FCC 47 CFR PART 15 SUBPART E

CERTIFICATION TEST REPORT

FOR

RADIO TRANSCEIVER DEVICE

MODEL NUMBER: 1688

FCC ID: C3K1688

REPORT NUMBER: 15U21746-E4V2

ISSUE DATE: DECEMBER 8, 2015

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Revision History

Rev.	Issue Date	Revisions	Revised By
V1	12/03/15	Initial Issue	C.S.OOI
V2	12/08/15	Revised table 8.4.12 CH 138 frequency to 5690MHz on page 39	C.S.OOI

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	MICROSOFT CORP.
EUT DESCRIPTION:	RADIO TRANSCEIVER DEVICE
MODEL:	1688
SERIAL NUMBER:	26653556, 28453556
DATE TESTED:	SEPTEMBER 18-NOVEMBER 9, 2015

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

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

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

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1. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, FCC 06-96, FCC KDB 789033 D02 v01 and ANSI C63.10-2013.

2. 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)

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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3. CALIBRATION AND UNCERTAINTY

3.1. 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.

3.2. 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

3.3. MEASUREMENT UNCERTAINTY

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

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

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

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4. EQUIPMENT UNDER TEST

4.1. DESCRIPTION OF EUT

The EUT is a radio transceiver device, which contains an integrated 802.11 a/b/g/n/ac and BT 4.1 radios.

4.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum total conducted output power as follows:

Frequency Range (MHz)	Mode	Total Output Power (dBm)	Total Output Power (mW)
5180 - 5240	802.11a	13.42	21.98
5260 - 5320	802.11a	18.44	69.82
5500 - 5720	802.11a	18.5	70.79
5745 - 5825	802.11a	18.32	67.92
5180 - 5240	802.11n HT20	13.92	24.66
5260 - 5320	802.11n HT20	18.44	69.82
5500 - 5720	802.11n HT20	18.5	70.79
5745 - 5825	802.11n HT20	18.32	67.92
5190 - 5230	802.11n HT40	16.28	42.46
5270 - 5310	802.11n HT40	18.44	69.82
5510 - 5710	802.11n HT40	18.5	70.79
5755 - 5795	802.11n HT40	18.32	67.92
5210	802.11ac HT80	14.88	30.76
5290	802.11ac HT80	15	31.62
5530 - 5690	802.11ac HT80	18.27	67.14
5775	802.11ac HT80	15.88	38.73

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4.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna for the 802.11a, 802.11n/ac HT20, 802.11n/ac HT40, 802.11ac HT80 modes with maximum peak gains as described below:

Frequency Band	MAIN Antenna (Core 0) Peak Gain (dBi)	MAIN Antenna (Core 1) Peak Gain (dBi)
2.4 to 2483.5 MHz	5.3	6.6
5.15 to 5.35 GHz	3.6	5.8
5.47 to 5.725 GHz	3.4	5.3
5.725 to 5.85 GHz	2.1	4.9

4.4. SOFTWARE AND FIRMWARE

The software installed in the EUT during testing was Microsoft Ver. Th2_analog1_dev.150917-2108.

The EUT HW Buid Phase: EV3B

The test utility software used during testing was Microsoft WiFi Tool, Ver 3.2.1 (526/2015)

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List of test reduction and modes covering other modes:

Authorized Frequency Band (Antenna port & Radiated Testing)		
Frequency Range (MHz)	**Mode**	**Covered by**
5180 - 5240	802.11a legacy 1TX	802.11a 2TX CDD
5180 - 5240	802.11HT20 1TX	802.11n HT20 2TX CDD
5180 - 5240	802.11HT20 2TX STBC	802.11n HT20 2TX CDD
5180 - 5240	802.11ac VHT20 1TX	802.11n HT20 2TX CDD
5180 - 5240	802.11ac VHT20 2TX STBC	802.11n HT20 2TX CDD
5180 - 5240	802.11ac VHT20 2TX CDD	802.11n HT20 2TX CDD
5190 - 5230	802.11n HT40 1TX	802.11n HT40 2TX CDD
5190 - 5230	802.11n HT40 2TX STBC	802.11n HT40 2TX CDD
5190 - 5230	802.11ac VHT40 1TX	802.11n HT40 2TX CDD
5190 - 5230	802.11ac VHT40 2TX STBC	802.11n HT40 2TX CDD
5190 - 5230	802.11ac VHT40 2TX CDD	802.11n HT40 2TX CDD
5210	802.11ac VHT80 1TX	802.11ac VHT80 2TX CDD
5210	802.11ac VHT80 2TX STBC	802.11ac VHT80 2TX CDD

Authorized Frequency Band (Antenna port & Radiated Testing)		
Frequency Range (MHz)	**Mode**	**Covered by**
5260 - 5320	802.11a legacy 1TX	802.11a 2TX CDD
5260 - 5320	802.11HT20 1TX	802.11n HT20 2TX CDD
5260 - 5320	802.11HT20 2TX STBC	802.11n HT20 2TX CDD
5260 - 5320	802.11ac VHT20 1TX	802.11n HT20 2TX CDD
5260 - 5320	802.11ac VHT20 2TX STBC	802.11n HT20 2TX CDD
5260 - 5320	802.11ac VHT20 2TX CDD	802.11n HT20 2TX CDD
5270 - 5310	802.11n HT40 1TX	802.11n HT40 2TX CDD
5270 - 5310	802.11n HT40 2TX STBC	802.11n HT40 2TX CDD
5270 - 5310	802.11ac VHT40 1TX	802.11n HT40 2TX CDD
5270 - 5310	802.11ac VHT40 2TX STBC	802.11n HT40 2TX CDD
5270 - 5310	802.11ac VHT40 2TX CDD	802.11n HT40 2TX CDD
5290	802.11ac VHT80 1TX	802.11ac VHT80 2TX CDD
5290	802.11ac VHT80 2TX STBC	802.11ac VHT80 2TX CDD

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Authorized Frequency Band (Antenna port & Radiated Testing)		
Frequency Range (MHz)	**Mode**	**Covered by**
5500 - 5720	802.11a legacy 1TX	802.11a 2TX CDD
5500 - 5720	802.11HT20 1TX	802.11n HT20 2TX CDD
5500 - 5720	802.11HT20 2TX STBC	802.11n HT20 2TX CDD
5500 - 5720	802.11ac VHT20 1TX	802.11n HT20 2TX CDD
5500 - 5720	802.11ac VHT20 2TX STBC	802.11n HT20 2TX CDD
5500 - 5720	802.11ac VHT20 2TX CDD	802.11n HT20 2TX CDD
5510 - 5710	802.11n HT40 1TX	802.11n HT40 2TX CDD
5510 - 5710	802.11n HT40 2TX STBC	802.11n HT40 2TX CDD
5510 - 5710	802.11ac VHT40 1TX	802.11n HT40 2TX CDD
5510 - 5710	802.11ac VHT40 2TX STBC	802.11n HT40 2TX CDD
5510 - 5710	802.11ac VHT40 2TX CDD	802.11n HT40 2TX CDD
5530-5690	802.11ac VHT80 1TX	802.11ac VHT80 2TX CDD
5530-5690	802.11ac VHT80 2TX STBC	802.11ac VHT80 2TX CDD

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4.5. WORST-CASE CONFIGURATION AND MODE

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

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

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

802.11a mode: 6 Mbps

802.11n HT20mode: MCS0

802.11n HT40mode: MCS0

802.11ac VHT80mode: MCS0

All conducted testing was performed in n-mode only for HT20/40, which covers ac-mode testing.

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4.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
AC Adapter	Microsoft	1623	0D130B01BGE54	DOC
Laptop	Lenovo	X1 Carbon	N/A	N/A

I/O CABLES

I/O Cable List						
Cable No	**Port**	**# of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	DC Power	1	Mini-USB	Shielded	1.2m	N/A

TEST SETUP

The EUT is setup as a stand-alone device.

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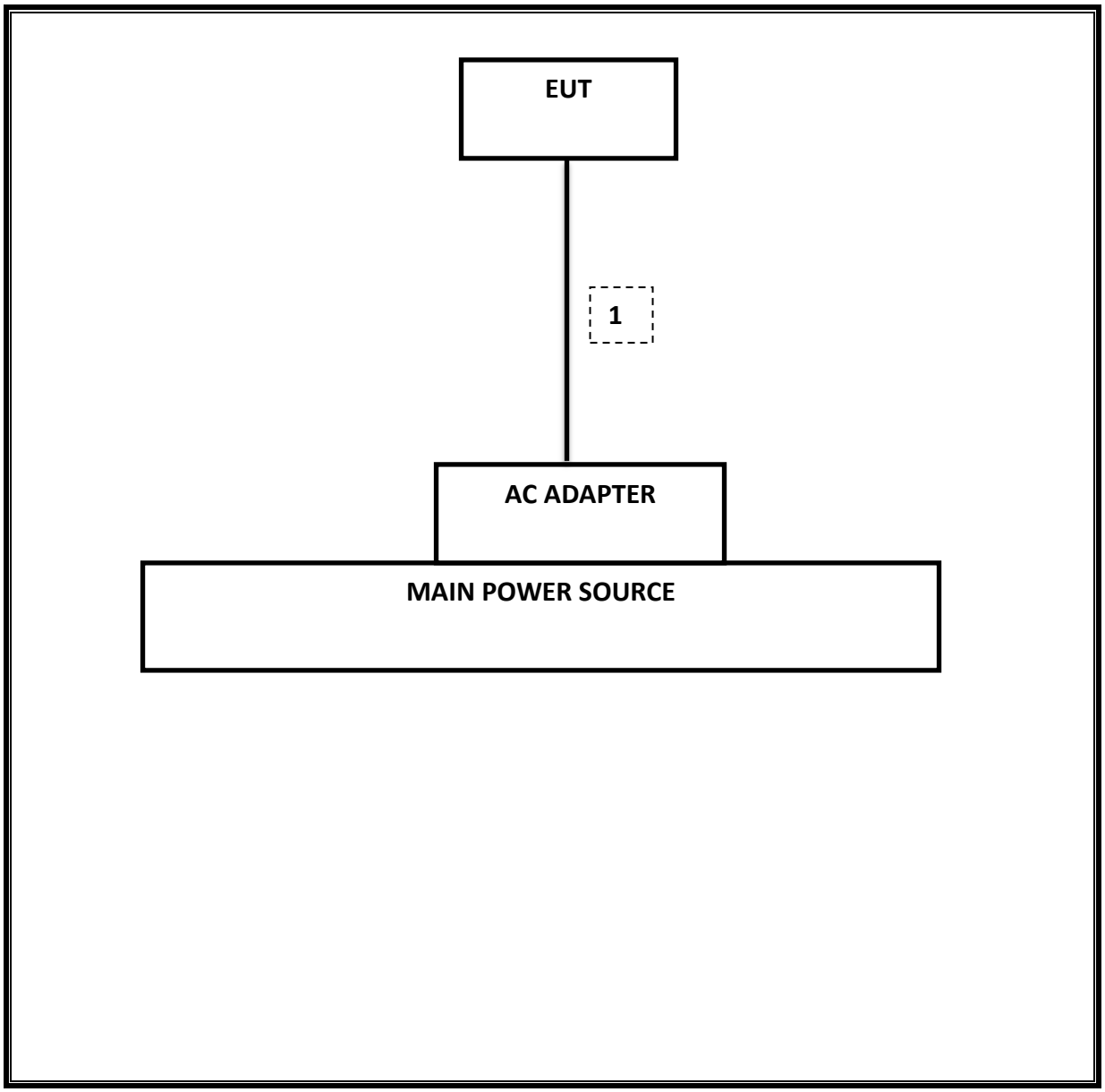
SETUP DIAGRAM FOR TESTS



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5. 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**
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01069	12/20/15
Spectrum Analyzer,9KHz-40GHz	HP	8564E	C00986	04/01/16
EMI Test Receiver, 9 kHz-7 GHz	R & S	ESCI 7	1000741	08/13/16
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	08/18/16
Peak Power Meter	Agilent / HP	E4416A	C00963	12/13/15
Peak / Average Power Sensor	Agilent / HP	E9327A	C00964	12/13/15
Antenna, Horn, 1-18 GHz	ETS	3117	C01022	02/21/16
Antenna, Horn,18- 26 GHz	ARA	MWH-1826/B	C00946	11/12/15
Antenna, Horn, 26-40 GHz	ARA	MWH-2640	C00891	06/28/16
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	T243	03/06/16
RF Preamplifier, 100KHz -> 1300MHz	HP	TBD	C00825	06/01/16
RF Preamplifier, 1GHz - 18GHz	Miteq	NSP4000-SP2	924343	03/23/16
RF Preamplifier, 1GHz - 26.5GHz	HP	8449B	T404	06/29/16
AC Power Supply, 2,500VA 45-500Hz	Elgar-Ametek	CW2501M	F00013	CNR
RF Preamplifier, 1GHz - 40GHz	Miteq	NSP4000-SP2	C00990	08/20/16
Attenuator / Switch driver	HP	11713A	F00204	CNR
Low Pass Filter 3GHz	Micro-Tronics	LPS17541	F00219	05/23/16
High Pass Filter 5GHz	Micro-Tronics	HPS17542	F00222	05/22/16
High Pass Filter 6GHz	Micro-Tronics	HPM17543	F00224	05/22/16
Radiated Software	UL	UL EMC	Ver 9.5, June 24, 2015	
Conducted Software	UL	UL EMC	Ver 9.5, May 17 2012	
CLT Software	UL	UL RF	Ver 1.0, Feb 2 2015	
Antenna Port Software	UL	UL RF	Ver 2.1.1.1, Jan 20 2015	

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6. SUMMARY TABLE

FCC Part Section	RSS Section	Test Description	Test Limit	Test Condition	Test Result	Worst Case
§15.407 (a)	RSS-247	Occupied Band width (26dB)	N/A	Conducted	Pass	82.164 MHz
§15.407	RSS-247 6.2.4	6dB Band width (5.8Ghz)	>500KHz		Pass	16.3 MHz
§15.407 (a)(1)	RSS-247 6.2	TX Cond. Power5.15-5.25	<24dBm (FCC) / <23 dBm or <10+10Log(99% BW) (IC)		Pass	16.28 dBm
§15.407 (a)(2)	RSS-247 6.2	TX Cond. Power 5.25-5.35 & 5.47-5.725	<24dBm or <11+10log (OBW) (FCC) / <24 dBm or <11+10Log(99% BW) (IC)		Pass	18.44dBm
§15.407 (a)(3)	RSS-247 6.2.4	TX Cond. Power 5.725-5.825	<30dBm		Pass	18.32 dBm
§15.407 (a)(1)	RSS-247 6.2	PSD (5.15-5.25)	<11dBm/MHz (FCC) <10 dBm/MHz EIRP (IC)		Pass	2.17 dBm
§15.407 (a)(2)	RSS-247 6.2	PSD (5.3,5.5GHz)	<11dBm/MHz		Pass	7.65 dBm
§15.407 (a)(3)	RSS-247 6.2.4	PSD (5.8GHz)	<30dBm per 500kHz		Pass	4.96 dBm
§15.207 (a)	RSS-GEN 8.8	AC Power Line conducted emissions	Section 10		Pass	51.03 dBuV (PK)
§15.407 (b) & 15.209	RSS-GEN 8.9/7	Harmonic Spurious Emission	<54dBuV/m	Radiated	Pass	43.4 dBuV/m
§15.407 (b) & 15.209	RSS-GEN 8.9/7	Radiated Band-Edge Emission	<54dBuV/m OR -17/-27 dBm	Radiated	Pass	-27.28 dBm
§15.407 (h)(2)	RSS-247 6.3	Dynamic Frequency Selection	N/A	Radiated / Condcuted	Pass	N/A

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7. MEASUREMENT METHOD

789033 D02 General UNII Test Procedures New Rules v01

The Duty Cycle is less than 98% and consistent therefore KDB 789033 Method SA-2 is used for .power and PSD

The Duty Cycle is less than 98% and consistent, KDB 789033 Method AD with Power RMS Averaging and duty cycle correction is used.

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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.

8.1.1. ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)
802.11a	4.210	4.233	0.995	99.5%	0.00	0.010
802.11ac HT80	0.323	0.339	0.953	95.3%	0.21	3.096
802.11n HT20	0.675	0.696	0.969	96.9%	0.13	1.482
802.11n HT40	0.348	0.364	0.956	95.6%	0.20	2.874

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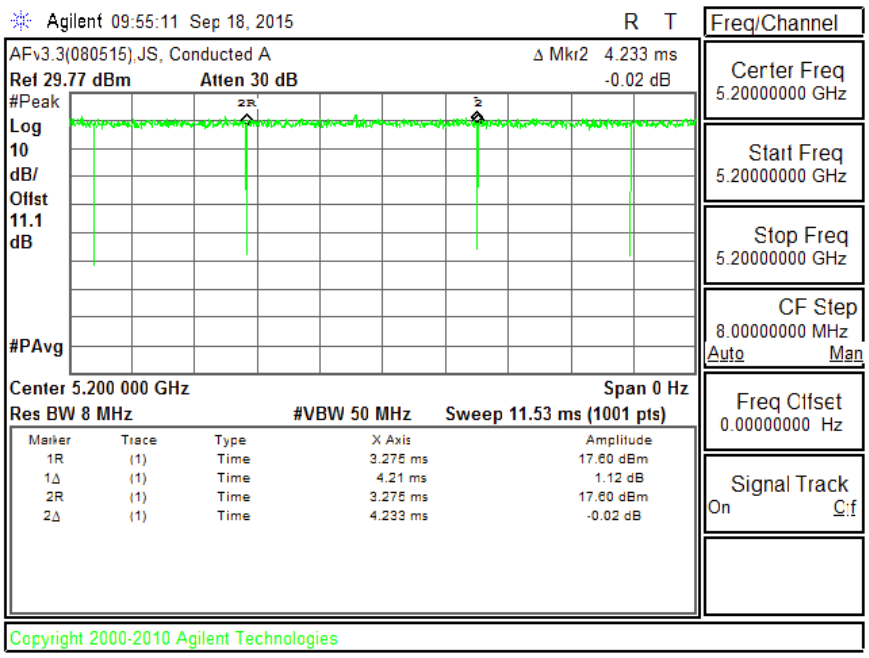
8.1.2. DUTY CYCLE PLOTS

DUTY CYCLE 802.11a CDD MODE



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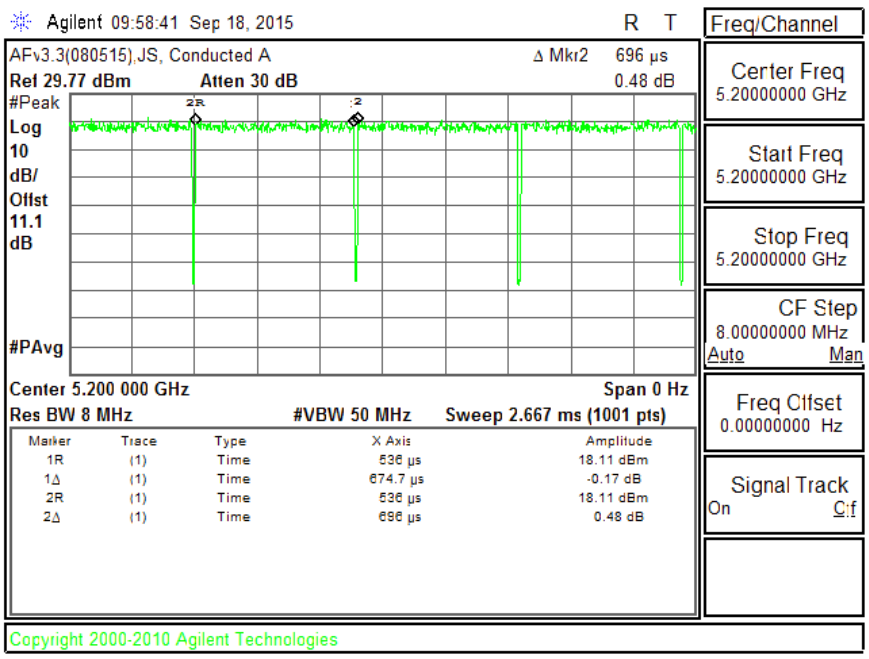
DUTY CYCLE 802.11n HT20 CDD MODE



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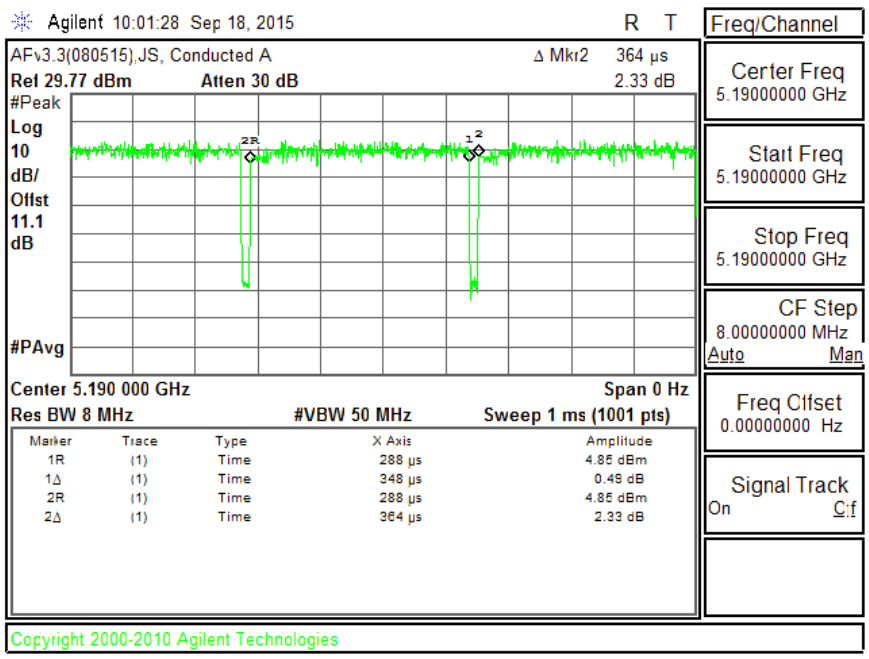
DUTY CYCLE 802.11n HT40 CDD MODE



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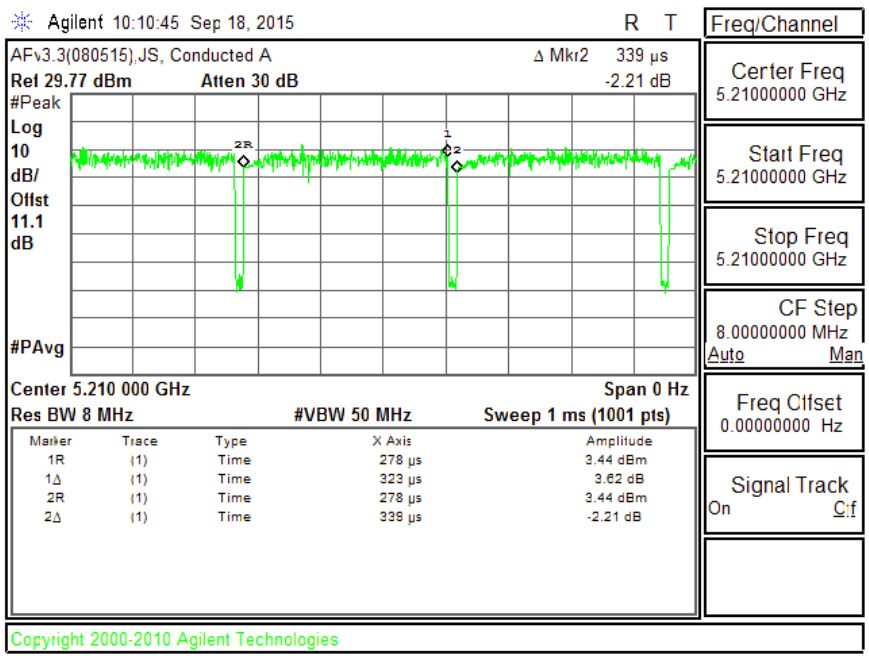
DUTY CYCLE 802.11ac HT80 MODE



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8.2. 6 dB BANDWIDTH

LIMITS

FCC §15.407

The minimum 6 dB bandwidth shall be at least 500 kHz.

TEST PROCEDURE

Reference to 789033 D02 General UNII Test Procedures New Rules v01: The transmitter output is connected to a spectrum analyzer with the RBW set to100KHz, the VBW >= 3 x RBW, peak detector and max hold.

RESULTS

8.2.1. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth CHAIN 0(MHz)	6 dB Bandwidth CHAIN 1(MHz)	Minimum Limit (MHz)
Low	5745	16.350	16.300	0.5
Mid	5785	16.325	16.300	0.5
High	5825	16.325	16.300	0.5
Worst		16.325	16.300	

8.2.2. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth CHAIN 0(MHz)	6 dB Bandwidth CHAIN 1(MHz)	Minimum Limit (MHz)
Low	5745	16.770	16.900	0.5
Mid	5785	17.604	17.604	0.5
High	5825	17.577	17.604	0.5
Worst		17.577	16.900	

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8.2.3. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth CHAIN 0(MHz)	6 dB Bandwidth CHAIN 1(MHz)	Minimum Limit (MHz)
Low	5755	36.355	36.355	0.5
High	5795	36.245	36.355	0.5
Worst		36.245	36.355	0.5

8.2.4. 802.11ac HT80 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth CHAIN 0(MHz)	6 dB Bandwidth CHAIN 1(MHz)	Minimum Limit (MHz)
Low	5775	76.32	76.24	0.5
Worst		76.32	76.24	0.5

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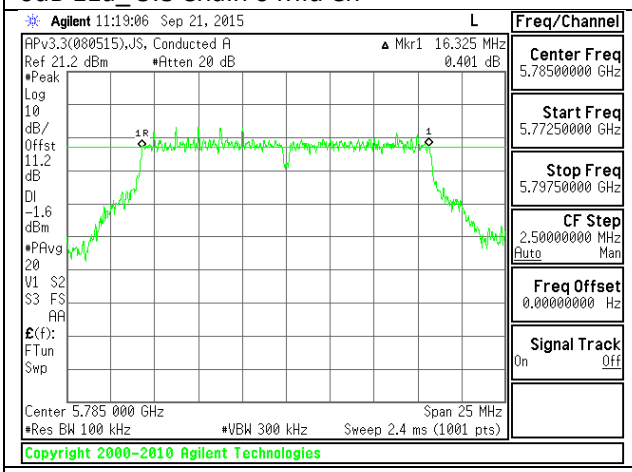
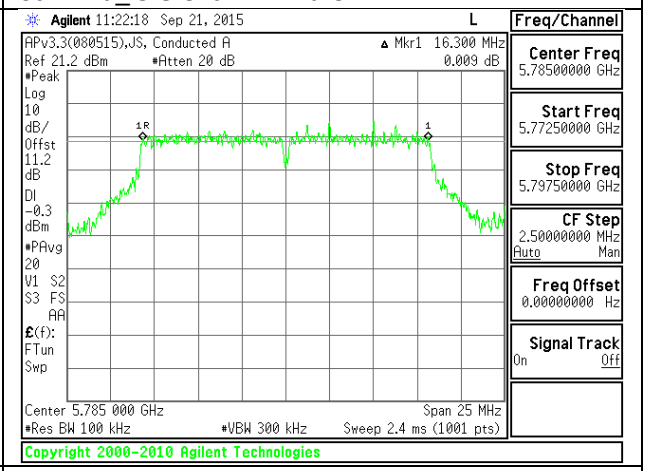
8.2.5. 6 dB BANDWIDTH MID CH PLOTS

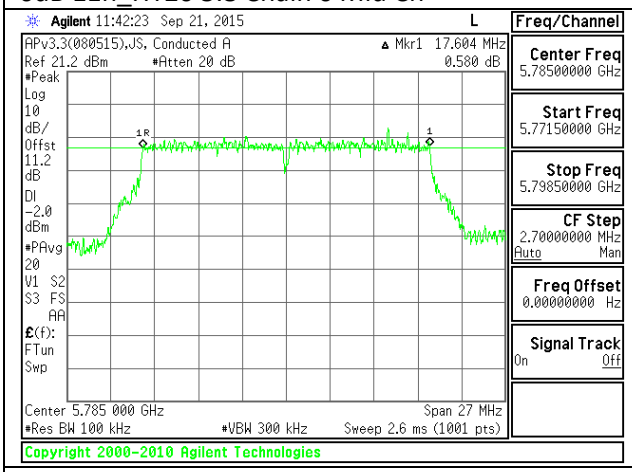
6dB 11a_ 5.8 Chain 0 Mid Ch



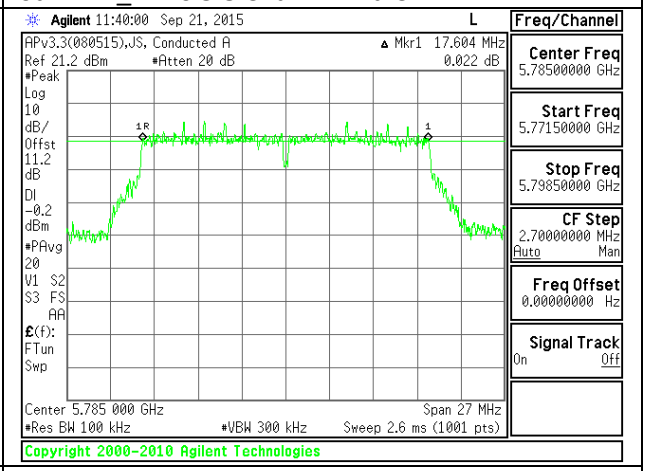
6dB 11a_ 5.8 Chain 1 Mid Ch



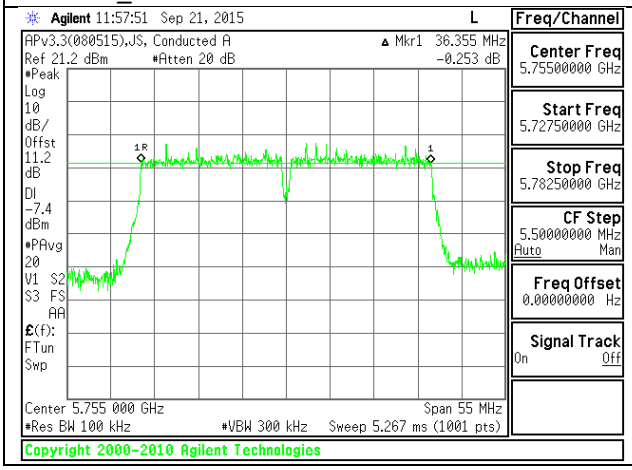
6dB 11n_HT20 5.8 Chain 0 Mid Ch



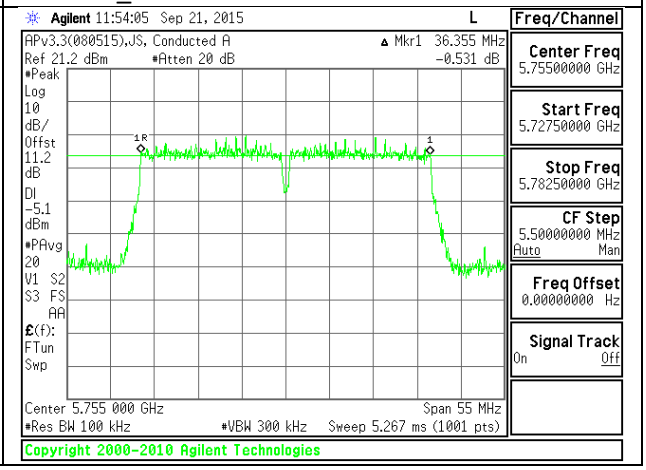
6dB 11n_HT20 5.8 Chain 1 Mid Ch



6dB 11n_HT40 5.8 Chain 0 Low Ch



6dB 11n_HT40 5.8 Chain 1 Low Ch



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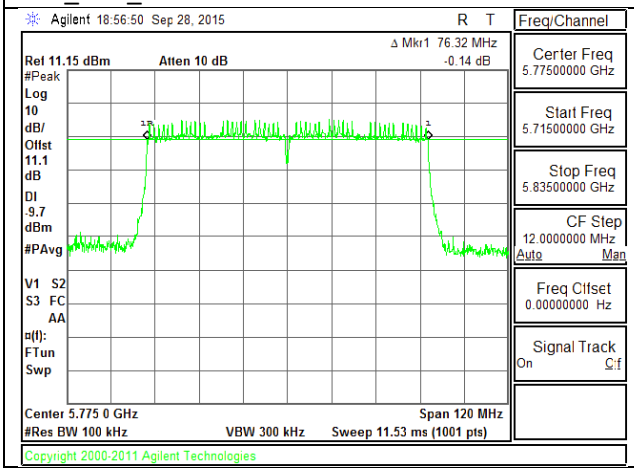
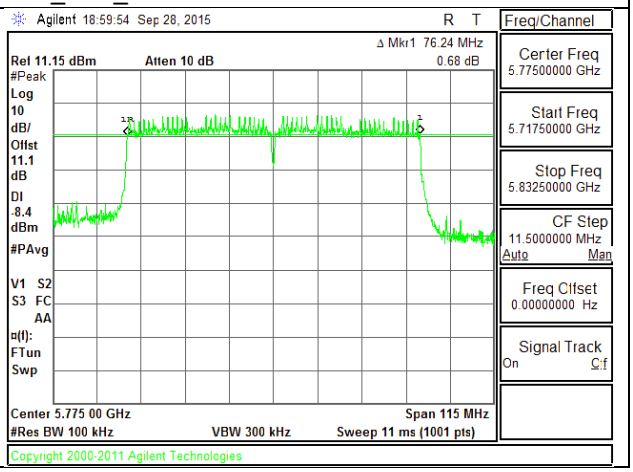
6dB_ 1ac_HT80 5.8 Chain 0 Low Ch



6dB_ 1ac_HT80 5.8 Chain 1 Low Ch



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8.3. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

8.3.1. 802.11a MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5180	21.615	21.417
Mid	5200	21.648	21.351
High	5240	18.734	18.508

8.3.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5180	21.516	21.582
Mid	5200	21.846	21.483
High	5240	18.995	19.024

8.3.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5190	40.565	39.840
High	5230	40.016	39.720

8.3.4. 802.11ac HT80 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5210	81.795	80.764

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8.3.5. 802.11a MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5260	18.792	18.424
Mid	5300	21.351	21.516
High	5320	21.780	21.351

8.3.6. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5260	19.380	18.792
Mid	5300	21.681	21.450
High	5320	21.780	21.681

8.3.7. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5270	40.077	39.780
High	5310	39.660	39.480

8.3.8. 802.11ac HT80 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5290	81.672	81.672

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8.3.9. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5500	21.516	21.248
Mid	5580	18.763	18.592
High	5700	21.417	21.088
144	5720	21.216	21.312

8.3.10. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5500	21.879	21.714
Mid	5580	22.882	18.908
High	5700	21.813	26.410
144	5720	21.516	21.219

8.3.11. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5510	39.600	39.720
Mid	5550	39.780	39.720
High	5670	39.660	39.720
142	5710	39.720	39.235

8.3.12. 802.11ac HT80 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5530	81.795	81.672
HIGH	5610	81.918	82.164
138	5690	81.549	81.130

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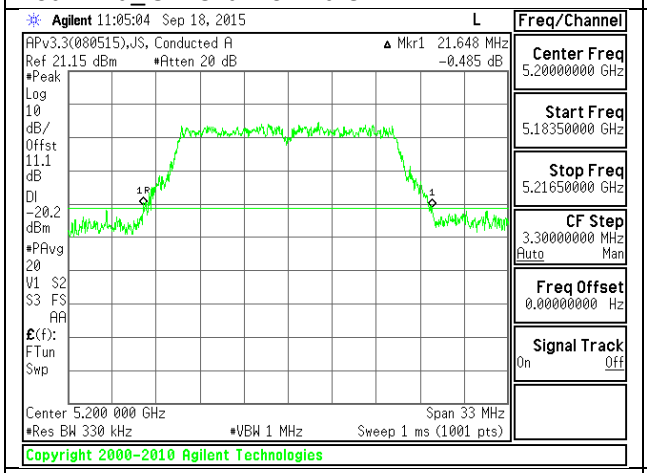
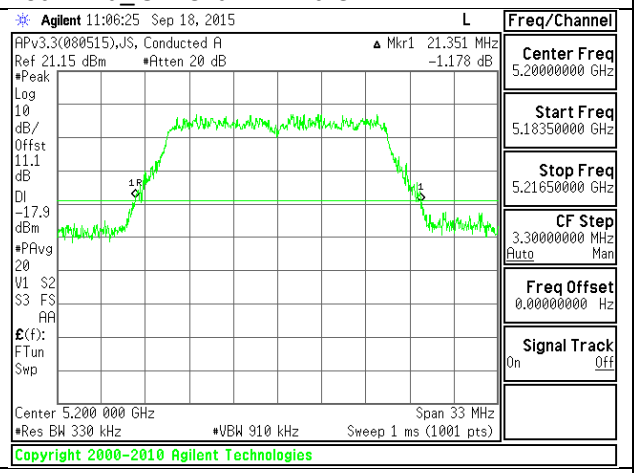
8.3.13. 26 dB BANDWIDTH PLOTS

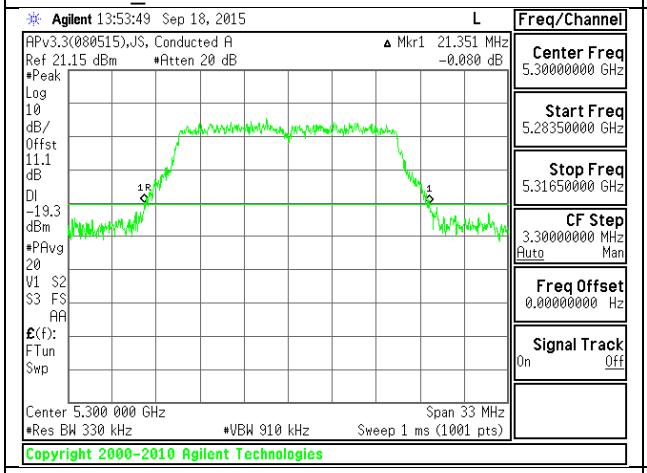
26dB 11a_ 5.2 Chain 0 Mid Ch



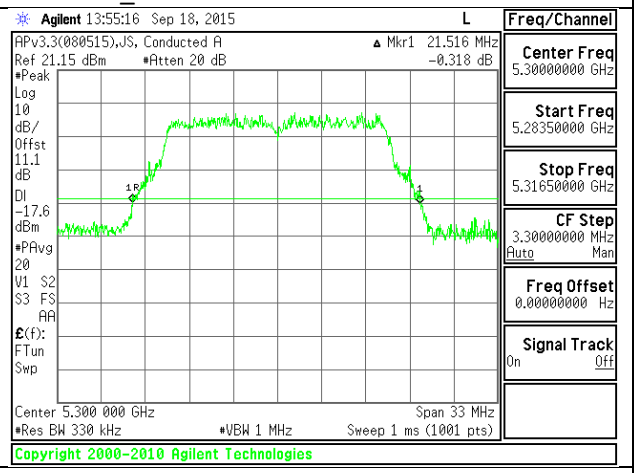
26dB 11a_ 5.2 Chain 1 Mid Ch



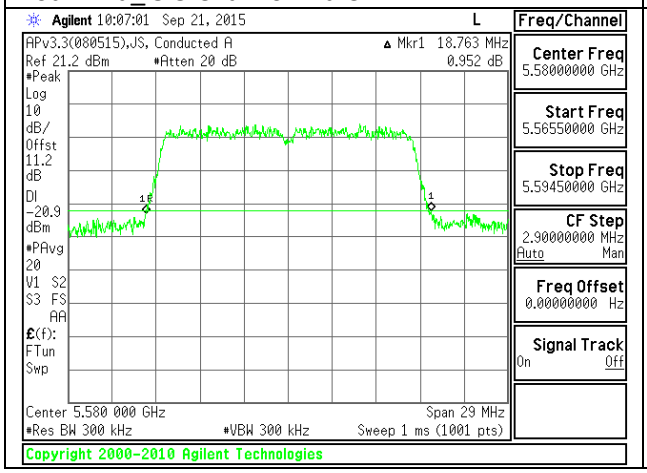
26dB 11a_ 5.3 Chain 0 Mid Ch



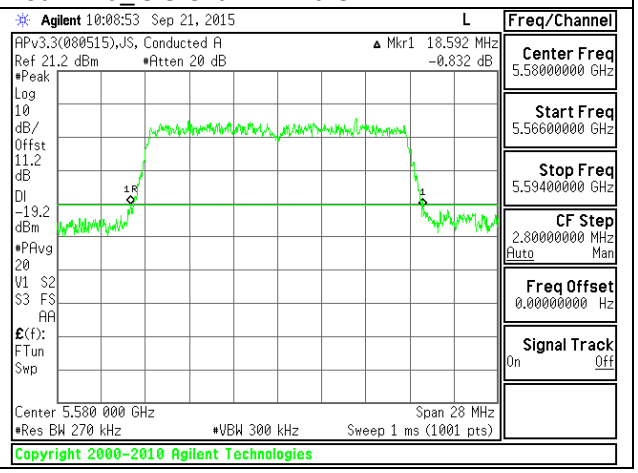
26dB 11a_ 5.3 Chain 1 Mid Ch



26dB 11a_ 5.5 Chain 0 Mid Ch



26dB 11a_ 5.5 Chain 1 Mid Ch



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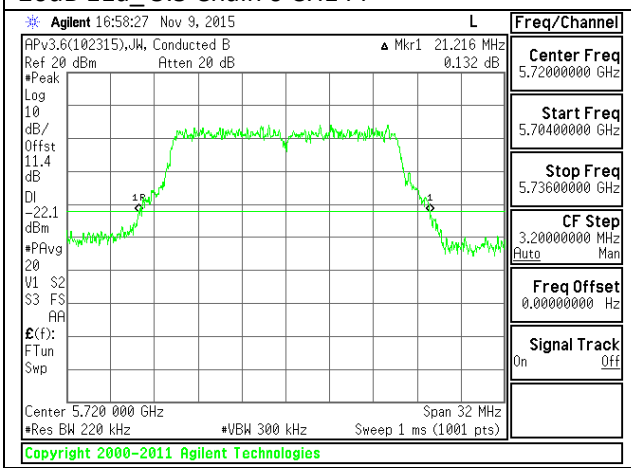
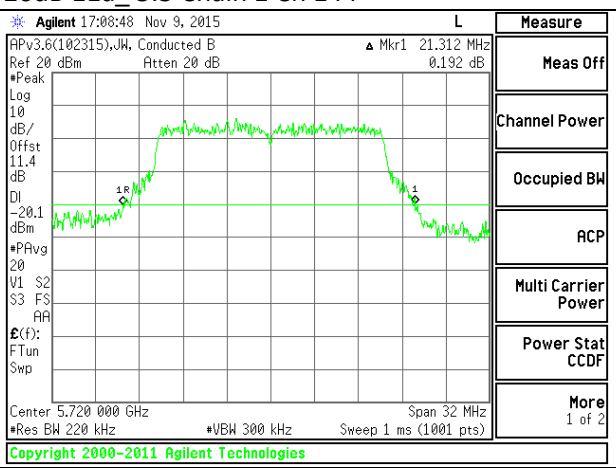
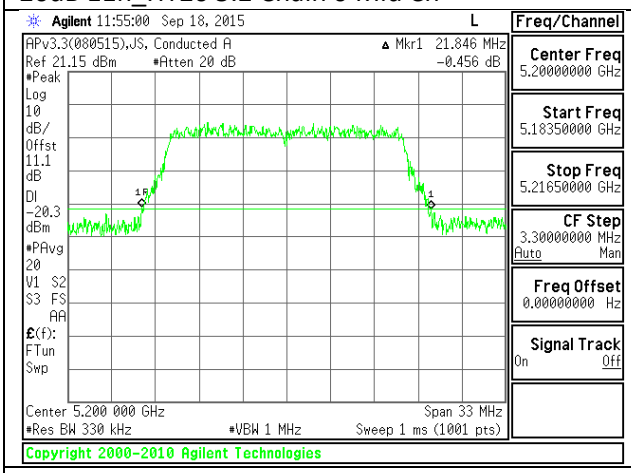
26dB 11a_ 5.5 Chain 0 CH144



