FCC 47 CFR PART 15 SUBPART E
CERTIFICATION TEST REPORT

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: A1476

FCC ID: BCGA1476

REPORT NUMBER: 15U21850-E39V3

ISSUE DATE: DECEMBER 03, 2015

Prepared for

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Revision History

Rev.	Issue Date	Revisions	Revised By
V1	11/16/15	Initial issue. Upgrade 13U16584-4, Revision A report to 5.2/5.3/5.6GHz band to new rule per KDB 789033 D02 v01.	T. Chu
V2	12/02/15	Revised report to address TCB's questions	T. Chu
V3	12/03/15	Added DFS section.	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: A1476

SERIAL NUMBER: 12558

DATE TESTED: NOVEMBER 5, 2013 – FEBRUARY 14, 2014

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:

Thu Chan
WiSE Operations Manager
UL Verification Services Inc.

Tested By:

Roy Zheng
WiSE Lab Technician
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 662911 D01 v02r01, FCC KDB 905462 D02 v01r02/D03 v01r01/D06 v01, FCC KDB 789033 D02 v01, ANSI C63.10-2009.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

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

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)
36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 1000 MHz	4.94 dB

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

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

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 5.2/5.3/5.6GHz band to new rule per KDB 789033 D02 v01.

We have reviewed the original test report for UNII-1, UNII-2A and UNII-2C bands and are hereby attesting that all current technical requirements are still met and all applicable test procedures remain the same. Therefore, the original report is still applicable and no additional testing is done.

We updated the following on this report:

- Updated report to latest KDB 789033 D02 v01.
- Removed IC related information.

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

Frequency Band (GHz)	Antenna Gain (dBi)		Uncorrelated Gain (dBi)	Correlated Gain (dBi)
	Tx1	Tx2		
5.2	2.37	2.07	**2.22**	**5.23**
5.3	2.60	2.11	**2.36**	**5.37**
5.5	3.66	3.99	**3.83**	**6.84**

5.4. MAXIMUM OUTPUT POWER

Please refer to 15U21850-E31V2, Section 5.3

5.5. SOFTWARE AND FIRMWARE

The test utility software used 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.

For the RF conducted test: Refer to FCC UNII report with the FCC ID BCGA1475 and project number 15U21850-E31V2.

The fundamental of the EUT was investigated in three orthogonal orientations X,Y,Z, it was determined that Z orientation was worst-case orientation for 5GHz; therefore, all final radiated testing was performed with the EUT in Z orientation for 5GHz.

Worst-Case data rates, as provided by the client, were as follows:

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
AC/DC adapter	Apple	A1401	60812	DoC
Earphone	Apple	NA	NA	NA

I/O CABLES (RADIATED TEST)

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	Audio	1	Jack	Un-Shielded	0.5m	NA

I/O CABLES BELOW 1GHZ TEST

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	AC	1	US115	Un-Shielded	2m	NA
2	DC	1	USB	Un-Shielded	2m	NA
3	Audio	1	Jack	Un-Shielded	0.5m	NA

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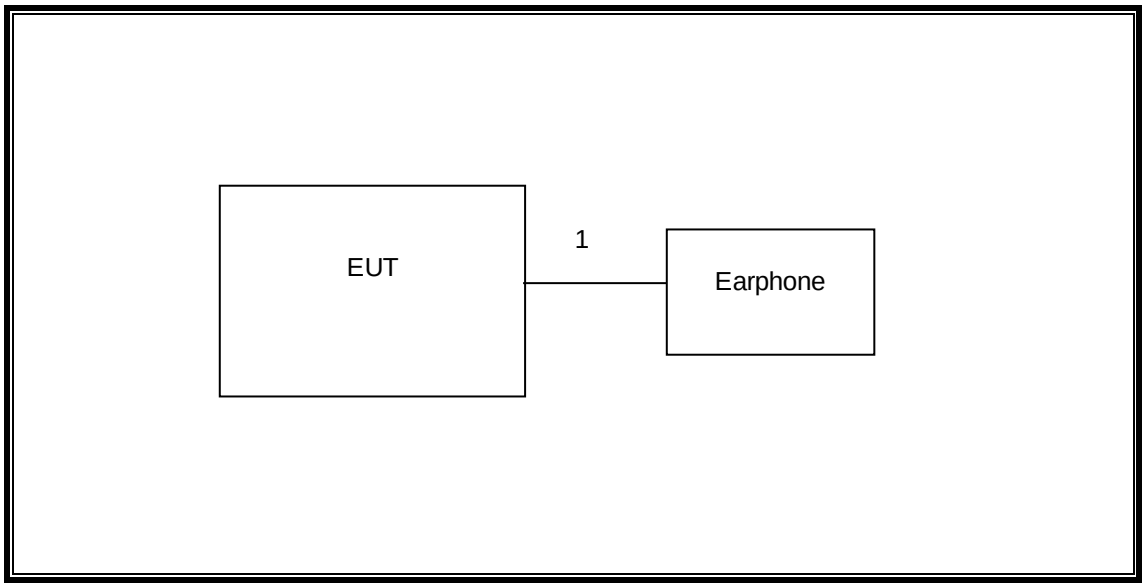
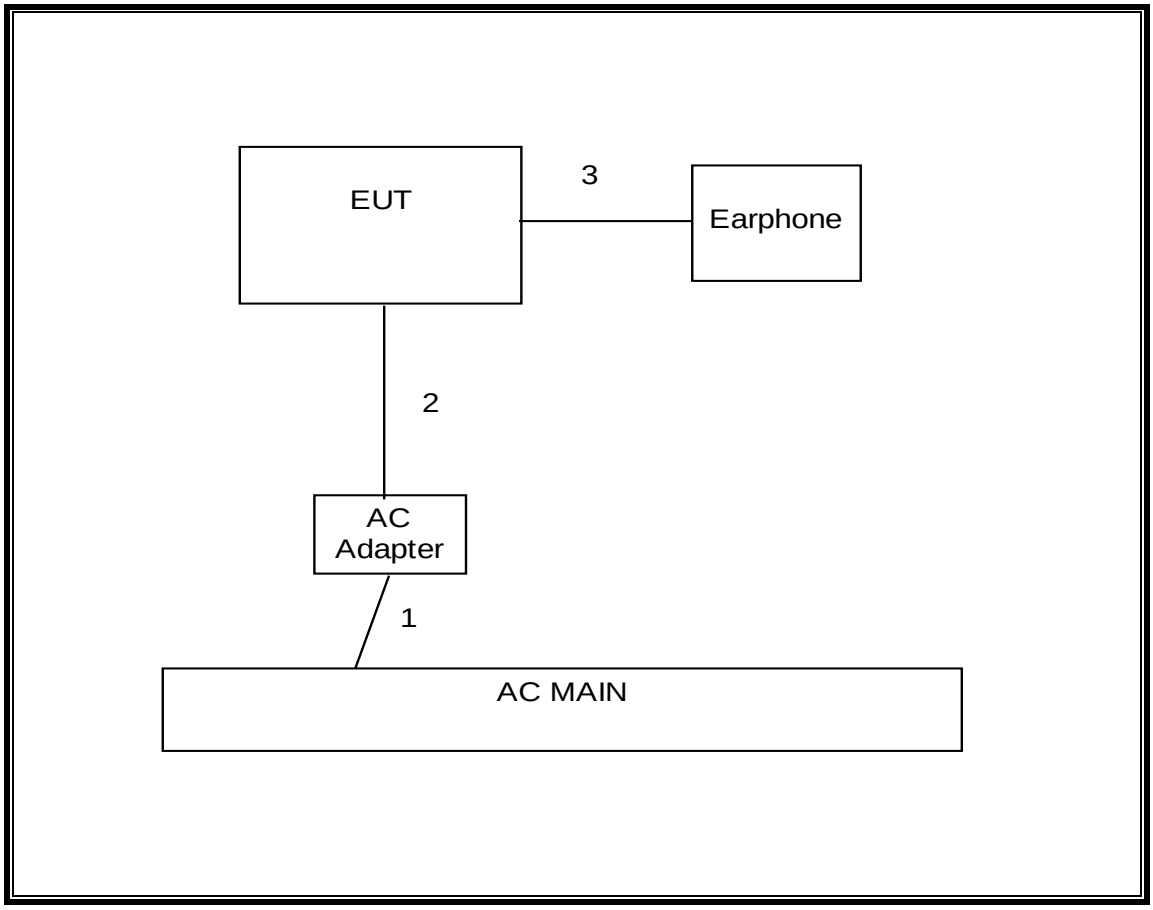
SETUP DIAGRAM FOR RADIATED TESTS



SETUP DIAGRAM FOR BELOW 1GHZ TESTS



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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**
Horn Antenna 1-18GHz	ETS Lindgren	3117	F00131	02/18/15
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00580	01/28/14
Antenna, Horn, 26.5 GHz	ARA	SWH-28	C01015	05/06/14
Antenna, Biconolog, 30MHz-1 GHz	Sunol Sciences	JB3	F00027	03/07/14
Peak / Average Power Sensor	Agilent / HP	E9323A	F00163	04/03/14
P-Series single channel Power Meter	Agilent / HP	N1911A	F00164	04/03/14
Spectrum Analyzer, 3Hz-44GHz	Agilent	N9030A	F00127	02/22/14
Spectrum Analyzer, 3Hz-44GHz	Agilent	E4446A	C01012	10/21/14
PreApmplifier, 1-26.5GHz	Agilent	8449B	C01052	06/26/14
Antenna, Horn, 40 GHz	ARA	MWH-2640/B	F00194	05/14/14
Preamplifier, 40 GHz	Miteq	NSP4000-SP2	C00990	08/20/14

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7. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

LIMITS

None; for reporting purposes only.

PROCEDURE

KDB 789033 Zero-Span Spectrum Analyzer Method.

7.1. ON TIME AND DUTY CYCLE RESULTS

Refer to the FCC ID: BCGA1475 and Project number 13U15555-8 Section 7.1

7.2. MEASUREMENT METHOD FOR POWER AND PPSD

The Duty Cycle is greater than or equal to 98% therefore KDB 789033 Method SA-1 is used.

The Duty Cycle is greater than or equal to 98% therefore KDB 789033 Method SA-1 Alternative is used.

7.3. MEASUREMENT METHOD FOR AVG. SPURIOUS EMISSIONS ABOVE 1 GHz

The Duty Cycle is greater than or equal to 98%, KDB 789033 Method AD with Power RMS Averaging is used.

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8. ANTENNA PORT TEST RESULTS

Note that for 5.2/5.3/5.6GHz all antenna port data refer to the FCC ID: BCGA1475 and Project number 15U21850-E31V2.

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9. RADIATED TEST RESULTS

9.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

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

TEST PROCEDURE

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

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

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 1 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.

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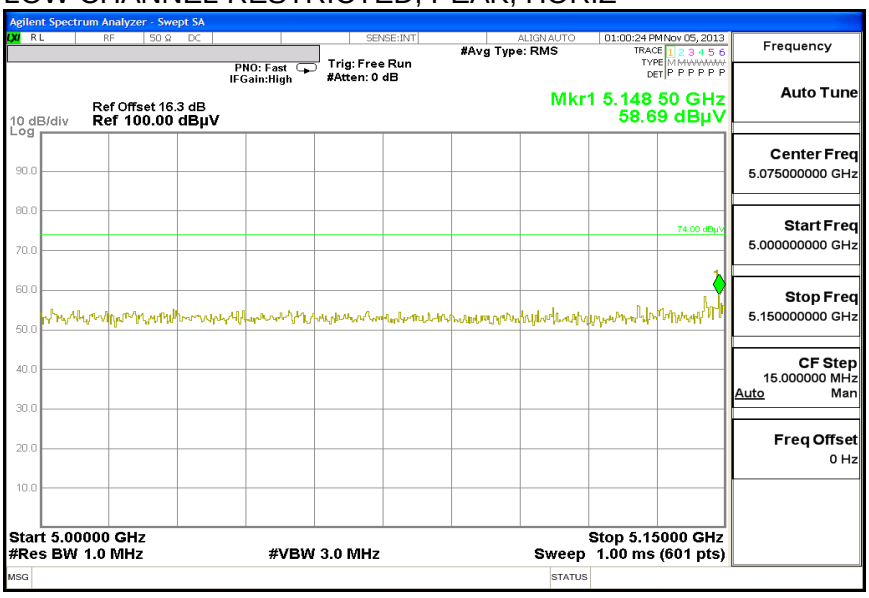
9.2. TRANSMITTER ABOVE 1 GHz

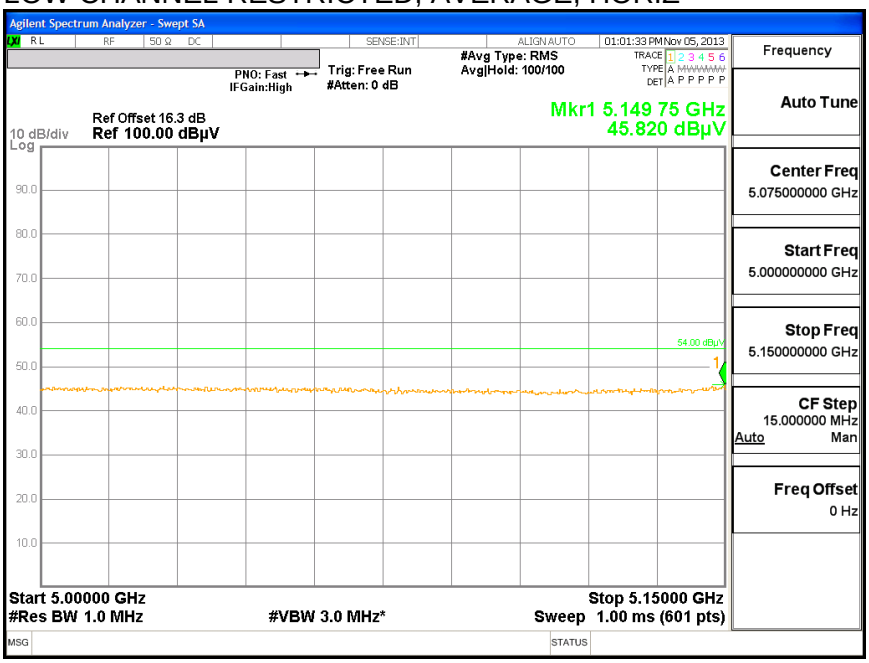
9.2.1. 802.11a MODE IN THE 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

LOW CHANNEL RESTRICTED, PEAK, HORIZ



LOW CHANNEL RESTRICTED, AVERAGE, HORIZ



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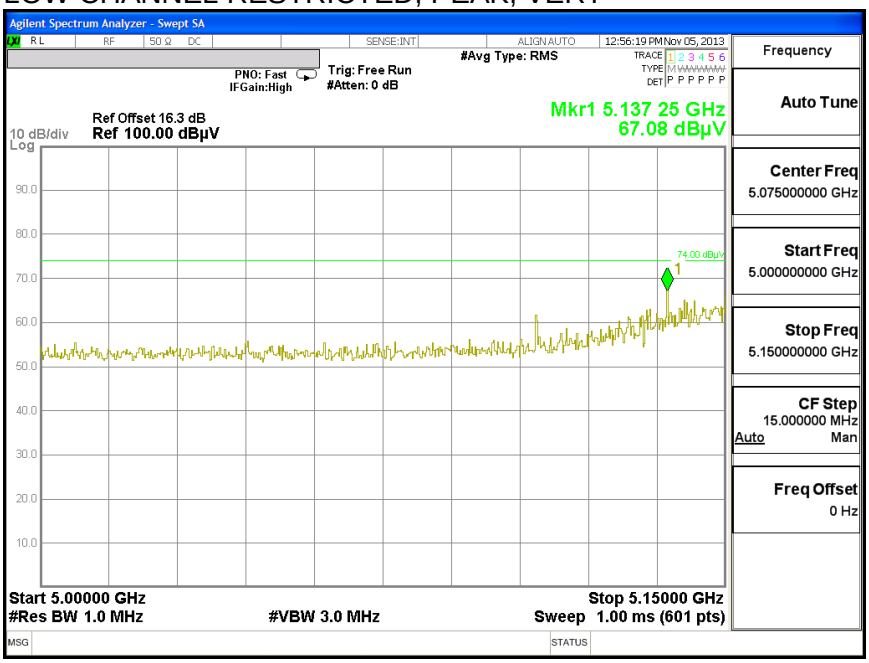
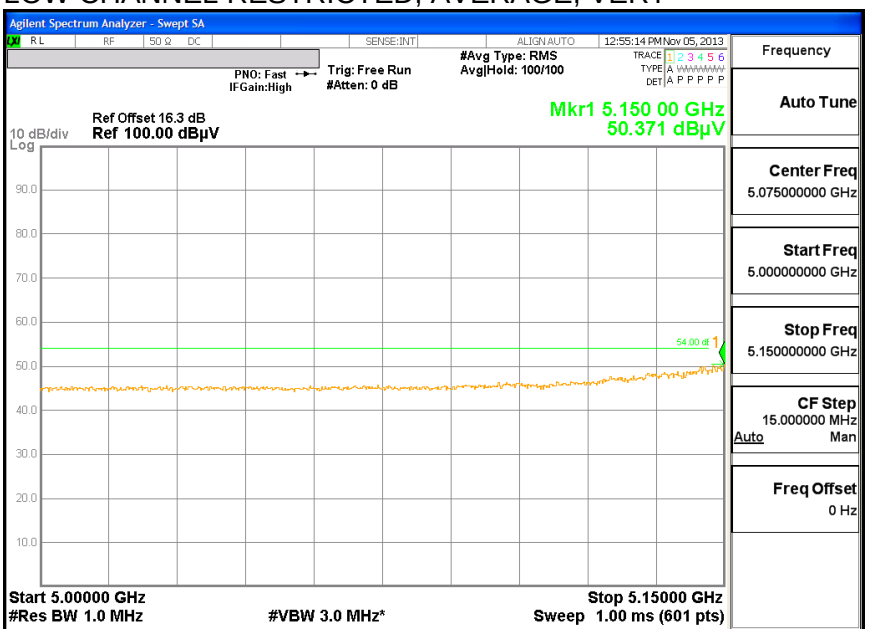
LOW CHANNEL RESTRICTED, PEAK, VERT



LOW CHANNEL RESTRICTED, AVERAGE, VERT



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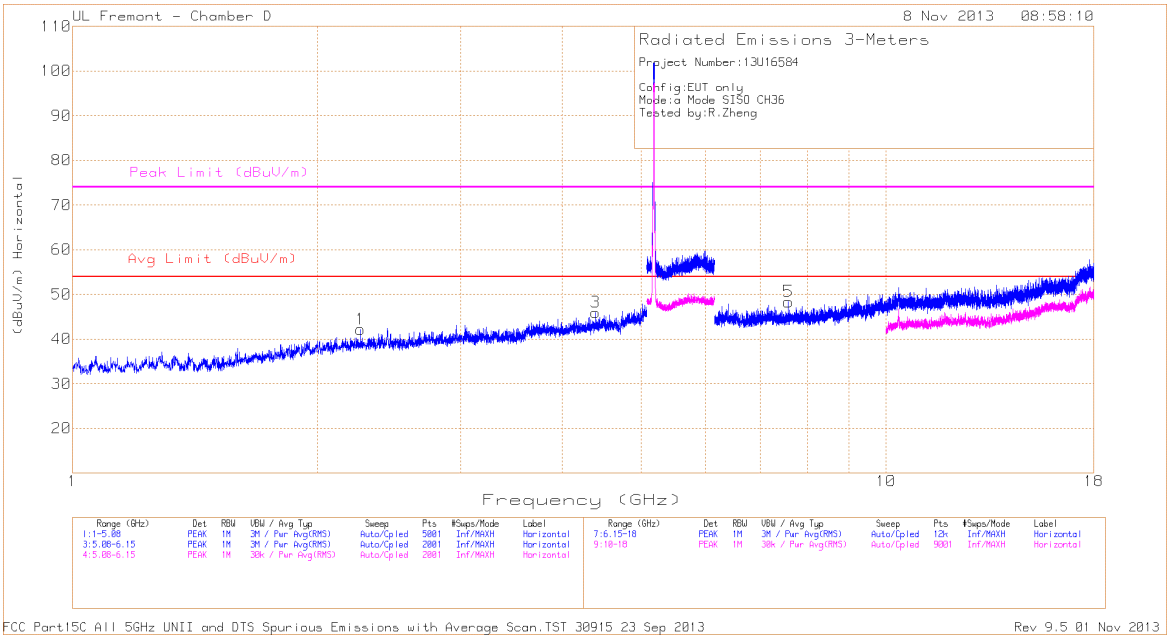
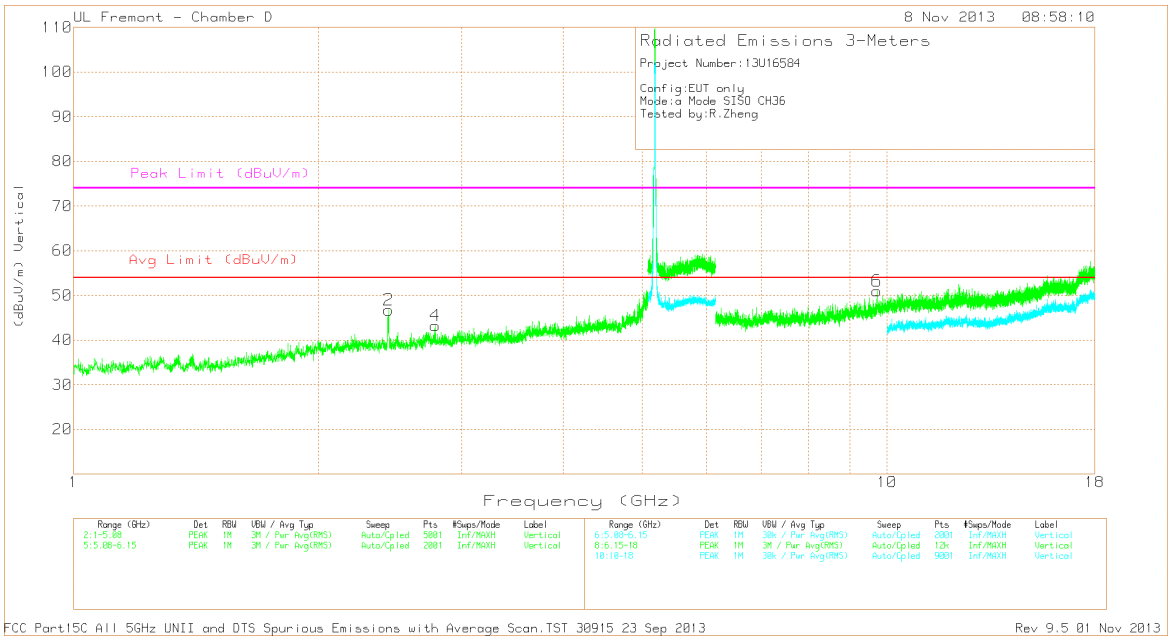
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL PLOT



LOW CHANNEL VERTICAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (db/m)	Amp/Cbl/Fltr/Pad	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarity
1	* 2.258	40.60	PK	32.4	-30.8	42.20	54	-11.80	74.0	-31.80	100	H
3	* 4.393	40.40	PK	34.1	-28.5	46.00	54	-8.00	74.0	-28.00	201	H
2	2.439	44.93	PK	32.4	-30.6	46.73	-	-	68.2	-21.47	201	V
4	* 2.784	40.25	PK	32.9	-29.9	43.25	54	-10.75	74.0	-30.75	201	V
5	* 7.583	38.25	PK	36.0	-25.9	48.35	-	-	74.0	-25.65	201	H
5	* 7.583	26.51	AD1	36.0	-25.9	36.61	54	-17.39	-	-		H
6	9.716	35.80	PK	37.4	-22.2	51.00	-	-	68.2	-17.25	201	V

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

AD1 - KDB 789033 Method: AD Primary Power Average

PK - Peak detector

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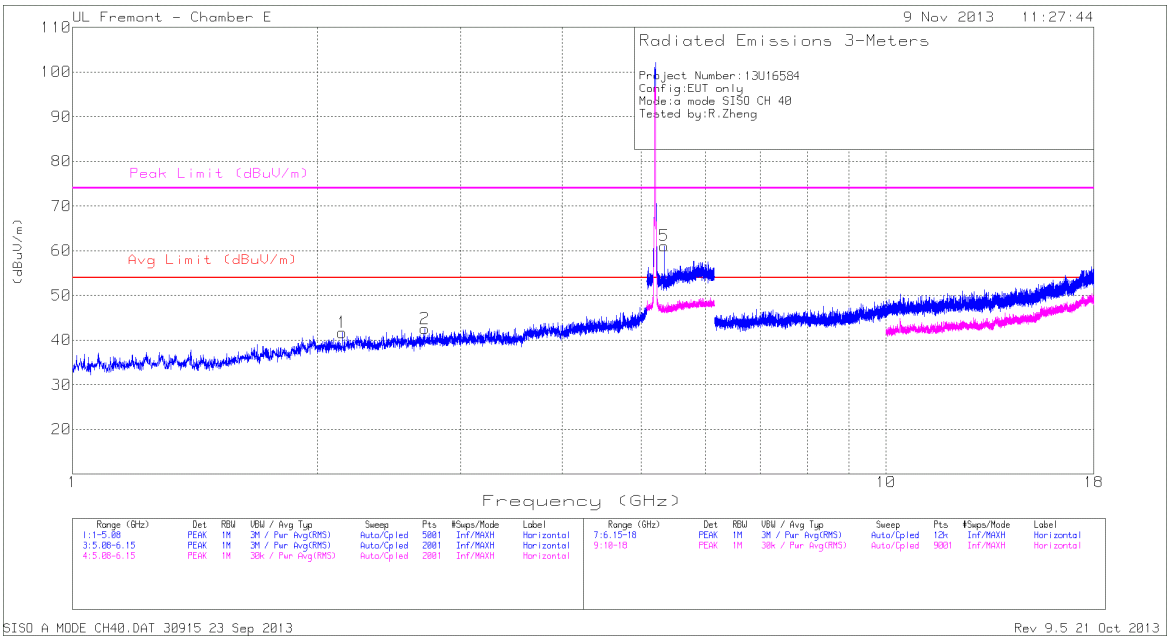
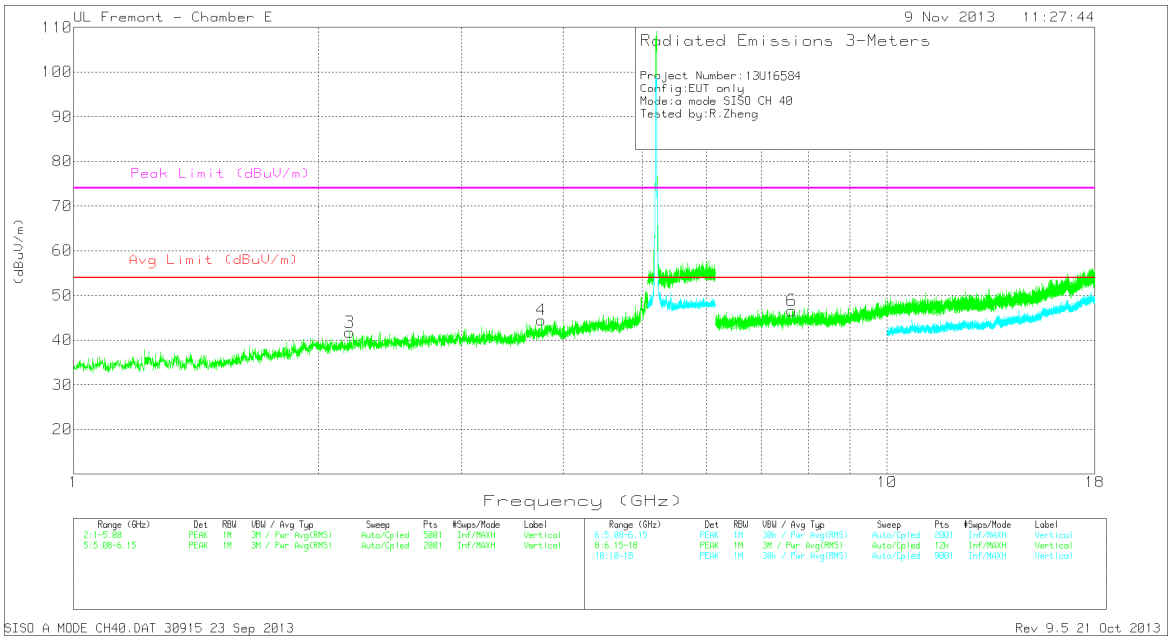
MID CHANNEL HORIZONTAL PLOT



MID CHANNEL VERTICAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.145	43.08	PK	32.3	-33.7	41.68	-	-	68.2	-26.52	0-360	100	H
2	* 2.711	42.06	PK	33.1	-32.6	42.56	54	-11.44	74.0	-31.44	0-360	100	H
3	2.184	42.72	PK	32.3	-33.3	41.72	-	-	68.2	-26.48	0-360	199	V
4	* 3.757	43.00	PK	33.7	-32.2	44.50	54	-9.50	74.0	-29.50	0-360	199	V

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/10dB Pad	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	5.337	48.10	PK	34.7	-21.7	61.1	-	-	68.2	-7.10	0-360	101	H

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/6GHz HPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6	* 7.638	38.50	PK	36.2	-28.1	46.60	54	-7.40	74	-27.40	0-360	100	V

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

PK - Peak detector

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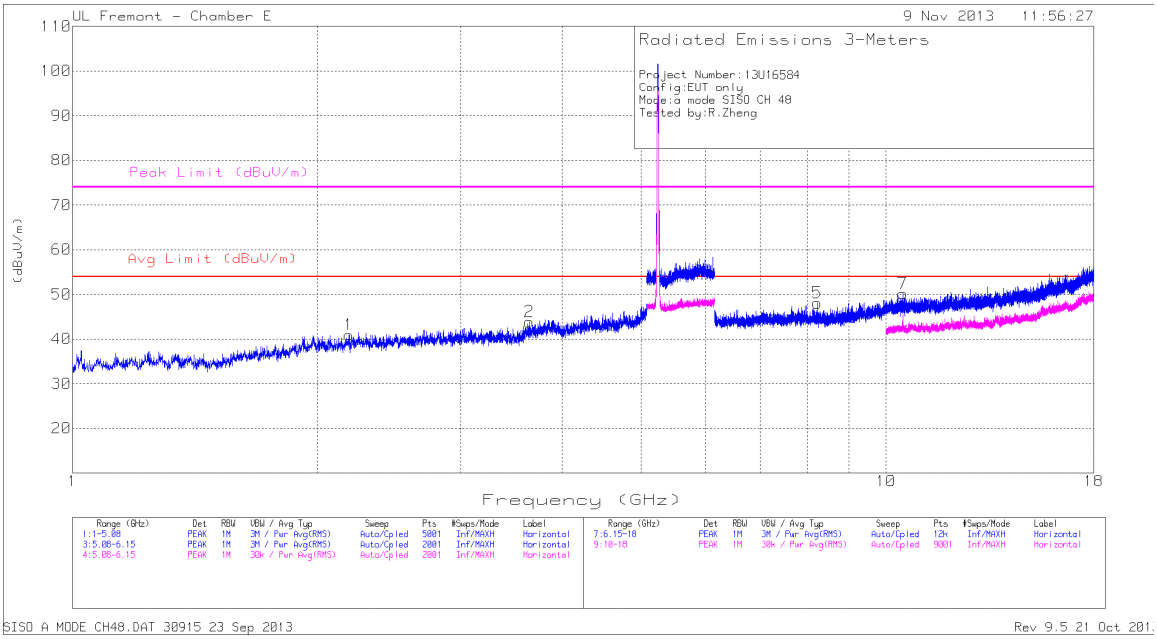
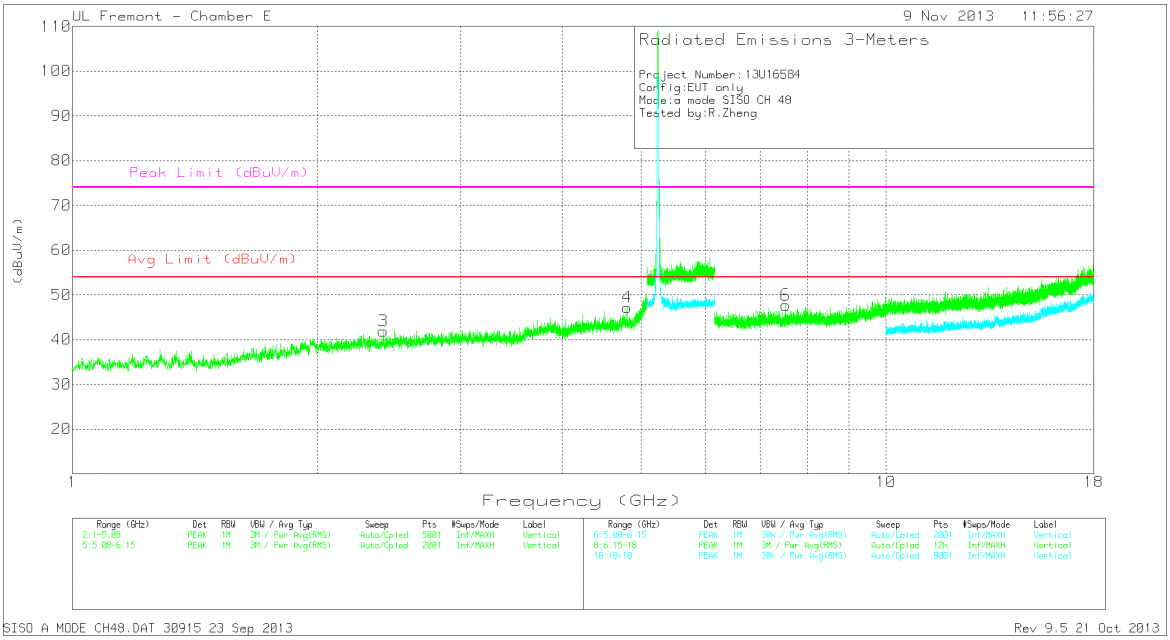
HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarity
1	2.186	41.87	PK	32.3	-33.2	40.97	-	-	68.2	-27.23	100	H
2	* 3.644	41.75	PK	33.4	-31.3	43.85	54	-10.15	74.0	-30.15	100	H
3	2.409	42.70	PK	32.6	-33.4	41.90	-	-	68.2	-26.30	101	V
4	* 4.804	43.22	PK	34.4	-30.4	47.22	54	-10.78	74.0	-26.78	199	V
5	* 8.233	39.60	PK	36.2	-27.7	48.10	54	-5.90	74.0	-25.90	199	H
6	* 7.524	40.19	PK	36.1	-28.6	47.69	54	-6.31	74.0	-26.31	199	V
7	10.483	36.67	PK	38.4	-24.9	50.17	-	-	68.2	-18.03	100	H

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

PK - Peak detector

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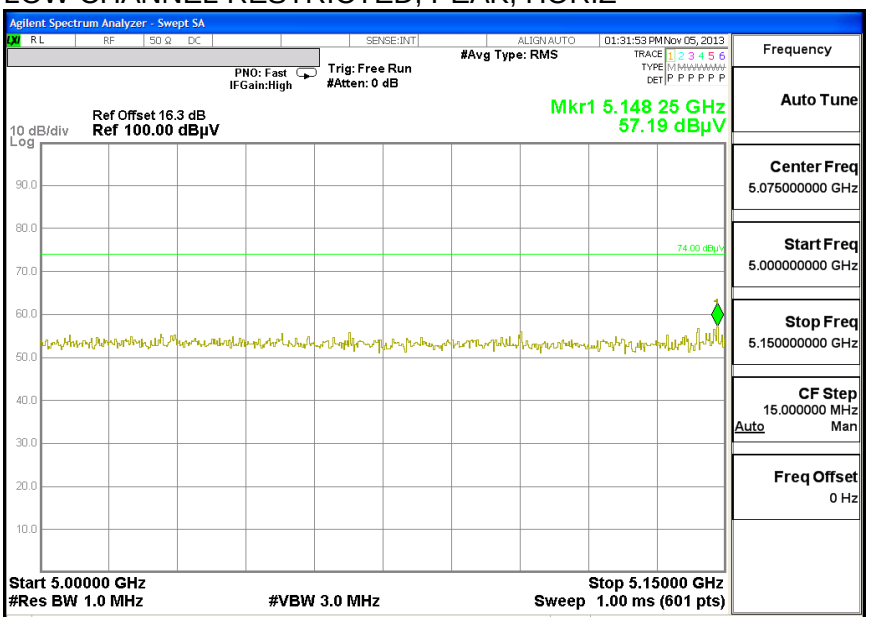
9.2.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

