



**FCC 47 CFR PART 15 SUBPART E
C2PC CERTIFICATION TEST REPORT
FOR**

802.11ac 3x3 Set Top Box Client with RF4CE for remote operation

MODEL NUMBER: ID:072

FCC ID: DKNCR90

REPORT NUMBER: 15U21905-E1V1

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Revision History

Rev.	Issue Date	Revisions	Revised By
V1	11/20/15	Initial Issue	

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: ECHOSTAR TECHNOLOGIES LLC

EUT DESCRIPTION: 802.11ac 3x3 Set Top Box Client with RF4CE for remote operation

MODEL: ID: 072

SERIAL NUMBER: AB02045Y00218K(1310151634) Radiated
AB02045Y00156K(1310151669) Conducted

DATE TESTED: OCTOBER 26 – NOVEMBER 18, 2015

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

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

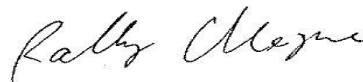
Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section.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

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.10-2013.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

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

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

The above test sites and facilities are covered under FCC Test Firm Registration # 208313. Chambers A through H are covered under Industry Canada company address code 2324B with site numbers 2324B -1 through 2324B-8, 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>.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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

4.3. MEASUREMENT UNCERTAINTY

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

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

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is an 802.11ac 3x3 Set Top Box Client with RF4CE for remote operation.

The set-top box is intended to be connected to any secondary television in a consumer's home. Using an 802.11ac link to an 802.11ac AP it will decode and output high-definition TV2 programming from an Echostar host STB.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

5.8 GHz BAND

Frequency Range (MHz)	Mode	Power, Chain 0 (dBm)	Power, Chain 1 (dBm)	Power, Chain 2 (dBm)	Output Power (dBm)	Output Power (mW)
5.8 GHz band, 1TX						
5745-5825	802.11a	20.30	N/A	N/A	20.30	107.15
5755-5795	802.11n HT20	21.04	N/A	N/A	21.04	127.06
5755-5795	802.11n HT40	20.64	N/A	N/A	20.64	115.88
5775	802.11n AC80	15.44	N/A	N/A	15.44	34.99
5.8 GHz band, 3TX						
5745-5825	802.11n HT20 CDD	17.83	17.98	17.64	22.59	181.56
5755-5795	802.11n HT40 CDD	19.65	19.87	19.53	24.46	279.05
5775	802.11n AC80 CDD	15.45	15.77	15.67	20.40	109.73

Testing performed was done on 1TX and 3TX modes only. All 2TX mode testing was waived because the power settings for these modes will leverage on the power setting for 3TX. 3TX modes are worst case representation of 2 TX modes.

The manufacturer will use 3TX power settings on 2TX modes.

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an N5x20B Embedded antenna, with a maximum is,

Freq. Band (GHz)	Antenna Gain (dBi)
5.8	3.16

5.4. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was Broadcom, Rev. 6.37RC14.49

The EUT driver software installed during testing was Broadcom, Rev. 6.37.14.49 (r421153 WLTEST)

The test utility software used during testing was MTool, Rev. 2.0.1.1

5.5. WORST-CASE CONFIGURATION AND MODE

The EUT supports only one orientation; therefore, X orientation (Up Right) was investigated and is considered the worst case.

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

802.11a SISO mode: 6 Mbps
802.11n HT20 SISO mode: MCS0
802.11n HT20 3TX CDD mode: MCS0
802.11n HT20 3TX SDM mode: MCS0
802.11n HT40 SISO mode: MCS0
802.11n HT40 3TX CDD mode: MCS0
802.11n HT40 3TX SDM mode: MCS0
802.11ac 80 SISO mode: MCS0
802.11ac 80 3TX CDD mode: MCS0
802.11ac 80 3TX SDM mode: MCS0

The worst-case mode and channel used for 30-1000 MHz radiated and power line conducted emissions was in the mode and channel with the highest output power.

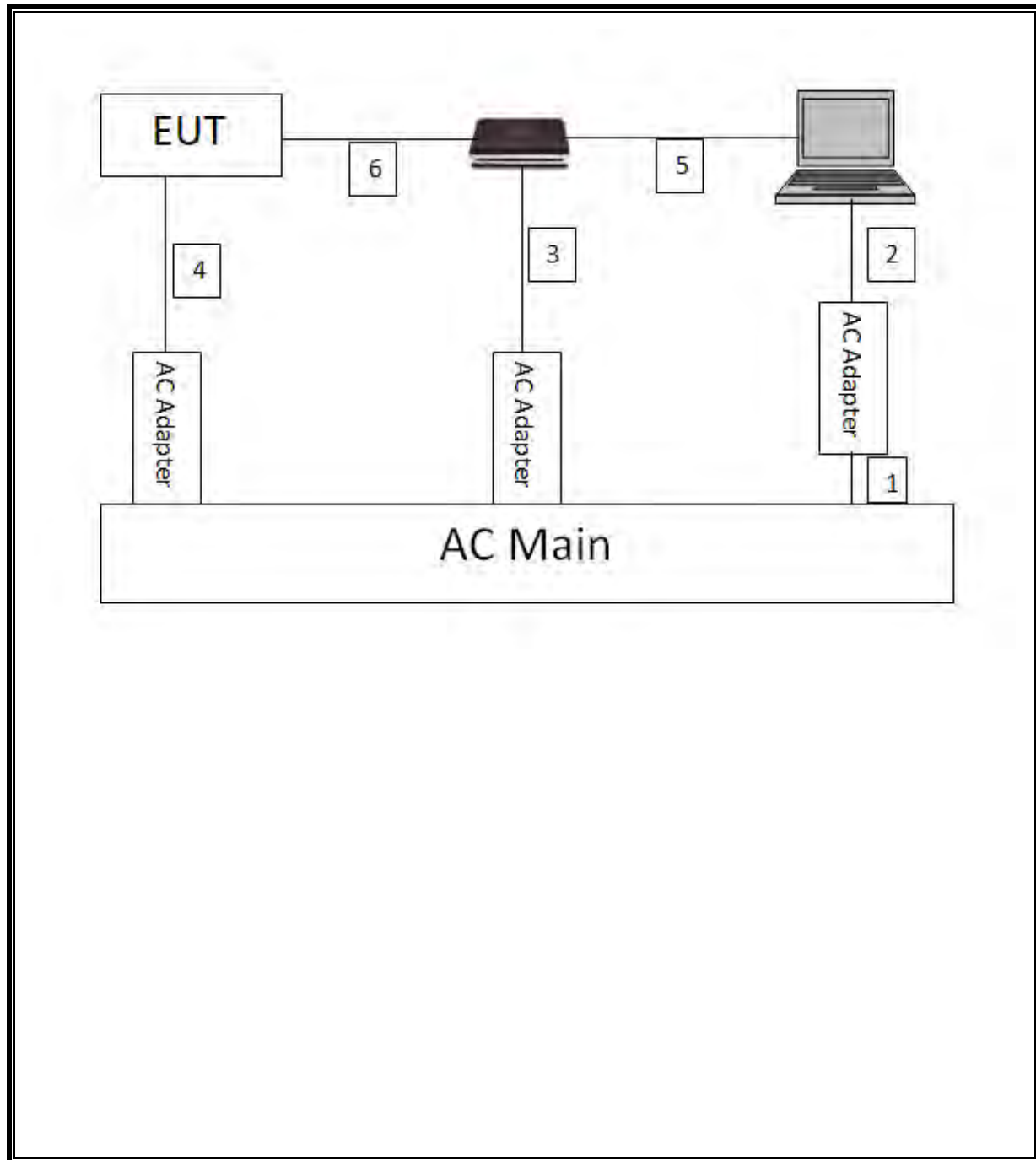
5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
EUT AC Adapter	Delta Electronics	ADP-25AQ b	GUBD394000123	N/A
Laotop	HP	8470P	CNU342CP7Y	DOC
AC Adapter	HP	PA-1650-32HJ	WCNXA0C3U5IAIC	DOC
Access Point	D-Link	EBR-2310	F311393000205	DOC
AC Adapter	D-Link	AF0605-B	-	N/A

I/O CABLES

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	AC	1	US115V	Un-shielded	1.8	N/A
2	DC	1	19.5VDC	Un-shielded	1.8	N/A
3	DC	1	5VDC	Un-shielded	1.8	N/A
4	DC	1	12VDC	Un-shielded	1.8	Ferrite on EUT end
5	LAN	1	RJ45	Un-shielded	2	N/A
6	LAN	1	RJ45	Un-shielded	2	N/A



6. TEST AND MEASUREMENT EQUIPMENT

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

Test Equipment List					
Description	Manufacturer	Model	T No.	Cal Date	Cal Due
Bilog Antenna 30-1000MHz	Sunol	JB1	130	09/01/15	09/01/16
Horn Antenna 1-18GHz	ETS	3117	136	03/03/15	03/03/16
Horn Antenna 1-18GHz	ETS	3117	345	03/03/15	03/03/16
Horn Antenna 18-26GHz	ARA	SWH-28	98	12/17/14	12/17/15
Horn Antenna 26.5- 40GHz	ARA	MWH-2640/B	90	07/28/15	07/28/16
Preamp 10kHz-1000MHz	Sonoma	310	300	09/01/15	09/01/16
Preamp 1-8GHz	Miteq	AMF-4D-010008	782	11/17/14	11/17/15
Preamp 1-18GHz	Miteq	AFS42-0010180	493	01/16/15	01/16/16
Preamp 1-26.5GHz	Agilent	8449B	404	04/13/15	04/13/16
Amplifier, 26-40GHz	Miteq	NSP4000-SP2	88	04/07/15	04/07/16
Spectrum Analyzer 3kHz - 44GHz	Agilent	N9030A	908	06/16/15	05/26/16
Spectrum Analyzer 3kHz - 44GHz	Agilent	N9030A	907	05/15/15	05/15/16
Spectrum Analyzer 9kHz - 40GHz	HP	8564E	106	08/14/15	08/14/16
3GHz HPF	Micro-Tronics	HPM17543	487	01/31/15	01/31/16
EMI Test Receiver	Rohde & Schwarz	ECSI 7	212	08/07/15	08/07/16
Power Meter	Agilent	N1911A	377	06/16/15	06/16/16
LISN for Conducted Emission	FCC	50/250-25-2	24	01/16/15	01/16/16
Power Sensor	Agilent	E9323A	400	05/05/15	05/05/16

Test Software List			
Description	Manufacturer	Model	Version
Radiated Software	UL	UL EMC	Version 9.5, 07/24/15
Conducted Software	UL	UL EMC	Version 9.5, 05/26/15
Antenna Port Software	UL	UL RF	Version 3.6, 10/23/15

7. MEASUREMENT METHODS

26 dB Emission BW: KDB 789033 D02 v01r, Section C.

99% Occupied BW: KDB 789033 D02 v01, Section D.

Conducted Output Power: KDB 789033 D02 v01, Section E.3.b (Method PM-G), and KDB 662911 D01 v02r01.

Power Spectral Density: KDB 789033 D02 v01, Section F.

Unwanted emissions in restricted bands: KDB 789033 D02 v01, Sections G.3, G.4, G.5, and G.6.

Unwanted emissions in non-restricted bands: KDB 789033 D02 v01, Sections G.3, G.4, and G.5.

8. SUMMARY TABLE

C2PC REASON:

Please refer to Echostar Technologies L.L.C. Class II Change Description Letter for details.

FCC Part Section	RSS Section	Test Description	Test Limit	Test Condition	Test Result	Worst Case
§15.407 (a)	RSS-247	Occupied Band width (26dB)	N/A	Conducted	Pass	N/A
§15.407	RSS-247 6.2.4	6dB Band width (5.8Ghz)	>500KHz		Pass	Ref. 13U16571 -1
§15.407 (a)(1)	RSS-247 6.2	TX Cond. Power 5.15-5.25	<24dBm (FCC) / <23 dBm or <10+10Log(99% BW) (IC)		Pass	N/A
§15.407 (a)(2)	RSS-247 6.2	TX Cond. Power 5.25-5.35 & 5.47-5.725	<24dBm or <11+10log (OBW) (FCC) / <24 dBm or <11+10Log(99% BW) (IC)		Pass	N/A
§15.407 (a)(3)	RSS-247 6.2.4	TX Cond. Power 5.725-5.825	<30dBm		Pass	24.46 dBm
§15.407 (a)(1)	RSS-247 6.2	PSD (5.15-5.25)	<11dBm/MHz (FCC) <10 dBm/MHz EIRP (IC)		Pass	N/A
§15.407 (a)(2)	RSS-247 6.2	PSD (5.3,5.5GHz)	<11dBm/MHz		Pass	N/A
§15.407 (a)(3)	RSS-247 6.2.4	PSD (5.8GHz)	<30dBm per 500kHz			8.23 dBm
§15.207 (a)	RSS-GEN 8.8	AC Power Line conducted emissions	Section 10		Pass	59.05 dBuV
§15.407 (b) & 15.209	RSS-GEN 8.9/7	Radiated Spurious Emission	<54dBuV/m (Avg) (Restricted) < 68.2 dBuV/m (PK) (non-Restricted)	Radiated	Pass	68.07 dBuV/m
§15.407 (h)(2)	RSS-247 6.3	Dynamic Frequency Selection	N/A	Radiated / Conducted	Pass	N/A

9. ANTENNA PORT TEST RESULTS

9.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

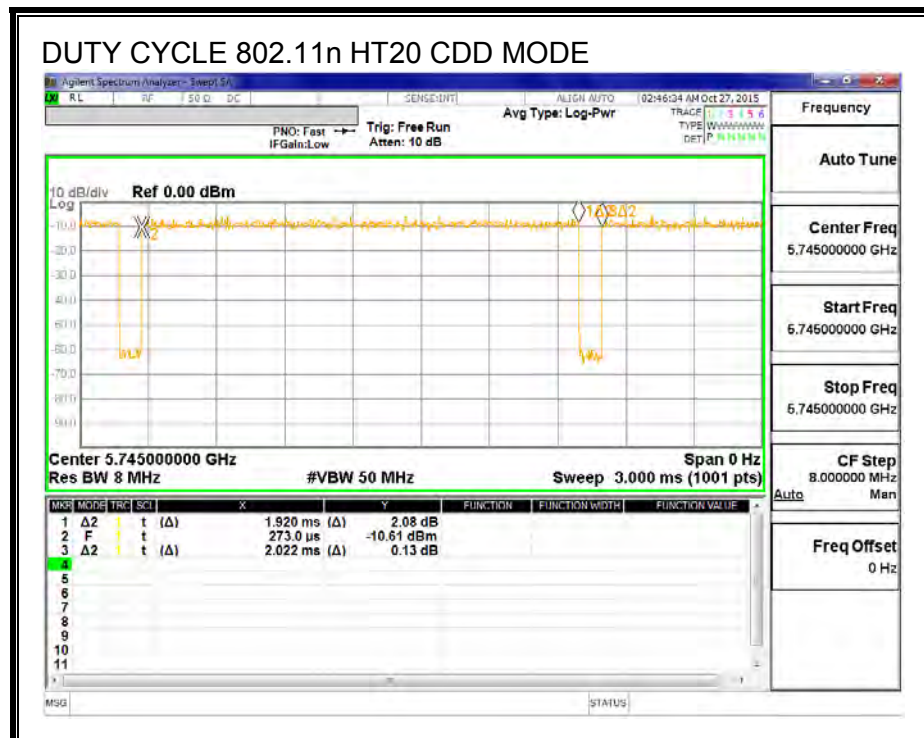
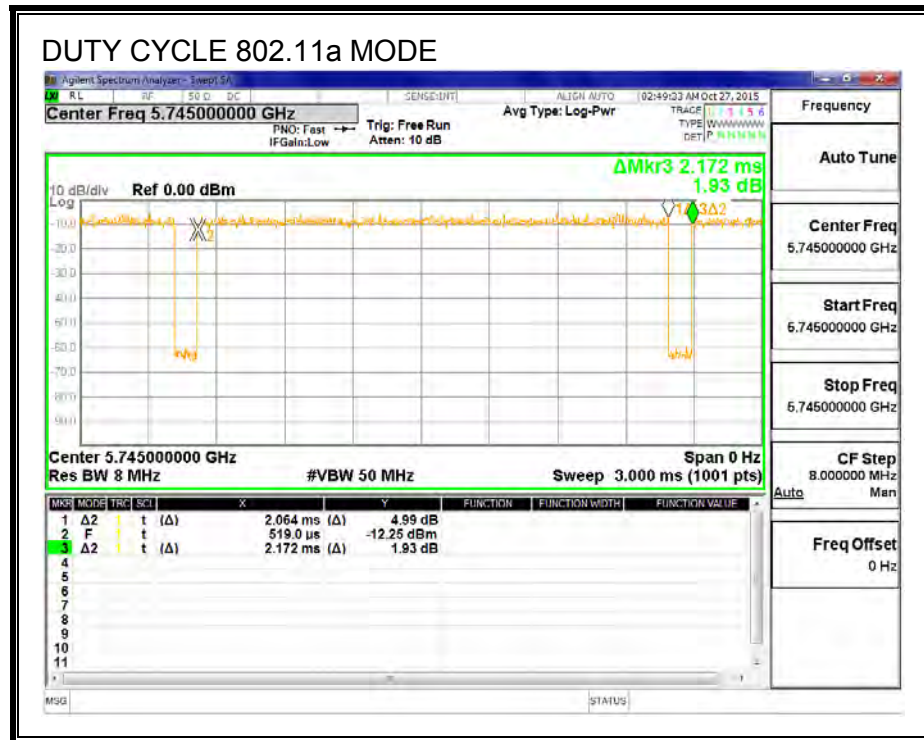
PROCEDURE

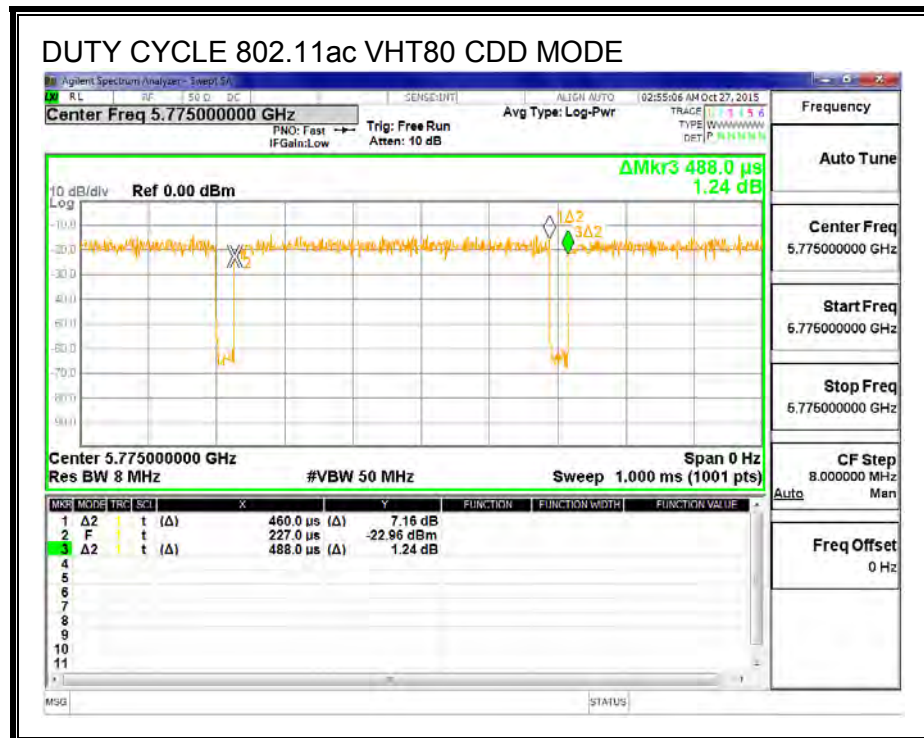
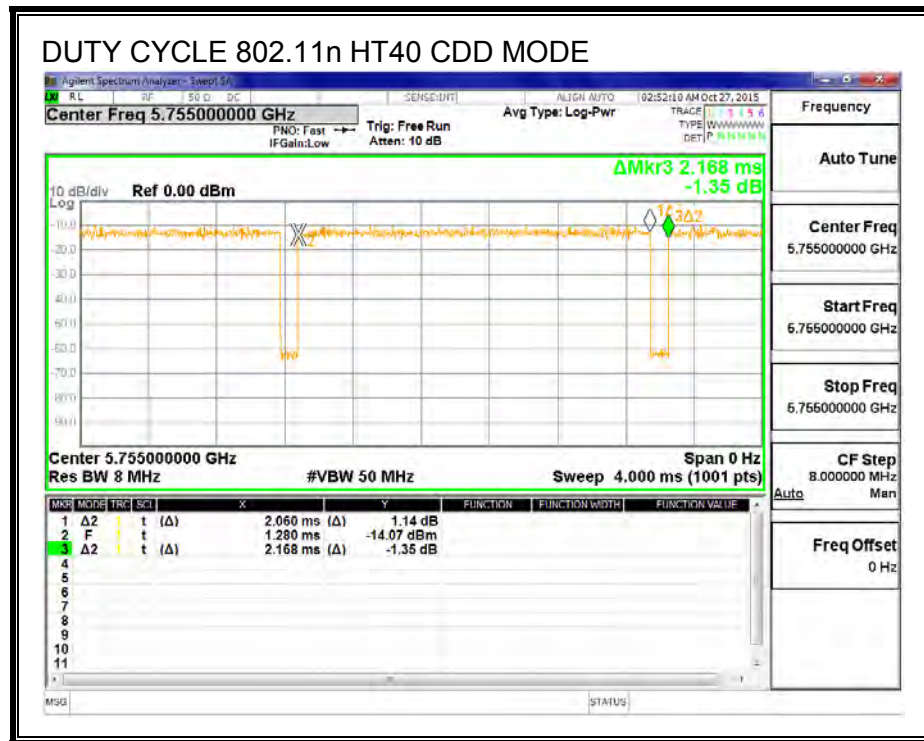
KDB 789033 Zero-Span Spectrum Analyzer Method.

ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
802.11a CDD	2.064	2.172	0.950	95.03%	0.22	0.484
802.11n HT20 CDD	1.920	2.022	0.950	94.96%	0.22	0.521
802.11n HT40 CDD	2.060	2.168	0.950	95.02%	0.22	0.485
802.11ac VHT80 CDD	0.460	0.488	0.943	94.26%	0.26	2.174

DUTY CYCLE PLOTS





9.2. 802.11a SISO MODE IN THE 5.8 GHz BAND

9.2.1. OUTPUT POWER

LIMITS

FCC §15.407 (a) (3)

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

DIRECTIONAL ANTENNA GAIN

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

RESULTS

Antenna Gain and Limit

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Power Limit (dBm)
Low	5745	3.16	30.00
Mid	5785	3.16	30.00
High	5825	3.16	30.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	20.30	20.30	30.00	-9.70
Mid	5785	19.64	19.64	30.00	-10.36
High	5825	19.17	19.17	30.00	-10.83

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

9.2.2. Maximum Power Spectral Density (PSD)

LIMITS

FCC §15.407 (a) (3)

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

DIRECTIONAL ANTENNA GAIN

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

RESULTS

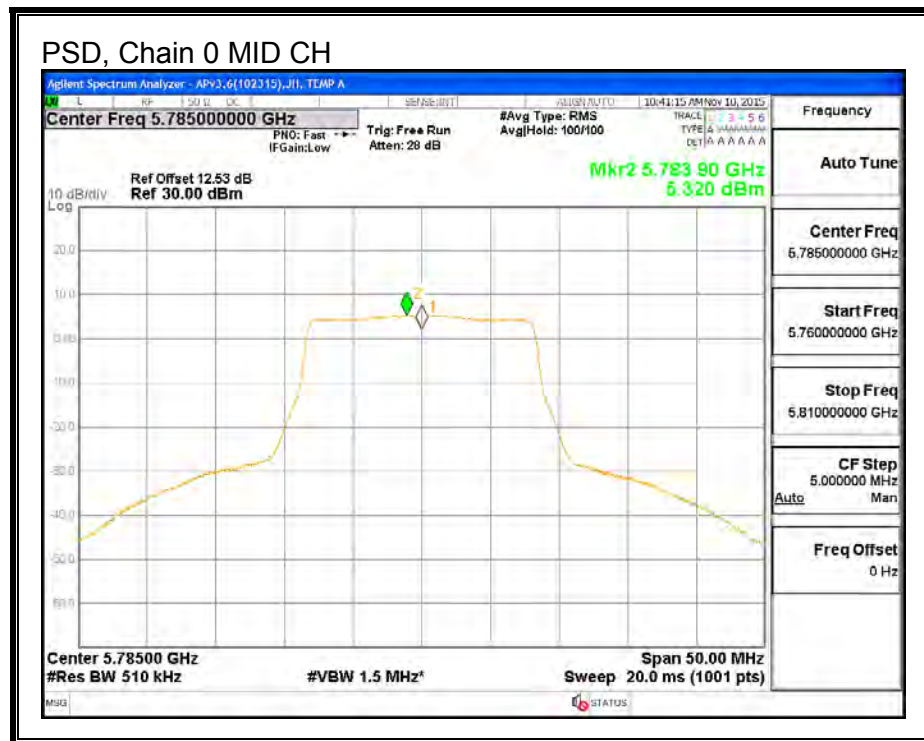
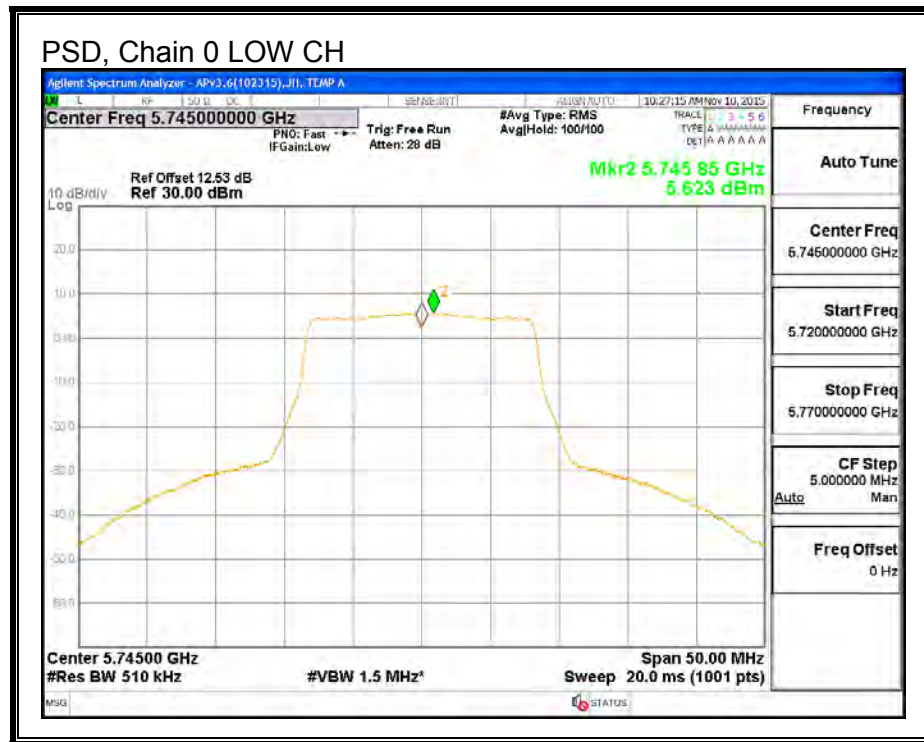
Antenna Gain and Limits

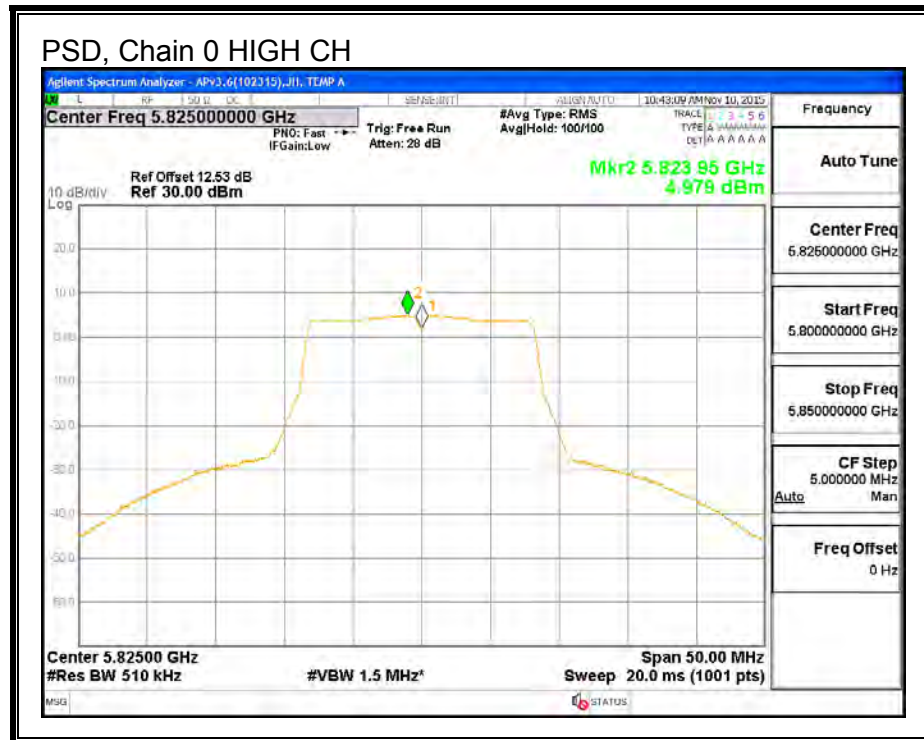
Channel	Frequency (MHz)	Directional Gain (dBi)	PSD Limit (dBm)
Low	5745	3.16	30.00
Mid	5785	3.16	30.00
High	5825	3.16	30.00

Duty Cycle CF (dB)	0.22	Included in Calculations of Corr'd PSD
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PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5745	5.623	5.84	30.00	-24.16
Mid	5785	5.320	5.54	30.00	-24.46
High	5825	4.979	5.20	30.00	-24.80

PSD, Chain 0



9.3. 802.11n HT20 SISO MODE IN THE 5.8 GHz BAND

9.3.1. OUTPUT POWER

LIMITS

FCC §15.407 (a) (3)

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

DIRECTIONAL ANTENNA GAIN

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

RESULTS

Antenna Gain and Limit

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Power Limit (dBm)
Low	5745	3.16	30.00
Mid	5785	3.16	30.00
High	5825	3.16	30.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	17.81	17.81	30.00	-12.19
Mid	5785	21.04	21.04	30.00	-8.96
High	5825	20.17	20.17	30.00	-9.83

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

9.3.2. Maximum Power Spectral Density (PSD)

LIMITS

FCC §15.407 (a) (3)

