



**FCC CFR47 PART 15 SUBPART C
INDUSTRY CANADA RSS-247 ISSUE 1**

CERTIFICATION TEST REPORT

FOR

CDMA/GSM/WCDMA/LTE PHONE + BLUETOOTH, DTS/UNII a/b/g/n/ac & NFC

MODEL NUMBER: LG-H790, LGH790, H790

**FCC ID: ZNFH790
IC: 2703C-H790**

REPORT NUMBER: 15I21235-E4V1

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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	8/31/15	Initial Issue	--
V2	9/8/15	- Updated Section 5.4 page 8 added 802.11ac mode information. - Updated Section 9.4 page 22 added tables for correlated chains directional gain.	D. Coronia

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: LG ELECTRONICS MOBILECOMM U.S.A., INC
EUT DESCRIPTION: CDMA/GSM/WCDMA/LTE PHONE + BLUETOOTH, DTS/UNII a/b/g/n/ac & NFC
MODEL: LG-H790, LGH790, H790
SERIAL NUMBER: Conducted: 1ZC51, 1ZC4Z, Radiated: 1ZC50, 1ZC4Y
DATE TESTED: JULY 6 -23, 2015

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	Pass
INDUSTRY CANADA RSS-247 Issue 1	Pass
INDUSTRY CANADA RSS-GEN Issue 4	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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UL VERIFICATION SERVICES INC

2. TEST METHODOLOGY

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

Deviation from ANSI C63.10-2009:

Radiated spurious emission above 1GHz was performed with the EUT elevated at 1.5m instead of 0.8m. 1.5m is the required height in ANSI C63.10:2013 as referenced by RSS GEN issue 4.

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:

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

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

This EUT is a CDMA/GSM/WCDMA/LTE PHONE + BLUETOOTH, DTS/UNII a/b/g/n/ac & 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	20.96	124.74
2412 - 2462	802.11g	17.96	62.52
2412 - 2462	802.11n HT20	17.71	59.02

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a PIF (Planar Inverted F) antenna, with a maximum gain of -0.05 dBi and -3.30 dBi.

5.4. WORST-CASE CONFIGURATION AND MODE

Radiated emission below 1GHz 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 Z orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in Z orientation.

SISO and MIMO modes:

Radiated band edge and harmonics spurious emission preliminary investigation showed that MIMO was worst case mode, therefore only MIMO was tested for these modes.

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

802.11b mode: 1 Mbps

802.11g mode: 6 Mbps

802.11n/ac HT20mode: MCS0

All conducted testing was performed in n-mode only for HT20, which covers ac-mode testing.

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	LG	MCS-N04WS	SA560000030	N/A
Earphone	LG	-	-	N/A

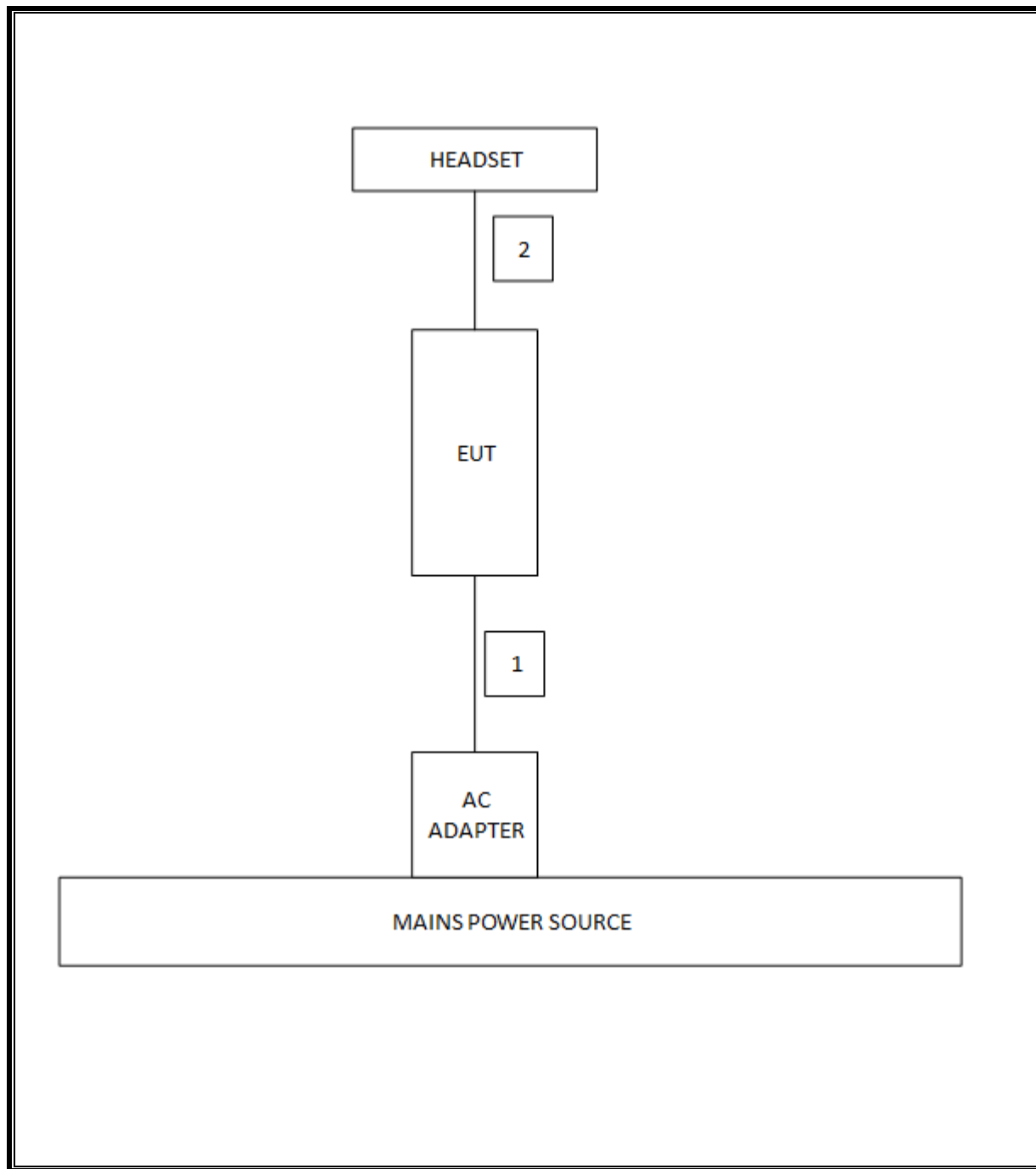
I/O CABLES

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	04/01/16
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	C01022	02/21/16
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, Jul 22, 2014	
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 AVGPS-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	7.584 MHz
2.1051, 15.247 (d)	RSS-247 5.5	Band Edge / Conducted Spurious Emission	-30dBc		Pass	-29.48 dBm
15.247	RSS-247 5.4.4	TX conducted output power	<30dBm		Pass	20.96 dBm
15.247	RSS-247 5.2.2	PSD	<8dBm		Pass	0 dBm
15.207 (a)	RSS-GEN 8.8	AC Power Line conducted emissions	Section 10	Radiated	Pass	57 dBuV
15.205, 15.209	RSS-GEN 8.9/7	Radiated Spurious Emission	< 54dBuV/m		Pass	48.88 dBuV/m

9. ANTENNA PORT TEST RESULTS

9.1. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

LIMITS

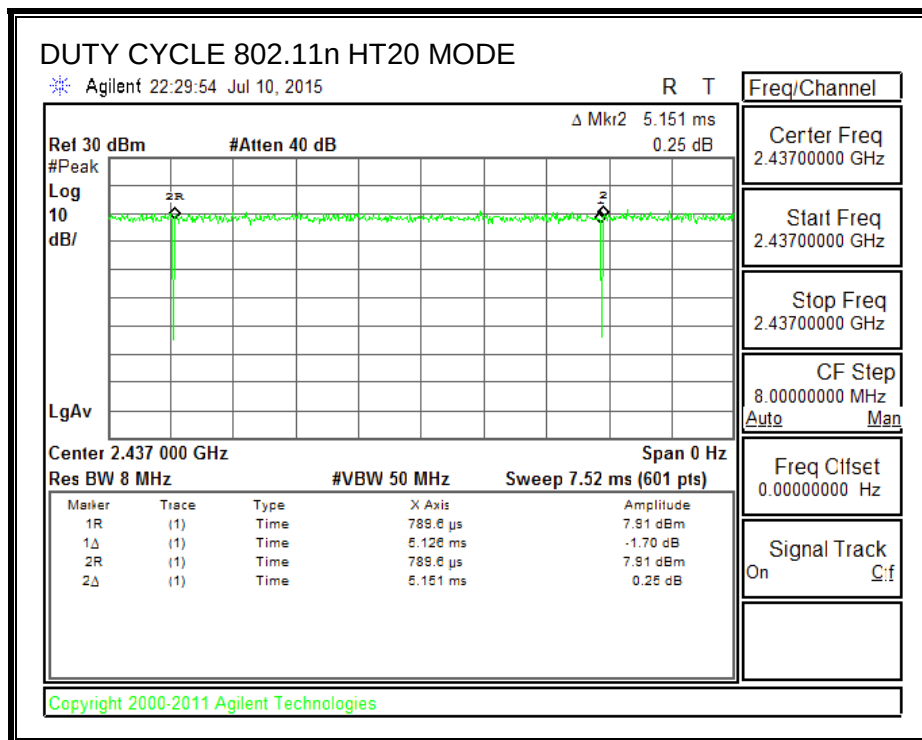
None; for reporting purposes only.

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	8.630	8.650	0.998	99.77%	0.00	0.010
802.11g CDD	2.800	2.825	0.991	99.12%	0.00	0.010
802.11n HT20 CDD	5.126	5.151	0.995	99.51%	0.00	0.010



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 to 100 kHz, the VBW $\geq 3 \times$ 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 CHAIN 0(MHz)	6 dB Bandwidth CHAIN 1(MHz)	Minimum Limit (MHz)
Low	2412	8.073	7.584	0.5
Mid	2437	8.008	8.060	0.5
High	2462	7.596	8.528	0.5
Worst		7.596	7.584	

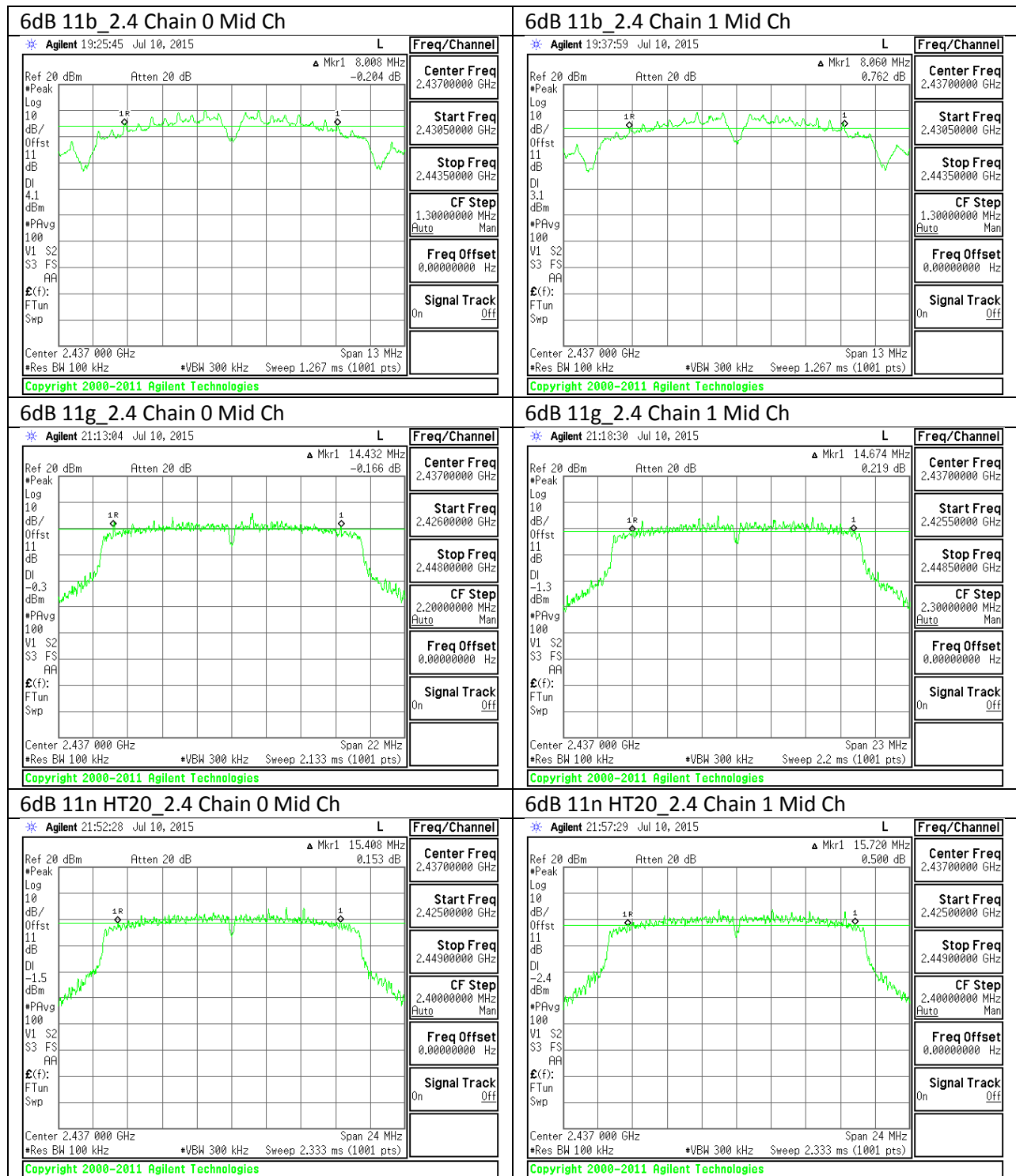
9.2.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth CHAIN 0(MHz)	6 dB Bandwidth CHAIN 1(MHz)	Minimum Limit (MHz)
Low	2412	15.576	15.065	0.5
Mid	2437	14.432	14.674	0.5
High	2462	14.674	15.672	0.5
Worst		14.432	14.674	

9.2.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth CHAIN 0(MHz)	6 dB Bandwidth CHAIN 1(MHz)	Minimum Limit (MHz)
Low	2412	15.019	13.797	0.5
Mid	2437	15.408	15.720	0.5
High	2462	15.700	14.766	0.5
Worst		15.019	13.797	

9.2.4. 6 dB BANDWIDTH MID CH PLOTS



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 CHAIN 0(MHz)	99% Bandwidth CHAIN 1(MHz)
Low	2412	13.3240	13.0954
Mid	2437	13.0122	13.0383
High	2462	13.1710	13.2168

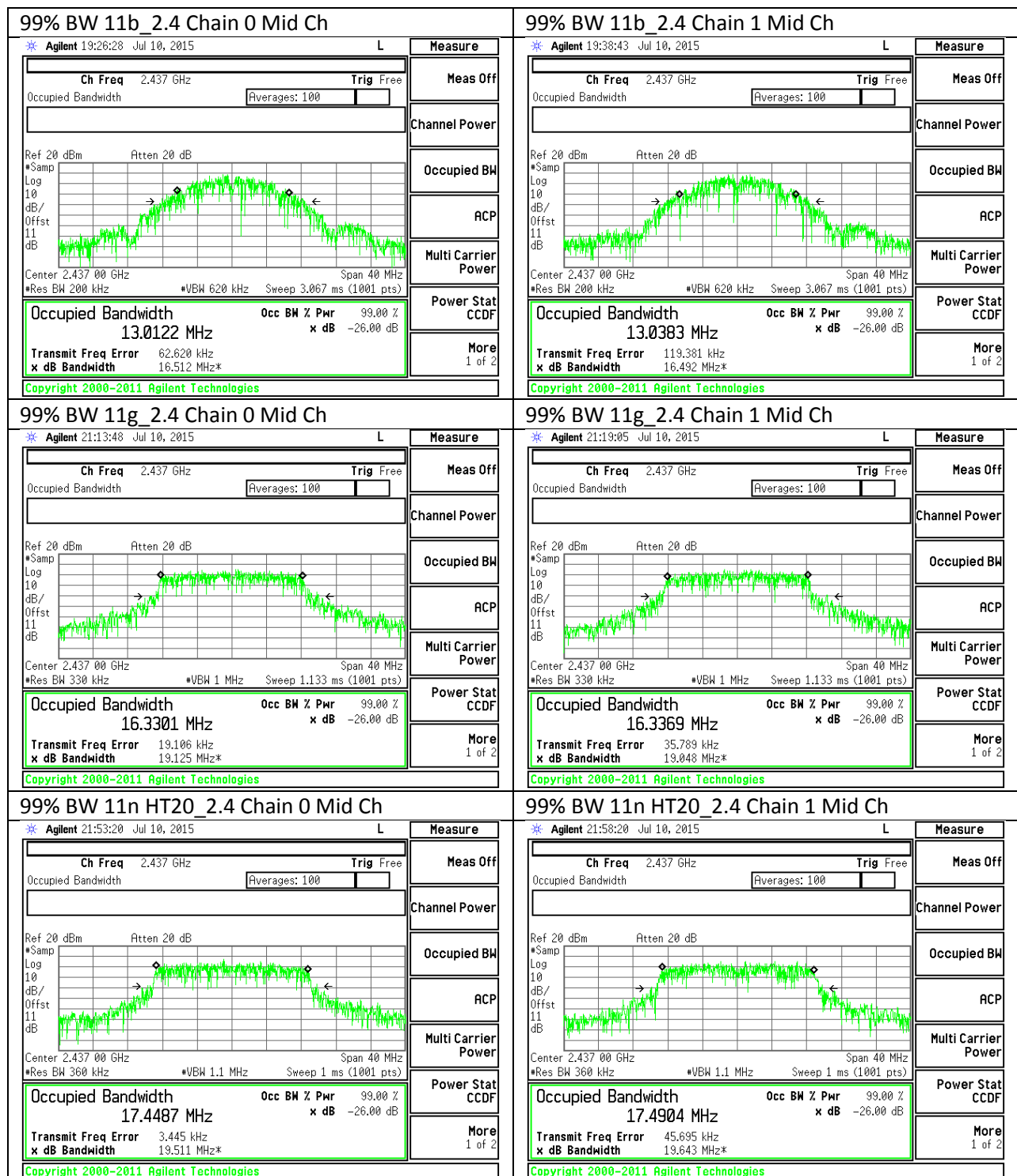
9.3.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth CHAIN 0(MHz)	99% Bandwidth CHAIN 1(MHz)
Low	2412	16.3451	16.2869
Mid	2437	16.3301	16.3369
High	2462	16.3510	16.3331

9.3.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth CHAIN 0(MHz)	99% Bandwidth CHAIN 1(MHz)
Low	2412	17.5068	17.4154
Mid	2437	17.4487	17.4904
High	2462	17.4889	17.4938

9.3.4. 99% BANDWIDTH MID CH PLOTS



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

The TX chains are uncorrelated and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
-0.05	-3.30	-1.38

The TX chains are correlated and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
-0.05	-3.30	1.49

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	-1.38	30.00	30	36	30.00
Mid	2437	-1.38	30.00	30	36	30.00
High	2462	-1.38	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	18.00	17.90	20.96	30.00	-9.04
Mid	2437	17.50	17.50	20.51	30.00	-9.49
High	2462	17.50	17.70	20.61	30.00	-9.39
Worst				20.96		

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	-1.38	30.00	30	36	30.00
Mid	2437	-1.38	30.00	30	36	30.00
High	2462	-1.38	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margi (dB)
Low	2412	14.00	14.50	17.27	30.00	-12.73
Mid	2437	14.80	15.10	17.96	30.00	-12.04
High	2462	13.70	14.20	16.97	30.00	-13.03
Worst				17.96		

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	-1.38	30.00	30	36	30.00
Mid	2437	-1.38	30.00	30	36	30.00
High	2462	-1.38	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margi (dB)
Low	2412	14.00	14.10	17.06	30.00	-12.94
Mid	2437	14.70	14.70	17.71	30.00	-12.29
High	2462	13.60	14.10	16.87	30.00	-13.13
Worst				17.71		

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

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD
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PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	Total Corr'd PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-2.810	-3.217	0.00	8.0	-8.0
Mid	2437	-3.663	-3.864	-0.75	8.0	-8.8
High	2462	-3.352	-3.633	-0.48	8.0	-8.5
Worst				0.00		

9.5.2. 802.11g MODE IN THE 2.4 GHz BAND

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD
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PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	Total Corr'd PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-9.311	-9.644	-6.46	8.0	-14.5
Mid	2437	-8.743	-9.128	-5.92	8.0	-13.9
High	2462	-10.070	-10.029	-7.04	8.0	-15.0
Worst				-5.92		

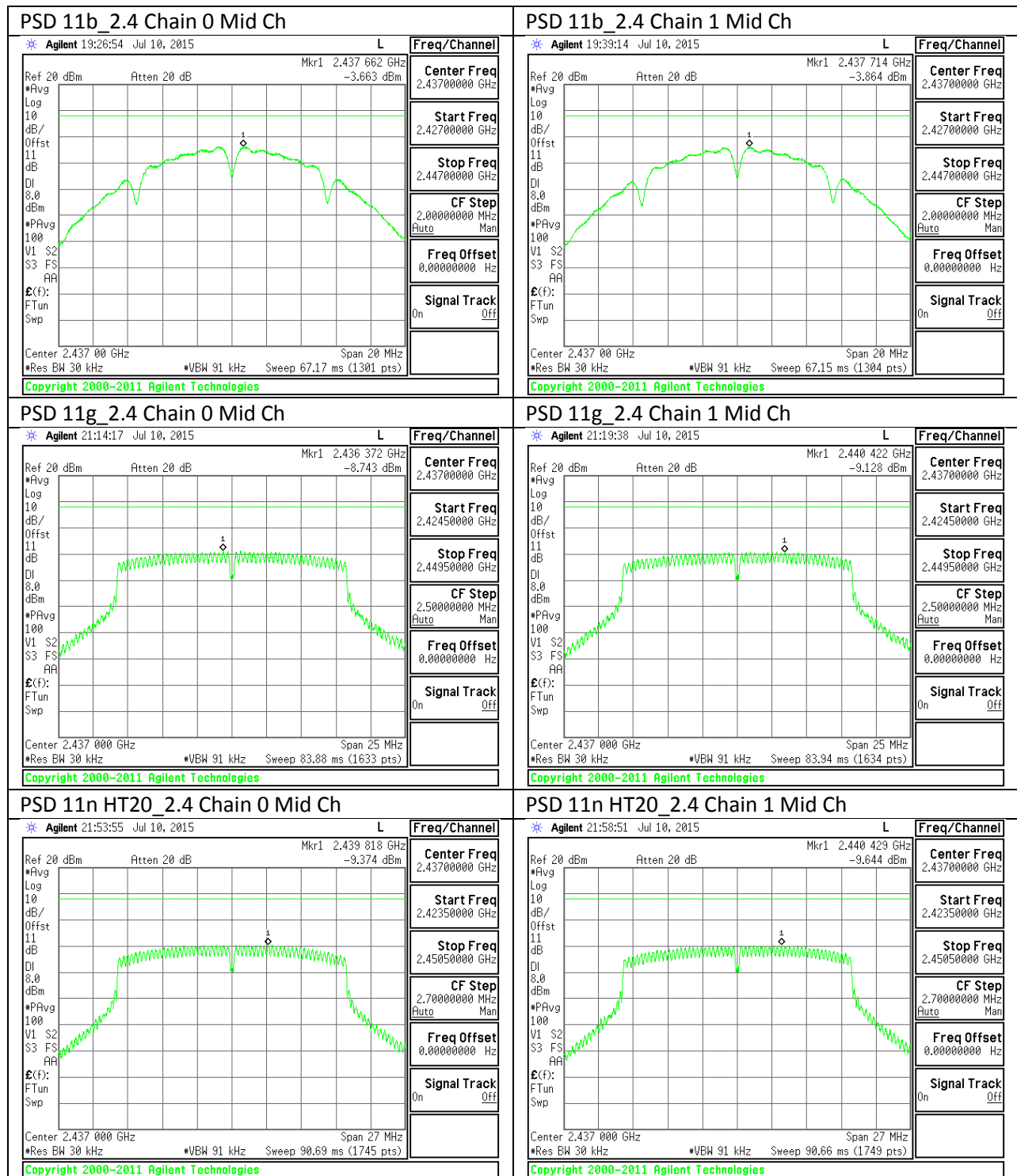
9.5.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD
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PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	Total Corr'd PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-9.842	-10.019	-6.92	8.0	-14.9
Mid	2437	-9.374	-9.644	-6.50	8.0	-14.5
High	2462	-10.599	-10.477	-7.53	8.0	-15.5
Worst				-6.50		

9.5.4. PSD MID CH PLOTS



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.

