



**FCC 47 CFR PART 15 SUBPART E**

**CLASS II PERMISSIVE CHANGE**

**TEST REPORT**

**FOR**

**802.11 a/g/n/ac WLAN +Bluetooth PCI-E Custom Combination Card**

**MODEL NUMBER: BCM94360CD**

**FCC ID: QDS-BRCM1070**

**REPORT NUMBER: 15U22130-E2V3**

**ISSUE DATE: JANUARY 26, 2016**

*Prepared for*  
**BROADCOM CORPORATION**  
**190 MATHILDA PLACE**  
**SUNNYVALE, CA 94086, U.S.A.**

*Prepared by*  
**UL VERIFICATION SERVICES INC.**  
**47173 BENICIA STREET**  
**FREMONT, CA 94538, U.S.A.**  
**TEL: (510) 771-1000**  
**FAX: (510) 661-0888**



**NVLAP LAB CODE 200065-0**

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	12/23/15	Initial Issue	H. Mustapha
V2	1/11/16	Added reference to KDB 662911 under section 2	H. Mustapha
V3	1/26/16	Removed BT antenna gain from section 5.4	H. Mustapha

## TABLE OF CONTENTS

<b>1. ATTESTATION OF TEST RESULTS .....</b>	<b>5</b>
<b>2. TEST METHODOLOGY .....</b>	<b>7</b>
<b>3. FACILITIES AND ACCREDITATION .....</b>	<b>7</b>
<b>4. CALIBRATION AND UNCERTAINTY .....</b>	<b>7</b>
4.1. MEASURING INSTRUMENT CALIBRATION .....	7
4.2. SAMPLE CALCULATION .....	7
4.3. MEASUREMENT UNCERTAINTY.....	8
<b>5. EQUIPMENT UNDER TEST .....</b>	<b>9</b>
5.1. DESCRIPTION OF EUT .....	9
5.2. MAXIMUM OUTPUT POWER.....	9
5.3. LIST OF TEST REDUCTION AND MODES COVERING OTHER MODES.....	10
5.4. DESCRIPTION OF AVAILABLE ANTENNAS .....	11
5.5. SOFTWARE AND FIRMWARE.....	11
5.6. DESCRIPTION OF CLASS II PERMISSIVE CHANGE .....	11
5.7. WORST-CASE CONFIGURATION AND MODE.....	12
5.8. DESCRIPTION OF TEST SETUP.....	13
<b>6. TEST AND MEASUREMENT EQUIPMENT .....</b>	<b>15</b>
<b>7. MEASUREMENT METHODS .....</b>	<b>16</b>
<b>8. ANTENNA PORT TEST RESULTS (LOW ANTENNA GAIN) .....</b>	<b>17</b>
8.1. ON TIME AND DUTY CYCLE.....	17
8.2. 802.11a LEGACY MODE IN THE 5.8 GHz BAND.....	24
8.2.1. OUTPUT POWER .....	24
8.3. 802.11n HT20 CDD 1Tx MODE IN THE 5.8 GHz BAND.....	26
8.3.1. OUTPUT POWER .....	26
8.4. 802.11n HT20 CDD 3TX MODE IN THE 5.8 GHz BAND .....	28
8.4.1. 6 dB BANDWIDTH.....	28
8.4.2. OUTPUT POWER .....	34
8.4.3. Maximum Power Spectral Density (PSD).....	36
8.5. 802.11n HT20 TxBF 3TX MODE IN THE 5.8 GHz BAND .....	43
8.5.1. OUTPUT POWER .....	43
8.6. 802.11n HT40 1TX MODE IN THE 5.8 GHz BAND.....	45
8.6.1. OUTPUT POWER .....	45
8.7. 802.11n HT40 CDD 3TX MODE IN THE 5.8 GHz BAND .....	47
8.7.1. 6 dB BANDWIDTH.....	47

8.7.2.	OUTPUT POWER .....	51
8.7.3.	Maximum Power Spectral Density (PSD) .....	53
8.8.	802.11n HT40 TxBF 3TX MODE IN THE 5.8 GHz BAND .....	58
8.8.1.	OUTPUT POWER .....	58
8.8.2.	Maximum Power Spectral Density (PSD) .....	60
8.9.	802.11ac VHT80 1TX MODE IN THE 5.8 GHz BAND.....	65
8.9.1.	OUTPUT POWER .....	65
8.10.	802.11ac VHT80 CDD 3TX MODE IN THE 5.8 GHz BAND.....	67
8.10.1.	6 dB BANDWIDTH .....	67
8.10.2.	OUTPUT POWER .....	71
8.10.3.	Maximum Power Spectral Density (PSD) .....	73
8.11.	802.11ac VHT80 TxBF 3TX MODE IN THE 5.8 GHz BAND.....	77
8.11.1.	OUTPUT POWER .....	77
8.11.2.	Maximum Power Spectral Density (PSD) .....	79
<b>9.</b>	<b>RADIATED TEST RESULTS.....</b>	<b>83</b>
9.1.	LIMITS AND PROCEDURE .....	83
9.2.	TX ABOVE 1 GHz 802.11a MODE SISO IN THE 5.8 GHz BAND.....	84
9.3.	TX ABOVE 1 GHz 802.11n HT20 MODE 1Tx IN THE 5.8 GHz BAND.....	86
9.4.	TX ABOVE 1 GHz 802.11n HT20 MODE 3Tx IN THE 5.8 GHz BAND.....	88
9.5.	TX ABOVE 1 GHz 802.11n HT20 MODE TxBF IN THE 5.8 GHz BAND .....	96
9.6.	TX ABOVE 1 GHz 802.11n HT40 MODE 1Tx IN THE 5.8 GHz BAND.....	104
9.7.	TX ABOVE 1 GHz 802.11n HT40 MODE 3Tx IN THE 5.8 GHz BAND.....	106
9.8.	TX ABOVE 1 GHz 802.11n HT40 MODE TxBF IN THE 5.8 GHz BAND .....	112
9.9.	TX ABOVE 1 GHz 802.11ac HT80 MODE 1Tx IN THE 5.8 GHz BAND.....	118
9.10.	TX ABOVE 1 GHz 802.11ac HT80 MODE 3Tx IN THE 5.8 GHz BAND .....	120
9.11.	TX ABOVE 1 GHz 802.11ac HT80 MODE TxBF IN THE 5.8 GHz BAND.....	124
9.12.	WORST-CASE BELOW 1 GHz LOW ANTENNA GAIN.....	128
9.13.	WORST-CASE ABOVE 18GHz.....	131
<b>10.</b>	<b>AC POWER LINE CONDUCTED EMISSIONS .....</b>	<b>135</b>
<b>11.</b>	<b>SETUP PHOTOS .....</b>	<b>139</b>

## 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** BROADCOM CORPORATION  
190 MATHILDA PLACE  
SUNNYVALE, CA 94086, U.S.A.

**EUT DESCRIPTION:** 802.11 a/g/n/ac WLAN + Bluetooth PCI-E Custom Combination Card

**MODEL:** BCM94360CD

**SERIAL NUMBER:** Radiated S/N: C86248400J0F6RY1B  
Conducted S/N: C86320100009F6RY38

**DATE TESTED:** OCTOBER 26 – NOVEMBER 10, 2015  
NOVEMBER 12 – DECEMBER 10, 2012

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.

Approved & Released For  
UL Verification Services Inc. By:

Tested By:

*Huda Mustapha*

*Lionel Lara*

---

HUDA MUSTAPHA  
PROJECT LEAD  
UL Verification Services Inc.

---

LIONEL LARA  
EMC ENGINEER  
UL Verification Services Inc.



---

FRANK IBRAHIM  
PROGRAM MANAGER  
UL Verification Services Inc.

## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, FCC 06-96, FCC KDB 789033 D02 v01, KDB 662911 D01 v02r01 and 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
<input type="checkbox"/> Chamber A	<input type="checkbox"/> Chamber D
<input checked="" type="checkbox"/> Chamber B	<input type="checkbox"/> Chamber E
<input type="checkbox"/> Chamber C	<input type="checkbox"/> Chamber F
	<input type="checkbox"/> Chamber G
	<input type="checkbox"/> 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:

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

### 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	$\pm 3.52$ dB
Radiated Disturbance, 30 to 1000 MHz	$\pm 4.94$ dB
Radiated Disturbance, 1 to 6 GHz	$\pm 3.86$ dB
Radiated Disturbance, 6 to 18 GHz	$\pm 4.23$ dB
Radiated Disturbance, 18 to 26 GHz	$\pm 5.30$ dB
Radiated Disturbance, 26 to 40 GHz	$\pm 5.23$ dB

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



## 5. EQUIPMENT UNDER TEST

### 5.1. DESCRIPTION OF EUT

The EUT is an 802.11 a/g/n/ac WLAN + Bluetooth PCI-E Custom Combination card.

The radio module is manufactured by Broadcom.

### 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)
<b>5.8 GHz band, 1TX</b>						
5745-5825	802.11a Legacy	20.60	N/A	N/A	20.60	114.82
5745-5825	802.11n HT20	22.19	N/A	N/A	22.19	165.58
5755-5795	802.11n HT40	18.32	N/A	N/A	18.32	67.92
5775	802.11ac VHT80	13.53	N/A	N/A	13.53	22.54
<b>5.8 GHz band, 3TX</b>						
5745-5825	802.11n HT20 CDD	21.26	20.52	21.12	25.75	375.80
5745-5825	802.11n HT20 TxBF	18.81	18.04	18.65	23.28	212.99
5755-5795	802.11n HT40 CDD	18.35	17.73	18.00	22.81	190.78
5755-5795	802.11n HT40 TxBF	19.50	18.55	19.40	23.94	247.84
5775	802.11ac VHT80 CDD	12.06	11.63	11.99	16.67	46.44
5775	802.11ac VHT80 TxBF	11.45	10.77	11.58	16.05	40.29

### 5.3. LIST OF TEST REDUCTION AND MODES COVERING OTHER MODES

#### List of test reduction (Non Beam-Forming modes)

Antenna Port Testing		
Band	Mode	Covered by
5 GHz bands	802.11a Legacy 1TX	802.11n HT20 CDD 3TX
5 GHz bands	802.11a CDD 2TX	802.11n HT20 CDD 3TX
5 GHz bands	802.11a CDD 3TX	802.11n HT20 CDD 3TX
5 GHz bands	802.11n HT40 1TX	802.11n HT40 CDD 3TX
5 GHz bands	802.11n HT40 CDD 2TX	802.11n HT40 CDD 3TX
5 GHz bands	802.11ac VHT80 1TX	802.11ac VHT80 CDD 3TX
5 GHz bands	802.11ac VHT80 CDD 2TX	802.11ac VHT80 CDD 3TX

Radiated Testing		
Band	Mode	Covered by
5 GHz bands	802.11a Legacy 1TX (Harmonics)	802.11n HT20 CDD 3TX (Harmonics)
5 GHz bands	802.11a CDD 2TX	802.11n HT20 CDD 3TX
5 GHz bands	802.11a CDD 3TX	802.11n HT20 CDD 3TX
5 GHz bands	802.11n HT20 CDD 2TX	802.11n HT20 CDD 3TX
5 GHz bands	802.11n HT40 1TX (Harmonics)	802.11n HT40 CDD 3TX (Harmonics)
5 GHz bands	802.11ac VHT80 1TX (Harmonics)	802.11ac VHT80 CDD 3TX (Harmonics)
5 GHz bands	802.11ac VHT80 CDD 2TX	802.11ac VHT80 CDD 3TX

#### List of test reduction (Beam-Forming modes)

Antenna Port Testing		
Band	Mode	Covered by
5 GHz bands	802.11n HT40 BF 2Tx	802.11n HT40 BF 3Tx
5 GHz bands	802.11ac VHT80 BF 2Tx	802.11ac VHT80 BF 3Tx

Radiated Testing		
Band	Mode	Covered by
5 GHz bands	802.11a BF 2TX	802.11n HT20 BF 3Tx
5 GHz bands	802.11a BF 3TX	802.11n HT20 BF 3Tx
5 GHz bands	802.11n HT20 BF 2Tx	802.11n HT20 BF 3Tx
5 GHz bands	802.11n HT40 BF 2Tx	802.11n HT40 BF 3Tx
5 GHz bands	802.11ac VHT80 BF 2Tx	802.11ac VHT80 BF 3Tx

## 5.4. DESCRIPTION OF AVAILABLE ANTENNAS

The EUT utilizes the following antennas:

No.	Antenna Manufacturer	Antenna Type	Model	Peak gain @ 2412, 2422, 2432MHz, (BT)	Peak gain @ 2412, 2422, 2432MHz, (WLAN)	Peak gain (5150-5250MHz) @5200MHz	Peak gain (5250-5350MHz) @5320MHz	Peak gain (5470-5725MHz) @5500, 5700MHz	Peak gain (5725-5850MHz) @5785, 5805MHz
1	Amphenol/Molex	802.11abgn WLAN Antenna	WF2 (604-3073)	NA	4.32	4.83	4.52	4.72	4.86
1	Amphenol/Molex	802.11abgn WLAN Antenna	WF3 (604-3075)	NA	4.77	2.84	3.21	2.09	1.95
1	Amphenol/Molex	802.11abgn WLAN Antenna	WF4 (604-3074)	NA	3.72	1.18	1.48	2.85	3.09

## 5.5. SOFTWARE AND FIRMWARE

The EUT driver software installed during testing was Broadcom, rev. 7.15.53.9.

The test utility software used during testing was Broadcom MTool, rev. 7.10 RC81.1.

## 5.6. DESCRIPTION OF CLASS II PERMISSIVE CHANGE

The purpose of this C2PC is to upgrade the device described under section 5.1 of this report to the new rules per KDB 789033 D02 v01.

For UNII-1, UNII-2 and UNII-2C bands, we have reviewed the original test report (report no. 12U14669-4E) and are hereby attesting that all the current technical requirements are still met and all applicable test procedures remain the same. Therefore, the original test report is still applicable and no additional testing is done.

## **5.7. WORST-CASE CONFIGURATION AND MODE**

The EUT was tested as an external module installed in a test jig board connected to a host Laptop PC.

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

For all modes with single chain SISO, chain 1 (J0) was used for 5GHz band as worst case.

For radiated band edge, preliminary investigation showed that horizontal polarization was worst case for 3Tx modes, while vertical polarization was worst case for SISO modes, therefore only horizontal polarization was tested for 3Tx modes and only vertical polarization was tested for SISO modes.

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

802.11a mode: 6 Mbps  
802.11n HT20 mode: MCS0  
802.11n HT40 mode: MCS0  
802.11ac HT80 mode: MCS0

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

## 5.8. DESCRIPTION OF TEST SETUP

### SUPPORT EQUIPMENT

Support Equipment List			
Description	Manufacturer	Model	Serial Number
Laptop	Lenovo	G560	CBU3475167
AC / DC Adapter	Lenovo	PA-1650-56LC	N/A
Laptop	Lenovo	G560	CBU4495771
AC / DC Adapter	Lenovo	PA-1650-56LC	N/A
PCle. Card	Broadcom	N/A	N/A

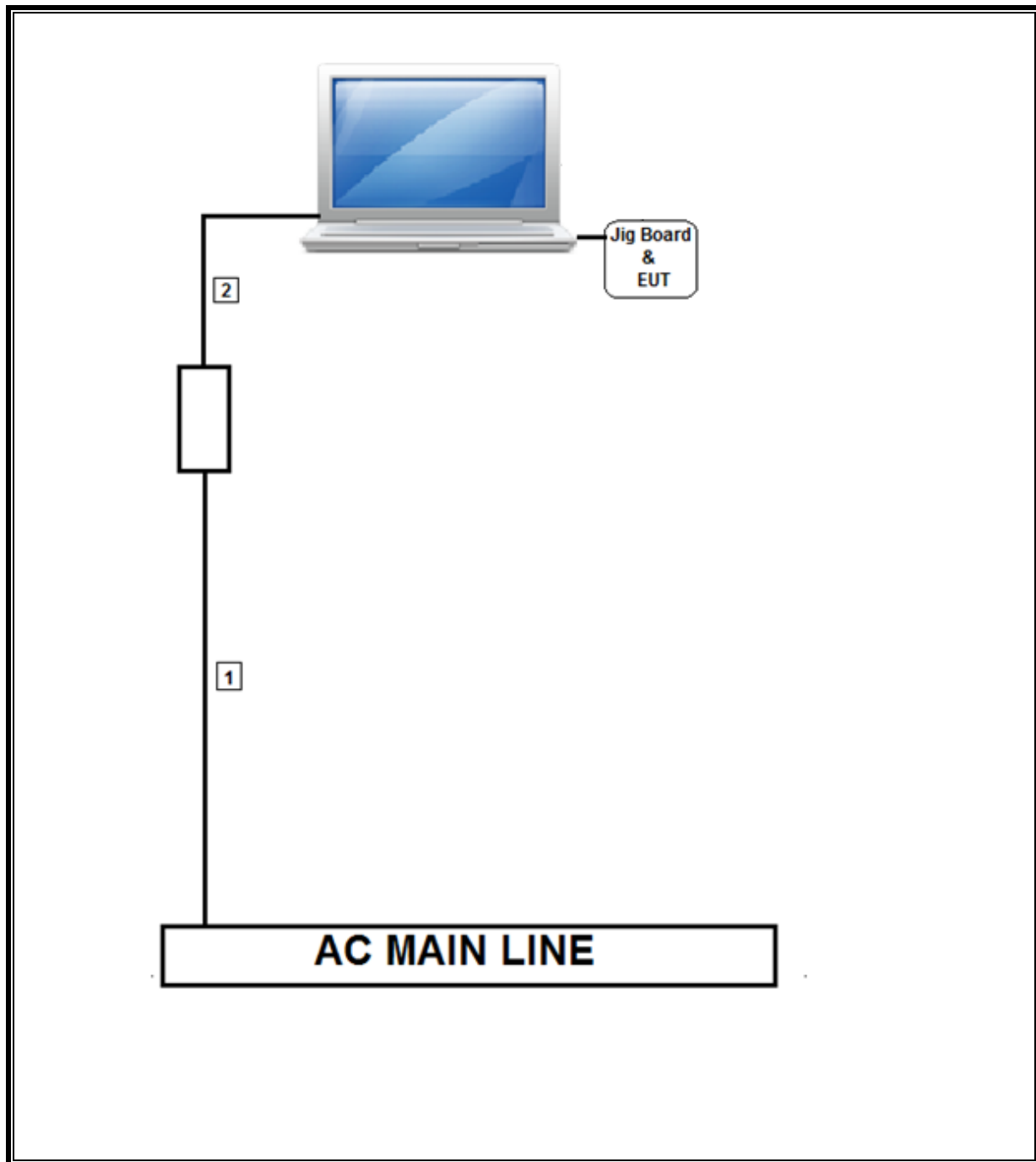
### I/O CABLES

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	AC	1	US 115V	Unshielded	1.5 m	NA
2	DC	1	DC	Unshielded	1.5 m	Ferrite at laptop's end

### TEST SETUP

The EUT was connected to a host laptop via PCIE card. Test software exercised the EUT.

**SETUP DIAGRAM FOR TESTS**



## 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
Radiated Software	UL	UL EMC	Ver 9.5, June 6, 2015		
Conducted Software	UL	UL EMC	Ver 9.5, May 17 2012		
Bilog Antenna 30-1000MHz	Sunol	JB1	130	09/01/15	09/01/16
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	HP	8447D	10	01/16/15	01/16/16
Preamp 1-8GHz	Miteq	AMF-4D-01000	782	10/22/15	10/22/16
Preamp 1-26.5GHz	Agilent	8449B	404	06/29/15	06/29/16
Amplifier, 26-40GHz	Miteq	NSP4000-SP2	88	04/07/15	04/07/16
Spectrum Analyzer 3kHz - 44GHz	Agilent	N9030A	907	05/15/15	05/15/16
Coaxial Switchbox	Keysight	11713A	457	-	-
3GHz HPF	Micro-Tronics	HPM17543	485	01/16/15	01/16/16
5GHz LPF	Micro-Tronics	LPS17541	482	01/16/15	01/16/16
6GHz HPF	Micro-Tronics	HPS17542	483	01/16/15	01/16/16
EMI Test Receiver	Rohde & Schwarz	ECSI 7	1124	09/30/15	09/30/16
Spectrum Analyzer 3Hz to 44GHz	Agilent	E4440A	123	10/22/15	10/22/16
Power Meter	Agilent	N1911A	T1268	06/07/15	06/07/16
Power Sensor	Agilent	N1921A	1223	06/07/15	02/06/16

## 7. MEASUREMENT METHODS

On Time and Duty Cycle: KDB 789033 D02 v01, Section B

6 dB Emission BW: KDB 789033 D02 v01, Section C.2.

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, and KDB 662911 D01 v02r01.

Unwanted emissions in restricted bands: KDB 789033 D02 v01, Sections G.2, G.3, G.4, G.5, and G.6.

Unwanted emissions in non-restricted bands: KDB 789033 D02 v01, Sections G.2, G.3, G.4, and G.5



## 8. ANTENNA PORT TEST RESULTS (LOW ANTENNA GAIN)

### 8.1. ON TIME AND DUTY CYCLE

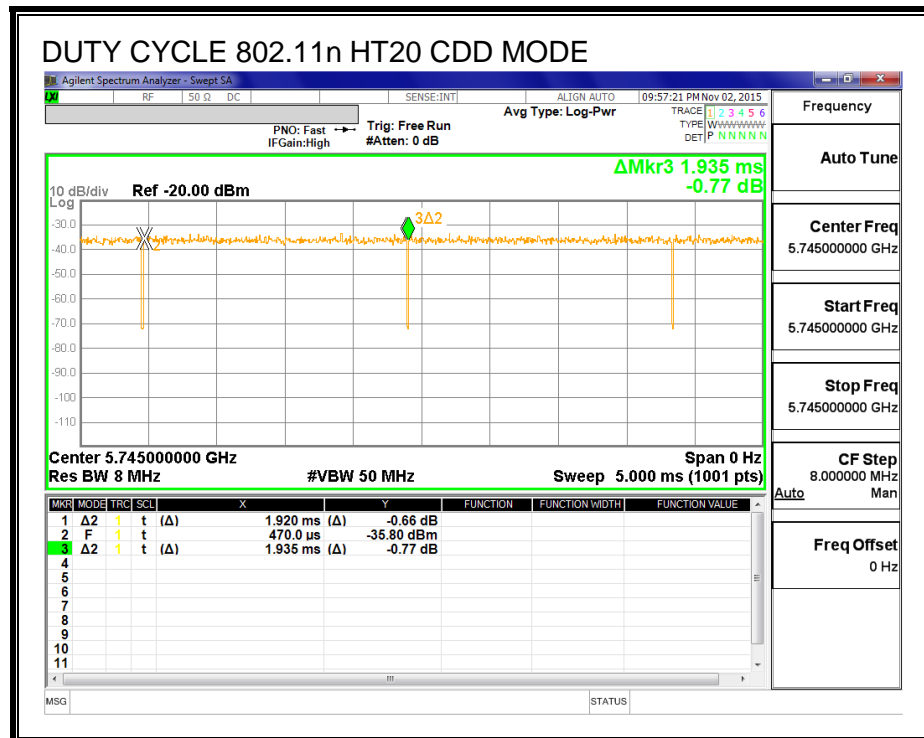
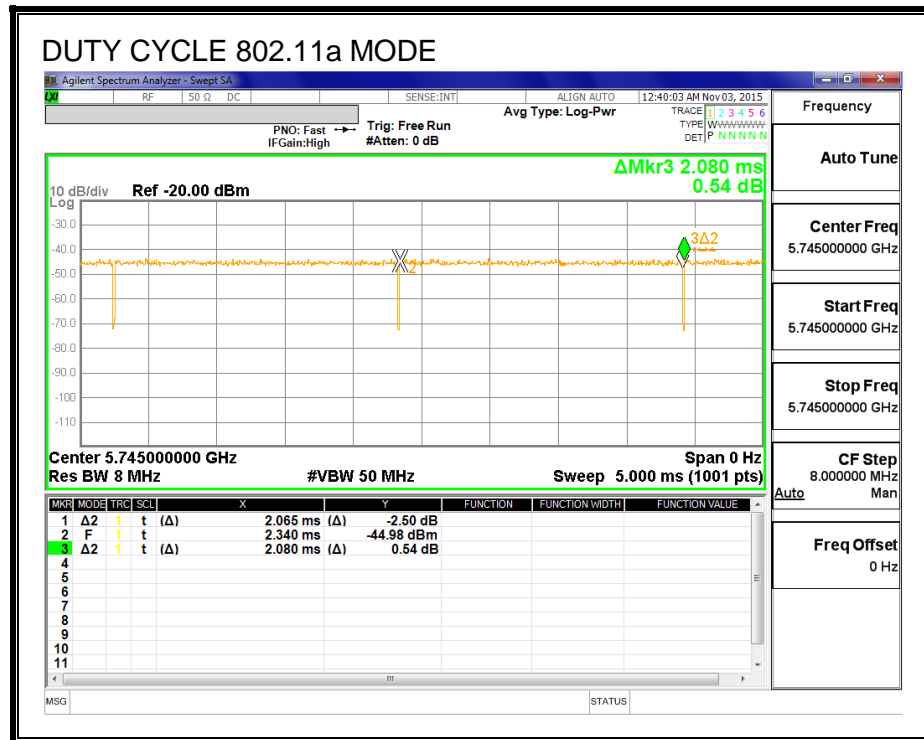
#### LIMITS

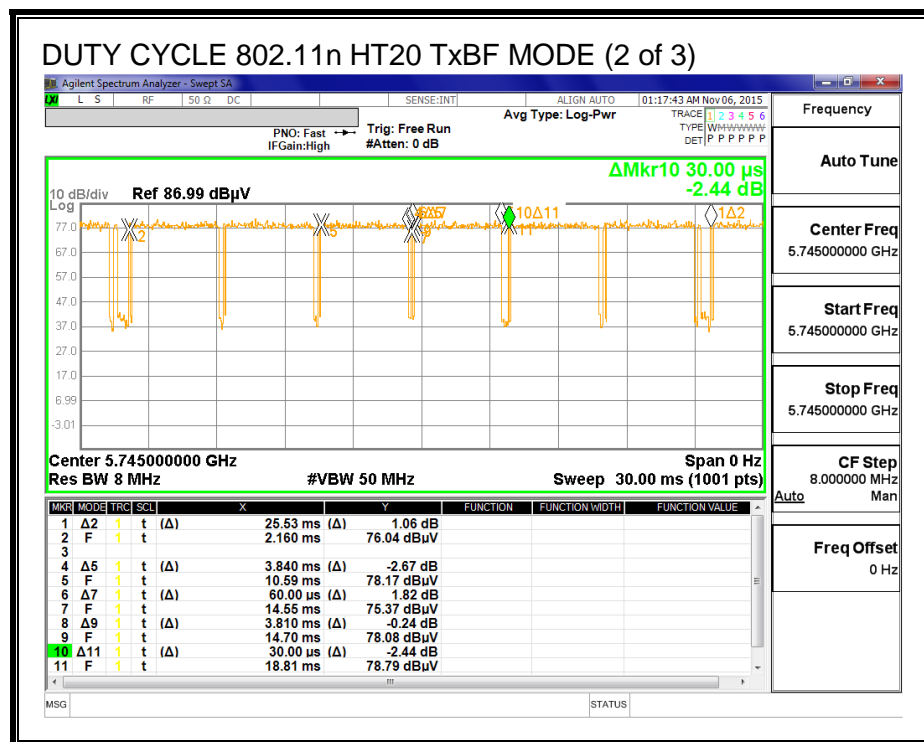
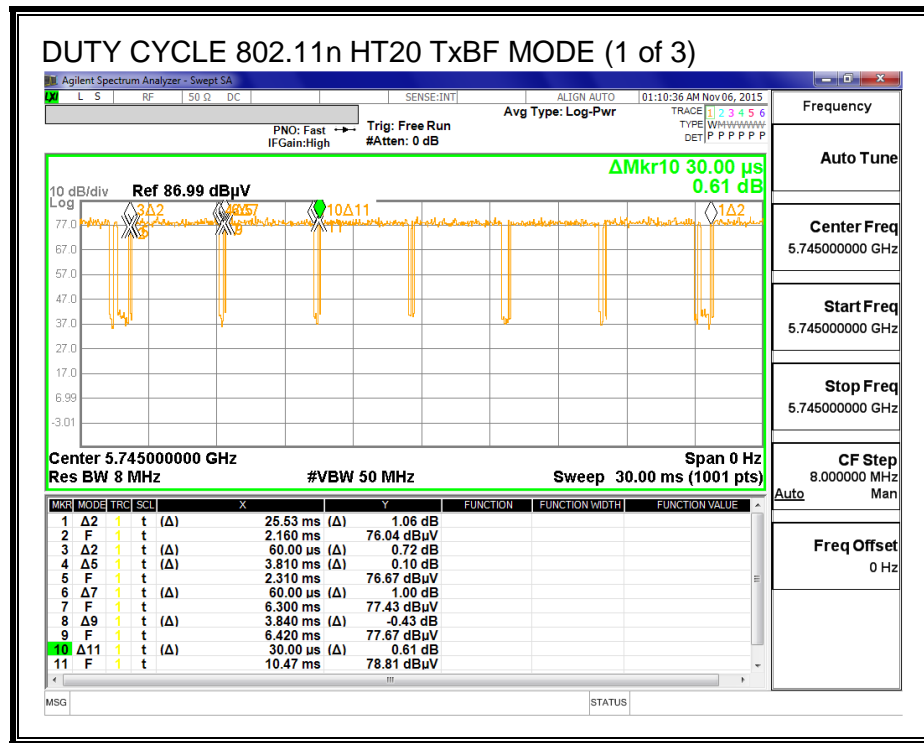
None; for reporting purposes only.

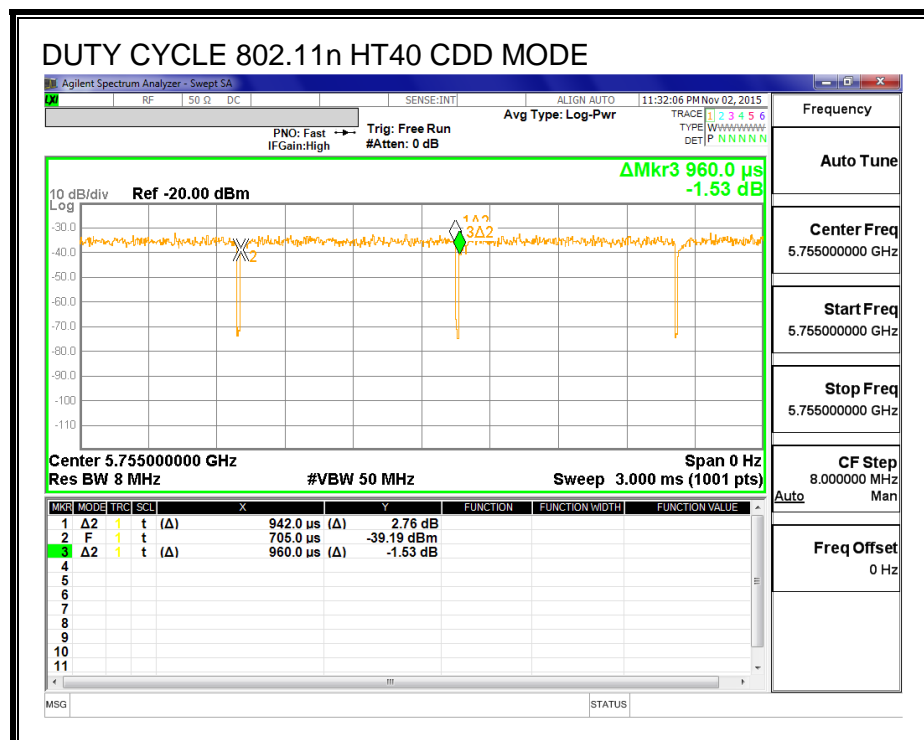
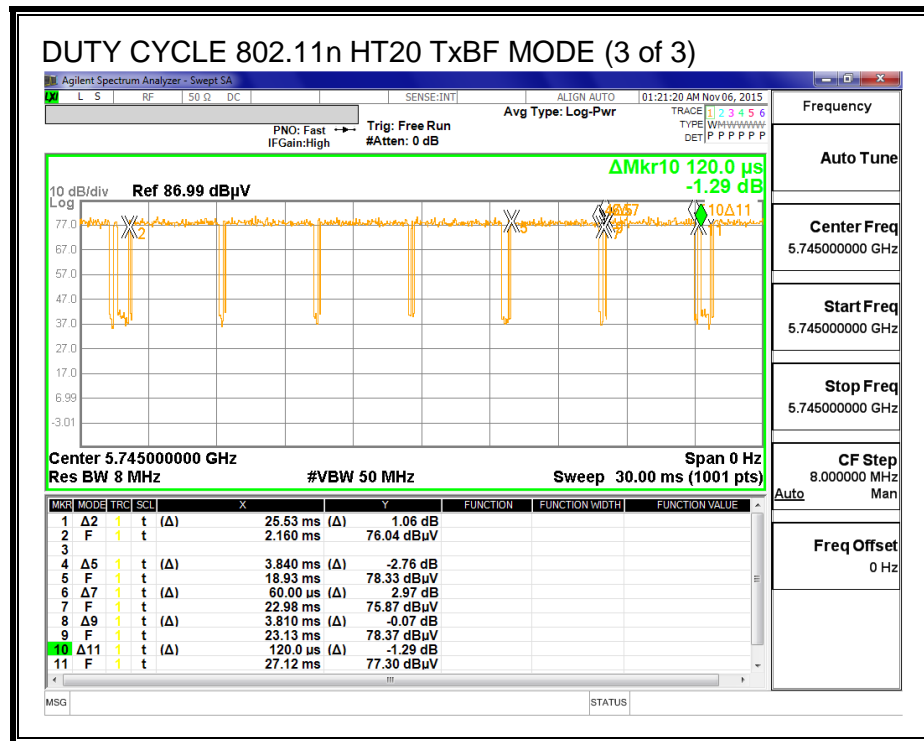
#### ON TIME AND DUTY CYCLE RESULTS

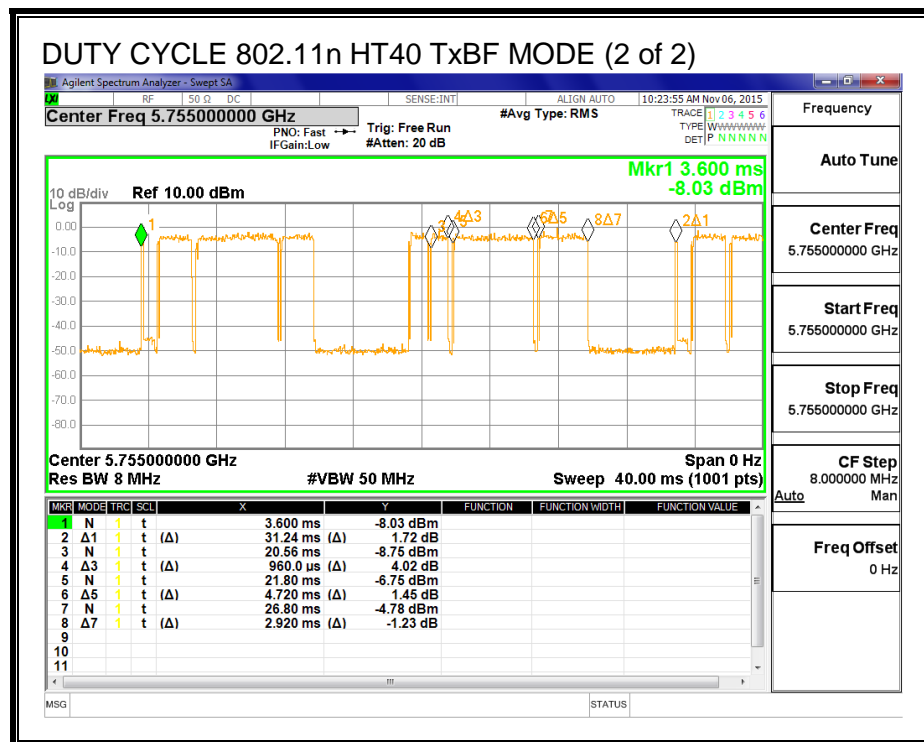
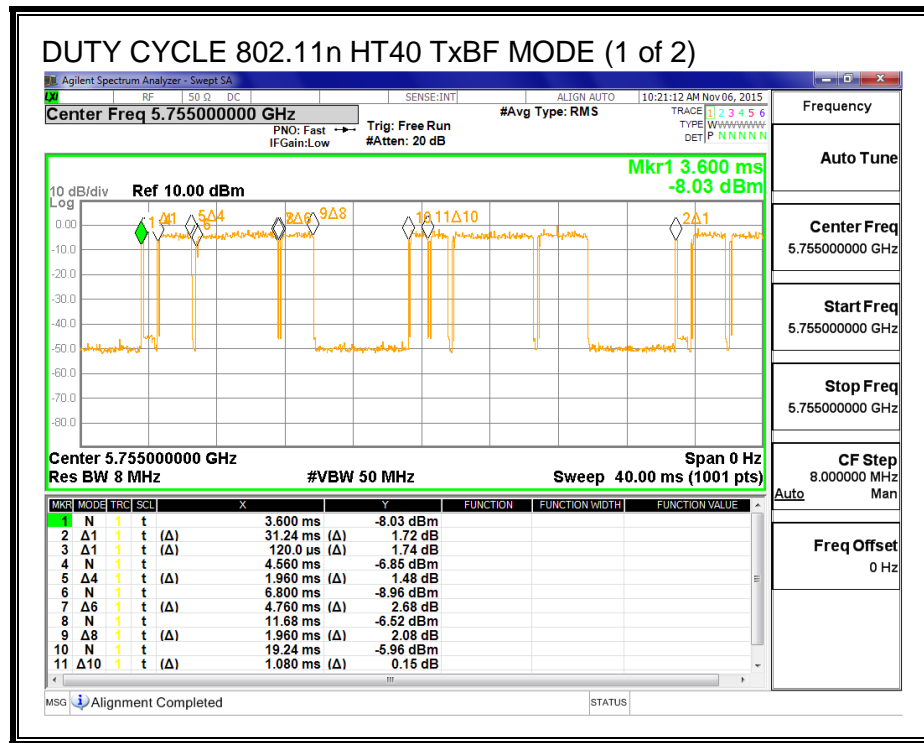
Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
802.11a CDD	2.065	2.080	0.993	99.28%	0.00	0.010
802.11n HT20 CDD	1.920	1.935	0.992	99.22%	0.00	0.010
802.11n HT20 TxBF	23.370	25.530	0.915	91.54%	0.38	0.043
802.11n HT40 CDD	0.9420	0.9600	0.981	98.13%	0.00	0.010
802.11n HT40 TxBF	18.480	31.240	0.592	59.15%	2.28	0.054
802.11ac VHT80 CDD	0.4600	0.4769	0.965	96.46%	0.16	2.174
802.11ac VHT80 TxBF	12.0092	31.2800	0.384	38.39%	4.16	0.083

