



FCC CFR47 PART 15 SUBPART C

CERTIFICATION TEST REPORT

FOR

GSM/WCDMA/LTE PHONE + BLUETOOTH, DTS b/g/n

MODEL NUMBER: LG-H345, LGH345, H345

FCC ID: ZNFH345

REPORT NUMBER: 15I19960-E4 Revision B

ISSUE DATE: APRIL 9, 2015

Prepared for

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

Prepared by

**UL VERIFICATION SERVICES INC.
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.	Date	Revisions	Revised By
--	02/20/15	Initial Issue	D. Corona
A	4/9/15	Added Appendix A- Geo-Location Validation Data	L. Nguyen
B	4/9/15	Updated issue date and page arrangement	D. Corona

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS	5
2. TEST METHODOLOGY	6
3. FACILITIES AND ACCREDITATION	6
4. CALIBRATION AND UNCERTAINTY	6
4.1. MEASURING INSTRUMENT CALIBRATION	6
4.2. SAMPLE CALCULATION	6
4.3. MEASUREMENT UNCERTAINTY.....	7
5. EQUIPMENT UNDER TEST	8
5.1. DESCRIPTION OF EUT	8
5.2. MAXIMUM OUTPUT POWER.....	8
5.3. DESCRIPTION OF AVAILABLE ANTENNAS	8
5.4. WORST-CASE CONFIGURATION AND MODE.....	9
5.5. DESCRIPTION OF TEST SETUP.....	10
6. TEST AND MEASUREMENT EQUIPMENT	12
7. MEASUREMENT METHODS	13
8. SUMMARY TABLE	14
9. ANTENNA PORT TEST RESULTS	15
9.1. 6 dB BANDWIDTH.....	15
9.1.1. 802.11b MODE IN THE 2.4 GHz BAND.....	16
9.1.2. 802.11g MODE IN THE 2.4 GHz BAND.....	16
9.1.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND	16
9.1.4. 6 dB BANDWIDTH MID CH PLOTS.....	17
9.2. 99% BANDWIDTH.....	18
9.2.1. 802.11b MODE IN THE 2.4 GHz BAND.....	19
9.2.2. 802.11g MODE IN THE 2.4 GHz BAND.....	19
9.2.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND	19
9.2.4. 99% BANDWIDTH MID CH PLOTS.....	20
9.3. OUTPUT POWER.....	21
9.3.1. 802.11b MODE IN THE 2.4 GHz BAND.....	22
9.3.2. 802.11g MODE IN THE 2.4 GHz BAND.....	22
9.3.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND	23
9.4. PSD.....	24
9.4.1. 802.11b MODE IN THE 2.4 GHz BAND.....	25

9.4.2. 802.11g MODE IN THE 2.4 GHz BAND.....25
9.4.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND25
9.4.4. PSD Chain 0 MID CH PLOTS.....26
9.5. *OUT-OF-BAND EMISSIONS*.....27
9.5.1. 802.11b MODE IN THE 2.4 GHz BAND.....28
9.5.2. 802.11g MODE IN THE 2.4 GHz BAND.....34
9.5.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND40
10. RADIATED TEST RESULTS46
10.1. *LIMITS AND PROCEDURE*.....46
10.2. *TRANSMITTER ABOVE 1 GHz*.....47
10.2.1. TX ABOVE 1 GHz 802.11b MODE IN THE 2.4 GHz BAND.....47
10.2.2. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND.....60
10.2.3. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND73
10.3. *WORST-CASE BELOW 1 GHz*.....86
11. AC POWER LINE CONDUCTED EMISSIONS89
12. APPENDIX A GEO-LOCATION VALIDATION DATA.....92
13. SETUP PHOTOS95

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: LG ELECTRONICS MOBILECOMM U.S.A., INC
EUT DESCRIPTION: GSM/WCDMA/LTE PHONE + BLUETOOTH, DTS b/g/n
MODEL: LG-H345, LGH345, H345
SERIAL NUMBER: 501KPED818116 (Radiated), 501KPRW818126 (Conducted)
DATE TESTED: FEBRUARY 2-5, 2015

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

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

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

Approved & Released For
UL Verification Services Inc. By:

Tested By:



DAN CORONIA
CONSUMER TECHNOLOGY DIVISION
WISE PROJECT LEAD
UL VERIFICATION SERVICES INC

STEVEN TRAN
CONSUMER TECHNOLOGY DIVISION
WISE LAB ENGINEER
UL VERIFICATION SERVICES INC

2. TEST METHODOLOGY

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

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

47173 Benicia Street	47266 Benicia Street
<input type="checkbox"/> Chamber A(IC: 2324B-1)	<input type="checkbox"/> Chamber D(IC: 2324B-4)
<input checked="" type="checkbox"/> Chamber B(IC: 2324B-2)	<input type="checkbox"/> Chamber E(IC: 2324B-5)
<input checked="" type="checkbox"/> Chamber C(IC: 2324B-3)	<input type="checkbox"/> Chamber F(IC: 2324B-6)
	<input type="checkbox"/> Chamber G(IC: 2324B-7)
	<input checked="" type="checkbox"/> Chamber H(IC: 2324B-8)

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <http://ts.nist.gov/standards/scopes/2000650.htm>

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 18000 MHz	4.94 dB

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a GSM/WCDMA/LTE PHONE + BLUETOOTH, DTS b/g/n

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2412 - 2462	802.11b	16.4	43.65
2412 - 2462	802.11g	11.1	12.88
2412 - 2462	802.11n HT20	10.2	10.47

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of 0.46dBi.

5.4. WORST-CASE CONFIGURATION AND MODE

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

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

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

802.11b mode: 1 Mbps

802.11g mode: 6 Mbps

802.11n HT20mode: MCS0

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	LG	MCS-02WR	RA4Y1031433	N/A
Earphone	LG	N/A	N/A	N/A

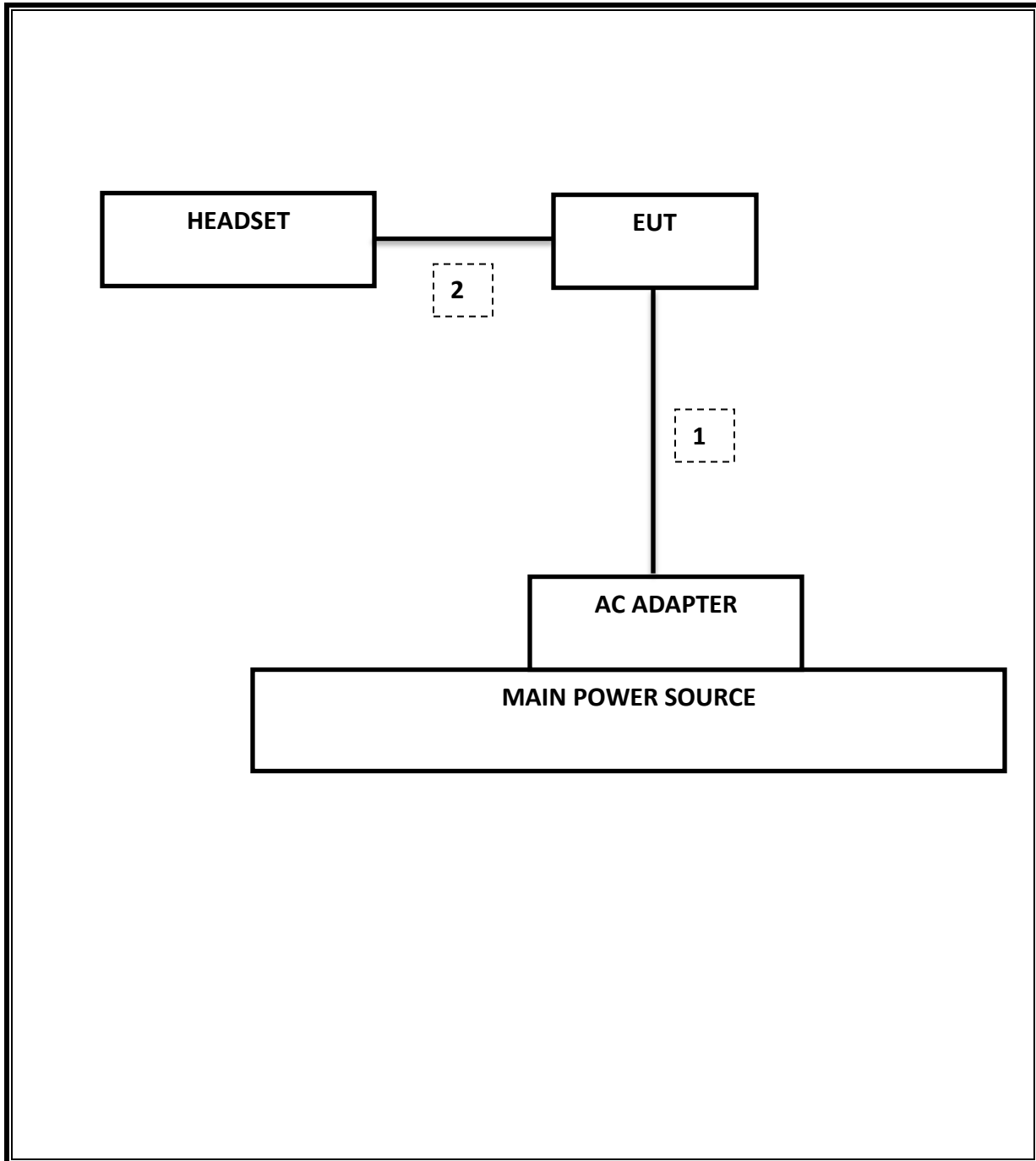
I/O CABLES

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	DC Power	1	Mini-USB	Shielded	1.2m	N/A
2	Audio	1	Mini-Jack	Unshielded	1m	N/A

TEST SETUP

The EUT is a stand-alone unit during the tests. Test software exercised the radio card.

SETUP DIAGRAM FOR TESTS



6. TEST AND MEASUREMENT EQUIPMENT

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

Test Equipment List				
Description	Manufacturer	Model	Asset	Cal Due
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01069	12/20/15
Spectrum Analyzer,9KHz-40GHz	HP	8564E	C00986	04/01/15
EMI Test Receiver, 9 kHz-7 GHz	R & S	ESCI 7	1000741	08/13/15
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	08/18/15
Peak Power Meter	Agilent / HP	E4416A	C00963	12/13/15
Peak / Average Power Sensor	Agilent / HP	E9327A	C00964	12/13/15
Antenna, Horn, 1-18 GHz	ETS	3117	C01022	02/21/15
Antenna, Horn,18- 26 GHz	ARA	MWH-1826/B	C00946	11/12/15
Antenna, Horn, 26-40 GHz	ARA	MWH-2640	C00891	06/28/15
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	T243	03/06/15
RF Preamp, 100KHz -> 1300MHz	HP	TBD	C00825	06/01/15
RF Preamp, 1GHz - 18GHz	Miteq	NSP4000-SP2	924343	03/23/15
RF Preamp, 1GHz - 26.5GHz	HP	8449B	F00351	06/27/15
AC Power Supply, 2,500VA 45-500Hz	Elgar-Ametek	CW2501M	F00013	CNR
RF Preamp, 1GHz - 40GHz	Miteq	NSP4000-SP2	C00990	08/20/15
Attenuator / Switch driver	HP	11713A	F00204	CNR
Low Pass Filter 3GHz	Micro-Tronics	LPS17541	F00219	05/23/15
High Pass Filter 5GHz	Micro-Tronics	HPS17542	F00222	05/22/15
High Pass Filter 6GHz	Micro-Tronics	HPM17543	F00224	05/22/15

Test Software List			
Description	Manufacturer	Model	Version
Radiated Software	UL	UL EMC	Version 9.5, 07/22/14
Conducted Software	UL	UL EMC	Version 9.5, 05/17/14
CLT Software	UL	UL RF	Version 1.0, 02/02/15
Antenna Port Software	UL	UL RF	Version 2.1.1.1, 1/20/15

7. MEASUREMENT METHODS

KDB 558074 D01 DTS Meas Guidance v03r02: Measurement Procedure AVGPM-G is used for power and AVGPSD-3 is used for power spectral density.

Unwanted emissions within Restricted Bands are measured using traditional radiated procedures.

Band edge emissions within Restricted Bands are measured using RMS with duty cycle factor offset method.

8. SUMMARY TABLE

FCC Part Section	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result	Worst Case
15.247 (a)(2)	RSS-210 A8.2(a)	Occupied Band width (6dB)	>500KHz	Conducted	Pass	7.10 MHz
2.1051, 15.247 (d)	RSS-210 A8.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	-35.79 dBm
15.247	RSS-210 A8.4	TX conducted output power	<30dBm		Pass	16.4 dBm
15.247	RSS-210 A8.2	PSD	<8dBm		Pass	-14.32 dBm
15.207 (a)	RSS-GEN 7.2.2	AC Power Line conducted emissions	Section 10	Radiated	Pass	35.31 dBuV (AV)
15.205, 15.209	RSS-210 Clause 2.6, RSS-210 Clause 6	Radiated Spurious Emission	< 54dBuV/m		Pass	46.91 dBuV/m

9. ANTENNA PORT TEST RESULTS

9.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

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

TEST PROCEDURE

Reference to KDB 558074 D01 DTS Meas Guidance v03r02: The transmitter output is connected to a spectrum analyzer with the RBW set to 100kHz, the VBW $\geq 3 \times$ RBW, peak detector and max hold.

RESULTS

9.1.1. 802.11b MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	7.13	0.5
Mid	2437	7.11	0.5
High	2462	7.10	0.5
Worst		7.10	

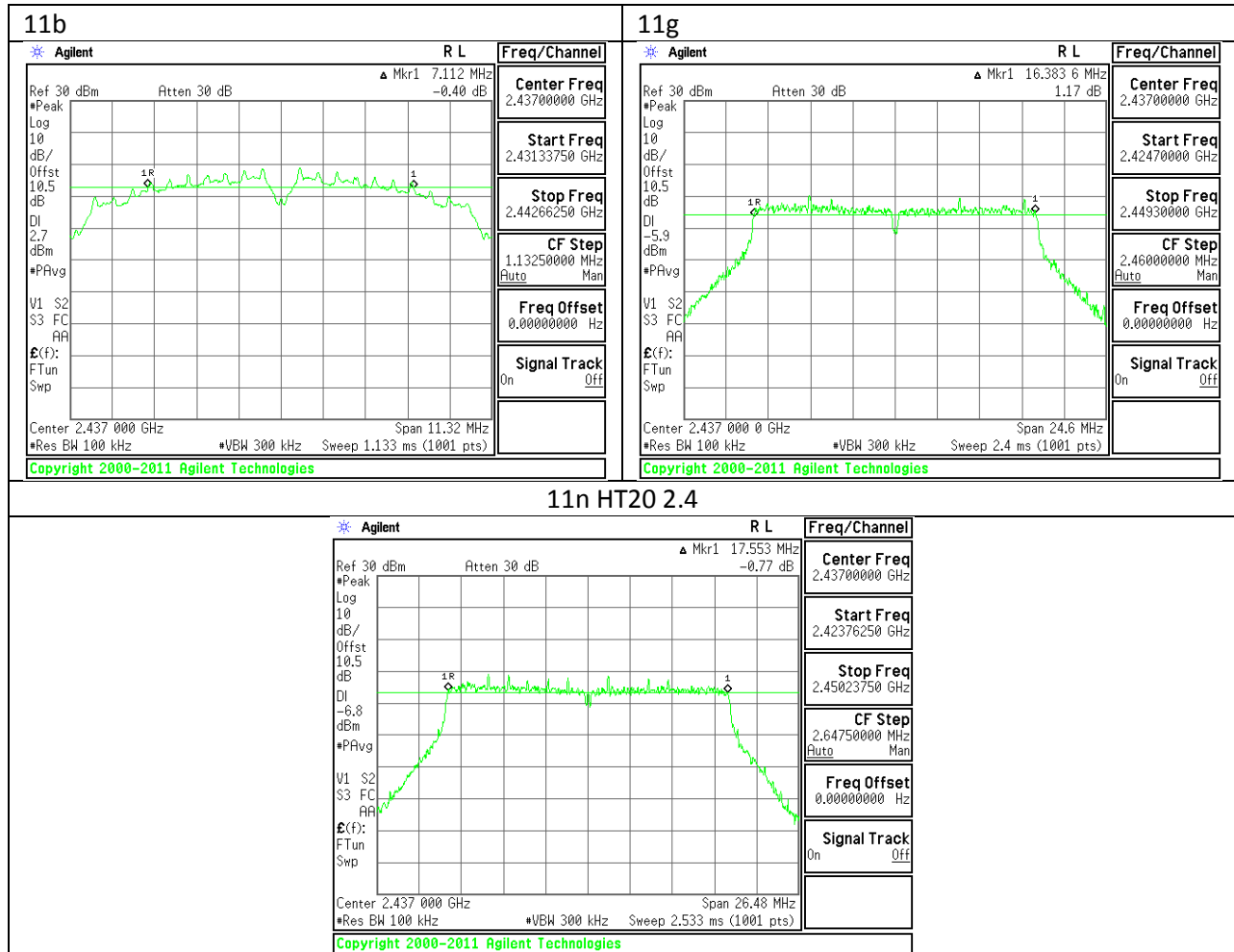
9.1.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	16.38	0.5
Mid	2437	16.38	0.5
High	2462	16.38	0.5
Worst		16.38	

9.1.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	17.61	0.5
Mid	2437	17.55	0.5
High	2462	17.61	0.5
Worst		17.55	

9.1.4. 6 dB BANDWIDTH MID CH PLOTS



9.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

9.2.1. 802.11b MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	12.38
Mid	2437	12.08
High	2462	12.08
Worst		12.38

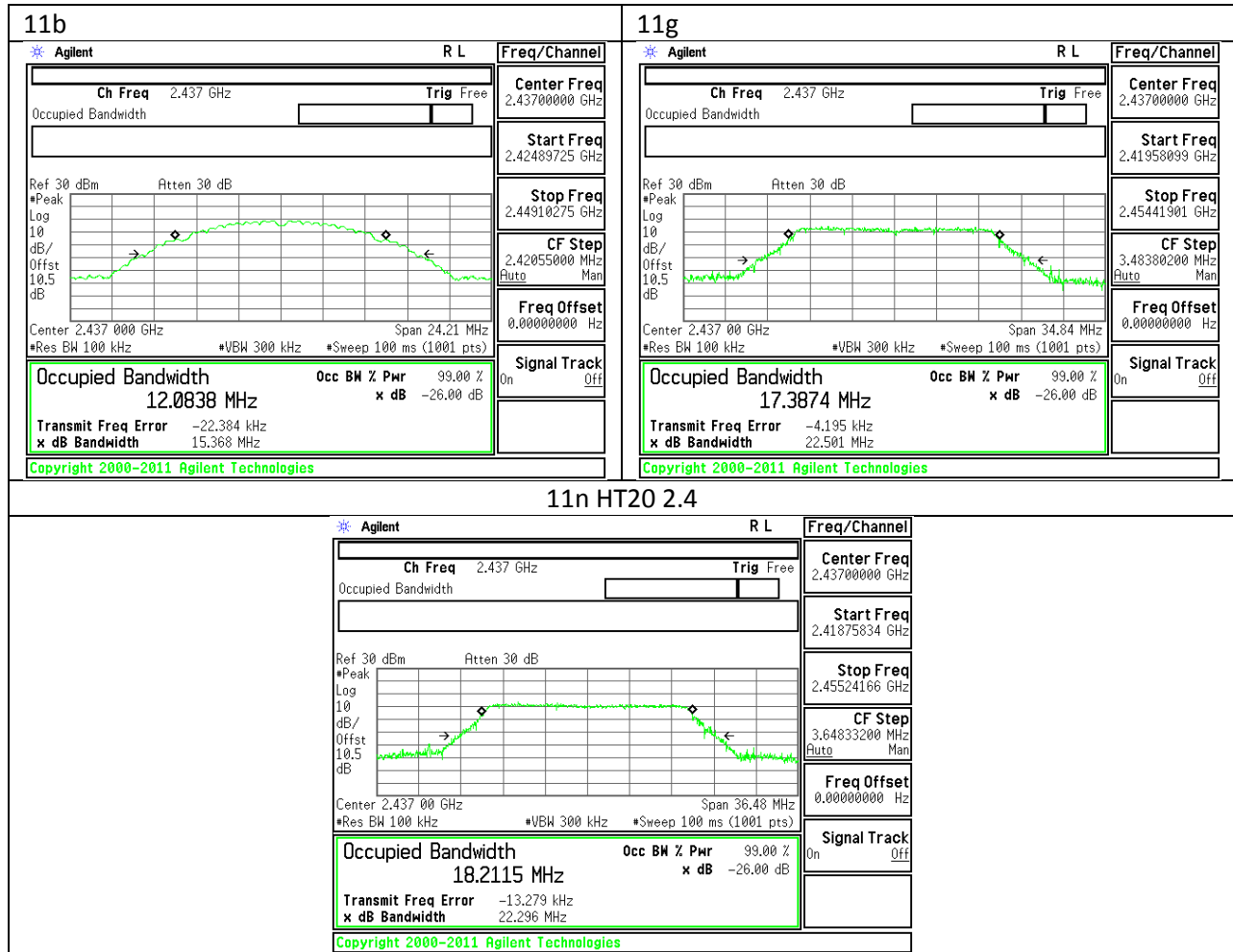
9.2.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	17.26
Mid	2437	17.39
High	2462	17.25
Worst		17.39

9.2.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	18.26
Mid	2437	18.21
High	2462	18.23
Worst		18.26

9.2.4. 99% BANDWIDTH MID CH PLOTS



9.3. OUTPUT POWER

LIMITS

FCC §15.247

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

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 10.5 dB (including 10 dB pad and 0.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

RESULTS

9.3.1. 802.11b MODE IN THE 2.4 GHz BAND

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	0.46	30.00	30	36	30.00
Mid	2437	0.46	30.00	30	36	30.00
High	2462	0.46	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	16.30	16.30	30.00	-13.70
Mid	2437	16.40	16.40	30.00	-13.60
High	2462	16.40	16.40	30.00	-13.60
Worst			16.40		

9.3.2. 802.11g MODE IN THE 2.4 GHz BAND

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	0.46	30.00	30	36	30.00
Mid	2437	0.46	30.00	30	36	30.00
High	2462	0.46	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	10.90	10.90	30.00	-19.10
Mid	2437	11.00	11.00	30.00	-19.00
High	2462	11.10	11.10	30.00	-18.90
Worst			11.10		

9.3.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	0.46	30.00	30	36	30.00
Mid	2437	0.46	30.00	30	36	30.00
High	2462	0.46	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	10.10	10.10	30.00	-19.90
Mid	2437	10.10	10.10	30.00	-19.90
High	2462	10.20	10.20	30.00	-19.80
Worst			10.20		

9.4. PSD

LIMITS

FCC §15.247

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

RESULTS

9.4.1. 802.11b MODE IN THE 2.4 GHz BAND

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-14.32	8.0	-22.3
Mid	2437	-14.70	8.0	-22.7
High	2462	-14.48	8.0	-22.5

9.4.2. 802.11g MODE IN THE 2.4 GHz BAND

PSD Results

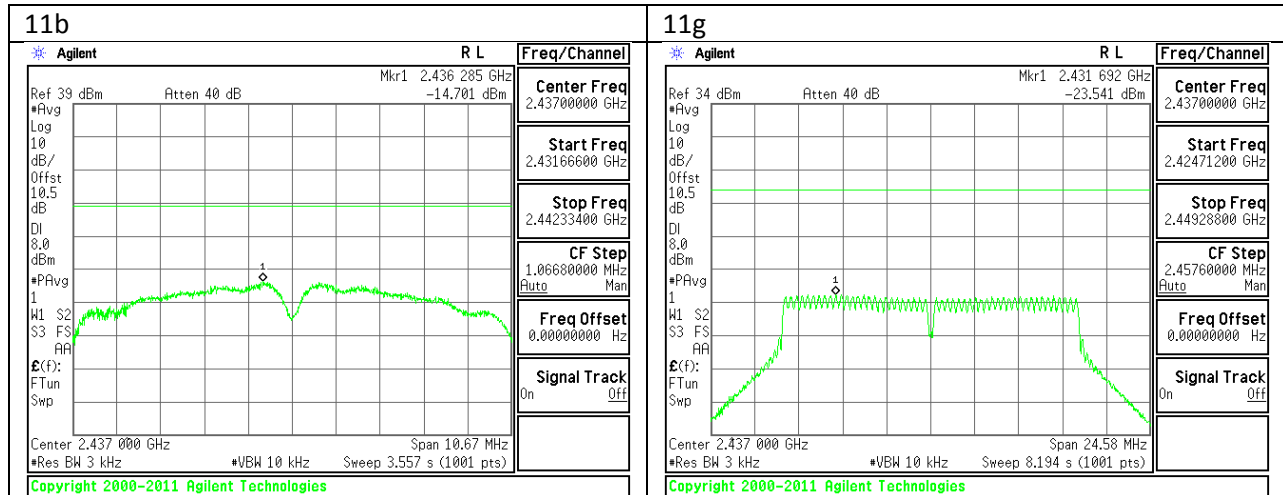
Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-23.39	8.0	-31.4
Mid	2437	-23.54	8.0	-31.5
High	2462	-23.52	8.0	-31.5

9.4.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

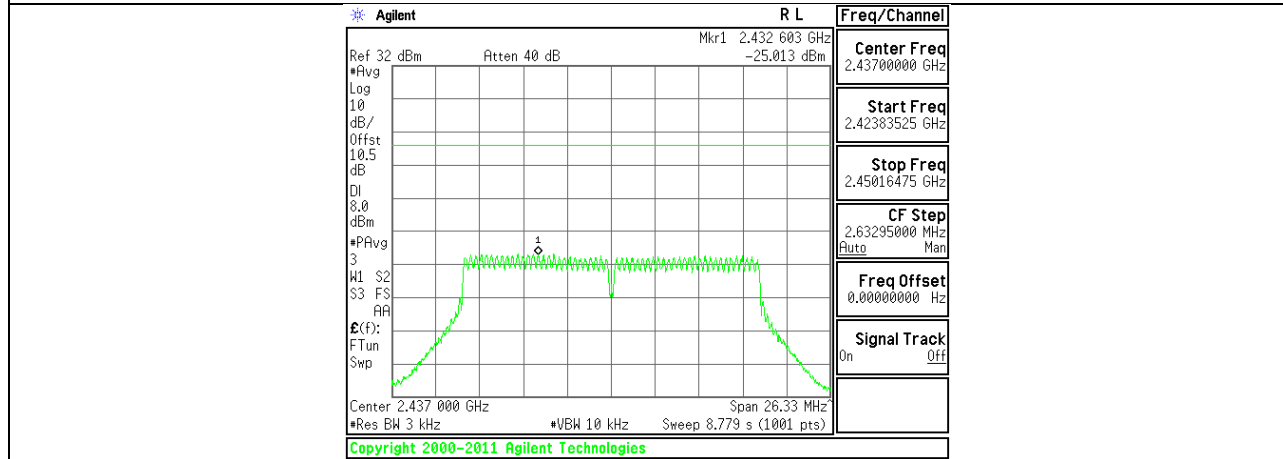
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-24.51	8.0	-32.5
Mid	2437	-19.88	8.0	-27.9
High	2462	-25.01	8.0	-33.0

9.4.4. PSD Chain 0 MID CH PLOTS



11n HT20 2.4



9.5. OUT-OF-BAND EMISSIONS

LIMITS

FCC §15.247 (d)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required.

