



**FCC 47 CFR PART 15 SUBPART E**

**CERTIFICATION TEST REPORT**

**FOR**

**GSM/WCDMA/CDMA + BLUETOOTH + DTS/UNII a/b/g/n RADIO MODULE**

**MODEL NUMBER: QM8626**

**FCC ID: J9CQM8626**

**REPORT NUMBER: 15U19820-E5, Revision B**

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**NVLAP LAB CODE 200065-0**

Revision History

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-	05/12/15	Initial Issue	CHOON OOI
A	08/15/15	Revised Page 8 Maximum Power Table Revised Page 13 and 21 Revised Duty Cycle on Page 30 and 33 Revised Setup Picture	CHOON OOI
B	08/26/15	Updated Conducted Emission Photo	CHOON OOI

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# 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** QUALCOMM TECHNOLOGIES, INC.  
**EUT DESCRIPTION:** GSM/WCDMA/CDMA + BLUETOOTH + DTS/UNII a/b/g/n RADIO MODULE  
**MODEL:** QM8626  
**SERIAL NUMBER:** N10KRK5FL  
**DATE TESTED:** APRIL 11 – MAY 4, 2015

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

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

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

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## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.4-2009.

## 3. FACILITIES AND ACCREDITATION

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

47173 Benicia Street	47266 Benicia Street
<input type="checkbox"/> Chamber A(IC: 2324B-1)	<input type="checkbox"/> Chamber D(IC: 2324B-4)
<input type="checkbox"/> Chamber B(IC: 2324B-2)	<input type="checkbox"/> Chamber E(IC: 2324B-5)
<input checked="" type="checkbox"/> Chamber C(IC: 2324B-3)	<input type="checkbox"/> Chamber F(IC: 2324B-6)
	<input type="checkbox"/> Chamber G(IC: 2324B-7)
	<input type="checkbox"/> Chamber H(IC: 2324B-8)

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

## 4. CALIBRATION AND UNCERTAINTY

### 4.1. MEASURING INSTRUMENT CALIBRATION

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

### 4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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

### 4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 18000 MHz	4.94 dB

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

## 5. EQUIPMENT UNDER TEST

### 5.1. DESCRIPTION OF EUT

The EUT is a GSM/WCDMA/CDMA + BLUETOOTH + DTS/UNII a/b/g/n radio module.

### 5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
5180-5240	802.11a	16.15	41.21
5180-5240	802.11n HT20	15.47	35.24
5190-5230	802.11n HT40	12.8	19.05
5745-5825	802.11a	15.85	38.46
5745-5825	802.11n HT20	15.38	34.51
5755-5795	802.11n HT40	16.23	41.98