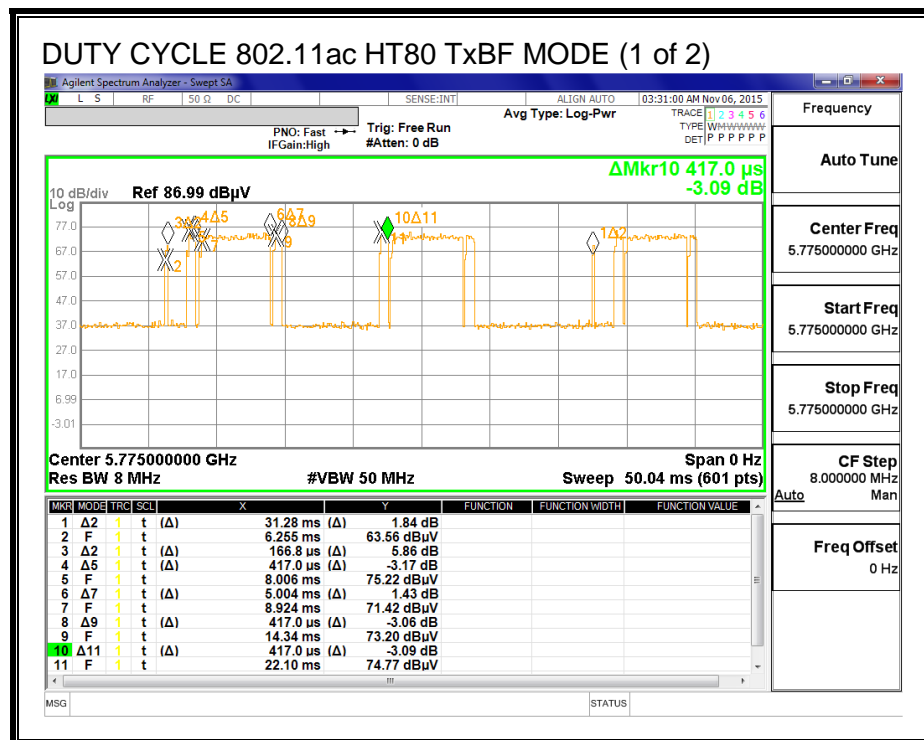
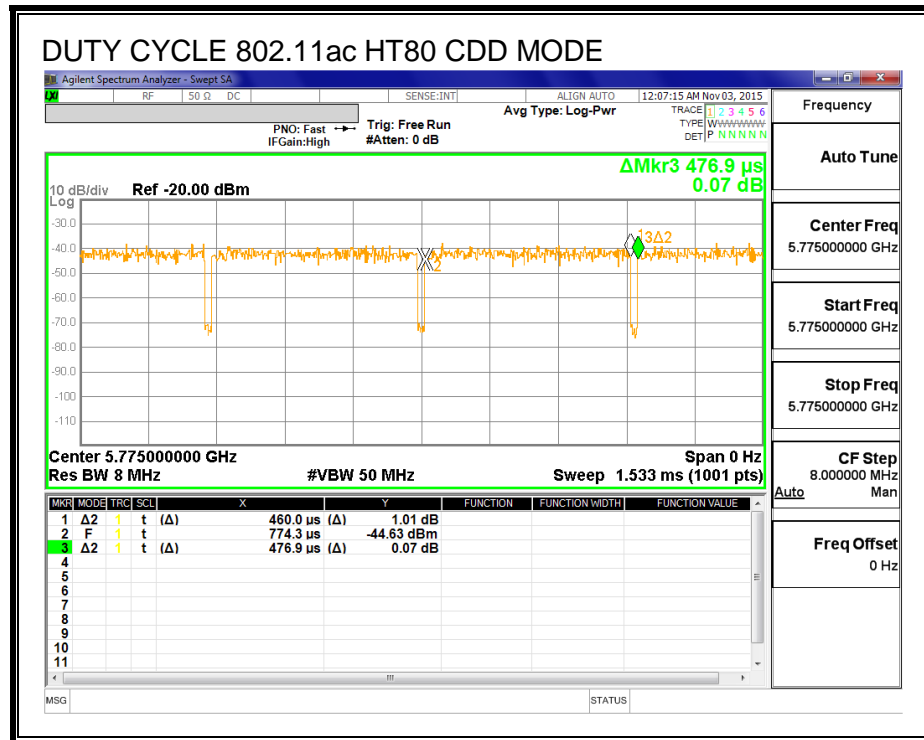
## DUTY CYCLE PLOTS

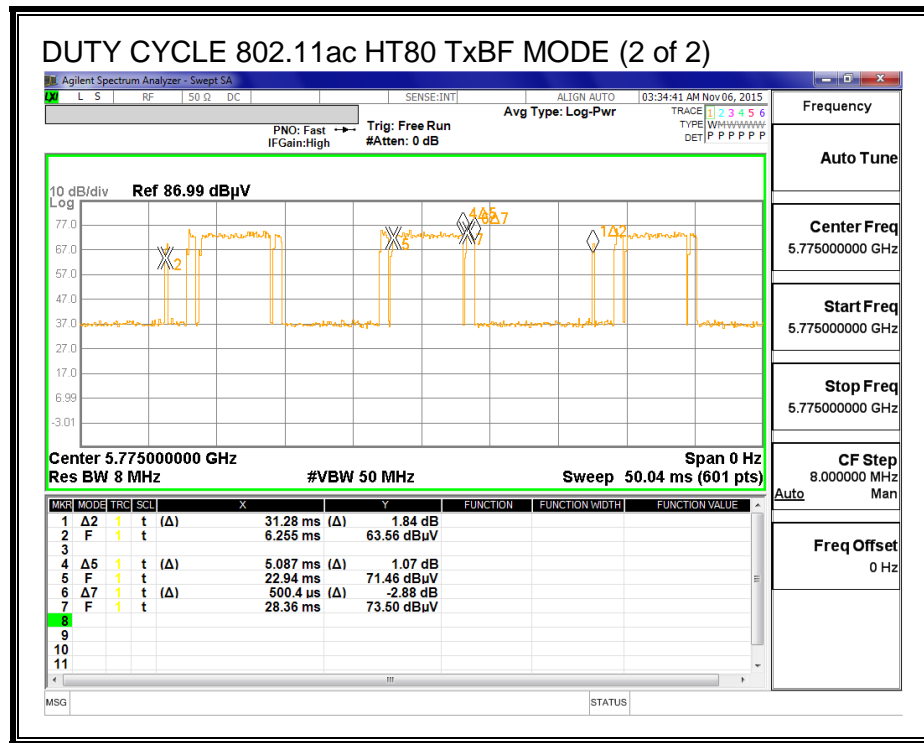












## **8.2. 802.11a LEGACY MODE IN THE 5.8 GHz BAND**

### **8.2.1. 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**

This is SISO mode, AG is the highest (worst-case) = 4.86 dBi



## **RESULTS**

### **Antenna Gain and Limit**

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Power Limit (dBm)
Low	5745	4.86	30.00
153	5765	4.86	30.00
High	5825	4.86	30.00

### **Output Power Results**

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	16.74	16.74	30.00	-13.26
153	5765	20.30	20.30	30.00	-9.70
High	5825	20.60	20.60	30.00	-9.40

**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.

### **8.3. 802.11n HT20 CDD 1Tx MODE IN THE 5.8 GHz BAND**

#### **8.3.1. 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**

This is SISO mode, AG is the highest (worst-case) = 4.86 dBi

## **RESULTS**

### **Antenna Gain and Limit**

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Power Limit (dBm)
Low	5745	4.86	30.00
153	5765	4.86	30.00
High	5825	4.86	30.00

### **Output Power Results**

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	15.47	15.47	30.00	-14.53
153	5765	22.19	22.19	30.00	-7.81
High	5825	19.44	19.44	30.00	-10.56

**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.

## 8.4.802.11n HT20 CDD 3TX MODE IN THE 5.8 GHz BAND

### 8.4.1. 6 dB BANDWIDTH

#### LIMITS

FCC §15.247 (a) (2)

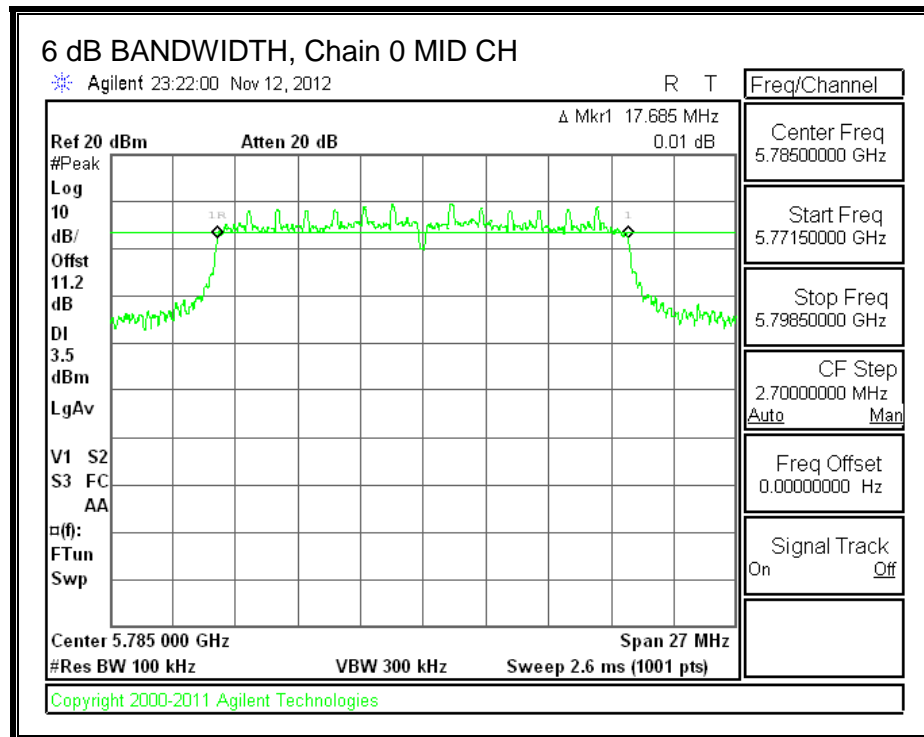
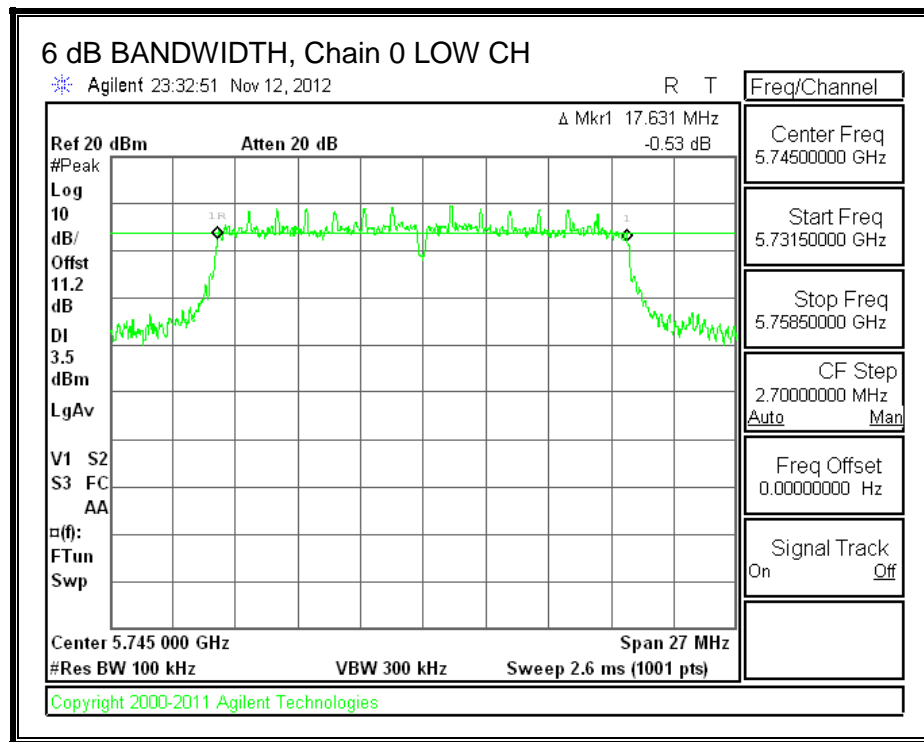
IC RSS-210 A8.2 (a)

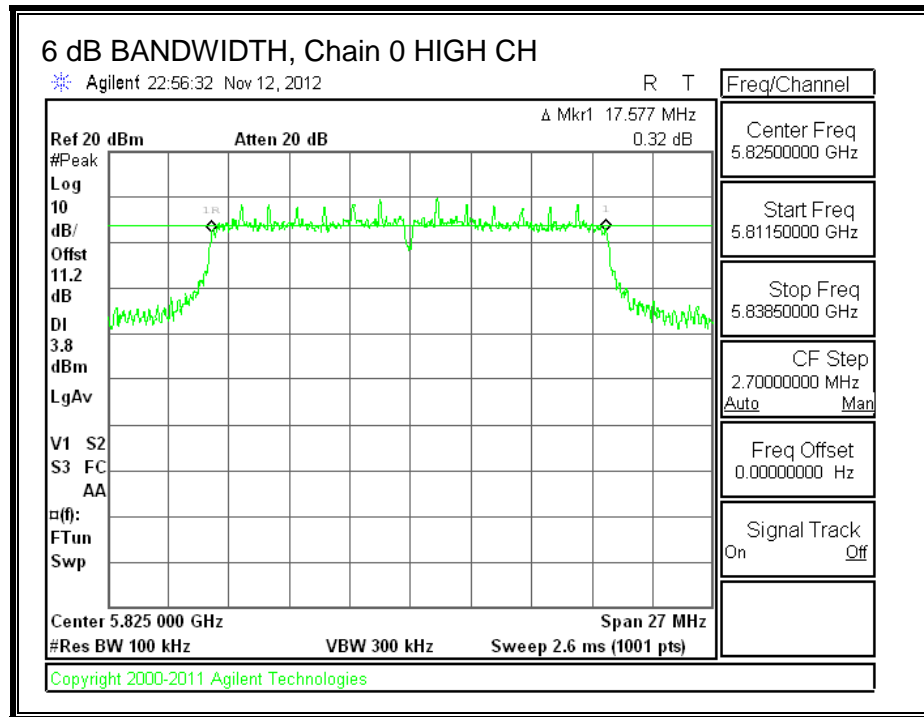
The minimum 6 dB bandwidth shall be at least 500 kHz.

#### RESULTS

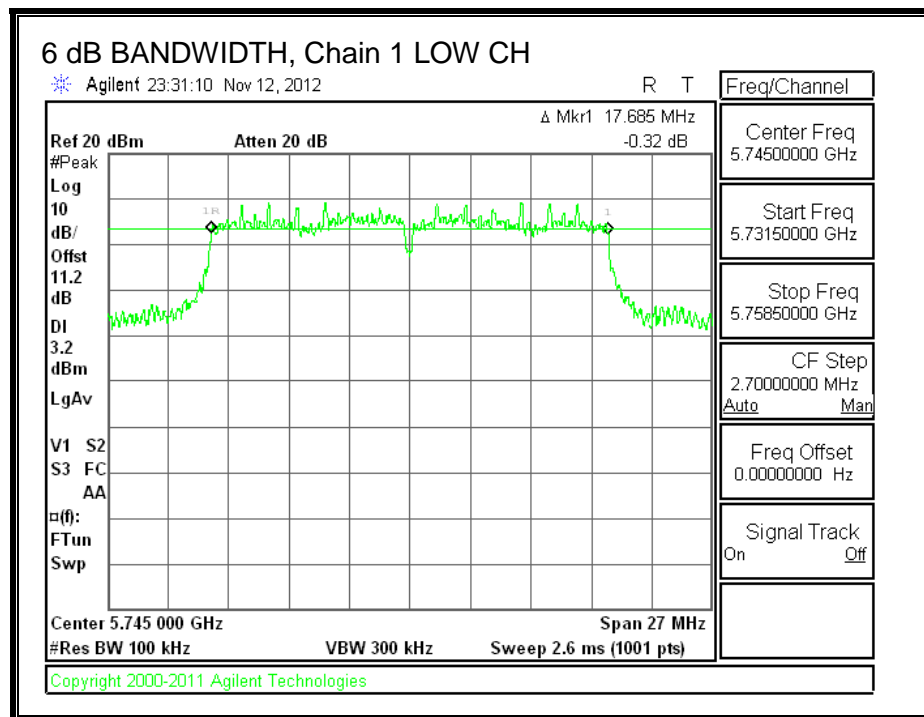
Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	6 dB BW Chain 2 (MHz)	Minimum Limit (MHz)
Low	5745	17.631	17.685	17.631	0.5
Mid	5785	17.685	17.631	17.658	0.5
High	5825	17.577	17.658	17.577	0.5

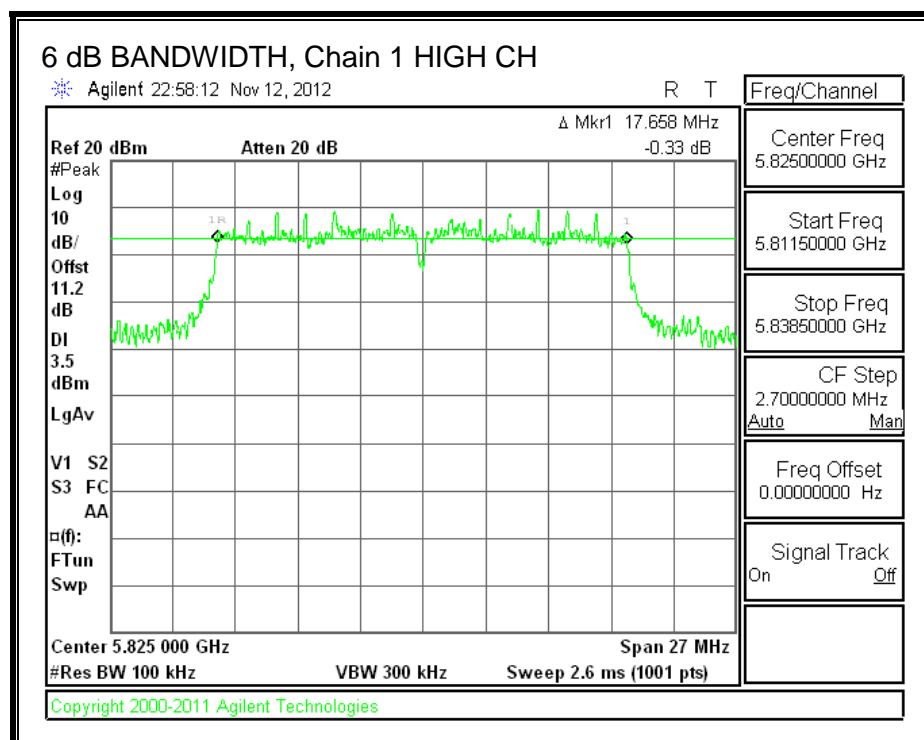
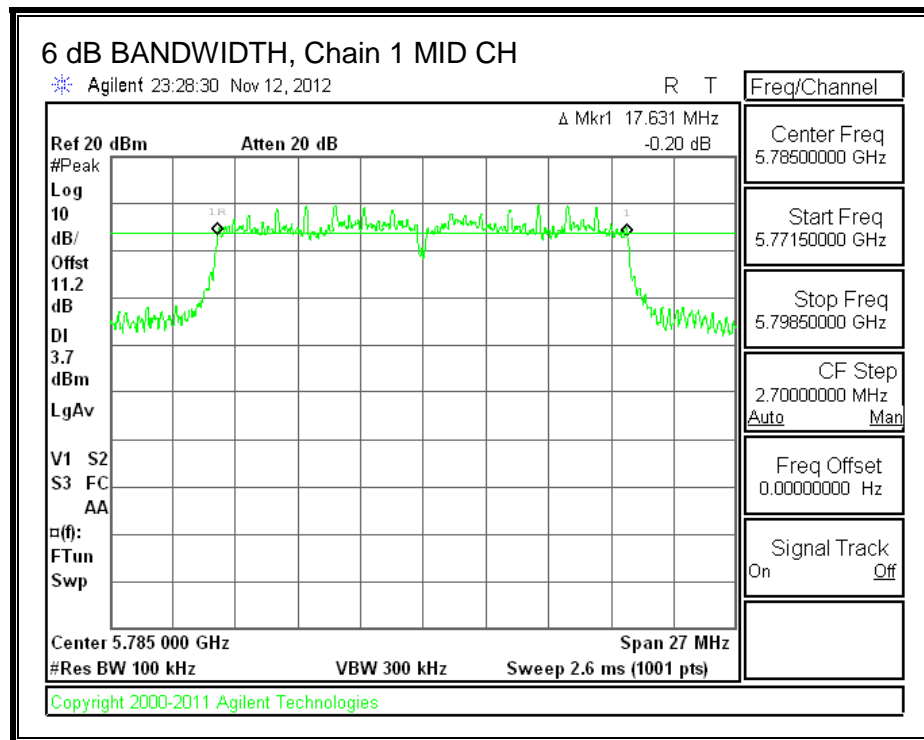
**6 dB BANDWIDTH, Chain 0**



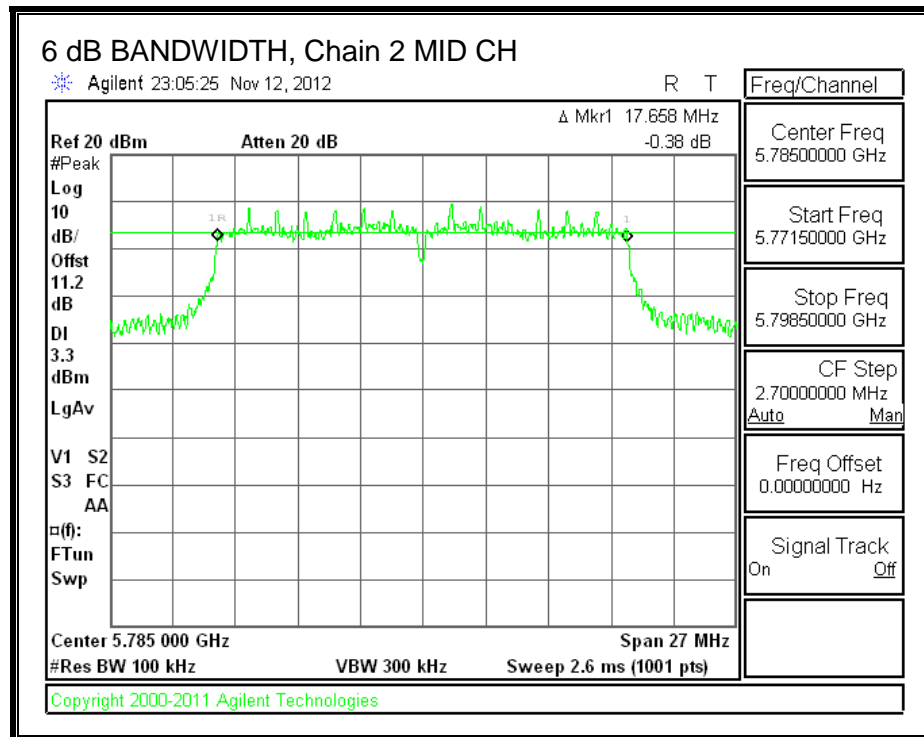
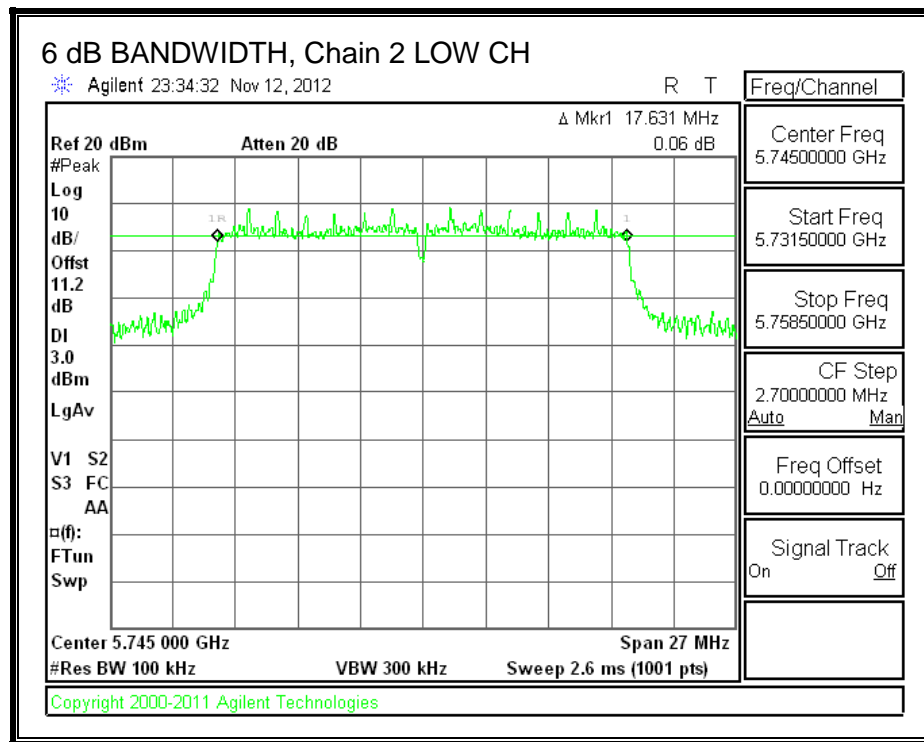


**6 dB BANDWIDTH, Chain 1**

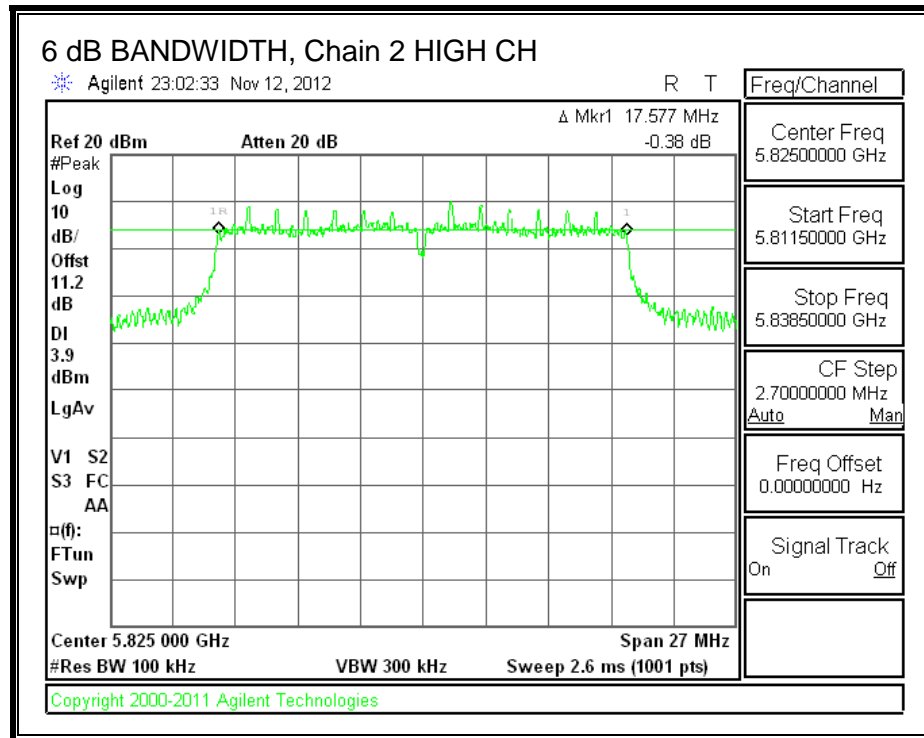




**6 dB BANDWIDTH, Chain 2**







## 8.4.2. 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 unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
4.86	1.95	3.09	3.47

## **RESULTS**

### **Antenna Gain and Limit**

Channel	Frequency (MHz)	Directional Gain (dBi)	Power Limit (dBm)
Low	5745	3.47	30.00
153	5765	3.47	30.00
Mid	5785	3.47	30.00
High	5825	3.47	30.00

### **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	15.40	14.88	15.26	19.96	30.00	-10.04
153	5765	21.26	20.52	21.12	25.75	30.00	-4.25
Mid	5785	20.98	20.75	20.66	25.57	30.00	-4.43
High	5825	18.57	18.21	18.36	23.15	30.00	-6.85

**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.

### 8.4.3. 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 unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
4.86	1.95	3.09	8.15

## **RESULTS**

### **Antenna Gain and Limit**

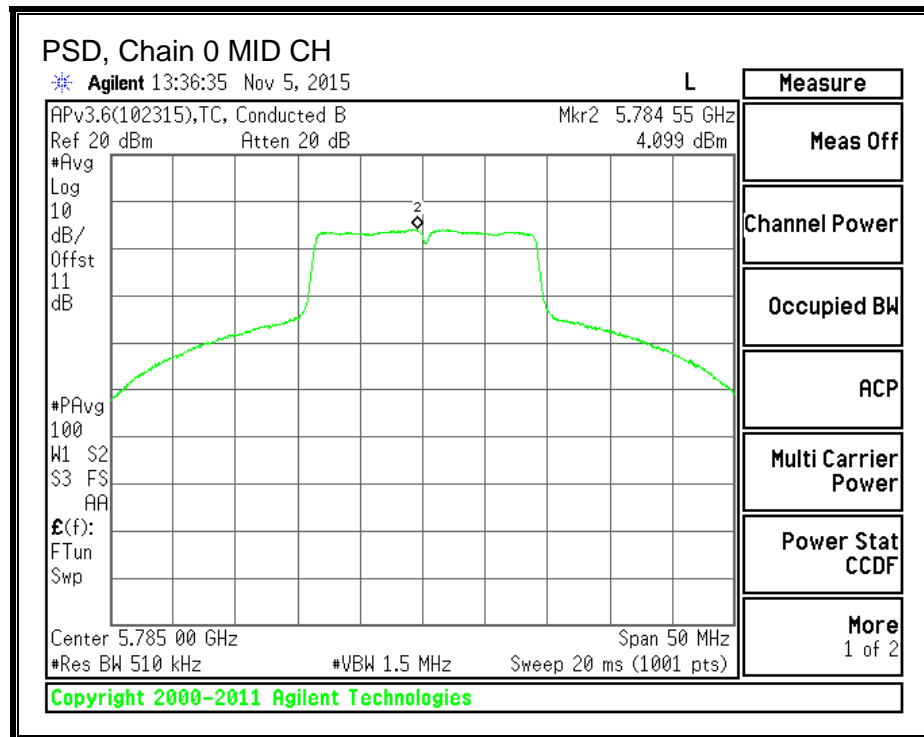
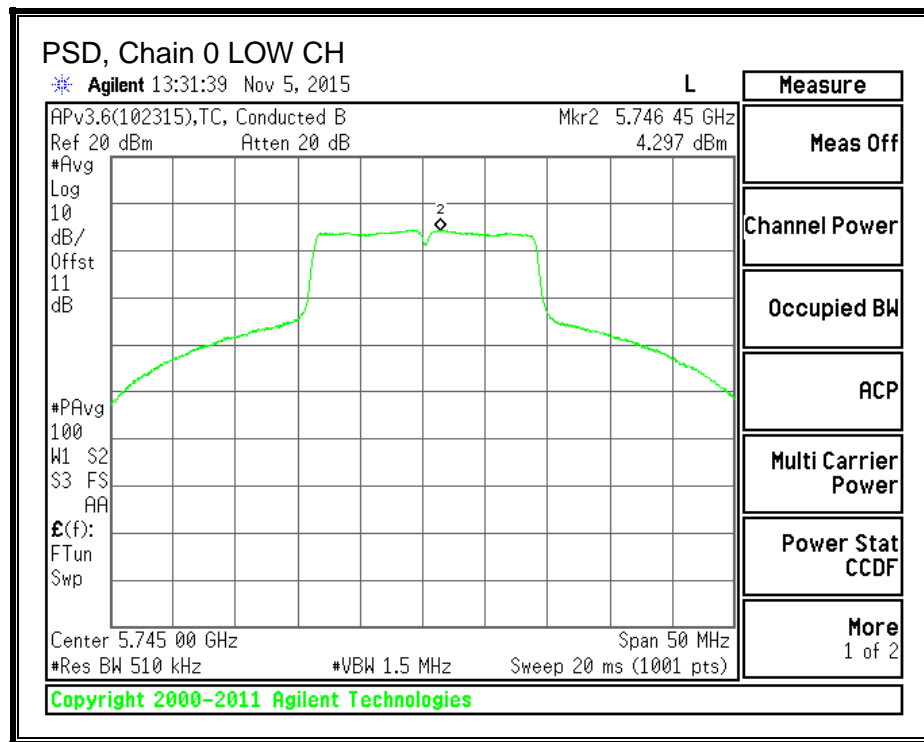
<b>Channel</b>	<b>Frequency (MHz)</b>	<b>Directional Gain (dBi)</b>	<b>PSD Limit (dBm)</b>
Low	5745	8.15	27.85
Mid	5785	8.15	27.85
High	5825	8.15	27.85

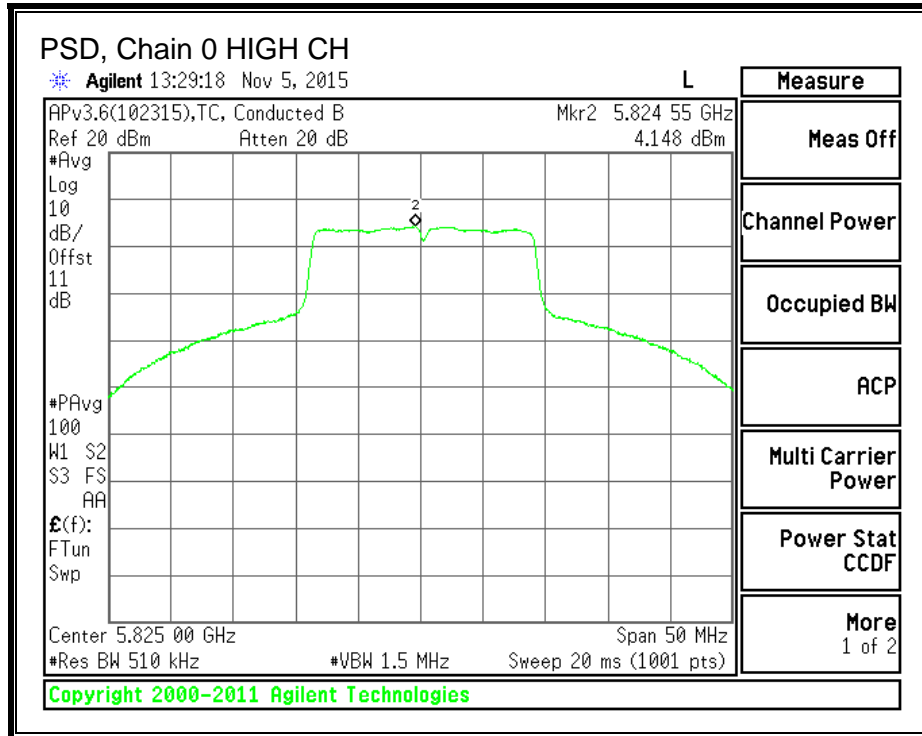
<b>Duty Cycle CF (dB)</b>	0.00	<b>Included in Calculations of Corr'd PSD</b>
---------------------------	------	---

### **PSD Results**

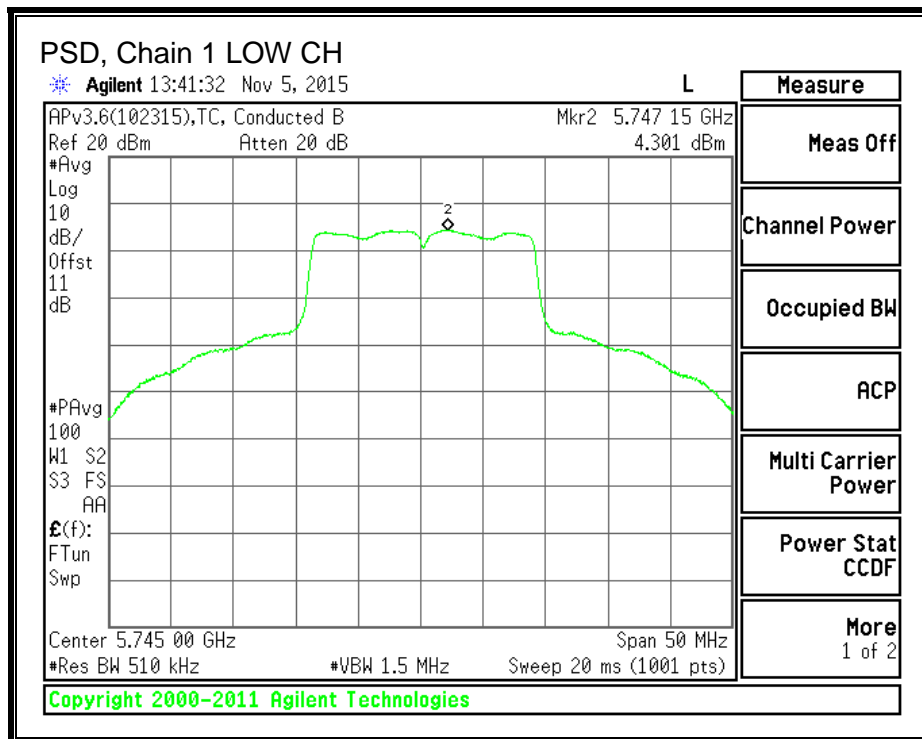
<b>Channel</b>	<b>Frequency (MHz)</b>	<b>Chain 0 Meas PSD (dBm)</b>	<b>Chain 1 Meas PSD (dBm)</b>	<b>Chain 2 Meas PSD (dBm)</b>	<b>Total Corr'd PSD (dBm)</b>	<b>PSD Limit (dBm)</b>	<b>PSD Margin (dB)</b>
Low	5745	4.297	4.301	3.988	8.97	27.85	-18.88
Mid	5785	4.099	4.101	3.679	8.74	27.85	-19.11
High	5825	4.148	4.094	3.872	8.81	27.85	-19.04

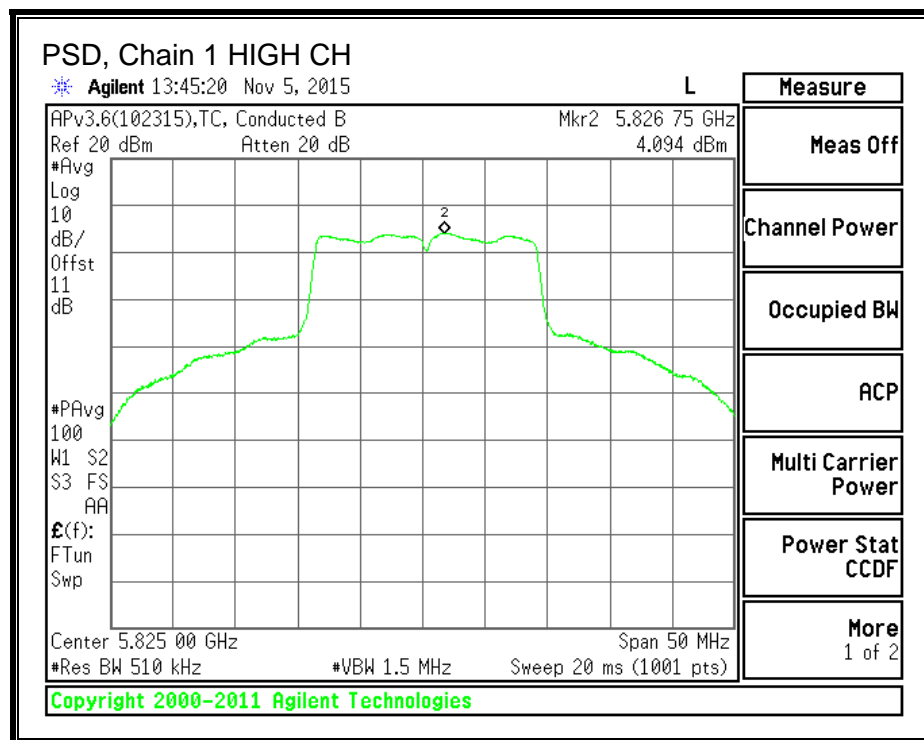
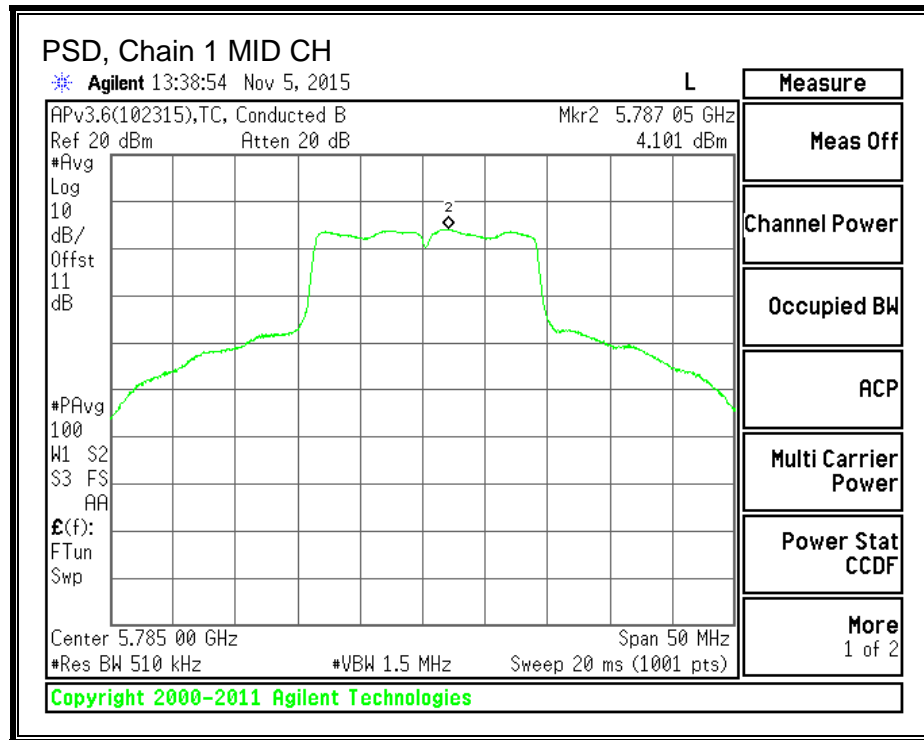
**PSD, Chain 0**