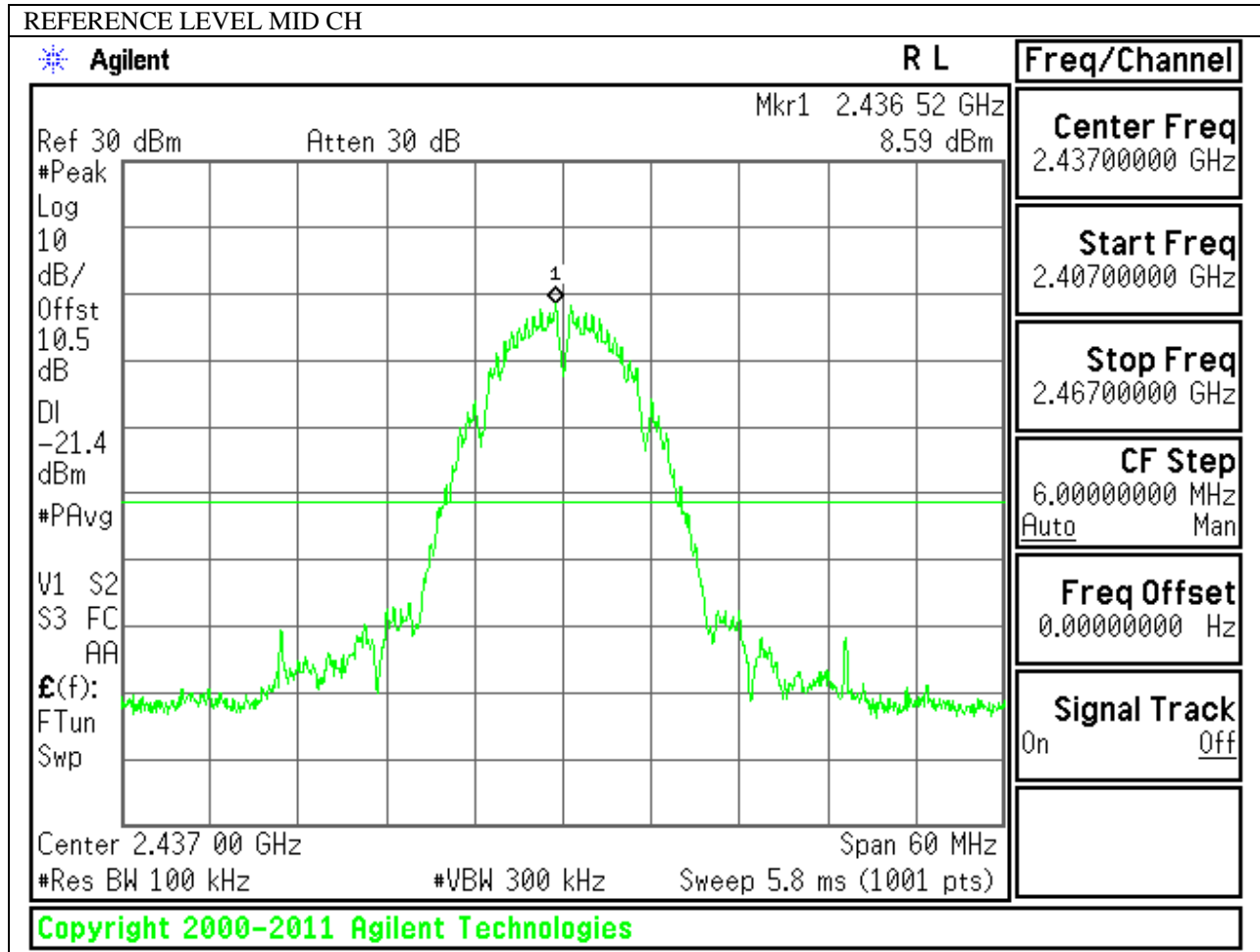
TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer with RBW = 100 kHz, VBW = 300 kHz, peak detector, and max hold. Measurements utilizing these settings are made of the in-band reference level, bandedge (where measurements to the general radiated limits will not be made) and out-of-band emissions.