LOW CHANNEL RESTRICTED, PEAK, HORIZ



LOW CHANNEL RESTRICTED, AVERAGE, HORIZ

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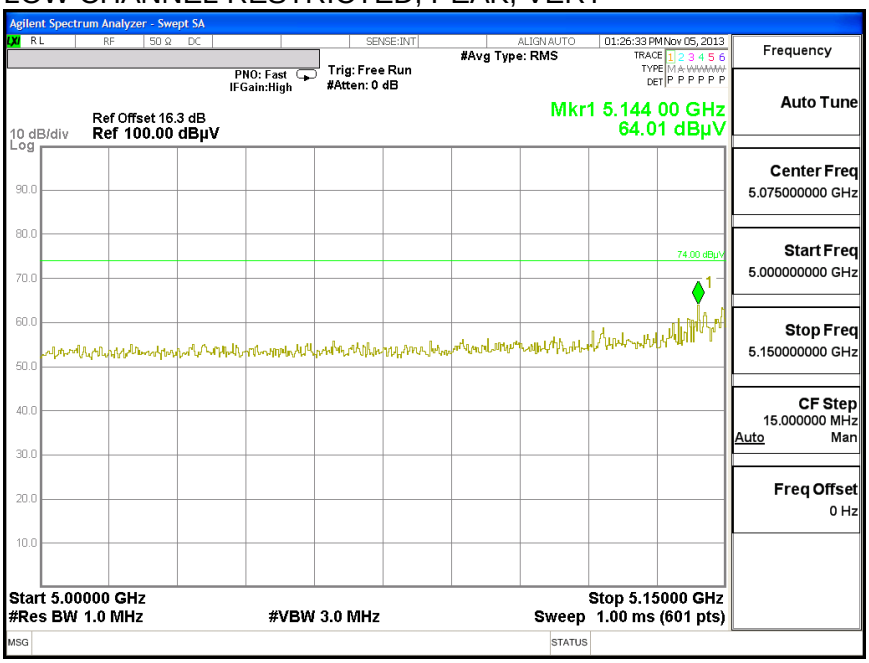
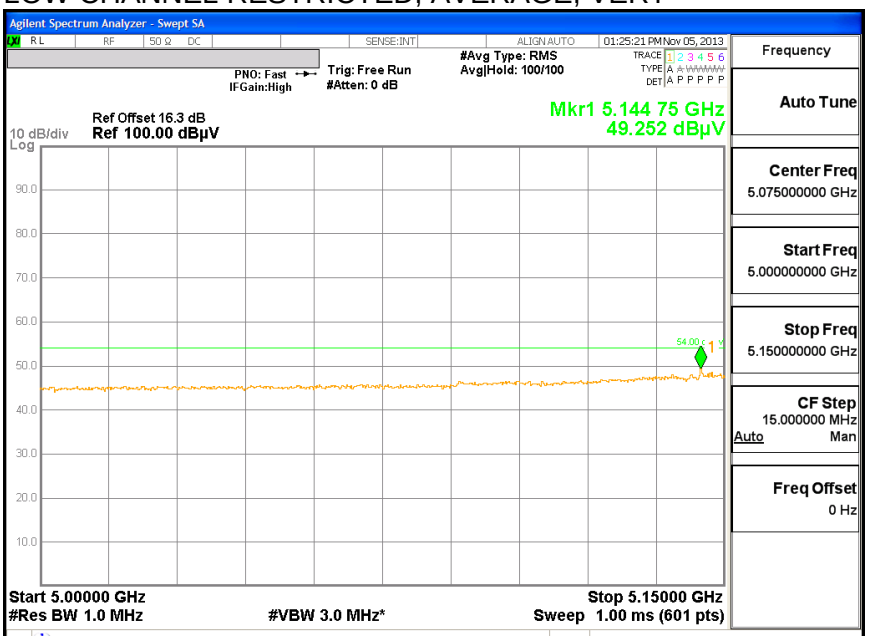
LOW CHANNEL RESTRICTED, PEAK, VERT



LOW CHANNEL RESTRICTED, AVERAGE, VERT



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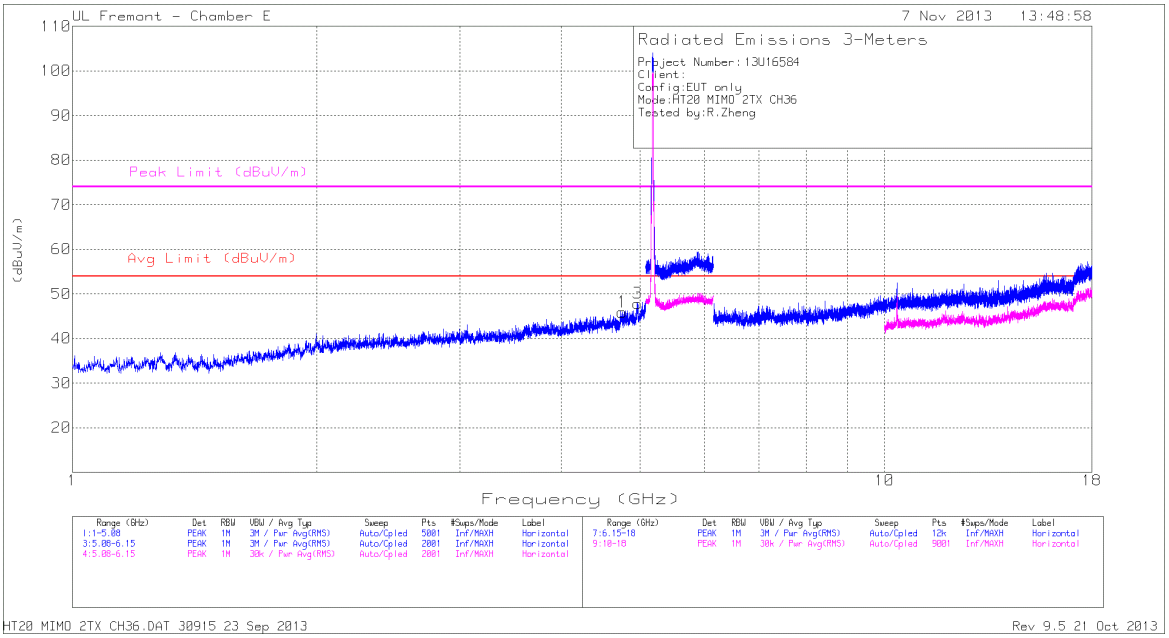
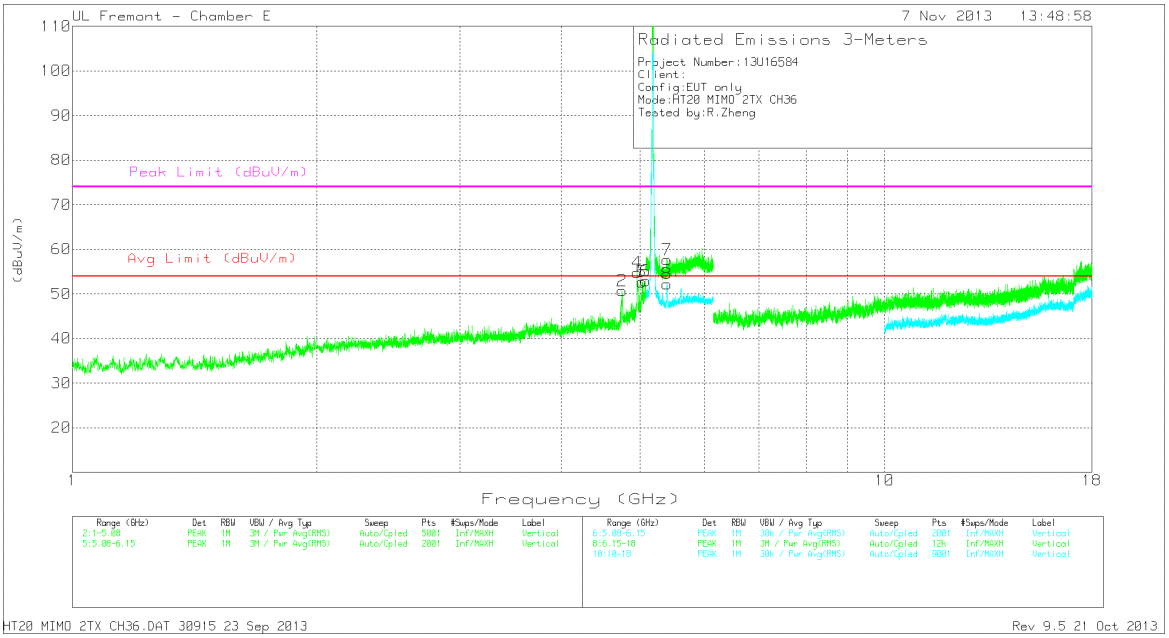
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL HORIZONTAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (db/m)	Amp/ Cbl/Flt r/Pad	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*4.753	39.32	PK	34.4	-27.8	45.92	54	-8.08	74.0	-28.08	0-360	100	H
2	*4.751	44.12	PK	34.4	-27.8	50.72	-	-	74.0	-23.28	0-360	201	V
	*4.751	36.7	AD1	34.4	-27.9	43.20	54	-10.80	-	-	264	347	V
3	*4.963	40.1	PK	34.3	-26.5	47.90	54	-6.10	74.0	-26.10	0-360	100	H
4	*4.964	46.87	PK	34.3	-26.4	54.77	-	-	-	-19.23	0-360	201	V
	*4.964	42.45	AD1	34.3	-26.5	50.25	54	-3.75	-	-	252	320	V
5	*5.023	45.11	PK	34.3	-26.7	52.71	-	-	-	-21.29	0-360	201	V
	*5.023	37.71	AD1	34.3	-26.5	45.51	54	-8.49	-	-	238	385	V
6	*5.080	44.06	PK	34.4	-25.5	52.96	-	-	74.0	-21.04	0-360	201	V
	*5.080	34.21	AD1	34.4	-25.6	43.01	54	-10.99	-	-	276	336	V
7	*5.397	41.55	PK	34.8	-18.7	57.65	-	-	74.0	-16.35	0-360	201	V
8	*5.397	36.14	Avg	34.8	-18.7	52.24	54	-1.76	-	-	0-360	100	V

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

PK - Peak detector

Avg - Video bandwidth < Resolution bandwidth

AD1 - KDB 789033 Method: AD Primary Power Average

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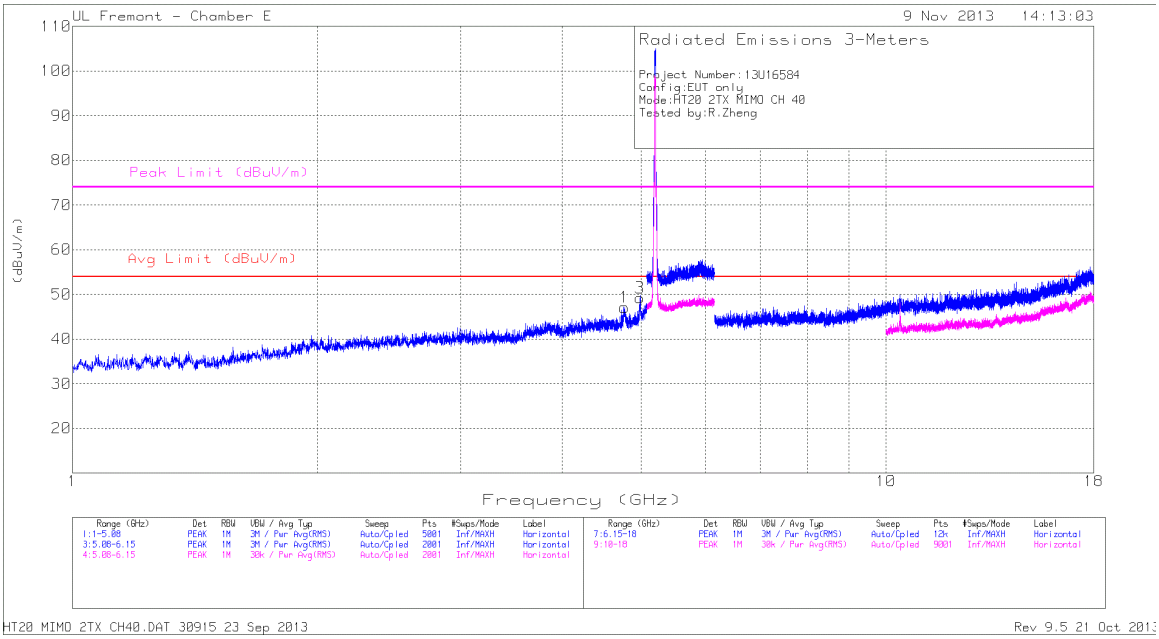
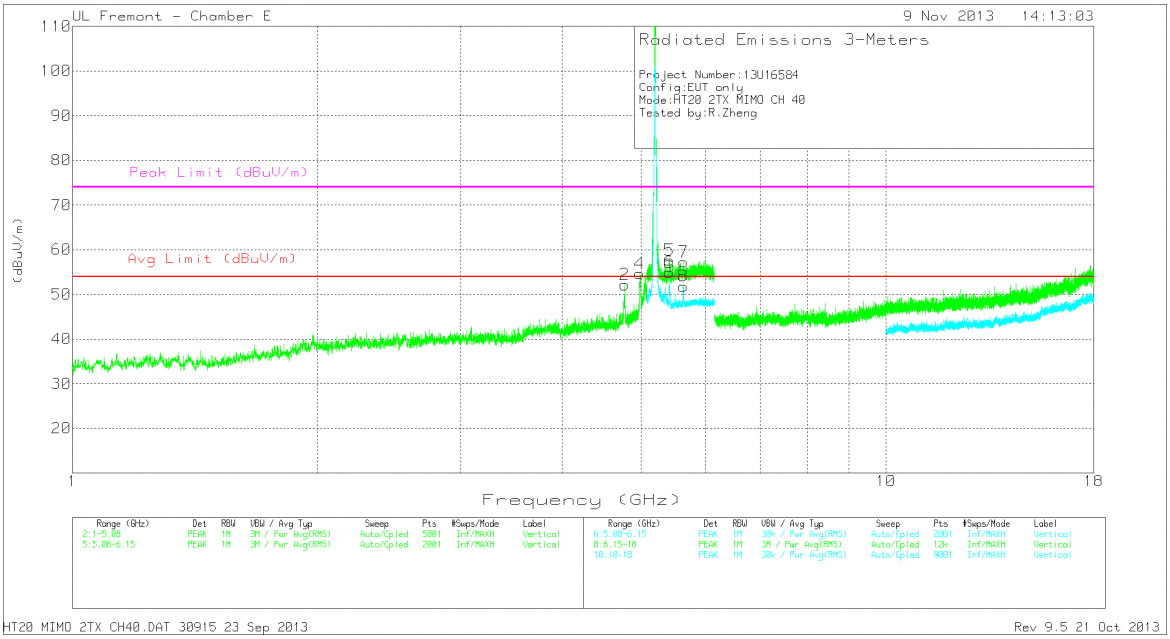
MID CHANNEL HORIZONTAL PLOT



MID CHANNEL VERTICAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl /5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.768	42.70	PK	34.4	-30.0	47.10	54	-6.90	74.0	-26.90	0-360	100	H
2	* 4.771	47.78	PK	34.4	-30.0	52.18	-	-	74.0	-21.82	0-360	199	V
2	* 4.771	40.17	AD1	34.4	-30.0	44.57	54	-9.43	-	-	59	221	V
3	* 4.982	44.40	PK	34.4	-29.6	49.20	-	-	74.0	-24.80	0-360	100	H
3	* 4.982	40.81	AD1	34.4	-29.5	45.71	54	-8.29	-	-	359	346	H
4	* 4.978	50.04	PK	34.4	-29.8	54.64	-	-	74	-19.36	0-360	101	V
4	* 4.978	41.31	AD1	34.4	-29.7	46.01	54	-7.99	-	-	32	351	V
5	* 5.417	44.24	PK	34.8	-21.4	57.64	-	-	74.0	-16.36	0-360	199	V
6	* 5.417	30.27	AD1	34.8	-21.6	43.47	54	-10.53	-	-	63	213	V
7	5.637	43.26	PK	35.1	-21.1	57.26	-	-	74.0	-16.74	0-360	199	V
8	5.637	37.76	Avg	35.1	-21.0	51.86	54	-2.14	-	-	0-360	100	V

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

PK - Peak detector

Avg - Video bandwidth < Resolution bandwidth

AD1 - KDB 789033 Method: AD Primary Power Average

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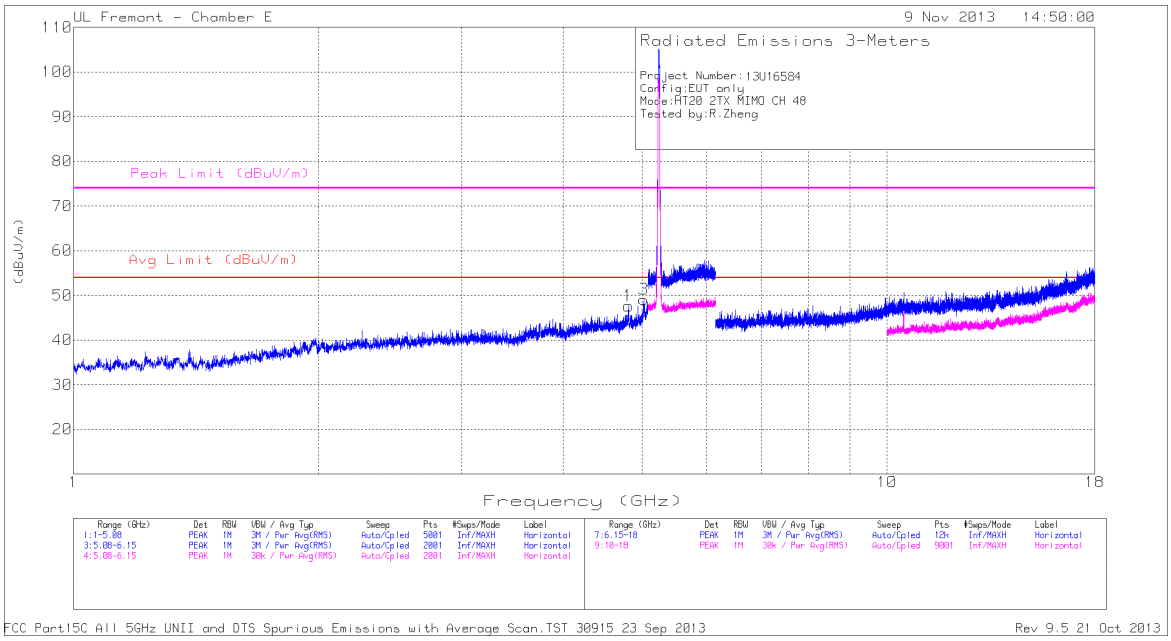
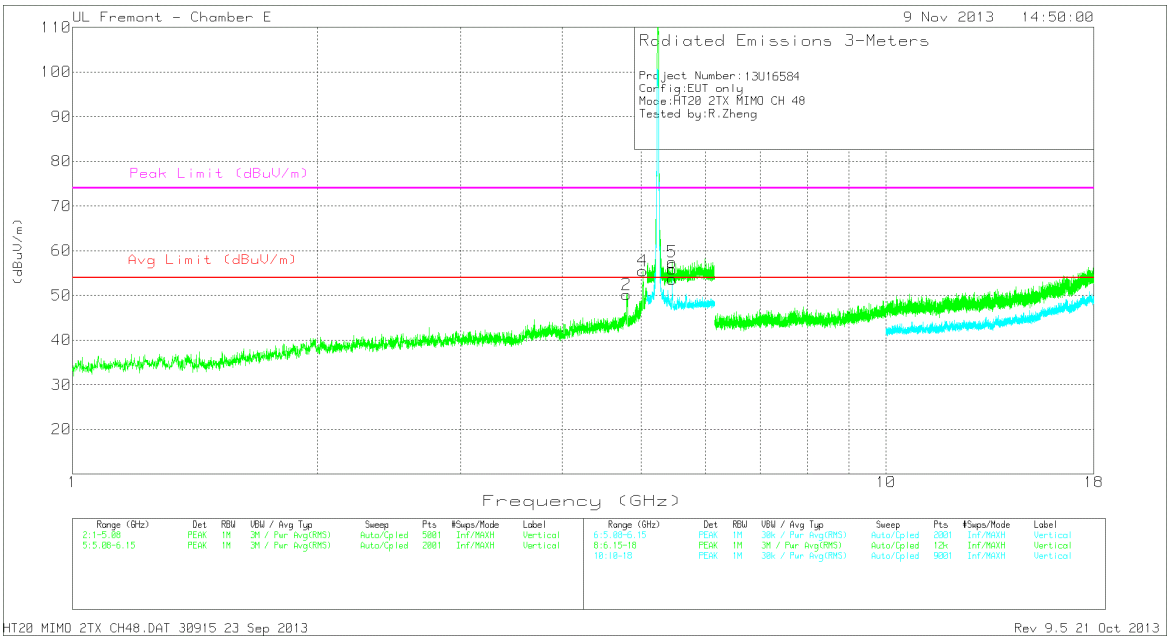
HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.809	43.67	PK	34.4	-30.4	47.67	54	-6.33	74.0	-26.33	0-360	100	H
2	* 4.798	46.15	PK	34.4	-30.4	50.15	-	-	74.0	-23.85	0-360	199	V
2	* 4.798	35.64	AD1	34.4	-30.4	39.64	54	-14.36	-	-	0-360	358	H
3	* 5.025	43.83	PK	34.4	-29.1	49.13	-	-	74.0	-24.87	0-360	100	H
3	* 5.025	35.25	AD1	34.4	-29.0	40.65	54	-13.35	-	-	0-360	322	H
4	* 5.022	50.20	PK	34.4	-29.1	55.50	-	-	74.0	-18.50	0-360	199	V
4	* 5.022	42.21	AD1	34.4	-29.1	47.51	54	-6.49	-	-	0-360	199	V
5	* 5.458	43.97	PK	34.8	-21.3	57.47	-	-	74.0	-16.53	0-360	199	V
6	* 5.458	30.46	AD1	34.8	-21.3	43.96	54	-10.04	-	-	0-360	369	V

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

PK - Peak detector

AD1 - KDB 789033 Method: AD Primary Power Average

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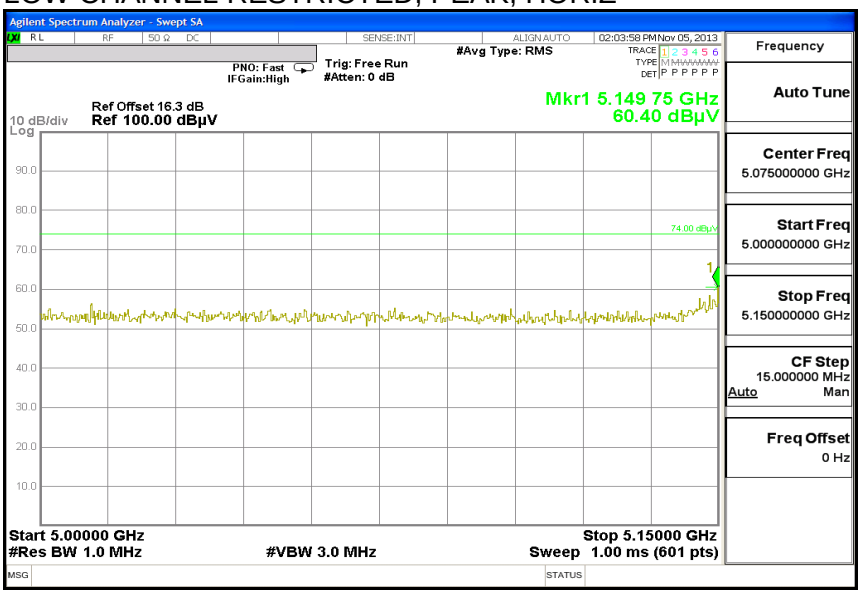
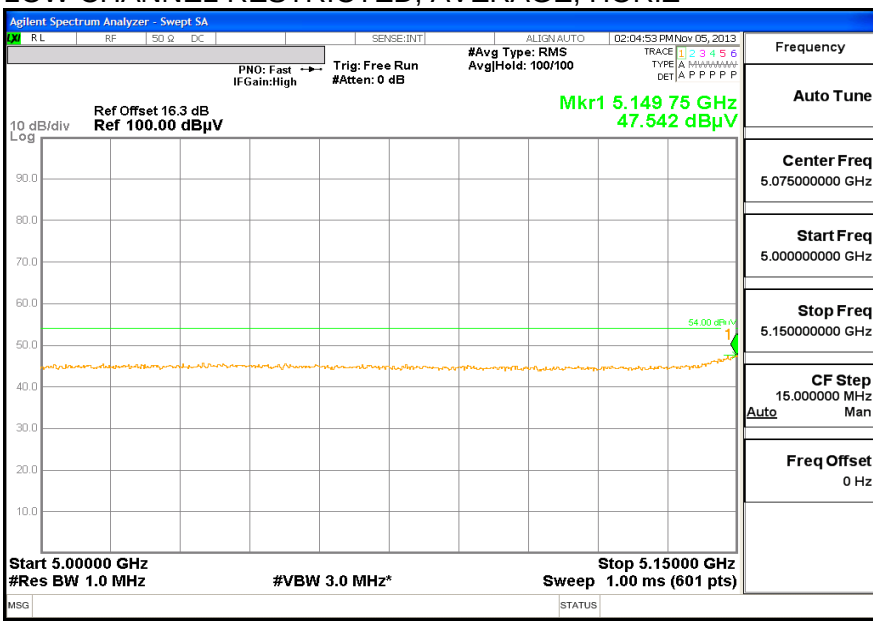
9.2.3. 802.11a HT40 MODE IN THE 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

LOW CHANNEL RESTRICTED, PEAK, HORIZ



LOW CHANNEL RESTRICTED, AVERAGE, HORIZ



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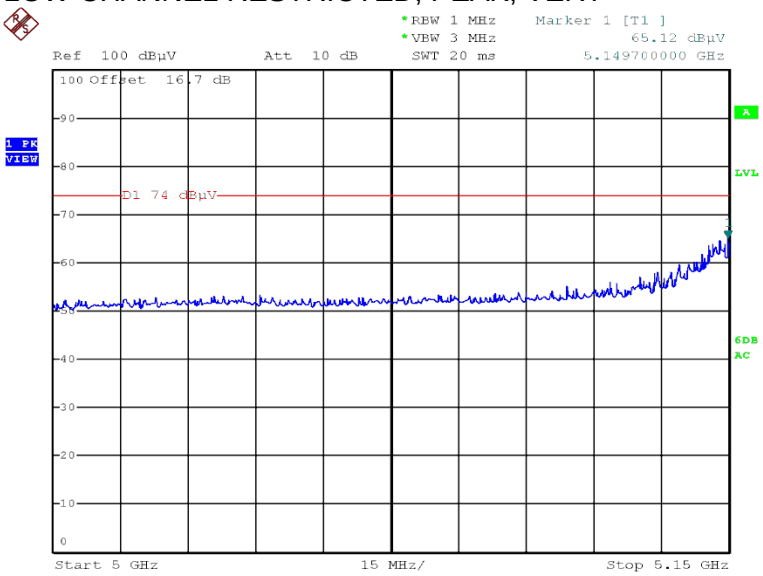
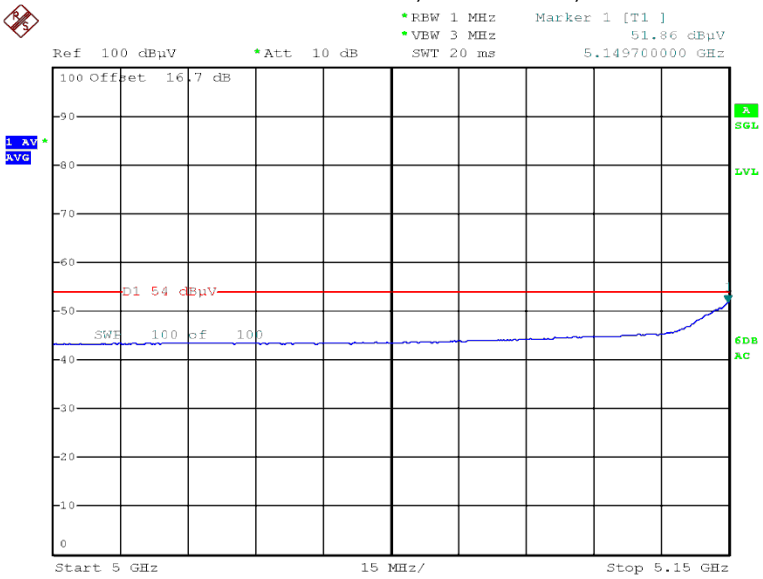
LOW CHANNEL RESTRICTED, PEAK, VERT



Date: 16.DEC.2013 19:05:50

LOW CHANNEL RESTRICTED, AVERAGE, VERT



Date: 16.DEC.2013 19:06:30

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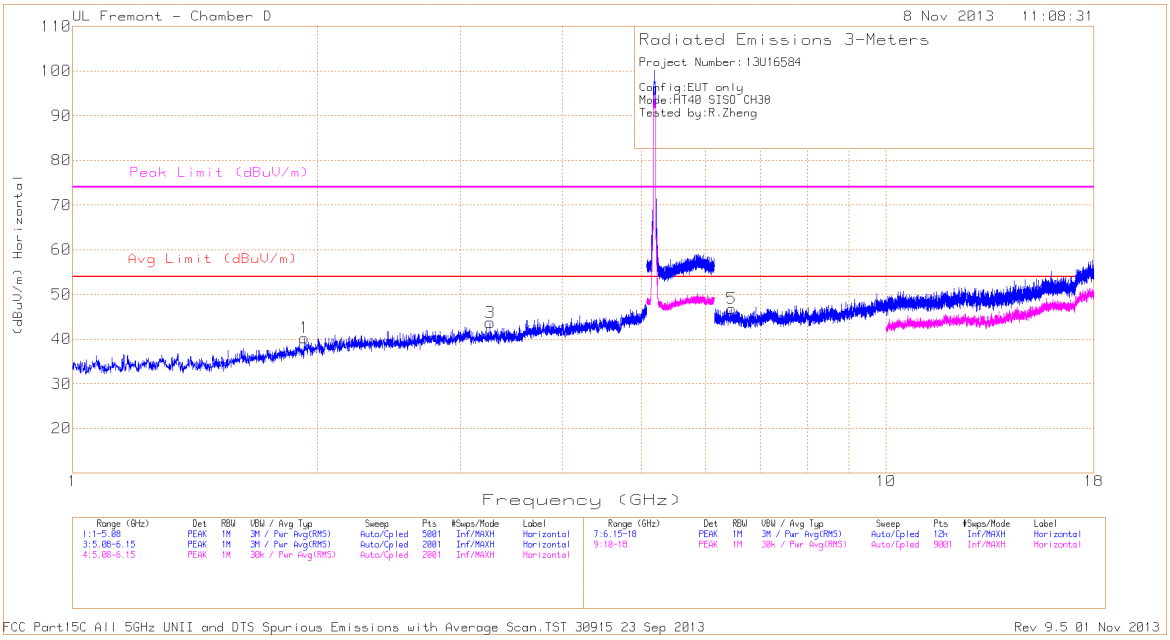
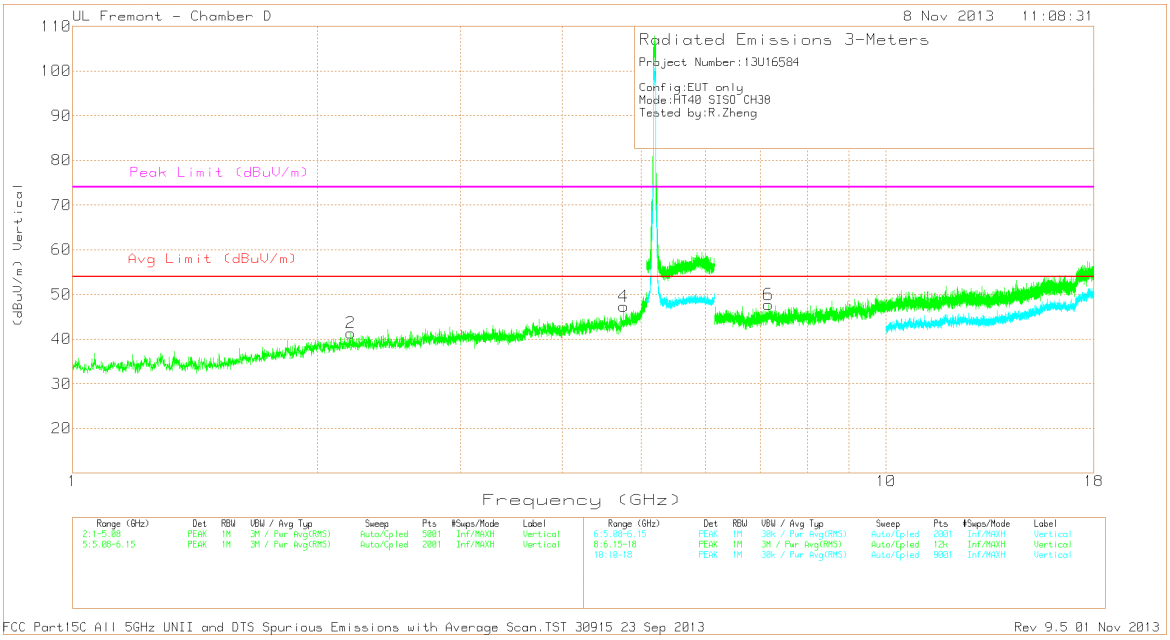
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL PLOT



LOW CHANNEL VERTICAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (db/m)	Amp/Cbl/Fltr/Pad	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.928	39.97	PK	31.2	-30.9	40.27	-	-	68.2	-27.93	0-360	201	H
3	* 3.260	40.00	PK	33.3	-29.6	43.70	54	-10.30	74.0	-30.30	0-360	100	H
2	2.197	40.07	PK	32.3	-31.0	41.37	-	-	68.2	-26.83	0-360	201	V
4	* 4.758	40.60	PK	34.4	-27.7	47.30	54	-6.70	74.0	-26.72	0-360	201	V
5	6.461	37.51	PK	35.8	-26.5	46.81	-	-	68.2	-21.39	0-360	201	H
6	7.167	36.13	PK	35.9	-24.3	47.73	-	-	68.2	-41.93	0-360	100	V

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

PK - Peak detector

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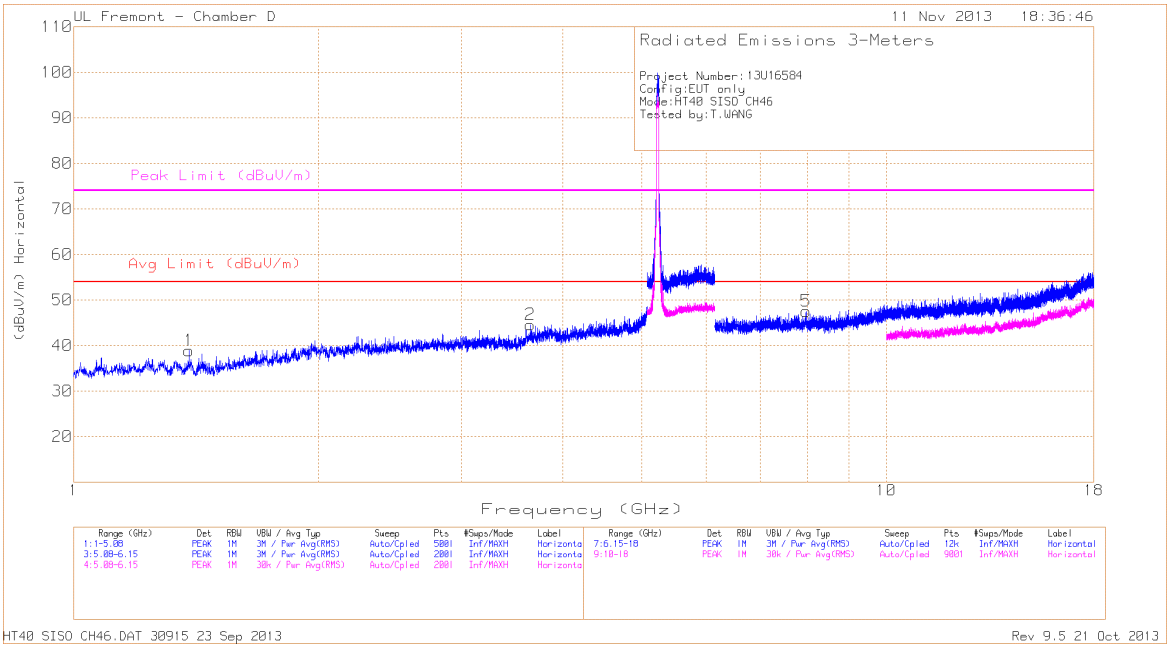
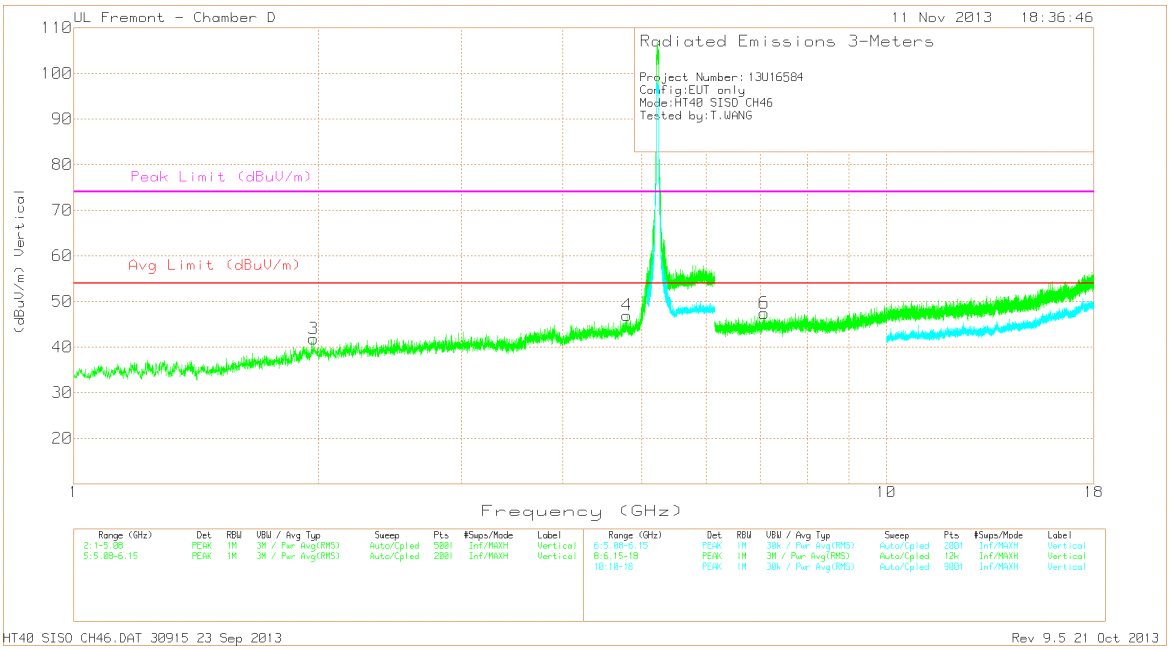
HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl /5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.387	44.06	PK	29.0	-34.2	38.86	54	-15.14	74.0	-35.14	0-360	100	H
2	* 3.647	42.33	PK	33.5	-31.3	44.53	54	-9.47	74.0	-29.47	0-360	100	H
3	1.973	42.63	PK	31.9	-32.7	41.83	-	-	68.2	-26.37	0-360	100	V
4	* 4.795	42.86	PK	34.4	-30.3	46.96	54	-7.04	74.0	-27.04	0-360	100	V

