CERTIFICATION TEST REPORT

Report Number. : 12021721-E2V2

Applicant	:	725-1 Corporation 195 Page Mill Rd. Suite 115 Palo Alto, CA 94306
Model	:	725-100
FCC ID	:	2AOMN-725100
EUT Description	:	Car Camera
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART E

Date Of Issue:
January 19, 2018

Prepared by:
UL Verification Services Inc.
47173 Benicia Street
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NVLAP LAB CODE 200065-0

REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	1/9/2018	Initial Issue	---
V2	1/18/2018	Updated KDB refrences in sections 2, 6 and 8.5 Added below 30 MHz set-up photos in section 10	Huda Mustapha

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: 725-1 Corporation
195 Page Mill Road, Suite 115
Palo Alto, CA, 94306

EUT DESCRIPTION: Car Camera

MODEL: 725-100

SERIAL NUMBER: N746100AALM (Radiated), N746100AAMD (Conducted)

DATE TESTED: December 13th – 21st, 2018

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 the U.S. government.

Approved & Released For
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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, FCC 14-30, FCC KDB 789033 D02 v02r01 and ANSI C63.10-2013.

3. FACILITIES AND ACCREDITATION

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

47173 Benicia Street	47266 Benicia Street
☐ Chamber A (ISED:2324B-1)	☒ Chamber D (ISED:22541-1)
☒ Chamber B (ISED:2324B-2)	☐ Chamber E (ISED:22541-2)
☒ Chamber C (ISED:2324B-3)	☐ Chamber F (ISED:22541-3)
	☐ Chamber G (ISED:22541-4)
	☐ Chamber H (ISED:22541-5)

The above test sites and facilities are covered under FCC Test Firm Registration # 208313. Chambers A through C are covered under ISED company address code 2324B with site numbers 2324B -1 through 2324B-3, respectively. Chambers D through H are covered under ISED Canada company address code 22541 with site numbers 22541 -1 through 22541-5, respectively.

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

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4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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

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

4.3. MEASUREMENT UNCERTAINTY

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

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

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

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5. EQUIPMENT UNDER TEST

5.1. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

5.2 GHz BAND

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
5.2 GHz band, 1TX			
5180-5240	802.11a	18.05	63.83
5180-5240	802.11n HT20	18.86	76.91
5190-5230	802.11n HT40	15.68	36.98
5210	802.11ac VHT80	15.58	36.14

5.8 GHz BAND

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
5.8 GHz band, 1TX			
5745-5825	802.11a	19.92	98.17
5745-5825	802.11n HT20	20.78	119.67
5755-5795	802.11n HT40	17.34	54.20

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5.2. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an LDS antenna, with a maximum gain of -3.1 dBi.

5.3. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was V2.7B17

The test utility software used during testing was QRCT v3.0.264.0.

5.4. WORST-CASE CONFIGURATION AND MODE

Radiated emissions below 1GHz and above 18GHz were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

Radiated band edge, harmonics and spurious emissions between 1GHz and 18GHz were performed with the EUT set to transmit at the highest power on low, middle and high channels.

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

802.11a mode: 6 Mbps
802.11n HT20mode: MCS0
802.11n HT40mode: MCS0
802.11ac VHT80 mode: MCS0

The EUT is designed for a fixed position in the Y orientation; therefore, all final radiated testing was performed with the EUT in the Y orientation.

AC mains line conducted emissions is not applicable, as the EUT is intended for vehicular use only and has no means to connect to AC mains under normal operation.

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5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Support Laptop	HP	HP Notebook X2	5CD736D58D	N/A
Custom debug control PCB	N/A	N/A	N/A	N/A
AC Adapter	NoiPosi	RS-AB02J00	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	1	DC	Shielded	1m	
2	USB	1	MicroUSB	Shielded	1.5m	
3	USB	1	5-pin	Shielded	0.2m	
4	UFL	1	SMA	Shielded	0.1m	

TEST SETUP

Test software on the laptop exercises the EUT transmission through the control PCB.

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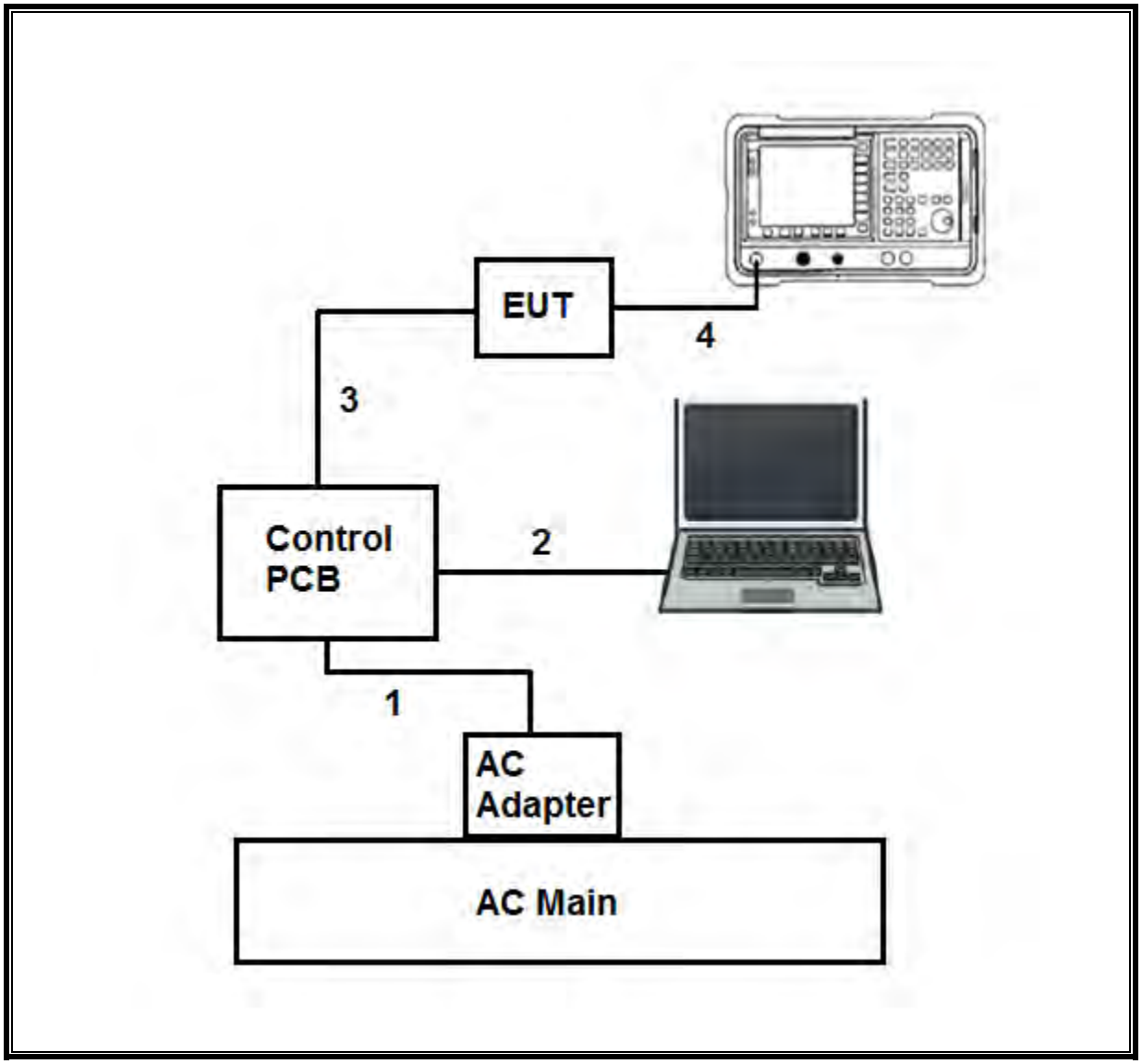
SETUP DIAGRAM FOR CONDUCTED TESTS



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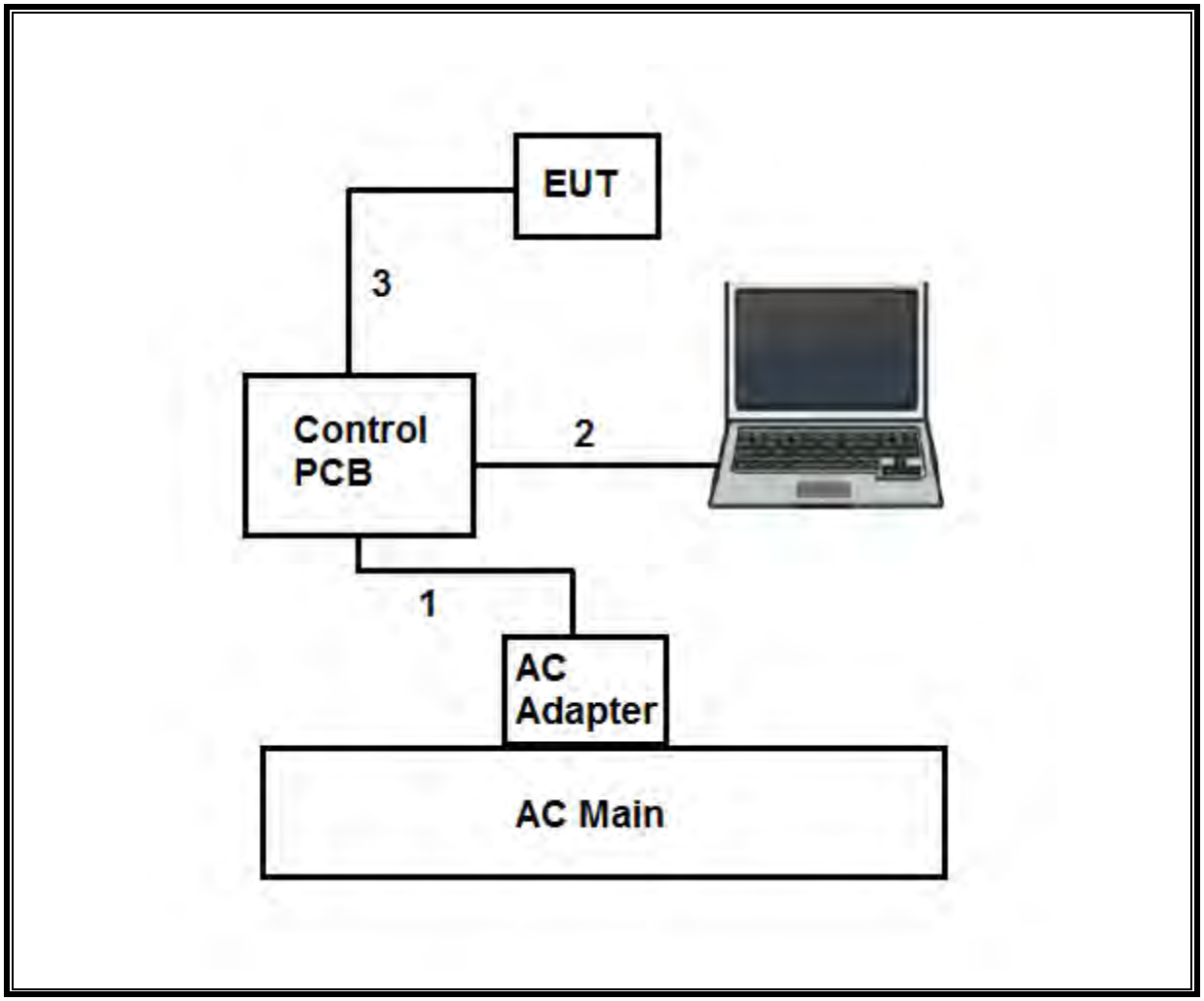
SETUP DIAGRAM FOR RADIATED TESTS



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6. MEASUREMENT METHOD

On Time and Duty Cycle: KDB 789033 D02 v02r01, Section B.

6 dB Emission BW: KDB 789033 D02 v02r01, Section C.

26 dB Emission BW: KDB 789033 D02 v02r01, Section C.

99% Occupied BW: KDB 789033 D02 v02r01, Section D.

Conducted Output Power: KDB 789033 D02 v02r01, Section E.3.b (Method PM-G) and KDB 789033 D02 v02r01, Section E.2.b (Method SA-1)

Power Spectral Density: KDB 789033 D02 v02r01, Section F

Unwanted emissions in restricted bands: KDB 789033 D02 v02r01, Sections G.3, G.4, G.5, and G.6.

Unwanted emissions in non-restricted bands: KDB 789033 D02 v02r01, Sections G.3, G.4, and G.5.

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7. TEST AND MEASUREMENT EQUIPMENT

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

TEST EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Asset**	**Cal Due**
Antenna, Broadband Hybrid, 30MHz to 2000MHz w/4dB Pad	Sunol Sciences Corp.	JB1	T130	10/16/2018
Antenna, Active Loop 9kHz-30MHz	Com-Power Corp.	AL-130R	T1866	10/10/2018
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	T345	04/14/2018
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	T346	03/28/2018
Antenna, Horn 18-26.5GHz	ARA	MWH-1826	T89	01/04/2018
Antenna Horn, 26-40GHz	ARA	MWH-2640	T90	08/25/2018
Power Meter, P-series single channel	Agilent (Keysight) Technologies	N1911A	T1268	06/15/2018
Power Sensor, P – series, 50MHz to 18GHz, Wideband	Agilent (Keysight) Technologies	N1921A	T1223	03/29/2018
Amplifier, 1 - 18GHz	MITEQ	AFS42-00101800-25-S-42	T491	06/01/2018
Amplifier, 1 - 18GHz	MITEQ	AFS42-00101800-25-S-42	T493	06/23/2018
Amplifier, 1-8GHz	MITEQ	AMF-4D-01000800-30-29P	T1156	06/24/2018
Pre Amplifier, 1-26.5GHz	Agilent	8449B	T404	7/23/2018
RF Preamplifier, 26-40GHz	Miteq	TTA2640-35-HG	T1864	09/21/2018
Filter, HPF 3.0GHz	MICRO-TRONICS	HPM17543	T486	11/25/2018
Filter, HPF 3.0GHz	MICRO-TRONICS	HPM17543	T485	6/24/2018
Amplifier, 10kHz-1GHz	Agilent (Keysight) Technologies	8447D	T15	08/14/2018
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent (Keysight) Technologies	N9030A	T1210	07/17/2018
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent (Keysight) Technologies	N9030A	T339	09/13/2018
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent (Keysight) Technologies	N9030A	T1466	04/11/2018

Test Software List			
Description	**Manufacturer**	**Model**	**Version**
Radiated Software	UL	UL EMC	Ver 9.5, Dec 01, 2016
Antenna Port Software	UL	UL RF	Ver 7.7, Dec 14, 2017

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8. ANTENNA PORT TEST RESULTS

8.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

PROCEDURE

KDB 789033 Zero-Span Spectrum Analyzer Method.

ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
802.11a 1TX	1.363	1.562	0.873	87.26%	0.59	0.734
802.11n HT20 1TX	1.276	1.474	0.866	86.57%	0.63	0.784
802.11n HT40 1TX	0.635	0.835	0.761	76.10%	1.19	1.574
802.11ac VHT80 1TX	0.248	0.448	0.553	55.27%	2.58	4.037

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DUTY CYCLE PLOTS

DUTY CYCLE 802.11a 1TX MODE

DUTY CYCLE 802.11n HT20 1TX MODE

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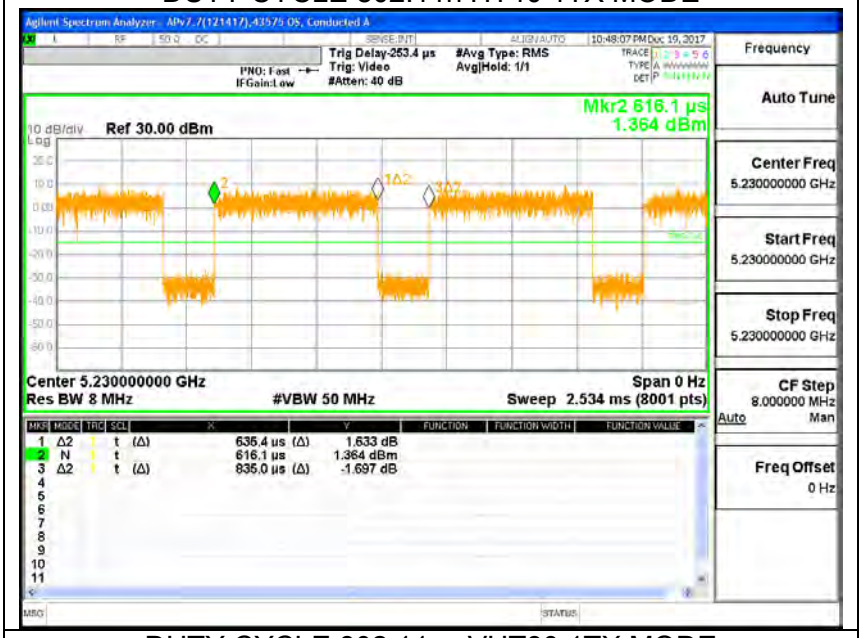
DUTY CYCLE 802.11n HT40 1TX MODE



DUTY CYCLE 802.11ac VHT80 1TX MODE

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8.2. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

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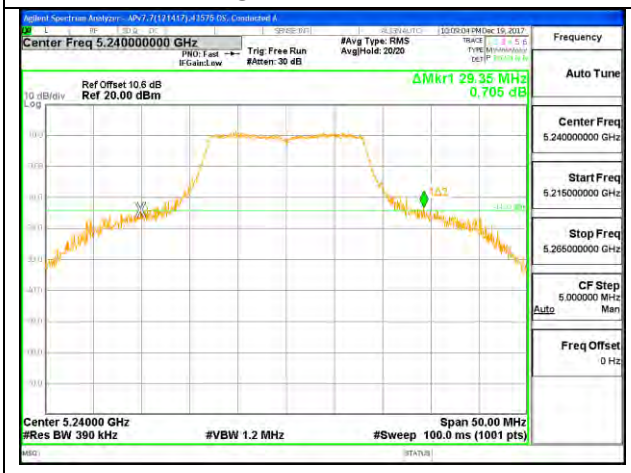
8.2.1. 802.11a MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5180	36.50
Mid	5200	32.35
High	5240	29.35

LOW CHANNEL

MID CHANNEL



HIGH CHANNEL

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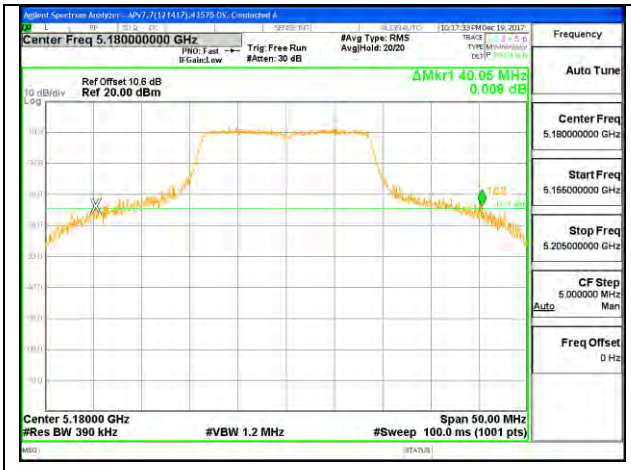
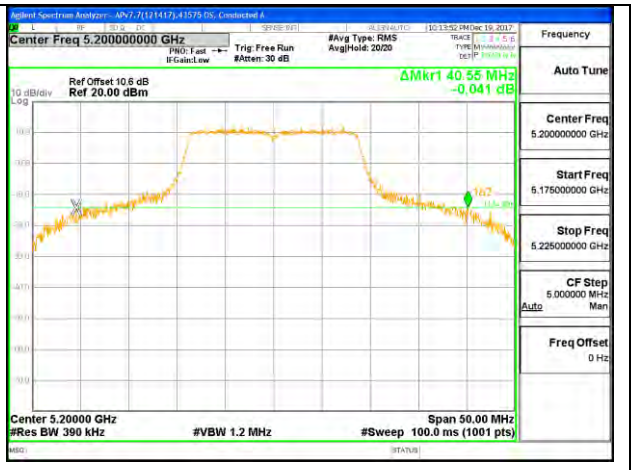
8.2.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

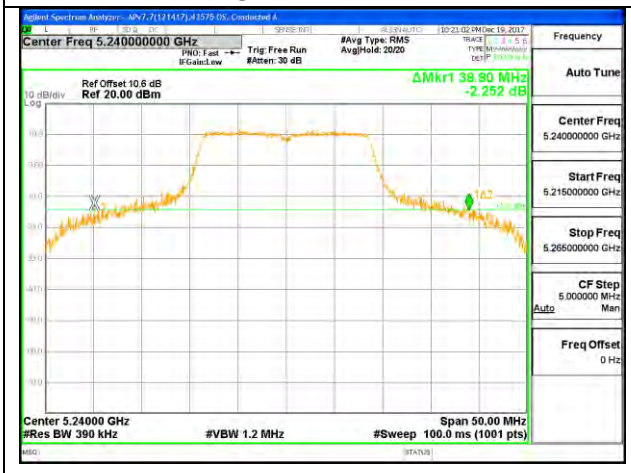
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5180	40.05
Mid	5200	40.55
High	5240	38.80



LOW CHANNEL



MID CHANNEL



HIGH CHANNEL

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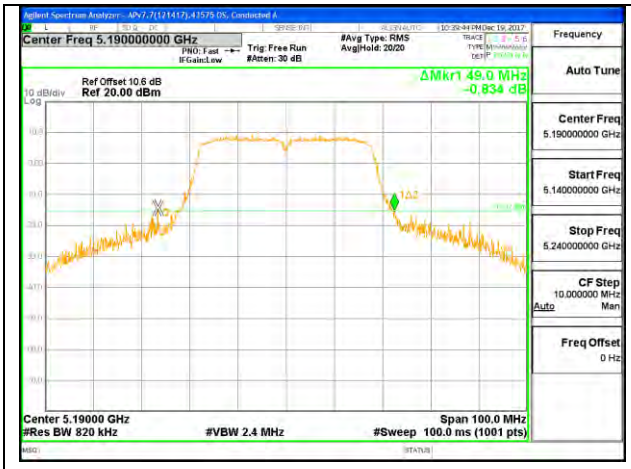
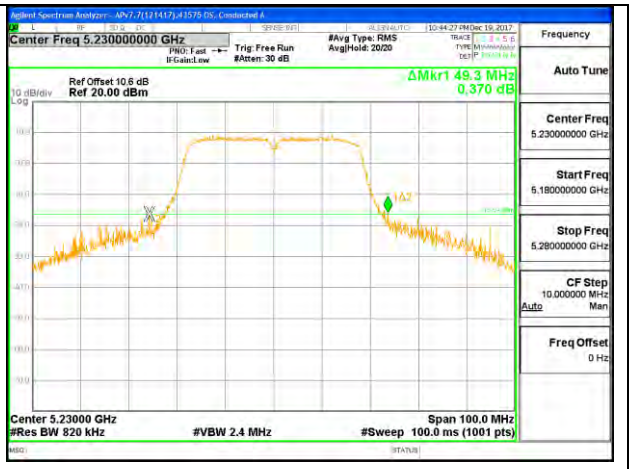
8.2.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	26dB Bandwidth (MHz)
Low	5190	49.00
High	5230	49.30



LOW CHANNEL



HIGH CHANNEL

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8.2.4. 802.11ac VHT80 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Mid	5210	86.40

MID CHANNEL

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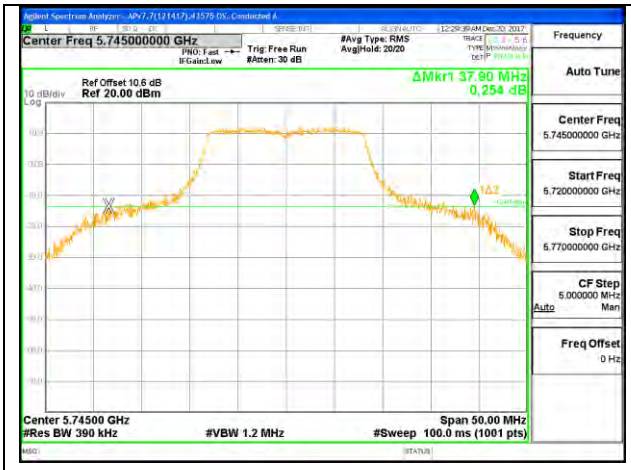
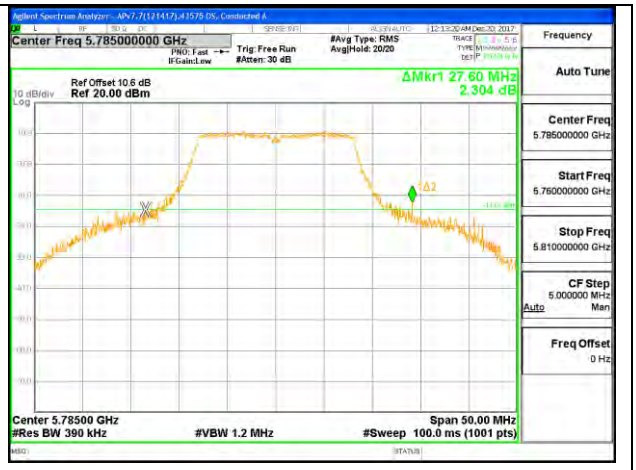
8.2.5. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5745	37.90
Mid	5785	27.60
High	5825	24.10



LOW CHANNEL



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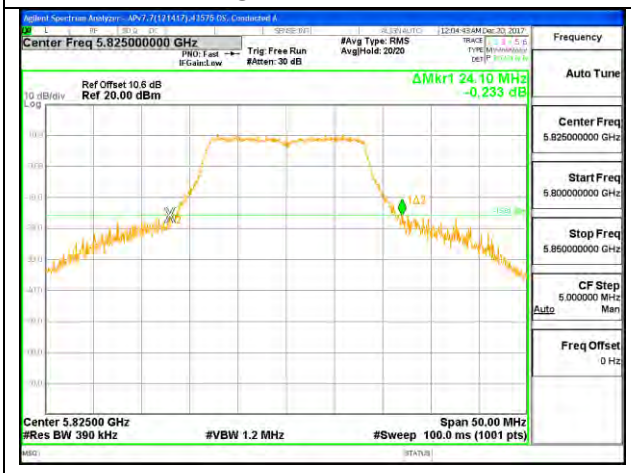

HIGH CHANNEL

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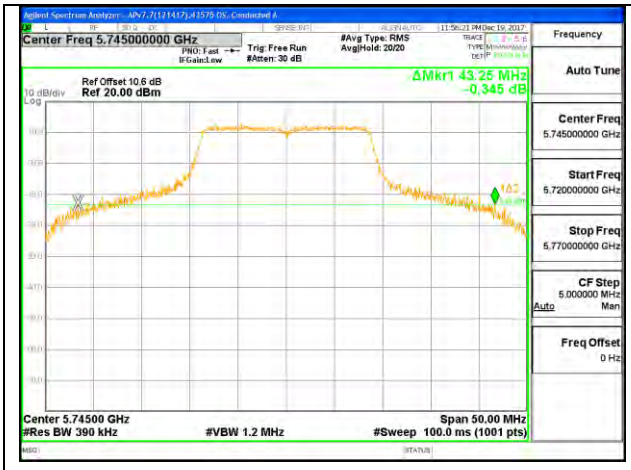
8.2.6. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5745	43.25
Mid	5785	39.55
High	5825	35.05



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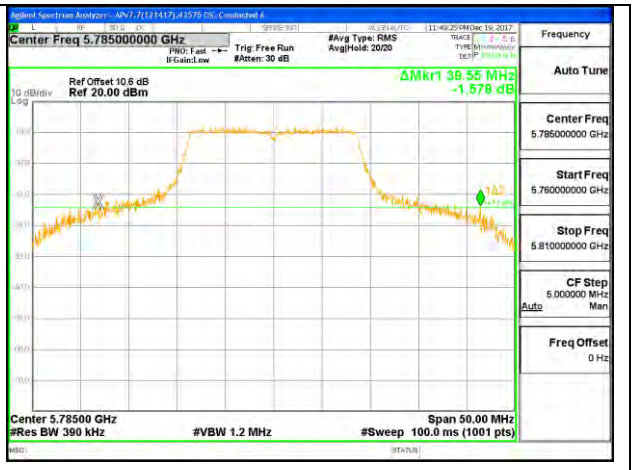

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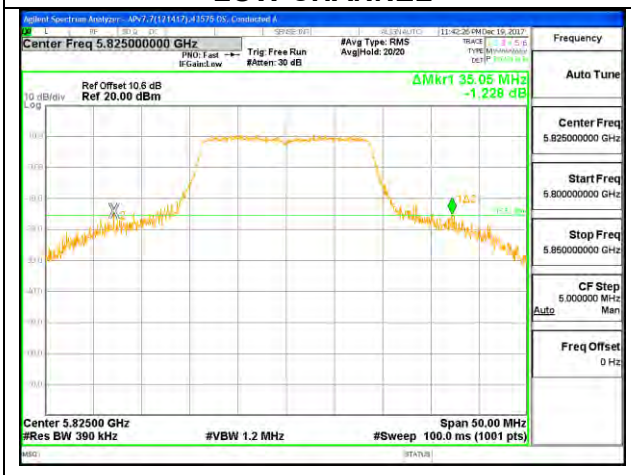

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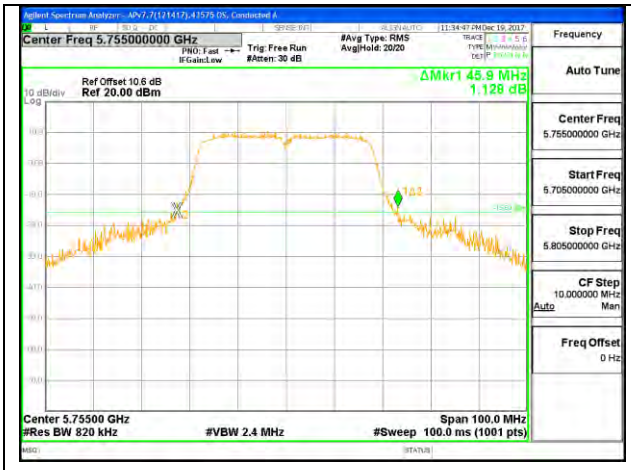
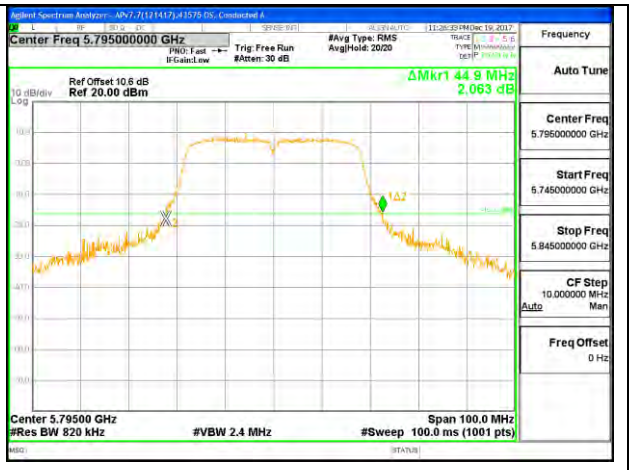
8.2.7. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	26dB Bandwidth (MHz)
Low	5755	45.90
High	5795	44.90



LOW CHANNEL



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8.3. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

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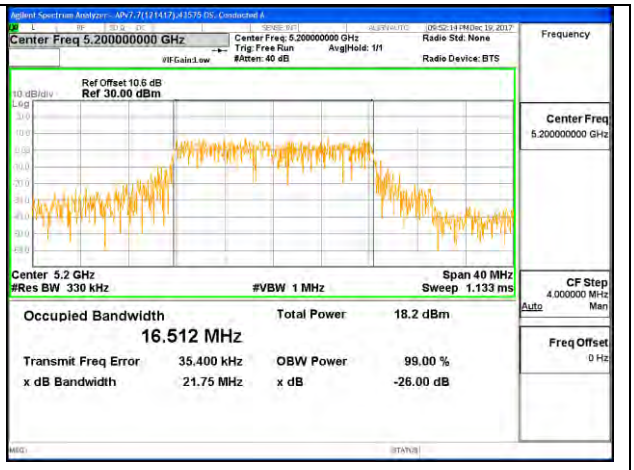
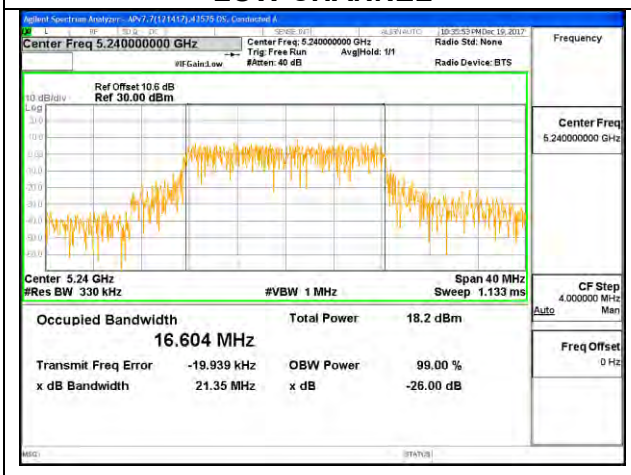
8.3.1. 802.11a MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5180	16.573
Mid	5200	16.512
High	5240	16.604

LOW CHANNEL



MID CHANNEL



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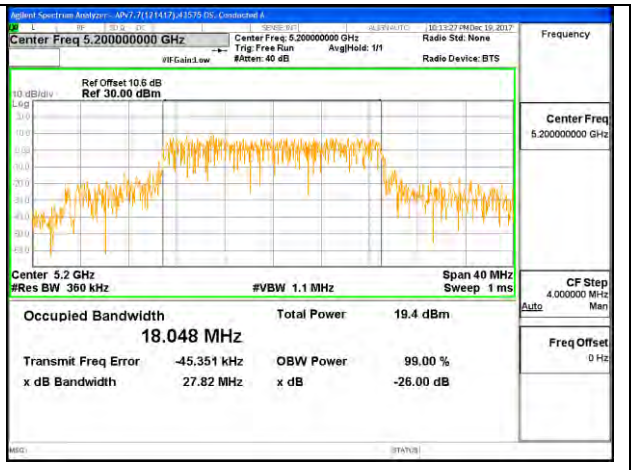
8.3.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5180	17.937
Mid	5200	18.048
High	5240	17.734

LOW CHANNEL



MID CHANNEL

HIGH CHANNEL

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8.3.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5190	36.253
High	5230	35.999

LOW CHANNEL

HIGH CHANNEL

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8.3.4. 802.11ac VHT80 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Mid	5210	75.705

MID CHANNEL

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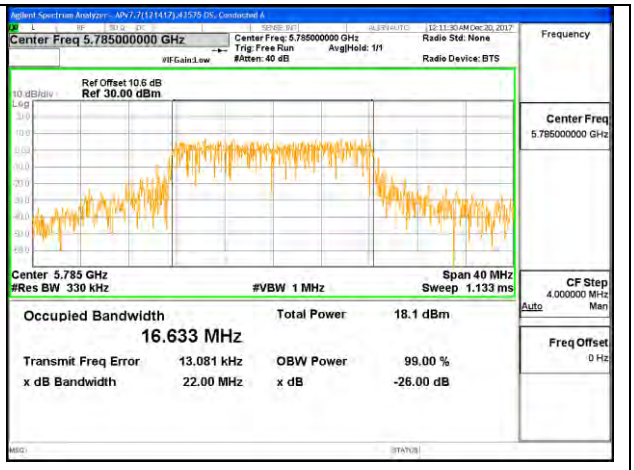
8.3.5. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5745	16.586
Mid	5785	16.633
High	5825	16.620

