CLASS II PERMISSIVE CHANGE TEST REPORT

Report Number. : 11460738-E2V3

Applicant	:	Microsoft Corporation One Microsoft Way Redmond, WA, 98052, USA
Model	:	1708
FCC ID	:	C3K1708
IC	:	3048A-1708
EUT Description	:	Wireless Input Device
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART C INDUSTRY CANADA RSS - 247 ISSUE 1

Date Of Issue:
December 16, 2016

Prepared by:
UL Verification Services Inc.
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	12/07/2016	Initial Issue	---
V2	12/14/2016	Updated section 5.2	Francisco de Anda
V3	12/16/2016	Revised section 5.2	Francisco de Anda

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UL VERIFICATION SERVICES INC.
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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Microsoft Corporation
One Microsoft Way
Redmond, WA, 98052, USA

EUT DESCRIPTION: Wireless Input Device

MODEL: 1708

SERIAL NUMBER: 02600011204642 (CONDUCTED); 02600011004642 (RADIATED)

DATE TESTED: November 8th 2016 – December 7th 2016

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart E	Pass
INDUSTRY CANADA RSS - 247 ISSUE 1	Pass
INDUSTRY CANADA RSS - GEN ISSUE 4	Pass

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

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

Approved & Released For
UL Verification Services Inc. By:

Francisco de Anda
CONSUMER TECHNOLOGY DIVISION
Program Manager
UL VERIFICATION SERVICES INC.

Prepared By:

Clifford Susa
CONSUMER TECHNOLOGY DIVISION
Engineer
UL VERIFICATION SERVICES INC.

2. TEST METHODOLOGY

FCC: 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 905462 D02 v01r02/D03 v01r01/D06 v01, FCC KDB 789033 D02 v01r03, ANSI C63.10-2013.

3. FACILITIES AND ACCREDITATION

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

47173 Benicia Street	47266 Benicia Street
☒ Chamber A (IC:2324B-1)	☐ Chamber D (IC:2324B-4)
☒ Chamber B (IC:2324B-2)	☐ Chamber E (IC:2324B-5)
☐ Chamber C (IC:2324B-3)	☐ Chamber F (IC:2324B-6)
	☐ Chamber G (IC:2324B-7)
	☒ Chamber H (IC:2324B-8)

The above test sites and facilities are covered under FCC Test Firm Registration # 208313.

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

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4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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

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

4.3. MEASUREMENT UNCERTAINTY

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

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

Parameter	Uncertainty
Worst Case Conducted Disturbance, 9KHz to 0.15 MHz	3.84 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.65 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz	3.15 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	5.36 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.32 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.45 dB
Worst Case Radiated Disturbance, 26000 to 40000 MHz	5.24 dB

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

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

Model 1708 is a wireless input device that contains an 802.11a/g/n and Bluetooth transceiver.

5.2. DESCRIPTION OF CLASS II PERMISSIVE CHANGE

The purpose of this C2PC is to upgrade the device described under section 5.1 of this report to include the following two configuration changes that will be manufactured;

Configuration C

-Removal of RF shield.

Configuration F

-Change of PCB layout due to re-sizing the PCB and consequent relocation of some non-RF relevant components and removal of RF shield

Radiated tests were performed on both configurations and was found configuration F to be worst case. Conducted test are leveraged from the original report, number R11040094-E2V4. Conducted power data included in this report is used to verify the output power.

5.3. MAXIMUM OUTPUT POWER

The measured output power values were verified to be less or equal than the original values. Refer to original report number "R11040094-E2V4" for original output power values and for all antenna port conducted results.

5.2GHz Band

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
5180 - 5240	802.11a	8.03	6.35
	802.11n HT20	8.12	6.49

5.3GHz Band

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
5260 - 5320	802.11a	8.32	6.79
	802.11n HT20	7.79	6.01

5.6GHz Band

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
5500 - 5700	802.11a	8.37	6.87
	802.11n HT20	8.33	6.81

5.8GHz Band

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
5745 - 5825	802.11a	7.96	6.25
	802.11n HT20	7.76	5.97

5.4. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an integral antenna, with a maximum gain as follows:

Frequency Band (GHz)	Antenna Gain (dBi)
5.2	3.46
5.3	3.03
5.5	3.03
5.8	1.24

5.5. SOFTWARE AND FIRMWARE

The controller firmware used with the EUT during testing was 3.1.703.0 and Radio Firmware was 1.0.107.0.

The test utility software used for conducted testing was Indium QA Tool v0.0.1.63

The HQA UART Tool version used was: Ind_SW_v.1.22

5.6. WORST-CASE CONFIGURATION AND MODE

An investigation on two EUT configurations (C and F, described in section 5.2) was performed, it was determined that configuration F was worst-case. Therefore, all final radiated testing was performed on configuration F.

For below 1G 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 X orientation was worst-case orientation. Therefore, all final radiated testing was performed with the EUT in X orientation.

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

802.11a mode: 6 Mbps
802.11n HT20mode: MCS0

5.7. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Laptop	Lenovo	X220	R9-EVC3X	DoC
Laptop AC Adapter	Lenovo	42T4434	11S42T4434Z1ZF3K0CV0A3	DoC
Interface Board	Microsoft	X930837-001	None	None
AC/DC Adapter	Samsung	ETA0U61JWE	SC2F422AS/A-E	DoC

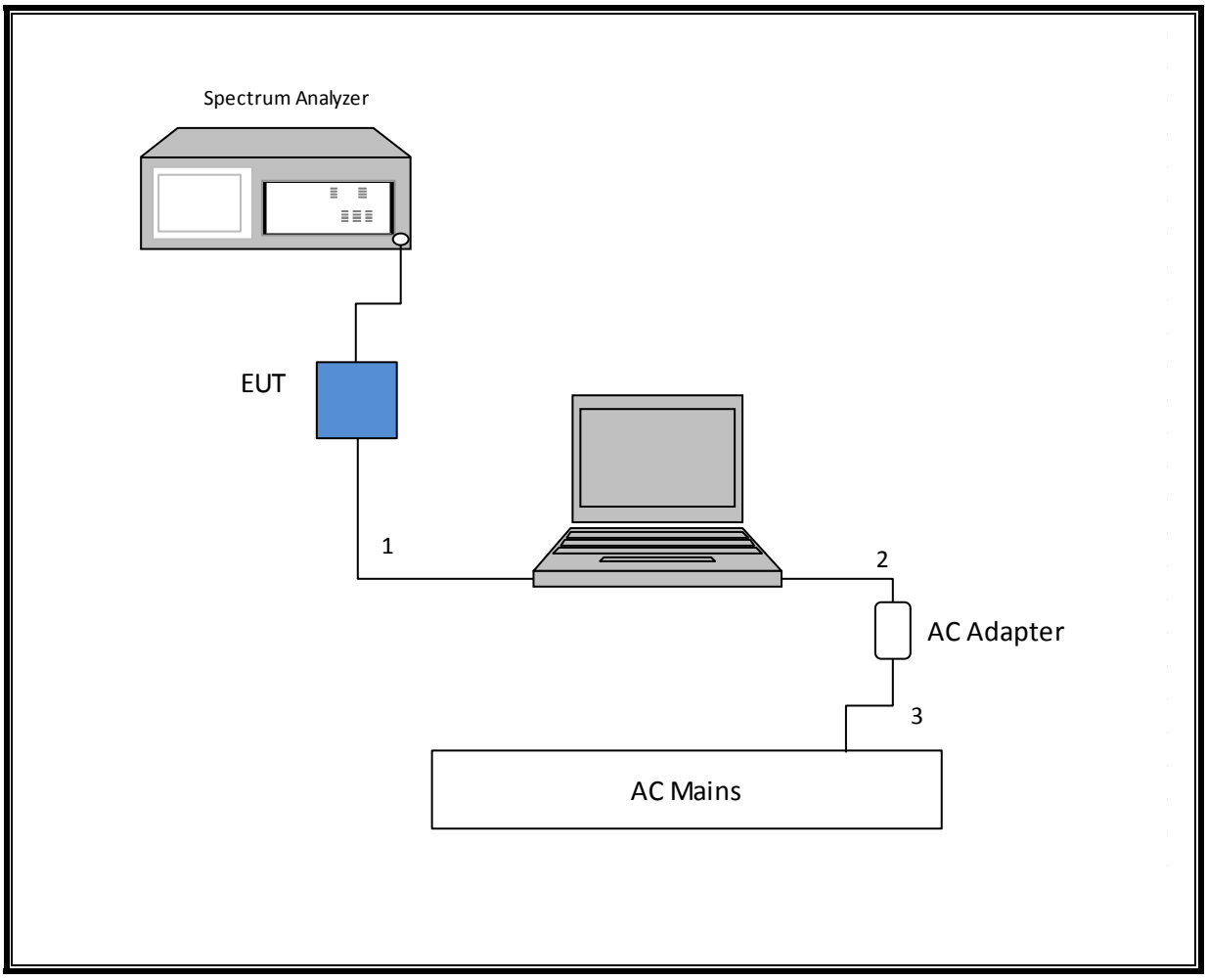
I/O CABLES

I/O Cable List						
Cable No	**Port**	**# of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	USB	1	USB	unshielded	1	
2	DC	1	barrel	unshielded	0.8	
3	AC	1	2 prong	unshielded	1.5	

TEST SETUP - CONDUCTED TESTS

The EUT was tested connected to a host Laptop via USB cable adapter and spectrum analyzer to antenna port. Test software exercised the EUT.

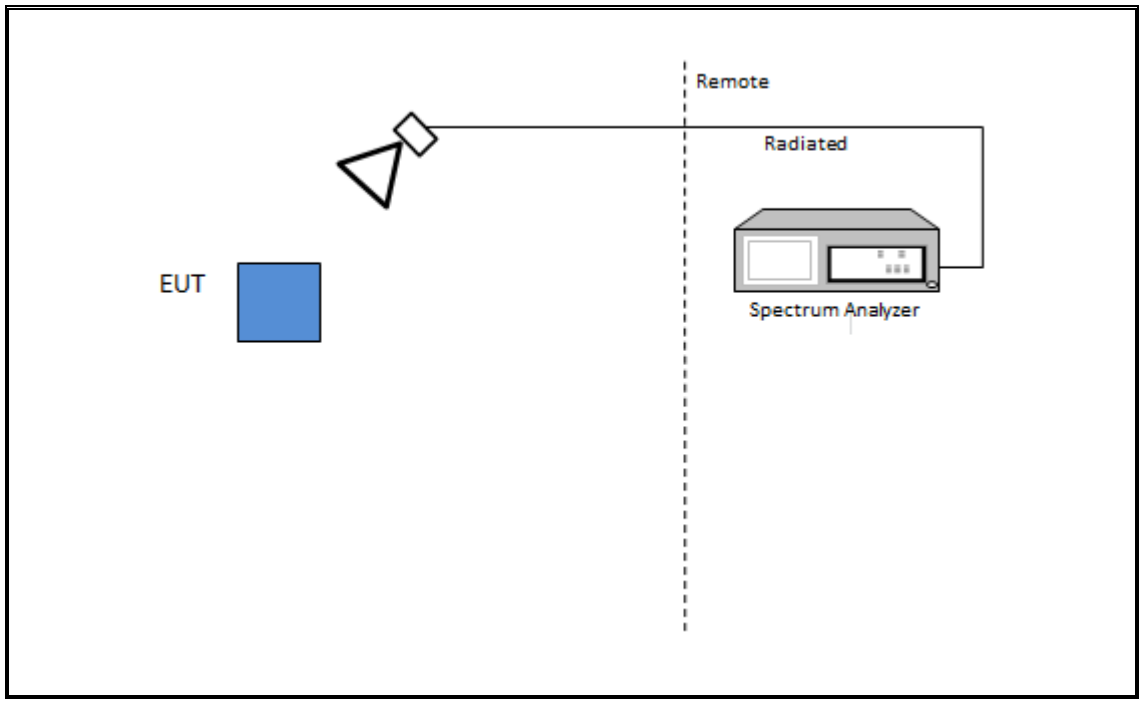
SETUP DIAGRAM – CONDUCTED TESTS



TEST SETUP- RADIATED TESTS

An interface board between EUT and laptop was used to program the EUT. Once programmed the EUT was tested standalone powered by batteries. Test software exercised the EUT.

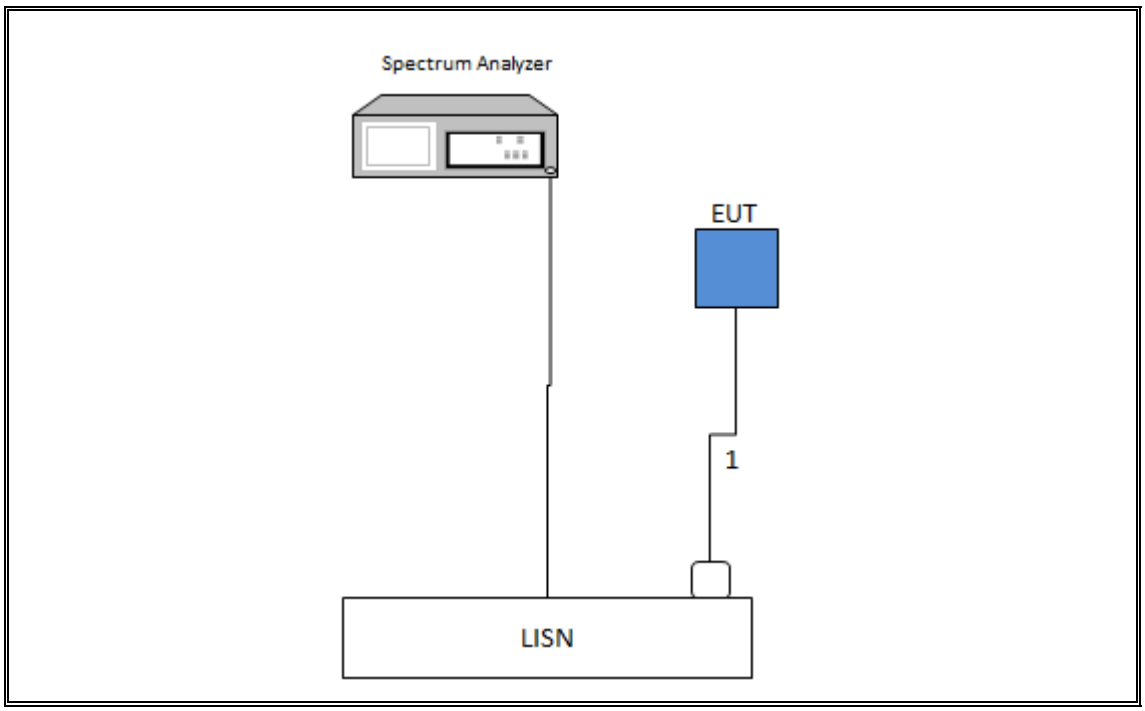
SETUP DIAGRAM – RADIATED TESTS



TEST SETUP- AC LINE CONDUCTED: AC/DC ADAPTER

The EUT was powered by AC/DC adapter via USB cable. Test software exercised the EUT.

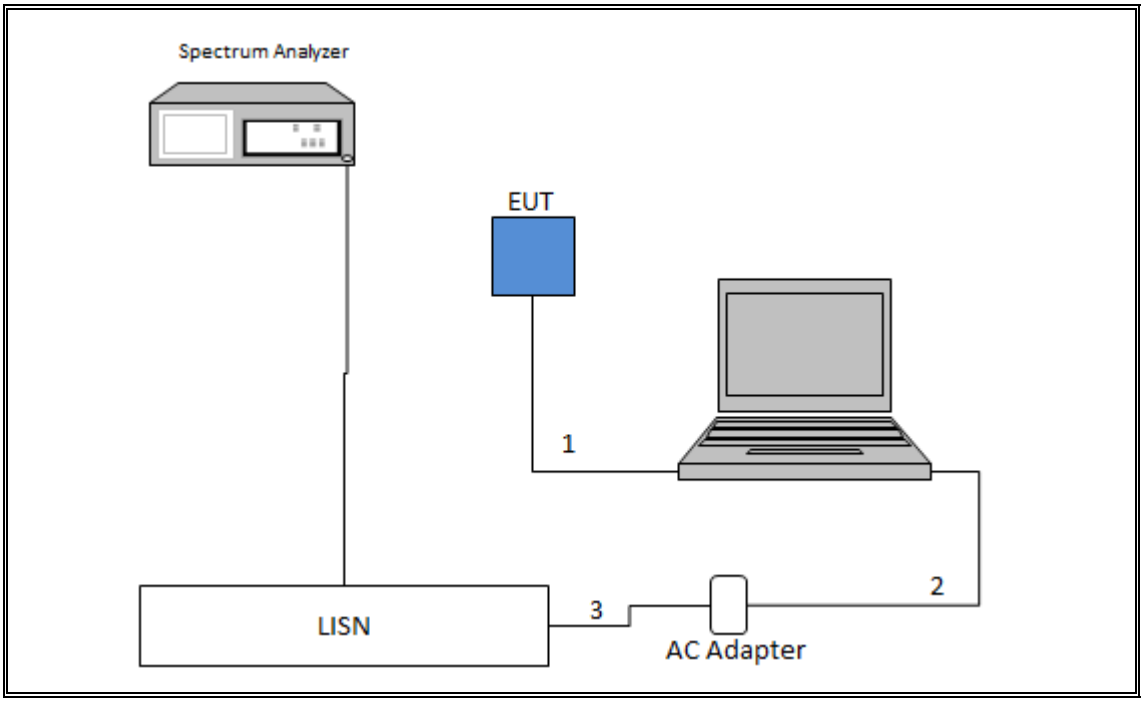
SETUP DIAGRAM – AC LINE CONDUCTED AC/DC ADAPTER



TEST SETUP- AC LINE CONDUCTED: LAPTOP CONFIGURATION

The EUT was powered by host PC via USB cable. Test software exercised the EUT.

SETUP DIAGRAM – AC LINE CONDUCTED LAPTOP CONFIGURATION



6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Asset**	**Cal Due**
Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences Corp.	JB3	T477	06/22/2017
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	T345	03/07/2017
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	T346	02/22/2017
Antenna, Active Loop 9kHz to 30MHz	ETS-Lindgren	6502	T757	05/31/2017
RF Amplifier	MITEQ	AFS42-00101800-25-S-42	T493	03/09/2017
RF Amplifier	MITEQ	AFS42-00101800-25-S-42	T1165	08/01/2017
RF Preamplifier, 1 - 7GHz	Amplical	AMP1G6-10-27	T1370	04/15/2017
RF Preamplifier, 1 - 8GHz	MITEQ	AMF-4D-01000800-30-29P	T1156	03/09/2017
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight	N9030A	T907	01/06/2017
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight	N9030A	T908	04/13/2017
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight	N9030A	T906	02/03/2017
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	T482	3/9/2017
High Pass Filter 6GHz	Micro-Tronics	HPS17542	T483	3/9/2017
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	T481	8/1/2017
High Pass Filter 6GHz	Micro-Tronics	HPS17542	T484	8/1/2017
Antenna, Horn, 18-26 GHz	ARA	MWH-1826/B	T449	05/26/2017
Antenna, Horn, 26-40 GHz	ARA	MWH-2640/B	T446	05/26/17
RF Preamplifier, 1 - 26GHz	Agilent	8449B	T404	07/05/2017
RF Preamplifier, 26 - 40GHz	Miteq	NSP4000-SP2	T88	04/07/17
Spectrum Analyzer, 40 GHz	HP	8564E	T106	09/07/2017
LISN	Fischer Custom Communication, Inc.	FCC-LISN-50/250-25-2-01-CISPR16	T1310	06/08/2017
EMI Test Receiver, 10 Hz - 7 GHz	Rohde & Schwarz	ESCR 7	T1436	12/19/2016
Transient Limiter	Com-Power	LIT-930	T1457	02/10/2017
Power Meter	Keysight	N1912A	T1244	05/03/2017
Power Sensor	Keysight	N1921A	T1224	03/22/2017
Radiated Software	UL	UL EMC	Rev. 9.5, April 26, 2016	

7. MEASUREMENT METHODS

Conducted Output Power: KDB 789033 D02 v01r03, Section E.3.b (Method PM-G)

Unwanted emissions in restricted bands: KDB 789033 D02 v01r03, Sections G.3, G.4, G.5, and G.6.

Unwanted emissions in non-restricted bands: KDB 789033 D02 v01r03, Sections G.3, G.4, and G.5.

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8. ANTENNA PORT TEST RESULTS

8.1. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

LIMITS

None; for reporting purposes only.

PROCEDURE

KDB 789033 Zero-Span Spectrum Analyzer Method.

RESULTS

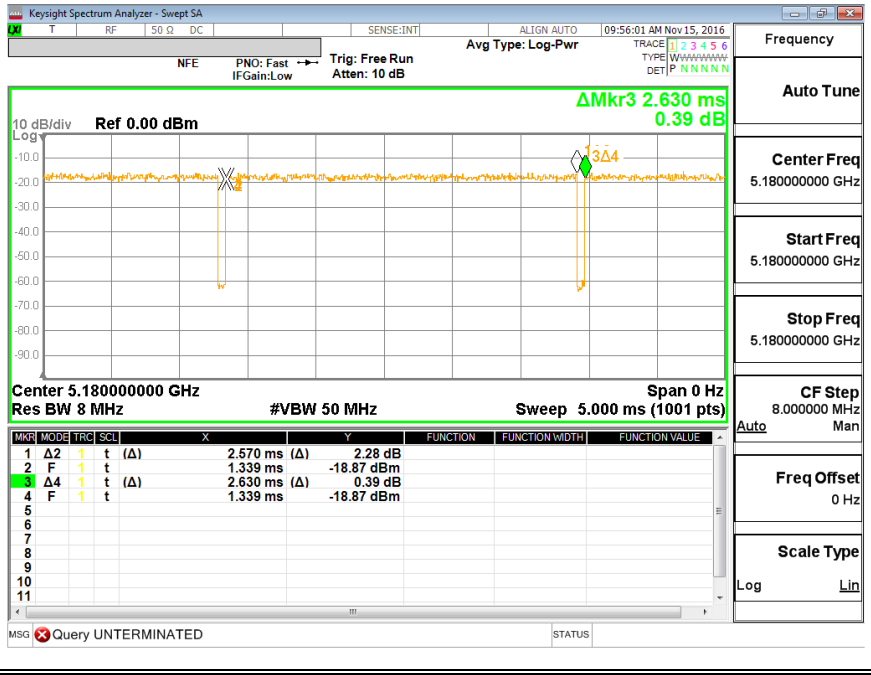
ID:	37699 CS	Date:	11/14/16 - 11/15/16

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (khz)
11a	2.757	2.82	0.977	0.977	0.1	0.362
11n HT20	2.57	2.63	0.977	0.977	0.1	0.389

DUTY CYCLE PLOTS

DUTY CYCLE 802.11a 1TX MODE

DUTY CYCLE 802.11n HT20 1TX MODE



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8.2. 11a MODE IN THE 5.2GHz BAND

8.2.1. OUTPUT POWER

LIMITS

FCC §15.407 (a) (1)

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

IC RSS-247

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 $\log_{10}$B, dBm, whichever power is less. B is the 99% emission bandwidth in megahertz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

RESULTS

Tested By:	37699 CS
Date:	11/8/2016

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5180	27.10	16.40	3.46
Mid	5200	30.22	16.44	3.46
High	5240	34.53	16.45	3.46

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC EIRP Limit (dBm)	Max IC Power (dBm)	Power Limit (dBm)
Low	5180	24.00	22.15	18.69	18.69
Mid	5200	24.00	22.16	18.70	18.70
High	5240	24.00	22.16	18.70	18.70

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	7.35	7.35	18.69	-11.34
Mid	5200	8.03	8.03	18.70	-10.67
High	5240	7.76	7.76	18.70	-10.94

8.3. 11n HT20 MODE IN THE 5.2GHz BAND

8.3.1. OUTPUT POWER

LIMITS

FCC §15.407 (a) (1)

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

IC RSS-247

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 $\log_{10}$B, dBm, whichever power is less. B is the 99% emission bandwidth in megahertz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

RESULTS

Tested By:	37699 CS
Date:	11/8/2016

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5180	37.02	17.61	3.46
Mid	5200	30.27	17.63	3.46
High	5240	34.78	17.43	3.46

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC EIRP Limit (dBm)	Max IC Power (dBm)	Power Limit (dBm)
Low	5180	24.00	22.46	19.00	19.00
Mid	5200	24.00	22.46	19.00	19.00
High	5240	24.00	22.41	18.95	18.95

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	8.12	8.12	19.00	-10.88
Mid	5200	8.02	8.02	19.00	-10.98
High	5240	7.85	7.85	18.95	-11.10

8.4. 11a MODE IN THE 5.3GHz BAND

8.4.1. OUTPUT POWER

LIMITS

FCC §15.407 (a) (2)

For the band 5.25–5.35 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

IC RSS-247 (6.2.2) (1)

The maximum conducted output power shall not exceed 250 mW or 11 + 10 log10B, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log10B, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

TEST PROCEDURE

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

Measurements perform using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

RESULTS

Tested By:	37699 CS
Date:	11/8/2016

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5260	36.58	16.520	3.03
Mid	5300	34.58	16.580	3.03
High	5320	35.55	16.310	3.03

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)
Low	5260	24.00	23.18	29.18	23.18
Mid	5300	24.00	23.20	29.20	23.20
High	5320	24.00	23.12	29.12	23.12

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	8.32	8.32	23.18	-14.86
Mid	5300	7.67	7.67	23.20	-15.53
High	5320	8.02	8.02	23.12	-15.10

8.5. 11n HT20 MODE IN THE 5.3GHz BAND

8.5.1. OUTPUT POWER

LIMITS

FCC §15.407 (a) (2)

For the band 5.25–5.35 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

IC RSS-247 (6.2.2) (1)

The maximum conducted output power shall not exceed 250 mW or 11 + 10 log10B, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log10B, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

TEST PROCEDURE

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

Measurements perform using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

RESULTS

Tested By:	37699 CS
Date:	11/8/2016

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5260	35.92	17.590	3.03
Mid	5300	35.11	17.680	3.03
High	5320	35.25	17.530	3.03

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)
Low	5260	24.00	23.45	29.45	23.45
Mid	5300	24.00	23.47	29.47	23.47
High	5320	24.00	23.44	29.44	23.44

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	7.73	7.73	23.45	-15.72
Mid	5300	7.75	7.75	23.47	-15.72
High	5320	7.79	7.79	23.44	-15.65

8.6. 11a MODE IN THE 5.6GHz BAND

8.6.1. OUTPUT POWER

LIMITS

FCC §15.407 (a) (2)

For the band 5.47-5.725 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

IC RSS-247 (6.2.2) (1)

The maximum conducted output power shall not exceed 250 mW or 11 + 10 log10B, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log10B, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

TEST PROCEDURE

The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

Measurements perform using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

RESULTS

Tested By:	37699 CS
Date:	11/8/2016

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5500	31.49	16.610	3.03
Mid	5580	30.69	16.295	3.03
High	5700	35.24	16.639	3.03

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)
Low	5500	24.00	23.20	29.20	23.20
Mid	5580	24.00	23.12	29.12	23.12
High	5700	24.00	23.21	29.21	23.21

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	8.14	8.14	23.20	-15.06
Mid	5580	7.68	7.68	23.12	-15.44
High	5700	8.37	8.37	23.21	-14.84

8.7. 11n HT20 MODE IN THE 5.6GHz BAND

8.7.1. OUTPUT POWER

LIMITS

FCC §15.407 (a) (2)

For the band 5.47-5.725 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

IC RSS-247 (6.2.2) (1)

The maximum conducted output power shall not exceed 250 mW or 11 + 10 log10B, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log10B, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

TEST PROCEDURE
The transmitter output is connected to a power meter. The power meter was setup for a gated power measurement.

Measurements perform using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

RESULTS

Tested By:	37699 CS
Date:	11/8/2016

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5500	34.58	17.474	3.03
Mid	5580	32.06	17.424	3.03
High	5700	34.16	17.429	3.03

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)
Low	5500	24.00	23.42	29.42	23.42
Mid	5580	24.00	23.41	29.41	23.41
High	5700	24.00	23.41	29.41	23.41

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	8.15	8.15	23.42	-15.27
Mid	5580	8.33	8.33	23.41	-15.08
High	5700	8.23	8.23	23.41	-15.18

8.8. 11a MODE IN THE 5.8GHz BAND

8.8.1. OUTPUT POWER

LIMITS

FCC §15.407 (a) (3)

IC RSS-247 (6.2.4) (1)

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

RESULTS

Tested By:	37699 CS
Date:	11/8/2016

Antenna Gain and Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC/IC Power Limit (dBm)
Low	5745	1.24	30.00
Mid	5785	1.24	30.00
High	5825	1.24	30.00

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	7.96	7.96	30.00	-22.04
Mid	5785	7.68	7.68	30.00	-22.32
High	5825	7.61	7.61	30.00	-22.39

8.9. 11n HT20 MODE IN THE 5.8GHz BAND

8.9.1. OUTPUT POWER

LIMITS

FCC §15.407 (a) (3)

IC RSS-247 (6.2.4) (1)

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

RESULTS

Tested By:	37699 CS
Date:	11/8/2016

Antenna Gain and Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC/IC Power Limit (dBm)
Low	5745	1.24	30.00
Mid	5785	1.24	30.00
High	5825	1.24	30.00

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	7.76	7.76	30.00	-22.24
Mid	5785	7.12	7.12	30.00	-22.88
High	5825	7.32	7.32	30.00	-22.68

9. RADIATED TEST RESULTS

9.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-GEN, Section 8.9 and 8.10.

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

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for measurement below 1GHz; 1.5 m above the ground plane for measurement above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

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

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

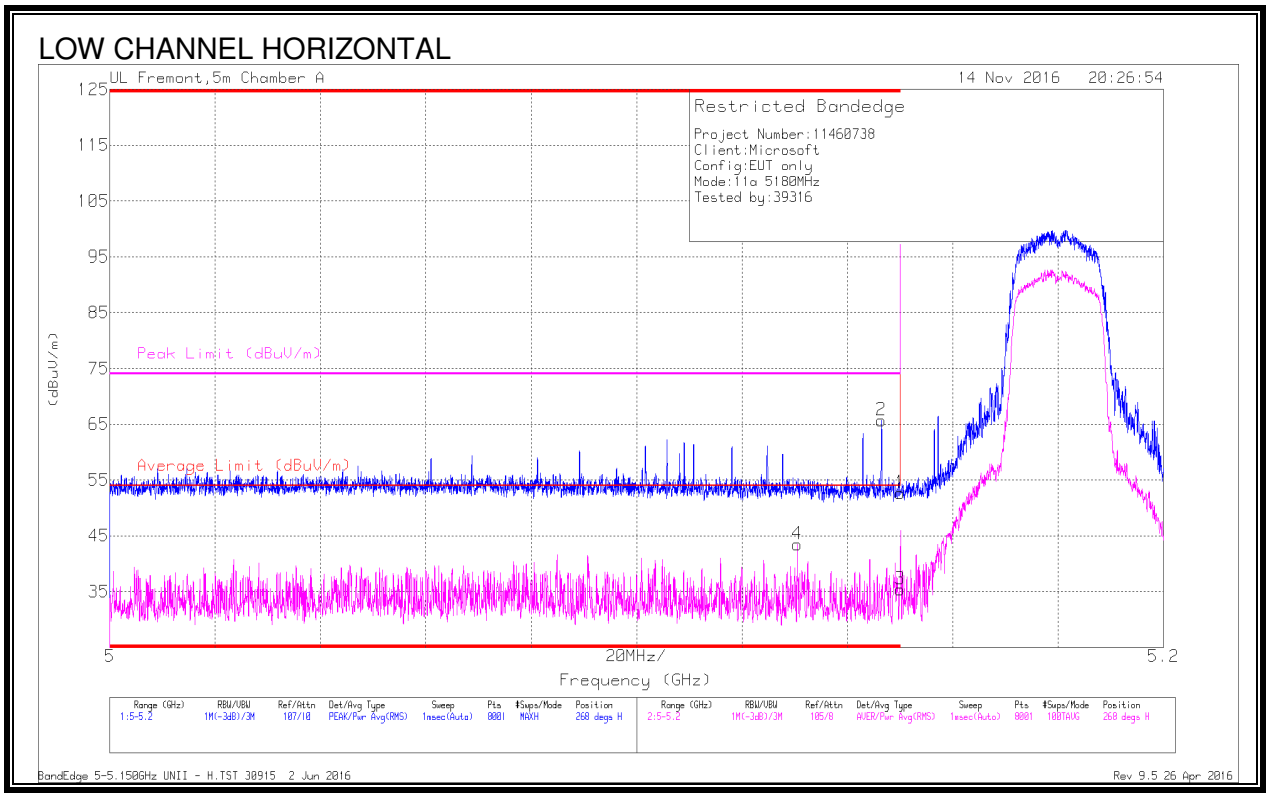
The spectrum from 9KHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

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

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

9.1.1. 11a MODE IN THE 5.2GHz BAND

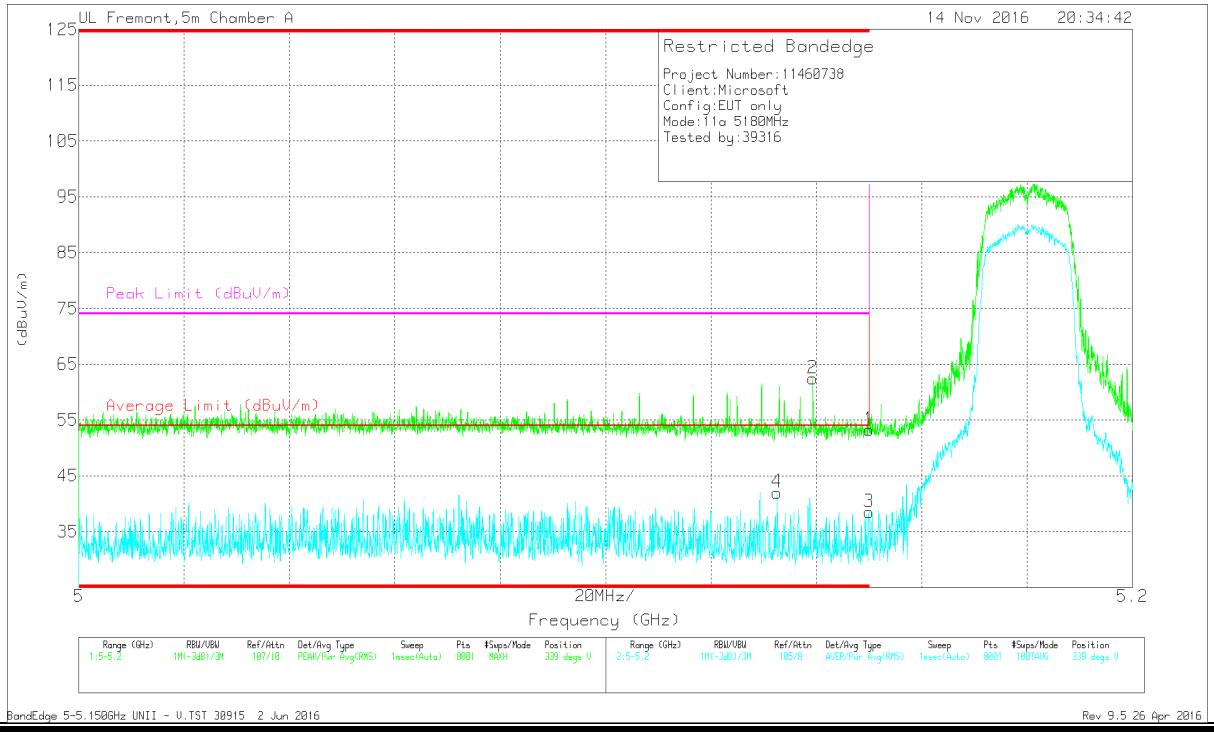
RESTRICTED BANDEDGE (LOW CHANNEL)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (db/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 5.146	49.83	Pk	34.5	-18.6	0	65.73	-	-	74	-8.27	268	305	H
4	* 5.131	27.54	RMS	34.4	-18.6	.1	43.44	54	-10.56	-	-	268	305	H
1	5.15	36.9	Pk	34.5	-18.7	0	52.7	-	-	74	-21.3	268	305	H
3	5.15	19.44	RMS	34.5	-18.7	.1	35.34	54	-18.66	-	-	268	305	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

LOW CHANNEL VERTICAL

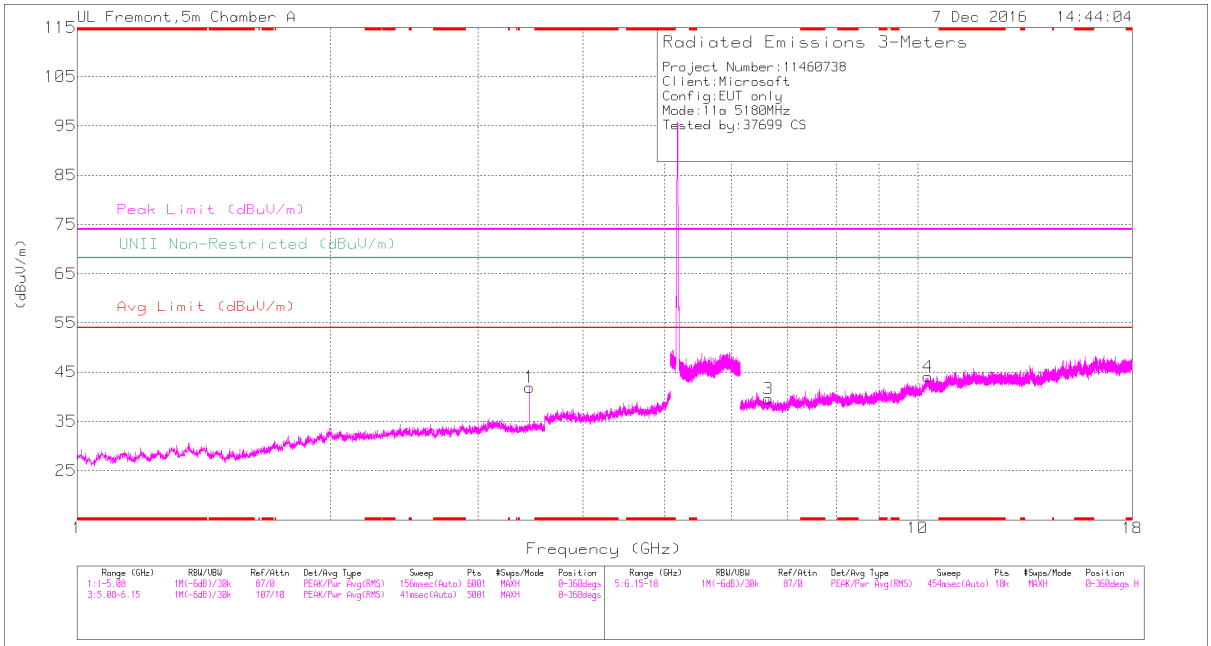


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (db/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 5.139	46.62	Pk	34.4	-18.6	0	62.42	-	-	74	-11.58	339	251	V
4	* 5.133	26.13	RMS	34.4	-18.6	.1	42.03	54	-11.97	-	-	339	251	V
1	5.15	37.49	Pk	34.5	-18.7	0	53.29	-	-	74	-20.71	339	251	V
3	5.15	22.63	RMS	34.5	-18.7	.1	38.53	54	-15.47	-	-	339	251	V