### 5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an antenna with a maximum gain of 1.9dBi.



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

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

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

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

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

## 5.5. DESCRIPTION OF TEST SETUP

### SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
LAPTOP	HP	N/A	N/A	N/A

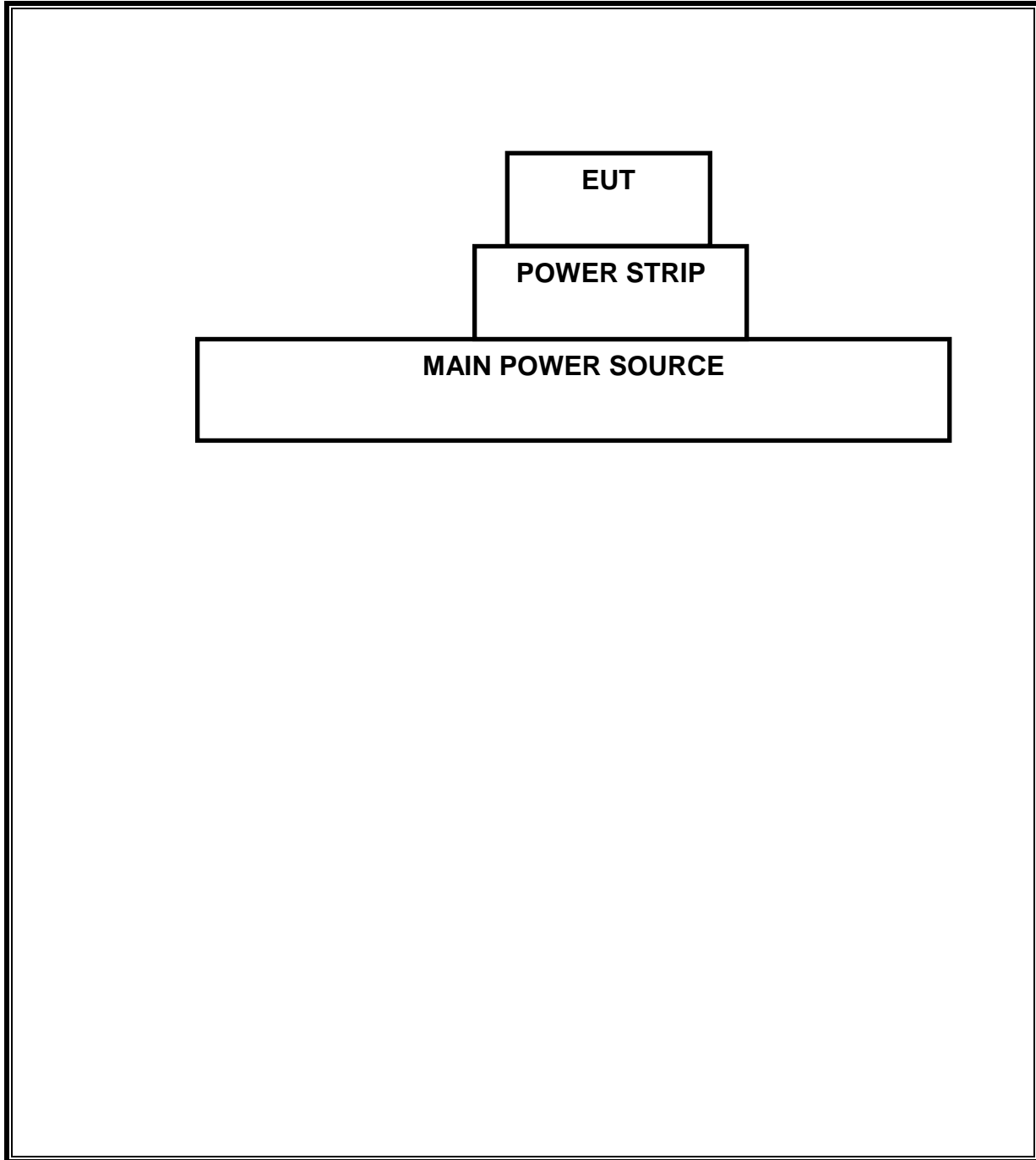
### I/O CABLES

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	DC Power	1	Mini-USB	Shielded	1.2m	N/A
2	Audio	1	Mini-Jack	Unshielded	1.0m	N/A

### TEST SETUP

The EUT is setup as a stand-alone device.

**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	Asset	Cal Due
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01069	12/20/15
Spectrum Analyzer, 9kHz-40GHz	HP	8564E	C00986	04/01/16
EMI Test Receiver, 9 kHz-7 GHz	R & S	ESCI 7	1000741	08/13/15
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	08/18/15
Peak Power Meter	Agilent / HP	E4416A	C00963	12/13/15
Peak / Average Power Sensor	Agilent / HP	E9327A	C00964	12/13/15
Antenna, Horn, 1-18 GHz	ETS	3117	C01022	02/21/16
Antenna, Horn, 18- 26 GHz	ARA	MWH-1826/B	C00946	11/12/15
Antenna, Horn, 26-40 GHz	ARA	MWH-2640	C00891	06/28/15
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	T243	03/06/16
RF Preamplifier, 100kHz -> 1300MHz	HP	TBD	C00825	06/01/15
RF Preamplifier, 1GHz - 18GHz	Miteq	NSP4000-SP2	924343	03/23/16
RF Preamplifier, 1GHz - 26.5GHz	HP	8449B	F00351	06/27/15
AC Power Supply, 2,500VA 45-500Hz	Elgar-Ametek	CW2501M	F00013	CNR
RF Preamplifier, 1GHz - 40GHz	Miteq	NSP4000-SP2	C00990	08/20/15
Attenuator / Switch driver	HP	11713A	F00204	CNR
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	T420	04/29/16
High Pass Filter 3GHz	Micro-Tronics	HPS17543	T426	04/29/16
High Pass Filter 6GHz	Micro-Tronics	HPS17542	T424	04/29/16

Test Software List			
Description	Manufacturer	Model	Version
Radiated Software	UL	UL EMC	Version 9.5, 07/22/14
Conducted Software	UL	UL EMC	Version 9.5, 05/17/14
CLT Software	UL	UL RF	Version 1.0, 02/02/15
Antenna Port Software	UL	UL RF	Version 2.1.1.1, 1/20/15

## 7. SUMMARY TABLE

FCC Part Section	Test Description	Test Limit	Test Condition	Test Result	Worst Case
15.407 (a)	Occupied Band width (26dB)	N/A	Conducted	Pass	91.5MHz
15.407 (a)(2)	TX Cond. Power 5.15-2.25, 5.25-5.35 & 5.47-5.725	<24dBm or 11+10Log(OBW)		Pass	16.15dBm
15.407 (a)(3)	TX Cond. Power 5.725-5.825	< 30dBm or 17+10Log(OBW)		Pass	16.23dBm
15.407 (a)(5)	PSD (5.2,5.3,5.5GHz)	<11dBm		Pass	4.62 dBm
15.407 (a)(5)	PSD (5.8GHz)	30dBm per 500kHz		Pass	1.46dBm
15.207 (a)	AC Power Line conducted emissions	Section 10	Radiated	Pass	54.04dBuV(PK)
15.407 (b) & 15.209	Radiated Spurious Emission	< 54dBuV/m		Pass	53.35dBuV/m
15.407 (b) & 15.209	Radiated Spurious Emission	<-17	Radiated	Pass	-17.21dBm

## 8. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

### LIMITS

None; for reporting purposes only.