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

DIRECTIONAL ANTENNA GAIN

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

RESULTS

Antenna Gain and Limits

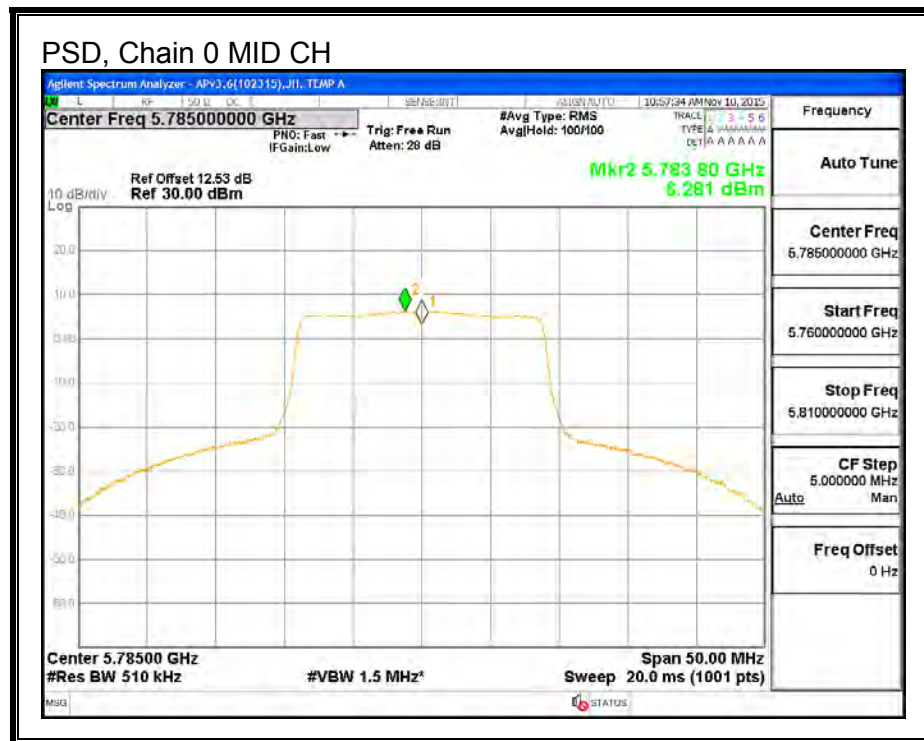
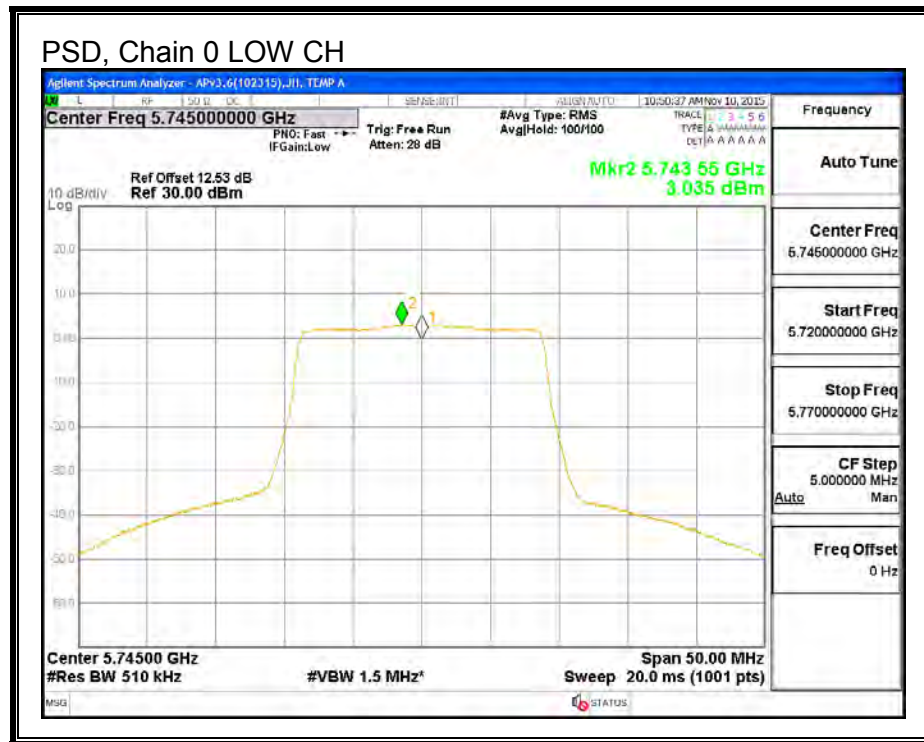
Channel	Frequency (MHz)	Directional Gain (dBi)	PSD Limit (dBm)
Low	5745	3.16	30.00
Mid	5785	3.16	30.00
High	5825	3.16	30.00

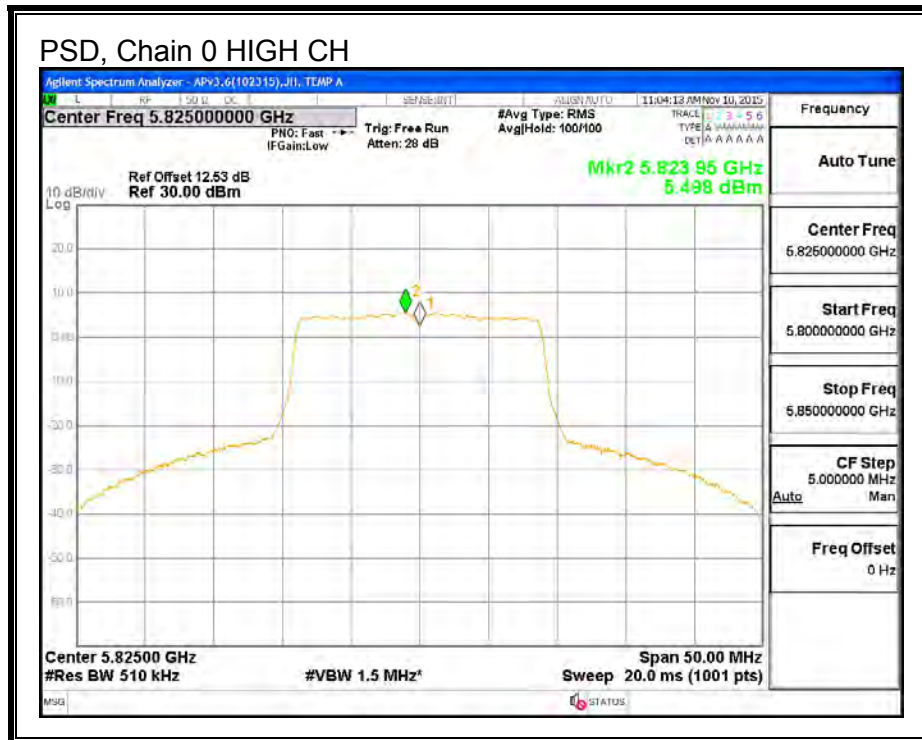
Duty Cycle CF (dB)	0.22	Included in Calculations of Corr'd PSD
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PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5745	3.035	3.26	30.00	-26.75
Mid	5785	6.281	6.50	30.00	-23.50
High	5825	5.498	5.72	30.00	-24.28

PSD, Chain 0





9.4. 802.11n HT20 3TX CDD MODE IN THE 5.8 GHz BAND

9.4.1. OUTPUT POWER

LIMITS

FCC §15.407 (a) (3)

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

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is the same for each chain. The directional gain is equal to the antenna gain.

RESULTS

Antenna Gain and Limit

Channel	Frequency (MHz)	Directional Gain (dBi)	Power Limit (dBm)
Low	5745	3.16	30.00
Mid	5785	3.16	30.00
High	5825	3.16	30.00

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	15.98	15.77	15.65	20.57	30.00	-9.43
Mid	5785	15.26	15.19	15.00	19.92	30.00	-10.08
High	5825	17.83	17.98	17.64	22.59	30.00	-7.41

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

9.4.2. Maximum Power Spectral Density (PSD)

LIMITS

FCC §15.407 (a) (3)

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

DIRECTIONAL ANTENNA GAIN

The TX chains are correlated and the antenna gain is the same for each chain. The directional gain is:

Antenna Gain (dBi)	10 * Log (3 chains) (dB)	Correlated Chains Directional Gain (dBi)
3.16	4.77	7.93

RESULTS

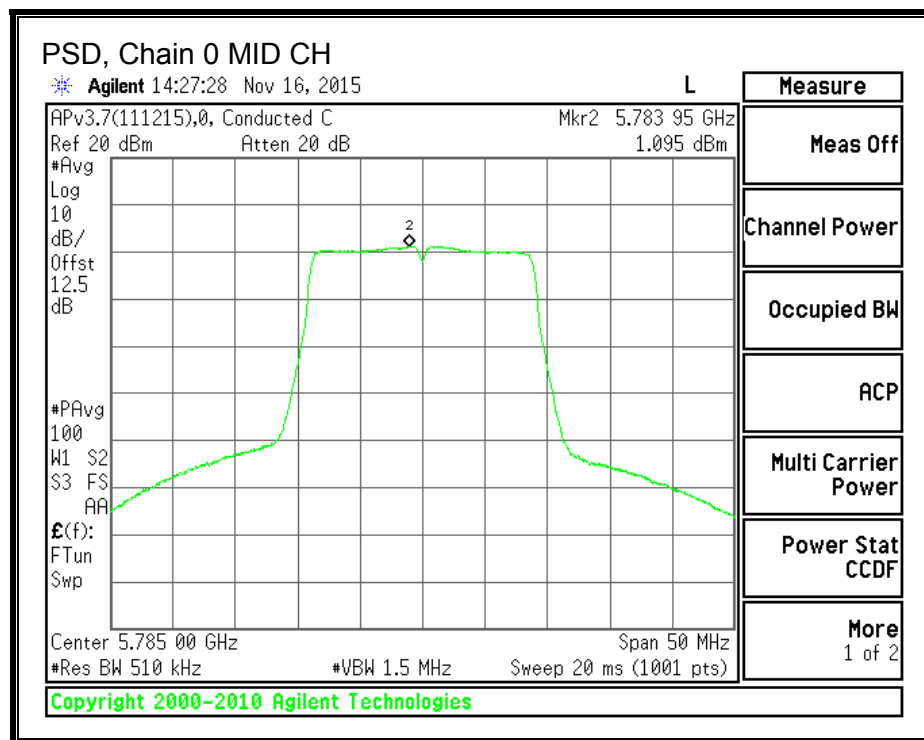
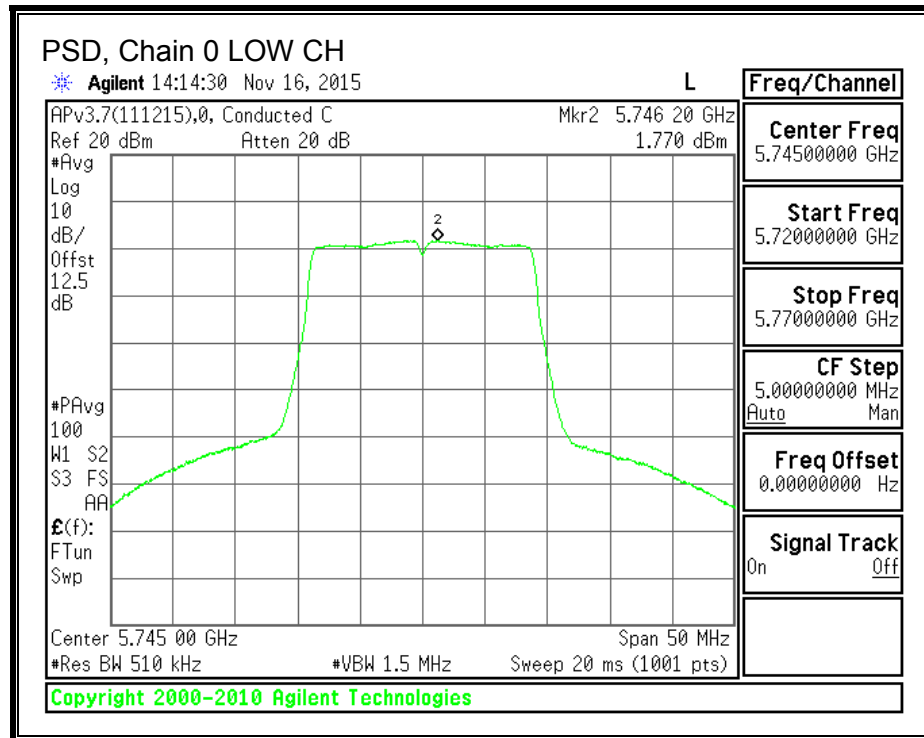
Antenna Gain and Limit

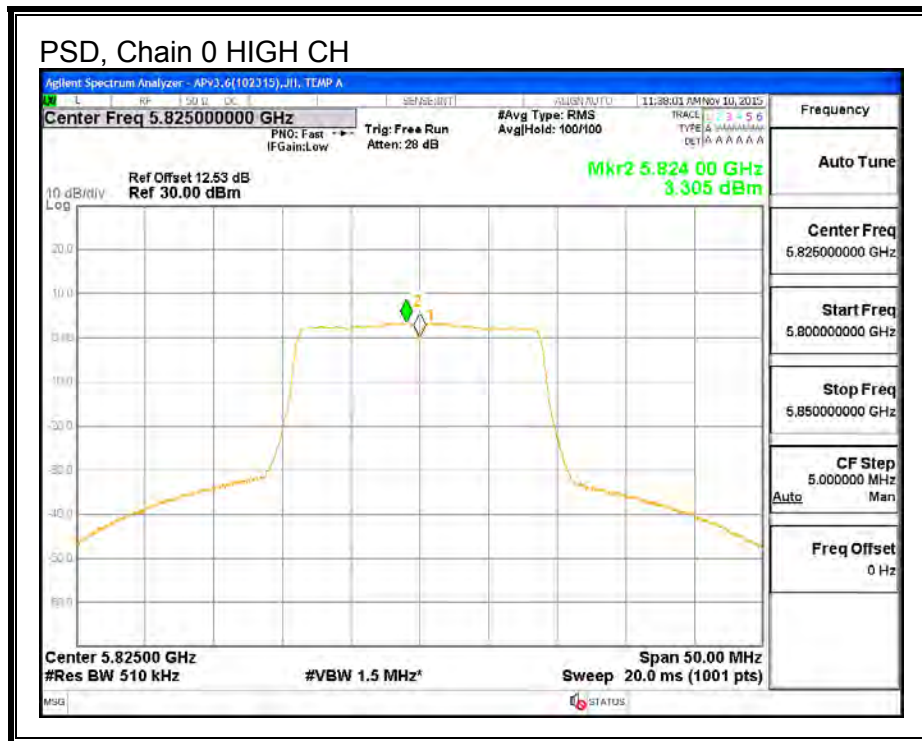
Channel	Frequency (MHz)	Directional Gain (dBi)	PSD Limit (dBm)
Low	5745	7.93	28.07
Mid	5785	7.93	28.07
High	5825	7.93	28.07

Duty Cycle CF (dB)	0.22	Included in Calculations of Corr'd PSD
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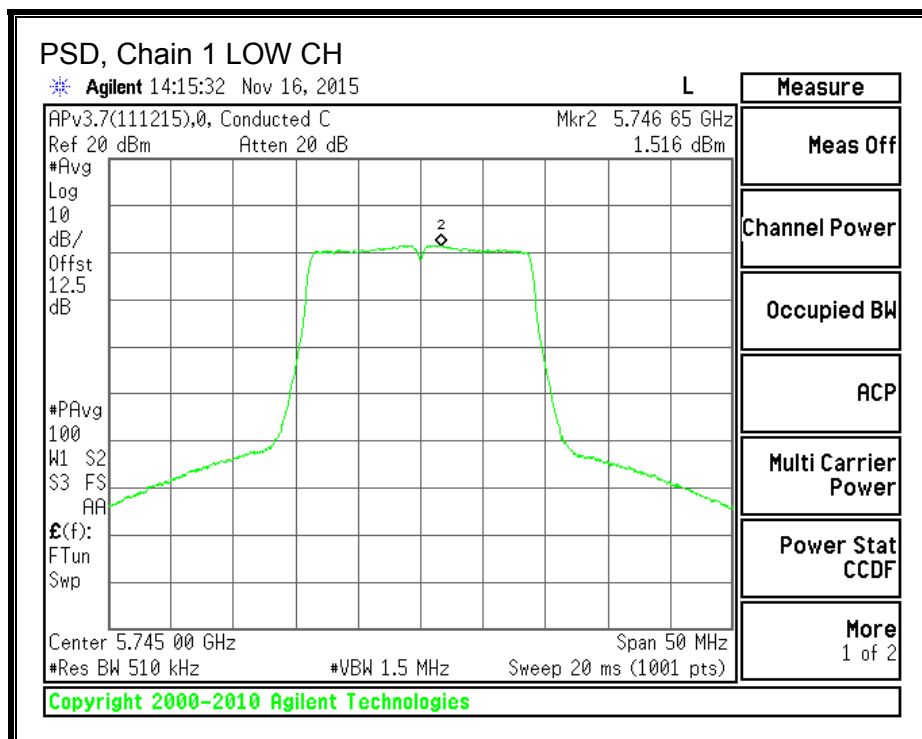
PSD Results

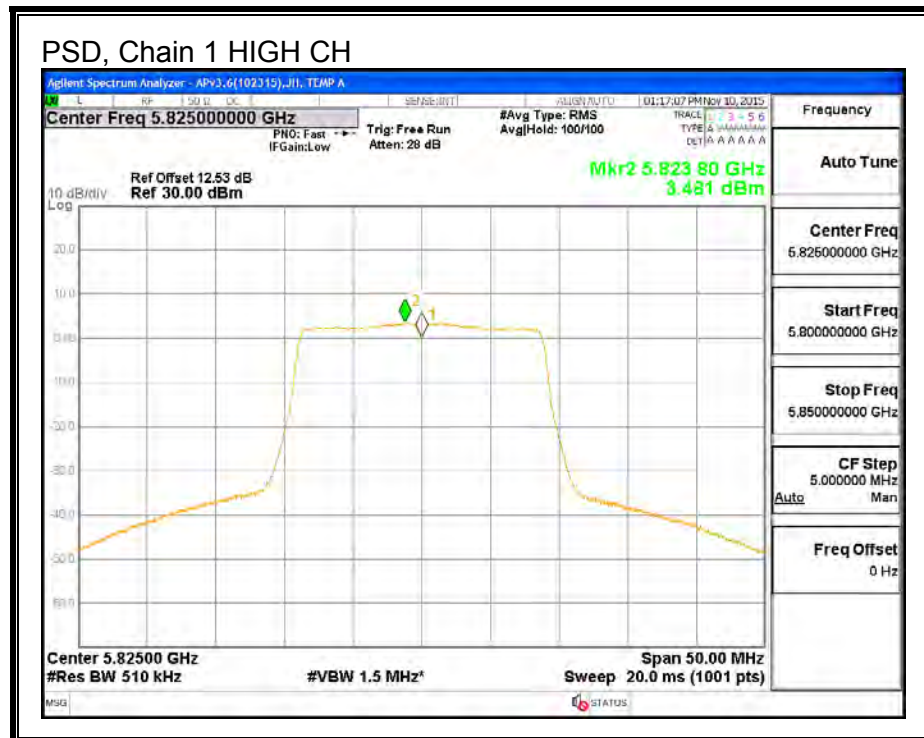
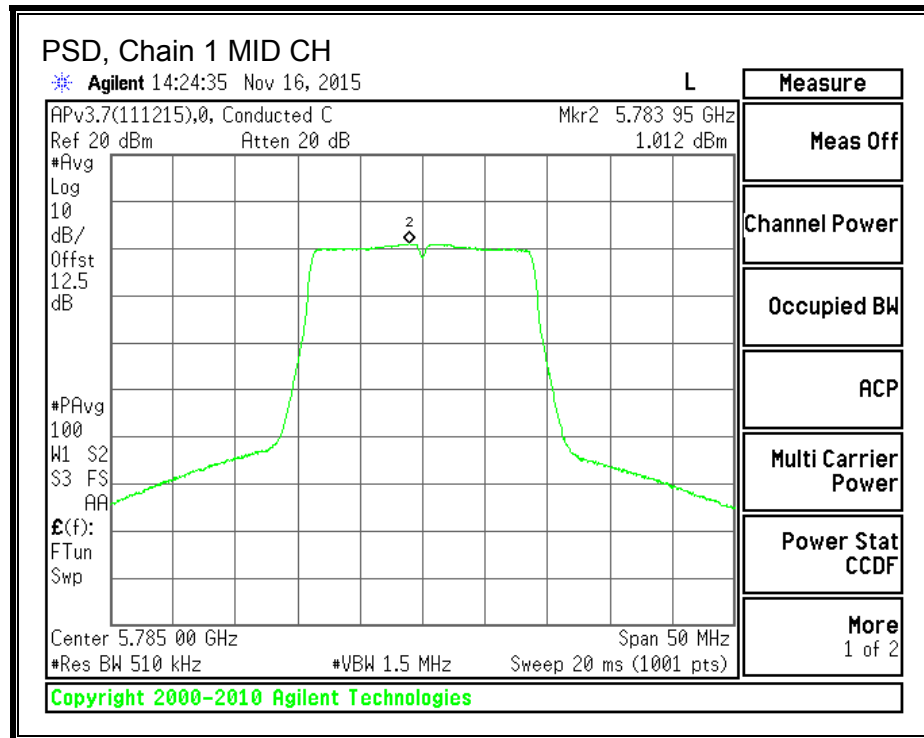
Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Chain 2 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5745	1.770	1.516	1.196	6.49	28.07	-21.58
Mid	5785	1.095	1.012	0.676	5.92	28.07	-22.15
High	5825	3.305	3.481	2.912	8.23	28.07	-19.84

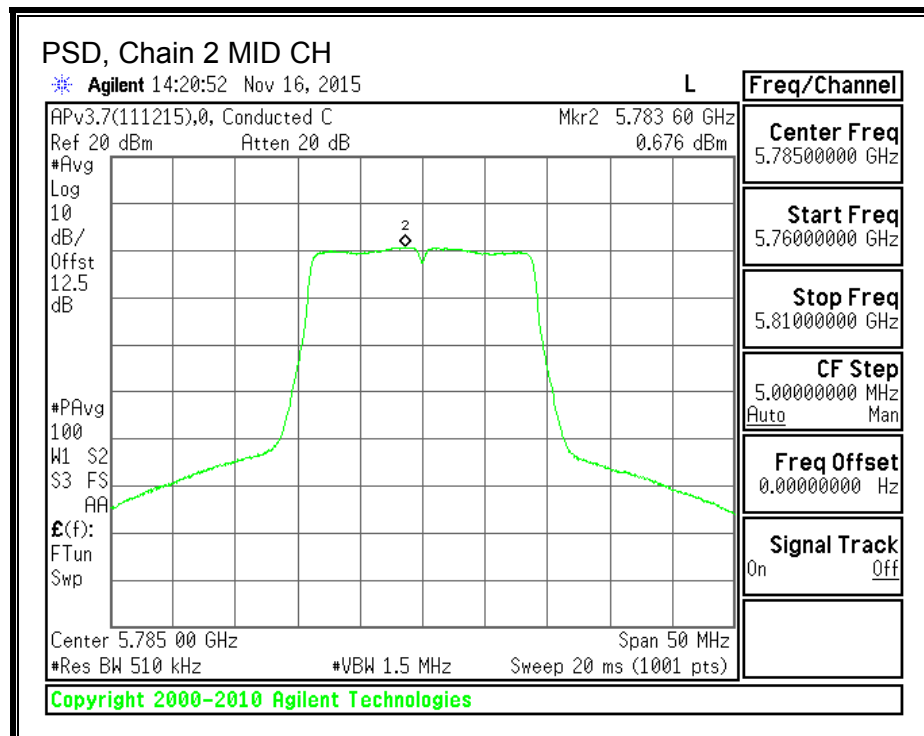
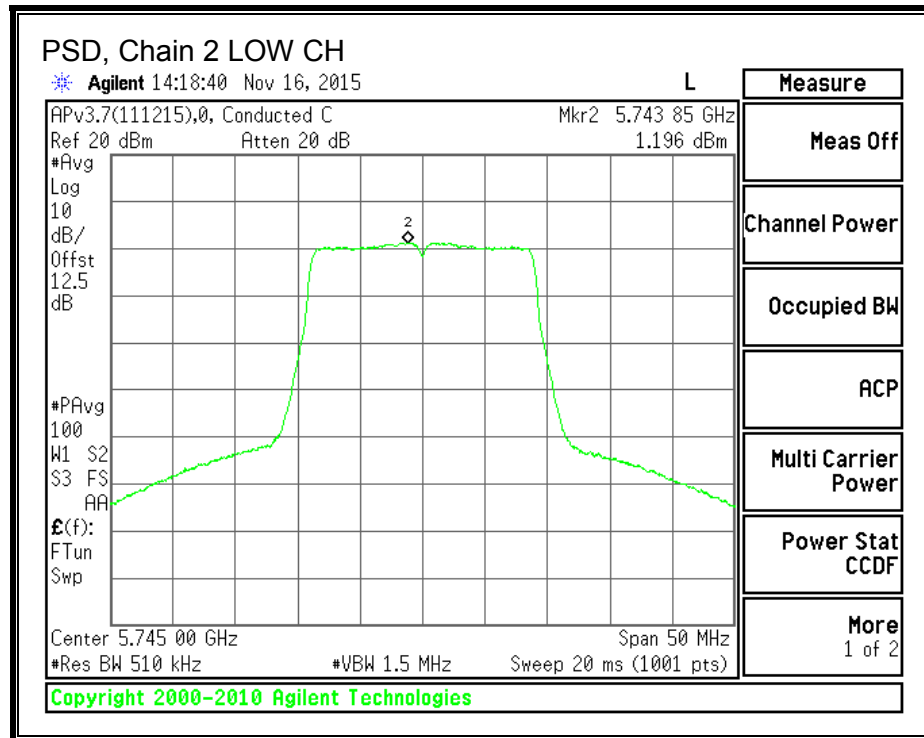
PSD, Chain 0



PSD, Chain 1





PSD, Chain 2



9.5. 802.11n HT40 SISO MODE IN THE 5.8 GHz BAND

9.5.1. OUTPUT POWER

LIMITS

FCC §15.407 (a) (3)

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

DIRECTIONAL ANTENNA GAIN

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

RESULTS

Antenna Gain and Limit

Channel	Frequency (MHz)	Directional Gain (dBi)	Power Limit (dBm)
Low	5755	3.16	30.00
High	5795	3.16	30.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5755	17.42	17.42	30.00	-12.58
High	5795	20.64	20.64	30.00	-9.36

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

9.5.2. Maximum Power Spectral Density (PSD)

LIMITS

FCC §15.407 (a) (3)

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

DIRECTIONAL ANTENNA GAIN

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

RESULTS

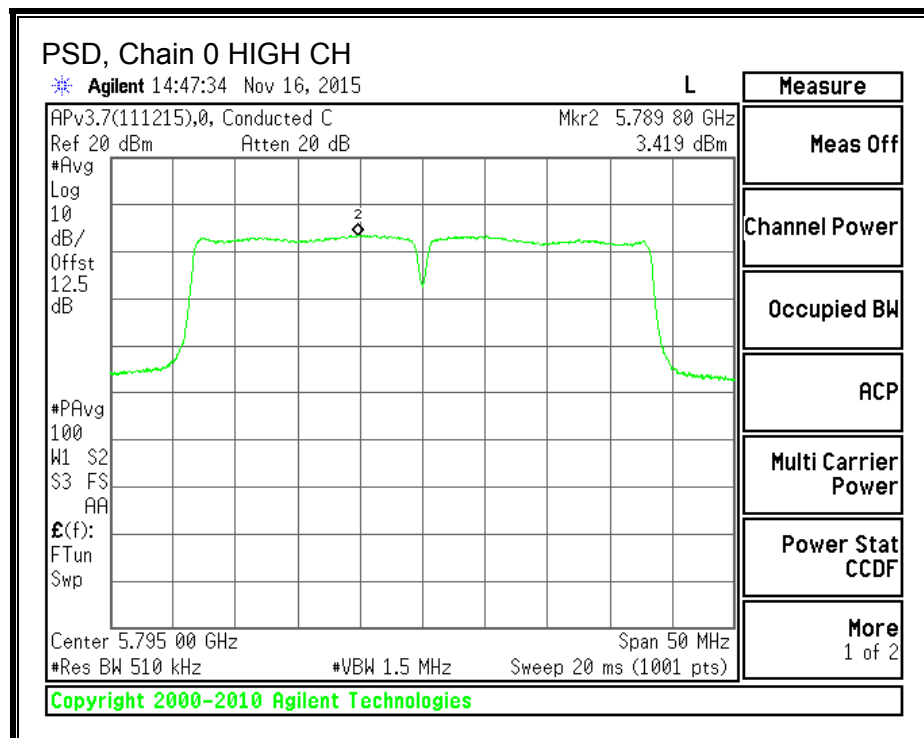
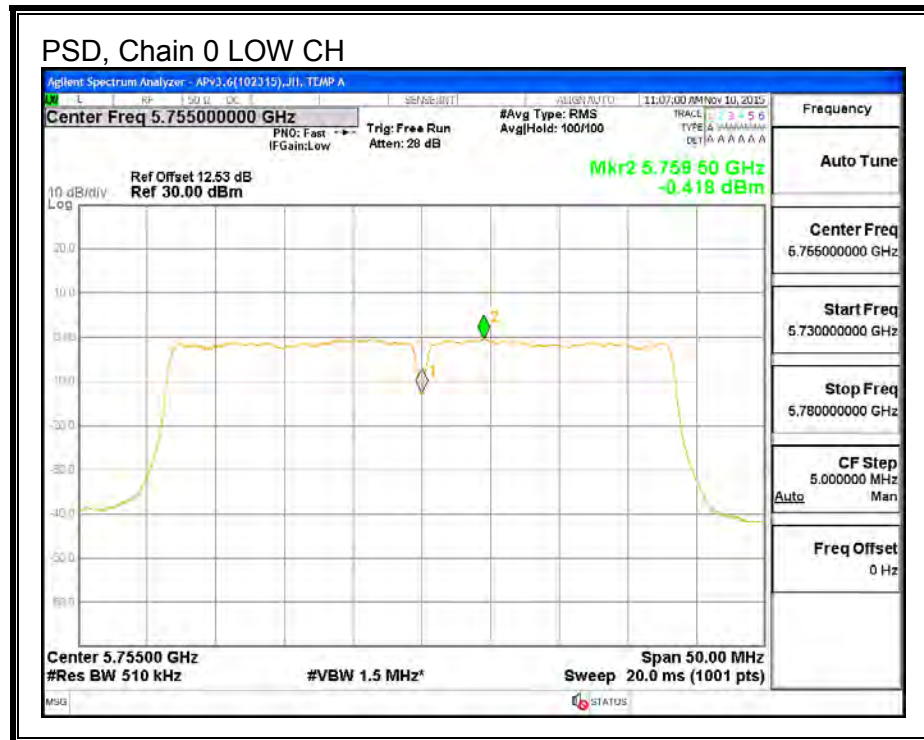
Antenna Gain and Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	PSD Limit (dBm)
Low	5755	3.16	30.00
High	5795	3.16	30.00

Duty Cycle CF (dB)	0.22	Included in Calculations of Corr'd PSD
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PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5755	-0.418	-0.20	30.00	-30.20
High	5795	3.419	3.64	30.00	-26.36

PSD, Chain 0

9.6. 802.11n HT40 3TX CDDMODE IN THE 5.8 GHz BAND

9.6.1. OUTPUT POWER

LIMITS

FCC §15.407 (a) (3)

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

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is the same for each chain. The directional gain is equal to the antenna gain.