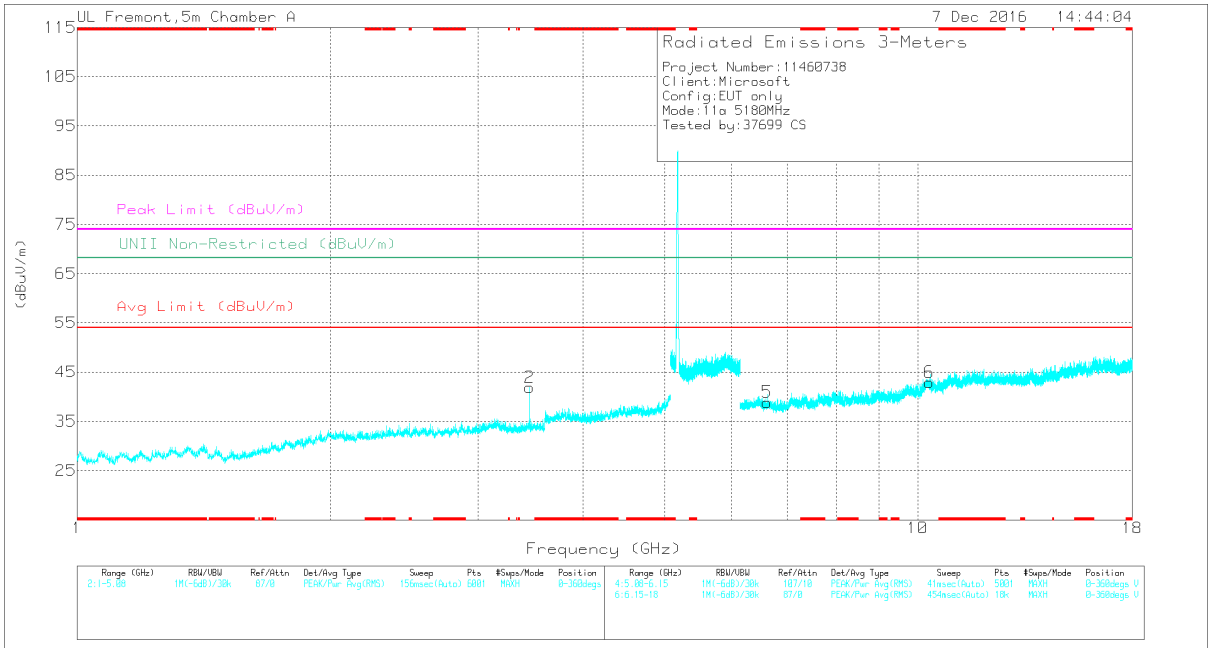
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL

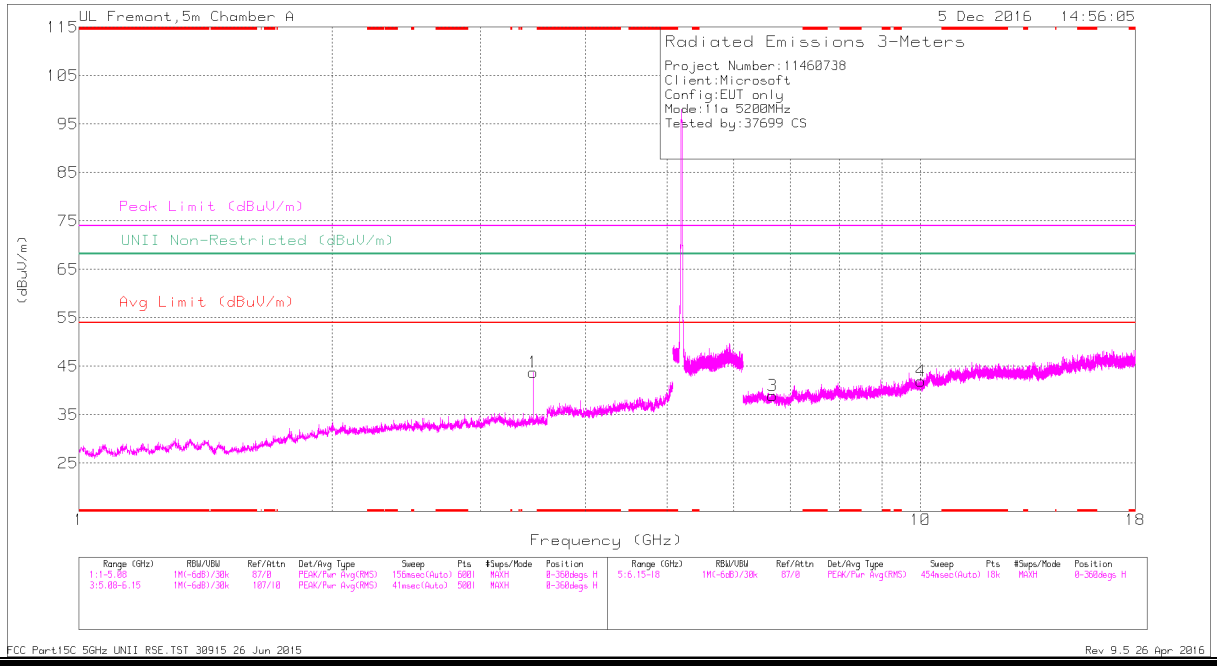


UL VERIFICATION SERVICES INC.
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888

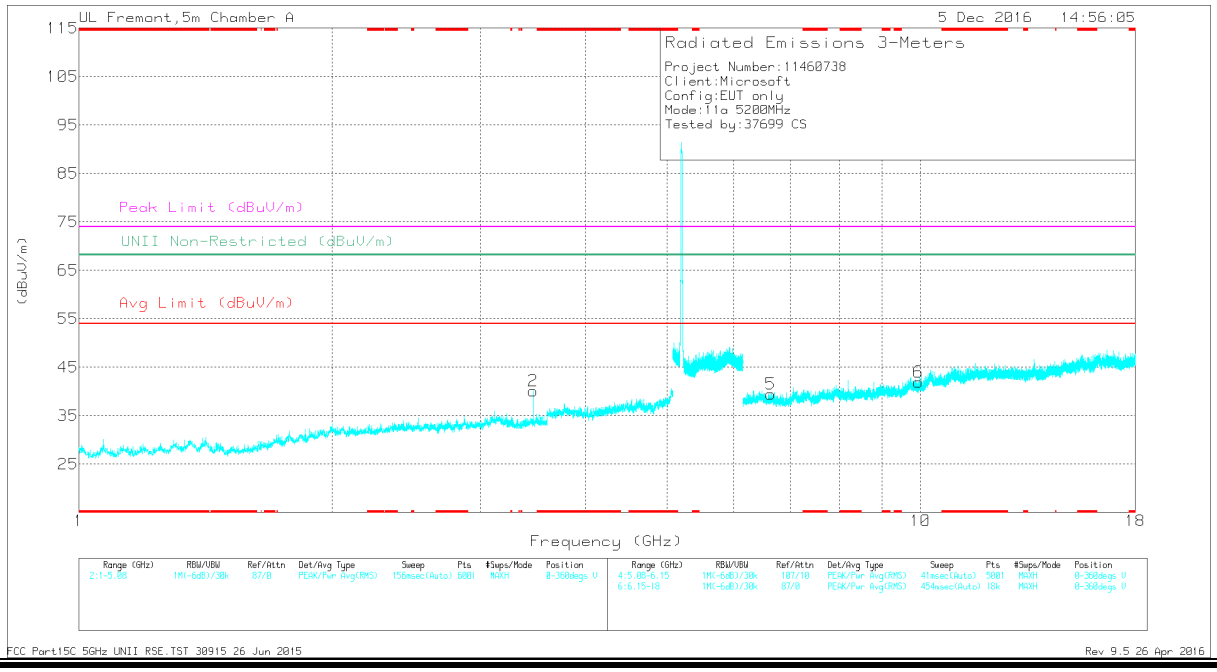
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (db/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	3.453	43.35	PK-U	33	-30.3	0	46.05	-	-	-	-	68.2	-22.15	69	108	H
2	3.453	43.11	PK-U	33	-30.3	0	45.81	-	-	-	-	68.2	-22.39	137	128	V
5	6.617	35.47	PK-U	35.6	-26	0	45.07	-	-	-	-	68.2	-23.13	123	216	V
3	6.643	35.54	PK-U	35.6	-25.8	0	45.34	-	-	-	-	68.2	-22.86	287	101	H
4	10.291	31.84	PK-U	37.3	-19.6	0	49.54	-	-	-	-	68.2	-18.66	23	101	H
6	10.326	31.77	PK-U	37.3	-20.1	0	48.97	-	-	-	-	68.2	-19.23	312	256	V

PK-U - U-NII: Maximum Peak

MID CHANNEL HORIZONTAL



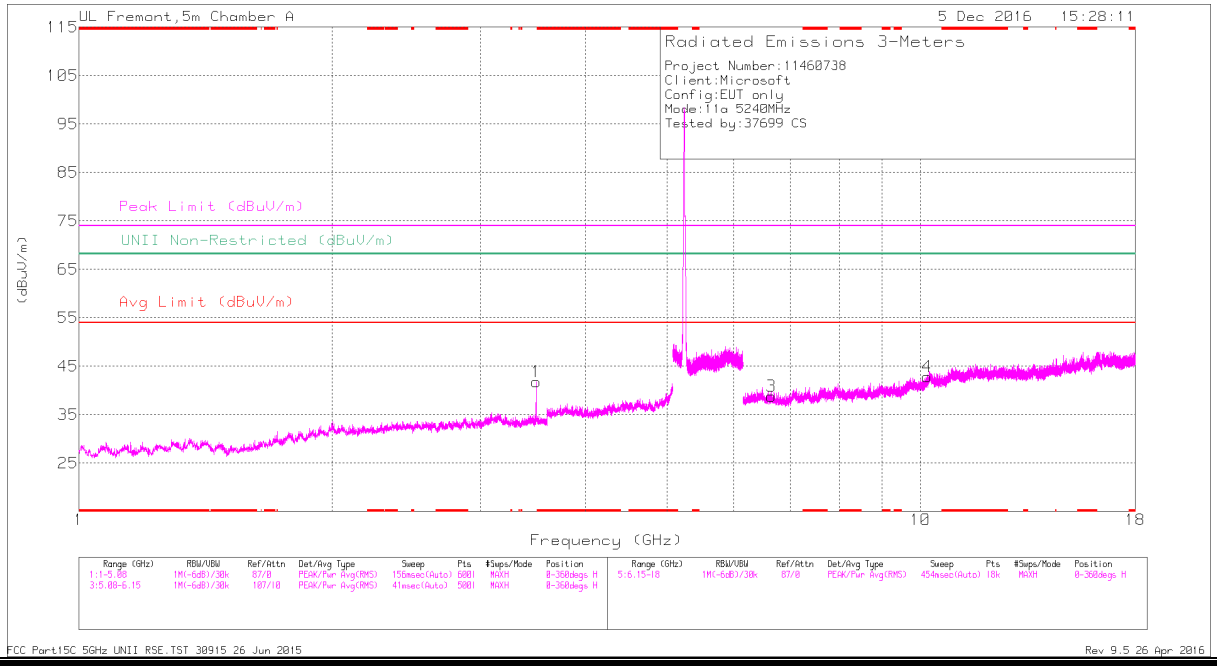
MID CHANNEL VERTICAL



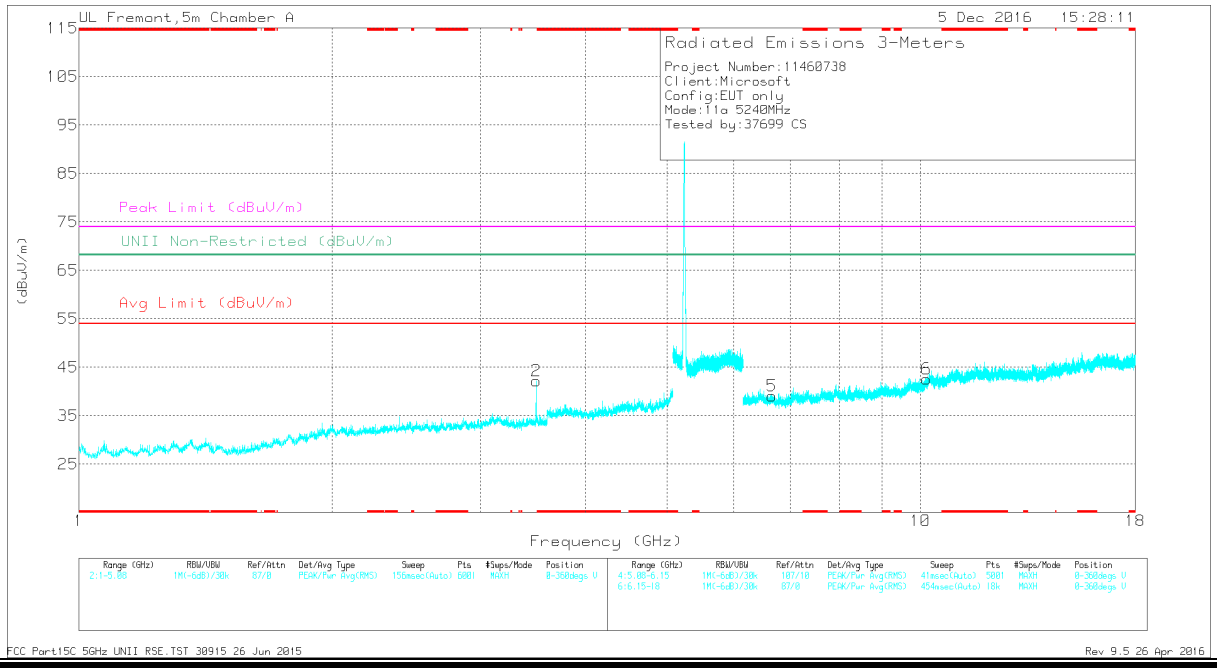
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (db/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	3.467	45.19	PK-U	33	-30.5	0	47.69	-	-	-	-	68.2	-20.51	177	105	H
2	3.467	43.92	PK-U	33	-30.5	0	46.42	-	-	-	-	68.2	-21.78	171	231	V
5	6.641	35.19	PK-U	35.6	-25.9	0	44.89	-	-	-	-	68.2	-23.31	289	111	V
3	6.671	34.92	PK-U	35.6	-25.1	0	45.42	-	-	-	-	68.2	-22.78	256	124	H
6	9.944	32.99	PK-U	36.9	-21.5	0	48.39	-	-	-	-	68.2	-19.81	360	101	V
4	10.01	32.2	PK-U	37.1	-21.1	0	48.2	-	-	-	-	68.2	-20	307	345	H

PK-U - U-NII: Maximum Peak

HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL

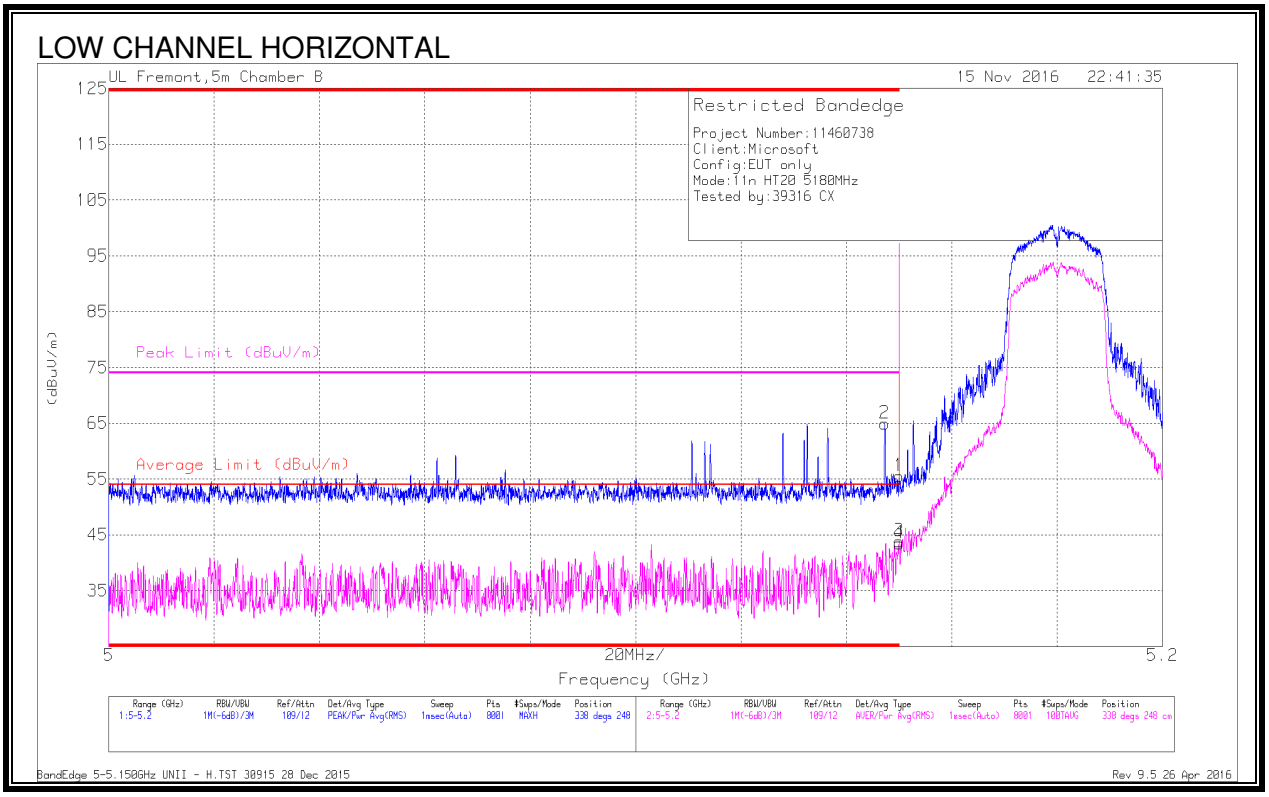


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (db/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	3.492	38.22	PK-U	33	-30.4	0	40.82	-	-	-	-	68.2	-27.38	358	180	V
2	3.493	44.96	PK-U	33	-30.3	0	47.66	-	-	-	-	68.2	-20.54	326	229	H
3	6.652	35.53	PK-U	35.6	-25.5	0	45.63	-	-	-	-	68.2	-22.57	298	200	H
5	6.657	34.79	PK-U	35.6	-25.4	0	44.99	-	-	-	-	68.2	-23.21	23	236	V
6	10.166	32.91	PK-U	37.2	-21.1	0	49.01	-	-	-	-	68.2	-19.19	184	101	V
4	10.184	32.31	PK-U	37.2	-21.1	0	48.41	-	-	-	-	68.2	-19.79	123	149	H

PK-U - U-NII: Maximum Peak

9.1.2. 11n HT20 MODE IN THE 5.2GHz BAND

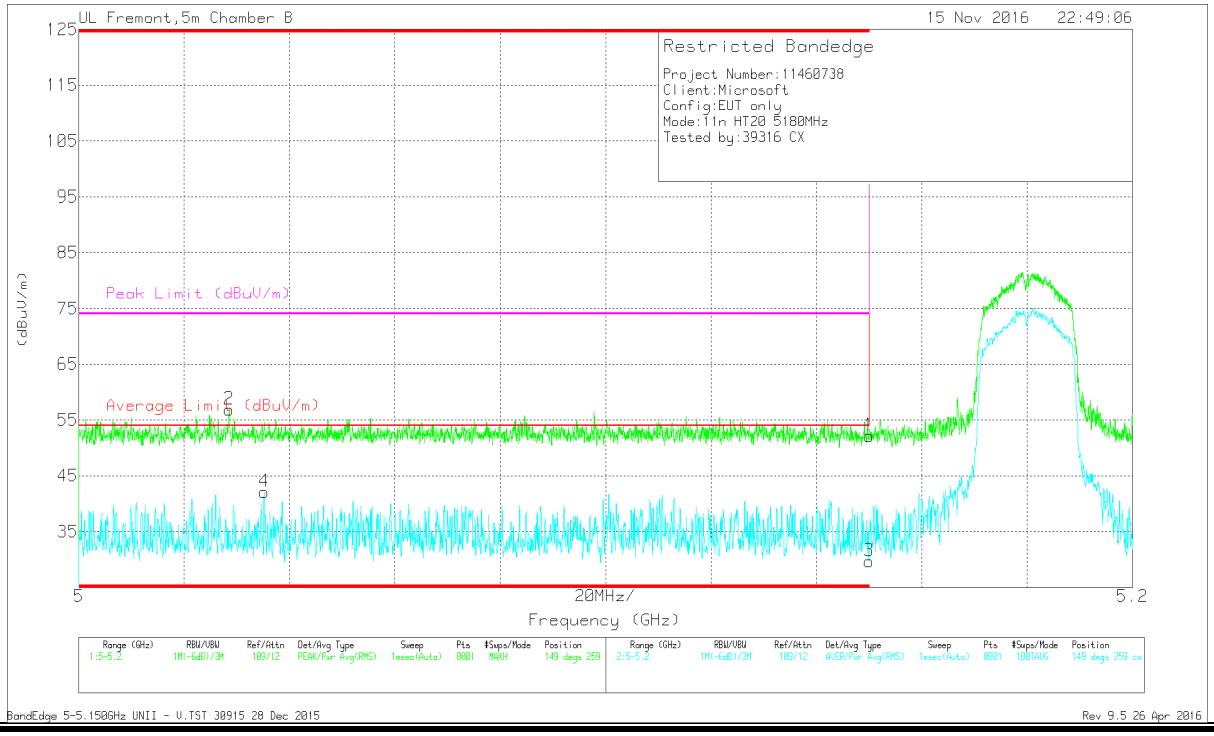
RESTRICTED BANDEDGE (LOW CHANNEL)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
2	* 5.147	50.29	Pk	34.2	-19.5	64.99	-	-	74	-9.01	338	248	H
4	* 5.15	29.19	RMS	34.2	-19.9	43.49	54	-10.51	-	-	338	248	H
1	5.15	41.16	Pk	34.2	-19.9	55.46	-	-	74	-18.54	338	248	H
3	5.15	29.49	RMS	34.2	-19.9	43.79	54	-10.21	-	-	338	248	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

LOW CHANNEL VERTICAL

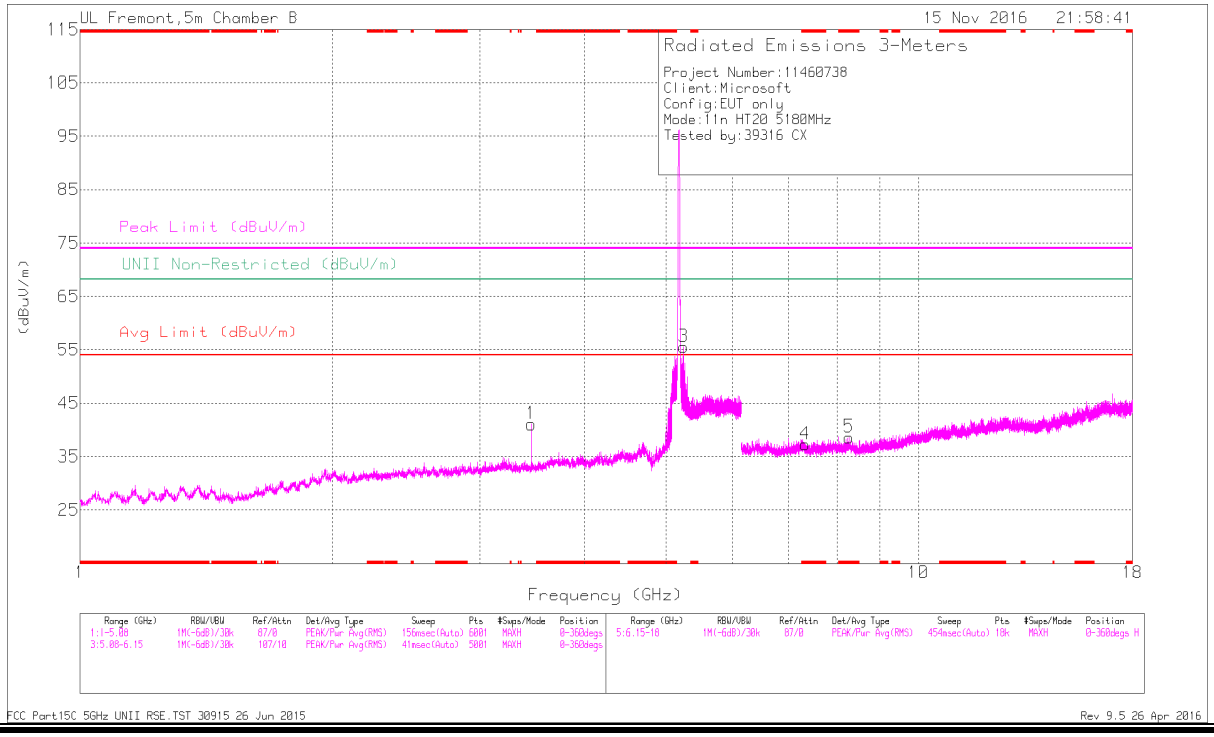


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 5.029	42.4	Pk	34.1	-19.6	56.9	-	-	74	-17.1	149	259	V
4	* 5.035	27.25	RMS	34.1	-19.3	42.05	54	-11.95	-	-	149	259	V
1	5.15	37.86	Pk	34.2	-19.9	52.16	-	-	74	-21.84	149	259	V
3	5.15	15.33	RMS	34.2	-19.9	29.63	54	-24.37	-	-	149	259	V

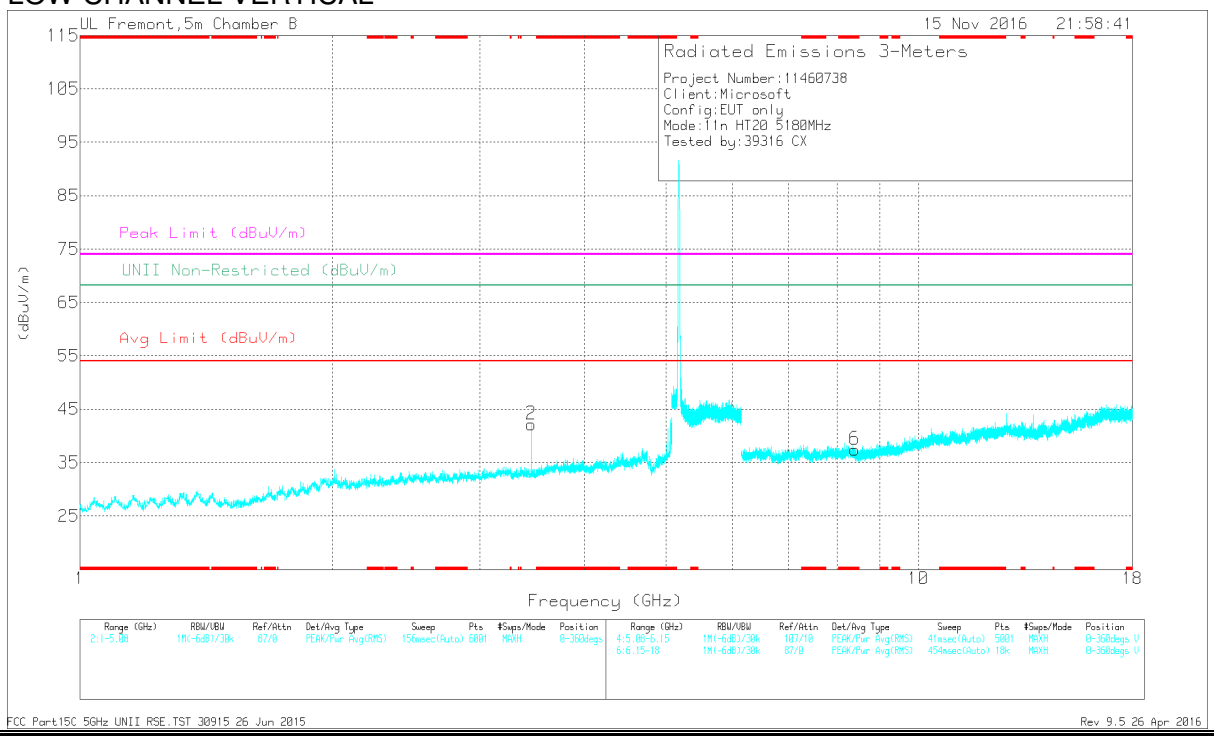
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



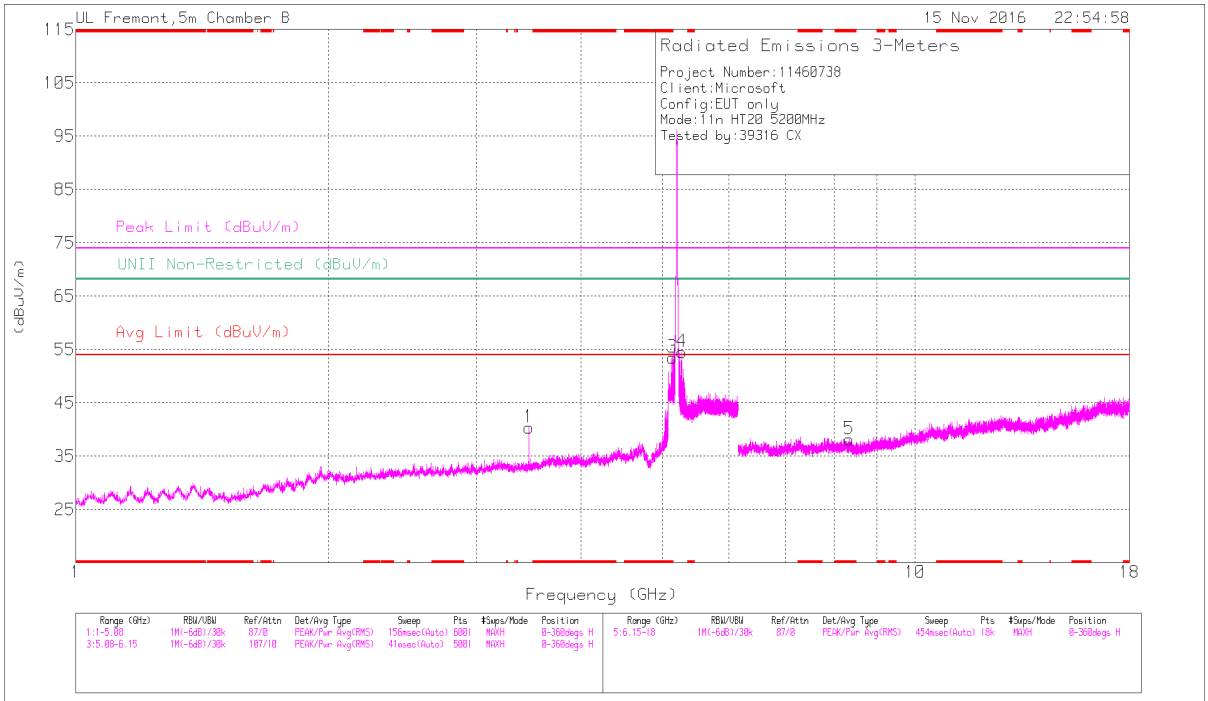
LOW CHANNEL VERTICAL



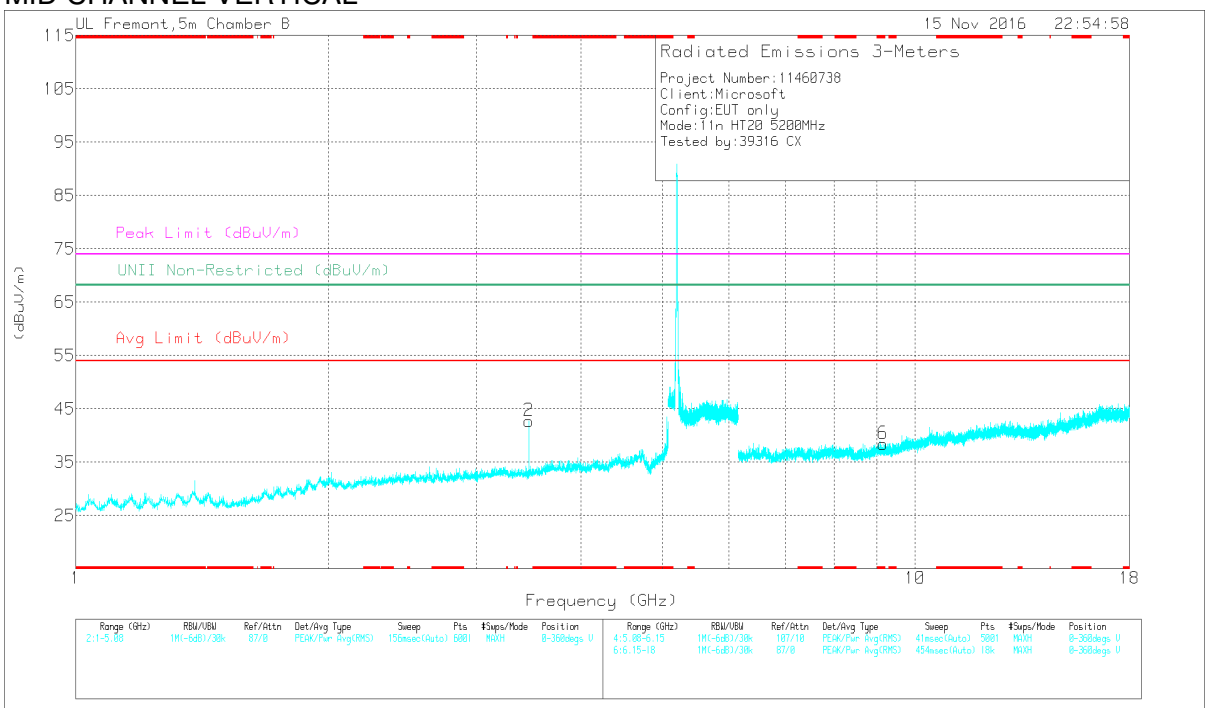
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 7.331	38.06	PK-U	35.6	-29.6	0	44.06	-	-	74	-29.94	-	-	174	180	H
	* 7.331	27.04	ADR	35.6	-29.6	.1	33.14	54	-20.86	-	-	-	-	174	180	H
5	* 8.261	37.95	PK-U	35.8	-28.7	0	45.05	-	-	74	-28.95	-	-	317	152	H
	* 8.262	26.33	ADR	35.8	-28.7	.1	33.53	54	-20.47	-	-	-	-	317	152	H
6	* 8.398	36.53	PK-U	35.8	-28.7	0	43.63	-	-	74	-30.37	-	-	289	174	V
	* 8.399	25.95	ADR	35.8	-28.7	.1	33.15	54	-20.85	-	-	-	-	289	174	V
1	3.453	48.11	PK-U	32.8	-33.8	0	47.11	-	-	-	-	68.2	-21.09	57	108	H
2	3.453	48.04	PK-U	32.8	-33.8	0	47.04	-	-	-	-	68.2	-21.16	293	192	V
3	5.247	44.94	PK-U	34.4	-19.8	0	59.54	-	-	-	-	68.2	-8.66	151	124	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