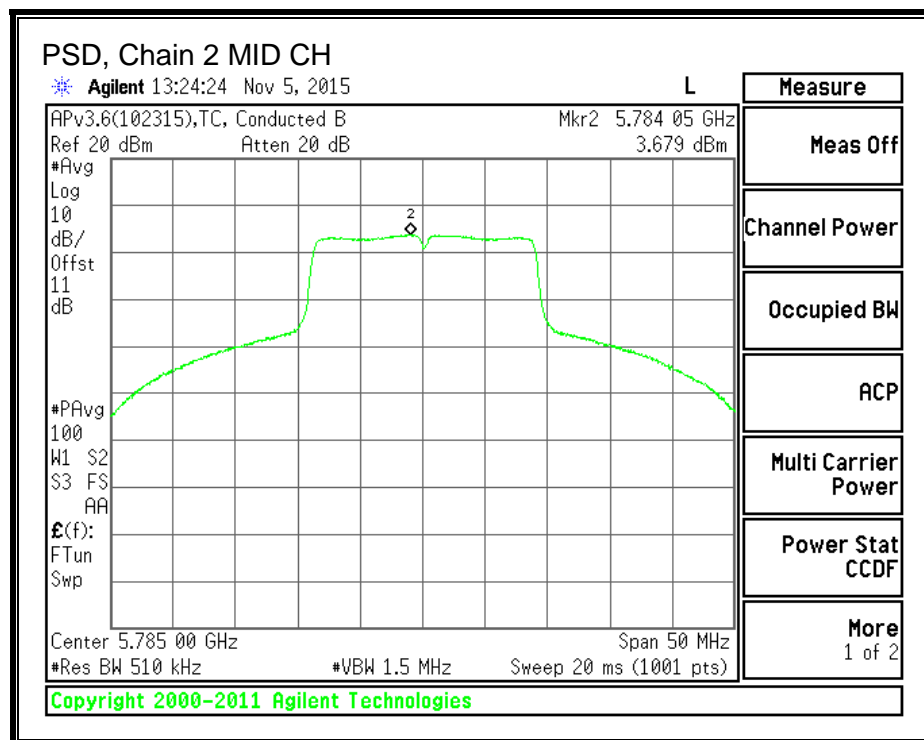
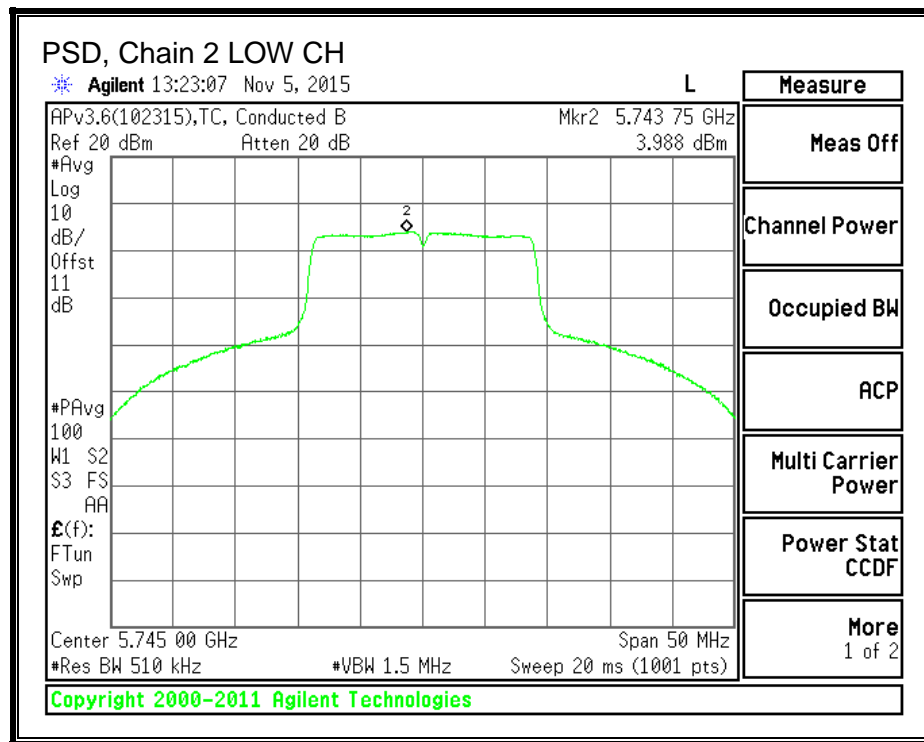
**PSD, Chain 1**

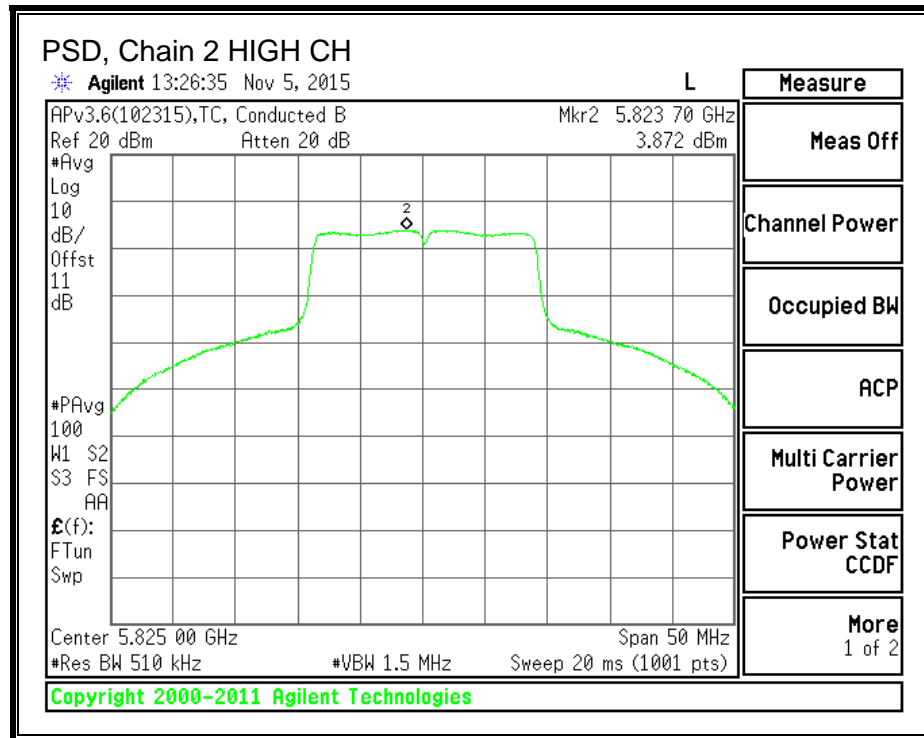






**PSD, Chain 2**





## 8.5.802.11n HT20 TxBF 3TX MODE IN THE 5.8 GHz BAND

### 8.5.1. 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

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

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
4.86	1.95	3.09	8.15

## **RESULTS**

### **Antenna Gain and Limit**

Channel	Frequency (MHz)	Directional Gain (dBi)	Power Limit (dBm)
Low	5745	8.15	27.85
Mid	5785	8.15	27.85
High	5825	8.15	27.85

### **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	12.48	12.11	12.79	17.24	27.85	-10.61
Mid	5785	18.81	18.04	18.65	23.28	27.85	-4.57
High	5825	18.42	17.53	18.28	22.87	27.85	-4.98

**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.

## **8.6.802.11n HT40 1TX MODE IN THE 5.8 GHz BAND**

### **8.6.1. 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**

This is SISO mode, AG is the highest (worst-case) = 4.86 dBi

## **RESULTS**

### **Antenna Gain and Limit**

Channel	Frequency (MHz)	Directional Gain (dBi)	Power Limit (dBm)
Low	5755	4.86	30.00
High	5795	4.86	30.00

### **Output Power Results**

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5755	14.37	14.37	30.00	-15.63
High	5795	18.32	18.32	30.00	-11.68

**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.

## 8.7.802.11n HT40 CDD 3TX MODE IN THE 5.8 GHz BAND

### 8.7.1. 6 dB BANDWIDTH

#### LIMITS

FCC §15.247 (a) (2)

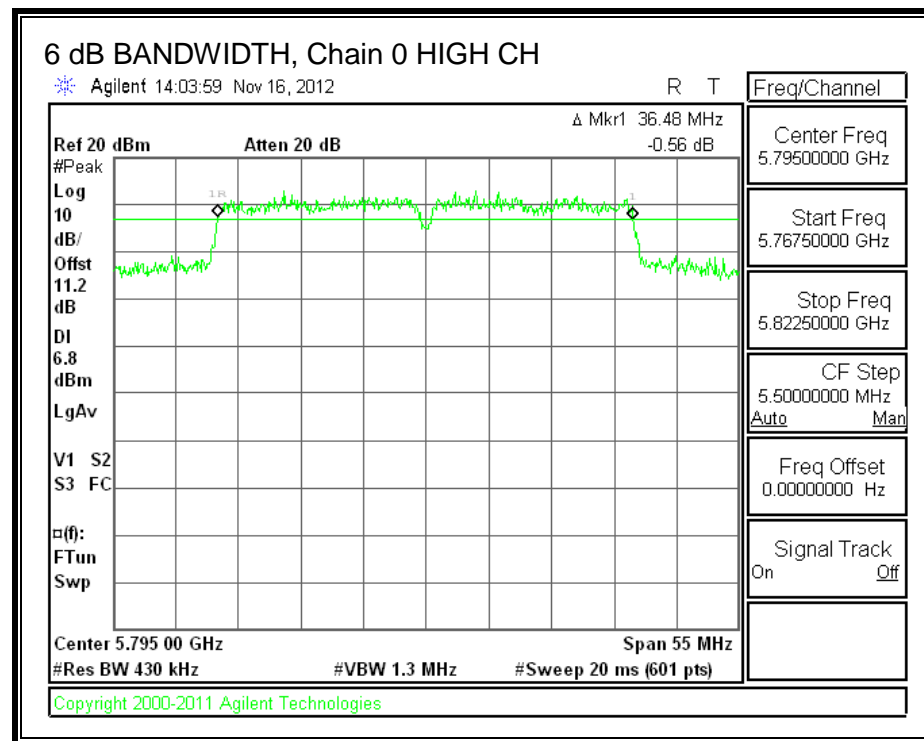
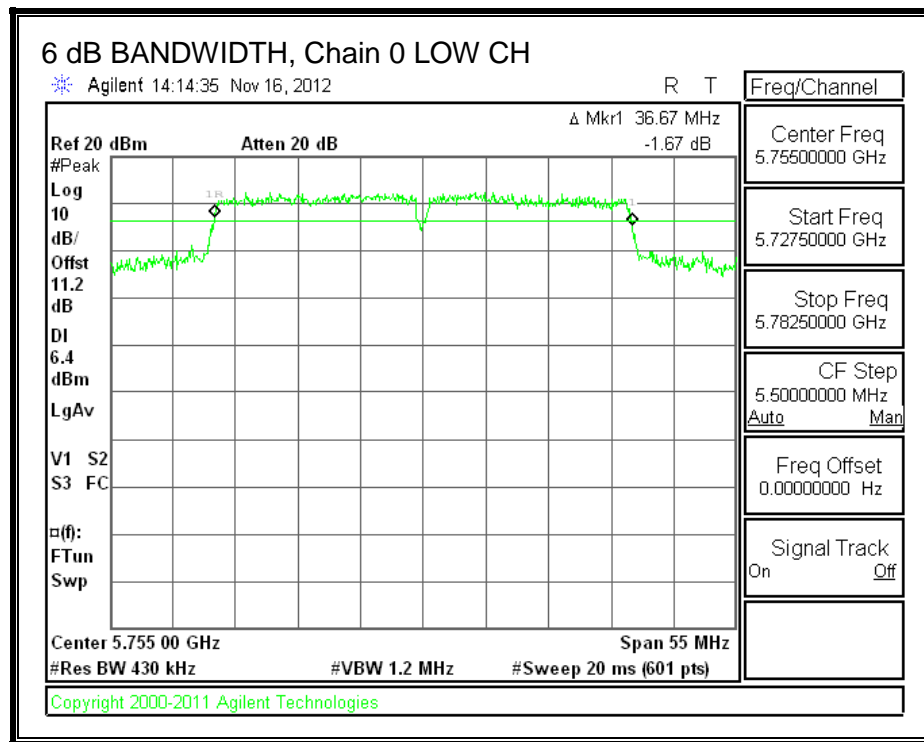
IC RSS-210 A8.2 (a)

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

#### RESULTS

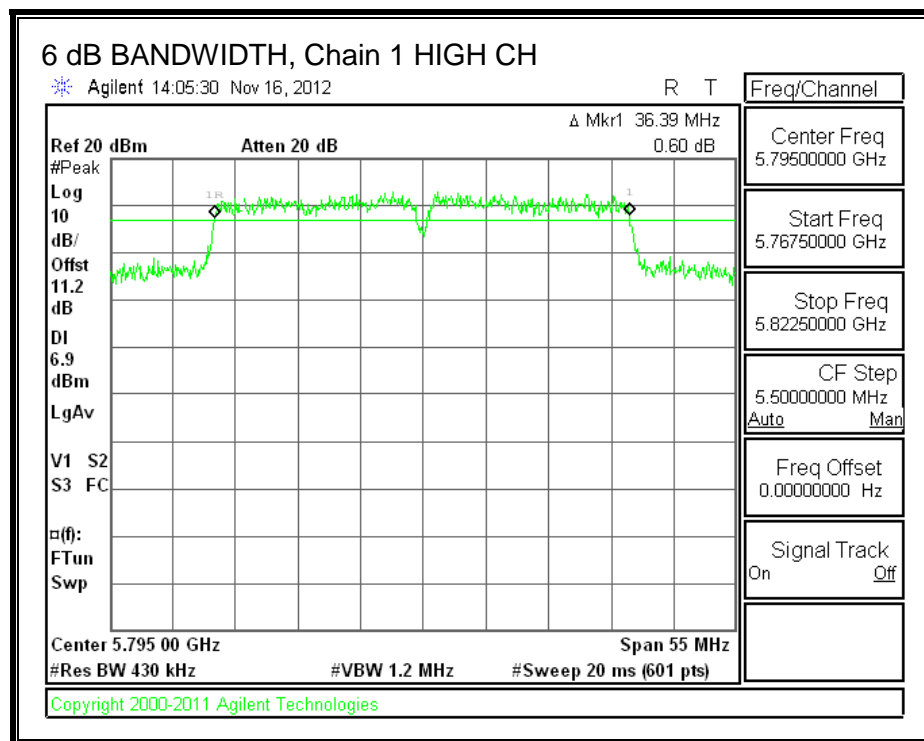
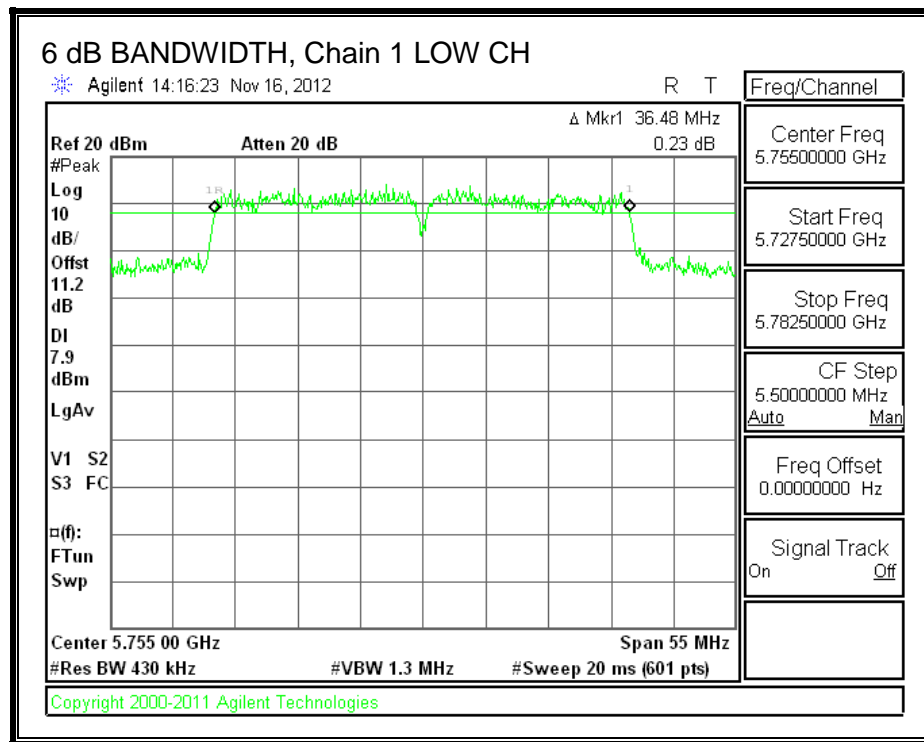
Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	6 dB BW Chain 2 (MHz)	Minimum Limit (MHz)
Low	5755	36.67	36.48	36.58	0.5
High	5795	36.48	36.39	36.48	0.5

**6 dB BANDWIDTH, Chain 0**

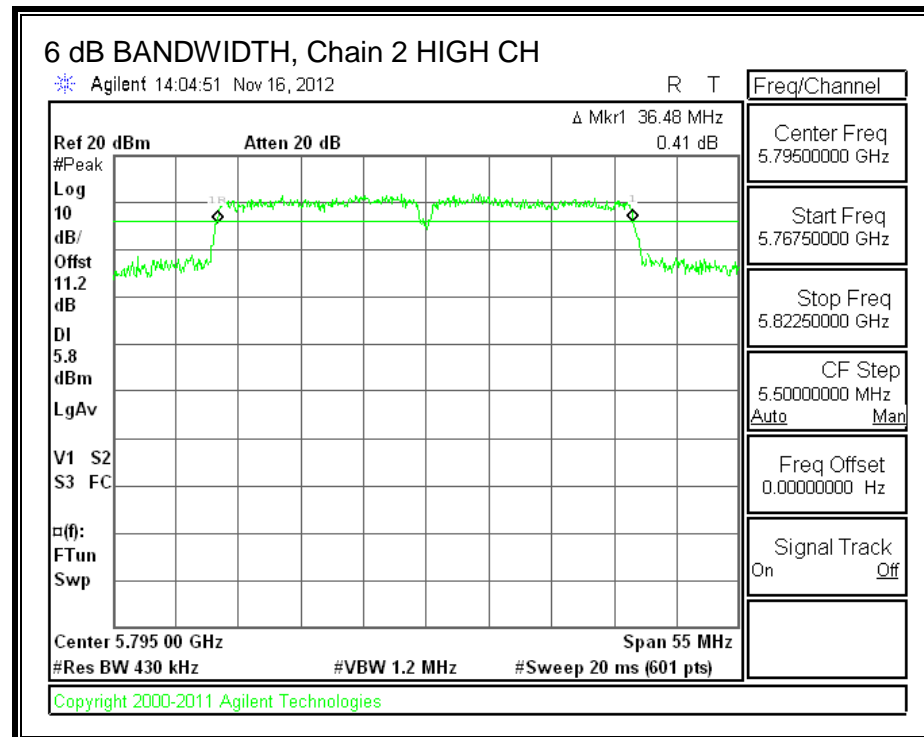
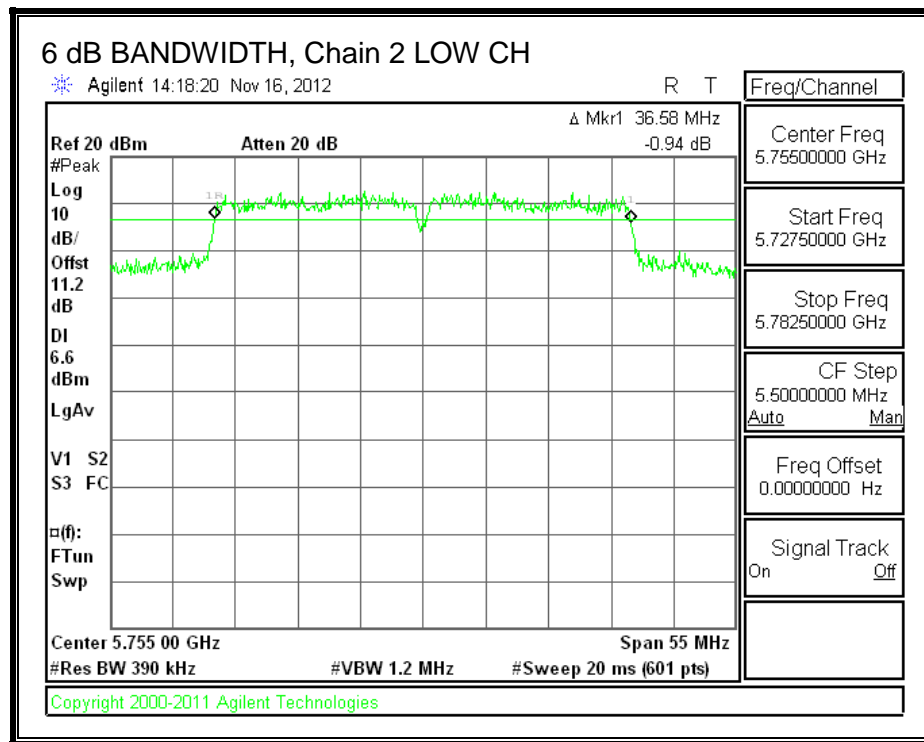




**6 dB BANDWIDTH, Chain 1**



**6 dB BANDWIDTH, Chain 2**



## 8.7.2. 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 unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
4.86	1.95	3.09	3.47

## **RESULTS**

### **Antenna Gain and Limit**

Channel	Frequency (MHz)	Directional Gain (dBi)	Power Limit (dBm)
Low	5755	3.47	30.00
High	5795	3.47	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	5755	12.56	12.07	12.52	17.16	30.00	-12.84
High	5795	18.35	17.73	18.00	22.81	30.00	-7.19

**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.

### 8.7.3. 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 unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
4.86	1.95	3.09	8.15

## **RESULTS**

### **Antenna Gain and Limit**

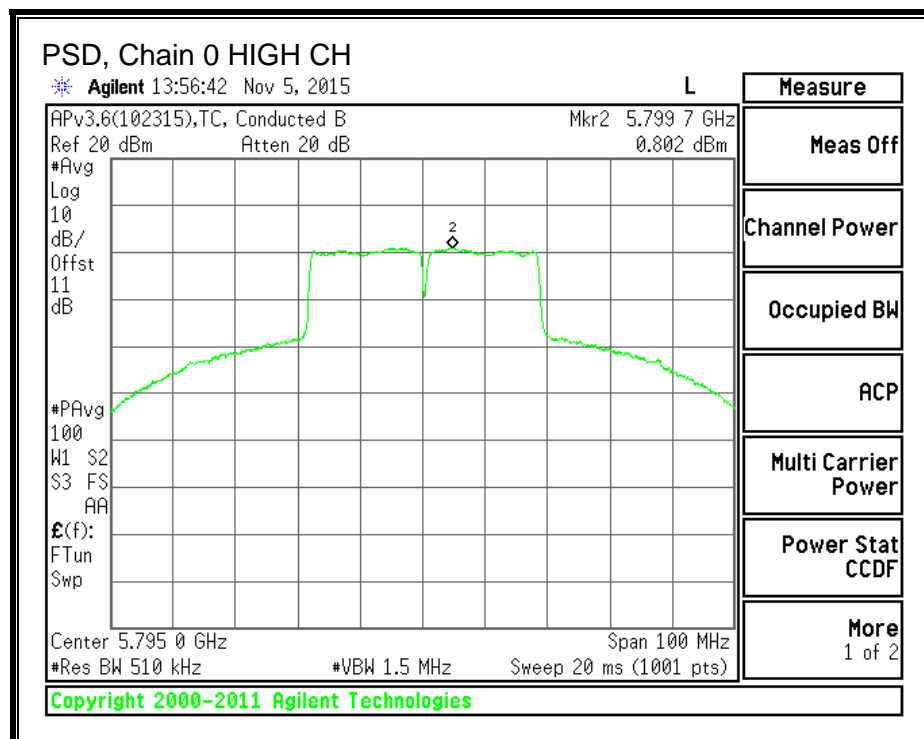
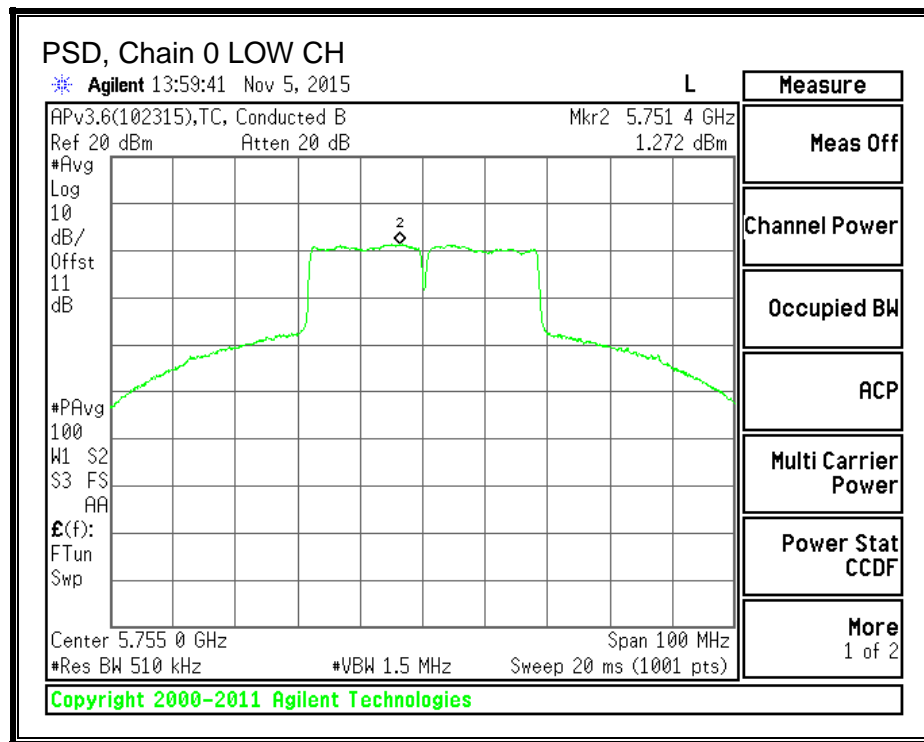
Channel	Frequency (MHz)	Directional Gain (dBi)	PSD Limit (dBm)
Low	5755	8.15	27.85
High	5795	8.15	27.85

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

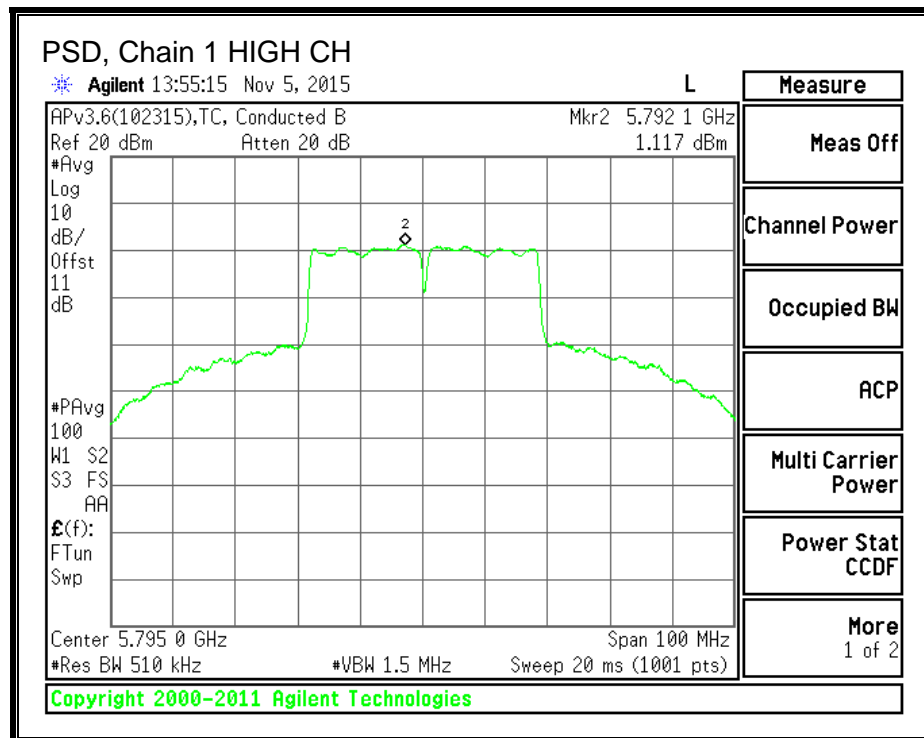
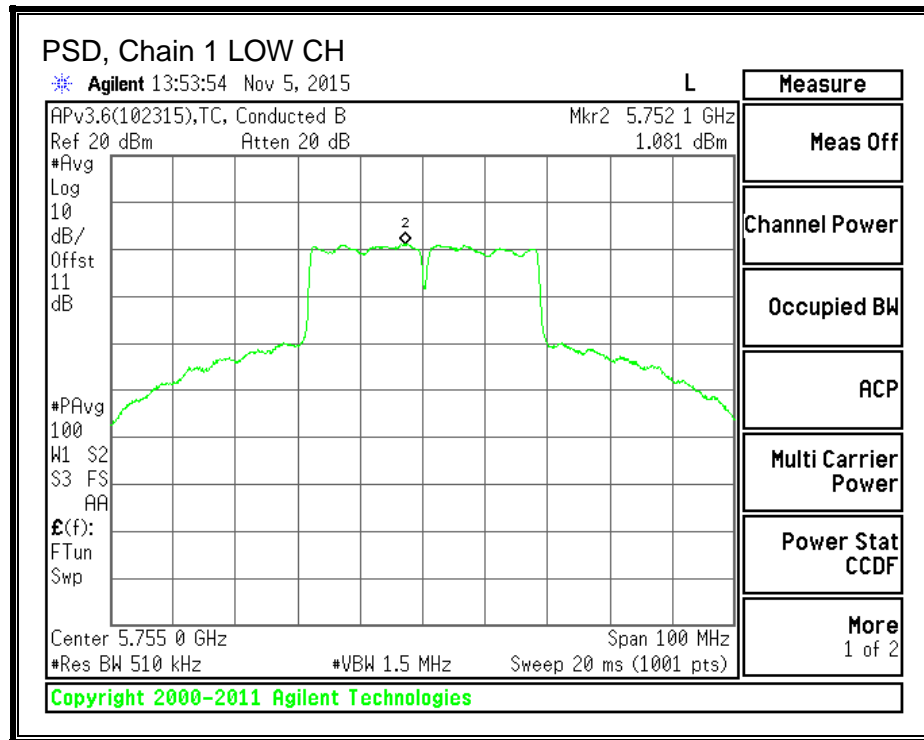
### **PSD Results**

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	5755	1.272	1.081	0.808	5.83	27.85	-22.02
High	5795	0.802	1.117	0.685	5.64	27.85	-22.21

**PSD, Chain 0**

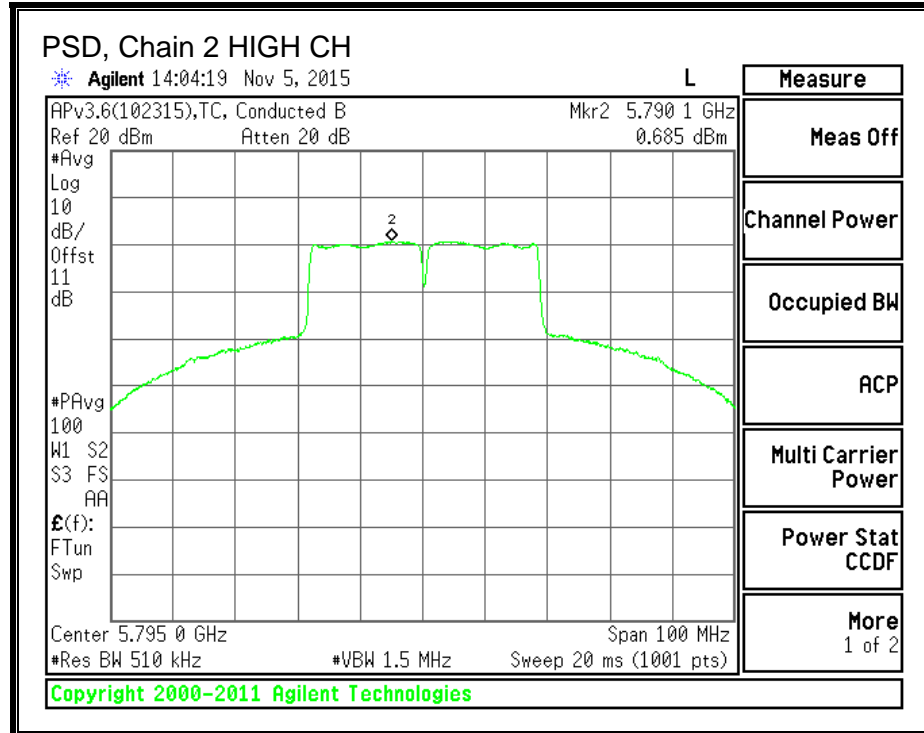
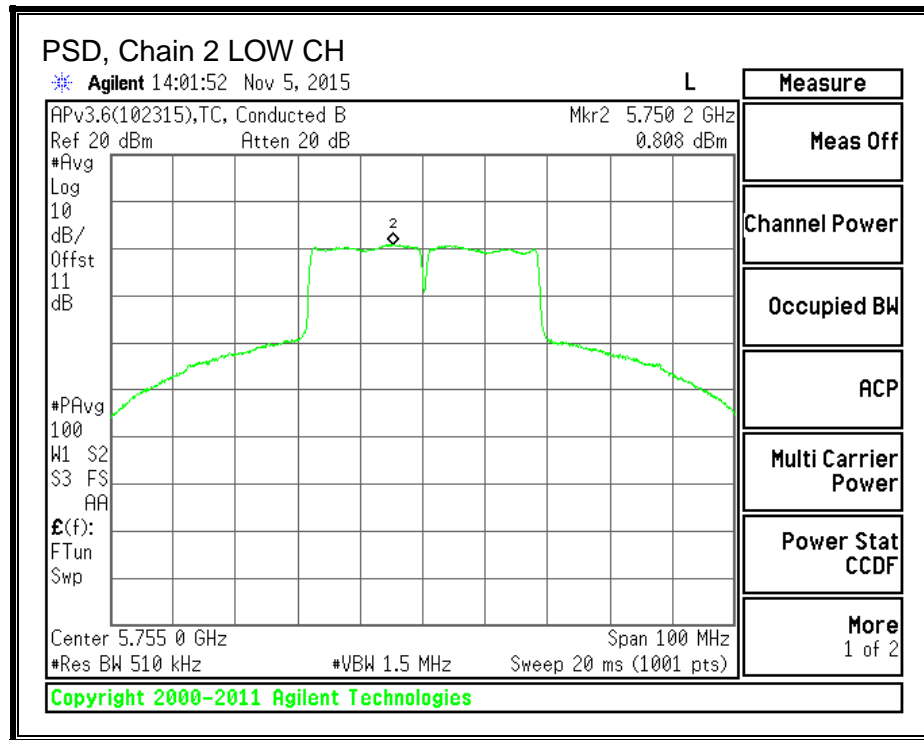


**PSD, Chain 1**





**PSD, Chain 2**



## 8.8.802.11n HT40 TxBF 3TX MODE IN THE 5.8 GHz BAND

### 8.8.1. 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 correlated and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
4.86	1.95	3.09	8.15

## **RESULTS**

### **Antenna Gain and Limit**

Channel	Frequency (MHz)	Directional Gain (dBi)	Power Limit (dBm)
Low	5755	8.15	27.85
High	5795	8.15	27.85

### **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	5755	12.56	11.85	12.81	17.20	27.85	-10.65
High	5795	19.50	18.55	19.40	23.94	27.85	-3.91

**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.

## 8.8.2. 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 unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
4.86	1.95	3.09	8.15

## **RESULTS**

### **Antenna Gain and Limit**

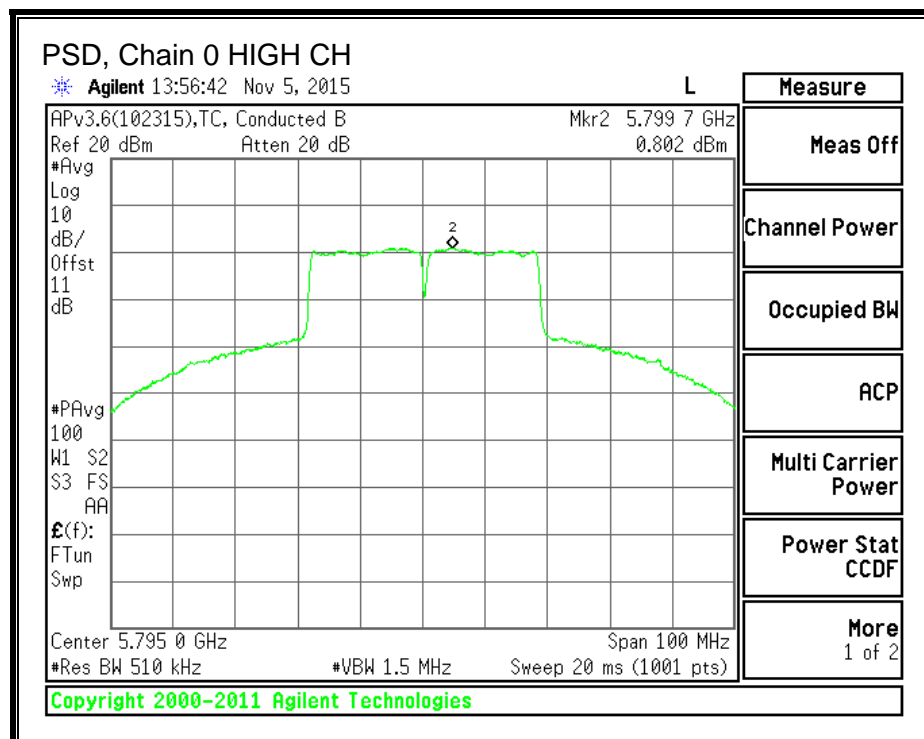
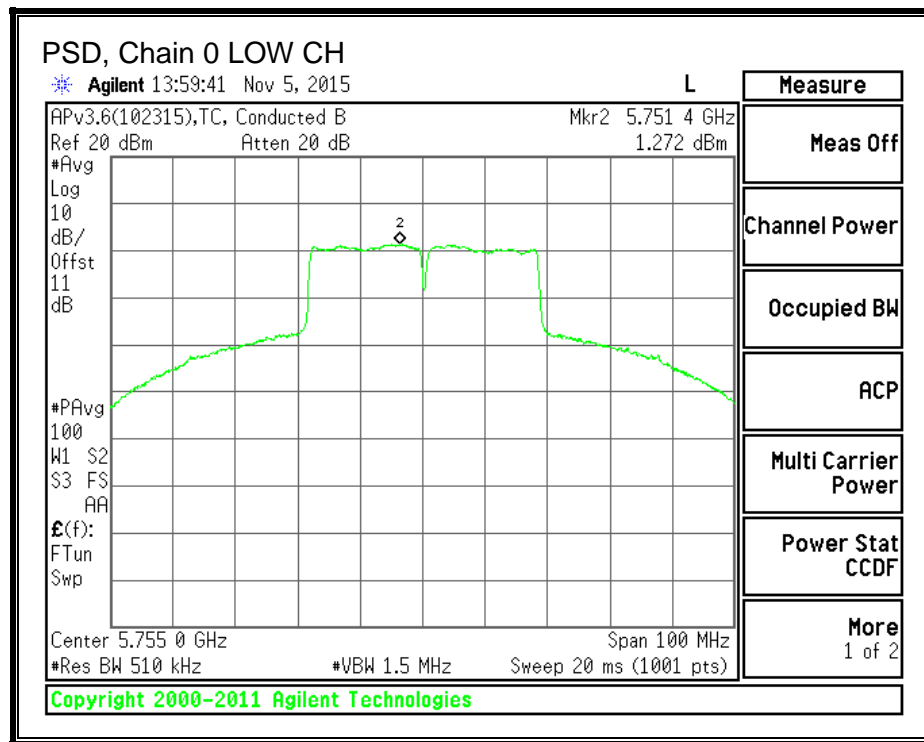
Channel	Frequency (MHz)	Directional Gain (dBi)	PSD Limit (dBm)
Low	5755	8.15	27.85
High	5795	8.15	27.85