RESULTS

Antenna Gain and Limit

Channel	Frequency	Directional Gain	Power Limit
	(MHz)	(dBi)	(dBm)
Low	5755	3.16	30.00
High	5795	3.16	30.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power
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Output Power Results

Channel	Frequency	Chain 0 Meas Power	Chain 1 Meas Power	Chain 2 Meas Power	Total Corr'd Power	Power Limit	Power Margin
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5755	15.17	14.95	14.63	19.69	30.00	-10.31
High	5795	19.65	19.87	19.53	24.46	30.00	-5.54

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

9.6.1. Maximum Power Spectral Density (PSD)

LIMITS

FCC §15.407 (a) (3)

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

DIRECTIONAL ANTENNA GAIN

The TX chains are correlated and the antenna gain is the same for each chain. The directional gain is:

Antenna Gain (dBi)	10 * Log (3 chains) (dB)	Correlated Chains Directional Gain (dBi)
3.16	4.77	7.93

RESULTS

Antenna Gain and Limit

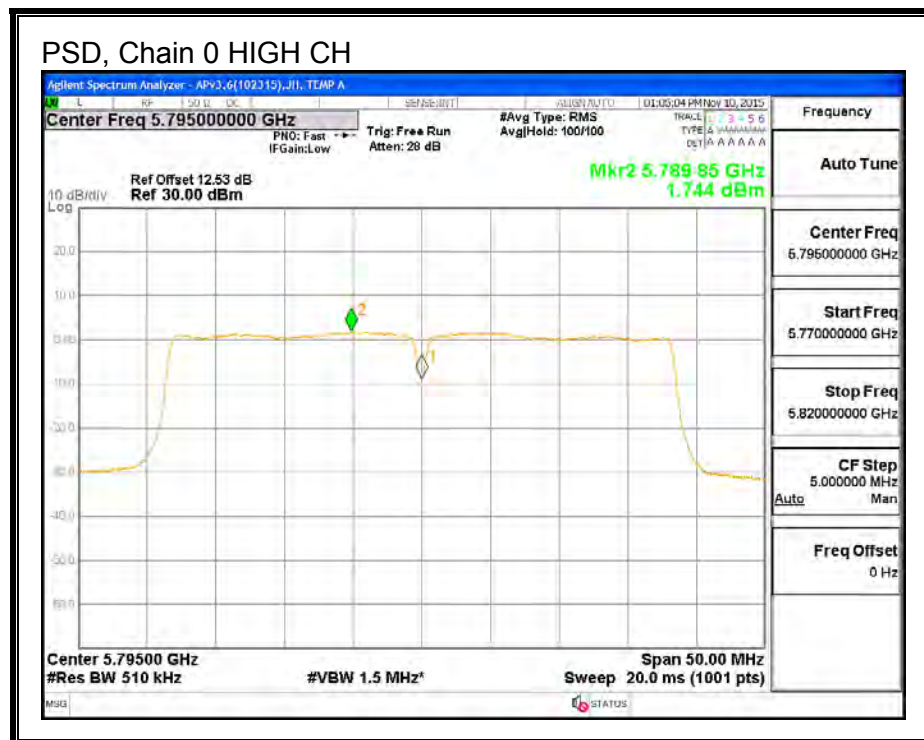
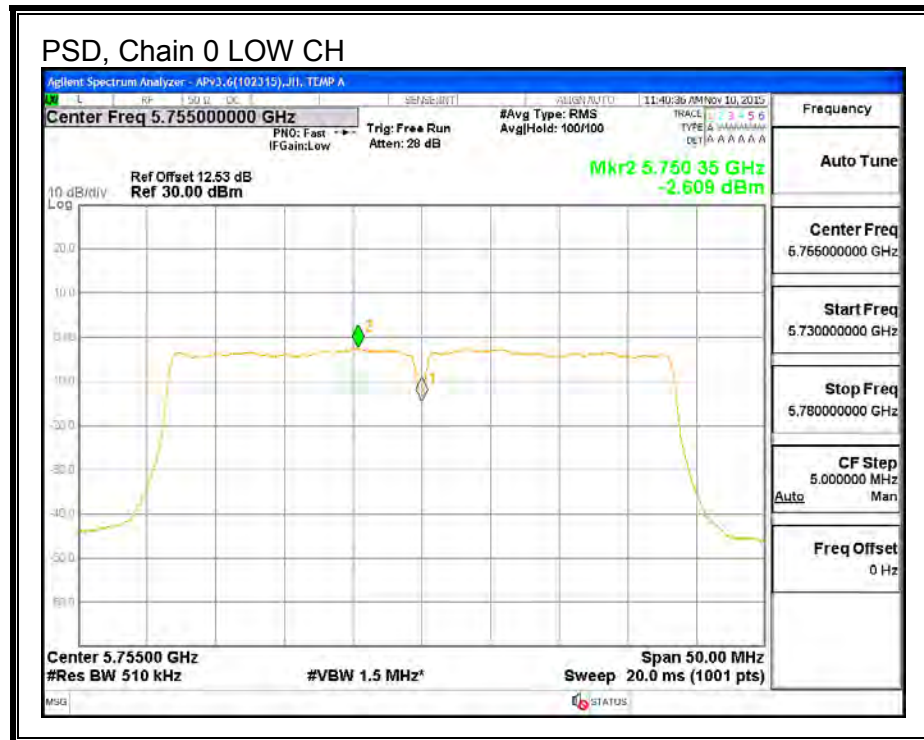
Channel	Frequency (MHz)	Directional Gain (dBi)	PSD Limit (dBm)
Low	5755	7.93	28.07
High	5795	7.93	28.07

Duty Cycle CF (dB)	0.22	Included in Calculations of Corr'd PSD
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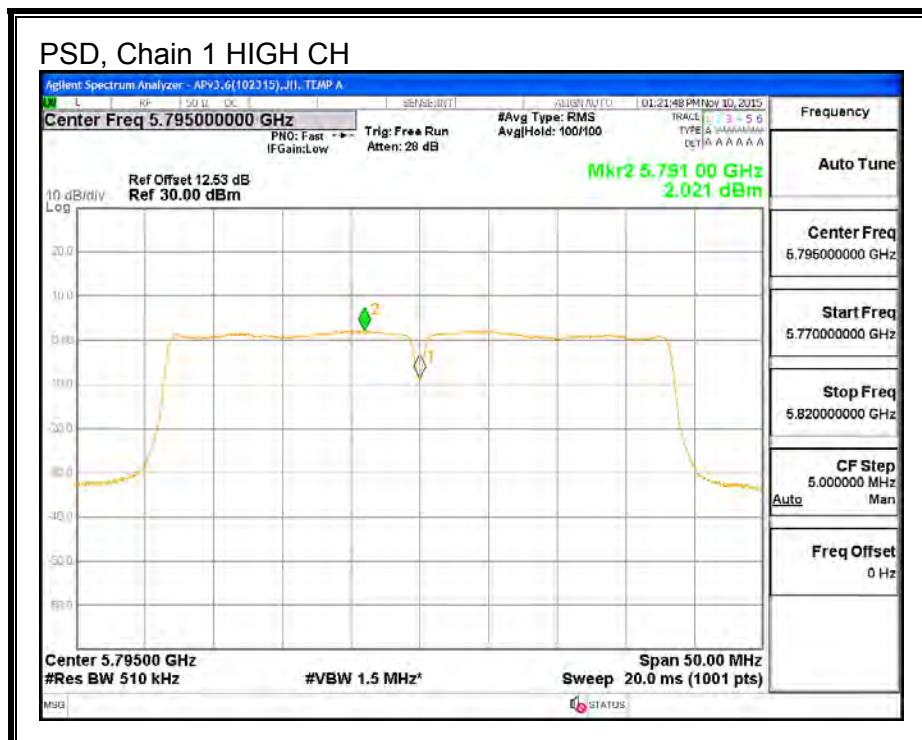
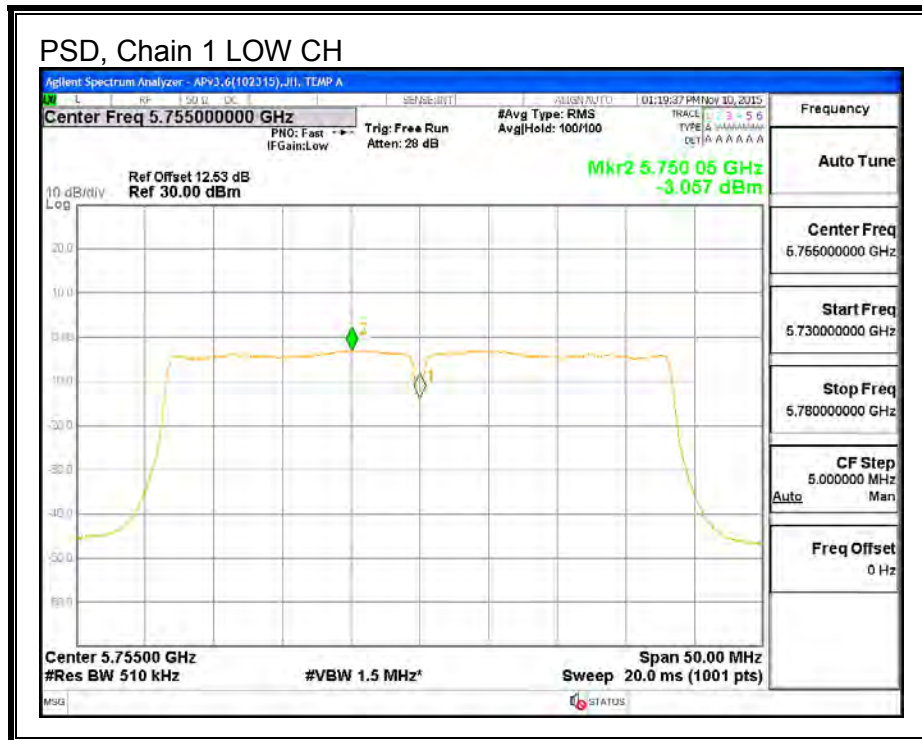
PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Chain 2 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5755	-2.609	-3.057	-3.358	1.99	28.07	-26.08
High	5795	1.744	2.021	1.835	6.86	28.07	-21.21

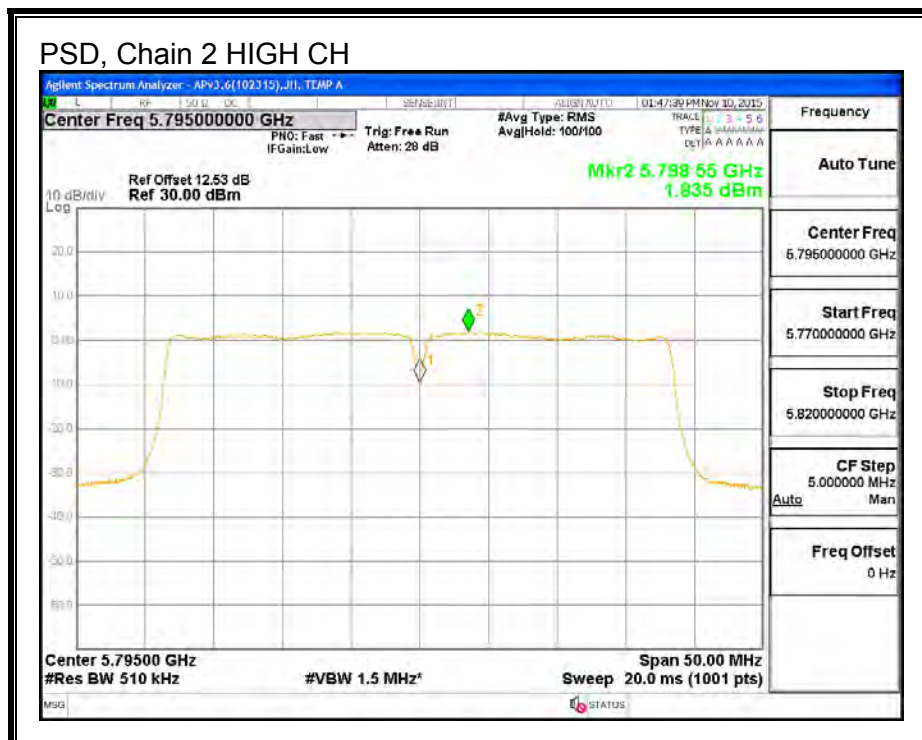
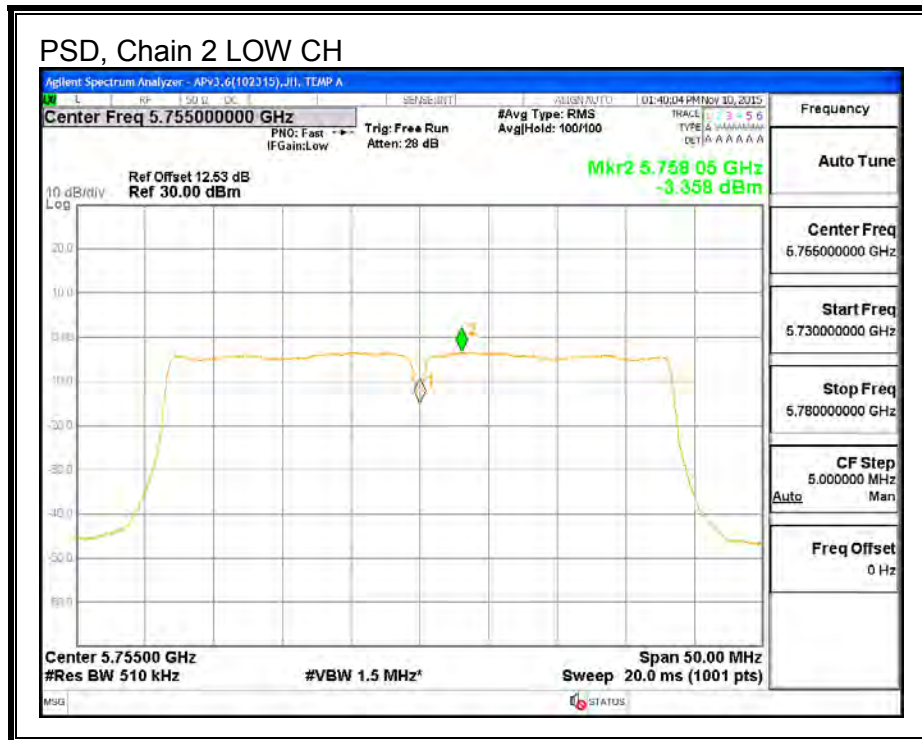
PSD, Chain 0



PSD, Chain 1



PSD, Chain 2



9.7. 802.11ac VHT80 SISO MODE IN THE 5.8 GHz BAND

9.7.1. OUTPUT POWER

LIMITS

FCC §15.407 (a) (3)

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

DIRECTIONAL ANTENNA GAIN

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

RESULTS

Antenna Gain and Limit

Channel	Frequency (MHz)	Directional Gain (dBi)	Power Limit (dBm)
Mid	5775	3.16	30.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Mid	5775	15.44	15.44	30.00	-14.56

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

9.7.2. Maximum Power Spectral Density (PSD)

LIMITS

FCC §15.407 (a) (3)

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

DIRECTIONAL ANTENNA GAIN

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

RESULTS

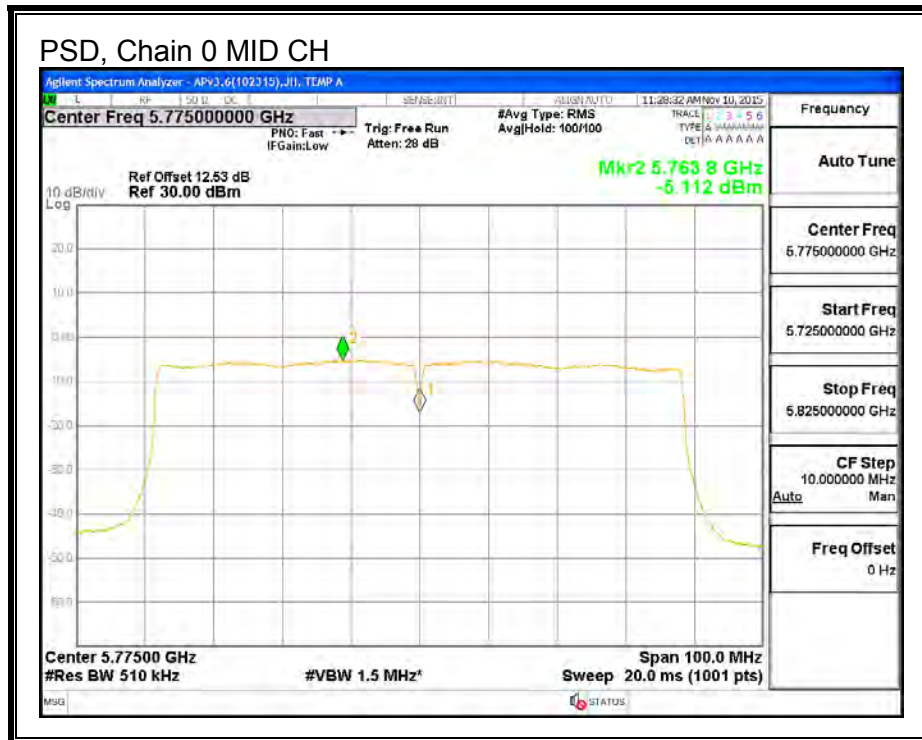
Antenna Gain and Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	PSD Limit (dBm)
Mid	5755	3.16	30.00

Duty Cycle CF (dB)	0.26	Included in Calculations of Corr'd PSD
---------------------------	------	---

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Mid	5755	-5.112	-4.85	30.00	-34.85



9.8. 802.11ac VHT80 3TX CDD MODE IN THE 5.8 GHz BAND

9.8.1. OUTPUT POWER

LIMITS

FCC §15.407 (a) (3)

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

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is the same for each chain. The directional gain is equal to the antenna gain.

RESULTS

Antenna Gain and Limit

Channel	Frequency (MHz)	Directional Gain (dBi)	Power Limit (dBm)
Mid	5775	3.16	30.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Mid	5775	15.45	15.77	15.67	20.40	30.00	-9.60

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

9.8.2. Maximum Power Spectral Density (PSD)

LIMITS

FCC §15.407 (a) (3)

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

DIRECTIONAL ANTENNA GAIN

The TX chains are correlated and the antenna gain is the same for each chain. The directional gain is:

Antenna Gain (dBi)	10 * Log (3 chains) (dB)	Correlated Chains Directional Gain (dBi)
3.16	4.77	7.93

RESULTS

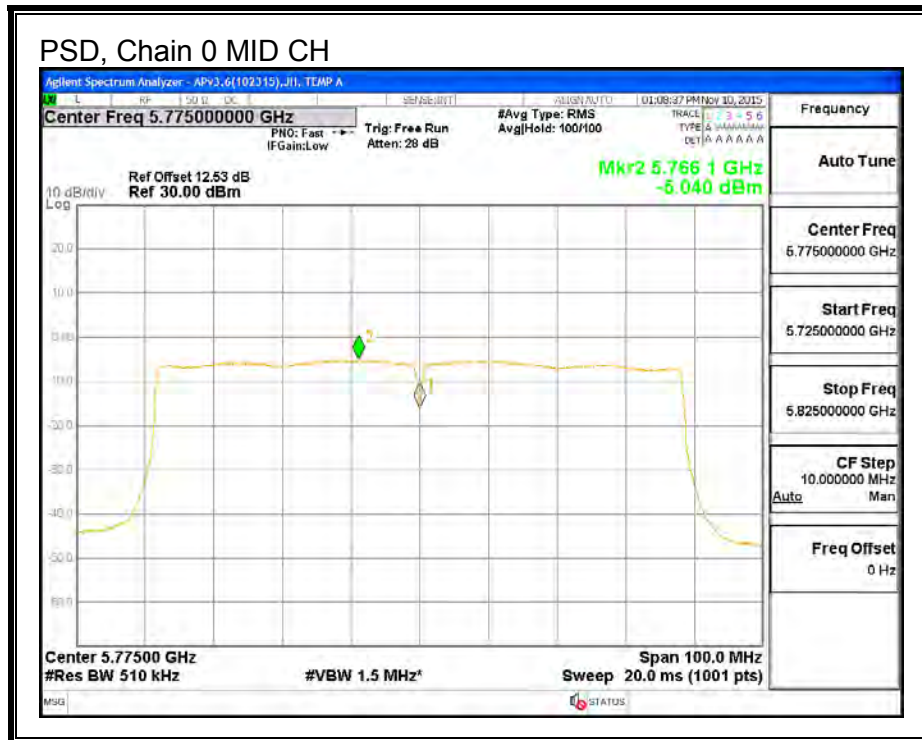
Antenna Gain and Limit

Channel	Frequency (MHz)	Directional Gain (dBi)	PSD Limit (dBm)
Mid	5775	7.93	28.07

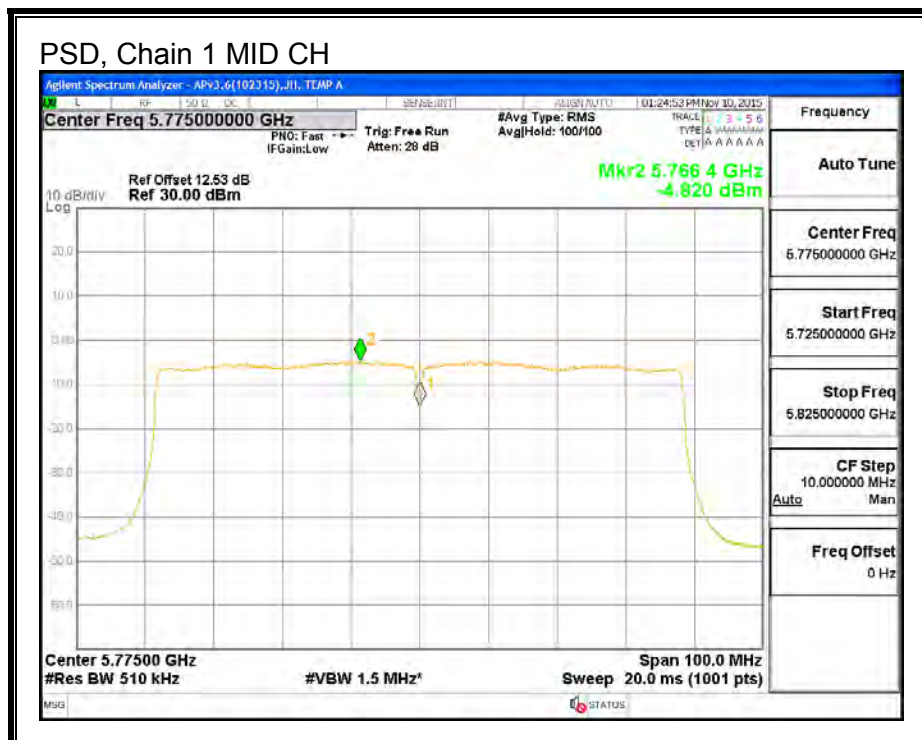
Duty Cycle CF (dB)	0.26	Included in Calculations of Corr'd PSD
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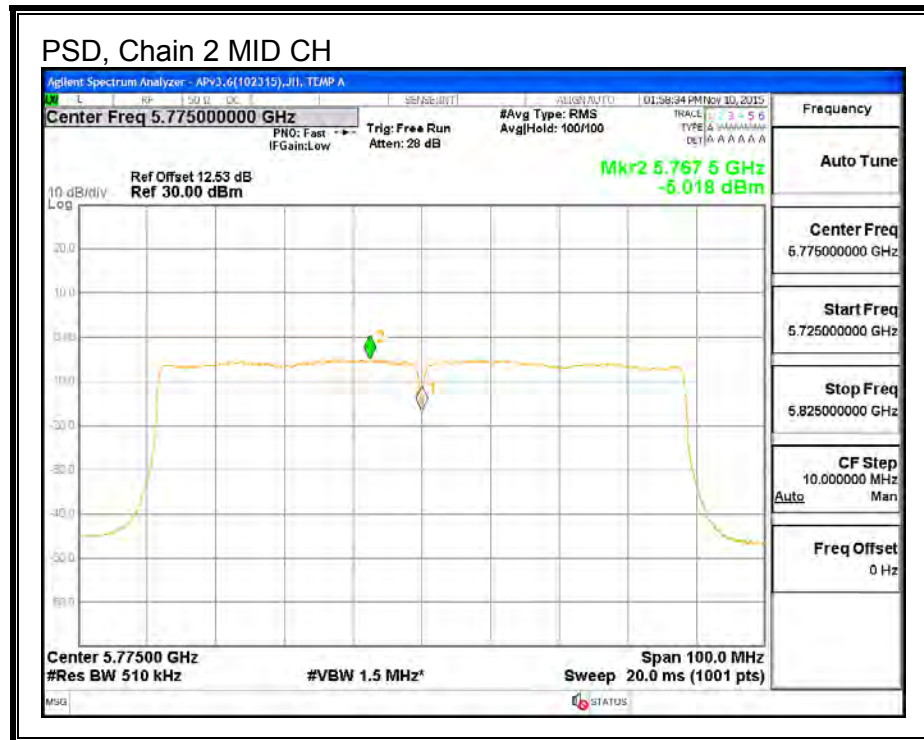
PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Chain 2 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Mid	5775	-5.040	-4.820	-5.018	0.07	28.07	-28.00



PSD, Chain 1



PSD, Chain 2

10. RADIATED TEST RESULTS

10.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

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

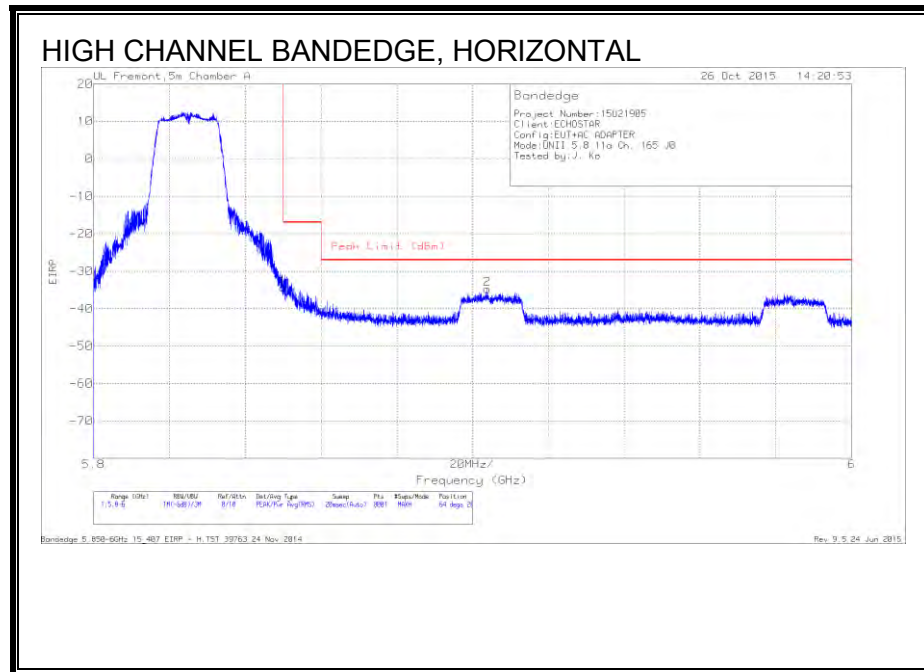


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Filt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.664	48.13	Pk	34.6	-21	0	61.73	-	-	74	-12.27	239	176	V
6	5.664	39.11	RMS	34.6	-21	.22	52.93	54	-1.07	-	-	239	176	V
1	5.715	43.36	Pk	34.7	-20.8	0	57.26	-	-	74	-16.74	239	176	V
5	5.715	33.43	RMS	34.7	-20.8	.22	47.55	54	-6.45	-	-	239	176	V
4	5.723	62.35	Pk	34.7	-20.7	0	76.35	-	-	78.2	-1.85	239	176	V
3	5.725	59.43	Pk	34.7	-20.7	0	73.43	-	-	78.2	-4.77	239	176	V
7	5.725	47.42	RMS	34.7	-20.7	.22	61.64	-	-	-	-	239	176	V
8	5.725	47.73	RMS	34.7	-20.7	.22	61.95	-	-	-	-	239	176	V

Pk - Peak detector

RMS - RMS detection

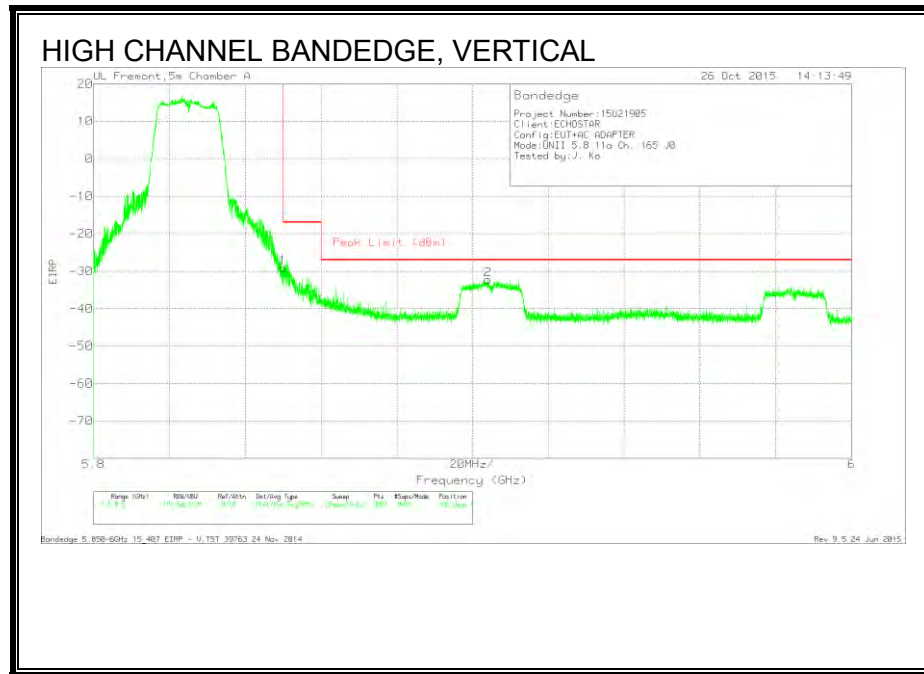
AUTHORIZED BANDEDGE (HIGH CHANNEL)



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-61.02	Pk	35.1	-20.3	11.8	-34.42	-17	-17.42	64	204	H
2	5.904	-61.6	Pk	35.2	-20.2	11.8	-34.8	-27	-7.8	64	204	H

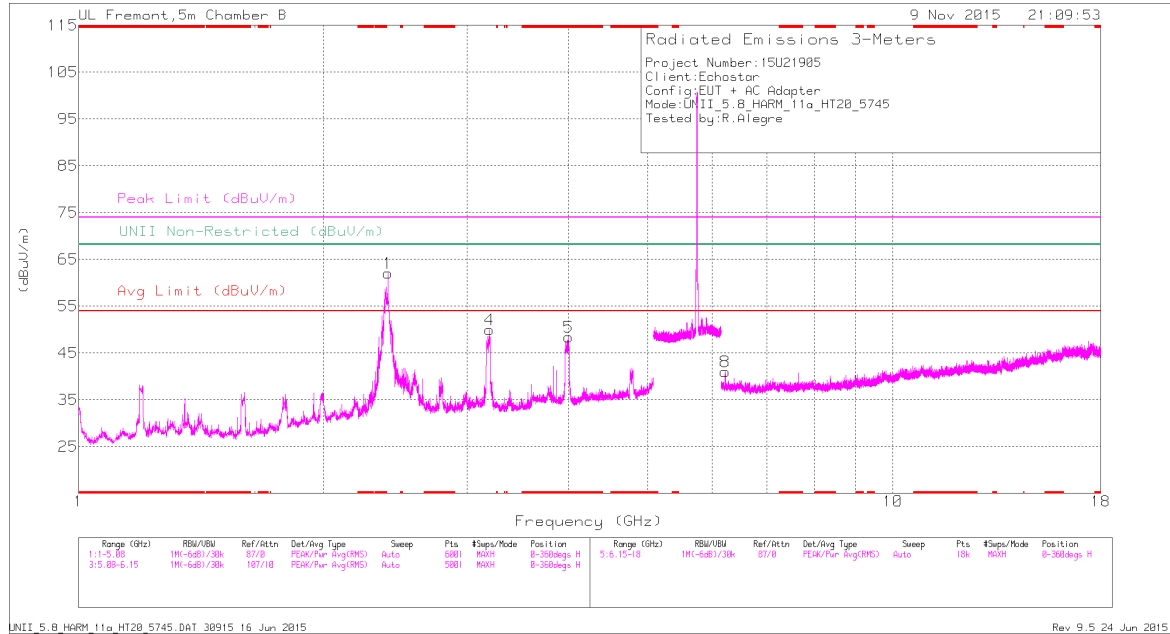
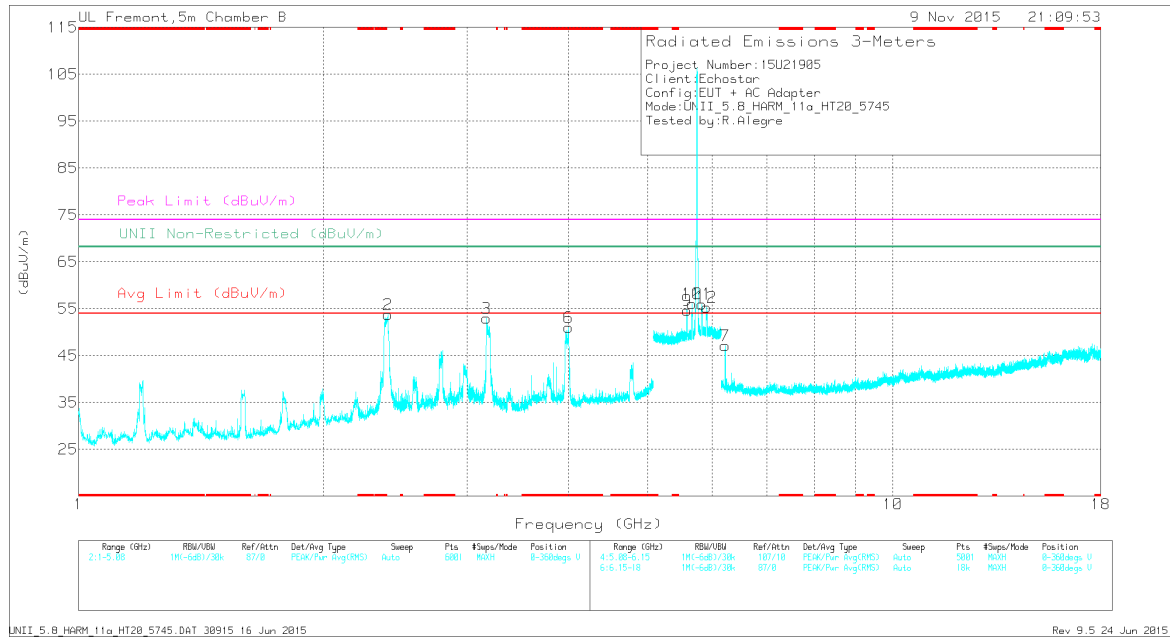
Pk - Peak detector