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl /6GHz HPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	7.969	38.71	PK	36.2	-27.4	47.51	-	-	68.2	-20.69	0-360	100	H
6	7.075	39.83	PK	36.0	-28.4	47.43	-	-	68.2	-20.77	0-360	199	V

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

PK - Peak detector

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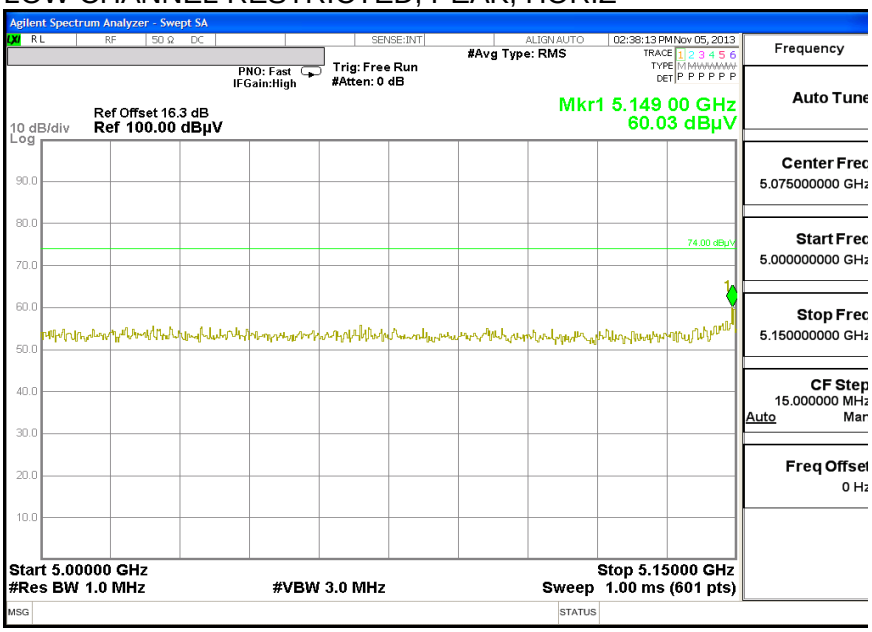
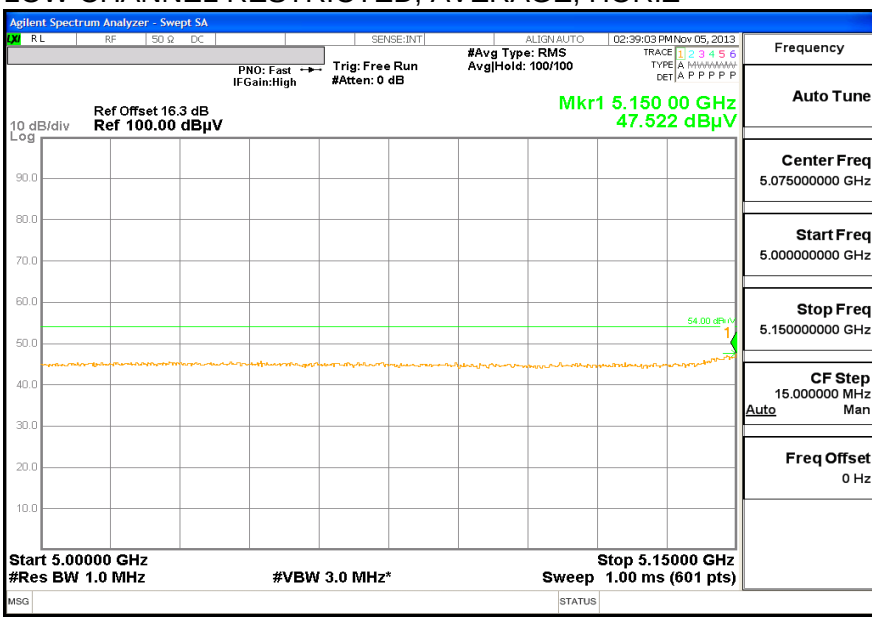
9.2.4. 802.11n HT40 MIMO IN THE 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

LOW CHANNEL RESTRICTED, PEAK, HORIZ



LOW CHANNEL RESTRICTED, AVERAGE, HORIZ



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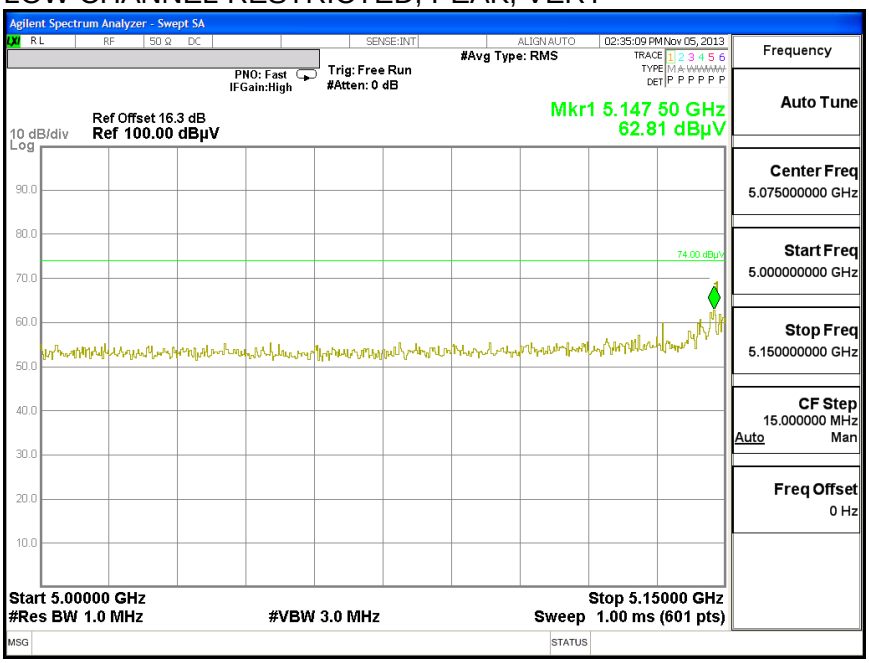
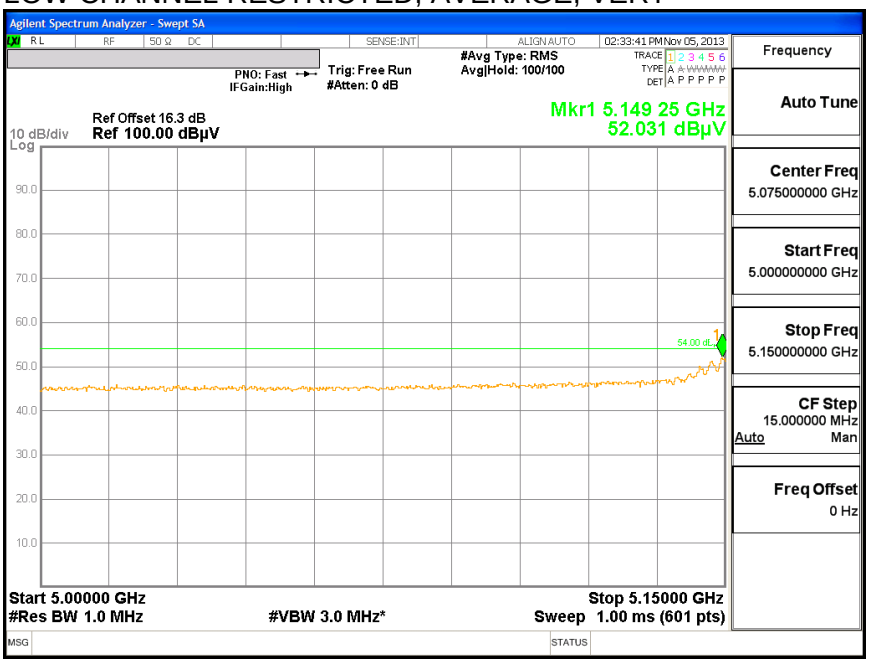
LOW CHANNEL RESTRICTED, PEAK, VERT



LOW CHANNEL RESTRICTED, AVERAGE, VERT



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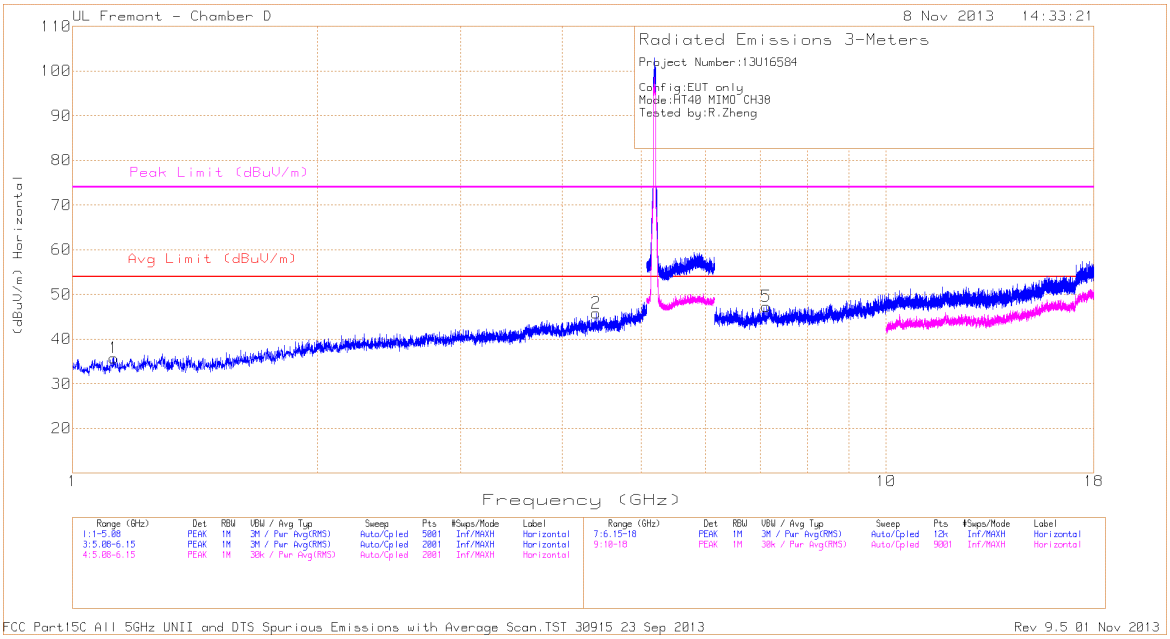
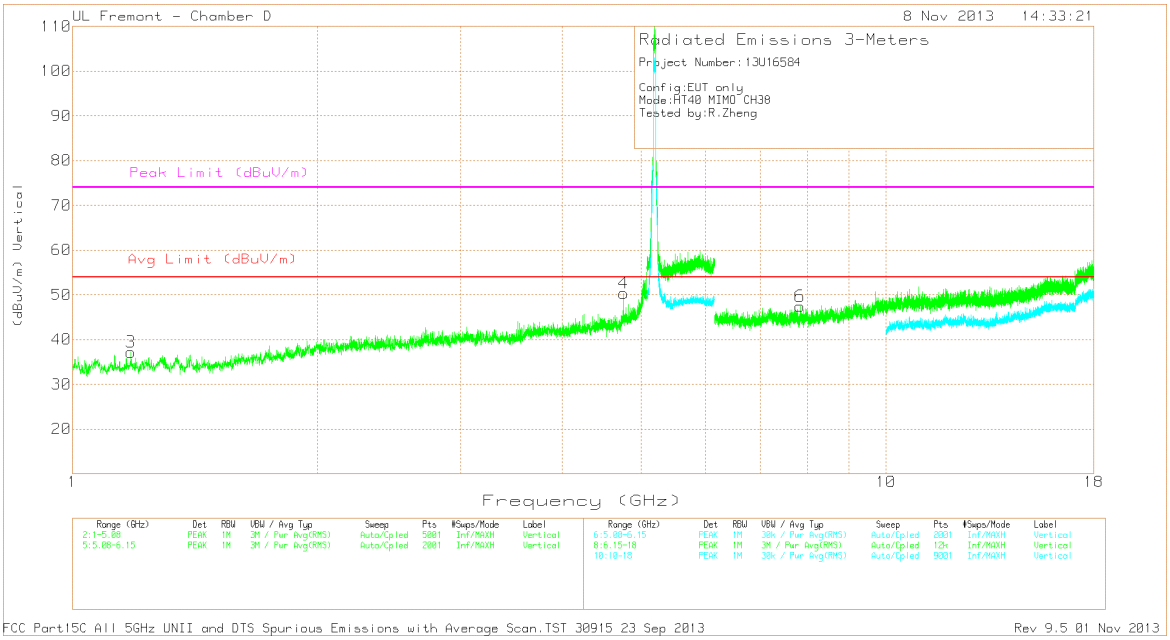
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL PLOT



LOW CHANNEL VERTICAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (db/m)	Amp/Cbl /Fltr/Pad	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.124	40.18	PK	28.1	-32.5	35.78	54	-18.22	74.0	-38.22	0-360	200	H
2	4.403	40.09	PK	34.1	-28.4	45.79	-	-	68.2	-22.41	0-360	100	H
3	* 1.180	41.50	PK	28.3	-32.6	37.20	54	-16.80	74.0	-36.80	0-360	100	V
4	* 4.758	43.67	PK	34.4	-27.7	50.37		-	74.0	-23.63	0-360	200	V
4	* 4.758	35.38	AD1	34.4	-27.7	42.08	54	-11.92	-	-	0-360	181	V
5	7.121	36.61	PK	35.9	-25.2	47.31	-	-	68.2	-20.89	0-360	201	H
6	7.838	36.43	PK	36.1	-25.1	47.43	-	-	68.2	-20.77	0-360	201	V

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

PK - Peak detector

AD1 - KDB 789033 Method: AD Primary Power Average

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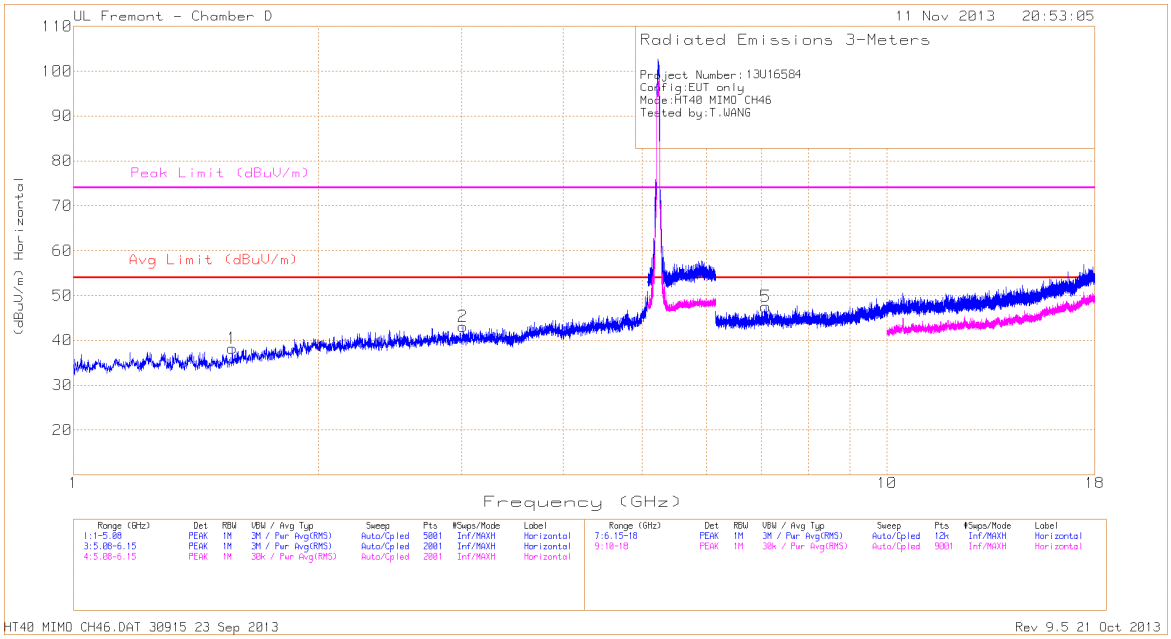
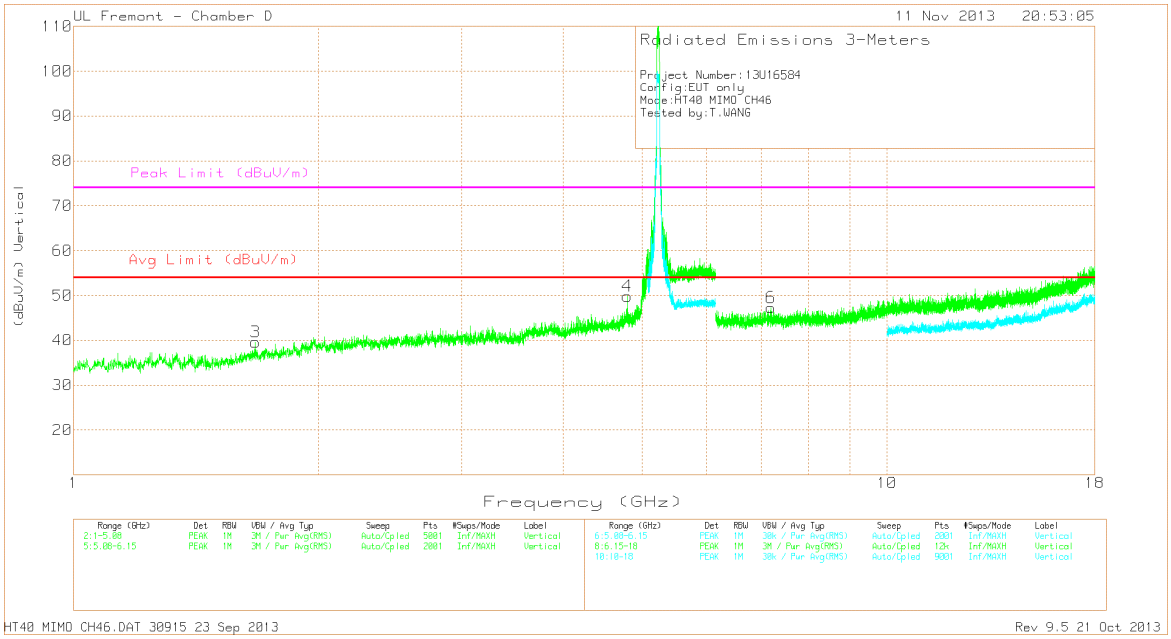
HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl /5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.567	43.32	PK	29.3	-34.4	38.22	-	-	68.2	-29.98	0-360	100	H
2	3.010	41.81	PK	33.2	-31.9	43.11	-	-	68.2	-25.09	0-360	100	H
3	1.673	43.14	PK	30.0	-33.5	39.64	-	-	68.2	-28.56	0-360	199	V
4	*4.794	45.74	PK	34.4	-30.3	49.84	-	-	74.0	-24.16	0-360	199	V
4	* 4.794	37.58	AD1	34.4	-30.3	41.68	54	-12.32	-	-	0-360	199	V

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/ 6GHz HPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	7.093	40.03	PK	36.0	-28.5	47.53	-	-	68.2	-20.67	0-360	199	H
6	7.196	39.79	PK	36.0	-28.5	47.29	-	-	68.2	-20.91	0-360	100	V

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

PK - Peak detector

AD1 - KDB 789033 Method: AD Primary Power Average

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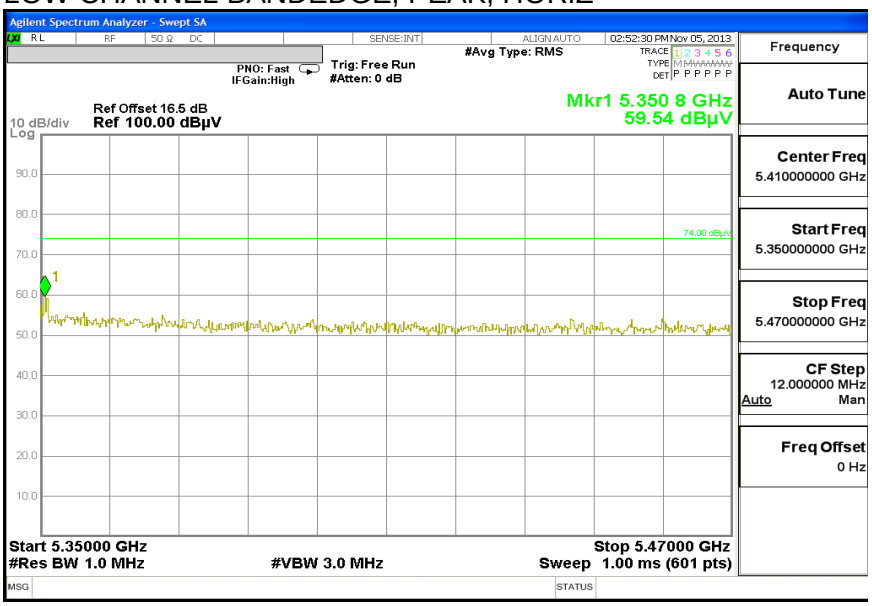
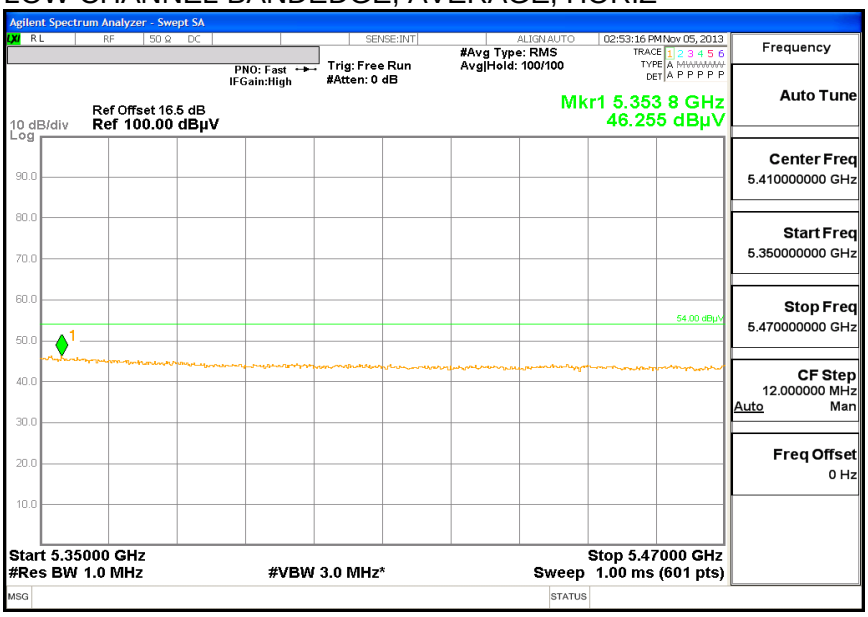
9.2.5. 802.11a MODE IN THE 5.3 GHz BAND

AUTHORIZED BANDEDGE (LOW CHANNEL)

LOW CHANNEL BANDEDGE, PEAK, HORIZ



LOW CHANNEL BANDEDGE, AVERAGE, HORIZ



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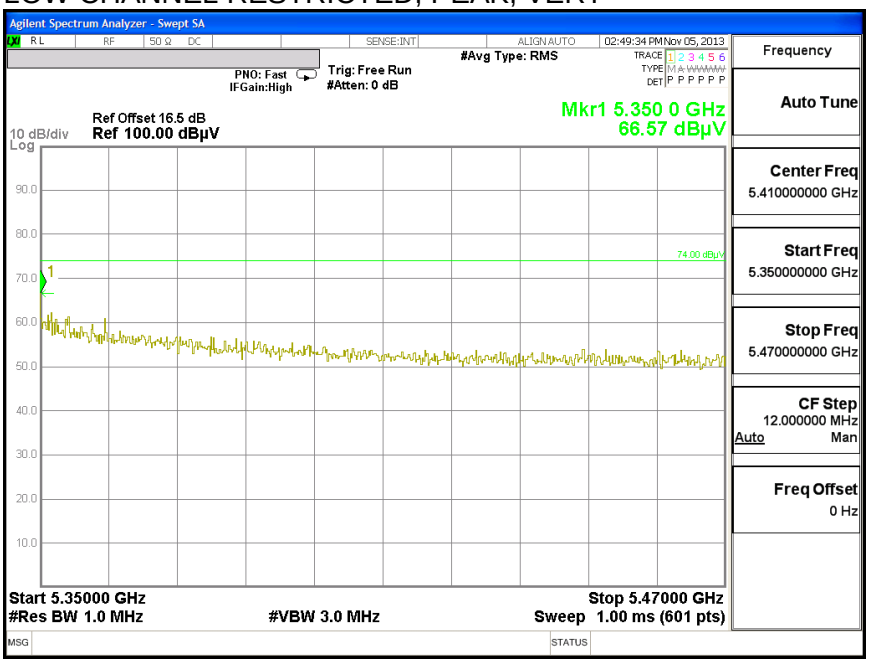
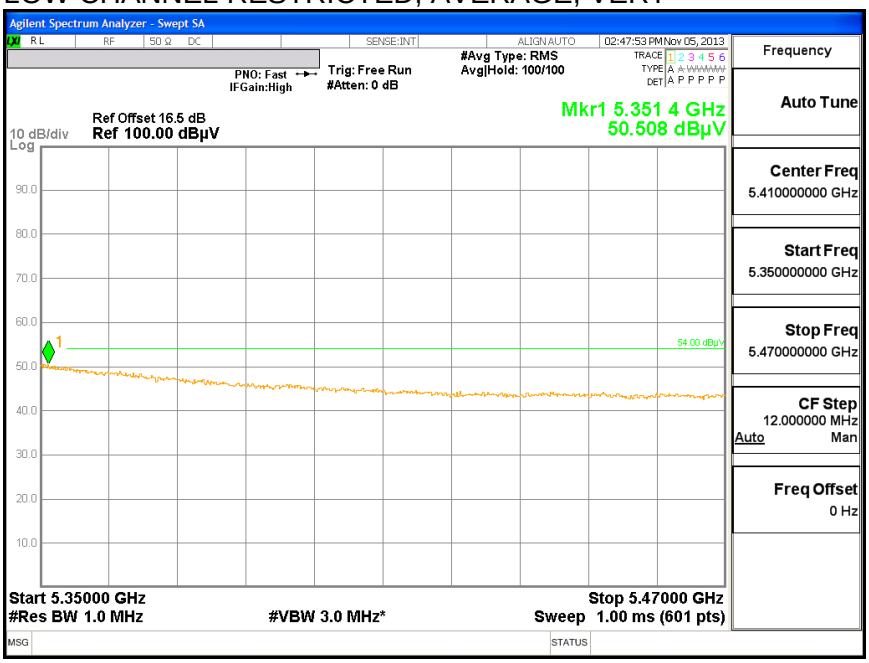
LOW CHANNEL RESTRICTED, PEAK, VERT



LOW CHANNEL RESTRICTED, AVERAGE, VERT



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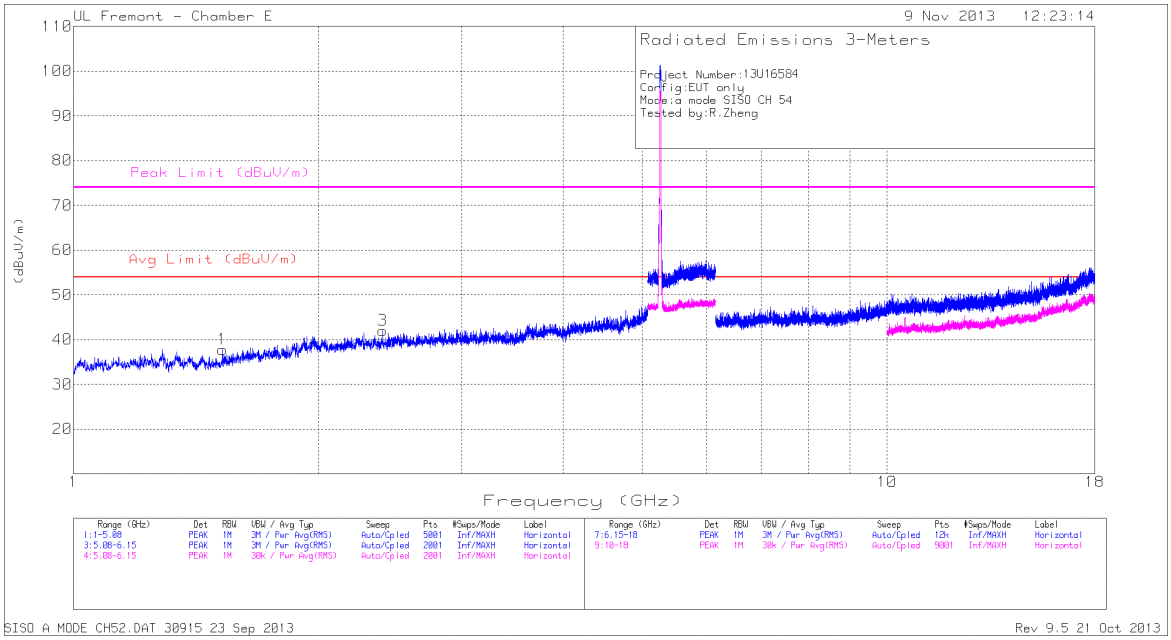
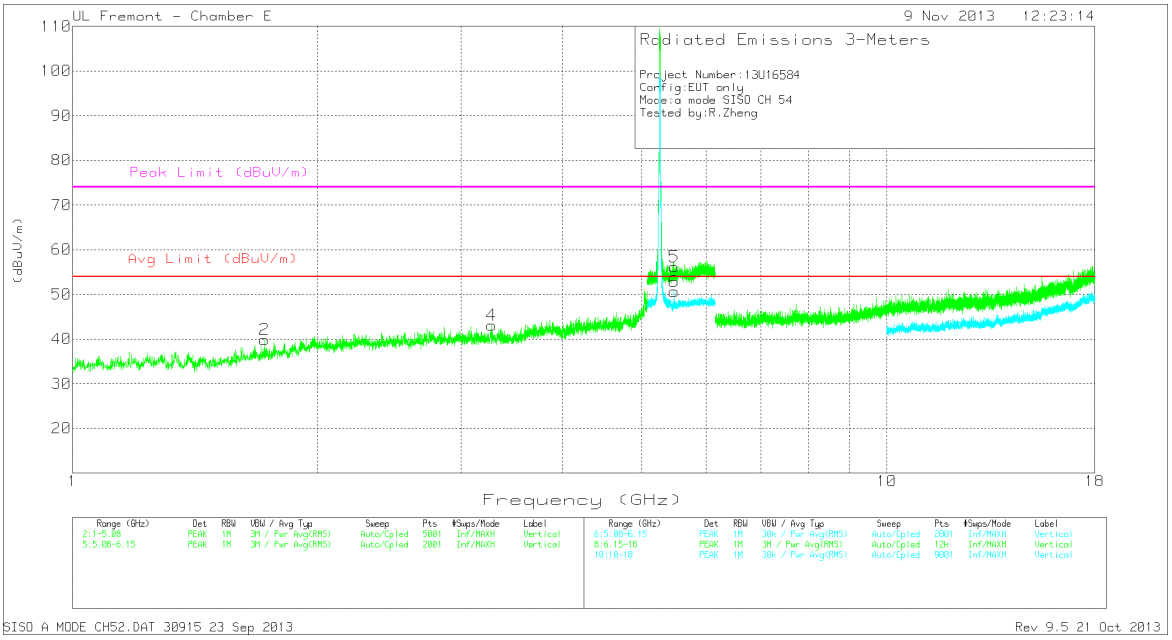
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL PLOT



LOW CHANNEL HORIZONTAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/ 5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*1.525	43.53	PK	29.0	-34.7	37.83	54	-16.17	74.0	-36.17	0-360	199	H
2	*1.721	43.38	PK	30.3	-33.8	39.88	54	-14.12	74.0	-34.12	0-360	199	V
3	*2.399	42.85	PK	32.6	-33.4	42.05	54	-11.95	74.0	-31.95	0-360	100	H
4	*3.271	41.78	PK	33.4	-32.1	43.08	54	-10.92	74.0	-30.92	0-360	101	V

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/ 10dB Pad	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	5.480	42.58	PK	34.8	-21.2	56.18	-	-	74.0	-17.82	0-360	100	V
6	5.480	37.05	Avg	34.8	-21.2	50.65	54	-3.35	-	-	0-360	199	V

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

PK - Peak detector

Avg - Video bandwidth < Resolution bandwidth

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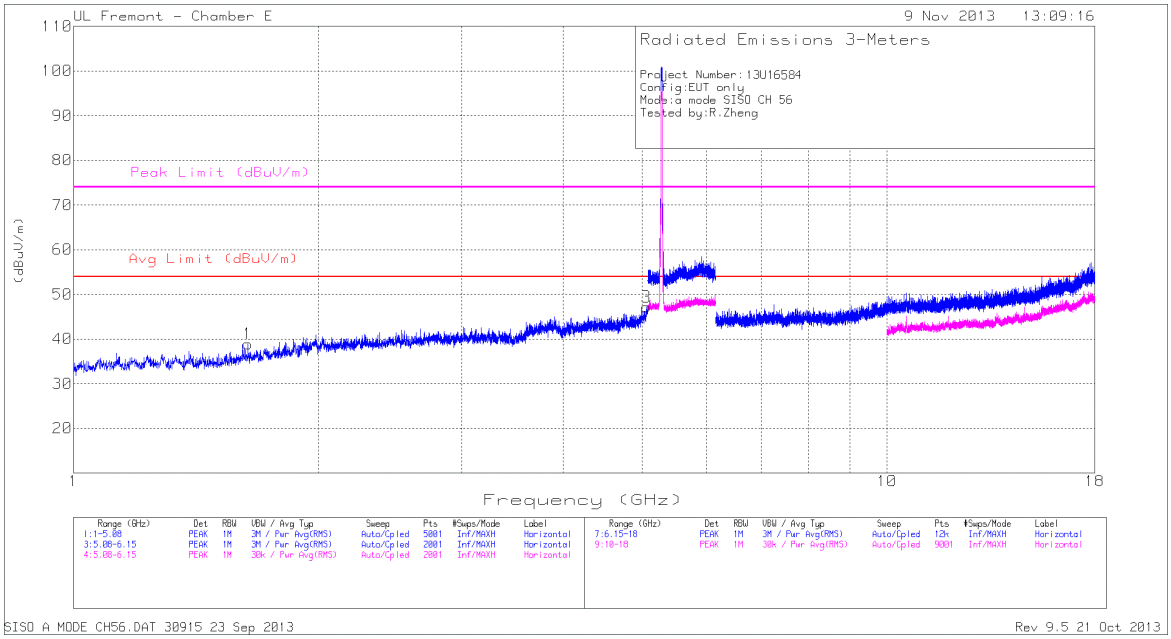
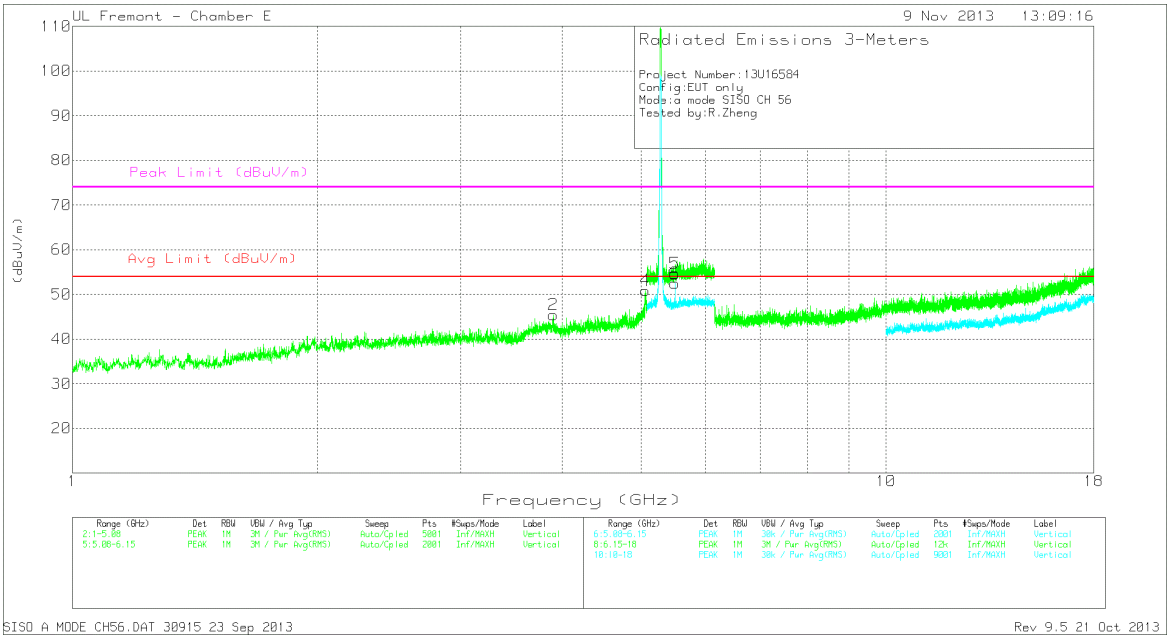
MID CHANNEL HORIZONTAL PLOT



