FCC 47 CFR PART 15 SUBPART E
INDUSTRY CANADA RSS-210 ISSUE 8

CERTIFICATION TEST REPORT

FOR

HANDELD COMPUTING DEVICE

MODEL NUMBER: 1572

FCC ID: C3K1572
IC: 3048A-1572

REPORT NUMBER: 13U16702-2A

ISSUE DATE: FEBRUARY 12, 2014

Prepared for
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	1/29/14	Initial Issue	T. LEE
A	2/12/14	Updated section 2 with KDB 662911 referance and section 6 with above 18GHz test equipement.	D. GARCIA

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: MICROSOFT CORPORATION
ONE MICROSOFT WAY
REDMOND, WA 98052, U.S.A.

EUT DESCRIPTION: HANDHELD COMPUTING DEVICE

MODEL: 1572

SERIAL NUMBER: 008079434852

DATE TESTED: JANUARY 8, 2014 to JANUARY 29, 2014

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart E	Pass
INDUSTRY CANADA RSS-210 Issue 8 Annex 9	Pass
INDUSTRY CANADA RSS-GEN Issue 3	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:

TIM LEE
WiSE Program Manager
UL Verification Services Inc.

Tested By:

JOE VANG
EMC ENGINEER
UL Verification Services Inc.

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, FCC 06-96, FCC KDB 789033, FCC KDB 662911 v02r01, ANSI C63.10-2009, RSS-GEN Issue 3, and RSS-210 Issue 8.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

47173 Benicia Street	47266 Benicia Street
☒ Chamber A	☐ Chamber D
☐ Chamber B	☒ Chamber E
☐ Chamber C	☐ Chamber F

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

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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

The EUT is a handheld computing device with 802.11 a/b/g/n WLAN and Bluetooth radios.

5.2. MAXIMUM OUTPUT POWER

The measured average power values were within ± 0.5 dB of the original values. Refer to original report number “13U15414-4A” for exact output power values and for all antenna port results.

5.3. DESCRIPTION OF CLASS II PERMISSIVE CHANGE

The change filed under this application has the following changes.

- The reference oscillator type change from TXCO to simple Crystal, with the reference frequency stays the same and the new part pin for pin compatible with original.
- New PCB Layout with Different PCB stack up

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5.4. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an PIFA antenna, with a maximum gain of 3.2 dBi and 3.9 dBi in the 5 GHz band.

5.5. SOFTWARE AND FIRMWARE

The EUT driver software installed during testing was Window RT 8.1 Preview Build 943

The test utility software used during testing was Laptool 189.1.0.9.0\ WIFI Tool.exe

5.6. WORST-CASE CONFIGURATION AND MODE

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

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

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

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

Radiated emissions for EUT with antenna was performed and passed; therefore, antenna port spurious was not performed.

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5.7. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
USB Ethernet Adaptor	CISCO	USB 300M	CU90MC02233	DoC
Laptop	Lenovo	L420	7854CT0	DoC
AC Adaptor (laptop)	Lenovo	92P1156	111S92P1156ZDXN272091	N/A

I/O CABLES

I/O Cable List						
Cable No	**Port**	**# of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	AC	1	AC	Unshielded	1.8	AC adapter
2	USB	1	USB	Unshielded	0.1	USB to Ethernet adapter
3	DC	1	DC	Unshielded	1.8	
4	Ethernet	1	RJ 45	Unshielded	0.6	Connects to USB adapter

TEST SETUP

The EUT is a standalone wireless handheld computing device. Test software exercised the wireless module installed within the device under test.

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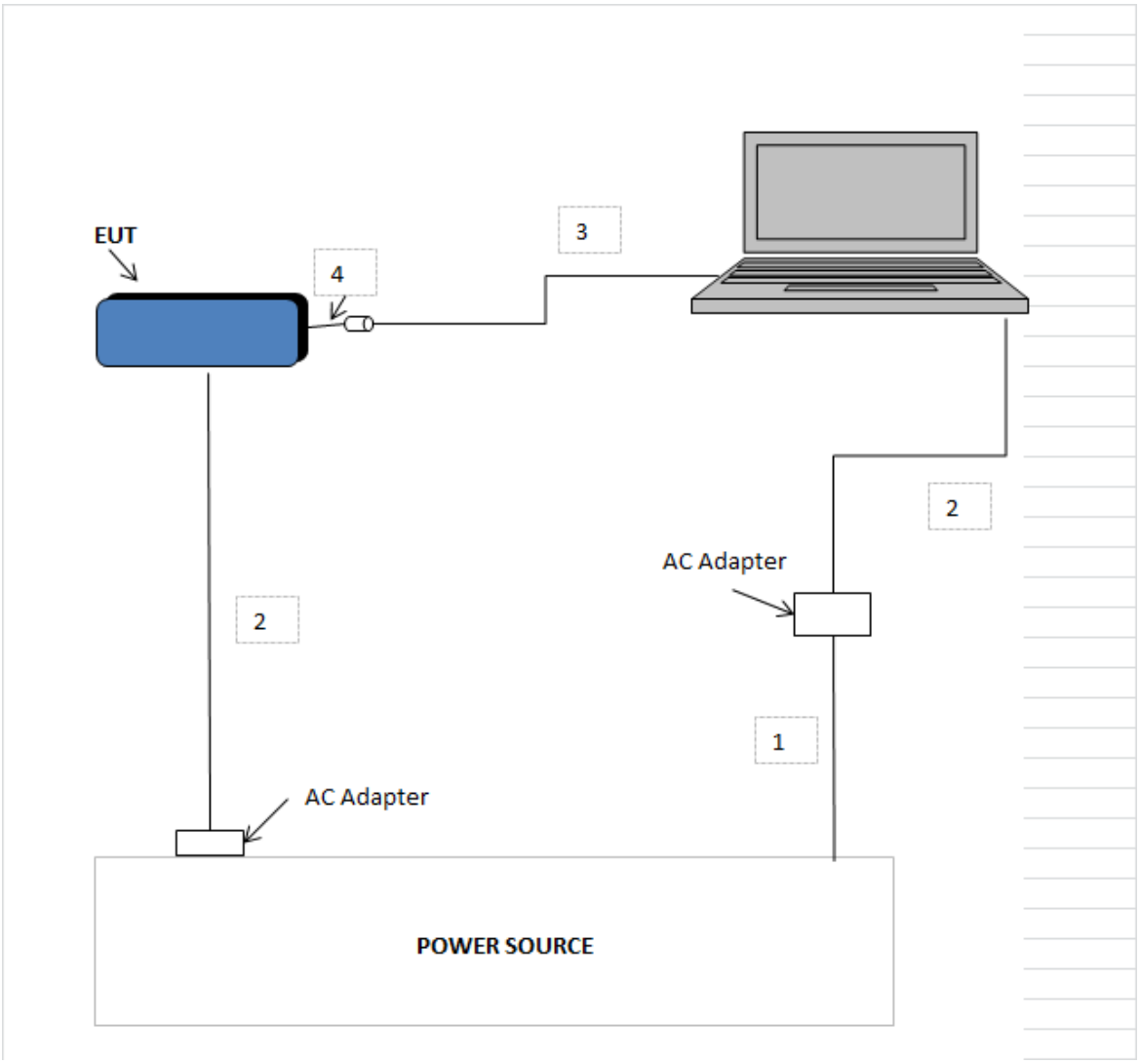
SETUP DIAGRAM FOR TESTS



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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 Date**
Single Channel PK Power Meter	Agilent	N1911A	F00022	4/3/2013
Wideband Power Sensor, 30MHz video bandwidth	Agilent	N1921A	F00358	10/1/2013
Spectrum Analyzer, 44 GHz	Agilent	E4446A	C00986	4/1/2013
Antenna, Horn, 18 GHz	ETS Lindgren	3117	C01022	2/21/2013
Antenna, Biconolog, 30MHz-1 GHz	Sunol Sciences	JB1	C01016	8/22/2013
High Pass Filter	Micro-Tronics	HPM17543	F00224	6/26/2013
Low Pass Filter	Micro-Tronics	LPS17541	F00219	6/26/2013
High Pass Filter	Micro-Tronics	HPS17542	F00222	6/26/2013
RF PreAmplifier, 1-18GHz	Miteq	TBD	F00350	6/26/2013
Preamplifier, 1300 MHz	Agilent	8447D	C00885	6/26/2013
Spectrum Analyzer, 40 GHz	Agilent	8564E	C00951	7/29/2013
PreAmplifier, 1-26.5GHz	Agilent	8449B	F00167	3/23/2013
Antenna, Horn, 40 GHz	ARA	MWH-2640/B	C00981	6/28/2013
Antenna, Horn, 26.5 GHz	ARA	MWH-1826/B	C00980	11/26/2013
Preamplifier, 40 GHz	Miteq	NSP4000-SP2	C00990	8/20/2013

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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

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
5.2 Ghz Band						
802.11a 1TX	1.620	1.626	0.996	99.63%	0.00	0.010
802.11n HT20 1TX	0.284	0.289	0.985	98.54%	0.00	0.010
802.11n HT40 1TX	0.299	0.304	0.986	98.62%	0.00	0.010
5.3 Ghz Band						
802.11a 1TX	1.000	1.000	1.000	100.00%	0.00	0.010
802.11n HT20 1TX	0.283	0.289	0.982	98.20%	0.00	0.010
802.11n HT40 1TX	0.300	0.304	0.986	98.55%	0.00	0.010
5.6 Ghz Band						
802.11a 1TX	1.000	1.000	1.000	100.00%	0.00	0.010
802.11n HT20 1TX	0.284	0.288	0.987	98.68%	0.00	0.010
802.11n HT40 1TX	0.299	0.304	0.986	98.55%	0.00	0.010

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7.1.1. MEASUREMENT METHOD FOR POWER AND PPSD

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

7.1.2. MEASUREMENT METHOD FOR AVERAGE 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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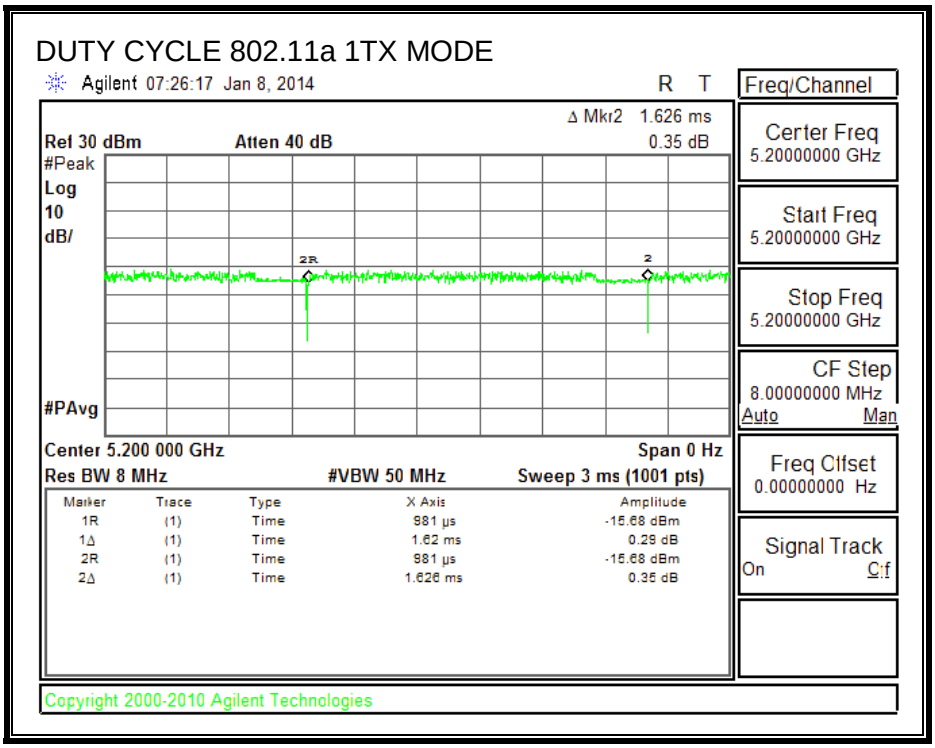
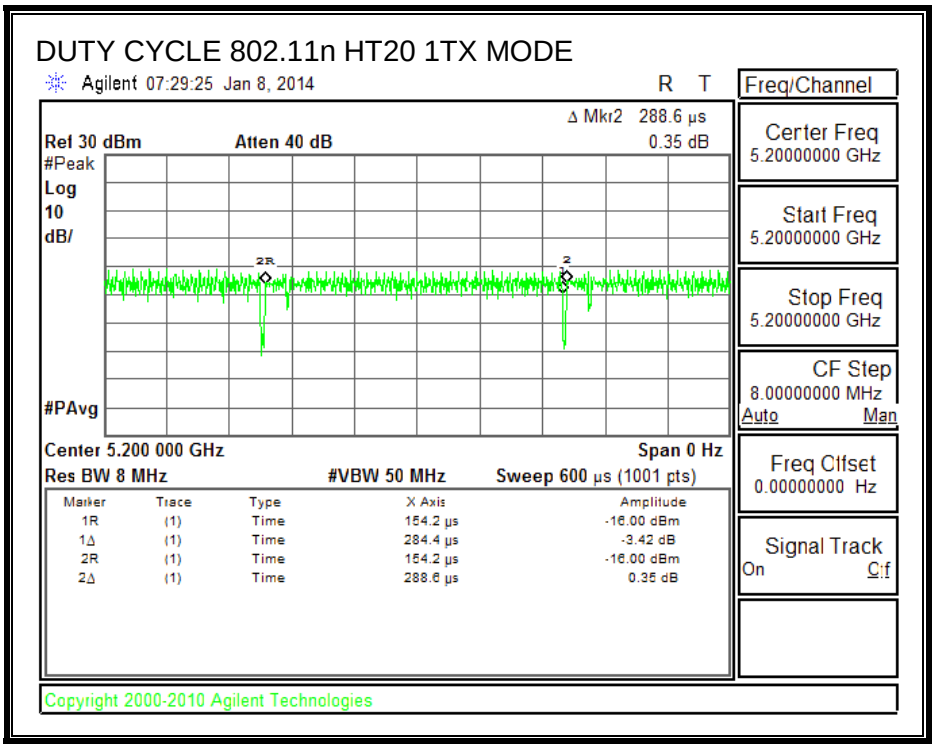
7.1. DUTY CYCLE PLOTS

5.2 GHz BAND





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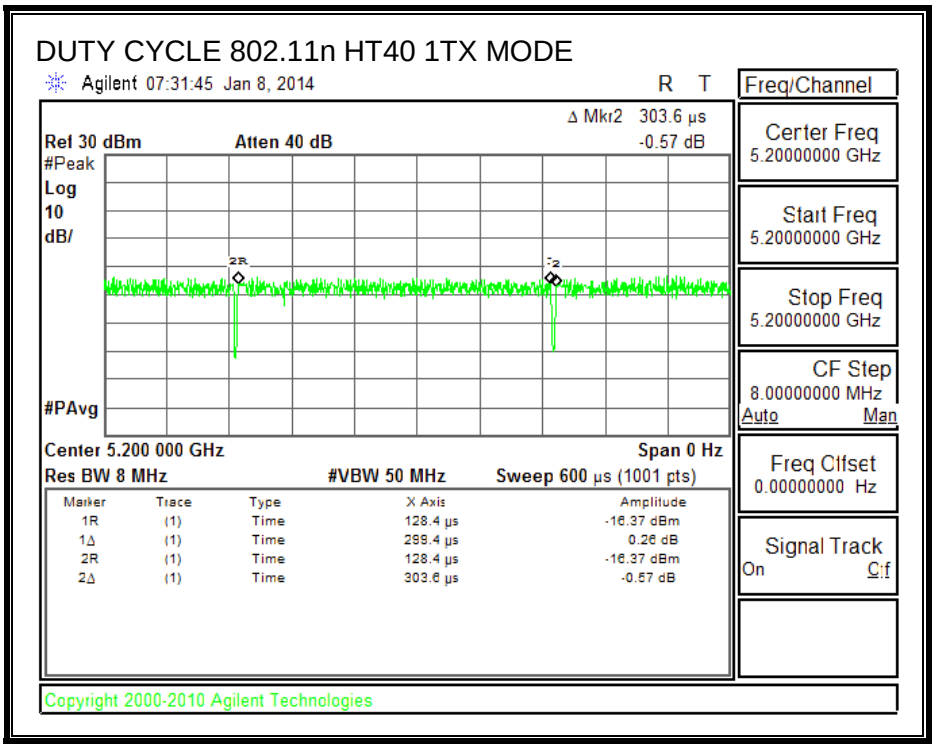
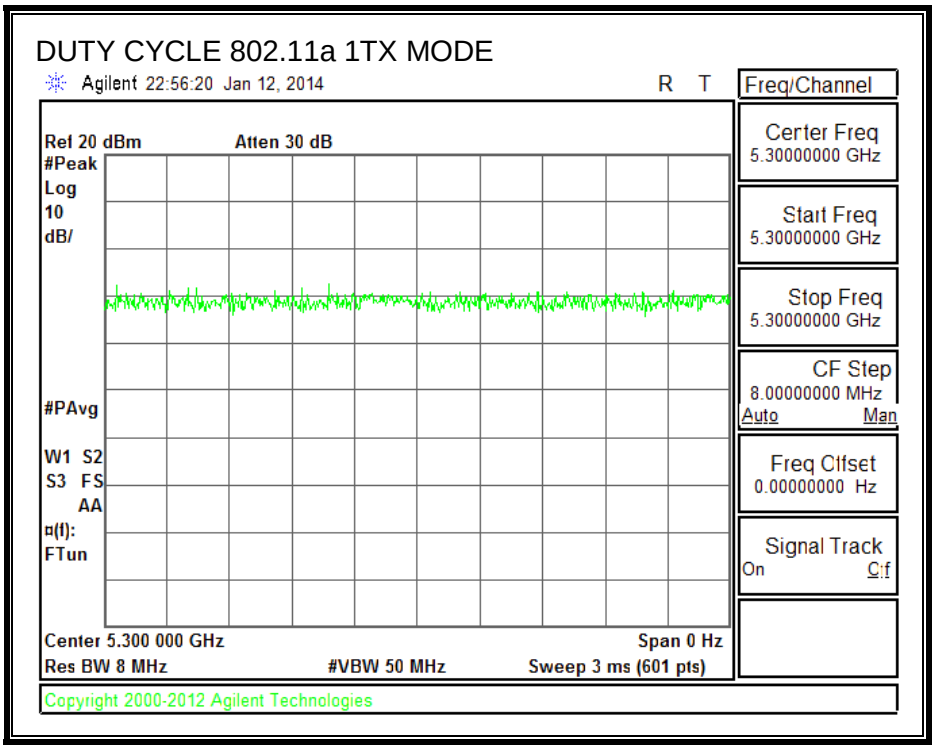


5.3 GHz BAND



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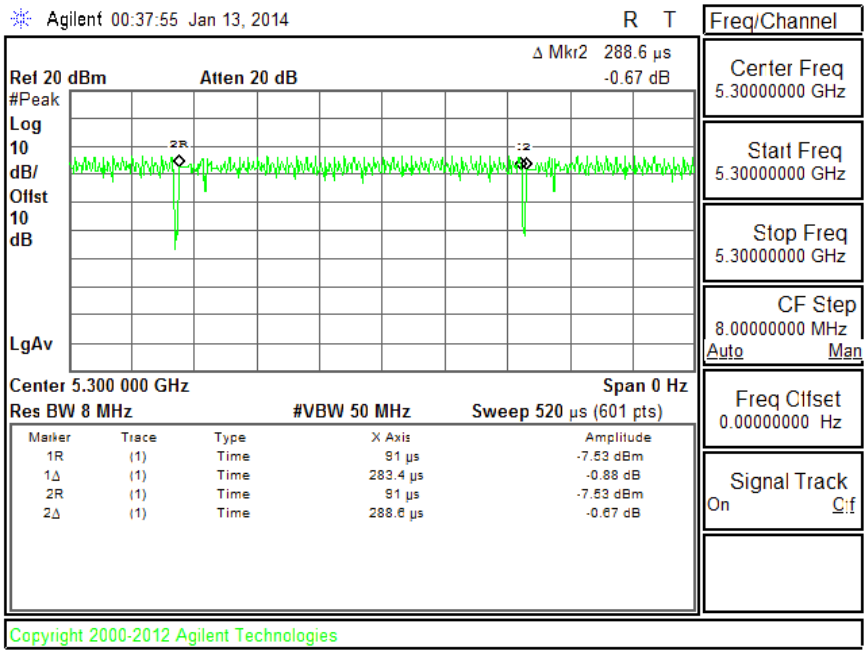
DUTY CYCLE 802.11n HT20 1TX MODE



DUTY CYCLE 802.11n HT40 1TX MODE

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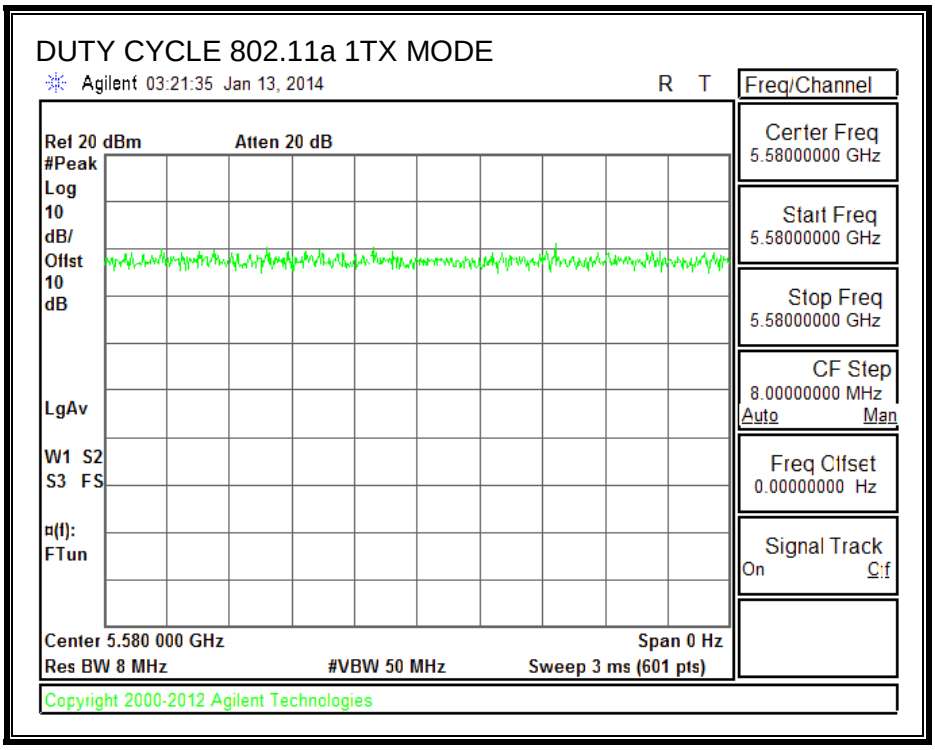
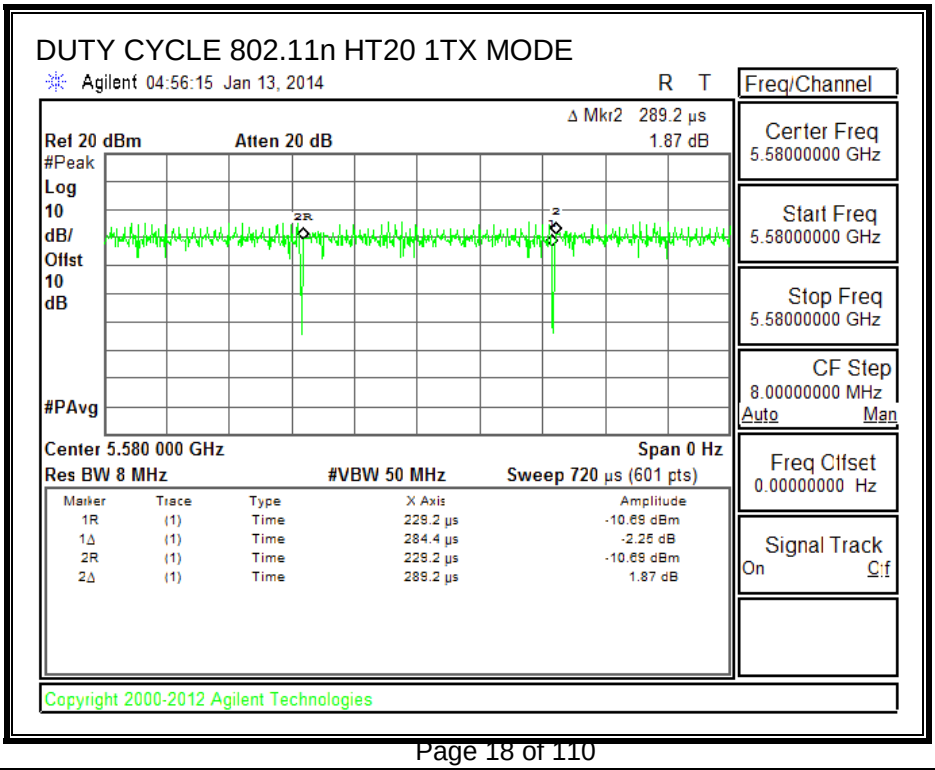
5.6 GHz BAND





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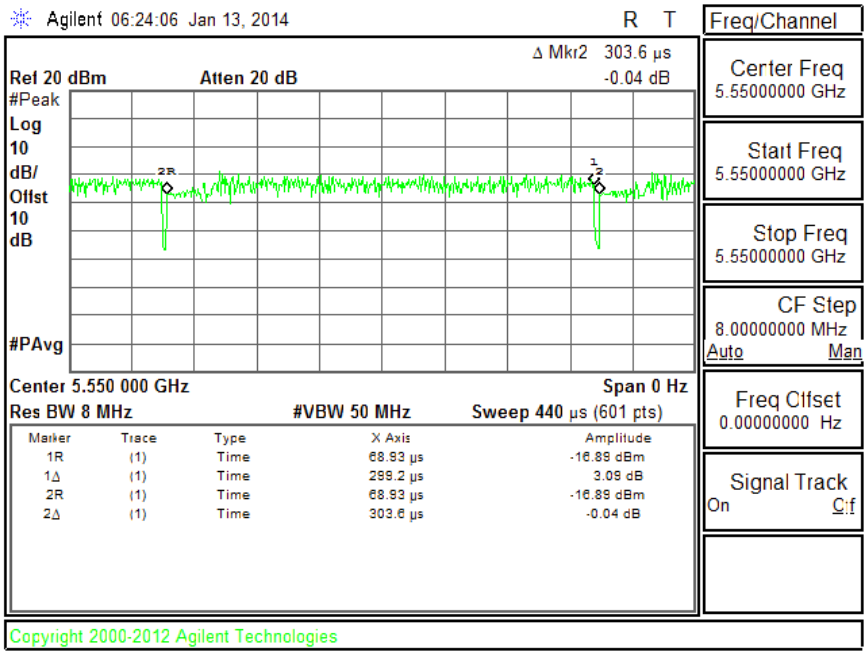
DUTY CYCLE 802.11n HT40 1TX MODE



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8. RADIATED TEST RESULTS

8.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-210 Clause 2.6 (Transmitter)

IC RSS-GEN Clause 6 (Receiver)

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

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane. 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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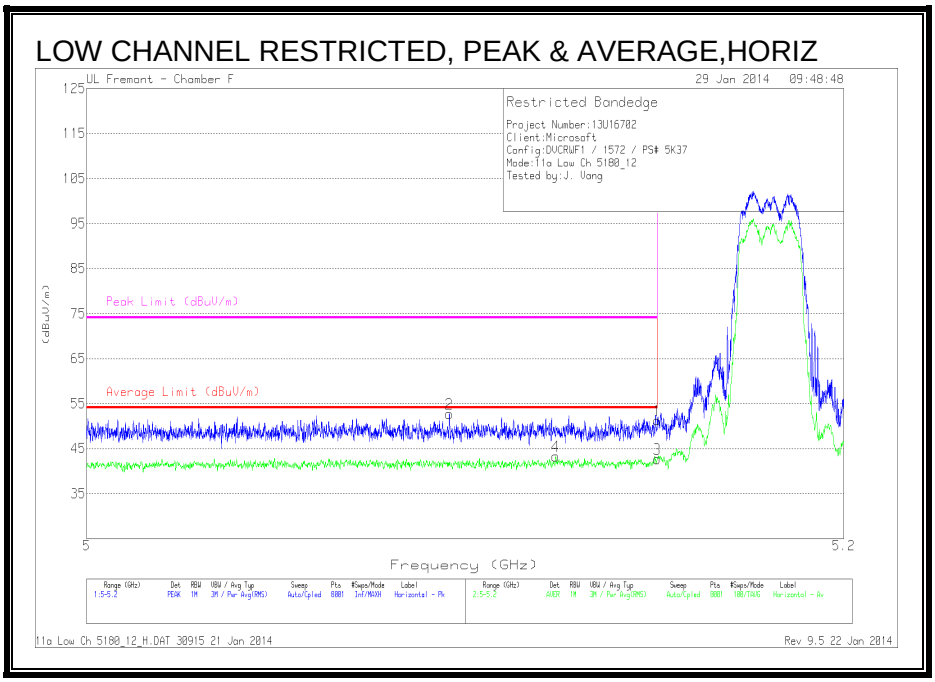
8.1. TRANSMITTER ABOVE 1 GHz