LOW CHANNEL



MID CHANNEL

HIGH CHANNEL

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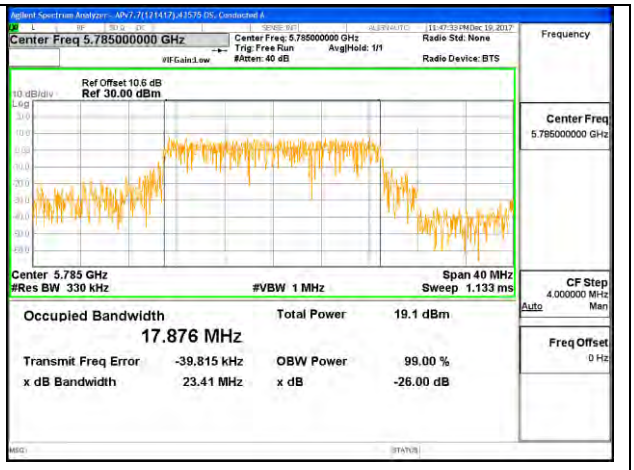
8.3.6. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5745	17.867
Mid	5785	17.876
High	5825	17.912

LOW CHANNEL



MID CHANNEL

HIGH CHANNEL

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8.3.7. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5755	36.608
High	5795	36.478

LOW CHANNEL

HIGH CHANNEL

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8.4. 6 dB BANDWIDTH

LIMITS

FCC §15.407 (e)

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

RESULTS

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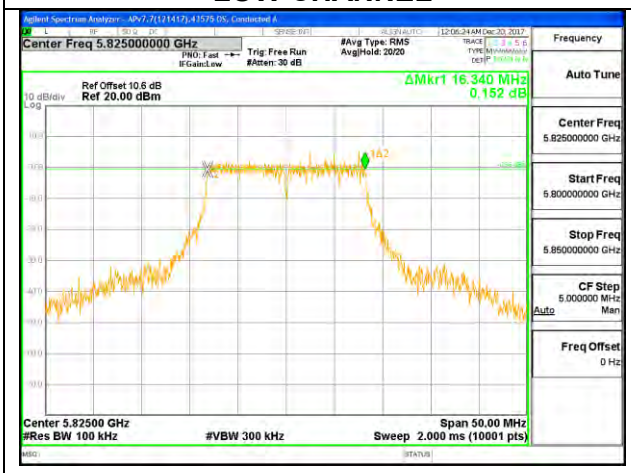
8.4.1. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	16.325	0.5
Mid	5785	16.340	0.5
High	5825	16.340	0.5

LOW CHANNEL

MID CHANNEL



HIGH CHANNEL

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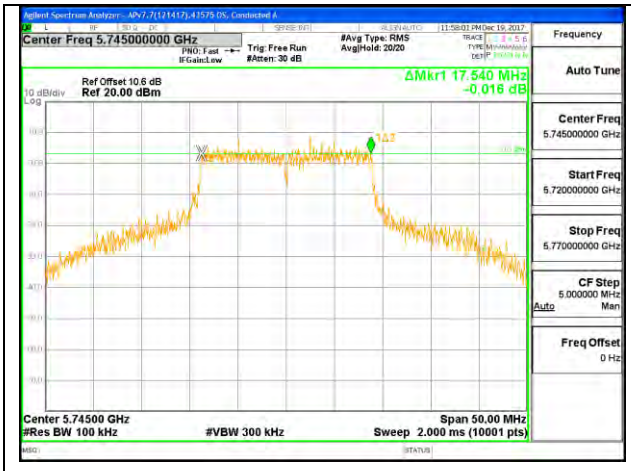
8.4.2. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	17.540	0.5
Mid	5785	17.585	0.5
High	5825	17.595	0.5



LOW CHANNEL

MID CHANNEL

HIGH CHANNEL

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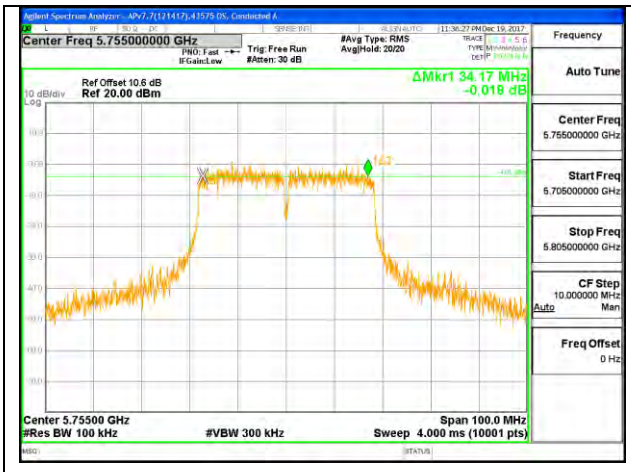
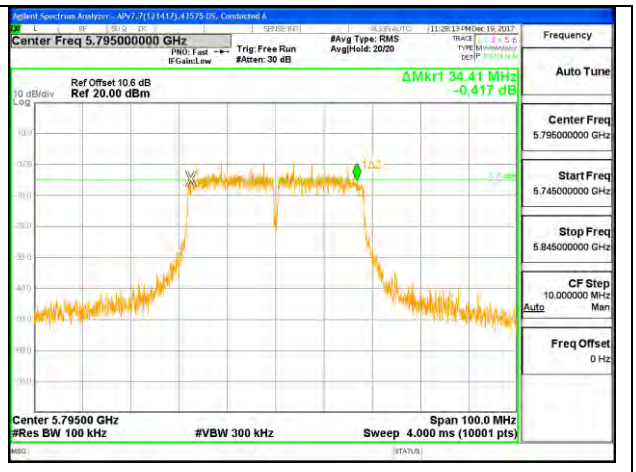
8.4.3. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5755	34.17	0.5
High	5795	34.41	0.5



LOW CHANNEL



HIGH CHANNEL

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8.5. OUTPUT POWER AND PSD

LIMITS

FCC §15.407

Band 5.15–5.25 GHz

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 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.

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.

TEST PROCEDURE

The measurement method used for output power is KDB 789033 D02 v02r01, Section E.3.b (Method PM-G) and for straddles channels KDB 789033 D02 v02r01, Section E.2.b (Method SA-1) was used.

The measurement method used for power spectral density is KDB 789033 D02 v02r01, Section F.

DIRECTIONAL ANTENNA GAIN

For 1 TX:
There is only one transmitter output therefore the directional gain is equal to the antenna gain.

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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 (dBi)	Power Limit (dBm)	PSD Limit (dBm/1MHz)
Low	5180	-3.1	30.00	11.00
Mid	5200	-3.1	30.00	11.00
High	5240	-3.1	30.00	11.00

Duty Cycle CF (dB)	0.59	**Included in Calculations of Corr'd PSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	17.92	17.92	30.00	-12.08
Mid	5200	17.98	17.98	30.00	-12.02
High	5240	18.05	18.05	30.00	-11.95

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/1MHz)	Total Corr'd PSD (dBm/1MHz)	PSD Limit (dBm/1MHz)	PSD Margin (dB)
Low	5180	7.11	7.70	17.00	-9.30
Mid	5200	7.13	7.72	17.00	-9.28
High	5240	6.79	7.38	17.00	-9.62

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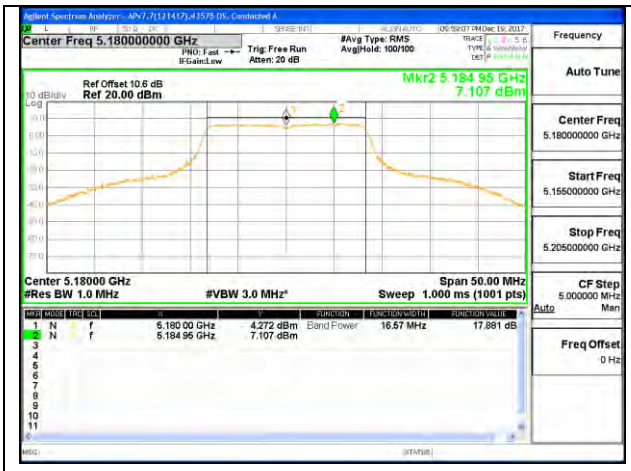
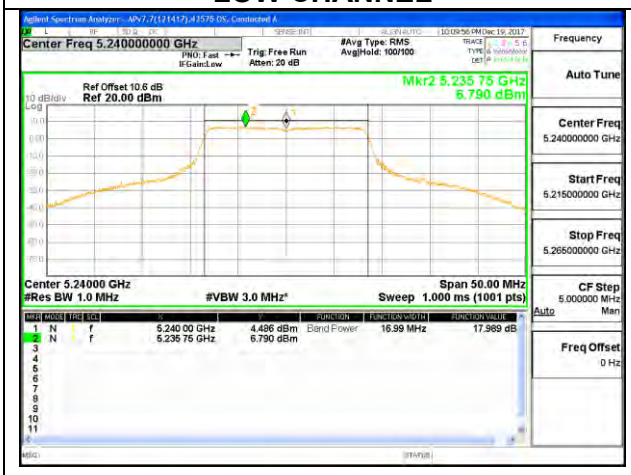


LOW CHANNEL

MID CHANNEL



HIGH CHANNEL

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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 (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5180	-3.1	30.00	11.00
Mid	5200	-3.1	30.00	11.00
High	5240	-3.1	30.00	11.00

Duty Cycle CF (dB)	0.63	**Included in Calculations of Corr'd PSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	18.63	18.63	30.00	-11.37
Mid	5200	18.74	18.74	30.00	-11.26
High	5240	18.86	18.86	30.00	-11.14

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/1MHz)	Total Corr'd PSD (dBm/1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5180	6.44	7.07	17.00	-9.93
Mid	5200	7.48	8.11	17.00	-8.89
High	5240	7.63	8.26	17.00	-8.74

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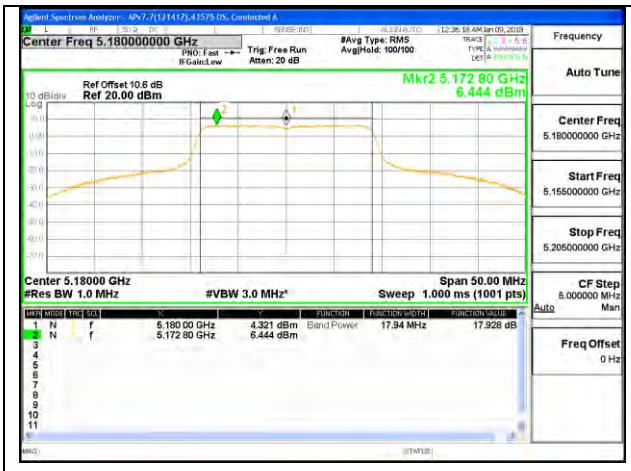
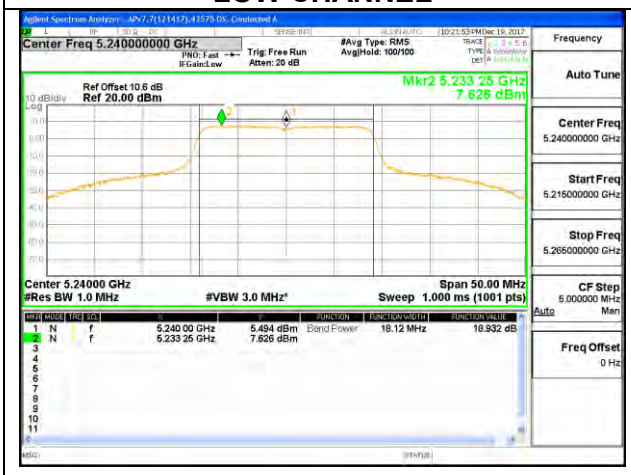


LOW CHANNEL

MID CHANNEL



HIGH CHANNEL

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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)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5190	-3.1	30.00	11.00
High	5230	-3.1	30.00	11.00

Duty Cycle CF (dB)	1.19	**Included in Calculations of Corr'd PSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5190	15.68	15.68	30.00	-14.32
High	5230	15.67	15.67	30.00	-14.33

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/1MHz)	Total Corr'd PSD (dBm/1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5190	1.34	2.52	17.00	-14.48
High	5230	0.86	2.04	17.00	-14.96

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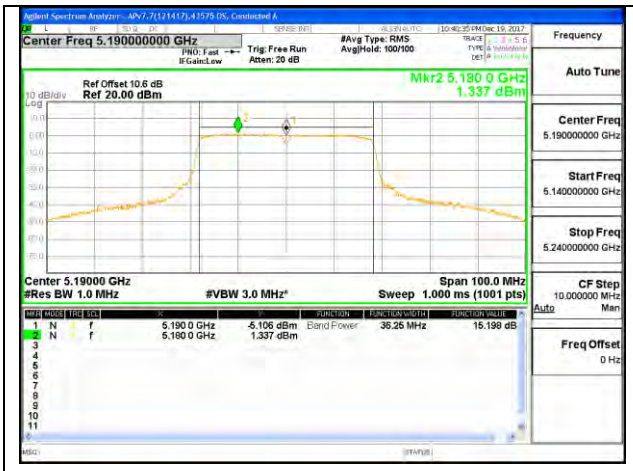

LOW CHANNEL

HIGH CHANNEL

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8.5.4. 802.11ac VHT80 MODE IN THE 5.2 GHz BAND

Antenna Gain and Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Mid	5210	-3.1	30.00	11.00

Duty Cycle CF (dB)	2.58	Included in Calculations of Corr'd PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Mid	5210	15.58	15.58	30.00	-14.42

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Mid	5210	-2.72	-0.14	17.00	-17.14

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MID CHANNEL

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8.5.5. 802.11a MODE IN THE 5.8 GHz BAND

Antenna Gain and Limit

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5745	37.90	-3.1	30.00	30.00
Mid	5785	27.60	-3.1	30.00	30.00
High	5825	24.10	-3.1	30.00	30.00

Duty Cycle CF (dB)	0.59	**Included in Calculations of Corr'd PSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	19.92	19.92	30.00	-10.08
Mid	5785	18.74	18.74	30.00	-11.26
High	5825	17.38	17.38	30.00	-12.62

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5745	5.469	6.059	30.00	-23.94
Mid	5785	3.527	4.117	30.00	-25.88
High	5825	2.762	3.352	30.00	-26.65

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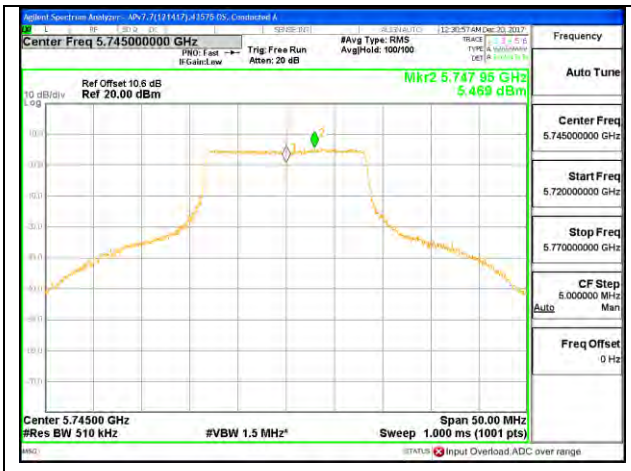
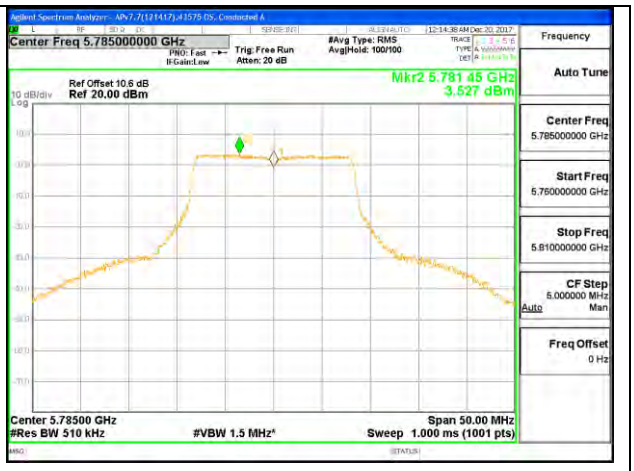
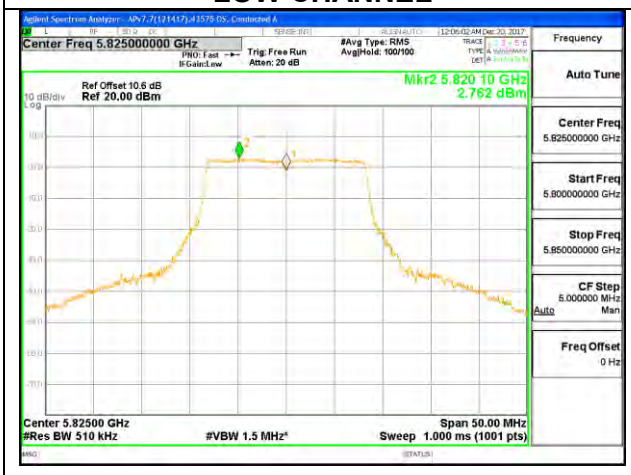


LOW CHANNEL



MID CHANNEL



HIGH CHANNEL

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8.5.6. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Antenna Gain and Limit

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5745	43.25	-3.1	30.00	30.00
Mid	5785	39.55	-3.1	30.00	30.00
High	5825	35.05	-3.1	30.00	30.00

Duty Cycle CF (dB)	0.63	**Included in Calculations of Corr'd PSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	20.78	20.78	30.00	-9.22
Mid	5785	19.82	19.82	30.00	-10.18
High	5825	18.25	18.25	30.00	-11.75

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5745	6.100	6.730	30.00	-23.27
Mid	5785	4.484	5.114	30.00	-24.89
High	5825	3.465	4.095	30.00	-25.91

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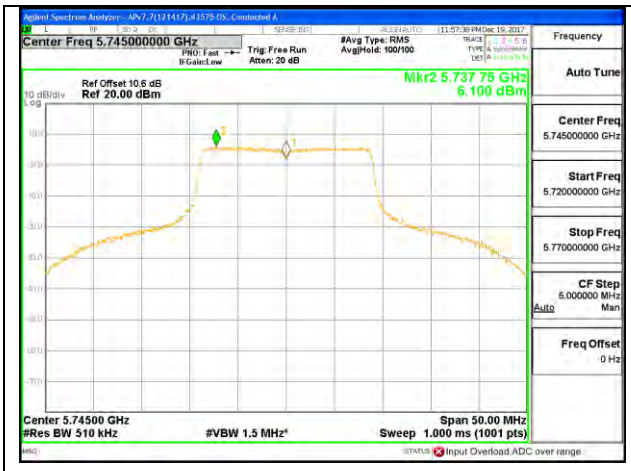
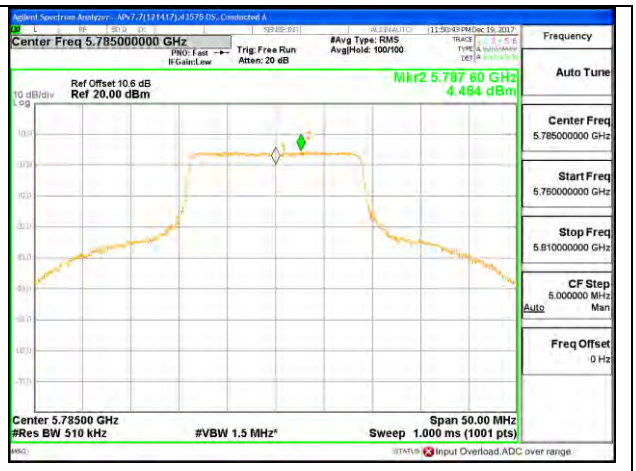
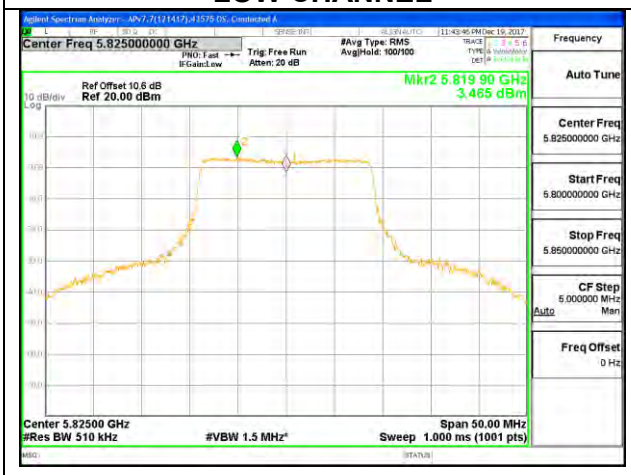


LOW CHANNEL



MID CHANNEL



HIGH CHANNEL

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8.5.7. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Antenna Gain and Limit

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5755	45.90	-3.1	30.00	30.00
High	5795	44.90	-3.1	30.00	30.00

Duty Cycle CF (dB)	1.19	**Included in Calculations of Corr'd PSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5755	17.340	17.340	30.00	-12.66
High	5795	15.830	15.830	30.00	-14.17

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5755	-0.865	0.321	30.00	-29.68
High	5795	-2.717	-1.531	30.00	-31.53

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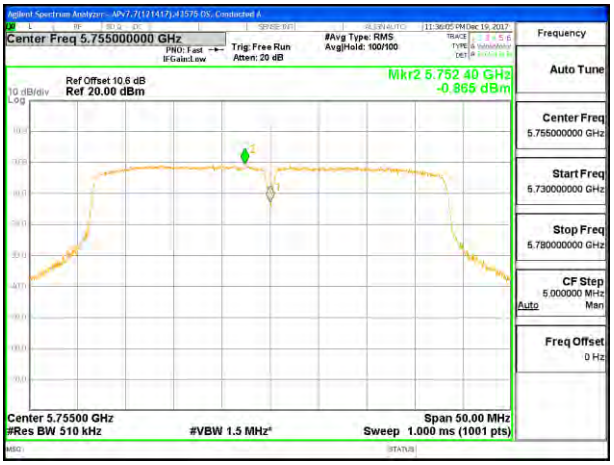

LOW CHANNEL

HIGH CHANNEL

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9. RADIATED TEST RESULTS

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
0.009-0.490	2400/F(kHz) @ 300 m	-
0.490-1.705	24000/F(kHz) @ 30 m	-
1.705 - 30	30 @ 30m	-
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

TEST PROCEDURE

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

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

For pre-scans above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 KHz for peak measurements.

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

The spectrum from 30 MHz to 1GHz and 18GHz to 40 GHz is investigated with the transmitter set to transmit at the channel with highest output power as worst-case scenario. 1GHz to 18GHz was set to the lowest, middle, and highest channels in the 5 GHz bands.

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

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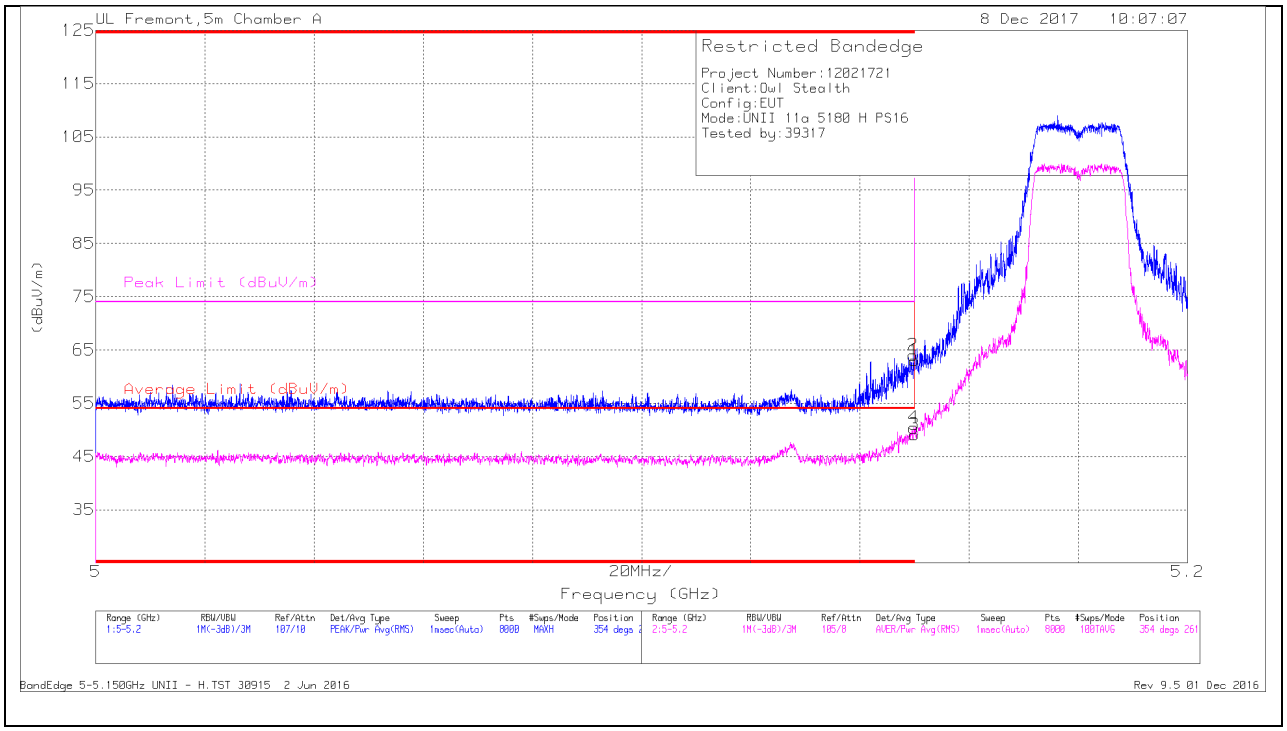
9.1. TRANSMITTER ABOVE 1 GHz

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

1TX Antenna 1 MODE

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	46.82	Pk	34.4	-18.2	0	63.02	-	-	74	-10.98	354	261	H
2	* 5.15	47.78	Pk	34.4	-18.2	0	63.98	-	-	74	-10.02	354	261	H
3	* 5.15	32.32	RMS	34.4	-18.2	.59	49.11	54	-4.89	-	-	354	261	H
4	* 5.15	33.61	RMS	34.4	-18.2	.59	50.4	54	-3.6	-	-	354	261	H

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

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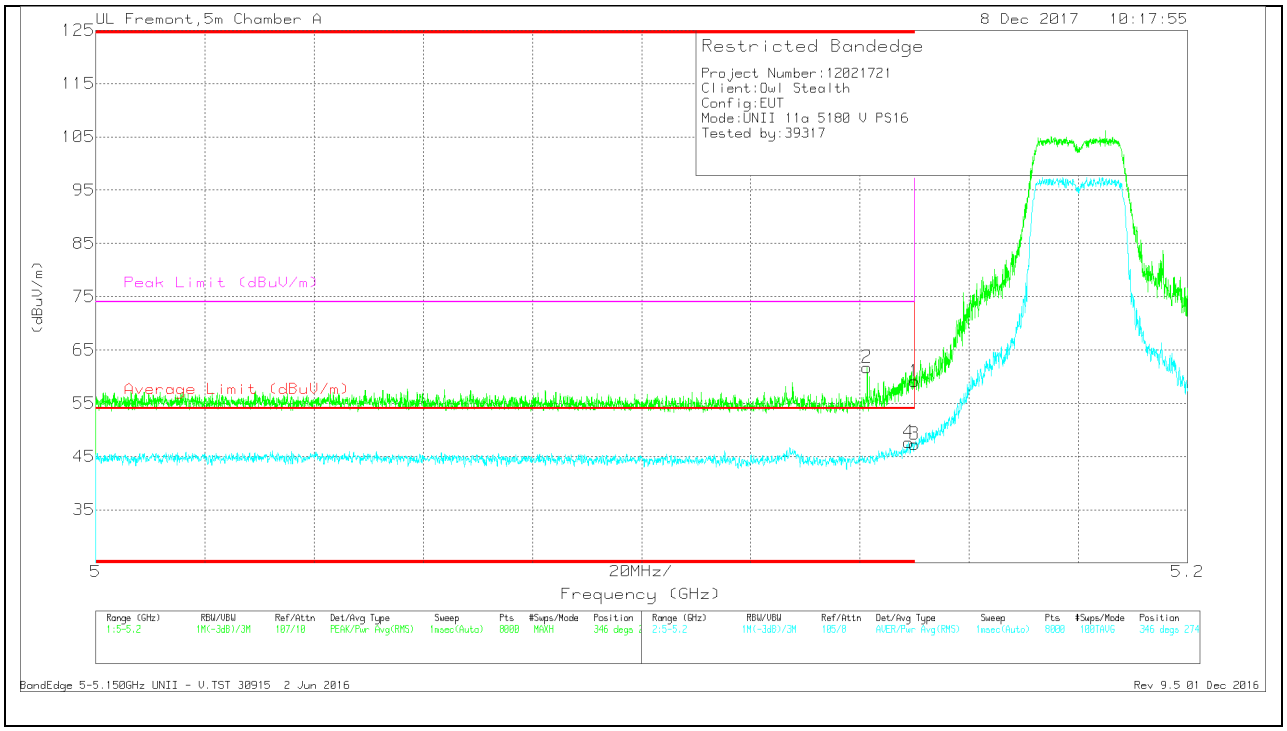
VERTICAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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	* 5.141	45.42	Pk	34.4	-18.1	0	61.72	-	-	74	-12.28	346	274	V
4	* 5.149	30.87	RMS	34.4	-18.2	.59	47.66	54	-6.34	-	-	346	274	V
1	* 5.15	42.89	Pk	34.4	-18.2	0	59.09	-	-	74	-14.91	346	274	V
3	* 5.15	30.52	RMS	34.4	-18.2	.59	47.31	54	-6.69	-	-	346	274	V

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

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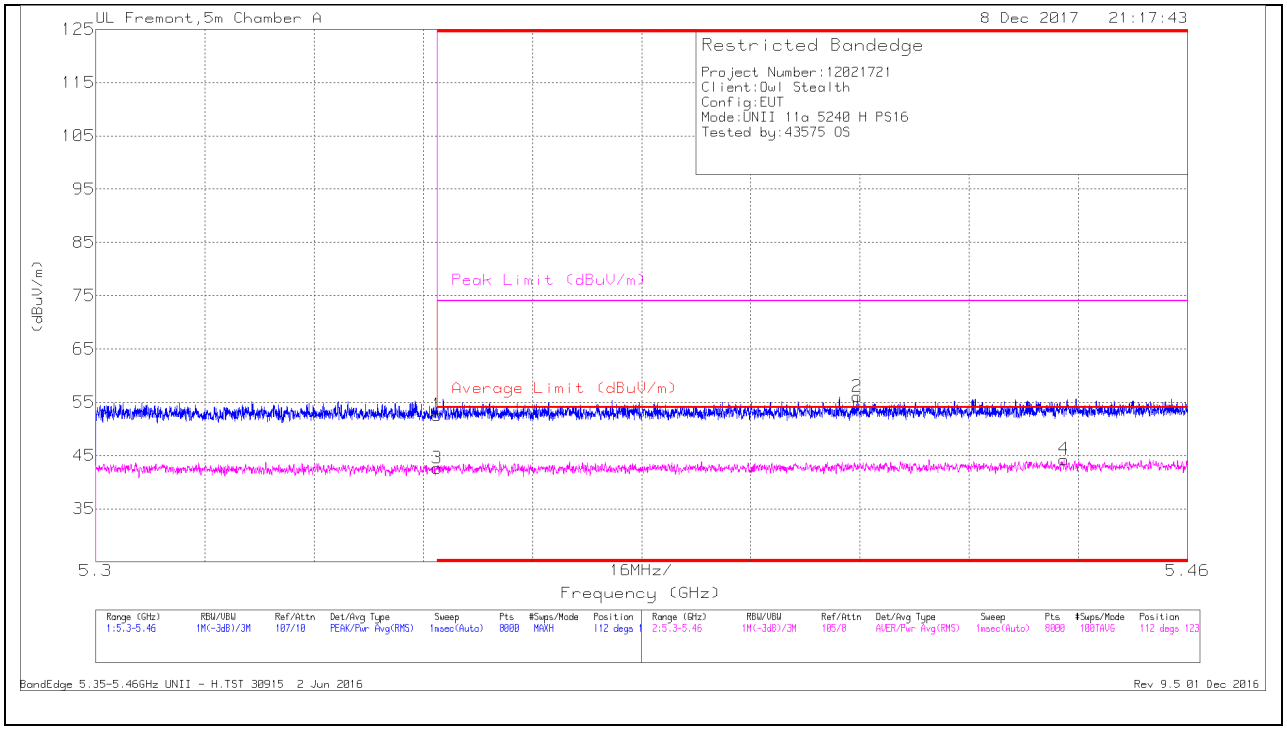
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	36.25	Pk	34.6	-18.3	0	52.55	-	-	74	-21.45	112	123	H
3	* 5.35	25.75	RMS	34.6	-18.3	.59	42.64	54	-11.36	-	-	112	123	H
2	* 5.412	39.68	Pk	34.7	-18.3	0	56.08	-	-	74	-17.92	112	123	H
4	* 5.442	27.28	RMS	34.7	-18.3	.59	44.27	54	-9.73	-	-	112	123	H

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

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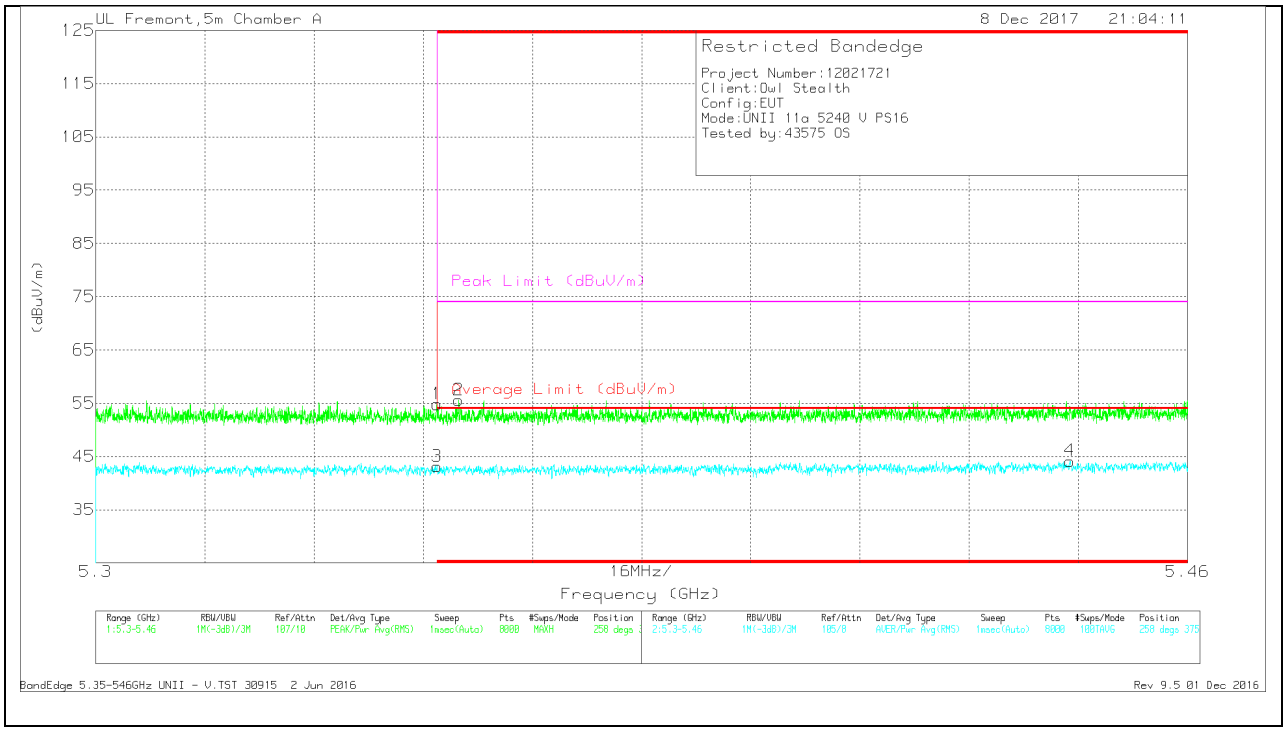
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	38.51	Pk	34.6	-18.3	0	54.81	-	-	74	-19.19	258	375	V
3	* 5.35	26.2	RMS	34.6	-18.3	.59	43.09	54	-10.91	-	-	258	375	V
2	* 5.353	39.29	Pk	34.6	-18.3	0	55.59	-	-	74	-18.41	258	375	V
4	* 5.443	27.17	RMS	34.7	-18.3	.59	44.16	54	-9.84	-	-	258	375	V