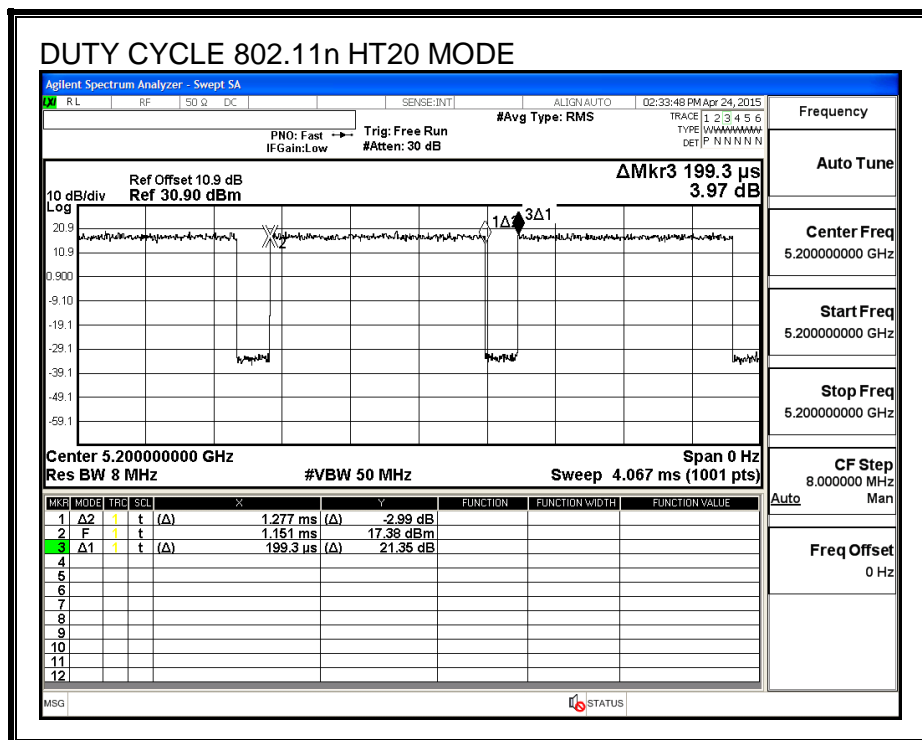
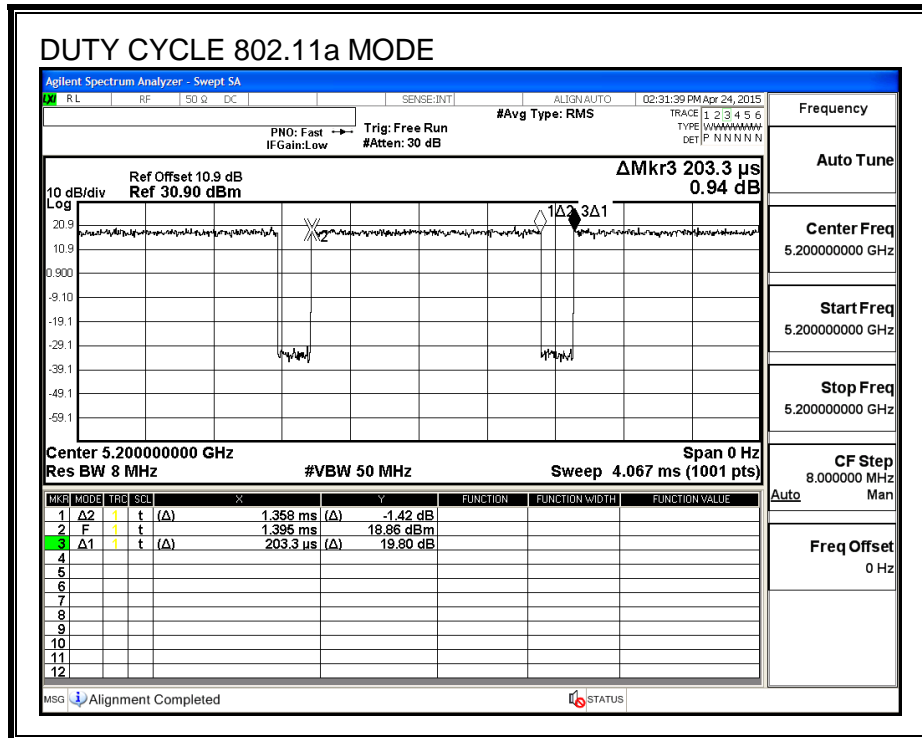
### PROCEDURE

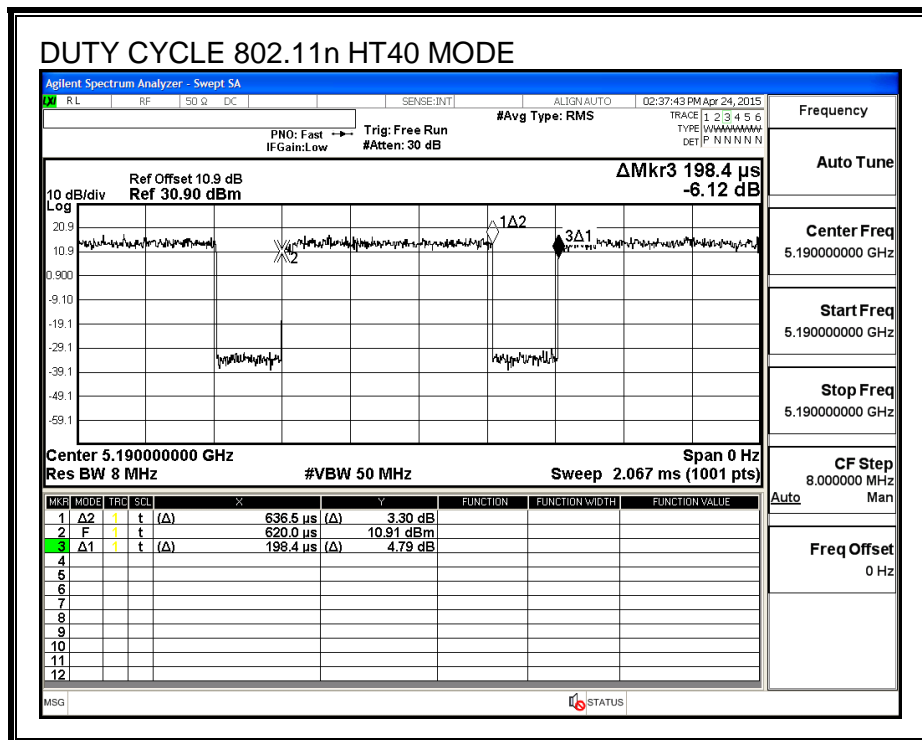
KDB 789033 Zero-Span Spectrum Analyzer Method.

