



**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-E35V2**

**ISSUE DATE: DECEMBER 03, 2015**

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Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
V1	11/16/15	Initial issue. Upgrade 13U16583-4 Revision A report to 5.2/5.3/5.6GHz band to new rule per KDB 789033 D02 v01.	T. Chu
V2	12/03/15	Revised report to address TCB's questions	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:** 11092

**DATE TESTED:** NOVEMBER 11 – DECEMBER 17, 2013 and FEBRUARY 14, 2014

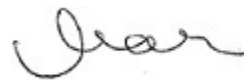
APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart E	Pass

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:

Tested By:



Thu Chan  
WiSE Operations Manager  
UL Verification Services Inc.

Mona Hua  
WiSE Lab Technician  
UL Verification Services Inc.

## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, 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 and 47266 Benicia Street, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

47173 Benicia Street	47266 Benicia Street
<input type="checkbox"/> Chamber A	<input checked="" type="checkbox"/> Chamber D
<input type="checkbox"/> Chamber B	<input checked="" type="checkbox"/> Chamber E
<input type="checkbox"/> Chamber C	<input checked="" type="checkbox"/> Chamber F

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

## 4. CALIBRATION AND UNCERTAINTY

### 4.1. MEASURING INSTRUMENT CALIBRATION

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

### 4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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

### 4.3. MEASUREMENT UNCERTAINTY

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

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

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

## 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 5.2/5.3/5.6GHz 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		Uncorrelated Gain	Correlated Gain
	Tx1	Tx2		
5.2	-0.02	<b>3.06</b>	<b>1.79</b>	<b>4.67</b>
5.3	0.75	<b>3.25</b>	<b>2.18</b>	<b>5.10</b>
5.5	2.43	<b>4.29</b>	<b>3.46</b>	<b>6.42</b>

### 5.4. SOFTWARE AND FIRMWARE

The test utility software used during testing was Broadcom WL Tool Version 6.25.86.

### 5.5. MAXIMUM OUTPUT POWER

Please refer to 15U21850-E30V2 from Section 5.3

## 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 vendors 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-E30V2.

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.



## 5.7. DESCRIPTION OF TEST SETUP

### SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC/DC Adapter	Apple	A1357	A/12981EA	DoC
Earphone	Apple	NA	NA	NA

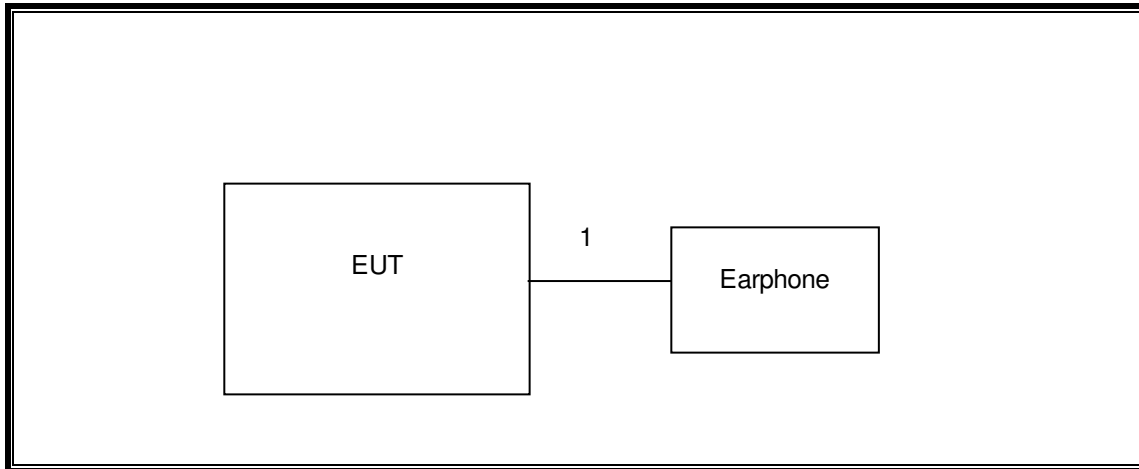
### I/O CABLES (RADIATED TEST)

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

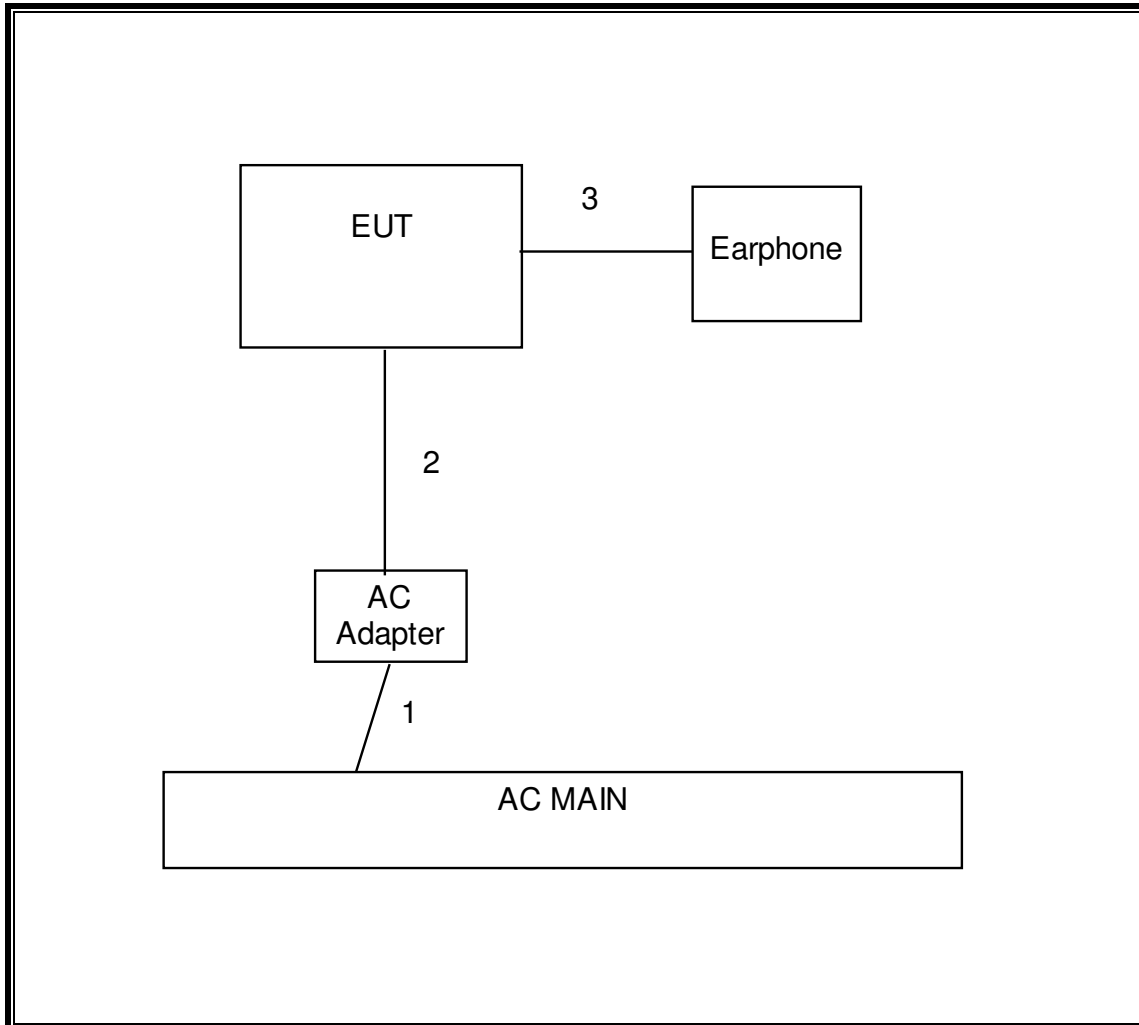
### I/O CABLES BELOW 1GHZ TEST

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

**SETUP DIAGRAM FOR RADIATED TESTS**



**SETUP DIAGRAM FOR BELOW 1GHZ TEST**



## 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
PreApmplifier, 1-26.5GHz	Agilent	8449B	C01052	10/22/14
Antenna, Horn, 40 GHz	ARA	MWH-2640/B	F00194	05/14/14
Preamplifier, 40 GHz	Miteq	NSP4000-SP2	C00990	08/20/14

## **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 the on time and duty cycle data FCC UNII report with the FCC ID BCGA1490 and project number 13U15668-6 at 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.

## 8. ANTENNA PORT TEST RESULTS

Note that for all of 5.2/5.3/5.6GHz antenna port data refer to the FCC UNII report with the FCC ID: BCGA1490 and project number 15U21850-E30V2.

## 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.

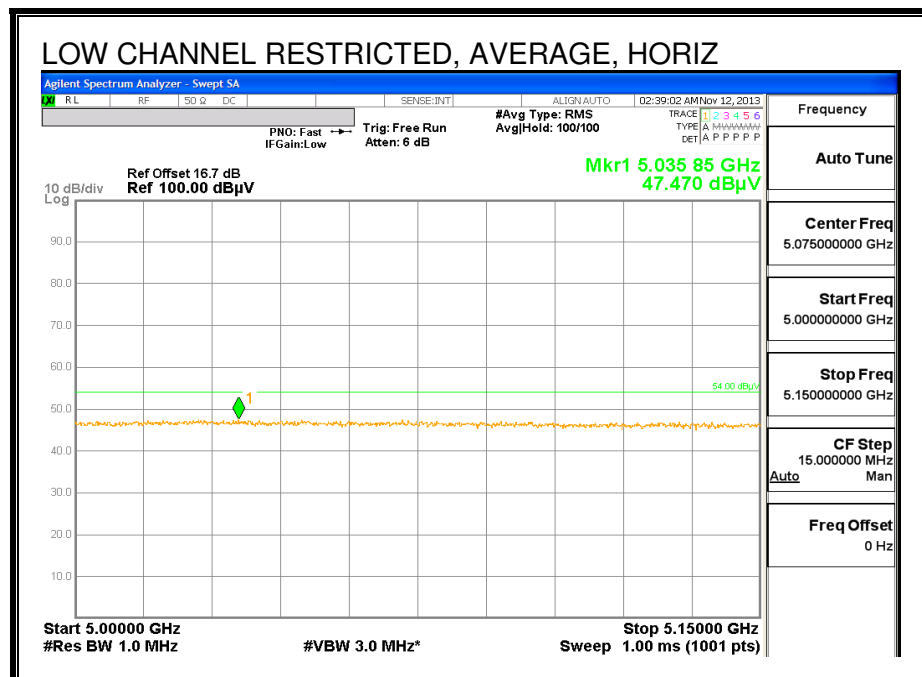
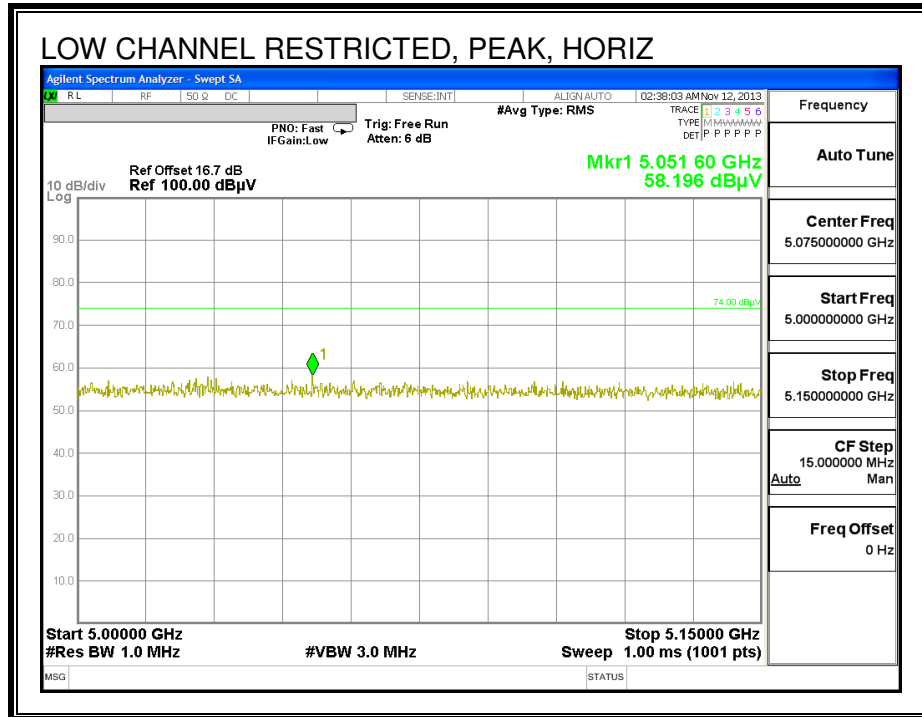
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

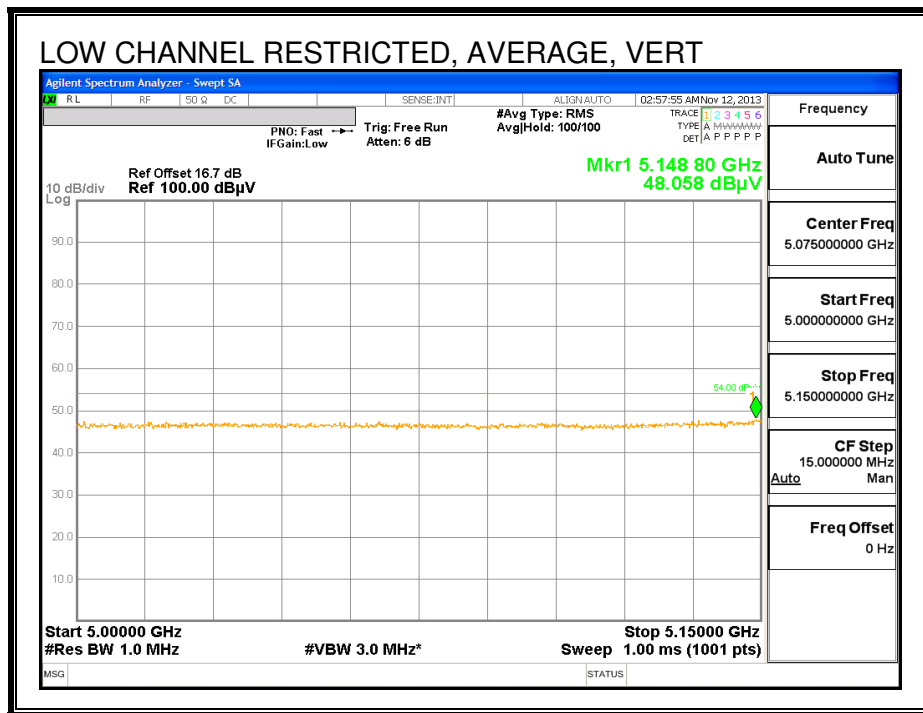
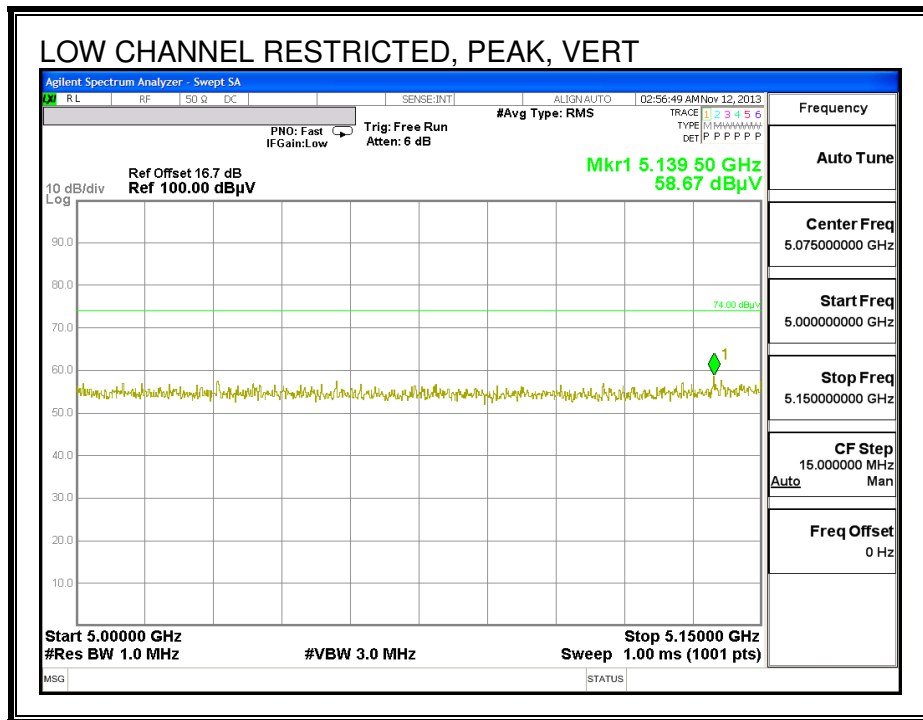
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

## 9.2. TRANSMITTER ABOVE 1 GHz

### 9.2.1. 802.11a SISO MODE IN THE 5.2 GHz BAND

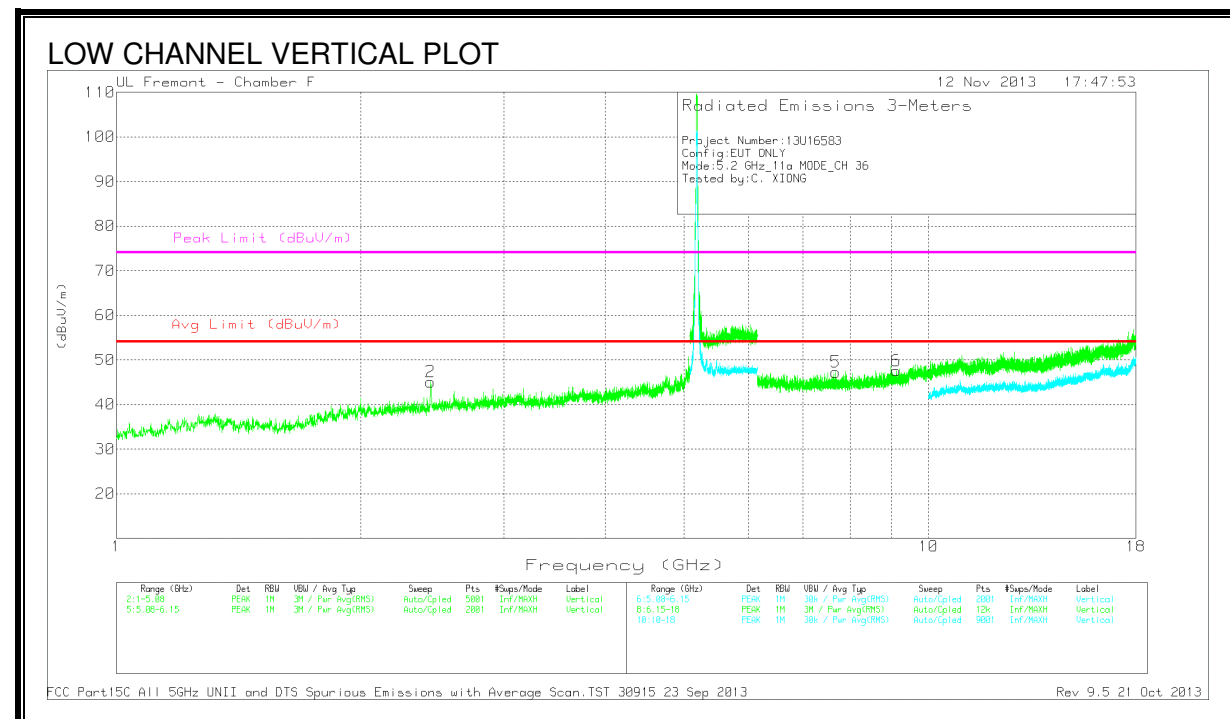
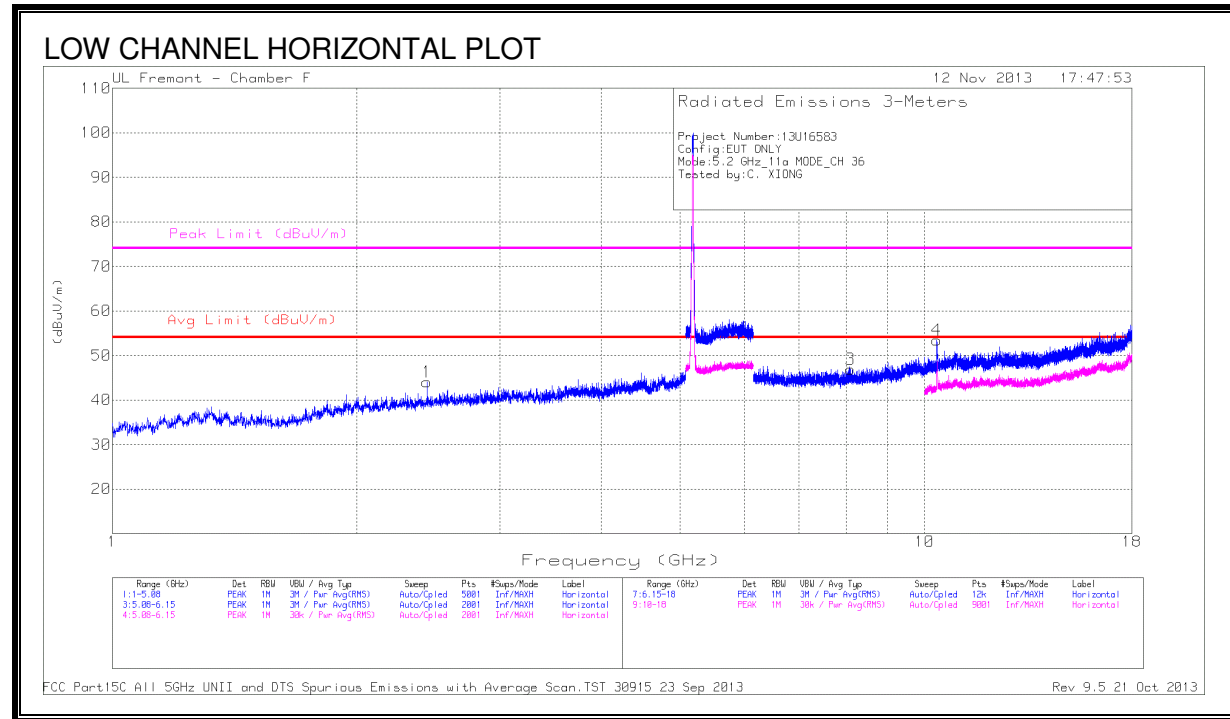
#### RESTRICTED BANDEDGE (LOW CHANNEL)







**HARMONICS AND SPURIOUS EMISSIONS**

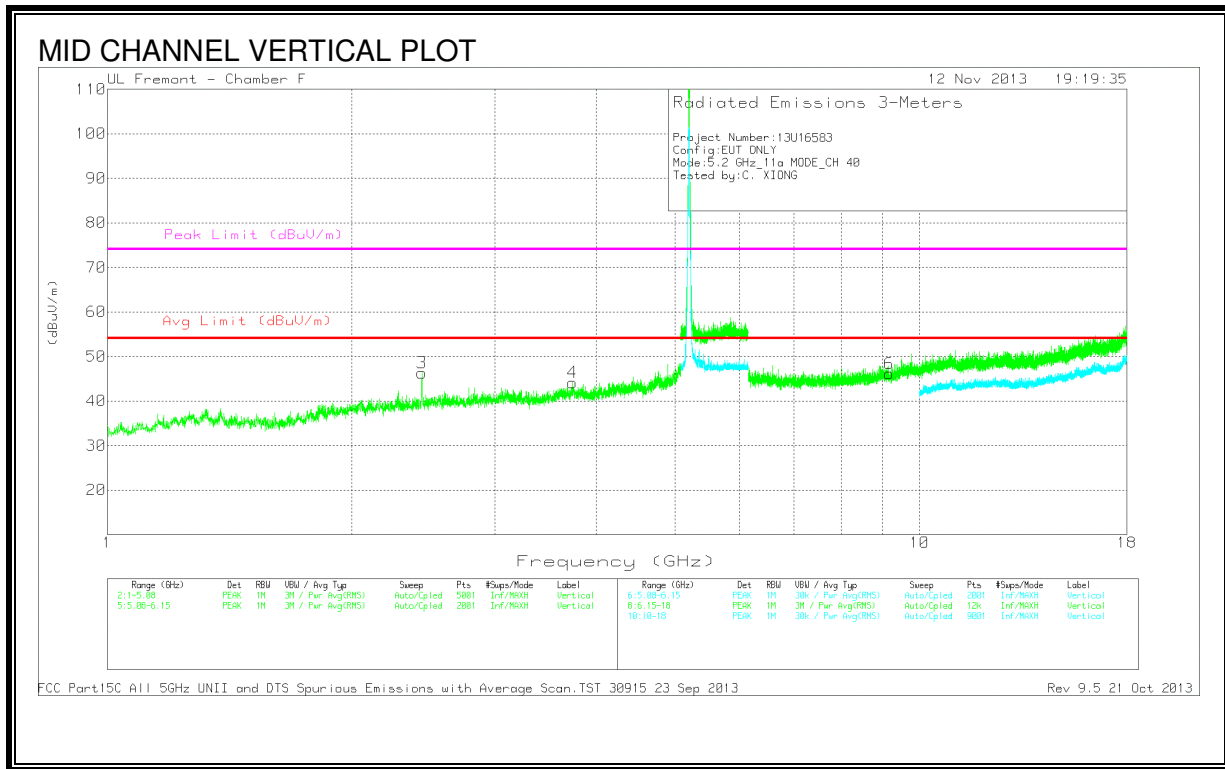
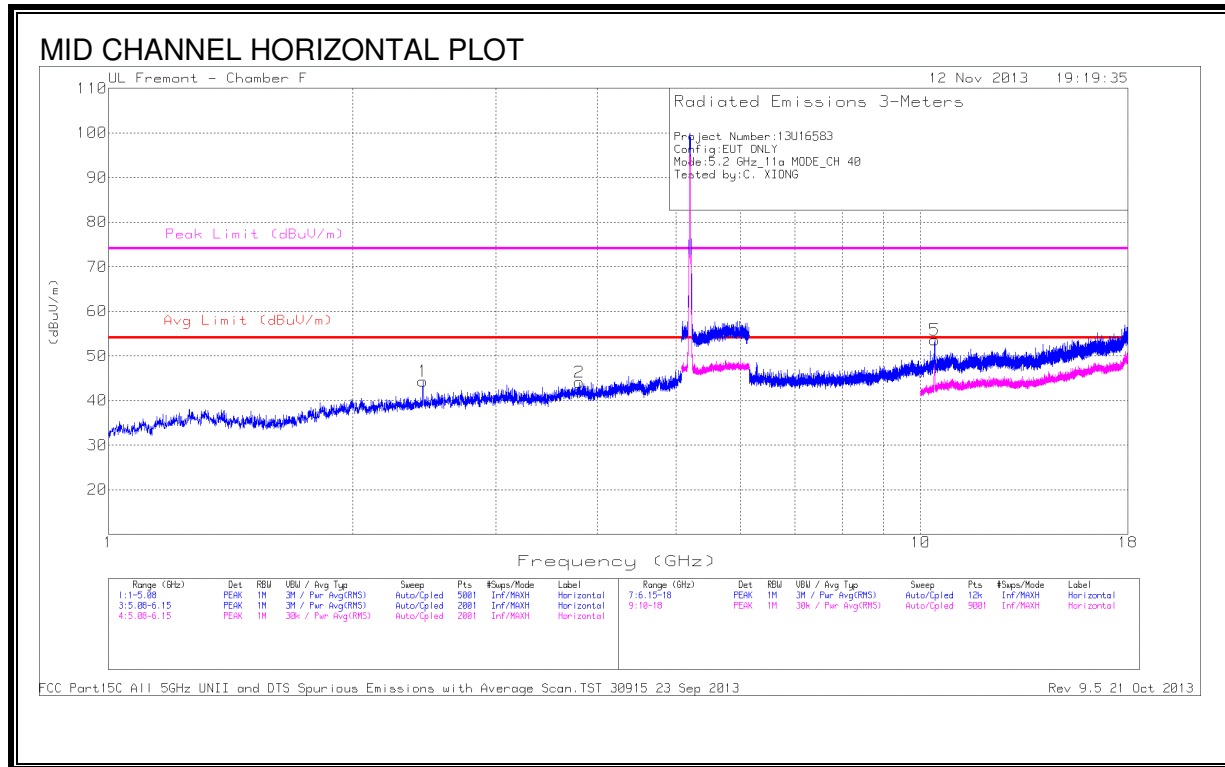


**DATA**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	2.439	42.47	PK	32.3	-30.7	44.07	-	-	68.2	-24.13	0-360	199	H
2	2.436	43.49	PK	32.3	-30.7	45.09	-	-	68.2	-23.11	0-360	200	V
3	* 8.102	36.32	PK	36.0	-25.4	46.92	54	-7.08	74.0	-27.08	0-360	100	H
4	10.351	38.05	PK	38.0	-22.6	53.45	-	-	68.2	-14.75	0-360	199	H
5	* 7.684	37.45	PK	35.9	-26.1	47.25	54	-6.75	74.0	-26.75	0-360	201	V
6	* 9.127	34.89	PK	36.5	-23.8	47.59	54	-6.41	74.0	-26.41	0-360	101	V

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

PK - Peak detector

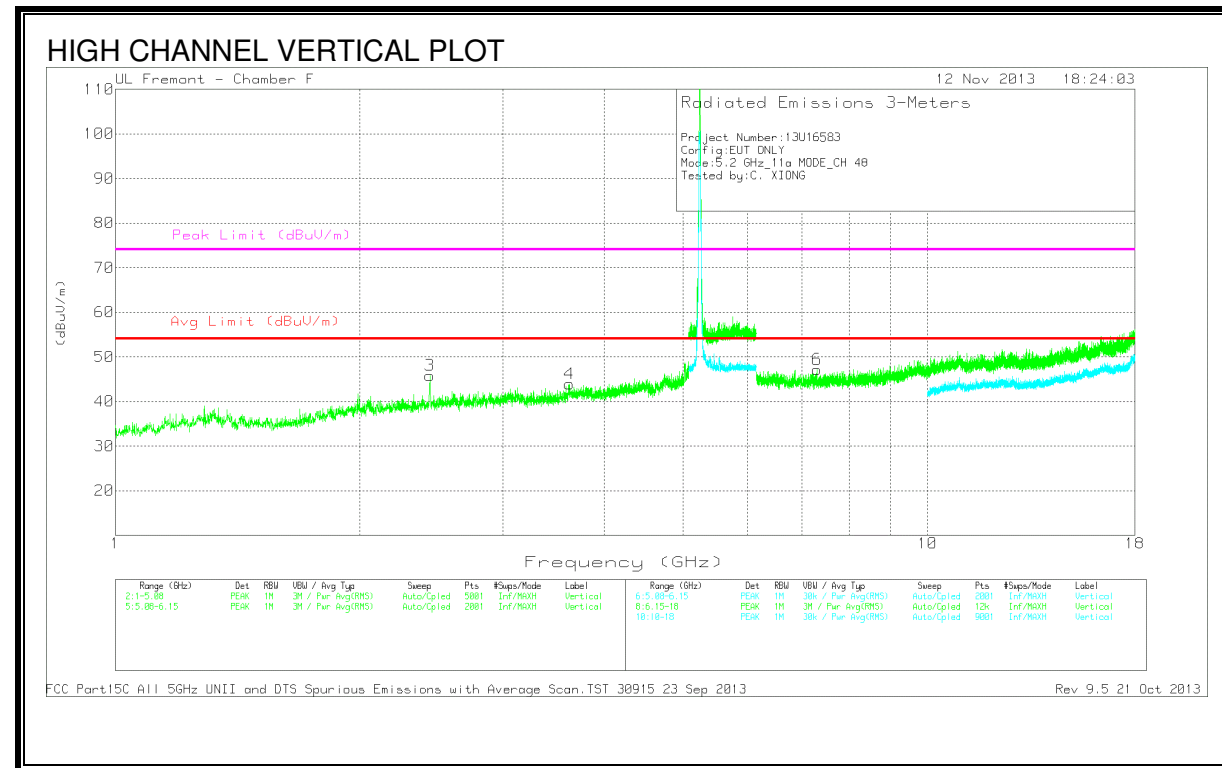
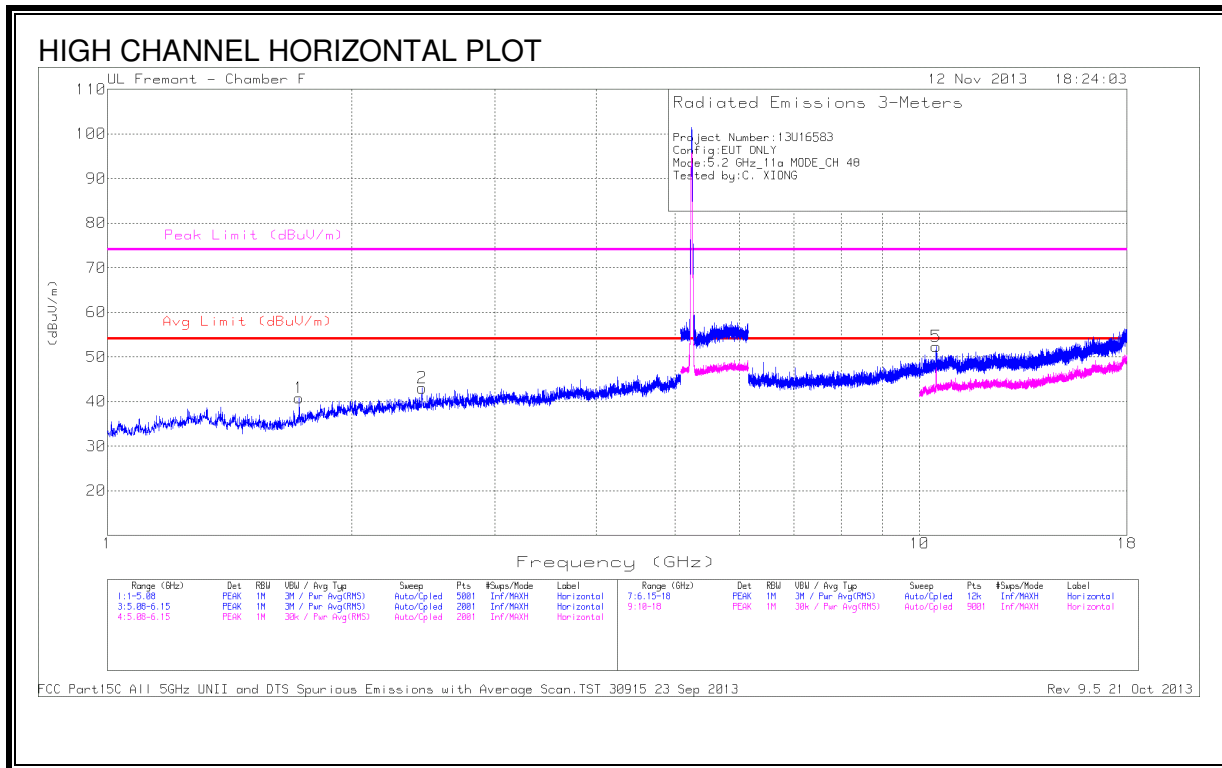


**DATA**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	2.439	42.74	PK	32.3	-30.7	44.34	-	-	68.2	-23.86	0-360	199	H
2	* 3.801	39.91	PK	33.6	-29.4	44.11	54	-9.89	74.0	-29.89	0-360	199	H
3	2.439	44.73	PK	32.3	-30.7	46.33	-	-	68.2	-21.87	0-360	200	V
4	* 3.738	40.04	PK	33.5	-29.4	44.14	54	-9.86	74.0	-29.86	0-360	200	V
5	10.408	37.48	PK	38.2	-22.1	53.58	-	-	68.2	-14.62	0-360	100	H
6	* 9.171	33.65	PK	36.5	-24.0	46.15	54	-7.85	74.0	-27.85	0-360	100	V

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

PK - Peak detector



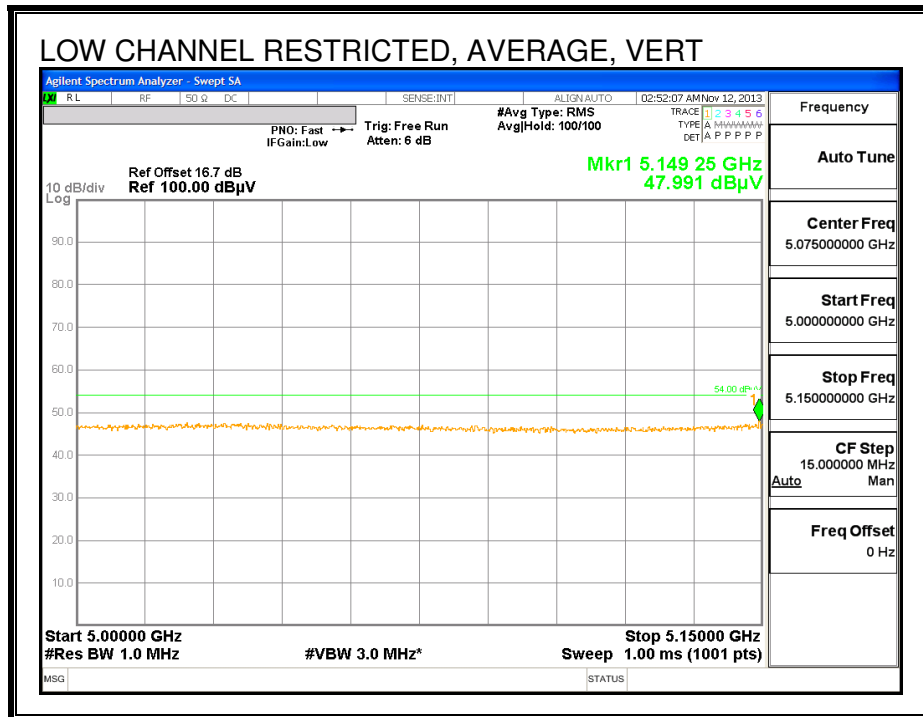
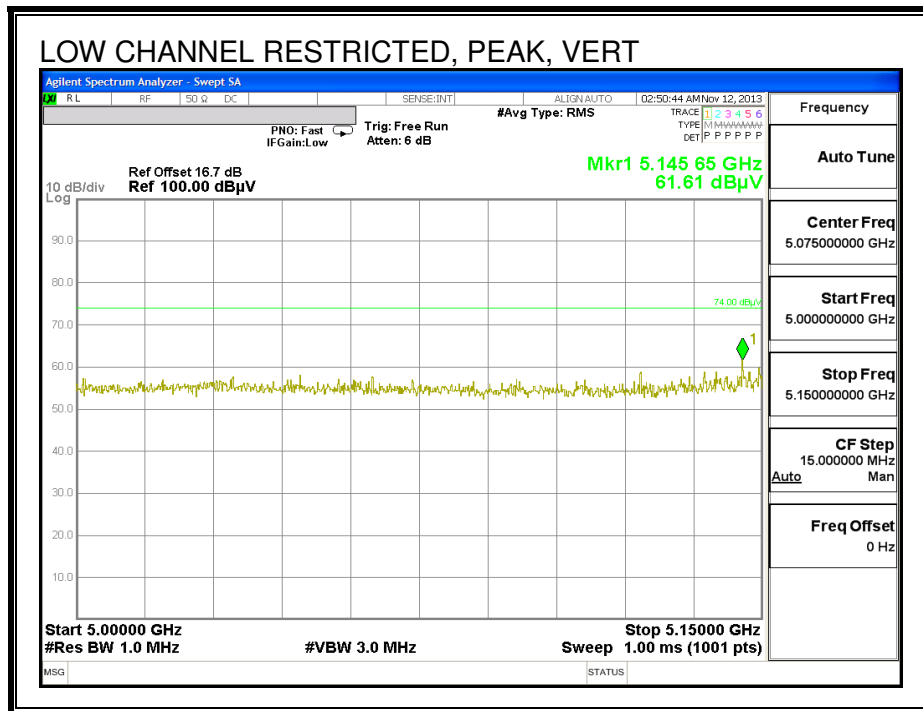
**DATA**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	* 1.722	43.03	PK	29.2	-31.4	40.83	54	-13.17	74.0	-33.17	0-360	100	H
2	2.441	41.46	PK	32.3	-30.7	43.06	-	-	68.2	-25.14	0-360	199	H
3	2.439	44.25	PK	32.3	-30.7	45.85	-	-	68.2	-22.35	0-360	200	V
4	* 3.623	39.67	PK	33.7	-29.4	43.97	54	-10.03	74.0	-30.03	0-360	200	V
5	10.481	36.93	PK	38.3	-22.9	52.33	-	-	68.2	-15.18	0-360	100	H
6	* 7.310	37.27	PK	35.7	-25.8	47.17	54	-6.83	74.0	-26.83	0-360	101	V

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

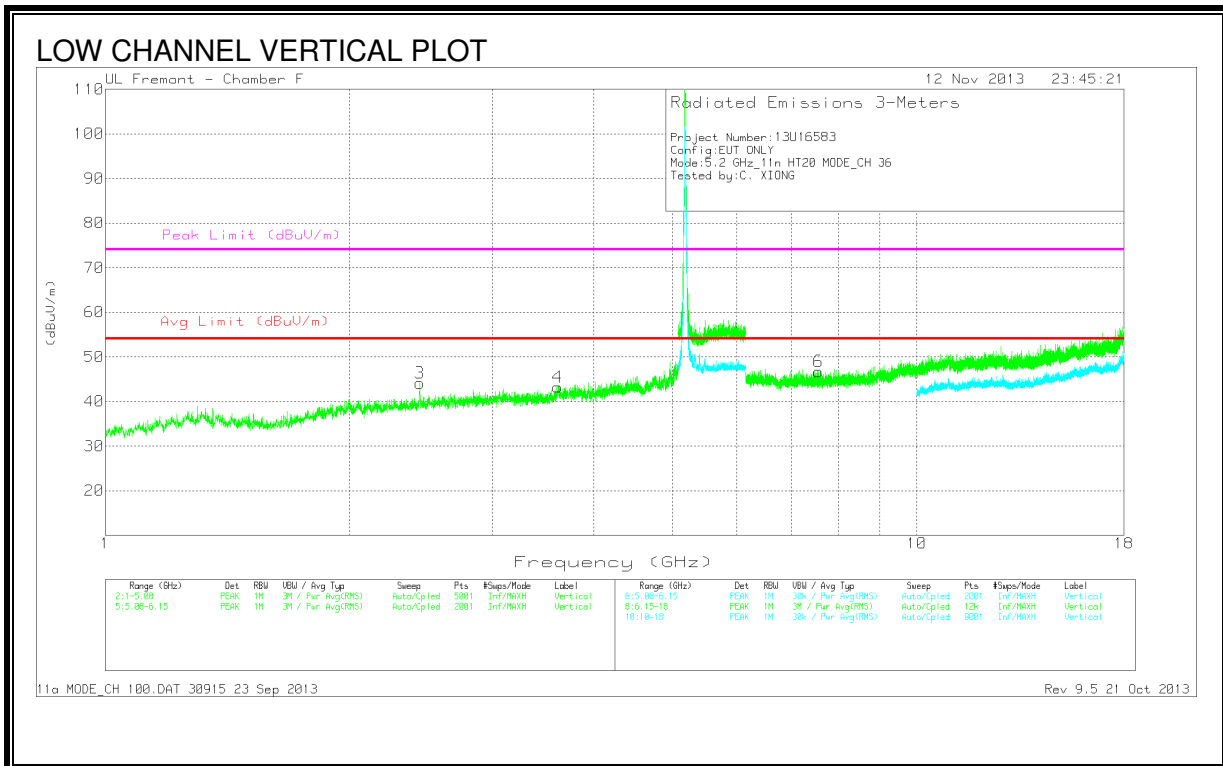
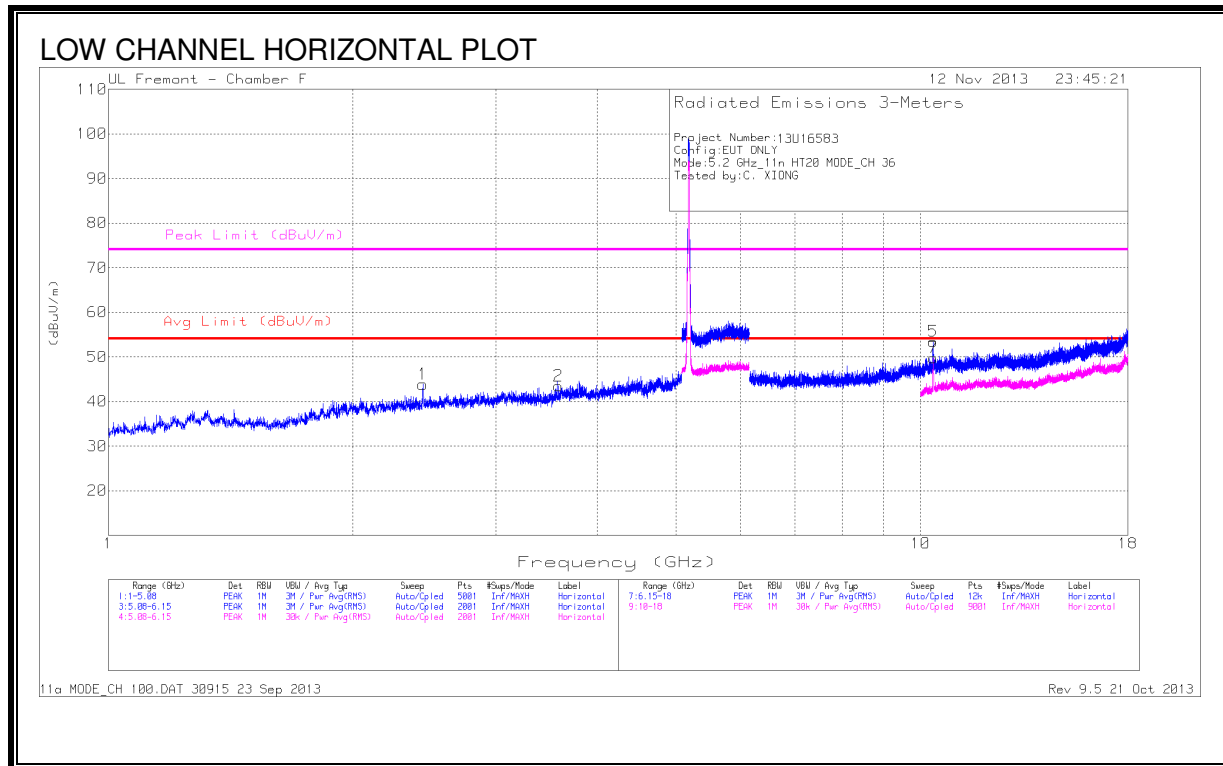
PK - Peak detector