UL VERIFICATION SERVICES INC.
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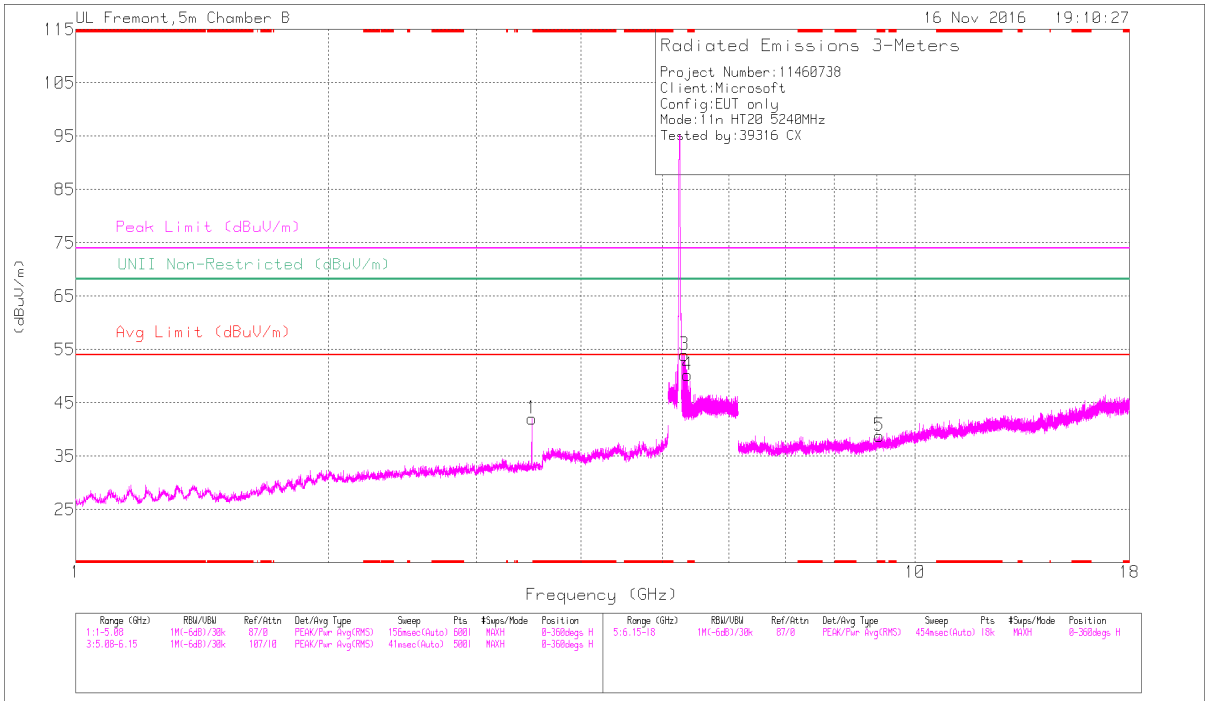
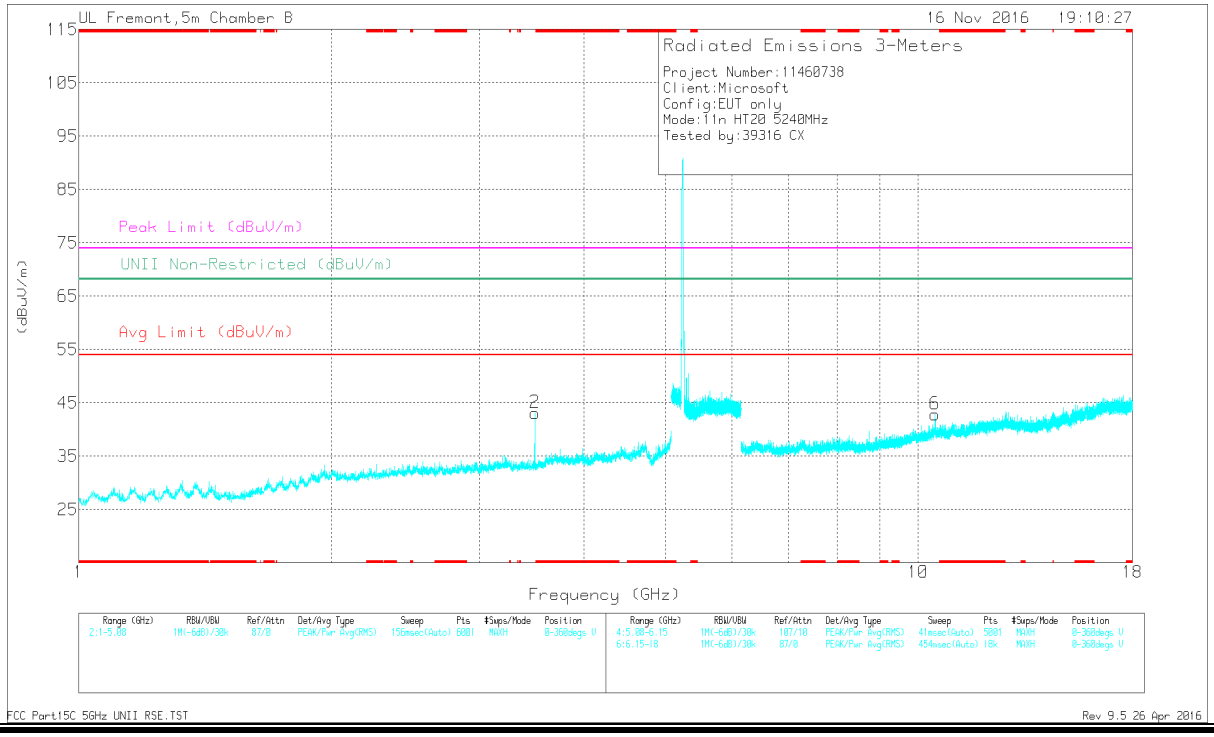
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 5.136	42.99	PK-U	34.2	-19.3	57.89	-	-	74	-16.11	-	-	314	116	H
	* 5.136	23.5	ADR	34.2	-19.4	38.3	54	-15.7	-	-	-	-	314	116	H
5	* 8.346	36.95	PK-U	35.8	-28.7	44.05	-	-	74	-29.95	-	-	244	182	H
	* 8.346	26.24	ADR	35.8	-28.7	33.34	54	-20.66	-	-	-	-	244	182	H
6	* 9.153	36.68	PK-U	36.3	-27.8	45.18	-	-	74	-28.82	-	-	169	148	V
	* 9.152	25.14	ADR	36.3	-27.8	33.64	54	-20.36	-	-	-	-	169	148	V
2	3.467	47.47	PK-U	32.8	-33.7	46.57	-	-	-	-	68.2	-21.63	310	112	H
1	3.467	48.76	PK-U	32.8	-33.7	47.86	-	-	-	-	68.2	-20.34	280	145	V
4	5.269	47.18	PK-U	34.4	-19.9	61.68	-	-	-	-	68.2	-6.52	287	153	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 5.351	41.98	PK-U	34.5	-20.4	0	56.08	-	-	74	-17.92	-	-	187	195	H
	* 5.351	22.92	ADR	34.5	-20.3	.1	37.22	54	-16.78	-	-	-	-	187	195	H
5	* 9.064	36.44	PK-U	36.2	-27.9	0	44.74	-	-	74	-29.26	-	-	112	145	H
	* 9.063	25.49	ADR	36.2	-27.9	.1	33.89	54	-20.11	-	-	-	-	112	145	H
1	3.493	47.78	PK-U	32.8	-33.2	0	47.38	-	-	-	-	68.2	-20.82	154	127	H
2	3.493	47.29	PK-U	32.8	-33.2	0	46.89	-	-	-	-	68.2	-21.31	302	297	V
3	5.303	37.85	PK-U	34.5	-20.3	0	52.05	-	-	-	-	68.2	-16.15	260	247	H
6	10.472	35.22	PK-U	37.7	-25.6	0	47.32	-	-	-	-	68.2	-20.88	133	166	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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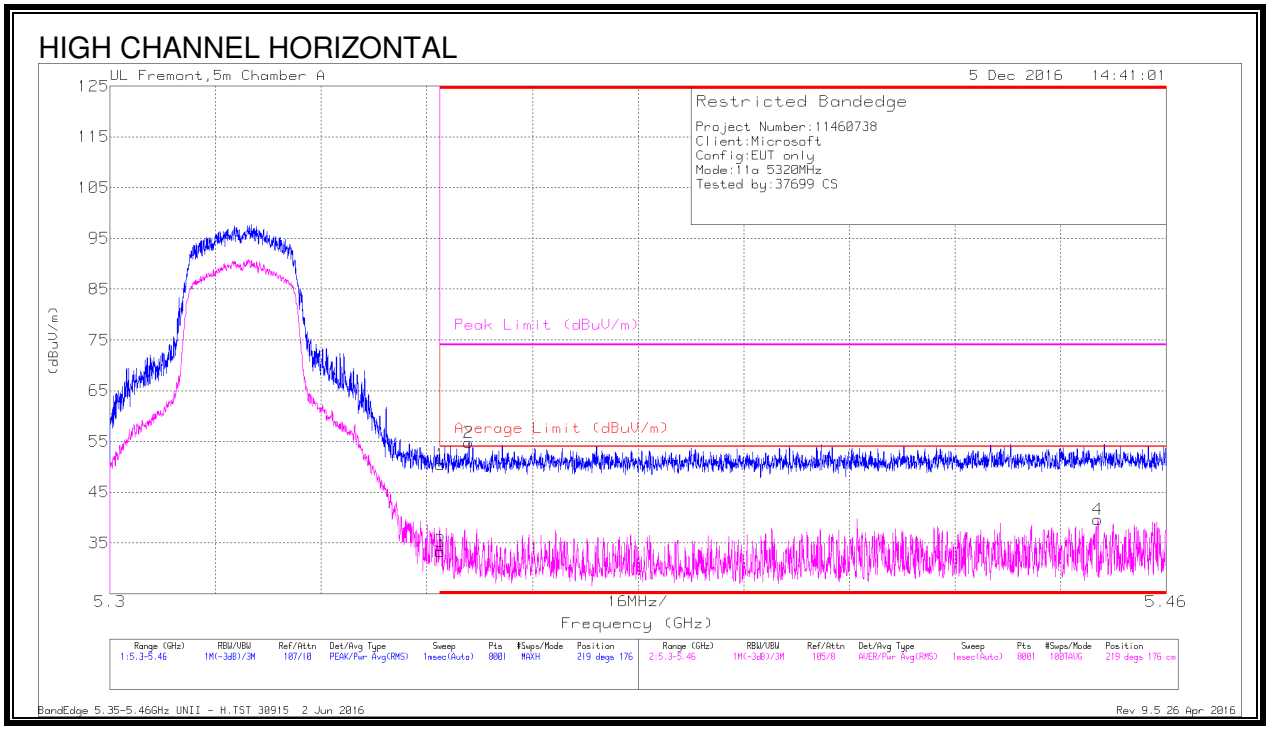
9.1.3. 11a MODE IN THE 5.3GHz BAND

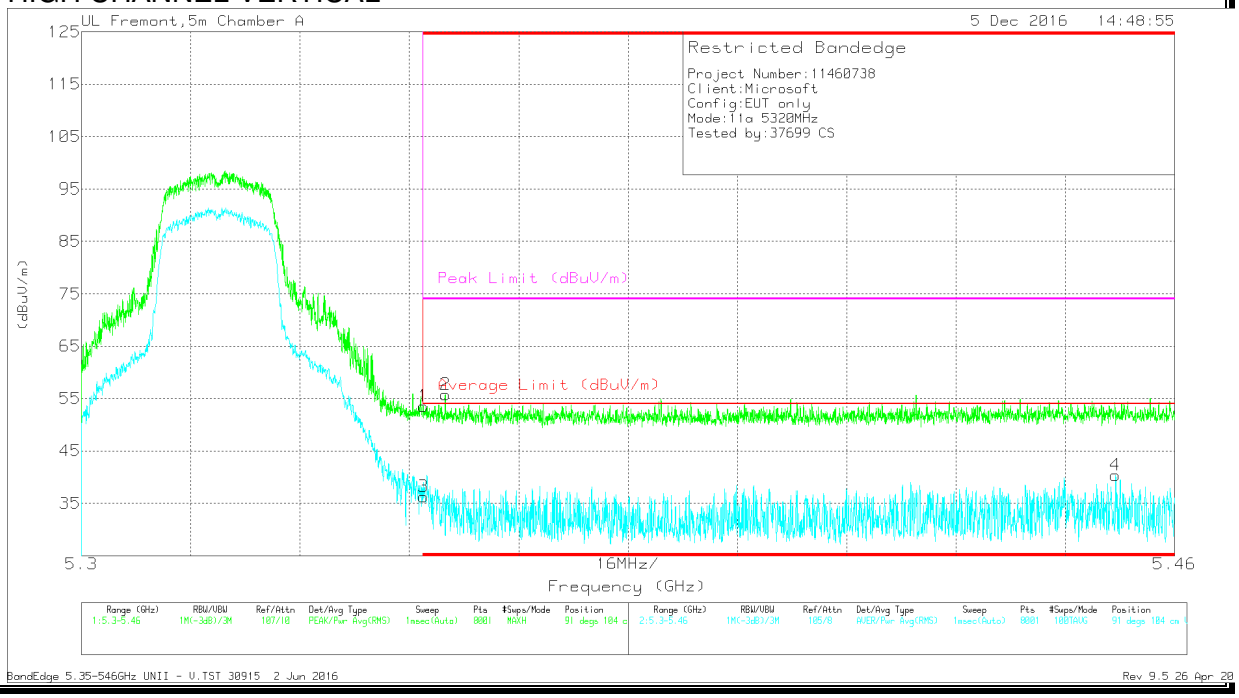
AUTHORIZED BANDEDGE (HIGH CHANNEL)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (db/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	34.5	Pk	34.8	-18.9	0	50.4	-	-	74	-23.6	219	176	H
2	* 5.354	38.78	Pk	34.8	-18.8	0	54.78	-	-	74	-19.22	219	176	H
3	* 5.35	17.44	RMS	34.8	-18.9	.1	33.44	54	-20.56	-	-	219	176	H
4	* 5.45	23.66	RMS	34.8	-18.8	.1	39.76	54	-14.24	-	-	219	176	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

HIGH CHANNEL VERTICAL

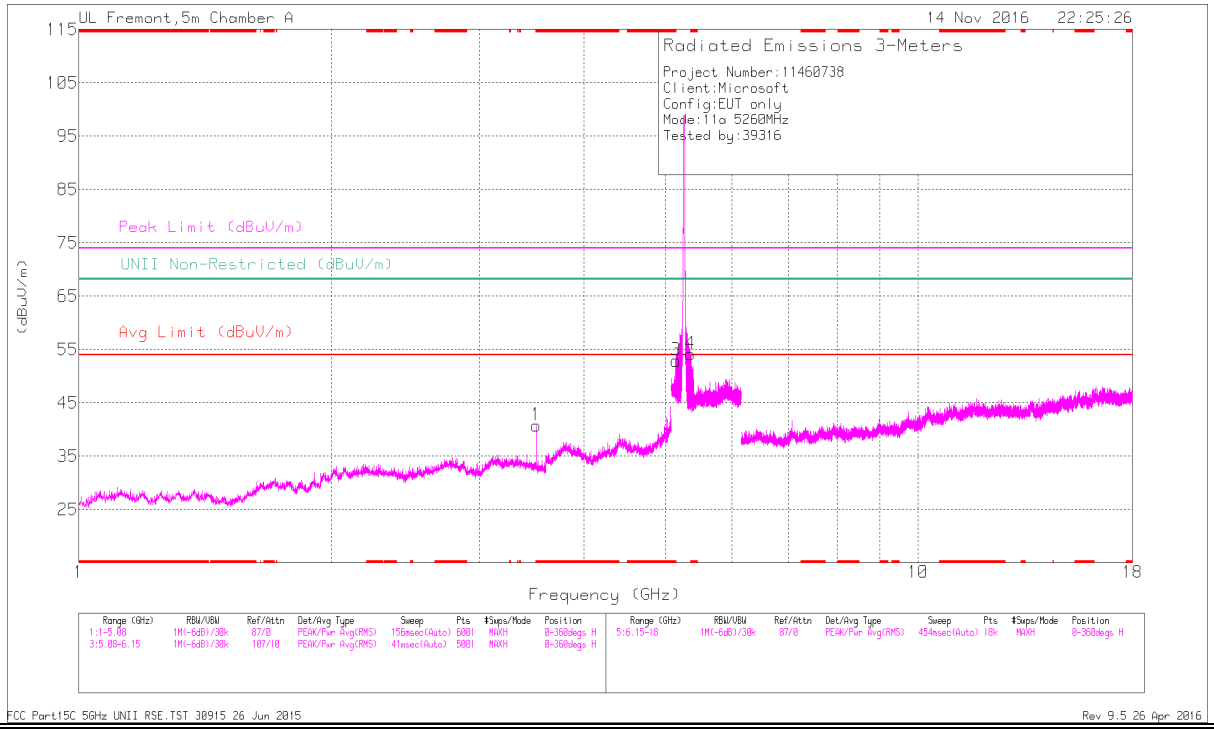


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (db/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	37.62	Pk	34.8	-18.9	0	53.52	-	-	74	-20.48	91	104	V
3	* 5.35	20.3	RMS	34.8	-18.9	.1	36.3	54	-17.7	-	-	91	104	V
2	* 5.353	39.74	Pk	34.8	-18.8	0	55.74	-	-	74	-18.26	91	104	V
4	* 5.451	24.3	RMS	34.8	-18.8	.1	40.4	54	-13.6	-	-	91	104	V

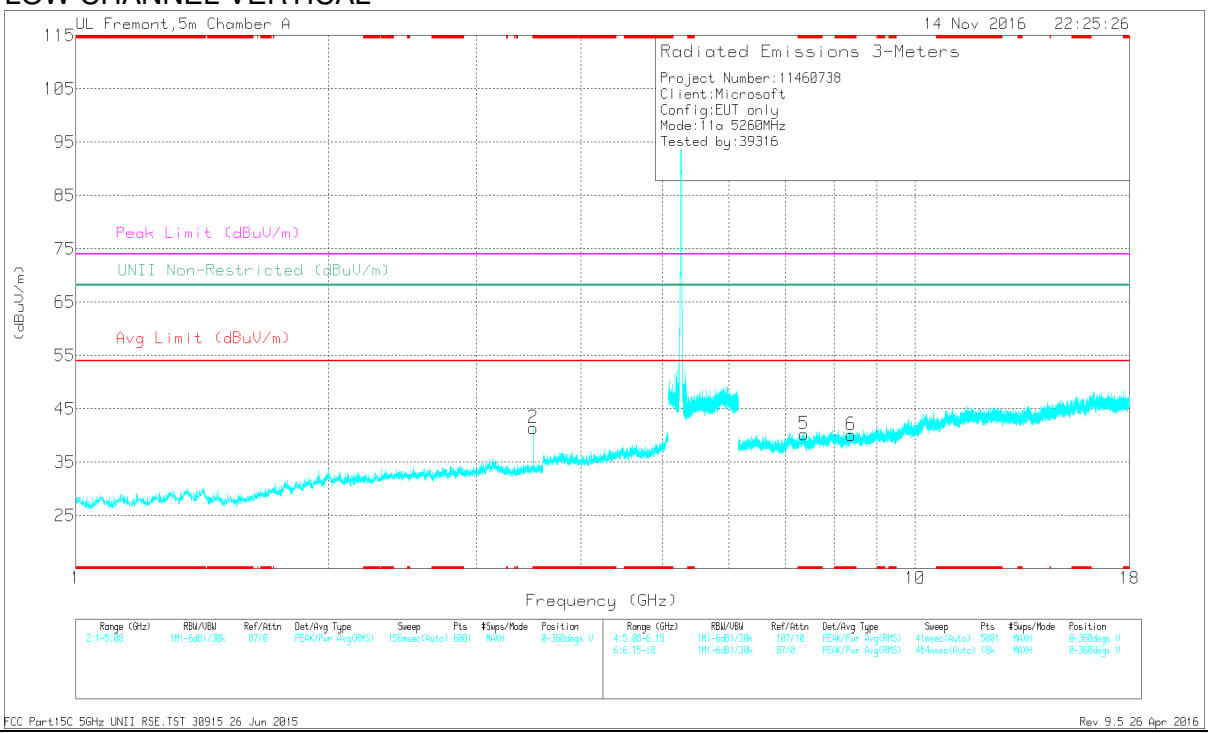
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



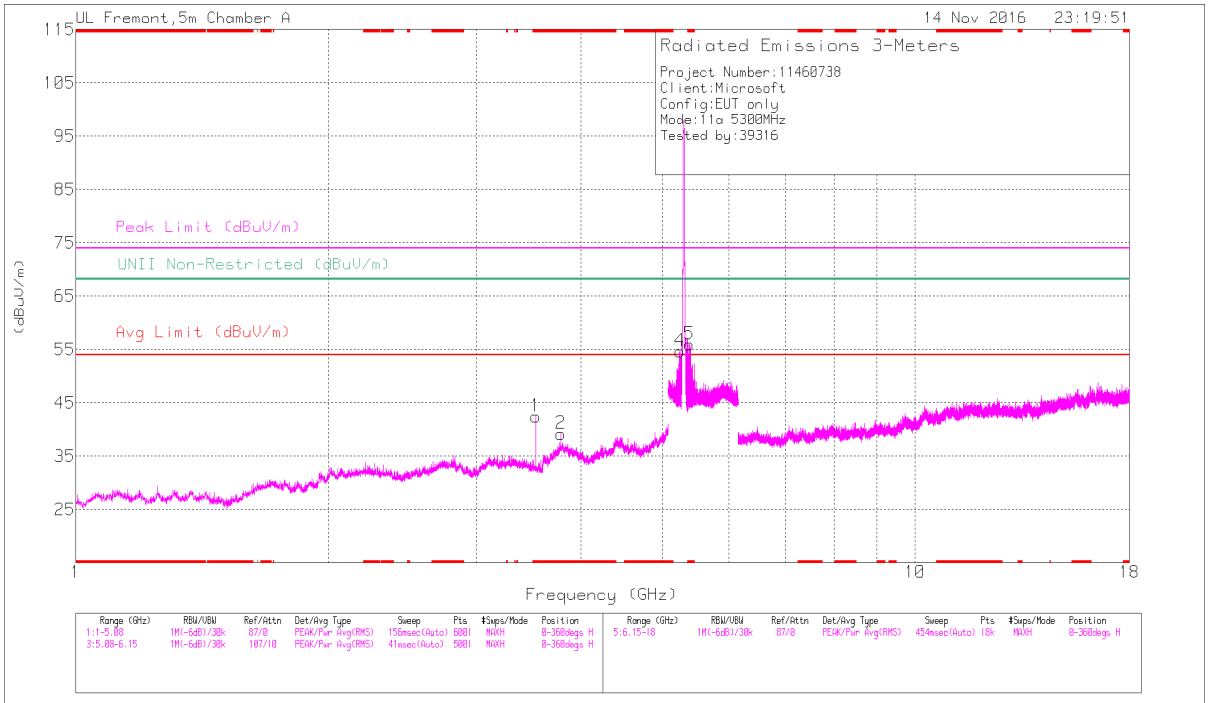
LOW CHANNEL VERTICAL



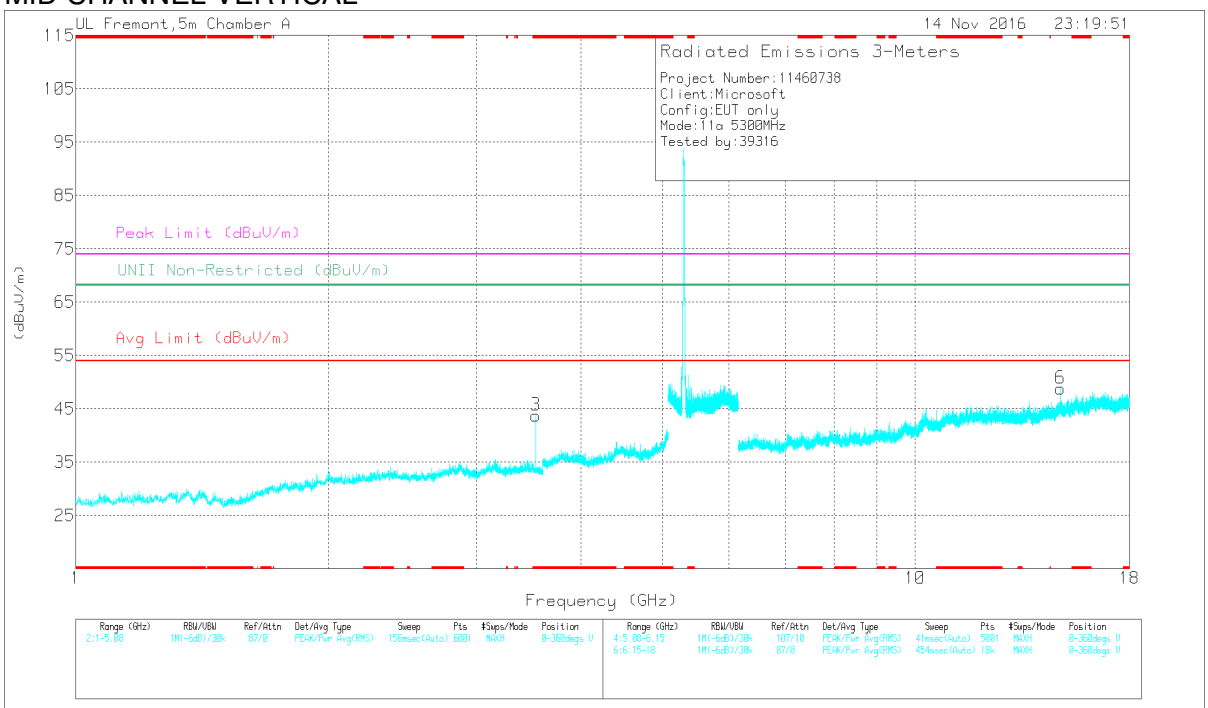
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (db/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.507	44.45	PK-U	33	-30.3	0	47.15	-	-	74	-26.85	-	-	301	103	H
	* 3.507	38.72	ADR	33	-30.3	.1	41.52	54	-12.48	-	-	-	-	301	103	H
2	* 3.507	44.48	PK-U	33	-30.3	0	47.18	-	-	74	-26.82	-	-	179	218	V
	* 3.507	37.6	ADR	33	-30.3	.1	40.4	54	-13.6	-	-	-	-	179	218	V
3	* 5.149	41.88	PK-U	34.5	-18.6	0	57.78	-	-	74	-16.22	-	-	91	238	H
	* 5.146	23.54	ADR	34.4	-18.6	.1	39.44	54	-14.56	-	-	-	-	91	238	H
4	* 5.355	37.11	PK-U	34.8	-18.8	0	53.11	-	-	74	-20.89	-	-	204	169	H
	* 5.353	18.78	ADR	34.8	-18.8	.1	34.88	54	-19.12	-	-	-	-	204	169	H
5	* 7.374	34.38	PK-U	35.7	-23.4	0	46.68	-	-	74	-27.32	-	-	174	187	V
	* 7.375	22.44	ADR	35.7	-23.3	.1	34.94	54	-19.06	-	-	-	-	174	187	V
6	* 8.387	35.21	PK-U	35.9	-23.2	0	47.91	-	-	74	-26.09	-	-	113	171	V
	* 8.386	22.8	ADR	35.9	-23.2	.1	35.6	54	-18.4	-	-	-	-	113	171	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (db/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.533	43.84	PK-U	33	-30.5	0	46.34	-	-	74	-27.66	-	-	166	114	H
	* 3.533	38.51	ADR	33	-30.5	.1	41.11	54	-12.89	-	-	-	-	166	114	H
2	* 3.785	39.16	PK-U	33.6	-29.8	0	42.96	-	-	74	-31.04	-	-	183	133	H
	* 3.785	27.98	ADR	33.6	-29.8	.1	31.88	54	-22.12	-	-	-	-	183	133	H
3	* 3.533	44.9	PK-U	33	-30.5	0	47.4	-	-	74	-26.6	-	-	180	216	V
	* 3.533	38.86	ADR	33	-30.5	.1	41.46	54	-12.54	-	-	-	-	180	216	V
5	* 5.384	49.2	PK-U	34.8	-18.8	0	65.2	-	-	74	-8.8	-	-	0	113	H
	* 5.383	28.8	ADR	34.8	-18.8	.1	44.9	54	-9.1	-	-	-	-	0	113	H
4	5.243	48.06	PK-U	34.7	-18.8	0	63.96	-	-	-	-	68.2	-4.24	4	236	H
6	14.884	32.75	PK-U	39.8	-20.4	0	52.15	-	-	-	-	68.2	-16.05	47	145	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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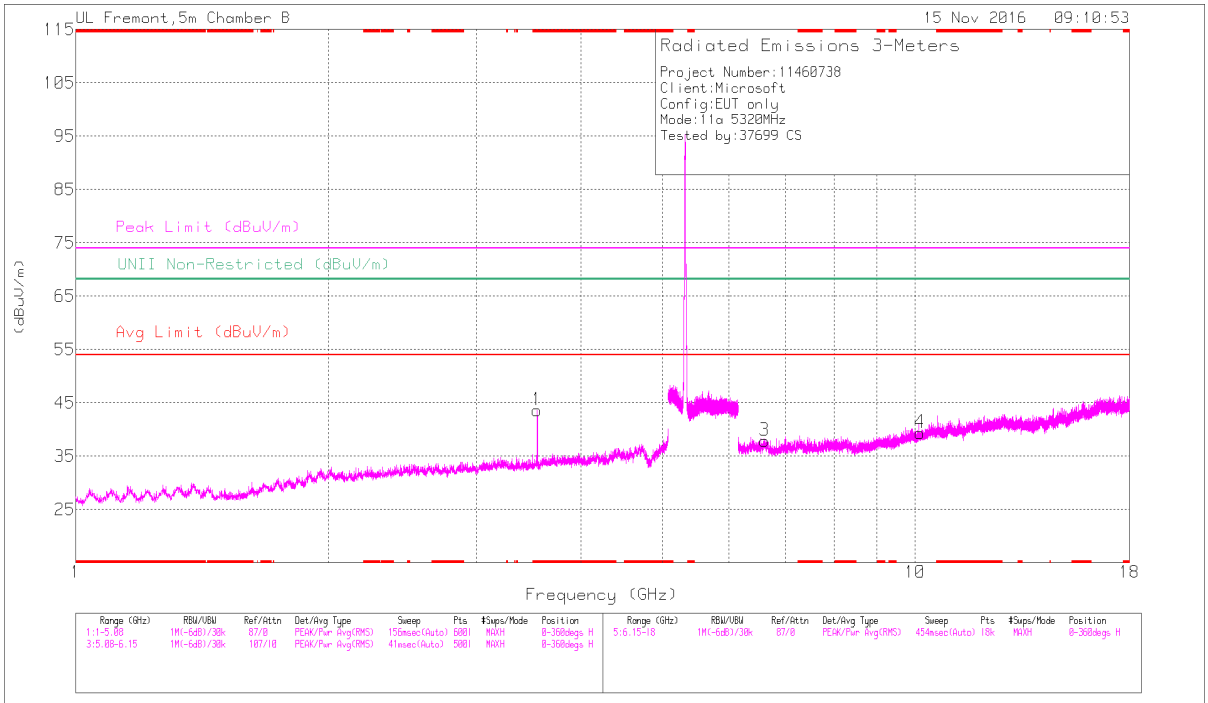
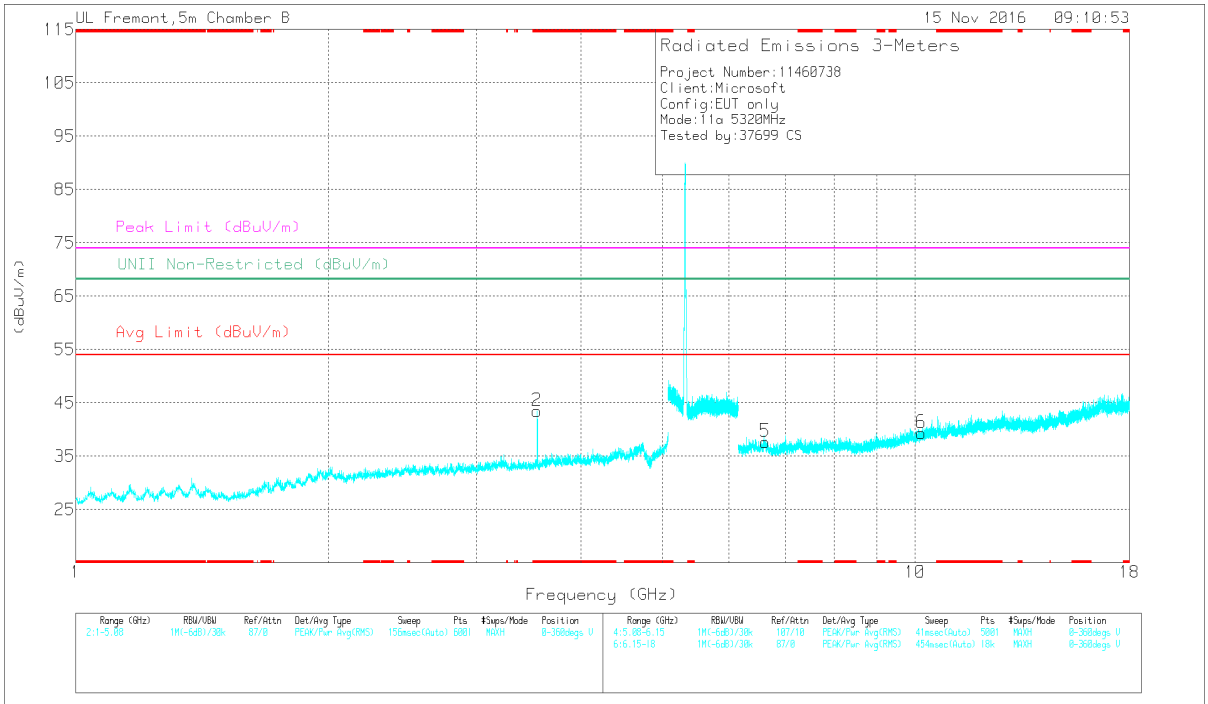
HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL

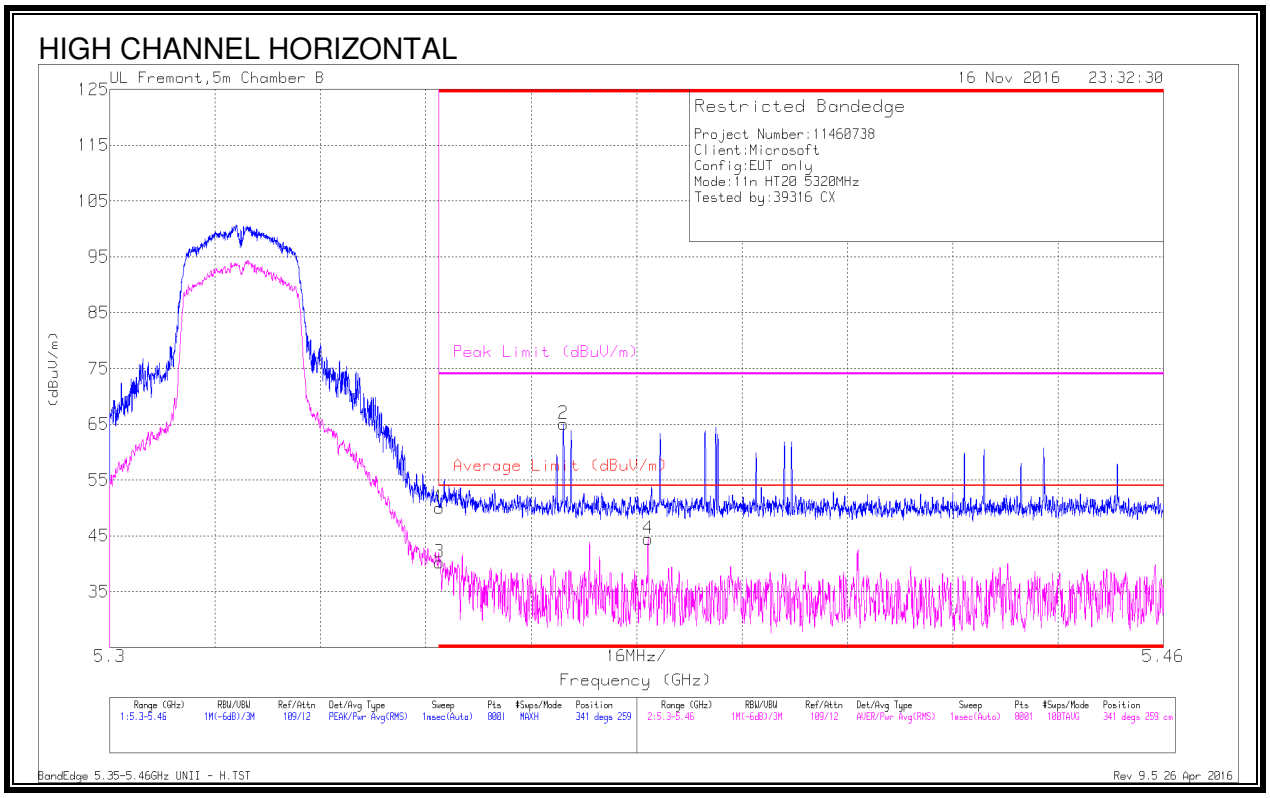


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.547	47.36	PK-U	32.9	-32.8	0	47.46	-	-	74	-26.54	-	-	141	102	H
	* 3.547	42.79	ADR	32.9	-32.8	.1	42.99	54	-11.01	-	-	-	-	141	102	H
2	* 3.547	45.77	PK-U	32.9	-32.8	0	45.87	-	-	74	-28.13	-	-	298	101	V
	* 3.547	40.15	ADR	32.9	-32.8	.1	40.35	54	-13.65	-	-	-	-	298	101	V
3	6.614	38.28	PK-U	35.5	-30	0	43.78	-	-	-	-	68.2	-24.42	261	119	H
5	6.625	38.31	PK-U	35.5	-29.8	0	44.01	-	-	-	-	68.2	-24.19	186	127	V
4	10.132	34.5	PK-U	37.4	-26.5	0	45.4	-	-	-	-	68.2	-22.8	167	139	H
6	10.168	34.88	PK-U	37.4	-26.5	0	45.78	-	-	-	-	68.2	-22.42	195	107	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

9.1.4. 11n HT20 MODE IN THE 5.3GHz BAND

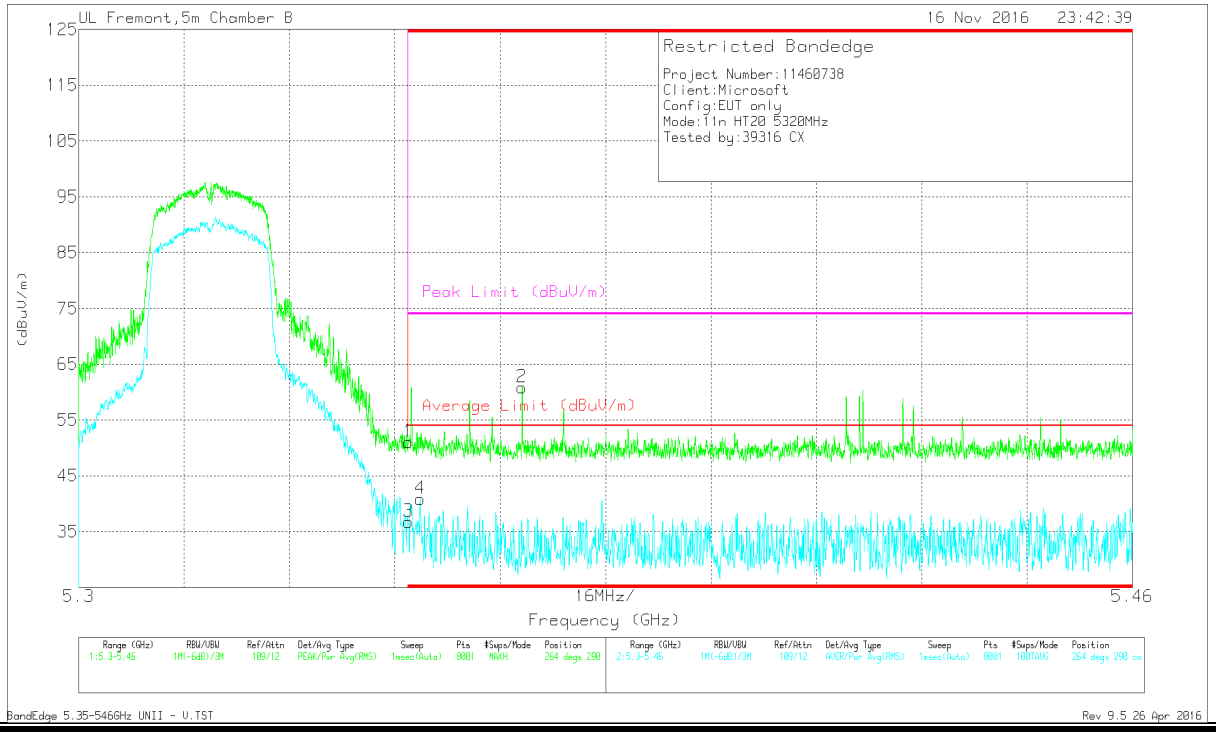
AUTHORIZED BANDEDGE (HIGH CHANNEL)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	35.87	Pk	34.5	-20.3	0	50.07	-	-	74	-23.93	341	259	H
2	* 5.369	50.63	Pk	34.5	-20.1	0	65.03	-	-	74	-8.97	341	259	H
3	* 5.35	26	RMS	34.5	-20.3	.1	40.3	54	-13.7	-	-	341	259	H
4	* 5.382	30.46	RMS	34.5	-20.5	.1	44.56	54	-9.44	-	-	341	259	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

HIGH CHANNEL VERTICAL

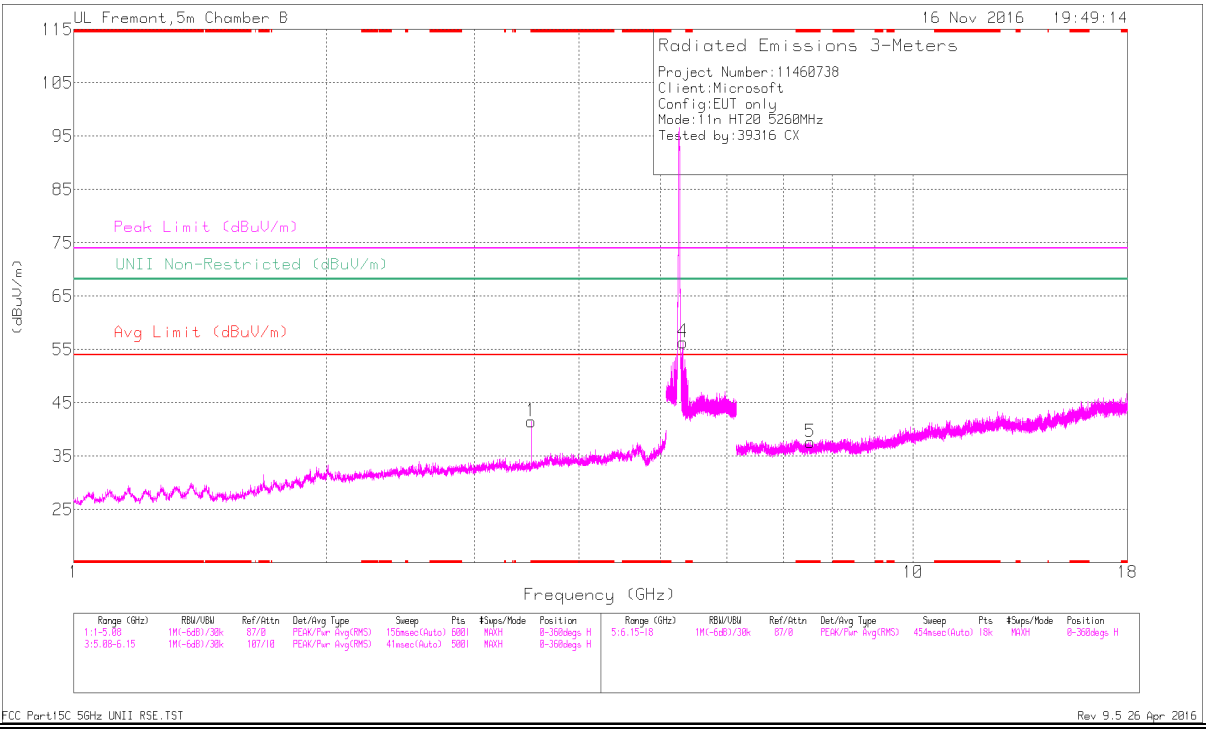


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	36.89	Pk	34.5	-20.3	51.09	-	-	74	-22.91	264	290	V
2	* 5.367	46.69	Pk	34.5	-20.3	60.89	-	-	74	-13.11	264	290	V
3	* 5.35	22.53	RMS	34.5	-20.3	36.73	54	-17.27	-	-	264	290	V
4	* 5.352	26.59	RMS	34.5	-20.2	40.89	54	-13.11	-	-	264	290	V