### 8.1. ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)
802.11a	1.36	1.56	0.871	87.1%	0.60	0.736
802.11n HT20	1.28	1.48	0.863	86.3%	0.64	0.783
802.11n HT40	0.64	0.84	0.762	76.2%	1.18	1.571

## 8.2. DUTY CYCLE PLOTS







## 9. MEASUREMENT METHOD

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

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

## **10. ANTENNA PORT TEST RESULTS**

### **10.1. 6 dB BANDWIDTH**

#### **LIMITS**

FCC §15.407

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

#### **TEST PROCEDURE**

Reference to 789033 D02 General UNII Test Procedures New Rules v01: The transmitter output is connected to a spectrum analyzer with the RBW set to 100kHz, the VBW  $\geq 3 \times$  RBW, peak detector and max hold.

#### **RESULTS**

**10.1.1. 802.11a MODE IN THE 5.8 GHz BAND**

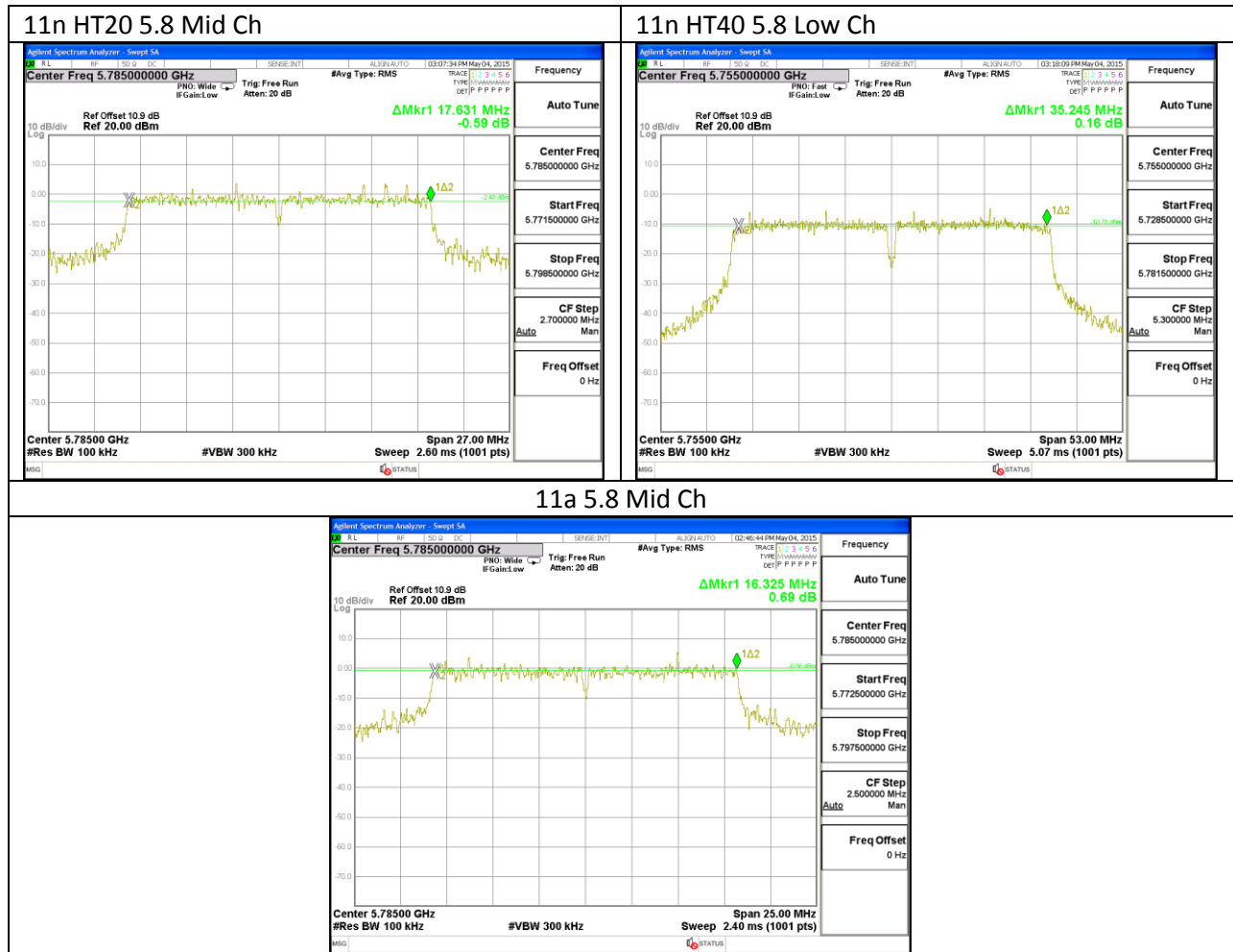
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	16.400	0.5
Mid	5785	16.325	0.5
High	5825	16.325	0.5
Worst		16.400	