**HARMONICS AND SPURIOUS EMISSIONS**

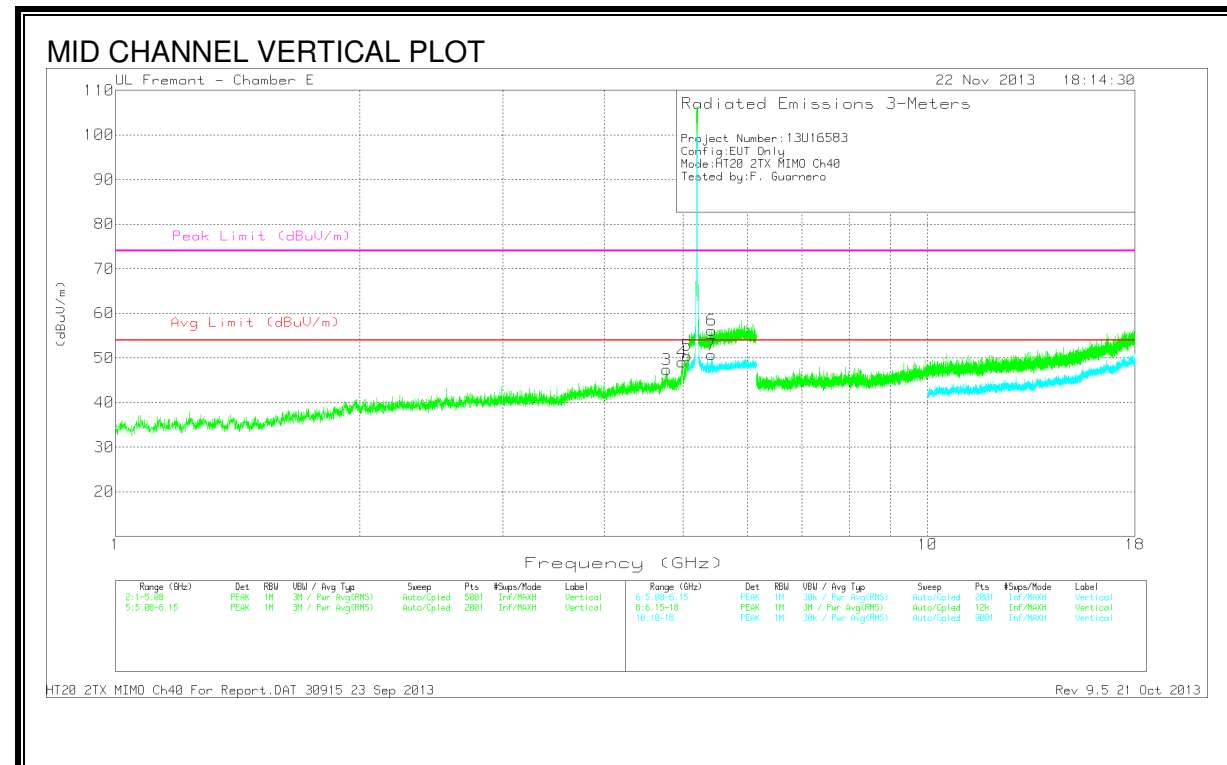
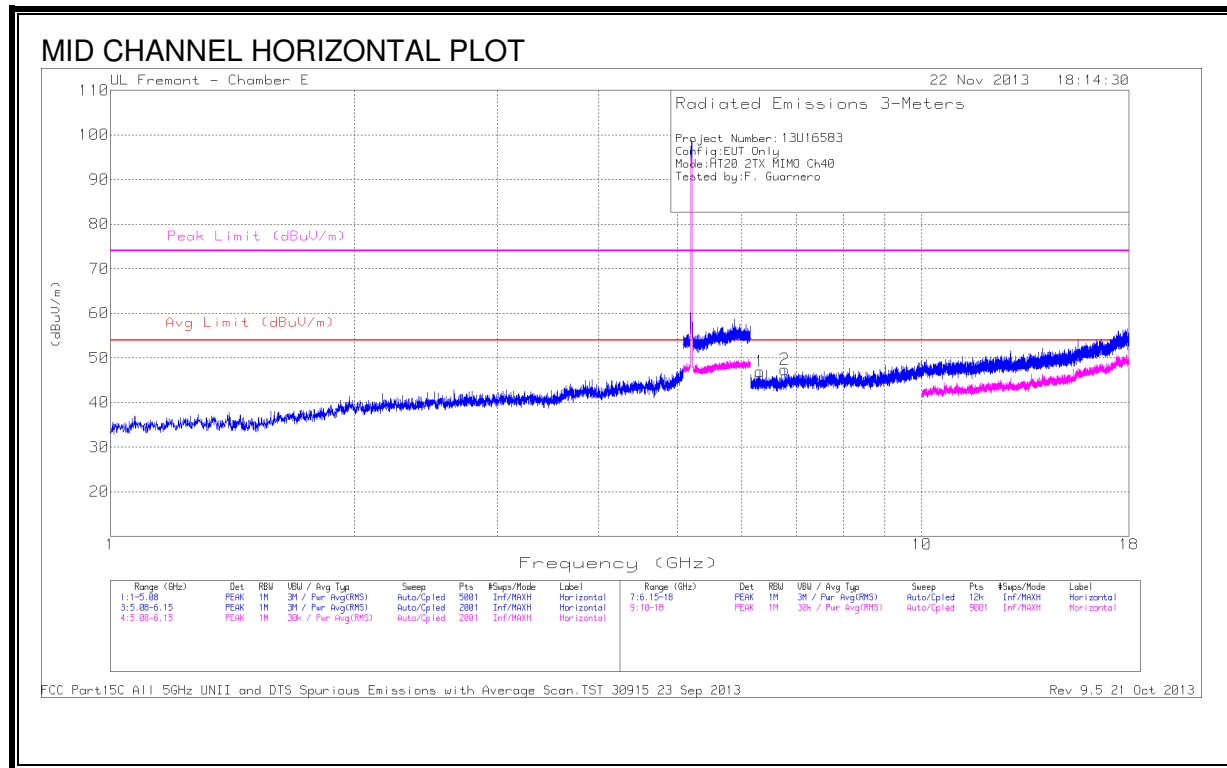


**DATA**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	2.439	42.25	PK	32.3	-30.7	43.85	-	-	68.2	-24.35	0-360	199	H
2	* 3.583	39.28	PK	33.7	-29.5	43.48	54	-10.52	74.0	-30.52	0-360	199	H
3	2.440	42.52	PK	32.3	-30.7	44.12	-	-	68.2	-24.08	0-360	201	V
4	* 3.609	38.93	PK	33.7	-29.4	43.23	54	-10.77	74.0	-30.77	0-360	201	V
5	10.360	37.97	PK	38.1	-22.6	53.47	-	-	68.2	-14.73	0-360	199	H
6	* 7.564	36.11	PK	35.8	-25.2	46.71	54	-7.29	74.0	-27.29	0-360	200	V

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

PK - Peak detector



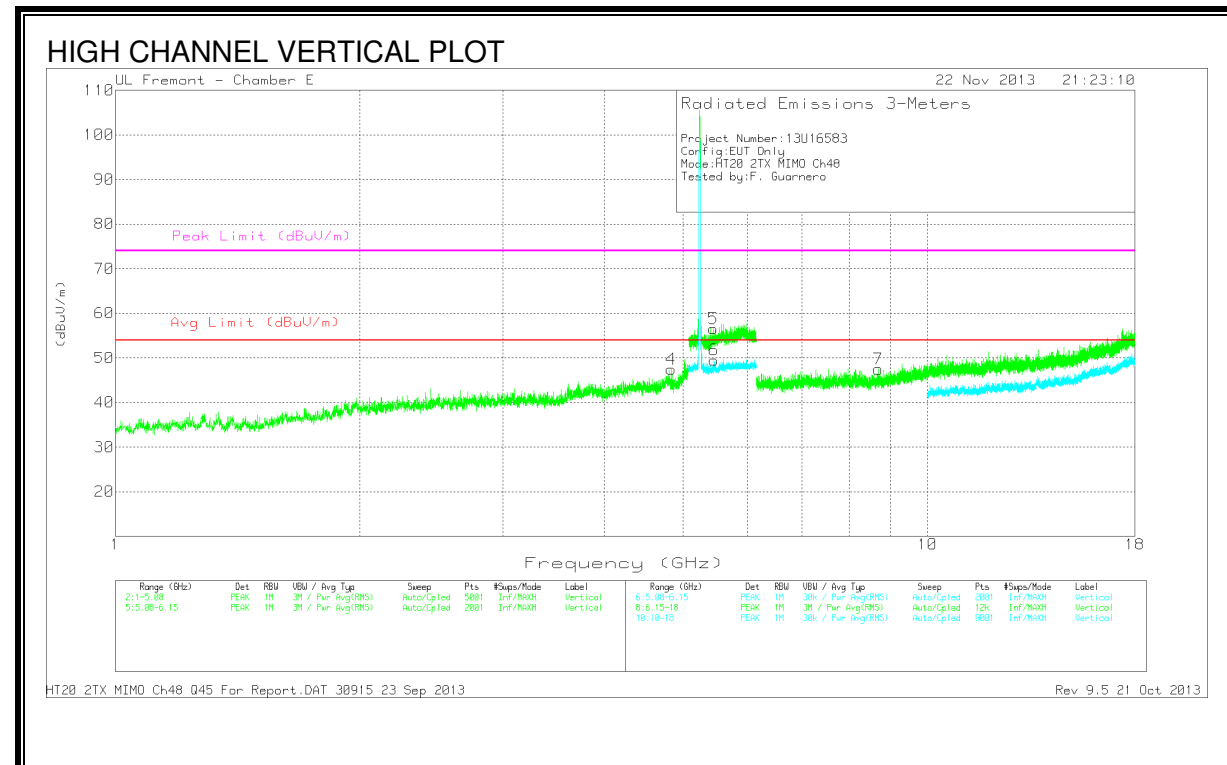
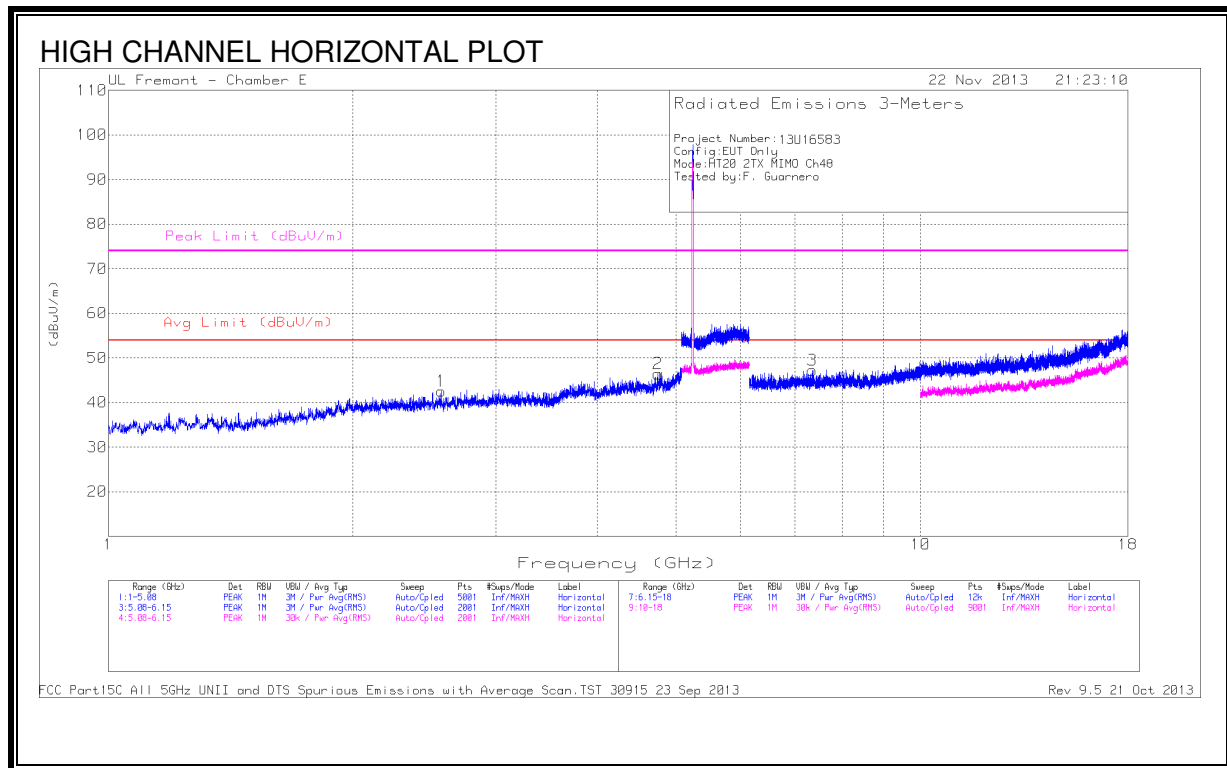
**DATA**

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
1	6.317	39.79	PK	35.9	-28.7	46.99	-	-	68.2	-21.21	0-360	199	H
2	6.777	40.79	PK	35.8	-29.2	47.39	-	-	68.2	-20.81	0-360	199	H
3	* 4.773	42.98	PK	34.4	-30.0	47.38	54	-6.62	74.0	-26.62	0-360	199	V
4	* 4.985	44.16	PK	34.4	-29.5	49.06	-	-	740.0	-24.94	0-360	199	V
	* 4.985	37.01	AD1	34.4	-29.5	41.91	54	-12.09	-	-	220	190	V
5	* 5.058	44.17	PK	34.5	-28.2	50.47	-	-	74.0	-23.53	0-360	199	V
	* 5.048	33.03	AD1	34.5	-28.9	38.63	54	-15.37	-	-	211	227	V
6	* 5.423	42.79	PK	34.8	-21.4	56.19	-	-	74	-17.81	0-360	199	V
7	* 5.423	32.98	AD1	34.8	-21.4	46.38	54	-7.62	-	-	281	117	V

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

PK - Peak detector

AD1 - KDB 789033 Method: AD Primary Power Average



**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	2.570	42.67	PK	32.8	-32.9	42.57	-	-	68.2	-25.63	0-360	100	H
2	* 4.749	42.35	PK	34.4	-30.3	46.45	54	-7.55	74.0	-27.55	0-360	100	H
3	* 7.357	38.94	PK	36	-27.7	47.24	54	-6.76	74.0	-26.76	0-360	199	H
4	* 4.836	43.35	PK	34.4	-30.3	47.45	54	-6.55	74.0	-26.55	0-360	100	V
5	* 5.448	43.06	PK	34.8	-21.3	56.56	-	-	74.0	-17.44	0-360	100	V
6	* 5.448	33.19	AD1	34.8	-21.2	46.79	54	-7.21	-	-	241	392	V
7	8.697	37.72	PK	36.5	-26.7	47.52	-	-	68.2	-20.68	0-360	199	V

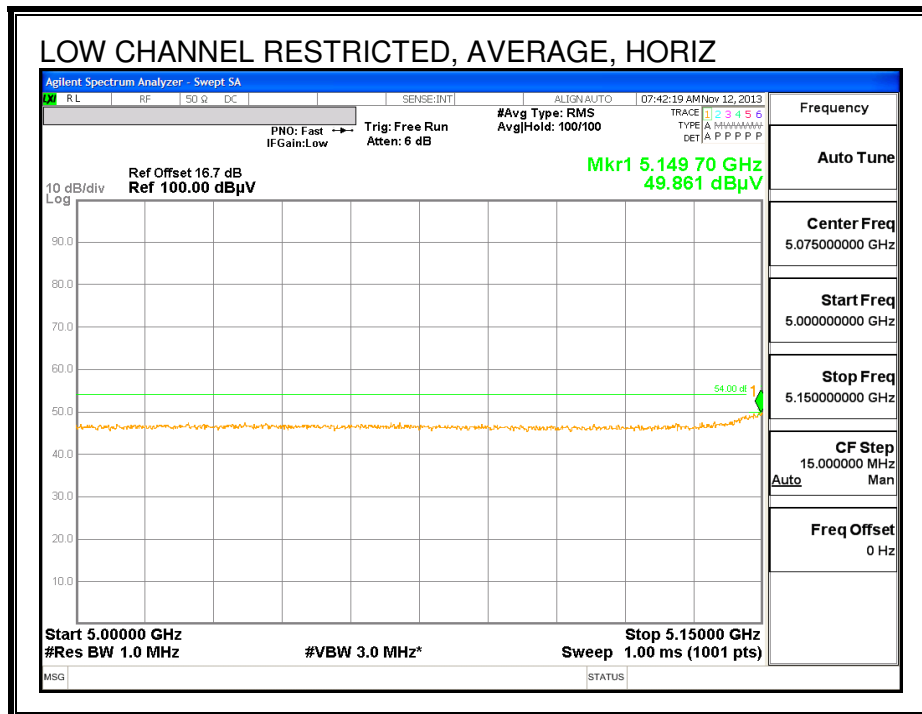
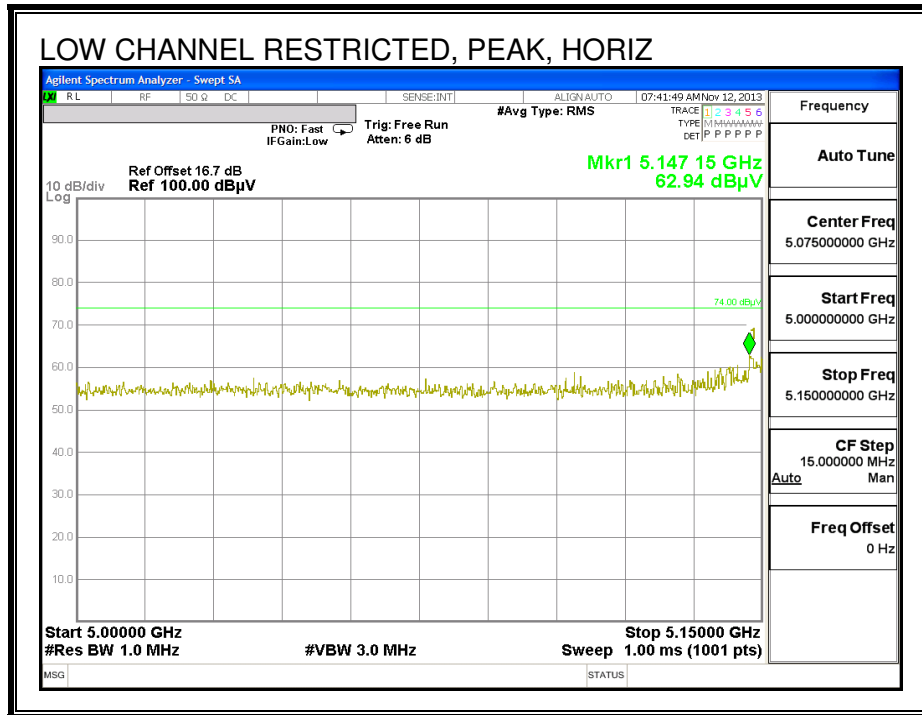
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

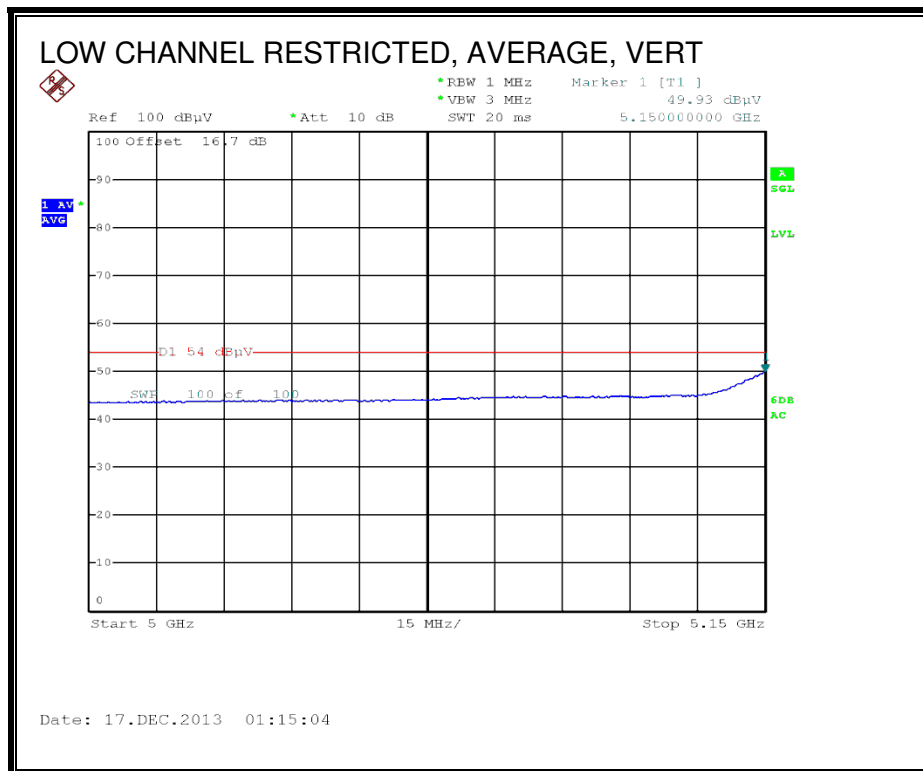
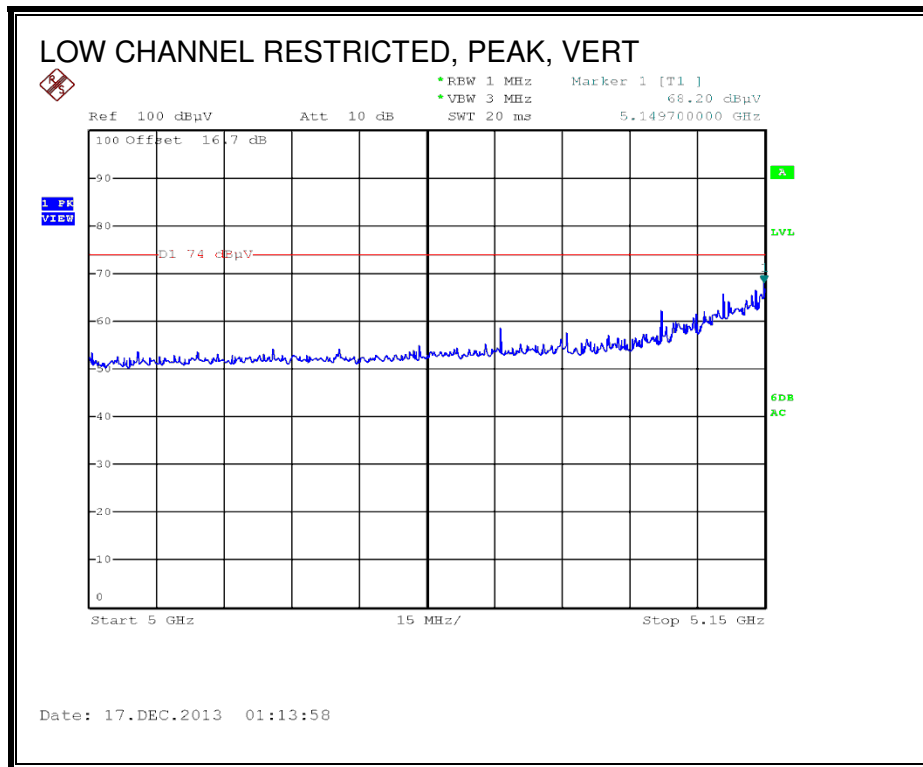
PK - Peak detector

AD1 - KDB 789033 Method: AD Primary Power Average

### 9.2.3. 802.11n HT40 SISO MODE IN THE 5.2 GHz BAND

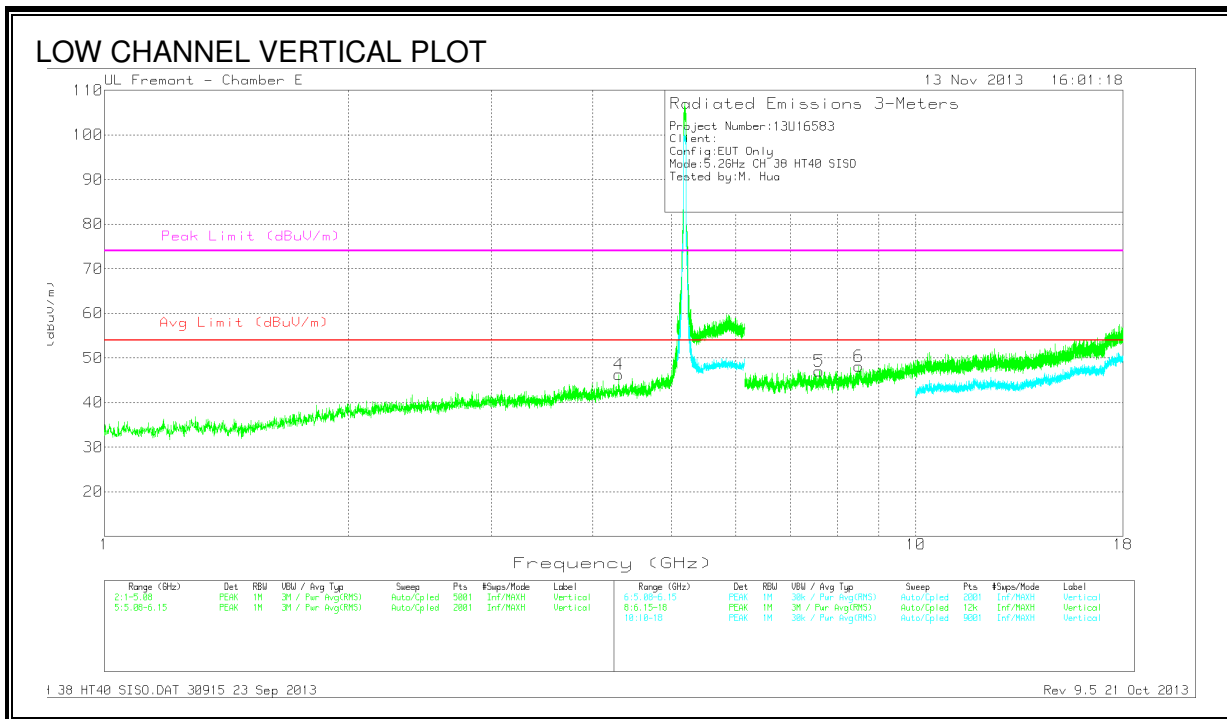
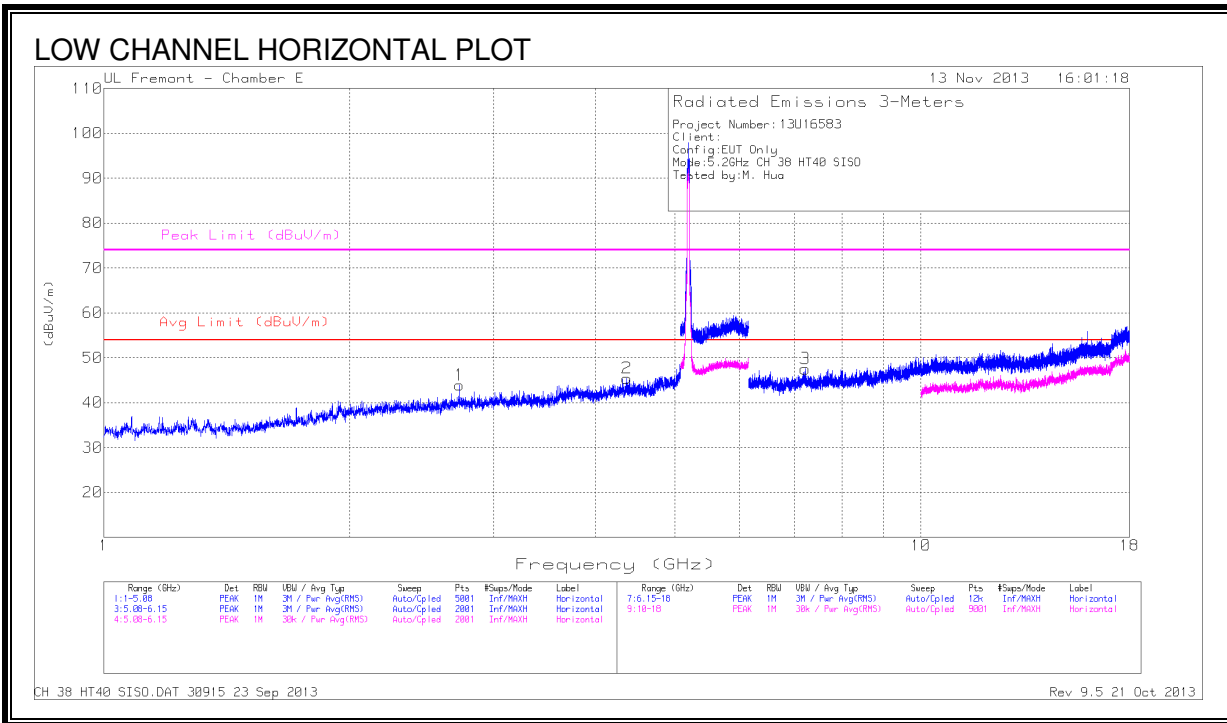
#### RESTRICTED BANDEDGE (LOW CHANNEL)







**HARMONICS AND SPURIOUS EMISSIONS**

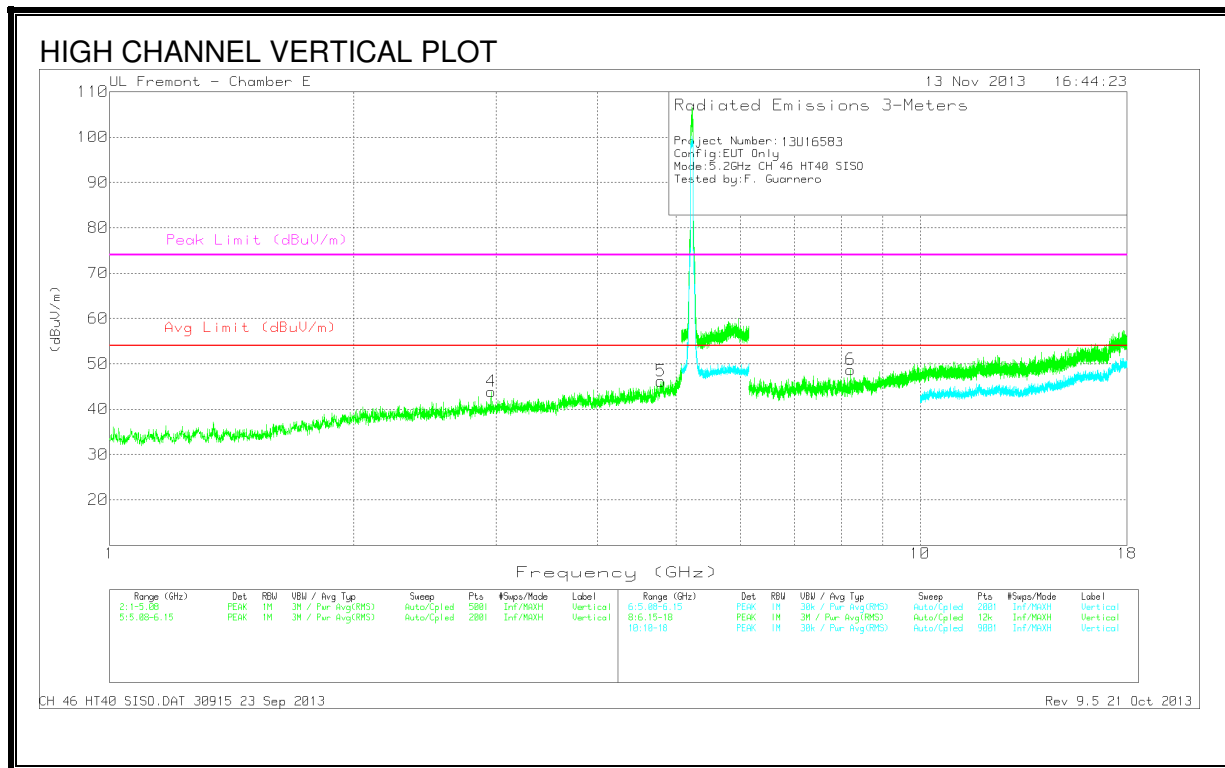
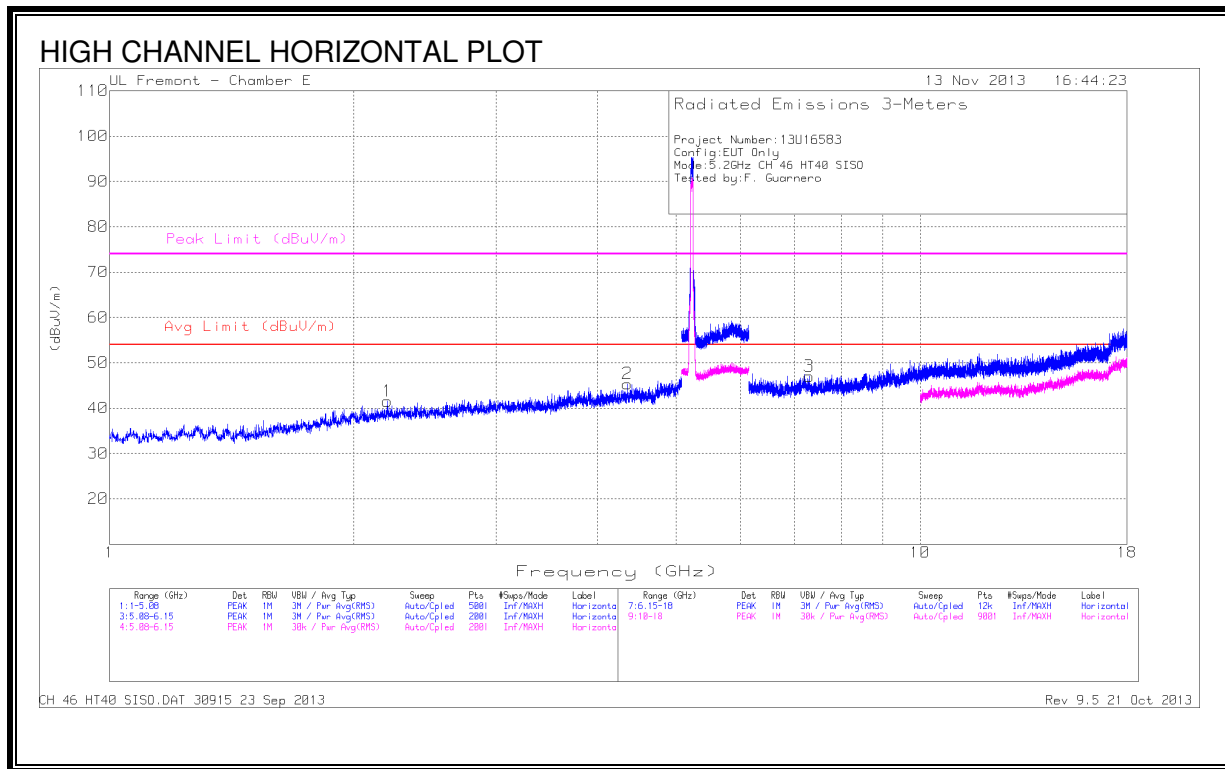


**DATA**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (db/m)	Amp/Cbl /Filtr/Pad	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.724	40.82	PK	32.8	-29.7	43.92	54	-10.08	74.0	-30.08	0-360	100	H
2	* 4.367	40.14	PK	34.0	-28.7	45.44	54	-8.56	74.0	-28.56	0-360	100	H
3	7.218	35.63	PK	35.9	-24.0	47.53	-	-	68.2	-20.67	0-360	200	H
4	* 4.306	40.29	PK	34.0	-28.0	46.29	54	-7.71	74.0	-27.71	0-360	100	V
5	* 7.600	36.86	PK	36.0	-25.8	47.06	54	-6.94	74.0	-26.94	0-360	100	V
6	8.506	35.33	PK	36.2	-23.4	48.13	-	-	68.2	-20.07	0-360	100	V

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

PK - Peak detector



**DATA**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (db/m)	Amp/Cbl /Fitr/Pad	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*2.203	40.25	PK	32.3	-31.0	41.55	54	-12.45	74.0	-32.45	0-360	201	H
2	*4.356	39.96	PK	34	-28.6	45.36	54	-8.64	74.0	-28.64	0-360	100	H
3	*7.296	37.03	PK	35.9	-25.9	47.03	54	-6.97	74.0	-26.97	0-360	100	H
4	2.958	40.66	PK	33.1	-29.9	43.86	-	-	68.2	-24.34	0-360	201	V
5	*4.790	38.98	PK	34.4	-27.2	46.18	54	-7.82	74.0	-27.82	0-360	100	V
6	*8.211	37.78	PK	36	-25.1	48.68	-	-	74.0	-25.32	0-360	100	V
	*8.211	28.37	AD1	36	-24.9	39.47	54	-14.53	-	-	0-360	331	V

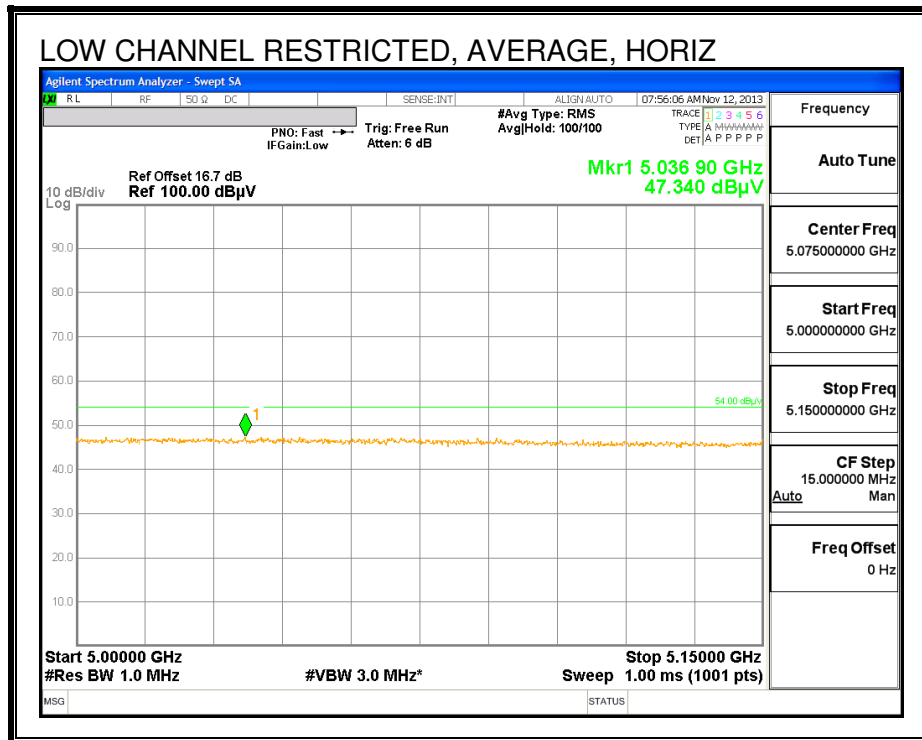
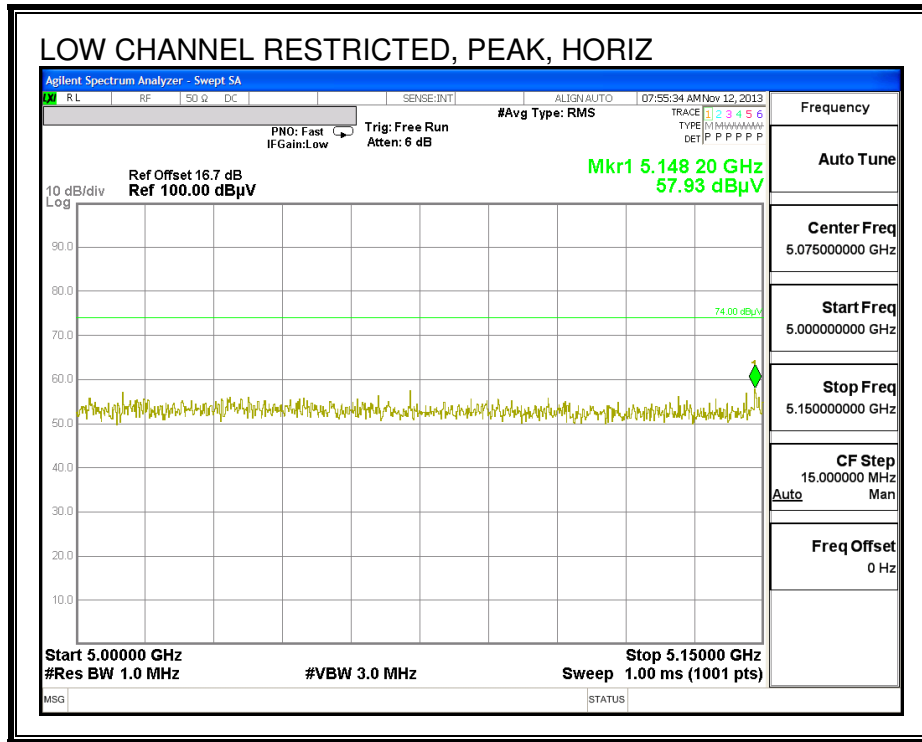
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

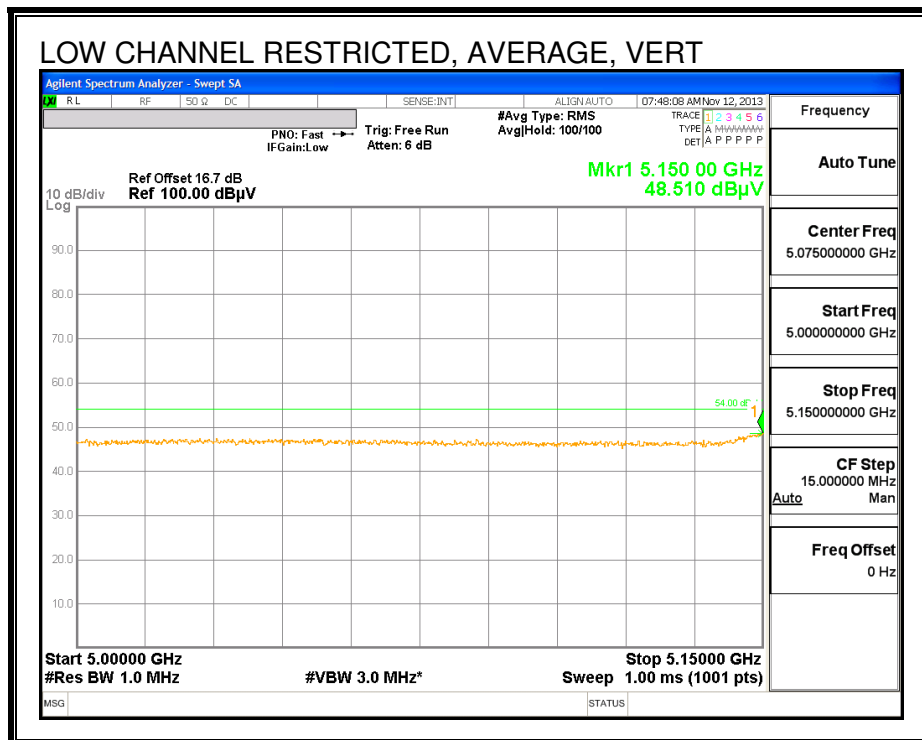
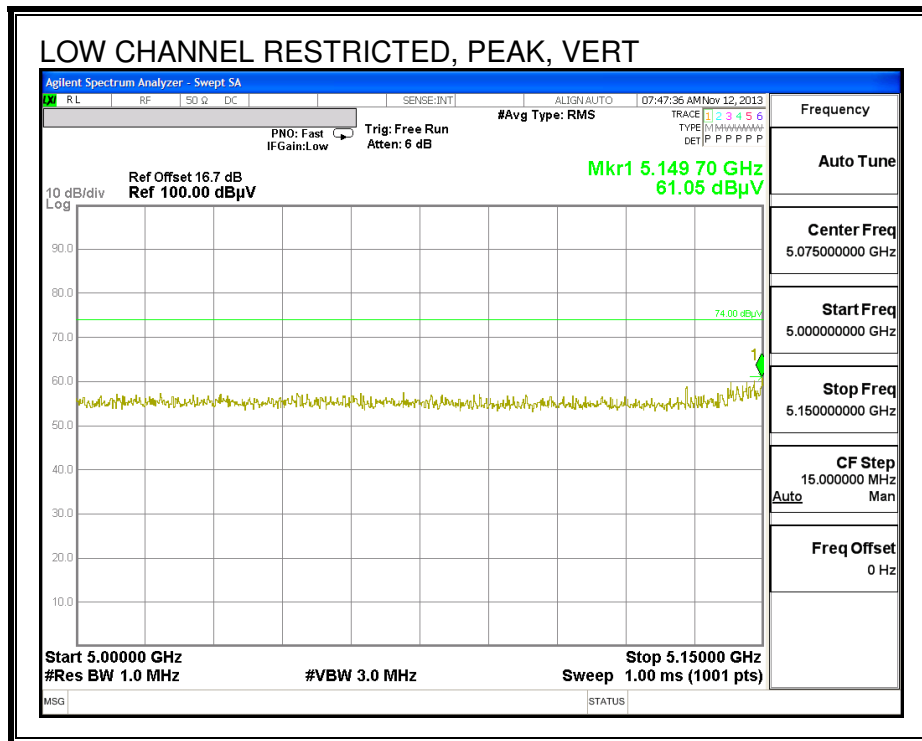
PK - Peak detector

