FCC CFR47 PART 15 SUBPART C

CERTIFICATION TEST REPORT

FOR

GSM/WCDMA/LTE PHABLET + BLUETOOTH, DTS/UNII a/b/g/n and NFC

MODEL NUMBER: LG-H740, LGH740, H740

FCC ID: ZNFH740

REPORT NUMBER: 15I21238-E4

ISSUE DATE: AUGUST 4, 2015

Prepared for

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Revision History

Rev.	Issue Date	Revisions	Revised By
--	8/4/15	Initial Issue	

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	LG ELECTRONICS MOBILECOMM U.S.A., INC
EUT DESCRIPTION:	GSM/WCDMA/LTE PHABLET + BLUETOOTH, DTS/UNII a/b/g/n and NFC
MODEL:	LG-H740, LGH740, H740
SERIAL NUMBER:	1ZW89 (RADIATED), 1ZW8C (CONDUCTED)
DATE TESTED:	JULY 11-24, 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.

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.10-2009 for FCC and ANSI C63.10-2013 for IC, RSS-GEN Issue 4, and RSS-247 Issue 1.

ANSI C63.10-2009 Deviation:

Radiated spurious emission above 1GHz EUT height is 1.5m not 0.8m.

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
☒ Chamber A(IC: 2324B-1)	☐ Chamber D(IC: 2324B-4)
☒ Chamber B(IC: 2324B-2)	☐ Chamber E(IC: 2324B-5)
☒ Chamber C(IC: 2324B-3)	☐ Chamber F(IC: 2324B-6)
	☐ Chamber G(IC: 2324B-7)
	☐ 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:

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

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

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 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 PHABLET + BLUETOOTH, DTS/UNII a/b/g/n and NFC.

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	18.3	67.61
2412 - 2462	802.11g	15.0	31.62
2412 - 2462	802.11n HT20	13.0	19.95

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of -2.0 dBi.

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
802.11a 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-01WRE	RA560000025	N/A
Earphone	LG	-	-	-

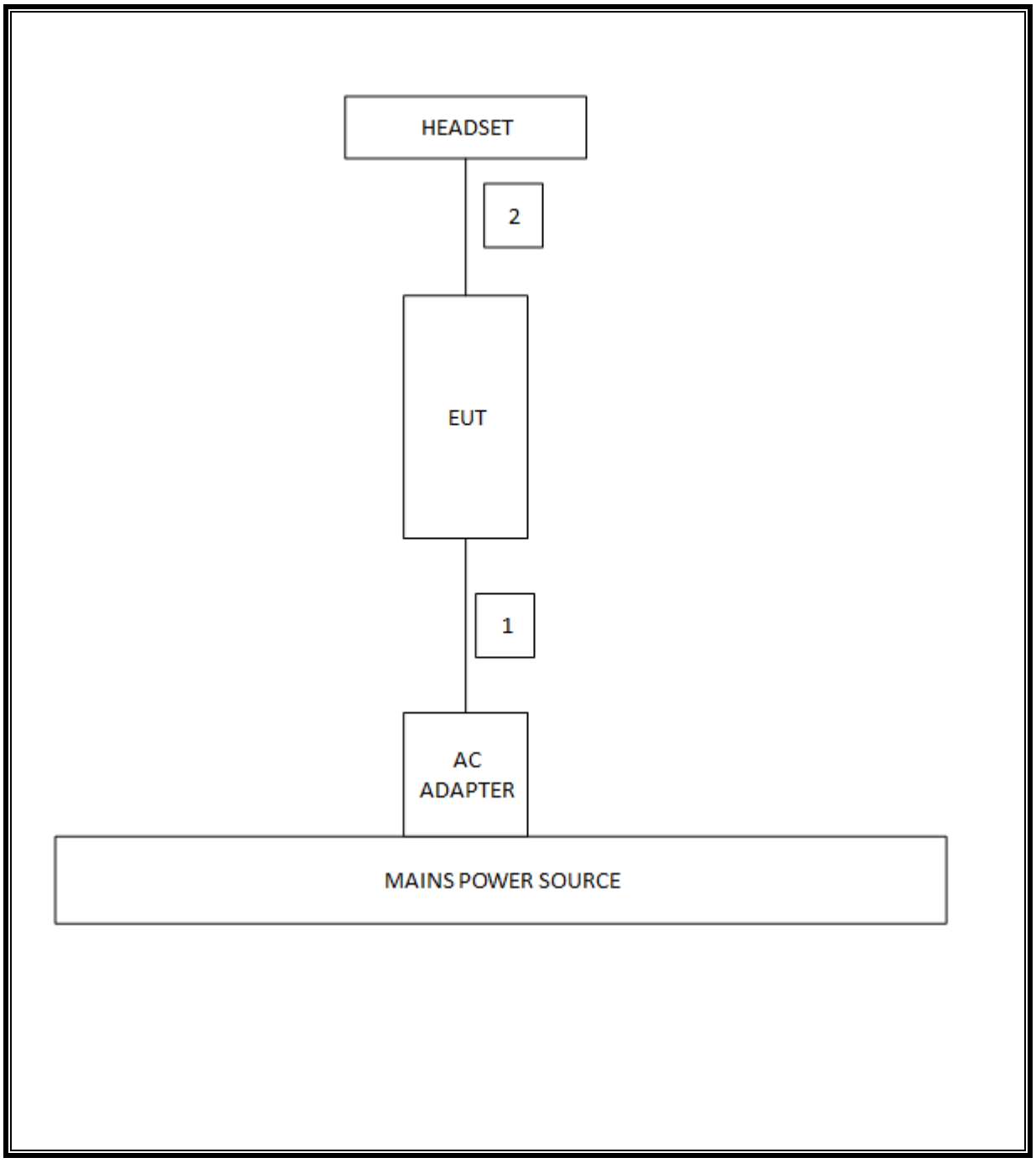
I/O CABLES

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	04/01/16
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	T119	01/05/16
Antenna, Horn, 1-18 GHz	ETS	3117	T136	03/03/16
Antenna, Horn, 1-18 GHz	ETS	3117	T345	03/03/16
Antenna, Horn,18- 26 GHz	ARA	MWH-1826/B	C00946	11/12/15
Antenna, Horn, 26-40 GHz	ARA	MWH-2640	C00891	06/28/16
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	T243	03/06/16
RF Preamplifier, 100KHz -> 1300MHz	HP	TBD	C00825	06/01/16
RF Preamplifier, 1GHz - 18GHz	Miteq	NSP4000-SP2	924343	03/23/16
RF Preamplifier, 1GHz - 26.5GHz	HP	8449B	T404	06/29/16
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	05/23/16
High Pass Filter 5GHz	Micro-Tronics	HPS17542	F00222	05/22/16
High Pass Filter 6GHz	Micro-Tronics	HPM17543	F00224	05/22/16
Radiated Software	UL	UL EMC	Ver 9.5, June 24, 2015	
Conducted Software	UL	UL EMC	Ver 9.5, May 17 2012	
CLT Software	UL	UL RF	Ver 1.0, Feb 2 2015	
Antenna Port Software	UL	UL RF	Ver 2.1.1.1, Jan 20 2015	

7. MEASUREMENT METHODS

KDB 558074 D01 DTS Meas Guidance v03r03: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-247 5.2.1	Occupied Band width (6dB)	>500KHz	Conducted	Pass	17.604 MHz
2.1051, 15.247 (d)	RSS-247 5.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	-35.65 dBm
15.247	RSS-247 5.4.4	TX conducted output power	<30dBm		Pass	18.3 dBm
15.247	RSS-247 5.2.2	PSD	<8dBm		Pass	-4.815 dBm
15.207 (a)	RSS-GEN 8.8	AC Power Line conducted emissions	Section 10	Radiated	Pass	44.87 dBuV(PK)
15.205, 15.209	RSS-GEN 8.9/7	Radiated Spurious Emission	< 54dBuV/m		Pass	43.84 dBuV/m

9. ANTENNA PORT TEST RESULTS

9.1. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

LIMITS

None; for reporting purposes only.

PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method.

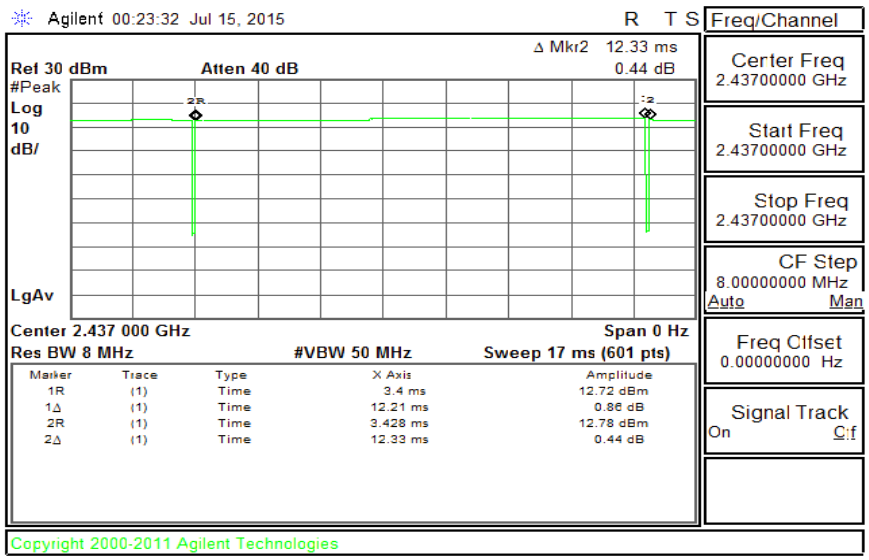
9.1.1. ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
2.4GHz Band						
802.11b CDD	12.210	12.330	0.990	99.03%	0.00	0.010
802.11g CDD	2.013	2.122	0.949	94.86%	0.23	0.497
802.11n HT20 CDD	1.853	1.977	0.937	93.73%	0.28	0.540

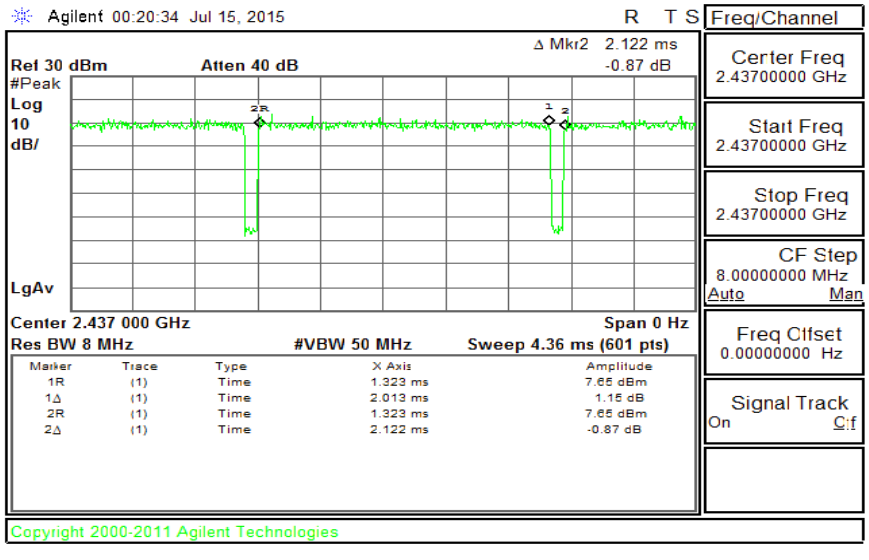
9.1.2. DUTY CYCLE PLOTS

2.4 GHz BAND

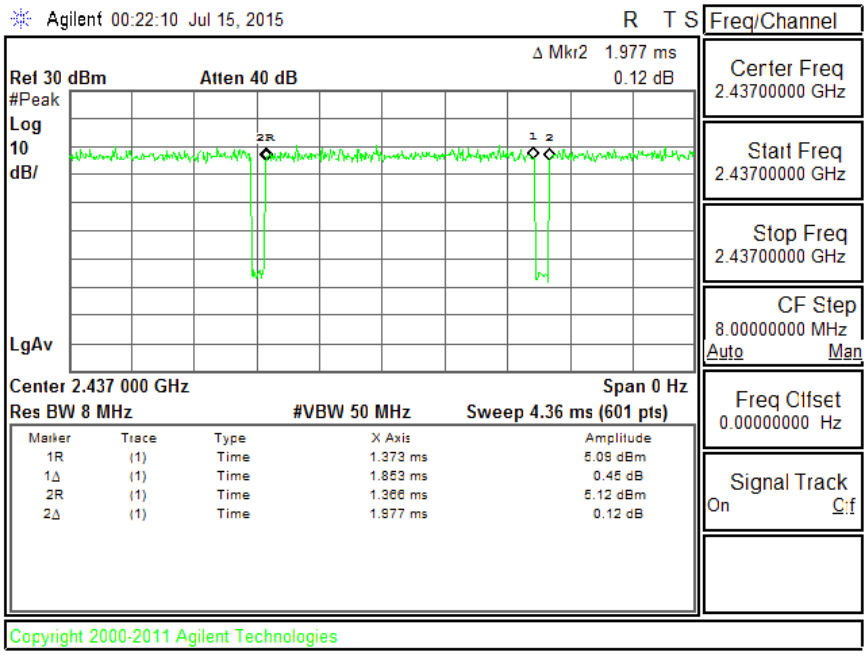
DUTY CYCLE 802.11b CDD MODE



DUTY CYCLE 802.11g CDD MODE



DUTY CYCLE 802.11n HT20 MODE



9.2. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

IC RSS-247 5.2.1

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

TEST PROCEDURE

Reference to KDB 558074 D01 DTS Meas Guidance v03r03: The transmitter output is connected to a spectrum analyzer with the RBW set to100KHz, the VBW >= 3 x RBW, peak detector and max hold.

RESULTS

9.2.1. 802.11b MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	8.021	0.5
Mid	2437	8.086	0.5
High	2462	8.060	0.5
Worst		8.021	

9.2.2. 802.11g MODE IN THE 2.4 GHz BAND

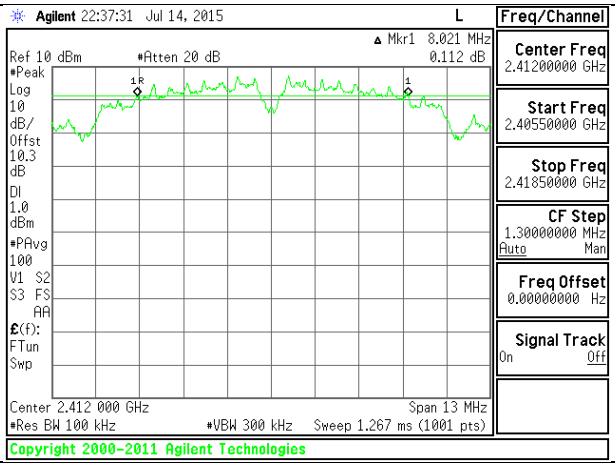
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	16.400	0.5
Mid	2437	16.400	0.5
High	2462	16.425	0.5
Worst		16.400	

9.2.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

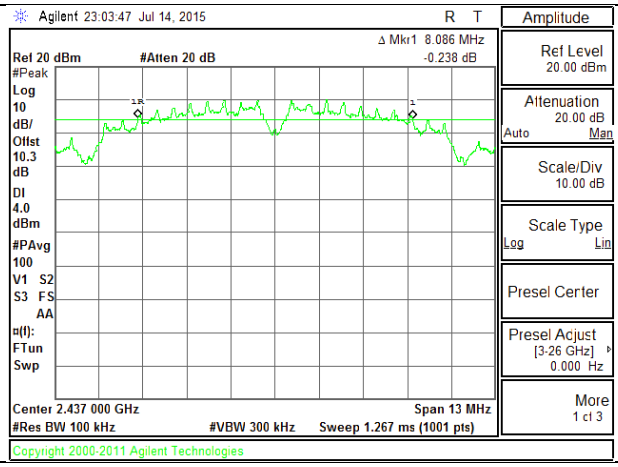
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	17.604	0.5
Mid	2437	17.604	0.5
High	2462	17.631	0.5
Worst		17.604	

9.2.4. 6 dB BANDWIDTH MID CH PLOTS

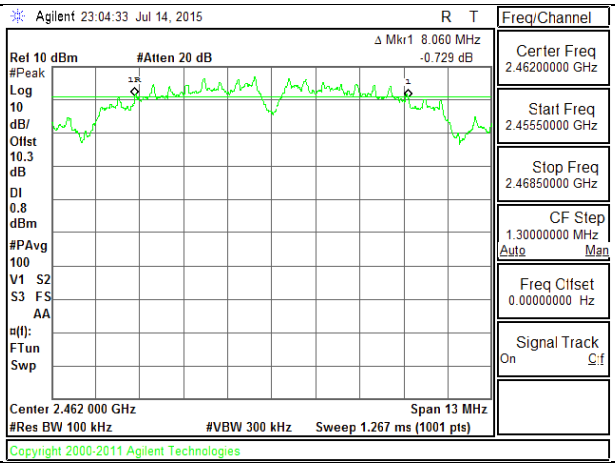
11b 2412 MHz



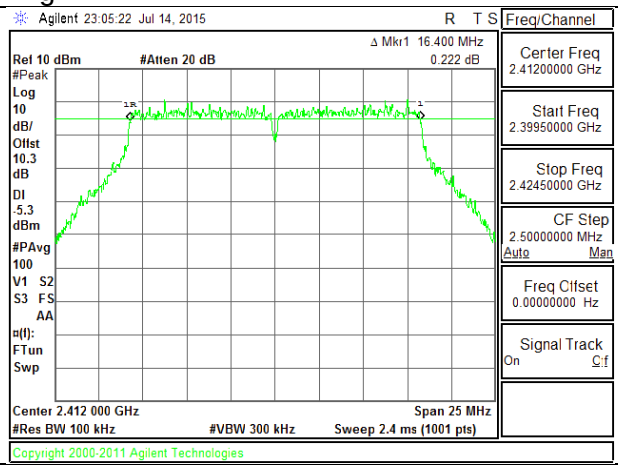
11b 2437 MHz



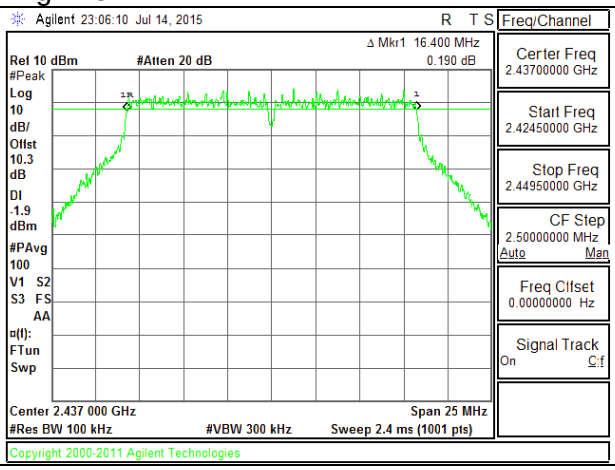
11b 2462 MHz



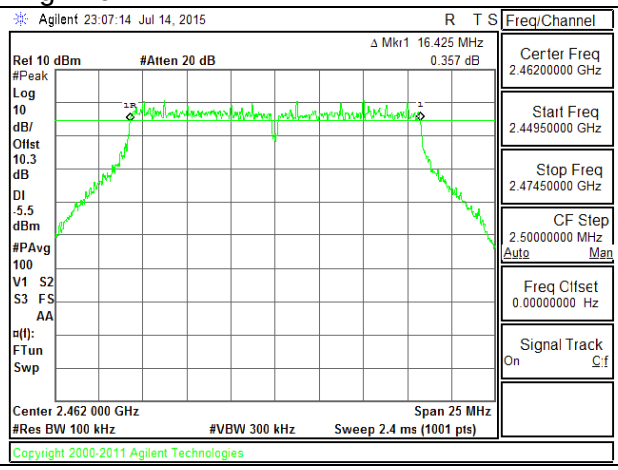
11g 2412 MHz



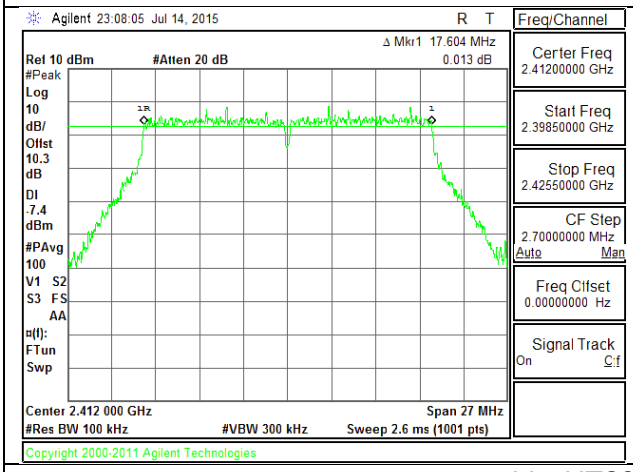
11g 2437 MHz



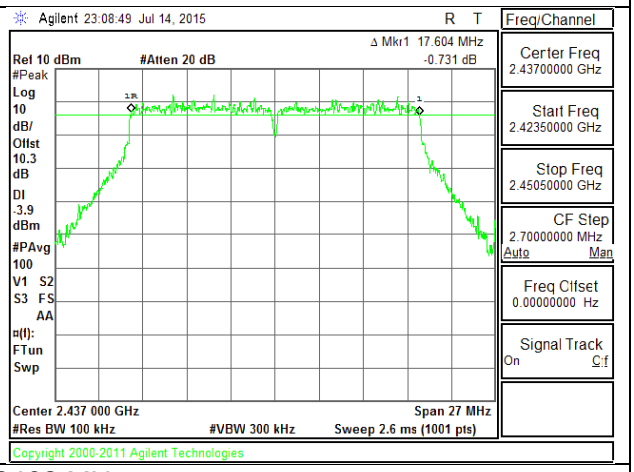
11g 2462 MHz



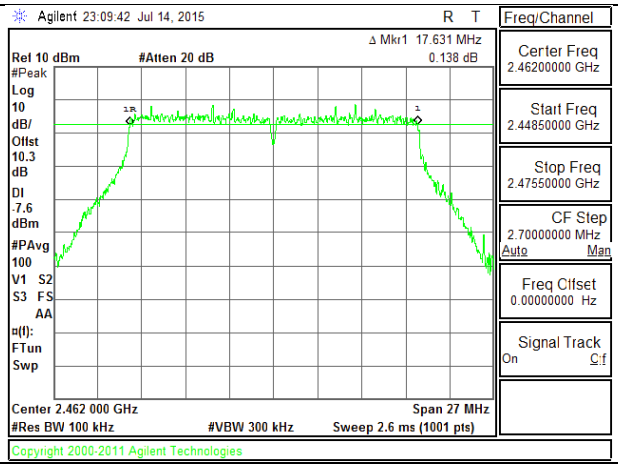
11n HT20 2412 MHz



11n HT20 2437 MHz



11n HT20 2462 MHz



9.3. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

9.3.1. 802.11b MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	14.1069
Mid	2437	13.8508
High	2462	13.5655
Worst		14.1069

9.3.2. 802.11g MODE IN THE 2.4 GHz BAND

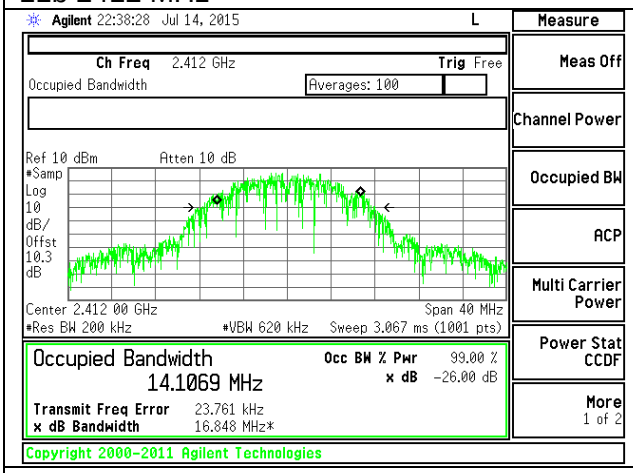
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	17.2138
Mid	2437	17.3319
High	2462	17.2662
Worst		17.3319

9.3.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

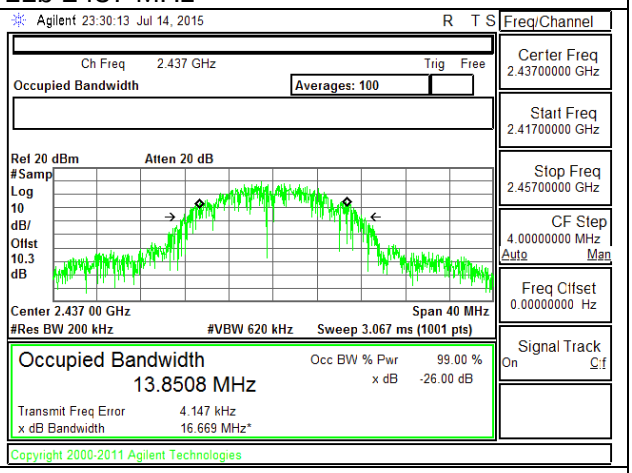
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	17.8229
Mid	2437	18.2367
High	2462	18.3835
Worst		18.3835

9.3.4. 99% BANDWIDTH MID CH PLOTS

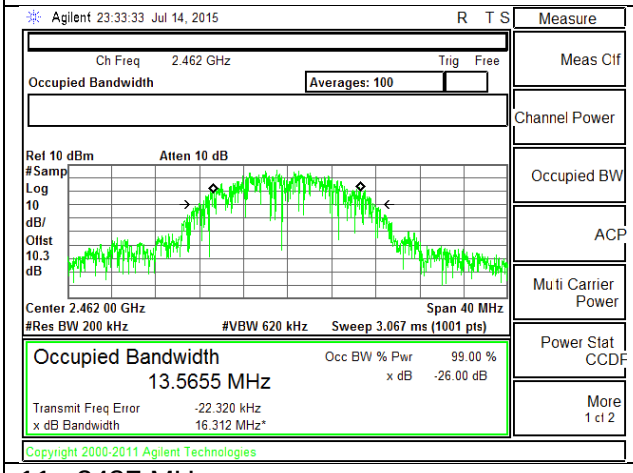
11b 2412 MHz



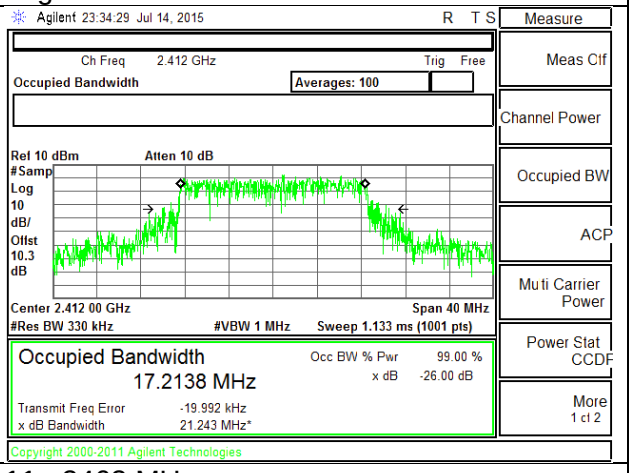
11b 2437 MHz



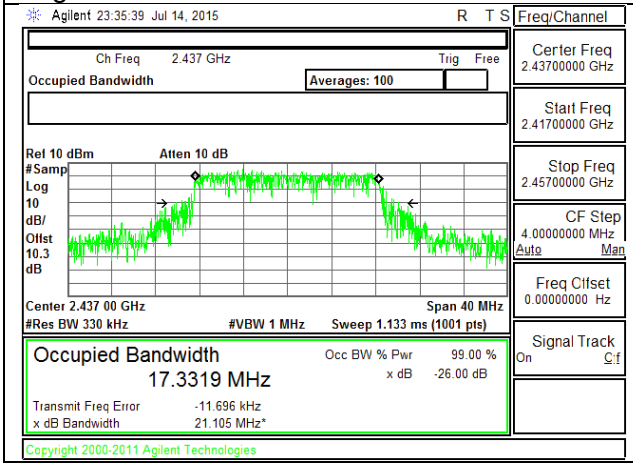
11b 2462 MHz



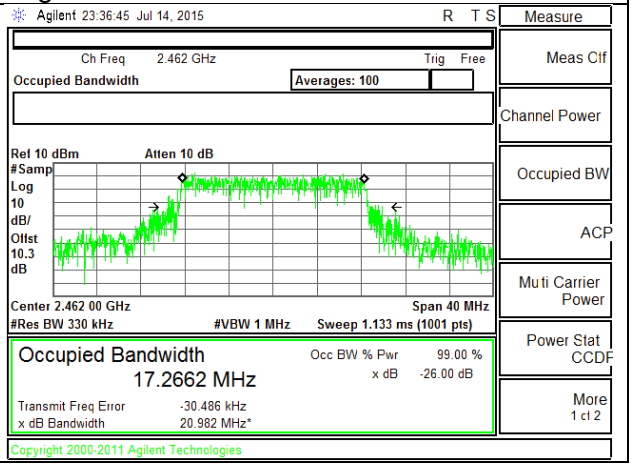
11g 2412 MHz



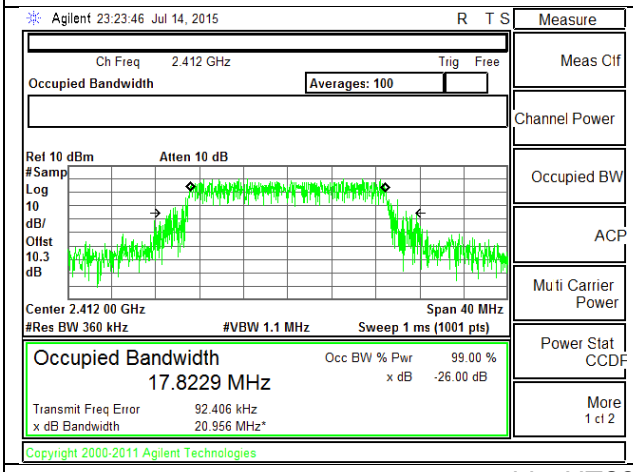
11g 2437 MHz



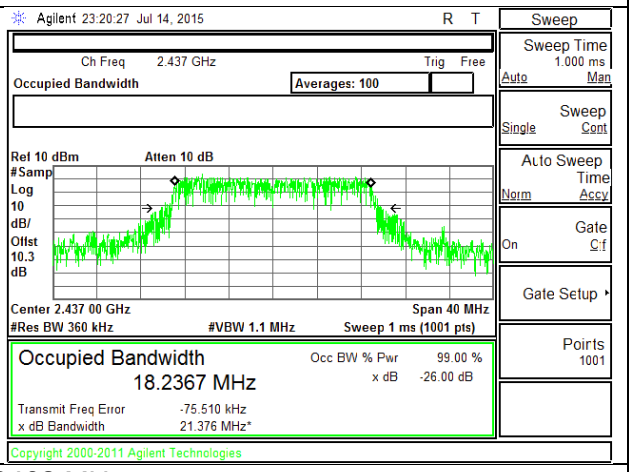
11g 2462 MHz



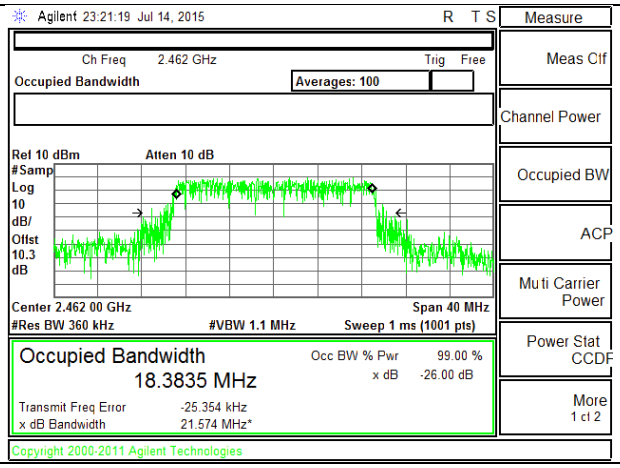
11n HT20 2412 MHz



11n HT20 2437 MHz



11n HT20 2462 MHz



9.4. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-247 5.4.4

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.