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

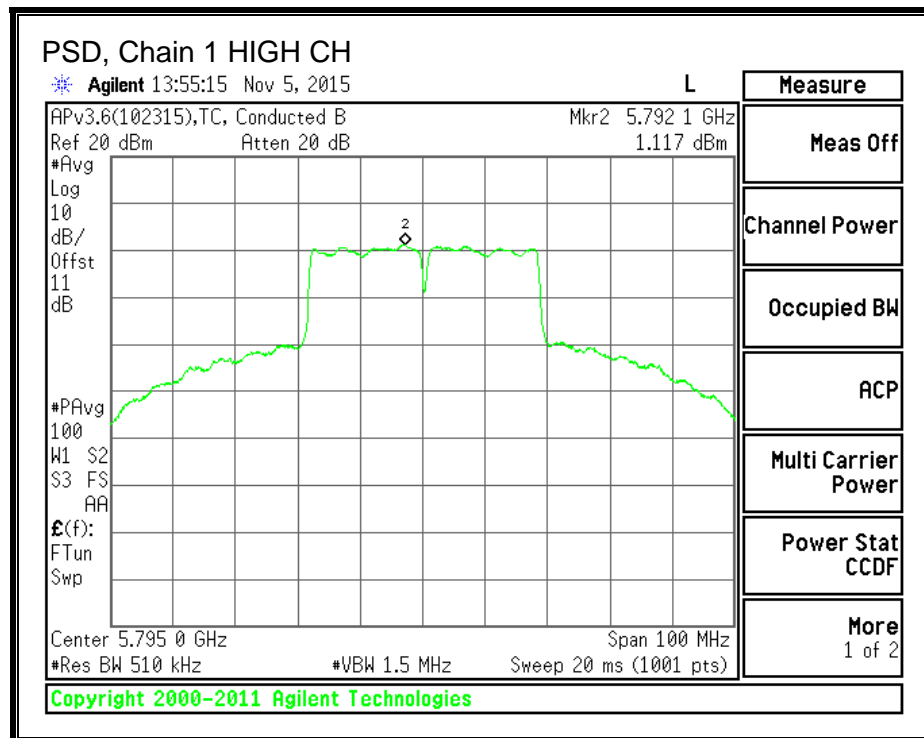
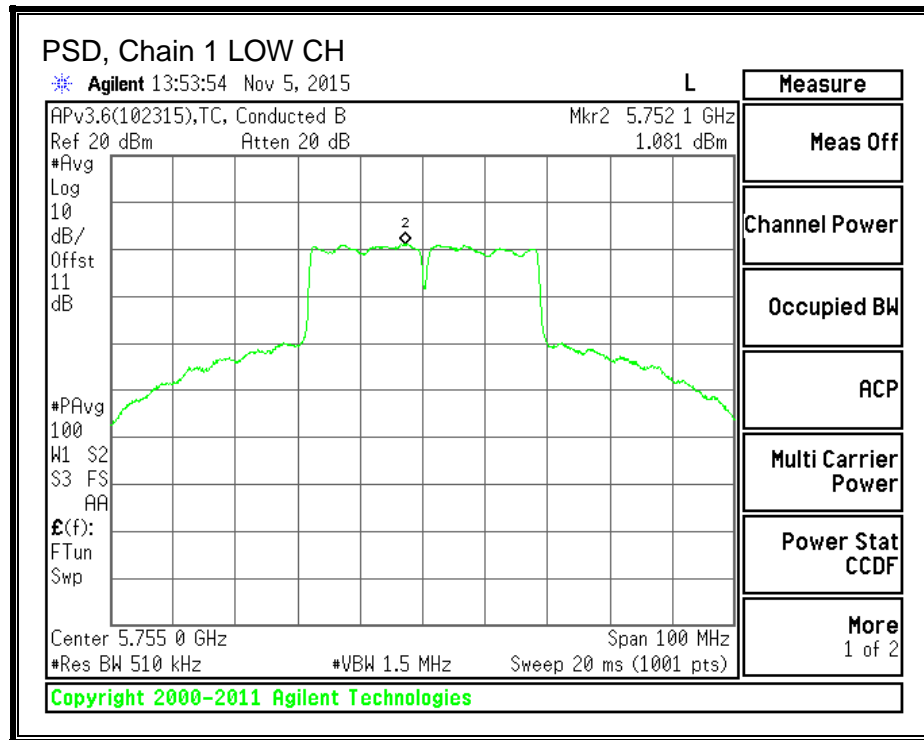
### **PSD Results**

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	5755	1.272	1.081	0.808	5.83	27.85	-22.02
High	5795	0.802	1.117	0.685	5.64	27.85	-22.21

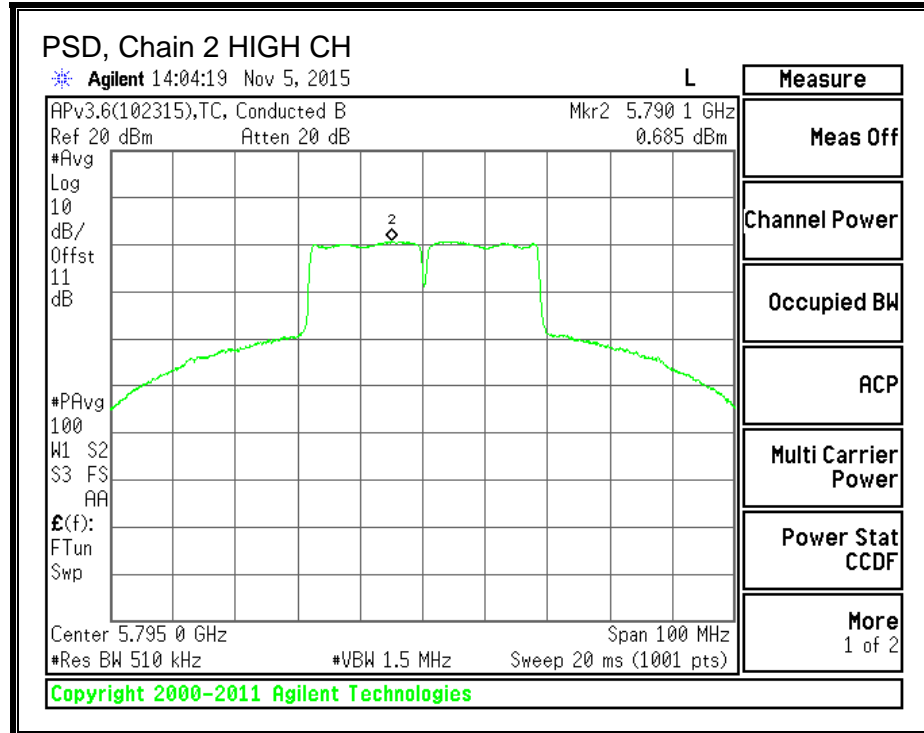
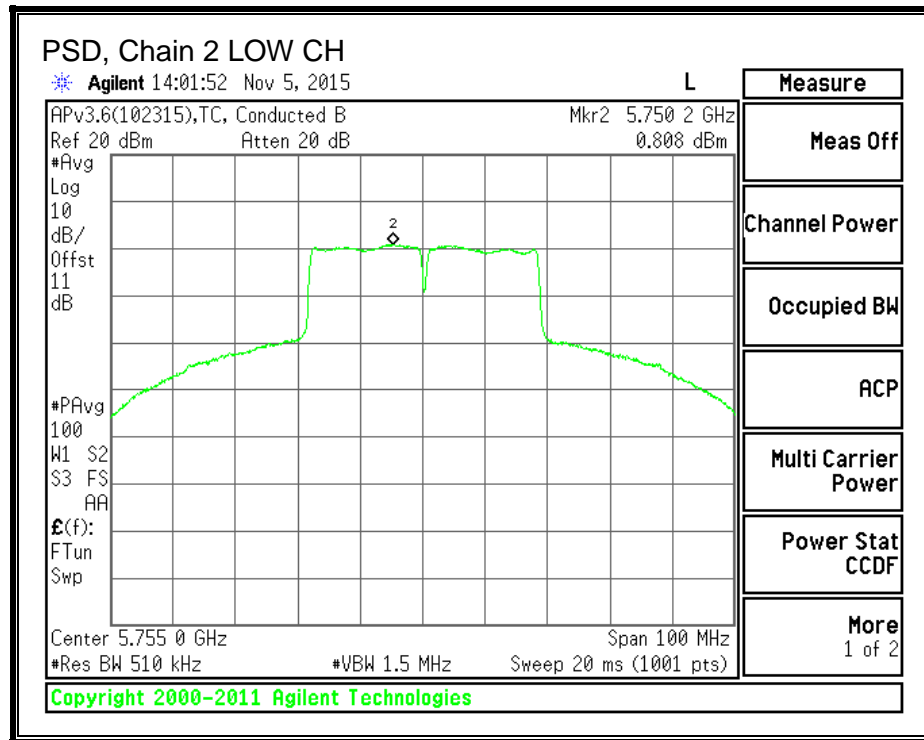
**PSD, Chain 0**



**PSD, Chain 1**



**PSD, Chain 2**





## **8.9.802.11ac VHT80 1TX MODE IN THE 5.8 GHz BAND**

### **8.9.1. 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**

This is SISO mode, AG is the highest (worst-case) = 4.86 dBi

## **RESULTS**

### **Antenna Gain and Limit**

Channel	Frequency (MHz)	Directional Gain (dBi)	Power Limit (dBm)
Mid	5775	4.86	30.00

### **Output Power Results**

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Mid	5775	13.53	13.53	30.00	-16.47

**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.

## **8.10. 802.11ac VHT80 CDD 3TX MODE IN THE 5.8 GHz BAND**

### **8.10.1. 6 dB BANDWIDTH**

#### **LIMITS**

FCC §15.247 (a) (2)

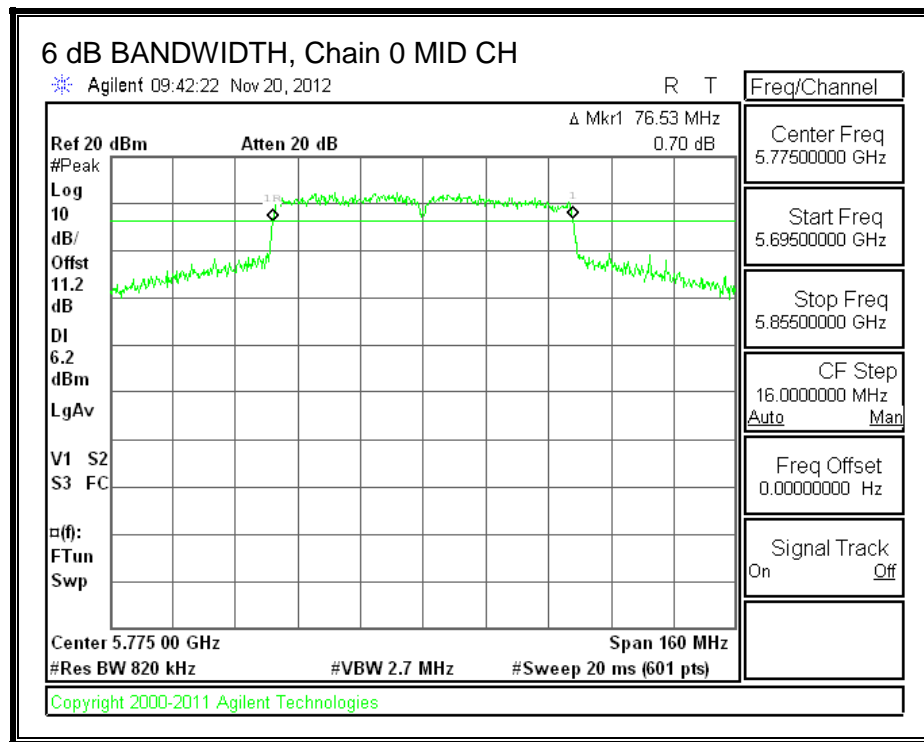
IC RSS-210 A8.2 (a)

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

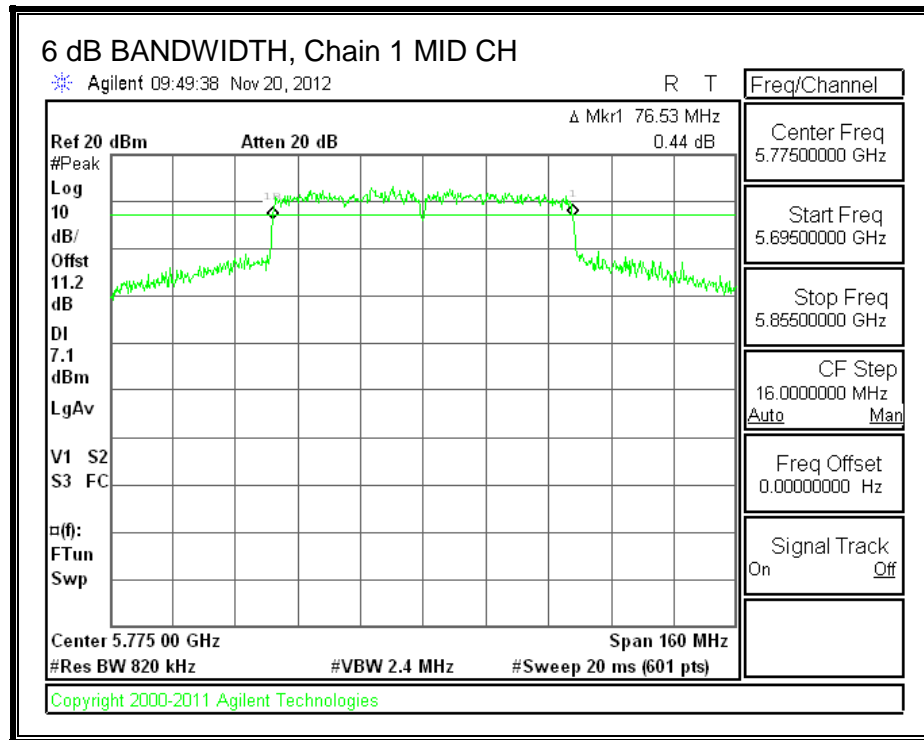
#### **RESULTS**

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	6 dB BW Chain 2 (MHz)	Minimum Limit (MHz)
Mid	5775	76.530	76.530	76.000	0.5

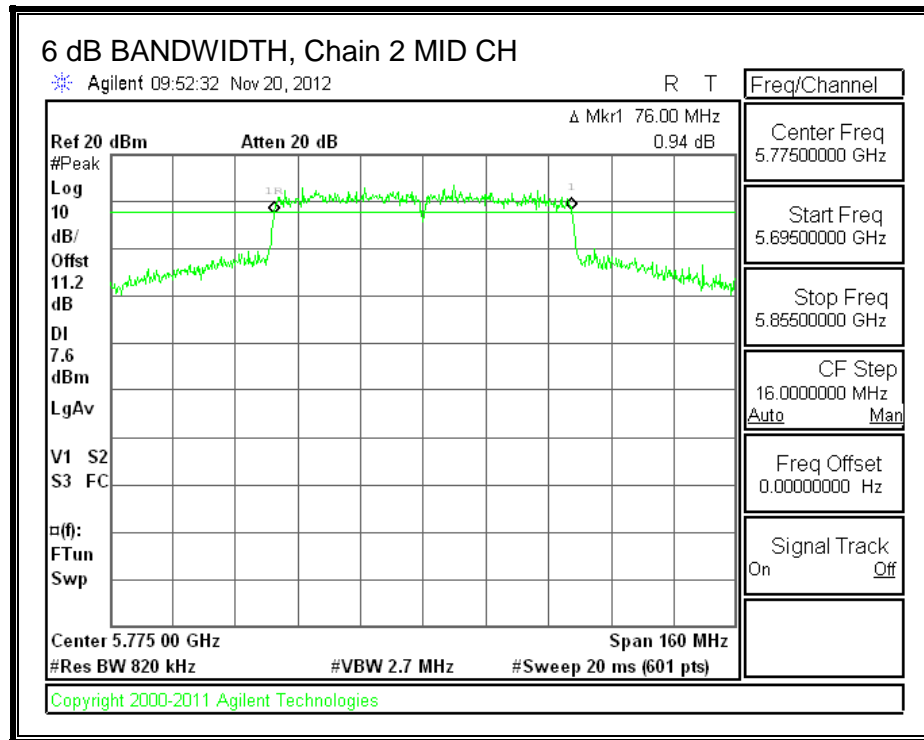
**6 dB BANDWIDTH, Chain 0**



**6 dB BANDWIDTH, Chain 1**



**6 dB BANDWIDTH, Chain 2**



## **8.10.2. 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 unequal among the chains. The directional gain is:

<b>Chain 0 Antenna Gain (dBi)</b>	<b>Chain 1 Antenna Gain (dBi)</b>	<b>Chain 2 Antenna Gain (dBi)</b>	<b>Uncorrelated Chains Directional Gain (dBi)</b>
4.86	1.95	3.09	3.47

## **RESULTS**

### **Antenna Gain and Limit**

Channel	Frequency (MHz)	Directional Gain (dBi)	Power Limit (dBm)
Mid	5775	3.47	30.00

### **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	12.06	11.63	11.99	16.67	30.00	-13.33

**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.



### 8.10.3. 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 unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
4.86	1.95	3.09	8.15

## **RESULTS**

### **Antenna Gain and Limit**

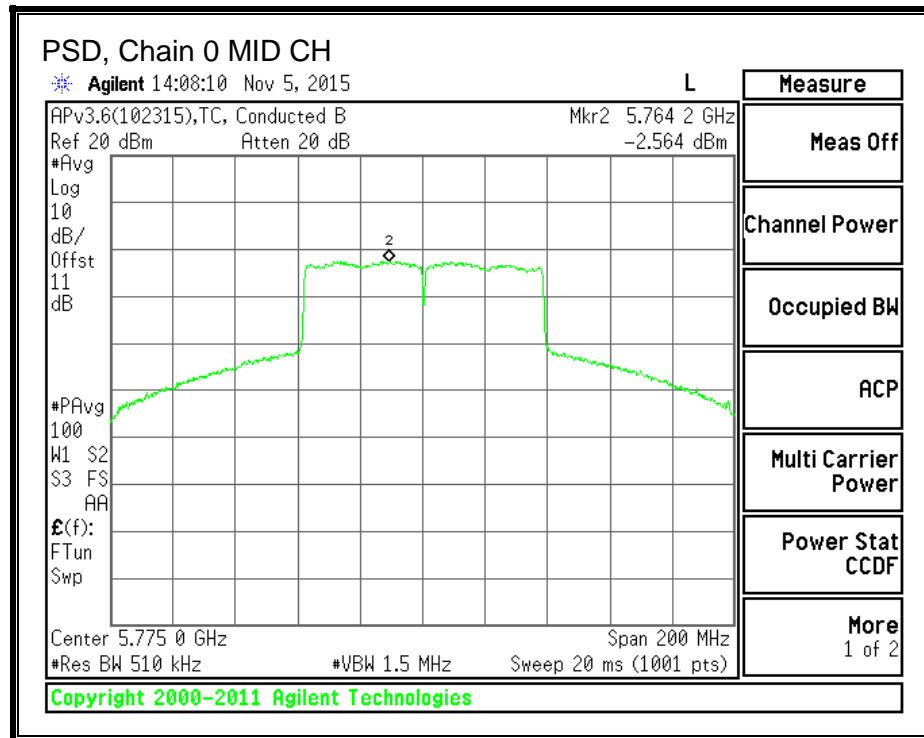
<b>Channel</b>	<b>Frequency (MHz)</b>	<b>Directional Gain (dBi)</b>	<b>PSD Limit (dBm)</b>
Mid	5775	8.15	27.85

<b>Duty Cycle CF (dB)</b>	0.16	<b>Included in Calculations of Corr'd PSD</b>
---------------------------	------	---

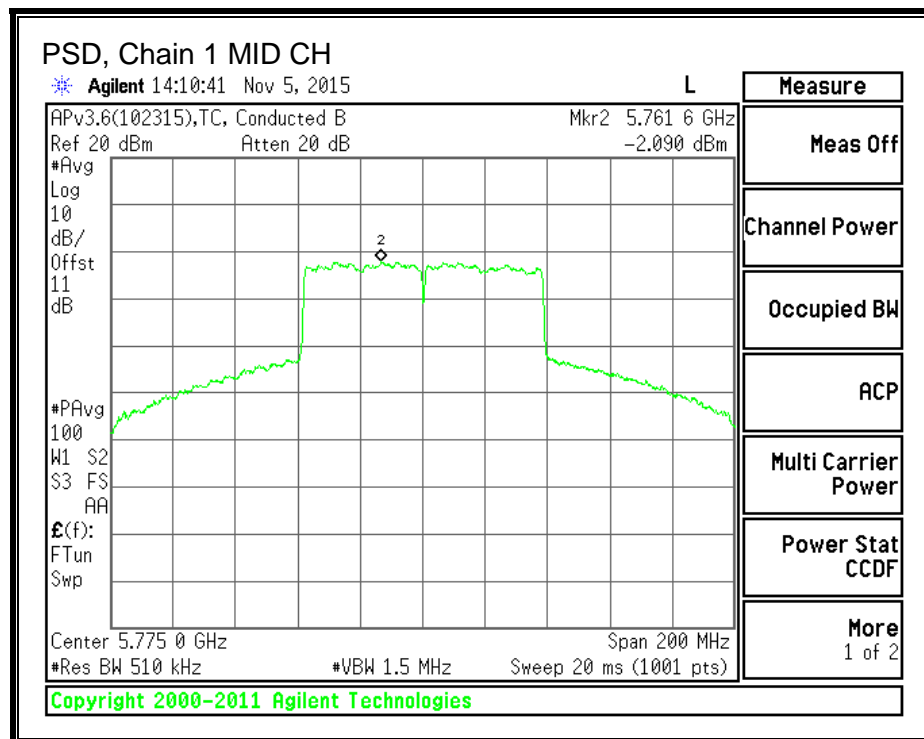
### **PSD Results**

<b>Channel</b>	<b>Frequency (MHz)</b>	<b>Chain 0 Meas PSD (dBm)</b>	<b>Chain 1 Meas PSD (dBm)</b>	<b>Chain 2 Meas PSD (dBm)</b>	<b>Total Corr'd PSD (dBm)</b>	<b>PSD Limit (dBm)</b>	<b>PSD Margin (dB)</b>
Mid	5775	-2.56	-2.09	-2.41	2.58	27.85	-25.27

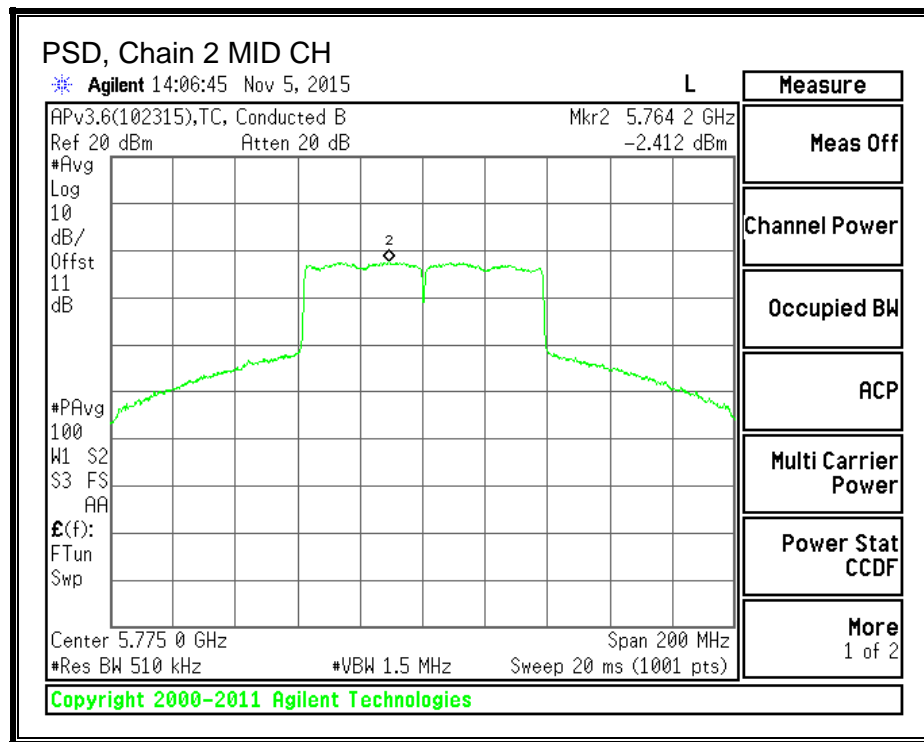
**PSD, Chain 0**



**PSD, Chain 1**



**PSD, Chain 2**



## **8.11. 802.11ac VHT80 TxBF 3TX MODE IN THE 5.8 GHz BAND**

### **8.11.1. 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 correlated and the antenna gain is unequal among the chains. The directional gain is:

<b>Chain 0 Antenna Gain (dBi)</b>	<b>Chain 1 Antenna Gain (dBi)</b>	<b>Chain 2 Antenna Gain (dBi)</b>	<b>Correlated Chains Directional Gain (dBi)</b>
4.86	1.95	3.09	8.15

## **RESULTS**

### **Antenna Gain and Limit**

Channel	Frequency (MHz)	Directional Gain (dBi)	Power Limit (dBm)
Mid	5775	8.15	27.85

### **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	11.45	10.77	11.58	16.05	27.85	-11.80

**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.

## 8.11.2. 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 unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
4.86	1.95	3.09	8.15

## **RESULTS**

### **Antenna Gain and Limit**

Channel	Frequency (MHz)	Directional Gain (dBi)	PSD Limit (dBm)
Mid	5775	8.15	27.85

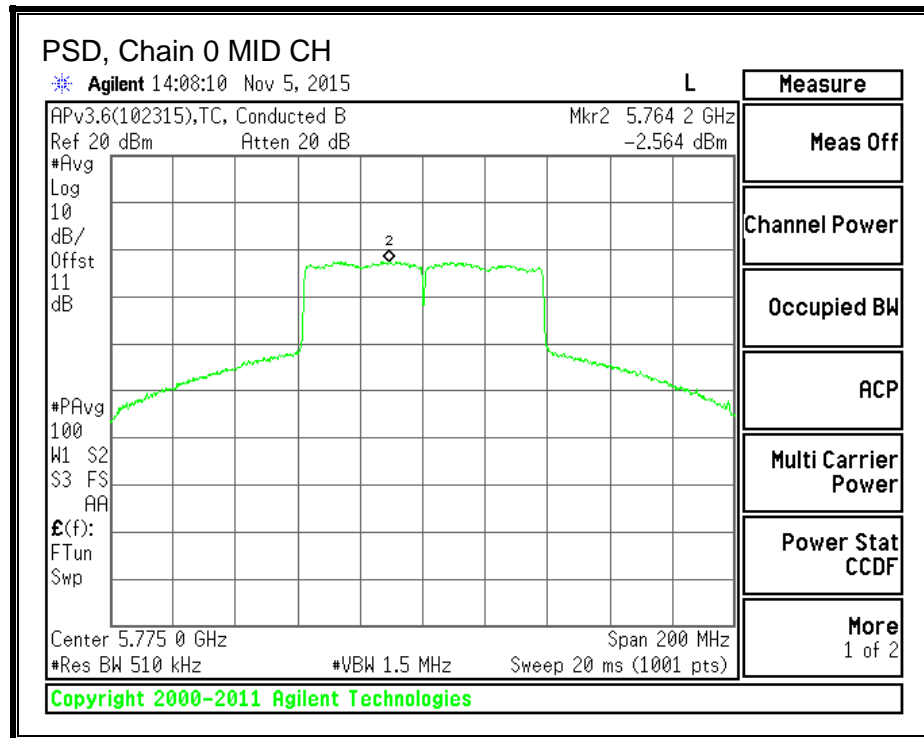
<b>Duty Cycle CF (dB)</b>	0.16	<b>Included in Calculations of Corr'd PSD</b>
---------------------------	------	---

### **PSD Results**

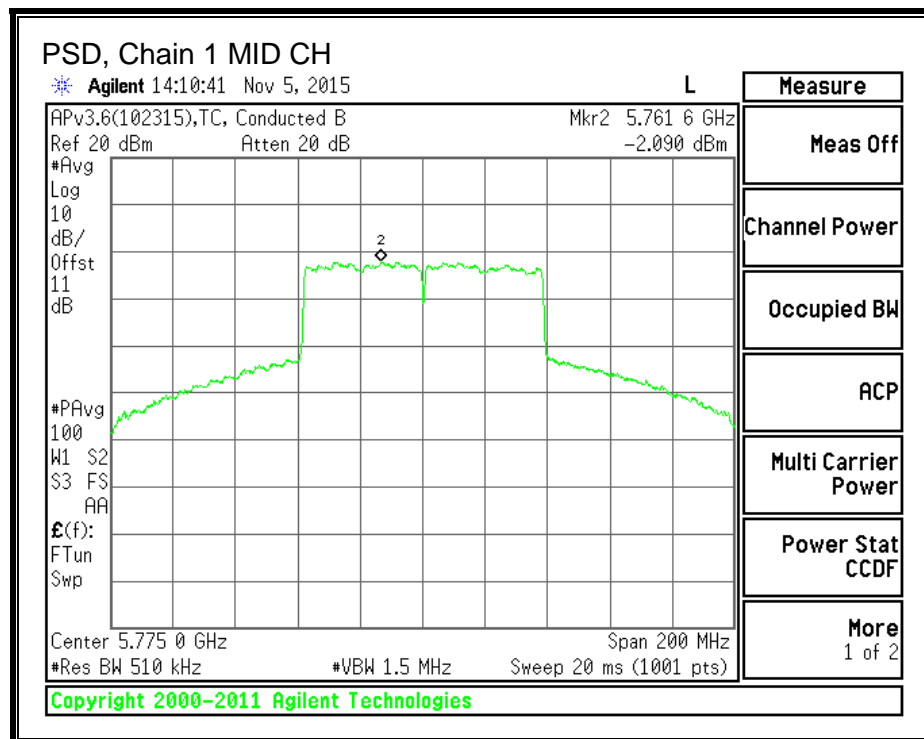
Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Chain 2 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Mid	5775	-2.564	-2.090	-2.412	2.580	27.85	-25.27



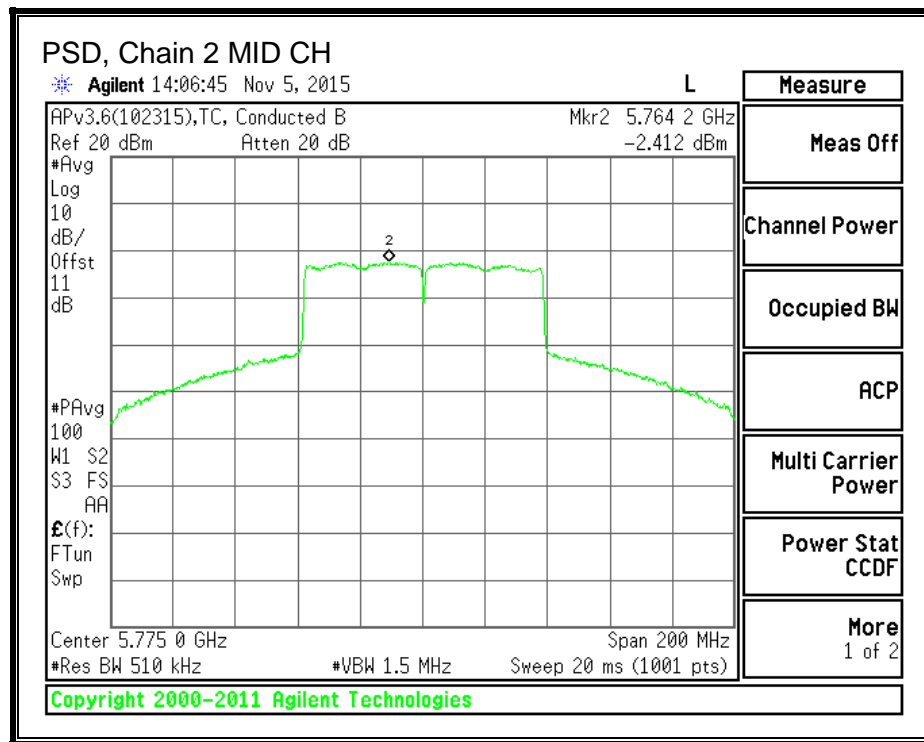
**PSD, Chain 0**



**PSD, Chain 1**



**PSD, Chain 2**



## 9. RADIATED TEST RESULTS

### 9.1. LIMITS AND PROCEDURE

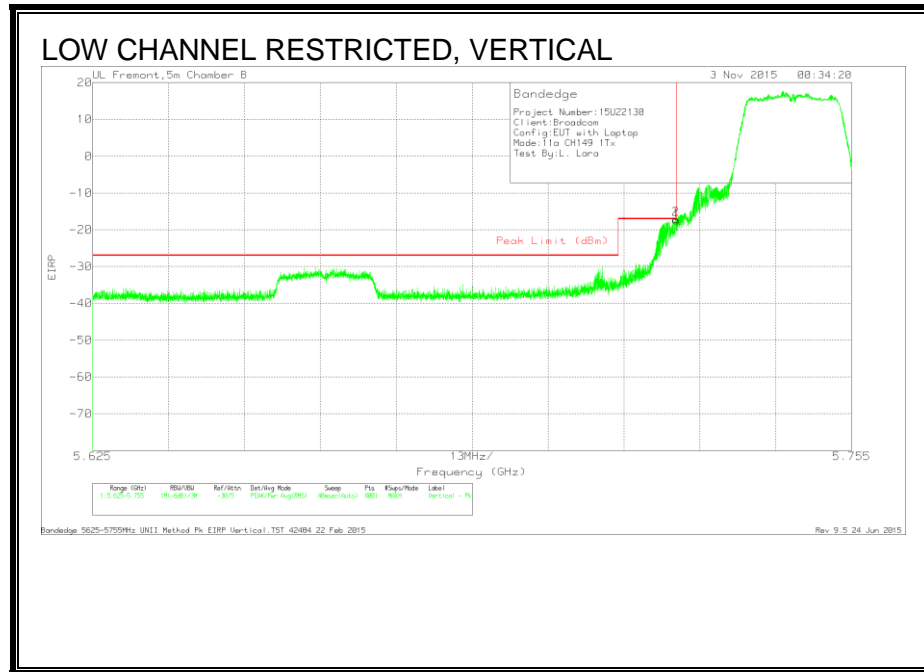
#### LIMITS

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

## 9.2. TX ABOVE 1 GHz 802.11a MODE SISO IN THE 5.8 GHz BAND

### RESTRICTED BANDEDGE (LOW CHANNEL)

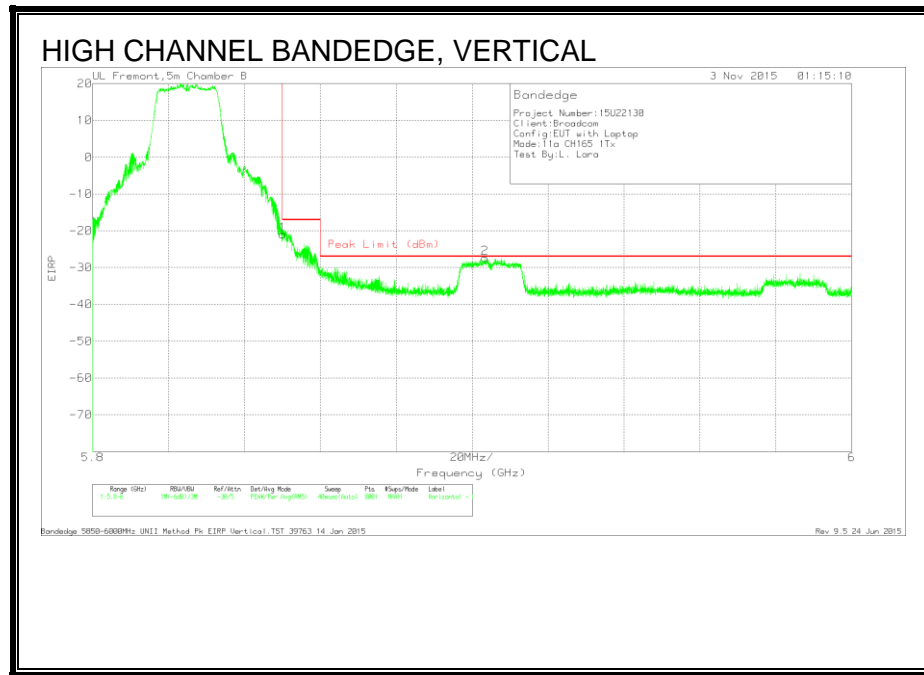


### Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T345 (dB/m)	Bypass (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-71.64	Pk	35	7.4	11.8	-17.44	-17	-.44	156	302	V
2	5.725	-71.31	Pk	35	7.4	11.8	-17.11	-17	-.11	156	302	V

Pk - Peak detector

# **AUTHORIZED BANDEGE (HIGH CHANNEL)**



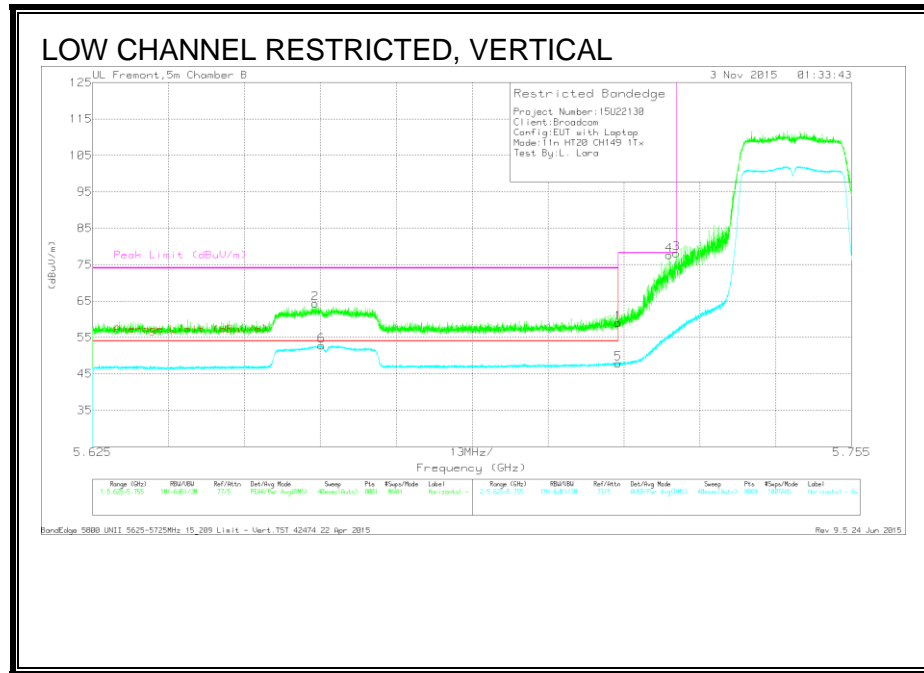
## Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T345 (dB/m)	Bypass (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-75.72	Pk	35.4	7.5	11.8	-21.02	-17	-4.02	155	296	V
2	5.903	-82.17	Pk	35.5	7.5	11.8	-27.37	-27	-.37	155	296	V