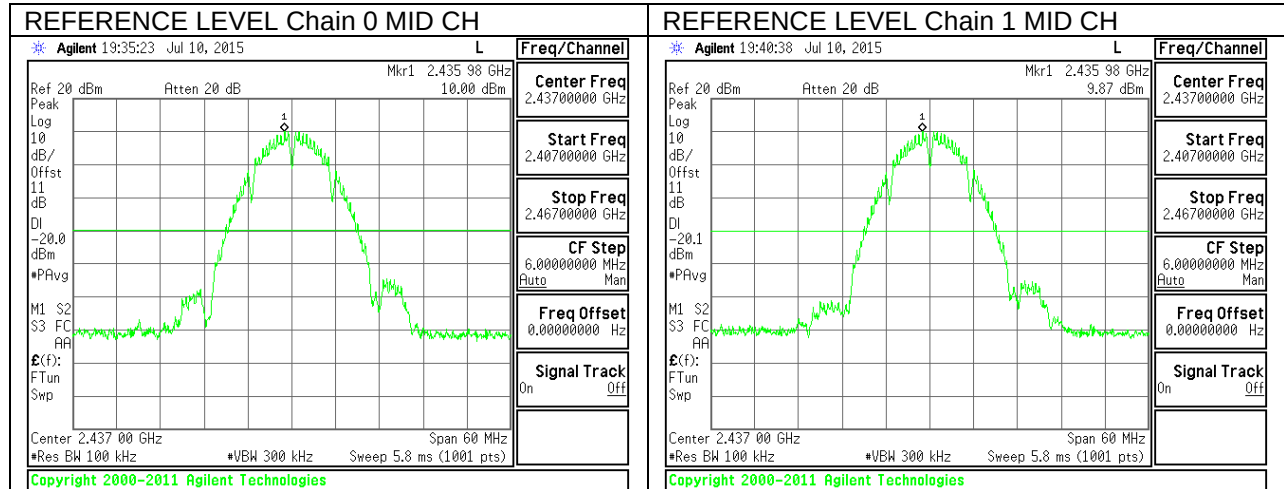
TEST PROCEDURE

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.

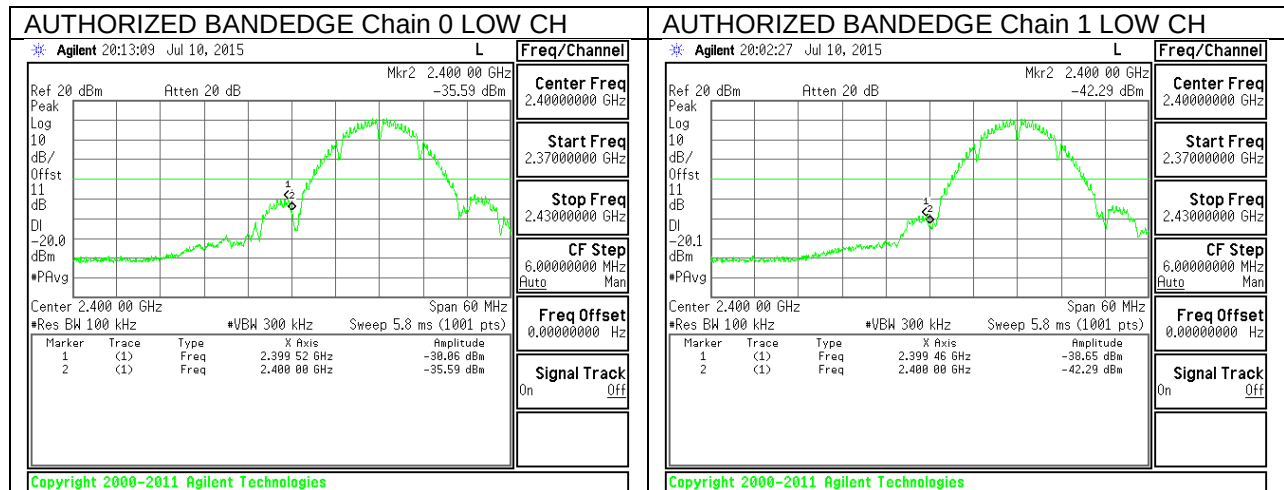
RESULTS

9.6.1. 802.11b MODE IN THE 2.4 GHz BAND

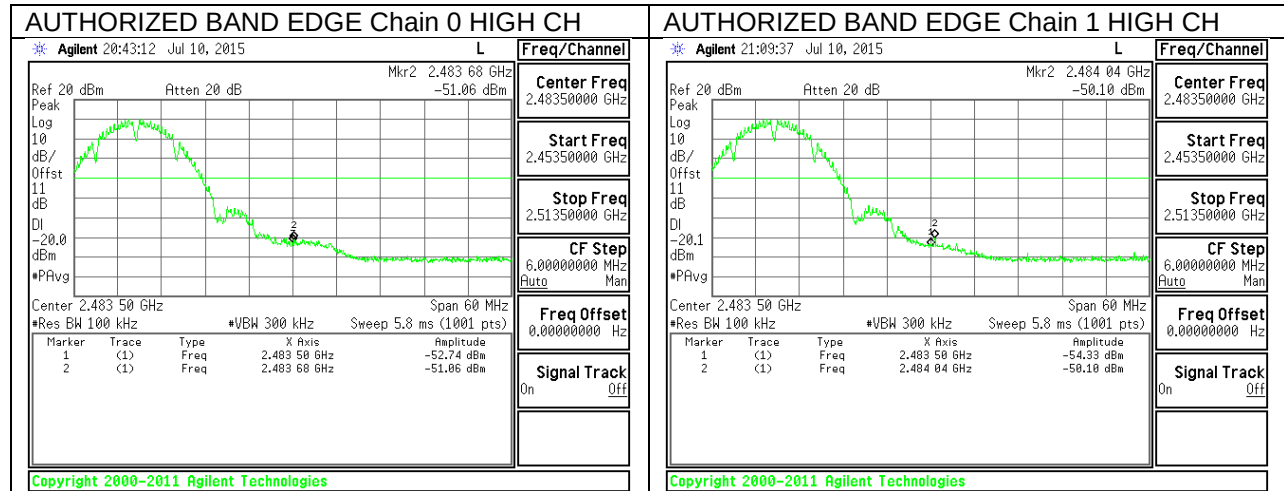
IN-BAND REFERENCE LEVEL



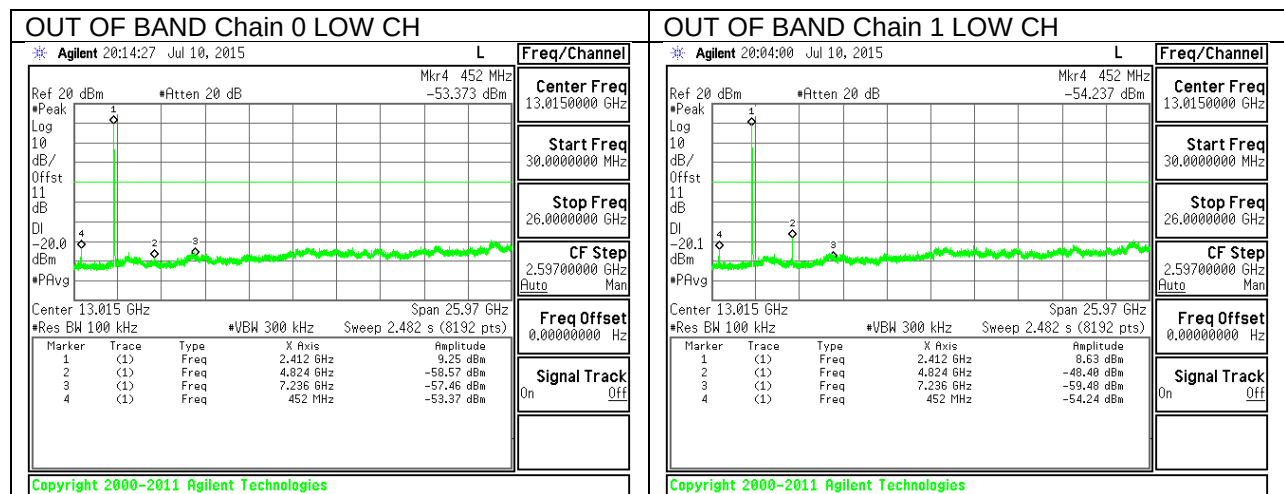
LOW CHANNEL BAND EDGE

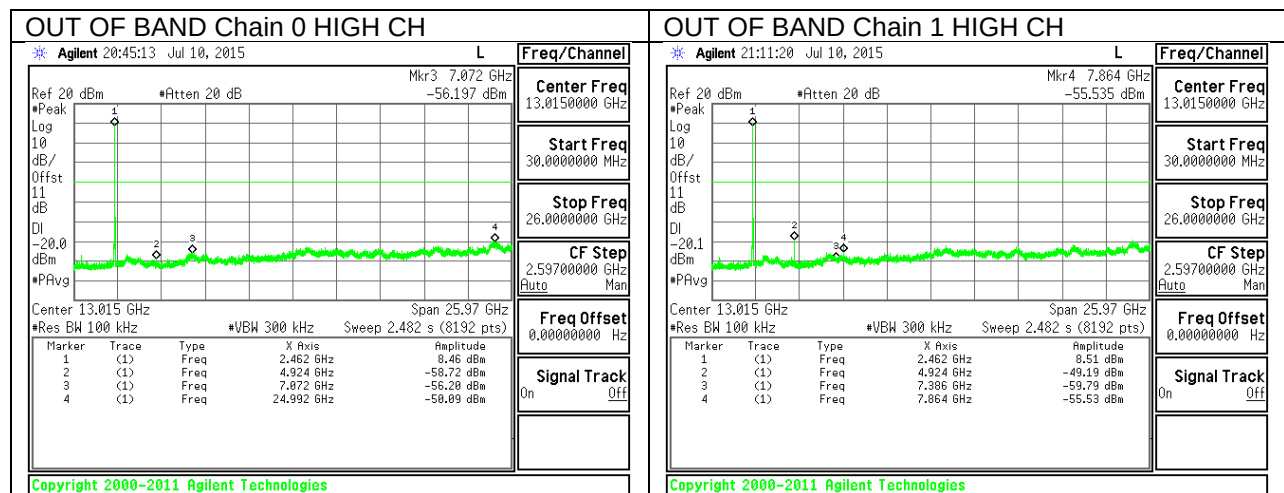
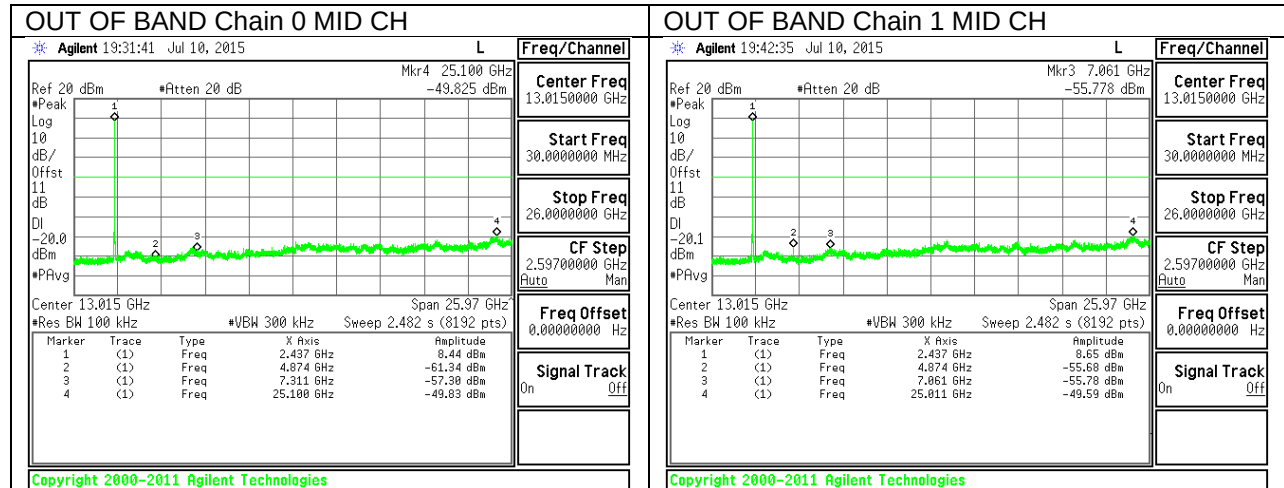