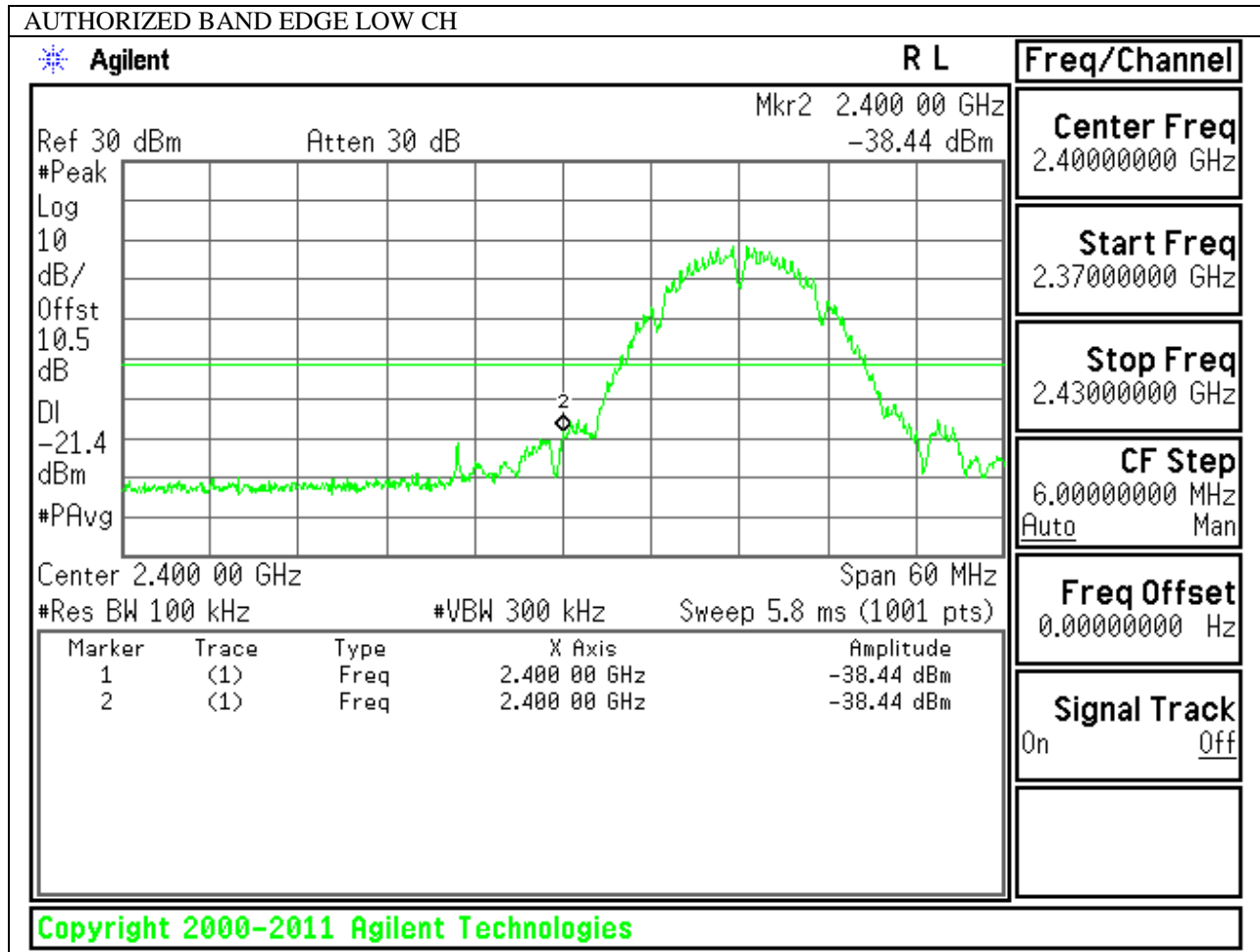
RESULTS

9.5.1. 802.11b MODE IN THE 2.4 GHz BAND

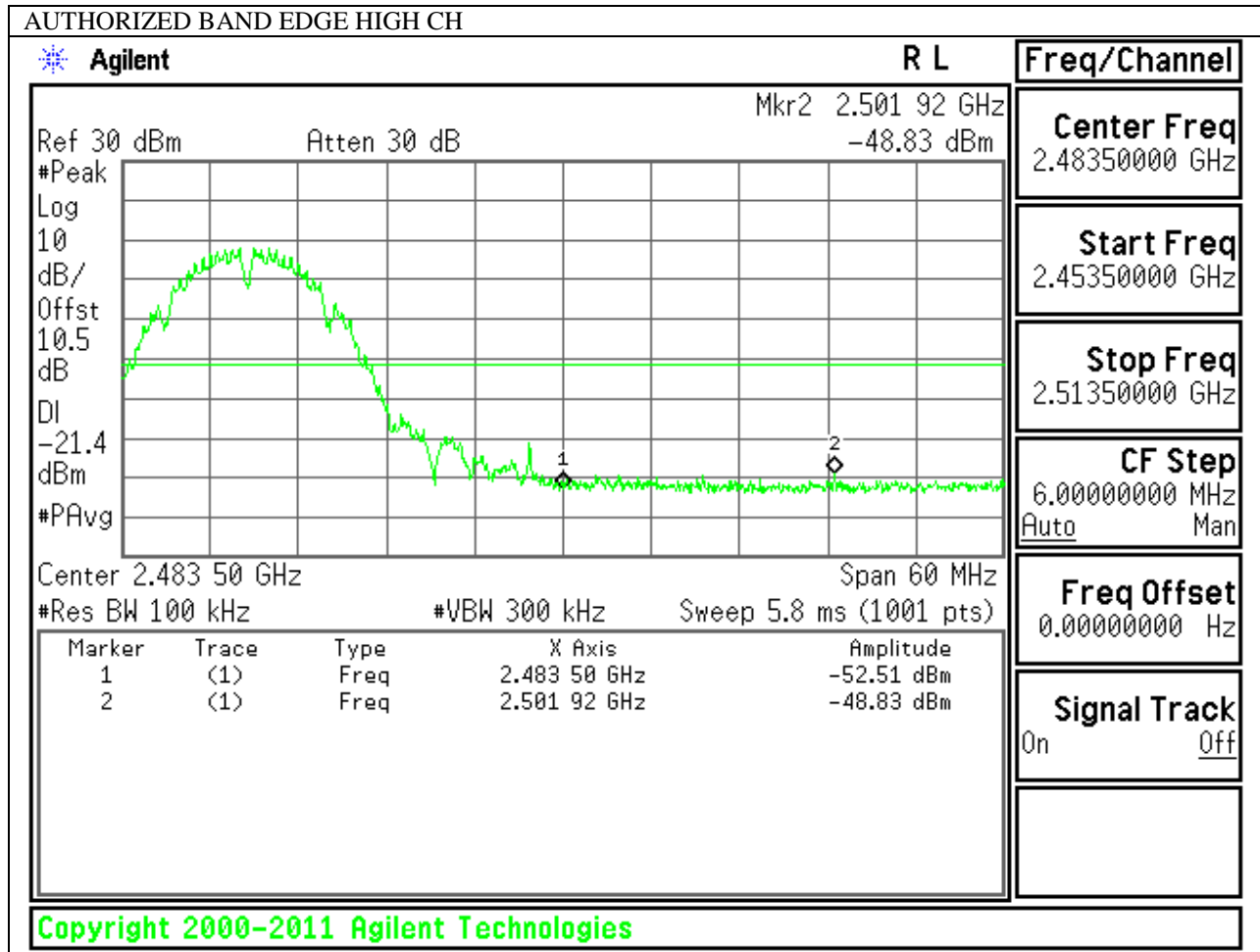
IN-BAND REFERENCE LEVEL



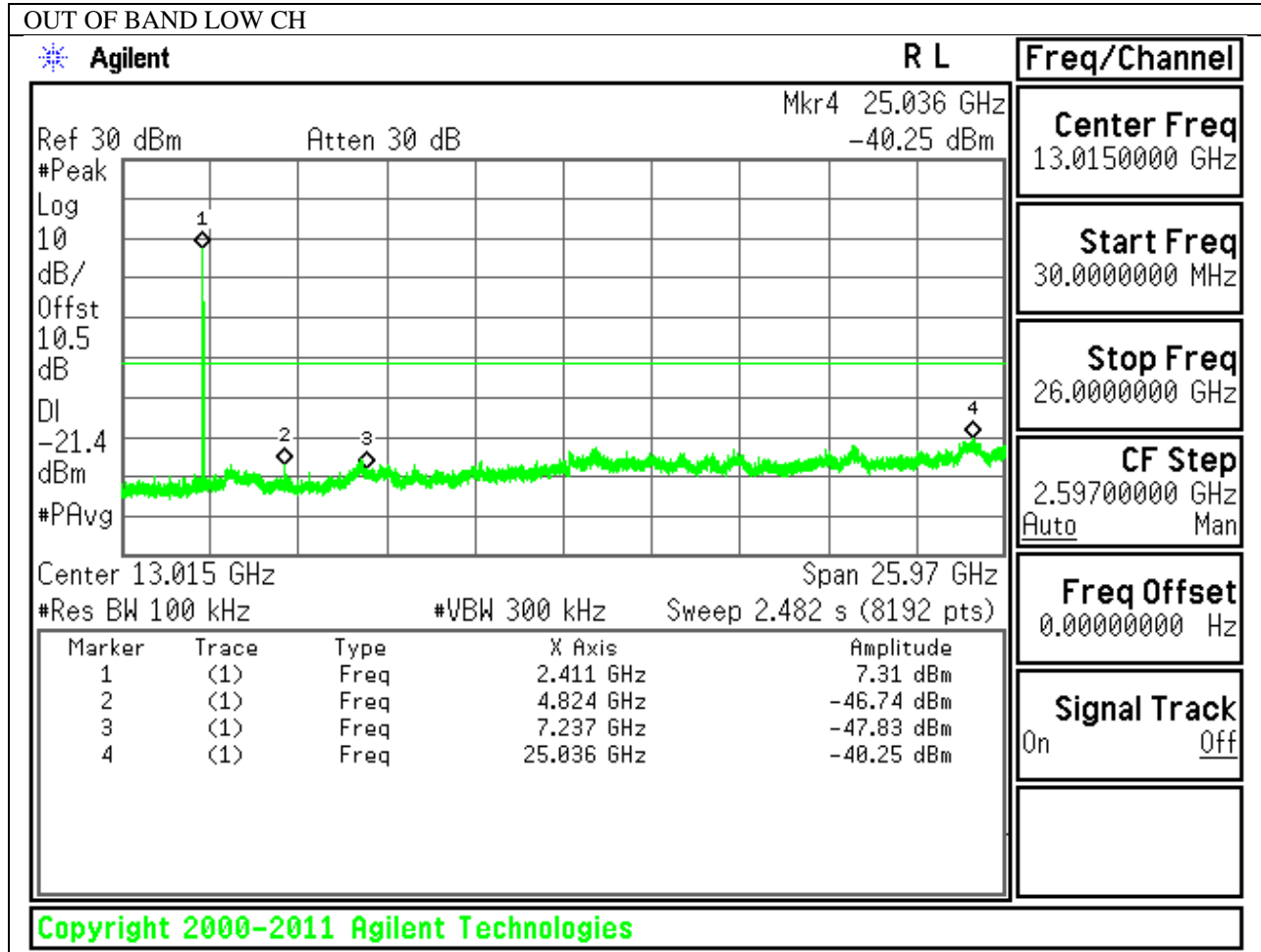
LOW CHANNEL BANDEDGE

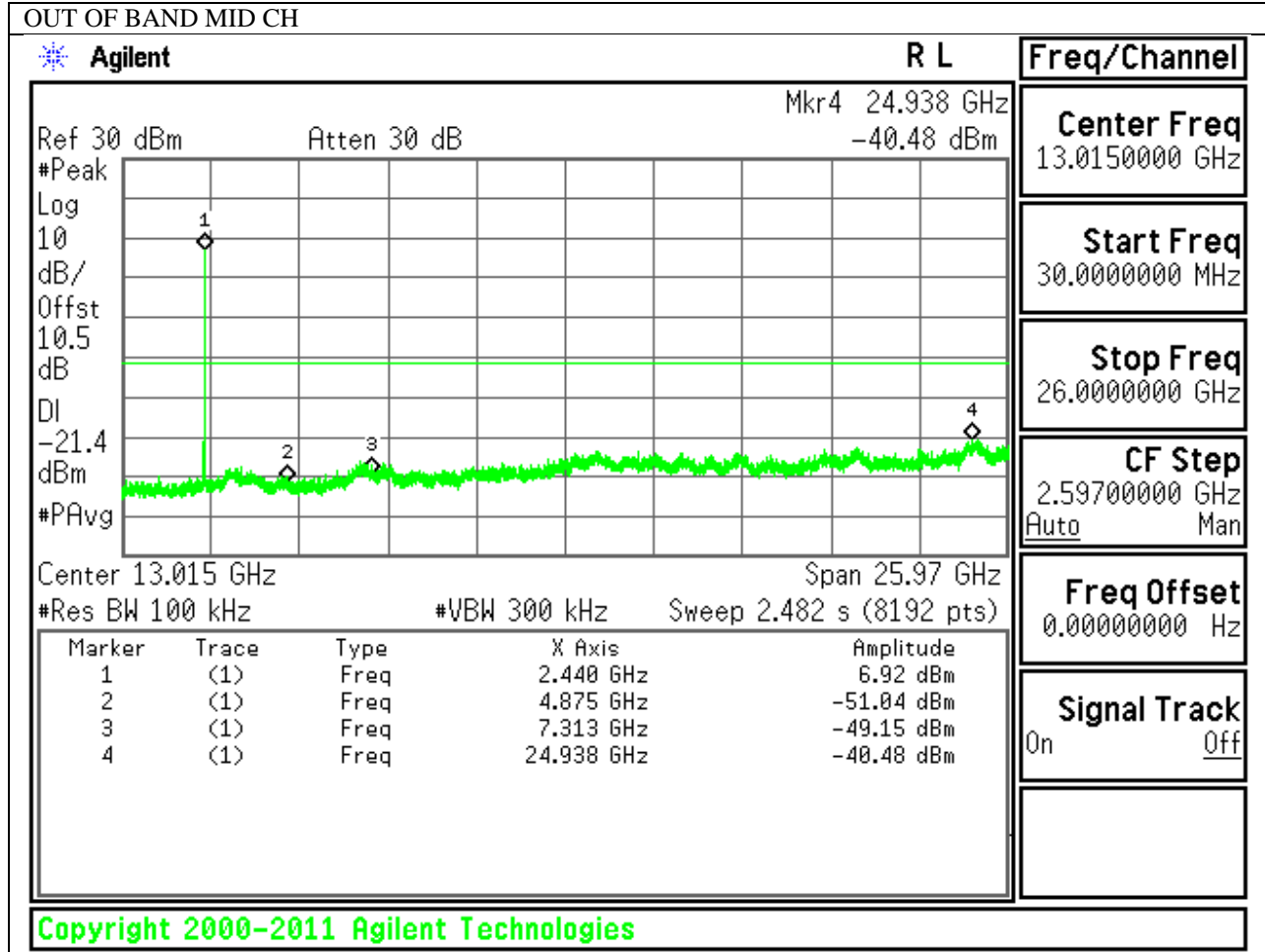


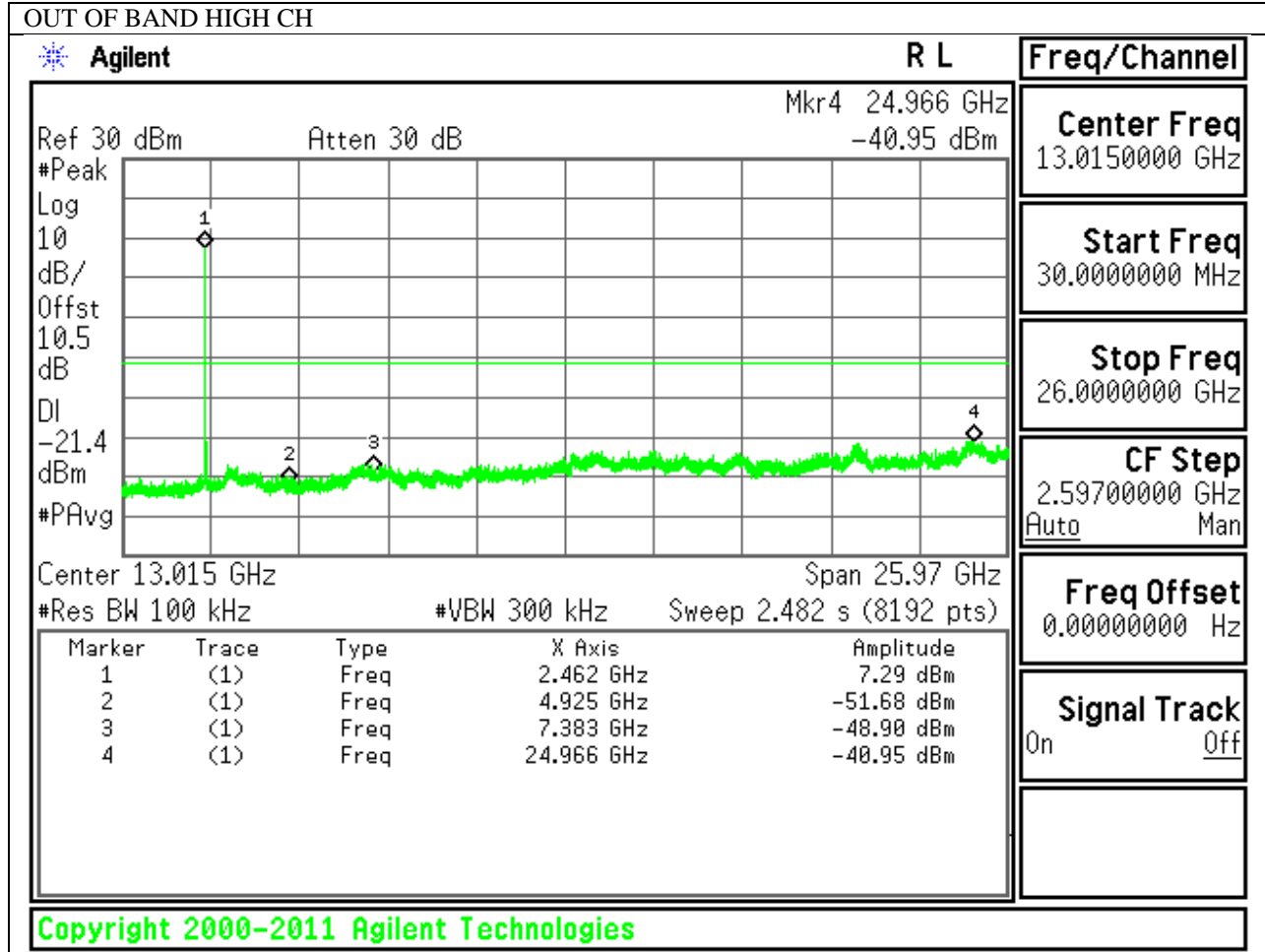
HIGH CHANNEL BANDEDGE



OUT-OF-BAND EMISSIONS

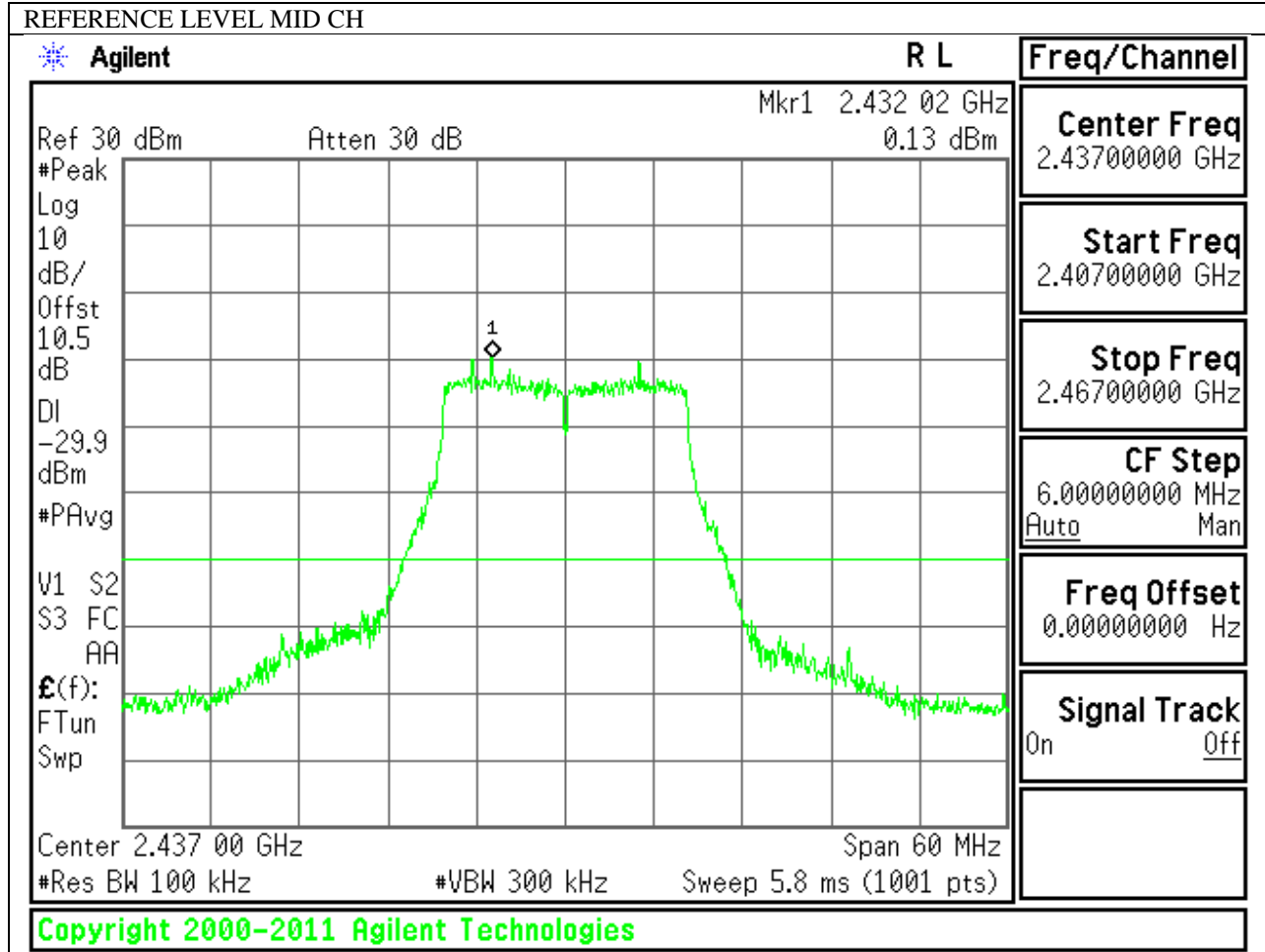




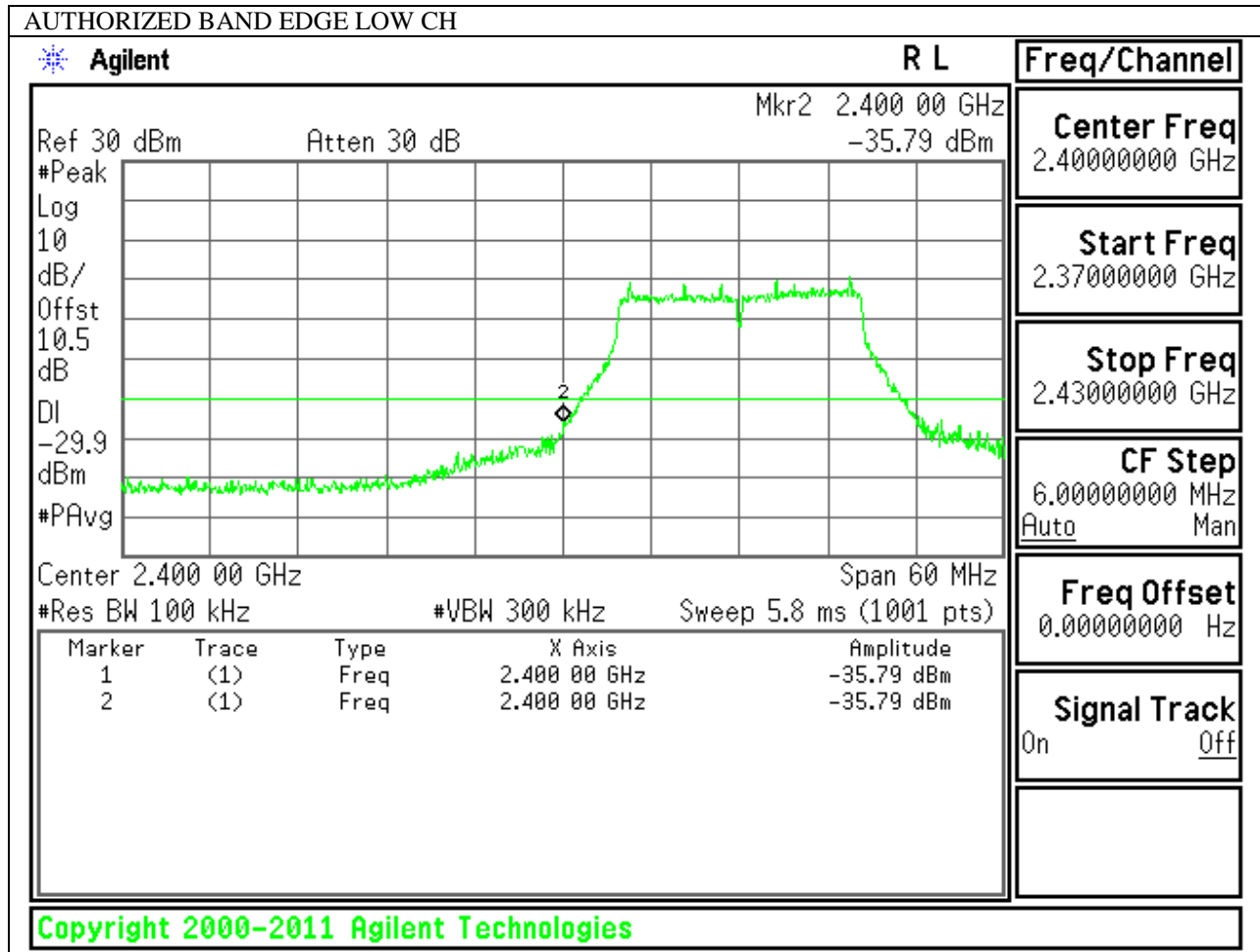


9.5.2. 802.11g MODE IN THE 2.4 GHz BAND

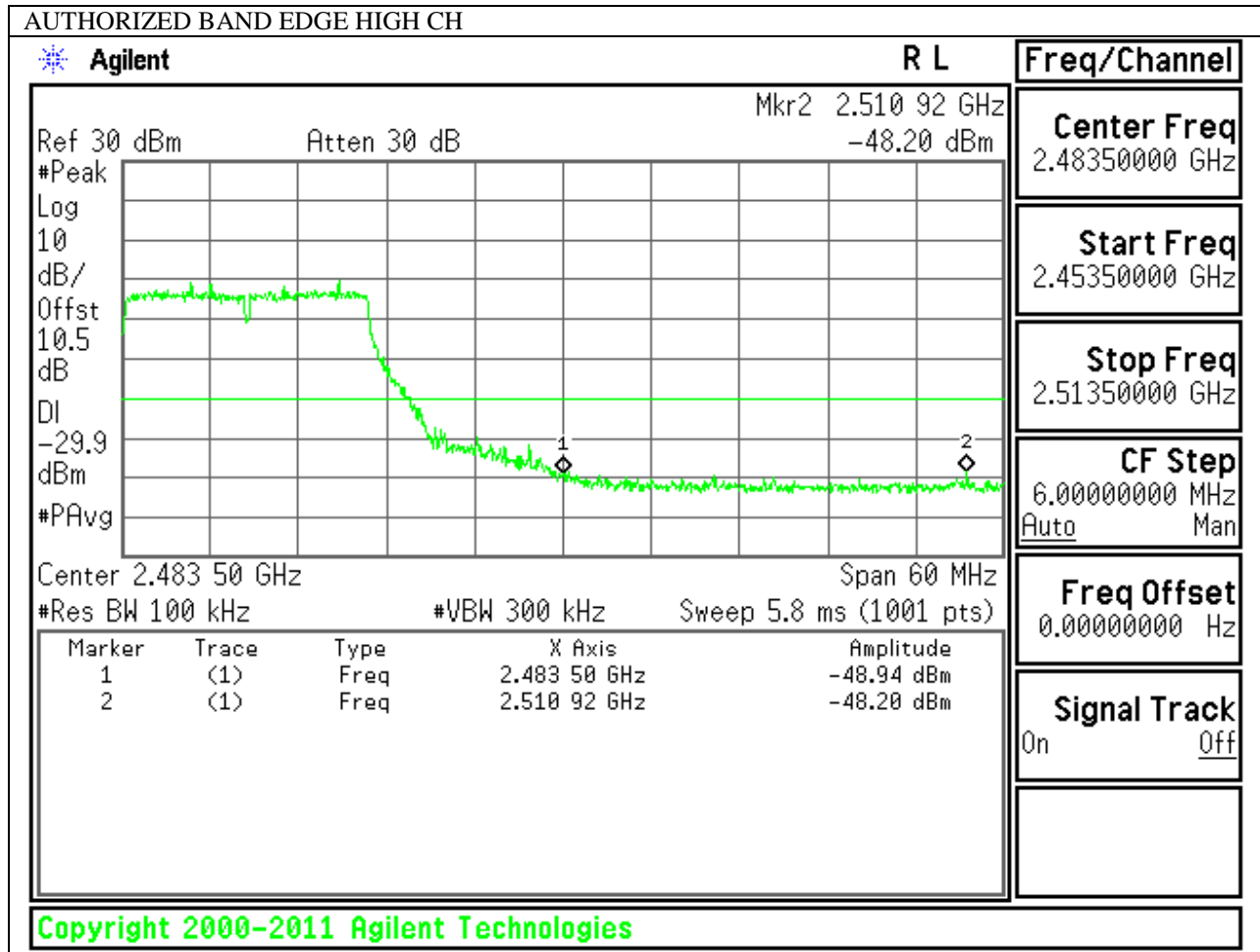
IN-BAND REFERENCE LEVEL



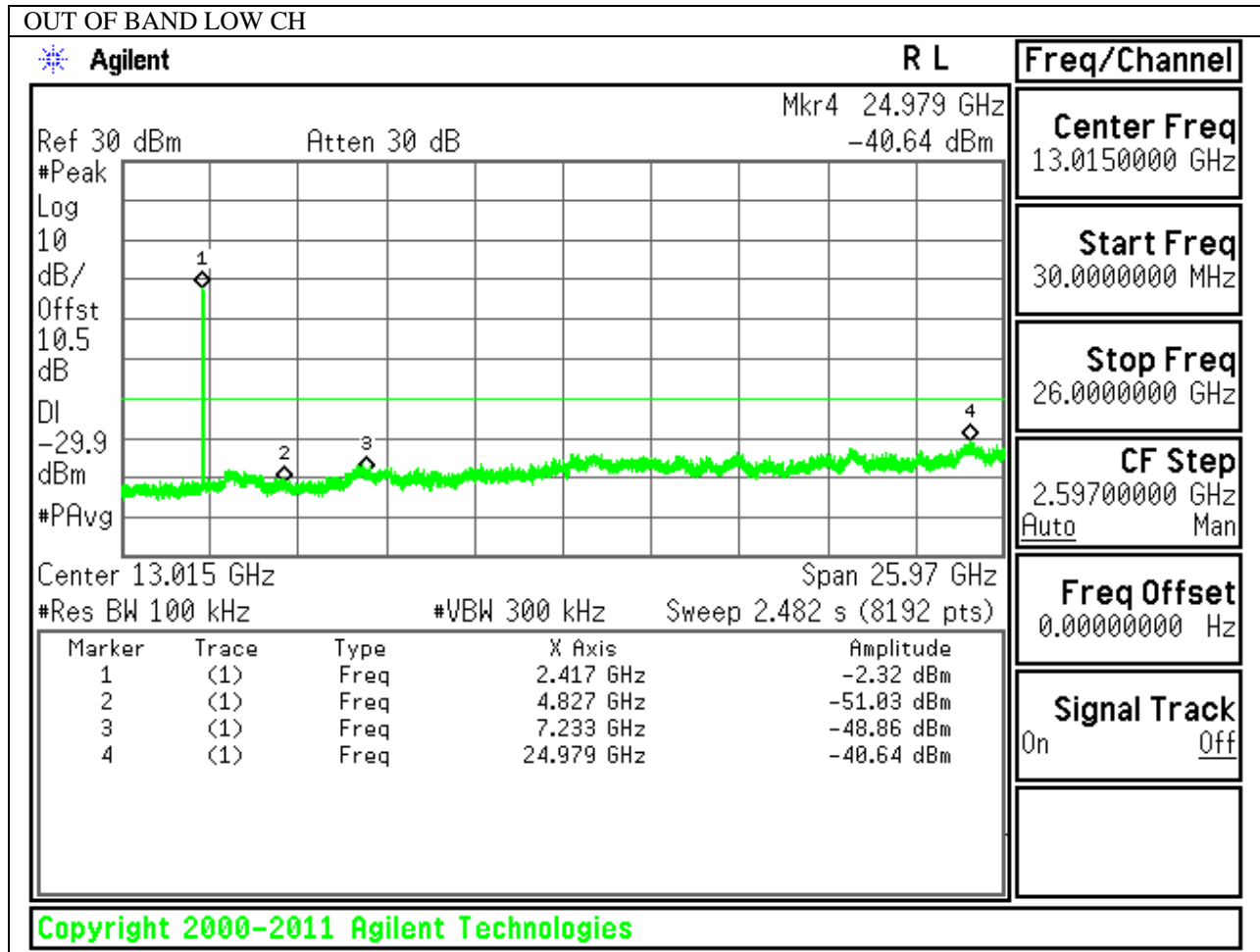
LOW CHANNEL BANDEDGE

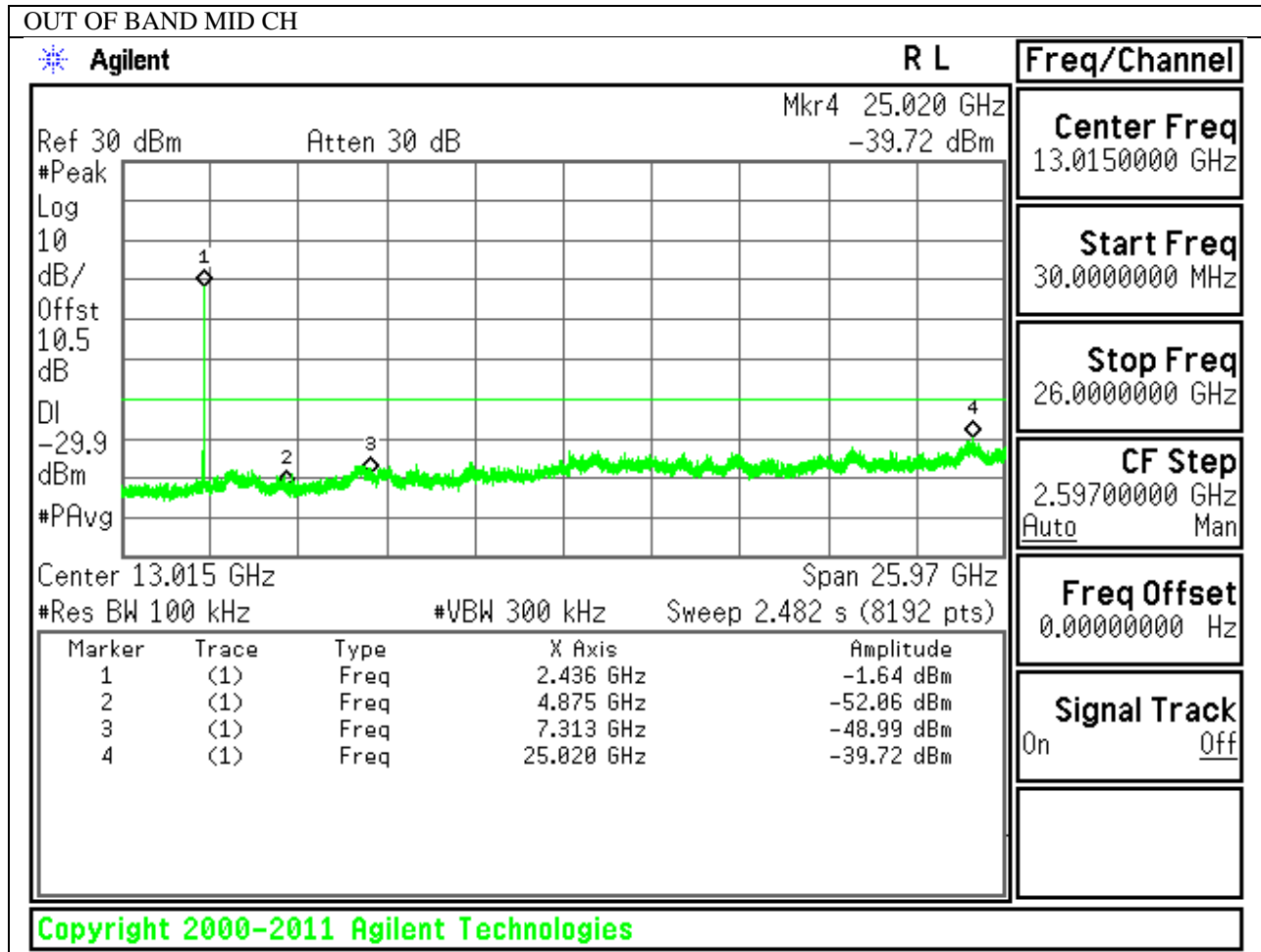


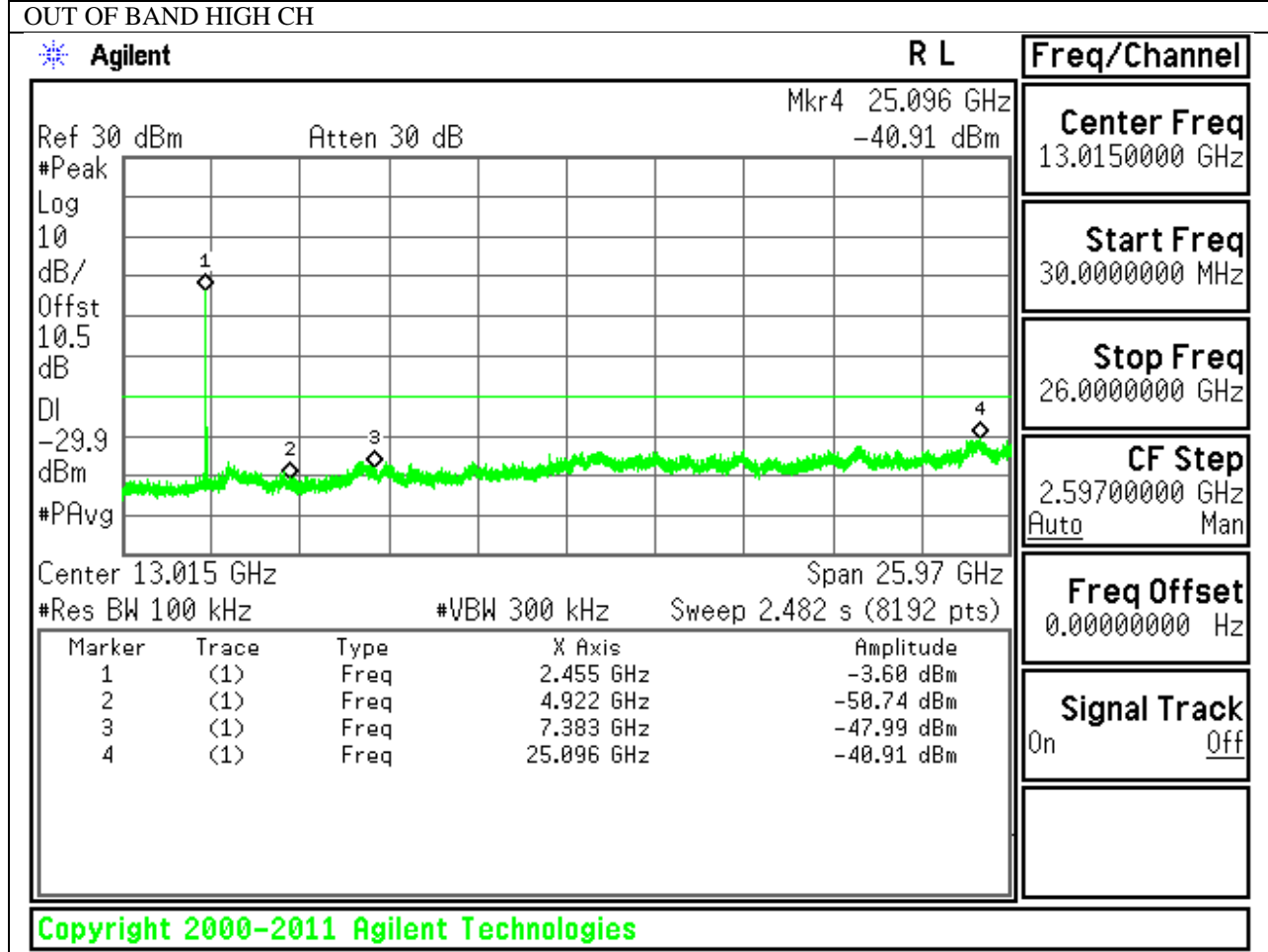
HIGH CHANNEL BANDEDGE



OUT-OF-BAND EMISSIONS

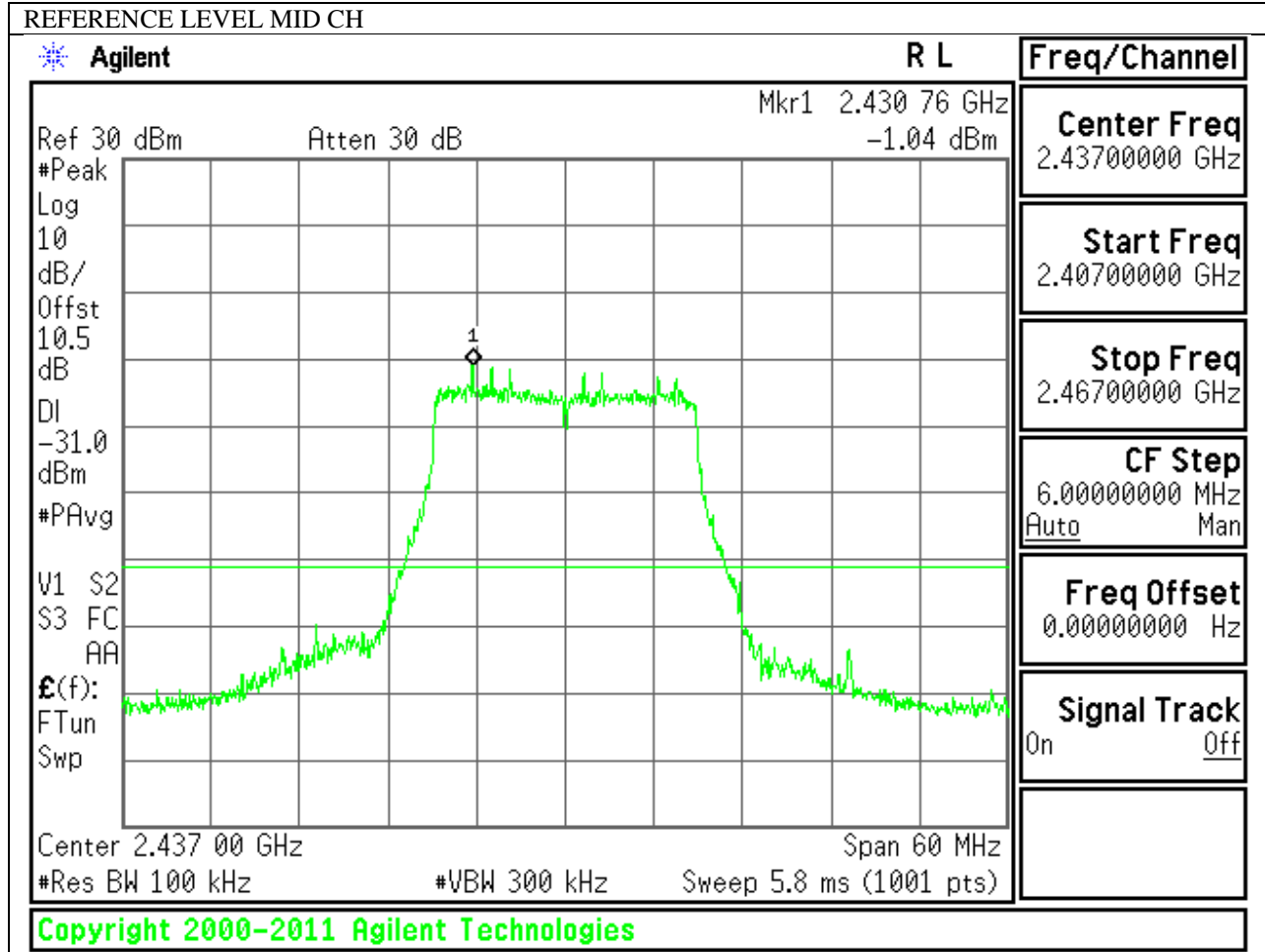




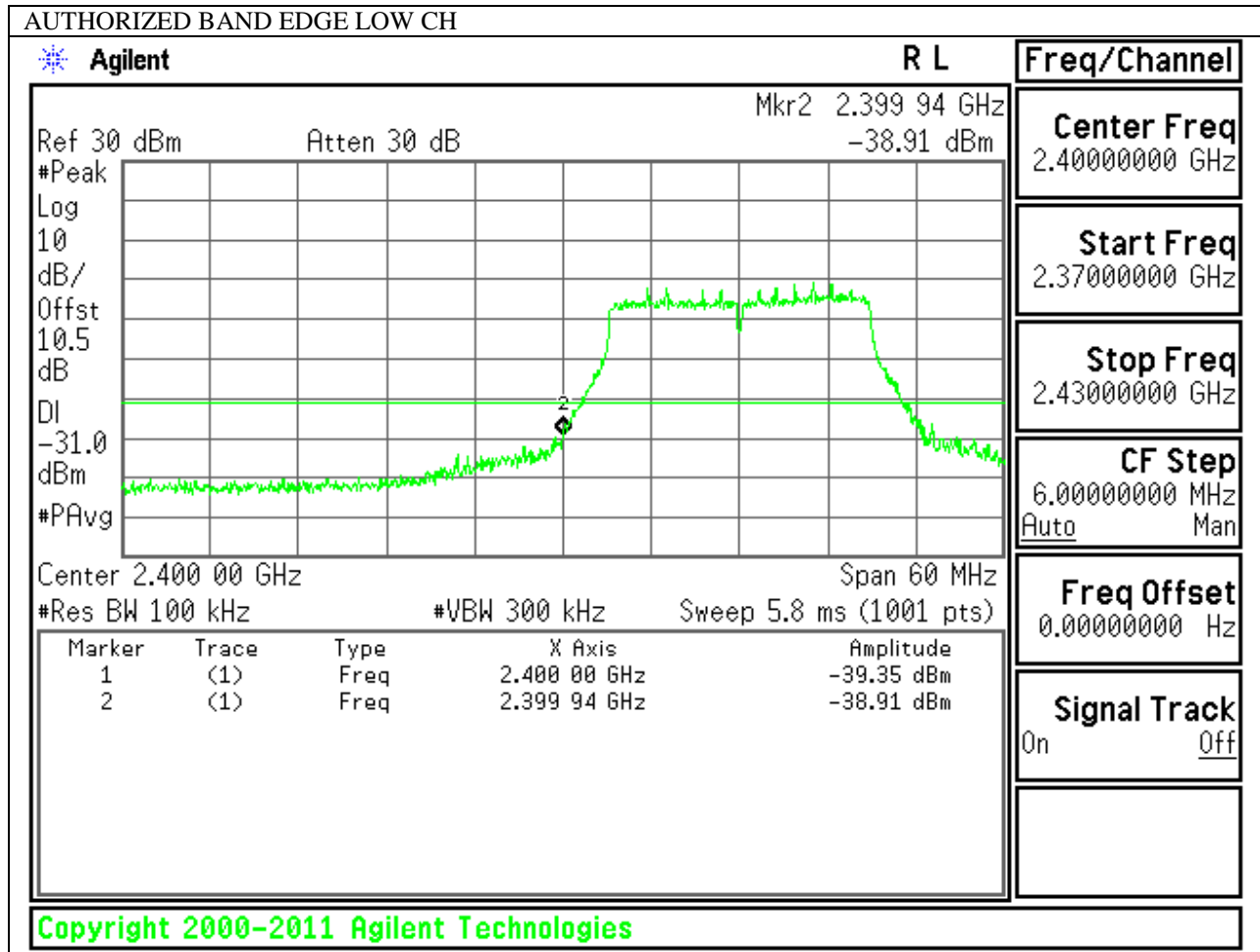


9.5.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

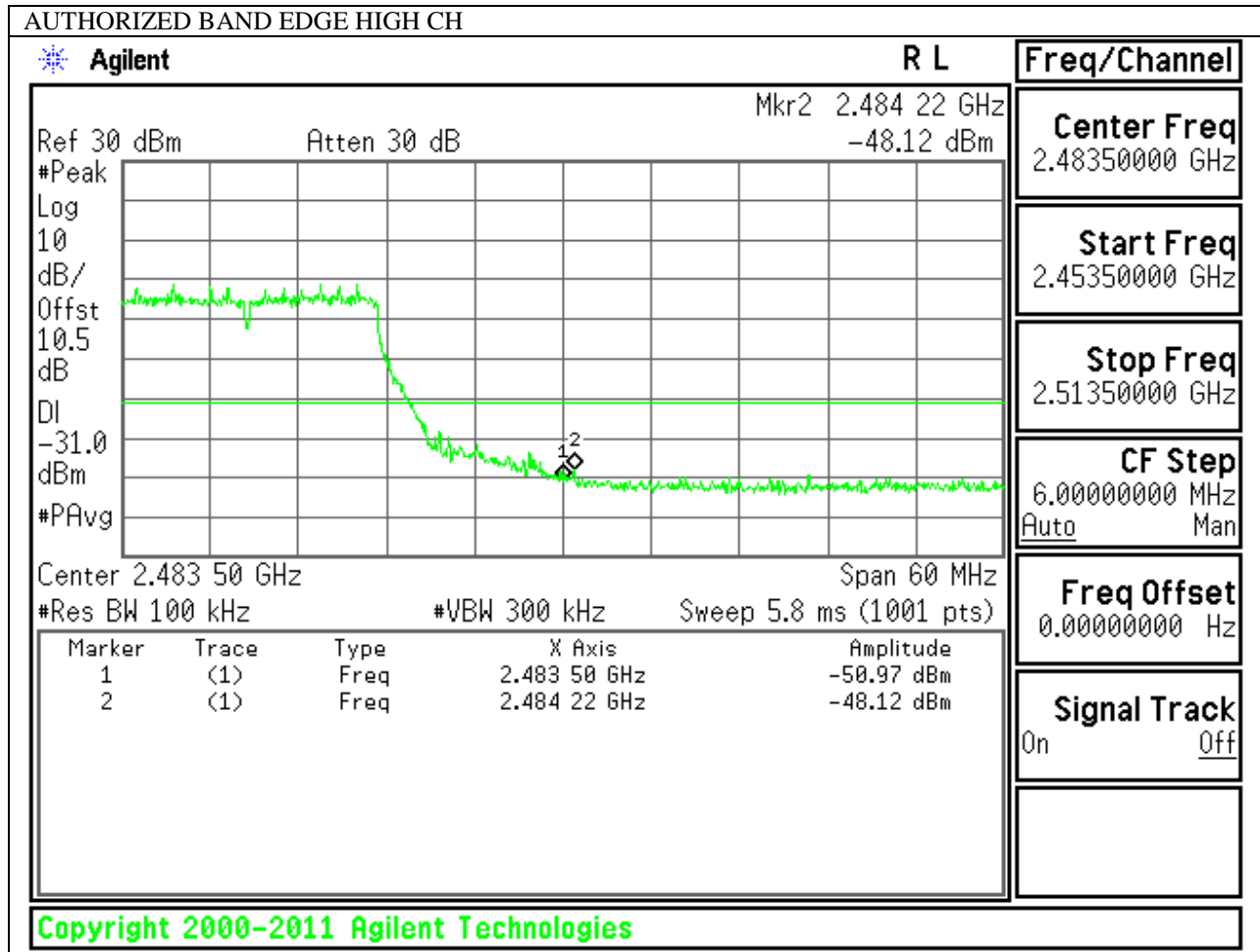
IN-BAND REFERENCE LEVEL



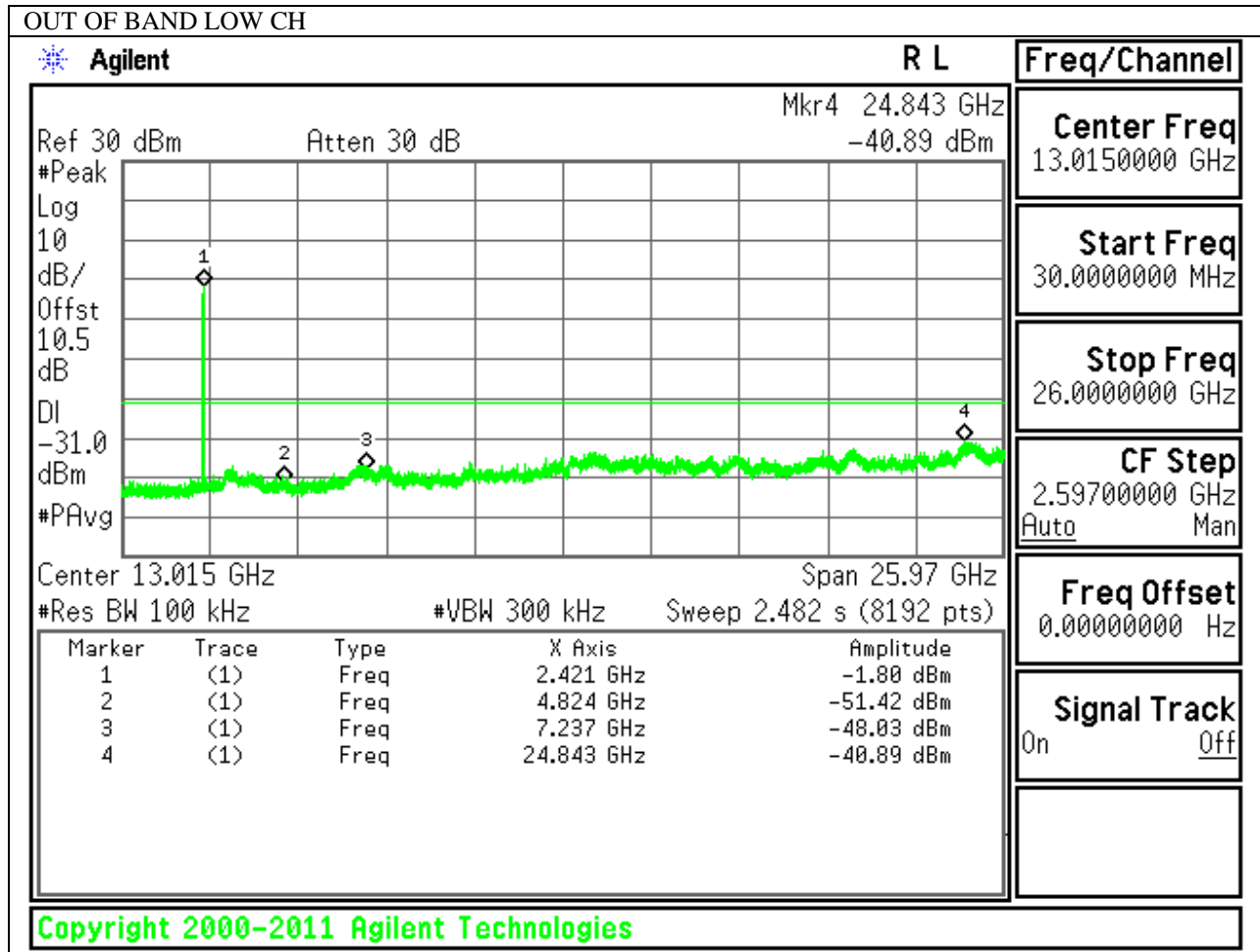
LOW CHANNEL BANDEDGE

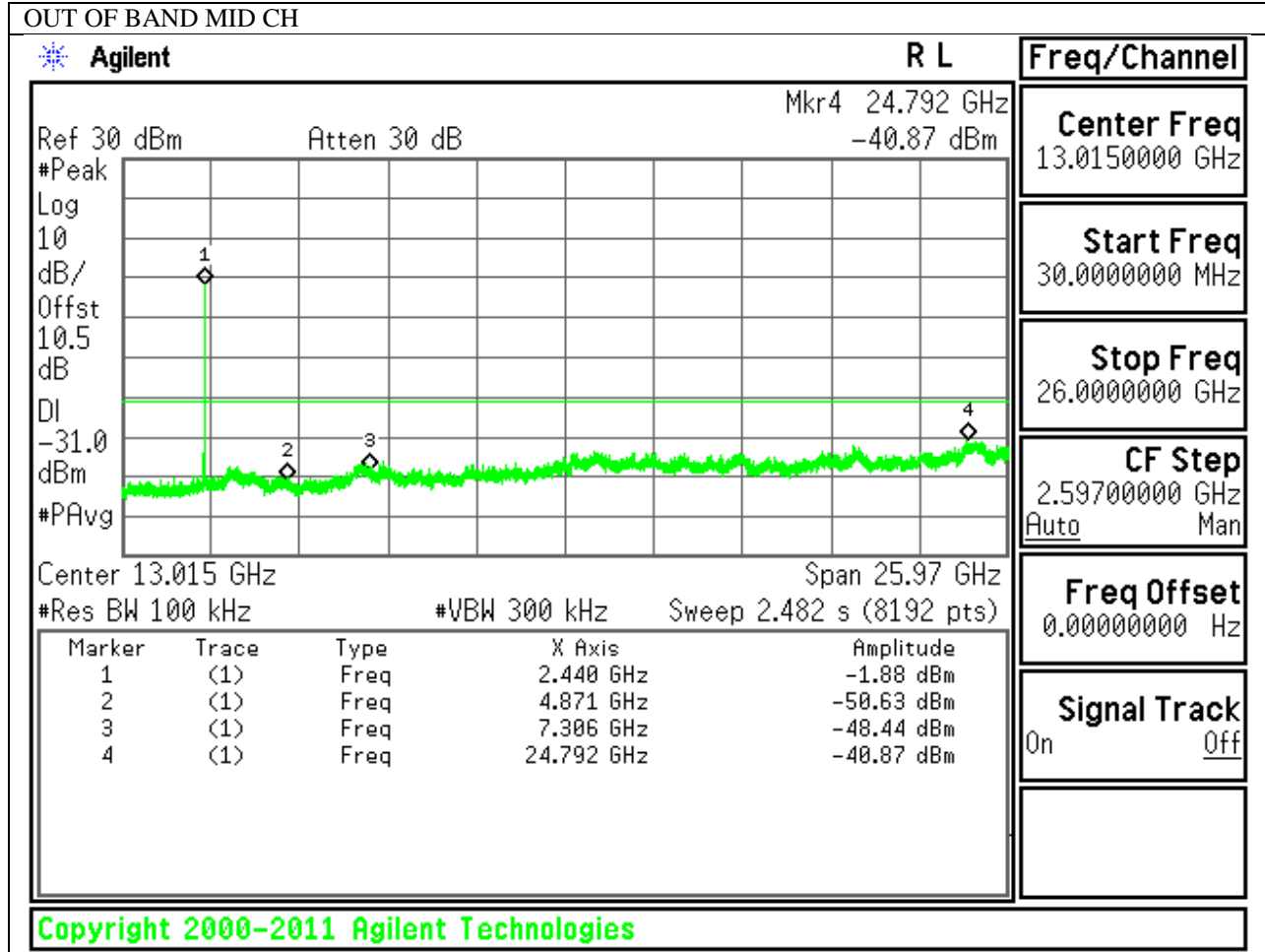


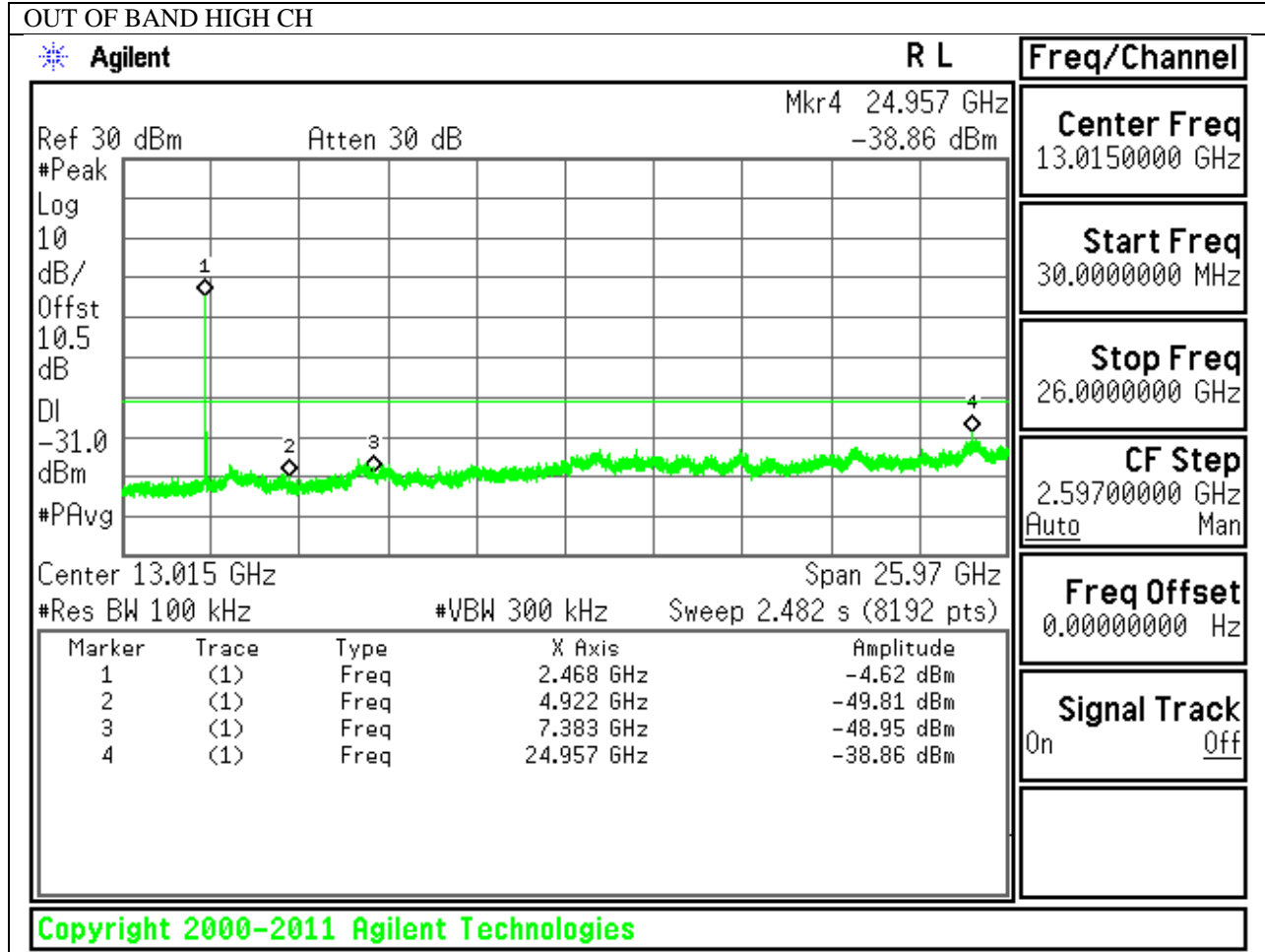
HIGH CHANNEL BANDEDGE



OUT-OF-BAND EMISSIONS







10. RADIATED TEST RESULTS

10.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

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

TEST PROCEDURE

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