MID CHANNEL VERTICAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl /5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*1.638	42.73	PK	29.7	-33.5	38.93	54	-15.07	74.0	-35.07	0-360	199	H
2	*3.899	42.55	PK	33.8	-30.9	45.45	54	-8.55	74.0	-28.55	0-360	199	V
4	*5.060	44.36	PK	34.5	-28.0	50.86	-	-	74.0	-23.14	0-360	199	V
4	*5.060	37.10	AD1	34.5	-28.1	43.50	54	-10.50	-	-	0-360	374	V
3	*5.062	40.65	PK	34.5	-28.0	47.15	54	-6.85	74.0	-26.85	0-360	101	H

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl /10dB Pad	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	5.501	40.93	PK	34.8	-21.1	54.63	-	-	74.0	-19.37	0-360	100	V
6	5.501	38.76	Avg	34.8	-21.1	52.46	54	-1.54	-	-	0-360	200	V

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

PK - Peak detector

Avg - Video bandwidth < Resolution bandwidth

AD1 - KDB 789033 Method: AD Primary Power Average

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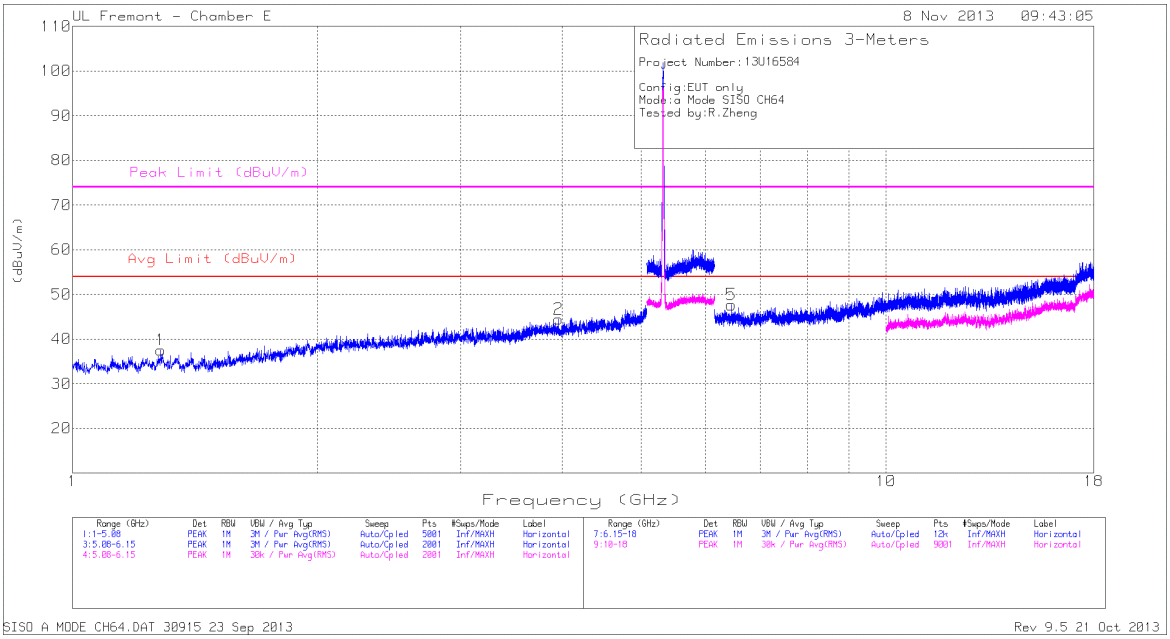
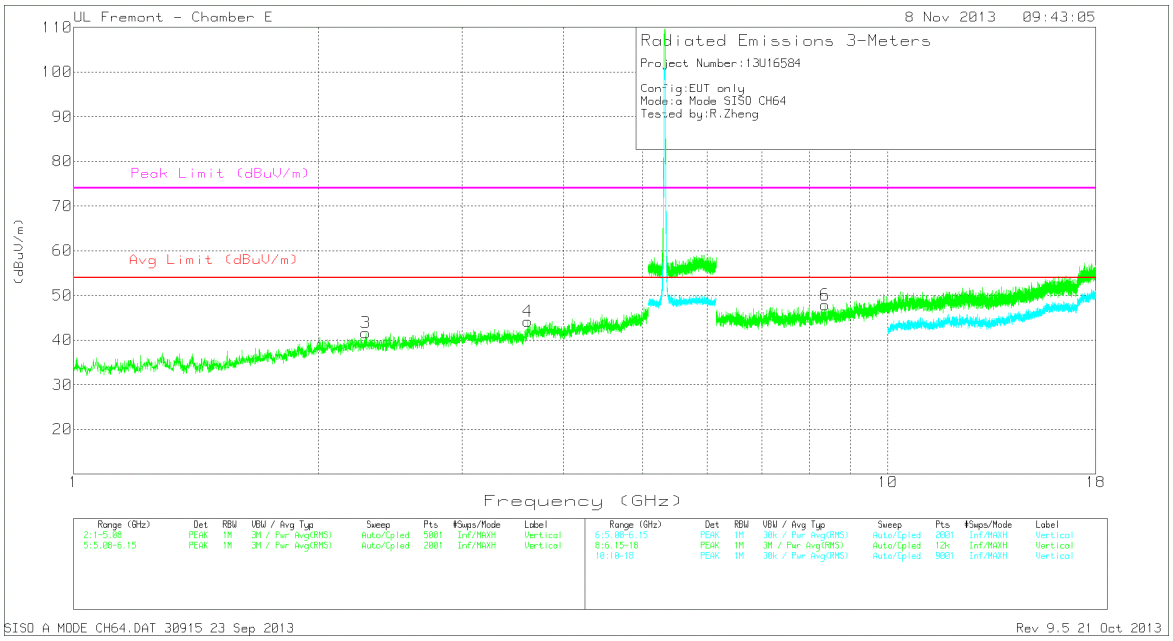
HIGH CHANNEL HORITONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (db/m)	Amp/Cbl /Fltr/Pad	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*1.284	40.56	PK	28.5	-31.5	37.56	54	-16.44	74.0	-36.44	0-360	100	H
3	*2.284	39.94	PK	32.4	-30.7	41.64	54	-12.36	74.0	-32.36	0-360	100	V
4	*3.614	40.01	PK	33.5	-29.3	44.21	54	-9.79	74.0	-29.79	0-360	201	V
2	*3.956	39.68	PK	33.8	-29.0	44.48	54	-9.52	74.0	-29.52	0-360	100	H
5	6.454	38.49	PK	35.8	-26.6	47.69	-	-	68.2	-20.51	0-360	100	H
6	*8.372	36.64	PK	36.1	-24.9	47.84	54	-6.16	74.0	-26.16	0-360	200	V

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

PK - Peak detector

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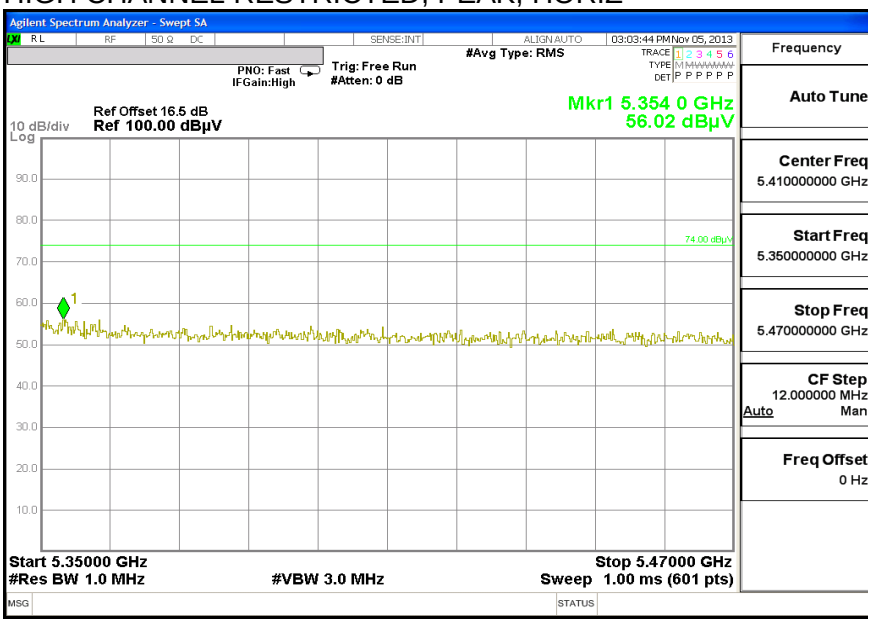
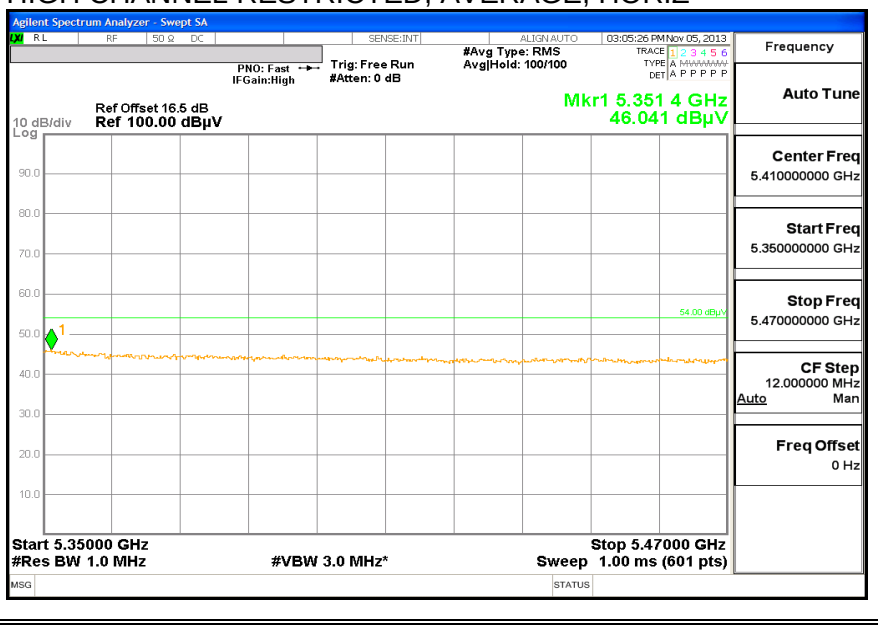
9.2.6. 802.11n HT20 MIMO IN THE 5.3 GHz BAND

RESTRICTED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL RESTRICTED, PEAK, HORIZ



HIGH CHANNEL RESTRICTED, AVERAGE, HORIZ



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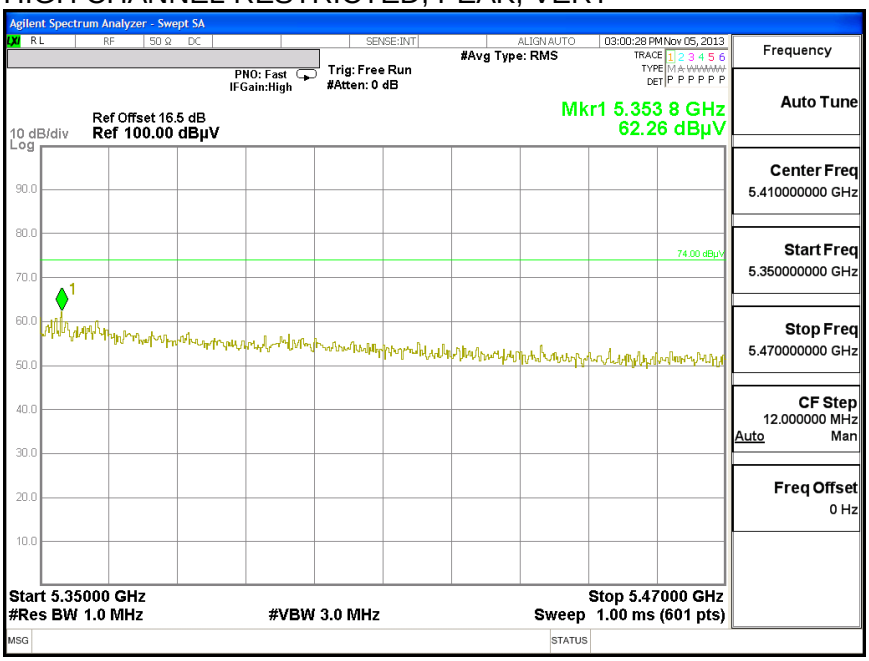
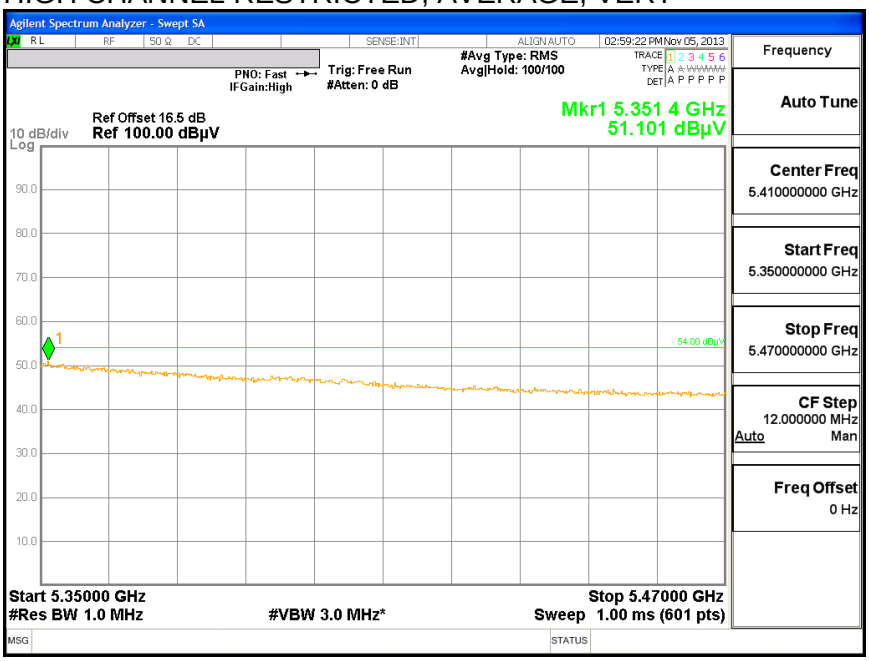
HIGH CHANNEL RESTRICTED, PEAK, VERT



HIGH CHANNEL RESTRICTED, AVERAGE, VERT



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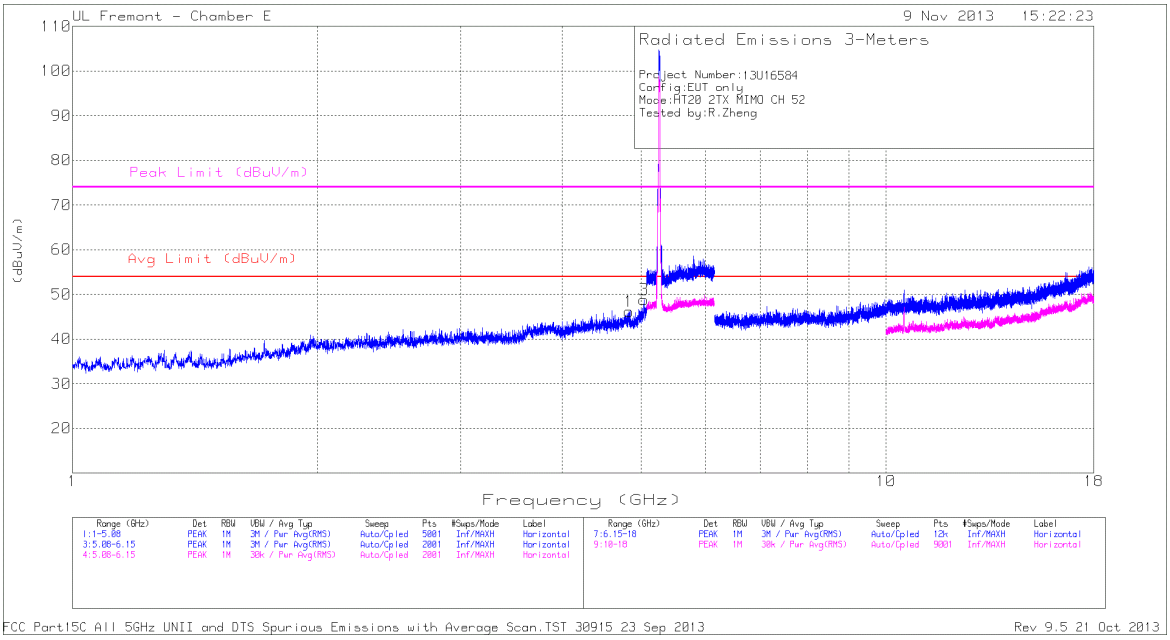
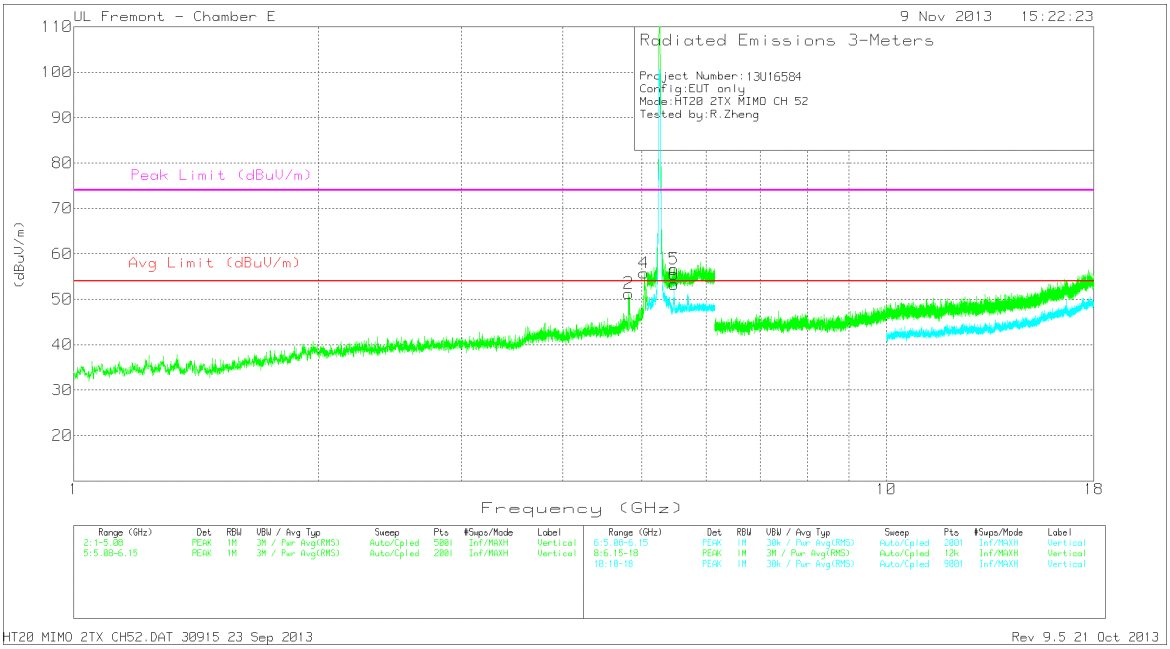
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL PLOT



LOW CHANNEL VERTICAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/ 5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.829	42.16	PK	34.4	-30.4	46.16	54	-7.84	74.0	-27.84	0-360	199	H
2	* 4.818	47.34	PK	34.4	-30.5	51.24	-	-	74.0	-22.76	0-360	199	V
	* 4.818	38.64	AD1	34.4	-30.5	42.54	54	-11.46	-	-	58	148	V
3	* 5.038	43.42	PK	34.4	-29.0	48.82	-	-	74.0	-25.18	0-360	100	H
	* 5.038	36.70	AD1	34.4	-29.0	42.10	54	-11.90	-	-	30	257	H
4	* 5.034	50.37	PK	34.4	-29.0	55.77	-	-	74.0	-18.23	0-360	199	V
	* 5.034	44.67	AD1	34.4	-29.0	50.07	54	-3.93	-	-			V
5	5.480	43.04	PK	34.8	-21.2	56.64	-	-	68.2	-11.56	0-360	100	V
6	5.479	39.71	Avg	34.8	-21.2	53.31	-	-	-	-	0-360	199	V

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

PK - Peak detector

Avg - Video bandwidth < Resolution bandwidth

AD1 - KDB 789033 Method: AD Primary Power Average

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47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
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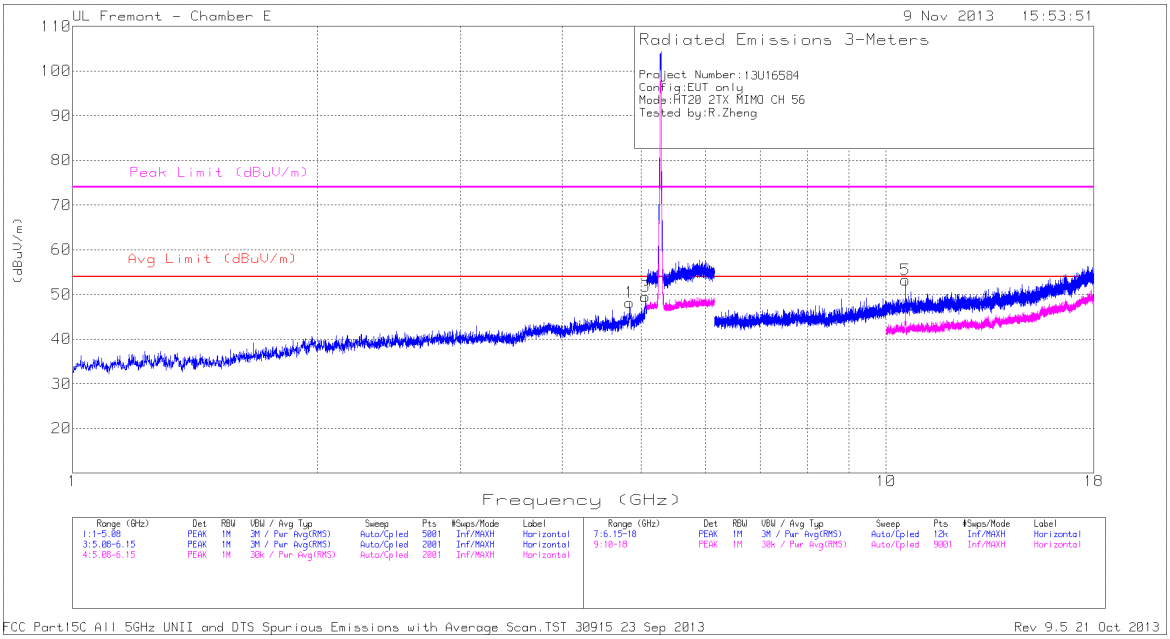
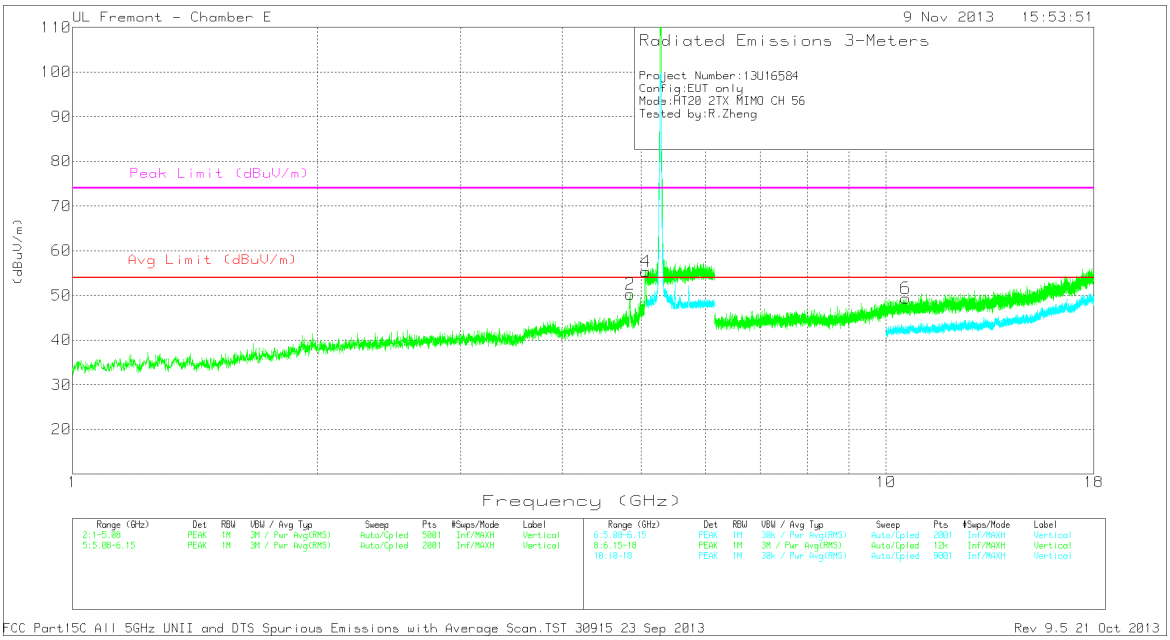
MID CHANNEL HORIZONTAL PLOT



MID CHANNEL VERTICAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl /5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.837	44.07	PK	34.4	-30.3	48.17	-	-	74.0	-25.83	0-360	199	H
	* 4.837	38.84	AD1	34.4	-30.3	42.94	54	-11.06	-	-	32	333	V
2	* 4.848	46.17	PK	34.4	-30.3	50.27	54	-3.73	74.0	-23.73	0-360	100	V
3	* 5.061	43.03	PK	34.5	-28.0	49.53	54	-4.47	74.0	-24.47	0-360	101	H
4	* 5.064	48.74	PK	34.5	-27.9	55.34	-	-	74.0	-18.66	0-360	200	V
	* 5.064	33.01	AD1	34.5	-27.9	39.61	54	-14.39	-	-	95	165	H

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl /6GHz HPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	10.563	39.53	PK	38.4	-24.7	53.23	-	-	68.2	-14.97	0-360	101	H
6	10.572	35.95	PK	38.4	-25.0	49.35	-	-	68.2	-18.85	0-360	200	V

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

PK - Peak detector

AD1 - KDB 789033 Method: AD Primary Power Average

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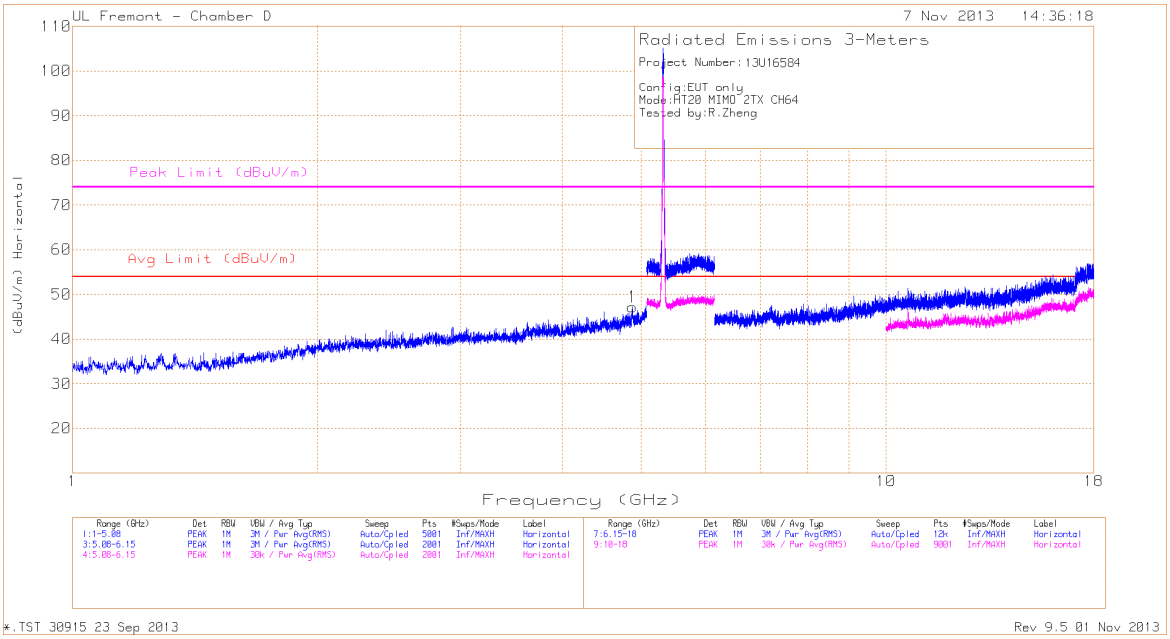
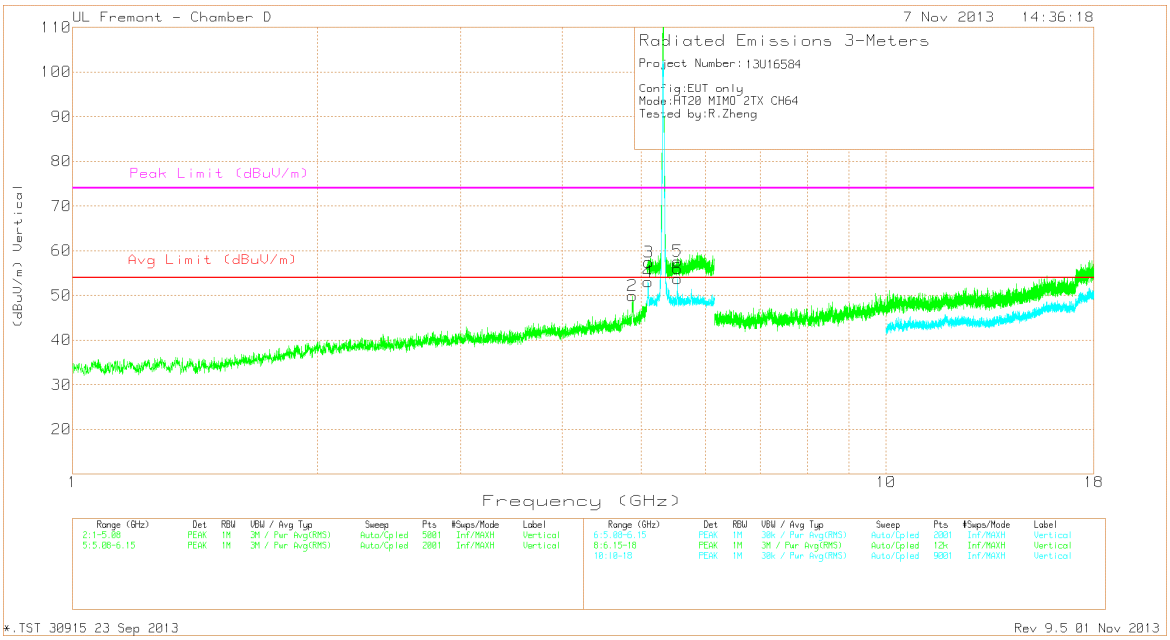
HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (db/m)	Amp/Cbl/ Fltr/Pad	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.878	40.29	PK	34.3	-27.4	47.19	54	-6.81	74.0	-26.81	0-360	100	H
2	* 4.877	43.04	PK	34.3	-27.4	49.94	-	-	74.0	-24.06	0-360	100	V
	* 4.877	35.73	AD1	34.3	-27.4	42.63	54	-11.37	-	-	35	321	V
3	* 5.106	41.34	PK	34.5	-18.4	57.44	-	-	74.0	-16.56	0-360	100	V
4	* 5.106	32.52	AD1	34.5	-18.4	48.62	54	-5.38	-	-	178	374	V
5	5.540	40.77	PK	34.9	-18.0	57.67	-	-	68.2	-10.53	0-360	201	V

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

PK - Peak detector

AD1 - KDB 789033 Method: AD Primary Power Average

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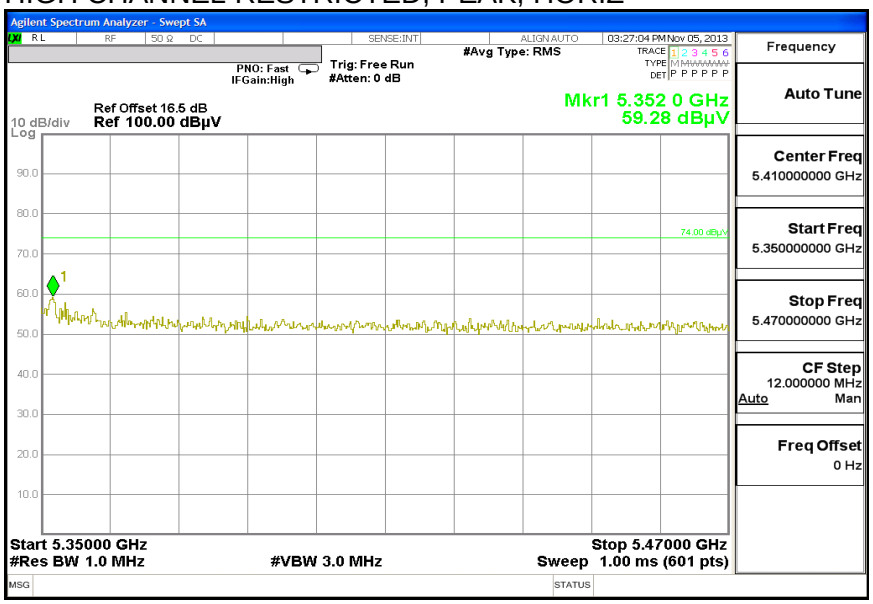
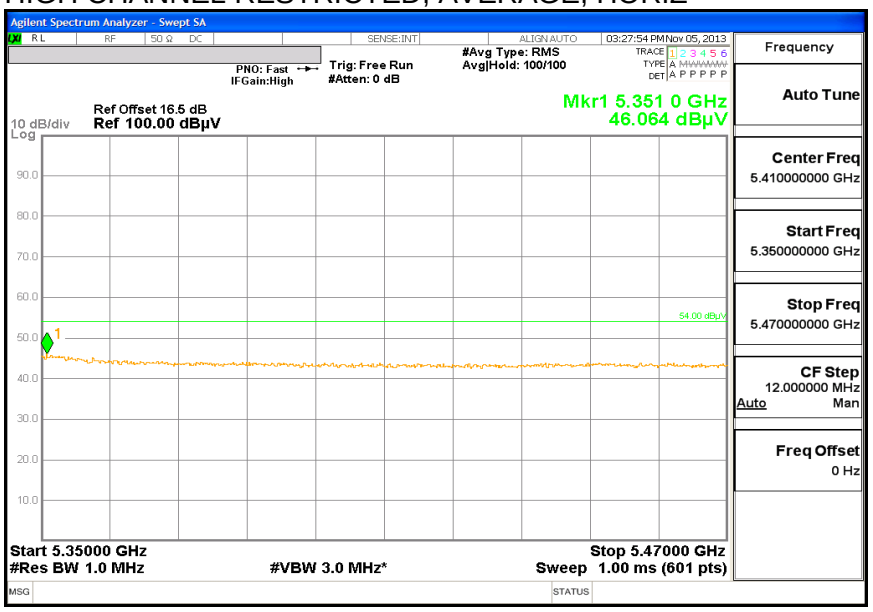
9.2.7. 802.11n HT40 SISO IN THE 5.3 GHz BAND

RESTRICTED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL RESTRICTED, PEAK, HORIZ



HIGH CHANNEL RESTRICTED, AVERAGE, HORIZ



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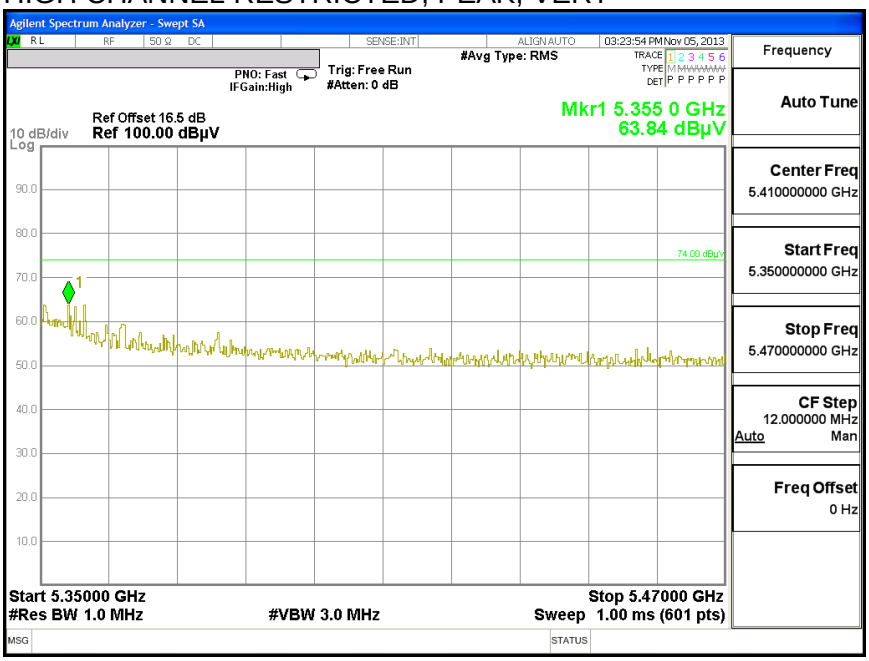
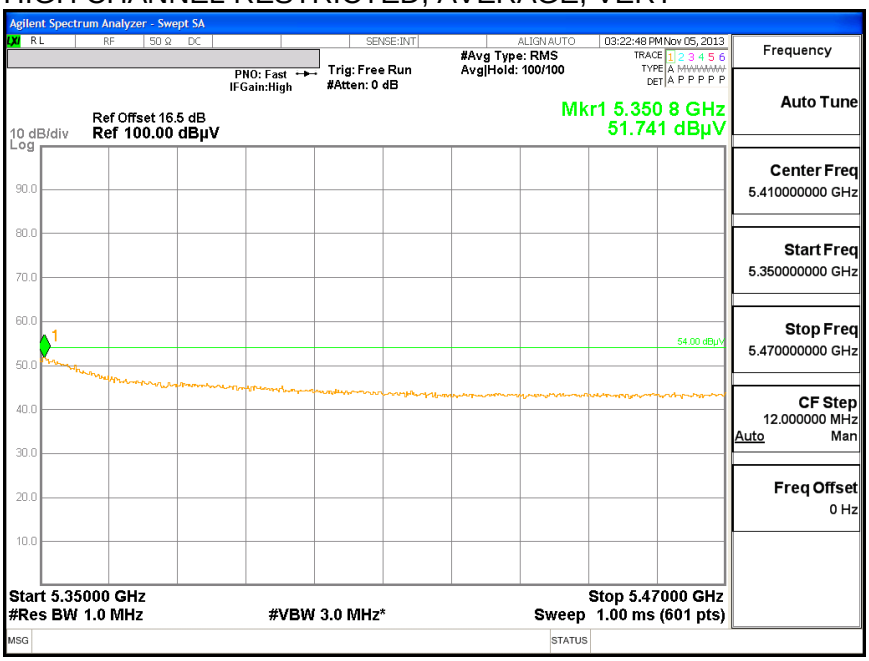
HIGH CHANNEL RESTRICTED, PEAK, VERT



