



FCC CFR47 PART 15 SUBPART C

CERTIFICATION TEST REPORT

FOR

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

MODEL NUMBER: LG-L33L, LGL33L, L33L

FCC ID: ZNFL33L

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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-L33L, LGL33L, L33L
SERIAL NUMBER: 1HRKA (Conducted), 1HRK9 (Radiated)
DATE TESTED: DECEMBER 8-16, 2014

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.

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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 15C.

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 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	14.5	28.18
2412 - 2462	802.11g	10.1	10.23
2412 - 2462	802.11n HT20	9.2	8.32

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of 2.9dBi.

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-01WR	RD4X0891946	N/A
Earphone	LG	LG-L33L	N/A	N/A

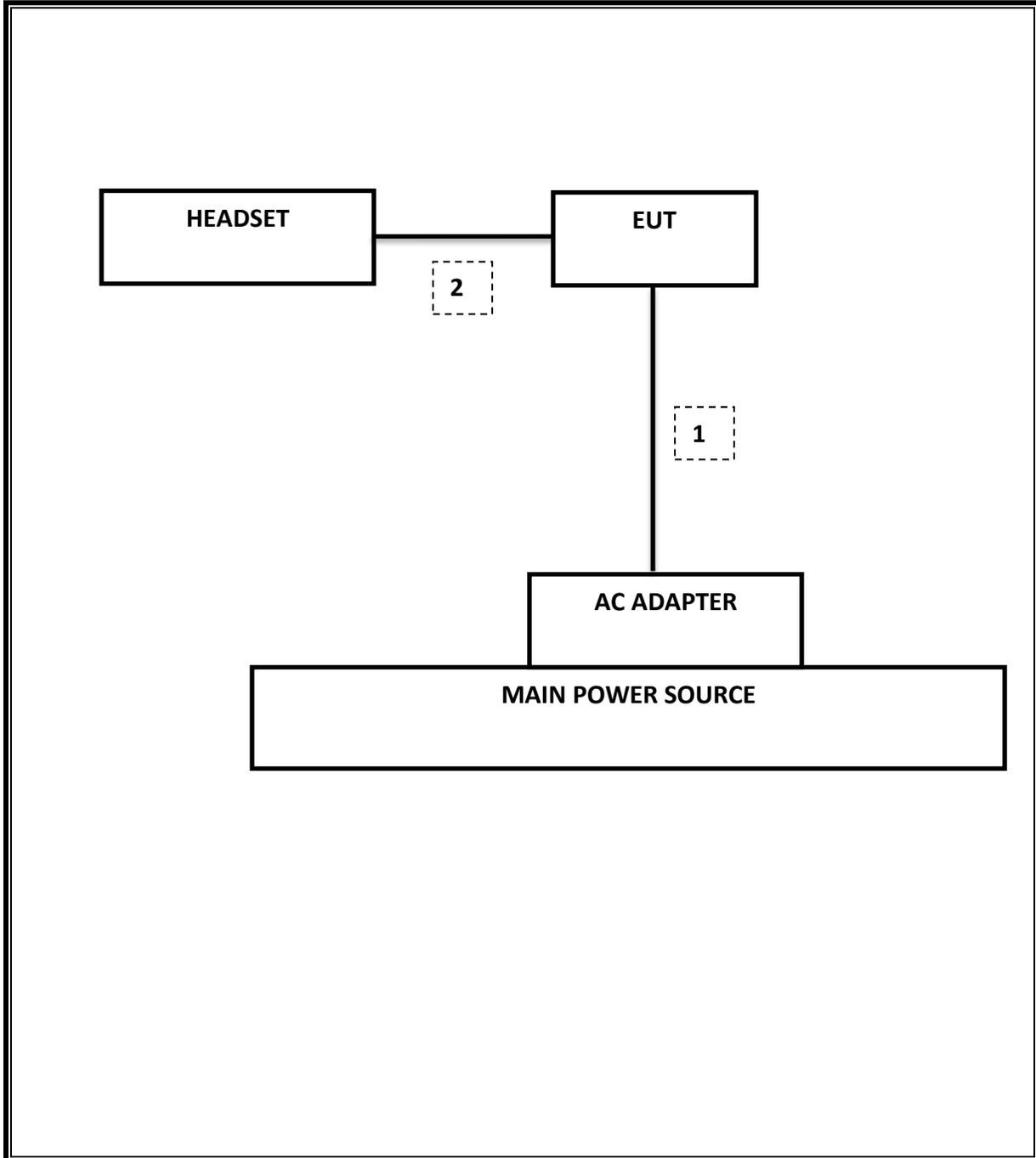
I/O CABLES

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 Preamplifier, 100KHz -> 1300MHz	HP	TBD	C00825	06/01/15
RF Preamplifier, 1GHz - 18GHz	Miteq	NSP4000-SP2	924343	03/23/15
RF Preamplifier, 1GHz - 26.5GHz	HP	8449B	F00351	06/27/15
AC Power Supply, 2,500VA 45-500Hz	Elgar-Ametek	CW2501M	F00013	CNR
RF Preamplifier, 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

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	8.58 MHz
2.1051, 15.247 (d)	RSS-210 A8.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	-36.1 dBm
15.247	RSS-210 A8.4	TX conducted output power	<30dBm		Pass	14.5 dBm
15.247	RSS-210 A8.2	PSD	<8dBm		Pass	-17.96 dBm
15.207 (a)	RSS-GEN 7.2.2	AC Power Line conducted emissions	Section 10	Radiated	Pass	51.72 dBuV (AV)
15.205, 15.209	RSS-210 Clause 2.6, RSS-210 Clause 6	Radiated Spurious Emission	< 54dBuV/m		Pass	40.97 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	8.58	0.5
Mid	2437	9.04	0.5
High	2462	8.59	0.5
Worst		8.58	

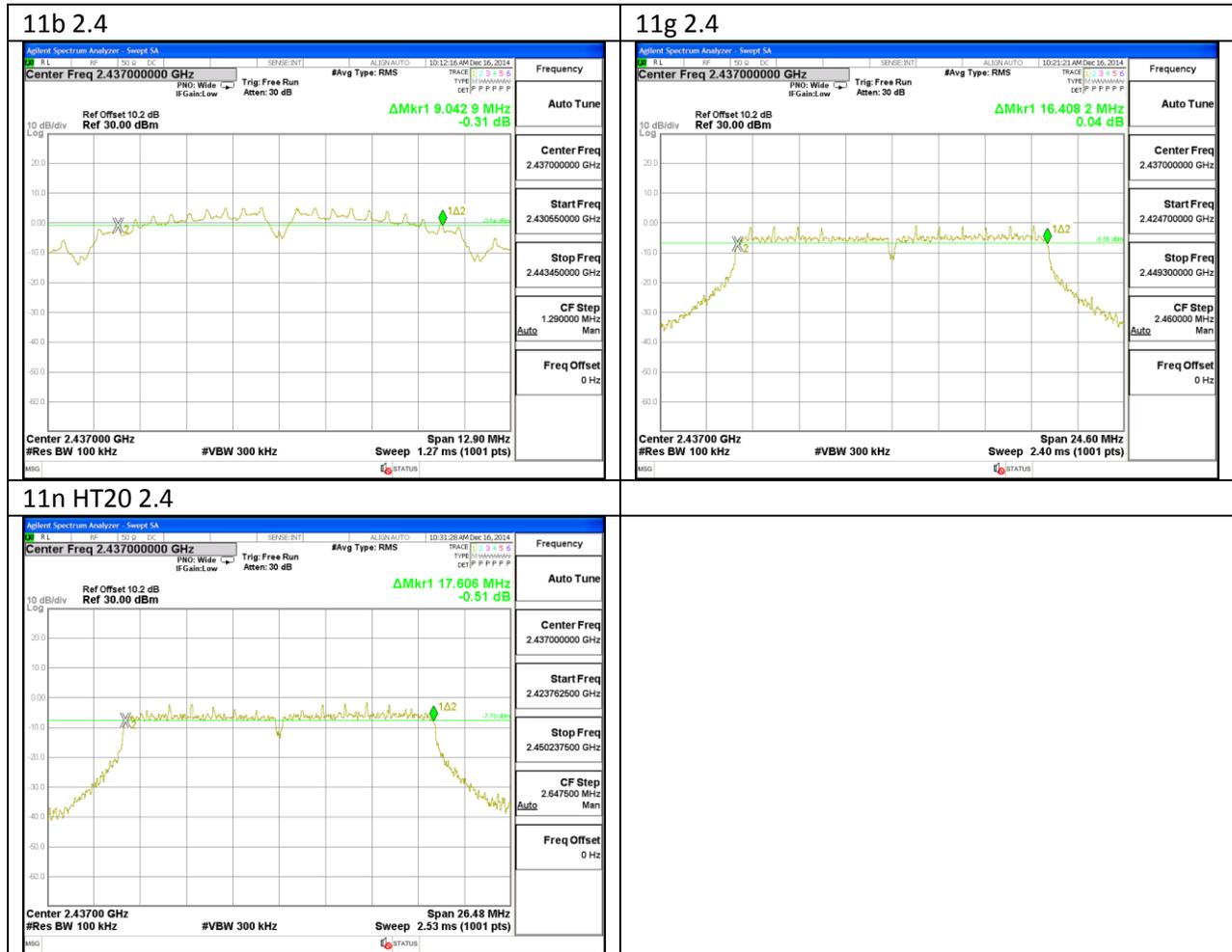
9.1.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	16.41	0.5
Mid	2437	16.41	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	17.63	0.5
Mid	2437	17.61	0.5
High	2462	17.61	0.5
Worst		17.61	

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	13.42
Mid	2437	13.44
High	2462	13.61
Worst		13.61

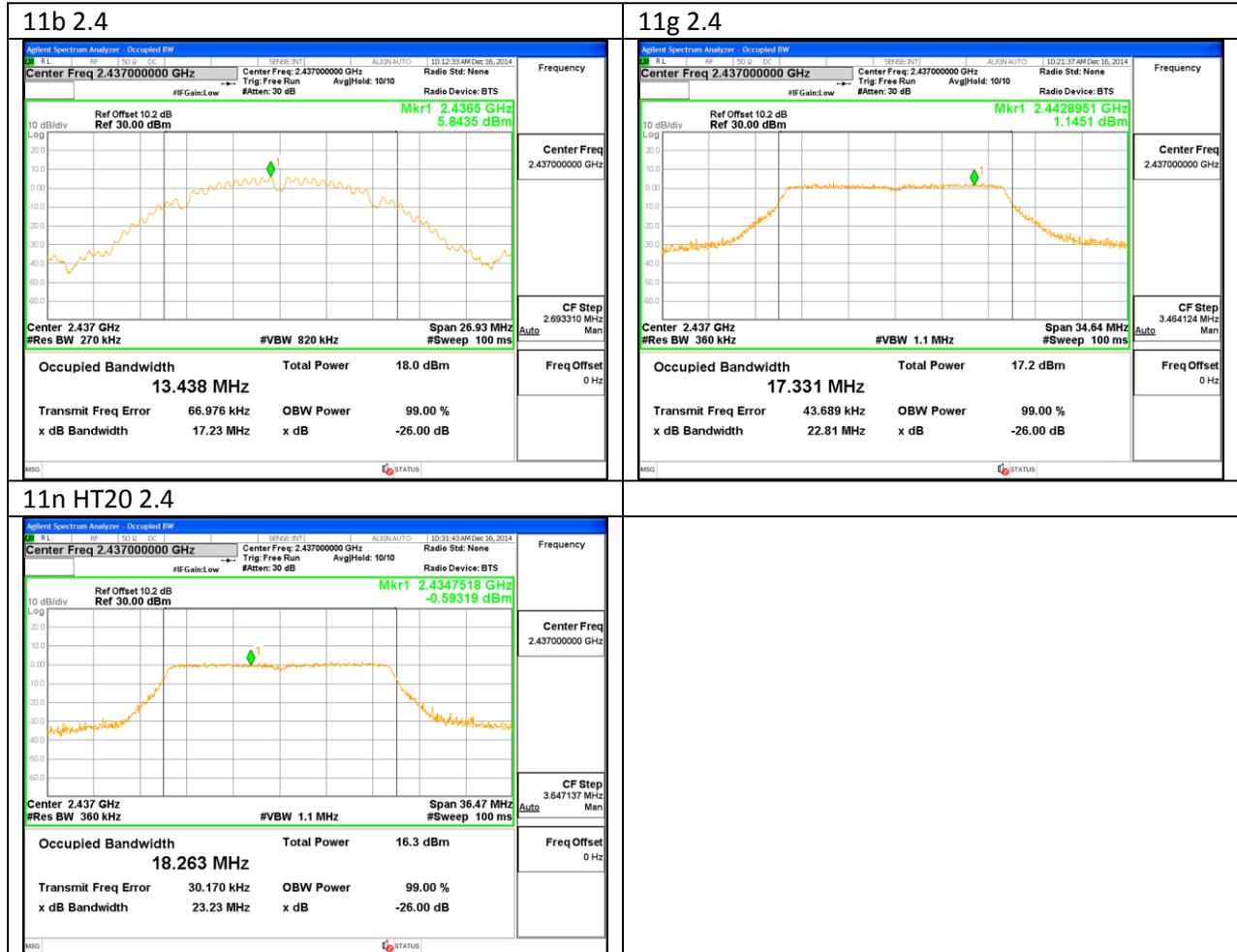
9.2.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	17.35
Mid	2437	17.33
High	2462	17.38
Worst		17.38

9.2.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	18.24
Mid	2437	18.26
High	2462	18.24
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		30.00	30	36	30.00
Mid	2437		30.00	30	36	30.00
High	2462		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	14.50	14.50	30.00	-15.50
Mid	2437	13.92	13.92	30.00	-16.08
High	2462	14.28	14.28	30.00	-15.72
Worst			14.50		

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		30.00	30	36	30.00
Mid	2437		30.00	30	36	30.00
High	2462		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	9.54	9.54	30.00	-20.46
Mid	2437	9.67	9.67	30.00	-20.33
High	2462	10.05	10.05	30.00	-19.95
Worst			10.05		

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		30.00	30	36	30.00
Mid	2437		30.00	30	36	30.00
High	2462		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	8.75	8.75	30.00	-21.25
Mid	2437	8.86	8.86	30.00	-21.14
High	2462	9.19	9.19	30.00	-20.81
Worst			9.19		

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	-17.96	8.0	-26.0
Mid	2437	-18.54	8.0	-26.5
High	2462	-18.00	8.0	-26.0

9.4.2. 802.11g MODE IN THE 2.4 GHz BAND

PSD Results

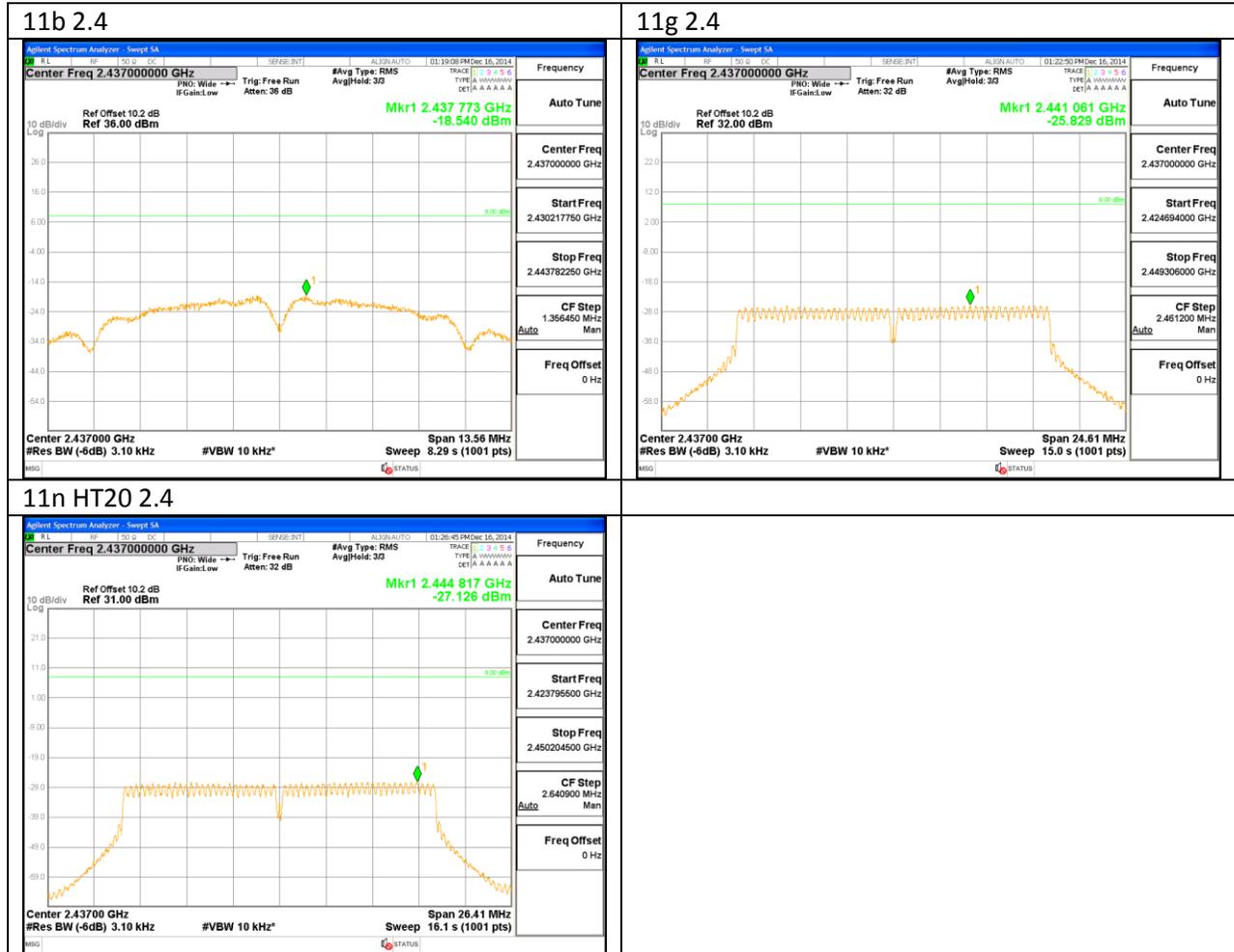
Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-26.06	8.0	-34.1
Mid	2437	-25.83	8.0	-33.8
High	2462	-25.44	8.0	-33.4

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	-24.33	8.0	-32.3
Mid	2437	-27.13	8.0	-35.1
High	2462	-26.66	8.0	-34.7

9.4.4. PSD Chain 0 MID CH PLOTS



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.

