FCC 47 CFR PART 15 SUBPART E

CERTIFICATION TEST REPORT
CLASS II PERMISSIVE CHANGE

FOR

TABLET WITH CELLULAR GSM/GPRS/EGPRS/WCDMA/HSPA+/DC- HSDPA/LTE IEEE 802.11A/B/G/N (MIMO 2X2) AND BLUETOOTH RADIO

MODEL NUMBER: A1491

FCC ID: BCGA1491

REPORT NUMBER: 15U21850-E15V2

ISSUE DATE: DECEMBER 03, 2015

Prepared for
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1 INFINITE LOOP
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	11/16/2015	Initial Issue	M. Mekuria
V2	12/03/2015	Revised report to address TCB's questions. Conducted result was removed.	T. Chu

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: APPLE, INC.
1 INFINITE LOOP
CUPERTINO, CA 95014, U.S.A.

EUT DESCRIPTION: TABLET WITH CELLULAR GSM/GPRS/EGPRS/WCDMA/HSPA+/DC-HSDPA/LTE/IEEE 802.11A/B/G/N (MIMO 2X2) AND BLUETOOTH RADIO

MODEL: A1491

SERIAL NUMBER: DLXLQ0CNFVLP

DATE TESTED: OCTOBER 14, 2015 TO OCTOBER 25, 2015

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart E	Pass

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

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

Approved & Released For
UL Verification Services Inc. By:

Mengistu Mekuria

MENGISTU MEKURIA
SENIOR ENGINEER
UL VERIFICATION SERVICES INC.

Tested By:

FRANCISCO GUARNERO
EMC LAB ENGINEER
UL VERIFICATION SERVICES INC.

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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, FCC 14-30, FCC KDB 789033 D02 v01, ANSI C63.10-2013.

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	☐ Chamber D
☐ Chamber B	☒ Chamber E
☐ Chamber C	☐ Chamber F
	☒ Chamber G
	☐ Chamber H

The above test sites and facilities are covered under FCC Test Firm Registration # 208313. Chambers A through H are covered under Industry Canada company address code 2324B with site numbers 2324B -1 through 2324B-8, respectively.

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.

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4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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

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

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	± 3.52 dB
Radiated Disturbance, 30 to 1000 MHz	± 4.94 dB
Radiated Disturbance, 1 to 6 GHz	± 3.86 dB
Radiated Disturbance, 6 to 18 GHz	± 4.23 dB
Radiated Disturbance, 18 to 26 GHz	± 5.30 dB
Radiated Disturbance, 26 to 40 GHz	± 5.23 dB

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

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The device is a Tablet with cellular GSM/GPRS/EGPRS/WCDMA/HSPA+/DC- HSDPA/LTE/IEEE 802.11a/b/g/n (MIMO 2x2) and Bluetooth Radio

5.2. DESCRIPTION OF CLASS II PERMISSIVE CHANGE

Upgrade 5.8GHz band to new rule per KDB 789033 D02 v01

5.3. MAXIMUM OUTPUT POWER

For 5.8GHz maximum output power, please refer to the FCC UNII report with the FCC ID: BCGA1490 and project number 15U21850-E10V2.

5.4. DESCRIPTION OF AVAILABLE ANTENNAS

Frequency Band (GHz)	Antenna Gain	
	Chain 0	Chain 1
5.8	2.68	3.76

5.5. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was Broadcom WL Tool Version 6.25.86.

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5.6. WORST-CASE CONFIGURATION AND MODE

There are two vendors of the WiFi/Bluetooth radio modules: BOM #1, vender1 and BOM #2, vender 2, and they have the same mechanical outline, same on board antenna, matching circuit, antenna structure and same specification and baseline was performed on both venders to determine the worst case on conducted power and radiated emissions.

For the RF conducted test: Refer to FCC UNII report with the FCC ID BCGA1490 and project number 15U21850-E10V2.

The fundamental of the EUT was investigated in three orthogonal orientations X (Flatbed), Y (Landscape), Z (Portrait), it was determined that was worst-case orientations. Therefore, all final radiated testing was performed with the EUT in Z (Portrait) orientation.

Worst-case data rates as provided by the client were:

802.11a mode: 6 Mbps
802.11n HT20mode: MCS0
802.11n HT40mode: MCS0

For below 1GHz test, the EUT that is connected to the headset and AC charger is activated on the worst-case mode and channel with the highest output power.

For all modes with single chain, the radiated emissions test was based on the port with the higher antenna gain.

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5.7. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Laptop	Apple	MacBook Pro	73043BDQAGU	N/A
Laptop AC/DC adapter	Apple	A1172	MV7211FJAX4XA	N/A
Earphone	Apple	NA	NA	N/A
EUT AC/DC adapter	Apple	A1357	W010A051	N/A

I/O CABLES (RADIATED ABOVE 1 GHZ)

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
None Used						

I/O CABLES (RADAITED BELOW 1 GHZ)

I/O Cable List						
Cable No	Port	# of identical	Connector Type	Cable Type	Cable Length (m)	Remarks
1	Headphones Jack	1	3.5mm Audio	Shielded	0.9	N/A
2	AC	1	AC	Un-shielded	3	N/A

I/O CABLES (AC LINE CONDUCTED: AC/DC ADAPTER)

I/O Cable List						
Cable No	Port	# of identical	Connector Type	Cable Type	Cable Length (m)	Remarks
1	Headphones Jack	1	3.5mm Audio	Shielded	0.9	N/A
2	AC	1	AC	Un-shielded	3	N/A

I/O CABLES (AC LINE CONDUCTED: LAPTOP CONFIGUARTION)

I/O Cable List						
Cable No	Port	# of identical	Connector Type	Cable Type	Cable Length (m)	Remarks
1	Headphones Jack	1	3.5mm Audio	Shielded	0.9	N/A
2	USB	1	USB	Shielded	1	N/A
3	AC	1	AC	Un-shielded	3	N/A

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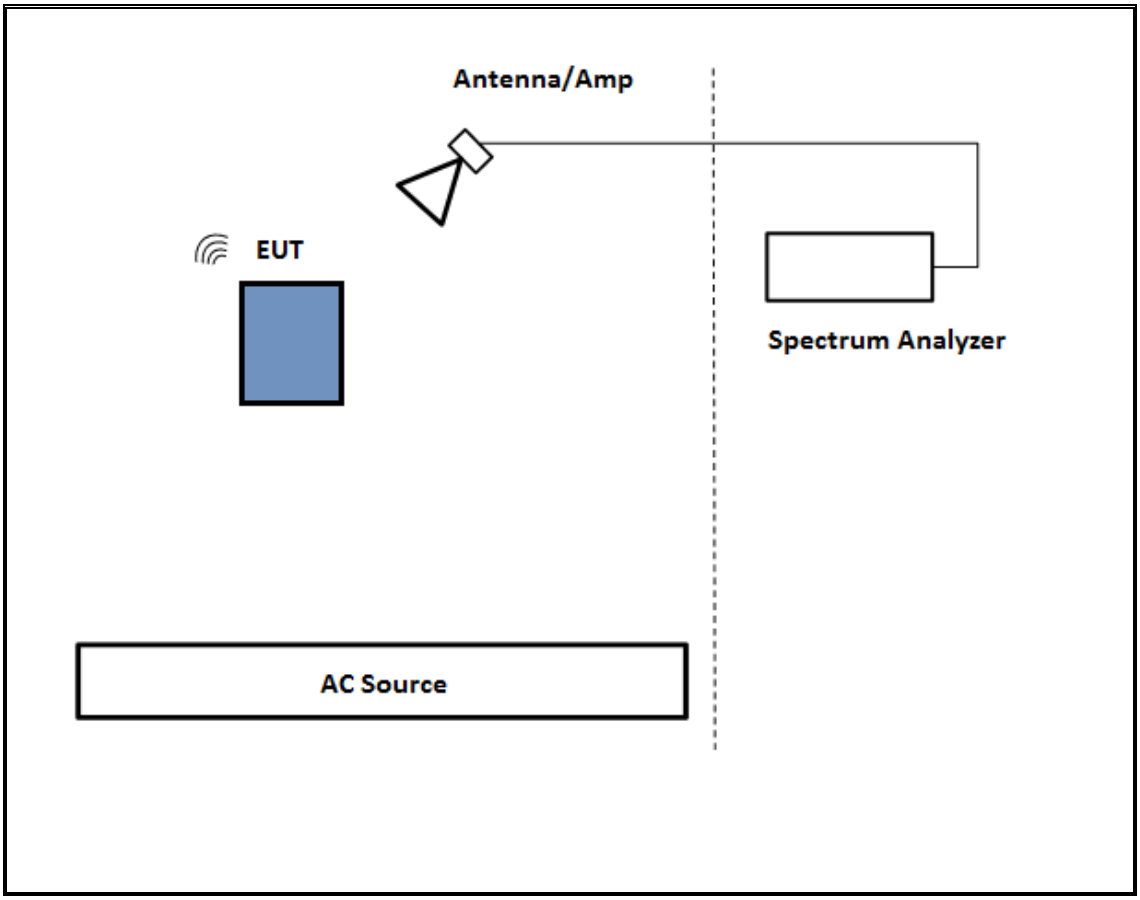
TEST SETUP- RADIATED-ABOVE 1 GHZ

The EUT was tested battery powered. Test software exercised the EUT.

SETUP DIAGRAM



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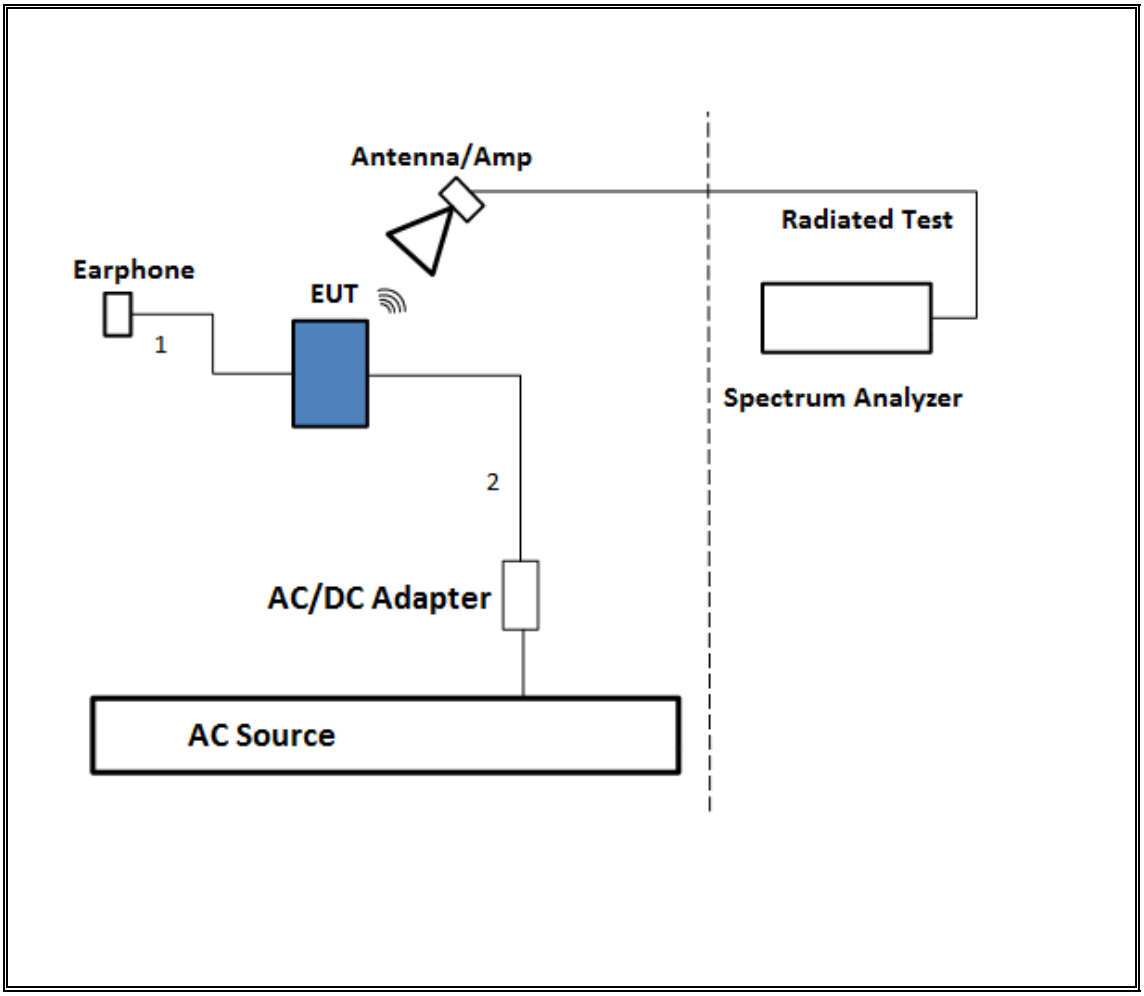
TEST SETUP- BELOW 1GHz

The EUT was tested with earphone connected and powered by AC adapter. Test software exercised the EUT.

SETUP DIAGRAM



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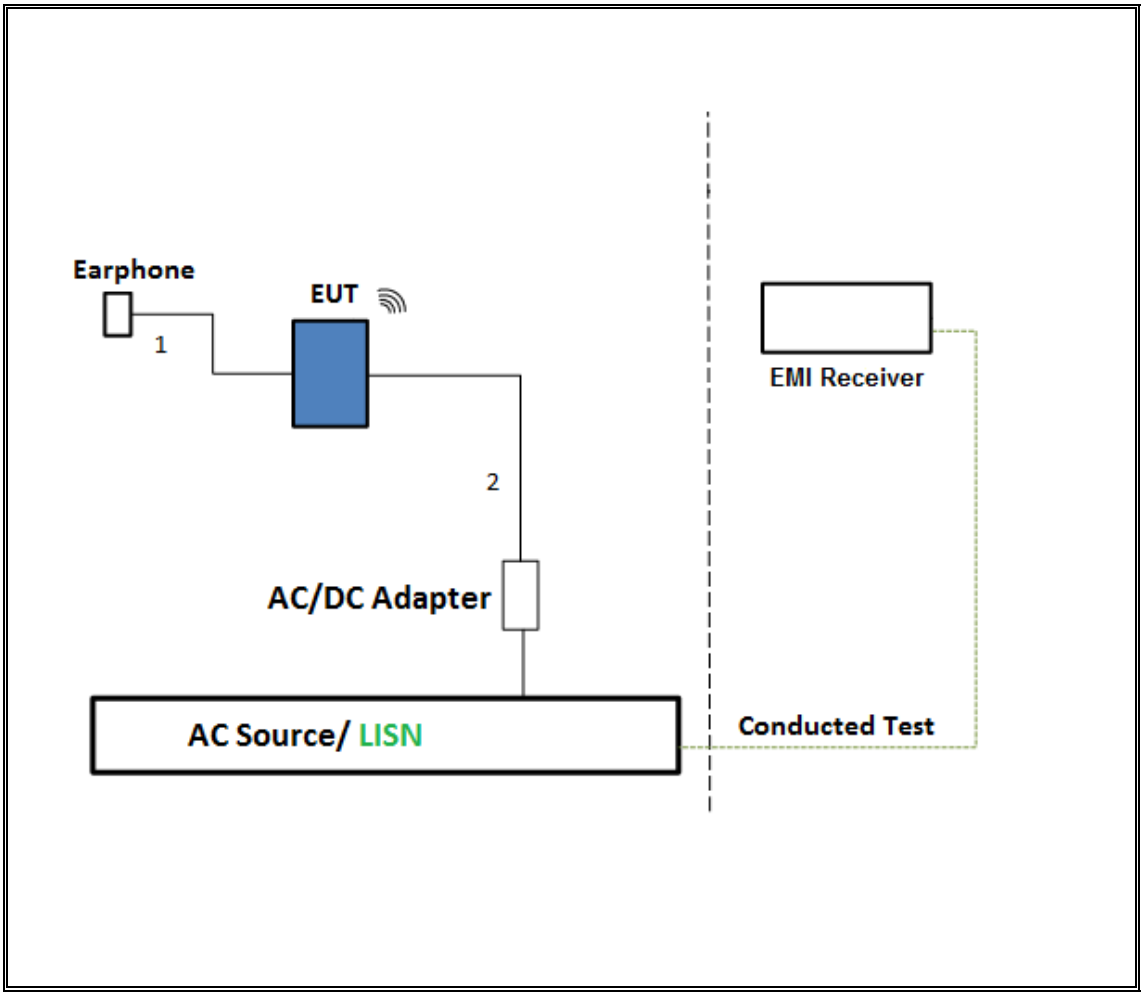
TEST SETUP- AC LINE CONDUCTED: AC/DC ADAPTER

The EUT was tested with earphone connected and powered by AC/DC adapter via USB cable. Test software exercised the EUT.

SETUP DIAGRAM



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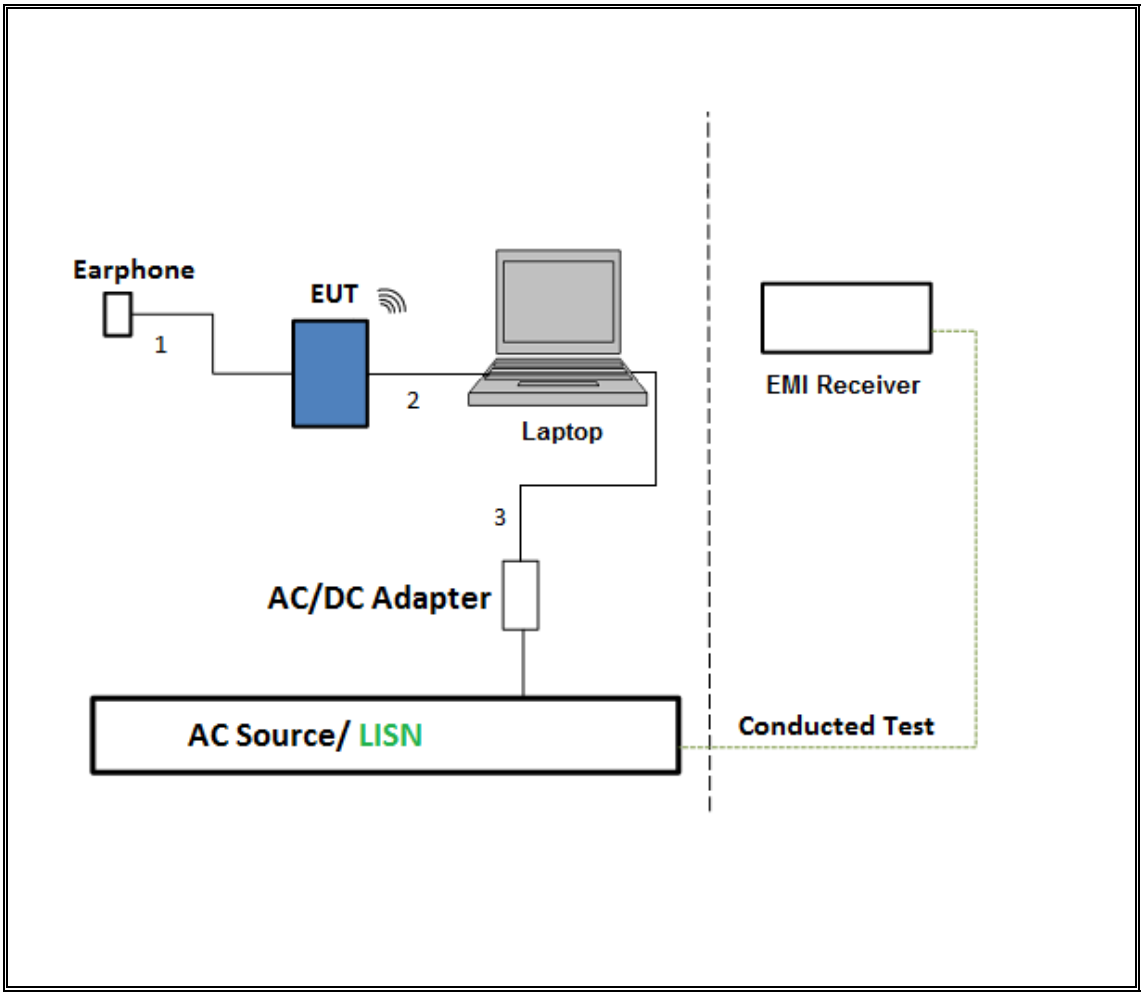
TEST SETUP- AC LINE CONDUCTED: LAPTOP CONFIGURATION

The EUT was tested with earphone connected and powered by host PC via USB cable. Test software exercised the EUT.

SETUP DIAGRAM



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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**
Antenna, Horn 1-18GHz	ETS Lindgren	3117	00143448	2/10/2016
Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences	JB3	A022813-1	1/14/2016
Amplifier, 1 - 18GHz	Miteq	AFS42-00101800-25-S-42	1782158	1/26/2016
Amplifier, 10KHz to 1GHz, 32dB	Sonoma	310N	323561	6/8/2016
Spectrum Analyzer, PXA, 3Hz to 50GHz	Agilent	N9030A	MY52350427	9/13/2016
Amplifier, 10KHz to 1GHz, 32dB	Sonoma	310N	325117	6/9/2016
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent	N9030A-544	US51160264	12/23/2015
Power Meter, P-series single channel	Agilent	N1911A	GB45100212	10/9/2016
Power Sensor, P - series, 50MHz to 18GHz, Wideband	Agilent	N1921A	MY53260010	7/12/2016
Antenna, Horn 18 to 26.5GHz	ARA	MWH-1826	1049	12/17/2015
Horn Antenna, 40GHz	ARA	MWH-2640/B	1029	7/28/2016
Spectrum Analyzer, 40 GHz	Agilent	8564E	3943A01643	8/6/2016
Amplifier, 1 to 26.5GHz, 23.5dB Gain minimum	Keysight	8449B	3008A04710	6/29/2016
Amplifier, 26 - 40GHz	Miteq	NSP4000-SP2	924343	4/7/2016
AC Line Conducted				
EMI Test Receiver 9Khz-7GHz	Rohde & Schwarz	ESCI7	9/16/2015	9/16/2016
LISN for Conducted Emissions CISPR-16	FCC	50/250-25-2	1/16/2015	1/16/2016
Power Cable, Line Conducted Emissions ANSI 63.4	UL	PG1	N/A	7/28/2016
UL SOFTWARE				
*Radiated Software	UL	UL EMC	Ver 9.5, July 22, 2014	
*AC Line Conducted Software	UL	UL EMC	Ver 9.5, April 3, 2015	

Note: * indicates automation software version used in the compliance certification testing

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7. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

7.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

PROCEDURE

KDB 789033 Zero-Span Spectrum Analyzer Method.

RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
802.11a 1TX	2.064	2.094	0.986	98.57%	0.00	0.010
802.11n HT20 CDD	1.905	1.938	0.983	98.30%	0.00	0.010
802.11n HT40 1TX	1.908	1.926	0.991	99.07%	0.00	0.010
802.11n HT40 CDD	1.908	1.926	0.991	99.07%	0.00	0.010

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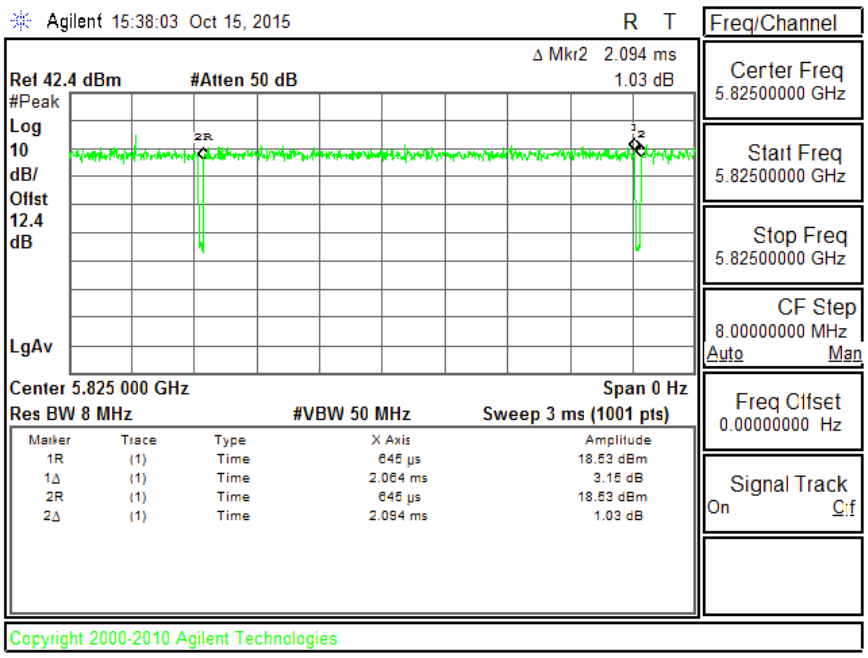
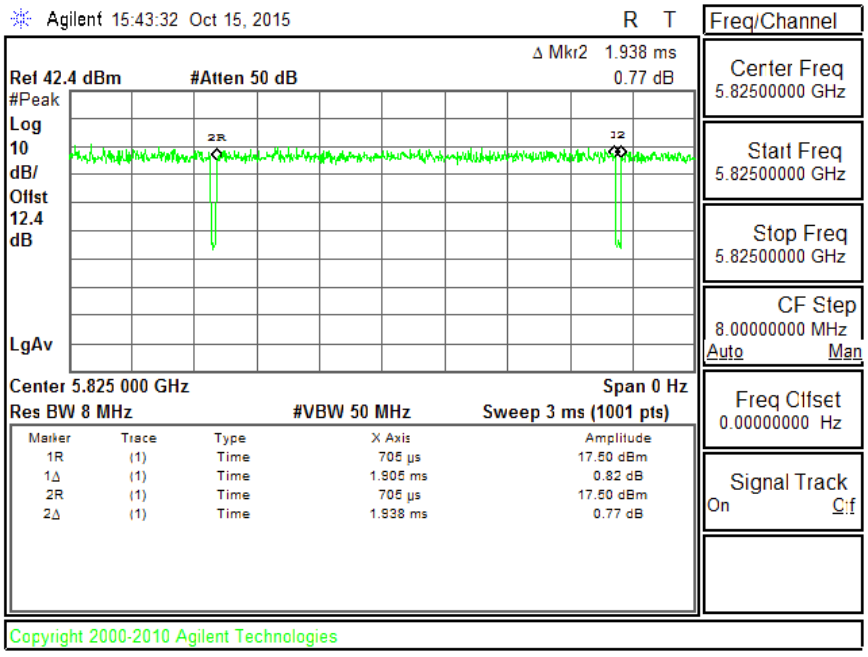
DUTY CYCLE PLOTS

DUTY CYCLE 802.11a 1TX MODE



DUTY CYCLE 802.11n HT20 CDD MODE



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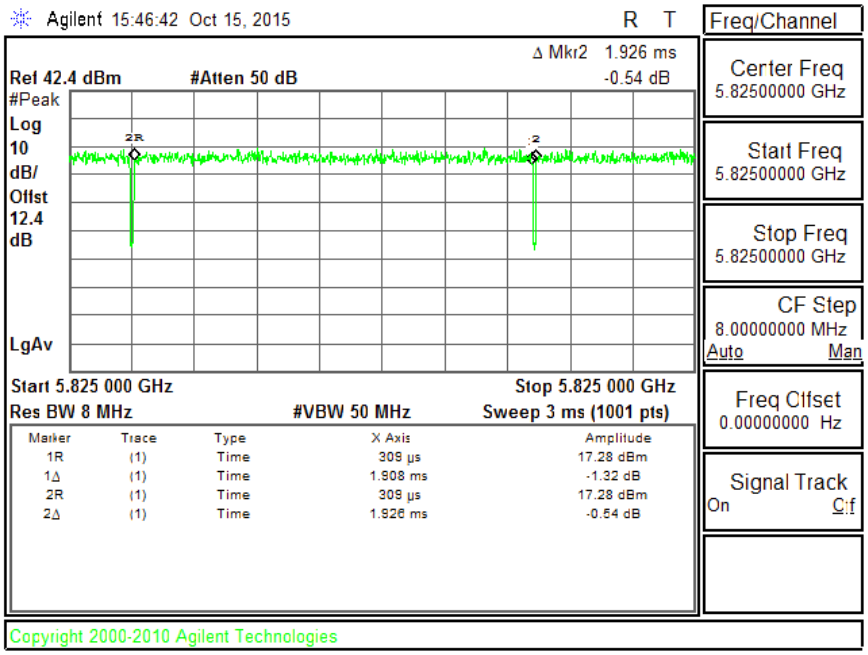
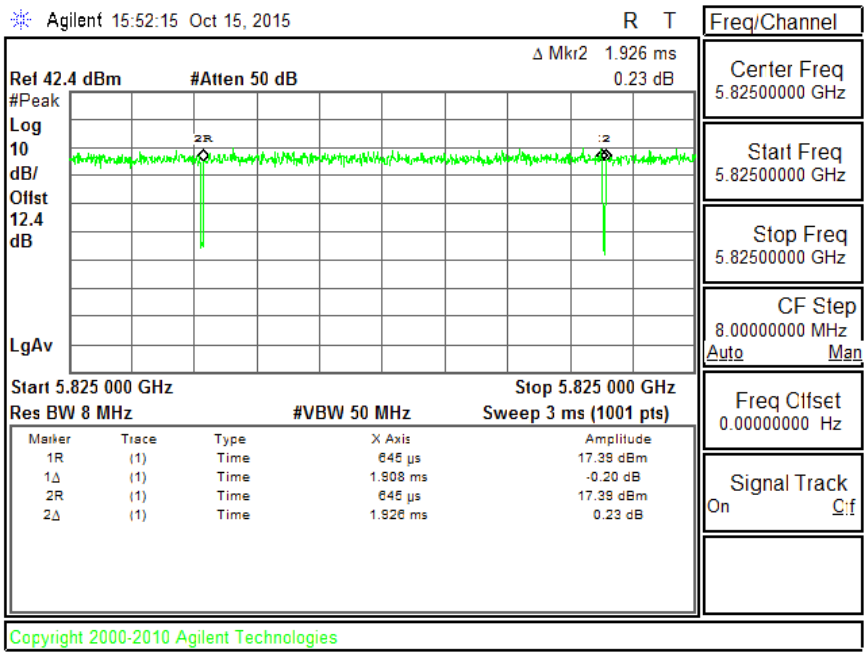
DUTY CYCLE 802.11n HT40 1TX MODE



DUTY CYCLE 802.11n HT40 CDD MODE



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8. MEASUREMENT METHODS

26 dB Emission BW & 6 dB Emission BW: KDB 789033 D02 v01, Section C.