HIGH CHANNEL BAND EDGE



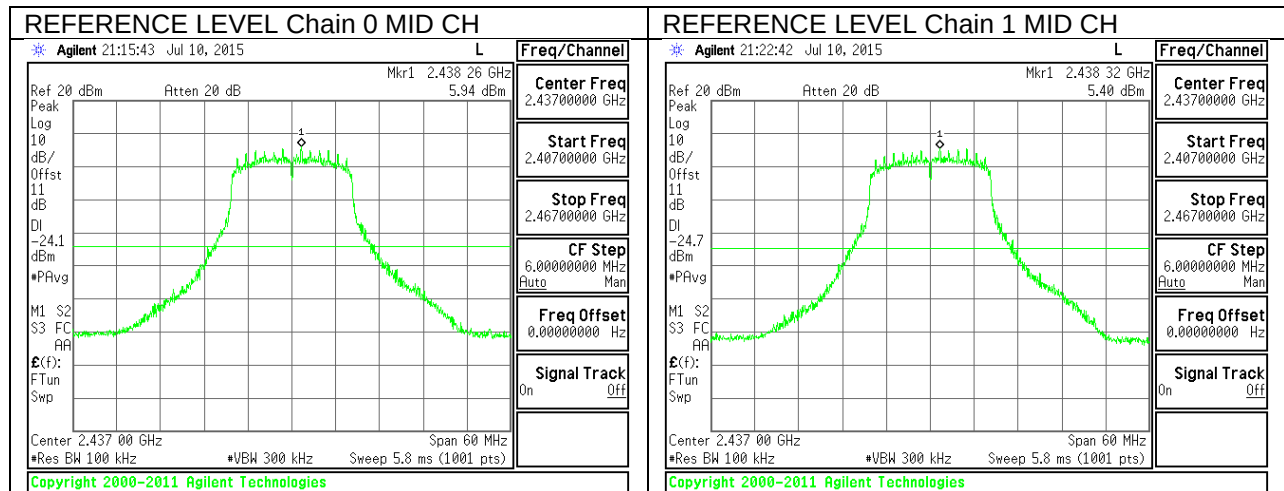
OUT-OF-BAND EMISSIONS



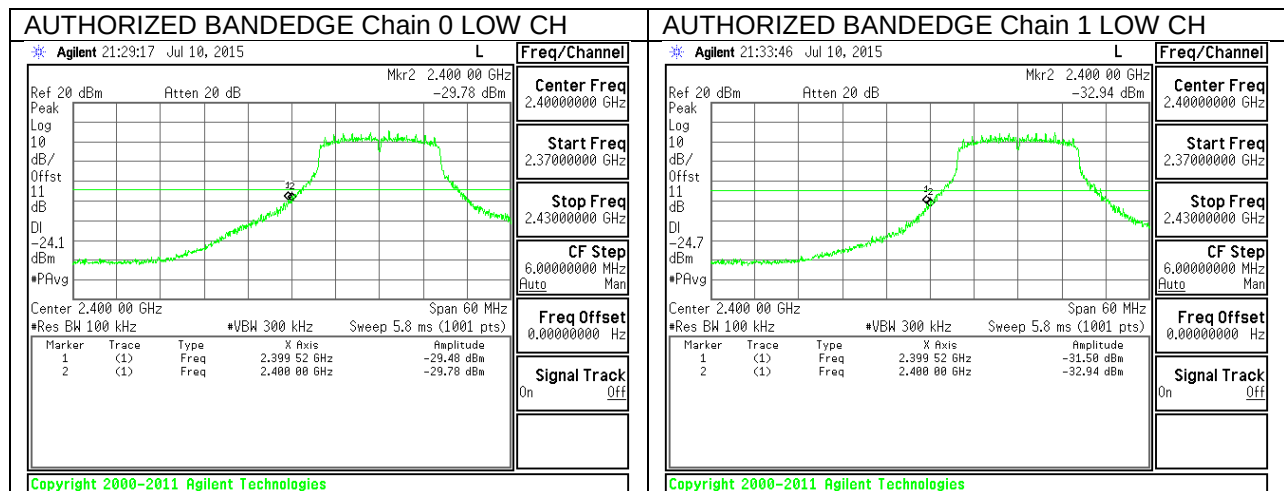


9.6.2. 802.11g MODE IN THE 2.4 GHz BAND

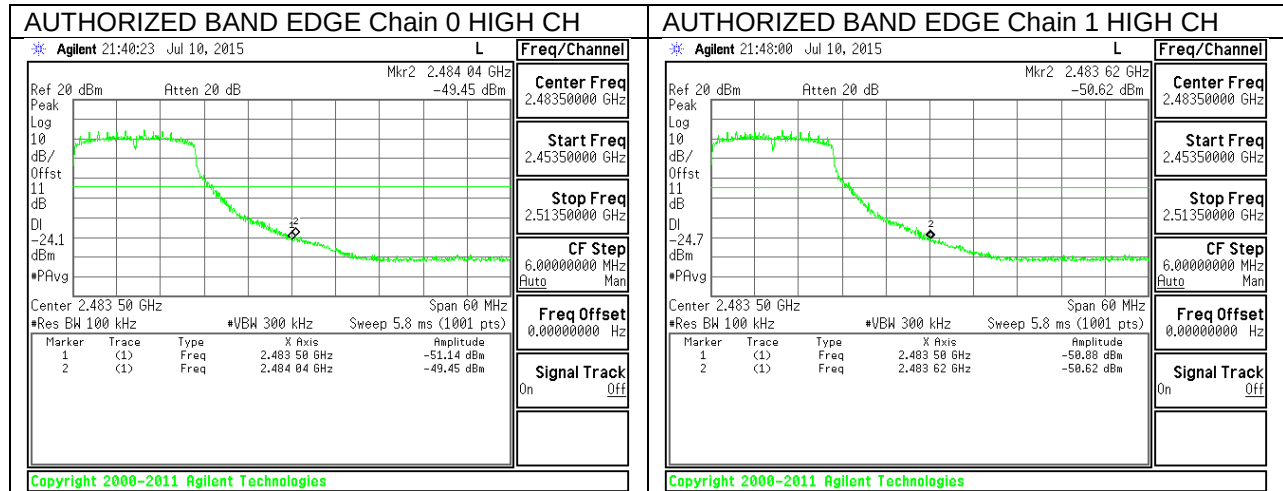
IN-BAND REFERENCE LEVEL



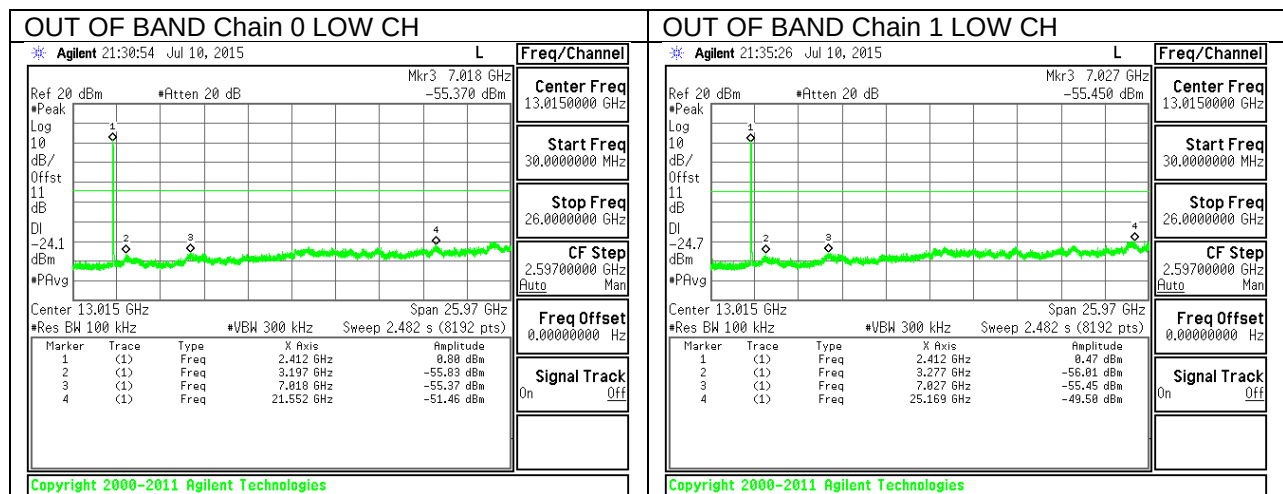
LOW CHANNEL BAND EDGE

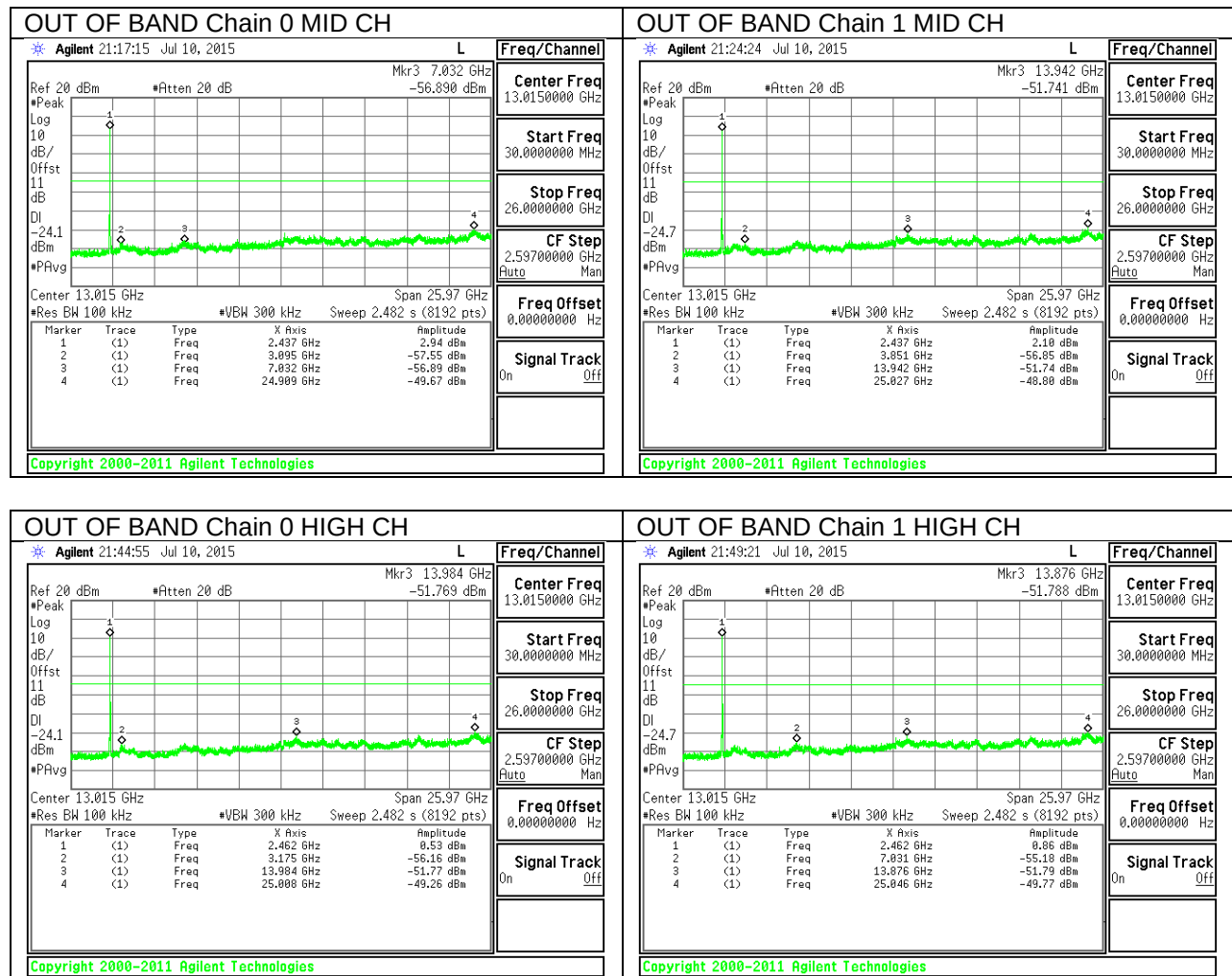


HIGH CHANNEL BAND EDGE



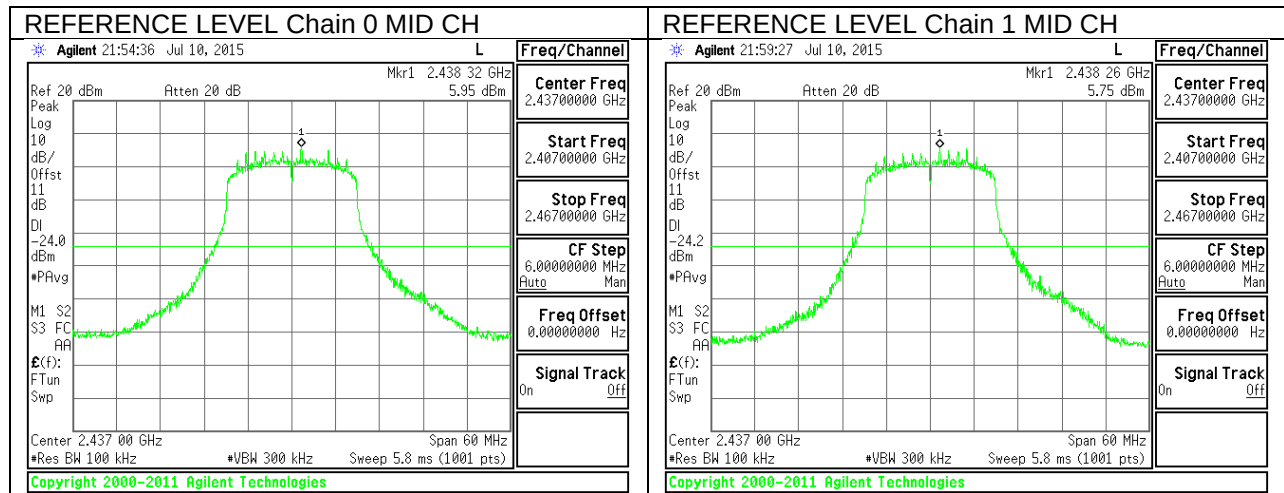
OUT-OF-BAND EMISSIONS



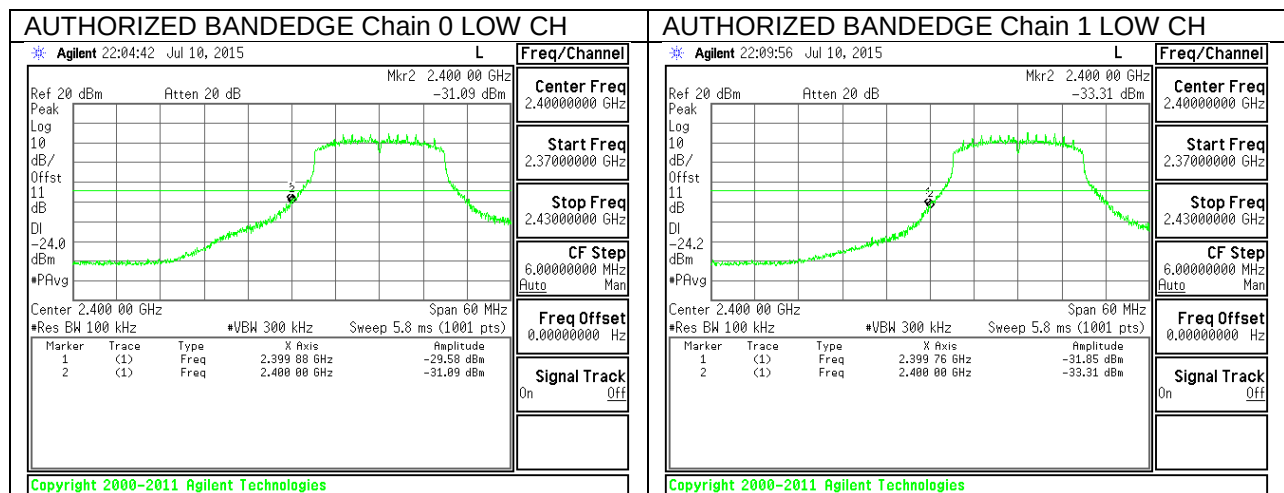


9.6.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

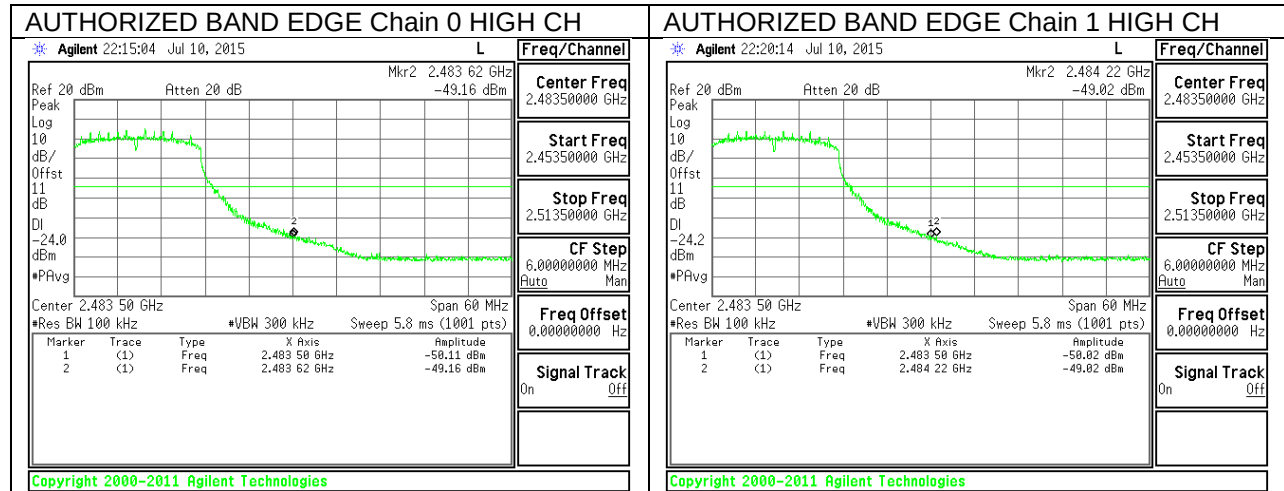
IN-BAND REFERENCE LEVEL



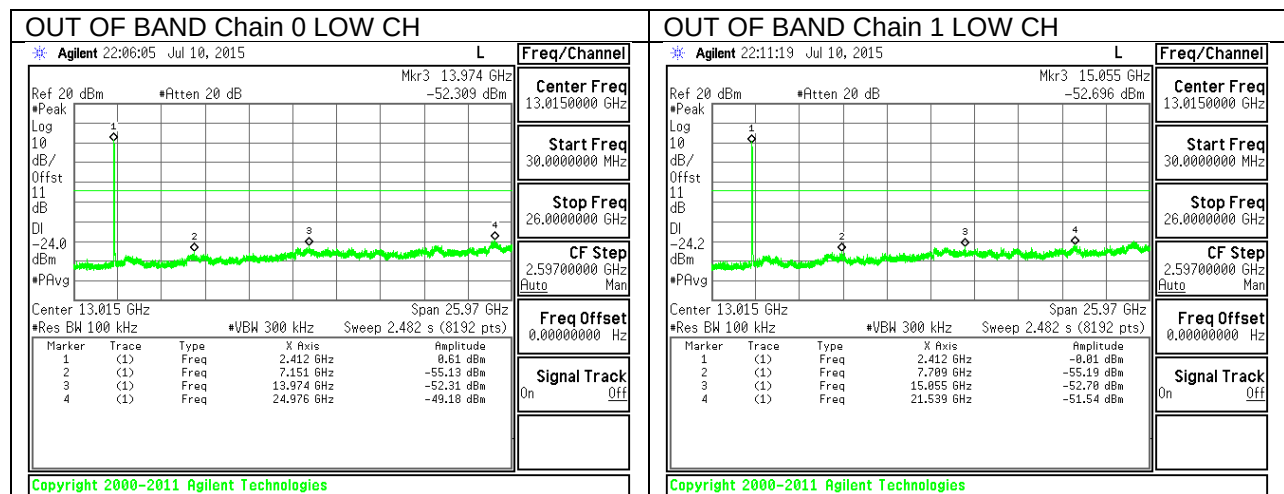
LOW CHANNEL BAND EDGE

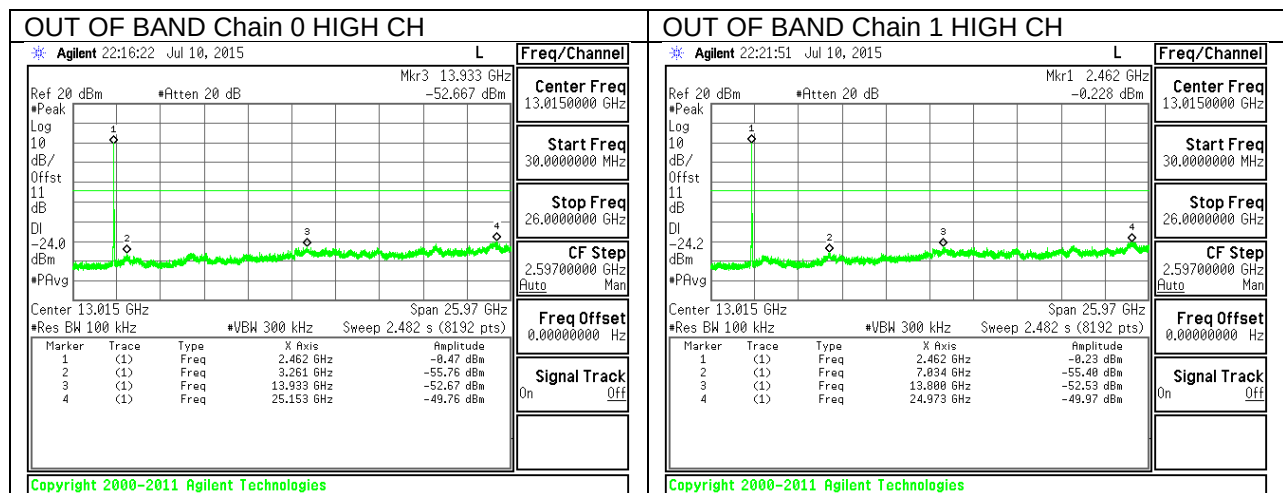
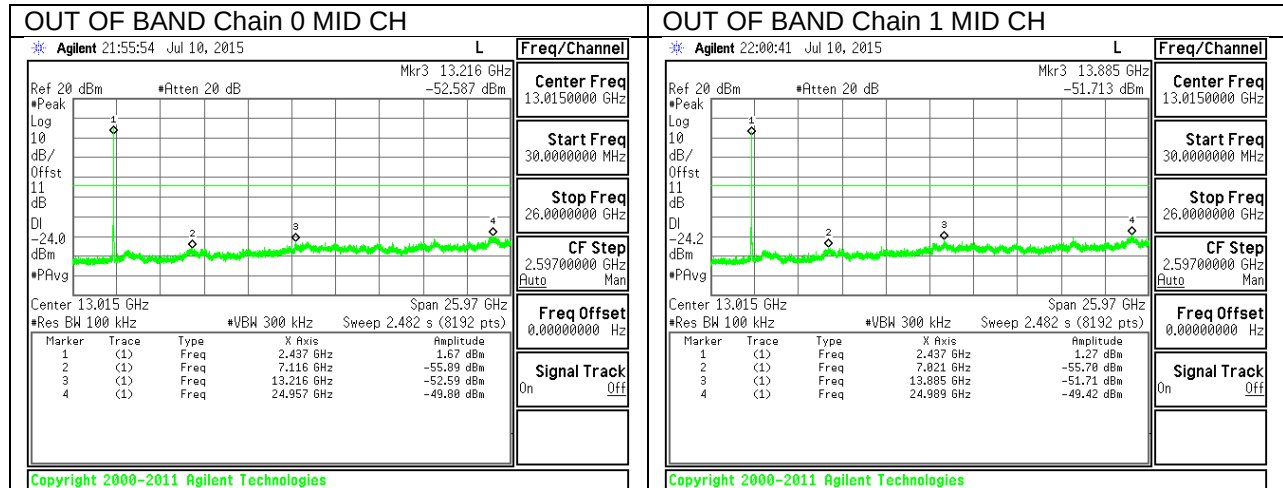


HIGH CHANNEL BAND EDGE



OUT-OF-BAND EMISSIONS





10. RADIATED TEST RESULTS

10.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-GEN Clause 8.9 (Transmitter)

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 150 cm 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= $10\log(1/x)$ For this sample B mode = 0dB (duty cycle >98%); G mode = 0 dB; HT20 mode = 0dB.

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.

* - indicates frequency in CFR15.205/IC8.10 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

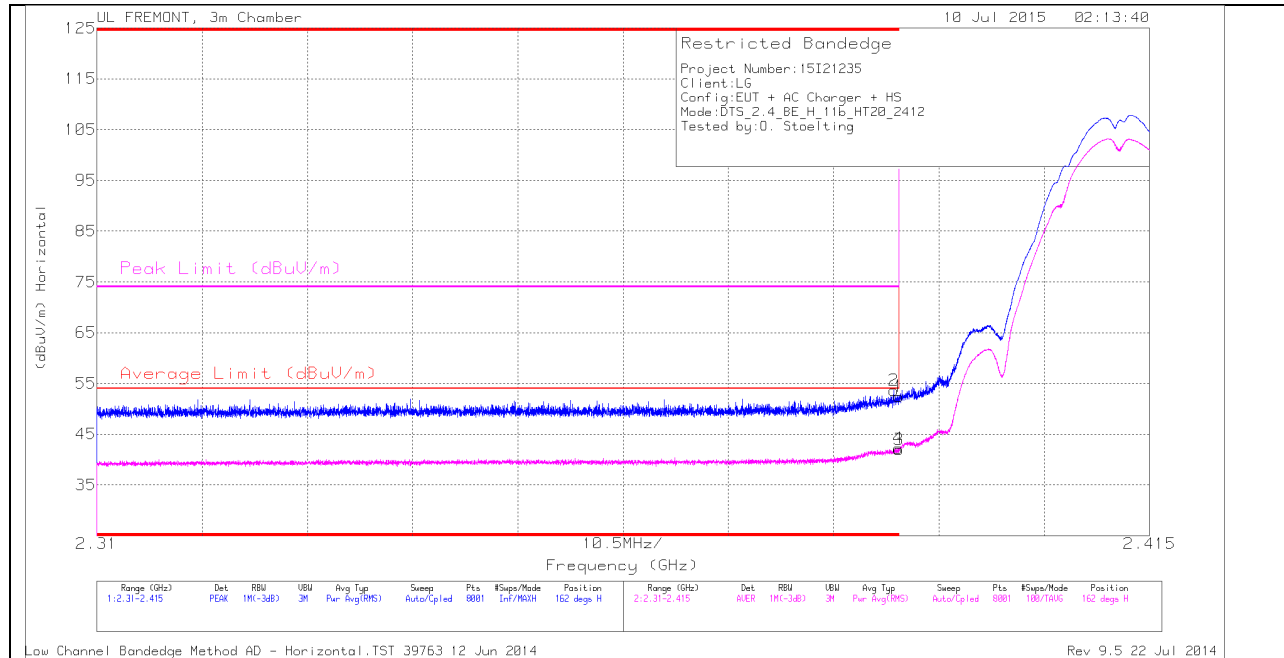
MAV1 - KDB558074 Option 1 Maximum RMS Average

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)

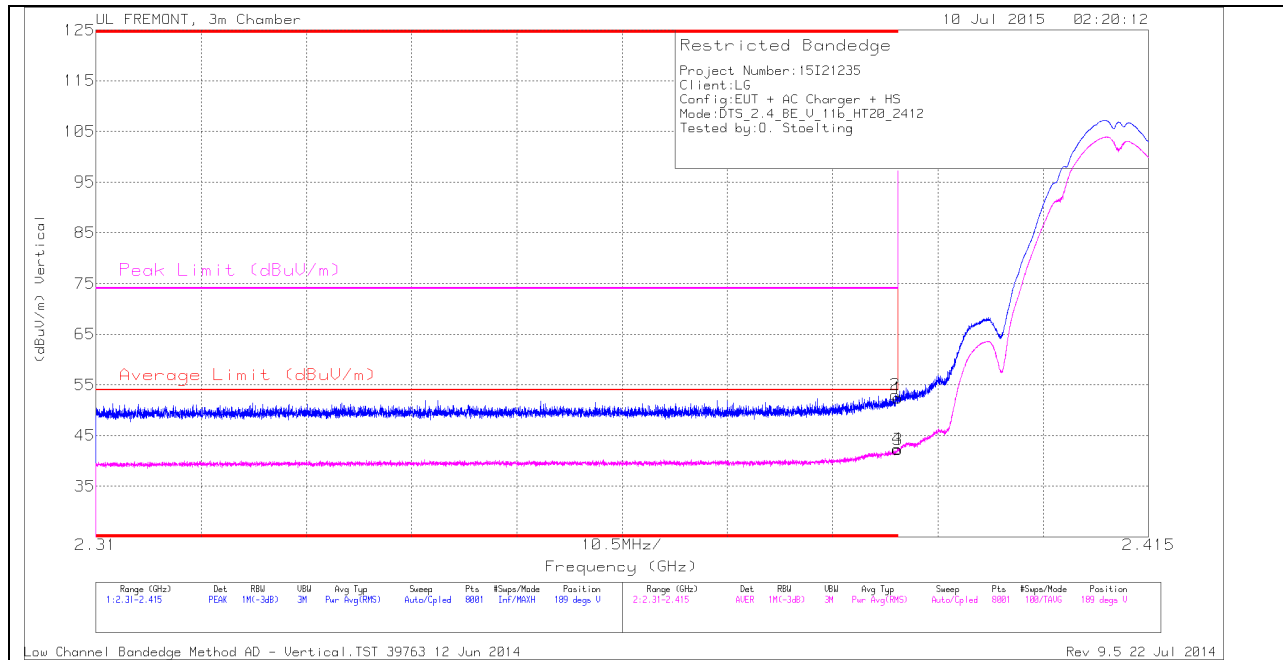
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dBm)	Amp/Cbl/FI tr/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	44.06	PK	32	-22.4	0	53.66	-	-	74	-20.34	162	270	H
1	* 2.39	42.86	PK	32	-22.4	0	52.46	-	-	74	-21.54	162	270	H
3	* 2.39	32.35	RMS	32	-22.4	0	41.95	54	-12.05	-	-	162	270	H
4	* 2.39	32.63	RMS	32	-22.4	0	42.23	54	-11.77	-	-	162	270	H