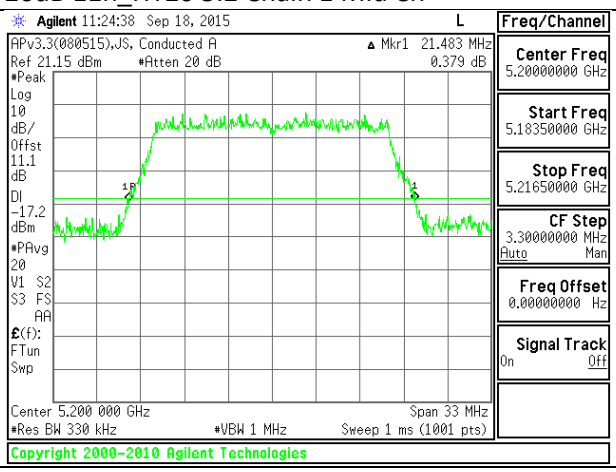
26dB 11a_ 5.5 Chain 1 Ch 144



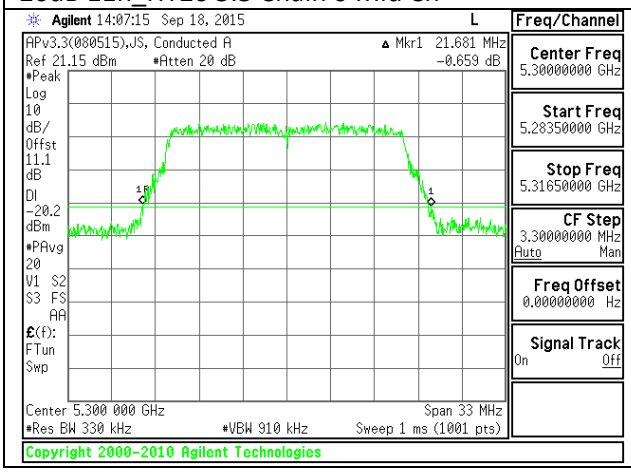
26dB 11n_HT20 5.2 Chain 0 Mid Ch



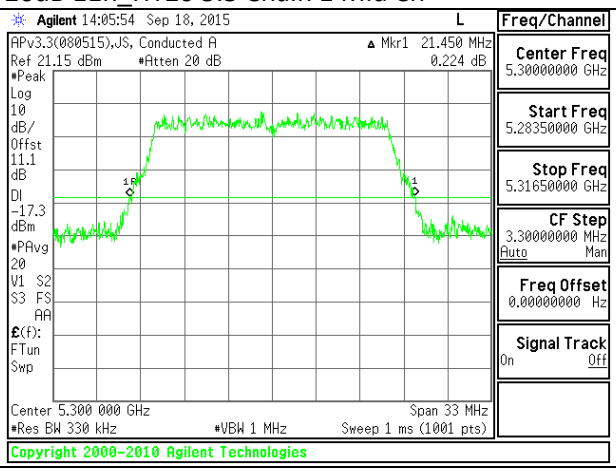
26dB 11n_HT20 5.2 Chain 1 Mid Ch



26dB 11n_HT20 5.3 Chain 0 Mid Ch



26dB 11n_HT20 5.3 Chain 1 Mid Ch



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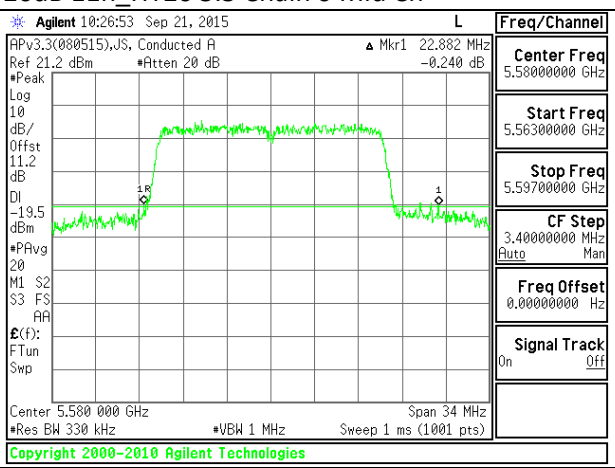
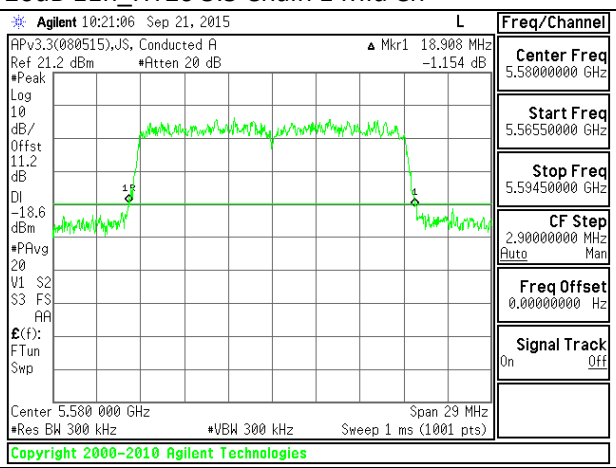
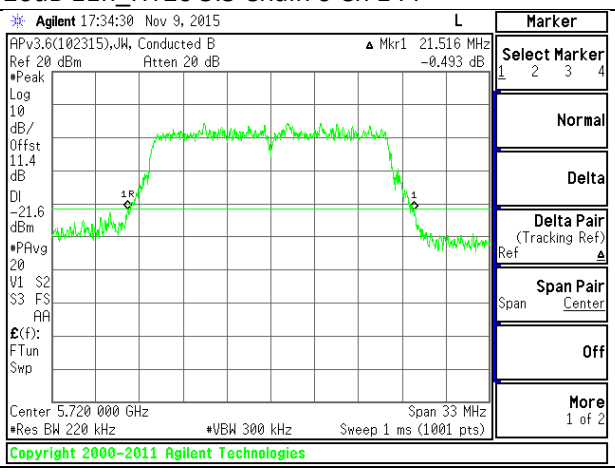
26dB 11n_HT20 5.5 Chain 0 Mid Ch



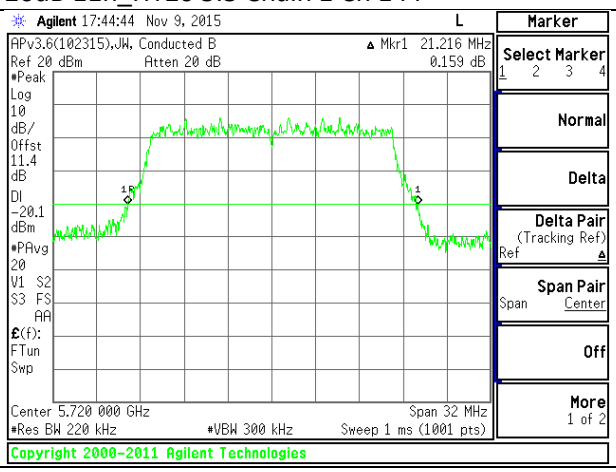
26dB 11n_HT20 5.5 Chain 1 Mid Ch



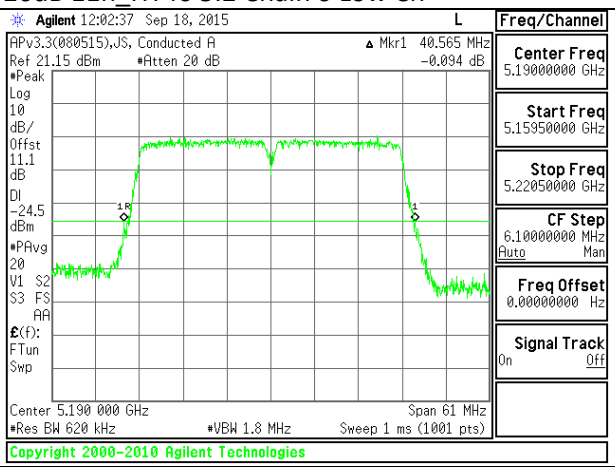
26dB 11n_HT20 5.5 Chain 0 Ch 144



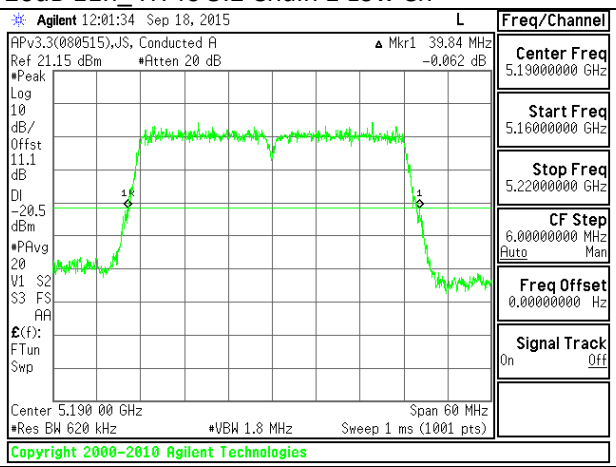
26dB 11n_HT20 5.5 Chain 1 Ch 144



26dB 11n_HT40 5.2 Chain 0 Low Ch



26dB 11n_ HT40 5.2 Chain 1 Low Ch



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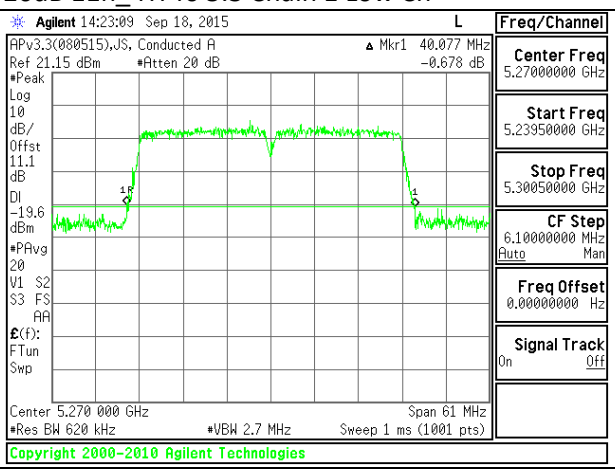
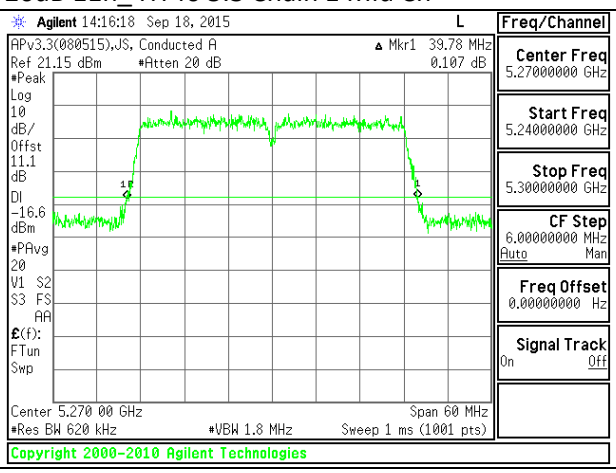
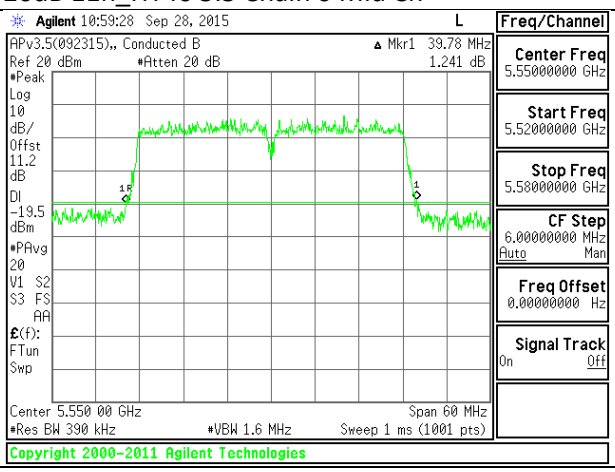
26dB 11n_ HT40 5.3 Chain 1 Low Ch



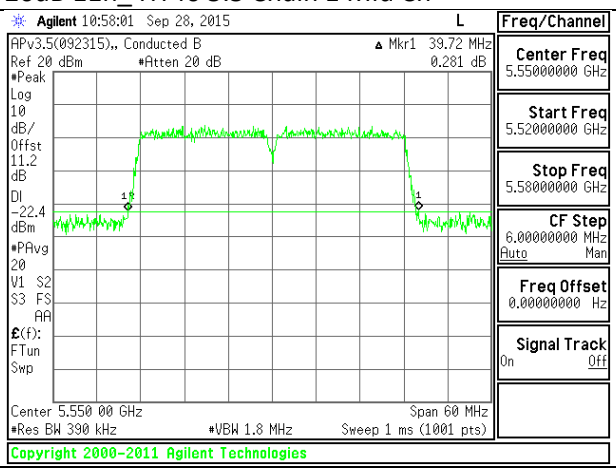
26dB 11n_ HT40 5.3 Chain 1 Mid Ch



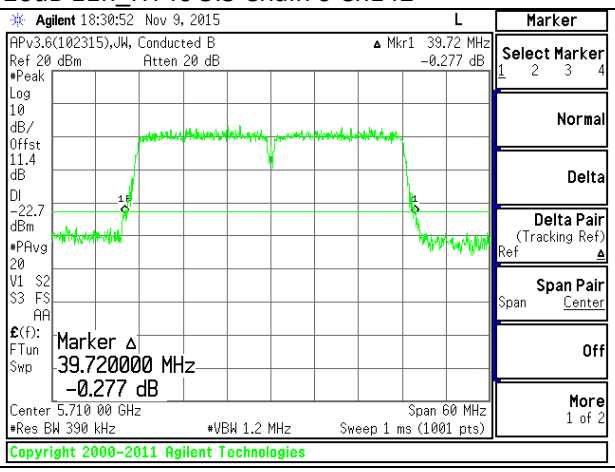
26dB 11n_HT40 5.5 Chain 0 Mid Ch



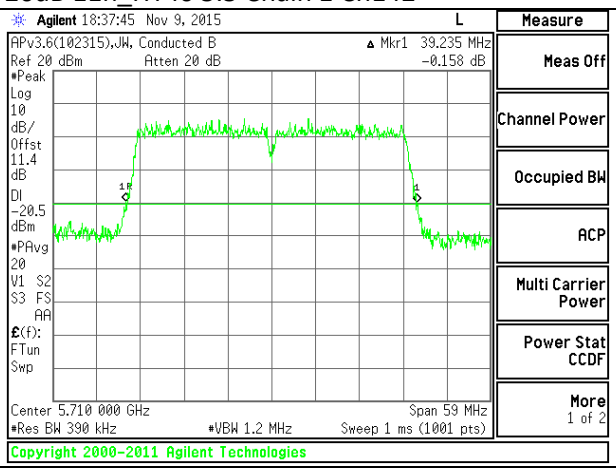
26dB 11n_ HT40 5.5 Chain 1 Mid Ch



26dB 11n_HT40 5.5 Chain 0 Ch142



26dB 11n_HT40 5.5 Chain 1 Ch142



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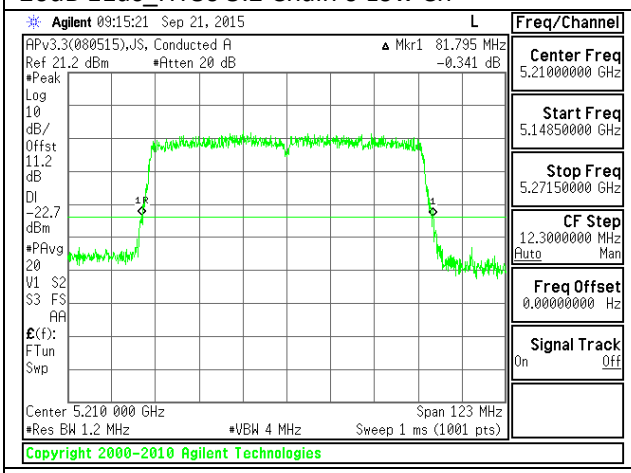
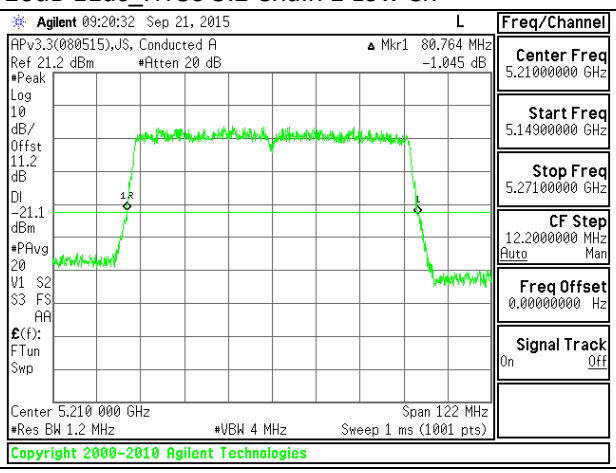
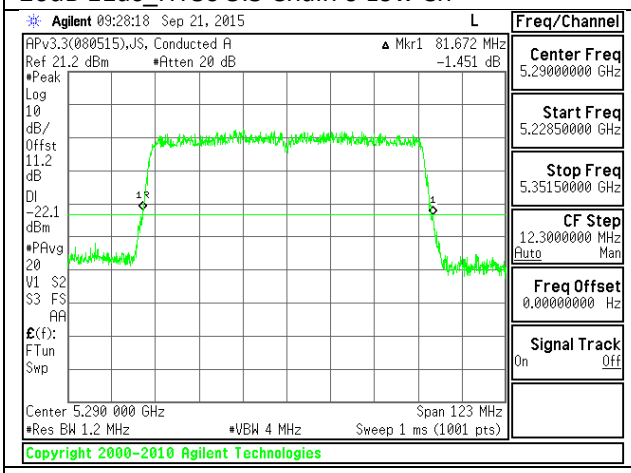
26dB 11ac_HT80 5.2 Chain 0 Low Ch



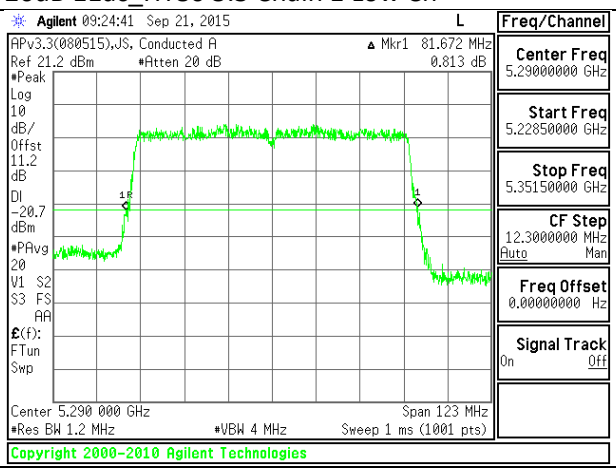
26dB 11ac_HT80 5.2 Chain 1 Low Ch



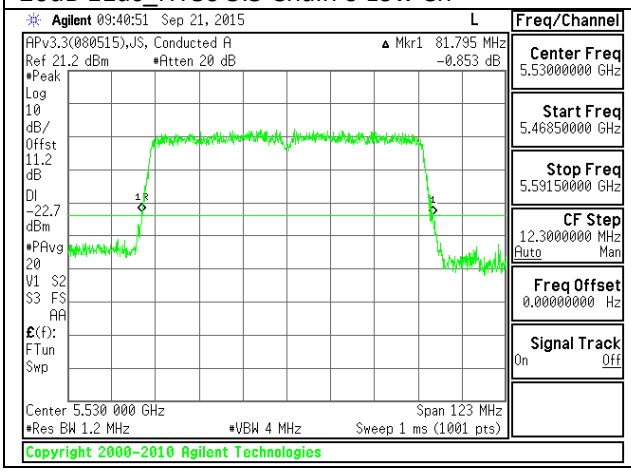
26dB 11ac_HT80 5.3 Chain 0 Low Ch



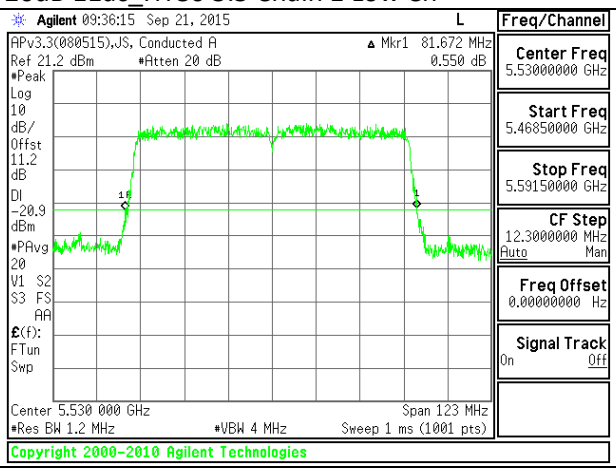
26dB 11ac_HT80 5.3 Chain 1 Low Ch



26dB 11ac_HT80 5.5 Chain 0 Low Ch



26dB 11ac_HT80 5.5 Chain 1 Low Ch



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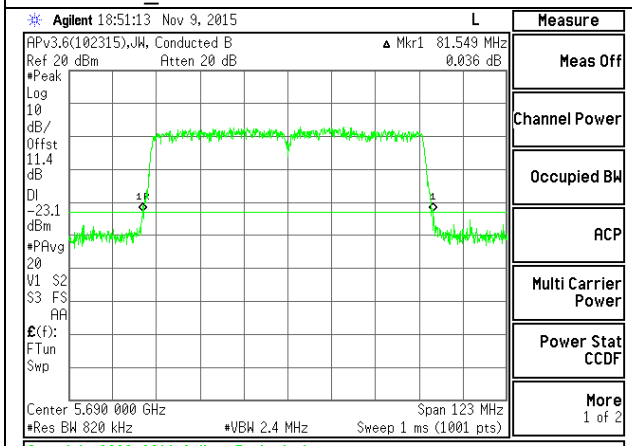
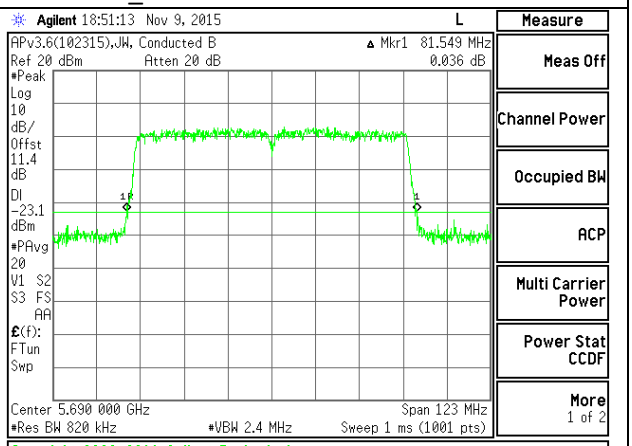
26dB 11ac_HT80 5.3 Chain 0 Ch 138



26dB 11ac_HT80 5.3 Chain 1 Ch 138



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8.4. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

8.4.1. 11802.11a MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5180	16.6696	16.5936
Mid	5200	16.6086	16.5805
High	5240	16.5507	16.4933

8.4.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5180	17.7937	17.6746
Mid	5200	17.7639	17.7461
High	5240	17.4679	17.4043

8.4.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5190	36.3169	36.2792
High	5230	36.5253	36.3854

8.4.4. 802.11ac HT80 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5210	75.7907	75.7299

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8.4.5. 802.11a MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5260	16.4939	16.4927
Mid	5300	16.6375	16.5691
High	5320	16.6381	16.5967

8.4.6. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5260	17.4160	17.4104
Mid	5300	17.7411	17.7239
High	5320	17.7988	17.7510

8.4.7. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5270	36.4499	36.2467
High	5310	36.2865	36.2478

8.4.8. 802.11ac HT80 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5290	75.8584	75.8043

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8.4.9. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5500	16.6202	16.6216
Mid	5580	16.5108	16.4830
High	5700	16.5987	16.6041
144	5720	16.5970	16.6287

8.4.10. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5500	17.7377	17.7290
Mid	5580	17.4389	17.4268
High	5700	17.7912	17.7460
144	5720	17.7520	17.8080

8.4.11. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5510	36.3269	36.2351
Mid	5550	36.3884	36.3742
High	5670	36.3823	36.2937
142	5710	36.3828	36.4149

8.4.12. 802.11ac HT80 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5530	75.7510	75.7856
138	5690	76.0096	75.8257

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8.4.13. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5745	16.5028	16.4900
Mid	5785	16.5894	16.6728
High	5825	16.6434	16.6118

8.4.14. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5745	17.4299	17.4659
Mid	5785	17.7312	17.7517
High	5825	17.6989	17.7511

8.4.15. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5755	36.3021	36.2611
High	5795	36.3294	36.5015

8.4.16. 802.11ac HT80 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5775	75.7661	75.7889

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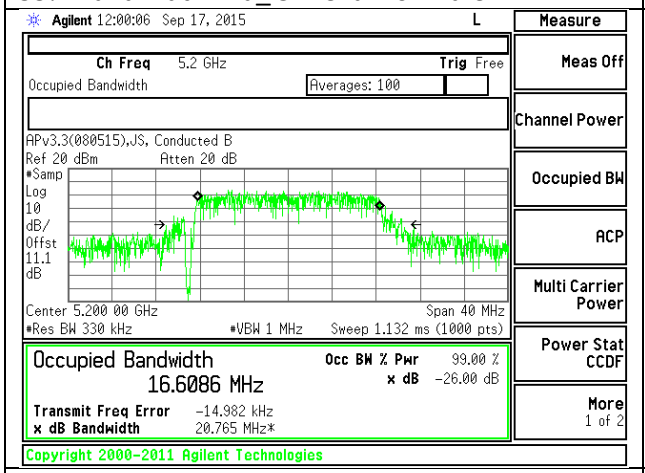
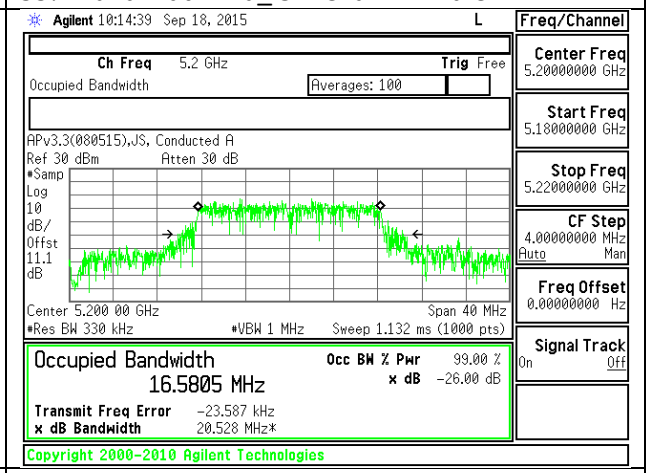
8.4.17. 99% BANDWIDTH PLOTS

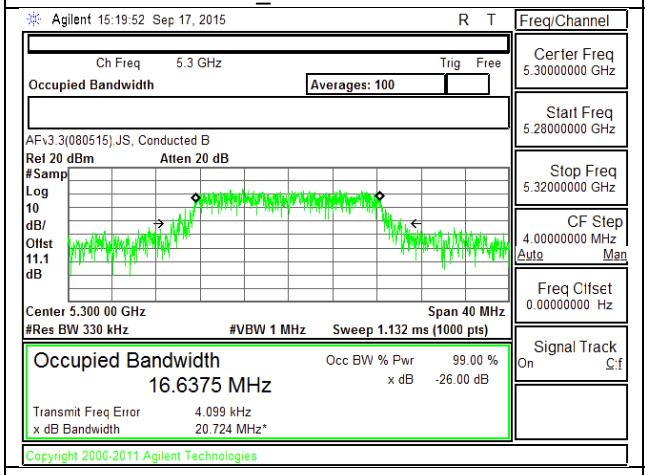
99% Bandwidth 11a_ 5.2 Chain 0 Mid Ch



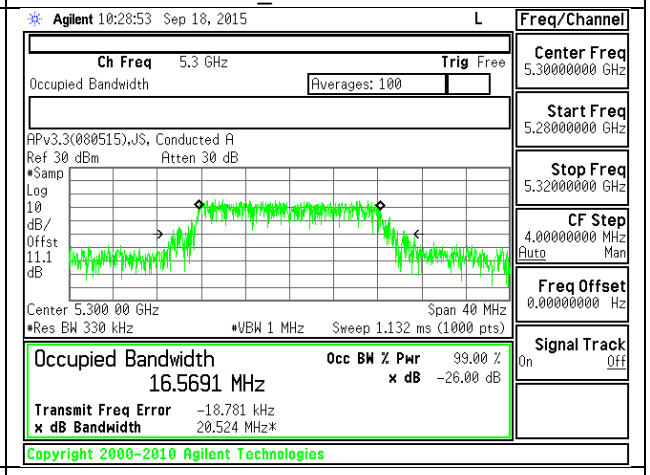
99% Bandwidth 11a_ 5.2 Chain 1 Mid Ch



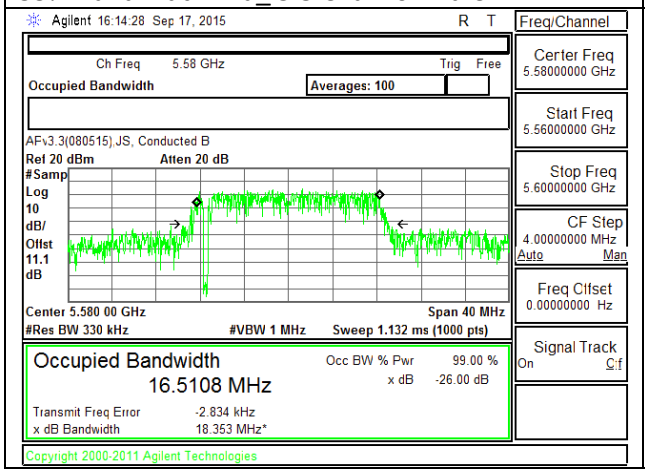
99% Bandwidth 11a_ 5.3 Chain 0 Mid Ch



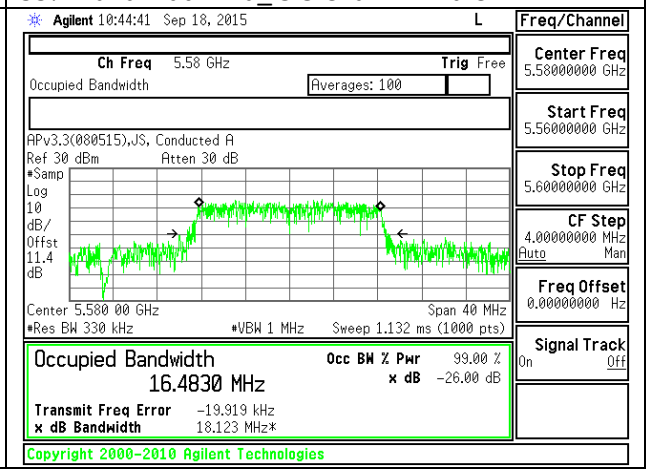
99% Bandwidth 11a_ 5.3 Chain 1 Mid Ch



99% Bandwidth 11a_ 5.5 Chain 0 Mid Ch



99% Bandwidth 11a_ 5.5 Chain 1 Mid Ch



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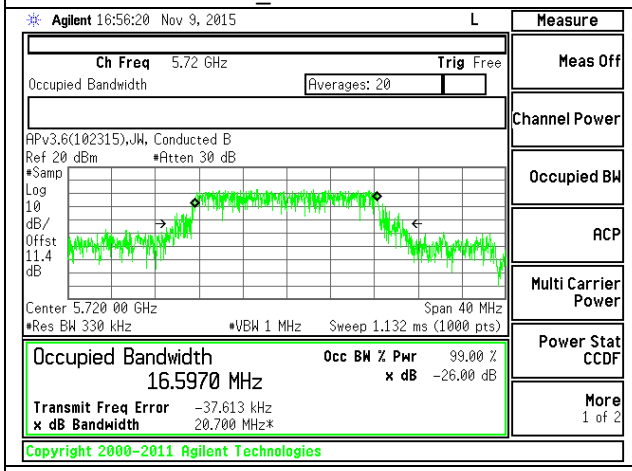
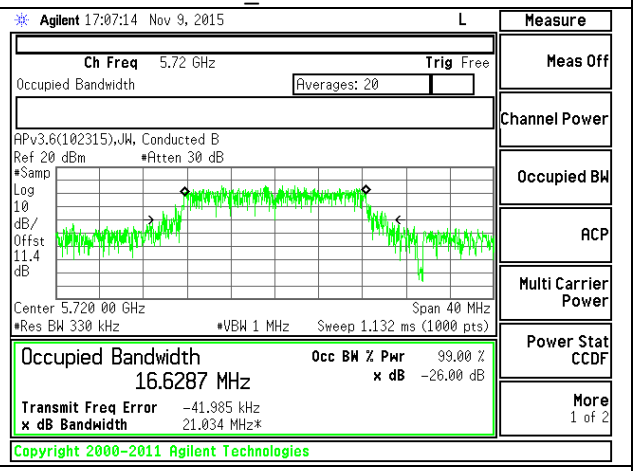
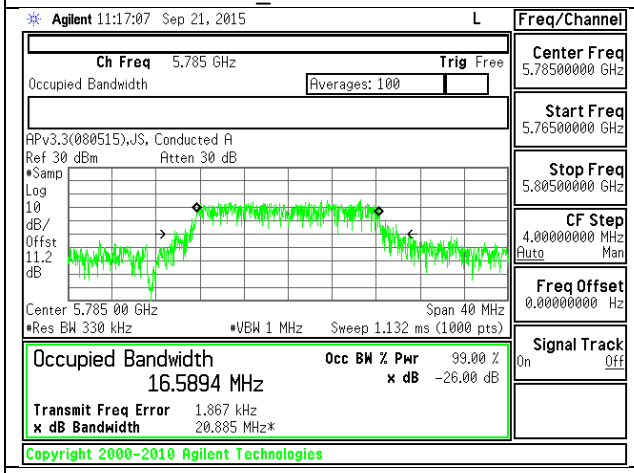
99% Bandwidth 11a_ 5.5 Chain 0 CH144



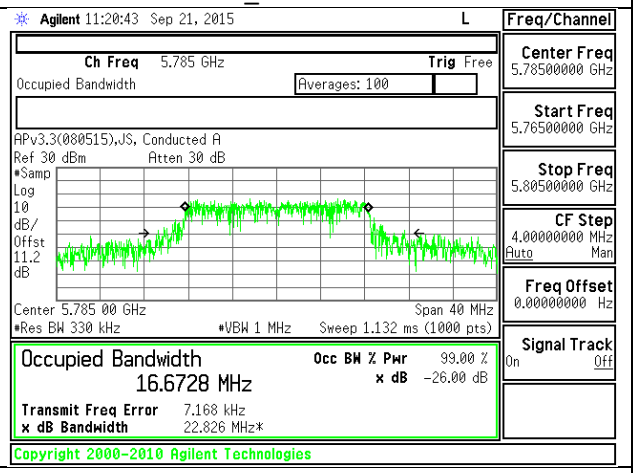
99% Bandwidth 11a_ 5.5 Chain 1 Ch 144



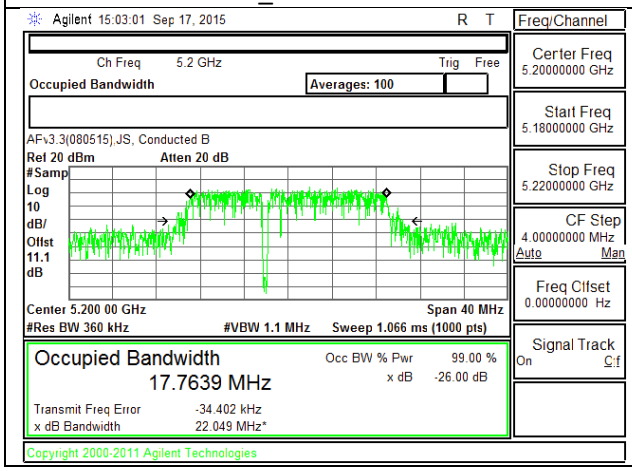
99% Bandwidth 11a_ 5.8 Chain 0 Mid Ch



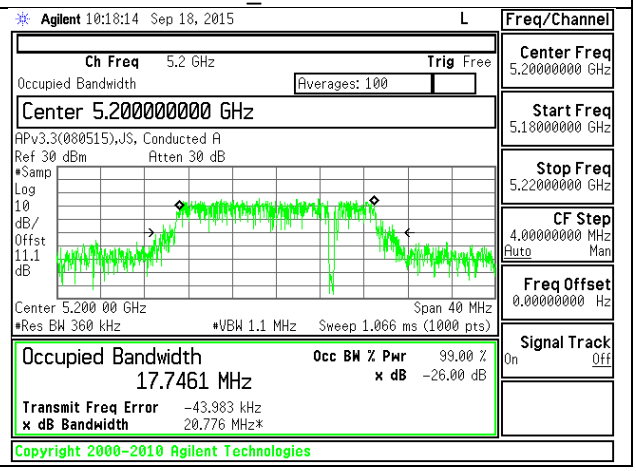
99% Bandwidth 11a_5.8 Chain 1 Mid Ch



99% Bandwidth 11n_HT20 5.2 Chain 0 Mid Ch



99% Bandwidth 11n_HT20 5.2 Chain 1 Mid Ch



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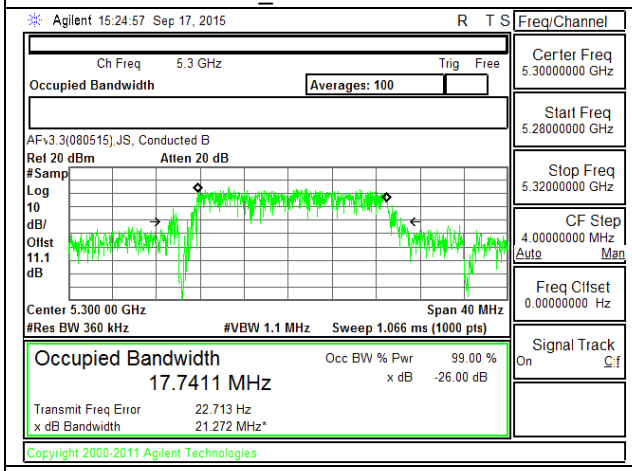
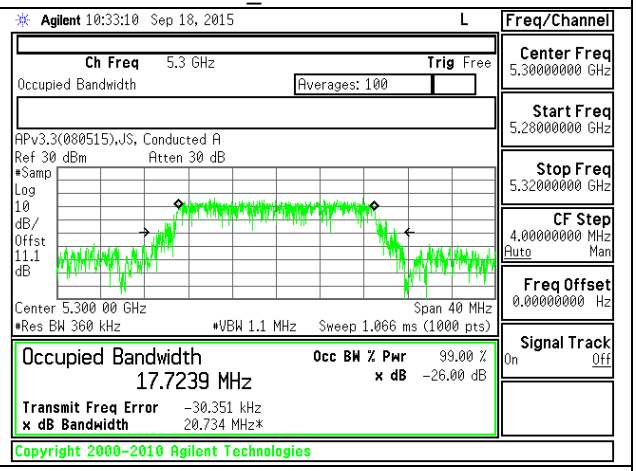
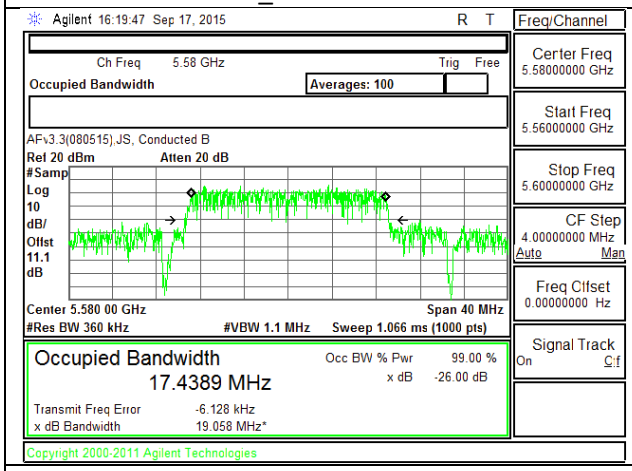
99% Bandwidth 11n_HT20 5.3 Chain 0 Mid Ch



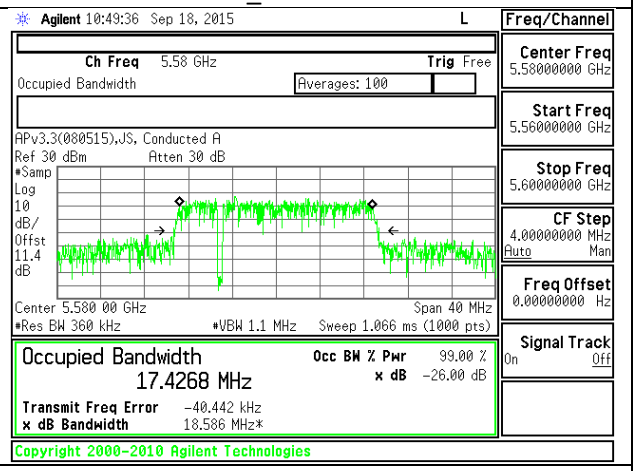
99% Bandwidth 11n_HT20 5.3 Chain 1 Mid Ch



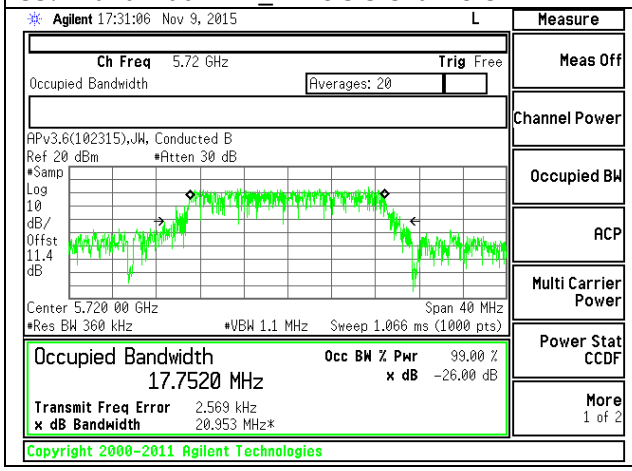
99% Bandwidth 11n_HT20 5.5 Chain 0 Mid Ch



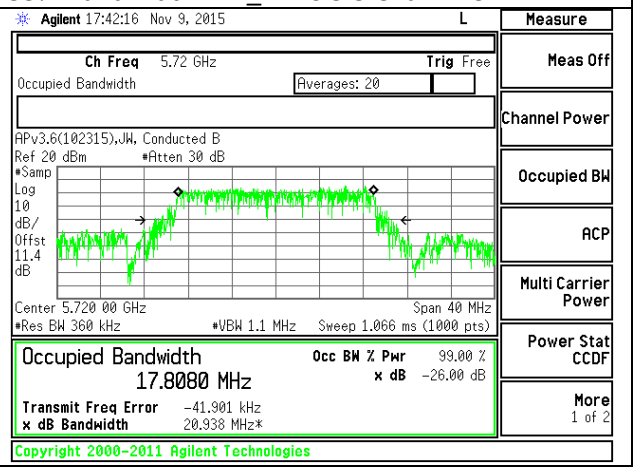
99% Bandwidth 11n_HT20 5.5 Chain 1 Mid Ch