99% Occupied BW: KDB 789033 D02 v01, Section D.

Conducted Output Power: KDB 789033 D02 v01, Section E.3.b (Method PM-G).

Power Spectral Density: KDB 789033 D02 v01, Section F.

Unwanted emissions in restricted bands: KDB 789033 D02 v01, Sections G.3, G.4, G.5, and G.6.

Unwanted emissions in non-restricted bands: KDB 789033 D02 v01, Sections G.3, G.4, and G.5.

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9. ANTENNA PORT TEST RESULTS

Note that for all of 5.8GHz antenna port data refer to the FCC UNII report with the FCC ID: BCGA1490 and project number 15U21850-E10V2.

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10. RADIATED TEST RESULTS

10.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-GEN, Section 8.9 and 8.10.

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 measurement below 1GHz; 1.5 m above the ground plane for measurement above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

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

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and as applicable for average measurements.

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.

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

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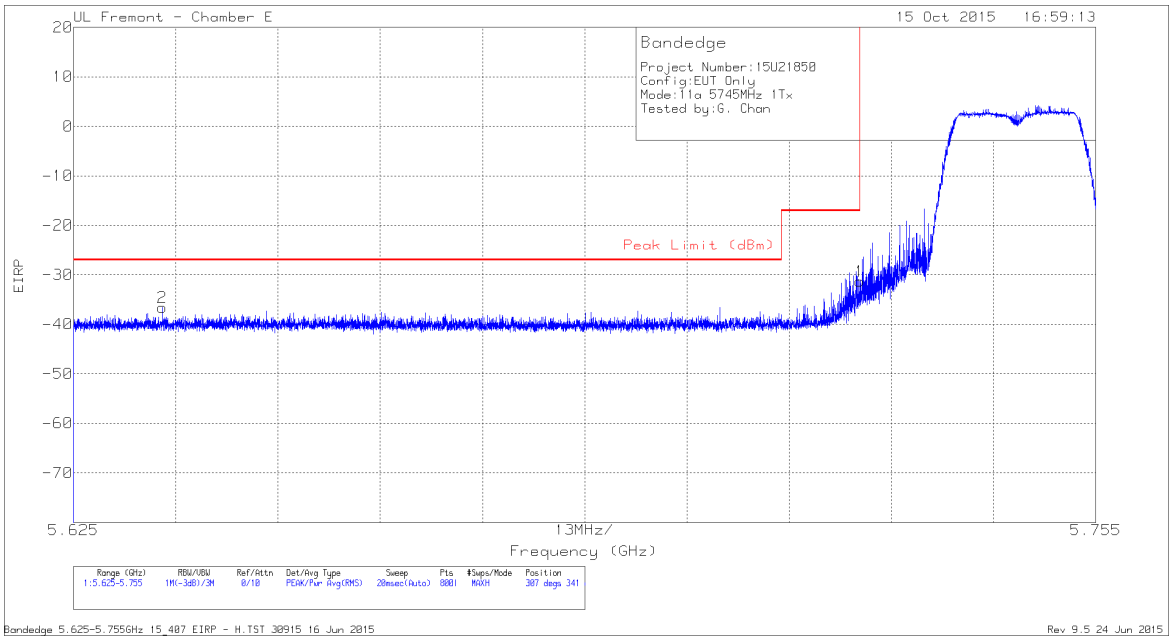
10.2. 802.11a 1Tx MODE IN THE 5.8 GHz BAND

10.2.1. CHAIN 0, RESTRICTED BANDEDGE AND HARMONIC SPURIOS

LOW CHANNEL

LOW CHANNEL HORIZONTAL PLOT



DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.636	-63.01	Pk	34.6	-20	11.8	-36.61	-27	-9.61	307	341	H
1	5.725	-57.68	Pk	34.7	-20.1	11.8	-31.28	-17	-14.28	307	341	H

Pk - Peak detector

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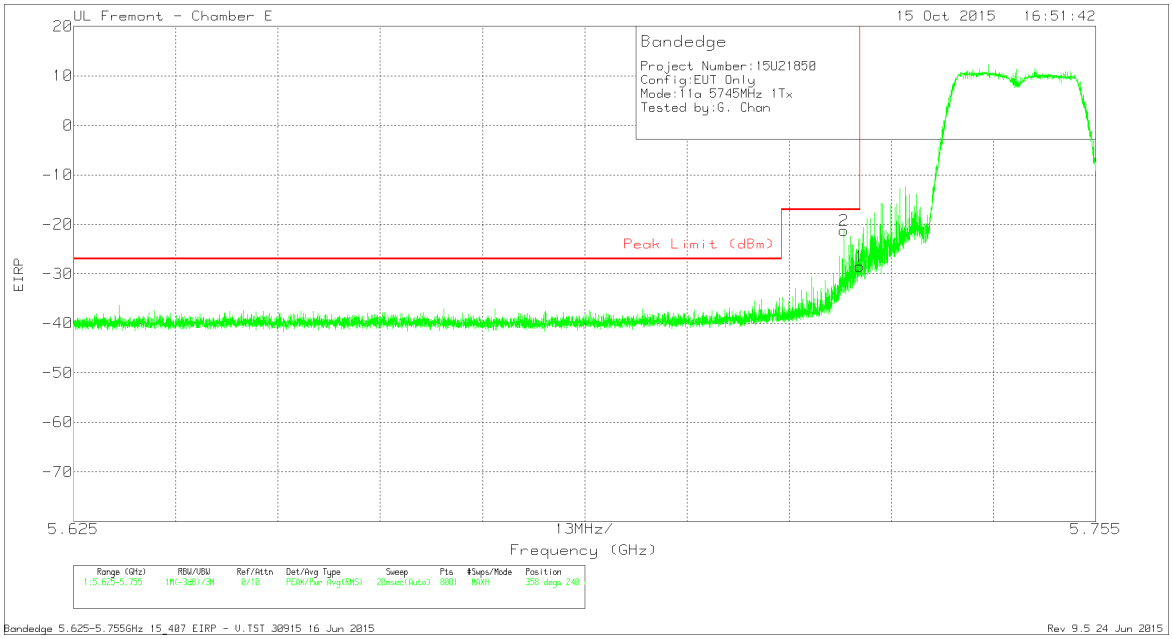
LOW CHANNEL VERTICAL PLOT



DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.723	-47.66	Pk	34.7	-20.1	11.8	-21.26	-17	-4.26	358	240	V
1	5.725	-54.92	Pk	34.7	-20.1	11.8	-28.52	-17	-11.52	358	240	V

Pk - Peak detector

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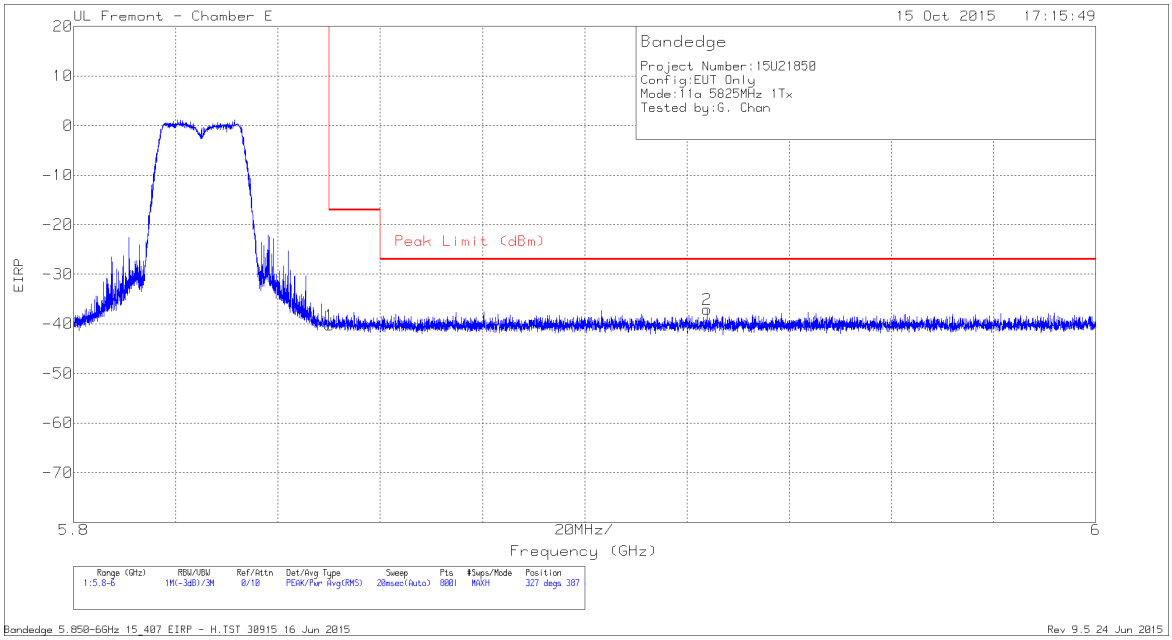
RESTRICTED BANDEDGE, CHAIN 0 (HIGH CHANNEL)

HIGH CHANNEL HORIZONTAL PLOT



DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-66.66	Pk	34.9	-20.3	11.8	-40.26	-17	-23.26	327	387	H
2	5.924	-63.59	Pk	35	-20.3	11.8	-37.09	-27	-10.09	327	387	H

Pk - Peak detector

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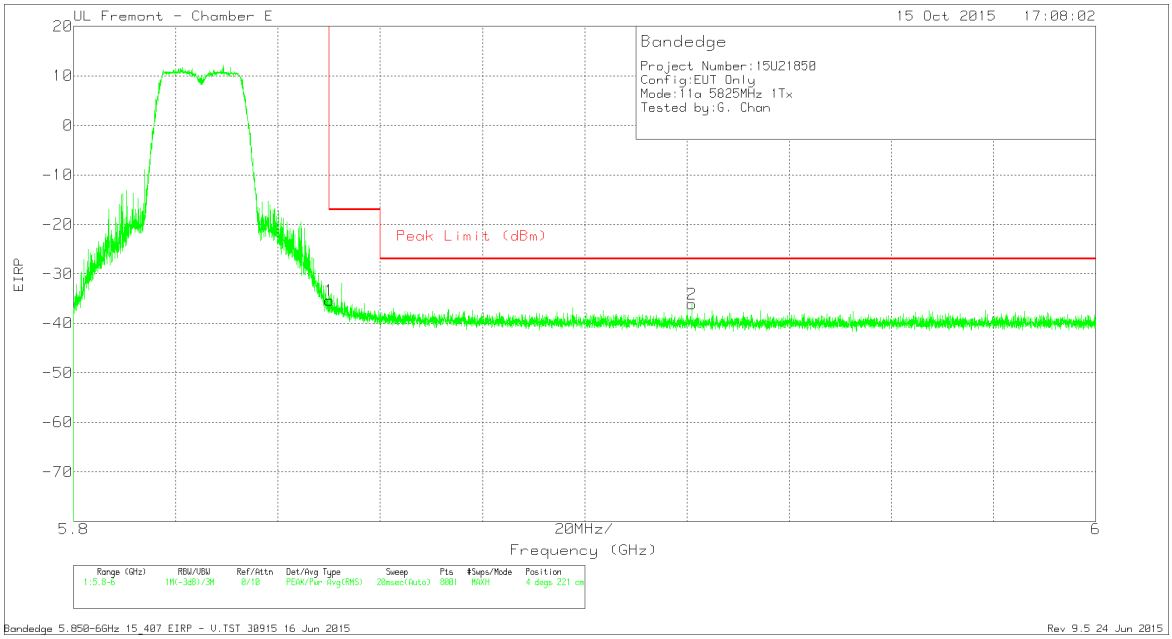
HIGH CHANNEL VERTICAL PLOT



DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-61.74	Pk	34.9	-20.3	11.8	-35.34	-17	-18.34	4	221	V
2	5.921	-62.62	Pk	35	-20.3	11.8	-36.12	-27	-9.12	4	221	V

Pk - Peak detector

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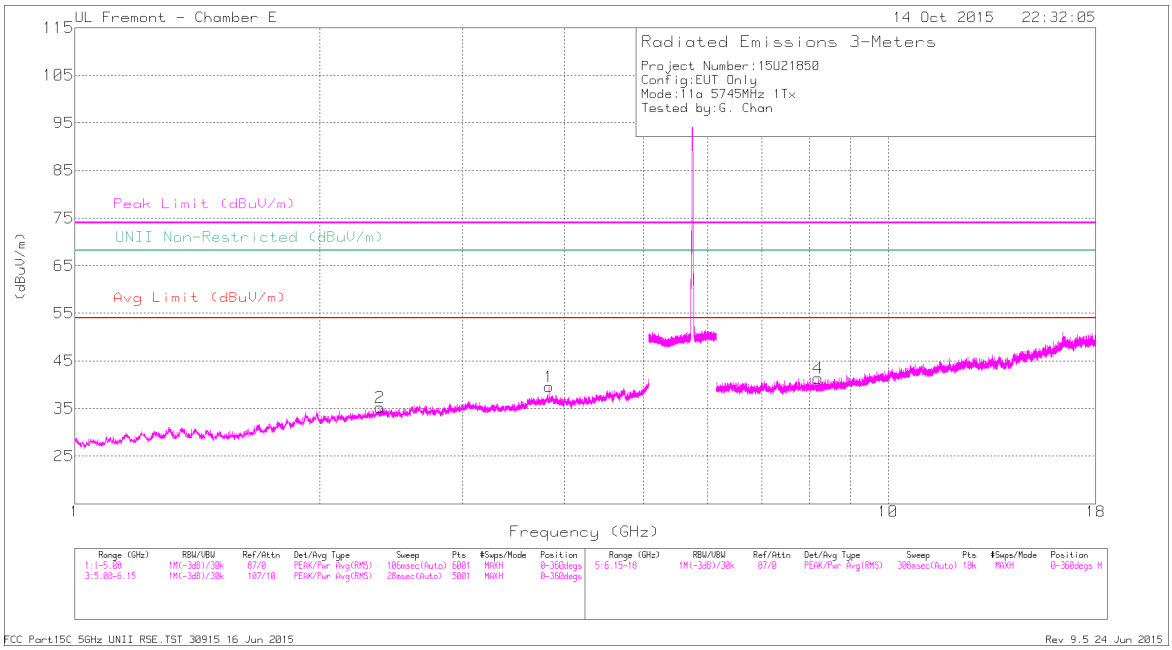
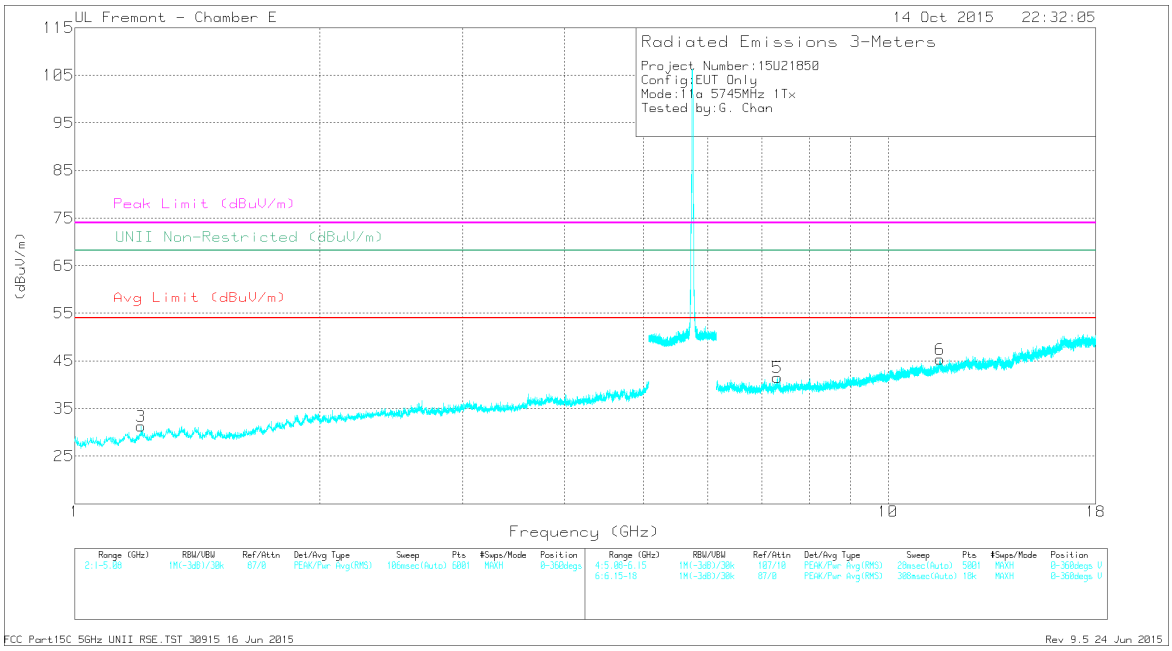
LOW CHANNEL HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL PLOT



LOW CHANNEL VERTICAL PLOT



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DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.83	42.77	PK-U	33.5	-29.9	46.37	-	-	74	-27.63	-	-	336	144	H
	* 3.83	30.34	ADR	33.5	-29.9	33.94	54	-20.06	-	-	-	-	336	144	H
2	* 2.373	41.91	PK-U	32	-32.2	41.71	-	-	74	-32.29	-	-	157	164	H
	* 2.373	30.18	ADR	32	-32.2	29.98	54	-24.02	-	-	-	-	157	164	H
3	* 1.208	44.99	PK-U	28.1	-35.6	37.49	-	-	74	-36.51	-	-	348	114	V
	* 1.206	33.14	ADR	28.1	-35.6	25.64	54	-28.36	-	-	-	-	348	114	V
4	* 8.204	37.76	PK-U	35.7	-26.9	46.56	-	-	74	-27.44	-	-	137	171	H
	* 8.202	26.52	ADR	35.7	-26.9	35.32	54	-18.68	-	-	-	-	137	171	H
5	* 7.31	38.01	PK-U	35.5	-26.1	47.41	-	-	74	-26.59	-	-	172	185	V
	* 7.309	26.49	ADR	35.5	-26.1	35.89	54	-18.11	-	-	-	-	172	185	V
6	* 11.582	36.2	PK-U	38.1	-22.3	52	-	-	74	-22	-	-	30	333	V
	* 11.582	24.33	ADR	38.1	-22.3	40.13	54	-13.87	-	-	-	-	30	333	V

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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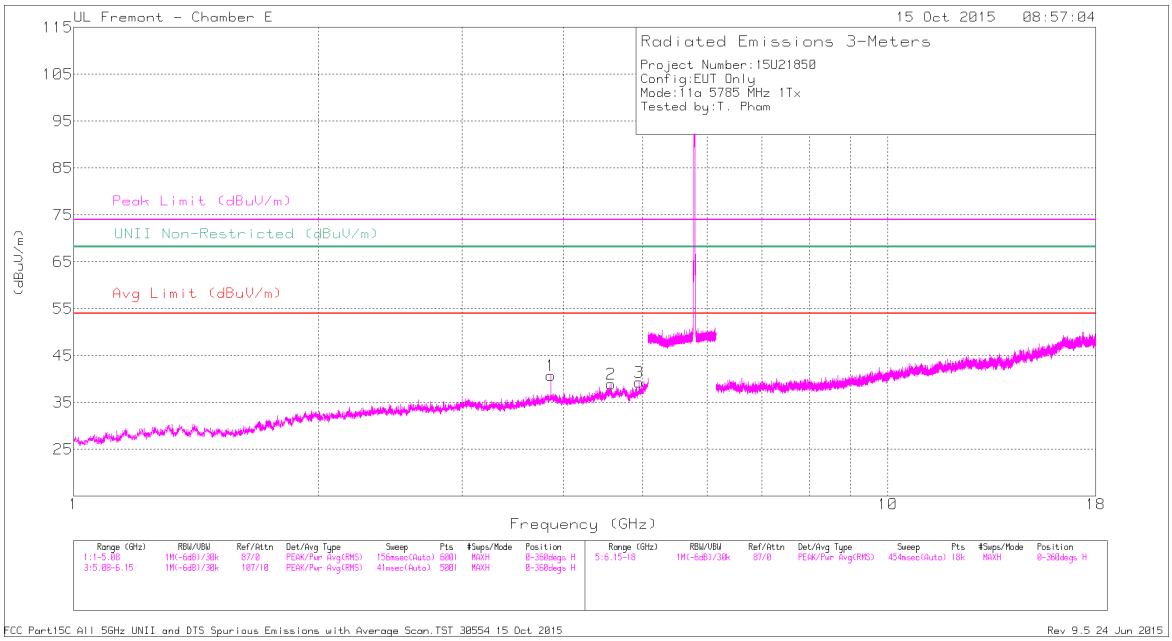
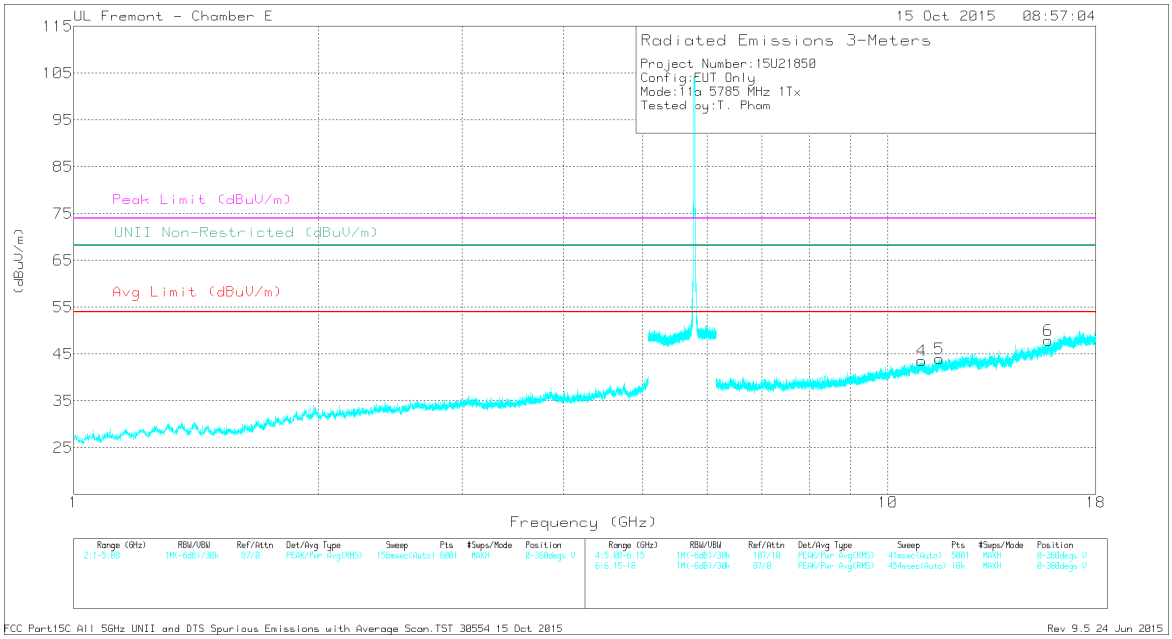
MID CHANNEL HARMONICS AND SPURIOUS EMISSIONS

MID CHANNEL HORIZONTAL PLOT



MID CHANNEL VERTICAL PLOT



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DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.857	44.42	PK-U	33.5	-29.9	48.02	-	-	74	-25.98	-	-	37	118	H
	* 3.857	36.29	ADR	33.5	-29.9	39.89	54	-14.11	-	-	-	-	37	118	H
2	* 4.568	41.92	PK-U	34.1	-29.4	46.62	-	-	74	-27.38	-	-	122	150	H
	* 4.569	30.09	ADR	34.1	-29.4	34.79	54	-19.21	-	-	-	-	122	150	H
3	* 4.947	42.31	PK-U	34.1	-29.4	47.01	-	-	74	-26.99	-	-	159	165	H
	* 4.948	30.17	ADR	34.1	-29.4	34.87	54	-19.13	-	-	-	-	159	165	H
4	* 10.996	36.74	PK-U	37.9	-22.6	52.04	-	-	74	-21.96	-	-	38	240	V
	* 10.998	24.9	ADR	37.9	-22.6	40.2	54	-13.8	-	-	-	-	38	240	V
5	* 11.57	36.37	PK-U	38.1	-22.3	52.17	-	-	74	-21.83	-	-	72	320	V
	* 11.569	25.05	ADR	38.1	-22.3	40.85	54	-13.15	-	-	-	-	72	320	V
6	* 15.731	38.14	PK-U	40.4	-21.9	56.64	-	-	74	-17.36	-	-	113	283	V
	* 15.73	25.64	ADR	40.4	-21.9	44.14	54	-9.86	-	-	-	-	113	283	V