**10.1.2. 802.11n HT20 MODE IN THE 5.8 GHz BAND**

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	17.550	0.5
Mid	5785	17.631	0.5
High	5825	17.577	0.5
Worst		17.631	

**10.1.3. 802.11n HT40 MODE IN THE 5.8 GHz BAND**

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5755	35.245	0.5
High	5795	33.708	0.5
Worst		35.245	



**10.2. 26 dB BANDWIDTH**

**LIMITS**

None; for reporting purposes only.

**RESULTS**

**10.2.1. 802.11a MODE IN THE 5.2 GHz BAND**

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5180	37.35
Mid	5200	51.15
High	5240	48.56
Worst		51.15

**10.2.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND**

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5180	43.78
Mid	5200	51.74
High	5240	48.62
Worst		51.74

**10.2.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND**

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5190	45.607
Mid	5230	66.394
Worst		66.394

**10.2.4. 802.11a MODE IN THE 5.8 GHz BAND**

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5745	22.308
Mid	5785	44.309
High	5825	40.415
Worst		44.309

**10.2.5. 802.11n HT20 MODE IN THE 5.8 GHz BAND**

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5745	23.244
Mid	5785	47.908
High	5825	44.132
Worst		47.908

**10.2.6. 802.11n HT40 MODE IN THE 5.8 GHz BAND**

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5755	44.2
High	5795	91.5
Worst		91.5

**10.3. 99% BANDWIDTH**

**LIMITS**

None; for reporting purposes only.

**RESULTS**

**10.3.1. 802.11a MODE IN THE 5.2 GHz BAND**

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5180	16.53
Mid	5200	23.43
High	5240	19.20
Worst		23.43

**10.3.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND**

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5180	17.74
Mid	5200	22.90
High	5240	19.87
Worst		22.90

**10.3.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND**

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5190	36.210
Mid	5230	39.060
Worst		39.060

**10.3.4. 802.11a MODE IN THE 5.8 GHz BAND**

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5745	16.630
Mid	5785	20.090
High	5825	16.805
Worst		20.090

**10.3.5. 802.11n HT20 MODE IN THE 5.8 GHz BAND**

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5745	17.839
Mid	5785	18.700
High	5825	18.000
Worst		18.700

**10.3.6. 802.11n HT40 MODE IN THE 5.8 GHz BAND**

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5755	36.2
High	5795	40.5
Worst		40.5



## 10.4. AVERAGE POWER

### LIMITS

None; for reporting purposes only.

### TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11 dB (including 10 dB pad and 1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

### RESULTS

#### 10.4.1. 802.11a MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5180	11.90
Mid	5200	15.90
High	5240	12.10
Worst		15.90

#### 10.4.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5180	11.90
Mid	5200	15.50
High	5240	12.20
Worst		15.50

#### 10.4.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5190	8.000
Mid	5230	13.600
Worst		13.600

**10.4.4. 802.11a MODE IN THE 5.8 GHz BAND**

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5745	10.500
Mid	5785	15.800
High	5825	14.500
Worst		15.800

**10.4.5. 802.11n HT20 MODE IN THE 5.8 GHz BAND**

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5745	10.600
Mid	5785	15.500
High	5825	13.800
Worst		15.500

**10.4.6. 802.11n HT40 MODE IN THE 5.8 GHz BAND**

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5755	9.4
High	5795	15.8
Worst		15.8

## **10.5. OUTPUT POWER AND PPSD**

### **LIMITS**

FCC §15.407 (a) (1)

For the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or  $4 \text{ dBm} + 10 \log B$ , where B is the 26-dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 4 dBm in any 1-MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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.

IC RSS-247 6.2.1 (1) and 6.2.4 (1)

#### **5150-5250MHz**

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

#### **5250-5350MHz**

The maximum conducted output power shall not exceed 1 W. The 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 power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### **DIRECTIONAL ANTENNA GAIN**

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

**RESULTS**

**10.5.1. 802.11a MODE IN THE 5.2 GHz BAND**

**Bandwidth and Antenna Gain**

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5180	37.35	16.53	1.90
Mid	5200	52.16	23.43	1.90
High	5240	48.56	19.20	1.90

**Limits**

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC EIRP Limit (dBm)	Max IC Power (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC eirp PSD Limit (dBm)	PPSD Limit (dBm)
Low	5180	24.00	22.18	20.28	20.28	11.00	10.00	8.10
Mid	5200	24.00	23.00	21.10	21.10	11.00	10.00	8.10
High	5240	24.00	22.83	20.93	20.93	11.00	10.00	8.10

<b>Duty Cycle CF (dB)</b>	0.60	<b>Included in Calculations of Corr'd Power &amp; PSD</b>
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**Output Power Results**

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	11.626	12.23	20.28	-8.06
Mid	5200	15.550	16.15	21.10	-4.95
High	5240	11.382	11.98	20.93	-8.95