HIGH CHANNEL RESTRICTED, AVERAGE, VERT



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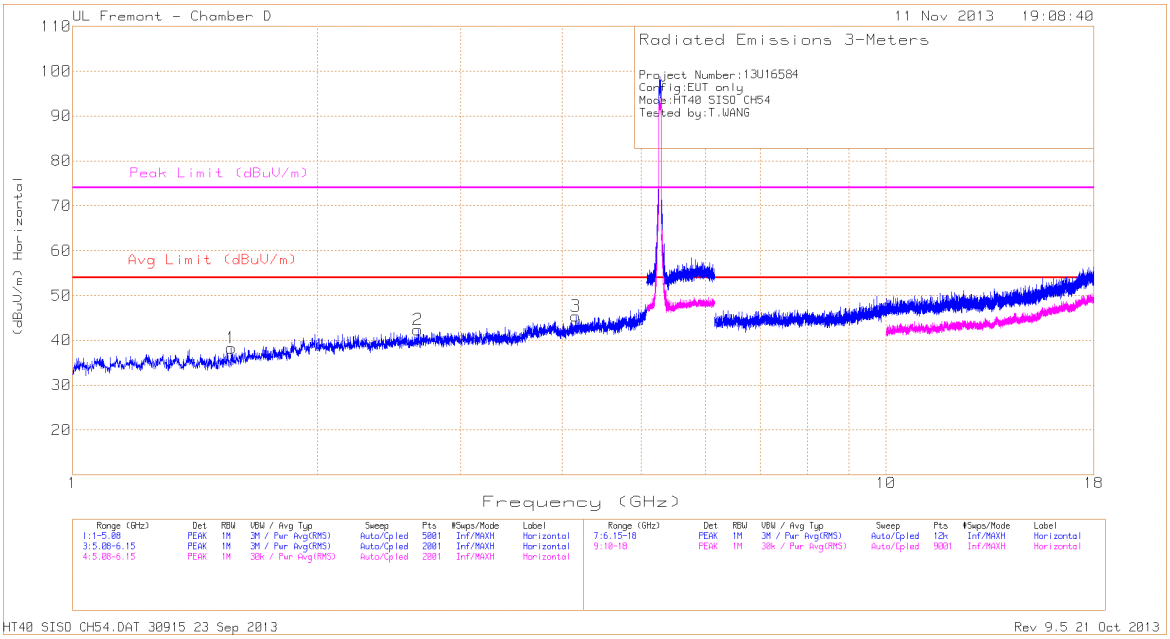
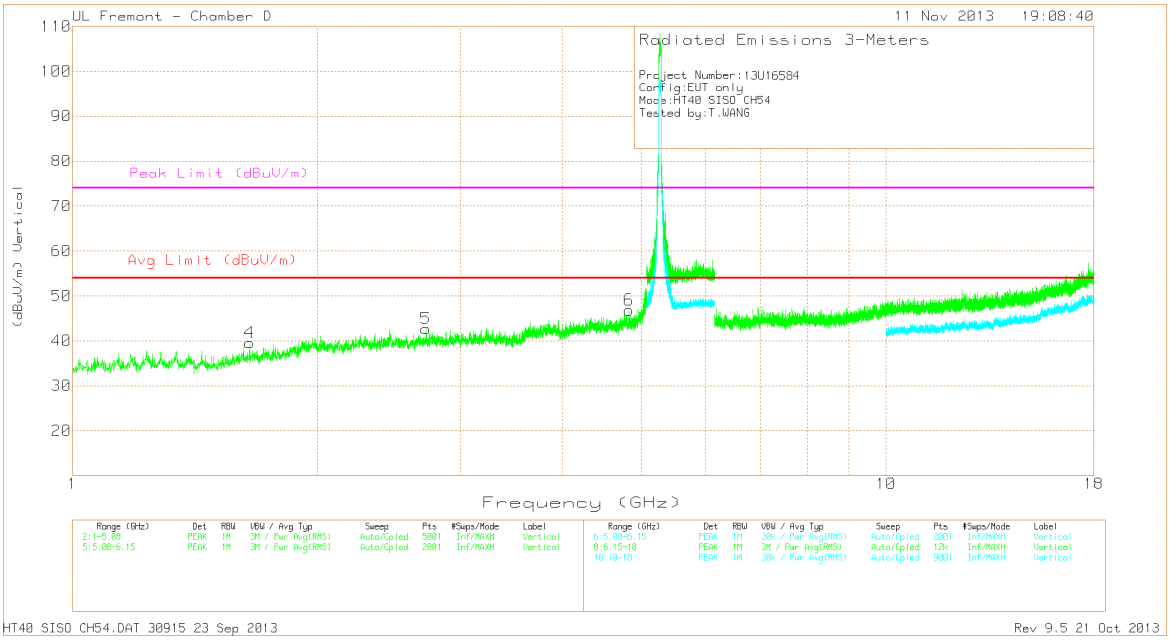
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL PLOT



LOW CHANNEL VERTICAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl /5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*1.567	43.40	PK	29.3	-34.4	38.30	54	-15.70	74.0	-35.70	0-360	199	H
2	*2.658	42.37	PK	33.0	-33.0	42.37	54	-11.63	74.0	-31.63	0-360	100	H
3	*4.155	42.69	PK	33.9	-31.2	45.39	54	-8.61	74.0	-28.61	0-360	100	H
4	*1.651	43.20	PK	29.8	-33.4	39.60	54	-14.40	74.0	-34.40	0-360	199	V
5	*2.718	42.14	PK	33.1	-32.5	42.74	54	-11.26	74.0	-31.26	0-360	100	V
6	*4.832	42.86	PK	34.4	-30.4	46.86	54	-7.14	74.0	-27.14	0-360	199	V

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

PK - Peak detector

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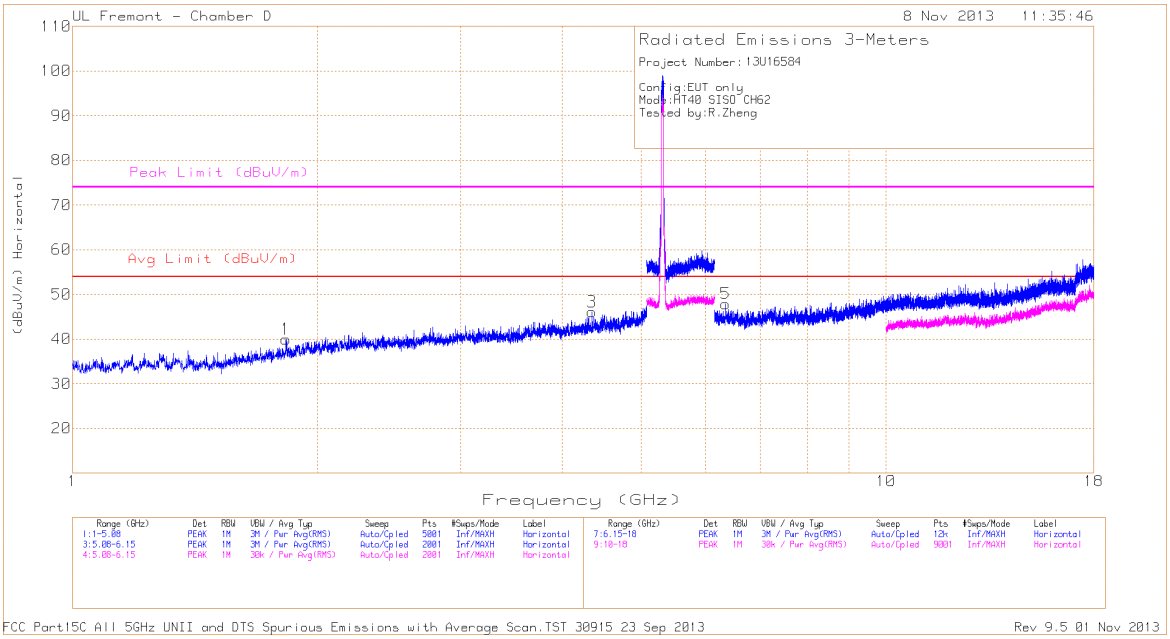
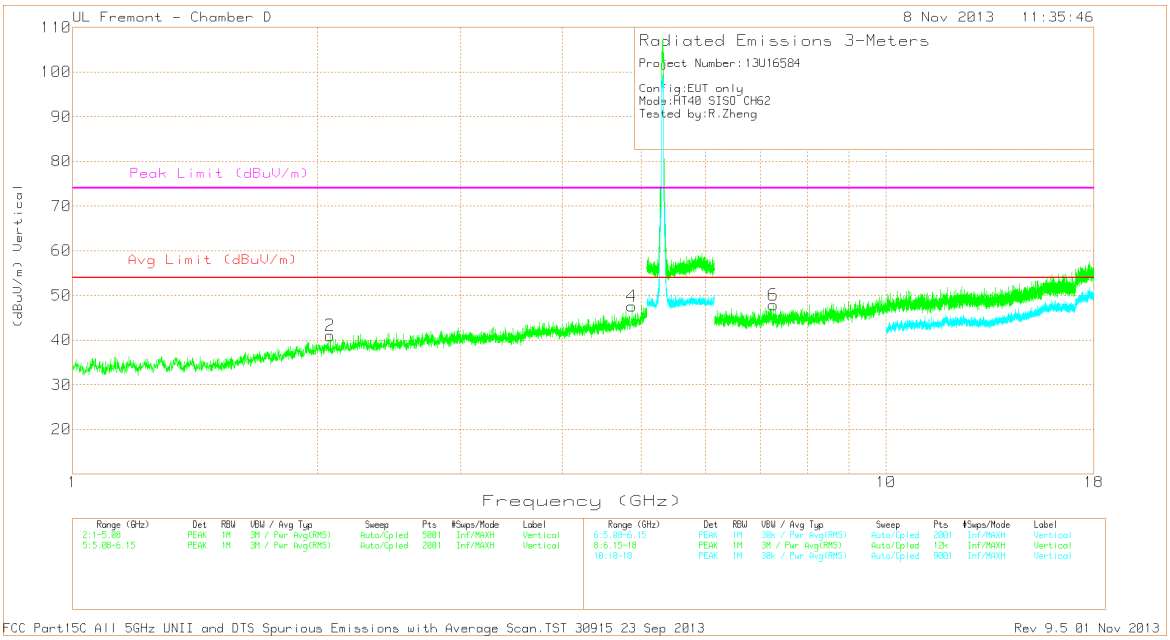
HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (db/m)	Amp/Cbl/ Fltr/Pad	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.830	40.84	PK	30.5	-31.4	39.94	-	-	68.2	-28.26	0-360	201	H
3	* 4.347	40.57	PK	34.0	-28.5	46.07	54	-7.93	74.0	-27.93	0-360	100	H
2	2.074	40.41	PK	31.9	-31.3	41.01	-	-	68.2	-27.19	0-360	100	V
4	* 4.869	40.66	PK	34.4	-27.5	47.56	54	-6.44	74.0	-26.44	0-360	100	V
5	6.349	38.60	PK	35.9	-26.6	47.90	-	-	68.2	-20.30	0-360	100	H
6	* 7.267	37.38	PK	35.9	-25.4	47.88	54	-6.12	74.0	-26.12	0-360	100	V

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

PK - Peak detector

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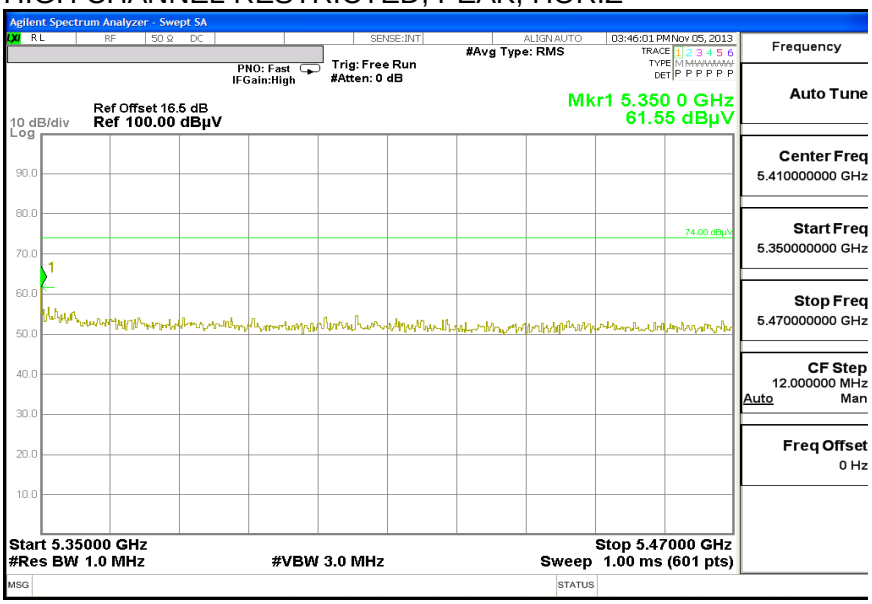
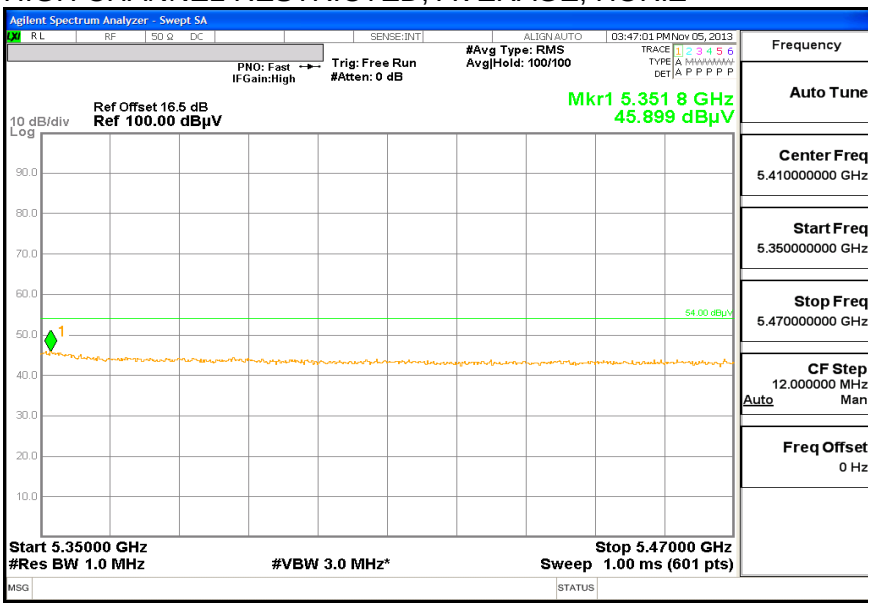
9.2.8. 802.11n HT40 MIMO IN THE 5.3 GHz BAND

RESTRICTED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL RESTRICTED, PEAK, HORIZ



HIGH CHANNEL RESTRICTED, AVERAGE, HORIZ



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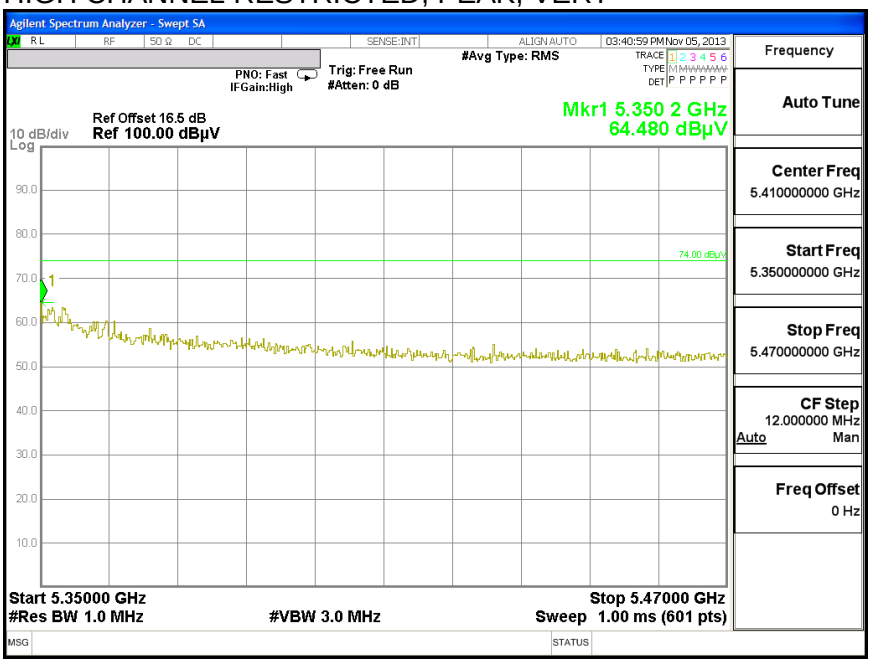
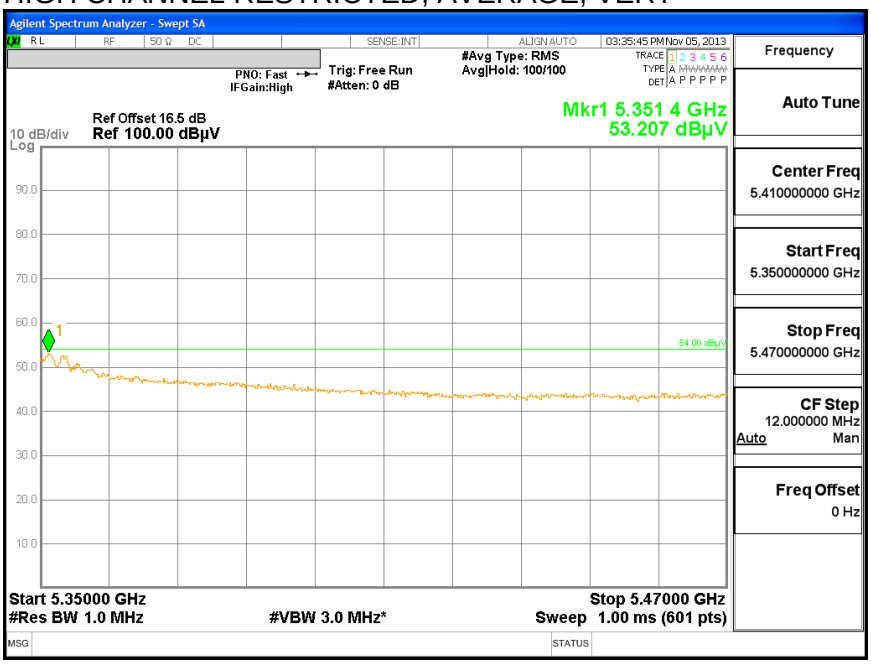
HIGH CHANNEL RESTRICTED, PEAK, VERT



HIGH CHANNEL RESTRICTED, AVERAGE, VERT



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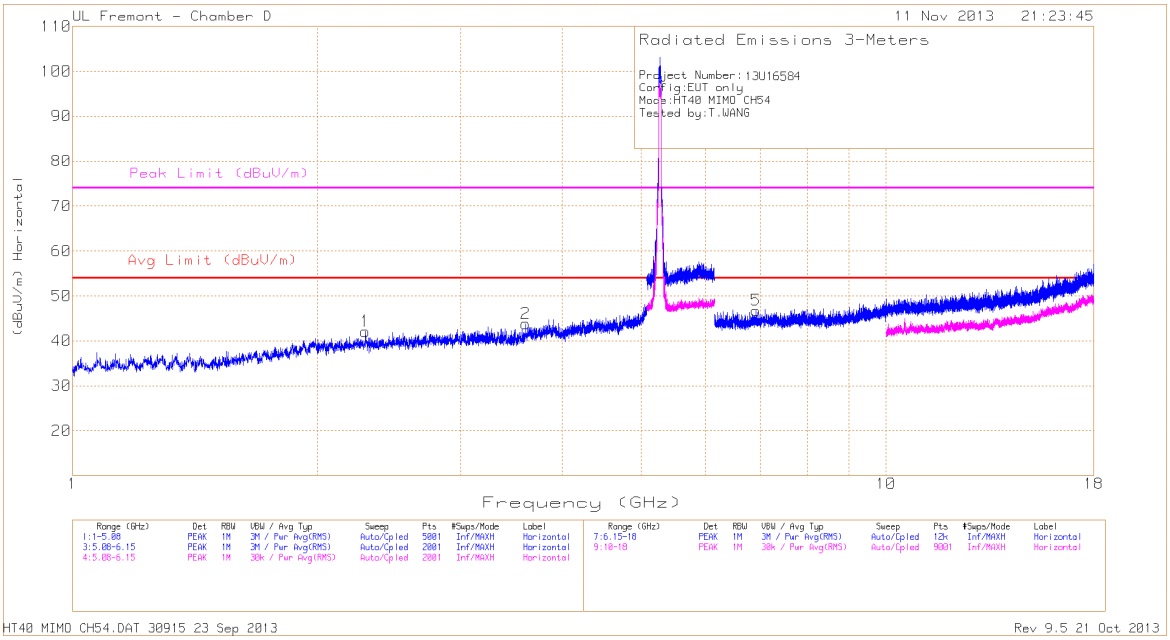
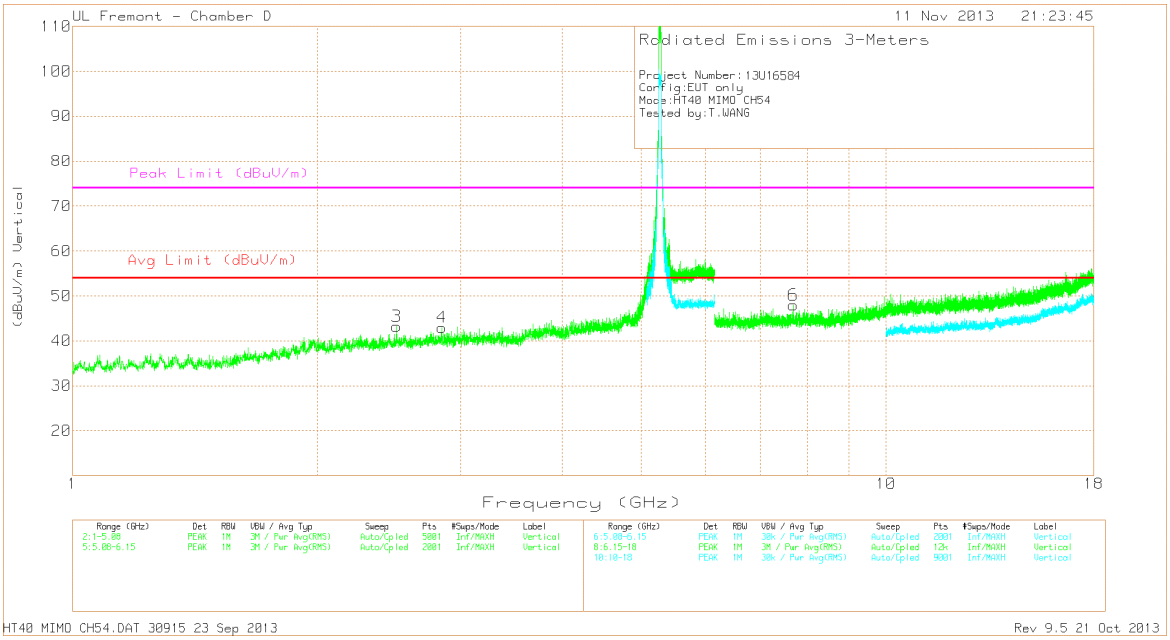
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL PLOT



LOW CHANNEL VERTICAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl /5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*2.291	42.69	PK	32.4	-33.0	42.09	54	-11.91	74.0	-31.91	0-360	100	H
2	*3.605	41.74	PK	33.4	-31.3	43.84	54	-10.16	74.0	-30.16	0-360	199	H
3	*2.501	42.82	PK	32.7	-32.3	43.22	54	-10.78	74.0	-30.78	0-360	101	V
4	*2.844	42.70	PK	33.2	-32.9	43.00	54	-11.00	74.0	-31.00	0-360	199	V

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl /6GHz HPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	6.919	39.60	PK	35.9	-28.7	46.80	-	-	68.2	-21.40	0-360	199	H
6	*7.692	40.19	PK	36.2	-28.4	47.99	54	-6.01	74.0	-26.01	0-360	200	V

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

PK - Peak detector

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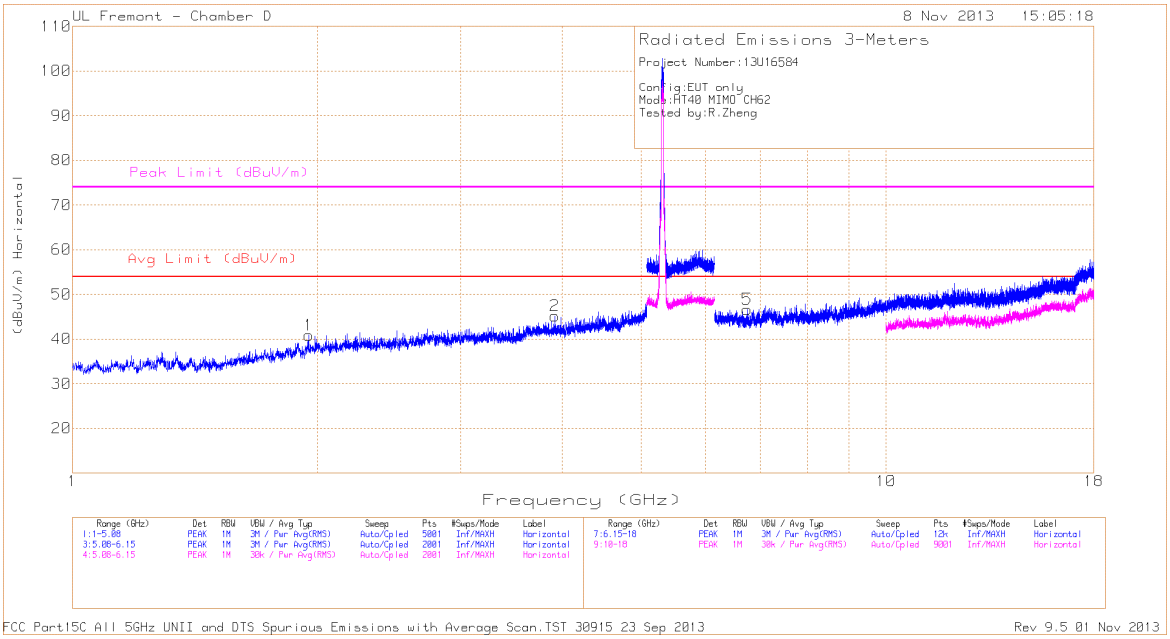
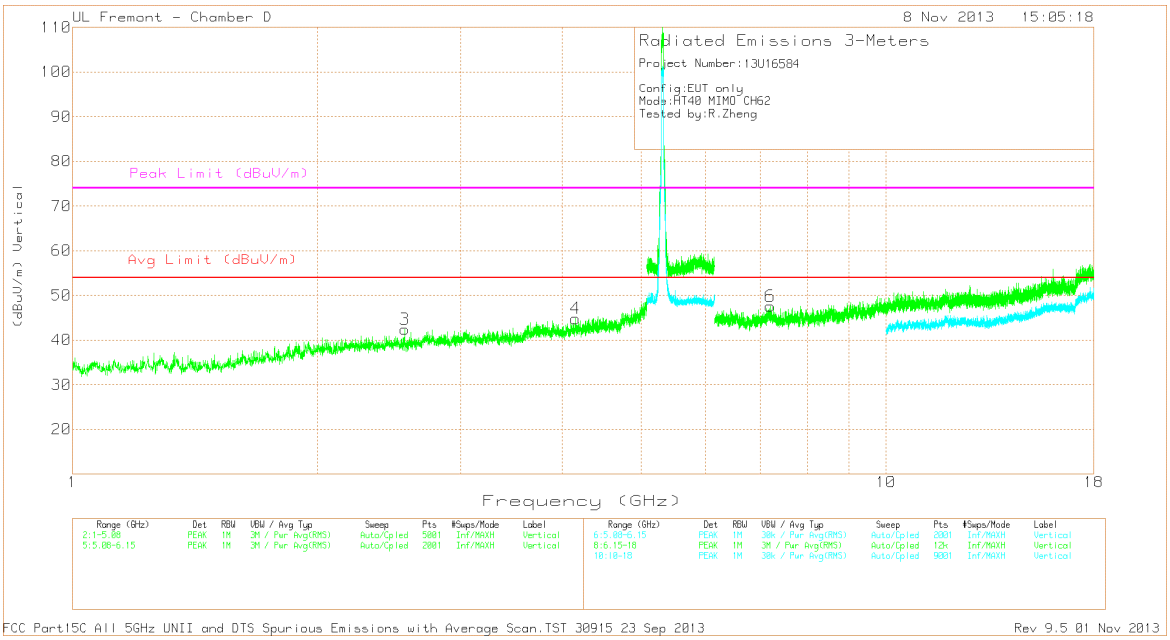
HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (db/m)	Amp/Cbl /Fltr/Pad	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.951	40.35	PK	31.4	-30.9	40.85	-	-	68.2	-27.35	0-360	200	H
2	* 3.916	40.40	PK	33.8	-29.0	45.20	54	-8.80	74.0	-28.80	0-360	100	H
3	2.561	40.62	PK	32.5	-30.7	42.42	-	-	68.2	-25.78	0-360	200	V
4	* 4.152	39.40	PK	33.9	-28.5	44.80	54	-9.20	74.0	-29.20	0-360	200	V
5	6.749	37.85	PK	35.7	-26.9	46.65	-	-	68.2	-21.55	0-360	201	H
6	7.206	35.80	PK	35.9	-24.1	47.60	-	-	68.2	-20.60	0-360	201	V

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

PK - Peak detector

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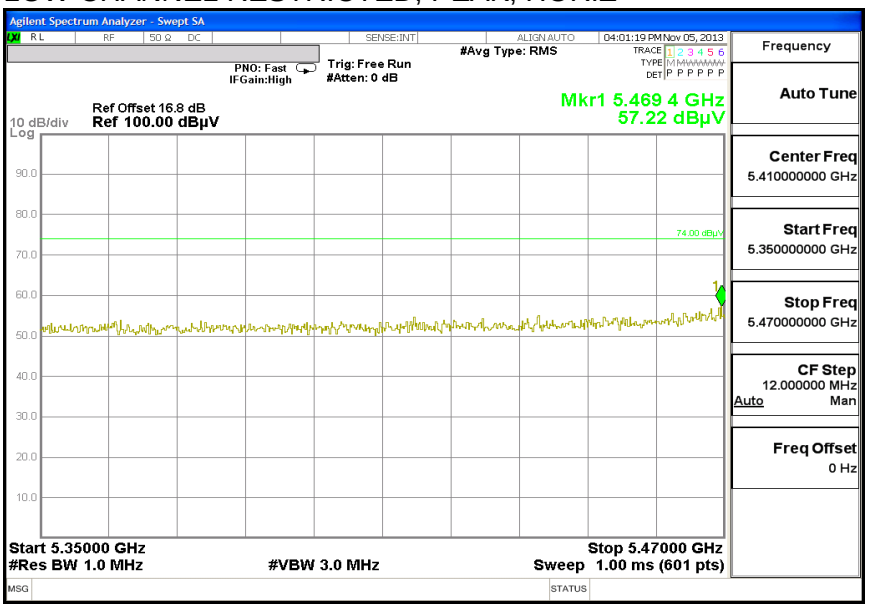
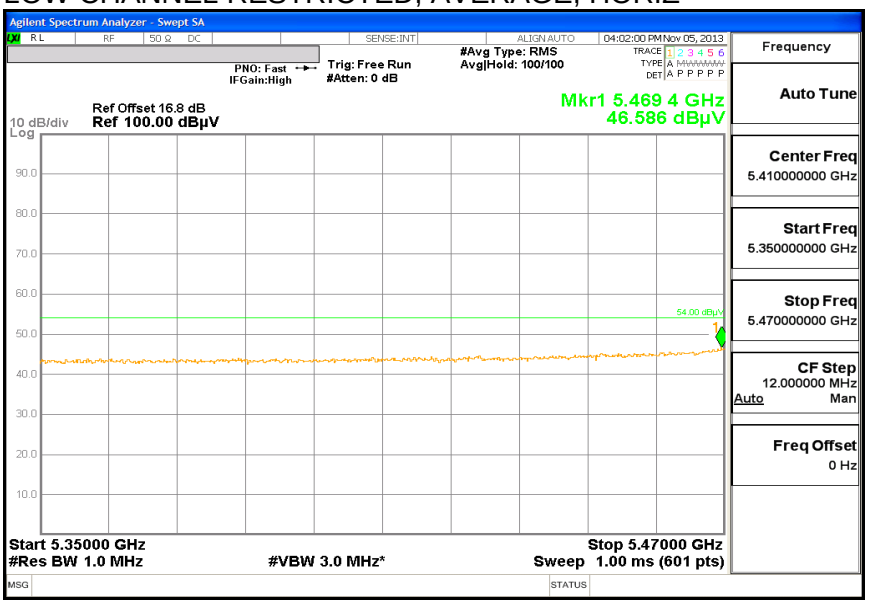
9.2.9. 802.11a SISO IN THE 5.6 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

LOW CHANNEL RESTRICTED, PEAK, HORIZ



LOW CHANNEL RESTRICTED, AVERAGE, HORIZ



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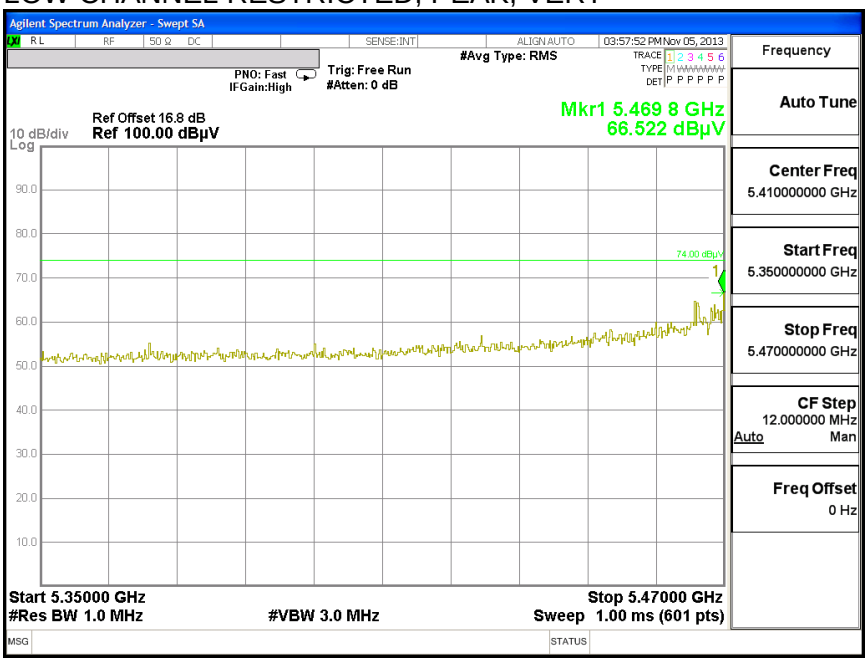
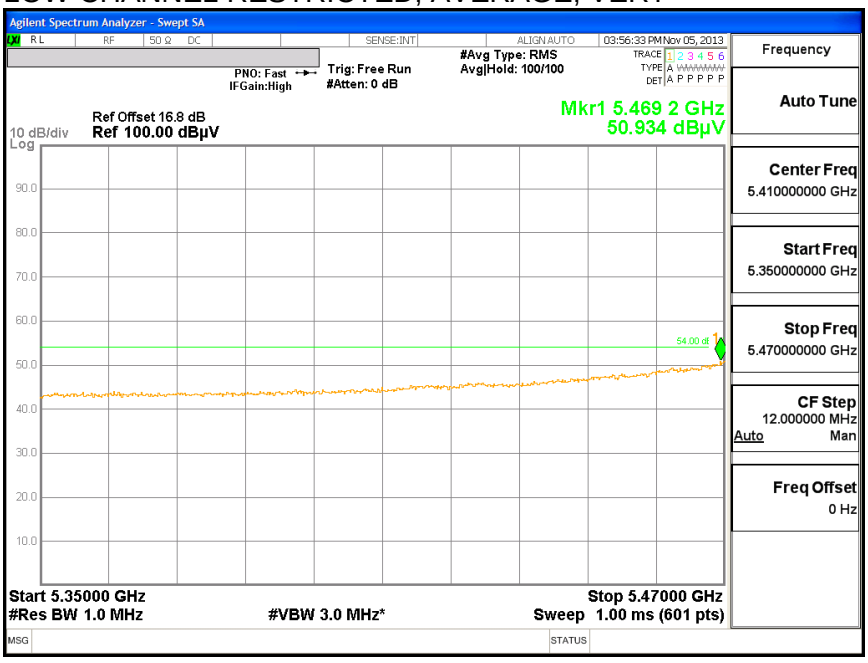
LOW CHANNEL RESTRICTED, PEAK, VERT