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-55.79	Pk	35.1	-20.3	11.8	-29.19	-17	-12.19	106	189	V
2	5.904	-59.03	Pk	35.2	-20.2	11.8	-32.23	-27	-5.23	106	189	V

Pk - Peak detector

HARMONICS AND SPURIOUS EMISSIONS**LOW CHANNEL HORIZONTAL PLOT****LOW CHANNEL VERTICAL PLOT**

DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filtz/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
5	* 3.999	56.71	PK-U	33.3	-31.4	0	58.61	-	-	74	-15.39	-	-	36	231	H
	* 3.998	37.37	ADR	33.3	-31.4	.22	39.49	54	-14.51	-	-	-	-	36	231	H
6	* 3.997	58.75	PK-U	33.3	-31.5	0	60.55	-	-	74	-13.45	-	-	334	209	V
	* 3.997	40.21	ADR	33.3	-31.5	.22	42.23	54	-11.77	-	-	-	-	334	209	V
1	2.4	69.49	PK-U	32	-34.1	0	67.39	-	-	-	-	68.2	-.81	339	159	H
2	2.4	65.26	PK-U	32	-34.1	0	63.16	-	-	-	-	68.2	-5.04	294	139	V
3	3.168	63.03	PK-U	32.8	-32.6	0	63.23	-	-	-	-	68.2	-4.97	329	152	V
4	3.192	57.26	PK-U	32.7	-33	0	56.96	-	-	-	-	68.2	-11.24	359	119	H
9	5.587	49.8	PK-U	34.5	-20.2	0	64.1	-	-	-	-	68.2	-4.1	57	182	V
10	**5.663	41.43	Pk	34.6	-20	0	56.03	-	-	-	-	68.2	-12.17	0-360	200	V
11	***5.824	40.32	Pk	35	-19.3	0	56.02	-	-	-	-	68.2	-12.18	0-360	200	V
12	5.902	48.33	PK-U	35.2	-19.3	0	64.23	-	-	-	-	68.2	-3.97	108	201	V
8	6.224	42.76	PK-U	35.5	-28	0	50.26	-	-	-	-	68.2	-17.94	8	104	H
7	6.224	47.2	PK-U	35.5	-28	0	54.7	-	-	-	-	68.2	-13.5	289	238	V

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

** - indicates frequency covered by bandedge measurement

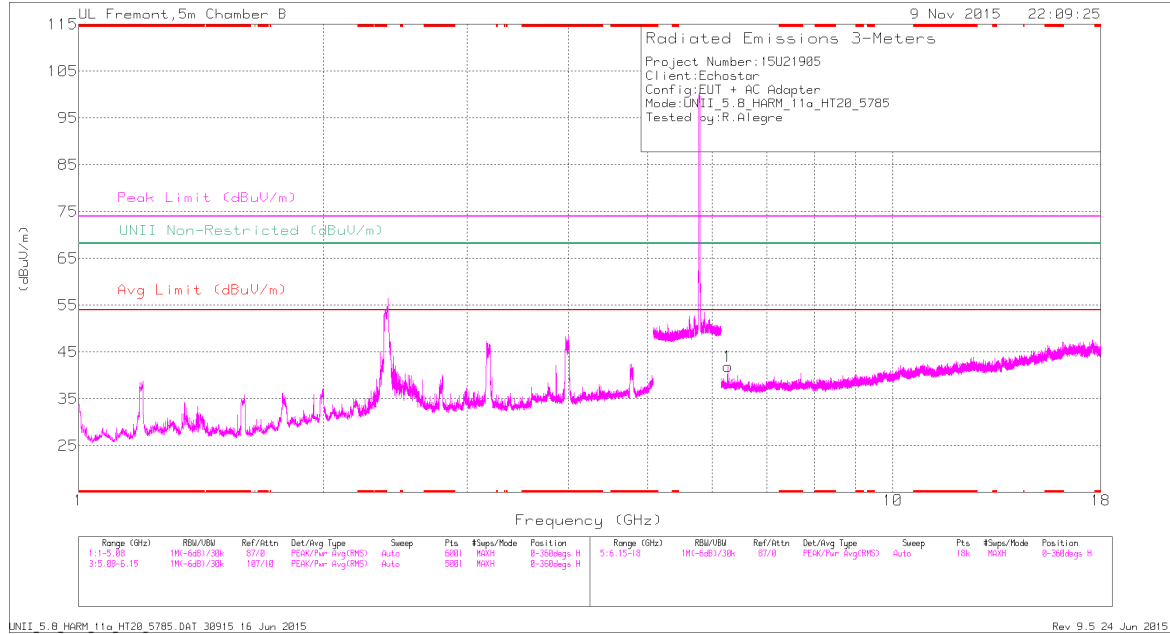
*** - indicates frequency inside the authorized band

Pk - Peak detector

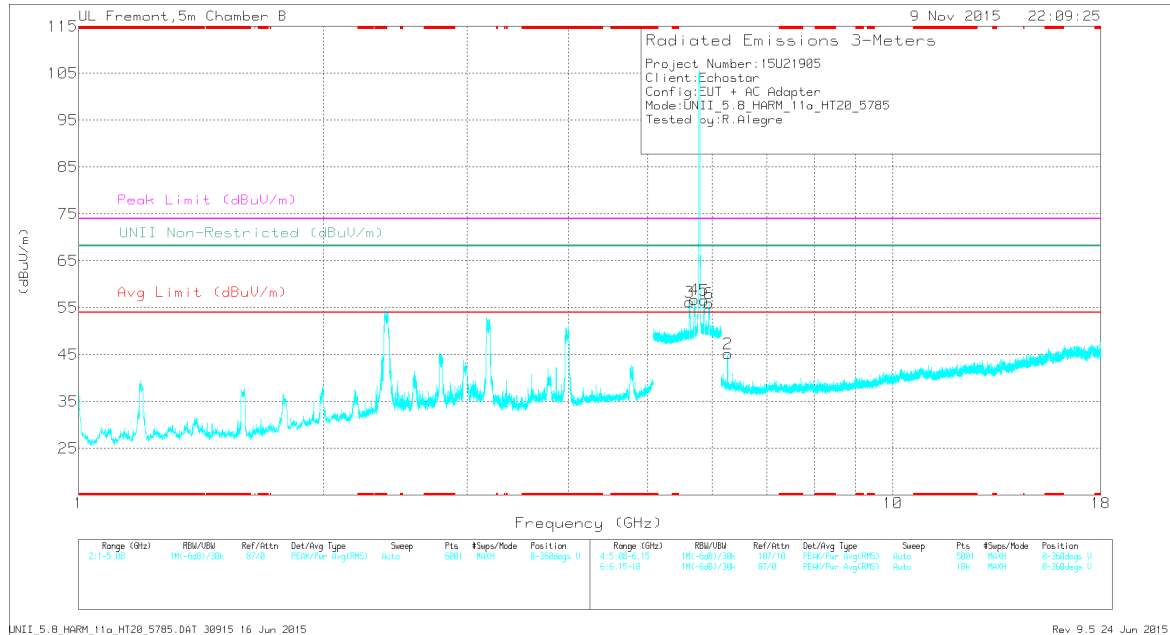
PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

MID CHANNEL HORIZONTAL PLOT



MID CHANNEL VERTICAL PLOT



DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fitr/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
3	5.629	49.88	PK-U	34.5	-20.1	0	64.28	-	-	-	-	68.2	-3.92	113	160	V
4	5.704	49.96	PK-U	34.7	-19.8	0	64.86	-	-	-	-	68.2	-3.34	118	187	V
5	*5.867	49.3	PK-U	35.1	-19.3	0	65.1	-	-	-	-	68.2	-3.1	112	181	V
6	*5.946	48.82	PK-U	35.3	-19.3	0	64.82	-	-	-	-	68.2	-3.38	37	208	V
2	6.266	46.3	PK-U	35.5	-28	0	53.8	-	-	-	-	68.2	-14.4	187	210	V
1	6.267	41.59	PK-U	35.5	-28	0	49.09	-	-	-	-	68.2	-19.11	9	102	H

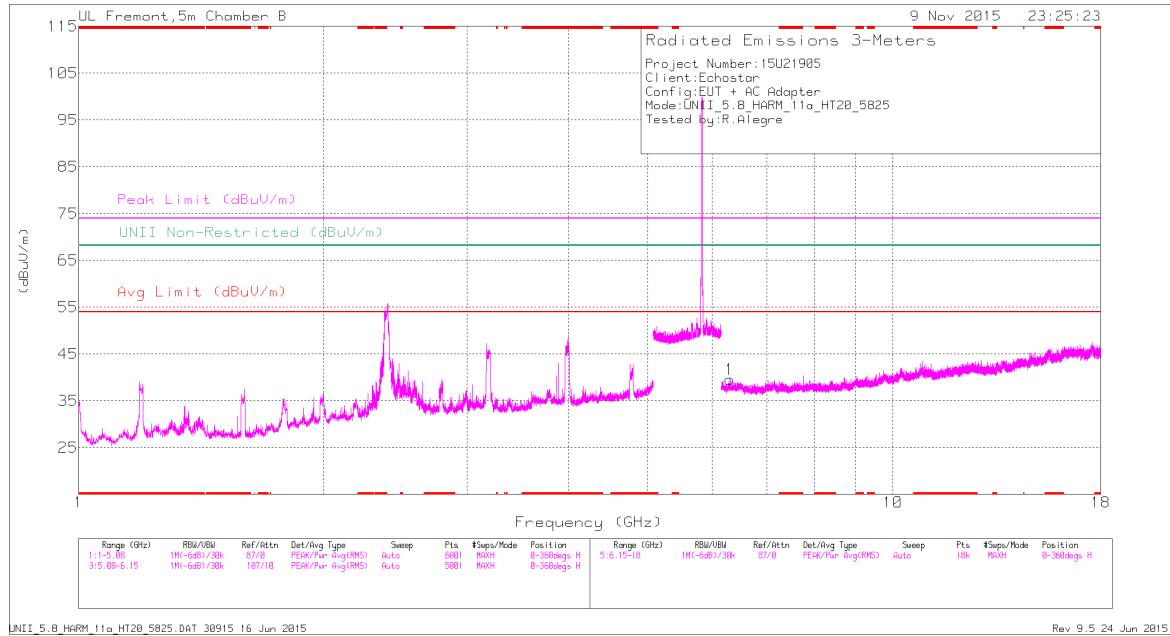
* - indicates frequency covered by bandedge measurement

PK - Peak detector

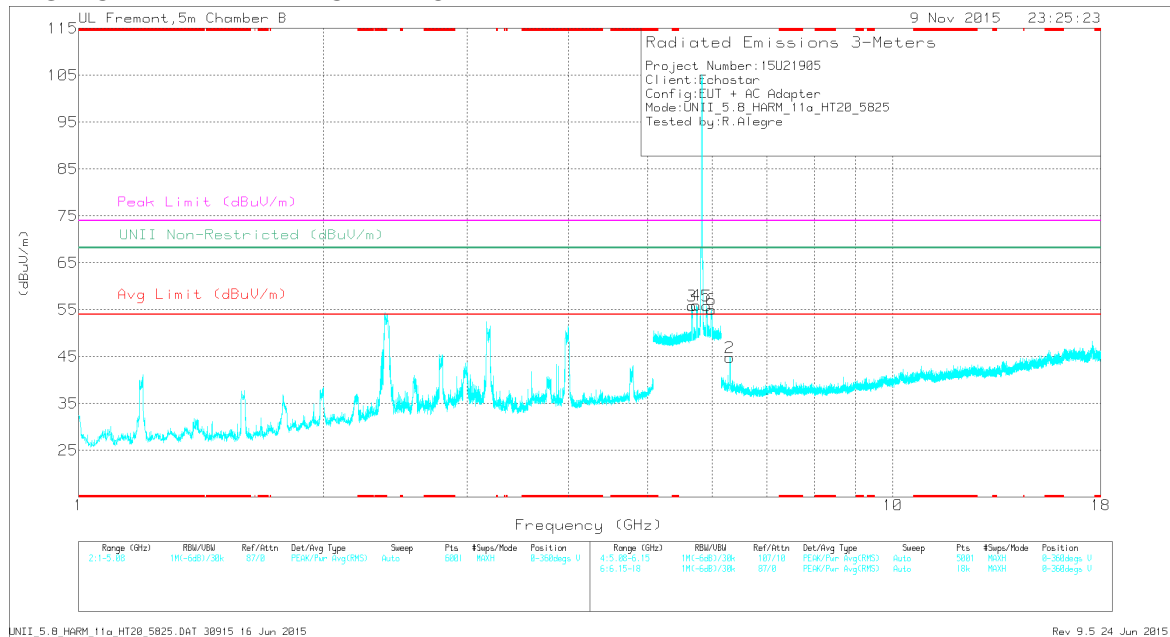
PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filt/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
3	5.667	50.87	PK-U	34.6	-20	0	65.47	-	-	-	-	68.2	-2.73	48	220	V
4	*5.738	40.91	Pk	34.8	-19.8	0	55.91	-	-	-	-	68.2	-12.29	0-360	200	V
5	**5.906	39.93	Pk	35.2	-19.3	0	55.83	-	-	-	-	68.2	-12.37	0-360	200	V
6	**5.984	39	Pk	35.3	-19.3	0	55	-	-	-	-	68.2	-13.2	0-360	200	V
2	6.306	44.14	PK-U	35.6	-27.8	0	51.94	-	-	-	-	68.2	-16.26	166	201	V
1	6.31	40.2	PK-U	35.5	-27.8	0	47.9	-	-	-	-	68.2	-20.3	0	125	H

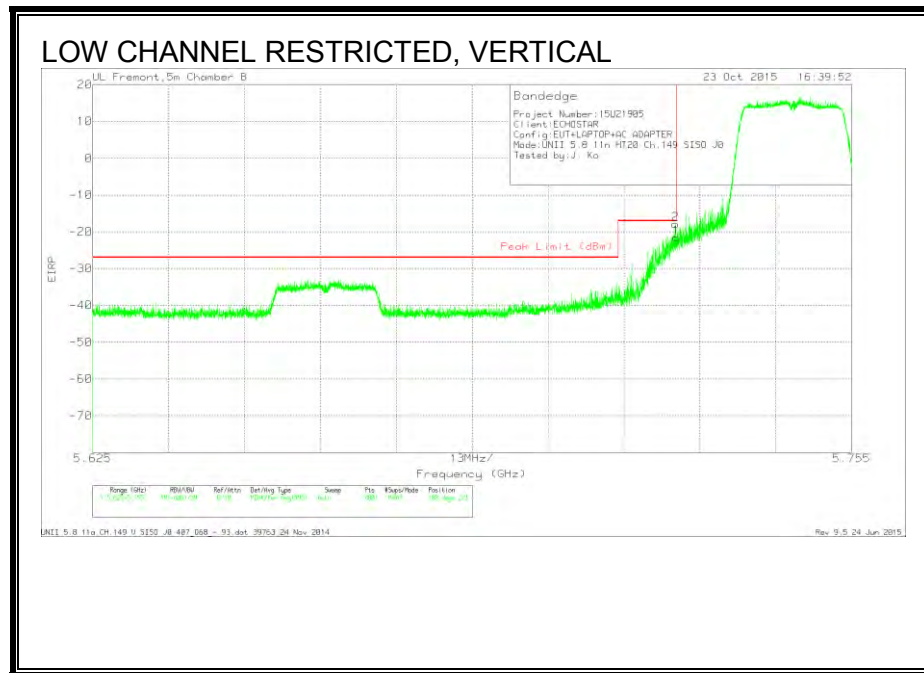
* - indicates frequency in authorized band

** - indicates frequency covered by the bandedge measurement

Pk - Peak detector

PK-U - U-NII: Maximum Peak

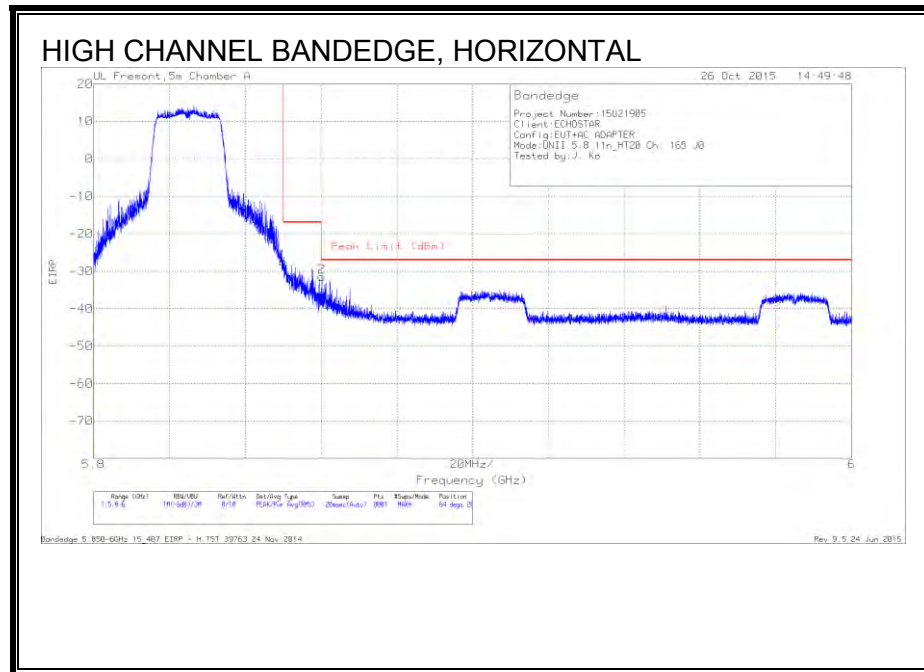
ADR - U-NII AD primary method, RMS average



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T345 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-47.64	Pk	35	-20.8	11.8	-21.64	-17	-4.64	108	221	V
2	5.725	-43.83	Pk	35	-20.9	11.8	-17.93	-17	-.93	108	221	V

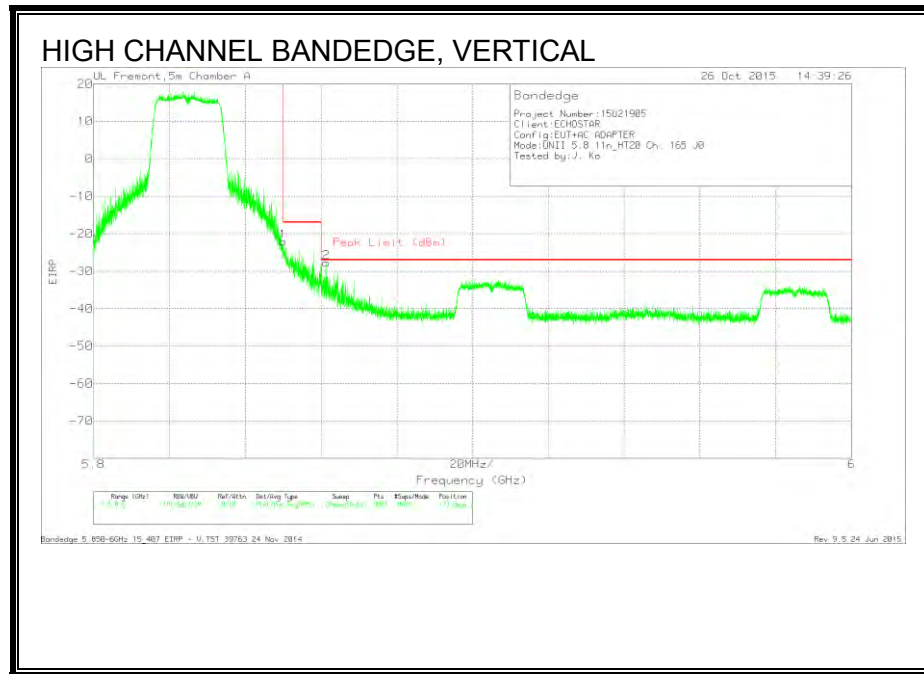
Pk - Peak detector

AUTHORIZED BANDEGE (HIGH CHANNEL)

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-54.03	Pk	35.1	-20.3	11.8	-27.43	-17	-10.43	64	205	H
2	5.86	-58.06	Pk	35.1	-20.3	11.8	-31.46	-27	-4.46	64	205	H

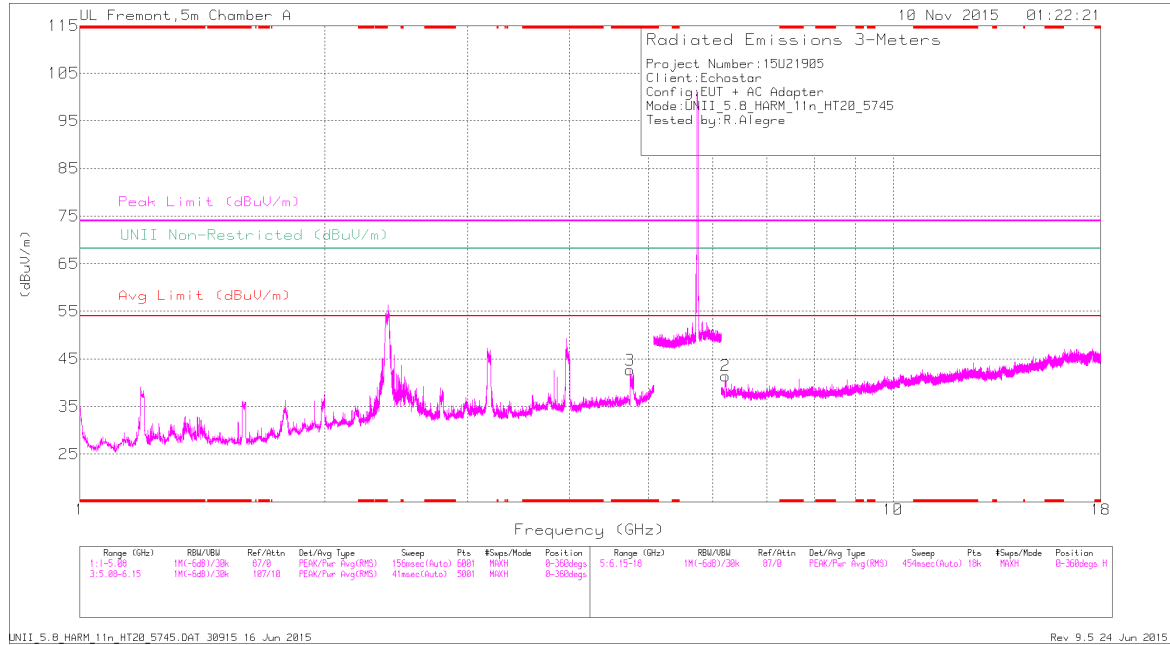
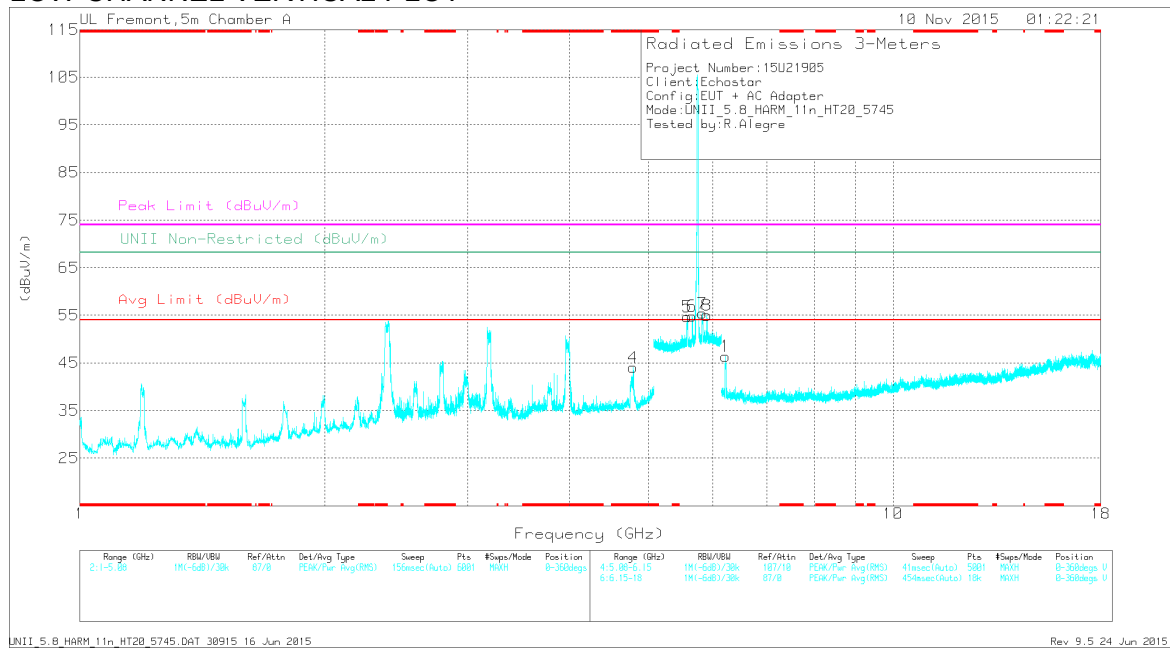
Pk - Peak detector



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-48.69	Pk	35.1	-20.3	11.8	-22.09	-17	-5.09	173	201	V
2	5.861	-54.3	Pk	35.1	-20.3	11.8	-27.7	-27	-.7	173	201	V

Pk - Peak detector

HARMONICS AND SPURIOUS EMISSIONS**LOW CHANNEL HORIZONTAL PLOT****LOW CHANNEL VERTICAL PLOT**

DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filtz/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
3	* 4.753	48.42	PK-U	34	-30.3	0	52.12	-	-	74	-21.88	-	-	36	175	H
	* 4.753	31.41	ADR	34	-30.3	.22	35.33	54	-18.67	-	-	-	-	36	175	H
4	* 4.791	47.8	PK-U	34	-30	0	51.8	-	-	74	-22.2	-	-	309	113	V
	* 4.792	31.72	ADR	34	-30	.22	35.94	54	-18.06	-	-	-	-	309	113	V
5	5.582	43.52	PK-U	34.5	-20.2	0	57.82	-	-	-	-	68.2	-10.38	126	288	V
6	**5.66	40.35	Pk	34.6	-20.1	0	54.85	-	-	-	-	68.2	-13.35	0-360	200	V
7	***5.831	39.7	Pk	35	-19.3	0	55.4	-	-	-	-	68.2	-12.8	0-360	200	V
8	5.905	43.6	PK-U	35.2	-19.3	0	59.5	-	-	-	-	68.2	-8.7	205	273	V
2	6.223	40.98	PK-U	35.5	-28	0	48.48	-	-	-	-	68.2	-19.72	277	204	H
1	6.224	47.8	PK-U	35.5	-28	0	55.3	-	-	-	-	68.2	-12.9	185	199	V

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

** - indicates frequency covered by bandedge measurement

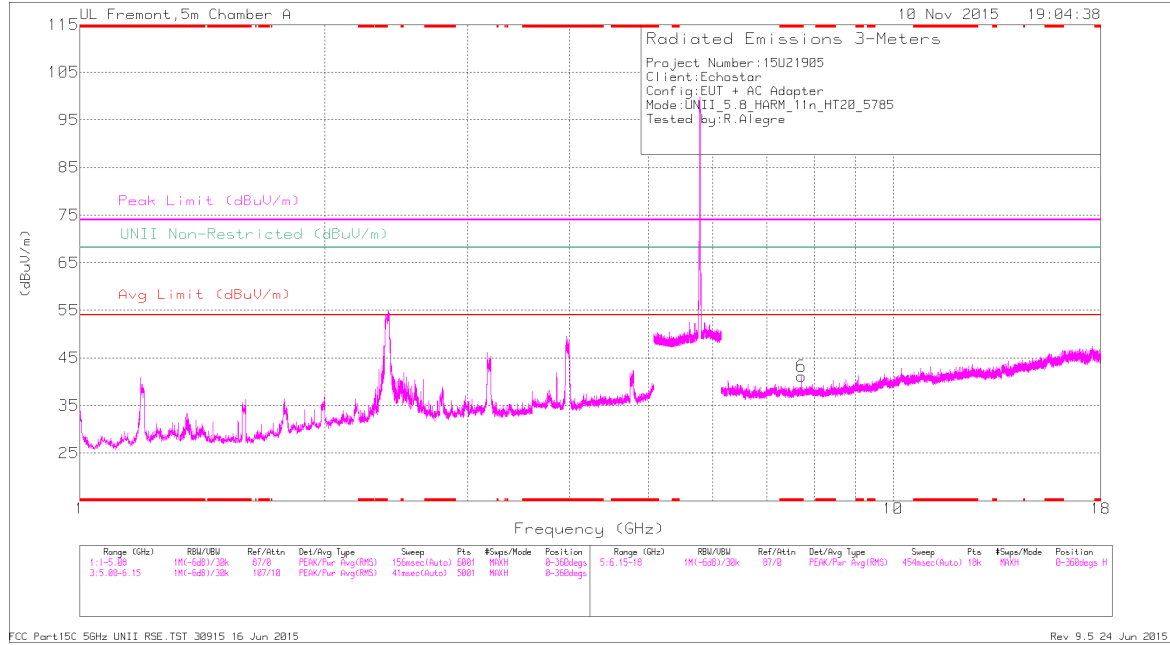
*** - indicates frequency inside the authorized band