DIRECTIONAL ANTENNA GAIN

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

RESULTS

9.4.1. 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	15.00	15.00	30.00	-15.00
Mid	2437	18.30	18.30	30.00	-11.70
High	2462	14.90	14.90	30.00	-15.10
Worst			18.30		

Note: the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.

9.4.2. 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	11.30	11.30	30.00	-18.70
Mid	2437	15.00	15.00	30.00	-15.00
High	2462	11.40	11.40	30.00	-18.60
Worst			15.00		

Note: the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.

9.4.3. 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	10.10	10.10	30.00	-19.90
Mid	2437	13.00	13.00	30.00	-17.00
High	2462	10.10	10.10	30.00	-19.90
Worst			13.00		

Note: the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.

9.5. PSD

LIMITS

FCC §15.247

IC RSS-247 5.2.2

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

9.5.1. 802.11b MODE IN THE 2.4 GHz BAND

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-7.310	8.0	-15.3
Mid	2437	-4.815	8.0	-12.8
High	2462	-6.988	8.0	-15.0

9.5.2. 802.11g MODE IN THE 2.4 GHz BAND

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-13.091	8.0	-21.1
Mid	2437	-9.934	8.0	-17.9
High	2462	-13.291	8.0	-21.3

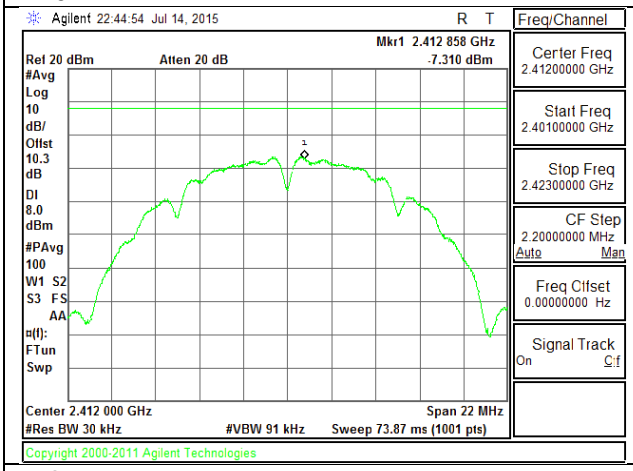
9.5.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

PSD Results

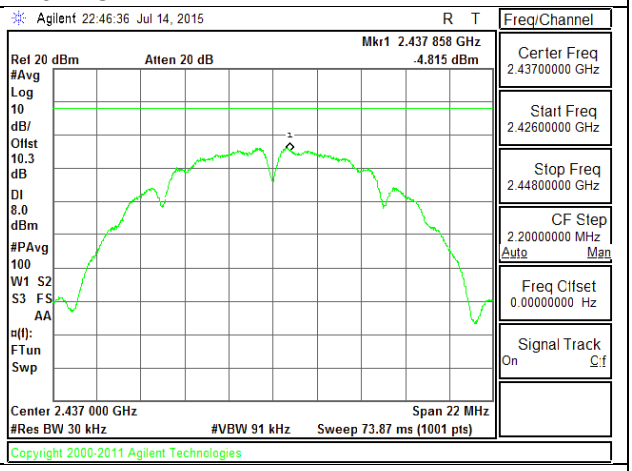
Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-14.905	8.0	-22.9
Mid	2437	-11.871	8.0	-19.9
High	2462	-14.761	8.0	-22.8

9.5.4. PSD Chain 0 MID CH PLOTS

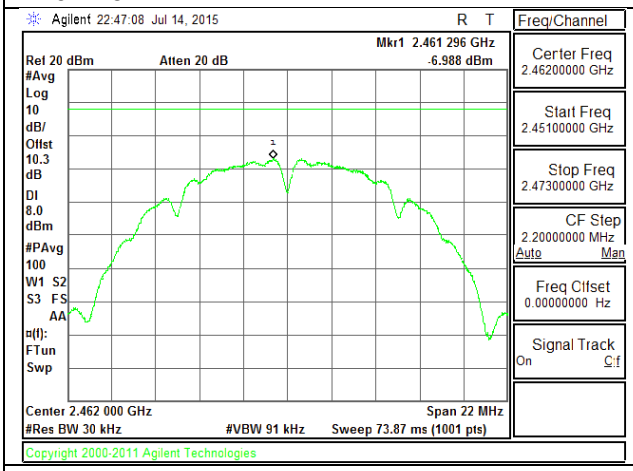
11b 2412 MHz



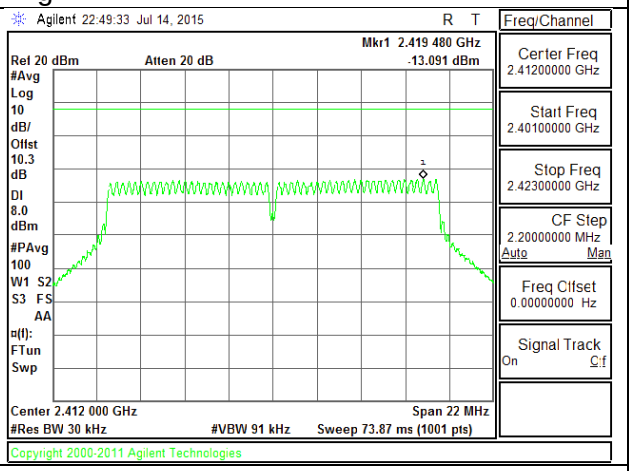
11b 2437 MHz



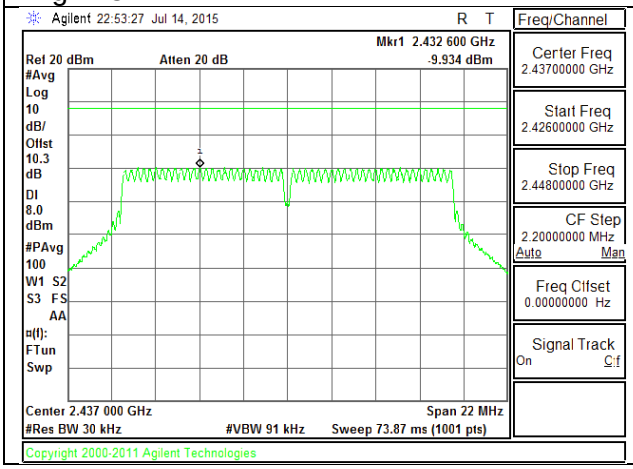
11b 2462 MHz



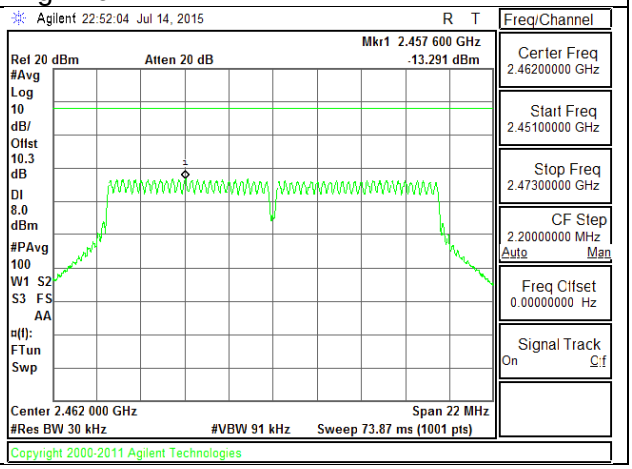
11g 2412 MHz



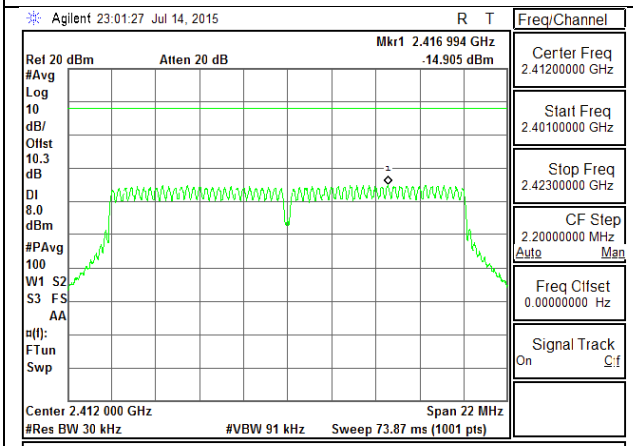
11g 2437 MHz



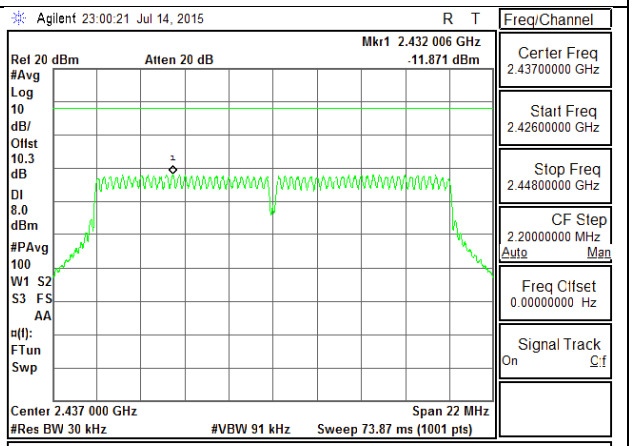
11g 2462 MHz



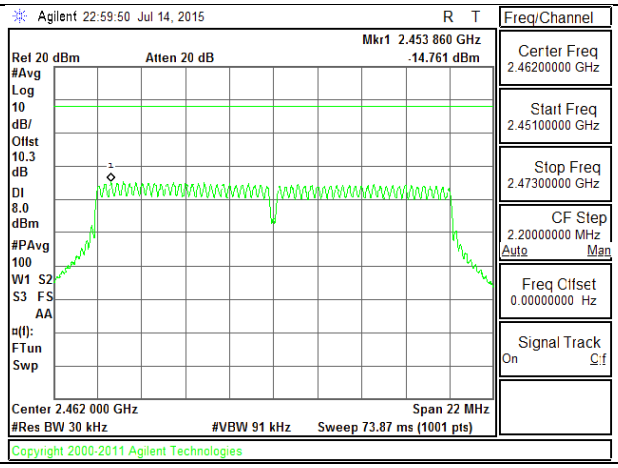
11n HT20 2412 MHz



11n HT20 2412 MHz



11n HT20 2462 MHz



9.6. OUT-OF-BAND EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-247 5.5

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

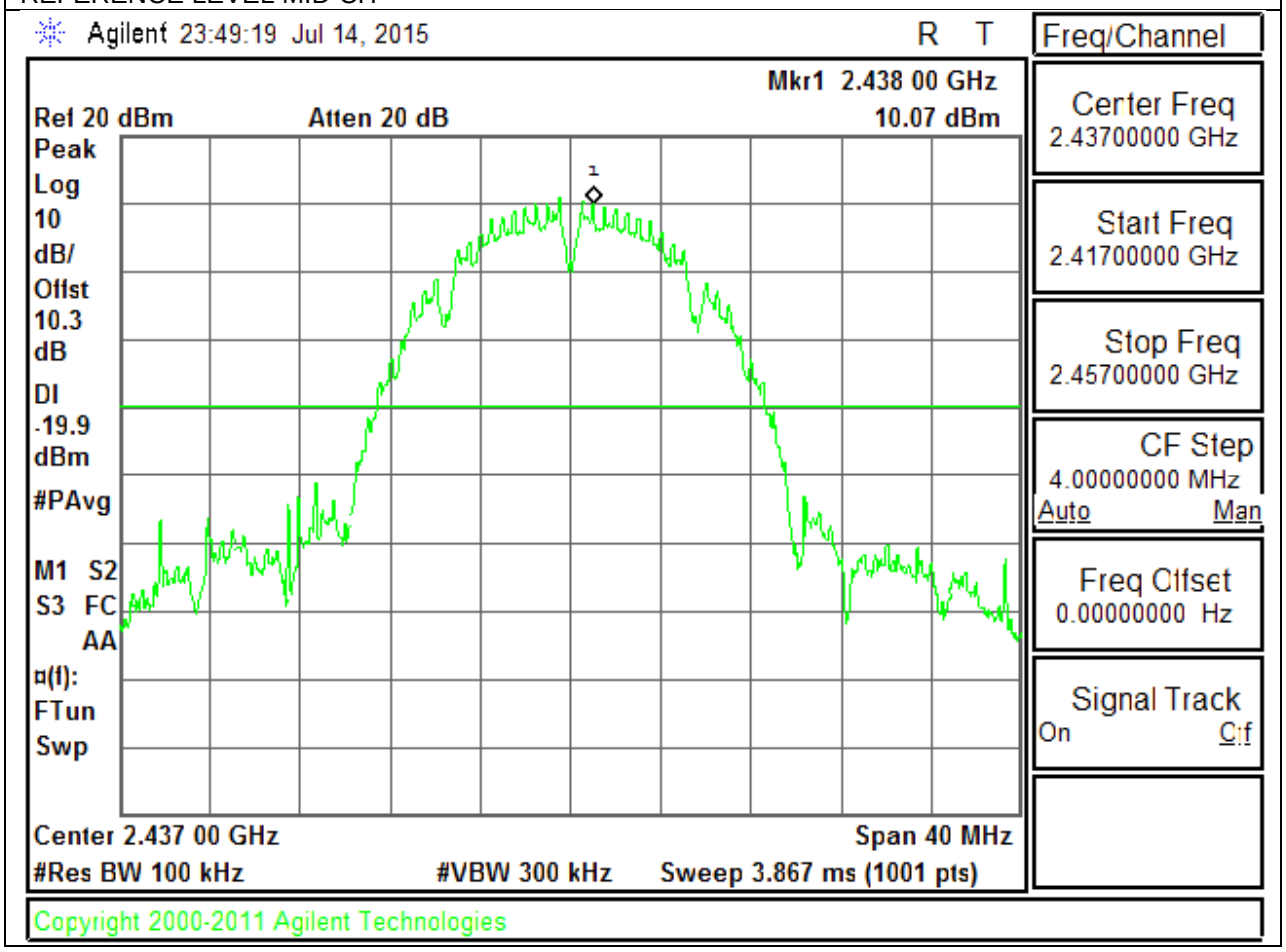
The transmitter output is connected to a spectrum analyzer with RBW = 100 kHz, VBW = 300 kHz, peak detector, and max hold. Measurements utilizing these settings are made of the in-band reference level, bandedge (where measurements to the general radiated limits will not be made) and out-of-band emissions.