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

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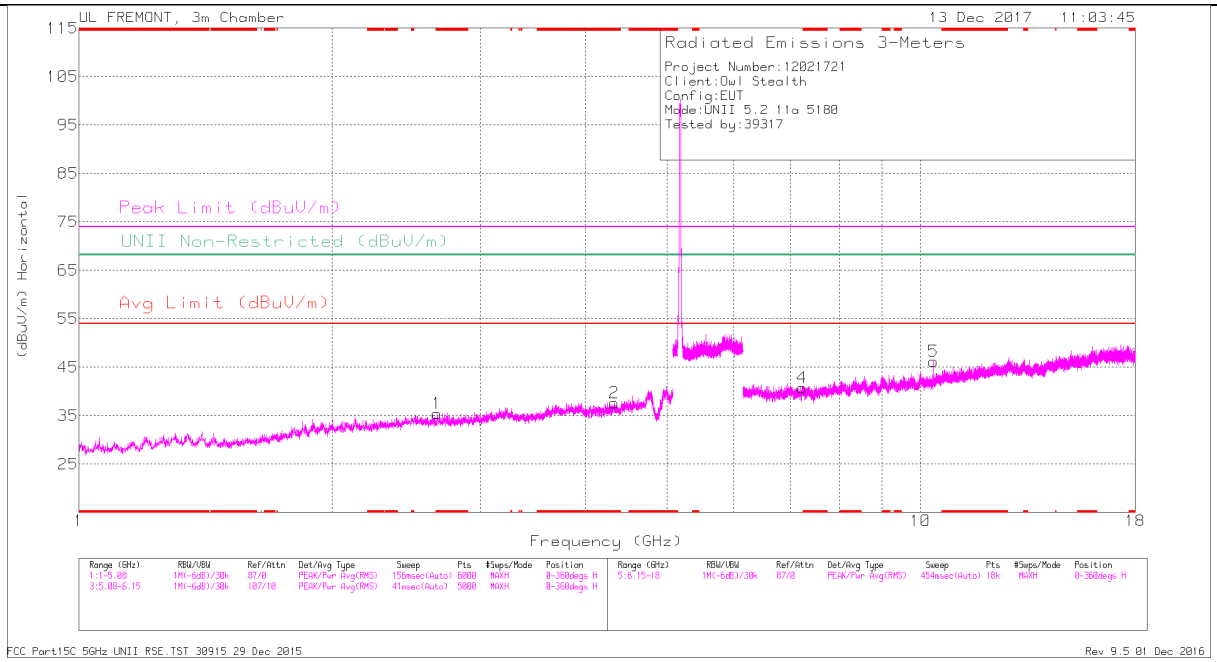
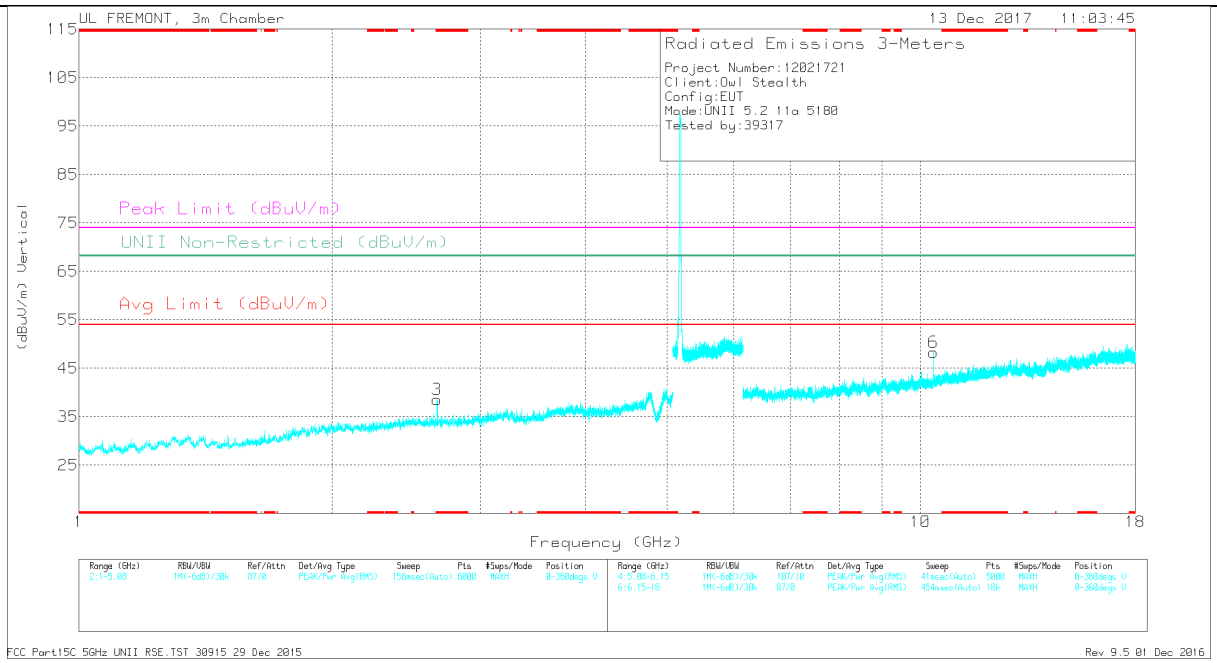
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (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
* 2.667	40.54	PK-U	32.4	-30.2	0	42.74	-	-	74	-31.26	-	-	0	100	H
* 2.667	28.2	ADR	32.4	-30.3	.59	30.89	54	-23.11	-	-	-	-	0	100	H
* 4.327	38.58	PK-U	33.5	-28.7	0	43.38	-	-	74	-30.62	-	-	0	200	H
* 4.326	27.34	ADR	33.5	-28.7	.59	32.73	54	-21.27	-	-	-	-	0	200	H
* 2.666	40.02	PK-U	32.4	-30.3	0	42.12	-	-	74	-31.88	-	-	0	100	V
* 2.667	27.8	ADR	32.4	-30.2	.59	30.59	54	-23.41	-	-	-	-	0	100	V
7.23	37.75	PK-U	35.6	-25.5	0	47.85	-	-	-	-	68.2	-20.35	0	100	H
7.231	25.64	ADR	35.6	-25.4	.59	36.43	-	-	-	-	-	-	0	100	H
10.358	34.03	PK-U	37.2	-21.7	0	49.53	-	-	-	-	68.2	-18.67	0	100	H
10.36	22.43	ADR	37.2	-21.7	.59	38.52	-	-	-	-	-	-	0	100	H
10.36	37.4	PK-U	37.2	-21.7	0	52.9	-	-	-	-	68.2	-15.3	0	100	V
10.36	30.57	ADR	37.2	-21.7	.59	46.66	-	-	-	-	-	-	0	100	V

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

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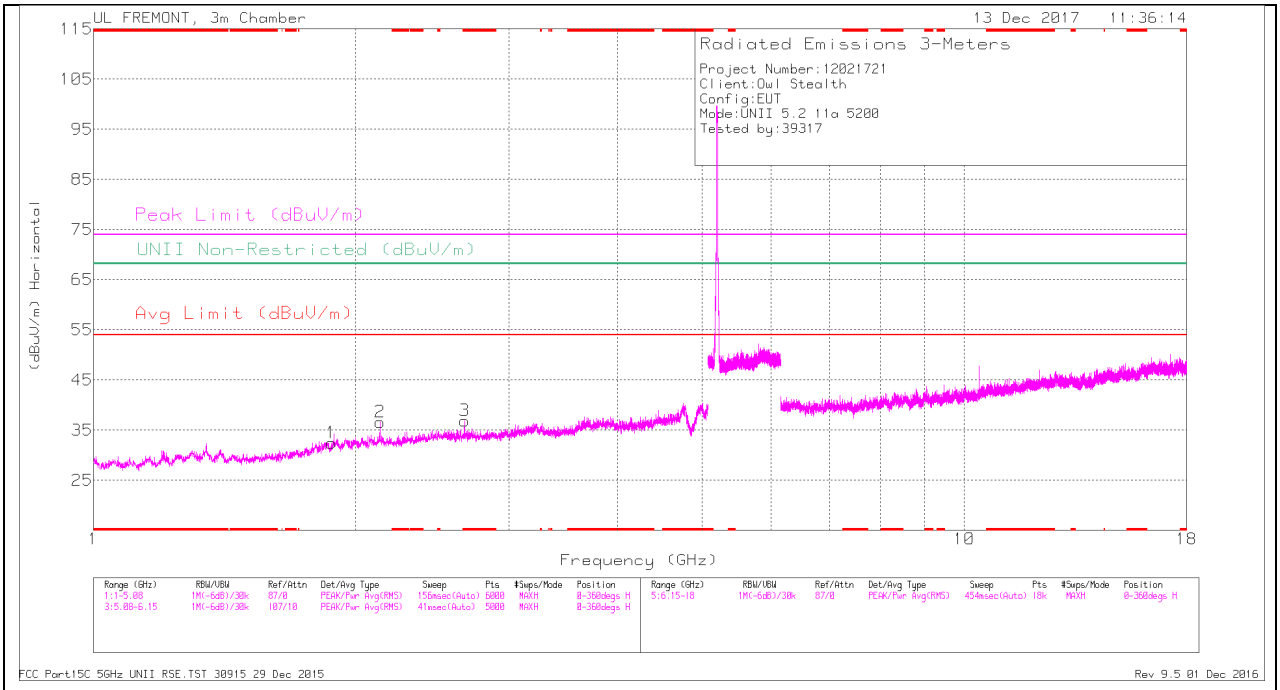
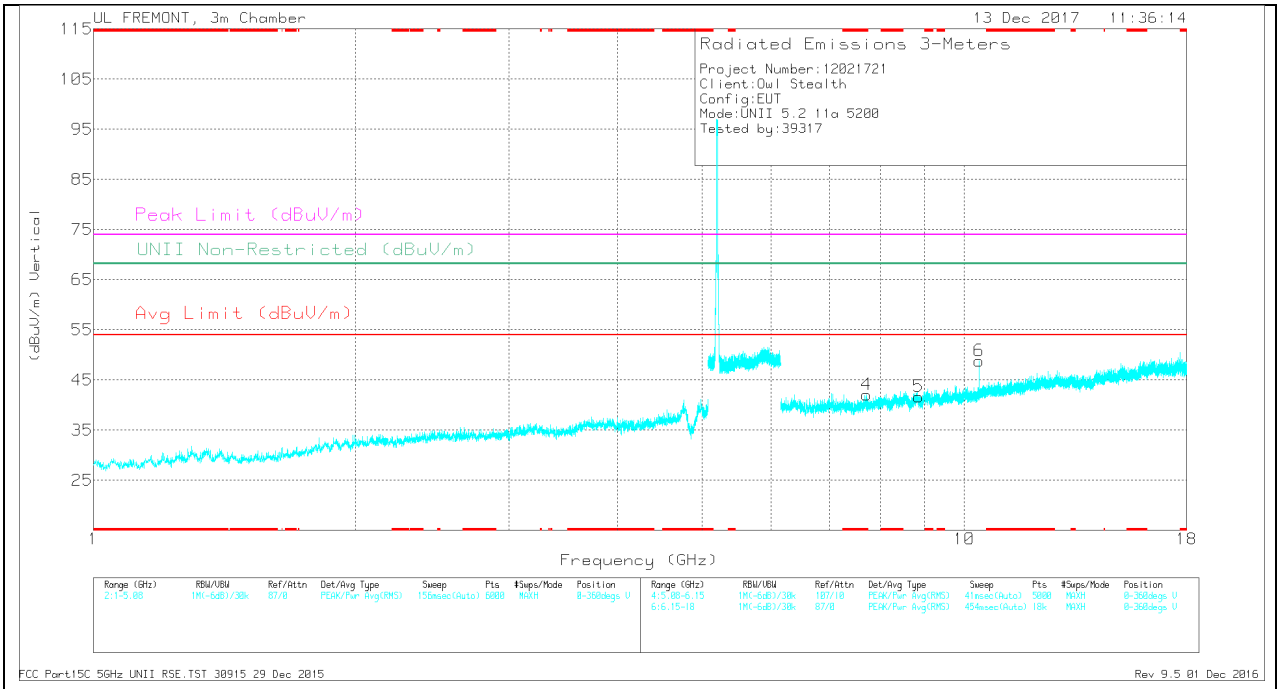
MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (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
* 2.667	43.13	PK-U	32.4	-30.3	0	45.23	-	-	74	-28.77	-	-	0	200	H
* 2.666	29.26	ADR	32.4	-30.3	.59	31.95	54	-22.05	-	-	-	-	0	200	H
* 7.72	36.74	PK-U	35.7	-25	0	47.44	-	-	74	-26.56	-	-	0	200	V
* 7.721	25.01	ADR	35.7	-25	.59	36.3	54	-17.7	-	-	-	-	0	200	V
1.873	27.62	ADR	30.6	-30.9	.59	27.91	-	-	-	-	-	-	0	200	H
1.876	38.95	PK-U	30.7	-30.7	0	38.95	-	-	-	-	68.2	-29.25	0	200	H
2.132	39.62	PK-U	31.3	-30.8	0	40.12	-	-	-	-	68.2	-28.08	0	100	H
2.133	28.37	ADR	31.3	-30.7	.59	29.56	-	-	-	-	-	-	0	100	H
8.861	23.04	ADR	36	-22.7	.59	36.93	-	-	-	-	-	-	0	100	V
8.862	35.46	PK-U	36	-22.8	0	48.66	-	-	-	-	68.2	-19.54	0	100	V
10.4	37.92	PK-U	37.3	-22.1	0	53.12	-	-	-	-	68.2	-15.08	88	100	V
10.4	32.06	ADR	37.3	-22.1	.59	47.85	-	-	-	-	-	-	88	100	V

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

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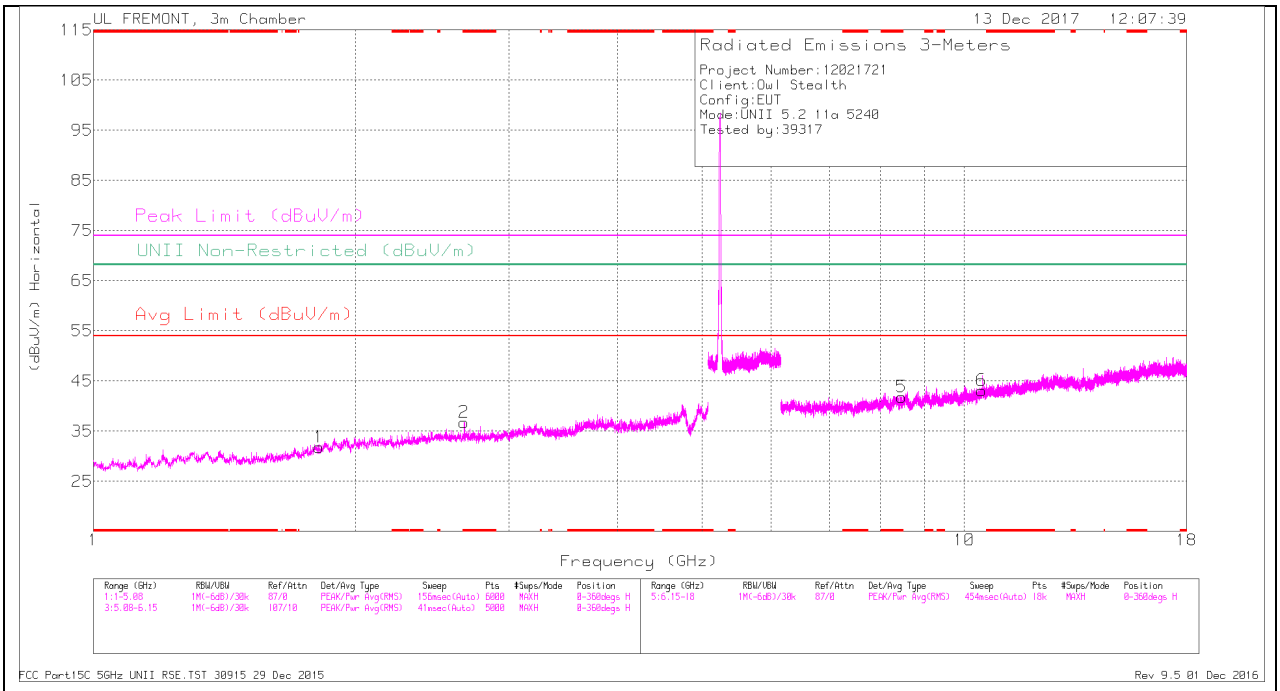
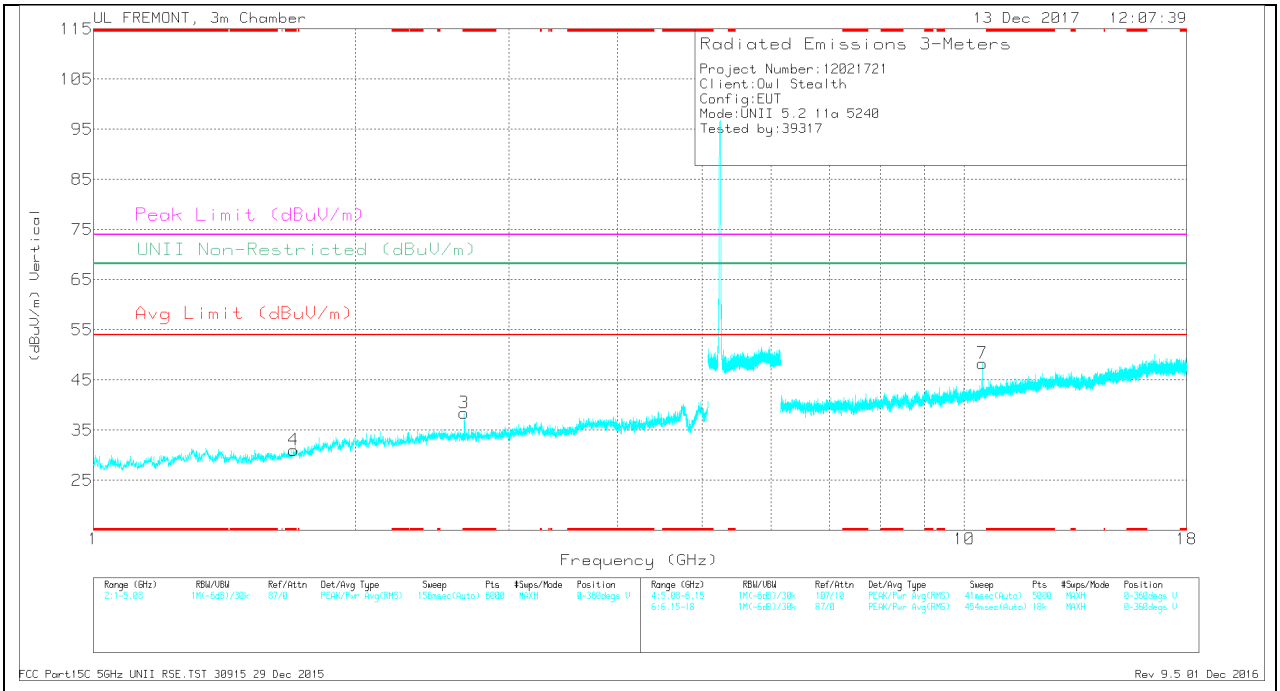
HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (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
* 2.667	44.1	PK-U	32.4	-30.3	0	46.2	-	-	74	-27.8	-	-	0	200	H
* 2.666	29.69	ADR	32.4	-30.3	.59	32.38	54	-21.62	-	-	-	-	0	200	H
* 2.666	40.14	PK-U	32.4	-30.3	0	42.24	-	-	74	-31.76	-	-	0	100	V
* 2.667	27.79	ADR	32.4	-30.2	.59	30.58	54	-23.42	-	-	-	-	0	100	V
* 1.698	40.56	PK-U	29	-31.5	0	38.06	-	-	74	-35.94	-	-	0	100	V
* 1.697	28.66	ADR	29	-31.5	.59	26.75	54	-27.25	-	-	-	-	0	100	V
* 8.472	37.45	PK-U	35.8	-24.8	0	48.45	-	-	74	-25.55	-	-	0	200	H
* 8.47	25.55	ADR	35.8	-24.8	.59	37.14	54	-16.86	-	-	-	-	0	200	H
1.814	40.01	PK-U	30.3	-31.2	0	39.11	-	-	-	-	68.2	-29.09	0	200	H
1.815	28.41	ADR	30.3	-31.2	.59	28.1	-	-	-	-	-	-	0	200	H
10.468	34.11	PK-U	37.4	-21.5	0	50.01	-	-	-	-	68.2	-18.19	0	100	H
10.47	22.03	ADR	37.4	-21.4	.59	38.62	-	-	-	-	-	-	0	100	H

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

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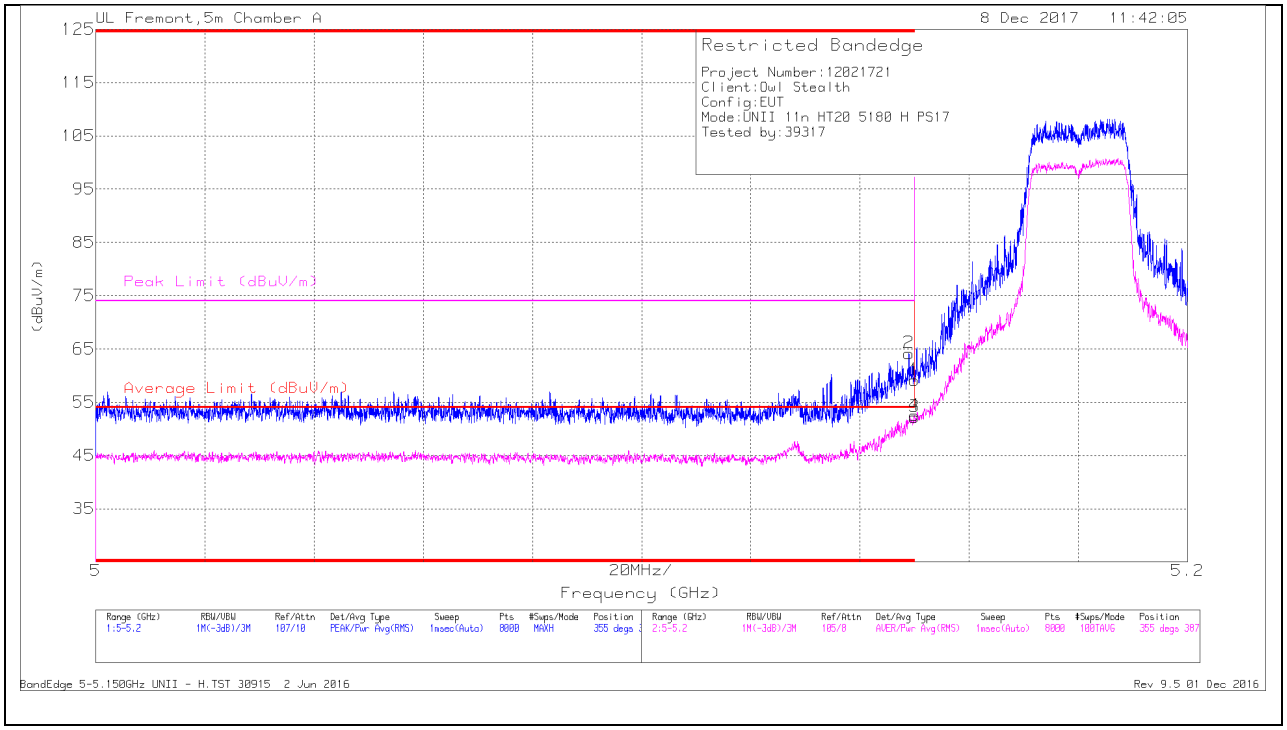
9.1.2. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.2 GHz BAND

1TX Antenna 1 MODE

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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	* 5.149	47.99	Pk	34.4	-18.2	0	64.19	-	-	74	-9.81	355	387	H
1	* 5.15	42.94	Pk	34.4	-18.2	0	59.14	-	-	74	-14.86	355	387	H
3	* 5.15	35.42	RMS	34.4	-18.2	.6	52.22	54	-1.78	-	-	355	387	H
4	* 5.15	35.72	RMS	34.4	-18.2	.6	52.52	54	-1.48	-	-	355	387	H

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

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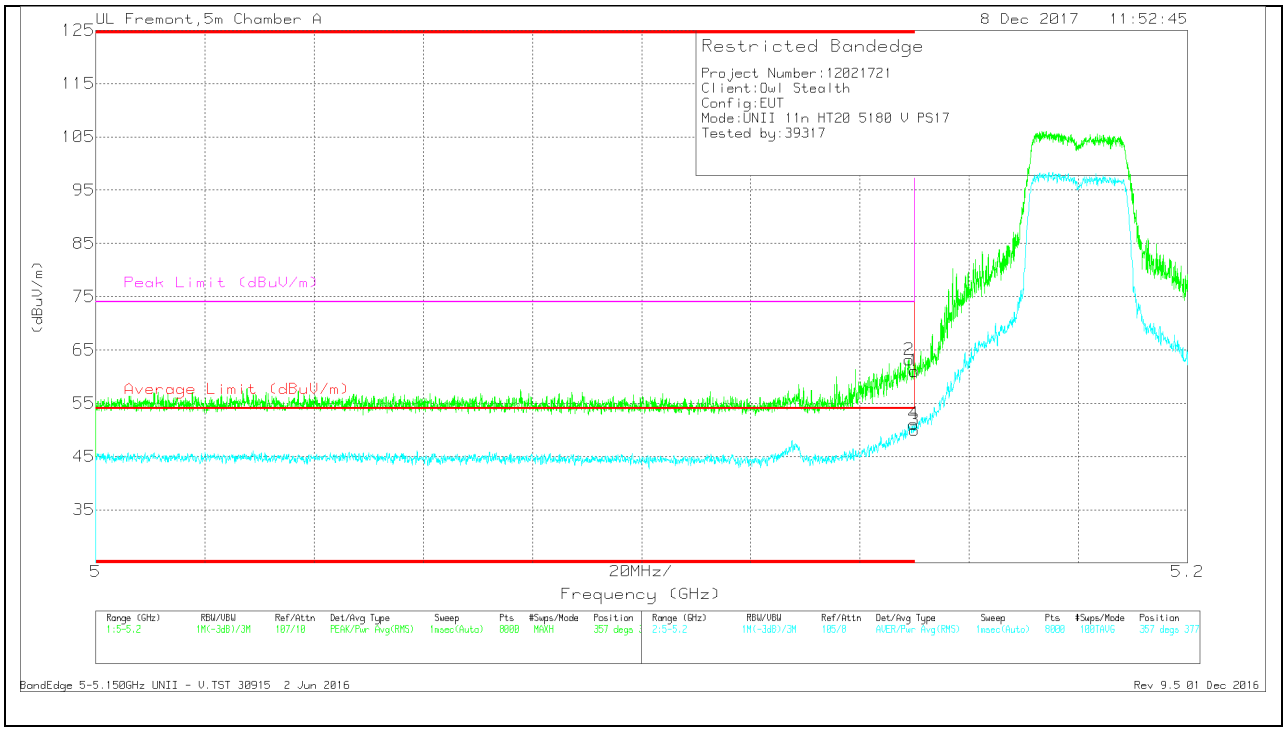
VERTICAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (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	* 5.149	46.96	Pk	34.4	-18.2	0	63.16	-	-	74	-10.84	357	377	V
1	* 5.15	44.83	Pk	34.4	-18.2	0	61.03	-	-	74	-12.97	357	377	V
3	* 5.15	33.13	RMS	34.4	-18.2	.6	49.93	54	-4.07	-	-	357	377	V
4	* 5.15	34.28	RMS	34.4	-18.2	.6	51.08	54	-2.92	-	-	357	377	V

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

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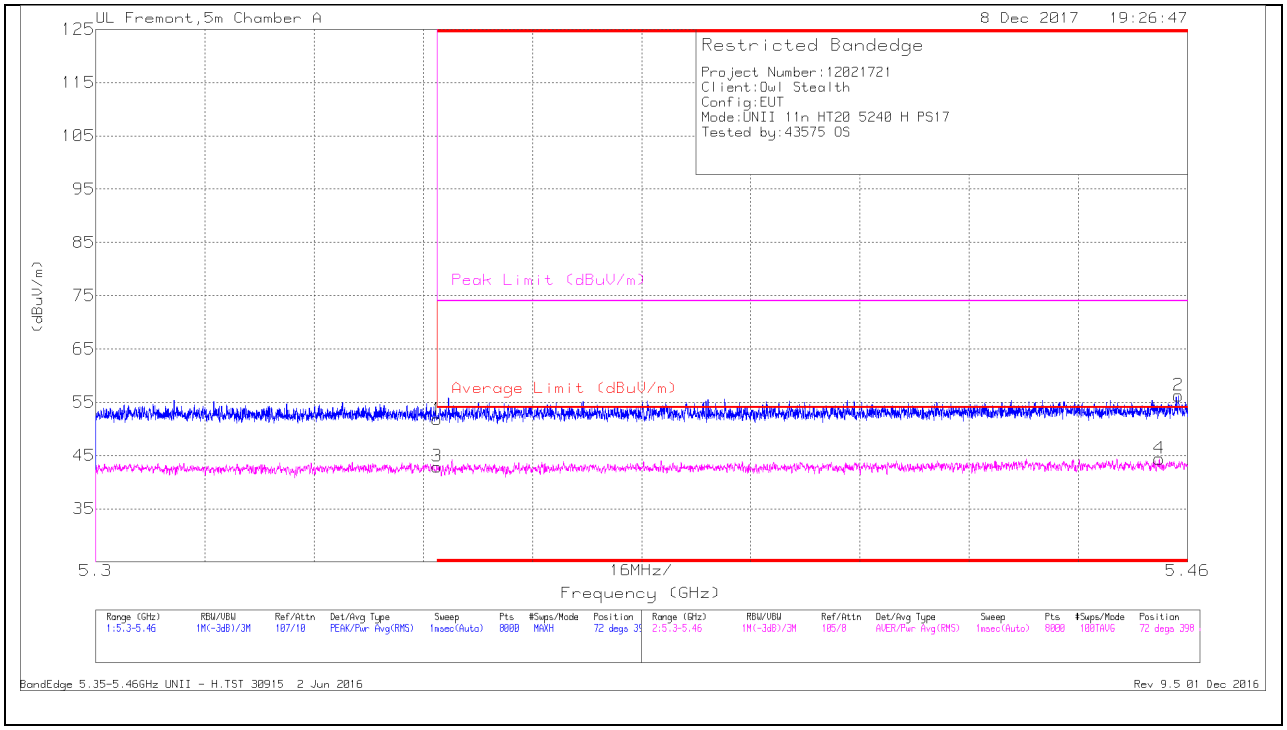
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	35.5	Pk	34.6	-18.3	0	51.8	-	-	74	-22.2	72	398	H
3	* 5.35	26.02	RMS	34.6	-18.3	.61	42.93	54	-11.07	-	-	72	398	H
4	* 5.456	27.5	RMS	34.7	-18.4	.61	44.41	54	-9.59	-	-	72	398	H
2	* 5.459	39.96	Pk	34.7	-18.4	0	56.26	-	-	74	-17.74	72	398	H

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

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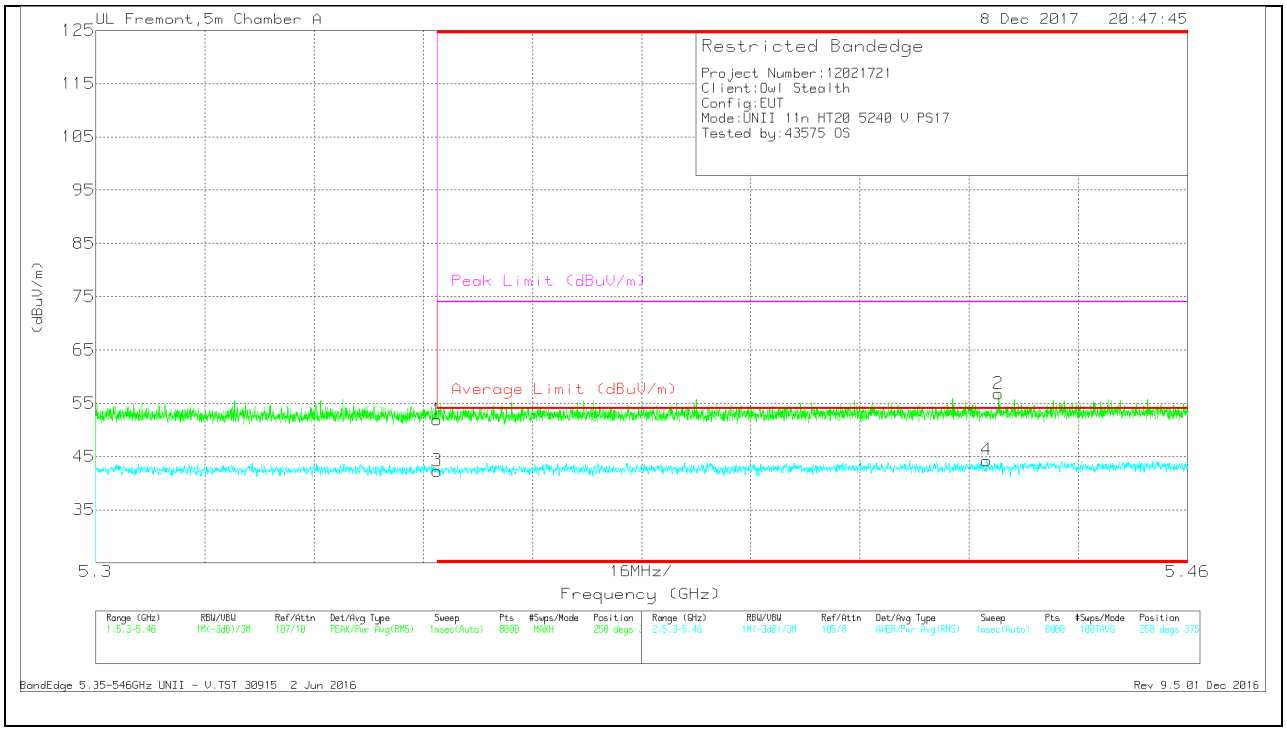
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	35.58	Pk	34.6	-18.3	0	51.88	-	-	74	-22.12	258	375	V
3	* 5.35	25.39	RMS	34.6	-18.3	.61	42.3	54	-11.7	-	-	258	375	V
4	* 5.431	27.27	RMS	34.7	-18.3	.61	44.28	54	-9.72	-	-	258	375	V
2	* 5.432	40.41	Pk	34.7	-18.3	0	56.81	-	-	74	-17.19	258	375	V