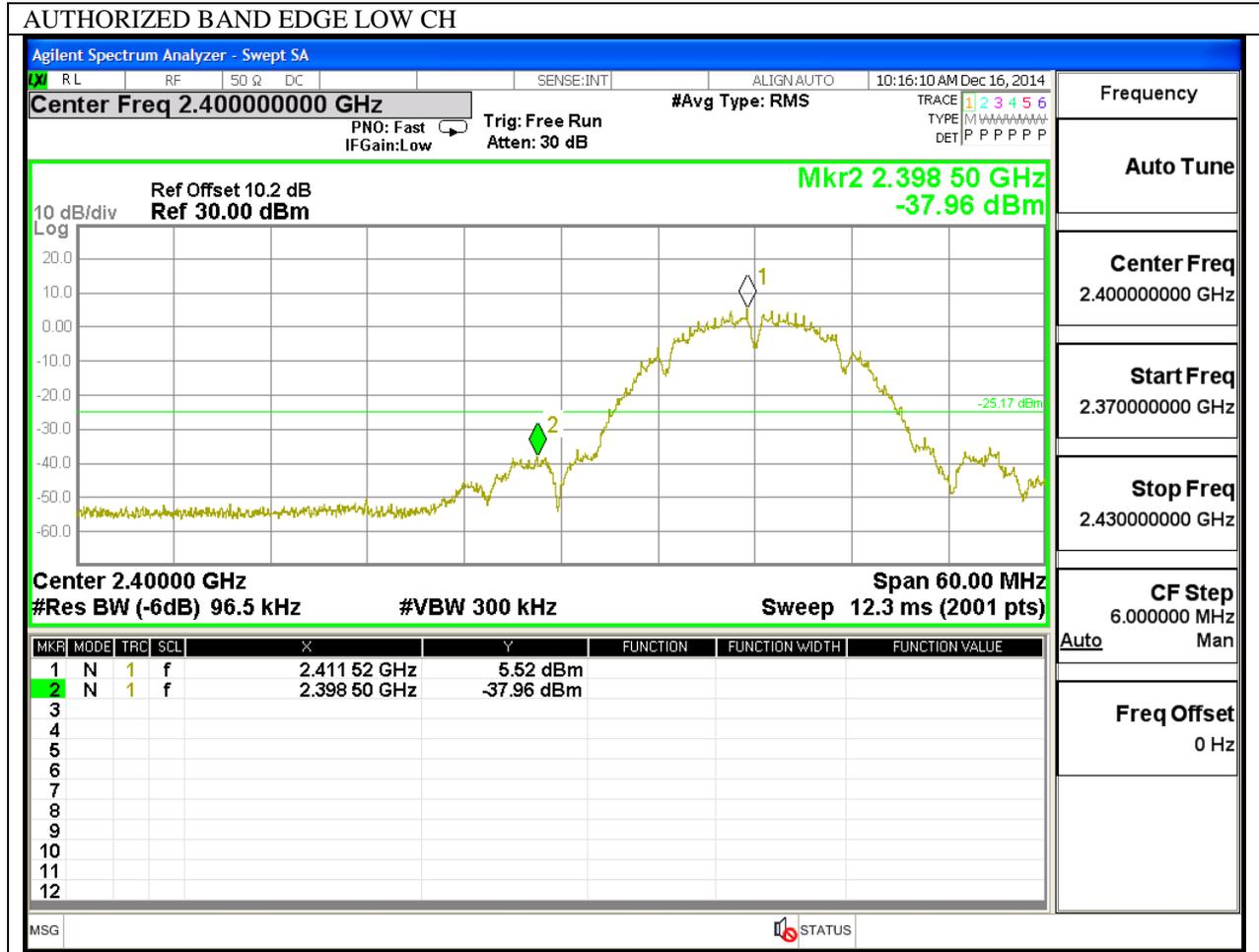
RESULTS

9.5.1. 802.11b MODE IN THE 2.4 GHz BAND

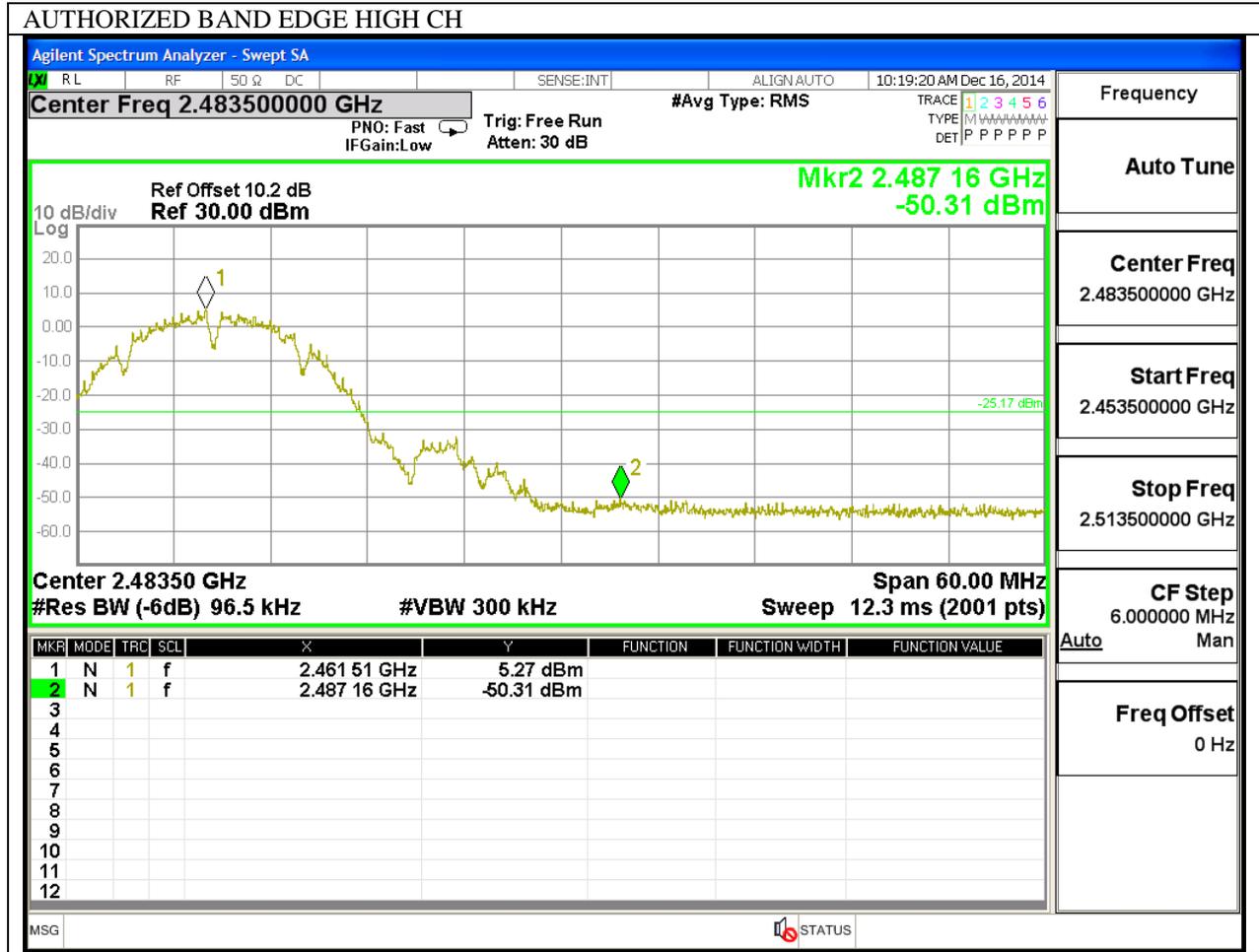
IN-BAND REFERENCE LEVEL



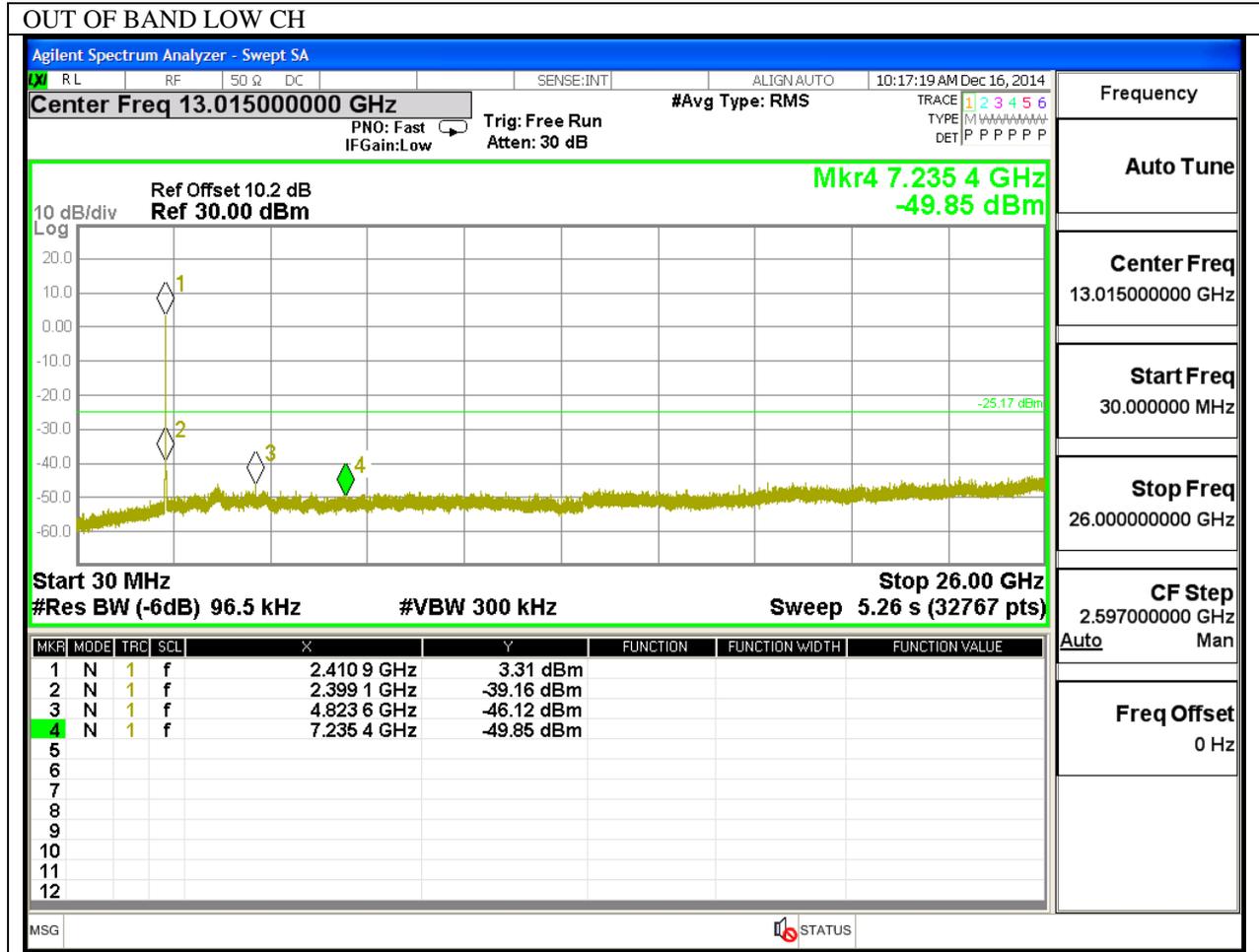
LOW CHANNEL BANDEDGE

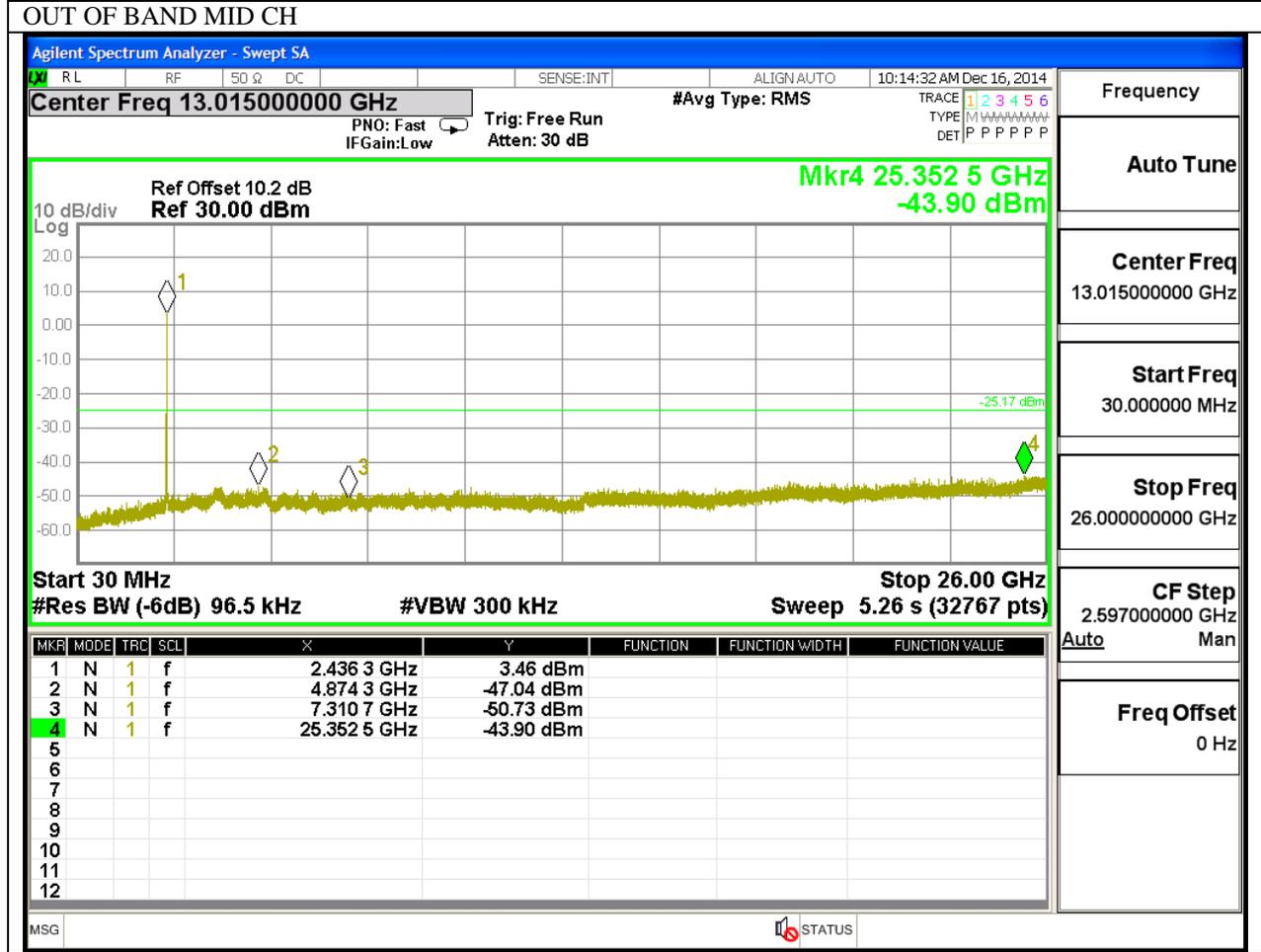


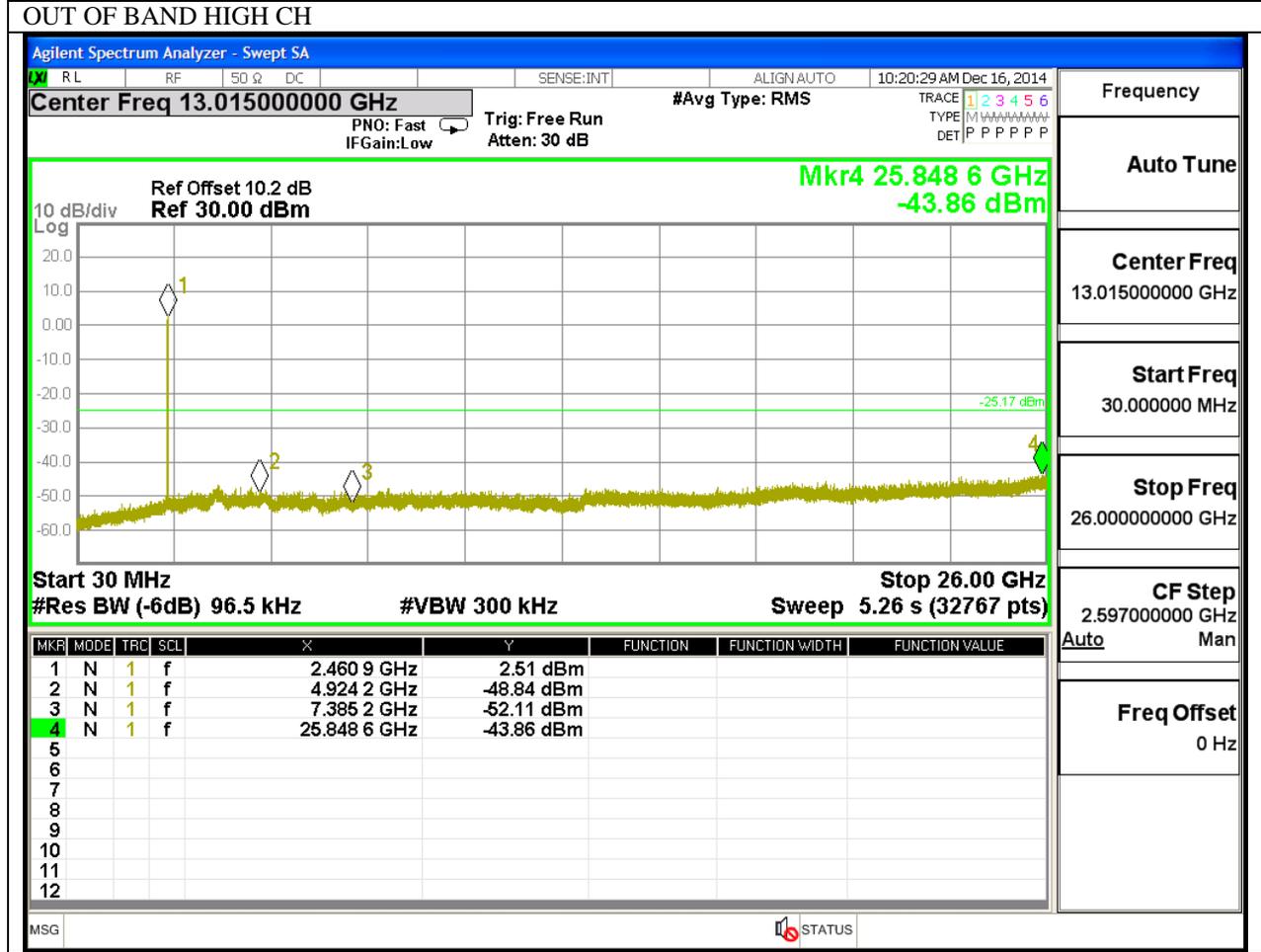
HIGH CHANNEL BANDEDGE



OUT-OF-BAND EMISSIONS

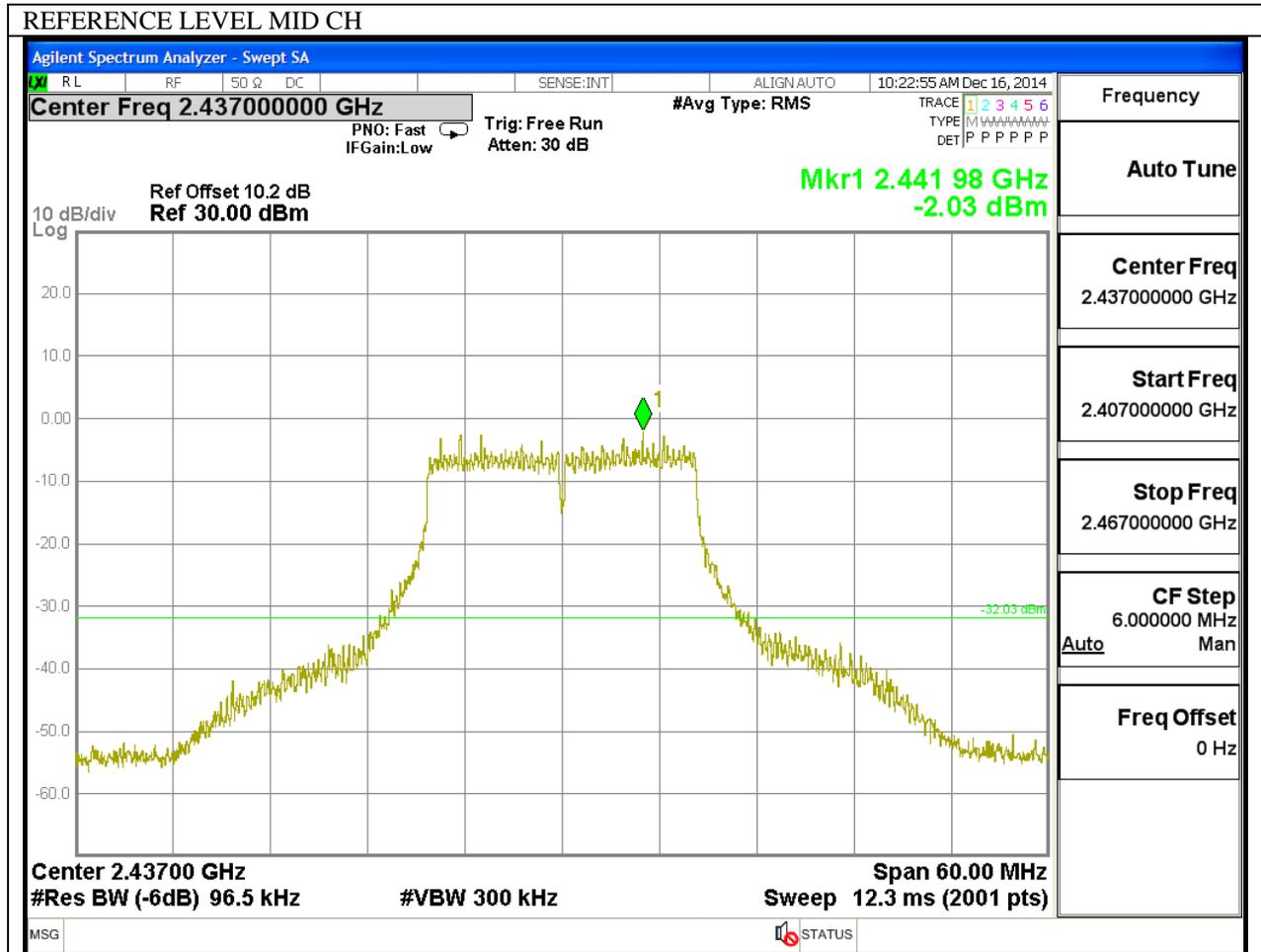




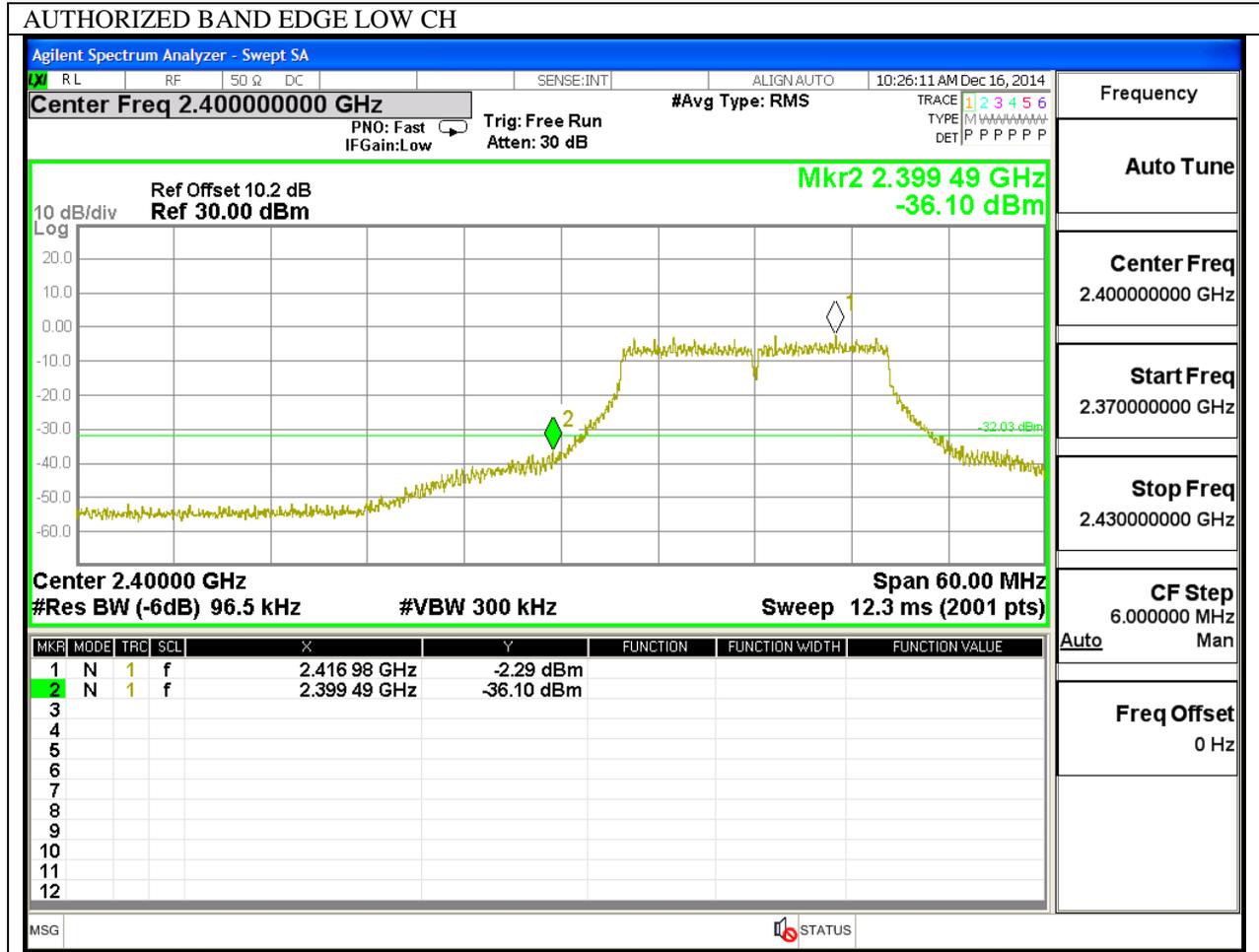


9.5.2. 802.11g MODE IN THE 2.4 GHz BAND

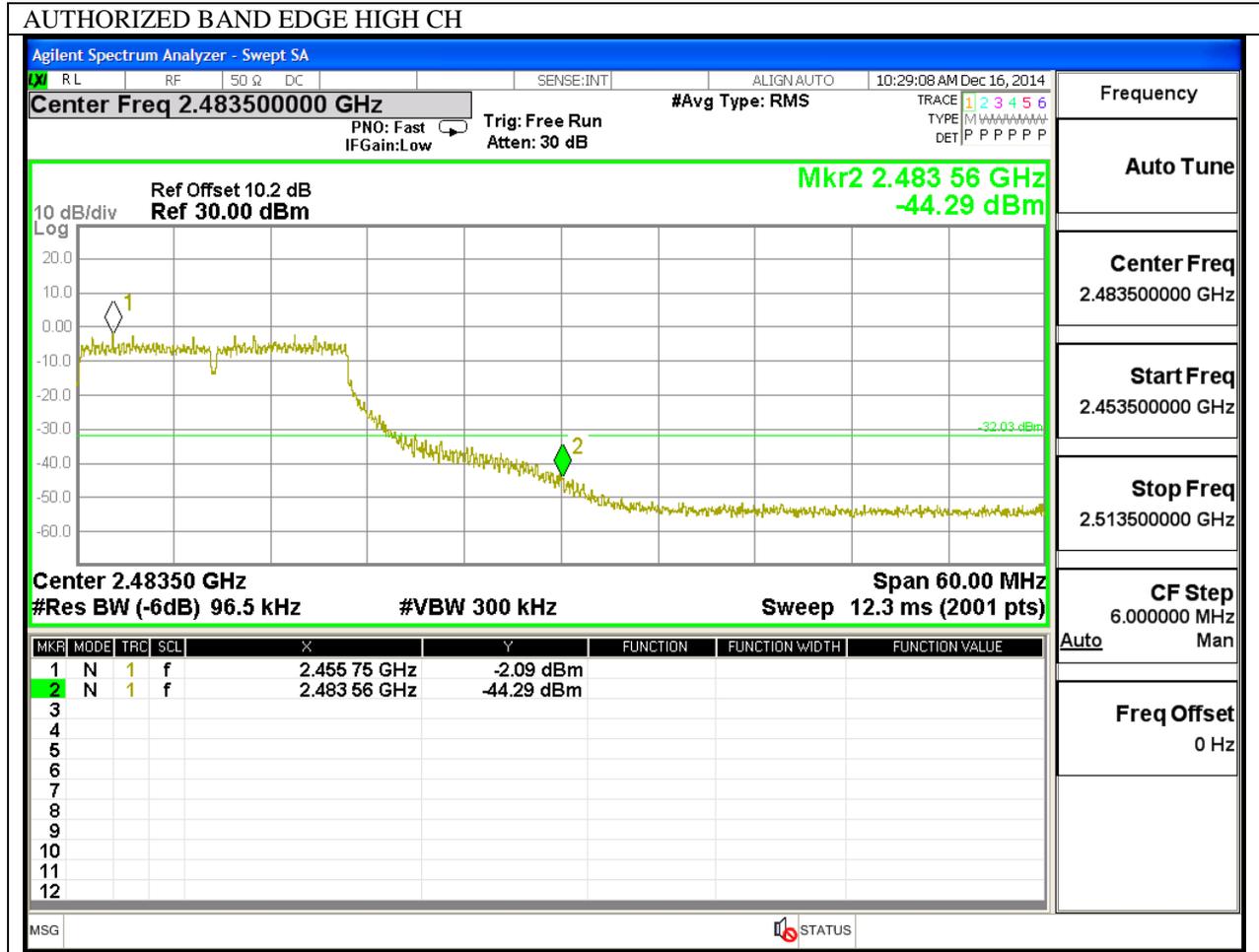
IN-BAND REFERENCE LEVEL



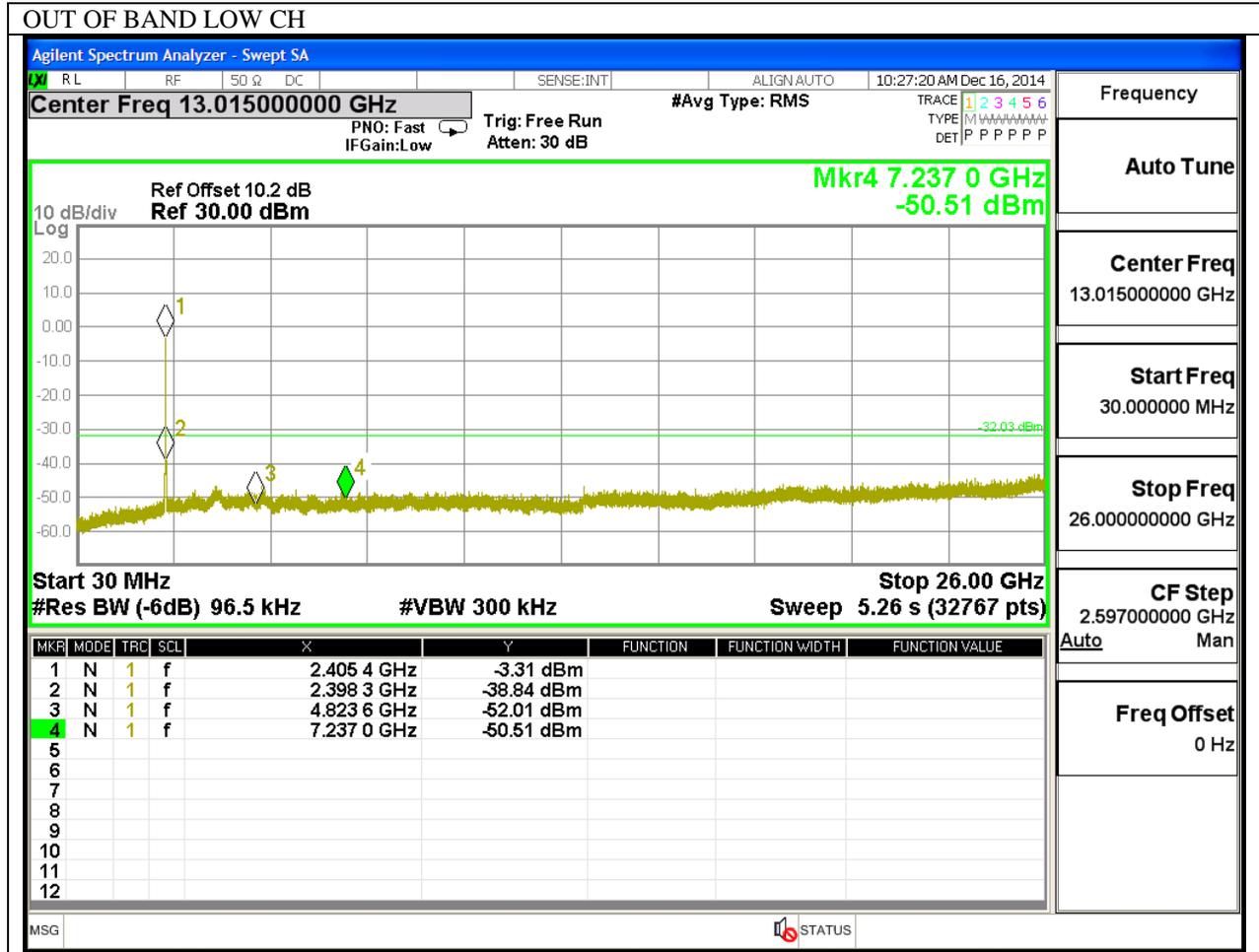
LOW CHANNEL BANDEDGE

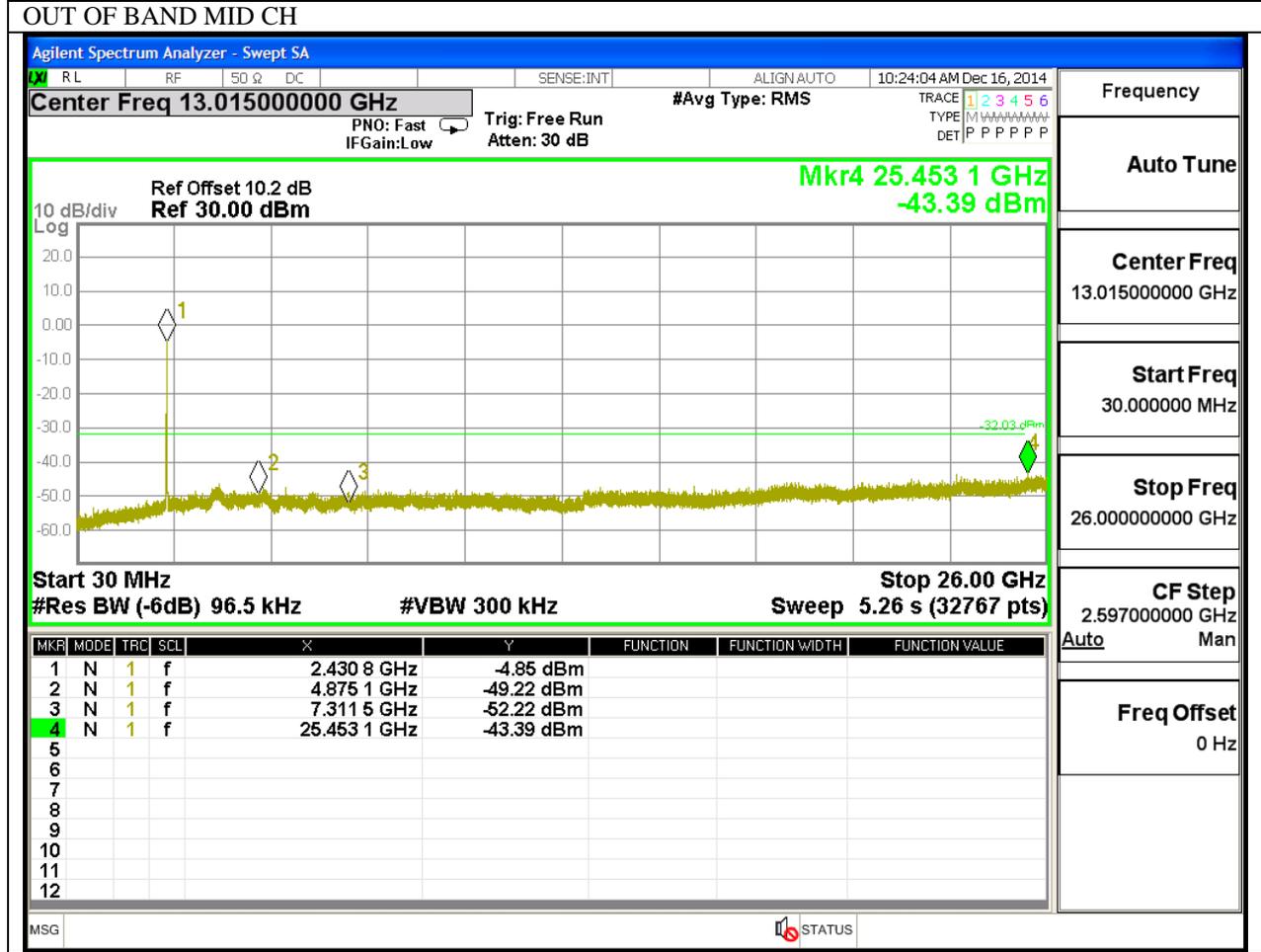


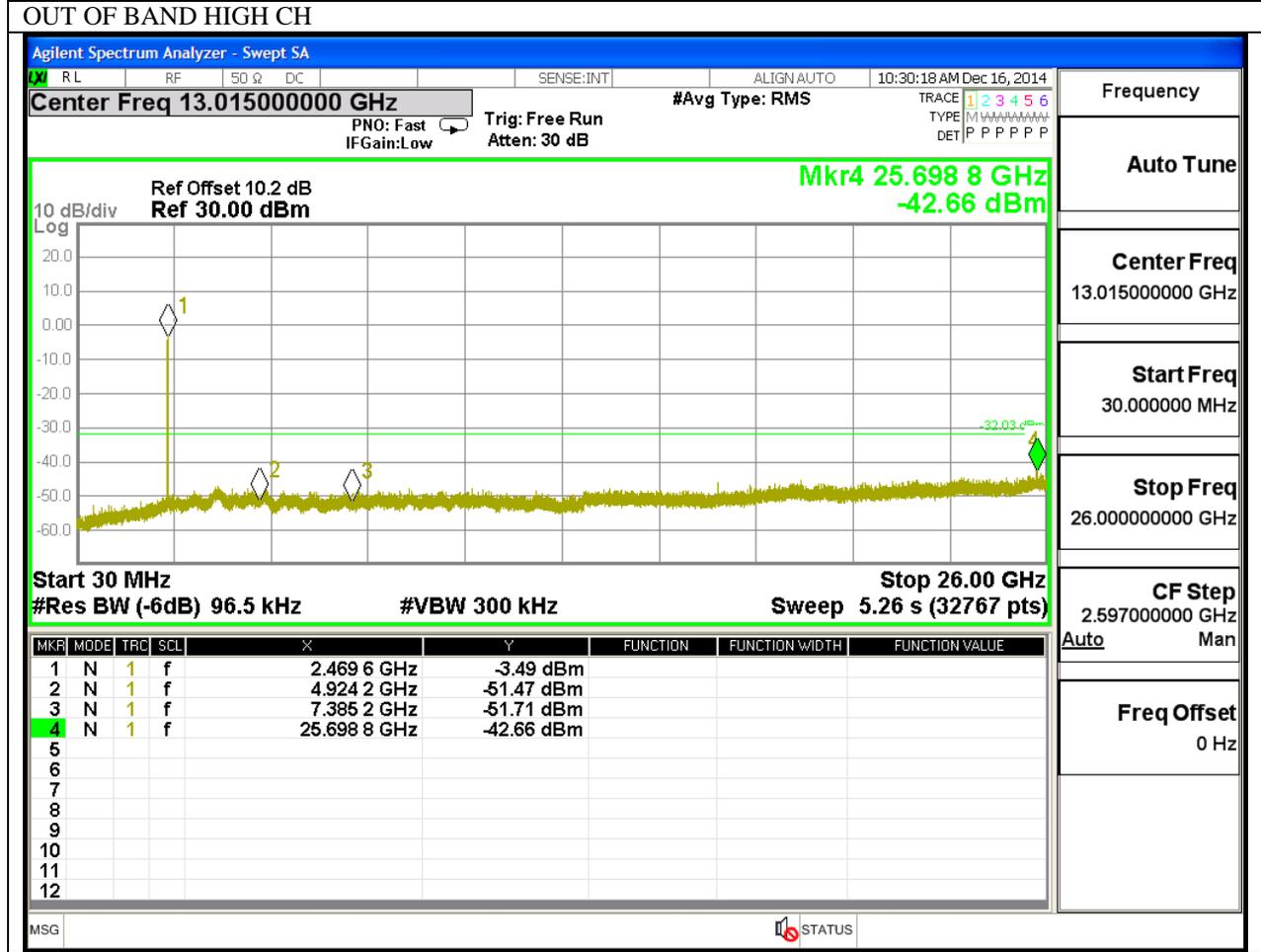
HIGH CHANNEL BANDEDGE



OUT-OF-BAND EMISSIONS

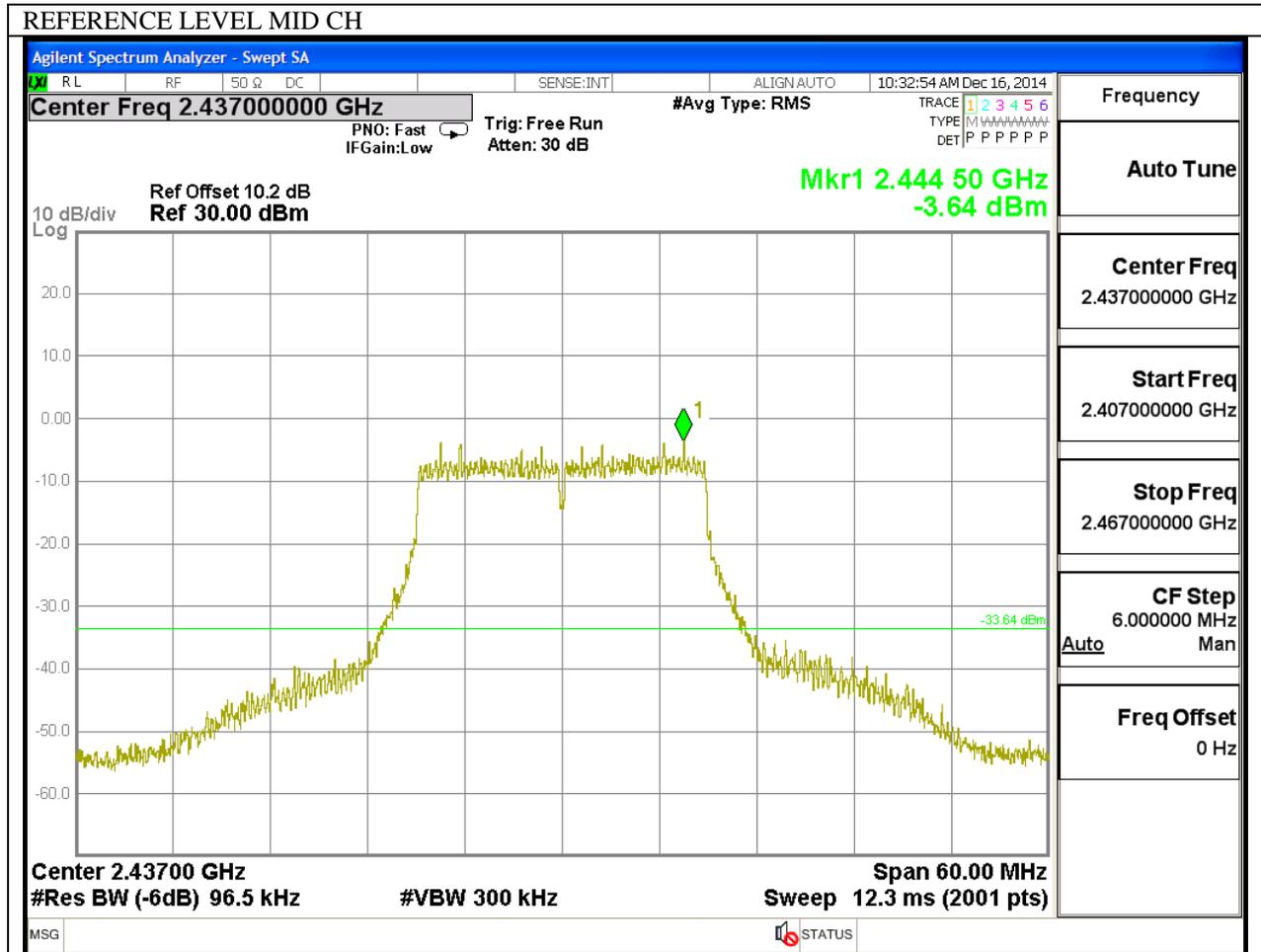




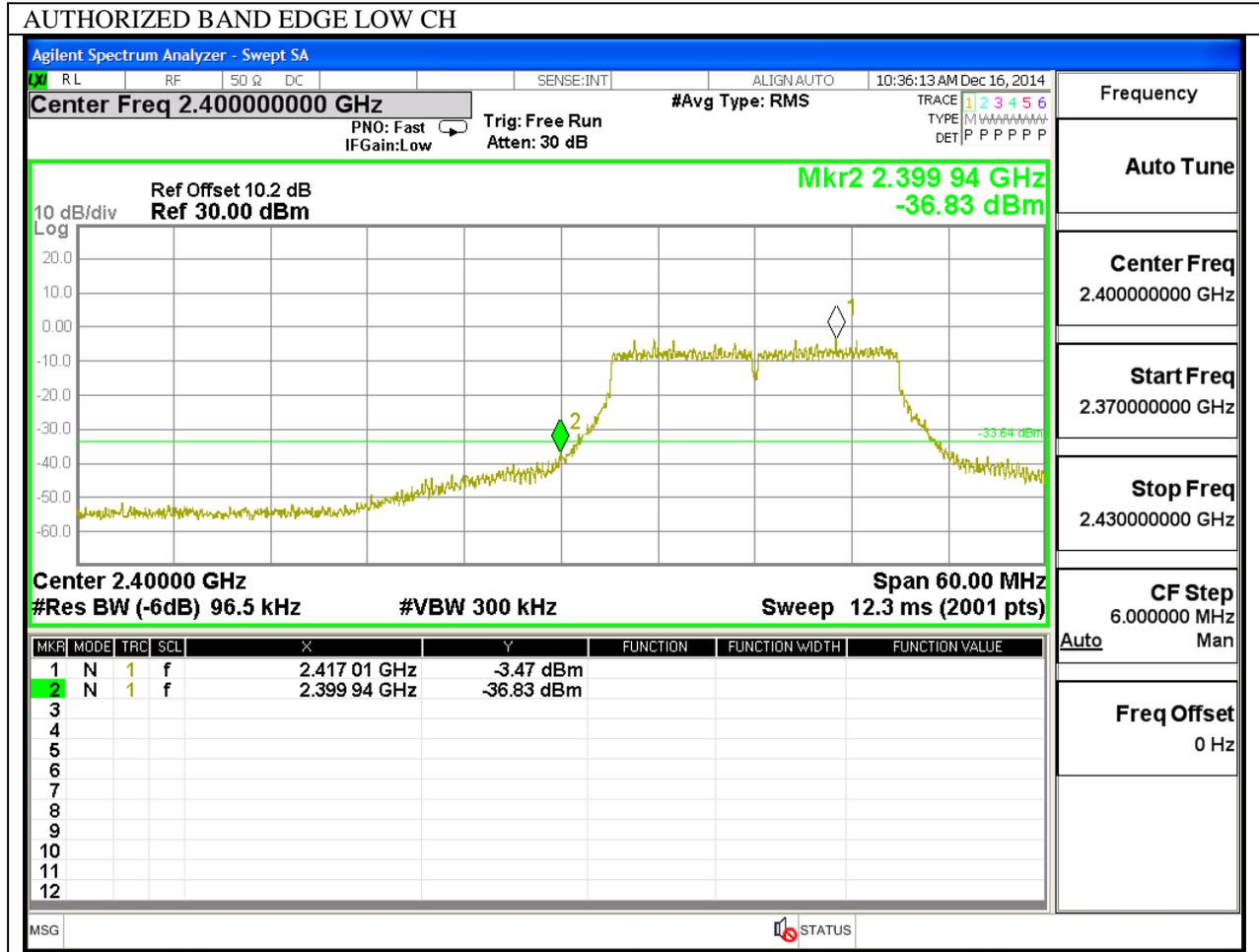


9.5.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

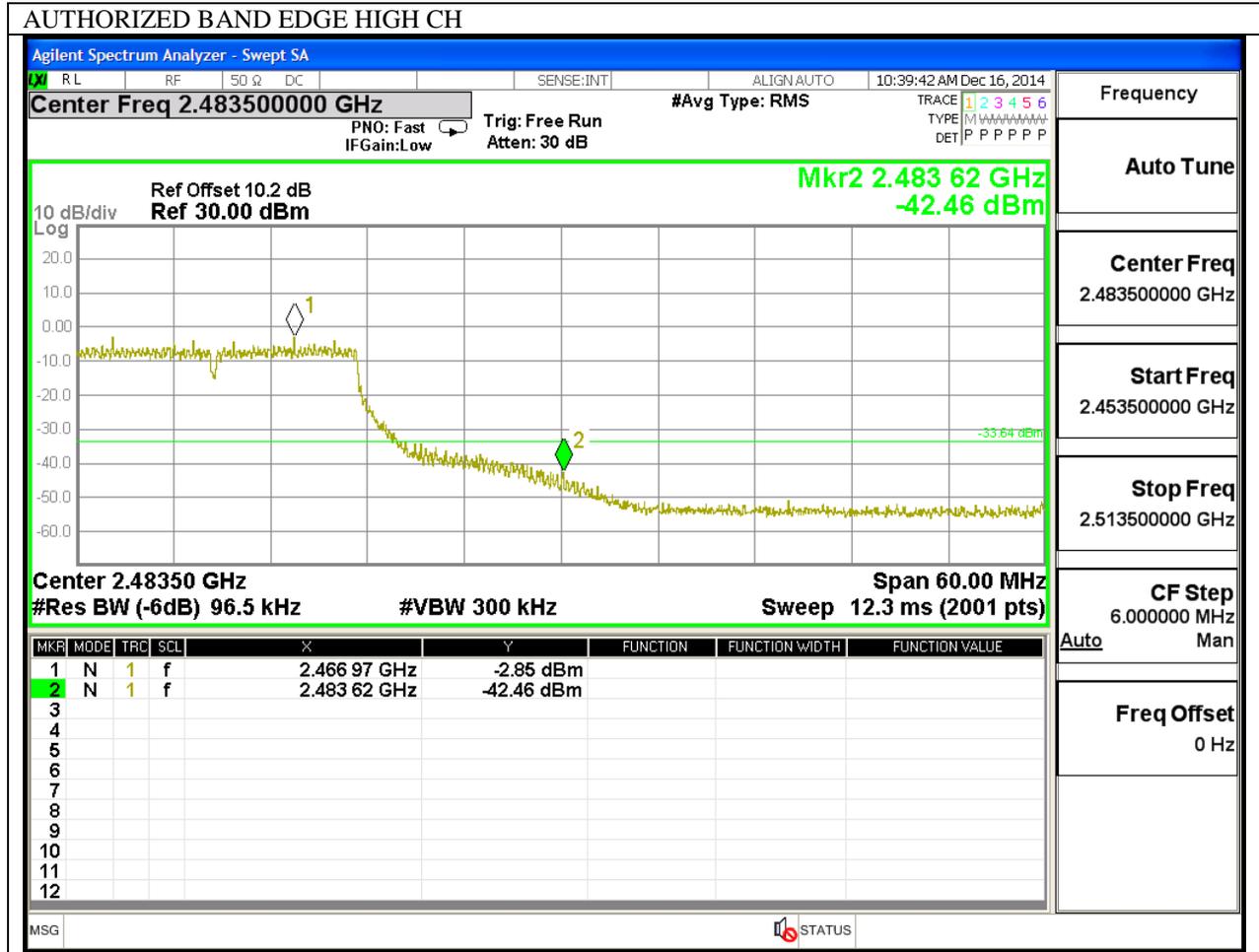
IN-BAND REFERENCE LEVEL