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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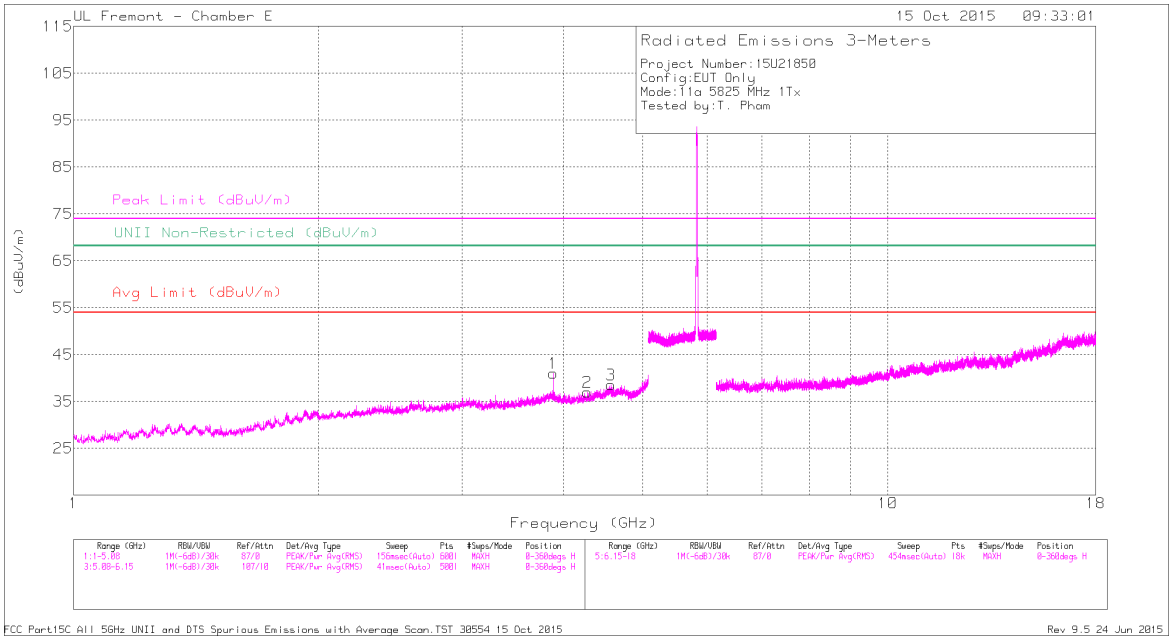
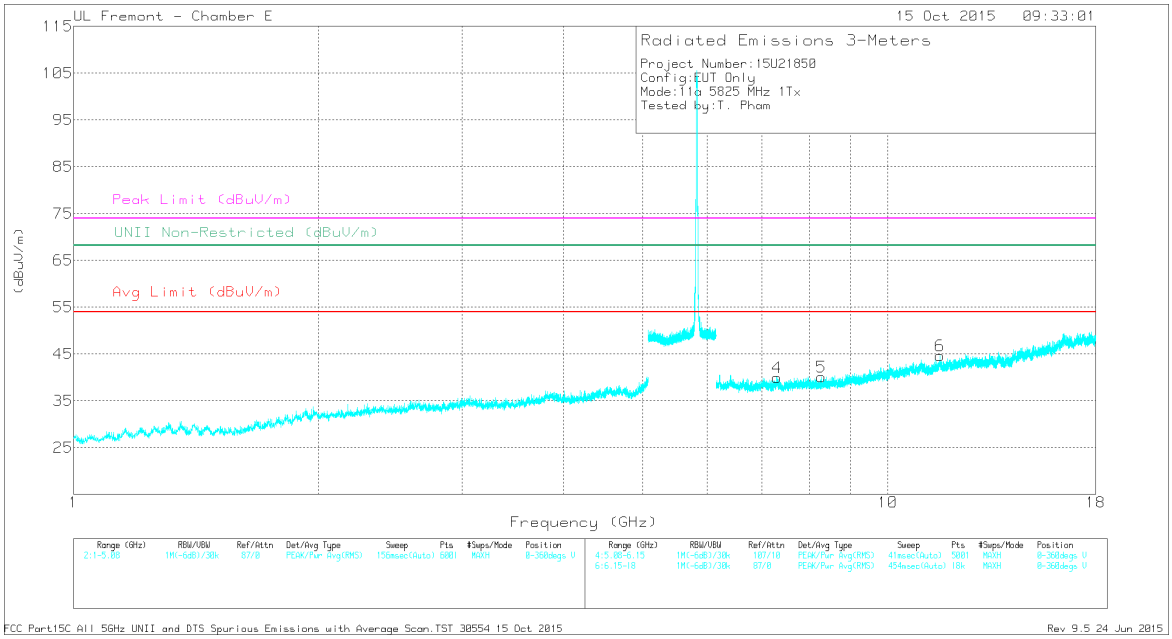
HIGH CHANNEL HARMONICS AND SPURIOUS EMISSIONS

HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



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DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.883	44.8	PK-U	33.5	-30.2	48.1	-	-	74	-25.9	-	-	26	185	H
	* 3.883	37.24	ADR	33.5	-30.2	40.54	54	-13.46	-	-	-	-	26	185	H
2	* 4.275	41.34	PK-U	33.5	-30	44.84	-	-	74	-29.16	-	-	200	203	H
	* 4.276	29.93	ADR	33.5	-30	33.43	54	-20.57	-	-	-	-	200	203	H
3	* 4.572	41.87	PK-U	34.1	-29.4	46.57	-	-	74	-27.43	-	-	48	284	H
	* 4.572	29.76	ADR	34.1	-29.4	34.46	54	-19.54	-	-	-	-	48	284	H
4	* 7.308	39.04	PK-U	35.5	-26	48.54	-	-	74	-25.46	-	-	337	234	V
	* 7.309	27.31	ADR	35.5	-26	36.81	54	-17.19	-	-	-	-	337	234	V
5	* 8.282	39.13	PK-U	35.7	-27	47.83	-	-	74	-26.17	-	-	268	284	V
	* 8.283	27.15	ADR	35.7	-27	35.85	54	-18.15	-	-	-	-	268	284	V
6	* 11.59	36.68	PK-U	38.1	-22.5	52.28	-	-	74	-21.72	-	-	140	143	V
	* 11.589	24.84	ADR	38.1	-22.5	40.44	54	-13.56	-	-	-	-	140	143	V

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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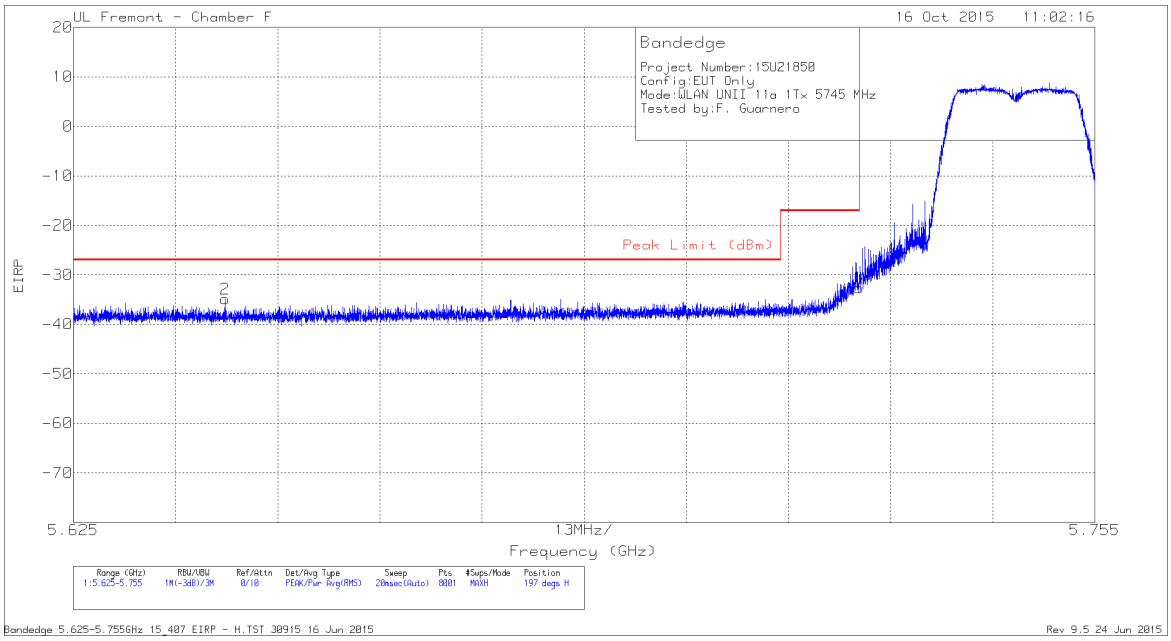
10.2.2. CHAIN 1, RESTRICTED BANDEDGE AND HARMONIC SPURIOUS

LOW CHANNEL

LOW CHANNEL HORIZONTAL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T120 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-60.96	Pk	34.9	-18.4	11.8	-32.66	-17	-15.66	197	391	H
2	5.644	-62.81	Pk	34.8	-18.6	11.8	-34.81	-27	-7.81	197	391	H

Pk - Peak detector
Bandedge 5.625-5.755GHz 15_407 EIRP - H.TST 30915 16 Jun 2015
Rev 9.5 24 Jun 2015

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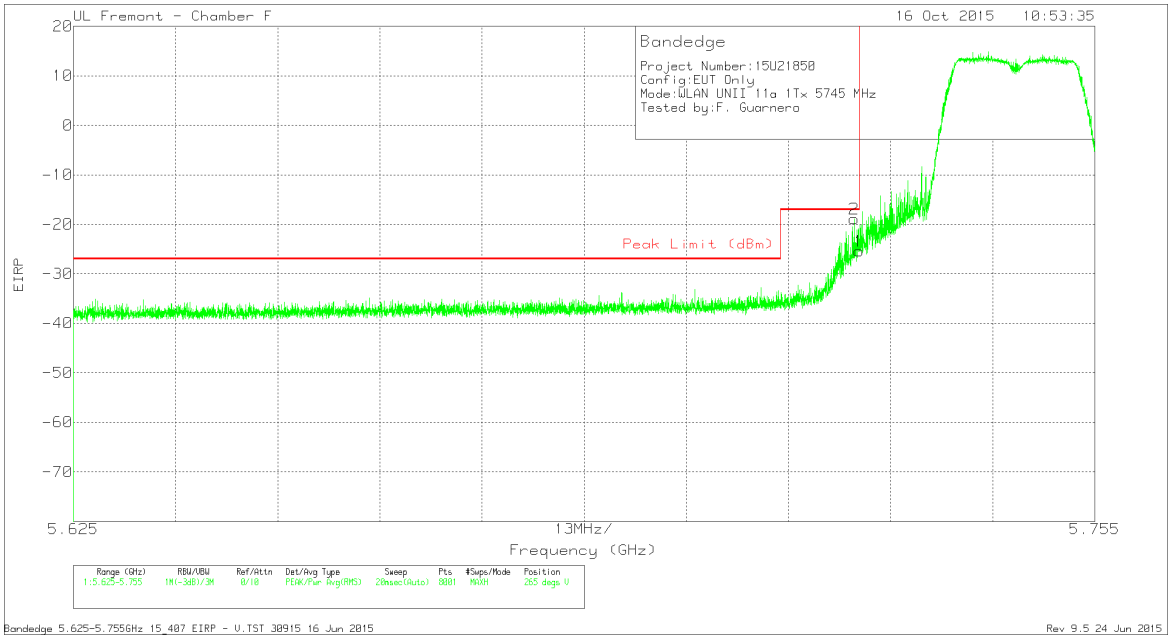
LOW CHANNEL VERTICAL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T120 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-53.75	Pk	34.9	-18.4	11.8	-25.45	-17	-8.45	265	116	V
2	5.724	-47.15	Pk	34.9	-18.4	11.8	-18.85	-17	-1.85	265	116	V

Pk - Peak detector
Bandedge 5.625-5.755GHz 15_407 EIRP - V.TST 30915 16 Jun 2015
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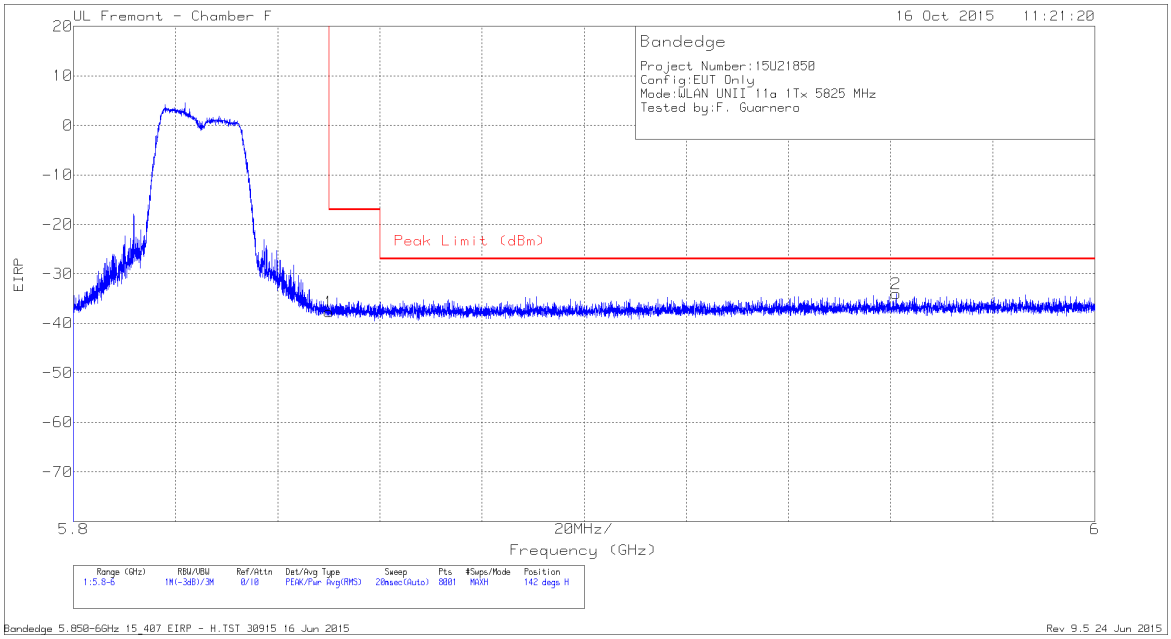
RESTRICTED BANDEDGE, CHAIN 1 (HIGH CHANNEL)

HIGH CHANNEL HORIZONTAL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T120 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-65.98	Pk	35.1	-18.6	11.8	-37.68	-17	-20.68	142	364	H
2	5.961	-62.52	Pk	35.3	-18.6	11.8	-34.02	-27	-7.02	142	364	H

Pk - Peak detector
Bandedge 5.850-6GHz 15_407 EIRP - H.TST 30915 16 Jun 2015
Rev 9.5 24 Jun 2015

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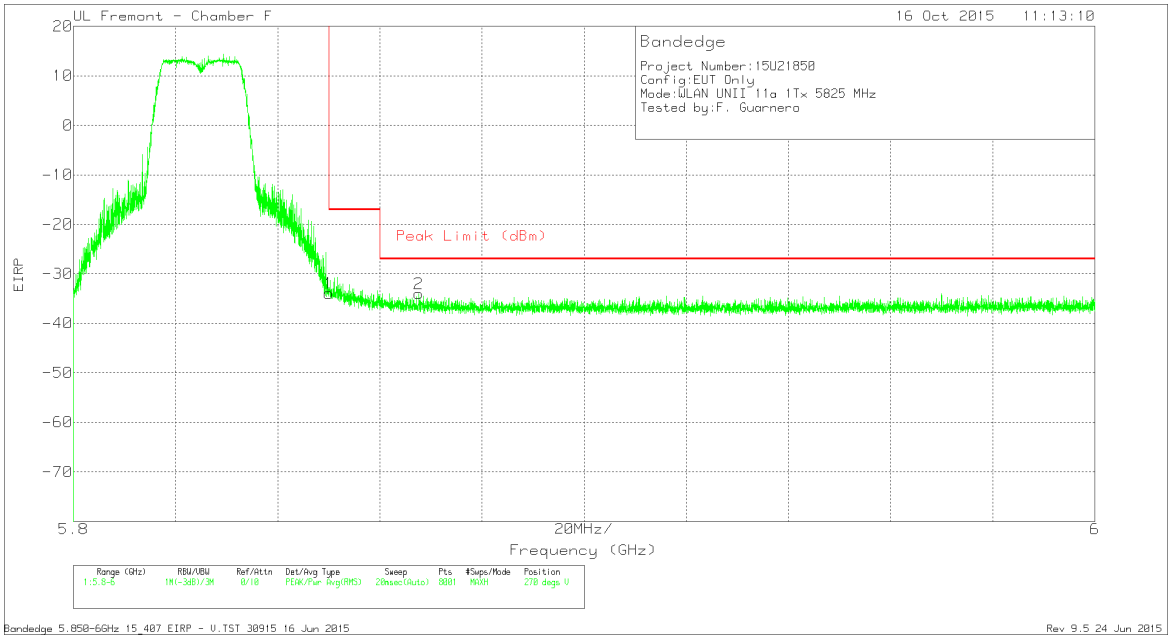
HIGH CHANNEL VERTICAL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T120 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-62.24	Pk	35.1	-18.6	11.8	-33.94	-17	-16.94	270	294	V
2	5.868	-62.25	Pk	35.1	-18.6	11.8	-33.95	-27	-6.95	270	294	V

Pk - Peak detector
Bandedge 5.850-6GHz 15_407 EIRP - V.TST 30915 16 Jun 2015
Rev 9.5 24 Jun 2015

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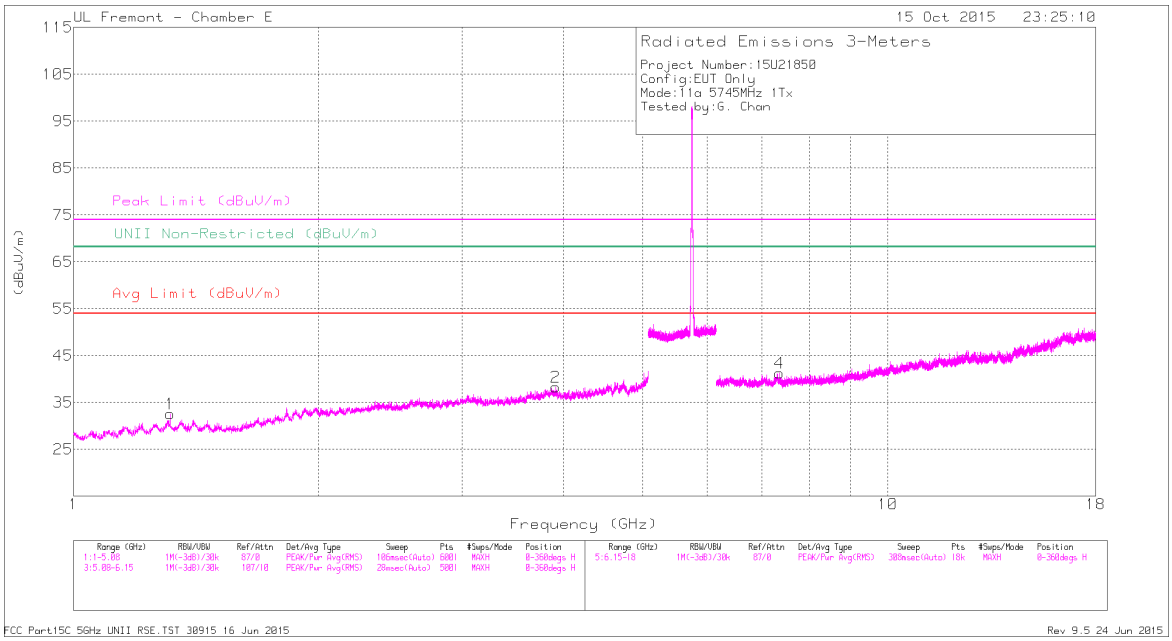
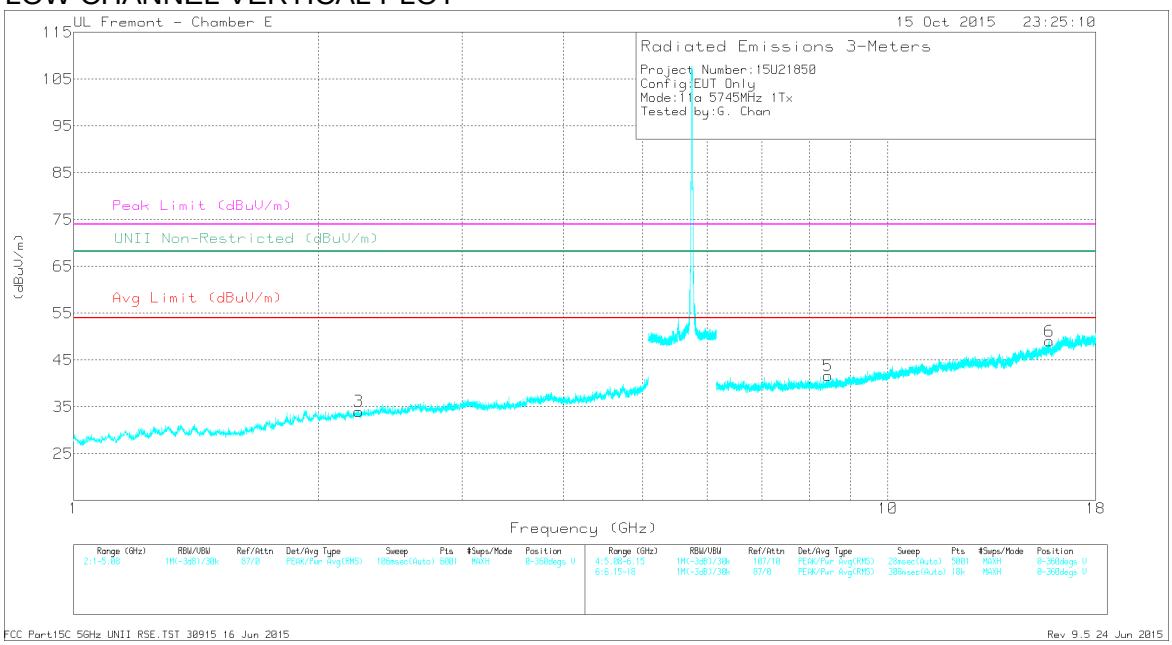
LOW CHANNEL HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL PLOT



LOW CHANNEL VERTICAL PLOT



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DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.315	45.05	PK-U	28.9	-35.4	38.55	-	-	74	-35.45	-	-	336	123	H
	* 1.314	33.15	ADR	28.9	-35.4	26.65	54	-27.35	-	-	-	-	336	123	H
2	* 3.914	42.05	PK-U	33.5	-30.9	44.65	-	-	74	-29.35	-	-	271	141	H
	* 3.911	30.8	ADR	33.5	-30.8	33.5	54	-20.5	-	-	-	-	271	141	H
3	* 2.237	42.67	PK-U	31.5	-32.7	41.47	-	-	74	-32.53	-	-	184	162	V
	* 2.239	31.37	ADR	31.5	-32.7	30.17	54	-23.83	-	-	-	-	184	162	V
4	* 7.363	39.07	PK-U	35.5	-27.5	47.07	-	-	74	-26.93	-	-	189	368	H
	* 7.36	27.46	ADR	35.5	-27.4	35.56	54	-18.44	-	-	-	-	189	368	H
5	* 8.451	38.35	PK-U	35.8	-26.9	47.25	-	-	74	-26.75	-	-	45	388	V
	* 8.452	26.93	ADR	35.8	-26.9	35.83	54	-18.17	-	-	-	-	45	388	V
6	* 15.792	37.72	PK-U	40.4	-23	55.12	-	-	74	-18.88	-	-	179	400	V
	* 15.794	26	ADR	40.4	-23	43.4	54	-10.6	-	-	-	-	179	400	V

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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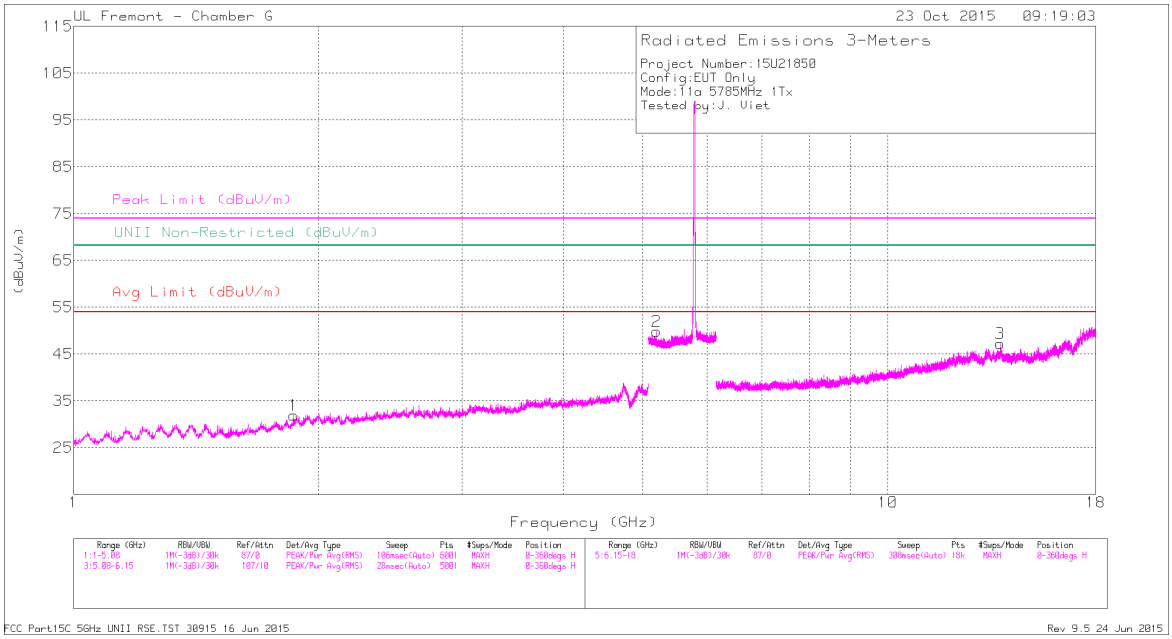
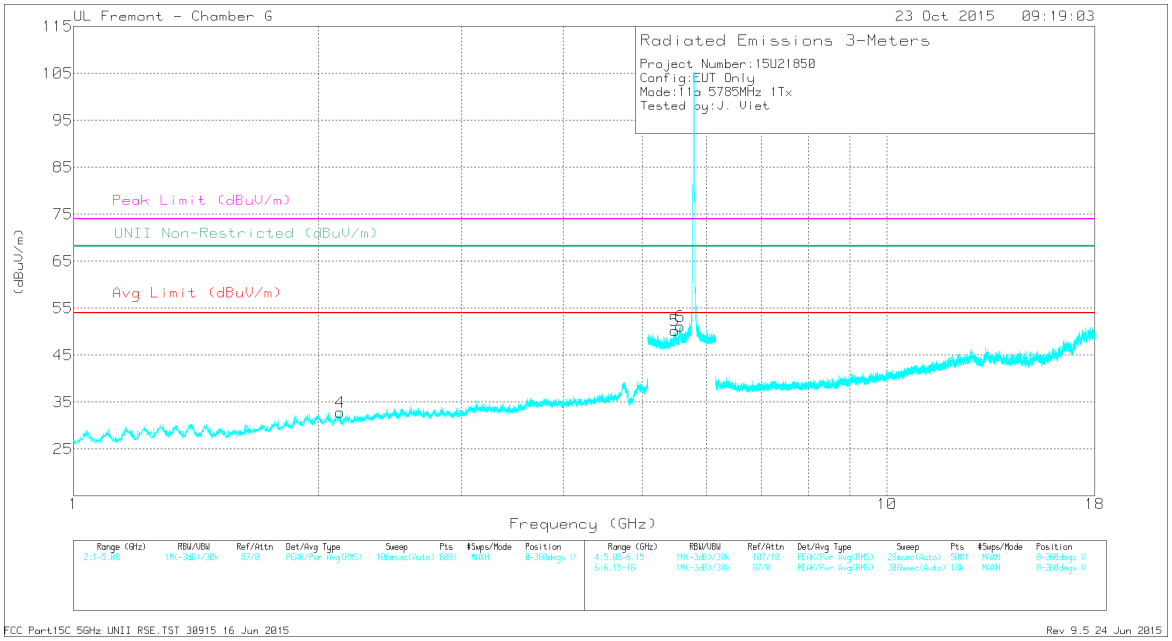
MID CHANNEL HARMONICS AND SPURIOUS EMISSIONS

MID CHANNEL HORIZONTAL PLOT



MID CHANNEL VERTICAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.861	44.21	PK-U	30.6	-34.8	40.01	-	-	-	-	68.2	-28.19	30	177	H
4	2.126	42.6	PK-U	31.2	-34.3	39.5	-	-	-	-	68.2	-28.7	175	333	V
2	5.203	44.58	PK-U	34.4	-23.2	55.78	-	-	-	-	68.2	-12.42	202	251	H
5	5.487	44.31	PK-U	34.6	-23	55.91	-	-	-	-	68.2	-12.29	343	275	V
6	5.567	47.19	PK-U	34.8	-23	58.99	-	-	-	-	68.2	-9.21	197	288	V
3	13.744	38.47	PK-U	39.2	-24.6	53.07	-	-	-	-	68.2	-15.13	334	278	H