AD1 - KDB 789033 Method: AD Primary Power Average

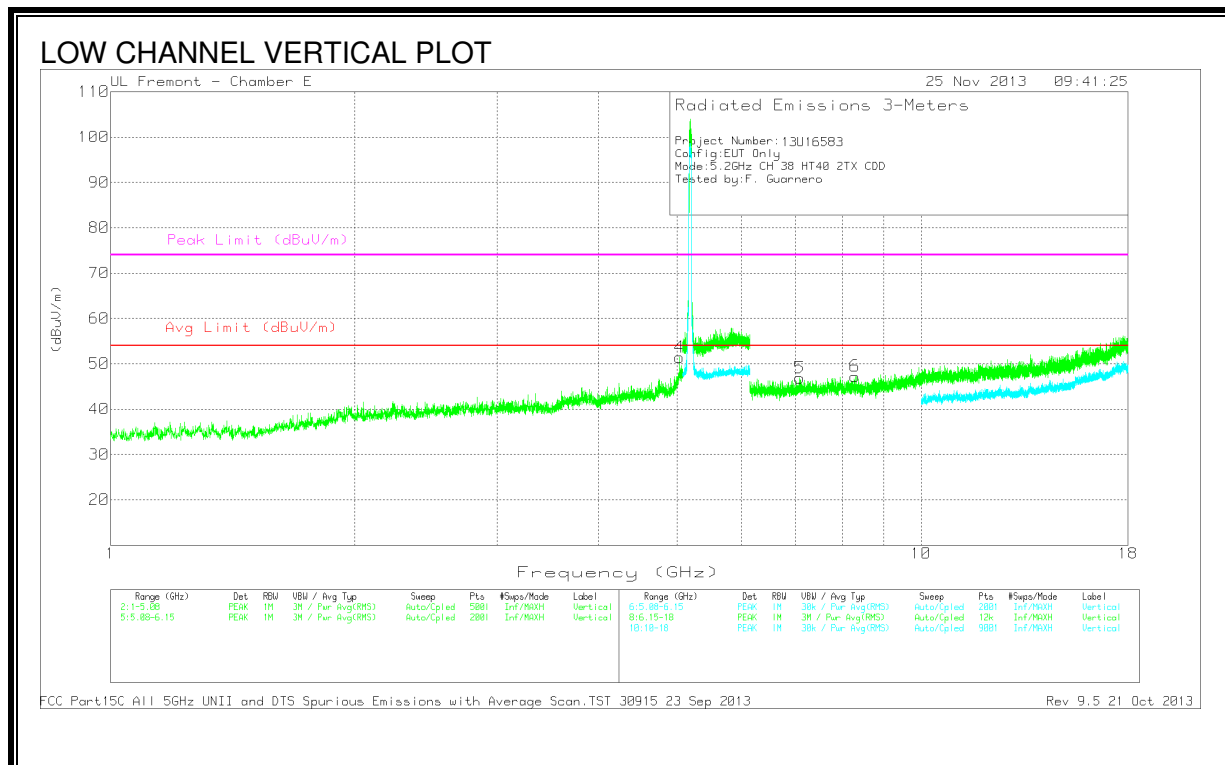
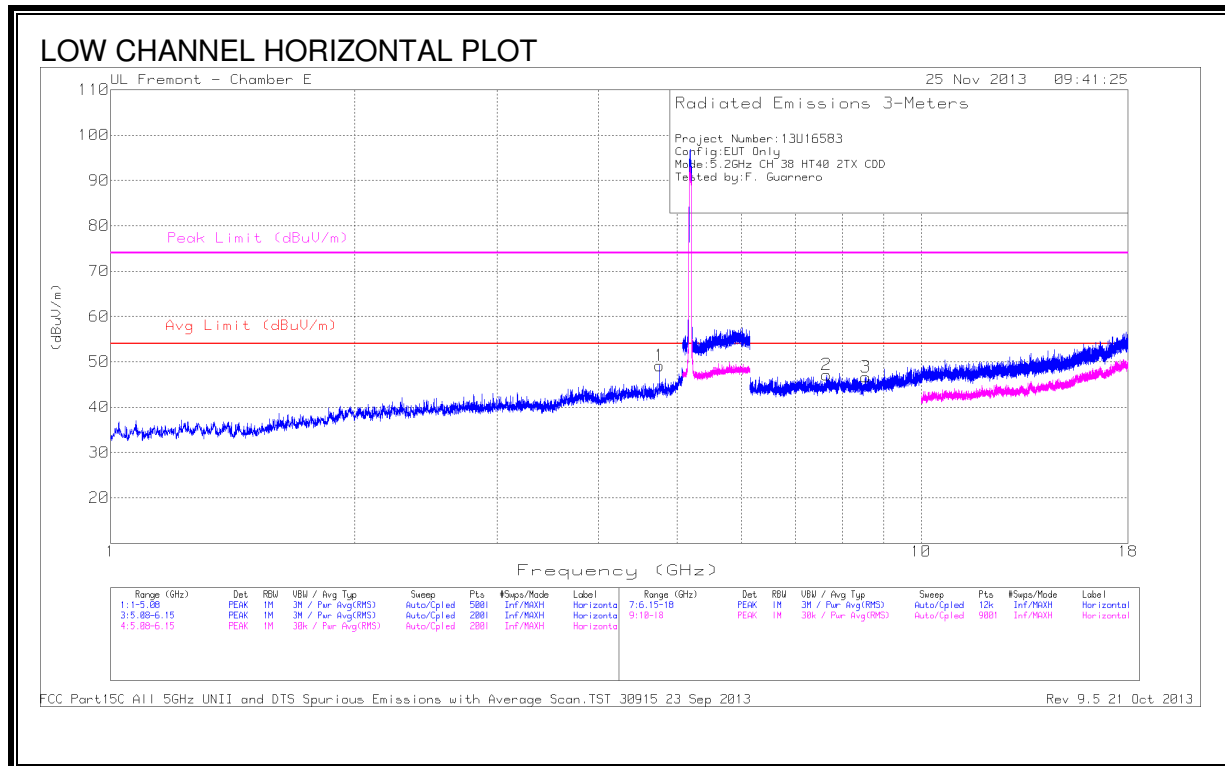
### 9.2.4. 802.11n HT40 2TX CDD MODE IN THE 5.2 GHz BAND

#### RESTRICTED BANDEDGE (LOW CHANNEL)





**HARMONICS AND SPURIOUS EMISSIONS**



**DATA**

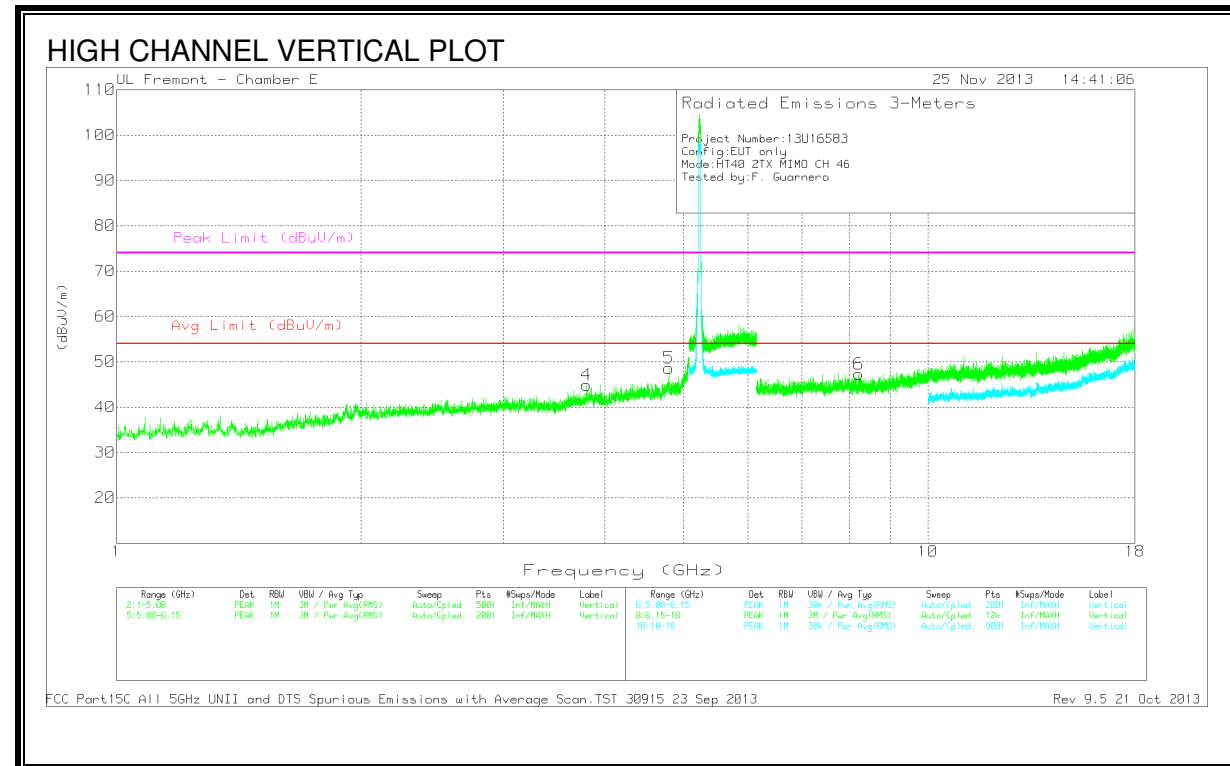
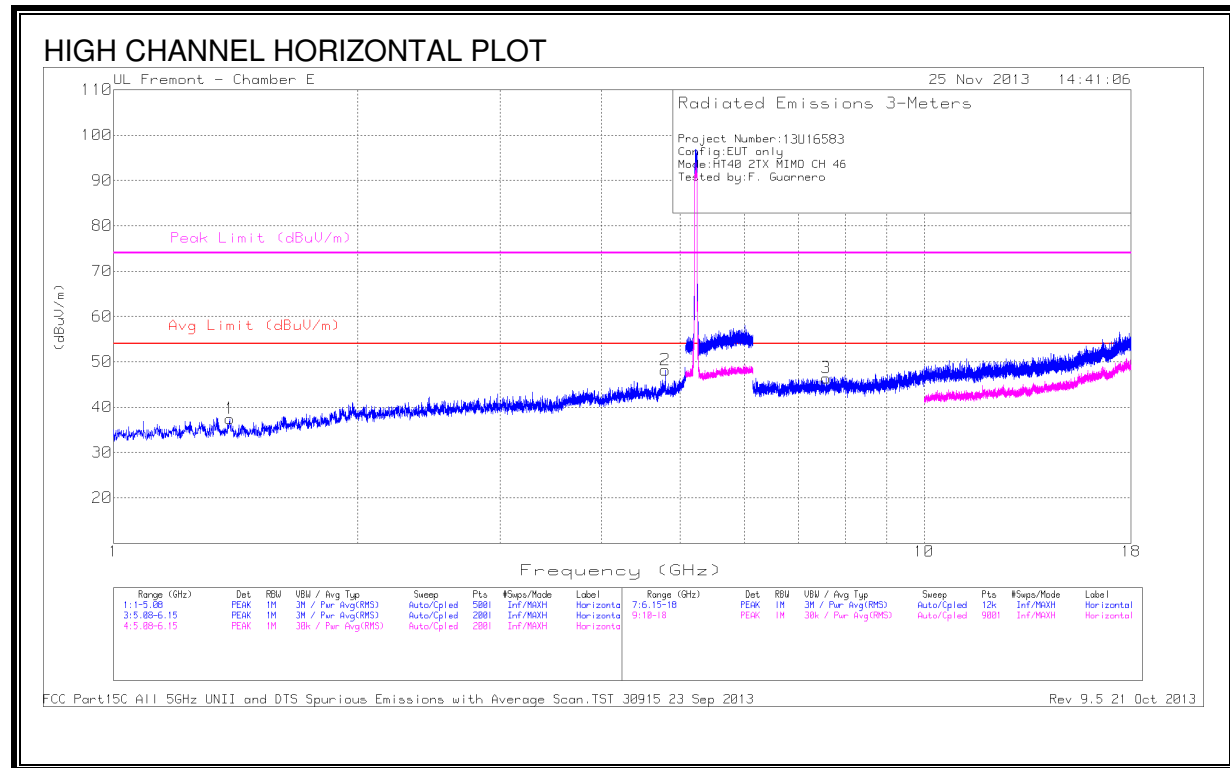
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl /5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.758	44.88	PK	34.4	-30.1	49.18	-	-	74.0	-24.82	0-360	199	H
	* 4.758	38.52	AD1	34.4	-30.1	42.82	54	-11.18	-	-	0-360	147	H
2	* 7.648	38.92	PK	36.2	-28.0	47.12	54	-6.88	74.0	-26.88	0-360	199	H
3	8.546	36.96	PK	36.3	-26.6	46.66	-	-	68.2	-21.54	0-360	199	H
4	* 5.037	46.01	PK	34.4	-29.0	51.41	-	-	-	-22.59	0-360	199	V
	* 5.037	35.64	AD1	34.4	-29.0	41.04	54	-12.96	-	-	0-360	102	V
5	7.084	39.31	PK	36	-28.4	46.91	-	-	68.2	-21.29	0-360	200	V
6	* 8.292	38.52	PK	36.2	-27.5	47.22	54	-6.78	74.0	-26.78	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





**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	* 1.392	42.64	PK	29	-34.2	37.44	54	-16.56	74.0	-36.56	0-360	199	H
2	* 4.795	44.08	PK	34.4	-30.3	48.18	-	-	74.0	-25.82	0-360	101	H
	* 4.795	38.29	AD1	34.4	-30.3	42.39	54	-11.61	-	-	64	191	H
3	* 7.575	39.01	PK	36.1	-28.7	46.41	54	-7.59	74.0	-27.59	0-360	199	H
4	* 3.796	43.20	PK	33.7	-32.0	44.90	54	-9.10	74.0	-29.10	0-360	100	V
5	* 4.795	44.52	PK	34.4	-30.3	48.62	-	-	74.0	-25.38	0-360	199	V
	* 4.795	40.87	AD1	34.4	-30.3	44.97	54	-9.03	-	-	103	183	V
6	* 8.222	39.01	PK	36.2	-27.9	47.31	54	-6.69	74.0	-26.69	0-360	199	V

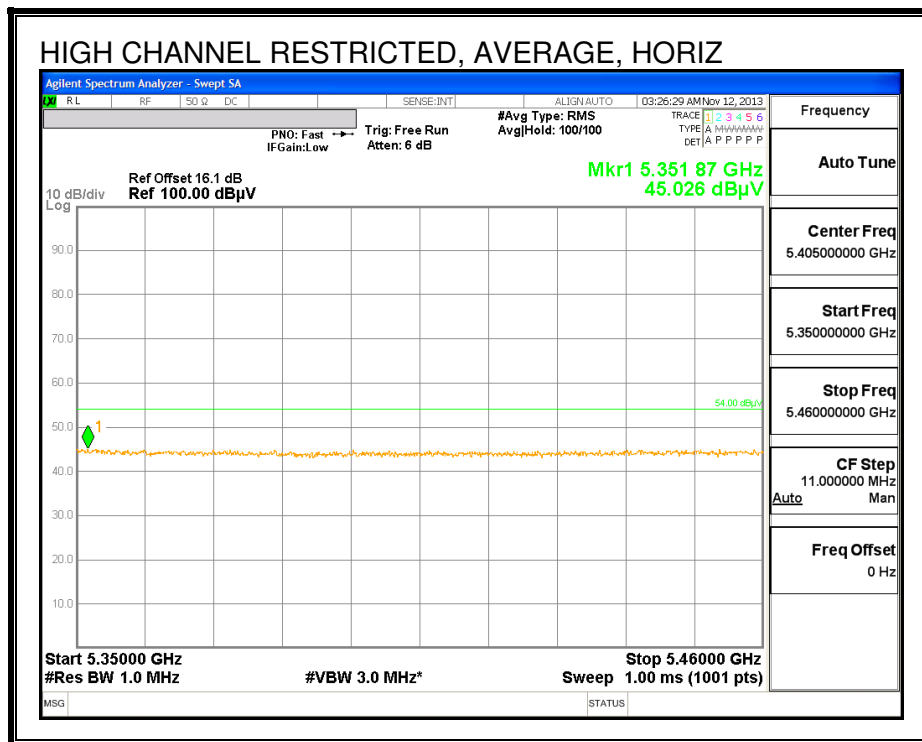
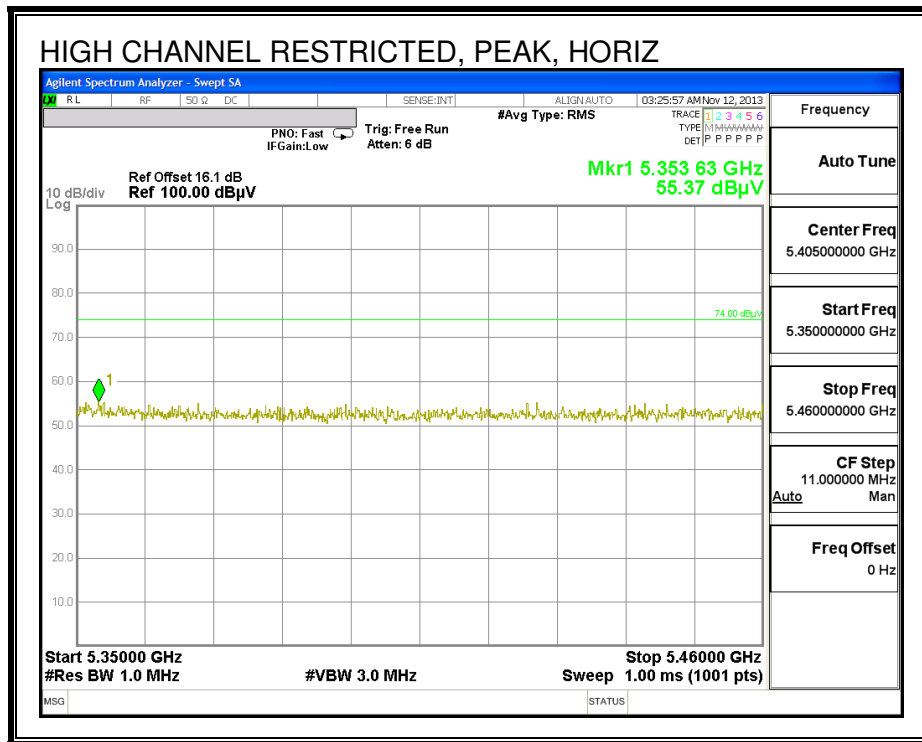
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

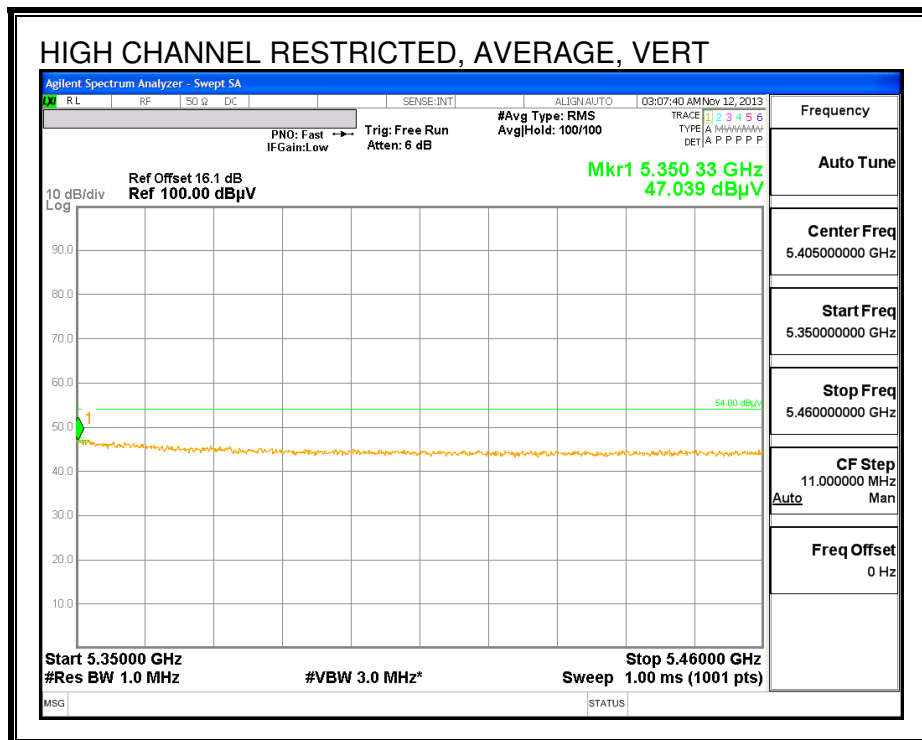
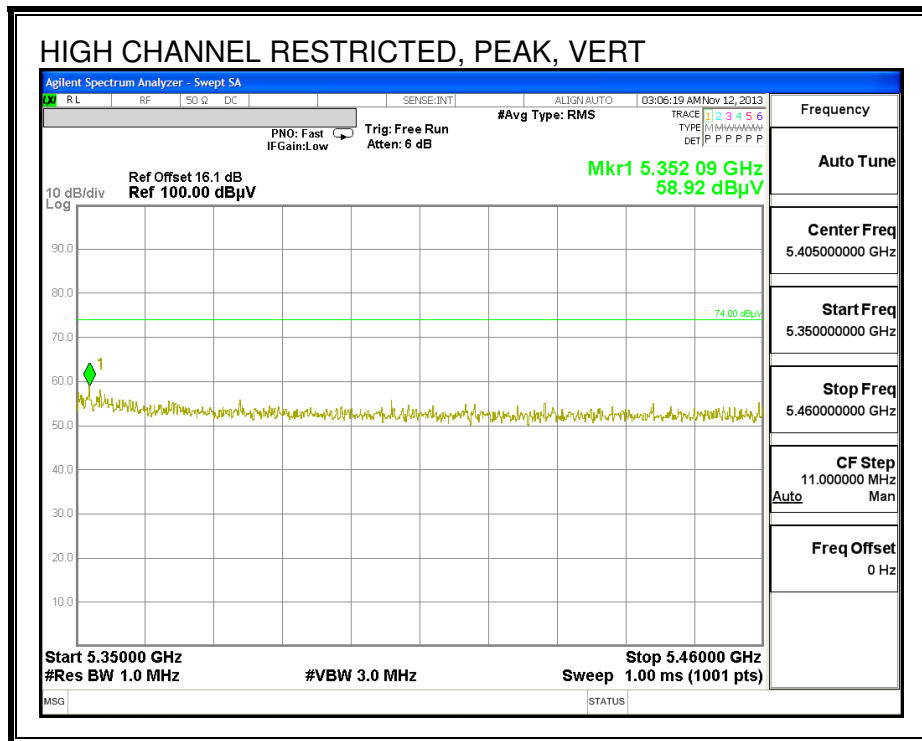
PK - Peak detector

AD1 - KDB 789033 Method: AD Primary Power Average

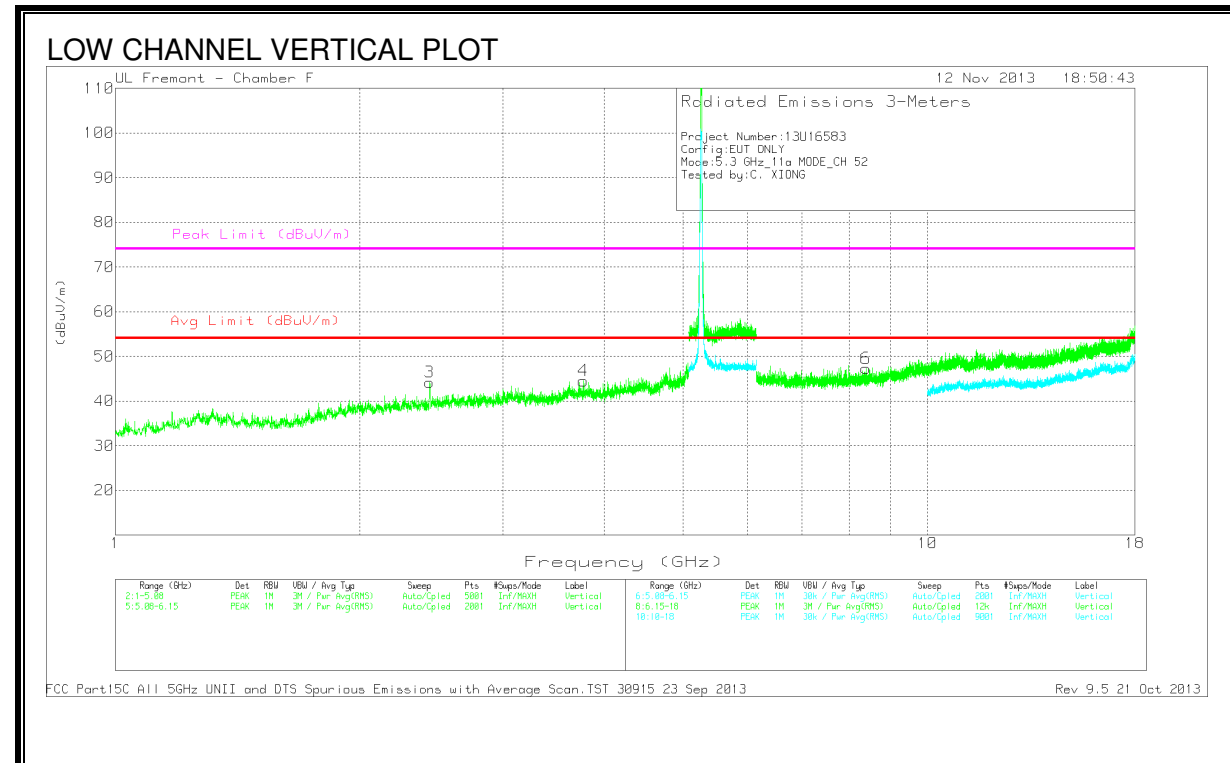
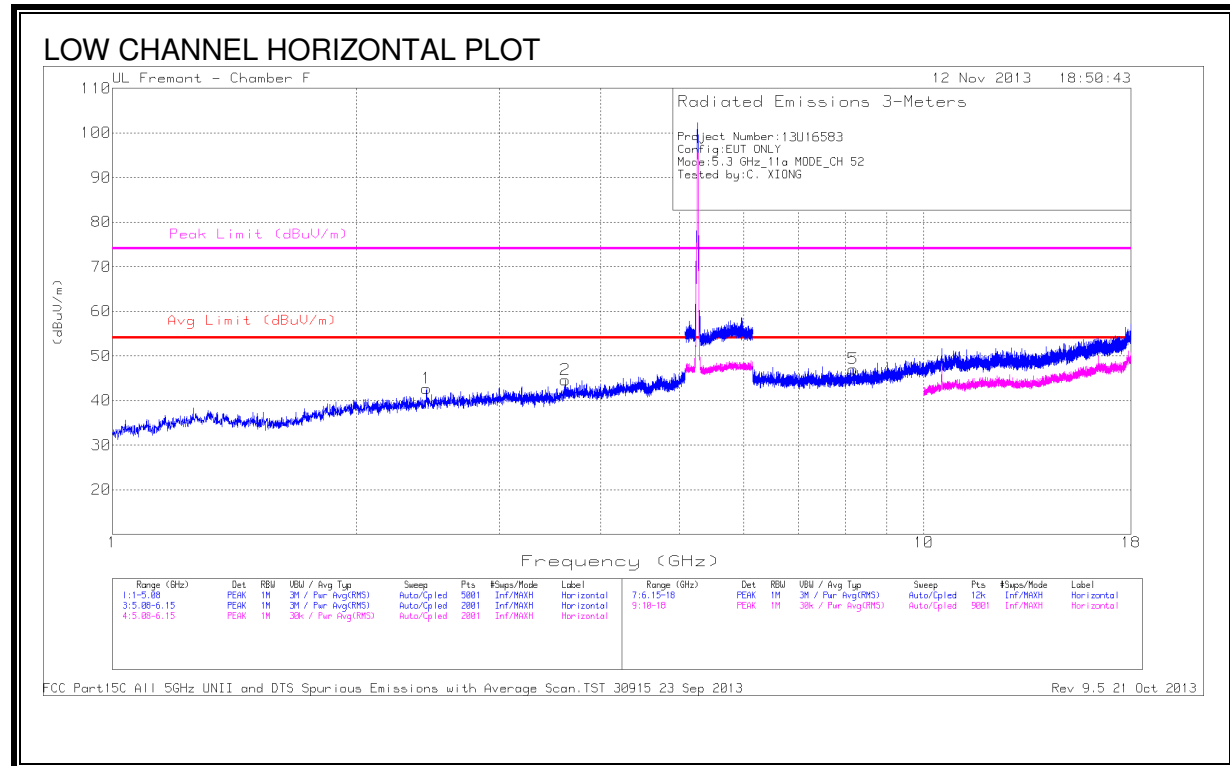
### 9.2.5. 802.11a SISO MODE IN THE 5.3 GHz BAND

#### RESTRICTED BANDEDGE (HIGH CHANNEL)





**HARMONICS AND SPURIOUS EMISSIONS**



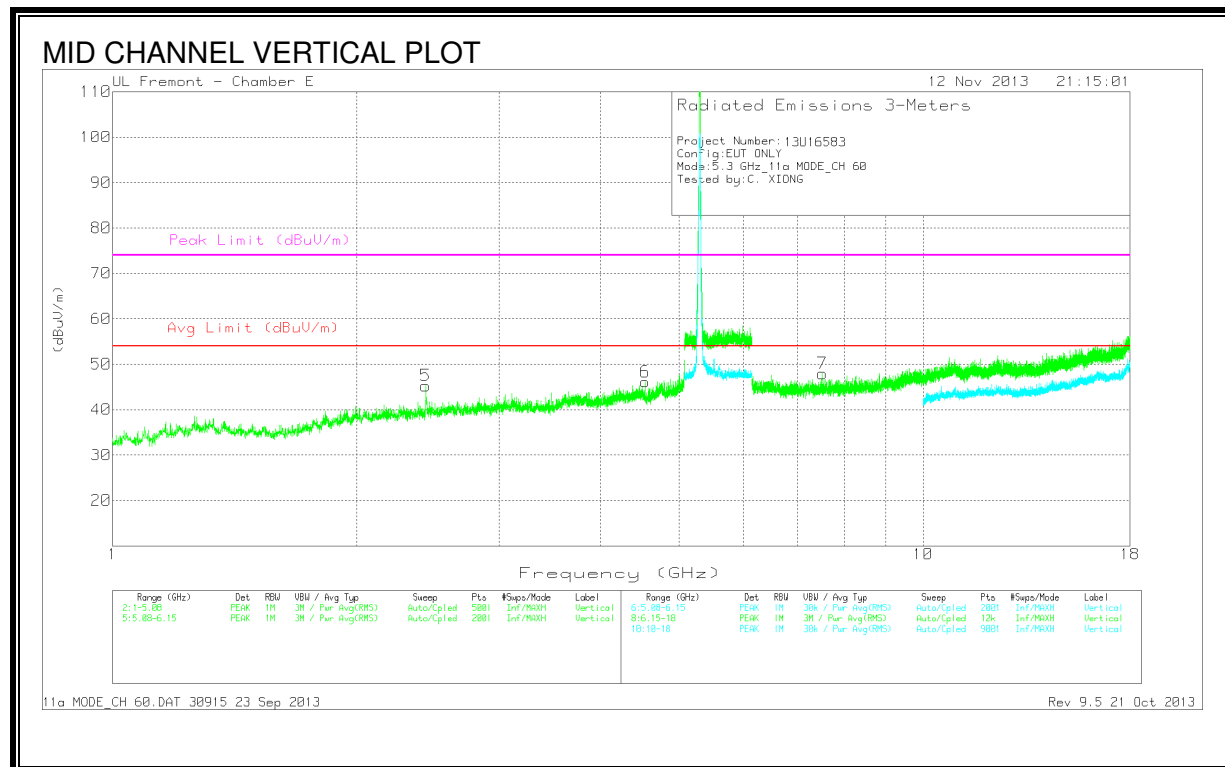
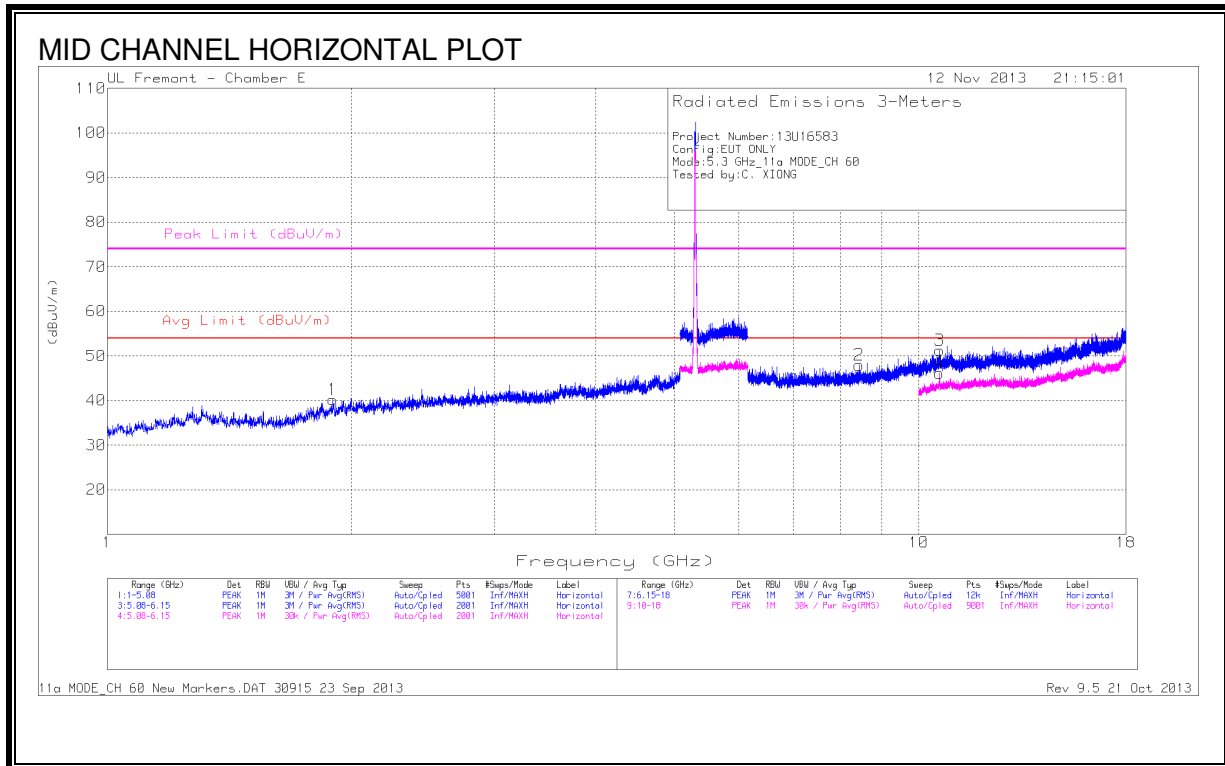
**DATA**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl /LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.439	41.14	PK	32.3	-30.7	42.74	-	-	68.2	-25.46	0-360	199	H
2	* 3.615	40.22	PK	33.7	-29.3	44.62	54	-9.38	74.0	-29.38	0-360	199	H
3	2.436	42.64	PK	32.3	-30.7	44.24	-	-	68.2	-23.95	0-360	201	V
4	* 3.769	40.54	PK	33.6	-29.6	44.54	54	-9.46	74.0	-29.46	0-360	201	V
5	* 8.184	36.27	PK	36.0	-25.2	47.07	54	-6.93	74.0	-26.93	0-360	100	H
6	* 8.398	36.30	PK	36.0	-25.0	47.30	54	-6.70	74.0	-26.70	0-360	100	V

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

PK - Peak detector

Avg - Video bandwidth < Resolution bandwidth



**DATA**

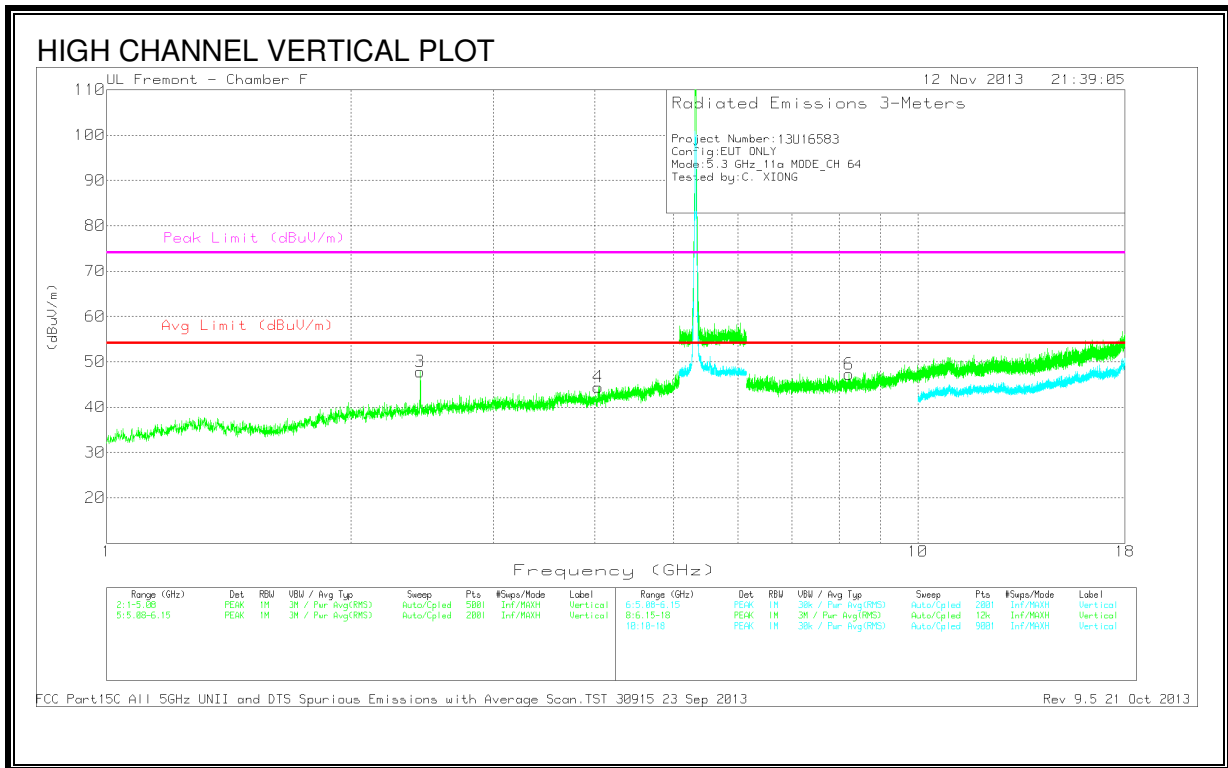
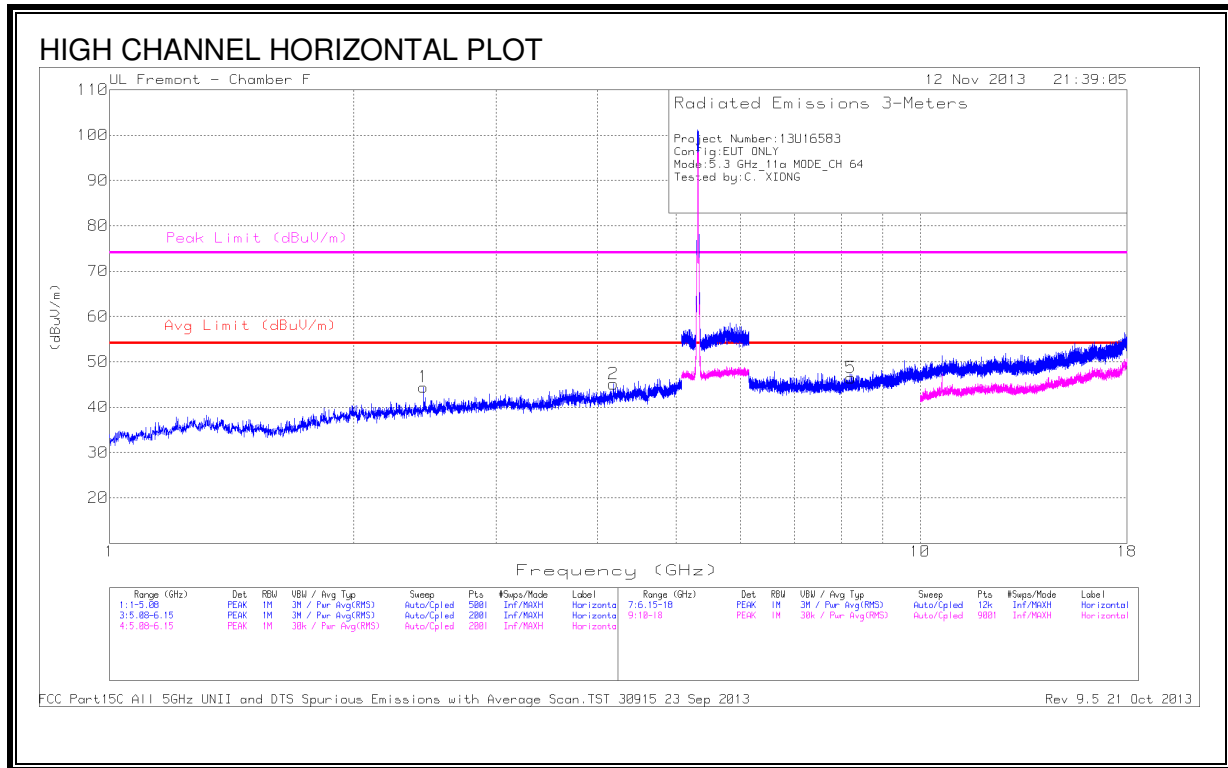
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl /5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.895	40.45	PK	31.1	-31.3	40.25	-	-	68.2	-27.95	0-360	100	H
2	*8.438	37.14	PK	36	-25.2	47.94	54	-6.06	74.0	-26.06	0-360	199	H
3	*10.604	35.58	PK	38.6	-22.9	51.28	-	-	74.0	-22.72	0-360	199	H
4	*10.604	30.27	Avg	38.6	-22.7	46.17	54	-7.11	-	-	0-360	100	H
5	2.435	43.66	PK	32.3	-30.7	45.26	-	-	68.2	-22.94	0-360	200	V
6	*4.541	40.71	PK	34	-28.6	46.11	54	-7.89	74.0	-27.89	0-360	200	V
7	*7.512	37.85	PK	35.8	-25.7	47.95	54	-6.05	74.0	-26.05	0-360	101	V

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

PK - Peak detector

Avg - Video bandwidth < Resolution bandwidth





**DATA**

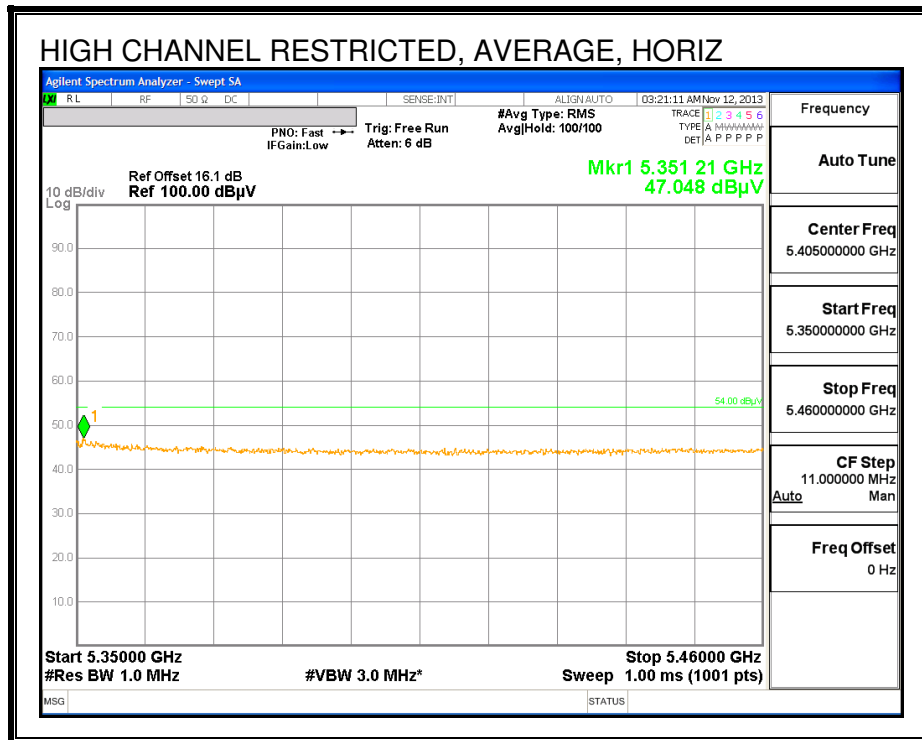
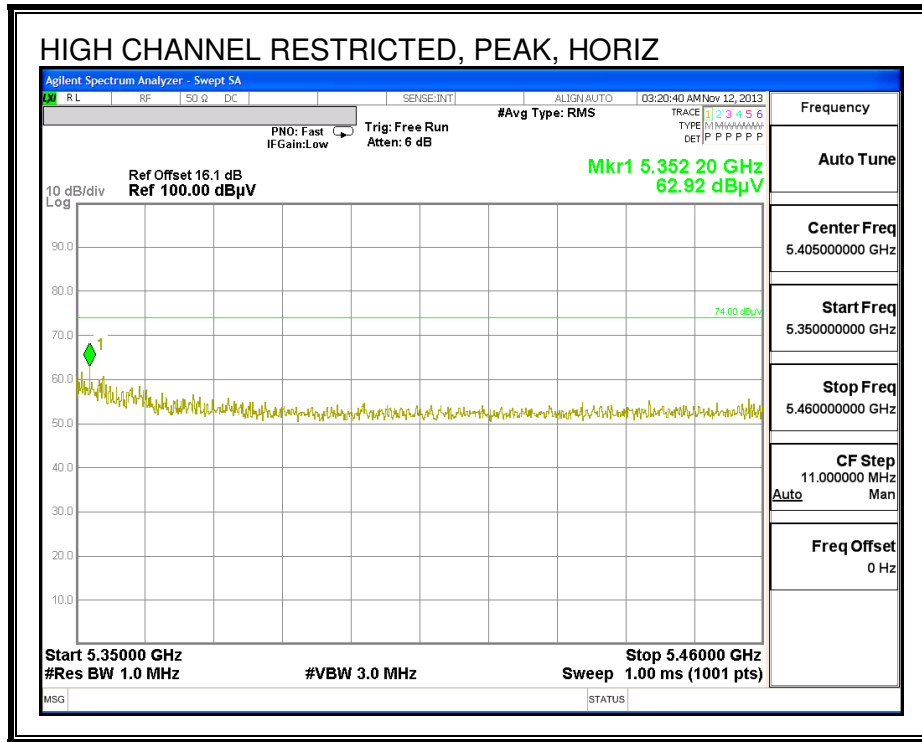
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl /LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.439	42.83	PK	32.3	-30.7	44.43	-	-	68.2	-23.77	0-360	199	H
2	* 4.185	40.47	PK	33.4	-28.7	45.17	54	-8.83	74.0	-28.83	0-360	100	H
3	2.436	46.24	PK	32.3	-30.7	47.84	-	-	68.2	-20.36	0-360	201	V
4	* 4.038	39.12	PK	33.4	-28.1	44.42	54	-9.58	74.0	-29.58	0-360	201	V
5	* 8.221	35.76	PK	36.0	-25.3	46.46	54	-7.54	74.0	-27.54	0-360	199	H
6	* 8.226	36.66	PK	36.0	-25.4	47.26	54	-6.74	74.0	-26.74	0-360	101	V