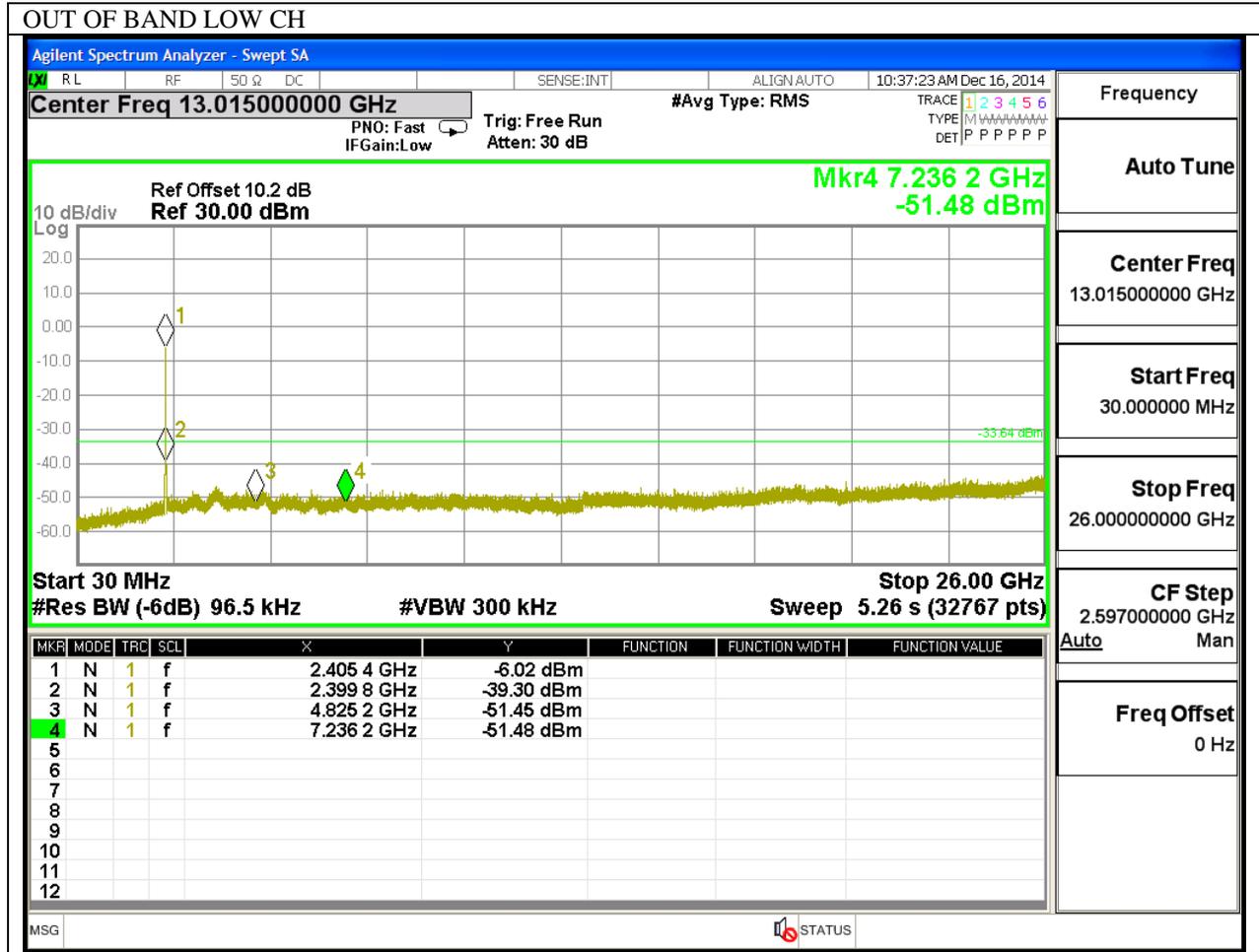
LOW CHANNEL BANDEDGE

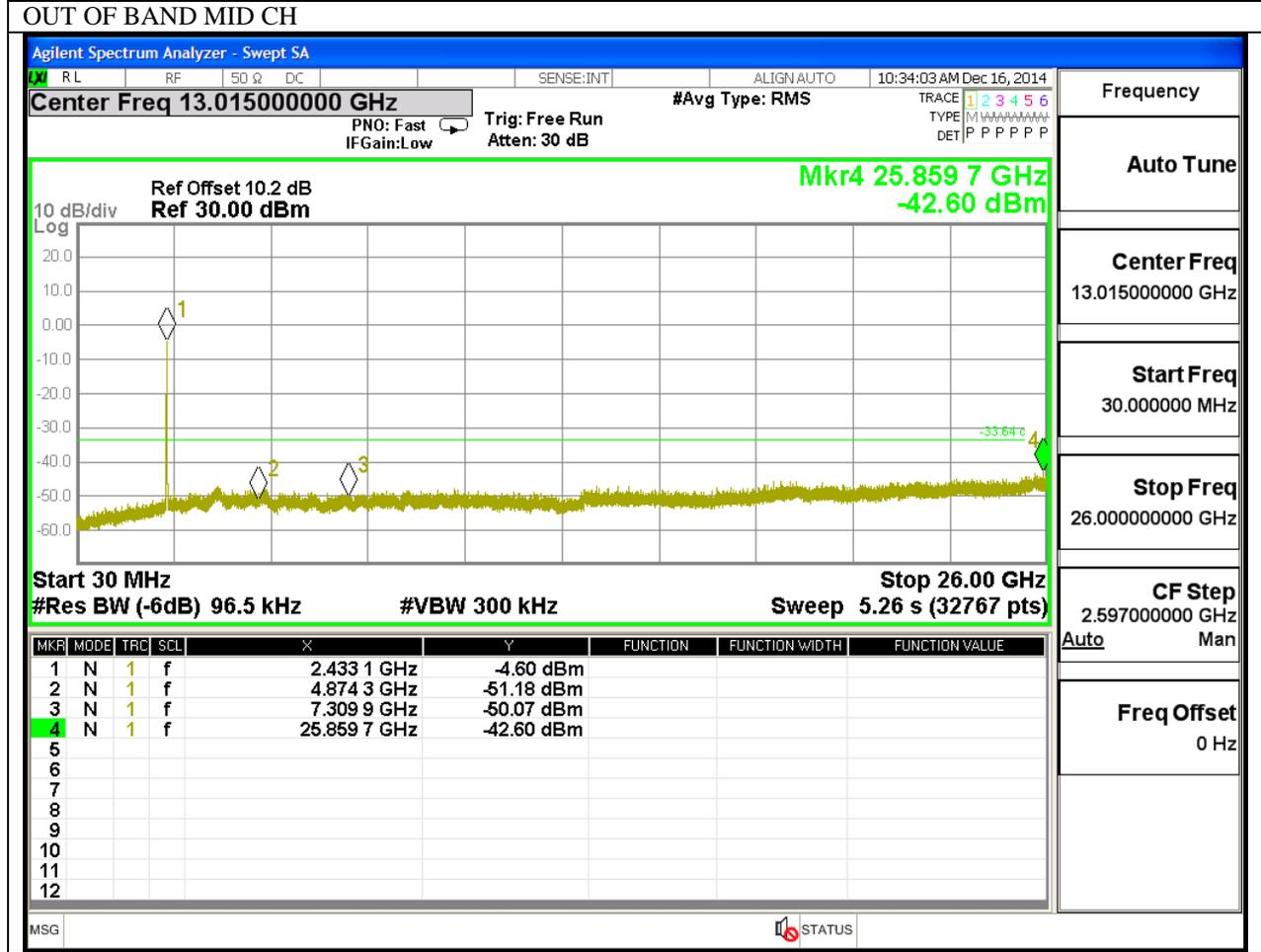


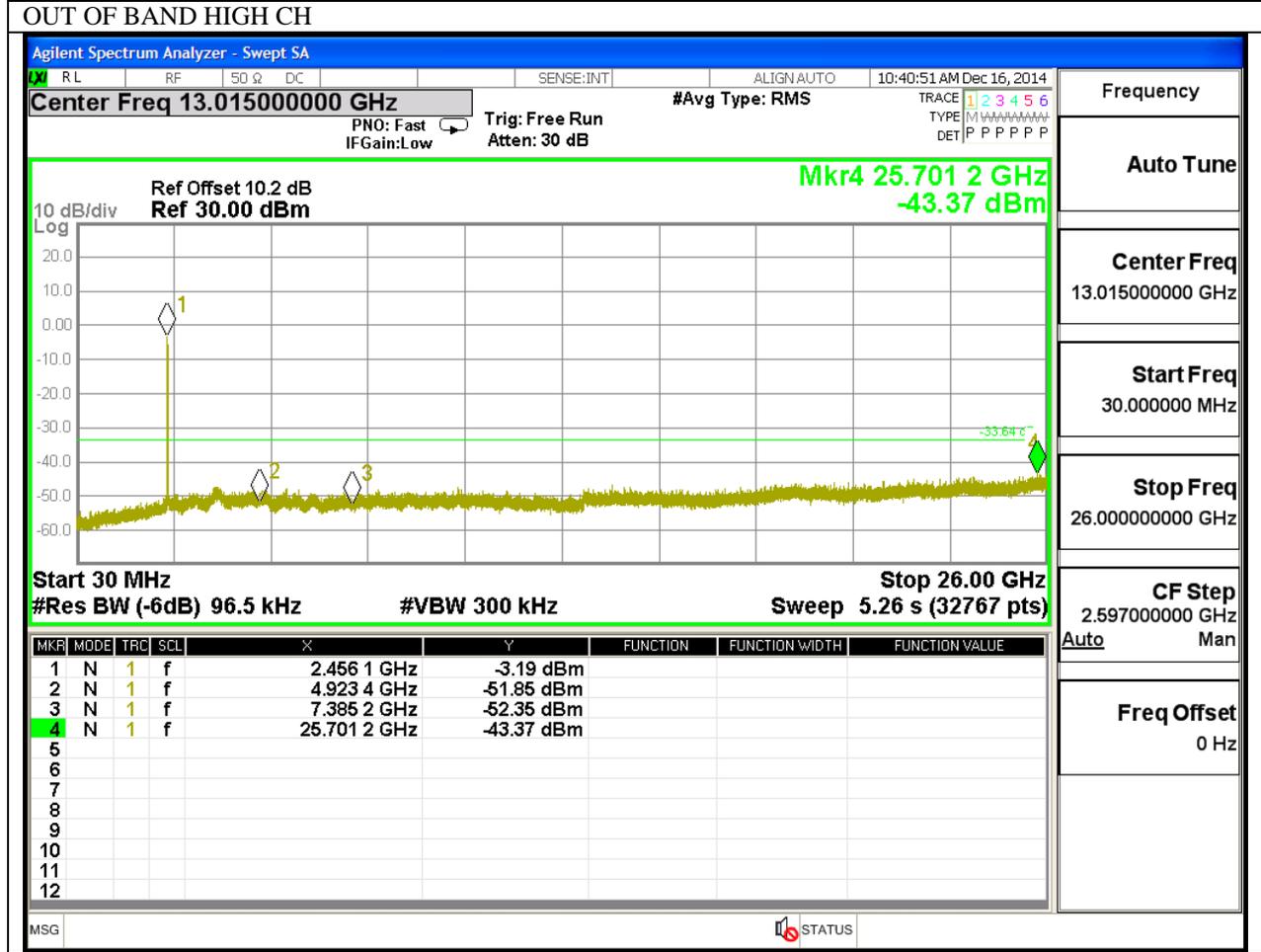
HIGH CHANNEL BANDEDGE



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 = 0dB (duty cycle >98%); G mode = 0.22dB; N mode = 0.23dB.

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.

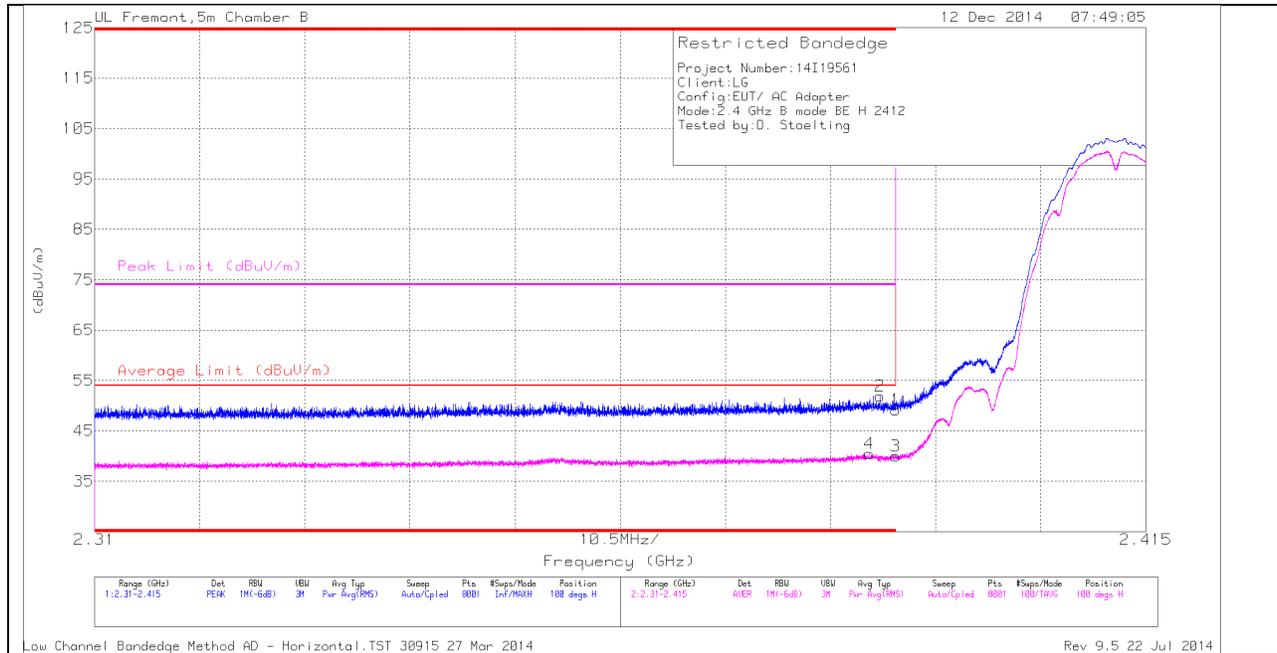
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

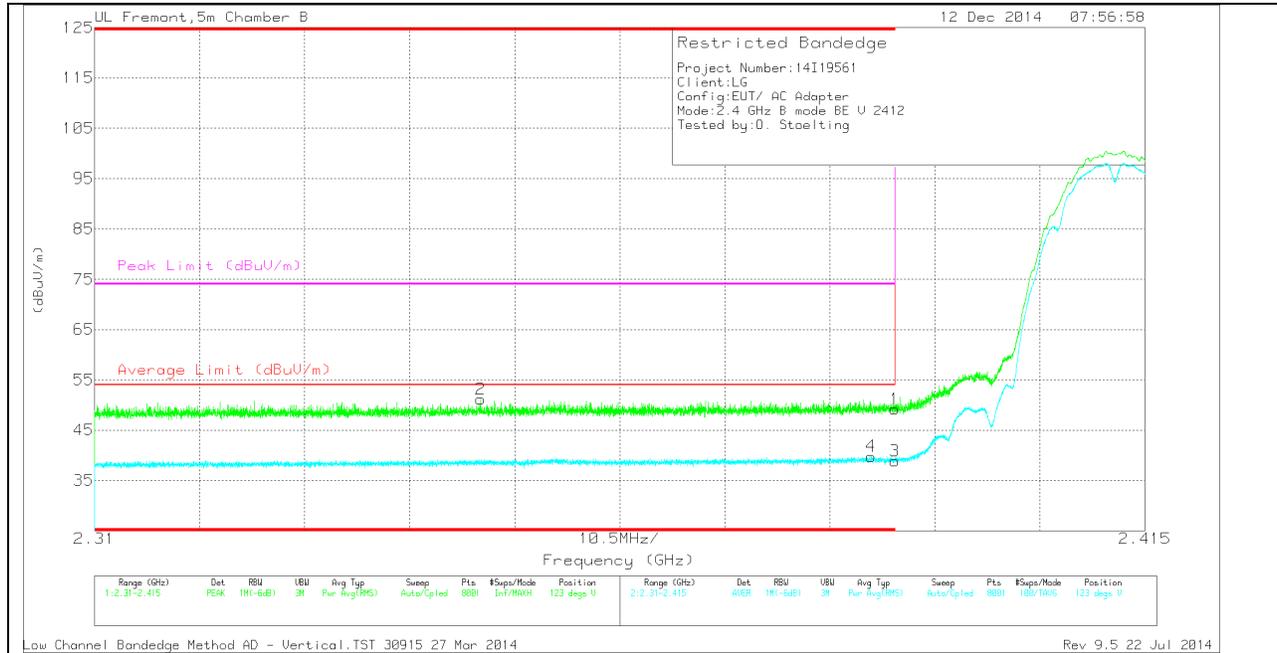
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 2.387	31.11	RMS	32.1	-22.7	40.51	54	-13.49	-	-	100	343	H
2	* 2.388	42.48	PK	32.1	-22.7	51.88	-	-	74	-22.12	100	343	H
1	* 2.39	39.72	PK	32.1	-22.7	49.12	-	-	74	-24.88	100	343	H
3	* 2.39	30.54	RMS	32.1	-22.7	39.94	54	-14.06	-	-	100	343	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Ftr/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	* 2.349	42.01	PK	31.9	-22.8	51.11	-	-	74	-22.89	123	349	V
4	* 2.388	30.4	RMS	32.1	-22.7	39.8	54	-14.2	-	-	123	349	V