LOW CHANNEL RESTRICTED, AVERAGE, VERT



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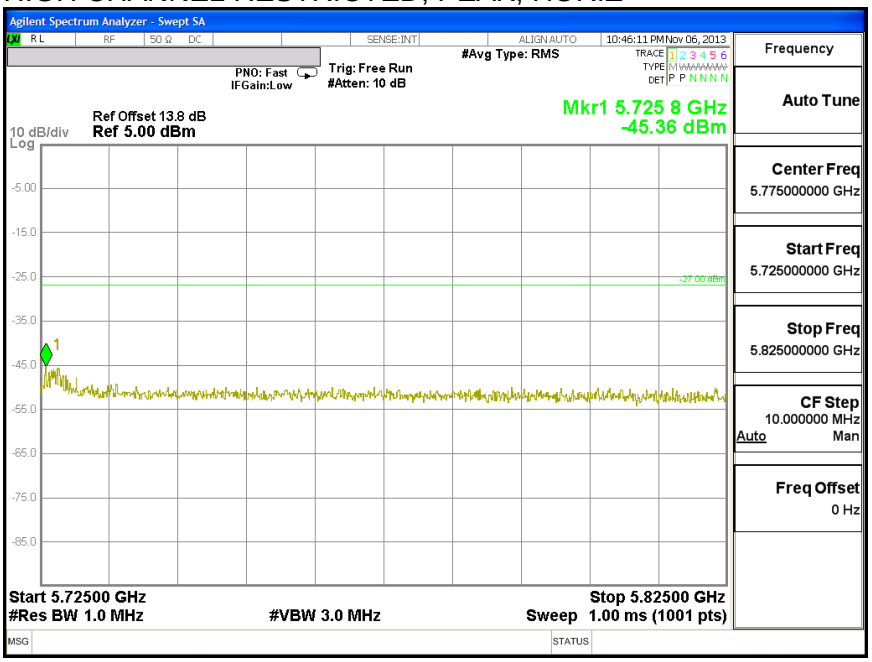
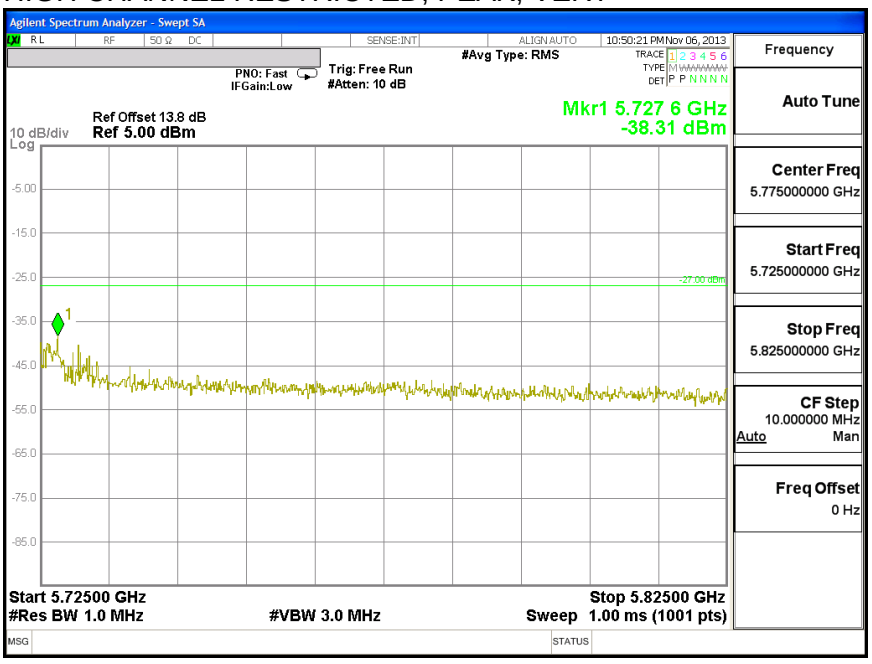
RESTRICTED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL RESTRICTED, PEAK, HORIZ



HIGH CHANNEL RESTRICTED, PEAK, VERT



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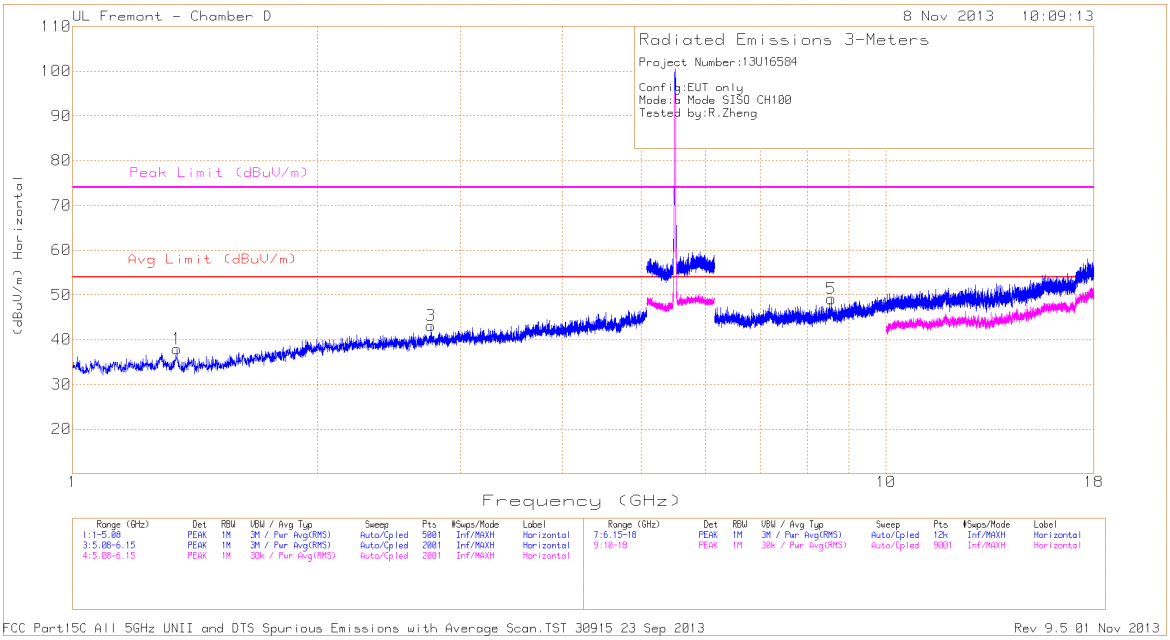
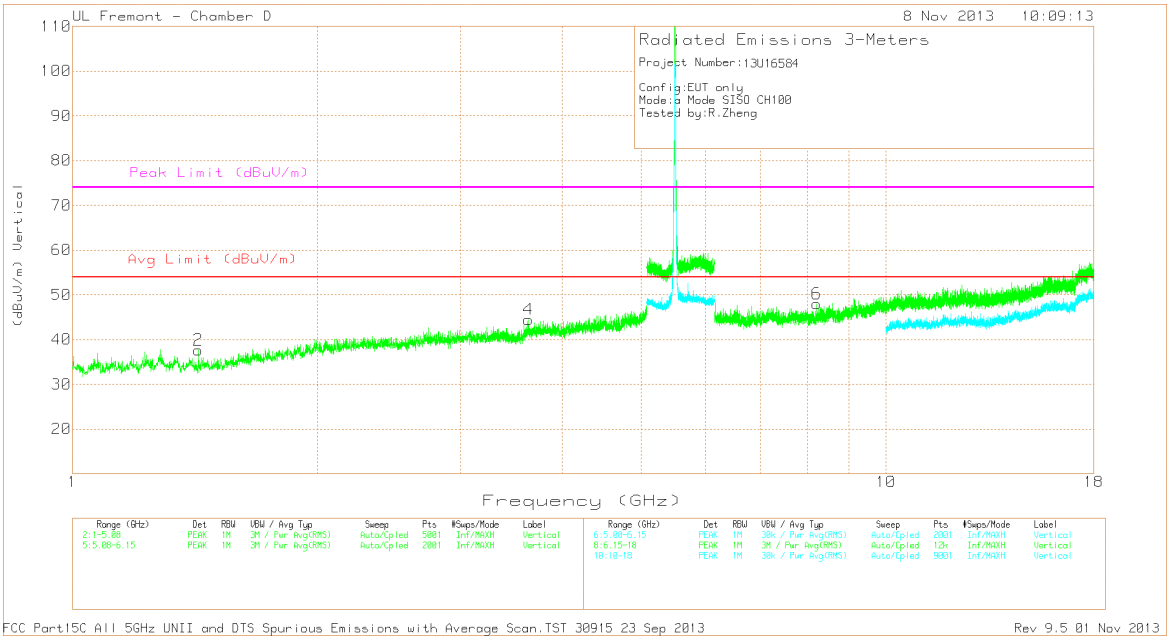
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL PLOT



LOW CHANNEL VERTICAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (db/m)	Amp/Cbl /Fltr/Pad	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.344	41.14	PK	28.5	-31.7	37.94	54	-16.06	74.0	-36.06	0-360	201	H
2	1.428	41.46	PK	28.3	-32.1	37.66	-	-	68.2	-30.54	0-360	100	V
3	* 2.758	40.05	PK	32.9	-29.8	43.15	54	-10.85	74.0	-30.85	0-360	100	H
4	* 3.635	39.91	PK	33.6	-29.0	44.51	54	-9.49	74.0	-29.49	0-360	201	V
5	8.563	36.25	PK	36.3	-23.4	49.15	-	-	68.2	-19.05	0-360	200	H
6	* 8.217	37.02	PK	36.0	-25.0	48.02	54	-5.98	74.0	-25.98	0-360	200	V

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

PK - Peak detector

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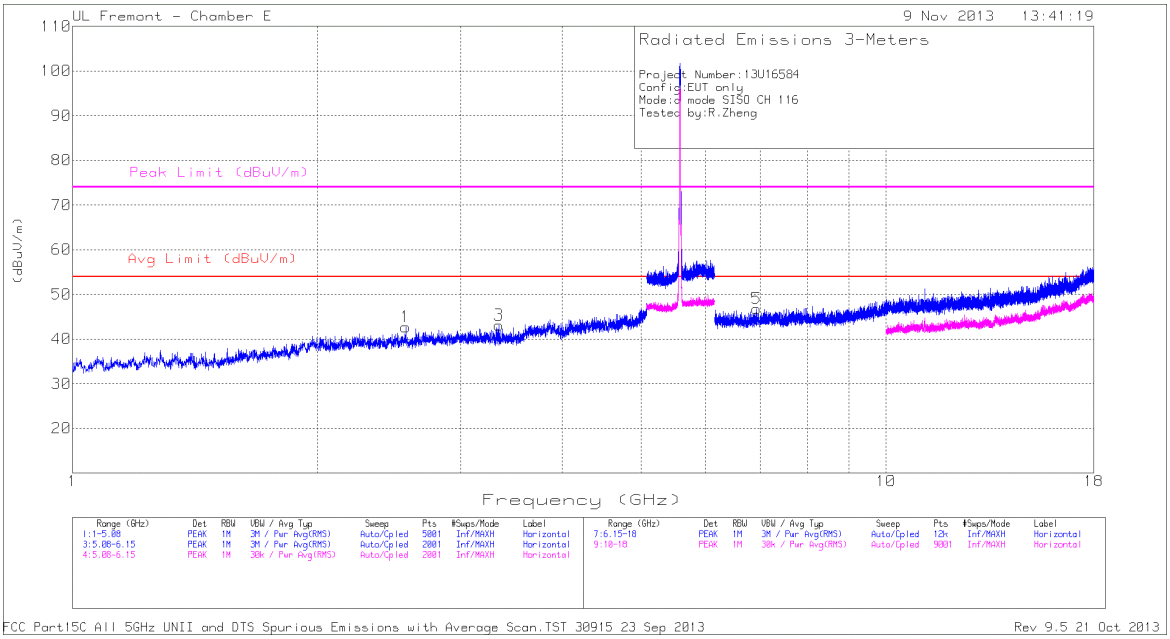
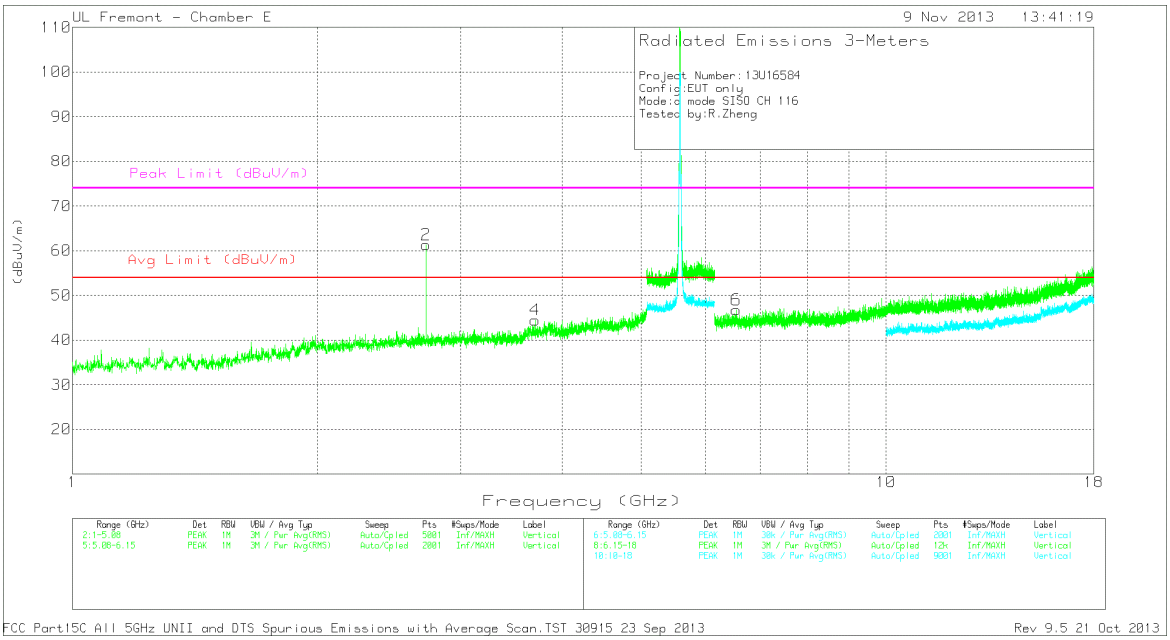
MID CHANNEL HORIZONTAL PLOT



MID CHANNEL VERTICAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/ 5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.568	42.84	PK	32.8	-32.9	42.74	-	-	68.2	-25.46	0-360	199	H
2	* 2.721	60.74	PK	33.1	-32.5	61.34	-	-	74.0	-12.66	0-360	199	V
	* 2.721	31.40	AD1	33.1	-32.5	32.00	54	-22.00	-	-	120	275	V
3	3.343	41.62	PK	33.3	-31.8	43.12	-	-	68.2	-25.08	0-360	100	H
4	* 3.704	42.69	PK	33.6	-31.8	44.49	54	-9.51	74.0	-29.51	0-360	199	V

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/ 6GHz HPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	6.931	39.62	PK	35.9	-28.7	46.82	-	-	68.2	-21.38	0-360	100	H
6	6.545	39.26	PK	35.8	-28.3	46.76	-	-	68.2	-21.44	0-360	100	V

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

PK - Peak detector

AD1 - KDB 789033 Method: AD Primary Power Average

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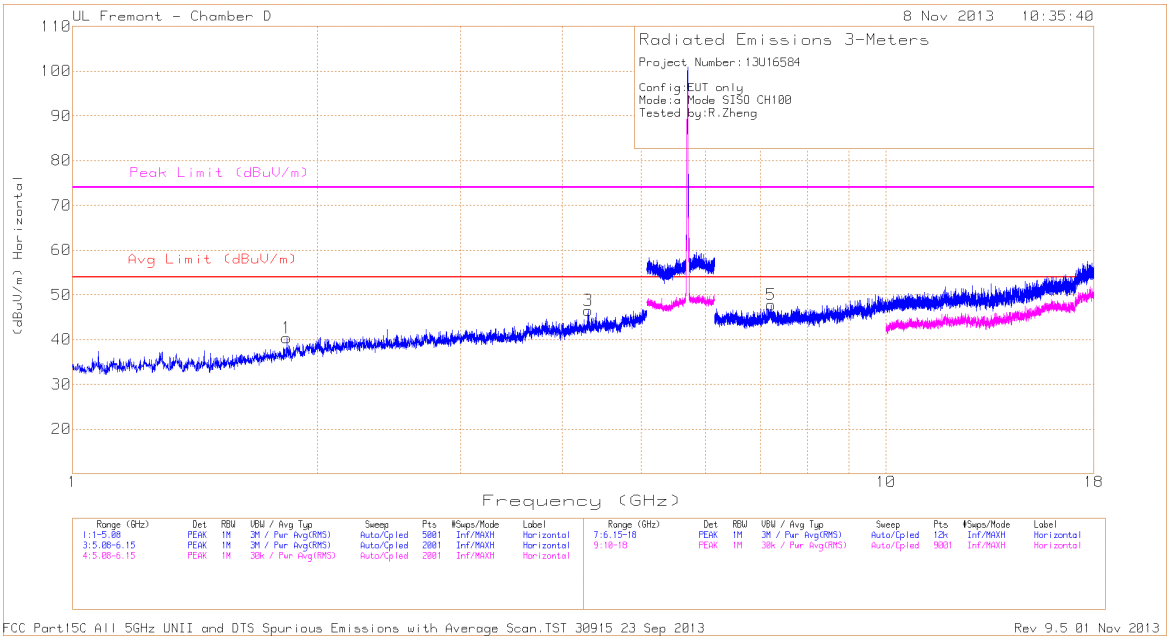
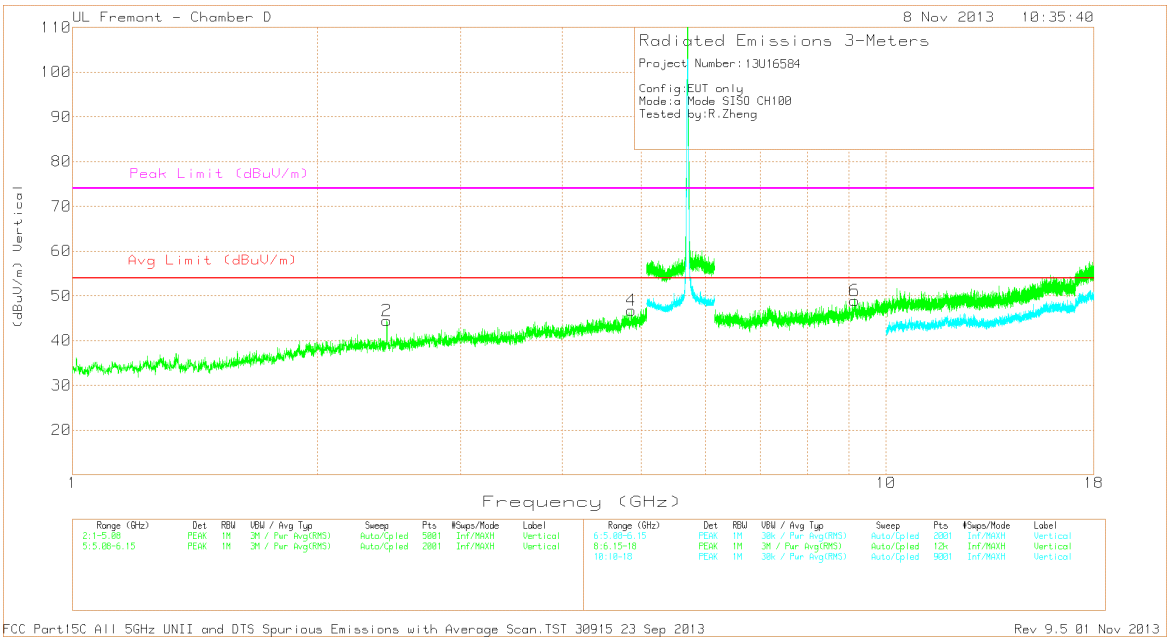
HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (db/m)	Amp/Cbl/ Fltr/Pad	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.833	41.18	PK	30.6	-31.4	40.38	-	-	68.2	-27.82	0-360	201	H
3	* 4.303	40.50	PK	34.0	-28.0	46.50	54	-7.50	74.0	-27.50	0-360	201	H
2	2.434	42.68	PK	32.4	-30.6	44.48	-	-	68.2	-23.72	0-360	100	V
4	* 4.865	39.96	PK	34.4	-27.6	46.76	54	-7.24	74.0	-27.24	0-360	100	V
5	7.223	35.88	PK	35.9	-24.0	47.78	-	-	68.2	-20.42	0-360	200	H
6	* 9.151	34.83	PK	36.8	-22.7	48.93	-	-	74.0	-25.07	0-360	200	V
	* 9.151	24.61	AD1	36.8	-22.7	38.71	54	-15.29	-	-	287	254	V

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

PK - Peak detector

AD1 - KDB 789033 Method: AD Primary Power Average

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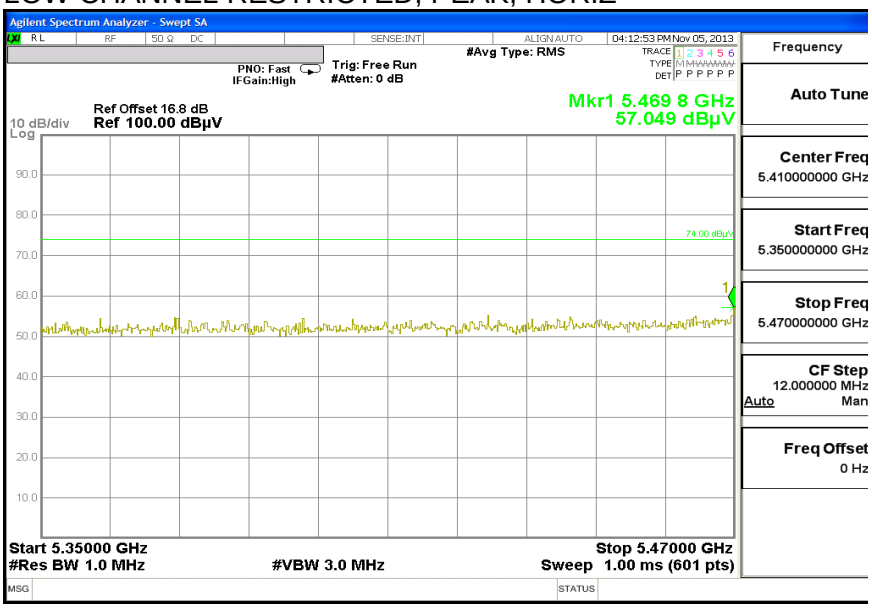
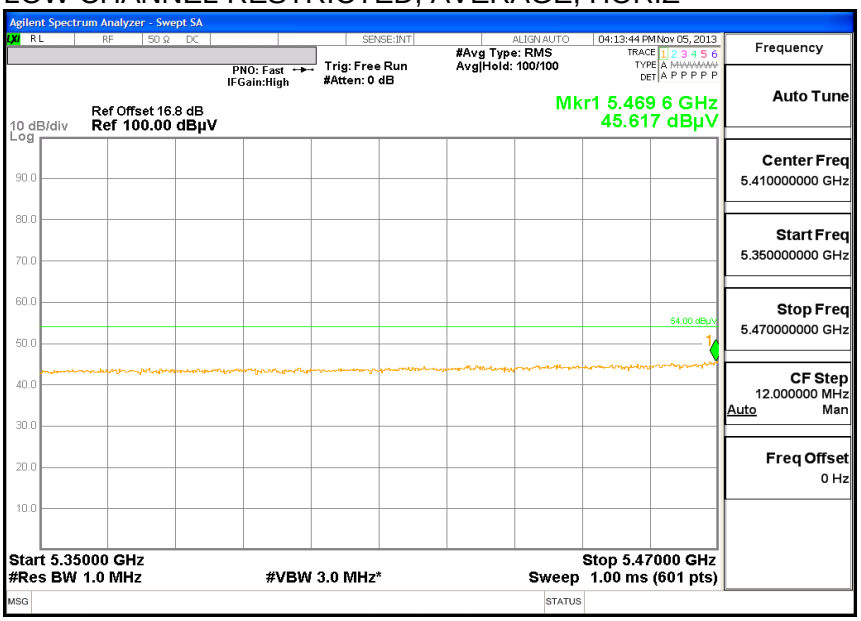
9.2.10. 802.11n HT20 MIMO IN THE 5.6 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

LOW CHANNEL RESTRICTED, PEAK, HORIZ



LOW CHANNEL RESTRICTED, AVERAGE, HORIZ



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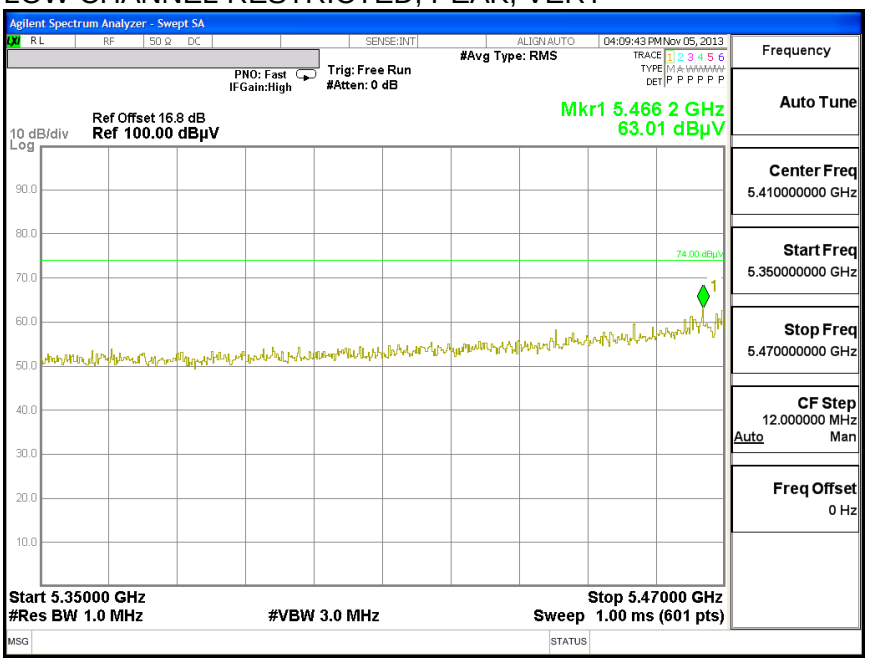
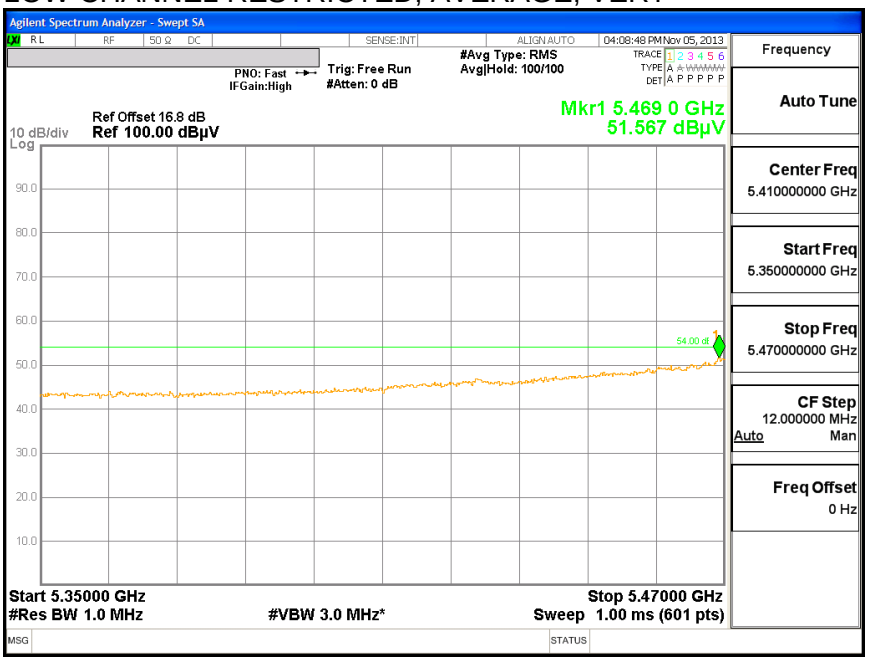
LOW CHANNEL RESTRICTED, PEAK, VERT



LOW CHANNEL RESTRICTED, AVERAGE, VERT



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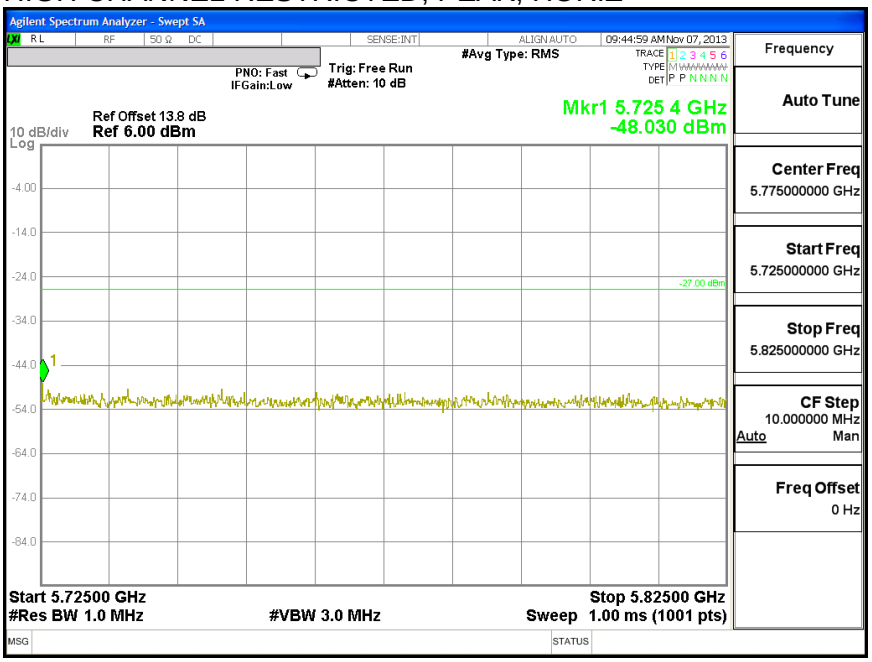
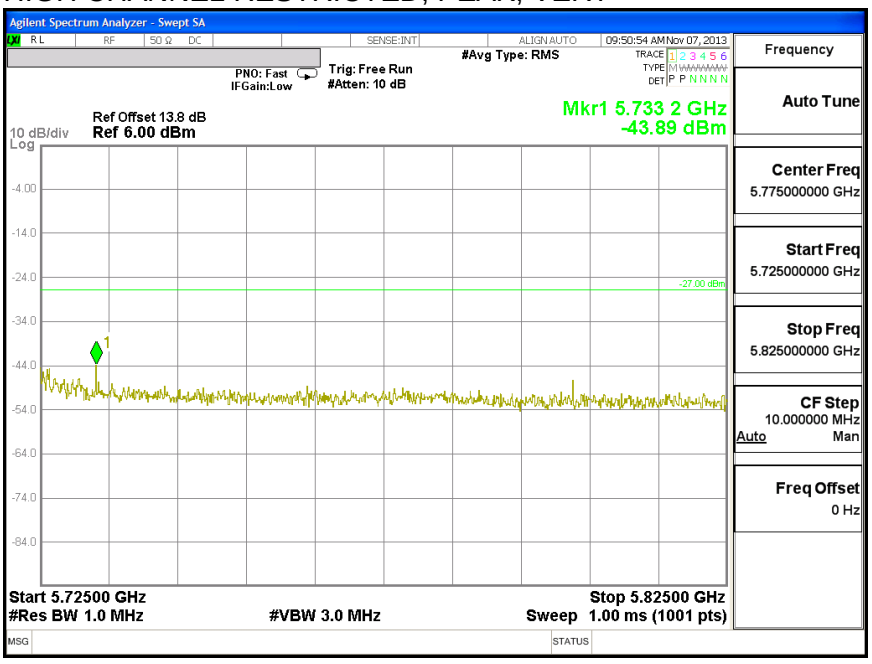
RESTRICTED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL RESTRICTED, PEAK, HORIZ



HIGH CHANNEL RESTRICTED, PEAK, VERT



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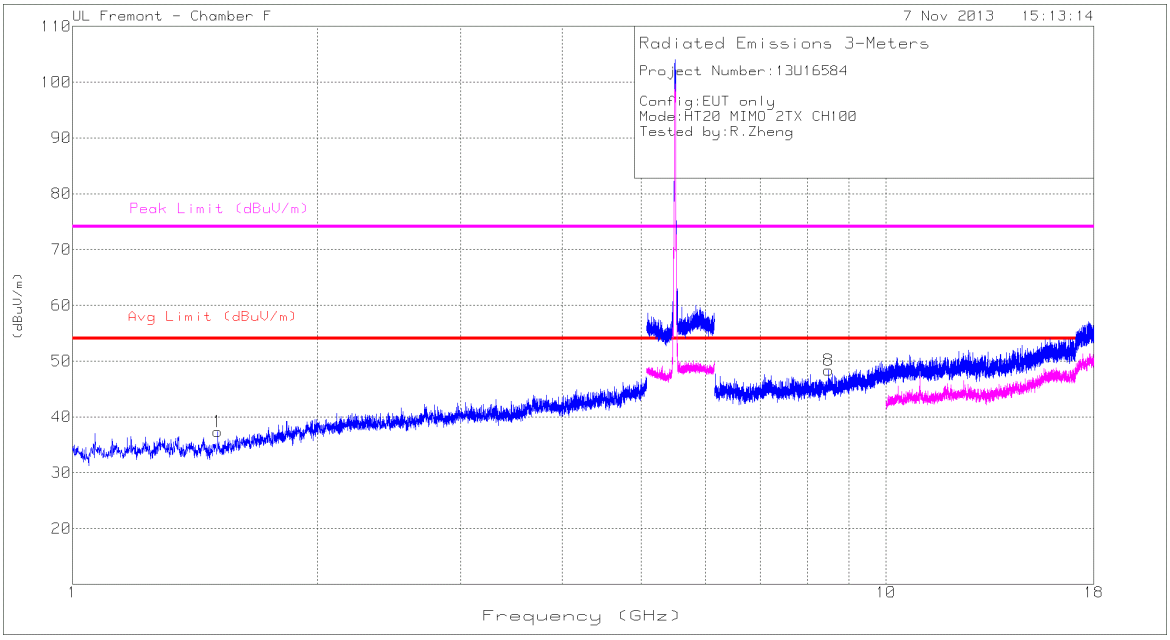
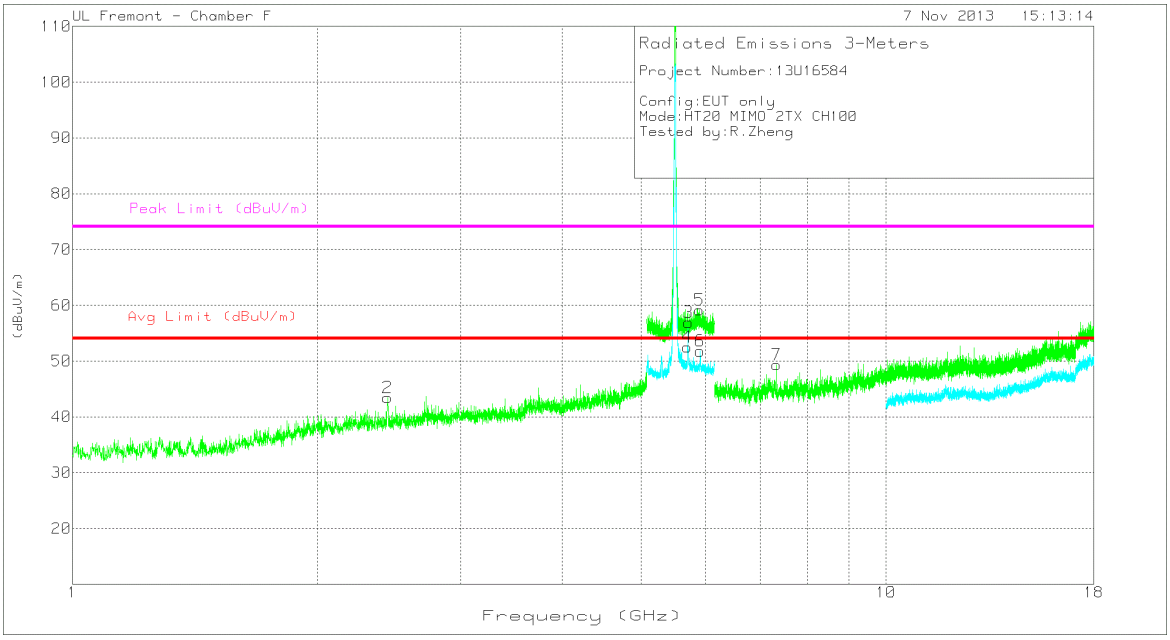
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL PLOT