VERTICAL PEAK AND AVERAGE PLOT

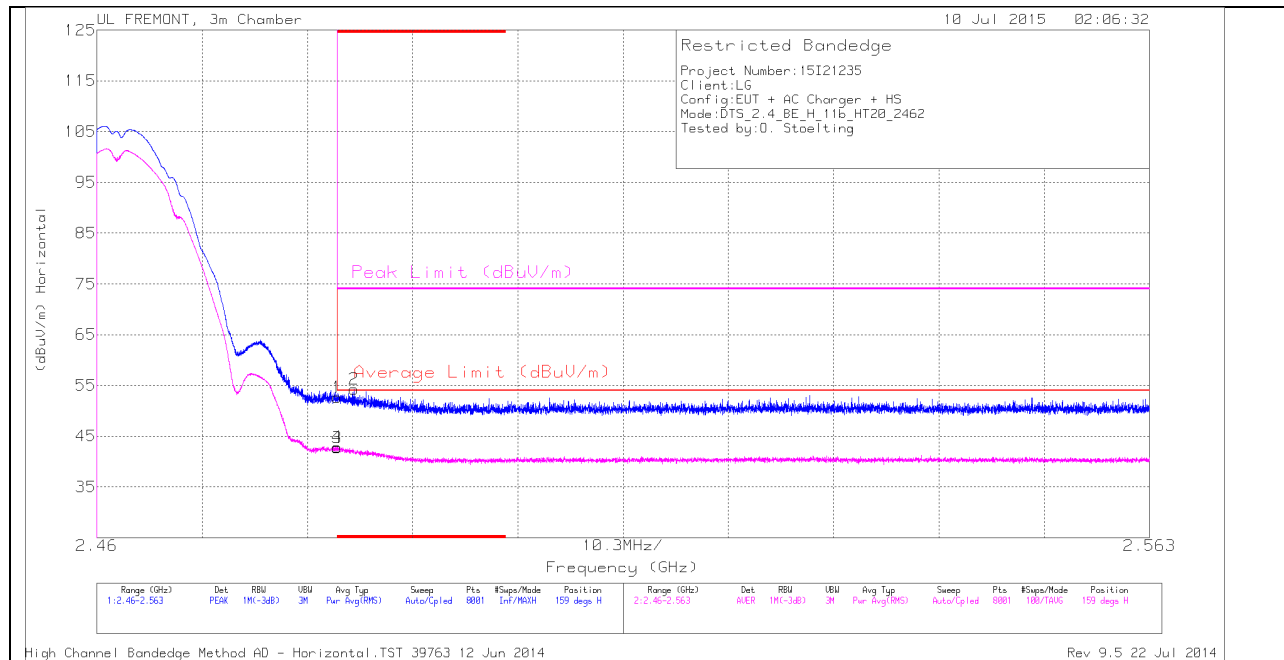


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr/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	42.84	PK	32	-22.4	0	52.44	-	-	74	-21.56	189	104	V
2	* 2.39	43.41	PK	32	-22.4	0	53.01	-	-	74	-20.99	189	104	V
3	* 2.39	32.66	RMS	32	-22.4	0	42.26	54	-11.74	-	-	189	104	V
4	* 2.39	32.7	RMS	32	-22.4	0	42.3	54	-11.7	-	-	189	104	V

AUTHORIZED BANDEDGE (HIGH CHANNEL)

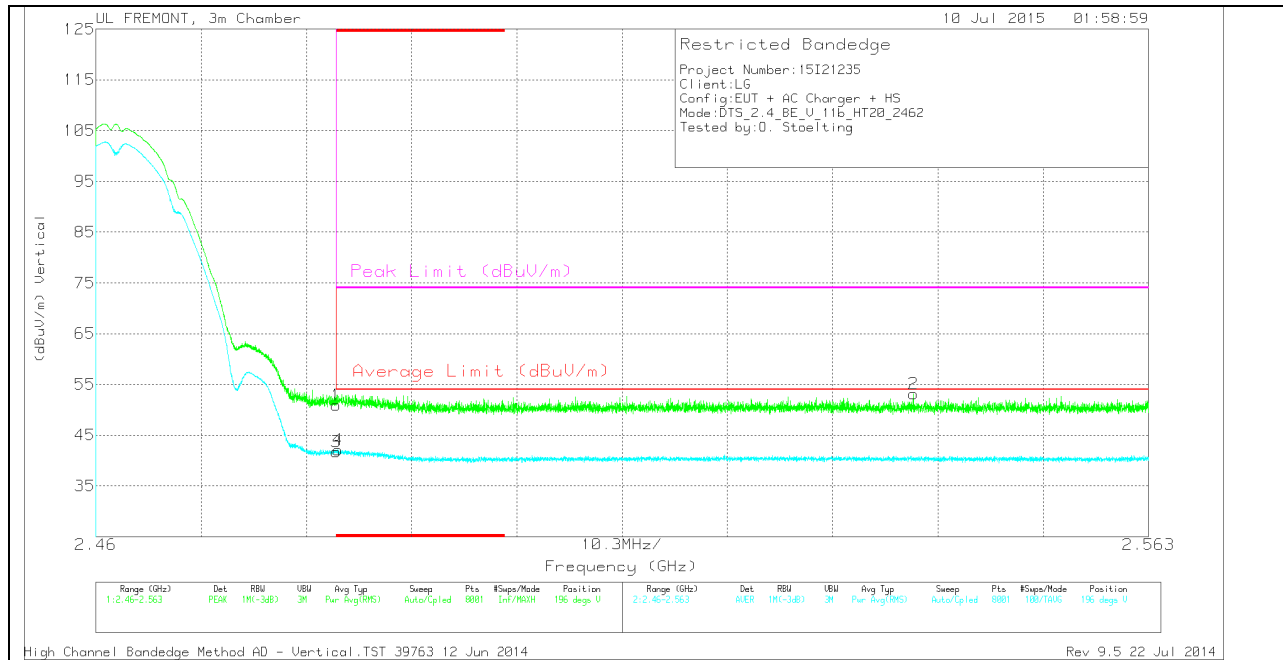
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/FI tri/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	42.5	PK	32.3	-22.1	0	52.7	-	-	74	-21.3	159	249	H
3	* 2.484	32.47	RMS	32.3	-22.1	0	42.67	54	-11.33	-	-	159	249	H
4	* 2.484	32.64	RMS	32.3	-22.1	0	42.84	54	-11.16	-	-	159	249	H
2	* 2.485	44.09	PK	32.3	-22.1	0	54.29	-	-	74	-19.71	159	249	H

VERTICAL PEAK AND AVERAGE PLOT

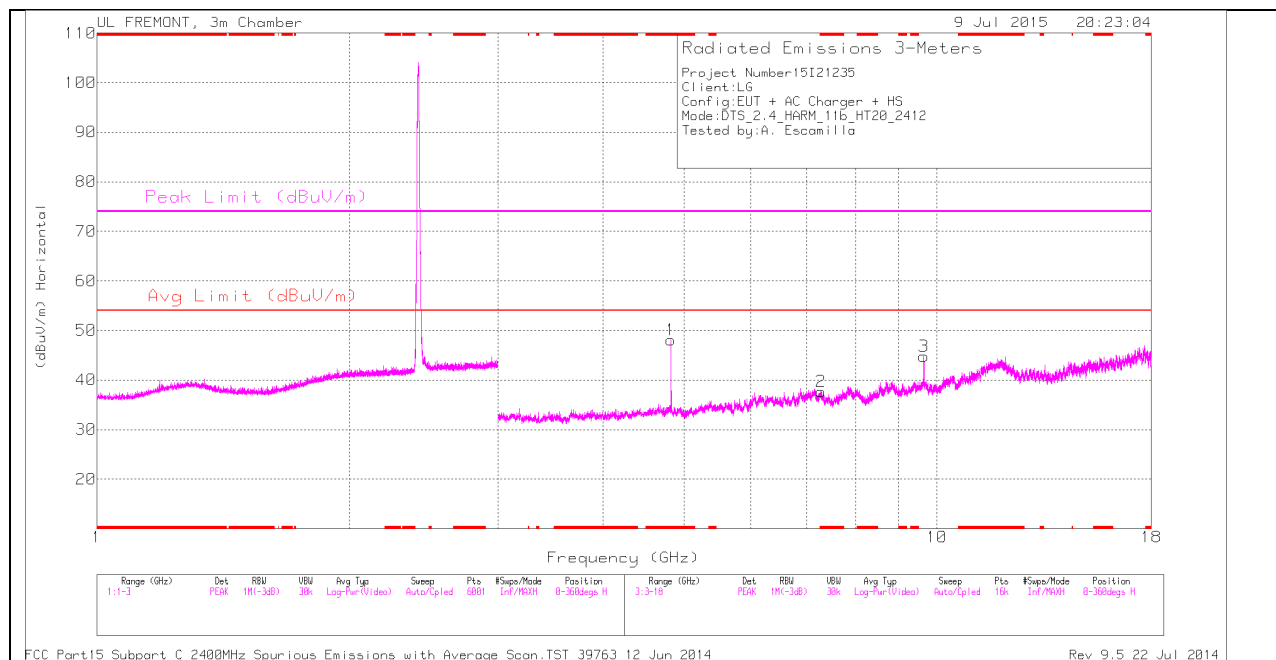


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/FI tr/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	40.74	PK	32.3	-22.1	0	50.94	-	-	74	-23.06	196	170	V
3	* 2.484	31.51	RMS	32.3	-22.1	0	41.71	54	-12.29	-	-	196	170	V
4	* 2.484	31.89	RMS	32.3	-22.1	0	42.09	54	-11.91	-	-	196	170	V
2	2.54	42.63	PK	32.4	-21.9	0	53.13	-	-	74	-20.87	196	170	V

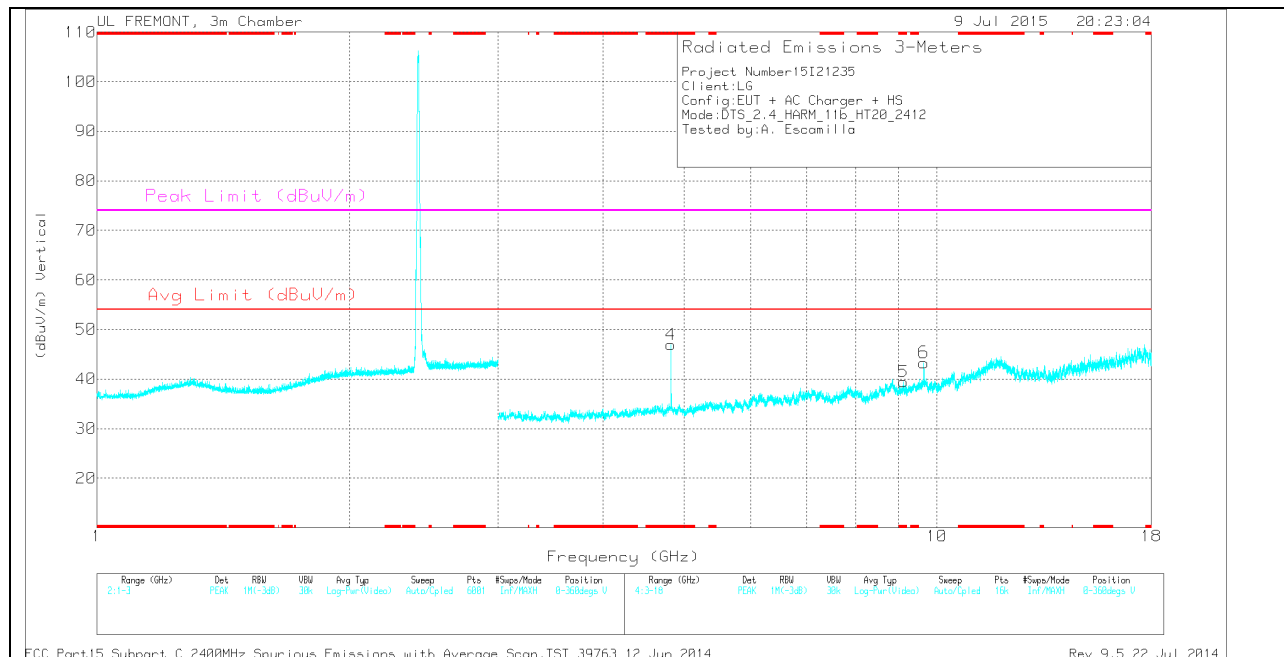
HARMONICS AND SPURIOUS EMISSIONS

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 T119 (dB/m)	Amp/Cbl/Fil tr/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	* 4.824	43.49	PK	34	-29.4	0	48.09	-	-	74	-25.91	0-360	200	H
4	* 4.824	42.31	PK	34	-29.4	0	46.91	-	-	74	-27.09	0-360	100	V
2	* 7.278	30.35	PK	35.6	-28.3	0	37.65	-	-	74	-36.35	0-360	100	H
5	* 9.117	27.99	PK	36.1	-24.6	0	39.49	-	-	74	-34.51	0-360	100	V
3	9.647	31.87	PK	36.8	-23.9	0	44.77	-	-	-	-	0-360	200	H
6	9.647	30.43	PK	36.8	-23.9	0	43.33	-	-	-	-	0-360	200	V

PK - Peak detector

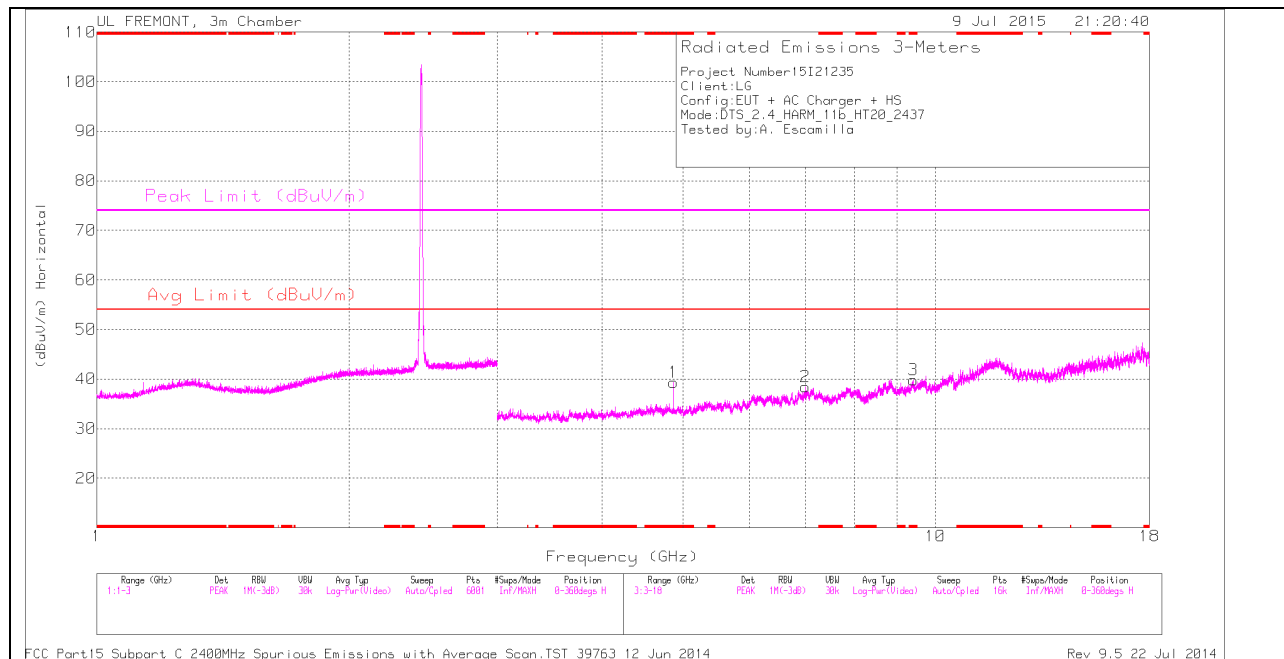
RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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
* 4.824	47.76	PK2	34	-29.4	0	52.36	-	-	74	-21.64	179	209	H
* 4.824	43.72	MAV1	34	-29.4	0	48.32	54	-5.68	-	-	179	209	H
* 7.278	39.2	PK2	35.6	-28.3	0	46.5	-	-	74	-27.5	205	167	H
* 7.279	27.97	MAV1	35.6	-28.3	0	35.27	54	-18.73	-	-	205	167	H
* 4.824	48.14	PK2	34	-29.4	0	52.74	-	-	74	-21.26	219	388	V
* 4.824	44.28	MAV1	34	-29.4	0	48.88	54	-5.12	-	-	219	388	V
* 9.116	36.48	PK2	36.1	-24.6	0	47.98	-	-	74	-26.02	254	264	V
* 9.116	25.39	MAV1	36.1	-24.6	0	36.89	54	-17.11	-	-	254	264	V
9.648	38.22	PK2	36.8	-23.9	0	51.12	-	-	-	-	133	325	H
9.648	30.53	MAV1	36.8	-23.9	0	43.43	-	-	-	-	133	325	H
9.648	38.28	PK2	36.8	-23.9	0	51.18	-	-	-	-	117	221	V
9.648	29.66	MAV1	36.8	-23.9	0	42.56	-	-	-	-	117	221	V

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

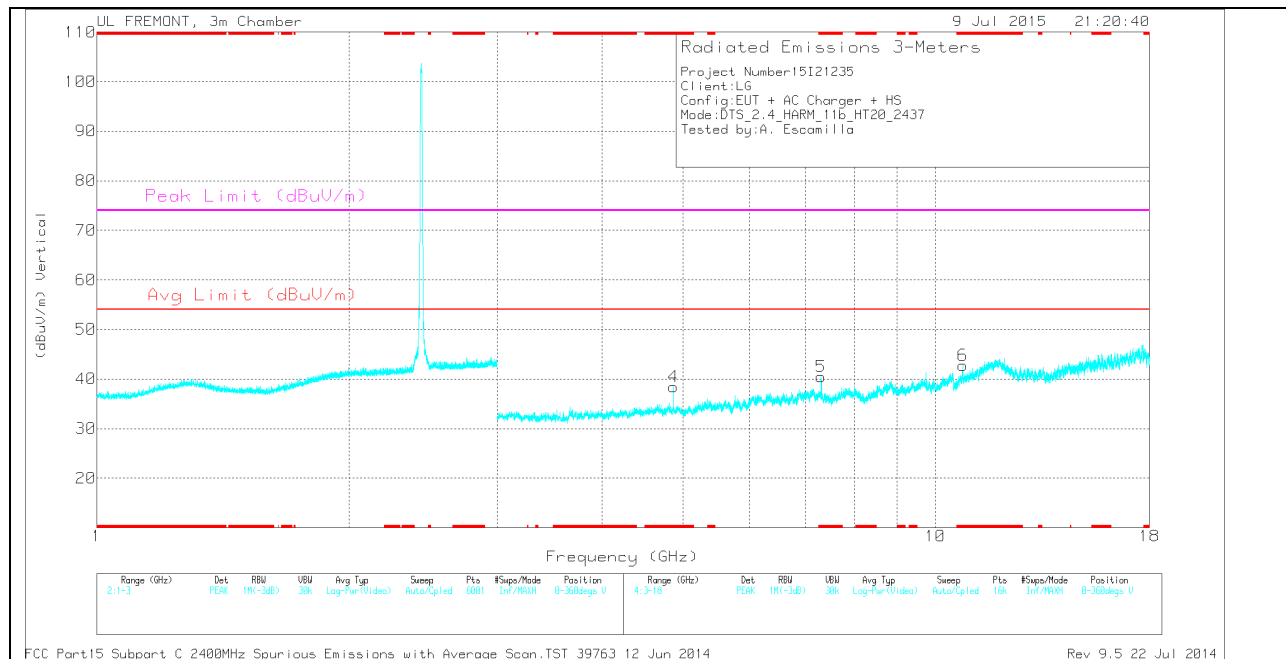
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MID CHANNEL HORIZONTAL



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 T119 (dB/m)	Amp/Cbl/Fil tr/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	* 4.874	34.44	PK	34	-29.1	0	39.34	-	-	74	-34.66	0-360	100	H
3	* 9.415	27.78	PK	36.4	-24.3	0	39.88	-	-	74	-34.12	0-360	100	H
4	* 4.874	33.56	PK	34	-29.1	0	38.46	-	-	74	-35.54	0-360	200	V
5	* 7.308	32.42	PK	35.6	-27.5	0	40.52	-	-	74	-33.48	0-360	200	V
6	* 10.773	28.11	PK	37.9	-23.2	0	42.81	-	-	74	-31.19	0-360	200	V
2	6.991	31.31	PK	35.6	-28.5	0	38.41	-	-	-	-	0-360	100	H

PK - Peak detector

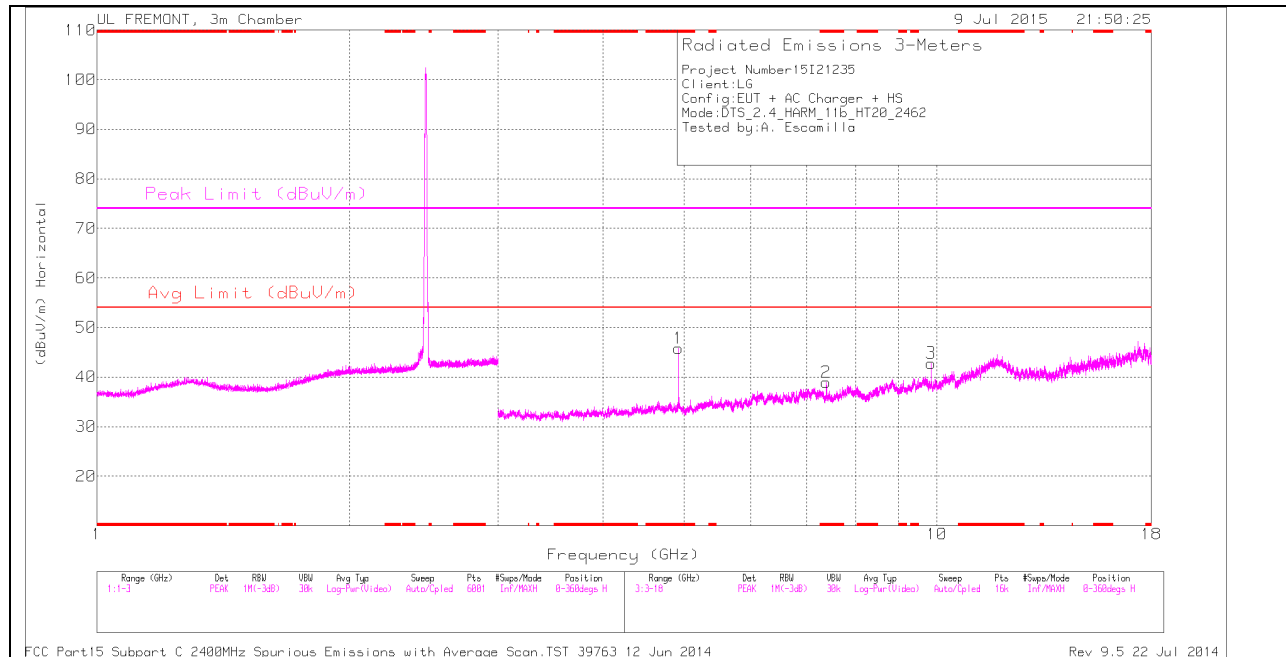
RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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
* 4.874	42.21	PK2	34	-29.1	0	47.11	-	-	74	-26.89	178	121	H
* 4.874	34.95	MAv1	34	-29.1	0	39.85	54	-14.15	-	-	178	121	H
* 9.417	36.13	PK2	36.4	-24.3	0	48.23	-	-	74	-25.77	154	181	H
* 9.415	25.01	MAv1	36.4	-24.3	0	37.11	54	-16.89	-	-	154	181	H
* 4.874	42.9	PK2	34	-29.1	0	47.8	-	-	74	-26.2	200	361	V
* 4.874	36.31	MAv1	34	-29.1	0	41.21	54	-12.79	-	-	200	361	V
* 7.309	38.42	PK2	35.6	-27.5	0	46.52	-	-	74	-27.48	139	389	V
* 7.31	27.41	MAv1	35.6	-27.5	0	35.51	54	-18.49	-	-	139	389	V
* 10.774	37.07	PK2	37.9	-23.3	0	51.67	-	-	74	-22.33	98	147	V
* 10.772	24.36	MAv1	37.9	-23.2	0	39.06	54	-14.94	-	-	98	147	V
6.991	39.4	PK2	35.6	-28.5	0	46.5	-	-	-	-	199	157	H
6.992	27.93	MAv1	35.6	-28.4	0	35.13	-	-	-	-	199	157	H