**PPSD Results**

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5180	0.100	0.70	8.10	-7.40
Mid	5200	4.021	4.62	8.10	-3.48
High	5240	-1.636	-1.04	8.10	-9.14

### 10.5.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

#### Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5180	43.78	17.74	1.90
Mid	5200	51.74	22.90	1.90
High	5240	48.62	19.87	1.90

#### Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC EIRP Limit (dBm)	Max IC Power (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC eirp PSD Limit (dBm)	PPSD Limit (dBm)
Low	5180	24.00	22.49	20.59	20.59	11.00	10.00	8.10
Mid	5200	24.00	23.00	21.10	21.10	11.00	10.00	8.10
High	5240	24.00	22.98	21.08	21.08	11.00	10.00	8.10

<b>Duty Cycle CF (dB)</b>	0.64	<b>Included in Calculations of Corr'd Power &amp; PPSD</b>
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#### Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	11.733	12.37	20.59	-8.22
Mid	5200	14.826	15.47	21.10	-5.63
High	5240	11.451	12.09	21.08	-8.99

#### PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5180	-0.001	0.64	8.10	-7.46
Mid	5200	3.197	3.84	8.10	-4.26
High	5240	-1.549	-0.91	8.10	-9.01

**10.5.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND**

**Bandwidth and Antenna Gain**

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5190	45.61	36.21	1.90
Mid	5230	66.39	39.08	1.90

**Limits**

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC EIRP Limit (dBm)	Max IC Power (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC eirp PSD Limit (dBm)	PPSD Limit (dBm)
Low	5190	24.00	23.00	23.00	23.00	11.00	10.00	8.10
Mid	5230	24.00	23.00	21.10	21.10	11.00	10.00	8.10
<b>Duty Cycle CF (dB)</b>		1.18	<b>Included in Calculations of Corr'd Power &amp; PPSD</b>					

**Output Power Results**

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5190	7.524	8.70	23.00	-14.30
Mid	5230	11.623	12.80	21.10	-8.30

**PPSD Results**

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5190	-7.010	-5.83	8.10	-13.93
Mid	5230	-3.846	-2.67	8.10	-10.77

**10.5.4. 802.11a MODE IN THE 5.8 GHZ BAND**

**Bandwidth and Antenna Gain**

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5745	22.3	16.6	1.90
Mid	5785	44.3	20.1	1.90
High	5825	40.4	16.8	1.90

**Limits**

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5745	30.00	30.00	36.00	30.00	30.00	30.00	30.00
Mid	5785	30.00	30.00	36.00	30.00	30.00	30.00	30.00
High	5825	30.00	30.00	36.00	30.00	30.00	30.00	30.00

<b>Duty Cycle CF (dB)</b>	0.60	<b>Included in Calculations of Corr'd Power &amp; PPSD</b>
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**Output Power Results**

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	9.67	10.27	30.00	-19.73
Mid	5785	15.25	15.85	30.00	-14.15
High	5825	13.43	14.03	30.00	-15.97

**PPSD Results**

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5745	-1.61	-1.01	30.00	-31.01
Mid	5785	3.72	4.32	30.00	-25.68
High	5825	1.88	2.48	30.00	-27.52

**10.5.5. 802.11n HT20 MODE IN THE 5.8 GHz BAND**

**Bandwidth and Antenna Gain**

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5745	23.2	17.8	1.90
Mid	5785	47.9	18.7	1.90
High	5825	44.1	18.0	1.90

**Limits**

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5745	30.00	30.00	36.00	30.00	30.00	30.00	30.00
Mid	5785	30.00	30.00	36.00	30.00	30.00	30.00	30.00
High	5825	30.00	30.00	36.00	30.00	30.00	30.00	30.00

<b>Duty Cycle CF (dB)</b>	0.64	<b>Included in Calculations of Corr'd Power &amp; PPSD</b>
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**Output Power Results**

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	9.89	10.53	30.00	-19.47
Mid	5785	14.74	15.38	30.00	-14.62
High	5825	13.45	14.09	30.00	-15.91

**PPSD Results**

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5745	-1.90	-1.26	30.00	-31.26
Mid	5785	2.93	3.57	30.00	-26.43
High	5825	1.72	2.36	30.00	-27.64



**10.5.6. 802.11n HT40 MODE IN THE 5.8 GHz BAND**

**Bandwidth and Antenna Gain**

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5755	44.2	36.2	1.90
High	5795	91.5	40.5	1.90

**Limits**

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5755	30.00	30.00	36.00	30.00	30.00	30.00	30.00
High	5795	30.00	30.00	36.00	30.00	30.00	30.00	30.00