1	* 2.39	39.72	PK	32.1	-22.7	49.12	-	-	74	-24.88	123	349	V
3	* 2.39	29.48	RMS	32.1	-22.7	38.88	54	-15.12	-	-	123	349	V

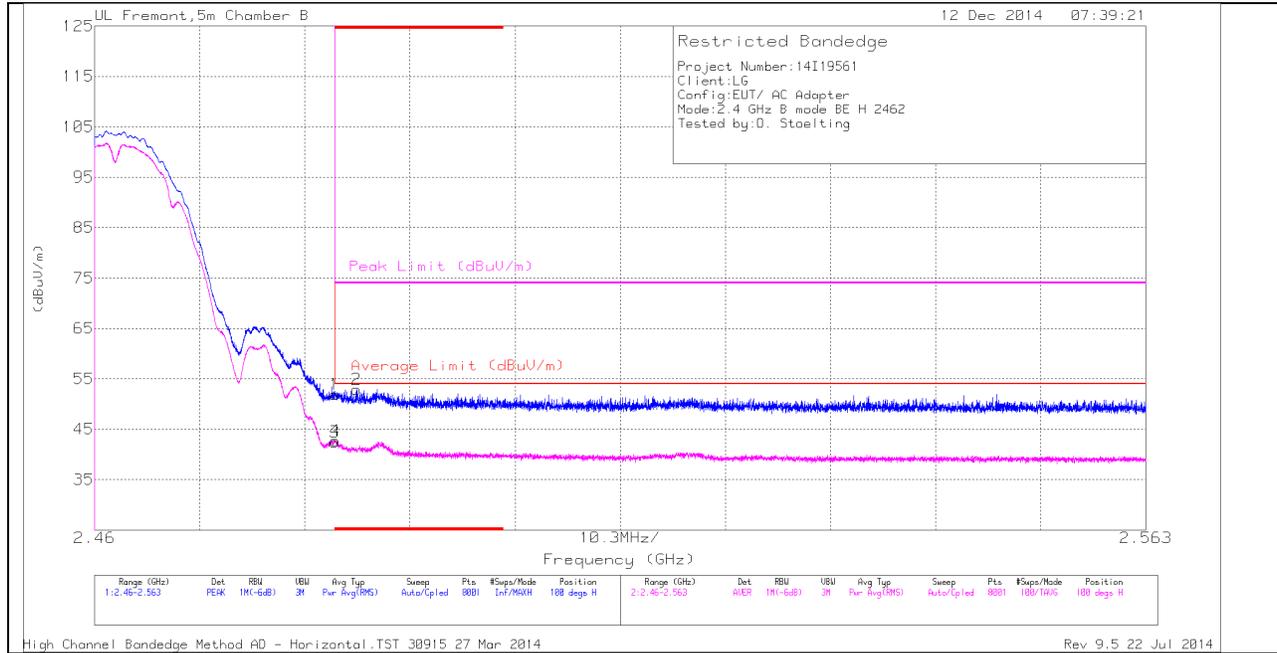
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

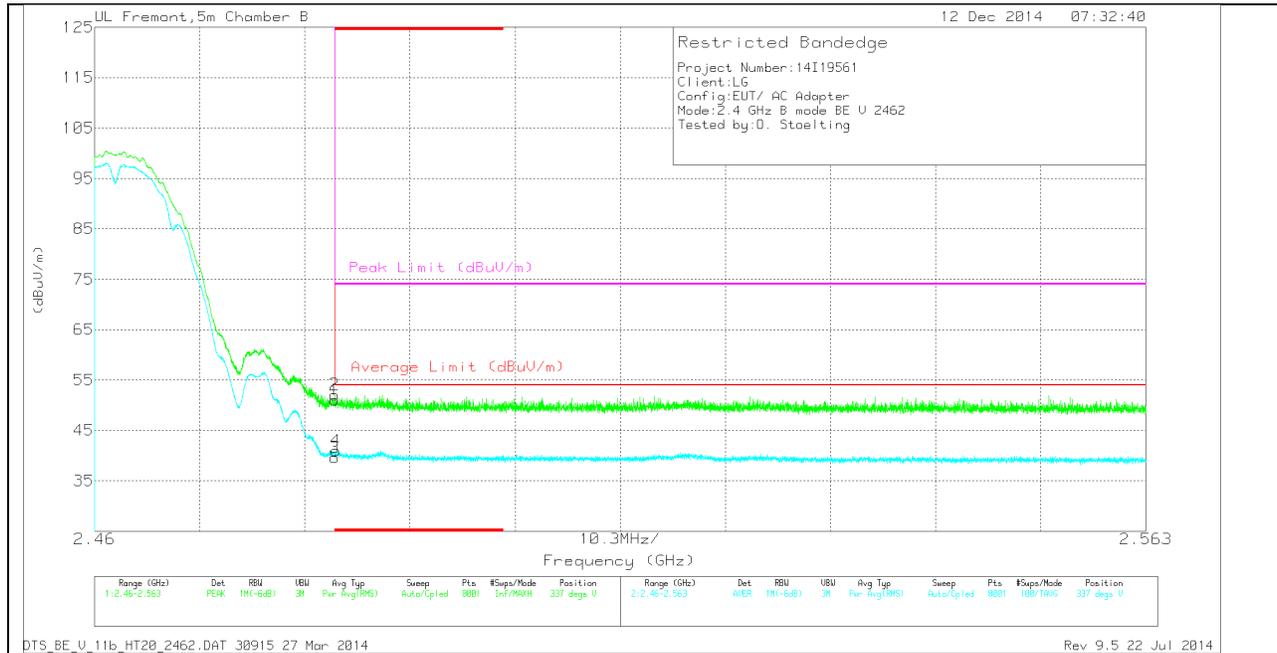
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	42.12	PK	32.4	-22.6	51.92	-	-	74	-22.08	100	329	H
3	* 2.484	32.69	RMS	32.4	-22.6	42.49	54	-11.51	-	-	100	329	H
4	* 2.484	32.92	RMS	32.4	-22.6	42.72	54	-11.28	-	-	100	329	H
2	* 2.486	43.08	PK	32.4	-22.6	52.88	-	-	74	-21.12	100	329	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Ftr/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	41.28	PK	32.4	-22.6	51.08	-	-	74	-22.92	337	323	V
2	* 2.484	42.29	PK	32.4	-22.6	52.09	-	-	74	-21.91	337	323	V
3	* 2.484	29.85	RMS	32.4	-22.6	39.65	54	-14.35	-	-	337	323	V
4	* 2.484	31.16	RMS	32.4	-22.6	40.96	54	-13.04	-	-	337	323	V

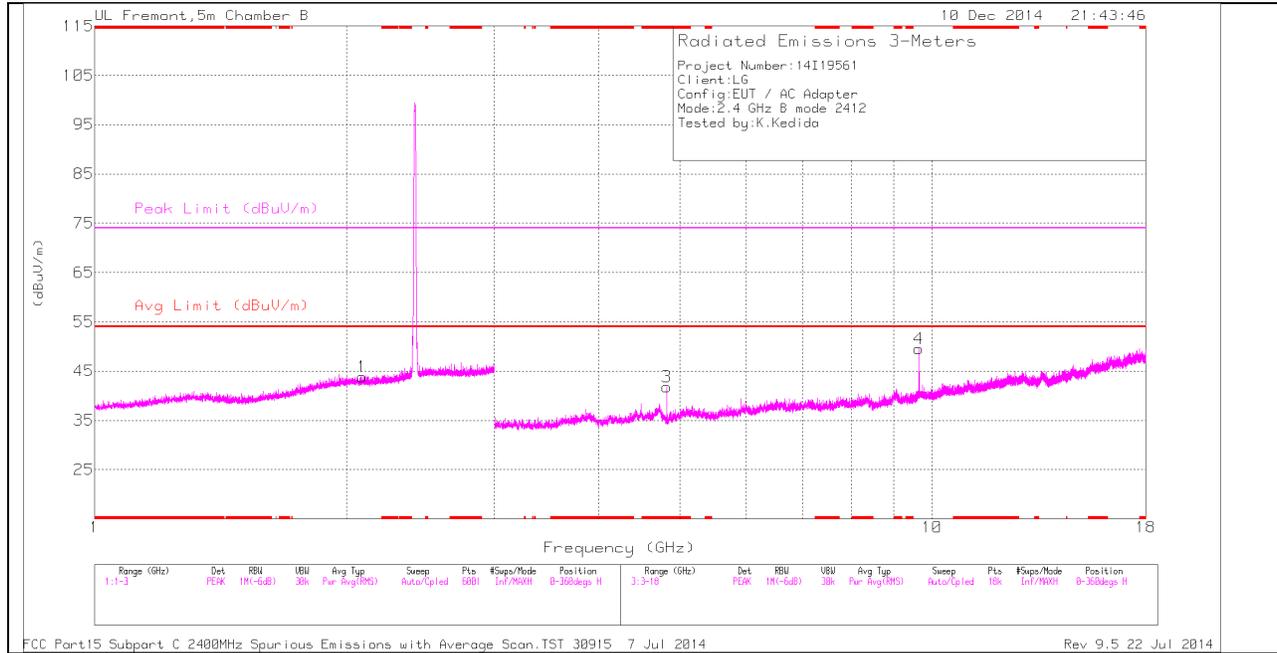
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