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

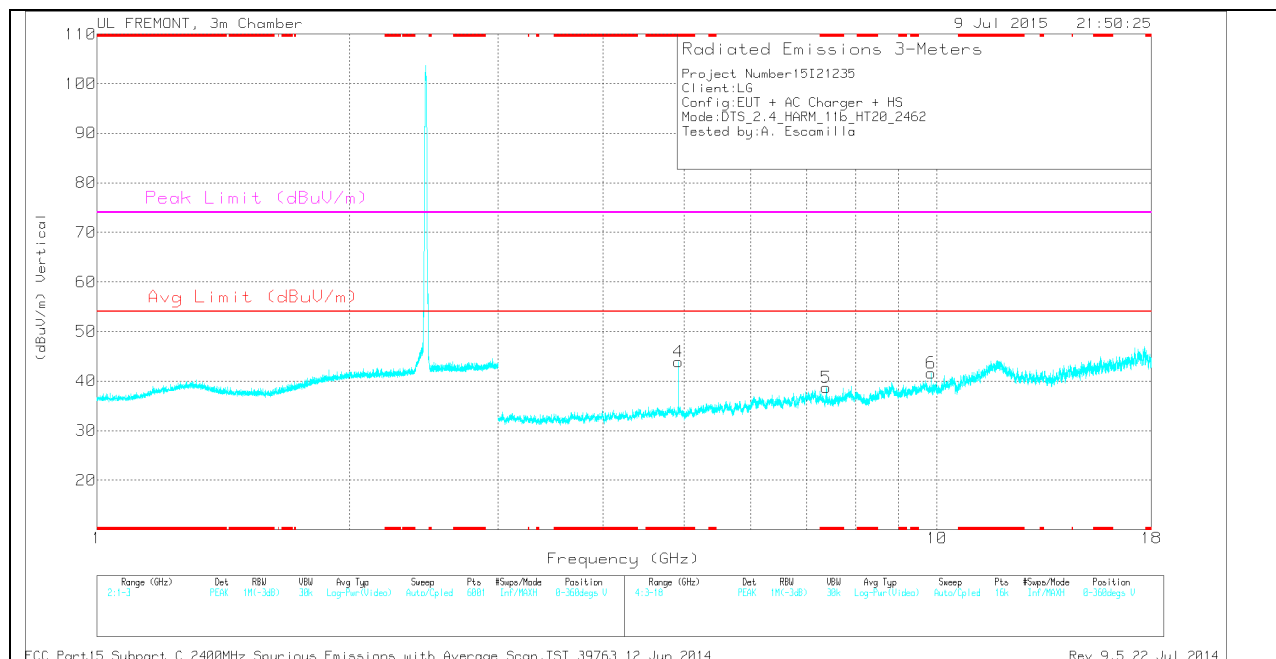
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HIGH CHANNEL HORIZONTAL



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 T119 (dB/m)	Amp/Cbl/Fil tr/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	* 4.924	41.45	PK	34	-29.6	0	45.85	-	-	74	-28.15	0-360	200	H
2	* 7.384	30.44	PK	35.6	-27.1	0	38.94	-	-	74	-35.06	0-360	100	H
4	* 4.924	39.52	PK	34	-29.6	0	43.92	-	-	74	-30.08	0-360	100	V
5	* 7.384	30.15	PK	35.6	-27.1	0	38.65	-	-	74	-35.35	0-360	200	V
6	9.847	29.14	PK	36.9	-24.4	0	41.64	-	-	-	-	0-360	200	V
3	9.848	30.22	PK	36.9	-24.3	0	42.82	-	-	-	-	0-360	200	H

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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
* 4.924	47.08	PK2	34	-29.6	0	51.48	-	-	74	-22.52	180	215	H
* 4.924	42.42	MAv1	34	-29.6	0	46.82	54	-7.18	-	-	180	215	H
* 7.385	38.69	PK2	35.6	-27.1	0	47.19	-	-	74	-26.81	204	102	H
* 7.385	26.84	MAv1	35.6	-27.1	0	35.34	54	-18.66	-	-	204	102	H
* 4.924	47.73	PK2	34	-29.6	0	52.13	-	-	74	-21.87	203	354	V
* 4.924	42.7	MAv1	34	-29.6	0	47.1	54	-6.9	-	-	203	354	V
* 7.385	37.86	PK2	35.6	-27.1	0	46.36	-	-	74	-27.64	261	107	V
* 7.383	26.01	MAv1	35.6	-27	0	34.61	54	-19.39	-	-	261	107	V
9.848	39.24	PK2	36.9	-24.3	0	51.84	-	-	-	-	188	198	H
9.848	31.28	MAv1	36.9	-24.3	0	43.88	-	-	-	-	188	198	H
9.848	38.39	PK2	36.9	-24.3	0	50.99	-	-	-	-	104	256	V
9.848	28.87	MAv1	36.9	-24.3	0	41.47	-	-	-	-	104	256	V

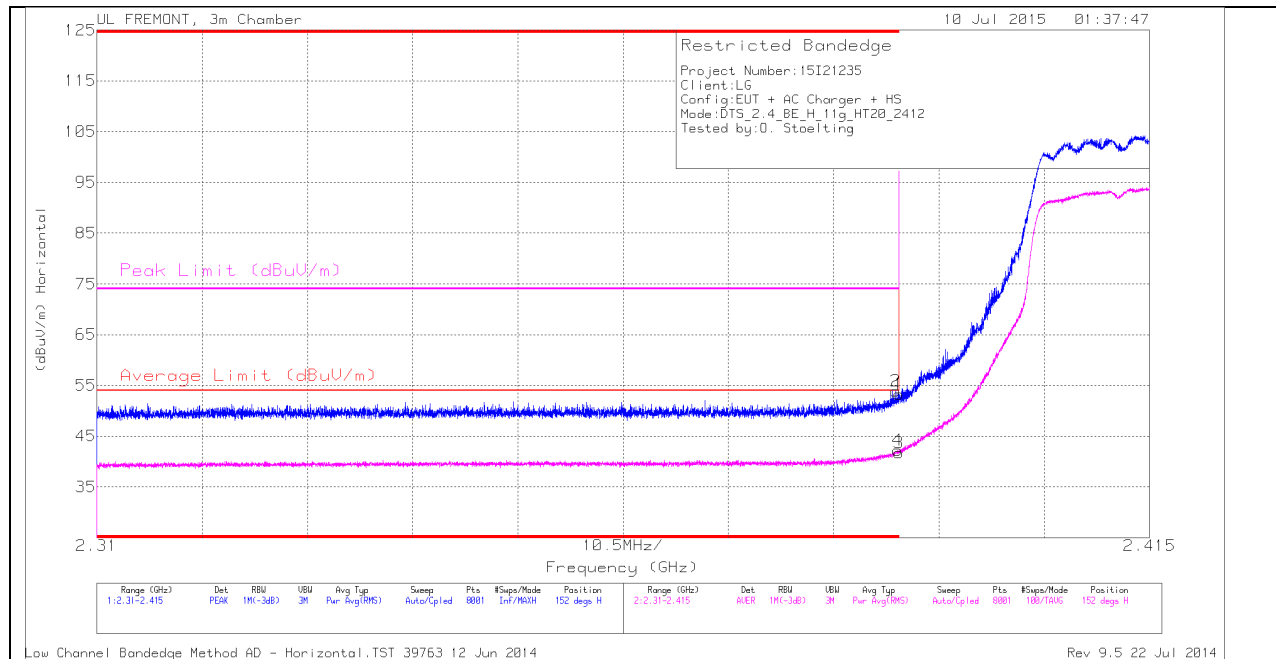
- Compliance for emission in non-restricted bands is show in conducted out of band testing

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

RESTRICTED BANDEDGE (LOW CHANNEL)

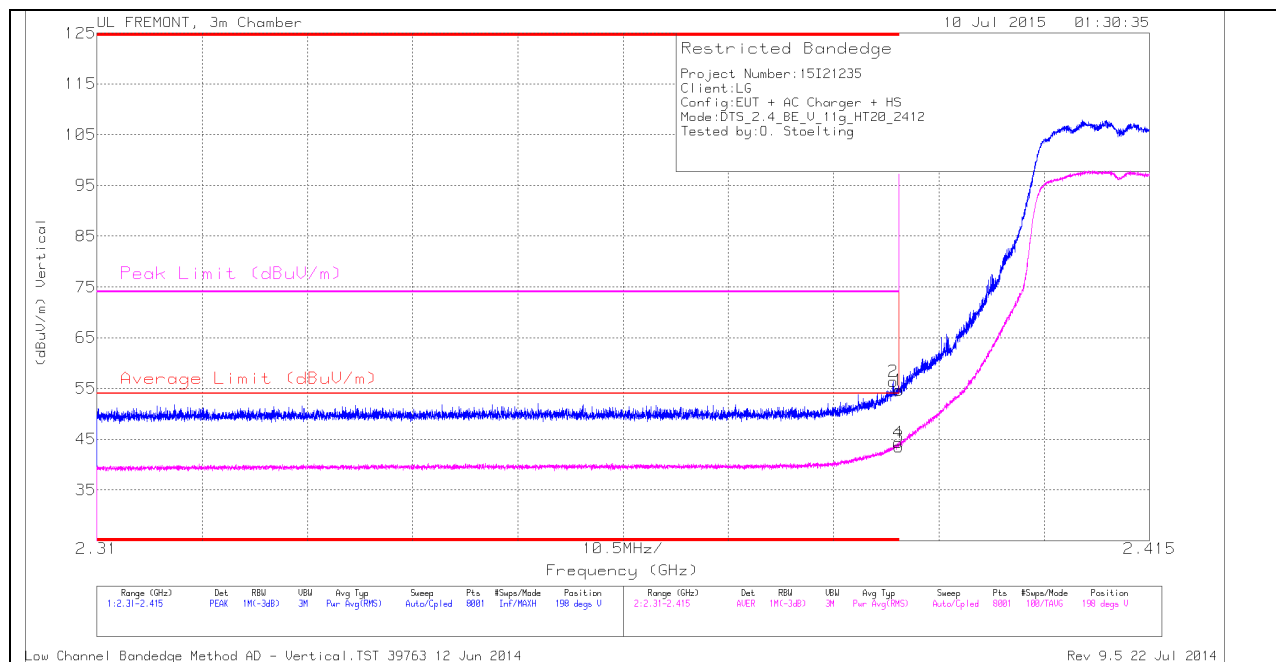
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dBm)	Amp/Cbl/FI tr/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	43.66	PK	32	-22.4	0	53.26	-	-	74	-20.74	152	346	H
2	* 2.39	44.25	PK	32	-22.4	0	53.85	-	-	74	-20.15	152	346	H
3	* 2.39	32.15	RMS	32	-22.4	0	41.75	54	-12.25	-	-	152	346	H
4	* 2.39	32.59	RMS	32	-22.4	0	42.19	54	-11.81	-	-	152	346	H

VERTICAL PEAK AND AVERAGE PLOT

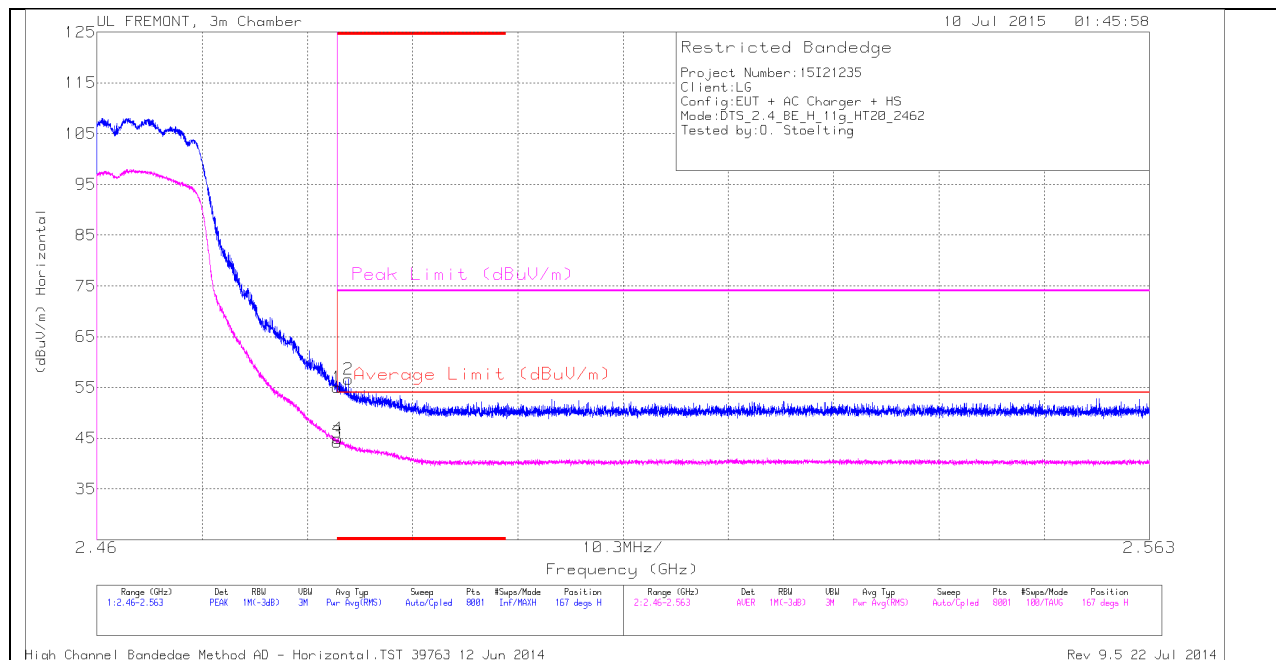


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/FI tr/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	46.82	PK	32	-22.4	0	56.42	-	-	74	-17.58	198	105	V
1	* 2.39	45.08	PK	32	-22.4	0	54.68	-	-	74	-19.32	198	105	V
3	* 2.39	33.93	RMS	32	-22.4	0	43.53	54	-10.47	-	-	198	105	V
4	* 2.39	34.72	RMS	32	-22.4	0	44.32	54	-9.68	-	-	198	105	V

AUTHORIZED BANDEDGE (HIGH CHANNEL)

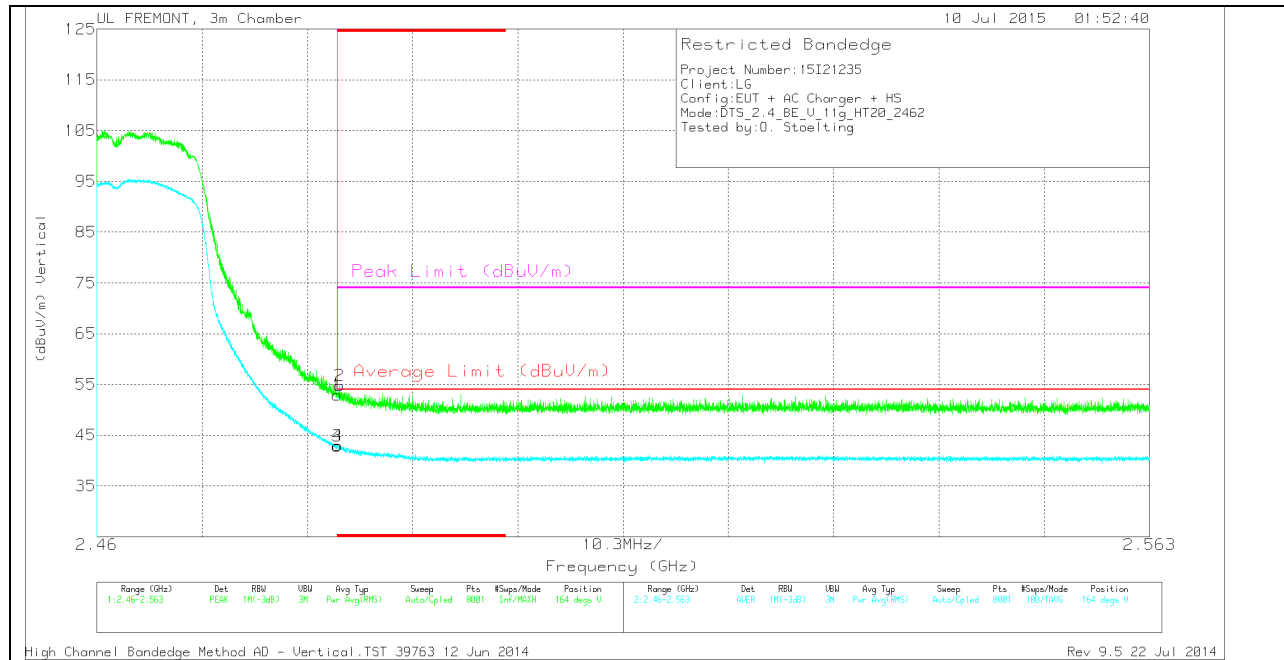
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/FI tr/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	44.84	PK	32.3	-22.1	0	55.04	-	-	74	-18.96	167	297	H
3	* 2.484	33.96	RMS	32.3	-22.1	0	44.16	54	-9.84	-	-	167	297	H
4	* 2.484	34.73	RMS	32.3	-22.1	0	44.93	54	-9.07	-	-	167	297	H
2	* 2.485	46.39	PK	32.3	-22.1	0	56.59	-	-	74	-17.41	167	297	H

VERTICAL PEAK AND AVERAGE PLOT

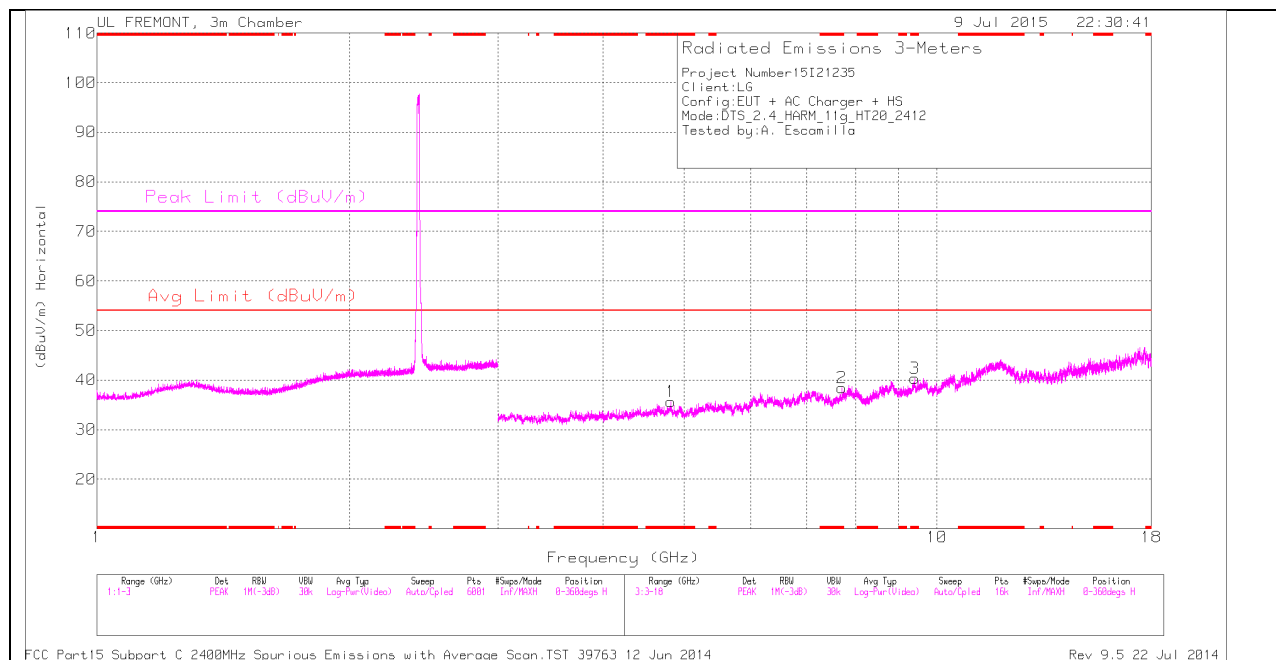


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/FI tr/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	42.65	PK	32.3	-22.1	0	52.85	-	-	74	-21.15	164	100	V
2	* 2.484	44.54	PK	32.3	-22.1	0	54.74	-	-	74	-19.26	164	100	V
3	* 2.484	32.68	RMS	32.3	-22.1	0	42.88	54	-11.12	-	-	164	100	V
4	* 2.484	32.8	RMS	32.3	-22.1	0	43	54	-11	-	-	164	100	V

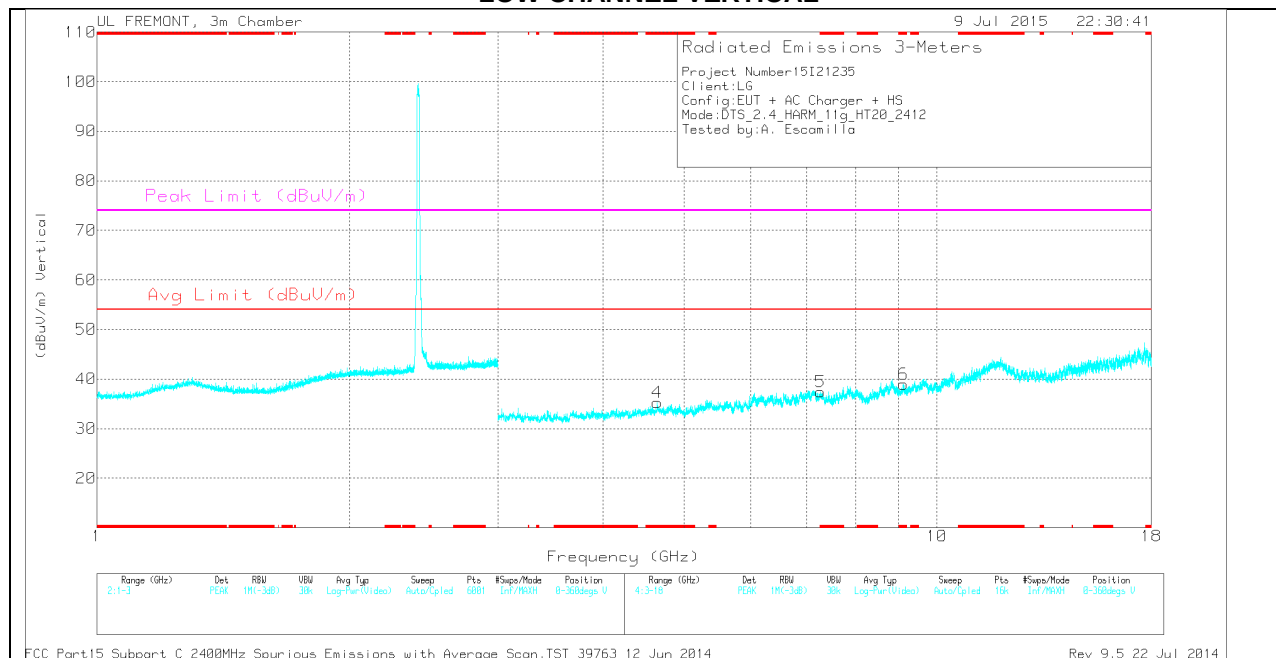
HARMONICS AND SPURIOUS EMISSIONS

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 T119 (dB/m)	Amp/Cbl/Fil tr/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	* 4.824	31.01	PK	34	-29.4	0	35.61	-	-	74	-38.39	0-360	200	H
2	* 7.708	30.88	PK	35.8	-28.2	0	38.48	-	-	74	-35.52	0-360	200	H
3	* 9.404	27.89	PK	36.4	-24	0	40.29	-	-	74	-33.71	0-360	100	H
4	* 4.646	31.35	PK	34	-30.1	0	35.25	-	-	74	-38.75	0-360	100	V
5	* 7.266	30.21	PK	35.6	-28.4	0	37.41	-	-	74	-36.59	0-360	100	V
6	* 9.123	27.3	PK	36.1	-24.5	0	38.9	-	-	74	-35.1	0-360	200	V