Pk - Peak detector

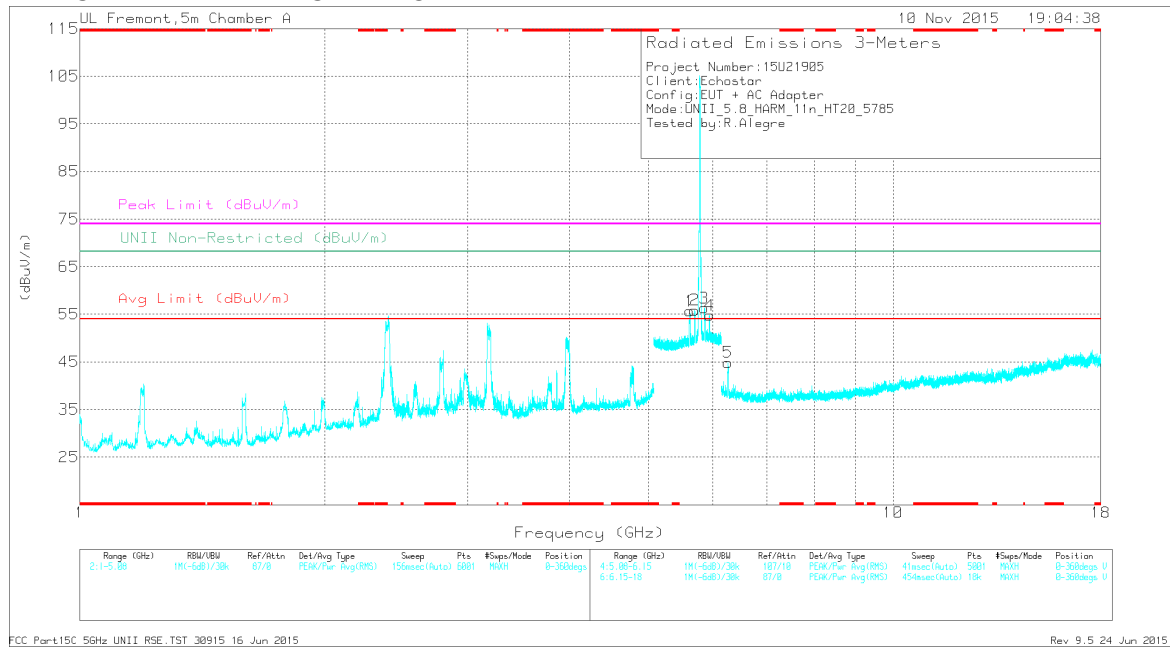
PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

MID CHANNEL HORIZONTAL PLOT



MID CHANNEL VERTICAL PLOT



DATA

Trace Markers

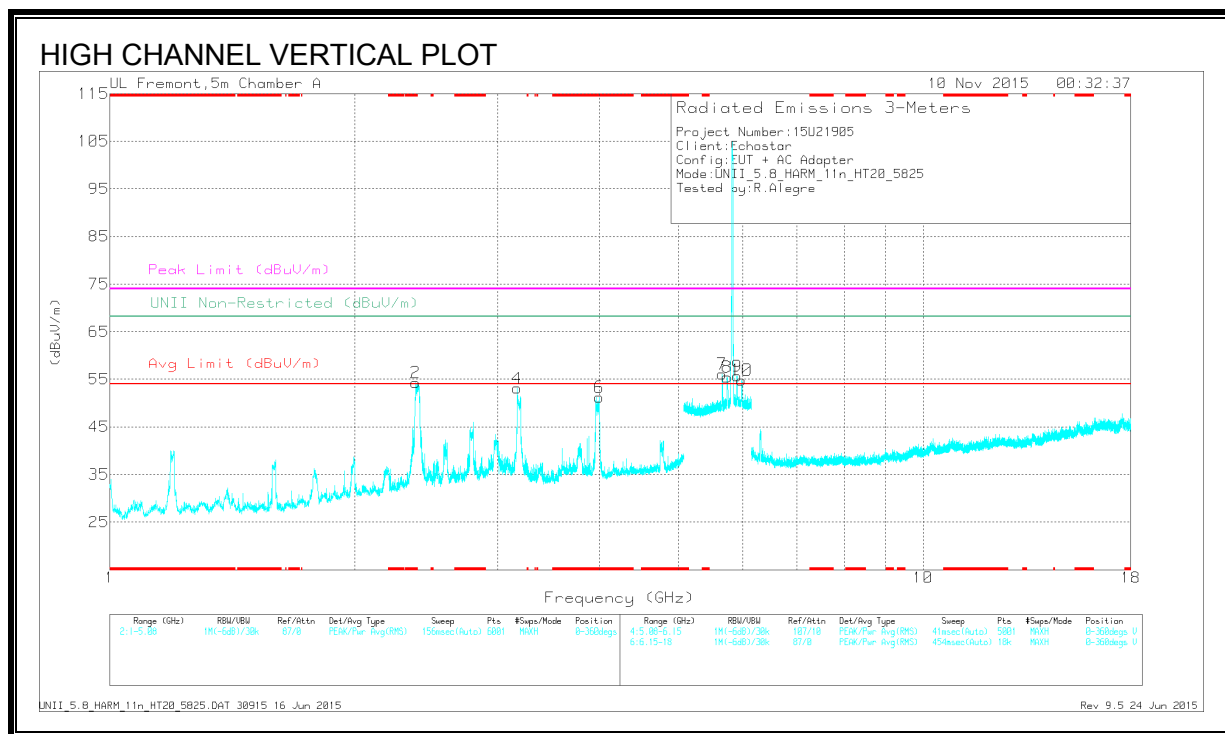
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6	* 7.713	38.73	PK-U	35.7	-26.1	0	48.33	-	-	74	-25.67	-	-	274	212	H
	* 7.713	29.96	ADR	35.7	-26.1	-22	39.78	54	-14.22	-	-	-	-	274	212	H
1	5.624	50.42	PK-U	34.5	-20.2	0	64.72	-	-	-	-	68.2	-3.48	180	212	V
2	5.703	50.27	PK-U	34.7	-19.8	0	65.17	-	-	-	-	68.2	-3.03	189	202	V
3	5.858	48.36	PK-U	35.1	-19.4	0	64.06	-	-	-	-	68.2	-4.14	174	222	V
4	5.952	47.1	PK-U	35.3	-19.3	0	63.1	-	-	-	-	68.2	-5.1	239	246	V
5	6.267	45.35	PK-U	35.5	-28	0	52.85	-	-	-	-	68.2	-15.35	237	185	V

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

Pk - Peak detector

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average



DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fitr/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
5	* 3.966	57.36	PK-U	33.4	-31.8	0	58.96	-	-	74	-15.04	-	-	346	258	H
	* 3.968	39.37	ADR	33.4	-31.8	-22	41.19	54	-12.81	-	-	-	-	346	258	H
2	* 2.377	64.68	PK-U	31.9	-33.9	0	62.68	-	-	74	-11.32	-	-	138	195	V
	* 2.379	47.44	ADR	31.9	-33.9	.22	45.66	54	-8.34	-	-	-	-	138	195	V
6	* 4	58.13	PK-U	33.3	-31.4	0	60.03	-	-	74	-13.97	-	-	356	283	V
	* 3.998	38.55	ADR	33.3	-31.4	-22	40.67	54	-13.33	-	-	-	-	356	283	V
1	2.399	69.15	PK-U	32	-34.1	0	67.05	-	-	-	-	68.2	-1.15	339	112	H
3	3.168	57.45	PK-U	32.8	-32.6	0	57.65	-	-	-	-	68.2	-10.55	0	102	H
4	3.168	62.66	PK-U	32.8	-32.6	0	62.86	-	-	-	-	68.2	-5.34	314	103	V
7	5.664	45.55	PK-U	34.6	-20	0	60.15	-	-	-	-	68.2	-8.05	242	135	V
8	5.742	46.51	PK-U	34.8	-19.7	0	61.61	-	-	-	-	68.2	-6.59	177	206	V
9	**5.906	39.77	Pk	35.2	-19.3	0	55.67	-	-	-	-	68.2	-12.53	0-360	200	V
10	**5.984	38.85	Pk	35.3	-19.3	0	54.85	-	-	-	-	68.2	-13.35	0-360	200	V

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

** - indicates frequency covered by bandedge

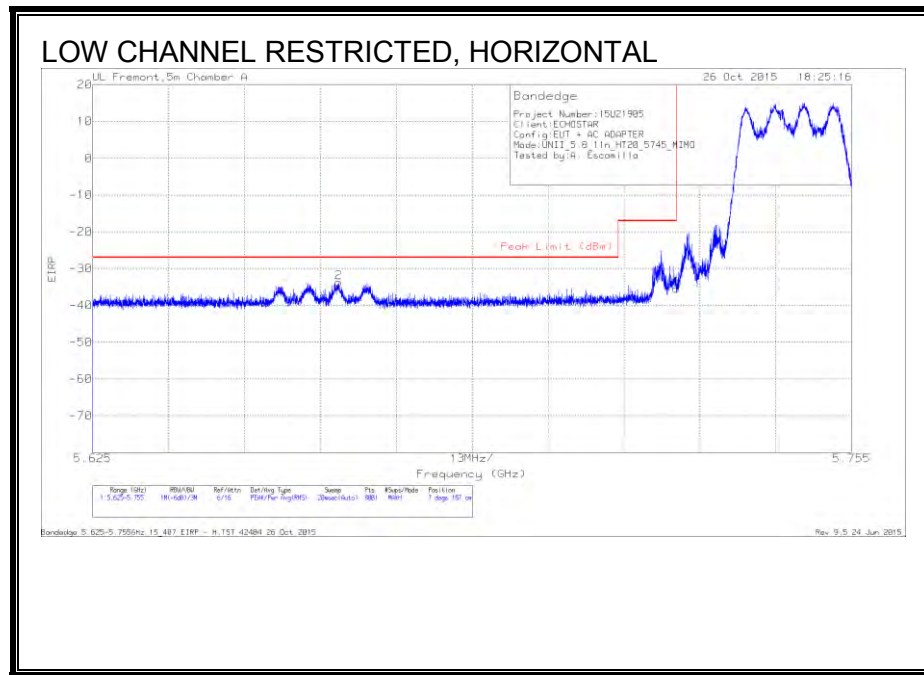
Pk - Peak detector

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

10.2.1. TX ABOVE 1 GHz 802.11n HT20 3TX CDD MODE IN THE 5.8 GHz BAND

RESTRICTED BANDEGE (LOW CHANNEL)



Trace Markers

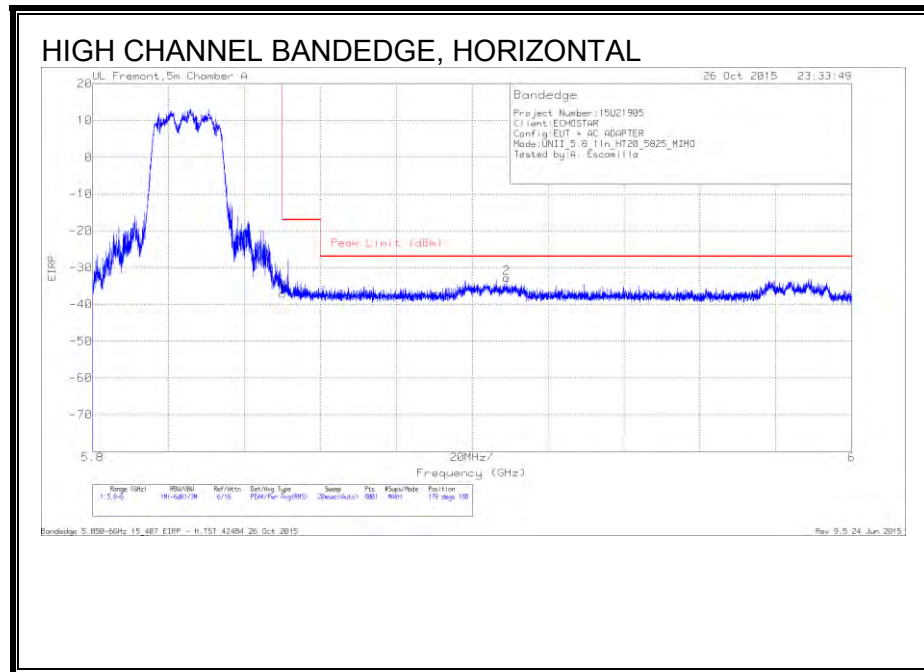
Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AFT136 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.667	-59.2	Pk	34.6	-21	11.8	0	-33.8	-27	-6.8	7	187	H
1	5.725	-61.33	Pk	34.7	-20.7	11.8	0	-35.53	-17	-18.53	7	187	H

Pk - Peak detector



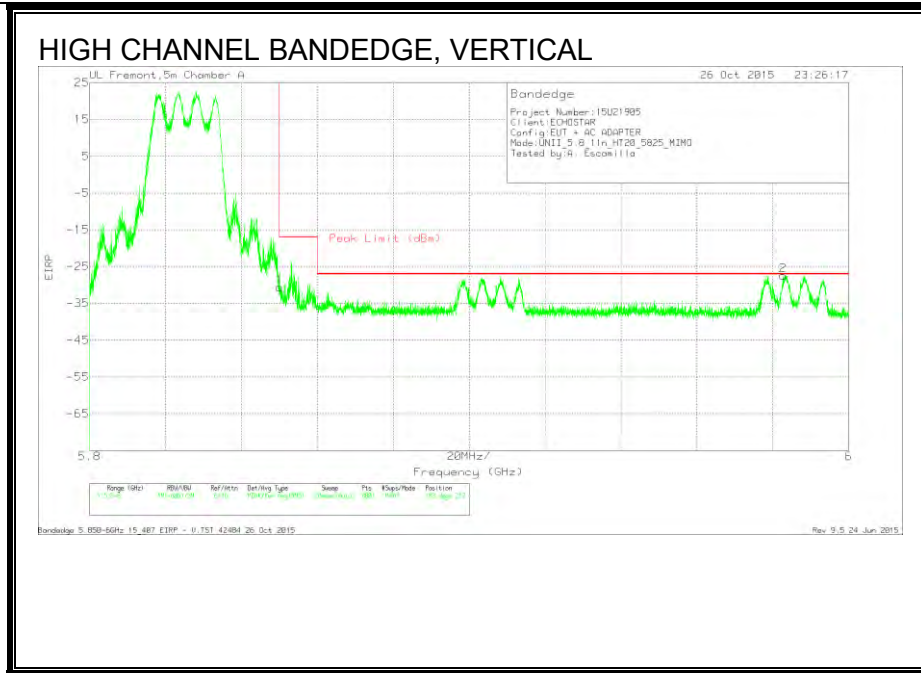
Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cb/Fltr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.724	-43.31	Pk	34.7	-20.7	11.8	0	-17.51	-17	-.51	185	202	V
1	5.725	-55.18	Pk	34.7	-20.7	11.8	0	-29.38	-17	-12.38	185	202	V

Pk - Peak detector

AUTHORIZED BANDEGE (HIGH CHANNEL)**Trace Markers**

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-63.69	Pk	35.1	-20.3	11.8	0	-37.09	-17	-20.09	179	188	H
2	5.909	-59.56	Pk	35.2	-20.2	11.8	0	-32.76	-27	-5.76	179	188	H

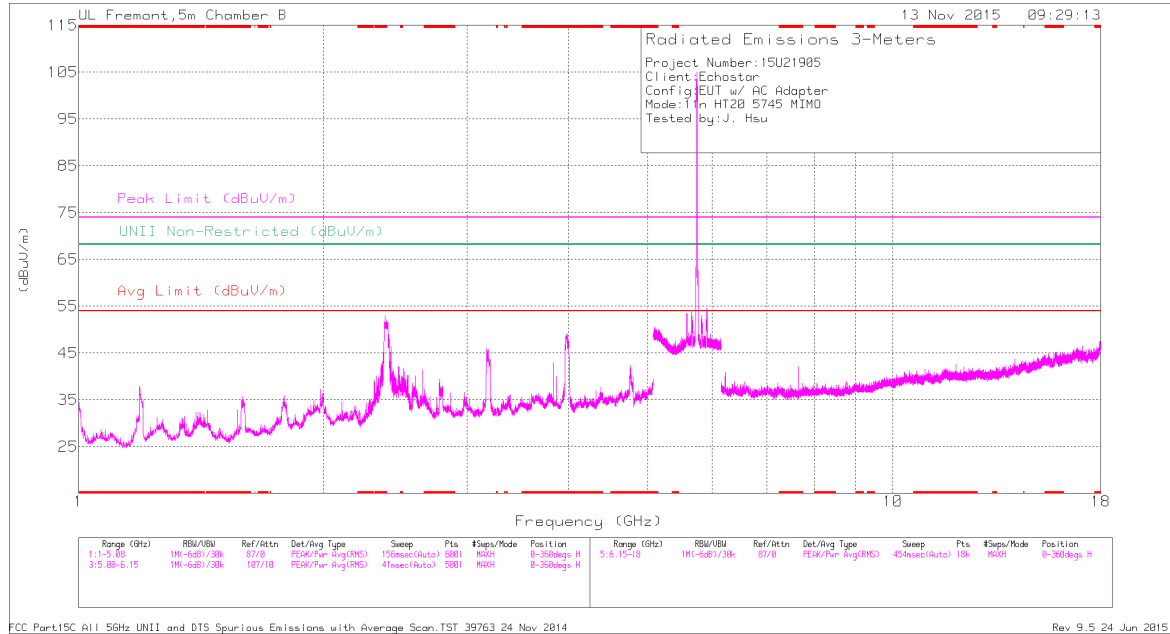
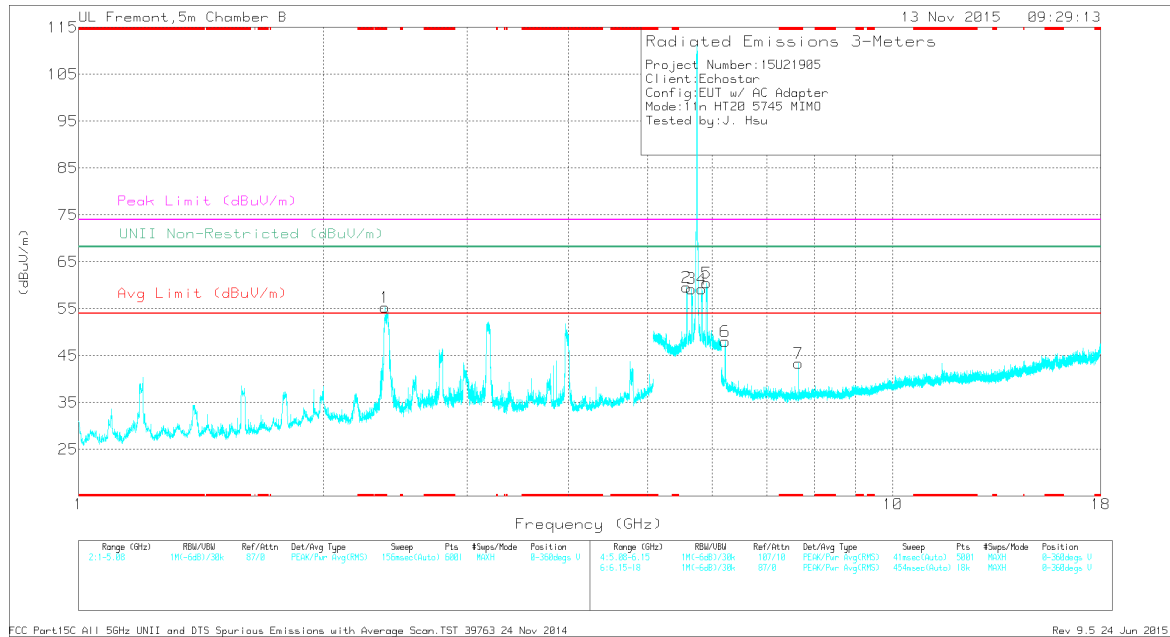
Pk - Peak detector



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AFT136 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-57.22	Pk	35.1	-20.3	11.8	0	-30.62	-17	-13.62	183	212	V
2	5.983	-54.44	Pk	35.3	-20.1	11.8	0	-27.44	-27	-.44	183	212	V

Pk - Peak detector

HARMONICS AND SPURIOUS EMISSIONS**LOW CHANNEL HORIZONTAL PLOT****LOW CHANNEL VERTICAL PLOT**

DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Filtz/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.379	67.45	PK-U	31.9	-34.3	0	65.05	-	-	74	-8.95	68.2	-3.15	179	103	V
	* 2.384	50.02	ADR	32	-34.4	.22	47.84	54	-6.16	-	-	-	-	179	103	V
7	* 7.66	43.88	PK-U	35.4	-29.9	0	49.38	-	-	74	-24.62	68.2	-18.82	166	268	V
	* 7.66	38.45	ADR	35.4	-29.9	.22	44.17	54	-9.83	-	-	-	-	166	268	V
2	5.583	53.22	PK-U	34.7	-20.8	0	67.12	-	-	-	-	68.2	-1.08	344	189	V
3	**5.658	45.37	Pk	34.9	-21	0	59.27	-	-	-	-	68.2	-8.93	0-360	199	V
4	***5.826	44.55	Pk	35.3	-20.7	0	59.15	-	-	-	-	68.2	-9.05	0-360	199	V
5	5.907	52.8	PK-U	35.5	-20.7	0	67.6	-	-	-	-	68.2	-6	103	192	V
6	6.224	50.7	PK-U	35.5	-31.5	0	54.7	-	-	-	-	68.2	-13.5	26	187	V

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

** - indicates frequency covered by bandedge measurement

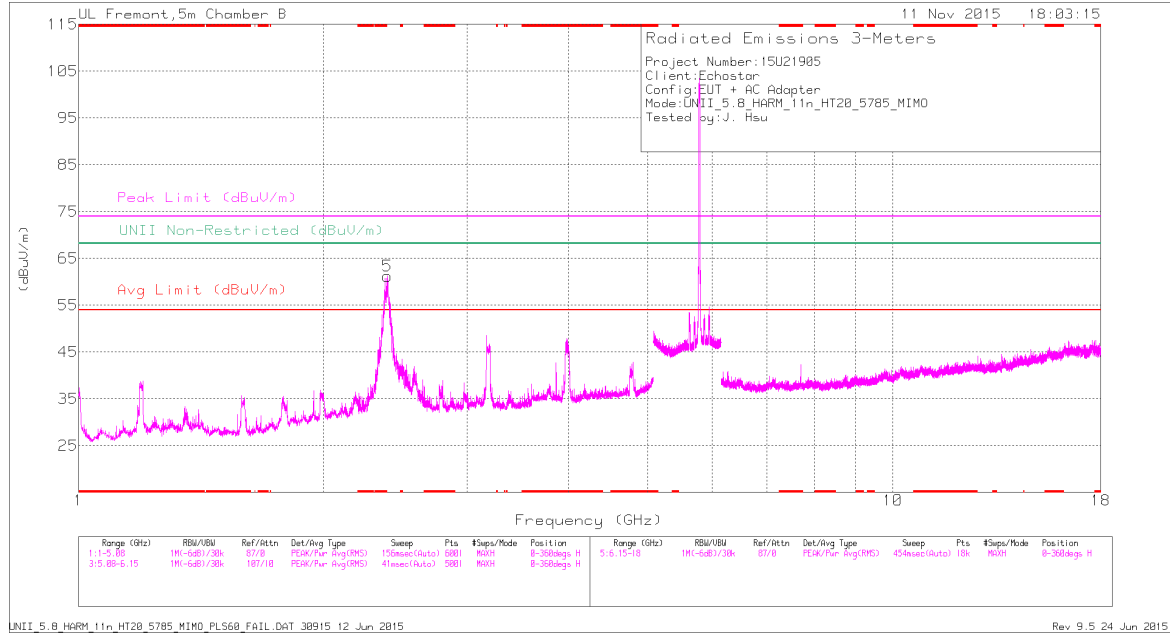
*** - indicates frequency inside the authorized band

Pk - Peak detector

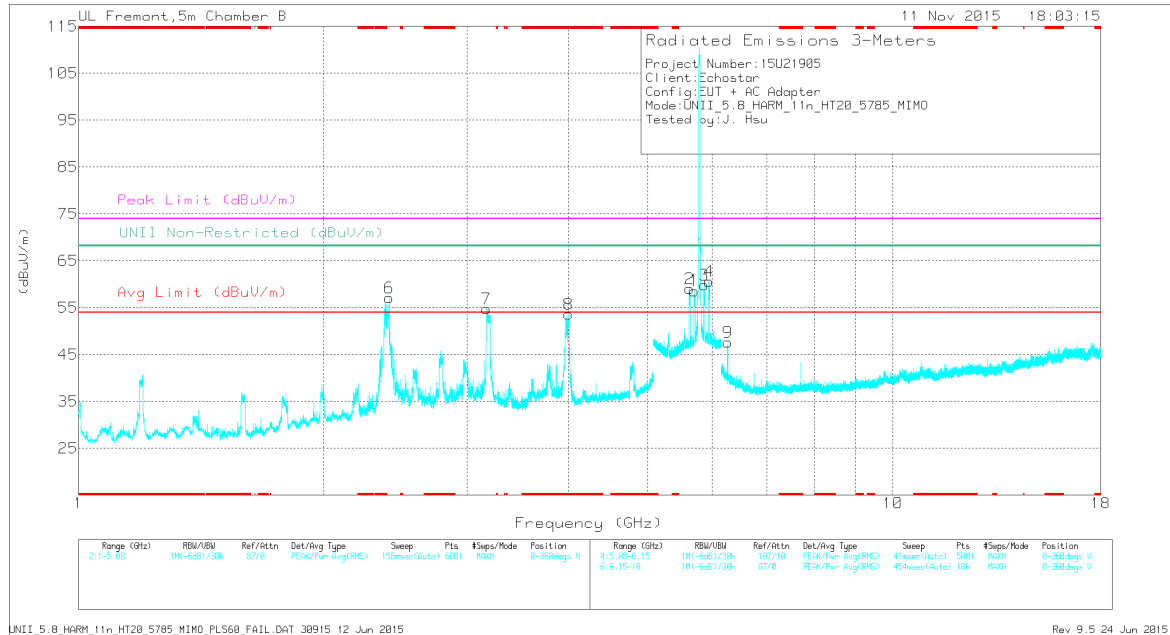
PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

MID CHANNEL HORIZONTAL PLOT



MID CHANNEL VERTICAL PLOT



DATA

Trace Markers

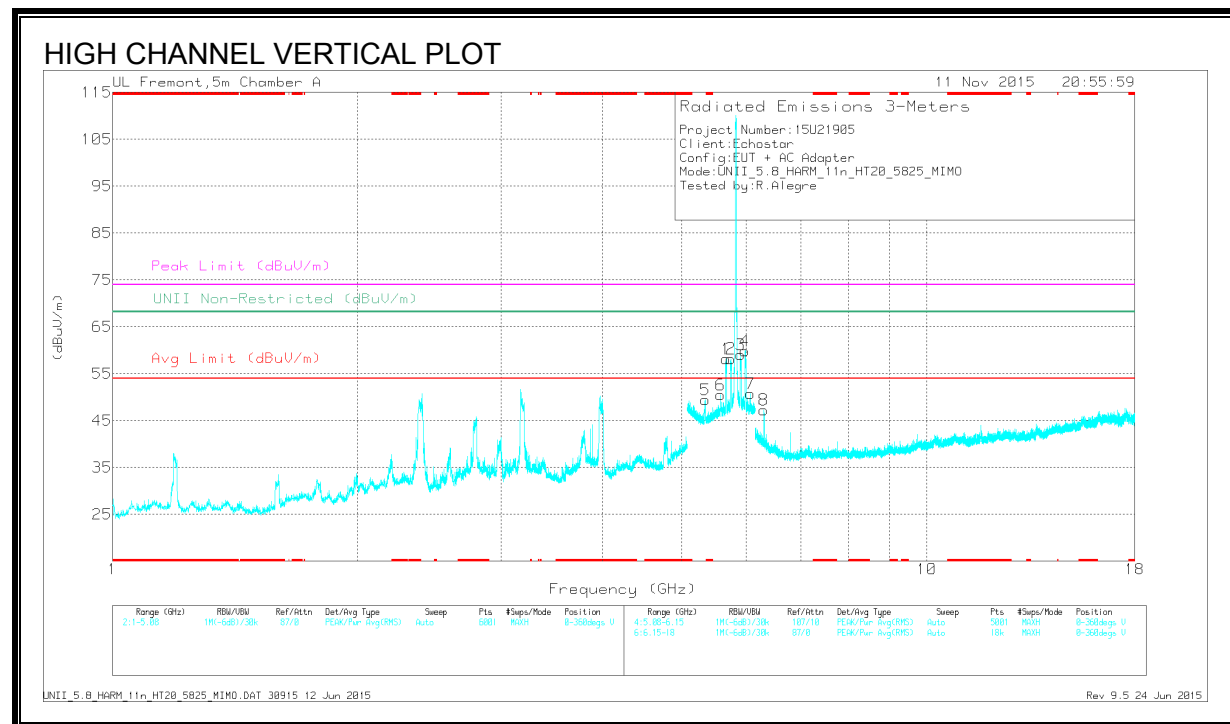
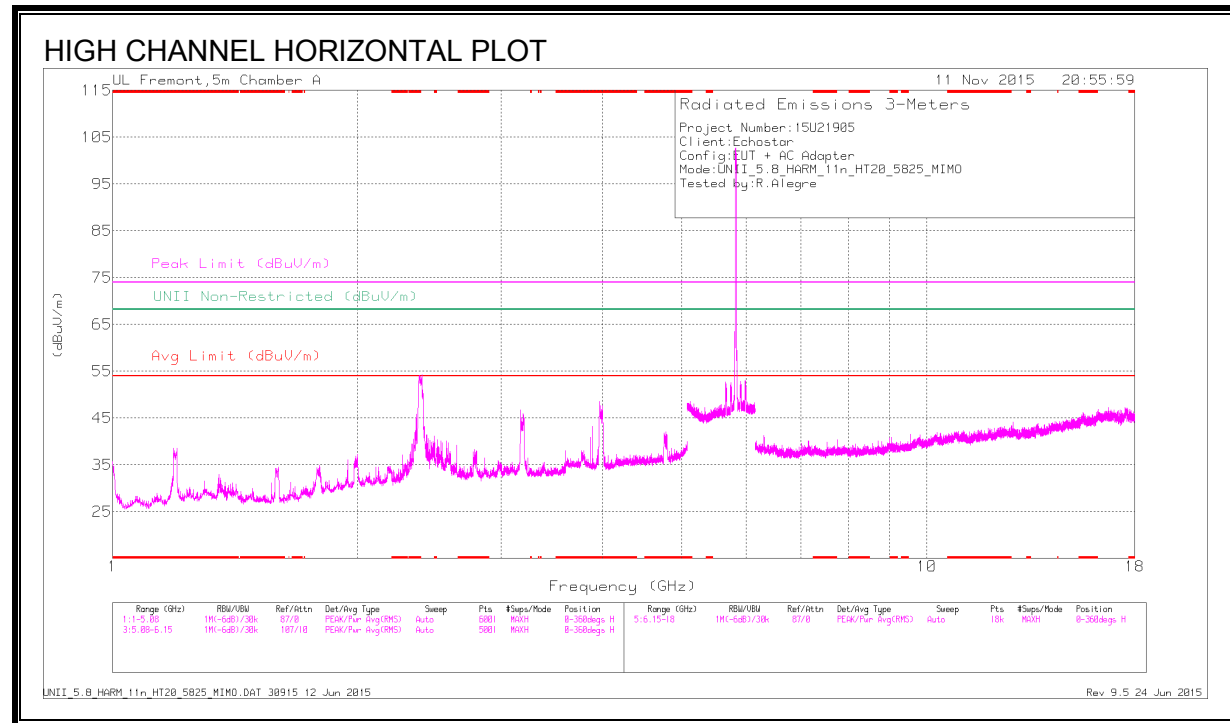
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
8	* 4	58.89	PK-U	33.3	-31.4	0	60.79	-	-	74	-13.21	-	-	357	272	V
	* 3.997	39.51	ADR	33.3	-31.5	.22	41.53	54	-12.47	-	-	-	-	357	272	V
5	2.395	68.42	PK-U	32	-34.1	0	66.32	-	-	-	-	68.2	-1.88	335	240	H
6	2.406	62.97	PK-U	32	-34.2	0	60.77	-	-	-	-	68.2	-7.43	144	124	V
7	3.171	61.54	PK-U	32.8	-32.6	0	61.74	-	-	-	-	68.2	-6.46	337	118	V
2	5.626	52.62	PK-U	34.5	-21	0	66.12	-	-	-	-	68.2	-2.08	175	209	V
1	5.711	50.9	PK-U	34.7	-20.7	0	64.9	-	-	-	-	68.2	-3.3	33	196	V
3	5.863	52.6	PK-U	35.1	-20.3	0	67.4	-	-	-	-	68.2	-.8	182	210	V
4	5.947	52.35	PK-U	35.3	-20.2	0	67.45	-	-	-	-	68.2	-.75	0-360	200	V
9	6.267	47.38	PK-U	35.5	-28	0	54.88	-	-	-	-	68.2	-13.32	98	153	V