RESULTS

9.6.1. 802.11b MODE IN THE 2.4 GHz BAND

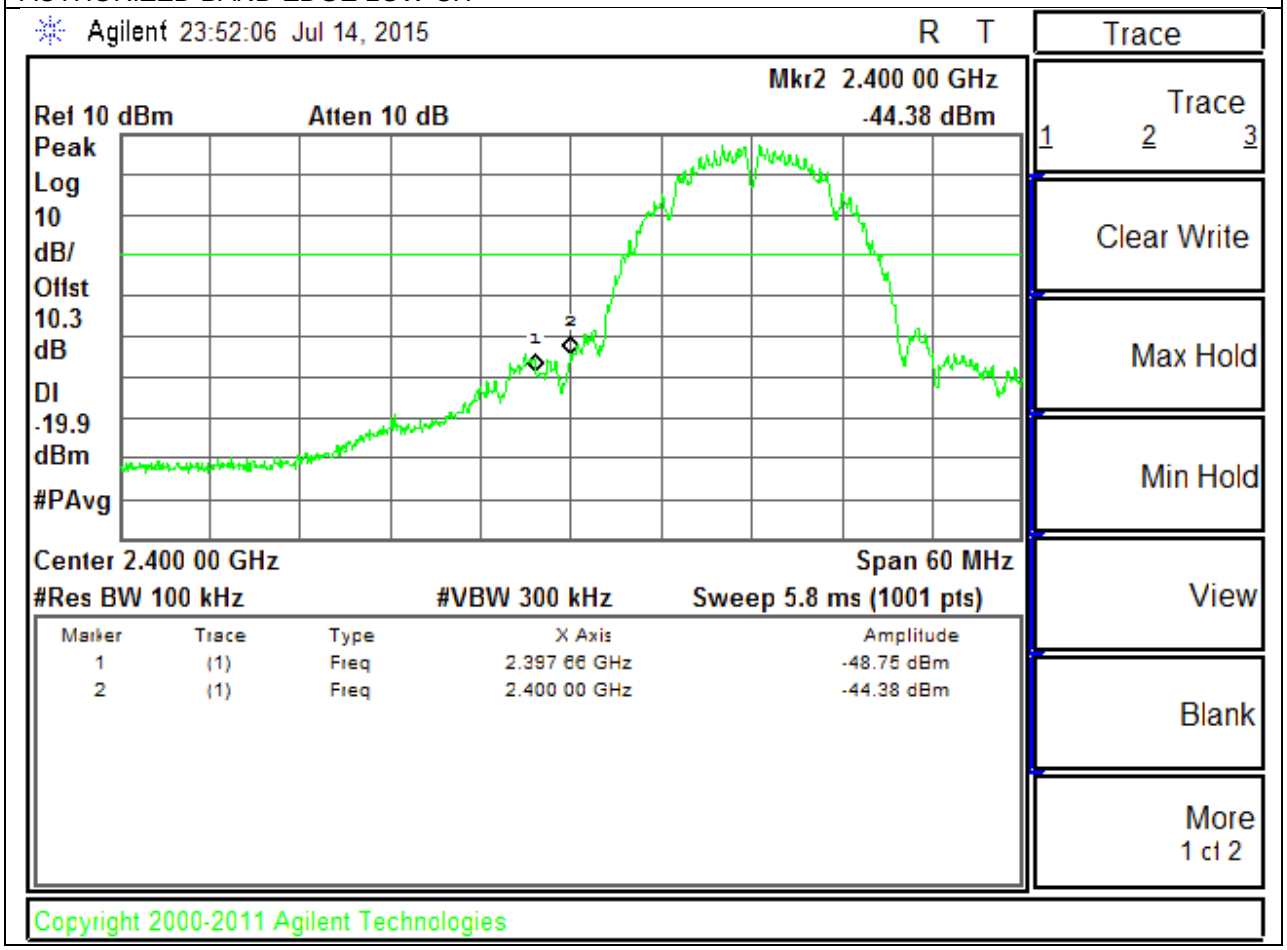
IN-BAND REFERENCE LEVEL

REFERENCE LEVEL MID CH



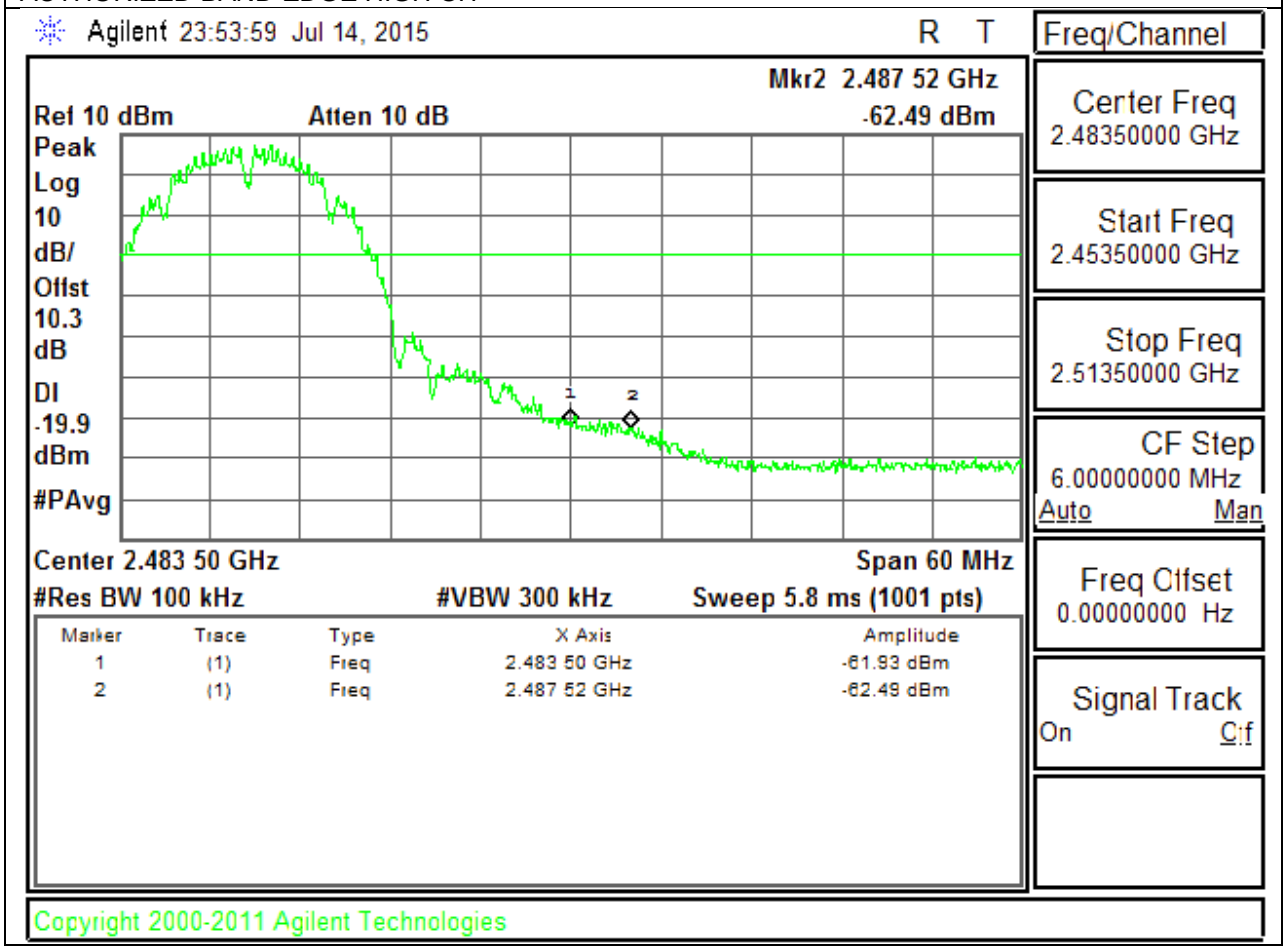
LOW CHANNEL BANDEDGE

AUTHORIZED BAND EDGE LOW CH



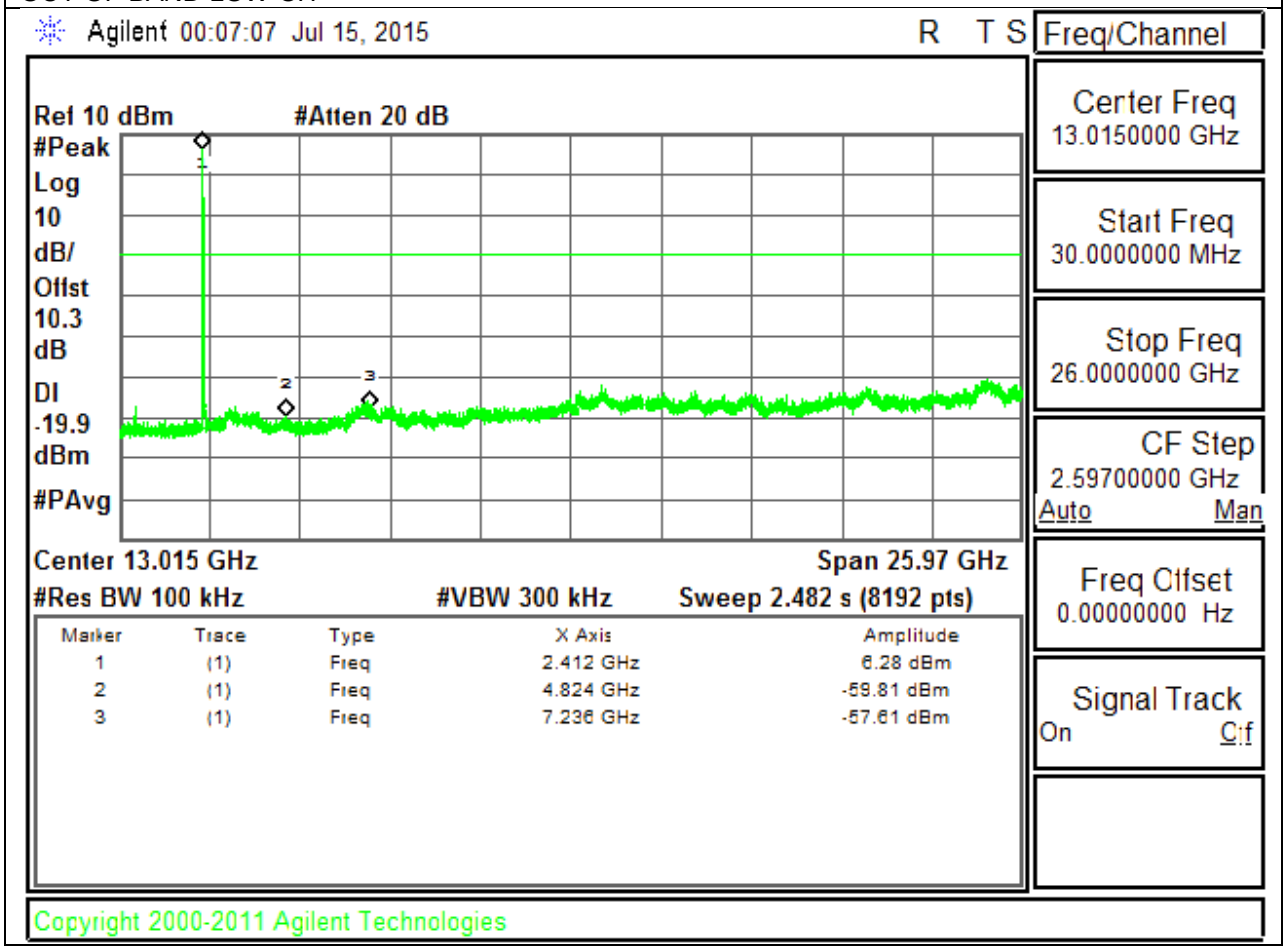
HIGH CHANNEL BANDEDGE

AUTHORIZED BAND EDGE HIGH CH

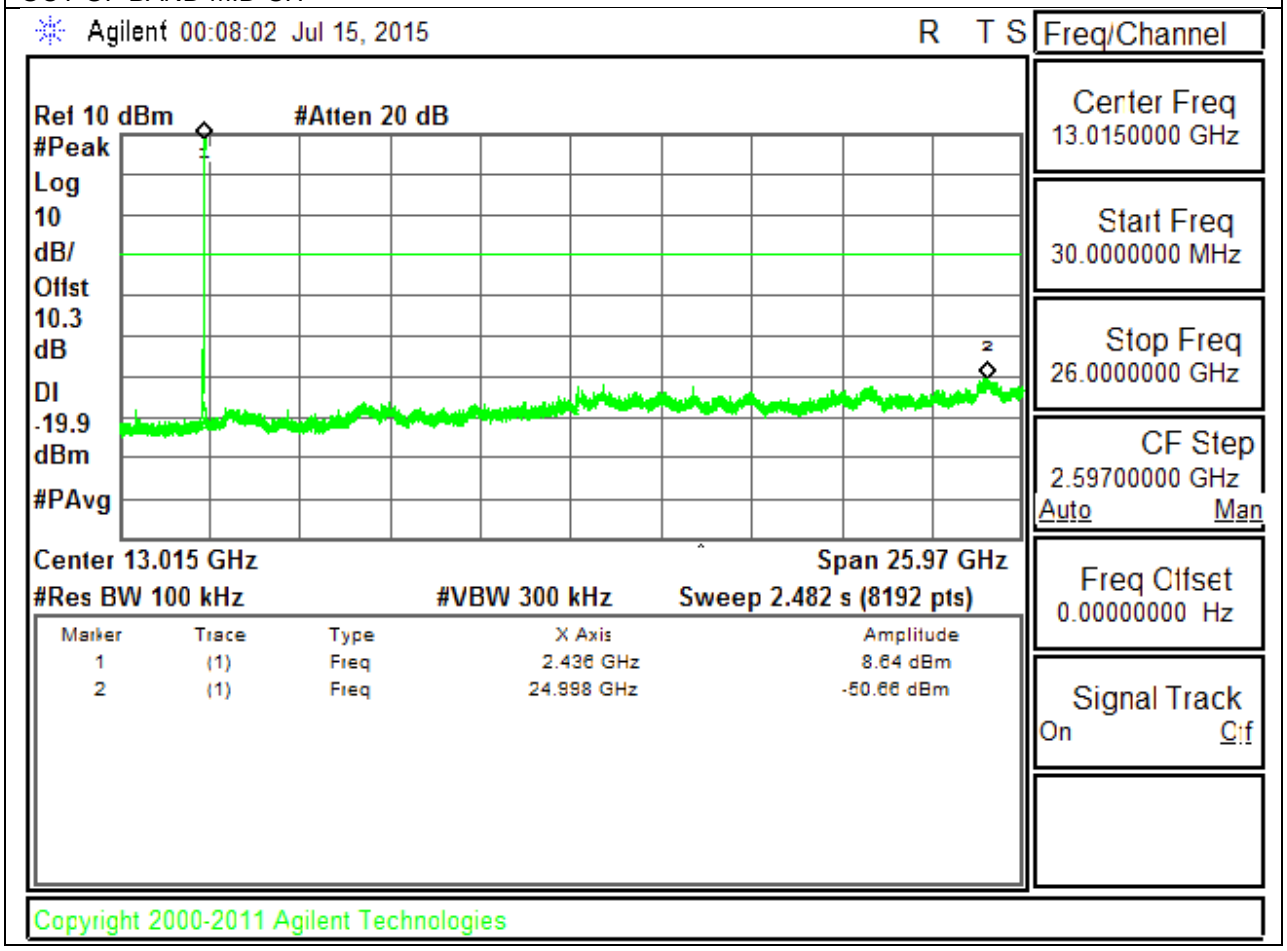


OUT-OF-BAND EMISSIONS

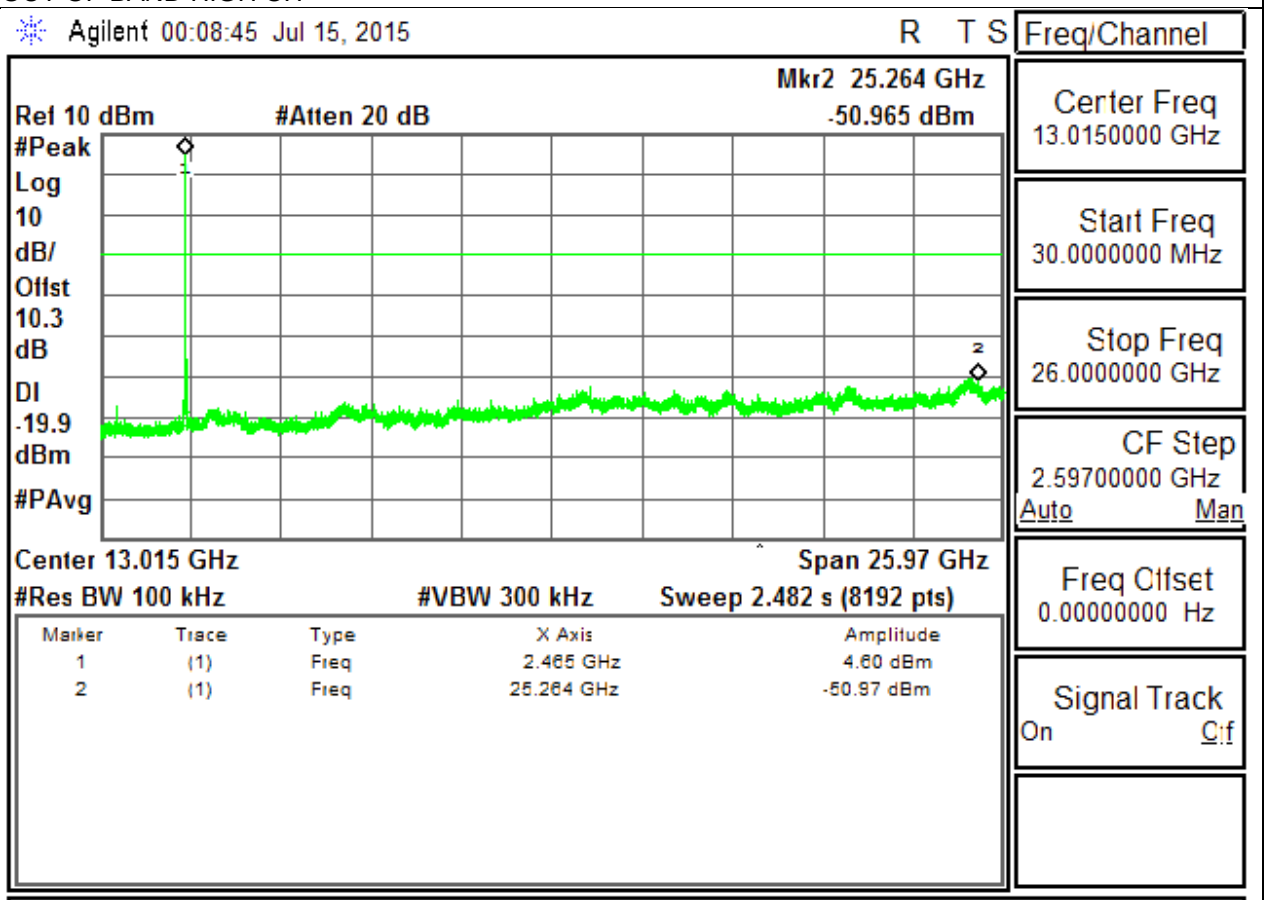
OUT OF BAND LOW CH



OUT OF BAND MID CH



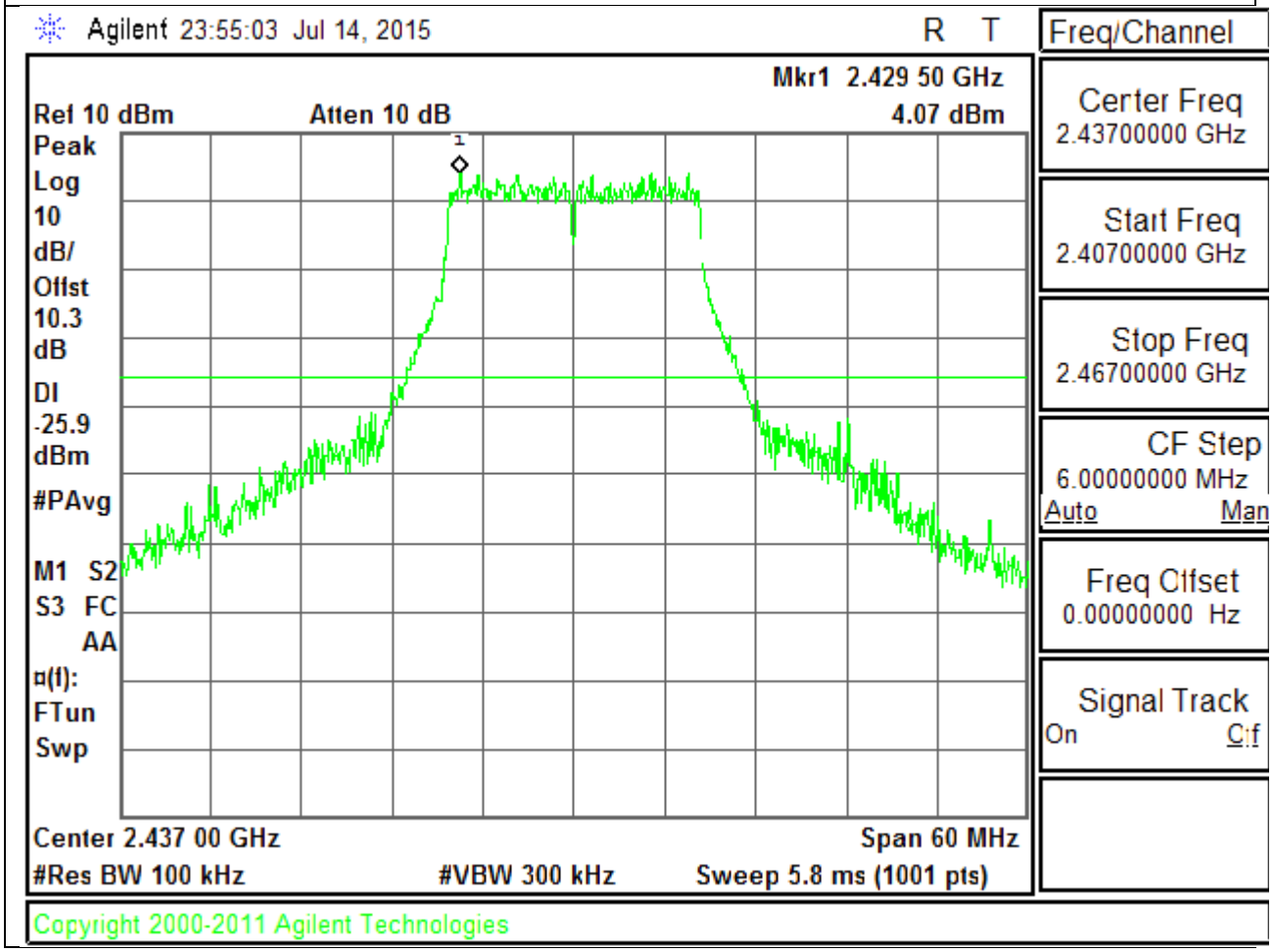
OUT OF BAND HIGH CH



9.6.2. 802.11g MODE IN THE 2.4 GHz BAND

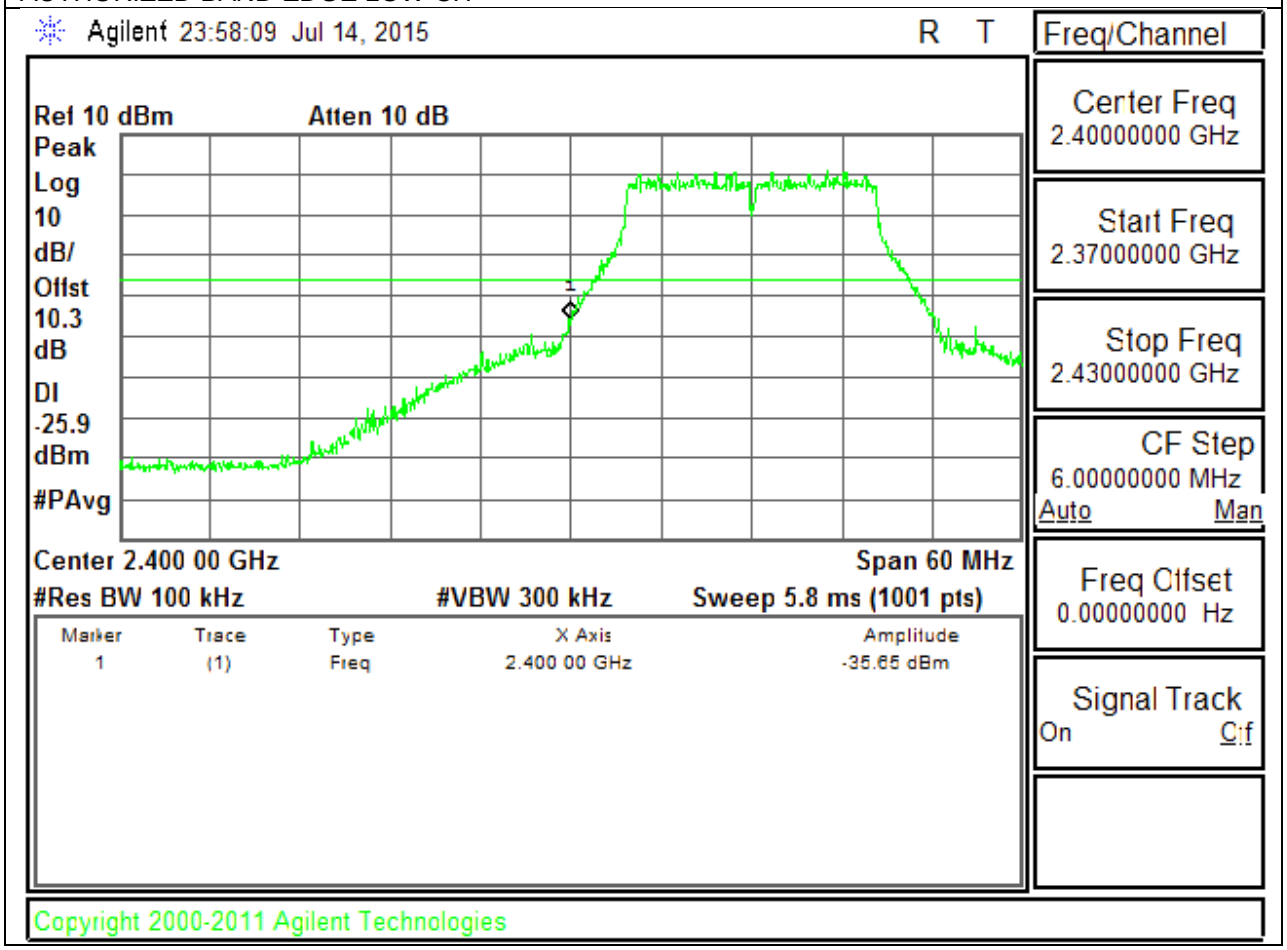
IN-BAND REFERENCE LEVEL

REFERENCE LEVEL MID CH



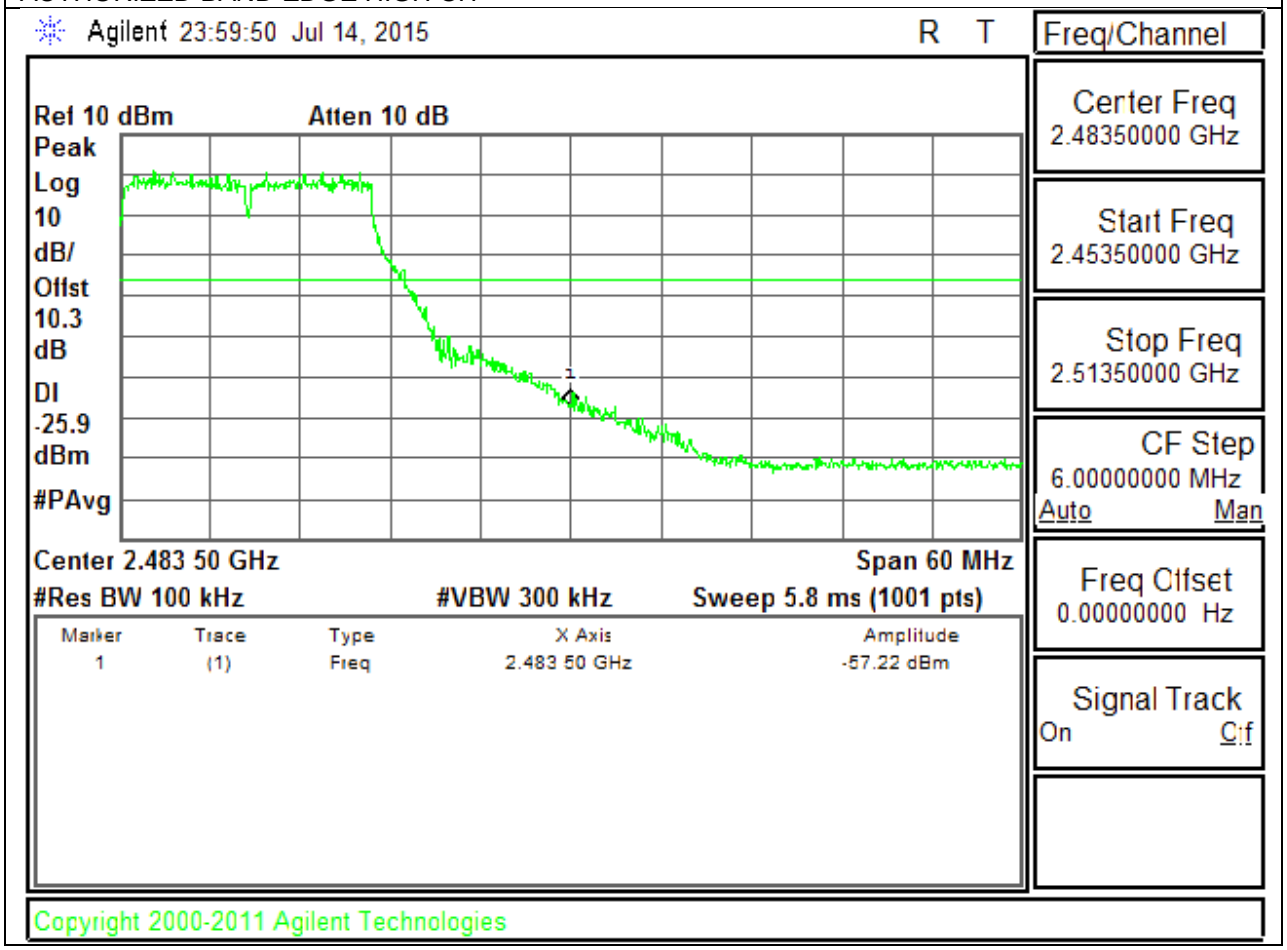
LOW CHANNEL BANDEDGE

AUTHORIZED BAND EDGE LOW CH



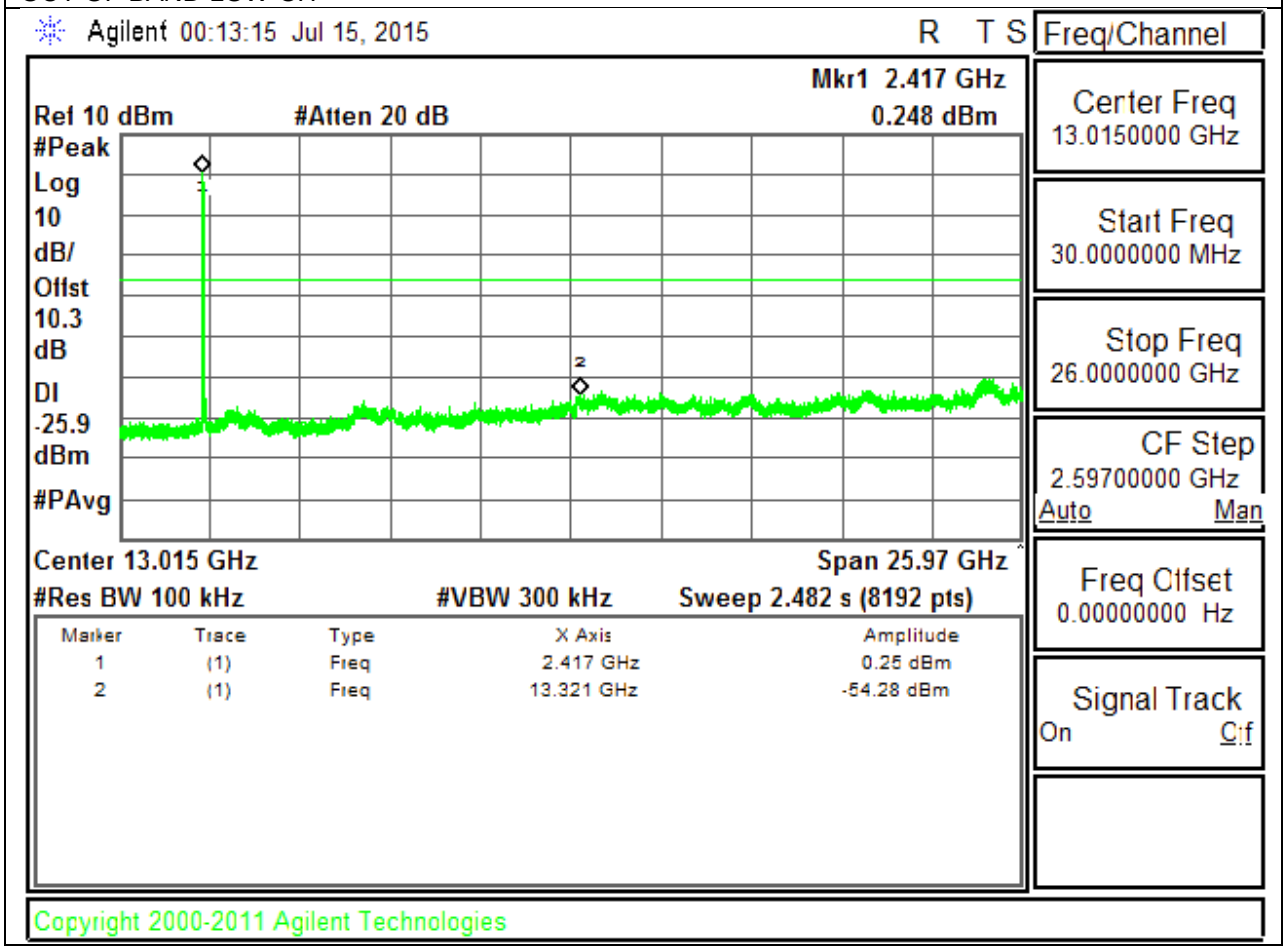
HIGH CHANNEL BANDEDGE

AUTHORIZED BAND EDGE HIGH CH

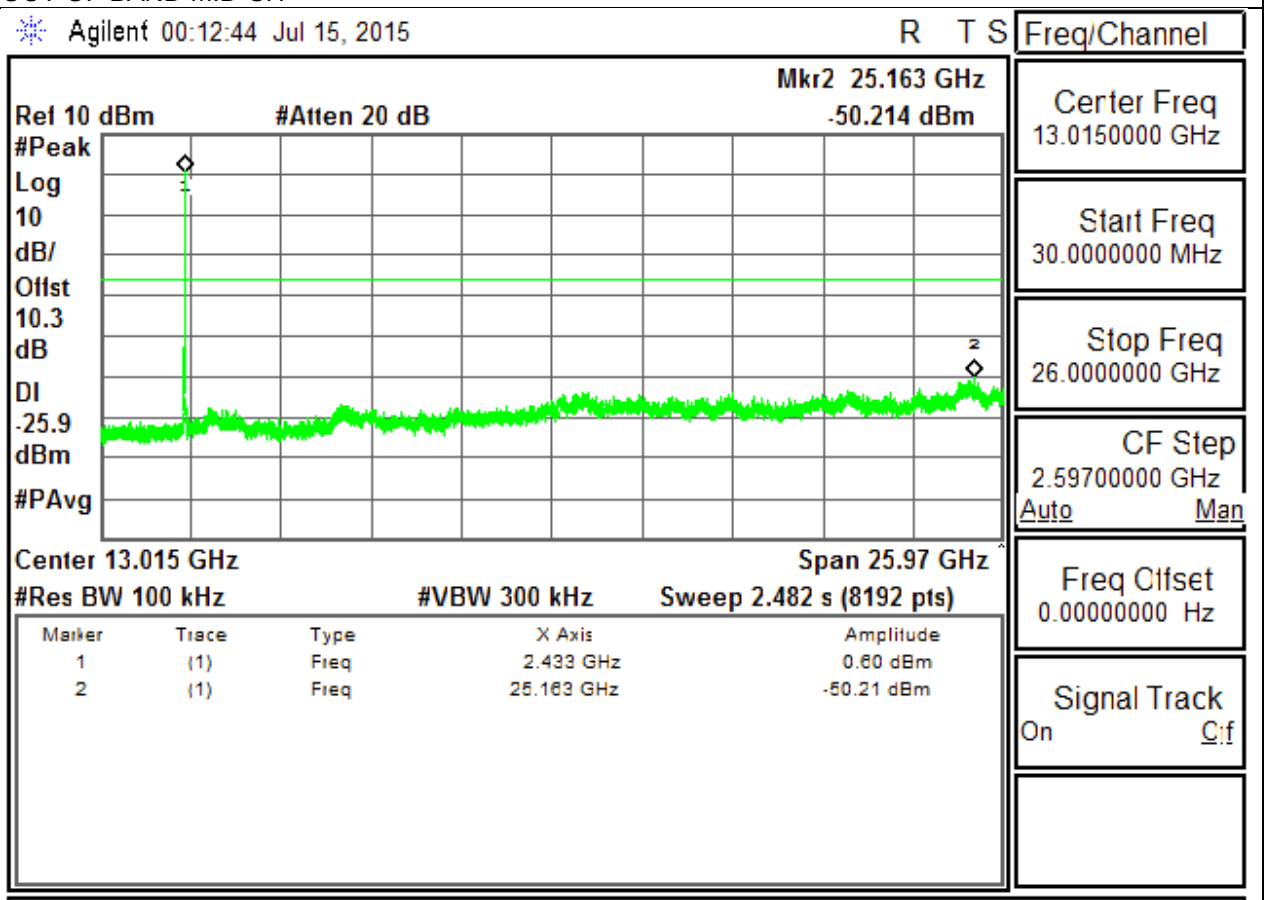


OUT-OF-BAND EMISSIONS

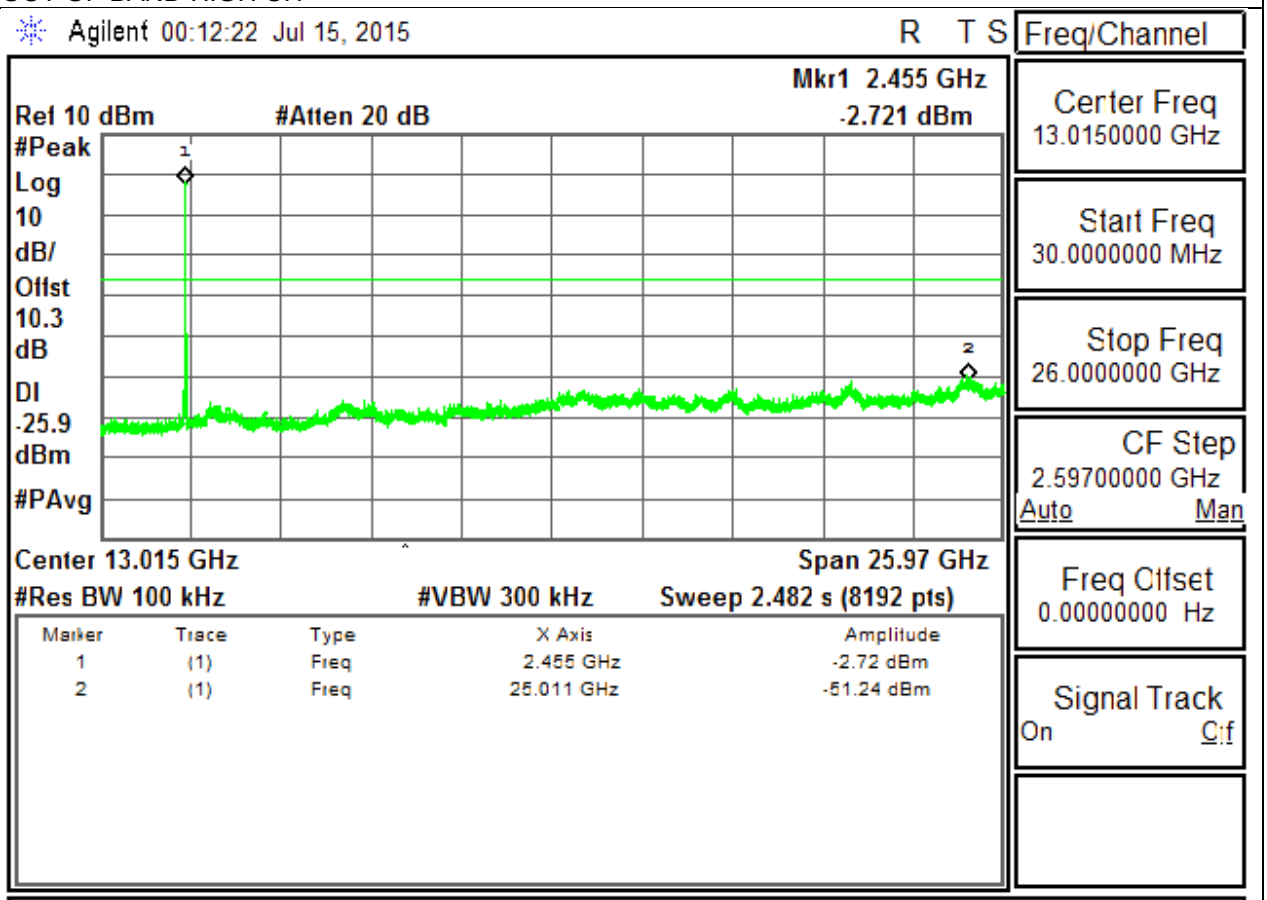
OUT OF BAND LOW CH



OUT OF BAND MID CH



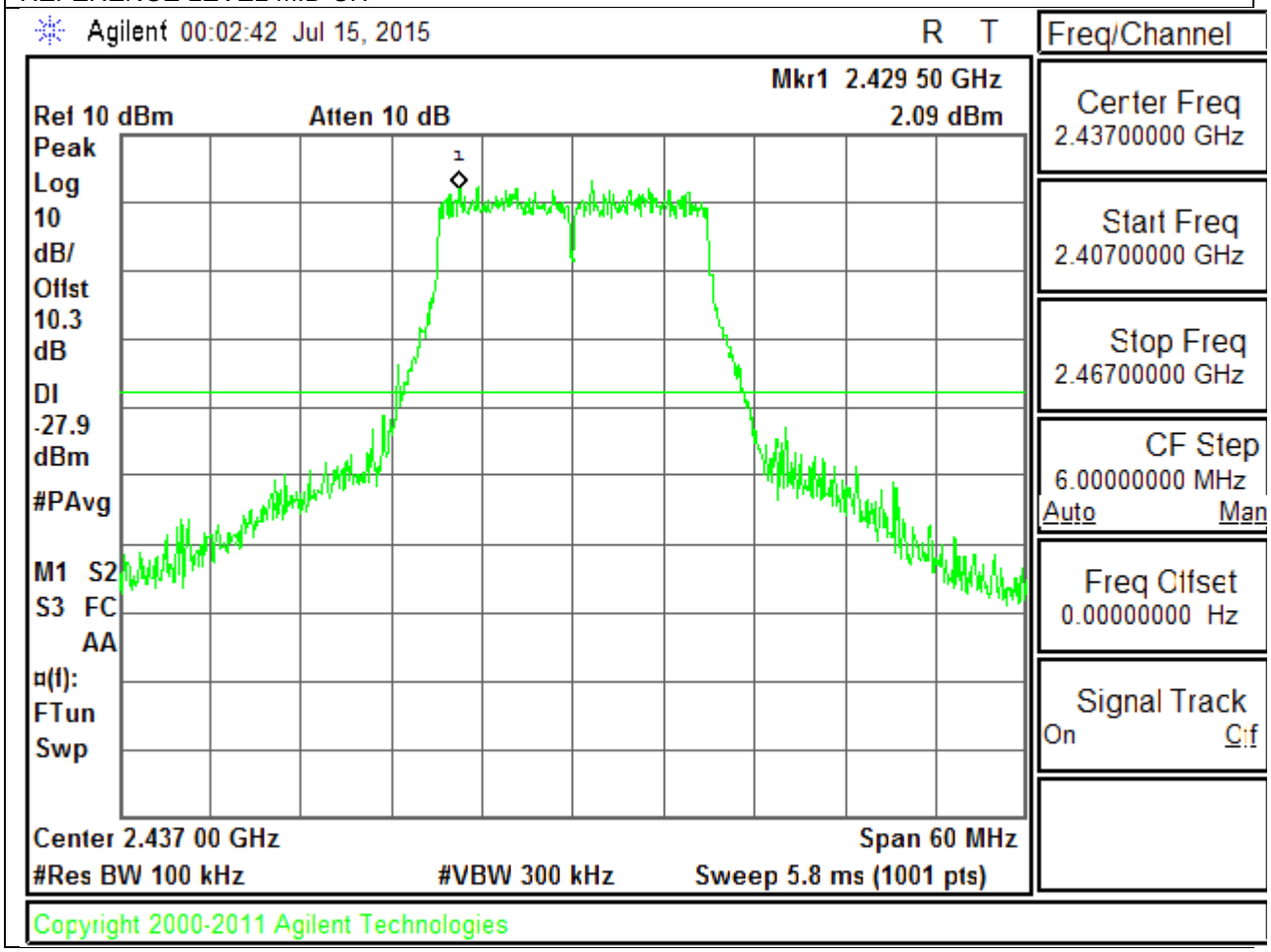
OUT OF BAND HIGH CH



9.6.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

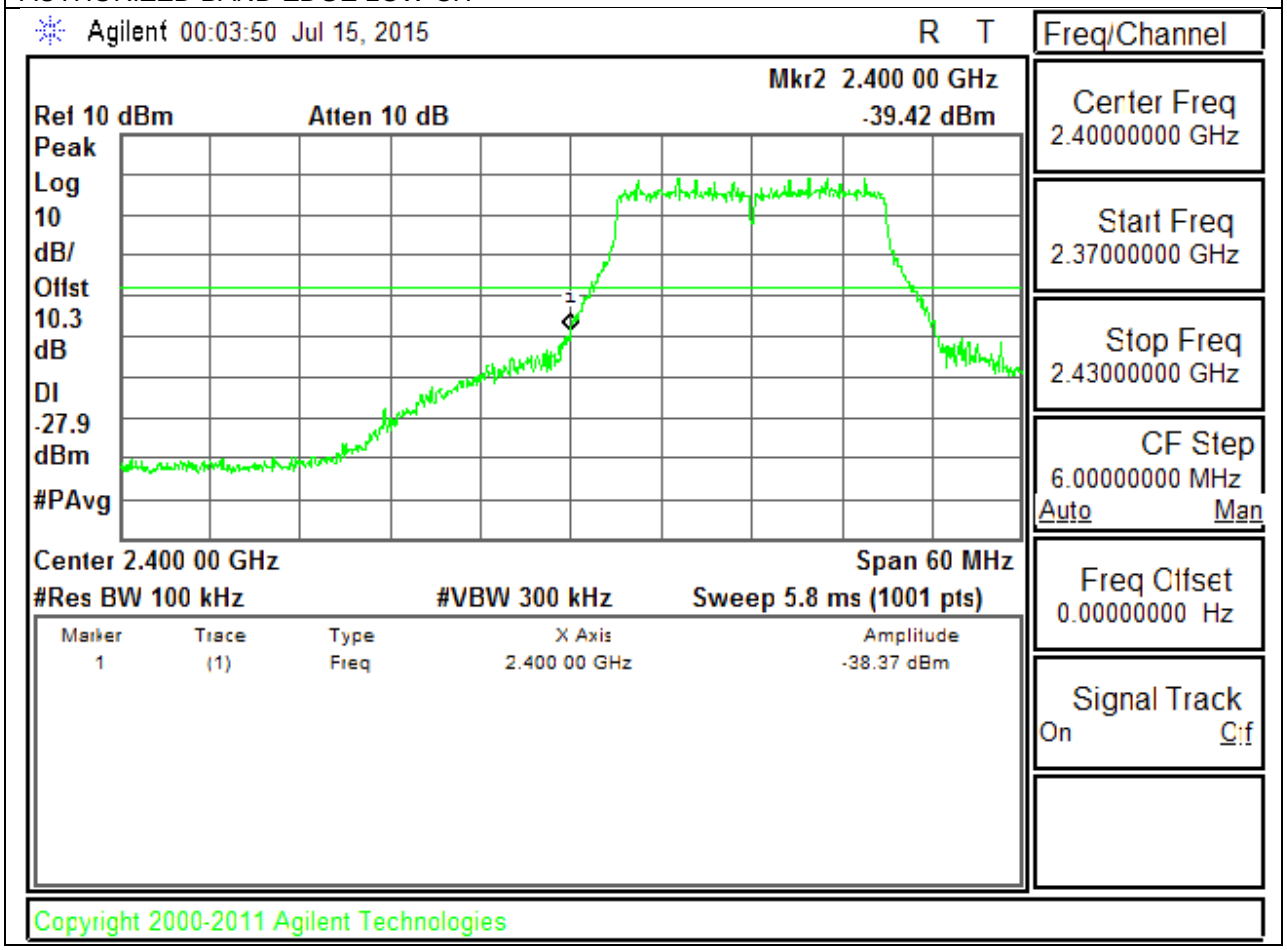
IN-BAND REFERENCE LEVEL

REFERENCE LEVEL MID CH



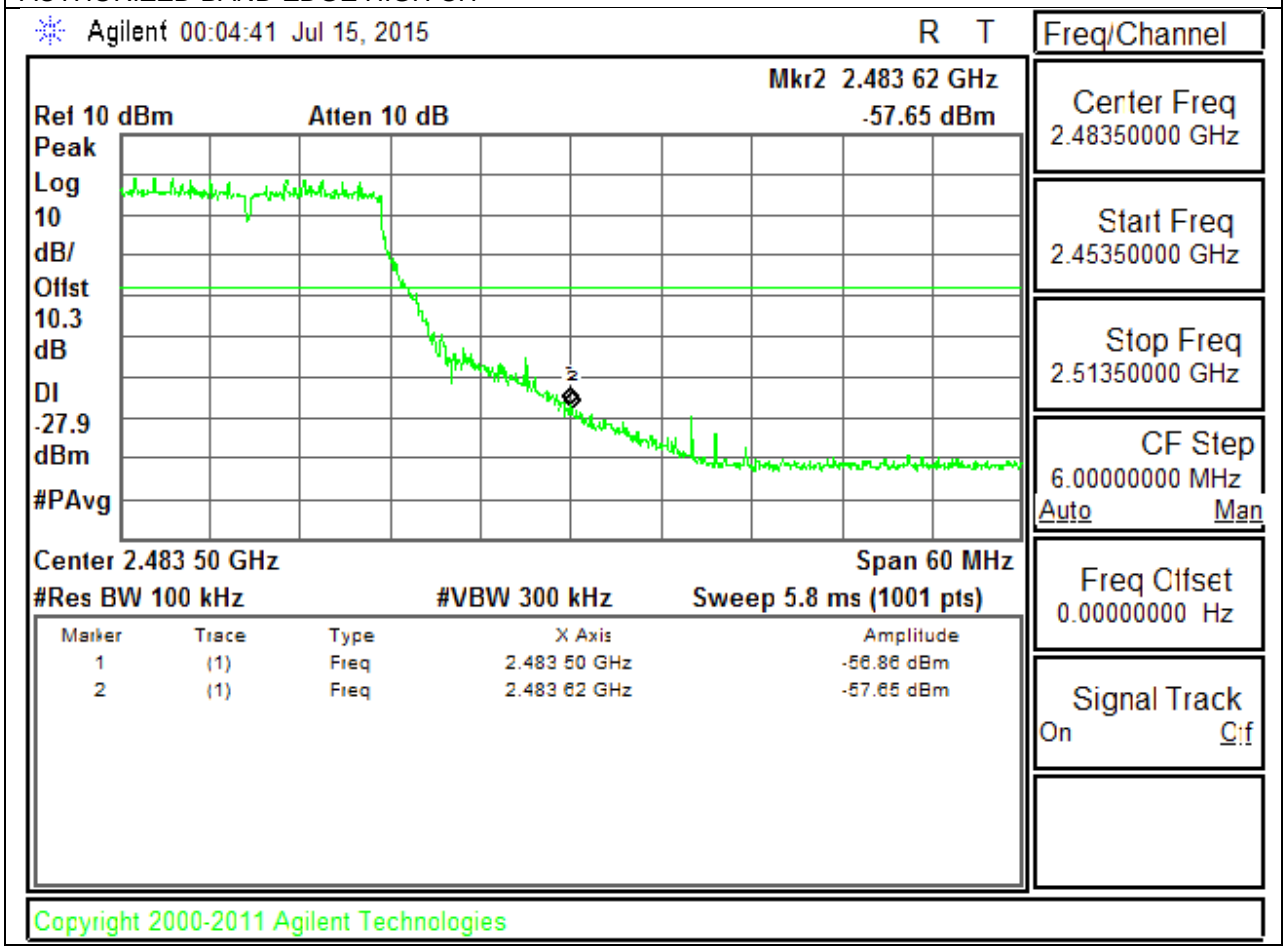
LOW CHANNEL BANDEDGE