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

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and add duty cycle factor for average measurements. Duty cycle factor = $10 \log(1/x)$ For this sample B mode = 0.5dB (duty cycle >98%); G mode = 0.47dB; N mode = 0.08dB.

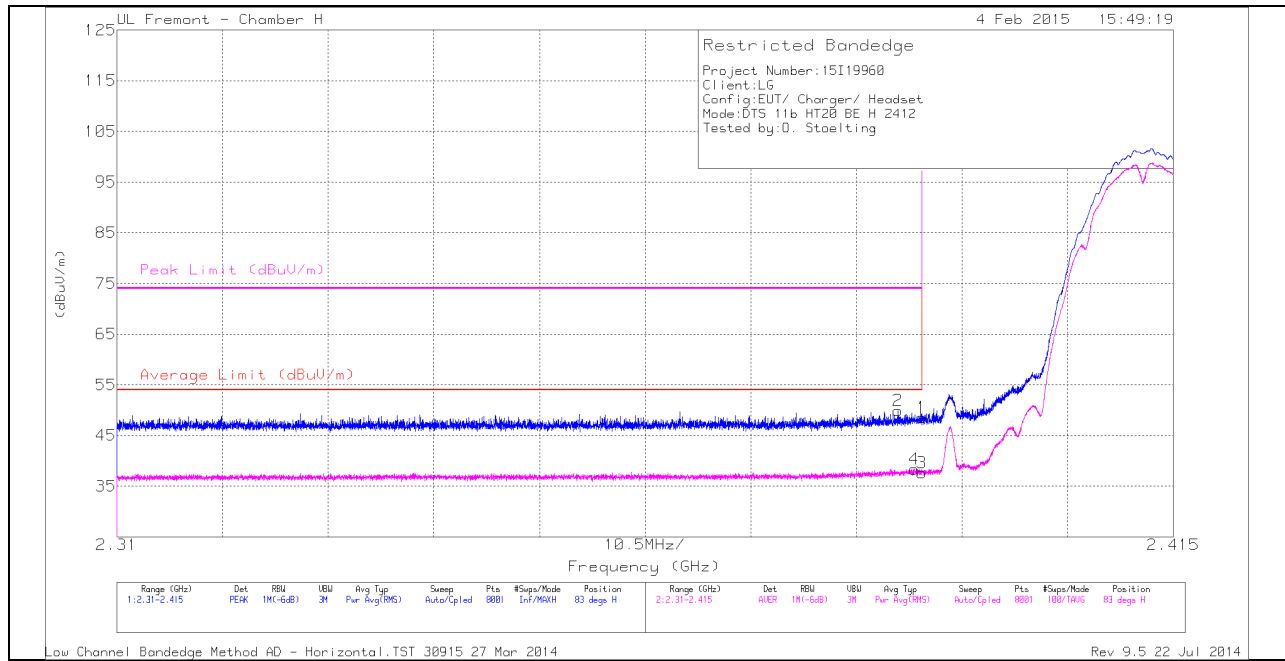
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

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.

10.2. TRANSMITTER ABOVE 1 GHz

10.2.1. TX ABOVE 1 GHz 802.11b MODE IN THE 2.4 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

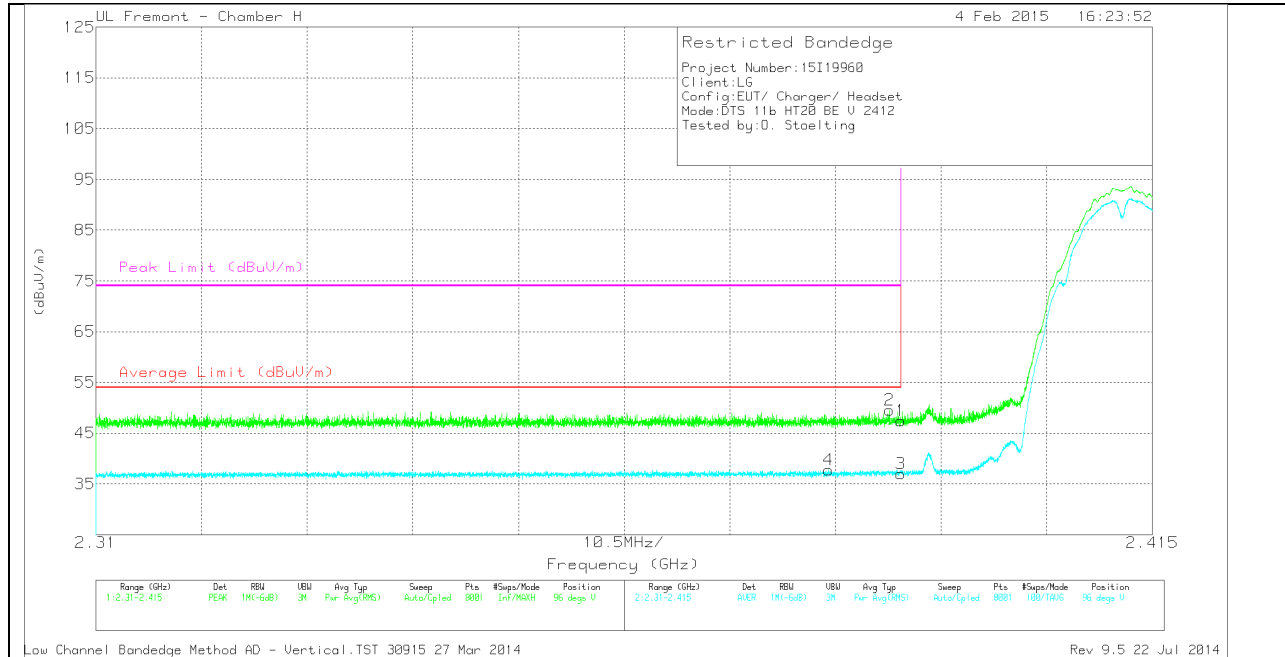
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.388	42.57	PK	32	-24.6	49.97	-	-	74	-24.03	83	210	H
4	* 2.389	31.02	RMS	32	-24.6	38.42	54	-15.58	-	-	83	210	H
1	* 2.39	41.1	PK	32	-24.6	48.5	-	-	74	-25.5	83	210	H
3	* 2.39	30.27	RMS	32	-24.6	37.67	54	-16.33	-	-	83	210	H

VERTICAL PEAK AND AVERAGE PLOT

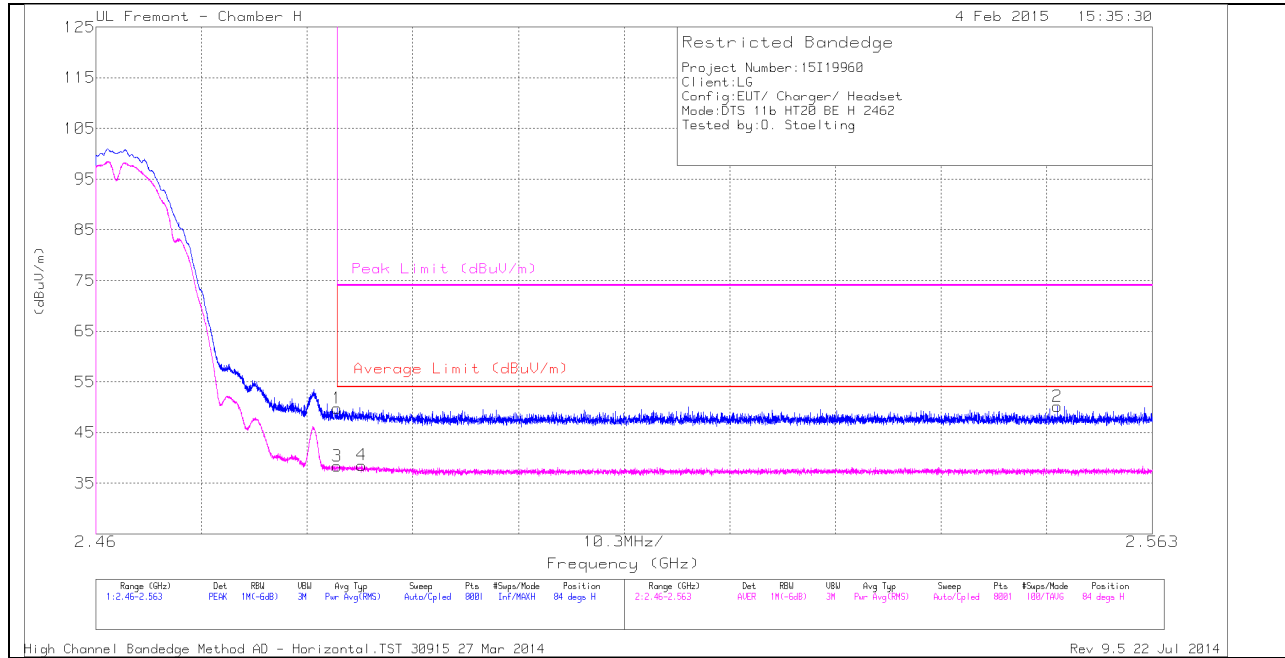


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Fitr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 2.383	30.32	RMS	32	-24.6	37.72	54	-16.28	-	-	96	256	V
2	* 2.389	42.17	PK	32	-24.6	49.57	-	-	74	-24.43	96	256	V
1	* 2.39	40.02	PK	32	-24.6	47.42	-	-	74	-26.58	96	256	V
3	* 2.39	29.65	RMS	32	-24.6	37.05	54	-16.95	-	-	96	256	V

AUTHORIZED BANDEDGE (HIGH CHANNEL)