99% Bandwidth 11n_HT20 5.5 Chain 0 Ch 144



99% Bandwidth 11n_HT20 5.5 Chain 1 Ch 144



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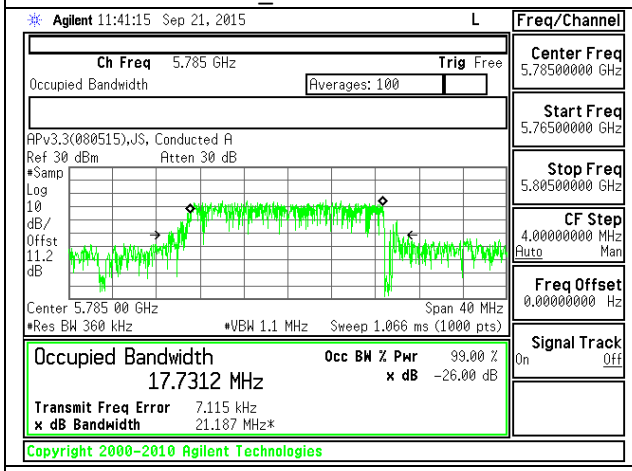
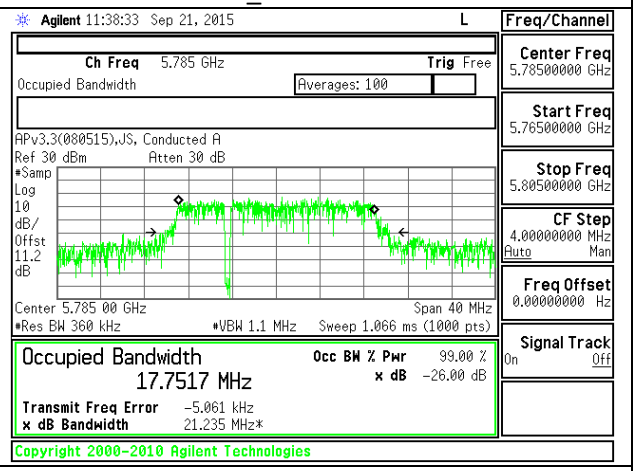
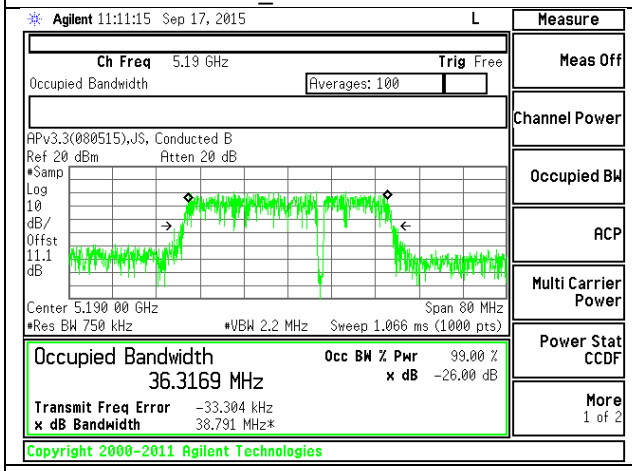
99% Bandwidth 11n_HT20 5.8 Chain 0 Mid Ch



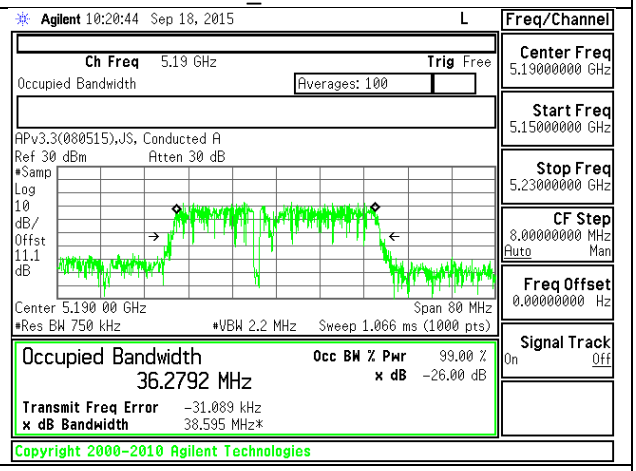
99% Bandwidth 11n_HT20 5.8 Chain 1 Mid Ch



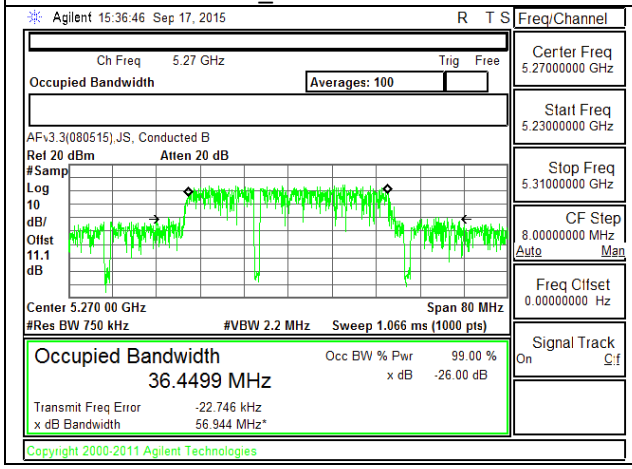
99% Bandwidth 11n_HT40 5.2 Chain 0 Low Ch



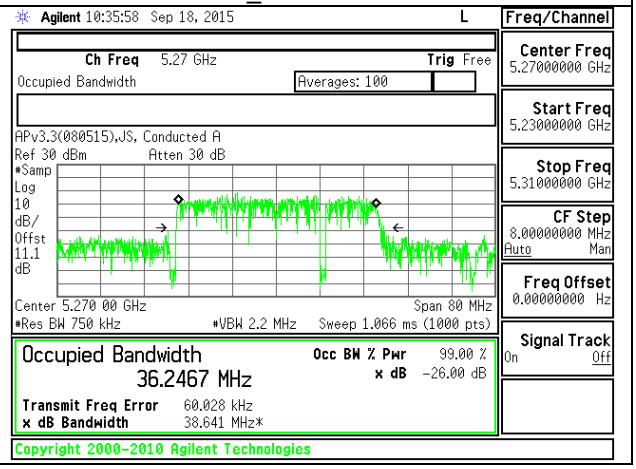
99% Bandwidth 11n_ HT40 5.2 Chain 1 Low Ch



99% Bandwidth 11n_ HT40 5.3 Chain 0 Low Ch



99% Bandwidth 11n_ HT40 5.3 Chain 1 Mid Ch



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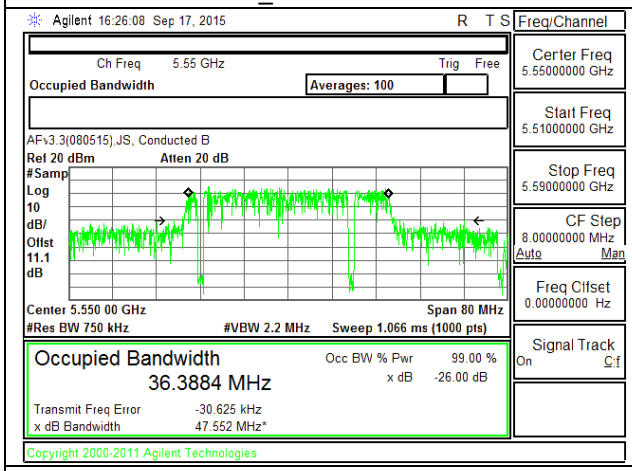
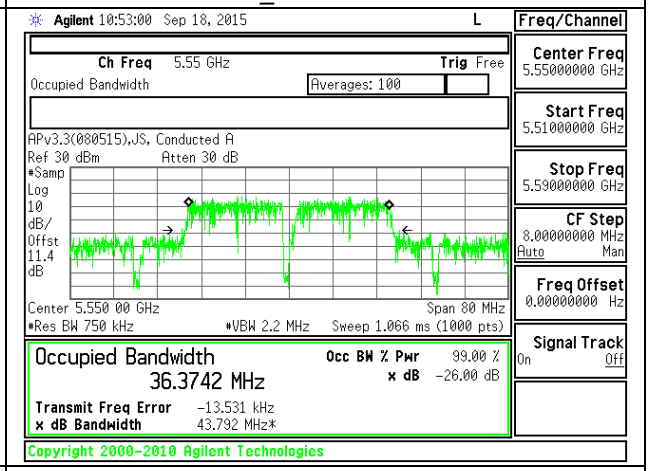
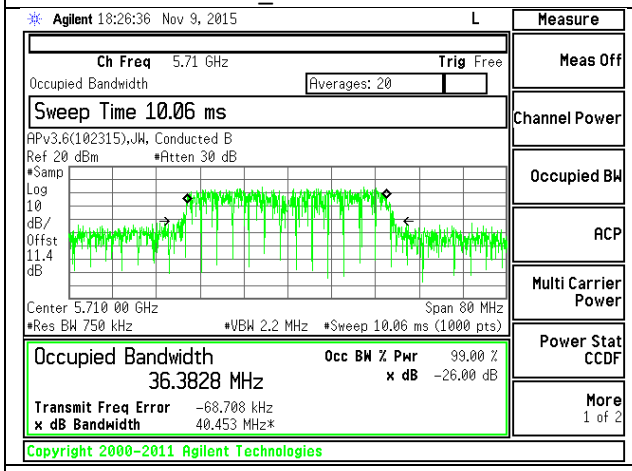
99% Bandwidth 11n_HT40 5.5 Chain 0 Mid Ch



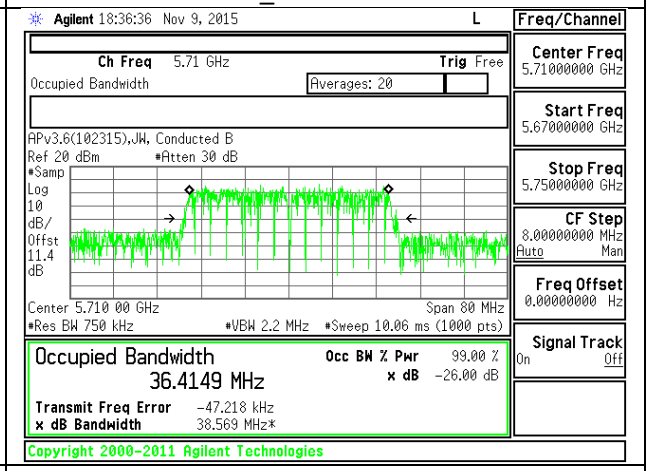
99% Bandwidth 11n_ HT40 5.5 Chain 1 Mid Ch



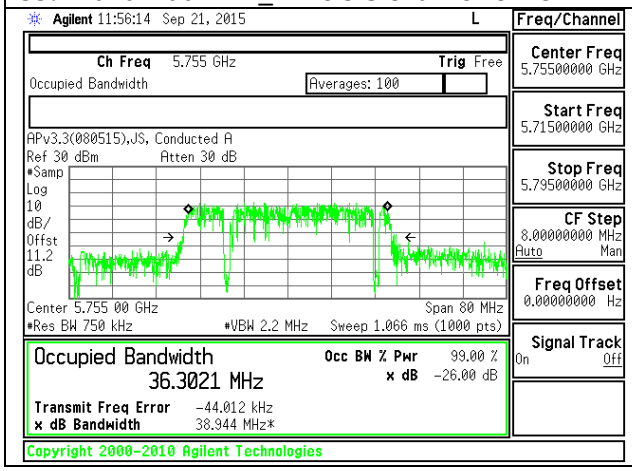
99% Bandwidth 11n_HT40 5.5 Chain 0 Ch142



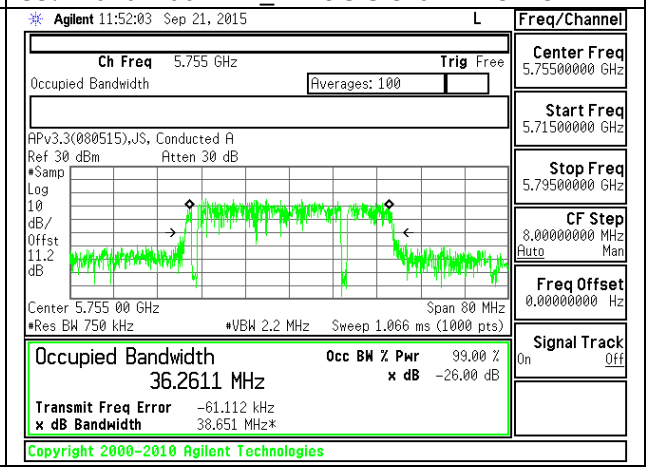
99% Bandwidth 11n_HT40 5.5 Chain 1 Ch142



99% Bandwidth 11n_HT40 5.8 Chain 0 Low Ch



99% Bandwidth 11n_HT40 5.8 Chain 1 Low Ch



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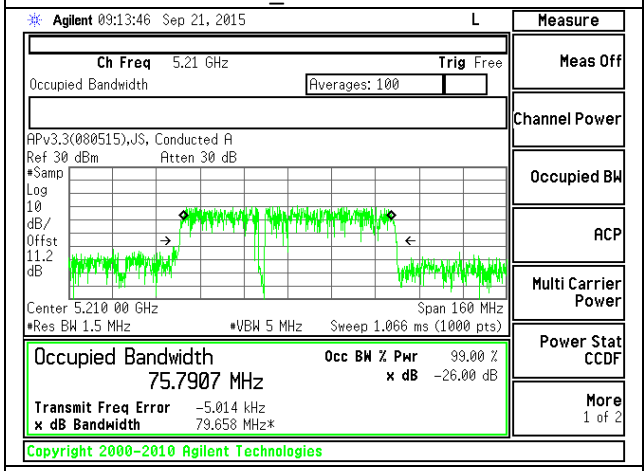
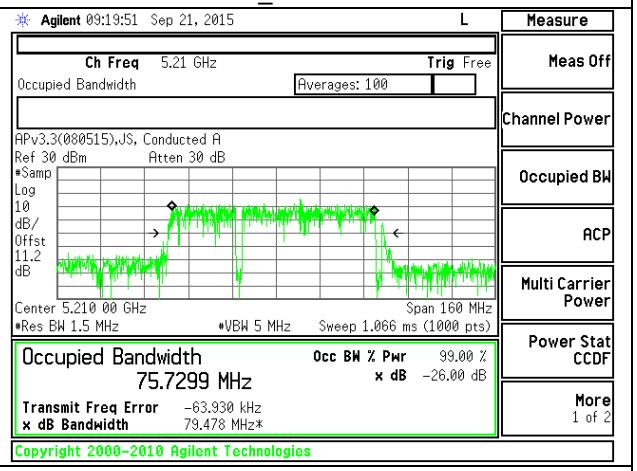
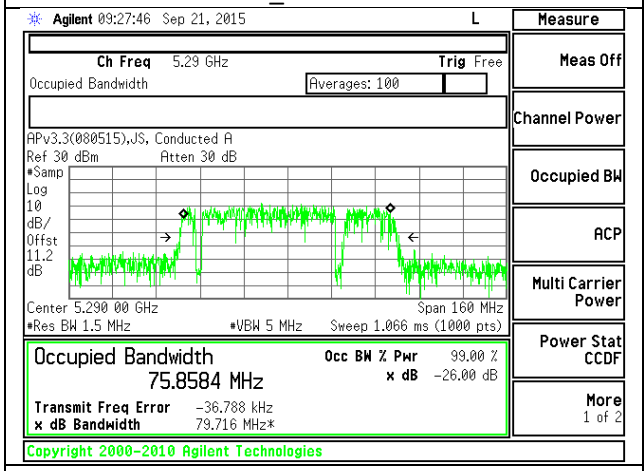
99% Bandwidth 11ac_HT80 5.2 Chain 0 Low Ch



99% Bandwidth 11ac_HT80 5.2 Chain 1 Low Ch



99% Bandwidth 11ac_HT80 5.3 Chain 0 Low Ch



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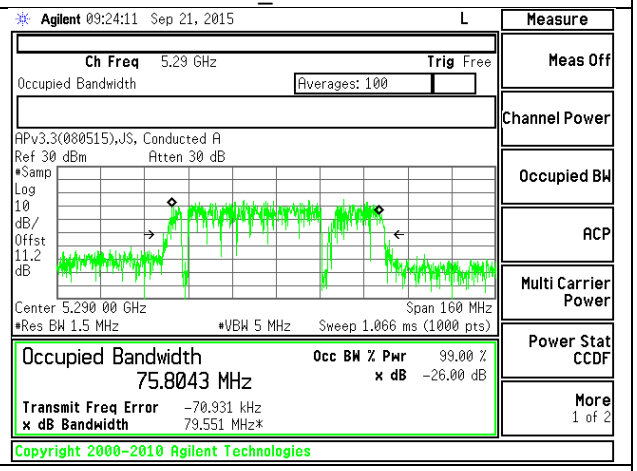

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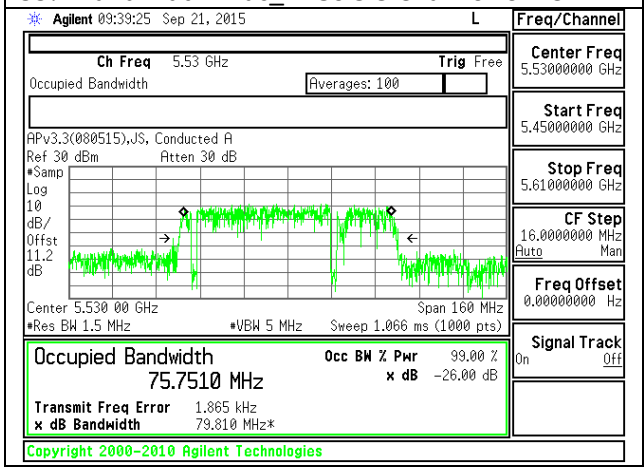
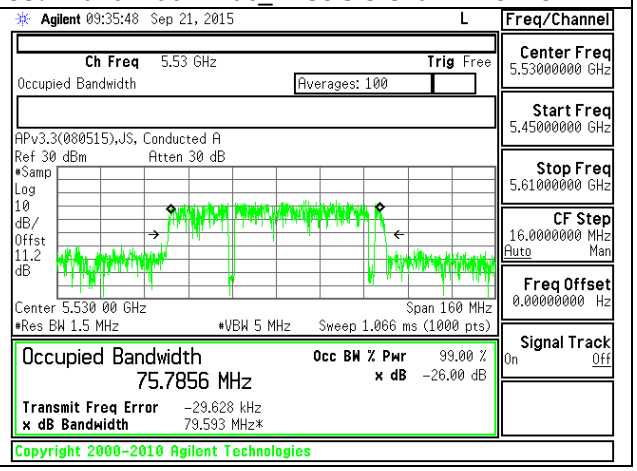


99% Bandwidth 11ac_HT80 5.5 Chain 1 Low Ch



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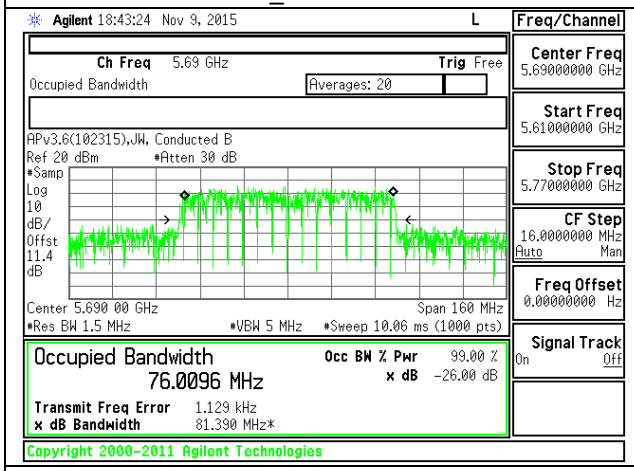
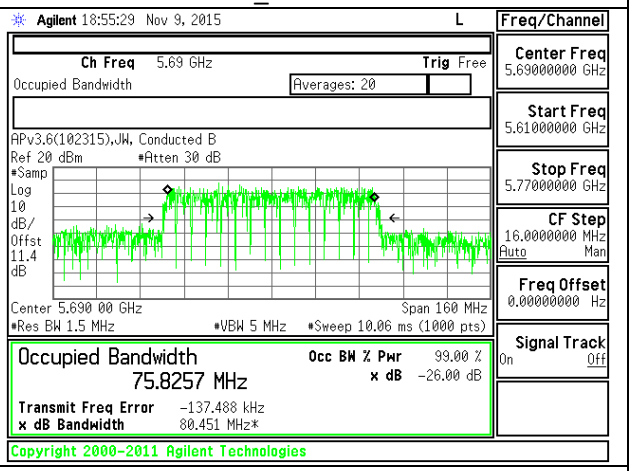
99% Bandwidth 11ac_HT80 5.5 Chain 0 Ch 138



99% Bandwidth 11ac_HT80 5.5 Chain 1 Ch 138



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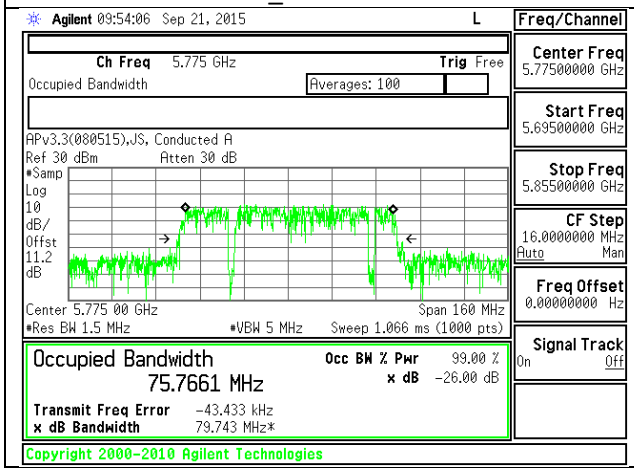
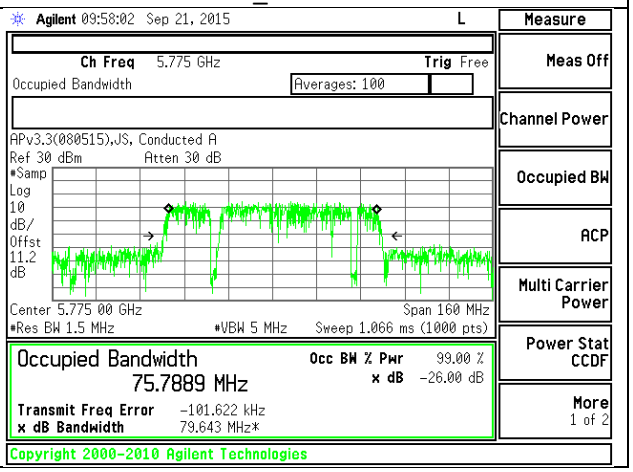


99% Bandwidth 11ac_HT80 5.8 Low Ch



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8.5. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (1) (2) (3)

For the band 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.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands 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 megahertz. 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.

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. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

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DIRECTIONAL ANTENNA GAIN

SISO

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

MIMO

5.15 – 5.35 GHz:

The TX chains are uncorrelated and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
3.60	5.80	4.84

The TX chains are correlated and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
3.60	5.80	7.78

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5.47 – 5.725 GHz:

The TX chains are uncorrelated and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
3.40	5.30	4.45

The TX chains are correlated and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
3.40	5.30	7.41

5.725 – 5.85 GHz:

The TX chains are uncorrelated and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
2.10	4.90	3.72

The TX chains are correlated and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
2.10	4.90	6.62

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RESULTS

8.5.1. 802.11a MODE IN THE 5.2 GHz BAND

Antenna Gain and Limits

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5180	4.84	7.78	24.00	9.22
Mid	5200	4.84	7.78	24.00	9.22
High	5240	4.84	7.78	24.00	9.22

Duty Cycle CF (dB)	0.00	**Included in Calculations of Corr'd PSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	8.80	10.90	12.99	24.00	-11.01
Mid	5200	9.30	11.30	13.42	24.00	-10.58
High	5240	9.40	11.20	13.40	24.00	-10.60

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5180	-2.385	-0.498	1.67	9.22	-7.55
Mid	5200	-2.155	-0.298	1.88	9.22	-7.34
High	5240	-1.998	-0.225	1.99	9.22	-7.23

Note: the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.

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8.5.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Antenna Gain and Limits

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5180	4.84	7.78	24.00	9.22
Mid	5200	4.84	7.78	24.00	9.22
High	5240	4.84	7.78	24.00	9.22

Duty Cycle CF (dB)	0.13	**Included in Calculations of Corr'd PSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	9.70	11.70	13.82	24.00	-10.18
Mid	5200	9.80	11.80	13.92	24.00	-10.08
High	5240	9.40	11.40	13.52	24.00	-10.48

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5180	-2.111	-0.114	2.14	9.22	-7.08
Mid	5200	-2.064	-0.090	2.17	9.22	-7.05
High	5240	-2.373	-0.305	1.92	9.22	-7.30

Note: the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.

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8.5.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Antenna Gain and Limits

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5190	4.84	7.78	24.00	9.22
High	5230	4.84	7.78	24.00	9.22

Duty Cycle CF (dB)	0.20	**Included in Calculations of Corr'd PSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5190	11.00	12.50	14.82	24.00	-9.18
High	5230	12.40	14.00	16.28	24.00	-7.72

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5190	-4.346	-2.219	0.06	9.22	-9.16
High	5230	-2.139	-0.489	1.97	9.22	-7.25

Note: the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.

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8.5.4. 802.11ac HT80 MODE IN THE 5.2 GHz BAND

Antenna Gain and Limits

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Mid	5210	4.84	7.78	24.00	9.22

Duty Cycle CF (dB)	0.21	**Included in Calculations of Corr'd PSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Mid	5210	11.00	12.60	14.88	24.00	-9.12

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Mid	5210	-6.890	-5.178	-2.73	9.22	-11.95

Note: the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.

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8.5.5. 802.11a MODE IN THE 5.3 GHz BAND

Bandwidth, Antenna Gain and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5260	18.42	4.84	7.78	23.65	9.22
Mid	5300	21.35	4.84	7.78	24.00	9.22
High	5320	21.35	4.84	7.78	24.00	9.22

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	14.50	16.20	18.44	23.65	-5.21
Mid	5300	14.50	16.20	18.44	24.00	-5.56
High	5320	14.10	15.70	17.98	24.00	-6.02

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5260	3.095	5.393	7.40	9.22	-1.82
Mid	5300	3.291	5.337	7.44	9.22	-1.78
High	5320	3.459	5.118	7.38	9.22	-1.84

Note: the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.

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8.5.6. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Bandwidth, Antenna Gain and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5260	18.79	4.84	7.78	23.74	9.22
Mid	5300	21.45	4.84	7.78	24.00	9.22
High	5320	21.68	4.84	7.78	24.00	9.22

Duty Cycle CF (dB)	0.13	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	14.50	16.20	18.44	23.74	-5.30
Mid	5300	14.50	16.10	18.38	24.00	-5.62
High	5320	14.30	16.00	18.24	24.00	-5.76

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5260	3.042	5.186	7.39	9.22	-1.83
Mid	5300	3.310	5.454	7.65	9.22	-1.57
High	5320	3.498	4.908	7.40	9.22	-1.82

Note: the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.

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8.5.7. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Bandwidth, Antenna Gain and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5270	39.78	4.84	7.78	24.00	9.22
High	5310	39.48	4.84	7.78	24.00	9.22

Duty Cycle CF (dB)	0.20	Included in Calculations of Corr'd Power & PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5270	14.50	16.20	18.44	24.00	-5.56
High	5310	11.00	12.60	14.88	24.00	-9.12

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5270	0.217	2.342	4.62	9.22	-4.60
High	5310	-3.499	-1.546	0.80	9.22	-8.42

Note: the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.

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8.5.8. 802.11ac HT80 MODE IN THE 5.3 GHz BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Mid	5290	81.67	4.84	7.78	24.00	9.22

Duty Cycle CF (dB)	0.21	Included in Calculations of Corr'd Power & PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Mid	5290	11.00	12.80	15.00	24.00	-9.00

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Mid	5290	-6.223	-4.735	-2.20	9.22	-11.42

Note: the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.

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8.5.9. 802.11a MODE IN THE 5.5 GHz BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5500	21.25	4.45	7.41	24.00	9.59
Mid	5580	18.59	4.45	7.41	23.69	9.59
High	5700	21.09	4.45	7.41	24.00	9.59

Duty Cycle CF (dB)	0.00	**Included in Calculations of Corr'd PSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	14.20	16.10	18.26	24.00	-5.74
Mid	5580	14.50	16.30	18.50	23.69	-5.19
High	5700	14.30	15.70	18.07	24.00	-5.93

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5500	2.764	4.335	6.63	9.59	-2.96
Mid	5580	3.006	4.676	6.93	9.59	-2.66
High	5700	3.354	4.837	7.17	9.59	-2.42

Note: the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.

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8.5.10. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5500	21.71	4.45	7.41	24.00	9.59
Mid	5580	18.91	4.45	7.41	23.77	9.59
High	5700	21.81	4.45	7.41	24.00	9.59

Duty Cycle CF (dB)	0.13	**Included in Calculations of Corr'd Power & PSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	14.50	16.30	18.50	24.00	-5.50
Mid	5580	14.50	16.30	18.50	23.77	-5.26
High	5700	14.50	16.00	18.32	24.00	-5.68

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5500	2.404	4.258	6.57	9.59	-3.02
Mid	5580	2.975	4.710	7.07	9.59	-2.52
High	5700	3.018	4.573	7.01	9.59	-2.58

Note: the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.

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8.5.11. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5510	39.60	4.45	7.41	24.00	9.59
Mid	5550	39.72	4.45	7.41	24.00	9.59
High	5670	39.66	4.45	7.41	24.00	9.59

Duty Cycle CF (dB)	0.20	**Included in Calculations of Corr'd PSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	11.30	13.50	15.55	24.00	-8.45
Mid	5550	14.50	16.30	18.50	24.00	-5.50
High	5670	14.30	15.80	18.12	24.00	-5.88

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5510	-3.483	-1.546	0.80	9.59	-8.79
Mid	5550	-0.203	1.583	3.99	9.59	-5.60
High	5670	0.258	1.777	4.29	9.59	-5.30

Note: the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.

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8.5.12. 802.11ac HT80 MODE IN THE 5.5 GHz BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5530	81.67	4.45	7.41	24.00	9.59
Mid	5610	81.92	4.45	7.41	24.00	9.59

Duty Cycle CF (dB)	0.21	**Included in Calculations of Corr'd PSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5530	11.30	13.30	15.42	24.00	-8.58
Mid	5610	14.50	16.40	18.56	24.00	-5.44

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5530	-6.217	-4.602	-2.11	9.59	-11.70
Mid	5610	-3.141	-1.309	1.09	9.59	-8.50

Note: the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.

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8.5.13. 802.11a MODE IN THE 5.8 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)
Low	5745	3.72	6.62
Mid	5785	3.72	6.62
High	5825	3.72	6.62

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	Power Limit (dBm)	FCC PSD Limit (dBm)	IC PSD Limit (dBm)	PSD Limit (dBm)
Low	5745	30.00	30.00	30.00	29.38	29.38	29.38
Mid	5785	30.00	30.00	30.00	29.38	29.38	29.38
High	5825	30.00	30.00	30.00	29.38	29.38	29.38

Duty Cycle CF (dB)	0.00	**Included in Calculations of Corr'd PSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	14.20	15.80	18.08	30.00	-11.92
Mid	5785	14.50	15.80	18.21	29.38	-11.17
High	5825	14.50	16.00	18.32	29.38	-11.06

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5745	0.331	1.777	4.12	29.38	-25.26
Mid	5785	1.111	2.639	4.95	29.38	-24.43
High	5825	1.059	2.681	4.96	29.38	-24.42

Note: the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.

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8.5.14. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5745	3.72	6.62
Mid	5785	3.72	6.62
High	5825	3.72	6.62

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5745	30.00	30.00	30.00	29.38	29.38	29.38
Mid	5785	30.00	30.00	30.00	29.38	29.38	29.38
High	5825	30.00	30.00	30.00	29.38	29.38	29.38

Duty Cycle CF (dB)	0.13	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	14.50	16.00	18.32	30.00	-11.68
Mid	5785	14.50	15.90	18.27	30.00	-11.73
High	5825	14.50	15.80	18.21	30.00	-11.79

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5745	0.528	1.878	4.40	29.38	-24.98
Mid	5785	0.763	2.177	4.67	29.38	-24.71
High	5825	0.719	2.109	4.61	29.38	-24.77

Note: the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.

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8.5.15. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Directio Gain for Power (dBi)	Directio Gain for PPSD (dBi)
Low	5755	3.72	6.62
High	5795	3.72	6.62

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5755	30.00	30.00	30.00	29.38	29.38	29.38
High	5795	30.00	30.00	30.00	29.38	29.38	29.38

Duty Cycle CF (dB)	0.20	**Included in Calculations of Corr'd Power & PPSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5755	12.00	13.50	15.82	30.00	-14.18
High	5795	14.50	16.00	18.32	30.00	-11.68

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5755	-4.674	-2.843	-0.45	29.38	-29.83
High	5795	-2.453	-0.641	1.76	29.38	-27.62

Note: the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.

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8.5.16. 802.11ac HT80 MODE IN THE 5.8 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Directio Gain for Power (dBi)	Directio Gain for PPSD (dBi)
Low	5775	3.72	6.62

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5775	30.00	30.00	30.00	29.38	29.38	29.38

Duty Cycle CF (dB)	0.21	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5775	12.00	13.60	15.88	30.00	-14.12

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5775	-7.698	-5.996	-3.54	29.38	-32.92

Note: the power readings above were measured with gated method, and the measurement was taken only during the ON time. No duty cycle correction was necessary.

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8.5.17. 802.11a MODE STRADDLE CHANNEL 144 RESULTS

UNII-2C BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
144	5720	15.61	13.3000	4.45	7.41

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
144	5720	22.93	22.24	28.24	22.24	9.59	11.00	9.59

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
144	5720	13.70	15.27	17.57	22.24	-4.67

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
144	5720	3.007	4.534	6.85	9.59	-2.74

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UNII-3 BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Directio Gain for Power (dBi)	Directio Gain for PPSD (dBi)
144	5720	3.72	6.62

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
144	5720	30.00	30.00	30.00	29.38	29.38	29.38

Duty Cycle CF (dB)	0.13	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
144	5720	7.53	9.03	11.48	30.00	-18.52

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
144	5720	0.045	1.422	3.93	29.38	-25.45

AVERAGE OUTPUT POWER (WHOLE FUNDAMENTAL)

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)
144	5720	14.50	16.00	18.32

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8.5.18. 802.11n HT20 MODE STRADDLE CHANNEL 144 RESULTS

UNII-2C BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
144	5720	15.61	13.88	4.45	7.41

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
144	5720	22.93	22.42	28.42	22.42	9.59	11.00	9.59

Duty Cycle CF (dB)	0.13	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
144	5720	13.72	15.05	17.57	22.42	-4.85

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
144	5720	2.785	4.166	6.67	9.59	-2.92

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UNII-3 BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Directio Gain for Power (dBi)	Directio Gain for PPSD (dBi)
144	5720	3.72	6.62

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
144	5720	30.00	30.00	30.00	29.38	29.38	29.38

Duty Cycle CF (dB)	0.13	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
144	5720	8.06	9.35	11.89	30.00	-18.11

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
144	5720	-0.064	1.245	3.78	29.38	-25.60

AVERAGE OUTPUT POWER (WHOLE FUNDAMENTAL)

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)
144	5720	14.50	15.90	18.27

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8.5.19. 802.11n HT40 MODE STRADDLE CHANNEL 142 RESULTS

UNII-2C BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
144	5710	34.62	33.19	4.45	7.41

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
144	5710	24.00	24.00	30.00	24.00	9.59	11.00	9.59

Duty Cycle CF (dB)	0.20	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
144	5710	14.09	15.57	18.11	24.00	-5.89

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
144	5710	-0.352	1.126	3.66	9.59	-5.93

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UNII-3 BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
142	5710	3.72	6.62

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
142	5710	30.00	30.00	30.00	29.38	29.38	29.38

Duty Cycle CF (dB)	0.20	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
142	5710	3.86	5.25	7.82	30.00	-22.18

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
142	5710	-3.489	-1.837	0.63	29.38	-28.75

AVERAGE OUTPUT POWER (WHOLE FUNDAMENTAL)

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)
142	5710	14.50	16.00	18.32

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8.5.20. 802.11ac HT80 MODE STRADDLE CHANNEL 138 RESULTS

UNII-2C BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
138	5690	75.60	72.90	4.45	7.41

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
138	5690	24.00	24.00	30.00	24.00	9.59	11.00	9.59

Duty Cycle CF (dB)	0.21	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	14.04	15.62	18.12	24.00	-5.88

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
138	5690	-3.516	-1.959	0.55	9.59	-9.04

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UNII-3 BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Directio Gain for Power (dBi)	Directio Gain for PPSD (dBi)
138	5690	3.72	6.62

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
138	5690	30.00	30.00	30.00	29.38	29.38	29.38

Duty Cycle CF (dB)	0.21	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
138	5690	0.00	1.36	3.95	30.00	-26.05

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
138	5690	-7.163	-5.958	-3.30	29.38	-32.68

AVERAGE OUTPUT POWER (WHOLE FUNDAMENTAL)

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)
138	5690	14.50	15.90	18.27

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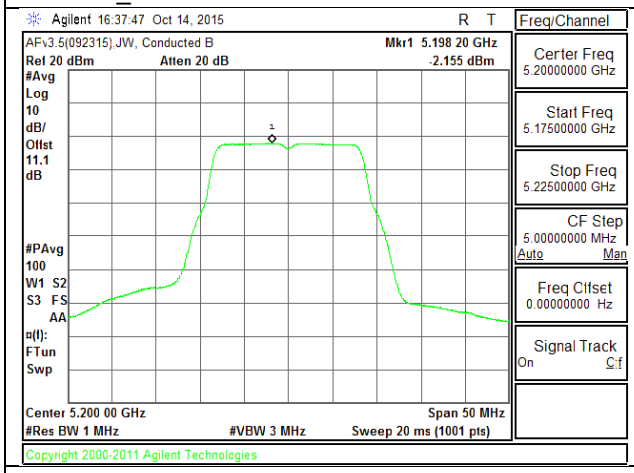
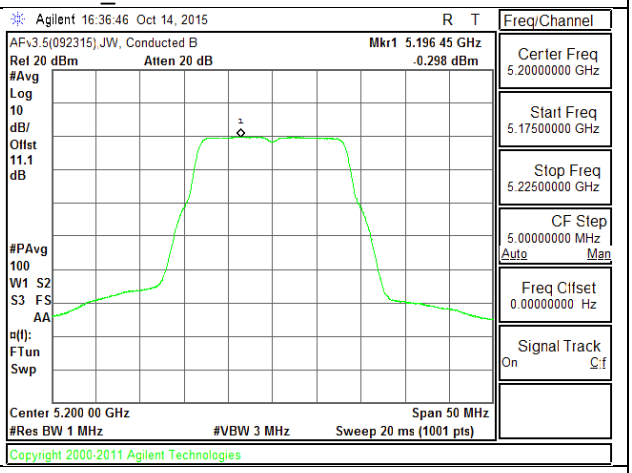
8.5.21. PSD PLOTS

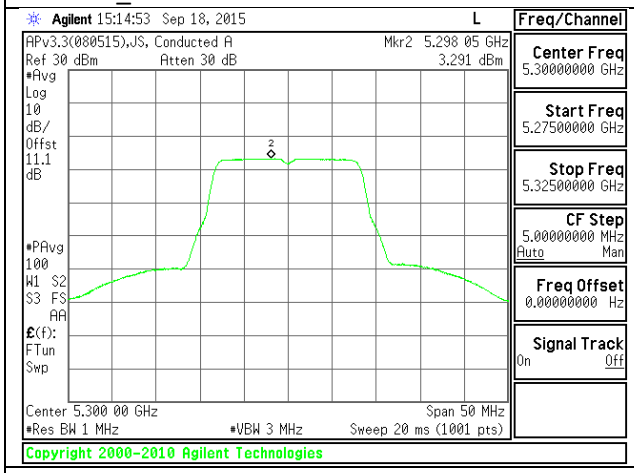
PSD 11a_5.2 Chain 0 Mid Ch



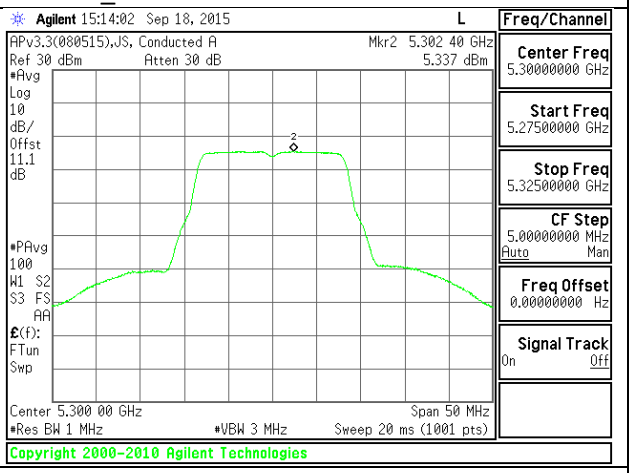
PSD 11a_5.2 Chain 1 Mid Ch



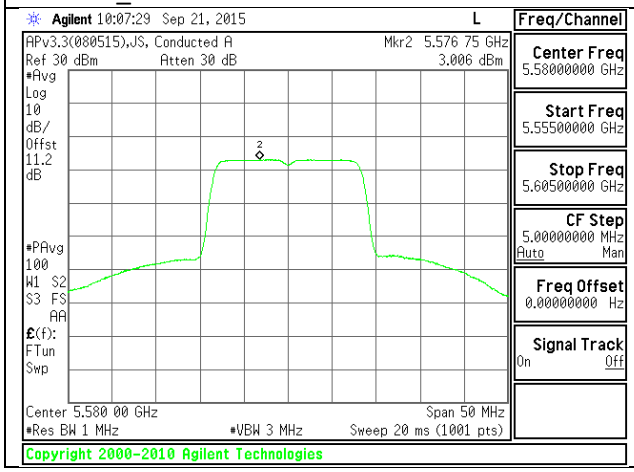
PSD 11a_5.3Chain 0 Mid Ch



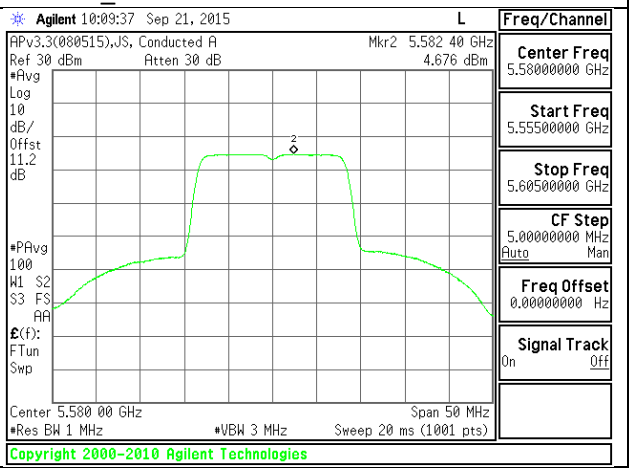
PSD 11a_5.3 Chain 1 Mid Ch



PSD 11a_5.5 Chain 0 Mid Ch



PSD 11a_5.5 Chain 1 Mid Ch



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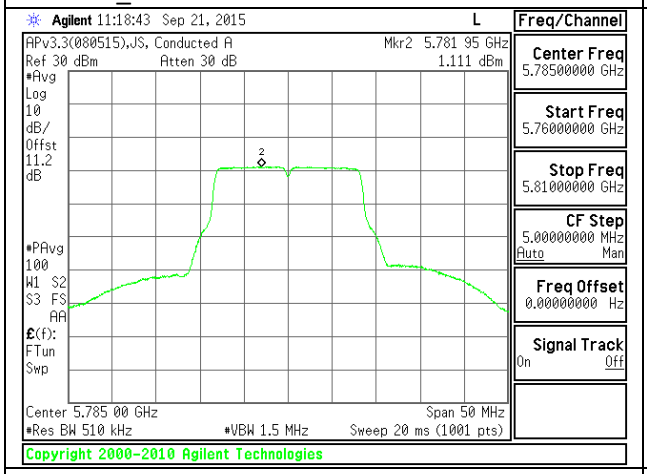
PSD 11a_5.8 Chain 0 Mid Ch