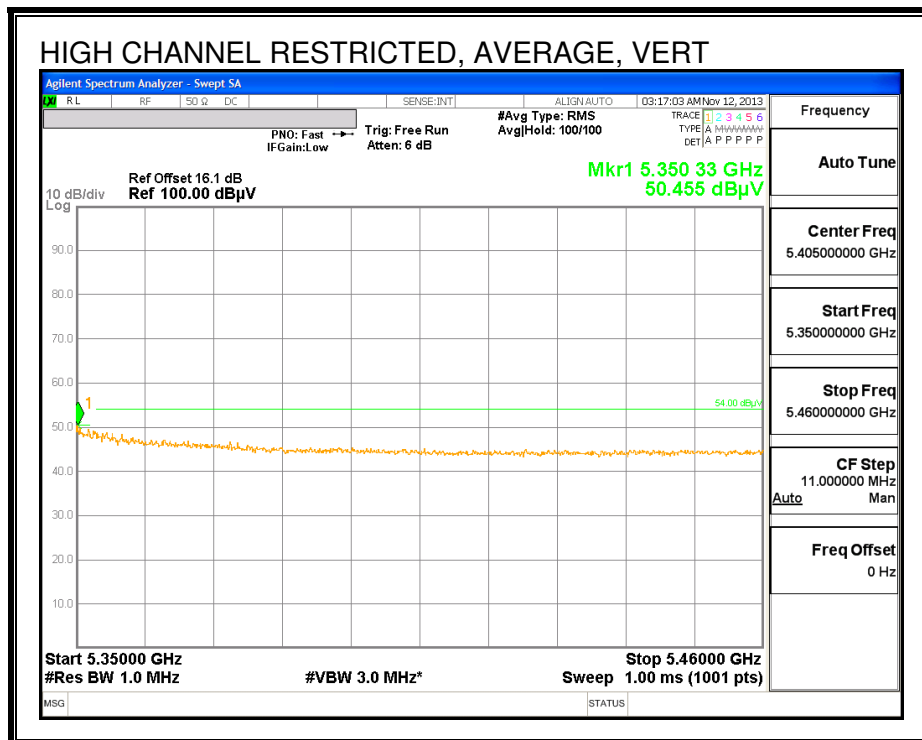
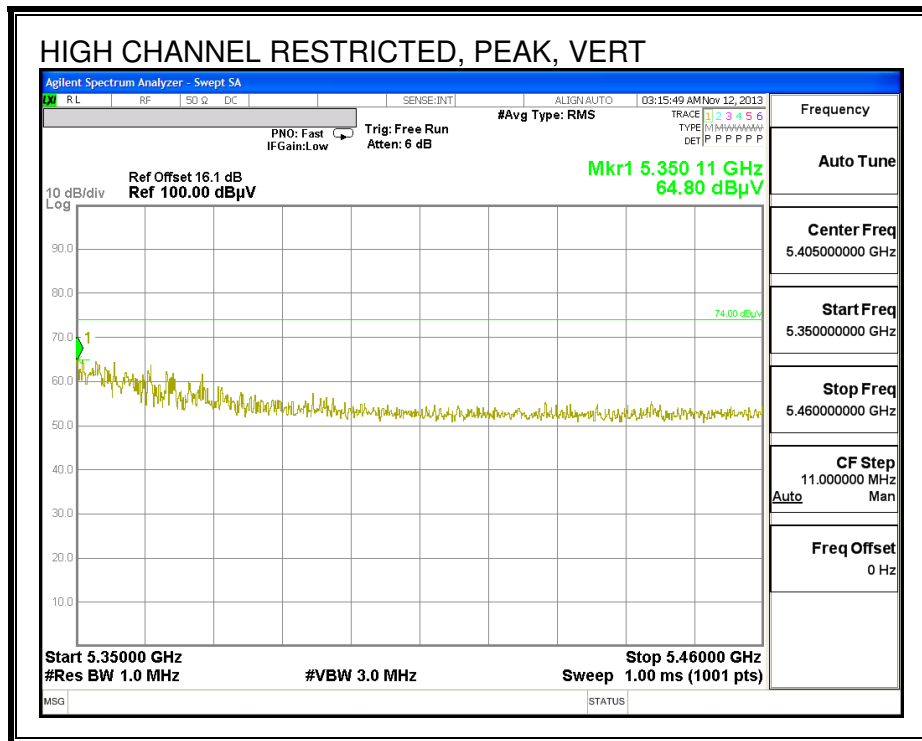
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

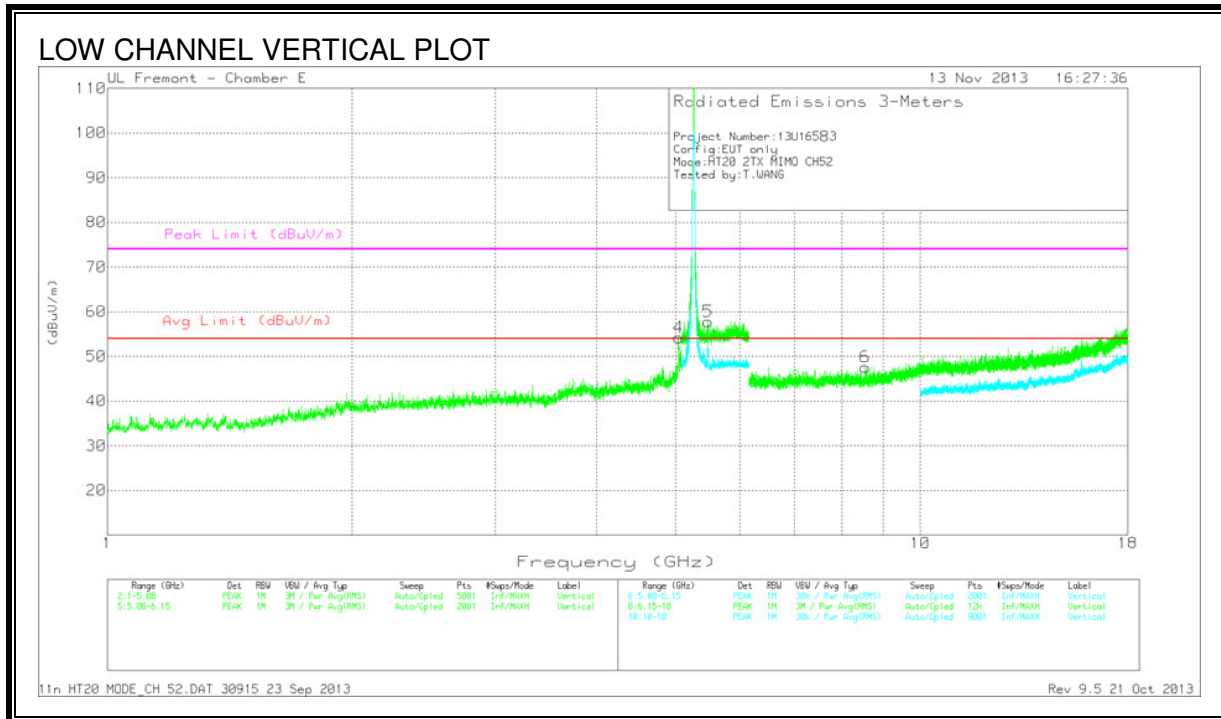
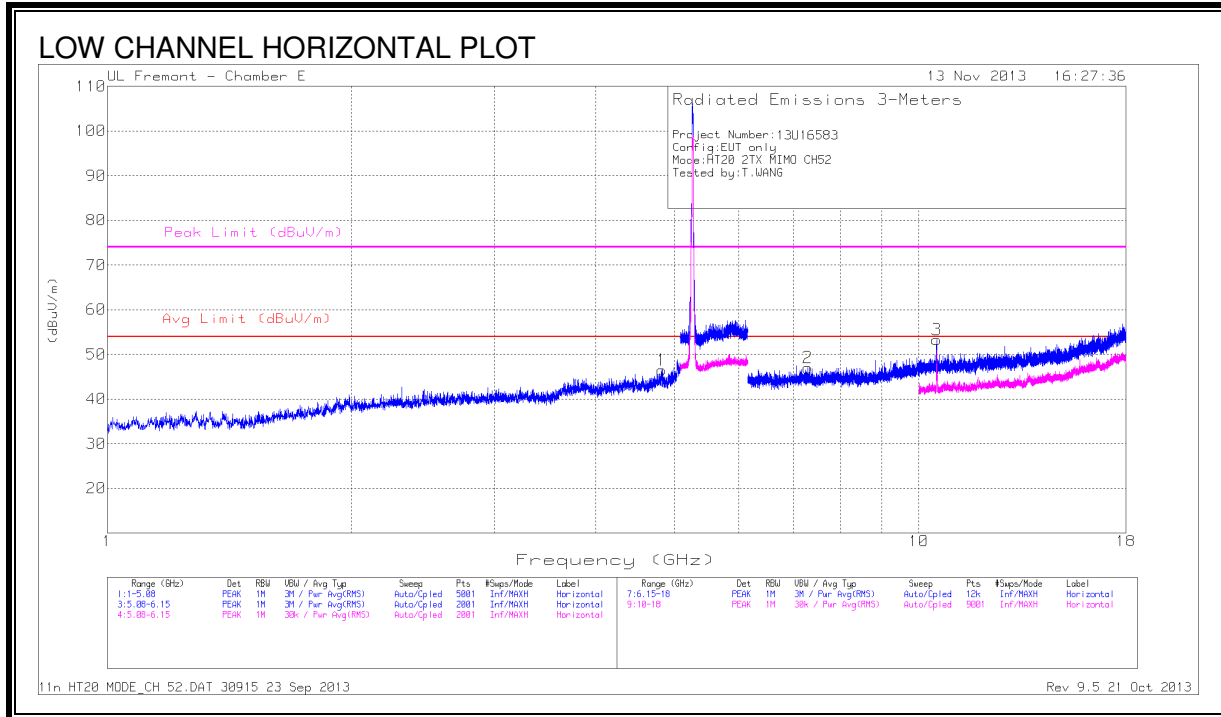
### 9.2.6. 802.11n HT20 2TX CDD MODE IN THE 5.3 GHz BAND

#### RESTRICTED BANDEDGE (HIGH CHANNEL)





**HARMONICS AND SPURIOUS EMISSIONS**



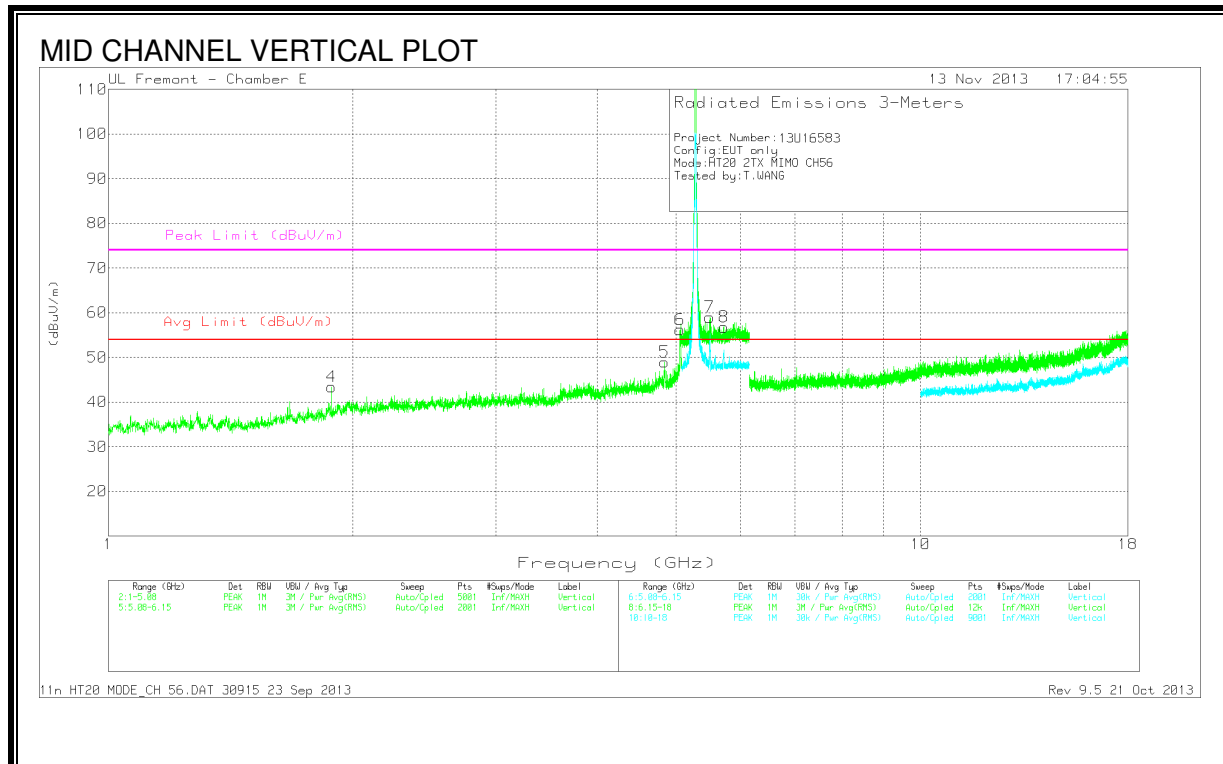
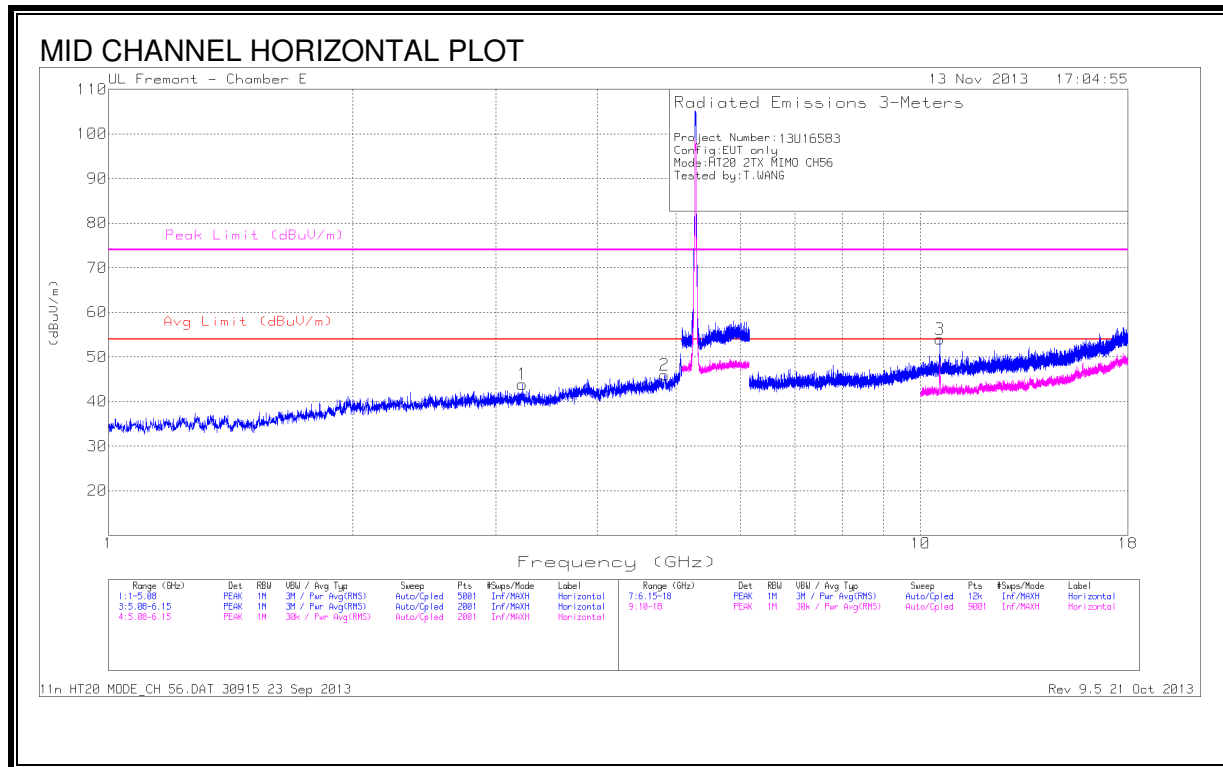
**DATA**

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	* 4.821	42.59	PK	34.4	-30.5	46.49	54	-7.51	74.0	-27.51	0-360	199	H
2	* 7.299	39.41	PK	36.0	-28.4	47.01	54	-6.99	74.0	-26.99	0-360	101	H
3	10.519	39.80	PK	38.4	-24.9	53.30	-	-	68.2	-14.90	0-360	101	H
4	* 5.040	48.80	PK	34.4	-29.0	54.20	-	-	74.0	-19.80	0-360	101	V
	* 5.040	42.80	AD1	34.4	-29.0	48.20	54	-5.80	-	-	56	309	V
5	5.480	44.20	PK	34.8	-21.2	57.80	-	-	68.2	-10.40	0-360	199	V
6	8.552	38.03	PK	36.3	-26.7	47.63	-	-	68.2	-20.57	0-360	101	V

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

PK - Peak detector

AD1 - KDB 789033 Method: AD Primary Power Average



**DATA**

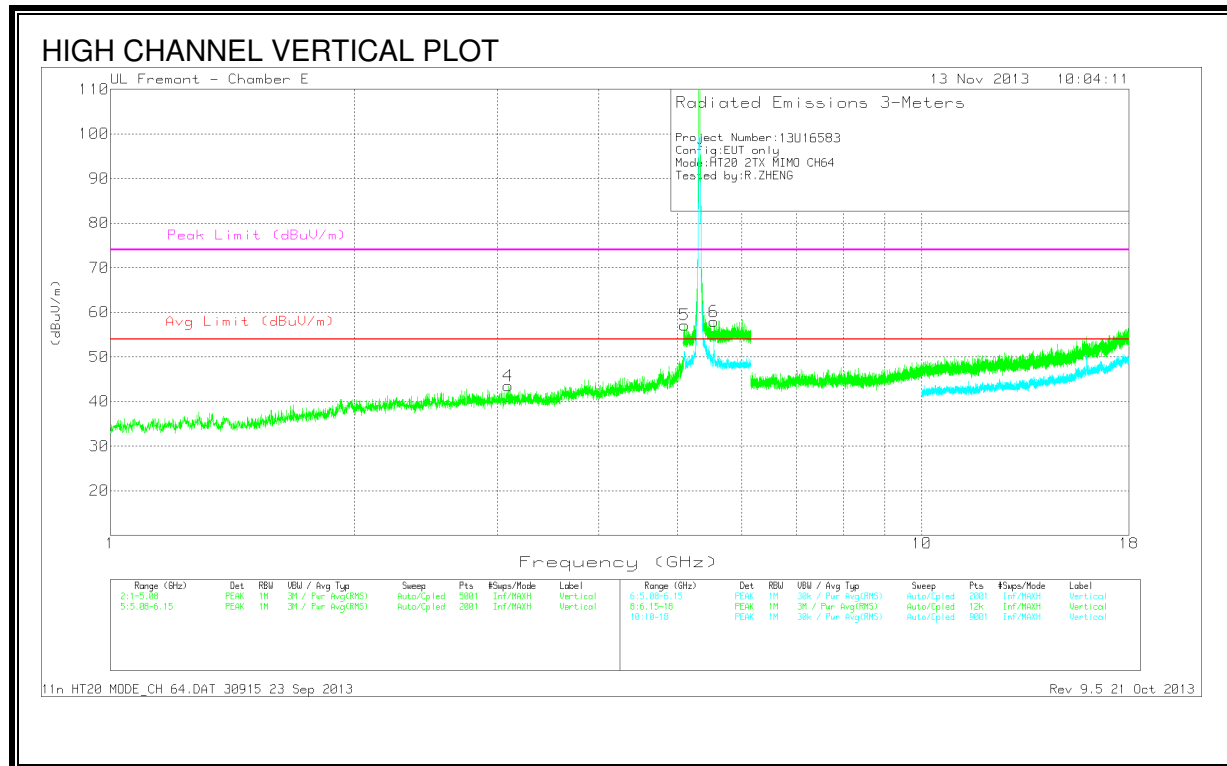
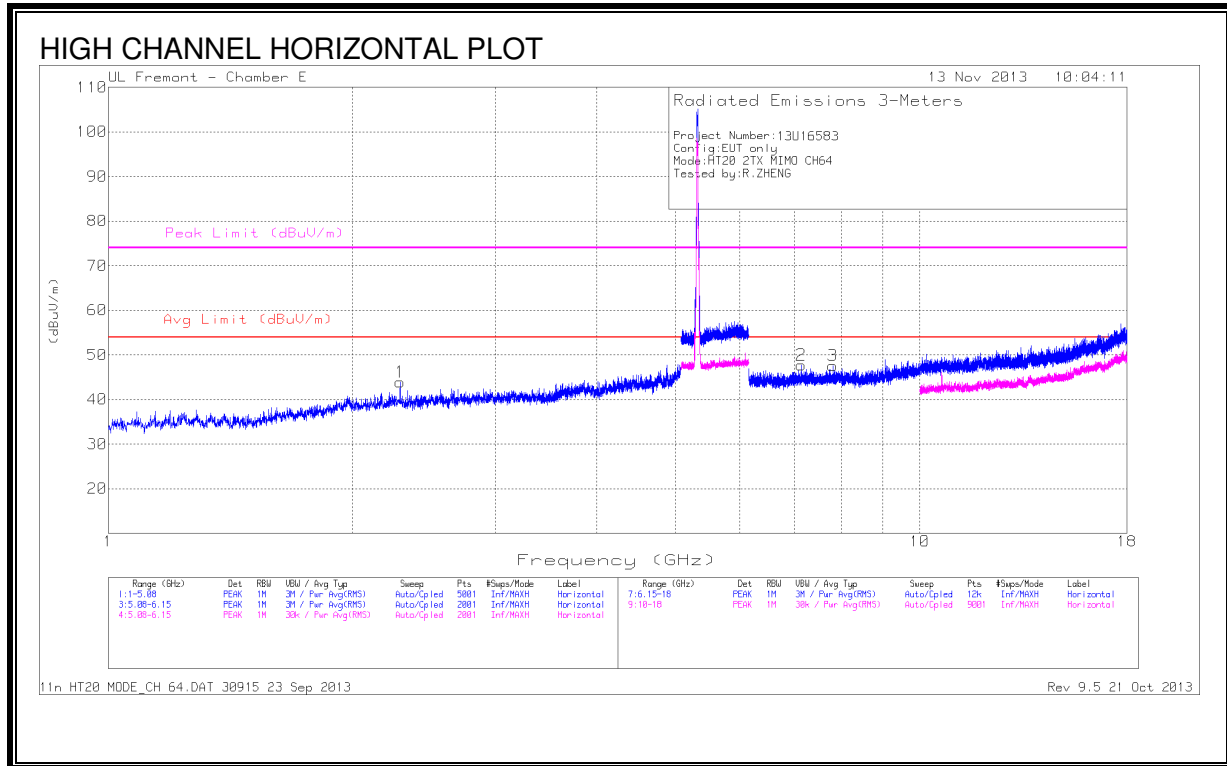
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl /5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	3.233	42.58	PK	33.4	-32.1	43.88	-	-	68.2	-24.32	0-360	199	H
2	* 4.839	41.87	PK	34.4	-30.3	45.97	54	-8.03	74.0	-28.03	0-360	199	H
3	10.562	40.26	PK	38.4	-24.7	53.96	-	-	68.2	-14.24	0-360	100	H
4	1.883	45.73	PK	31.4	-33.7	43.43	-	-	68.2	-24.77	0-360	100	V
5	* 4.838	44.87	PK	34.4	-30.3	48.97	-	-	74.0	-25.03	0-360	100	V
	* 4.838	37.73	AD1	34.4	-30.3	41.19	54	-12.20	-	-	31.8	265.4	V
6	* 5.057	49.92	PK	34.5	-28.2	56.22	-	-	74	-17.78	0-360	100	V
	* 5.057	42.80	AD1	34.4	-29.0	48.2	54	-5.80	-	-	56	309	V
7	5.499	45.28	PK	34.8	-21.1	58.98	-	-	68.2	-9.22	0-360	199	V
8	5.725	42.99	PK	35.3	-21.5	56.79	-	-	68.2	-11.41	0-360	199	V

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

PK - Peak detector

AD1 - KDB 789033 Method: AD Primary Power Average





**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	* 2.288	44.50	PK	32.4	-33.0	43.90	54	-10.10	74.0	-30.10	0-360	199	H
2	7.142	40.90	PK	36	-29.2	47.70	-	-	68.2	-20.50	0-360	100	H
3	7.811	39.44	PK	36.2	-28.0	47.64	-	-	68.2	-20.56	0-360	199	H
4	3.092	42.5	PK	33.3	-32.3	43.50	-	-	68.2	-24.70	0-360	199	V
5	* 5.100	44.25	PK	34.5	-21.6	57.15	-	-	74.0	-16.85	0-360	199	V
	* 5.100	35.38	AD1	34.5	-21.7	48.18	54	-5.82	-	-	103	238	V
6	5.543	43.90	PK	34.9	-20.9	57.90	-	-	68.2	-10.30	0-360	199	V

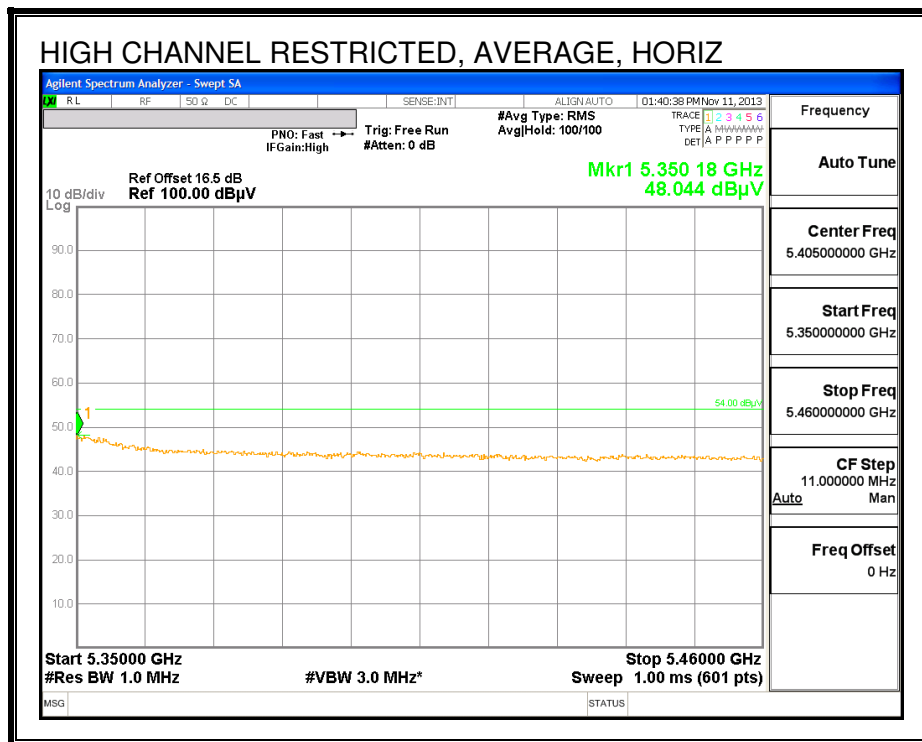
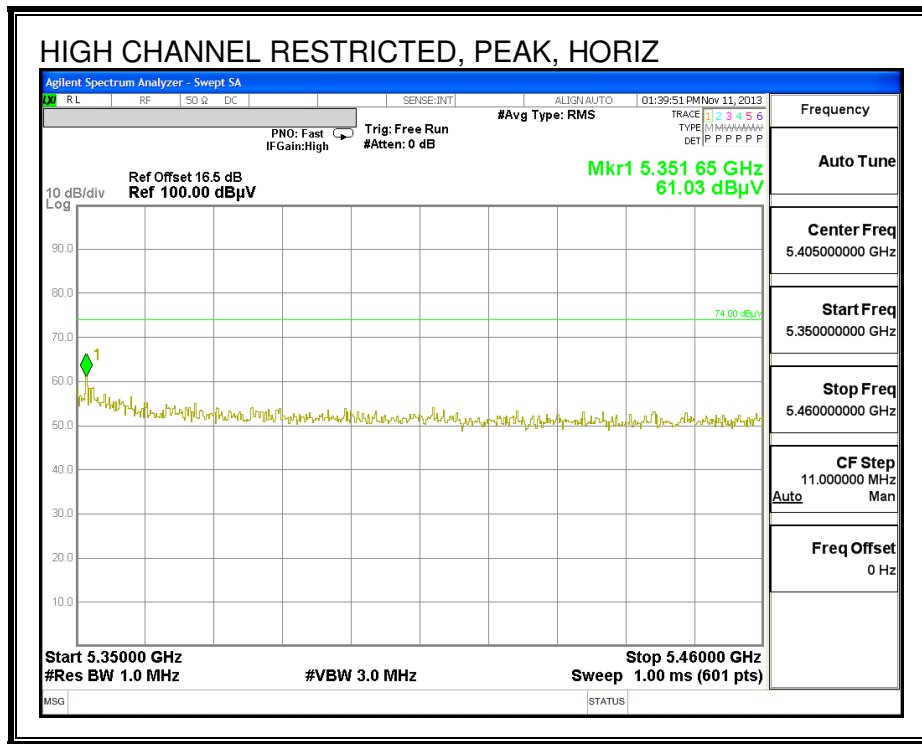
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

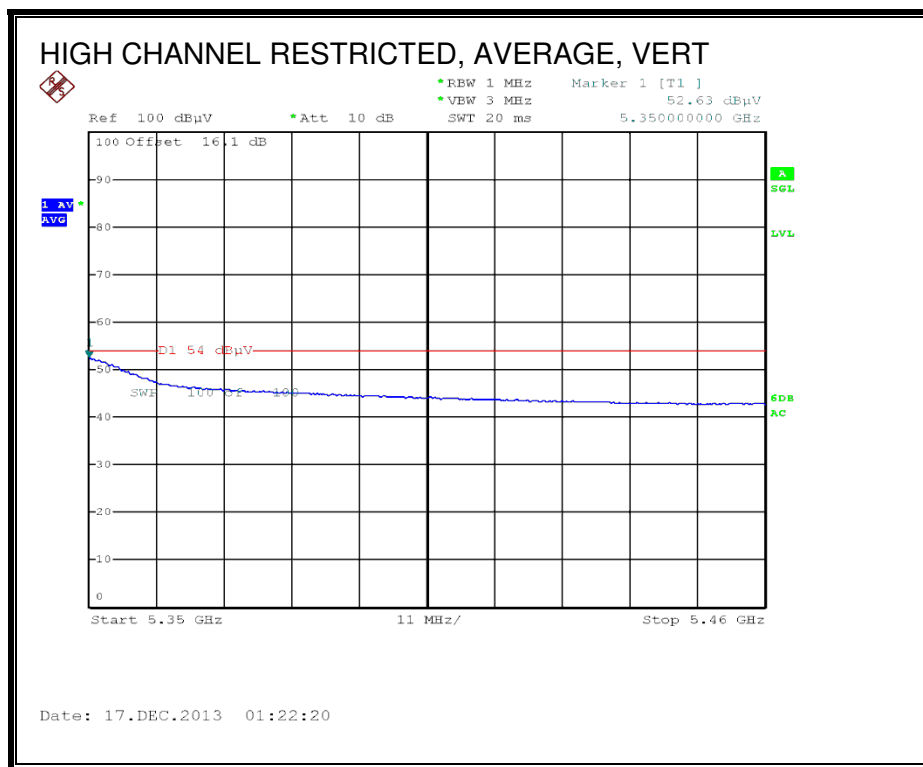
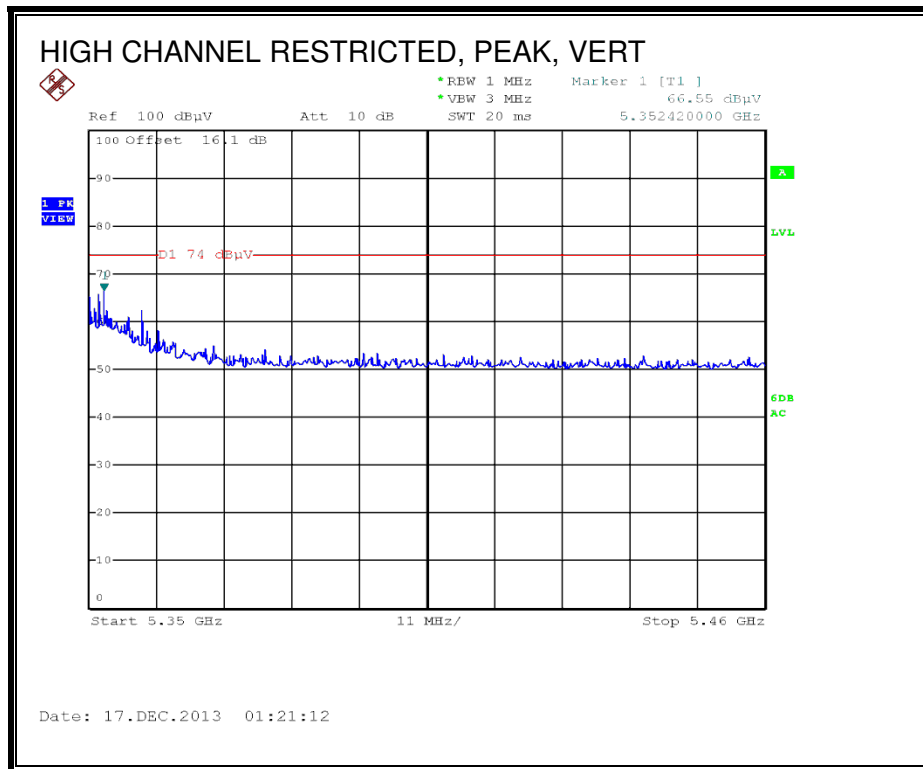
PK - Peak detector

AD1 - KDB 789033 Method: AD Primary Power Average

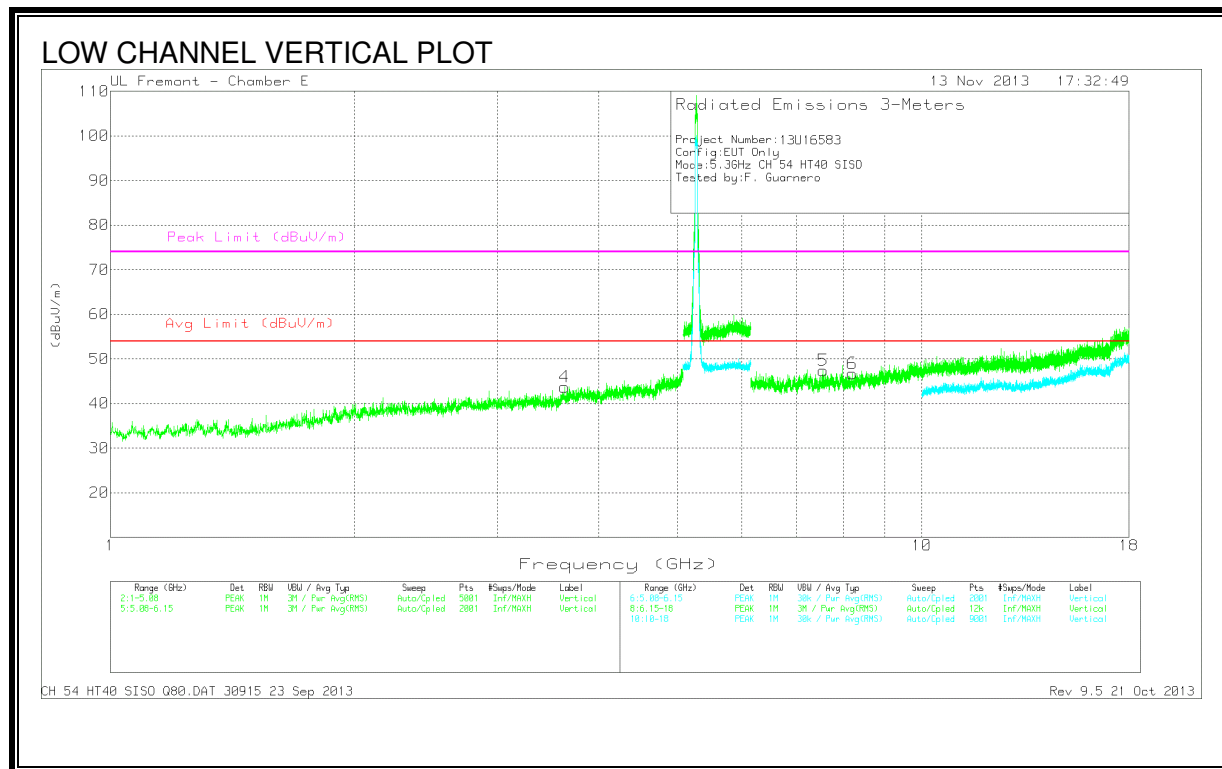
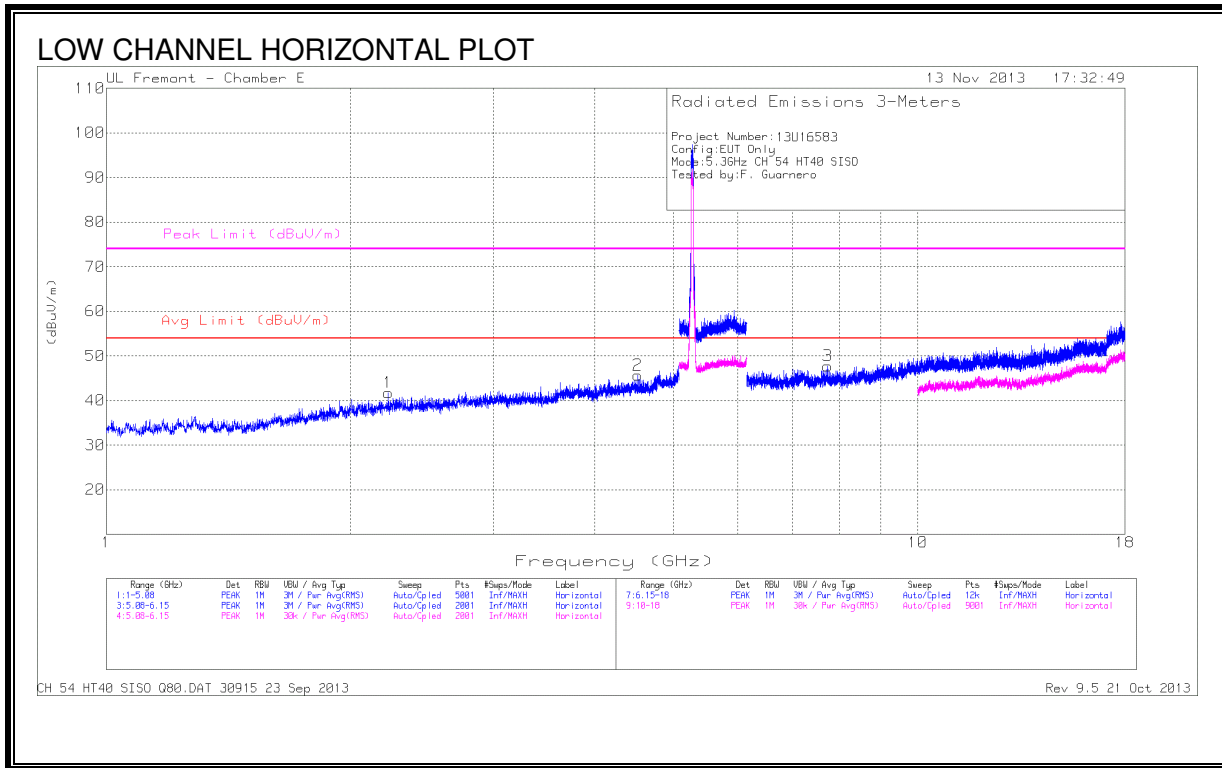
### 9.2.7. 802.11n HT40 SISO MODE IN THE 5.3 GHz BAND

#### RESTRICTED BANDEDGE (HIGH CHANNEL)





**HARMONICS AND SPURIOUS EMISSIONS**

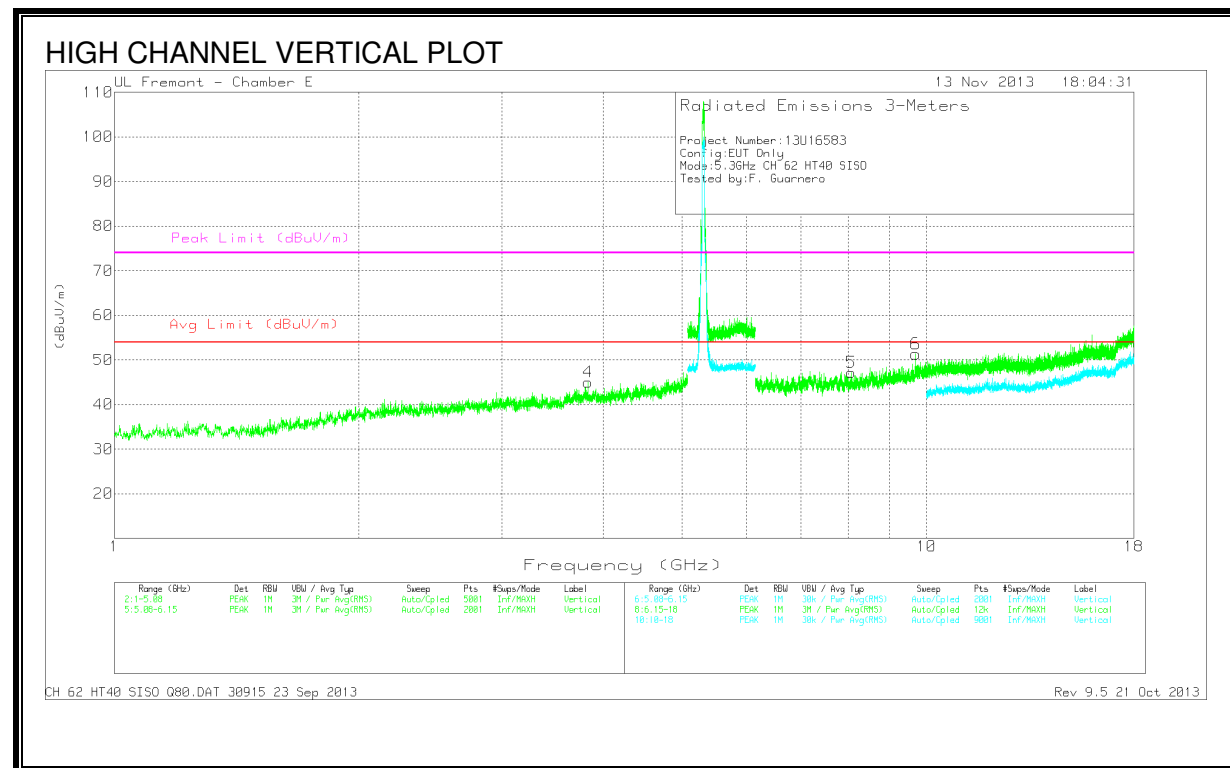
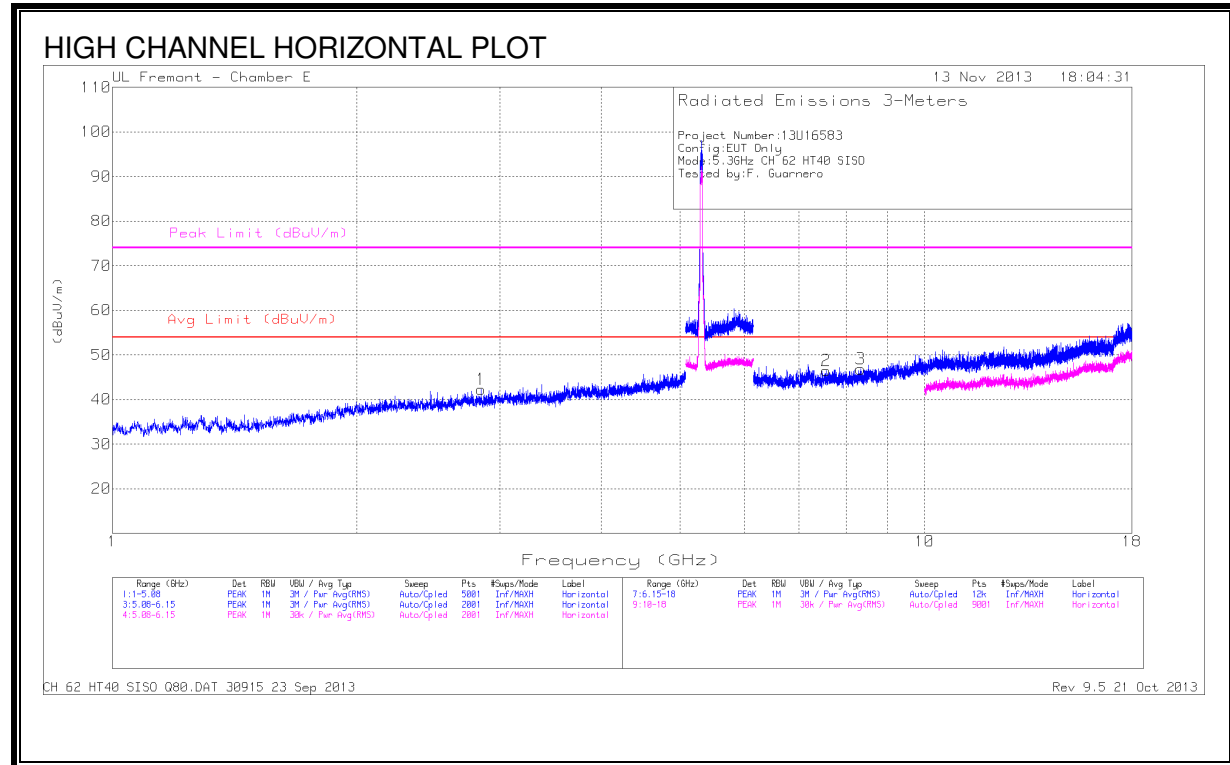