LOW CHANNEL VERTICAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (db/m)	Amp/Cbl /Fltr/Pad	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.508	41.16	PK	28.3	-32.1	37.36	54	-16.64	74.0	-36.64	0-360	100	H
2	2.439	41.64	PK	32.4	-30.6	43.44	-	-	68.2	-24.76	0-360	100	V
3	5.718	39.63	PK	35.2	-17.9	56.93	-	-	68.2	-11.27	0-360	100	V
5	5.896	41.04	PK	35.5	-17.4	59.14	-	-	68.2	-9.06	0-360	201	V
7	* 7.334	39.76	PK	35.9	-26.3	49.36	-	-	74.0	-24.64	0-360	100	V
	* 7.334	27.26	AD1	35.9	-26.4	36.76	54	-17.24	-	-	54	295	V
8	* 8.495	35.96	PK	36.2	-23.8	48.36	-	-	74.0	-25.64	0-360	100	H
	* 8.495	25.63	AD1	36.2	-24.3	37.53	54	-16.47	-	-	131	389	H

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

PK - Peak detector

AD1 - KDB 789033 Method: AD Primary Power Average

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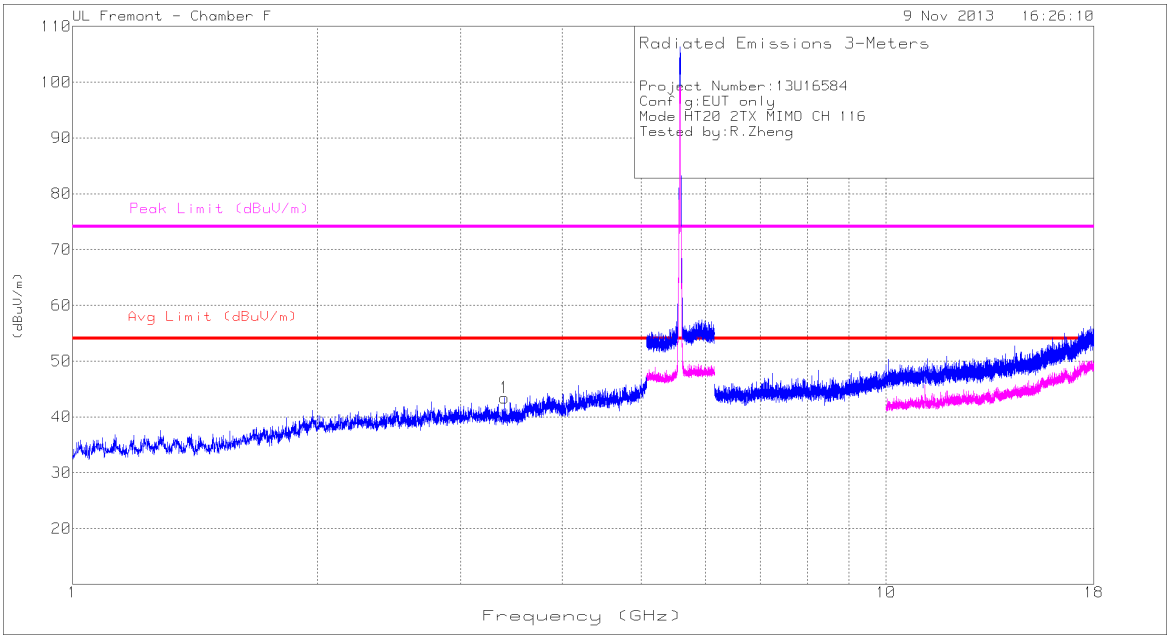
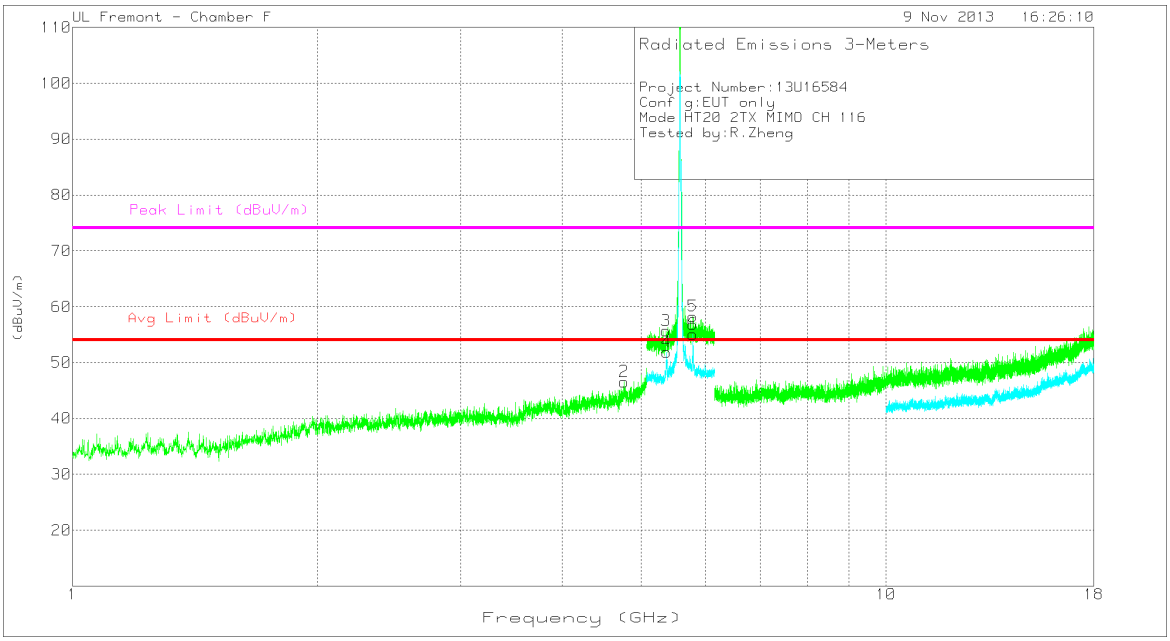
MID CHANNEL HORIZONTAL PLOT



MID CHANNEL VERTICAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl /5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	3.396	42.42	PK	33.2	-32.2	43.42	-	-	68.2	-24.78	0-360	100	H
2	* 4.764	42.18	PK	34.4	-30.0	46.58	54	-7.42	74.0	-27.42	0-360	199	V

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl /10dB Pad	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 5.366	42.71	PK	34.7	-21.7	55.71	-	-	74.0	-18.29	0-360	100	V
4	* 5.366	38.90	Avg	34.7	-21.7	51.90	54	-2.10	-	-	0-360	199	V
5	5.787	44.20	PK	35.5	-21.4	58.30	-	-	68.2	-9.90	0-360	199	V

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

PK - Peak detector

Avg - Video bandwidth < Resolution bandwidth

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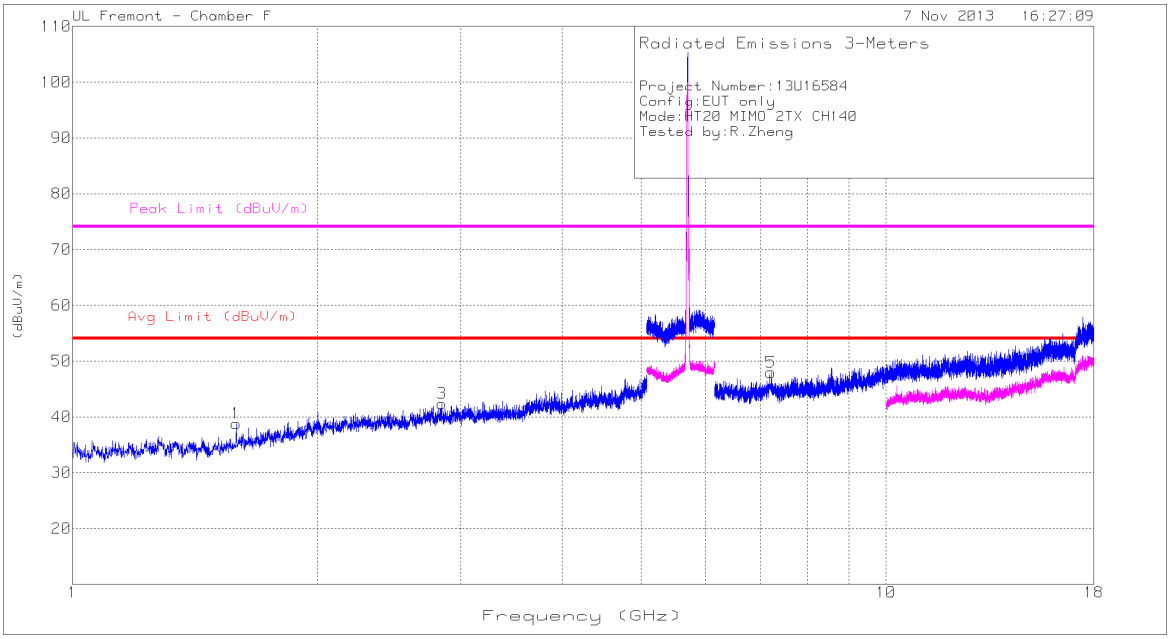
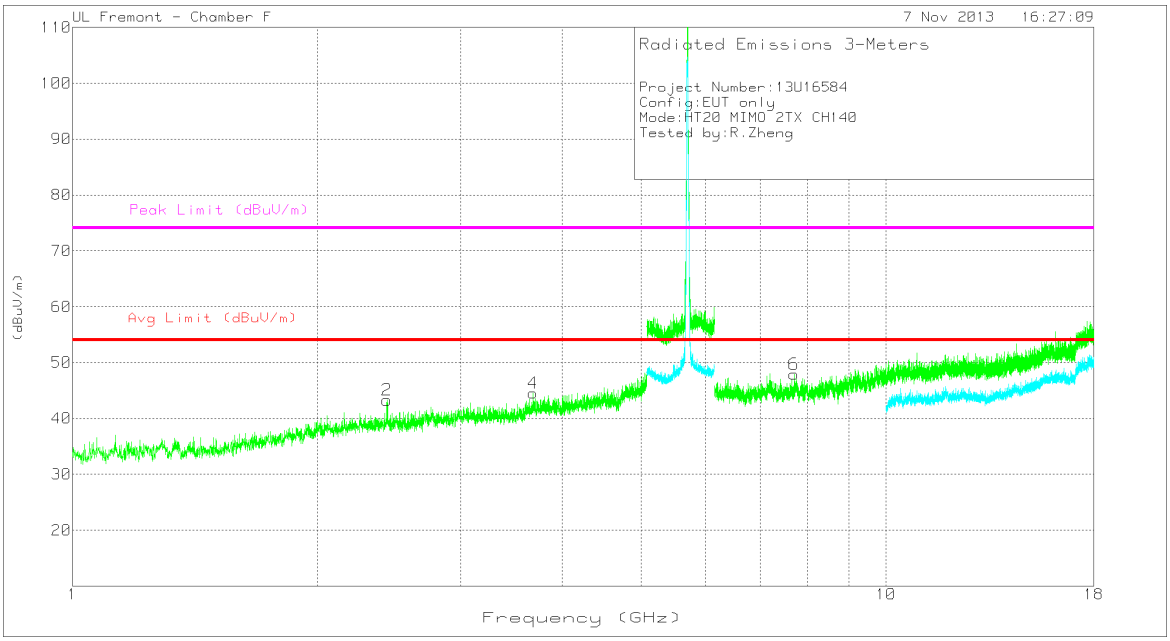
HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (db/m)	Amp/Cbl /Fltr/Pad	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.589	41.60	PK	28.8	-31.6	38.80	54	-15.20	74.0	-35.20	0-360	201	H
2	2.435	41.50	PK	32.4	-30.6	43.30	-	-	68.2	-24.90	0-360	100	V
3	* 2.843	39.79	PK	33.0	-30.4	42.39	54	-11.61	74.0	-31.61	0-360	100	H
4	* 3.681	39.83	PK	33.7	-29.0	44.53	54	-9.47	74.0	-29.47	0-360	201	V
5	7.217	36.08	PK	35.9	-24.0	47.98	-	-	68.2	-20.22	0-360	200	H
6	* 7.706	36.83	PK	36.1	-25.0	47.93	54	-6.07	74.0	-26.07	0-360	100	V

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

PK - Peak detector

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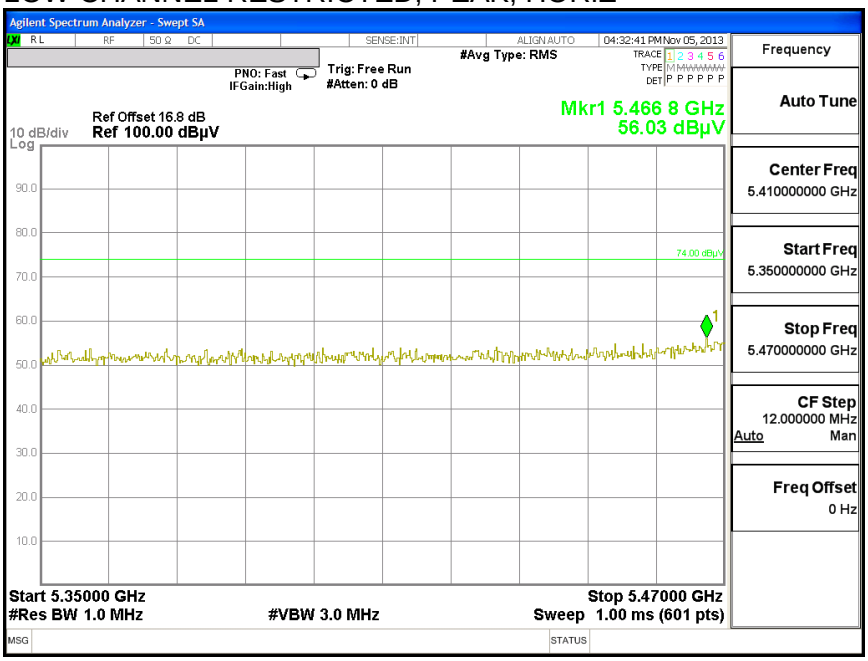
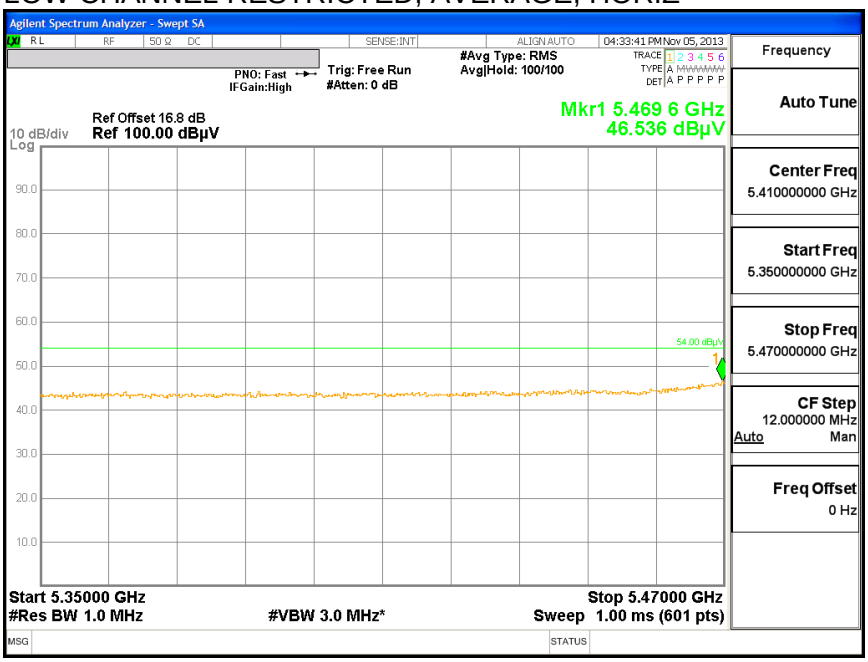
9.2.11. 802.11n HT40 SISO IN THE 5.6 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

LOW CHANNEL RESTRICTED, PEAK, HORIZ



LOW CHANNEL RESTRICTED, AVERAGE, HORIZ



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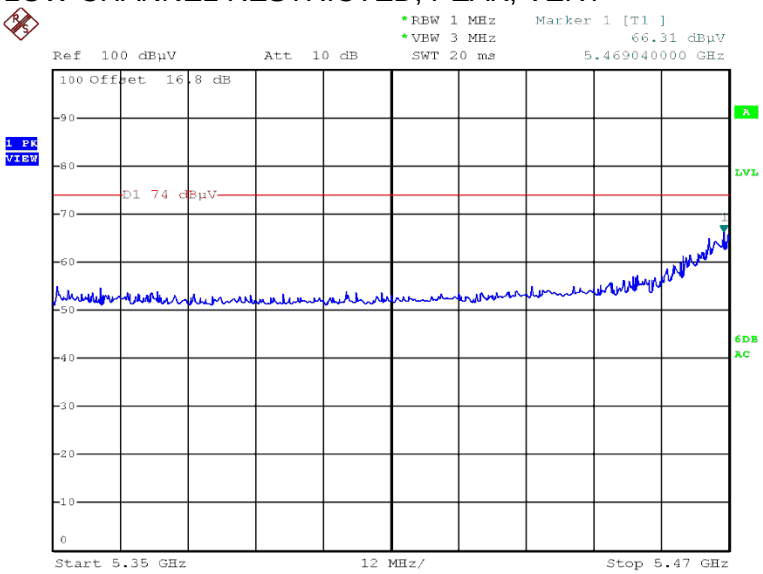
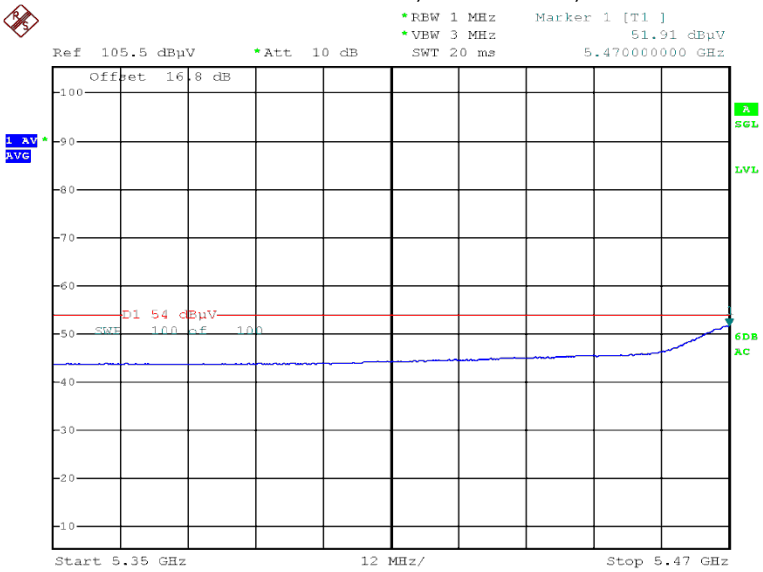
LOW CHANNEL RESTRICTED, PEAK, VERT



Date: 16.DEC.2013 19:42:30

LOW CHANNEL RESTRICTED, AVERAGE, VERT



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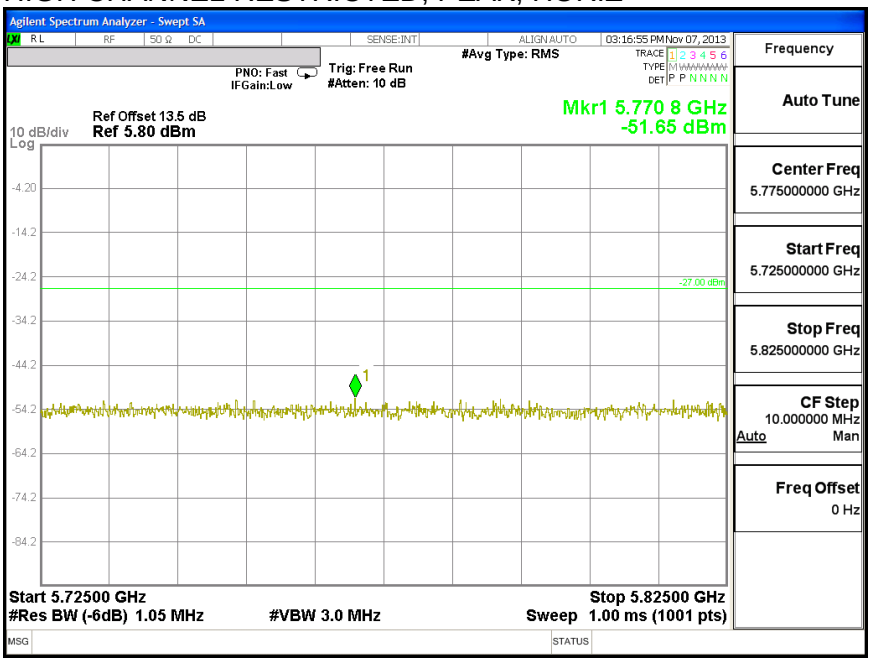
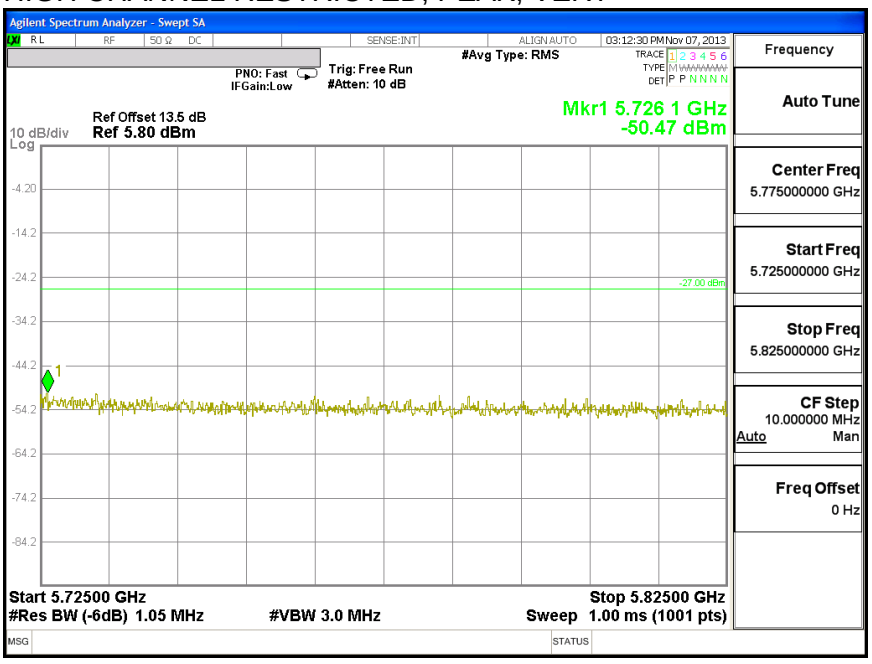
RESTRICTED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL RESTRICTED, PEAK, HORIZ



HIGH CHANNEL RESTRICTED, PEAK, VERT



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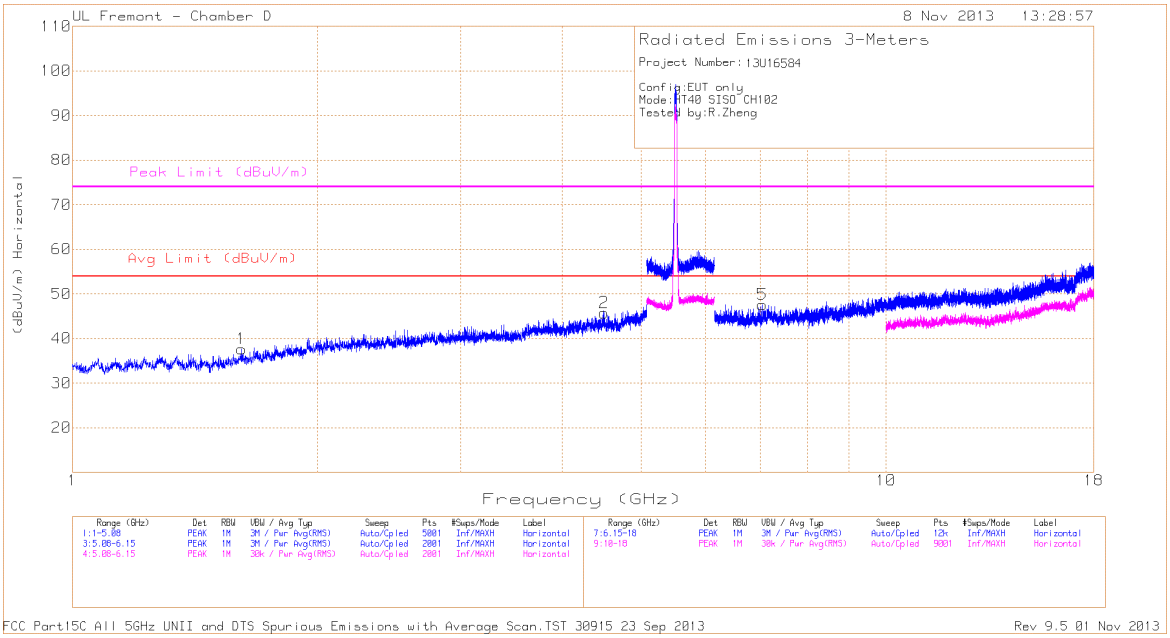
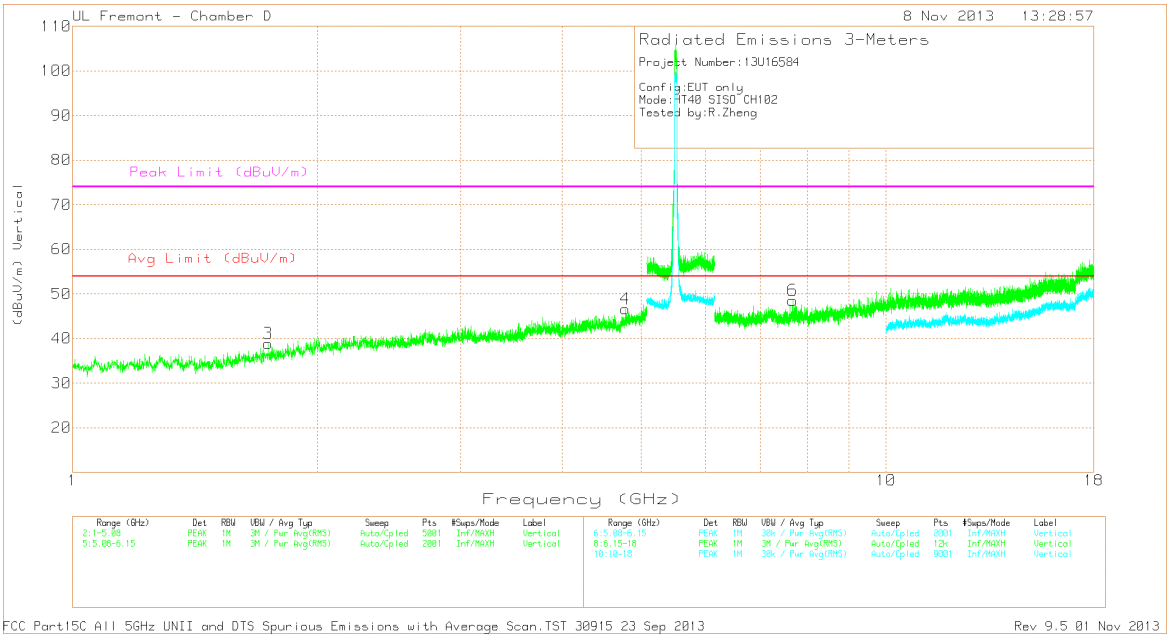
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL PLOT



LOW CHANNEL VERTICAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (db/m)	Amp/Cbl /Fltr/Pad	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.614	39.98	PK	29.0	-31.3	37.68	54	-16.32	74.0	-36.32	0-360	100	H
2	* 4.501	38.58	PK	34.2	-27.0	45.78	54	-8.22	74.0	-28.22	0-360	100	H
3	1.739	40.57	PK	29.9	-31.6	38.87	-	-	68.2	-29.33	0-360	200	V
4	* 4.782	39.43	PK	34.4	-27.2	46.63	54	-7.37	74.0	-27.37	0-360	200	V
5	7.046	38.32	PK	35.9	-26.6	47.62	-	-	68.2	-20.58	0-360	201	H
6	* 7.677	37.86	PK	36	-25.3	48.56	-	-	74.0	-25.44	0-360	201	V
	* 7.677	26.11	AD1	36.1	-25.2	37.01	54	-16.99	-	-	120	388	V

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

PK - Peak detector

AD1 - KDB 789033 Method: AD Primary Power Average

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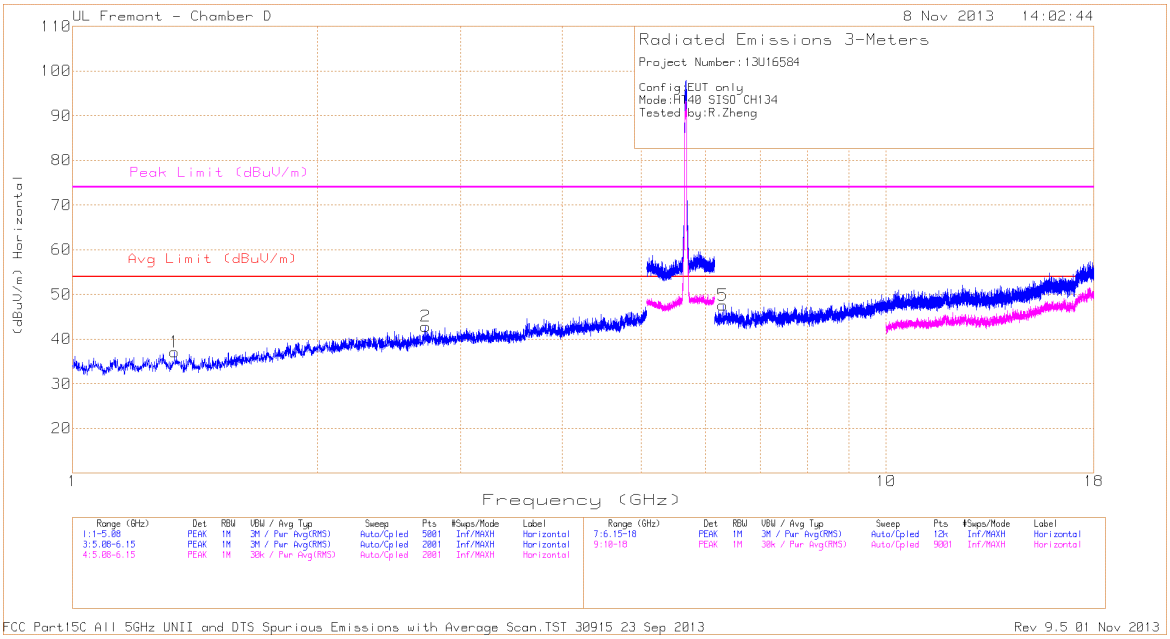
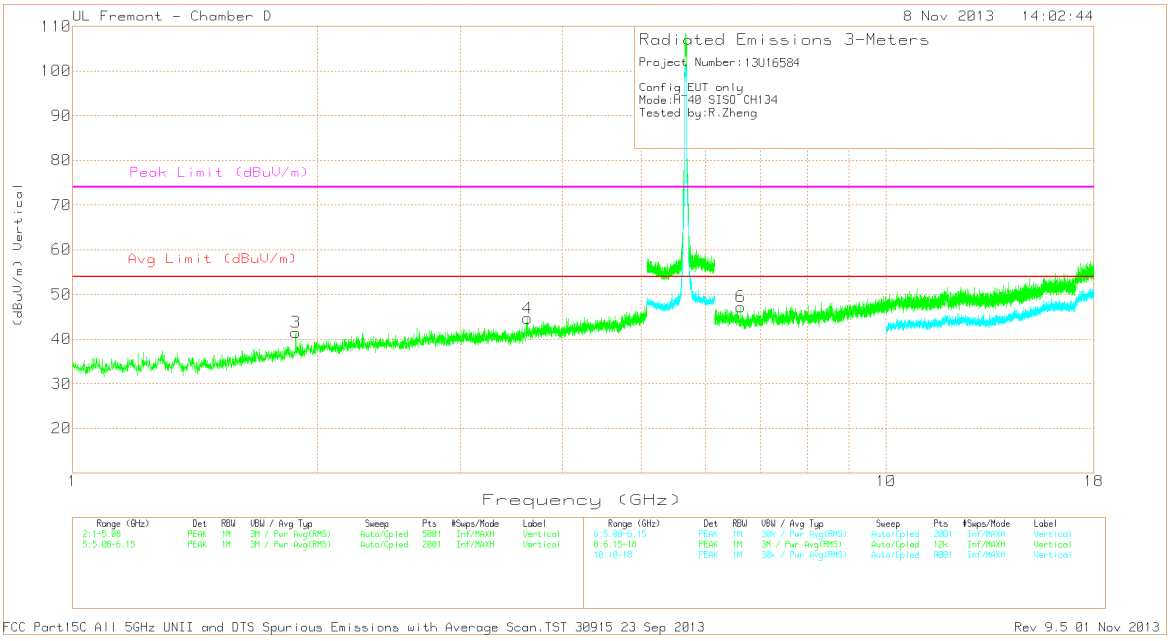
HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (db/m)	Amp/Cbl /Fltr/Pad	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.335	40.21	PK	28.5	-31.6	37.11	54	-16.89	74.0	-36.89	0-360	201	H
2	* 2.717	39.76	PK	32.8	-29.7	42.86	54	-11.14	74.0	-31.14	0-360	201	H
3	1.881	41.79	PK	30.9	-31.2	41.49	-	-	68.2	-26.71	0-360	201	V
4	* 3.623	40.26	PK	33.5	-29.1	44.66	54	-9.34	74.0	-29.34	0-360	100	V
5	6.299	38.18	PK	36.0	-26.6	47.58	-	-	68.2	-20.62	0-360	100	H
6	6.630	38.03	PK	35.7	-26.5	47.23	-	-	68.2	-20.97	0-360	100	V

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

PK - Peak detector

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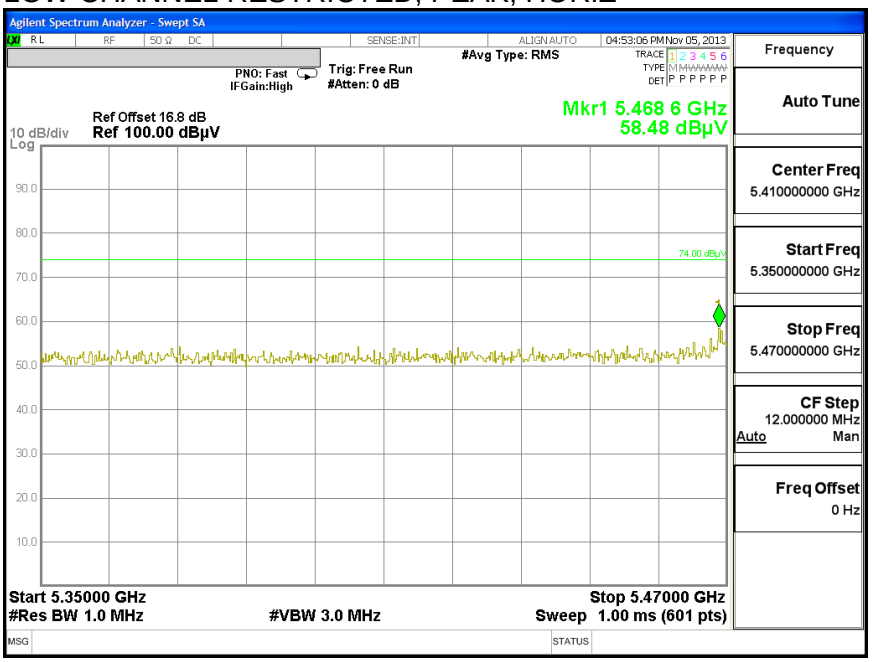
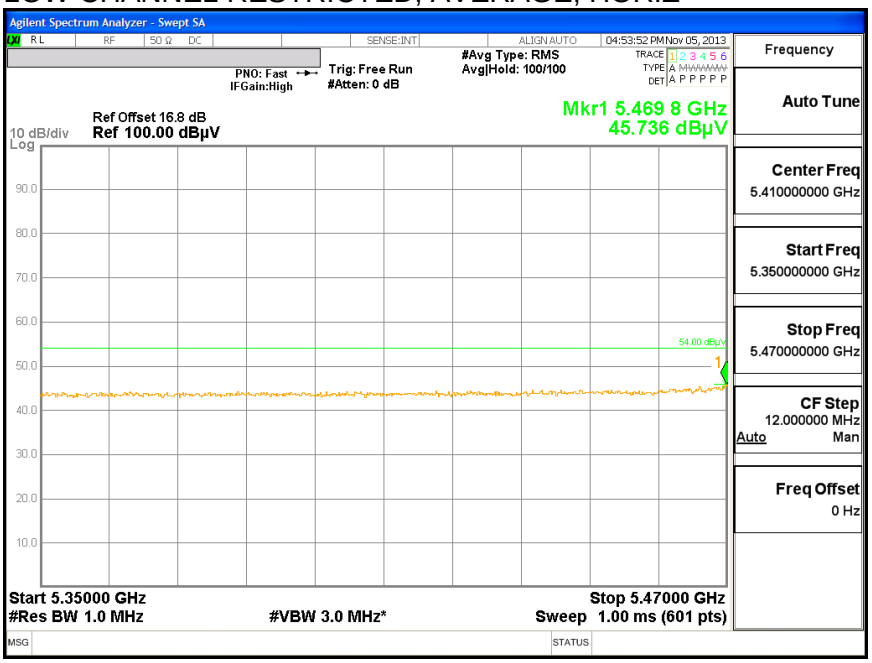
9.2.12. 802.11n HT40 MIMO IN THE 5.6 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