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

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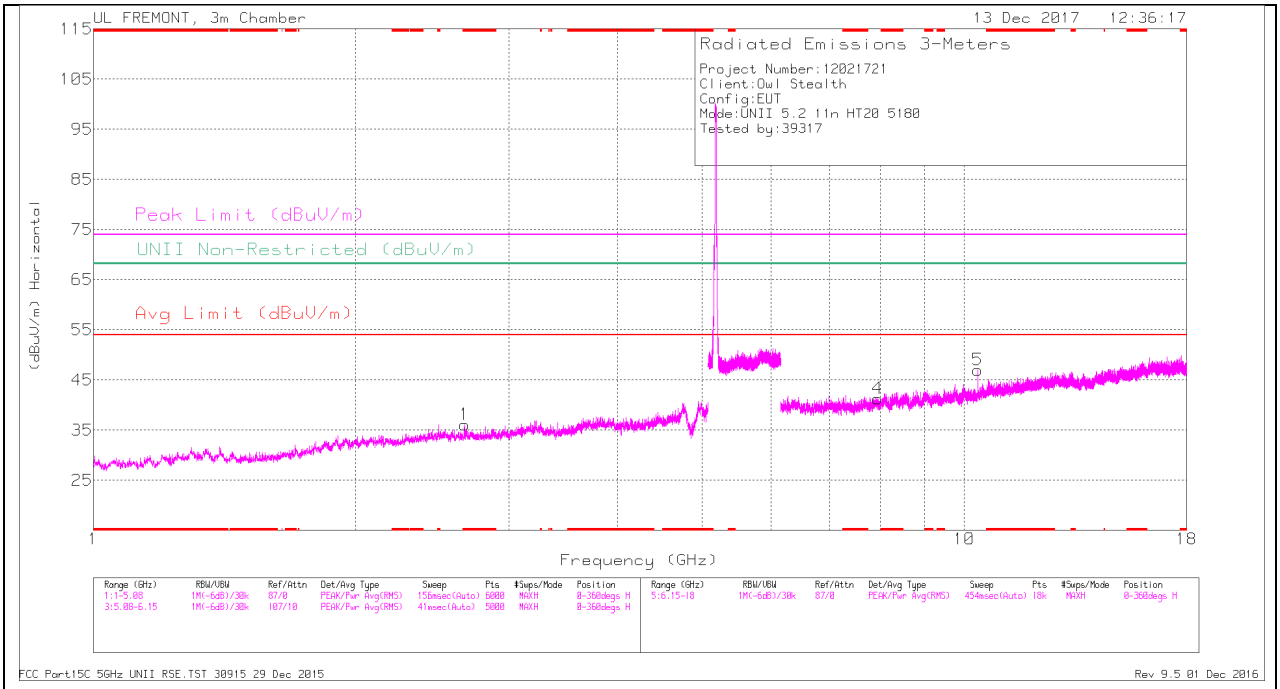
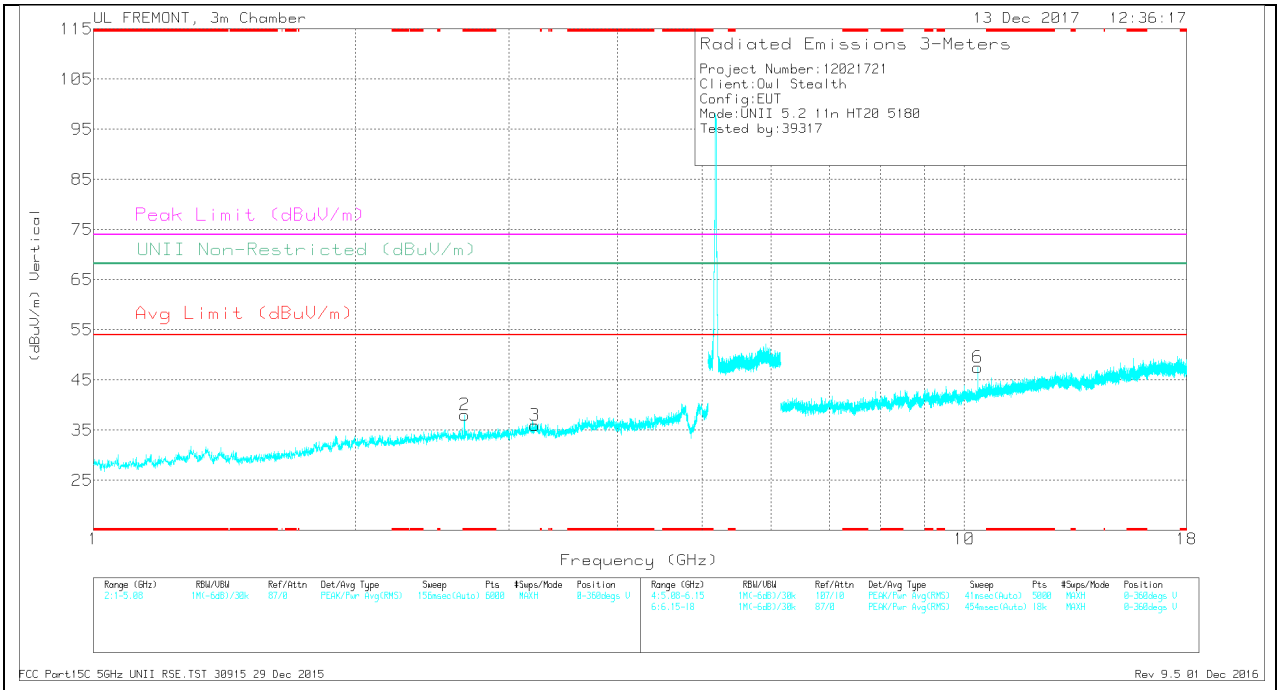
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (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
* 2.667	43.34	PK-U	32.4	-30.2	0	45.54	-	-	74	-28.46	-	-	0	200	H
* 2.667	29.15	ADR	32.4	-30.3	.6	31.85	54	-22.15	-	-	-	-	0	200	H
3.216	27.42	ADR	33.3	-29.5	.6	31.82	-	-	-	-	-	-	0	100	V
3.217	38.78	PK-U	33.3	-29.5	0	42.58	-	-	-	-	68.2	-25.62	0	100	V
7.949	25.28	ADR	35.8	-25.2	.6	36.48	-	-	-	-	-	-	0	200	H
7.951	37.37	PK-U	35.8	-25.2	0	47.97	-	-	-	-	68.2	-20.23	0	200	H
10.359	34.12	PK-U	37.2	-21.7	0	49.62	-	-	-	-	68.2	-18.58	0	100	H
10.36	22.39	ADR	37.2	-21.7	.6	38.49	-	-	-	-	-	-	0	100	H
10.36	36.73	PK-U	37.2	-21.7	0	54.23	-	-	-	-	68.2	-13.97	3	100	V
10.36	31.78	ADR	37.2	-21.7	.6	47.88	-	-	-	-	-	-	3	100	V

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

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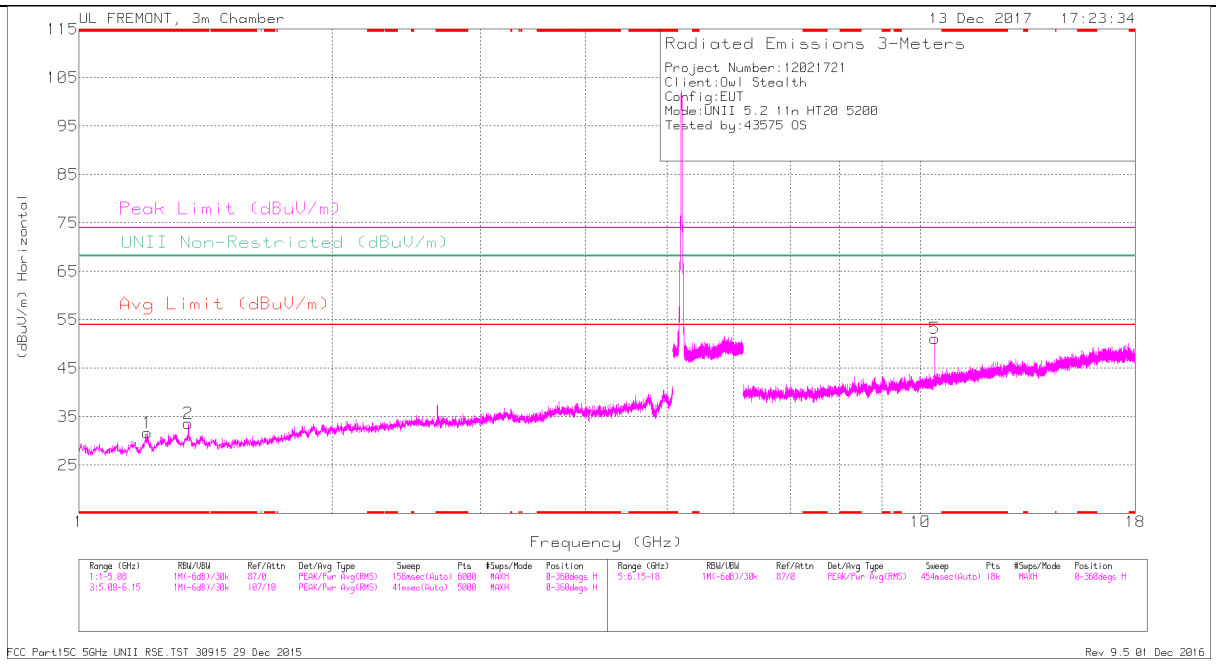
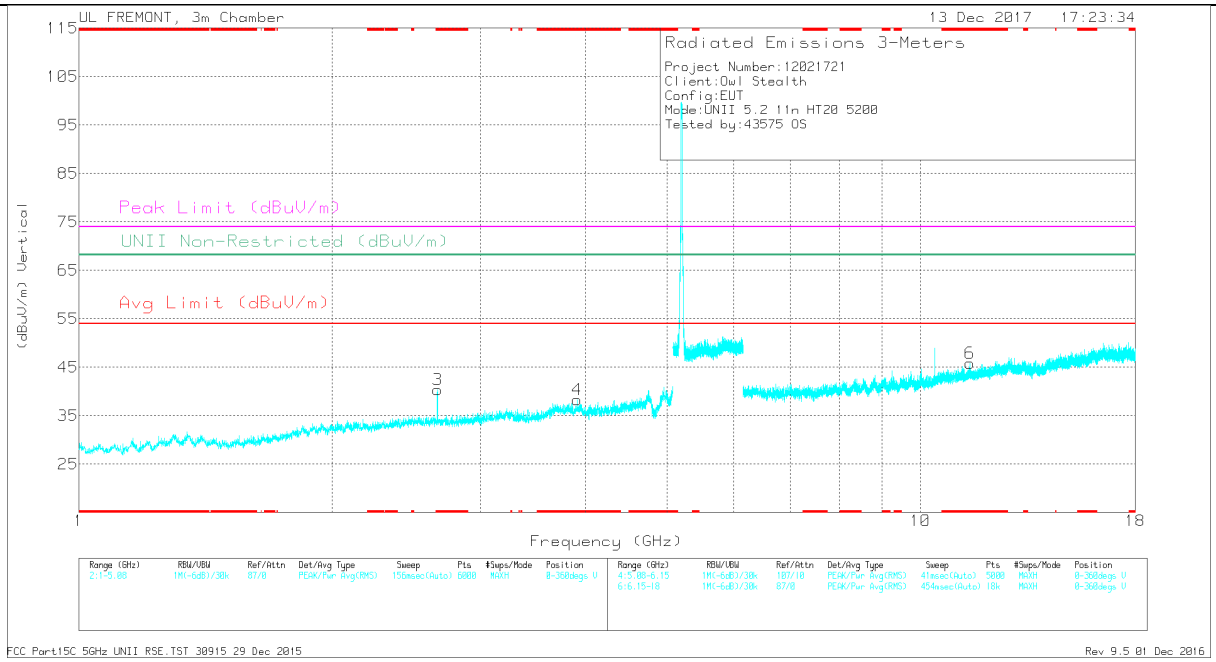
MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (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
* 1.206	44.7	PK-U	28.2	-32.5	0	40.4	-	-	74	-33.6	-	-	304	289	H
* 1.205	30.55	ADR	28.2	-32.5	.61	26.86	54	-27.14	-	-	-	-	304	289	H
* 1.35	44.12	PK-U	29	-31.6	0	41.52	-	-	74	-32.48	-	-	202	133	H
* 1.35	30.78	ADR	29	-31.6	.61	28.79	54	-25.21	-	-	-	-	202	133	H
* 2.667	46.68	PK-U	32.4	-30.3	0	48.78	-	-	74	-25.22	-	-	7	169	V
* 2.667	31.85	ADR	32.4	-30.2	.61	34.66	54	-19.34	-	-	-	-	7	169	V
* 3.911	39.25	PK-U	33.4	-29.2	0	43.45	-	-	74	-30.55	-	-	122	399	V
* 3.91	27.09	ADR	33.4	-29.1	.61	32	54	-22	-	-	-	-	122	399	V
* 11.447	34.84	PK-U	38.1	-21.8	0	51.14	-	-	74	-22.86	-	-	300	249	V
* 11.446	22.34	ADR	38.1	-21.7	.61	39.35	54	-14.65	-	-	-	-	300	249	V
10.4	39.68	PK-U	37.3	-22.1	0	54.88	-	-	-	-	68.2	-13.32	40	100	H
10.4	33.7	ADR	37.3	-22.1	.61	49.51	-	-	-	-	-	-	40	100	H

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

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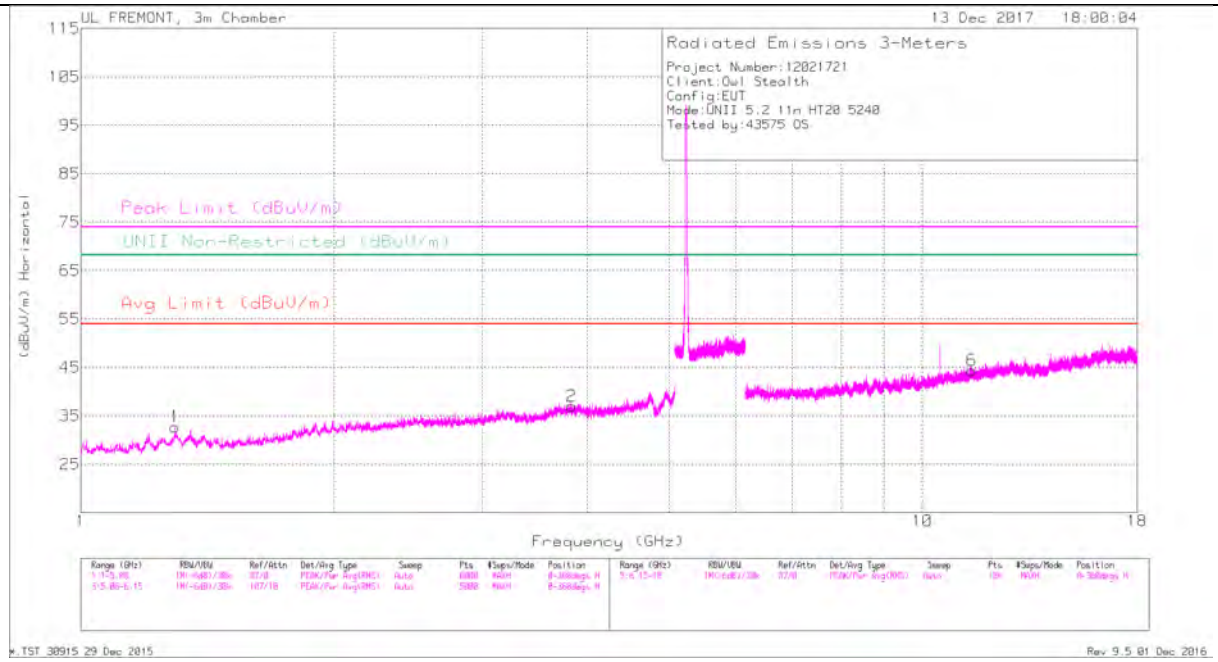
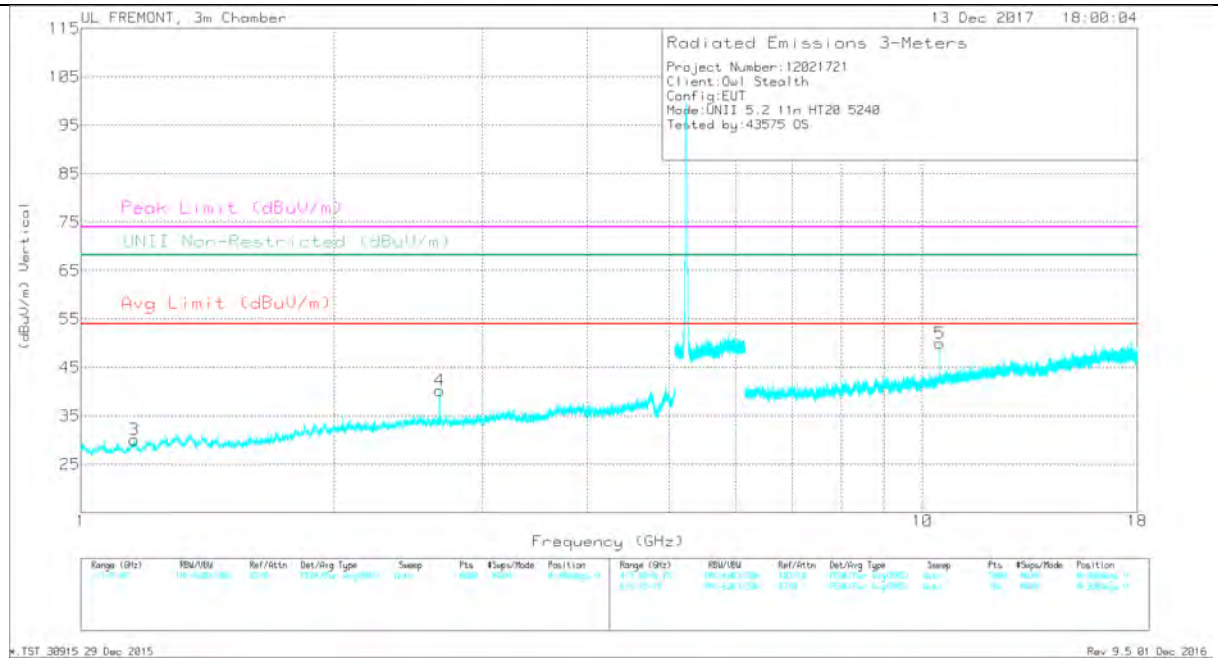
HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (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
1.156	41.43	PK-U	27.8	-32.4	0	36.83	-	-	74	-37.17	-	-	142	397	V
1.156	29.26	ADR	27.8	-32.4	.61	25.27	54	-28.73	-	-	-	-	142	397	V
1.293	42.26	PK-U	29	-32	0	39.26	-	-	74	-34.74	-	-	203	158	H
1.294	30.03	ADR	29.1	-31.9	.61	27.84	54	-26.16	-	-	-	-	203	158	H
2.667	46.25	PK-U	32.4	-30.2	0	48.45	-	-	74	-25.55	-	-	9	168	V
2.667	31.94	ADR	32.4	-30.2	.61	34.75	54	-19.25	-	-	-	-	9	168	V
3.83	27.27	ADR	33.4	-29.5	.61	31.78	54	-22.22	-	-	-	-	165	103	H
3.833	39.79	PK-U	33.4	-29.5	0	43.69	-	-	74	-30.31	-	-	165	103	H
10.48	38.32	PK-U	37.4	-21	0	54.72	-	-	-	-	68.2	-13.48	280	201	V
10.48	32.13	ADR	37.4	-21	.61	49.14	-	-	-	-	-	-	280	201	V
11.445	35.09	PK-U	38.1	-21.7	0	51.49	-	-	74	-22.51	-	-	146	352	H
11.447	22.12	ADR	38.1	-21.8	.61	39.03	54	-14.97	-	-	-	-	146	352	H

PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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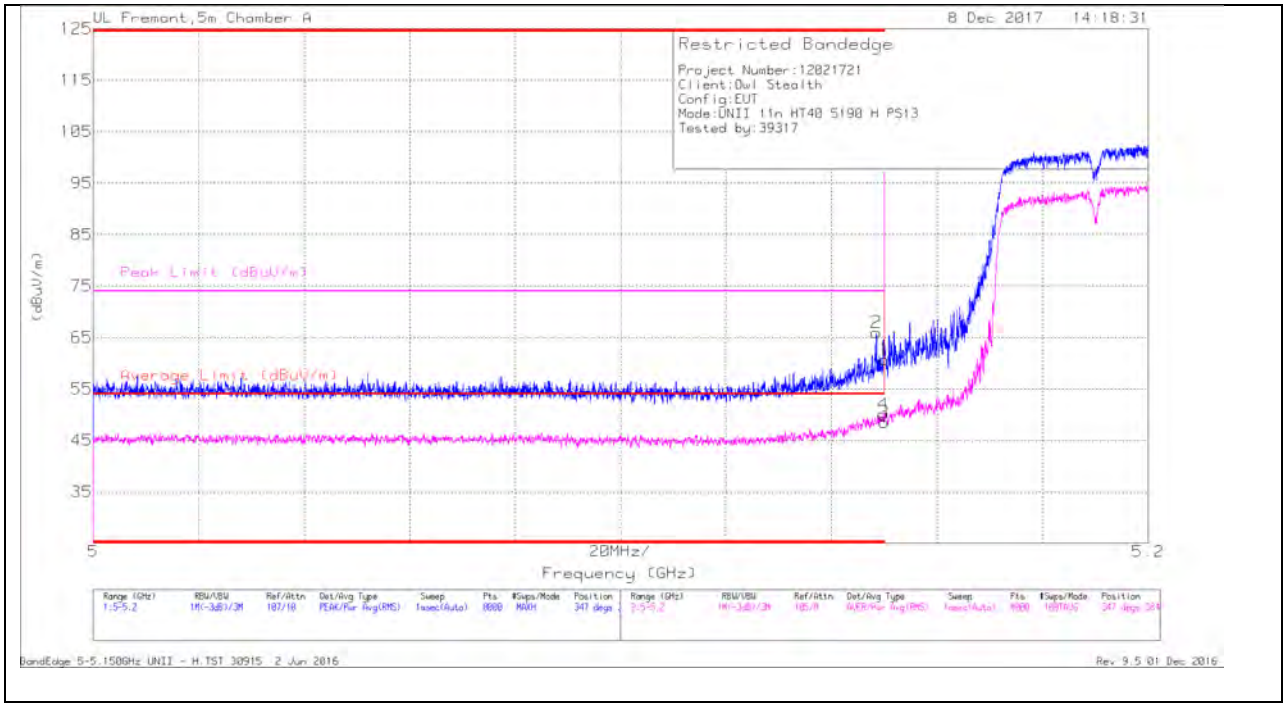
9.1.3. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.2 GHz BAND

1TX Antenna 1 MODE

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	44.54	Pk	34.4	-18.2	0	60.74	-	-	74	-13.26	347	384	H
2	* 5.148	49.79	Pk	34.4	-18.2	0	65.99	-	-	74	-8.01	347	384	H
3	* 5.15	31.16	RMS	34.4	-18.2	1.16	48.52	54	-5.48	-	-	347	384	H
4	* 5.15	32.71	RMS	34.4	-18.2	1.16	50.07	54	-3.93	-	-	347	384	H

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

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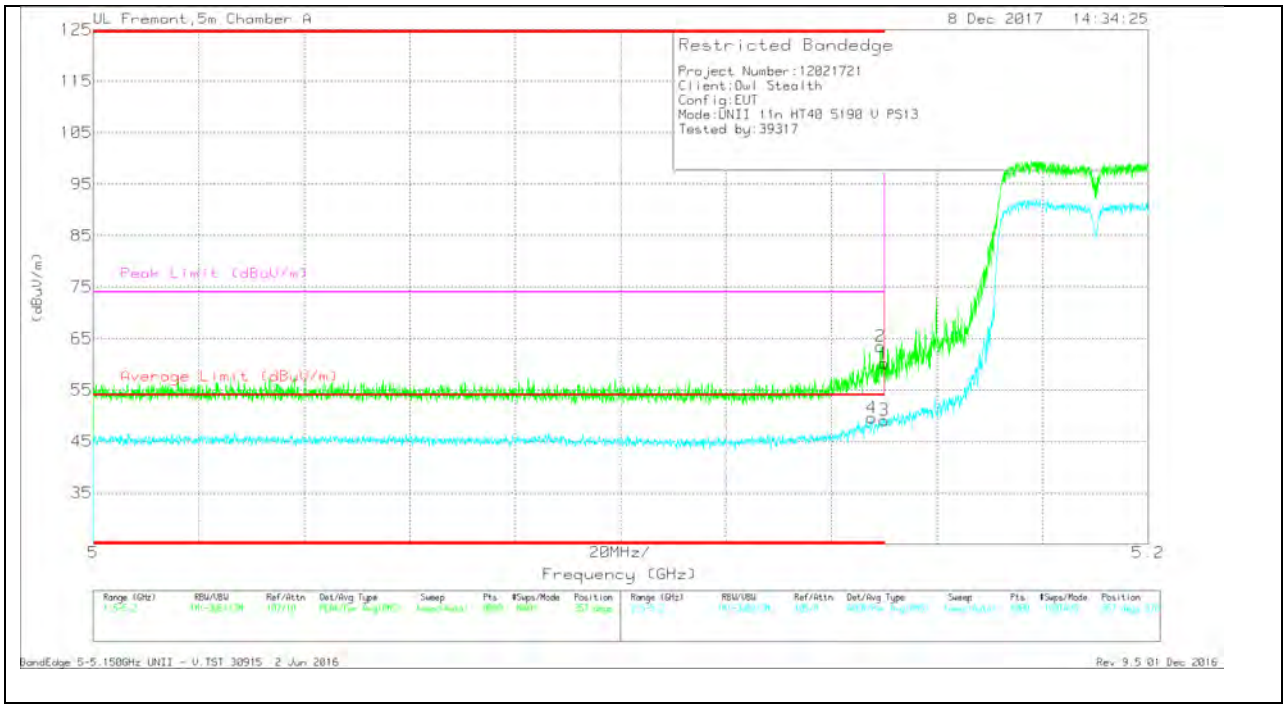
VERTICAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	44.04	Pk	34.4	-18.2	0	60.24	-	-	74	-13.76	357	376	V
2	* 5.149	47.28	Pk	34.4	-18.2	0	63.48	-	-	74	-10.52	357	376	V
3	* 5.15	31.76	RMS	34.4	-18.2	1.16	49.12	54	-4.88	-	-	357	376	V
4	* 5.148	32.2	RMS	34.4	-18.2	1.16	49.56	54	-4.44	-	-	357	376	V

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

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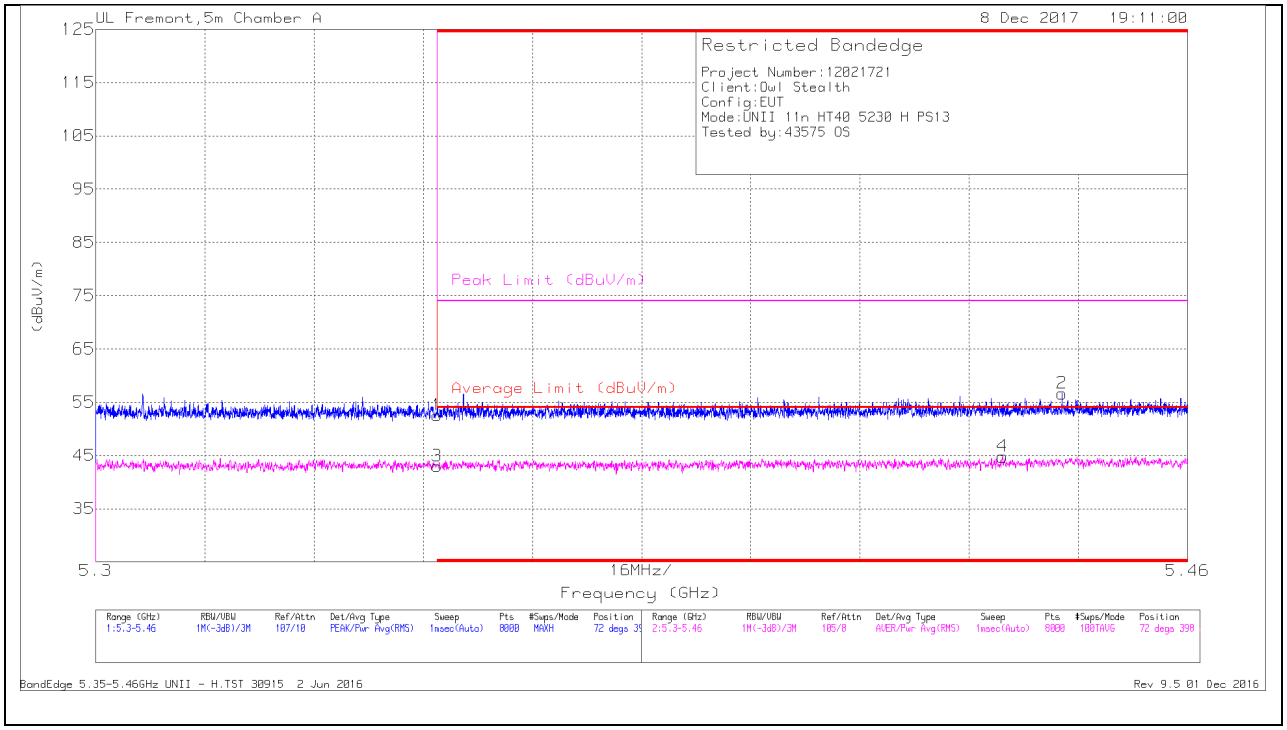
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	36.23	Pk	34.6	-18.3	0	52.53	-	-	74	-21.47	72	398	H
3	* 5.35	25.52	RMS	34.6	-18.3	1.16	42.98	54	-11.02	-	-	72	398	H
4	* 5.433	27.33	RMS	34.7	-18.4	1.16	44.79	54	-9.21	-	-	72	398	H
2	* 5.442	40.23	Pk	34.7	-18.3	0	56.63	-	-	74	-17.37	72	398	H

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

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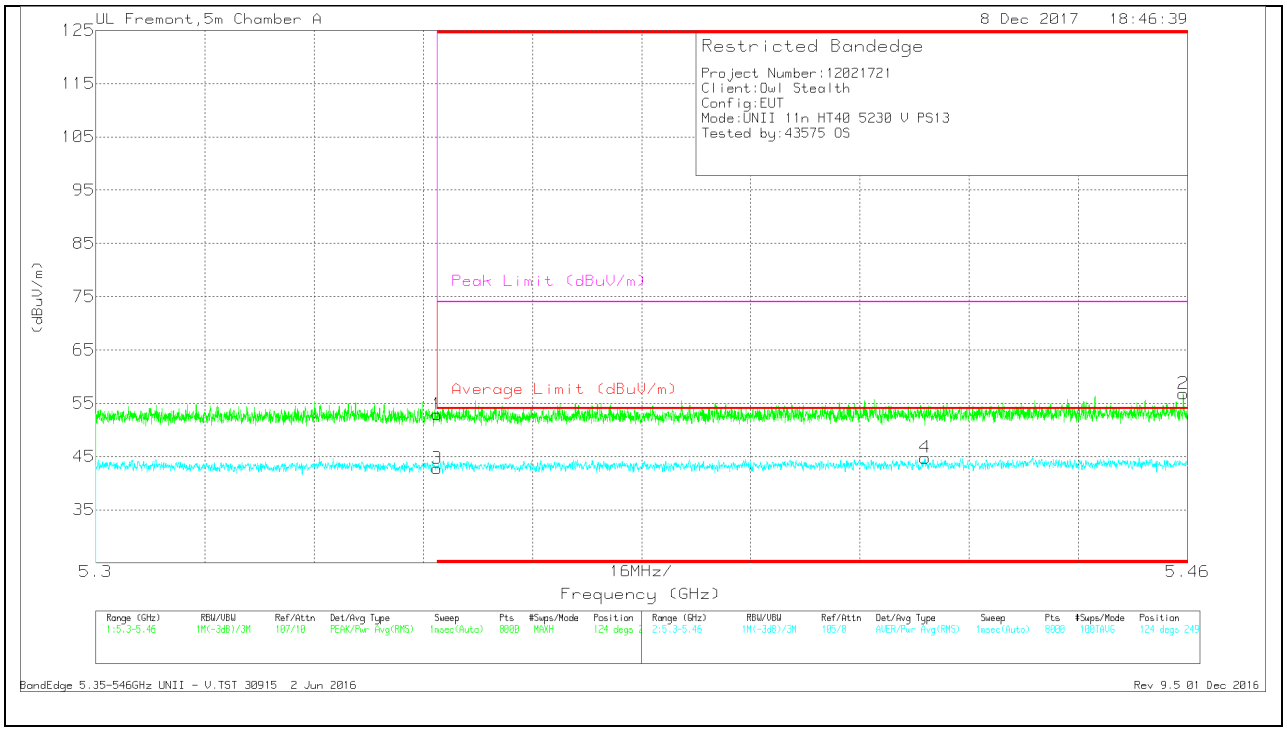
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	36.58	Pk	34.6	-18.3	0	52.88	-	-	74	-21.12	124	249	V
3	* 5.35	25.26	RMS	34.6	-18.3	1.16	42.72	54	-11.28	-	-	124	249	V
4	* 5.422	27.31	RMS	34.7	-18.4	1.16	44.77	54	-9.23	-	-	124	249	V
2	* 5.459	40.49	Pk	34.7	-18.4	0	56.79	-	-	74	-17.21	124	249	V

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

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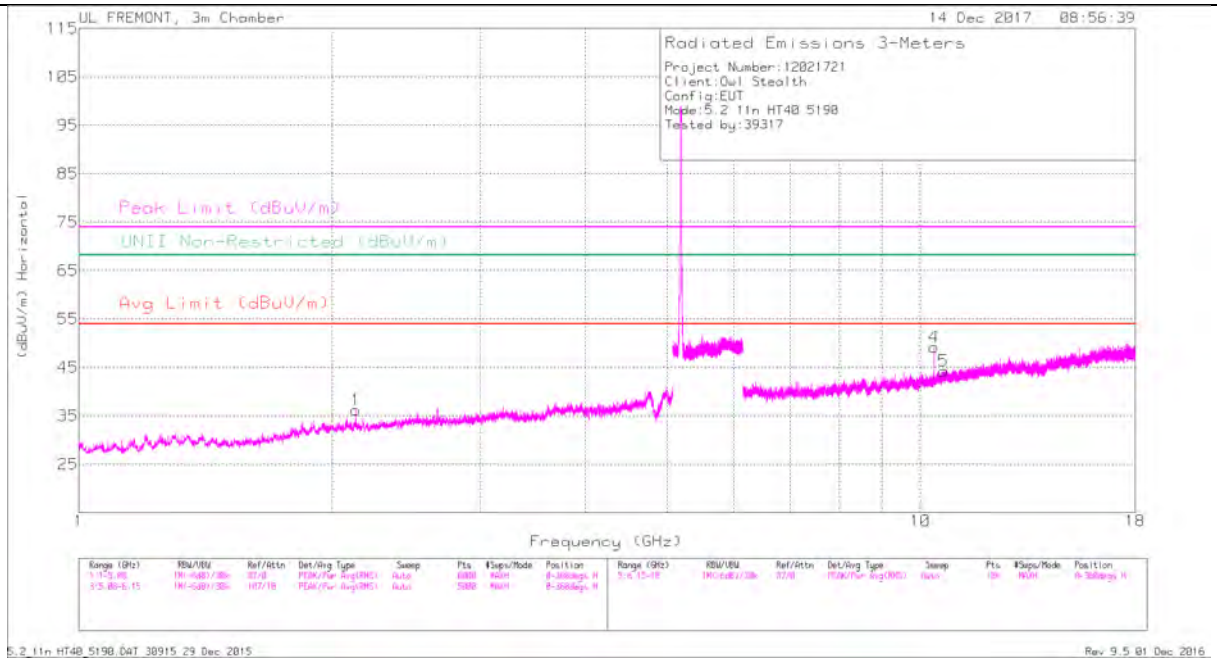
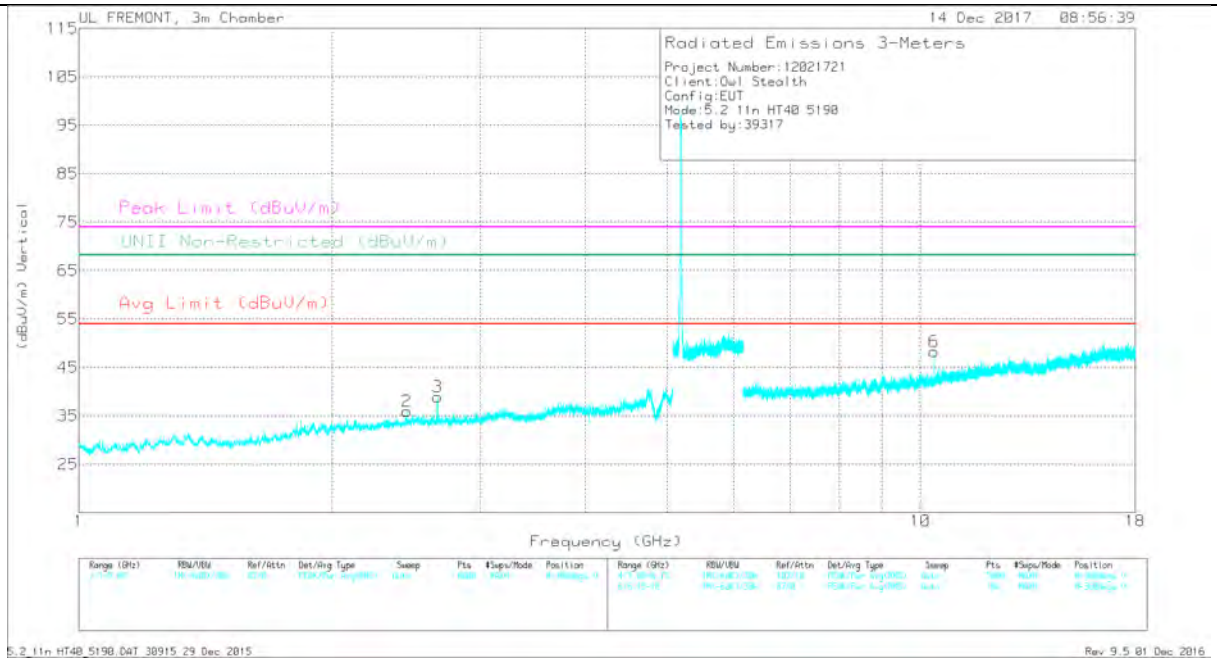
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (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
2.132	40.45	PK-U	31.3	-30.8	0	40.95	-	-	-	-	68.2	-27.25	360	100	H
2.133	28.37	ADR	31.3	-30.8	1.16	30.03	-	-	-	-	-	-	360	100	H
2.452	28.01	ADR	32.2	-30.8	1.16	30.57	-	-	-	-	-	-	360	100	V
2.453	39.8	PK-U	32.3	-30.9	0	41.2	-	-	-	-	68.2	-27	360	100	V
2.667	44.08	PK-U	32.4	-30.3	0	46.18	-	-	74	-27.82	-	-	360	200	V
2.667	30.24	ADR	32.4	-30.3	1.16	33.5	54	-20.5	-	-	-	-	360	200	V
10.38	22.53	ADR	37.3	-21.6	1.16	39.39	-	-	-	-	-	-	360	100	H
10.38	37.62	PK-U	37.3	-21.6	0	53.32	-	-	-	-	68.2	-14.88	349	100	V
10.38	31.46	ADR	37.3	-21.6	1.16	48.32	-	-	-	-	-	-	349	100	V
10.381	34.32	PK-U	37.3	-21.5	0	50.12	-	-	-	-	68.2	-18.08	360	100	H
10.66	35.13	PK-U	37.8	-22.1	0	50.83	-	-	74	-23.17	-	-	360	100	H
10.661	23.02	ADR	37.8	-22	1.16	39.98	54	-14.02	-	-	-	-	360	100	H

PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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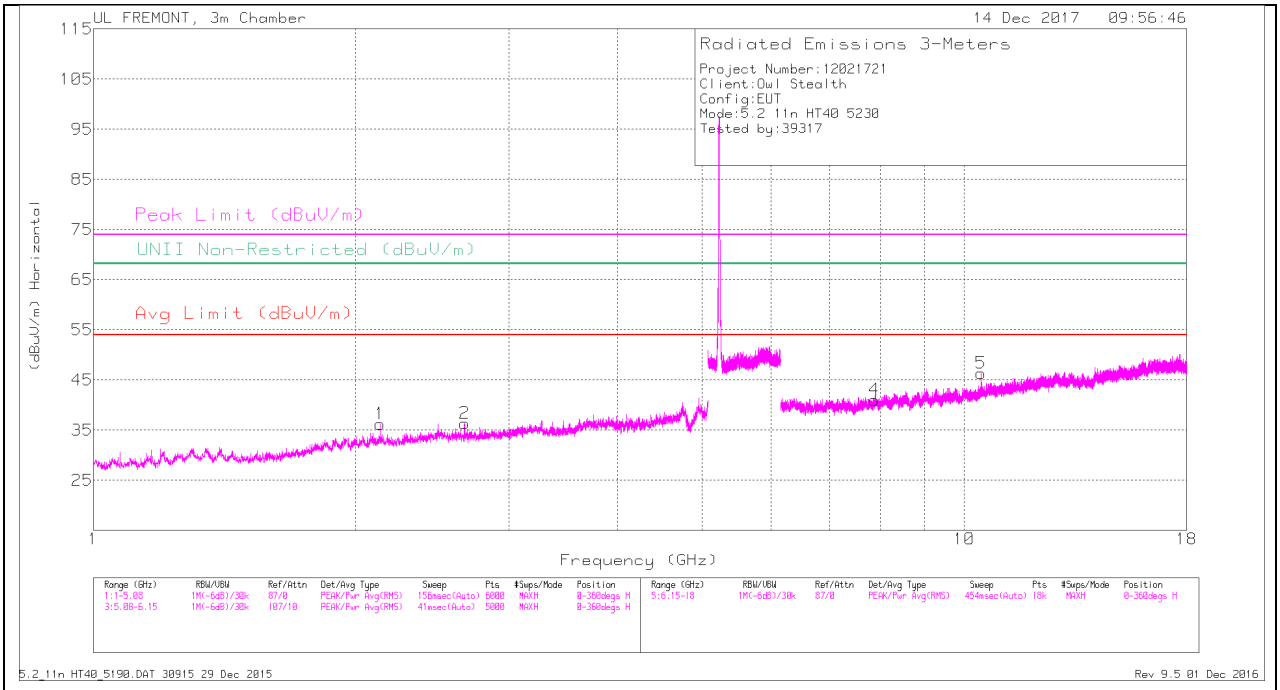
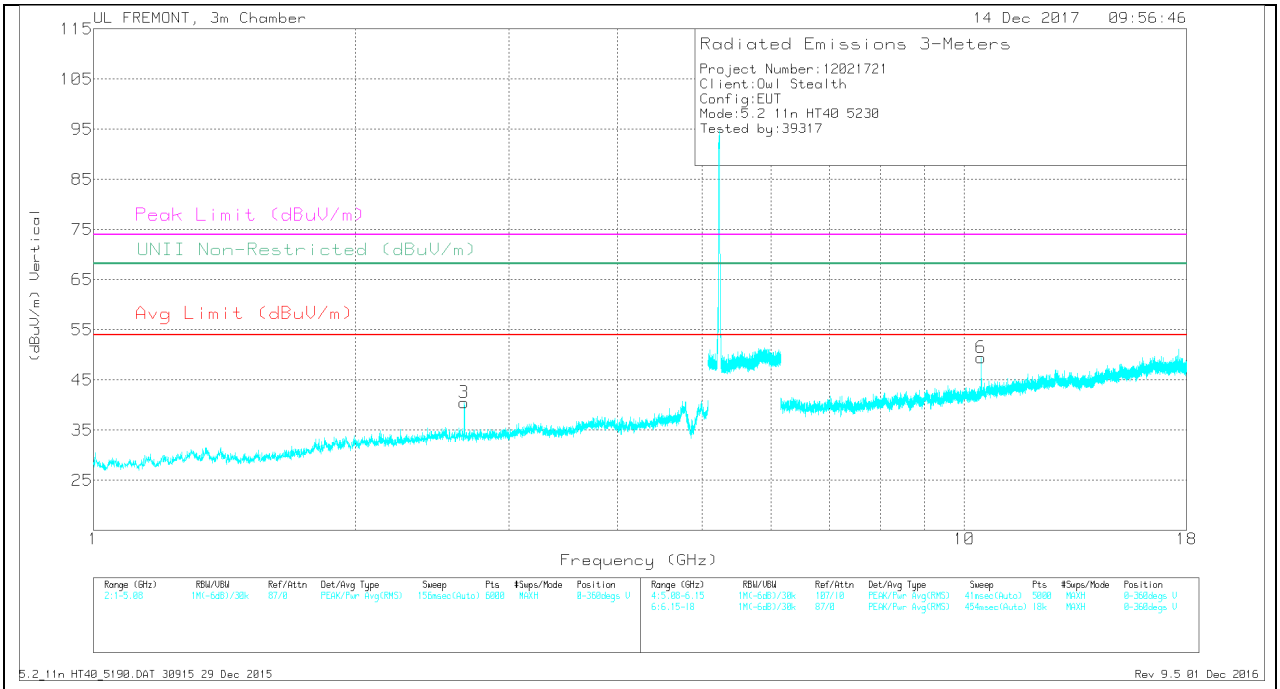
HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (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
2.131	40.78	PK-U	31.3	-30.8	0	41.28	-	-	-	-	68.2	-26.92	360	100	H
2.133	28.39	ADR	31.3	-30.8	1.16	30.05	-	-	-	-	-	-	360	100	H
2.667	41.92	PK-U	32.4	-30.2	0	44.12	-	-	74	-29.88	-	-	360	200	H
2.667	28.56	ADR	32.4	-30.2	1.16	31.92	54	-22.08	-	-	-	-	360	200	H
2.667	40.47	PK-U	32.4	-30.3	0	42.57	-	-	74	-31.43	-	-	360	100	V
2.667	27.77	ADR	32.4	-30.2	1.16	31.13	54	-22.87	-	-	-	-	360	100	V
7.879	24.6	ADR	35.8	-24.5	1.16	37.06	-	-	-	-	-	-	360	200	H
7.88	36.02	PK-U	35.8	-24.4	0	47.42	-	-	-	-	68.2	-20.78	360	200	H
10.459	35.6	PK-U	37.4	-21.6	0	51.4	-	-	-	-	68.2	-16.8	360	100	H
10.46	23.25	ADR	37.4	-21.6	1.16	40.21	-	-	-	-	-	-	360	100	H
10.46	38.5	PK-U	37.4	-21.6	0	54.3	-	-	-	-	68.2	-13.9	360	100	V
10.46	31.68	ADR	37.4	-21.6	1.16	48.64	-	-	-	-	-	-	360	100	V

PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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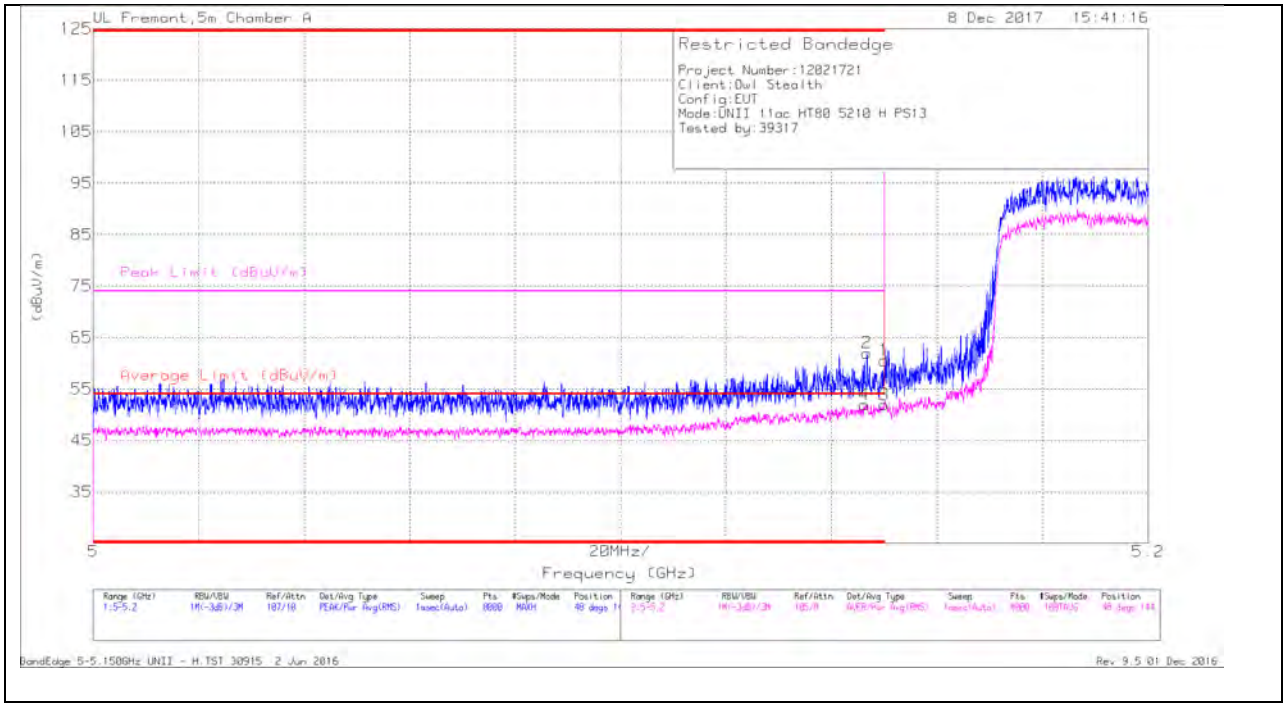
9.1.4. TX ABOVE 1 GHz 802.11ac VHT80 MODE IN THE 5.2 GHz BAND

1TX Antenna 1 MODE

BANDEDGE (MID CHANNEL – LOW EDGE)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	44.35	Pk	34.4	-18.2	0	60.55	-	-	74	-13.45	48	144	H
2	* 5.147	45.79	Pk	34.4	-18.2	0	61.99	-	-	74	-12.01	48	144	H
3	* 5.15	33.23	RMS	34.4	-18.2	2.51	51.94	54	-2.06	-	-	48	144	H
4	* 5.146	33.09	RMS	34.4	-18.1	2.51	51.9	54	-2.1	-	-	48	144	H

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

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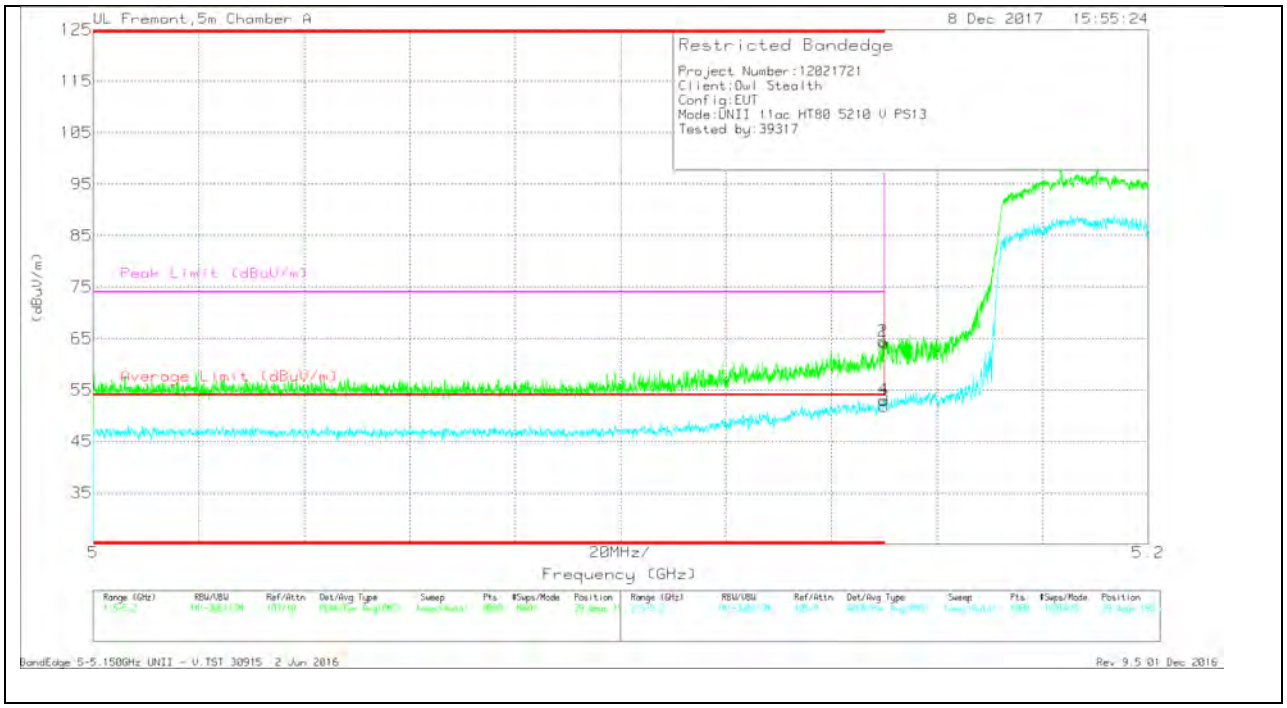
VERTICAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	47.98	Pk	34.4	-18.2	0	64.18	-	-	74	-9.82	39	195	V
2	* 5.15	48.28	Pk	34.4	-18.2	0	64.48	-	-	74	-9.52	39	195	V
3	* 5.15	33.15	RMS	34.4	-18.2	2.51	51.86	54	-2.14	-	-	39	195	V
4	* 5.15	34.35	RMS	34.4	-18.2	2.51	53.06	54	-.94	-	-	39	195	V

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

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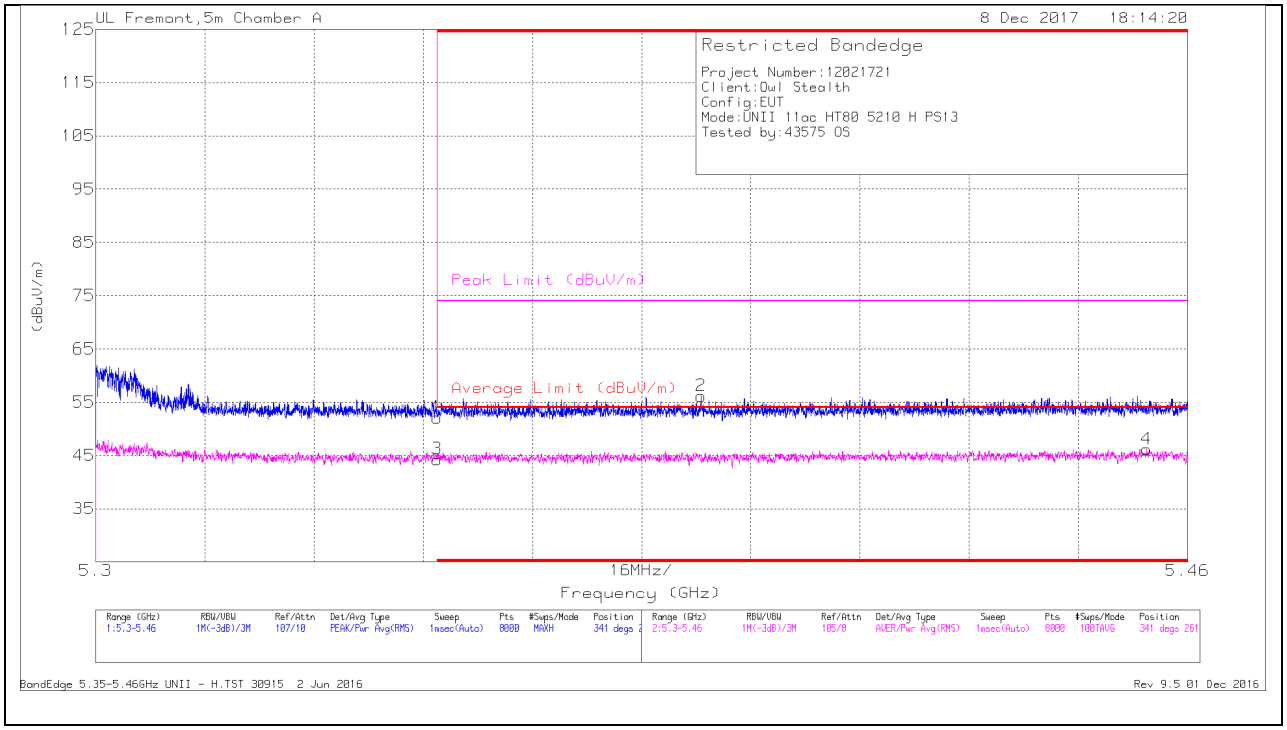
BANDEDGE (MID CHANNEL – HIGH EDGE)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	35.81	Pk	34.6	-18.3	0	52.11	-	-	74	-21.89	341	261	H
3	* 5.35	25.47	RMS	34.6	-18.3	2.51	44.28	54	-9.72	-	-	341	261	H
2	* 5.389	39.94	Pk	34.6	-18.4	0	56.14	-	-	74	-17.86	341	261	H
4	* 5.454	27.27	RMS	34.7	-18.3	2.51	46.18	54	-7.82	-	-	341	261	H

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

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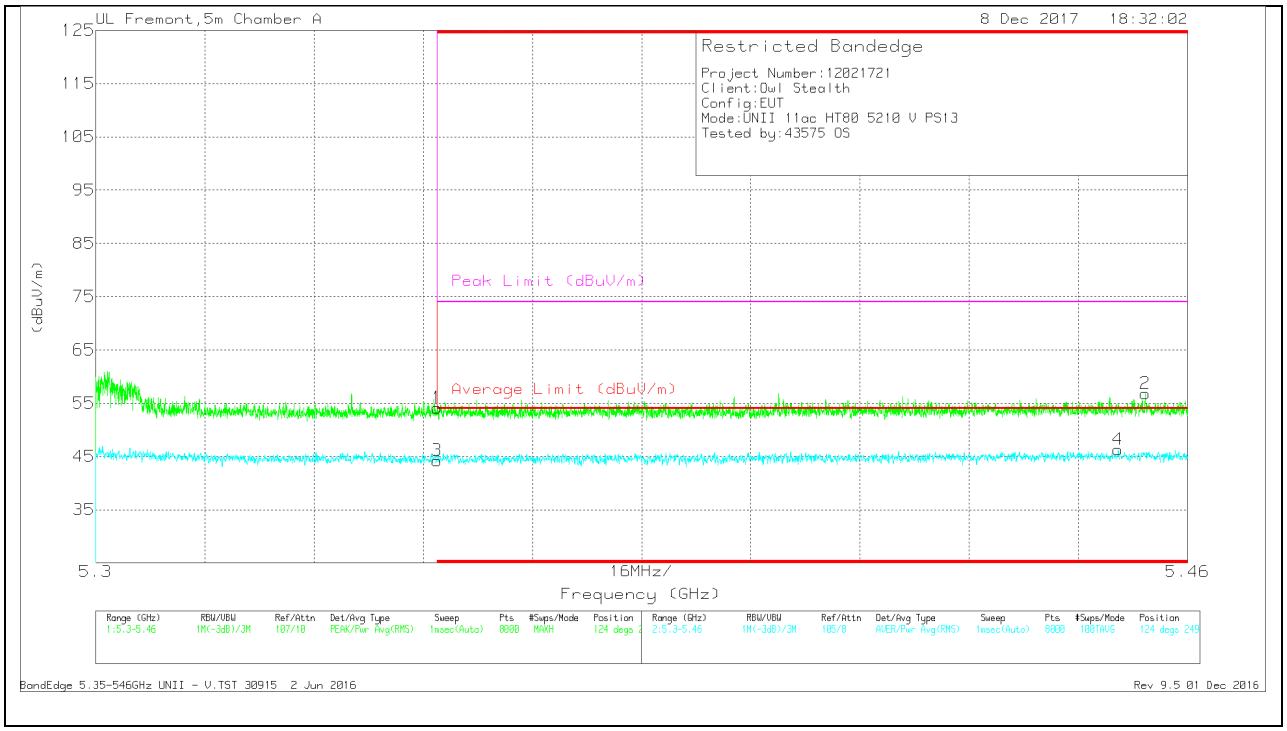
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	37.78	Pk	34.6	-18.3	0	54.08	-	-	74	-19.92	124	249	V
3	* 5.35	25.42	RMS	34.6	-18.3	2.51	44.23	54	-9.77	-	-	124	249	V
4	* 5.45	27.38	RMS	34.7	-18.3	2.51	46.29	54	-7.71	-	-	124	249	V
2	* 5.454	40.41	Pk	34.7	-18.3	0	56.81	-	-	74	-17.19	124	249	V

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

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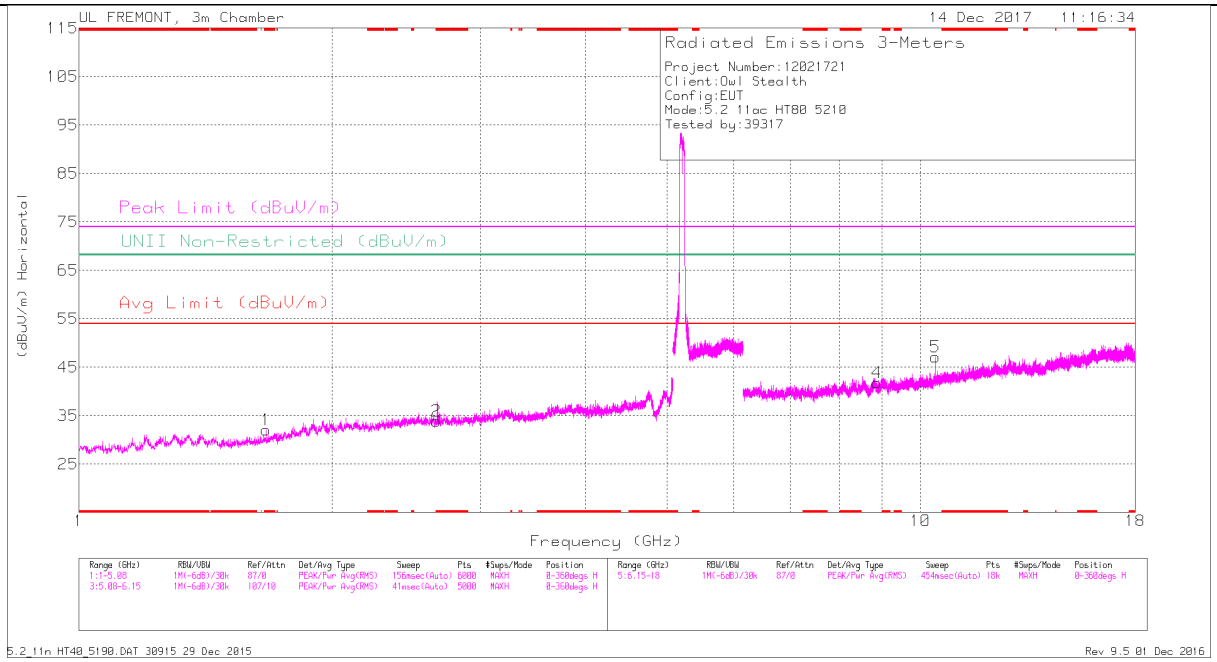
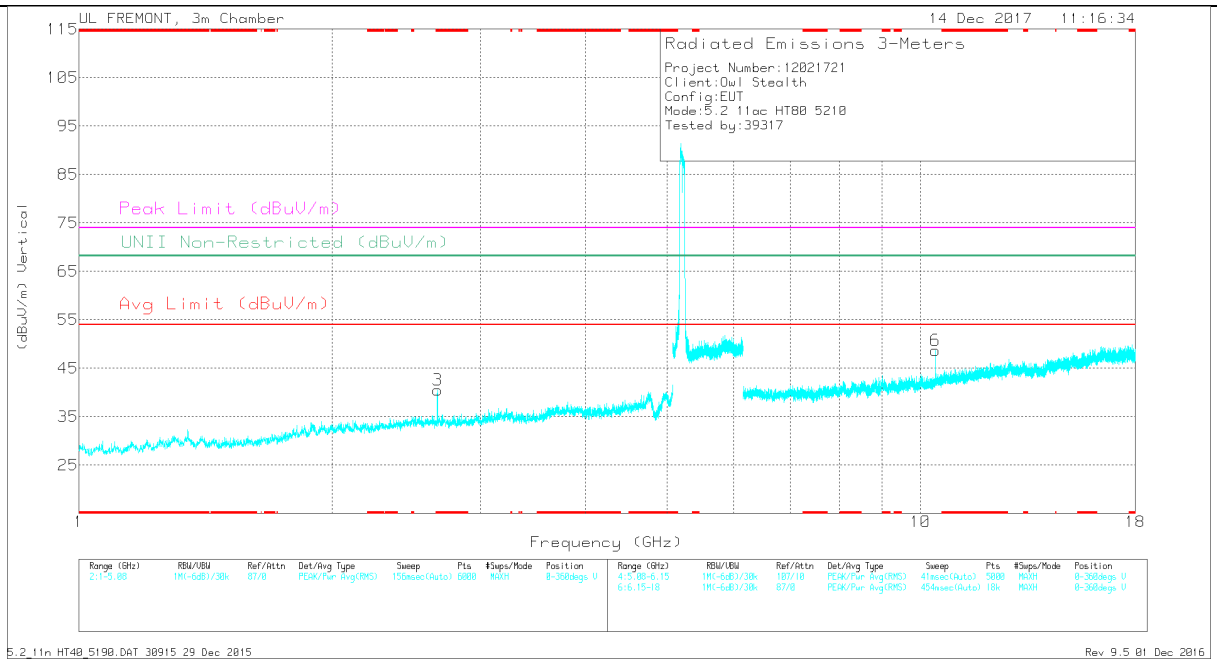
HARMONICS AND SPURIOUS EMISSIONS

MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (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
* 1.67	40.21	PK-U	28.8	-31.4	0	37.61	-	-	74	-36.39	-	-	0	200	H
* 1.668	28.54	ADR	28.8	-31.5	2.51	28.35	54	-25.65	-	-	-	-	0	200	H
* 2.658	40.55	PK-U	32.4	-30.7	0	42.25	-	-	74	-31.75	-	-	0	100	H
* 2.658	27.67	ADR	32.4	-30.7	2.51	31.88	54	-22.12	-	-	-	-	0	100	H
8.873	35.59	PK-U	36	-22.9	0	48.69	-	-	-	-	68.2	-19.51	0	100	H
8.876	23.03	ADR	36	-22.9	2.51	38.64	-	-	-	-	-	-	0	100	H
10.42	38.09	PK-U	37.3	-22.1	0	53.29	-	-	-	-	68.2	-14.91	186	100	H
10.42	31.41	ADR	37.3	-22.1	2.51	49.12	-	-	-	-	-	-	186	100	H
10.42	38.9	PK-U	37.3	-22.1	0	54.1	-	-	-	-	68.2	-14.1	350	105	V
10.42	32.68	ADR	37.3	-22.1	2.51	50.39	-	-	-	-	-	-	350	105	V

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

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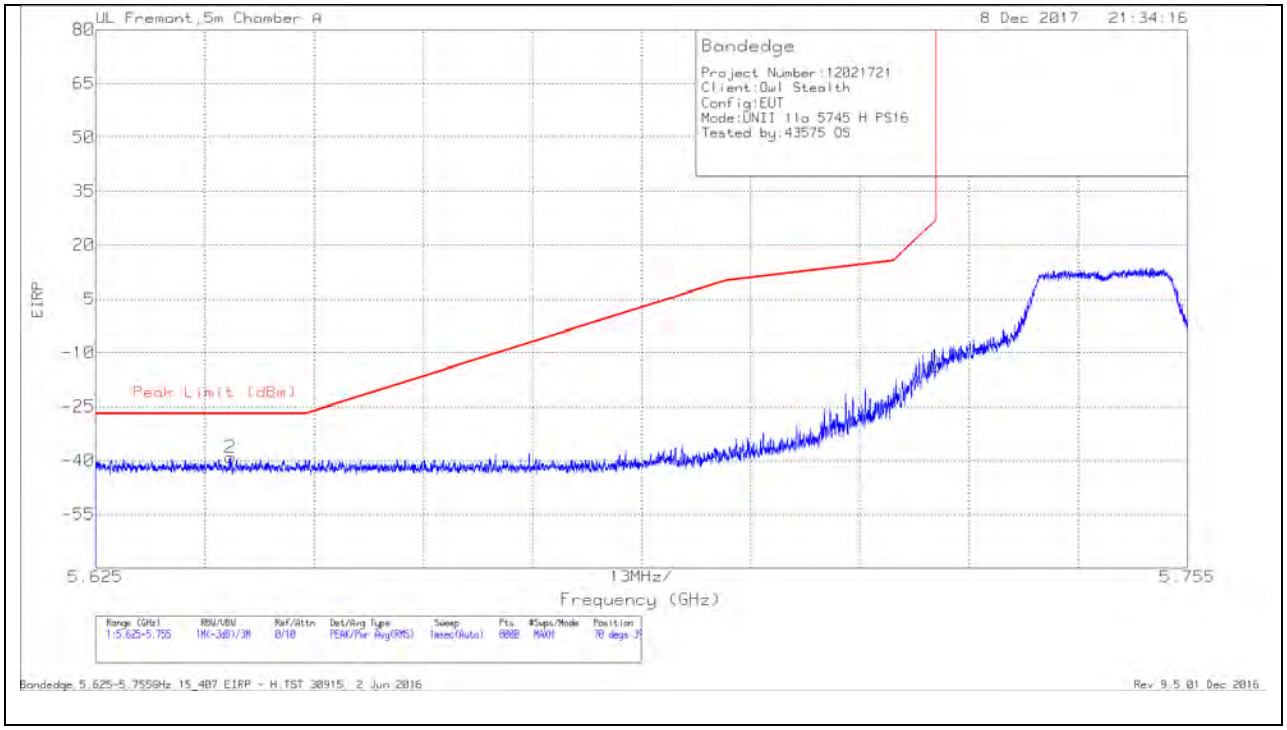
9.1.5. TX ABOVE 1 GHz 802.11a MODE IN THE 5.8 GHz BAND

1TX Antenna 1 MODE

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.641	-67.56	Pk	35.1	-18.5	11.8	-39.16	-27	-12.16	70	390	H
1	5.725	-42.07	Pk	35	-18.5	11.8	-13.77	27	-40.77	70	390	H

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

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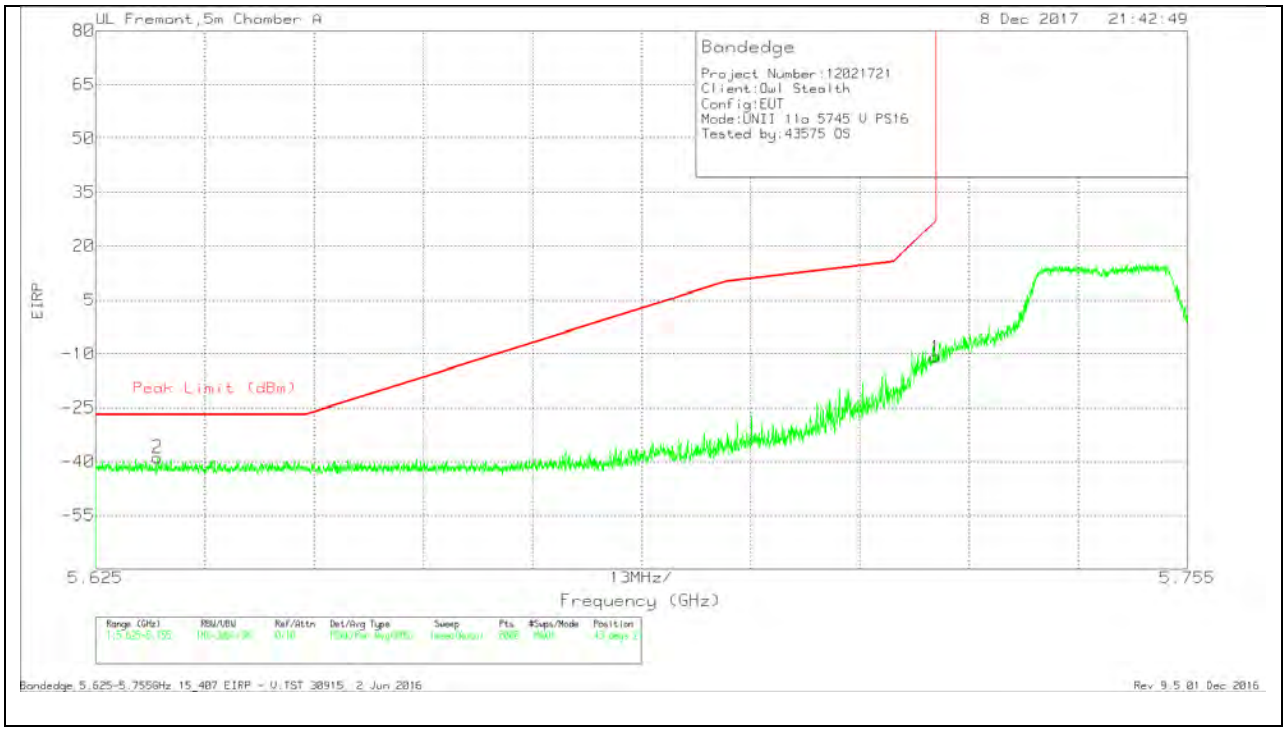
VERTICAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.632	-67.33	Pk	35.1	-18.5	11.8	-38.93	-27	-11.93	43	271	V
1	5.725	-39.18	Pk	35	-18.5	11.8	-10.88	27	-37.88	43	271	V