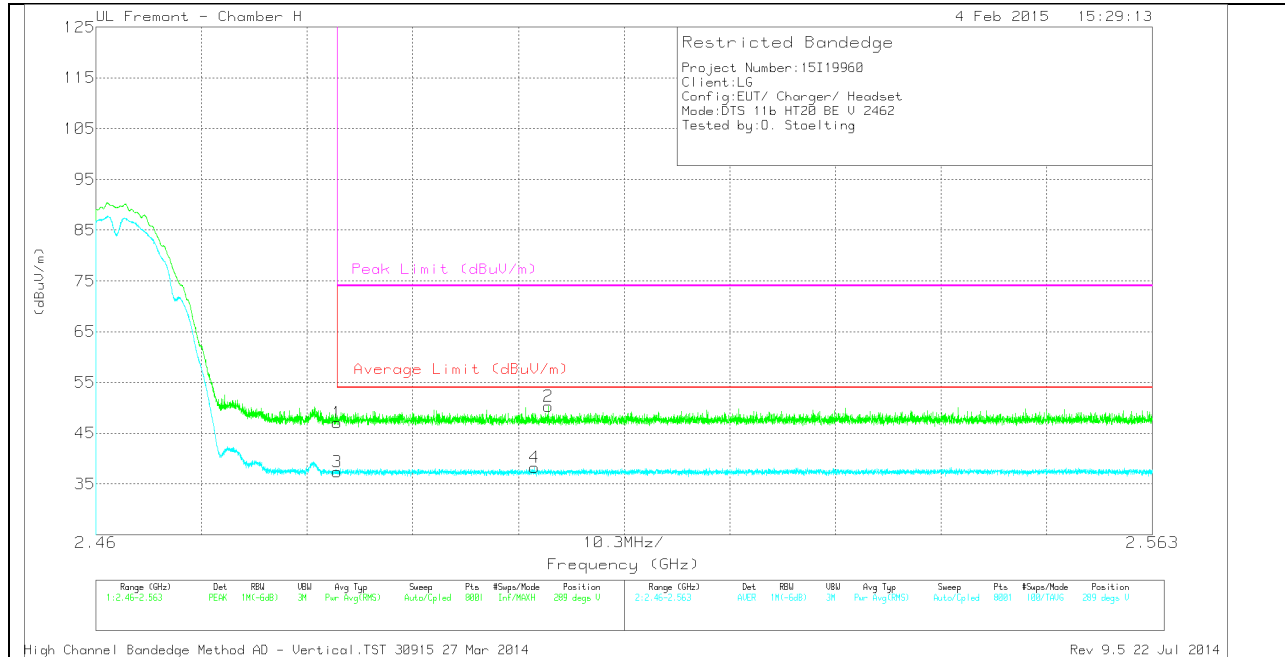
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	42.13	PK	32.2	-24.5	49.83	-	-	74	-24.17	84	206	H
3	* 2.484	30.65	RMS	32.2	-24.5	38.35	54	-15.65	-	-	84	206	H
4	* 2.486	30.86	RMS	32.2	-24.5	38.56	54	-15.44	-	-	84	206	H
2	2.554	42.23	PK	32.2	-24.3	50.13	-	-	74	-23.87	84	206	H

VERTICAL PEAK AND AVERAGE PLOT

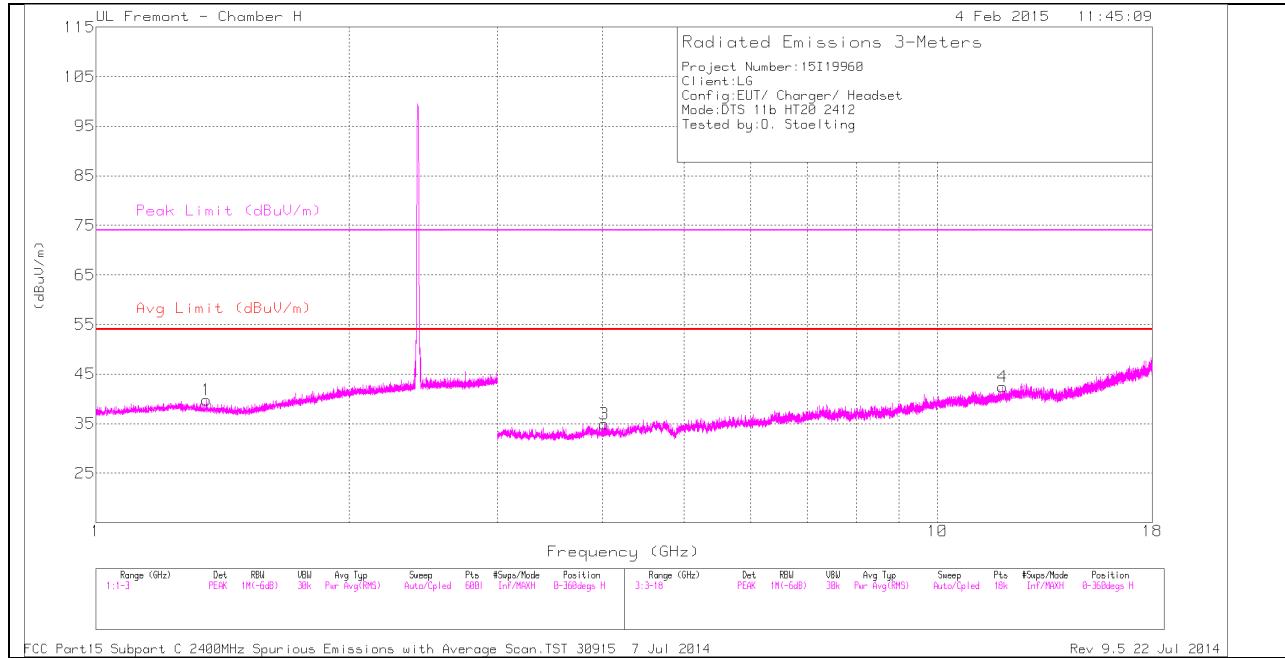


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	39.36	PK	32.2	-24.5	47.06	-	-	74	-26.94	289	109	V
3	* 2.484	29.67	RMS	32.2	-24.5	37.37	54	-16.63	-	-	289	109	V
4	2.503	30.44	RMS	32.2	-24.4	38.24	54	-15.76	-	-	289	109	V
2	2.504	42.44	PK	32.2	-24.4	50.24	-	-	74	-23.76	289	109	V

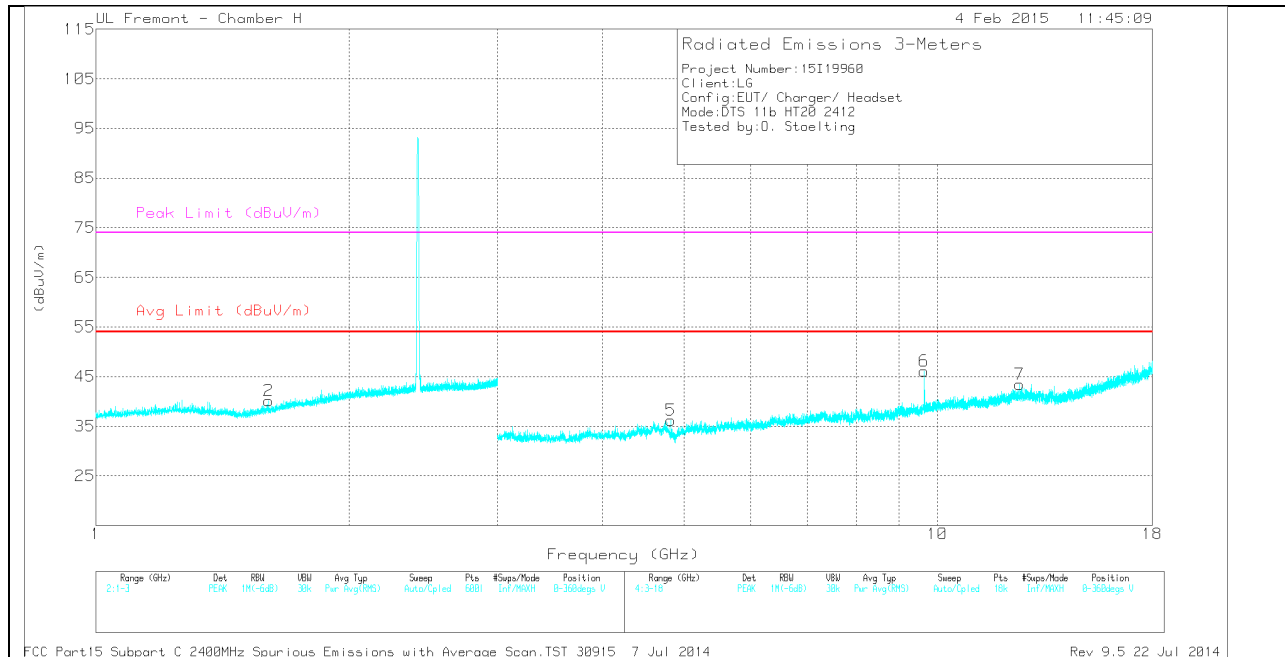
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

TRACE MARKERS

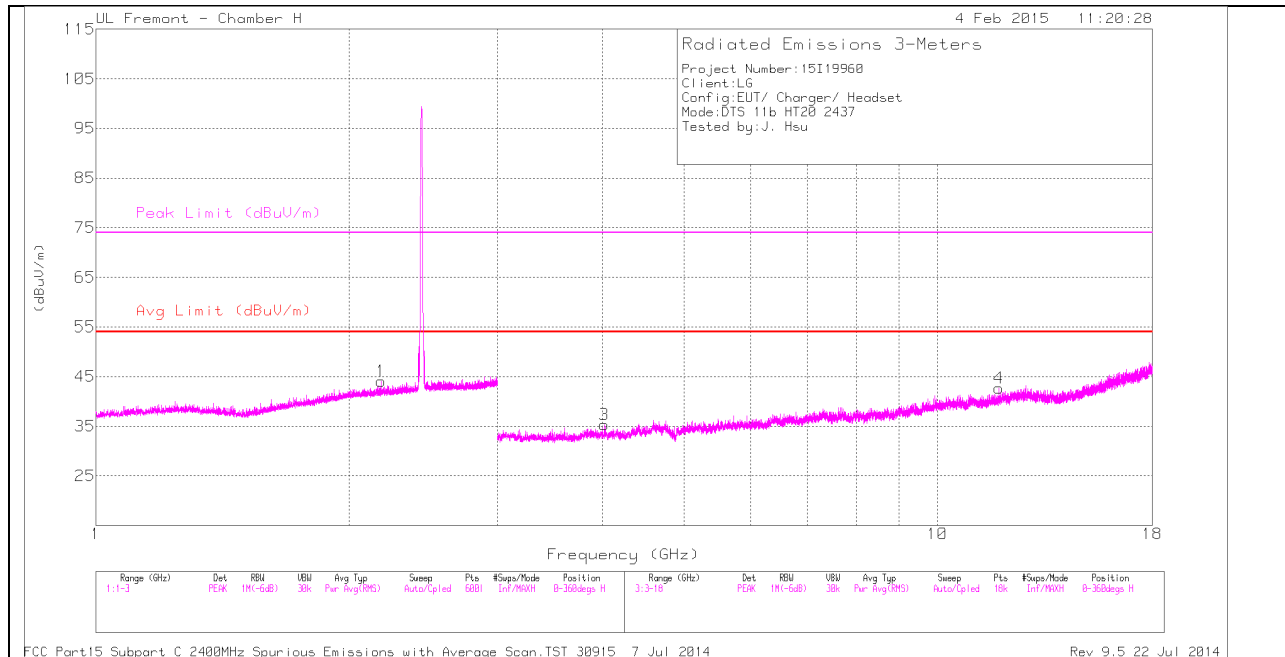
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.354	36.96	PK	28.5	-25.7	39.76	-	-	74	-34.24	0-360	101	H
2	* 1.603	36.7	PK	28.5	-25.1	40.1	-	-	74	-33.9	0-360	100	V
3	* 4.015	34.02	PK	33.5	-32.6	34.92	-	-	74	-39.08	0-360	100	H
4	* 11.955	28.67	PK	38.7	-24.9	42.47	-	-	74	-31.53	0-360	100	H
5	* 4.824	34.25	PK	34.3	-32.3	36.25	-	-	74	-37.75	0-360	201	V
7	* 12.529	29.9	PK	39.1	-25.5	43.5	-	-	74	-30.5	0-360	201	V
6	9.648	35.61	PK	36.9	-26.4	46.11	-	-	-	-	0-360	100	V

PK - Peak detector

RADIATED EMISSIONS

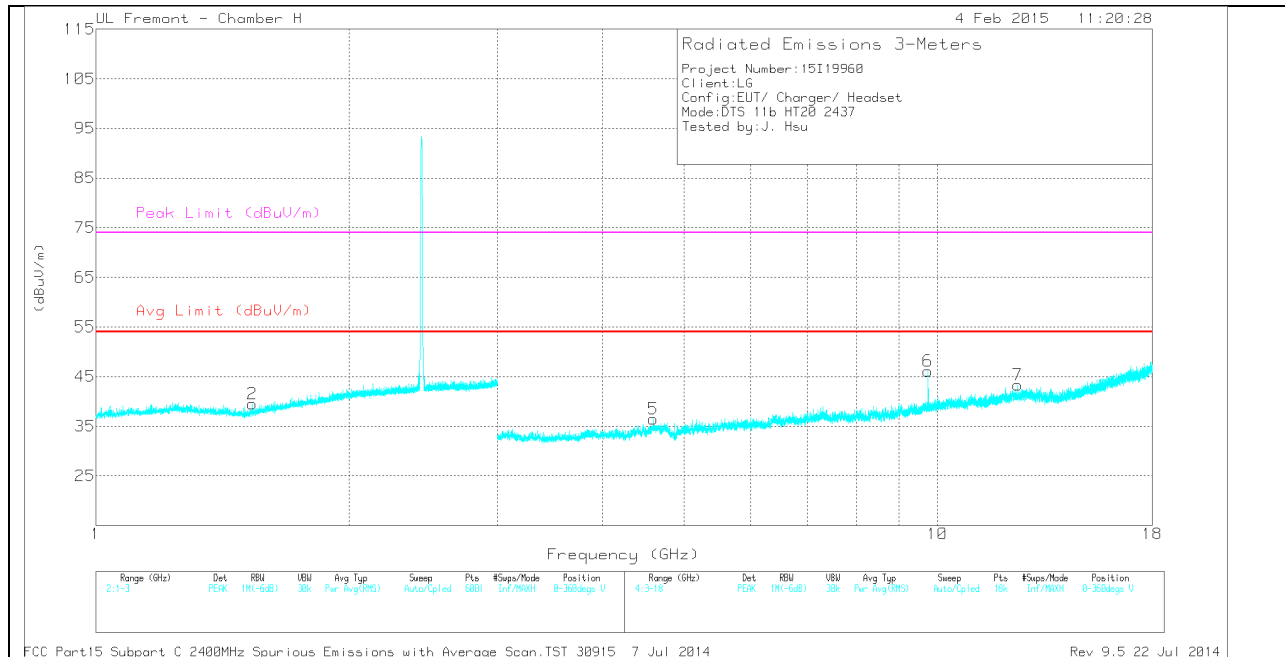
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 12.53	36.55	PK2	39.1	-25.5	50.15	-	-	74	-23.85	74	110	V
* 12.53	24.75	MAV1	39.1	-25.5	38.35	54	-15.65	-	-	74	110	V
9.648	40.52	PK2	36.9	-26.4	51.02	-	-	-	-	316	142	V
9.648	34.6	MAV1	36.9	-26.4	45.1	-	-	-	-	316	142	V

MID CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

TRACE MARKERS

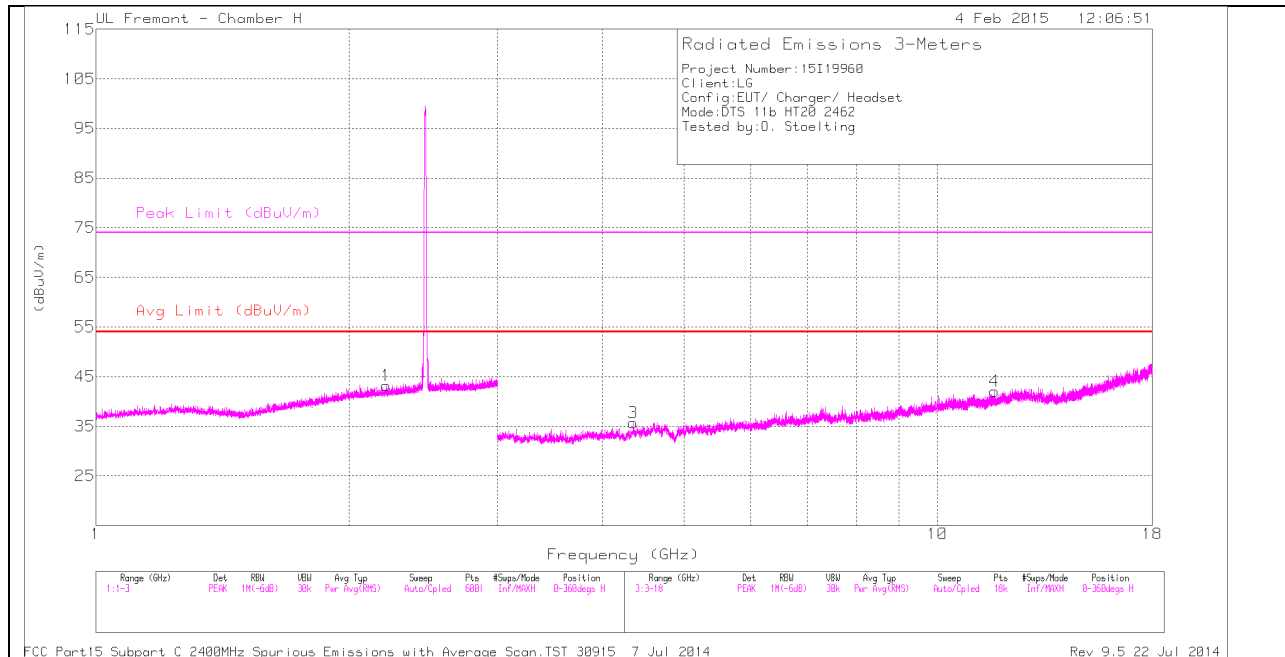
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 1.533	36.81	PK	28	-25.3	39.51	-	-	74	-34.49	0-360	201	V
3	* 4.018	34.37	PK	33.5	-32.6	35.27	-	-	74	-38.73	0-360	100	H
4	* 11.835	29.87	PK	38.6	-25.8	42.67	-	-	74	-31.33	0-360	100	H
5	* 4.597	34.81	PK	34.1	-32.4	36.51	-	-	74	-37.49	0-360	201	V
7	* 12.465	29.87	PK	39.1	-25.6	43.37	-	-	74	-30.63	0-360	100	V
1	2.183	37.28	PK	31.6	-24.8	44.08	-	-	-	-	0-360	100	H
6	9.748	35.46	PK	36.9	-26.2	46.16	-	-	-	-	0-360	100	V

PK - Peak detector

RADIATED EMISSIONS

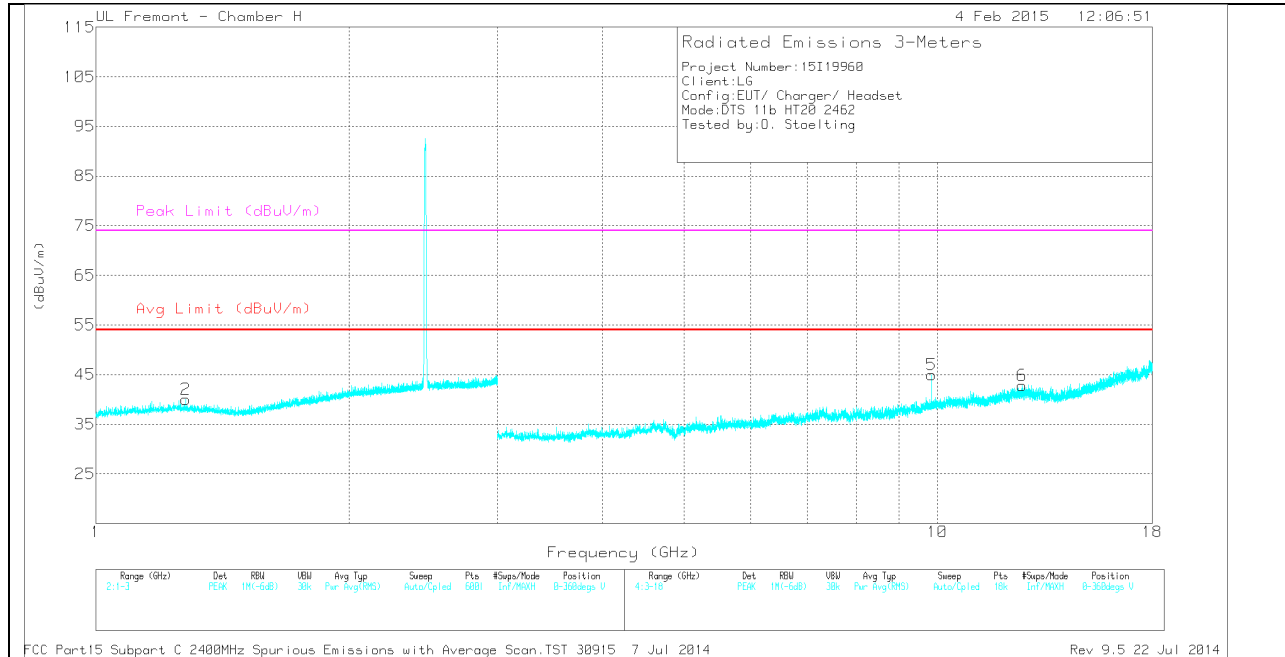
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 12.466	35.9	PK2	39.1	-25.6	49.4	-	-	74	-24.6	328	129	V
* 12.464	24.88	MAV1	39.1	-25.7	38.28	54	-15.72	-	-	328	129	V
9.748	40.78	PK2	36.9	-26.2	51.48	-	-	-	-	313	101	V
9.748	34.47	MAV1	36.9	-26.2	45.17	-	-	-	-	313	101	V

HIGH CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.213	36.24	PK	31.6	-24.7	43.14	-	-	74	-30.86	0-360	100	H
2	* 1.279	37.15	PK	28.8	-25.9	40.05	-	-	74	-33.95	0-360	100	V
3	* 4.351	33.95	PK	33.7	-32	35.65	-	-	74	-38.35	0-360	201	H
4	* 11.691	29.39	PK	38.4	-25.8	41.99	-	-	74	-32.01	0-360	201	H
6	* 12.602	28.57	PK	39.2	-25	42.77	-	-	74	-31.23	0-360	201	V
5	9.848	34.62	PK	37.1	-26.8	44.92	-	-	-	-	0-360	100	V

PK - Peak detector

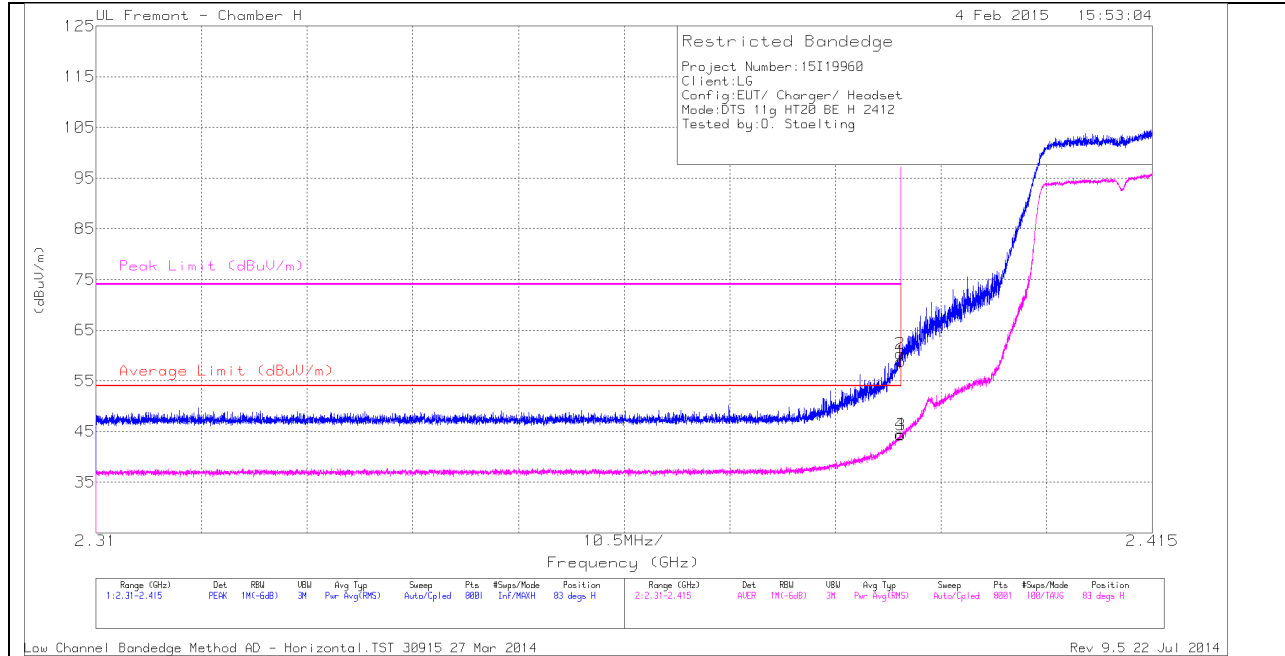
RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 2.213	43.13	PK2	31.6	-24.7	50.03	-	-	74	-23.97	6	183	H
* 2.213	31.51	MAV1	31.6	-24.7	38.41	54	-15.59	-	-	6	183	H
* 12.604	36.13	PK2	39.2	-25	50.33	-	-	74	-23.67	3	259	V
* 12.601	24.58	MAV1	39.2	-25	38.78	54	-15.22	-	-	3	259	V
9.848	39.98	PK2	37.1	-26.8	50.28	-	-	-	-	9	100	V
9.848	33.67	MAV1	37.1	-26.8	43.97	-	-	-	-	9	100	V

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

RESTRICTED BANDEDGE (LOW CHANNEL)