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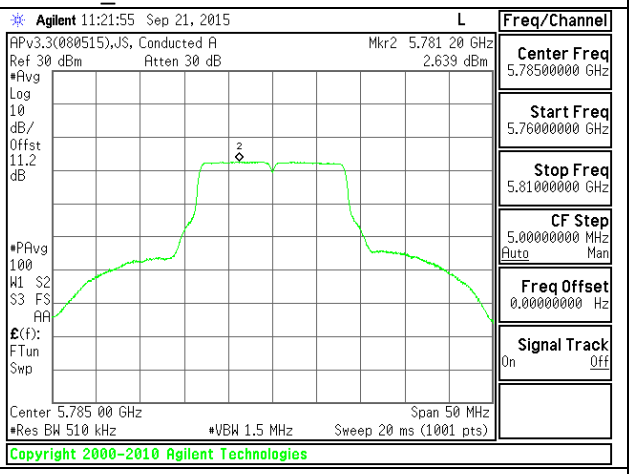

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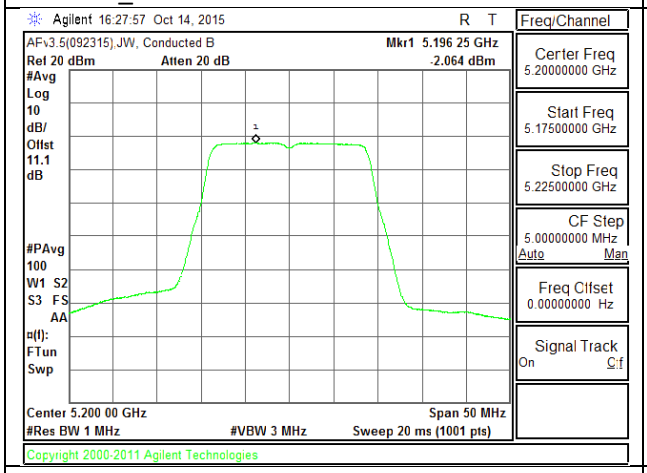

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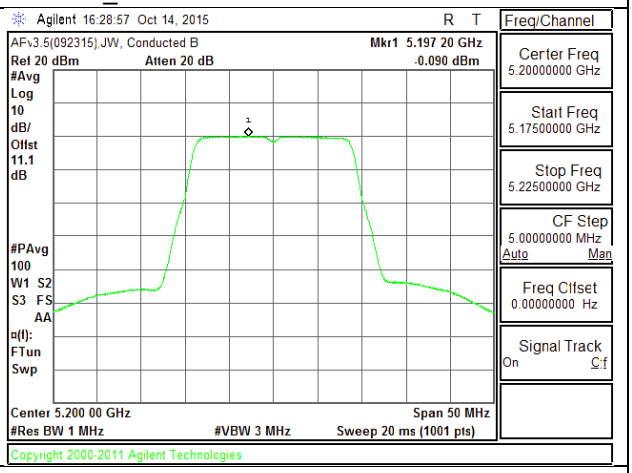

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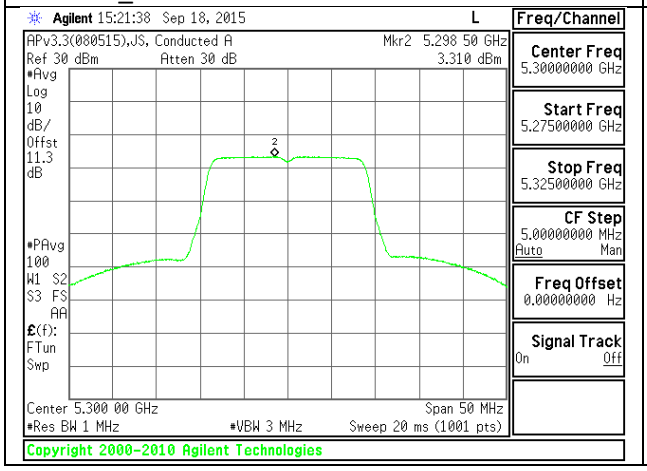

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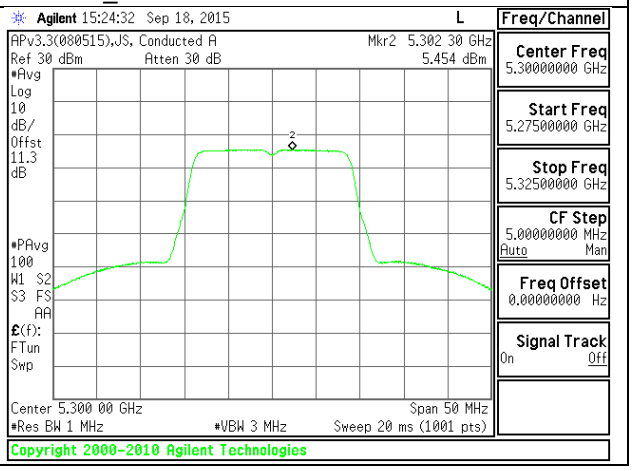

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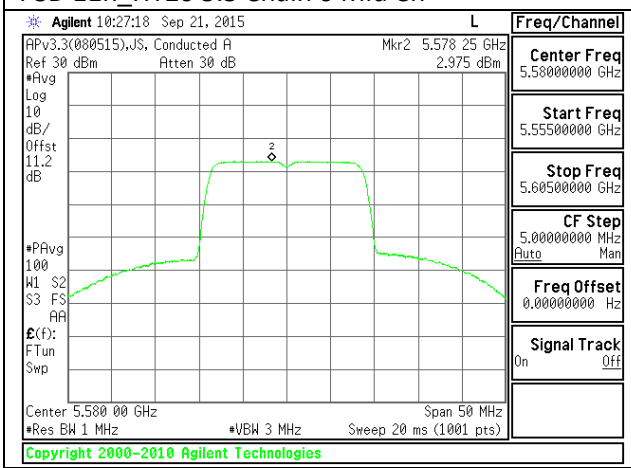
PSD 11n_HT20 5.5 Chain 0 Mid Ch



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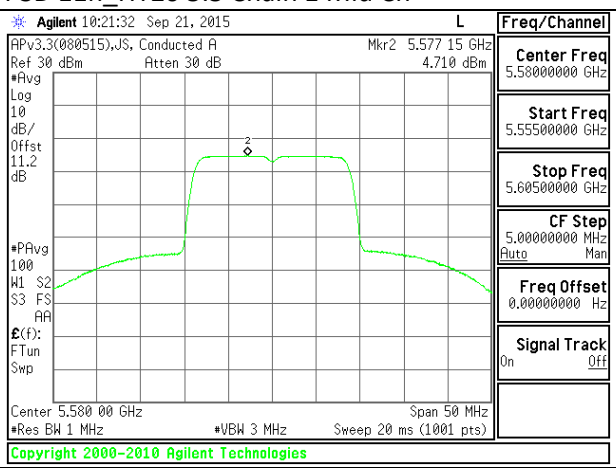

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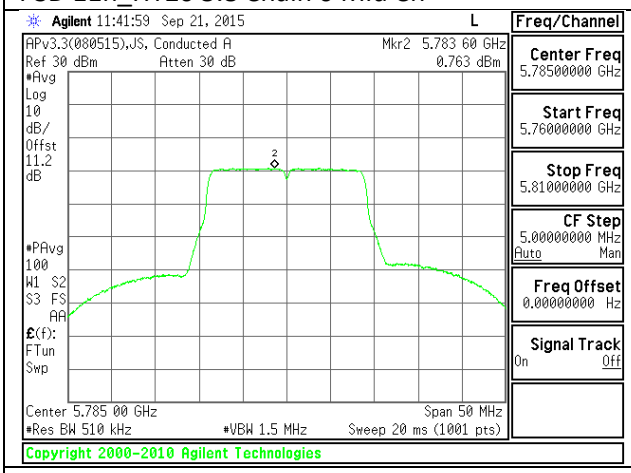

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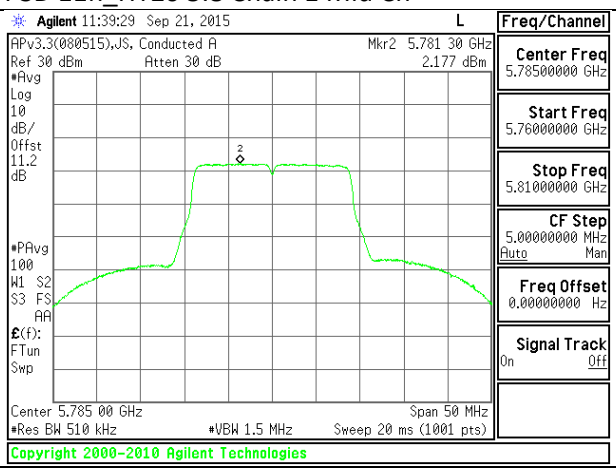

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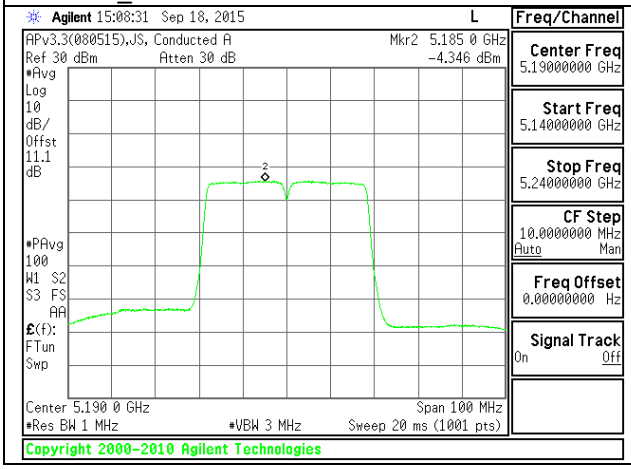

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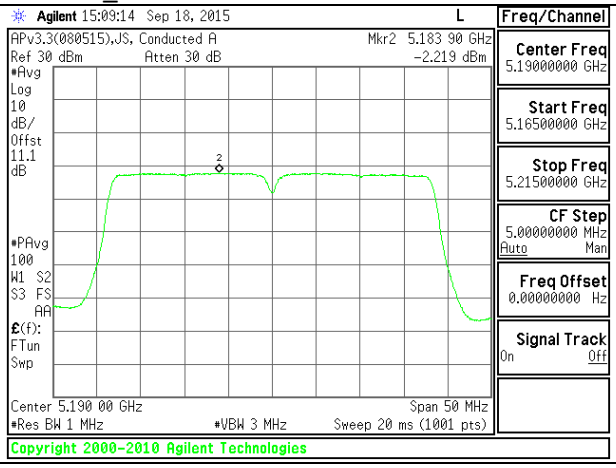

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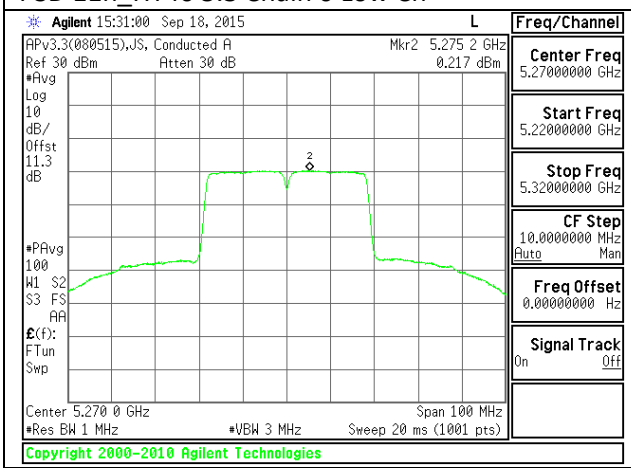
PSD 11n_HT40 5.3 Chain 0 Low Ch



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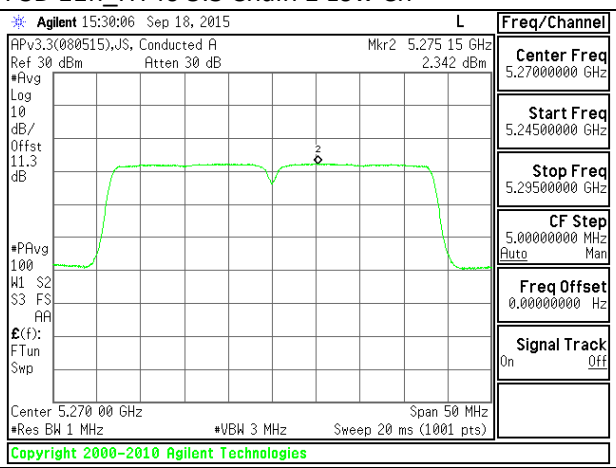

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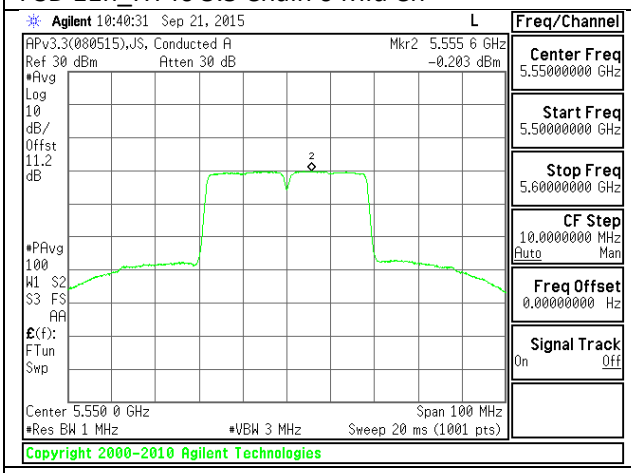

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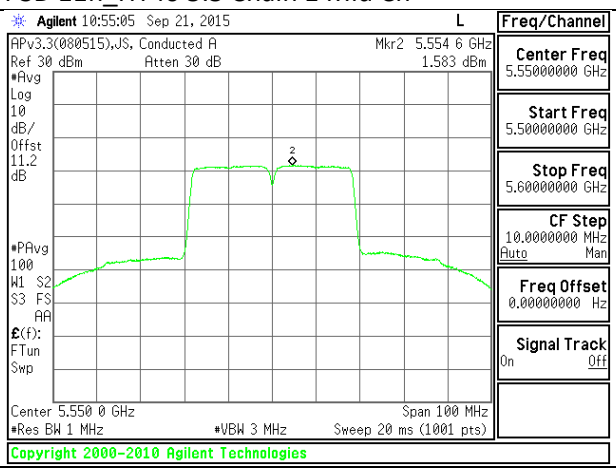

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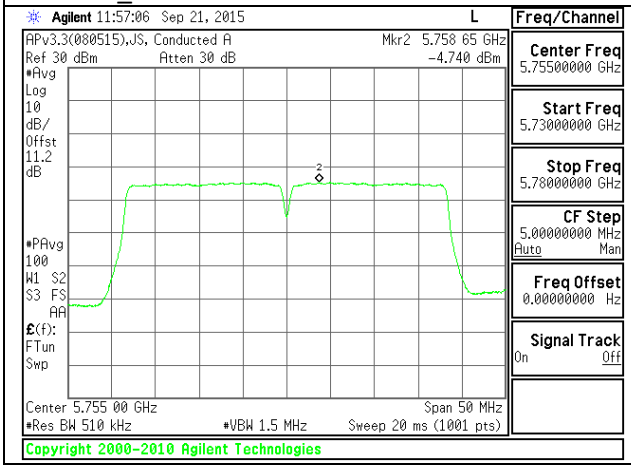

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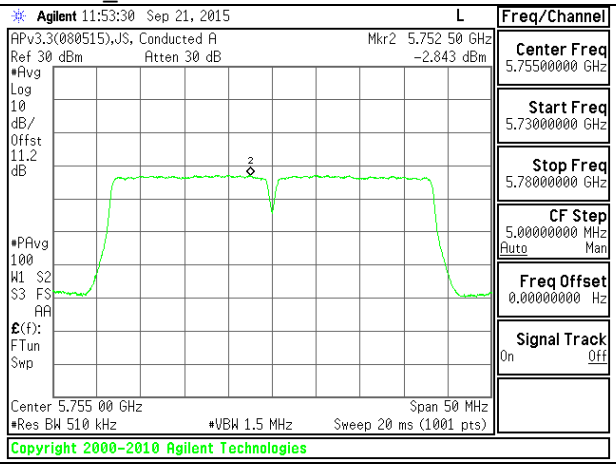

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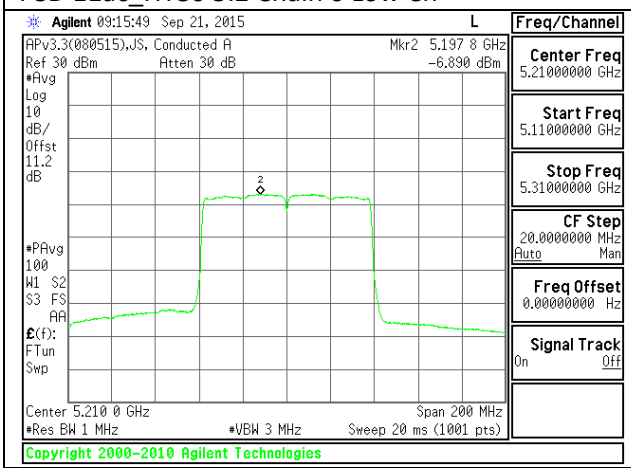
PSD 11ac_HT80 5.2 Chain 0 Low Ch



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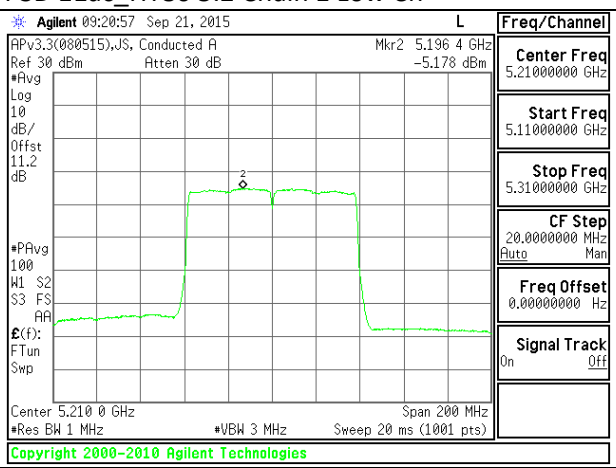

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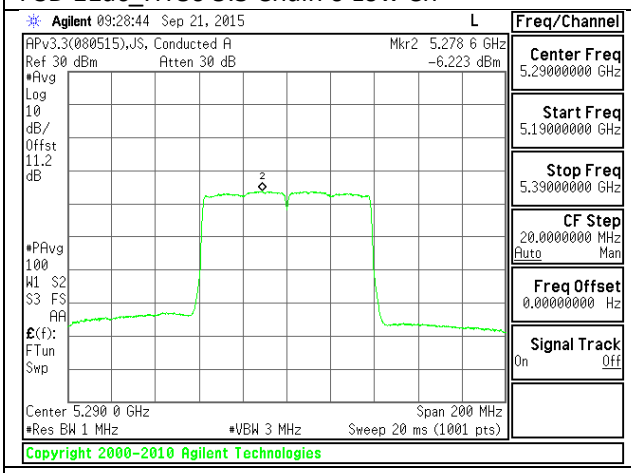

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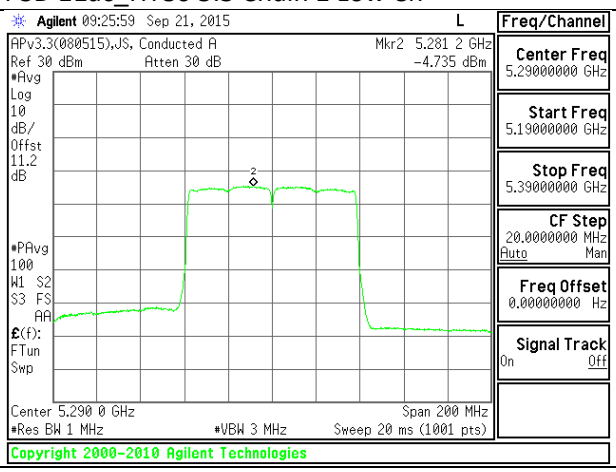

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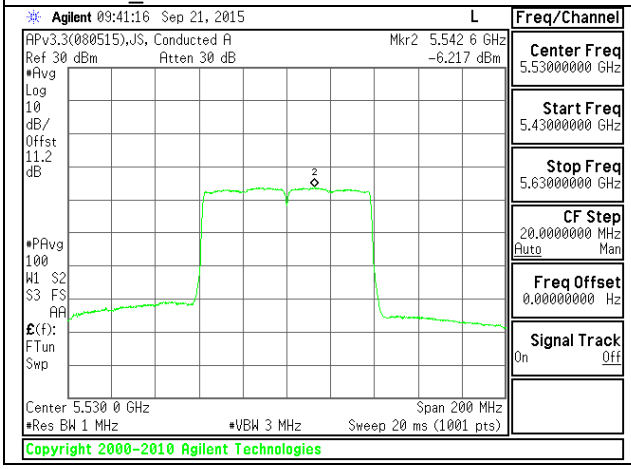

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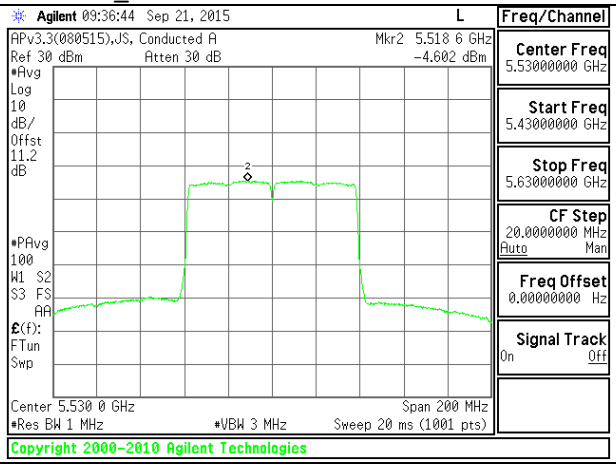

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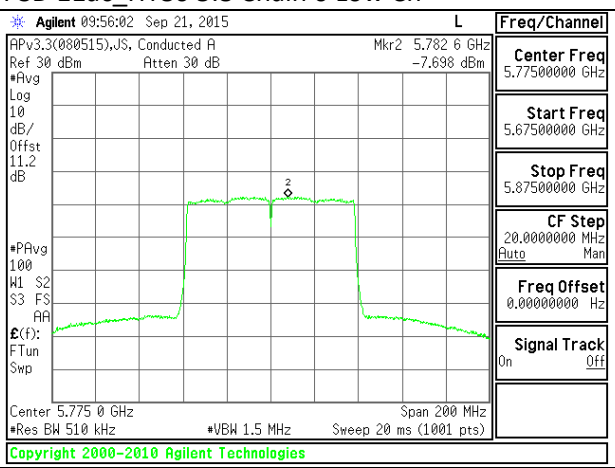
PSD 11ac_HT80 5.8 Chain 0 Low Ch



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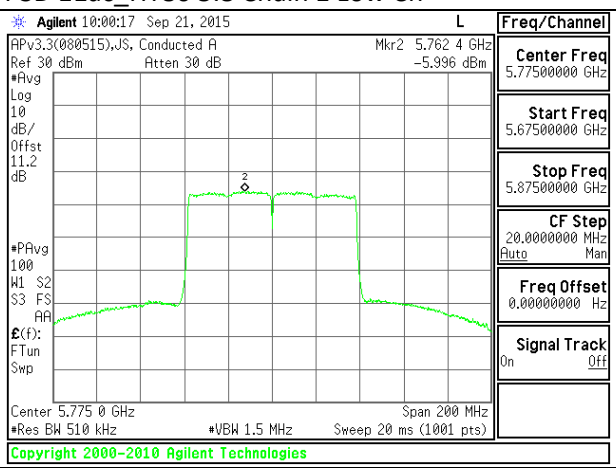

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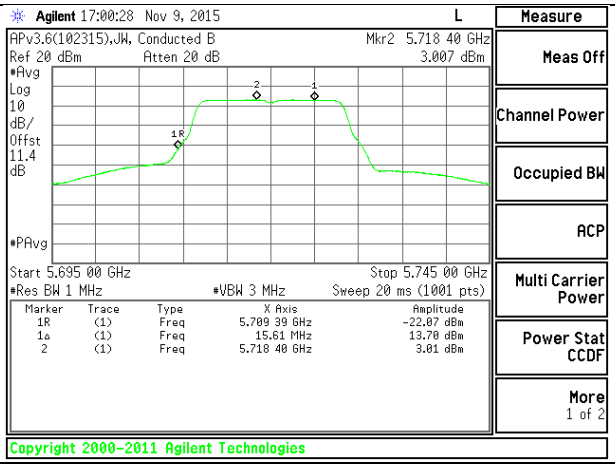
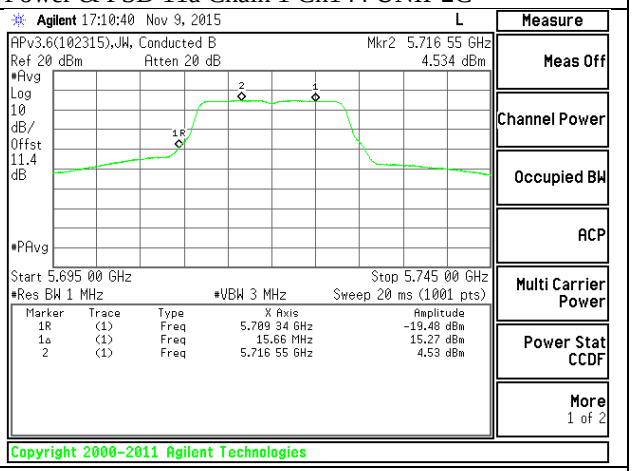
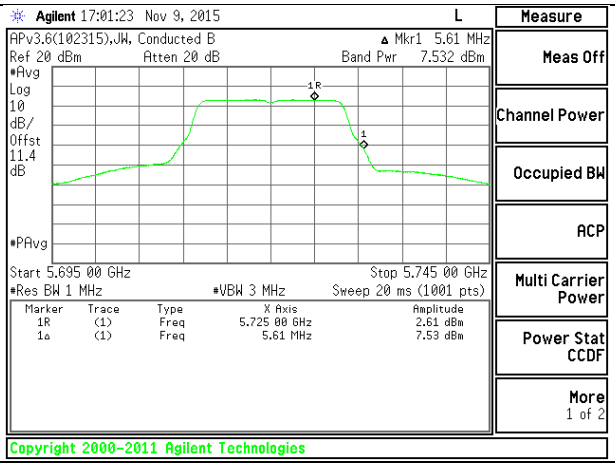
Power & PSD 11a Chain 0 Ch144 UNII-2C



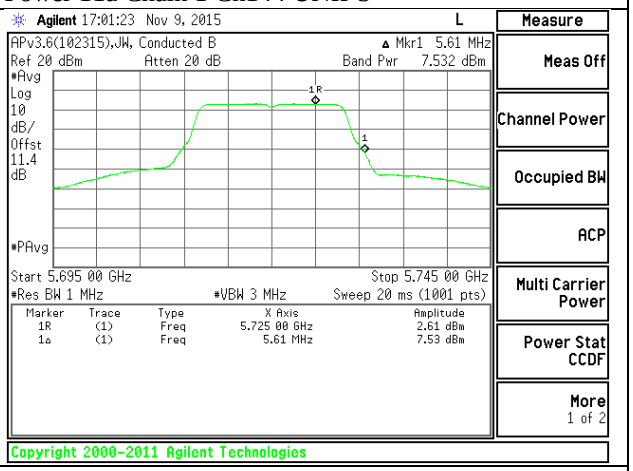
Power & PSD 11a Chain 1 Ch144 UNII-2C



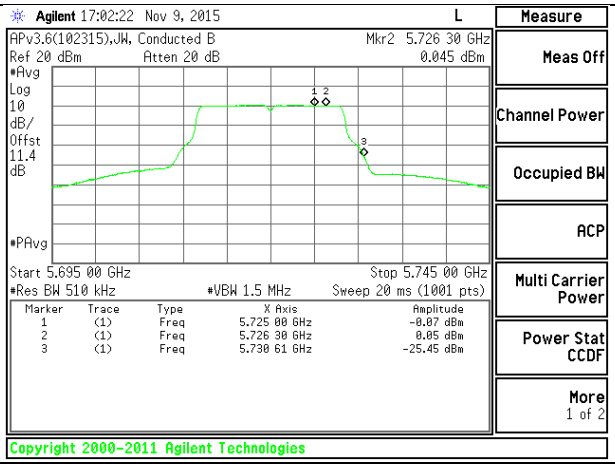
Power 11a Chain 0 Ch144 UNII-3



Power 11a Chain 1 Ch144 UNII-3



PSD11a Chain 0 Ch144 UNII-3



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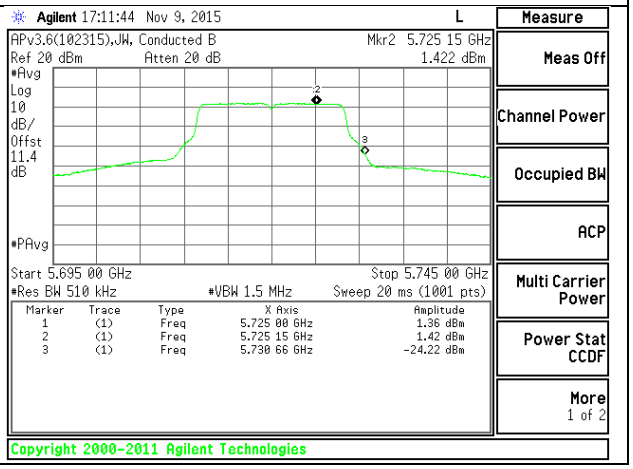

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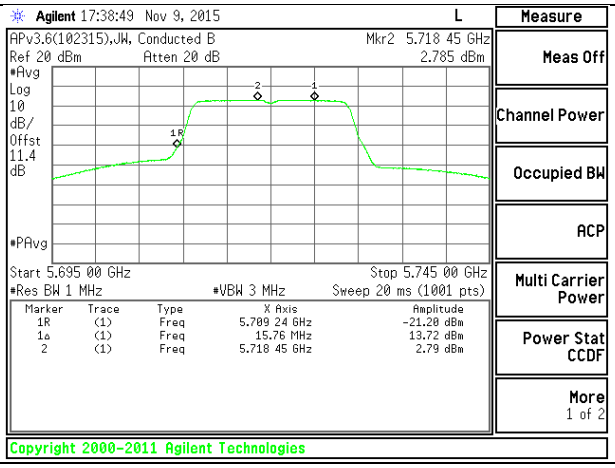
Power & PSD 11n HT20 Chain 0 Ch144 UNII-2C



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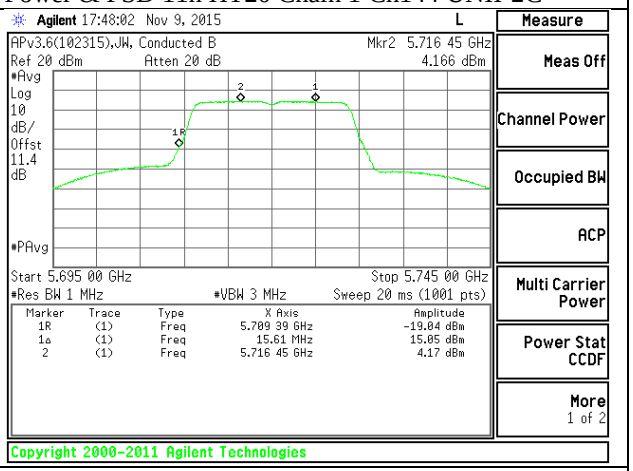

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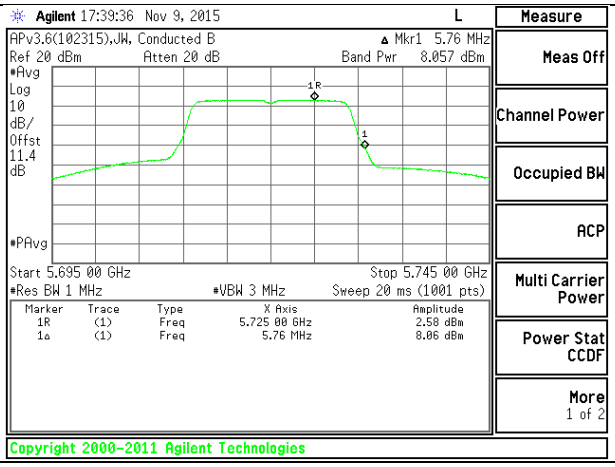

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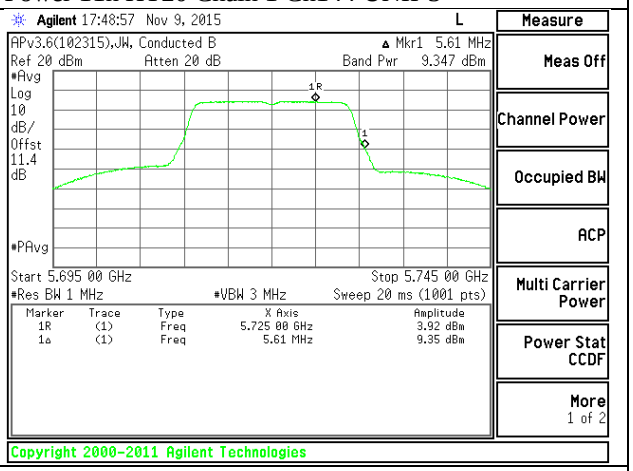

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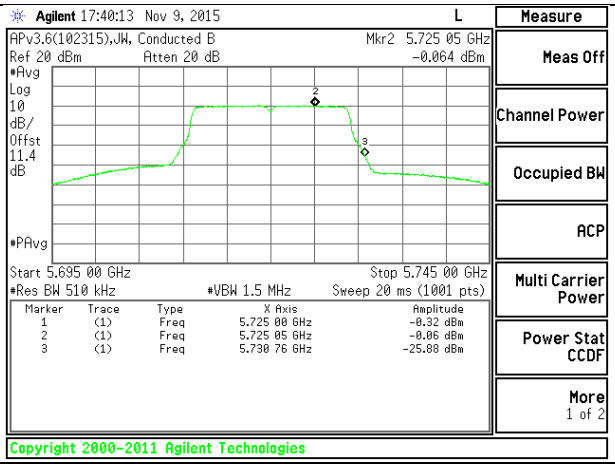
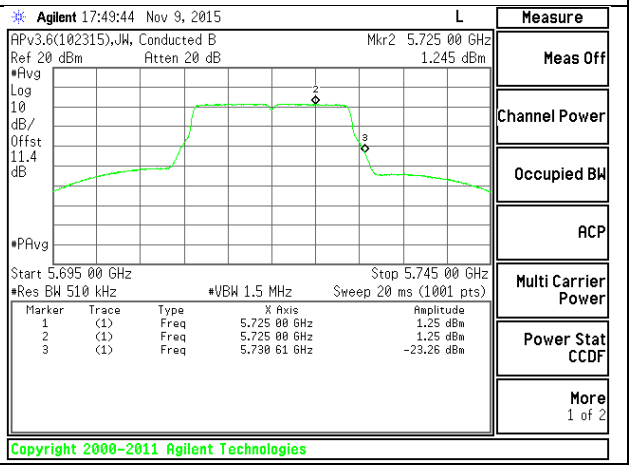


PSD 11n HT20 Chain 1 Ch144 UNII-3



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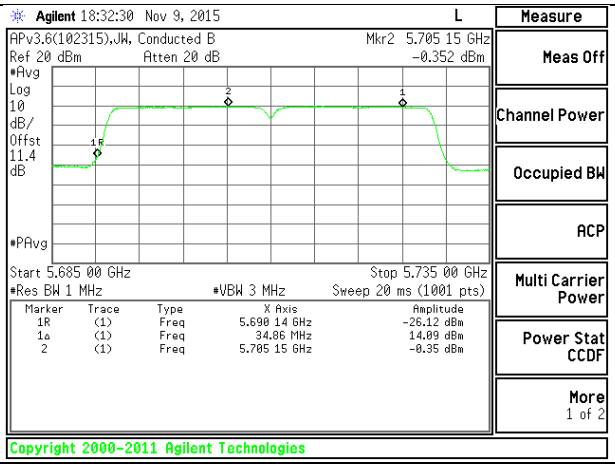
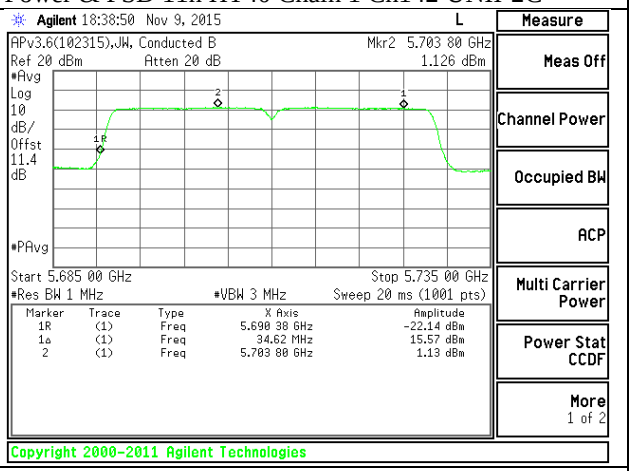
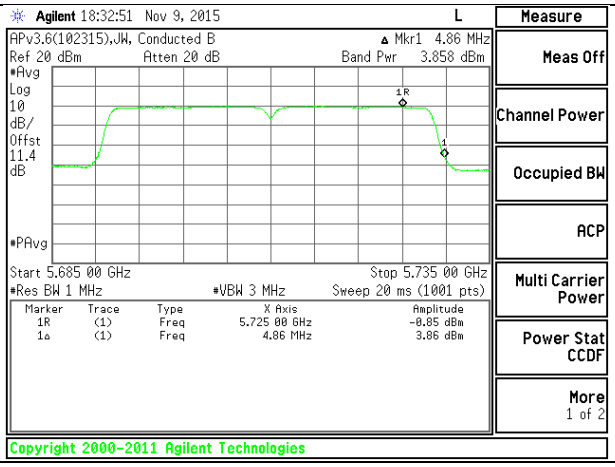
Power & PSD 11n HT40 Chain 0 Ch142 UNII-2C



Power & PSD 11n HT40 Chain 1 Ch142 UNII-2C



Power 11n HT40 Chain 0 Ch142 UNII-3



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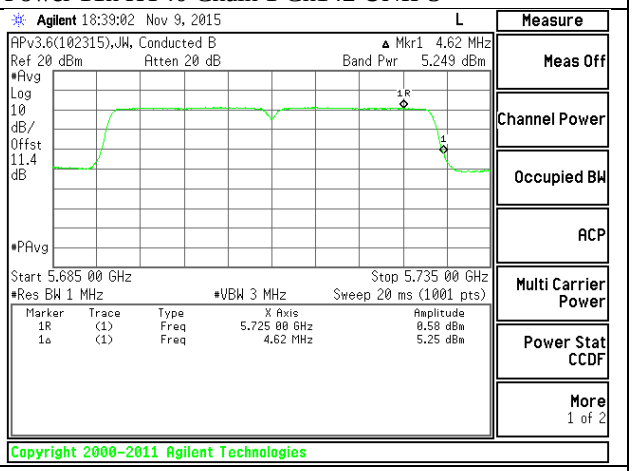

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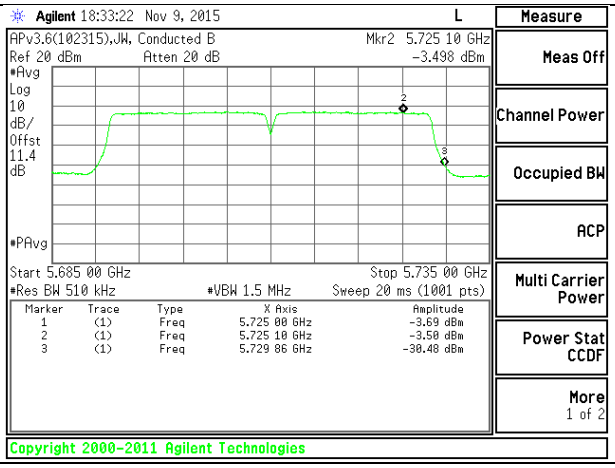
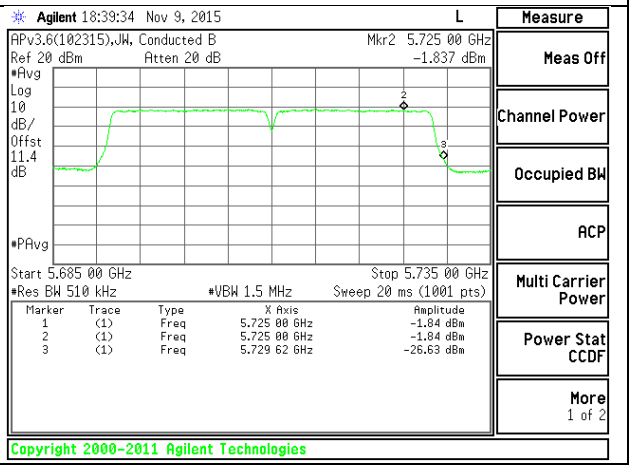


PSD 11n HT40 Chain 1 Ch142 UNII-3



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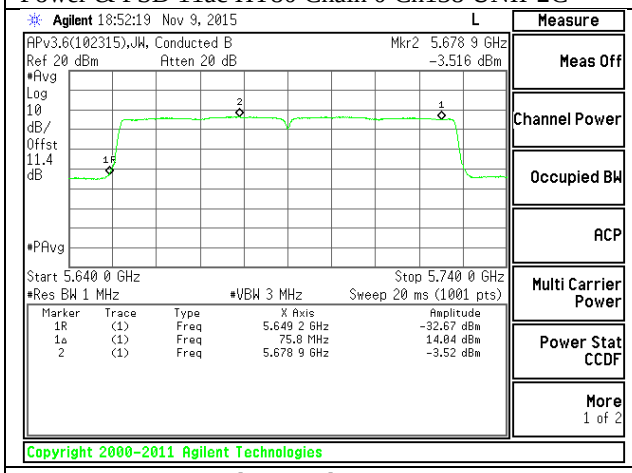
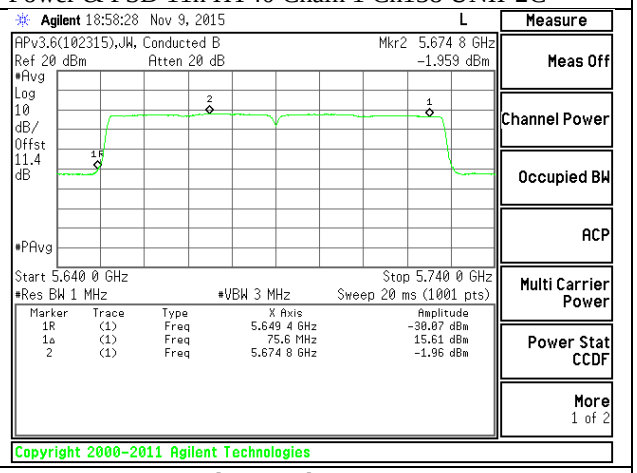
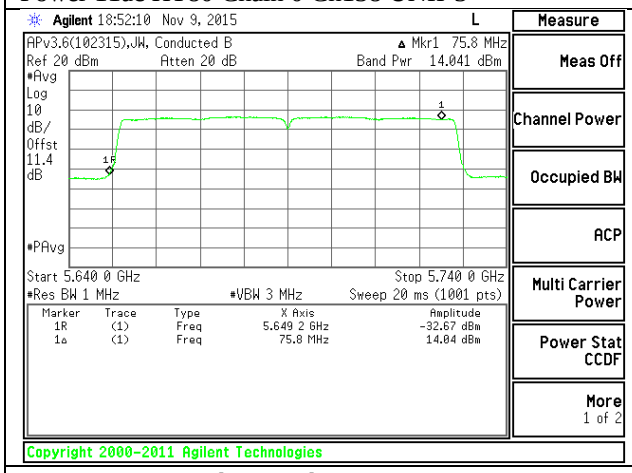
Power & PSD 11ac HT80 Chain 0 Ch138 UNII-2C



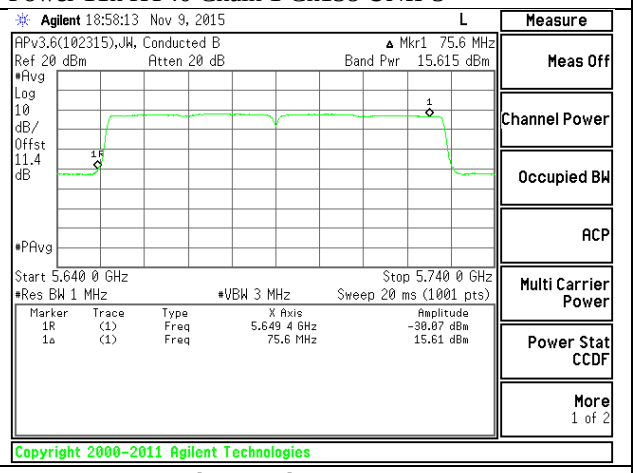
Power & PSD 11n HT40 Chain 1 Ch138 UNII-2C



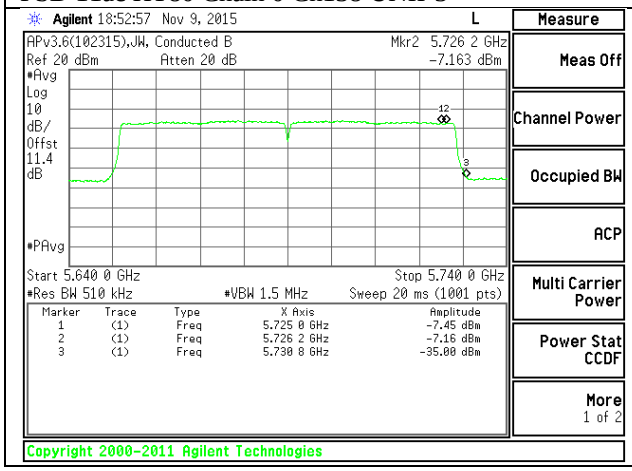
Power 11ac HT80 Chain 0 Ch138 UNII-3



Power 11n HT40 Chain 1 Ch138 UNII-3



PSD 11ac HT80 Chain 0 Ch138 UNII-3



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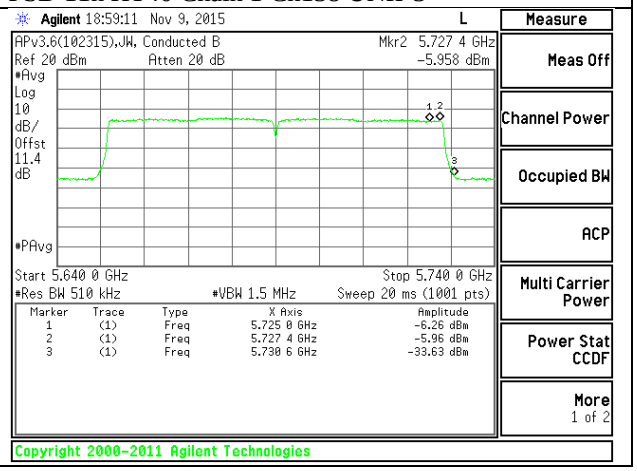

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9. TRANSMITTER ABOVE 1 GHz

LIMITS

FCC §15.205 and §15.209

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

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for below 1GHz and 150cm for above 1GHz. The antenna to EUT distance is 3 meters.