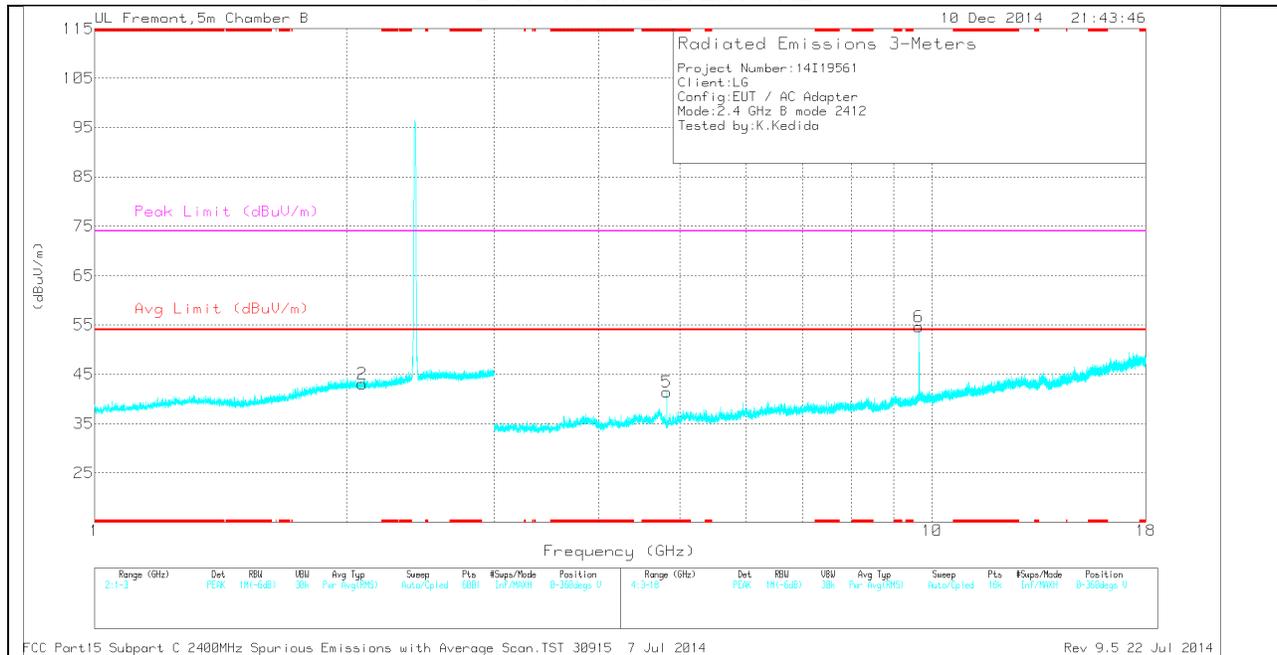
HARMONICS AND SPURIOUS EMISSIONS

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 T345 (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
3	* 4.824	37.6	PK	34.2	-30	41.8	-	-	74	-32.2	0-360	200	H
5	* 4.824	37.19	PK	34.2	-30	41.39	-	-	74	-32.61	0-360	100	V
1	2.086	35.67	PK	31.3	-23.1	43.87	-	-	-	-	0-360	199	H
2	2.088	34.86	PK	31.3	-23.1	43.06	-	-	-	-	0-360	101	V
4	9.648	36.94	PK	36.8	-24.2	49.54	-	-	-	-	0-360	200	H
6	9.648	42.07	PK	36.8	-24.2	54.67	-	-	-	-	0-360	200	V

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

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
* 4.824	42.96	PK2	34.2	-30	47.16	-	-	74	-26.84	178	107	V
* 4.824	35.07	MAV1	34.2	-30	39.27	54	-14.73	-	-	178	107	V

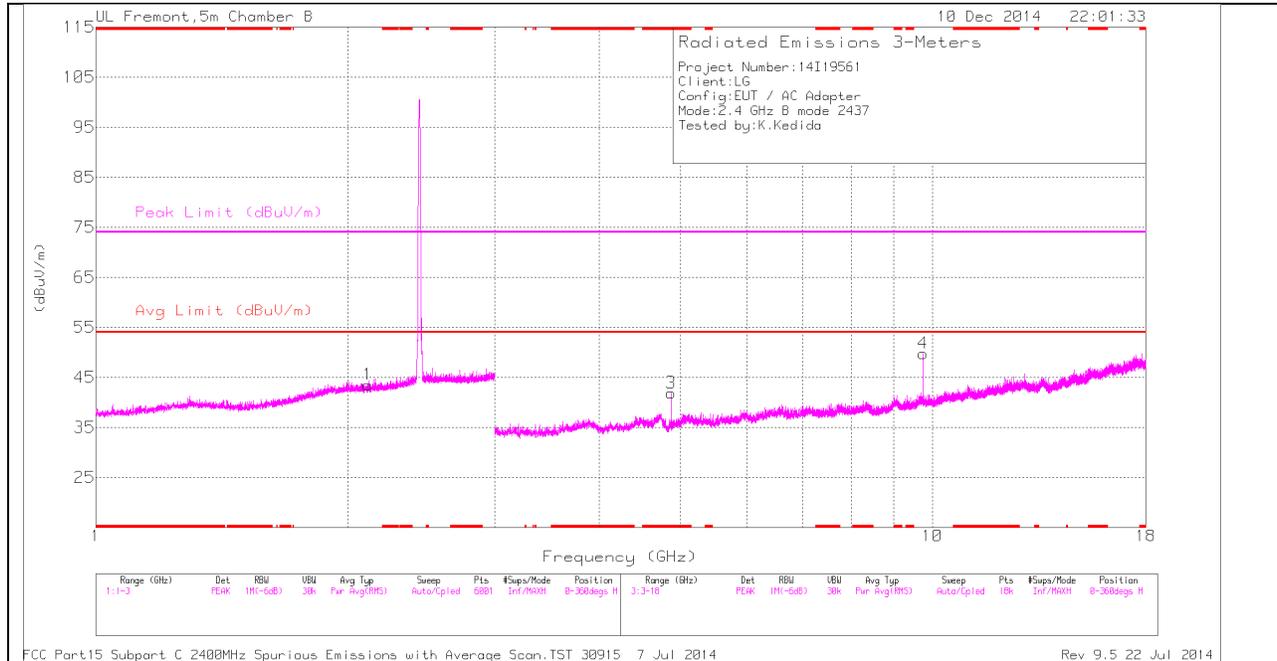
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAV1 - KDB558074 Option 1 Maximum RMS Average

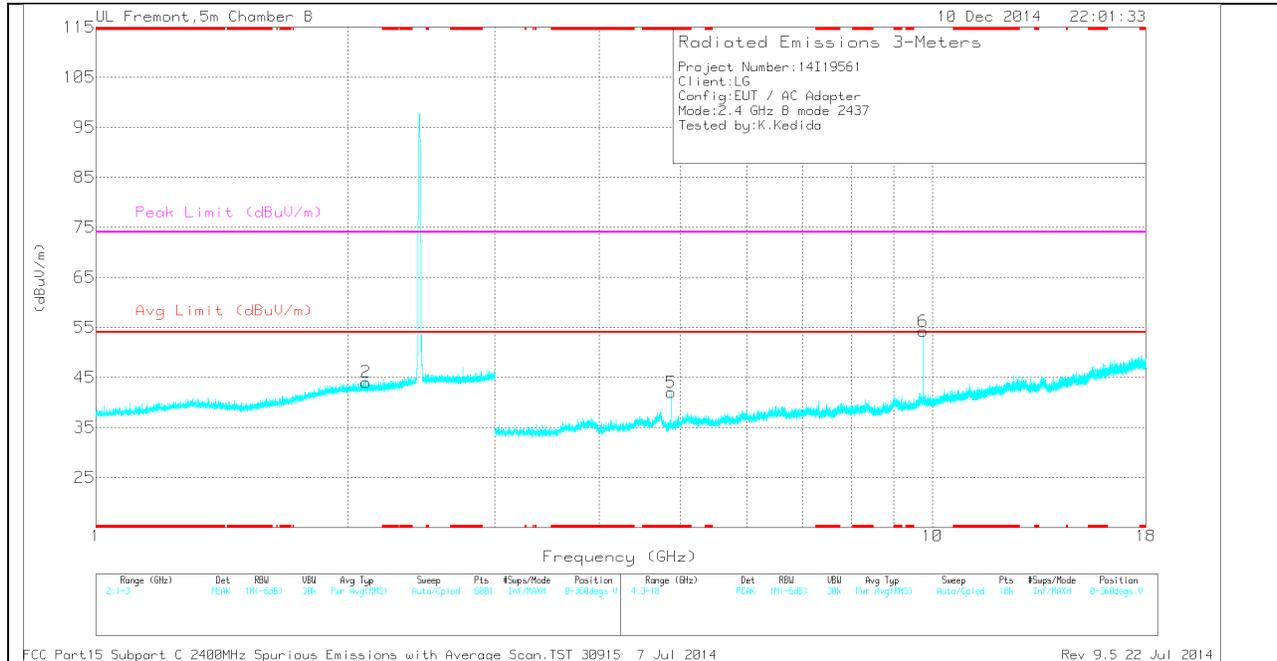
FCC Part15 Subpart C T186 2400MHz Spurious Emissions.TST 12746Rev 9.5 12 Jun 2013

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 T345 (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
3	* 4.874	38.26	PK	34.2	-30.6	41.86	-	-	74	-32.14	0-360	200	H
5	* 4.874	38.36	PK	34.2	-30.6	41.96	-	-	74	-32.04	0-360	101	V
2	2.105	35.93	PK	31.2	-23.1	44.03	-	-	-	-	0-360	199	V
1	2.115	35.33	PK	31.3	-23.1	43.53	-	-	-	-	0-360	199	H
4	9.748	37.08	PK	36.9	-24.2	49.78	-	-	-	-	0-360	200	H
6	9.748	41.53	PK	36.9	-24.2	54.23	-	-	-	-	0-360	101	V

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

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
* 4.874	42.95	PK2	34.2	-30.6	46.55	-	-	74	-27.45	182	150	V
* 4.874	36.75	MAV1	34.2	-30.6	40.35	54	-13.65	-	-	182	150	V

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

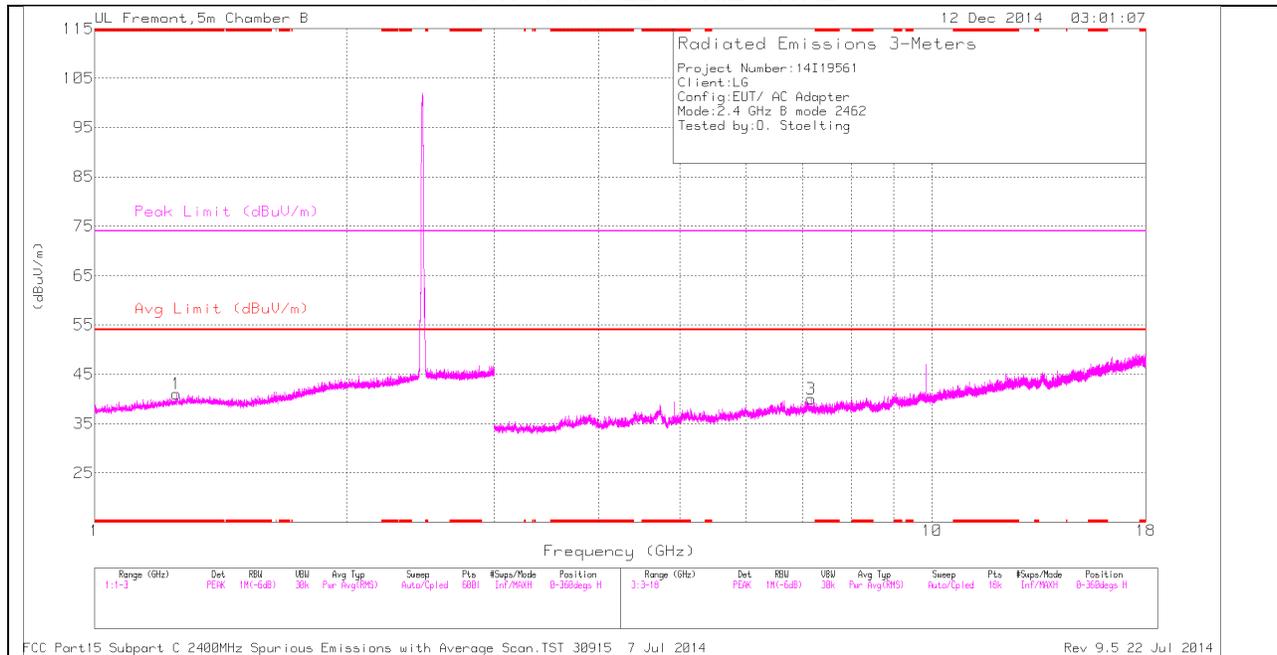
RMS - RMS detection

PK2 - KDB558074 Method: Maximum Peak

MAV1 - KDB558074 Option 1 Maximum RMS Average

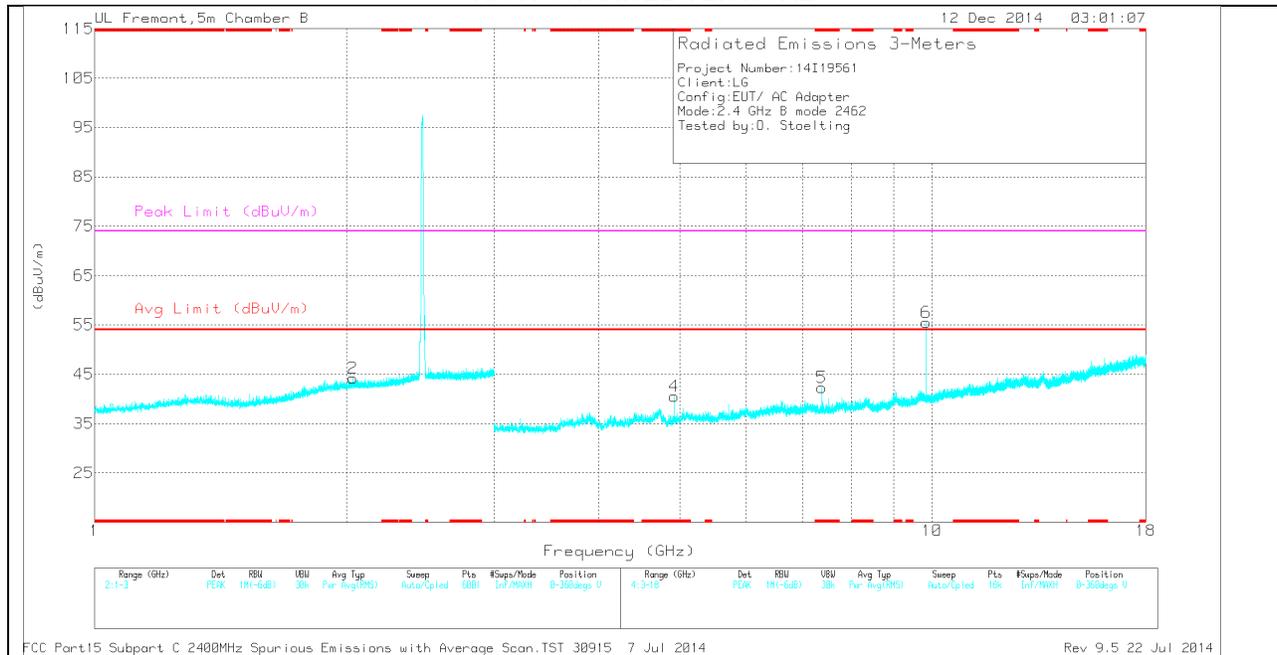
FCC Part15 Subpart C T186 2400MHz Spurious Emissions.TST 12746Rev 9.5 12 Jun 2013

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 T345 (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	* 1.252	36.89	PK	28.5	-24.4	40.99	-	-	74	-33.01	0-360	199	H
4	* 4.924	37.21	PK	34.2	-30.9	40.51	-	-	74	-33.49	0-360	101	V
5	* 7.385	34.51	PK	35.6	-27.8	42.31	-	-	74	-31.69	0-360	199	V
2	2.033	36.22	PK	31.3	-23.3	44.22	-	-	-	-	0-360	199	V
3	7.177	31.65	PK	35.6	-27.2	40.05	-	-	-	-	0-360	101	H
6	9.848	43.06	PK	37	-24.5	55.56	-	-	-	-	0-360	199	V

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

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
* 4.924	43.11	PK2	34.2	-30.9	46.41	-	-	74	-27.59	48	105	V
* 4.924	35.64	MAV1	34.2	-30.9	38.94	54	-15.06	-	-	48	105	V
* 7.385	41.9	PK2	35.6	-27.8	49.7	-	-	74	-24.3	155	214	V
* 7.385	33.17	MAV1	35.6	-27.8	40.97	54	-13.03	-	-	155	214	V

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

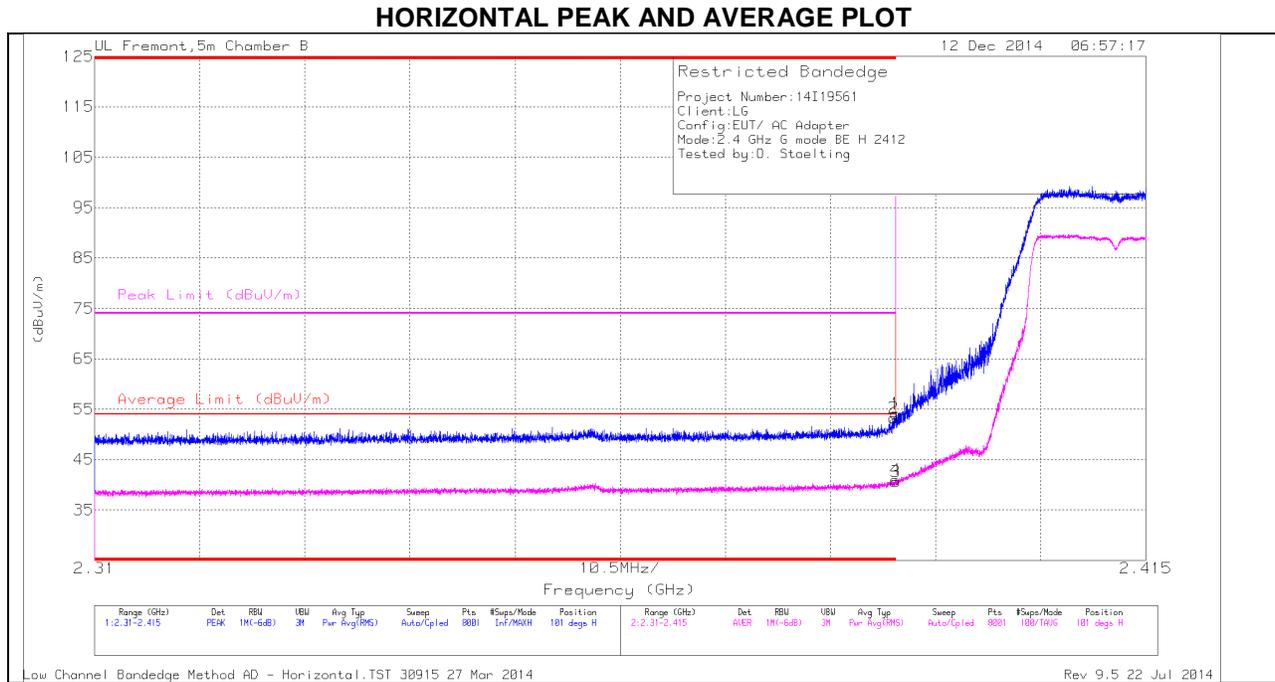
PK2 - KDB558074 Method: Maximum Peak

MAV1 - KDB558074 Option 1 Maximum RMS Average

FCC Part15 Subpart C T186 2400MHz Spurious Emissions.TST 12746Rev 9.5 12 Jun 2013

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

RESTRICTED BANDEDGE (LOW CHANNEL)



HORIZONTAL DATA

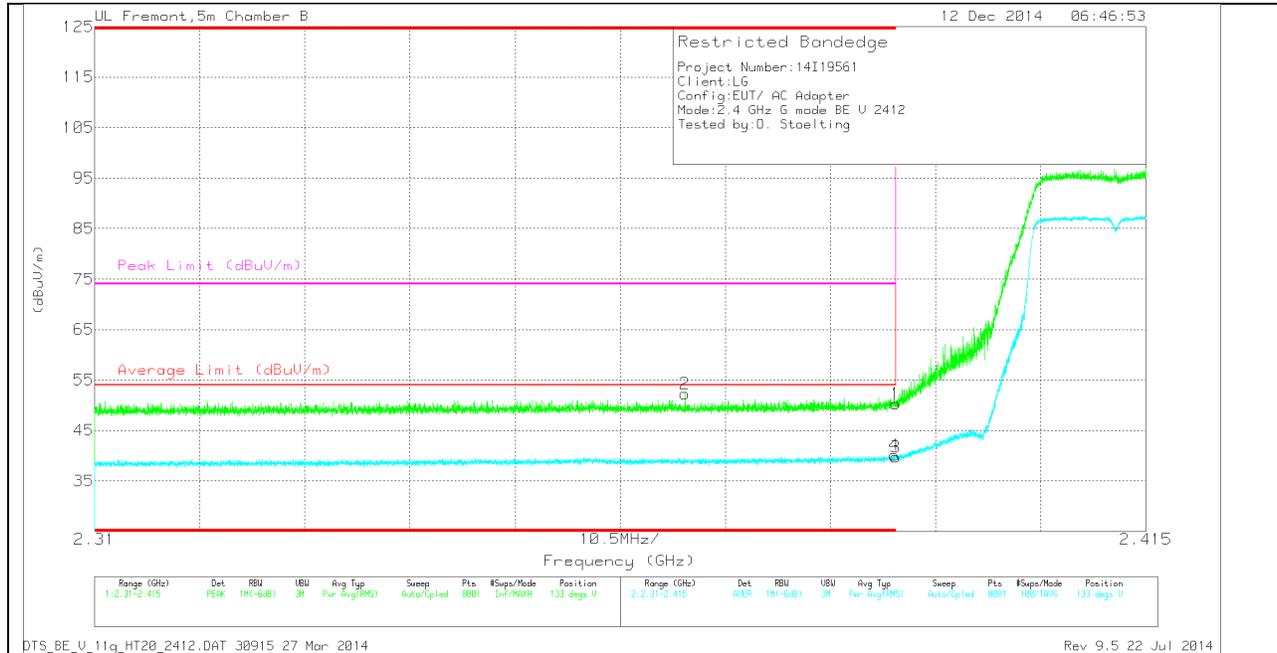
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fitter/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	44.71	PK	32.1	-22.7	0	54.11	-	-	74	-19.89	101	344	H
2	* 2.39	43.86	PK	32.1	-22.7	0	53.26	-	-	74	-20.74	101	344	H
3	* 2.39	30.98	RMS	32.1	-22.7	.22	40.6	54	-13.4	-	-	101	344	H
4	* 2.39	31.33	RMS	32.1	-22.7	.22	40.95	54	-13.05	-	-	101	344	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
2	* 2.369	43.05	PK	32	-22.8	0	52.25	-	-	74	-21.75	133	349	V
1	* 2.39	40.9	PK	32.1	-22.7	0	50.3	-	-	74	-23.7	133	349	V
3	* 2.39	30.08	RMS	32.1	-22.7	.22	39.7	54	-14.3	-	-	133	349	V
4	* 2.39	30.48	RMS	32.1	-22.7	.22	40.1	54	-13.9	-	-	133	349	V