**DATA**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (db/m)	Amp/Cbl /Filtr/Pad	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.226	40.17	PK	32.3	-30.7	41.77	54	-12.23	74.0	-32.23	0-360	100	H
2	* 4.517	38.68	PK	34.2	-27.2	45.68	54	-8.32	74.0	-28.32	0-360	201	H
3	* 7.742	36.75	PK	36.1	-25.1	47.75	54	-6.25	74.0	-26.25	0-360	100	H
4	* 3.628	39.22	PK	33.6	-29.1	43.72	54	-10.28	74.0	-30.28	0-360	100	V
5	* 7.557	37.01	PK	35.9	-25.5	47.41	54	-6.59	74.0	-26.59	0-360	100	V
6	* 8.212	35.71	PK	36.0	-25.0	46.71	54	-7.29	74.0	-27.29	0-360	201	V

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

PK - Peak detector



**DATA**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (db/m)	Amp/Cbl /Fitr/Pad	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*2.843	39.70	PK	33.0	-30.4	42.30	54	-11.70	74.0	-31.7	0-360	200	H
2	*7.563	36.21	PK	36.0	-25.7	46.51	54	-7.49	74.0	-27.49	0-360	201	H
3	*8.340	35.37	PK	36.1	-24.6	46.87	54	-7.13	74.0	-27.13	0-360	201	H
4	*3.828	40.45	PK	33.8	-29.2	45.05	54	-8.95	74.0	-28.95	0-360	100	V
5	*8.077	36.68	PK	36.0	-25.5	47.18	54	-6.82	74.0	-26.82	0-360	201	V
6	9.697	36.34	PK	37.4	-22.4	51.34	-	-	68.2	-16.86	0-360	201	V

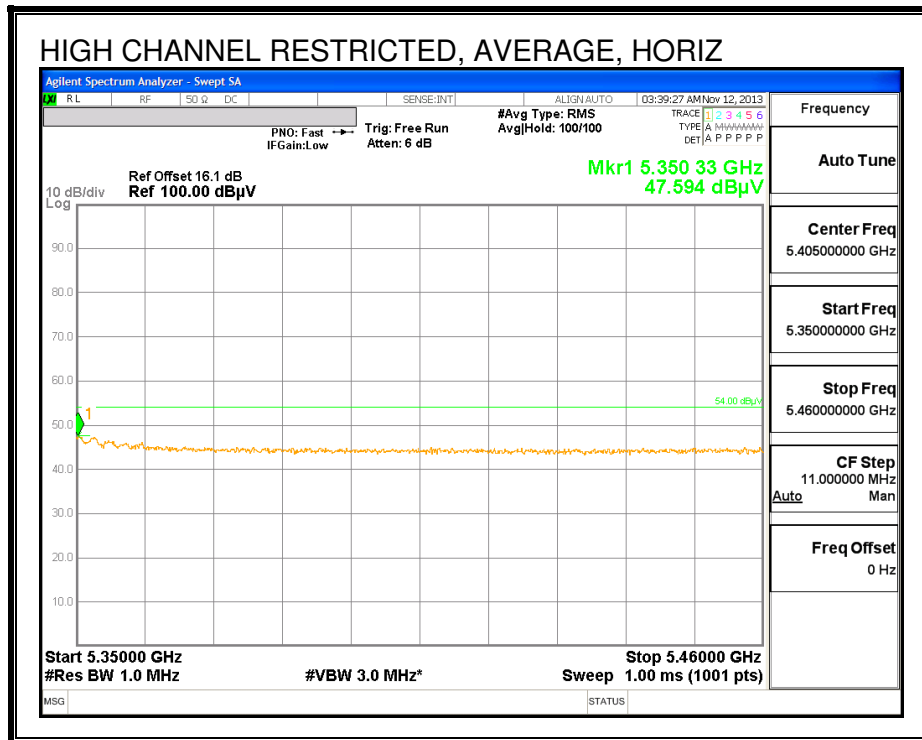
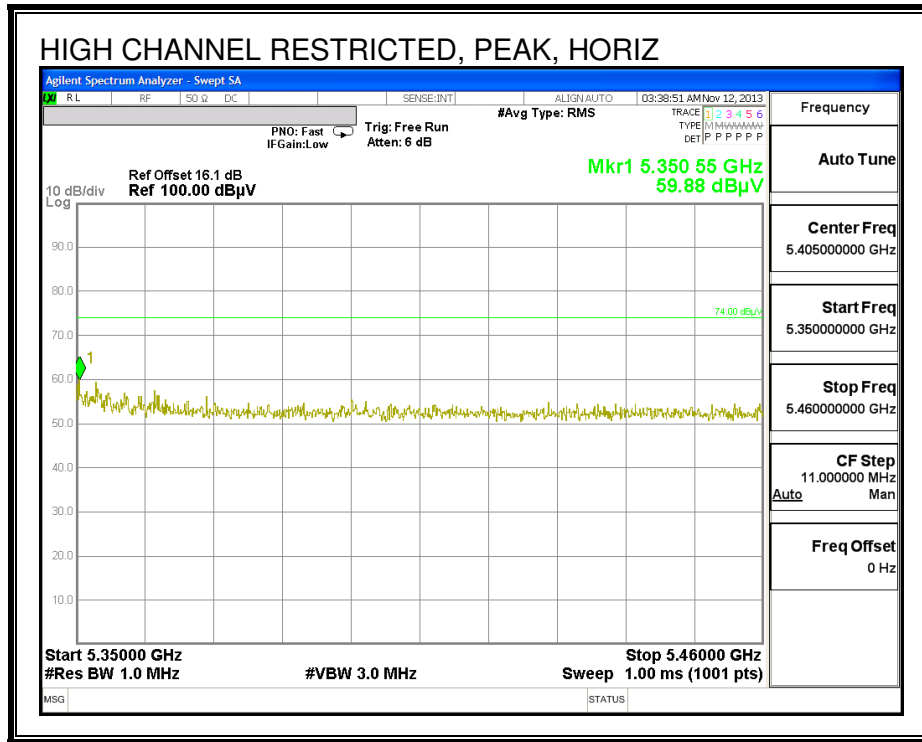
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

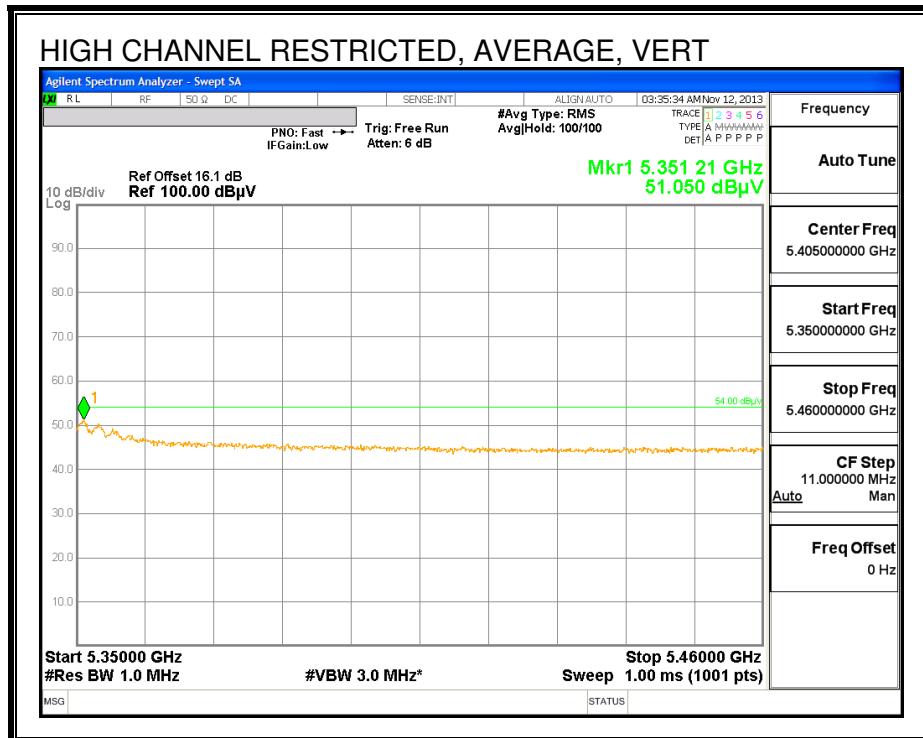
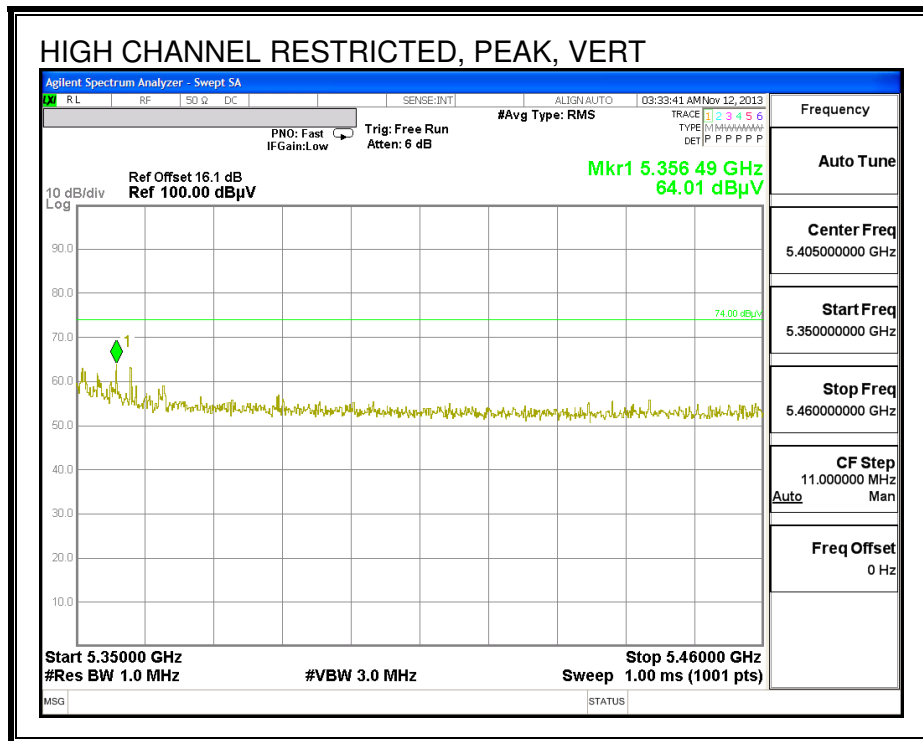
PK - Peak detector



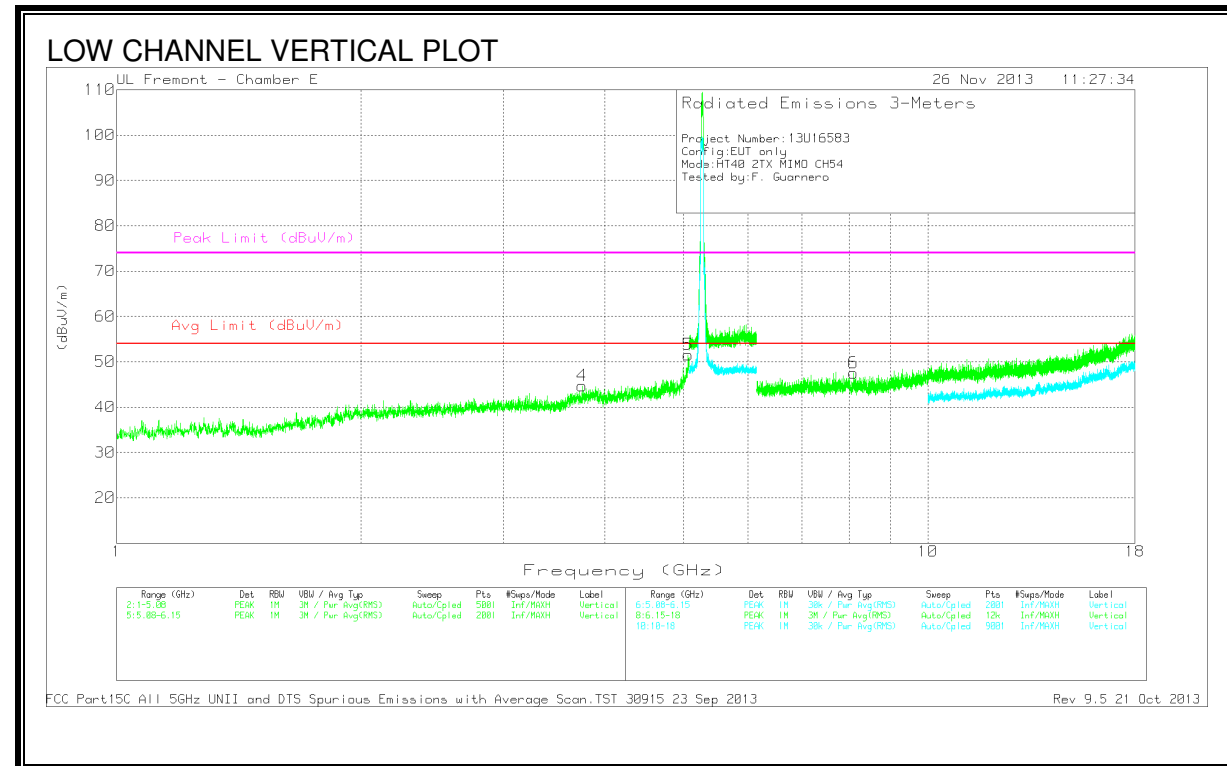
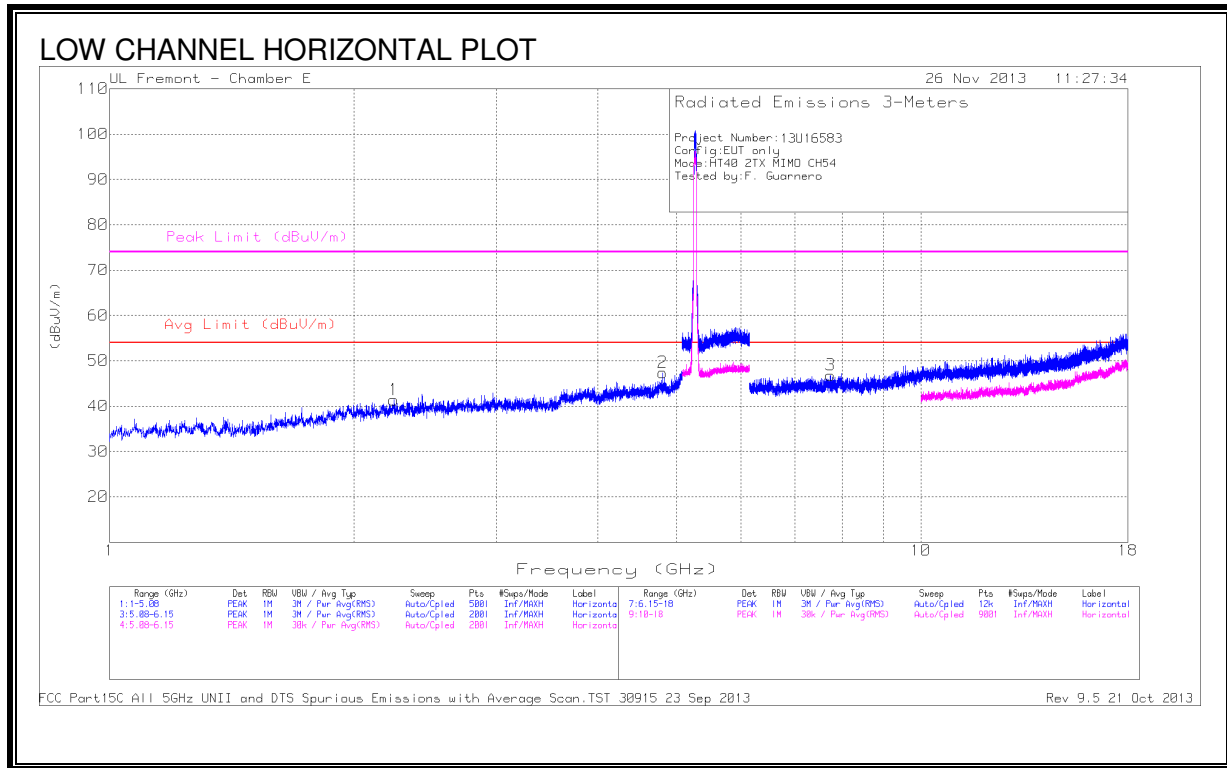
### 9.2.8. 802.11n HT40 2TX CDD MODE IN THE 5.3 GHz BAND

#### RESTRICTED BANDEDGE (HIGH CHANNEL)





**HARMONICS AND SPURIOUS EMISSIONS**



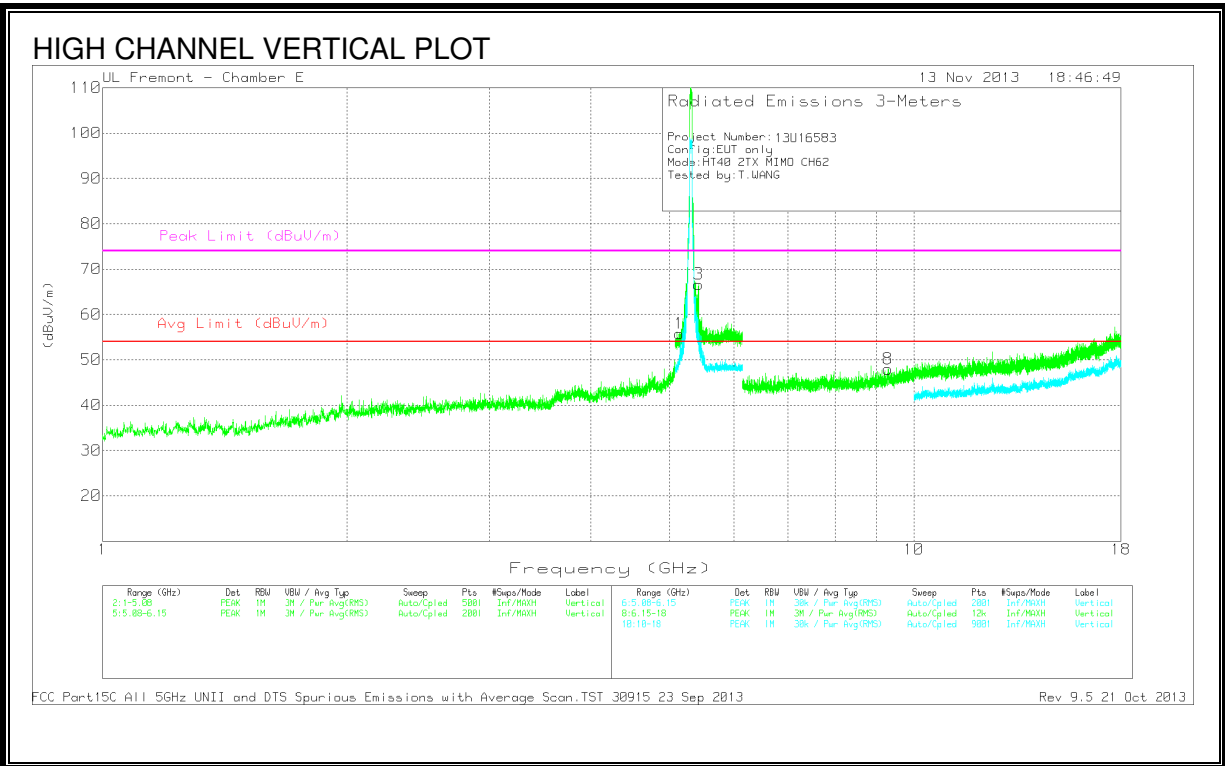
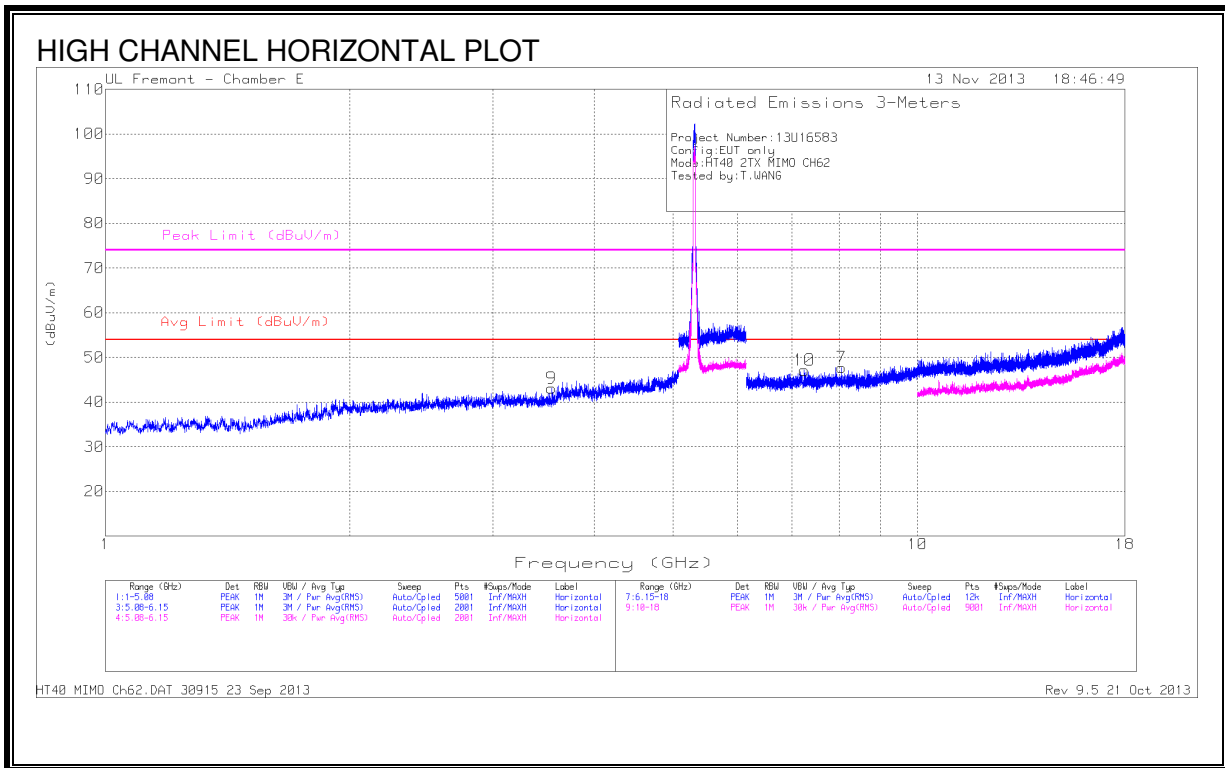
**DATA**

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	* 2.241	41.50	PK	32.4	-32.5	41.40	54	-12.60	74.0	-32.60	0-360	199	H
2	* 4.807	43.38	PK	34.4	-30.4	47.38	54	-6.62	74.0	-26.62	0-360	101	H
3	* 7.741	39.03	PK	36.2	-28.4	46.83	54	-7.17	74.0	-27.17	0-360	100	H
4	* 3.748	43.21	PK	33.7	-32.2	44.71	54	-9.29	74.0	-29.29	0-360	100	V
5	* 5.065	44.93	PK	34.5	-27.9	51.53	-	-	74.0	-22.47	0-360	200	V
	* 5.065	35.25	AD1	34.5	-27.9	41.85	54	-12.15	-	-	58	182	V
6	* 8.096	39.18	PK	36.2	-27.8	47.58	54	-6.42	74.0	-26.42	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



**DATA**

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
1	* 5.141	42.67	PK	34.6	-21.5	55.77	-	-	74.0	-18.23	0-360	100	V
	* 5.141	33.28	AD1	34.6	-21.5	46.38	54	-7.62	-	-	252	361	V
3	* 5.430	53.24	PK	34.8	-21.4	66.64	-	-	74.0	-7.36	0-360	199	V
	* 5.430	32.10	AD1	34.8	-21.4	45.50	54	-8.50	-	-	294	301	V
7	* 8.063	39.97	PK	36.2	-28.4	47.77	54	-6.23	74.0	-26.23	0-360	100	H
8	9.294	36.17	PK	37.2	-25.4	47.97	-	-	68.2	-20.23	0-360	100	V
9	* 3.543	42.21	PK	33.2	-32.3	43.11	54	-10.89	74.0	-30.89	0-360	199	H
10	* 7.252	39.92	PK	36.0	-28.8	47.12	54	-6.88	74.0	-26.88	0-360	100	H

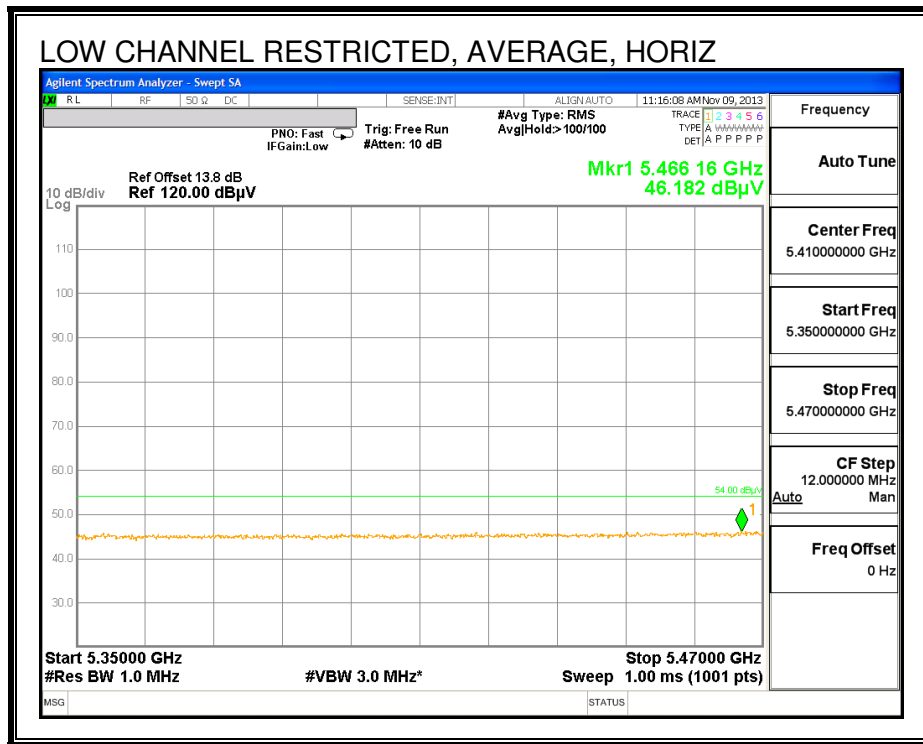
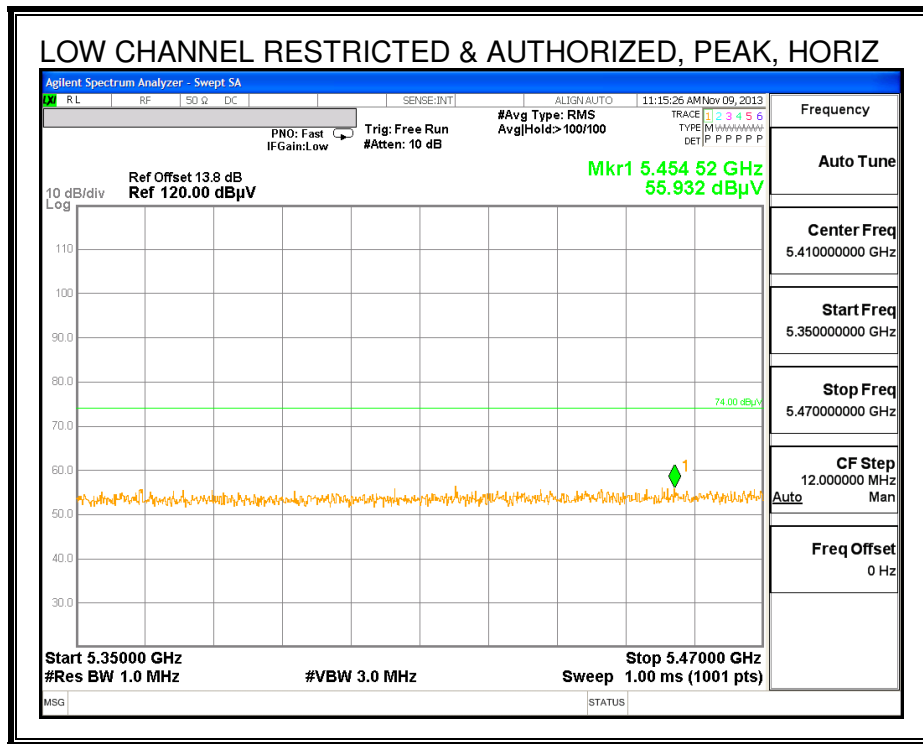
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

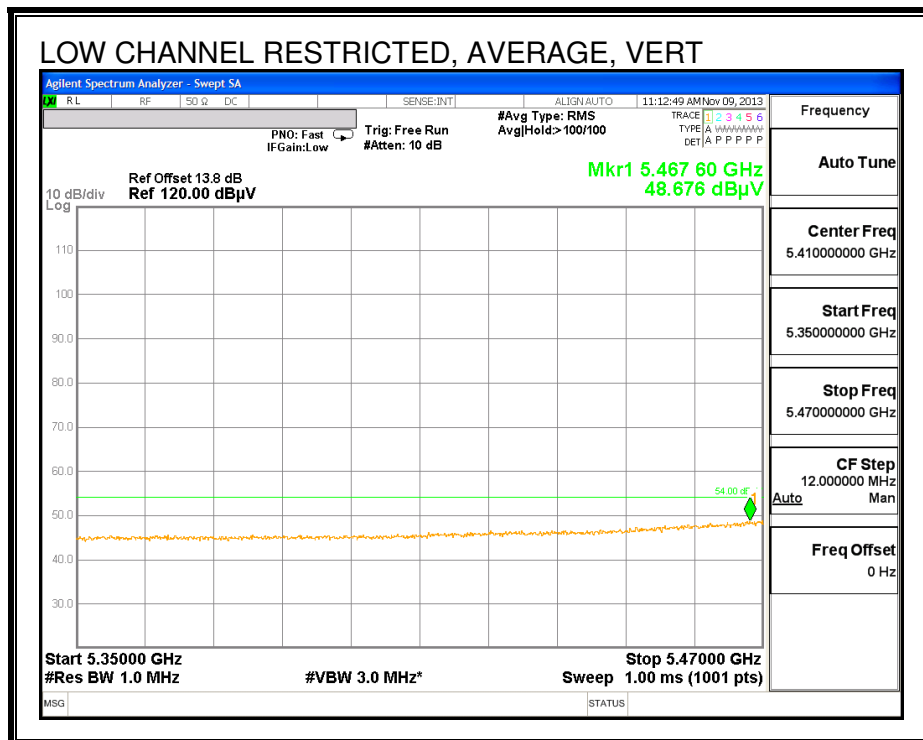
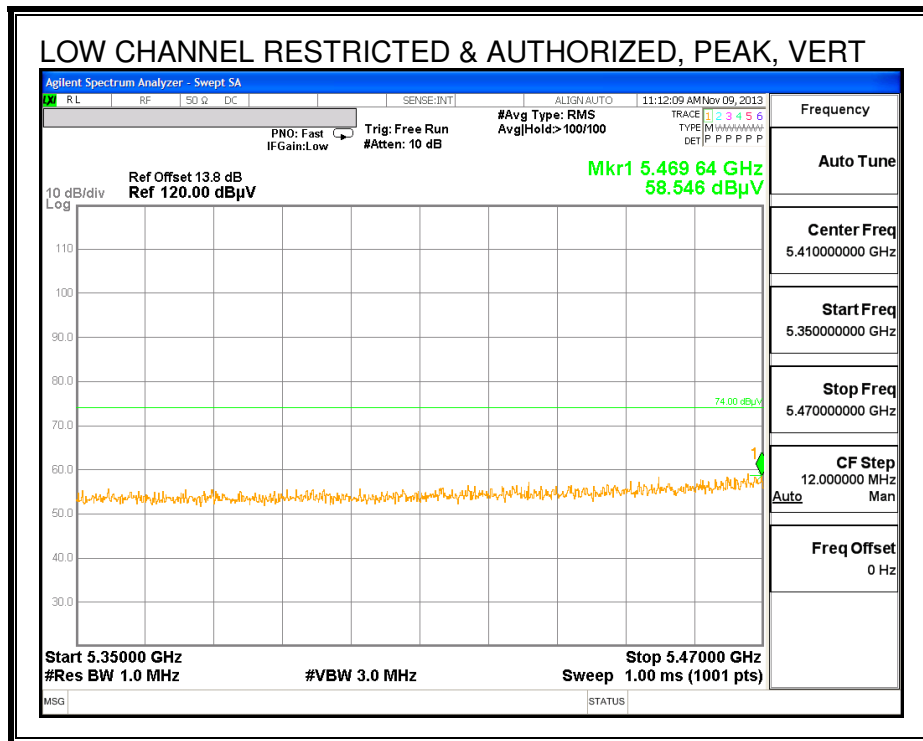
PK - Peak detector

AD1 - KDB 789033 Method: AD Primary Power Average

**9.2.9. 802.11a SISO MODE IN THE 5.6 GHz BAND**

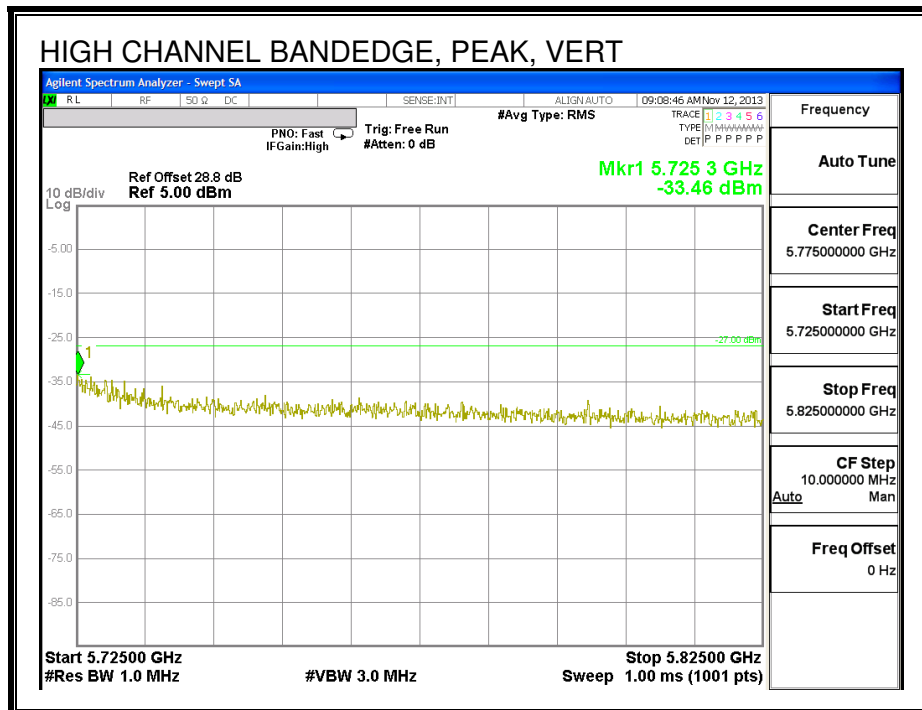
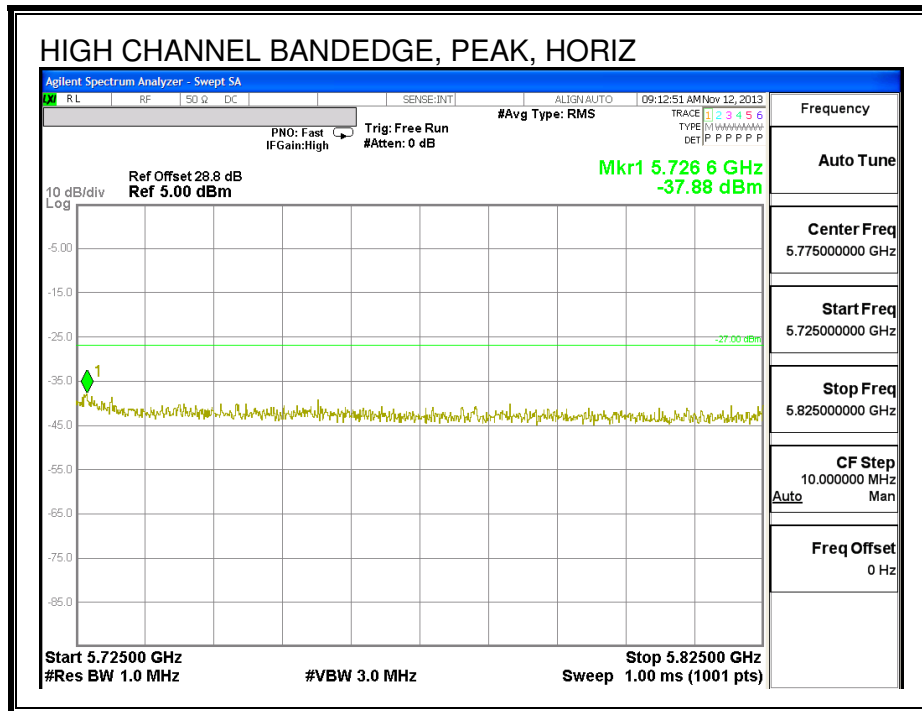
**RESTRICTED BANDEDGE (LOW CHANNEL)**



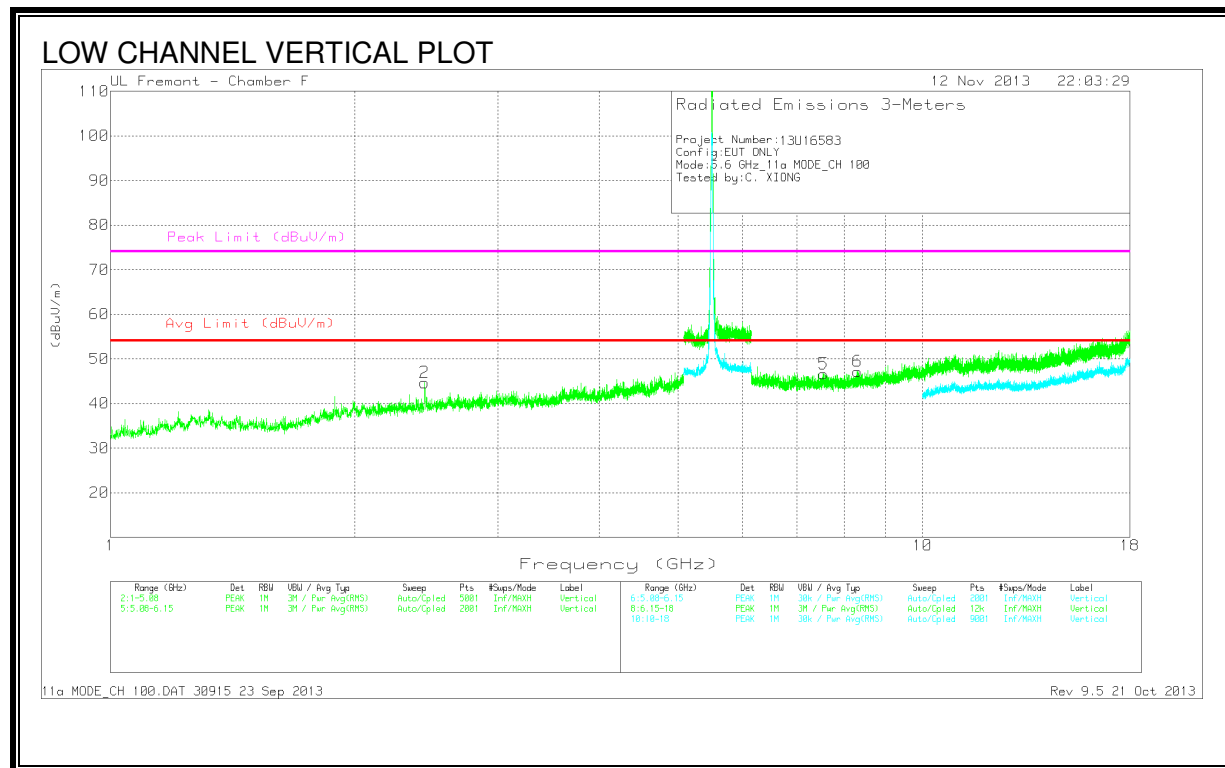
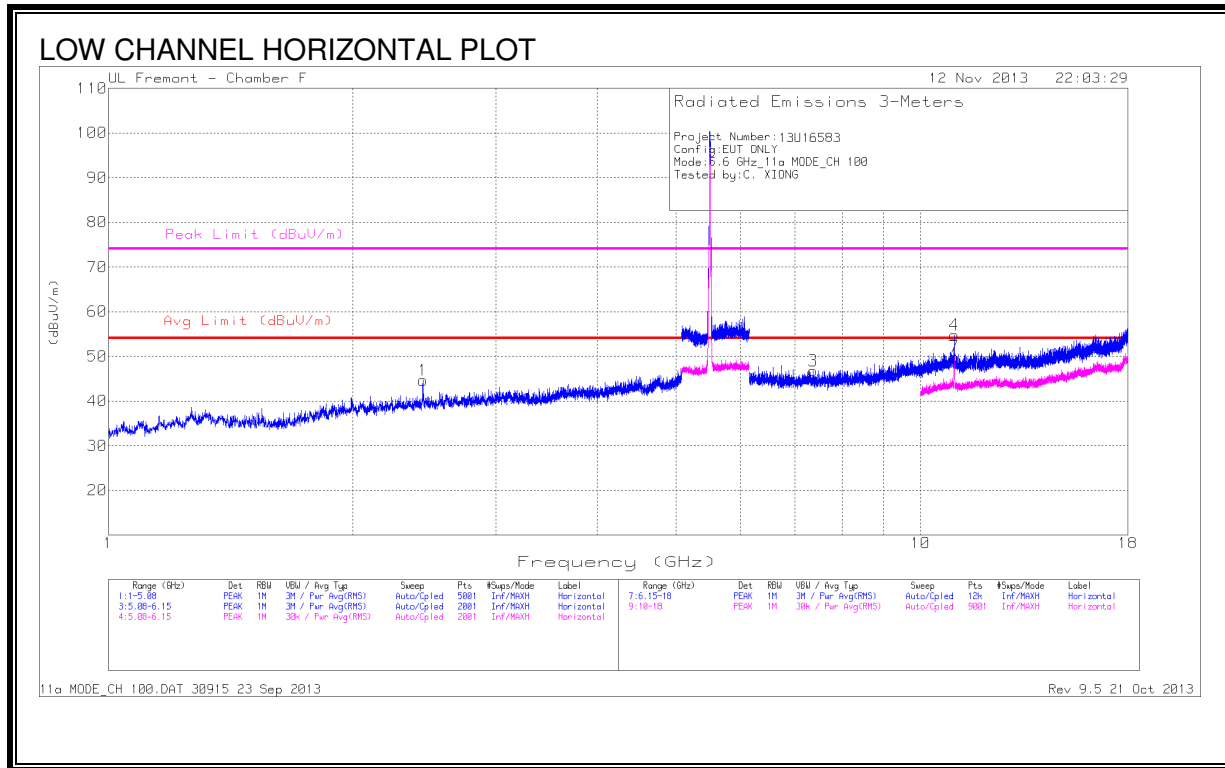




**RESTRICTED BANDEDGE (HIGH CHANNEL)**



**HARMONICS AND SPURIOUS EMISSIONS**



**DATA**

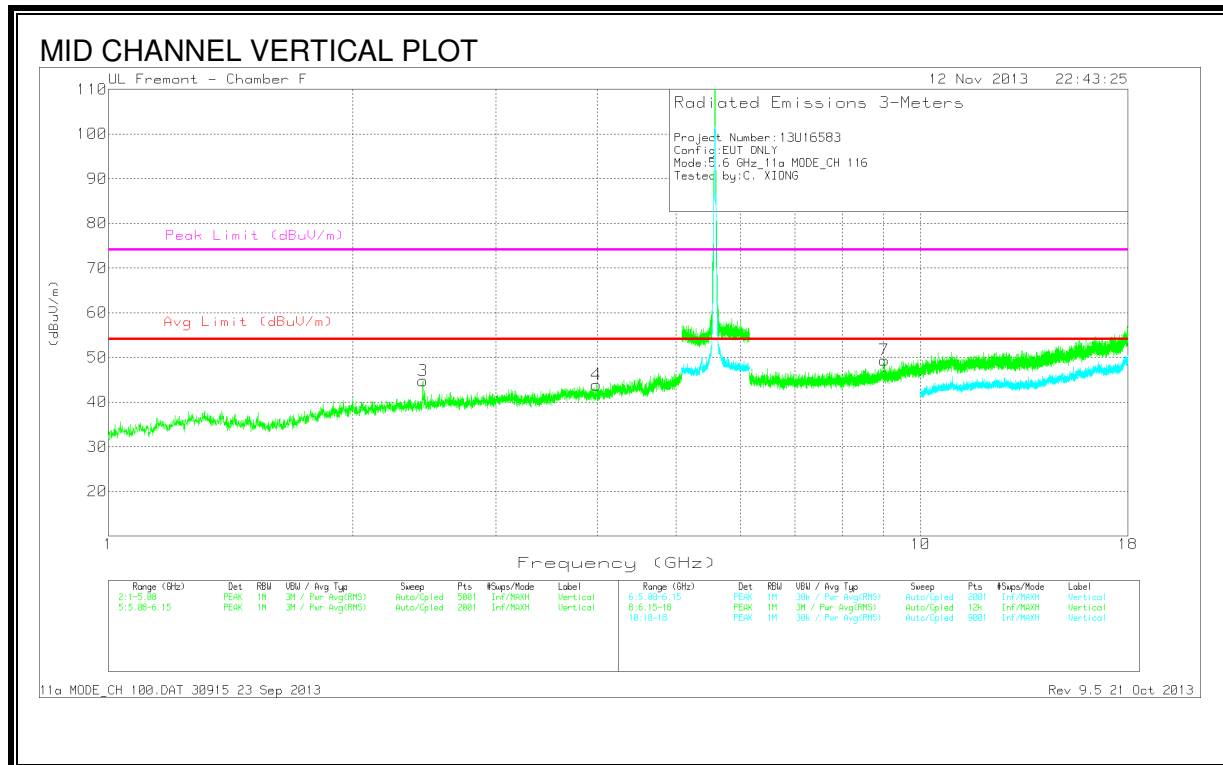
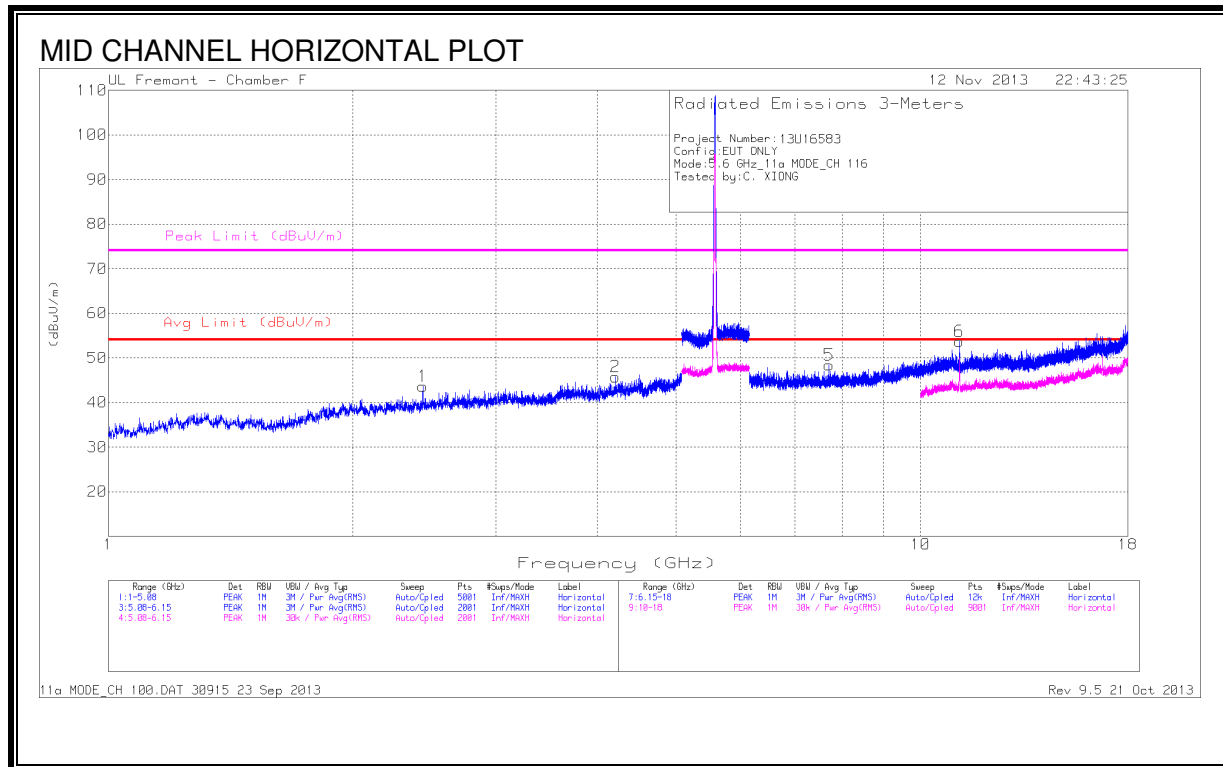
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl /5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.440	43.06	PK	32.3	-30.7	44.66	-	-	68.2	-23.54	0-360	199	H
2	2.436	43.09	PK	32.3	-30.7	44.69	-	-	68.2	-23.51	0-360	200	V
3	* 7.372	37.75	PK	35.7	-26.7	46.75	54	-7.25	74.0	-27.25	0-360	199	H
4	* 11.006	39.08	PK	38.6	-22.9	54.78	-	-	74.0	-19.22	0-360	199	H
7	* 11.006	29.95	AD1	38.7	-22.8	45.85	54	-8.15	-	-	356	198	H
5	* 7.550	36.25	PK	35.8	-25.4	46.65	54	-7.35	74.0	-27.35	0-360	200	V
6	* 8.313	36.33	PK	36.0	-25.1	47.23	54	-6.77	74.0	-26.77	0-360	200	V