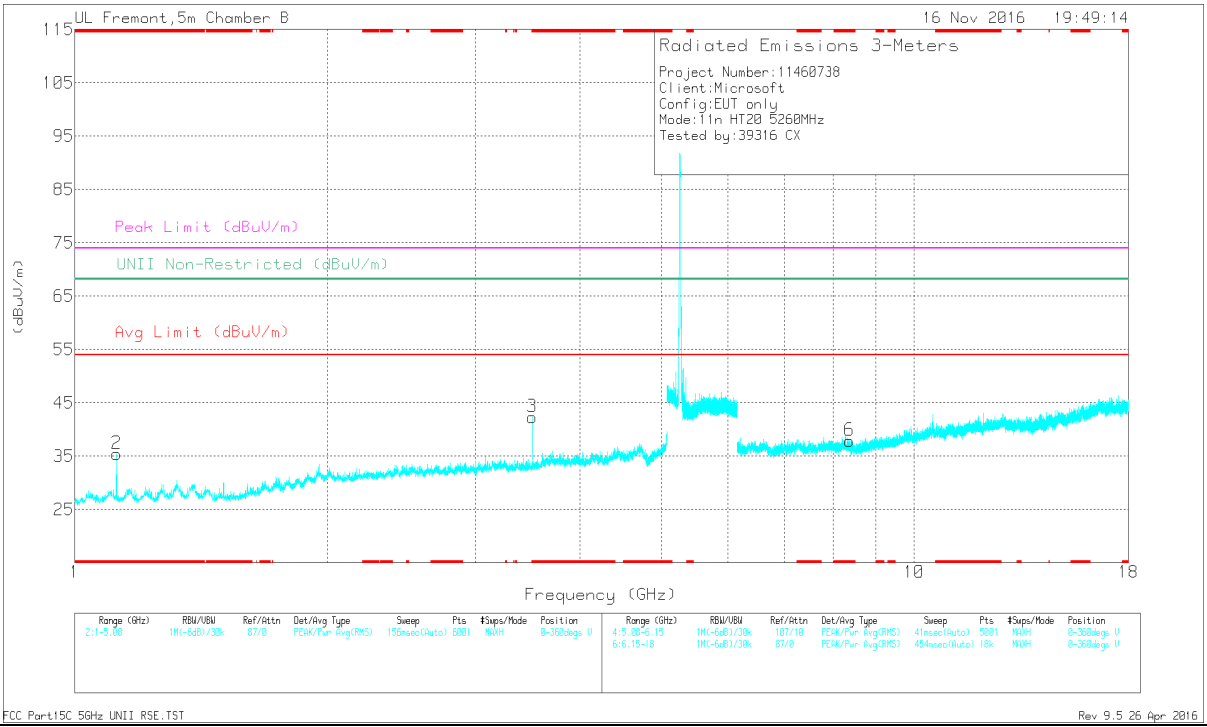
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.507	47.49	PK-U	32.8	-33.2	0	47.09	-	-	74	-26.91	-	-	66	265	H
	* 3.507	40.6	ADR	32.8	-33.2	.1	40.3	54	-13.7	-	-	-	-	66	265	H
2	* 1.122	41.87	PK-U	28	-35.5	0	34.37	-	-	74	-39.63	-	-	161	358	V
	* 1.12	30.48	ADR	28	-35.5	.1	23.08	54	-30.92	-	-	-	-	161	358	V
3	* 3.507	48.25	PK-U	32.8	-33.2	0	47.85	-	-	74	-26.15	-	-	297	106	V
	* 3.507	41.99	ADR	32.8	-33.2	.1	41.69	54	-12.31	-	-	-	-	297	106	V
5	* 7.541	36.57	PK-U	35.7	-29.2	0	43.07	-	-	74	-30.93	-	-	187	146	H
	* 7.543	25.98	ADR	35.7	-29.2	.1	32.58	54	-21.42	-	-	-	-	187	146	H
6	* 8.372	37.45	PK-U	35.8	-29	0	44.25	-	-	74	-29.75	-	-	172	183	V
	* 8.371	26.36	ADR	35.8	-29	.1	33.26	54	-20.74	-	-	-	-	172	183	V
4	5.32	38.1	PK-U	34.5	-19.8	0	52.8	-	-	-	-	68.2	-15.4	233	117	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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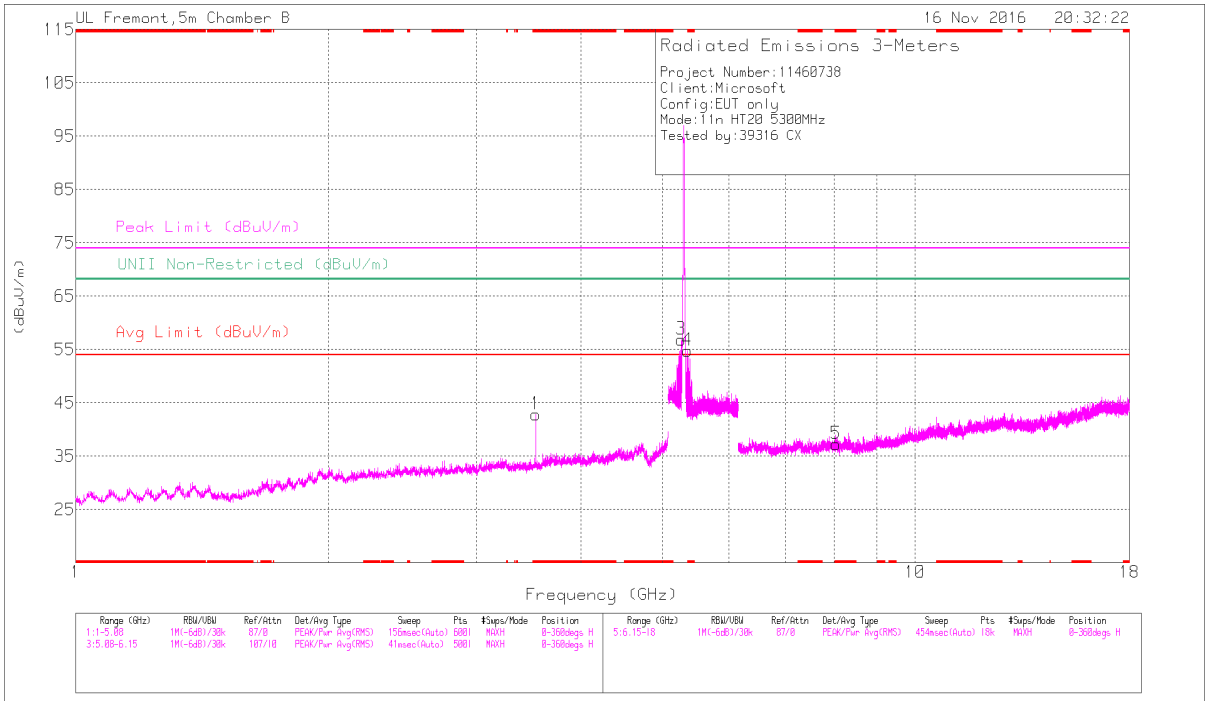
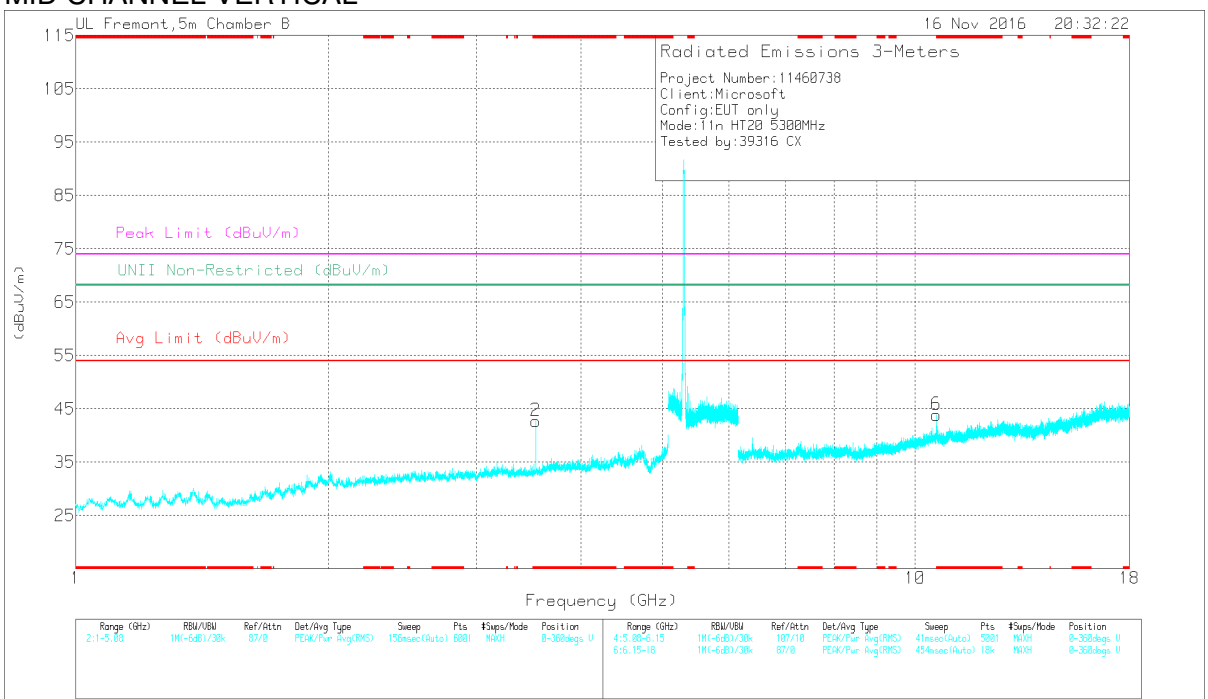
MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.533	48.05	PK-U	32.9	-32.8	0	48.15	-	-	74	-25.85	-	-	52	110	H
	* 3.533	41.9	ADR	32.9	-32.8	.1	42.1	54	-11.9	-	-	-	-	52	110	H
2	* 3.533	48.06	PK-U	32.9	-32.8	0	48.16	-	-	74	-25.84	-	-	295	210	V
	* 3.533	41.9	ADR	32.9	-32.8	.1	42.1	54	-11.9	-	-	-	-	295	210	V
4	* 5.357	37.17	PK-U	34.5	-20	0	51.67	-	-	74	-22.33	-	-	211	144	H
	* 5.356	22.76	ADR	34.5	-20.2	.1	37.16	54	-16.84	-	-	-	-	211	144	H
5	* 8.055	37.53	PK-U	35.8	-28.9	0	44.43	-	-	74	-29.57	-	-	187	212	H
	* 8.054	26.6	ADR	35.8	-28.9	.1	33.6	54	-20.4	-	-	-	-	187	212	H
6	* 10.601	37.1	PK-U	37.9	-26.3	0	48.7	-	-	74	-25.3	-	-	134	105	V
	* 10.603	26.11	ADR	37.9	-26.3	.1	37.81	54	-16.19	-	-	-	-	134	105	V
3	5.266	39.3	PK-U	34.4	-20.2	0	53.5	-	-	-	-	68.2	-14.7	234	178	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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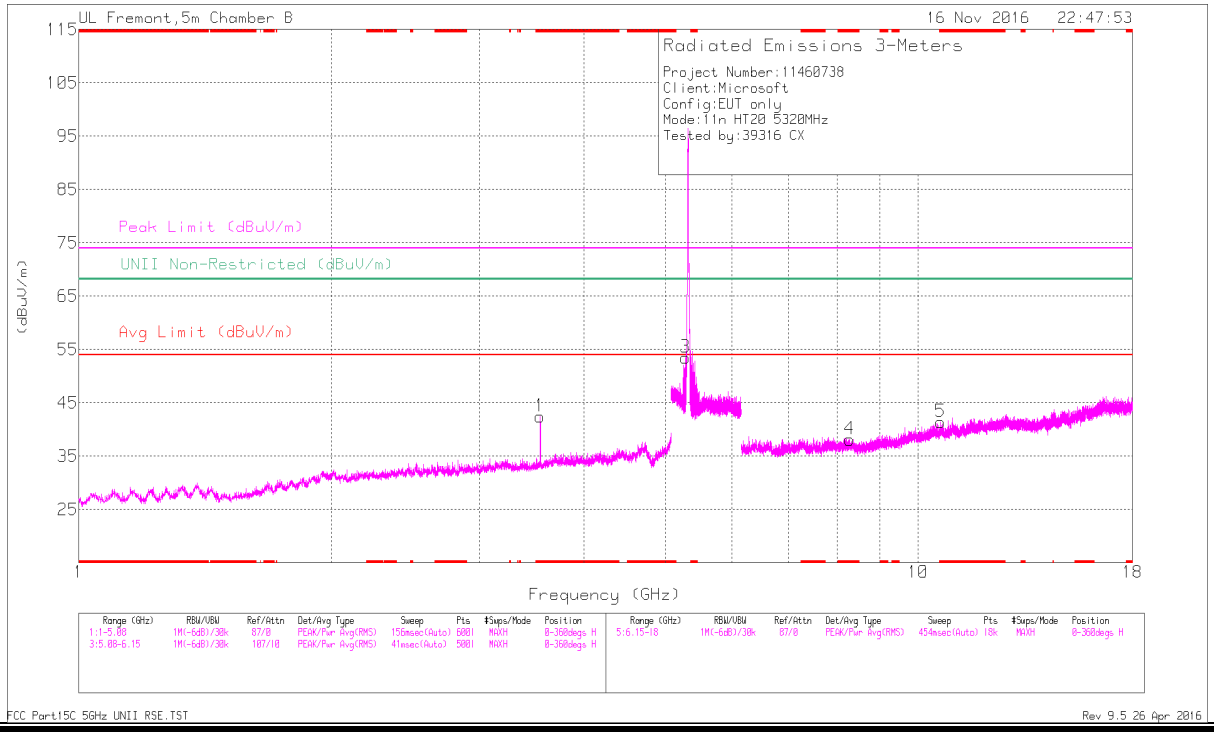
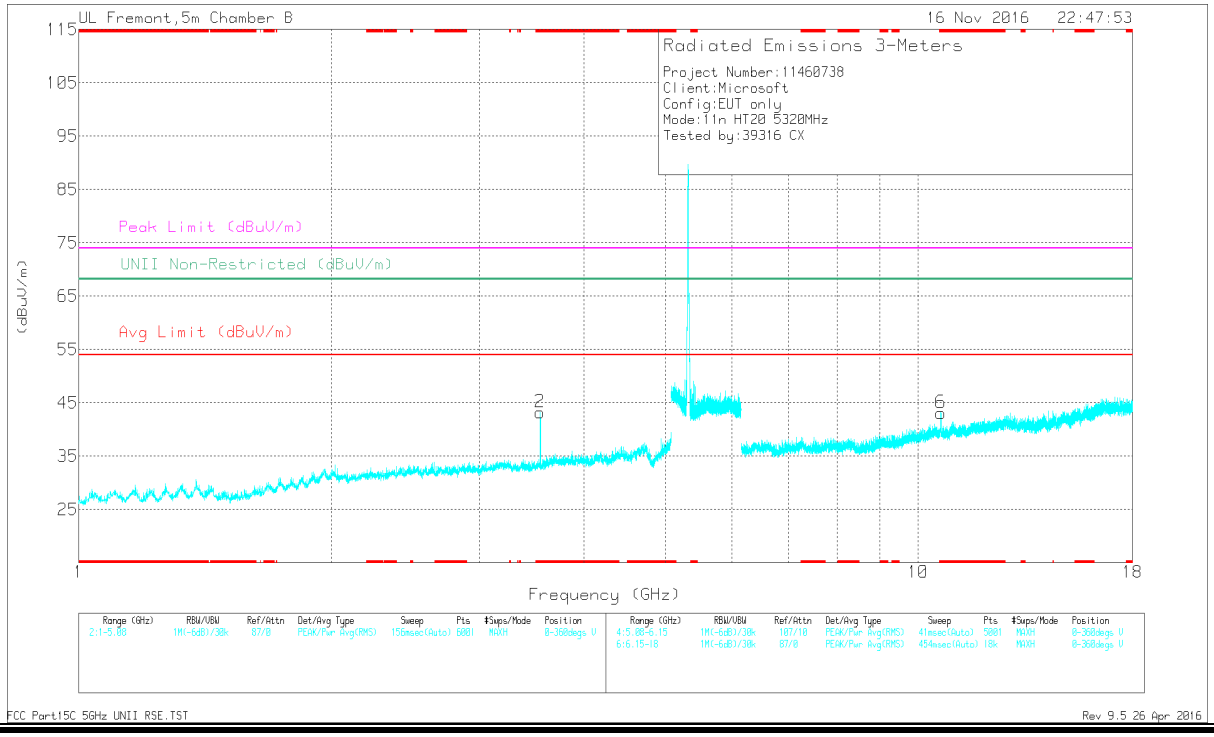
HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL

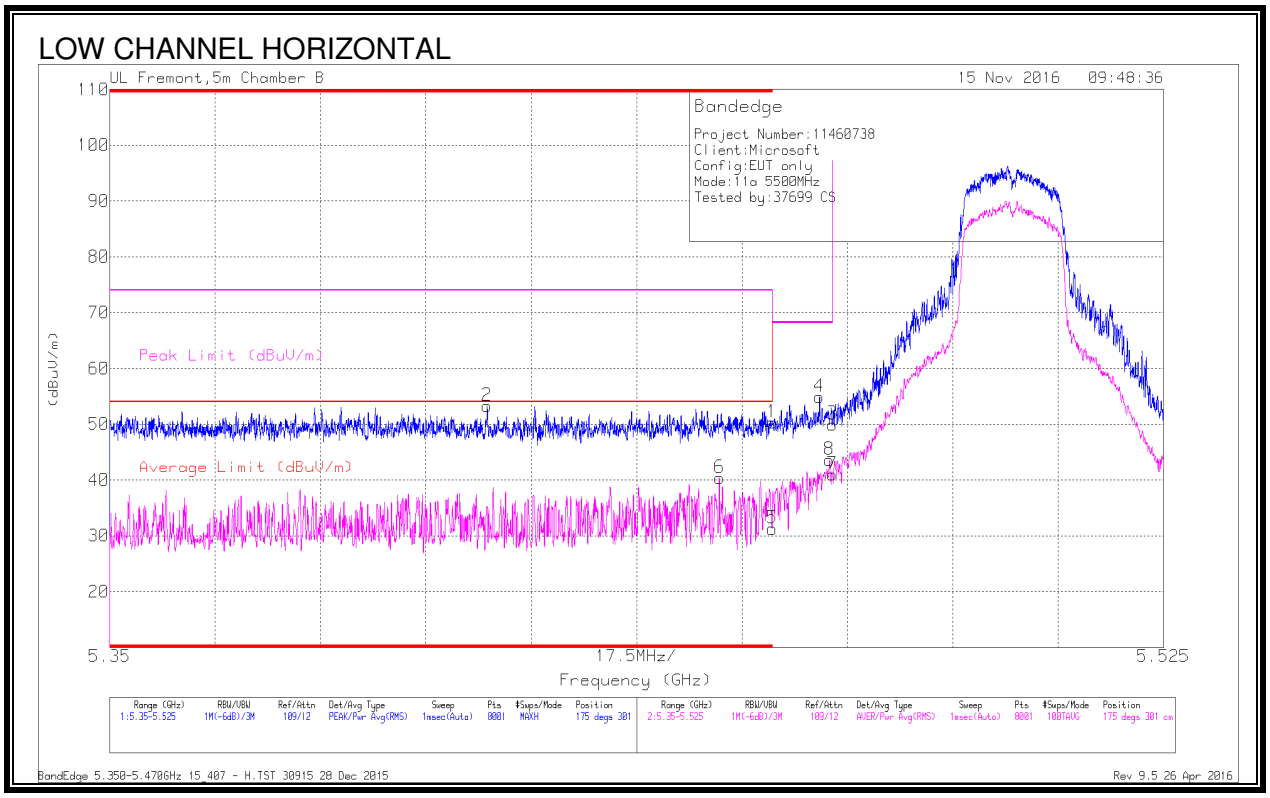


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.547	46	PK-U	32.9	-32.8	0	46.1	-	-	74	-27.9	-	-	268	102	H
	* 3.547	41.33	ADR	32.9	-32.8	.1	41.53	54	-12.47	-	-	-	-	268	102	H
2	* 3.547	46.84	PK-U	32.9	-32.8	0	46.94	-	-	74	-27.06	-	-	114	115	V
	* 3.547	39.73	ADR	32.9	-32.8	.1	39.93	54	-14.07	-	-	-	-	114	115	V
4	* 8.287	36.77	PK-U	35.8	-28.5	0	44.07	-	-	74	-29.93	-	-	177	159	H
	* 8.287	26.1	ADR	35.8	-28.5	.1	33.5	54	-20.5	-	-	-	-	177	159	H
5	* 10.634	34.99	PK-U	37.9	-25.6	0	47.29	-	-	74	-26.71	-	-	211	138	H
	* 10.635	24	ADR	37.9	-25.6	.1	36.4	54	-17.6	-	-	-	-	211	138	H
6	* 10.641	34.7	PK-U	37.9	-25.5	0	47.1	-	-	74	-26.9	-	-	322	168	V
	* 10.642	23.31	ADR	37.9	-25.5	.1	35.81	54	-18.19	-	-	-	-	322	168	V
3	5.285	44.65	PK-U	34.4	-20	0	59.05	-	-	-	-	68.2	-9.15	149	172	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

9.1.5. 11a MODE IN THE 5.6GHz BAND

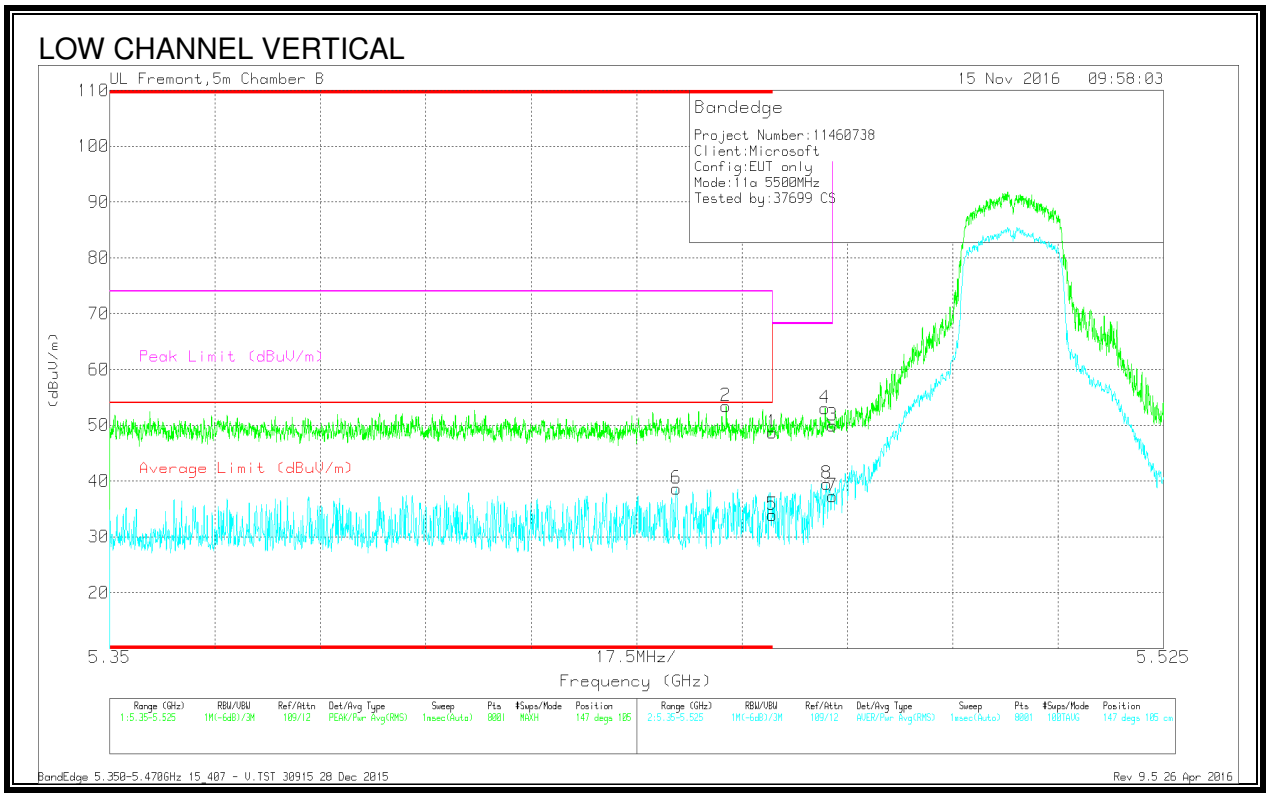
RESTRICTED BANDEDGE (LOW CHANNEL)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.46	36.8	Pk	34.5	-21	0	50.3	-	-	74	-23.7	175	301	H
2	* 5.413	39.38	Pk	34.5	-20.6	0	53.28	-	-	74	-20.72	175	301	H
5	* 5.46	17.66	RMS	34.5	-21	.1	31.26	54	-22.74	-	-	175	301	H
6	* 5.451	26.36	RMS	34.5	-20.6	.1	40.36	54	-13.64	-	-	175	301	H
4	5.468	41.19	Pk	34.5	-20.8	0	54.89	-	-	68.2	-13.31	175	301	H
3	5.47	36.4	Pk	34.5	-20.9	0	50	-	-	68.2	-18.2	175	301	H
7	5.47	27.34	RMS	34.5	-20.9	.1	41.04	-	-	-	-	175	301	H
8	5.47	29.86	RMS	34.5	-20.8	.1	43.66	-	-	-	-	175	301	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

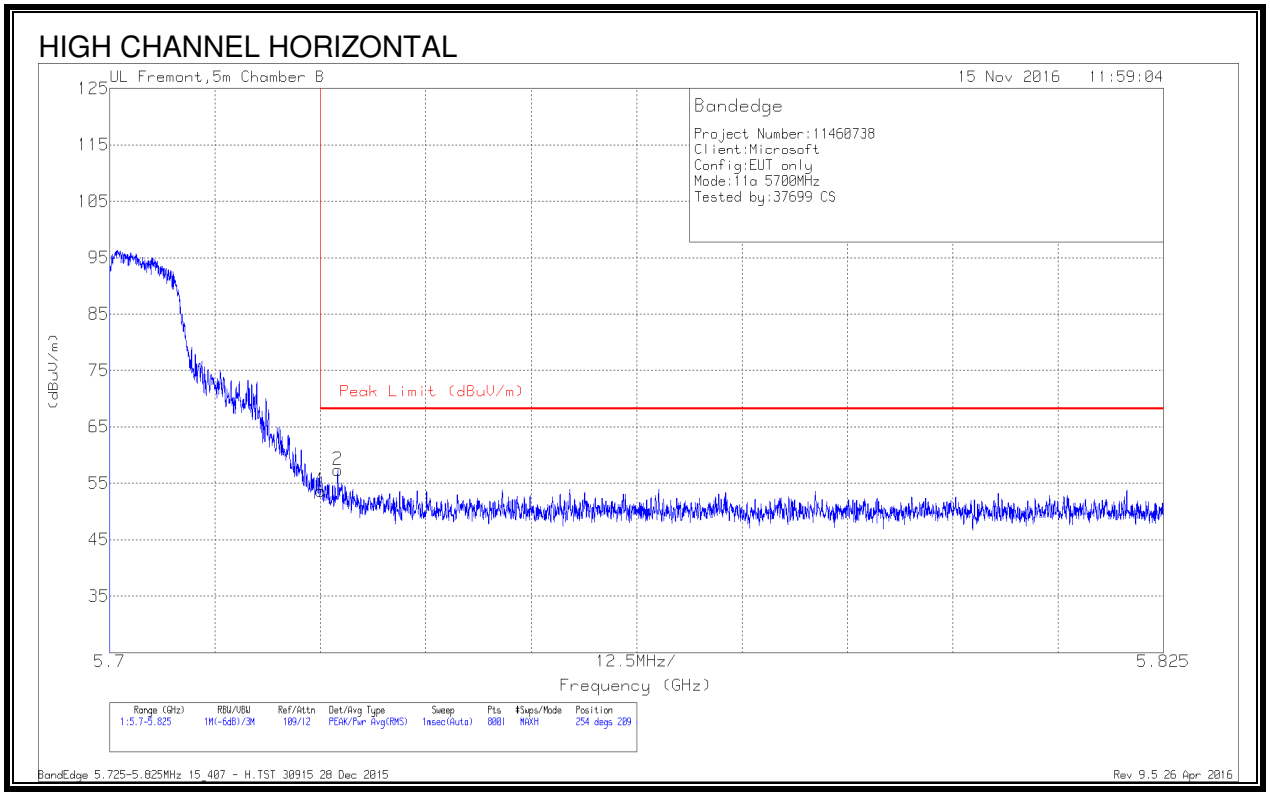
LOW CHANNEL VERTICAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6	* 5.444	24.93	RMS	34.5	-20.9	.1	38.63	54	-15.37	-	-	147	105	V
2	* 5.452	39.56	Pk	34.5	-20.6	0	53.46	-	-	74	-20.54	147	105	V
1	* 5.46	35.16	Pk	34.5	-21	0	48.66	-	-	74	-25.34	147	105	V
5	* 5.46	20.36	RMS	34.5	-21	.1	33.96	54	-20.04	-	-	147	105	V
4	5.469	39.25	Pk	34.5	-20.7	0	53.05	-	-	68.2	-15.15	147	105	V
8	5.469	25.54	RMS	34.5	-20.6	.1	39.54	-	-	-	-	147	105	V
3	5.47	36.34	Pk	34.5	-20.9	0	49.94	-	-	68.2	-18.26	147	105	V
7	5.47	23.56	RMS	34.5	-20.9	.1	37.26	-	-	-	-	147	105	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

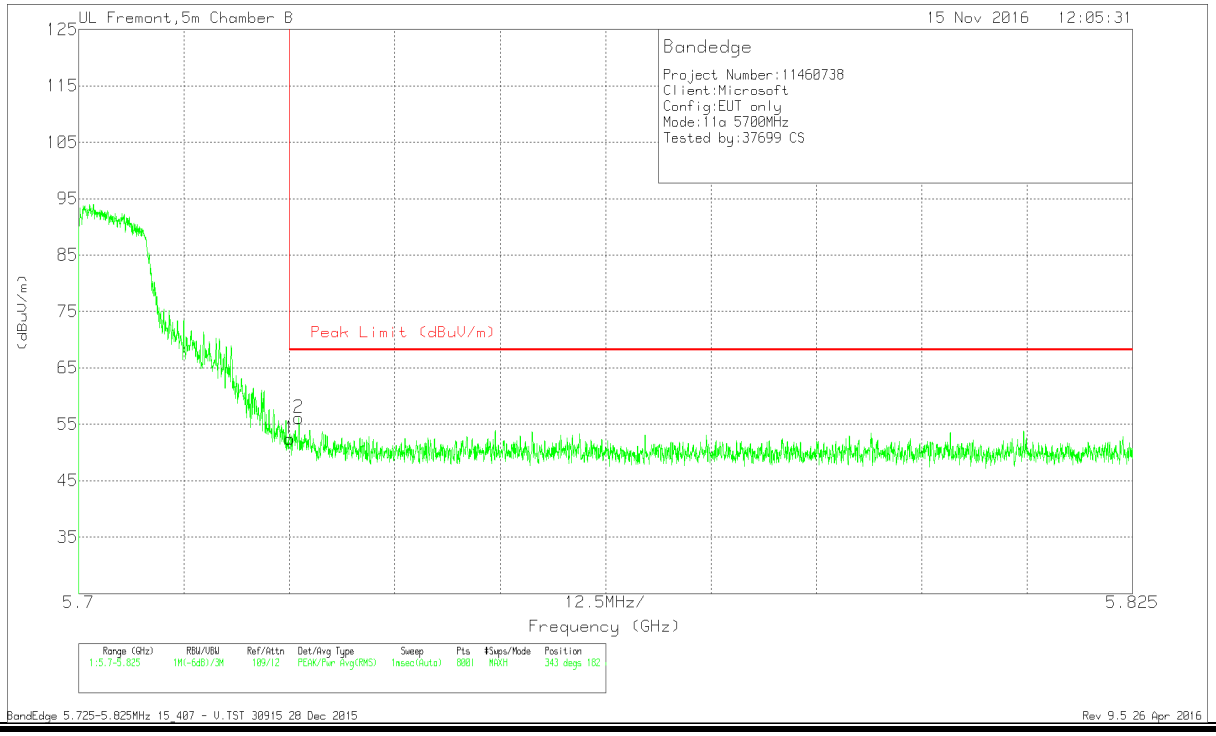
AUTHORIZED BANDEDGE (HIGH CHANNEL)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	40.52	Pk	34.9	-21.7	53.72	68.2	-14.48	254	209	H
2	5.727	43.98	Pk	34.9	-21.5	57.38	68.2	-10.82	254	209	H

Pk - Peak detector

HIGH CHANNEL VERTICAL

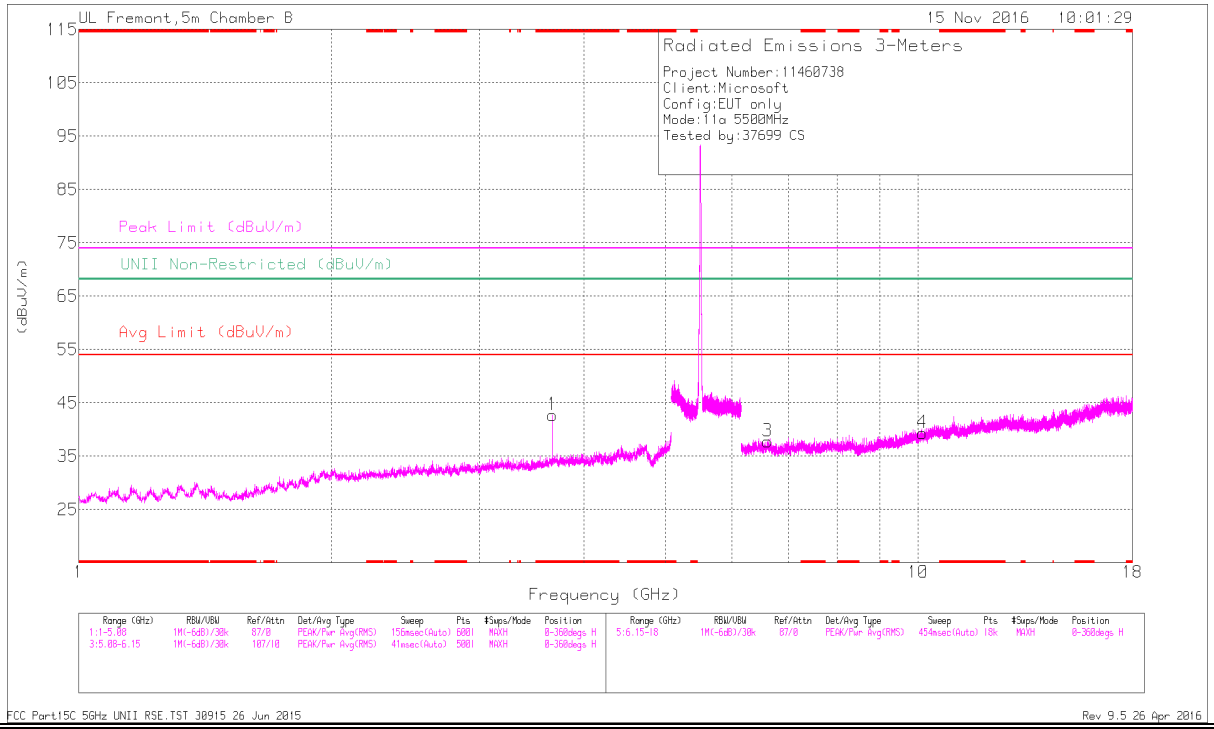


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	39.22	Pk	34.9	-21.7	52.42	68.2	-15.78	343	182	V
2	5.726	42.84	Pk	34.9	-21.6	56.14	68.2	-12.06	343	182	V