8.2. TX ABOVE 1 GHz 802.11a MODE IN THE 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.15	36.38	PK	34.2	-19.3	51.28	-	-	74	-22.72	259	102	H
2	5.095	38.22	PK	34.2	-19.7	52.72	-	-	74	-21.28	259	102	H
3	5.15	27.79	RMS	34.2	-19.3	42.69	54	-11.31	-	-	259	102	H
4	5.123	28.4	RMS	34.2	-19.3	43.3	54	-10.7	-	-	259	102	H

PK - Peak detector

RMS - RMS detection

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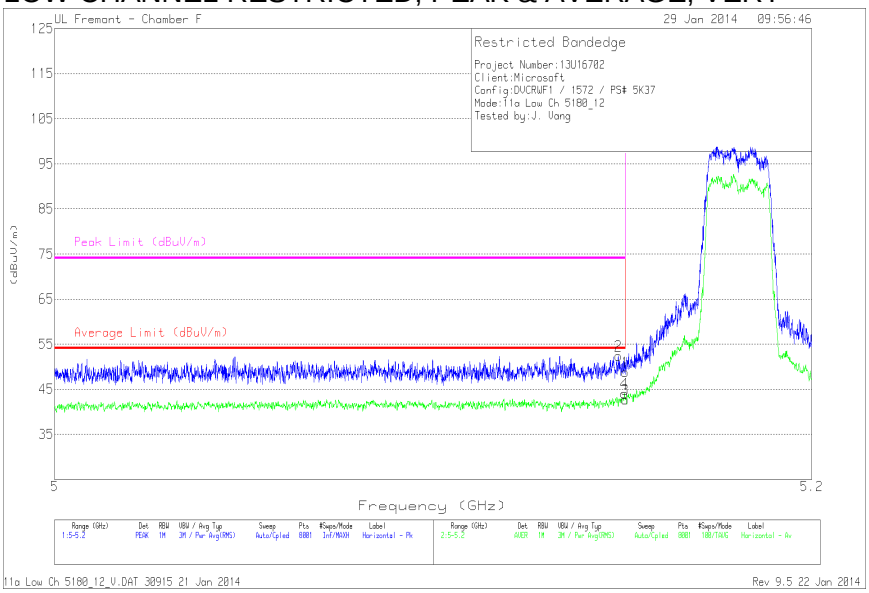
LOW CHANNEL RESTRICTED, PEAK & AVERAGE, VERT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.15	33.95	PK	34.2	-19.3	48.85	-	-	74	-25.15	65	216	V
2	5.148	37.51	PK	34.2	-19.3	52.41	-	-	74	-21.59	65	216	V
3	5.15	27.87	RMS	34.2	-19.3	42.77	54	-11.23	-	-	65	215	V
4	5.15	29.18	RMS	34.2	-19.3	44.08	54	-9.92	-	-	65	215	V

PK - Peak detector

RMS - RMS detection

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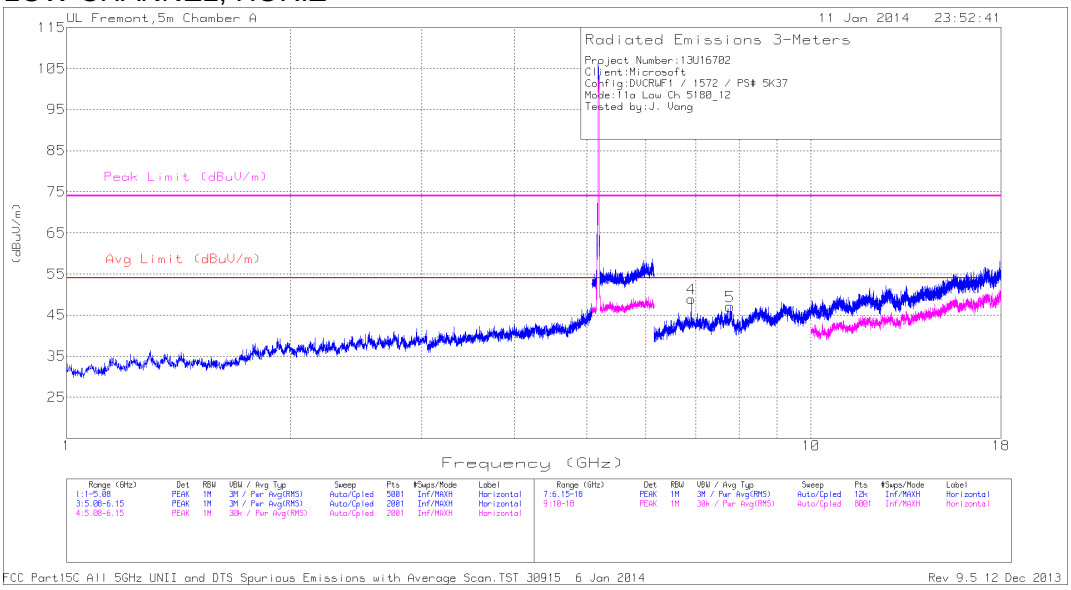
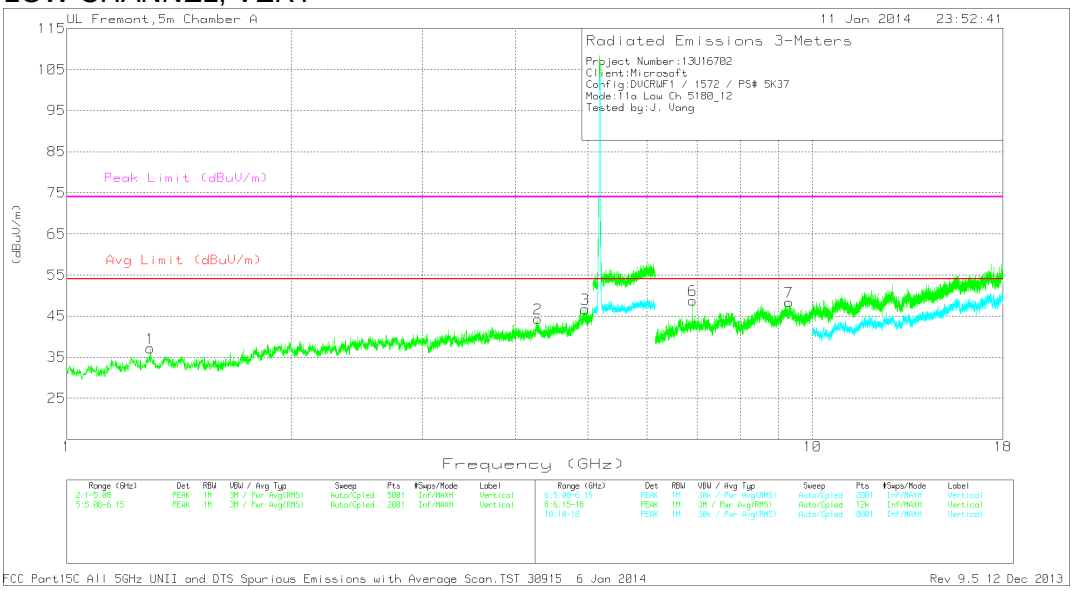
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL

LOW CHANNEL, HORIZ



LOW CHANNEL, VERT



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LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 1.295	43.59	PK	30.3	-36.7	37.19	54	-16.81	74	-36.81	0-360	101	V
2	* 4.284	39.56	PK	33.6	-28.8	44.36	54	-9.64	74	-29.64	0-360	200	V
3	* 4.957	41.9	PK	33.9	-29.1	46.7	54	-7.3	74	-27.3	0-360	200	V

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
7	* 9.303	37.02	PK	36.3	-24.9	48.42	54	-5.58	74	-25.58	0-360	101	V
4	6.906	41.27	PK	35.4	-27.7	48.97	54	-5.03	74	-25.03	0-360	200	H
6	6.906	41.13	PK	35.4	-27.7	48.83	54	-5.17	74	-25.17	0-360	101	V
5	7.784	37.11	PK	35.5	-25.5	47.11	54	-6.89	74	-26.89	0-360	101	H

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
* 9.303	22.72	Av	36.3	-24.9	34.12	54	-19.88	-	-	66	378	V

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

PK - Peak detector

Av - average detection

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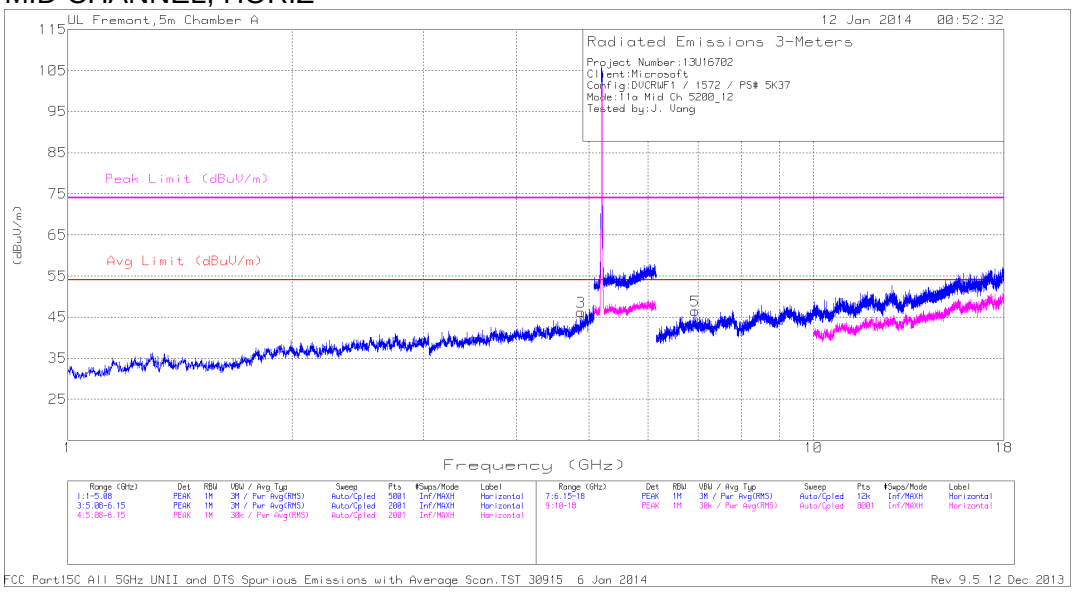
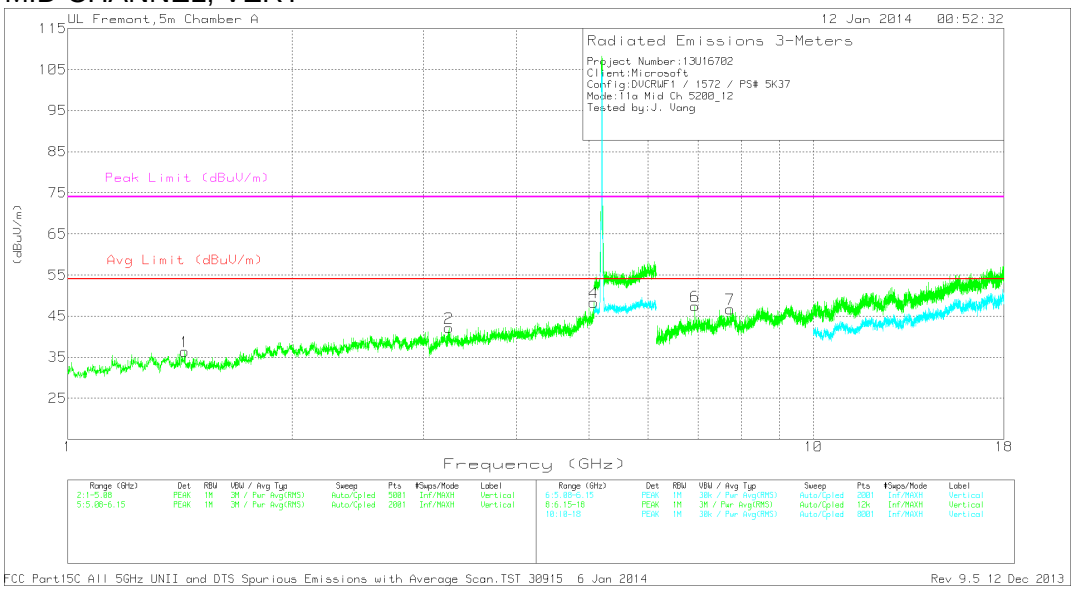
MID CHANNEL

MID CHANNEL, HORIZ



MID CHANNEL, VERT



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MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
3	* 4.877	40.95	PK	34	-28.7	46.25	54	-7.75	74	-27.75	0-360	101	H
4	* 5.073	41.52	PK	34	-27.2	48.32	54	-5.68	74	-25.68	0-360	101	V
1	1.435	42.8	PK	29.5	-35.9	36.4	54	-17.6	74	-37.6	0-360	200	V
2	3.244	40.54	PK	33.3	-31.7	42.14	54	-11.86	74	-31.86	0-360	101	V

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
7	* 7.733	37.99	PK	35.5	-26.8	46.69	54	-7.31	74	-27.31	0-360	200	V
5	6.934	38.72	PK	35.4	-27.6	46.52	54	-7.48	74	-27.48	0-360	200	H
6	6.934	39.64	PK	35.4	-27.6	47.44	54	-6.56	74	-26.56	0-360	101	V

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
* 5.071	27.46	Av	34	-27.2	34.26	54	-19.74	-	-	209	114	V

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

PK - Peak detector

Av - average detection

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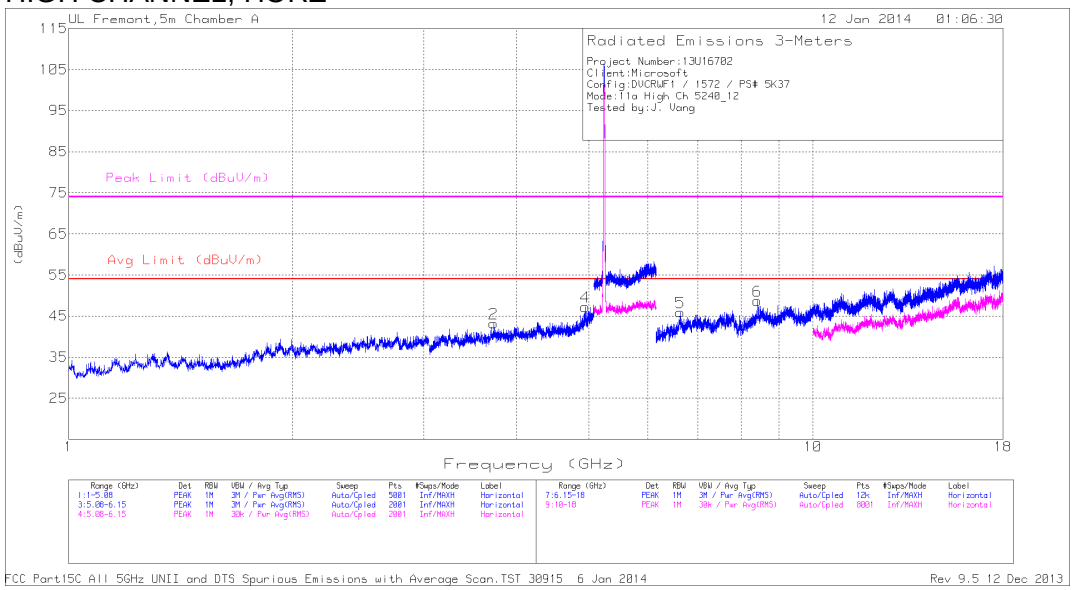
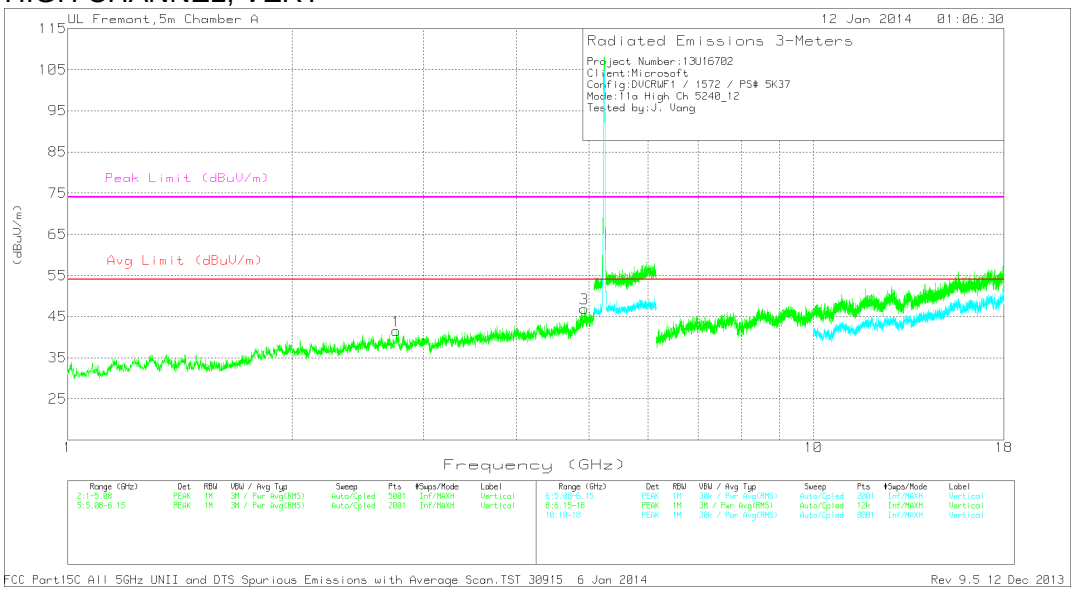
HIGH CHANNEL

HIGH CHANNEL, HORZ



HIGH CHANNEL, VERT



UL VERIFICATION SERVICES INC.
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888

FORM NO: CCSUP4701J

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HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
2	* 3.724	40.14	PK	33.3	-30.2	43.24	54	-10.76	74	-30.76	0-360	101	H
4	* 4.944	42.23	PK	34	-29	47.23	54	-6.77	74	-26.77	0-360	200	H
1	* 2.757	40.83	PK	32.6	-31.9	41.53	54	-12.47	74	-32.47	0-360	101	V
3	* 4.928	42.13	PK	34	-29.2	46.93	54	-7.07	74	-27.07	0-360	201	V

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 8.42	38.91	PK	35.7	-25.9	48.71	54	-5.29	74	-25.29	0-360	200	H
5	6.633	36.32	PK	35.5	-25.9	45.92	54	-8.08	74	-28.08	0-360	100	H

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
* 8.418	23.25	Av	35.7	-25.9	33.05	54	-20.95	-	-	100	218	H

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

PK - Peak detector

Av - average detection

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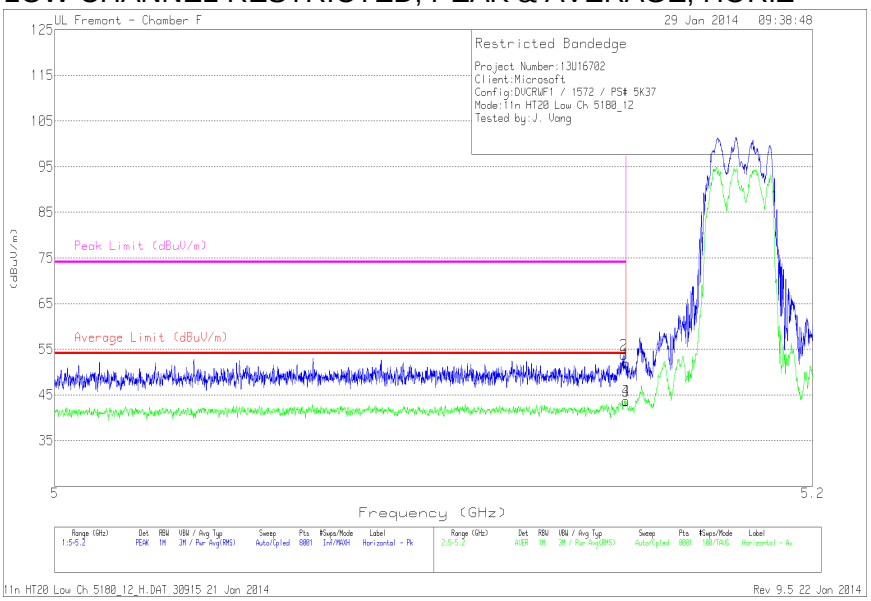
8.3. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

LOW CHANNEL RESTRICTED, PEAK & AVERAGE, HORIZ



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.15	37.03	PK	34.2	-19.3	51.93	-	-	74	-22.07	235	216	H
2	5.149	38.86	PK	34.2	-19.3	53.76	-	-	74	-20.24	235	216	H
3	5.15	28.77	RMS	34.2	-19.3	43.67	54	-10.33	-	-	235	216	H
4	5.15	28.84	RMS	34.2	-19.3	43.74	54	-10.26	-	-	235	216	H

PK - Peak detector

RMS - RMS detection

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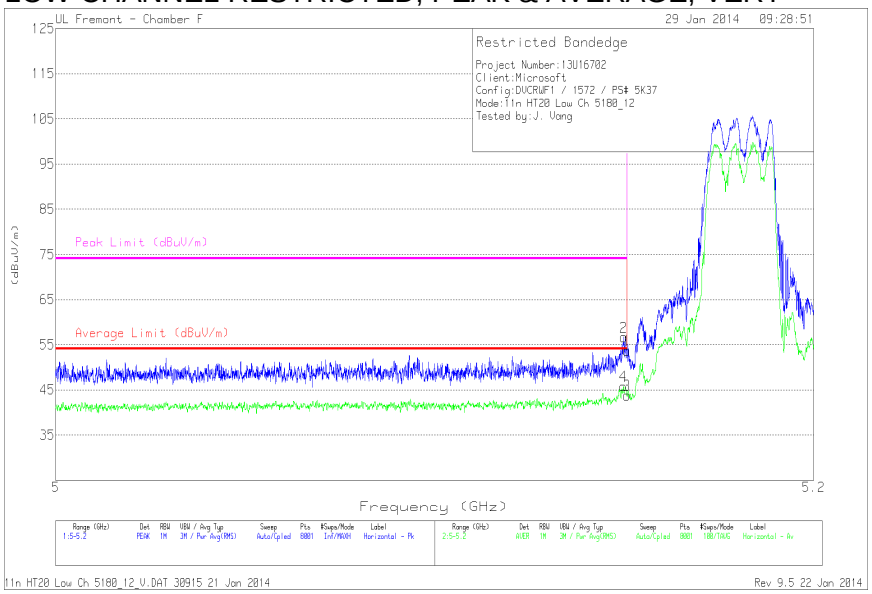
LOW CHANNEL RESTRICTED, PEAK & AVERAGE, VERT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.15	38.83	PK	34.2	-19.3	53.73	-	-	74	-20.27	54	176	V
2	5.149	41.79	PK	34.2	-19.3	56.69	-	-	74	-17.31	54	176	V
3	5.15	28.9	RMS	34.2	-19.3	43.8	54	-10.2	-	-	54	176	V
4	5.149	30.94	RMS	34.2	-19.3	45.84	54	-8.16	-	-	54	176	V

PK - Peak detector

RMS - RMS detection

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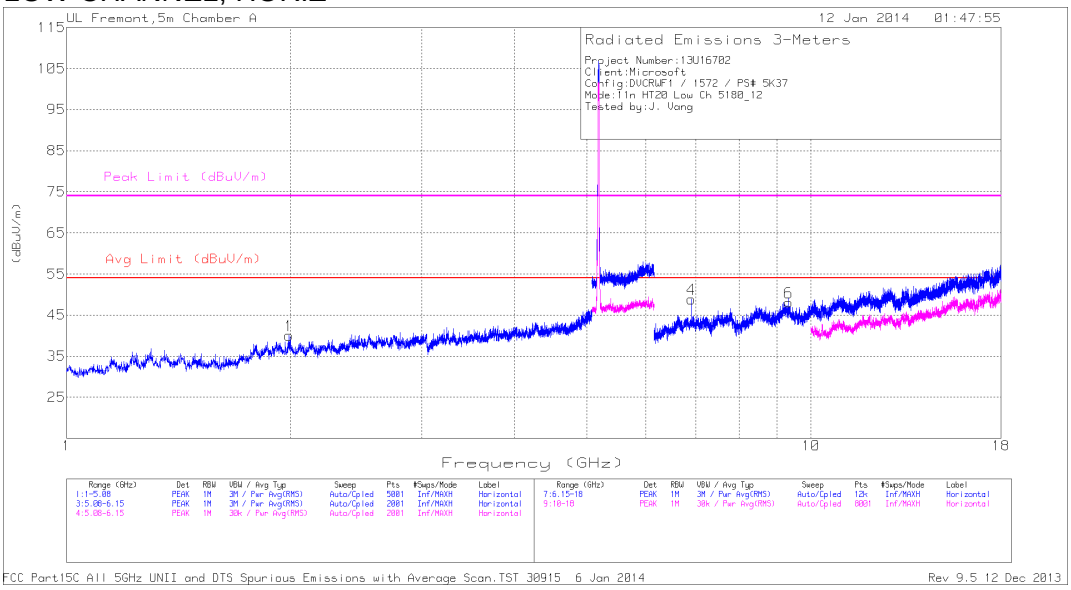
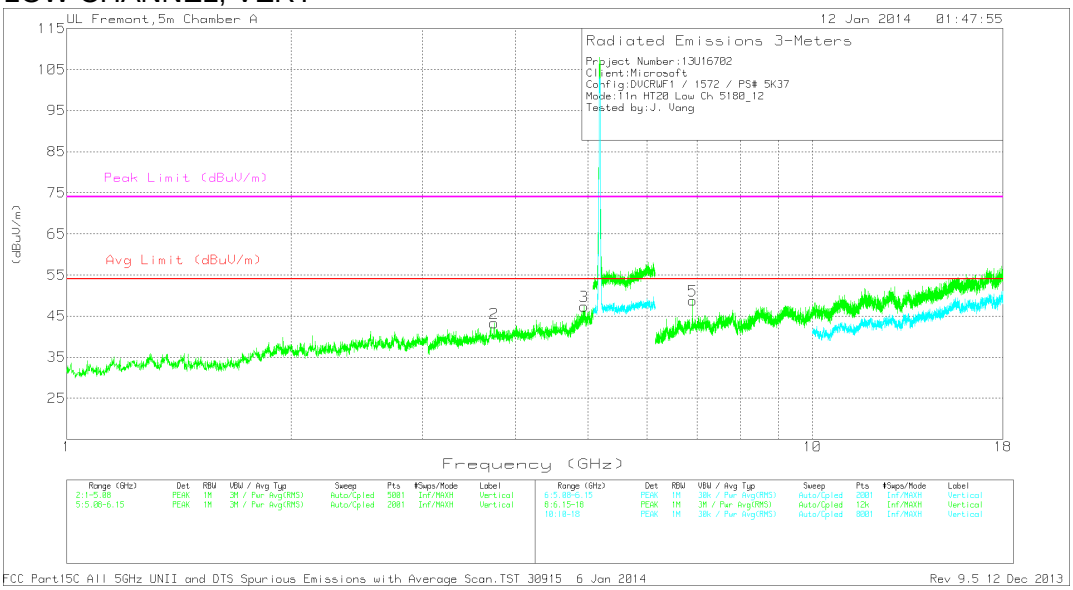
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL

LOW CHANNEL, HORIZ



LOW CHANNEL, VERT



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LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
2	* 3.742	39.59	PK	33.4	-29.7	43.29	54	-10.71	74	-30.71	0-360	200	V
3	* 4.938	42.38	PK	34	-29	47.38	54	-6.62	74	-26.62	0-360	200	V
1	1.988	42.66	PK	31.9	-34.5	40.06	54	-13.94	74	-33.94	0-360	101	H

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 9.33	37	PK	36.3	-25.2	48.1	54	-5.9	74	-25.9	0-360	200	H
4	6.906	41.18	PK	35.4	-27.7	48.88	54	-5.12	74	-25.12	0-360	101	H
5	6.907	41.07	PK	35.4	-27.7	48.77	54	-5.23	74	-25.23	0-360	101	V