PK-U - U-NII: Maximum Peak

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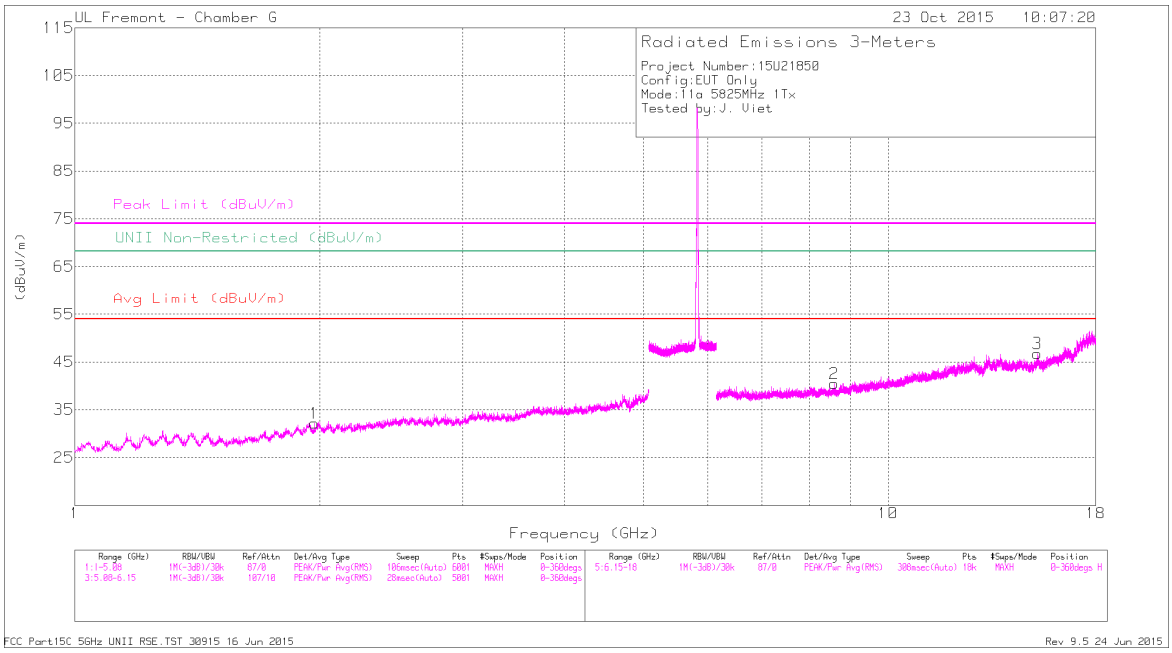
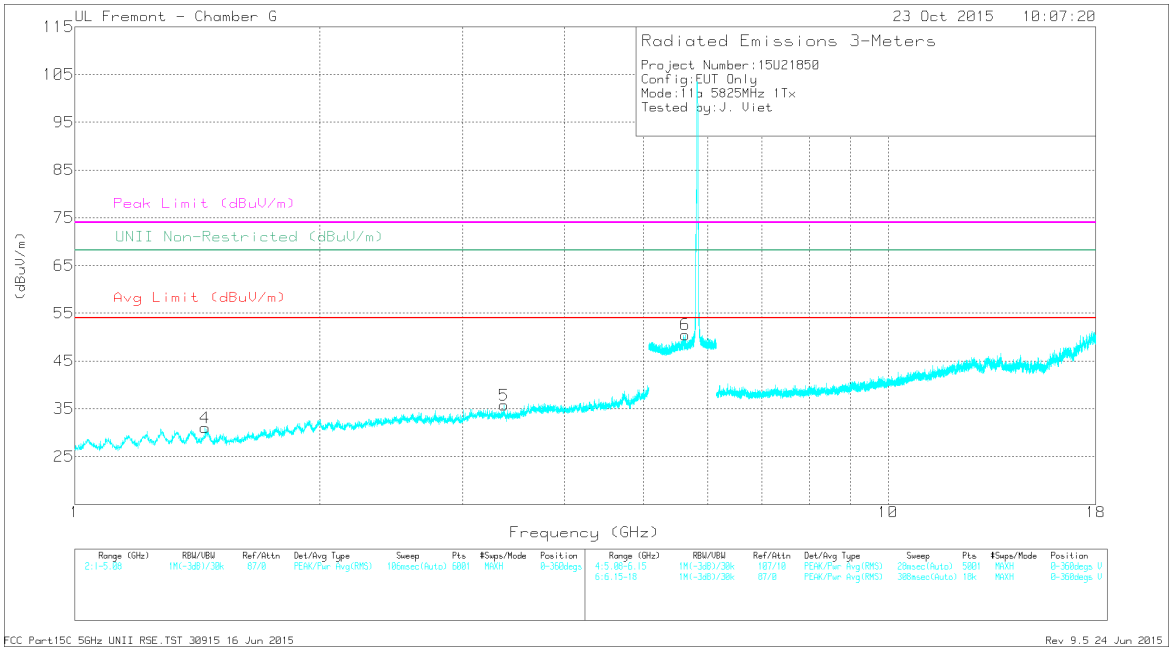
HIGH CHANNEL HARMONICS AND SPURIOUS EMISSIONS

HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 1.449	42.82	PK-U	28.6	-34.3	37.12	-	-	74	-36.88	-	-	360	201	V
	* 1.447	31.61	ADR	28.6	-34.3	25.91	54	-28.09	-	-	-	-	360	201	V
1	1.972	41.78	PK-U	31.2	-34.3	38.68	-	-	-	-	68.2	-29.52	15	171	H
5	3.371	41.58	PK-U	32.8	-32.8	41.58	-	-	-	-	68.2	-26.62	76	291	V
6	5.63	46	PK-U	34.9	-23.1	57.8	-	-	-	-	68.2	-10.4	249	351	V
2	8.585	39.94	PK-U	35.7	-28.7	46.94	-	-	-	-	68.2	-21.26	165	211	H
3	15.244	39.16	PK-U	39.8	-25.7	53.26	-	-	-	-	68.2	-14.94	225	197	H

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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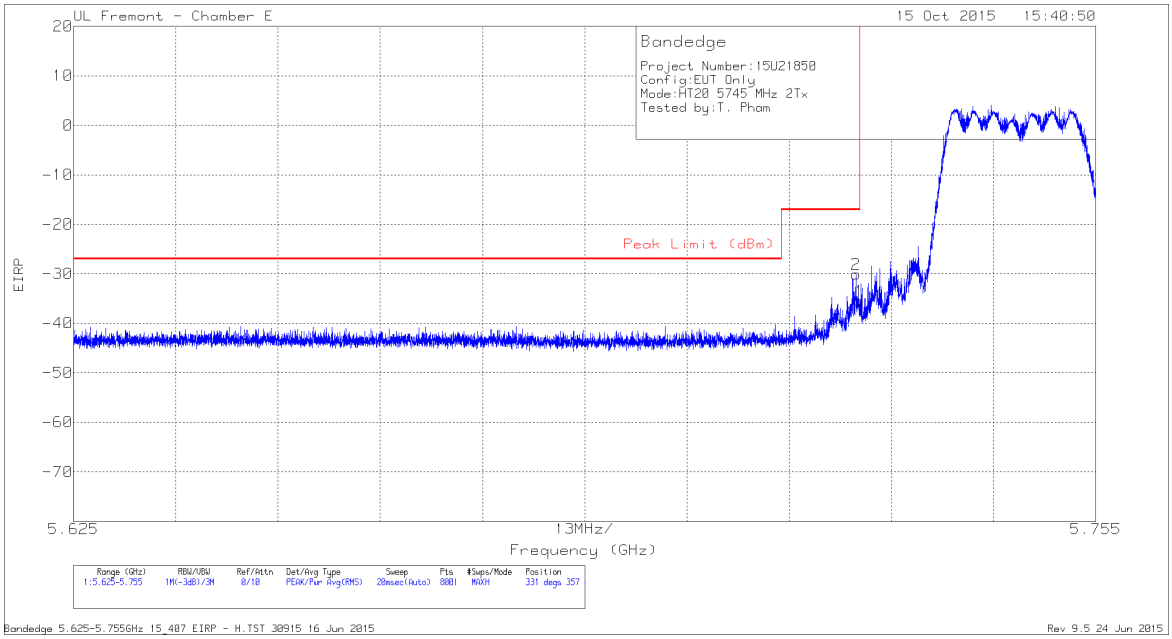
10.3. 802.11n HT20 2Tx CDD MODE IN THE 5.8 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

LOW CHANNEL HORIZONTAL PLOT



DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.724	-56.73	Pk	34.7	-19.8	11.8	-30.03	-17	-13.03	331	357	H
1	5.725	-62.21	Pk	34.7	-19.8	11.8	-35.51	-17	-18.51	331	357	H

Pk - Peak detector

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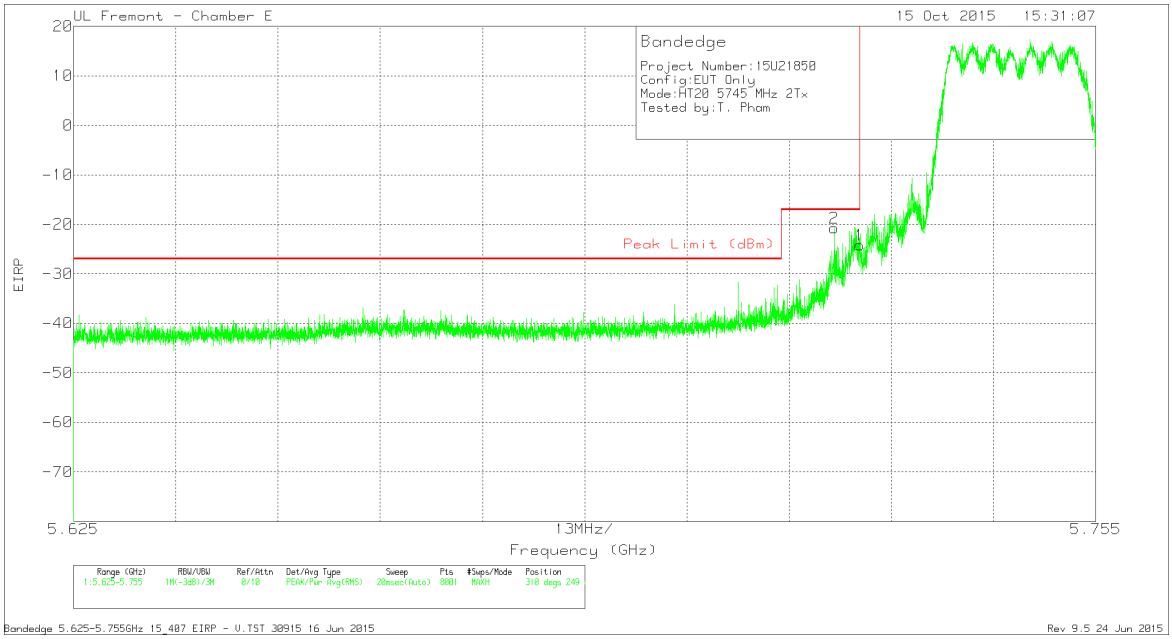
LOW CHANNEL VERTICAL PLOT



DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.722	-47.48	Pk	34.7	-19.8	11.8	-20.78	-17	-3.78	310	249	V
1	5.725	-50.9	Pk	34.7	-19.8	11.8	-24.2	-17	-7.2	310	249	V

Pk - Peak detector

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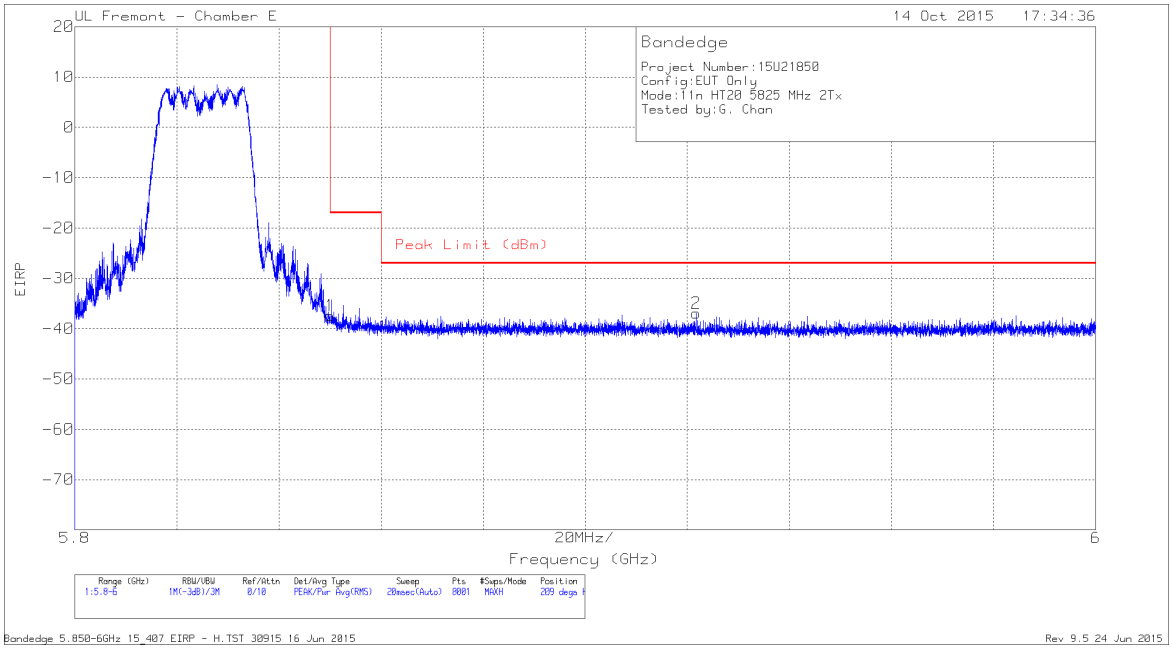
RESTRICTED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL HORIZONTAL PLOT



DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-63.79	Pk	34.9	-20.3	11.8	-37.39	-17	-20.39	209	398	H
2	5.922	-63.41	Pk	35	-20.3	11.8	-36.91	-27	-9.91	209	398	H

Pk - Peak detector

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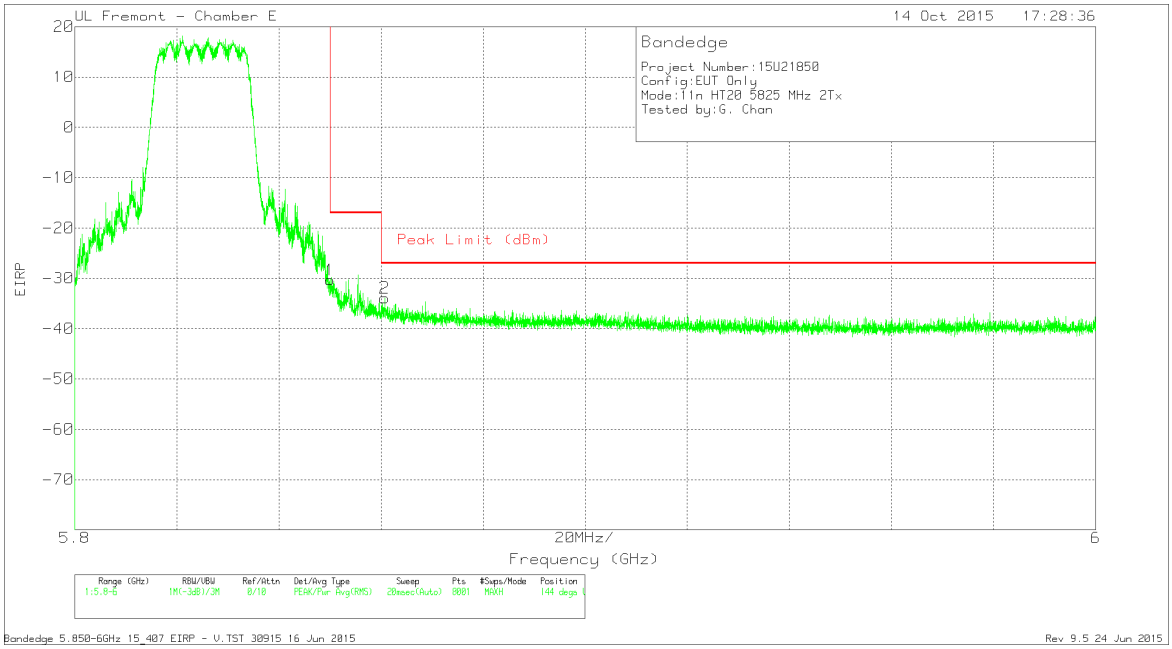
HIGH CHANNEL VERTICAL PLOT



DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-56.7	Pk	34.9	-20.3	11.8	-30.3	-17	-13.3	144	259	V
2	5.861	-60.2	Pk	34.9	-20.4	11.8	-33.9	-27	-6.9	144	259	V

Pk - Peak detector

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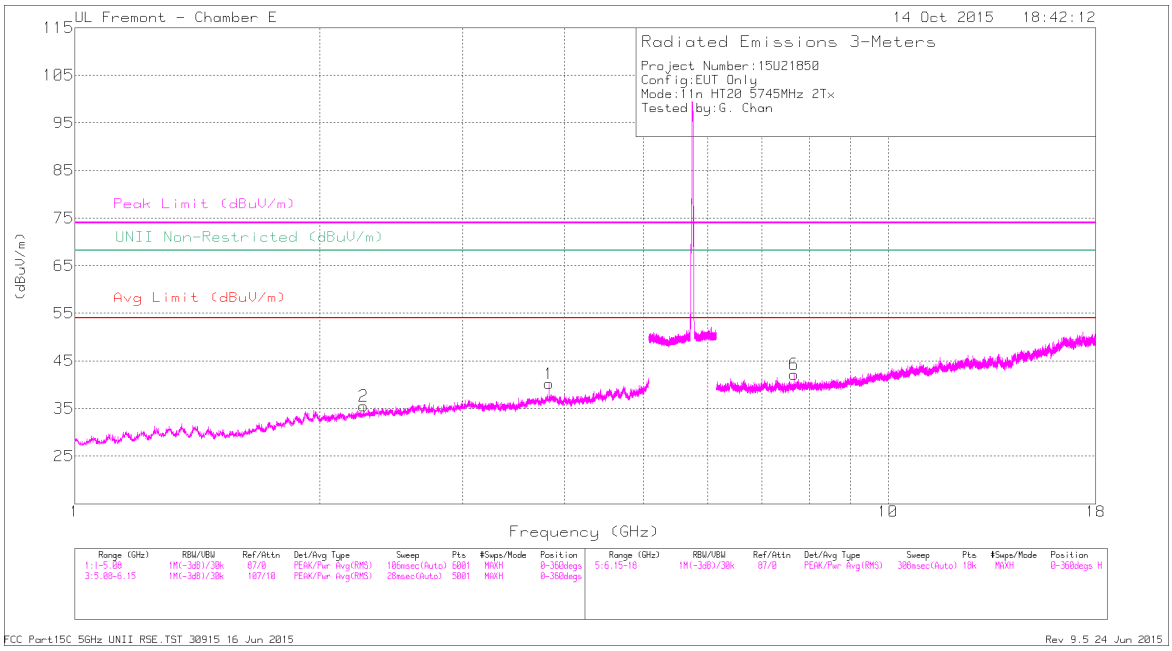
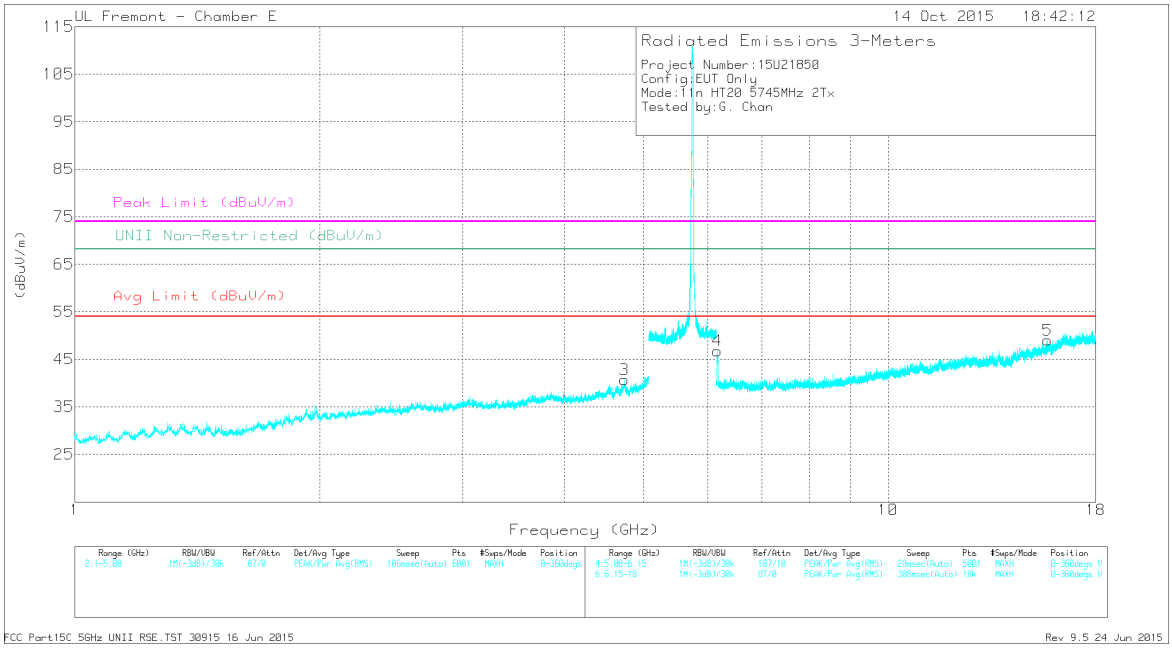
LOW CHANNEL HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL PLOT



LOW CHANNEL VERTICAL PLOT



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DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.83	42.8	PK-U	33.5	-29.9	46.4	-	-	74	-27.6	-	-	113	109	H
	* 3.83	34.4	ADR	33.5	-29.9	38	54	-16	-	-	-	-	113	109	H
2	* 2.267	43.09	PK-U	31.7	-33.2	41.59	-	-	74	-32.41	-	-	328	296	H
	* 2.269	31.32	ADR	31.7	-33.2	29.82	54	-24.18	-	-	-	-	328	296	H
3	* 4.738	42.17	PK-U	34.1	-29	47.27	-	-	74	-26.73	-	-	127	104	V
	* 4.739	30.16	ADR	34.1	-29	35.26	54	-18.74	-	-	-	-	127	104	V
6	* 7.659	39.25	PK-U	35.8	-27.4	47.65	-	-	74	-26.35	-	-	216	177	H
	* 7.66	28.91	ADR	35.8	-27.4	37.31	54	-16.69	-	-	-	-	216	177	H
5	* 15.715	36.95	PK-U	40.4	-21.9	55.45	-	-	74	-18.55	-	-	111	188	V
	* 15.718	25.91	ADR	40.4	-22	44.31	54	-9.69	-	-	-	-	111	188	V
4	6.17	40.73	PK-U	35.3	-28.2	47.83	-	-	-	-	68.2	-20.37	343	139	V
	6.172	29.74	ADR	35.3	-28.2	36.84	-	-	-	-	-	-	343	139	V

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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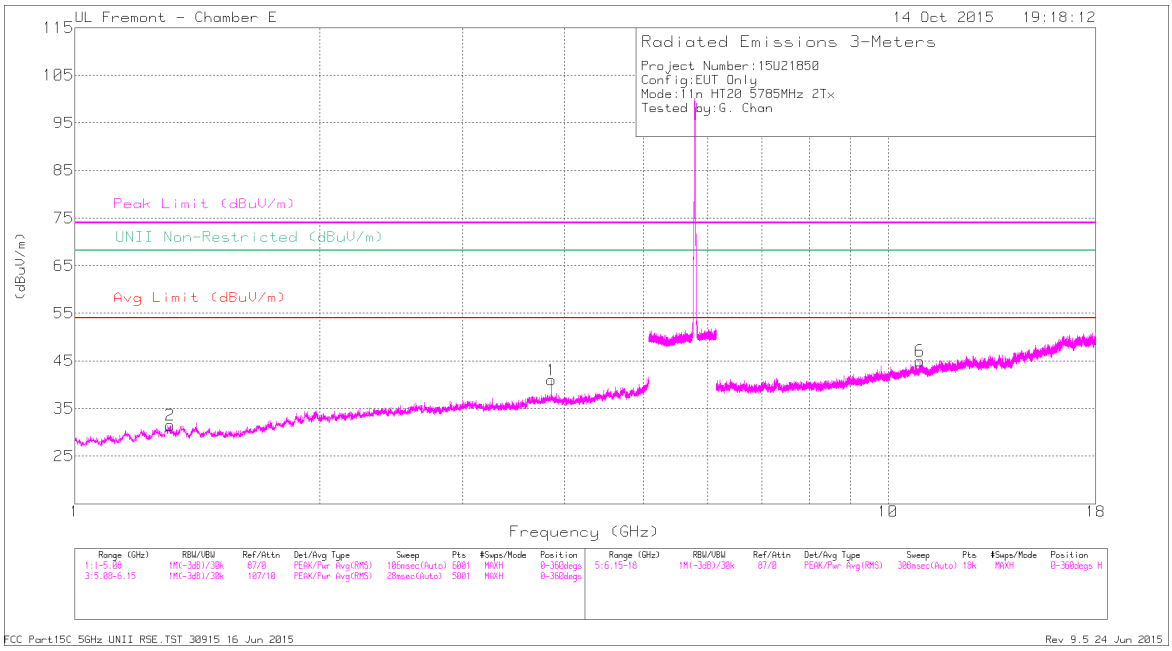
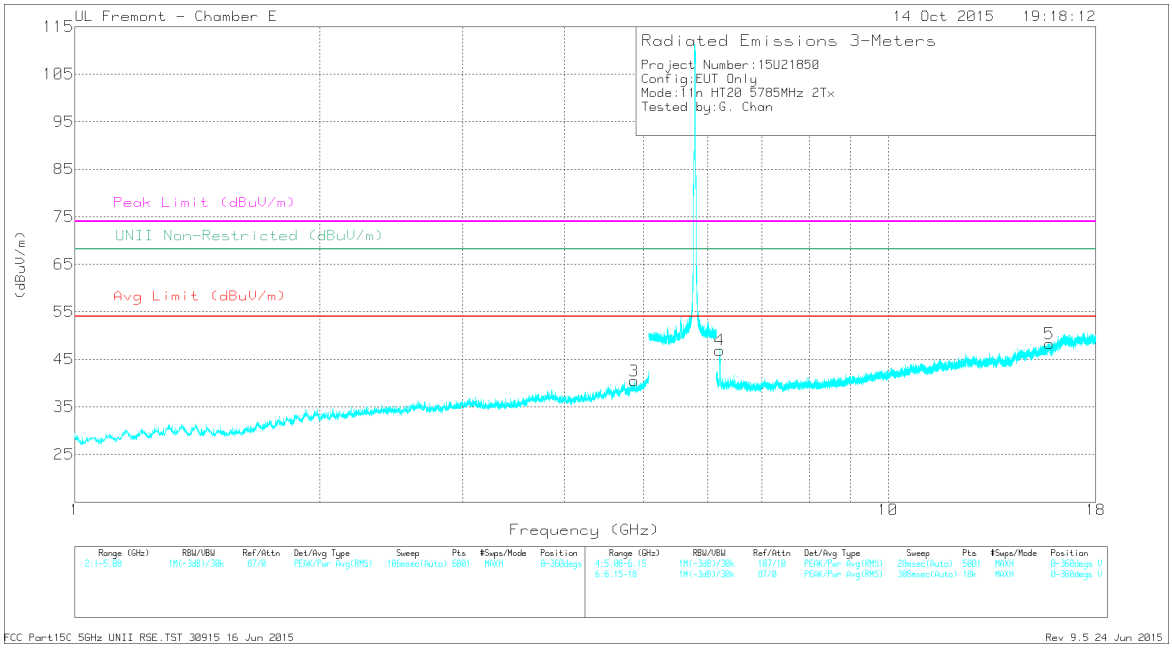
MID CHANNEL HARMONICS AND SPURIOUS EMISSIONS