PK - Peak detector

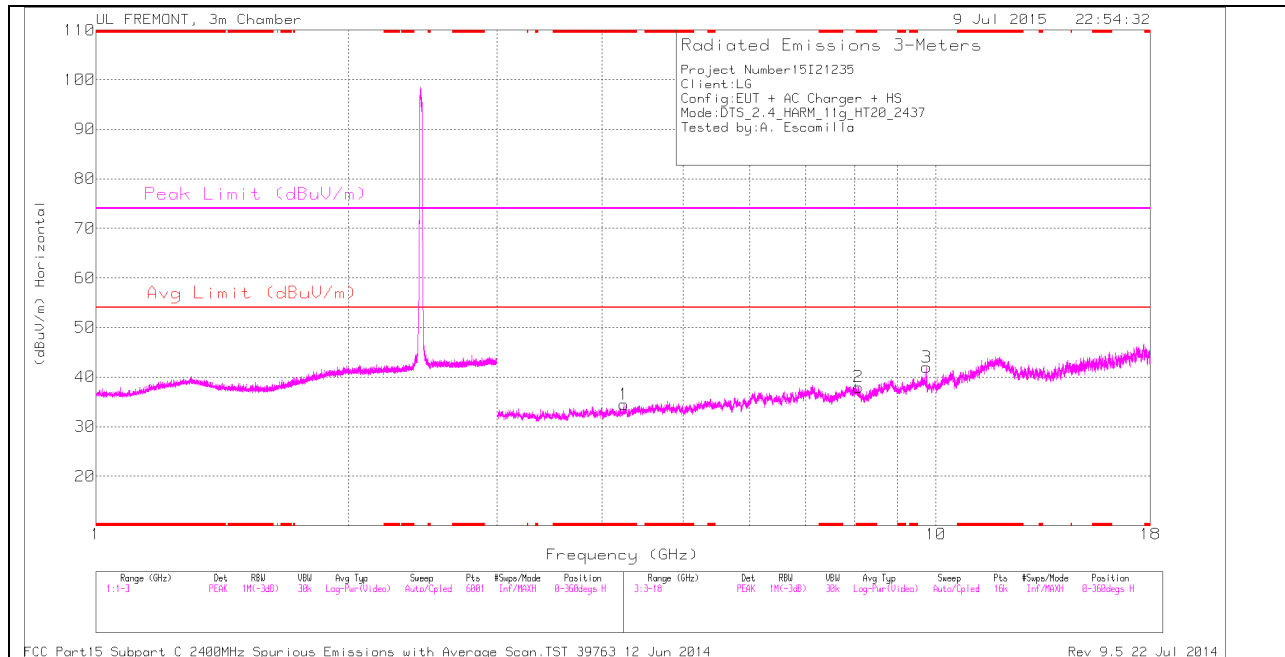
RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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
* 4.825	41.35	PK2	34	-29.4	0	45.95	-	-	74	-28.05	171	186	H
* 4.824	29.68	MAV1	34	-29.4	0	34.28	54	-19.72	-	-	171	186	H
* 7.708	38.76	PK2	35.8	-28.2	0	46.36	-	-	74	-27.64	192	206	H
* 7.709	27.47	MAV1	35.8	-28.2	0	35.07	54	-18.93	-	-	192	206	H
* 9.403	36.32	PK2	36.4	-24	0	48.72	-	-	74	-25.28	228	176	H
* 9.405	24.75	MAV1	36.4	-24	0	37.15	54	-16.85	-	-	228	176	H
* 4.646	40.74	PK2	34	-30.1	0	44.64	-	-	74	-29.36	66	117	V
* 4.648	28.83	MAV1	34	-30.1	0	32.73	54	-21.27	-	-	66	117	V
* 7.267	39.33	PK2	35.6	-28.4	0	46.53	-	-	74	-27.47	48	161	V
* 7.268	28.01	MAV1	35.6	-28.4	0	35.21	54	-18.79	-	-	48	161	V
* 9.122	37.55	PK2	36.1	-24.5	0	49.15	-	-	74	-24.85	34	223	V
* 9.125	25.44	MAV1	36.1	-24.5	0	37.04	54	-16.96	-	-	34	223	V

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

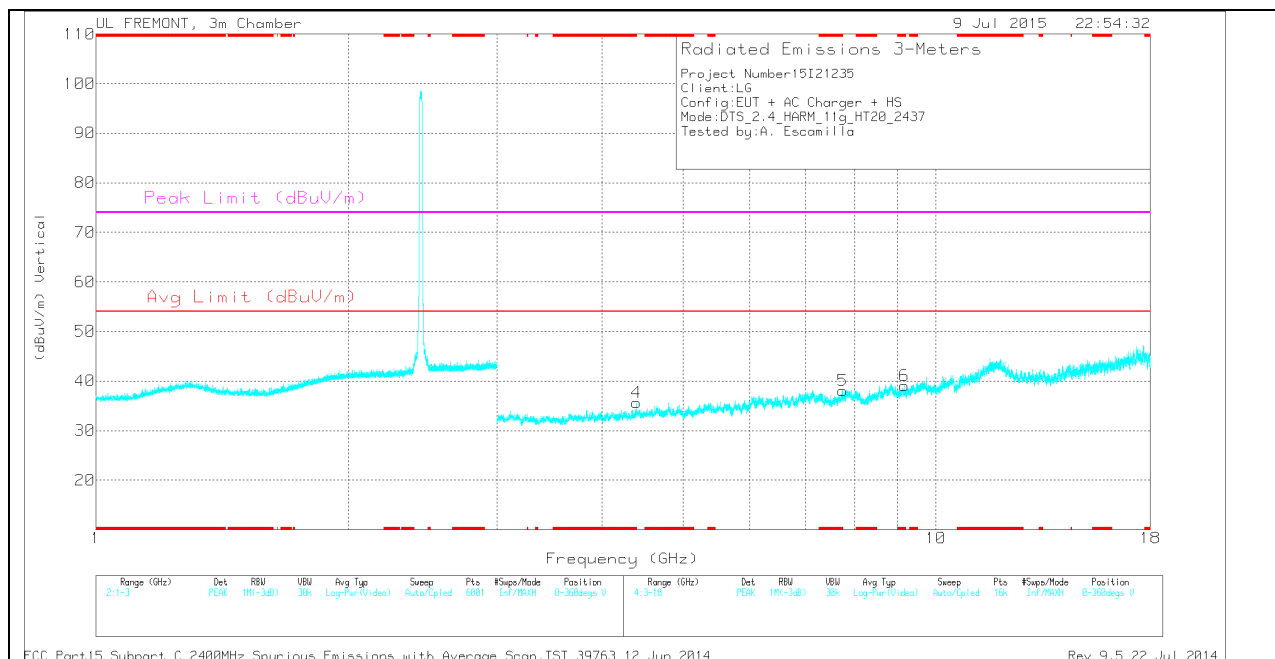
FCC Part15 Subpart C T186 2400MHz Spurious Emissions.TST 12746Rev 9.5 22 Jul 2014

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 T119 (dB/m)	Amp/Cbl/Fil tr/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	* 4.249	31.66	PK	33.4	-30.5	0	34.56	-	-	74	-39.44	0-360	100	H
2	* 8.079	29.2	PK	35.7	-26.9	0	38	-	-	74	-36	0-360	100	H
5	* 7.739	30.61	PK	35.8	-28.3	0	38.11	-	-	74	-35.89	0-360	100	V
6	* 9.164	27.62	PK	36.2	-24.7	0	39.12	-	-	74	-34.88	0-360	200	V
4	4.401	31.43	PK	33.6	-29.4	0	35.63	-	-	-	-	0-360	200	V
3	9.748	29.42	PK	36.9	-24.3	0	42.02	-	-	-	-	0-360	200	H

PK - Peak detector

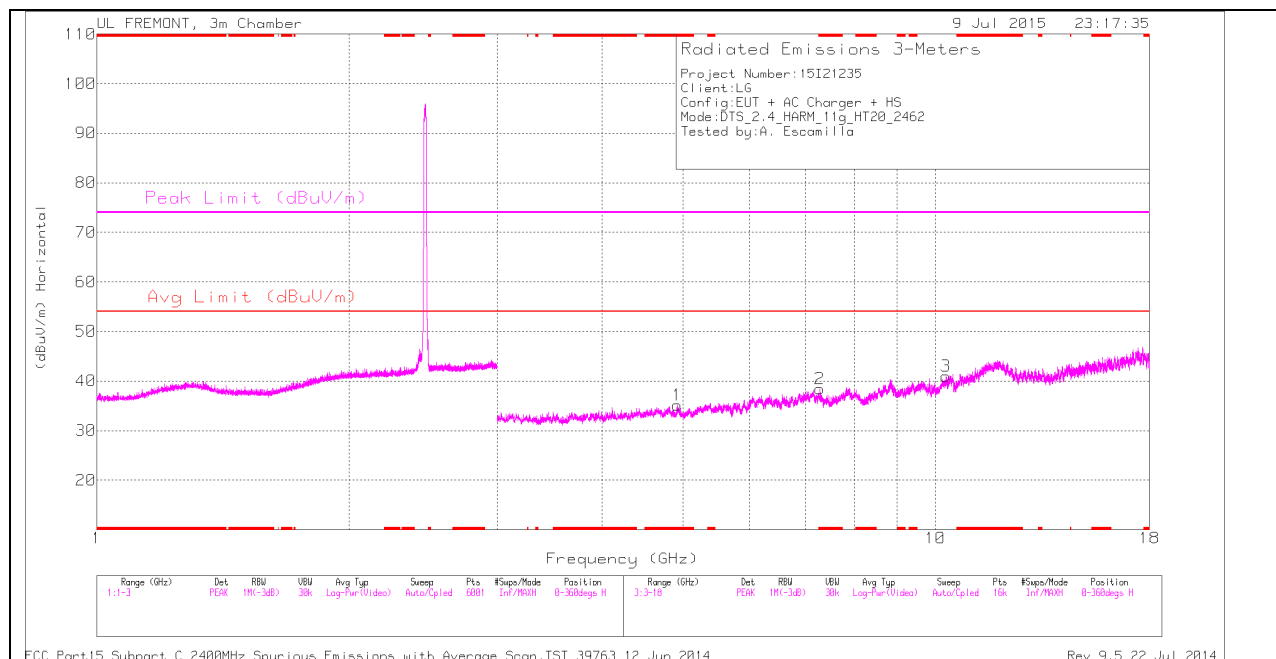
RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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
* 4.249	39.95	PK2	33.4	-30.5	0	42.85	-	-	74	-31.15	14	133	H
* 4.248	28.74	MAv1	33.4	-30.5	0	31.64	54	-22.36	-	-	14	133	H
* 8.081	37.62	PK2	35.7	-26.9	0	46.42	-	-	74	-27.58	53	183	H
* 8.081	26.33	MAv1	35.7	-26.9	0	35.13	54	-18.87	-	-	53	183	H
* 7.737	39.58	PK2	35.8	-28.2	0	47.18	-	-	74	-26.82	192	181	V
* 7.738	28.09	MAv1	35.8	-28.3	0	35.59	54	-18.41	-	-	192	181	V
* 9.162	36.6	PK2	36.2	-24.8	0	48	-	-	74	-26	223	193	V
* 9.163	25.55	MAv1	36.2	-24.8	0	36.95	54	-17.05	-	-	223	193	V
4.4	39.66	PK2	33.6	-29.4	0	43.86	-	-	-	-	156	218	V
4.401	28.12	MAv1	33.6	-29.4	0	32.32	-	-	-	-	156	218	V
9.748	35.43	PK2	36.9	-24.3	0	48.03	-	-	-	-	120	200	H
9.748	24.39	MAv1	36.9	-24.3	0	36.99	-	-	-	-	120	200	H

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

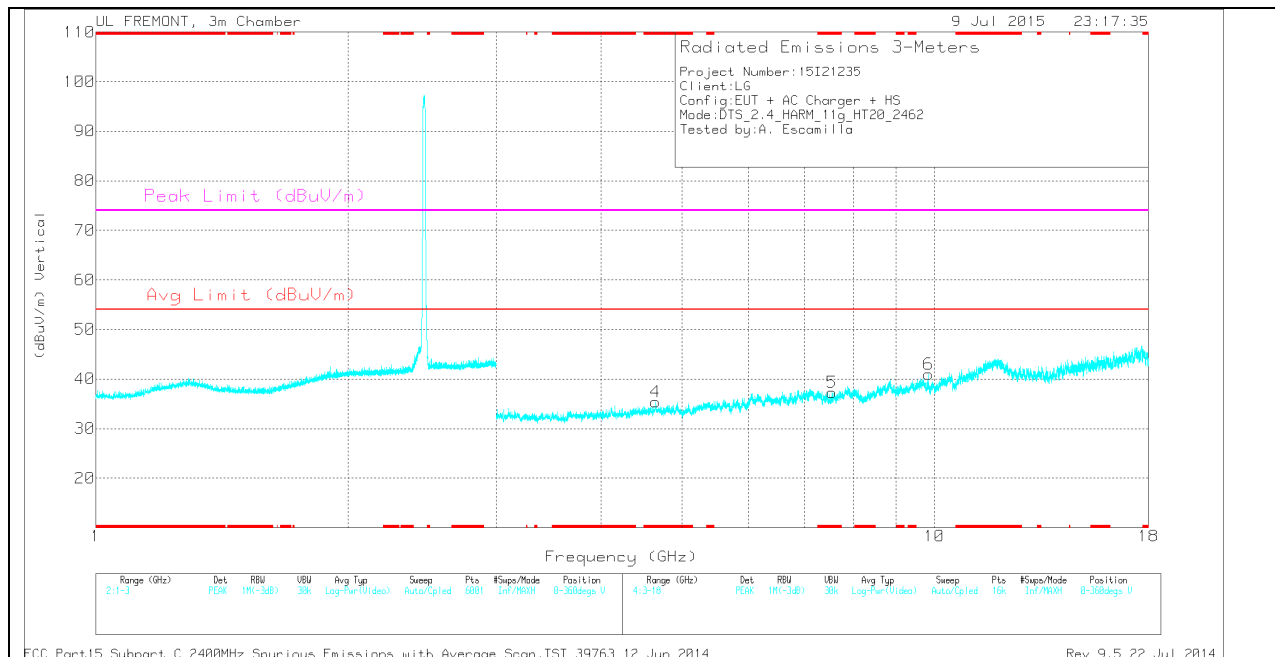
FCC Part15 Subpart C T186 2400MHz Spurious Emissions.TST 12746Rev 9.5 22 Jul 2014

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 T119 (dB/m)	Amp/Cbl/FI tr/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	* 4.919	30.66	PK	34	-29.5	0	35.16	-	-	74	-38.84	0-360	200	H
2	* 7.282	31.18	PK	35.6	-28.3	0	38.48	-	-	74	-35.52	0-360	200	H
4	* 4.654	31.34	PK	34	-30	0	35.34	-	-	74	-38.66	0-360	100	V
5	* 7.552	28.9	PK	35.7	-27.3	0	37.3	-	-	74	-36.7	0-360	100	V
6	9.847	28.48	PK	36.9	-24.4	0	40.98	-	-	-	-	0-360	200	V
3	10.298	27.97	PK	37.1	-24.1	0	40.97	-	-	-	-	0-360	100	H

PK - Peak detector

RADIATED EMISSIONS

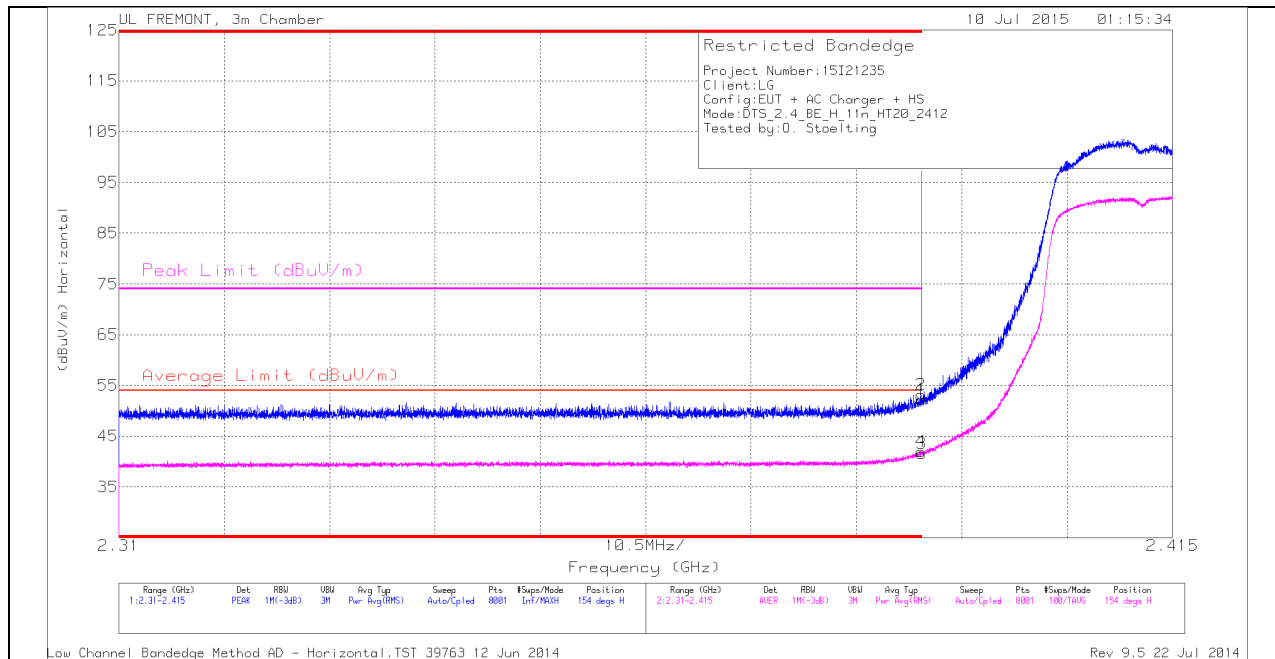
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl /Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.921	39.56	PK2	34	-29.6	0	43.96	-	-	74	-30.04	341	196	H
* 4.919	28.59	MAV1	34	-29.6	0	32.99	54	-21.01	-	-	341	196	H
* 7.284	39.32	PK2	35.6	-28.4	0	46.52	-	-	74	-27.48	308	184	H
* 7.284	27.77	MAV1	35.6	-28.4	0	34.97	54	-19.03	-	-	308	184	H
* 4.654	40.22	PK2	34	-30	0	44.22	-	-	74	-29.78	108	166	V
* 4.653	28.93	MAV1	34	-30	0	32.93	54	-21.07	-	-	108	166	V
* 7.551	38.98	PK2	35.7	-27.3	0	47.38	-	-	74	-26.62	66	144	V
* 7.55	27.15	MAV1	35.7	-27.3	0	35.55	54	-18.45	-	-	66	144	V
9.848	36.62	PK2	36.9	-24.3	0	49.22	-	-	-	-	36	214	V
9.848	25.43	MAV1	36.9	-24.3	0	38.03	-	-	-	-	36	214	V
10.299	35.96	PK2	37.1	-24.1	0	48.96	-	-	-	-	281	182	H
10.299	24.51	MAV1	37.1	-24.1	0	37.51	-	-	-	-	281	182	H

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

FCC Part15 Subpart C T186 2400MHz Spurious Emissions.TST 12746Rev 9.5 22 Jul 2014

10.2.3. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND **RESTRICTED BANDEDGE (LOW CHANNEL)**

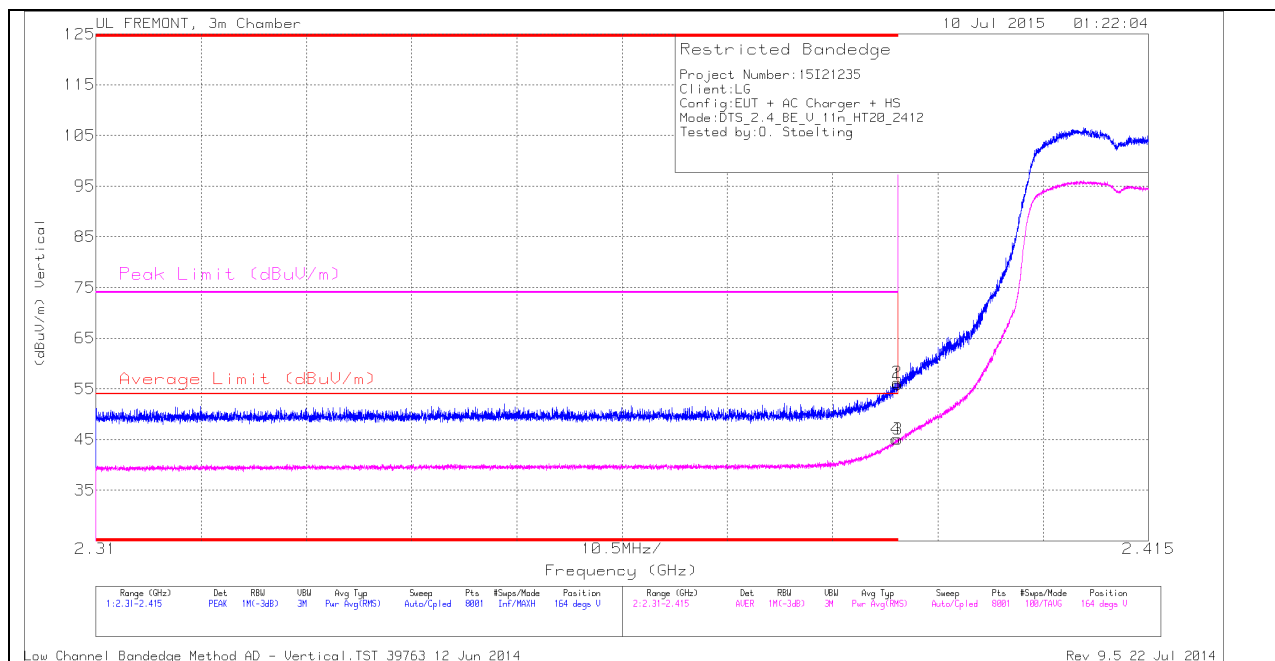
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/FI tr/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	42.6	PK	32	-22.4	0	52.2	-	-	74	-21.8	154	308	H
2	* 2.39	43.53	PK	32	-22.4	0	53.13	-	-	74	-20.87	154	308	H
3	* 2.39	31.99	RMS	32	-22.4	0	41.59	54	-12.41	-	-	154	308	H
4	* 2.39	32.38	RMS	32	-22.4	0	41.98	54	-12.02	-	-	154	308	H