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

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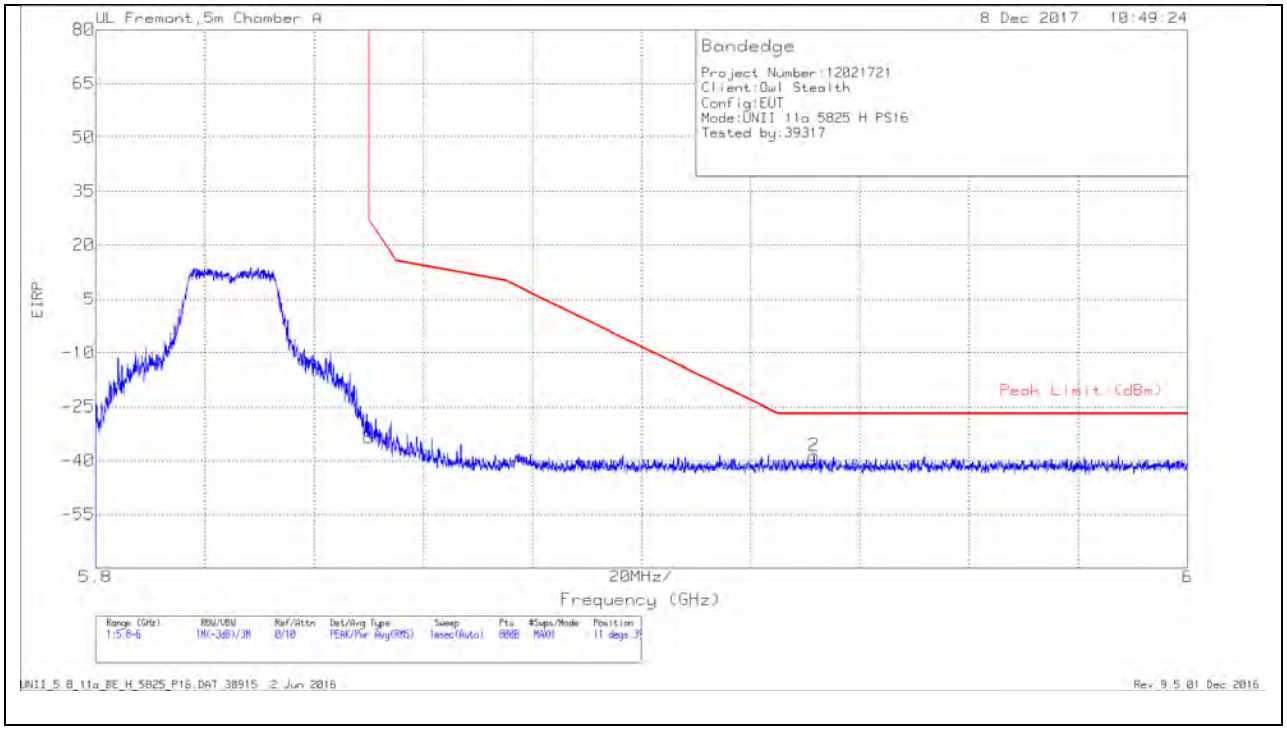
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-62.35	Pk	35.1	-18.3	11.8	-33.75	26.99	-60.74	11	390	H
2	5.932	-67.51	Pk	35.2	-18.1	11.8	-38.61	-27	-11.61	11	390	H

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

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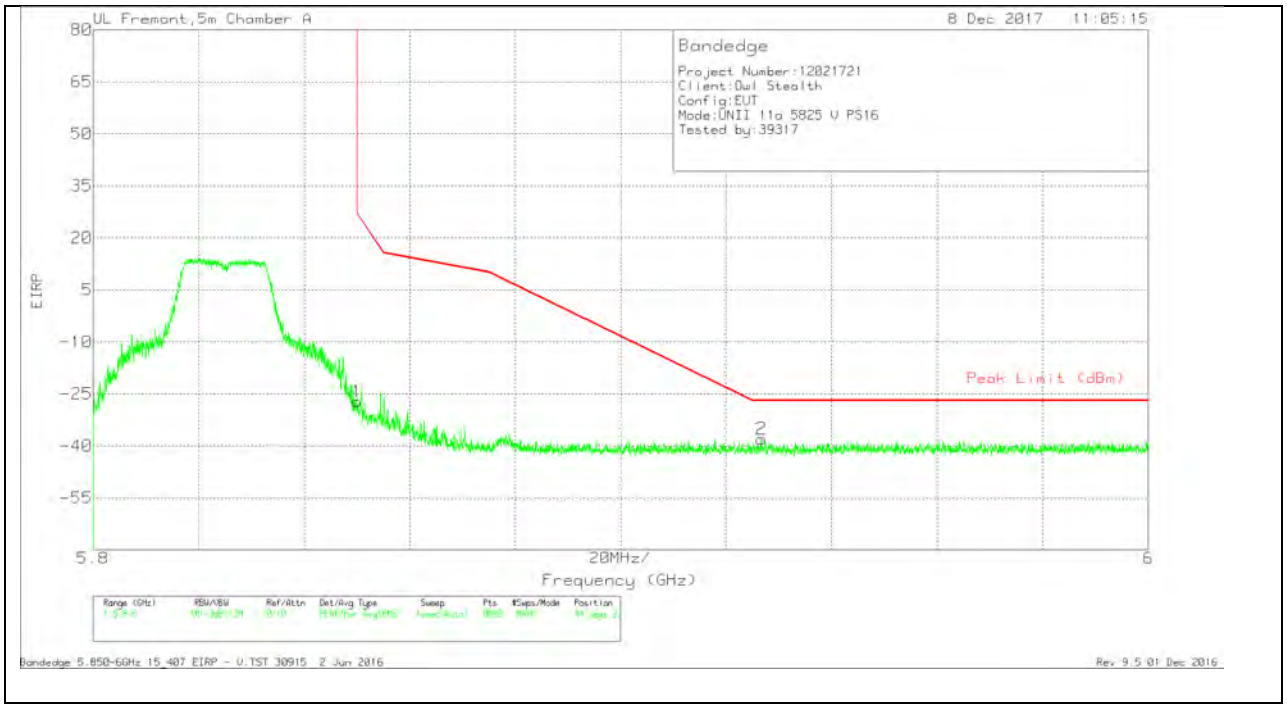
VERTICAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-55.78	Pk	35.1	-18.3	11.8	-27.18	26.99	-54.17	44	233	V
2	5.927	-66.88	Pk	35.2	-18.1	11.8	-37.98	-27	-10.98	44	233	V

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

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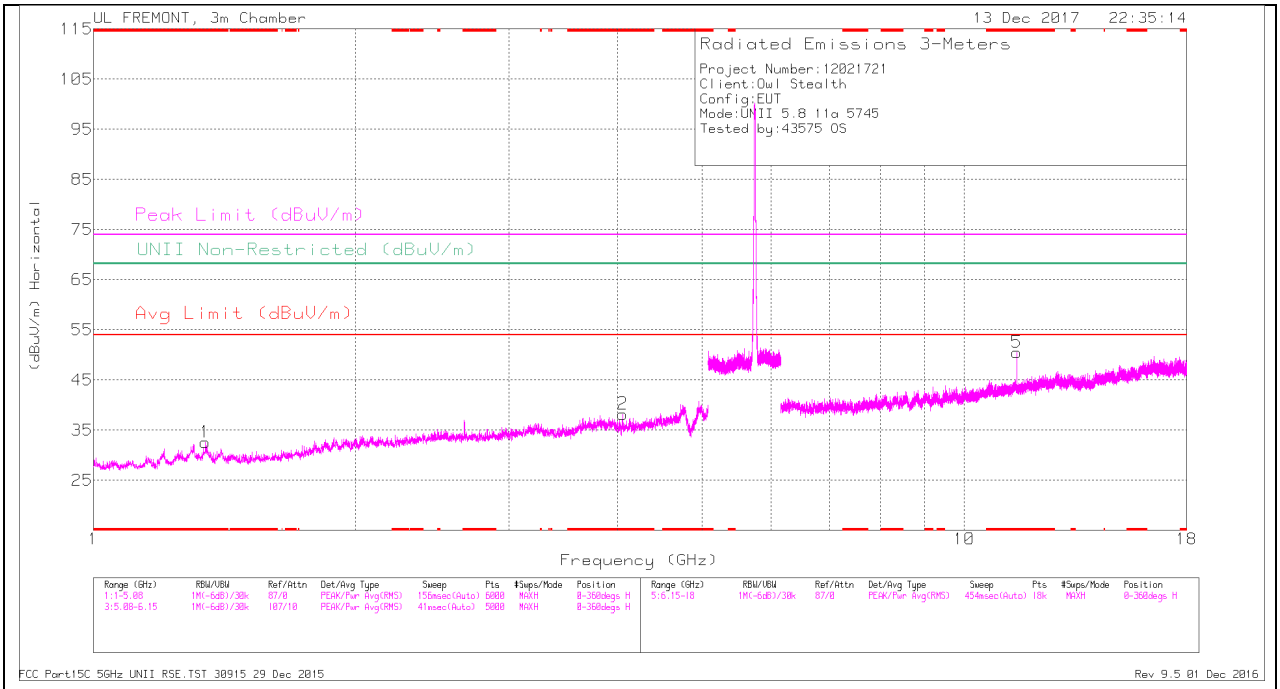
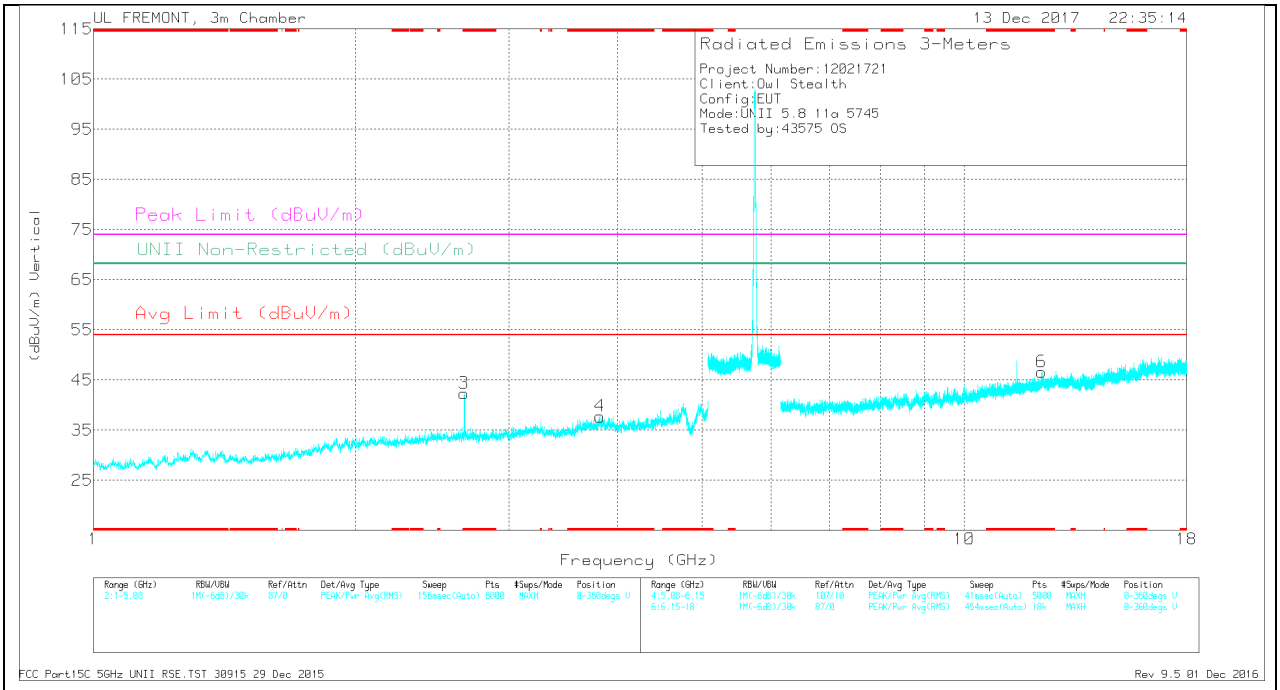
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (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
* 1.344	42.12	PK-U	29	-31.6	0	39.52	-	-	74	-34.48	-	-	194	152	H
* 1.346	29.86	ADR	29	-31.6	.59	27.85	54	-26.15	-	-	-	-	194	152	H
* 4.053	39.57	PK-U	33.4	-29	0	43.97	-	-	74	-30.03	-	-	317	214	H
* 4.051	27.11	ADR	33.4	-29	.59	32.1	54	-21.9	-	-	-	-	317	214	H
* 2.667	47.09	PK-U	32.4	-30.2	0	49.29	-	-	74	-24.71	-	-	4	170	V
* 2.667	31.67	ADR	32.4	-30.2	.59	34.46	54	-19.54	-	-	-	-	4	170	V
* 3.811	40.09	PK-U	33.4	-29.8	0	43.69	-	-	74	-30.31	-	-	213	134	V
* 3.811	27.71	ADR	33.4	-29.8	.59	31.9	54	-22.1	-	-	-	-	213	134	V
* 11.49	39.39	PK-U	38.1	-22	0	55.49	-	-	74	-18.51	-	-	323	100	H
* 11.49	33.35	ADR	38.1	-22	.59	50.04	54	-3.96	-	-	-	-	323	100	H
* 12.269	35.42	PK-U	38.9	-22.4	0	51.92	-	-	74	-22.08	-	-	258	124	V
* 12.271	22.83	ADR	38.9	-22.4	.59	39.92	54	-14.08	-	-	-	-	258	124	V

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

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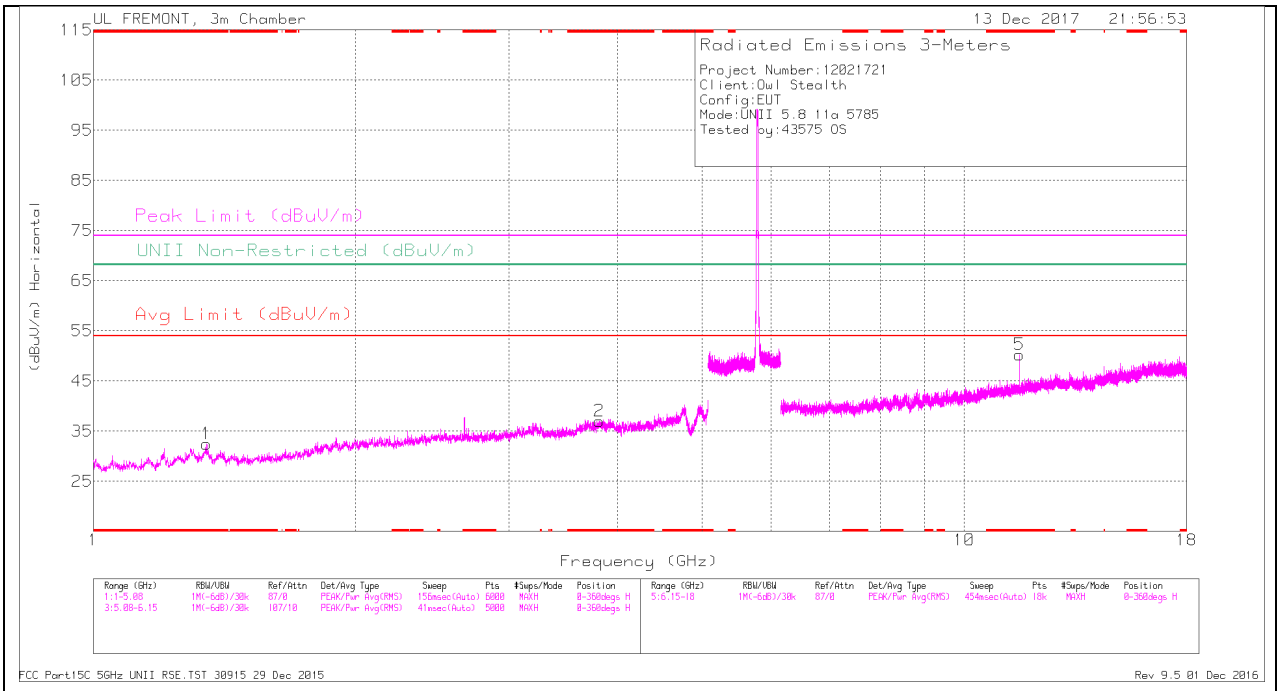
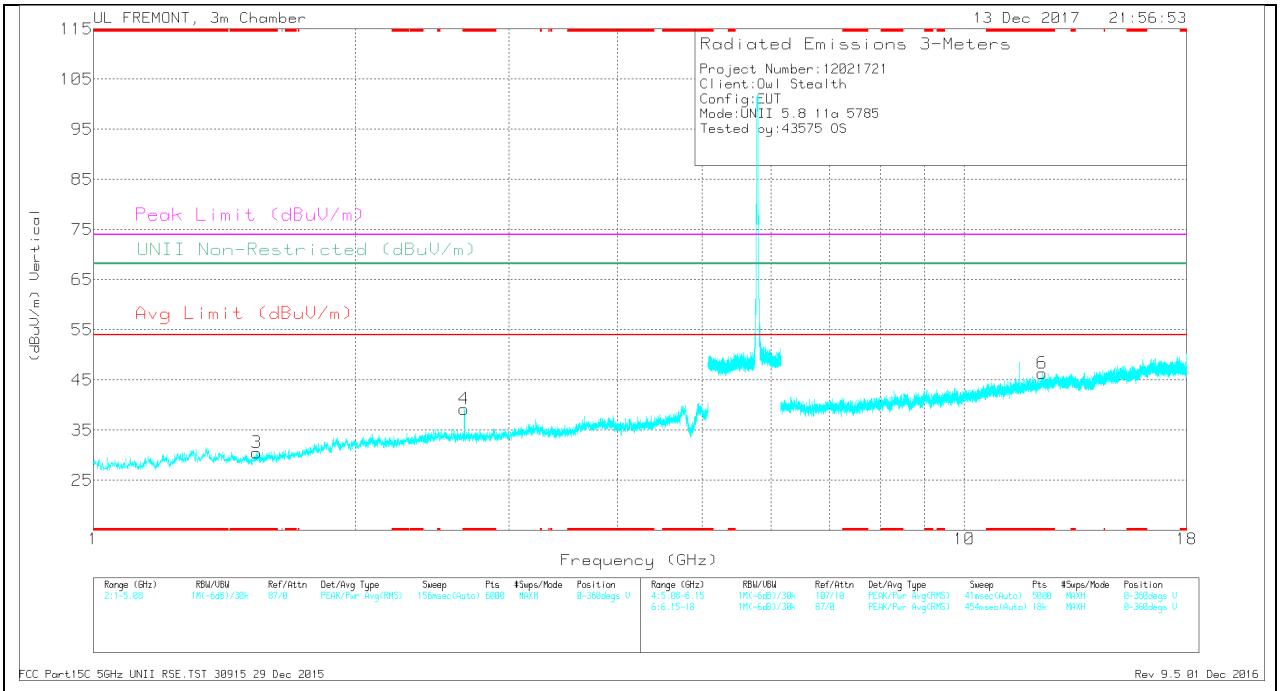
MID CHANNEL RESULTS



HORIZONTAL



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RADIATED EMISSIONS

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (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
* 1.35	42.9	PK-U	29	-31.6	0	40.3	-	-	74	-33.7	-	-	203	113	H
* 1.35	31.64	ADR	29	-31.6	.59	29.63	54	-24.37	-	-	-	-	203	113	H
* 3.813	39.8	PK-U	33.4	-29.6	0	43.6	-	-	74	-30.4	-	-	198	365	H
* 3.809	27.85	ADR	33.4	-29.9	.59	31.94	54	-22.06	-	-	-	-	198	365	H
* 1.54	40.45	PK-U	28.2	-31.7	0	36.95	-	-	74	-37.05	-	-	58	185	V
* 1.54	28.56	ADR	28.2	-31.7	.59	25.65	54	-28.35	-	-	-	-	58	185	V
* 2.667	45.82	PK-U	32.4	-30.2	0	48.02	-	-	74	-25.98	-	-	29	270	V
* 2.667	30.83	ADR	32.4	-30.2	.59	33.62	54	-20.38	-	-	-	-	29	270	V
* 11.57	39.69	PK-U	38.2	-22.6	0	55.29	-	-	74	-18.71	-	-	327	144	H
* 11.57	34.39	ADR	38.2	-22.6	.59	50.58	54	-3.42	-	-	-	-	327	144	H
* 12.279	35.61	PK-U	38.9	-22.2	0	52.31	-	-	74	-21.69	-	-	216	344	V
* 12.28	22.9	ADR	38.9	-22.2	.59	40.19	54	-13.81	-	-	-	-	216	344	V

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

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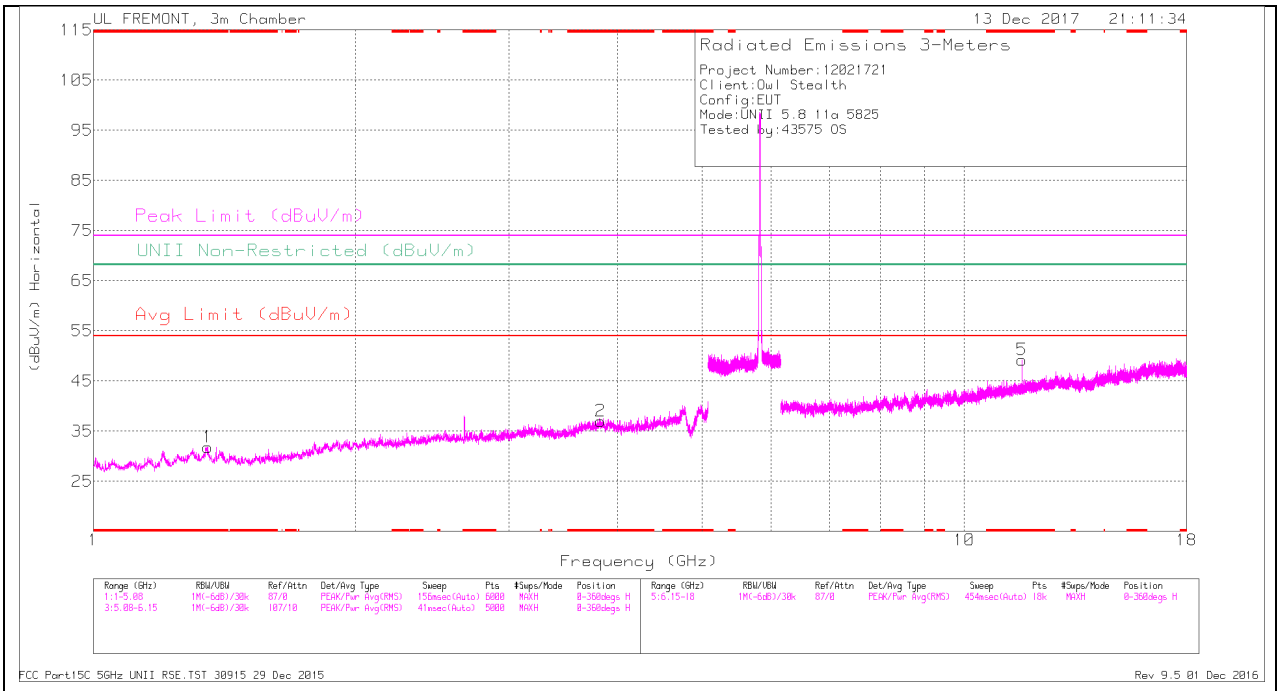
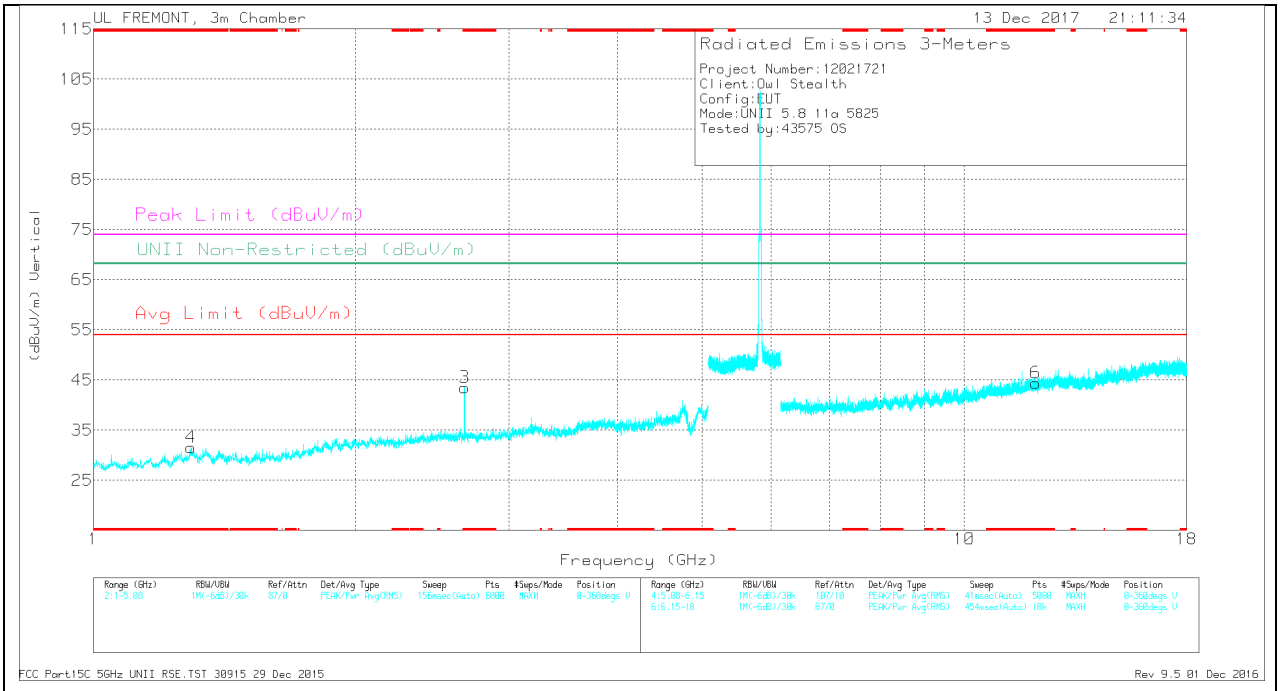
HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (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
* 1.352	42.91	PK-U	28.9	-31.6	0	40.21	-	-	74	-33.79	-	-	208	196	H
* 1.35	30.48	ADR	29	-31.6	.59	28.47	54	-25.53	-	-	-	-	208	196	H
* 3.823	41.01	PK-U	33.4	-29.6	0	44.81	-	-	74	-29.19	-	-	356	165	H
* 3.824	27.62	ADR	33.4	-29.6	.59	32.01	54	-21.99	-	-	-	-	356	165	H
* 2.667	46.69	PK-U	32.4	-30.3	0	48.79	-	-	74	-25.21	-	-	5	167	V
* 2.667	31.87	ADR	32.4	-30.3	.59	34.56	54	-19.44	-	-	-	-	5	167	V
* 1.294	41.01	PK-U	29.1	-31.9	0	38.21	-	-	74	-35.79	-	-	285	213	V
* 1.294	28.84	ADR	29.1	-32	.59	26.53	54	-27.47	-	-	-	-	285	213	V
* 11.65	40.17	PK-U	38.3	-22.4	0	56.07	-	-	74	-17.93	-	-	56	280	H
* 11.65	35.78	ADR	38.3	-22.4	.59	52.27	54	-1.73	-	-	-	-	56	280	H
* 12.072	34.82	PK-U	38.8	-22.3	0	51.32	-	-	74	-22.68	-	-	161	376	V
* 12.07	22.48	ADR	38.8	-22.3	.59	39.57	54	-14.43	-	-	-	-	161	376	V

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

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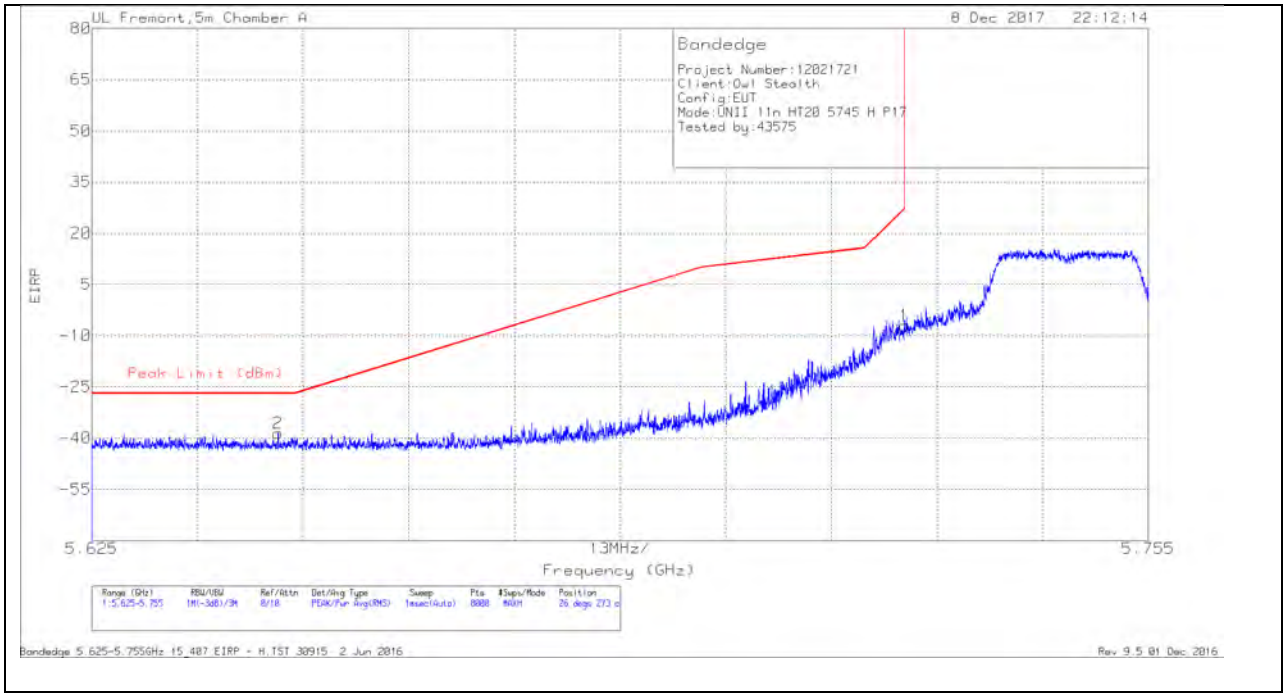
9.1.6. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.8 GHz BAND

1TX Antenna 1 MODE

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.648	-67.04	Pk	35.1	-18.5	11.8	-38.64	-27	-11.64	26	273	H
1	5.725	-35.3	Pk	35	-18.5	11.8	-7	27	-34	26	273	H

Pk - Peak detector

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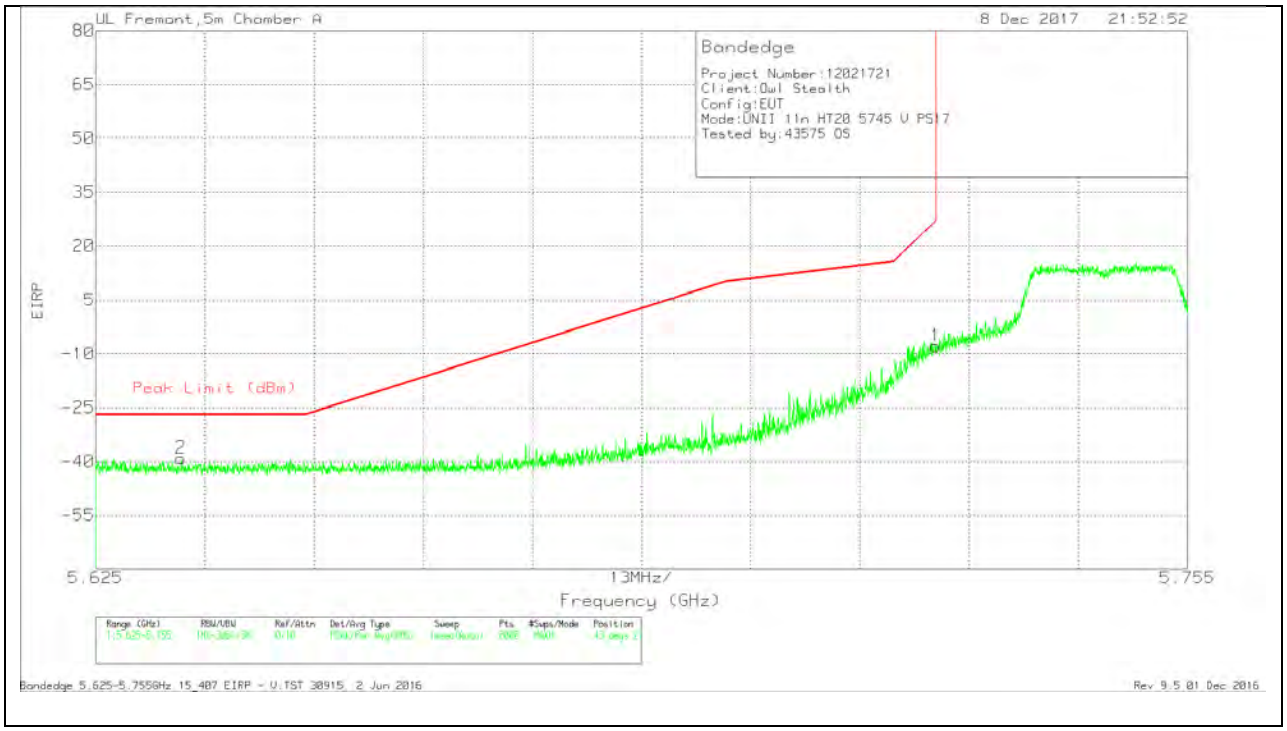
VERTICAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.635	-67.49	Pk	35.1	-18.5	11.8	-39.09	-27	-12.09	43	271	V
1	5.725	-36.14	Pk	35	-18.5	11.8	-7.84	27	-34.84	43	271	V