<b>Duty Cycle CF (dB)</b>	1.18	<b>Included in Calculations of Corr'd Power &amp; PPSD</b>
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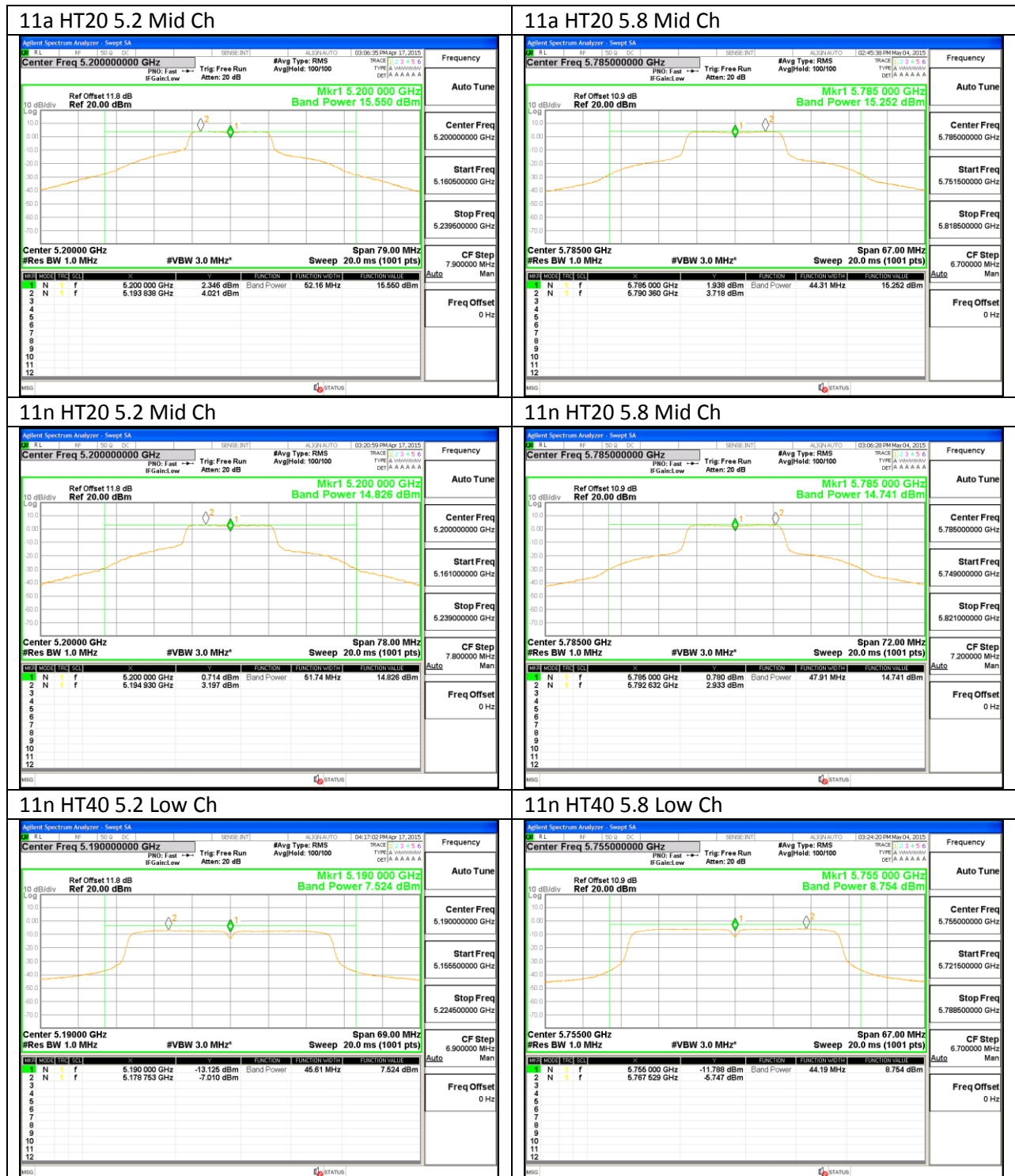
**Output Power Results**

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5755	8.75	9.93	30.00	-20.07
High	5795	15.04	16.22	30.00	-13.78