Pk - Peak detector

### 9.3. TX ABOVE 1 GHz 802.11n HT20 MODE 1Tx IN THE 5.8 GHz BAND

#### RESTRICTED BANDEDGE (LOW CHANNEL)



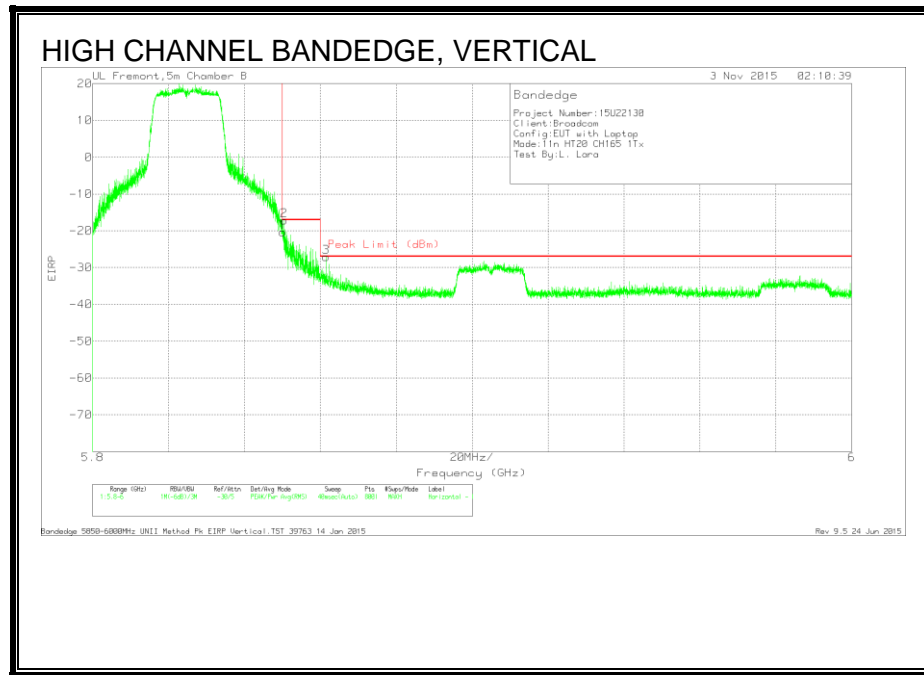
#### Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Bypass (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.663	22.16	Pk	34.9	7.3	64.36	-	-	74	-9.64	161	231	V
6	5.664	10.56	RMS	34.9	7.3	52.76	54	-1.24	-	-	161	231	V
1	5.715	16.72	Pk	35	7.3	59.02	-	-	74	-14.98	161	231	V
5	5.715	5.48	RMS	35	7.3	47.78	54	-6.22	-	-	161	231	V
4	5.724	35.26	Pk	35	7.4	77.66	-	-	78.2	-.54	161	231	V
3	5.725	35.71	Pk	35	7.4	78.11	-	-	78.2	-.09	161	231	V

Pk - Peak detector

RMS - RMS detection

# **AUTHORIZED BANDEDGE (HIGH CHANNEL)**



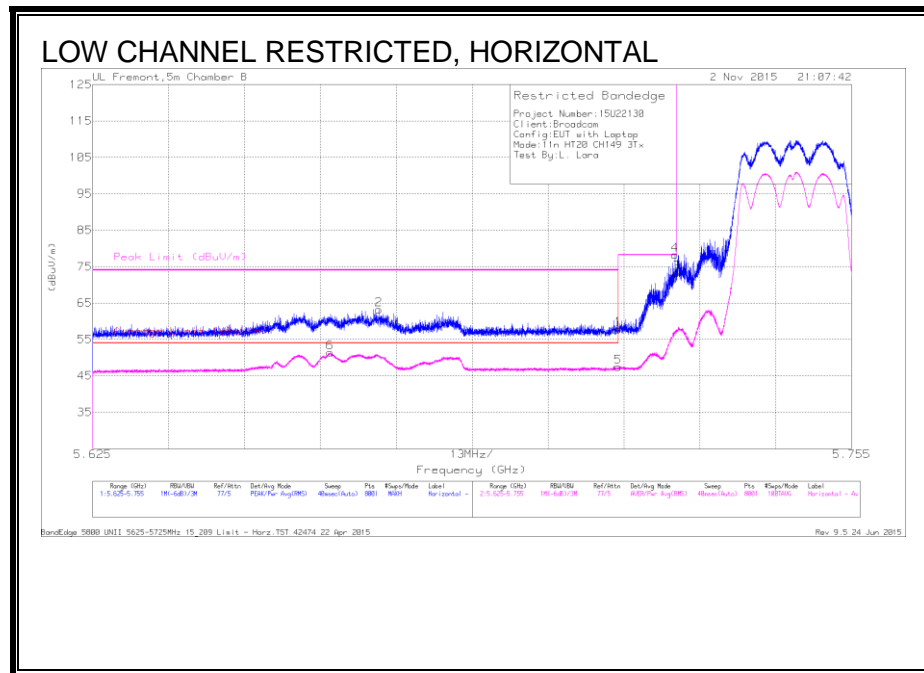
## Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T345 (dB/m)	Bypass (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-75.07	Pk	35.4	7.5	11.8	-20.37	-17	-3.37	155	229	V
2	5.85	-71.86	Pk	35.4	7.5	11.8	-17.16	-17	-.16	155	229	V
3	5.862	-81.86	Pk	35.4	7.5	11.8	-27.16	-27	-.16	155	229	V

Pk - Peak detector

#### 9.4. TX ABOVE 1 GHz 802.11n HT20 MODE 3Tx IN THE 5.8 GHz BAND

### RESTRICTED BANDEDGE (LOW CHANNEL)



## Trace Markers

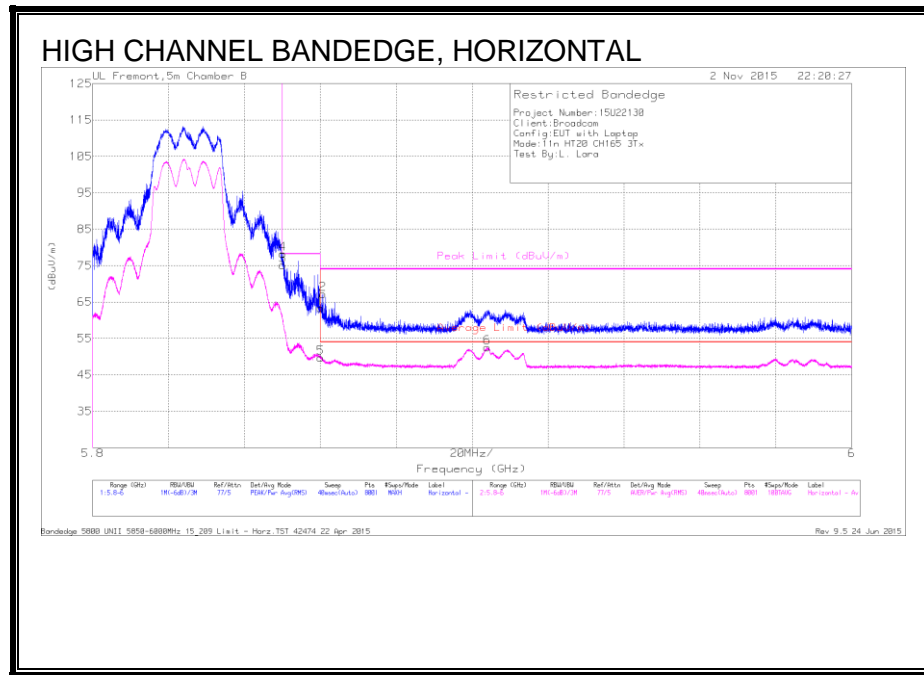
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Bypass (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6	5.666	9.18	RMS	34.9	7.3	51.38	54	-2.62	-	-	346	207	H
2	5.674	21	Pk	34.9	7.3	63.2	-	-	74	-10.8	346	207	H
1	5.715	15.5	Pk	35	7.3	57.8	-	-	74	-16.2	346	207	H
5	5.715	5.13	RMS	35	7.3	47.43	54	-6.57	-	-	346	207	H
3	5.725	30.91	Pk	35	7.4	73.31	-	-	78.2	-4.89	346	207	H
4	5.725	35.77	Pk	35	7.4	78.17	-	-	78.2	-.03	346	207	H

Pk - Peak detector

RMS - RMS detection



# **AUTHORIZED BANDEGE (HIGH CHANNEL)**



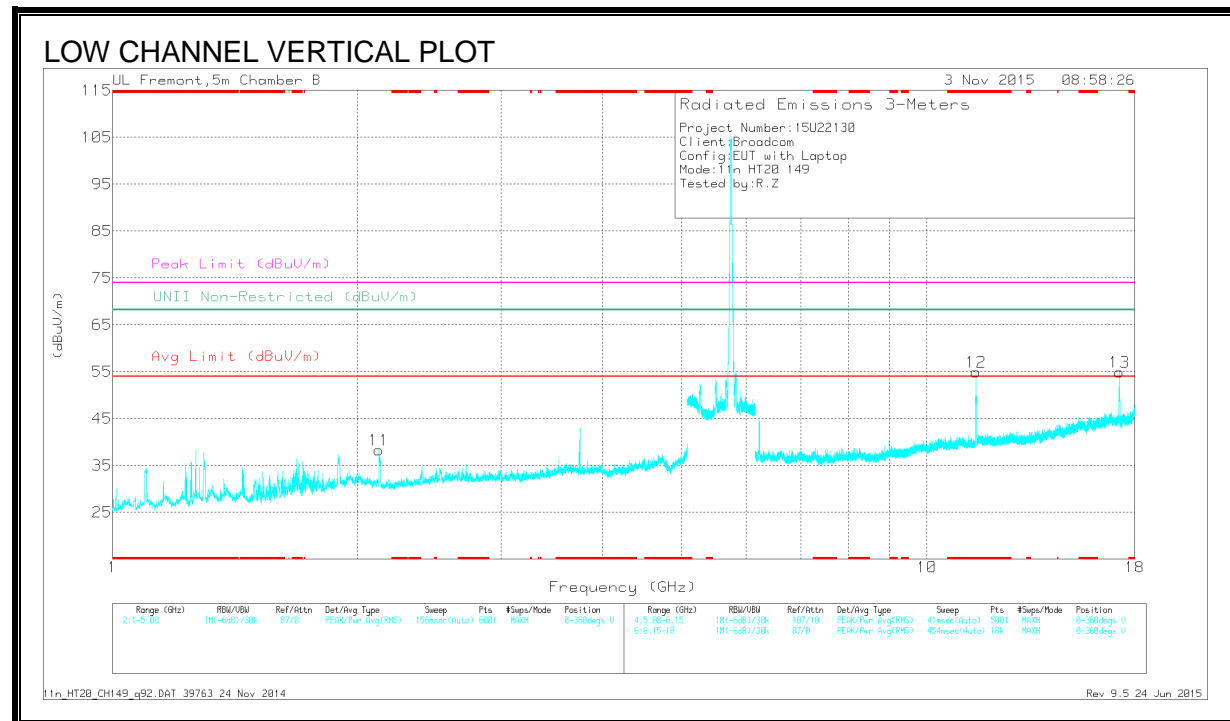
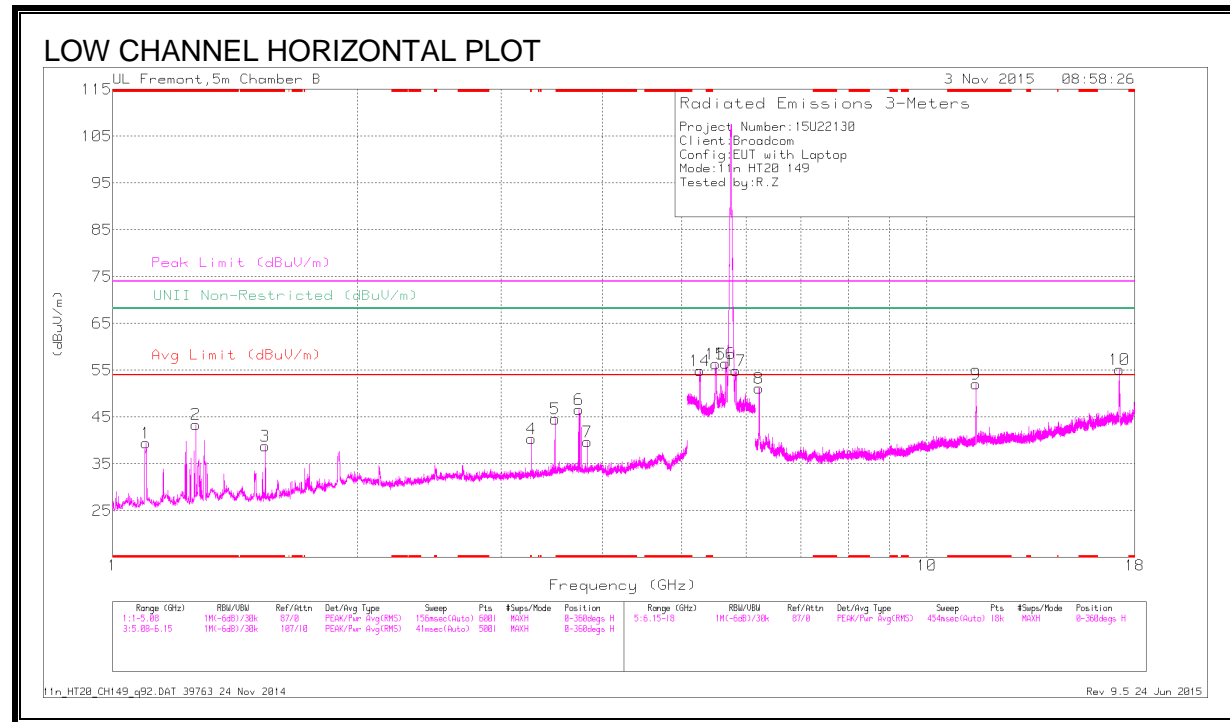
## Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Bypass (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	5.85	32.2	Pk	35.4	7.5	75.1	-	-	78.2	-3.1	335	217	H
4	5.85	35.28	Pk	35.4	7.5	78.18	-	-	78.2	-.02	335	217	H
1	5.86	20.49	Pk	35.4	7.5	63.39	-	-	74	-10.61	335	217	H
5	5.86	6.82	RMS	35.4	7.5	49.72	54	-4.28	-	-	335	217	H
2	5.861	24.32	Pk	35.4	7.5	67.22	-	-	74	-6.78	335	217	H
6	5.904	9.52	RMS	35.5	7.5	52.52	54	-1.48	-	-	335	217	H

Pk - Peak detector

RMS - RMS detection

## HARMONICS AND SPURIOUS EMISSIONS



## DATA

### Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fitr /Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.1	50.33	PK-U	27.6	-35.5	42.43	-	-	74	-31.57	-	-	316	192	H
	* 1.099	40.51	ADR	27.6	-35.5	32.61	54	-21.39	-	-	-	-	316	192	H
2	* 1.265	50.24	PK-U	29.1	-35.9	43.44	-	-	74	-30.56	-	-	259	172	H
	* 1.265	32.27	ADR	29.1	-35.9	25.47	54	-28.53	-	-	-	-	259	172	H
7	* 3.83	47.08	PK-U	33.4	-33	47.48	-	-	74	-26.52	-	-	100	144	H
	* 3.83	38.34	ADR	33.4	-33	38.74	54	-15.26	-	-	-	-	100	144	H
3	* 1.542	54.18	PK-U	28.7	-35.7	47.18	-	-	74	-26.82	-	-	339	145	H
	* 1.54	32.47	ADR	28.7	-35.7	25.47	54	-28.53	-	-	-	-	339	145	H
6	* 3.735	54.22	PK-U	33.5	-32.7	55.02	-	-	74	-18.98	-	-	322	167	H
	* 3.735	31.05	ADR	33.5	-32.7	31.85	54	-22.15	-	-	-	-	322	167	H
12	* 11.491	46.29	PK-U	38.3	-25.4	59.19	-	-	74	-14.81	-	-	327	347	V
	* 11.491	32.98	ADR	38.3	-25.4	45.88	54	-8.12	-	-	-	-	327	347	V
11	2.124	44.63	PK-U	31.6	-35	41.23	-	-	-	-	68.2	-26.97	343	103	V
4	3.268	51.04	PK-U	32.6	-32.8	50.84	-	-	-	-	68.2	-17.36	339	198	H
5	3.497	50.17	PK-U	33.6	-33.1	50.67	-	-	-	-	68.2	-17.53	339	198	H
14	5.264	47.97	PK-U	34.3	-19.5	62.77	-	-	-	-	68.2	-5.43	151	133	H
15	5.504	54.23	PK-U	34.5	-20.8	67.93	-	-	-	-	68.2	-2.27	199	178	H
16	2.124	44.63	PK-U	31.6	-35	41.23	-	-	-	-	68.2	-26.97	343	103	V
17	***5.825	40.36	Pk	35.3	-20.7	54.96	-	-	-	-	-	-	0-360	199	H
8	6.221	47.05	Pk	35.5	-31.4	51.15	-	-	-	-	68.2	-17.05	0-360	101	H
13	17.231	44.61	PK-U	41.1	-21.7	64.01	-	-	-	-	68.2	-4.19	350	268	V
10	17.235	35.81	Pk	41.1	-21.7	55.21	-	-	-	-	68.2	-12.99	0-360	101	H

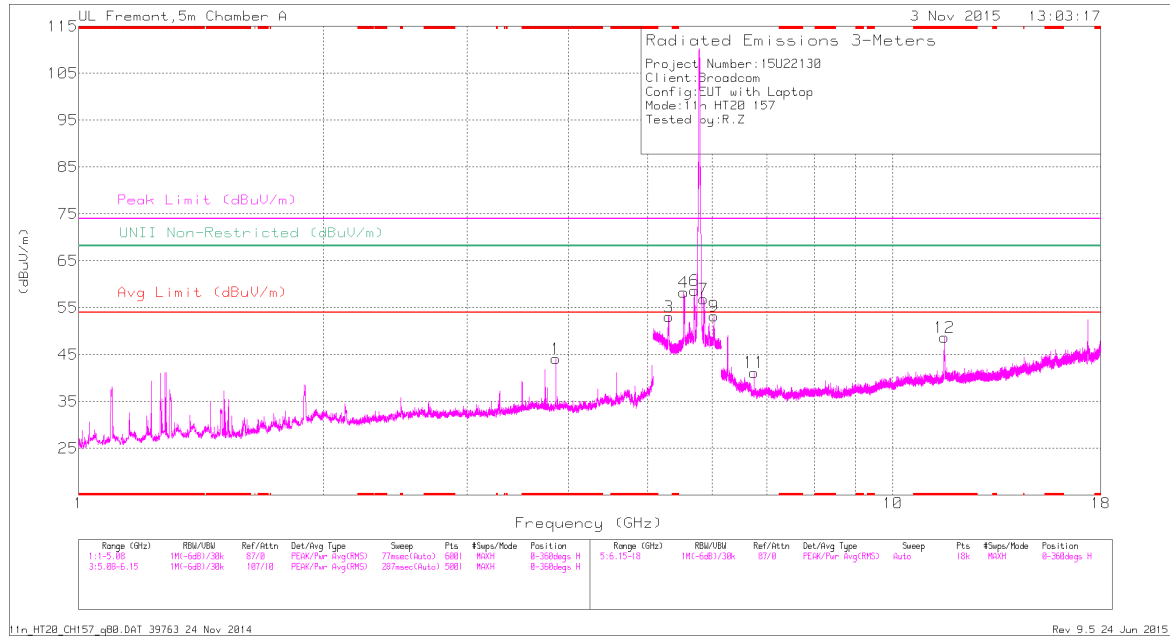
\* - indicates frequency in CFR15.205 Restricted Band

\*\*\* - indicates frequency in the authorized band

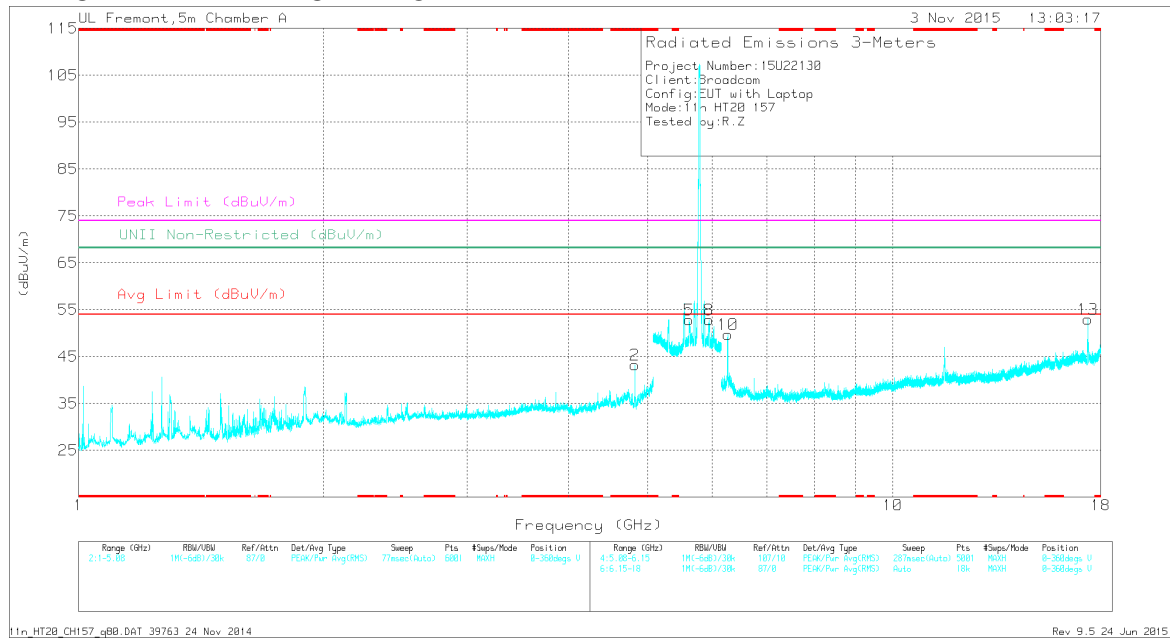
PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

## MID CHANNEL HORIZONTAL PLOT



## MID CHANNEL VERTICAL PLOT



## DATA

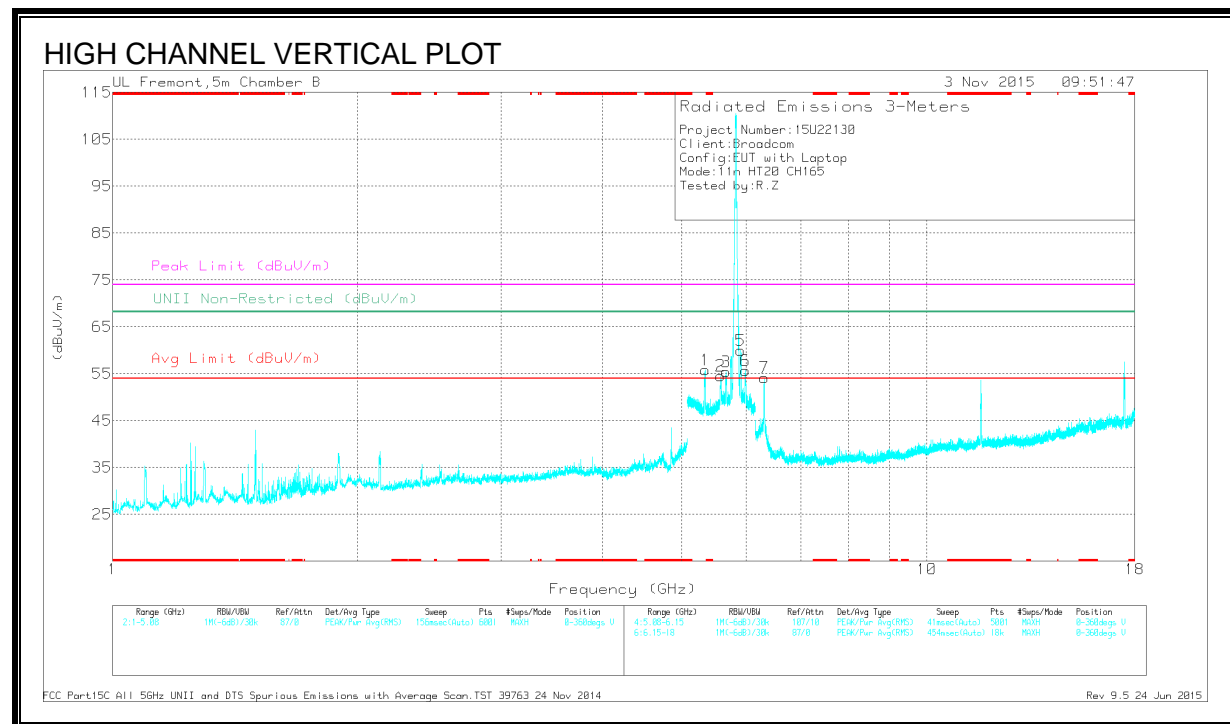
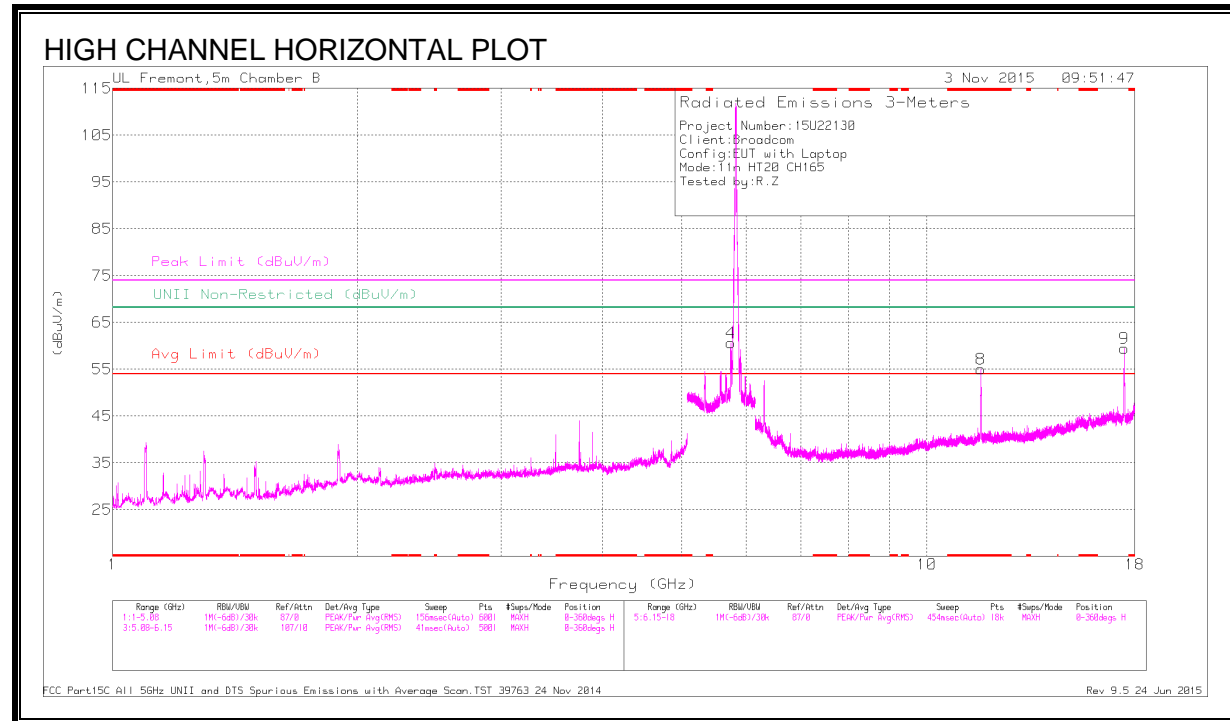
### Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fitr /Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.856	45.69	PK-U	33.4	-32.9	46.19	-	-	74	-27.81	68.2	-22.01	80	222	H
	* 3.857	38.44	ADR	33.4	-32.9	38.94	54	-15.06	-	-	-	-	80	222	H
2	* 4.821	47.87	PK-U	34.3	-32.1	50.07	-	-	74	-23.93	68.2	-18.13	3	346	V
	* 4.821	41.03	ADR	34.3	-32.1	43.23	54	-10.77	-	-	-	-	3	346	V
12	* 11.568	46.28	PK-U	38.4	-24.6	60.08	-	-	74	-13.92	68.2	-8.12	14	198	H
	* 11.569	30.63	ADR	38.4	-24.6	44.43	54	-9.57	-	-	-	-	14	198	H
3	5.306	46.41	PK-U	34.4	-19.7	61.11	-	-	-	-	68.2	-7.09	147	116	H
4	5.538	54.11	PK-U	34.6	-20.7	68.01	-	-	-	-	68.2	-1.19	97	182	H
5	5.617	47.15	PK-U	34.8	-20.6	61.35	-	-	-	-	68.2	-6.85	31	268	V
6	5.709	52.86	PK-U	35	-21	66.86	-	-	-	-	68.2	-1.34	99	236	H
7	5.858	51.79	PK-U	35.4	-20.7	66.49	-	-	-	-	68.2	-1.71	178	221	H
8	5.946	47.85	PK-U	35.6	-20.9	62.55	-	-	-	-	68.2	-5.65	30	200	V
9	6.026	45.33	PK-U	35.6	-20.7	60.23	-	-	-	-	68.2	-7.97	182	214	H
10	6.267	55.55	PK-U	35.5	-31.6	59.45	-	-	-	-	68.2	-8.75	26	265	V
11	6.749	42.64	PK-U	35.9	-30.8	47.74	-	-	-	-	68.2	-20.46	13	133	H
13	17.352	43.73	PK-U	40.8	-21.4	63.13	-	-	-	-	68.2	-5.07	343	246	V

\* - indicates frequency in CFR15.205 Restricted Band

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 T345 (dBm)	Amp/Cb/Fitr /Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
8	* 11.65	38.66	ADR	38.5	-24.8	52.36	54	-1.64	-	-	-	-	31	339	H
	* 11.65	51.32	PK-U	38.5	-24.8	65.02	-	-	74	-8.98	68.2	-3.18	5	204	H
1	5.343	47.92	PK-U	34.4	-19.7	62.62	-	-	-	-	68.2	-5.58	5	257	V
2	5.581	50.39	PK-U	34.7	-20.5	64.59	-	-	-	-	68.2	-3.61	39	211	V
3	5.662	50.03	PK-U	34.9	-21	63.93	-	-	-	-	68.2	-4.27	360	304	V
4	**5.744	46.66	PK	35.1	-21.1	60.66	-	-	-	-	68.2	-7.54	0-360	199	H
5	5.907	52.96	PK-U	35.5	-20.7	67.76	-	-	-	-	68.2	-4.4	21	232	V
6	5.986	50.27	PK-U	35.6	-20.7	65.17	-	-	-	-	68.2	-3.03	35	186	V
7	6.31	59.25	PK-U	35.6	-31.3	63.55	-	-	-	-	68.2	-4.65	27	214	V
9	17.473	47.95	PK-U	40.7	-21.1	67.55	-	-	-	-	68.2	-.65	292	106	H

\* - indicates frequency in CFR15.205 Restricted Band

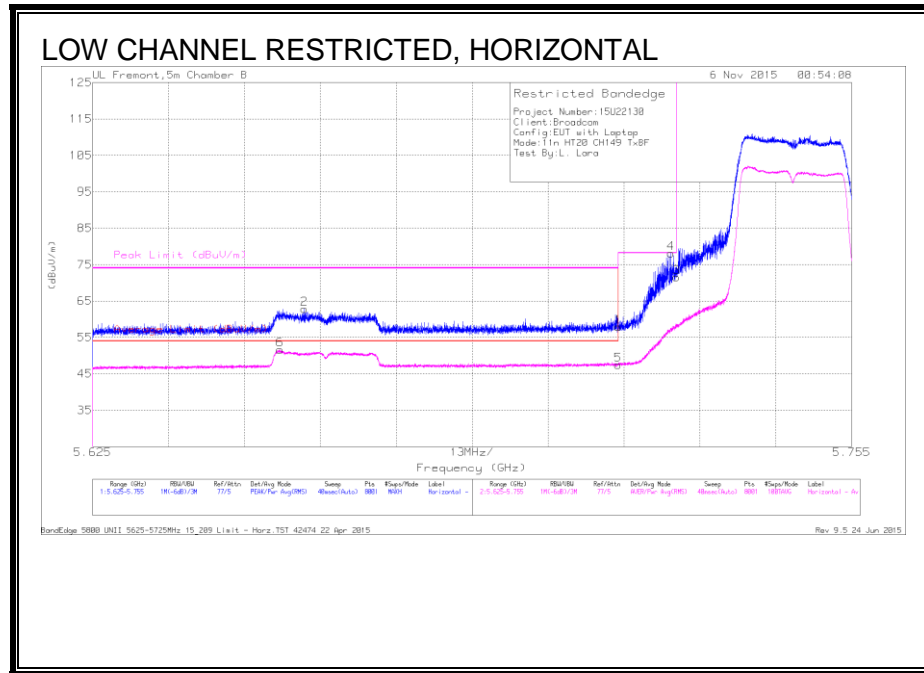
\*\* - indicates frequency covered by the radiated band edge

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

## 9.5. TX ABOVE 1 GHz 802.11n HT20 MODE TxBF IN THE 5.8 GHz BAND

### RESTRICTED BANDEDGE (LOW CHANNEL)



### Trace Markers

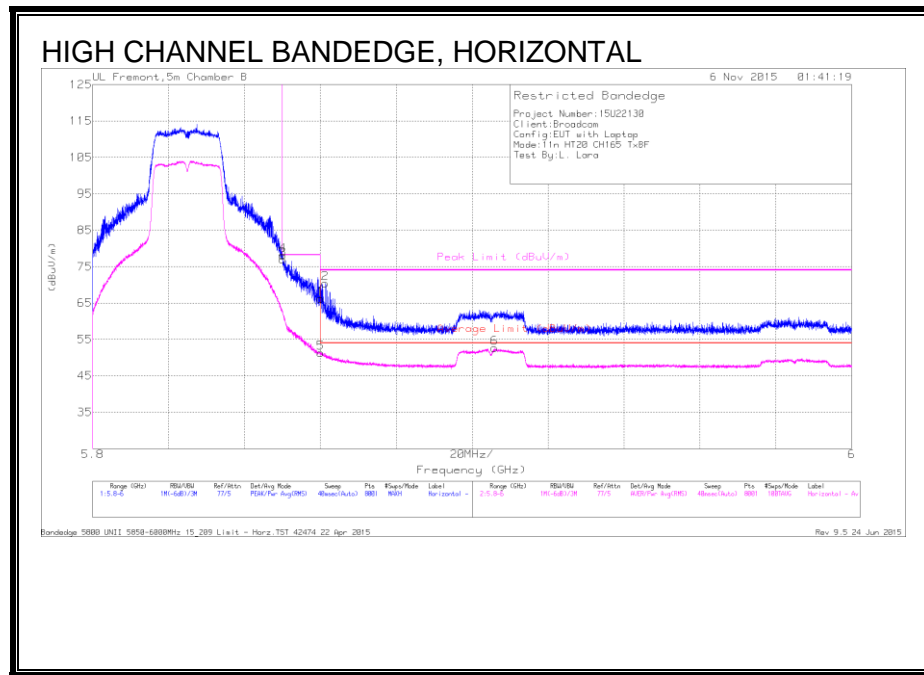
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Bypass (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6	5.657	9.05	RMS	34.9	7.3	.38	51.63	54	-2.37	-	-	184	178	H
2	5.661	20.59	Pk	34.9	7.3	0	62.79	-	-	74	-11.21	184	178	H
1	5.715	15.62	Pk	35	7.3	0	57.92	-	-	74	-16.08	184	178	H
5	5.715	4.75	RMS	35	7.3	.38	47.43	54	-6.57	-	-	184	178	H
4	5.724	35.66	Pk	35	7.4	0	78.06	-	-	78.2	-.14	184	178	H
3	5.725	29.15	Pk	35	7.4	0	71.55	-	-	78.2	-6.65	184	178	H

Pk - Peak detector

RMS - RMS detection



## AUTHORIZED BANDEDGE (HIGH CHANNEL)



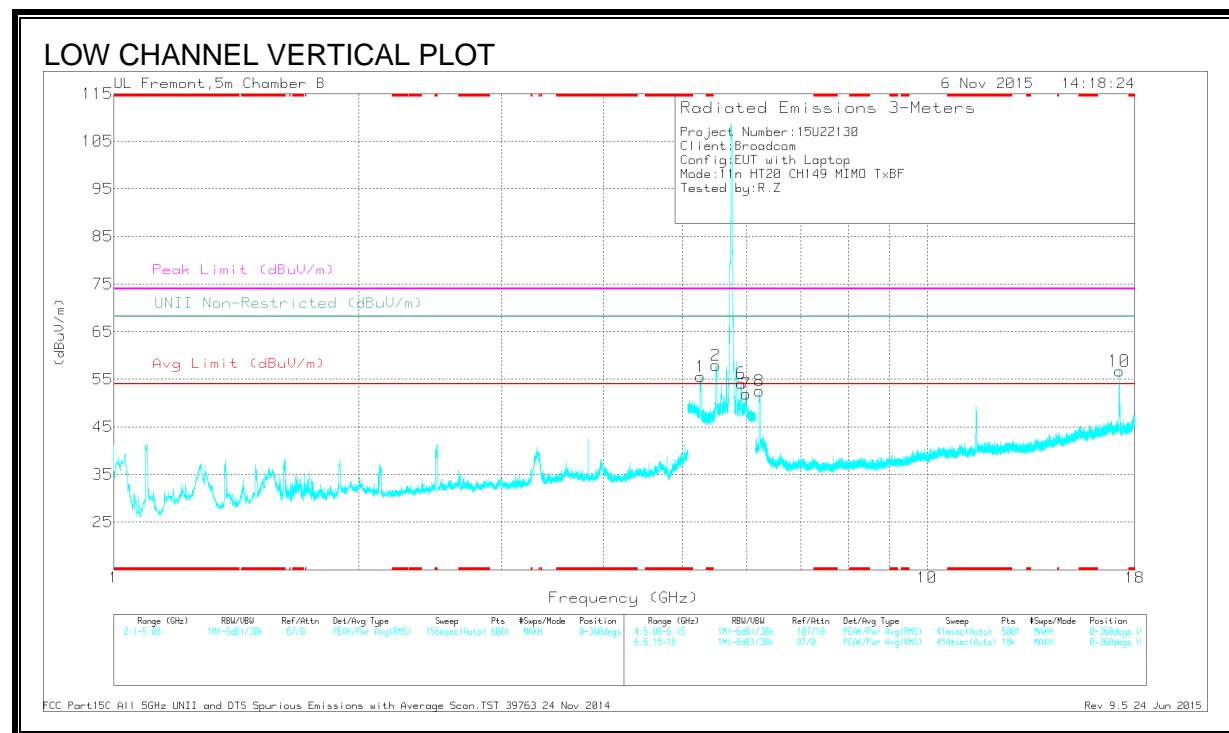
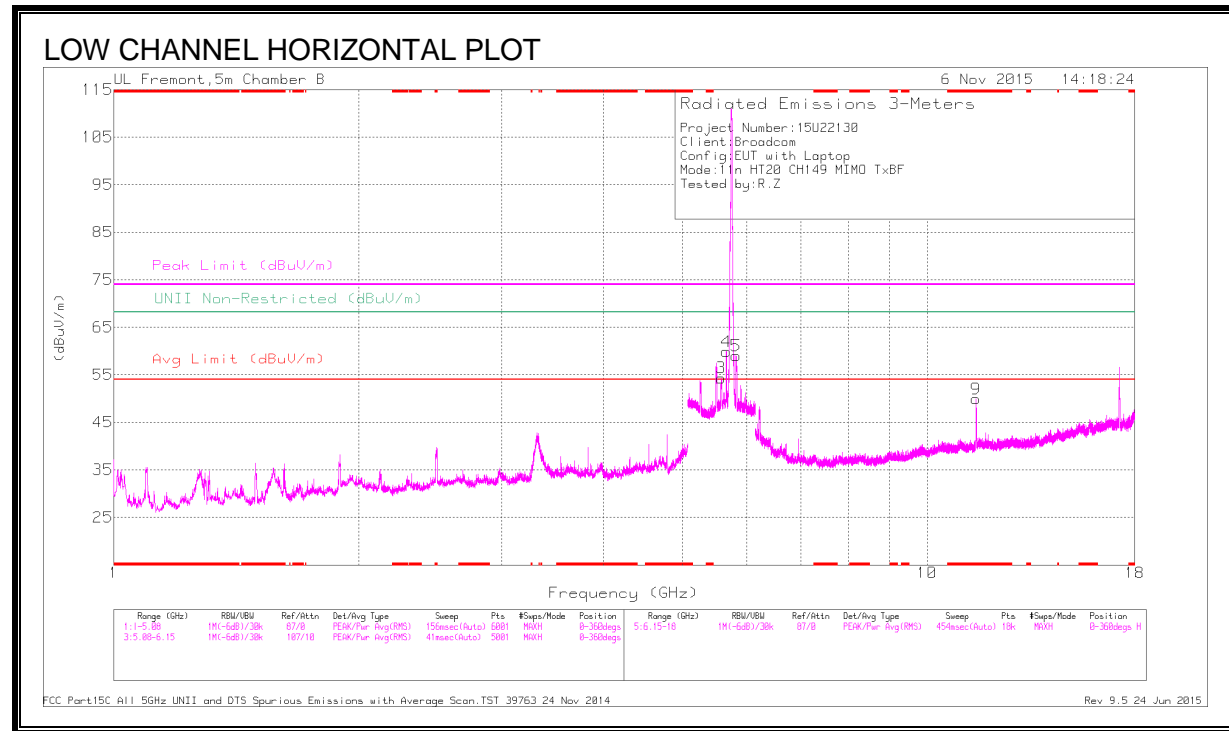
## Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Bypass (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
3	5.85	34.05	Pk	35.4	7.5	0	76.95	-	-	78.2	-1.25	238	172	H
4	5.85	35.24	Pk	35.4	7.5	0	78.14	-	-	78.2	-.06	238	172	H
1	5.86	23.31	Pk	35.4	7.5	0	66.21	-	-	74	-7.79	238	172	H
5	5.86	7.95	RMS	35.4	7.5	.38	51.23	54	-2.77	-	-	238	172	H
2	5.861	27.56	Pk	35.4	7.5	0	70.46	-	-	74	-3.54	238	172	H
6	5.906	9.29	RMS	35.5	7.5	.38	52.67	54	-1.33	-	-	238	172	H