AUTHORIZED BAND EDGE LOW CH



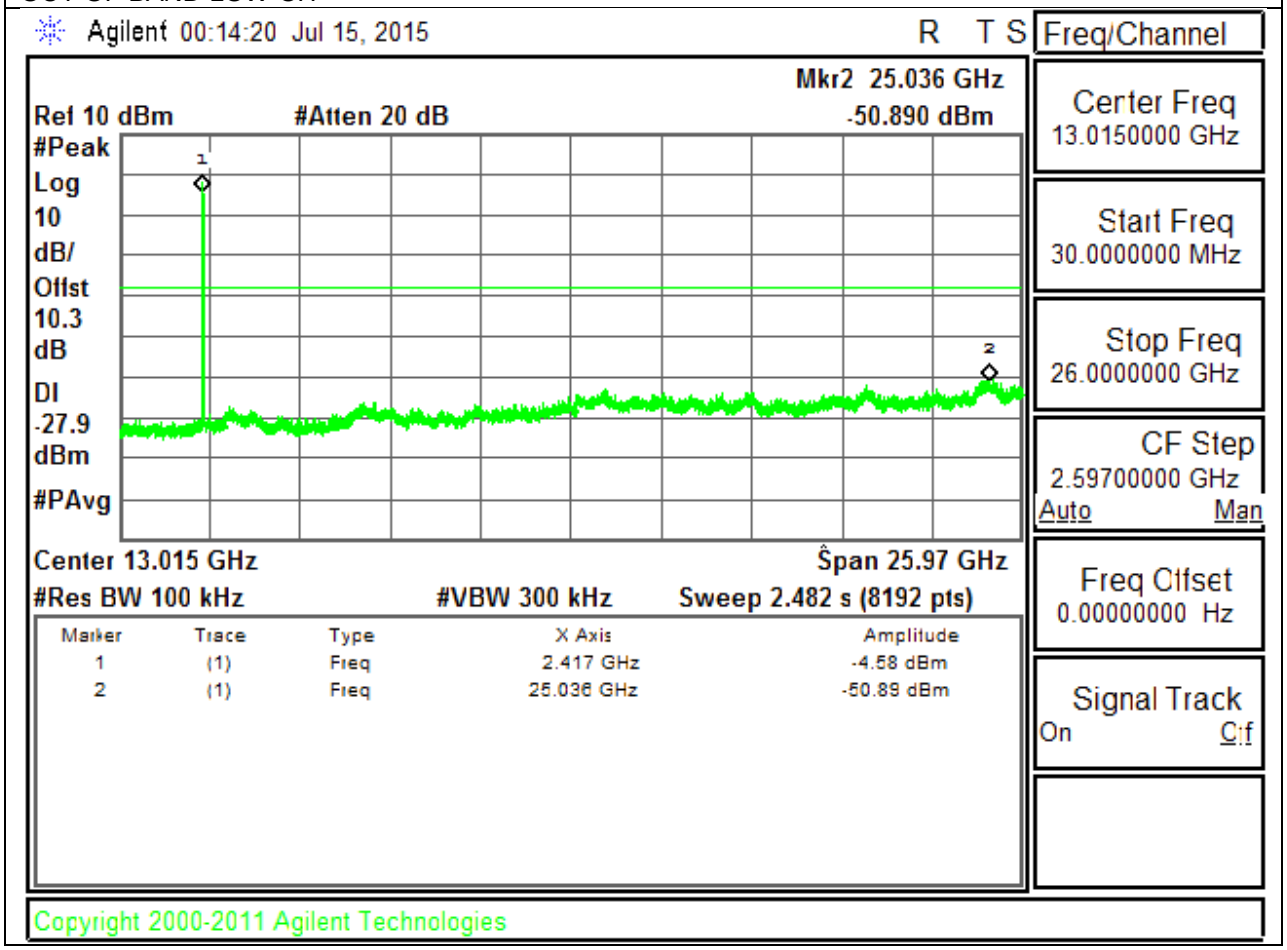
HIGH CHANNEL BANDEDGE

AUTHORIZED BAND EDGE HIGH CH

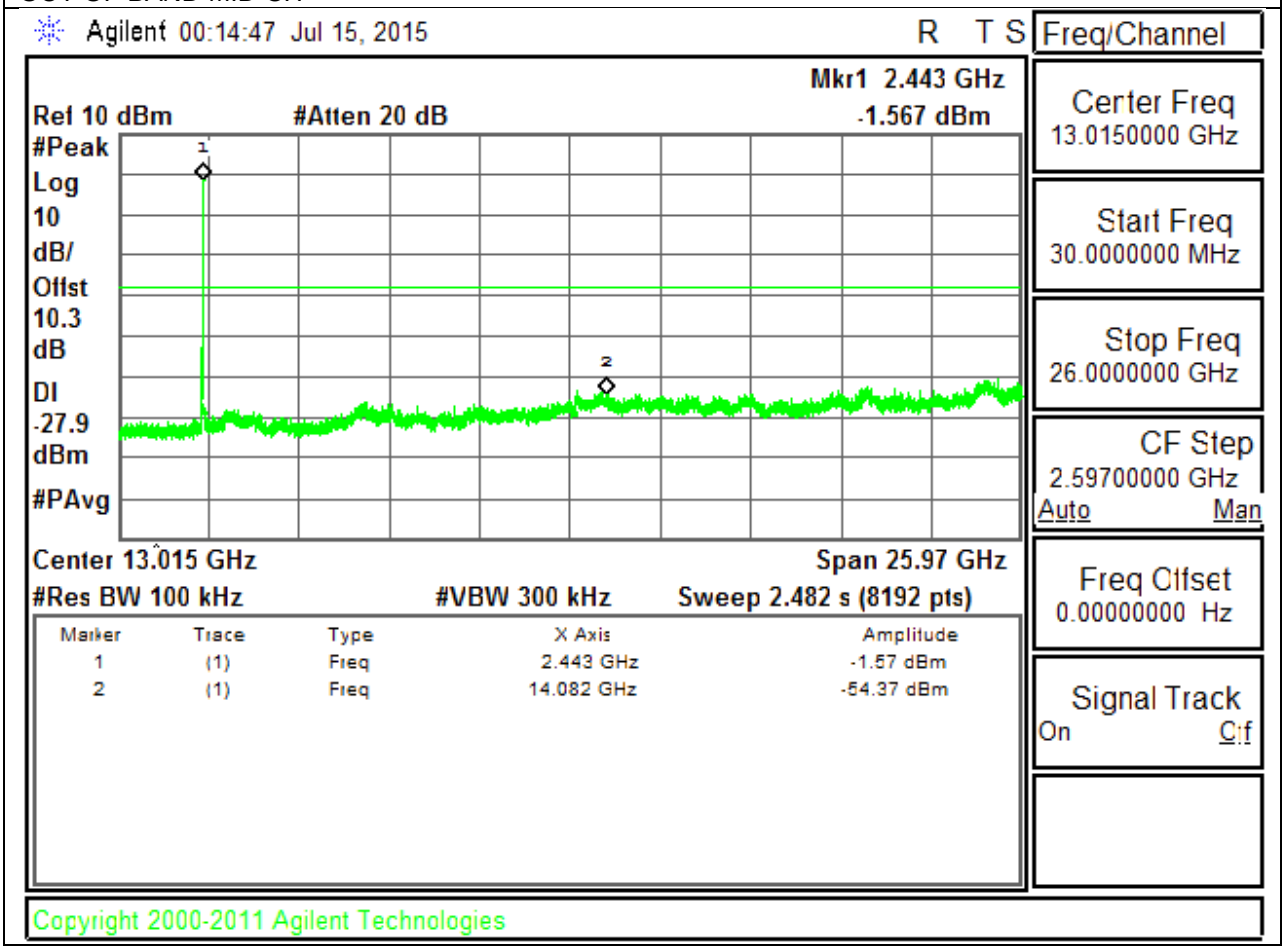


OUT-OF-BAND EMISSIONS

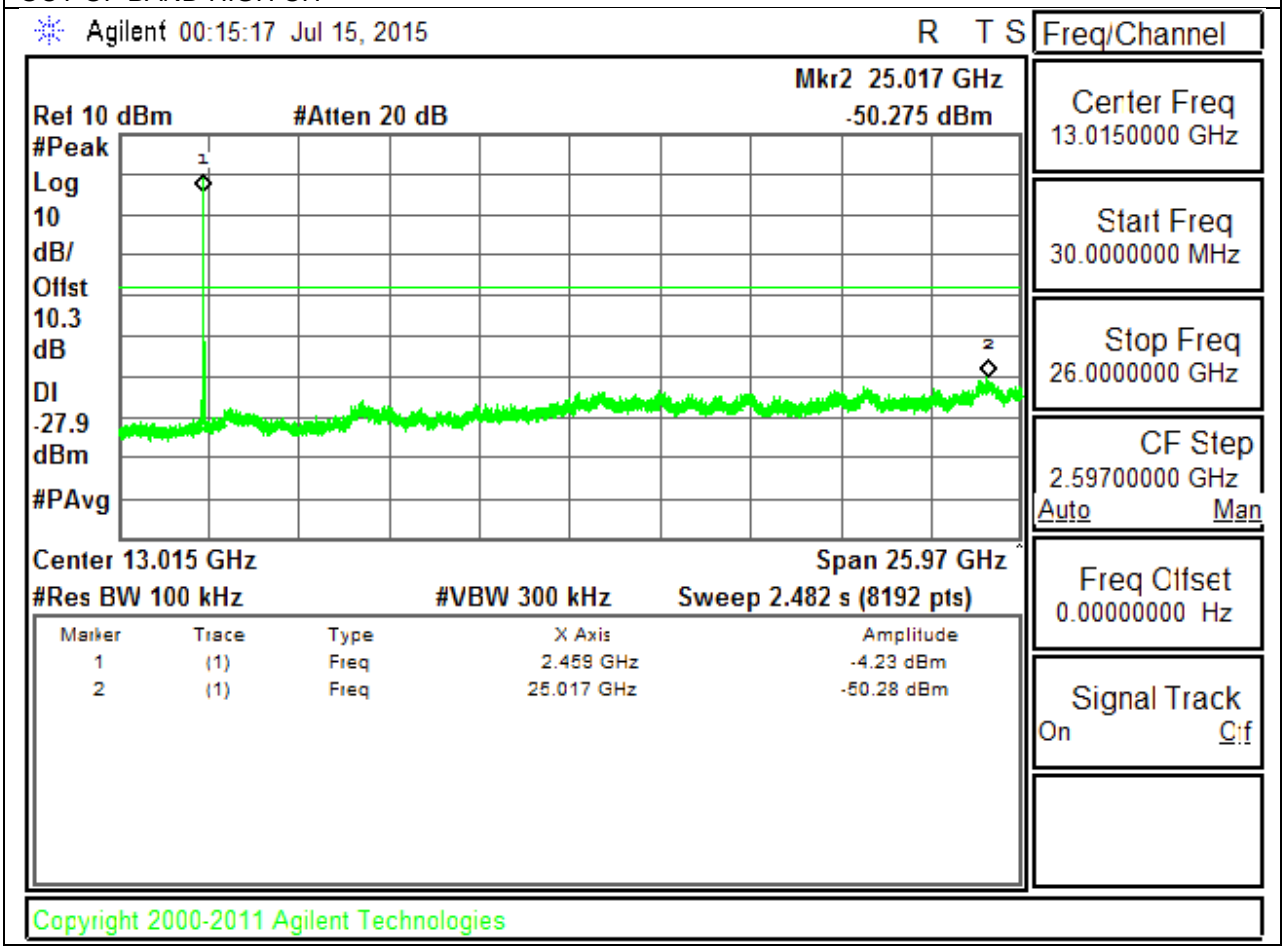
OUT OF BAND LOW CH



OUT OF BAND MID CH



OUT OF BAND HIGH CH



10. RADIATED TEST RESULTS

10.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-GEN Clause 8.9 (Transmitter)

IC RSS-GEN Clause 7 (Receiver)

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

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for below 1GHz and 150cm for above 1GHz. 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= 10log (1/x) For this sample B mode = 0dB (duty cycle >98%); G mode = 0.23dB; HT20 mode = 0.28dB.

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.

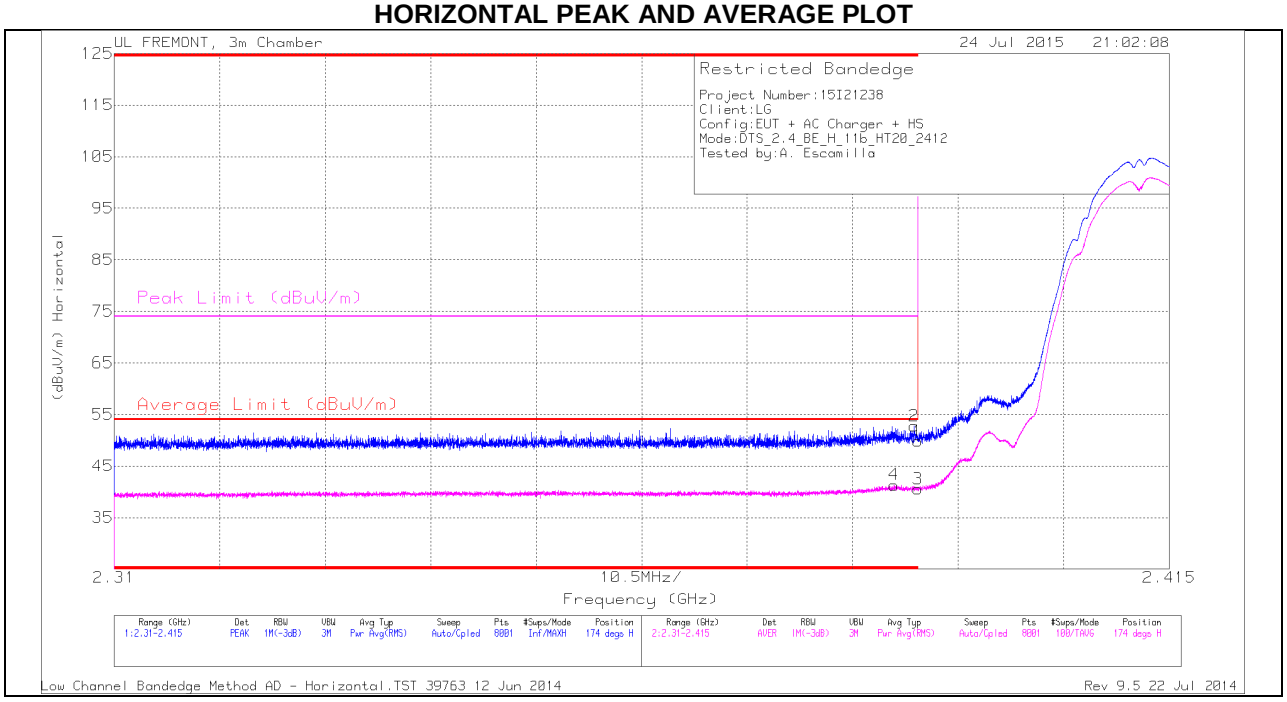
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

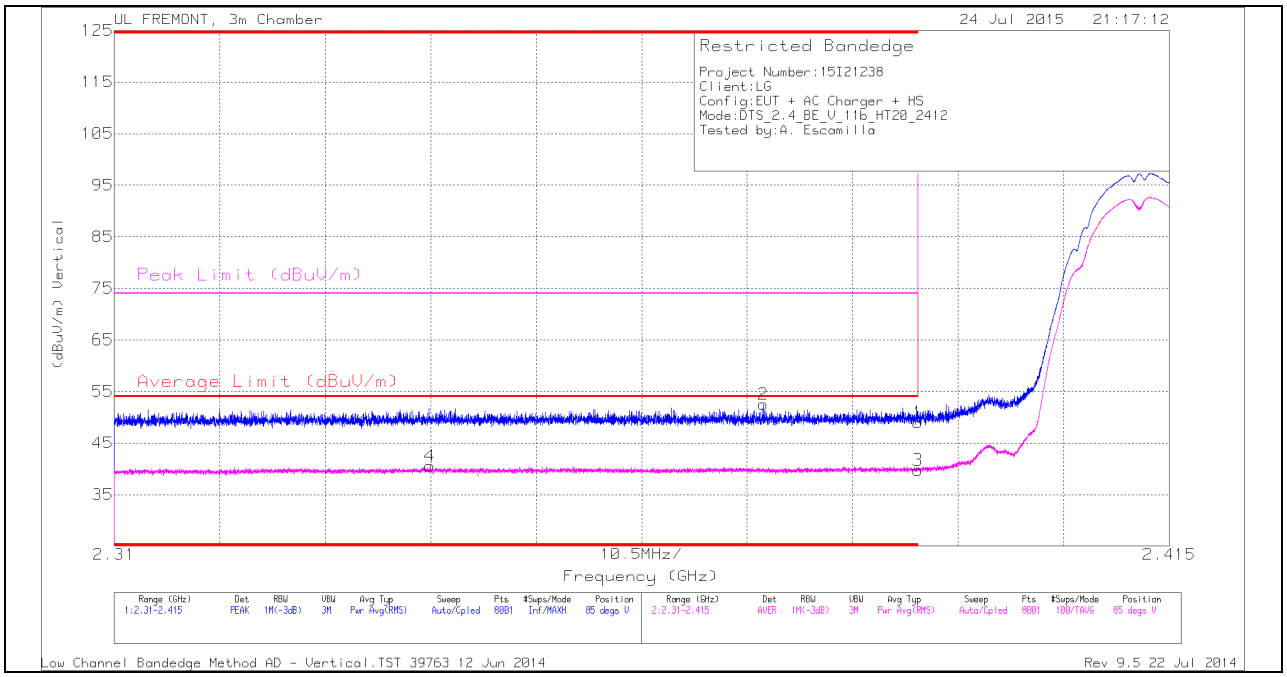
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/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
4	* 2.388	31.75	RMS	32	-22.4	0	41.35	54	-12.65	-	-	174	209	H
1	* 2.39	40.22	PK	32	-22.4	0	49.82	-	-	74	-24.18	174	209	H
2	* 2.39	43.18	PK	32	-22.4	0	52.78	-	-	74	-21.22	174	209	H
3	* 2.39	30.96	RMS	32	-22.4	0	40.56	54	-13.44	-	-	174	209	H