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

PK - Peak detector

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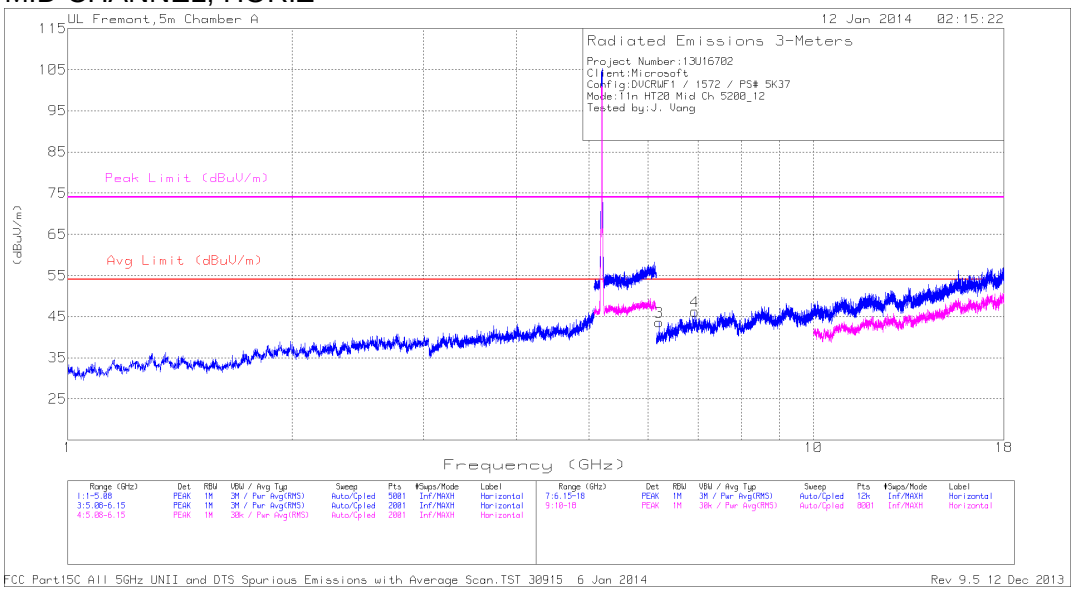
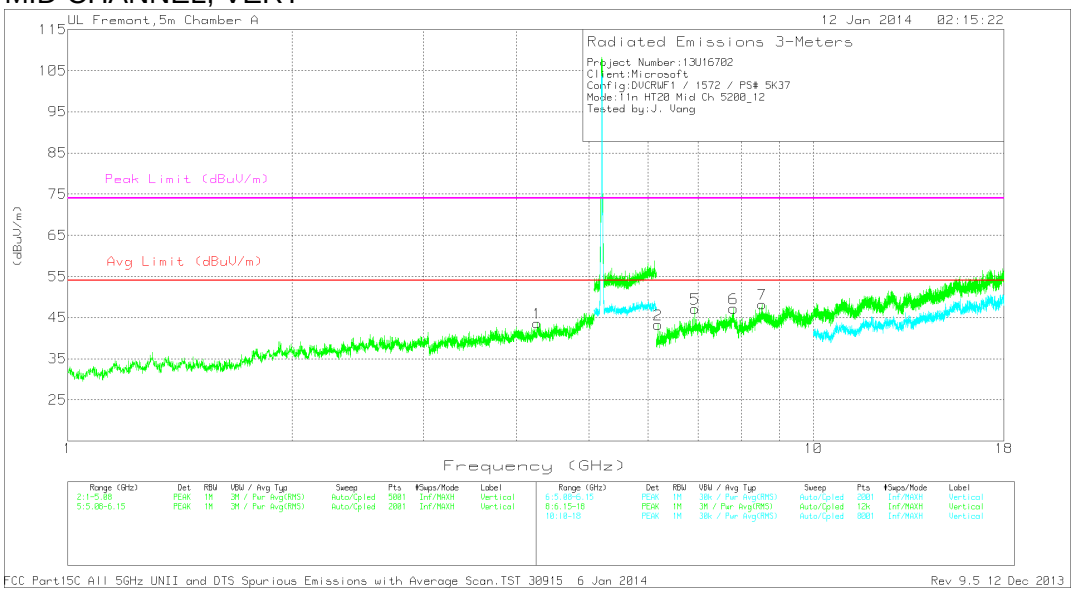
MID CHANNEL

MID CHANNEL, HORIZ



MID CHANNEL, VERT



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MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 4.262	38.08	PK	33.6	-28	43.68	54	-10.32	74	-30.32	0-360	201	V

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
2	6.186	36.19	PK	35.4	-28.3	43.29	54	-10.71	74	-30.71	0-360	201	V
3	6.206	36.28	PK	35.4	-28	43.68	54	-10.32	74	-30.32	0-360	101	H
4	6.933	38.47	PK	35.4	-27.6	46.27	54	-7.73	74	-27.73	0-360	200	H
5	6.934	39.34	PK	35.4	-27.6	47.14	54	-6.86	74	-26.86	0-360	101	V
6	7.813	36.22	PK	35.5	-24.5	47.22	54	-6.78	74	-26.78	0-360	201	V
7	8.53	38.97	PK	35.7	-26.4	48.27	54	-5.73	74	-25.73	0-360	101	V

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

PK - Peak detector

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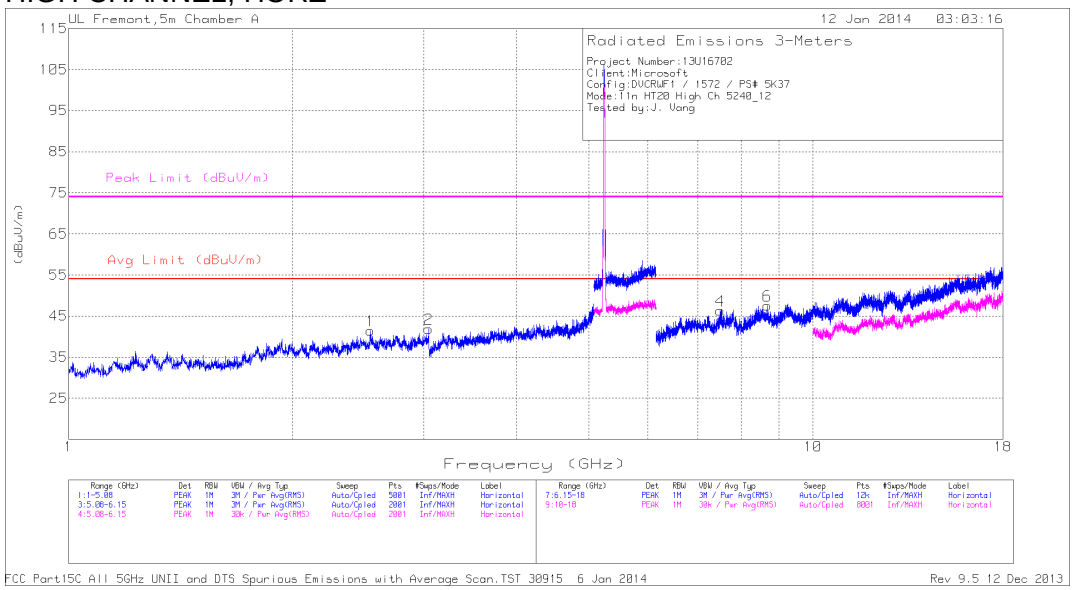
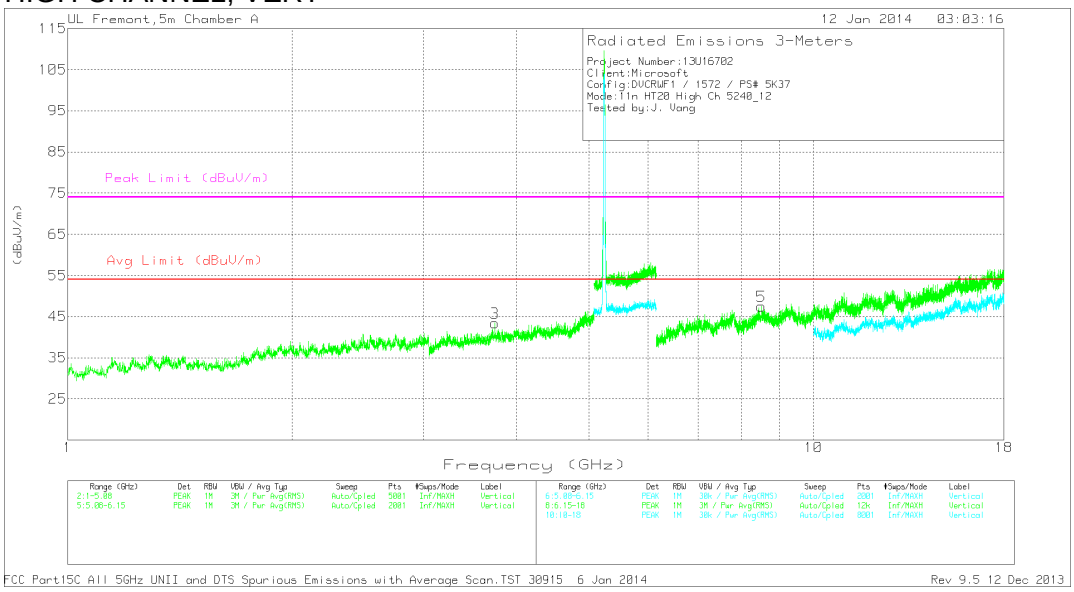
HIGH CHANNEL

HIGH CHANNEL, HORZ



HIGH CHANNEL, VERT



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HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
3	* 3.739	39.74	PK	33.4	-29.7	43.44	54	-10.56	74	-30.56	0-360	200	V
1	2.544	41.7	PK	32.6	-32.8	41.5	54	-12.5	74	-32.5	0-360	100	H
2	3.045	40.88	PK	32.7	-31.7	41.88	54	-12.12	74	-32.12	0-360	100	H

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
4	* 7.506	35.64	PK	35.4	-24.7	46.34	54	-7.66	74	-27.66	0-360	200	H
5	8.513	38.11	PK	35.7	-26.3	47.51	54	-6.49	74	-26.49	0-360	100	V
6	8.682	37.35	PK	35.8	-25.6	47.55	54	-6.45	74	-26.45	0-360	200	H

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

PK - Peak detector

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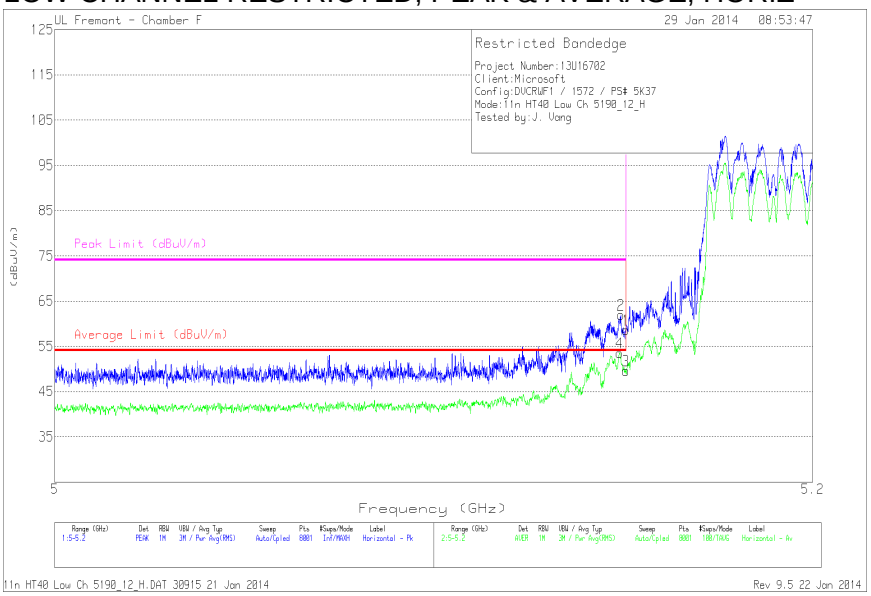
8.4. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

LOW CHANNEL RESTRICTED, PEAK & AVERAGE, HORIZ



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.15	43.72	PK	34.2	-19.3	58.62	-	-	74	-15.38	170	182	H
2	5.149	47.08	PK	34.2	-19.3	61.98	-	-	74	-12.02	170	182	H
3	5.15	34.73	RMS	34.2	-19.3	49.63	54	-4.37	-	-	170	182	H
4	5.148	38.65	RMS	34.2	-19.3	53.55	54	-.45	-	-	170	182	H

PK - Peak detector

RMS - RMS detection

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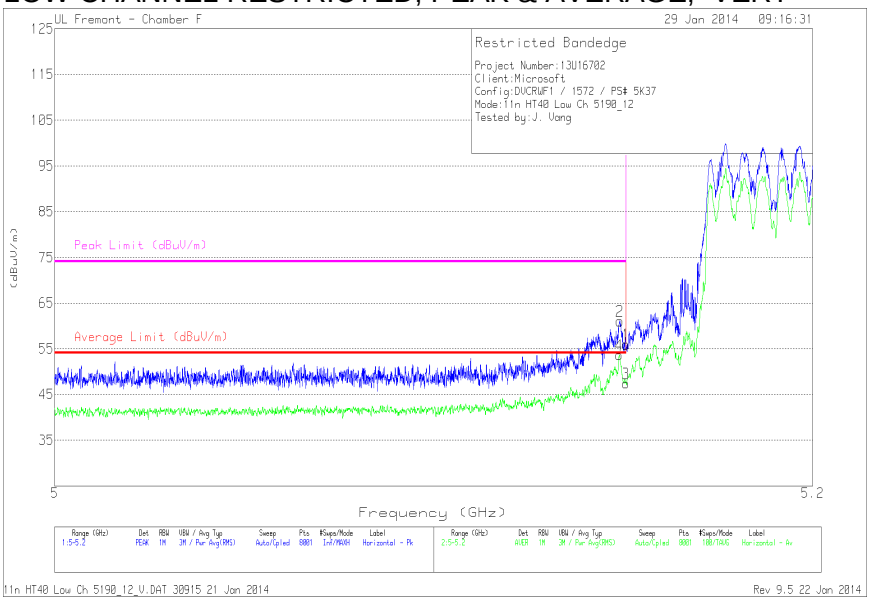
LOW CHANNEL RESTRICTED, PEAK & AVERAGE, VERT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.15	41.08	PK	34.2	-19.3	55.98	-	-	74	-18.02	55	216	V
2	5.148	46.17	PK	34.2	-19.3	61.07	-	-	74	-12.93	55	216	V
3	5.15	32.54	RMS	34.2	-19.3	47.44	54	-6.56	-	-	55	216	V
4	5.148	38.73	RMS	34.2	-19.3	53.63	54	-.37	-	-	55	216	V

PK - Peak detector

RMS - RMS detection

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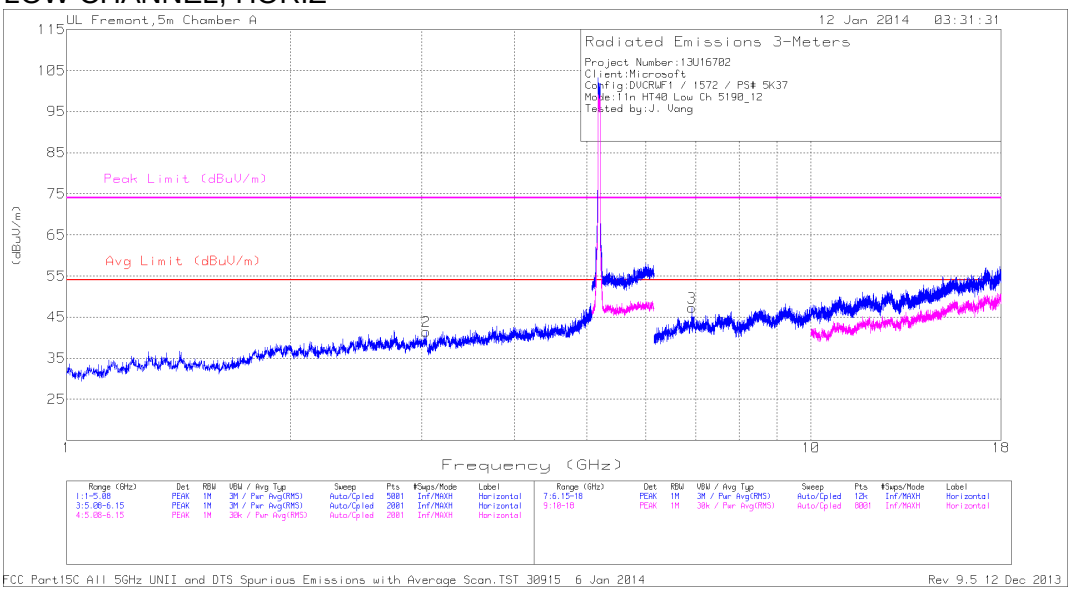
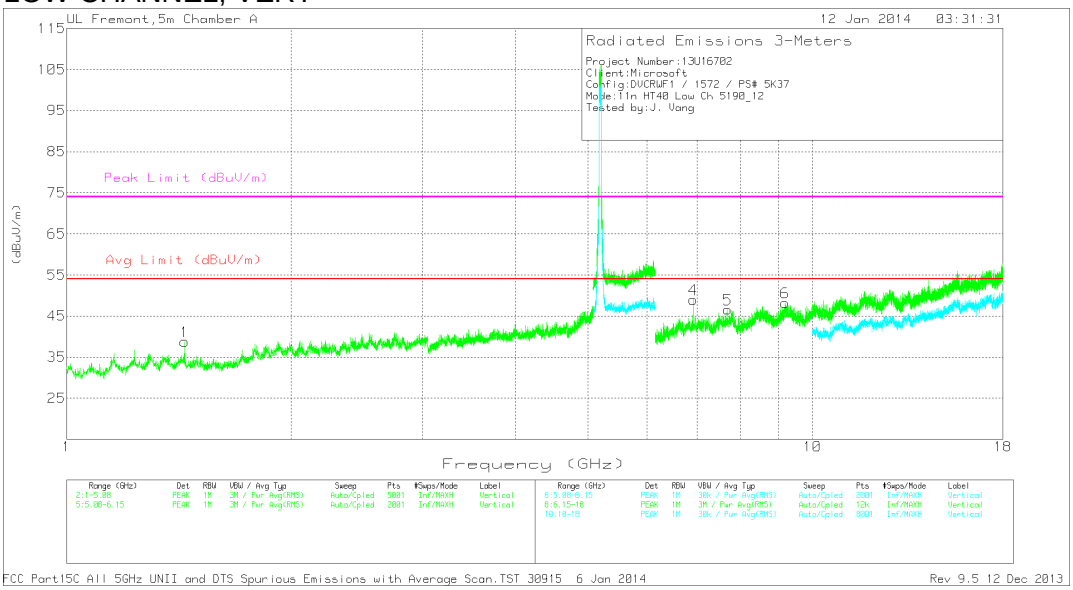
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL

LOW CHANNEL, HORIZ



LOW CHANNEL, VERT



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LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 1.439	45.41	PK	29.4	-36	38.81	54	-15.19	74	-35.19	0-360	200	V
2	3.041	40.29	PK	32.7	-31.5	41.49	54	-12.51	74	-32.51	0-360	101	H

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 7.696	37.9	PK	35.5	-26.8	46.6	54	-7.4	74	-27.4	0-360	201	V
6	* 9.19	36.39	PK	36.1	-24.2	48.29	54	-5.71	74	-25.71	0-360	101	V
3	6.92	39.41	PK	35.4	-27.5	47.31	54	-6.69	74	-26.69	0-360	200	H
4	6.92	41.12	PK	35.4	-27.5	49.02	54	-4.98	74	-24.98	0-360	101	V

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

PK - Peak detector

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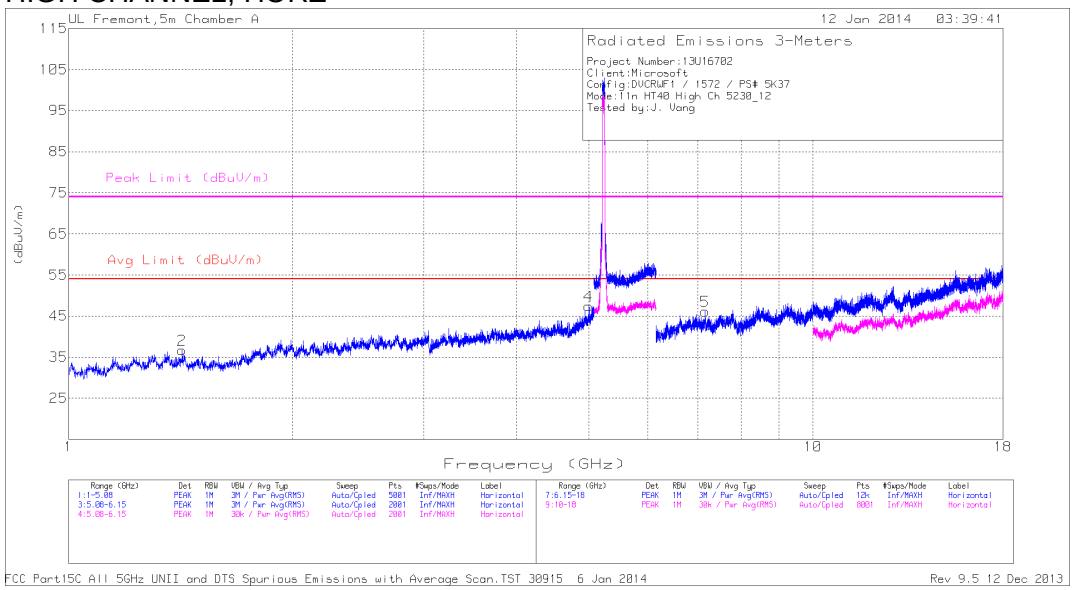
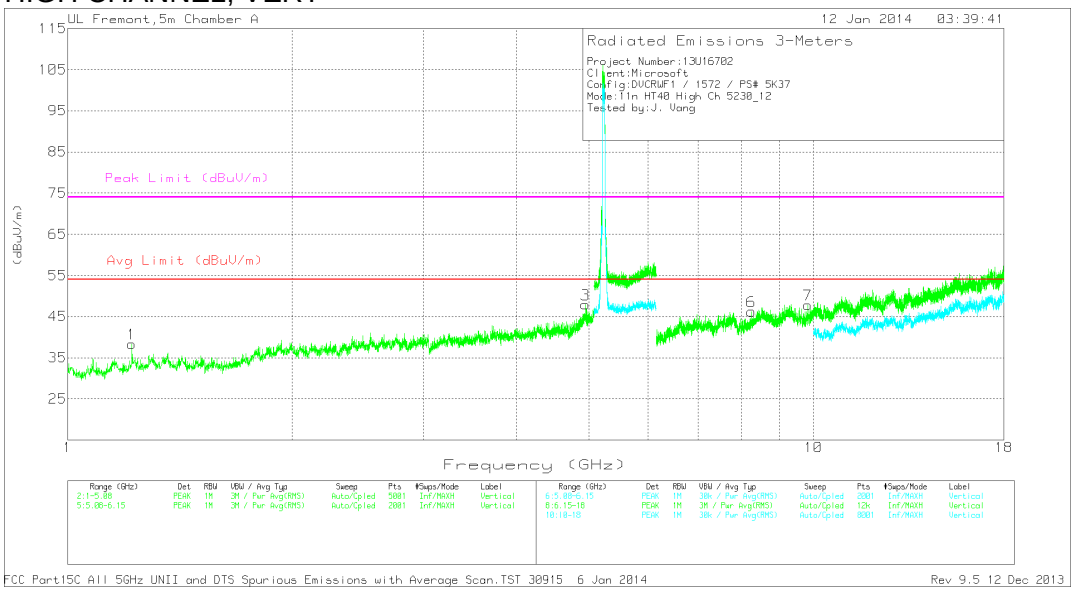
HIGH CHANNEL

HIGH CHANNEL, HORZ



HIGH CHANNEL, VERT



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HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
2	* 1.42	43.61	PK	29.6	-36.5	36.71	54	-17.29	74	-37.29	0-360	101	H
4	* 4.996	42.15	PK	33.9	-28.6	47.45	54	-6.55	74	-26.55	0-360	101	H
1	* 1.219	45.78	PK	29.6	-37	38.38	54	-15.62	74	-35.62	0-360	201	V
3	* 4.945	42.95	PK	34	-29	47.95	54	-6.05	74	-26.05	0-360	201	V

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 8.255	36.47	PK	35.6	-25.8	46.27	54	-7.73	74	-27.73	0-360	101	V
5	7.16	36.85	PK	35.4	-26.1	46.15	54	-7.85	74	-27.85	0-360	200	H
7	9.821	34.06	PK	36.9	-23.1	47.86	54	-6.14	74	-26.14	0-360	200	V

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

PK - Peak detector

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8.5. TX ABOVE 1 GHz 802.11a MODE IN THE 5.3 GHz BAND

RESTRICTED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL RESTRICTED, PEAK & AVERAGE, HORIZ

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.35	32.52	PK	34.5	-19.2	47.82	-	-	74	-26.18	61	216	H
2	5.363	36.2	PK	34.6	-19.2	51.6	-	-	74	-22.4	61	216	H
3	5.35	25.53	RMS	34.5	-19.2	40.83	54	-13.17	-	-	61	216	H
4	5.448	27.7	RMS	34.7	-20	42.4	54	-11.6	-	-	61	216	H

PK - Peak detector

RMS - RMS detection

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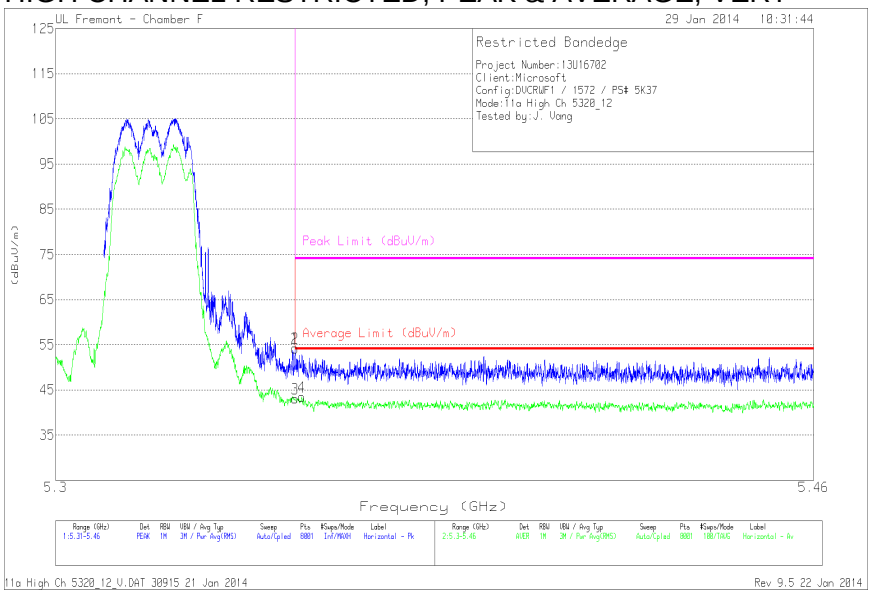
HIGH CHANNEL RESTRICTED, PEAK & AVERAGE, VERT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.35	38.93	PK	34.5	-19.2	54.23	-	-	74	-19.77	303	194	V
2	5.35	38.93	PK	34.5	-19.2	54.23	-	-	74	-19.77	303	194	V
3	5.35	27.8	RMS	34.5	-19.2	43.1	54	-10.9	-	-	303	194	V
4	5.351	28.16	RMS	34.5	-19.2	43.46	54	-10.54	-	-	303	194	V