Pk - Peak detector

RMS - RMS detection

## HARMONICS AND SPURIOUS EMISSIONS



## DATA

### Trace Markers

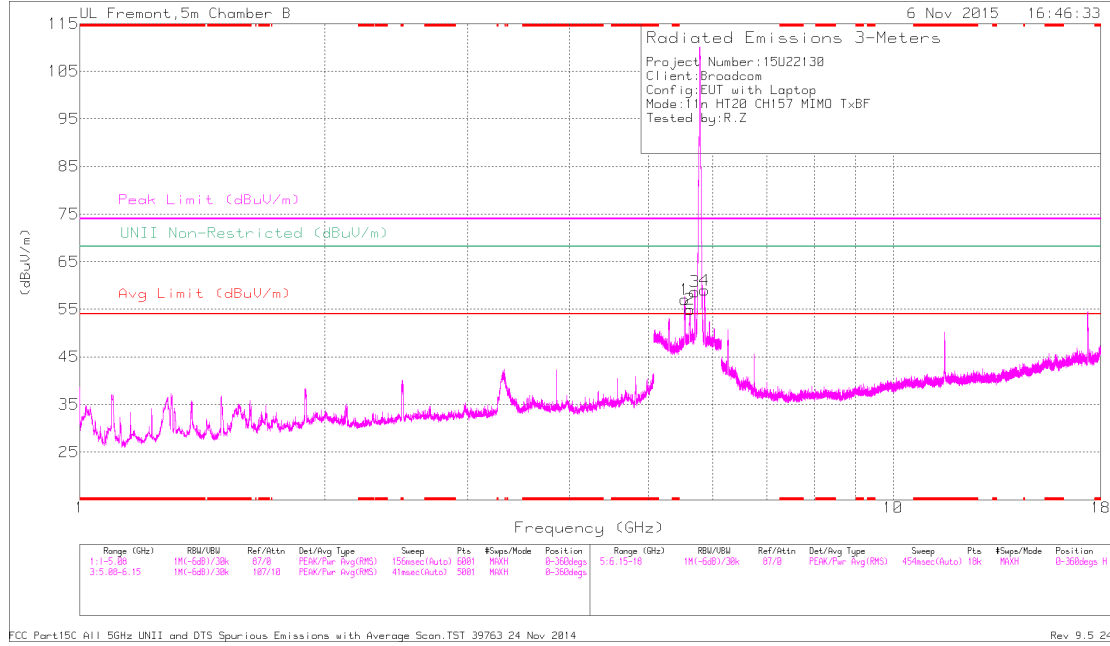
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
9	* 11.486	45.35	PK-U	38.2	-25.4	0	58.15	-	-	74	-15.85	68.2	-10.05	86	101	H
	* 11.487	31.6	ADR	38.2	-25.4	.38	44.78	54	-9.22	-	-	-	-	86	101	H
1	5.268	50.47	PK-U	34.3	-19.5	0	65.27	-	-	-	-	68.2	-2.93	127	266	V
2	5.5	48.45	PK-U	34.5	-20.5	0	62.45	-	-	-	-	68.2	-5.75	67	102	V
3	5.585	48.96	PK-U	34.7	-20.7	0	62.96	-	-	-	-	68.2	-5.24	280	199	H
4	5.668	54.18	PK-U	34.9	-21	0	68.08	-	-	-	-	68.2	-.12	274	185	H
5	5.824	52.64	PK-U	35.3	-21	0	66.94	-	-	-	-	68.2	-1.26	272	185	H
6	5.906	50.74	PK-U	35.5	-20.7	0	65.54	-	-	-	-	68.2	-2.66	134	193	V
7	5.989	49.41	PK-U	35.6	-20.9	0	64.11	-	-	-	-	68.2	-4.09	136	162	V
8	6.225	59.13	PK-U	35.5	-31.5	0	63.13	-	-	-	-	68.2	-5.07	133	174	V
10	17.228	47.18	PK-U	41.1	-21.7	0	66.58	-	-	-	-	68.2	-1.62	155	220	V

\* - indicates frequency in CFR15.205 Restricted Band

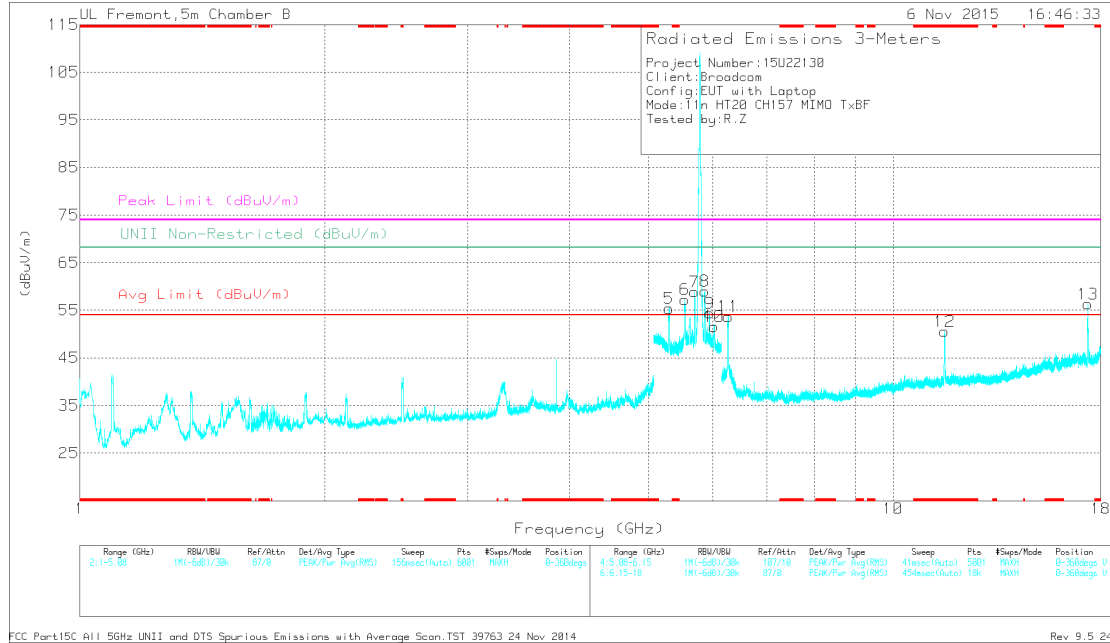
PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

### MID CHANNEL HORIZONTAL PLOT



### MID CHANNEL VERTICAL PLOT



## DATA

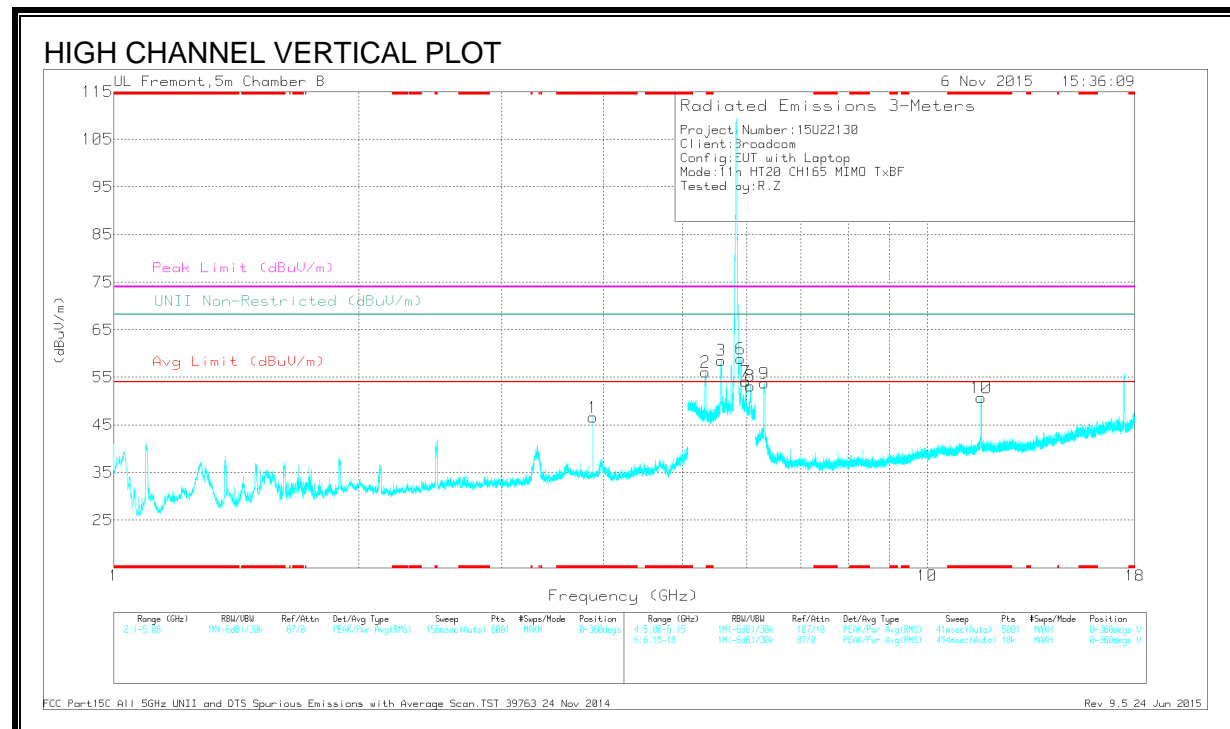
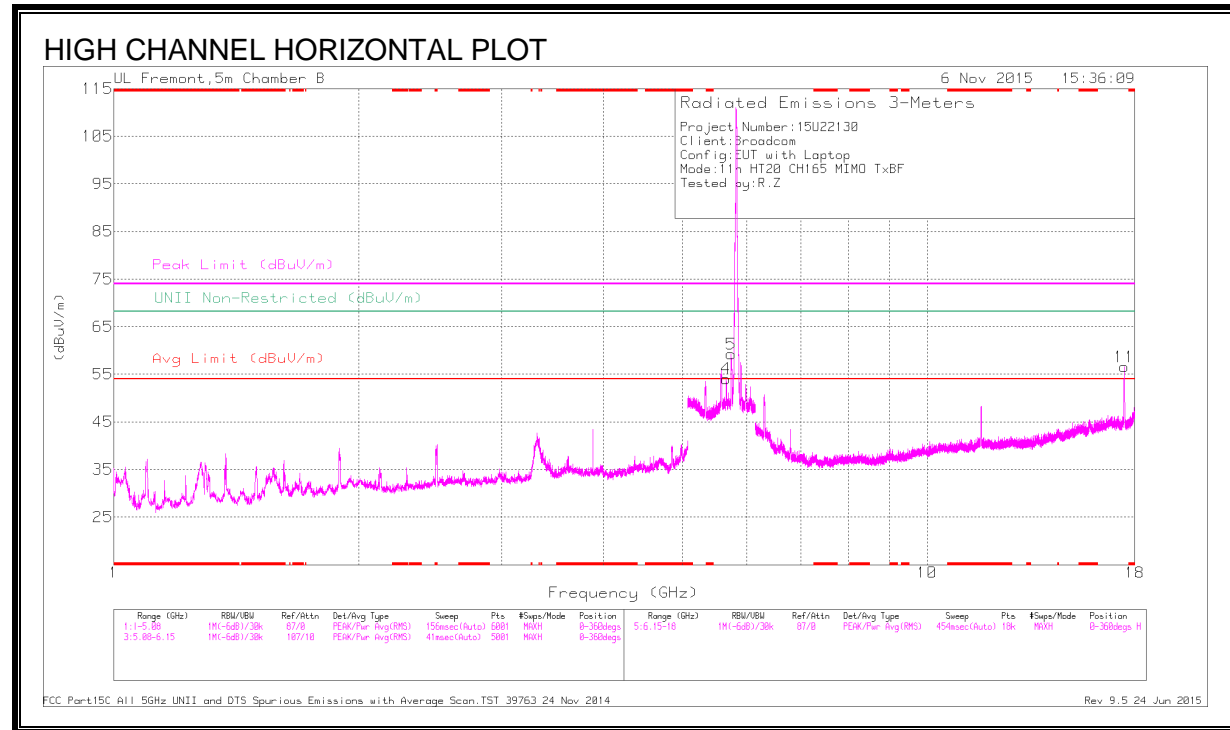
### Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
12	* 11.573	49.01	PK-U	38.4	-24.5	0	62.91	-	-	74	-11.09	-	-	299	151	V
	* 11.57	35.5	ADR	38.4	-24.6	.38	49.68	54	-4.32	-	-	-	-	299	151	V
5	5.305	50.11	PK-U	34.4	-19.5	0	65.01	-	-	-	-	68.2	-3.19	119	214	V
1	5.544	50.58	PK-U	34.6	-20.6	0	64.58	-	-	-	-	68.2	-3.62	183	103	H
6	5.544	53.78	PK-U	34.6	-20.4	0	67.98	-	-	-	-	68.2	-2.22	116	237	V
2	5.627	49.06	PK-U	34.8	-20.9	0	62.96	-	-	-	-	68.2	-5.24	281	187	H
7	5.698	52.69	PK-U	35	-21	0	66.69	-	-	-	-	68.2	-1.51	231	299	H
3	5.704	52.59	PK-U	35	-20.8	0	66.79	-	-	-	-	68.2	-1.41	118	184	V
4	5.864	51.44	PK-U	35.4	-20.7	0	66.14	-	-	-	-	68.2	-2.06	176	203	H
8	5.866	53.66	PK-U	35.4	-20.9	0	68.16	-	-	-	-	68.2	-.04	115	297	V
9	5.944	49.15	PK-U	35.6	-20.7	0	64.05	-	-	-	-	68.2	-4.15	108	235	V
10	6.032	45.88	PK-U	35.6	-20.7	0	60.78	-	-	-	-	68.2	-7.42	88	365	V
11	6.266	57.64	PK-U	35.5	-31.6	0	61.54	-	-	-	-	68.2	-6.66	109	104	V
13	17.34	47.12	PK-U	40.8	-21.7	0	66.22	-	-	-	-	68.2	-1.98	152	172	V

\* - indicates frequency in CFR15.205 Restricted Band

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 T345 (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	* 3.883	50.5	PK-U	33.5	-32.6	0	51.4	-	-	74	-22.6	-	-	93	312	V
	* 3.883	46.49	ADR	33.5	-32.6	.38	47.77	54	-6.23	-	-	-	-	93	312	V
10	* 11.65	48.37	PK-U	38.5	-24.8	0	62.07	-	-	74	-11.93	-	-	304	151	V
	* 11.65	34.69	ADR	38.5	-24.8	.38	48.77	54	-5.23	-	-	-	-	304	151	V
2	5.341	49.29	PK-U	34.4	-19.6	0	64.09	-	-	-	-	68.2	-4.11	108	232	V
3	5.579	53.73	PK-U	34.7	-20.9	0	67.53	-	-	-	-	68.2	-6.7	121	240	V
4	5.661	49.17	PK-U	34.9	-20.9	0	63.17	-	-	-	-	68.2	-5.03	285	194	H
5	***5.743	45.24	Pk	35.1	-21.1	0	59.24	-	-	-	-	-	-	0-360	199	H
6	5.904	53.5	PK-U	35.5	-20.9	0	68.1	-	-	-	-	68.2	-1	119	283	V
7	5.985	47.28	PK-U	35.6	-20.7	0	62.18	-	-	-	-	68.2	-6.02	130	208	V
8	6.064	45.61	PK-U	35.5	-20.6	0	60.51	-	-	-	-	68.2	-7.69	117	214	V
9	6.309	58.16	PK-U	35.6	-31.3	0	62.46	-	-	-	-	68.2	-5.74	110	103	V
11	17.471	46.42	PK-U	40.7	-21.1	0	66.02	-	-	-	-	68.2	-2.18	67	201	H

\* - indicates frequency in CFR15.205 Restricted Band

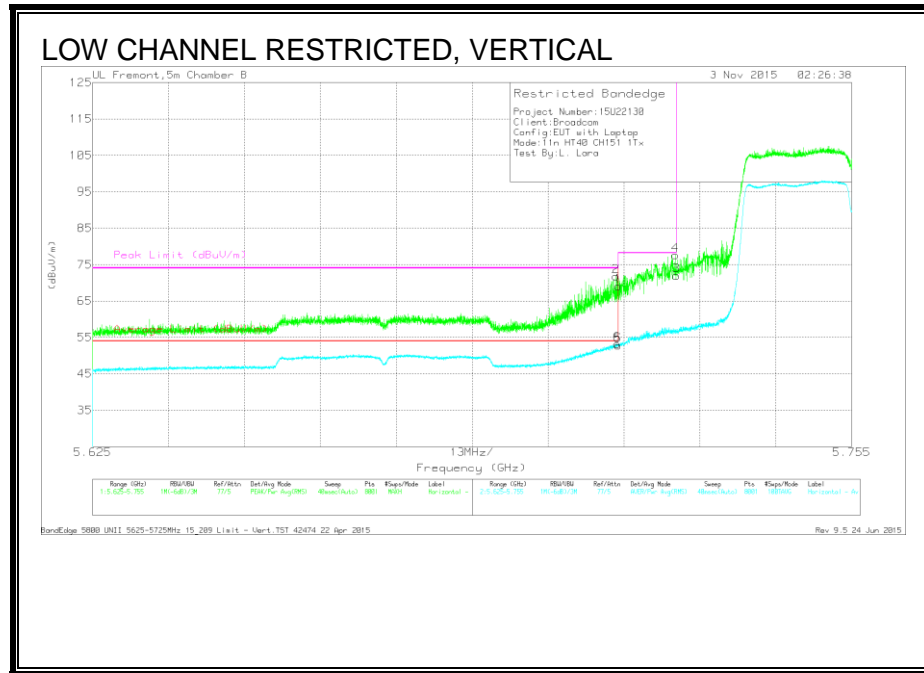
\*\*\* - indicates frequency in the authorized band

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

## 9.6. TX ABOVE 1 GHz 802.11n HT40 MODE 1Tx IN THE 5.8 GHz BAND

### RESTRICTED BANDEDGE (LOW CHANNEL)



### Trace Markers

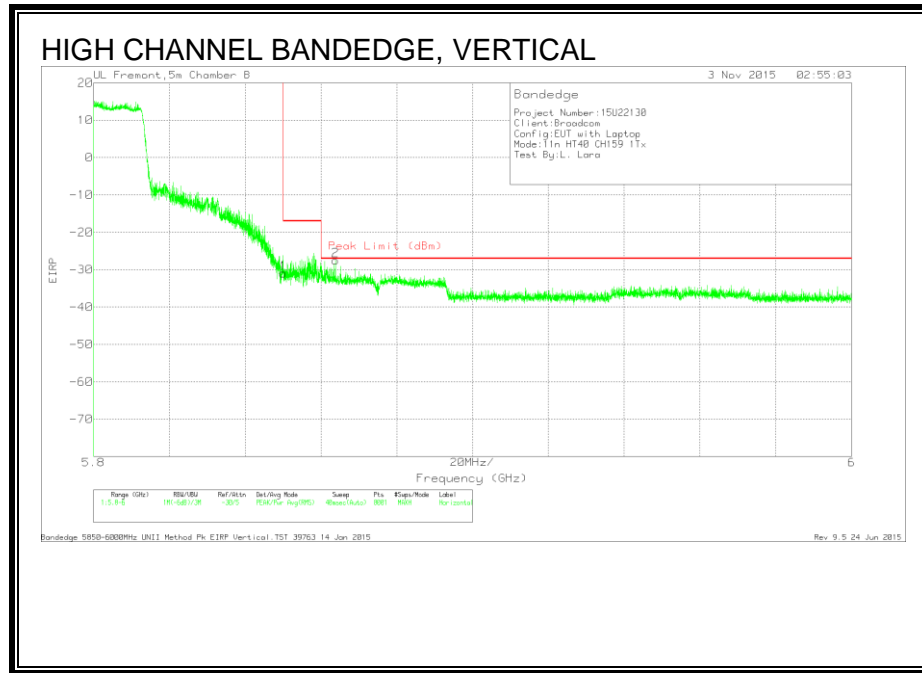
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Bypass (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.715	26.8	Pk	35	7.3	69.1	-	-	74	-4.9	161	230	V
2	5.715	29.5	Pk	35	7.3	71.8	-	-	74	-2.2	161	230	V
5	5.715	10.5	RMS	35	7.3	52.8	54	-1.2	-	-	161	230	V
6	5.715	10.84	RMS	35	7.3	53.14	54	-.86	-	-	161	230	V
3	5.725	29.56	Pk	35	7.4	71.96	-	-	78.2	-6.24	161	230	V
4	5.725	35.22	Pk	35	7.4	77.62	-	-	78.2	-.58	161	230	V

Pk - Peak detector

RMS - RMS detection



# **AUTHORIZED BANDEDGE (HIGH CHANNEL)**



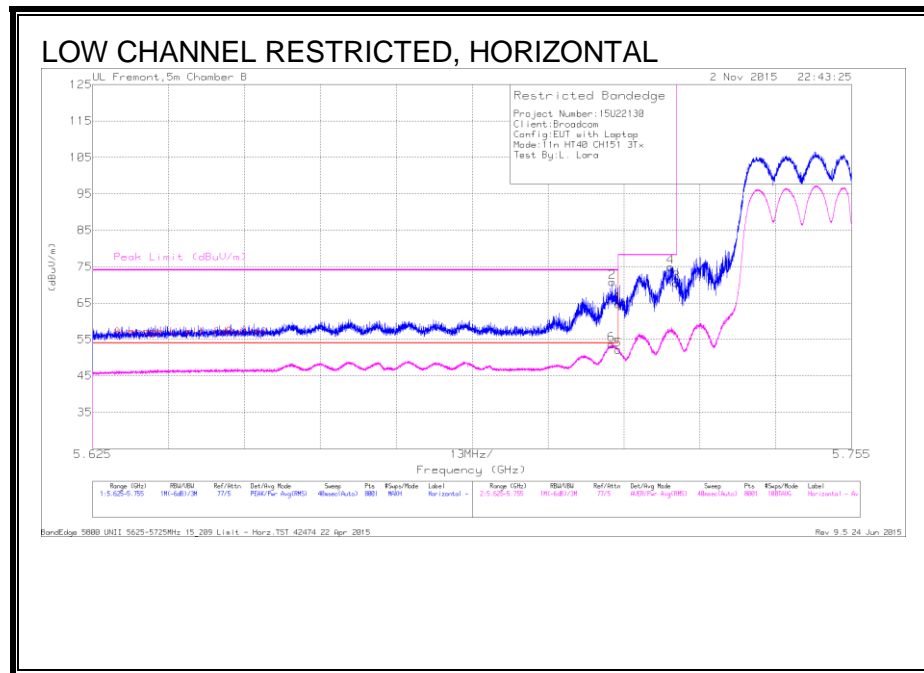
## Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T345 (dB/m)	Bypass (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-85.65	Pk	35.4	7.5	11.8	-30.95	-17	-13.95	155	237	V
2	5.864	-82.18	Pk	35.4	7.5	11.8	-27.48	-27	-48	155	237	V

Pk - Peak detector

## 9.7. TX ABOVE 1 GHz 802.11n HT40 MODE 3Tx IN THE 5.8 GHz BAND

### RESTRICTED BANDEDGE (LOW CHANNEL)



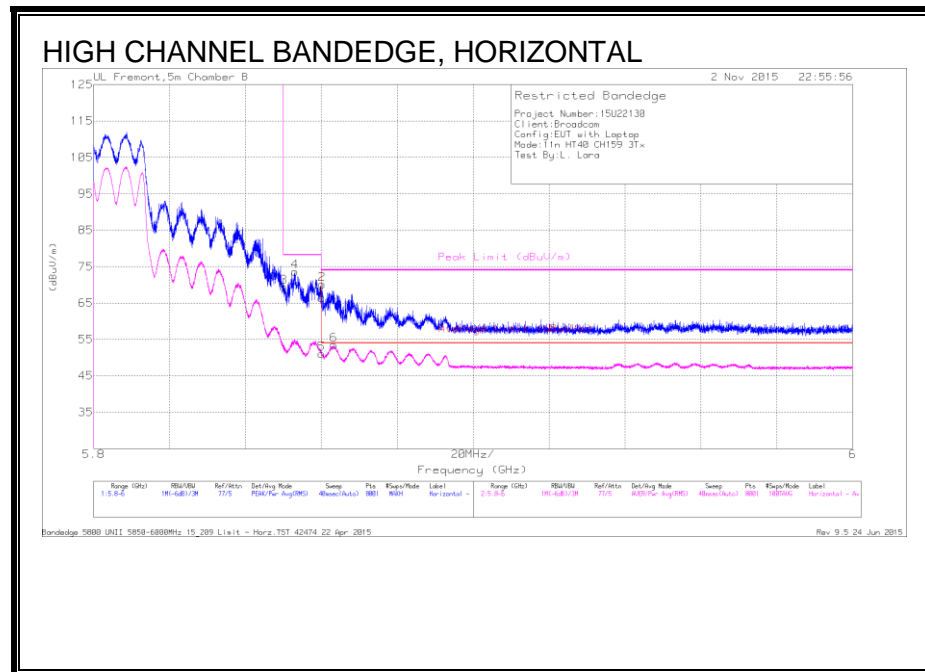
### Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Bypass (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.714	28.43	Pk	35	7.3	70.73	-	-	74	-3.27	231	214	H
6	5.714	11.36	RMS	35	7.3	53.66	54	-3.34	-	-	231	214	H
1	5.715	22.42	Pk	35	7.3	64.72	-	-	74	-9.28	231	214	H
5	5.715	9.8	RMS	35	7.3	52.1	54	-1.9	-	-	231	214	H
4	5.724	32.52	Pk	35	7.4	74.92	-	-	78.2	-3.28	231	214	H
3	5.725	28.08	Pk	35	7.4	70.48	-	-	78.2	-7.72	231	214	H

Pk - Peak detector

RMS - RMS detection

**AUTHORIZED BANDEDGE (HIGH CHANNEL)**



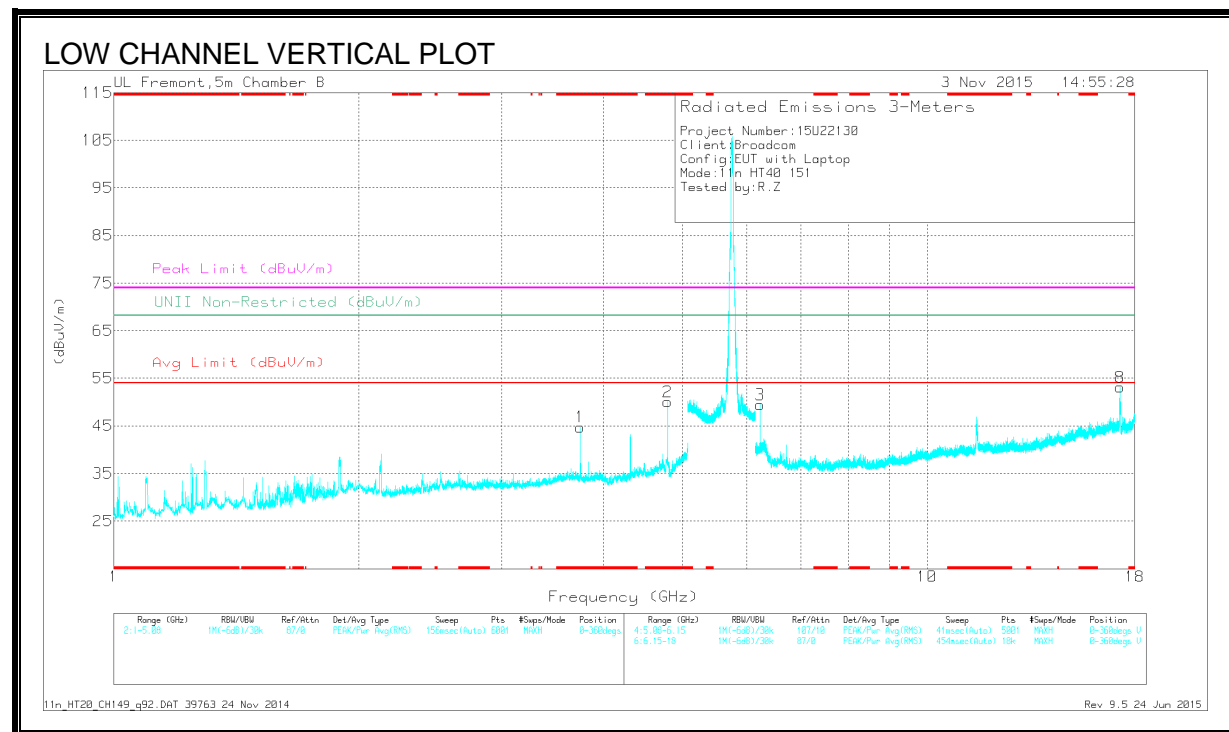
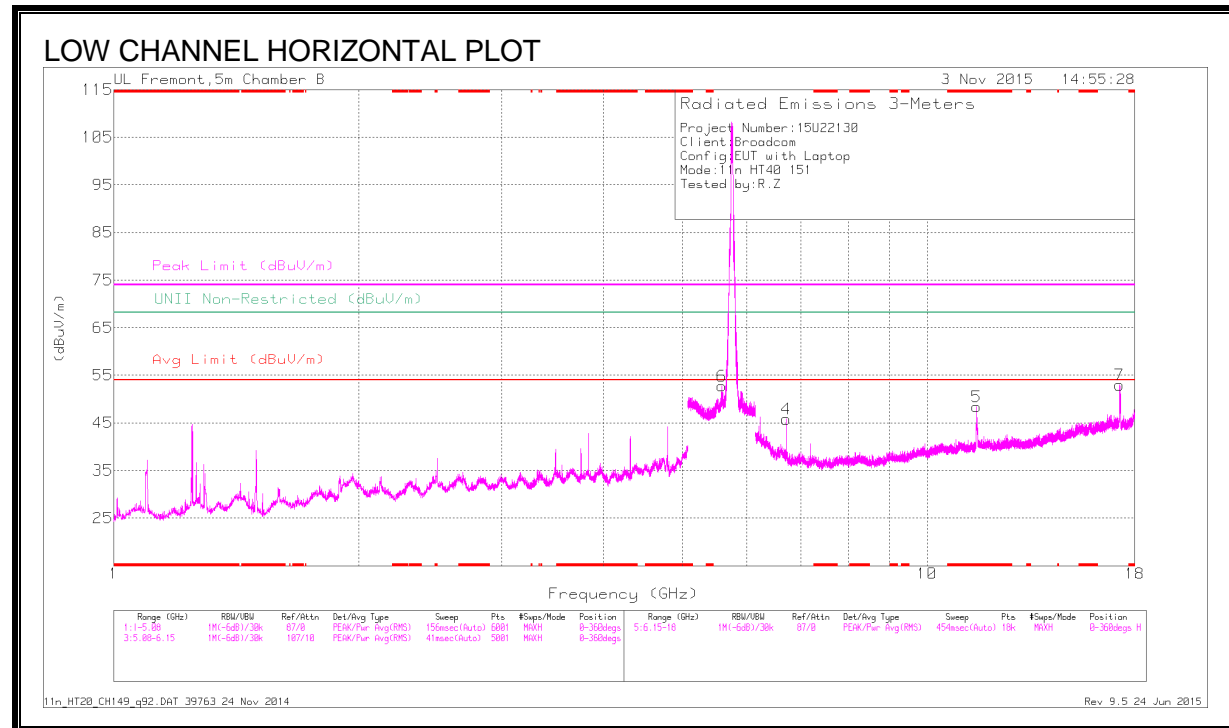
## Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Bypass (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	5.85	26.55	Pk	35.4	7.5	69.45	-	-	78.2	-8.75	237	222	H
4	5.853	30.87	Pk	35.4	7.4	73.67	-	-	78.2	-4.53	237	222	H
1	5.86	23.55	Pk	35.4	7.5	66.45	-	-	74	-7.55	237	222	H
2	5.86	27.22	Pk	35.4	7.5	70.12	-	-	74	-3.88	237	222	H
5	5.86	8.15	RMS	35.4	7.5	51.05	54	-2.95	-	-	237	222	H
6	5.863	10.6	RMS	35.4	7.5	53.5	54	-.5	-	-	237	222	H

Pk - Peak detector

## RMS - RMS detection

## HARMONICS AND SPURIOUS EMISSIONS



## DATA

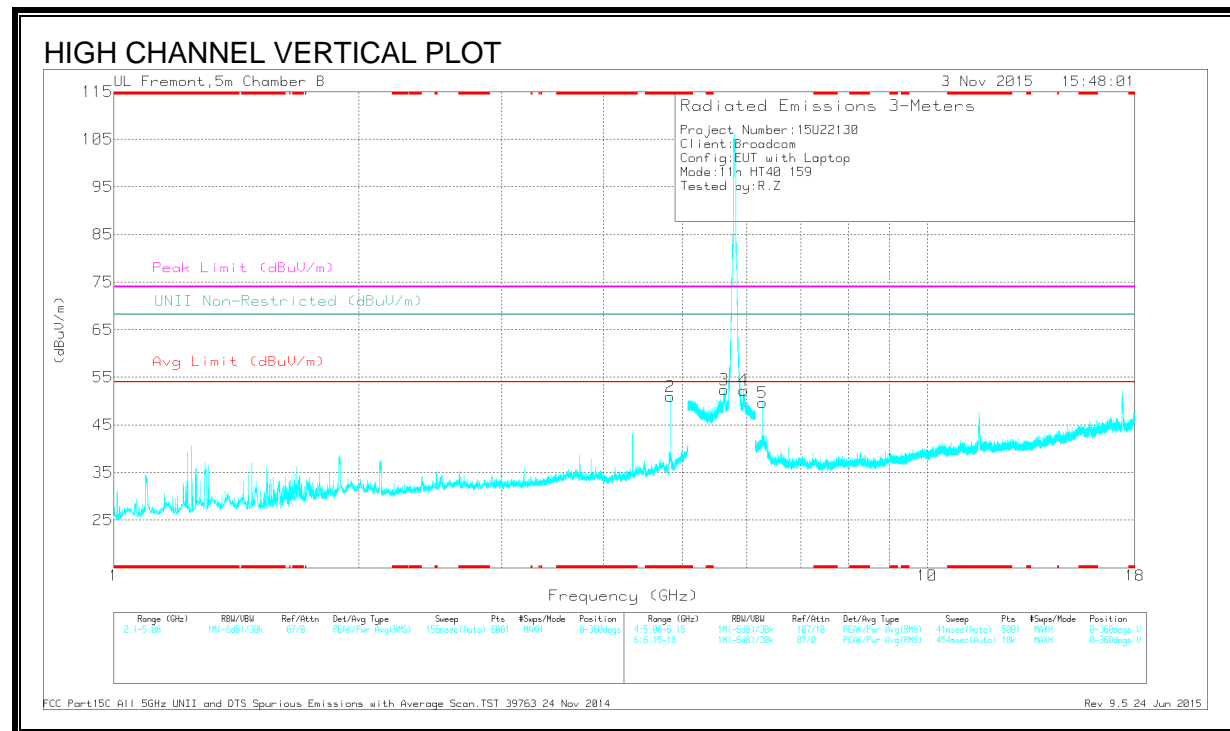
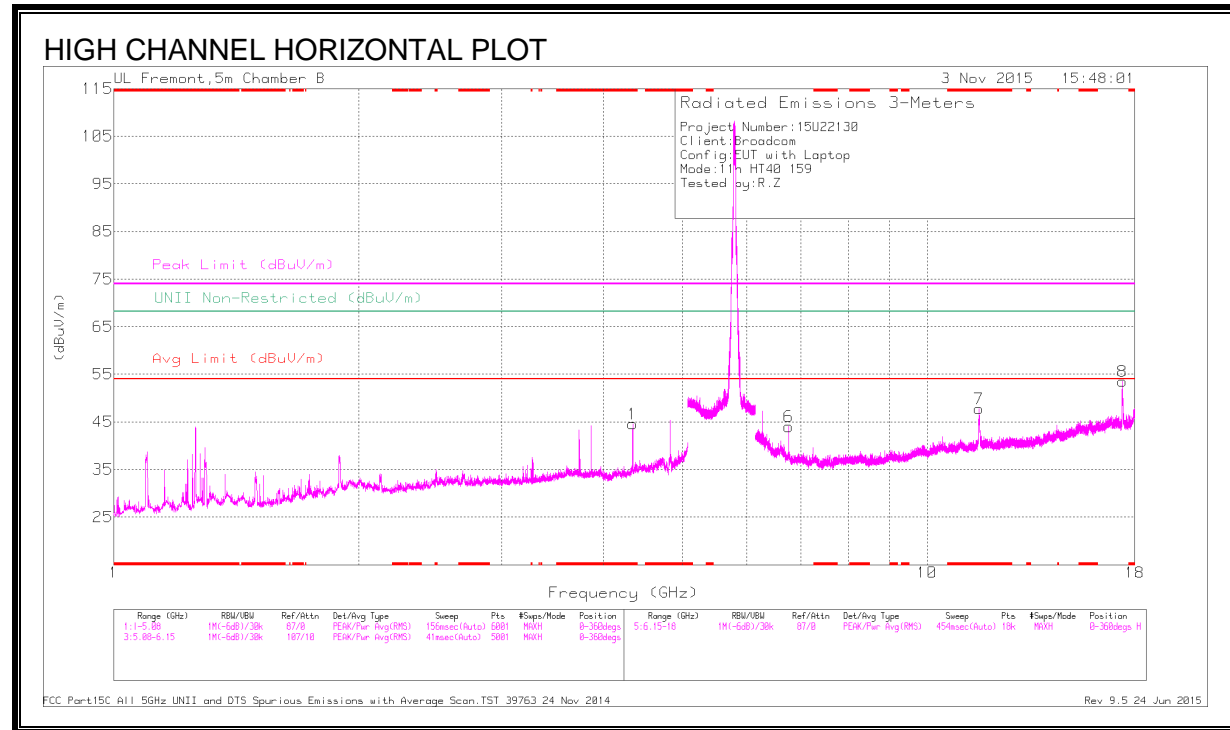
### Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	* 3.742	51.28	PK-U	33.5	-32.7	0	52.08	-	-	74	-21.92	-	-	351	165	V
	* 3.748	31.13	ADR	33.5	-32.7	0	31.93	54	-22.07	-	-	-	-	351	165	V
2	* 4.796	52.48	PK-U	34.3	-31.7	0	55.08	-	-	74	-18.92	-	-	4	348	V
	* 4.796	48.61	ADR	34.3	-31.7	0	51.21	54	-2.79	-	-	-	-	4	348	V
5	* 11.514	44.34	PK-U	38.3	-25.2	0	57.44	-	-	74	-16.56	-	-	350	117	H
	* 11.509	31.86	ADR	38.3	-25.3	0	44.86	54	-9.14	-	-	-	-	350	117	H
6	5.592	46.54	PK-U	34.7	-20.6	0	60.64	-	-	-	-	68.2	-7.56	96	147	H
3	6.235	51.49	PK-U	35.5	-31.6	0	55.39	-	-	-	-	68.2	-12.81	29	260	V
4	6.714	46.77	PK-U	35.9	-31	0	51.67	-	-	-	-	68.2	-16.53	93	108	H
7	17.248	43.31	PK-U	41	-21.6	0	62.71	-	-	-	-	68.2	-5.49	42	216	V
8	17.252	42.36	PK-U	41	-21.6	0	61.76	-	-	-	-	68.2	-6.44	61	126	H