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

AD1 - KDB 789033 Method: AD Primary Power Average

PK - Peak detector

Avg - Video bandwidth < Resolution bandwidth



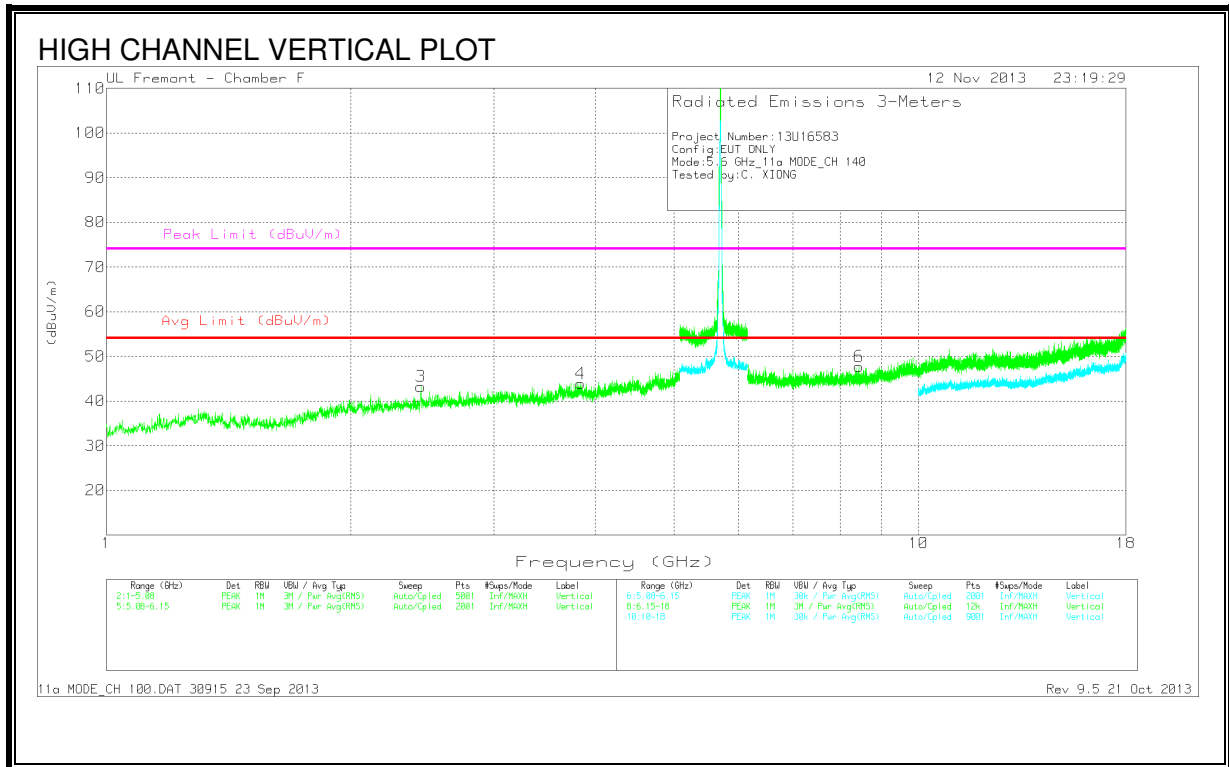
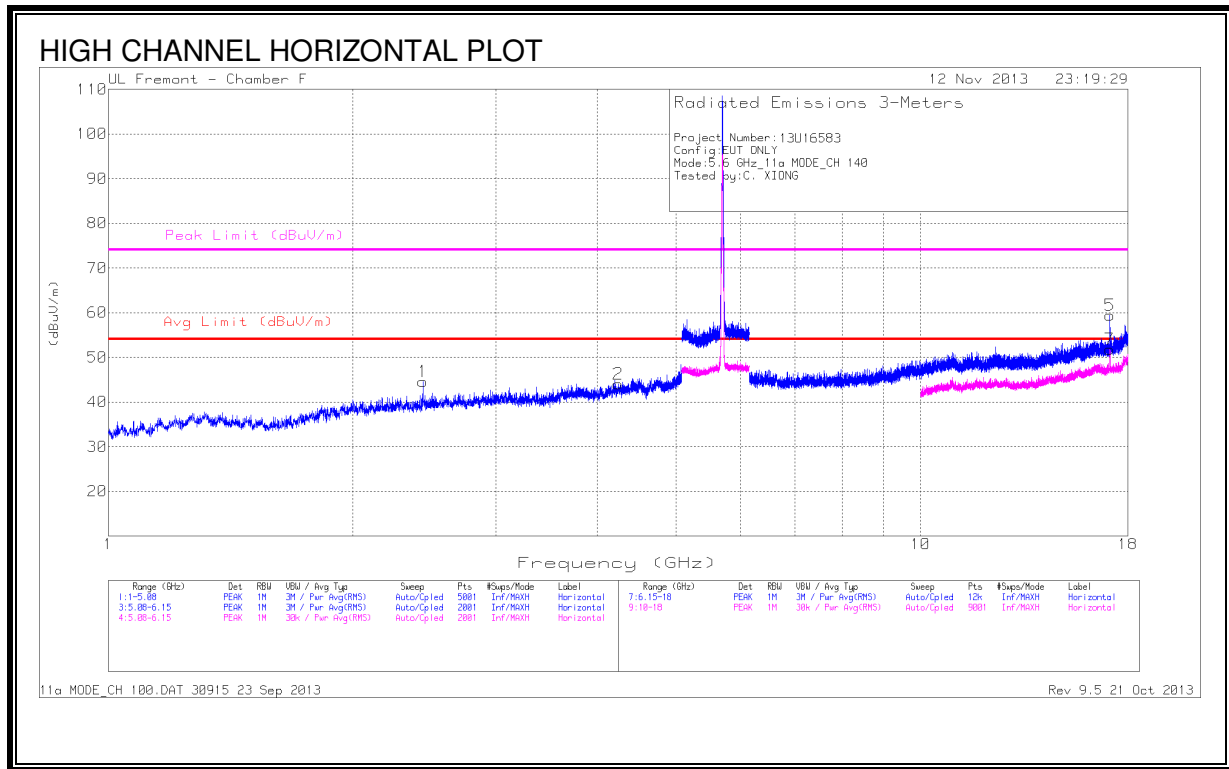
**DATA**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	2.439	42.04	PK	32.3	-30.7	43.64	-	-	68.2	-24.56	0-360	199	H
2	* 4.208	40.38	PK	33.4	-28	45.78	54	-8.22	74.0	-28.22	0-360	100	H
3	2.439	43.19	PK	32.3	-30.7	44.79	-	-	68.2	-23.41	0-360	201	V
4	* 3.989	39.38	PK	33.5	-29	43.88	54	-10.12	74.0	-30.12	0-360	101	V
5	* 7.714	38.48	PK	35.9	-26	48.38	-	-	74.0	-25.62	0-360	199	H
	* 7.714	26.53	AD1	35.9	-26.1	36.33	54	-17.67	-	-	345	326	H
6	* 11.158	37.99	PK	38.6	-22.9	53.69	-	-	74.0	-20.31	0-360	100	H
	* 11.158	29.7	AD1	38.6	-22.9	45.4	54	-8.60	-	-	329	182	H
7	* 9.023	36.89	PK	36.4	-23.9	49.39	-	-	74.0	-24.61	0-360	101	V
	* 9.023	25.44	AD1	36.4	-24.2	37.64	54	-16.36	-	-	282	172	V

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

AD1 - KDB 789033 Method: AD Primary Power Average

PK - Peak detector



**DATA**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	2.439	43.01	PK	32.3	-30.7	44.61	-	-	68.2	-23.59	0-360	199	H
2	* 4.244	38.13	PK	33.4	-27.5	44.03	54	-9.97	74.0	-29.97	0-360	199	H
3	2.439	41.68	PK	32.3	-30.7	43.28	-	-	68.2	-24.92	0-360	200	V
4	* 3.836	39.4	PK	33.5	-29	43.9	54	-10.10	74.0	-30.1	0-360	200	V
5	17.101	39.7	PK	41	-21.3	59.4	-	-	68.2	-8.8	0-360	199	H
6	* 8.446	36.93	PK	36	-25.2	47.73	54	-6.27	74.0	-26.27	0-360	201	V

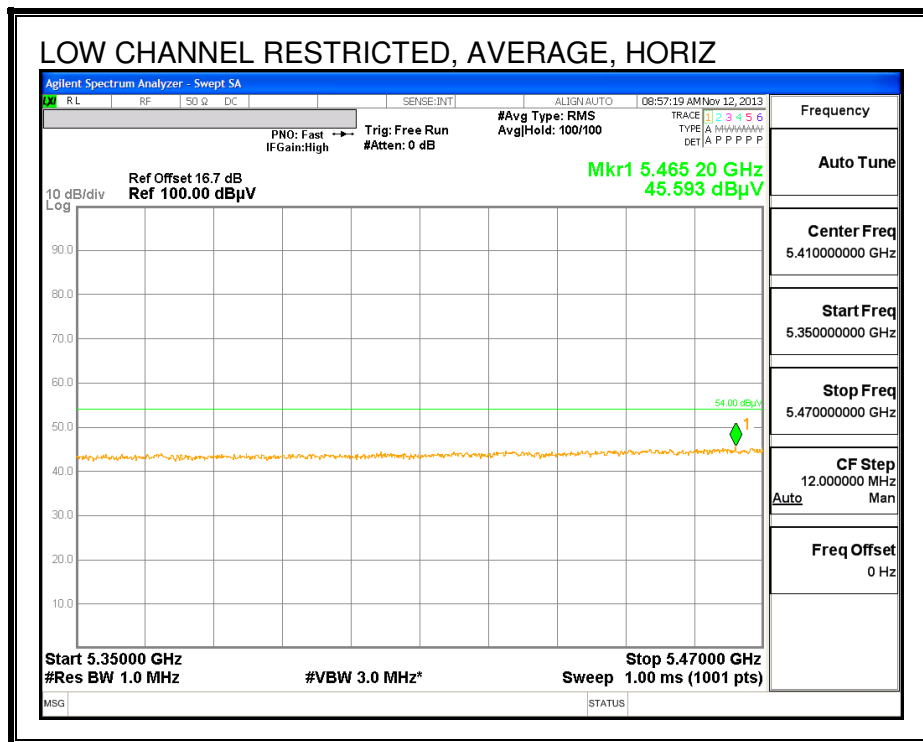
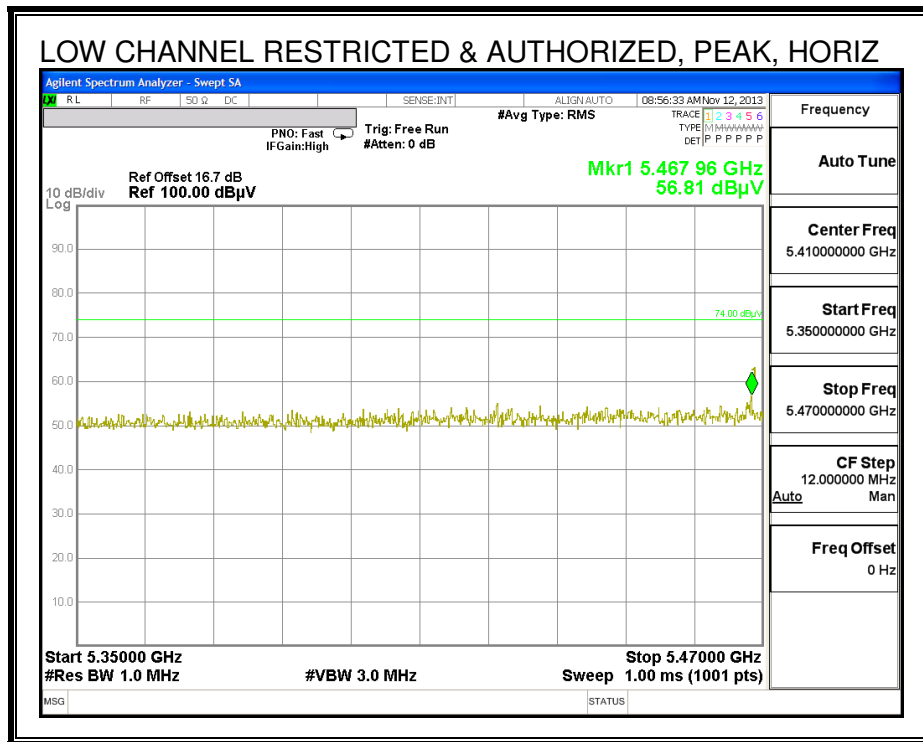
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

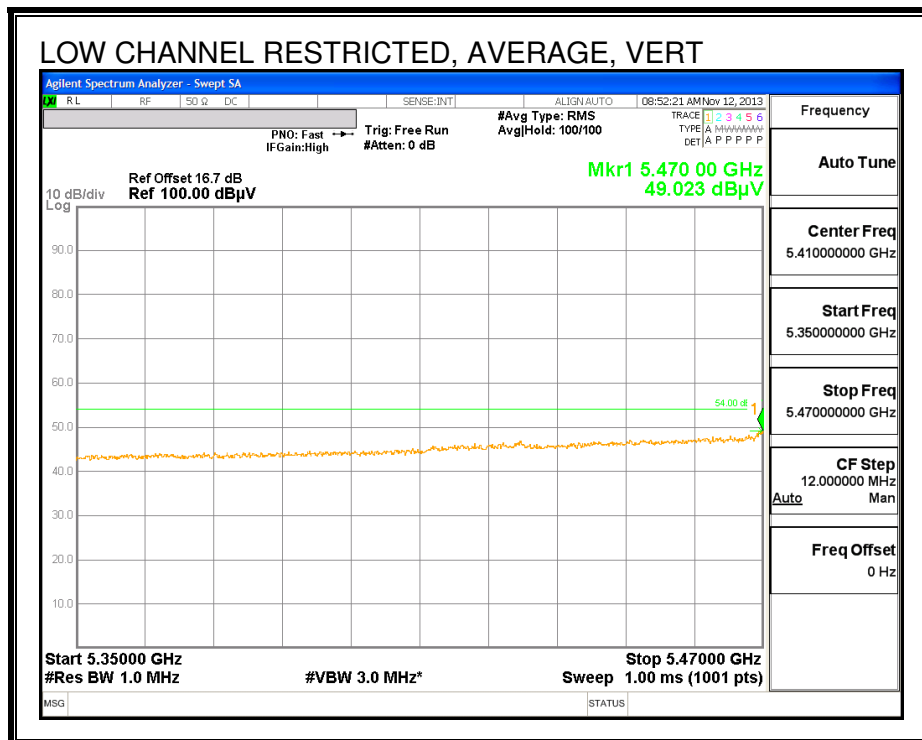
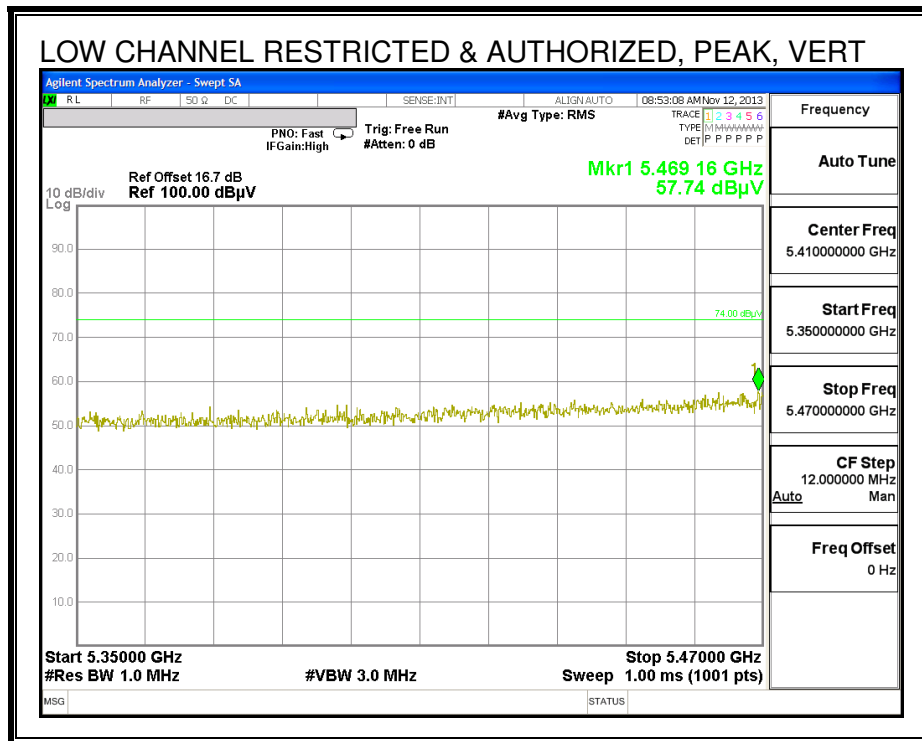
Avg - Video bandwidth < Resolution bandwidth

**9.2.10. 802.11n HT20 2TX CDD MODE IN THE 5.6 GHz BAND**

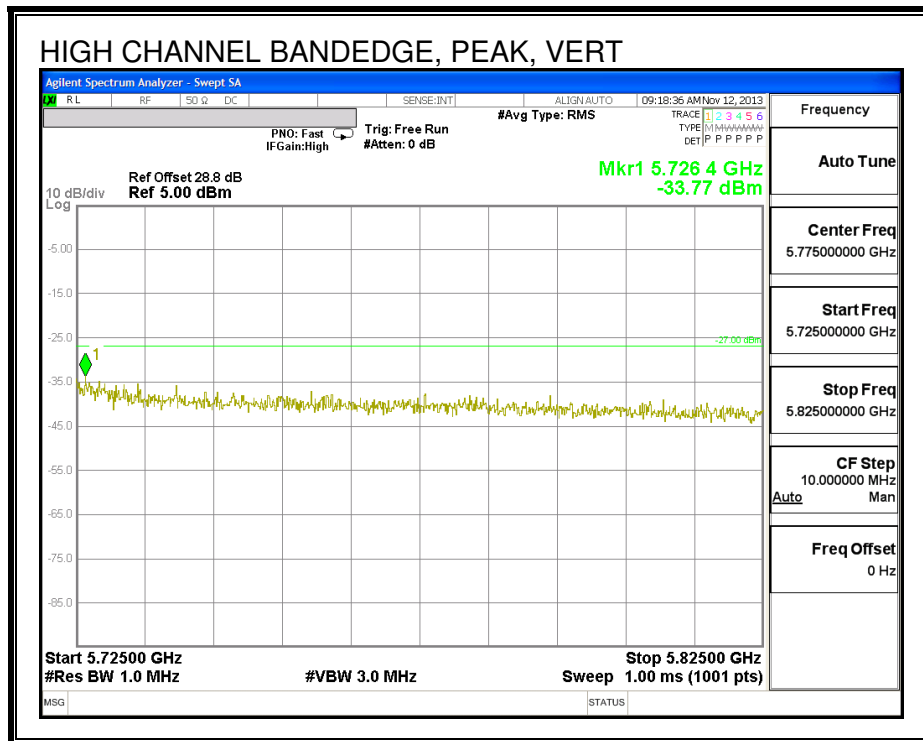
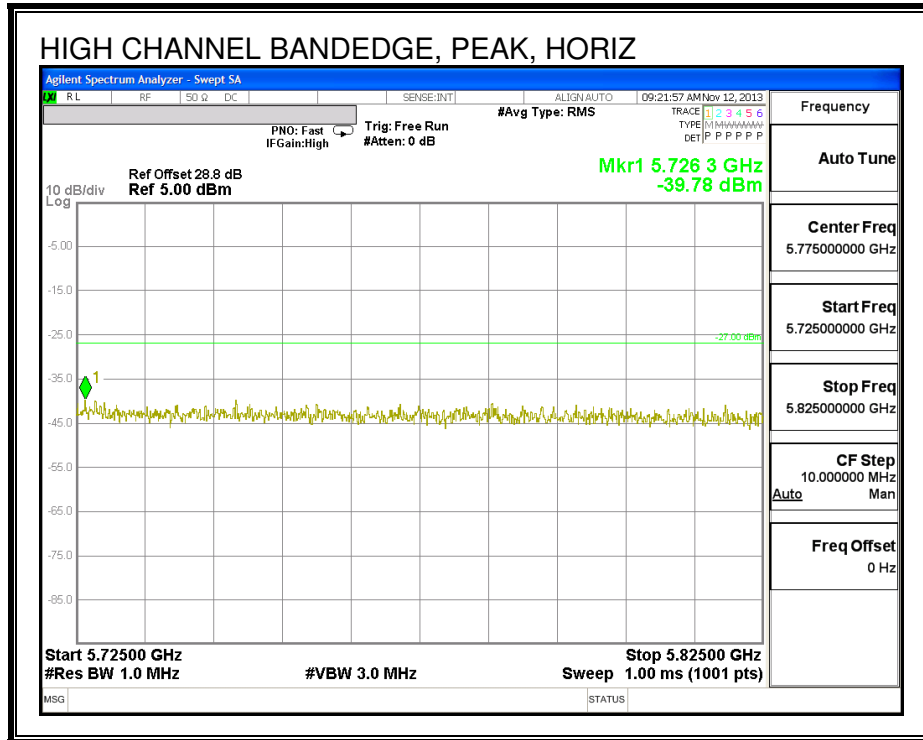
**RESTRICTED BANEDGE (LOW CHANNEL)**



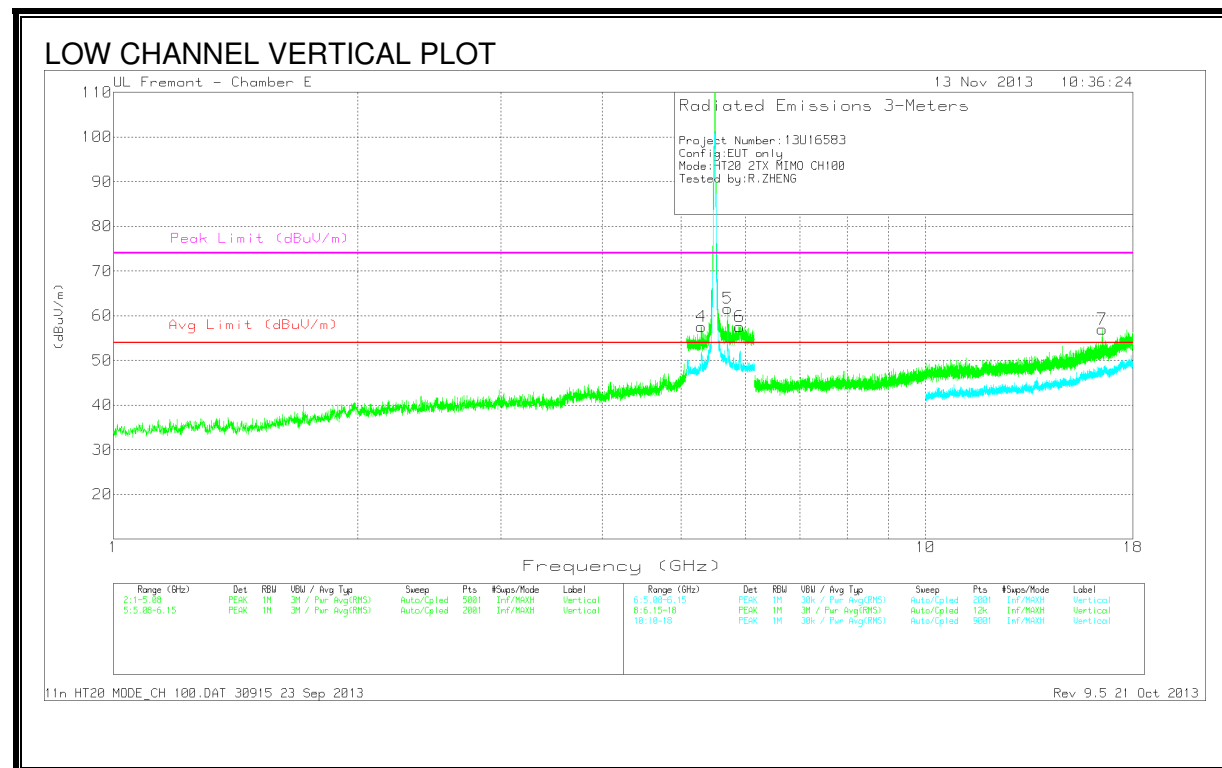
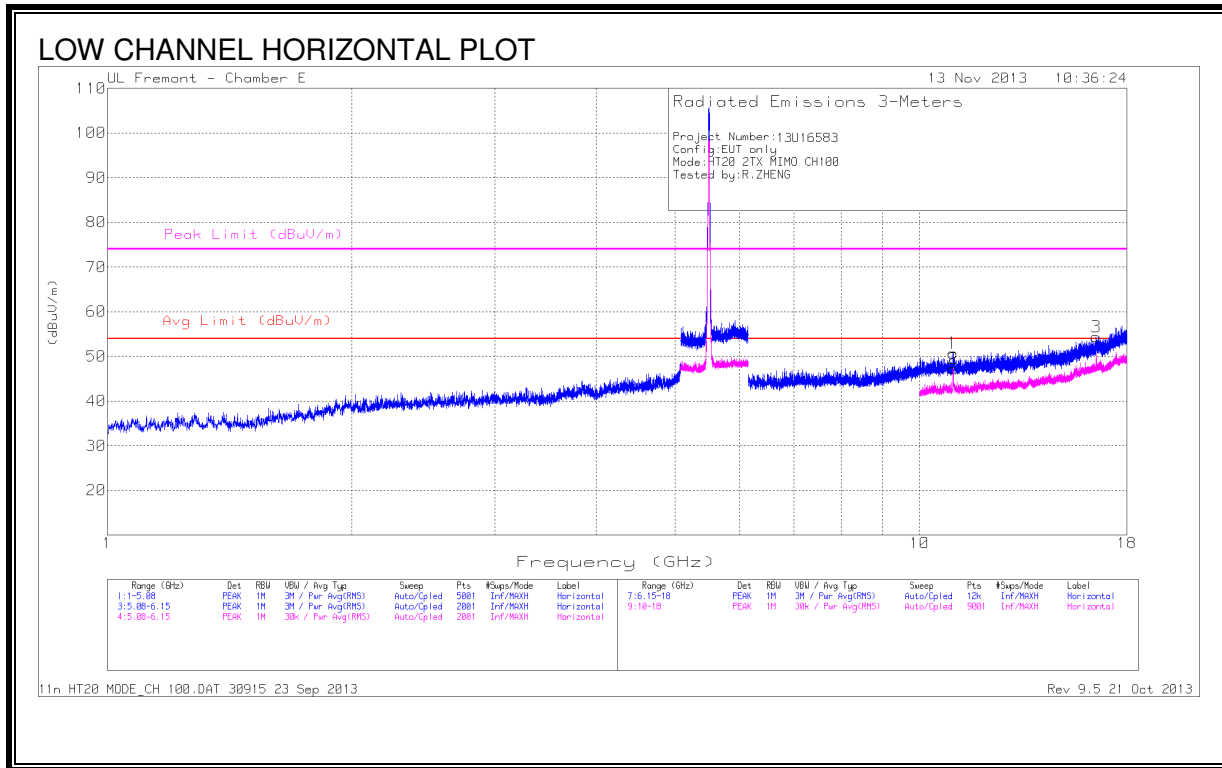




**RESTRICTED BANDEDGE (HIGH CHANNEL)**



**HARMONICS AND SPURIOUS EMISSIONS**



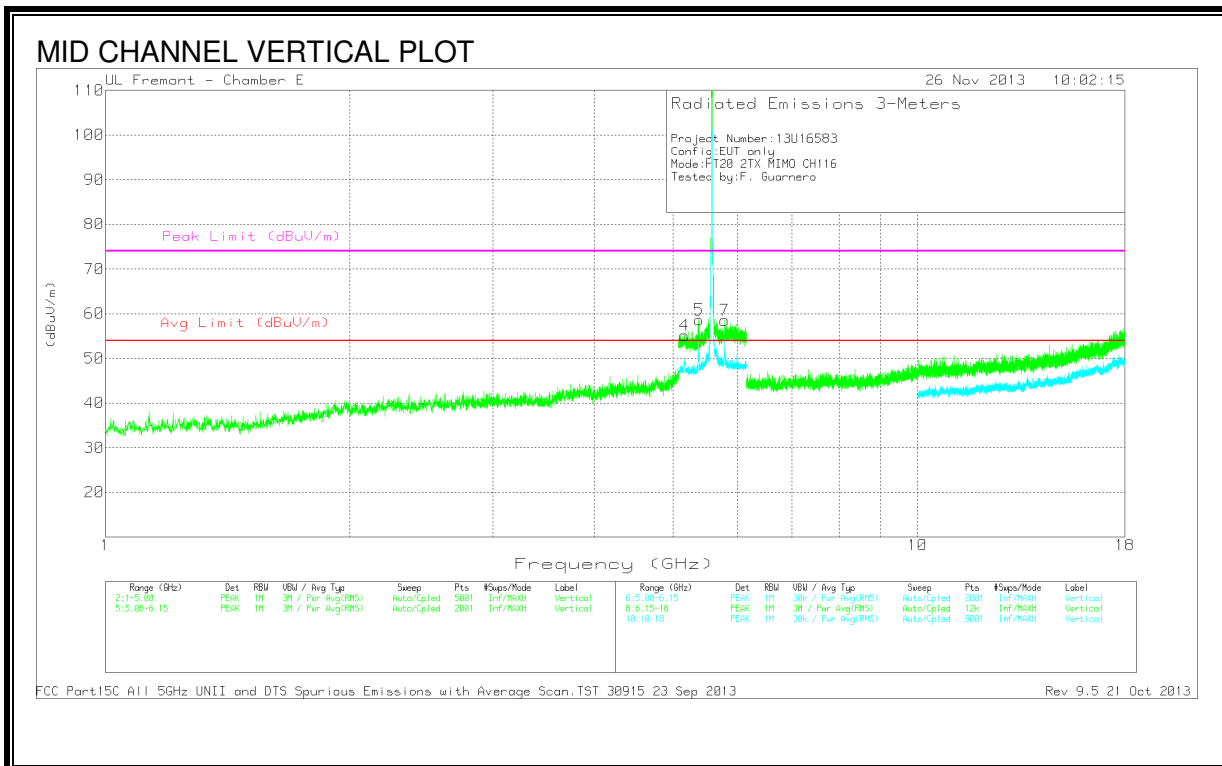
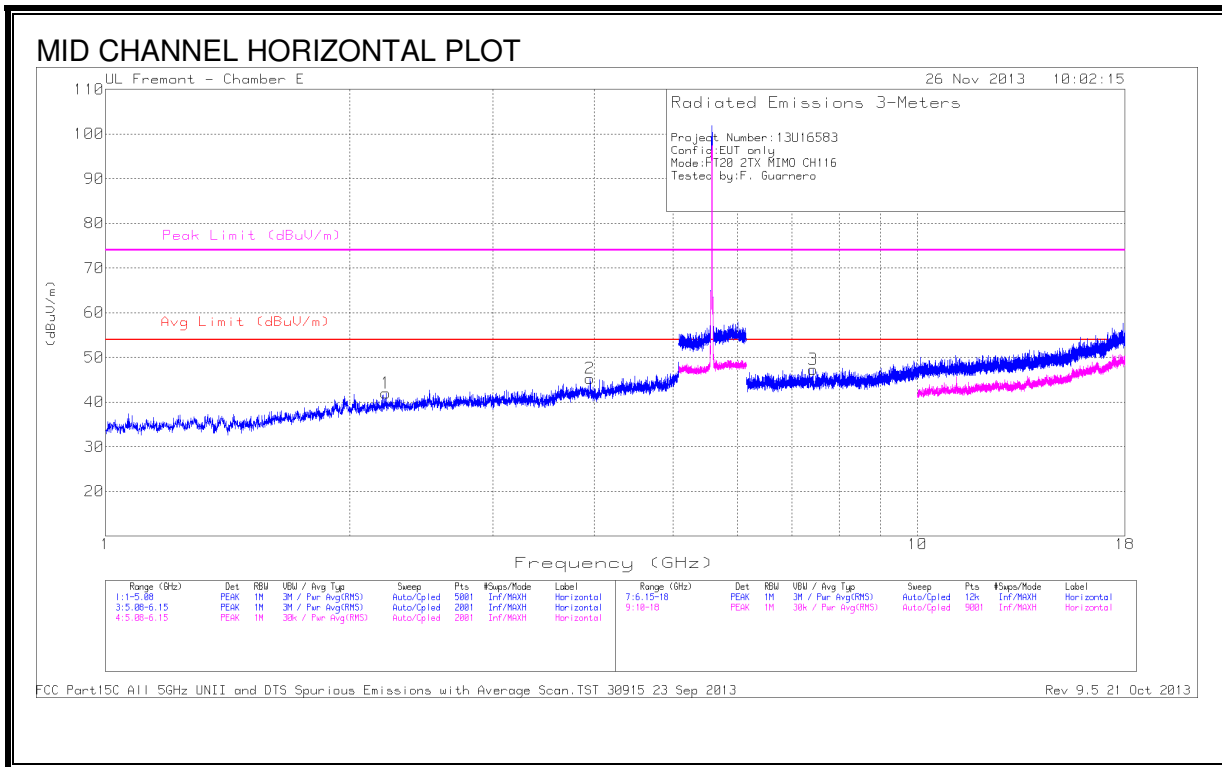
**DATA**

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
1	* 10.996	37.22	PK	38.5	-25	50.72	-	-	74.0	-23.28	0-360	100	H
2	* 10.996	33.72	Avg	38.5	-25	47.22	54	-6.78	-	-	0-360	100	H
3	16.494	35.77	PK	41.3	-22.7	54.37	-	-	68.2	-13.83	0-360	100	H
4	5.295	44.37	PK	34.7	-21.5	57.57	-	-	68.2	-10.63	0-360	101	V
5	5.704	47.74	PK	35.3	-21.4	61.64	-	-	68.2	-6.56	0-360	101	V
6	5.902	42.46	PK	35.6	-20.5	57.56	-	-	68.2	-10.64	0-360	101	V
7	16.502	38.36	PK	41.3	-22.7	56.96	-	-	68.2	-11.24	0-360	199	V

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

PK - Peak detector

Avg - Video bandwidth < Resolution bandwidth



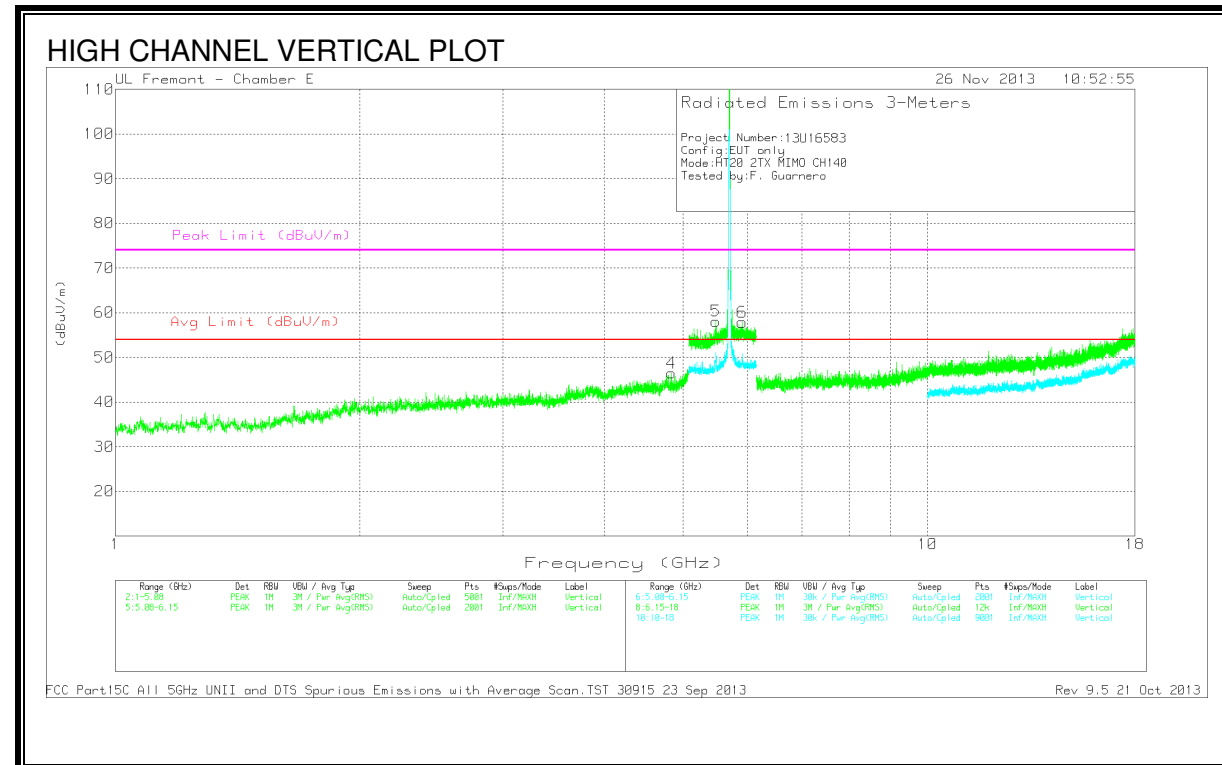
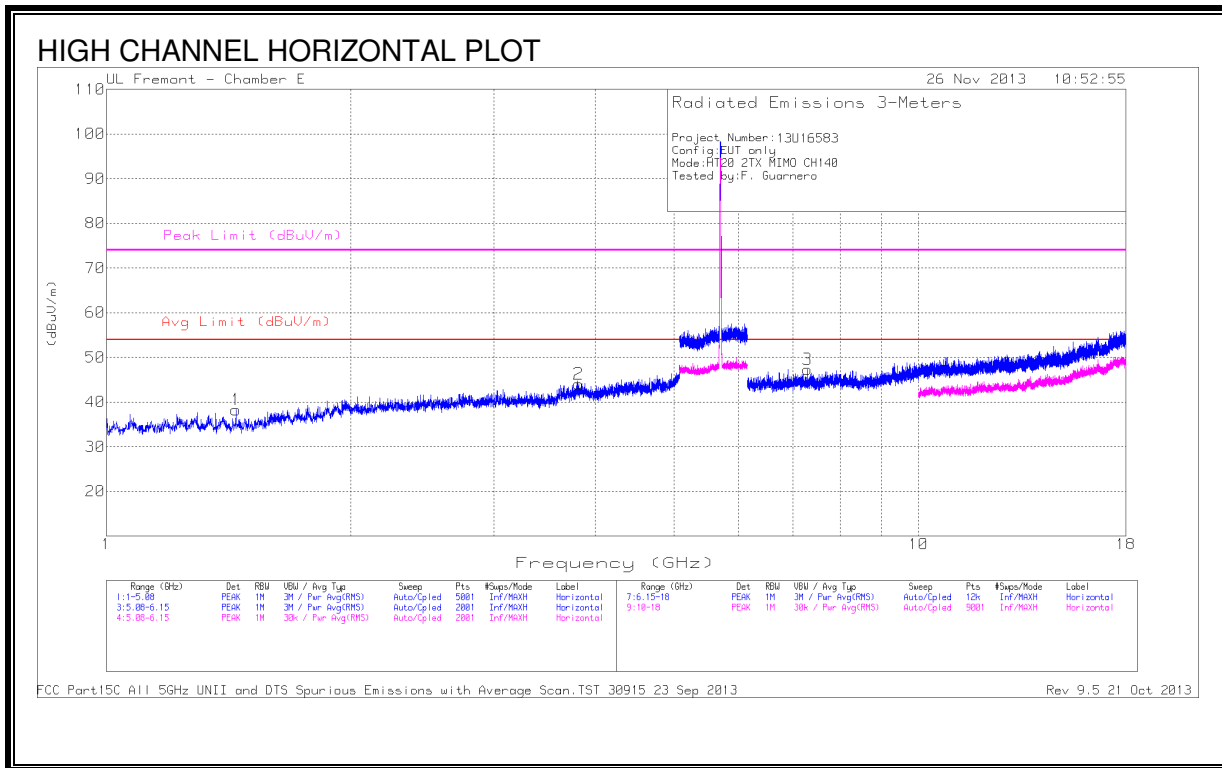
**DATA**

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	* 2.215	42.38	PK	32.4	-32.8	41.98	54	-12.02	74.0	-32.02	0-360	199	H
2	* 3.948	43.31	PK	33.8	-31.8	45.31	54	-8.69	74.0	-28.69	0-360	101	H
3	* 7.439	40.21	PK	36.1	-29	47.31	54	-6.69	74.0	-26.69	0-360	199	H
4	5.167	41.84	PK	34.6	-21.3	55.14	-	-	68.2	-13.06	0-360	100	V
5	* 5.381	45.52	PK	34.8	-21.7	58.62	-	-	74.0	-15.38	0-360	199	V
6	* 5.381	36.79	AD1	34.7	-21.7	49.79	54	-4.21	-	-	91	201	V
7	5.788	44.43	PK	35.5	-21.4	58.53	-	-	68.2	-9.67	0-360	199	V

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

PK - Peak detector

AD1 - KDB 789033 Method: AD Primary Power Average



**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	* 1.444	44.07	PK	28.9	-34.7	38.27	54	-15.73	74.0	-35.73	0-360	100	H
2	* 3.813	42.25	PK	33.7	-31.9	44.05	54	-9.95	74.0	-29.95	0-360	199	H
4	* 4.839	42.38	PK	34.4	-30.3	46.48	54	-7.52	74.0	-27.52	0-360	199	V
3	* 7.300	39.69	PK	36.0	-28.4	47.29	54	-6.71	74.0	-26.71	0-360	199	H
5	5.487	44.49	PK	34.8	-21.2	58.09	-	-	68.2	-10.11	0-360	199	V
6	5.912	42.56	PK	35.7	-20.4	57.86	-	-	68.2	-10.34	0-360	199	V