VERTICAL PEAK AND AVERAGE PLOT

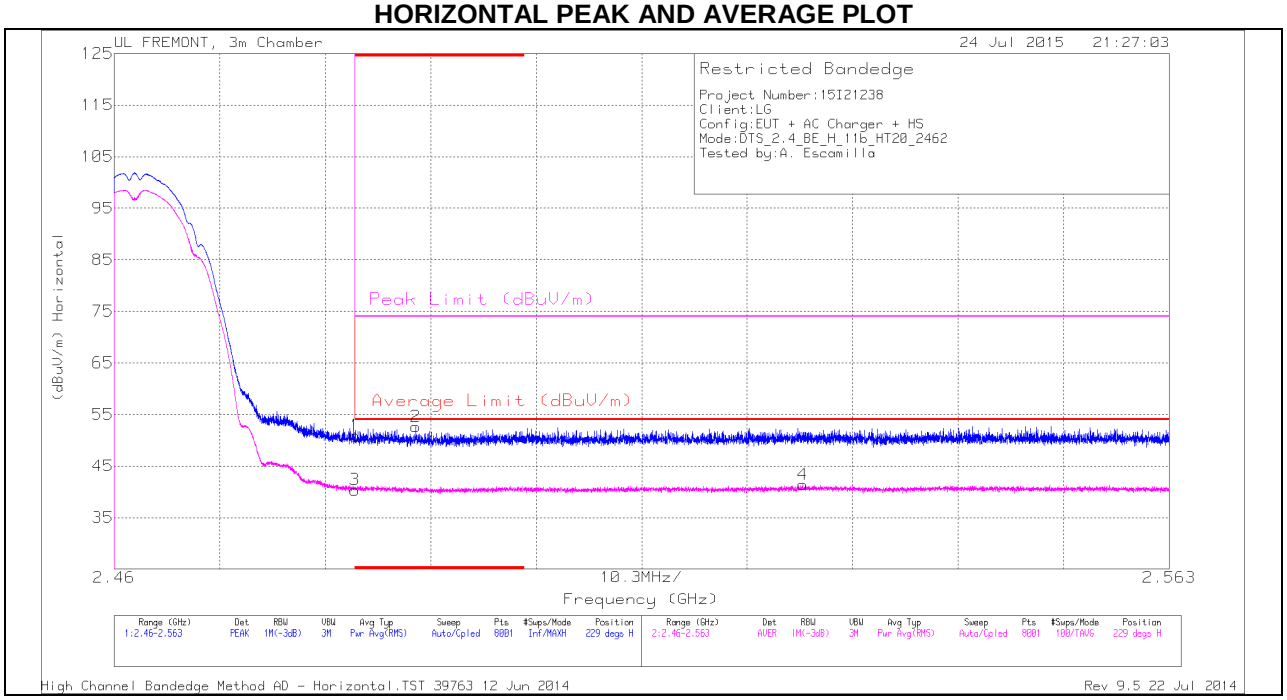


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/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
4	* 2.341	31.13	RMS	31.8	-22.4	0	40.53	54	-13.47	-	-	85	276	V
2	* 2.375	43.03	PK	31.9	-22.4	0	52.53	-	-	74	-21.47	85	276	V
1	* 2.39	39.36	PK	32	-22.4	0	48.96	-	-	74	-25.04	85	276	V
3	* 2.39	30.12	RMS	32	-22.4	0	39.72	54	-14.28	-	-	85	276	V

AUTHORIZED BANDEDGE (HIGH CHANNEL)

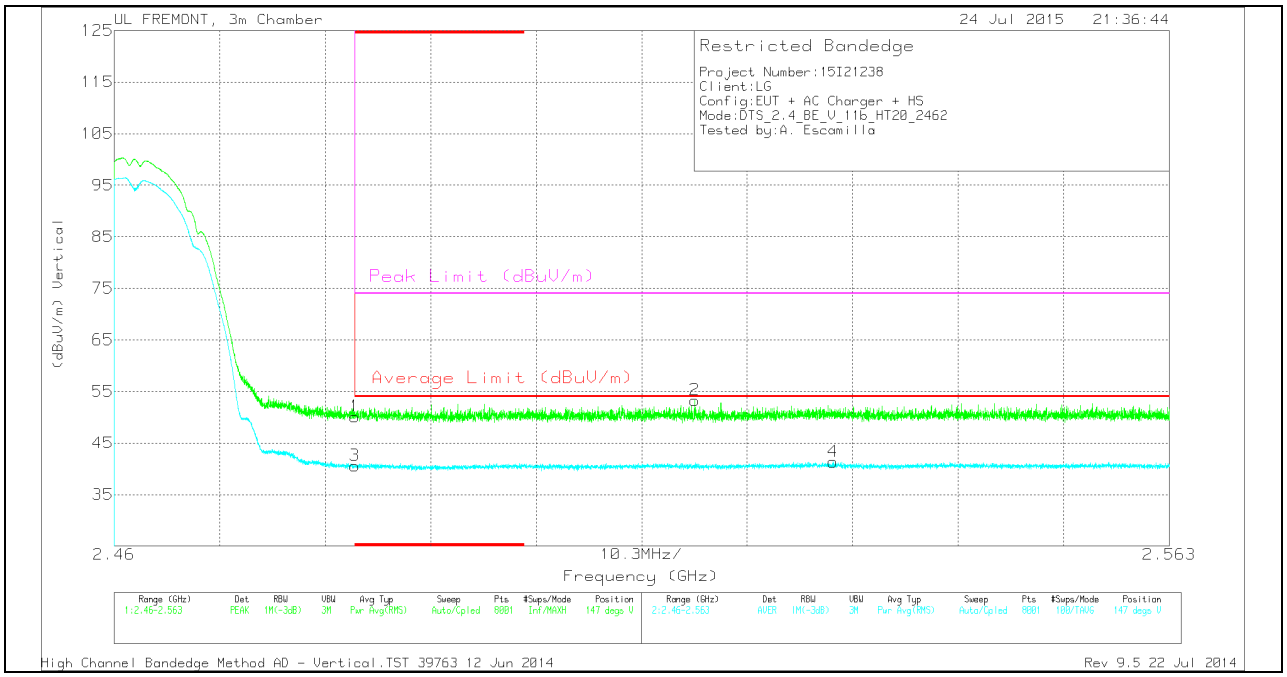
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/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	40.7	PK	32.3	-22.1	0	50.9	-	-	74	-23.1	229	313	H
3	* 2.484	30.17	RMS	32.3	-22.1	0	40.37	54	-13.63	-	-	229	313	H
2	* 2.489	42.56	PK	32.3	-22.2	0	52.66	-	-	74	-21.34	229	313	H
4	2.527	31	RMS	32.4	-22	0	41.4	54	-12.6	-	-	229	313	H

VERTICAL PEAK AND AVERAGE PLOT

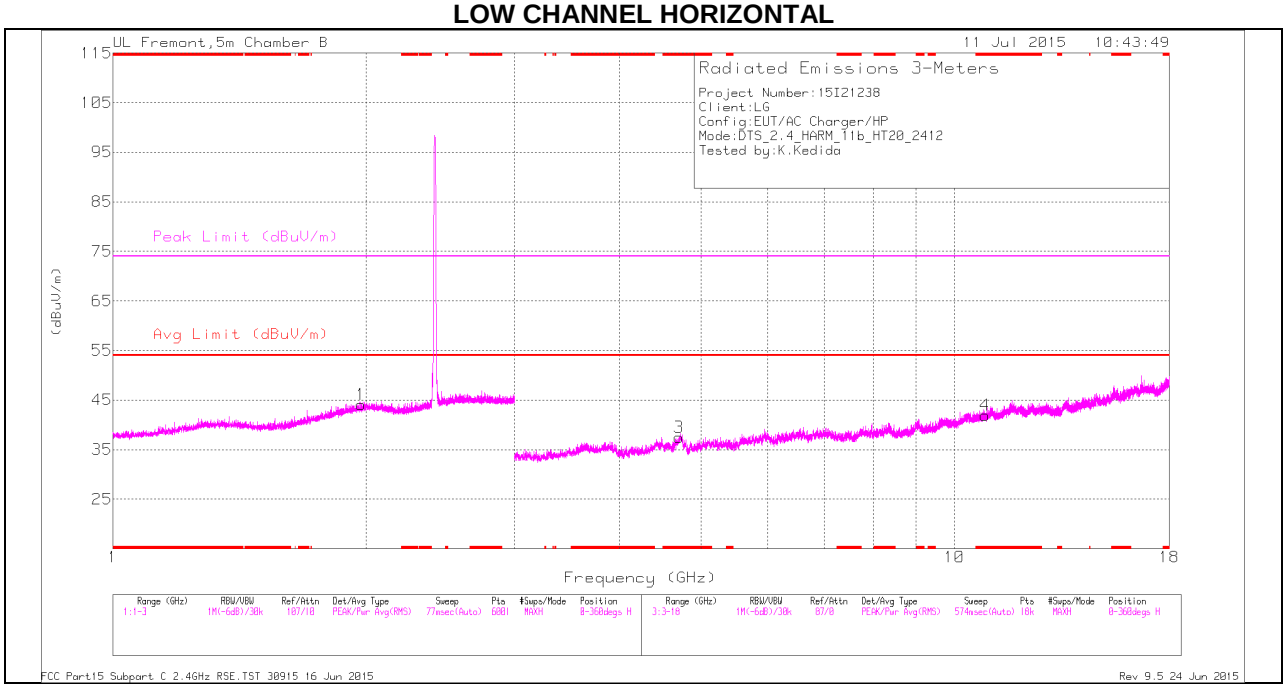


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/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	39.94	PK	32.3	-22.1	0	50.14	-	-	74	-23.86	147	360	V
3	* 2.484	30.41	RMS	32.3	-22.1	0	40.61	54	-13.39	-	-	147	360	V
2	2.517	43.12	PK	32.3	-22.1	0	53.32	-	-	74	-20.68	147	360	V
4	2.53	30.97	RMS	32.4	-22	0	41.37	54	-12.63	-	-	147	360	V

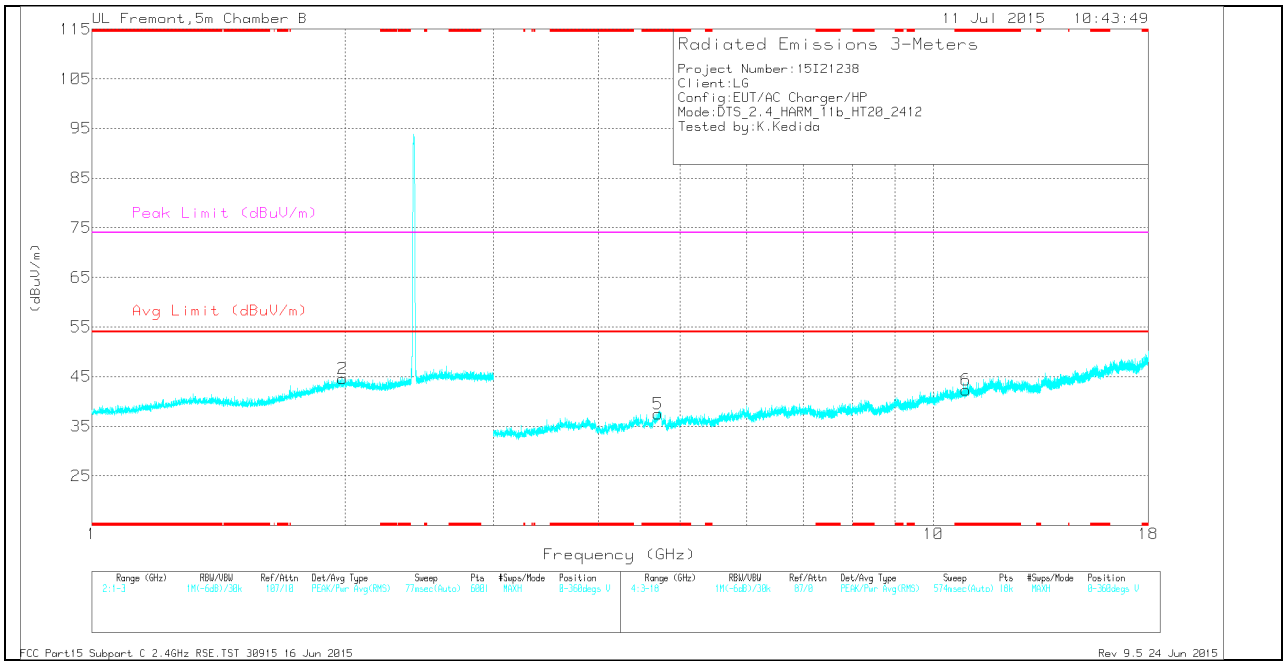
HARMONICS AND SPURIOUS EMISSIONS

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 T345 (dB/m)	Amp/Cbl/Fltr/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
3	* 4.703	32.28	Pk	34.2	-29	0	37.48	-	-	74	-36.52	0-360	101	H
4	* 10.871	25.83	Pk	37.7	-21.6	0	41.93	-	-	74	-32.07	0-360	101	H
5	* 4.703	32.29	Pk	34.2	-29	0	37.49	-	-	74	-36.51	0-360	199	V
6	* 10.928	26.41	Pk	37.7	-21.8	0	42.31	-	-	74	-31.69	0-360	199	V
1	1.971	34.64	Pk	32.2	-22.8	0	44.04	-	-	-	-	0-360	199	H
2	1.985	34.99	Pk	32.3	-22.7	0	44.59	-	-	-	-	0-360	199	V

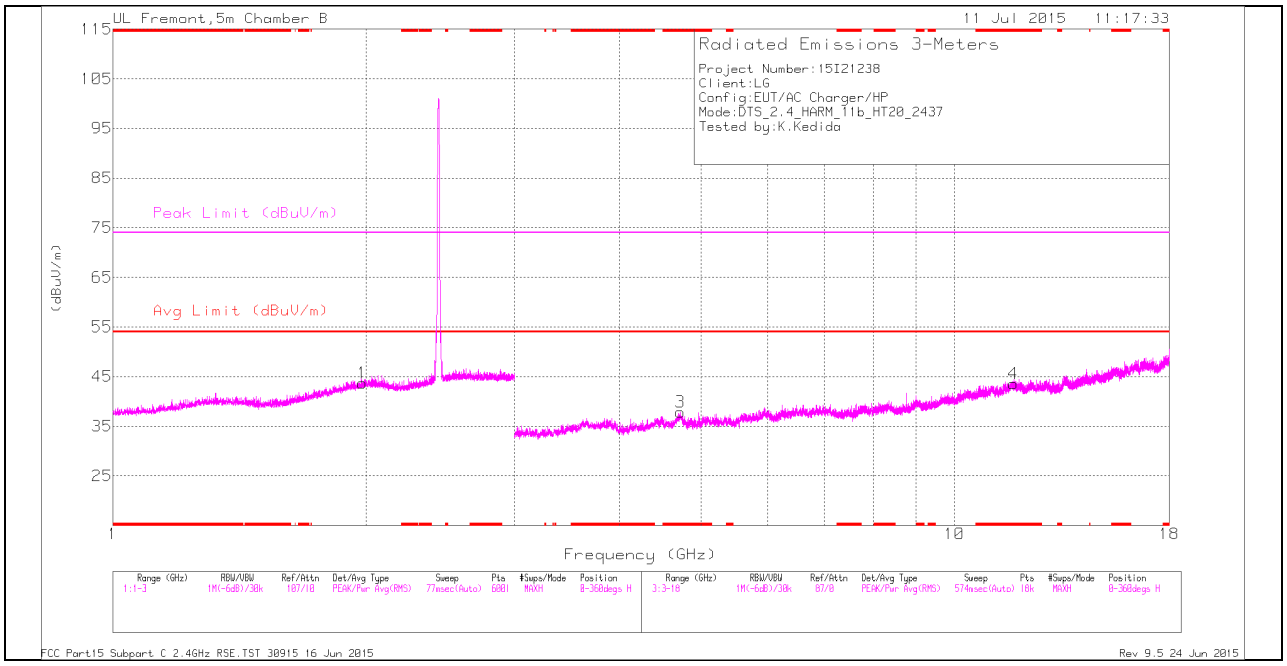
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl /Fltr/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
* 4.702	40.31	PK2	34.2	-29.1	0	45.41	-	-	74	-28.59	1	102	H
* 4.702	29.12	MAv1	34.2	-29.1	0	34.22	54	-19.78	-	-	1	102	H
* 10.871	35.17	PK2	37.7	-21.6	0	51.27	-	-	74	-22.73	1	102	H
* 10.873	23.19	MAv1	37.7	-21.7	0	39.19	54	-14.81	-	-	1	102	H
* 4.705	40.97	PK2	34.2	-28.9	0	46.27	-	-	74	-27.73	1	199	V
* 4.705	28.98	MAv1	34.2	-28.9	0	34.28	54	-19.72	-	-	1	199	V
* 10.929	34.9	PK2	37.7	-21.8	0	50.8	-	-	74	-23.2	1	199	V
* 10.929	23.56	MAv1	37.7	-21.8	0	39.46	54	-14.54	-	-	1	199	V
1.969	31.06	MAv1	32.2	-22.8	0	40.46	-	-	-	-	1	199	H
1.97	43.33	PK2	32.2	-22.8	0	52.73	-	-	-	-	1	199	H
1.984	42.64	PK2	32.3	-22.7	0	52.24	-	-	-	-	1	199	V
1.985	31.06	MAv1	32.3	-22.7	0	40.66	-	-	-	-	1	199	V

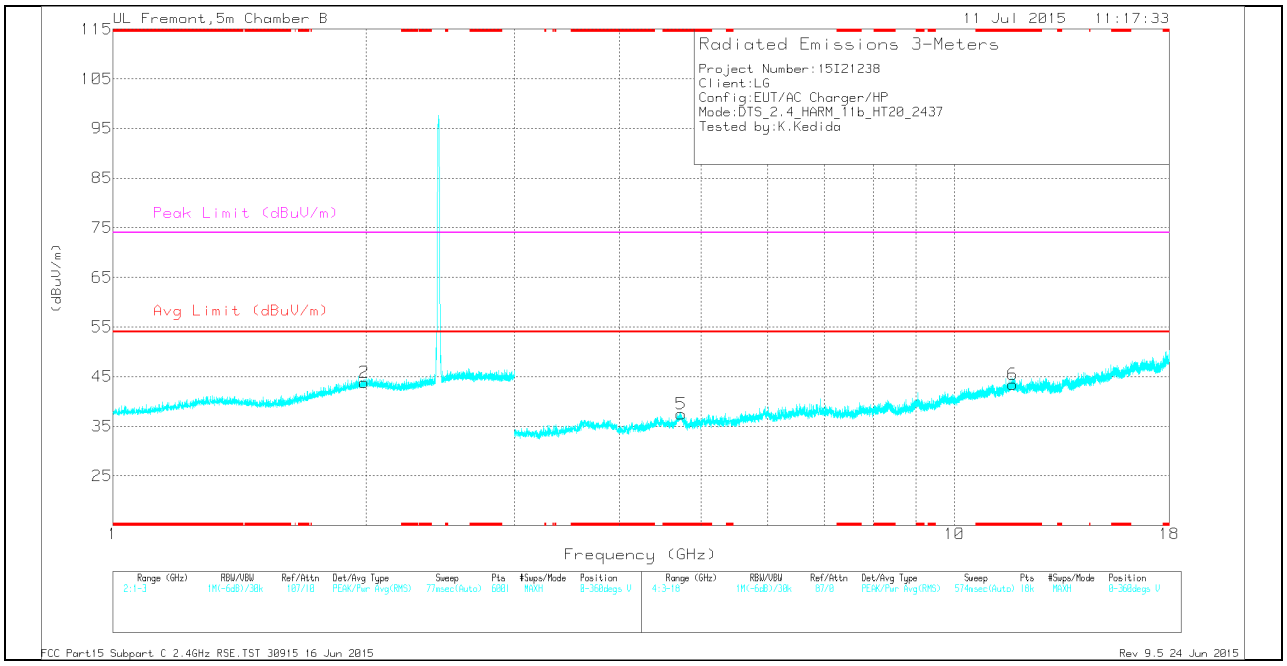
- Compliance for emission in non-restricted bands is show in conducted out of band testing

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/Fltr/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
3	* 4.723	31.81	Pk	34.3	-28.2	0	37.91	-	-	74	-36.09	0-360	101	H
4	* 11.745	26.05	Pk	38.5	-21	0	43.55	-	-	74	-30.45	0-360	101	H
5	* 4.735	31.09	Pk	34.3	-27.9	0	37.49	-	-	74	-36.51	0-360	101	V
6	* 11.732	25.79	Pk	38.5	-20.8	0	43.49	-	-	74	-30.51	0-360	199	V
1	1.98	34.19	Pk	32.2	-22.7	0	43.69	-	-	-	-	0-360	101	H
2	1.989	34.22	Pk	32.3	-22.7	0	43.82	-	-	-	-	0-360	200	V

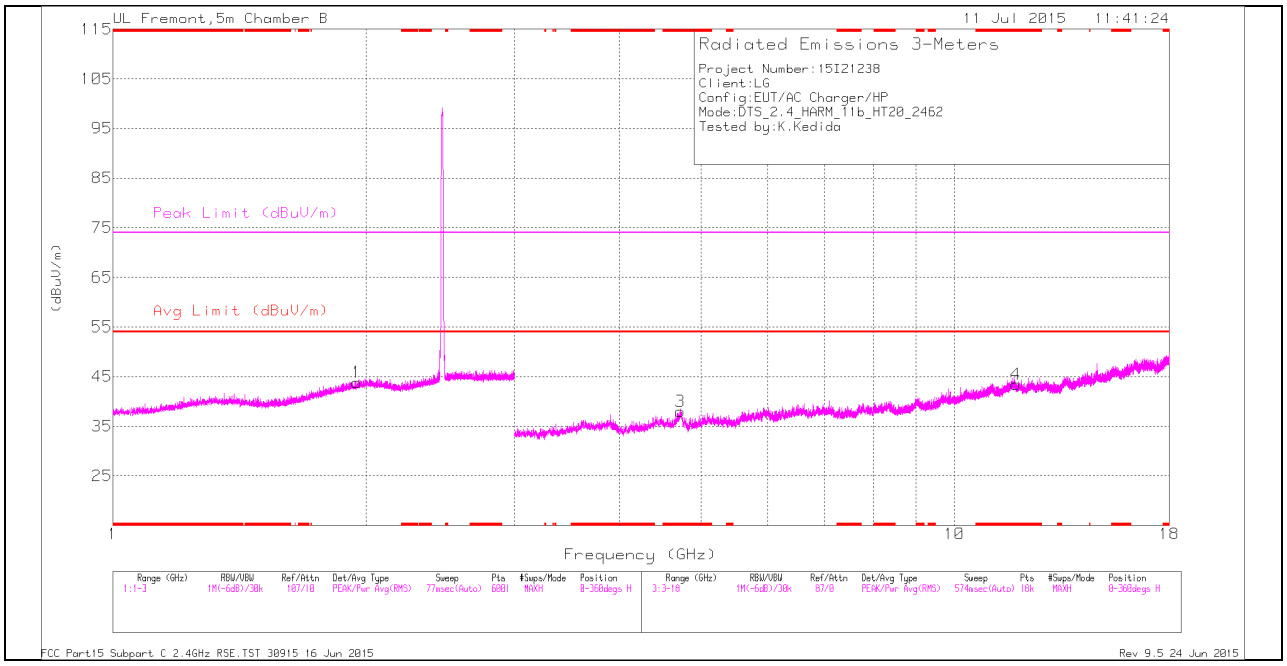
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl /Fltr/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
* 4.722	40.33	PK2	34.3	-28.3	0	46.33	-	-	74	-27.67	1	102	H
* 4.723	29.04	MAv1	34.3	-28.2	0	35.14	54	-18.86	-	-	1	102	H
* 11.744	34.16	PK2	38.5	-21	0	51.66	-	-	74	-22.34	1	102	H
* 11.745	23.07	MAv1	38.5	-21	0	40.57	54	-13.43	-	-	1	102	H
* 4.736	39.64	PK2	34.3	-27.9	0	46.04	-	-	74	-27.96	1	102	V
* 4.737	28.98	MAv1	34.3	-28	0	35.28	54	-18.72	-	-	1	102	V
* 11.731	33.93	PK2	38.5	-20.8	0	51.63	-	-	74	-22.37	1	199	V
* 11.733	23.07	MAv1	38.5	-20.8	0	40.77	54	-13.23	-	-	1	199	V
1.98	42.84	PK2	32.2	-22.7	0	52.34	-	-	-	-	1	101	H
1.98	30.99	MAv1	32.2	-22.7	0	40.49	-	-	-	-	1	101	H
1.988	30.99	MAv1	32.3	-22.7	0	40.59	-	-	-	-	1	199	V
1.989	42.32	PK2	32.3	-22.7	0	51.92	-	-	-	-	1	199	V

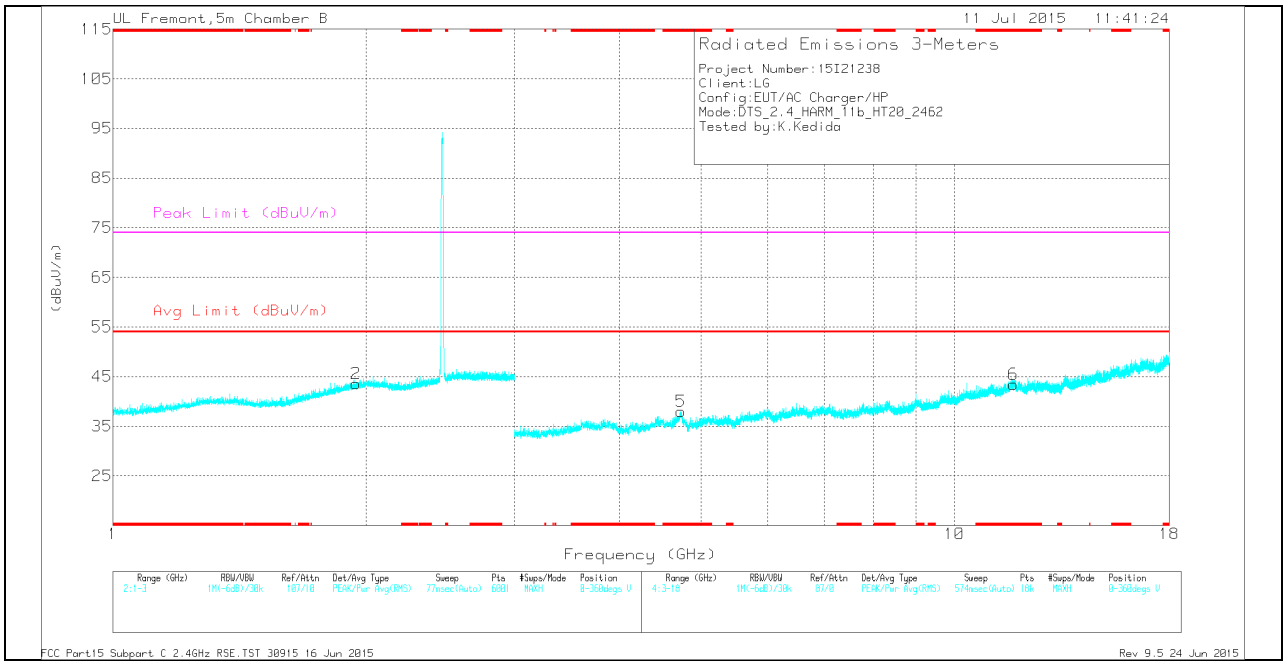
- Compliance for emission in non-restricted bands is show in conducted out of band testing

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/Fltr/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
3	* 4.727	31.65	Pk	34.3	-28	0	37.95	-	-	74	-36.05	0-360	101	H
4	* 11.83	26.3	Pk	38.6	-21.4	0	43.5	-	-	74	-30.5	0-360	101	H
5	* 4.728	31.65	Pk	34.3	-28	0	37.95	-	-	74	-36.05	0-360	101	V
6	* 11.75	25.85	Pk	38.5	-20.9	0	43.45	-	-	74	-30.55	0-360	101	V
2	1.943	34.42	Pk	32	-22.9	0	43.52	-	-	-	-	0-360	101	V
1	1.947	34.63	Pk	32.1	-22.9	0	43.83	-	-	-	-	0-360	101	H