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

Reference to KDB 789033 UNII part H) 6) d) Method VB:

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 add duty cycle factor to the reading offset for average measurements.

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

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

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

Note: Band edge and radiated spurious emission test data are from MIMO mode.

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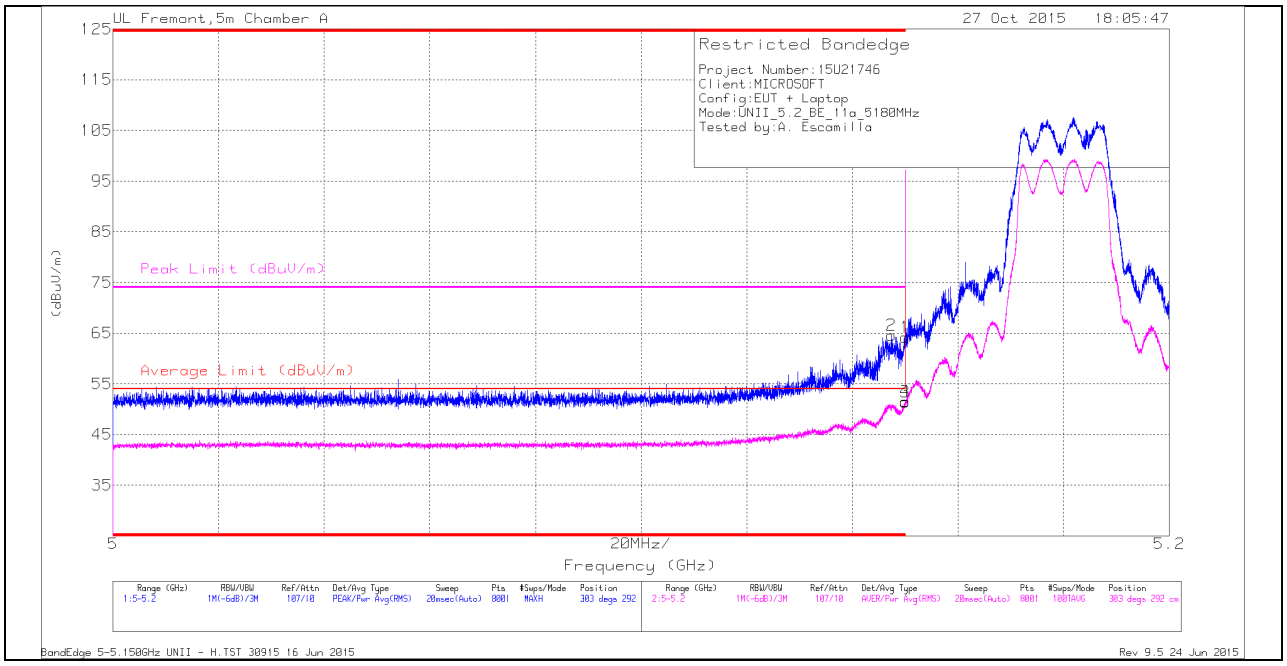
9.1. 5.2 GHz

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

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	51.08	Pk	34.2	-20.7	64.58	-	-	74	-9.42	303	292	H
1	* 5.15	50.69	Pk	34.2	-20.7	64.19	-	-	74	-9.81	303	292	H
3	* 5.15	37.88	RMS	34.2	-20.7	51.38	54	-2.62	-	-	303	292	H
4	* 5.15	38	RMS	34.2	-20.7	51.5	54	-2.5	-	-	303	292	H

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

Pk - Peak detector

RMS - RMS detection

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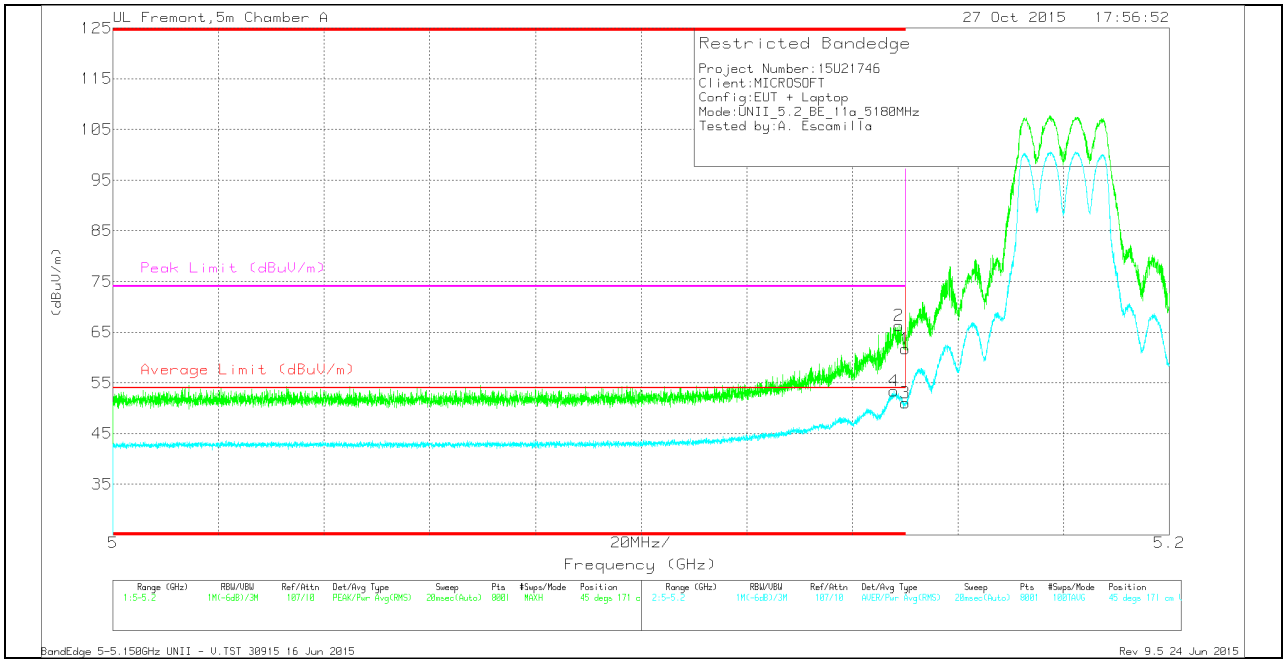
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Flt r/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
4	* 5.148	39.84	RMS	34.2	-20.7	0	53.34	54	-0.66	-	-	45	171	V
2	* 5.149	52.78	Pk	34.2	-20.7	0	66.28	-	-	74	-7.72	45	171	V
1	* 5.15	48.17	Pk	34.2	-20.7	0	61.67	-	-	74	-12.33	45	171	V
3	* 5.15	37.52	RMS	34.2	-20.7	0	51.02	54	-2.98	-	-	45	171	V

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

Pk - Peak detector

RMS - RMS detection

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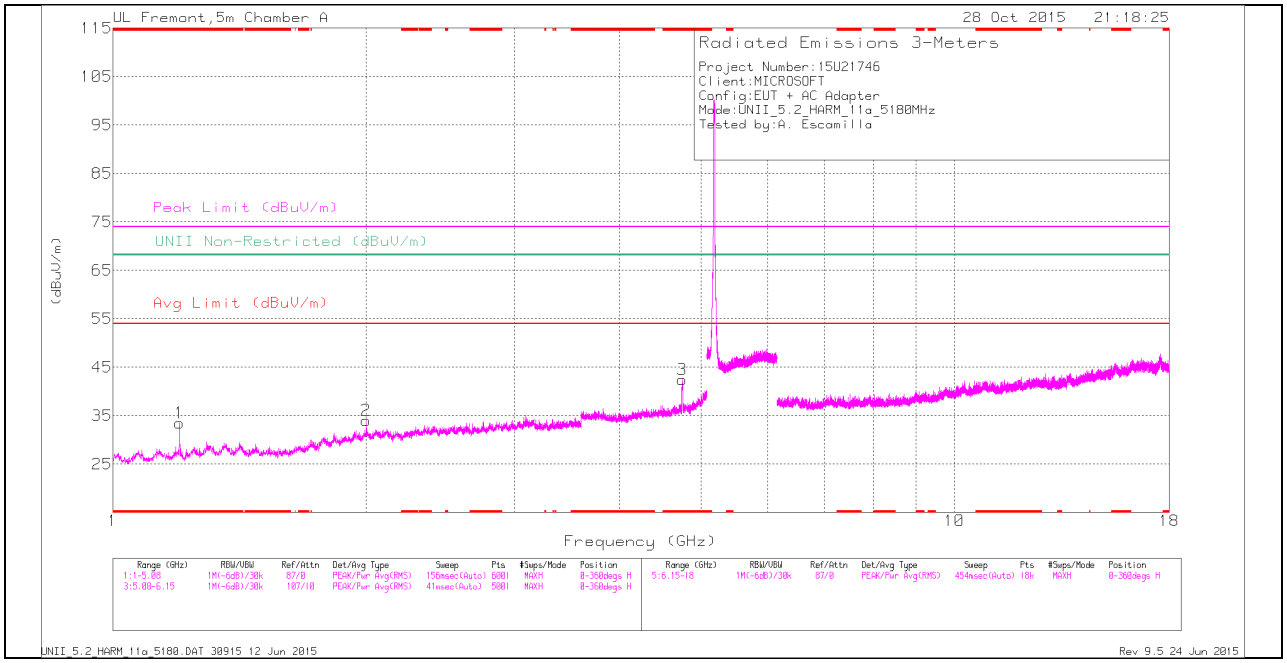
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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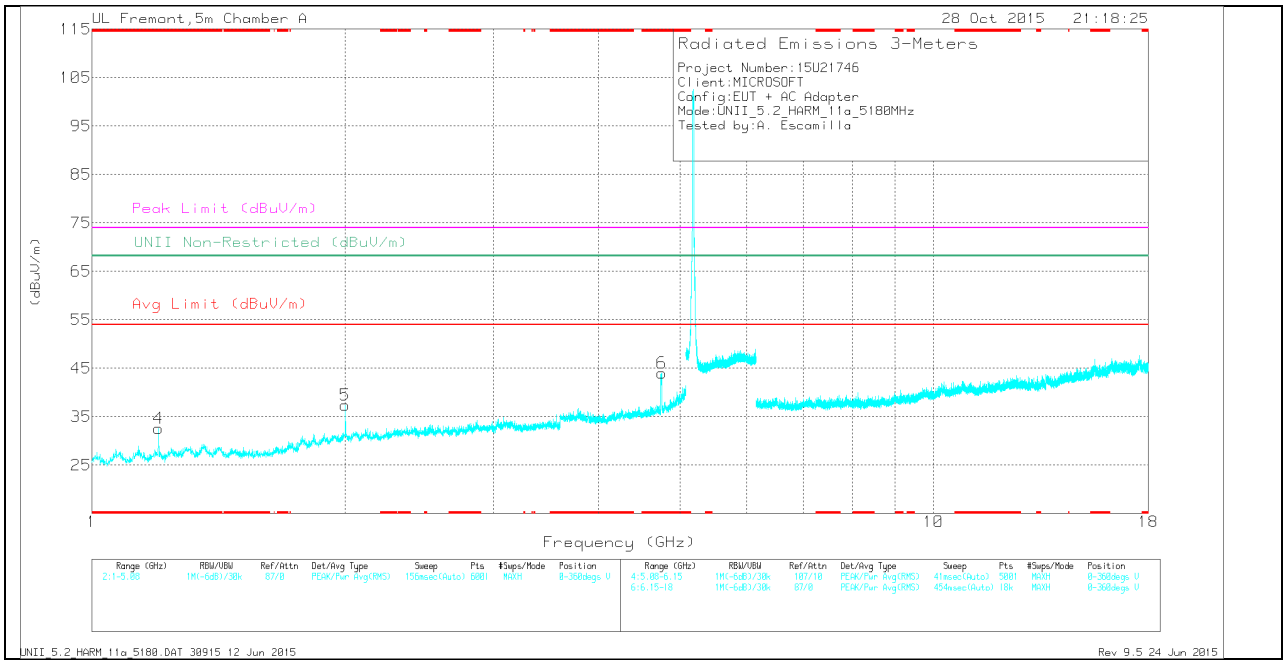
LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 1.2	41.52	Pk	28	-36	0	33.52	-	-	74	-40.48	68.2	-34.68	0-360	100	H
3	* 4.744	38.73	Pk	34.1	-30.4	0	42.43	-	-	74	-31.57	68.2	-25.77	0-360	100	H
4	* 1.2	40.55	Pk	28	-36	0	32.55	-	-	74	-41.45	68.2	-35.65	0-360	100	V
6	* 4.753	40.28	Pk	34	-30.3	0	43.98	-	-	74	-30.02	68.2	-24.22	0-360	200	V
2	2	37.22	Pk	31.1	-34.3	0	34.02	-	-	74	-39.98	68.2	-34.18	0-360	201	H
5	2	40.72	Pk	31.1	-34.4	0	37.42	-	-	74	-36.58	68.2	-30.78	0-360	200	V

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

Pk - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fl tr/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
* 1.2	47.61	PK-U	28	-36	0	39.61	-	-	74	-34.39	-	-	296	114	H
* 1.2	38.97	ADR	28	-36	0	30.97	54	-23.03	-	-	-	-	296	114	H
* 4.744	48.79	PK-U	34.1	-30.4	0	52.49	-	-	74	-21.51	-	-	234	138	H
* 4.744	38.39	ADR	34.1	-30.4	0	42.09	54	-11.91	-	-	-	-	234	138	H
* 1.2	46.86	PK-U	28	-36	0	38.86	-	-	74	-35.14	-	-	327	146	V
* 1.2	38.86	ADR	28	-36	0	30.86	54	-23.14	-	-	-	-	327	146	V
* 4.753	50.05	PK-U	34	-30.3	0	53.75	-	-	74	-20.25	-	-	289	227	V
* 4.753	39.7	ADR	34	-30.3	0	43.4	54	-10.6	-	-	-	-	289	227	V
2	44.78	PK-U	31.1	-34.4	0	41.48	-	-	-	-	68.2	-26.72	182	289	H
2	35.5	ADR	31.1	-34.4	0	32.2	-	-	-	-	-	-	182	289	H
2	46.76	PK-U	31.1	-34.4	0	43.46	-	-	-	-	68.2	-24.74	99	204	V
2	39.16	ADR	31.1	-34.4	0	35.86	-	-	-	-	-	-	99	204	V

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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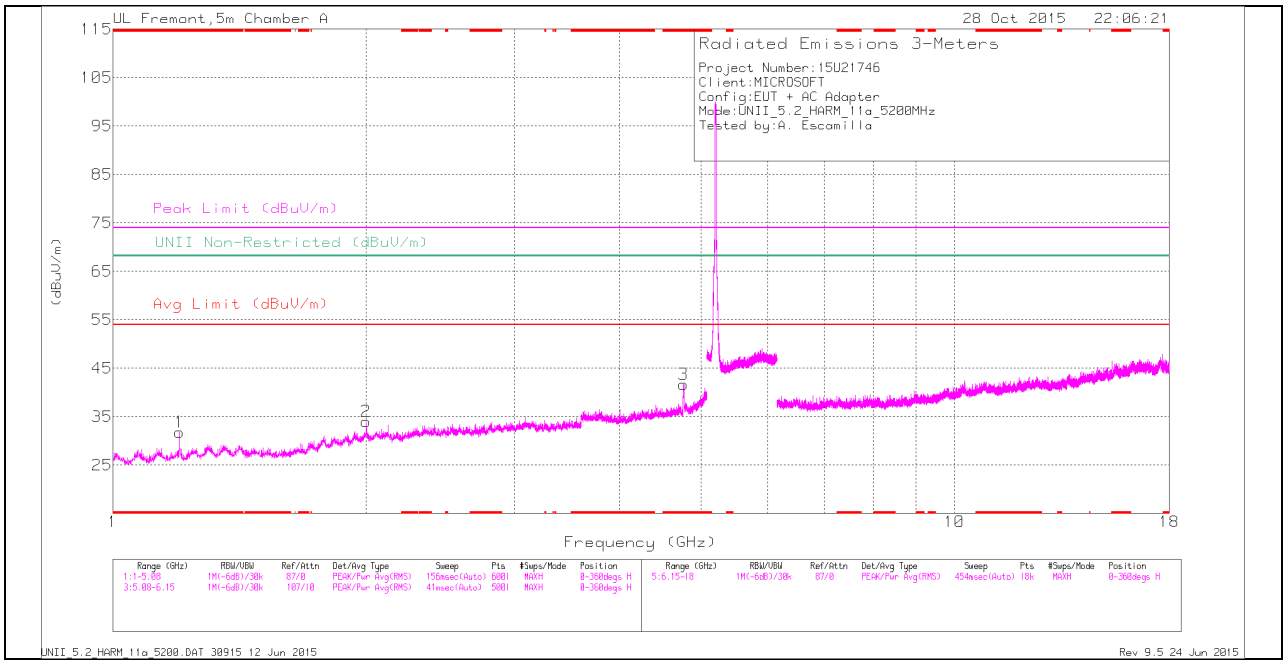
MID CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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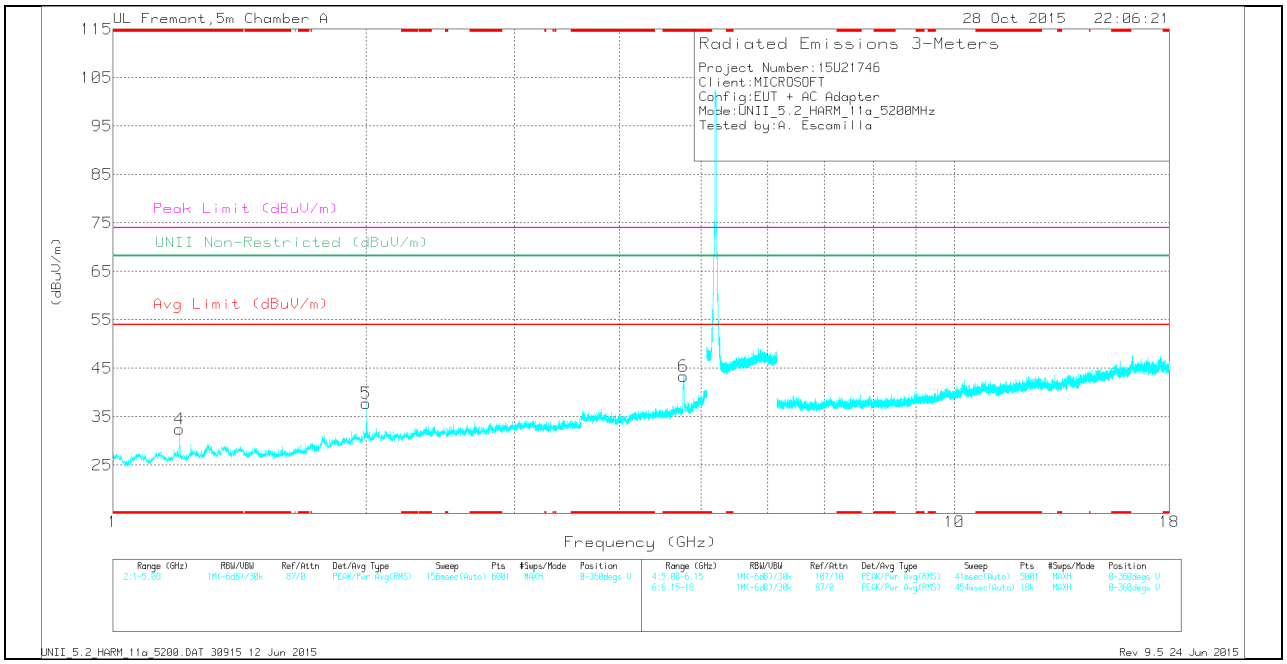
MID CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 1.2	39.8	Pk	28	-36	0	31.8	-	-	74	-42.2	68.2	-36.4	0-360	100	H
3	* 4.762	37.91	Pk	34	-30.2	0	41.71	-	-	74	-32.29	68.2	-26.49	0-360	100	H
4	* 1.2	40.46	Pk	28	-36	0	32.46	-	-	74	-41.54	68.2	-35.74	0-360	100	V
6	* 4.766	39.49	Pk	34	-30.1	0	43.39	-	-	74	-30.61	68.2	-24.81	0-360	200	V
2	2	37.3	Pk	31.1	-34.4	0	34	-	-	74	-40	68.2	-34.2	0-360	201	H
5	2	41.06	Pk	31.1	-34.4	0	37.76	-	-	74	-36.24	68.2	-30.44	0-360	200	V

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

Pk - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fl tr/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
* 1.2	46.84	PK-U	28	-36	0	38.84	-	-	74	-35.16	-	-	281	101	H
* 1.2	38.35	ADR	28	-36	0	30.35	54	-23.65	-	-	-	-	281	101	H
* 4.763	46.86	PK-U	34	-30.2	0	50.66	-	-	74	-23.34	-	-	220	125	H
* 4.762	37.09	ADR	34	-30.2	0	40.89	54	-13.11	-	-	-	-	220	125	H
* 1.2	46.99	PK-U	28	-36	0	38.99	-	-	74	-35.01	-	-	323	143	V
* 1.2	38.59	ADR	28	-36	0	30.59	54	-23.41	-	-	-	-	323	143	V
* 4.765	48.23	PK-U	34	-30.1	0	52.13	-	-	74	-21.87	-	-	285	226	V
* 4.766	38.4	ADR	34	-30.1	0	42.3	54	-11.7	-	-	-	-	285	226	V
2	45.38	PK-U	31.1	-34.4	0	42.08	-	-	-	-	68.2	-26.12	173	273	H
2	35.47	ADR	31.1	-34.4	0	32.17	-	-	-	-	-	-	173	273	H
2	46.51	PK-U	31.1	-34.4	0	43.21	-	-	-	-	68.2	-24.99	95	201	V
2	39.36	ADR	31.1	-34.4	0	36.06	-	-	-	-	-	-	95	201	V

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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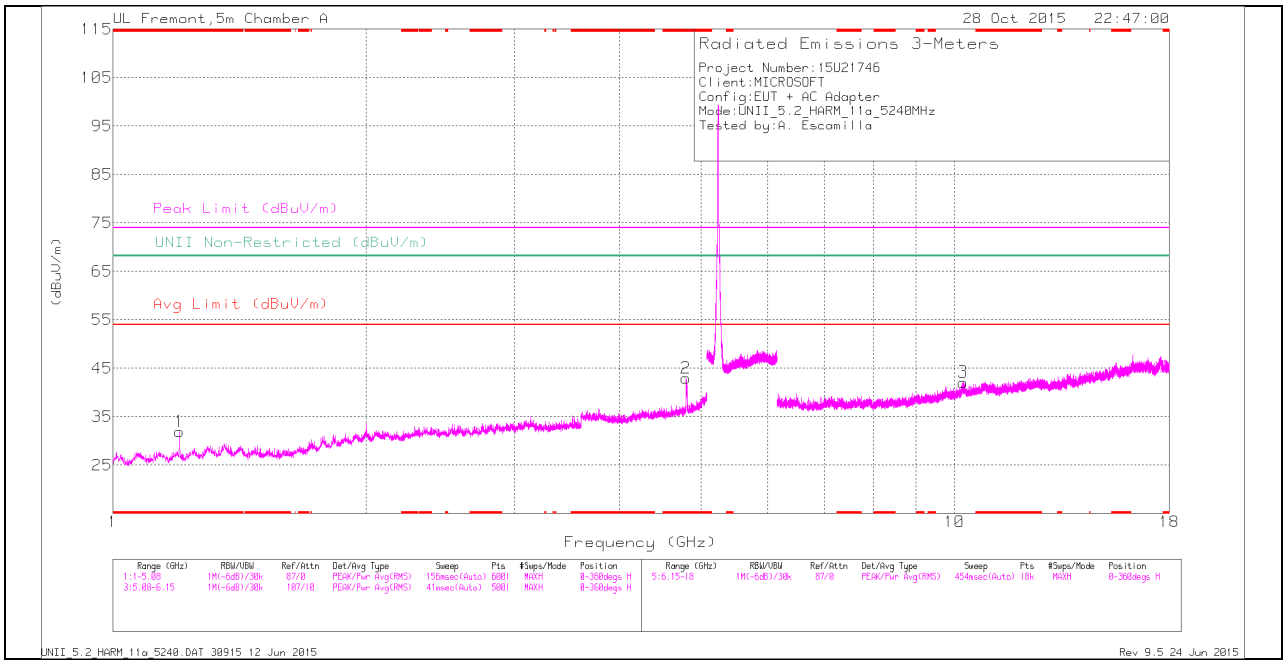
HIGH CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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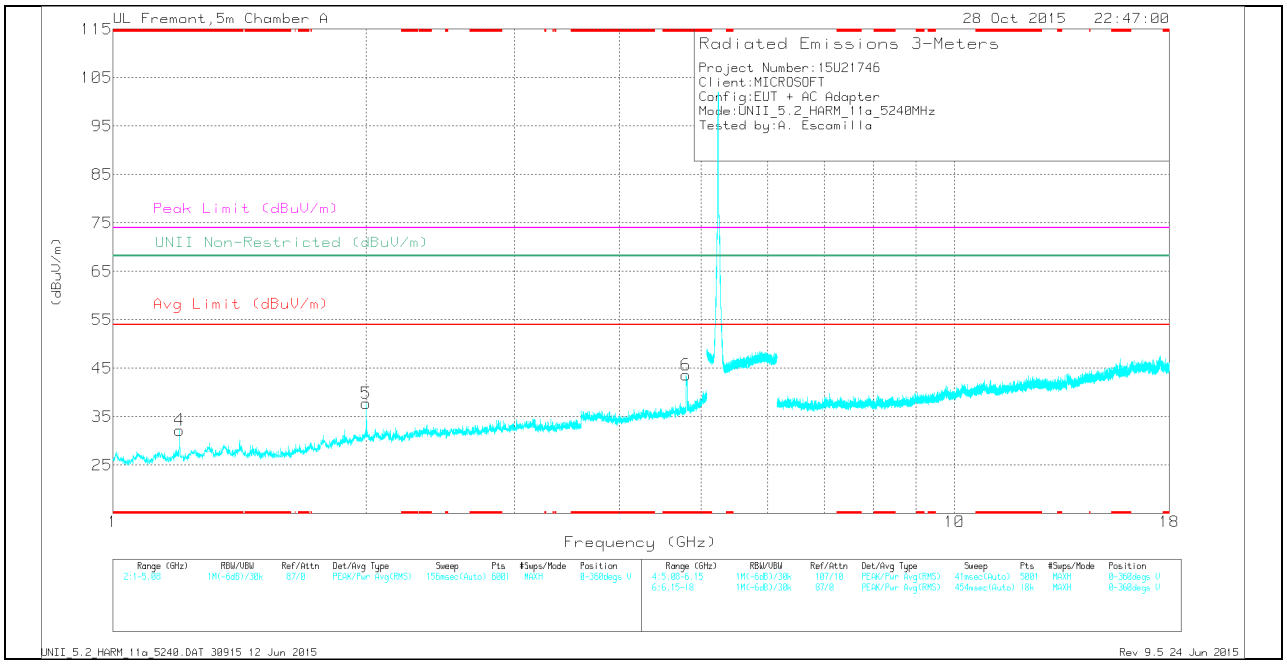
HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 1.2	39.95	Pk	28	-36	0	31.95	-	-	74	-42.05	68.2	-36.25	0-360	100	H
2	* 4.799	38.94	Pk	34	-30	0	42.94	-	-	74	-31.06	68.2	-25.26	0-360	100	H
4	* 1.2	40.26	Pk	28	-36	0	32.26	-	-	74	-41.74	68.2	-35.94	0-360	200	V
6	* 4.797	39.63	Pk	34	-30	0	43.63	-	-	74	-30.37	68.2	-24.57	0-360	200	V
5	2	41.05	Pk	31.1	-34.4	0	37.75	-	-	74	-36.25	68.2	-30.45	0-360	200	V
3	10.233	27.13	Pk	37.3	-22.3	0	42.13	-	-	74	-31.87	68.2	-26.07	0-360	100	H

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

Pk - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fl tr/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
* 1.2	46.58	PK-U	28	-36	0	38.58	-	-	74	-35.42	-	-	300	116	H
* 1.2	38	ADR	28	-36	0	30	54	-24	-	-	-	-	300	116	H
* 4.799	47.1	PK-U	34	-30	0	51.1	-	-	74	-22.9	-	-	230	136	H
* 4.799	37.31	ADR	34	-30	0	41.31	54	-12.69	-	-	-	-	230	136	H
* 1.2	46.28	PK-U	28	-36	0	38.28	-	-	74	-35.72	-	-	330	148	V
* 1.2	38.33	ADR	28	-36	0	30.33	54	-23.67	-	-	-	-	330	148	V
* 4.797	47.66	PK-U	34	-30	0	51.66	-	-	74	-22.34	-	-	291	231	V
* 4.797	37.19	ADR	34	-30	0	41.19	54	-12.81	-	-	-	-	291	231	V
2	46.81	PK-U	31.1	-34.4	0	43.51	-	-	-	-	68.2	-24.69	100	209	V
2	39.61	ADR	31.1	-34.4	0	36.31	-	-	-	-	-	-	100	209	V
10.231	34.63	PK-U	37.3	-22.3	0	49.63	-	-	-	-	68.2	-18.57	223	378	H
10.231	22.67	ADR	37.3	-22.3	0	37.67	-	-	-	-	-	-	223	378	H

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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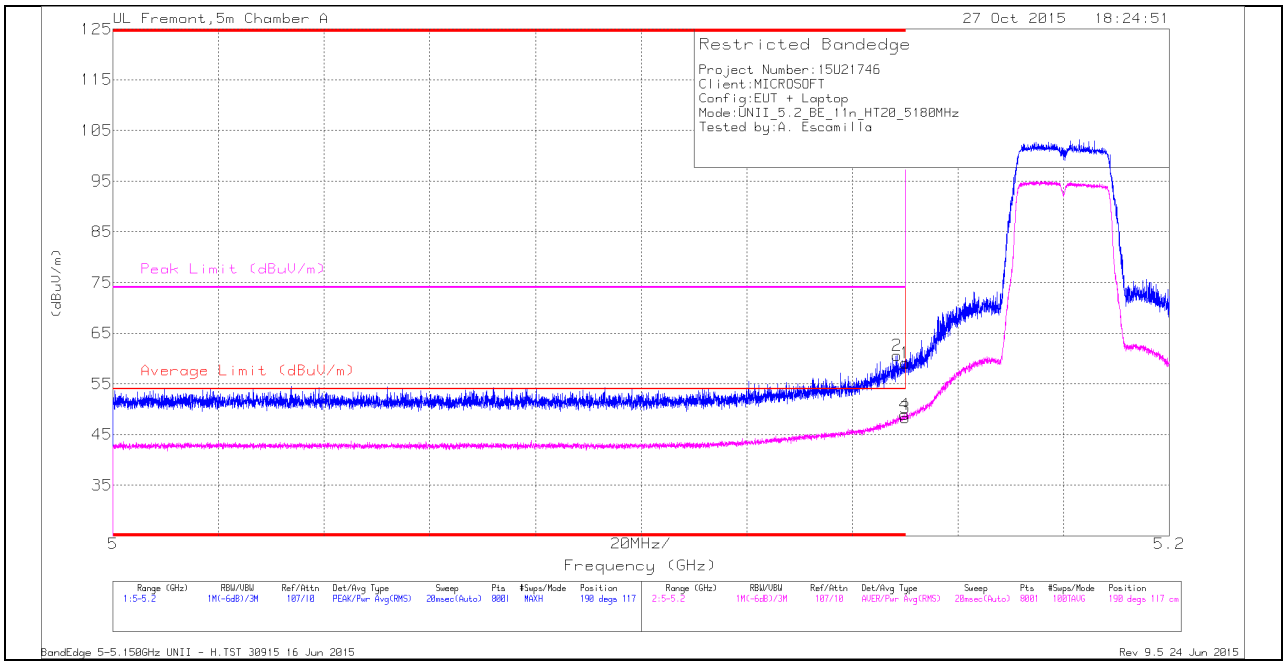
9.1.2. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.2 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 5.148	47.05	Pk	34.2	-20.7	0	60.55	-	-	74	-13.45	190	117	H
1	* 5.15	45.61	Pk	34.2	-20.7	0	59.11	-	-	74	-14.89	190	117	H
3	* 5.15	34.7	RMS	34.2	-20.7	.1	48.3	54	-5.7	-	-	190	117	H
4	* 5.15	35.33	RMS	34.2	-20.7	.1	48.93	54	-5.07	-	-	190	117	H

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

Pk - Peak detector

RMS - RMS detection

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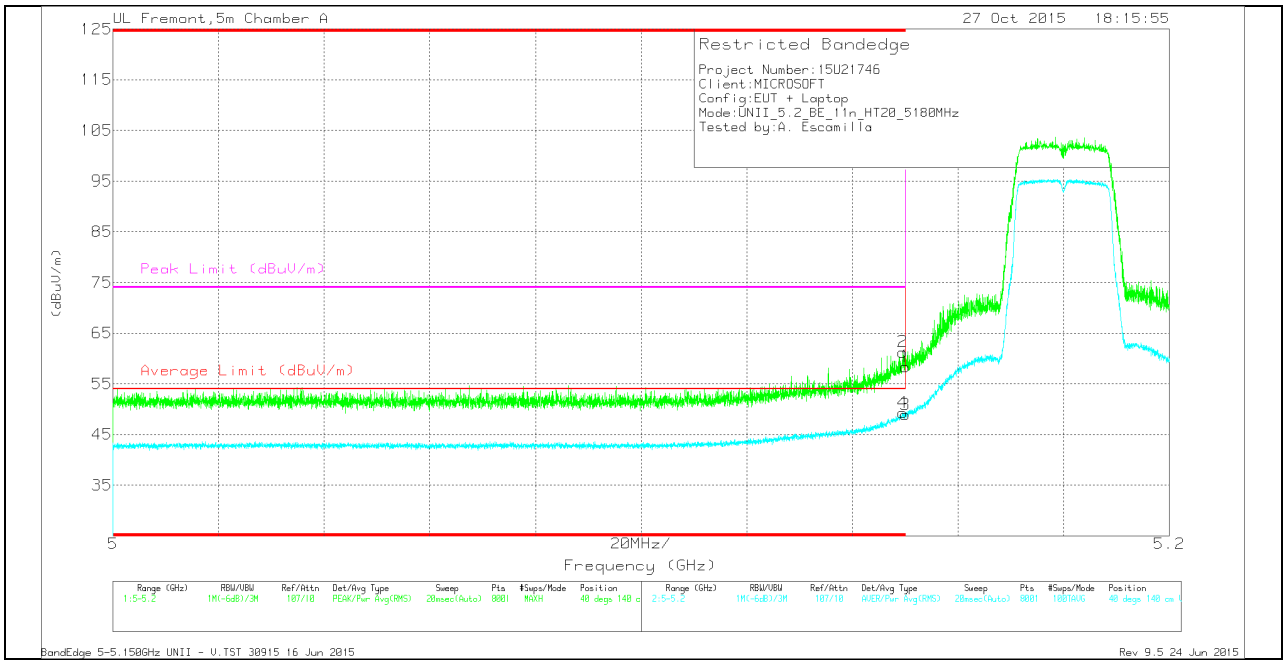
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Flt r/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	* 5.15	44.92	Pk	34.2	-20.7	0	58.42	-	-	74	-15.58	40	140	V
2	* 5.15	47.78	Pk	34.2	-20.7	0	61.28	-	-	74	-12.72	40	140	V
3	* 5.15	35.34	RMS	34.2	-20.7	.1	48.94	54	-5.06	-	-	40	140	V
4	* 5.15	35.7	RMS	34.2	-20.7	.1	49.3	54	-4.7	-	-	40	140	V

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

Pk - Peak detector

RMS - RMS detection

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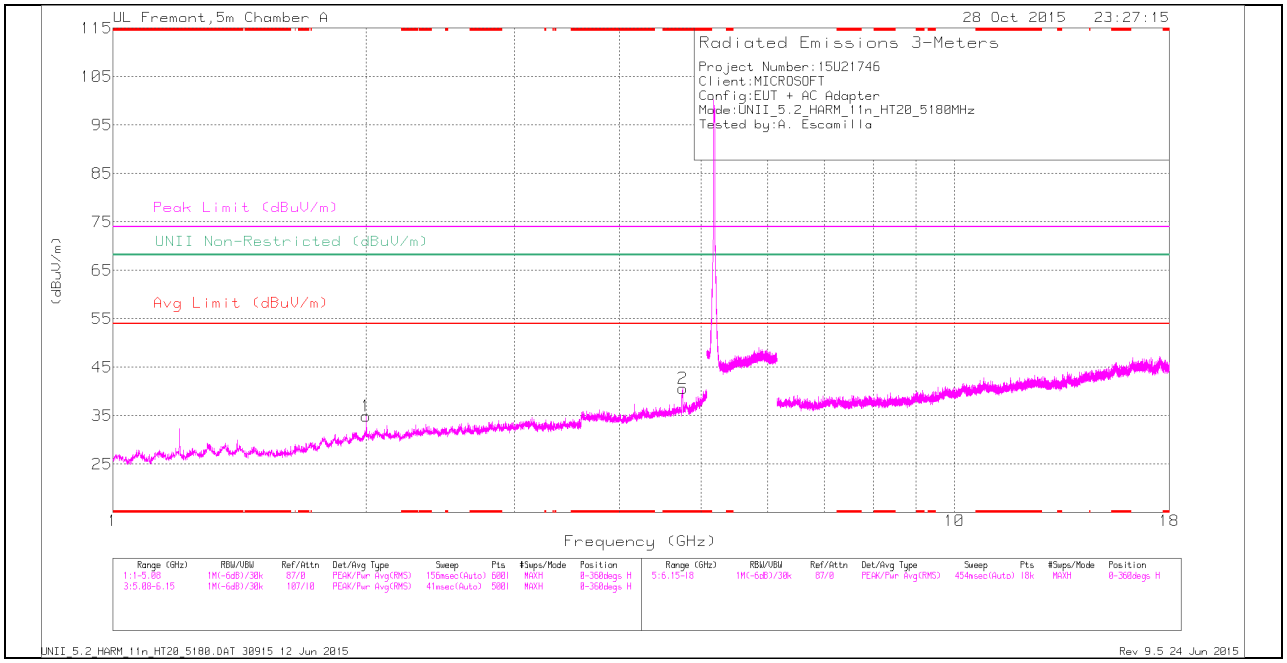
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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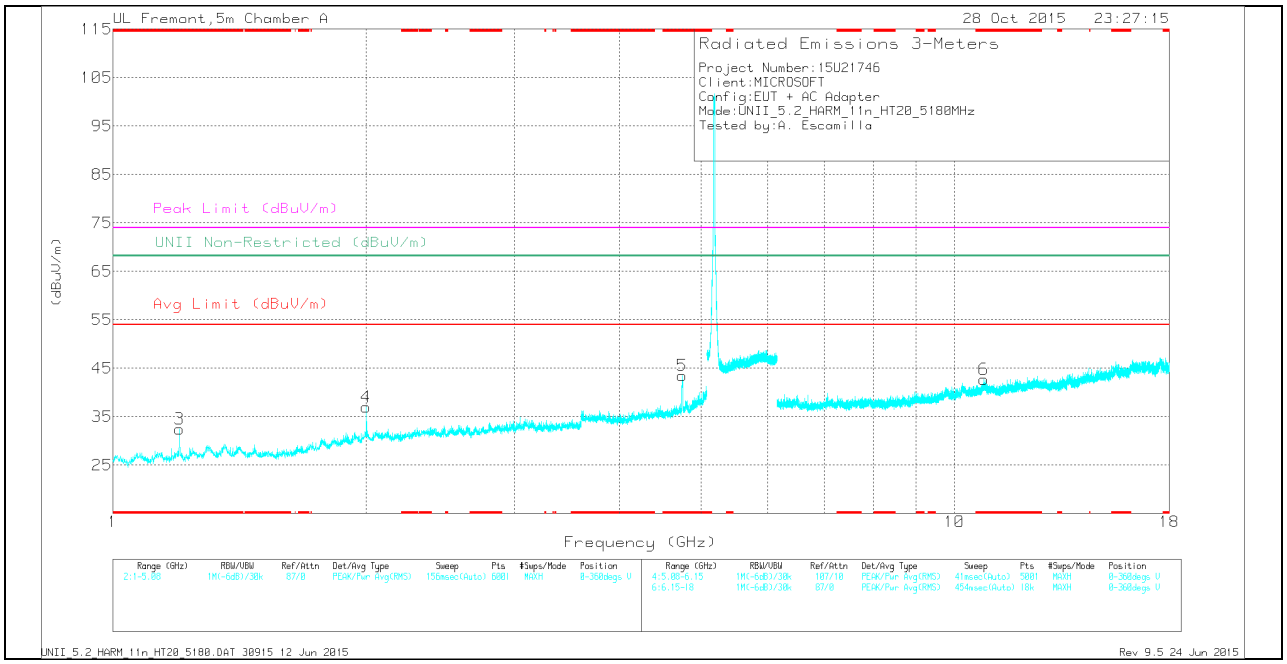
LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
2	* 4.756	36.99	Pk	34	-30.3	0	40.69	-	-	74	-33.31	68.2	-27.51	0-360	100	H
3	* 1.2	40.48	Pk	28	-36	0	32.48	-	-	74	-41.52	68.2	-35.72	0-360	100	V
5	* 4.748	39.79	Pk	34.1	-30.4	0	43.49	-	-	74	-30.51	68.2	-24.71	0-360	200	V
6	* 10.844	26.97	Pk	37.8	-22	0	42.77	-	-	74	-31.23	68.2	-25.43	0-360	200	V
1	2	38.25	Pk	31.1	-34.4	0	34.95	-	-	74	-39.05	68.2	-33.25	0-360	201	H
4	2	40.36	Pk	31.1	-34.4	0	37.06	-	-	74	-36.94	68.2	-31.14	0-360	200	V