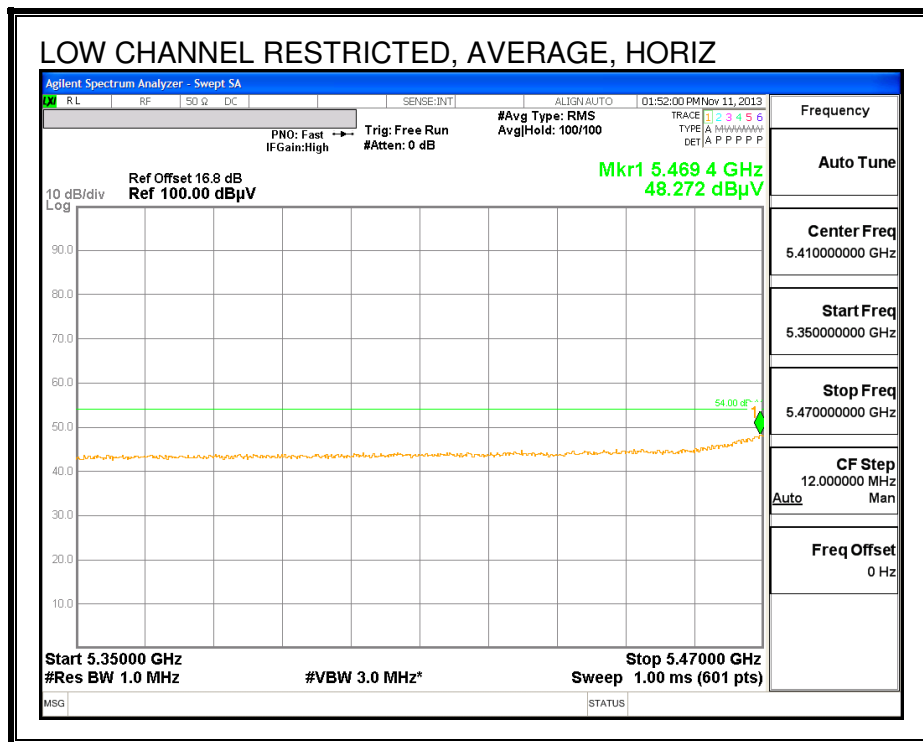
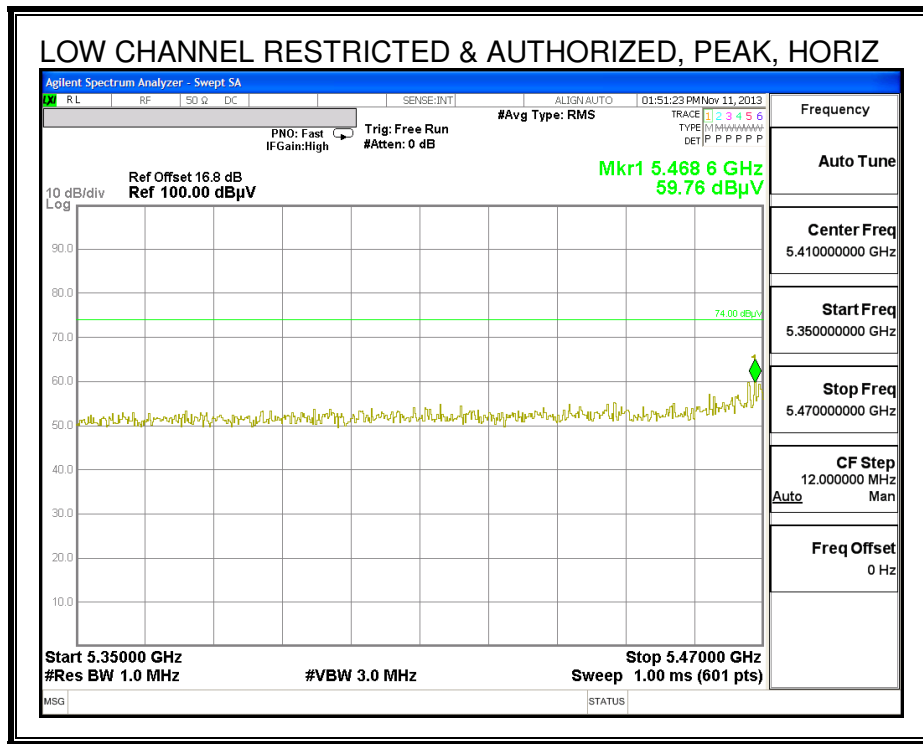
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

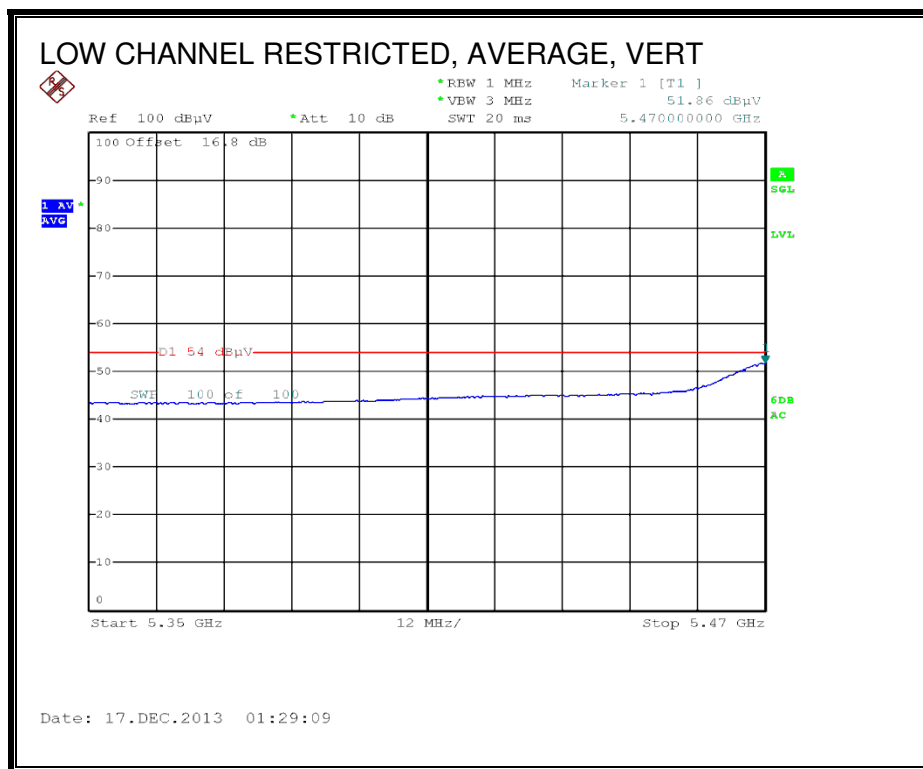
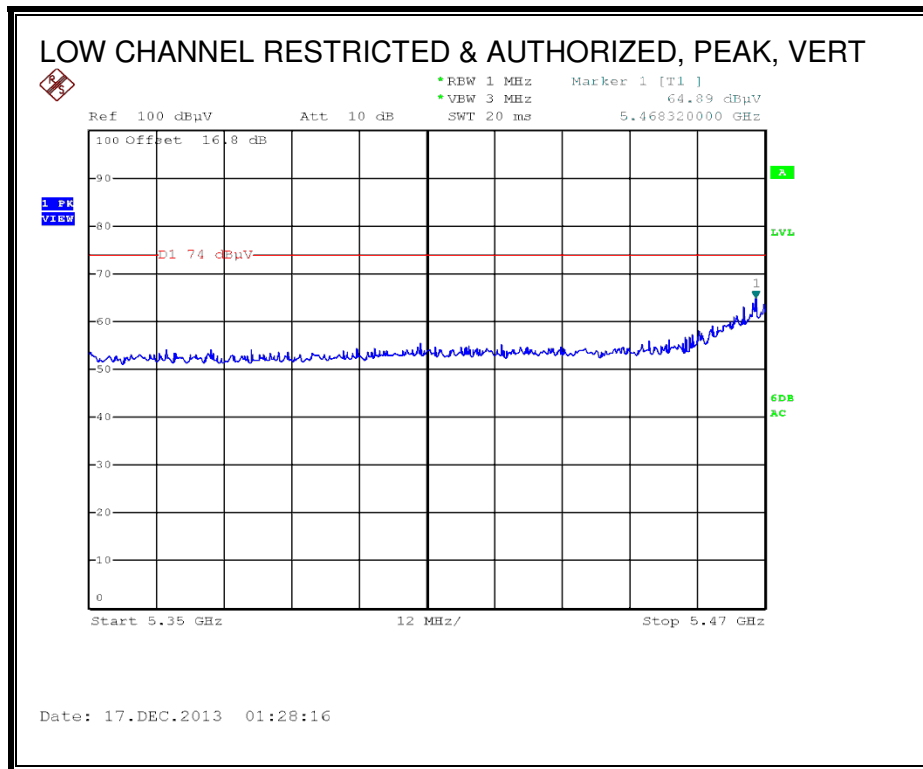
PK - Peak detector



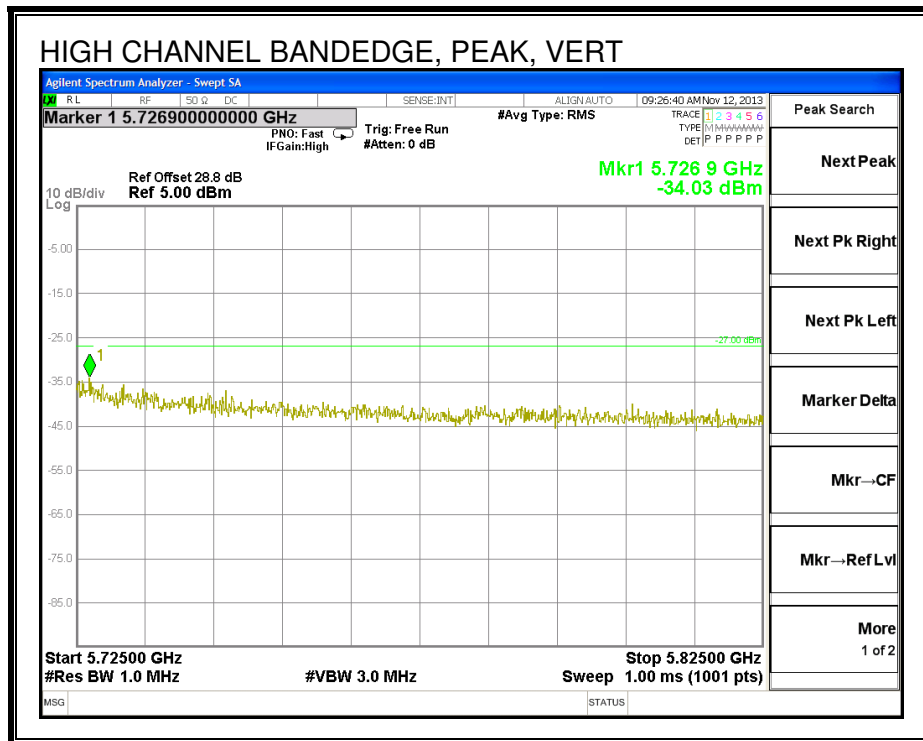
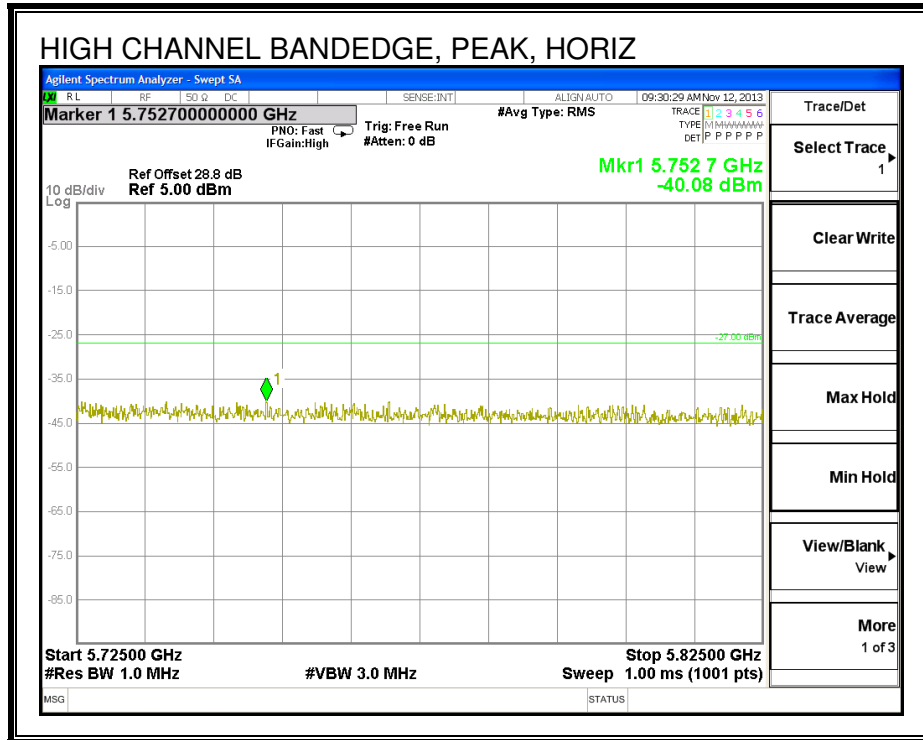
**9.2.11. 802.11n HT40 SISO MODE IN THE 5.6 GHz BAND**

**RESTRICTED BANDEDGE (LOW CHANNEL)**

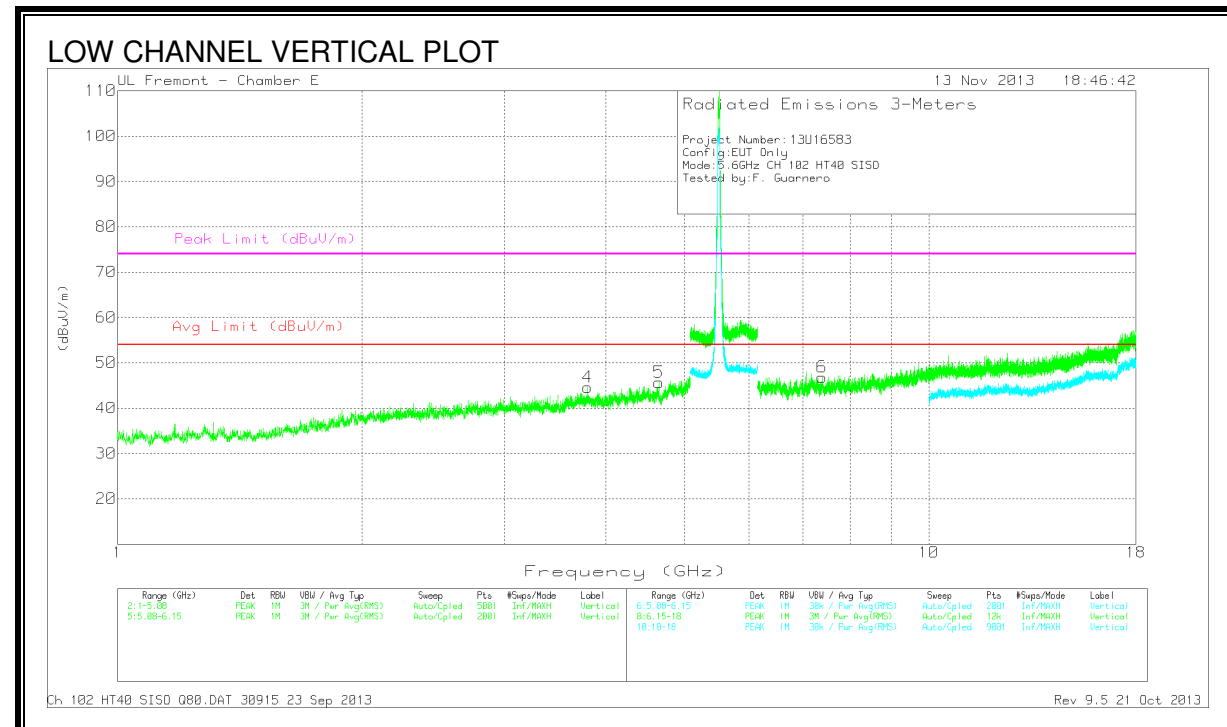
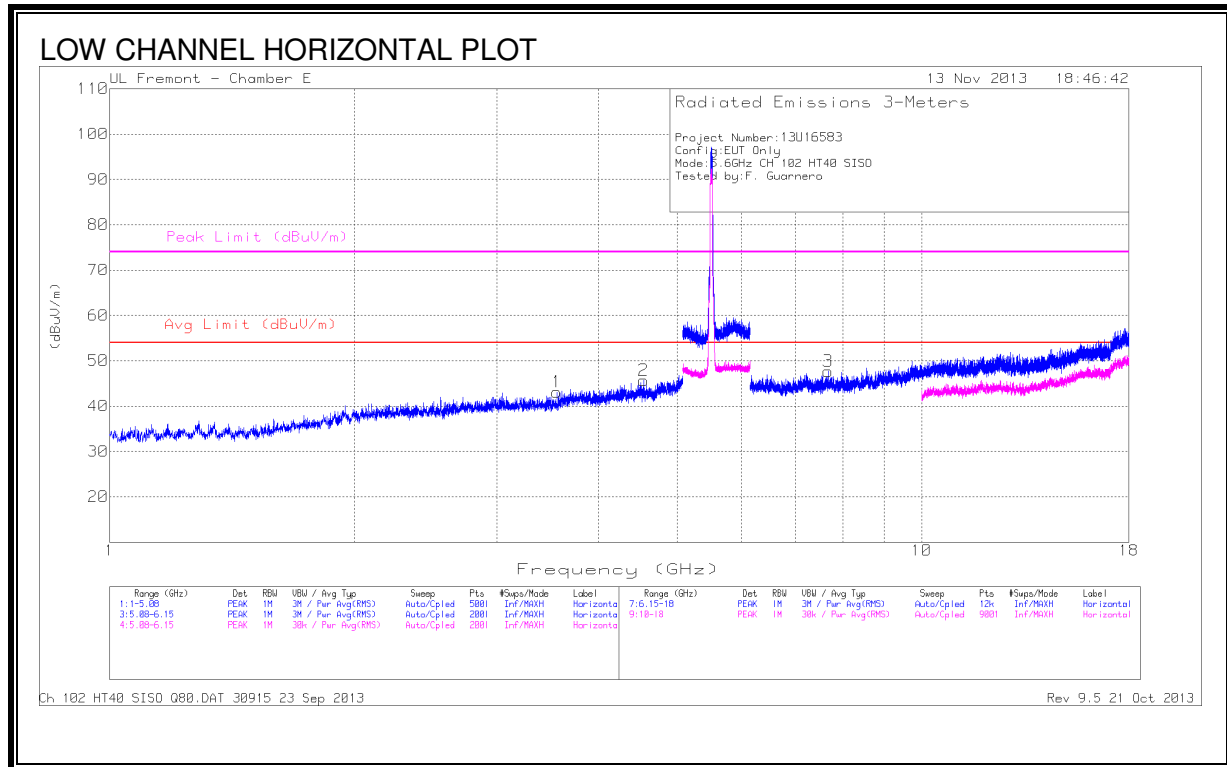




**RESTRICTED BANDEDGE (HIGH CHANNEL)**



**HARMONICS AND SPURIOUS EMISSIONS**

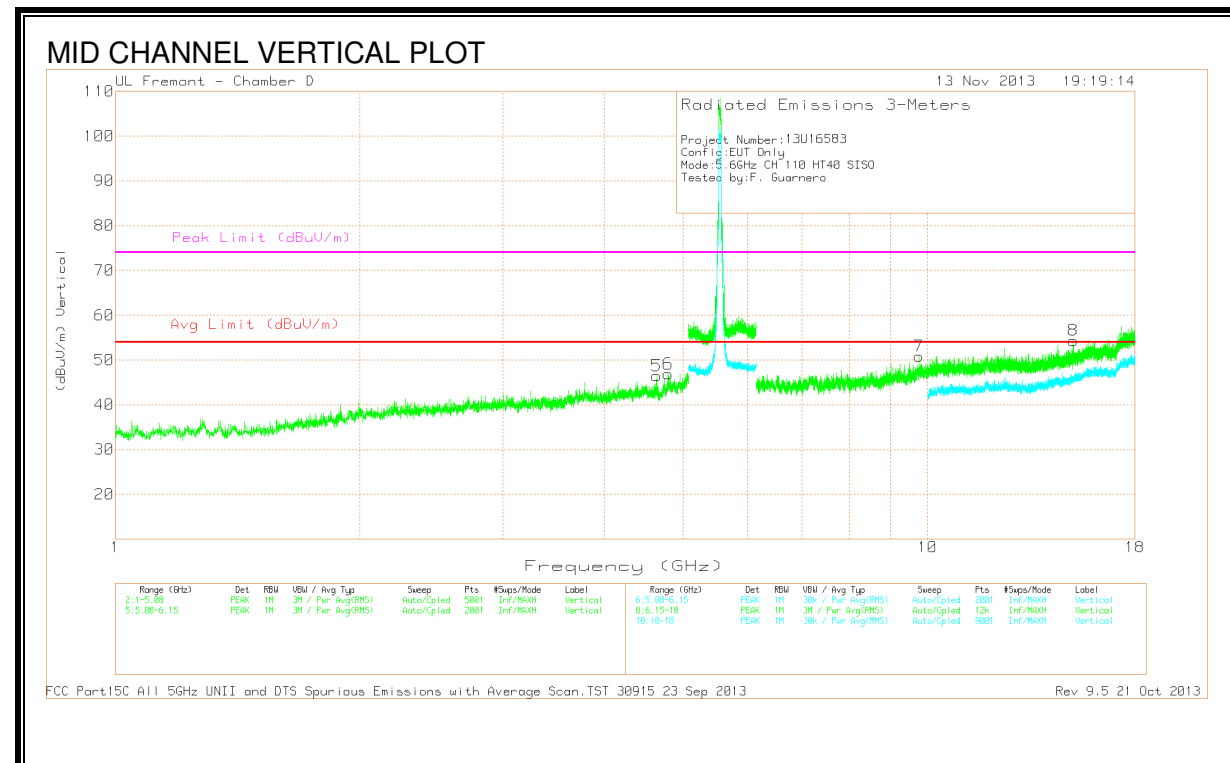
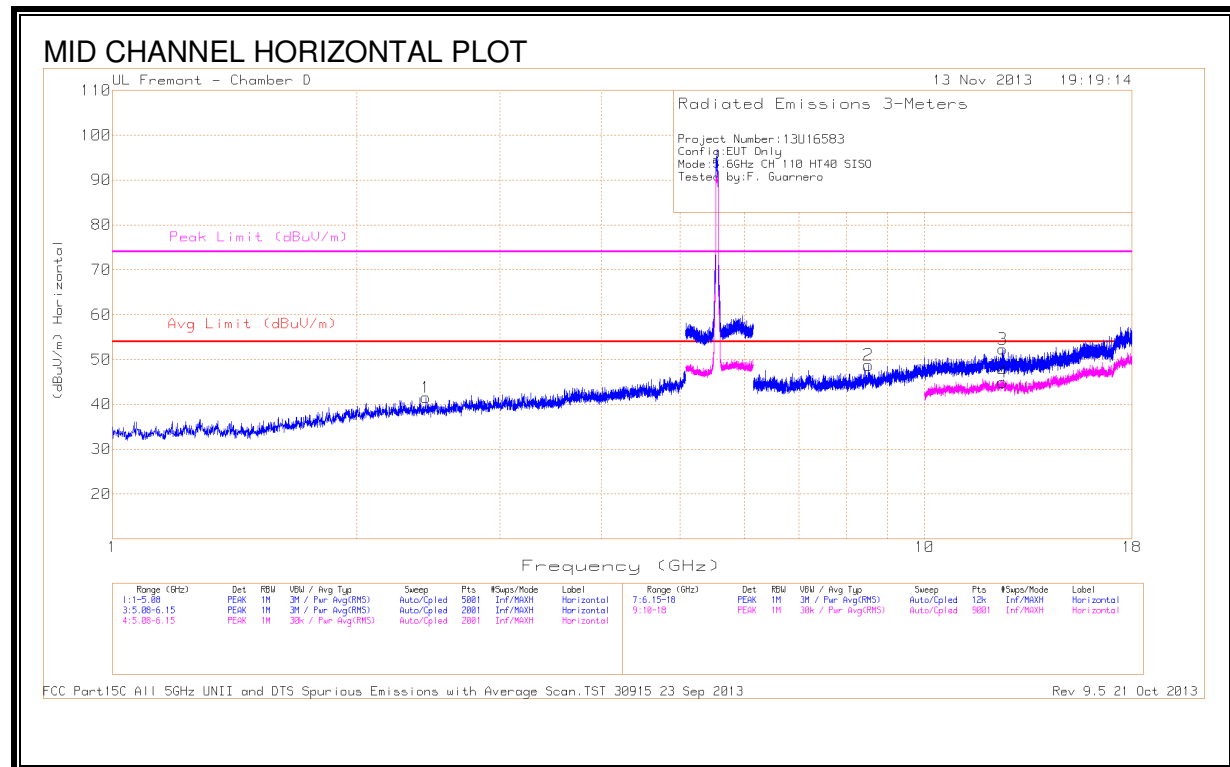


**DATA**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (db/m)	Amp/Cbl /Filtr/Pad	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.555	39.00	PK	33.4	-29.3	43.10	54	-10.90	74.0	-30.90	0-360	201	H
2	* 4.546	39.47	PK	34.2	-28.0	45.67	54	-8.33	74.0	-28.33	0-360	201	H
3	* 7.670	36.87	PK	36.0	-25.2	47.67	54	-6.33	74.0	-26.33	0-360	100	H
4	* 3.796	39.99	PK	33.8	-29.2	44.59	54	-9.41	74.0	-29.41	0-360	201	V
5	* 4.649	38.45	PK	34.3	-27.1	45.65	54	-8.35	74.0	-28.35	0-360	201	V
6	* 7.387	36.72	PK	35.9	-25.8	46.82	54	-7.18	74.0	-27.18	0-360	100	V

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

PK - Peak detector



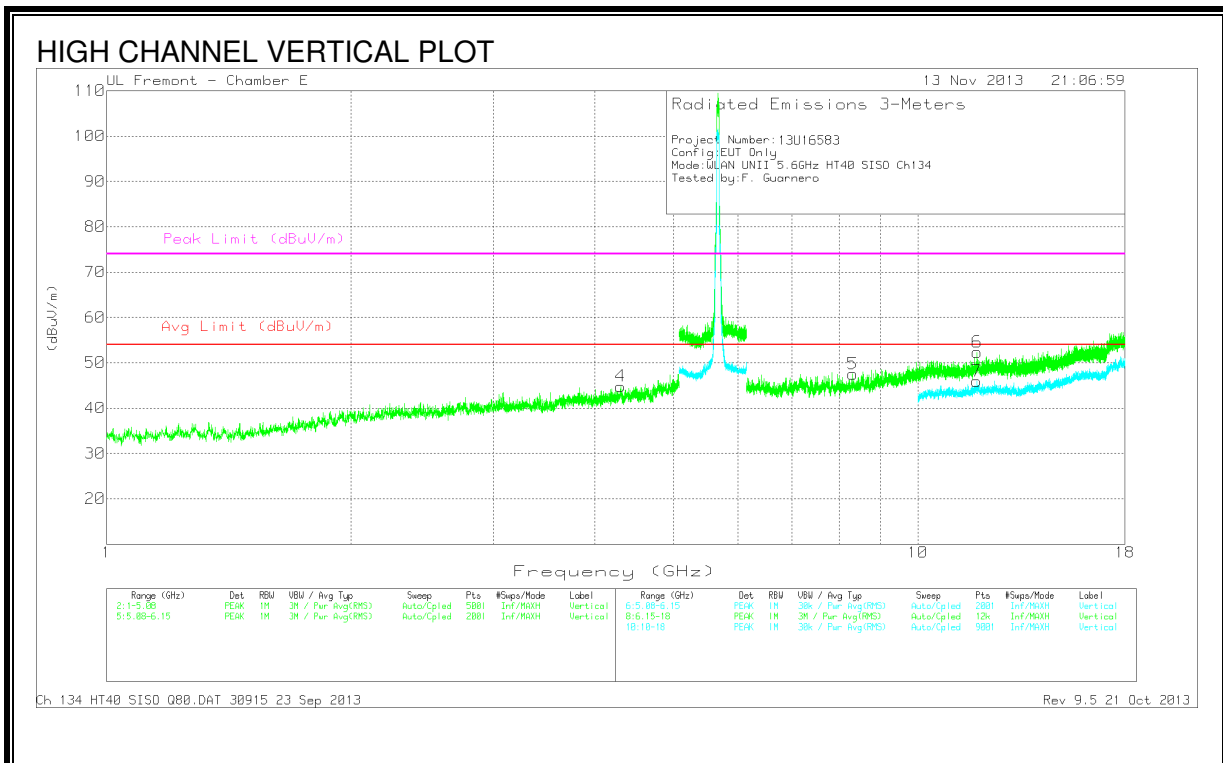
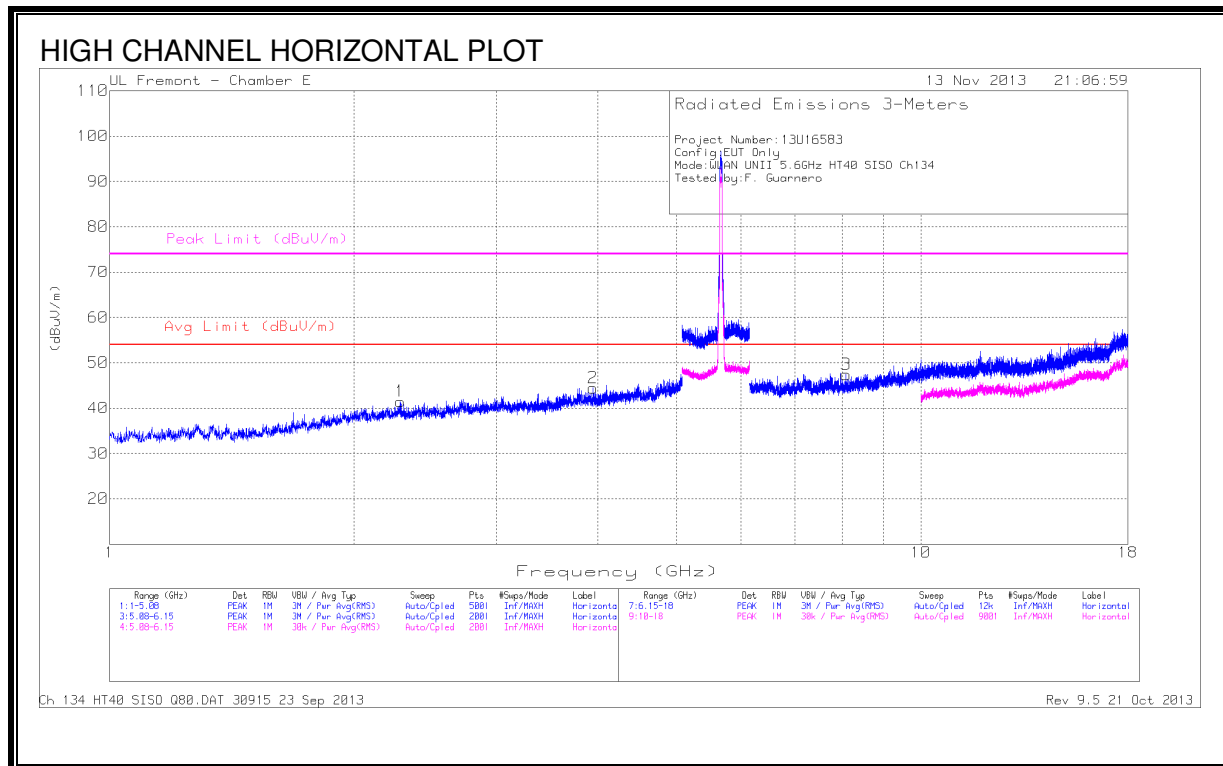
**DATA**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (db/m)	Amp/Cbl /Fitr/Pad	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.432	39.74	PK	32.4	-30.6	41.54	-	-	68.2	-26.66	0-360	100	H
2	8.526	36.05	PK	36.2	-23.5	48.75	-	-	68.2	-19.45	0-360	100	H
3	* 12.476	35.19	PK	39.2	-22.1	52.29	-	-	74.0	-21.71	0-360	201	H
4	* 12.476	27.85	Avg	39.2	-22.1	44.95	54	-9.05	-	-	0-360	200	H
5	* 4.639	39.30	PK	34.3	-27.1	46.50	54	-7.50	74.0	-27.50	0-360	201	V
6	* 4.792	39.82	PK	34.4	-27.3	46.92	54	-7.08	74.0	-27.08	0-360	201	V
7	9.756	35.88	PK	37.4	-22.4	50.88	-	-	68.2	-17.32	0-360	100	V
8	15.113	37.19	PK	40.1	-22.9	54.39	-	-	68.2	-13.81	0-360	100	V

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

PK - Peak detector

Avg - Video bandwidth < Resolution bandwidth





**DATA**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (db/m)	Amp/Cbl /Filtr/Pad	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.283	39.77	PK	32.4	-30.7	41.47	54	-12.53	74.0	-32.53	0-360	200	H
2	* 3.943	39.65	PK	33.8	-29	44.45	54	-9.55	74.0	-29.55	0-360	200	H
3	* 8.087	36.92	PK	36.0	-25.5	47.42	54	-6.58	74.0	-26.58	0-360	100	H
4	* 4.302	38.81	PK	34.0	-28	44.81	54	-9.19	74.0	-29.19	0-360	100	V
5	* 8.314	36.03	PK	36.1	-24.6	47.53	54	-6.47	74.0	-26.47	0-360	100	V
6	* 11.833	34.44	PK	39.0	-21.1	52.34	-	-	74.0	-21.66	0-360	100	V
7	* 11.833	28.17	Avg	39.0	-21.2	45.97	54	-8.03	-	-	0-360	201	V

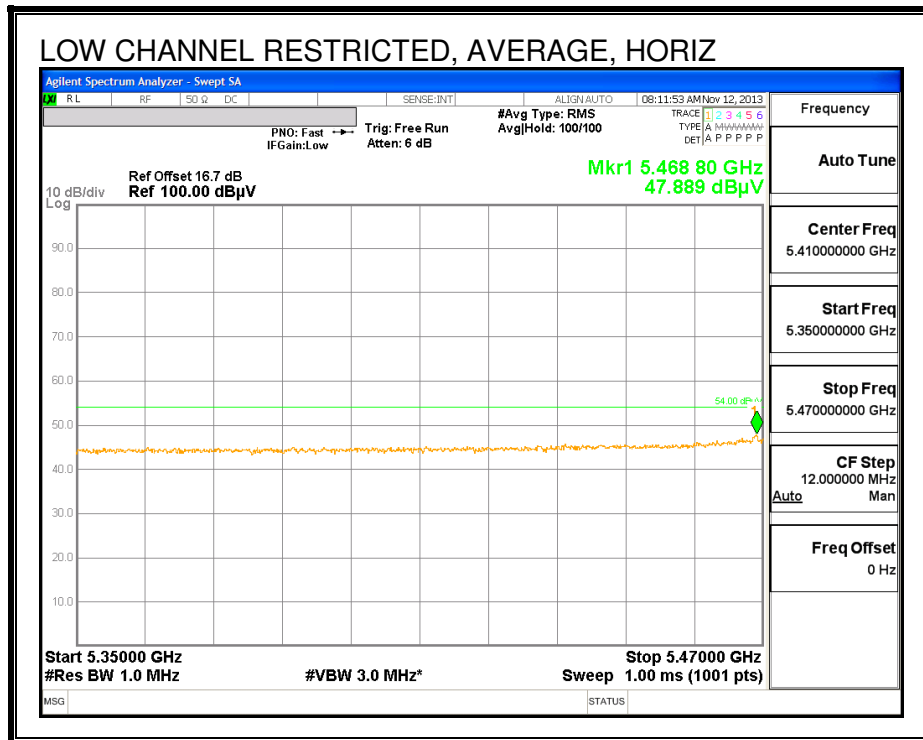
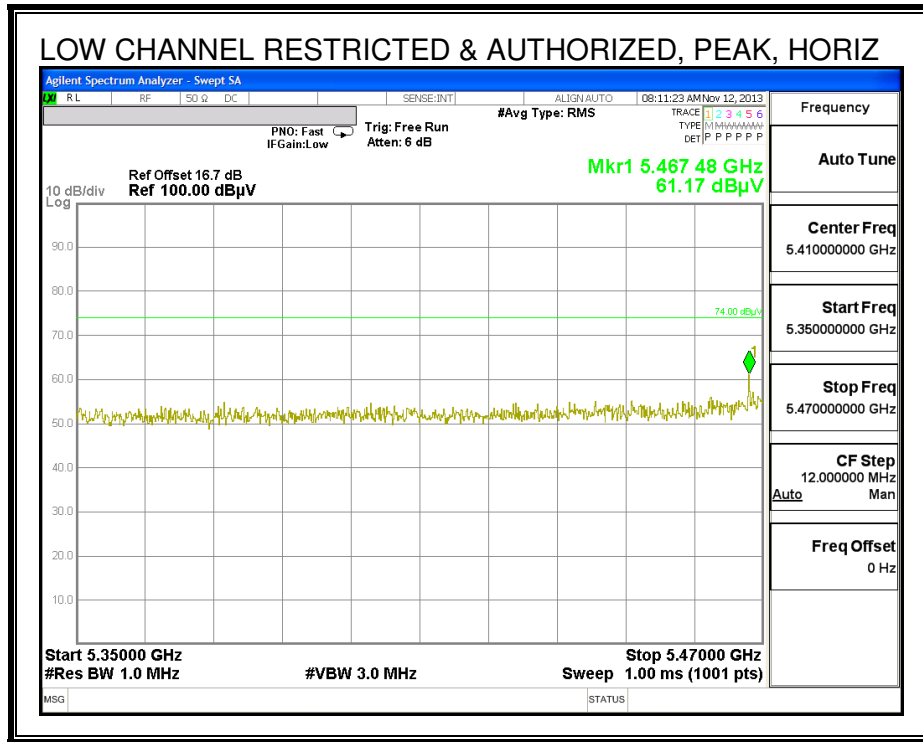
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

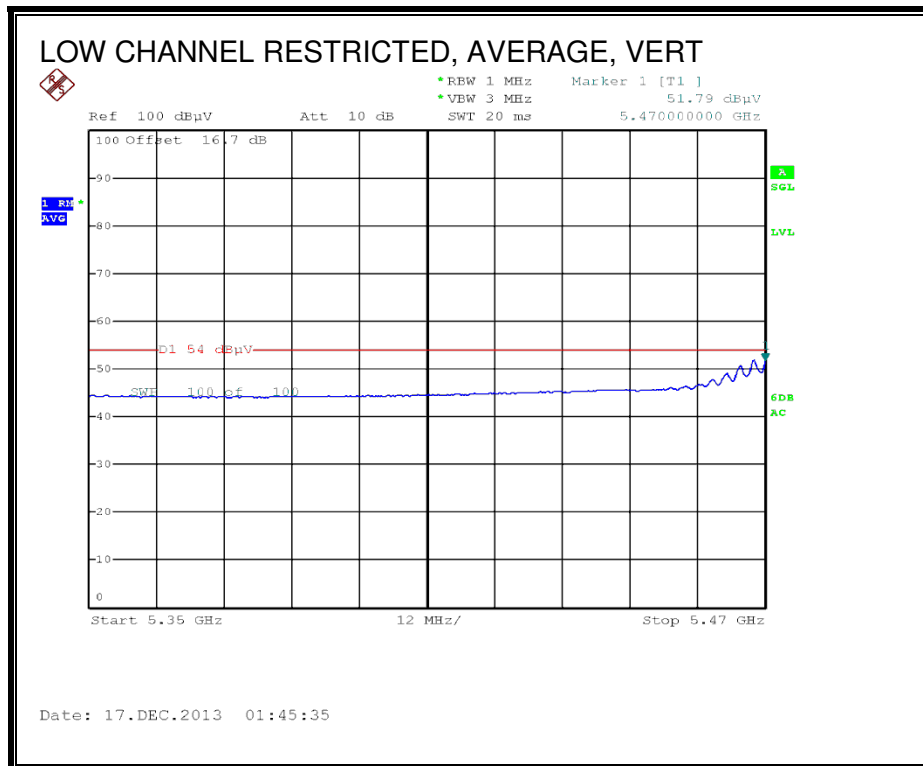
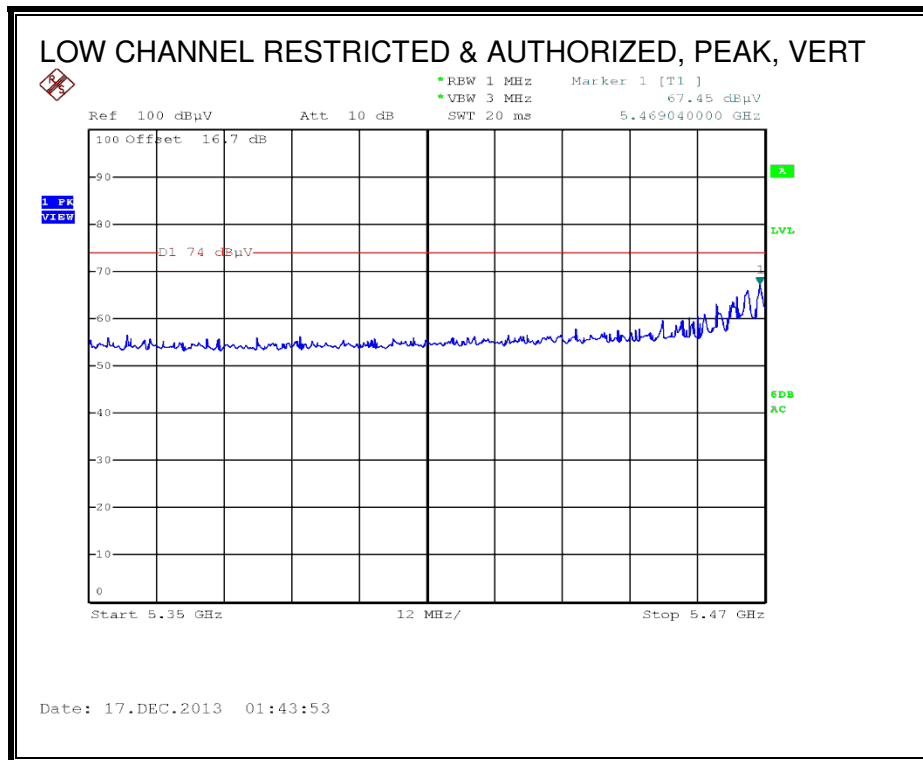
PK - Peak detector

Avg - Video bandwidth < Resolution bandwidth

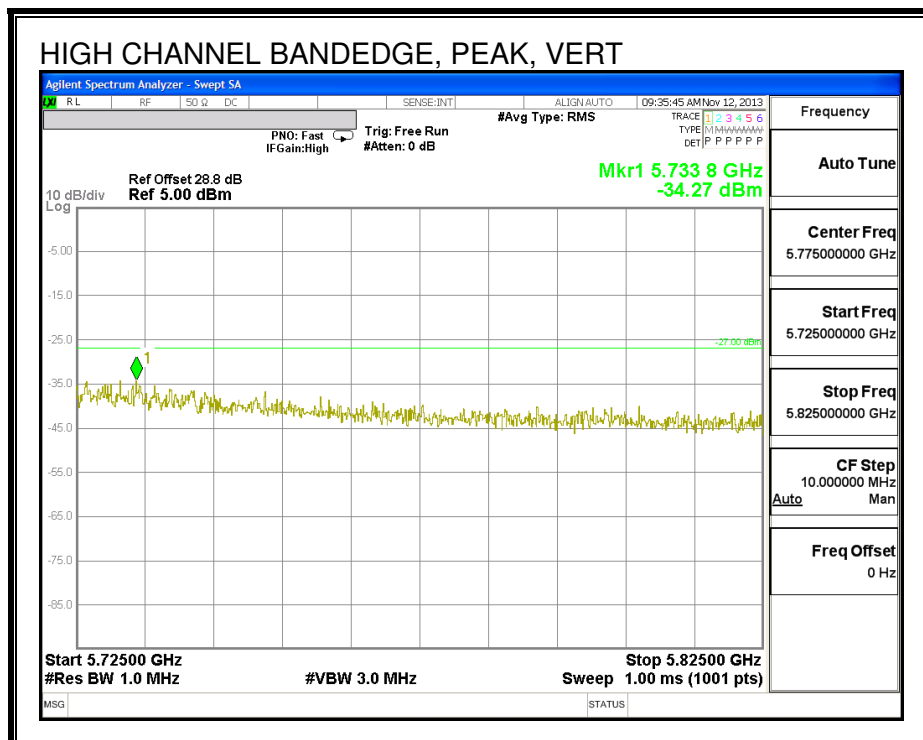
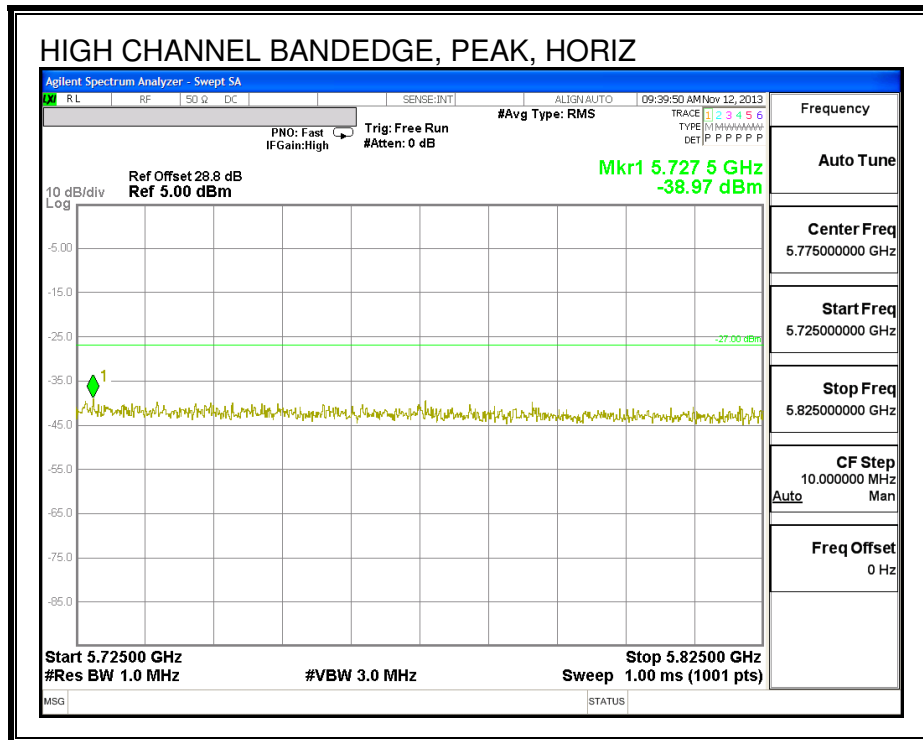
**9.2.12. 802.11n HT40 2TX CDD MODE IN THE 5.6 GHz BAND**