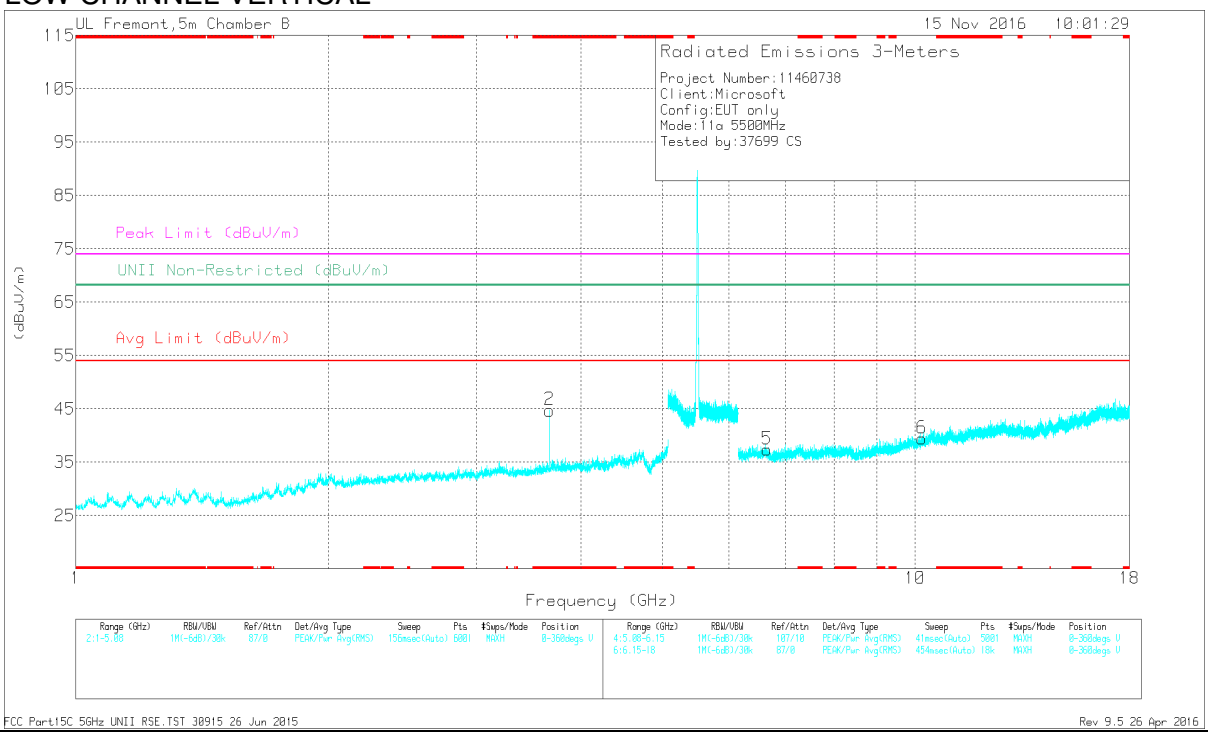
Pk - Peak detector

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



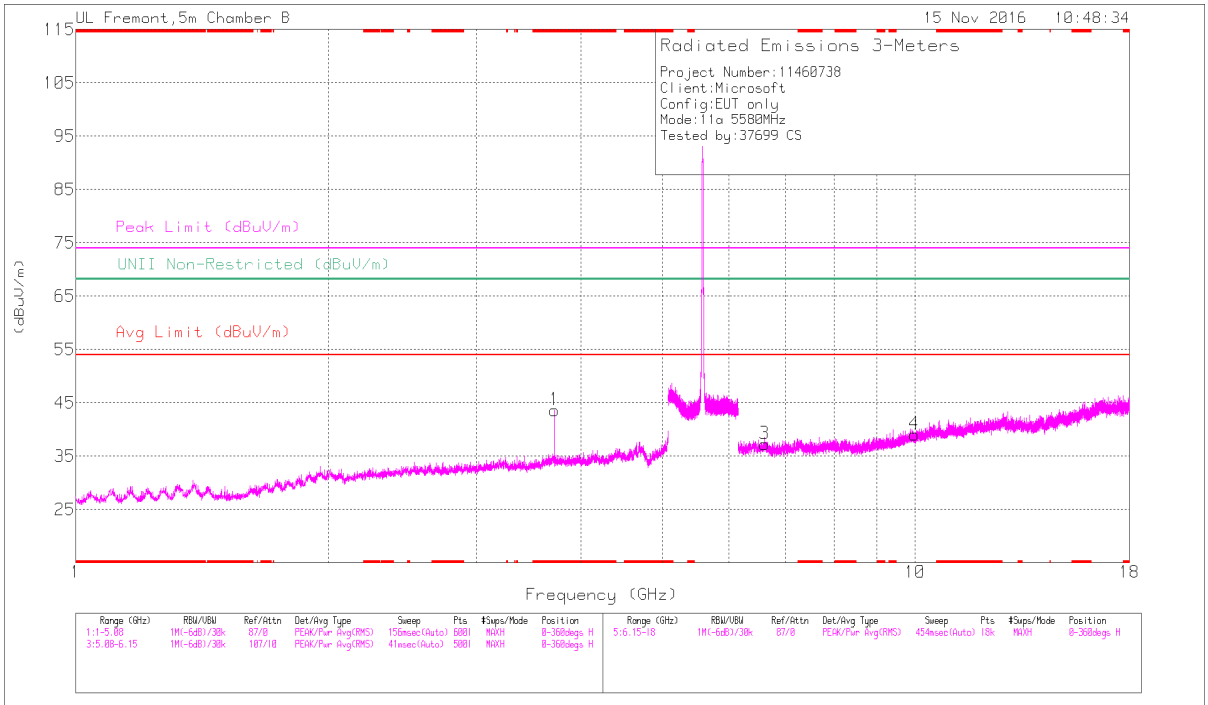
LOW CHANNEL VERTICAL



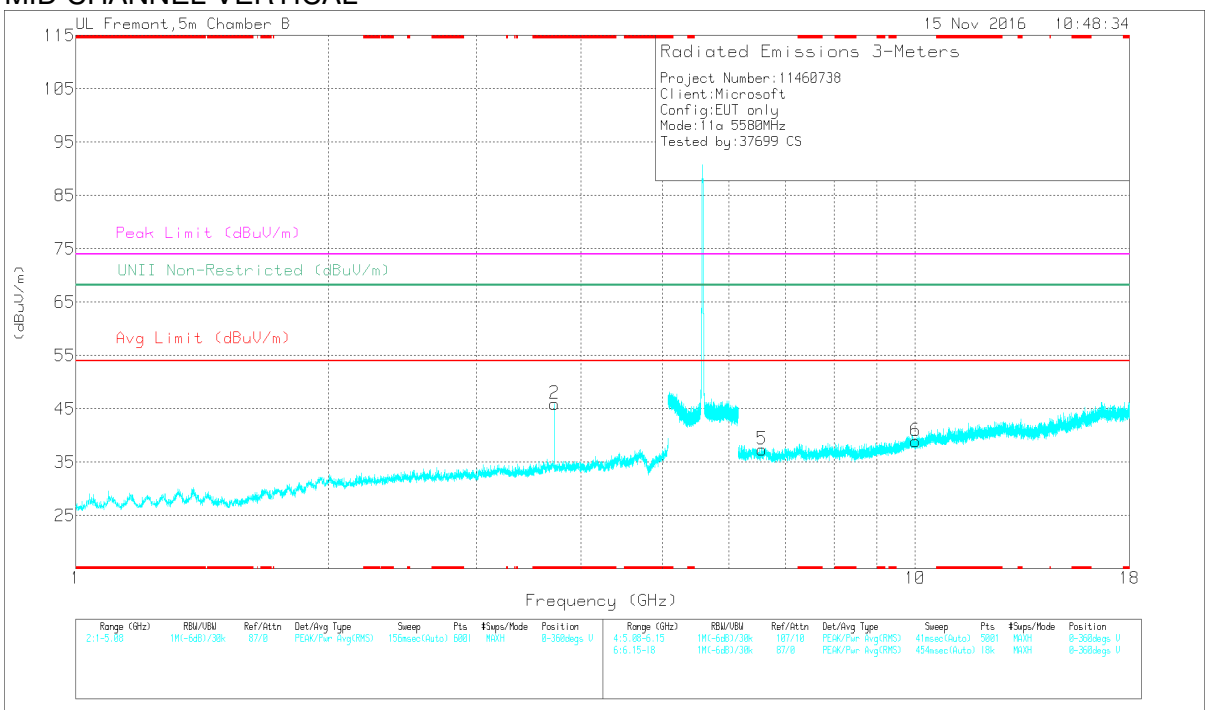
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.667	45.63	PK-U	33.3	-33.3	0	45.63	-	-	74	-28.37	-	-	97	234	H
	* 3.667	41.49	ADR	33.3	-33.3	.1	41.59	54	-12.41	-	-	-	-	97	234	H
2	* 3.667	48.14	PK-U	33.3	-33.3	0	48.14	-	-	74	-25.86	-	-	318	101	V
	* 3.667	44.12	ADR	33.3	-33.3	.1	44.22	54	-9.78	-	-	-	-	318	101	V
3	6.612	37.9	PK-U	35.5	-30	0	43.4	-	-	-	-	68.2	-24.8	352	117	H
5	6.664	38.3	PK-U	35.6	-30.4	0	43.5	-	-	-	-	68.2	-24.7	198	249	V
4	10.117	34.43	PK-U	37.4	-26.4	0	45.43	-	-	-	-	68.2	-22.77	262	175	H
6	10.186	34.61	PK-U	37.4	-26.6	0	45.41	-	-	-	-	68.2	-22.79	23	101	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

MID CHANNEL HORIZONTAL



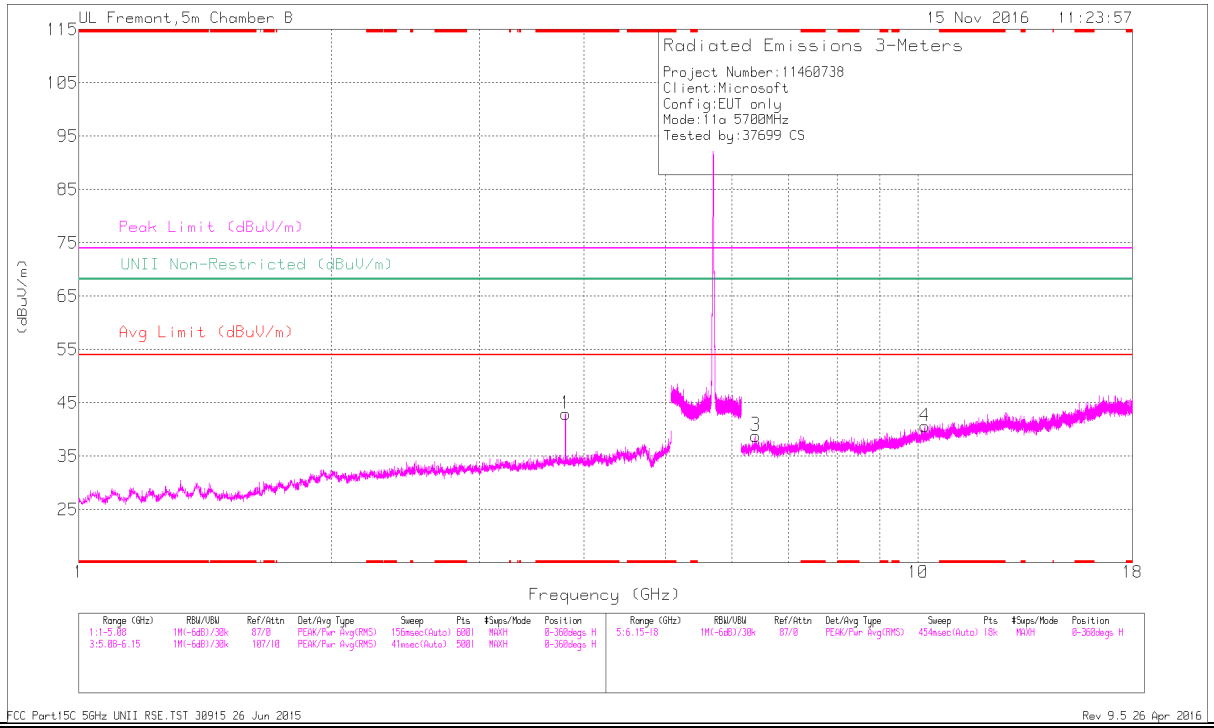
MID CHANNEL VERTICAL



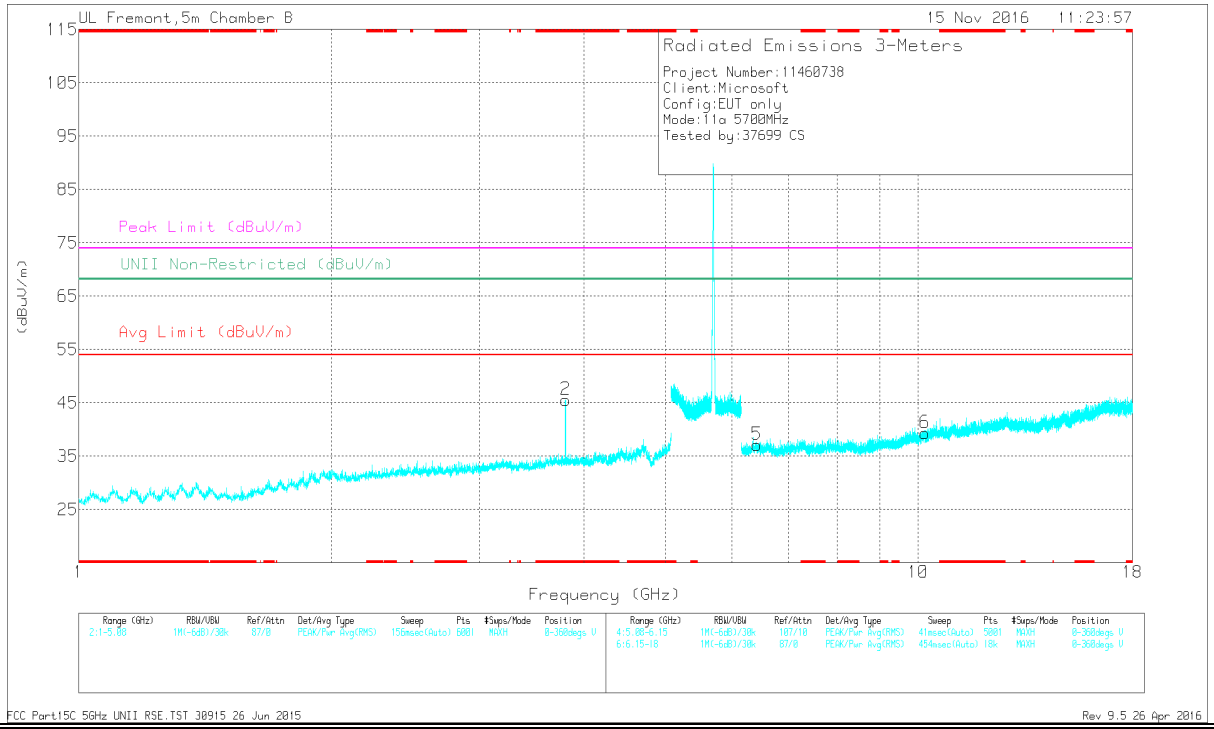
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.72	45.81	PK-U	33.4	-32.8	0	46.41	-	-	74	-27.59	-	-	235	287	H
	* 3.72	40.27	ADR	33.4	-32.8	.1	40.97	54	-13.03	-	-	-	-	235	287	H
2	* 3.72	47.34	PK-U	33.4	-32.8	0	47.94	-	-	74	-26.06	-	-	311	201	V
	* 3.72	43.61	ADR	33.4	-32.8	.1	44.31	54	-9.69	-	-	-	-	311	201	V
5	6.569	38.04	PK-U	35.5	-30.9	0	42.64	-	-	-	-	68.2	-25.56	125	101	V
3	6.617	38.04	PK-U	35.5	-29.9	0	43.64	-	-	-	-	68.2	-24.56	147	209	H
4	9.979	34.79	PK-U	37.4	-27	0	45.19	-	-	-	-	68.2	-23.01	110	144	H
6	10.013	34.4	PK-U	37.4	-26.8	0	45	-	-	-	-	68.2	-23.2	305	289	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.8	46.9	PK-U	33.5	-33.2	0	47.2	-	-	74	-26.8	-	-	331	323	H
	* 3.8	42.95	ADR	33.5	-33.2	.1	43.35	54	-10.65	-	-	-	-	331	323	H
2	* 3.8	48.43	PK-U	33.5	-33.2	0	48.73	-	-	74	-25.27	-	-	44	257	V
	* 3.8	44.31	ADR	33.5	-33.2	.1	44.71	54	-9.29	-	-	-	-	44	257	V
3	6.408	38.13	PK-U	35.6	-30	0	43.73	-	-	-	-	68.2	-24.47	107	204	H
5	6.422	38.32	PK-U	35.6	-30.2	0	43.72	-	-	-	-	68.2	-24.48	307	101	V
4	10.183	34.65	PK-U	37.4	-26.6	0	45.45	-	-	-	-	68.2	-22.75	236	143	H
6	10.186	35.06	PK-U	37.4	-26.6	0	45.86	-	-	-	-	68.2	-22.34	212	101	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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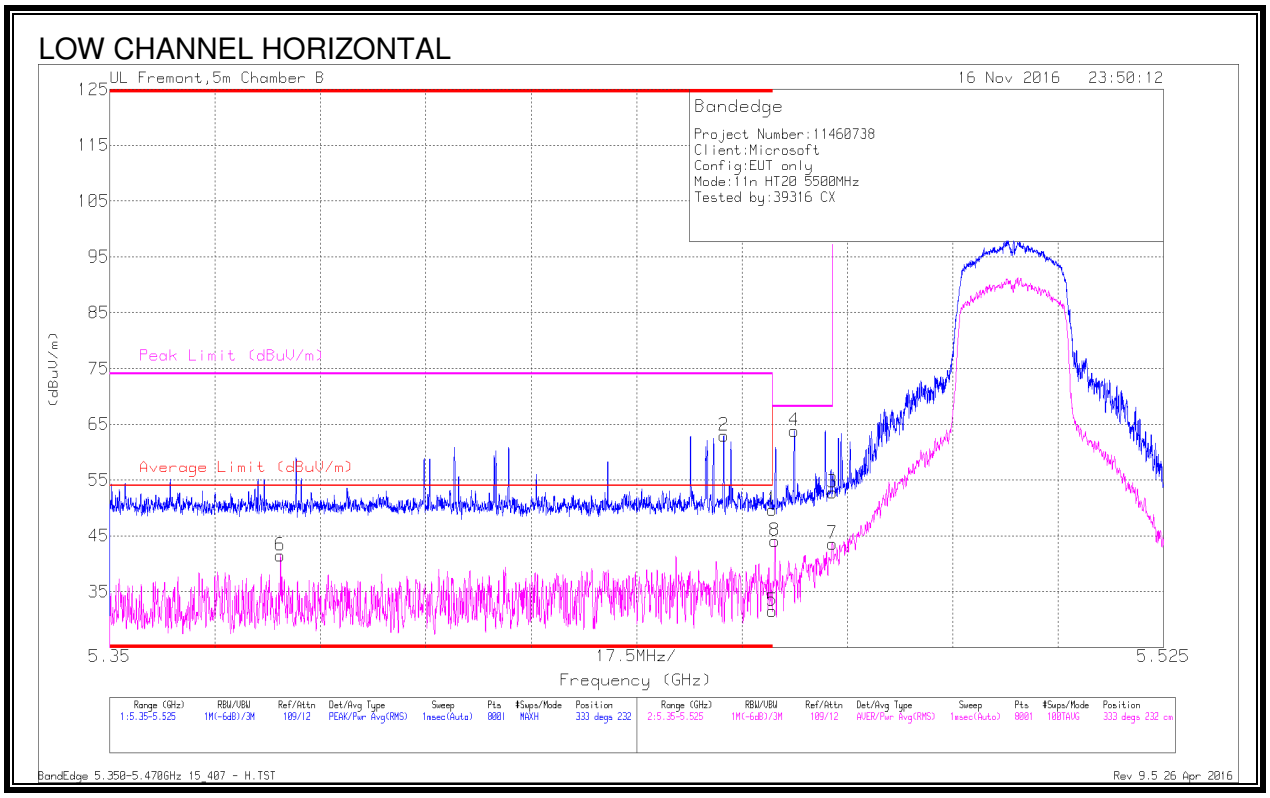
9.1.6. 11n HT20 MODE IN THE 5.6GHz BAND

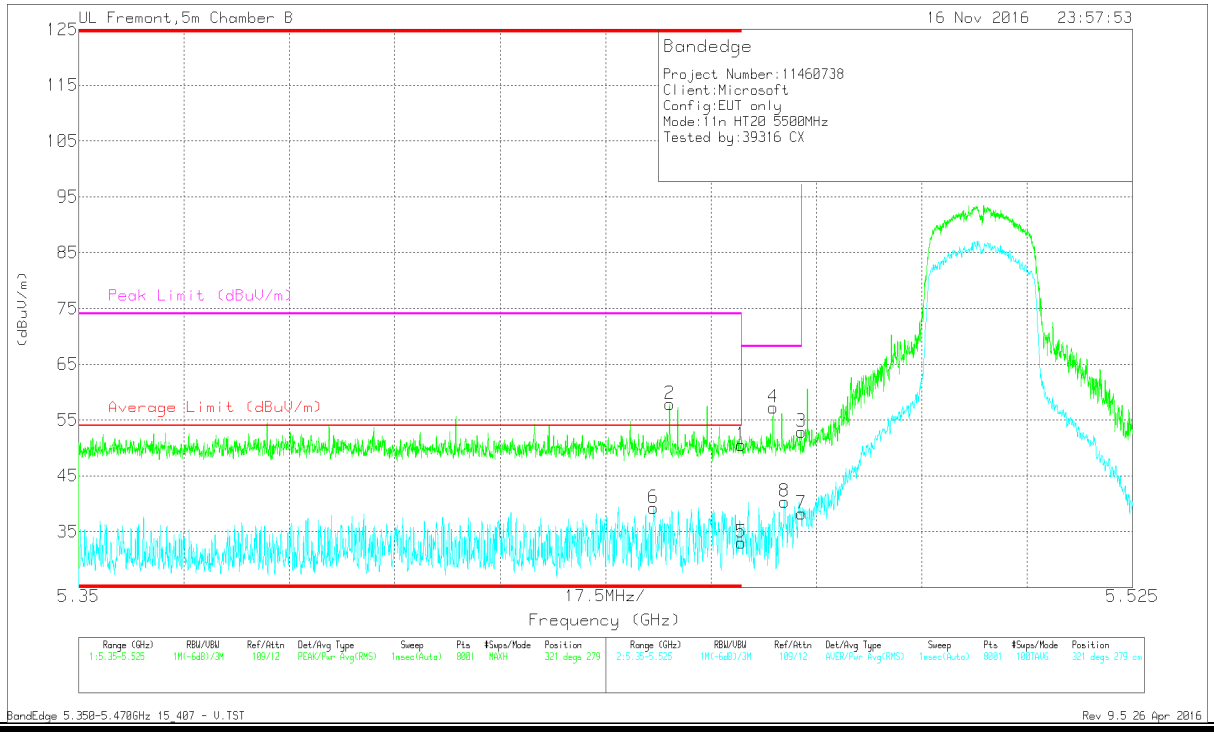
RESTRICTED BANDEDGE (LOW CHANNEL)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.46	36.13	Pk	34.5	-21	0	49.63	-	-	74	-24.37	333	232	H
2	* 5.452	49.11	Pk	34.5	-20.6	0	63.01	-	-	74	-10.99	333	232	H
5	* 5.46	18.1	RMS	34.5	-21	.1	31.7	54	-22.3	-	-	333	232	H
6	* 5.378	27.16	RMS	34.5	-20.2	.1	41.56	54	-12.44	-	-	333	232	H
8	5.46	30.57	RMS	34.5	-21	.1	44.17	-	-	-	-	333	232	H
4	5.464	50.03	Pk	34.5	-20.7	0	63.83	-	-	68.2	-4.37	333	232	H
3	5.47	39.2	Pk	34.5	-20.9	0	52.8	-	-	68.2	-15.4	333	232	H
7	5.47	30.01	RMS	34.5	-20.9	.1	43.71	-	-	-	-	333	232	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

LOW CHANNEL VERTICAL

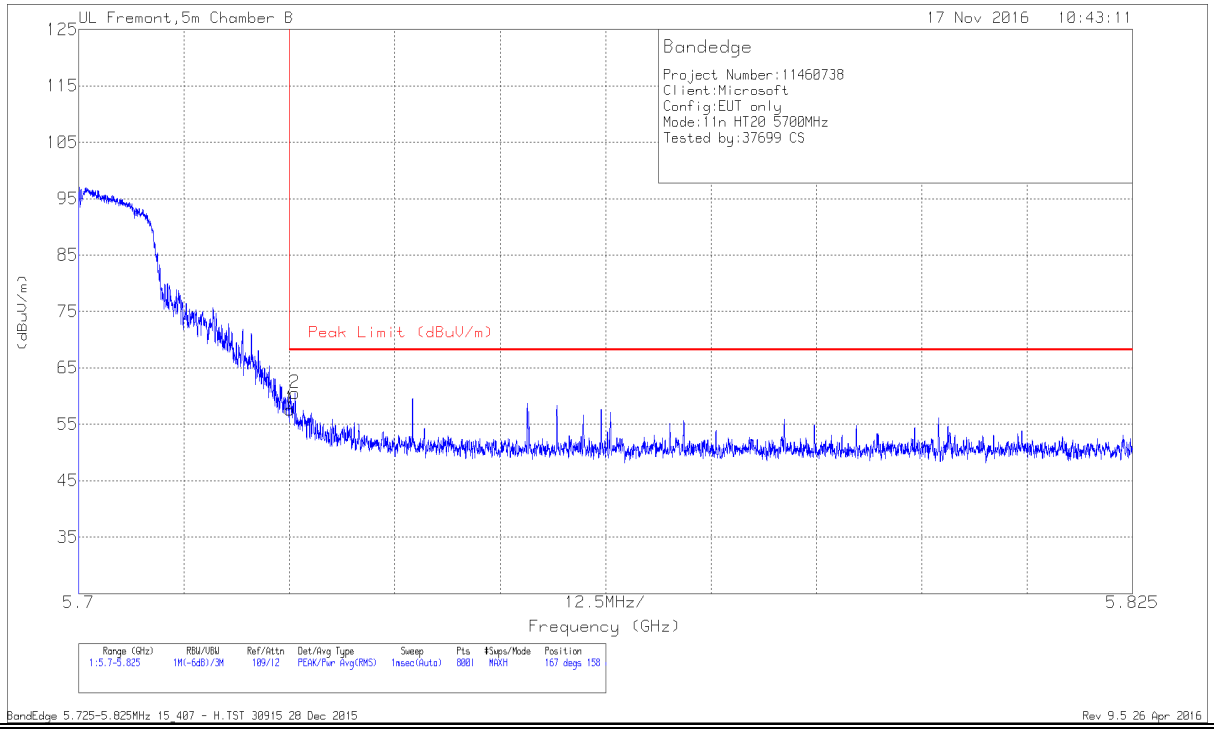


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.46	37	Pk	34.5	-21	0	50.5	-	-	74	-23.5	321	279	V
2	* 5.448	44.02	Pk	34.5	-20.6	0	57.92	-	-	74	-16.08	321	279	V
5	* 5.46	19.48	RMS	34.5	-21	.1	33.08	54	-20.92	-	-	321	279	V
6	* 5.445	25.65	RMS	34.5	-20.9	.1	39.35	54	-14.65	-	-	321	279	V
4	5.465	43.69	Pk	34.5	-20.9	0	57.29	-	-	68.2	-10.91	321	279	V
8	5.467	26.77	RMS	34.5	-20.9	.1	40.47	-	-	-	-	321	279	V
3	5.47	39.26	Pk	34.5	-20.9	0	52.86	-	-	68.2	-15.34	321	279	V
7	5.47	24.6	RMS	34.5	-20.9	.1	38.3	-	-	-	-	321	279	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL)

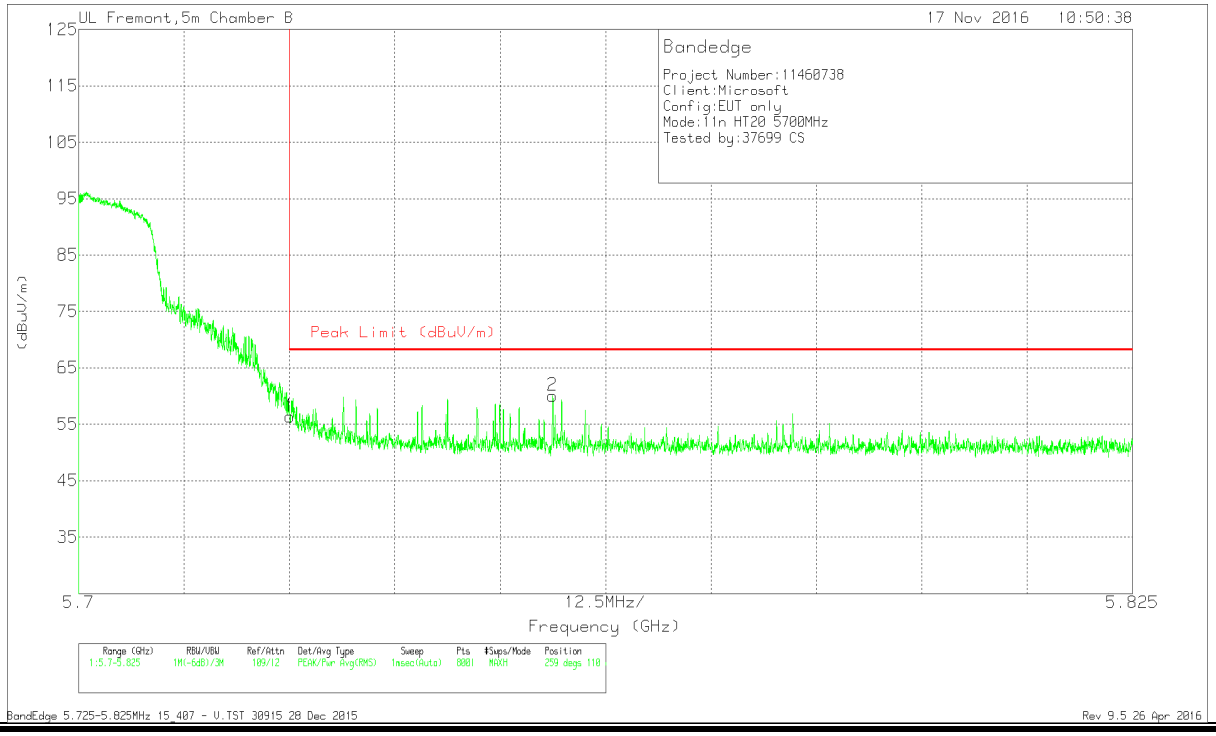
HIGH CHANNEL HORIZONTAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	44.47	Pk	34.9	-21.7	57.67	68.2	-10.53	167	158	H
2	5.726	47.27	Pk	34.9	-21.6	60.57	68.2	-7.63	167	158	H

Pk - Peak detector

HIGH CHANNEL VERTICAL

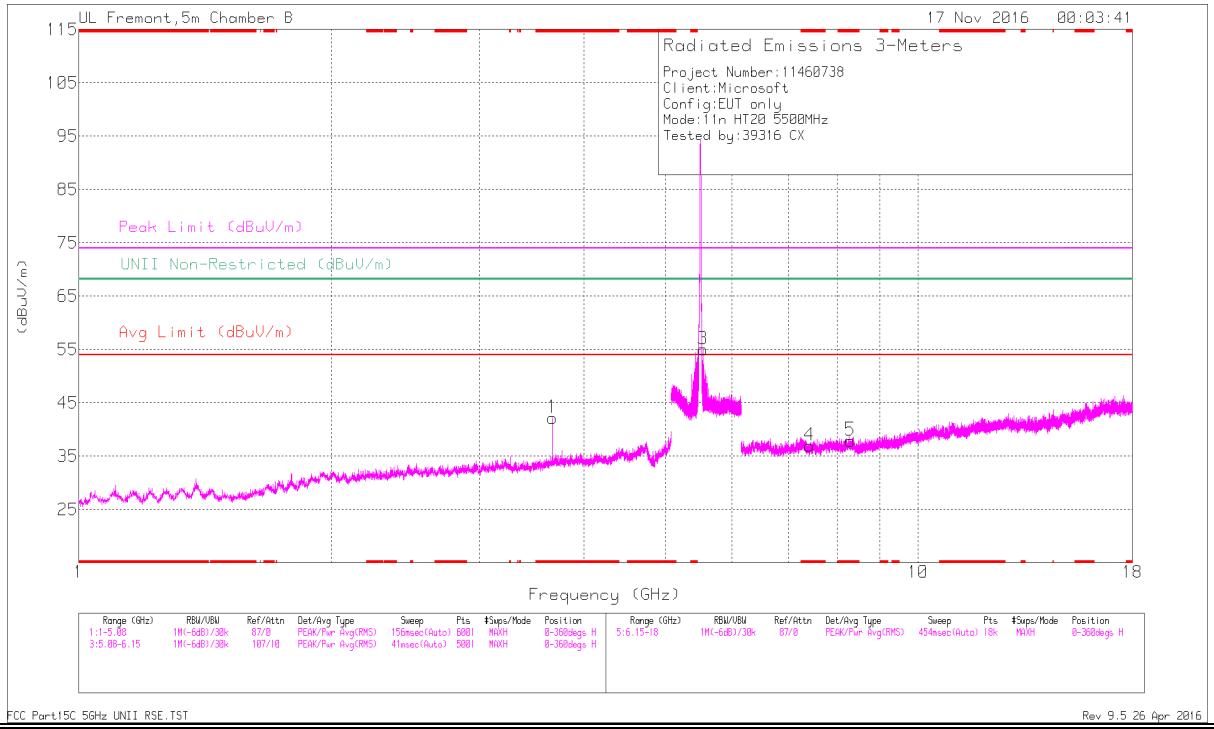


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	43.2	Pk	34.9	-21.7	56.4	68.2	-11.8	259	110	V
2	5.756	46.76	Pk	35	-21.7	60.06	68.2	-8.14	259	110	V

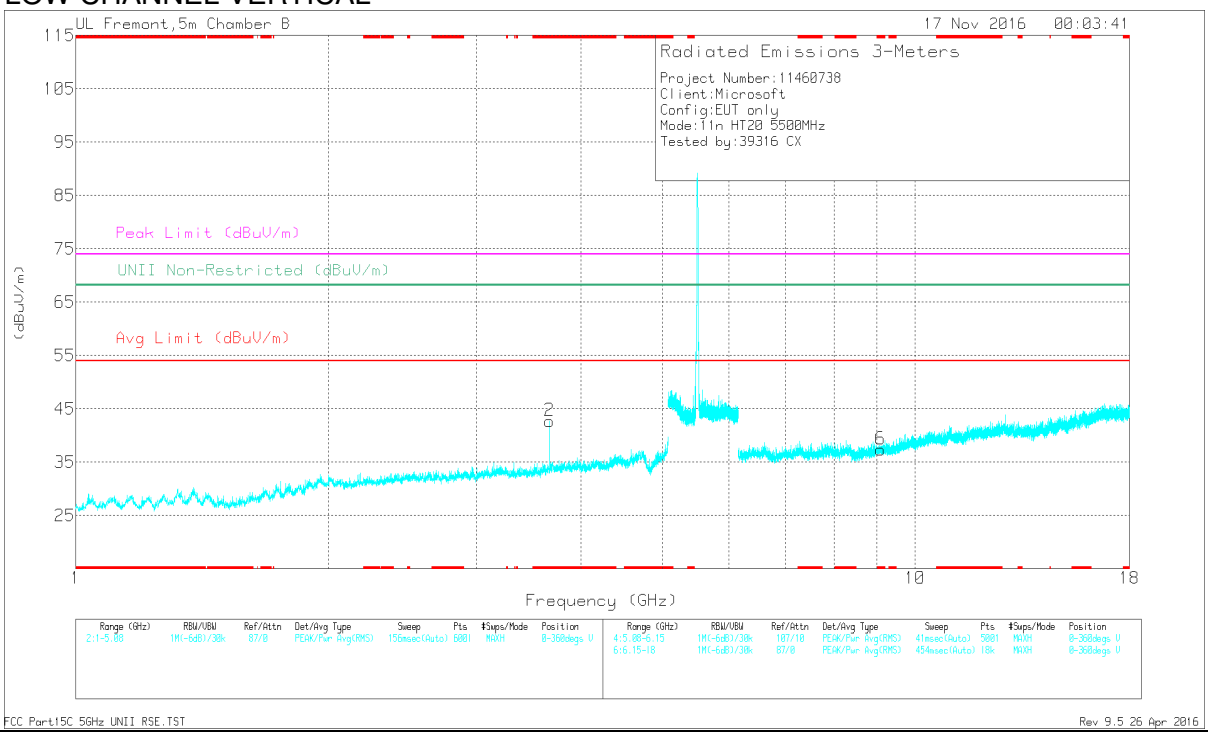
Pk - Peak detector

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.667	46.11	PK-U	33.3	-33.3	0	46.11	-	-	74	-27.89	-	-	290	172	H
	* 3.667	41.46	ADR	33.3	-33.3	.1	41.56	54	-12.44	-	-	-	-	290	172	H
2	* 3.667	46.45	PK-U	33.3	-33.3	0	46.45	-	-	74	-27.55	-	-	171	113	V
	* 3.667	39.6	ADR	33.3	-33.3	.1	39.7	54	-14.3	-	-	-	-	171	113	V
4	* 7.422	38.41	PK-U	35.6	-30.5	0	43.51	-	-	74	-30.49	-	-	213	155	H
	* 7.422	28.04	ADR	35.6	-30.5	.1	33.24	54	-20.76	-	-	-	-	213	155	H
5	* 8.297	38.31	PK-U	35.8	-28.7	0	45.41	-	-	74	-28.59	-	-	330	130	H
	* 8.297	26.32	ADR	35.8	-28.7	.1	33.52	54	-20.48	-	-	-	-	330	130	H
6	* 9.098	36.97	PK-U	36.2	-27.9	0	45.27	-	-	74	-28.73	-	-	314	162	V
	* 9.098	25.25	ADR	36.2	-27.9	.1	33.65	54	-20.35	-	-	-	-	314	162	V
3	5.538	42.75	PK-U	34.5	-21.1	0	56.15	-	-	-	-	68.2	-12.05	149	136	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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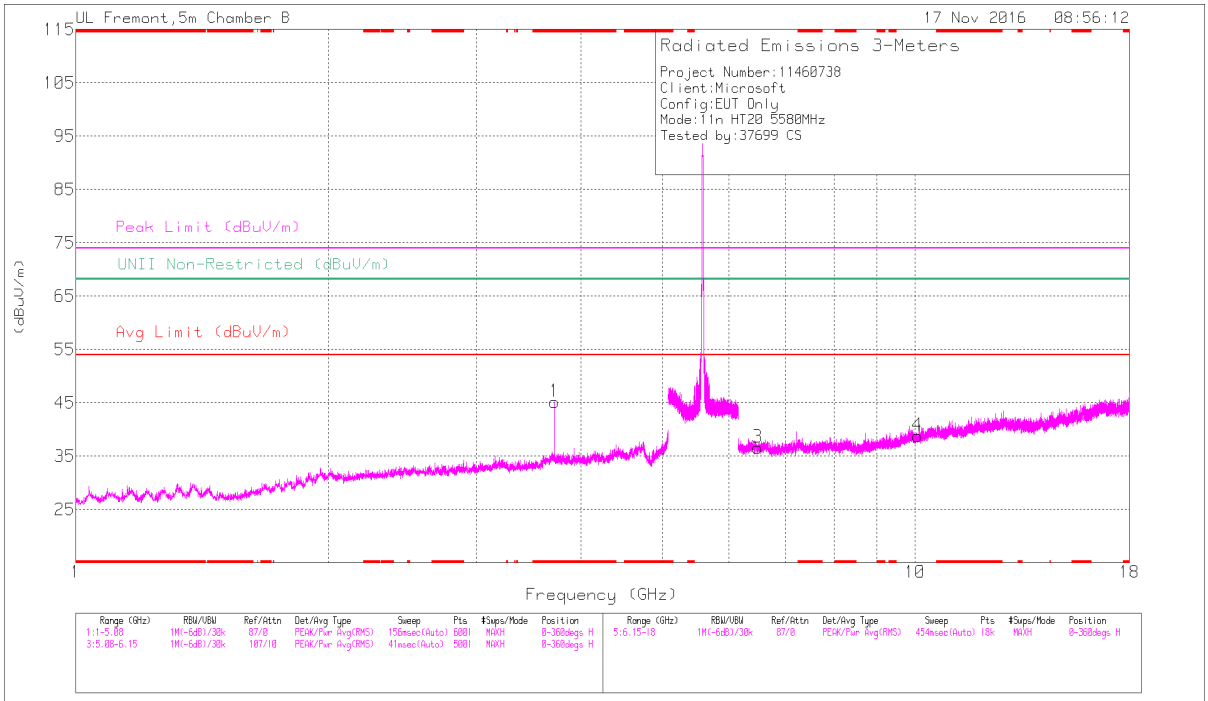
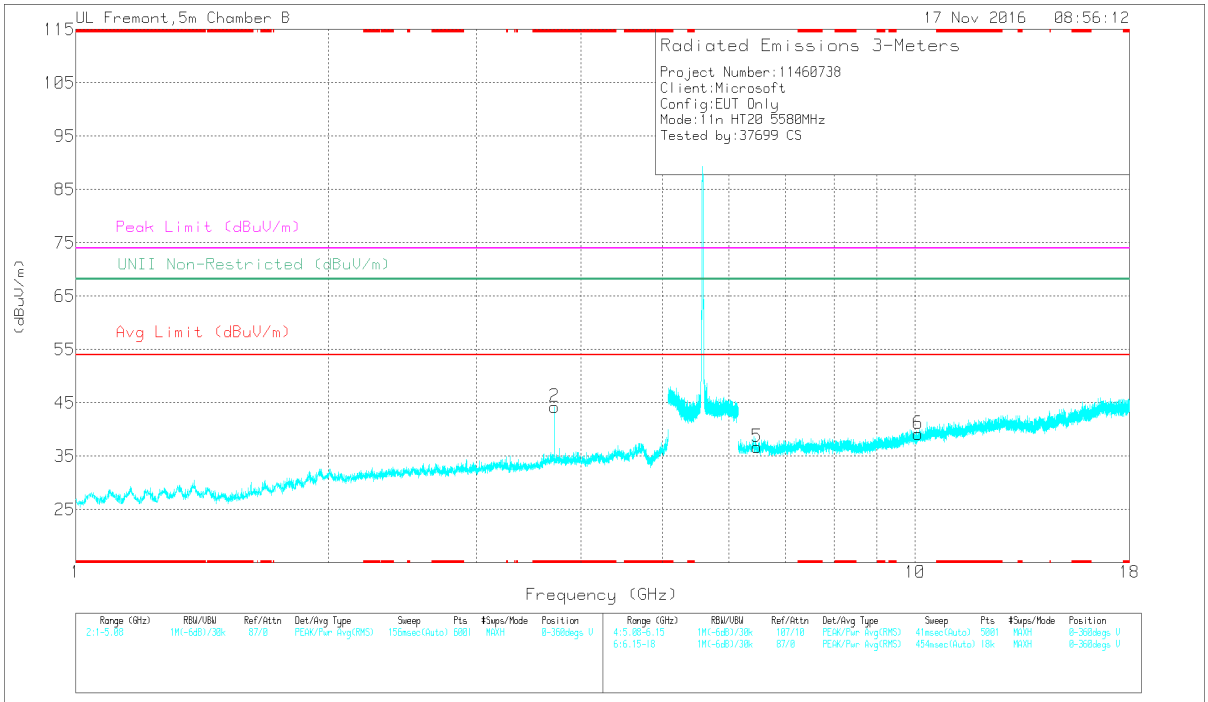
MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