PK - Peak detector

RADIATED EMISSIONS

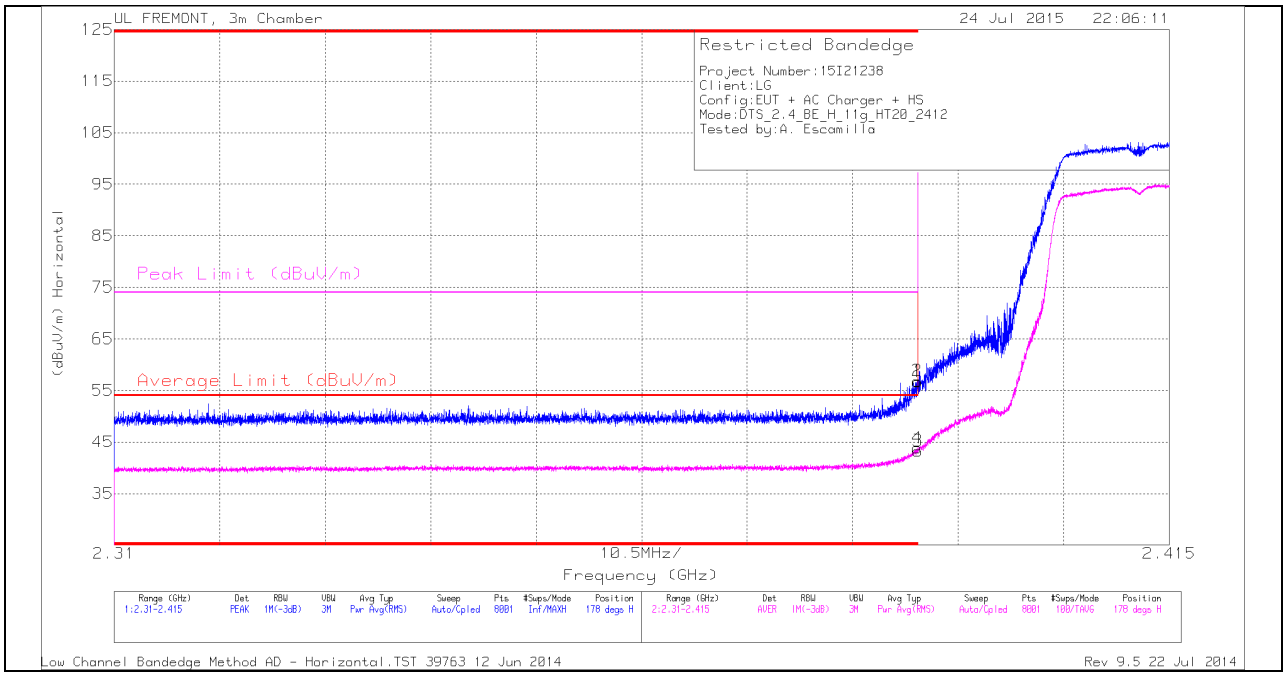
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl /Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.727	40.14	PK2	34.3	-28	0	46.44	-	-	74	-27.56	1	101	H
* 4.725	29.14	MAv1	34.3	-28.1	0	35.34	54	-18.66	-	-	1	101	H
* 11.828	34.33	PK2	38.6	-21.4	0	51.53	-	-	74	-22.47	1	101	H
* 11.831	23.58	MAv1	38.6	-21.4	0	40.78	54	-13.22	-	-	1	101	H
* 4.729	40.12	PK2	34.3	-27.9	0	46.52	-	-	74	-27.48	1	101	V
* 4.727	29.02	MAv1	34.3	-28	0	35.32	54	-18.68	-	-	1	101	V
* 11.752	34.06	PK2	38.5	-20.8	0	51.76	-	-	74	-22.24	1	101	V
* 11.75	22.95	MAv1	38.5	-20.9	0	40.55	54	-13.45	-	-	1	101	V
1.943	42.92	PK2	32	-22.9	0	52.02	-	-	-	-	1	101	V
1.944	31.27	MAv1	32	-22.9	0	40.37	-	-	-	-	1	101	V
1.946	31.18	MAv1	32.1	-22.9	0	40.38	-	-	-	-	1	101	H
1.948	42.61	PK2	32.1	-22.9	0	51.81	-	-	-	-	1	101	H

- Compliance for emission in non-restricted bands is show in conducted out of band testing

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

RESTRICTED BANDEDGE (LOW CHANNEL)

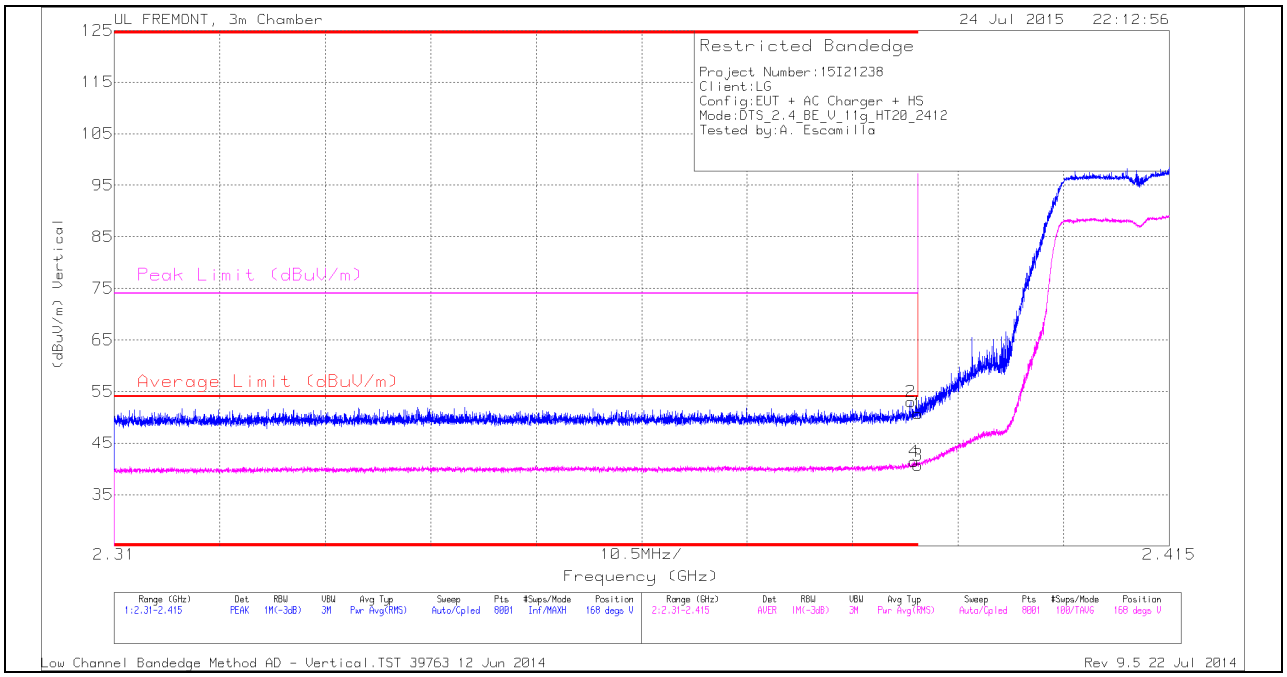
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/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	47.12	PK	32	-22.4	0	56.72	-	-	74	-17.28	178	305	H
2	* 2.39	47.26	PK	32	-22.4	0	56.86	-	-	74	-17.14	178	305	H
3	* 2.39	33.45	RMS	32	-22.4	.23	43.28	54	-10.72	-	-	178	305	H
4	* 2.39	34.01	RMS	32	-22.4	.23	43.84	54	-10.16	-	-	178	305	H

VERTICAL PEAK AND AVERAGE PLOT

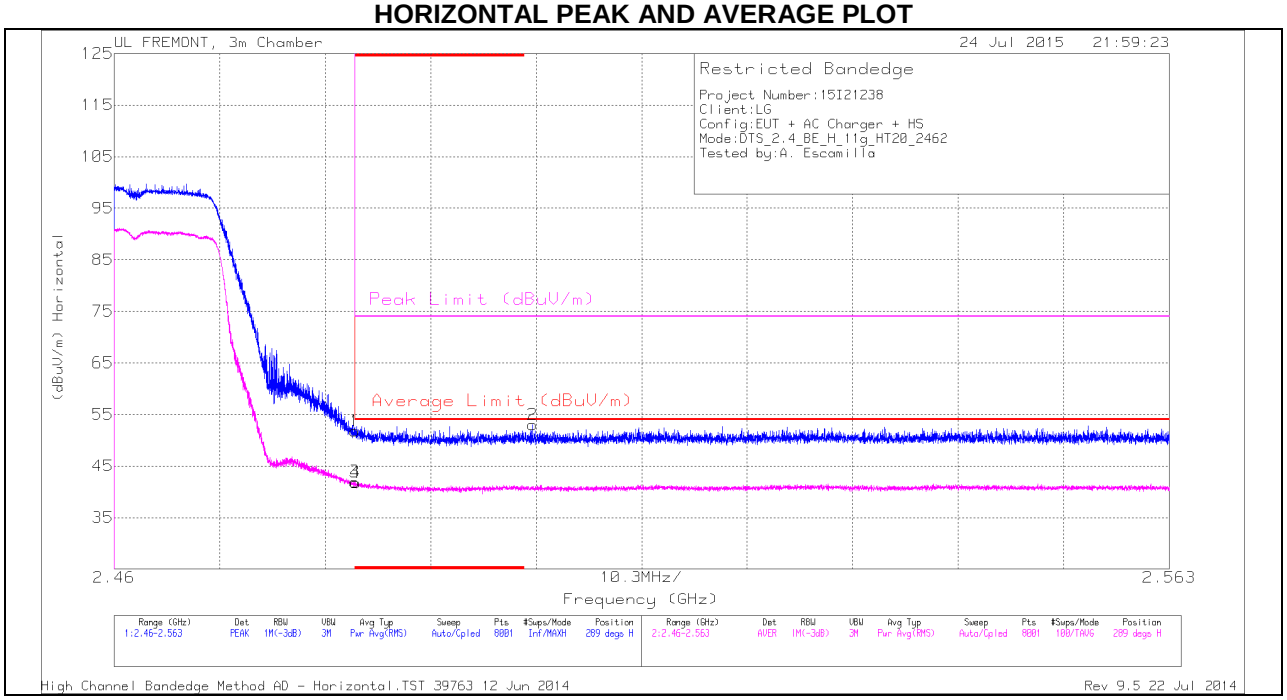


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/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	* 2.389	43.39	PK	32	-22.4	0	52.99	-	-	74	-21.01	168	373	V
1	* 2.39	41.11	PK	32	-22.4	0	50.71	-	-	74	-23.29	168	373	V
3	* 2.39	30.87	RMS	32	-22.4	.23	40.7	54	-13.3	-	-	168	373	V
4	* 2.39	31.58	RMS	32	-22.4	.23	41.41	54	-12.59	-	-	168	373	V

AUTHORIZED BANDEDGE (HIGH CHANNEL)

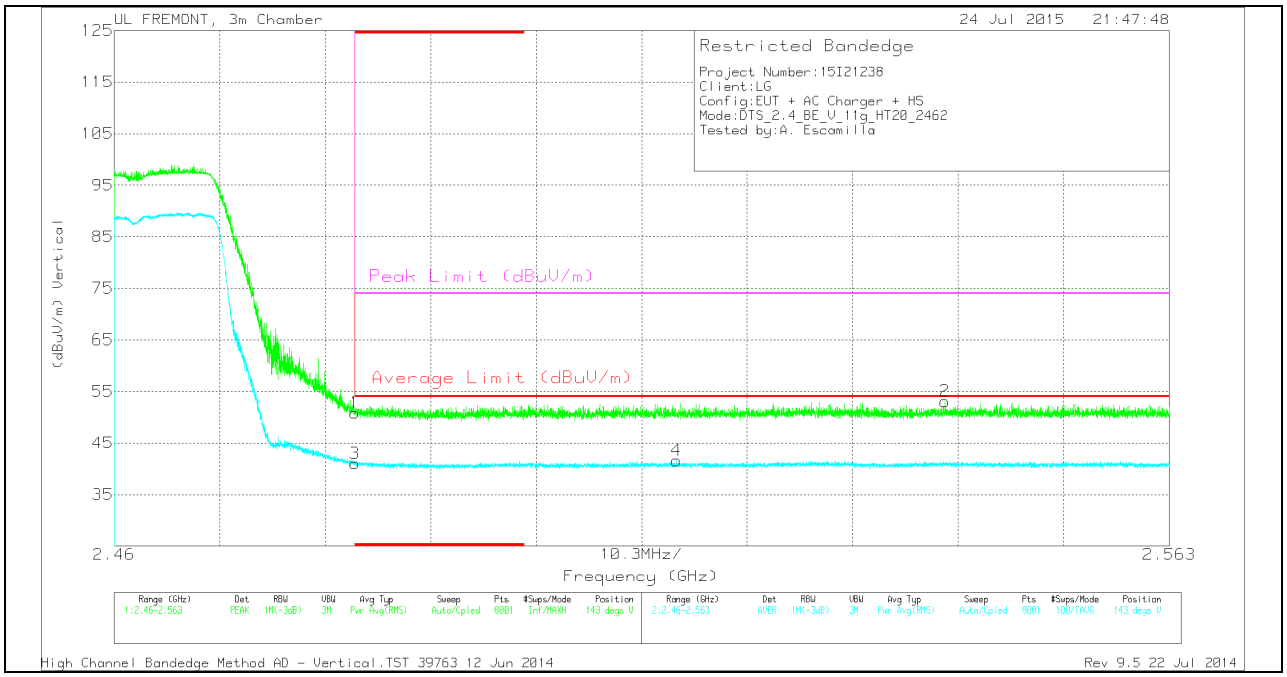
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/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	41.57	PK	32.3	-22.1	0	51.77	-	-	74	-22.23	289	351	H
3	* 2.484	31.51	RMS	32.3	-22.1	.23	41.94	54	-12.06	-	-	289	351	H
4	* 2.484	31.32	RMS	32.3	-22.1	.23	41.75	54	-12.25	-	-	289	351	H
2	2.501	42.78	PK	32.3	-22.1	0	52.98	-	-	74	-21.02	289	351	H

VERTICAL PEAK AND AVERAGE PLOT

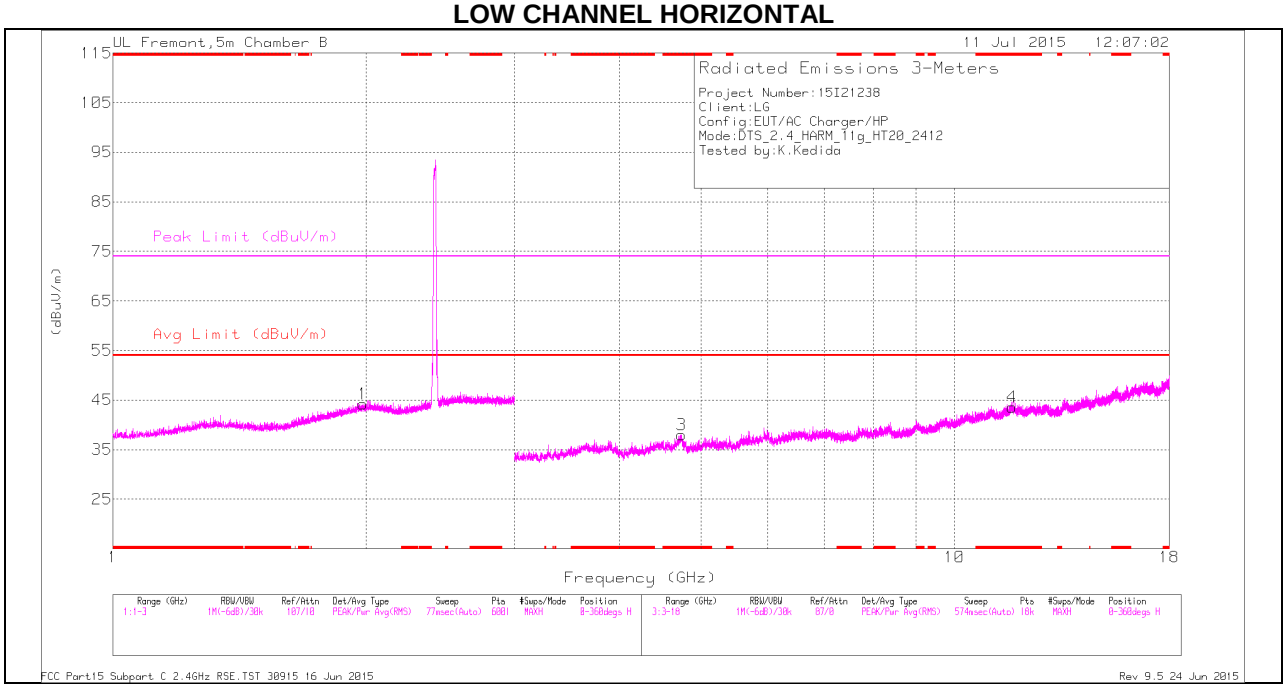


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/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	40.68	PK	32.3	-22.1	0	50.88	-	-	74	-23.12	143	395	V
3	* 2.484	30.61	RMS	32.3	-22.1	.23	41.04	54	-12.96	-	-	143	395	V
4	2.515	31.08	RMS	32.3	-22	.23	41.61	54	-12.39	-	-	143	395	V
2	2.541	42.58	PK	32.4	-21.9	0	53.08	-	-	74	-20.92	143	395	V

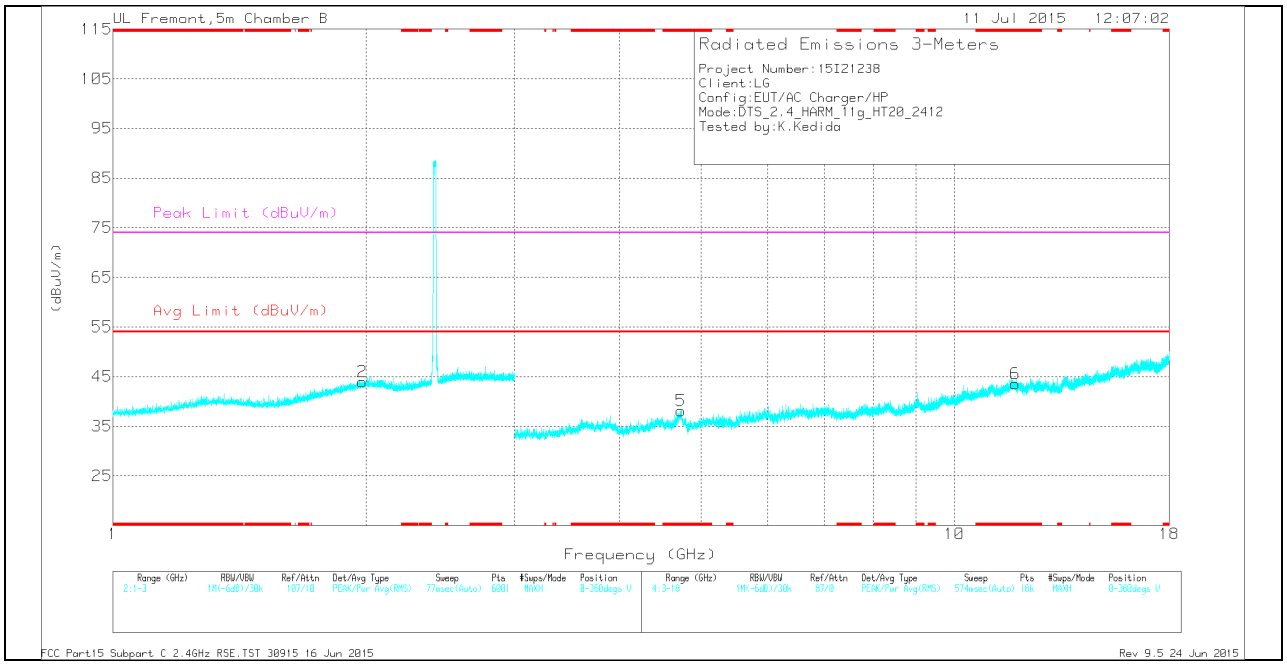
HARMONICS AND SPURIOUS EMISSIONS

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 T345 (dB/m)	Amp/Cbl/Fltr/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
3	* 4.737	31.53	Pk	34.3	-27.9	0	37.93	-	-	74	-36.07	0-360	101	H
4	* 11.712	25.71	Pk	38.5	-20.6	0	43.61	-	-	74	-30.39	0-360	199	H
5	* 4.727	31.78	Pk	34.3	-28	0	38.08	-	-	74	-35.92	0-360	199	V
6	* 11.811	26.05	Pk	38.6	-21.1	0	43.55	-	-	74	-30.45	0-360	199	V
2	1.98	34.45	Pk	32.2	-22.7	0	43.95	-	-	-	-	0-360	101	V
1	1.982	34.65	Pk	32.3	-22.7	0	44.25	-	-	-	-	0-360	199	H

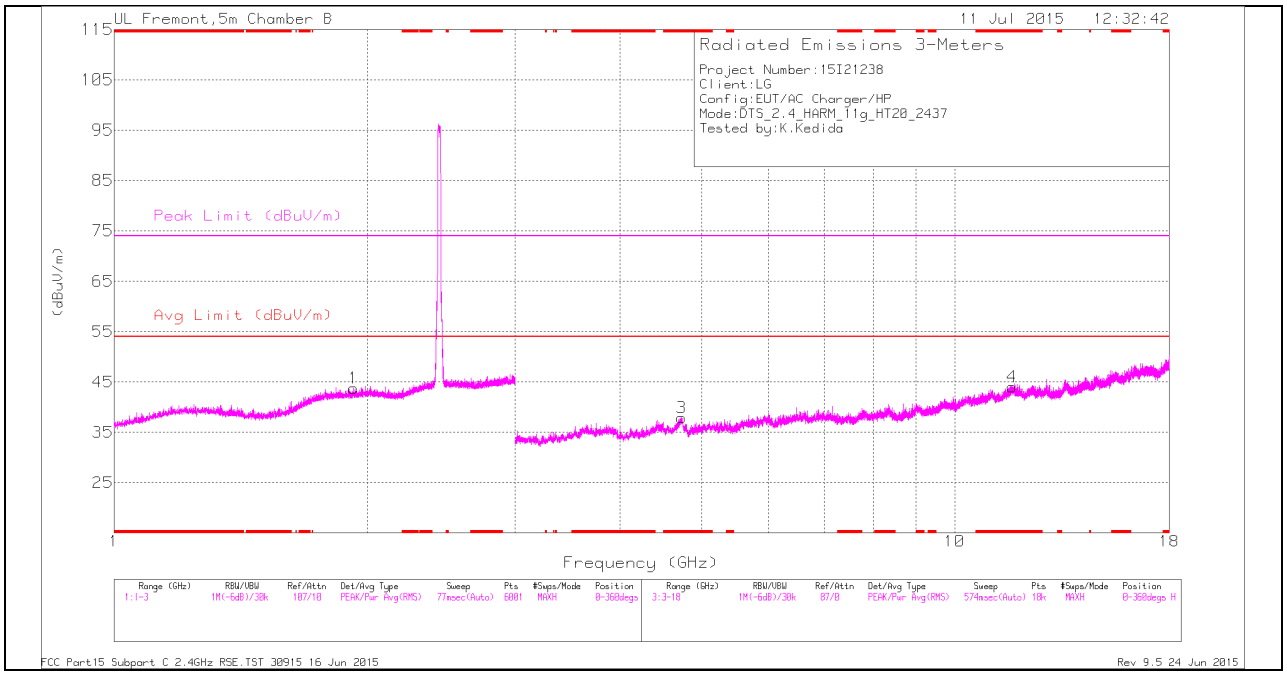
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl /Fltr/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
* 4.737	40.2	PK2	34.3	-28	0	46.5	-	-	74	-27.5	360	102	H
* 4.737	29.11	MAv1	34.3	-28	.22	35.63	54	-18.37	-	-	360	102	H
* 11.711	33.93	PK2	38.5	-20.6	0	51.83	-	-	74	-22.17	360	199	H
* 11.714	23.01	MAv1	38.5	-20.7	.22	41.03	54	-12.97	-	-	360	199	H
* 4.727	40.48	PK2	34.3	-28	0	46.78	-	-	74	-27.22	360	199	V
* 4.726	29	MAv1	34.3	-28	.22	35.52	54	--18.48	-	-	360	199	V
* 11.81	33.86	PK2	38.6	-21.1	0	51.36	-	-	74	-22.64	360	199	V
* 11.811	23.26	MAv1	38.6	-21.1	.22	40.98	54	-13.02	-	-	360	199	V
1.98	31.02	MAv1	32.2	-22.7	.22	40.74	-	-	-	-	360	102	V
1.981	42.6	PK2	32.2	-22.7	0	52.1	-	-	-	-	360	102	V
1.982	31	MAv1	32.2	-22.7	.22	40.72	-	-	-	-	360	199	H
1.984	42.87	PK2	32.3	-22.7	0	52.47	-	-	-	-	360	199	H

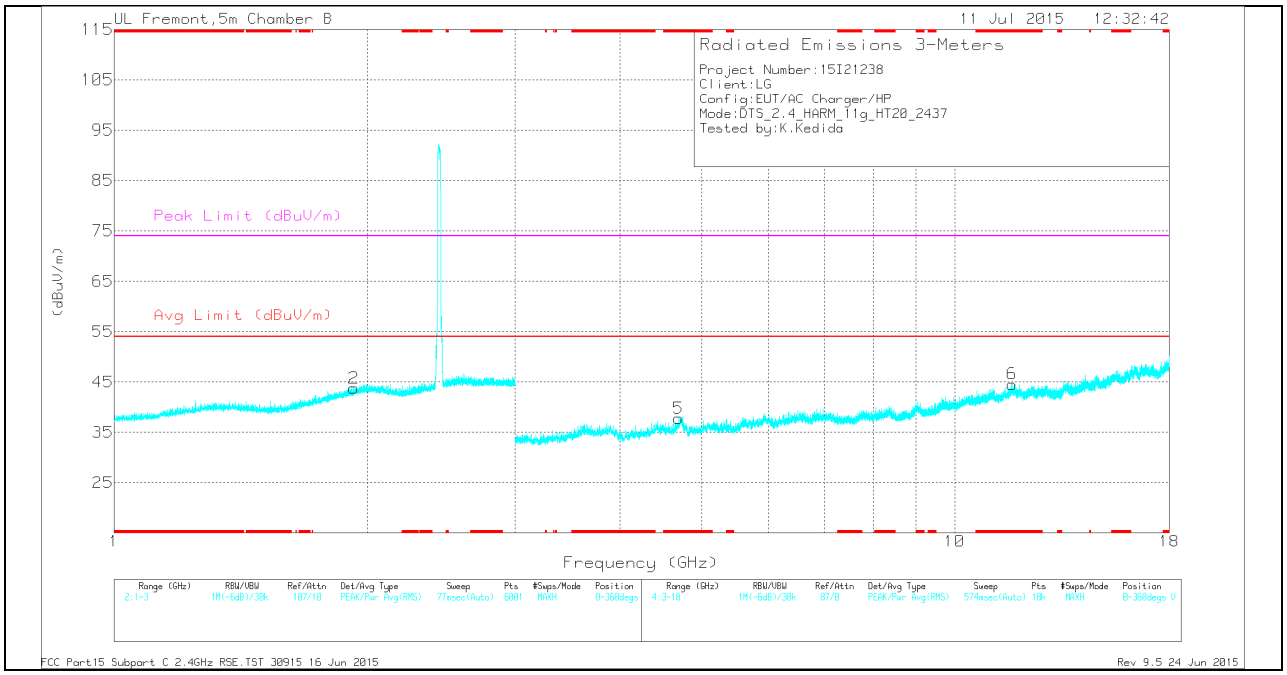
- Compliance for emission in non-restricted bands is show in conducted out of band testing

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/Fltr/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
3	* 4.735	31.49	Pk	34.3	-27.9	0	37.89	-	-	74	-36.11	0-360	101	H
4	* 11.705	26.02	Pk	38.5	-20.5	0	44.02	-	-	74	-29.98	0-360	200	H
5	* 4.692	32.85	Pk	34.2	-29.3	0	37.75	-	-	74	-36.25	0-360	200	V
6	* 11.703	26.59	Pk	38.5	-20.5	0	44.59	-	-	74	-29.41	0-360	101	V
1	1.928	34.68	Pk	32	-22.9	0	43.78	-	-	-	-	0-360	101	H
2	1.929	34.67	Pk	32	-22.9	0	43.77	-	-	-	-	0-360	101	V