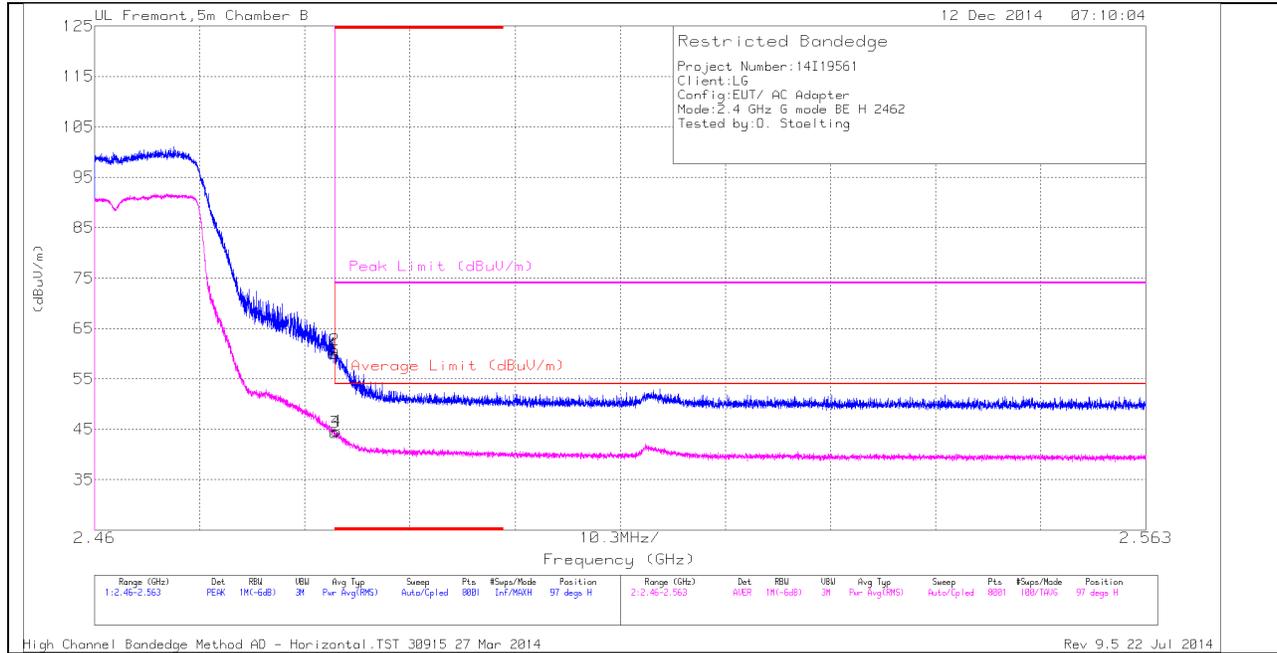
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

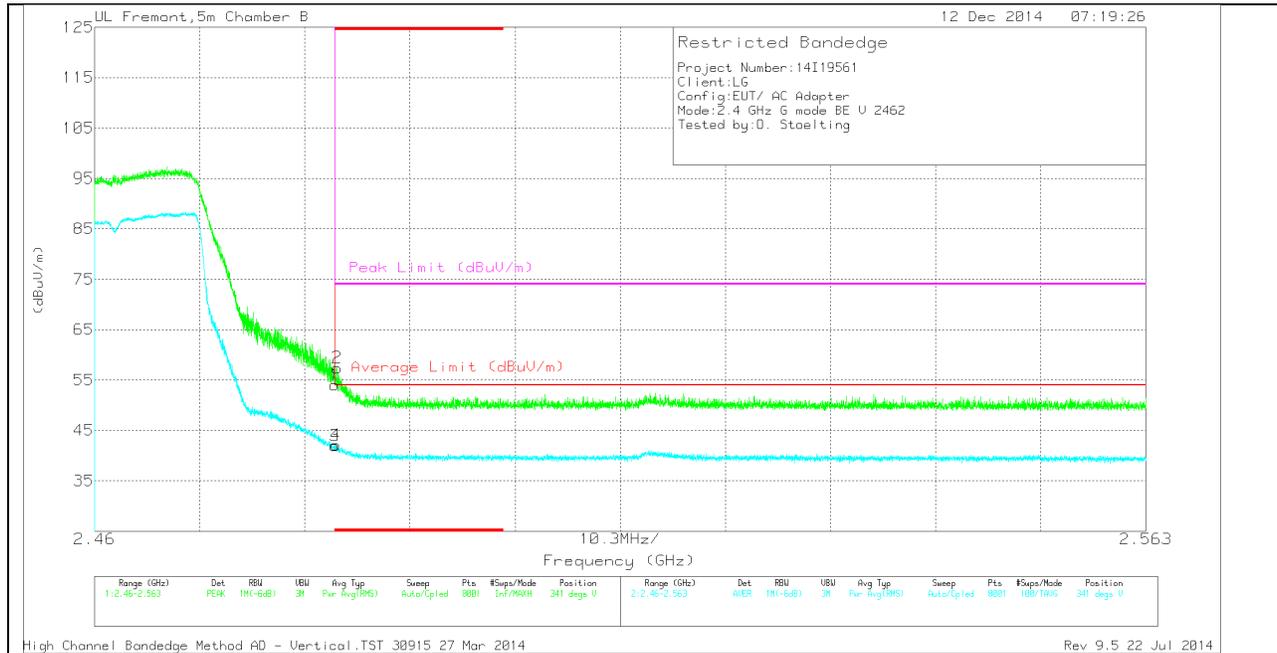
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cb/Fitter/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	50.15	PK	32.4	-22.6	0	59.95	-	-	74	-14.05	97	263	H
2	* 2.484	50.87	PK	32.4	-22.6	0	60.67	-	-	74	-13.33	97	263	H
3	* 2.484	34.31	RMS	32.4	-22.6	.22	44.33	54	-9.67	-	-	97	263	H
4	* 2.484	34.56	RMS	32.4	-22.6	.22	44.58	54	-9.42	-	-	97	263	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	* 2.484	44.26	PK	32.4	-22.6	0	54.06	-	-	74	-19.94	341	329	V
2	* 2.484	47.63	PK	32.4	-22.6	0	57.43	-	-	74	-16.57	341	329	V
3	* 2.484	31.97	RMS	32.4	-22.6	.22	41.99	54	-12.01	-	-	341	329	V
4	* 2.484	32.09	RMS	32.4	-22.6	.22	42.11	54	-11.89	-	-	341	329	V

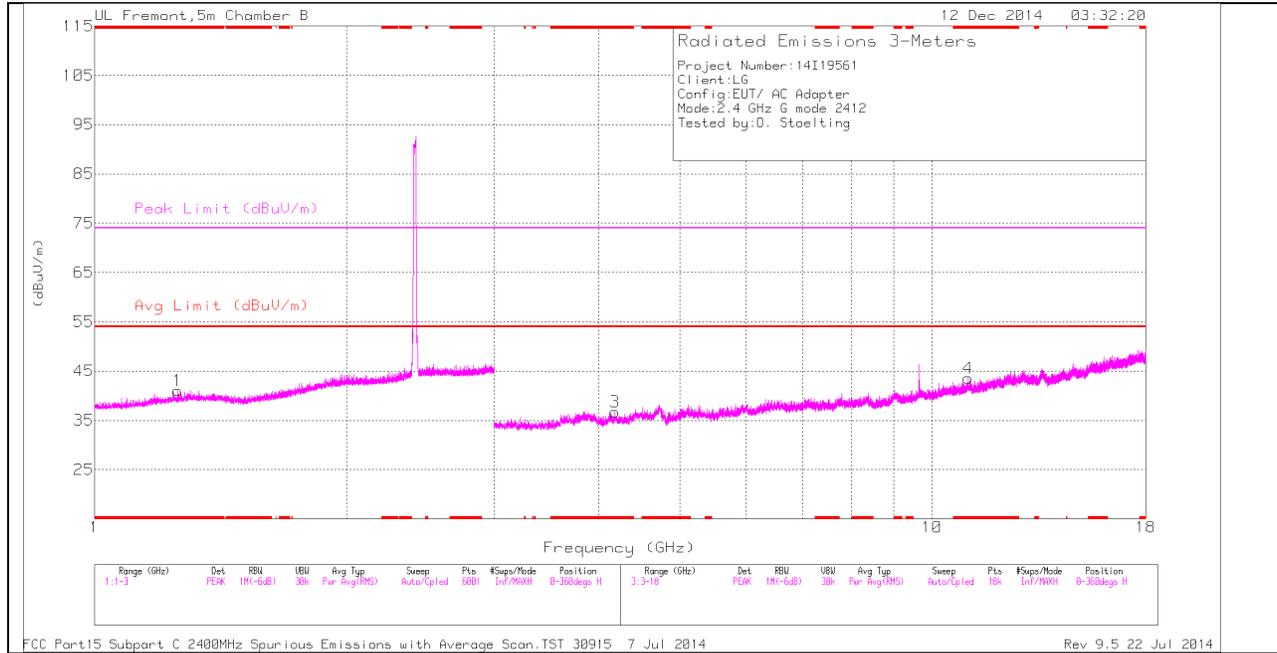
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

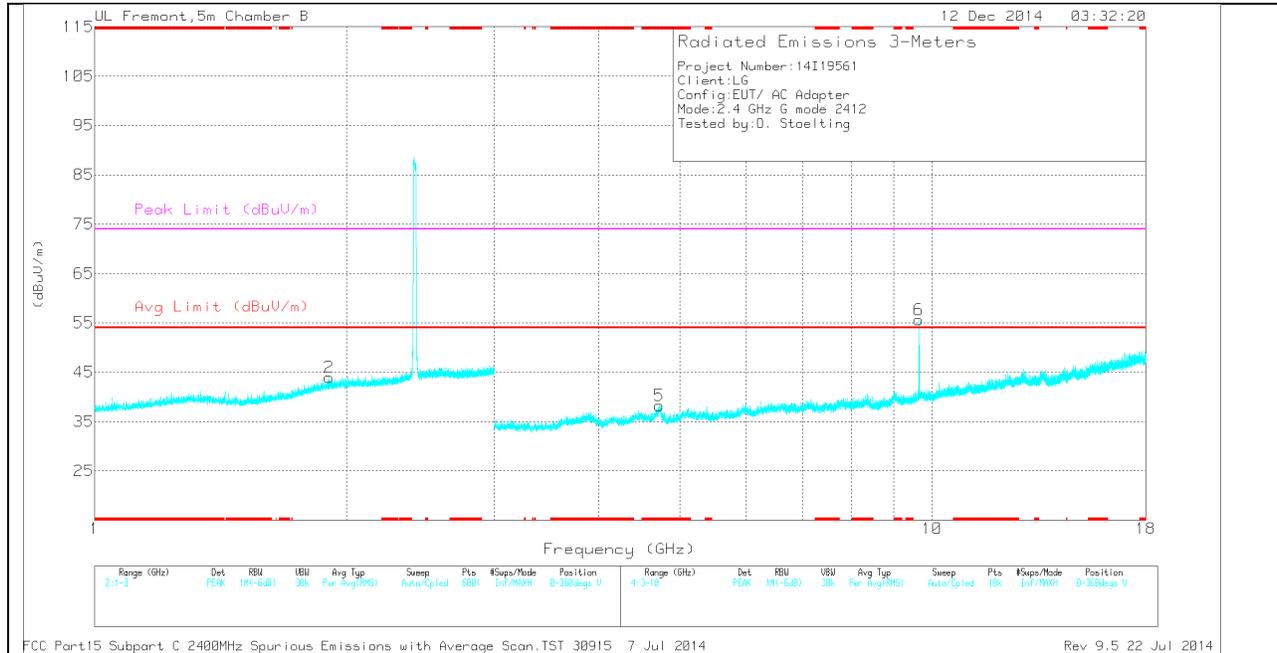
HARMONICS AND SPURIOUS EMISSIONS

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 T345 (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	* 1.257	36.88	PK	28.6	-24.4	0	41.08	-	-	74	-32.92	0-360	199	H
3	* 4.177	33.33	PK	33.6	-30.2	0	36.73	-	-	74	-37.27	0-360	200	H
4	* 11.045	28.46	PK	37.8	-22.7	0	43.56	-	-	74	-30.44	0-360	101	H
5	* 4.723	33.36	PK	34.2	-29.3	0	38.26	-	-	74	-35.74	0-360	101	V
2	1.904	36.27	PK	31.1	-23.4	0	43.97	-	-	-	-	0-360	199	V
6	9.648	43.07	PK	36.8	-24.2	0	55.67	-	-	-	-	0-360	101	V

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

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
* 4.725	41.45	PK2	34.2	-29.3	0	46.35	-	-	74	-27.65	289	115	V
* 4.723	29.73	MAv1	34.2	-29.3	.22	34.85	54	-19.15	-	-	289	115	V

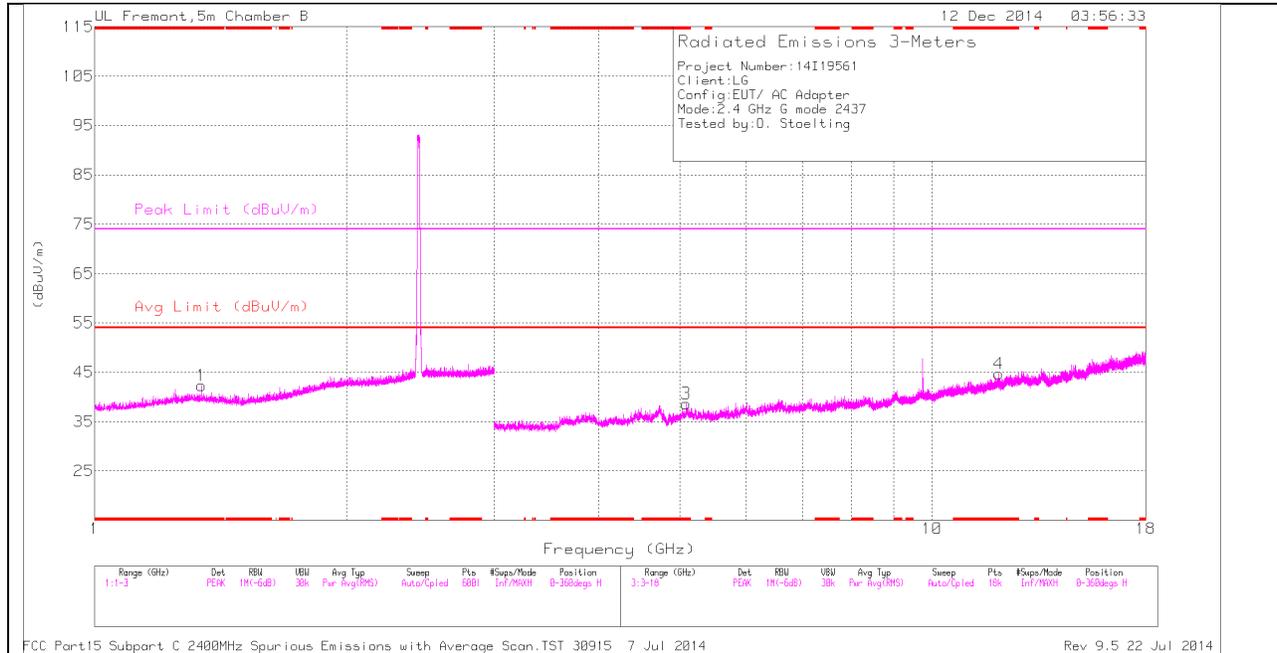
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

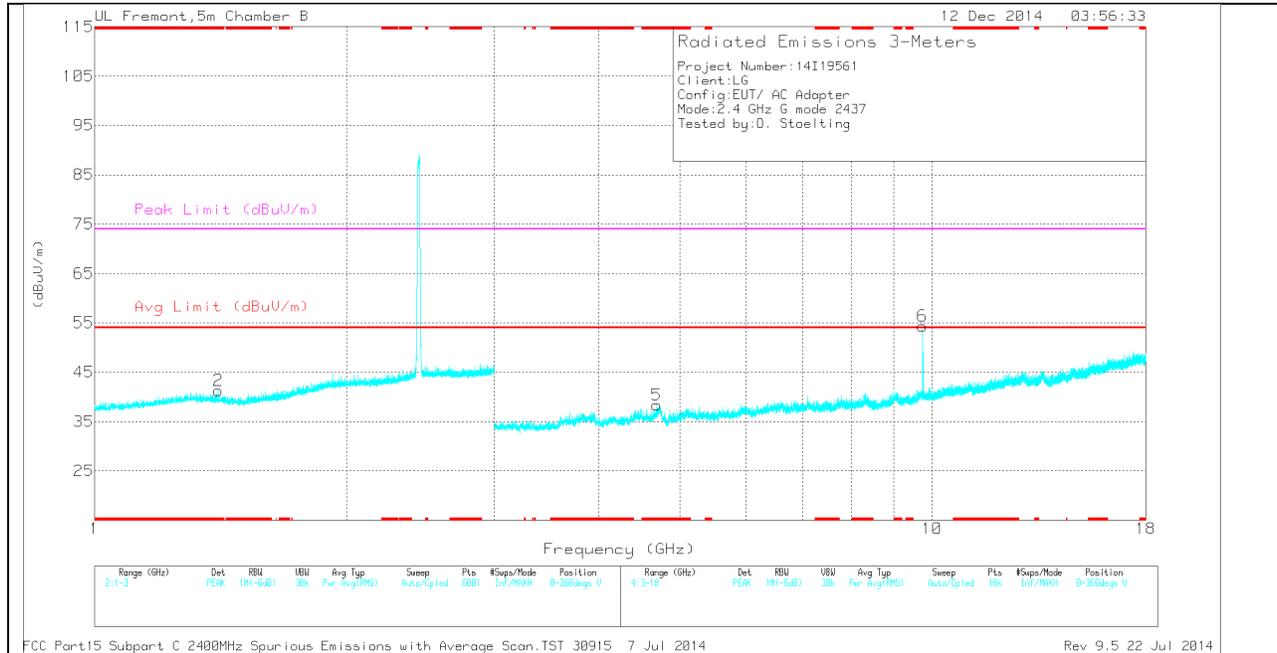
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MID CHANNEL HORIZONTAL



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 T345 (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	* 1.341	37.9	PK	28.7	-24.3	0	42.3	-	-	74	-31.7	0-360	199	H
2	* 1.405	36.96	PK	28.5	-24.2	0	41.26	-	-	74	-32.74	0-360	101	V
3	* 5.083	33.38	PK	34.2	-28.9	0	38.68	-	-	74	-35.32	0-360	199	H
4	* 12.004	28.09	PK	38.7	-22.1	0	44.69	-	-	74	-29.31	0-360	101	H
5	* 4.69	34.23	PK	34.2	-30.1	0	38.33	-	-	74	-35.67	0-360	199	V
6	9.748	41.65	PK	36.9	-24.2	0	54.35	-	-	-	-	0-360	101	V

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

PK - Peak detector

RADIATED EMISSIONS

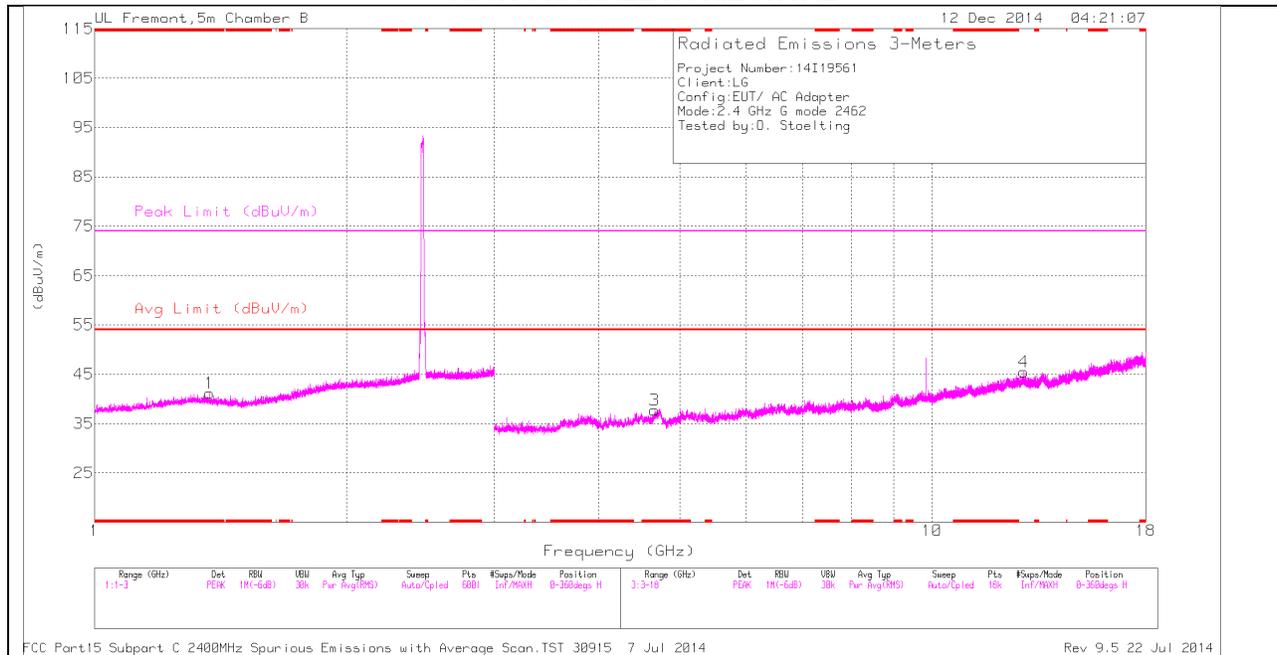
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 5.081	40.01	PK2	34.2	-28.9	0	45.31	-	-	74	-28.69	322	188	H
* 5.085	28.49	MAv1	34.2	-28.9	.22	34.01	54	-19.99	-	-	322	188	H

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

PK2 - KDB558074 Method: Maximum Peak

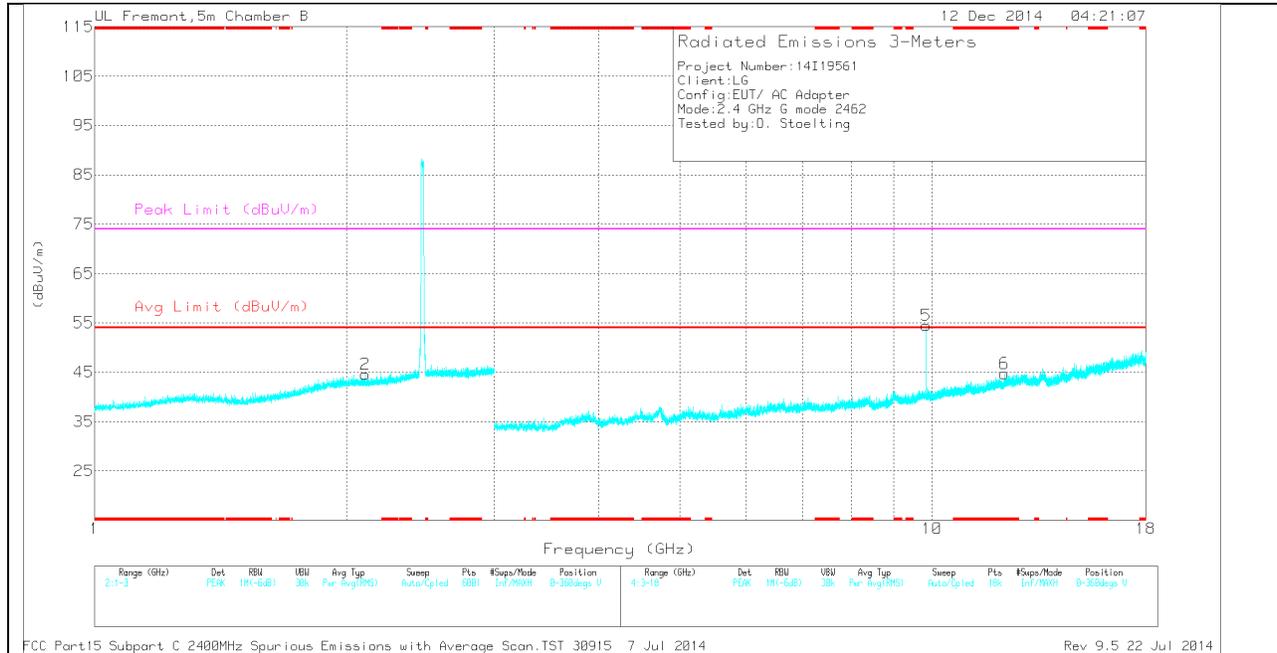
MAv1 - KDB558074 Option 1 Maximum RMS Average

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 T345 (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	* 1.372	36.81	PK	28.6	-24.3	0	41.11	-	-	74	-32.89	0-360	200	H
3	* 4.662	33.97	PK	34.2	-30.4	0	37.77	-	-	74	-36.23	0-360	200	H
6	* 12.195	28.3	PK	38.9	-22.5	0	44.7	-	-	74	-29.3	0-360	101	V
2	2.104	36.49	PK	31.2	-23.1	0	44.59	-	-	-	-	0-360	102	V
5	9.847	42.02	PK	37	-24.5	0	54.52	-	-	-	-	0-360	101	V
4	12.868	27.33	PK	39.2	-21.1	0	45.43	-	-	-	-	0-360	102	H