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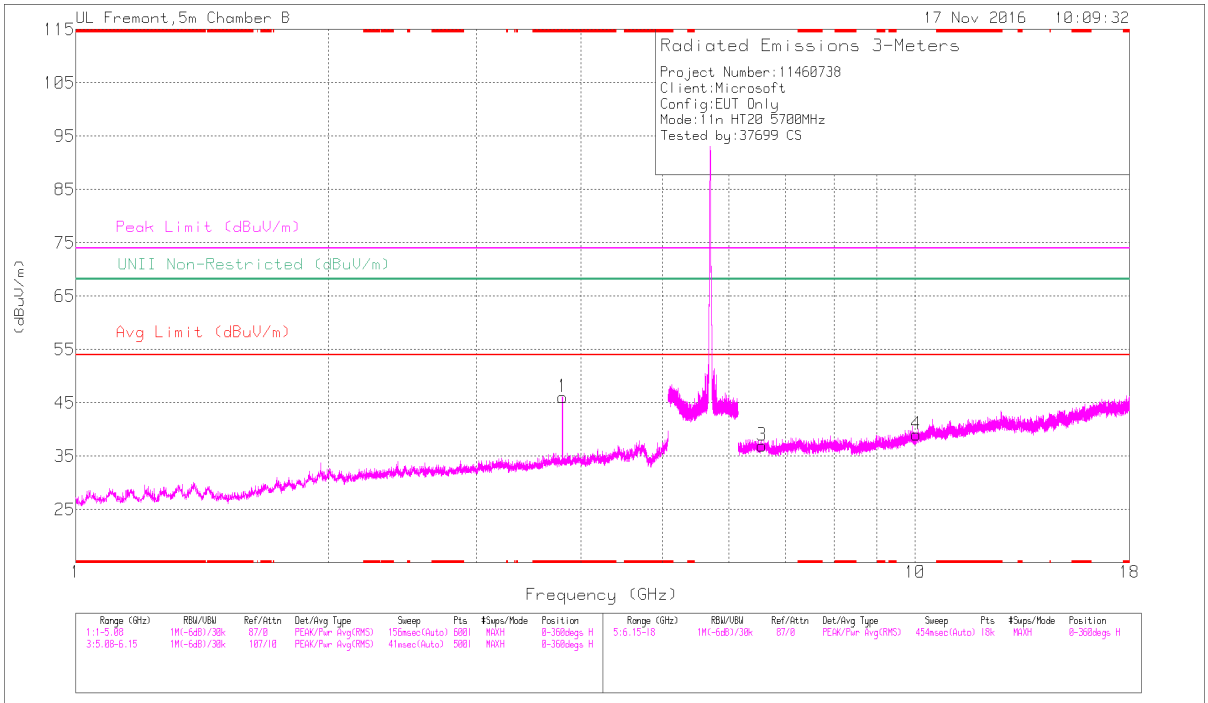
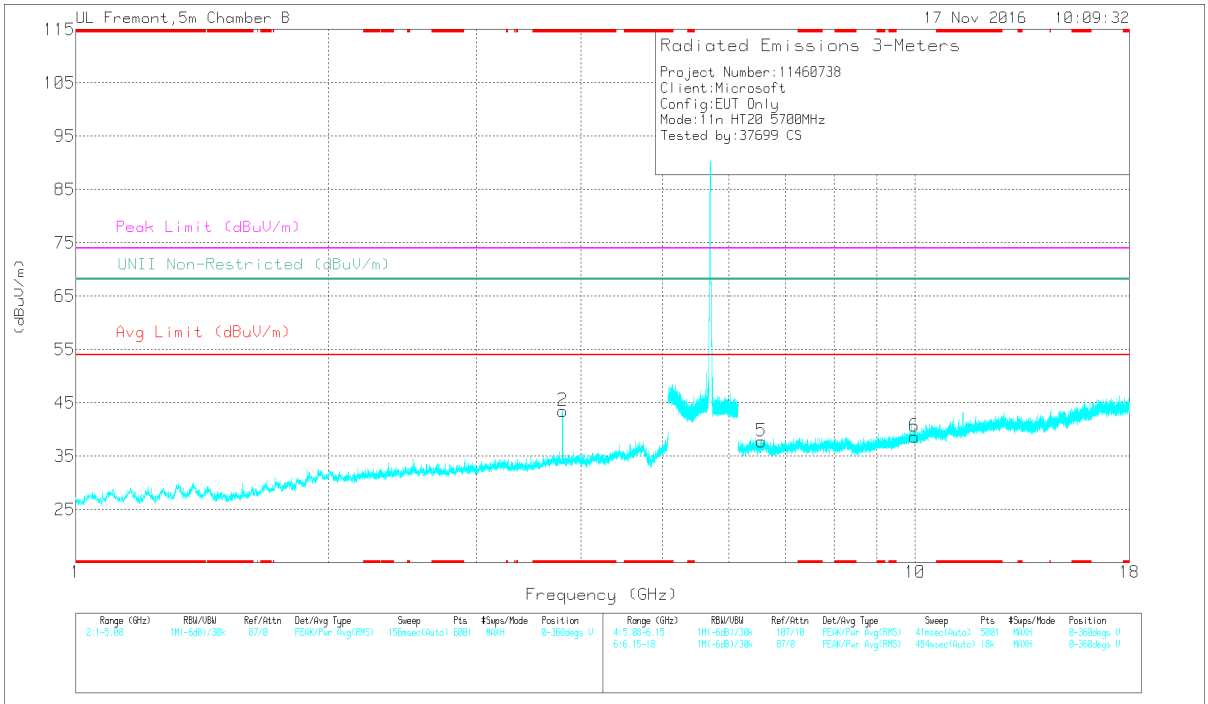
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.72	46.97	PK-U	33.4	-32.8	0	47.57	-	-	74	-26.43	-	-	189	125	H
	* 3.72	43.35	ADR	33.4	-32.8	.1	44.05	54	-9.95	-	-	-	-	189	125	H
2	* 3.72	46.01	PK-U	33.4	-32.8	0	46.61	-	-	74	-27.39	-	-	25	170	V
	* 3.72	40.48	ADR	33.4	-32.8	.1	41.18	54	-12.82	-	-	-	-	25	170	V
5	6.48	39.18	PK-U	35.6	-31	0	43.78	-	-	-	-	68.2	-24.42	143	306	V
3	6.495	38.72	PK-U	35.6	-31.4	0	42.92	-	-	-	-	68.2	-25.28	207	135	H
4	10.065	34.2	PK-U	37.4	-26.5	0	45.1	-	-	-	-	68.2	-23.1	182	108	H
6	10.083	34.09	PK-U	37.4	-26.2	0	45.29	-	-	-	-	68.2	-22.91	140	213	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



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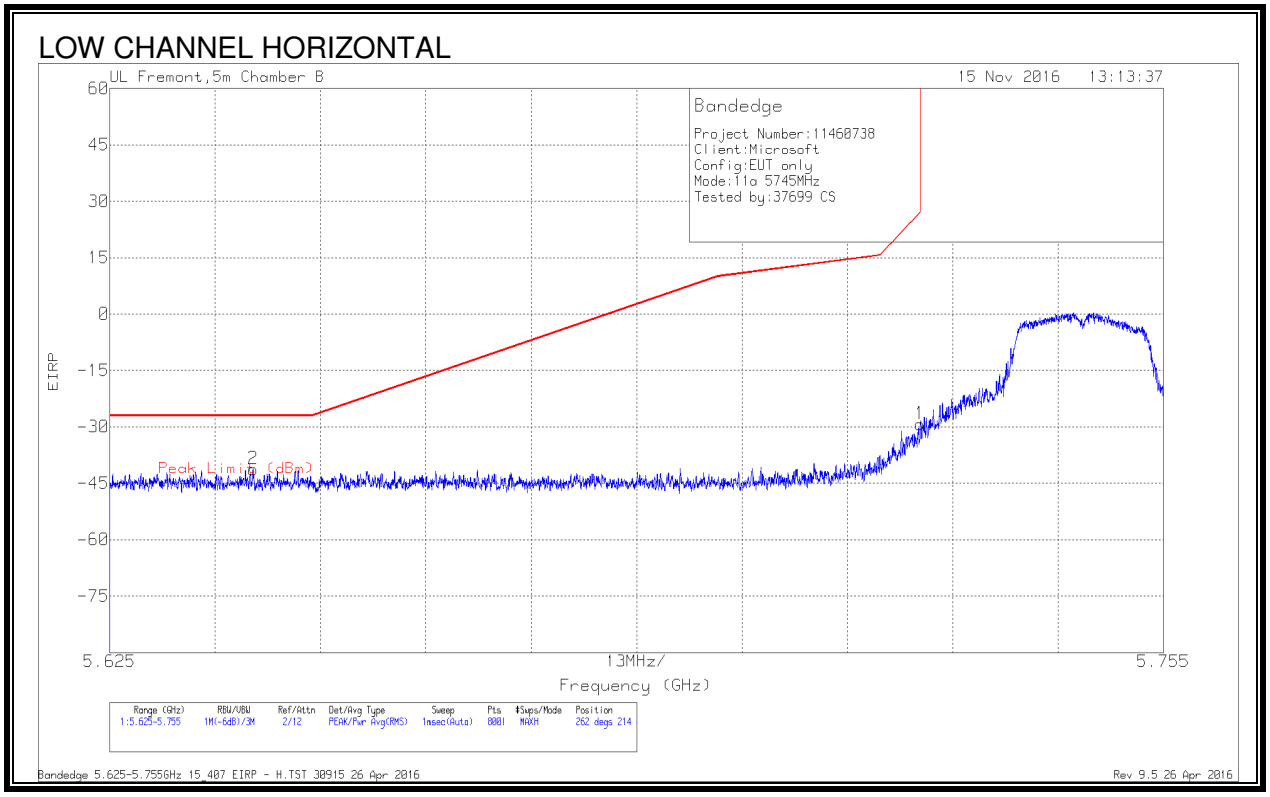
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.8	48.19	PK-U	33.5	-33.2	0	48.49	-	-	74	-25.51	-	-	114	132	H
	* 3.8	45.44	ADR	33.5	-33.2	.1	45.84	54	-8.16	-	-	-	-	114	132	H
2	* 3.8	46.79	PK-U	33.5	-33.2	0	47.09	-	-	74	-26.91	-	-	294	119	V
	* 3.8	41.92	ADR	33.5	-33.2	.1	42.32	54	-11.68	-	-	-	-	294	119	V
5	6.564	39.43	PK-U	35.5	-31.1	0	43.83	-	-	-	-	68.2	-24.37	132	101	V
3	6.569	39.2	PK-U	35.5	-30.9	0	43.8	-	-	-	-	68.2	-24.4	107	131	H
6	9.979	34.66	PK-U	37.4	-27	0	45.06	-	-	-	-	68.2	-23.14	127	112	V
4	10.028	33.78	PK-U	37.4	-26.6	0	44.58	-	-	-	-	68.2	-23.62	209	146	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

9.1.7. 11a MODE IN THE 5.8GHz BAND

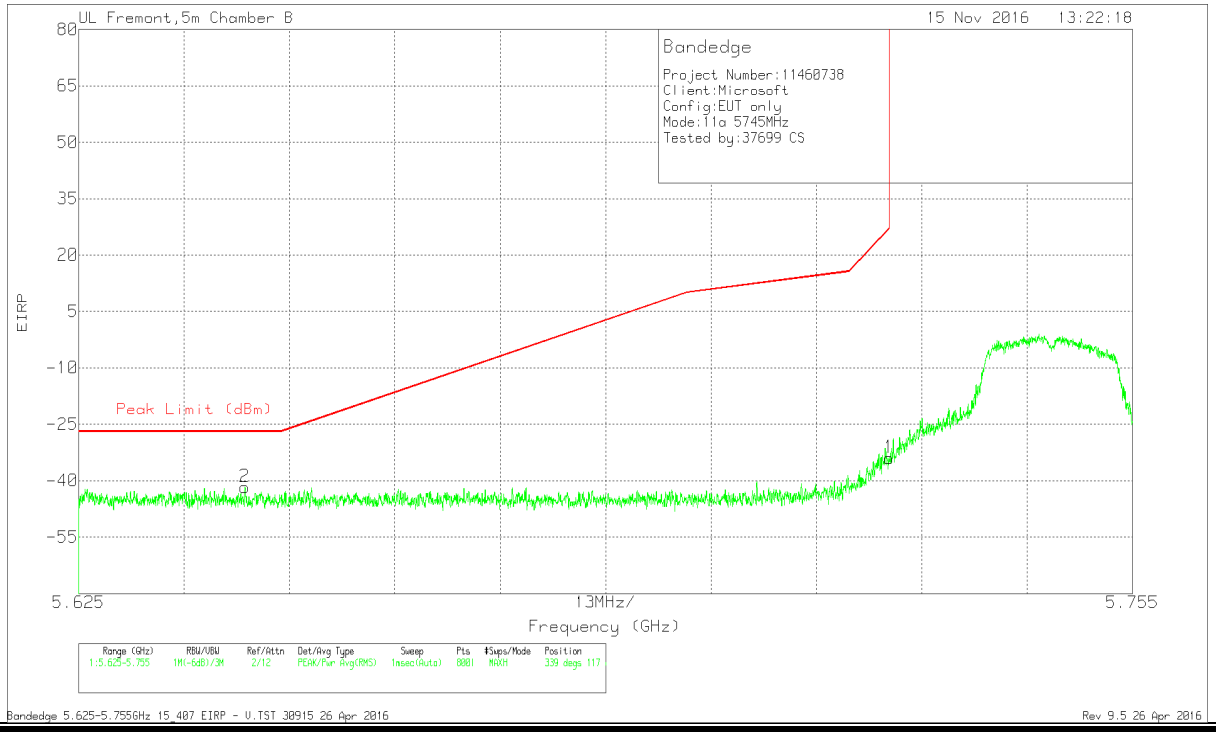
RESTRICTED BANDEDGE (LOW CHANNEL)



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.643	-66.41	Pk	34.7	-21.3	11.8	-41.21	-27	-14.21	262	214	H
1	5.725	-54.22	Pk	34.9	-21.7	11.8	-29.22	26.97	-56.19	262	214	H

Pk - Peak detector

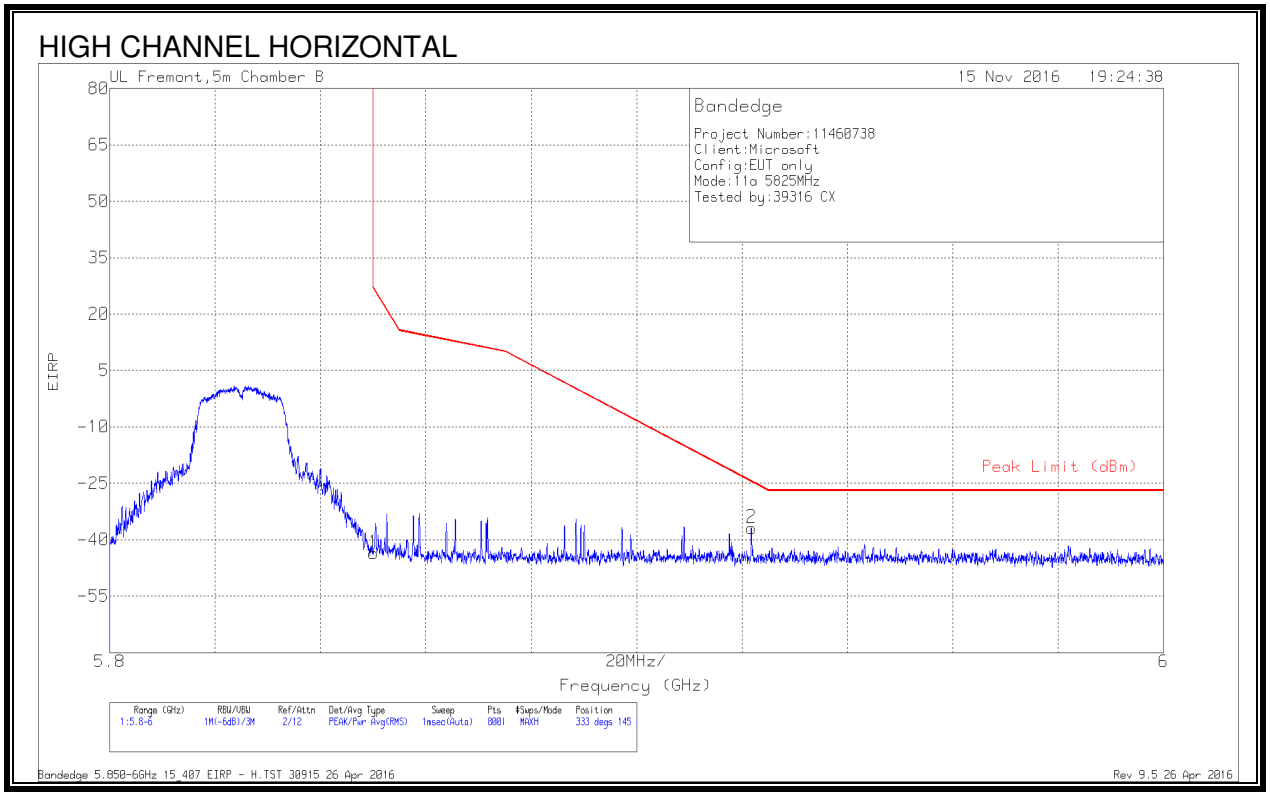
LOW CHANNEL VERTICAL



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.645	-66.68	Pk	34.7	-21.5	11.8	-41.68	-27	-14.68	339	117	V
1	5.725	-58.9	Pk	34.9	-21.7	11.8	-33.9	26.97	-60.87	339	117	V

Pk - Peak detector

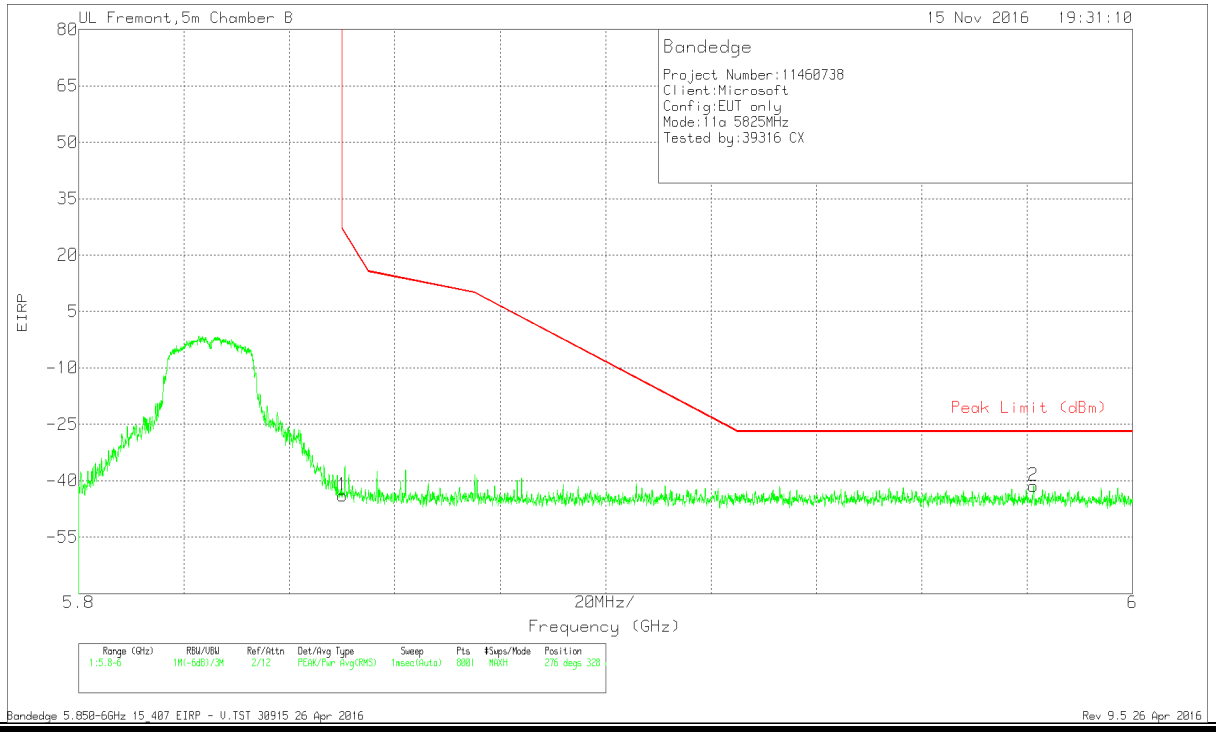
AUTHORIZED BANDEDGE (HIGH CHANNEL)



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-68.97	Pk	35.2	-21.6	11.8	-43.57	26.94	-70.51	333	145	H
2	5.922	-62.64	Pk	35.3	-21.3	11.8	-36.84	-24.61	-12.23	333	145	H

Pk - Peak detector

HIGH CHANNEL VERTICAL

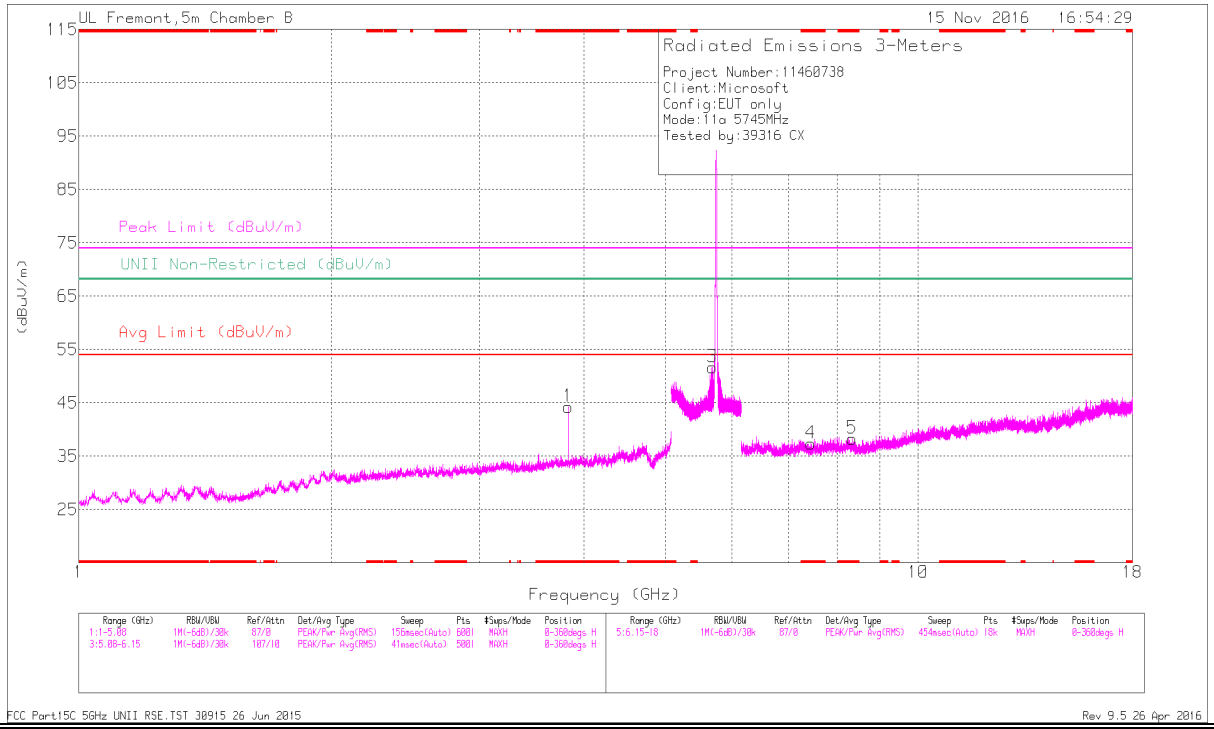


Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-69.38	Pk	35.2	-21.6	11.8	-43.98	26.94	-70.92	276	328	V
2	5.981	-66.85	Pk	35.2	-21.5	11.8	-41.35	-27	-14.35	276	328	V

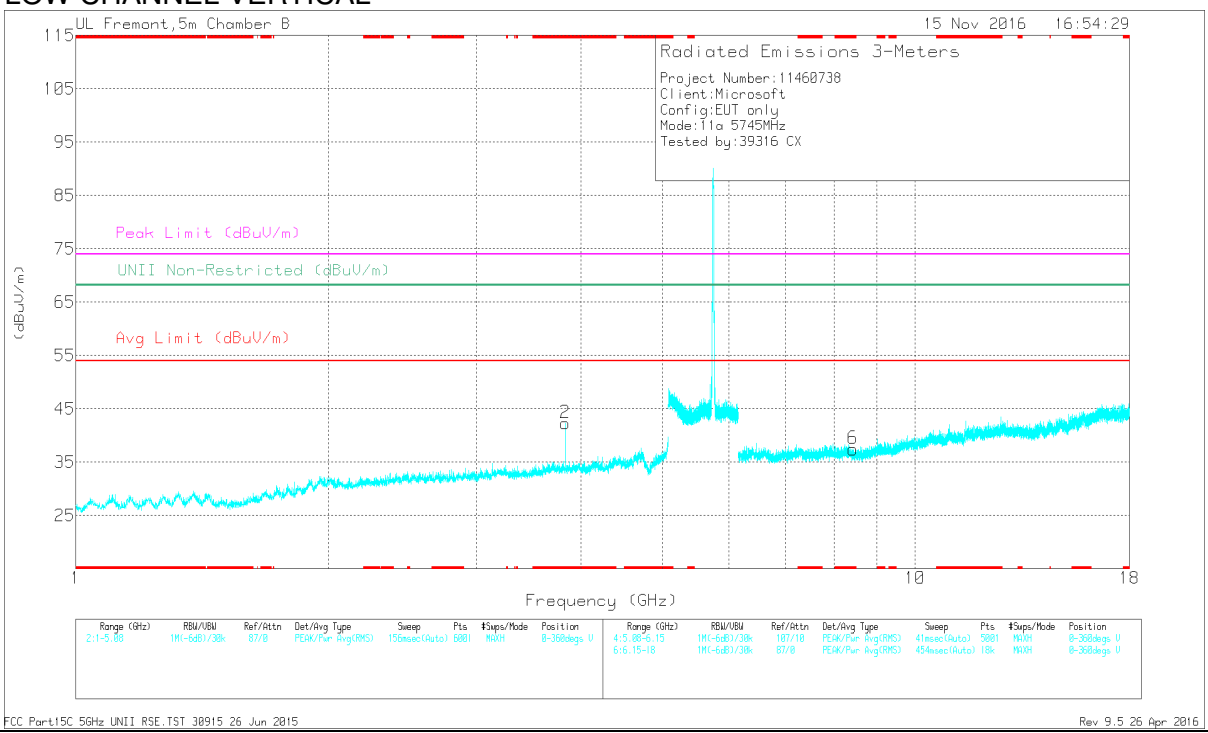
Pk - Peak detector

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.83	47.96	PK-U	33.4	-33	0	48.36	-	-	74	-25.64	-	-	45	158	H
	* 3.83	43.3	ADR	33.4	-33	.1	43.8	54	-10.2	-	-	-	-	45	158	H
2	* 3.83	45.94	PK-U	33.4	-33	0	46.34	-	-	74	-27.66	-	-	194	101	V
	* 3.83	40.1	ADR	33.4	-33	.1	40.6	54	-13.4	-	-	-	-	194	101	V
4	* 7.452	38.72	PK-U	35.6	-30.2	0	44.12	-	-	74	-29.88	-	-	322	127	H
	* 7.451	27.41	ADR	35.6	-30.2	.1	32.91	54	-21.09	-	-	-	-	322	127	H
5	* 8.34	36.98	PK-U	35.8	-28.6	0	44.18	-	-	74	-29.82	-	-	287	161	H
	* 8.341	25.85	ADR	35.8	-28.6	.1	33.15	54	-20.85	-	-	-	-	287	161	H
6	* 8.436	37.29	PK-U	35.8	-28.9	0	44.19	-	-	74	-29.81	-	-	174	189	V
	* 8.436	25.95	ADR	35.8	-28.9	.1	32.95	54	-21.05	-	-	-	-	174	189	V
3	5.689	47.67	PK-U	34.8	-21.5	0	60.97	-	-	-	-	68.2	-7.23	358	114	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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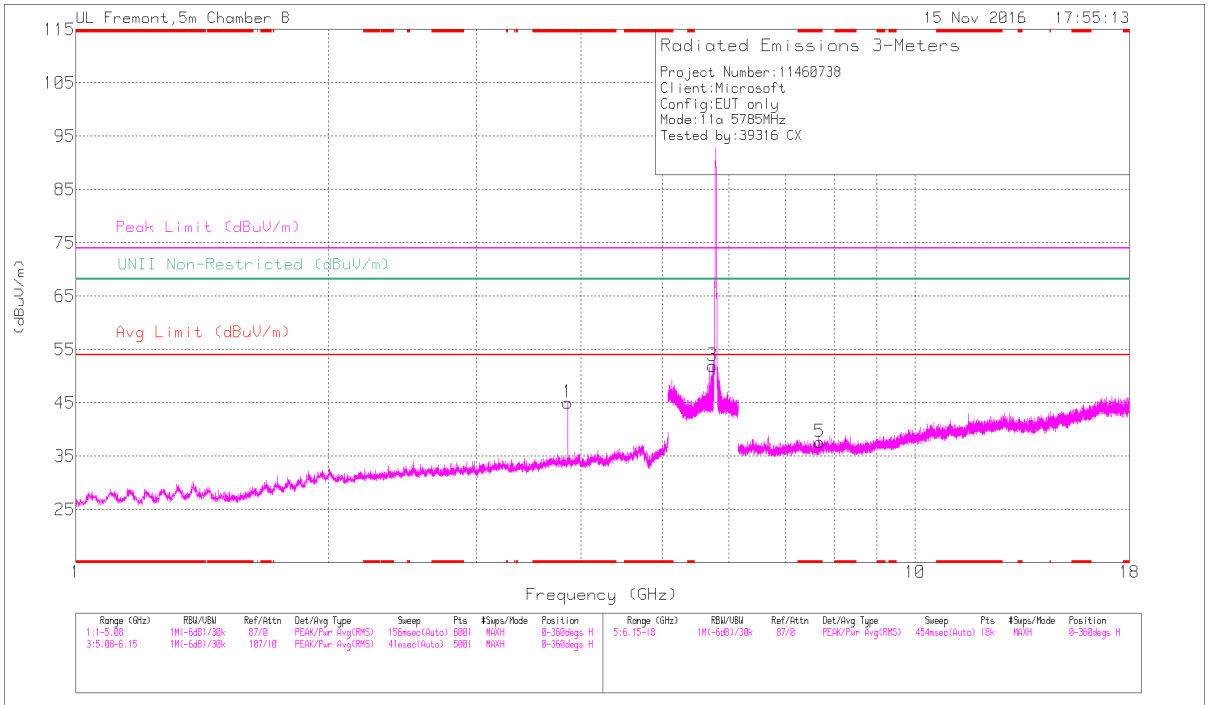
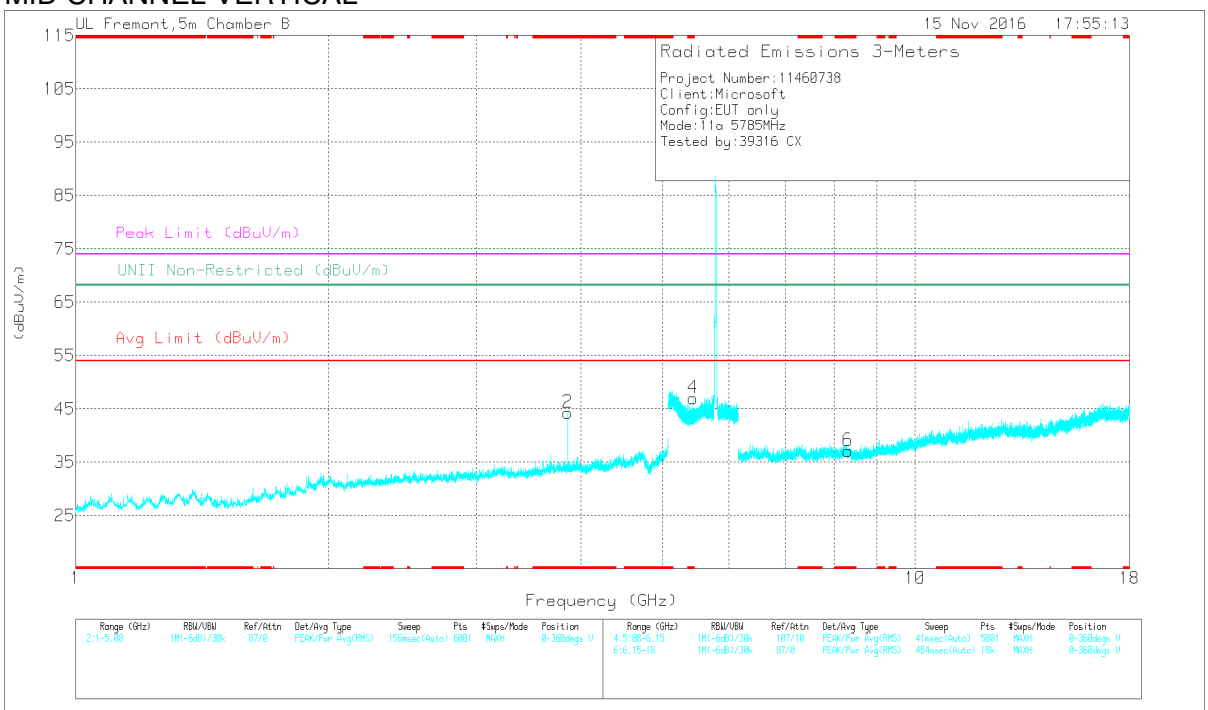
MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



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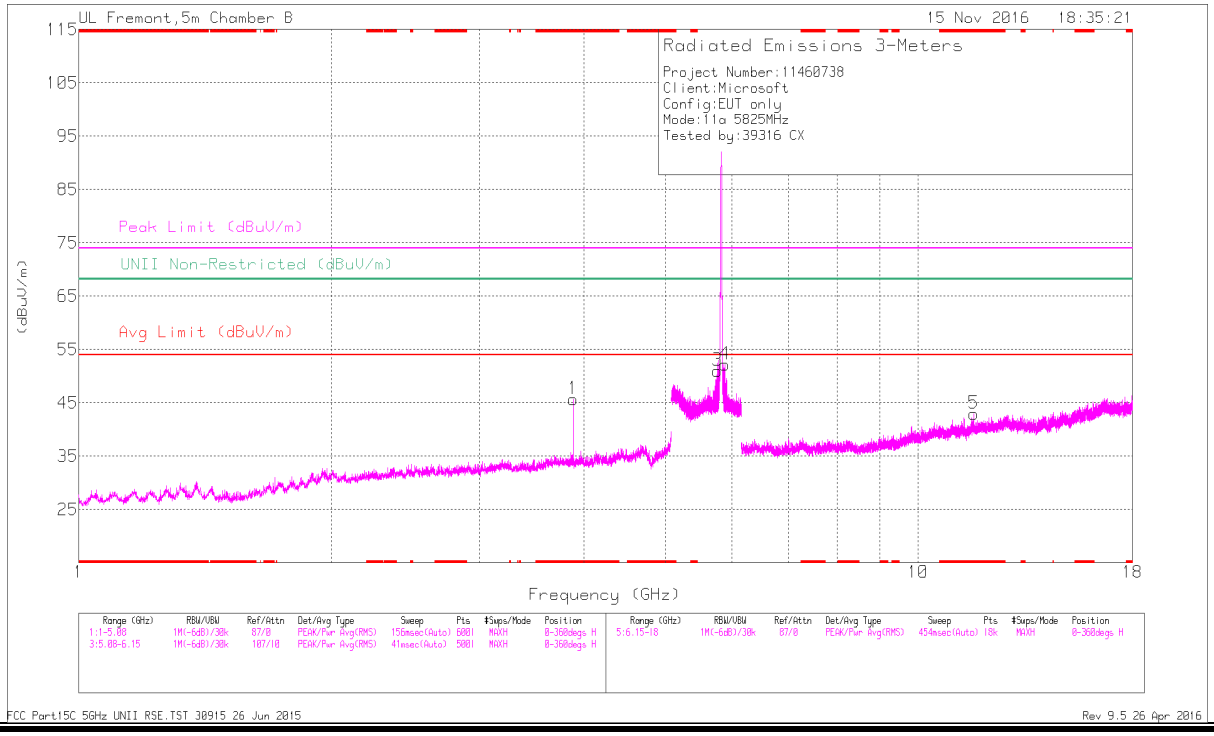
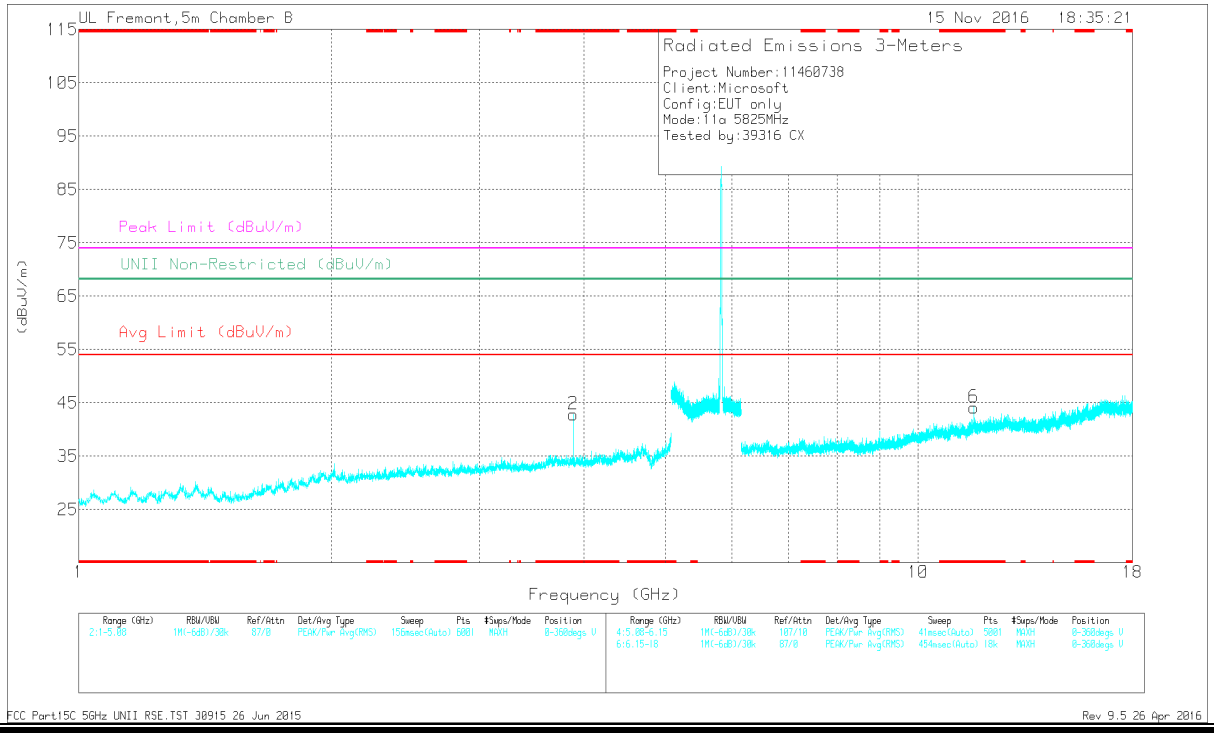
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.857	48.07	PK-U	33.4	-33.1	0	48.37	-	-	74	-25.63	-	-	200	144	H
	* 3.857	44.28	ADR	33.4	-33.1	.1	44.68	54	-9.32	-	-	-	-	200	144	H
2	* 3.857	48.33	PK-U	33.4	-33.1	0	48.63	-	-	74	-25.37	-	-	252	109	V
	* 3.857	44.12	ADR	33.4	-33.1	.1	44.52	54	-9.48	-	-	-	-	252	109	V
4	* 5.439	37.48	PK-U	34.5	-20.8	0	51.18	-	-	74	-22.82	-	-	255	286	V
	* 5.439	21.74	ADR	34.5	-20.8	.1	35.54	54	-18.46	-	-	-	-	255	286	V
5	* 7.69	38.35	PK-U	35.7	-29.8	0	44.25	-	-	74	-29.75	-	-	217	245	H
	* 7.69	27.23	ADR	35.7	-29.8	.1	33.23	54	-20.77	-	-	-	-	217	245	H
6	* 8.322	37.26	PK-U	35.8	-28.8	0	44.26	-	-	74	-29.74	-	-	181	175	V
	* 8.322	25.78	ADR	35.8	-28.8	.1	32.88	54	-21.12	-	-	-	-	181	175	V
3	5.73	46.29	PK-U	34.9	-21.8	0	59.39	-	-	-	-	68.2	-8.81	319	119	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL

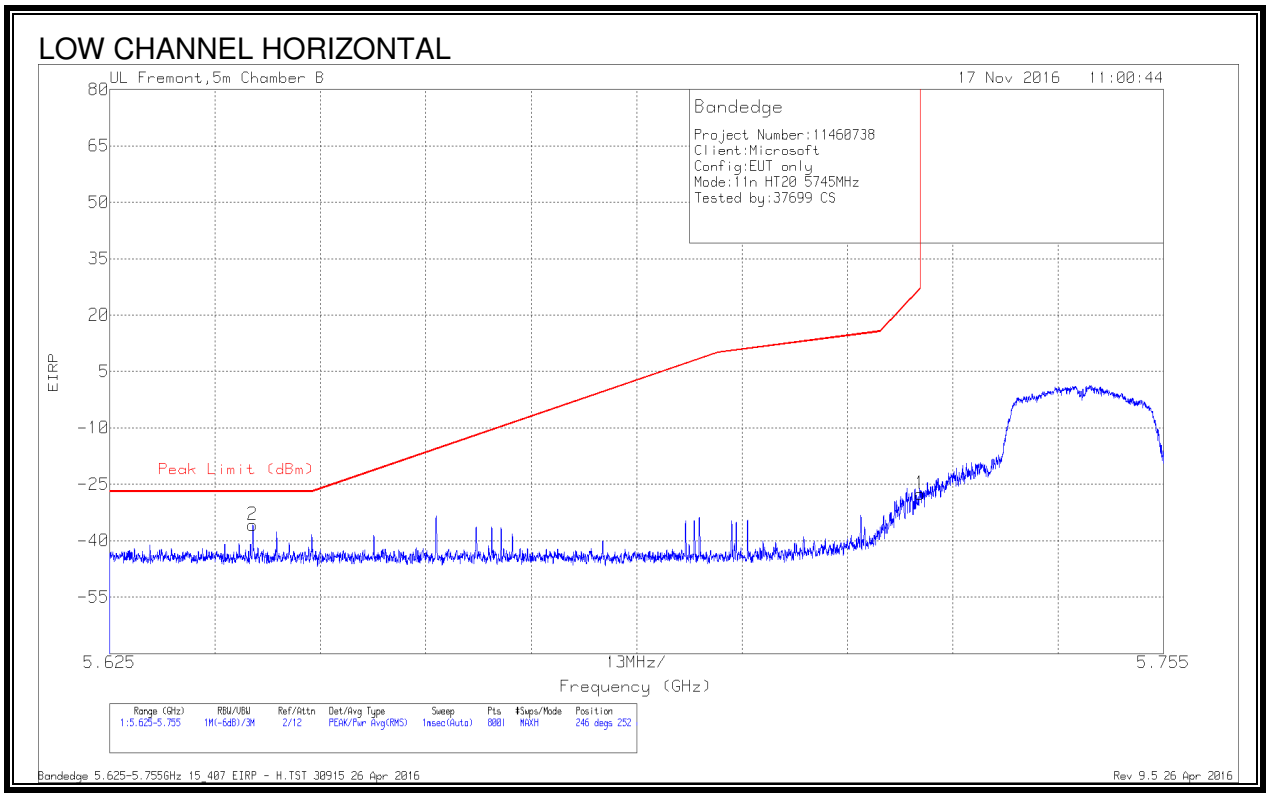


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.883	48.1	PK-U	33.3	-32.8	0	48.6	-	-	74	-25.4	-	-	282	107	H
	* 3.883	44.41	ADR	33.3	-32.8	.1	45.01	54	-8.99	-	-	-	-	282	107	H
2	* 3.883	47.01	PK-U	33.3	-32.8	0	47.51	-	-	74	-26.49	-	-	307	254	V
	* 3.883	41.71	ADR	33.3	-32.8	.1	42.31	54	-11.69	-	-	-	-	307	254	V
5	* 11.651	37.11	PK-U	38.5	-25.2	0	50.41	-	-	74	-23.59	-	-	280	101	H
	* 11.65	26.15	ADR	38.5	-25.1	.1	39.65	54	-14.35	-	-	-	-	280	101	H
6	* 11.652	37.23	PK-U	38.5	-25.2	0	50.53	-	-	74	-23.47	-	-	140	113	V
	* 11.651	27.34	ADR	38.5	-25.2	.1	40.74	54	-13.26	-	-	-	-	140	113	V
3	5.768	40.57	PK-U	35	-21.4	0	54.17	-	-	-	-	68.2	-14.03	283	234	H
4	5.884	39.69	PK-U	35.3	-21.4	0	53.59	-	-	-	-	68.2	-14.61	218	180	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

9.1.8. 11n HT20 MODE IN THE 5.8GHz BAND

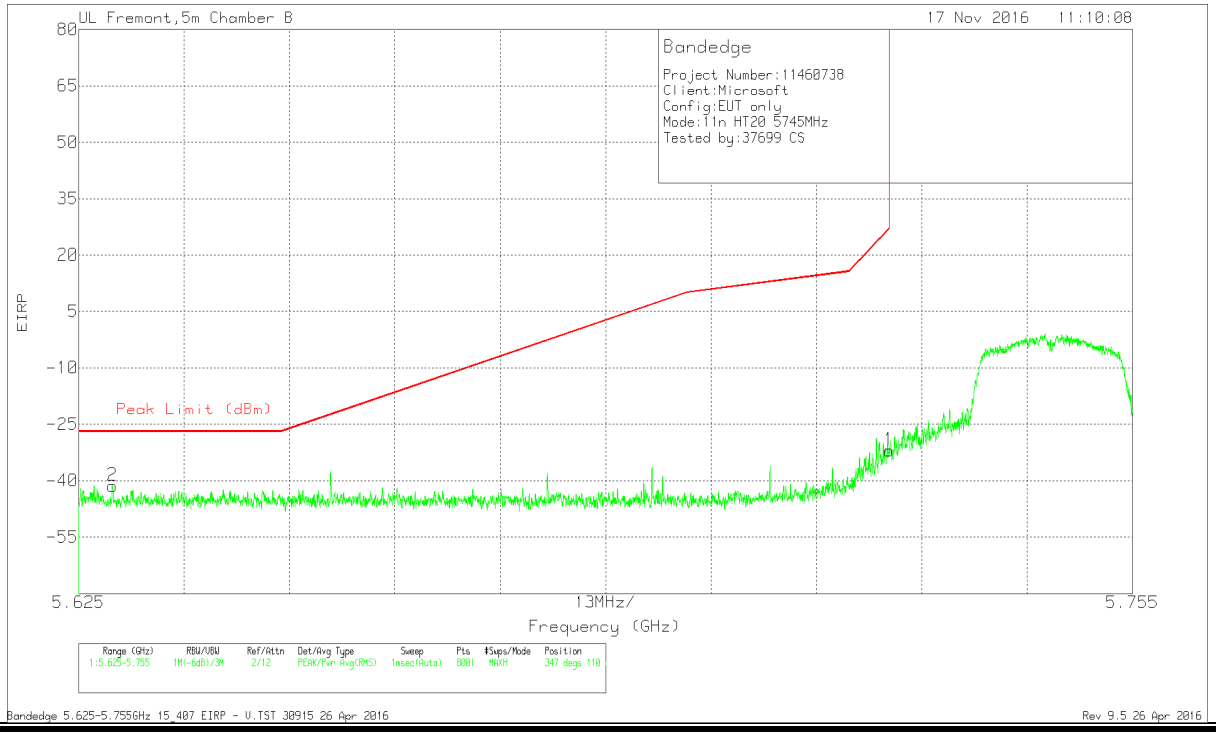
RESTRICTED BANDEDGE (LOW CHANNEL)



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.643	-61.01	Pk	34.7	-21.3	11.8	-35.81	-27	-8.81	246	252	H
1	5.725	-52.51	Pk	34.9	-21.7	11.8	-27.51	26.97	-54.48	246	252	H

Pk - Peak detector

LOW CHANNEL VERTICAL

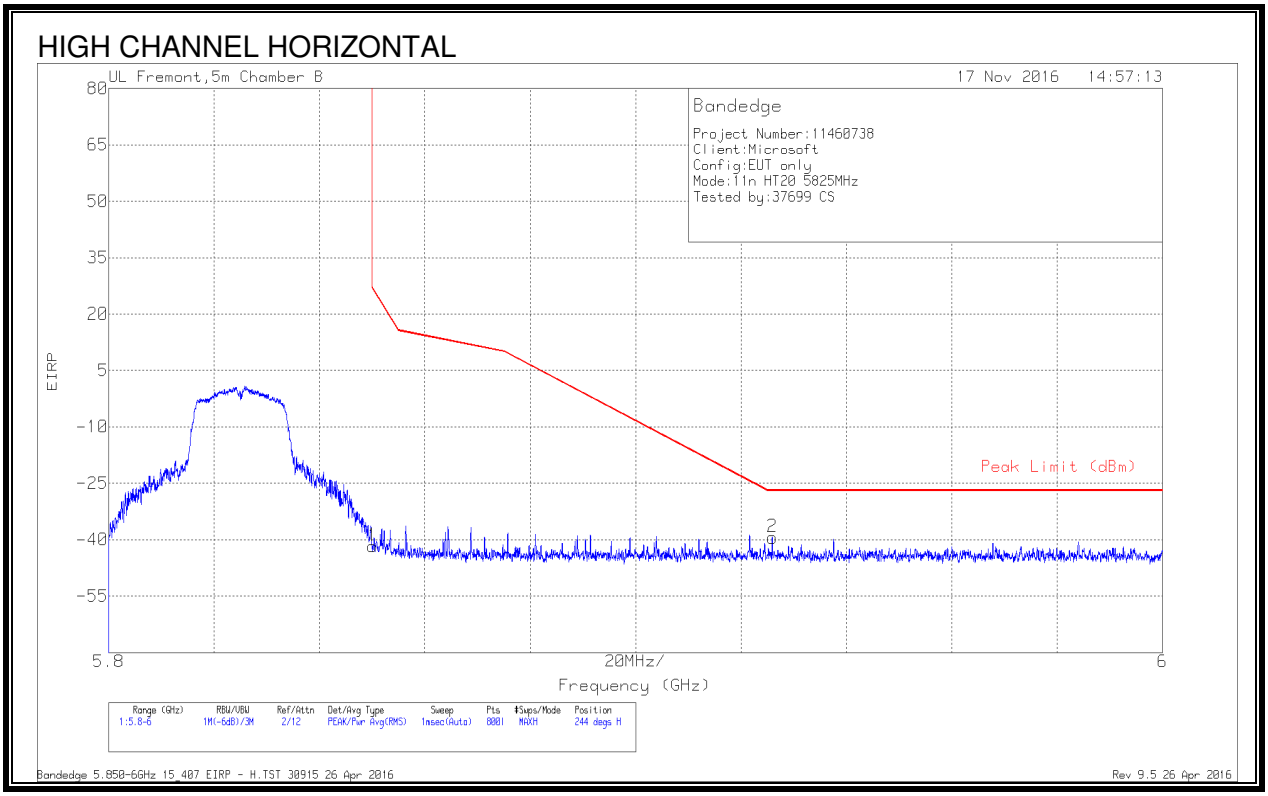


Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.629	-66.09	Pk	34.6	-21.6	11.8	-41.29	-27	-14.29	347	110	V
1	5.725	-56.99	Pk	34.9	-21.7	11.8	-31.99	26.97	-58.96	347	110	V

Pk - Peak detector

AUTHORIZED BANDEDGE (HIGH CHANNEL)

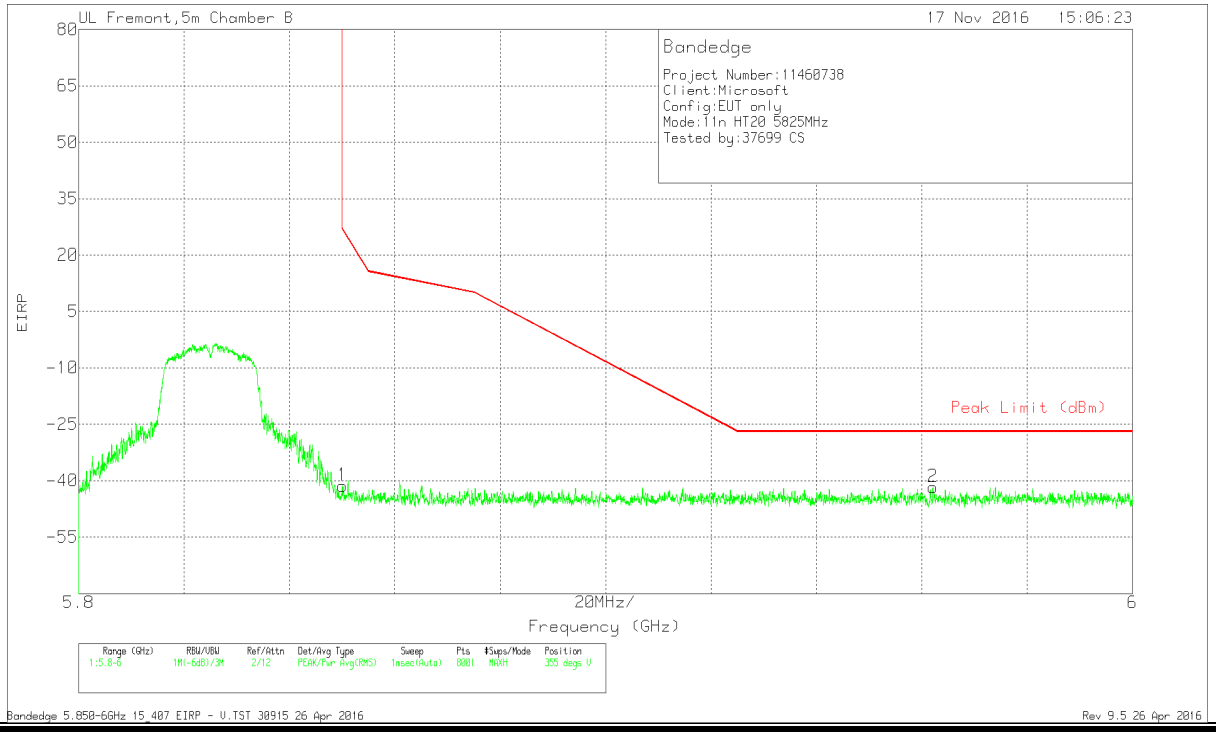
HIGH CHANNEL HORIZONTAL



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-67.13	Pk	35.2	-21.6	11.8	-41.73	26.94	-68.67	244	254	H
2	5.926	-65.21	Pk	35.3	-21.3	11.8	-39.41	-27	-12.41	244	254	H

Pk - Peak detector

HIGH CHANNEL VERTICAL

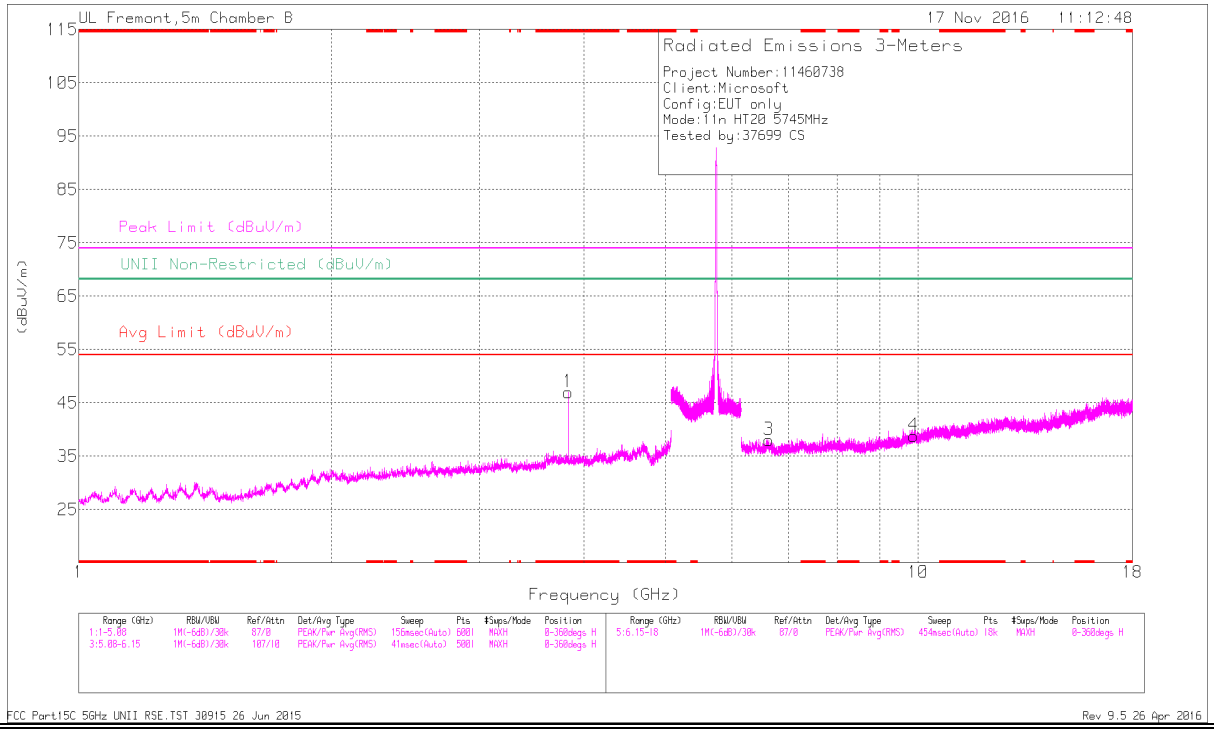


Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-66.83	Pk	35.2	-21.6	11.8	-41.43	26.94	-68.37	355	102	V
2	5.962	-67.2	Pk	35.2	-21.5	11.8	-41.7	-27	-14.7	355	102	V

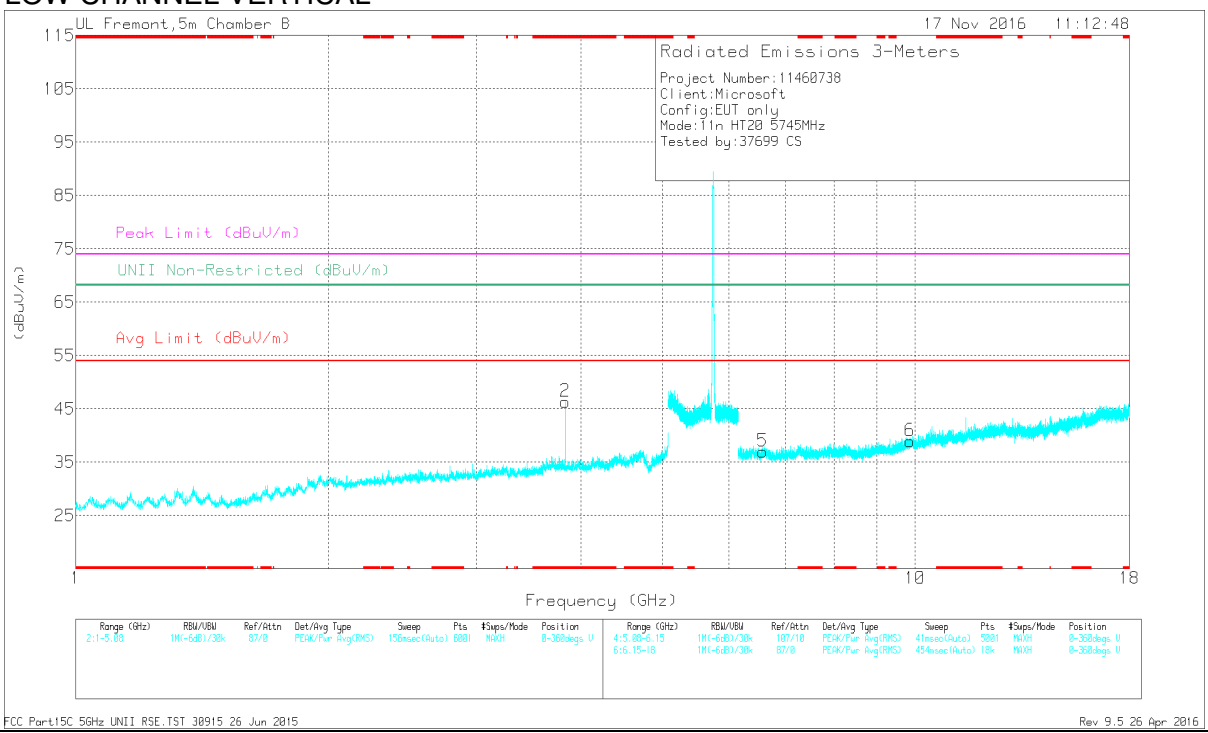
Pk - Peak detector

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.83	49.59	PK-U	33.4	-33	0	49.99	-	-	74	-24.01	-	-	194	137	H
	* 3.83	46.17	ADR	33.4	-33	.1	46.67	54	-7.33	-	-	-	-	194	137	H
2	* 3.83	47.21	PK-U	33.4	-33	0	47.61	-	-	74	-26.39	-	-	232	107	V
	* 3.83	44.1	ADR	33.4	-33	.1	44.6	54	-9.4	-	-	-	-	232	107	V
5	6.581	38.16	PK-U	35.5	-30.7	0	42.96	-	-	-	-	68.2	-25.24	32	157	V
3	6.638	37.7	PK-U	35.5	-29.9	0	43.3	-	-	-	-	68.2	-24.9	168	145	H
6	9.856	34.15	PK-U	37.1	-26.1	0	45.15	-	-	-	-	68.2	-23.05	186	101	V
4	9.877	34.62	PK-U	37.2	-26.3	0	45.52	-	-	-	-	68.2	-22.68	107	235	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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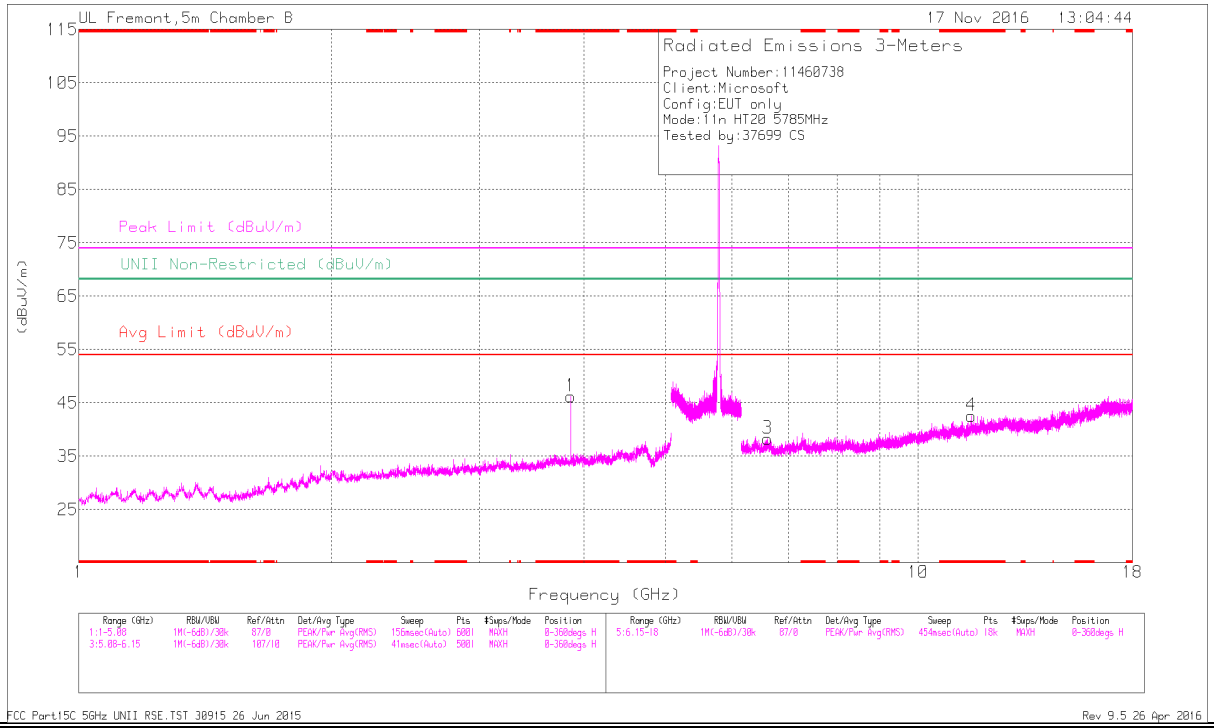
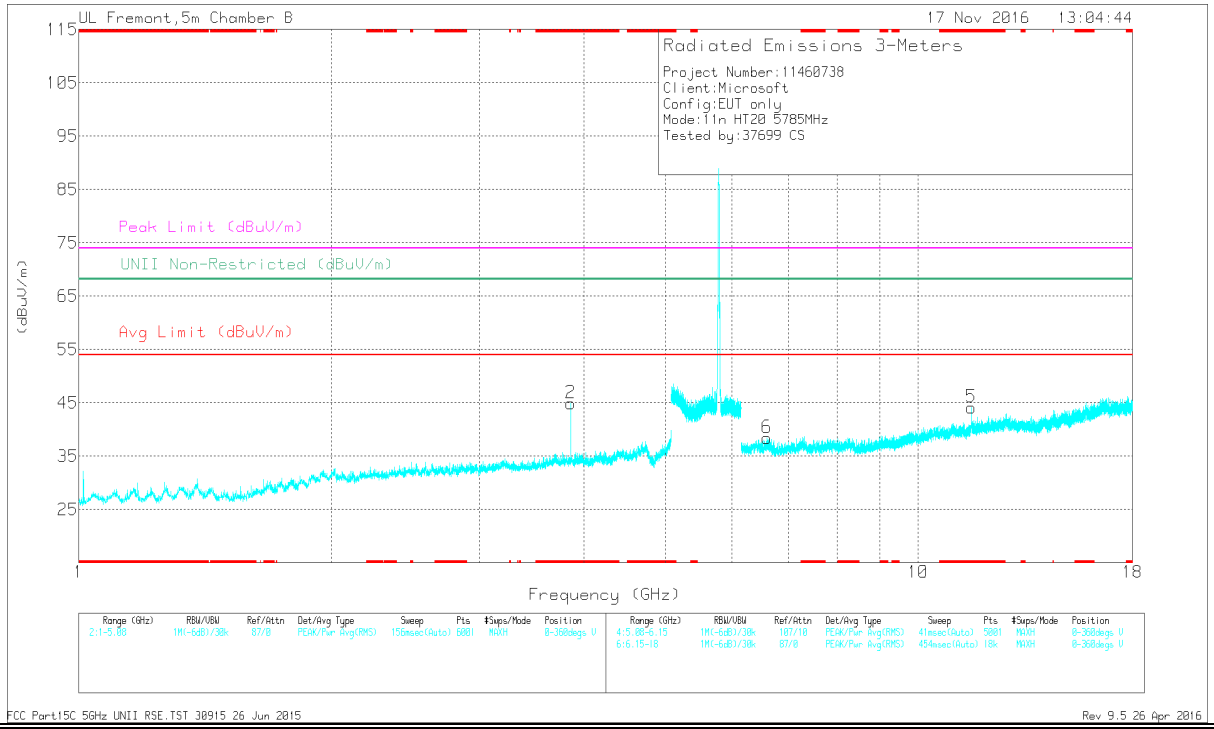
MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



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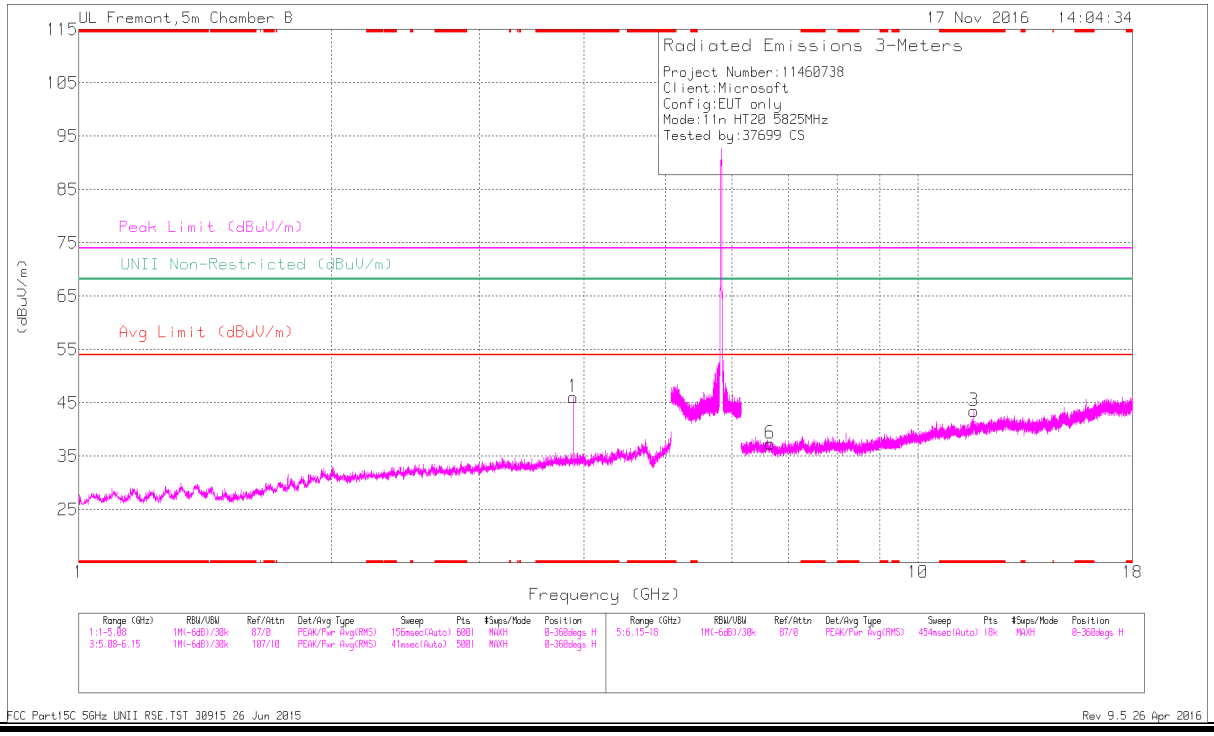
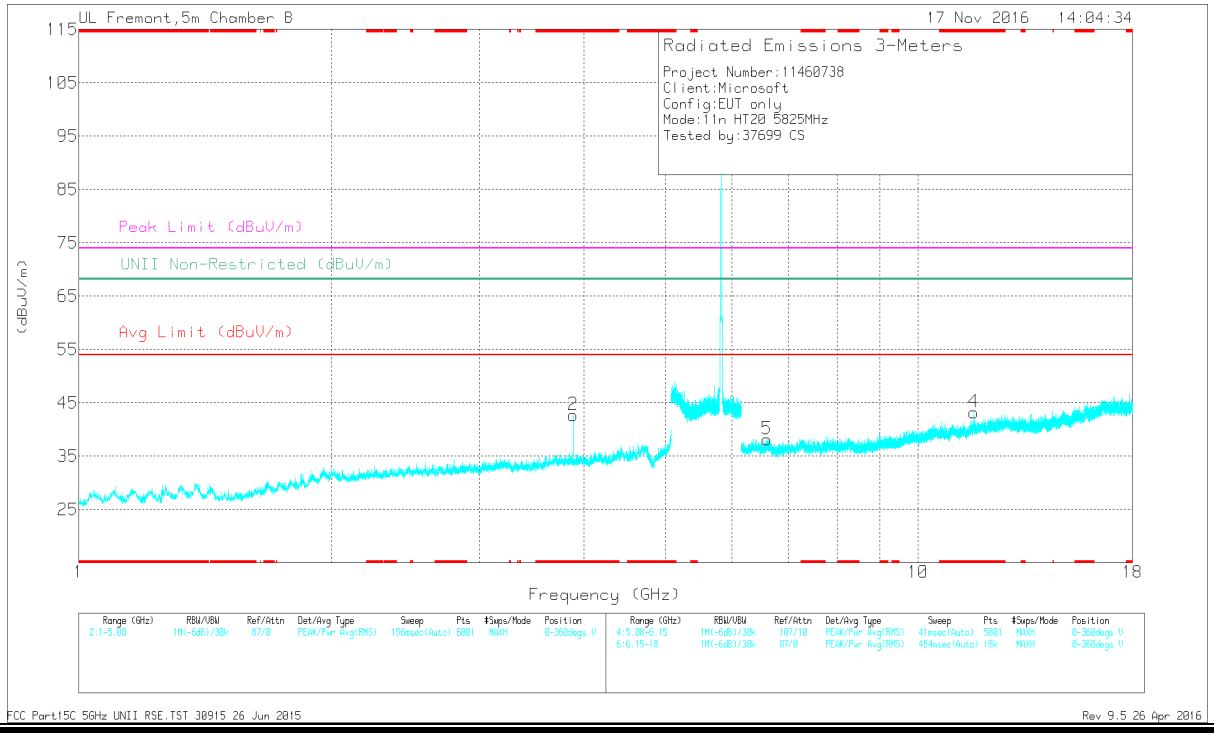
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.857	48.74	PK-U	33.4	-33.1	0	49.04	-	-	74	-24.96	-	-	104	132	H
	* 3.857	45.3	ADR	33.4	-33.1	.1	45.7	54	-8.3	-	-	-	-	104	132	H
2	* 3.857	47.49	PK-U	33.4	-33.1	0	47.79	-	-	74	-26.21	-	-	305	204	V
	* 3.857	42.38	ADR	33.4	-33.1	.1	42.78	54	-11.22	-	-	-	-	305	204	V
4	* 11.568	36.51	PK-U	38.4	-25	0	49.91	-	-	74	-24.09	-	-	127	229	H
	* 11.57	25.41	ADR	38.4	-24.9	.1	39.01	54	-14.99	-	-	-	-	127	229	H
5	* 11.565	37.03	PK-U	38.4	-25	0	50.43	-	-	74	-23.57	-	-	317	115	V
	* 11.564	25.5	ADR	38.4	-24.9	.1	39.1	54	-14.9	-	-	-	-	317	115	V
6	6.609	38.14	PK-U	35.5	-30.1	0	43.54	-	-	-	-	68.2	-24.66	216	101	V
3	6.615	37.93	PK-U	35.5	-30	0	43.43	-	-	-	-	68.2	-24.77	264	159	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.883	48.08	PK-U	33.3	-32.8	0	48.58	-	-	74	-25.42	-	-	110	101	H
	* 3.883	45.06	ADR	33.3	-32.8	.1	45.66	54	-8.34	-	-	-	-	110	101	H
2	* 3.883	46.62	PK-U	33.3	-32.8	0	47.12	-	-	74	-26.88	-	-	237	111	V
	* 3.883	42.34	ADR	33.3	-32.8	.1	42.94	54	-11.06	-	-	-	-	237	111	V
3	* 11.662	33.88	PK-U	38.5	-25.4	0	46.98	-	-	74	-27.02	-	-	192	273	H
	* 11.65	23.21	ADR	38.5	-25.1	.1	36.71	54	-17.29	-	-	-	-	192	273	H
4	* 11.649	35.4	PK-U	38.5	-25.1	0	48.8	-	-	74	-25.2	-	-	305	146	V
	* 11.653	24.76	ADR	38.5	-25.2	.1	38.16	54	-15.84	-	-	-	-	305	146	V
5	6.608	38.27	PK-U	35.5	-30.2	0	43.57	-	-	-	-	68.2	-24.63	218	101	V
6	6.661	38.02	PK-U	35.6	-30.4	0	43.22	-	-	-	-	68.2	-24.98	217	185	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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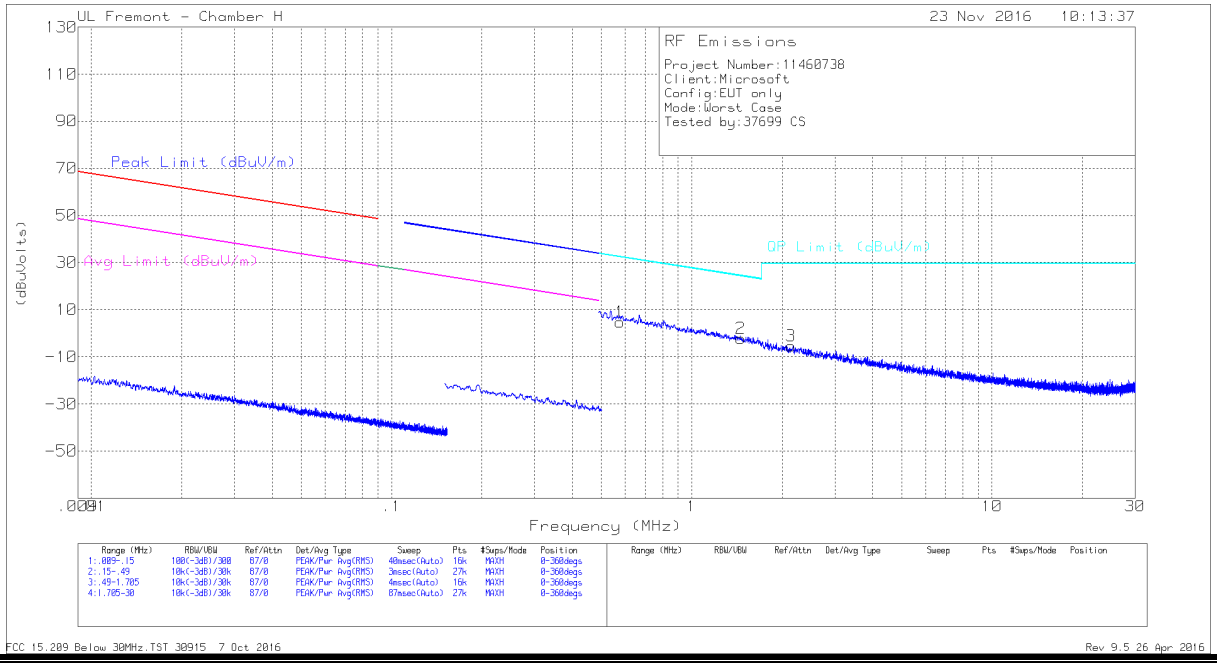
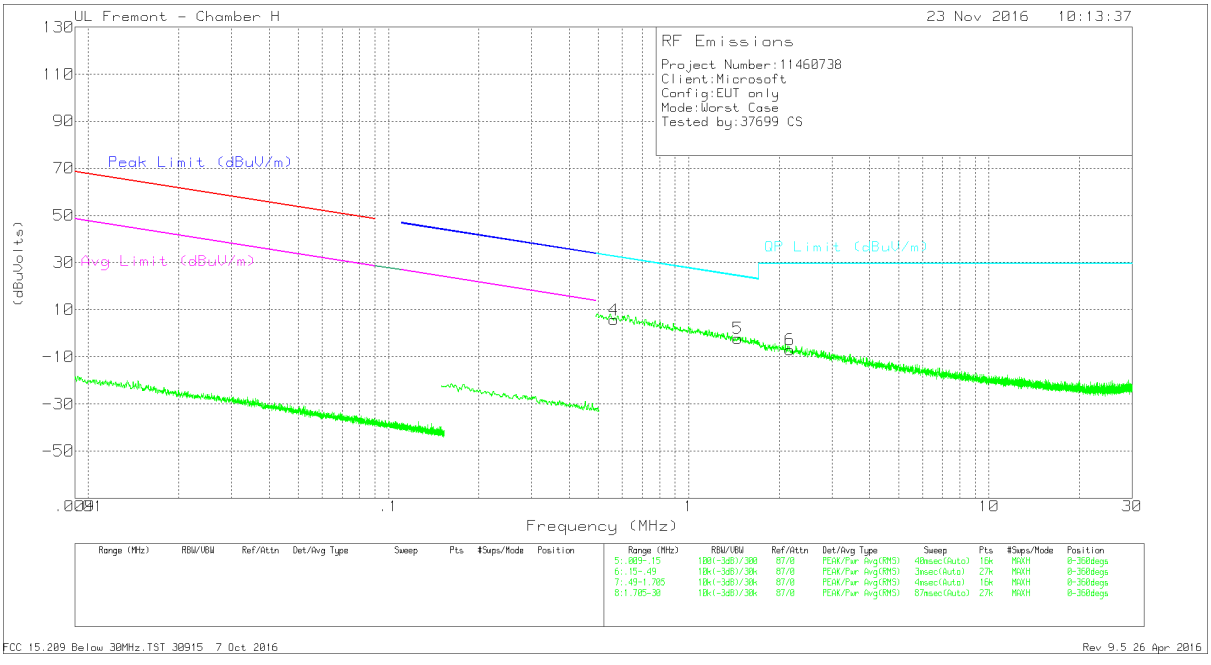
9.2. WORST-CASE BELOW 1 GHz