PK - Peak detector

RMS - RMS detection

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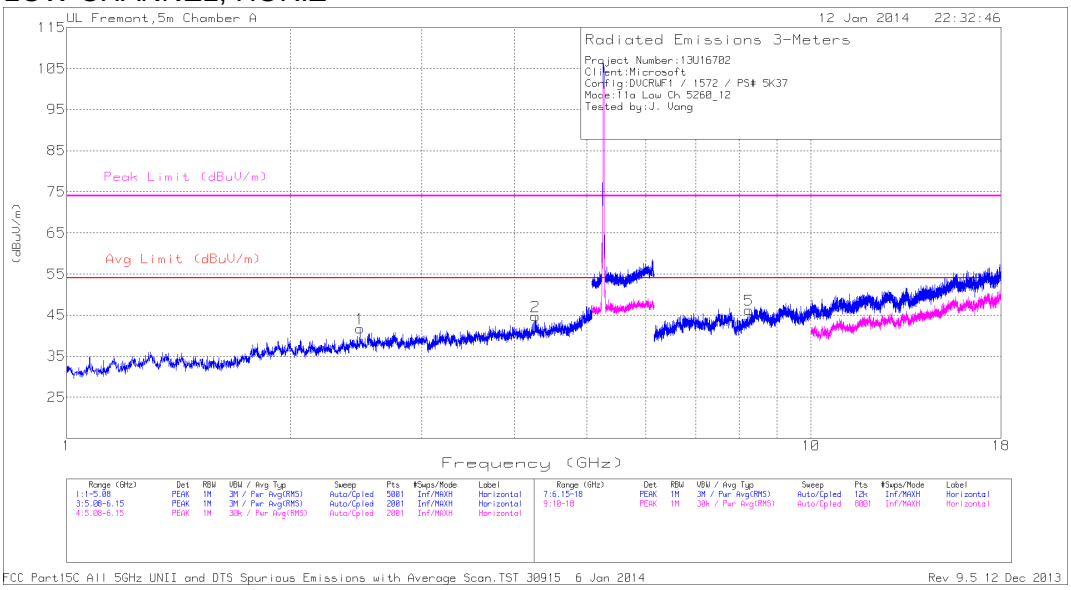
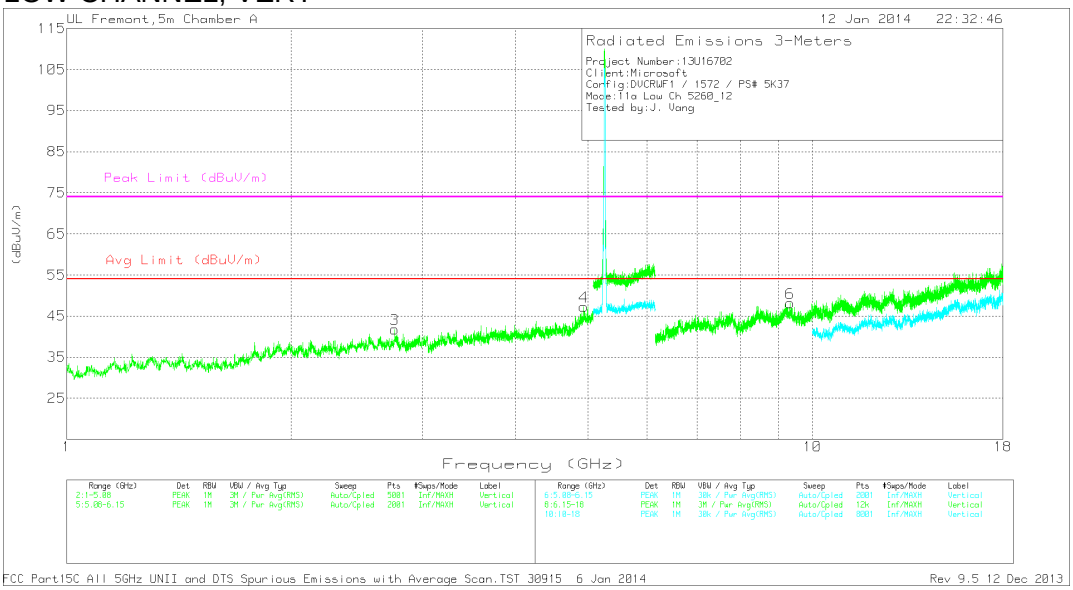
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL

LOW CHANNEL, HORIZ



LOW CHANNEL, VERT



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LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
2	* 4.263	39.19	PK	33.6	-28.1	44.69	54	-9.31	74	-29.31	0-360	200	H
3	* 2.754	40.89	PK	32.6	-31.7	41.79	54	-12.21	74	-32.21	0-360	201	V
4	* 4.934	42.36	PK	34	-29.1	47.26	54	-6.74	74	-26.74	0-360	201	V
1	2.479	43.01	PK	32.5	-33.8	41.71	54	-12.29	74	-32.29	0-360	200	H

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 8.252	36.66	PK	35.6	-26	46.26	54	-7.74	74	-27.74	0-360	101	H
6	* 9.329	37.07	PK	36.3	-25.2	48.17	54	-5.83	74	-25.83	0-360	101	V

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
* 9.329	23.33	Av	36.3	-25.1	34.53	54	-19.47	-	-	327	196	V

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

PK - Peak detector

Av - average detection

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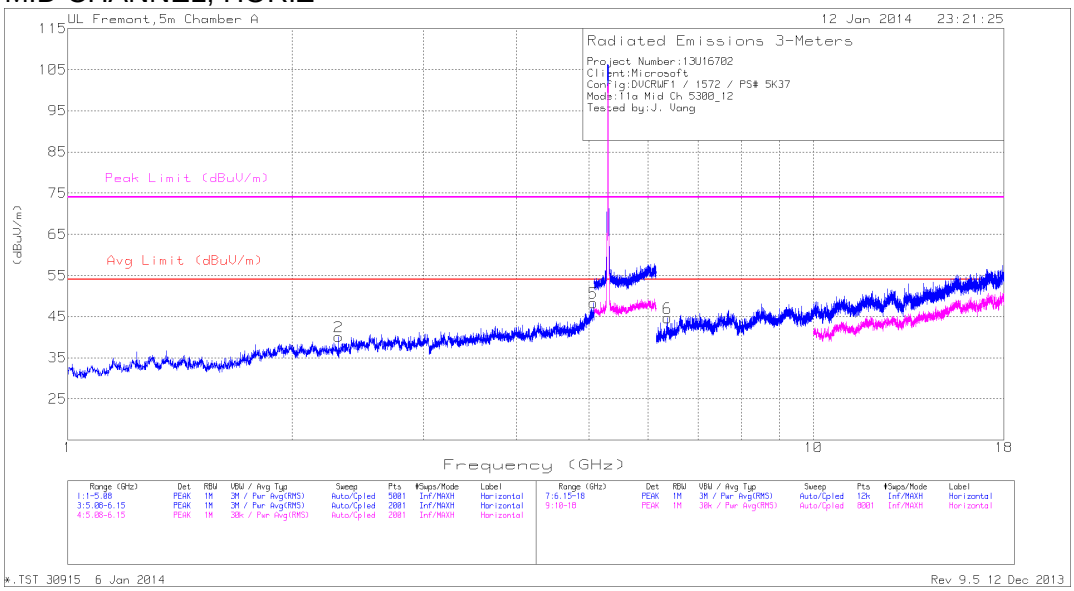
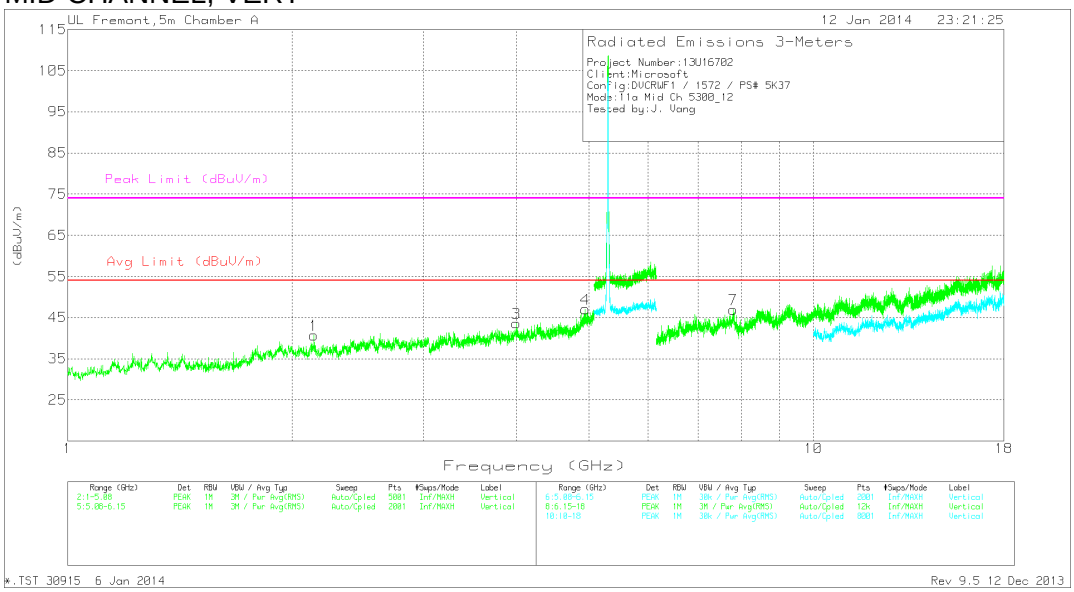
MID CHANNEL

MID CHANNEL, HORIZ



MID CHANNEL, VERT



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MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
5	* 5.069	41.41	PK	34	-27.1	48.31	54	-5.69	74	-25.69	0-360	200	H
3	* 3.994	39.57	PK	33.8	-29.7	43.67	54	-10.33	74	-30.33	0-360	101	V
4	* 4.943	42.08	PK	34	-29	47.08	54	-6.92	74	-26.92	0-360	201	V
1	2.138	43.03	PK	31.6	-33.9	40.73	54	-13.27	74	-33.27	0-360	201	V
2	2.307	43.55	PK	31.6	-35	40.15	54	-13.85	74	-33.85	0-360	200	H

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	6.369	36.36	PK	35.5	-27.2	44.66	54	-9.34	74	-29.34	0-360	101	H
7	7.807	36.16	PK	35.5	-24.7	46.96	54	-7.04	74	-27.04	0-360	101	V

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
* 5.071	30.41	Av	34	-27.2	37.21	54	-16.79	74	-36.79	160	281	H

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

PK - Peak detector

Av - average detection

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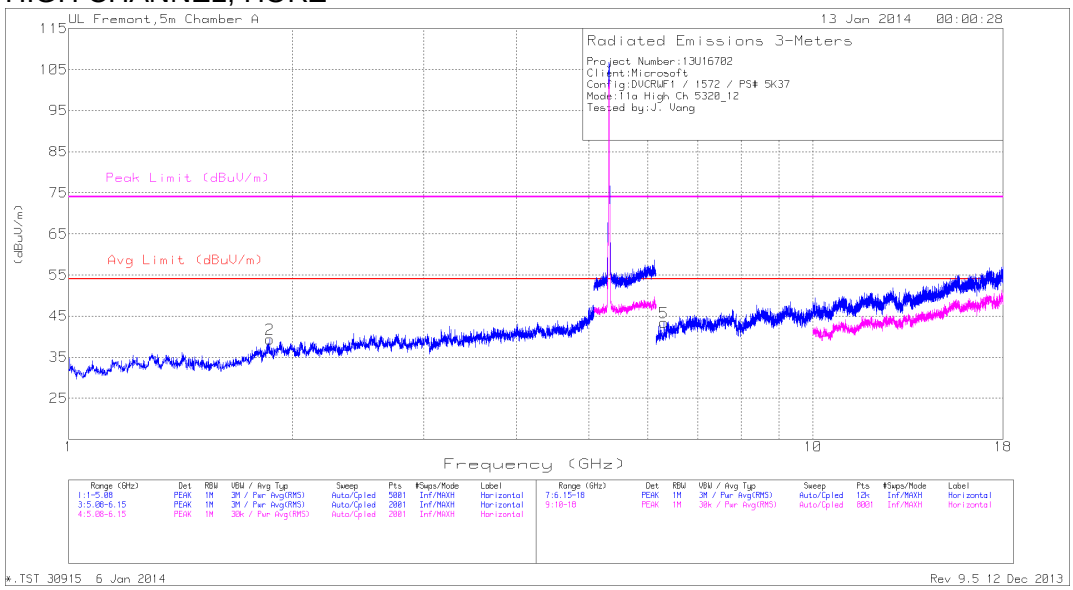
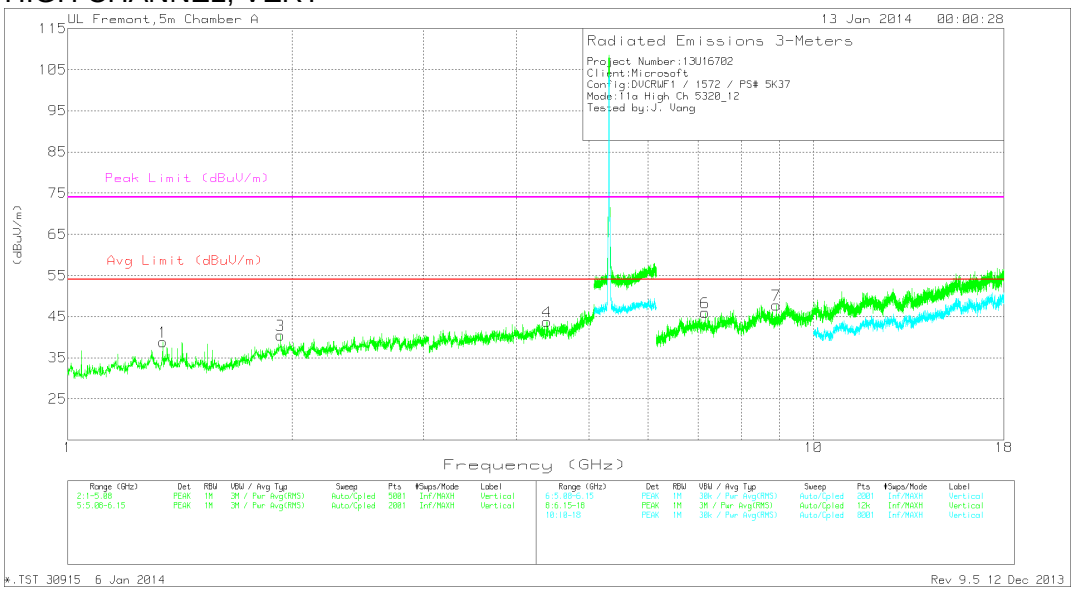
HIGH CHANNEL

HIGH CHANNEL, HORZ



HIGH CHANNEL, VERT



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HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	45.15	PK	30.1	-36.4	38.85	54	-15.15	74	-35.15	0-360	200	V
4	* 4.39	40.02	PK	33.6	-29.8	43.82	54	-10.18	74	-30.18	0-360	200	V
2	1.863	42.88	PK	31.3	-34.8	39.38	54	-14.62	74	-34.62	0-360	101	H
3	1.929	43.28	PK	31.8	-34.6	40.48	54	-13.52	74	-33.52	0-360	101	V

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	6.306	36.75	PK	35.5	-28.8	43.45	54	-10.55	74	-30.55	0-360	101	H
6	7.155	36.89	PK	35.4	-26.3	45.99	54	-8.01	74	-28.01	0-360	201	V
7	8.916	37.47	PK	35.8	-25.5	47.77	54	-6.23	74	-26.23	0-360	101	V

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

PK - Peak detector

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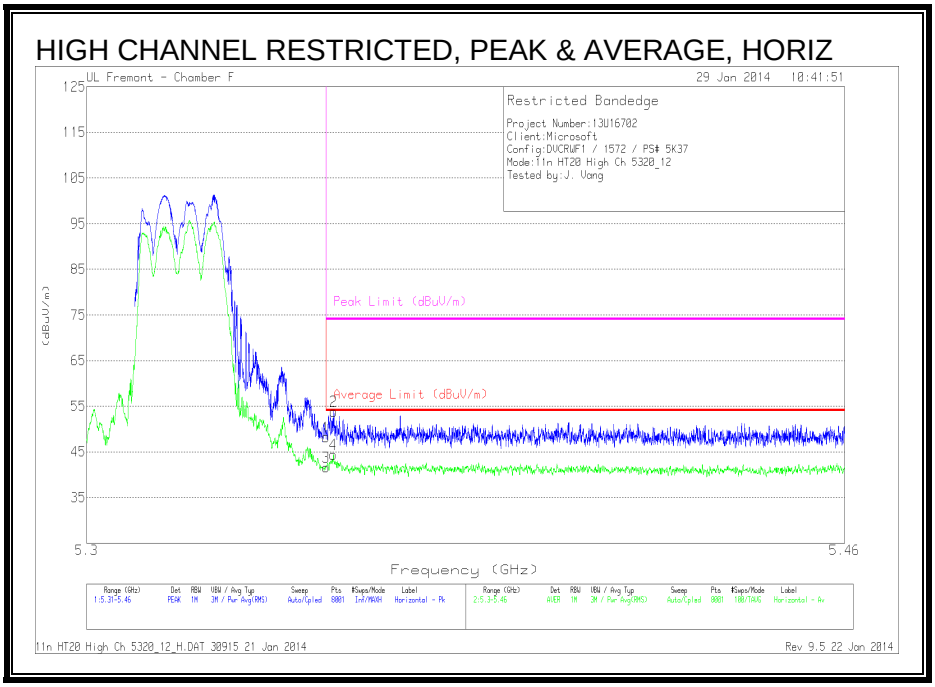
8.6. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.3 GHz BAND

RESTRICTED BANDEDGE (HIGH CHANNEL)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.35	32.95	PK	34.5	-19.2	48.25	-	-	74	-25.75	194	216	H
2	5.352	38.56	PK	34.5	-19.2	53.86	-	-	74	-20.14	194	216	H
3	5.35	26.35	RMS	34.5	-19.2	41.65	54	-12.35	-	-	194	216	H
4	5.352	29.12	RMS	34.5	-19.2	44.42	54	-9.58	-	-	194	216	H

PK - Peak detector

RMS - RMS detection

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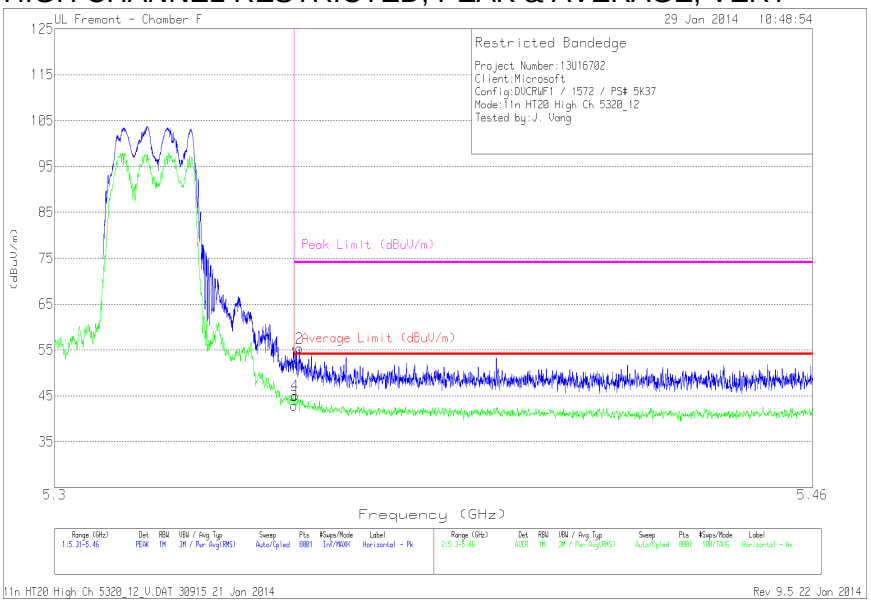
HIGH CHANNEL RESTRICTED, PEAK & AVERAGE, VERT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.35	36.96	PK	34.5	-19.2	52.26	-	-	74	-21.74	59	216	V
2	5.351	40.08	PK	34.5	-19.2	55.38	-	-	74	-18.62	59	216	V
3	5.35	27.59	RMS	34.5	-19.2	42.89	54	-11.11	-	-	59	216	V
4	5.35	29.78	RMS	34.5	-19.2	45.08	54	-8.92	-	-	59	216	V

PK - Peak detector

RMS - RMS detection

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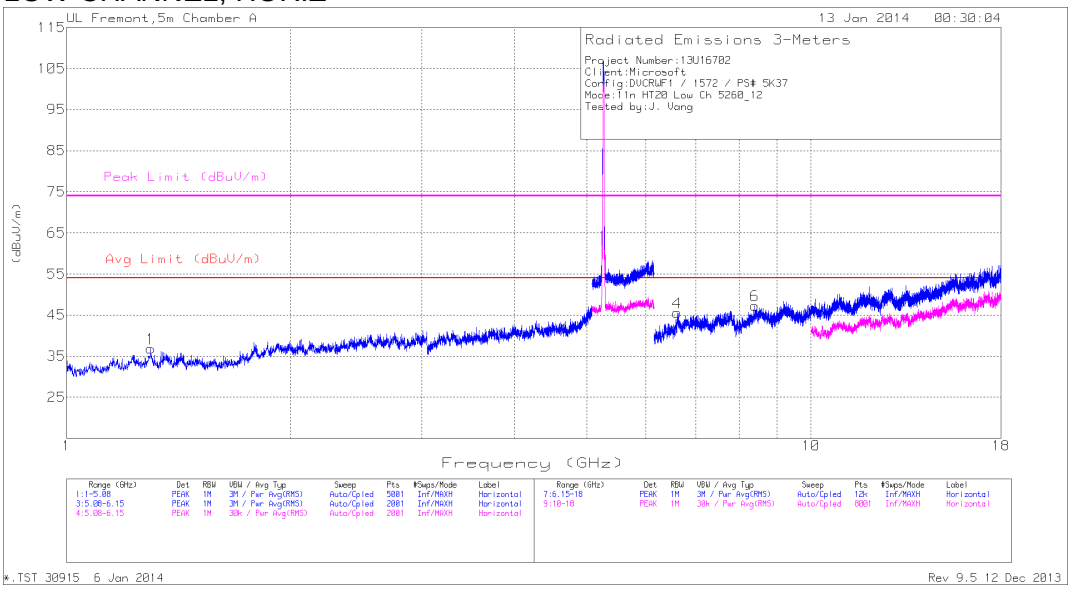
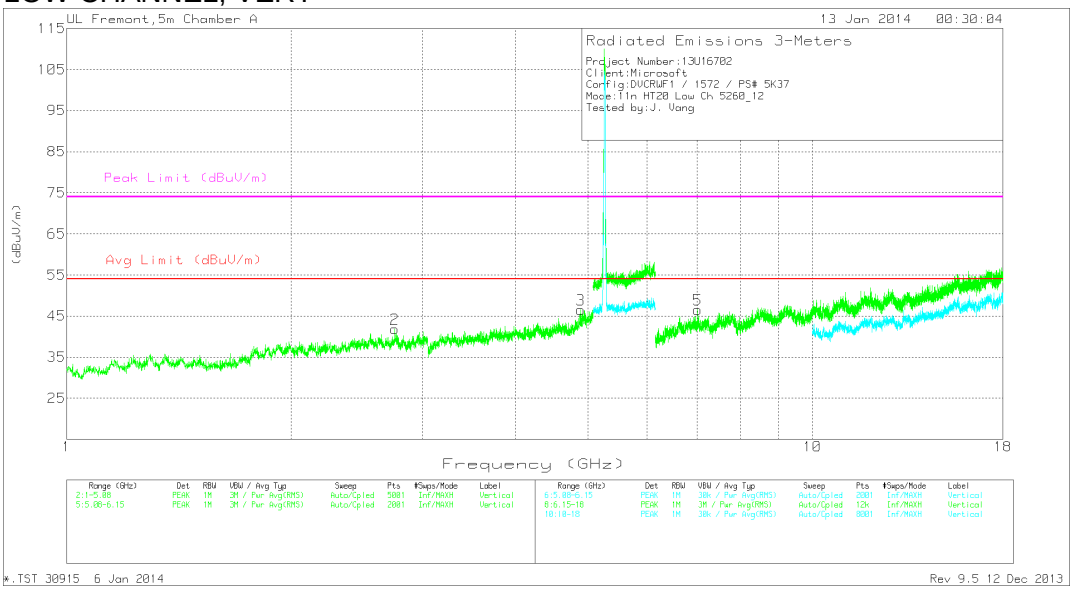
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL

LOW CHANNEL, HORIZ



LOW CHANNEL, VERT



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LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 1.297	43.25	PK	30.3	-36.7	36.85	54	-17.15	74	-37.15	0-360	200	H
2	* 2.753	40.98	PK	32.6	-31.7	41.88	54	-12.12	74	-32.12	0-360	201	V
3	* 4.891	41.45	PK	34	-28.9	46.55	54	-7.45	74	-27.45	0-360	201	V

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 8.405	37.02	PK	35.7	-25.4	47.32	54	-6.68	74	-26.68	0-360	101	H
4	6.611	35.59	PK	35.5	-25.5	45.59	54	-8.41	74	-28.41	0-360	101	H
5	7.013	38.35	PK	35.4	-27.2	46.55	54	-7.45	74	-27.45	0-360	101	V

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

PK - Peak detector

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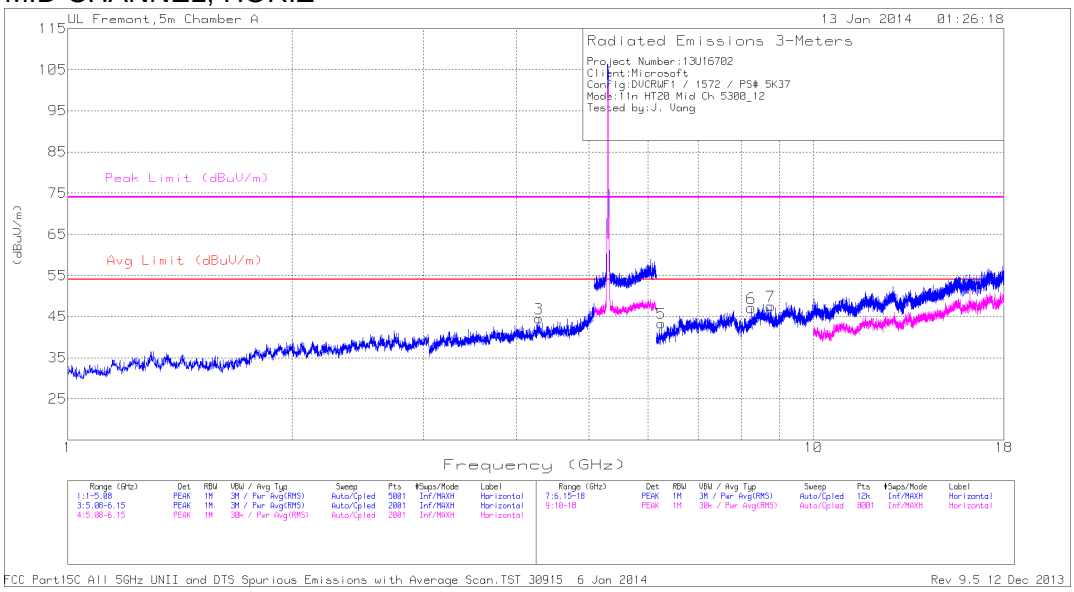
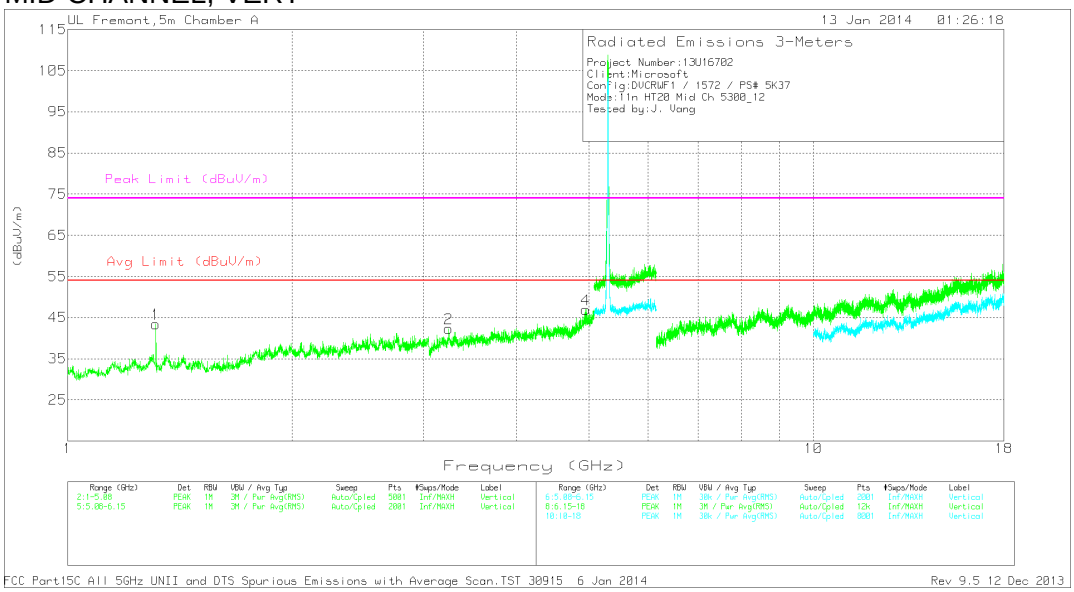
MID CHANNEL

MID CHANNEL, HORIZ



MID CHANNEL, VERT



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MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
3	* 4.284	39.69	PK	33.6	-28.7	44.59	54	-9.41	74	-29.41	0-360	200	H
1	* 1.313	50.35	PK	30.2	-37.1	43.45	54	-10.55	74	-30.55	0-360	200	V
4	* 4.95	42.15	PK	33.9	-29.1	46.95	54	-7.05	74	-27.05	0-360	200	V
2	3.241	40.84	PK	33.3	-31.8	42.34	54	-11.66	74	-31.66	0-360	101	V