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

Pk - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fl tr/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
* 4.755	44.83	PK-U	34	-30.3	0	48.53	-	-	74	-25.47	-	-	240	141	H
* 4.755	34.32	ADR	34	-30.3	.1	38.12	54	-15.88	-	-	-	-	240	141	H
* 1.2	46.57	PK-U	28	-36	0	38.57	-	-	74	-35.43	-	-	335	151	V
* 1.2	38.21	ADR	28	-36	.1	30.31	54	-23.69	-	-	-	-	335	151	V
* 4.747	45.98	PK-U	34.1	-30.4	0	49.68	-	-	74	-24.32	-	-	300	233	V
* 4.75	34.74	ADR	34.1	-30.4	.1	38.54	54	-15.46	-	-	-	-	300	233	V
* 10.843	34.36	PK-U	37.8	-22	0	50.16	-	-	74	-23.84	-	-	231	191	V
* 10.843	22.82	ADR	37.8	-22	.1	38.72	54	-15.28	-	-	-	-	231	191	V
2	43.93	PK-U	31.1	-34.4	0	40.63	-	-	-	-	68.2	-27.57	295	120	H
2	33.01	ADR	31.1	-34.4	.1	29.81	-	-	-	-	-	-	295	120	H
2	46.87	PK-U	31.1	-34.4	0	43.57	-	-	-	-	68.2	-24.63	105	211	V
2	39.44	ADR	31.1	-34.4	.1	36.24	-	-	-	-	-	-	105	211	V

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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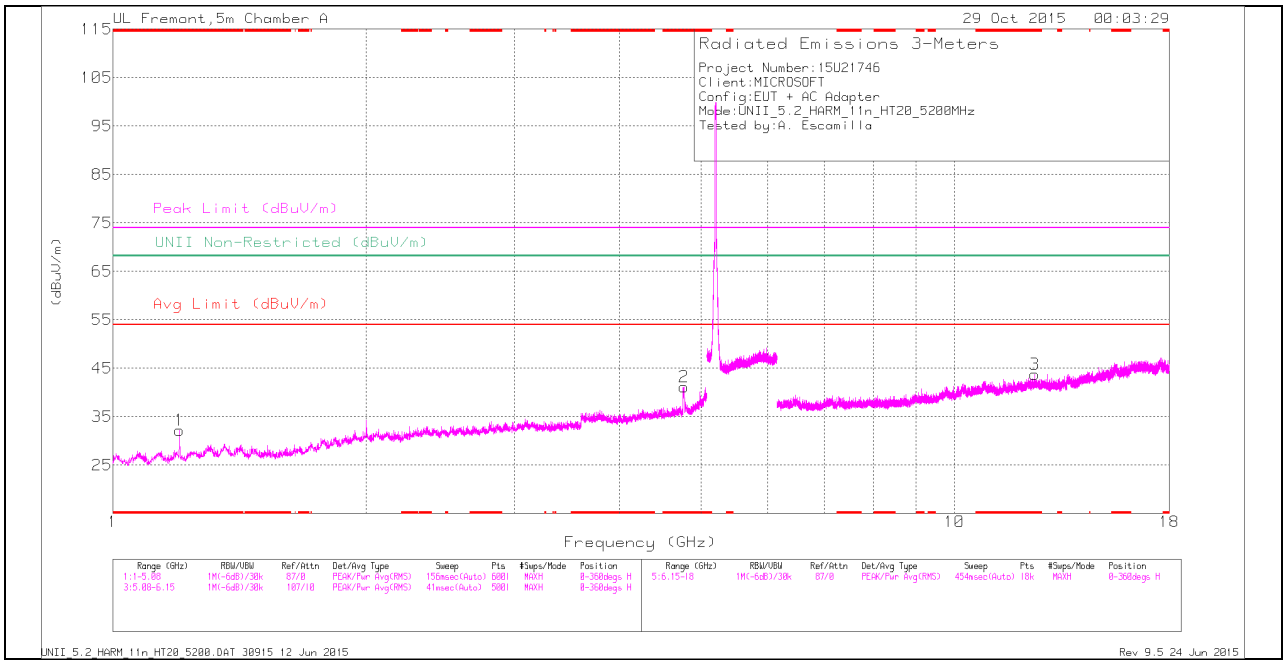
MID CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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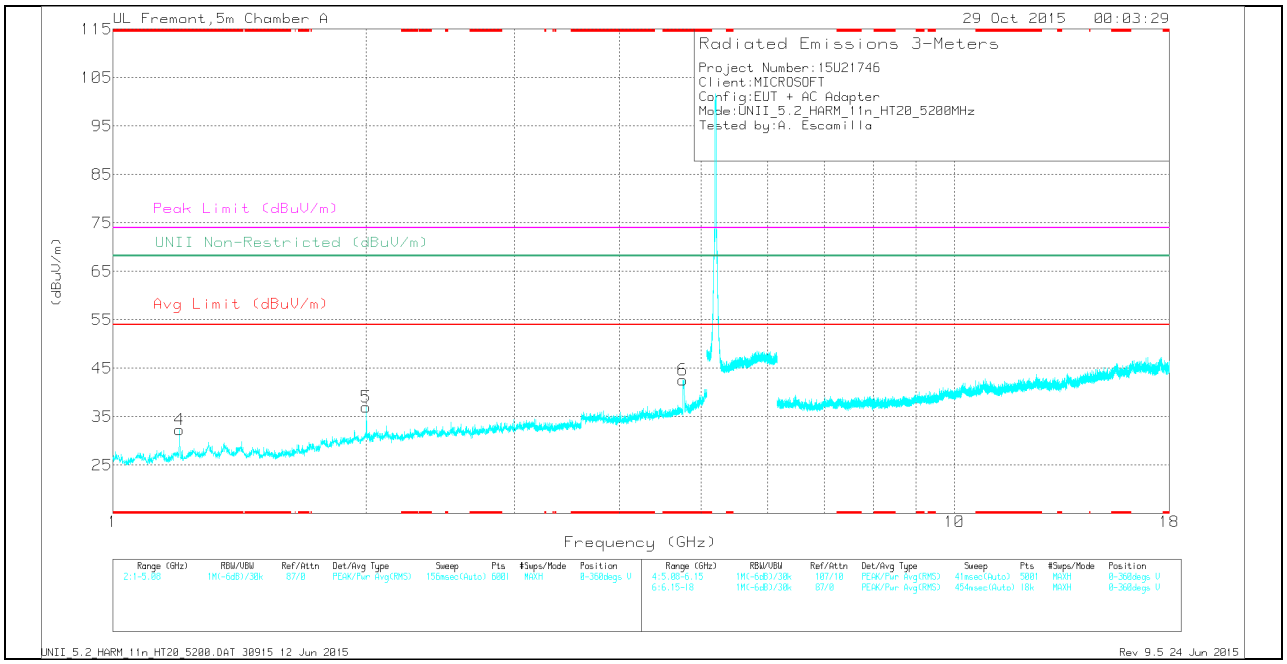
MID CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 1.2	40.18	Pk	28	-36	0	32.18	-	-	74	-41.82	68.2	-36.02	0-360	100	H
2	* 4.772	37.14	Pk	34	-30	0	41.14	-	-	74	-32.86	68.2	-27.06	0-360	100	H
4	* 1.2	40.38	Pk	28	-36	0	32.38	-	-	74	-41.62	68.2	-35.82	0-360	100	V
6	* 4.758	38.9	Pk	34	-30.3	0	42.6	-	-	74	-31.4	68.2	-25.6	0-360	200	V
3	* 12.447	27.31	Pk	39	-22.5	0	43.81	-	-	74	-30.19	68.2	-24.39	0-360	100	H
5	2	40.22	Pk	31.1	-34.3	0	37.02	-	-	74	-36.98	68.2	-31.18	0-360	200	V

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

Pk - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fl tr/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
* 1.2	46.81	PK-U	28	-36	0	38.81	-	-	74	-35.19	-	-	285	100	H
* 1.2	38.26	ADR	28	-36	.1	30.36	54	-23.64	-	-	-	-	285	100	H
* 4.773	46.3	PK-U	34	-30	0	50.3	-	-	74	-23.7	-	-	228	108	H
* 4.772	35.45	ADR	34	-30	.1	39.55	54	-14.45	-	-	-	-	228	108	H
* 1.2	47.96	PK-U	28	-36	0	39.96	-	-	74	-34.04	-	-	52	187	V
* 1.2	41.17	ADR	28	-36	.1	33.27	54	-20.73	-	-	-	-	52	187	V
* 4.76	46.27	PK-U	34	-30.2	0	50.07	-	-	74	-23.93	-	-	160	213	V
* 4.76	35.65	ADR	34	-30.2	.1	39.55	54	-14.45	-	-	-	-	160	213	V
* 12.445	33.74	PK-U	39	-22.5	0	50.24	-	-	74	-23.76	-	-	72	167	H
* 12.446	22.72	ADR	39	-22.5	.1	39.32	54	-14.68	-	-	-	-	72	167	H
2	46.99	PK-U	31.1	-34.4	0	43.69	-	-	-	-	68.2	-24.51	15	211	V
2	39.15	ADR	31.1	-34.4	.1	35.95	-	-	-	-	-	-	15	211	V

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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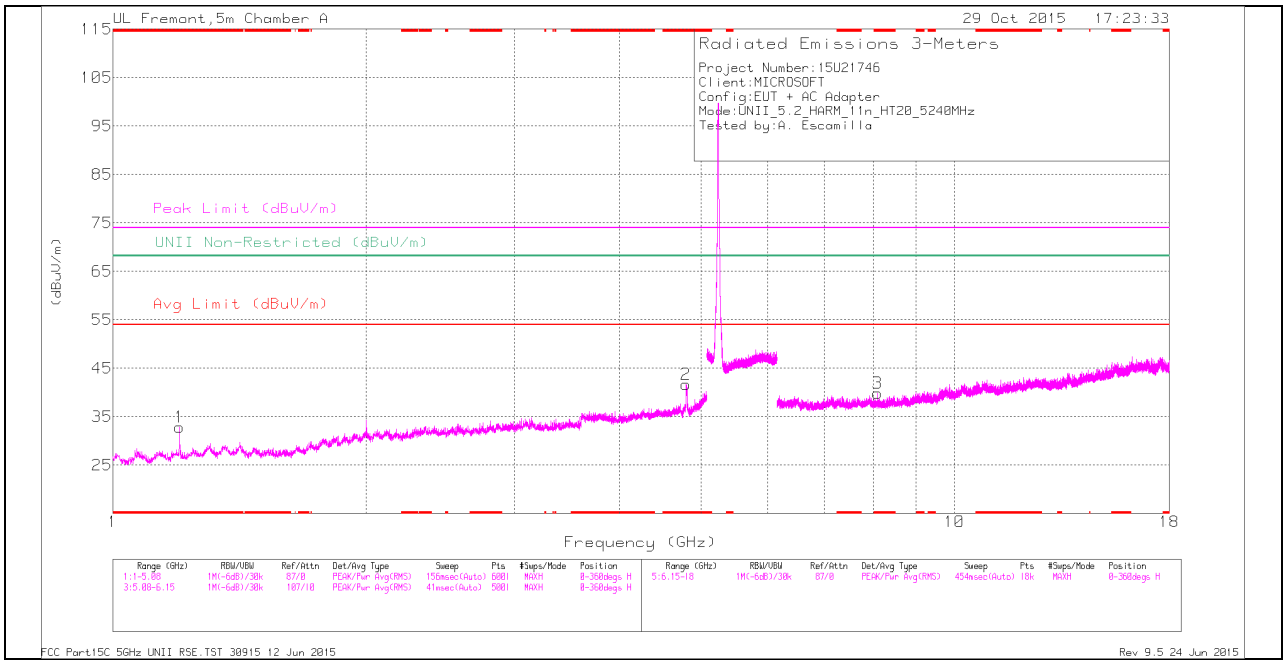
HIGH CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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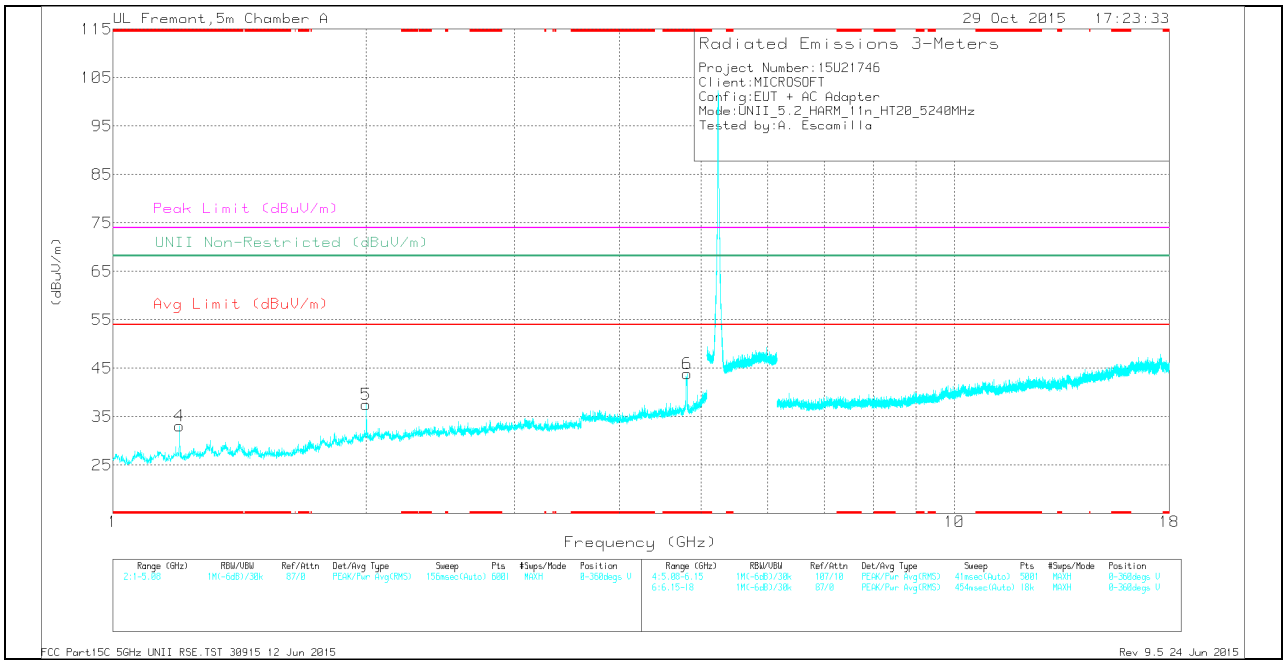
HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 1.2	40.9	Pk	28	-36	0	32.9	-	-	74	-41.1	68.2	-35.3	0-360	101	H
2	* 4.798	37.71	Pk	34	-30	0	41.71	-	-	74	-32.29	68.2	-26.49	0-360	101	H
4	* 1.2	41.11	Pk	28	-36	0	33.11	-	-	74	-40.89	68.2	-35.09	0-360	200	V
6	* 4.811	39.8	Pk	34	-29.9	0	43.9	-	-	74	-30.1	68.2	-24.3	0-360	200	V
3	* 8.11	29.48	Pk	35.7	-25.3	0	39.88	-	-	74	-34.12	68.2	-28.32	0-360	100	H
5	2	40.69	Pk	31.1	-34.3	0	37.49	-	-	74	-36.51	68.2	-30.71	0-360	100	V

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

Pk - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fl tr/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
* 1.2	46.86	PK-U	28	-36	0	38.86	-	-	74	-35.14	-	-	198	118	H
* 1.2	39.07	ADR	28	-36	.1	31.17	54	-22.83	-	-	-	-	198	118	H
* 4.797	47.63	PK-U	34	-30	0	51.63	-	-	74	-22.37	-	-	138	131	H
* 4.799	36.61	ADR	34	-30	.1	40.71	54	-13.29	-	-	-	-	138	131	H
* 1.2	47.82	PK-U	28	-36	0	39.82	-	-	74	-34.18	-	-	55	189	V
* 1.2	40.7	ADR	28	-36	.1	32.8	54	-21.2	-	-	-	-	55	189	V
* 4.809	48.29	PK-U	34	-29.9	0	52.39	-	-	74	-21.61	-	-	161	208	V
* 4.811	37.23	ADR	34	-29.9	.1	41.43	54	-12.57	-	-	-	-	161	208	V
* 8.111	36.14	PK-U	35.7	-25.3	0	46.54	-	-	74	-27.46	-	-	17	182	H
* 8.111	25.36	ADR	35.7	-25.3	.1	35.86	54	-18.14	-	-	-	-	17	182	H
2	46.63	PK-U	31.1	-34.4	0	43.33	-	-	-	-	68.2	-24.87	11	214	V
2	38.49	ADR	31.1	-34.4	.1	35.29	-	-	-	-	-	-	11	214	V

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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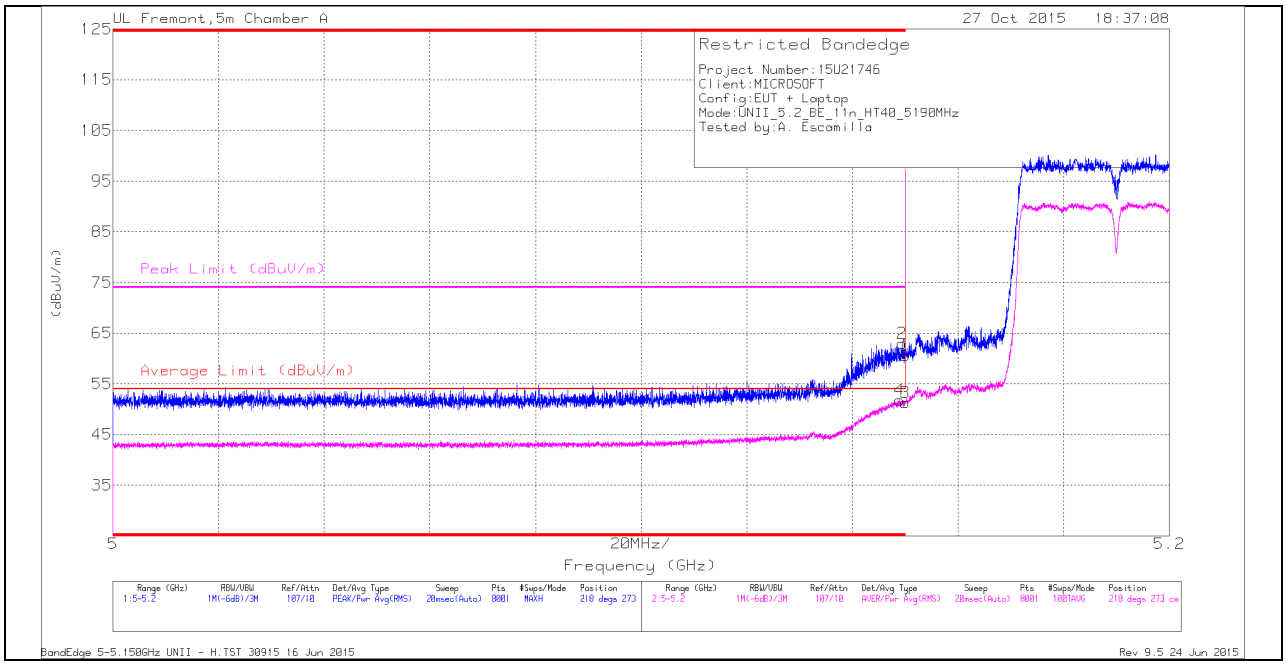
9.1.3. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.2 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Flt r/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	* 5.149	49.49	Pk	34.2	-20.7	0	62.99	-	-	74	-11.01	218	273	H
4	* 5.149	38.15	RMS	34.2	-20.7	.18	51.83	54	-2.17	-	-	218	273	H
1	* 5.15	47.07	Pk	34.2	-20.7	0	60.57	-	-	74	-13.43	218	273	H
3	* 5.15	37.56	RMS	34.2	-20.7	.18	51.24	54	-2.76	-	-	218	273	H

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

Pk - Peak detector

RMS - RMS detection

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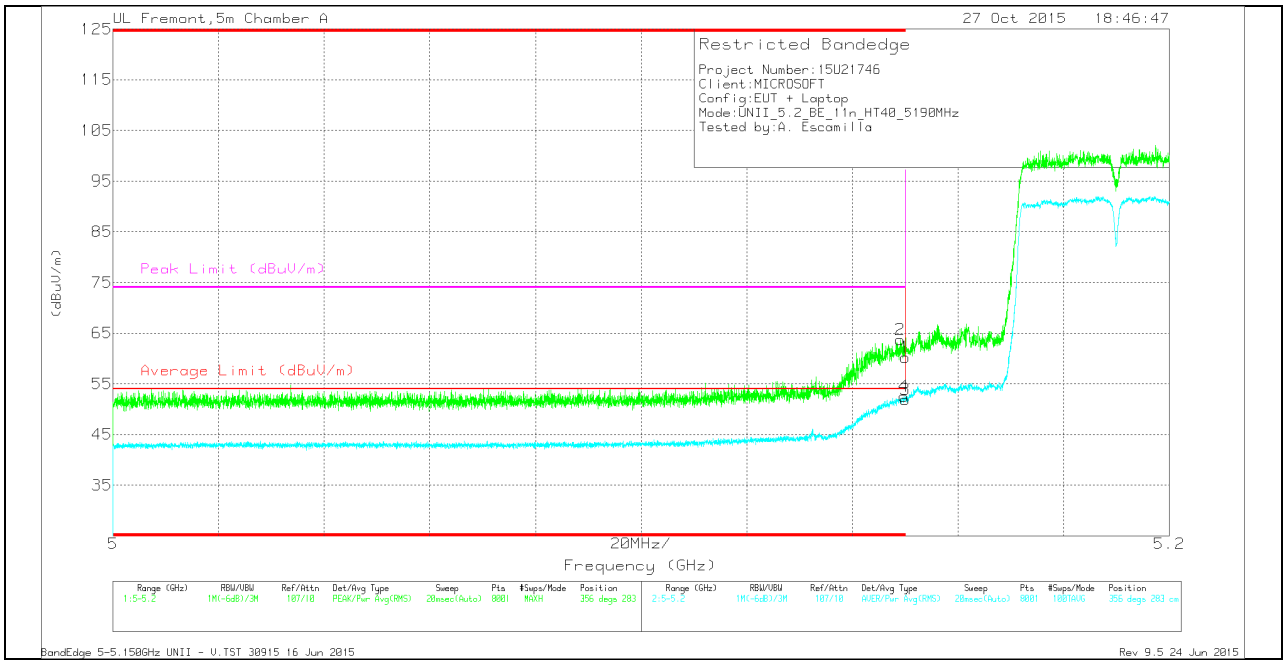
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Flt r/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	* 5.149	50.18	Pk	34.2	-20.7	0	63.68	-	-	74	-10.32	356	283	V
1	* 5.15	46.69	Pk	34.2	-20.7	0	60.19	-	-	74	-13.81	356	283	V
3	* 5.15	38.18	RMS	34.2	-20.7	.18	51.86	54	-2.14	-	-	356	283	V
4	* 5.15	38.86	RMS	34.2	-20.7	.18	52.54	54	-1.46	-	-	356	283	V

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

Pk - Peak detector

RMS - RMS detection

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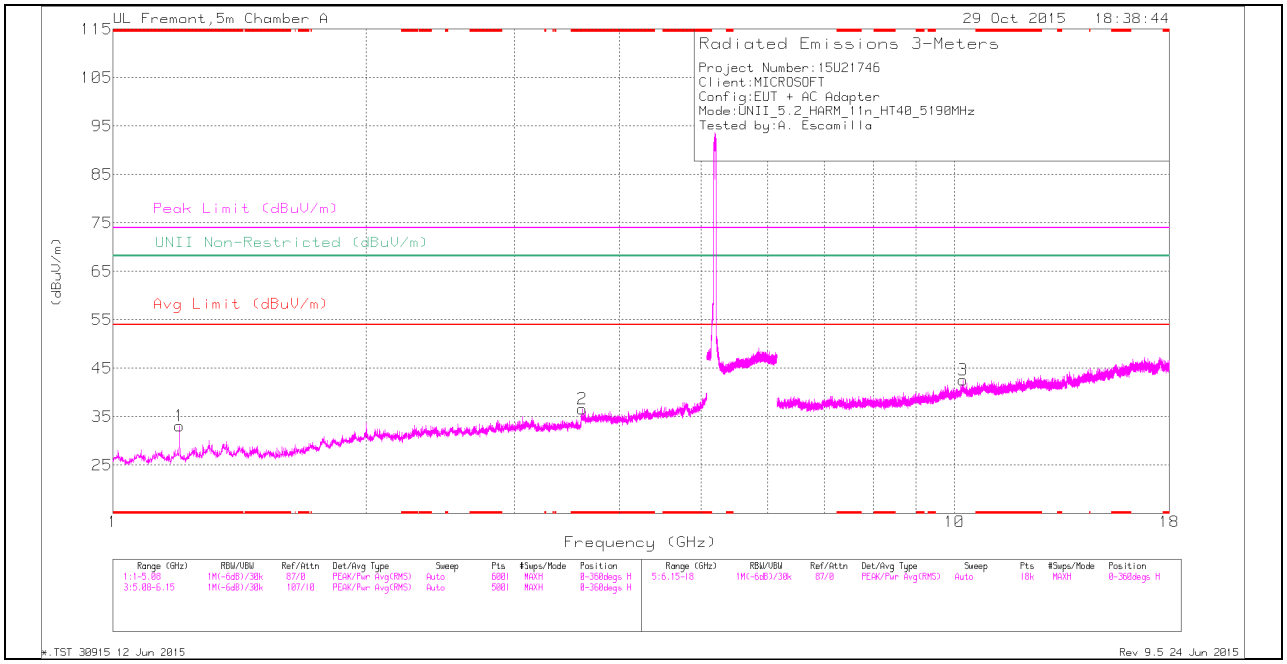
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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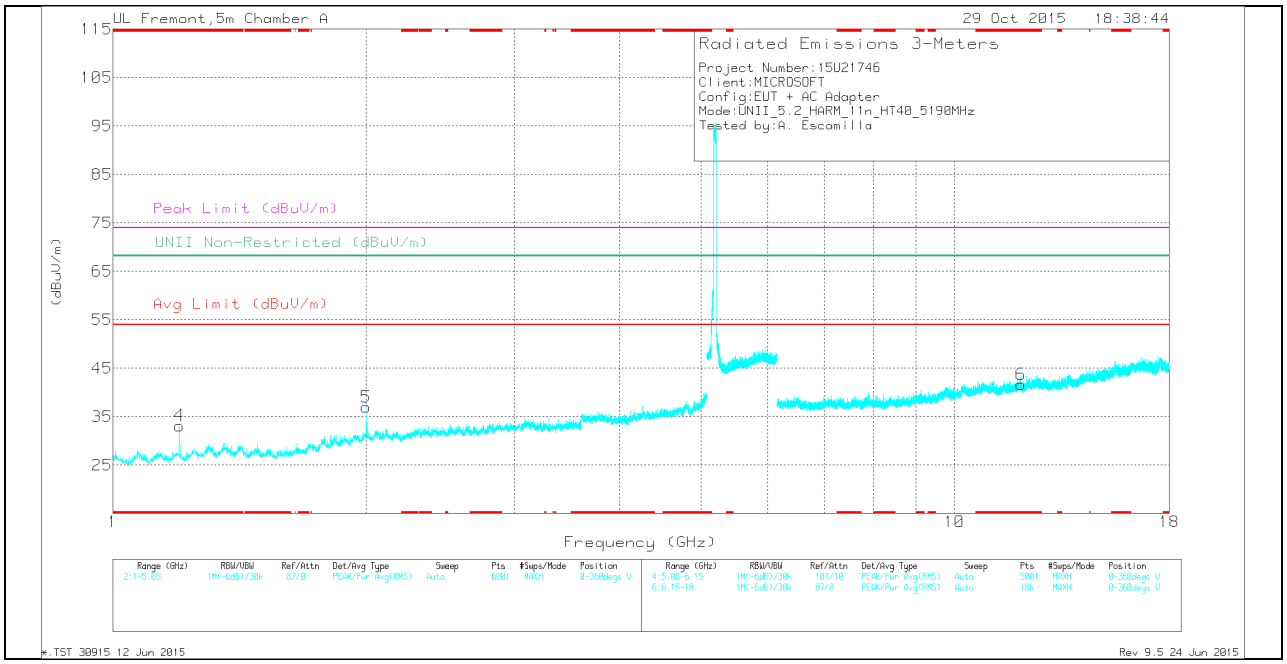
LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 1.2	41.13	Pk	28	-36	0	33.13	-	-	74	-40.87	68.2	-35.07	0-360	100	H
2	* 3.614	36.21	Pk	33.1	-32.7	0	36.61	-	-	74	-37.39	68.2	-31.59	0-360	100	H
4	* 1.2	41.17	Pk	28	-36	0	33.17	-	-	74	-40.83	68.2	-35.03	0-360	200	V
6	* 11.991	25.45	Pk	38.7	-22.5	0	41.65	-	-	74	-32.35	68.2	-26.55	0-360	200	V
5	2	40.32	Pk	31.1	-34.4	0	37.02	-	-	74	-36.98	68.2	-31.18	0-360	100	V
3	10.237	27.67	Pk	37.3	-22.4	0	42.57	-	-	74	-31.43	68.2	-25.63	0-360	100	H

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

Pk - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fl tr/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
* 1.2	46.19	PK-U	28	-36	0	38.19	-	-	74	-35.81	-	-	200	121	H
* 1.2	37.49	ADR	28	-36	.18	29.67	54	-24.33	-	-	-	-	200	121	H
* 3.615	42.67	PK-U	33.1	-32.7	0	43.07	-	-	74	-30.93	-	-	64	239	H
* 3.614	30.58	ADR	33.1	-32.7	.18	31.16	54	-22.84	-	-	-	-	64	239	H
* 1.2	47.94	PK-U	28	-36	0	39.94	-	-	74	-34.06	-	-	51	185	V
* 1.2	40.93	ADR	28	-36	.18	33.11	54	-20.89	-	-	-	-	51	185	V
* 11.993	33.28	PK-U	38.7	-22.6	0	49.38	-	-	74	-24.62	-	-	19	197	V
* 11.99	22.68	ADR	38.7	-22.5	.18	39.06	54	-14.94	-	-	-	-	19	197	V
2	46.69	PK-U	31.1	-34.4	0	43.39	-	-	-	-	68.2	-24.81	9	212	V
2	38.4	ADR	31.1	-34.4	.18	35.28	54	-18.72	-	-	-	-	9	212	V
10.236	23.24	ADR	37.3	-22.4	.18	38.32	54	-15.68	-	-	-	-	43	159	H
10.238	34.75	PK-U	37.3	-22.4	0	49.65	-	-	-	-	68.2	-18.55	43	159	H

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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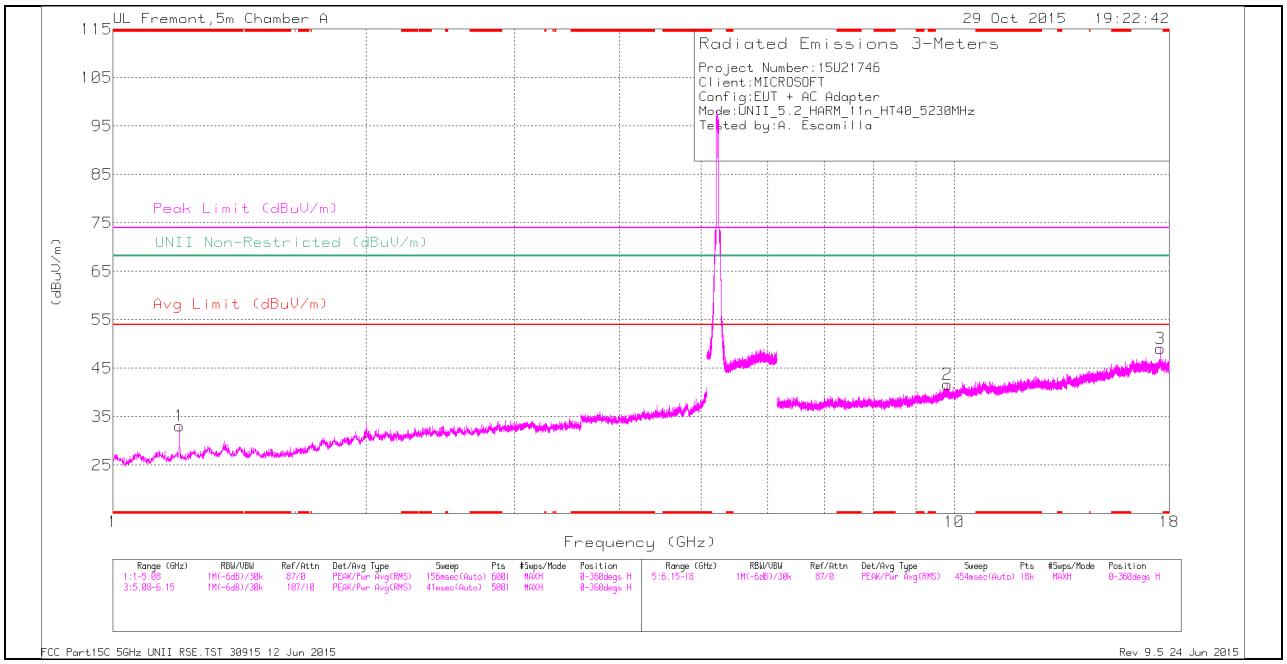
HIGH CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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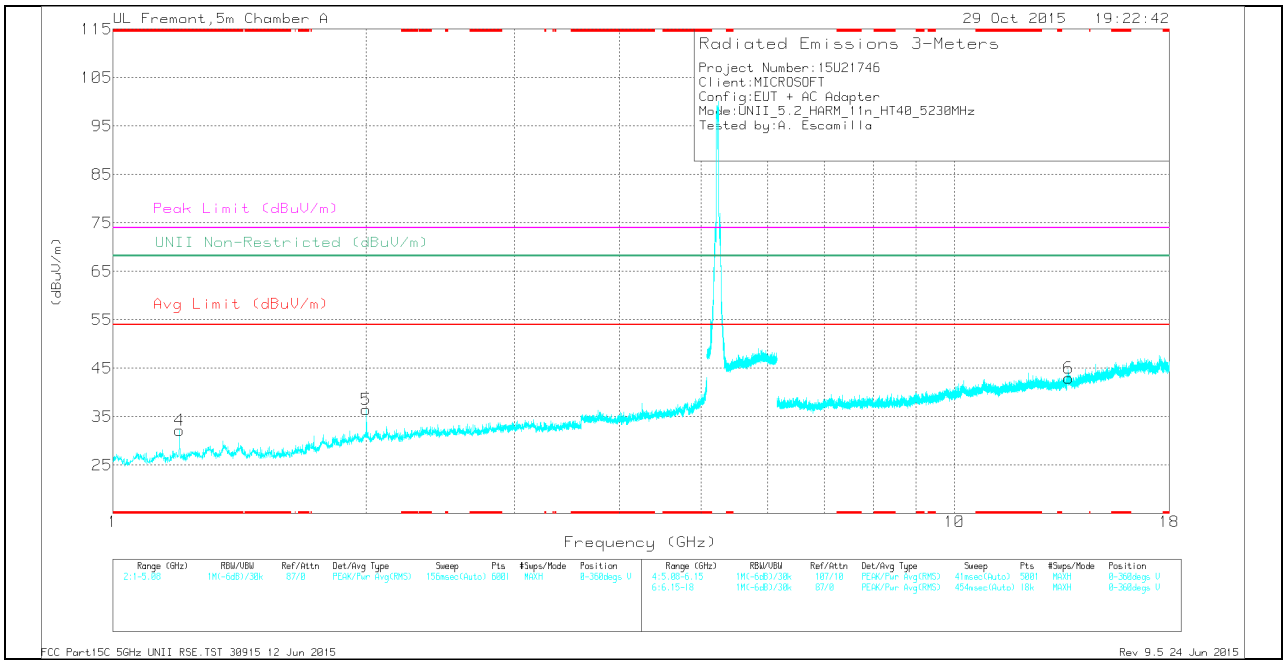
HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 1.2	41.11	Pk	28	-36	0	33.11	-	-	74	-40.89	68.2	-35.09	0-360	100	H
4	* 1.2	40.22	Pk	28	-36	0	32.22	-	-	74	-41.78	68.2	-35.98	0-360	200	V
5	2	39.7	Pk	31.1	-34.3	0	36.5	-	-	74	-37.5	68.2	-31.7	0-360	200	V
2	9.806	28.07	Pk	37	-23.4	0	41.67	-	-	74	-32.33	68.2	-26.53	0-360	201	H
6	13.669	26.93	Pk	38.8	-22.8	0	42.93	-	-	74	-31.07	68.2	-25.27	0-360	100	V
3	17.564	28.39	Pk	41.7	-21	0	49.09	-	-	74	-24.91	68.2	-19.11	0-360	100	H

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

Pk - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fl tr/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
* 1.2	46.45	PK-U	28	-36	0	38.45	-	-	74	-35.55	-	-	195	121	H
* 1.2	38.59	ADR	28	-36	.18	30.77	54	-23.23	-	-	-	-	195	121	H
* 1.2	47.81	PK-U	28	-36	0	39.81	-	-	74	-34.19	-	-	61	182	V
* 1.2	40.07	ADR	28	-36	.18	32.25	54	-21.75	-	-	-	-	61	182	V
2	46.32	PK-U	31.1	-34.4	0	43.02	-	-	-	-	68.2	-25.18	15	219	V
2	38.06	ADR	31.1	-34.4	.18	34.94	-	-	-	-	-	-	15	219	V
9.804	35.01	PK-U	37	-23.4	0	48.61	-	-	-	-	68.2	-19.59	127	201	H
9.807	23.98	ADR	37	-23.4	.18	37.76	-	-	-	-	-	-	127	201	H
13.667	23.89	ADR	38.8	-22.7	.18	40.17	-	-	-	-	-	-	36	116	V
13.671	35.02	PK-U	38.8	-22.8	0	51.02	-	-	-	-	68.2	-17.18	36	116	V
17.565	34.66	PK-U	41.7	-21	0	55.36	-	-	-	-	68.2	-12.84	201	159	H
17.566	23.27	ADR	41.7	-21.1	.18	44.05	-	-	-	-	-	-	201	159	H

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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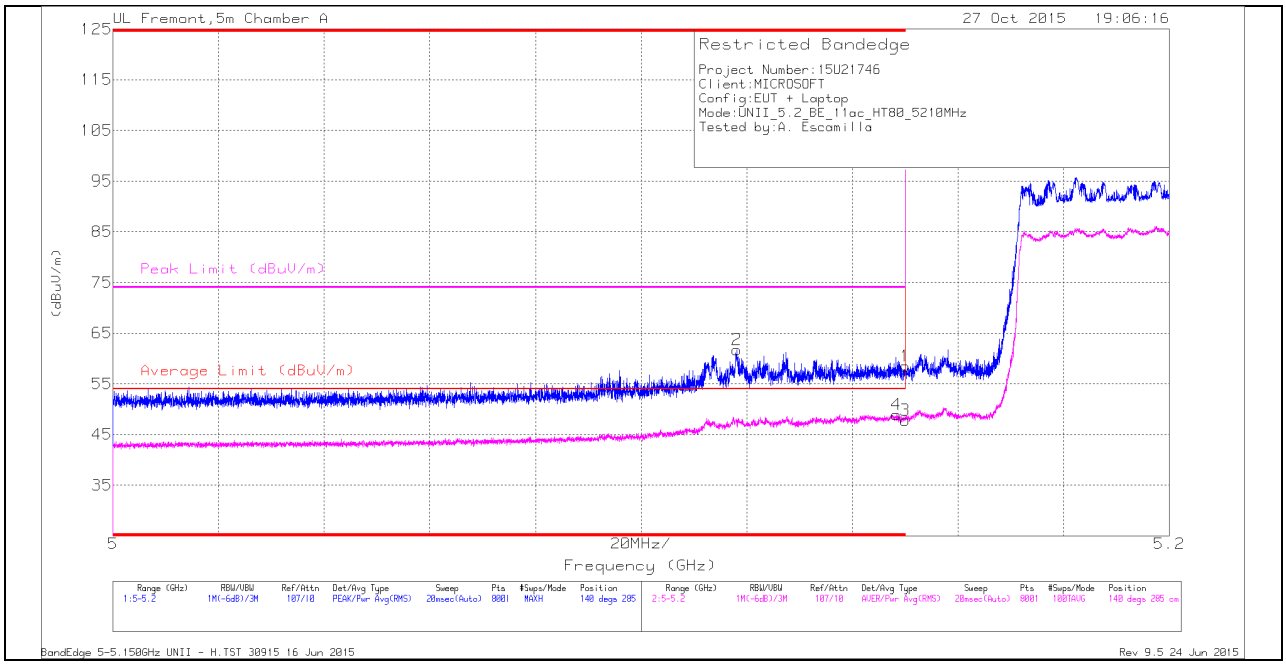
9.1.4. TX ABOVE 1 GHz 802.11ac HT80 MODE IN THE 5.2 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Flt r/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	* 5.118	48.2	Pk	34.1	-20.6	0	61.7	-	-	74	-12.3	140	285	H
4	* 5.148	35.22	RMS	34.2	-20.7	.23	48.95	54	-5.05	-	-	140	285	H
1	* 5.15	44.93	Pk	34.2	-20.7	0	58.43	-	-	74	-15.57	140	285	H
3	* 5.15	34.08	RMS	34.2	-20.7	.23	47.81	54	-6.19	-	-	140	285	H