SPURIOUS EMISSIONS 9KHz TO 30 MHz (WORST-CASE CONFIGURATION)

FACE ON PLOT



FACE OFF PLOT



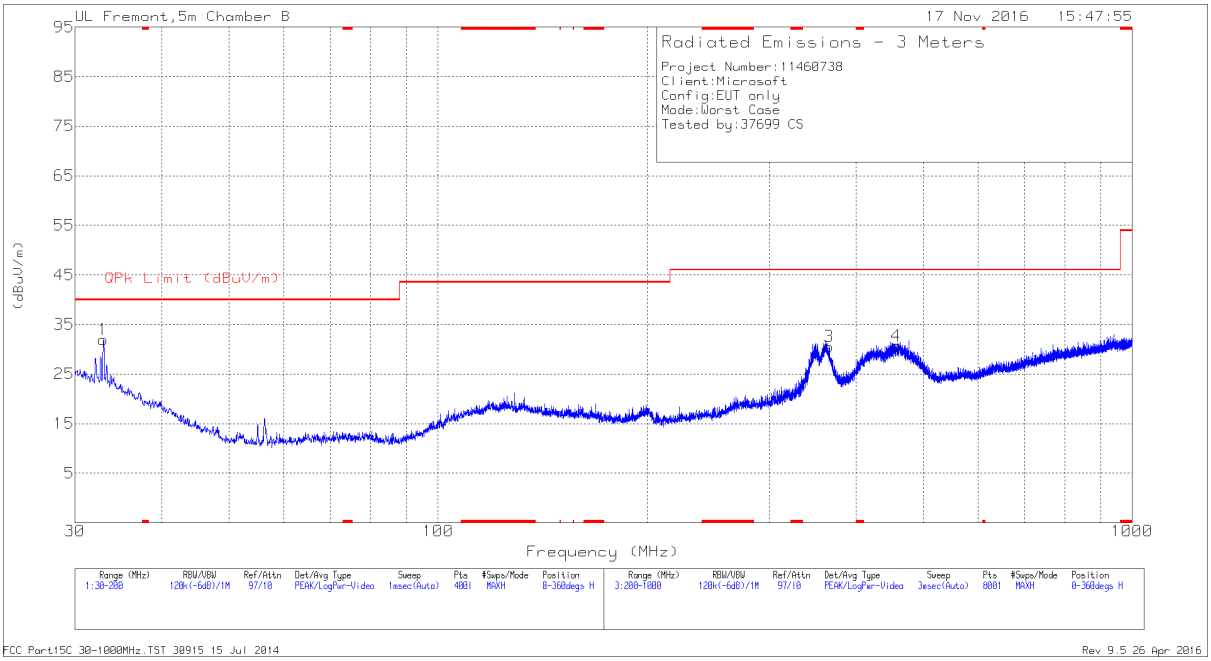
DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading (dBuVolts)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
4	.56342	33.89	Pk	11.7	.1	-40	5.69	32.59	-26.9	0-360
1	.57641	5.95	Pk	11.7	.1	-40	-22.25	32.39	-54.64	0-360
2	1.45596	25.79	Pk	11.8	.2	-40	-2.21	24.37	-26.58	0-360
5	1.45668	25.71	Pk	11.8	.2	-40	-2.29	24.36	-26.65	0-360
3	2.1373	-6.64	Pk	11.9	.2	-40	-34.54	29.5	-64.04	0-360
6	2.17136	21.02	Pk	11.9	.2	-40	-6.88	29.5	-36.38	0-360

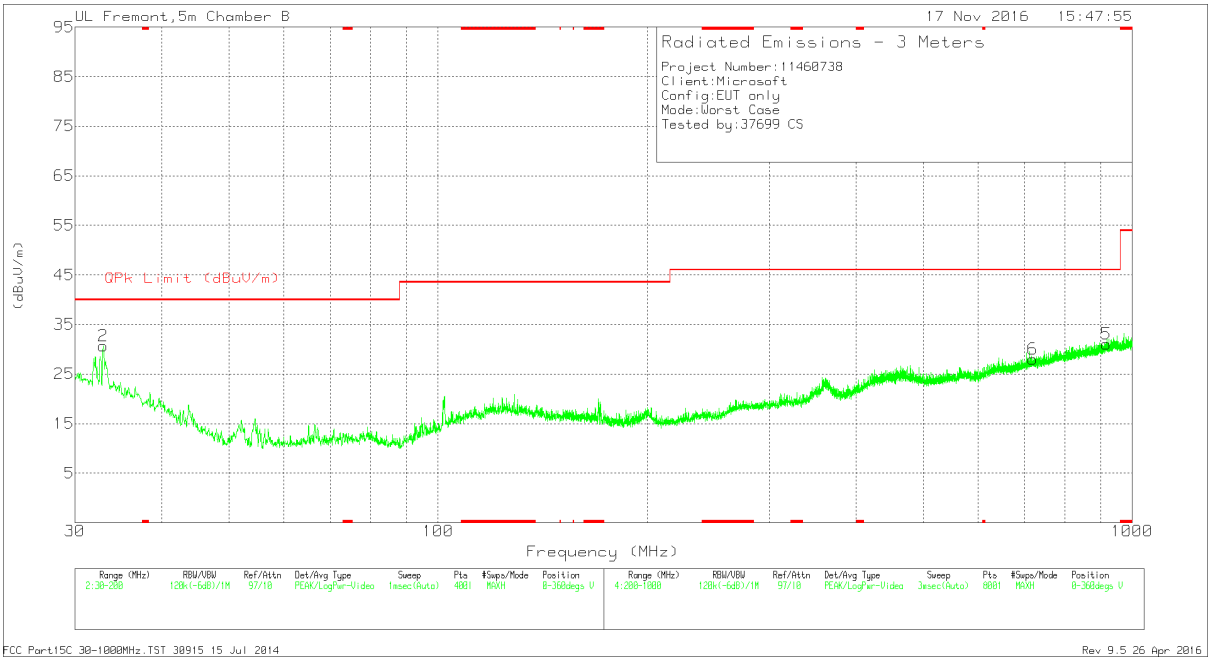
Pk - Peak detector

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

HORIZONTAL PLOT



VERTICAL PLOT



DATA

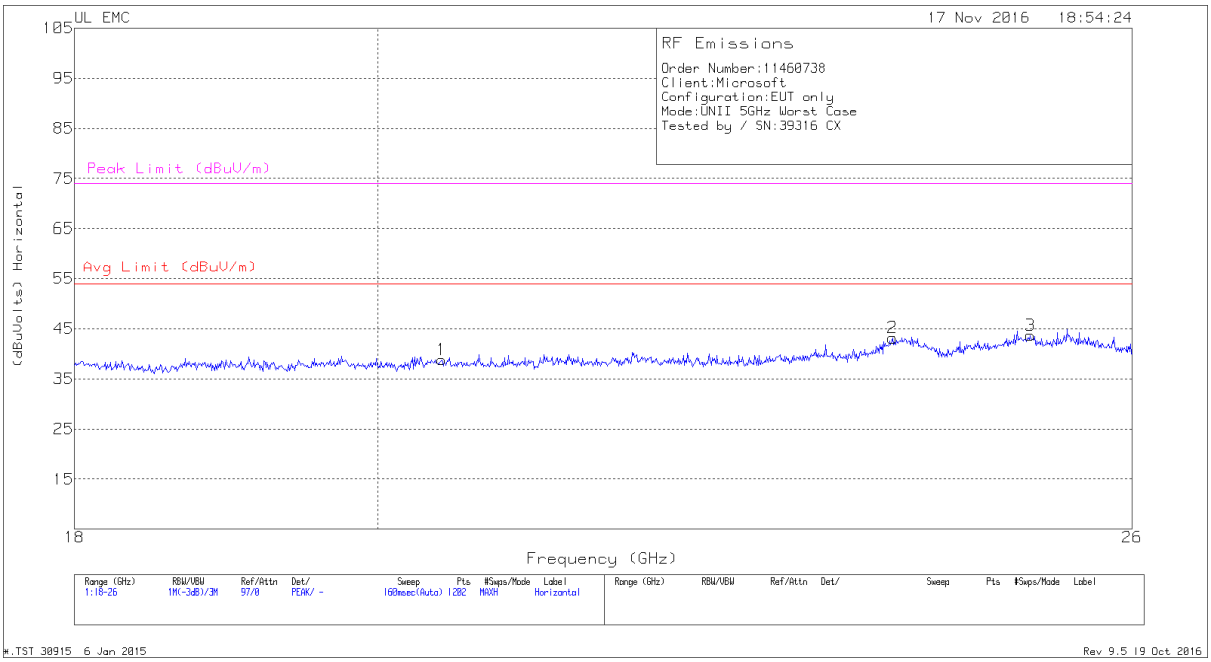
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T477 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	32.9325	36.32	Pk	23.2	-28.8	30.72	40	-9.28	0-360	100	V
1	32.975	37.58	Pk	23.2	-28.8	31.98	40	-8.02	0-360	200	H
3	365.5	37.81	Pk	18.8	-26.1	30.51	46.02	-15.51	0-360	100	H
4	457	35.98	Pk	20.9	-26.2	30.68	46.02	-15.34	0-360	200	H
6	719	28.89	Pk	24.3	-25.2	27.99	46.02	-18.03	0-360	300	V
5	917.8	28.36	Pk	26.4	-23.7	31.06	46.02	-14.96	0-360	300	V

Pk - Peak detector

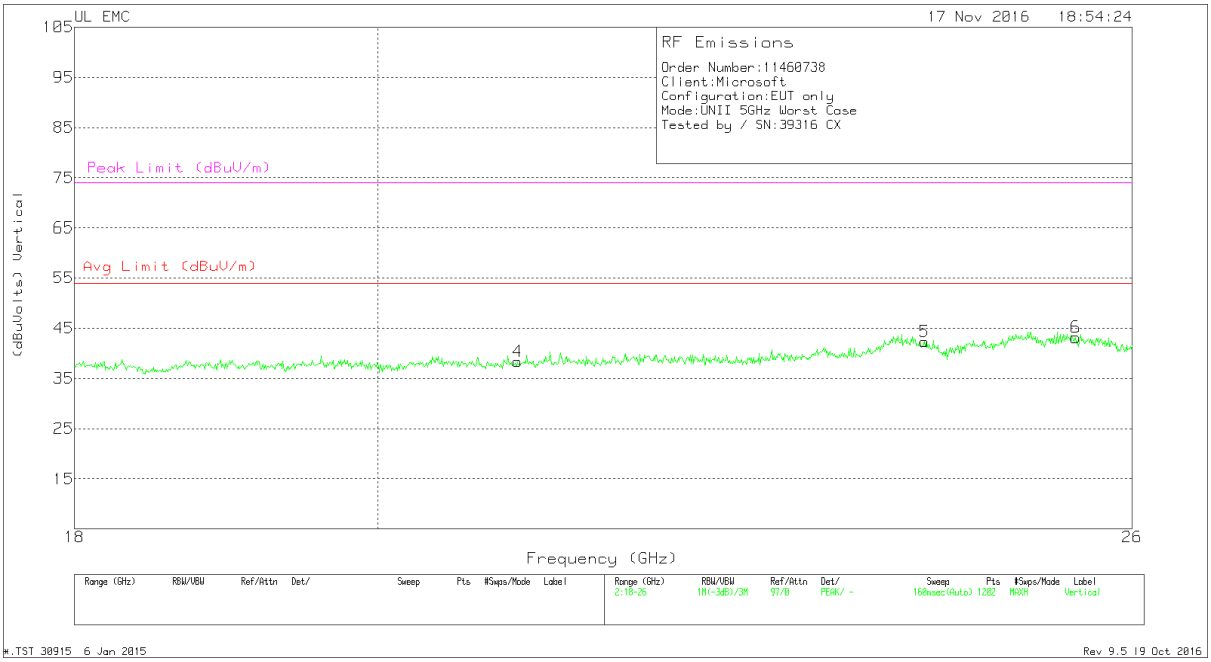
9.3. WORST-CASE 18 to 26 GHz

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

HORIZONTAL PLOT



VERTICAL PLOT



DATA

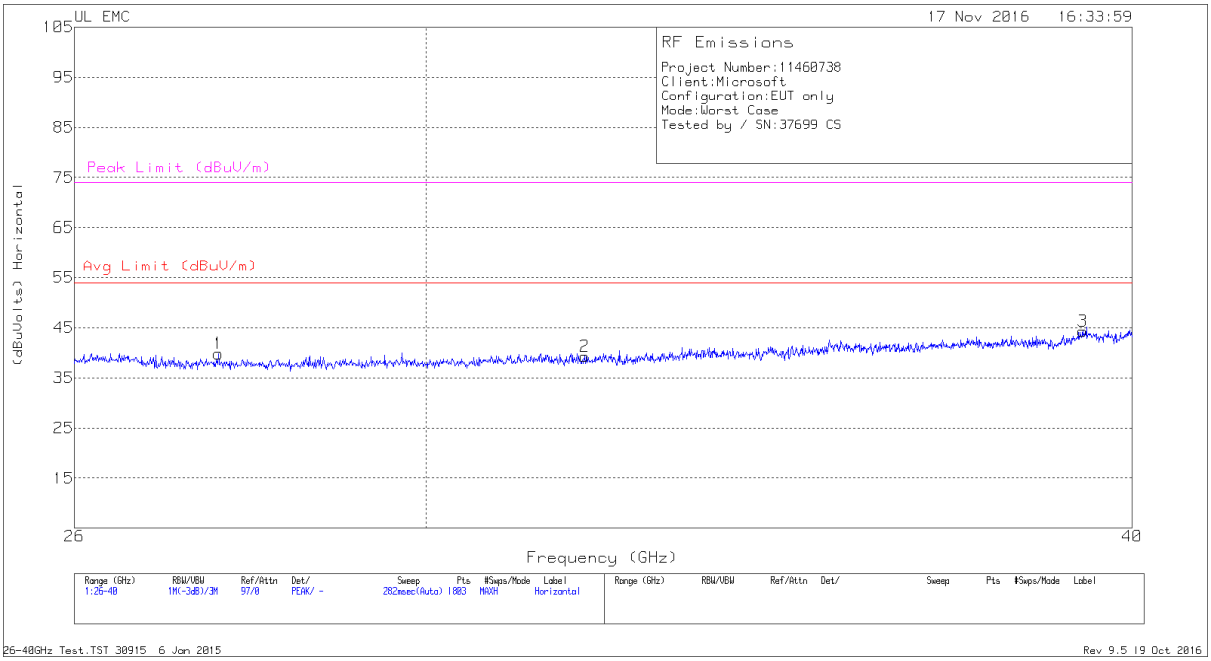
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T449 (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuVolts)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	20.451	40.53	Pk	32.9	-25.1	-9.5	38.83	54	-15.17	74	-35.17
2	23.922	42.57	Pk	34	-23.9	-9.5	43.16	54	-10.84	74	-30.84
3	25.094	43.37	Pk	34.3	-24.5	-9.5	43.66	54	-10.34	74	-30.34
4	20.998	40.33	Pk	33.2	-25.7	-9.5	38.33	54	-15.67	74	-35.67
5	24.188	42.03	Pk	33.9	-24.1	-9.5	42.33	54	-11.67	74	-31.67
6	25.494	43.27	Pk	34.4	-25	-9.5	43.16	54	-10.84	74	-30.84

Pk - Peak detector

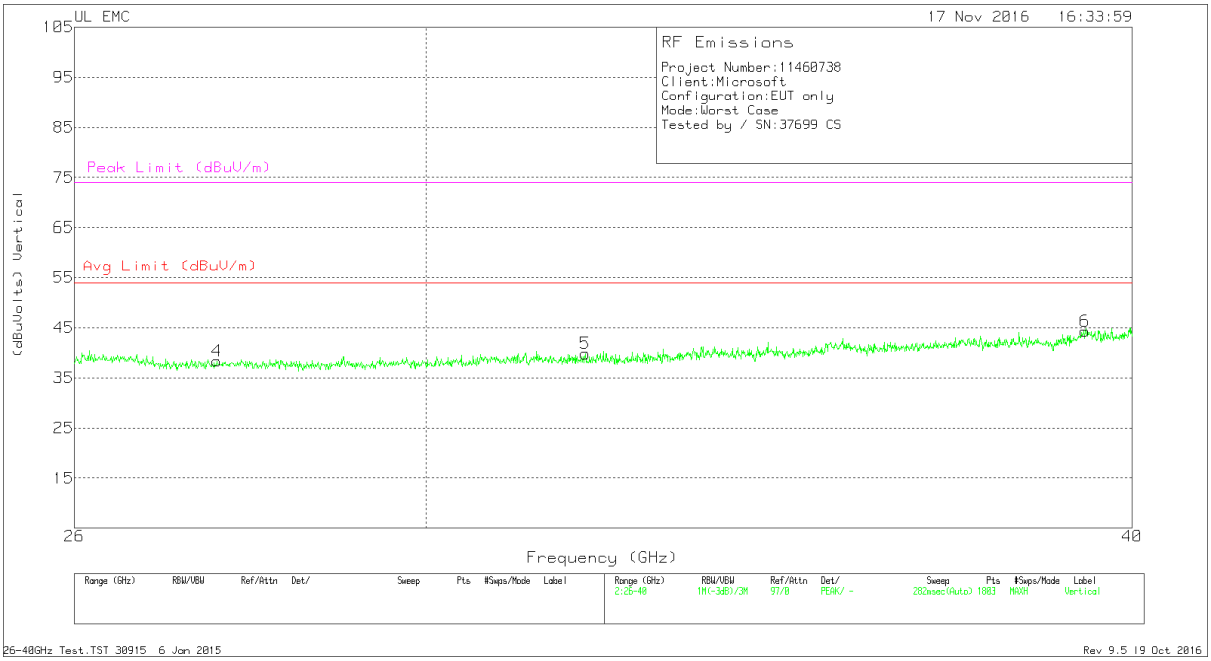
9.4. WORST-CASE 26 to 40 GHz

SPURIOUS EMISSIONS 26 TO 40 GHz (WORST-CASE CONFIGURATION)

HORIZONTAL PLOT



VERTICAL PLOT



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	27.569	45.43	Pk	35.7	-31.8	-9.5	39.83	54	-14.17	74	-34.17
2	32.006	46.03	Pk	36.2	-33.4	-9.5	39.33	54	-14.67	74	-34.67
3	39.2	48.13	Pk	38.3	-32.6	-9.5	44.33	54	-9.67	74	-29.67
4	27.554	43.83	Pk	35.7	-31.7	-9.5	38.33	54	-15.67	74	-35.67
5	32.013	46.53	Pk	36.2	-33.4	-9.5	39.83	54	-14.17	74	-34.17
6	39.239	47.73	Pk	38.5	-32.4	-9.5	44.33	54	-9.67	74	-29.67

Pk - Peak detector

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10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 8.8

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

*Decreases with the logarithm of the frequency.

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.10.

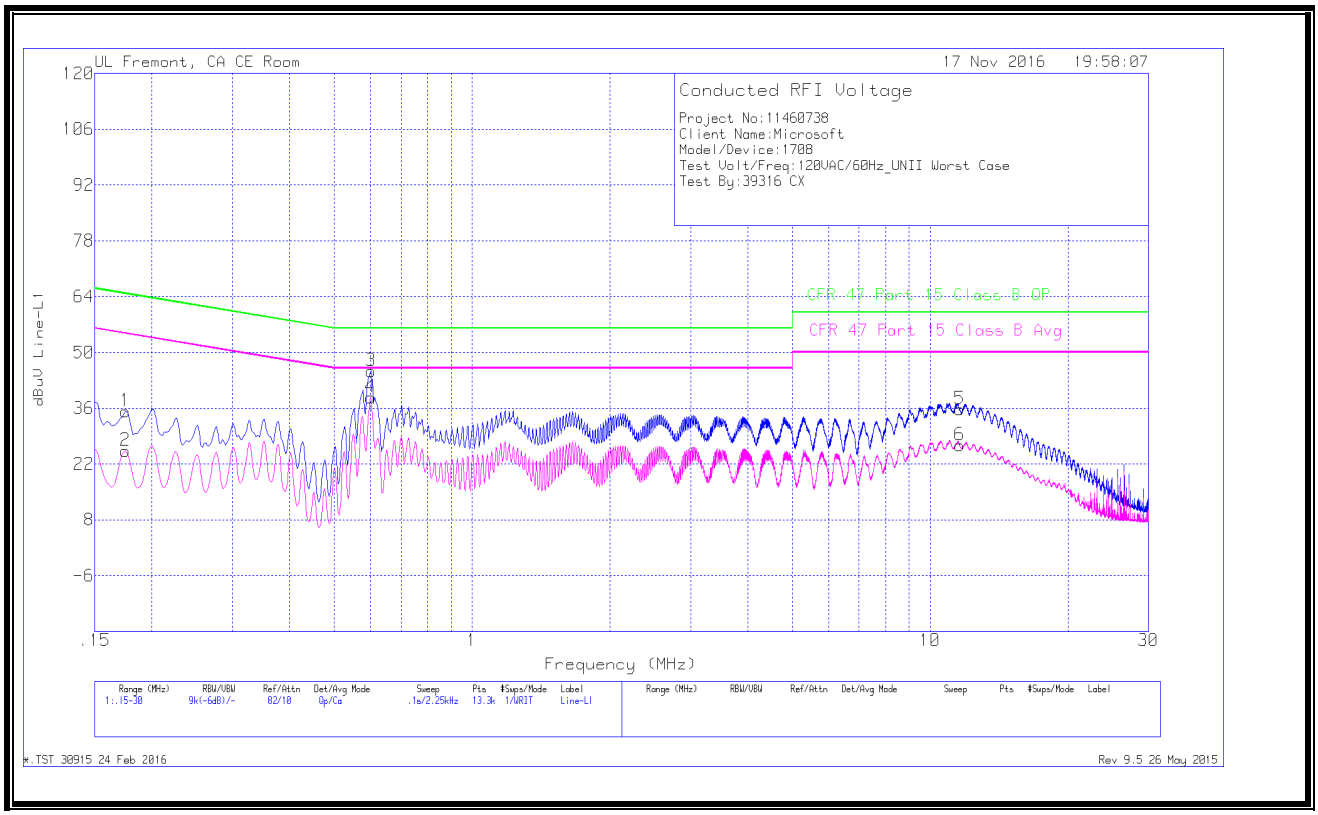
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

10.1. EUT POWERED BY AC/DC ADAPTER VIA USB CABLE

LINE 1 RESULTS

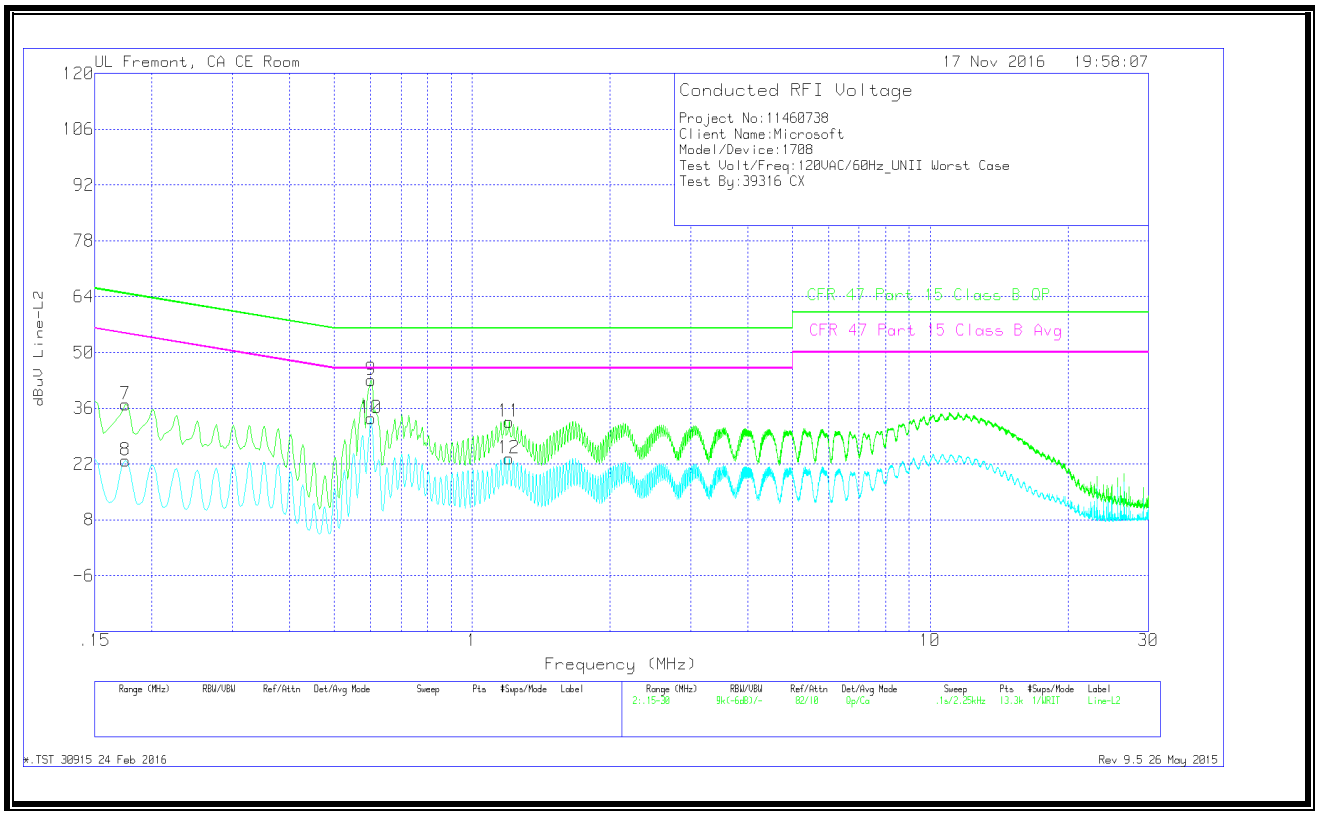


WORST EMISSIONS

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN L1	LC Cables 1&3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR)Margin (dB)
1	.17475	25.15	Qp	0	0	10.1	35.25	64.73	-29.48	-	-
2	.17475	15.18	Ca	0	0	10.1	25.28	-	-	54.73	-29.45
3	.60225	35.21	Qp	0	0	10.1	45.31	56	-10.69	-	-
4	.6	28.6	Ca	0	0	10.1	38.7	-	-	46	-7.3
5	11.6025	25.28	Qp	0	.2	10.2	35.68	60	-24.32	-	-
6	11.60025	16.34	Ca	0	.2	10.2	26.74	-	-	50	-23.26

Qp - Quasi-Peak detector
Ca - CISPR average detection

LINE 2 RESULTS



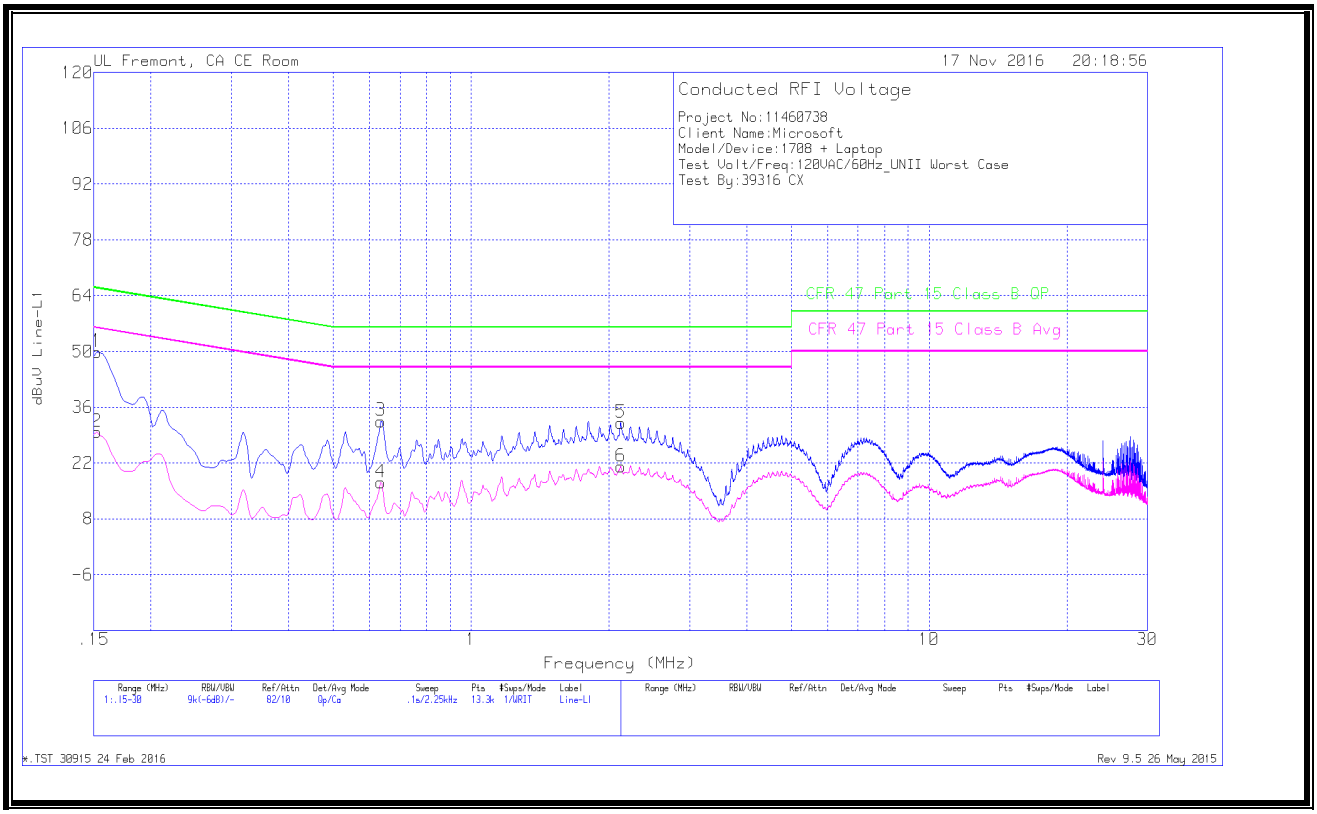
WORST EMISSIONS

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN L2	LC Cables 2&3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR)Margin (dB)
7	.17475	26.84	Qp	0	0	10.1	36.94	64.73	-27.79	-	-
8	.17475	12.84	Ca	0	0	10.1	22.94	-	-	54.73	-31.79
9	.60225	33.01	Qp	0	0	10.1	43.11	56	-12.89	-	-
10	.60225	23.46	Ca	0	0	10.1	33.56	-	-	46	-12.44
11	1.20525	22.52	Qp	0	0	10.1	32.62	56	-23.38	-	-
12	1.20525	13.32	Ca	0	0	10.1	23.42	-	-	46	-22.58

Qp - Quasi-Peak detector
Ca - CISPR average detection

10.2. EUT POWERED BY HOST PC VIA USB CABLE

LINE 1 RESULTS

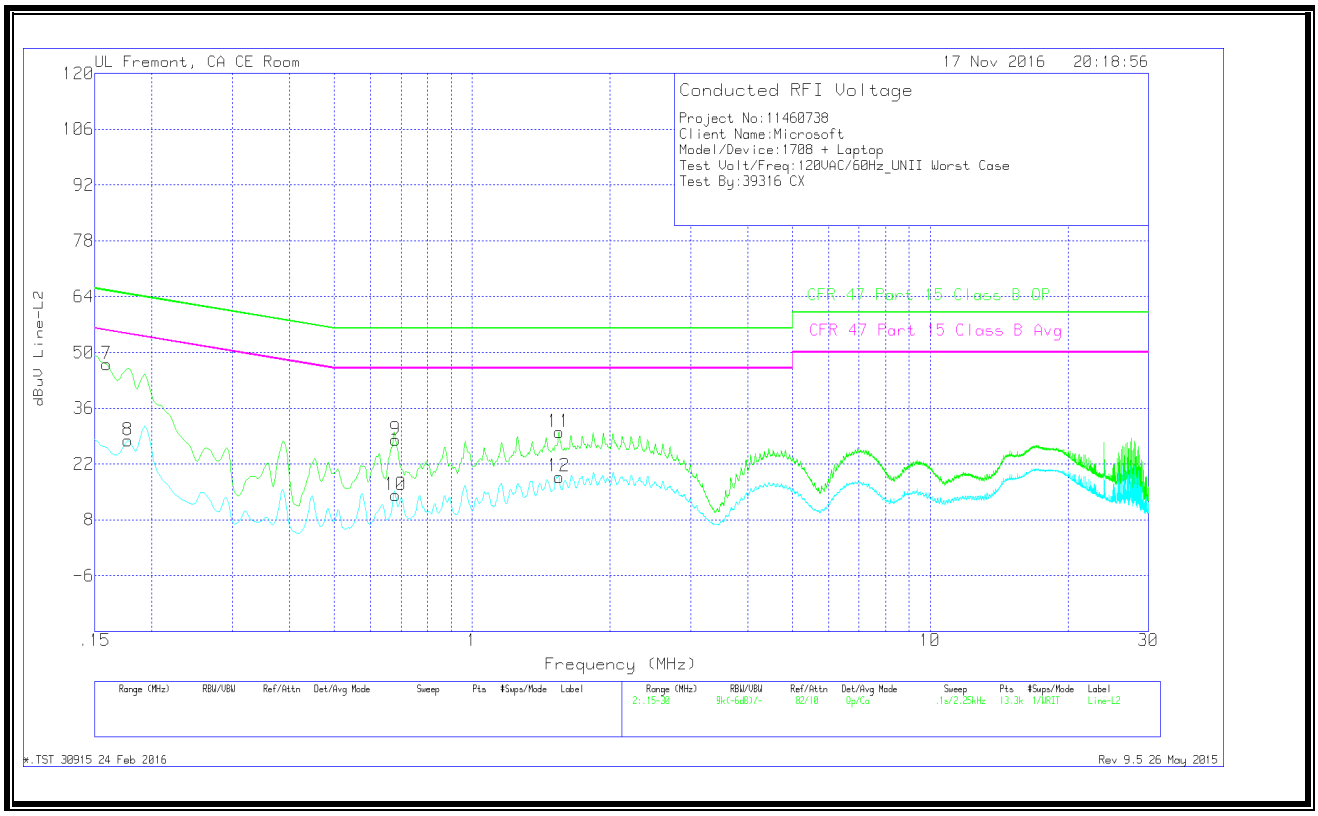


WORST EMISSIONS

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN L1	LC Cables 1&3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR)Margin (dB)
1	.15225	39.71	Qp	.1	0	10.1	49.91	65.88	-15.97	-	-
2	.15225	19.57	Ca	.1	0	10.1	29.77	-	-	55.88	-26.11
3	.636	22.43	Qp	0	0	10.1	32.53	56	-23.47	-	-
4	.636	7.08	Ca	0	0	10.1	17.18	-	-	46	-28.82
5	2.121	21.97	Qp	0	.1	10.1	32.17	56	-23.83	-	-
6	2.121	10.98	Ca	0	.1	10.1	21.18	-	-	46	-24.82

Qp - Quasi-Peak detector
Ca - CISPR average detection

LINE 2 RESULTS



WORST EMISSIONS

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN L2	LC Cables 2&3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR)Margin (dB)
7	.159	36.89	Qp	0	0	10.1	46.99	65.52	-18.53	-	-
8	.177	17.75	Ca	0	0	10.1	27.85	-	-	54.63	-26.78
9	.681	18.07	Qp	0	0	10.1	28.17	56	-27.83	-	-
10	.681	4.1	Ca	0	0	10.1	14.2	-	-	46	-31.8
11	1.54725	19.73	Qp	0	.1	10.1	29.93	56	-26.07	-	-
12	1.54725	8.6	Ca	0	.1	10.1	18.8	-	-	46	-27.2

Qp - Quasi-Peak detector
Ca - CISPR average detection