**RESTRICTED BANDEDGE (LOW CHANNEL)**

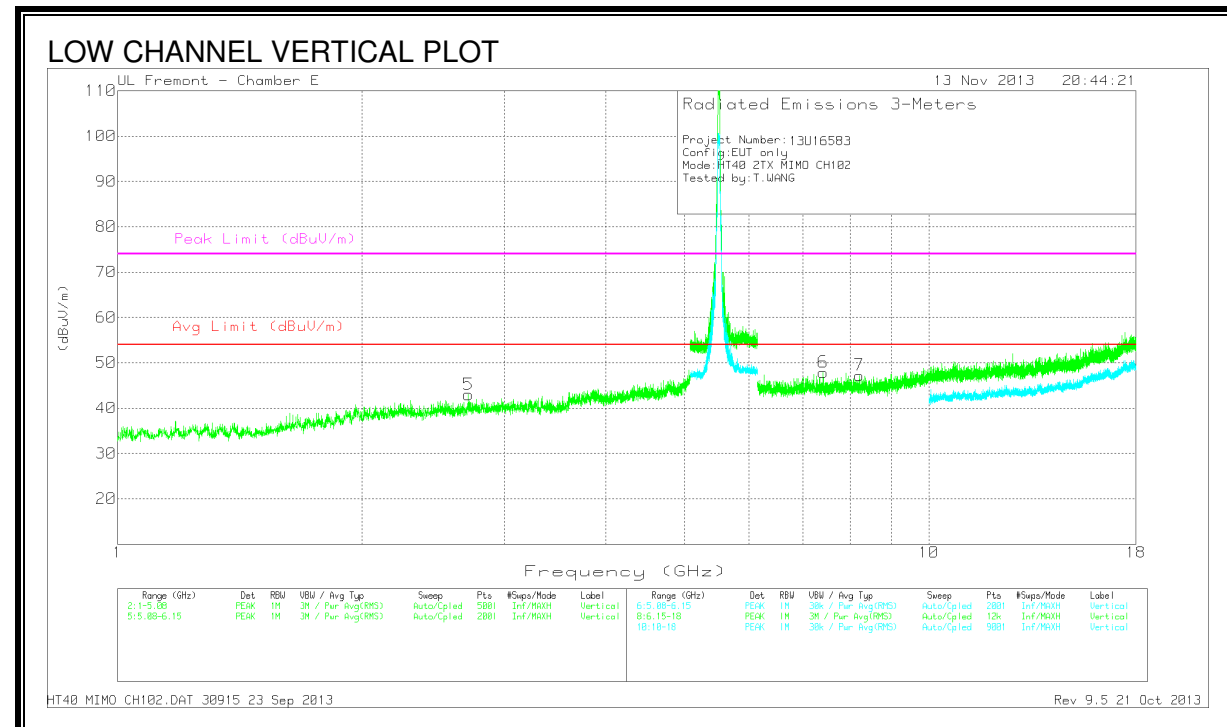
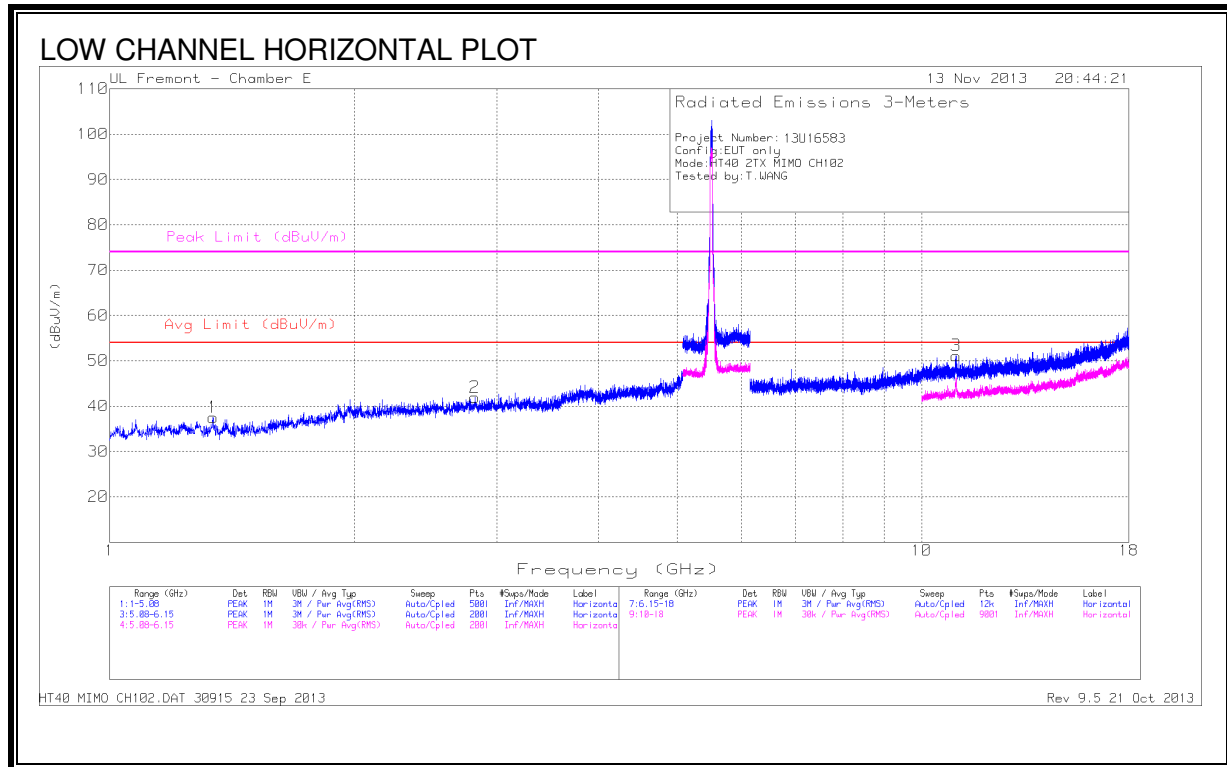




**RESTRICTED BANDEDGE (HIGH CHANNEL)**



**HARMONICS AND SPURIOUS EMISSIONS**



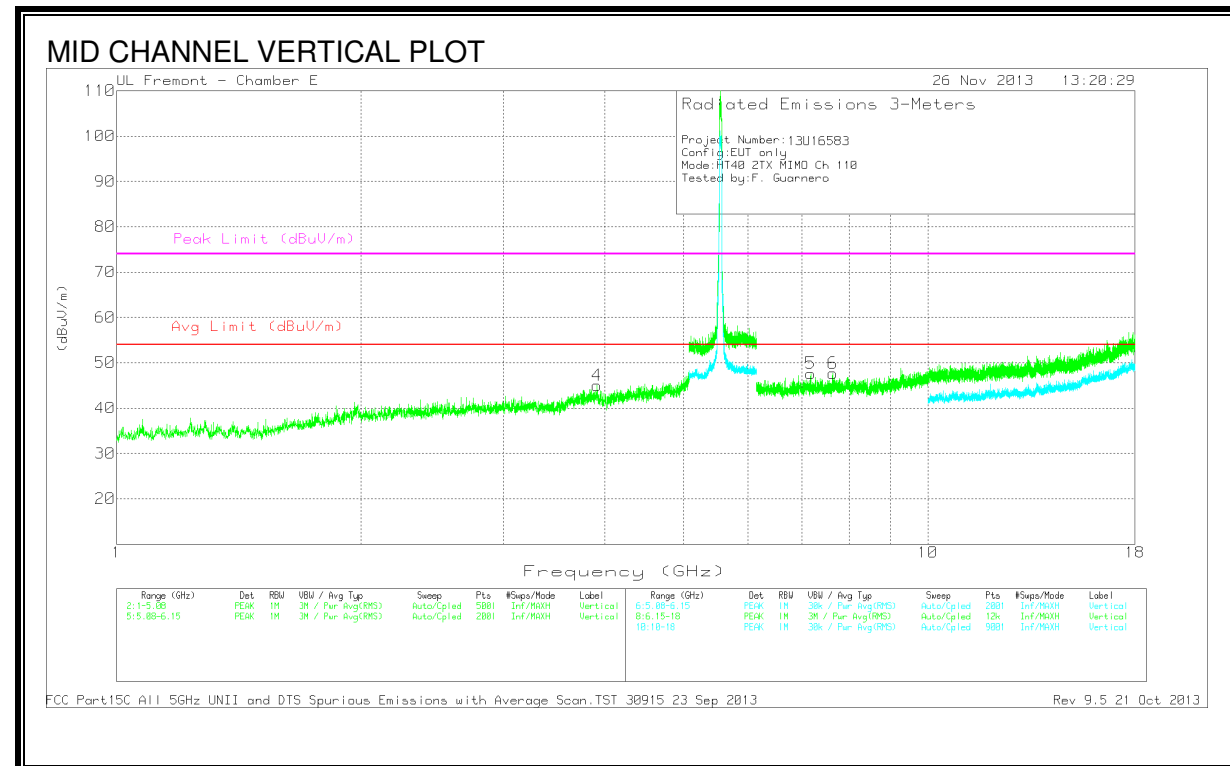
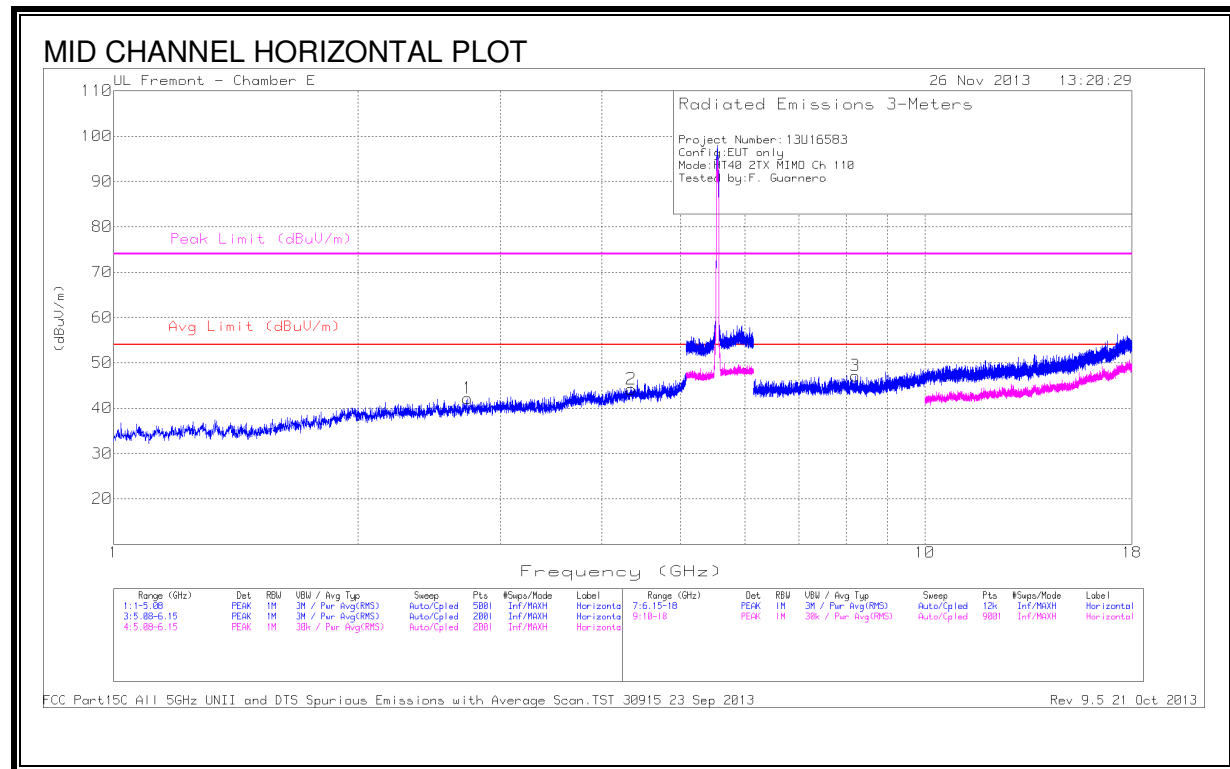
**DATA**

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	* 1.341	42.72	PK	29.1	-34.3	37.52	54	-16.48	74.0	-36.48	0-360	199	H
2	* 2.817	41.22	PK	33.2	-32.5	41.92	54	-12.08	74.0	-32.08	0-360	199	H
3	* 11.030	37.4	PK	38.5	-24.8	51.10	-	-	74.0	-22.9	0-360	100	H
4	* 11.030	32.64	Avg	38.5	-24.9	46.24	54	-7.76	74.0	-	0-360	100	H
5	* 2.706	42.49	PK	33.1	-32.6	42.99	54	-11.01	74.0	-31.01	0-360	100	V
6	* 7.410	39.91	PK	36.1	-28.1	47.91	54	-6.09	74.0	-26.09	0-360	100	V
7	* 8.211	38.94	PK	36.2	-27.9	47.24	54	-6.76	74.0	-26.76	0-360	199	V

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

PK - Peak detector

Avg - Video bandwidth < Resolution bandwidth



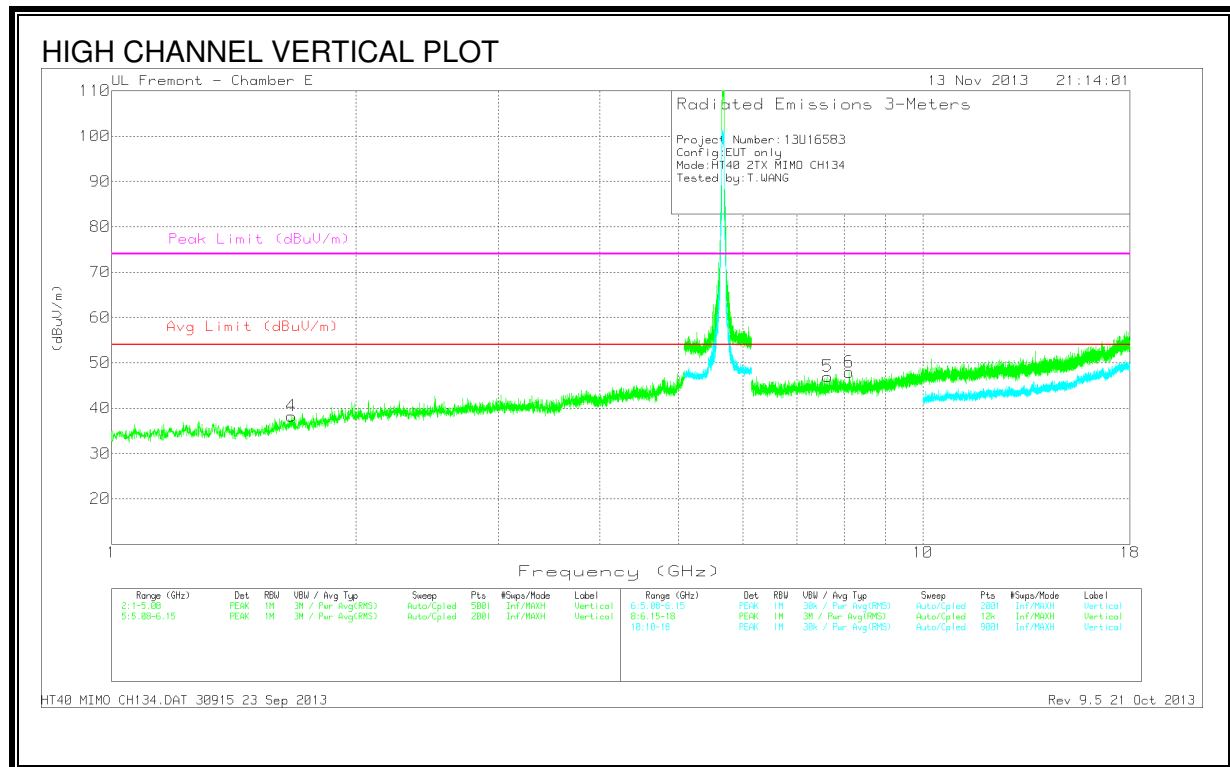
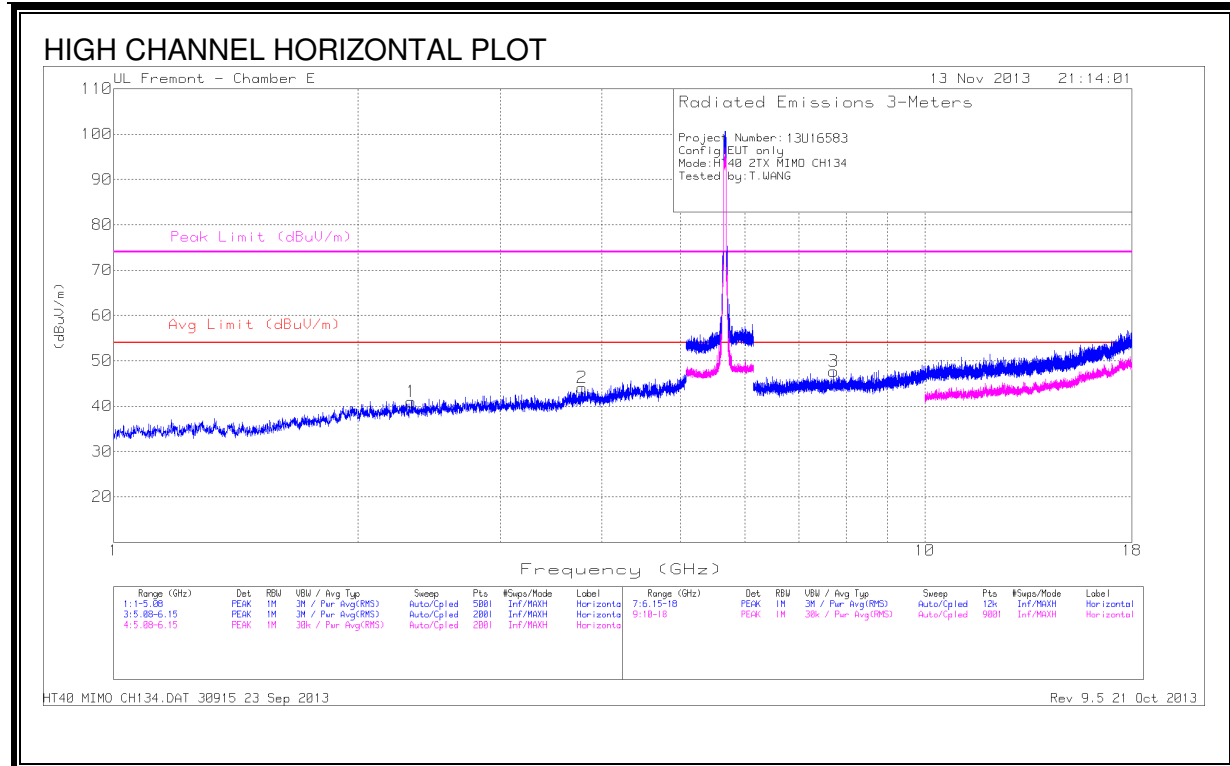
**DATA**

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	* 2.732	41.56	PK	33.2	-32.6	42.16	54	-11.84	74.0	-31.84	0-360	199	H
2	* 4.346	40.97	PK	34.1	-30.9	44.17	54	-9.83	74.0	-29.83	0-360	100	H
4	* 3.911	42.19	PK	33.8	-31.0	44.99	54	-9.01	74.0	-29.01	0-360	199	V
3	* 8.209	38.81	PK	36.2	-27.9	47.11	54	-6.89	74.0	-26.89	0-360	100	H
5	7.172	40.43	PK	36.0	-28.8	47.63	-	-	68.2	-20.57	0-360	100	V
6	* 7.637	39.66	PK	36.2	-28.2	47.66	54	-6.34	74.0	-26.34	0-360	100	V

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

PK - Peak detector





**DATA**

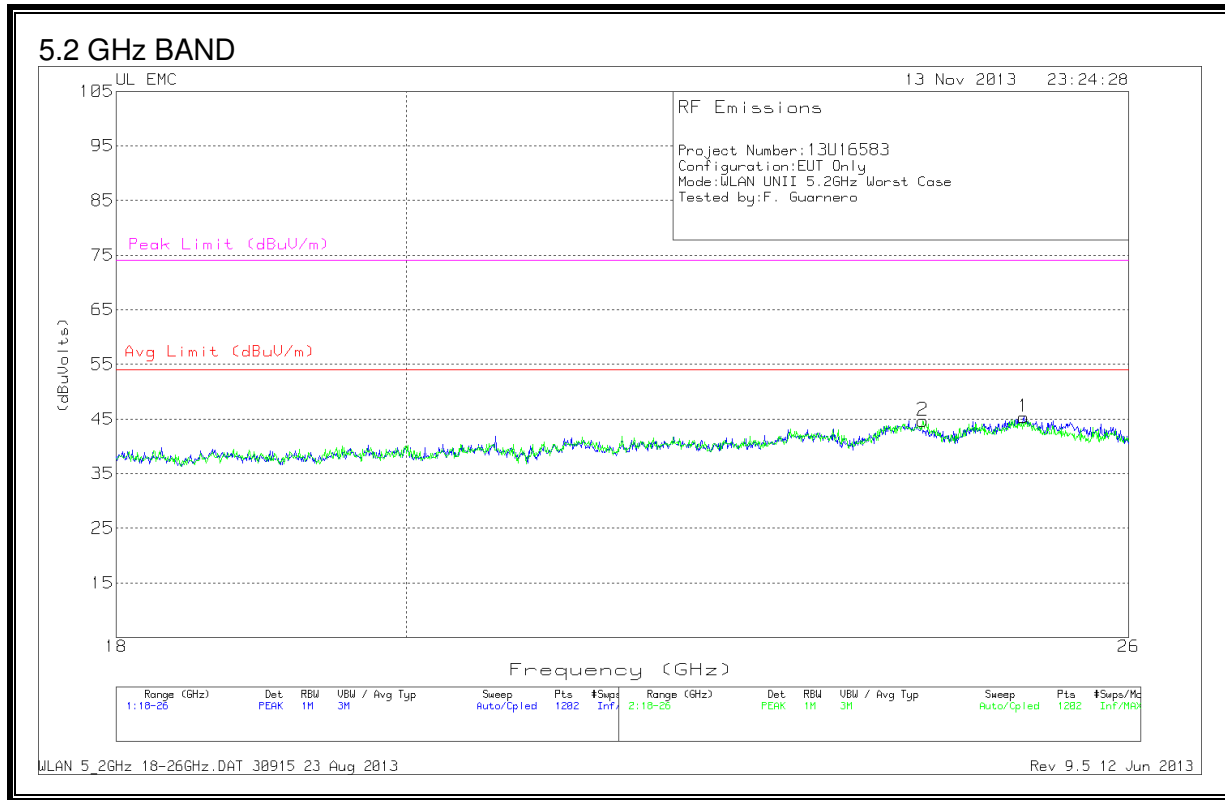
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl /5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.328	42.18	PK	32.5	-33.7	40.98	54	-13.02	74.0	-33.02	0-360	100	H
2	* 3.780	42.57	PK	33.7	-32.2	44.07	54	-9.93	74.0	-29.93	0-360	199	H
4	* 1.666	41.87	PK	29.9	-33.5	38.27	54	-15.73	74.0	-35.73	0-360	199	V
3	* 7.721	39.90	PK	36.2	-28.4	47.70	54	-6.30	74.0	-26.30	0-360	199	H
5	* 7.635	38.97	PK	36.2	-28.2	46.97	54	-7.03	74.0	-27.03	0-360	199	V
6	* 8.110	39.55	PK	36.2	-27.8	47.95	54	-6.05	74.0	-26.05	0-360	100	V

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

PK - Peak detector

### 9.3. WORST-CASE ABOVE 18 GHz

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

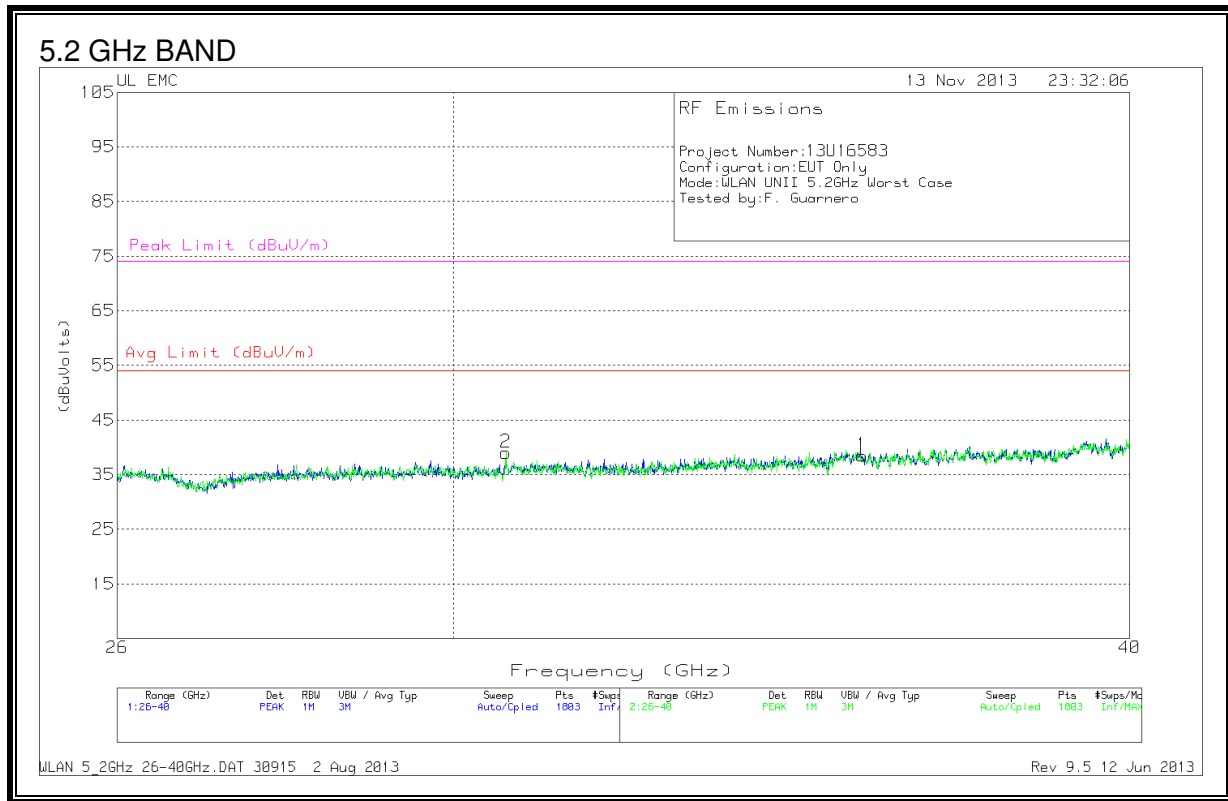


#### DATA

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	25.027	43.63	PK	34.1	-22.9	-9.5	45.333	54	-8.667	74	-28.667
2	24.128	43.47	PK	33.4	-22.7	-9.5	44.667	54	-9.333	74	-29.333

PK - Peak detector

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

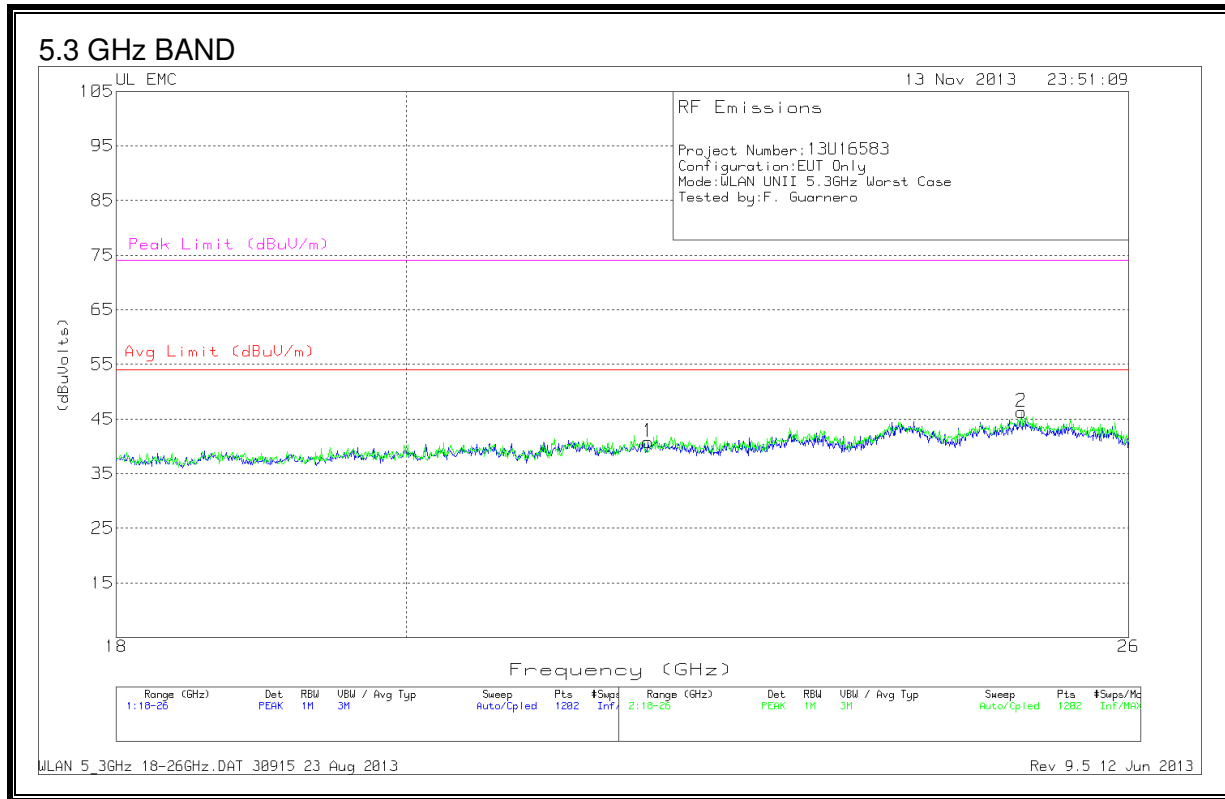


**DATA**

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	35.696	48.5	PK	37.4	-37.9	-9.5	38.5	54	-15.5	74	-35.5
2	30.677	47.9	PK	36.1	-35.5	-9.5	39.0	54	-15.0	74	-35

PK - Peak detector

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

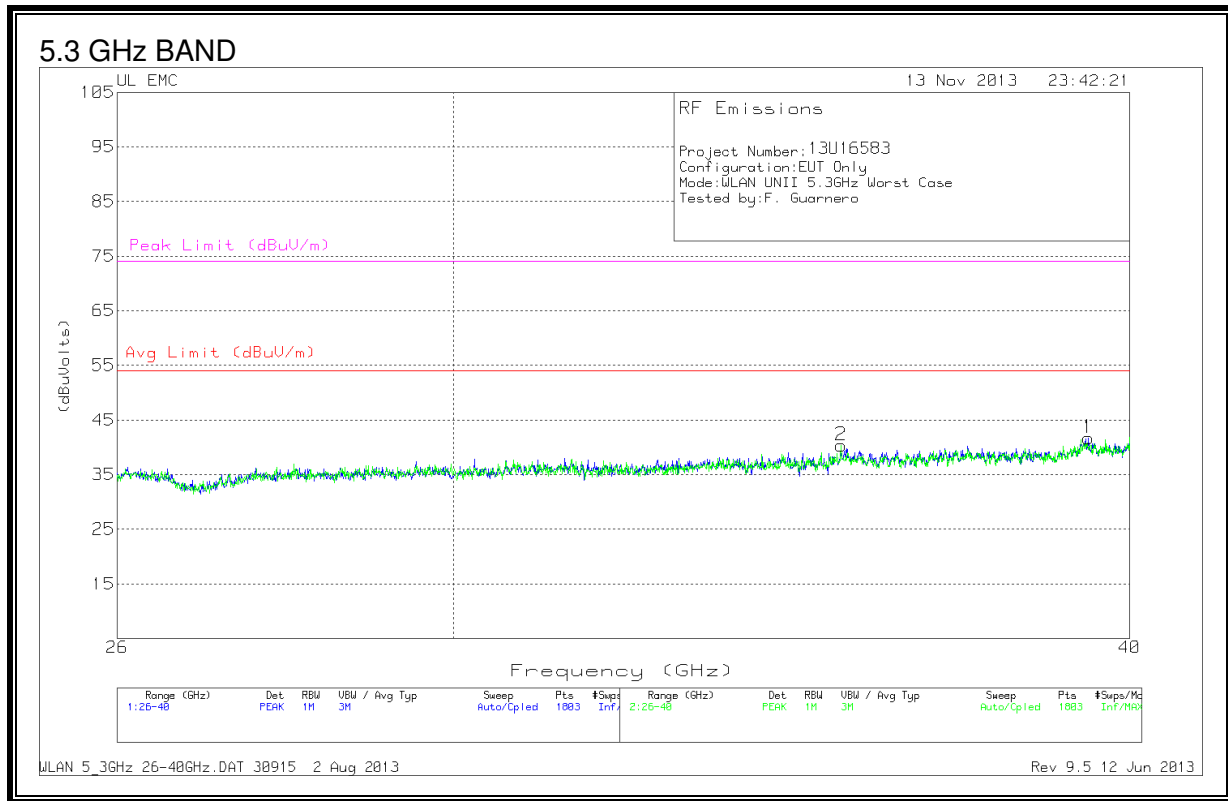


**DATA**

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	21.837	41.13	PK	33.3	-24.1	-9.5	40.833	54	-13.167	74	-33.167
2	25.007	44.53	PK	34.2	-22.9	-9.5	46.333	54	-7.667	74	-27.667

PK - Peak detector

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

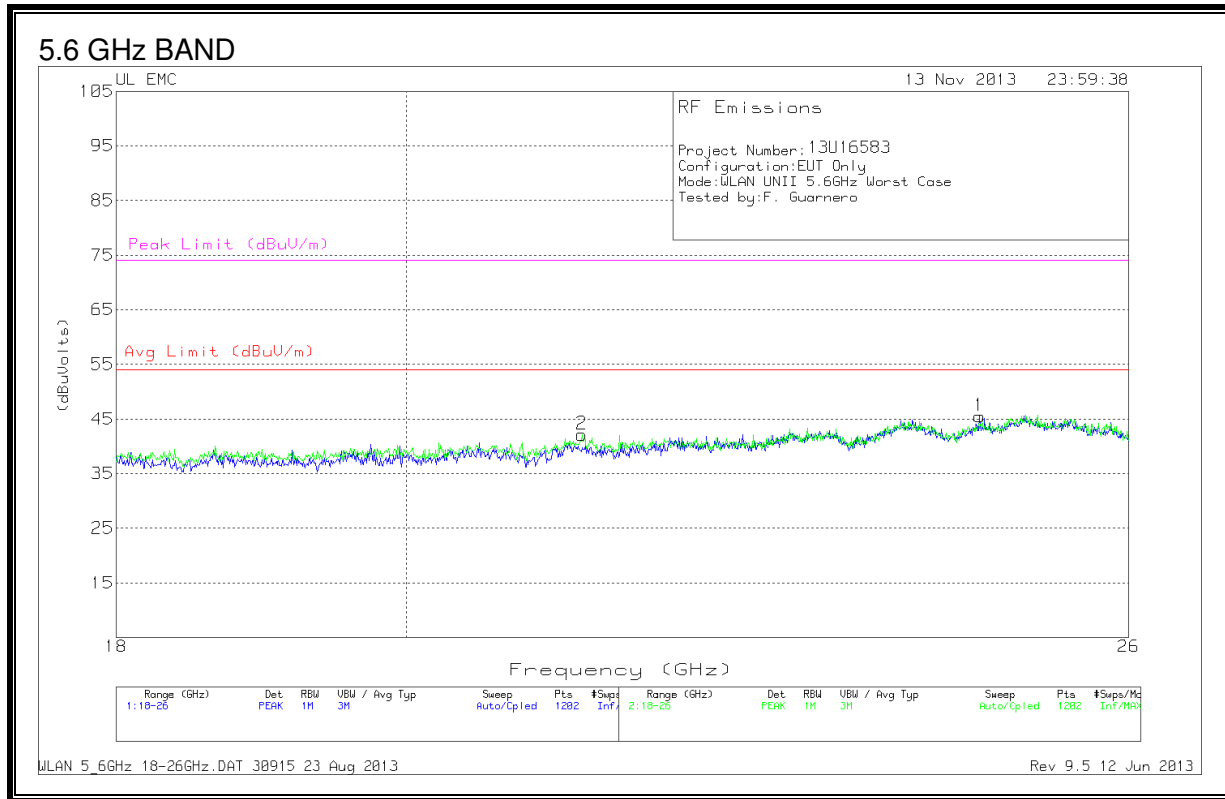


**DATA**

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	39.301	49.27	PK	38.3	-36.4	-9.5	41.667	54	-12.333	74	-32.333
2	35.377	49.93	PK	37.8	-37.9	-9.5	40.337	54	-13.663	74	-33.667

PK - Peak detector

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

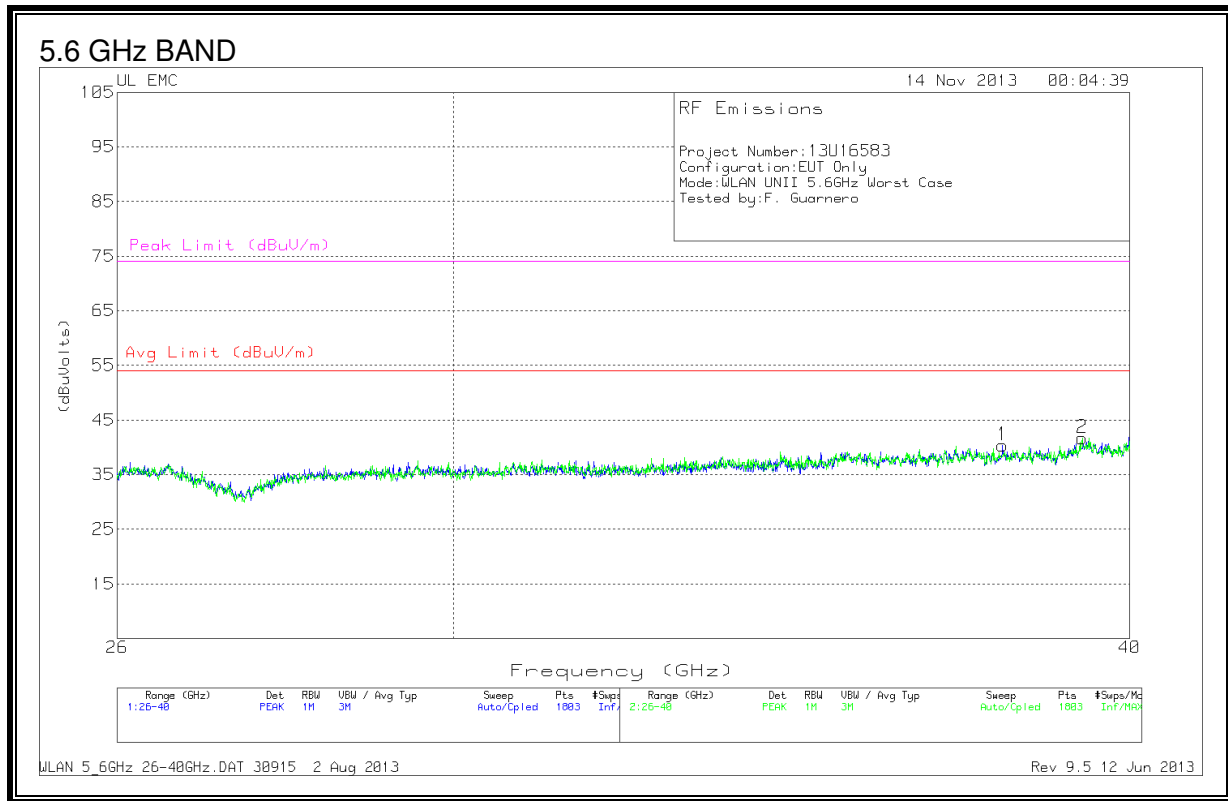


**DATA**

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	24.628	43.90	PK	33.9	-22.8	-9.5	45.5000	54	-8.500	74	-28.5
2	21.317	42.27	PK	33.2	-23.8	-9.5	42.1667	54	-11.833	74	-31.833

PK - Peak detector

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



**DATA**

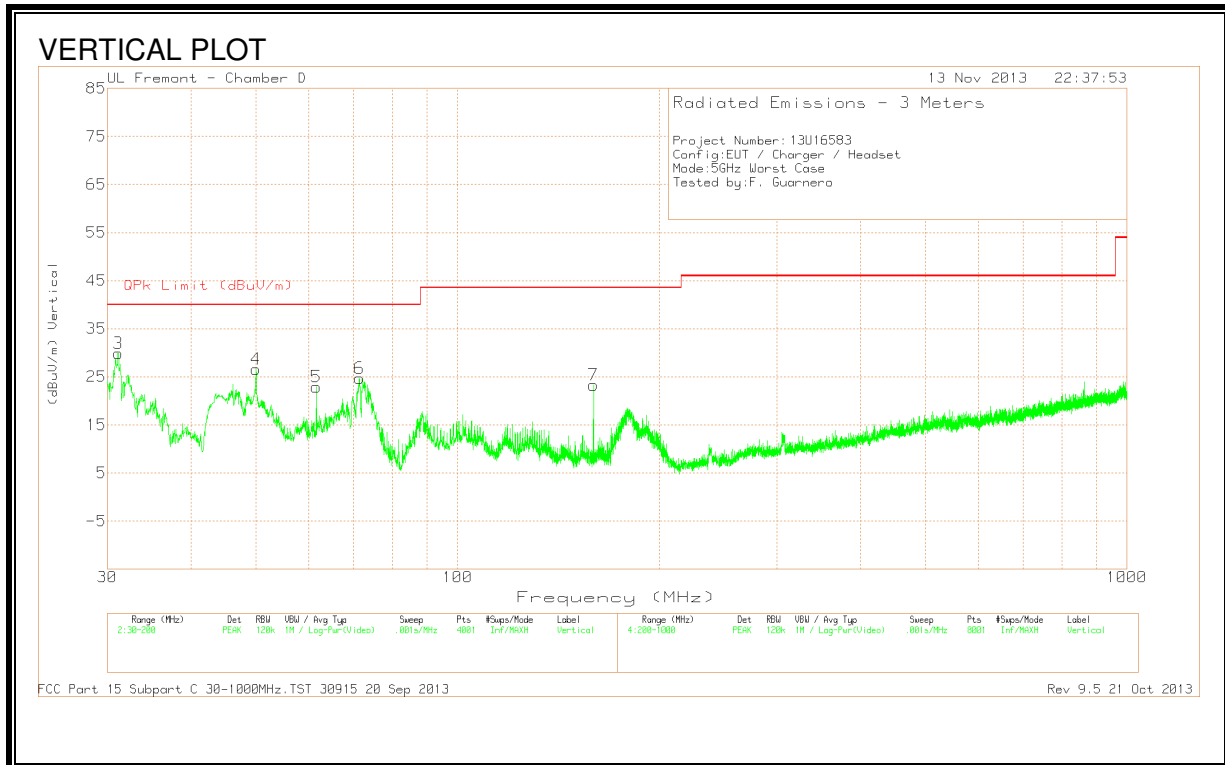
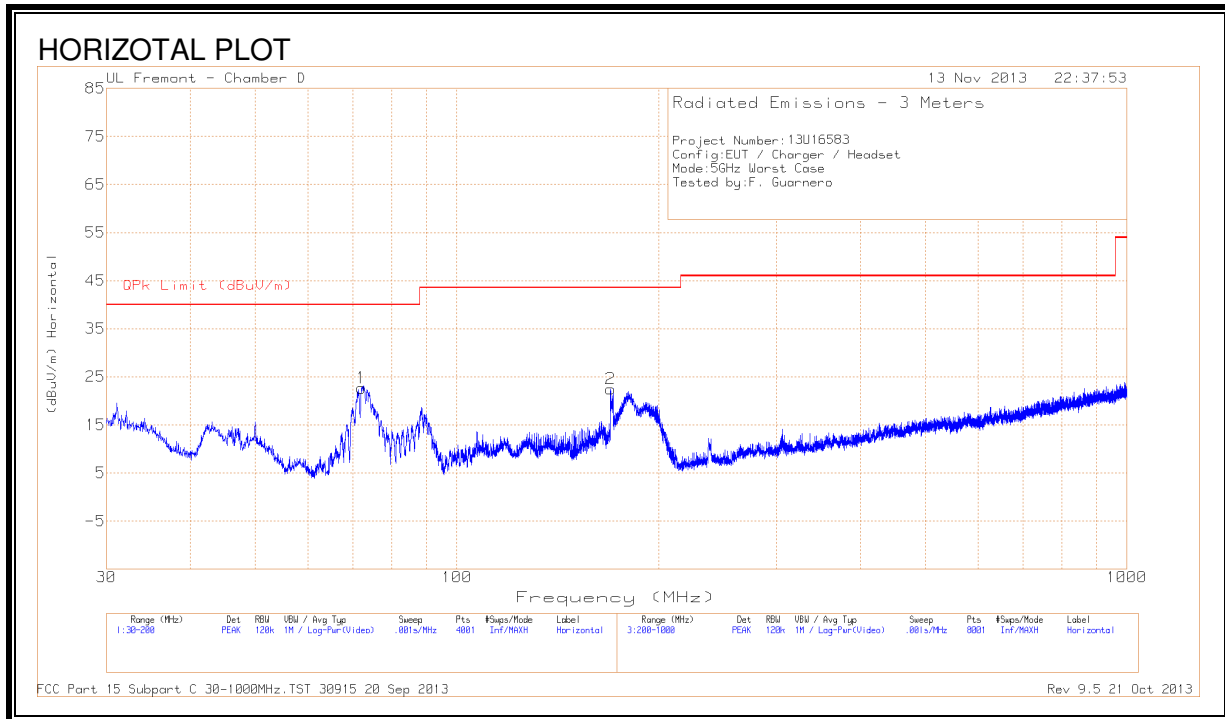
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T90 AF (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuVolts)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	37.895	50.13	PK	37.1	-37.4	-9.5	40.333	54	-13.667	74	-33.667
2	39.200	48.87	PK	38.3	-36.0	-9.5	41.667	54	-12.333	74	-32.333

PK - Peak detector



### 9.4. WORST-CASE BELOW 1 GHz

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



**DATA**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T407 dB/m	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarit y
1	72.075	46.07	PK	8.4	-31.8	22.67	40.00	-17.33	200	H
2	169.570	41.99	PK	11.8	-31.3	22.49	43.52	-21.03	98	H
3	31.1475	41.58	PK	20.4	-32.1	29.88	40.00	-10.12	100	V
4	50.0175	50.49	PK	8.0	-31.9	26.59	40.00	-13.41	100	V
5	61.535	47.1	PK	7.7	-31.9	22.9	40.00	-17.10	100	V
6	71.395	48.19	PK	8.3	-31.8	24.69	40.00	-15.31	100	V
7	159.625	42.4	PK	12.2	-31.3	23.3	43.52	-20.22	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: BCGA1490 and project number 15U21850-E30V2.

## **11. DYNAMIC FREQUENCY SELECTION**

Refer to the FCC UNII report with the FCC ID: BCGA1490 and project number 15U21850-E30V2.