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

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
* 12.195	34.88	PK2	38.9	-22.5	0	51.28	-	-	74	-22.72	341	165	V
* 12.194	23.2	MAv1	38.9	-22.5	.22	39.82	54	-14.18	-	-	341	165	V

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

PK2 - KDB558074 Method: Maximum Peak

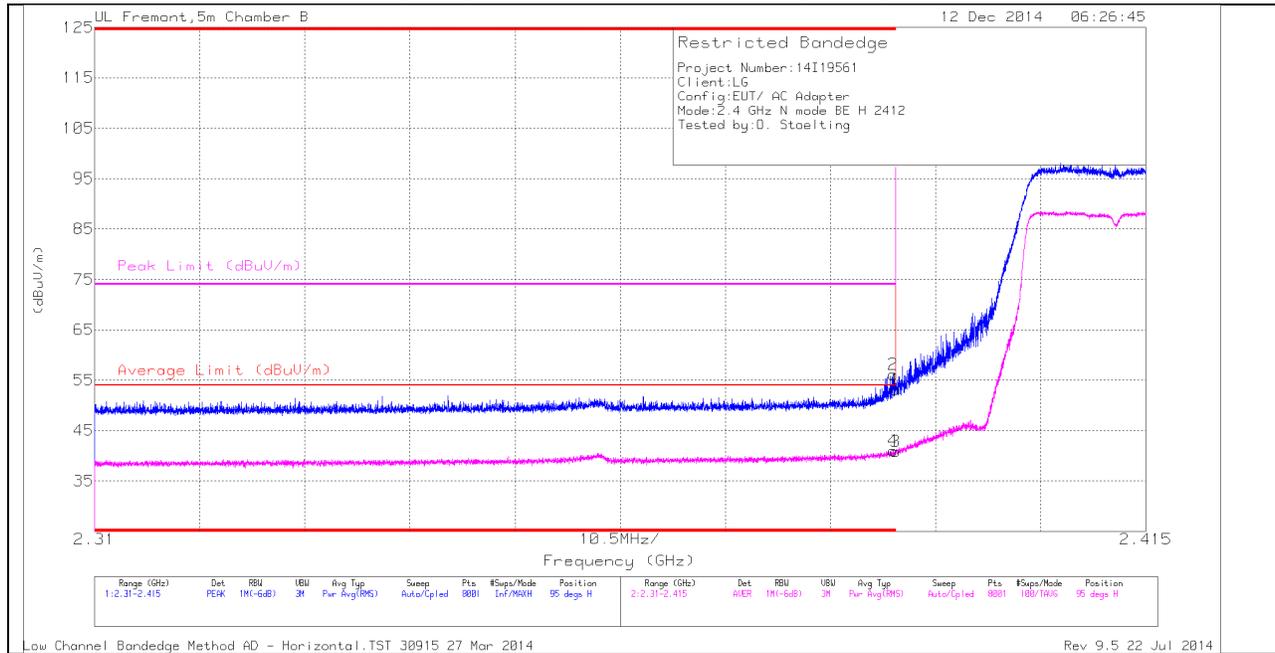
MAv1 - KDB558074 Option 1 Maximum RMS Average

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

RESTRICTED BANDEGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

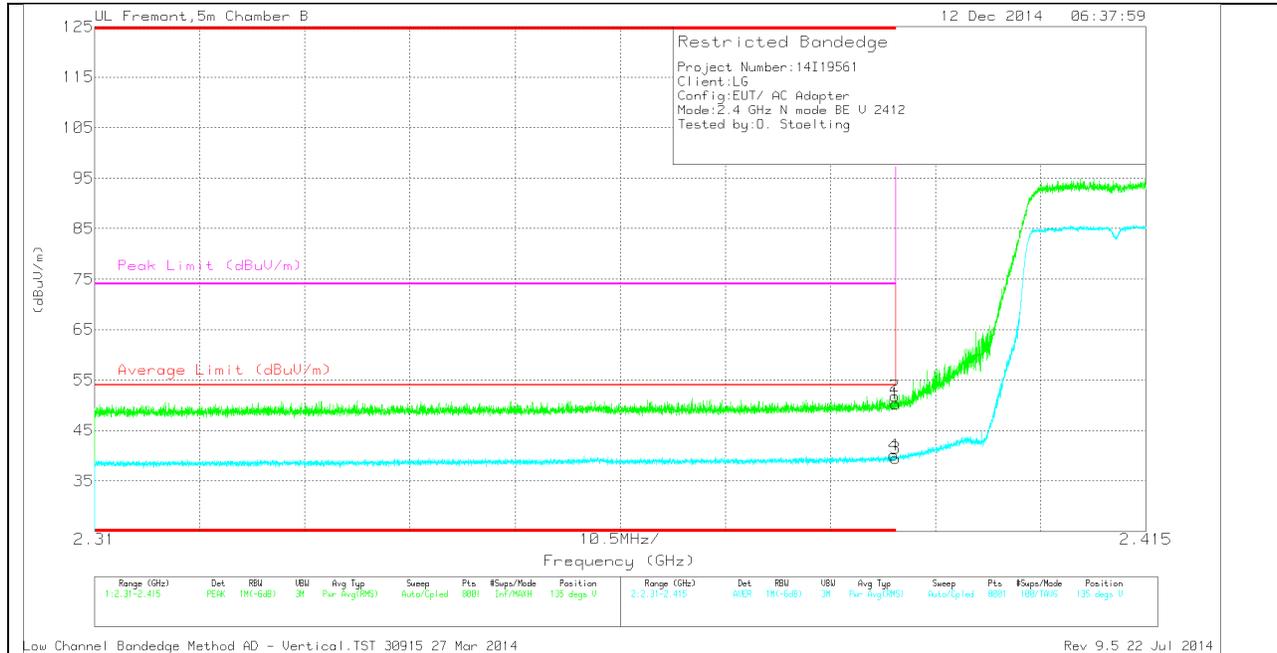
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fitter/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	43.73	PK	32.1	-22.7	0	53.13	-	-	74	-20.87	95	349	H
2	* 2.39	46.74	PK	32.1	-22.7	0	56.14	-	-	74	-17.86	95	349	H
3	* 2.39	31.2	RMS	32.1	-22.7	.23	40.83	54	-13.17	-	-	95	349	H
4	* 2.39	31.37	RMS	32.1	-22.7	.23	41	54	-13	-	-	95	349	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	* 2.39	40.93	PK	32.1	-22.7	0	50.33	-	-	74	-23.67	135	355	V
2	* 2.39	42.42	PK	32.1	-22.7	0	51.82	-	-	74	-22.18	135	355	V
3	* 2.39	29.89	RMS	32.1	-22.7	.23	39.52	54	-14.48	-	-	135	355	V
4	* 2.39	30.46	RMS	32.1	-22.7	.23	40.09	54	-13.91	-	-	135	355	V

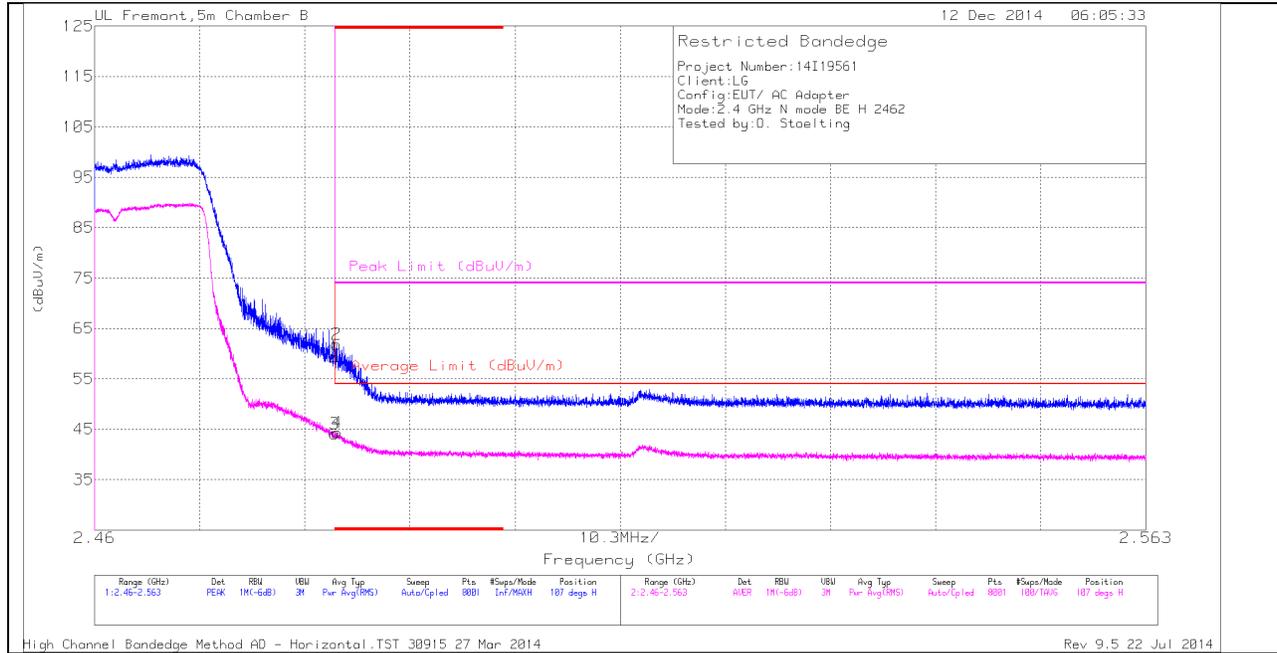
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

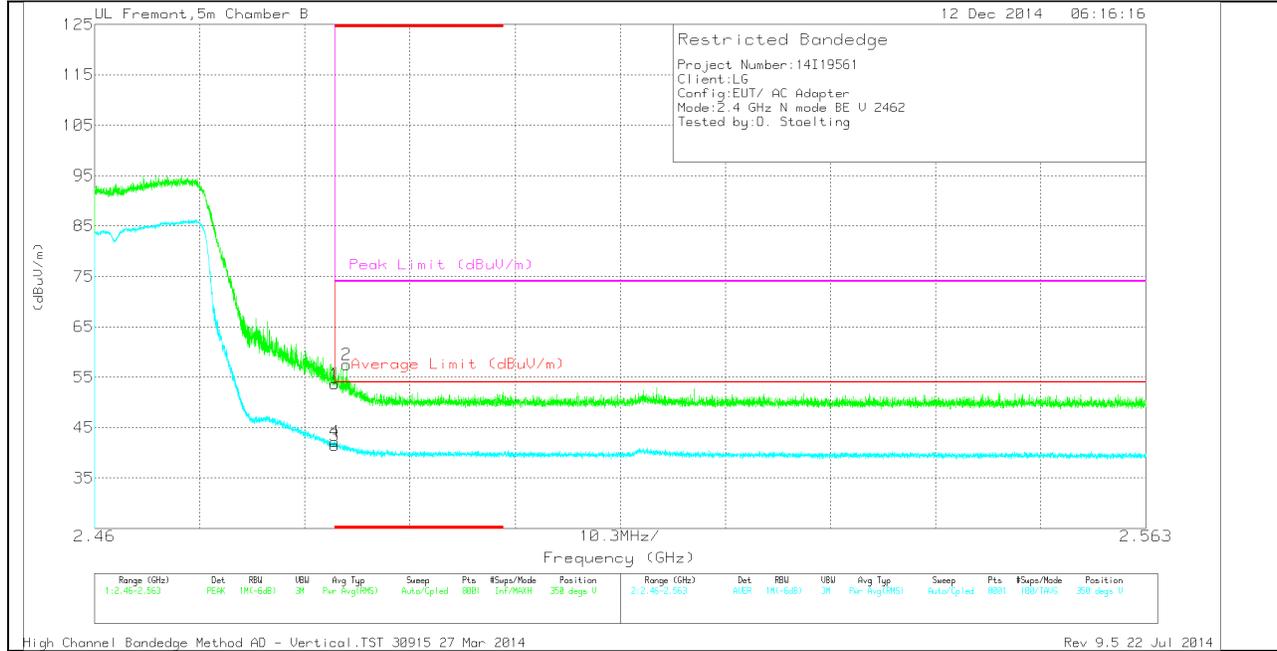
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cb/Fitter/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	49.54	PK	32.4	-22.6	0	59.34	-	-	74	-14.66	107	102	H
2	* 2.484	52.02	PK	32.4	-22.6	0	61.82	-	-	74	-12.18	107	102	H
3	* 2.484	34.07	RMS	32.4	-22.6	.23	44.1	54	-9.9	-	-	107	102	H
4	* 2.484	34.31	RMS	32.4	-22.6	.23	44.34	54	-9.66	-	-	107	102	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	* 2.484	43.83	PK	32.4	-22.6	0	53.63	-	-	74	-20.37	350	270	V
3	* 2.484	31.47	RMS	32.4	-22.6	.23	41.5	54	-12.5	-	-	350	270	V
4	* 2.484	32.15	RMS	32.4	-22.6	.23	42.18	54	-11.82	-	-	350	270	V
2	* 2.485	47.72	PK	32.4	-22.6	0	57.52	-	-	74	-16.48	350	270	V

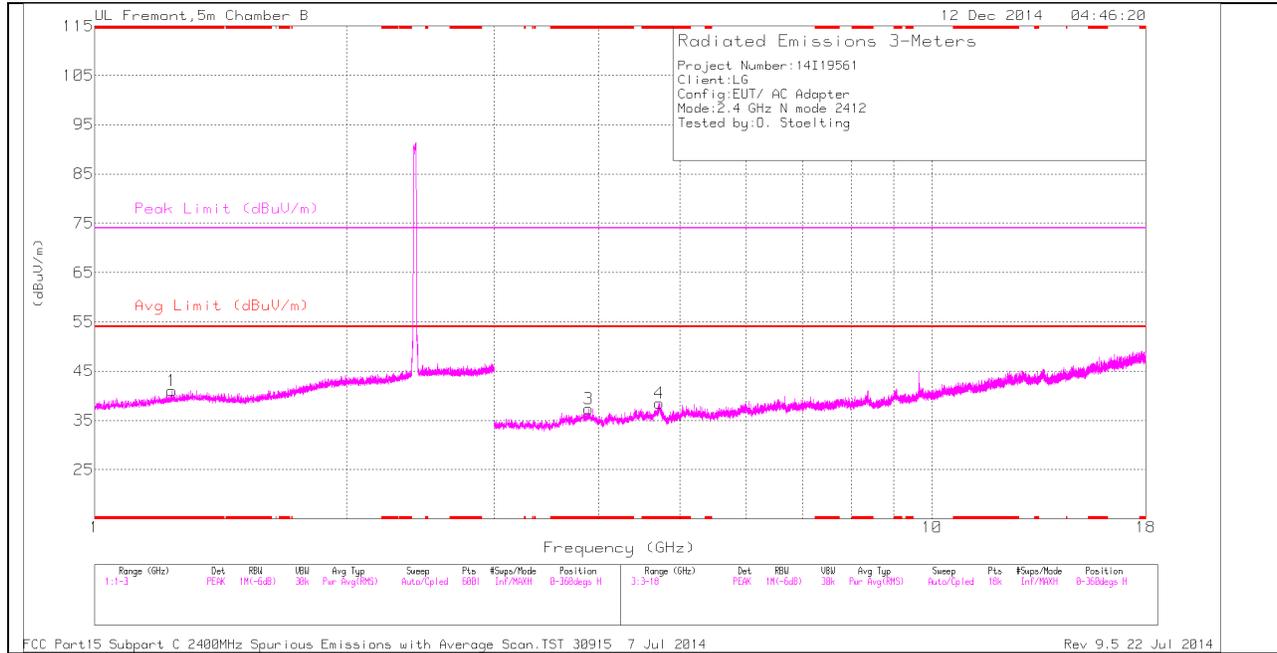
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

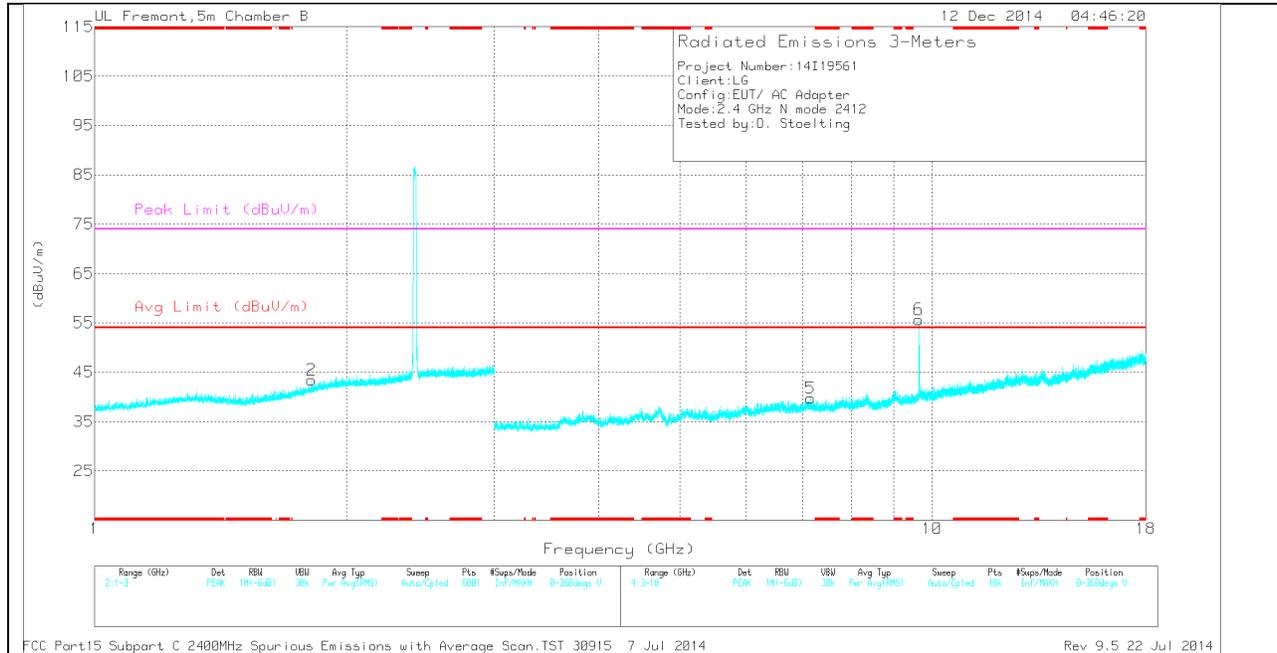
HARMONICS AND SPURIOUS EMISSIONS

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 T345 (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	* 1.236	37.08	PK	28.4	-24.4	0	41.08	-	-	74	-32.92	0-360	199	H
3	* 3.889	33.9	PK	33.8	-30.3	0	37.4	-	-	74	-36.6	0-360	101	H
4	* 4.719	33.7	PK	34.2	-29.4	0	38.5	-	-	74	-35.5	0-360	101	H
2	1.816	36.65	PK	30.3	-23.5	0	43.45	-	-	-	-	0-360	101	V
5	7.155	31.2	PK	35.6	-27	0	39.8	-	-	-	-	0-360	101	V
6	9.648	43.09	PK	36.8	-24.2	0	55.69	-	-	-	-	0-360	101	V

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

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
* 4.718	40.78	PK2	34.2	-29.4	0	45.58	-	-	74	-28.42	160	231	H
* 4.719	29.82	MAv1	34.2	-29.4	.23	34.85	54	-19.15	-	-	160	231	H

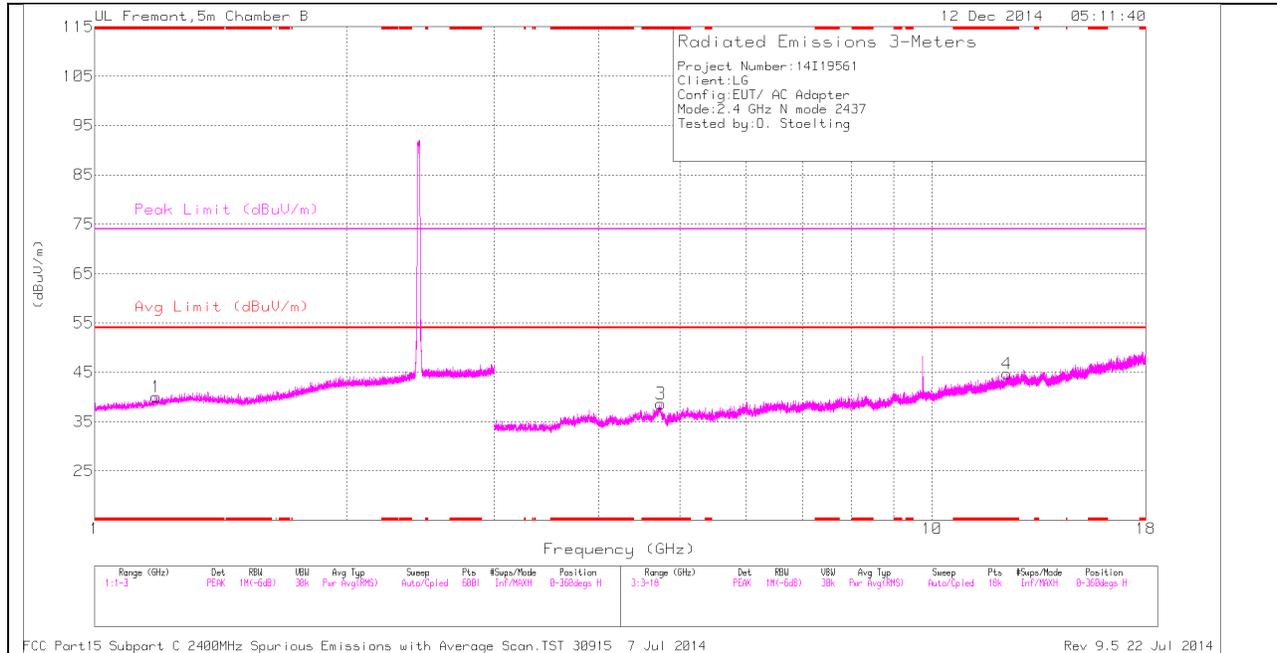
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

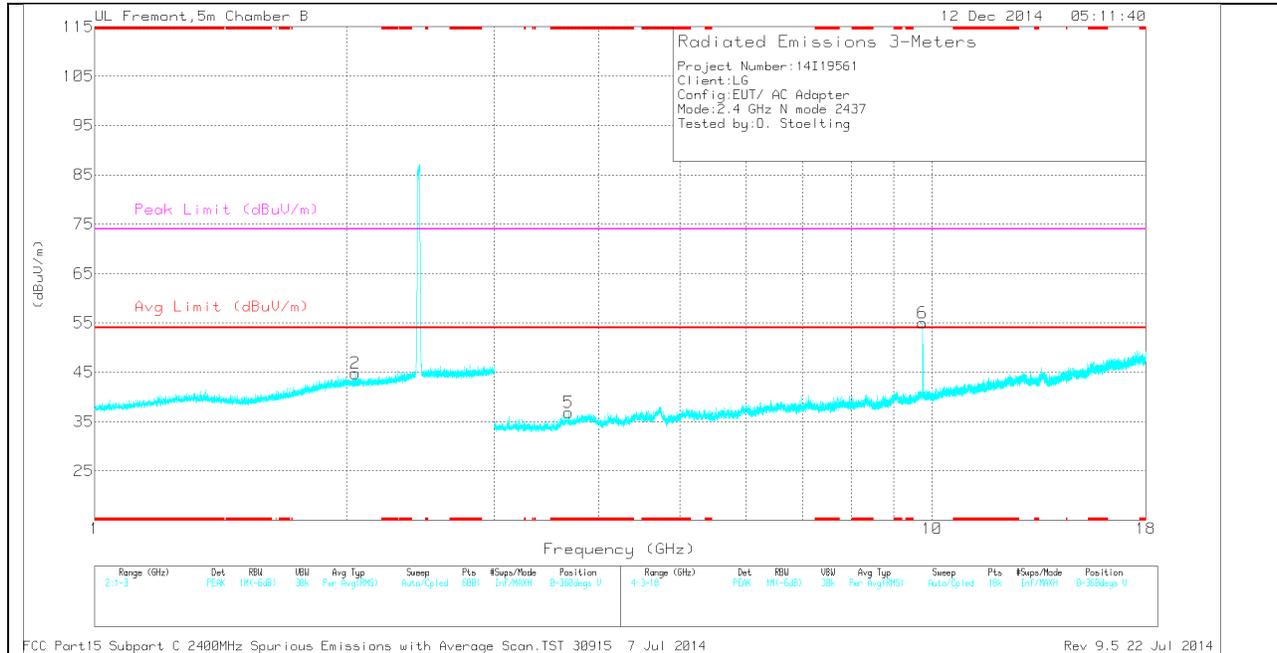
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MID CHANNEL HORIZONTAL