\* - indicates frequency in CFR15.205 Restricted Band

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 T345 (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	* 4.346	48.37	PK-U	33.8	-32.2	0	49.97	-	-	74	-24.03	-	-	176	202	H
	* 4.346	43.47	ADR	33.8	-32.2	0	45.07	54	-8.93	-	-	-	-	176	202	H
2	* 4.829	53.03	PK-U	34.3	-32.1	0	55.23	-	-	74	-18.77	-	-	6	269	V
	* 4.829	49.23	ADR	34.3	-32.1	0	51.43	54	-2.57	-	-	-	-	6	269	V
7	* 11.582	44.09	PK-U	38.4	-24.6	0	57.89	-	-	74	-16.11	-	-	79	204	H
	* 11.58	31.3	ADR	38.4	-24.6	0	45.1	54	-9.9	-	-	-	-	79	204	H
3	5.634	49.76	PK-U	34.8	-20.7	0	63.86	-	-	-	-	68.2	-4.34	2	313	V
4	5.951	47.61	PK-U	35.6	-20.9	0	62.31	-	-	-	-	68.2	-5.89	34	194	V
5	6.278	51.48	PK-U	35.5	-31.6	0	55.38	-	-	-	-	68.2	-12.82	22	126	V
6	6.761	45.26	PK-U	35.9	-30.9	0	50.26	-	-	-	-	68.2	-17.94	200	101	H
8	17.384	41.73	PK-U	40.8	-20.8	0	61.73	-	-	-	-	68.2	-6.47	297	103	H

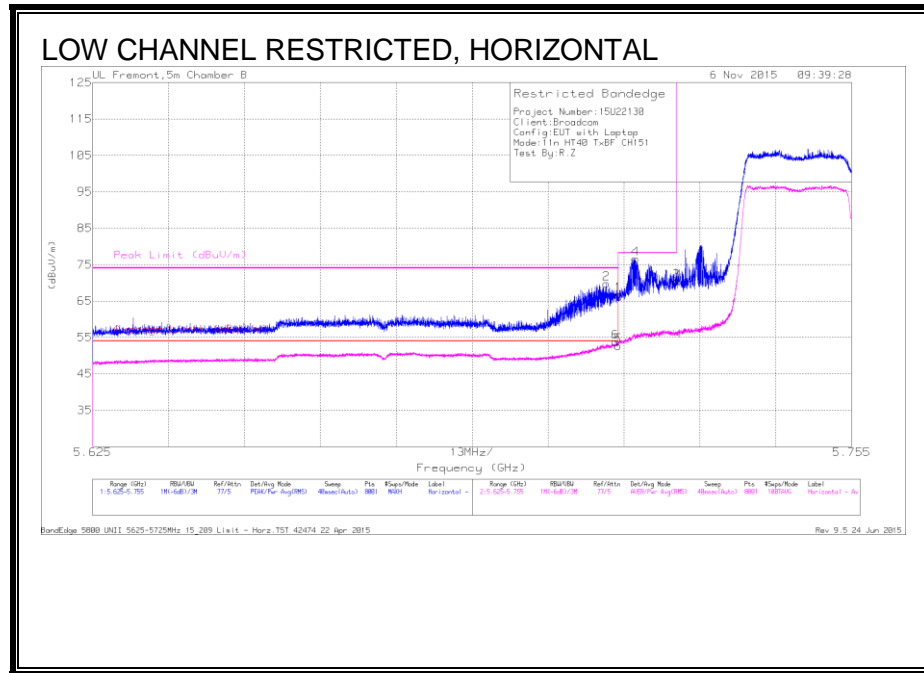
\* - indicates frequency in CFR15.205 Restricted Band

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

## 9.8. TX ABOVE 1 GHz 802.11n HT40 MODE TxBF IN THE 5.8 GHz BAND

### RESTRICTED BANDEDGE (LOW CHANNEL)



### Trace Markers

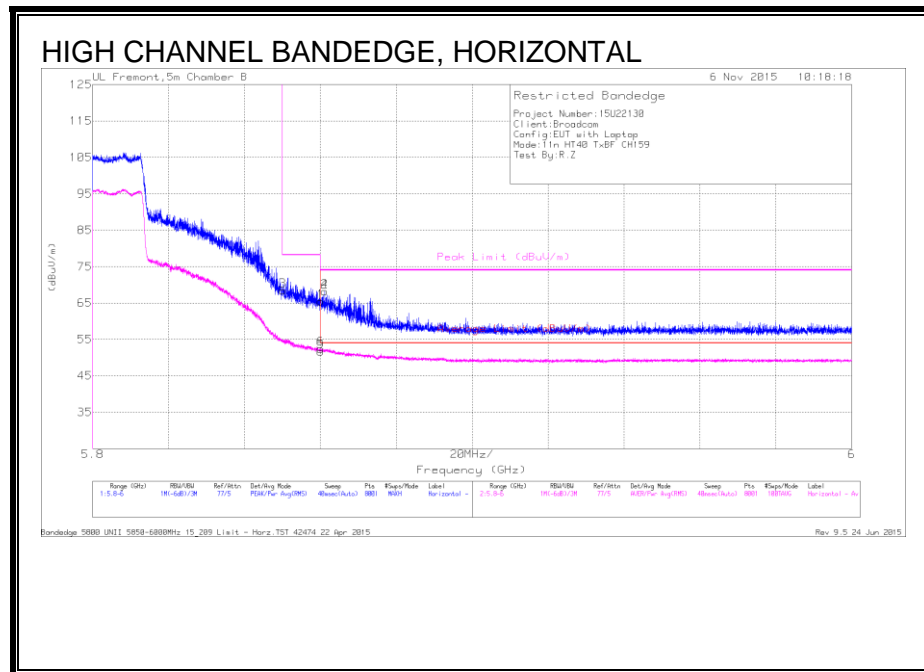
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Bypass (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.713	27.52	Pk	35	7.3	0	69.82	-	-	74	-4.18	301	166	H
1	5.715	24.47	Pk	35	7.3	0	66.77	-	-	74	-7.23	301	166	H
5	5.715	8.13	RMS	35	7.3	2.28	52.71	54	-1.29	-	-	301	166	H
6	5.715	9.15	RMS	35	7.3	2.28	53.73	54	-27	-	-	301	166	H
4	5.718	34.26	Pk	35	7.3	0	76.56	-	-	78.2	-1.64	301	166	H
3	5.725	27.99	Pk	35	7.4	0	70.39	-	-	78.2	-7.81	301	166	H

Pk - Peak detector

RMS - RMS detection



## AUTHORIZED BANDEGE (HIGH CHANNEL)

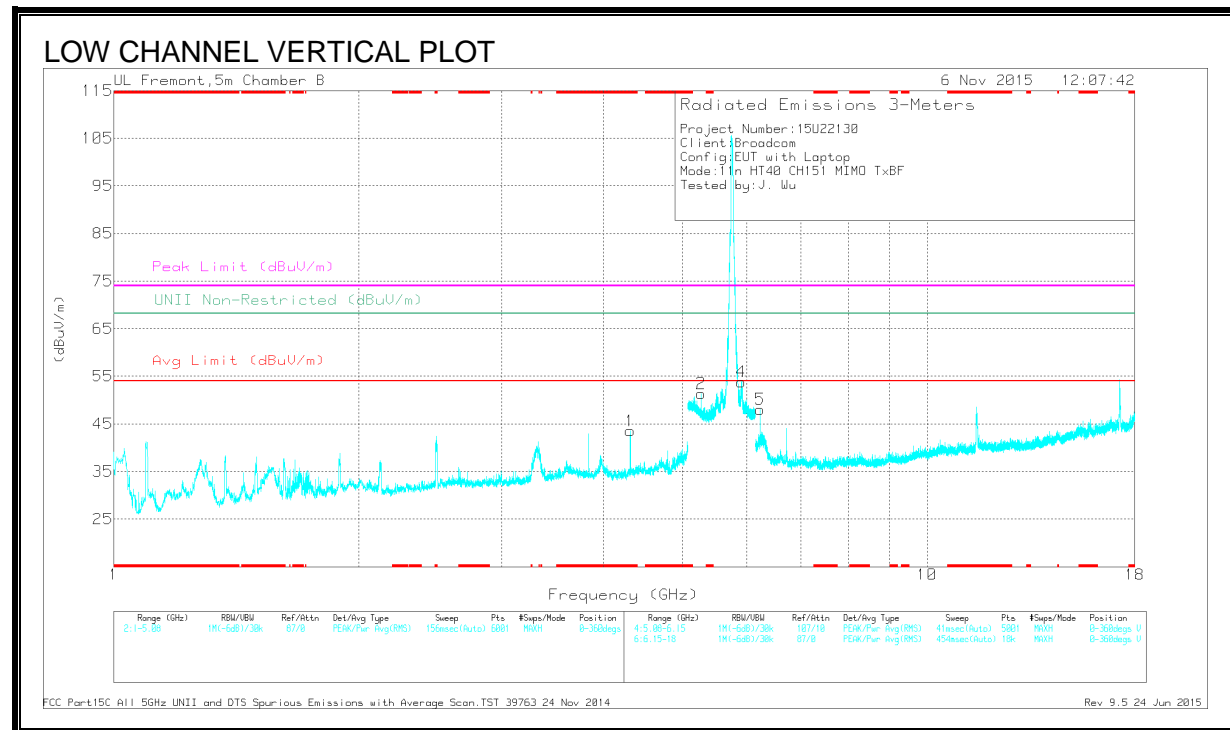
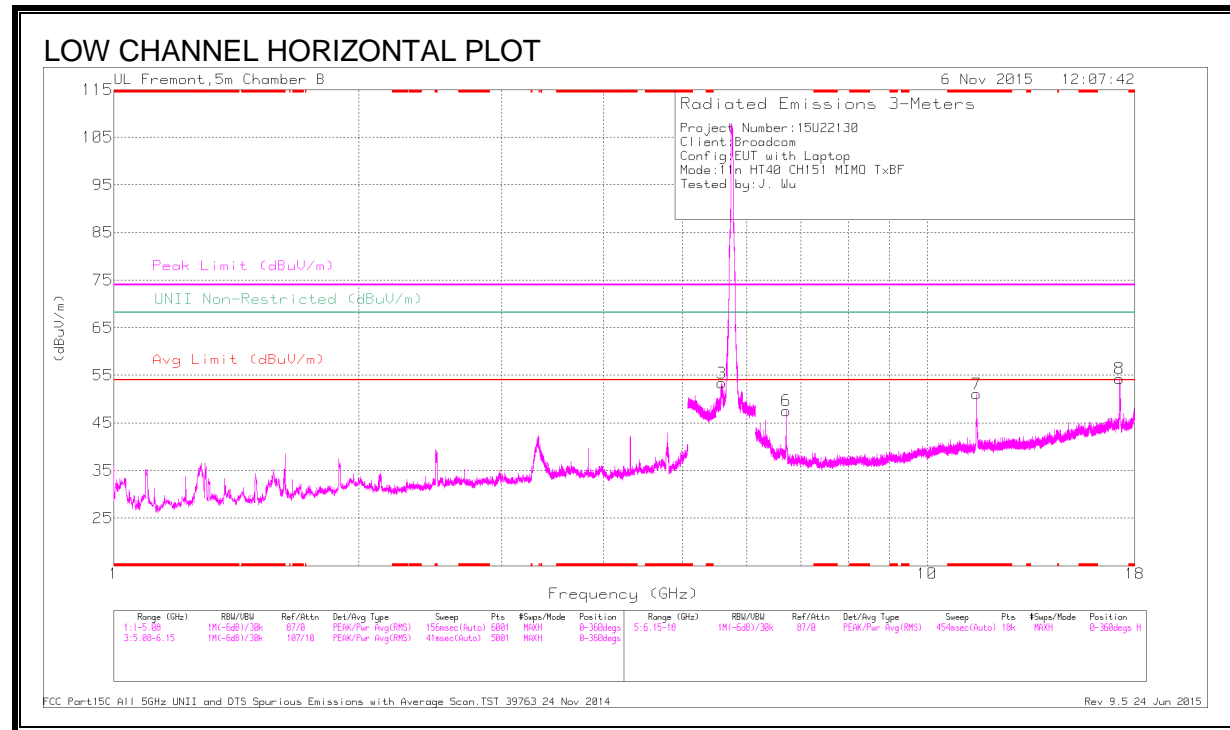


## Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Bypass (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
3	5.85	25.55	Pk	35.4	7.5	0	68.45	-	-	78.2	-9.75	0	201	H
1	5.86	22.52	Pk	35.4	7.5	0	65.42	-	-	74	-8.58	0	201	H
5	5.86	6.45	RMS	35.4	7.5	2.28	51.63	54	-2.37	-	-	0	201	H
6	5.86	7.25	RMS	35.4	7.5	2.28	52.43	54	-1.57	-	-	0	201	H
2	5.861	25.23	Pk	35.4	7.5	0	68.13	-	-	74	-5.87	0	201	H
4	5.861	25.23	Pk	35.4	7.5	0	68.13	-	-	74	-5.87	0	201	H

Pk - Peak detector  
RMS - RMS detection

## HARMONICS AND SPURIOUS EMISSIONS



## DATA

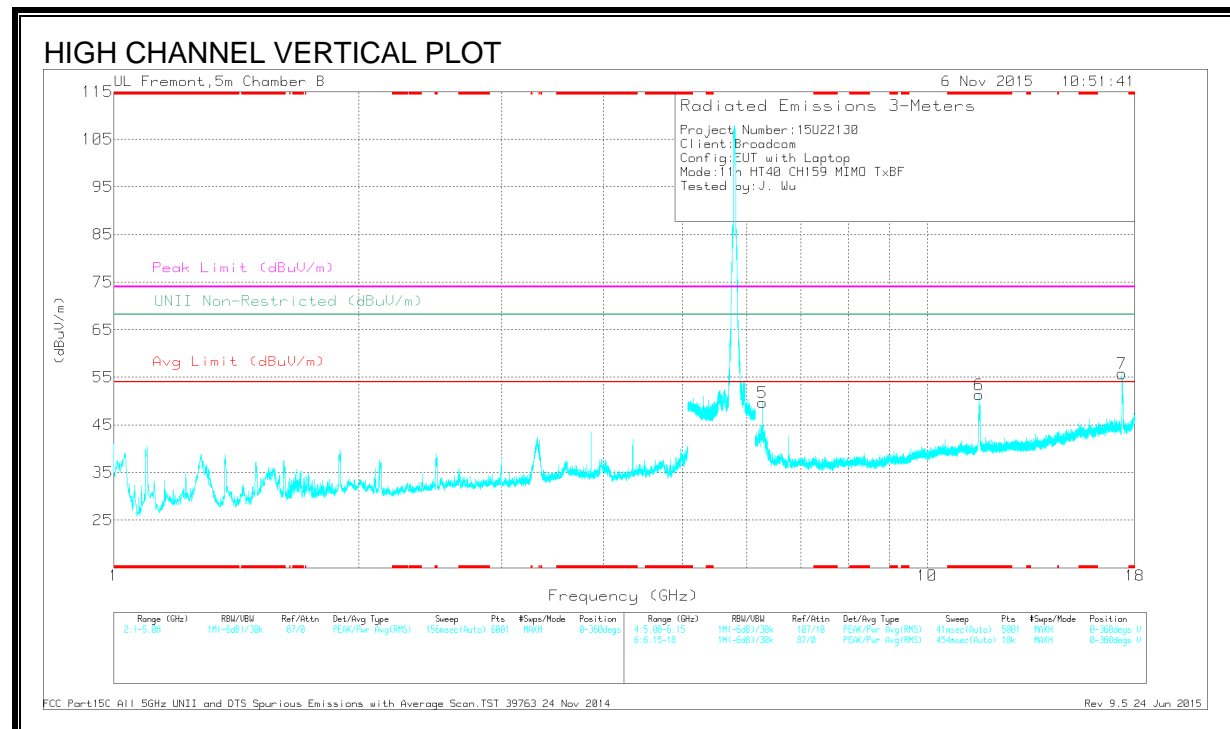
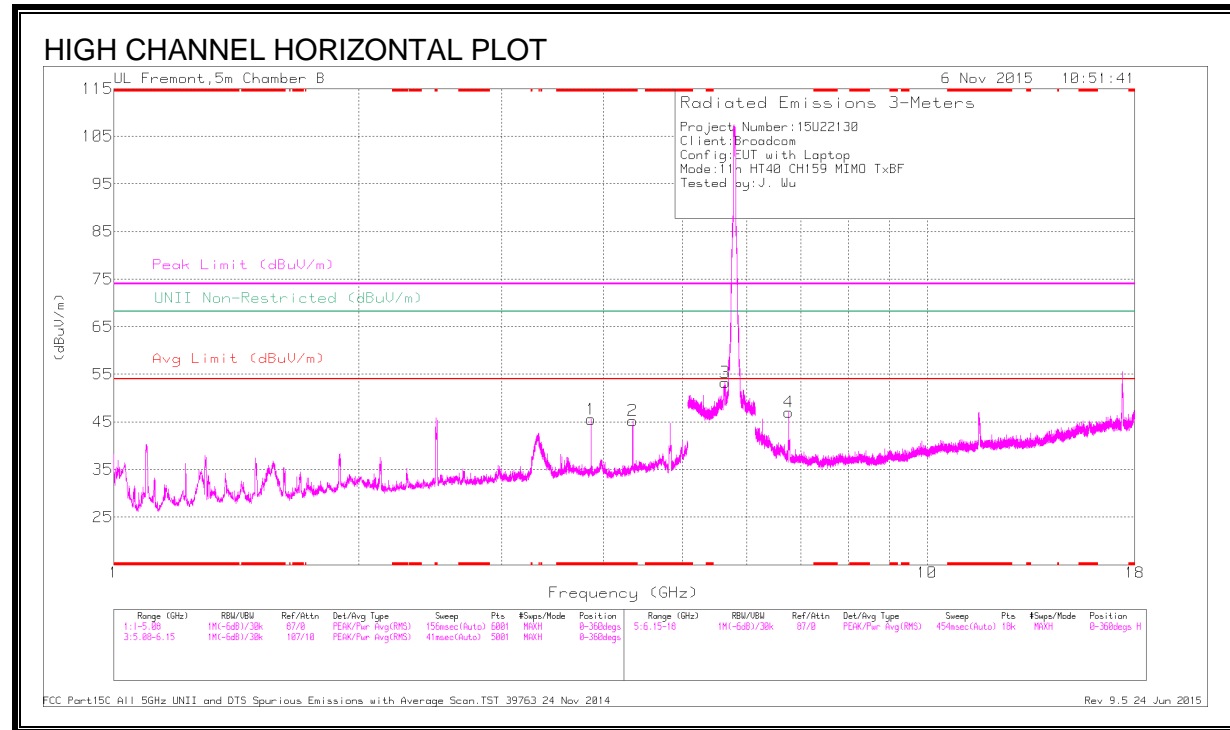
### Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	* 4.316	47.89	PK-U	33.7	-32.5	0	49.09	-	-	74	-24.91	-	-	269	134	V
	* 4.316	40.37	ADR	33.7	-32.5	2.28	43.85	54	-10.15	-	-	-	-	269	134	V
7	* 11.51	43.49	PK-U	38.3	-25.3	0	56.49	-	-	74	-17.51	-	-	77	318	H
	* 11.51	29.08	ADR	38.3	-25.3	2.28	44.36	54	-9.64	-	-	-	-	77	318	H
2	5.276	44.74	PK-U	34.3	-19.5	0	59.54	-	-	-	-	68.2	-8.66	107	256	V
3	5.592	47.79	PK-U	34.7	-20.5	0	61.99	-	-	-	-	68.2	-6.21	271	192	H
4	5.913	49.13	PK-U	35.5	-20.8	0	63.83	-	-	-	-	68.2	-4.37	88	231	V
5	6.235	51.51	PK-U	35.5	-31.6	0	55.41	-	-	-	-	68.2	-12.79	113	184	V
6	6.714	49.82	PK-U	35.9	-31	0	54.72	-	-	-	-	68.2	-13.48	186	138	H
8	17.25	41.63	PK-U	41	-21.6	0	61.03	-	-	-	-	68.2	-7.17	13	165	H

\* - indicates frequency in CFR15.205 Restricted Band

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 T345 (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	* 3.863	49.64	PK-U	33.4	-32.8	0	50.24	-	-	74	-23.76	-	-	114	234	H
	* 3.863	41.81	ADR	33.4	-32.8	2.28	44.69	54	-9.31	-	-	-	-	114	234	H
2	* 4.346	48.59	PK-U	33.8	-32.2	0	50.19	-	-	74	-23.81	-	-	266	263	H
	* 4.346	40.25	ADR	33.8	-32.2	2.28	44.13	54	-9.87	-	-	-	-	266	263	H
6	* 11.592	47.33	PK-U	38.4	-24.6	0	61.13	-	-	74	-12.87	-	-	297	155	V
	* 11.59	32.34	ADR	38.4	-24.7	2.28	48.32	54	-5.68	-	-	-	-	297	155	V
3	5.649	47.86	PK-U	34.8	-20.9	0	61.76	-	-	-	-	68.2	-6.44	184	204	H
5	6.278	53.94	PK-U	35.5	-31.6	0	57.84	-	-	-	-	68.2	-10.36	126	251	V
4	6.761	48.85	PK-U	35.9	-30.9	0	53.85	-	-	-	-	68.2	-14.35	184	129	H
7	17.379	42.82	PK-U	40.8	-20.7	0	62.92	-	-	-	-	68.2	-5.28	162	205	V

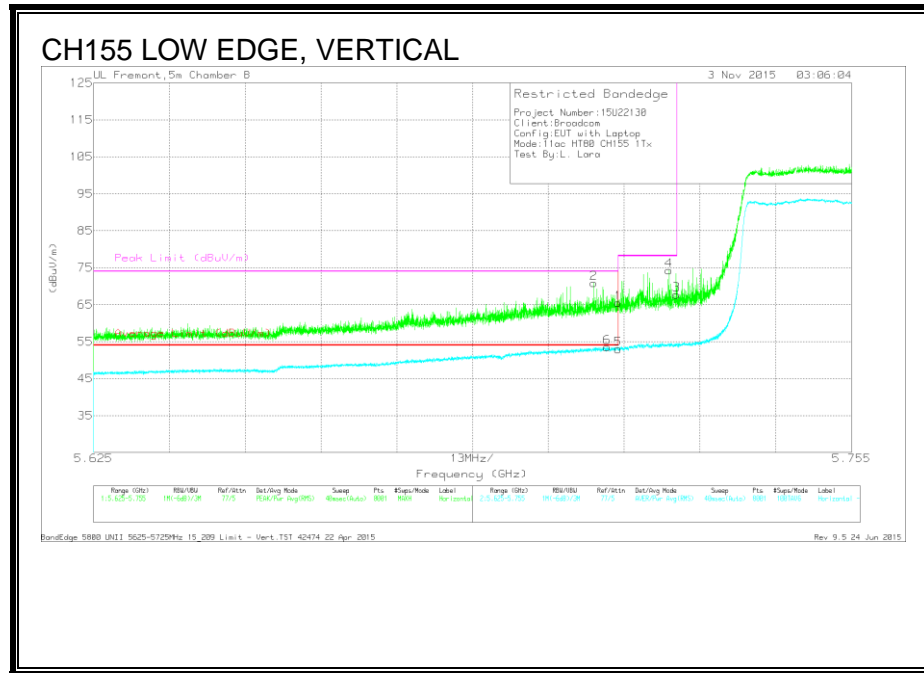
\* - indicates frequency in CFR15.205 Restricted Band

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

## 9.9. TX ABOVE 1 GHz 802.11ac HT80 MODE 1Tx IN THE 5.8 GHz BAND

### RESTRICTED BANDEDGE (LOW EDGE)



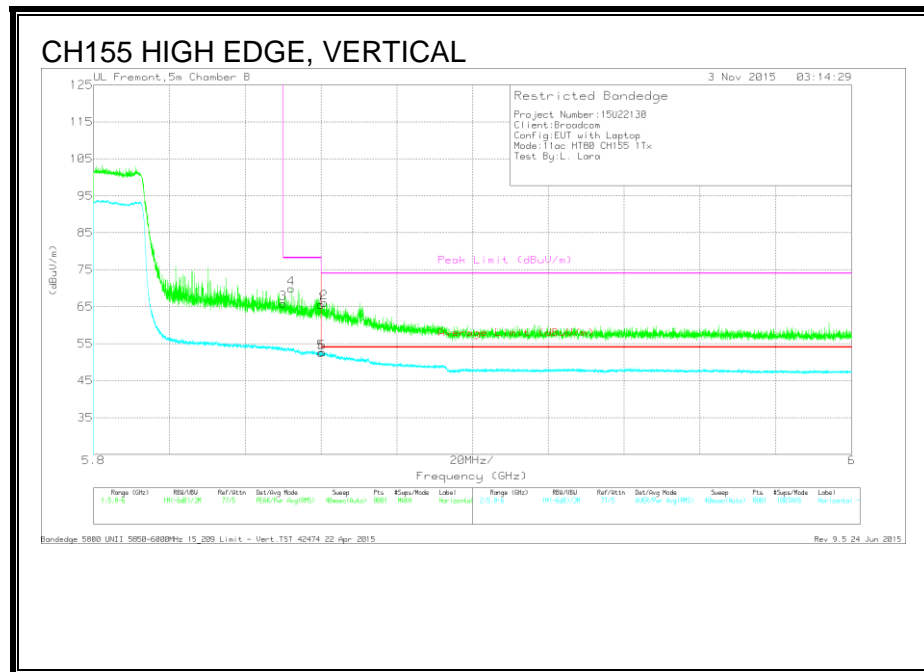
### Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Bypass (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	28.45	Pk	35	7.4	0	70.85	-	-	74	-3.15	158	302	V
6	5.713	11.04	RMS	35	7.3	.16	53.5	54	-5	-	-	158	302	V
1	5.715	23.16	Pk	35	7.3	0	65.46	-	-	74	-8.54	158	302	V
5	5.715	10.51	RMS	35	7.3	.16	52.97	54	-1.03	-	-	158	302	V
4	5.724	31.88	Pk	35	7.4	0	74.28	-	-	78.2	-3.92	158	302	V
3	5.725	25.31	Pk	35	7.4	0	67.71	-	-	78.2	-10.49	158	302	V

Pk - Peak detector

RMS - RMS detection

**AUTHORIZED BANDEDGE (HIGH EDGE)**



**Trace Markers**

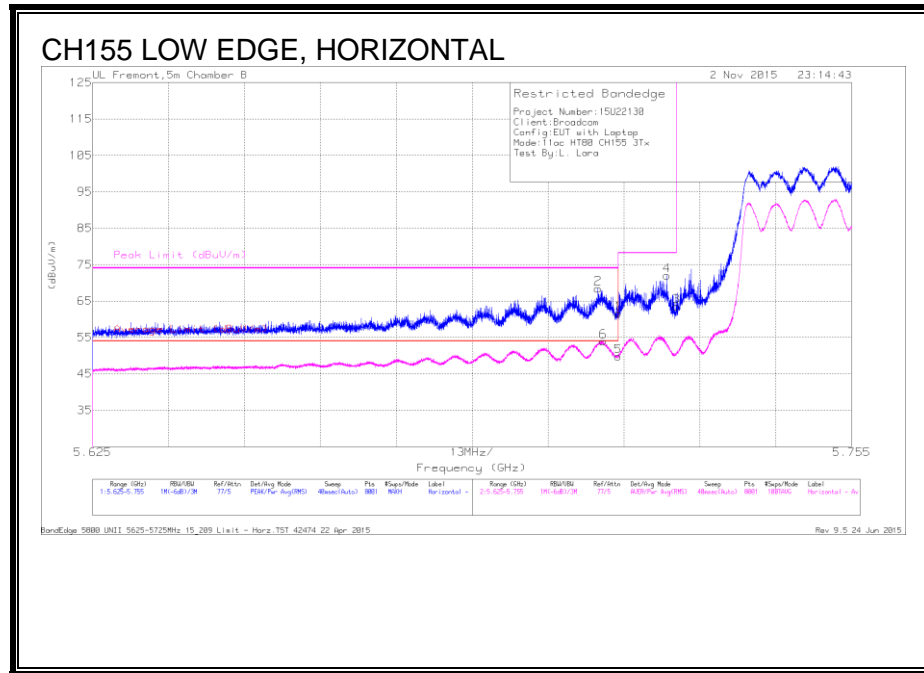
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Bypass (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	5.85	22.99	Pk	35.4	7.5	0	65.89	-	-	78.2	-12.31	139	296	V
4	5.852	27.11	Pk	35.4	7.4	0	69.91	-	-	78.2	-8.29	139	296	V
1	5.86	22.66	Pk	35.4	7.5	0	65.56	-	-	74	-8.44	139	296	V
5	5.86	9.68	RMS	35.4	7.5	.16	52.74	54	-1.26	-	-	139	296	V
6	5.86	9.72	RMS	35.4	7.5	.16	52.78	54	-1.22	-	-	139	296	V
2	5.861	23.2	Pk	35.4	7.5	0	66.1	-	-	74	-7.9	139	296	V

Pk - Peak detector

RMS - RMS detection

## 9.10. TX ABOVE 1 GHz 802.11ac HT80 MODE 3Tx IN THE 5.8 GHz BAND

### RESTRICTED BANDEDGE (LOW EDGE)



### Trace Markers

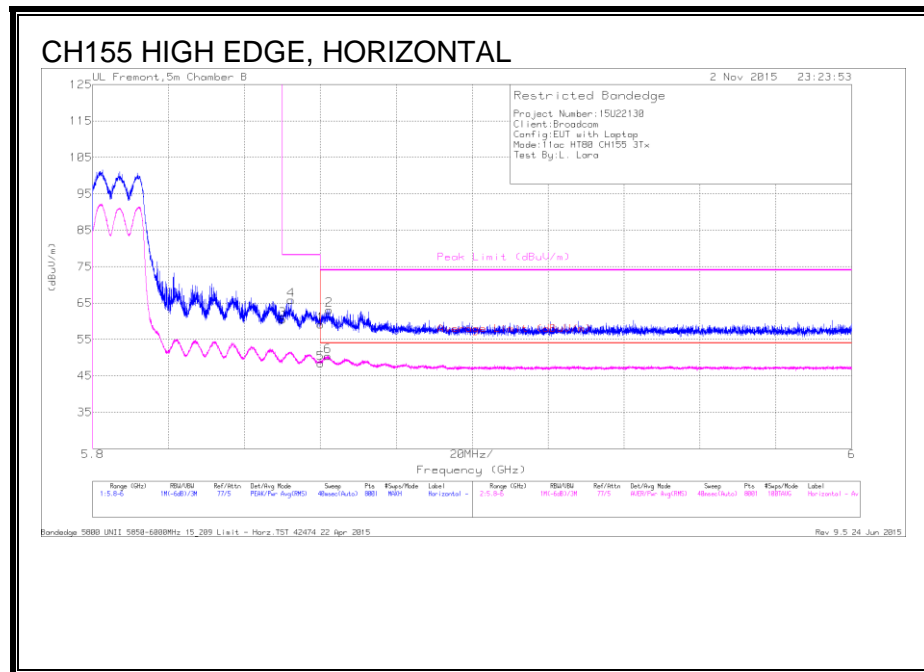
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Bypass (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.712	26.08	Pk	35	7.4	0	68.48	-	-	74	-5.52	232	160	H
6	5.712	11.48	RMS	35	7.3	.16	53.94	54	-.06	-	-	232	160	H
1	5.715	19.31	Pk	35	7.3	0	61.61	-	-	74	-12.39	232	160	H
5	5.715	7.39	RMS	35	7.3	.16	49.85	54	-4.15	-	-	232	160	H
4	5.723	29.66	Pk	35	7.4	0	72.06	-	-	78.2	-6.14	232	160	H
3	5.725	21.19	Pk	35	7.4	0	63.59	-	-	78.2	-14.61	232	160	H

Pk - Peak detector

RMS - RMS detection



**AUTHORIZED BANDEGE (HIGH EDGE)**



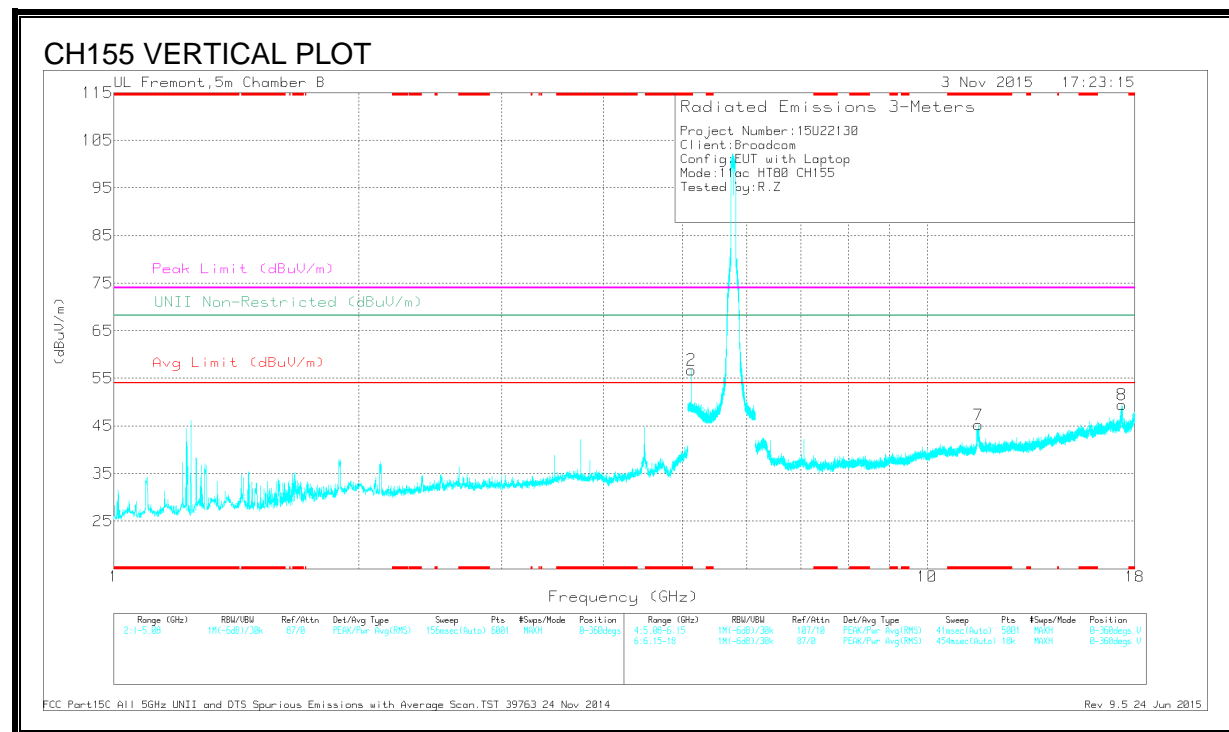
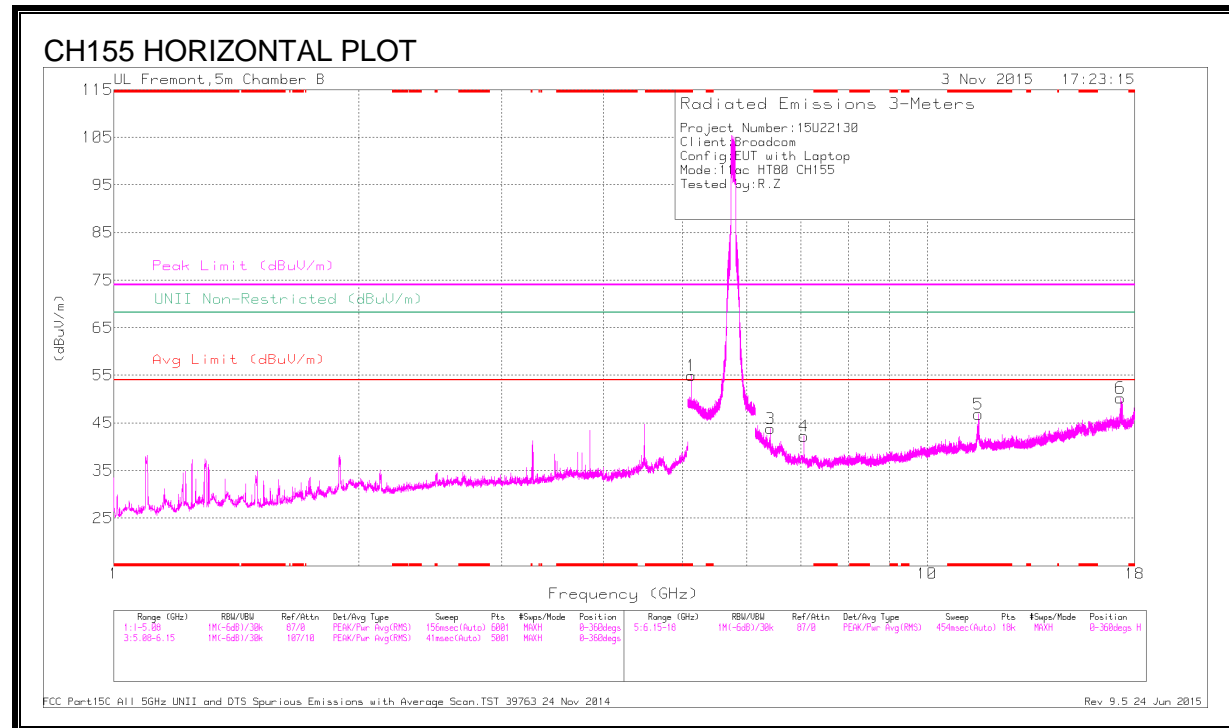
**Trace Markers**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Bypass (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
3	5.85	17.55	Pk	35.4	7.5	0	60.45	-	-	78.2	-17.75	234	155	H
4	5.852	23.04	Pk	35.4	7.4	0	65.84	-	-	78.2	-12.36	234	155	H
1	5.86	16.19	Pk	35.4	7.5	0	59.09	-	-	74	-14.91	234	155	H
5	5.86	5.33	RMS	35.4	7.5	.16	48.39	54	-5.61	-	-	234	155	H
2	5.862	20.24	Pk	35.4	7.5	0	63.14	-	-	74	-10.86	234	155	H
6	5.862	7.34	RMS	35.4	7.5	.16	50.4	54	-3.6	-	-	234	155	H