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

PK - Peak detector

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average



DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filt/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
5	5.34	43.92	PK-U	34.6	-21	0	57.52	-	-	-	-	68.2	-10.68	161	217	V
6	5.582	45.13	PK-U	34.5	-21	0	58.63	-	-	-	-	68.2	-9.57	121	182	V
1	5.665	51.84	PK-U	34.6	-21	0	65.44	-	-	-	-	68.2	-2.76	163	194	V
2	**5.744	44.03	Pk	34.8	-20.6	0	58.23	-	-	-	-	68.2	-9.97	0-360	200	V
3	*5.907	44.05	Pk	35.2	-20.2	0	59.05	-	-	-	-	68.2	-9.15	0-360	200	V
4	*5.977	44.7	Pk	35.3	-20.1	0	59.9	-	-	-	-	68.2	-8.3	0-360	200	V
7	6.067	43.61	PK-U	35.4	-19.9	0	59.11	-	-	-	-	68.2	-9.09	246	214	V
8	6.303	46.48	PK-U	35.6	-27.8	0	54.28	-	-	-	-	68.2	-13.92	231	172	V

* - indicates frequency covered by bandedge measurement

** - indicates frequency inside the authorized band

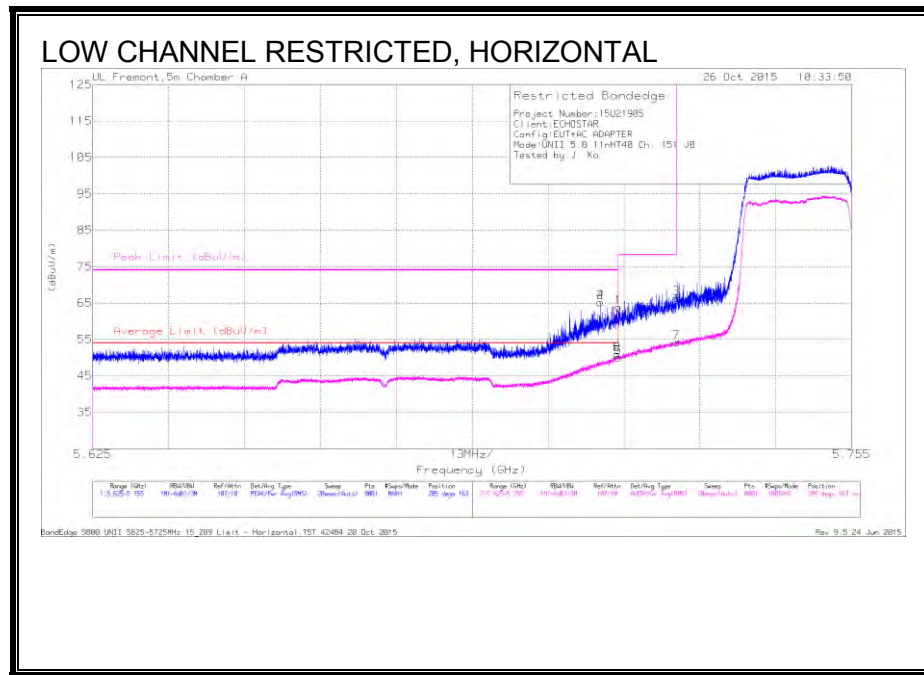
Pk - Peak detector

* - indicates frequency covered by bandedge measurement

** - indicates frequency inside the authorized band

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

RESTRICTED BANDEGE (LOW CHANNEL)

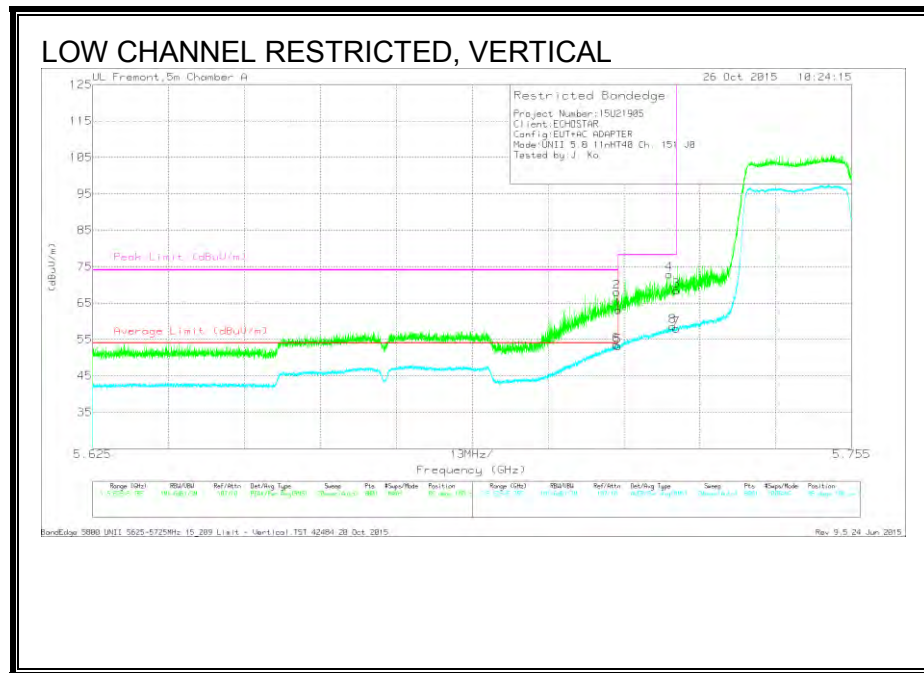


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Filt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.712	51.24	Pk	34.7	-20.7	0	65.24	-	-	74	-8.76	285	163	H
4	5.712	51.24	Pk	34.7	-20.7	0	65.24	-	-	74	-8.76	285	163	H
1	5.715	49.95	Pk	34.7	-20.8	0	63.85	-	-	74	-10.15	285	163	H
5	5.715	35.95	RMS	34.7	-20.8	.22	50.07	54	-3.93	-	-	285	163	H
6	5.715	36.79	RMS	34.7	-20.8	.22	50.91	54	-3.09	-	-	285	163	H
8	5.715	36.79	RMS	34.7	-20.8	.22	50.91	54	-3.09	-	-	285	163	H
3	5.725	52.26	Pk	34.7	-20.7	0	66.26	-	-	78.2	-11.94	285	163	H
7	5.725	39.88	RMS	34.7	-20.7	.22	54.1	-	-	-	-	285	163	H

Pk - Peak detector

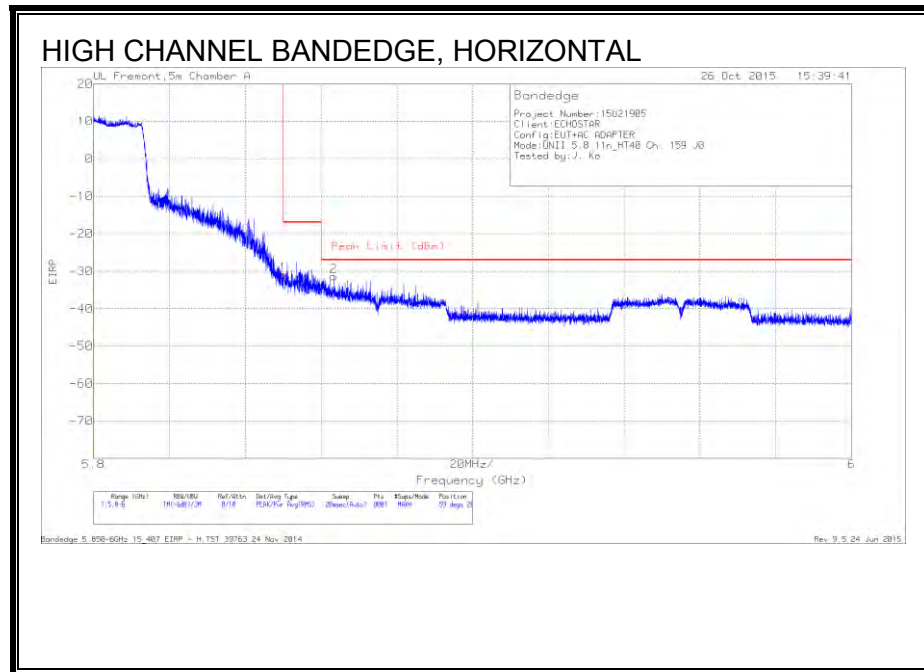
RMS - RMS detection



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cb/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.715	49.13	Pk	34.7	-20.8	0	63.03	-	-	74	-10.97	85	180	V
2	5.715	54.16	Pk	34.7	-20.8	0	68.06	-	-	74	-5.94	85	180	V
5	5.715	39	RMS	34.7	-20.8	.22	53.12	54	-88	-	-	85	180	V
6	5.715	39.38	RMS	34.7	-20.8	.22	53.5	54	-5	-	-	85	180	V
4	5.724	58.95	Pk	34.7	-20.7	0	72.95	-	-	78.2	-5.25	85	180	V
8	5.724	44.38	RMS	34.7	-20.7	.22	58.6	-	-	-	-	85	180	V
3	5.725	54.39	Pk	34.7	-20.7	0	68.39	-	-	78.2	-9.81	85	180	V
7	5.725	43.8	RMS	34.7	-20.7	.22	58.02	-	-	-	-	85	180	V

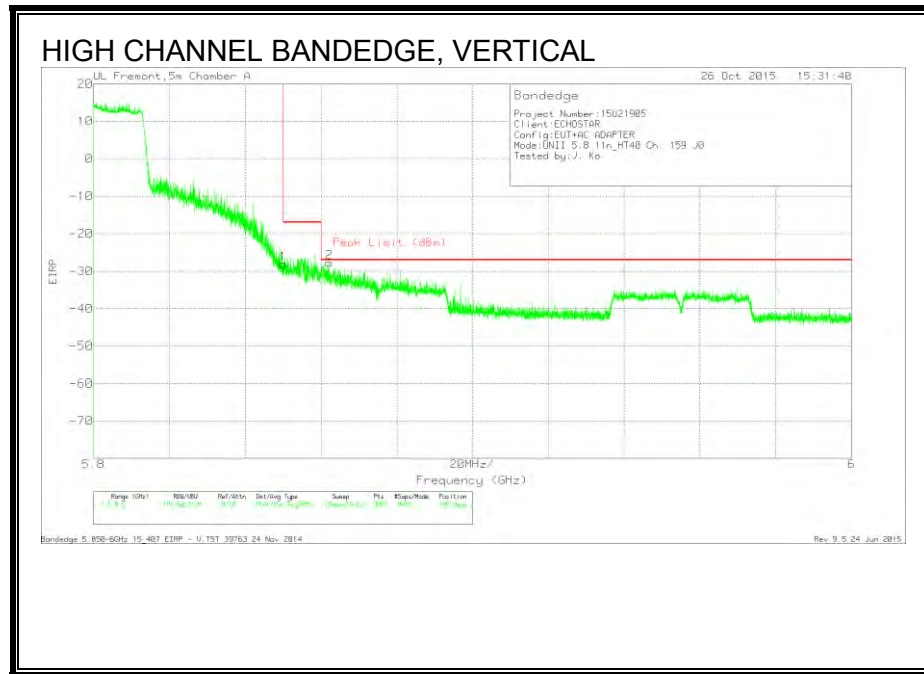
Pk - Peak detector

AUTHORIZED BANDEGE (HIGH CHANNEL)

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-57.58	Pk	35.1	-20.3	11.8	-30.98	-17	-13.98	59	205	H
2	5.863	-57.96	Pk	35.1	-20.3	11.8	-31.36	-27	-4.36	59	205	H

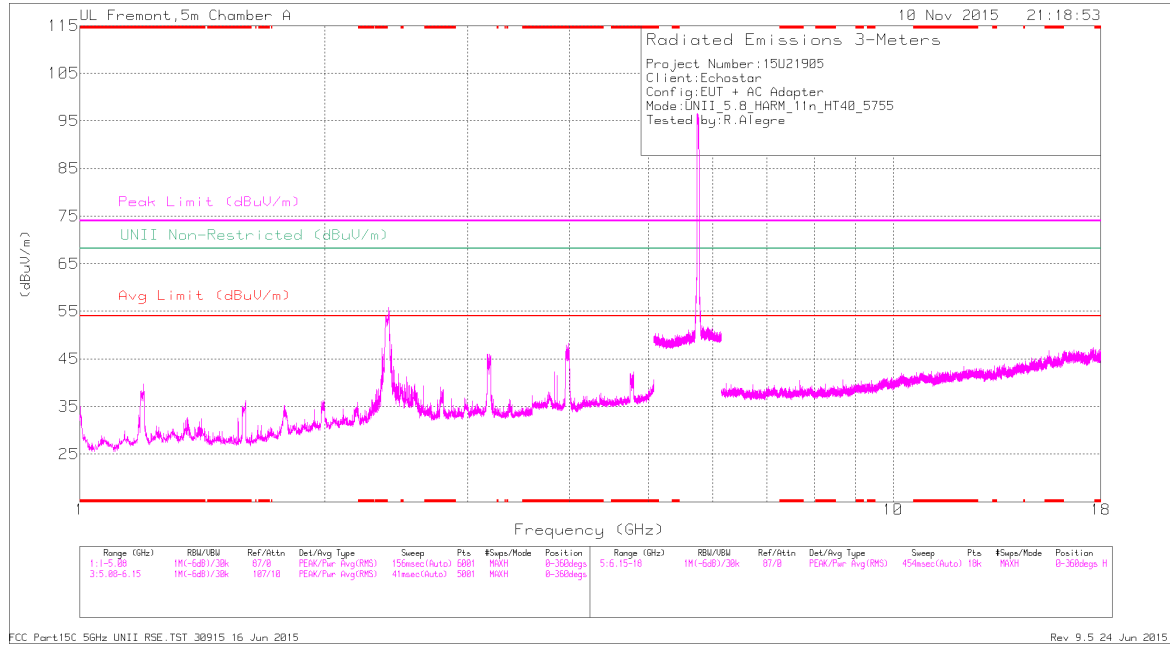
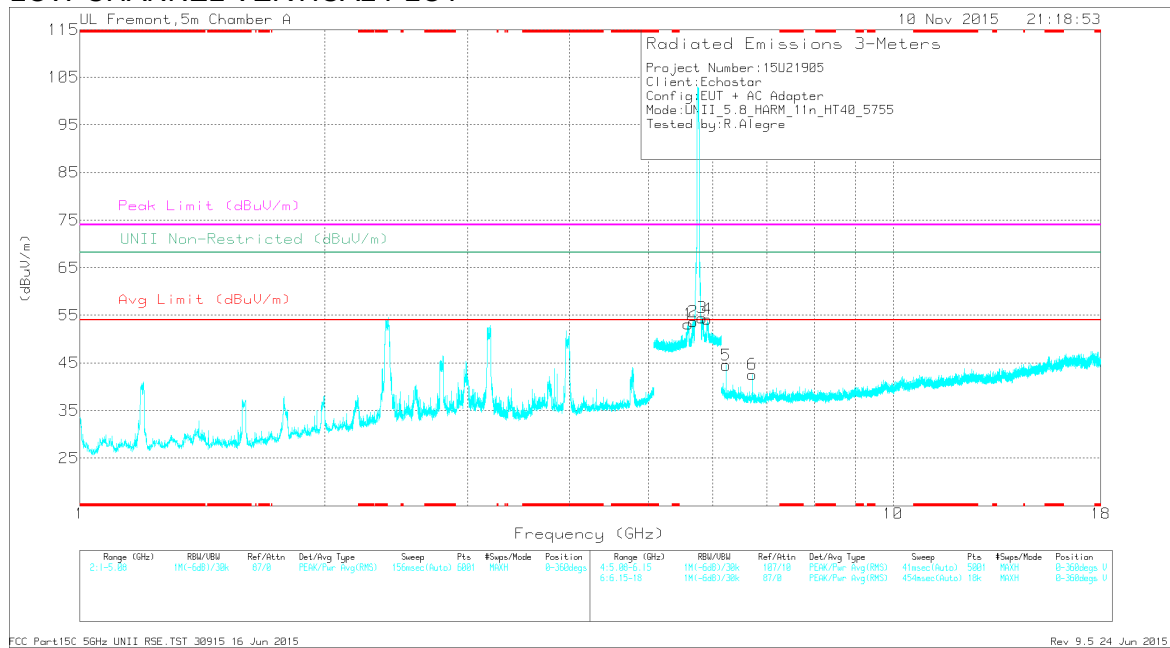
Pk - Peak detector



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-54.65	Pk	35.1	-20.3	11.8	-28.05	-17	-11.05	188	206	V
2	5.862	-54.3	Pk	35.1	-20.3	11.8	-27.7	-27	-.7	188	206	V

Pk - Peak detector

HARMONICS AND SPURIOUS EMISSIONS**LOW CHANNEL HORIZONTAL PLOT****LOW CHANNEL VERTICAL PLOT**

DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fitr/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	5.598	48.39	PK-U	34.5	-20.2	0	62.69	-	-	-	-	68.2	-5.51	248	201	V
2	**5.677	39.09	Pk	34.6	-20	0	53.69	-	-	-	-	68.2	-14.51	0-360	200	V
3	**5.823	38.77	Pk	35	-19.3	0	54.47	-	-	-	-	68.2	-13.73	0-360	200	V
4	5.91	47.38	PK-U	35.2	-19.3	0	63.28	-	-	-	-	68.2	-4.92	242	206	V
5	6.235	42.13	PK-U	35.5	-27.9	0	49.73	-	-	-	-	68.2	-18.47	182	195	V
6	6.714	40.73	PK-U	35.6	-27.3	0	49.03	-	-	-	-	68.2	-19.17	230	175	V

*- indicates frequency covered by bandedge measurement

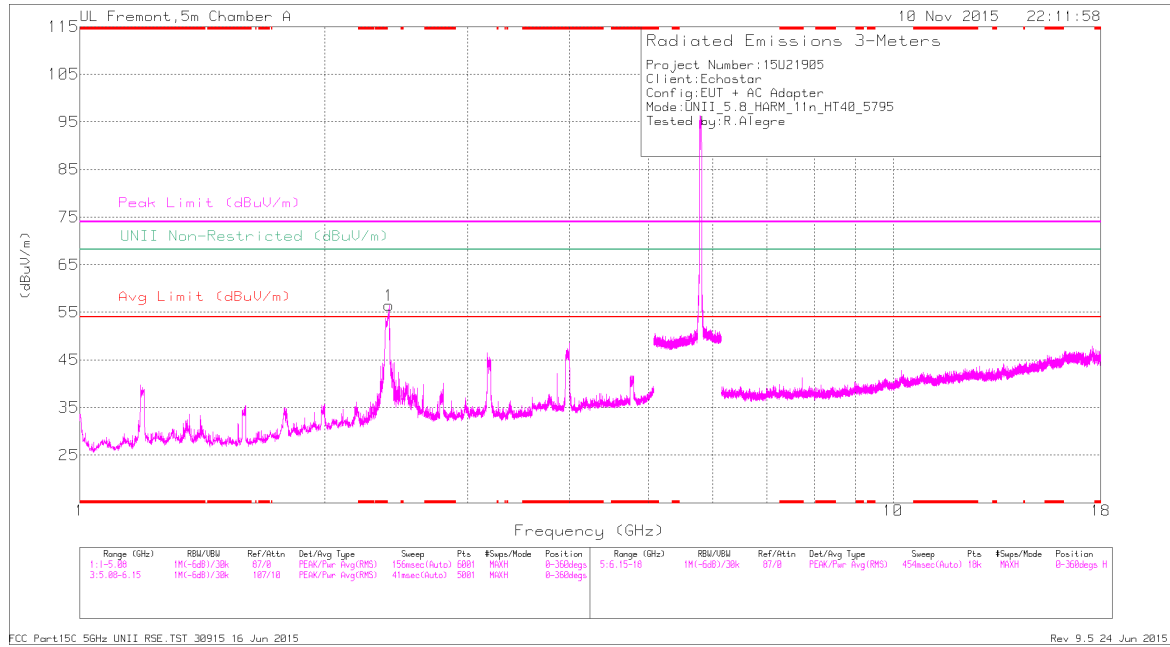
** - indicates frequency inside authorized band

Pk - Peak detector

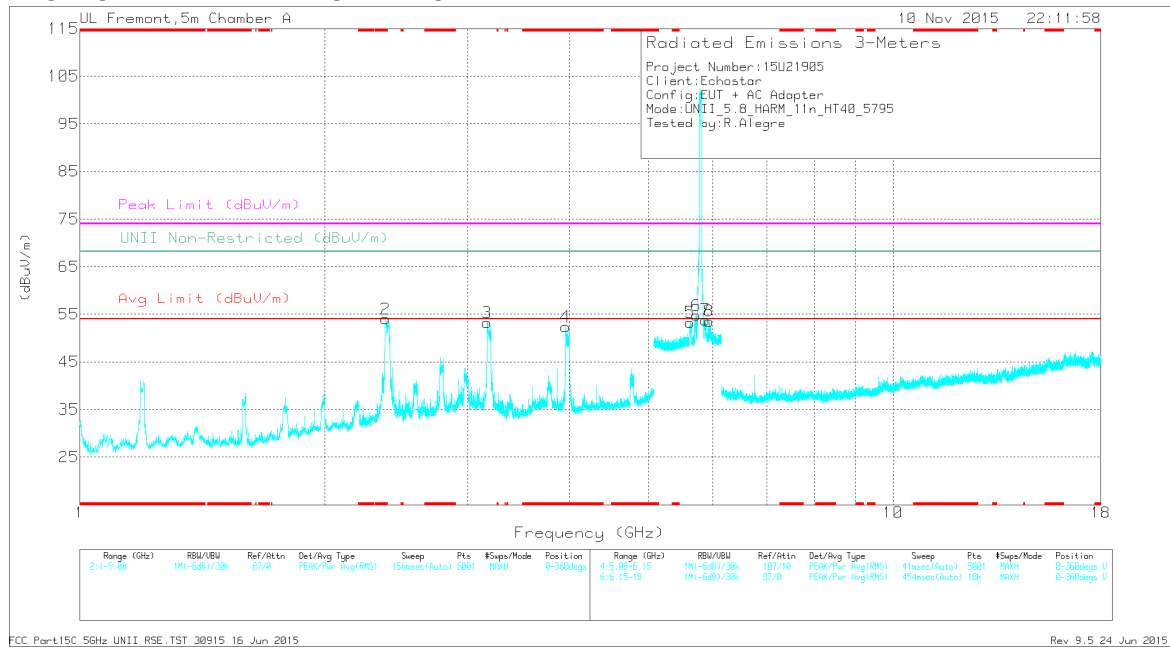
PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filtz/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	* 2.377	66.36	PK-U	31.9	-33.9	0	64.36	-	-	74	-9.64	-	-	166	177	V
	* 2.378	47.65	ADR	31.9	-33.9	.22	45.87	54	-8.13	-	-	-	-	166	177	V
4	* 3.961	58.91	PK-U	33.4	-31.8	0	60.51	-	-	74	-13.49	-	-	167	122	V
	* 3.962	39.25	ADR	33.4	-31.8	.22	41.07	54	-12.93	-	-	-	-	167	122	V
1	2.4	69.95	PK-U	32	-34.1	0	67.85	-	-	-	-	68.2	-5.23	344	243	H
3	3.172	62.87	PK-U	32.8	-32.7	0	62.97	-	-	-	-	68.2	-6.01	322	207	V
5	5.63	47.79	PK-U	34.5	-20.1	0	62.19	-	-	-	-	68.2	-13.4	255	206	V
6	***5.732	39.7	Pk	34.8	-19.7	0	54.8	-	-	-	-	68.2	-14.37	0-360	200	V
7	**5.882	38.03	Pk	35.1	-19.3	0	53.83	-	-	-	-	68.2	-14.62	0-360	200	V
8	**5.943	37.58	Pk	35.3	-19.3	0	53.58	-	-	-	-	68.2	-14.62	0-360	200	V

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

** - indicates frequency covered by bandedge measurement

*** - indicates frequency inside authorized band

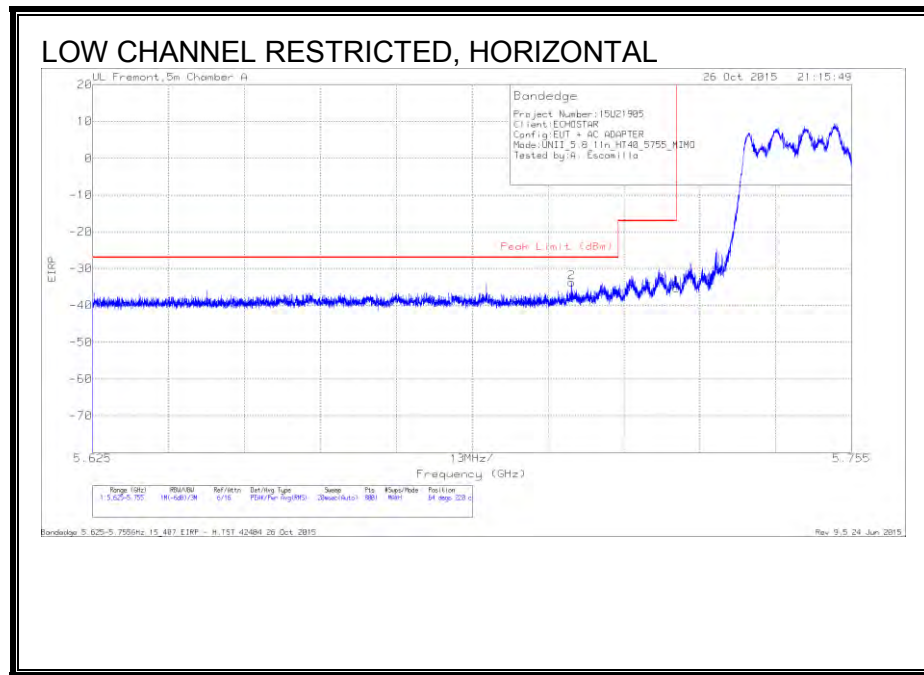
Pk - Peak detector

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

10.2.1. TX ABOVE 1 GHz 802.11n HT40 3TX CDD MODE IN THE 5.8 GHz BAND

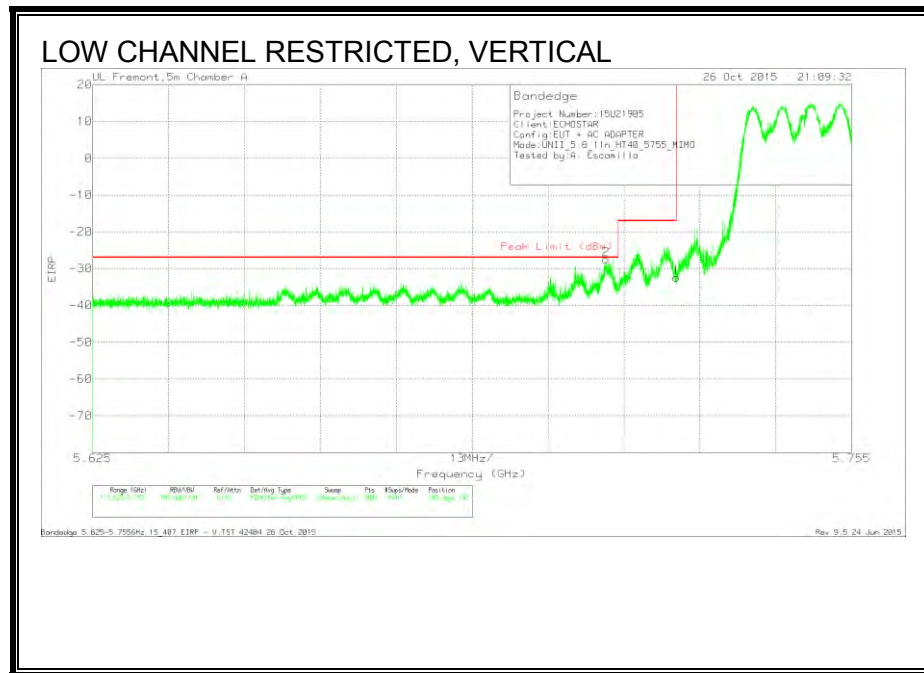
RESTRICTED BANDEGE (LOW CHANNEL)



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AFT136 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.707	-59.44	Pk	34.7	-20.8	11.8	0	-33.74	-27	-6.74	64	220	H
1	5.725	-61.09	Pk	34.7	-20.7	11.8	0	-35.29	-17	-18.29	64	220	H

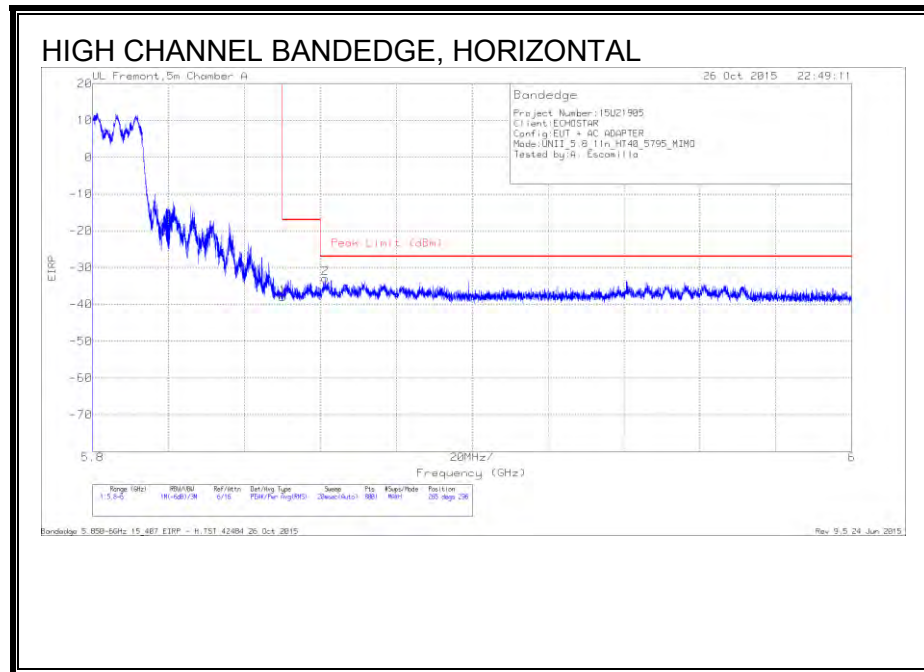
Pk - Peak detector



Trace Markers

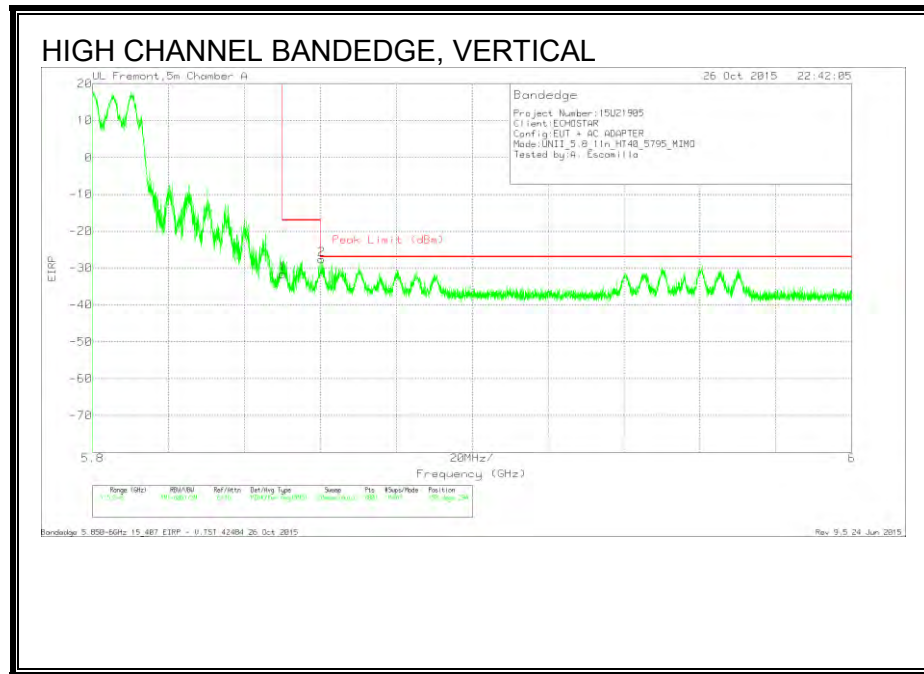
Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AFT136 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.713	-53.24	Pk	34.7	-20.8	11.8	0	-27.54	-27	-54	180	192	V
1	5.725	-58.24	Pk	34.7	-20.7	11.8	0	-32.44	-17	-15.44	180	192	V