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 8.254	37.3	PK	35.6	-25.8	47.1	54	-6.9	74	-26.9	0-360	200	H
5	6.254	35.4	PK	35.5	-27.5	43.4	54	-10.6	74	-30.6	0-360	101	H
7	8.764	36.89	PK	35.8	-25.1	47.59	54	-6.41	74	-26.41	0-360	101	H

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

PK - Peak detector

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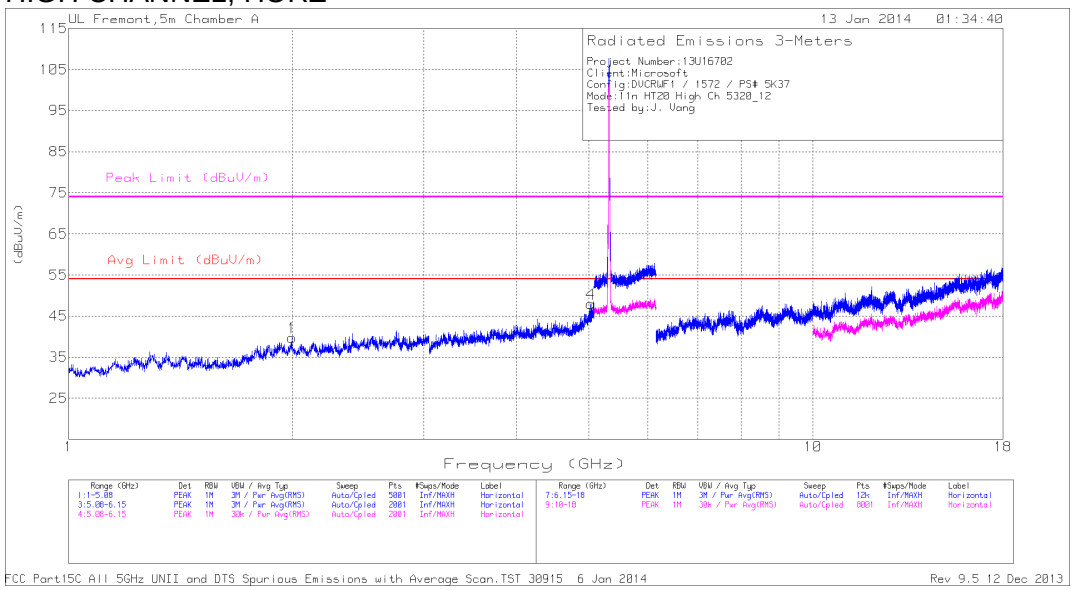
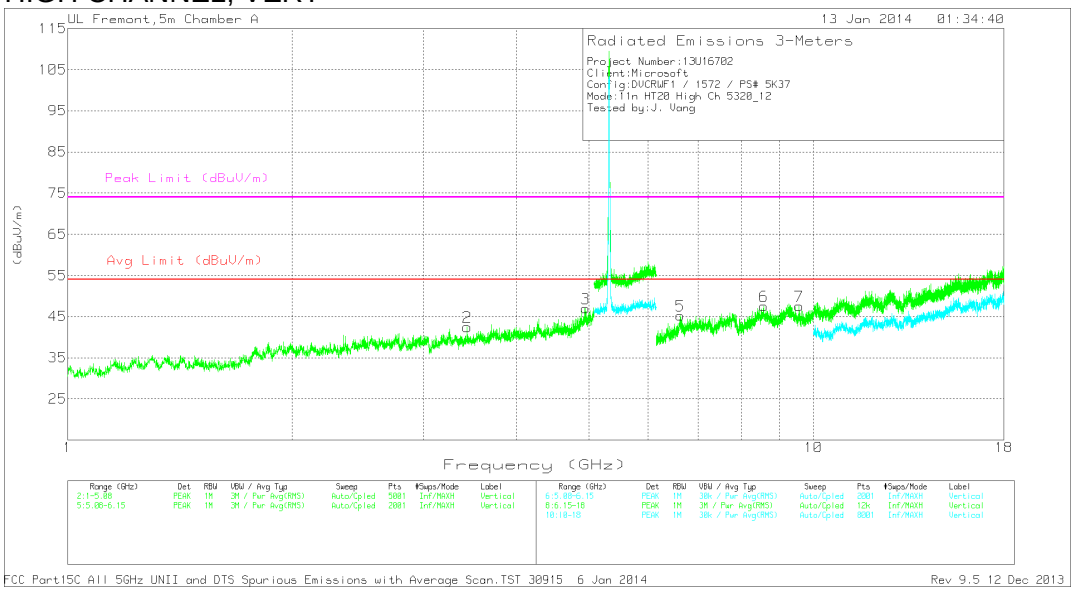
HIGH CHANNEL

HIGH CHANNEL, HORZ



HIGH CHANNEL, VERT



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HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
4	* 5.029	42.27	PK	33.9	-28.2	47.97	54	-6.03	74	-26.03	0-360	200	H
3	* 4.949	42.1	PK	34	-29.1	47	54	-7	74	-27	0-360	201	V
1	1.996	42.98	PK	31.9	-35.1	39.78	54	-14.22	74	-34.22	0-360	101	H
2	3.432	40.5	PK	33	-31	42.5	54	-11.5	74	-31.5	0-360	201	V

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	6.63	35.56	PK	35.5	-25.8	45.26	54	-8.74	74	-28.74	0-360	101	V
6	8.576	37.78	PK	35.7	-25.9	47.58	54	-6.42	74	-26.42	0-360	101	V
7	9.564	35.08	PK	36.7	-24.2	47.58	54	-6.42	74	-26.42	0-360	201	V

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

PK - Peak detector

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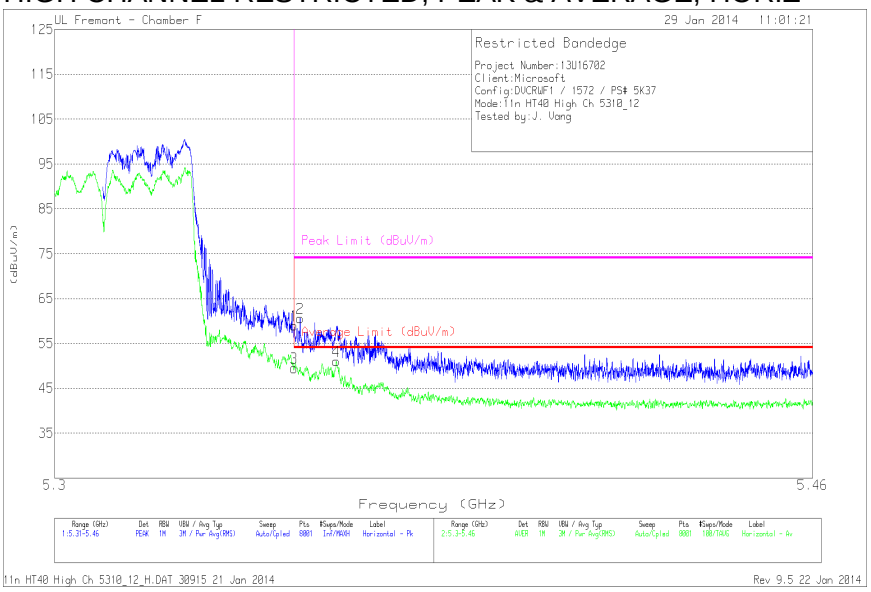
8.7. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.3 GHz BAND

RESTRICTED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL RESTRICTED, PEAK & AVERAGE, HORIZ



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.35	43.69	PK	34.5	-19.2	58.99	-	-	74	-15.01	166	119	H
2	5.351	45.35	PK	34.5	-19.2	60.65	-	-	74	-13.35	166	119	H
3	5.35	34.21	RMS	34.5	-19.2	49.51	54	-4.49	-	-	166	119	H
4	5.359	35.63	RMS	34.6	-19.2	51.03	54	-2.97	-	-	166	119	H

PK - Peak detector

RMS - RMS detection

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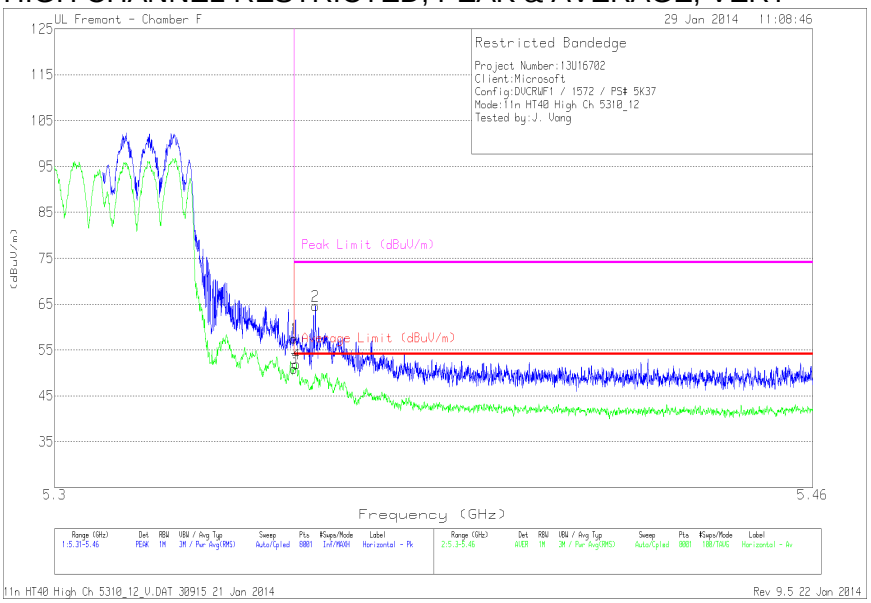
HIGH CHANNEL RESTRICTED, PEAK & AVERAGE, VERT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.35	42.2	PK	34.5	-19.2	57.5	-	-	74	-16.5	225	106	V
2	5.355	49.17	PK	34.6	-19.2	64.57	-	-	74	-9.43	225	106	V
3	5.35	35.66	RMS	34.5	-19.2	50.96	54	-3.04	-	-	225	106	V
4	5.351	36.64	RMS	34.5	-19.2	51.94	54	-2.06	-	-	225	106	V

PK - Peak detector

RMS - RMS detection

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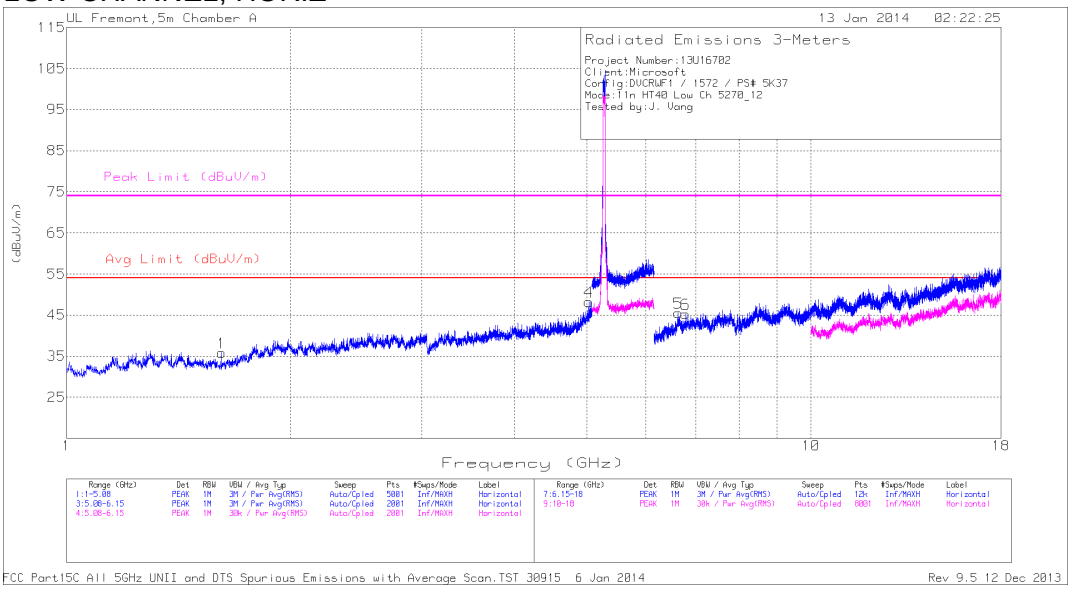
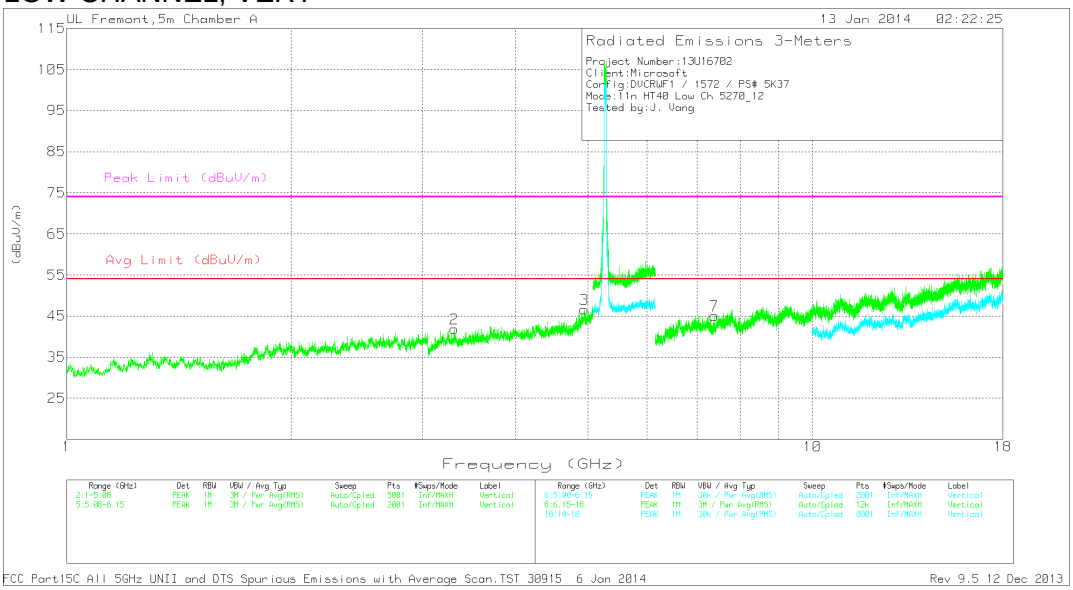
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL

LOW CHANNEL, HORIZ



LOW CHANNEL, VERT



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LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 1.615	43.24	PK	28.5	-35.9	35.84	54	-18.16	74	-38.16	0-360	101	H
4	* 5.029	42.56	PK	33.9	-28.2	48.26	54	-5.74	74	-25.74	0-360	200	H
3	* 4.945	41.66	PK	34	-29	46.66	54	-7.34	74	-27.34	0-360	200	V
2	3.31	40	PK	32.9	-31	41.9	54	-12.1	74	-32.1	0-360	200	V

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
7	* 7.389	36.56	PK	35.4	-26.9	45.06	54	-8.94	74	-28.94	0-360	100	V
5	6.632	35.82	PK	35.5	-25.8	45.52	54	-8.48	74	-28.48	0-360	101	H
6	6.784	37.38	PK	35.4	-27.5	45.28	54	-8.72	74	-28.72	0-360	101	H

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
* 5.028	30.98	Av	33.9	-28.2	36.68	54	-17.32	-	-	162	239	H

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

PK - Peak detector

Av - average detection

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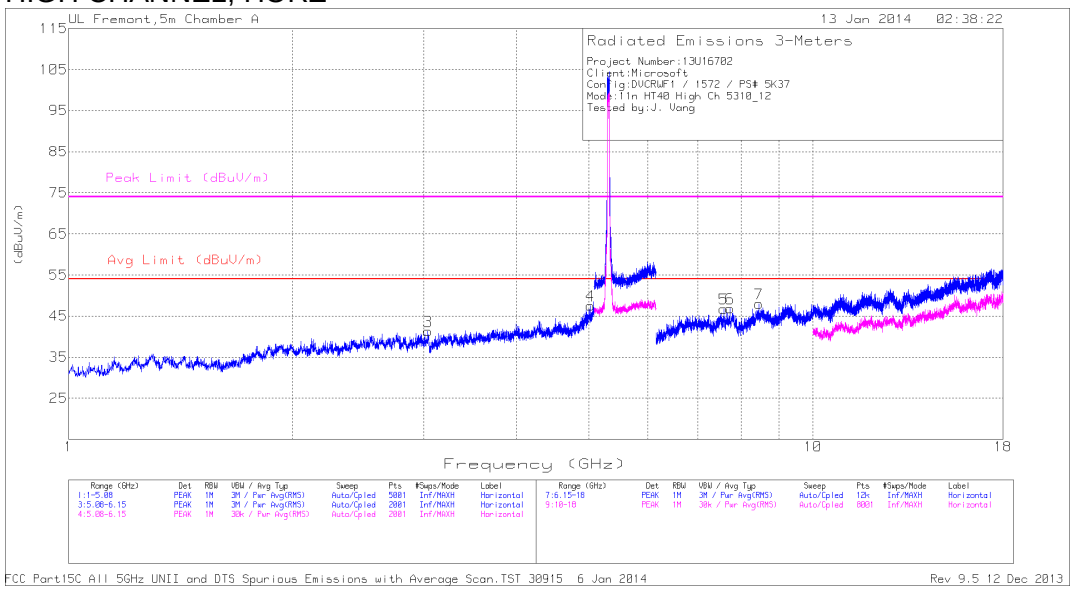
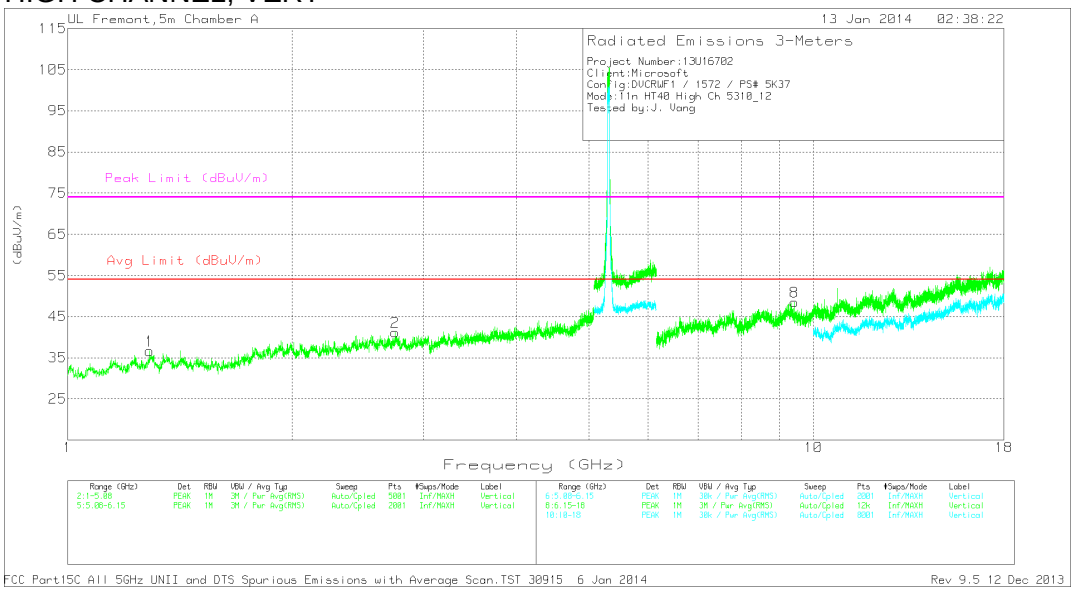
HIGH CHANNEL

HIGH CHANNEL, HORZ



HIGH CHANNEL, VERT



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HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
4	* 5.026	41.98	PK	33.9	-28.3	47.58	54	-6.42	74	-26.42	0-360	200	H
1	* 1.287	43.46	PK	30.2	-37	36.66	54	-17.34	74	-37.34	0-360	100	V
2	* 2.747	40.53	PK	32.7	-32	41.23	54	-12.77	74	-32.77	0-360	100	V
3	3.038	40.11	PK	32.7	-31.5	41.31	54	-12.69	74	-32.69	0-360	101	H

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 7.587	37.8	PK	35.5	-26.5	46.8	54	-7.2	74	-27.2	0-360	100	H
6	* 7.737	38.18	PK	35.5	-26.8	46.88	54	-7.12	74	-27.12	0-360	100	H
7	* 8.461	37.83	PK	35.7	-25.5	48.03	54	-5.97	74	-25.97	0-360	200	H
8	* 9.425	37.25	PK	36.5	-25.2	48.55	54	-5.45	74	-25.45	0-360	200	V

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
* 9.426	13.06	Av	36.5	-25.2	24.36	54	-29.64	-	-	12	239	V

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

PK - Peak detector

Av - average detection

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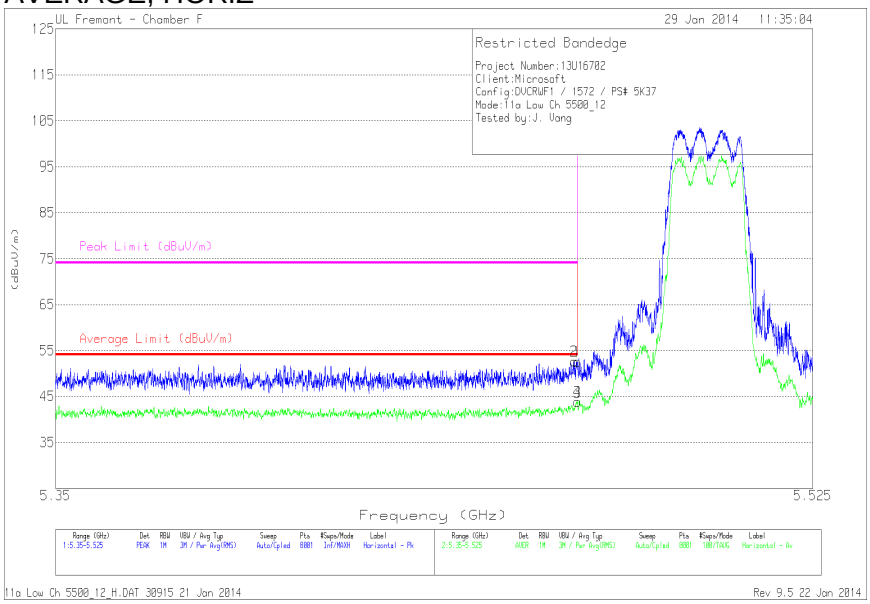
8.8. TX ABOVE 1 GHz 802.11a MODE IN THE 5.6 GHz BAND

RESTRICTED & AUTHORIZED BANDEDGE (LOW CHANNEL)

LOW CHANNEL RESTRICTED & AUTHORIZED, PEAK & AVERAGE, HORIZ



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.47	37.69	PK	34.7	-19.8	52.59	-	-	74	-21.41	284	105	H
2	5.469	37.79	PK	34.7	-19.8	52.69	-	-	74	-21.31	284	105	H
3	5.47	28.94	RMS	34.7	-19.8	43.84	54	-10.16	-	-	284	105	H
4	5.47	28.94	RMS	34.7	-19.8	43.84	54	-10.16	-	-	284	105	H

PK - Peak detector

RMS - RMS detection

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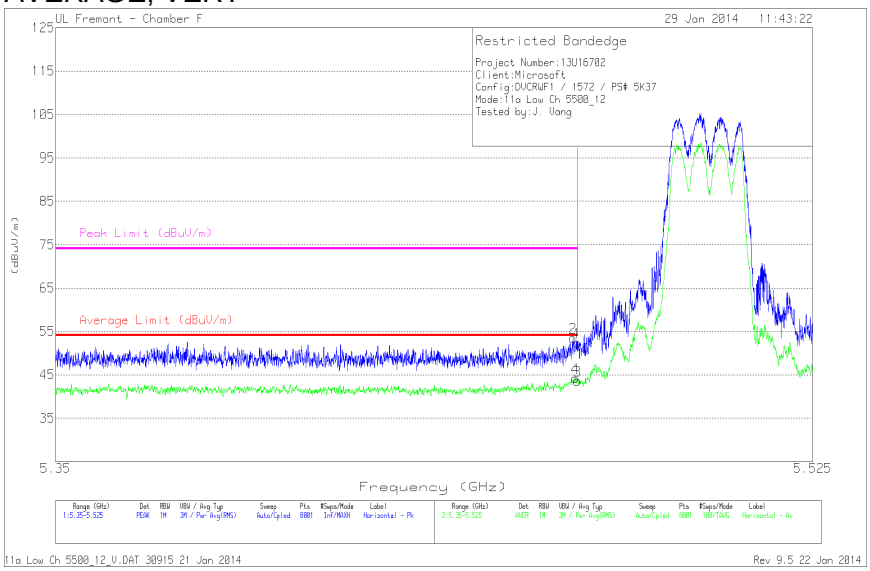
LOW CHANNEL RESTRICTED & AUTHORIZED, PEAK & AVERAGE, VERT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.47	37.55	PK	34.7	-19.8	52.45	-	-	74	-21.55	51	118	V
2	5.469	38.61	PK	34.7	-19.8	53.51	-	-	74	-20.49	51	118	V
3	5.47	28.75	RMS	34.7	-19.8	43.65	54	-10.35	-	-	51	118	V
4	5.469	29.29	RMS	34.7	-19.8	44.19	54	-9.81	-	-	51	118	V

PK - Peak detector

RMS - RMS detection

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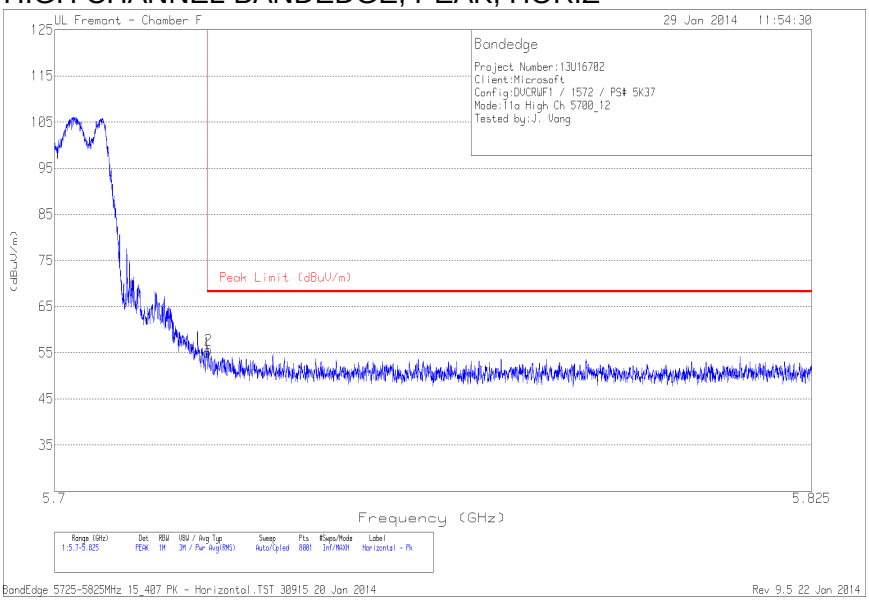
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL BANDEDGE, PEAK, HORIZ



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl /Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	39.25	PK	34.9	-19.1	55.05	68.2	-13.15	153	111	H
2	5.725	39.87	PK	34.9	-19.1	55.67	68.2	-12.53	153	111	H

PK - Peak detector

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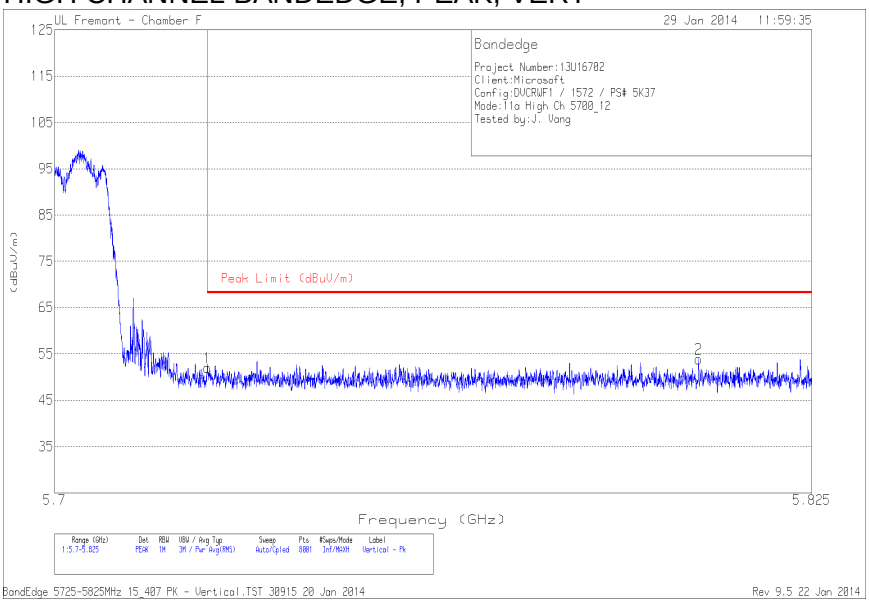
HIGH CHANNEL BANDEDGE, PEAK, VERT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl /Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	36.22	PK	34.9	-19.1	52.02	68.2	-16.18	36	216	V
2	5.806	37.68	PK	35.1	-18.9	53.88	68.2	-14.32	36	216	V