VERTICAL PEAK AND AVERAGE PLOT

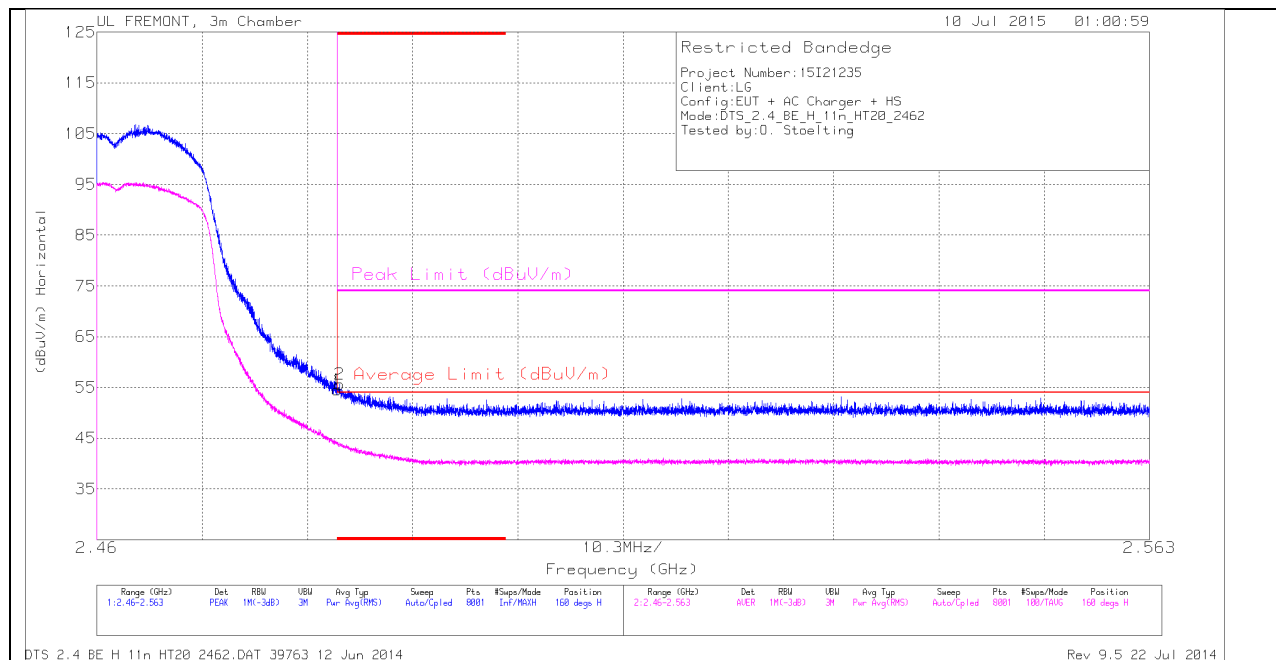


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/FI tr/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	46.31	PK	32	-22.4	0	55.91	-	-	74	-18.09	164	100	V
2	* 2.39	46.67	PK	32	-22.4	0	56.27	-	-	74	-17.73	164	100	V
3	* 2.39	35.44	RMS	32	-22.4	0	45.04	54	-8.96	-	-	164	100	V
4	* 2.39	35.46	RMS	32	-22.4	0	45.06	54	-8.94	-	-	164	100	V

AUTHORIZED BANDEDGE (HIGH CHANNEL)

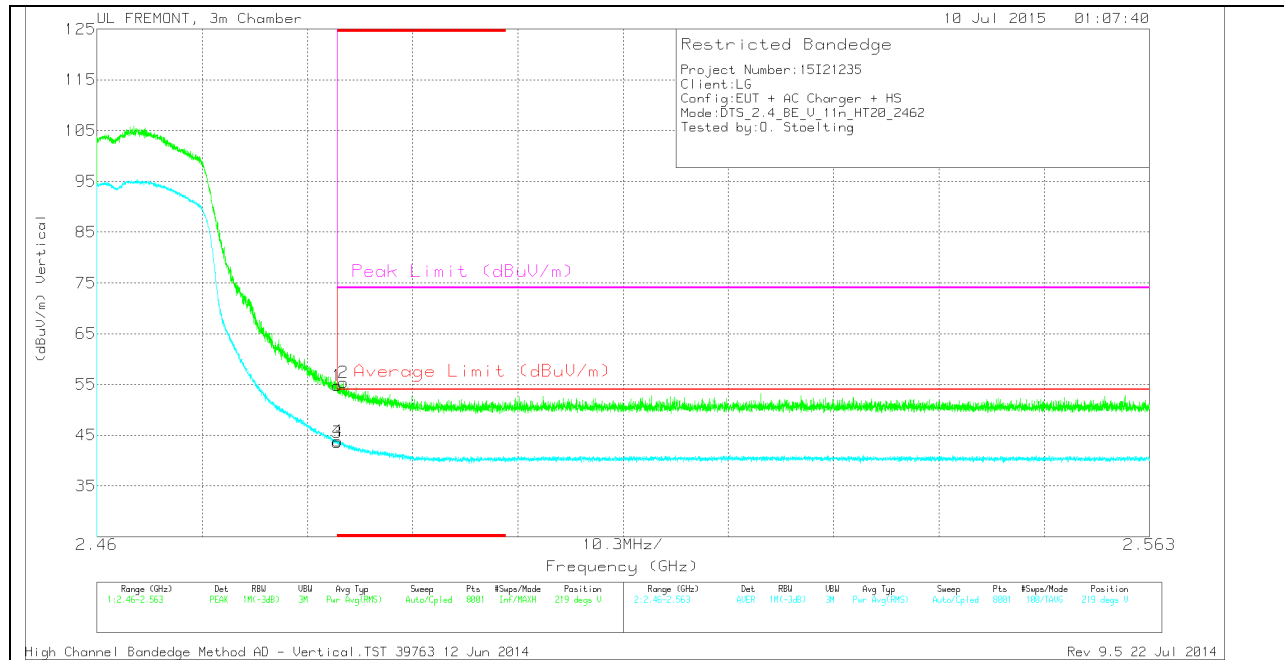
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/FI tr/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	44.32	PK	32.3	-22.1	0	54.52	-	-	74	-19.48	160	252	H
2	* 2.484	45.46	PK	32.3	-22.1	0	55.66	-	-	74	-18.34	160	252	H
3	* 2.484	33.83	RMS	32.3	-22.1	0	44.03	54	-9.97	-	-	160	252	H
4	* 2.484	34	RMS	32.3	-22.1	0	44.2	54	-9.8	-	-	160	252	H

VERTICAL PEAK AND AVERAGE PLOT

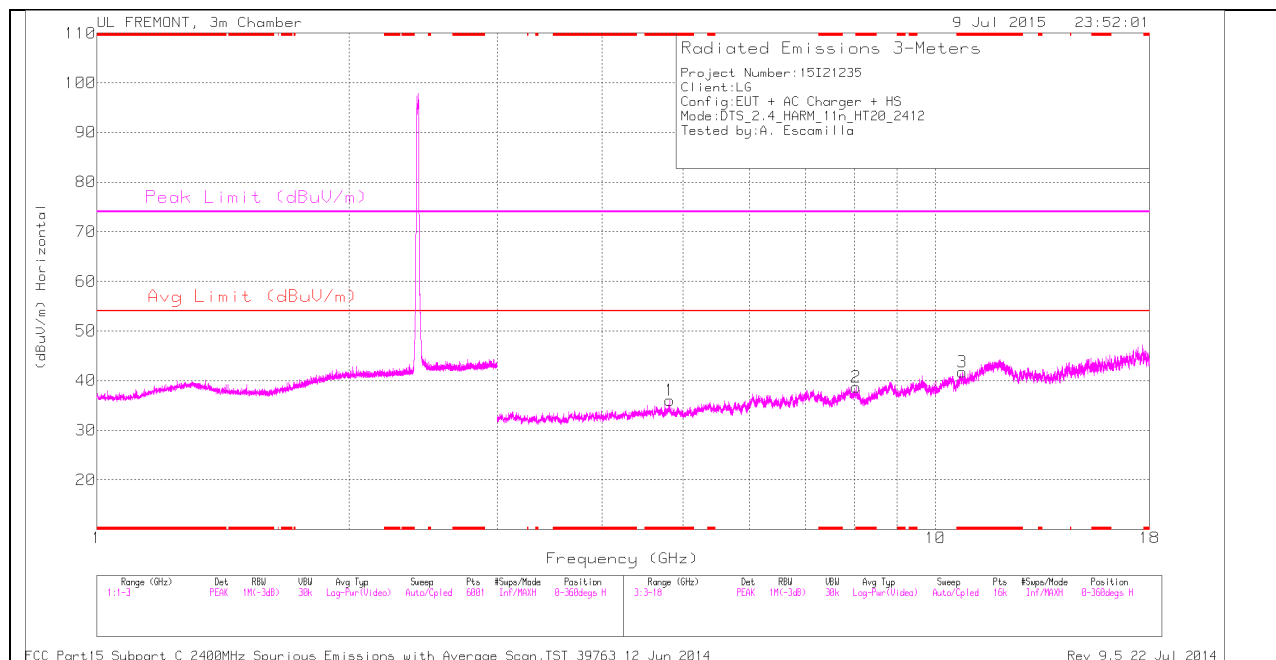


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/FI tr/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	44.51	PK	32.3	-22.1	0	54.71	-	-	74	-19.29	219	124	V
2	* 2.484	45.17	PK	32.3	-22.1	0	55.37	-	-	74	-18.63	219	124	V
3	* 2.484	33.4	RMS	32.3	-22.1	0	43.6	54	-10.4	-	-	219	124	V
4	* 2.484	33.68	RMS	32.3	-22.1	0	43.88	54	-10.12	-	-	219	124	V

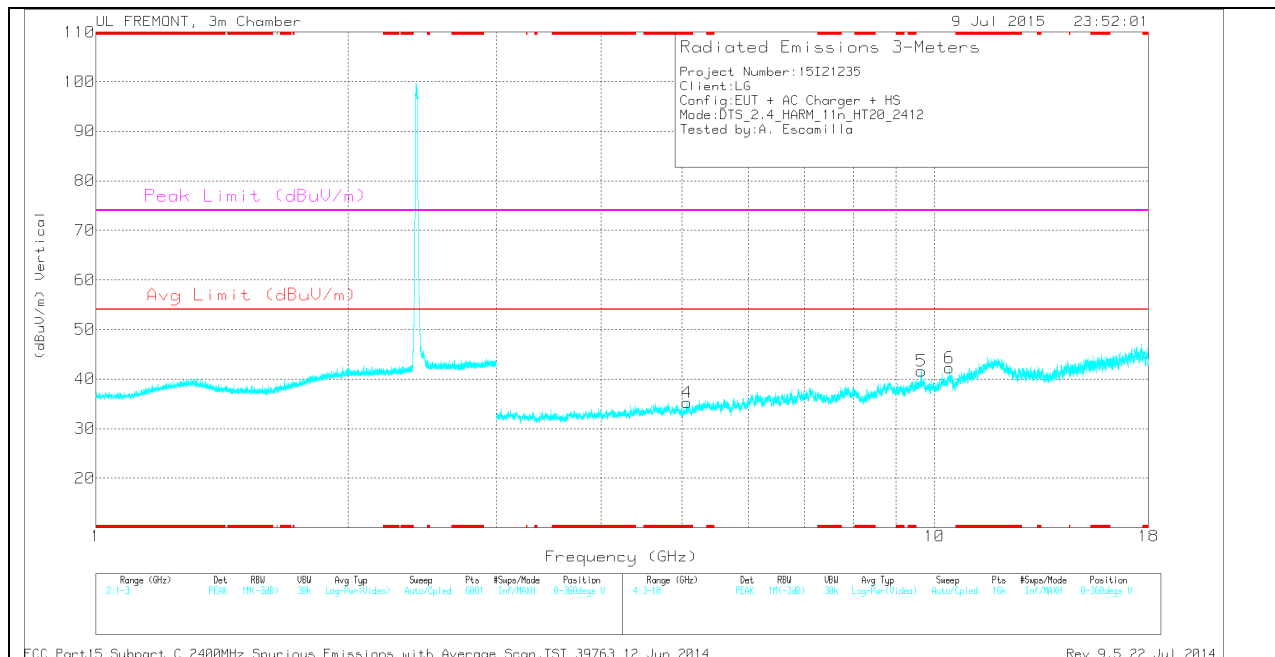
HARMONICS AND SPURIOUS EMISSIONS

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 T119 (dB/m)	Amp/Cbl/Fil tr/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	* 4.822	31.47	PK	34	-29.4	0	36.07	-	-	74	-37.93	0-360	100	H
2	* 8.043	29.74	PK	35.7	-26.8	0	38.64	-	-	74	-35.36	0-360	100	H
3	* 10.771	26.98	PK	37.9	-23.1	0	41.78	-	-	74	-32.22	0-360	100	H
4	* 5.066	30.72	PK	34.1	-29.5	0	35.32	-	-	74	-38.68	0-360	100	V
5	9.647	28.66	PK	36.8	-23.9	0	41.56	-	-	-	-	0-360	200	V
6	10.414	28.33	PK	37.3	-23.4	0	42.23	-	-	-	-	0-360	100	V

PK - Peak detector

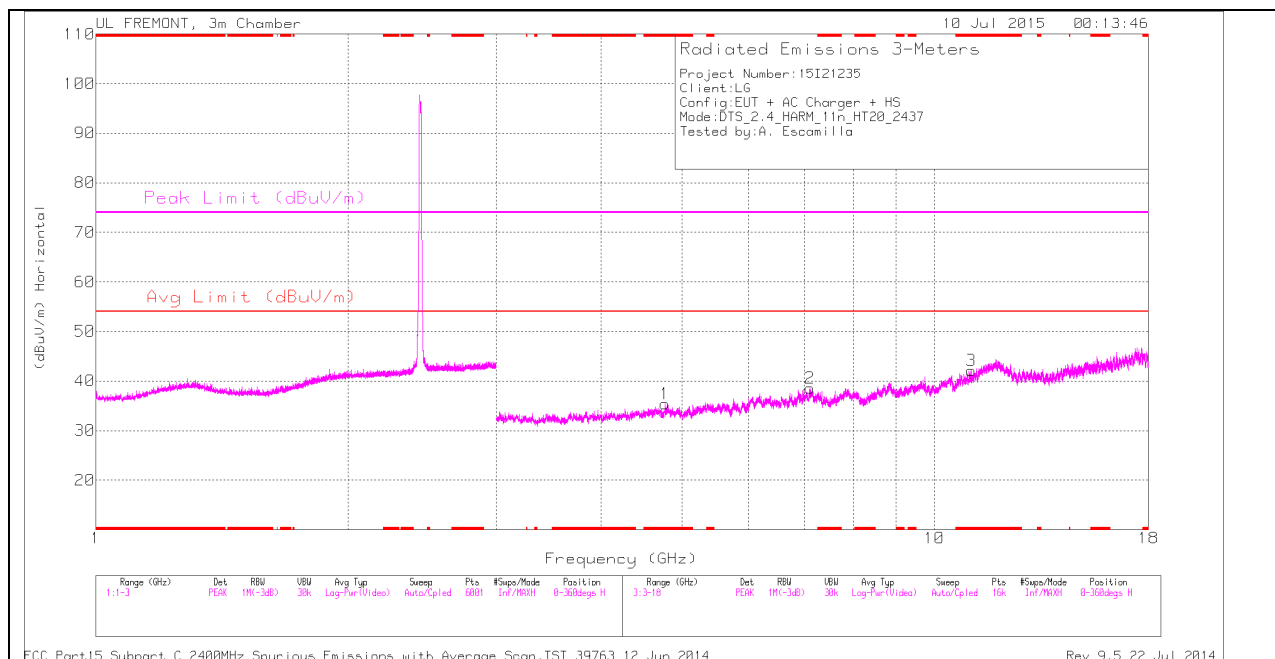
RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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
* 4.821	40.15	PK2	34	-29.4	0	44.75	-	-	74	-29.25	18	144	H
* 4.822	28.48	MAV1	34	-29.4	0	33.08	54	-20.92	-	-	18	144	H
* 8.044	37.44	PK2	35.7	-26.7	0	46.44	-	-	74	-27.56	48	171	H
* 8.044	26.58	MAV1	35.7	-26.7	0	35.58	54	-18.42	-	-	48	171	H
* 10.77	36.44	PK2	37.9	-23.1	0	51.24	-	-	74	-22.76	35	186	H
* 10.769	24.82	MAV1	37.9	-23	0	39.72	54	-14.28	-	-	35	186	H
* 5.068	39.24	PK2	34.1	-29.5	0	43.84	-	-	74	-30.16	109	208	V
* 5.066	27.95	MAV1	34.1	-29.5	0	32.55	54	-21.45	-	-	109	208	V
9.647	37.94	PK2	36.8	-23.9	0	50.84	-	-	-	-	142	212	V
9.648	27.15	MAV1	36.8	-23.9	0	40.05	-	-	-	-	142	212	V
10.413	35.97	PK2	37.3	-23.4	0	49.87	-	-	-	-	157	128	V
10.416	24.33	MAV1	37.3	-23.4	0	38.23	-	-	-	-	157	128	V

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

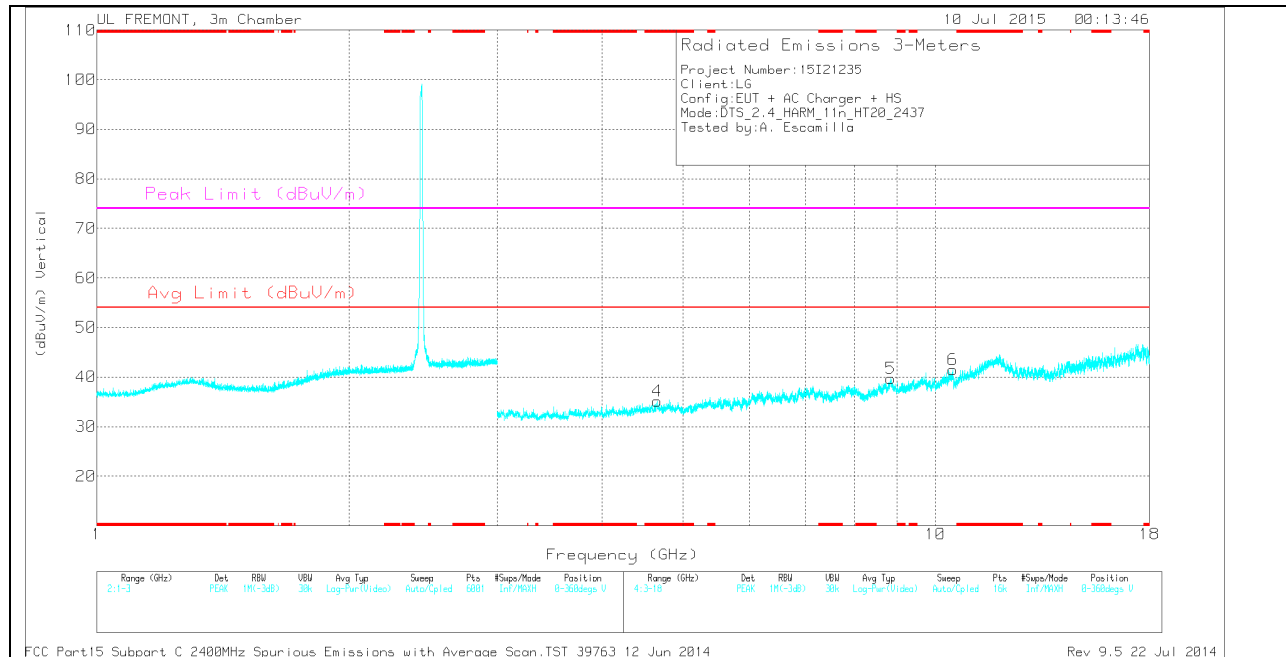
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MID CHANNEL HORIZONTAL



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 T119 (dB/m)	Amp/Cbl/Fil tr/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	* 4.776	31.27	PK	34	-29.9	0	35.37	-	-	74	-38.63	0-360	100	H
3	* 11.057	27.52	PK	37.8	-23.2	0	42.12	-	-	74	-31.88	0-360	200	H
4	* 4.655	31.1	PK	34	-30	0	35.1	-	-	74	-38.9	0-360	100	V
2	7.1	29.9	PK	35.6	-26.9	0	38.6	-	-	-	-	0-360	100	H
5	8.843	28.87	PK	35.9	-25	0	39.77	-	-	-	-	0-360	200	V
6	10.491	28.01	PK	37.4	-23.9	0	41.51	-	-	-	-	0-360	200	V