Pk - Peak detector

AUTHORIZED BANDEGE (HIGH CHANNEL)**Trace Markers**

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-64.69	Pk	35.1	-20.3	11.8	0	-38.09	-17	-21.09	265	296	H
2	5.861	-59.5	Pk	35.1	-20.3	11.8	0	-32.9	-27	-5.9	265	296	H

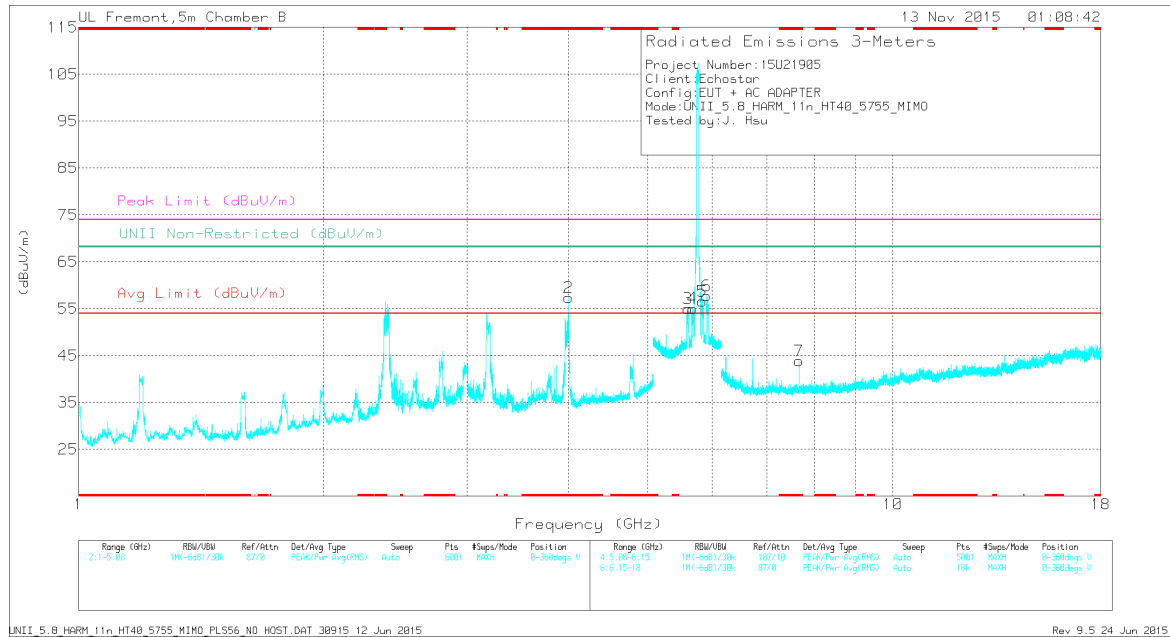
Pk - Peak detector



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-58.25	Pk	35.1	-20.3	11.8	0	-31.65	-17	-14.65	158	294	V
2	5.86	-54.27	Pk	35.1	-20.3	11.8	0	-27.67	-27	-.67	158	294	V

Pk - Peak detector

HARMONICS AND SPURIOUS EMISSIONS**LOW CHANNEL HORIZONTAL PLOT****LOW CHANNEL VERTICAL PLOT**

DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filtz/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	* 3.963	58.16	PK-U	33.4	-31.8	0	59.76	-	-	74	-14.24	-	-	20	113	V
	* 3.97	40.32	ADR	33.4	-31.7	.22	42.24	54	-11.76	-	-	-	-	20	113	V
7	* 7.673	43.64	PK-U	35.6	-25.7	0	53.54	-	-	74	-20.46	-	-	164	266	V
	* 7.673	36.71	ADR	35.6	-25.7	.22	46.83	54	-7.17	-	-	-	-	164	266	V
1	2.399	70.17	PK-U	32	-34.1	0	68.07	-	-	-	-	68.2	-.13	201	122	H
3	5.598	49.92	PK-U	34.5	-21	0	63.42	-	-	-	-	68.2	-4.78	345	173	V
4	**5.676	41.51	Pk	34.6	-21	0	55.11	-	-	-	-	68.2	-13.09	0-360	200	V
5	***5.837	41.95	Pk	35	-20.3	0	56.65	-	-	-	-	68.2	-11.55	0-360	200	V
6	5.912	50.25	PK-U	35.2	-20.2	0	65.25	-	-	-	-	68.2	-2.95	102	178	V

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

** - indicates frequency covered by bandedge measurement

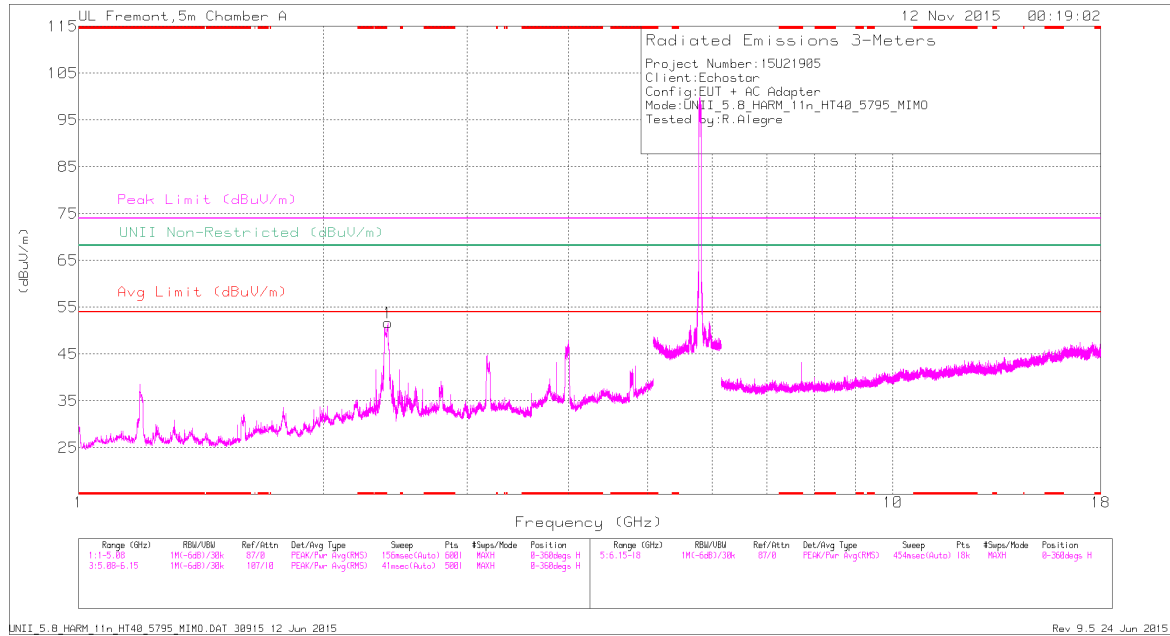
*** - indicates frequency inside the authorized band

Pk - Peak detector

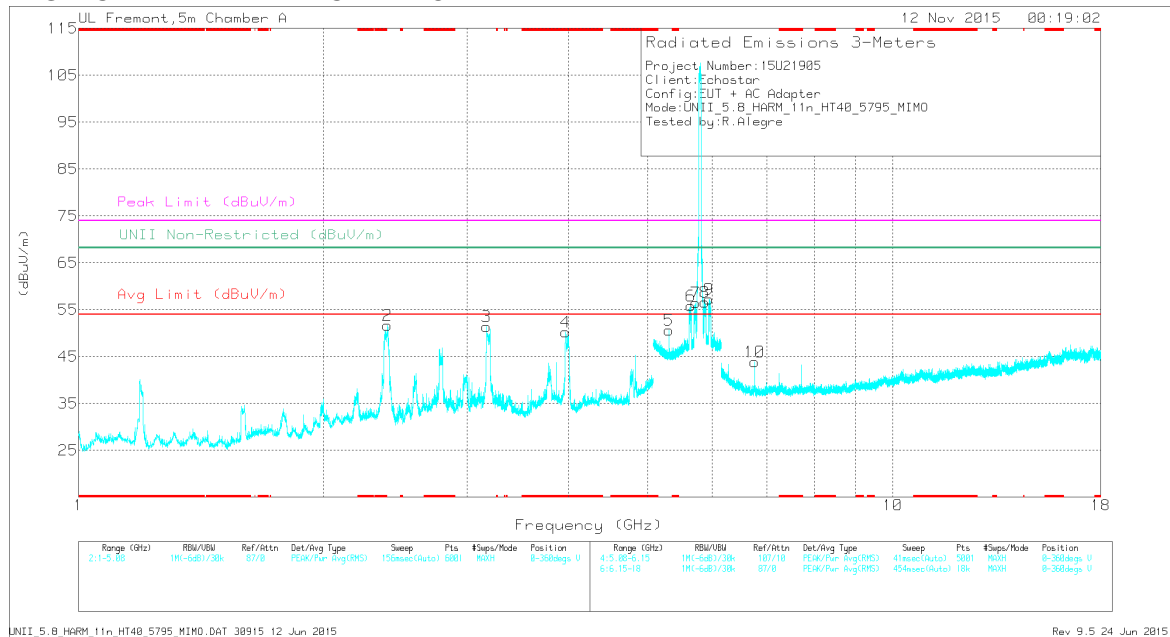
PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filtz/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 3.965	58.67	PK-U	33.4	-31.8	0	60.27	-	-	74	-13.73	-	-	332	157	V
	* 3.966	40.72	ADR	33.4	-31.8	.22	42.54	54	-11.46	-	-	-	-	332	157	V
2	2.397	62.73	PK-U	32	-34.1	0	60.63	-	-	-	-	68.2	-7.57	169	191	V
1	2.399	65.19	PK-U	32	-34.1	0	63.09	-	-	-	-	68.2	-5.11	331	311	H
3	3.17	61.27	PK-U	32.8	-32.6	0	61.47	-	-	-	-	68.2	-6.73	318	126	V
5	5.312	42.42	PK-U	34.5	-20.9	0	56.02	-	-	-	-	68.2	-12.18	159	186	V
6	5.644	49.73	PK-U	34.5	-20.9	0	63.33	-	-	-	-	68.2	-4.87	119	196	V
7	***5.728	42.47	Pk	34.7	-20.7	0	56.47	-	-	-	-	68.2	-11.73	0-360	200	V
8	**5.88	41.82	Pk	35.1	-20.3	0	56.62	-	-	-	-	68.2	-11.58	0-360	200	V
9	**5.95	42.17	Pk	35.3	-20.2	0	57.27	-	-	-	-	68.2	-10.93	0-360	200	V
10	6.761	42.31	PK-U	35.6	-27.4	0	50.51	-	-	-	-	68.2	-17.69	300	244	V

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

*** - indicates frequency inside the authorized band

** - indicates frequency covered by bandedge measurement

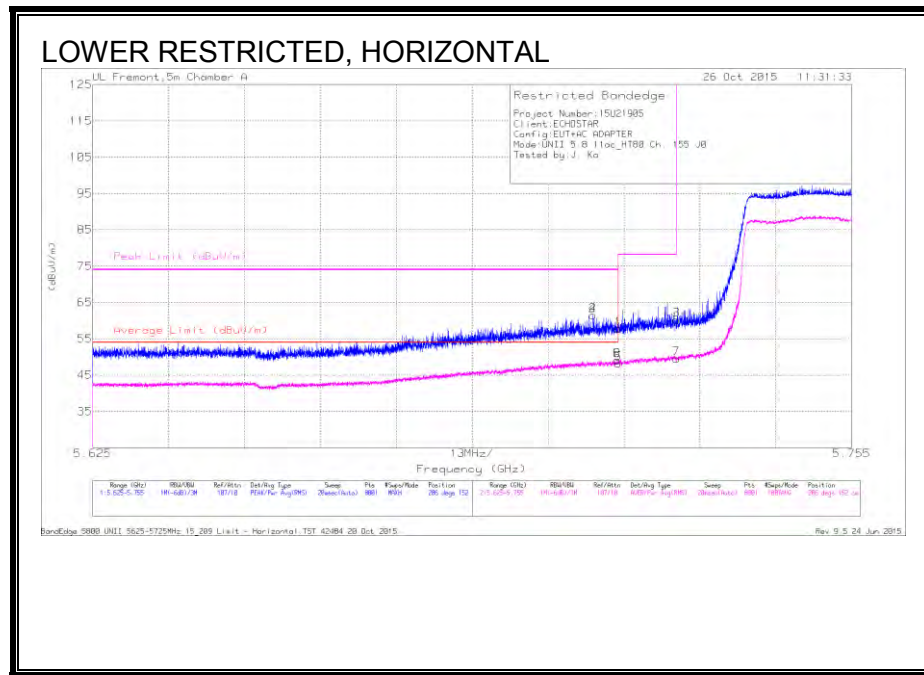
Pk - Peak detector

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

10.2.2. TX ABOVE 1 GHz 802.11ac HT80 SISO MODE IN THE 5.8 GHz BAND

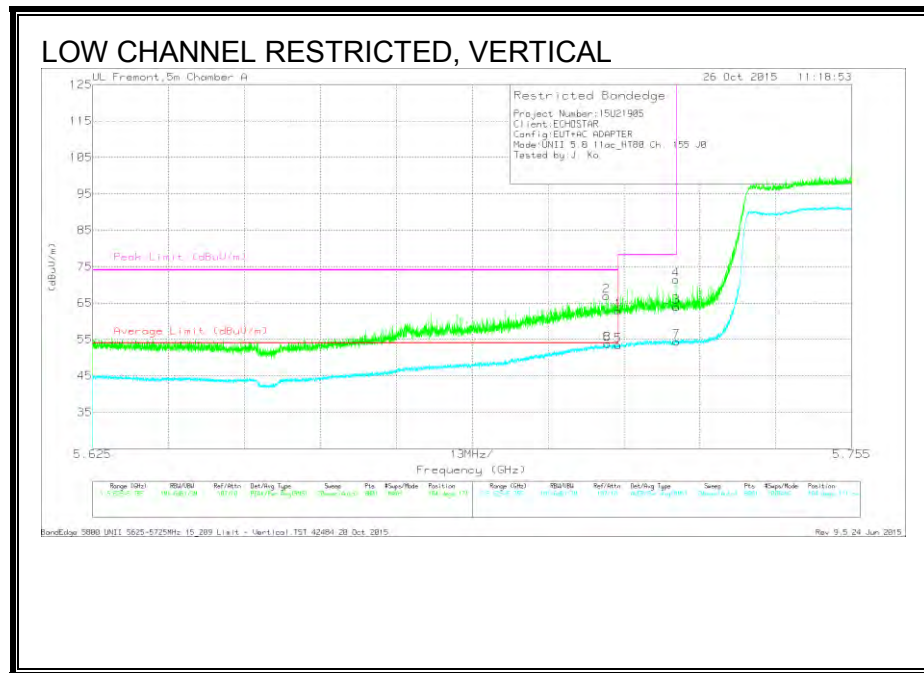
RESTRICTED BANDEGE (LOWER EDGE)



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Filt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.711	47.5	Pk	34.7	-20.7	0	61.5	-	-	74	-12.5	286	152	H
4	5.711	47.5	Pk	34.7	-20.7	0	61.5	-	-	74	-12.5	286	152	H
1	5.715	43.89	Pk	34.7	-20.8	0	57.79	-	-	74	-16.21	286	152	H
5	5.715	34.02	RMS	34.7	-20.8	.26	48.18	54	-5.82	-	-	286	152	H
6	5.715	34.86	RMS	34.7	-20.8	.26	49.02	54	-4.98	-	-	286	152	H
8	5.715	34.86	RMS	34.7	-20.8	.26	49.02	54	-4.98	-	-	286	152	H
3	5.725	46.17	Pk	34.7	-20.7	0	60.17	-	-	78.2	-18.03	286	152	H
7	5.725	35.29	RMS	34.7	-20.7	.26	49.55	-	-	-	-	286	152	H

Pk - Peak detector

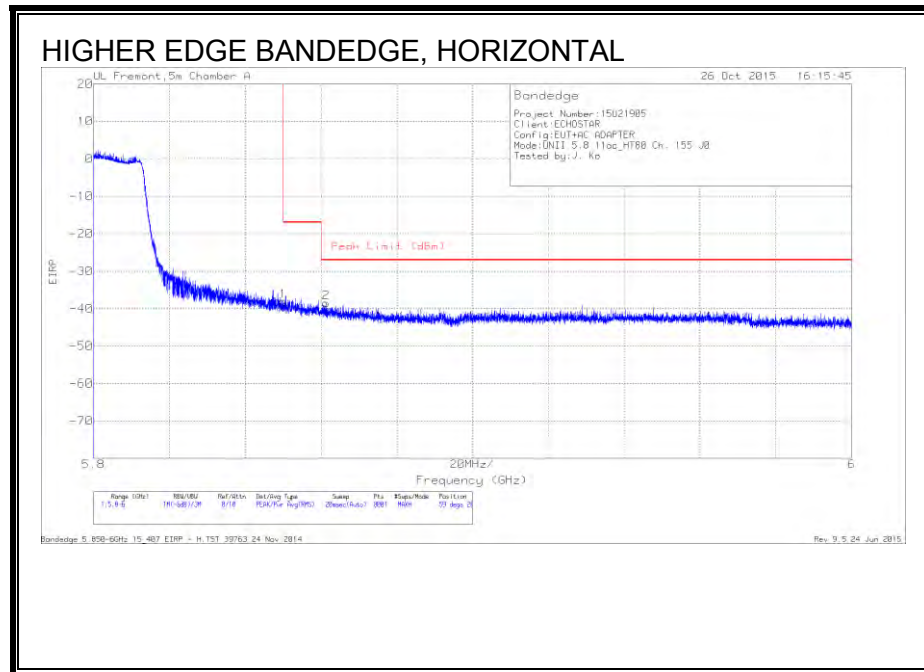


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cb/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.713	53.07	Pk	34.7	-20.8	0	66.97	-	-	74	-7.03	104	171	V
6	5.713	39.63	RMS	34.7	-20.8	.26	53.79	54	-21	-	-	104	171	V
8	5.713	39.63	RMS	34.7	-20.8	.26	53.79	54	-21	-	-	104	171	V
1	5.715	48.97	Pk	34.7	-20.8	0	62.87	-	-	74	-11.13	104	171	V
5	5.715	39.18	RMS	34.7	-20.8	.26	53.34	54	-66	-	-	104	171	V
3	5.725	49.96	Pk	34.7	-20.7	0	63.96	-	-	78.2	-14.24	104	171	V
4	5.725	57.35	Pk	34.7	-20.7	0	71.35	-	-	78.2	-6.85	104	171	V
7	5.725	40.19	RMS	34.7	-20.7	.26	54.45	-	-	-	-	104	171	V

Pk - Peak detector

RMS - RMS detection

AUTHORIZED BANDEGE (HIGHER EDGE)

Trace Markers

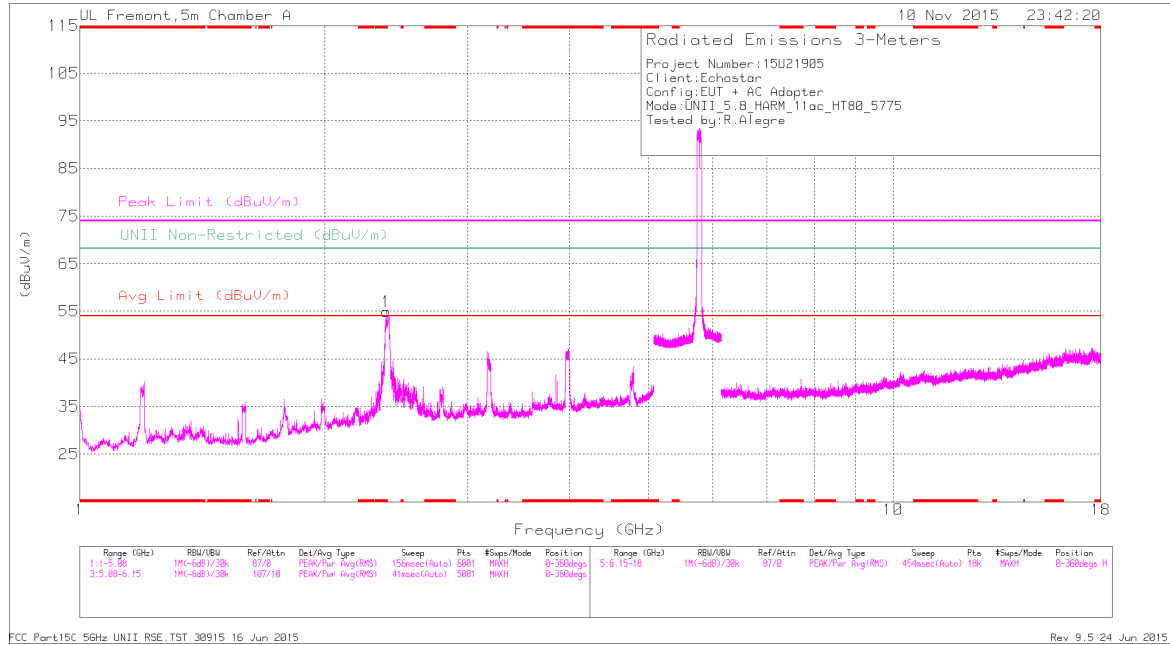
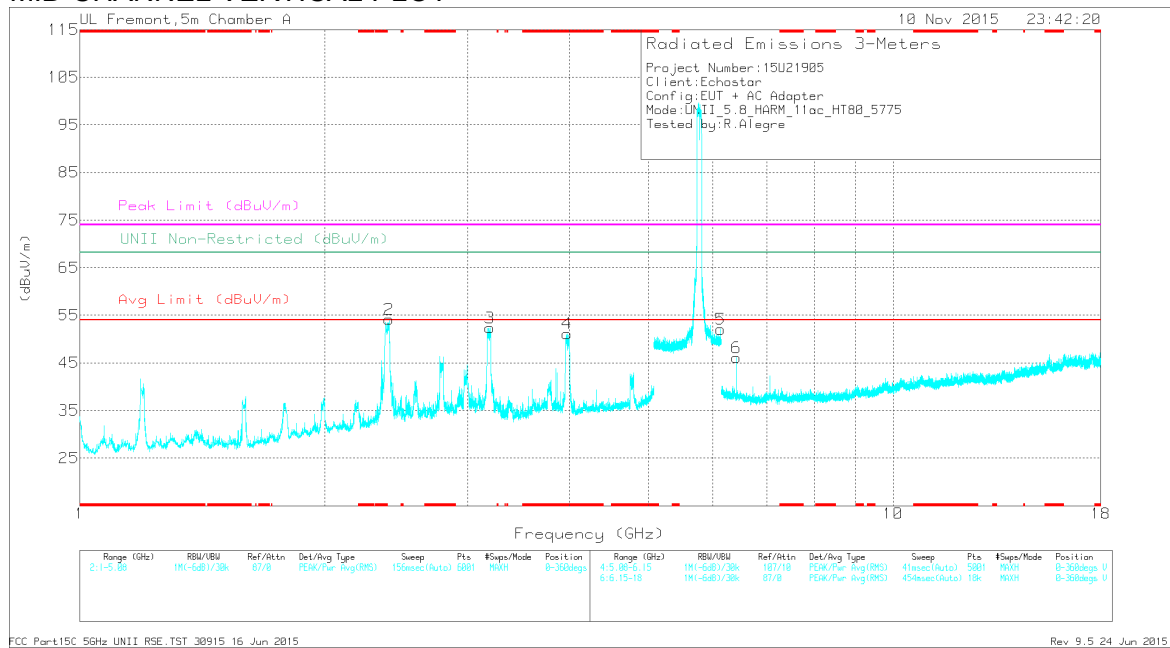
Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-64.67	Pk	35.1	-20.3	11.8	-38.07	-17	-21.07	59	207	H
2	5.861	-65.06	Pk	35.1	-20.3	11.8	-38.46	-27	-11.46	59	207	H

Pk - Peak detector



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-62.29	Pk	35.1	-20.3	11.8	-35.69	-17	-18.69	177	201	V
2	5.861	-60.11	Pk	35.1	-20.3	11.8	-33.51	-27	-6.51	177	201	V

Pk - Peak detector

HARMONICS AND SPURIOUS EMISSIONS**MID CHANNEL HORIZONTAL PLOT****MID CHANNEL VERTICAL PLOT**

DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.381	65.96	PK-U	31.9	-33.9	0	63.96	-	-	74	-10.04	-	-	19	245	H
	* 2.384	48.27	ADR	31.9	-33.9	-26	46.53	54	-7.47	-	-	-	-	19	245	H
4	* 3.979	55.49	PK-U	33.4	-31.7	0	57.19	-	-	74	-16.81	-	-	149	138	V
	* 3.976	37.7	ADR	33.4	-31.7	.26	39.66	54	-14.34	-	-	-	-	149	138	V
2	2.4	65.09	PK-U	32	-34.1	0	62.99	-	-	-	-	68.2	-5.21	167	146	V
3	3.195	62.32	PK-U	32.7	-33.1	0	61.92	-	-	-	-	68.2	-6.28	318	181	V
5	6.137	42.25	PK-U	35.4	-19.1	0	58.55	-	-	-	-	68.2	-9.65	154	204	V
6	6.417	43.33	PK-U	35.5	-27.7	0	51.13	-	-	-	-	68.2	-17.07	244	191	V

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

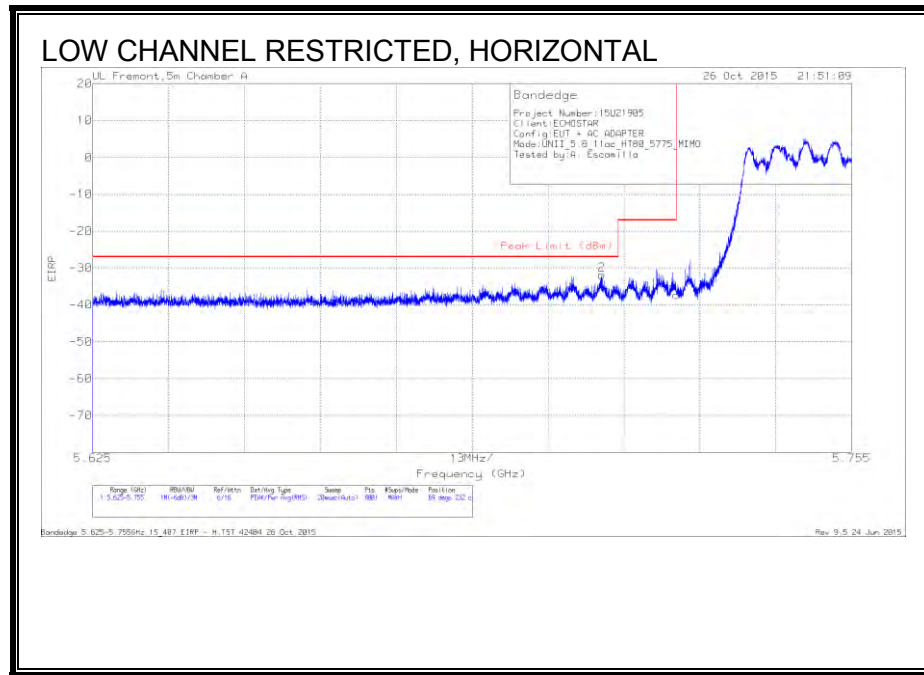
Pk - Peak detector

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

10.2.3. TX ABOVE 1 GHz 802.11ac HT80 3TX CDD MODE IN THE 5.8 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)



Trace Markers

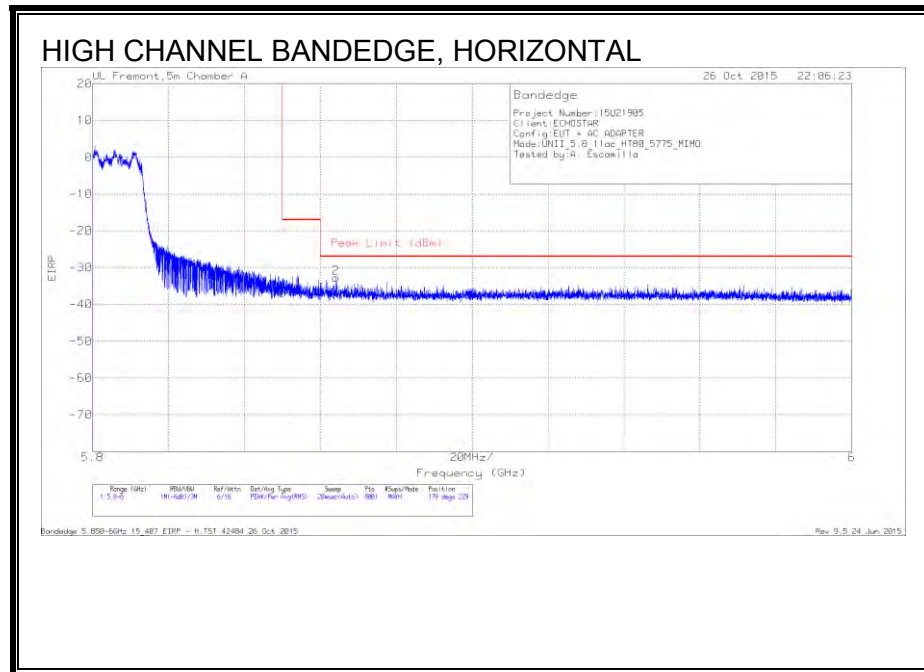
Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.712	-57.65	Pk	34.7	-20.7	11.8	0	-31.85	-27	-4.85	69	232	H
1	5.725	-63.06	Pk	34.7	-20.7	11.8	0	-37.26	-17	-20.26	69	232	H

Pk - Peak detector



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cb/Fltr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.712	-53.4	Pk	34.7	-20.7	11.8	0	-27.6	-27	-6	141	197	V
1	5.725	-58.68	Pk	34.7	-20.7	11.8	0	-32.88	-17	-15.88	141	197	V

Pk - Peak detector

AUTHORIZED BANDEGE (HIGH CHANNEL)