PK - Peak detector

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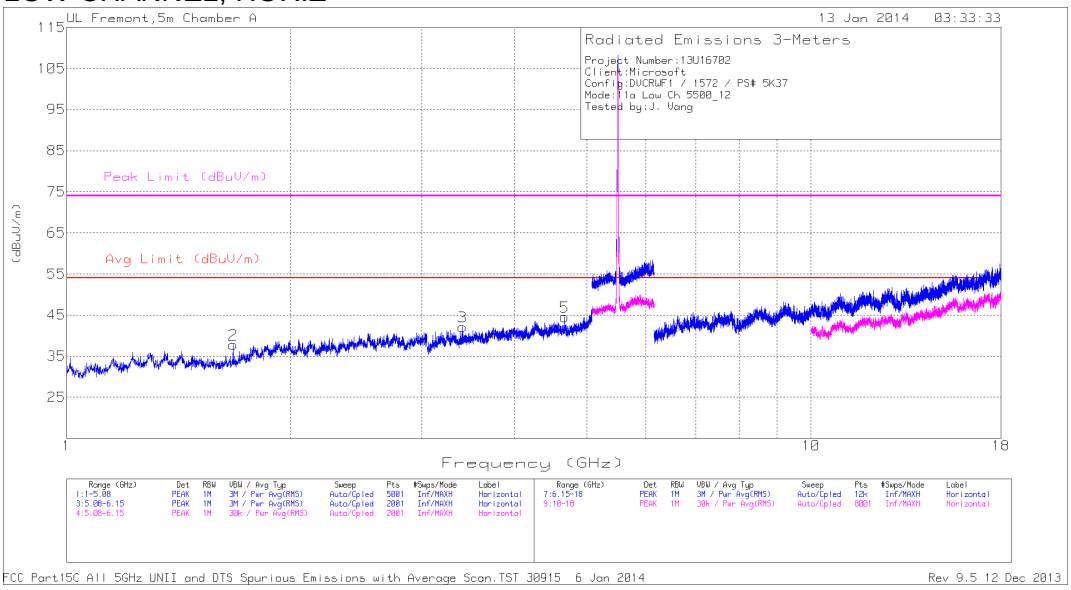
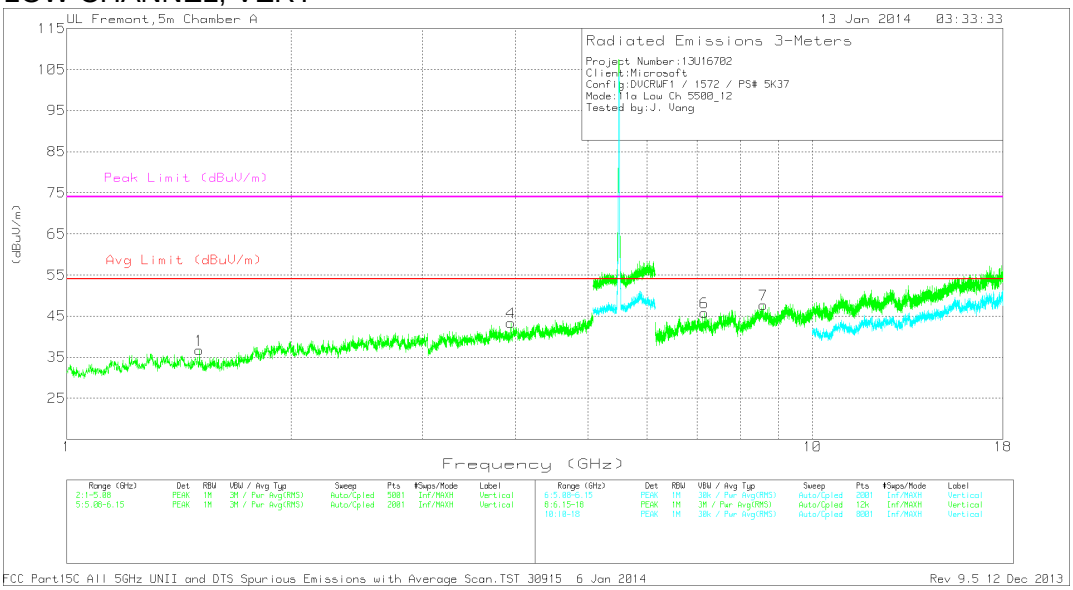
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL

LOW CHANNEL, HORIZ



LOW CHANNEL, VERT



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LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
2	* 1.674	44.88	PK	29.1	-36.2	37.78	54	-16.22	74	-36.22	0-360	200	H
5	* 4.669	40.44	PK	33.9	-29.8	44.54	54	-9.46	74	-29.46	0-360	200	H
1	* 1.505	43.91	PK	28.9	-36.1	36.71	54	-17.29	74	-37.29	0-360	200	V
4	* 3.94	40.69	PK	33.7	-31	43.39	54	-10.61	74	-30.61	0-360	200	V
3	3.403	40.29	PK	33	-31.1	42.19	54	-11.81	74	-31.81	0-360	200	H

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	7.162	36.55	PK	35.4	-26.1	45.85	54	-8.15	74	-28.15	0-360	201	V
7	8.591	37.84	PK	35.7	-25.8	47.74	54	-6.26	74	-26.26	0-360	201	V

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

PK - Peak detector

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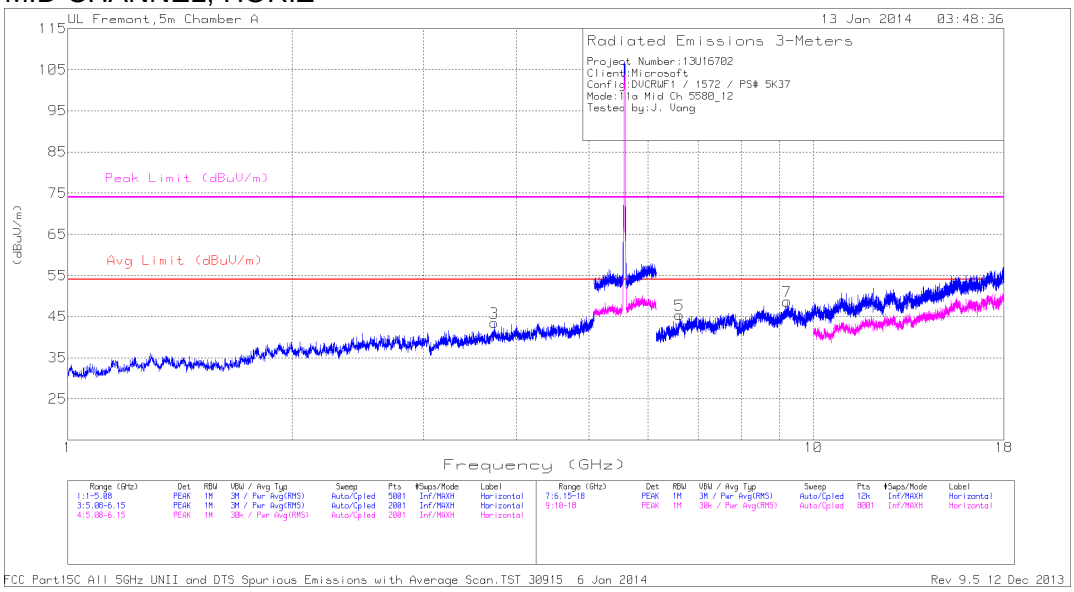
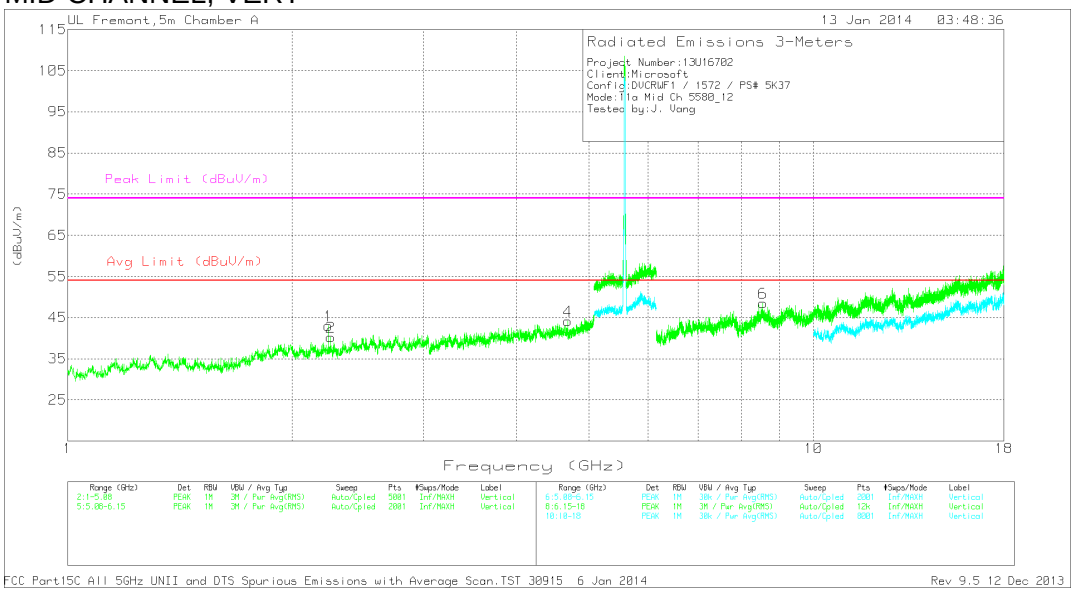
MID CHANNEL

MID CHANNEL, HORIZ



MID CHANNEL, VERT



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MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
3	* 3.731	40.09	PK	33.4	-30	43.49	54	-10.51	74	-30.51	0-360	200	H
1	* 2.236	45.03	PK	31.5	-33.5	43.03	54	-10.97	74	-30.97	0-360	201	V
2	* 2.253	41.99	PK	31.6	-33.3	40.29	54	-13.71	74	-33.71	0-360	201	V
4	* 4.683	40.15	PK	33.9	-29.9	44.15	54	-9.85	74	-29.85	0-360	201	V

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	6.612	35.51	PK	35.5	-25.6	45.41	54	-8.59	74	-28.59	0-360	101	H
6	8.552	38.86	PK	35.7	-26	48.56	54	-5.44	74	-25.44	0-360	101	V
7	9.215	37	PK	36.1	-24.4	48.7	54	-5.3	74	-25.3	0-360	101	H

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

PK - Peak detector

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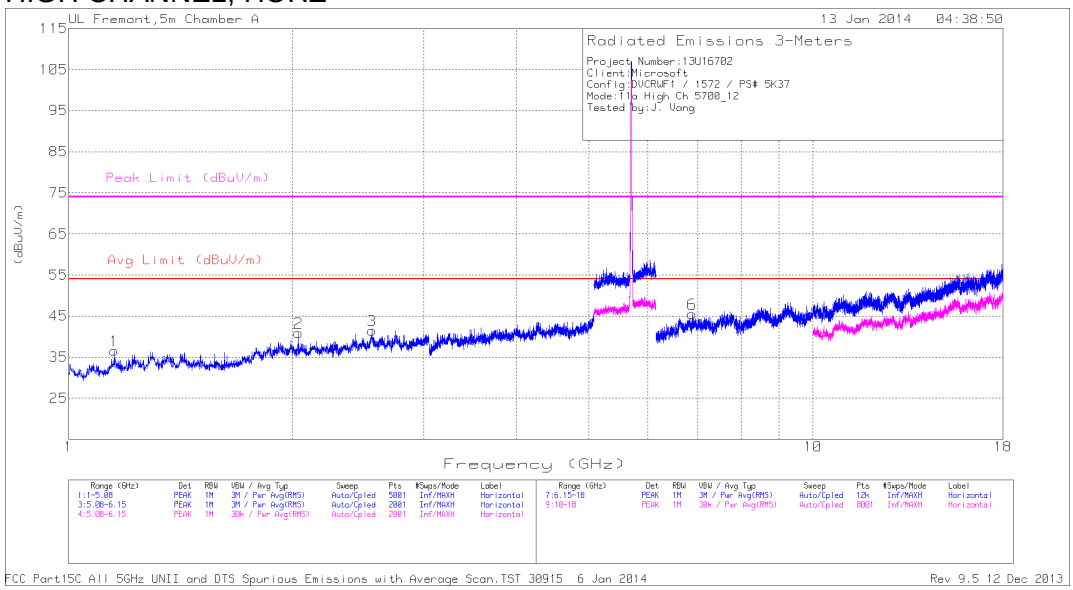
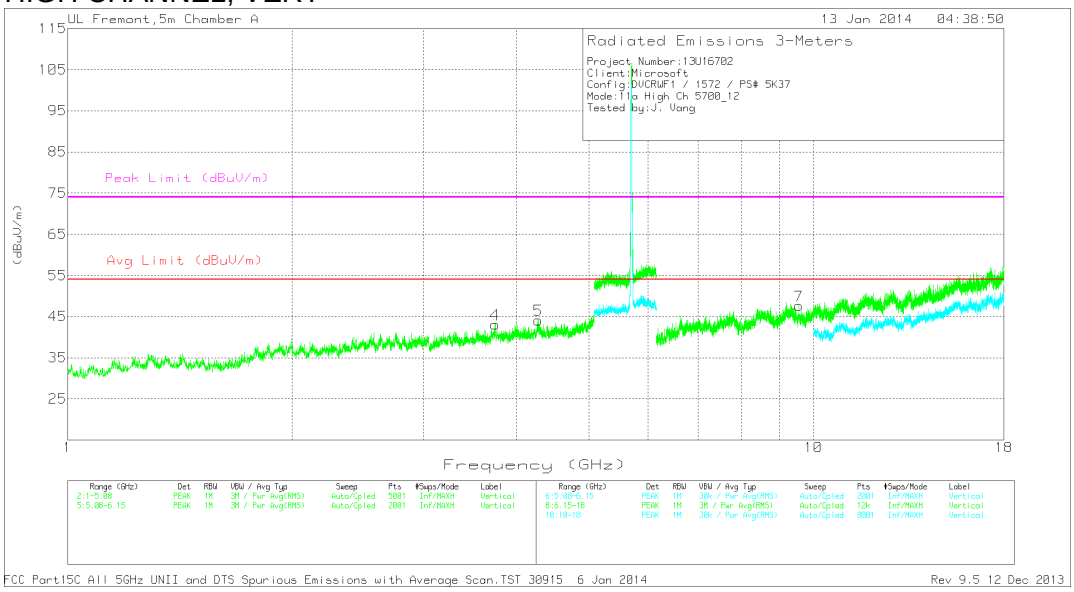
HIGH CHANNEL

HIGH CHANNEL, HORZ



HIGH CHANNEL, VERT



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HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 1.152	44.46	PK	28.7	-36.6	36.56	54	-17.44	74	-37.44	0-360	200	H
4	* 3.742	39.36	PK	33.4	-29.7	43.06	54	-10.94	74	-30.94	0-360	200	V
5	* 4.275	39.23	PK	33.6	-28.7	44.13	54	-9.87	74	-29.87	0-360	101	V
2	2.036	44.52	PK	31.8	-35.4	40.92	54	-13.08	74	-33.08	0-360	101	H
3	2.557	41.81	PK	32.7	-33	41.51	54	-12.49	74	-32.49	0-360	101	H

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	6.88	37.75	PK	35.4	-27.6	45.55	54	-8.45	74	-28.45	0-360	200	H
7	9.561	35.23	PK	36.7	-24.3	47.63	54	-6.37	74	-26.37	0-360	101	V

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

PK - Peak detector

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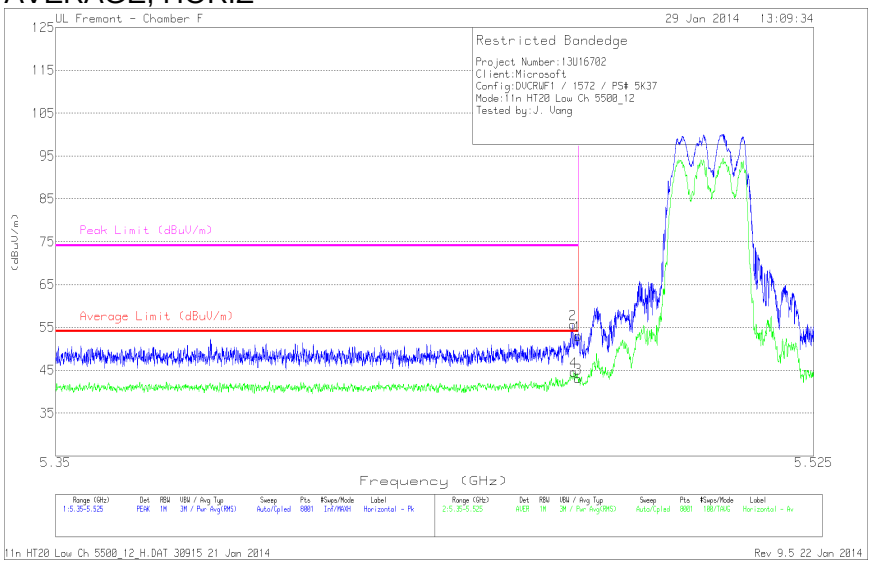
8.9. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.6 GHz BAND

RESTRICTED & AUTHORIZED BANDEDGE (LOW CHANNEL)

LOW CHANNEL RESTRICTED & AUTHORIZED, PEAK & AVERAGE, HORIZ



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.47	38.09	PK	34.7	-19.8	52.99	-	-	74	-21.01	5	216	H
2	5.469	40.78	PK	34.7	-19.8	55.68	-	-	74	-18.32	5	216	H
3	5.47	28.2	RMS	34.7	-19.8	43.1	54	-10.9	-	-	5	216	H
4	5.469	29.7	RMS	34.7	-19.8	44.6	54	-9.4	-	-	5	216	H

PK - Peak detector

RMS - RMS detection

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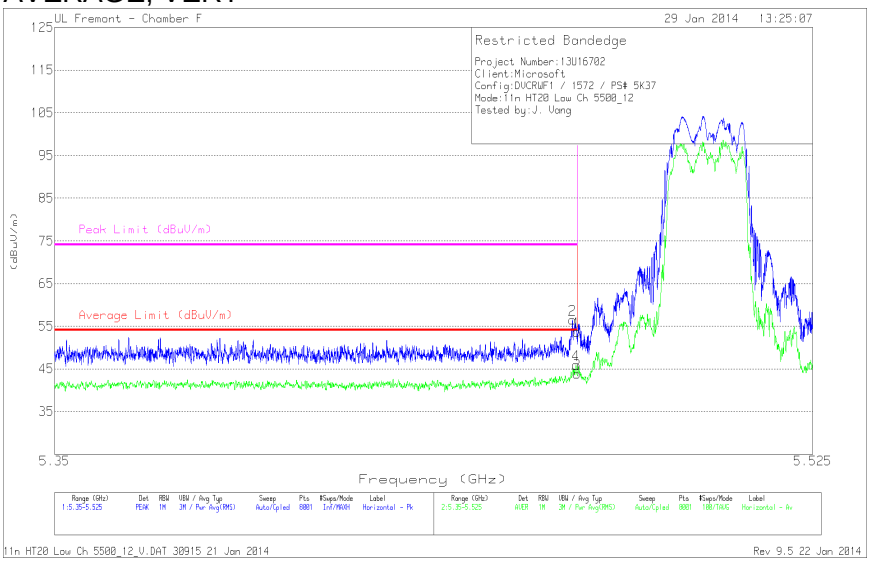
LOW CHANNEL RESTRICTED & AUTHORIZED, PEAK & AVERAGE, VERT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.47	38.8	PK	34.7	-19.8	53.7	-	-	74	-20.3	308	214	V
2	5.469	41.59	PK	34.7	-19.8	56.49	-	-	74	-17.51	308	214	V
3	5.47	28.92	RMS	34.7	-19.8	43.82	54	-10.18	-	-	308	214	V
4	5.47	31.02	RMS	34.7	-19.8	45.92	54	-8.08	-	-	308	214	V

PK - Peak detector

RMS - RMS detection

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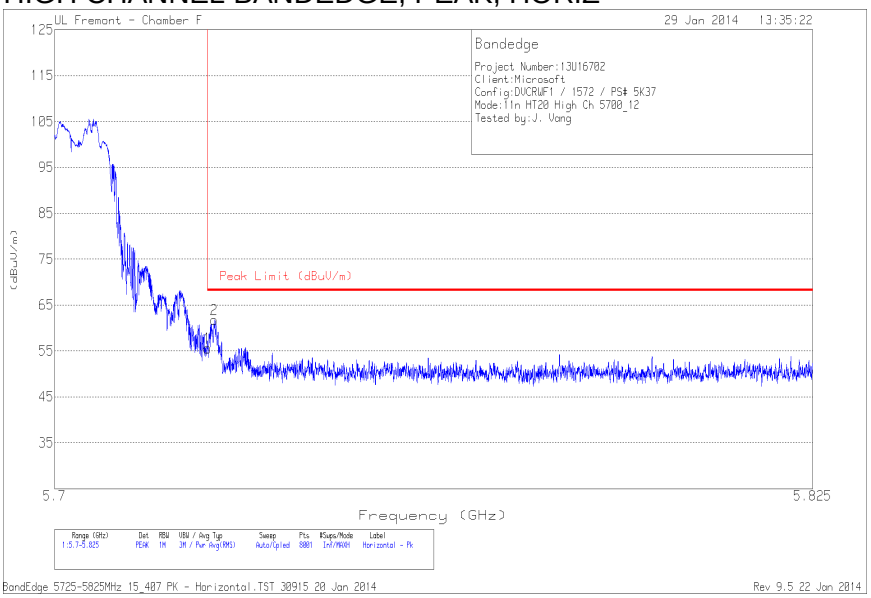
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL BANDEDGE, PEAK, HORIZ



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl /Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	39.81	PK	34.9	-19.1	55.61	68.2	-12.59	150	109	H
2	5.726	46.02	PK	34.9	-19.1	61.82	68.2	-6.38	150	109	H

PK - Peak detector

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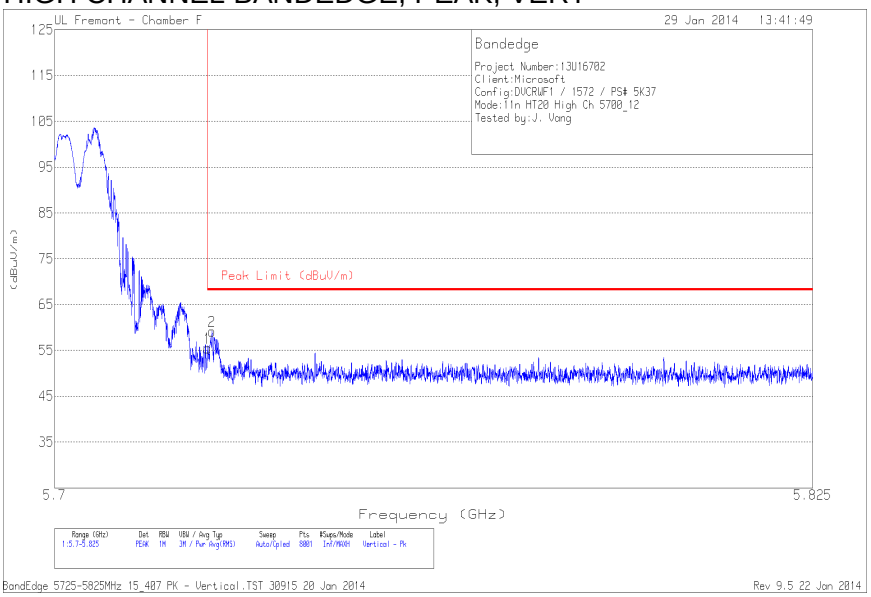
HIGH CHANNEL BANDEDGE, PEAK, VERT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl /Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	39.68	PK	34.9	-19.1	55.48	68.2	-12.72	30	133	V
2	5.726	43.35	PK	34.9	-19.1	59.15	68.2	-9.05	30	133	V

PK - Peak detector

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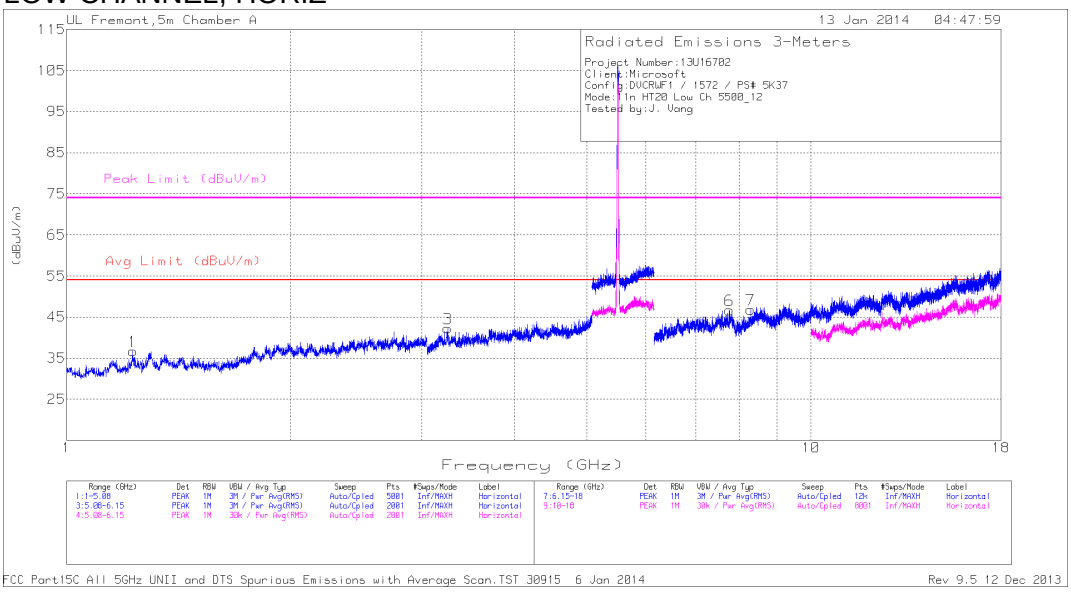
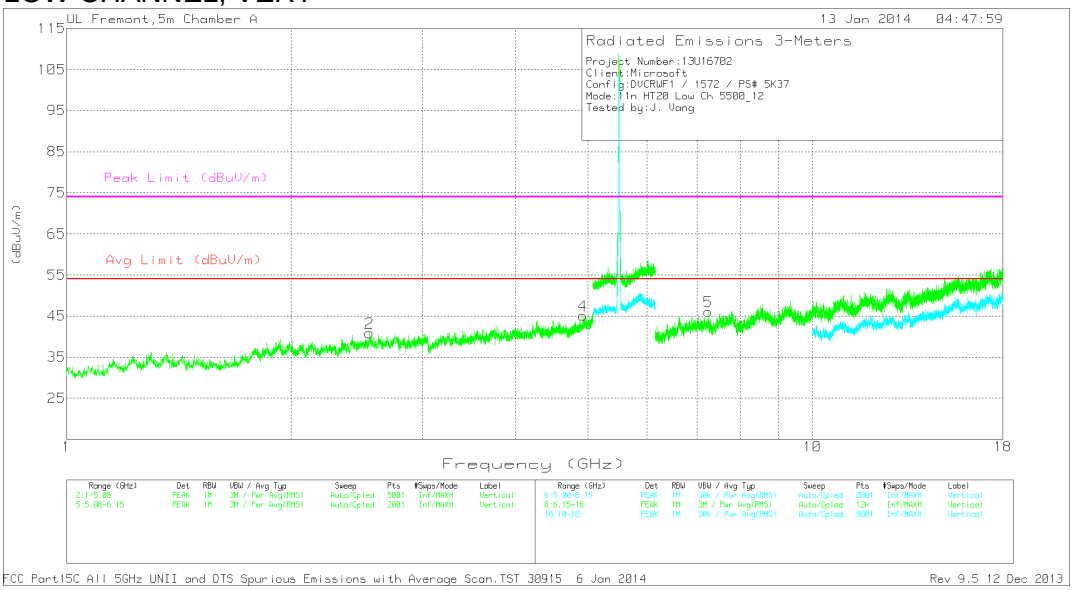
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL