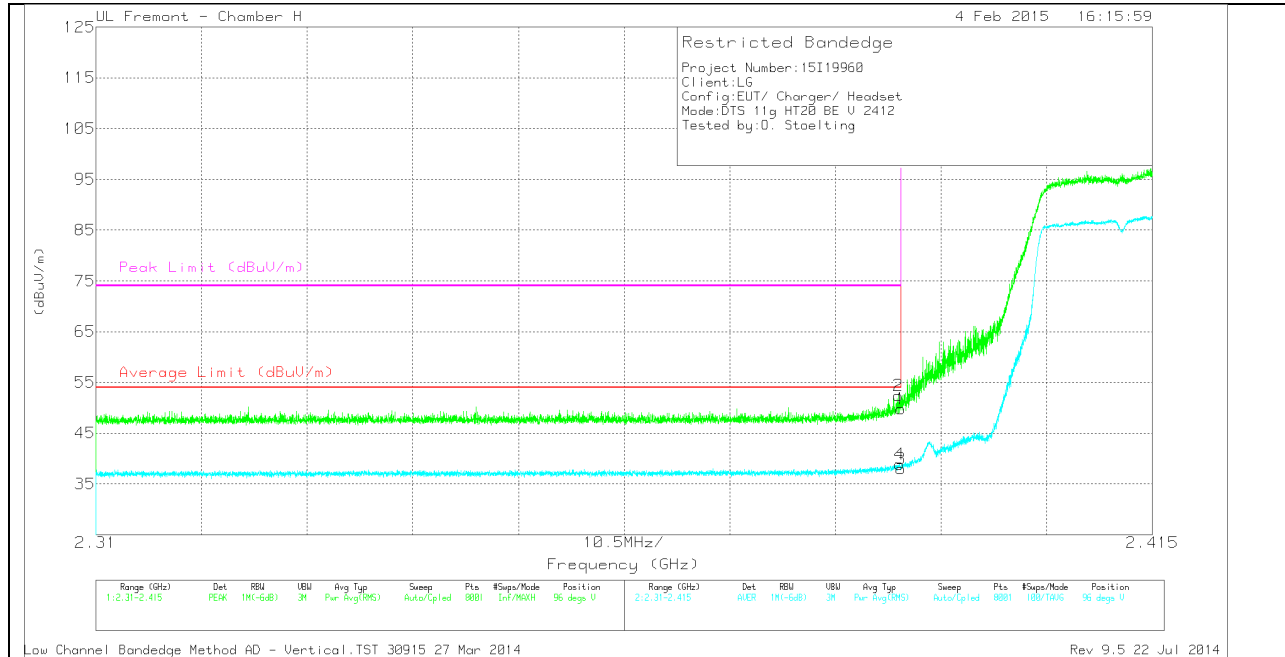
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cb/r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	51.46	PK	32	-24.6	0	58.86	-	-	74	-15.14	83	210	H
2	* 2.39	52.97	PK	32	-24.6	0	60.37	-	-	74	-13.63	83	210	H
3	* 2.39	36.73	RMS	32	-24.6	.2	44.33	54	-9.67	-	-	83	210	H
4	* 2.39	36.91	RMS	32	-24.6	.2	44.51	54	-9.49	-	-	83	210	H

VERTICAL PEAK AND AVERAGE PLOT

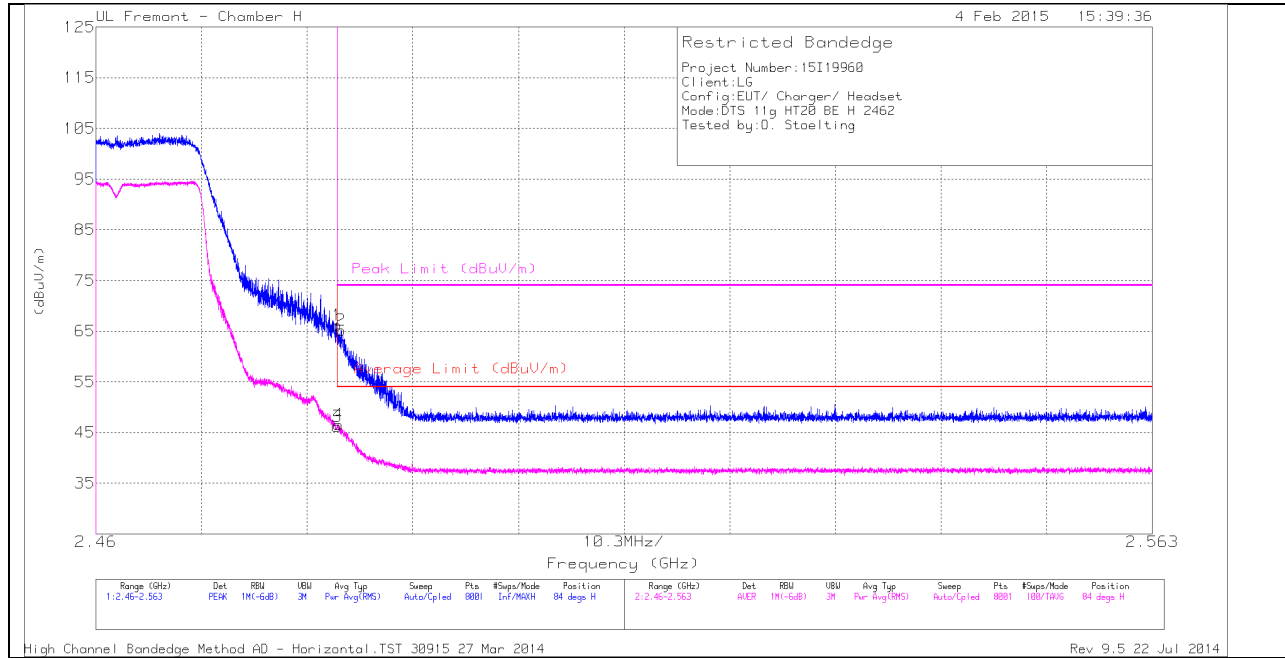


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	42.39	PK	32	-24.6	0	49.79	-	-	74	-24.21	96	256	V
2	* 2.39	44.95	PK	32	-24.6	0	52.35	-	-	74	-21.65	96	256	V
3	* 2.39	30.37	RMS	32	-24.6	.2	37.97	54	-16.03	-	-	96	256	V
4	* 2.39	31.31	RMS	32	-24.6	.2	38.91	54	-15.09	-	-	96	256	V

AUTHORIZED BANDEDGE (HIGH CHANNEL)

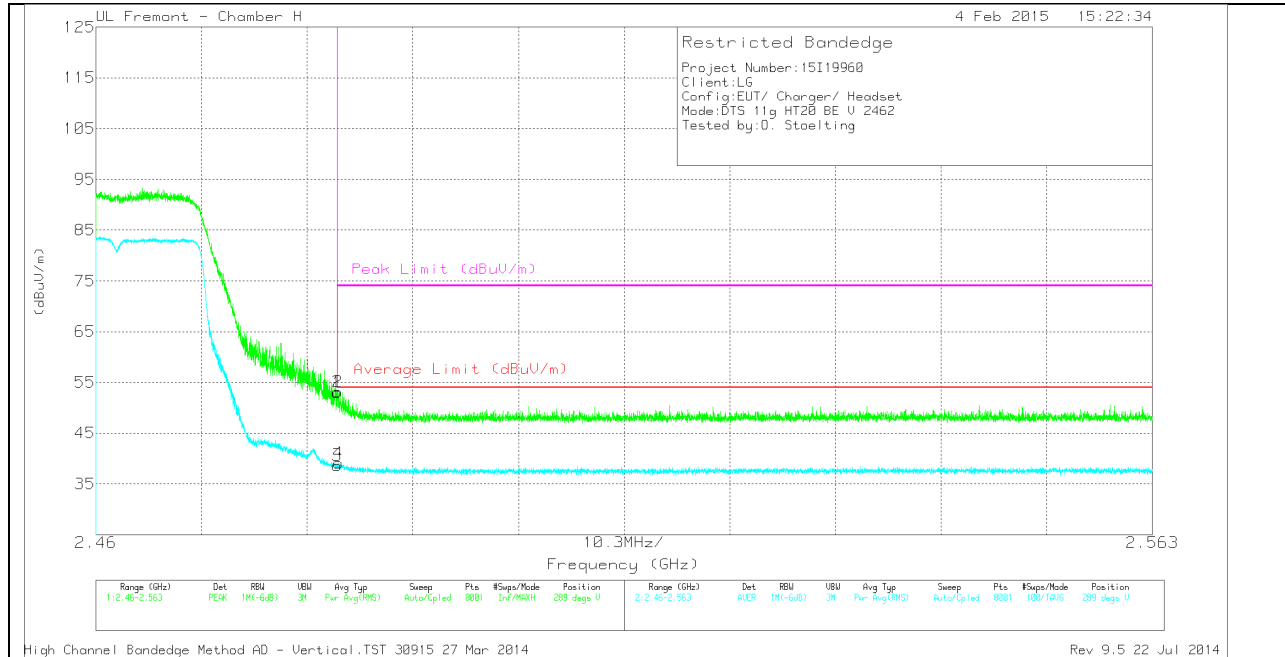
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cb/Filter/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	58.43	PK	32.2	-24.5	0	66.13	-	-	74	-7.87	84	206	H
2	* 2.484	57.51	PK	32.2	-24.5	0	65.21	-	-	74	-8.79	84	206	H
3	* 2.484	38.33	RMS	32.2	-24.5	.2	46.23	54	-7.77	-	-	84	206	H
4	* 2.484	38.63	RMS	32.2	-24.5	.2	46.53	54	-7.47	-	-	84	206	H

VERTICAL PEAK AND AVERAGE PLOT

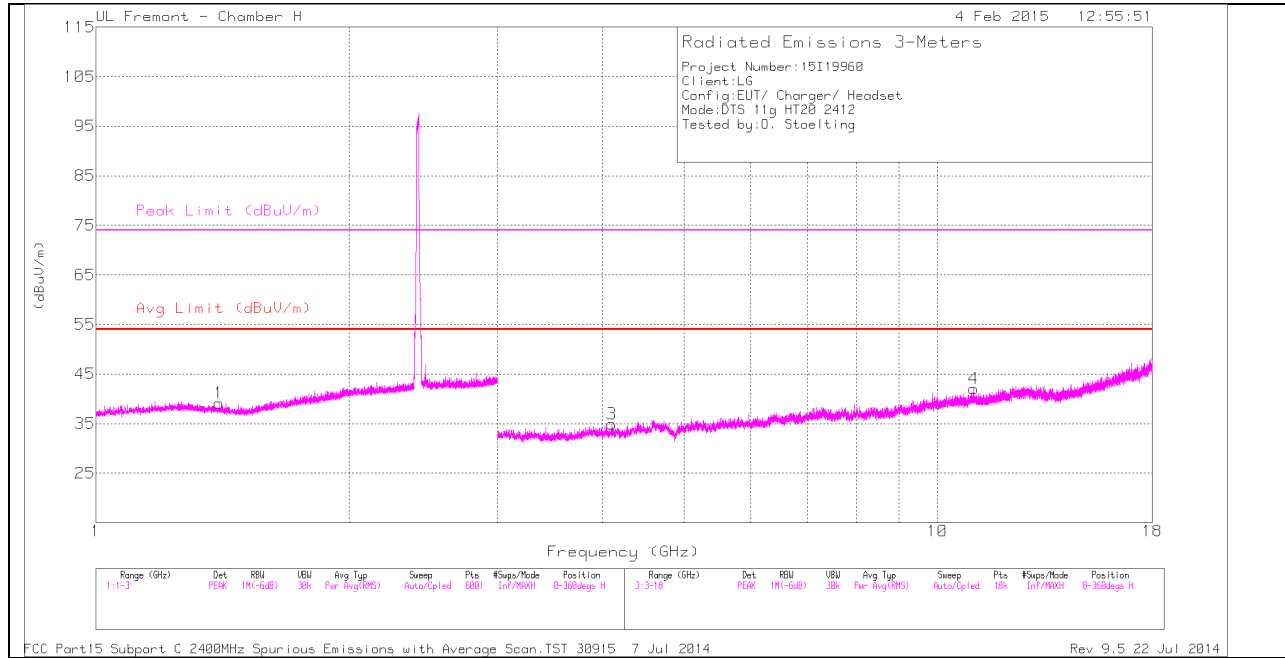


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cb/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	45.29	PK	32.2	-24.5	0	52.99	-	-	74	-21.01	289	109	V
2	* 2.484	45.49	PK	32.2	-24.5	0	53.19	-	-	74	-20.81	289	109	V
3	* 2.484	30.78	RMS	32.2	-24.5	.2	38.68	54	-15.32	-	-	289	109	V
4	* 2.484	31.2	RMS	32.2	-24.5	.2	39.1	54	-14.9	-	-	289	109	V

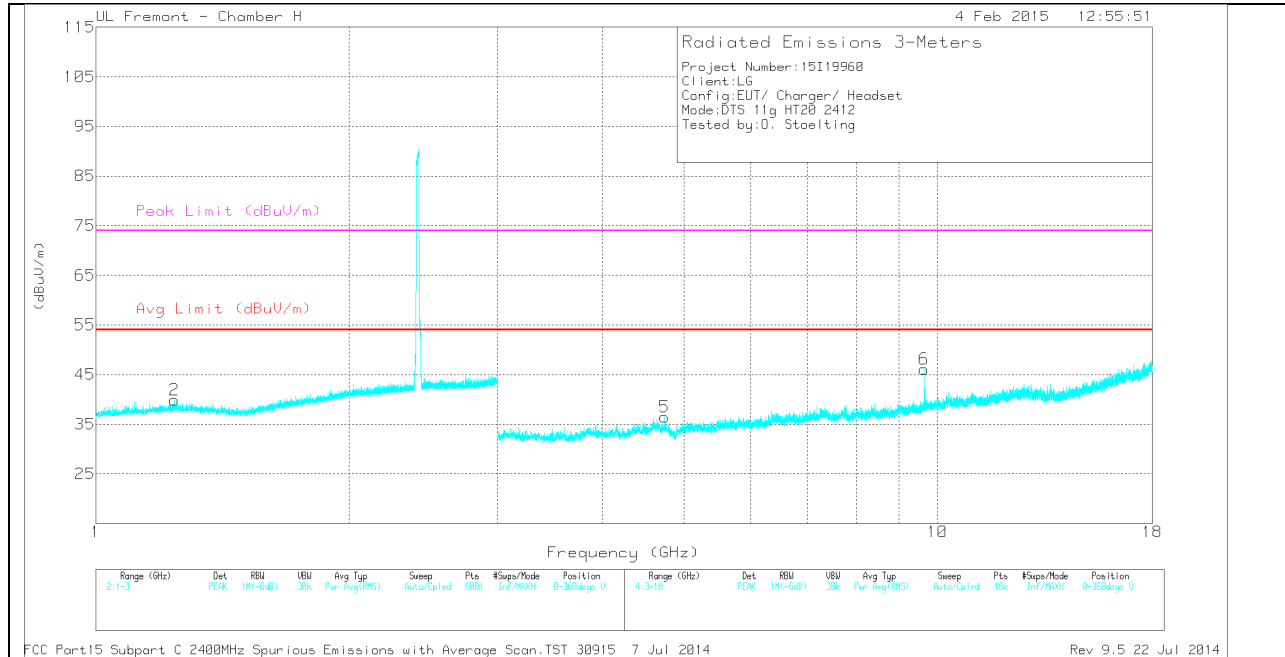
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

TRACE MARKERS

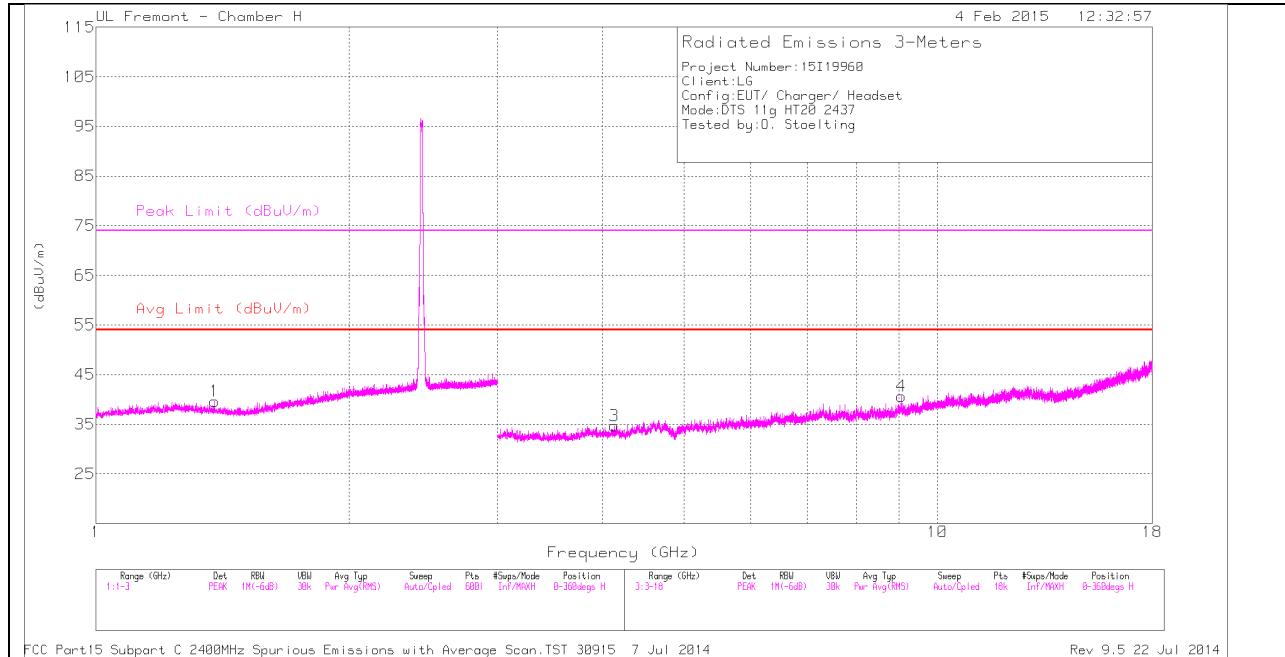
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.4	36.54	PK	28.2	-25.6	0	39.14	-	-	74	-34.86	0-360	100	H
2	* 1.239	36.94	PK	28.9	-25.9	0	39.94	-	-	74	-34.06	0-360	201	V
3	* 4.102	33.53	PK	33.5	-32.1	0	34.93	-	-	74	-39.07	0-360	100	H
4	* 11.04	29.5	PK	37.8	-25.2	0	42.1	-	-	74	-31.9	0-360	201	H
5	* 4.742	34.24	PK	34.3	-32.1	0	36.44	-	-	74	-37.56	0-360	100	V
6	9.648	35.61	PK	36.9	-26.4	0	46.11	-	-	-	-	0-360	100	V

PK - Peak detector

RADIATED EMISSIONS

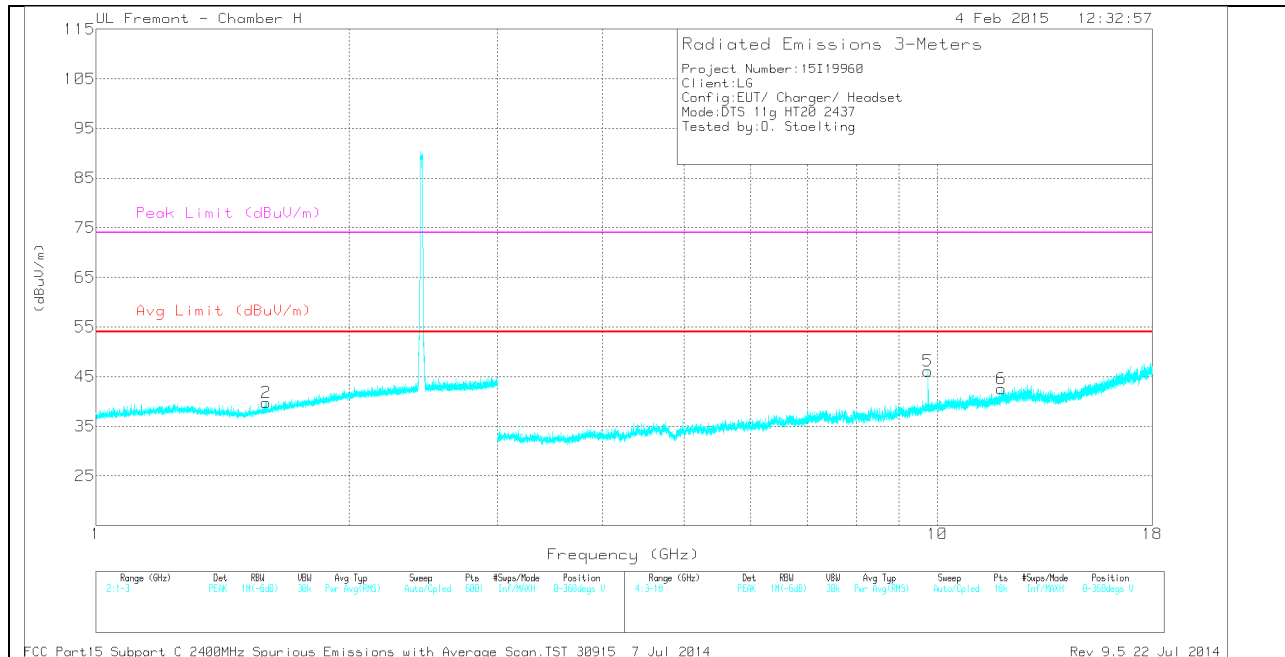
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 11.038	36.69	PK2	37.8	-25.1	0	49.39	-	-	74	-24.61	30	301	H
* 11.041	24.58	MAV1	37.8	-25.2	.2	37.38	54	-16.62	-	-	30	301	H
9.648	40.72	PK2	36.9	-26.4	0	51.22	-	-	-	-	319	100	V
9.648	34.87	MAV1	36.9	-26.4	.2	45.57	-	-	-	-	319	100	V

MID CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

TRACE MARKERS

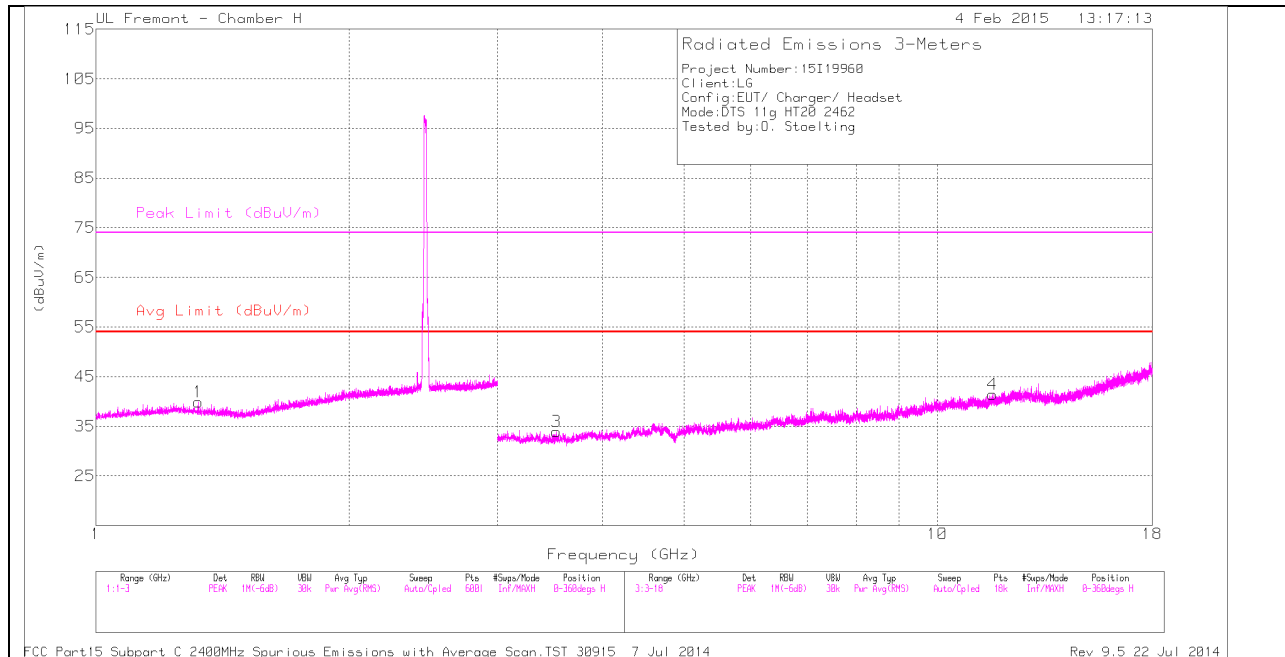
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Filtr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.383	36.99	PK	28.3	-25.6	0	39.69	-	-	74	-34.31	0-360	201	H
2	* 1.593	36.58	PK	28.4	-25.2	0	39.78	-	-	74	-34.22	0-360	201	V
3	* 4.132	33.13	PK	33.5	-31.9	0	34.73	-	-	74	-39.27	0-360	100	H
4	* 9.059	30.83	PK	36.4	-26.6	0	40.63	-	-	74	-33.37	0-360	201	H
6	* 11.904	29.51	PK	38.7	-25.6	0	42.61	-	-	74	-31.39	0-360	201	V
5	9.748	35.36	PK	36.9	-26.2	0	46.06	-	-	-	-	0-360	100	V