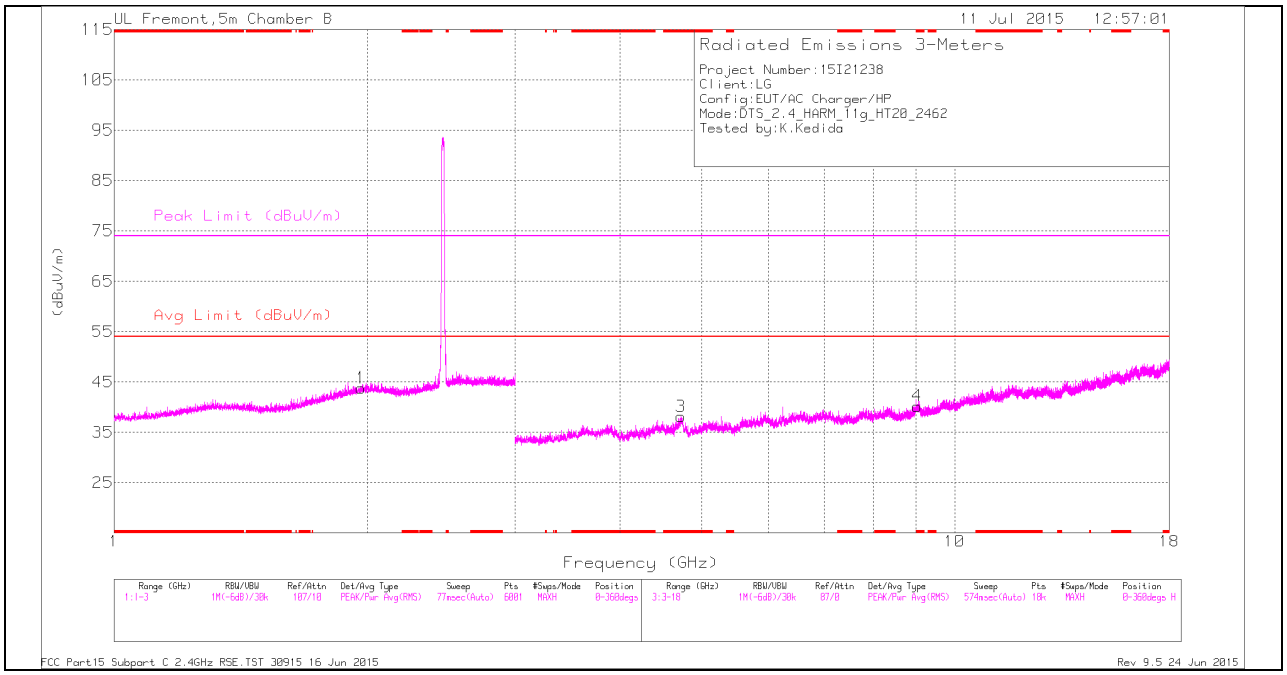
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl /Fltr/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
* 4.735	40.25	PK2	34.3	-27.8	0	46.75	-	-	74	-27.25	360	101	H
* 4.737	28.95	MAv1	34.3	-27.9	.22	35.57	54	-18.43	-	-	360	101	H
* 11.705	35.05	PK2	38.5	-20.5	0	53.05	-	-	74	-20.95	360	200	H
* 11.704	23.01	MAv1	38.5	-20.5	.22	41.23	54	-12.77	-	-	360	200	H
* 4.692	40.49	PK2	34.2	-29.3	0	45.39	-	-	74	-28.61	360	200	V
* 4.693	29.37	MAv1	34.2	-29.3	.22	34.49	54	-19.51	-	-	360	200	V
* 11.703	33.98	PK2	38.5	-20.5	0	51.98	-	-	74	-22.02	360	102	V
* 11.704	23.13	MAv1	38.5	-20.5	.22	41.35	54	-12.65	-	-	360	102	V
1.927	42.28	PK2	32	-22.9	0	51.38	-	-	-	-	360	101	H
1.928	30.72	MAv1	32	-22.9	.22	40.04	-	-	-	-	360	101	H
1.93	42.45	PK2	32	-22.9	0	51.55	-	-	-	-	360	101	V
1.93	31.14	MAv1	32	-22.9	.22	40.46	-	-	-	-	360	101	V

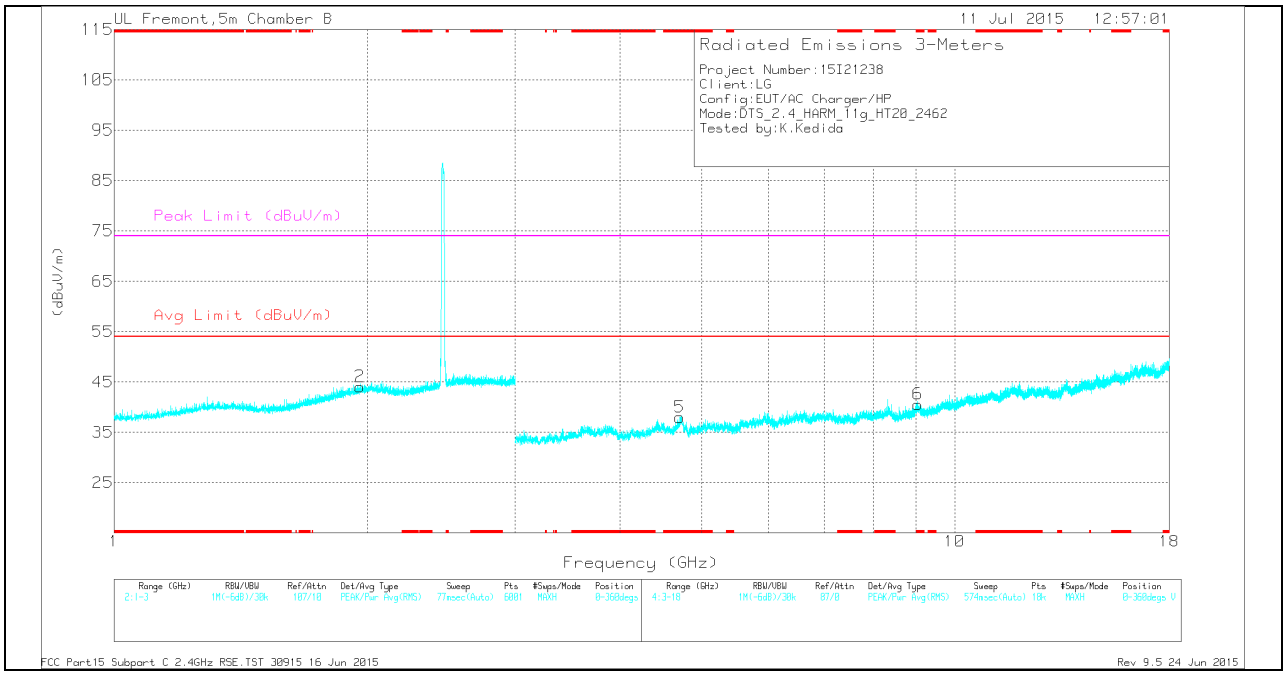
- Compliance for emission in non-restricted bands is show in conducted out of band testing

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/Fltr/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
3	* 4.725	31.97	Pk	34.3	-28.1	0	38.17	-	-	74	-35.83	0-360	101	H
4	* 9.025	27.81	Pk	36.1	-23.7	0	40.21	-	-	74	-33.79	0-360	101	H
5	* 4.711	32.59	Pk	34.2	-28.8	0	37.99	-	-	74	-36.01	0-360	199	V
6	* 9.039	28.19	Pk	36.1	-23.7	0	40.59	-	-	74	-33.41	0-360	101	V
2	1.962	34.78	Pk	32.1	-22.8	0	44.08	-	-	-	-	0-360	101	V
1	1.967	34.4	Pk	32.2	-22.8	0	43.8	-	-	-	-	0-360	102	H

PK - Peak detector

RADIATED EMISSIONS

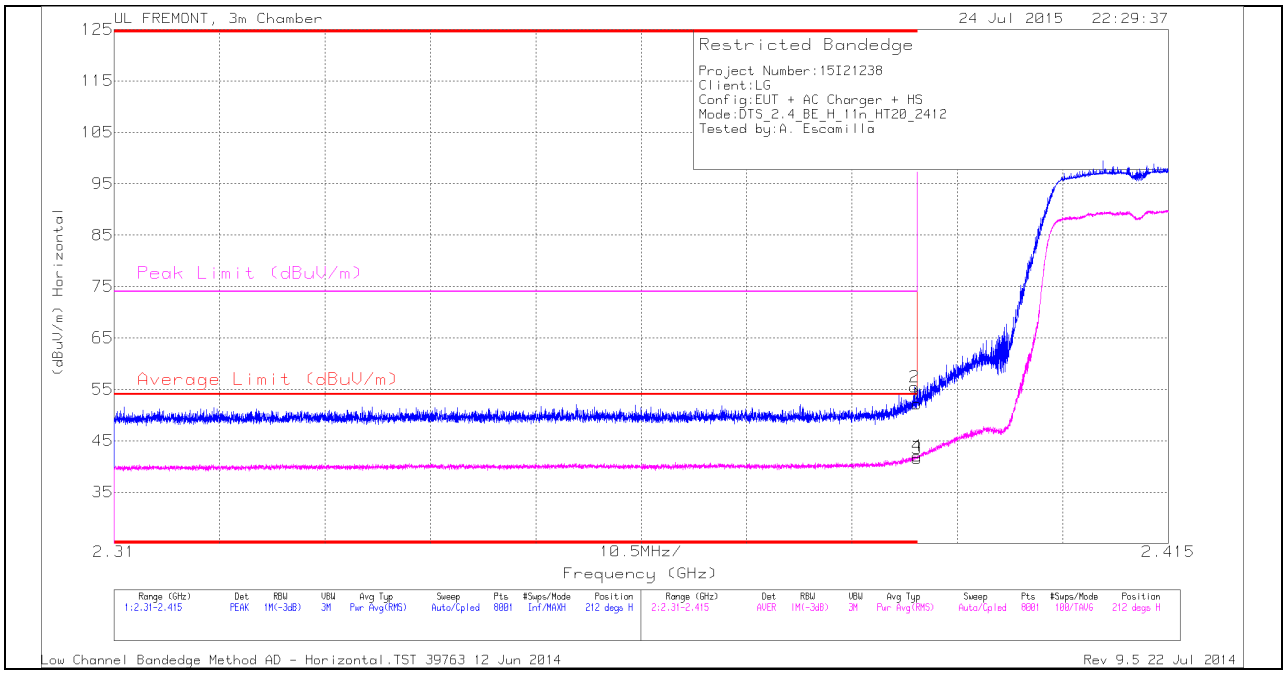
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl /Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.724	40.37	PK2	34.3	-28.1	0	46.57	-	-	74	-27.43	360	101	H
* 4.725	29.16	MAv1	34.3	-28.1	.22	35.58	54	-18.42	-	-	360	101	H
* 9.024	36.15	PK2	36.1	-23.7	0	48.55	-	-	74	-25.45	360	101	H
* 9.025	25.01	MAv1	36.1	-23.7	.22	37.63	54	-16.37	-	-	360	101	H
* 4.711	40.68	PK2	34.2	-28.8	0	46.08	-	-	74	-27.92	360	198	V
* 4.71	29.31	MAv1	34.2	-28.8	.22	34.93	54	-19.07	-	-	360	198	V
* 9.039	35.92	PK2	36.1	-23.7	0	48.32	-	-	74	-25.68	360	102	V
* 9.04	24.81	MAv1	36.1	-23.7	.22	37.43	54	-16.57	-	-	360	102	V
1.96	42.82	PK2	32.1	-22.8	0	52.12	-	-	-	-	360	101	V
1.961	31.16	MAv1	32.1	-22.8	.22	40.68	-	-	-	-	360	101	V
1.966	42.3	PK2	32.2	-22.8	0	51.7	-	-	-	-	360	101	H
1.968	30.59	MAv1	32.2	-22.8	.22	40.21	-	-	-	-	360	101	H

- Compliance for emission in non-restricted bands is show in conducted out of band testing

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

RESTRICTED BANDEDGE (LOW CHANNEL)

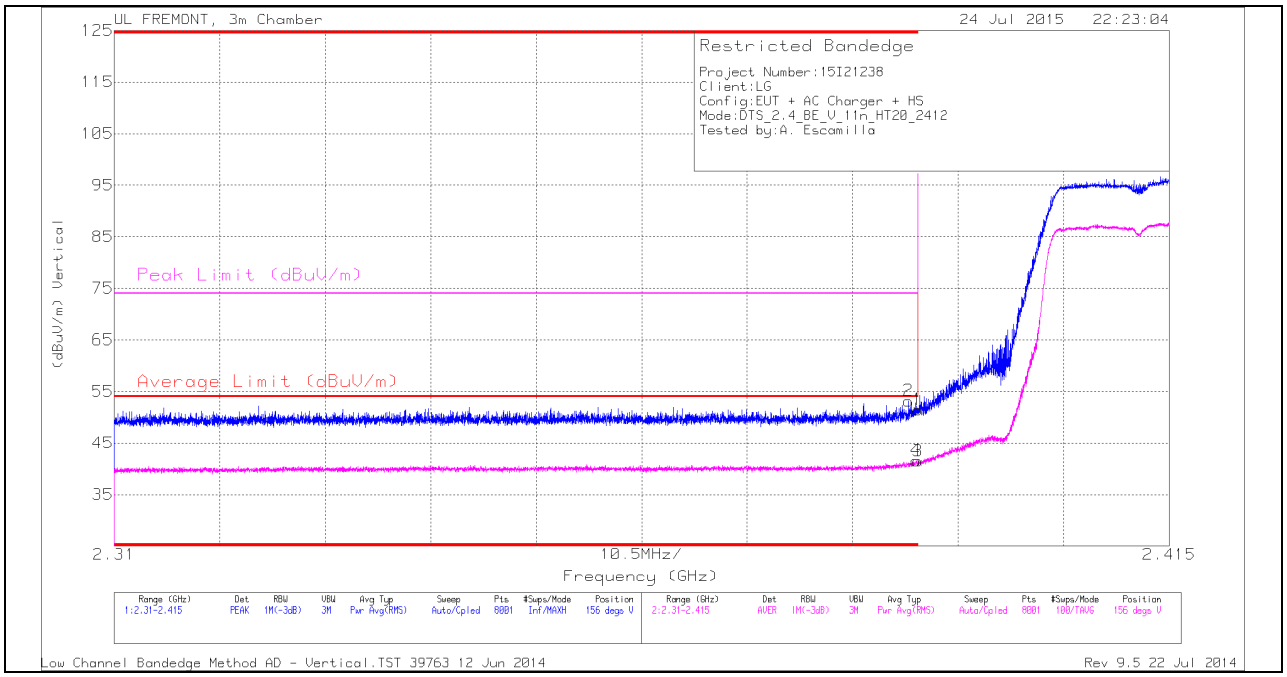
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/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	42.57	PK	32	-22.4	0	52.17	-	-	74	-21.83	212	340	H
2	* 2.39	45.86	PK	32	-22.4	0	55.46	-	-	74	-18.54	212	340	H
3	* 2.39	31.68	RMS	32	-22.4	.28	41.56	54	-12.44	-	-	212	340	H
4	* 2.39	32.11	RMS	32	-22.4	.28	41.99	54	-12.01	-	-	212	340	H

VERTICAL PEAK AND AVERAGE PLOT

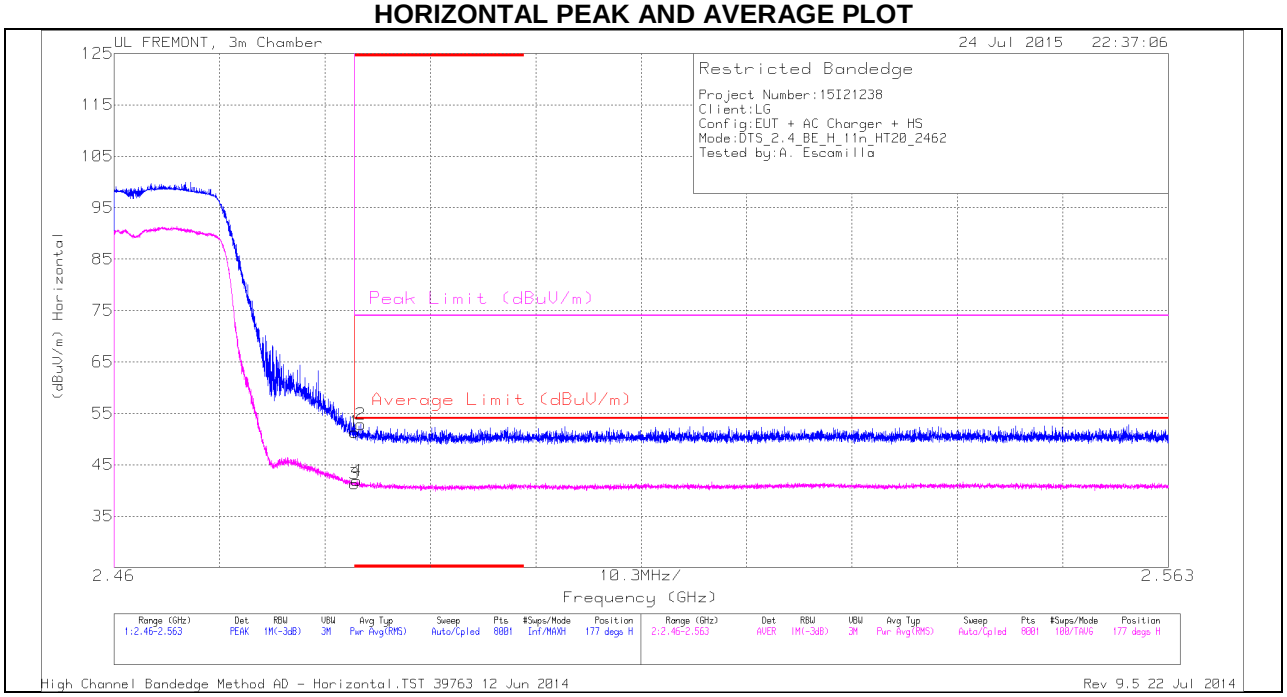


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/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	* 2.389	43.6	PK	32	-22.4	0	53.2	-	-	74	-20.8	156	375	V
1	* 2.39	41.86	PK	32	-22.4	0	51.46	-	-	74	-22.54	156	375	V
3	* 2.39	31.63	RMS	32	-22.4	.28	41.51	54	-12.49	-	-	156	375	V
4	* 2.39	31.71	RMS	32	-22.4	.28	41.59	54	-12.41	-	-	156	375	V

AUTHORIZED BANDEDGE (HIGH CHANNEL)

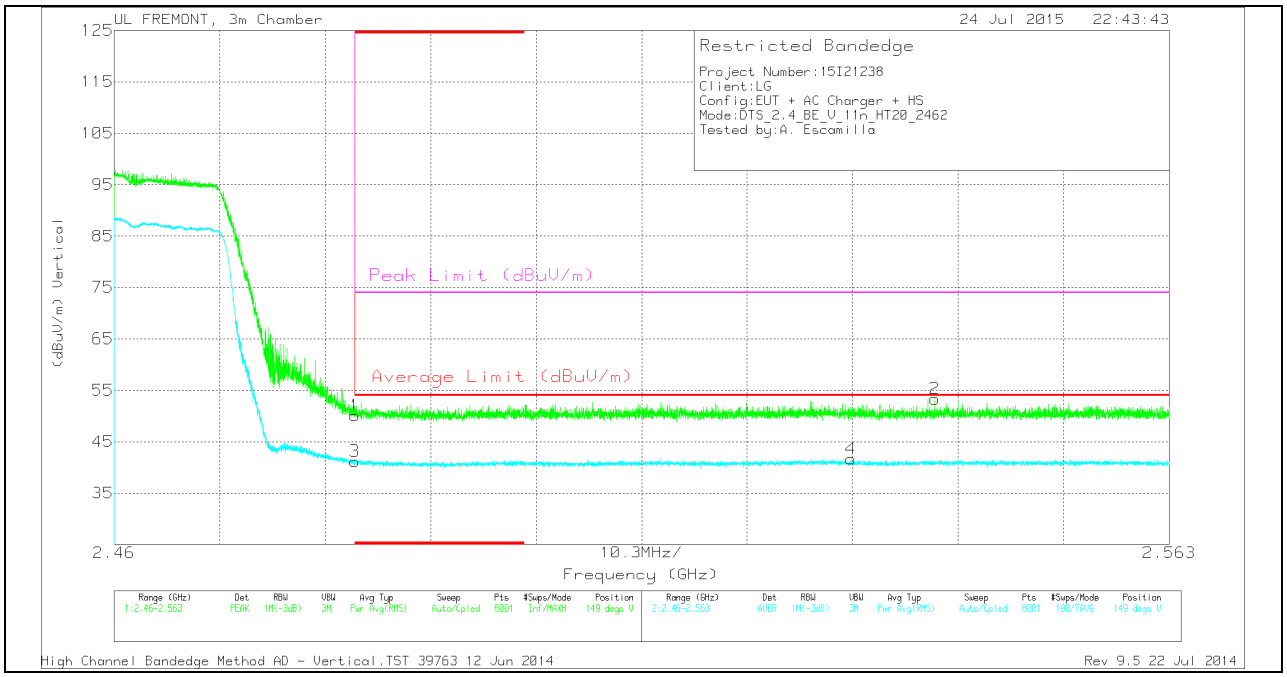
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/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	41.16	PK	32.3	-22.1	0	51.36	-	-	74	-22.64	177	293	H
2	* 2.484	42.64	PK	32.3	-22.1	0	52.84	-	-	74	-21.16	177	293	H
3	* 2.484	30.81	RMS	32.3	-22.1	.28	41.29	54	-12.71	-	-	177	293	H
4	* 2.484	31.39	RMS	32.3	-22.1	.28	41.87	54	-12.13	-	-	177	293	H

VERTICAL PEAK AND AVERAGE PLOT

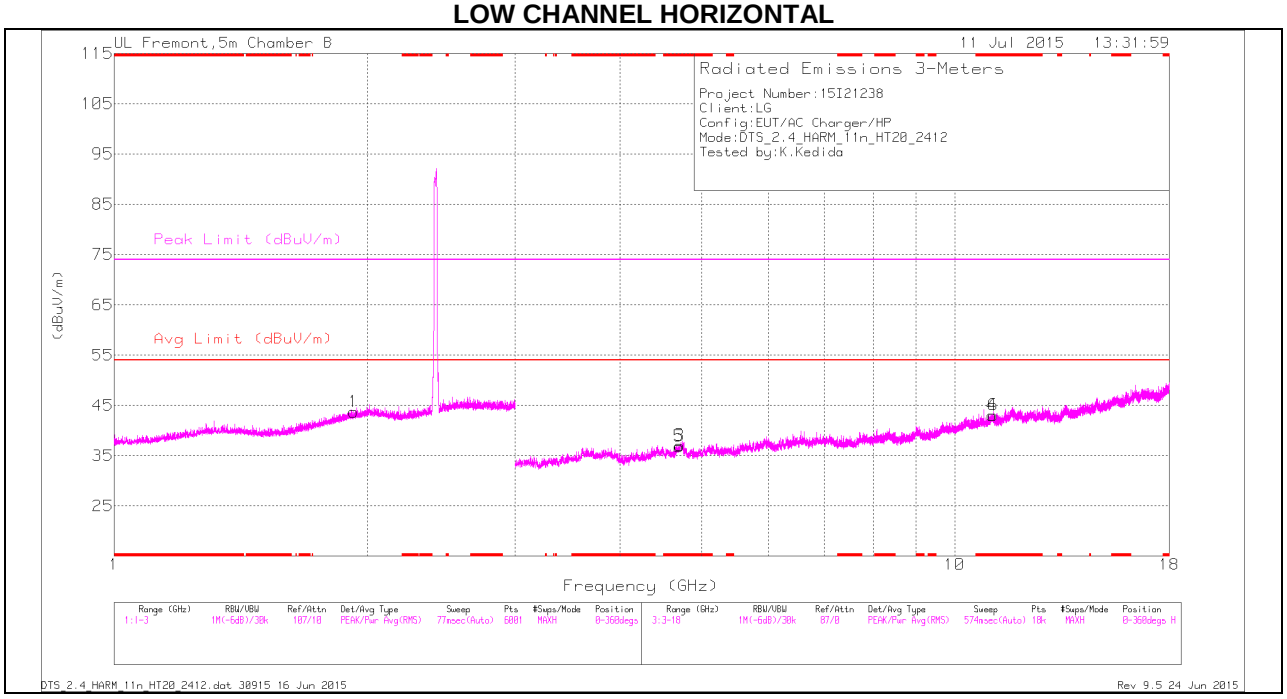


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/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	39.89	PK	32.3	-22.1	0	50.09	-	-	74	-23.91	149	362	V
3	* 2.484	30.7	RMS	32.3	-22.1	.28	41.18	54	-12.82	-	-	149	362	V
4	2.532	30.98	RMS	32.4	-22	.28	41.66	54	-12.34	-	-	149	362	V
2	2.54	42.84	PK	32.4	-21.9	0	53.34	-	-	74	-20.66	149	362	V

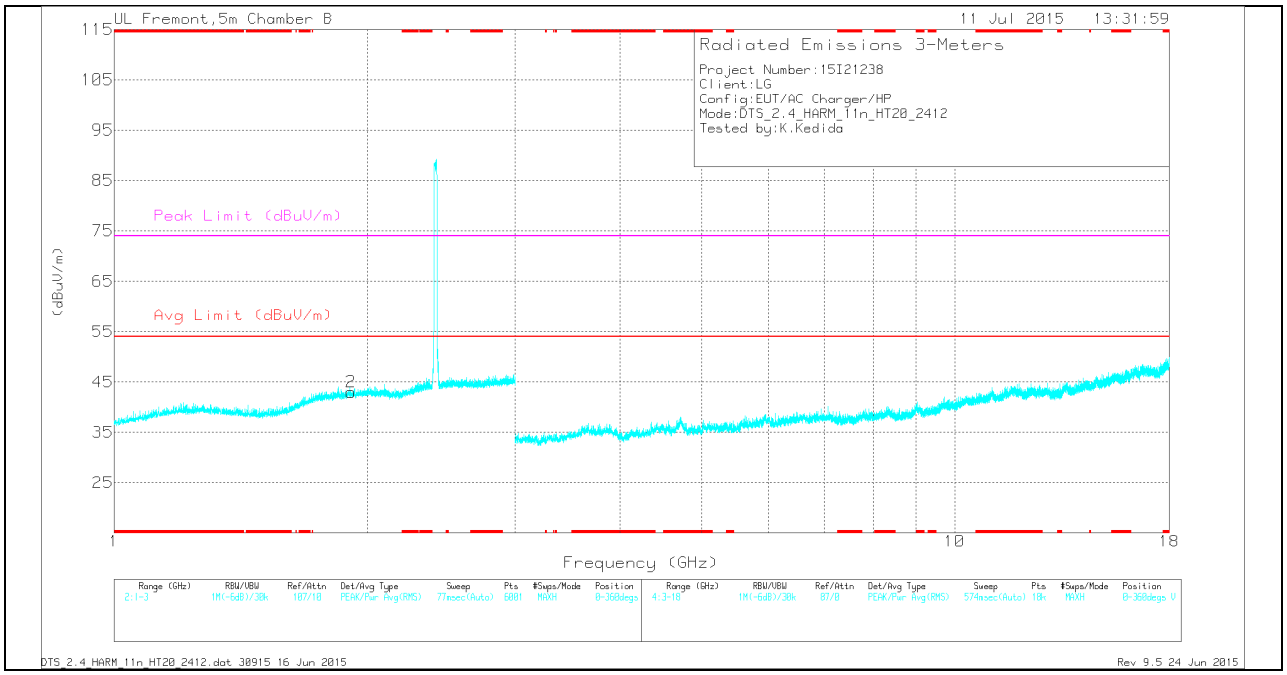
HARMONICS AND SPURIOUS EMISSIONS

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 T345 (dB/m)	Amp/Cbl/Fltr/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
3	* 4.708	31.65	Pk	34.2	-28.8	0	37.05	-	-	74	-36.95	0-360	101	H
4	* 11.074	26.06	Pk	37.8	-20.8	0	43.06	-	-	74	-30.94	0-360	101	H
5	* 4.7	31.74	Pk	34.2	-29.1	0	36.84	-	-	74	-37.16	0-360	101	H
6	* 11.112	26.59	Pk	37.8	-21.3	0	43.09	-	-	74	-30.91	0-360	101	H
2	1.913	33.98	Pk	31.9	-22.9	0	42.98	-	-	-	-	0-360	101	V
1	1.927	34.64	Pk	32	-22.9	0	43.74	-	-	-	-	0-360	102	H

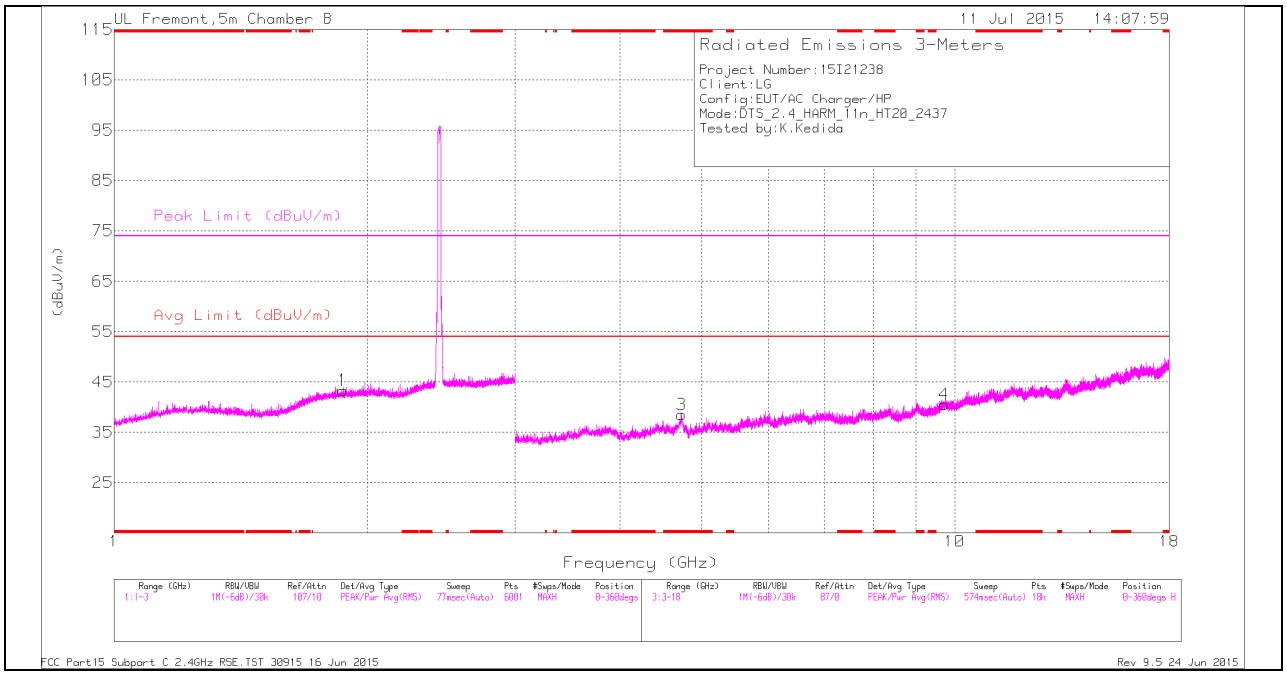
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl /Fltr/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
* 4.707	40.28	PK2	34.2	-28.9	0	45.58	-	-	74	-28.42	60	101	H
* 4.709	29.21	MAv1	34.2	-28.8	.28	34.89	54	-19.11	-	-	60	101	H
* 11.073	34.43	PK2	37.8	-20.8	0	51.43	-	-	74	-22.57	60	101	H
* 11.074	23.31	MAv1	37.8	-20.8	.28	40.59	54	-13.41	-	-	60	101	H
* 4.698	40	PK2	34.2	-29.2	0	45	-	-	74	-29	60	101	H
* 4.701	29.3	MAv1	34.2	-29.1	.28	34.68	54	-19.32	-	-	60	101	H
* 11.114	34.83	PK2	37.8	-21.3	0	51.33	-	-	74	-22.67	60	101	H
* 11.112	23.32	MAv1	37.8	-21.3	.28	40.10	54	-13.9	-	-	60	101	H
1.912	43.38	PK2	31.9	-22.9	0	52.38	-	-	-	-	360	101	V
1.927	42.82	PK2	32	-22.9	0	51.92	-	-	-	-	360	101	H