LOW CHANNEL, HORIZ



LOW CHANNEL, VERT



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LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 1.228	44.2	PK	29.7	-37.2	36.7	54	-17.3	74	-37.3	0-360	101	H
4	* 4.921	40.32	PK	34	-29.2	45.12	54	-8.88	74	-28.88	0-360	101	V
2	2.546	40.99	PK	32.6	-32.7	40.89	54	-13.11	74	-33.11	0-360	201	V
3	3.25	40.87	PK	33.3	-31.9	42.27	54	-11.73	74	-31.73	0-360	101	H

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
7	* 8.298	37.75	PK	35.6	-26.5	46.85	54	-7.15	74	-27.15	0-360	200	H
5	7.249	36.21	PK	35.4	-25.5	46.11	54	-7.89	74	-27.89	0-360	100	V
6	7.767	37.8	PK	35.5	-26.6	46.7	54	-7.3	74	-27.3	0-360	101	H

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

PK - Peak detector

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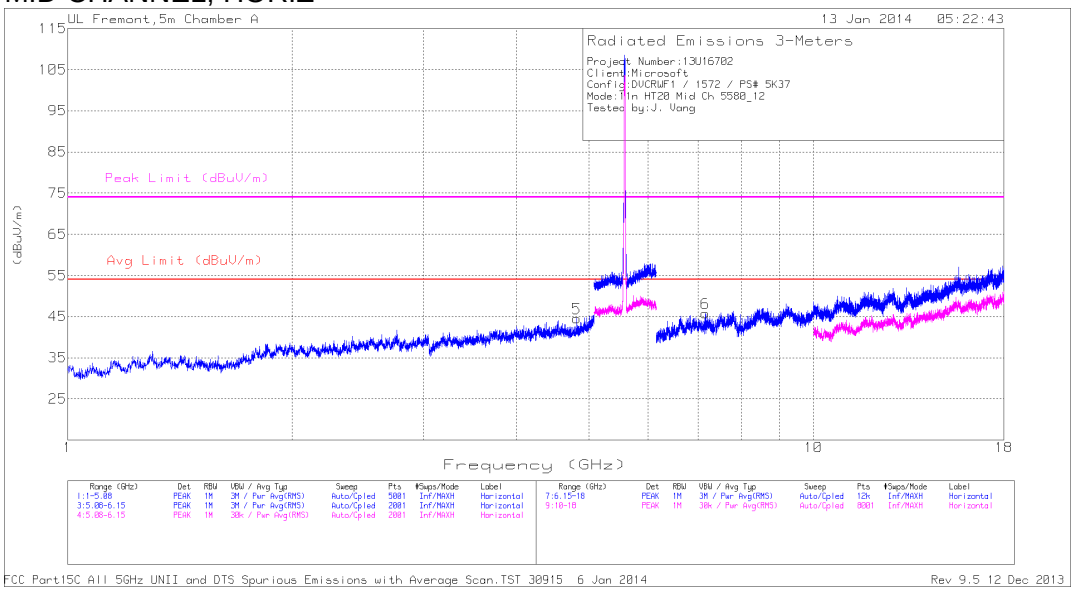
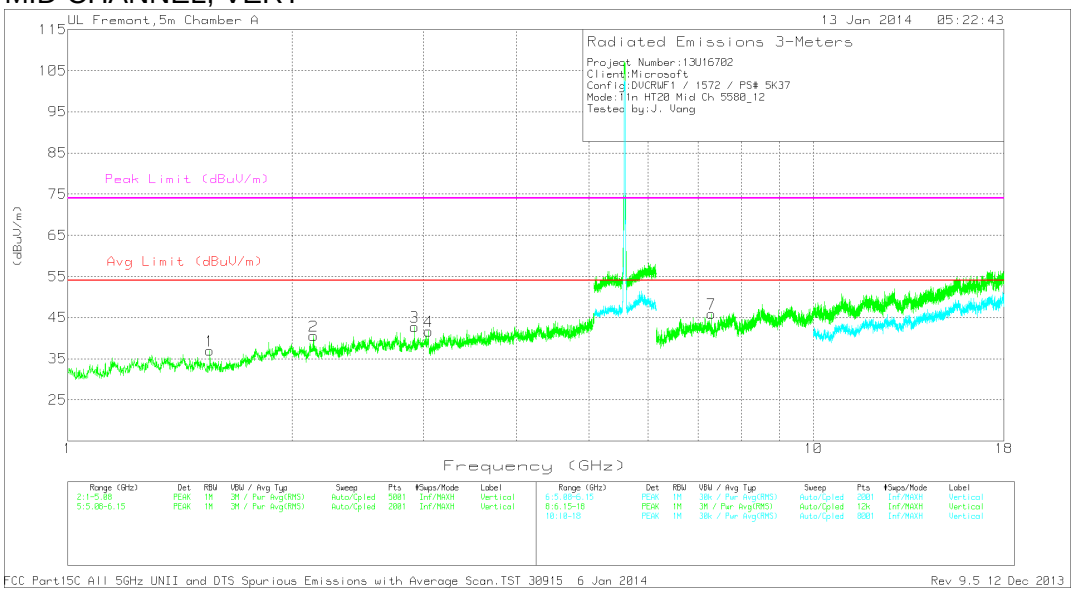
MID CHANNEL

MID CHANNEL, HORIZ



MID CHANNEL, VERT



UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701J
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
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MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
5	* 4.812	39.66	PK	33.9	-29	44.56	54	-9.44	74	-29.44	0-360	102	H
1	* 1.551	44.4	PK	28.6	-36	37	54	-17	74	-37	0-360	101	V
2	2.136	42.88	PK	31.6	-33.9	40.58	54	-13.42	74	-33.42	0-360	201	V
3	2.919	43.36	PK	32.5	-33.1	42.76	54	-11.24	74	-31.24	0-360	201	V
4	3.047	40.8	PK	32.7	-31.8	41.7	54	-12.3	74	-32.3	0-360	101	V

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
7	* 7.294	37.64	PK	35.3	-27	45.94	54	-8.06	74	-28.06	0-360	201	V
6	7.161	36.53	PK	35.4	-26.1	45.83	54	-8.17	74	-28.17	0-360	101	H

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

PK - Peak detector

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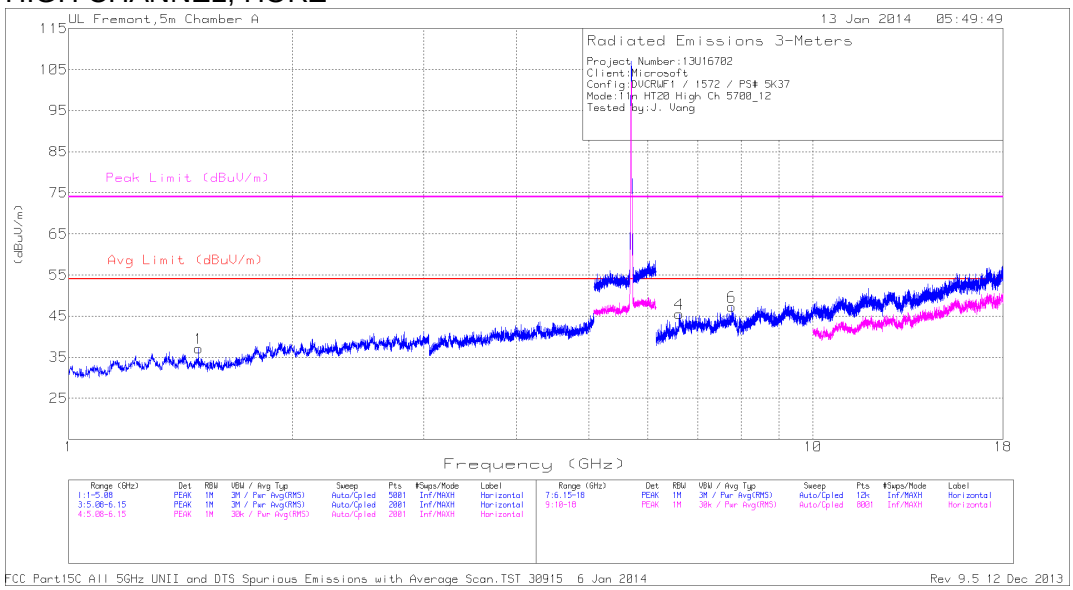
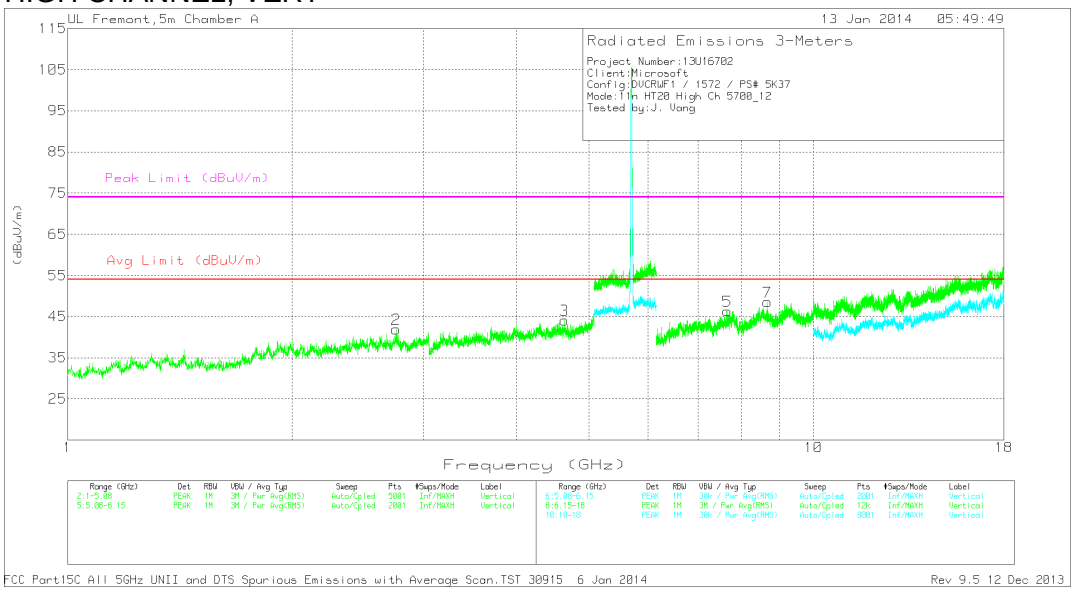
HIGH CHANNEL

HIGH CHANNEL, HORZ



HIGH CHANNEL, VERT



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HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 1.495	44.66	PK	28.9	-36.4	37.16	54	-16.84	74	-36.84	0-360	101	H
2	* 2.756	41.14	PK	32.6	-31.8	41.94	54	-12.06	74	-32.06	0-360	100	V
3	* 4.634	39.52	PK	33.9	-29.3	44.12	54	-9.88	74	-29.88	0-360	100	V

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 7.663	37.55	PK	35.5	-26.7	46.35	54	-7.65	74	-27.65	0-360	200	V
4	6.61	35.54	PK	35.5	-25.5	45.54	54	-8.46	74	-28.46	0-360	101	H
6	7.776	37.6	PK	35.5	-25.8	47.3	54	-6.7	74	-26.7	0-360	101	H
7	8.672	38.27	PK	35.8	-25.5	48.57	54	-5.43	74	-25.43	0-360	200	V

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

PK - Peak detector

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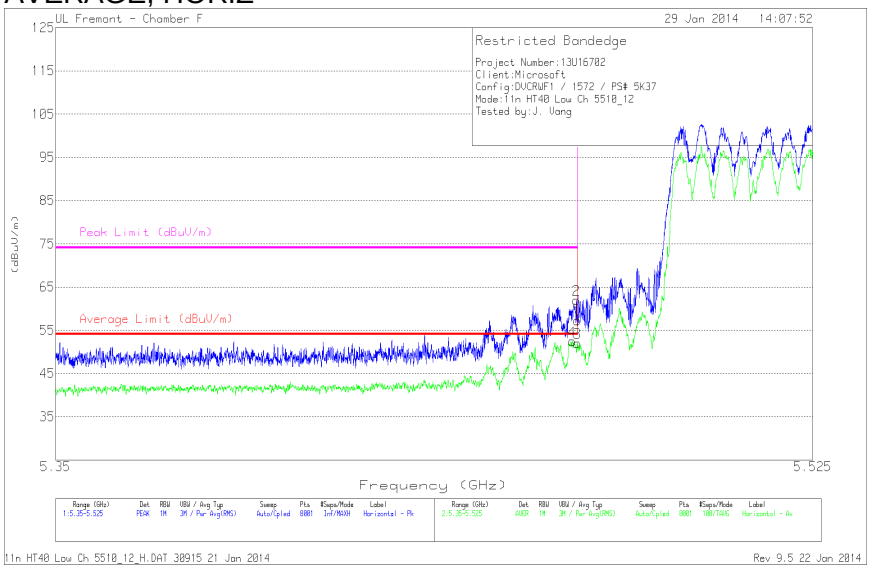
8.10. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.6 GHz BAND

RESTRICTED & AUTHORIZED BANDEDGE (LOW CHANNEL)

LOW CHANNEL RESTRICTED & AUTHORIZED, PEAK & AVERAGE, HORIZ



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.47	42.33	PK	34.7	-19.8	57.23	-	-	74	-16.77	144	163	H
2	5.47	47.11	PK	34.7	-19.8	62.01	-	-	74	-11.99	144	163	H
3	5.47	37.18	RMS	34.7	-19.8	52.08	54	-1.92	-	-	144	163	H
4	5.469	37.56	RMS	34.7	-19.8	52.46	54	-1.54	-	-	144	163	H

PK - Peak detector

RMS - RMS detection

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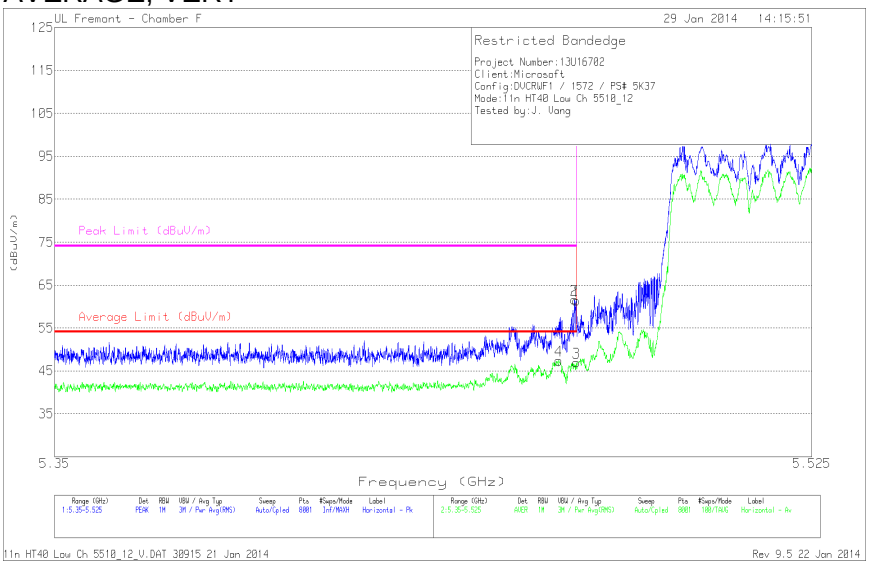
LOW CHANNEL RESTRICTED & AUTHORIZED, PEAK & AVERAGE, VERT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.47	46.43	PK	34.7	-19.8	61.33	-	-	74	-12.67	46	216	V
2	5.47	46.71	PK	34.7	-19.8	61.61	-	-	74	-12.39	46	216	V
3	5.47	32.06	RMS	34.7	-19.8	46.96	54	-7.04	-	-	46	216	V
4	5.466	32.5	RMS	34.7	-19.8	47.4	54	-6.6	-	-	46	216	V

PK - Peak detector

RMS - RMS detection

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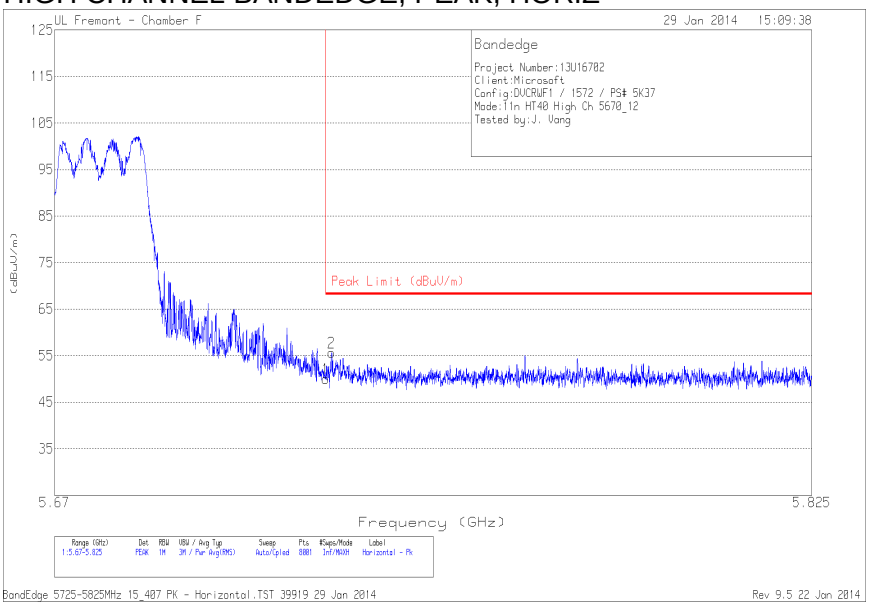
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL BANDEDGE, PEAK, HORIZ



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl /Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	34.24	PK	34.9	-19.1	50.04	68.2	-18.16	144	154	H
2	5.726	39.84	PK	34.9	-19.1	55.64	68.2	-12.56	144	154	H

PK - Peak detector

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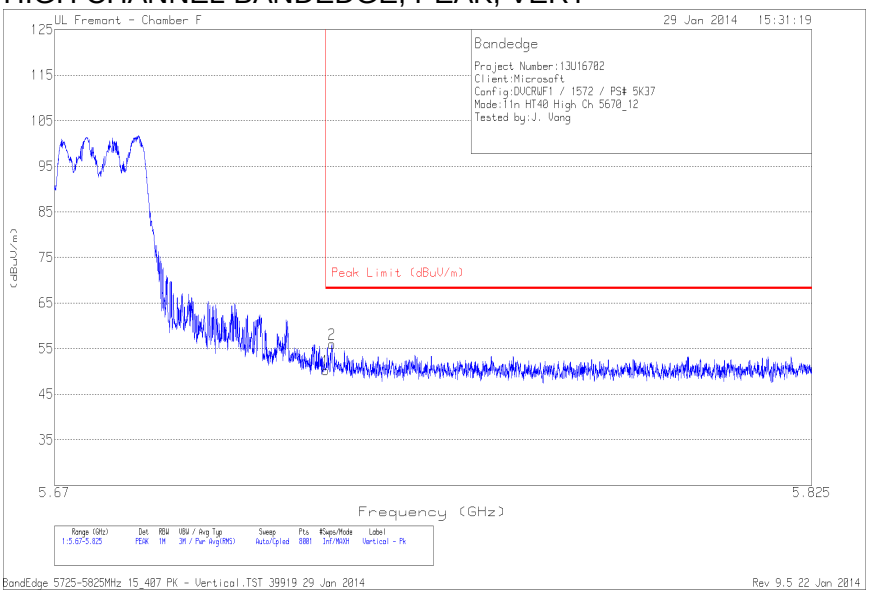
HIGH CHANNEL BANDEDGE, PEAK, VERT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl /Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	34.44	PK	34.9	-19.1	50.24	68.2	-17.96	120	216	V
2	5.726	40.22	PK	34.9	-19.1	56.02	68.2	-12.18	120	216	V

PK - Peak detector

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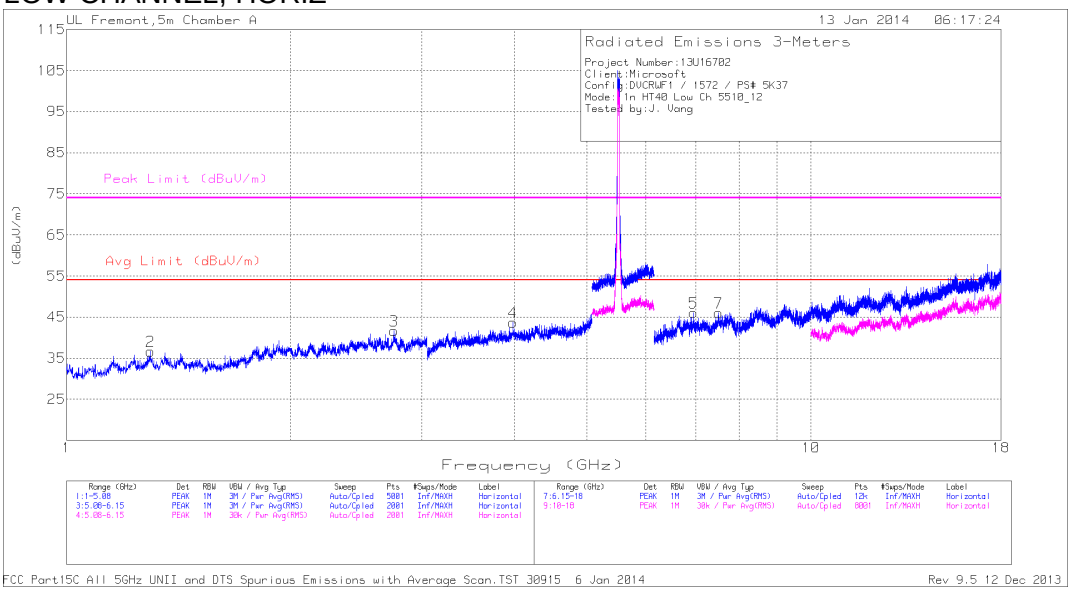
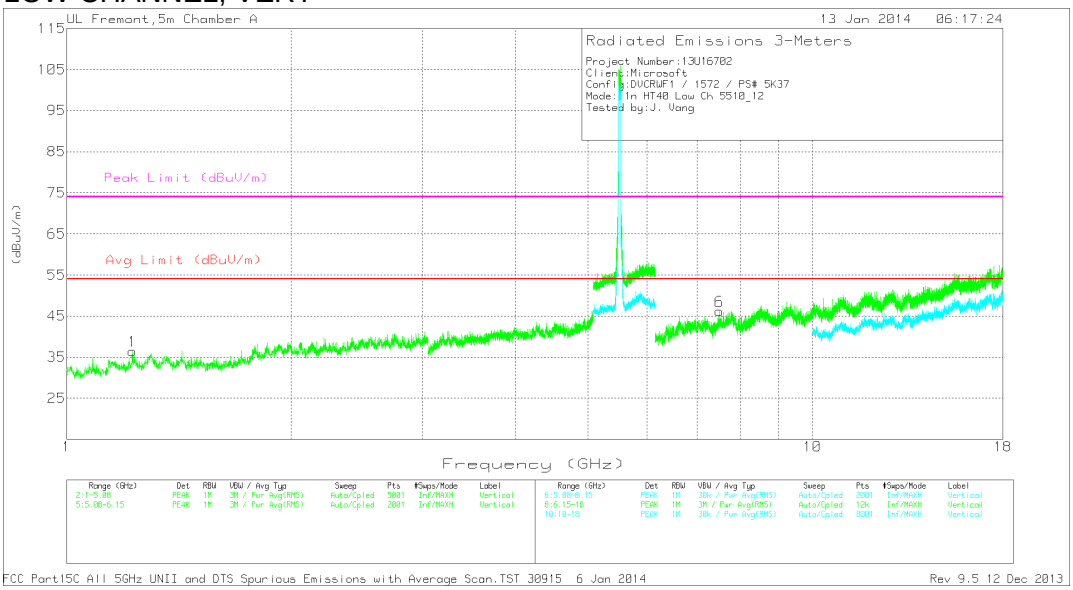
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL

LOW CHANNEL, HORIZ



LOW CHANNEL, VERT



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LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
2	* 1.296	43.08	PK	30.3	-36.7	36.68	54	-17.32	74	-37.32	0-360	200	H
3	* 2.754	40.78	PK	32.6	-31.7	41.68	54	-12.32	74	-32.32	0-360	200	H
4	* 3.977	40.12	PK	33.8	-30.2	43.72	54	-10.28	74	-30.28	0-360	200	H
1	* 1.225	43.89	PK	29.7	-37.1	36.49	54	-17.51	74	-37.51	0-360	101	V

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
7	* 7.517	35.44	PK	35.4	-24.8	46.04	54	-7.96	74	-27.96	0-360	200	H
6	* 7.5	35.7	PK	35.4	-24.9	46.2	54	-7.8	74	-27.8	0-360	101	V
5	6.954	37.89	PK	35.4	-27.2	46.09	54	-7.91	74	-27.91	0-360	100	H

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

PK - Peak detector

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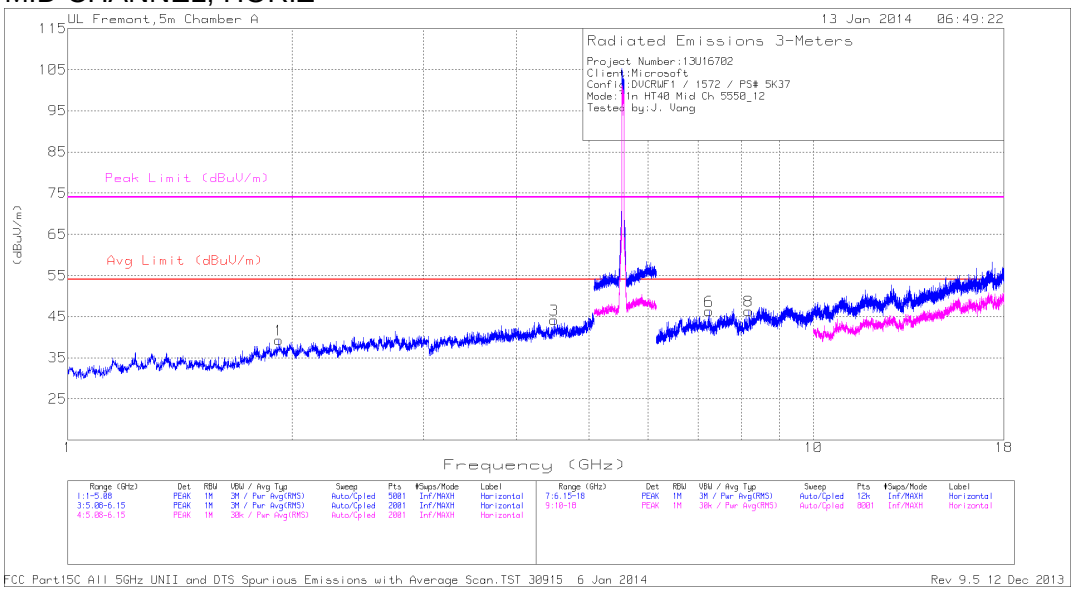
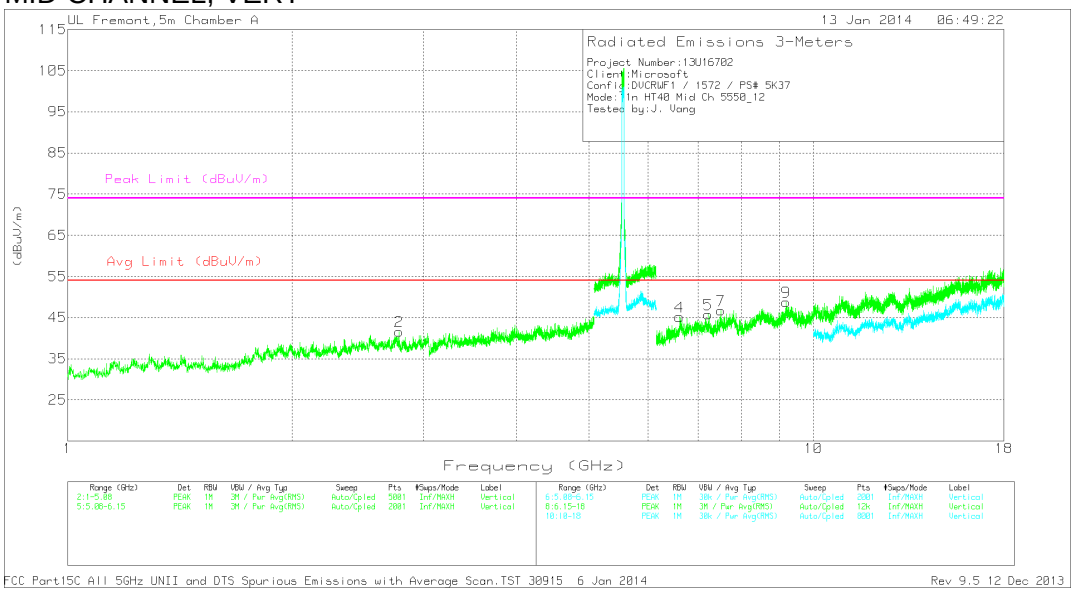
MID CHANNEL