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

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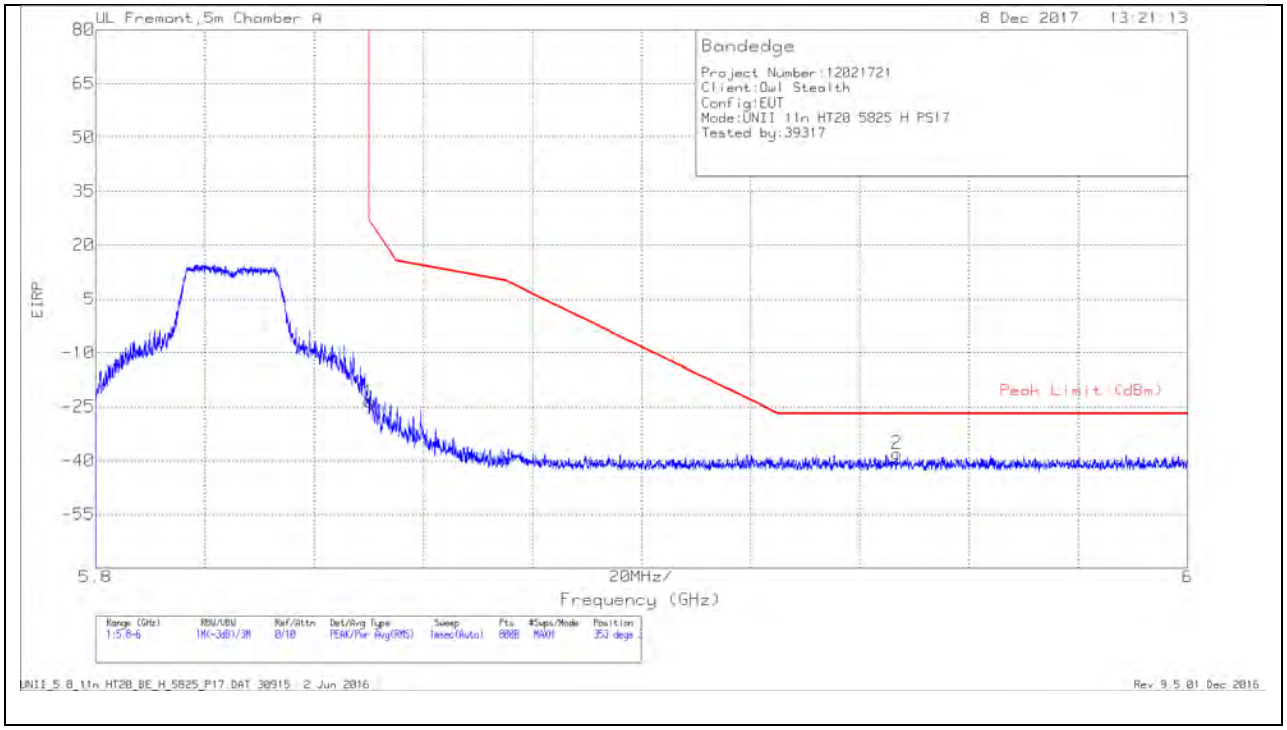
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-52.14	Pk	35.1	-18.3	11.8	-23.54	26.99	-50.53	353	391	H
2	5.947	-67.01	Pk	35.3	-18.1	11.8	-38.01	-27	-11.01	353	391	H

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

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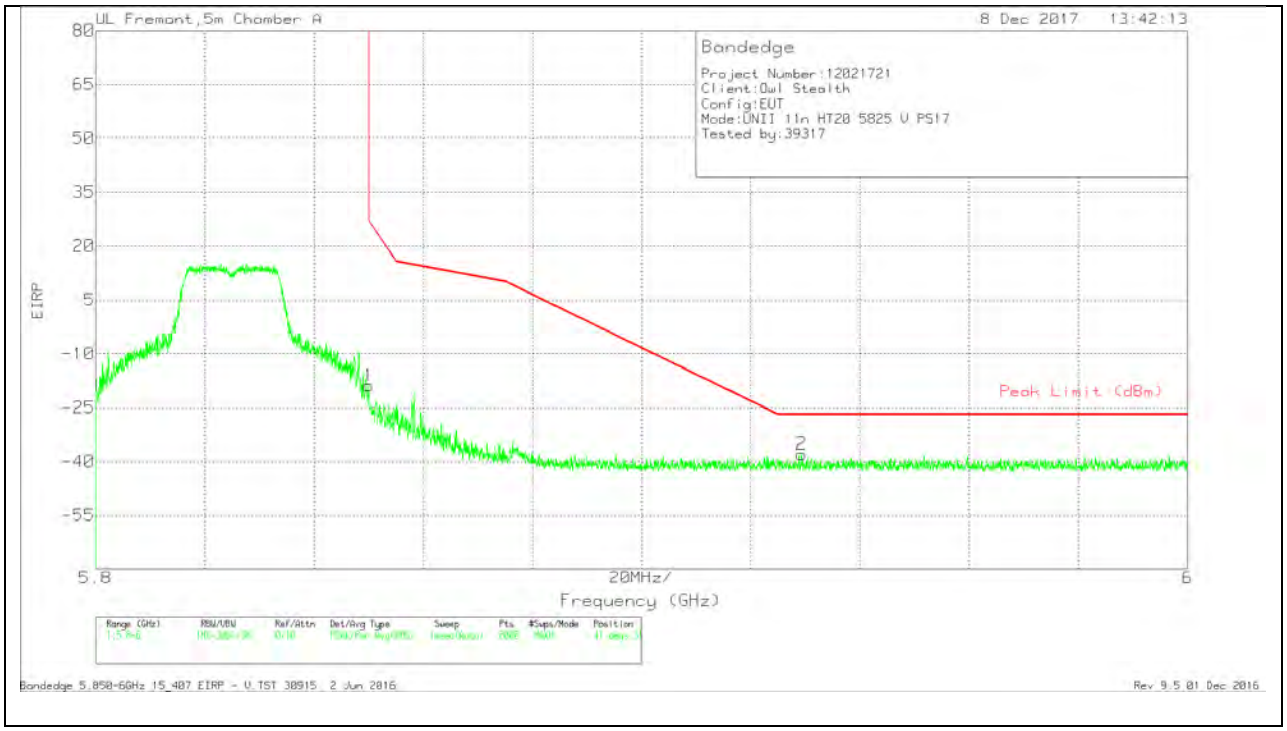
VERTICAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-47.42	Pk	35.1	-18.3	11.8	-18.82	26.99	-45.81	41	313	V
2	5.929	-66.91	Pk	35.2	-18.1	11.8	-38.01	-27	-11.01	41	313	V

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

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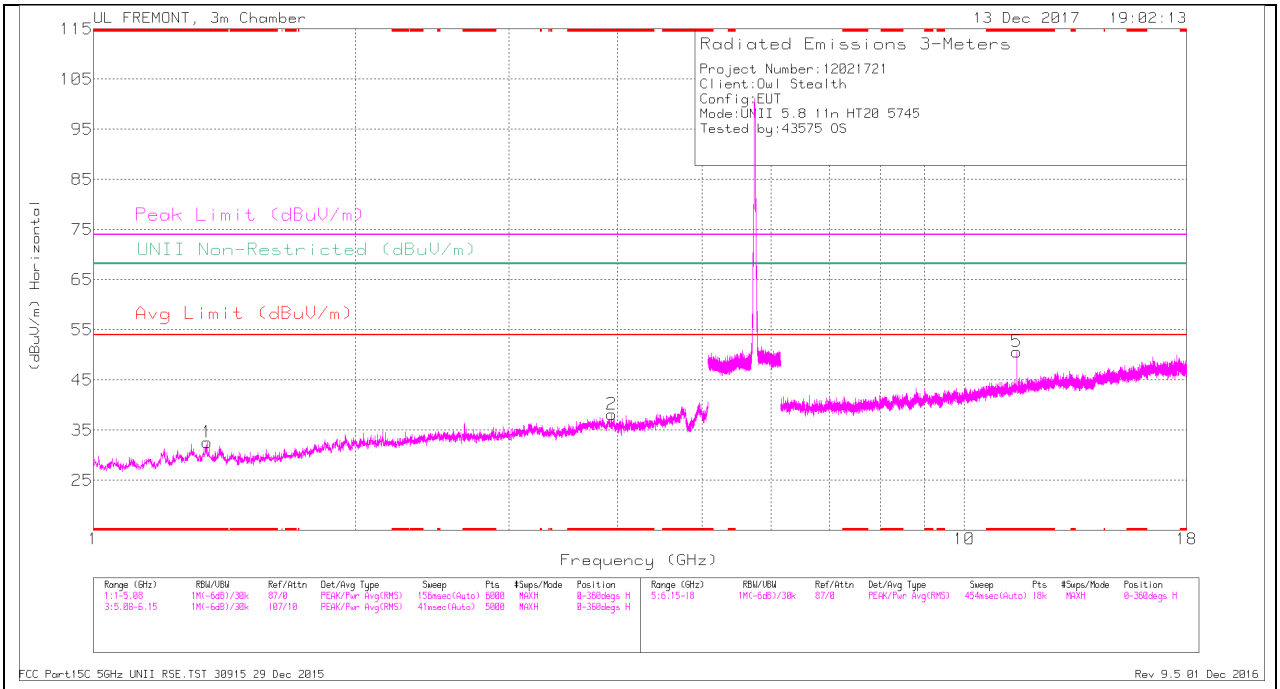
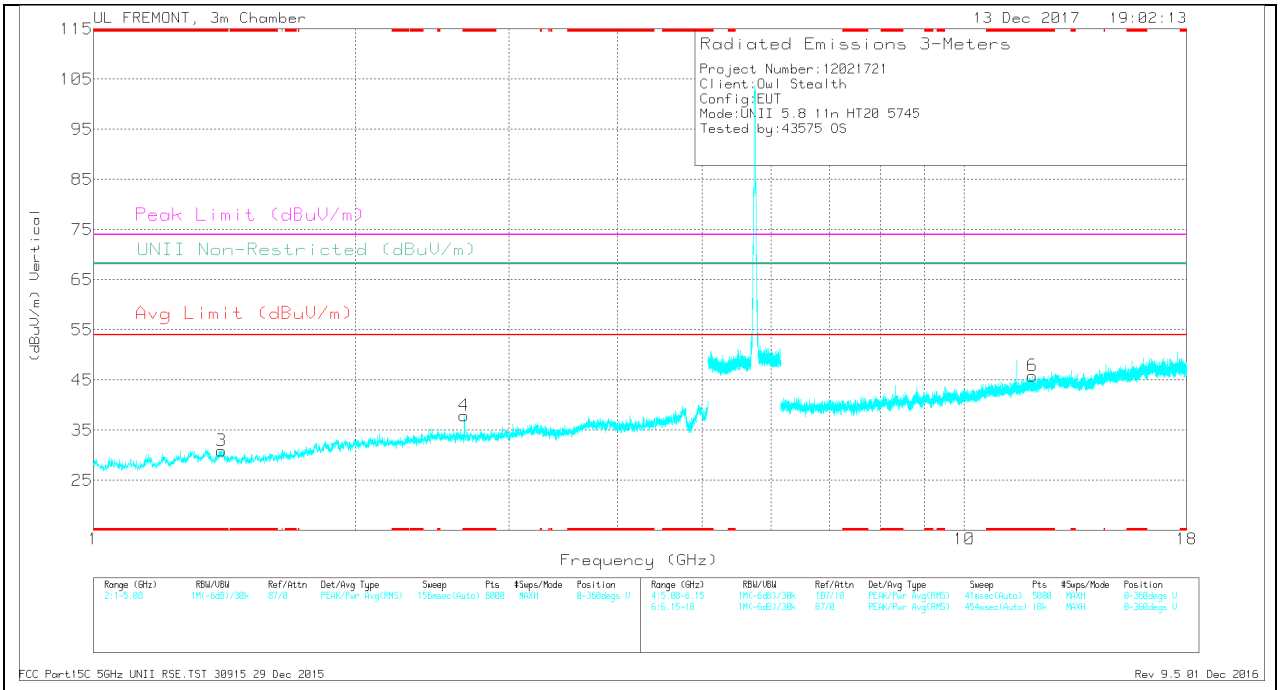
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (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
* 1.35	42.5	PK-U	29	-31.6	0	39.9	-	-	74	-34.1	-	-	205	148	H
* 1.35	31.45	ADR	29	-31.6	.61	29.46	54	-24.54	-	-	-	-	205	148	H
* 3.935	38.7	PK-U	33.5	-29.2	0	43	-	-	74	-31	-	-	27	211	H
* 3.936	27.13	ADR	33.5	-29.2	.61	32.04	54	-21.96	-	-	-	-	27	211	H
* 1.4	41.85	PK-U	28.8	-31.7	0	38.95	-	-	74	-35.05	-	-	147	392	V
* 1.4	29.34	ADR	28.8	-31.7	.61	27.05	54	-26.95	-	-	-	-	147	392	V
* 2.667	45.54	PK-U	32.4	-30.3	0	47.64	-	-	74	-26.36	-	-	33	264	V
* 2.667	30.7	ADR	32.4	-30.2	.61	33.51	54	-20.49	-	-	-	-	33	264	V
* 11.49	40.62	PK-U	38.1	-22	0	56.72	-	-	74	-17.28	-	-	326	100	H
* 11.49	34.87	ADR	38.1	-22	.61	51.58	54	-2.42	-	-	-	-	326	100	H
* 11.97	35.03	PK-U	38.7	-22.8	0	50.93	-	-	74	-23.07	-	-	171	381	V
* 11.97	22.84	ADR	38.7	-22.8	.61	39.35	54	-14.65	-	-	-	-	171	381	V

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

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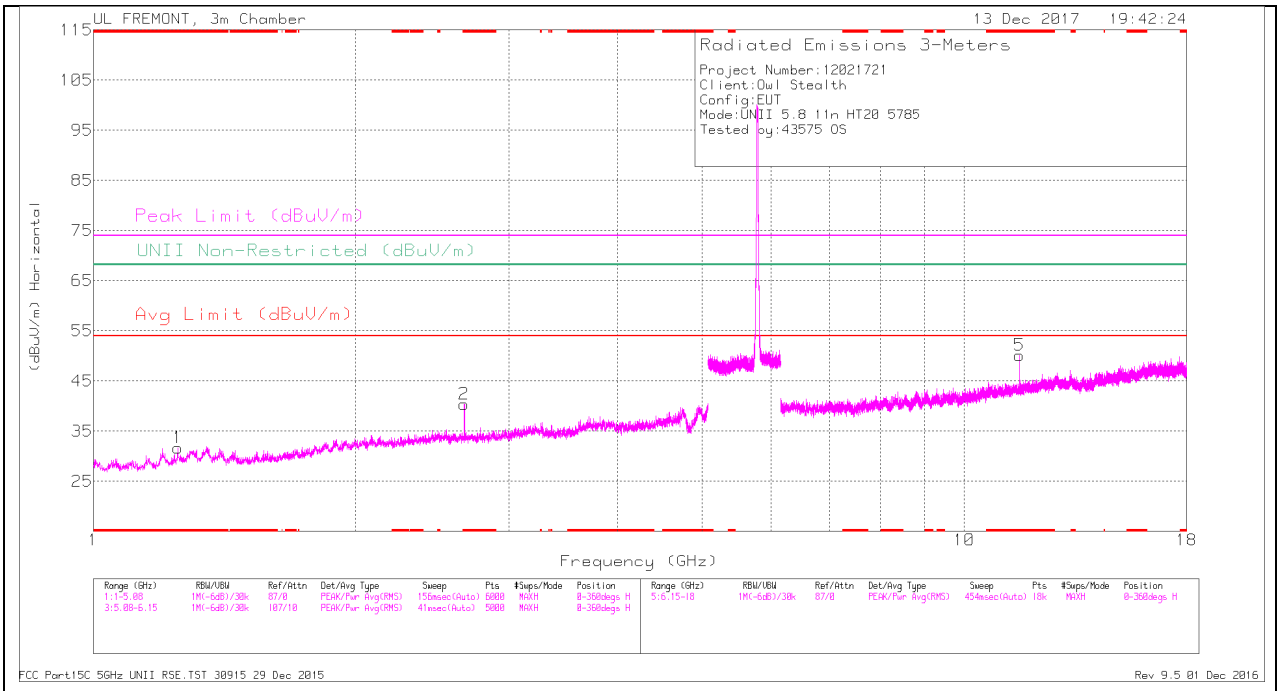
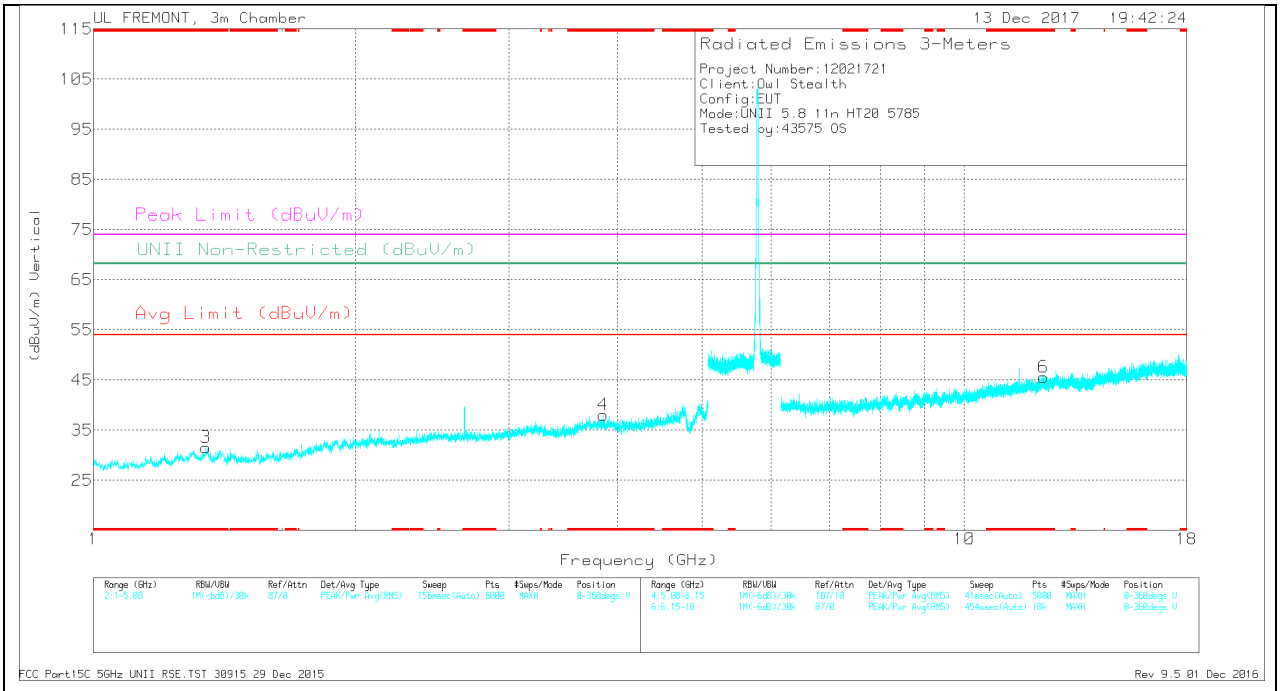
MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (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
* 1.251	41.61	PK-U	28.6	-32.4	0	37.81	-	-	74	-36.19	-	-	118	365	H
* 1.251	29.13	ADR	28.6	-32.4	.61	25.94	54	-28.06	-	-	-	-	118	365	H
* 2.667	43.62	PK-U	32.4	-30.2	0	45.82	-	-	74	-28.18	-	-	295	373	H
* 2.667	28.68	ADR	32.4	-30.2	.61	31.49	54	-22.51	-	-	-	-	295	373	H
* 1.346	40.86	PK-U	29	-31.6	0	38.26	-	-	74	-35.74	-	-	77	276	V
* 1.348	28.81	ADR	29	-31.6	.61	26.82	54	-27.18	-	-	-	-	77	276	V
* 3.846	39.33	PK-U	33.4	-29	0	43.73	-	-	74	-30.27	-	-	74	101	V
* 3.848	27.48	ADR	33.4	-29	.61	32.49	54	-21.51	-	-	-	-	74	101	V
* 11.57	39.62	PK-U	38.2	-22.6	0	55.22	-	-	74	-18.78	-	-	325	109	H
* 11.57	33.94	ADR	38.2	-22.6	.61	50.15	54	-3.85	-	-	-	-	325	109	H
* 12.324	35.05	PK-U	38.9	-22.4	0	51.55	-	-	74	-22.45	-	-	158	362	V
* 12.327	22.91	ADR	38.9	-22.4	.61	40.02	54	-13.98	-	-	-	-	158	362	V

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

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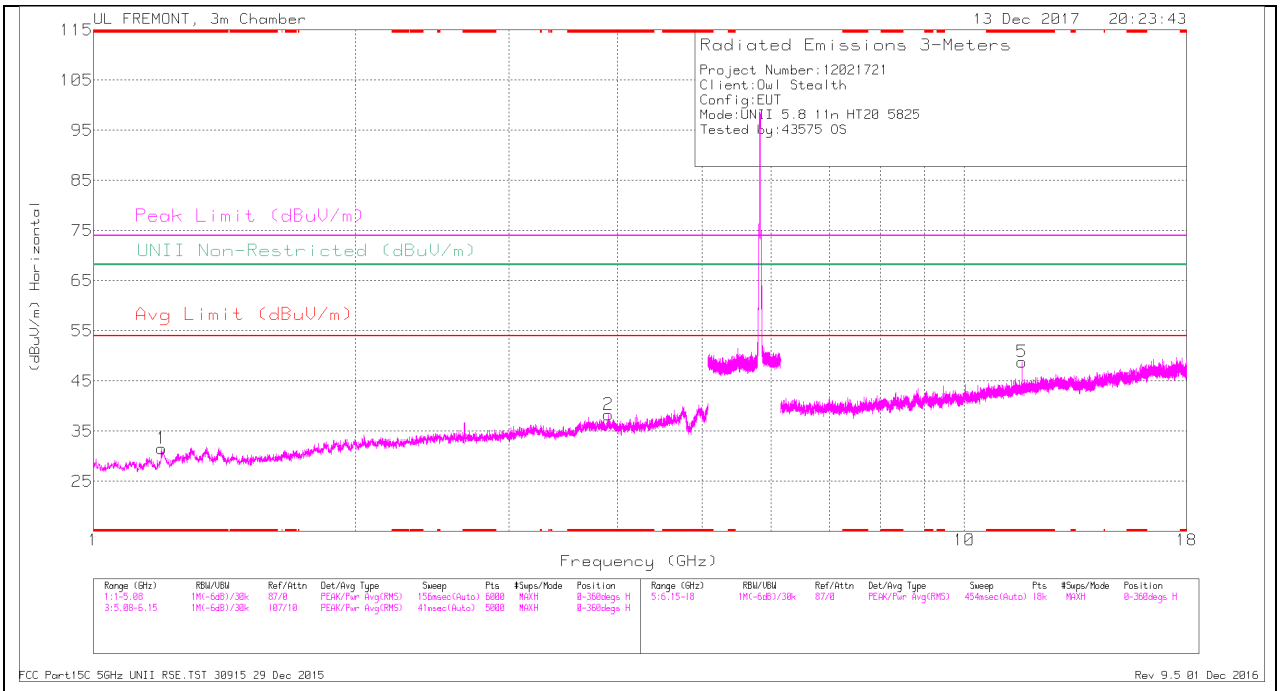
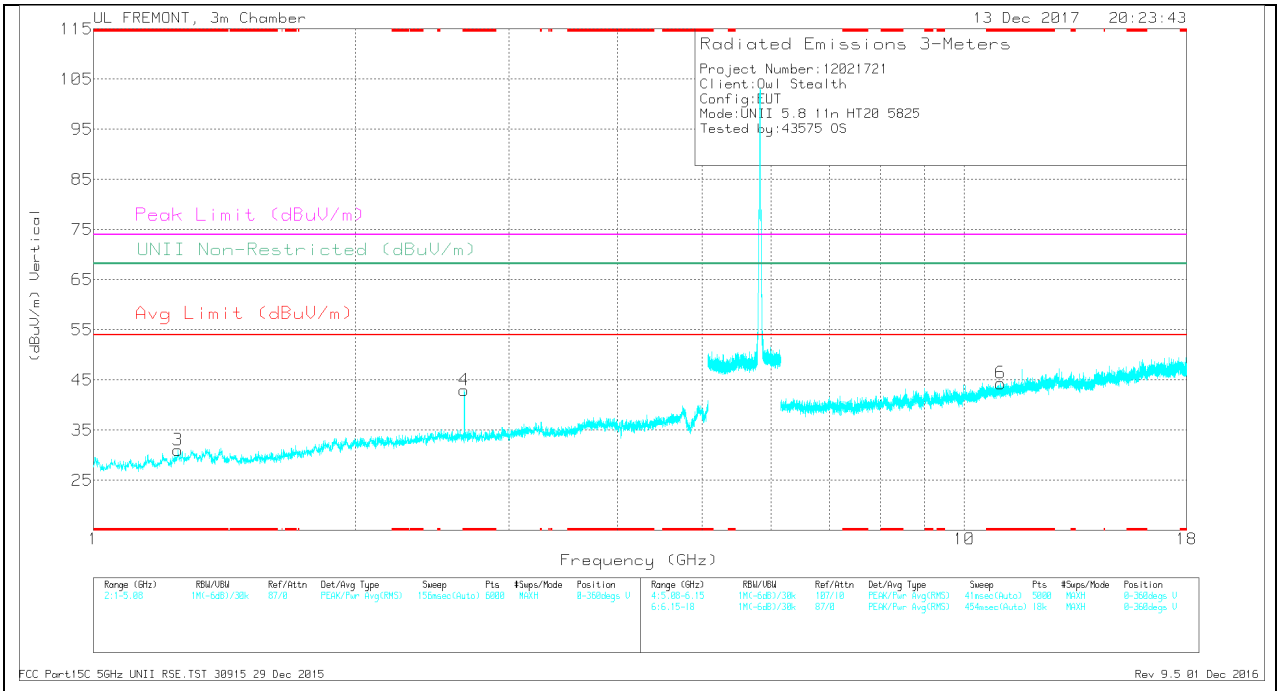
HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (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
* 1.199	45.54	PK-U	28.1	-32.5	0	41.14	-	-	74	-32.86	-	-	317	240	H
* 1.199	29.96	ADR	28.1	-32.5	.61	26.17	54	-27.83	-	-	-	-	317	240	H
* 3.906	39.18	PK-U	33.4	-28.9	0	43.68	-	-	74	-30.32	-	-	78	146	H
* 3.907	26.75	ADR	33.4	-28.9	.61	31.86	54	-22.14	-	-	-	-	78	146	H
* 1.25	40.95	PK-U	28.6	-32.4	0	37.15	-	-	74	-36.85	-	-	189	271	V
* 1.25	28.9	ADR	28.6	-32.4	.61	25.71	54	-28.29	-	-	-	-	189	271	V
* 2.667	46.83	PK-U	32.4	-30.3	0	48.93	-	-	74	-25.07	-	-	0	168	V
* 2.667	31.73	ADR	32.4	-30.3	.61	34.44	54	-19.56	-	-	-	-	0	168	V
* 11.65	39.42	PK-U	38.3	-22.4	0	55.32	-	-	74	-18.68	-	-	59	286	H
* 11.65	33.86	ADR	38.3	-22.4	.61	50.37	54	-3.63	-	-	-	-	59	286	H
* 10.999	34.77	PK-U	37.8	-21.3	0	51.27	-	-	74	-22.73	-	-	62	230	V
* 11.001	21.42	ADR	37.8	-21.5	.61	38.33	54	-15.67	-	-	-	-	62	230	V

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

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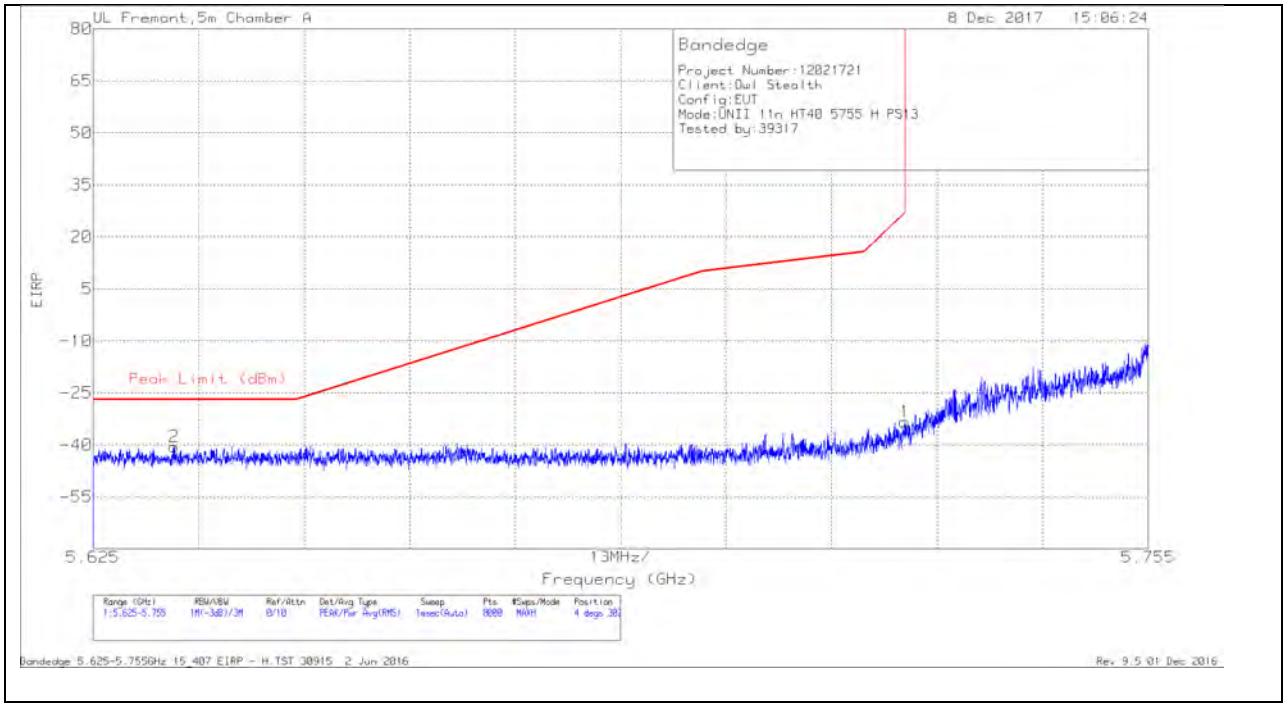
9.1.7. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.8 GHz BAND

1TX Antenna 1 MODE

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.635	-68.96	Pk	35.1	-18.5	11.8	-40.56	-27	-13.56	4	302	H
1	5.725	-61.66	Pk	35	-18.5	11.8	-33.36	27	-60.36	4	302	H

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

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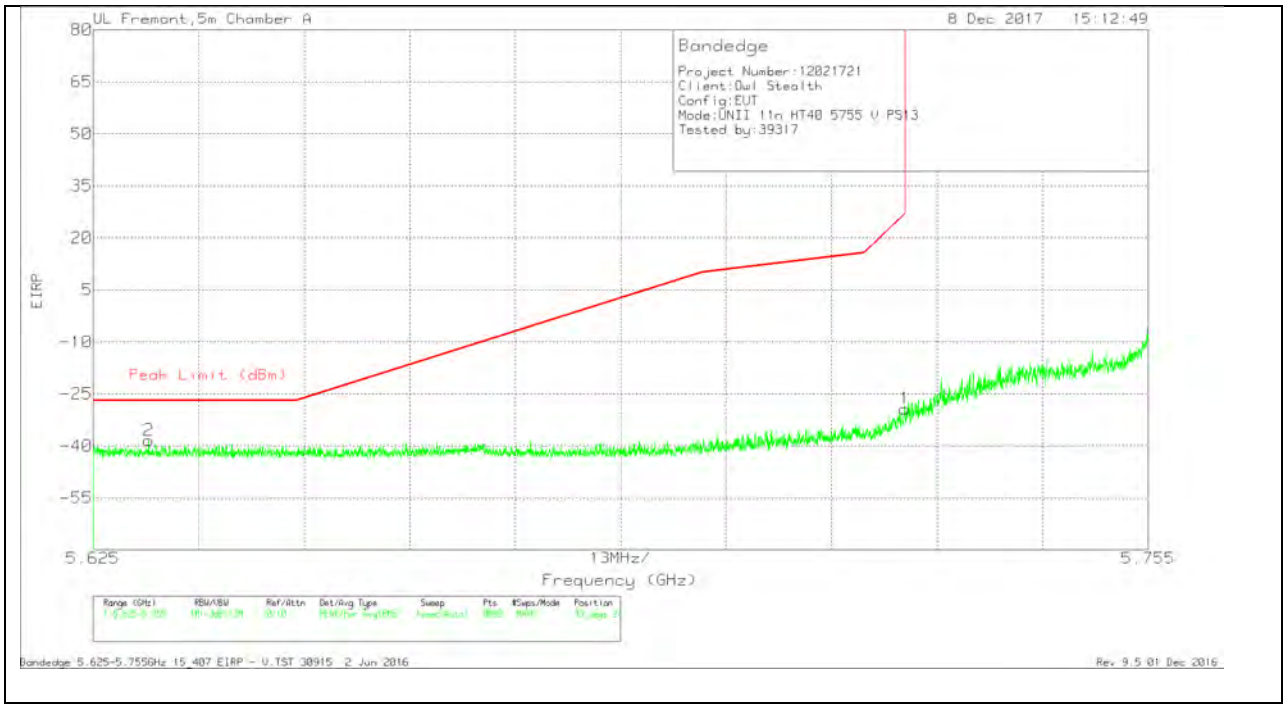
VERTICAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.632	-66.79	Pk	35.1	-18.5	11.8	-38.39	-27	-11.39	43	247	V
1	5.725	-57.57	Pk	35	-18.5	11.8	-29.27	27	-56.27	43	247	V

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

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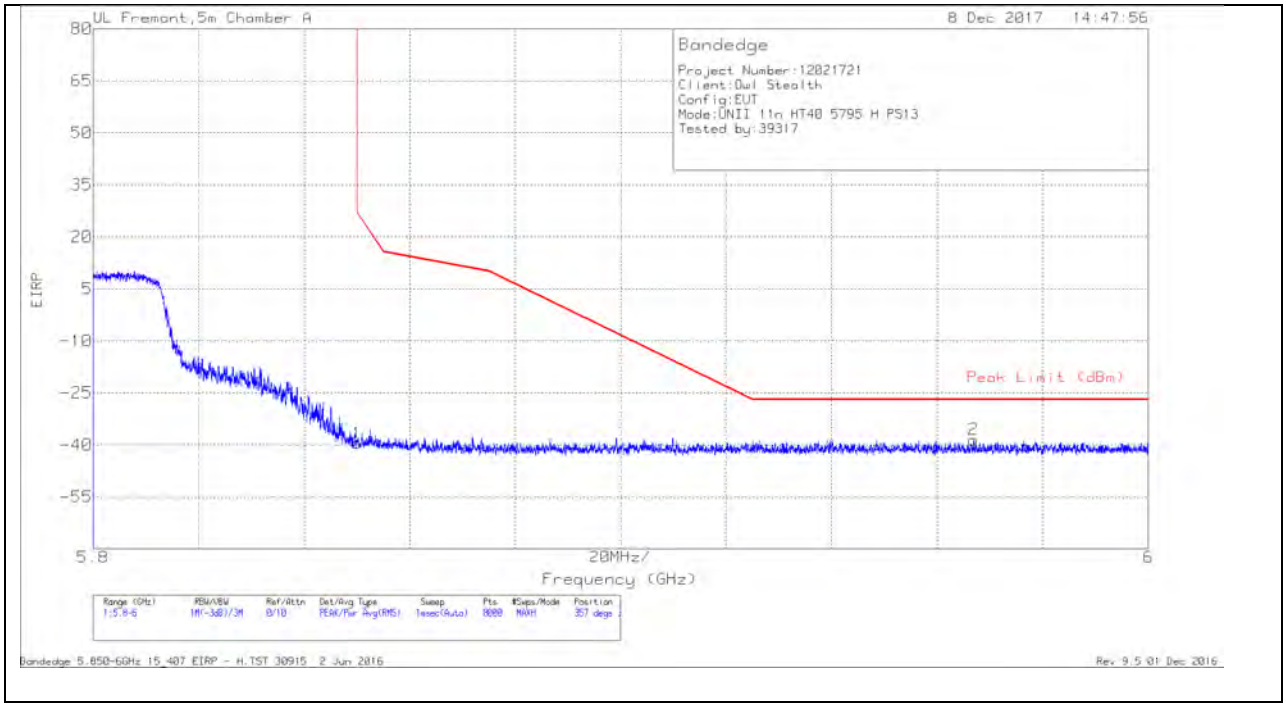
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-68.09	Pk	35.1	-18.3	11.8	-39.49	26.99	-66.48	357	391	H
2	5.967	-67.5	Pk	35.3	-18.1	11.8	-38.5	-27	-11.5	357	391	H