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

Pk - Peak detector

RMS - RMS detection

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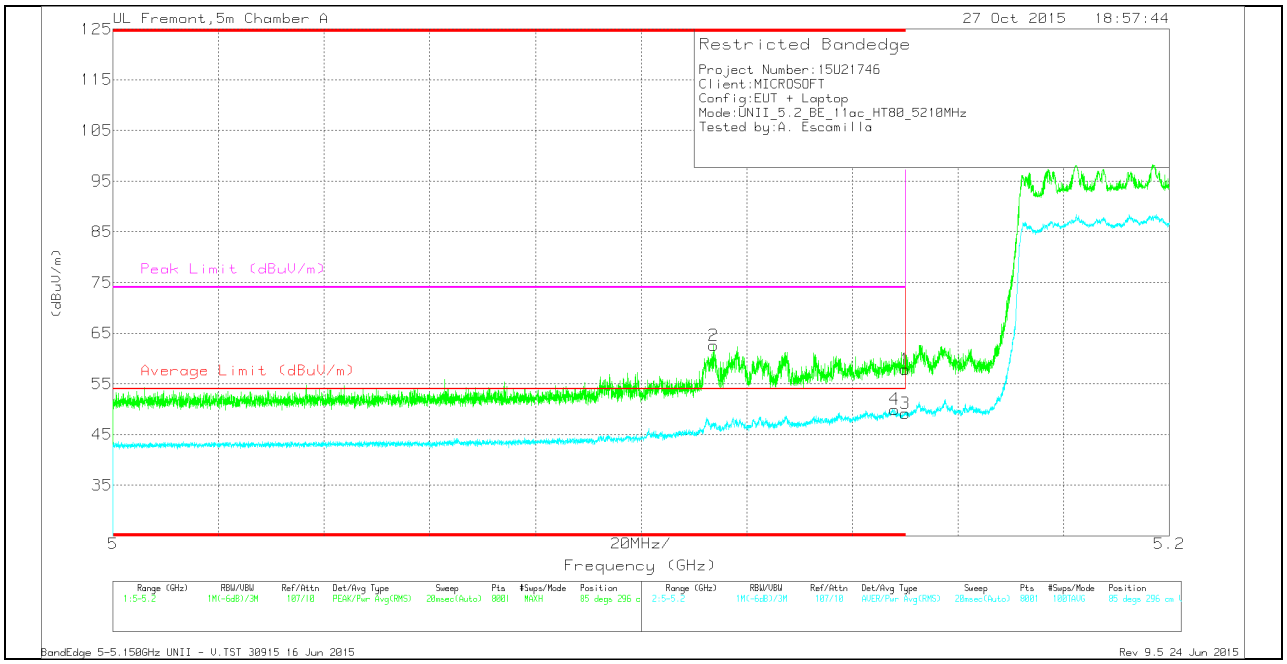
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Flt r/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	* 5.114	48.95	Pk	34.1	-20.5	0	62.55	-	-	74	-11.45	85	296	V
4	* 5.148	36.25	RMS	34.2	-20.7	.23	49.98	54	-4.02	-	-	85	296	V
1	* 5.15	44.41	Pk	34.2	-20.7	0	57.91	-	-	74	-16.09	85	296	V
3	* 5.15	35.46	RMS	34.2	-20.7	.23	49.19	54	-4.81	-	-	85	296	V

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

Pk - Peak detector

RMS - RMS detection

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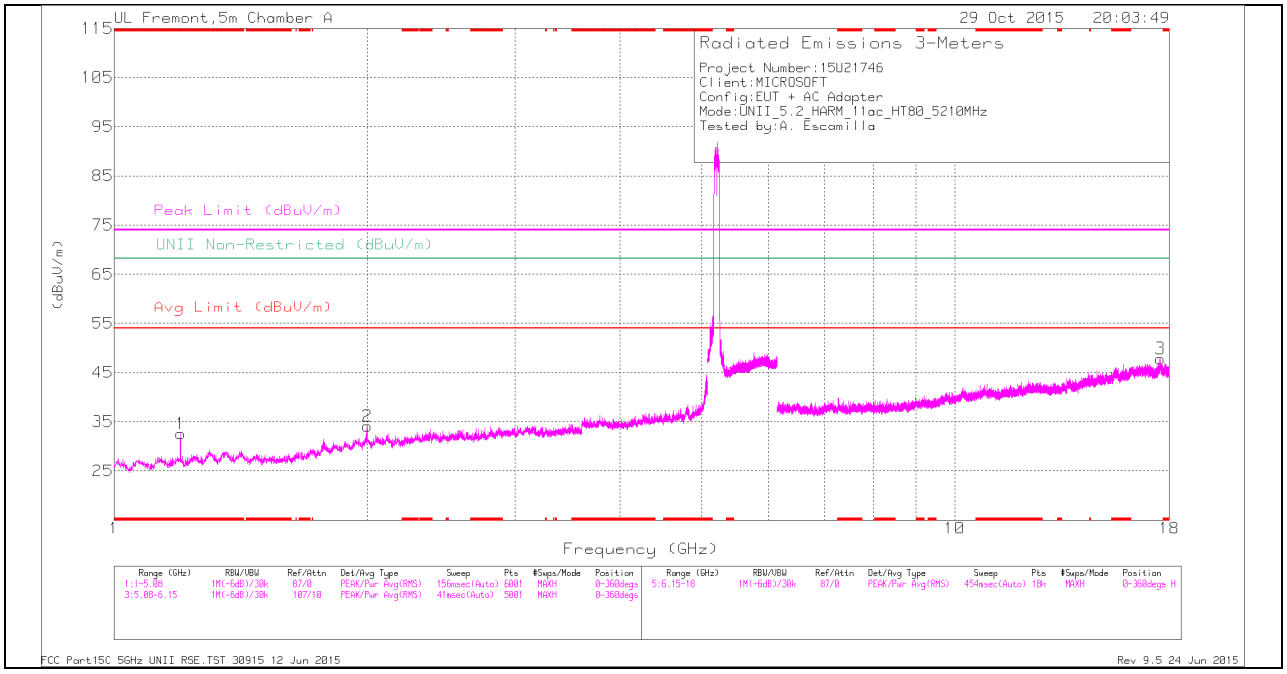
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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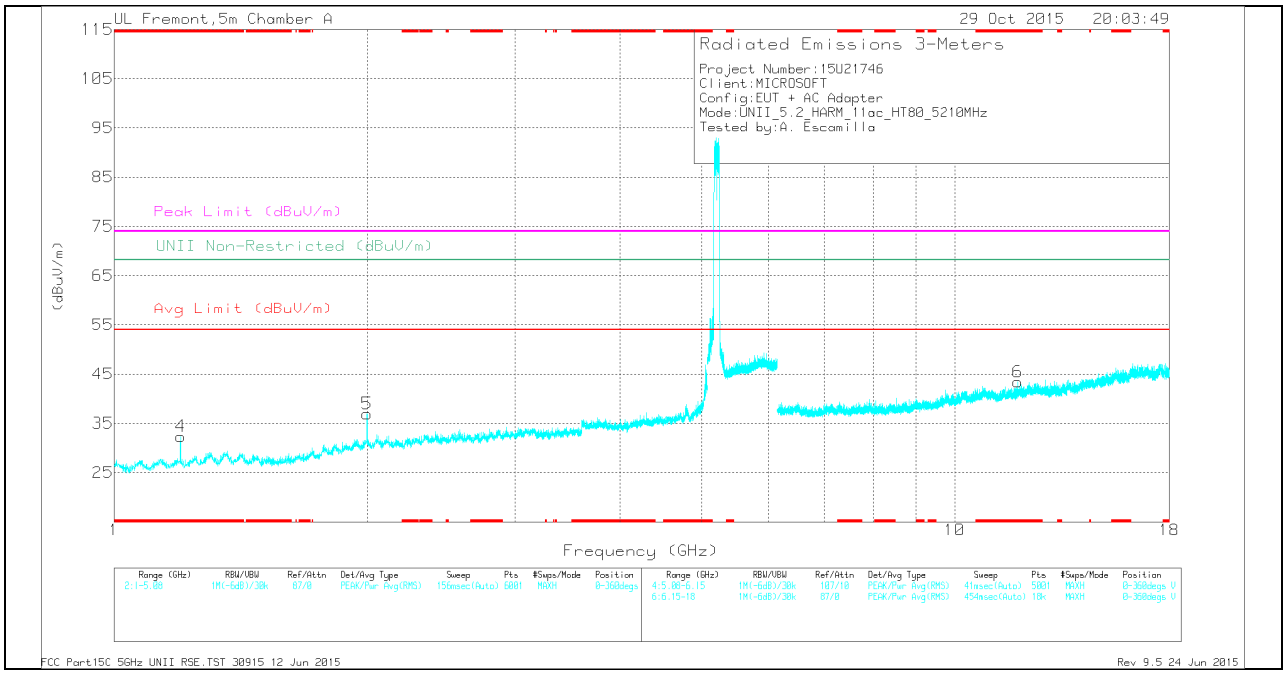
LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 1.2	40.54	Pk	28	-36	0	32.54	-	-	74	-41.46	68.2	-35.66	0-360	100	H
4	* 1.2	40.33	Pk	28	-36	0	32.33	-	-	74	-41.67	68.2	-35.87	0-360	200	V
6	* 11.887	27.73	Pk	38.5	-22.8	0	43.43	-	-	74	-30.57	68.2	-24.77	0-360	100	V
2	2	37.31	Pk	31.1	-34.3	0	34.11	-	-	74	-39.89	68.2	-34.09	0-360	201	H
5	2	40.23	Pk	31.1	-34.4	0	36.93	-	-	74	-37.07	68.2	-31.27	0-360	200	V
3	17.561	27.11	Pk	41.7	-21	0	47.81	-	-	74	-26.19	68.2	-20.39	0-360	201	H

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

Pk - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fl tr/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
* 1.2	47.51	PK-U	28	-36	0	39.51	-	-	74	-34.49	-	-	177	119	H
* 1.2	39.64	ADR	28	-36	.23	31.87	54	-22.13	-	-	-	-	177	119	H
* 1.2	46.86	PK-U	28	-36	0	38.86	-	-	74	-35.14	-	-	51	178	V
* 1.2	39.3	ADR	28	-36	.23	31.53	54	-22.47	-	-	-	-	51	178	V
* 11.887	34.16	PK-U	38.5	-22.8	0	49.86	-	-	74	-24.14	-	-	67	123	V
* 11.886	23.04	ADR	38.5	-22.8	.23	38.97	54	-15.03	-	-	-	-	67	123	V
2	45.27	PK-U	31.1	-34.4	0	41.97	-	-	-	-	68.2	-26.23	98	307	H
2	35.38	ADR	31.1	-34.4	.23	32.31	-	-	-	-	-	-	98	307	H
2	46.66	PK-U	31.1	-34.4	0	43.36	-	-	-	-	68.2	-24.84	7	125	V
2	39.11	ADR	31.1	-34.4	.23	36.04	-	-	-	-	-	-	7	125	V
17.562	34.4	PK-U	41.7	-21	0	55.1	-	-	-	-	68.2	-13.1	40	195	H
17.562	23.25	ADR	41.7	-21	.23	44.18	-	-	-	-	-	-	40	195	H

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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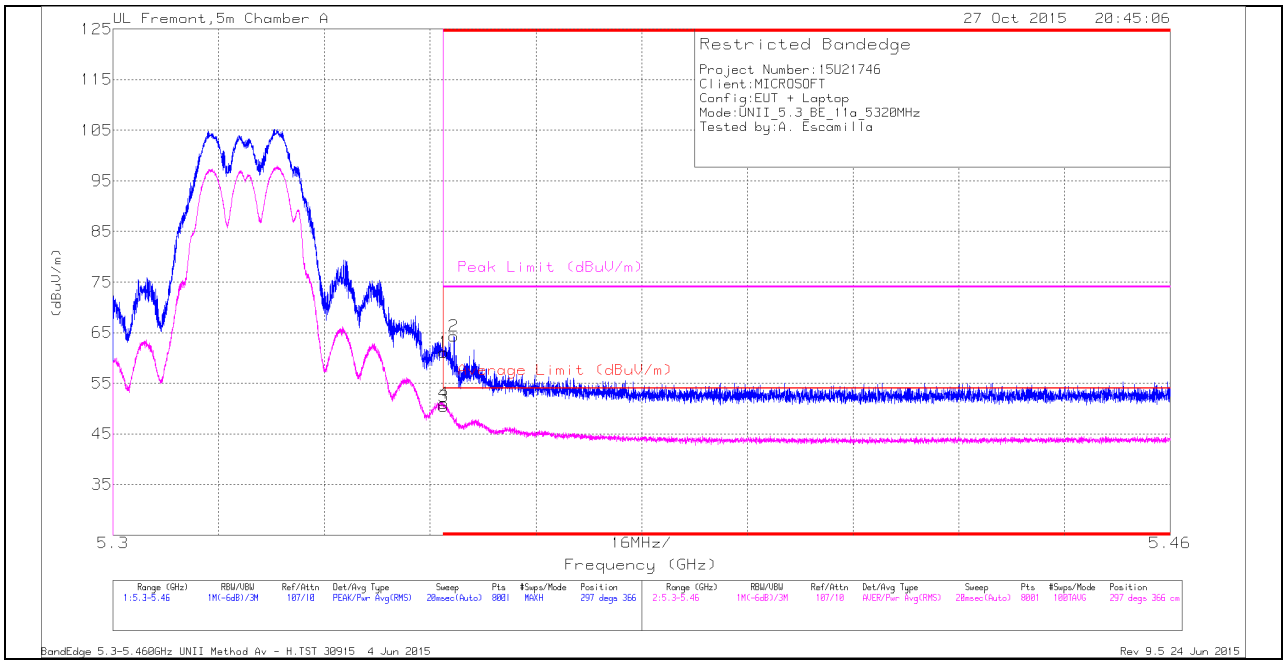
9.2. 5.3 GHz

9.2.1. TX ABOVE 1 GHz 802.11a MODE IN THE 5.3 GHz BAND AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Flt r/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	46.67	Pk	34.6	-20.2	0	61.07	-	-	74	-12.93	297	366	H
2	* 5.352	49.89	Pk	34.6	-20.2	0	64.29	-	-	74	-9.71	297	366	H
3	* 5.35	36.06	RMS	34.6	-20.2	0	50.46	54	-3.54	-	-	297	366	H
4	* 5.35	36.64	RMS	34.6	-20.2	0	51.04	54	-2.96	-	-	297	366	H

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

Pk - Peak detector

RMS - RMS detection

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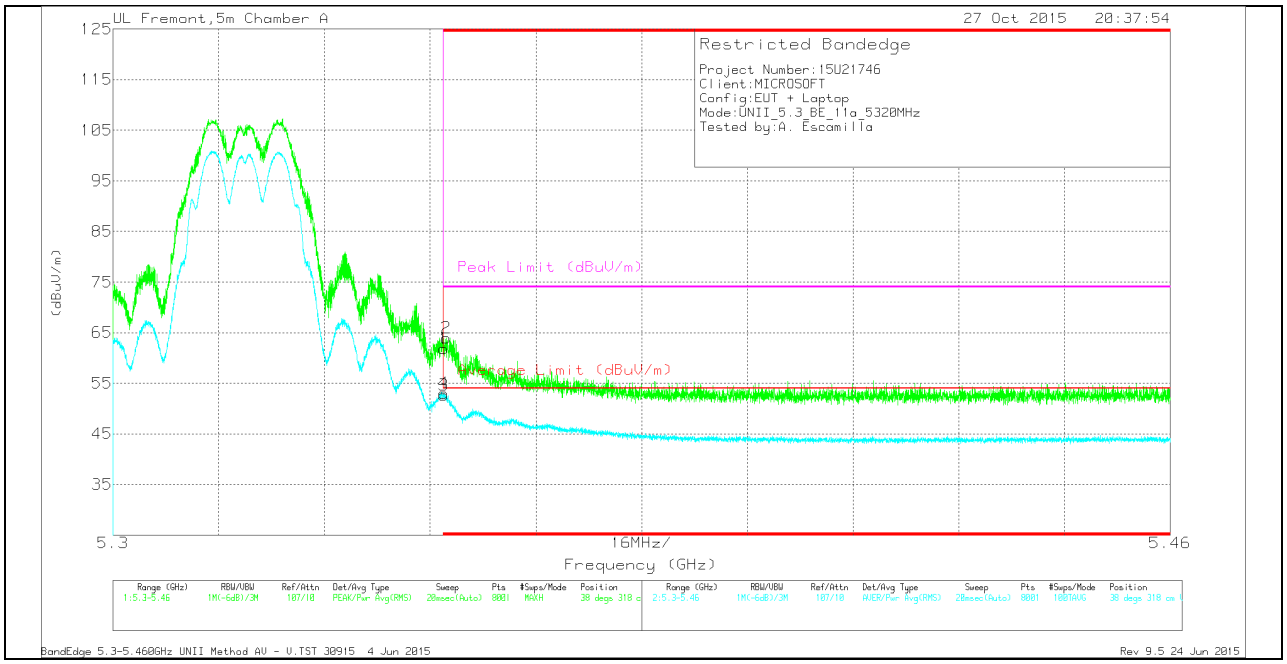
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Flt r/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	47.42	Pk	34.6	-20.2	0	61.82	-	-	74	-12.18	38	318	V
2	* 5.35	49.6	Pk	34.6	-20.2	0	64	-	-	74	-10	38	318	V
3	* 5.35	38.27	RMS	34.6	-20.2	0	52.67	54	-1.33	-	-	38	318	V
4	* 5.35	38.67	RMS	34.6	-20.2	0	53.07	54	-0.93	-	-	38	318	V

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

Pk - Peak detector

RMS - RMS detection

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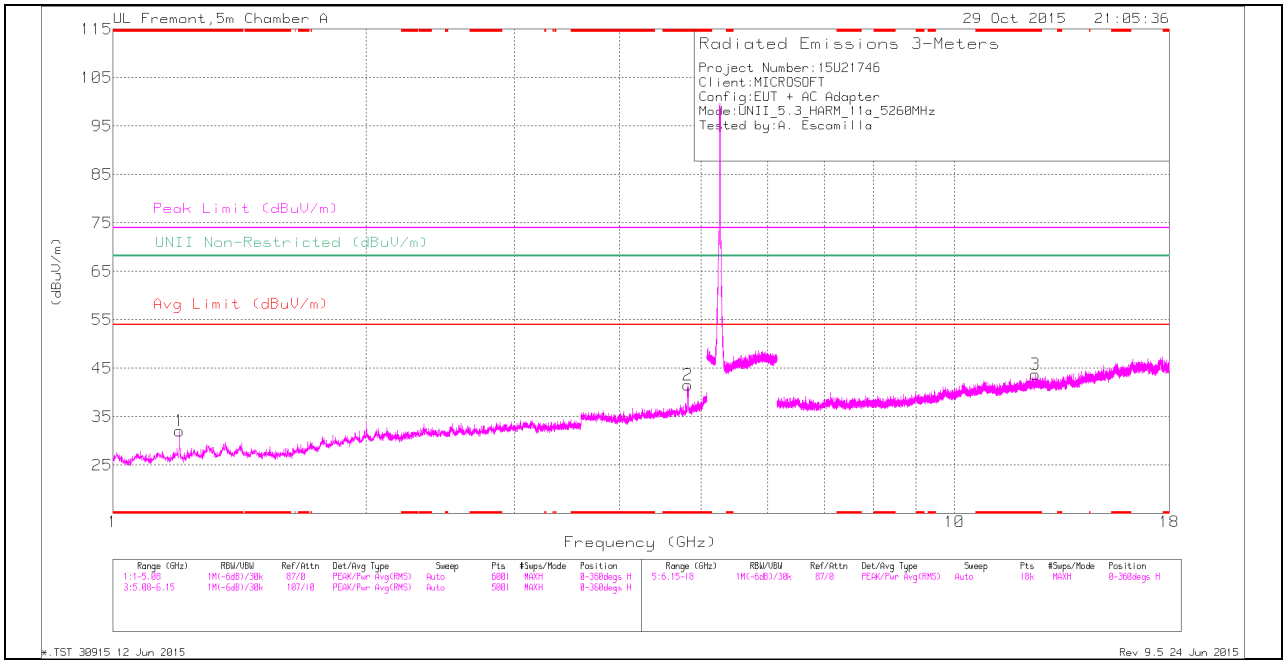
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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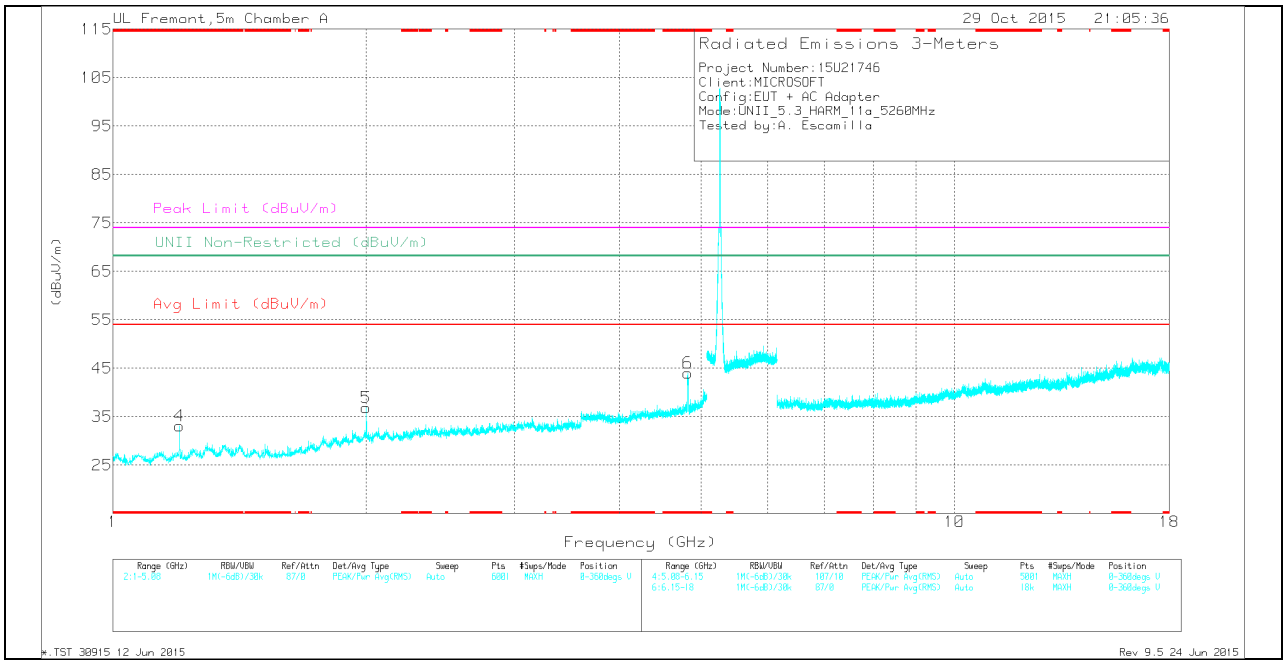
LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 1.2	40.07	Pk	28	-36	0	32.07	-	-	74	-41.93	68.2	-36.13	0-360	100	H
2	* 4.822	37.57	Pk	33.9	-29.9	0	41.57	-	-	74	-32.43	68.2	-26.63	0-360	100	H
4	* 1.2	41.14	Pk	28	-36	0	33.14	-	-	74	-40.86	68.2	-35.06	0-360	200	V
6	* 4.821	40.04	Pk	33.9	-29.9	0	44.04	-	-	74	-29.96	68.2	-24.16	0-360	200	V
3	* 12.48	27.05	Pk	39.1	-22.4	0	43.75	-	-	74	-30.25	68.2	-24.45	0-360	201	H
5	2	40.13	Pk	31.1	-34.3	0	36.93	-	-	74	-37.07	68.2	-31.27	0-360	100	V

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fl tr/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
* 1.2	46.6	PK-U	28	-36	0	38.6	-	-	74	-35.4	-	-	196	120	H
* 1.2	38.04	ADR	28	-36	0	30.04	54	-23.96	-	-	-	-	196	120	H
* 4.823	47.91	PK-U	33.9	-29.9	0	51.91	-	-	74	-22.09	-	-	146	159	H
* 4.823	37.32	ADR	33.9	-29.9	0	41.32	54	-12.68	-	-	-	-	146	159	H
* 1.2	47.27	PK-U	28	-36	0	39.27	-	-	74	-34.73	-	-	56	188	V
* 1.2	40.18	ADR	28	-36	0	32.18	54	-21.82	-	-	-	-	56	188	V
* 4.82	48.26	PK-U	33.9	-29.9	0	52.26	-	-	74	-21.74	-	-	160	205	V
* 4.82	37.95	ADR	33.9	-29.9	0	41.95	54	-12.05	-	-	-	-	160	205	V
* 12.48	33.38	PK-U	39.1	-22.4	0	50.08	-	-	74	-23.92	-	-	5	194	H
* 12.481	22.68	ADR	39.1	-22.4	0	39.38	54	-14.62	-	-	-	-	5	194	H
2	46.01	PK-U	31.1	-34.4	0	42.71	-	-	-	-	68.2	-25.49	10	221	V
2	38.12	ADR	31.1	-34.4	0	34.82	-	-	-	-	-	-	10	221	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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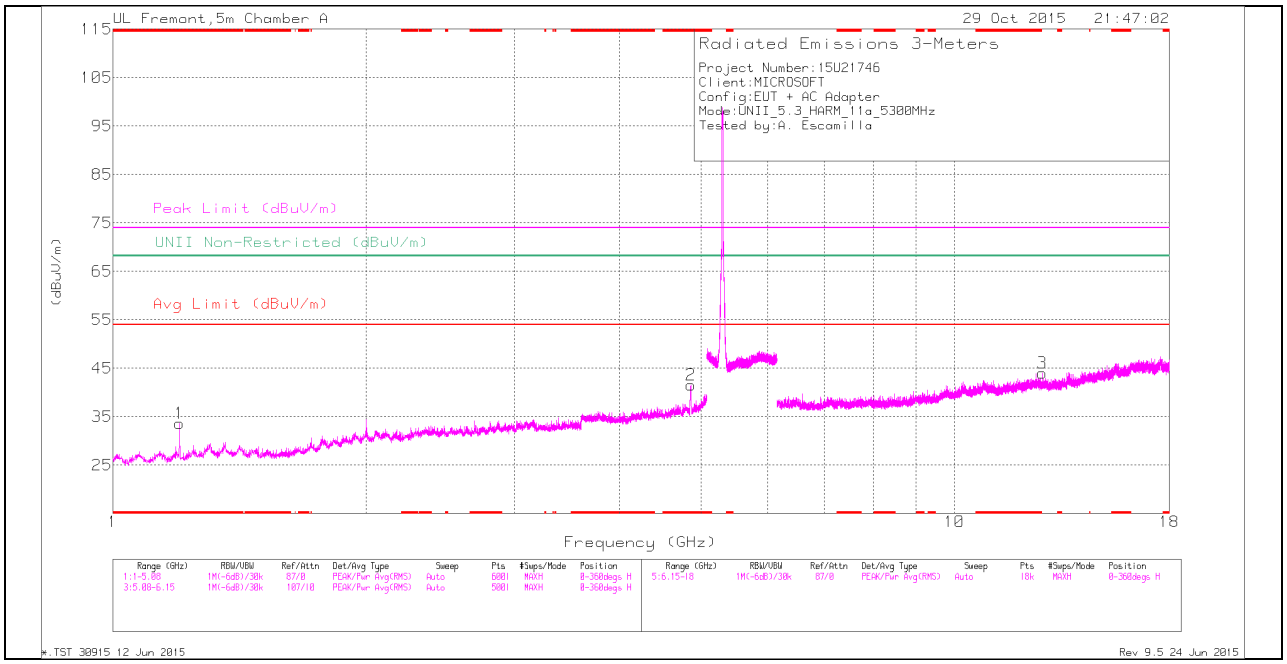
MID CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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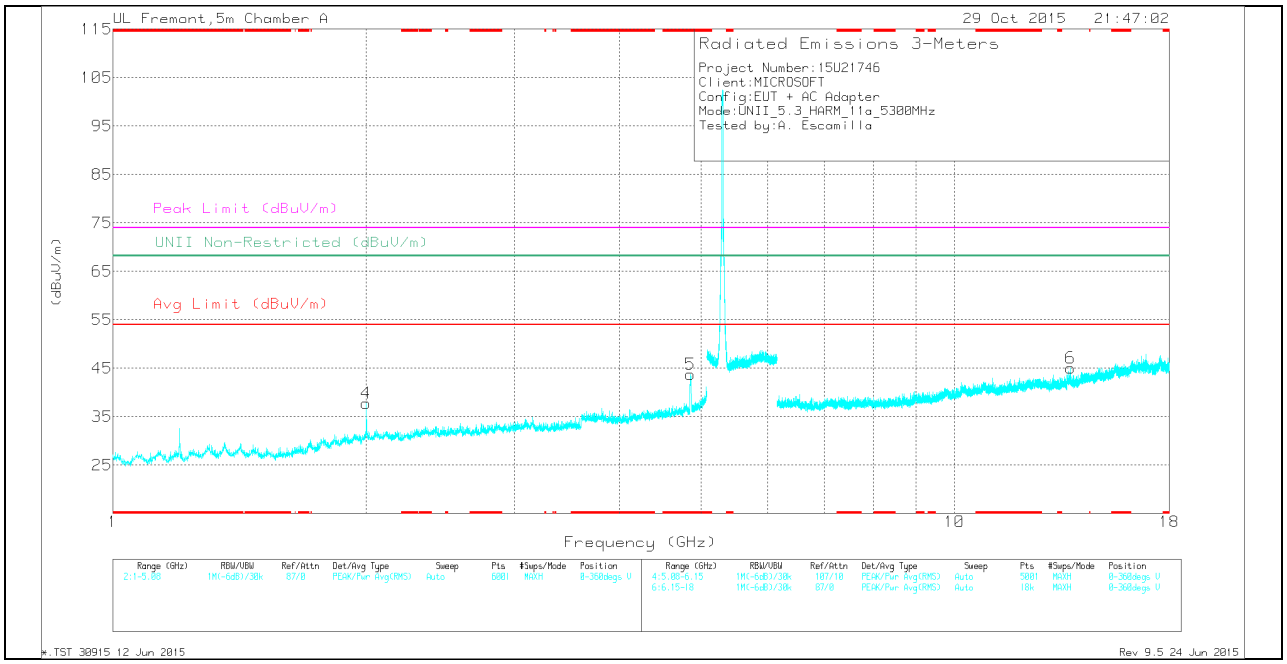
MID CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 1.2	41.63	Pk	28	-36	0	33.63	-	-	74	-40.37	68.2	-34.57	0-360	100	H
2	* 4.864	37.51	Pk	33.9	-29.9	0	41.51	-	-	74	-32.49	68.2	-26.69	0-360	100	H
5	* 4.858	39.81	Pk	33.9	-30	0	43.71	-	-	74	-30.29	68.2	-24.49	0-360	200	V
4	2	41.11	Pk	31.1	-34.4	0	37.81	-	-	74	-36.19	68.2	-30.39	0-360	200	V
3	12.706	27.68	Pk	39.2	-22.9	0	43.98	-	-	74	-30.02	68.2	-24.22	0-360	201	H
6	13.727	28.94	Pk	38.7	-22.6	0	45.04	-	-	74	-28.96	68.2	-23.16	0-360	100	V

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fl tr/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
* 1.2	47.26	PK-U	28	-36	0	39.26	-	-	74	-34.74	-	-	171	104	H
* 1.2	39.73	ADR	28	-36	0	31.73	54	-22.27	-	-	-	-	171	104	H
* 4.864	46.44	PK-U	33.9	-29.8	0	50.54	-	-	74	-23.46	-	-	146	145	H
* 4.864	35.94	ADR	33.9	-29.9	0	39.94	54	-14.06	-	-	-	-	146	145	H
* 4.858	48.75	PK-U	33.9	-30	0	52.65	-	-	74	-21.35	-	-	196	196	V
* 4.858	38.74	ADR	33.9	-30	0	42.64	54	-11.36	-	-	-	-	196	196	V
2	46.12	PK-U	31.1	-34.4	0	42.82	-	-	-	-	68.2	-25.38	25	126	V
2	38.06	ADR	31.1	-34.4	0	34.76	-	-	-	-	-	-	25	126	V
12.705	22.86	ADR	39.2	-22.9	0	39.16	-	-	-	-	-	-	32	217	H
12.706	34.19	PK-U	39.2	-22.9	0	50.49	-	-	-	-	68.2	-17.71	32	217	H
13.725	23.71	ADR	38.7	-22.7	0	39.71	-	-	-	-	-	-	11	178	V
13.727	34.87	PK-U	38.7	-22.6	0	50.97	-	-	-	-	68.2	-17.23	11	178	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701H
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888

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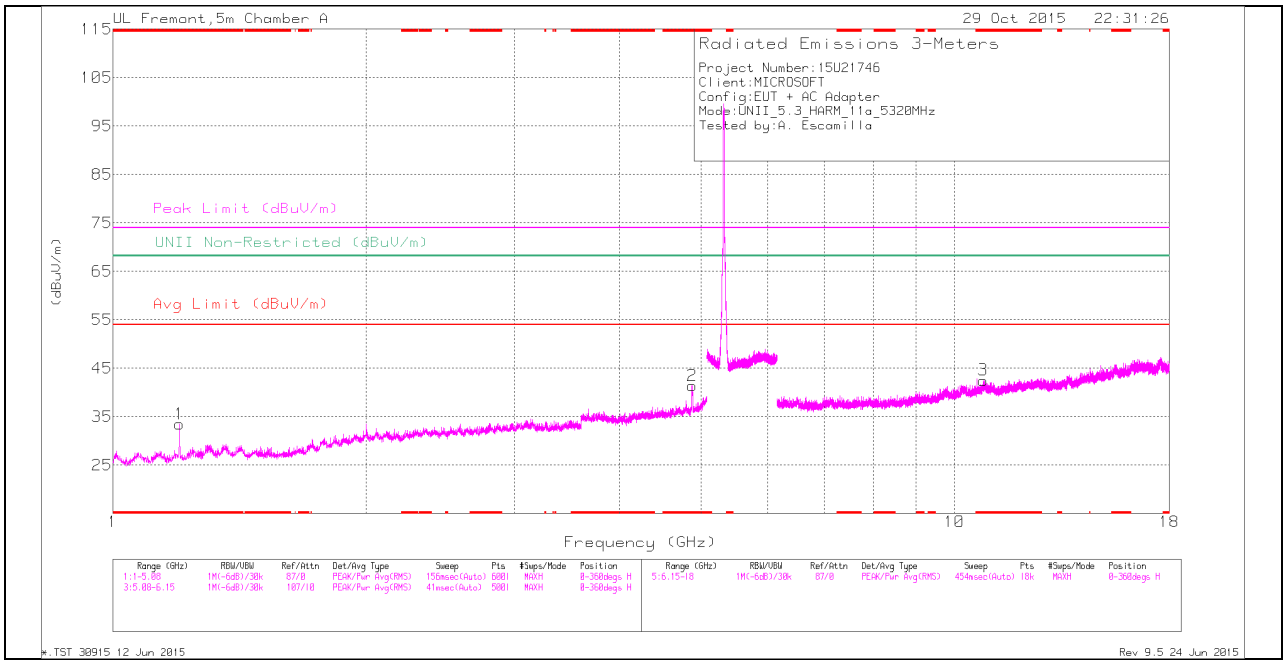
HIGH CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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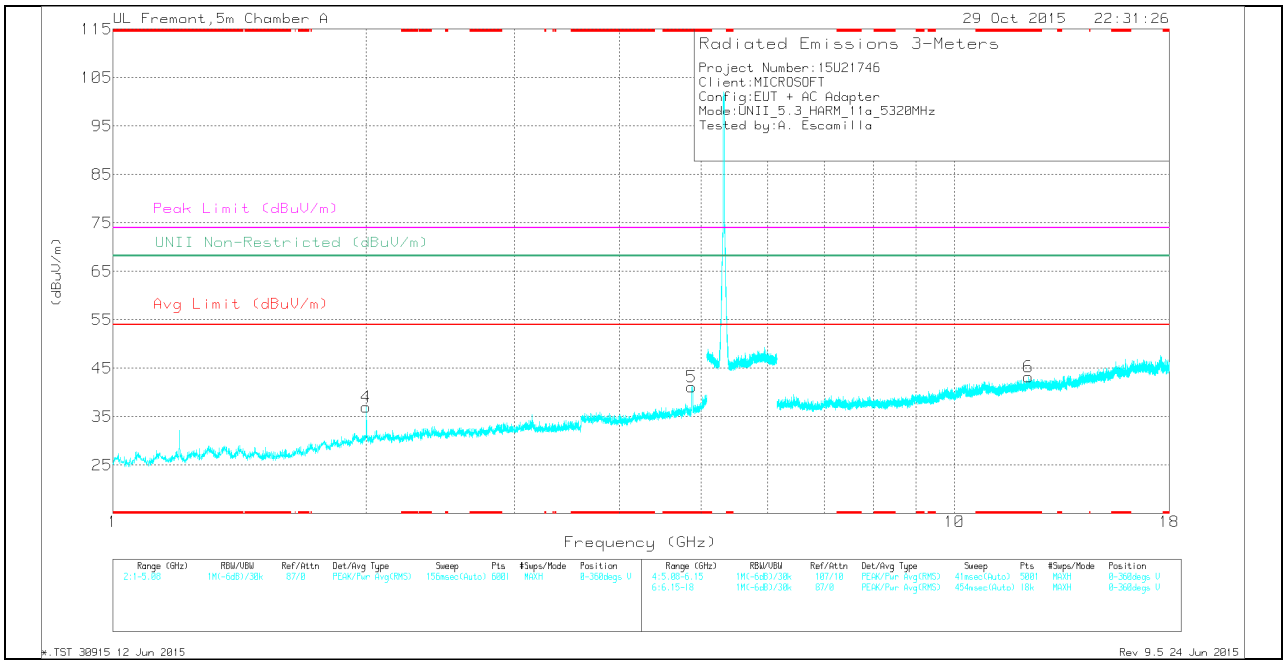
HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 1.2	41.52	Pk	28	-36	0	33.52	-	-	74	-40.48	68.2	-34.68	0-360	100	H
2	* 4.882	37.09	Pk	33.9	-29.6	0	41.39	-	-	74	-32.61	68.2	-26.81	0-360	100	H
5	* 4.875	37	Pk	33.9	-29.7	0	41.2	-	-	74	-32.8	68.2	-27	0-360	100	V
3	* 10.817	26.82	Pk	37.8	-22.1	0	42.52	-	-	74	-31.48	68.2	-25.68	0-360	201	H
6	* 12.246	26.77	Pk	38.9	-22.4	0	43.27	-	-	74	-30.73	68.2	-24.93	0-360	100	V
4	2	40.32	Pk	31.1	-34.4	0	37.02	-	-	74	-36.98	68.2	-31.18	0-360	200	V

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fl tr/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
* 1.2	46.97	PK-U	28	-36	0	38.97	-	-	74	-35.03	-	-	169	108	H
* 1.2	39.5	ADR	28	-36	0	31.5	54	-22.5	-	-	-	-	169	108	H
* 4.883	44.26	PK-U	33.9	-29.6	0	48.56	-	-	74	-25.44	-	-	150	152	H
* 4.882	33.68	ADR	33.9	-29.6	0	37.98	54	-16.02	-	-	-	-	150	152	H
* 4.876	47.21	PK-U	33.9	-29.7	0	51.41	-	-	74	-22.59	-	-	193	189	V
* 4.876	37.76	ADR	33.9	-29.7	0	41.96	54	-12.04	-	-	-	-	193	189	V
* 10.816	34.68	PK-U	37.8	-22.2	0	50.28	-	-	74	-23.72	-	-	82	202	H
* 10.817	23.24	ADR	37.8	-22.1	0	38.94	54	-15.06	-	-	-	-	82	202	H
* 12.245	33.79	PK-U	38.9	-22.4	0	50.29	-	-	74	-23.71	-	-	3	139	V
* 12.244	22.63	ADR	38.9	-22.4	0	39.13	54	-14.87	-	-	-	-	3	139	V
2	46.42	PK-U	31.1	-34.4	0	43.12	-	-	-	-	68.2	-25.08	22	132	V
2	39.01	ADR	31.1	-34.4	0	35.71	-	-	-	-	-	-	22	132	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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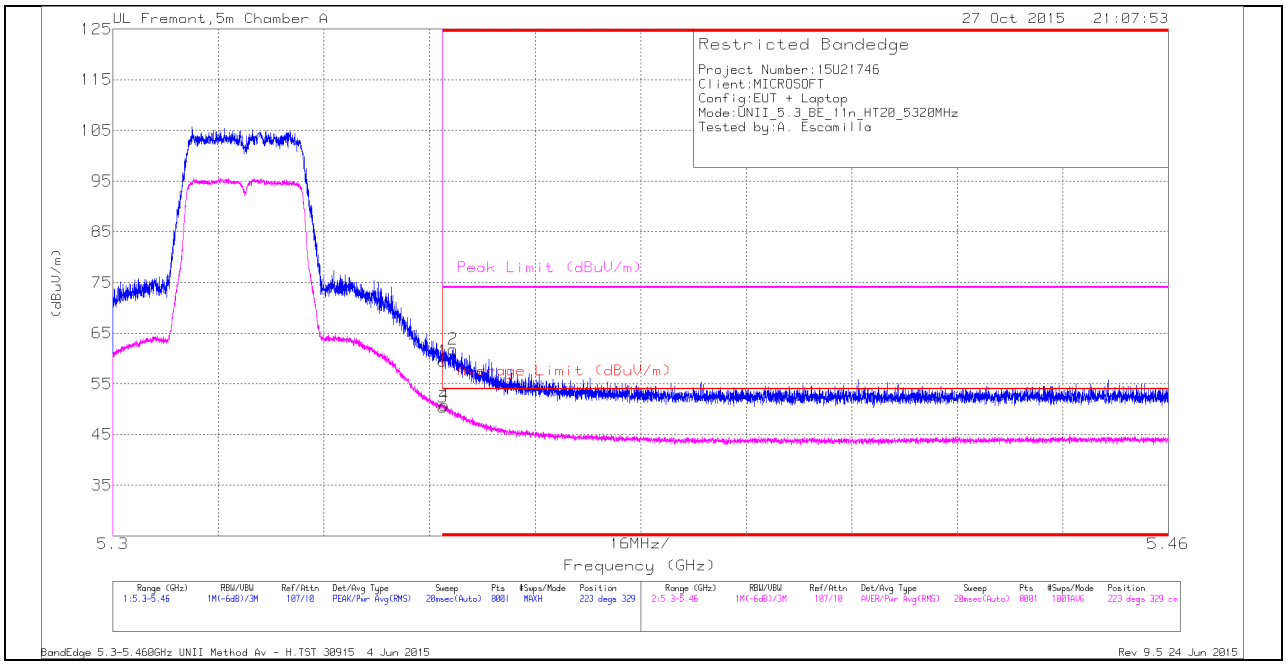
9.2.2. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.3 GHz BAND

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Flt r/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	45.12	Pk	34.6	-20.2	0	59.52	-	-	74	-14.48	223	329	H
3	* 5.35	35.92	RMS	34.6	-20.2	.1	50.42	54	-3.58	-	-	223	329	H
4	* 5.35	36.26	RMS	34.6	-20.2	.1	50.76	54	-3.24	-	-	223	329	H
2	* 5.352	47.49	Pk	34.6	-20.2	0	61.89	-	-	74	-12.11	223	329	H

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

Pk - Peak detector

RMS - RMS detection

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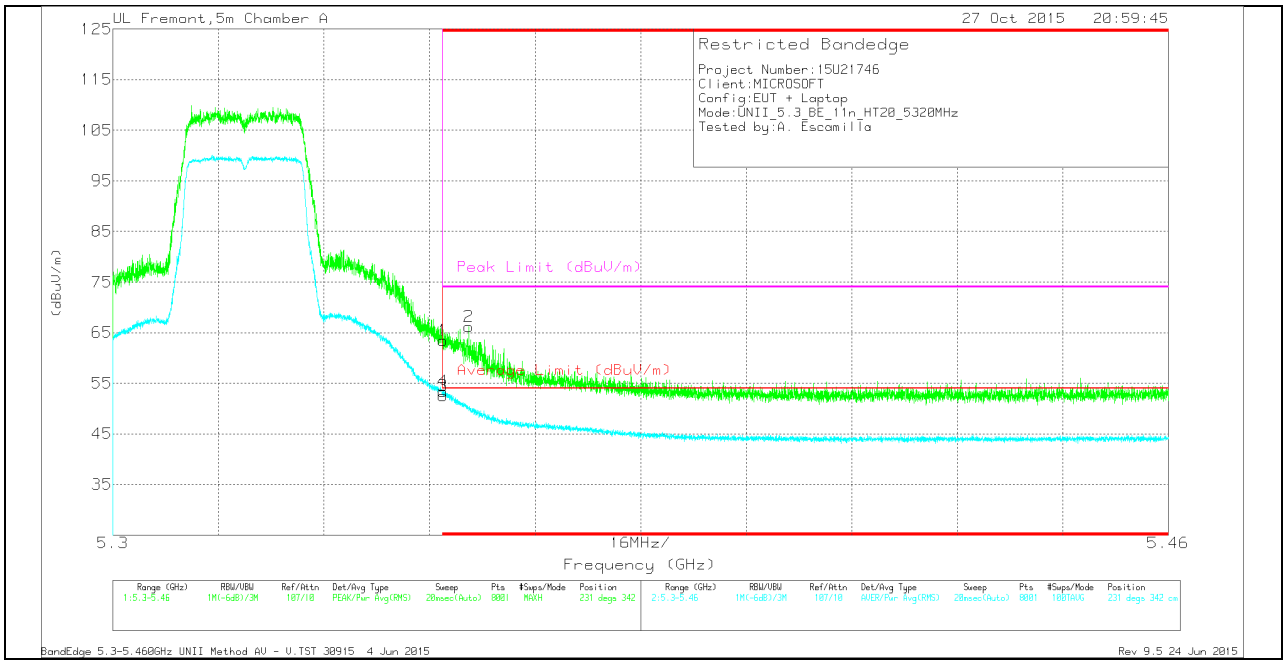
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Flt r/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	49.01	Pk	34.6	-20.2	0	63.41	-	-	74	-10.59	231	342	V
3	* 5.35	38.03	RMS	34.6	-20.2	.1	52.53	54	-1.47	-	-	231	342	V
4	* 5.35	38.86	RMS	34.6	-20.2	.1	53.36	54	-0.64	-	-	231	342	V
2	* 5.354	51.68	Pk	34.6	-20.1	0	66.18	-	-	74	-7.82	231	342	V