MID CHANNEL, HORIZ



MID CHANNEL, VERT



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MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
2	* 2.781	42.13	PK	32.6	-33.1	41.63	54	-12.37	74	-32.37	0-360	201	V
1	1.919	42.13	PK	31.7	-34.5	39.33	54	-14.67	74	-34.67	0-360	200	H
3	4.49	39.2	PK	33.8	-28.8	44.2	54	-9.8	74	-29.8	0-360	200	H

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
8	* 8.182	36.57	PK	35.6	-25.8	46.37	54	-7.63	74	-27.63	0-360	200	H
7	* 7.515	36.07	PK	35.4	-24.7	46.77	54	-7.23	74	-27.23	0-360	201	V
9	* 9.191	36.77	PK	36.1	-24.1	48.77	54	-5.23	74	-25.23	0-360	101	V
4	6.611	35.19	PK	35.5	-25.5	45.19	54	-8.81	74	-28.81	0-360	201	V
5	7.225	36	PK	35.4	-25.6	45.8	54	-8.2	74	-28.2	0-360	201	V
6	7.243	36.15	PK	35.4	-25.2	46.35	54	-7.65	74	-27.65	0-360	101	H

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

PK - Peak detector

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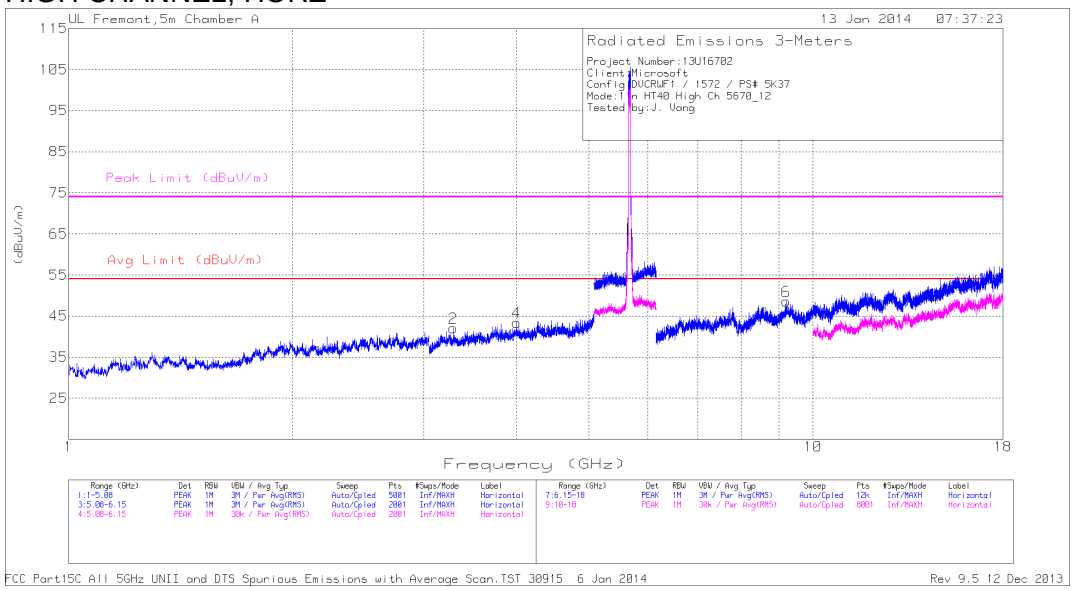
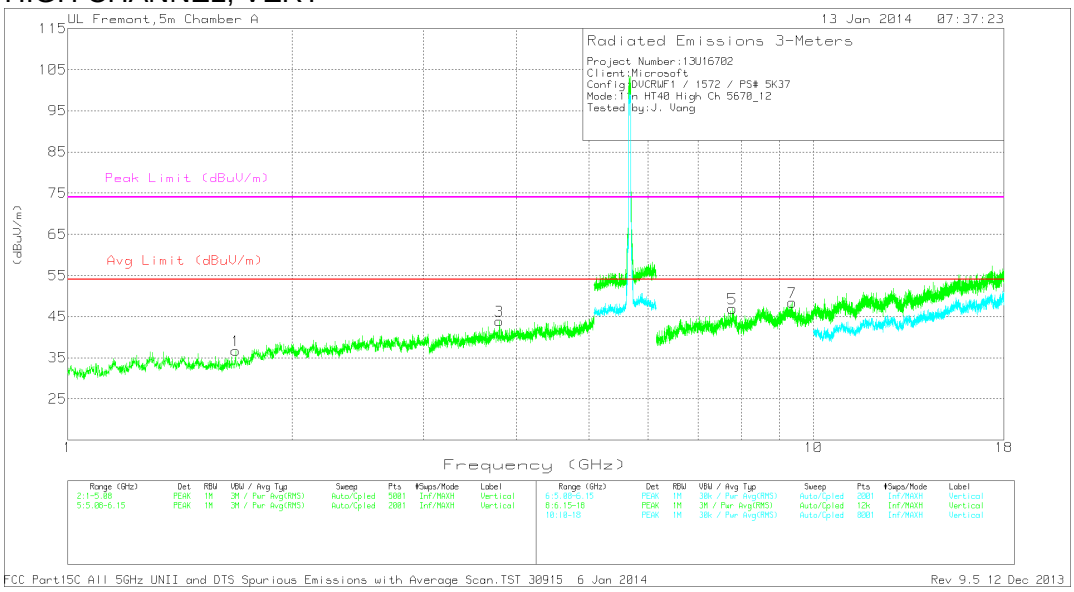
HIGH CHANNEL

HIGH CHANNEL, HORZ



HIGH CHANNEL, VERT



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HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
4	* 3.997	39.24	PK	33.8	-29.6	43.44	54	-10.56	74	-30.56	0-360	101	H
1	* 1.68	43.55	PK	29.2	-36	36.75	54	-17.25	74	-37.25	0-360	100	V
3	* 3.789	41.35	PK	33.5	-30.9	43.95	54	-10.05	74	-30.05	0-360	100	V
2	3.287	40.28	PK	33	-31.2	42.08	54	-11.92	74	-31.92	0-360	101	H

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
7	* 9.363	36.84	PK	36.4	-24.8	48.44	54	-5.56	74	-25.56	0-360	101	V
5	7.783	36.98	PK	35.5	-25.5	46.98	54	-7.02	74	-27.02	0-360	201	V
6	9.204	37.21	PK	36.1	-24.7	48.61	54	-5.39	74	-25.39	0-360	100	H

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
* 9.361	22.92	Av	36.4	-24.8	34.52	54	-19.48	-	-	210	400	V

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

PK - Peak detector

Av - average detection

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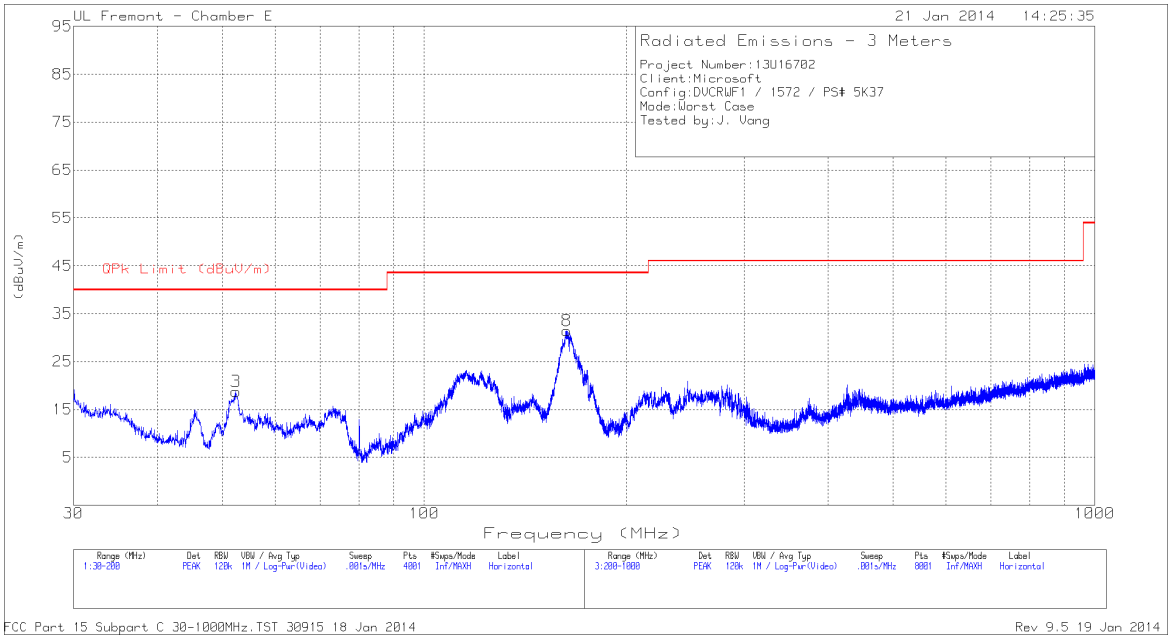
8.11. WORST-CASE BELOW 1 GHz

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

HORIZONTAL PLOT



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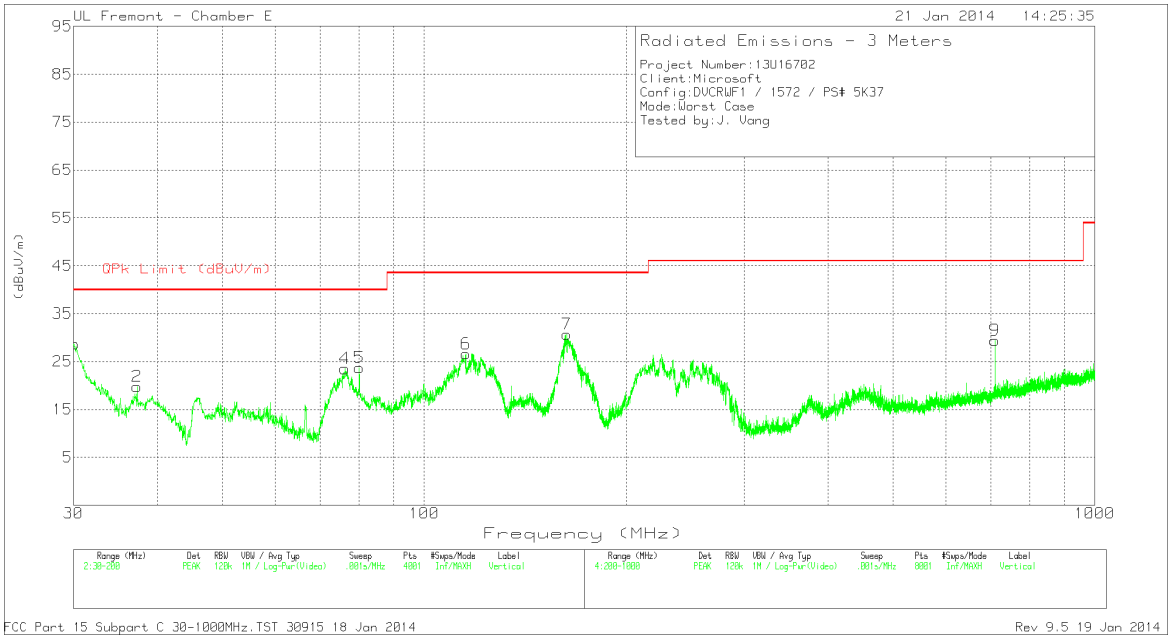
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, VERTICAL)

VERTICAL PLOT



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BELOW 1G 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	30.085	39.71	PK	21	-32	28.71	40	-11.29	0-360	100	V
2	37.31	35.5	PK	15.9	-31.6	19.8	40	-20.2	0-360	100	V
3	52.3975	42.45	PK	7.4	-31.1	18.75	40	-21.25	0-360	400	H
4	76.155	46.74	PK	8.1	-31.3	23.54	40	-16.46	0-360	100	V
5	80.0225	47.55	PK	7.7	-31.5	23.75	40	-16.25	0-360	100	V
6	115.3825	44.32	PK	13.3	-31	26.62	43.52	-16.9	0-360	100	V
7	163.1525	49.61	PK	12	-30.9	30.71	43.52	-12.81	0-360	100	V
8	163.2375	50.43	PK	12	-31	31.43	43.52	-12.09	0-360	201	H
9	709.4	38.23	PK	20.4	-29.2	29.43	46.02	-16.59	0-360	300	V

PK - Peak detector

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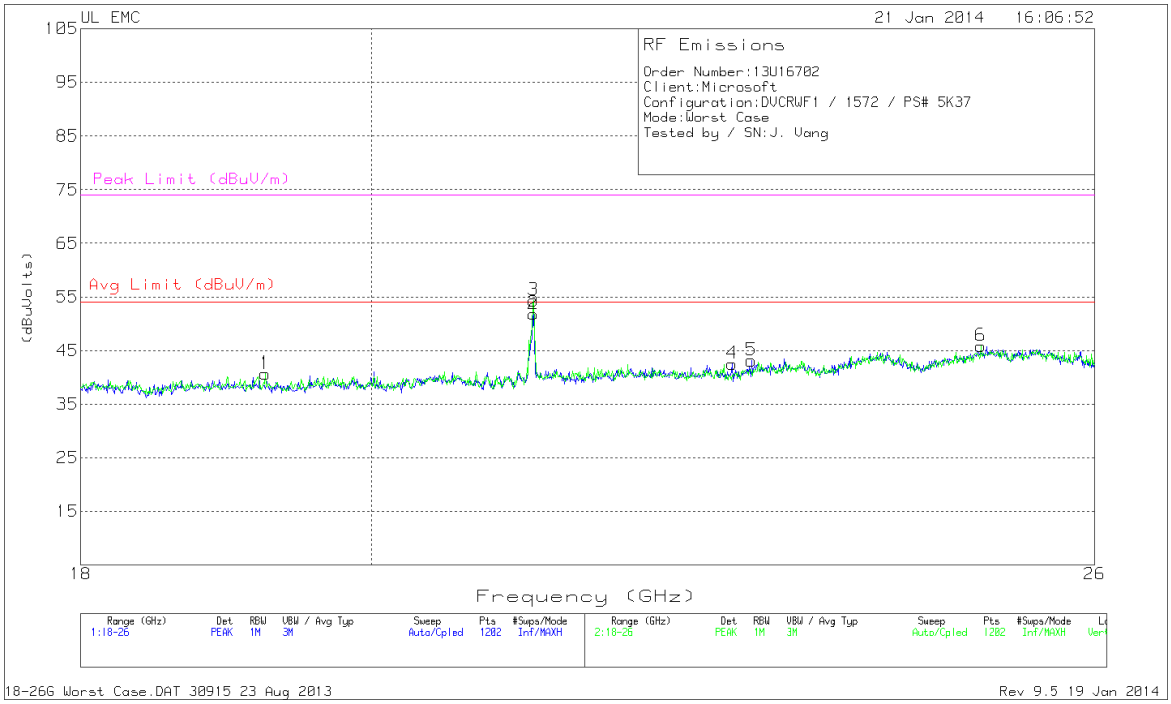
8.12. WORST-CASE 18 to 26GHz

SPURIOUS EMISSIONS 18000 26000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL & VERTICAL)

HORIZONTAL & VERTICAL PLOT



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18 TO 26G 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)	Polarity
2	21.211	52.13	PK	33	-23.8	-9.5	51.83	54	-2.16	74	-22.16	H
4	22.796	42.3	PK	33.4	-23.7	-9.5	42.5	54	-11.5	74	-31.5	H
5	22.956	42.77	PK	33.5	-23.6	-9.5	43.16	54	-10.83	74	-30.83	H
1	19.246	41.57	PK	32.5	-23.9	-9.5	40.66	54	-13.33	74	-33.33	V
3	21.211	54.63	PK	33	-23.8	-9.5	54.33	-	-	74	-19.66	V
6	24.948	43.93	PK	34	-22.6	-9.5	45.83	54	-8.166	74	-28.16	V

Radiated Emissions

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)	Polarity
21.21	42.63	Avg	33	-23.8	-9.5	42.33	54	-11.67	-	-	H
21.209	43.83	Avg	33	-23.8	-9.5	43.53	54	-10.47	-	-	V

PK - Peak detector

Avg - Video bandwidth < Resolution bandwidth

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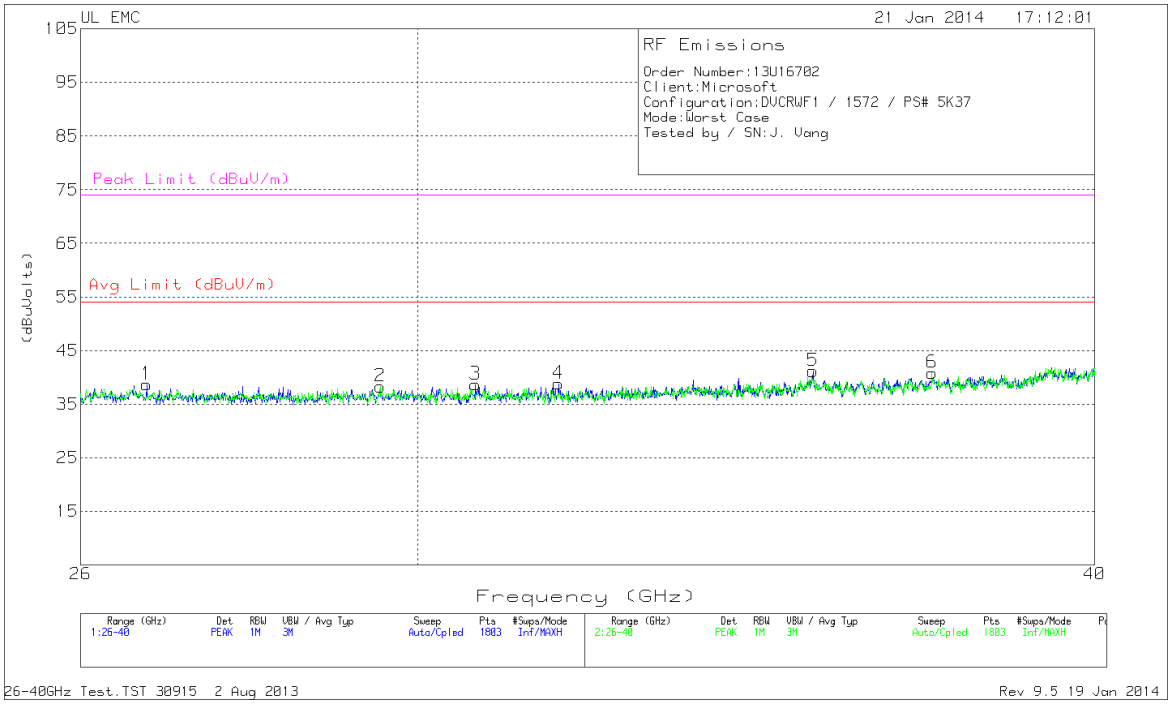
8.13. WORST-CASE 26 to 40GHz

SPURIOUS EMISSIONS 2600 40000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL & VERTICAL)

HORIZONTAL & VERTICAL PLOT



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26 TO 40G 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)	Polarity
1	26.738	46.77	PK	35.3	-33.9	-9.5	38.66	54	-15.33	74	-35.33	H
3	30.747	47.97	PK	36.1	-35.9	-9.5	38.66	54	-15.33	74	-35.33	H
4	31.85	47.93	PK	36.3	-35.9	-9.5	38.83	54	-15.16	74	-35.16	H
5	35.486	49.97	PK	37.9	-37.2	-9.5	41.16	54	-12.83	74	-32.83	H
2	29.527	46.73	PK	35.9	-34.8	-9.5	38.33	54	-15.66	74	-35.66	V
6	37.327	50.73	PK	37.3	-37.7	-9.5	40.83	54	-13.16	74	-33.16	V

PK - Peak detector

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9. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 7.2.2

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.4.

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

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

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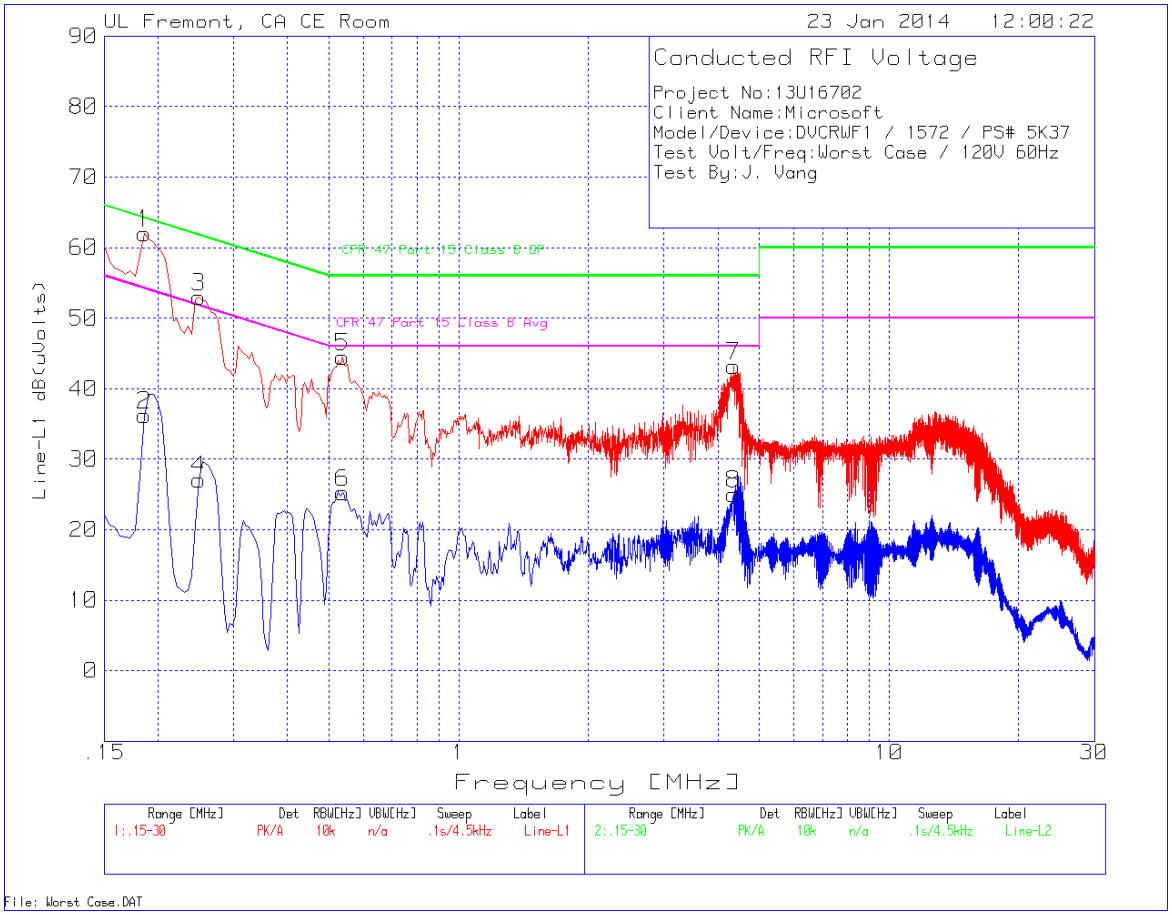
LINE 1 RESULTS



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LINE 1 DATA RESULTS

Line-L1 .15 - 30MHz

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1 (dB)	LC Cables 1&3 (dB)	Corrected Reading dB(uVolts)	CFR 47 Part 15 Class B QP	Margin to Limit (dB)	CFR 47 Part 15 Class B Avg	Margin to Limit (dB)
1	.186	61.04	PK	1	0	62.04	64.2	-2.16	-	-
2	.186	35.2	Av	1	0	36.2	-	-	54.2	-18
3	.249	52.31	PK	.7	0	53.01	61.8	-8.79	-	-
4	.249	26.38	Av	.7	0	27.08	-	-	51.8	-24.72
5	.537	44.13	PK	.3	0	44.43	56	-11.57	-	-
6	.537	24.92	Av	.3	0	25.22	-	-	46	-20.78
7	4.362	42.86	PK	.2	.1	43.16	56	-12.84	-	-
8	4.362	24.75	Av	.2	.1	25.05	-	-	46	-20.95

PK - Peak detector

Av - average detection

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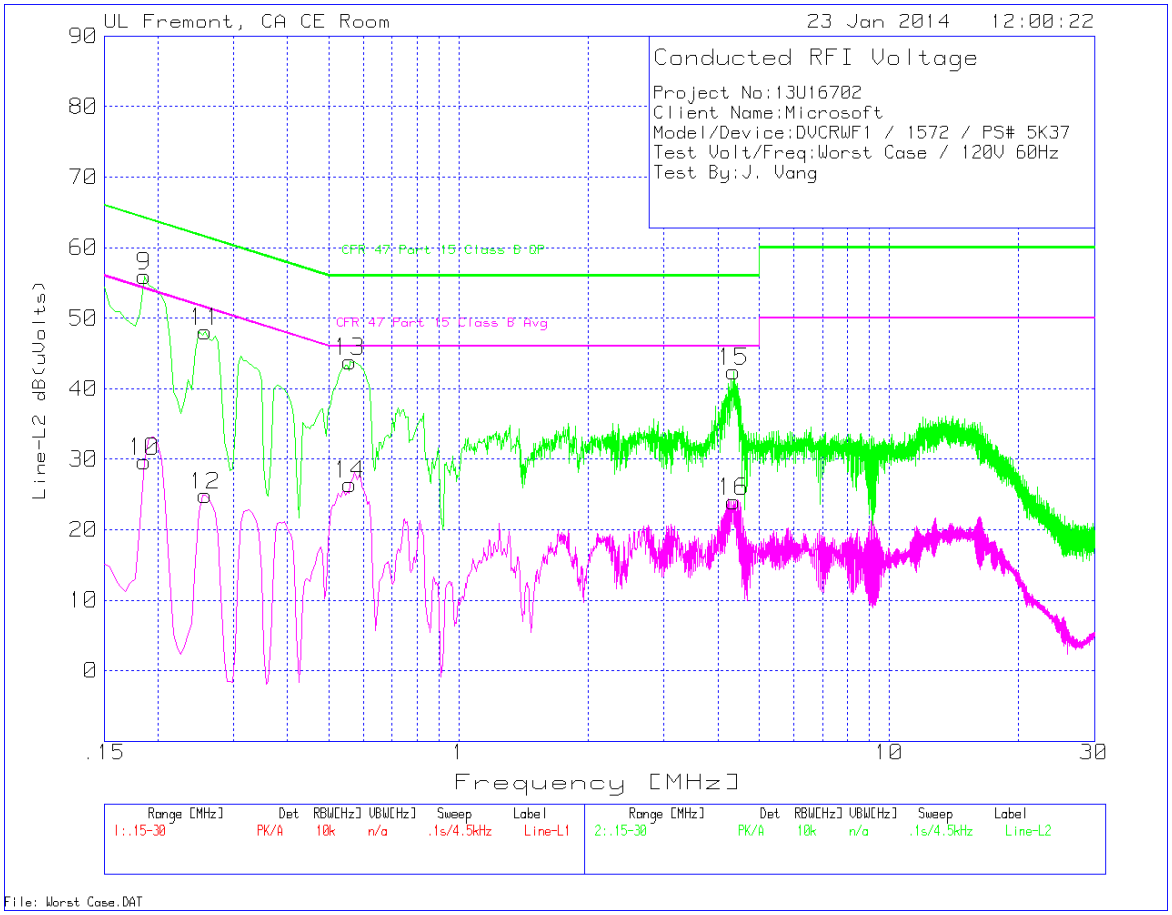
LINE 2 RESULTS



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LINE 2 DATA RESULTS

Line-L2 .15 - 30MHz

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2 (dB)	LC Cables 2&3 (dB)	Corrected Reading dB(uVolts)	CFR 47 Part 15 Class B QP	Margin to Limit (dB)	CFR 47 Part 15 Class B Avg	Margin to Limit (dB)
9	.186	54.87	PK	1.1	0	55.97	64.2	-8.23	-	-
10	.186	28.57	Av	1.1	0	29.67	-	-	54.2	-24.53
11	.258	47.41	PK	.7	0	48.11	61.5	-13.39	-	-
12	.258	24.13	Av	.7	0	24.83	-	-	51.5	-26.67
13	.5595	43.59	PK	.3	0	43.89	56	-12.11	-	-
14	.5595	26.18	Av	.3	0	26.48	-	-	46	-19.52
15	4.362	42.07	PK	.2	.1	42.37	56	-13.63	-	-
16	4.362	23.72	Av	.2	.1	24.02	-	-	46	-21.98

PK - Peak detector

Av - average detection

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