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

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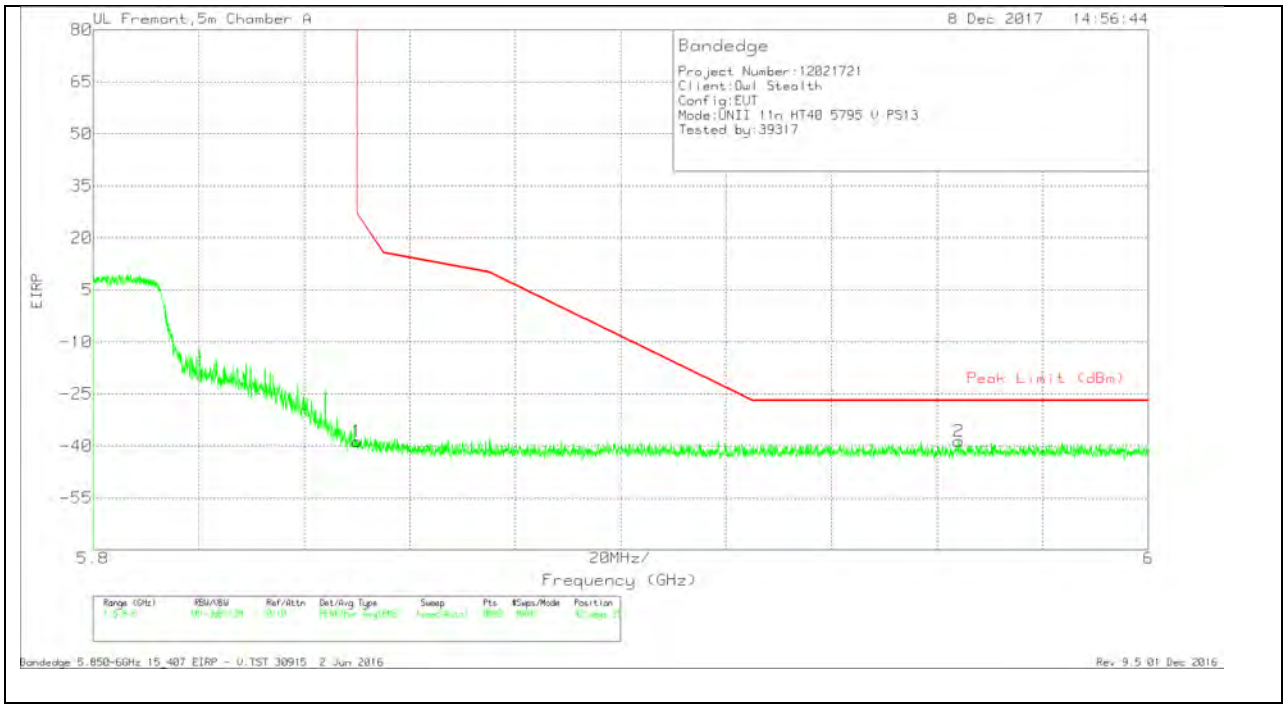
VERTICAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-67.34	Pk	35.1	-18.3	11.8	-38.74	26.99	-65.73	42	258	V
2	5.964	-67.59	Pk	35.3	-18.1	11.8	-38.59	-27	-11.59	42	258	V

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

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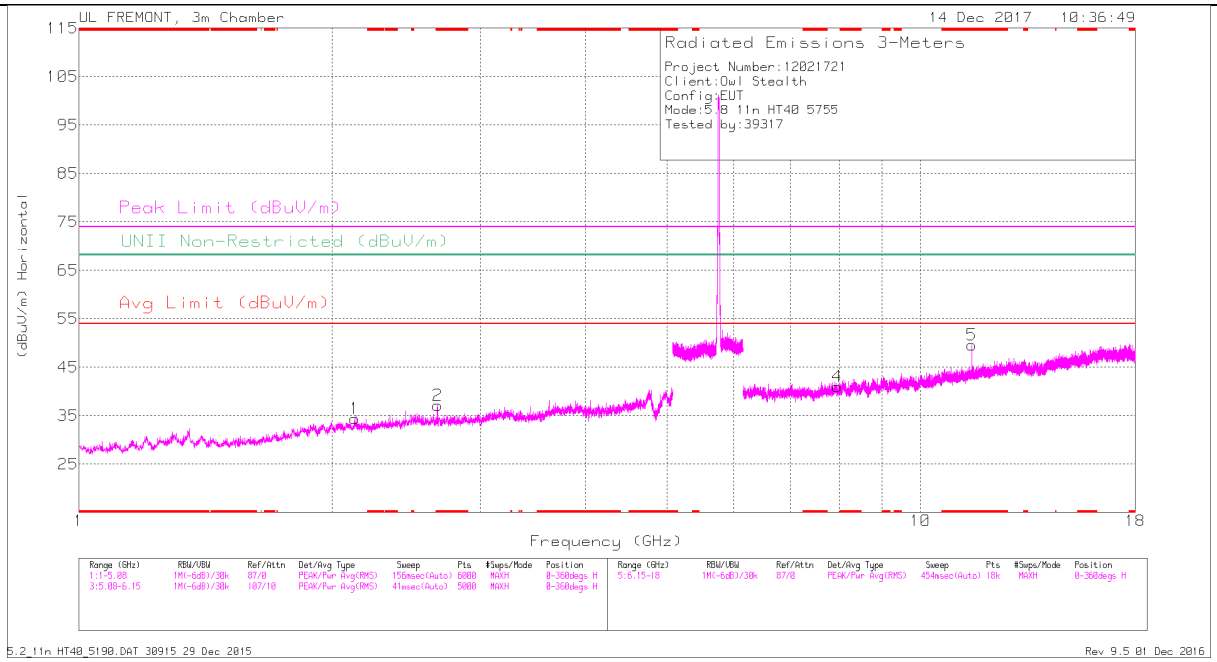
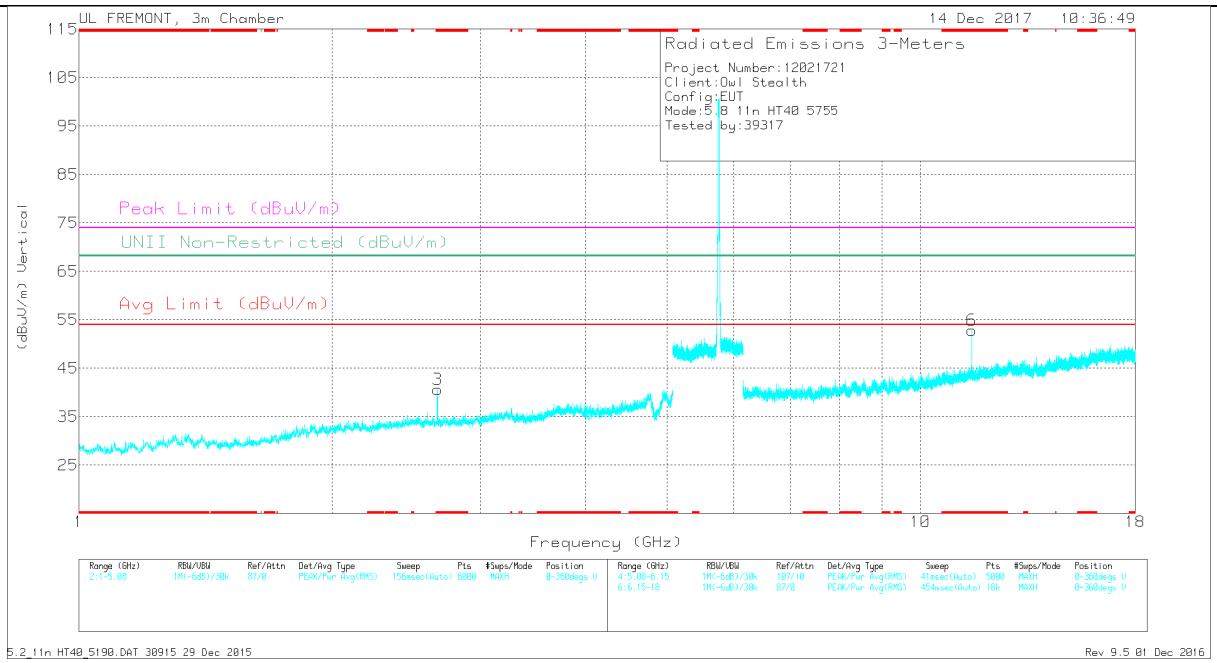
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (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
* 2.667	42.41	PK-U	32.4	-30.2	0	44.61	-	-	74	-29.39	-	-	360	200	H
* 2.667	28.91	ADR	32.4	-30.2	1.16	32.27	54	-21.73	-	-	-	-	360	200	H
* 2.667	42.68	PK-U	32.4	-30.3	0	44.78	-	-	74	-29.22	-	-	360	200	V
* 2.667	29.4	ADR	32.4	-30.2	1.16	32.76	54	-21.24	-	-	-	-	360	200	V
* 11.51	38.88	PK-U	38.1	-22.4	0	54.58	-	-	74	-19.42	-	-	23	293	H
* 11.51	32.58	ADR	38.1	-22.4	1.16	49.44	54	-4.56	-	-	-	-	23	293	H
* 11.51	40.52	PK-U	38.1	-22.4	0	56.22	-	-	74	-17.78	-	-	146	105	V
* 11.51	35.99	ADR	38.1	-22.4	1.16	52.85	54	-1.15	-	-	-	-	146	105	V
2.126	28.34	ADR	31.3	-30.6	1.16	30.2	-	-	-	-	-	-	360	100	H
2.127	39.83	PK-U	31.3	-30.7	0	40.43	-	-	-	-	68.2	-27.77	360	100	H
7.964	25.42	ADR	35.8	-25.3	1.16	37.08	-	-	-	-	-	-	360	100	H
7.965	37.19	PK-U	35.8	-25.3	0	47.69	-	-	-	-	68.2	-20.51	360	100	H

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

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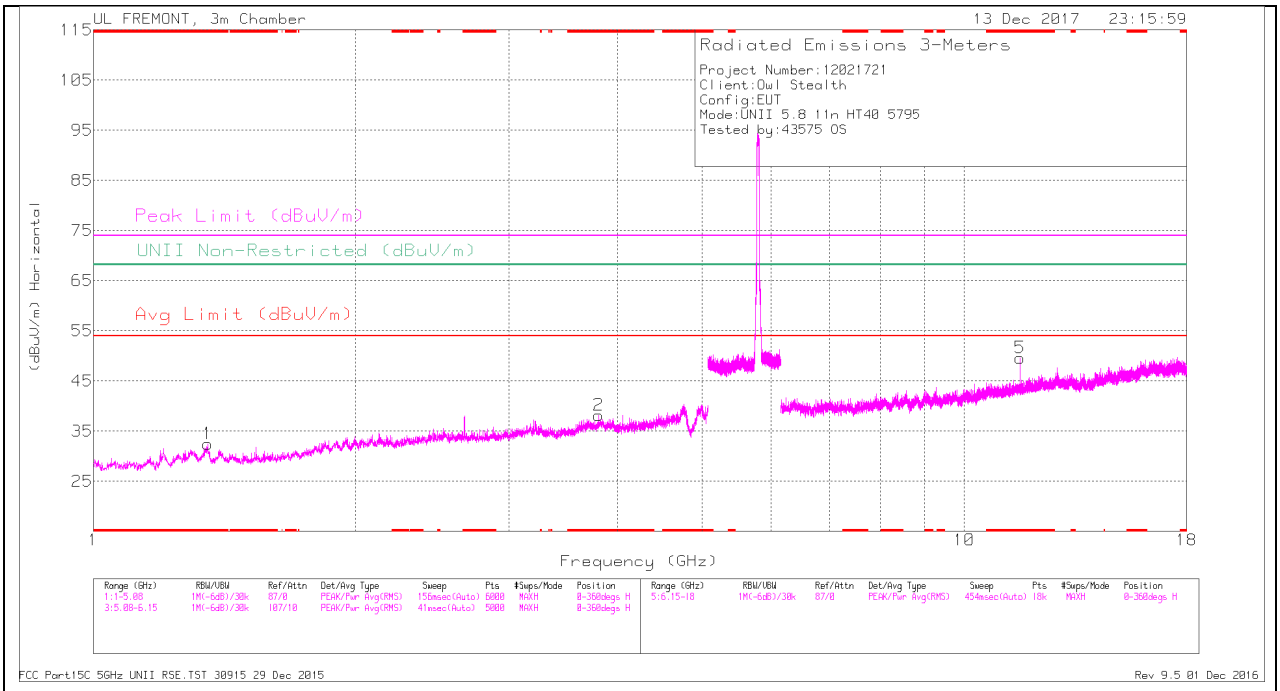
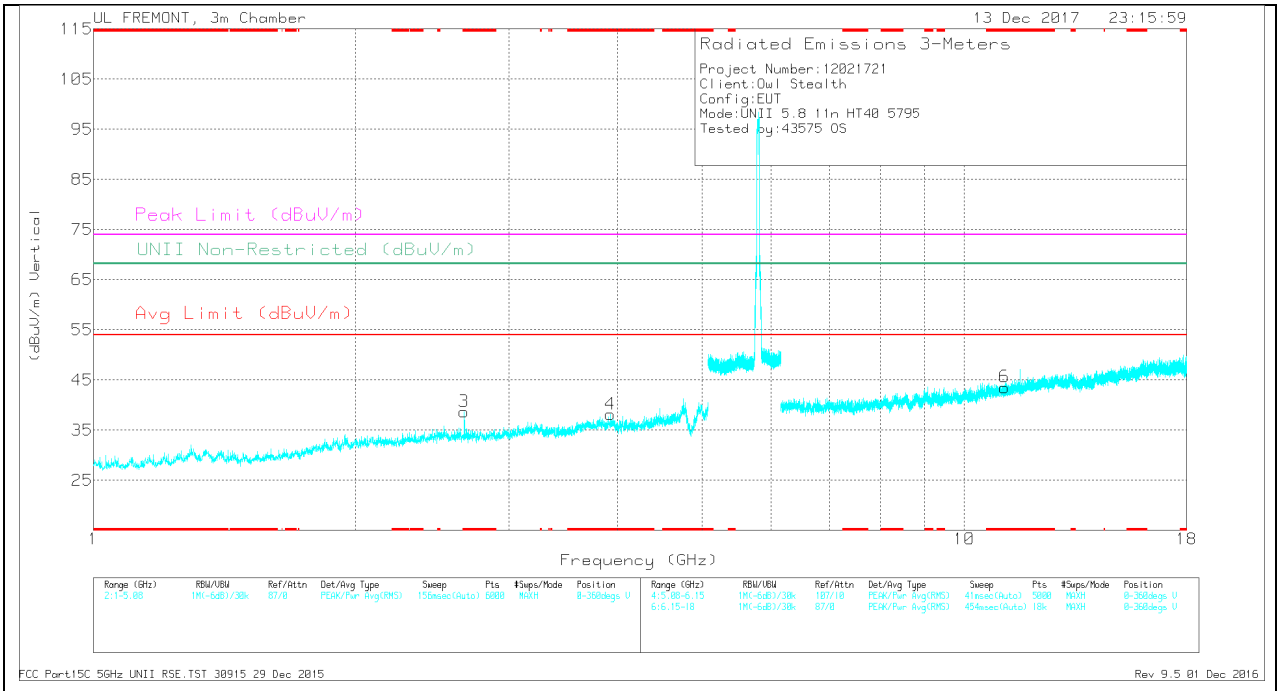
HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (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
* 1.354	41.89	PK-U	28.9	-31.6	0	39.19	-	-	74	-34.81	-	-	204	129	H
* 1.35	30.94	ADR	29	-31.6	1.16	29.5	54	-24.5	-	-	-	-	204	129	H
* 3.804	39.8	PK-U	33.4	-30	0	43.2	-	-	74	-30.8	-	-	244	118	H
* 3.803	28.03	ADR	33.4	-30	1.16	32.59	54	-21.41	-	-	-	-	244	118	H
* 2.667	46.6	PK-U	32.4	-30.2	0	48.8	-	-	74	-25.2	-	-	31	201	V
* 2.667	30.98	ADR	32.4	-30.3	1.16	34.24	54	-19.76	-	-	-	-	31	201	V
* 3.919	38.65	PK-U	33.4	-29.2	0	42.85	-	-	74	-31.15	-	-	184	100	V
* 3.919	26.76	ADR	33.4	-29.2	1.16	32.12	54	-21.88	-	-	-	-	184	100	V
* 11.59	39.47	PK-U	38.2	-22.6	0	55.07	-	-	74	-18.93	-	-	322	131	H
* 11.59	34.02	ADR	38.2	-22.6	1.16	50.78	54	-3.22	-	-	-	-	322	131	H
* 11.119	34.96	PK-U	37.7	-22.1	0	50.56	-	-	74	-23.44	-	-	344	393	V
* 11.121	21.94	ADR	37.7	-22	1.16	38.8	54	-15.2	-	-	-	-	344	393	V

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

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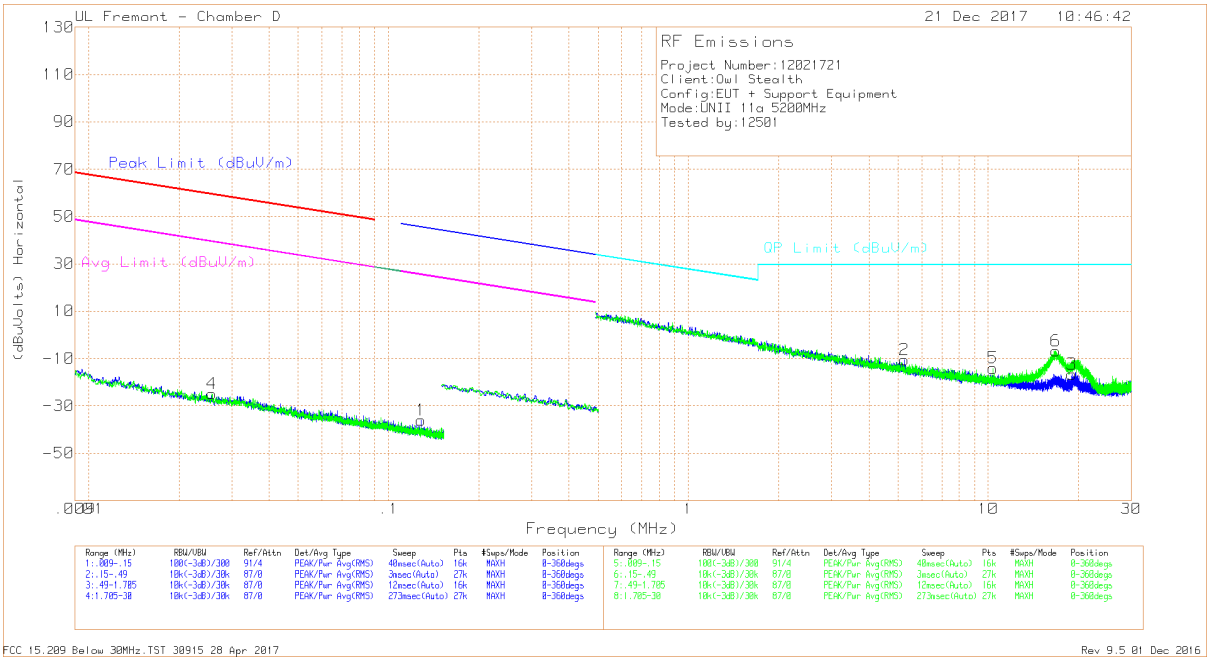
9.2. SPURIOUS EMISSIONS BELOW 30 MHz (WORST-CASE CONFIGURATION)

HORIZONTAL AND VERTICAL PLOTS



NOTE: KDB 414788 OATS and Chamber Correlation Justification

- Based on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.
- OATs and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cables (dB)	Dist Corr 300m	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	QP Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
4	.02579	40.37	Pk	14.8	0	-80	-24.83	59.35	-84.18	39.35	-64.18	-	-	-	-	-	-	0-360
1	.12827	32.17	Pk	11.6	.1	-80	-36.13	-	-	-	-	-	-	45.46	-81.59	25.46	-61.59	0-360
2	5.24514	17.96	Pk	11.3	.3	-40	-10.44	-	-	-	-	29.5	-39.94	-	-	-	-	0-360
5	10.36305	14.8	Pk	10.7	.4	-40	-14.1	-	-	-	-	29.5	-43.6	-	-	-	-	0-360
6	16.78467	22.93	Pk	9.9	.4	-40	-6.77	-	-	-	-	29.5	-36.27	-	-	-	-	0-360
3	19.00014	13.27	Pk	9.6	.5	-40	-16.63	-	-	-	-	29.5	-46.13	-	-	-	-	0-360

Pk - Peak detector

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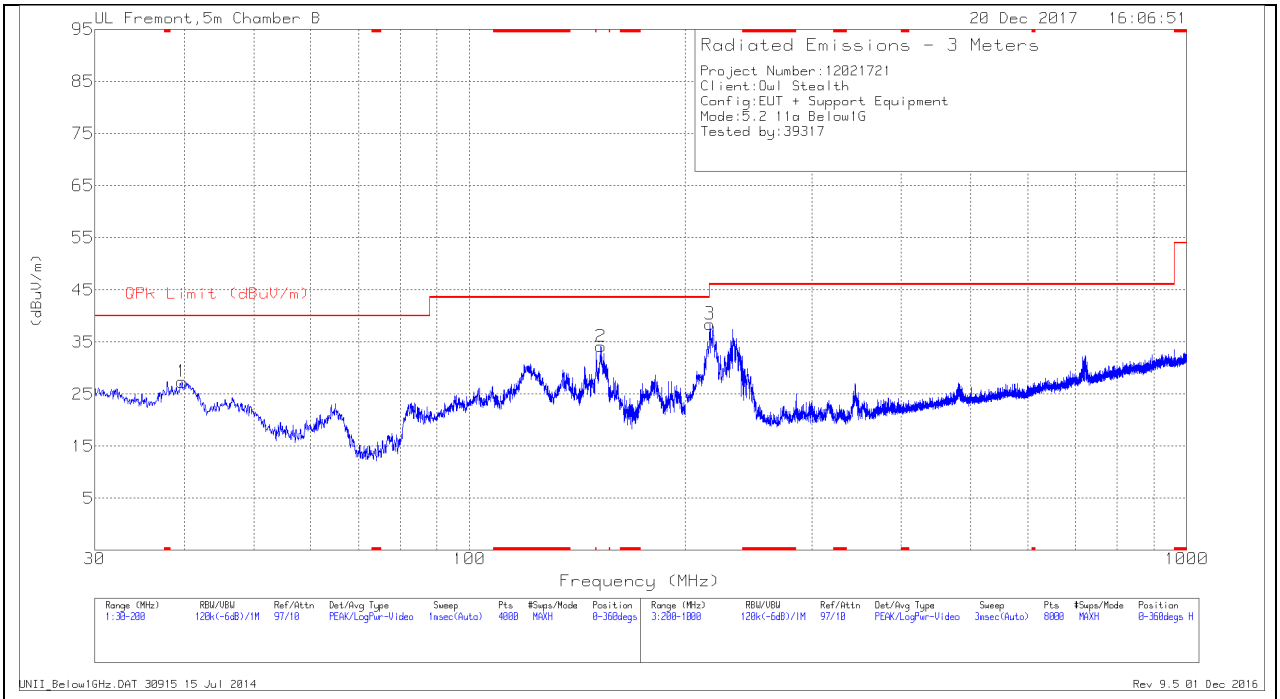
9.3. Worst Case Below 1 GHz



HORIZONTAL

VERTICAL

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Below 1GHz DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T899 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6	* 118.2953	46.06	Pk	17.5	-27.7	35.86	43.52	-7.66	0-360	100	V
1	39.735	37.65	Pk	18.4	-28.7	27.35	40	-12.65	0-360	300	H
4	39.8626	47.78	Qp	18.3	-28.7	37.38	40	-2.62	314	100	V
5	47.0894	34.69	Qp	13.1	-30.9	16.89	40	-23.11	306	101	V
2	152.4742	45.11	Pk	16.3	-27.3	34.11	43.52	-9.41	0-360	300	H
3	216.4021	50.74	Pk	14.4	-26.7	38.44	46.02	-7.58	0-360	100	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Qp - Quasi-Peak detector
Pk - Peak detector

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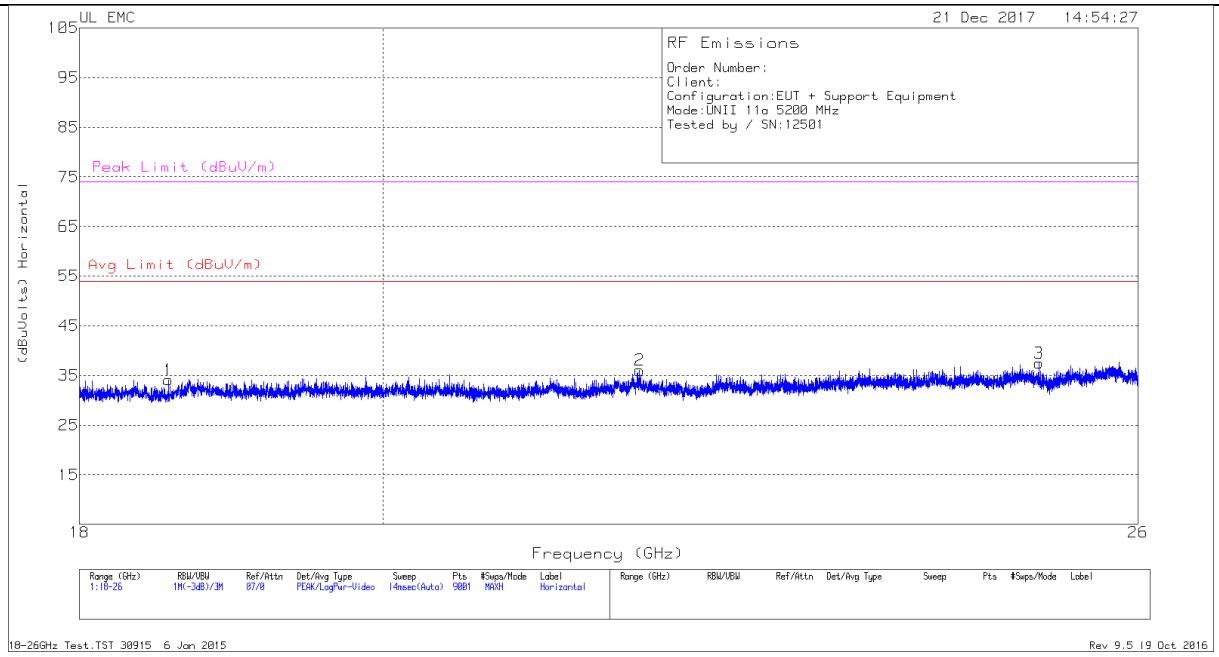
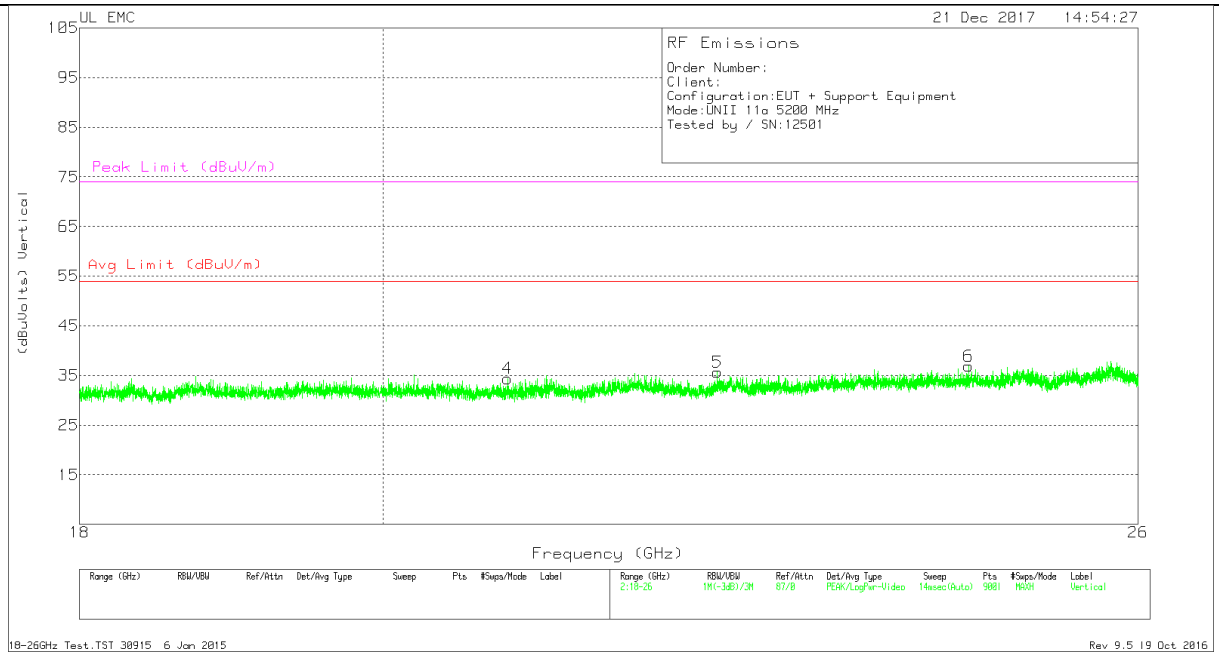
9.4. Worst Case 18-26 GHz



HORIZONTAL



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18 – 26GHz DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T89 AF (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuVolts)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	18.564	36.48	Pk	32.5	-25.4	-9.5	34.08	54	-19.92	74	-39.92
2	21.864	36.82	Pk	33.3	-24.6	-9.5	36.02	54	-17.98	74	-37.98
3	25.12	37.68	Pk	33.9	-24.6	-9.5	37.48	54	-16.52	74	-36.52
4	20.884	36.55	Pk	32.6	-25.3	-9.5	34.35	54	-19.65	74	-39.65
5	22.464	36.59	Pk	33.3	-24.7	-9.5	35.69	54	-18.31	74	-38.31
6	24.513	36.9	Pk	34	-24.5	-9.5	36.9	54	-17.1	74	-37.1

Pk - Peak detector

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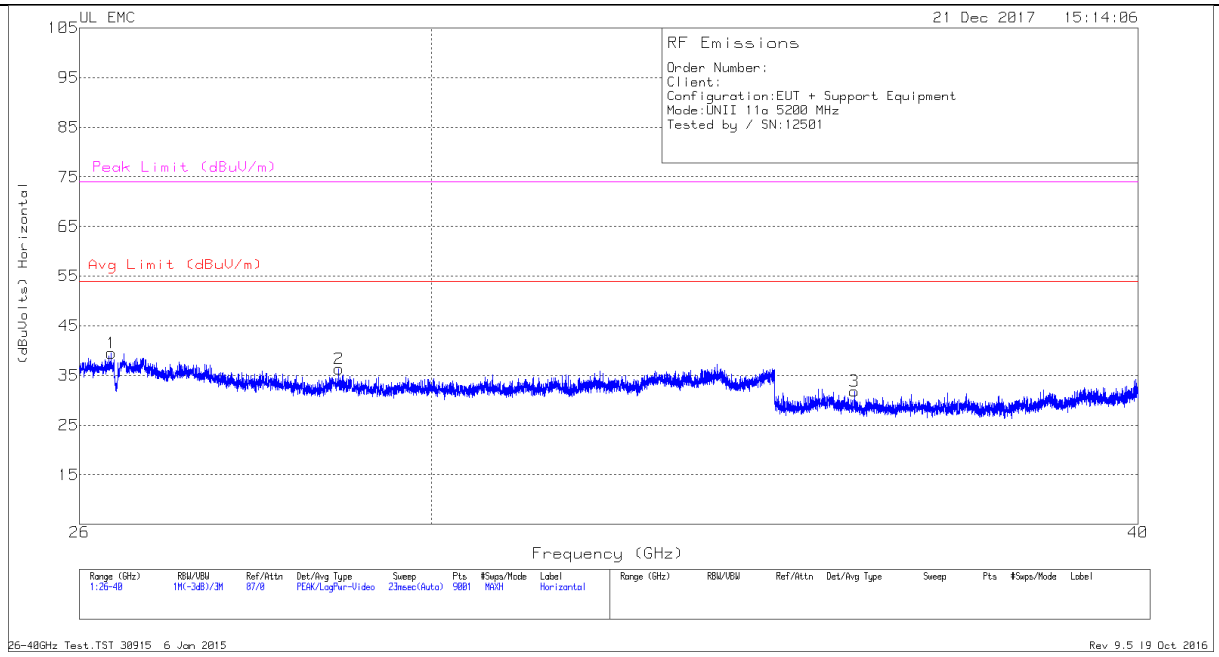
9.5. Worst Case 26-40 GHz



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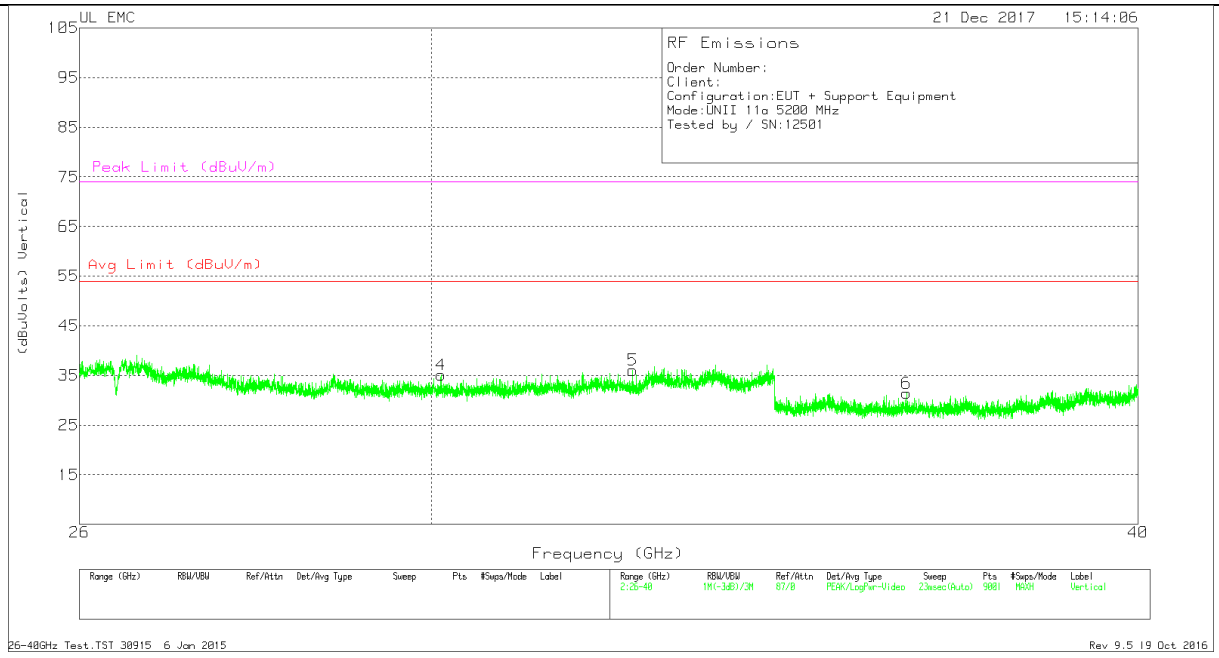

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26 – 40GHz DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T90 AF (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuVolts)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	26.338	44.31	Pk	35.6	-30.9	-9.5	39.51	54	-14.49	74	-34.49
2	28.893	41.72	Pk	35.8	-31.7	-9.5	36.32	54	-17.68	74	-37.68
3	35.637	37.1	Pk	37.5	-33.3	-9.5	31.8	54	-22.2	74	-42.2
4	30.119	41.1	Pk	35.9	-32.4	-9.5	35.1	54	-18.9	74	-38.9
5	32.563	42.12	Pk	36.2	-32.8	-9.5	36.02	54	-17.98	74	-37.98
6	36.4	36.72	Pk	37.2	-33	-9.5	31.42	54	-22.58	74	-42.58

Pk - Peak detector

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