PK - Peak detector

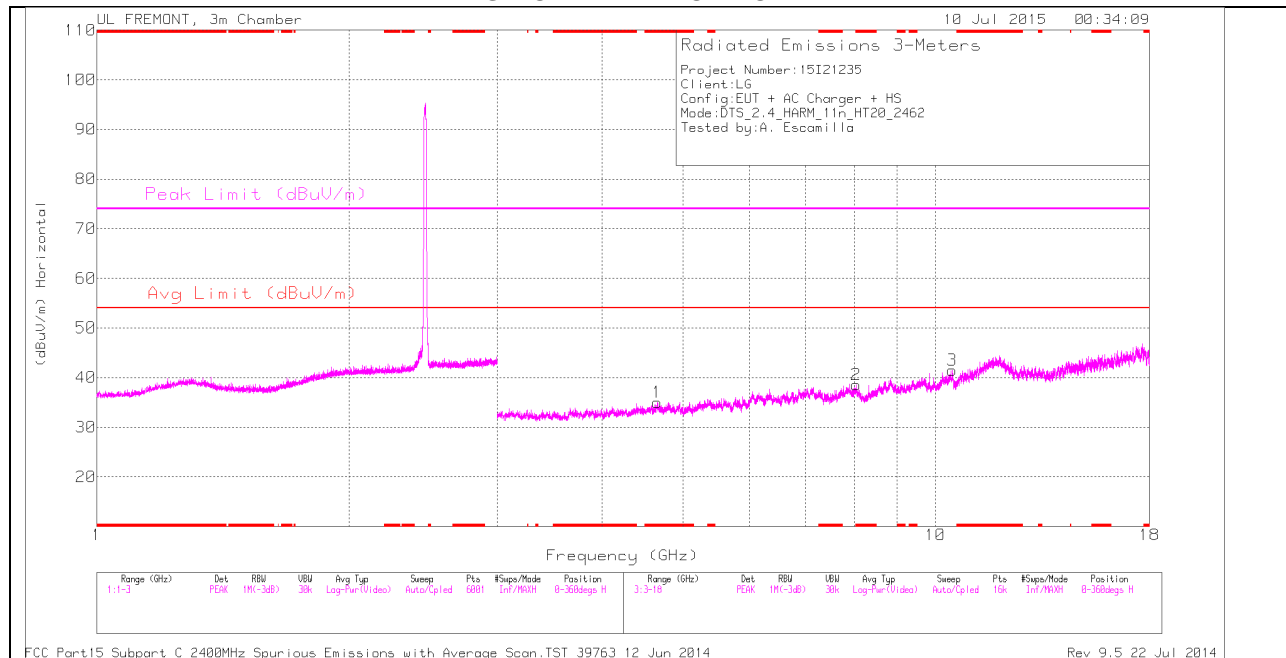
RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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
* 4.776	40.45	PK2	34	-29.9	0	44.55	-	-	74	-29.45	33	156	H
* 4.776	28.62	MAV1	34	-29.9	0	32.72	54	-21.28	-	-	33	156	H
* 11.056	36.45	PK2	37.8	-23.2	0	51.05	-	-	74	-22.95	101	199	H
* 11.058	25.19	MAV1	37.8	-23.3	0	39.69	54	-14.31	-	-	101	199	H
* 4.656	40.68	PK2	34	-30	0	44.68	-	-	74	-29.32	132	210	V
* 4.654	28.86	MAV1	34	-30	0	32.86	54	-21.14	-	-	132	210	V
7.099	38.07	PK2	35.6	-26.9	0	46.77	-	-	-	-	72	175	H
7.101	26.66	MAV1	35.6	-26.9	0	35.36	-	-	-	-	72	175	H
8.844	37.72	PK2	35.9	-24.9	0	48.72	-	-	-	-	249	260	V
8.845	25.75	MAV1	35.9	-24.9	0	36.75	-	-	-	-	249	260	V
10.492	35.86	PK2	37.5	-23.9	0	49.46	-	-	-	-	308	214	V
10.492	24.48	MAV1	37.5	-23.9	0	38.08	-	-	-	-	308	214	V

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

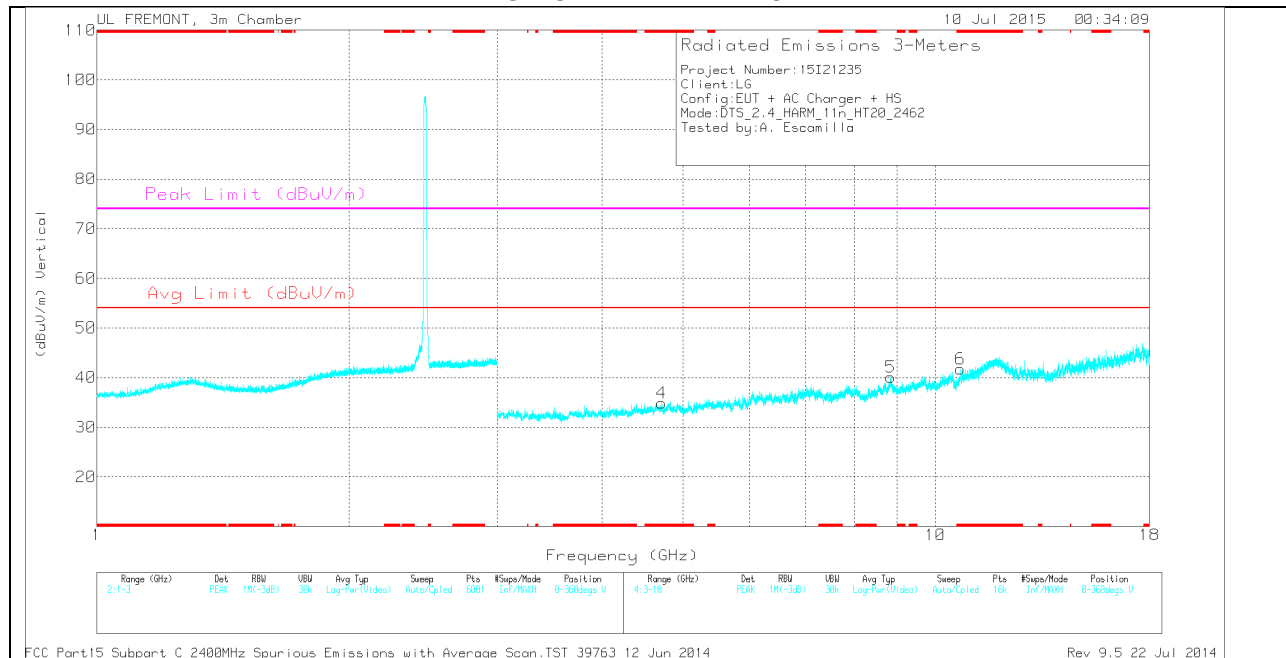
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HIGH CHANNEL HORIZONTAL



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 T119 (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	* 4.659	31.05	PK	34	-30	0	35.05	-	-	74	-38.95	0-360	100	H
2	* 8.042	29.66	PK	35.7	-26.8	0	38.56	-	-	74	-35.44	0-360	200	H
4	* 4.714	30.99	PK	34.1	-30.2	0	34.89	-	-	74	-39.11	0-360	200	V
6	* 10.704	26.77	PK	37.8	-22.8	0	41.77	-	-	74	-32.23	0-360	200	V
5	8.851	29.21	PK	35.9	-25	0	40.11	-	-	-	-	0-360	100	V
3	10.477	27.71	PK	37.4	-23.6	0	41.51	-	-	-	-	0-360	100	H

PK - Peak detector

RADIATED EMISSIONS

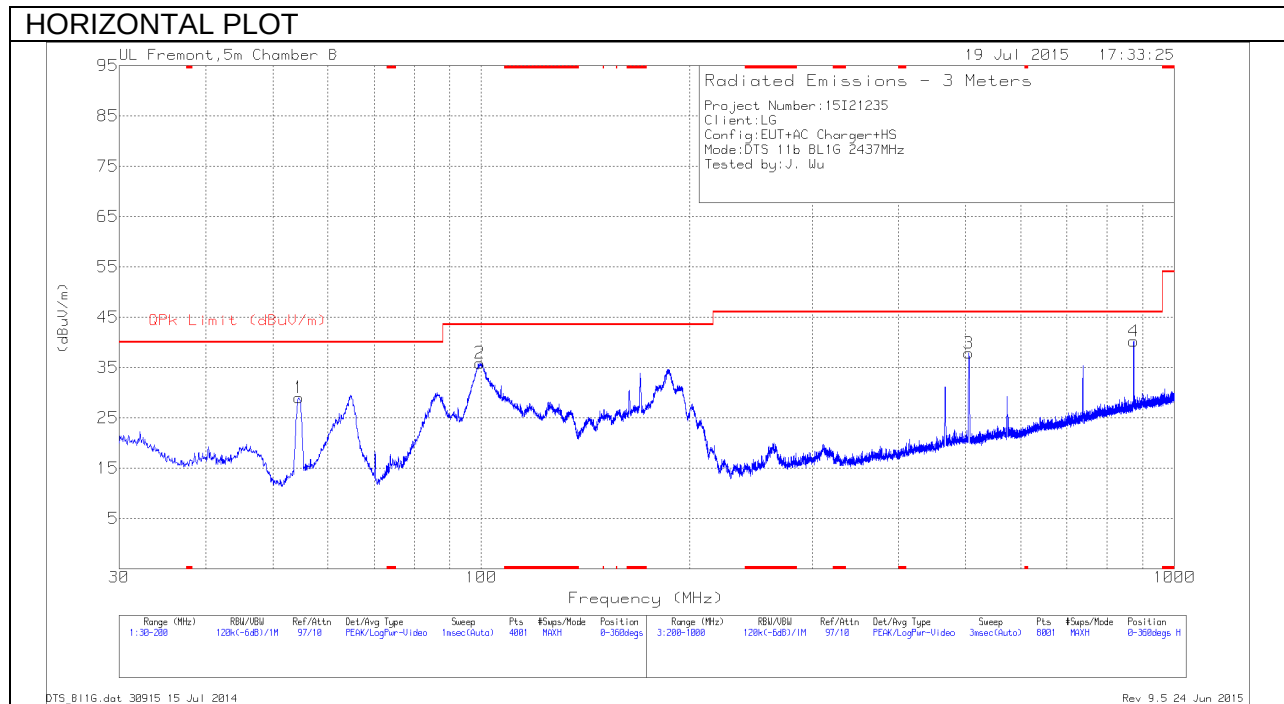
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.659	40.1	PK2	34	-30	0	44.1	-	-	74	-29.9	338	168	H
* 4.661	28.61	MAv1	34	-30	0	32.61	54	-21.39	-	-	338	168	H
* 8.043	38.1	PK2	35.7	-26.8	0	47	-	-	74	-27	350	207	H
* 8.044	26.55	MAv1	35.7	-26.7	0	35.55	54	-18.45	-	-	350	207	H
* 4.713	40.29	PK2	34.1	-30.2	0	44.19	-	-	74	-29.81	250	214	V
* 4.715	28.75	MAv1	34.1	-30.2	0	32.65	54	-21.35	-	-	250	214	V
* 10.706	35.91	PK2	37.8	-22.8	0	50.91	-	-	74	-23.09	47	221	V
* 10.705	24.26	MAv1	37.8	-22.8	0	39.26	54	-14.74	-	-	47	221	V
8.853	37.14	PK2	35.9	-25.1	0	47.94	-	-	-	-	162	196	V
8.853	25.95	MAv1	35.9	-25.1	0	36.75	-	-	-	-	162	196	V
10.479	35.68	PK2	37.4	-23.6	0	49.48	-	-	-	-	289	187	H
10.479	24.35	MAv1	37.4	-23.6	0	38.15	-	-	-	-	289	187	H

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

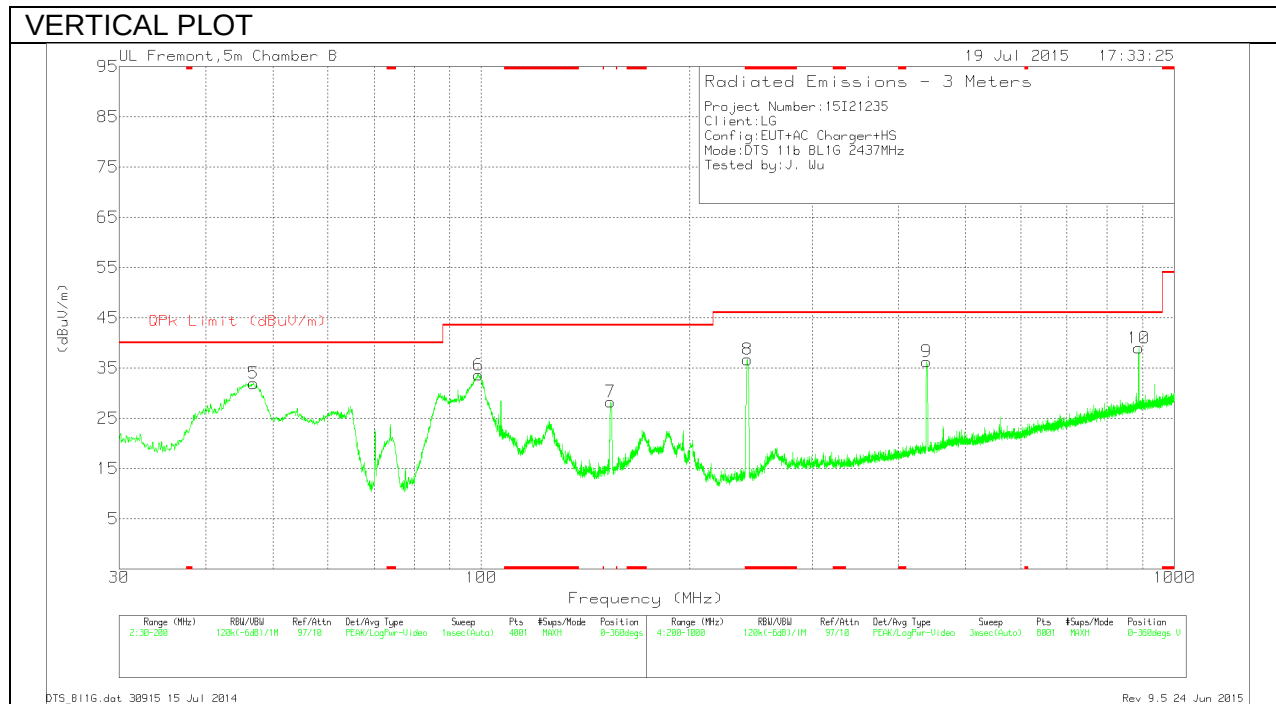
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10.3. WORST-CASE BELOW 1 GHz

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 T243 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
8	* 242.1	51.47	Pk	11.6	-26.4	36.67	46.02	-9.35	0-360	101	V
5	46.915	50.92	Pk	9.5	-28.5	31.92	40	-8.08	0-360	101	V
1	54.5225	50.19	Pk	7.3	-28.5	28.99	40	-11.01	0-360	199	H
6	99.105	51.57	Pk	10	-28	33.57	43.52	-9.95	0-360	101	V
2	99.53	53.77	Pk	10.1	-28	35.87	43.52	-7.65	0-360	199	H
7	153.7175	43.24	Pk	12.4	-27.4	28.24	43.52	-15.28	0-360	101	V
9	439.3	45.54	Pk	16.4	-25.7	36.24	46.02	-9.78	0-360	101	V
3	505.3	45.65	Pk	17.8	-25.6	37.85	46.02	-8.17	0-360	101	H
4	873.8	41.11	Pk	22.1	-23	40.21	46.02	-5.81	0-360	101	H
10	888.7	39.48	Pk	22.3	-22.8	38.98	46.02	-7.04	0-360	101	V

Pk - Peak detector

Radiated Emissions

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
873.934	22.48	Qp	22.1	-23	21.58	46.02	-24.44	288	391	H
926.872	22.09	Qp	22.6	-22.5	22.19	46.02	-23.83	315	193	H

Qp - Quasi-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.

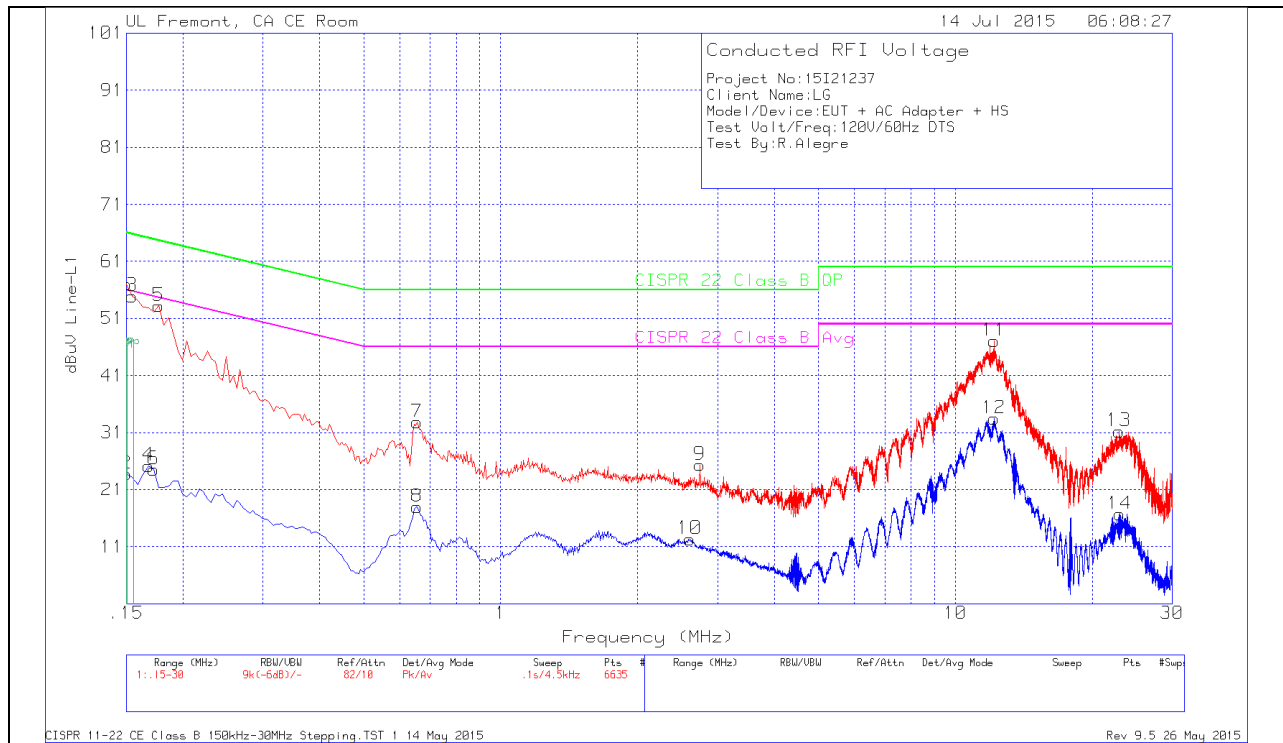
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

6 WORST EMISSIONS

LINE 1 PLOT



LINE 1 RESULTS

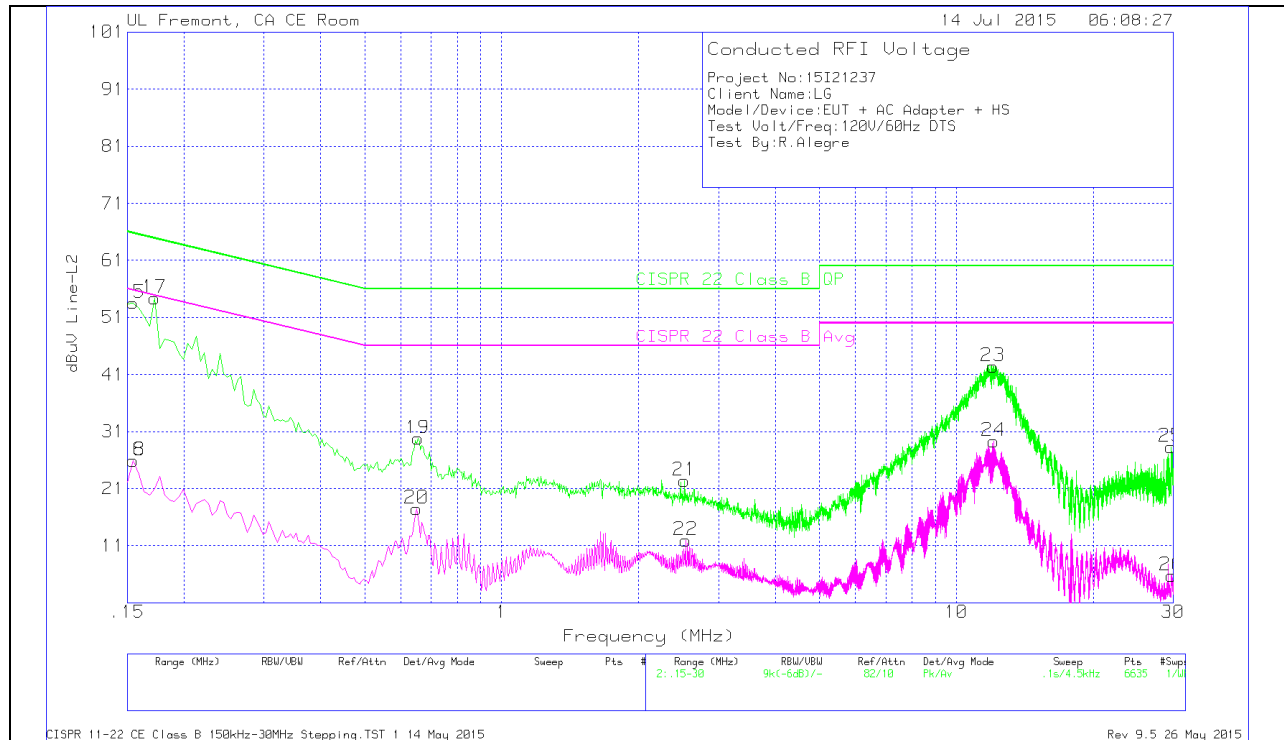
Range 1: Line-L1 .15 - 30MHz

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	.15	55.6	Pk	1.4	0	57	66	-9		
2	.15	22.34	Av	1.4	0	23.74	-	-	56	-32.26
3	.1545	53.58	Pk	1.3	0	54.88	65.75	-10.87		
4	.168	23.95	Av	1.2	0	25.15	-	-	55.06	-29.91
5	.177	52.08	Pk	1.1	0	53.18	64.63	-11.45		
6	.1725	23.44	Av	1.1	0	24.54	-	-	54.84	-30.3
7	.654	32.51	Pk	.3	0	32.81	56	-23.19		
8	.654	17.64	Av	.3	0	17.94	-	-	46	-28.06
9	2.742	25.04	Pk	.2	.1	25.34	56	-30.66		
10	2.607	12.02	Av	.2	.1	12.32	-	-	46	-33.68
11	12.156	46.63	Pk	.2	.2	47.03	60	-12.97		
12	12.156	33.04	Av	.2	.2	33.44	-	-	50	-16.56
13	22.9065	30.73	Pk	.3	.2	31.23	60	-28.77		
14	23.0055	16.17	Av	.3	.2	16.67	-	-	50	-33.33

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	.1545	52.15	Pk	1.4	0	53.55	65.75	-12.2		
16	.1545	24.49	Av	1.4	0	25.89	-	-	55.75	-29.86
17	.1725	53.18	Pk	1.2	0	54.38	64.84	-10.46		
18	.1545	24.49	Av	1.4	0	25.89	-	-	55.75	-29.86
19	.654	29.48	Pk	.3	0	29.78	56	-26.22		
20	.6495	17.17	Av	.3	0	17.47	-	-	46	-28.53
21	2.526	22.12	Pk	.2	.1	22.42	56	-33.58		
22	2.5395	11.65	Av	.2	.1	11.95	-	-	46	-34.05
23	12.048	42.04	Pk	.2	.2	42.44	60	-17.56		
24	12.0705	28.96	Av	.2	.2	29.36	-	-	50	-20.64
25	29.6835	27.73	Pk	.3	.3	28.33	60	-31.67		
26	29.7285	5.2	Av	.3	.3	5.8	-	-	50	-44.2

Pk - Peak detector

Av - Average detection