LOW CHANNEL RESTRICTED, PEAK, HORIZ



LOW CHANNEL RESTRICTED, AVERAGE, HORIZ



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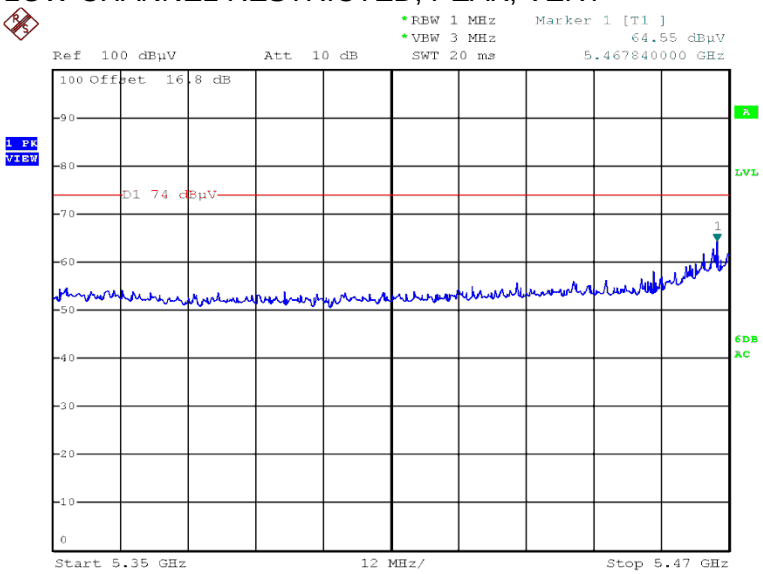
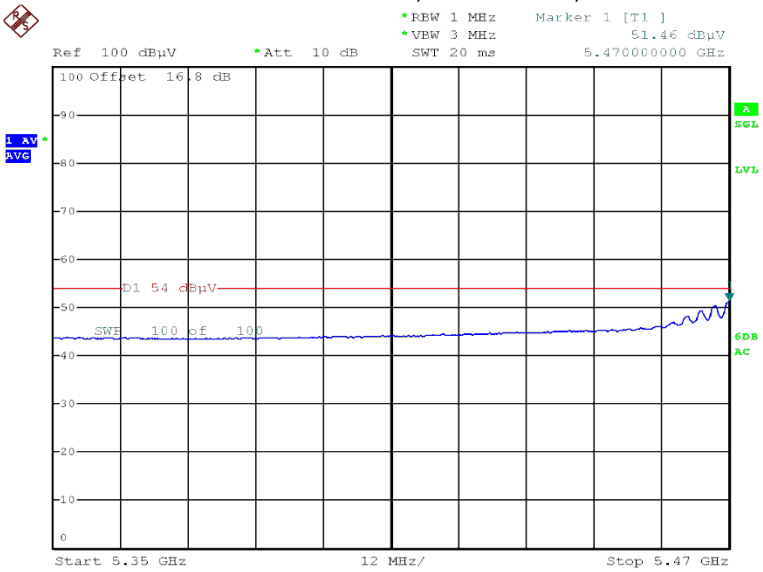
LOW CHANNEL RESTRICTED, PEAK, VERT



Date: 16.DEC.2013 19:48:59

LOW CHANNEL RESTRICTED, AVERAGE, VERT



Date: 16.DEC.2013 19:49:48

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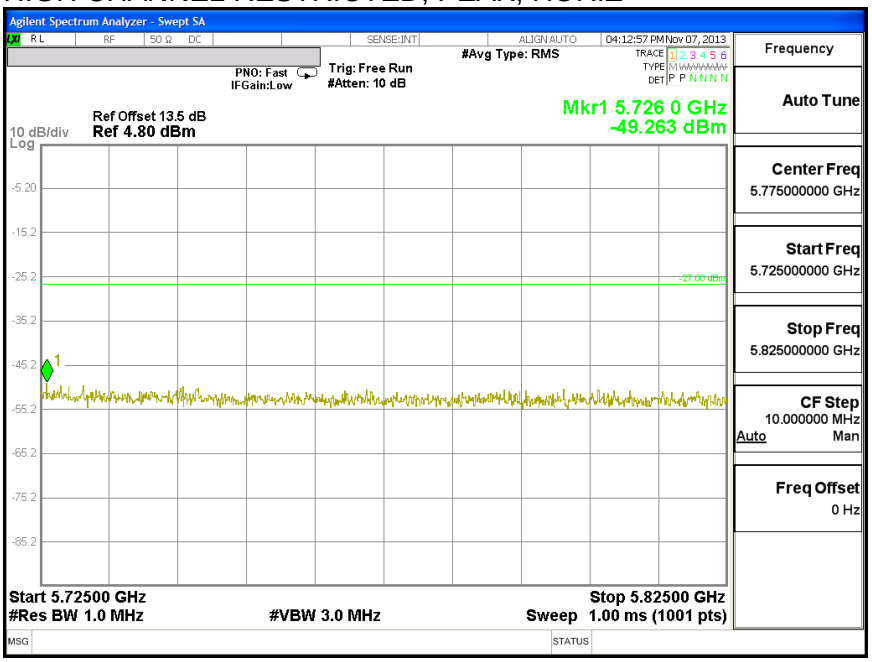
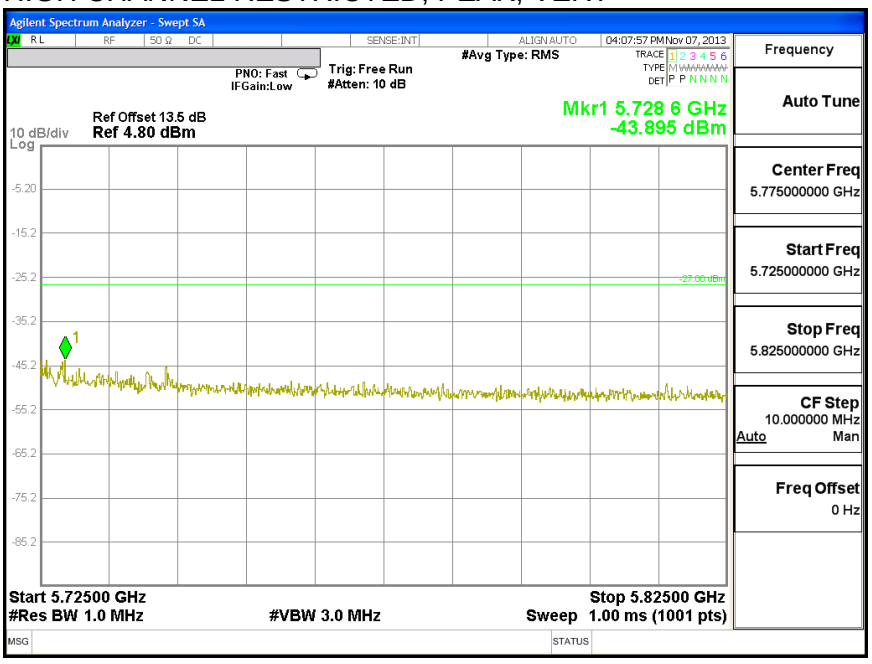
RESTRICTED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL RESTRICTED, PEAK, HORIZ



HIGH CHANNEL RESTRICTED, PEAK, VERT



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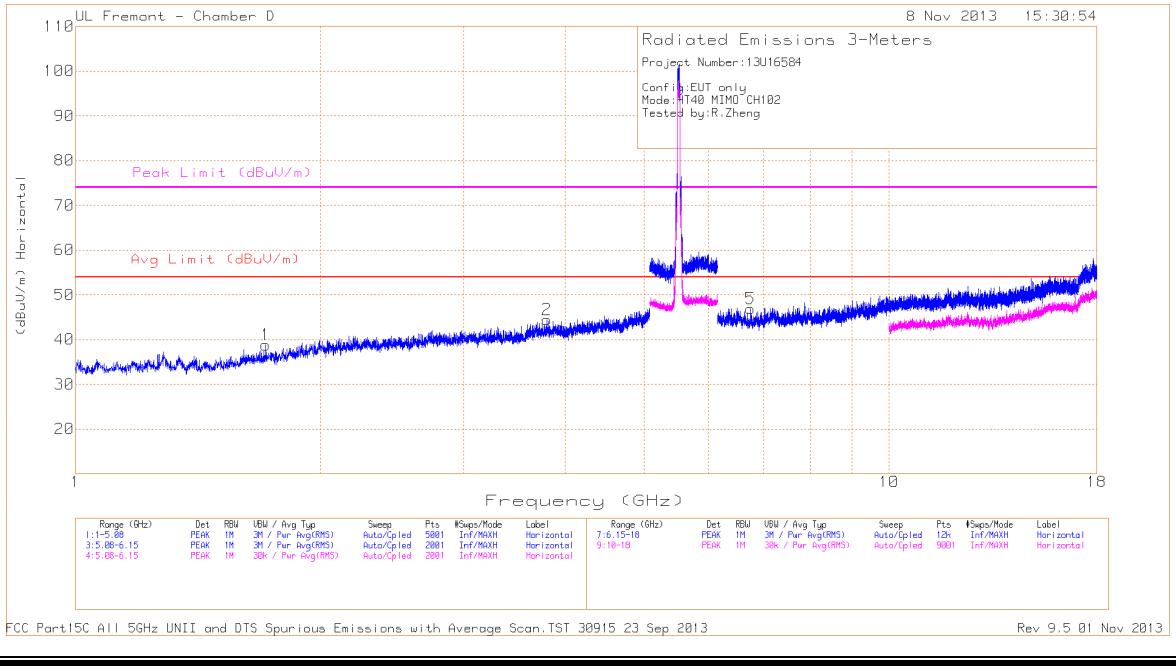
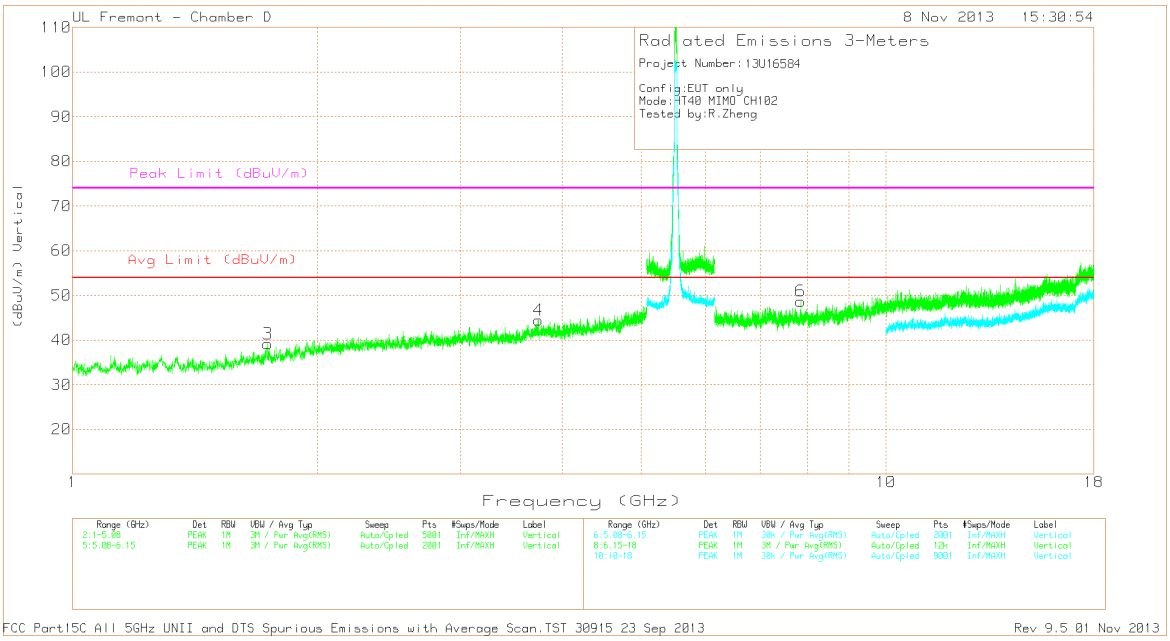
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL PLOT



LOW CHANNEL VERTICAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (db/m)	Amp/Cbl /Fltr/Pad	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.713	40.52	PK	29.7	-31.4	38.82	-	-	68.2	-29.38	0-360	100	H
2	* 3.797	39.84	PK	33.8	-29.2	44.44	54	-9.56	74.0	-29.56	0-360	200	H
3	1.738	40.83	PK	29.9	-31.6	39.13	-	-	68.2	-29.07	0-360	100	V
4	* 3.737	39.93	PK	33.8	-29.3	44.43	54	-9.57	74.0	-29.57	0-360	100	V
5	6.751	38.13	PK	35.7	-26.9	46.93	-	-	68.2	-21.27	0-360	200	H
6	7.850	37.93	PK	36.1	-25.3	48.73	-	-	68.2	-19.47	0-360	200	V

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

PK - Peak detector

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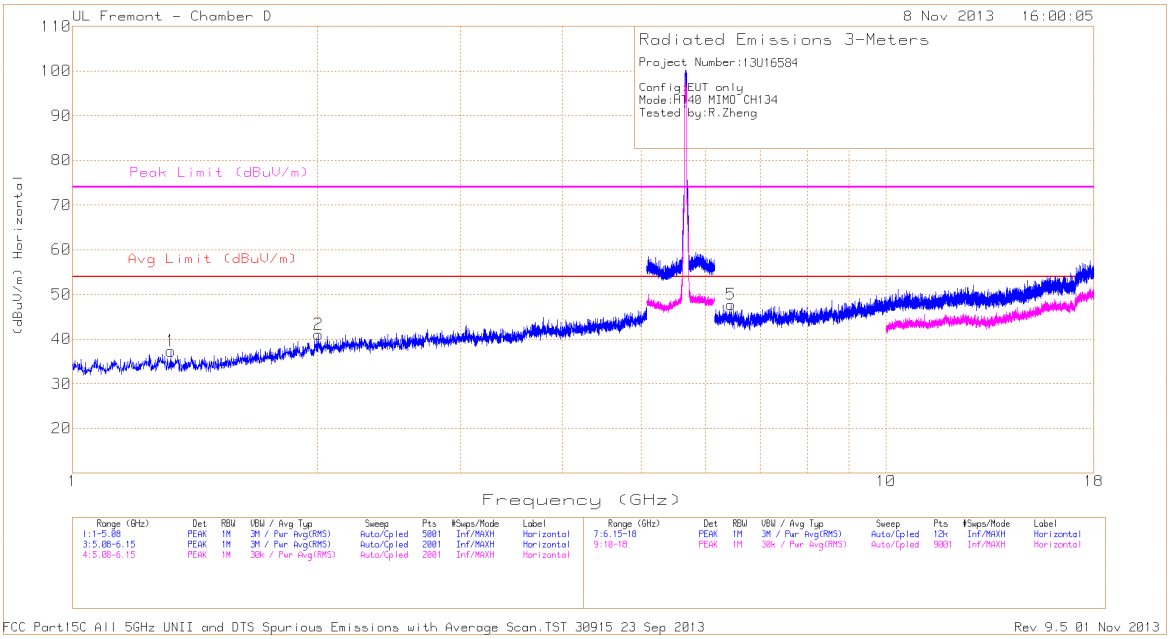
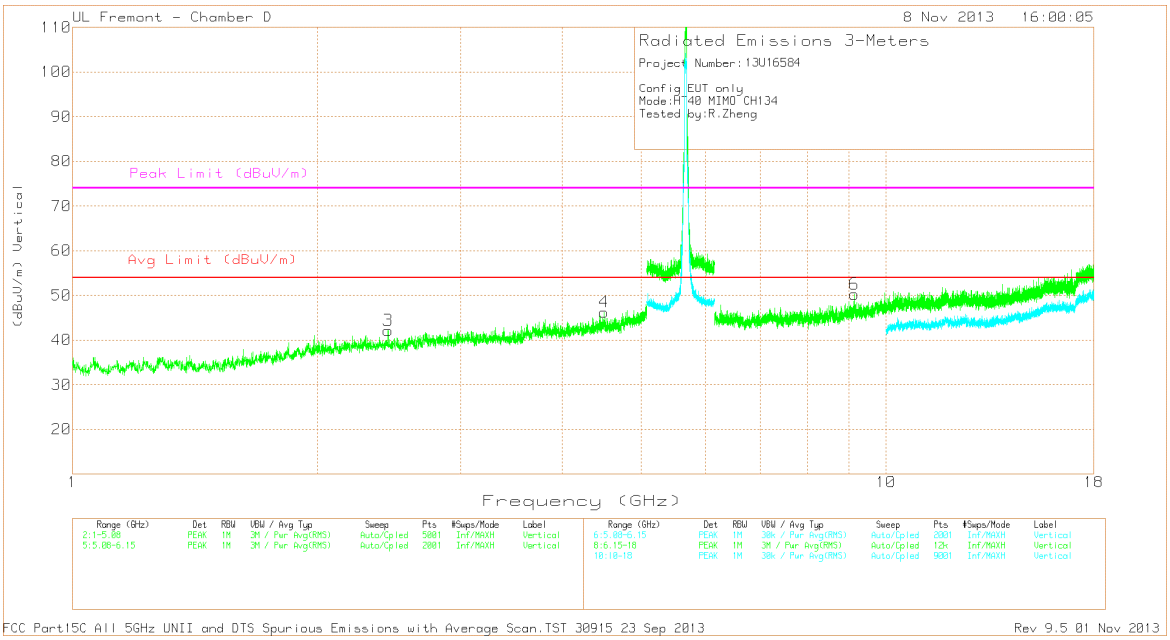
HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (db/m)	Amp/Cbl /Fltr/Pad	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.321	40.44	PK	28.5	-31.6	37.34	54	-16.66	74.0	-36.66	0-360	201	H
2	2.006	40.37	PK	31.7	-31.0	41.07	-	-	68.2	-27.13	0-360	201	H
3	2.443	40.36	PK	32.4	-30.6	42.16	-	-	68.2	-26.04	0-360	201	V
4	4.500	39.07	PK	34.2	-27.0	46.27	-	-	68.2	-21.93	0-360	201	V
5	6.446	38.76	PK	35.8	-26.8	47.76	-	-	68.2	-20.44	0-360	100	H
6	* 9.140	36.27	PK	36.8	-22.8	50.27	-	-	74.0	-23.73	0-360	100	V
	* 9.140	24.90	AD1	36.8	-22.8	38.90	54	-15.10	-	-	120	232	V

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

PK - Peak detector

AD1 - KDB 789033 Method: AD Primary Power Average

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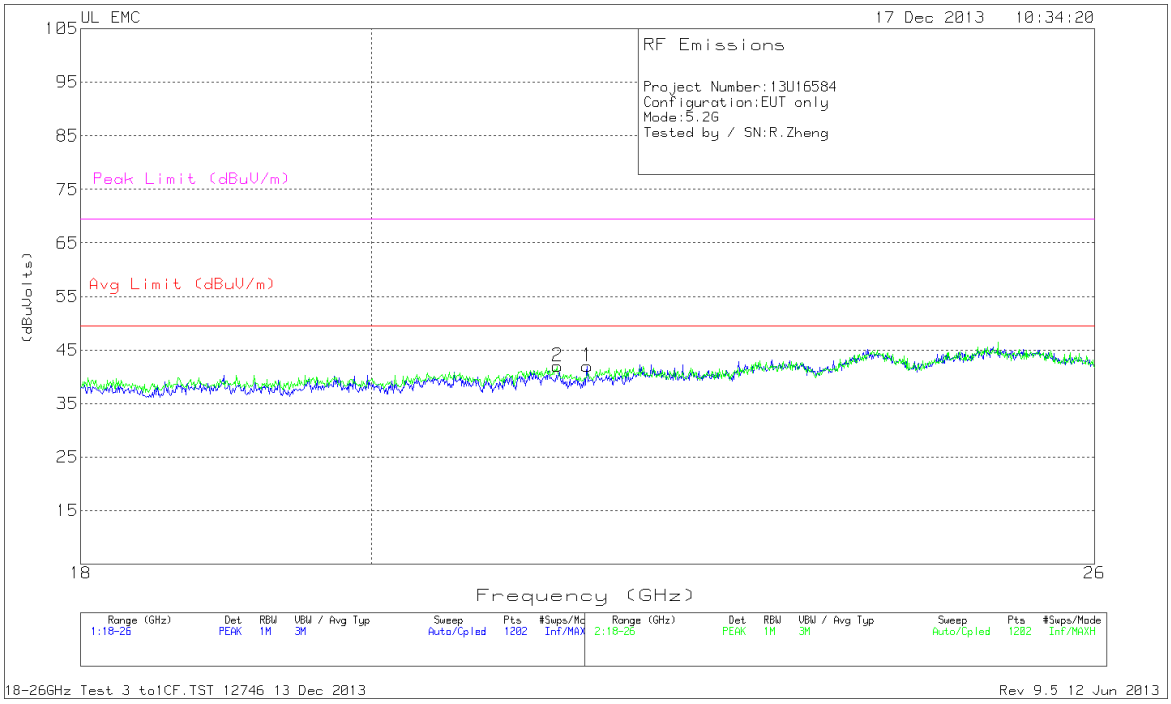
9.3. WORST-CASE ABOVE 18 GHz

SPURIOUS EMISSIONS 18 TO 26 GHz (WORST-CASE CONFIGURATION, HORIZONTAL & VERTICAL)

5.2 GHz BAND



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T89 (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	21.630	41.8	PK	33.1	-23.4	-9.5	42	49.5	-7.5	69.5	-27.5
2	21.397	42.3	PK	32.9	-23.7	-9.5	42	49.5	-7.5	69.5	-27.5

PK - Peak detector

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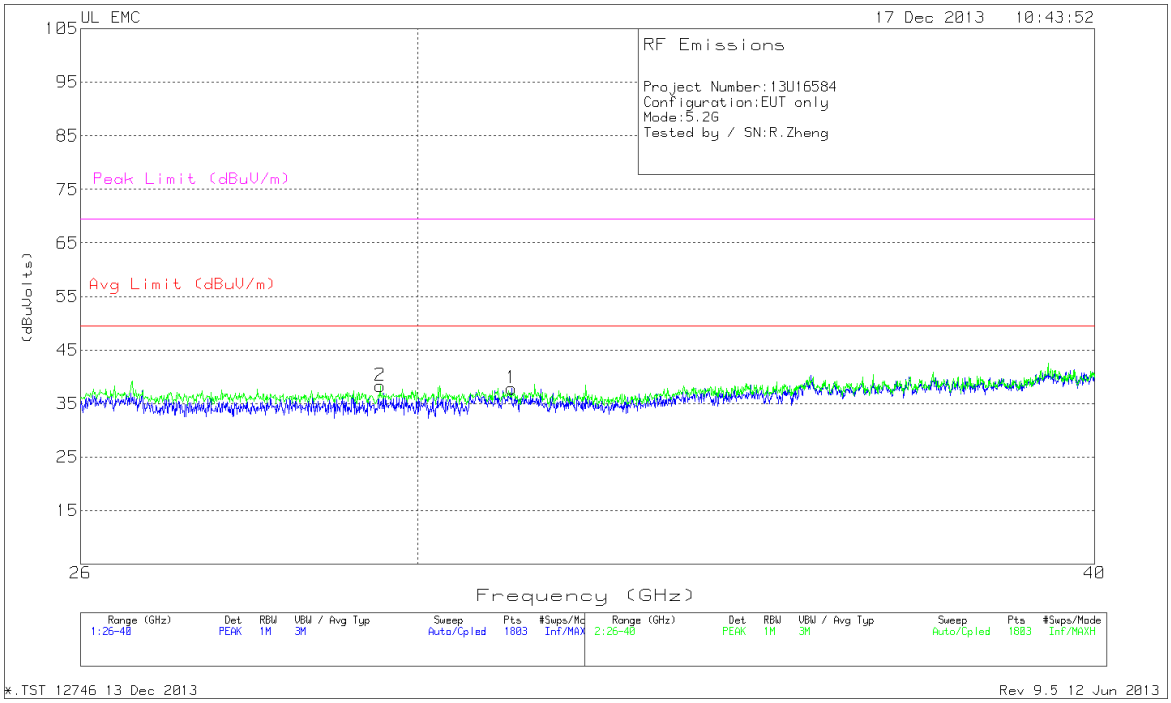
SPURIOUS EMISSIONS 26 TO 40 GHz (WORST-CASE CONFIGURATION, HORIZONTAL & VERTICAL)

5.2 GHz BAND



DATA

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	31.221	47.43	PK	36.0	-36.1	-9.5	37.83	49.5	-11.67	69.5	-31.67
2	29.527	46.73	PK	35.9	-34.8	-9.5	38.33	49.5	-11.167	69.5	-31.17

PK - Peak detector

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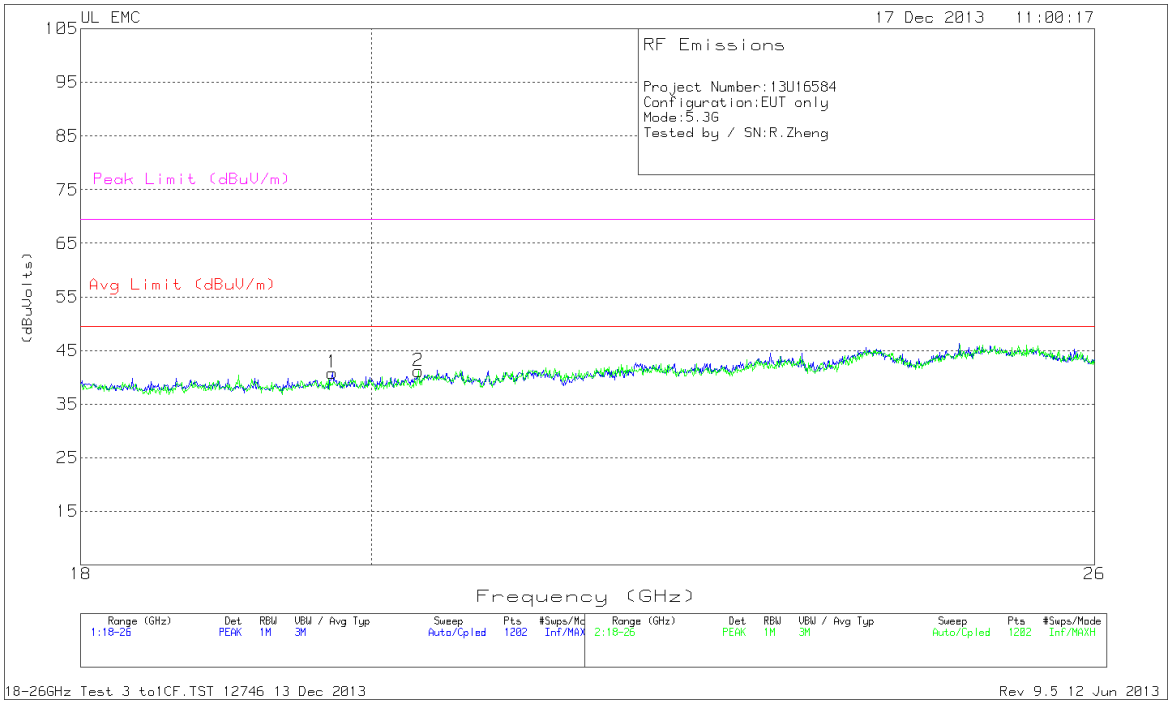
SPURIOUS EMISSIONS 18 TO 26 GHz (WORST-CASE CONFIGURATION, HORIZONTAL & VERTICAL)

5.3 GHz BAND



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T89 (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	19.719	41.53	PK	32.7	-23.9	-9.5	40.83	49.5	-8.67	69.5	-28.670
2	20.345	42.07	PK	32.7	-24.1	-9.5	41.17	49.5	-8.33	69.5	-28.337

PK - Peak detector

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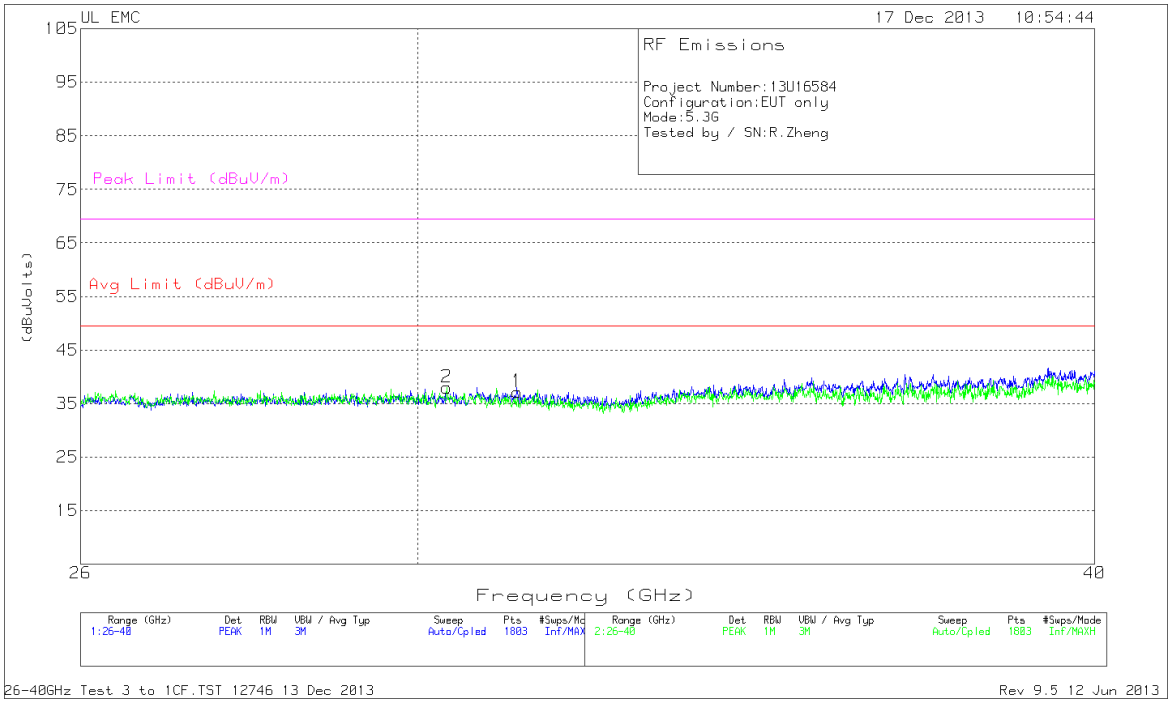
SPURIOUS EMISSIONS 26 TO 40 GHz (WORST-CASE CONFIGURATION, HORIZONTAL & VERTICAL)

5.3 GHz BAND



DATA

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	31.299	46.87	PK	36.0	-36.2	-9.5	37.17	49.5	-12.337	69.5	-32.337
2	30.374	47.50	PK	35.9	-35.9	-9.5	38.00	49.5	-11.500	69.5	-31.500

PK - Peak detector

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SPURIOUS EMISSIONS 18 TO 26 GHz (WORST-CASE CONFIGURATION, HORIZONTAL & VERTICAL)

5.6 GHz BAND

DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T89 (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	18.813	41.73	PK	32.5	-24.4	-9.5	40.33	49.5	-9.17	69.5	-29.17
2	23.149	43.33	PK	33.4	-23.4	-9.5	43.83	49.5	-5.67	69.5	-25.67

PK - Peak detector

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SPURIOUS EMISSIONS 26 TO 40 GHz (WORST-CASE CONFIGURATION, HORIZONTAL & VERTICAL)

5.6 GHz BAND

DATA

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	31.392	47.70	PK	36.1	-35.8	-9.5	38.50	49.5	-11.00	69.5	-31.00
2	30.164	46.33	PK	35.9	-35.4	-9.5	37.33	49.5	-12.17	69.5	-32.17

PK - Peak detector

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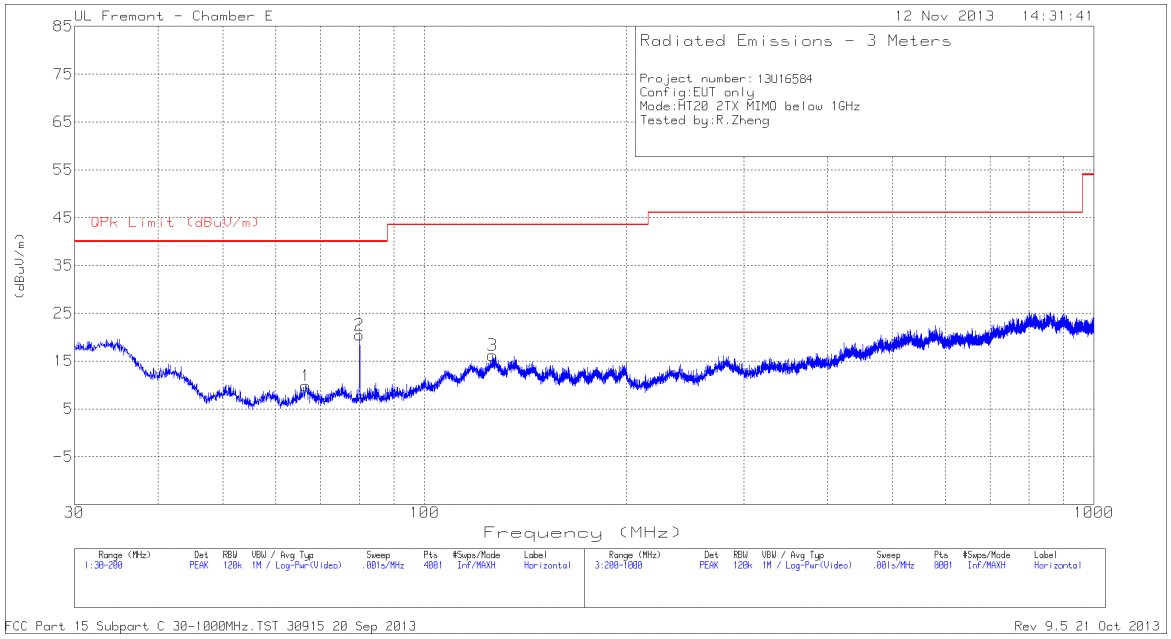
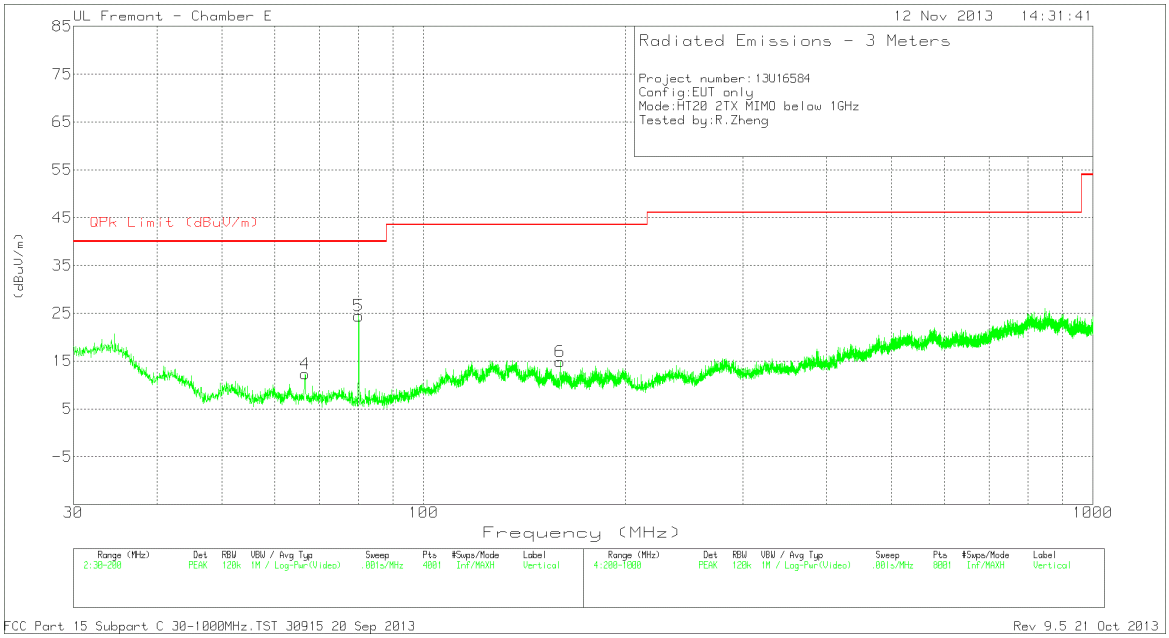
9.4. WORST-CASE BELOW 1 GHz

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

HORIZOTAL PLOT



VERTICAL PLOT



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DATA

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
1	66.5075	29.83	PK	8.1	-28.1	9.83	40.00	-30.17	0-360	300	H
2	79.9800	40.44	PK	7.7	-27.7	20.44	40.00	-19.56	0-360	400	H
3	126.3475	29.69	PK	13.8	-27.3	16.19	43.52	-27.33	0-360	98	H
4	66.5500	32.32	PK	8.1	-28.1	12.32	40.00	-27.68	0-360	100	V
5	80.0225	44.45	PK	7.7	-27.7	24.45	40.00	-15.55	0-360	100	V
6	160.0075	30.47	PK	12.1	-27.7	14.87	43.52	-28.65	0-360	100	V

PK - Peak detector

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10. AC POWER LINE CONDUCTED EMISSIONS

Refer to the FCC UNII report with the FCC ID BCGA1475 and project number 15U21850-E31V2.

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11. DYNAMIC FREQUENCY SELECTION

Note that for DFS data refer to the FCC ID: BCGA1475 and Project number 15U21850-E31V2.

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