MID CHANNEL HORIZONTAL PLOT



MID CHANNEL VERTICAL PLOT



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DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.856	44.44	PK-U	33.5	-29.8	48.14	-	-	74	-25.86	-	-	156	101	H
	* 3.857	36.75	ADR	33.5	-29.9	40.35	54	-13.65	-	-	-	-	156	101	H
2	* 1.311	44.74	PK-U	29	-35.4	38.34	-	-	74	-35.66	-	-	69	127	H
	* 1.31	33.31	ADR	29	-35.4	26.91	54	-27.09	-	-	-	-	69	127	H
3	* 4.874	40.66	PK-U	34.1	-29.6	45.16	-	-	74	-28.84	-	-	16	149	V
	* 4.874	29.59	ADR	34.1	-29.6	34.09	54	-19.91	-	-	-	-	16	149	V
6	* 10.952	36.5	PK-U	37.9	-23.5	50.9	-	-	74	-23.1	-	-	264	115	H
	* 10.948	25.56	ADR	37.9	-23.5	39.96	54	-14.04	-	-	-	-	264	115	H
5	* 15.783	37.39	PK-U	40.4	-22.9	54.89	-	-	74	-19.11	-	-	251	148	V
	* 15.784	26.46	ADR	40.4	-23	43.86	54	-10.14	-	-	-	-	251	148	V
4	6.208	46.62	PK-U	35.4	-28.1	53.92	-	-	-	-	68.2	-14.28	137	112	V
	6.208	35.98	ADR	35.4	-28.1	43.28	-	-	-	-	-	-	137	112	V

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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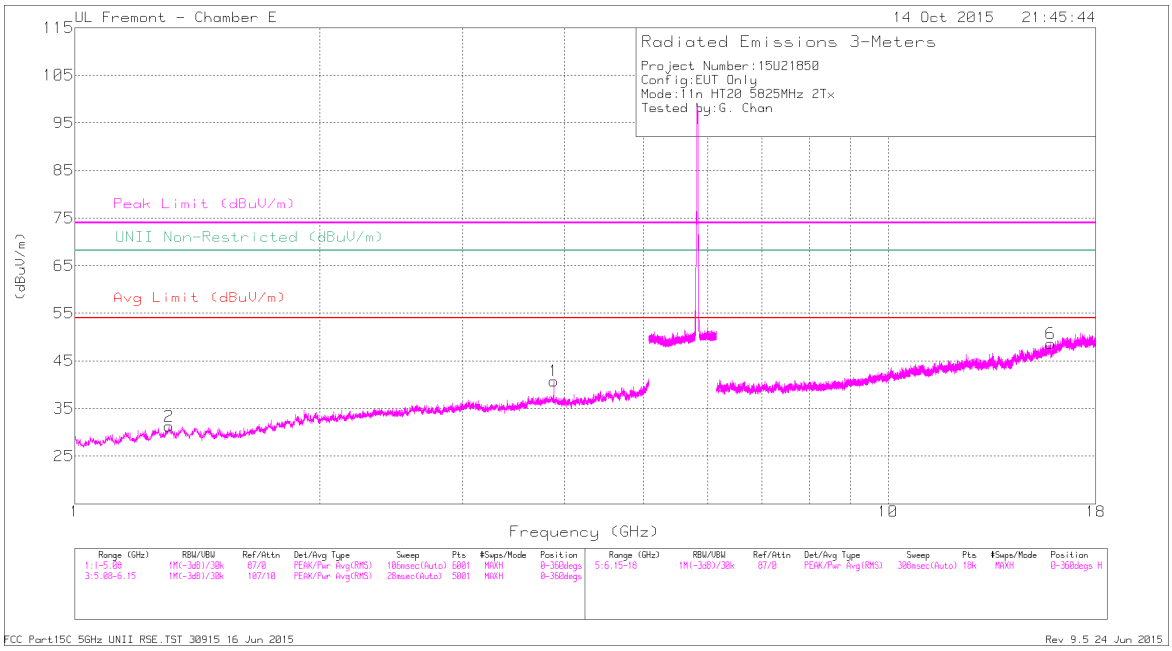
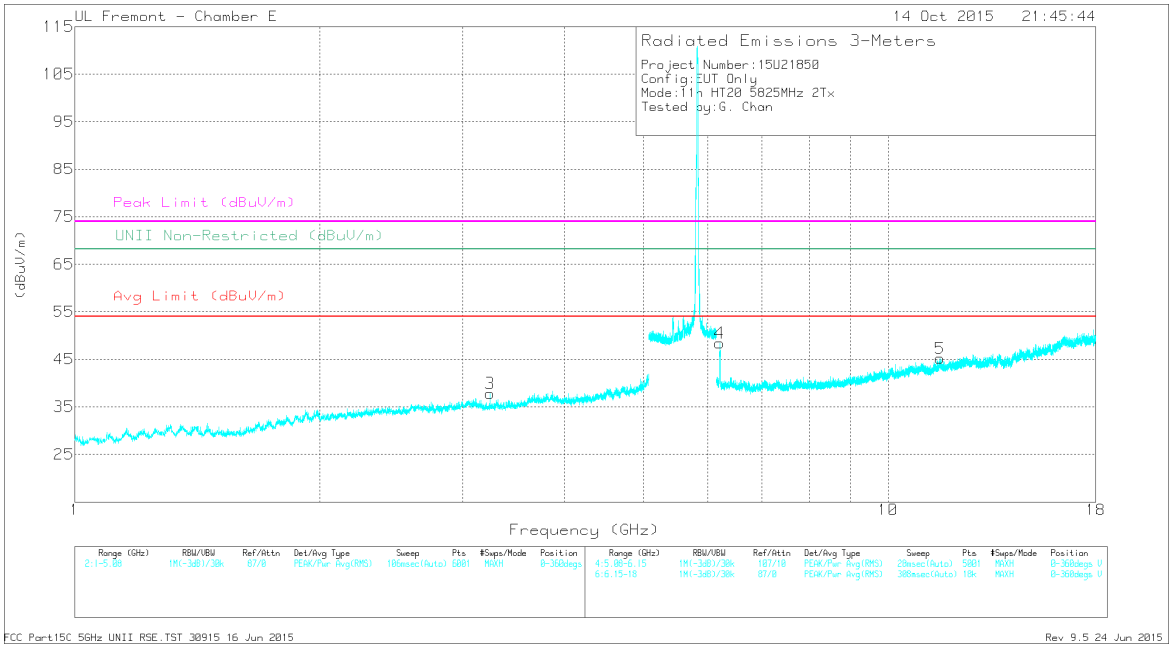
HIGH CHANNEL HARMONICS AND SPURIOUS EMISSIONS

HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



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DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.883	44.27	PK-U	33.5	-30.2	47.57	-	-	74	-26.43	-	-	332	114	H
	* 3.883	36.58	ADR	33.5	-30.2	39.88	54	-14.12	-	-	-	-	332	114	H
2	* 1.306	45.29	PK-U	29	-35.4	38.89	-	-	74	-35.11	-	-	324	376	H
	* 1.306	33.02	ADR	29	-35.4	26.62	54	-27.38	-	-	-	-	324	376	H
6	* 15.839	37.58	PK-U	40.5	-23	55.08	-	-	74	-18.92	-	-	201	287	H
	* 15.838	25.45	ADR	40.5	-23	42.95	54	-11.05	-	-	-	-	201	287	H
5	* 11.58	36.55	PK-U	38.1	-22.3	52.35	-	-	74	-21.65	-	-	325	297	V
	* 11.582	24.26	ADR	38.1	-22.3	40.06	54	-13.94	-	-	-	-	325	297	V
3	3.241	41.8	PK-U	32.7	-31.5	43	-	-	-	-	68.2	-25.2	307	245	V
	3.241	29.93	ADR	32.7	-31.5	31.13	-	-	-	-	-	-	307	245	V
4	6.205	47.21	PK-U	35.4	-28.1	54.51	-	-	-	-	68.2	-13.69	312	230	V
	6.208	37.06	ADR	35.4	-28.1	44.36	-	-	-	-	-	-	312	230	V

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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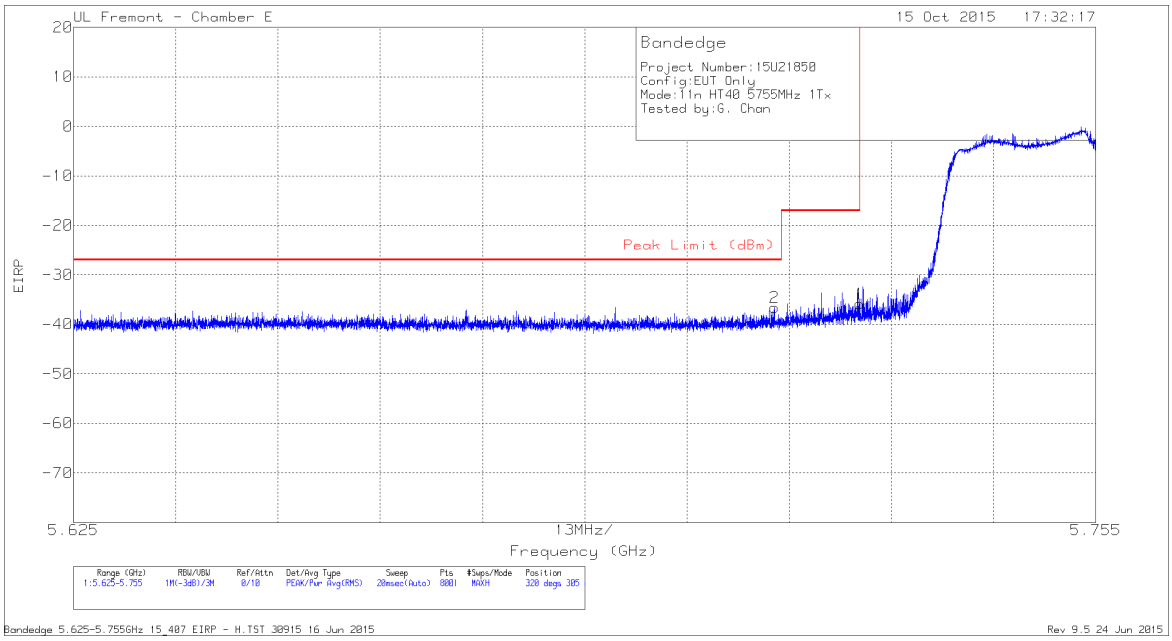
10.4. 802.11n HT40 1Tx MODE IN THE 5.8 GHz BAND

10.4.1. CHAIN 0, RESTRICTED BANDEDGE AND HARMONIC SPURIOUS

LOW CHANNEL

LOW CHANNEL HORIZONTAL PLOT



DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.714	-62.96	Pk	34.7	-20.1	11.8	-36.56	-27	-9.56	320	305	H
1	5.725	-62.22	Pk	34.7	-20.1	11.8	-35.82	-17	-18.82	320	305	H

Pk - Peak detector

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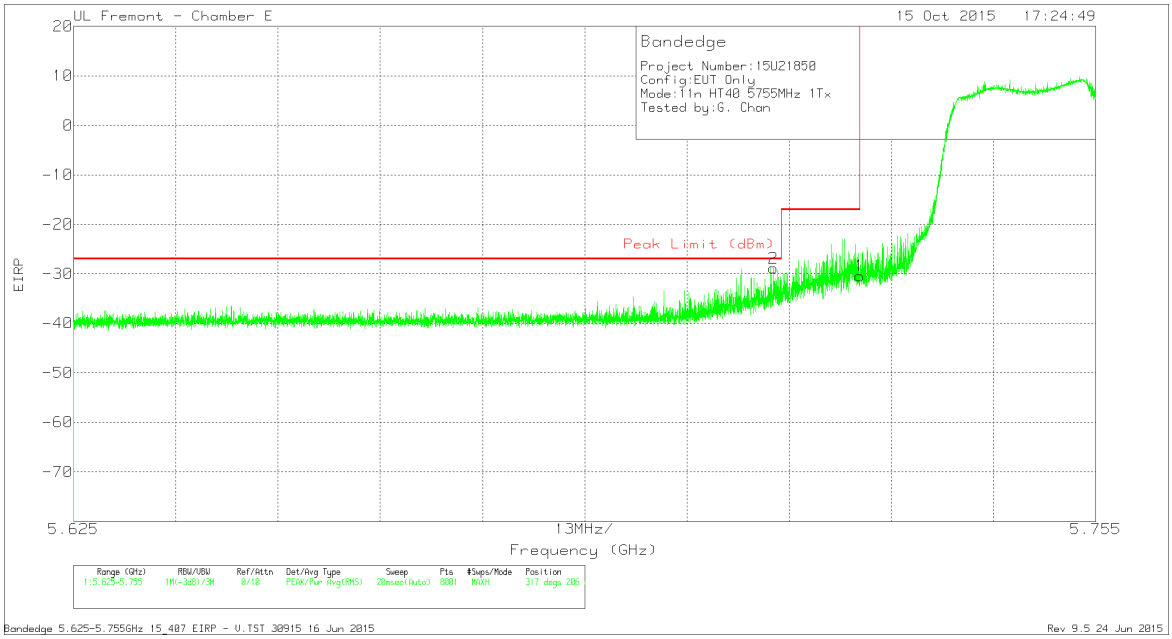
LOW CHANNEL VERTICAL PLOT



DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.714	-55.22	Pk	34.7	-20.1	11.8	-28.82	-27	-1.82	317	206	V
1	5.725	-56.78	Pk	34.7	-20.1	11.8	-30.38	-17	-13.38	317	206	V

Pk - Peak detector

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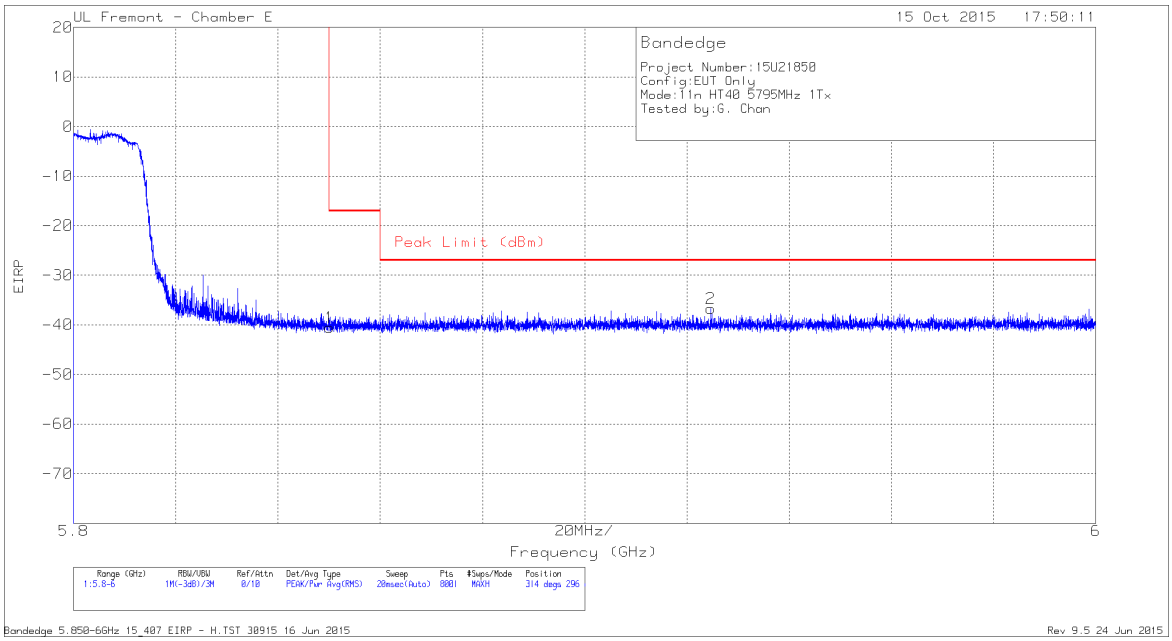
RESTRICTED BANDEDGE, CHAIN 0 (HIGH CHANNEL)

HIGH CHANNEL HORIZONTAL PLOT



DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-66.86	Pk	34.9	-20.3	11.8	-40.46	-17	-23.46	314	296	H
2	5.925	-63.15	Pk	35	-20.3	11.8	-36.65	-27	-9.65	314	296	H

Pk - Peak detector

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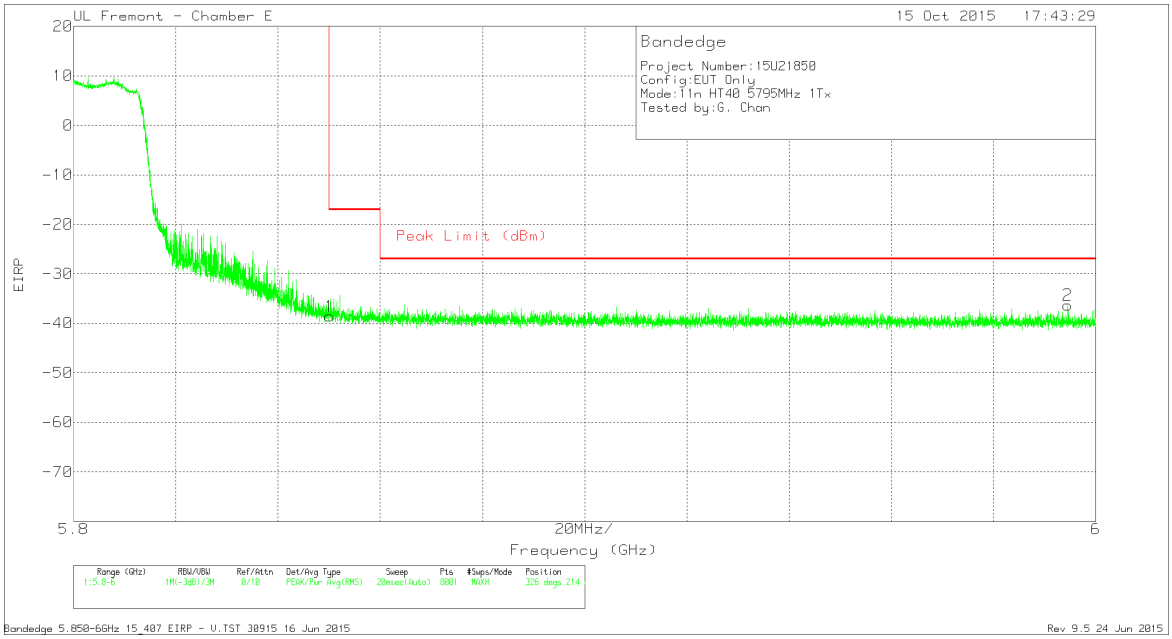
HIGH CHANNEL VERTICAL PLOT



DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-64.94	Pk	34.9	-20.3	11.8	-38.54	-17	-21.54	326	214	V
2	5.995	-63.28	Pk	35.1	-19.9	11.8	-36.28	-27	-9.28	326	214	V

Pk - Peak detector

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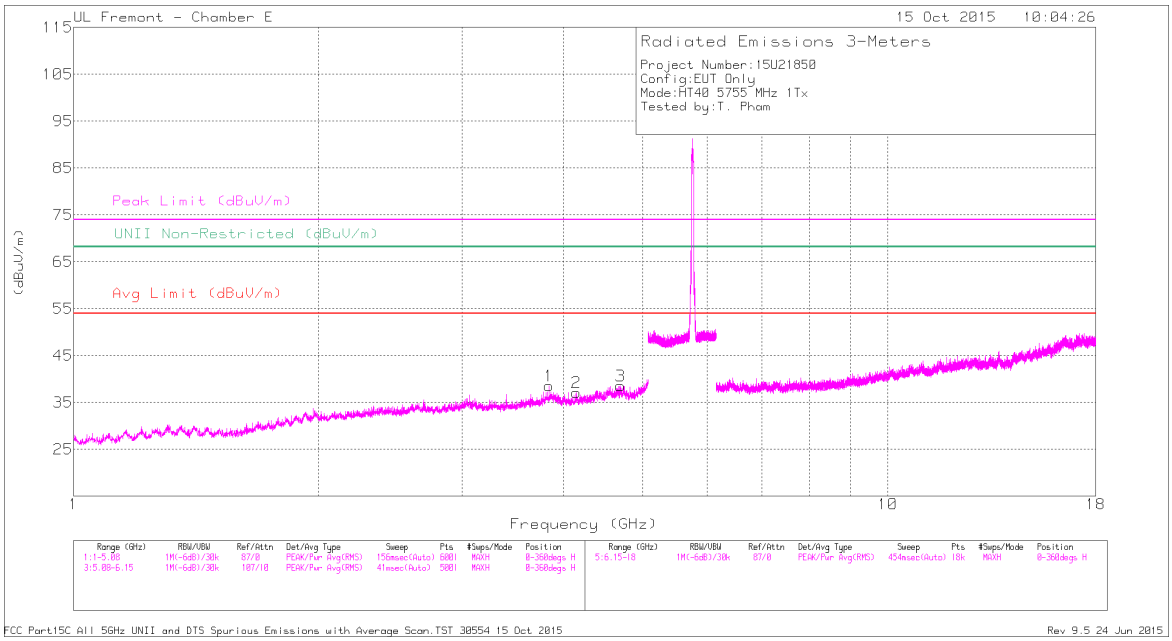
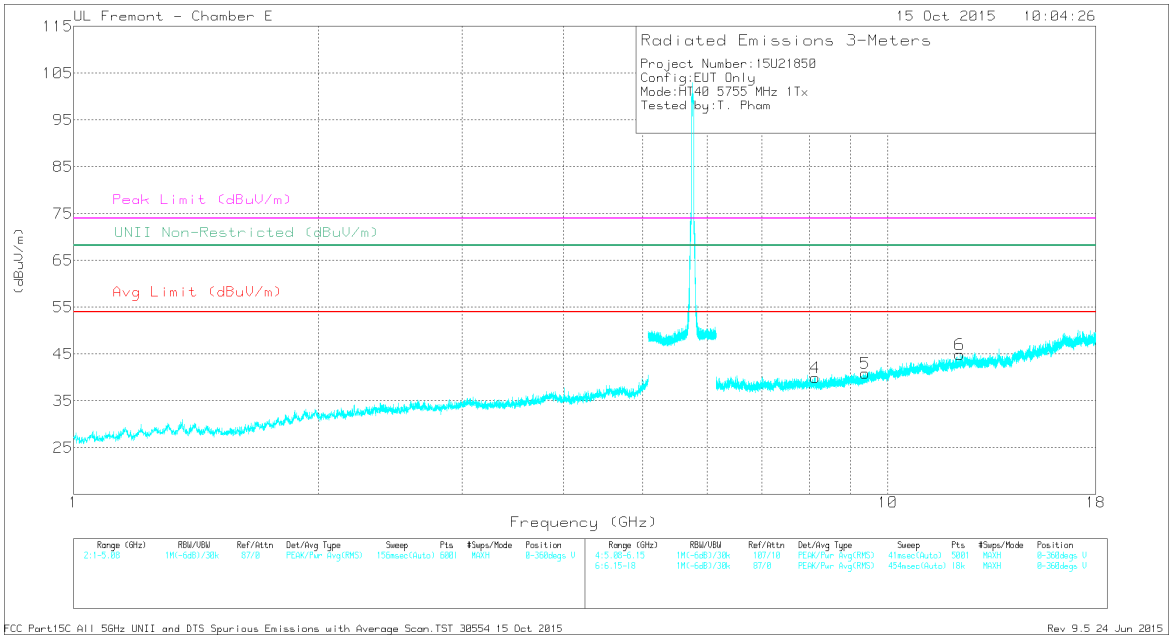
LOW CHANNEL HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL PLOT



LOW CHANNEL VERTICAL PLOT



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DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.837	43.49	PK-U	33.5	-29.9	47.09	-	-	74	-26.91	-	-	345	105	H
	* 3.837	34.54	ADR	33.5	-29.9	38.14	54	-15.86	-	-	-	-	345	105	H
2	* 4.147	42.11	PK-U	33.4	-30.4	45.11	-	-	74	-28.89	-	-	0	131	H
	* 4.148	30.21	ADR	33.4	-30.4	33.21	54	-20.79	-	-	-	-	0	131	H
3	* 4.695	41.82	PK-U	34.2	-29.4	46.62	-	-	74	-27.38	-	-	34	143	H
	* 4.695	30.08	ADR	34.2	-29.5	34.78	54	-19.22	-	-	-	-	34	143	H
4	* 8.15	39.21	PK-U	35.7	-26.5	48.41	-	-	74	-25.59	-	-	86	158	V
	* 8.15	27.01	ADR	35.7	-26.5	36.21	54	-17.79	-	-	-	-	86	158	V
5	* 9.382	38.54	PK-U	36.6	-26.3	48.84	-	-	74	-25.16	-	-	119	194	V
	* 9.382	26.79	ADR	36.6	-26.2	37.19	54	-16.81	-	-	-	-	119	194	V
6	* 12.253	37.94	PK-U	38.8	-24.7	52.04	-	-	74	-21.96	-	-	109	173	V
	* 12.253	26.57	ADR	38.8	-24.7	40.67	54	-13.33	-	-	-	-	109	173	V

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701J
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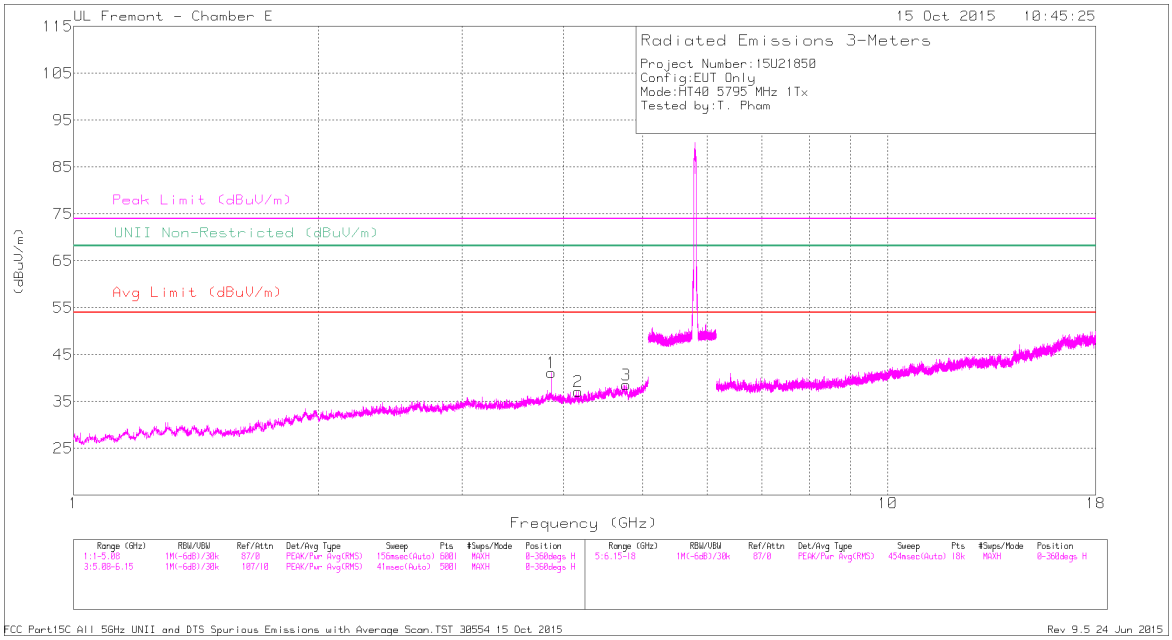
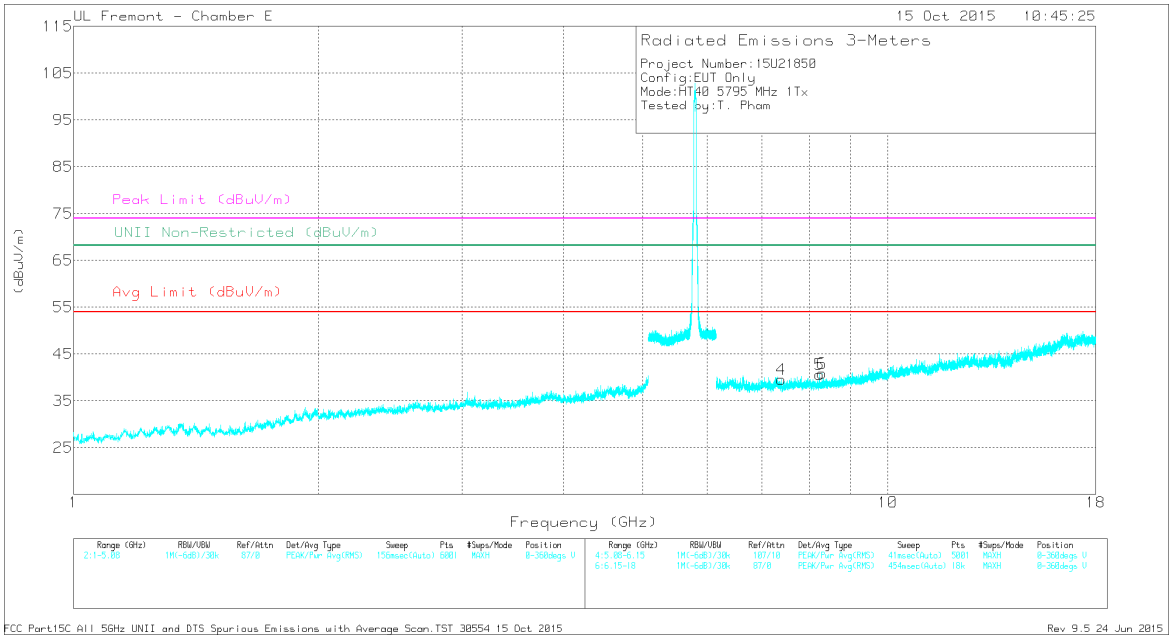
HIGH CHANNEL HARMONICS AND SPURIOUS EMISSIONS

HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



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DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.863	44.67	PK-U	33.5	-29.9	48.27	-	-	74	-25.73	-	-	332	116	H
	* 3.863	36.17	ADR	33.5	-29.9	39.77	54	-14.23	-	-	-	-	332	116	H
2	* 4.162	42.24	PK-U	33.4	-30.4	45.24	-	-	74	-28.76	-	-	293	148	H
	* 4.163	29.76	ADR	33.4	-30.4	32.76	54	-21.24	-	-	-	-	293	148	H
3	* 4.774	41.76	PK-U	34.1	-29.6	46.26	-	-	74	-27.74	-	-	274	195	H
	* 4.774	30.09	ADR	34.1	-29.6	34.59	54	-19.41	-	-	-	-	274	195	H
4	* 7.394	39.88	PK-U	35.5	-27.9	47.48	-	-	74	-26.52	-	-	237	115	V
	* 7.393	28.39	ADR	35.5	-27.9	35.99	54	-18.01	-	-	-	-	237	115	V
5	* 8.24	38.64	PK-U	35.7	-26.9	47.44	-	-	74	-26.56	-	-	139	368	V
	* 8.239	27.38	ADR	35.7	-26.9	36.18	54	-17.82	-	-	-	-	139	368	V
6	* 8.299	38.64	PK-U	35.7	-26.8	47.54	-	-	74	-26.46	-	-	168	337	V
	* 8.3	27.41	ADR	35.7	-26.8	36.31	54	-17.69	-	-	-	-	168	337	V

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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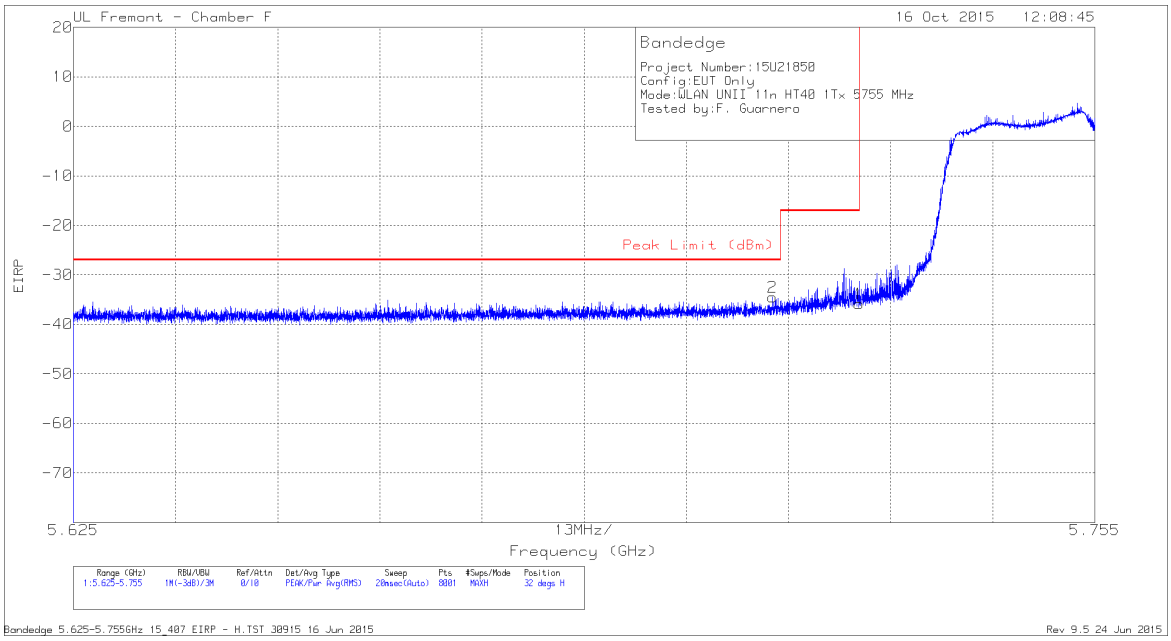
10.4.2. CHAIN 1 RESTRICTED BANDEDGE AND HARMONIC SPURIOUS,

LOW CHANNEL

LOW CHANNEL HORIZONTAL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T120 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-64.15	Pk	34.9	-18.4	11.8	-35.85	-17	-18.85	32	394	H
2	5.714	-62.76	Pk	34.8	-18.3	11.8	-34.46	-27	-7.46	32	394	H

Pk - Peak detector
Bandedge 5.625-5.755GHz 15_407 EIRP - H.TST 30915 16 Jun 2015
Rev 9.5 24 Jun 2015

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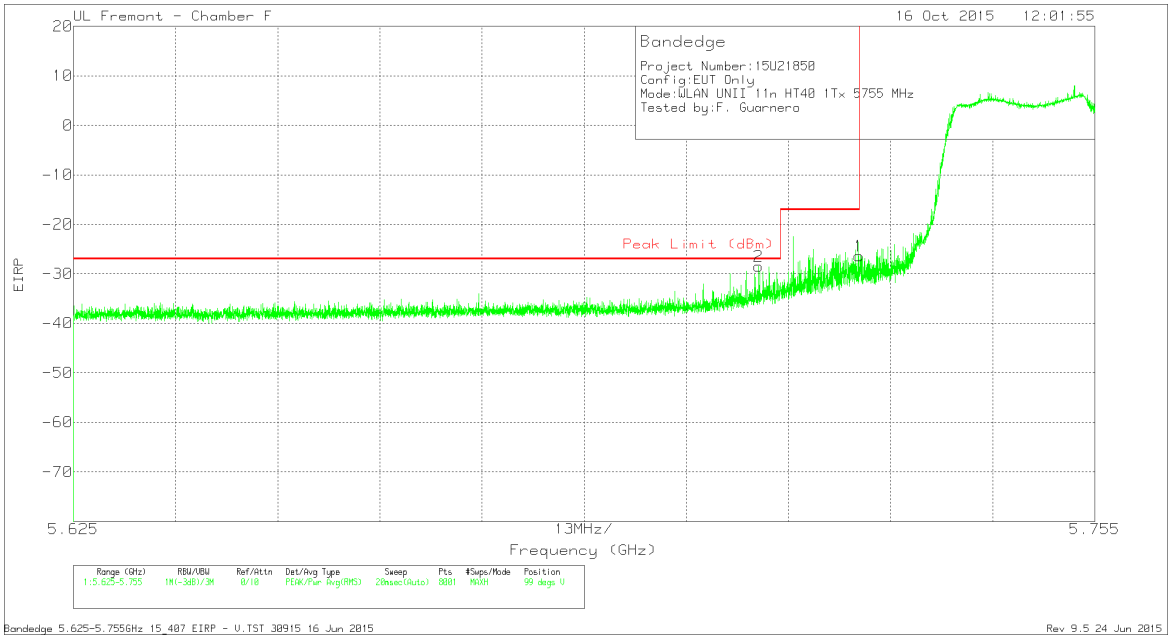
LOW CHANNEL VERTICAL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T120 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-54.68	Pk	34.9	-18.4	11.8	-26.38	-17	-9.38	99	395	V
2	5.712	-56.68	Pk	34.8	-18.4	11.8	-28.48	-27	-1.48	99	395	V

Pk - Peak detector
Bandedge 5.625-5.755GHz 15_407 EIRP - V.TST 30915 16 Jun 2015
Rev 9.5 24 Jun 2015

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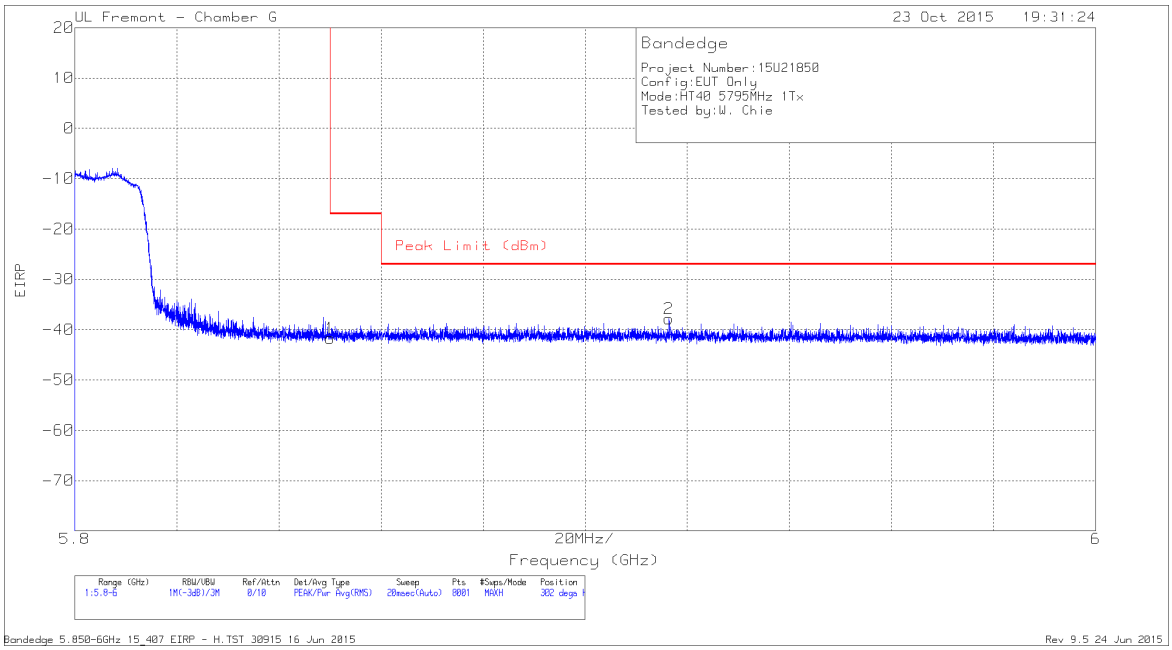
RESTRICTED BANDEDGE, CHAIN 1 (HIGH CHANNEL)

HIGH CHANNEL HORIZONTAL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-65.6	Pk	35.1	-23	11.8	-41.7	-17	-24.7	302	205	H
2	5.916	-61.53	Pk	35.1	-23.2	11.8	-37.83	-27	-10.83	302	205	H

Pk - Peak detector

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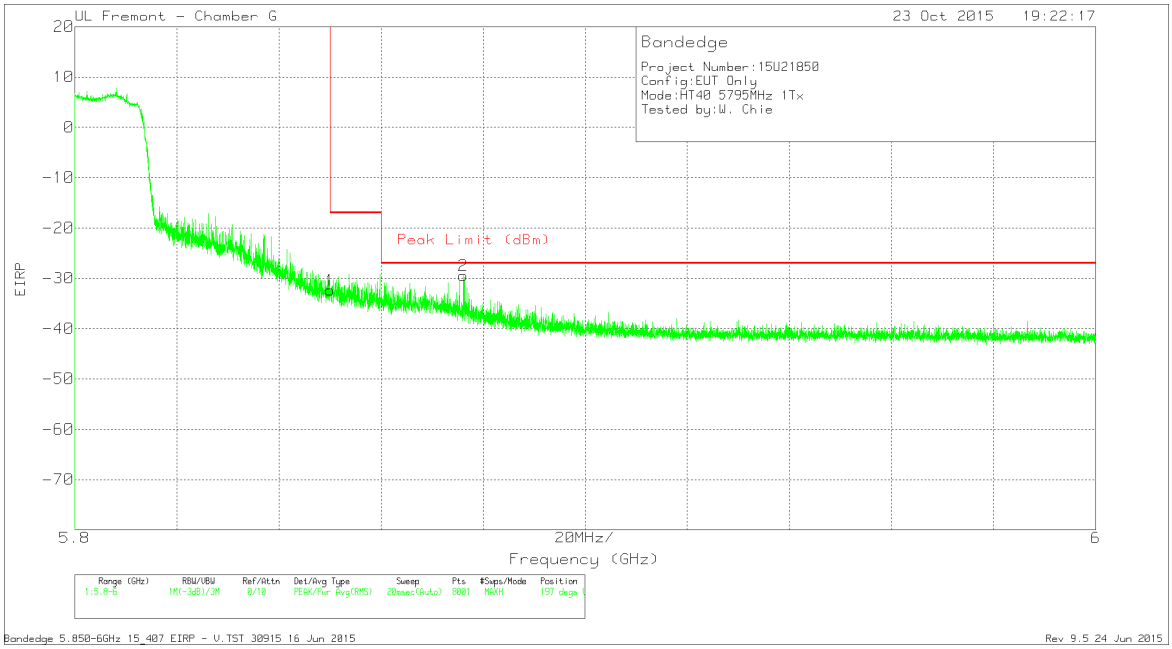
HIGH CHANNEL VERTICAL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-56.25	Pk	35.1	-23	11.8	-32.35	-17	-15.35	197	332	V
2	5.876	-53.28	Pk	35.1	-23.1	11.8	-29.48	-27	-2.48	197	332	V

Pk - Peak detector

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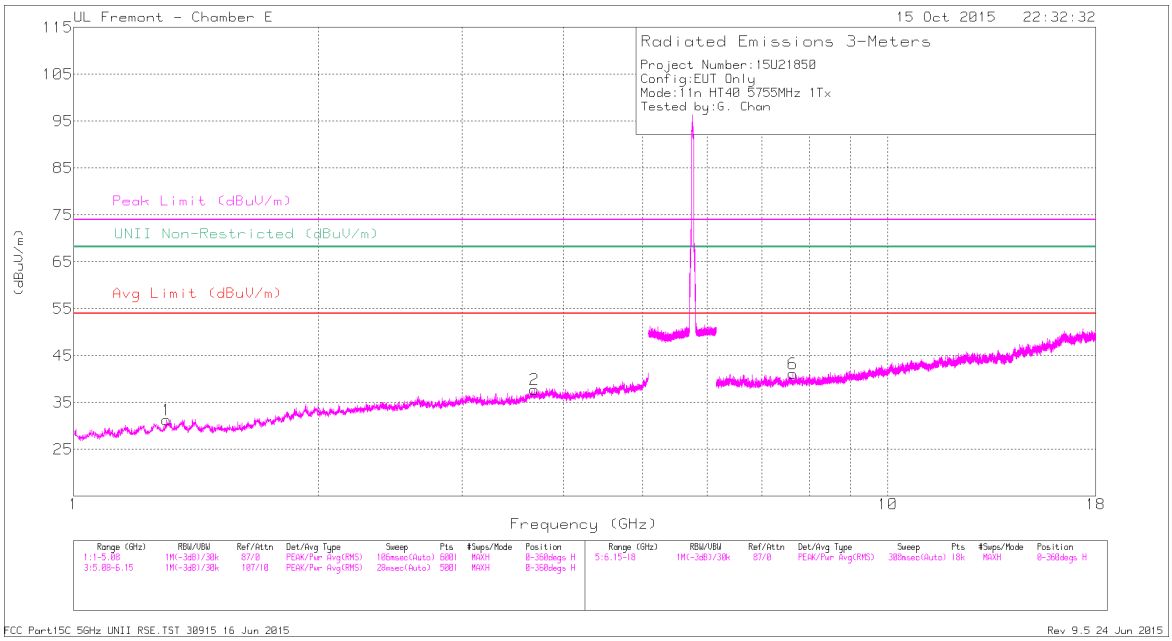
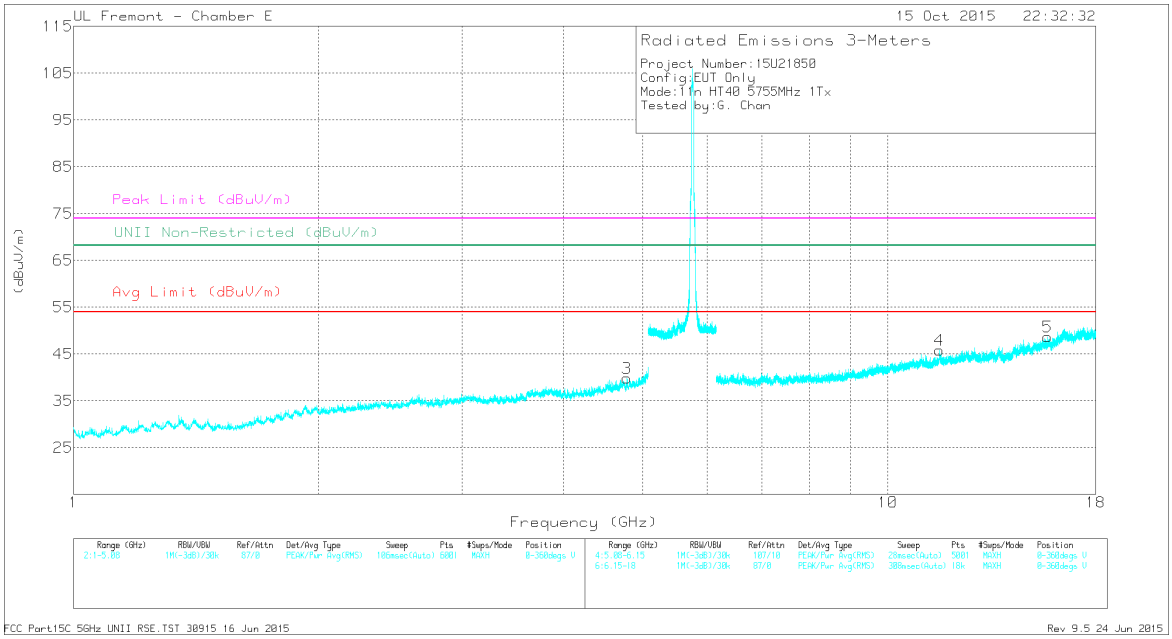
LOW CHANNEL HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL PLOT



LOW CHANNEL VERTICAL PLOT



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DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.3	44.62	PK-U	29	-35.5	38.12	-	-	74	-35.88	-	-	16	285	H
	* 1.302	32.8	ADR	29	-35.4	26.4	54	-27.6	-	-	-	-	16	285	H
2	* 3.685	41.26	PK-U	33.2	-30.7	43.76	-	-	74	-30.24	-	-	337	332	H
	* 3.685	29.63	ADR	33.2	-30.7	32.13	54	-21.87	-	-	-	-	337	332	H
3	* 4.782	42.38	PK-U	34.1	-29.7	46.78	-	-	74	-27.22	-	-	141	311	V
	* 4.783	30.88	ADR	34.1	-29.7	35.28	54	-18.72	-	-	-	-	141	311	V
6	* 7.644	38.97	PK-U	35.7	-27.5	47.17	-	-	74	-26.83	-	-	70	294	H
	* 7.645	27.03	ADR	35.7	-27.5	35.23	54	-18.77	-	-	-	-	70	294	H
4	* 11.565	36.11	PK-U	38.1	-22.3	51.91	-	-	74	-22.09	-	-	10	245	V
	* 11.564	24.4	ADR	38.1	-22.3	40.2	54	-13.8	-	-	-	-	10	245	V
5	* 15.721	36.97	PK-U	40.4	-22	55.37	-	-	74	-18.63	-	-	185	116	V
	* 15.722	25.75	ADR	40.4	-22	44.15	54	-9.85	-	-	-	-	185	116	V

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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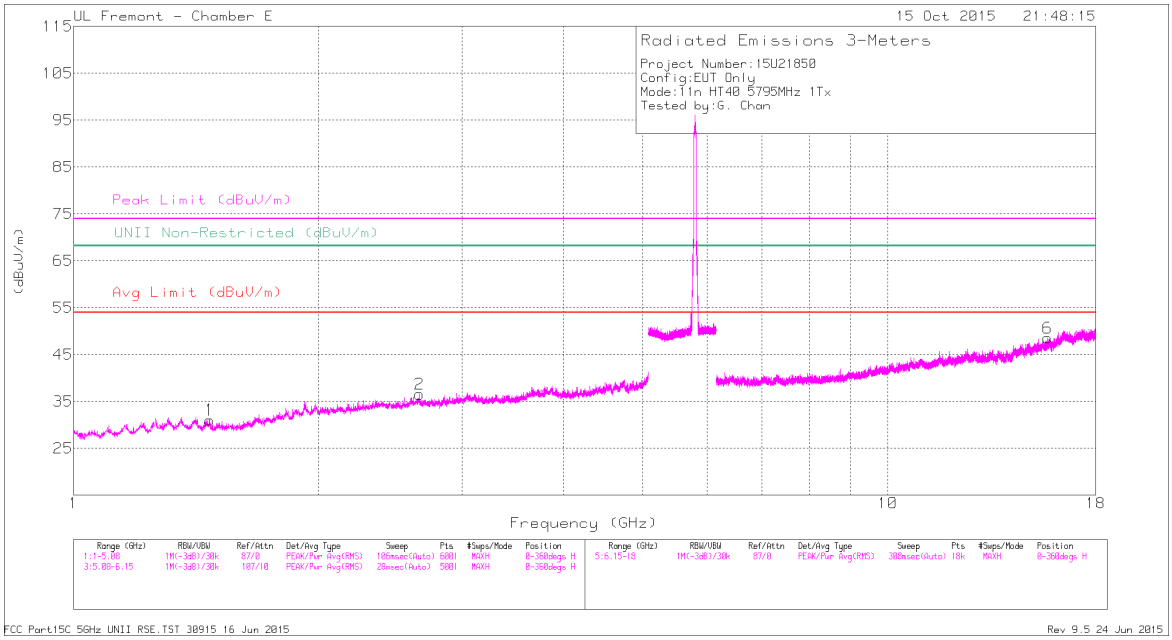
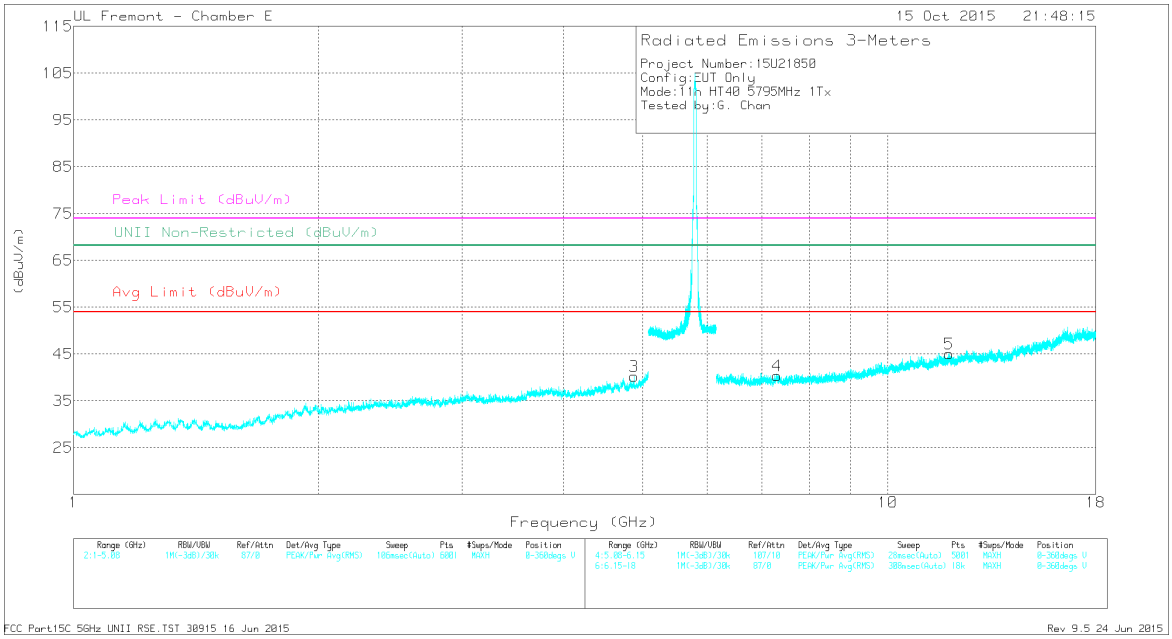
HIGH CHANNEL HARMONICS AND SPURIOUS EMISSIONS

HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



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DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.468	44.52	PK-U	28.3	-34.9	37.92	-	-	74	-36.08	-	-	203	341	H
	* 1.467	32.56	ADR	28.3	-34.9	25.96	54	-28.04	-	-	-	-	203	341	H
5	* 2.66	42.46	PK-U	32.4	-31.6	43.26	-	-	74	-30.74	-	-	160	312	H
	* 2.662	30.14	ADR	32.4	-31.6	30.94	54	-23.06	-	-	-	-	160	312	H
6	* 4.882	41.97	PK-U	34.1	-29.8	46.27	-	-	74	-27.73	-	-	344	159	V
	* 4.879	29.92	ADR	34.1	-29.8	34.22	54	-19.78	-	-	-	-	344	159	V
2	* 15.718	37.37	PK-U	40.4	-22	55.77	-	-	74	-18.23	-	-	48	330	H
	* 15.719	25.29	ADR	40.4	-22	43.69	54	-10.31	-	-	-	-	48	330	H
3	* 7.309	38.44	PK-U	35.5	-26.1	47.84	-	-	74	-26.16	-	-	199	349	V
	* 7.31	26.64	ADR	35.5	-26.1	36.04	54	-17.96	-	-	-	-	199	349	V
4	* 11.89	36.54	PK-U	38.4	-23.1	51.84	-	-	74	-22.16	-	-	63	232	V
	* 11.89	24.9	ADR	38.4	-23.1	40.2	54	-13.8	-	-	-	-	63	232	V