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 T345 (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	* 1.184	36.37	PK	28.1	-24.5	0	39.97	-	-	74	-34.03	0-360	199	H
3	* 4.743	33.68	PK	34.2	-29.2	0	38.68	-	-	74	-35.32	0-360	101	H
4	* 12.278	27.69	PK	39	-22	0	44.69	-	-	74	-29.31	0-360	101	H
5	* 3.679	34.75	PK	33.3	-31.2	0	36.85	-	-	74	-37.15	0-360	199	V
2	2.048	36.78	PK	31.3	-23.3	0	44.78	-	-	-	-	0-360	199	V
6	9.748	42.25	PK	36.9	-24.2	0	54.95	-	-	-	-	0-360	199	V

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

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
* 4.742	41.46	PK2	34.2	-29.2	0	46.46	-	-	74	-27.54	197	363	H
* 4.743	29.54	MAv1	34.2	-29.2	.23	34.77	54	-19.23	-	-	197	363	H

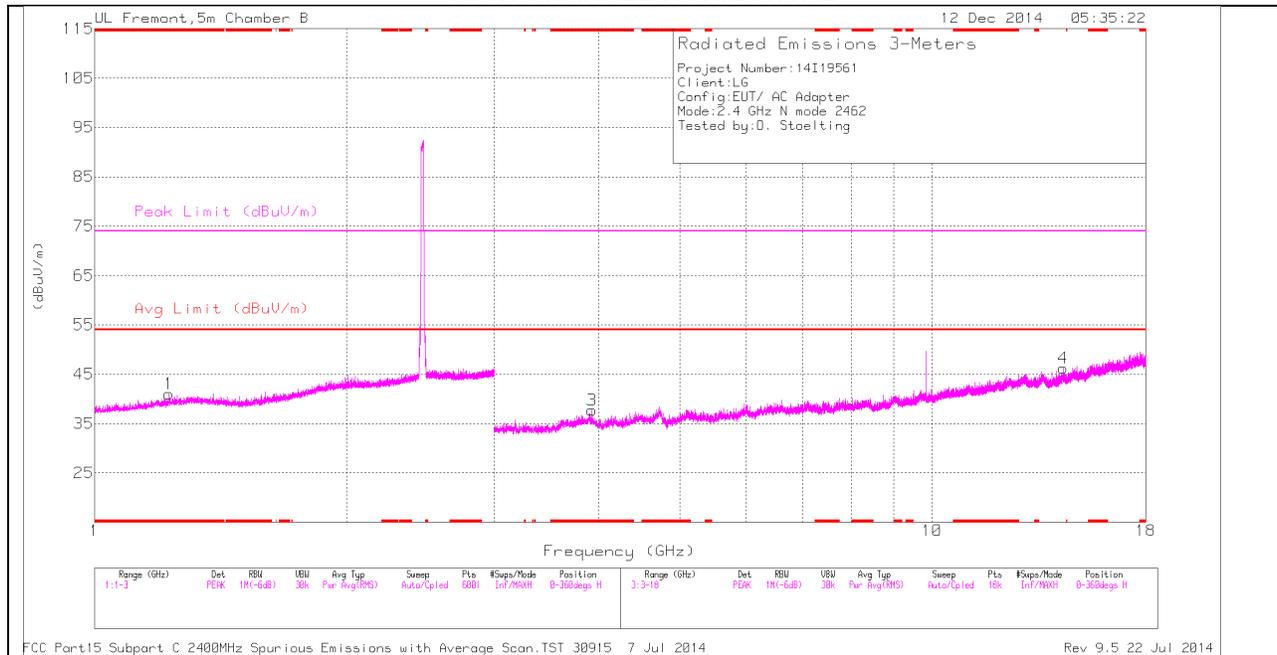
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

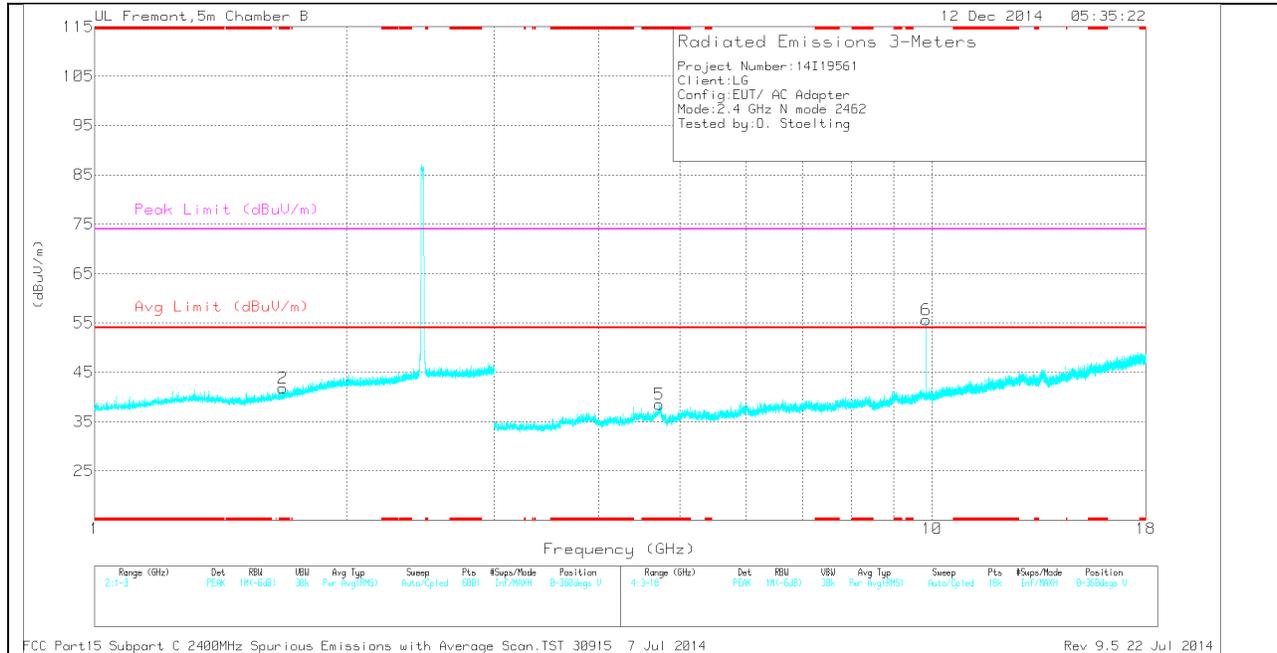
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HIGH CHANNEL HORIZONTAL



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 T345 (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	* 1.227	37.05	PK	28.4	-24.4	0	41.05	-	-	74	-32.95	0-360	101	H
2	* 1.677	36.45	PK	28.9	-23.6	0	41.75	-	-	74	-32.25	0-360	199	V
3	* 3.926	34.36	PK	33.7	-30.3	0	37.76	-	-	74	-36.24	0-360	199	H
5	* 4.727	33.64	PK	34.2	-29.3	0	38.54	-	-	74	-35.46	0-360	199	V
6	9.848	43.16	PK	37	-24.5	0	55.66	-	-	-	-	0-360	199	V
4	14.347	27.8	PK	39.1	-20.7	0	46.2	-	-	-	-	0-360	101	H

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

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
* 4.727	41.37	PK2	34.2	-29.3	0	46.27	-	-	74	-27.73	148	378	V
* 4.726	29.8	MAv1	34.2	-29.3	.23	34.93	54	-19.07	-	-	148	378	V

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

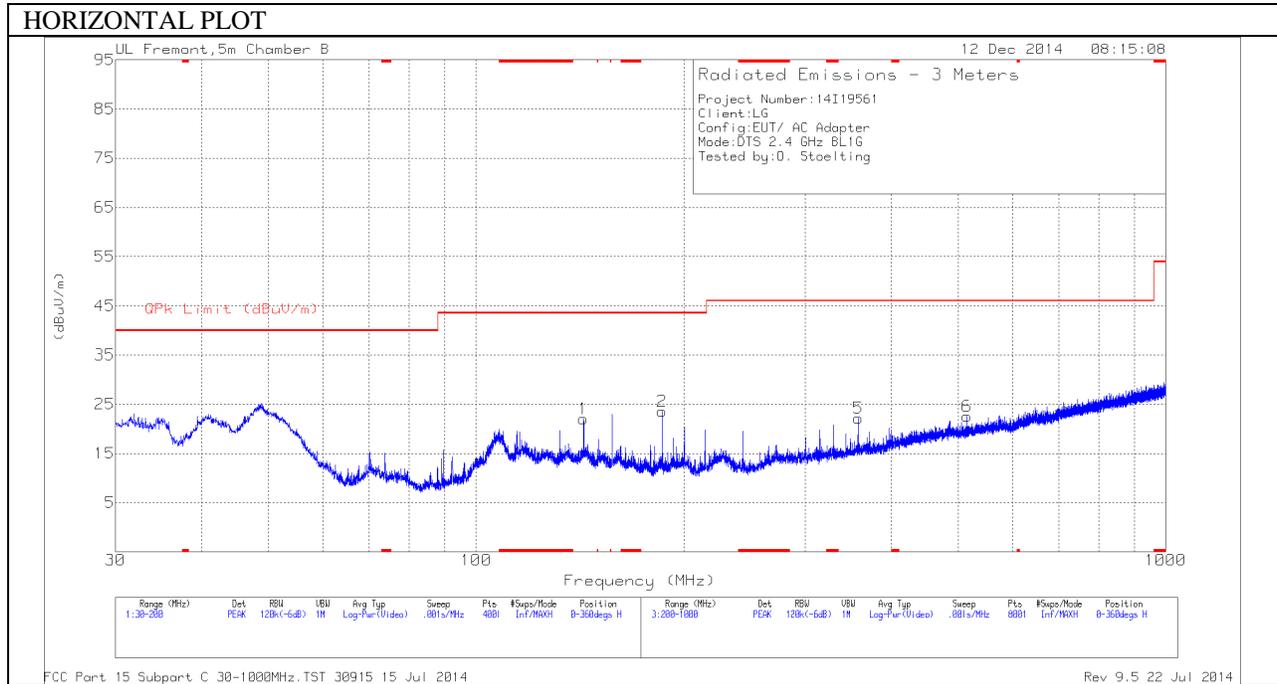
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

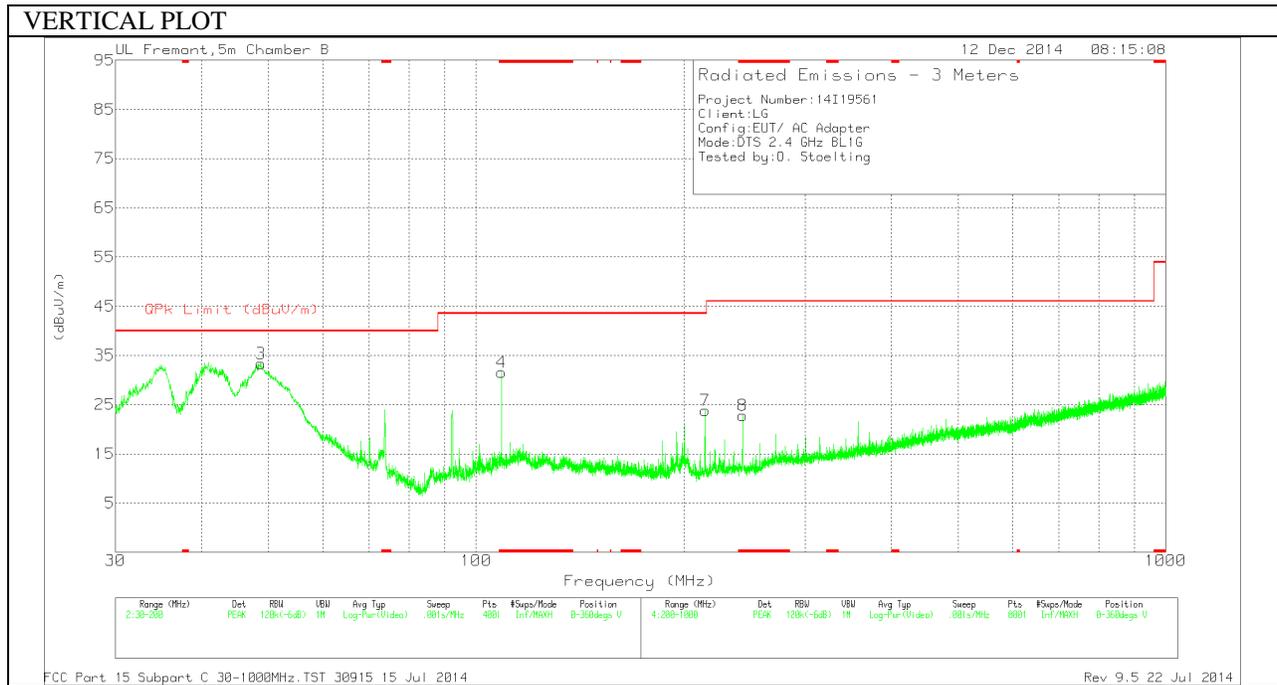
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10.3. WORST-CASE BELOW 1 GHz

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 T477 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 108.8375	47.01	PK	12.4	-27.9	31.51	43.52	-12.01	0-360	101	V
8	* 243.4	37.59	PK	11.6	-26.4	22.79	46.02	-23.23	0-360	101	V
3	48.7425	53.59	PK	8.3	-28.5	33.39	40	-6.61	0-360	101	V
1	143.1775	36.78	PK	12.8	-27.5	22.08	43.52	-21.44	0-360	200	H
2	186.145	39.36	PK	11.2	-27	23.56	43.52	-19.96	0-360	100	H
7	214.8	40.02	PK	10.6	-26.8	23.82	43.52	-19.7	0-360	200	V
5	357.9	33.3	PK	14.7	-25.8	22.2	46.02	-23.82	0-360	101	H
6	515.4	30.69	PK	17.7	-25.8	22.59	46.02	-23.43	0-360	200	H

* - 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.

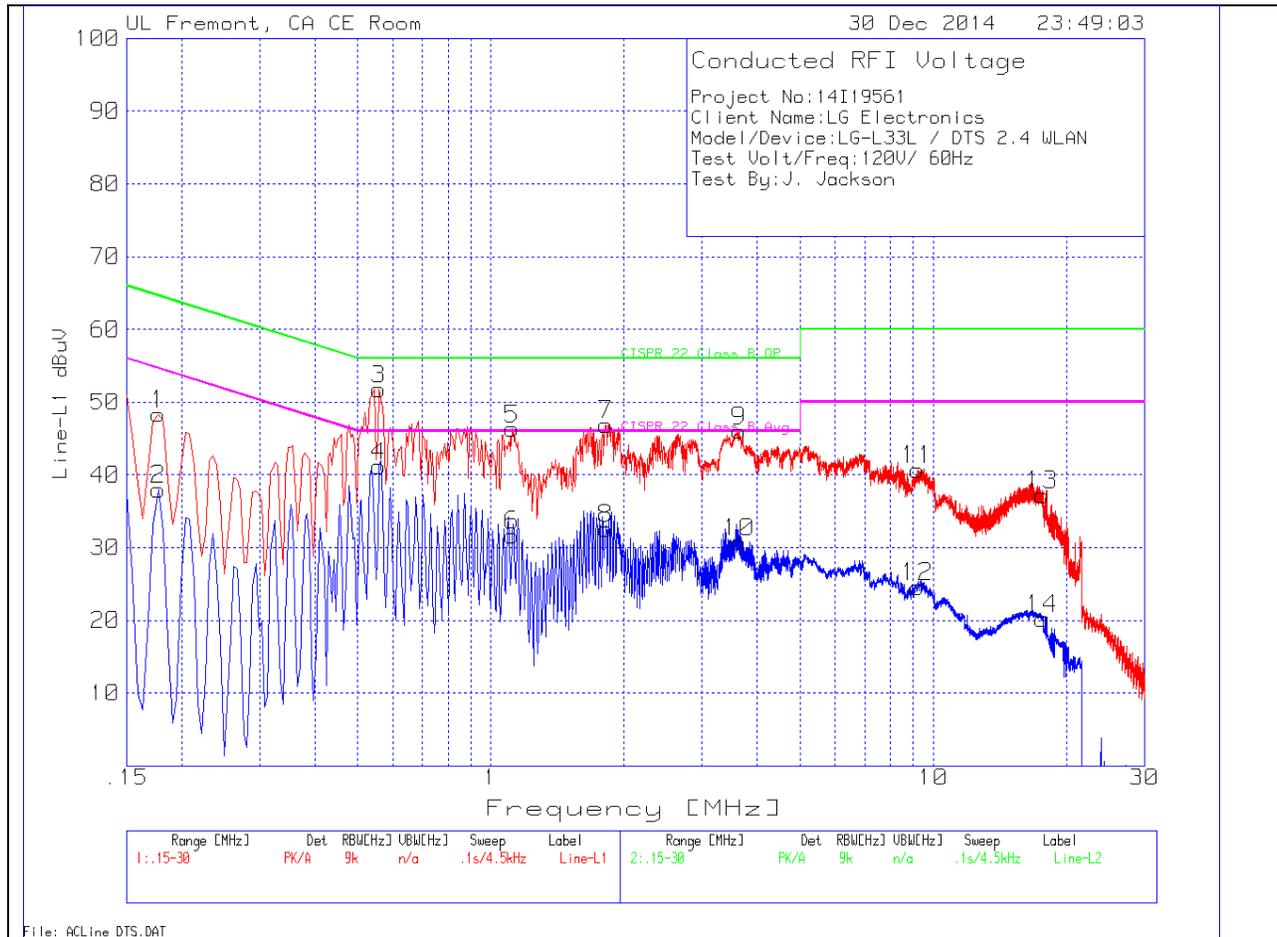
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

6 WORST EMISSIONS

LINE 1 PLOT



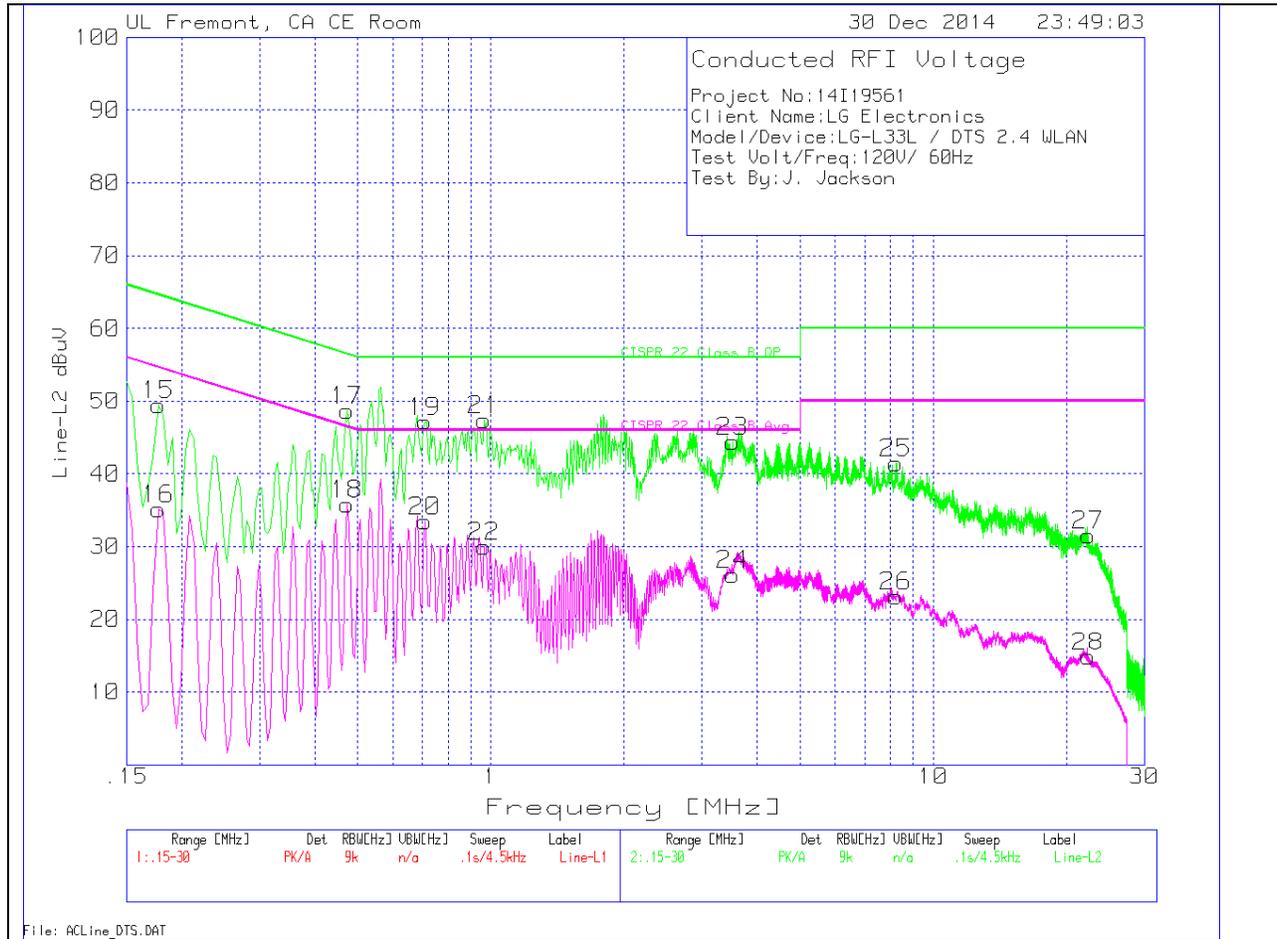
LINE 1 RESULTS

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	.177	47.26	PK	1.1	0	48.36	64.6	-16.24	-	-
2	.177	36.87	Av	1.1	0	37.97	-	-	54.6	-16.63
3	.5595	51.42	PK	.3	0	51.72	56	-4.28	-	-
4	.5595	40.85	Av	.3	0	41.15	-	-	46	-4.85
5	1.1175	46.1	PK	.2	0	46.3	56	-9.7	-	-
6	1.1175	31.47	Av	.2	0	31.67	-	-	46	-14.33
7	1.8195	46.61	PK	.2	.1	46.91	56	-9.09	-	-
8	1.8195	32.32	Av	.2	.1	32.62	-	-	46	-13.38
9	3.6375	45.74	PK	.2	.1	46.04	56	-9.96	-	-
10	3.6375	30.41	Av	.2	.1	30.71	-	-	46	-15.29
11	9.213	40.43	PK	.2	.1	40.73	60	-19.27	-	-
12	9.213	24.32	Av	.2	.1	24.62	-	-	50	-25.38
13	17.61	36.77	PK	.3	.2	37.27	60	-22.73	-	-
14	17.61	19.71	Av	.3	.2	20.21	-	-	50	-29.79

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)
15	.177	48.26	PK	1.2	0	49.46	64.6	-15.14	-	-
16	.177	33.91	Av	1.2	0	35.11	-	-	54.6	-19.49
17	.474	48.3	PK	.4	0	48.7	56.4	-7.7	-	-
18	.474	35.34	Av	.4	0	35.74	-	-	46.4	-10.66
19	.708	46.9	PK	.3	0	47.2	56	-8.8	-	-
20	.708	33.19	Av	.3	0	33.49	-	-	46	-12.51
21	.9645	47.04	PK	.3	0	47.34	56	-8.66	-	-
22	.9645	29.7	Av	.3	0	30	-	-	46	-16
23	3.516	44.16	PK	.2	.1	44.46	56	-11.54	-	-
24	3.516	25.8	Av	.2	.1	26.1	-	-	46	-19.9
25	8.2455	41.22	PK	.2	.1	41.52	60	-18.48	-	-
26	8.2455	22.87	Av	.2	.1	23.17	-	-	50	-26.83
27	22.38	31.07	PK	.3	.2	31.57	60	-28.43	-	-
28	22.38	14.35	Av	.3	.2	14.85	-	-	50	-35.15

PK - Peak detector

Av - average detection