PK - Peak detector

RADIATED EMISSIONS

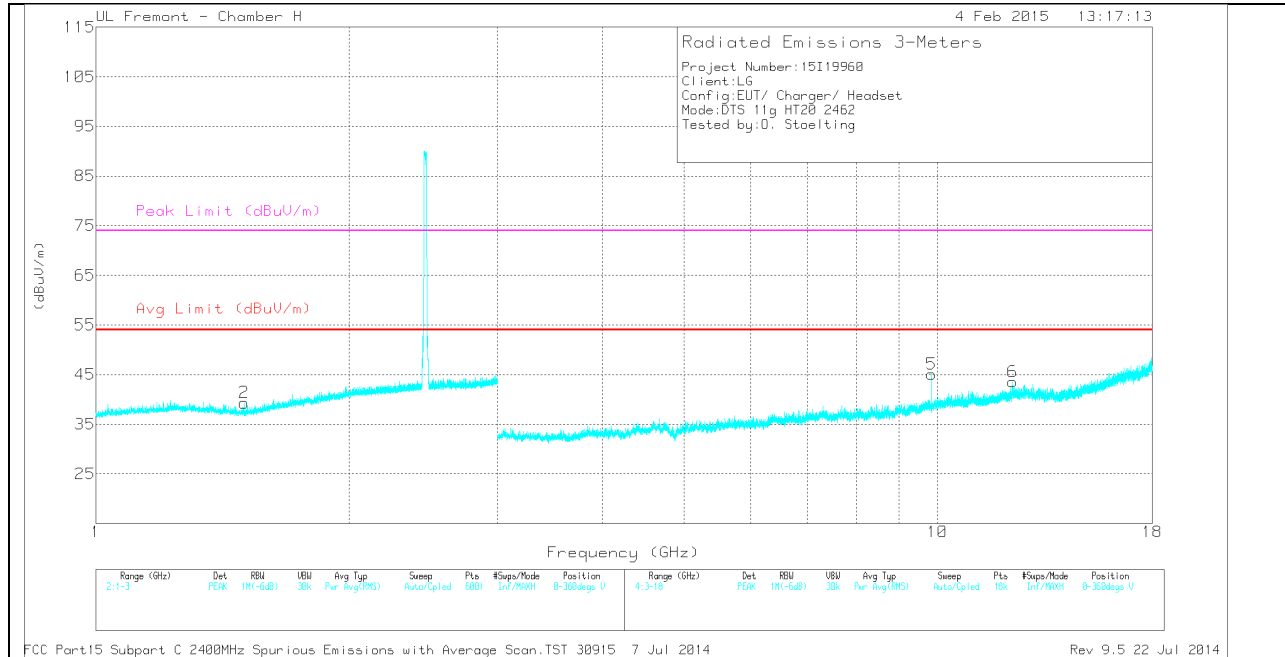
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Filtr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 11.905	36.5	PK2	38.7	-25.6	0	49.6	-	-	74	-24.4	164	176	V
* 11.903	24.57	MAV1	38.7	-25.6	.2	37.87	54	-16.13	-	-	164	176	V
9.748	39.49	PK2	36.9	-26.2	0	50.19	-	-	-	-	13	139	V
9.748	32.56	MAV1	36.9	-26.2	.2	43.46	-	-	-	-	13	139	V

HIGH CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cb/Fitr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.322	36.97	PK	28.6	-25.7	0	39.87	-	-	74	-34.13	0-360	100	H
2	* 1.5	37.02	PK	27.7	-25.4	0	39.32	-	-	74	-34.68	0-360	100	V
3	* 3.525	33.61	PK	32.8	-32.5	0	33.91	-	-	74	-40.09	0-360	100	H
4	* 11.635	28.58	PK	38.3	-25.5	0	41.38	-	-	74	-32.62	0-360	201	H
6	* 12.286	29.32	PK	39	-24.8	0	43.52	-	-	74	-30.48	0-360	100	V
5	9.848	34.76	PK	37.1	-26.8	0	45.06	-	-	-	-	0-360	100	V

PK - Peak detector

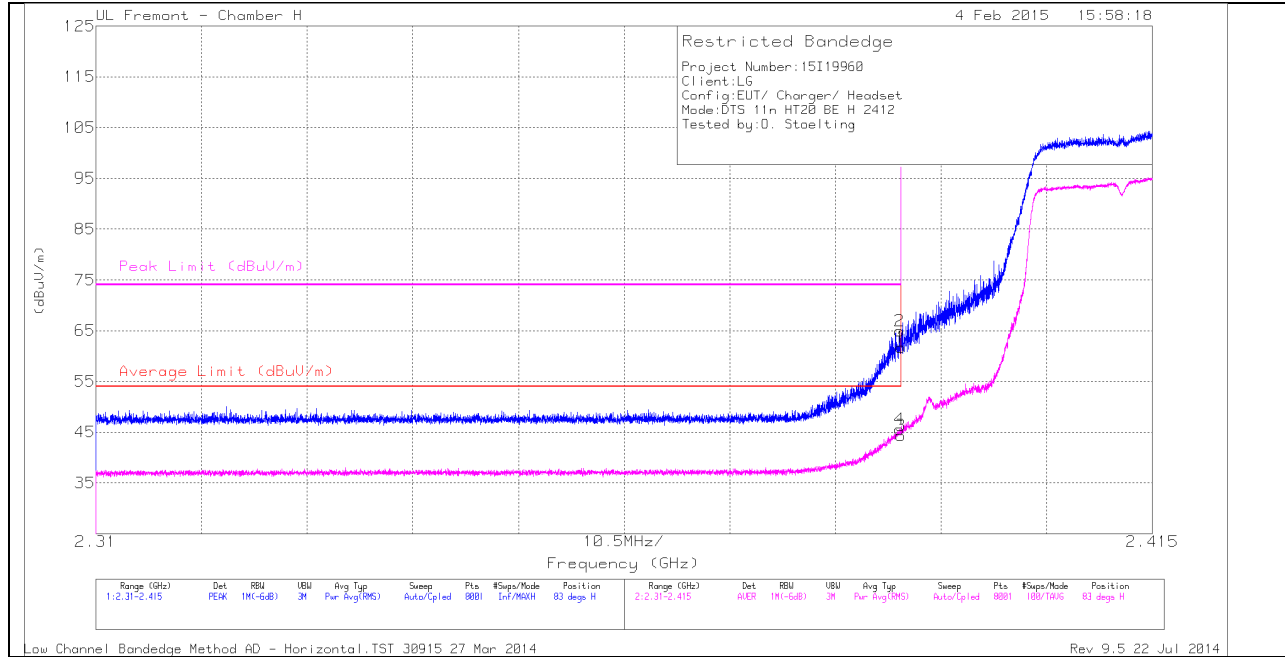
RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cb/Fitr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 12.286	36.1	PK2	39	-24.8	0	50.3	-	-	74	-23.7	112	235	V
* 12.286	24.56	MAV1	39	-24.8	.2	38.96	54	-15.04	-	-	112	235	V
9.848	40.49	PK2	37.1	-26.8	0	50.79	-	-	-	-	10	106	V
9.848	33.36	MAV1	37.1	-26.8	.2	43.86	-	-	-	-	10	106	V
9.848	40.26	PK2	37.1	-26.8	0	50.56	-	-	-	-	10	106	V
9.848	33.34	MAV1	37.1	-26.8	.2	43.84	-	-	-	-	10	106	V

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

RESTRICTED BANDEDGE (LOW CHANNEL)

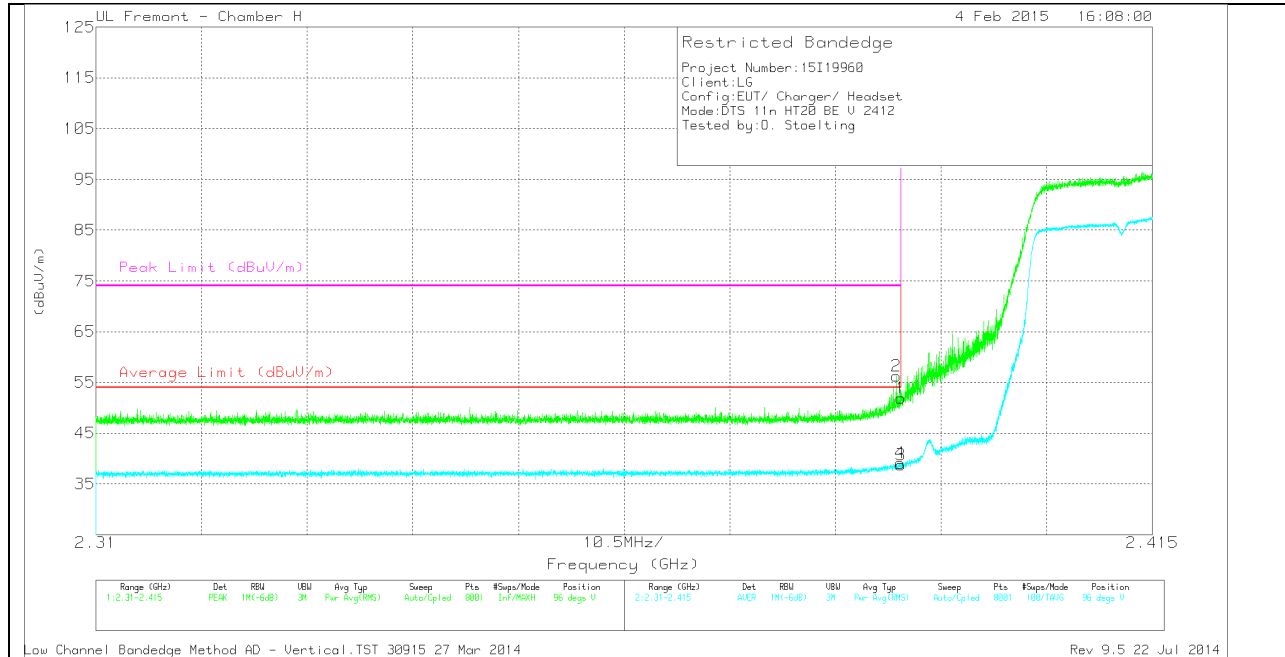
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Fitter/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	54.26	PK	32	-24.6	0	61.66	-	-	74	-12.34	83	210	H
2	* 2.39	57.53	PK	32	-24.6	0	64.93	-	-	74	-9.07	83	210	H
3	* 2.39	36.72	RMS	32	-24.6	.23	44.35	54	-9.65	-	-	83	210	H
4	* 2.39	37.91	RMS	32	-24.6	.23	45.54	54	-8.46	-	-	83	210	H

VERTICAL PEAK AND AVERAGE PLOT

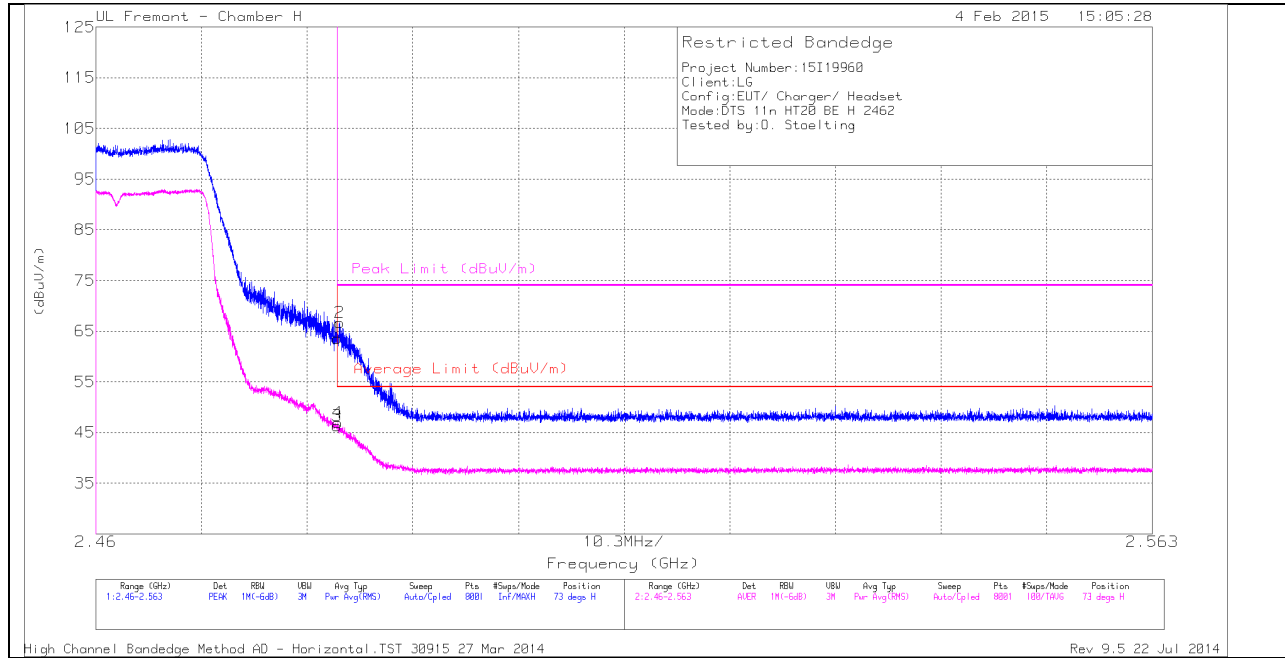


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	44.49	PK	32	-24.6	0	51.89	-	-	74	-22.11	96	256	V
2	* 2.39	48.86	PK	32	-24.6	0	56.26	-	-	74	-17.74	96	256	V
3	* 2.39	31.17	RMS	32	-24.6	.2	38.77	54	-15.23	-	-	96	256	V
4	* 2.39	31.46	RMS	32	-24.6	.2	39.06	54	-14.94	-	-	96	256	V

AUTHORIZED BANDEDGE (HIGH CHANNEL)

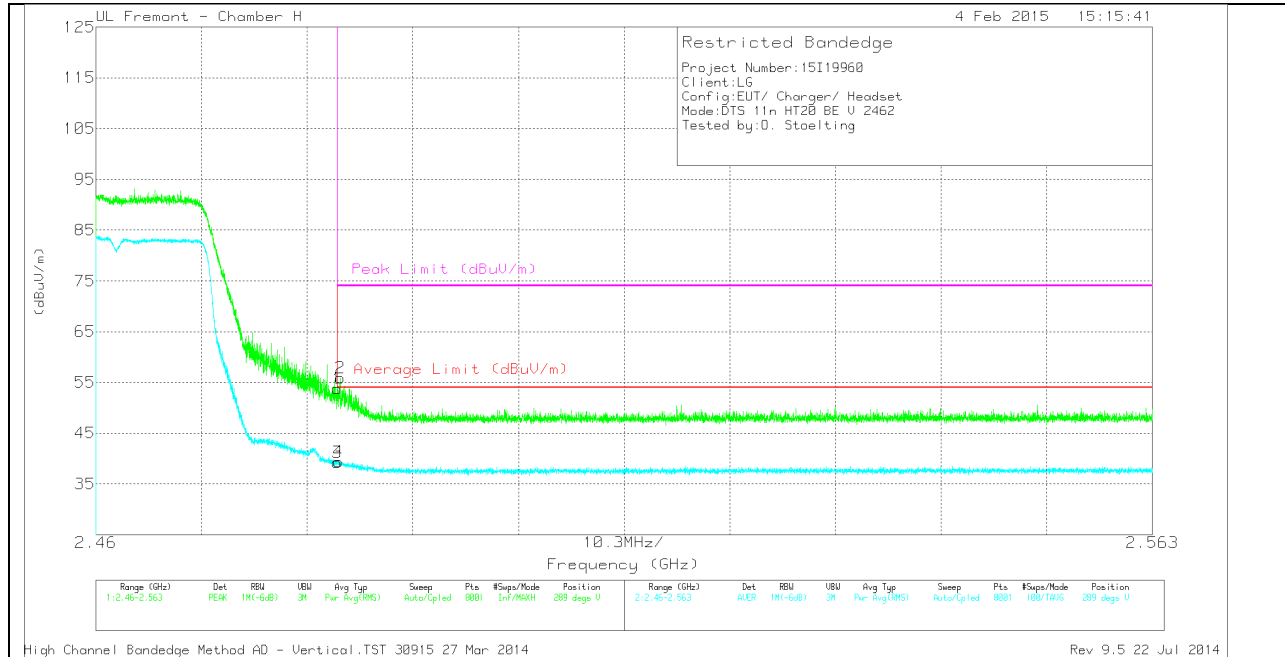
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cb/Filter/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	55.94	PK	32.2	-24.5	0	63.64	-	-	74	-10.36	73	103	H
2	* 2.484	58.98	PK	32.2	-24.5	0	66.68	-	-	74	-7.32	73	103	H
3	* 2.484	38.39	RMS	32.2	-24.5	.23	46.32	54	-7.68	-	-	73	103	H
4	* 2.484	38.98	RMS	32.2	-24.5	.23	46.91	54	-7.09	-	-	73	103	H

VERTICAL PEAK AND AVERAGE PLOT

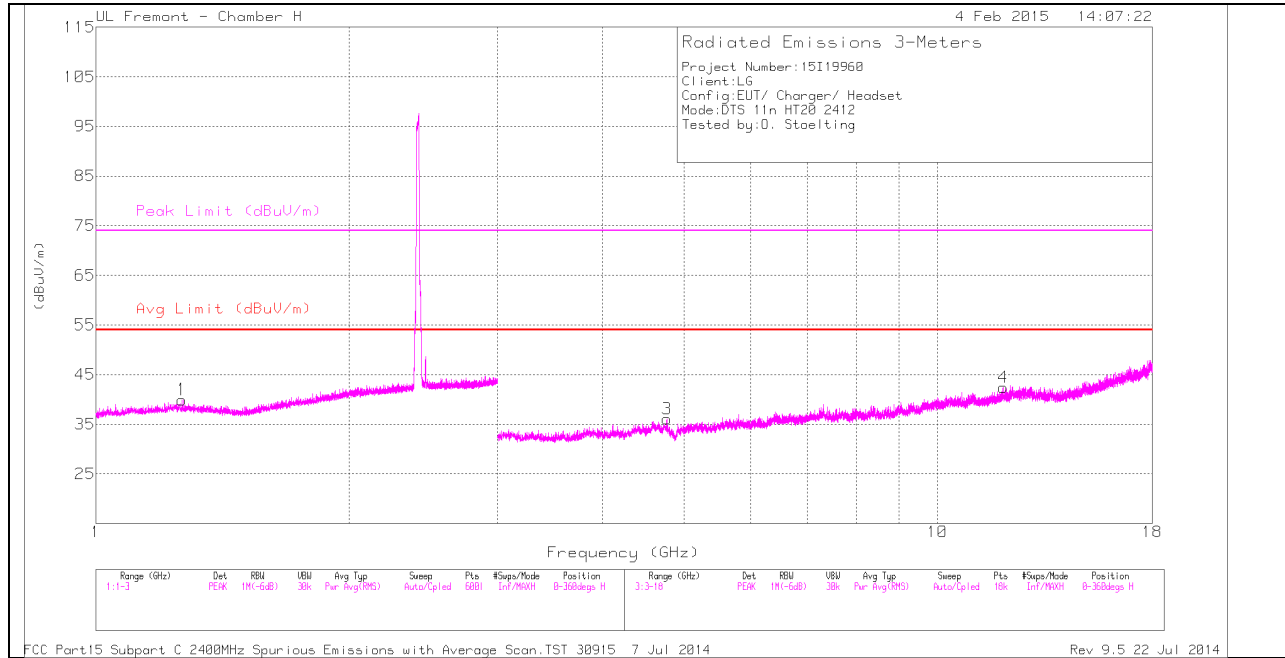


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cb/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	46.09	PK	32.2	-24.5	0	53.79	-	-	74	-20.21	289	109	V
2	* 2.484	48.16	PK	32.2	-24.5	0	55.86	-	-	74	-18.14	289	109	V
3	* 2.484	31.33	RMS	32.2	-24.5	.23	39.26	54	-14.74	-	-	289	109	V
4	* 2.484	31.48	RMS	32.2	-24.5	.23	39.41	54	-14.59	-	-	289	109	V

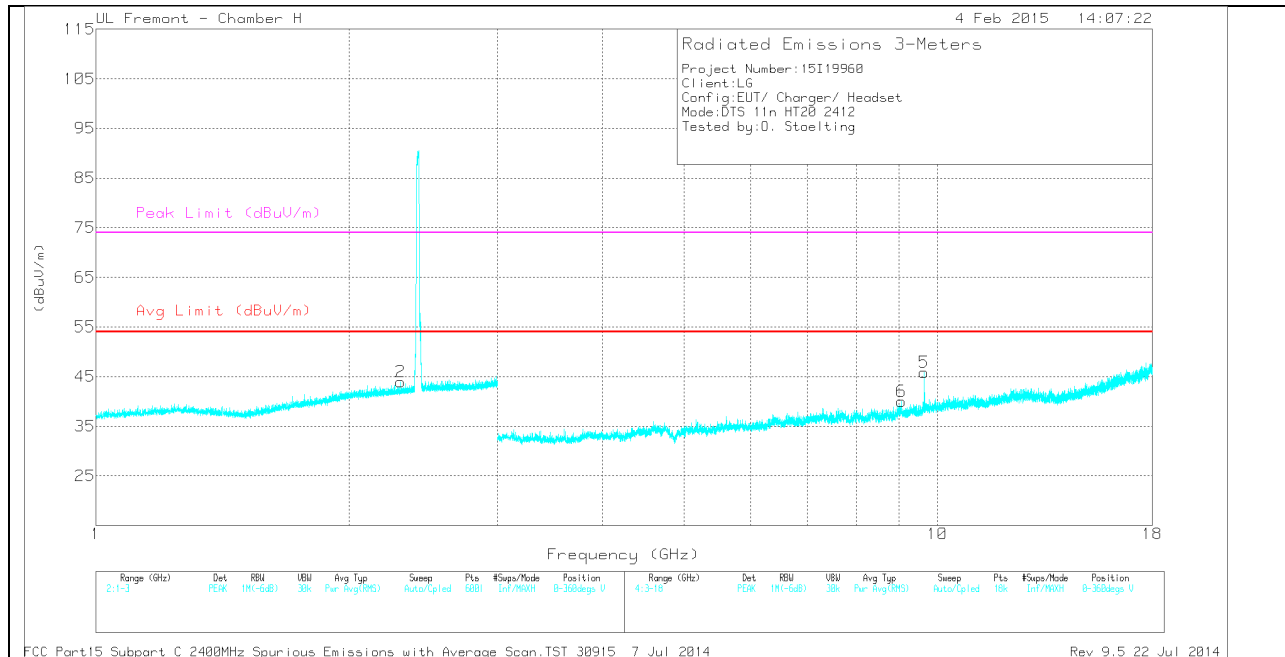
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

TRACE MARKERS

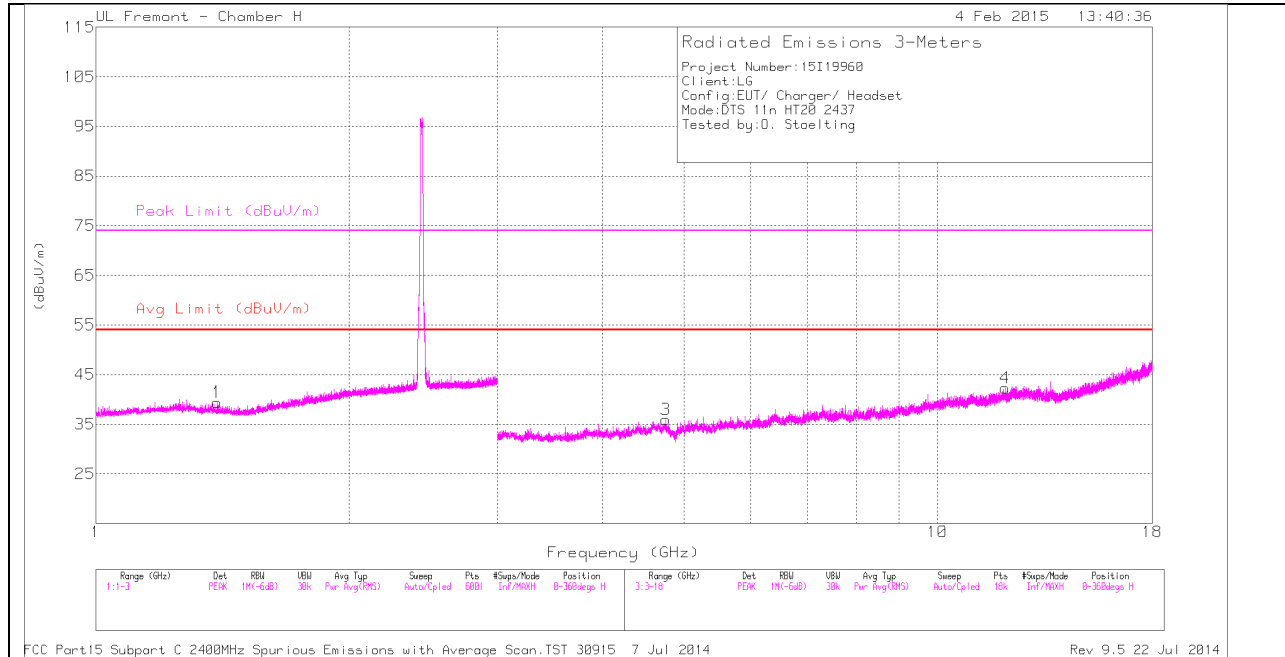
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Filtr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.265	36.95	PK	28.9	-25.9	0	39.95	-	-	74	-34.05	0-360	201	H
3	* 4.774	33.99	PK	34.3	-32.2	0	36.09	-	-	74	-37.91	0-360	100	H
4	* 11.971	28.4	PK	38.8	-24.8	0	42.4	-	-	74	-31.6	0-360	201	H
6	* 9.061	30.37	PK	36.4	-26.7	0	40.07	-	-	74	-33.93	0-360	201	V
2	2.303	36.71	PK	31.8	-24.6	0	43.91	-	-	-	-	0-360	100	V
5	9.648	35.3	PK	36.9	-26.4	0	45.8	-	-	-	-	0-360	100	V