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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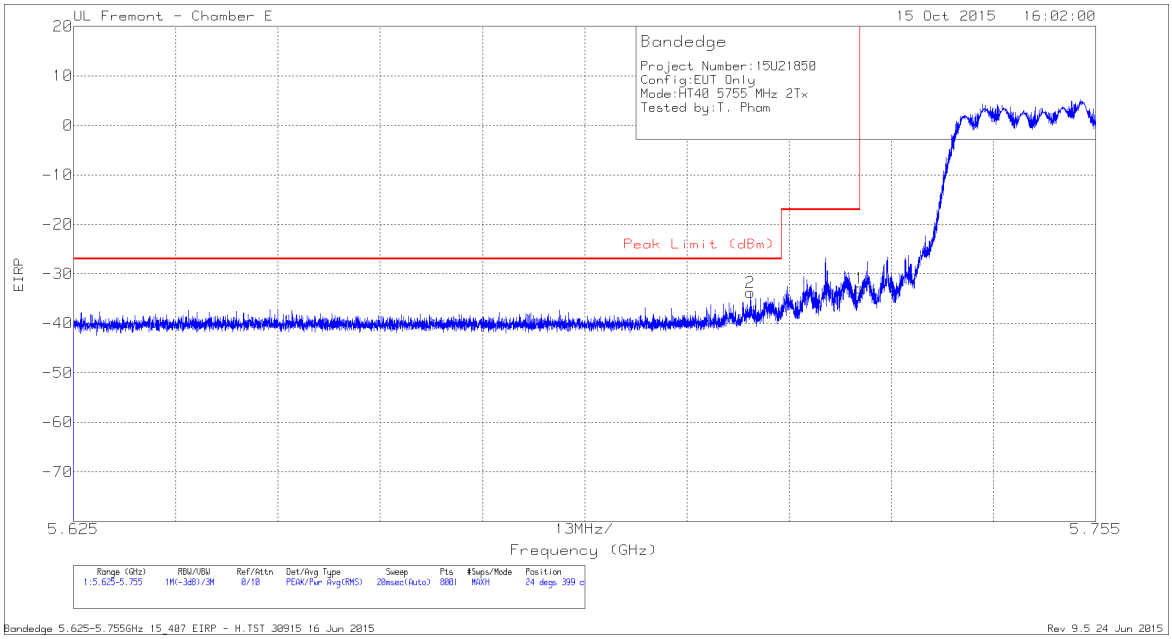
10.5. 802.11n HT40 2Tx CDD MODE IN THE 5.8 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

LOW CHANNEL HORIZONTAL PLOT



DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.711	-60.19	Pk	34.7	-20.1	11.8	-33.79	-27	-6.79	24	399	H
1	5.725	-59.34	Pk	34.7	-20.1	11.8	-32.94	-17	-15.94	24	399	H

Pk - Peak detector

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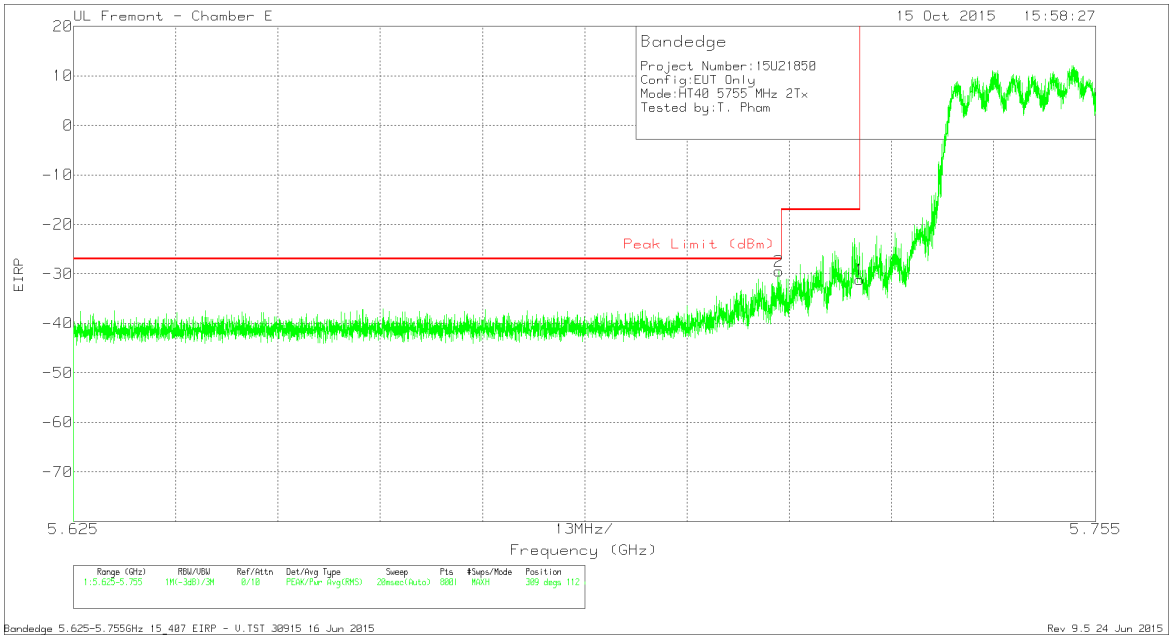
LOW CHANNEL VERTICAL PLOT



DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.715	-55.83	Pk	34.7	-20.1	11.8	-29.43	-27	-2.43	309	112	V
1	5.725	-57.58	Pk	34.7	-20.1	11.8	-31.18	-17	-14.18	309	112	V

Pk - Peak detector

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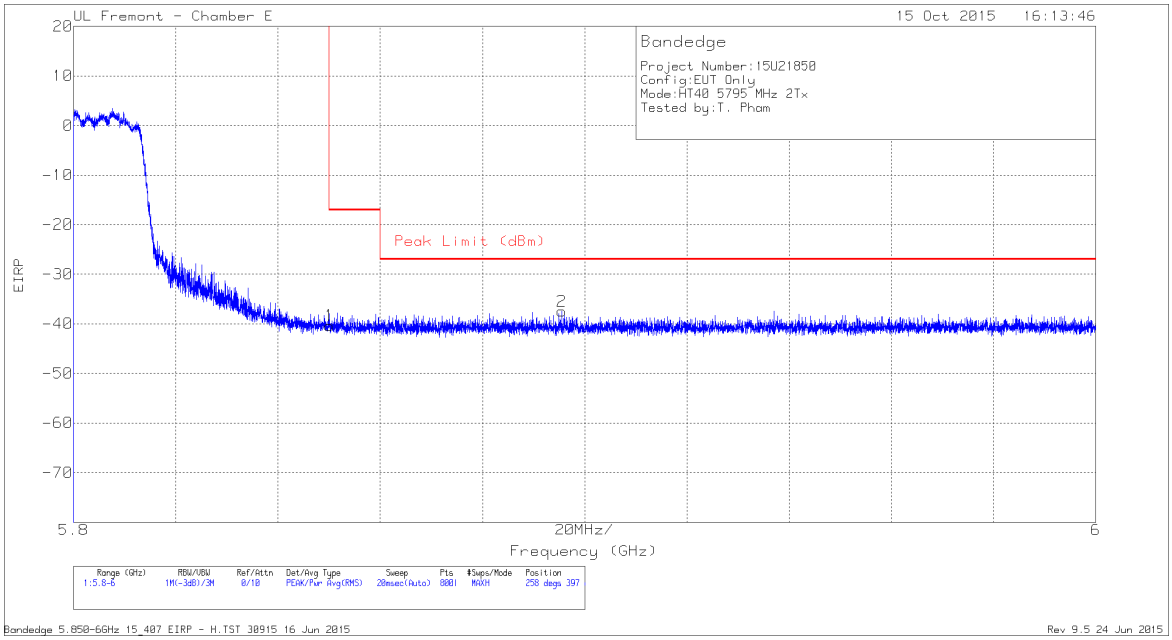
RESTRICTED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL HORIZONTAL PLOT



DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-66.73	Pk	34.9	-20.3	11.8	-40.33	-17	-23.33	258	397	H
2	5.896	-63.8	Pk	34.9	-20.3	11.8	-37.4	-27	-10.4	258	397	H

Pk - Peak detector

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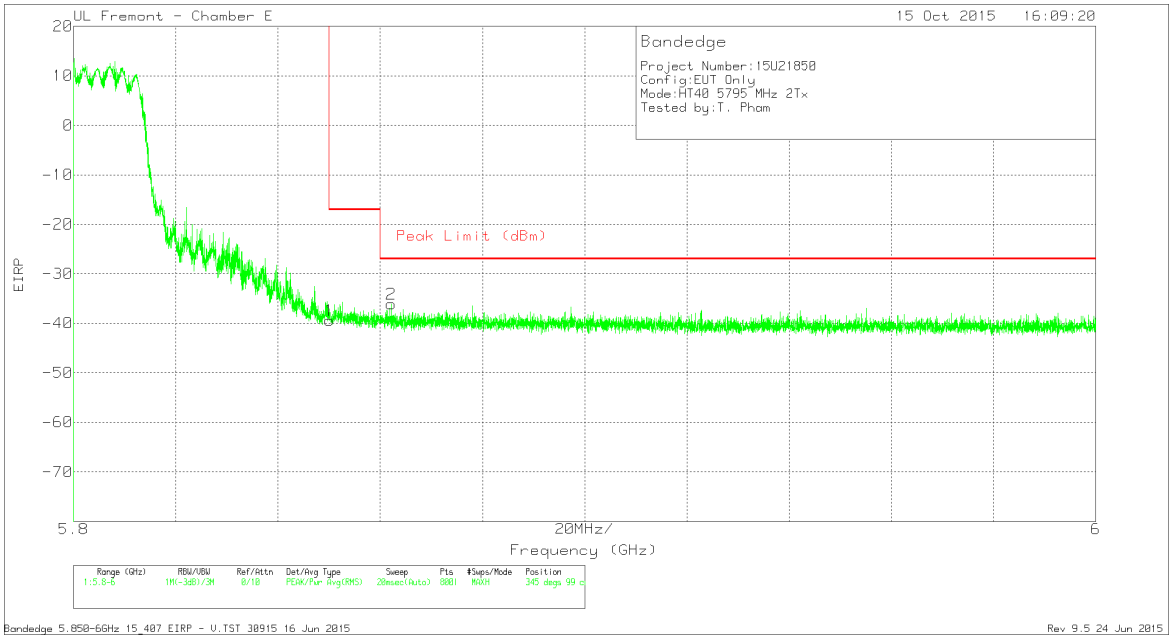
HIGH CHANNEL VERTICAL PLOT



DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-65.79	Pk	34.9	-20.3	11.8	-39.39	-17	-22.39	345	99	V
2	5.862	-62.38	Pk	34.9	-20.4	11.8	-36.08	-27	-9.08	345	99	V

Pk - Peak detector

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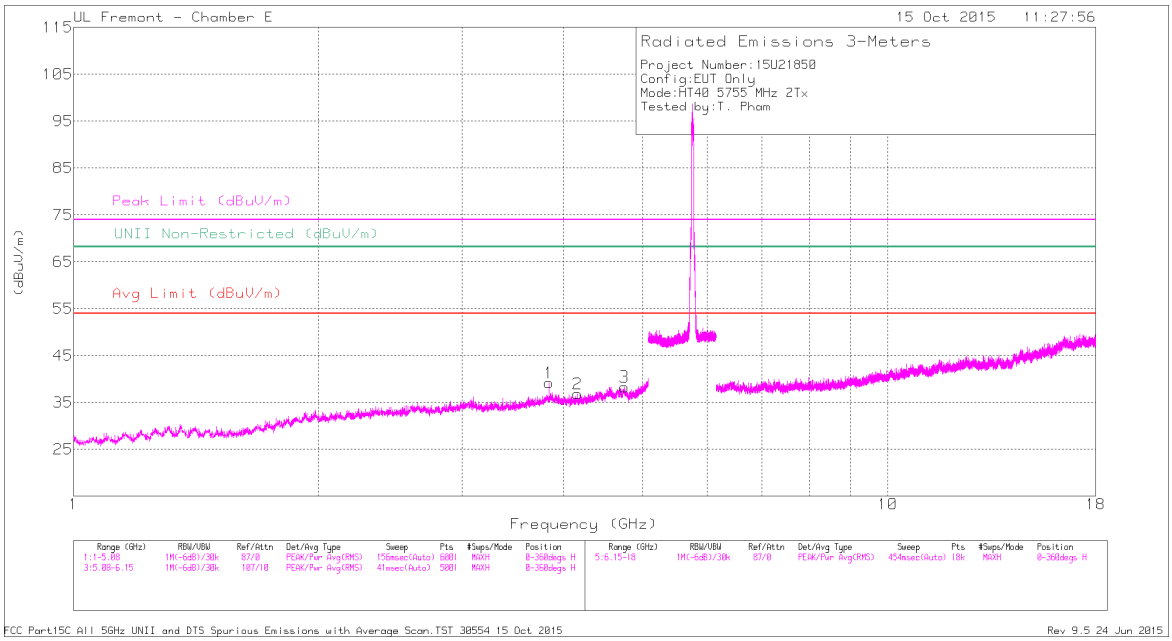
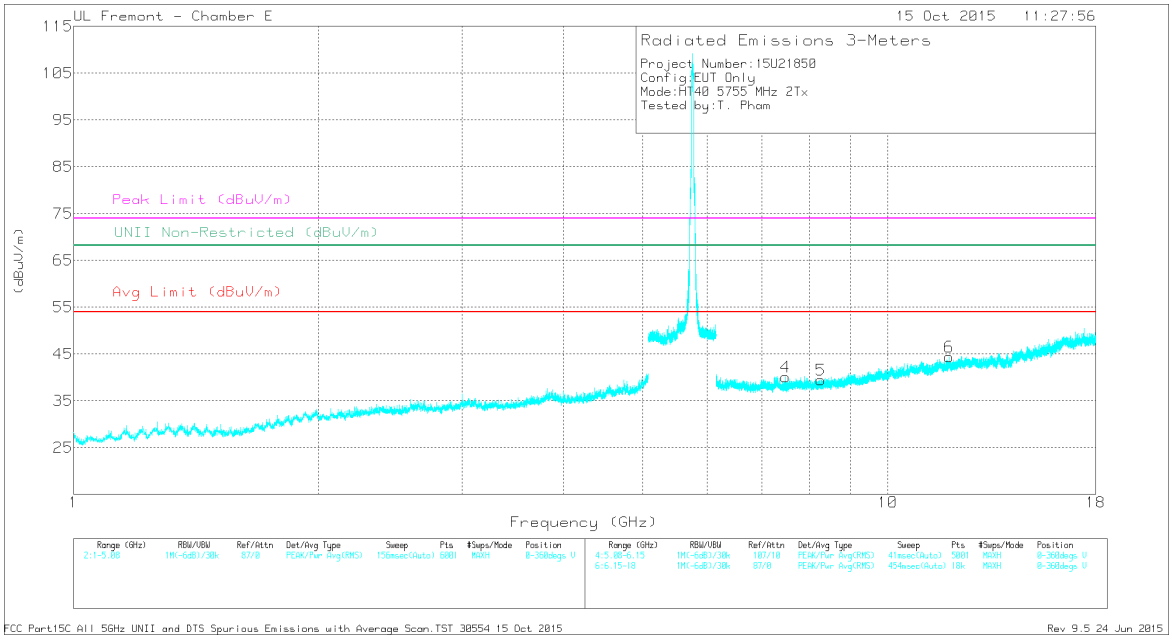
LOW CHANNEL HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL PLOT



LOW CHANNEL VERTICAL PLOT



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DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.837	43.9	PK-U	33.5	-29.9	47.5	-	-	74	-26.5	-	-	26	125	H
	* 3.837	34.58	ADR	33.5	-29.9	38.18	54	-15.82	-	-	-	-	26	125	H
2	* 4.16	41.58	PK-U	33.4	-30.4	44.58	-	-	74	-29.42	-	-	65	144	H
	* 4.161	29.85	ADR	33.4	-30.4	32.85	54	-21.15	-	-	-	-	65	144	H
3	* 4.743	41.54	PK-U	34.1	-29.1	46.54	-	-	74	-27.46	-	-	158	269	H
	* 4.743	30.22	ADR	34.1	-29.1	35.22	54	-18.78	-	-	-	-	158	269	H
4	* 7.486	38.76	PK-U	35.6	-27.5	46.86	-	-	74	-27.14	-	-	78	228	V
	* 7.486	27.41	ADR	35.6	-27.5	35.51	54	-18.49	-	-	-	-	78	228	V
5	* 8.277	39.03	PK-U	35.7	-27	47.73	-	-	74	-26.27	-	-	225	148	V
	* 8.276	27.37	ADR	35.7	-27	36.07	54	-17.93	-	-	-	-	225	148	V
6	* 11.889	37.49	PK-U	38.4	-23.1	52.79	-	-	74	-21.21	-	-	36	159	V
	* 11.889	25.36	ADR	38.4	-23.1	40.66	54	-13.34	-	-	-	-	36	159	V

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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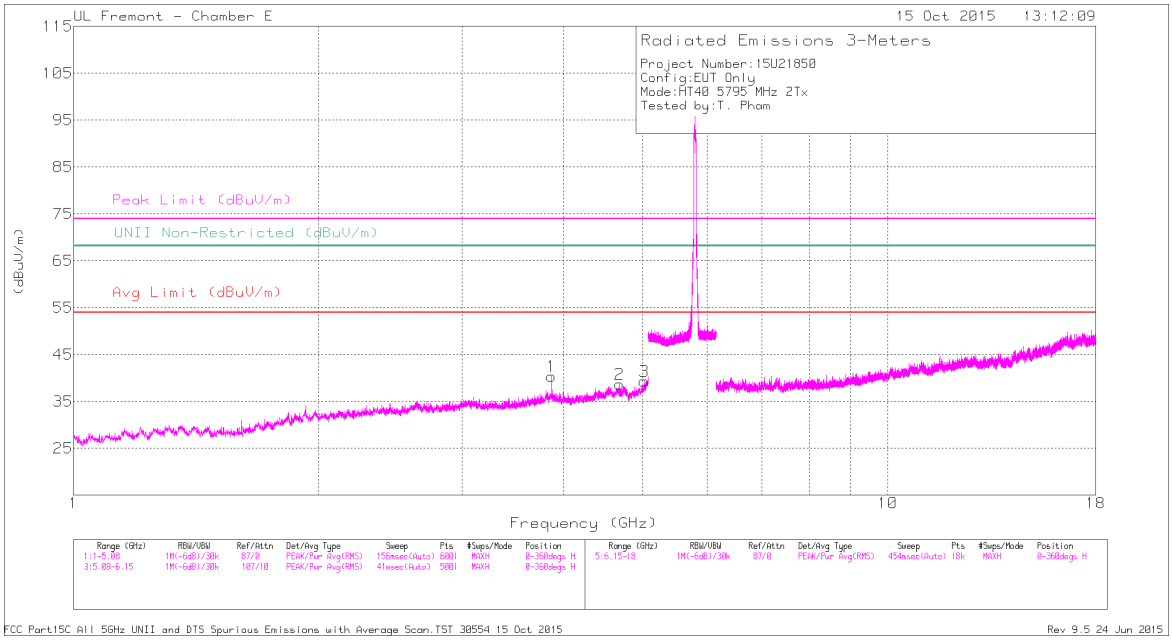
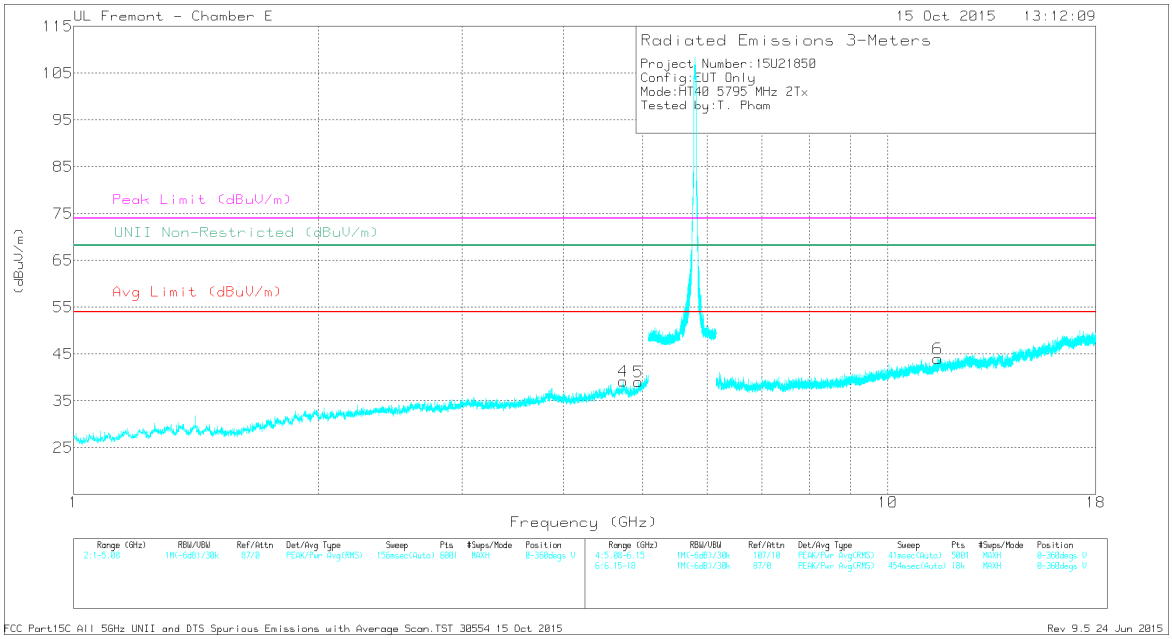
HIGH CHANNEL HARMONICS AND SPURIOUS EMISSIONS

HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



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DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.863	44.53	PK-U	33.5	-29.9	48.13	-	-	74	-25.87	-	-	9	332	H
	* 3.863	36.05	ADR	33.5	-29.9	39.65	54	-14.35	-	-	-	-	9	332	H
2	* 4.679	40.65	PK-U	34.2	-29.8	45.05	-	-	74	-28.95	-	-	76	309	H
	* 4.679	30	ADR	34.2	-29.8	34.4	54	-19.6	-	-	-	-	76	309	H
3	* 5.019	42.02	PK-U	34.2	-28.5	47.72	-	-	74	-26.28	-	-	76	259	H
	* 5.021	30.06	ADR	34.2	-28.5	35.76	54	-18.24	-	-	-	-	76	259	H
4	* 4.731	42.16	PK-U	34.2	-28.9	47.46	-	-	74	-26.54	-	-	183	275	V
	* 4.732	30.41	ADR	34.2	-28.9	35.71	54	-18.29	-	-	-	-	183	275	V
5	* 4.937	43.91	PK-U	34.1	-29.4	48.61	-	-	74	-25.39	-	-	229	244	V
	* 4.936	32.08	ADR	34.1	-29.4	36.78	54	-17.22	-	-	-	-	229	244	V
6	* 11.519	37.13	PK-U	38.1	-23.7	51.53	-	-	74	-22.47	-	-	29	130	V
	* 11.517	25.65	ADR	38.1	-23.7	40.05	54	-13.95	-	-	-	-	29	130	V

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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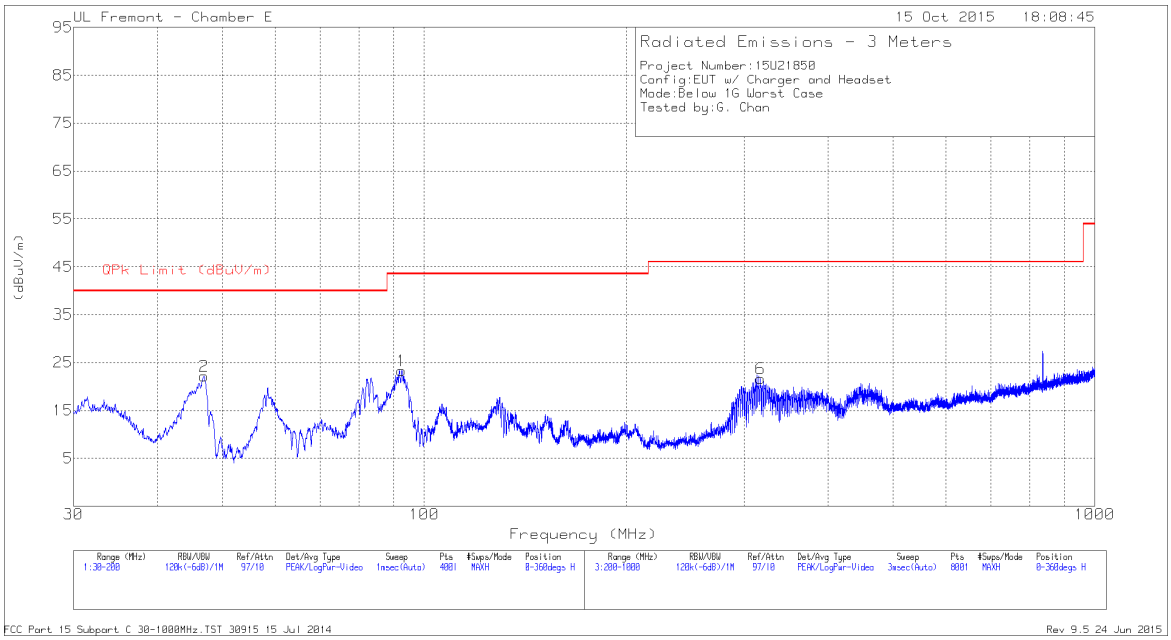
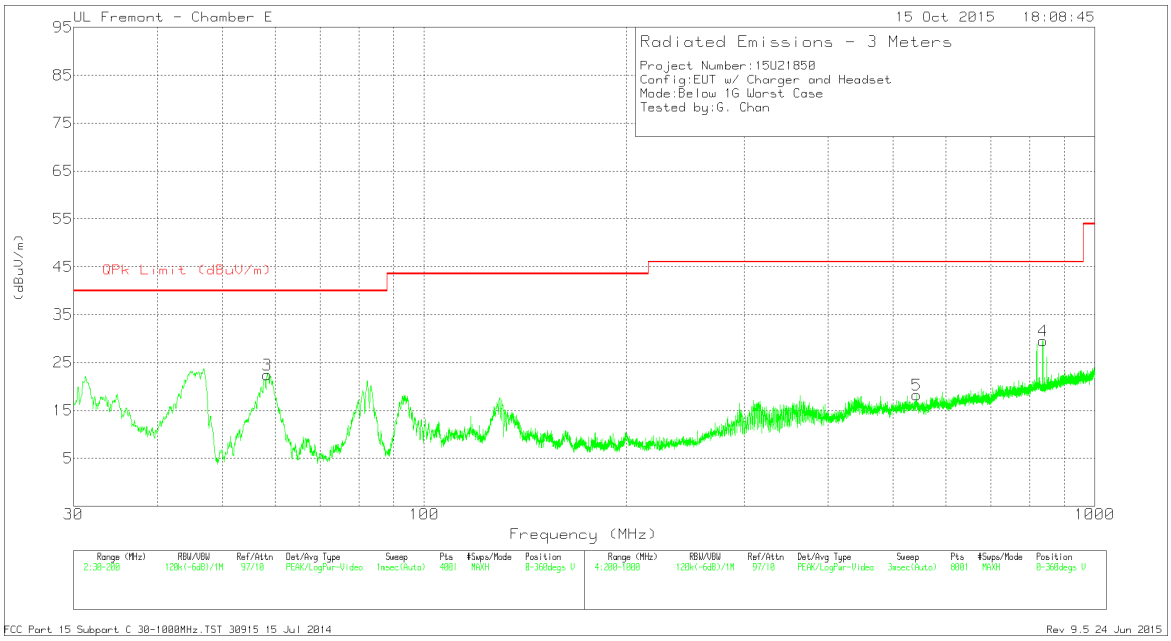
10.7. WORST-CASE BELOW 1 GHz

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

HORIZONTAL PLOT



VERTICAL PLOT



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HORIZONTAL AND VERTICAL DATA

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T408 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	46.9575	44.68	Pk	9.3	-31.8	22.18	40	-17.82	0-360	401	H
3	58.305	46.6	Pk	7.5	-31.7	22.4	40	-17.6	0-360	100	V
1	92.6025	46.27	Pk	8.5	-31.4	23.37	43.52	-20.15	0-360	201	H
6	317.2	38.29	Pk	13.6	-30.2	21.69	46.02	-24.33	0-360	100	H
5	542.8	29.59	Pk	18.2	-29.5	18.29	46.02	-27.73	0-360	301	V
4	836.6	37.14	Pk	21	-28.6	29.54	46.02	-16.48	0-360	301	V