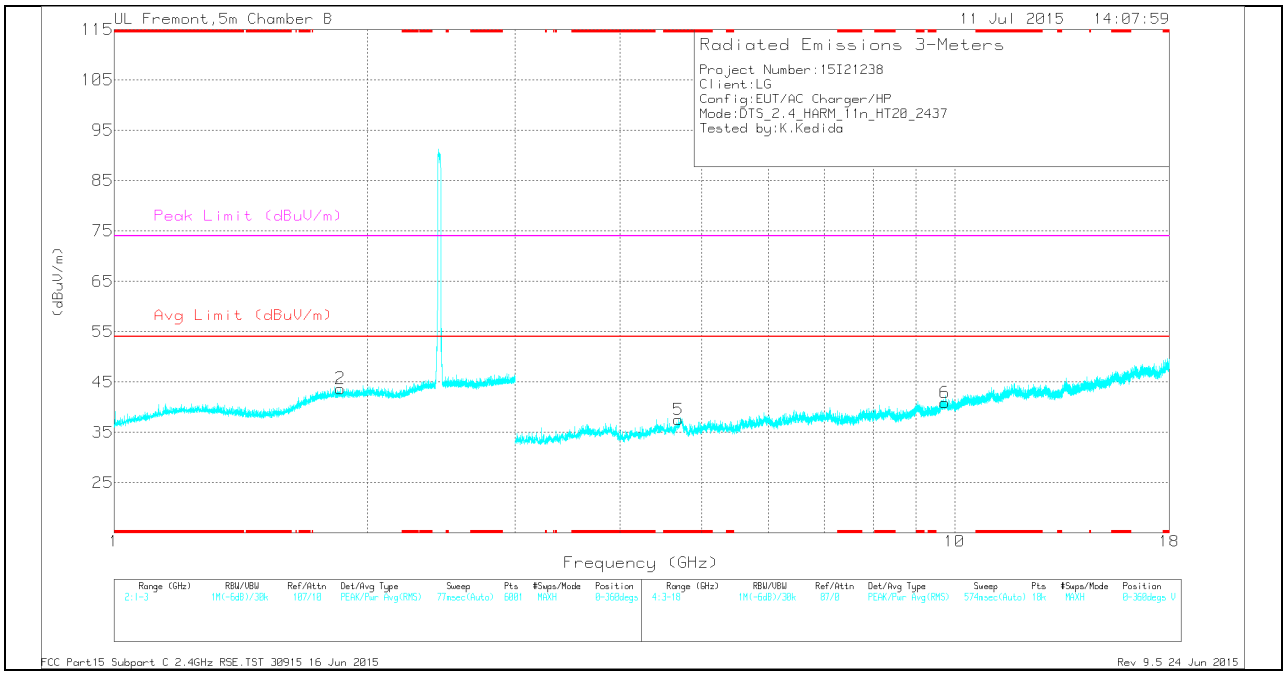
- Compliance for emission in non-restricted bands is show in conducted out of band testing

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/Fltr/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
3	* 4.73	32.12	Pk	34.3	-27.9	0	38.52	-	-	74	-35.48	0-360	199	H
5	* 4.693	32.61	Pk	34.2	-29.3	0	37.51	-	-	74	-36.49	0-360	101	V
2	1.858	35.19	Pk	31.4	-22.9	0	43.69	-	-	-	-	0-360	199	V
1	1.87	34.73	Pk	31.5	-22.9	0	43.33	-	-	-	-	0-360	199	H
4	9.722	26.91	Pk	36.8	-23.2	0	40.51	-	-	-	-	0-360	101	H
6	9.736	27.4	Pk	36.9	-23.4	0	40.9	-	-	-	-	0-360	199	V

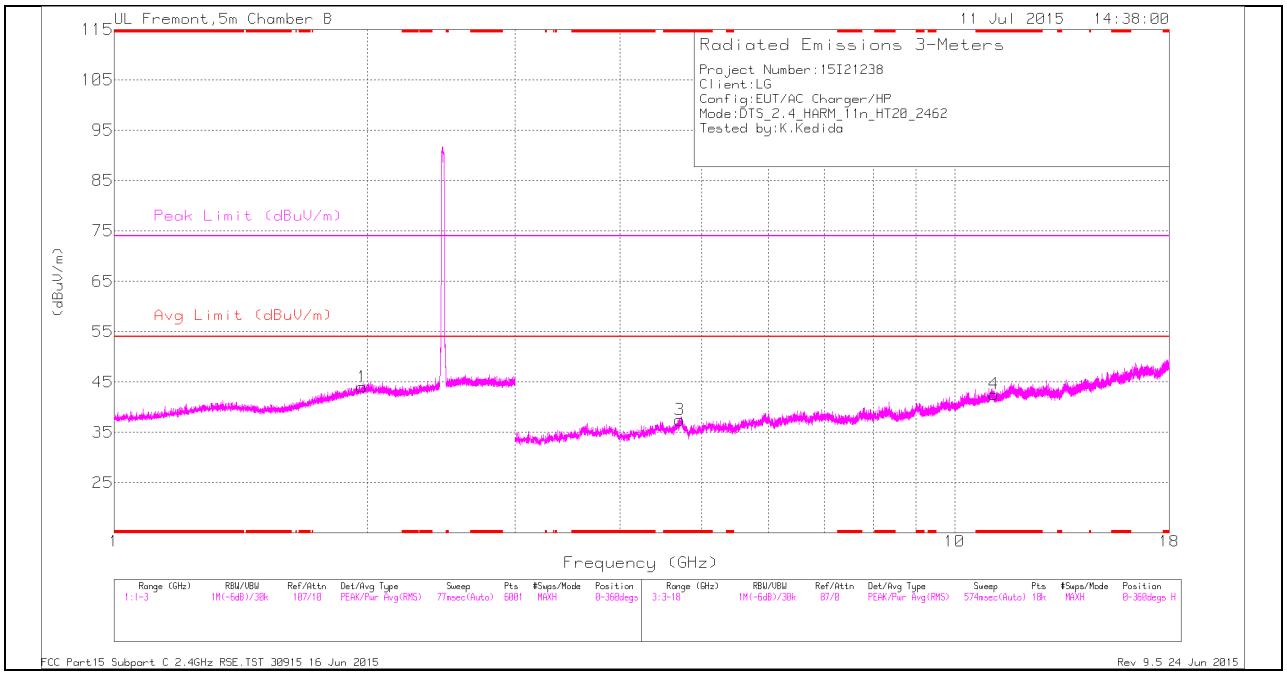
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl /Fltr/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
* 4.73	40.04	PK2	34.3	-27.9	0	46.44	-	-	74	-27.56	1	198	H
* 4.728	28.71	MAv1	34.3	-28	.28	35.29	54	-18.71	-	-	1	198	H
* 4.692	40.6	PK2	34.2	-29.3	0	45.5	-	-	74	-28.5	1	103	V
* 4.693	29.49	MAv1	34.2	-29.3	.28	34.67	54	-19.33	-	-	1	103	V
1.856	43.24	PK2	31.3	-22.9	0	51.64	-	-	-	-	1	198	V
1.869	42.44	PK2	31.5	-22.9	0	51.04	-	-	-	-	1	198	H
9.738	35.42	PK2	36.9	-23.4	0	48.92	-	-	-	-	1	199	V

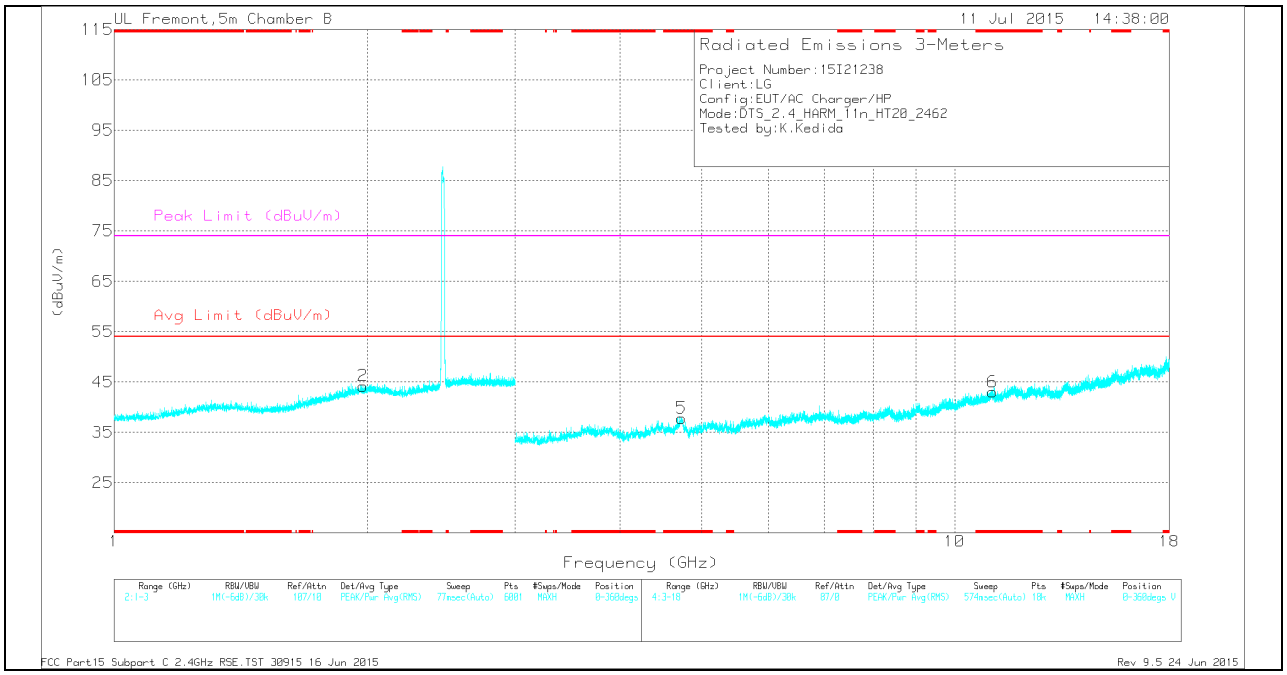
- Compliance for emission in non-restricted bands is show in conducted out of band testing

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/Fltr/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
3	* 4.711	32.09	Pk	34.2	-28.8	0	37.49	-	-	74	-36.51	0-360	199	H
4	* 11.135	26.29	Pk	37.8	-21.5	0	42.59	-	-	74	-31.41	0-360	199	H
5	* 4.736	31.43	Pk	34.3	-27.9	0	37.83	-	-	74	-36.17	0-360	101	V
6	* 11.091	26.51	Pk	37.8	-21.3	0	43.01	-	-	74	-30.99	0-360	199	V
1	1.973	34.6	Pk	32.2	-22.8	0	44	-	-	-	-	0-360	200	H
2	1.978	34.71	Pk	32.2	-22.7	0	44.21	-	-	-	-	0-360	200	V

PK - Peak detector

RADIATED EMISSIONS

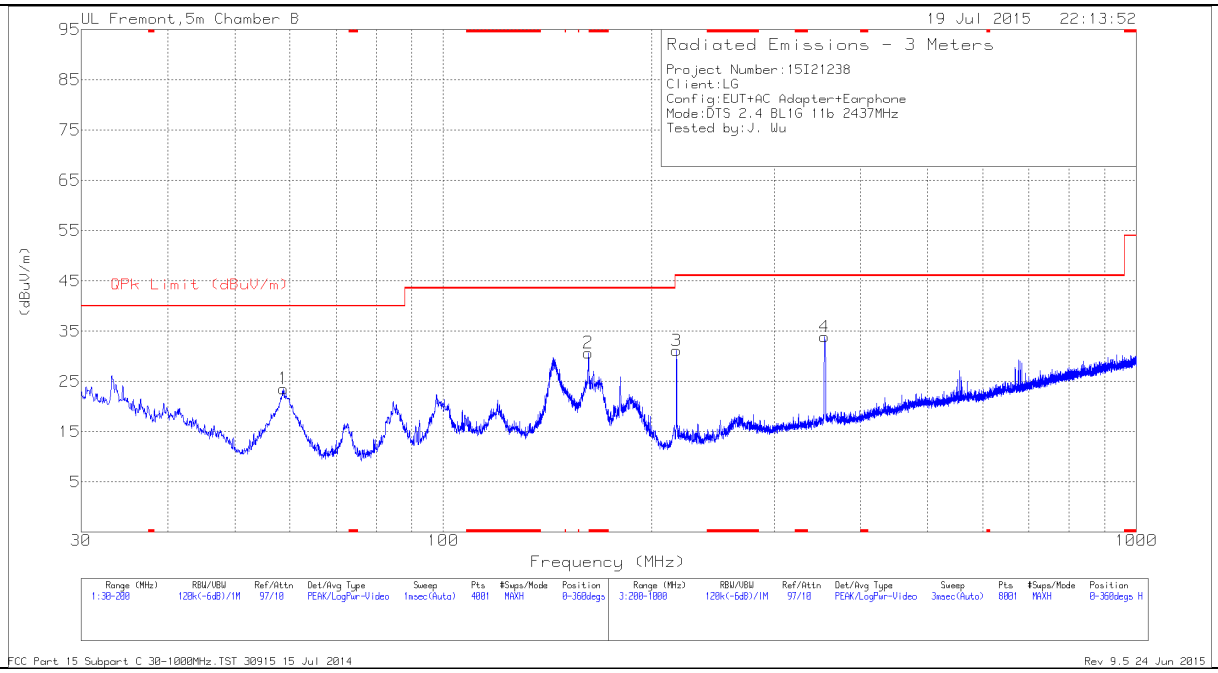
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl /Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.71	40.57	PK2	34.2	-28.8	0	45.97	-	-	74	-28.03	1	200	H
* 4.711	29.25	MAv1	34.2	-28.8	.22	34.87	54	-19.13	-	-	1	200	H
* 11.136	34.87	PK2	37.8	-21.5	0	51.17	-	-	74	-22.83	1	200	H
* 11.135	23.58	MAv1	37.8	-21.5	.22	40.1	54	-13.9	-	-	1	200	H
* 4.738	39.99	PK2	34.3	-28	0	46.29	-	-	74	-27.71	1	102	V
* 4.738	28.96	MAv1	34.3	-28	.22	35.48	54	-18.52	-	-	1	102	V
* 11.092	34.56	PK2	37.8	-21.3	0	51.06	-	-	74	-22.94	1	199	V
* 11.092	23.65	MAv1	37.8	-21.3	.22	40.37	54	-13.63	-	-	1	199	V
1.971	42.69	PK2	32.2	-22.8	0	52.09	-	-	-	-	1	200	H
1.978	42.57	PK2	32.2	-22.7	0	52.07	-	-	-	-	1	200	V

- Compliance for emission in non-restricted bands is show in conducted out of band testing

10.3. WORST-CASE BELOW 1 GHz

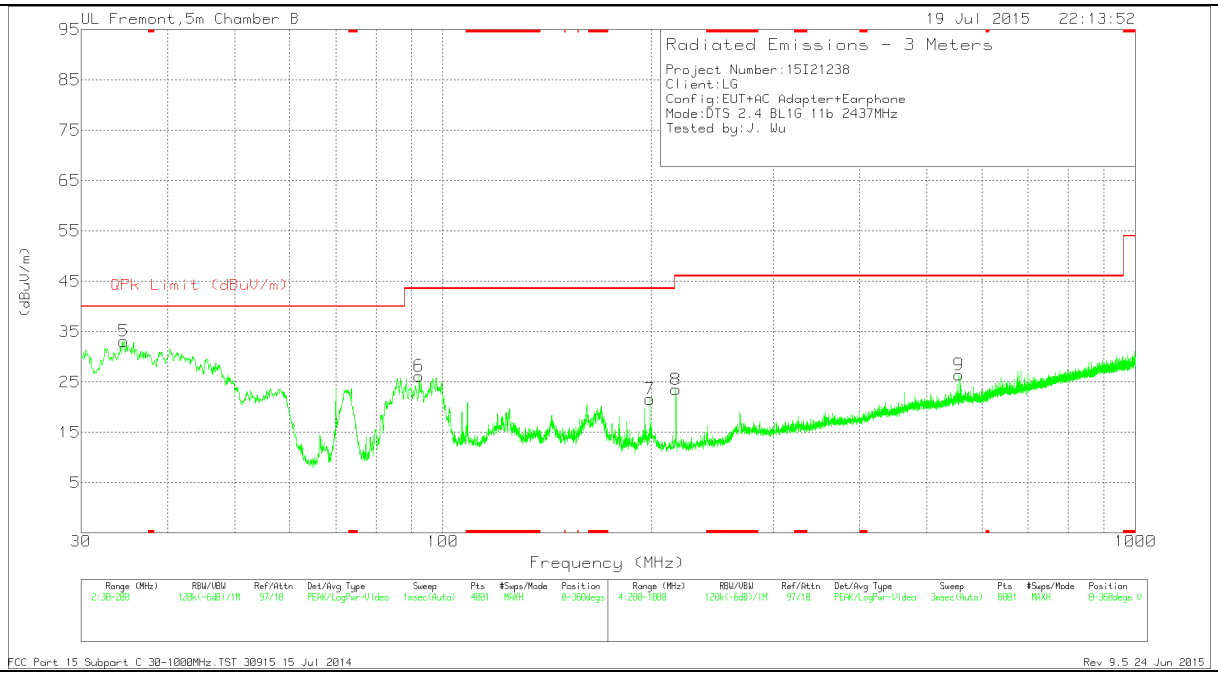
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)

HORIZONTAL PLOT



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

VERTICAL PLOT



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	34.59	44	Pk	17.8	-28.7	33.1	40	-6.9	0-360	101	V
1	58.7938	44.57	Pk	7.4	-28.4	23.57	40	-16.43	0-360	399	H
6	92.305	46	Pk	8.2	-28	26.2	43.52	-17.32	0-360	101	V
2	161.9625	45.78	Pk	12.1	-27.2	30.68	43.52	-12.84	0-360	100	H
7	199.065	35.91	Pk	12.6	-26.9	21.61	43.52	-21.91	0-360	101	V
3	217	47.25	Pk	10.6	-26.7	31.15	46.02	-14.87	0-360	101	H
8	217	39.64	Pk	10.6	-26.7	23.54	46.02	-22.48	0-360	299	V
4	355	44.96	Pk	14.6	-25.7	33.86	46.02	-12.16	0-360	299	H
9	556	33.22	Pk	18.6	-25.4	26.42	46.02	-19.6	0-360	101	V

Pk - Peak detector

11. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 8.8

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 C63.10.

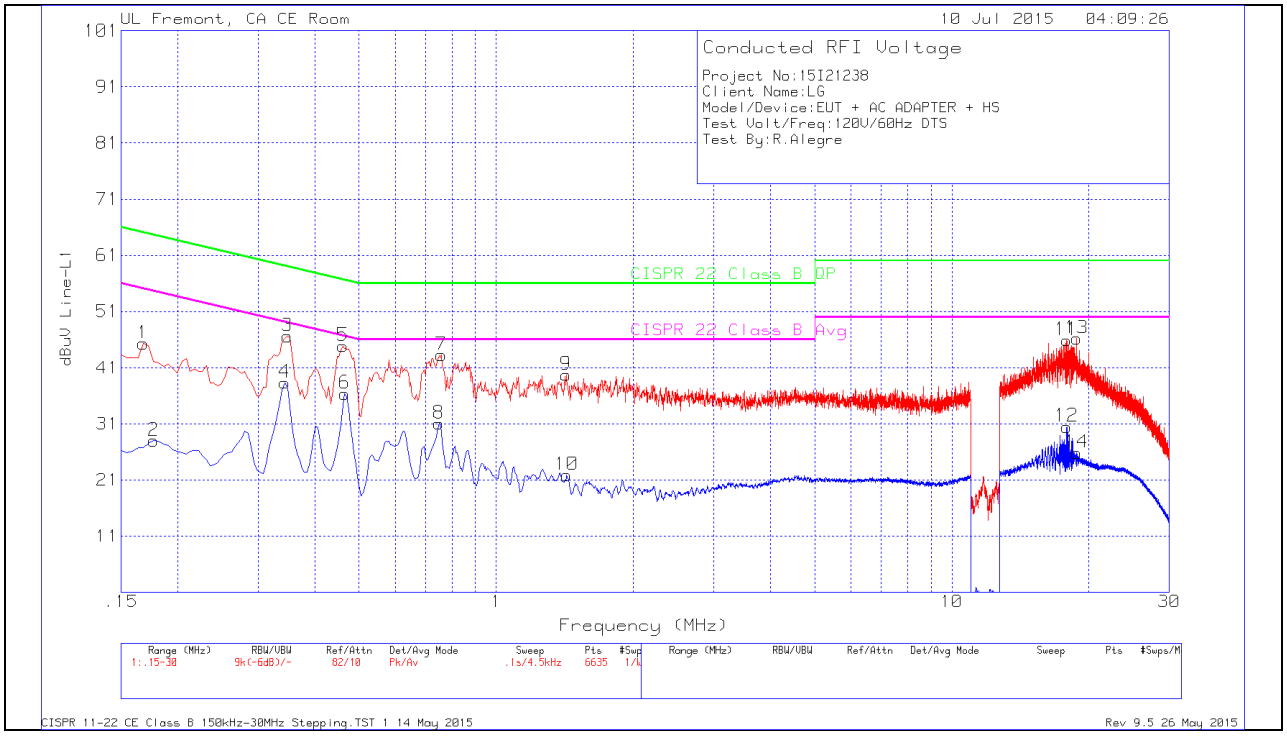
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

6 WORST EMISSIONS

LINE 1 PLOT



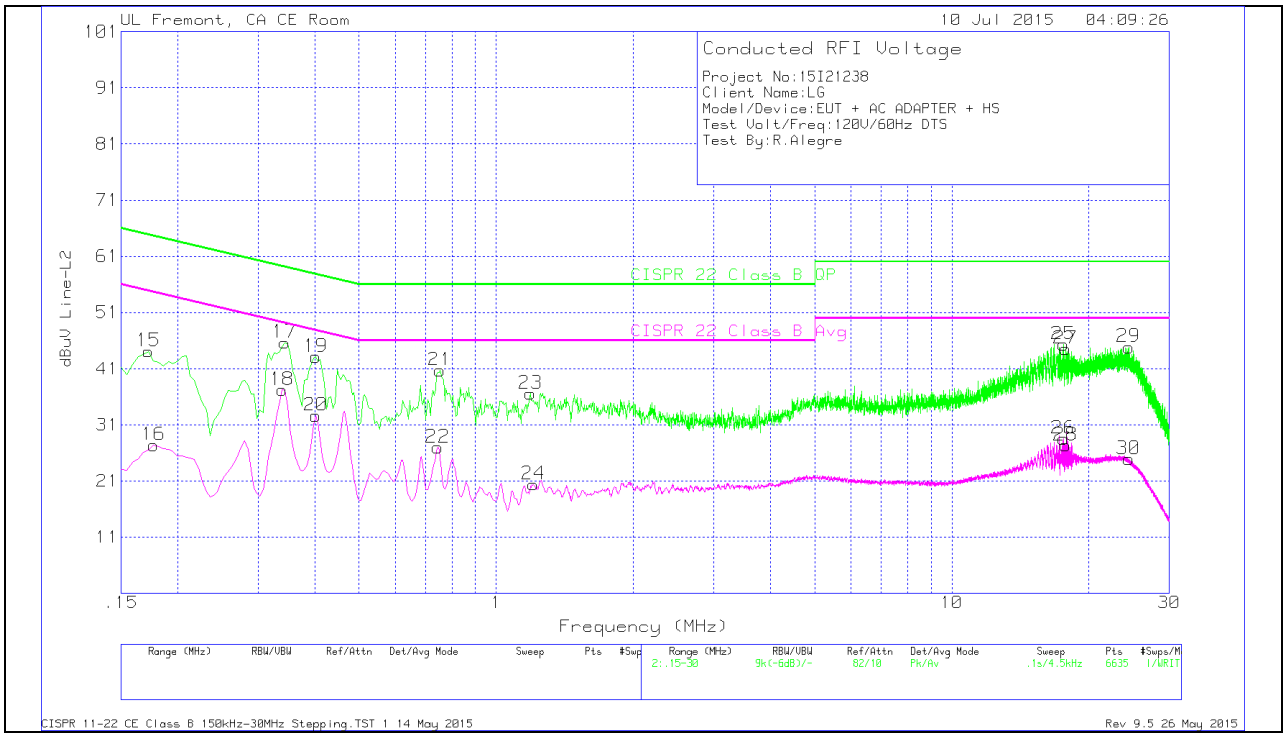
LINE 1 RESULTS

Range 1: Line-L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1	LC Cables 1&3	Corrected Reading dBuV	CISPR 22 Class B QP	Margin (dB)	CISPR 22 Class B Avg	Margin (dB)
1	.168	44.1	Pk	1.2	0	45.3	65.06	-19.76	-	-
2	.177	26.89	Av	1.1	0	27.99	-	-	54.63	-26.64
3	.348	46.13	Pk	.5	0	46.63	59.01	-12.38	-	-
4	.3435	37.84	Av	.5	0	38.34	-	-	49.12	-10.78
5	.4605	44.47	Pk	.4	0	44.87	56.68	-11.81	-	-
6	.465	35.99	Av	.4	0	36.39	-	-	46.6	-10.21
7	.7575	43	Pk	.3	0	43.3	56	-12.7	-	-
8	.7485	30.75	Av	.3	0	31.05	-	-	46	-14.95
9	1.4235	39.43	Pk	.2	.1	39.73	56	-16.27	-	-
10	1.428	21.61	Av	.2	.1	21.91	-	-	46	-24.09
11	17.871	45.4	Pk	.3	.2	45.9	60	-14.1	-	-
12	17.8755	30	Av	.3	.2	30.5	-	-	50	-19.5
13	18.8025	45.69	Pk	.3	.2	46.19	60	-13.81	-	-
14	18.8025	25.36	Av	.3	.2	25.86	-	-	50	-24.14

Pk - Peak detector
Av - Average detection

LINE 2 PLOT



LINE 2 RESULTS

Range 2: Line-L2 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2	LC Cables 2&3	Corrected Reading dBuV	CISPR 22 Class B QP	Margin (dB)	CISPR 22 Class B Avg	Margin (dB)
15	.1725	42.9	Pk	1.2	0	44.1	64.84	-20.74	-	-
16	.177	26.21	Av	1.2	0	27.41	-	-	54.63	-27.22
17	.3435	45.14	Pk	.5	0	45.64	59.12	-13.48	-	-
18	.339	36.71	Av	.5	0	37.21	-	-	49.23	-12.02
19	.402	42.7	Pk	.4	0	43.1	57.81	-14.71	-	-
20	.402	32.22	Av	.4	0	32.62	-	-	47.81	-15.19
21	.753	40.42	Pk	.3	0	40.72	56	-15.28	-	-
22	.744	26.66	Av	.3	0	26.96	-	-	46	-19.04
23	1.1895	36.16	Pk	.3	.1	36.56	56	-19.44	-	-
24	1.2075	20.2	Av	.2	0	20.4	-	-	46	-25.6
25	17.5605	44.81	Pk	.3	.2	45.31	60	-14.69	-	-
26	17.565	28.02	Av	.3	.2	28.52	-	-	50	-21.48
27	17.772	44.06	Pk	.3	.2	44.56	60	-15.44	-	-
28	17.7765	26.85	Av	.3	.2	27.35	-	-	50	-22.65
29	24.441	44.34	Pk	.3	.2	44.84	60	-15.16	-	-
30	24.4455	24.41	Av	.3	.2	24.91	-	-	50	-25.09

Pk - Peak detector

Av - Average detection