Pk - Peak detector

RMS - RMS detection

## HARMONICS AND SPURIOUS EMISSIONS



## DATA

### Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cb/Filtr/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	* 5.1333	38.86	ADR	34.2	-20.7	0	52.36	54	-1.64	-	-	-	-	288	105	H
2	* 5.1333	45.59	PK-U	34.2	-20.7	0	59.09	-	-	74	-14.91	-	-	288	105	H
5	* 11.563	41.68	PK-U	38.4	-24.6	0	55.48	-	-	74	-18.52	-	-	350	107	H
7	* 11.559	28.86	ADR	38.4	-24.6	.16	42.82	54	-11.18	-	-	-	-	350	107	H
3	* 11.548	40.93	PK-U	38.3	-24.7	0	54.53	-	-	74	-19.47	-	-	39	380	V
4	* 11.543	28.51	ADR	38.3	-24.8	.16	42.17	54	-11.83	-	-	-	-	39	380	V
6	6.416	48.63	PK-U	35.7	-29.9	0	54.43	-	-	-	-	68.2	-13.77	96	165	H
8	7.058	44.13	PK-U	35.8	-29.9	0	50.03	-	-	-	-	68.2	-18.17	86	167	H

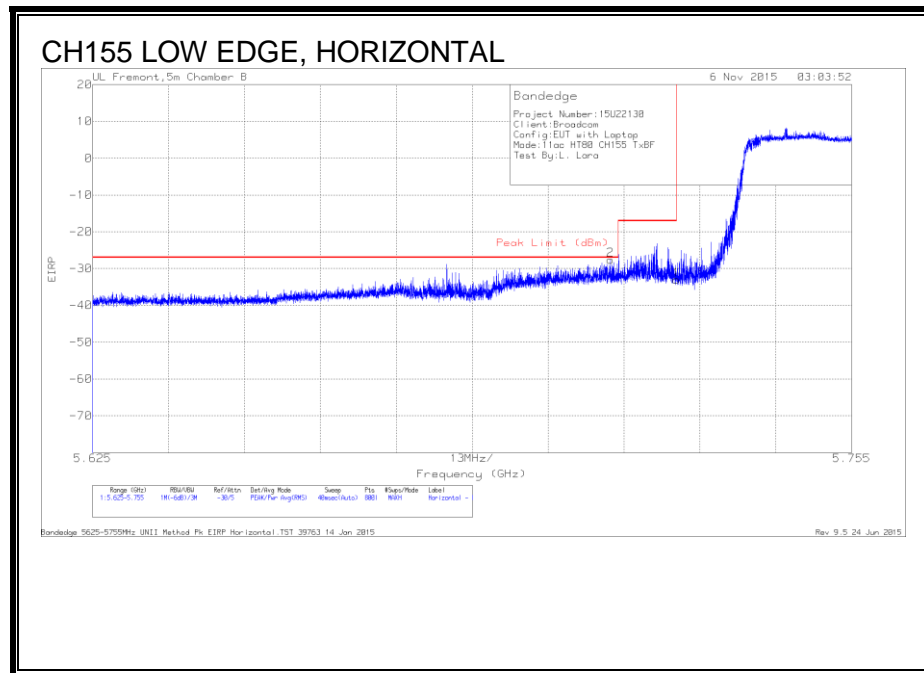
\* - indicates frequency in CFR15.205 Restricted Band

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

## 9.11. TX ABOVE 1 GHz 802.11ac HT80 MODE TxBF IN THE 5.8 GHz BAND

### RESTRICTED BANDEDGE (LOW EDGE)

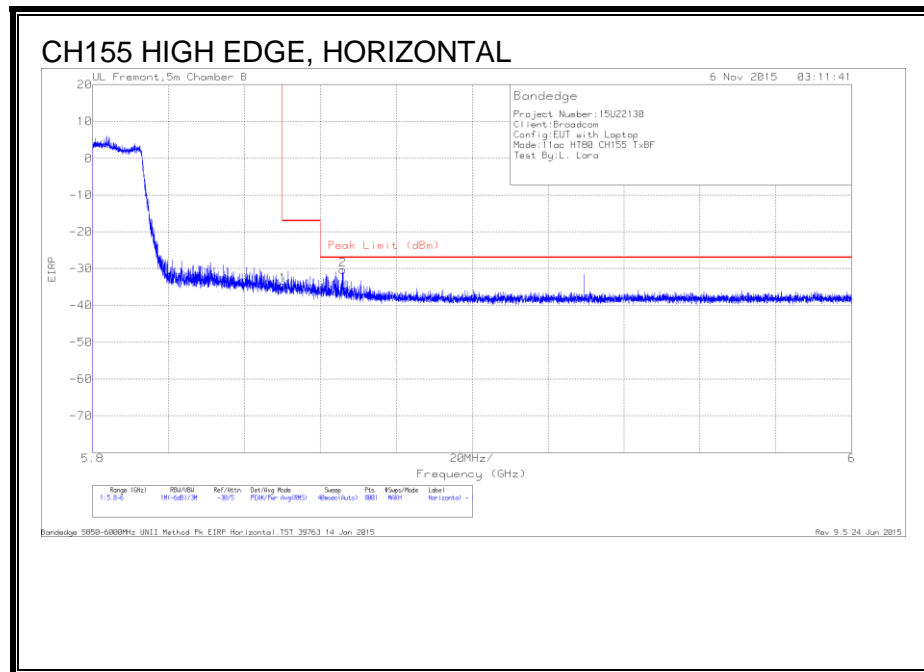


### Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T345 (dB/m)	Bypass (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.714	-81.67	Pk	35	7.3	11.8	-27.57	-27	-57	185	191	H
1	5.725	-87.19	Pk	35	7.4	11.8	-32.99	-17	-15.99	185	191	H

Pk - Peak detector

**AUTHORIZED BANDEDGE (HIGH EDGE)**

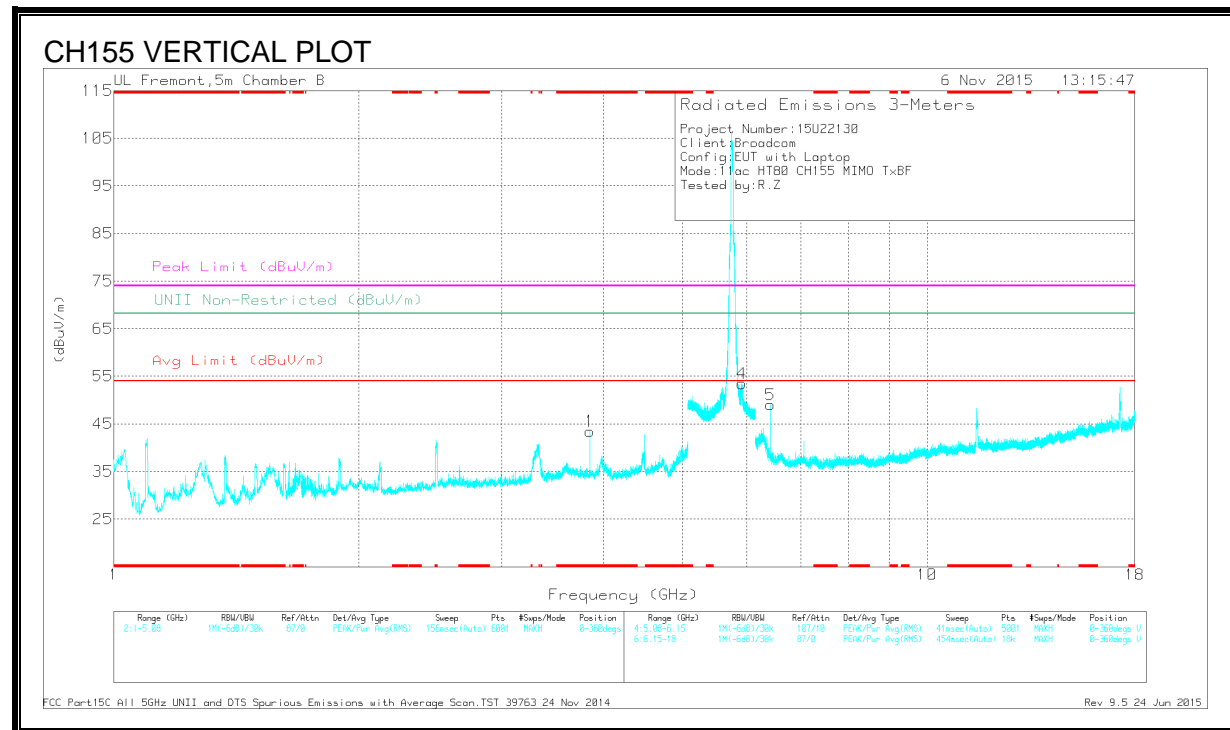
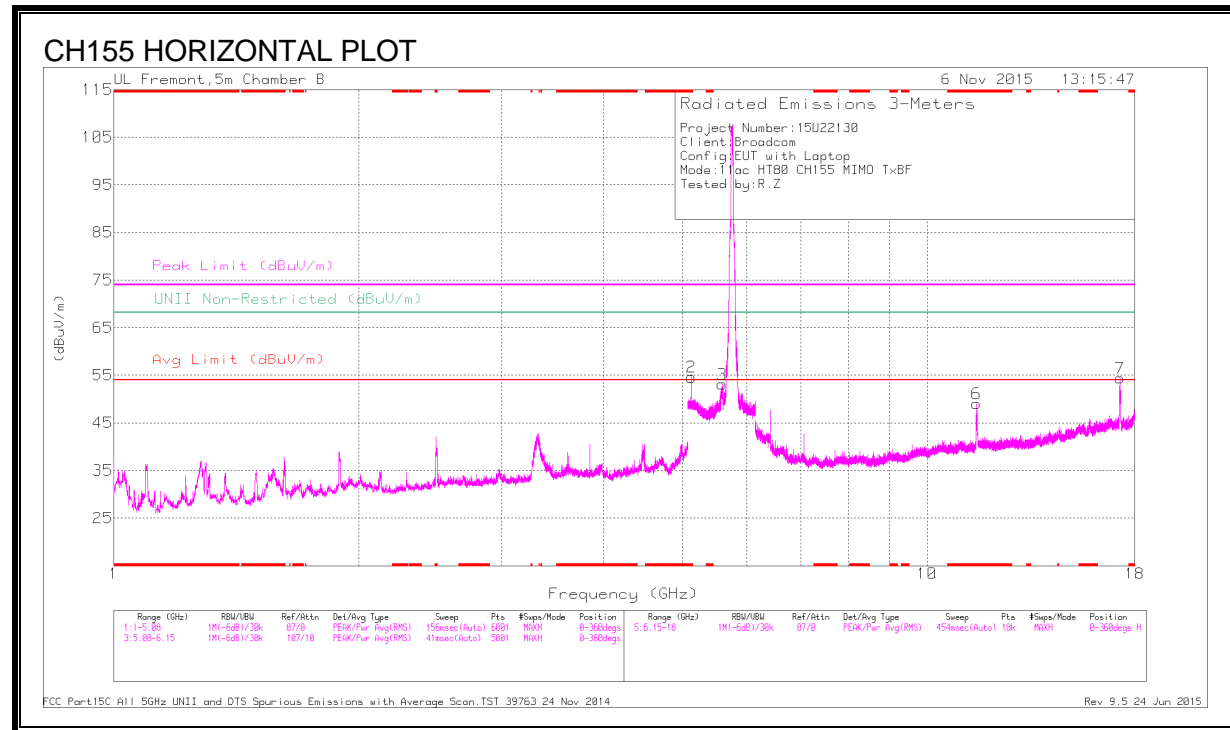


**Trace Markers**

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T345 (dB/m)	Bypass (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-89.2	Pk	35.4	7.5	11.8	-34.5	-17	-17.5	242	200	H
2	5.866	-85.01	Pk	35.4	7.5	11.8	-30.31	-27	-3.31	242	200	H

Pk - Peak detector

## HARMONICS AND SPURIOUS EMISSIONS



## DATA

### Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	* 3.85	47.77	PK-U	33.4	-33	0	48.17	-	-	74	-25.83	-	-	101	301	V
	* 3.85	40.31	ADR	33.4	-33	4.16	44.87	54	-9.13	-	-	-	-	101	301	V
2	* 5.133	46.42	PK-U	34.1	-19.1	0	61.42	-	-	74	-12.58	-	-	222	235	H
	* 5.133	37.31	ADR	34.1	-19.1	0	52.31	54	-1.69	-	-	-	-	222	235	H
6	* 11.508	42.6	PK-U	38.3	-25.3	0	55.6	-	-	74	-18.4	-	-	23	126	H
	* 11.51	28.98	ADR	38.3	-25.3	4.16	46.14	54	-7.86	-	-	-	-	23	126	H
3	5.599	47.29	PK-U	34.7	-20.8	0	61.19	-	-	-	-	68.2	-7.01	270	162	H
4	5.918	48.56	PK-U	35.5	-20.8	0	63.26	-	-	-	-	68.2	-4.94	114	240	V
5	6.416	48.04	PK-U	35.7	-29.9	0	53.84	-	-	-	-	68.2	-14.36	110	147	V
7	17.261	45.25	PK-U	41	-21.6	0	64.65	-	-	-	-	68.2	-3.55	151	194	H

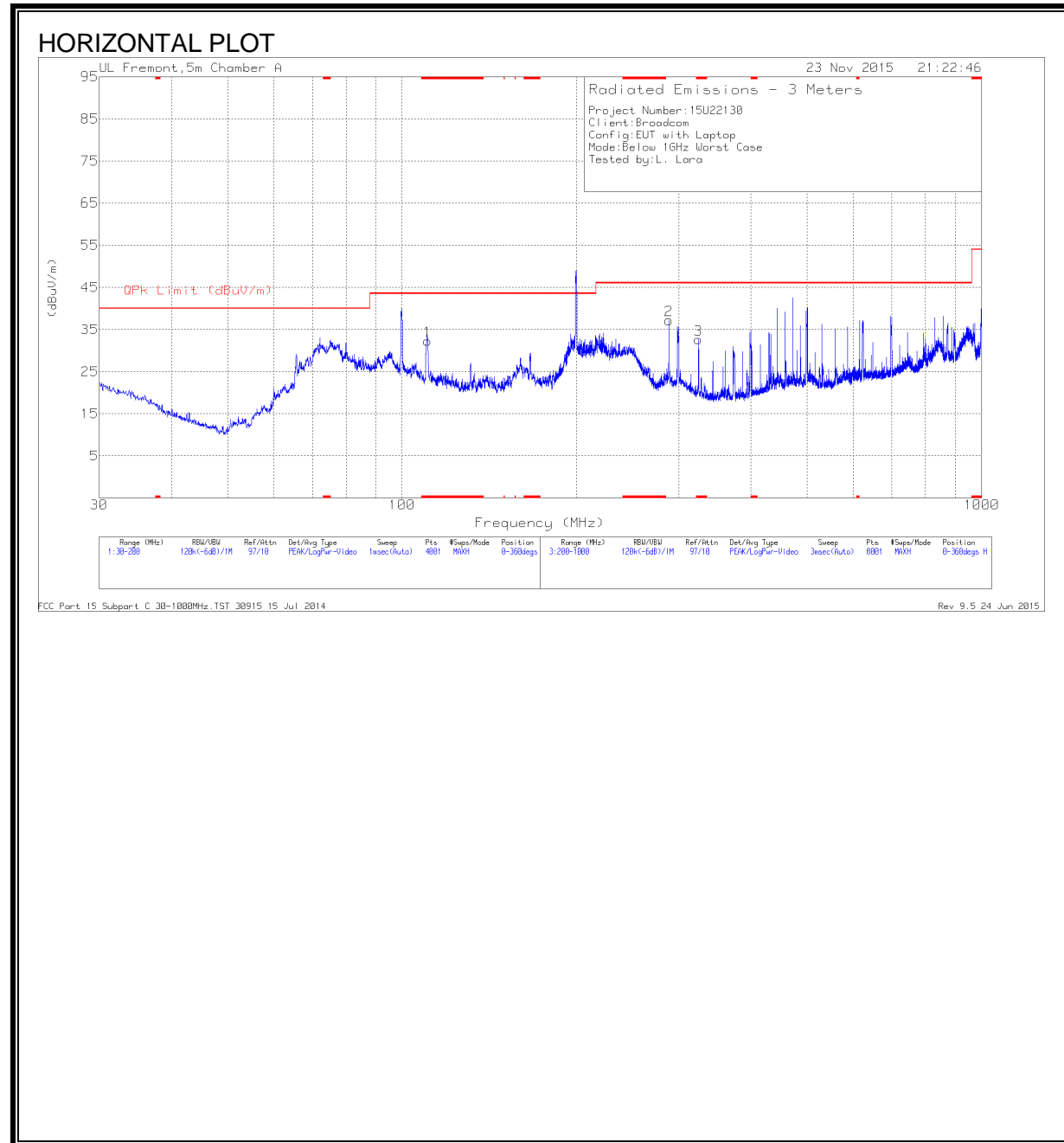
\* - indicates frequency in CFR15.205 Restricted Band

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

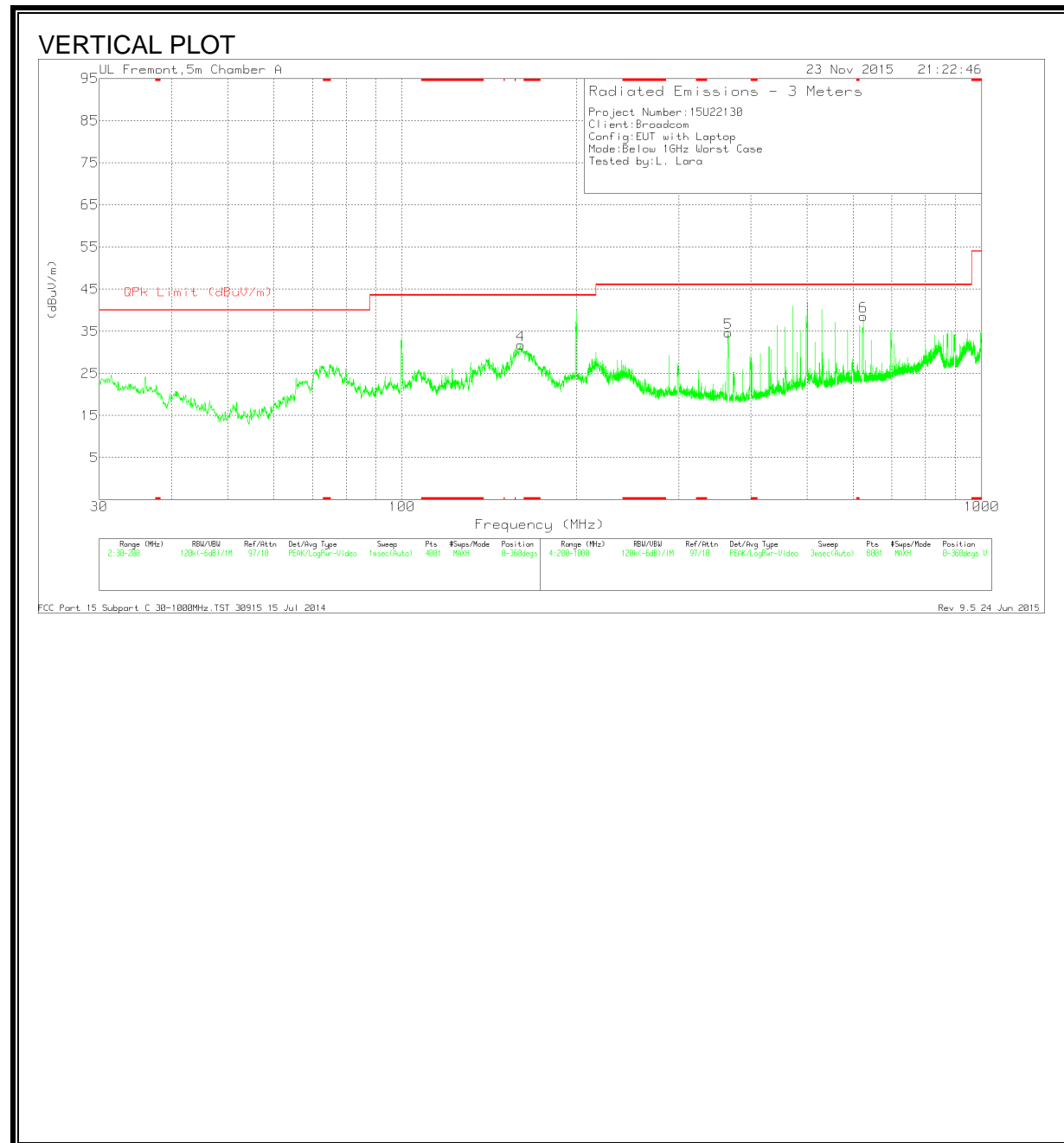
## 9.12. WORST-CASE BELOW 1 GHz LOW ANTENNA GAIN

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





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



## DATA

### Trace Markers

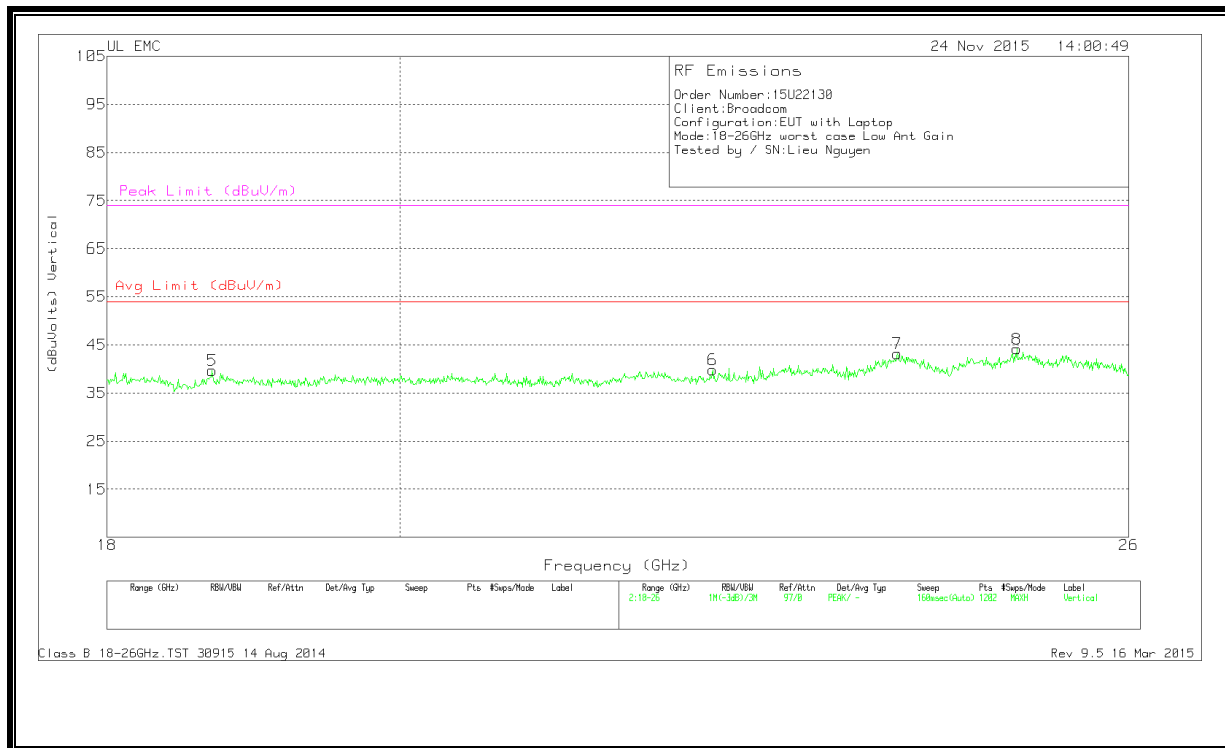
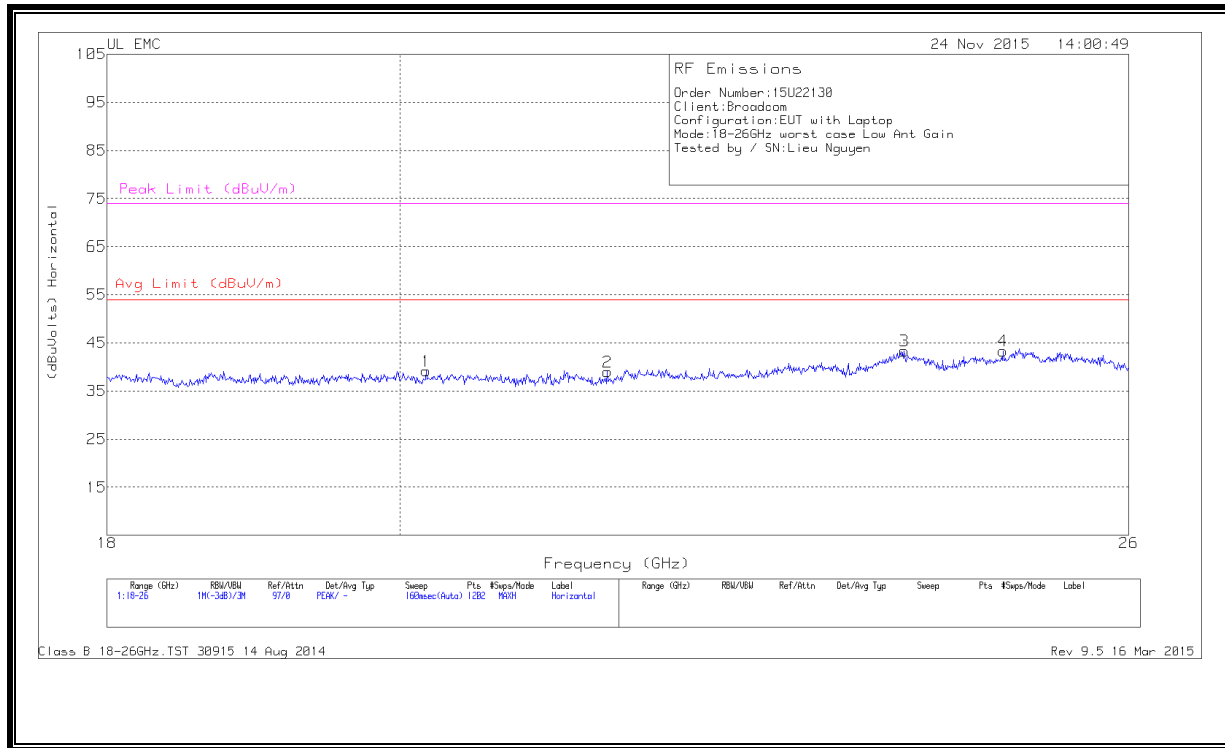
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T477 (dB/m)	Amp/Cbl (dB/m)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 110.7075	46.11	Pk	16.7	-30.5	32.31	43.52	-11.21	0-360	101	H
3	* 324.6	43.95	Pk	17.9	-29.2	32.65	46.02	-13.37	0-360	101	H
4	160.0925	45.68	Pk	16.3	-30.2	31.78	43.52	-11.74	0-360	101	V
2	288.6	49.31	Pk	17.3	-29.4	37.21	46.02	-8.81	0-360	101	H
5	365.3	44.95	Pk	18.9	-29.2	34.65	46.02	-11.37	0-360	199	V
6	624.8	43.76	Pk	23.3	-28.5	38.56	46.02	-7.46	0-360	199	V

\* - indicates frequency in CFR15.205 Restricted Band

Pk - Peak detector

## 9.13. WORST-CASE ABOVE 18GHz

### SPURIOUS EMISSIONS 18 – 26GHz

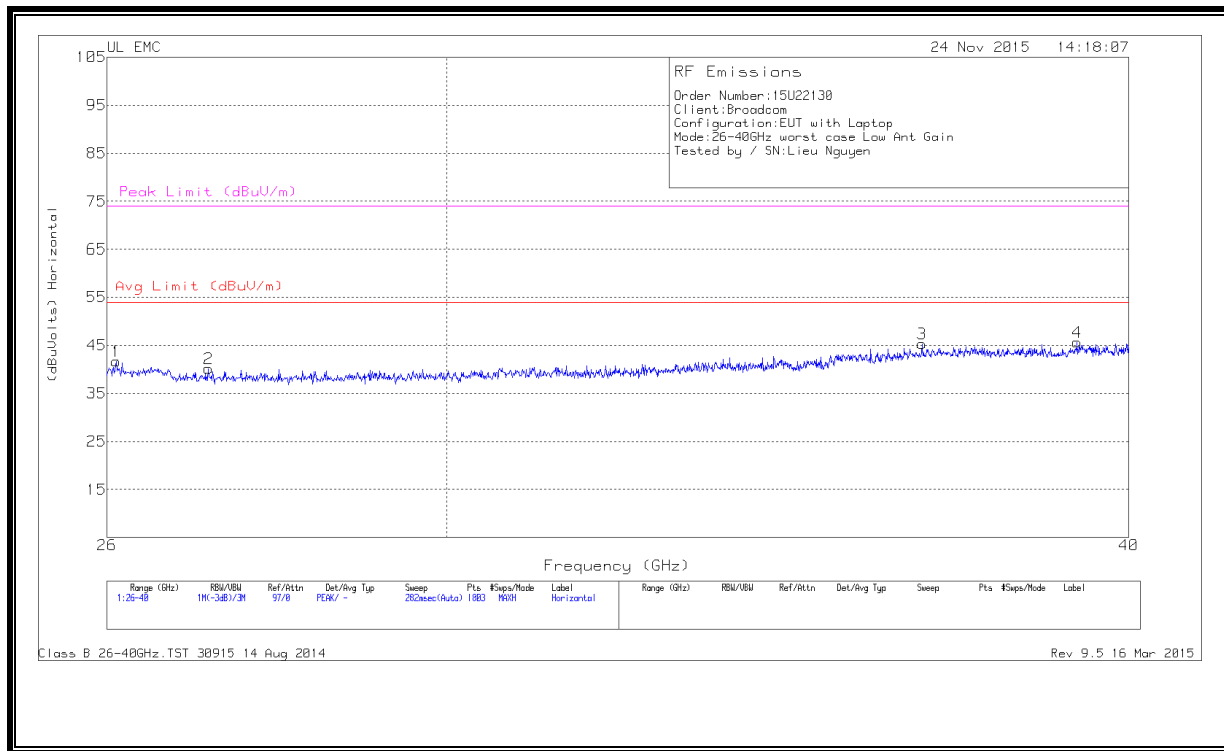


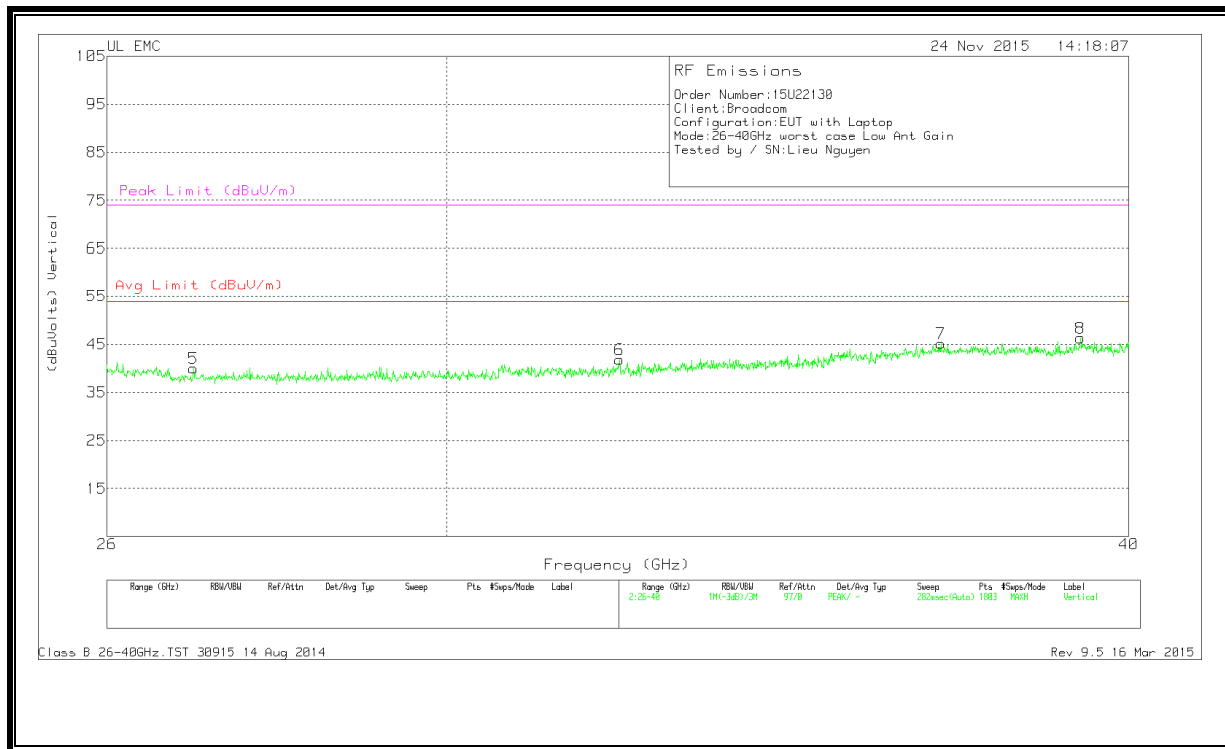
## Trace Markers

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	20.192	41.27	Pk	32.6	-25.2	-9.5	39.16	54	-14.83	74	-34.83
2	21.55	40.7	Pk	33.1	-25.3	-9.5	39	54	-15	74	-35
3	23.982	43.83	Pk	33.3	-24.3	-9.5	43.33	54	-10.66	74	-30.66
4	24.848	43.23	Pk	33.9	-24.3	-9.5	43.33	54	-10.66	74	-30.66
5	18.693	40.87	Pk	32.5	-24.2	-9.5	39.66	54	-14.33	74	-34.33
6	22.383	41.03	Pk	33.1	-24.8	-9.5	39.83	54	-14.16	74	-34.16
7	23.922	43.17	Pk	33.4	-23.9	-9.5	43.16	54	-10.83	74	-30.83
8	24.974	43.77	Pk	34.1	-24.2	-9.5	44.16	54	-9.83	74	-29.83

Pk - Peak detector

**SPURIOUS EMISSIONS 26 – 40GHz**





## 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	26.101	45.57	Pk	35.6	-30	-9.5	41.66	54	-12.33	74	-32.33
2	27.134	45.07	Pk	35.5	-30.9	-9.5	40.16	54	-13.83	74	-33.83
3	36.659	50.83	Pk	37.1	-33.1	-9.5	45.33	54	-8.66	74	-28.66
4	39.138	49.17	Pk	38	-32	-9.5	45.66	54	-8.33	74	-28.33
5	26.963	45	Pk	35.5	-31	-9.5	40	54	-14	74	-34
6	32.27	47.73	Pk	36.4	-32.8	-9.5	41.83	54	-12.16	74	-32.16
7	36.954	50.47	Pk	37.2	-33	-9.5	45.16	54	-8.83	74	-28.83
8	39.192	49.63	Pk	38.3	-32.1	-9.5	46.33	54	-7.66	74	-27.66

Pk - Peak detector

## 10. AC POWER LINE CONDUCTED EMISSIONS

### LIMITS

FCC §15.207 (a)

RSS-Gen 7.2.2

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

<sup>\*</sup> Decreases with the logarithm of the frequency.

### TEST PROCEDURE

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

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

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

## RESULTS

### 6 WORST EMISSIONS

Project No :12U14669

Client Name: Broadcom

Model/Device: BCM94360CD

Test Volt/Freq: EUT, Adapter Board, Antenna

Test By: John Nguyen

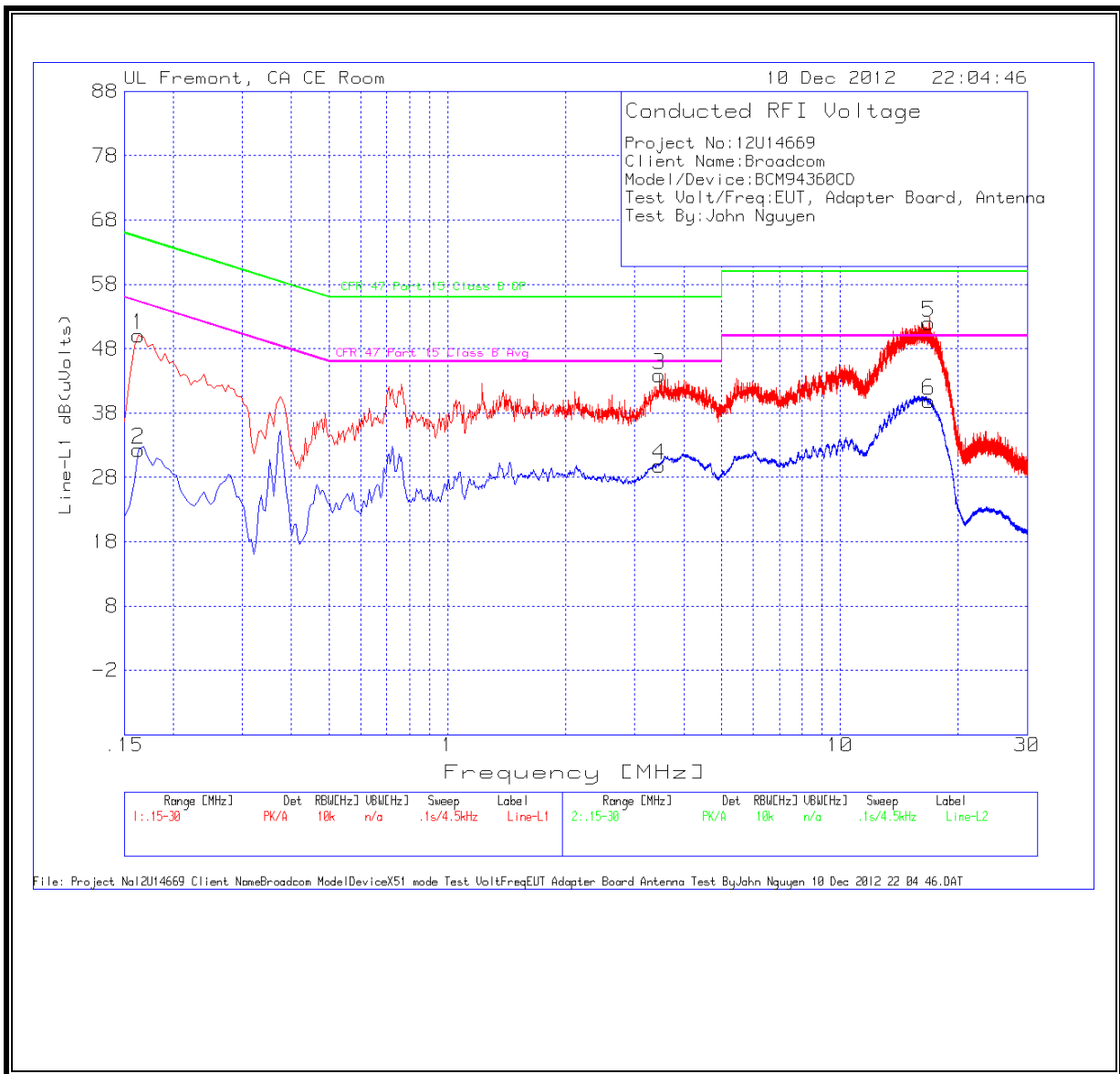
Test Frequency	Meter Reading	Detector	T24 IL L1.TXT (dB)	LC Cables 1&3.TXT (dB)		CFR 47 Part 15 Class B QP	Margin	CFR 47 Part 15 Class B Avg	Margin
Line-L1 .15 - 30MHz									
0.1635	49.99	PK	0.1	0	50.09	65.3	-15.21	-	-
0.1635	32.23	Av	0.1	0	32.33	-	-	55.3	-22.97
3.579	43.91	PK	0.2	0.1	44.21	56	-11.79	-	-
3.579	30.95	Av	0.2	0.1	31.25	-	-	46	-14.75
16.9935	50.75	PK	0.2	0.2	51.15	60	-8.85	-	-
16.9935	39.3	Av	0.2	0.2	39.7	-	-	50	-10.3
Line-L2 .15 - 30MHz									
0.312	50.32	PK	0.1	0	50.42	59.9	-9.48	-	-
0.312	32.37	Av	0.1	0	32.47	-	-	49.9	-17.43
0.555	45.45	PK	0.1	0	45.55	56	-10.45	-	-
0.555	27.34	Av	0.1	0	27.44	-	-	46	-18.56
15.837	50.95	PK	0.2	0.2	51.35	60	-8.65	-	-
15.837	39.95	Av	0.2	0.2	40.35	-	-	50	-9.65

PK - Peak detector

QP - Quasi-Peak detector



**LINE 1 RESULTS**



**LINE 2 RESULTS**