Pk - Peak detector

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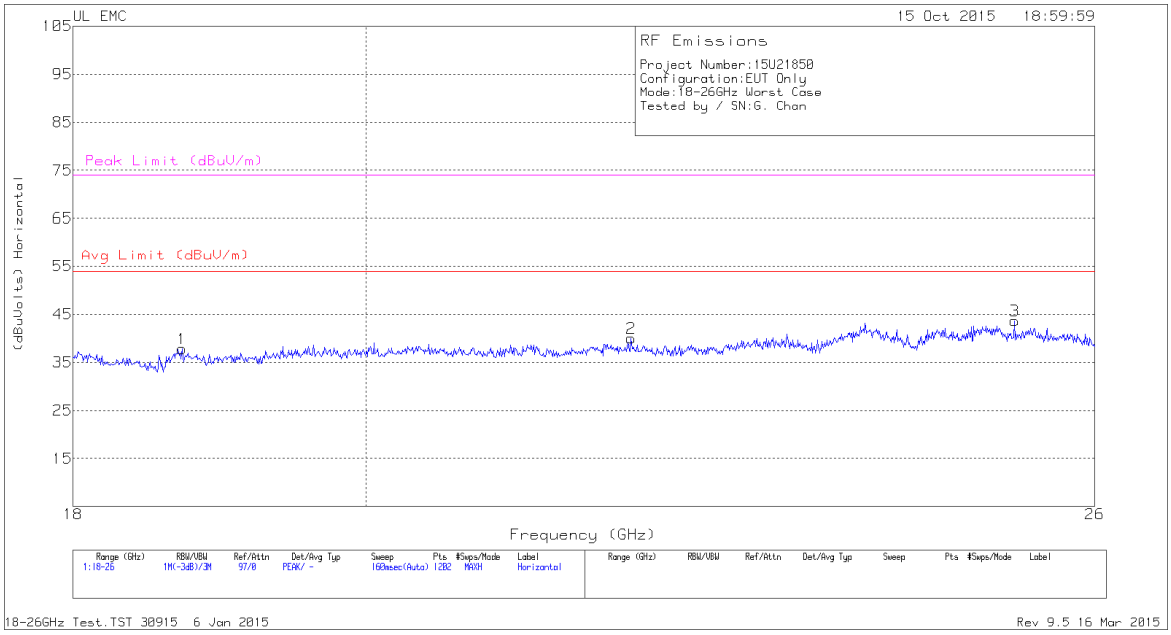
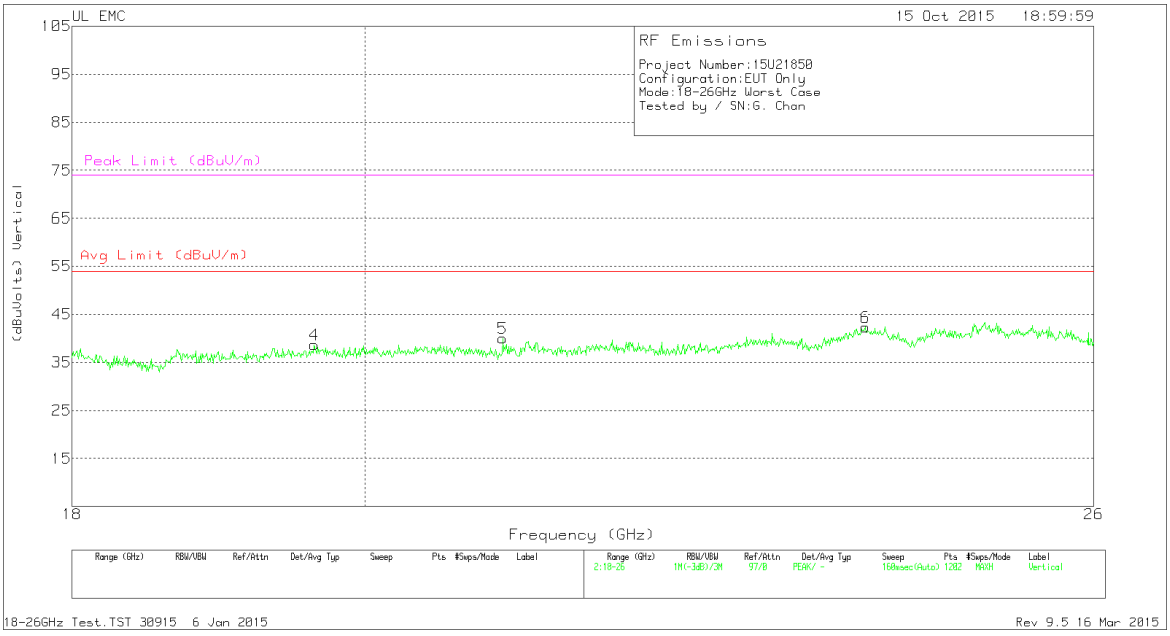
10.8. WORST-CASE ABOVE 18 GHz

SPURIOUS EMISSIONS 18000 TO 26000 MHz (WORST-CASE CONFIGURATION)

HORIZONTAL PLOT



VERTICAL PLOT



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HORIZONTAL AND VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T89 AF (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuVolts)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	18.719	39.53	Pk	32.5	-24.7	-9.5	37.83	54	-16.17	74	-36.17
2	22.003	41.5	Pk	33.2	-25.2	-9.5	40	54	-14	74	-34
3	25.261	44.37	Pk	33.5	-24.7	-9.5	43.67	54	-10.33	74	-30.33
4	19.639	40.67	Pk	32.5	-25	-9.5	38.67	54	-15.33	74	-35.33
5	21.017	42.6	Pk	32.4	-25.5	-9.5	40	54	-14	74	-34
6	23.948	42.83	Pk	33.3	-24.3	-9.5	42.33	54	-11.67	74	-31.67

Pk - Peak detector

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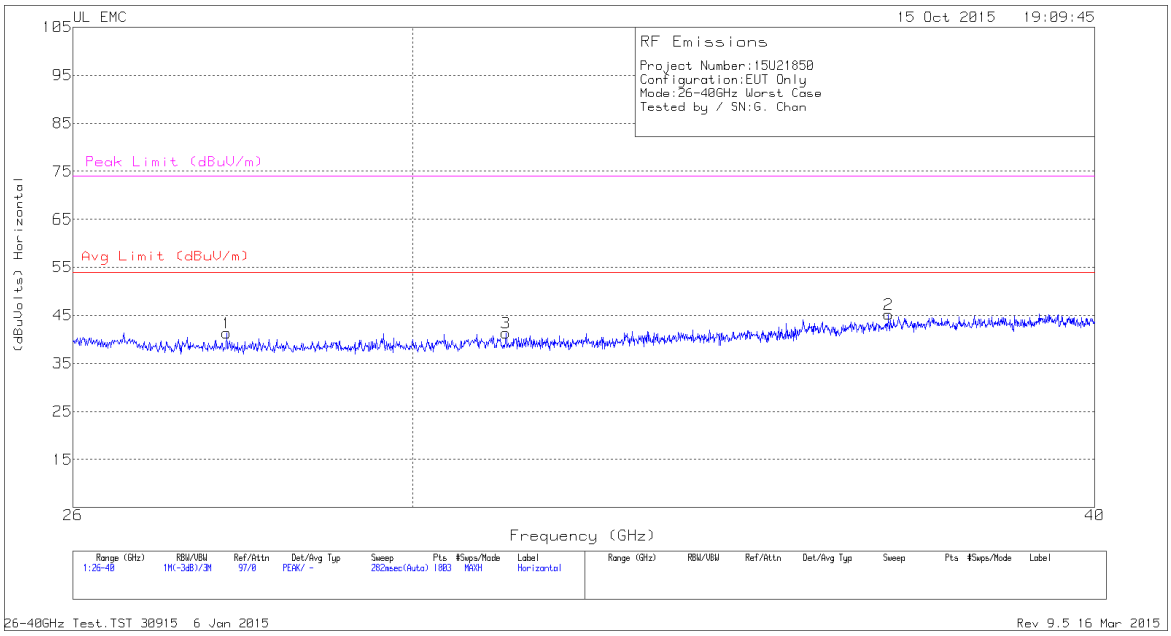
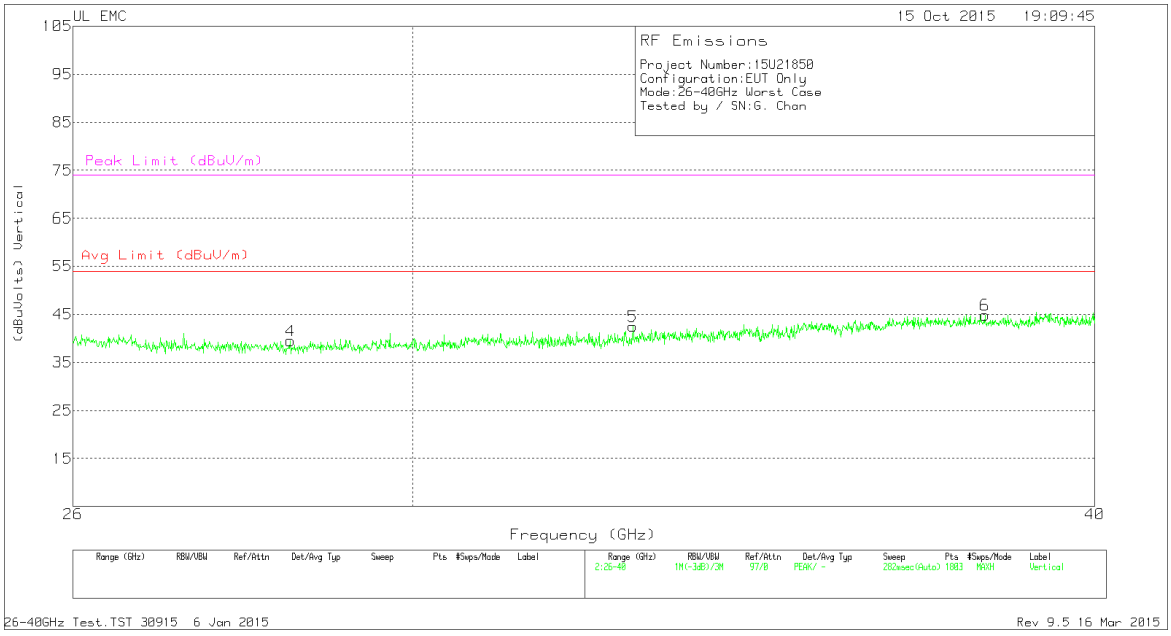
SPURIOUS EMISSIONS 26000 TO 40000 MHz (WORST-CASE CONFIGURATION)

HORIZONTAL PLOT



VERTICAL PLOT



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HORIZONTAL AND VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T90 AF (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuVolts)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	27.74	46.33	Pk	35.8	-31.3	-9.5	41.33	54	-12.67	74	-32.67
2	36.667	50.77	Pk	37.1	-33.2	-9.5	45.17	54	-8.83	74	-28.83
3	31.205	47.63	Pk	36	-32.8	-9.5	41.33	54	-12.67	74	-32.67
4	28.494	45.3	Pk	35.7	-32	-9.5	39.5	54	-14.5	74	-34.5
5	32.922	48.2	Pk	36.6	-32.8	-9.5	42.5	54	-11.5	74	-31.5
6	38.19	49.53	Pk	37.2	-32.4	-9.5	44.83	54	-9.17	74	-29.17

Pk - Peak detector

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11. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 8.8

Frequency of Emission (MHz)	Conducted Limit (dBμV)	
	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

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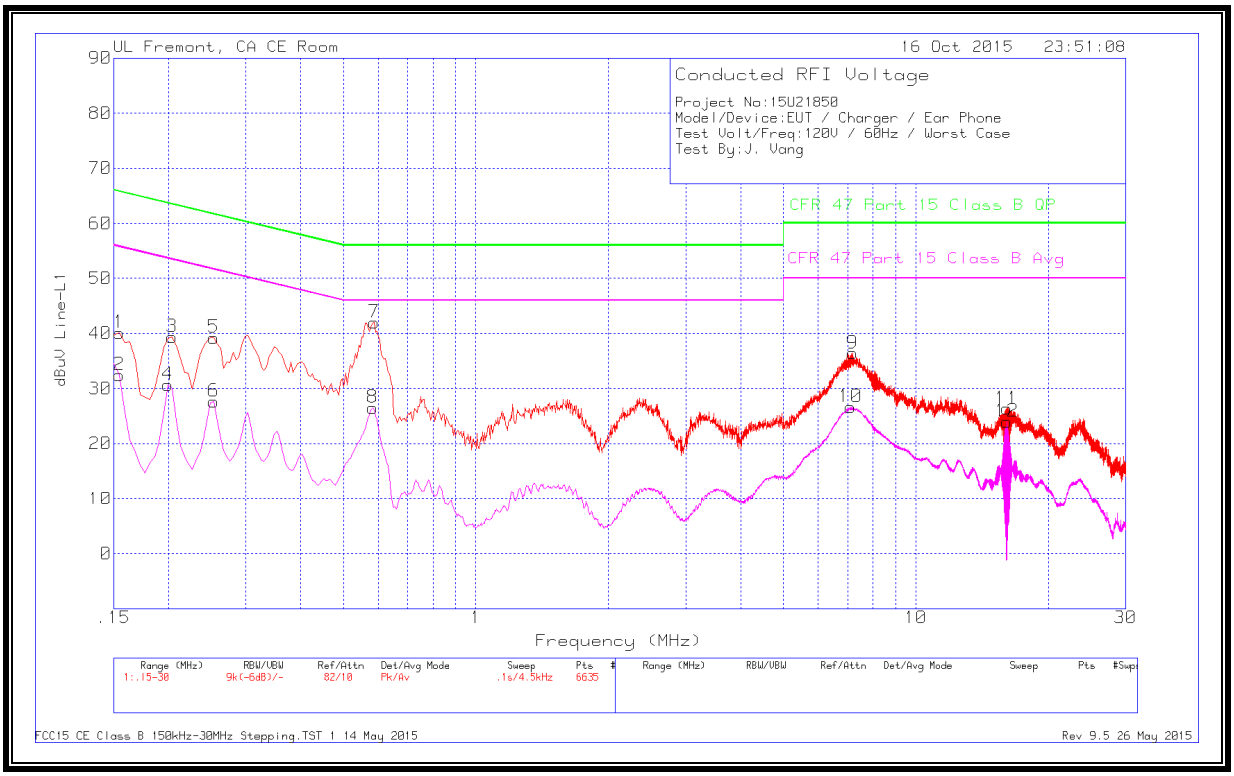
11.1. EUT POWERED BY AC ADAPTER

LINE 1 RESULTS



WORST EMISSIONS

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1	LC Cables 1&3	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	Margin (dB)	CFR 47 Part 15 Class B Avg	Margin (dB)
1	.1545	38.79	Pk	1.3	0	40.09	65.75	-25.66	-	-
2	.1545	31.11	Av	1.3	0	32.41	-	-	55.75	-23.34
3	.204	38.42	Pk	.9	0	39.32	63.45	-24.13	-	-
4	.1995	29.73	Av	.9	0	30.63	-	-	53.63	-23
5	.2535	38.55	Pk	.7	0	39.25	61.64	-22.39	-	-
6	.2535	26.93	Av	.7	0	27.63	-	-	51.64	-24.01
7	.5865	41.67	Pk	.3	0	41.97	56	-14.03	-	-
8	.582	26.22	Av	.3	0	26.52	-	-	46	-19.48
9	7.197	36.09	Pk	.2	.1	36.39	60	-23.61	-	-
10	7.116	26.36	Av	.2	.1	26.66	-	-	50	-23.34
11	16.0935	25.82	Pk	.3	.2	26.32	60	-33.68	-	-
12	16.0935	23.51	Av	.3	.2	24.01	-	-	50	-25.99

Pk - Peak detector

Av - Average detection

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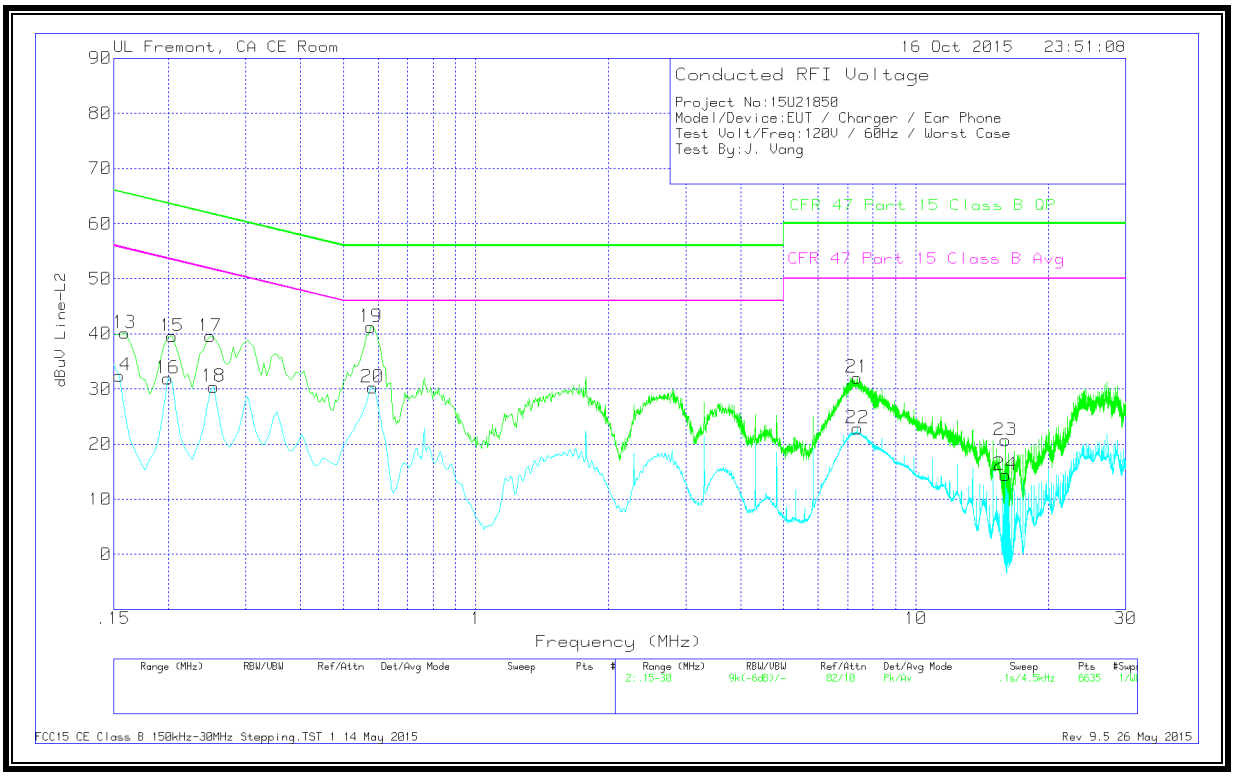
LINE 2 RESULTS



WORST EMISSIONS

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2	LC Cables 2&3	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	Margin (dB)	CFR 47 Part 15 Class B Avg	Margin (dB)
13	.159	38.76	Pk	1.4	0	40.16	65.52	-25.36	-	-
14	.1545	31.01	Av	1.4	0	32.41	-	-	55.75	-23.34
15	.204	38.55	Pk	1	0	39.55	63.45	-23.9	-	-
16	.1995	30.92	Av	1	0	31.92	-	-	53.63	-21.71
17	.249	38.86	Pk	.7	0	39.56	61.79	-22.23	-	-
18	.2535	29.68	Av	.7	0	30.38	-	-	51.64	-21.26
19	.5775	40.96	Pk	.3	0	41.26	56	-14.74	-	-
20	.582	29.99	Av	.3	0	30.29	-	-	46	-15.71
21	7.359	31.75	Pk	.2	.1	32.05	60	-27.95	-	-
22	7.3635	22.59	Av	.2	.1	22.89	-	-	50	-27.11
23	15.999	20.17	Pk	.3	.2	20.67	60	-39.33	-	-
24	15.999	13.92	Av	.3	.2	14.42	-	-	50	-35.58

Pk - Peak detector

Av - Average detection

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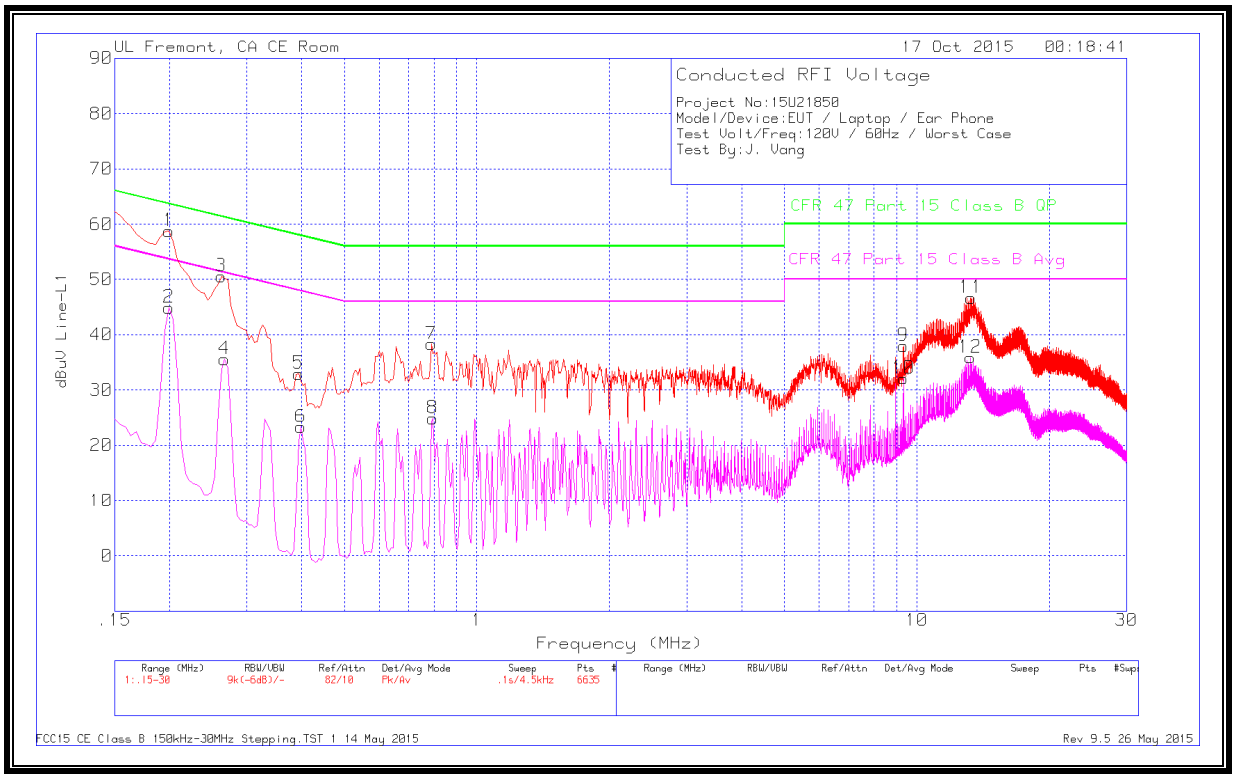
11.2. EUT POWERED BY HOST PC VIA USB CABLE

LINE 1 RESULTS



WORST EMISSIONS

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1	LC Cables 1&3	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	Margin (dB)	CFR 47 Part 15 Class B Avg	Margin (dB)
1	.1995	57.85	Pk	.9	0	58.75	63.63	-4.88	-	-
2	.1995	44.03	Av	.9	0	44.93	-	-	53.63	-8.7
3	.2625	49.88	Pk	.7	0	50.58	61.35	-10.77	-	-
4	.267	34.95	Av	.6	0	35.55	-	-	51.21	-15.66
5	.393	32.55	Pk	.4	0	32.95	58	-25.05	-	-
6	.3975	22.91	Av	.4	0	23.31	-	-	47.91	-24.6
7	.789	37.99	Pk	.3	0	38.29	56	-17.71	-	-
8	.7935	24.59	Av	.3	0	24.89	-	-	46	-21.11
9	9.321	37.69	Pk	.2	.1	37.99	60	-22.01	-	-
10	9.321	31.8	Av	.2	.1	32.1	-	-	50	-17.9
11	13.2855	46.24	Pk	.2	.2	46.64	60	-13.36	-	-
12	13.218	35.48	Av	.2	.2	35.88	-	-	50	-14.12

Pk - Peak detector

Av - Average detection

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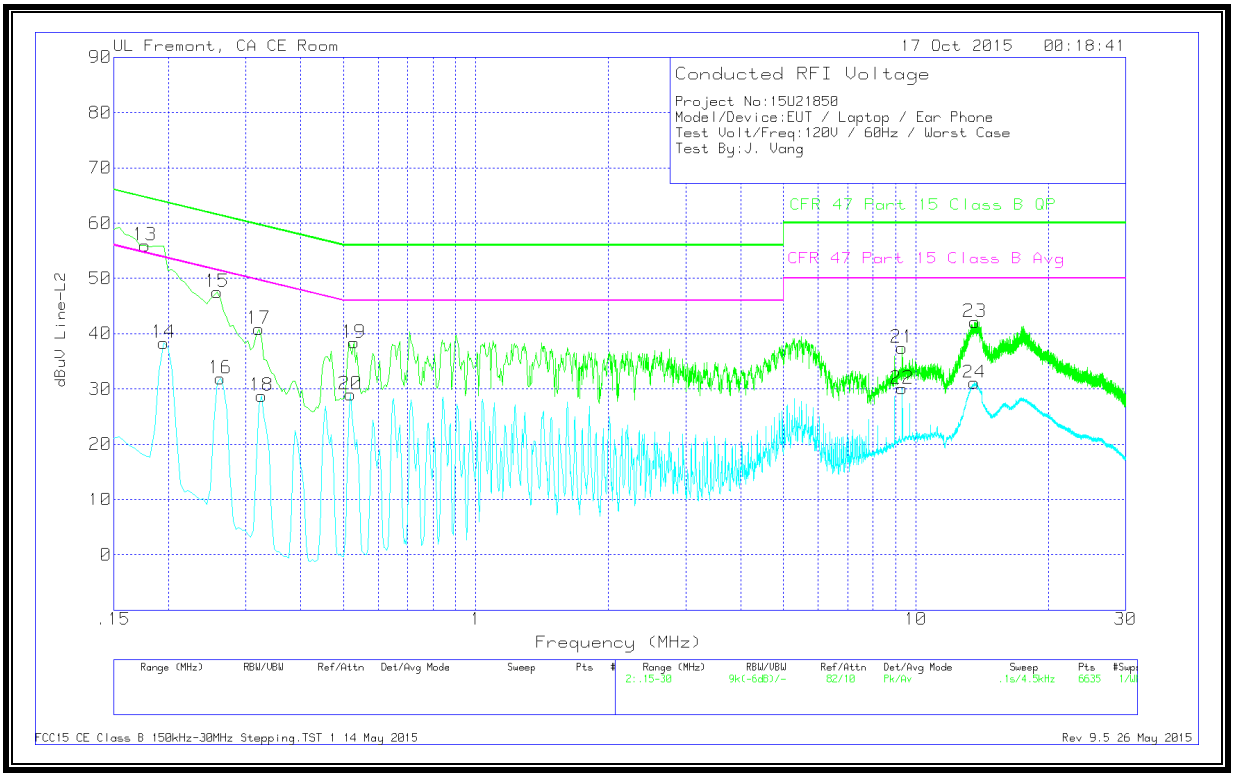
LINE 2 RESULTS



WORST EMISSIONS

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2	LC Cables 2&3	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	Margin (dB)	CFR 47 Part 15 Class B Avg	Margin (dB)
13	.177	54.8	Pk	1.2	0	56	64.63	-8.63	-	-
14	.195	37.33	Av	1	0	38.33	-	-	53.82	-15.49
15	.258	46.85	Pk	.7	0	47.55	61.5	-13.95	-	-
16	.2625	31.23	Av	.7	0	31.93	-	-	51.35	-19.42
17	.321	40.28	Pk	.6	0	40.88	59.68	-18.8	-	-
18	.3255	28.3	Av	.5	0	28.8	-	-	49.57	-20.77
19	.528	38.1	Pk	.3	0	38.4	56	-17.6	-	-
20	.519	28.6	Av	.4	0	29	-	-	46	-17
21	9.3165	37.18	Pk	.2	.1	37.48	60	-22.52	-	-
22	9.3165	29.79	Av	.2	.1	30.09	-	-	50	-19.91
23	13.632	41.72	Pk	.2	.2	42.12	60	-17.88	-	-
24	13.596	30.71	Av	.2	.2	31.11	-	-	50	-18.89

Pk - Peak detector

Av - Average detection

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