PK - Peak detector

RADIATED EMISSIONS

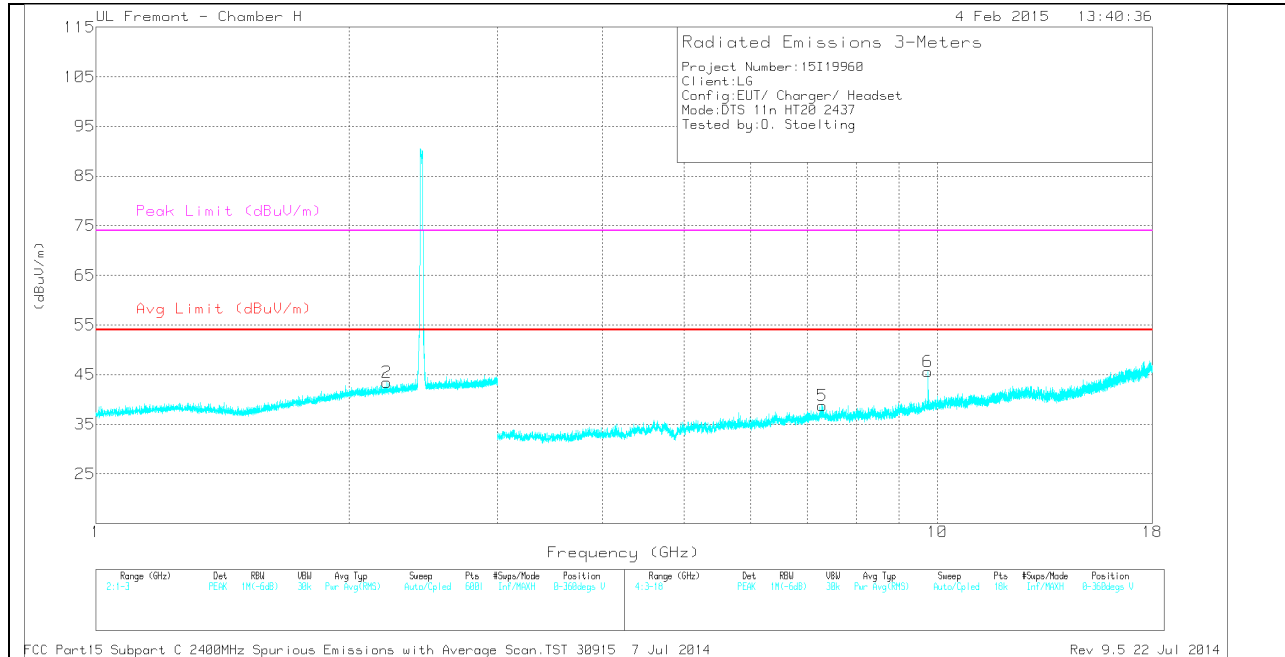
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Filtr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 11.973	35.12	PK2	38.8	-24.9	0	49.02	-	-	74	-24.98	82	219	H
* 11.972	24.16	MAV1	38.8	-24.9	.23	38.29	54	-15.71	-	-	82	219	H
* 9.063	36.88	PK2	36.5	-26.7	0	46.68	-	-	74	-27.32	231	207	V
* 9.063	25.64	MAV1	36.5	-26.7	.23	35.67	54	-18.33	-	-	231	207	V
9.648	40.29	PK2	36.9	-26.4	0	50.79	-	-	-	-	316	158	V
9.648	34.89	MAV1	36.9	-26.4	.23	45.62	-	-	-	-	316	158	V

MID CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

TRACE MARKERS

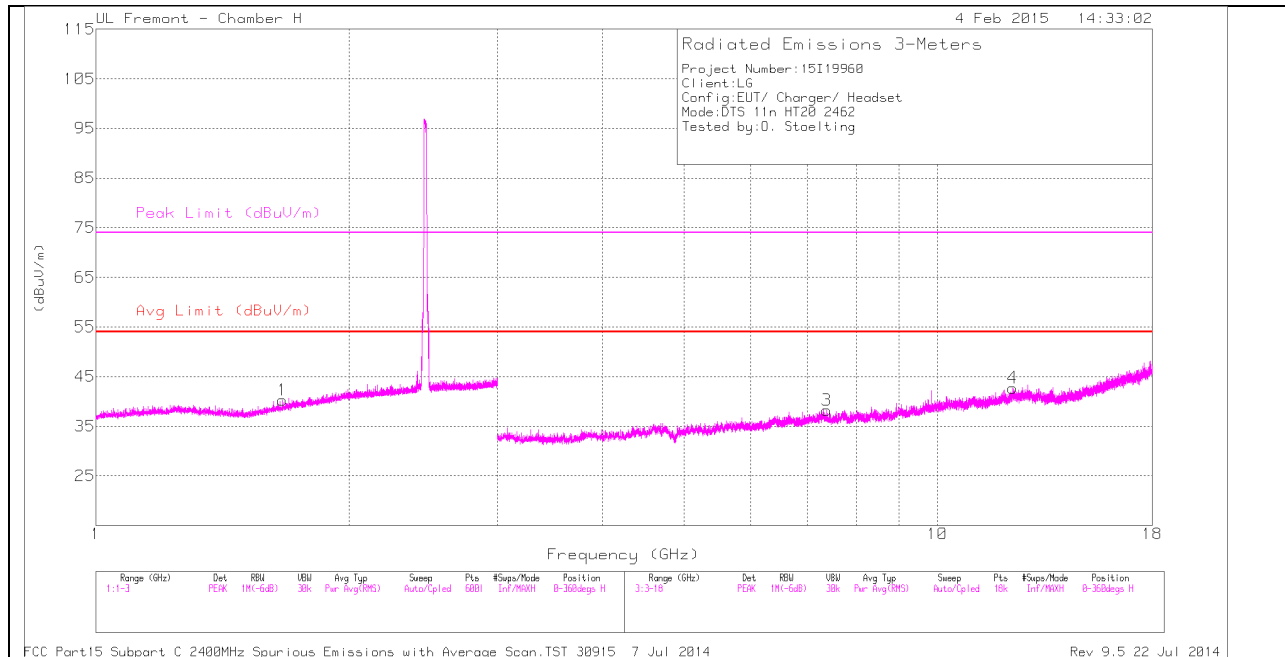
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Filtr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.394	36.74	PK	28.3	-25.6	0	39.44	-	-	74	-34.56	0-360	201	H
2	* 2.215	36.53	PK	31.6	-24.7	0	43.43	-	-	74	-30.57	0-360	100	V
3	* 4.755	33.81	PK	34.3	-32.1	0	36.01	-	-	74	-37.99	0-360	201	H
4	* 12.029	28.4	PK	38.8	-24.9	0	42.3	-	-	74	-31.7	0-360	201	H
5	* 7.296	31.71	PK	36.2	-29.2	0	38.71	-	-	74	-35.29	0-360	201	V
6	9.748	34.93	PK	36.9	-26.2	0	45.63	-	-	-	-	0-360	100	V

PK - Peak detector

RADIATED EMISSIONS

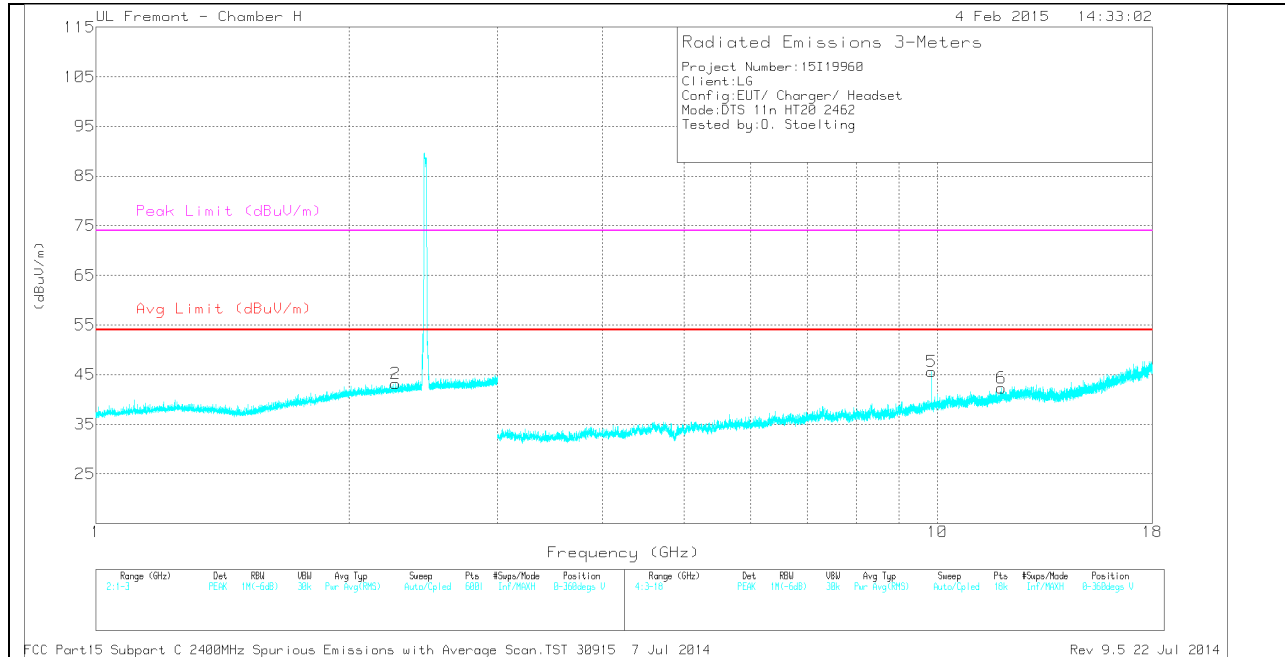
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Filtr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 2.217	43.91	PK2	31.6	-24.7	0	50.81	-	-	74	-23.19	91	172	V
* 2.216	31.44	MAV1	31.6	-24.7	.23	38.57	54	-15.43	-	-	91	172	V
* 12.028	35.37	PK2	38.8	-24.9	0	49.27	-	-	74	-24.73	58	140	H
* 12.031	23.91	MAV1	38.8	-24.9	.23	38.04	54	-15.96	-	-	58	140	H
9.748	40.55	PK2	36.9	-26.2	0	51.25	-	-	-	-	11	104	V
9.748	33.91	MAV1	36.9	-26.2	.23	44.84	-	-	-	-	11	104	V

HIGH CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cb/Filtr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.665	36.22	PK	29	-25	0	40.22	-	-	74	-33.78	0-360	201	H
2	* 2.269	36.05	PK	31.7	-24.6	0	43.15	-	-	74	-30.85	0-360	201	V
3	* 7.381	31.13	PK	36.1	-29	0	38.23	-	-	74	-35.77	0-360	201	H
4	* 12.28	28.64	PK	39	-24.9	0	42.74	-	-	74	-31.26	0-360	201	H
6	* 11.92	29.24	PK	38.7	-25.6	0	42.34	-	-	74	-31.66	0-360	100	V
5	9.848	35.26	PK	37.1	-26.8	0	45.56	-	-	-	-	0-360	100	V

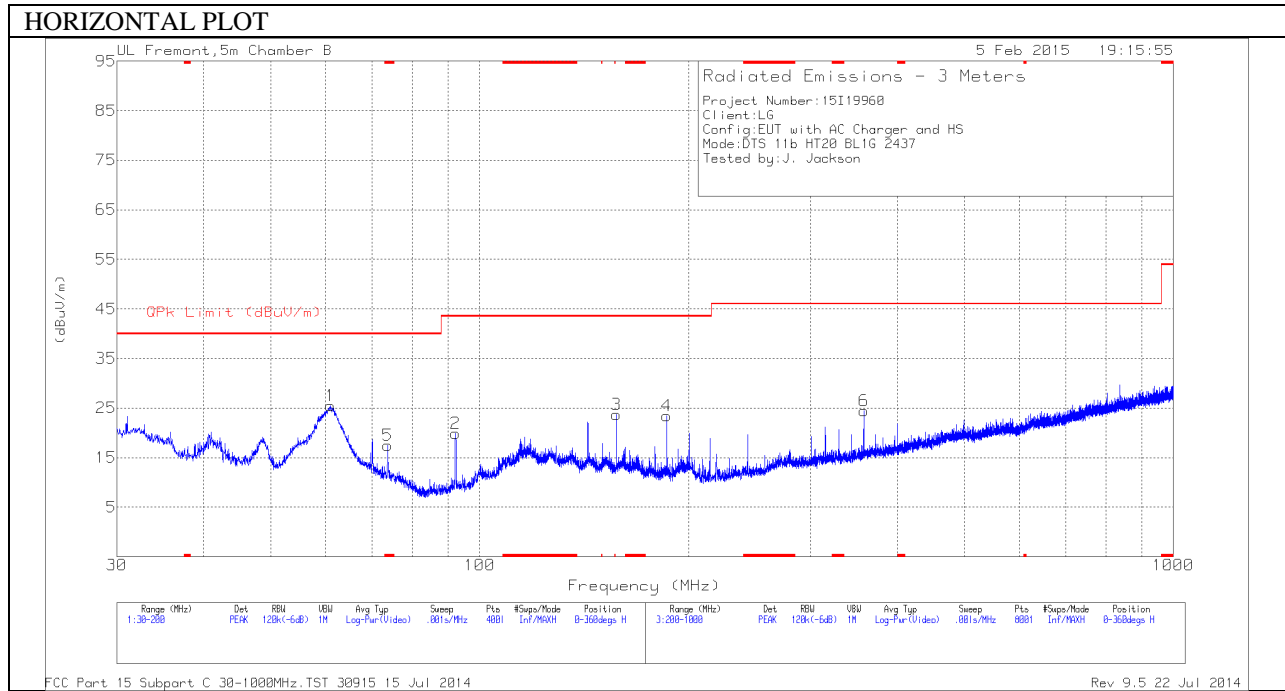
PK - Peak detector

RADIATED EMISSIONS

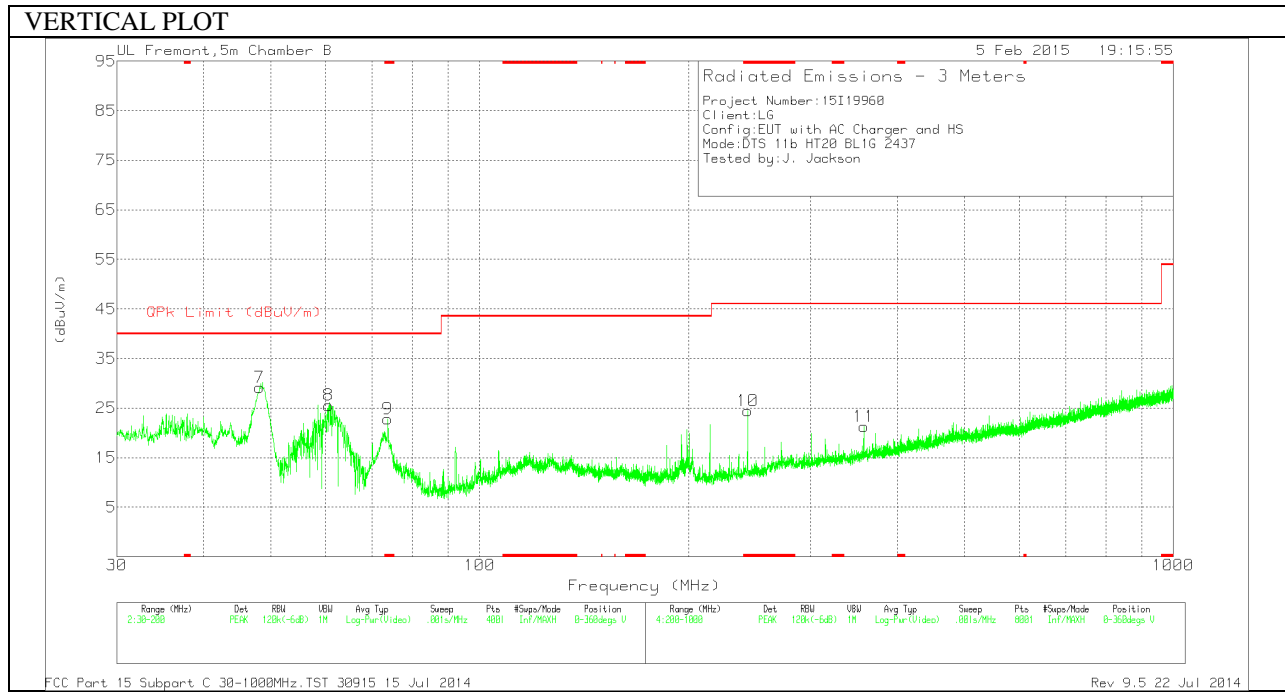
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cb/Filtr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 2.269	43.28	PK2	31.7	-24.6	0	50.38	-	-	74	-23.62	275	332	V
* 2.27	31.49	MAV1	31.7	-24.6	.23	38.82	54	-15.18	-	-	275	332	V
* 12.281	35.78	PK2	39	-24.9	0	49.88	-	-	74	-24.12	130	118	H
* 12.282	24.57	MAV1	39	-24.9	.23	38.9	54	-15.1	-	-	130	118	H
* 11.919	35.65	PK2	38.7	-25.6	0	48.75	-	-	74	-25.25	309	323	V
* 11.92	24.42	MAV1	38.7	-25.6	.23	37.75	54	-16.25	-	-	309	323	V
9.848	40.3	PK2	37.1	-26.8	0	50.6	-	-	-	-	6	106	V
9.848	33.42	MAV1	37.1	-26.8	.23	43.95	-	-	-	-	6	106	V

10.3. WORST-CASE BELOW 1 GHz

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



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



Below 1G Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T243 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	* 73.7325	37.89	PK	8	-28.4	17.49	40	-22.51	0-360	101	H
9	* 73.69	43.18	PK	8	-28.4	22.78	40	-17.22	0-360	101	V
10	* 243.4	39.39	PK	11.6	-26.5	24.49	46.02	-21.53	0-360	300	V
7	48.19	49.01	PK	8.9	-28.7	29.21	40	-10.79	0-360	101	V
8	60.6	46.54	PK	7.5	-28.5	25.54	40	-14.46	0-360	101	V
1	60.8975	46.39	PK	7.6	-28.5	25.49	40	-14.51	0-360	400	H
2	92.305	39.79	PK	8.2	-28.1	19.89	43.52	-23.63	0-360	200	H
3	157.5	38.84	PK	12.3	-27.4	23.74	43.52	-19.78	0-360	101	H
4	186.145	39.24	PK	11.3	-27.1	23.44	43.52	-20.08	0-360	101	H
6	357.9	35.59	PK	14.8	-25.9	24.49	46.02	-21.53	0-360	200	H
11	358	32.39	PK	14.8	-25.9	21.29	46.02	-24.73	0-360	200	V

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

PK - Peak detector

11. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

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

*Decreases with the logarithm of the frequency.

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.4 2009.

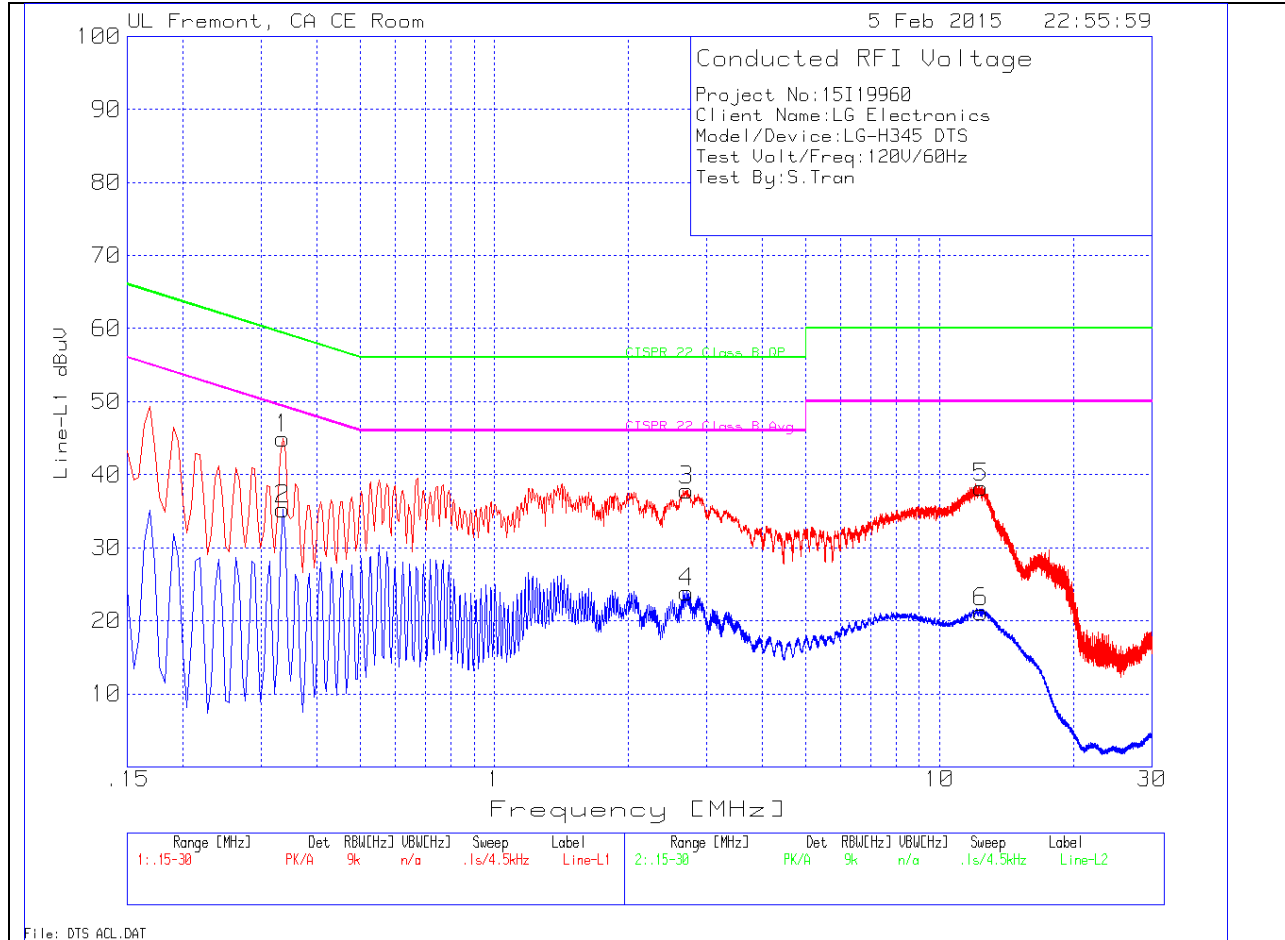
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

6 WORST EMISSIONS

LINE 1 PLOT



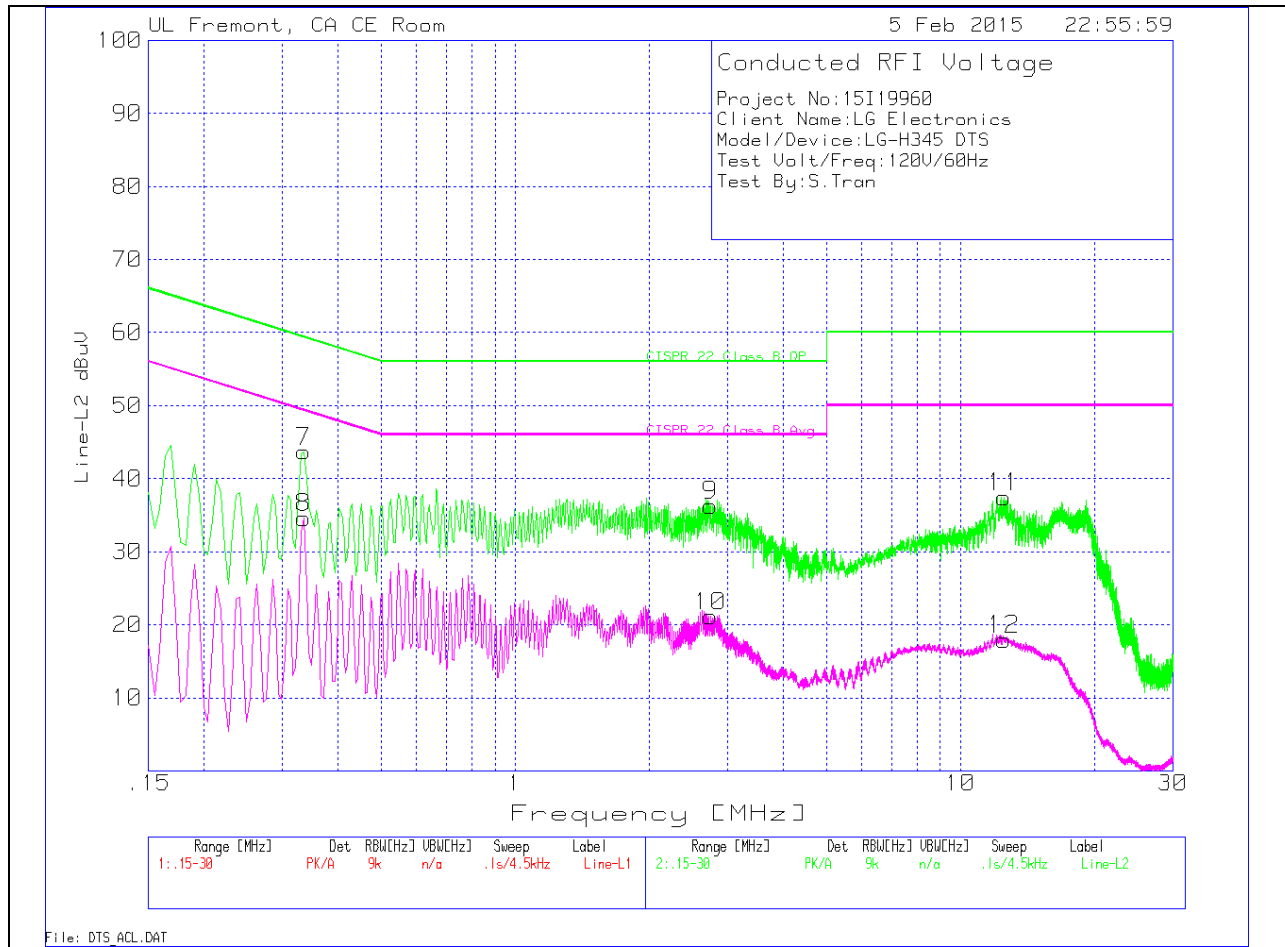
LINE 1 RESULTS

Line-L1 .15 - 30MHz

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1 (dB)	LC Cables 1&3 (dB)	Corrected Reading dBuV	CISPR 22 Class B QP	Margin to Limit (dB)	CISPR 22 Class B Avg	Margin to Limit (dB)
1	.3345	44.46	PK	.5	0	44.96	59.3	-14.34	-	-
2	.3345	34.81	Av	.5	0	35.31	-	-	49.3	-13.99
3	2.7015	37.59	PK	.2	.1	37.89	56	-18.11	-	-
4	2.7015	23.6	Av	.2	.1	23.9	-	-	46	-22.1
5	12.3855	37.85	PK	.2	.2	38.25	60	-21.75	-	-
6	12.3855	20.79	Av	.2	.2	21.19	-	-	50	-28.81

LINE 2 PLOT



LINE 2 RESULTS

Line-L2 .15 - 30MHz

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2 (dB)	LC Cables 2&3 (dB)	Corrected Reading dBuV	CISPR 22 Class B QP	Margin to Limit (dB)	CISPR 22 Class B Avg	Margin to Limit (dB)
7	.3345	43.22	PK	.5	0	43.72	59.3	-15.58	-	-
8	.3345	34.17	Av	.5	0	34.67	-	-	49.3	-14.63
9	2.7465	36.01	PK	.2	.1	36.31	56	-19.69	-	-
10	2.7465	20.83	Av	.2	.1	21.13	-	-	46	-24.87
11	12.543	37.01	PK	.2	.2	37.41	60	-22.59	-	-
12	12.543	17.51	Av	.2	.2	17.91	-	-	50	-32.09

PK - Peak detector

Av - average detection