Trace Markers

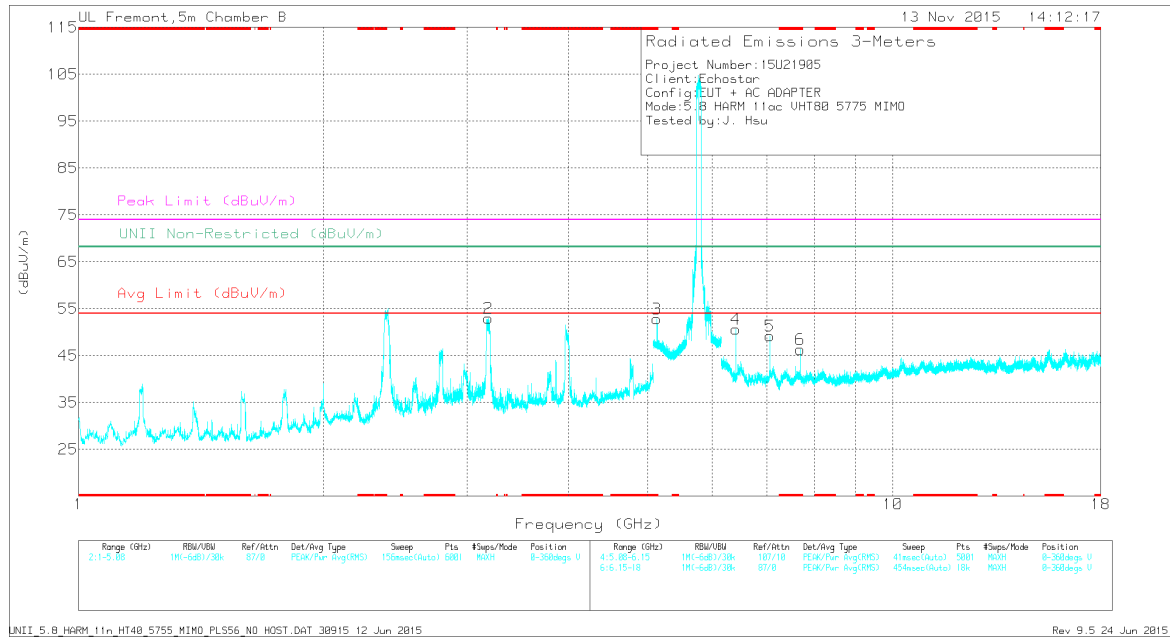
Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-63.41	Pk	35.1	-20.3	11.8	0	-36.81	-17	-19.81	179	229	H
2	5.864	-59.39	Pk	35.1	-20.3	11.8	0	-32.79	-27	-5.79	179	229	H

Pk - Peak detector



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl/ Ftr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-57.62	Pk	35.1	-20.3	11.8	0	-31.02	-17	-14.02	183	240	V
2	5.861	-57.16	Pk	35.1	-20.3	11.8	0	-30.56	-27	-3.56	183	240	V

Pk - Peak detector

HARMONICS AND SPURIOUS EMISSIONS**MID CHANNEL HORIZONTAL PLOT****MID CHANNEL VERTICAL PLOT**

DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.377	68.86	PK-U	31.9	-33.9	0	66.86	-	-	74	-7.14	-	-	204	216	H
	* 2.388	49.92	ADR	32	-34	-26	48.18	54	-5.82	-	-	-	-	204	216	H
	2.39	68.49	PK-U	32	-34	0	66.49	-	-	-	-	68.2	-1.71	204	216	H
3	* 5.133	45.1	PK-U	34.2	-20.7	0	58.6	-	-	74	-15.4	-	-	332	182	V
	* 5.133	37.87	ADR	34.2	-20.7	-26	51.63	54	-2.37	-	-	-	-	332	182	V
6	* 7.7	43.07	PK-U	35.7	-25.8	0	52.97	-	-	74	-21.03	-	-	164	176	V
	* 7.7	35.94	ADR	35.7	-25.8	-26	46.1	54	-7.9	-	-	-	-	164	176	V
2	3.175	63.36	PK-U	32.8	-32.7	0	63.46	-	-	-	-	68.2	-4.74	184	113	V
4	6.417	47.57	PK-U	35.5	-27.7	0	55.37	-	-	-	-	68.2	-12.83	31	183	V
5	7.058	44.9	PK-U	35.6	-26	0	54.5	-	-	-	-	68.2	-13.7	101	172	V

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

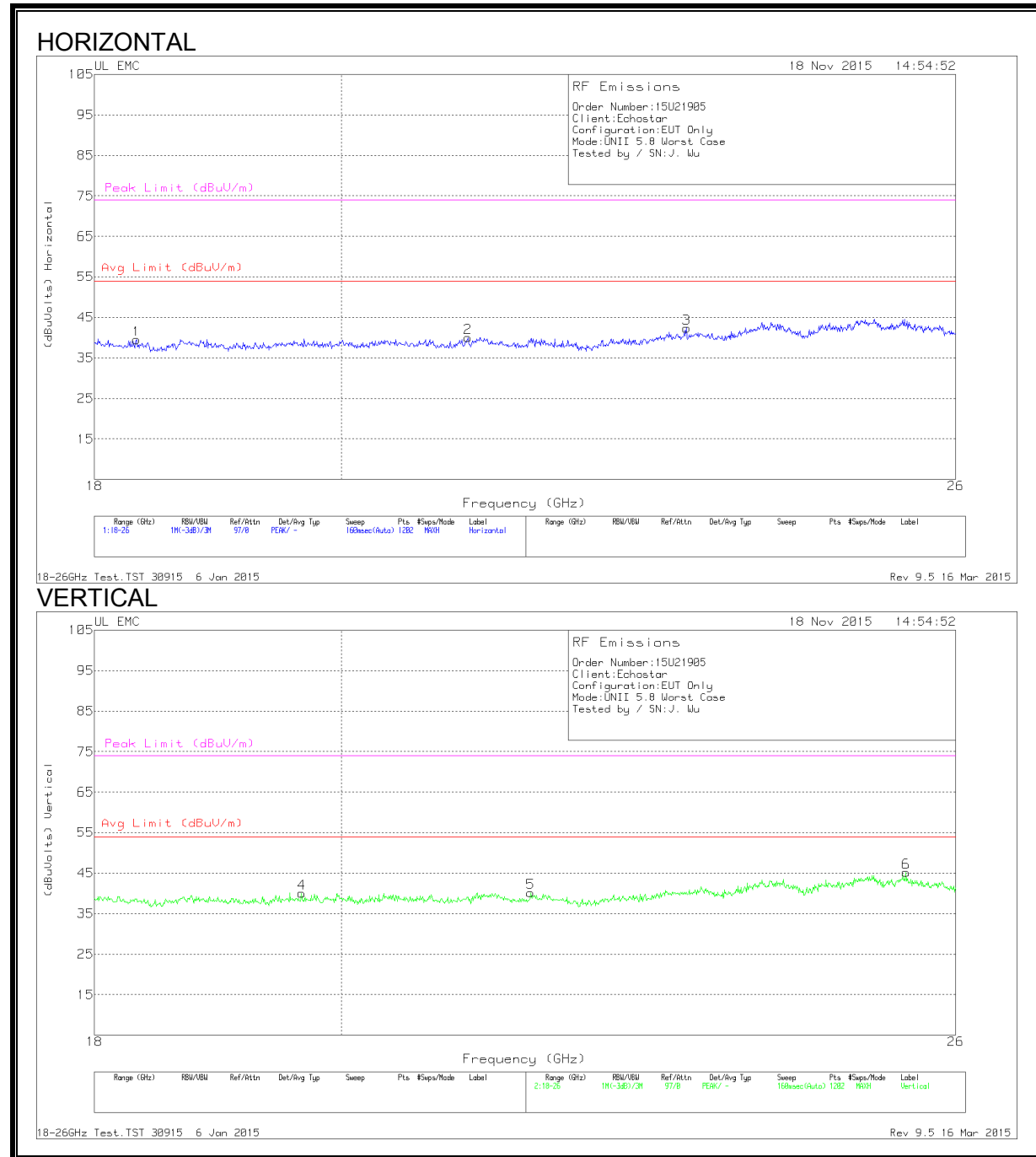
Pk - Peak detector

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

10.3. WORST-CASE ABOVE 18GHz

SPURIOUS EMISSIONS 18 – 26GHz

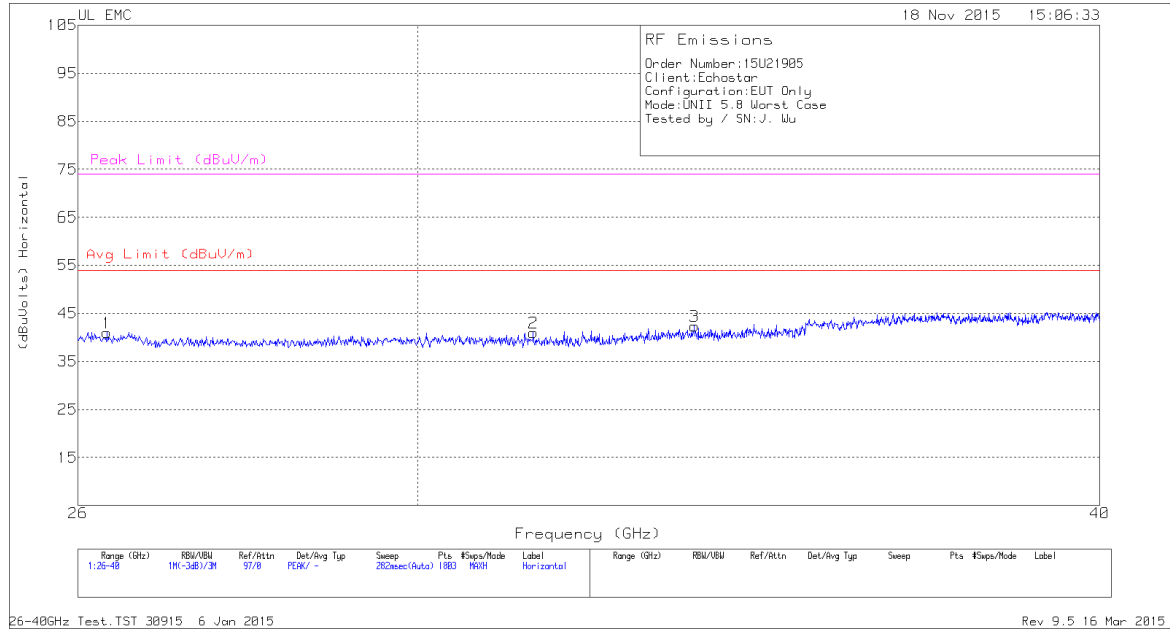


Trace Markers

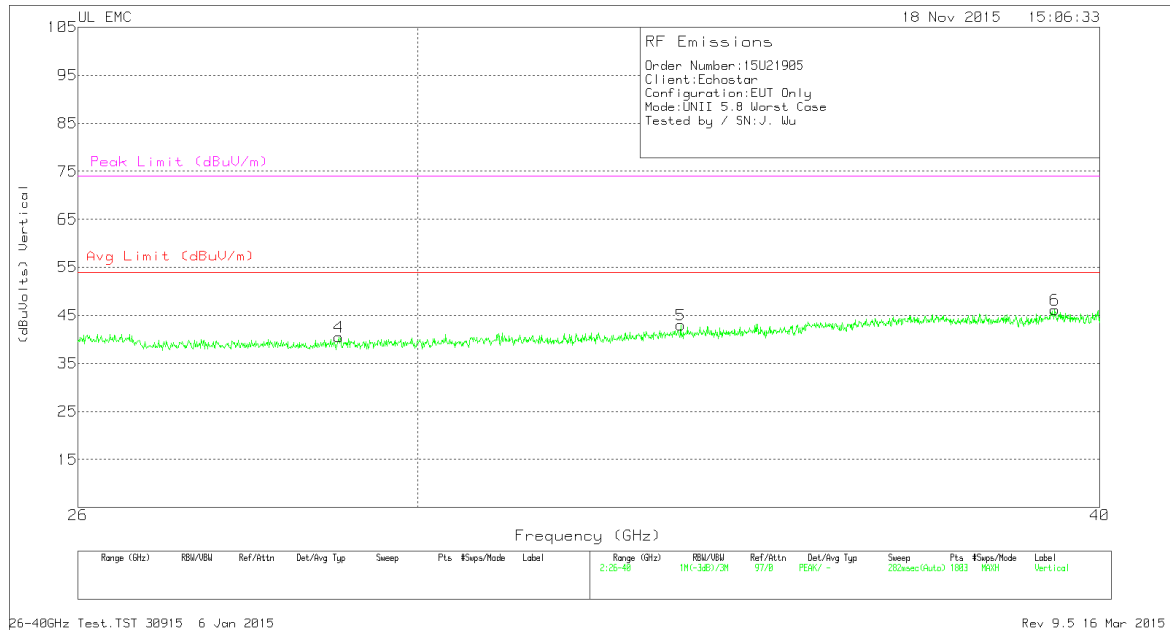
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T89 AF (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuVolts)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	18.326	41.9	Pk	32.4	-25.3	-9.5	39.5	54	-14.5	74	-34.5
2	21.111	41.9	Pk	32.8	-25.2	-9.5	40	54	-14	74	-34
3	23.176	43.43	Pk	33.5	-25.1	-9.5	42.33	54	-11.67	74	-31.67
4	19.665	41.9	Pk	32.5	-24.9	-9.5	40	54	-14	74	-34
5	21.684	41.27	Pk	33.2	-24.8	-9.5	40.17	54	-13.83	74	-33.83
6	25.454	45.37	Pk	33.8	-24.5	-9.5	45.17	54	-8.83	74	-28.83

PK - Peak detector

HORIZONTAL



VERTICAL



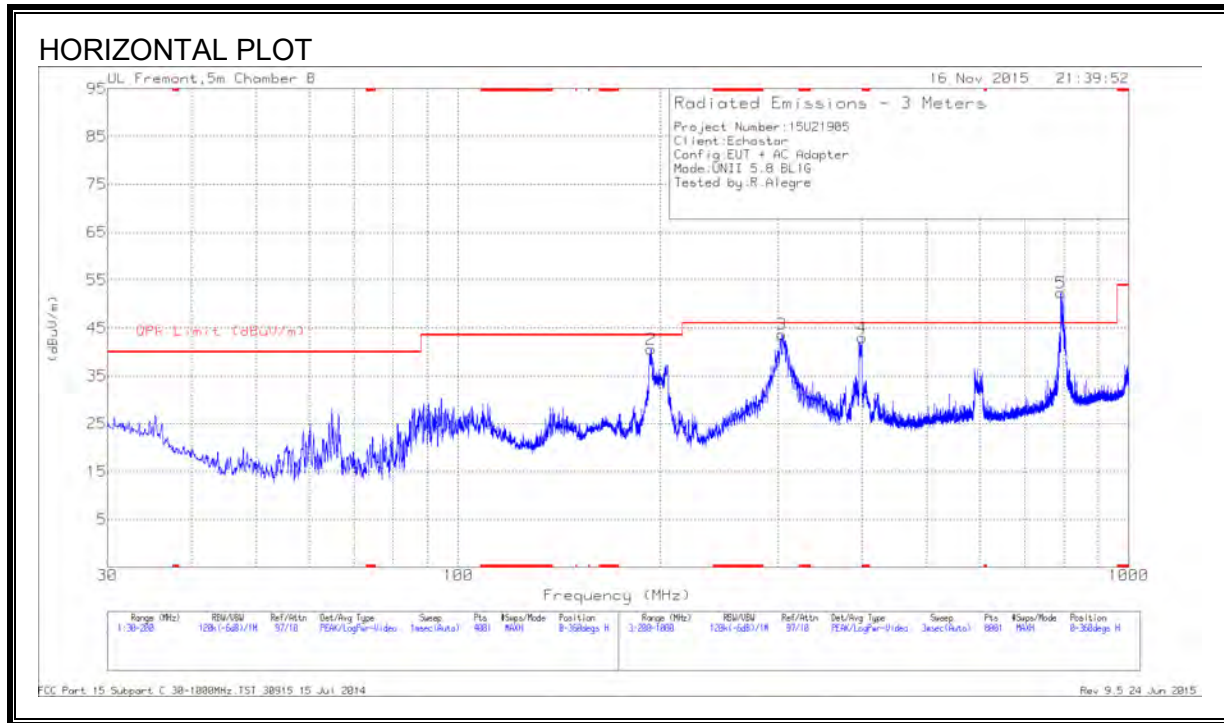
Trace Markers

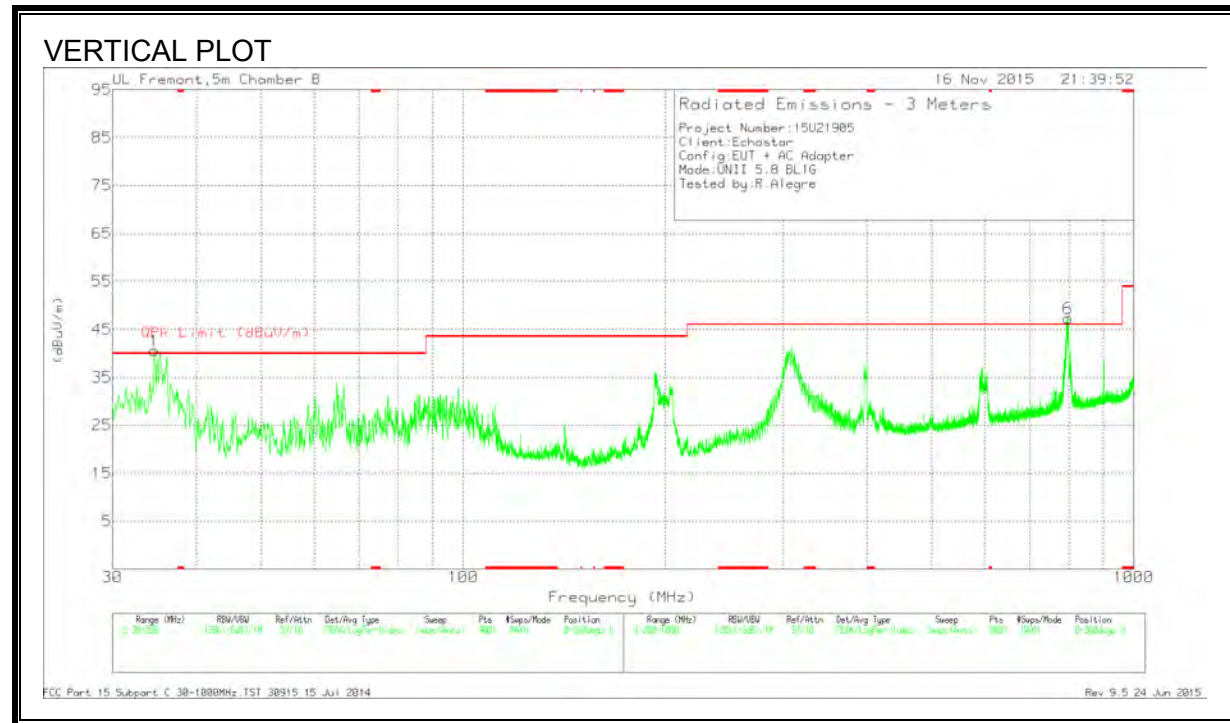
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T90 AF (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuVolts)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	26.319	46	Pk	35.6	-31.1	-9.5	41	54	-13	74	-33
2	31.501	47.3	Pk	36.2	-33	-9.5	41	54	-13	74	-33
3	33.715	47.73	Pk	36.9	-32.8	-9.5	42.33	54	-11.67	74	-31.67
4	29.022	45.8	Pk	35.9	-31.7	-9.5	40.5	54	-13.5	74	-33.5
5	33.521	48.2	Pk	37.1	-32.8	-9.5	43	54	-11	74	-31
6	39.246	49.07	Pk	38.6	-32	-9.5	46.17	54	-7.83	74	-27.83

PK - Peak detector

10.4. WORST-CASE BELOW 1 GHz

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



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

DATA

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T130 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	34.6295	44.34	Qp	21.9	-28.8	37.44	40	-2.56	125	104	V
2	194.5171	46.26	Qp	15.8	-27.1	34.96	43.52	-8.56	282	156	H
3	304.0392	47.52	Qp	17.5	-26.2	38.82	46.02	-7.2	360	103	H
4	399.8259	45.16	Qp	19.5	-26.3	38.36	46.02	-7.66	350	248	H
5	794.0619	39.18	Qp	25.1	-24.7	39.58	46.02	-6.44	107	118	H
6	798.175	40.31	Qp	25.2	-24.7	40.81	46.02	-5.21	116	166	V

Pk - Peak detector

Qp - Quasi-Peak detector

11. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

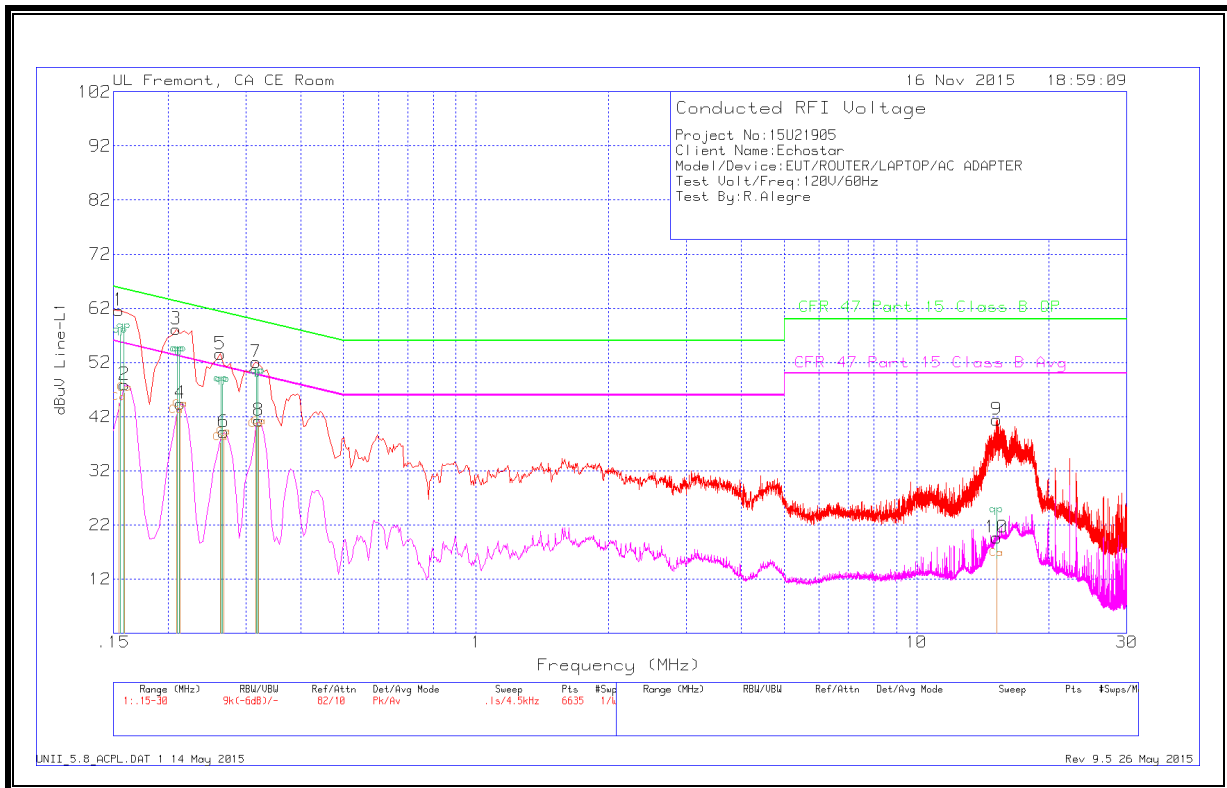
FCC §15.207 (a)

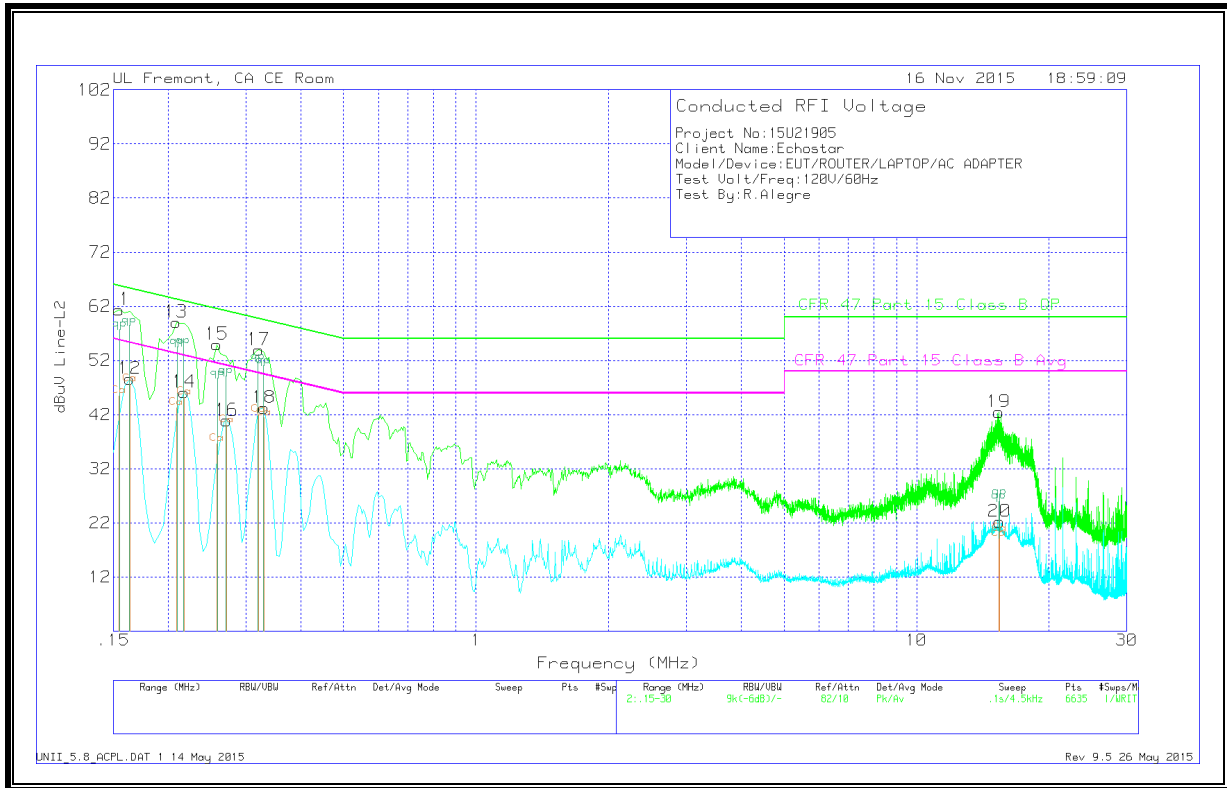
Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 [*]	56 to 46 [*]
0.5-5	56	46
5-30	60	50

^{*} Decreases with the logarithm of the frequency.

RESULTS

LINE 1 RESULTS



LINE 2 RESULTS

DATA

Trace Markers

Range 1: Line-L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1	LC Cables 1&3	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	Margin (dB)	CFR 47 Part 15 Class B Avg	Margin (dB)
1	.1545	60.31	Pk	1.3	0	61.61	65.75	-4.14		
2	.159	46.61	Av	1.3	0	47.91	-	-	55.52	-7.61
3	.2085	57.27	Pk	.9	0	58.17	63.26	-5.09		
4	.213	43.53	Av	.9	0	44.43	-	-	53.09	-8.66
5	.2625	52.87	Pk	.7	0	53.57	61.35	-7.78		
6	.267	38.56	Av	.6	0	39.16	-	-	51.21	-12.05
7	.3165	51.61	Pk	.5	0	52.11	59.8	-7.69		
8	.321	40.77	Av	.5	0	41.27	-	-	49.68	-8.41
9	15.1935	40.97	Pk	.3	.2	41.47	60	-18.53		
10	15.1935	19.16	Av	.3	.2	19.66	-	-	50	-30.34

Pk - Peak detector

Av - Average detection

Range 2: Line-L2 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2	LC Cables 2&3	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	Margin (dB)	CFR 47 Part 15 Class B Avg	Margin (dB)
11	.1545	59.95	Pk	1.4	0	61.35	65.75	-4.4		
12	.1635	47.34	Av	1.3	0	48.64	-	-	55.28	-6.64
13	.2085	58.05	Pk	1	0	59.05	63.26	-4.21		
14	.2175	45.23	Av	.9	0	46.13	-	-	52.91	-6.78
15	.258	54.25	Pk	.7	0	54.95	61.5	-6.55		
16	.2715	40.2	Av	.7	0	40.9	-	-	51.07	-10.17
17	.321	53.35	Pk	.6	0	53.95	59.68	-5.73		
18	.33	42.77	Av	.5	0	43.27	-	-	49.45	-6.18
19	15.378	41.96	Pk	.3	.2	42.46	60	-17.54		
20	15.4365	21.76	Av	.3	.2	22.26	-	-	50	-27.74

Pk - Peak detector

Av - Average detection

Peak/Average/RMS Emissions

Range 1: Line-L1 .15 - 30MHz

Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1	LC Cables 1&3	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	Margin (dB)	CFR 47 Part 15 Class B Avg	Margin (dB)
.15563	43.23	Ca	1.3	0	44.53	-	-	55.69	-11.16
.15878	44.99	Ca	1.3	0	46.29	-	-	55.53	-9.24
.20963	41.23	Ca	.9	0	42.13	-	-	53.22	-11.09
.21188	42.36	Ca	.9	0	43.26	-	-	53.13	-9.87
.26318	36.43	Ca	.7	0	37.13	-	-	51.33	-14.2
.26588	37.55	Ca	.6	0	38.15	-	-	51.25	-13.1
.31763	39.09	Ca	.5	0	39.59	-	-	49.77	-10.18
.31988	39.55	Ca	.5	0	40.05	-	-	49.71	-9.66
15.1946	15.24	Ca	.3	.2	15.74	-	-	50	-34.26

Ca - CISPR average detection

Range 2: Line-L2 .15 - 30MHz

Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2	LC Cables 2&3	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	Margin (dB)	CFR 47 Part 15 Class B Avg	Margin (dB)
.15518	44.04	Ca	1.4	0	45.44	-	-	55.72	-10.28
.16328	46.33	Ca	1.3	0	47.63	-	-	55.3	-7.67
.20963	42.34	Ca	.9	0	43.24	-	-	53.22	-9.98
.21638	44.33	Ca	.9	0	45.23	-	-	52.96	-7.73
.25913	35.91	Ca	.7	0	36.61	-	-	51.46	-14.85
.27038	39.33	Ca	.7	0	40.03	-	-	51.11	-11.08
.31988	41.37	Ca	.6	0	41.97	-	-	49.71	-7.74
.32888	40.91	Ca	.5	0	41.41	-	-	49.48	-8.07
15.3769	18.58	Ca	.3	.2	19.08	-	-	50	-30.92
15.4363	19.5	Ca	.3	.2	20	-	-	50	-30

Ca - CISPR average detection

Quasi-Peak Emissions

Range 1: Line-L1 .15 - 30MHz

Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1	LC Cables 1&3	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	Margin (dB)	CFR 47 Part 15 Class B Avg	Margin (dB)
.15563	55.72	Qp	1.3	0	57.02	65.69	-8.67	-	-
.15878	56.54	Qp	1.3	0	57.84	65.53	-7.69	-	-
.20963	52.6	Qp	.9	0	53.5	63.22	-9.72	-	-
.21188	52.61	Qp	.9	0	53.51	63.13	-9.62	-	-
.26318	47.32	Qp	.7	0	48.02	61.33	-13.31	-	-
.26588	47.33	Qp	.6	0	47.93	61.25	-13.32	-	-
.31763	48.95	Qp	.5	0	49.45	59.77	-10.32	-	-
.31988	48.98	Qp	.5	0	49.48	59.71	-10.23	-	-
15.1946	23.36	Qp	.3	.2	23.86	60	-36.14	-	-

Qp - Quasi-Peak detector

Range 2: Line-L2 .15 - 30MHz

Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2	LC Cables 2&3	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	Margin (dB)	CFR 47 Part 15 Class B Avg	Margin (dB)
.15518	56.37	Qp	1.4	0	57.77	65.72	-7.95	-	-
.16328	57.17	Qp	1.3	0	58.47	65.3	-6.83	-	-
.20963	53.62	Qp	.9	0	54.52	63.22	-8.7	-	-
.21638	53.78	Qp	.9	0	54.68	62.96	-8.28	-	-
.25913	48.04	Qp	.7	0	48.74	61.46	-12.72	-	-
.27038	48.44	Qp	.7	0	49.14	61.11	-11.97	-	-
.31988	51.17	Qp	.6	0	51.77	59.71	-7.94	-	-
.32888	50.51	Qp	.5	0	51.01	59.48	-8.47	-	-
15.3769	25.51	Qp	.3	.2	26.01	60	-33.99	-	-
15.4363	26.28	Qp	.3	.2	26.78	60	-33.22	-	-

Qp - Quasi-Peak detector

UNII_5.8_ACPL.DAT 1 14 May 2015

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