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

Pk - Peak detector

RMS - RMS detection

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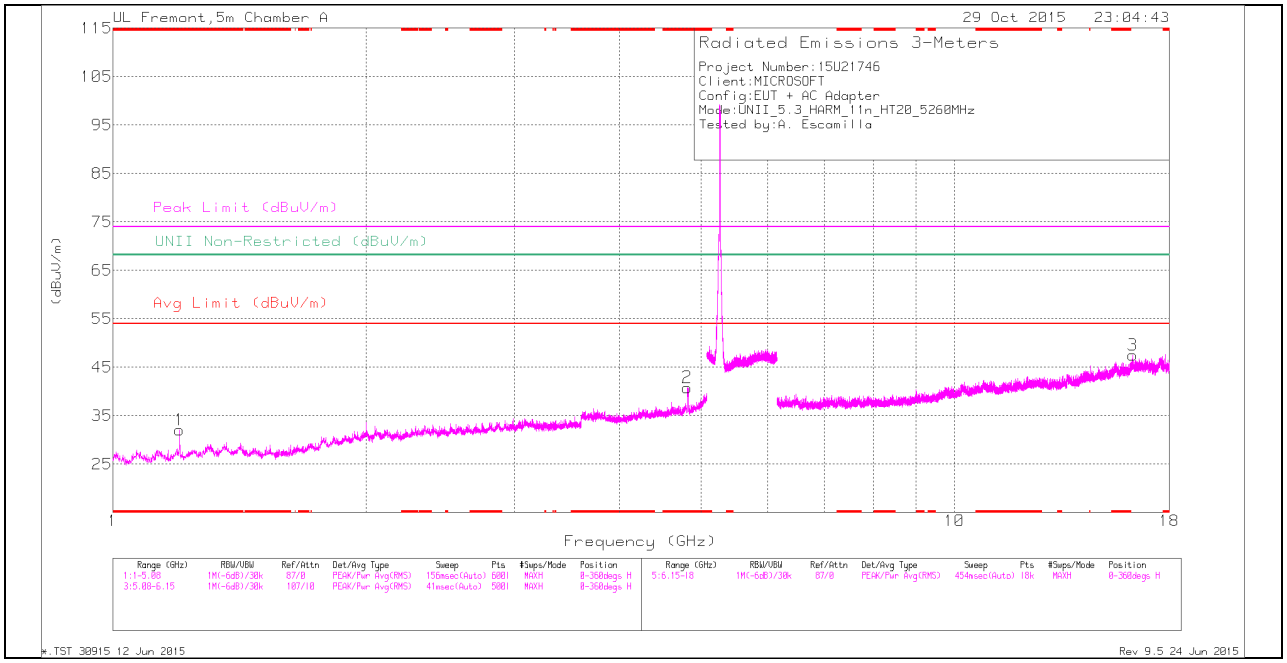
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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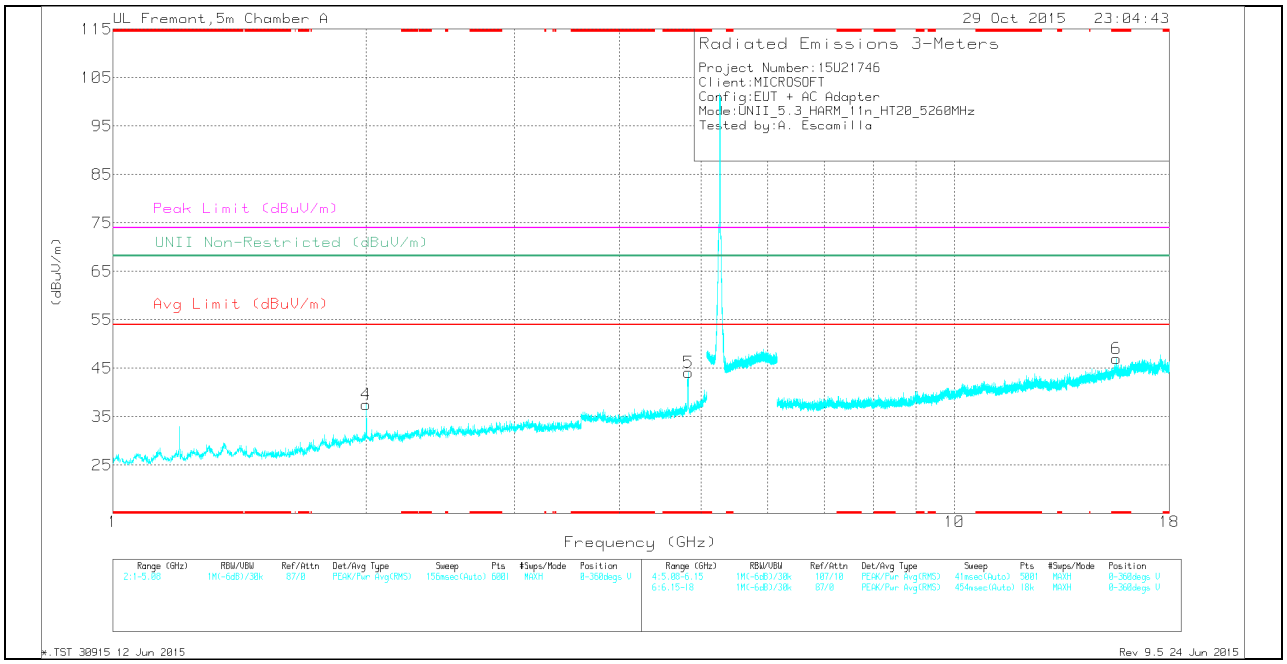
LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 1.2	40.04	Pk	28	-36	0	32.04	-	-	74	-41.96	68.2	-36.16	0-360	100	H
2	* 4.815	36.83	Pk	33.9	-29.9	0	40.83	-	-	74	-33.17	68.2	-27.37	0-360	100	H
5	* 4.826	40.27	Pk	33.9	-30	0	44.17	-	-	74	-29.83	68.2	-24.03	0-360	200	V
6	* 15.568	27.74	Pk	40.4	-21.2	0	46.94	-	-	74	-27.06	68.2	-21.26	0-360	200	V
4	2	40.69	Pk	31.1	-34.3	0	37.49	-	-	74	-36.51	68.2	-30.71	0-360	200	V
3	16.296	28.49	Pk	41.2	-22.2	0	47.49	-	-	74	-26.51	68.2	-20.71	0-360	201	H

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fl tr/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
* 1.2	46.33	PK-U	28	-36	0	38.33	-	-	74	-35.67	-	-	195	117	H
* 1.2	37.75	ADR	28	-36	.1	29.85	54	-24.15	-	-	-	-	195	117	H
* 4.817	45.35	PK-U	33.9	-29.9	0	49.35	-	-	74	-24.65	-	-	152	167	H
* 4.817	33.48	ADR	33.9	-29.9	.1	37.58	54	-16.42	-	-	-	-	152	167	H
* 4.827	47.25	PK-U	33.9	-30	0	51.15	-	-	74	-22.85	-	-	163	212	V
* 4.826	36.98	ADR	33.9	-30	.1	40.98	54	-13.02	-	-	-	-	163	212	V
* 15.568	34.43	PK-U	40.4	-21.2	0	53.63	-	-	74	-20.37	-	-	18	168	V
* 15.569	23.26	ADR	40.4	-21.2	.1	42.56	54	-11.44	-	-	-	-	18	168	V
2	45.85	PK-U	31.1	-34.4	0	42.55	-	-	-	-	68.2	-25.65	6	227	V
2	37.99	ADR	31.1	-34.4	.1	34.79	-	-	-	-	-	-	6	227	V
16.295	35.07	PK-U	41.2	-22.2	0	54.07	-	-	-	-	68.2	-14.13	74	204	H
16.297	23.92	ADR	41.2	-22.2	.1	43.02	-	-	-	-	-	-	74	204	H

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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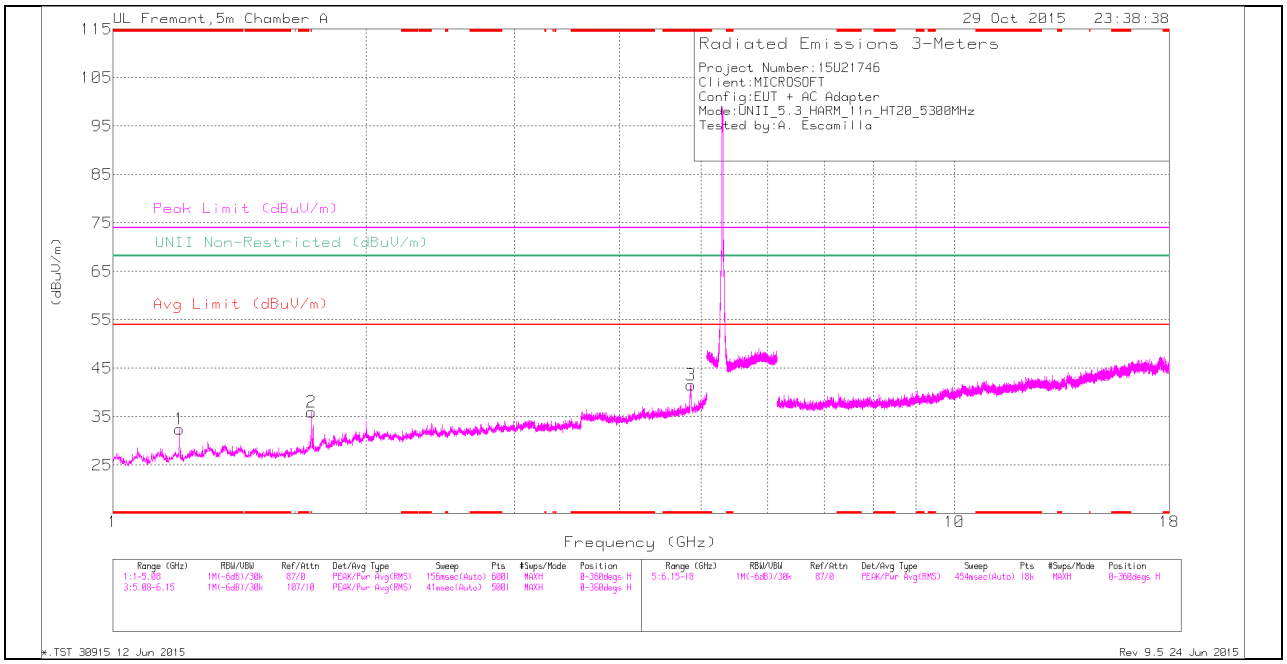
MID CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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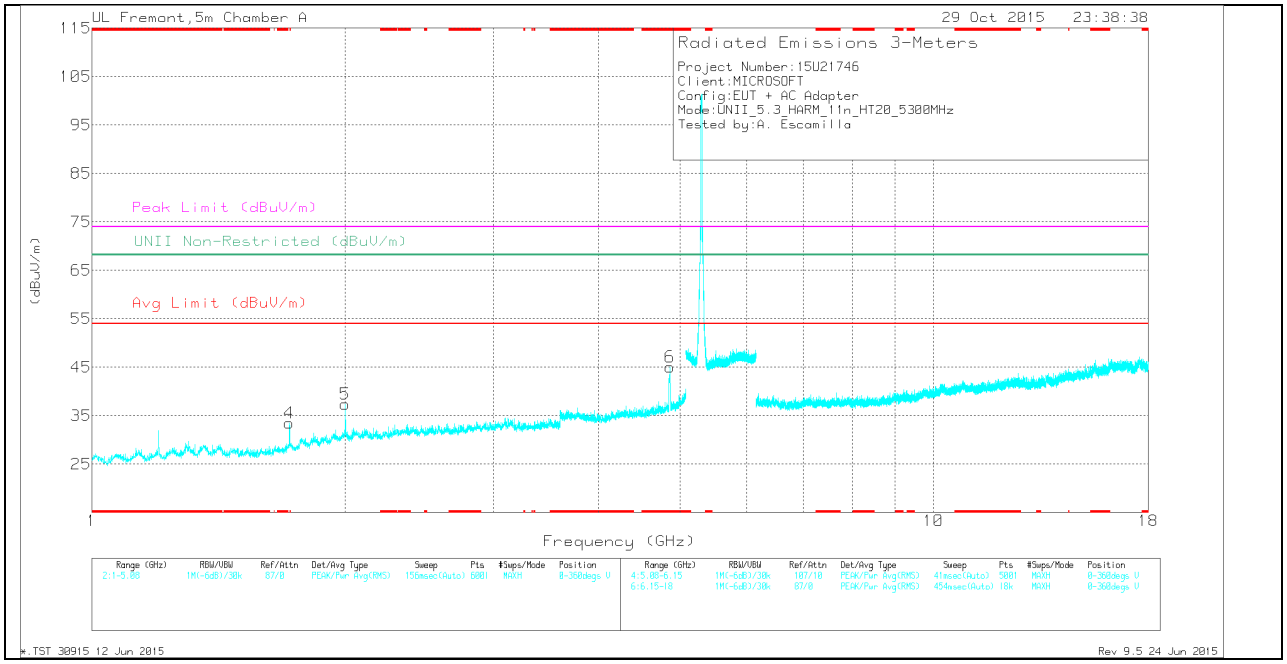
MID CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 1.2	40.43	Pk	28	-36	0	32.43	-	-	74	-41.57	68.2	-35.77	0-360	100	H
2	* 1.721	41.62	Pk	28.9	-34.5	0	36.02	-	-	74	-37.98	68.2	-32.18	0-360	100	H
3	* 4.863	37.6	Pk	33.9	-29.9	0	41.6	-	-	74	-32.4	68.2	-26.6	0-360	100	H
6	* 4.863	41.1	Pk	33.9	-29.9	0	45.1	-	-	74	-28.9	68.2	-23.1	0-360	200	V
4	1.717	39.24	Pk	28.8	-34.5	0	33.54	-	-	74	-40.46	68.2	-34.66	0-360	200	V
5	2	40.67	Pk	31.1	-34.4	0	37.37	-	-	74	-36.63	68.2	-30.83	0-360	100	V

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

Pk - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fl tr/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
* 1.2	46.21	PK-U	28	-36	0	38.21	-	-	74	-35.79	-	-	197	118	H
* 1.2	37.32	ADR	28	-36	.1	29.42	54	-24.58	-	-	-	-	197	118	H
* 1.721	43.71	PK-U	28.9	-34.5	0	38.11	-	-	74	-35.89	-	-	56	281	H
* 1.722	31.48	ADR	28.9	-34.5	.1	25.98	54	-28.02	-	-	-	-	56	281	H
* 4.862	46.52	PK-U	33.9	-29.9	0	50.52	-	-	74	-23.48	-	-	140	137	H
* 4.863	36.1	ADR	33.9	-29.9	.1	40.2	54	-13.8	-	-	-	-	140	137	H
* 4.863	46.88	PK-U	33.9	-29.9	0	50.88	-	-	74	-23.12	-	-	161	203	V
* 4.863	36.74	ADR	33.9	-29.9	.1	40.84	54	-13.16	-	-	-	-	161	203	V
1.716	43.73	PK-U	28.8	-34.5	0	38.03	-	-	-	-	68.2	-30.17	267	320	V
1.717	31.62	ADR	28.9	-34.5	.1	26.12	-	-	-	-	-	-	267	320	V
2	46.42	PK-U	31.1	-34.4	0	43.12	-	-	-	-	68.2	-25.08	18	223	V
2	38.37	ADR	31.1	-34.4	.1	35.17	-	-	-	-	-	-	18	223	V

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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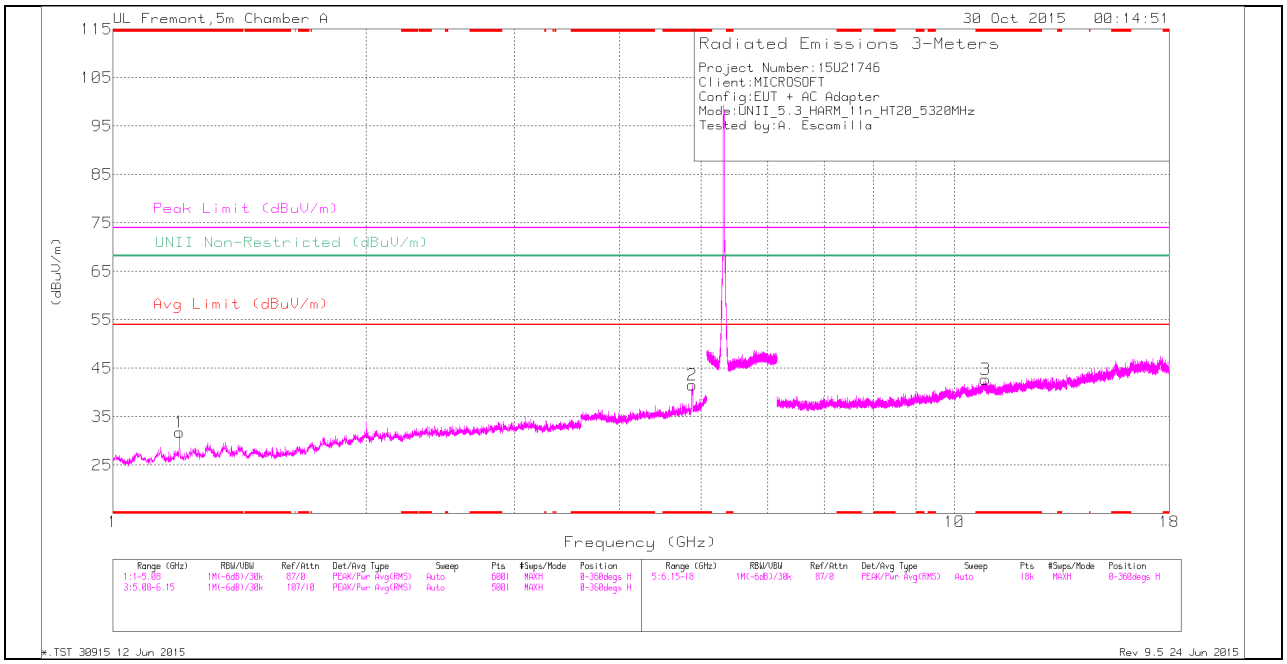
HIGH CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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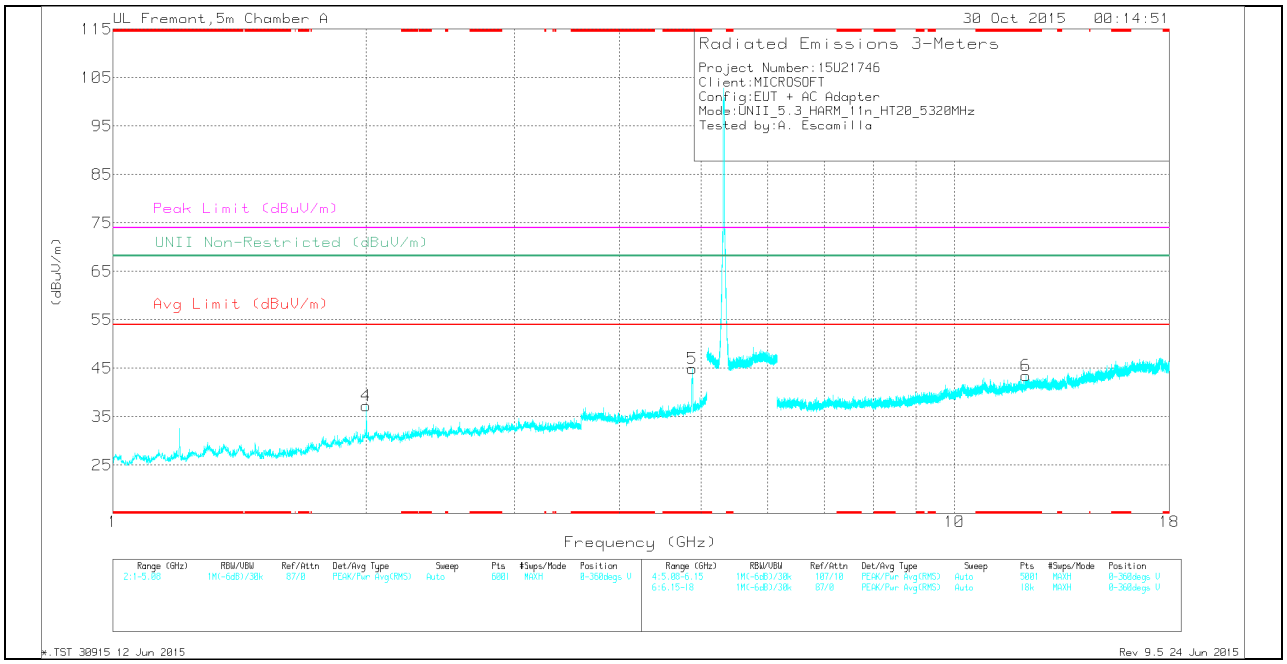
HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 1.2	39.83	Pk	28	-36	0	31.83	-	-	74	-42.17	68.2	-36.37	0-360	100	H
2	* 4.881	37.2	Pk	33.9	-29.6	0	41.5	-	-	74	-32.5	68.2	-26.7	0-360	100	H
5	* 4.882	40.59	Pk	33.9	-29.6	0	44.89	-	-	74	-29.11	68.2	-23.31	0-360	200	V
3	* 10.882	27.06	Pk	37.8	-22.1	0	42.76	-	-	74	-31.24	68.2	-25.44	0-360	201	H
6	* 12.169	27.46	Pk	38.8	-22.8	0	43.46	-	-	74	-30.54	68.2	-24.74	0-360	200	V
4	2	40.48	Pk	31.1	-34.3	0	37.28	-	-	74	-36.72	68.2	-30.92	0-360	200	V

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

Pk - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fl tr/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
* 1.2	47.04	PK-U	28	-36	0	39.04	-	-	74	-34.96	-	-	167	116	H
* 1.2	38.68	ADR	28	-36	.1	30.78	54	-23.22	-	-	-	-	167	116	H
* 4.88	44.81	PK-U	33.9	-29.7	0	49.01	-	-	74	-24.99	-	-	140	171	H
* 4.881	33.74	ADR	33.9	-29.6	.1	38.14	54	-15.86	-	-	-	-	140	171	H
* 4.883	46.68	PK-U	33.9	-29.6	0	50.98	-	-	74	-23.02	-	-	160	206	V
* 4.881	35.78	ADR	33.9	-29.7	.1	40.08	54	-13.92	-	-	-	-	160	206	V
* 10.881	34.31	PK-U	37.8	-22.1	0	50.01	-	-	74	-23.99	-	-	42	202	H
* 10.882	23.04	ADR	37.8	-22.1	.1	38.84	54	-15.16	-	-	-	-	42	202	H
* 12.169	33.91	PK-U	38.8	-22.8	0	49.91	-	-	74	-24.09	-	-	9	139	V
* 12.17	22.7	ADR	38.8	-22.8	.1	38.8	54	-15.2	-	-	-	-	9	139	V
2	45.81	PK-U	31.1	-34.3	0	42.61	-	-	-	-	68.2	-25.59	2	220	V
2	37.99	ADR	31.1	-34.4	.1	34.79	-	-	-	-	-	-	2	220	V

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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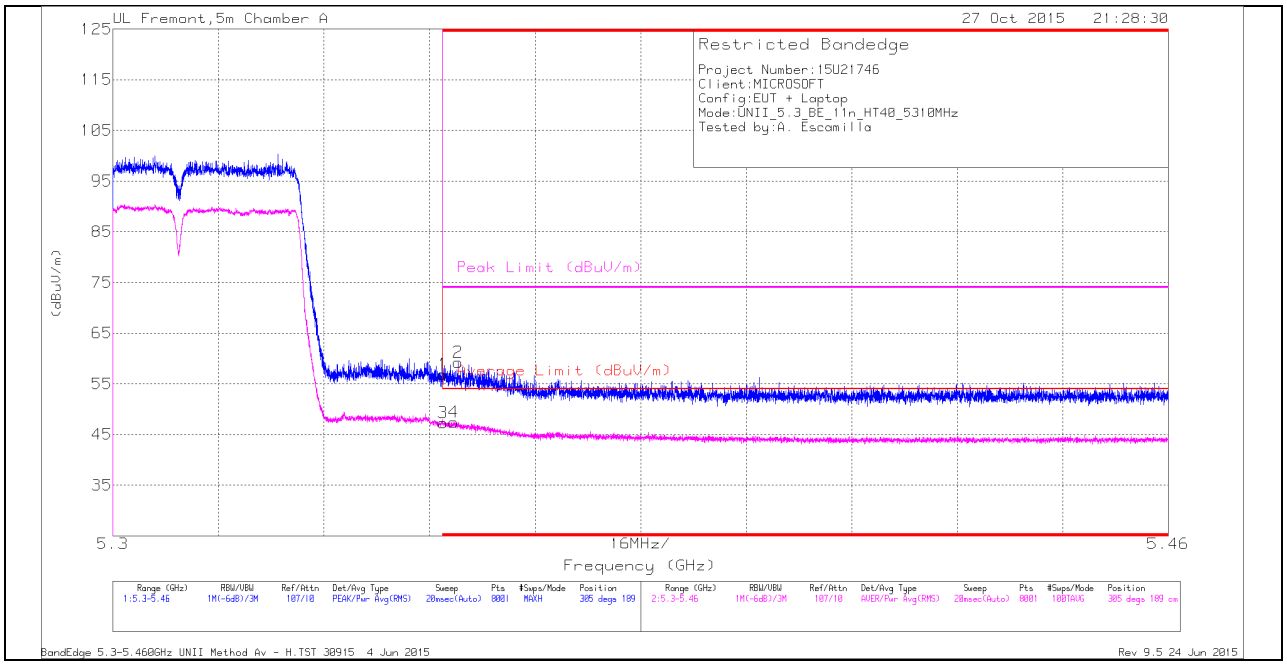
9.2.3. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.3 GHz BAND AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Flt r/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	42.42	Pk	34.6	-20.2	0	56.82	-	-	74	-17.18	305	189	H
3	* 5.35	32.75	RMS	34.6	-20.2	.18	47.33	54	-6.67	-	-	305	189	H
2	* 5.352	44.72	Pk	34.6	-20.1	0	59.22	-	-	74	-14.78	305	189	H
4	* 5.352	32.91	RMS	34.6	-20.2	.18	47.49	54	-6.51	-	-	305	189	H

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

Pk - Peak detector

RMS - RMS detection

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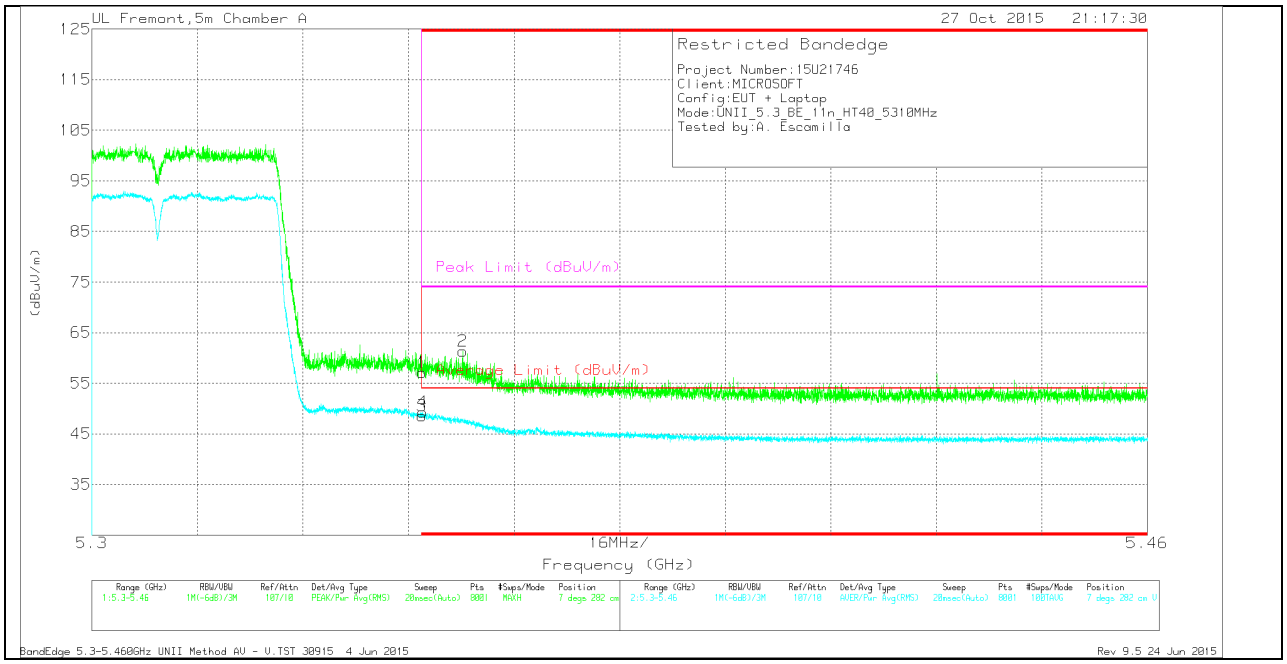
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Flt r/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	42.76	Pk	34.6	-20.2	0	57.16	-	-	74	-16.84	7	282	V
3	* 5.35	33.99	RMS	34.6	-20.2	.18	48.57	54	-5.43	-	-	7	282	V
4	* 5.35	34.77	RMS	34.6	-20.2	.18	49.35	54	-4.65	-	-	7	282	V
2	* 5.356	46.79	Pk	34.6	-20.1	0	61.29	-	-	74	-12.71	7	282	V

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

Pk - Peak detector

RMS - RMS detection

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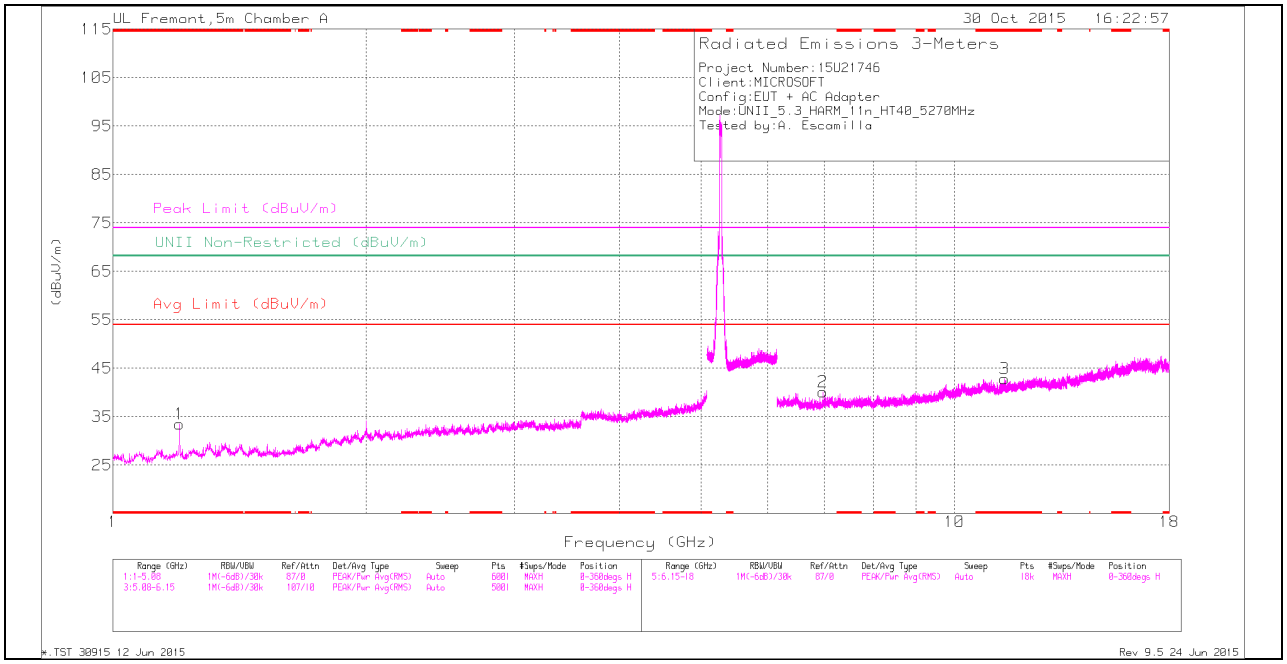
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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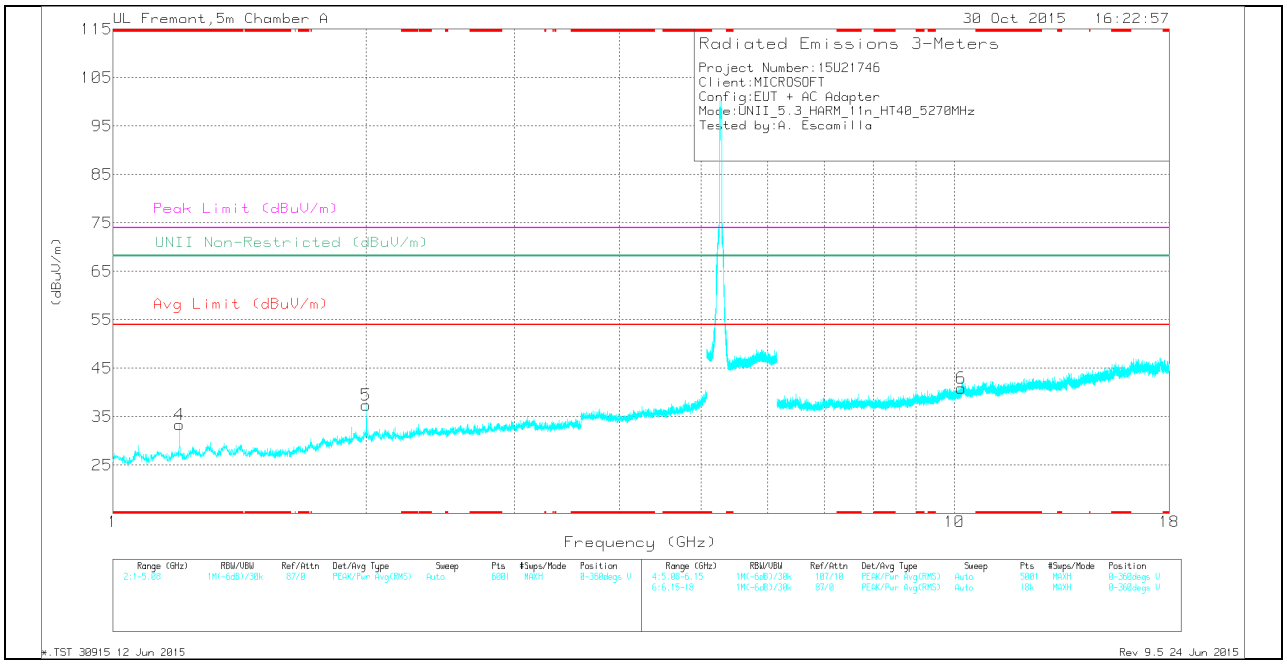
LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 1.2	41.45	Pk	28	-36	0	33.45	-	-	74	-40.55	68.2	-34.75	0-360	100	H
4	* 1.2	41.35	Pk	28	-36	0	33.35	-	-	74	-40.65	68.2	-34.85	0-360	100	V
3	* 11.474	27.29	Pk	38	-22.4	0	42.89	-	-	74	-31.11	68.2	-25.31	0-360	100	H
5	2	40.73	Pk	31.1	-34.4	0	37.43	-	-	74	-36.57	68.2	-30.77	0-360	200	V
2	6.981	31.56	Pk	35.6	-27.1	0	40.06	-	-	74	-33.94	68.2	-28.14	0-360	100	H
6	10.189	26.95	Pk	37.2	-23.3	0	40.85	-	-	74	-33.15	68.2	-27.35	0-360	200	V

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

Pk - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fl tr/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
* 1.2	46.77	PK-U	28	-36	0	38.77	-	-	74	-35.23	-	-	127	101	H
* 1.2	37.21	ADR	28	-36	.18	29.39	54	-24.61	-	-	-	-	127	101	H
* 1.2	46.87	PK-U	28	-36	0	38.87	-	-	74	-35.13	-	-	256	240	V
* 1.2	38.66	ADR	28	-36	.18	30.84	54	-23.16	-	-	-	-	256	240	V
* 11.472	33.8	PK-U	38	-22.4	0	49.4	-	-	74	-24.6	-	-	117	304	H
* 11.472	22.37	ADR	38	-22.4	.18	38.15	54	-15.85	-	-	-	-	117	304	H
2	46.55	PK-U	31.1	-34.4	0	43.25	-	-	-	-	68.2	-24.95	13	129	V
2	39.33	ADR	31.1	-34.4	.18	36.21	-	-	-	-	-	-	13	129	V
6.983	37.48	PK-U	35.6	-27	0	46.08	-	-	-	-	68.2	-22.12	267	220	H
6.983	26.13	ADR	35.6	-27	.18	34.91	-	-	-	-	-	-	267	220	H
10.189	35.38	PK-U	37.2	-23.3	0	49.28	-	-	-	-	68.2	-18.92	201	247	V
10.189	23.22	ADR	37.2	-23.3	.18	37.3	-	-	-	-	-	-	201	247	V

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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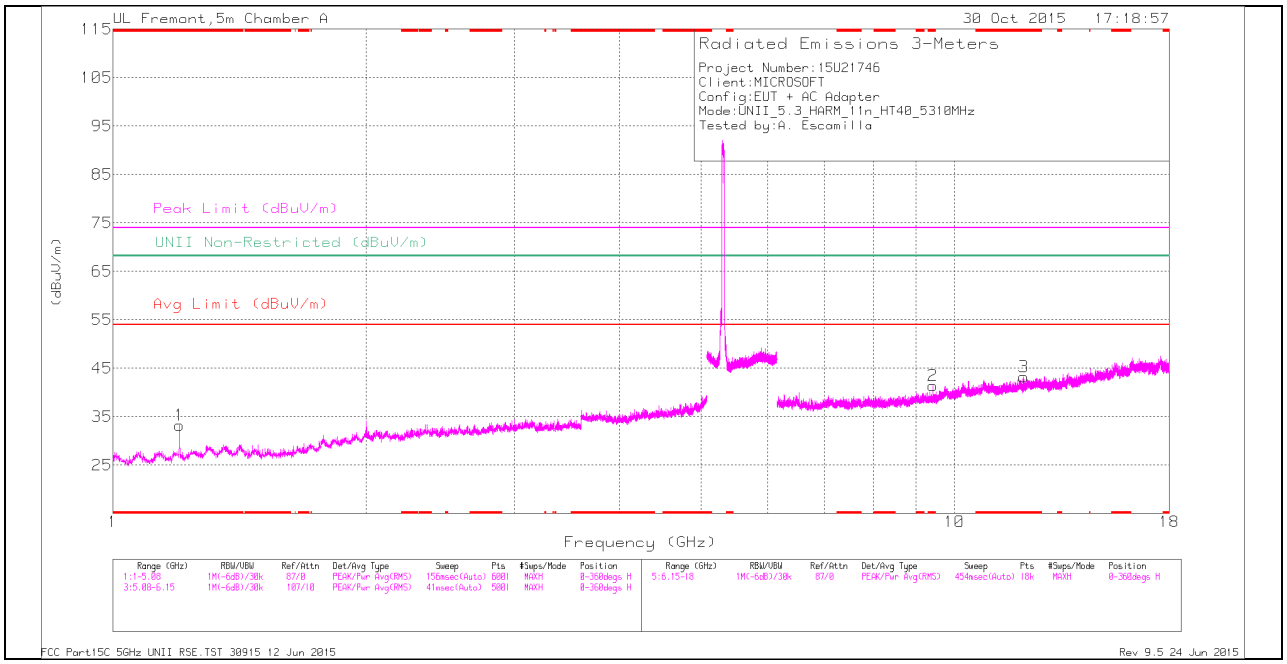
HIGH CHANNEL HORIZONTAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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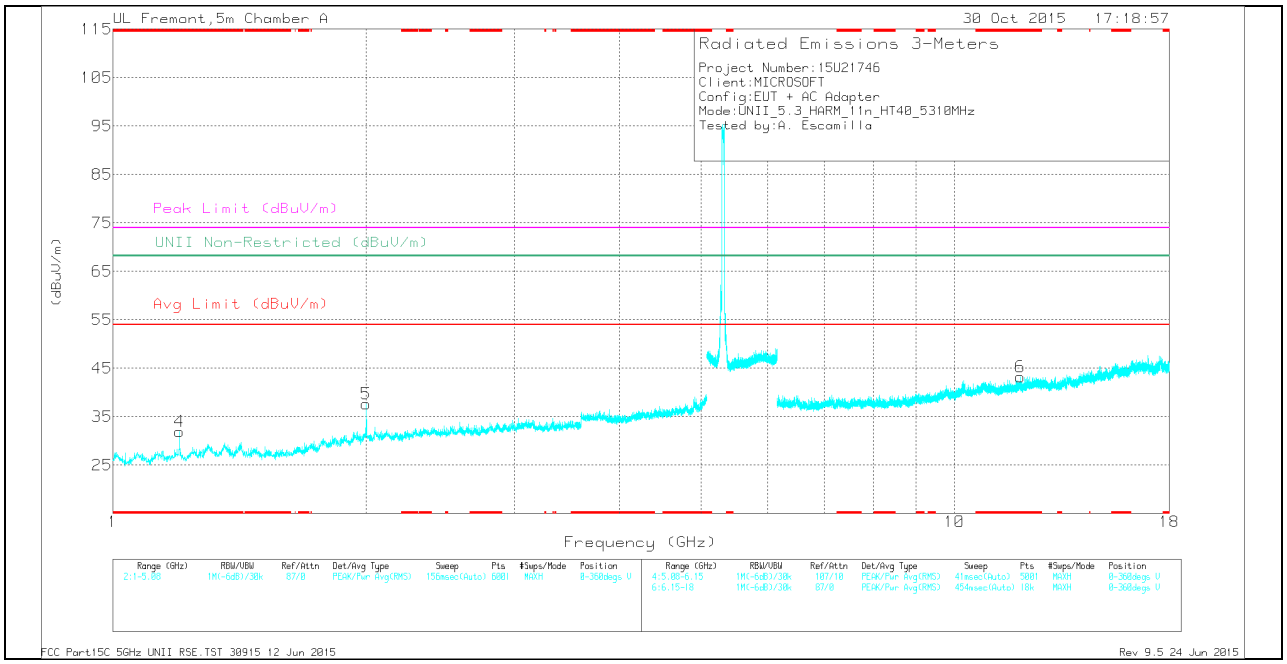
HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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