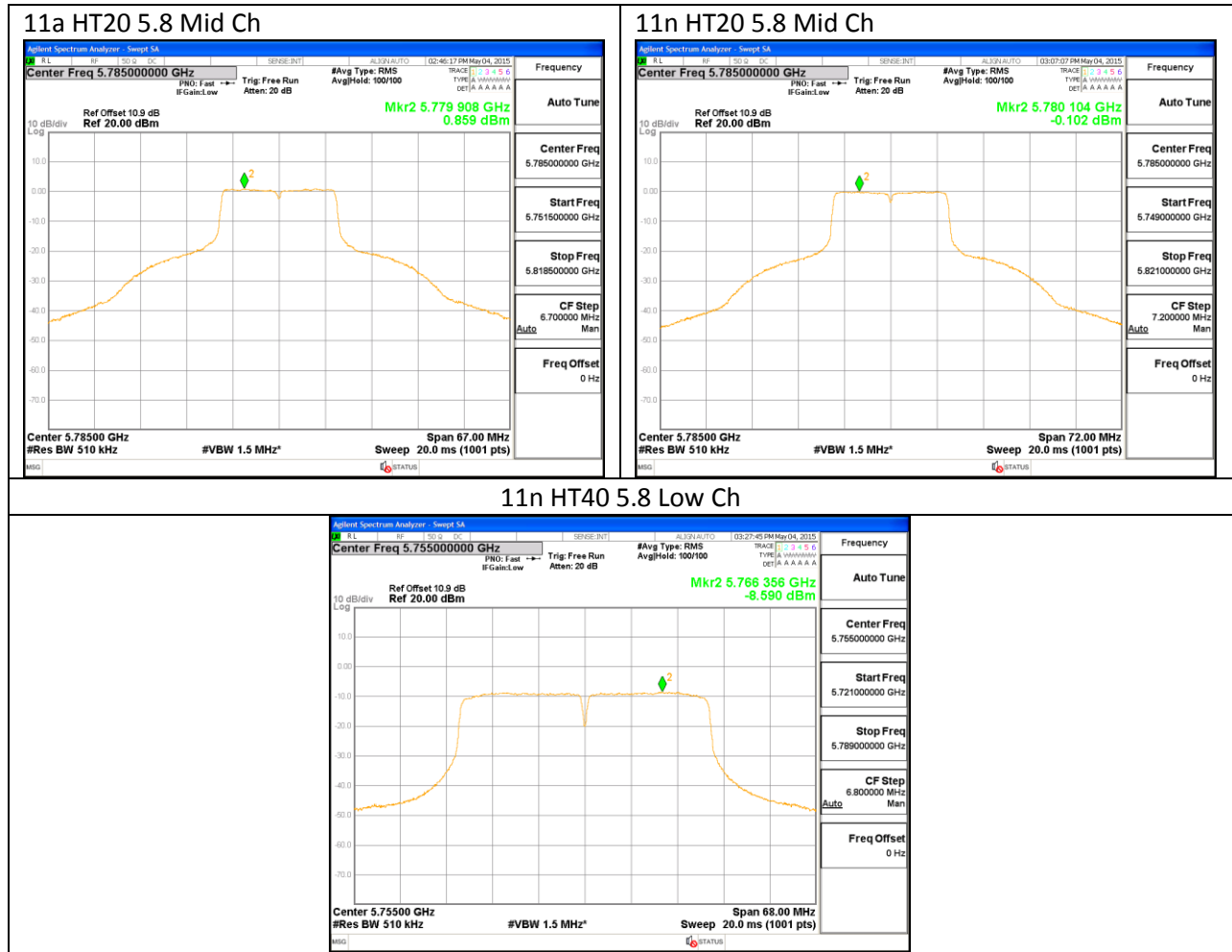
**PPSD Results**

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5755	-5.75	-4.57	30.00	-34.57
High	5795	0.34	1.52	30.00	-28.48

10.5.7. OUTPUT POWER AND PPSD PLOTS



UNII 5.8 PSD



## 11. TRANSMITTER ABOVE 1 GHz

### LIMITS

FCC §15.205 and §15.209

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

### TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane. The antenna to EUT distance is 3 meters.

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

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

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and add duty cycle factor to the reading offset for average measurements.

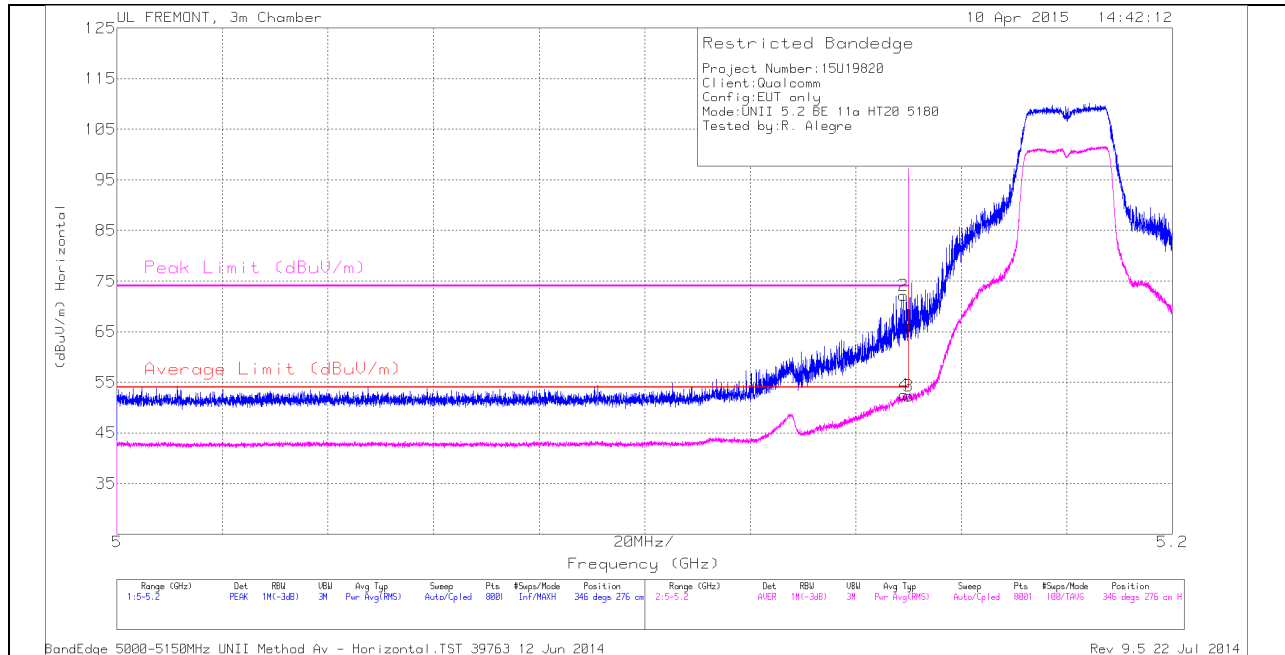
The spectrum from 1GHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

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

# 11.1. 5.2 GHz

## 11.1.1. TX ABOVE 1 GHz 802.11a MODE IN THE 5.2 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

### HORIZONTAL PEAK AND AVERAGE PLOT



### HORIZONTAL DATA

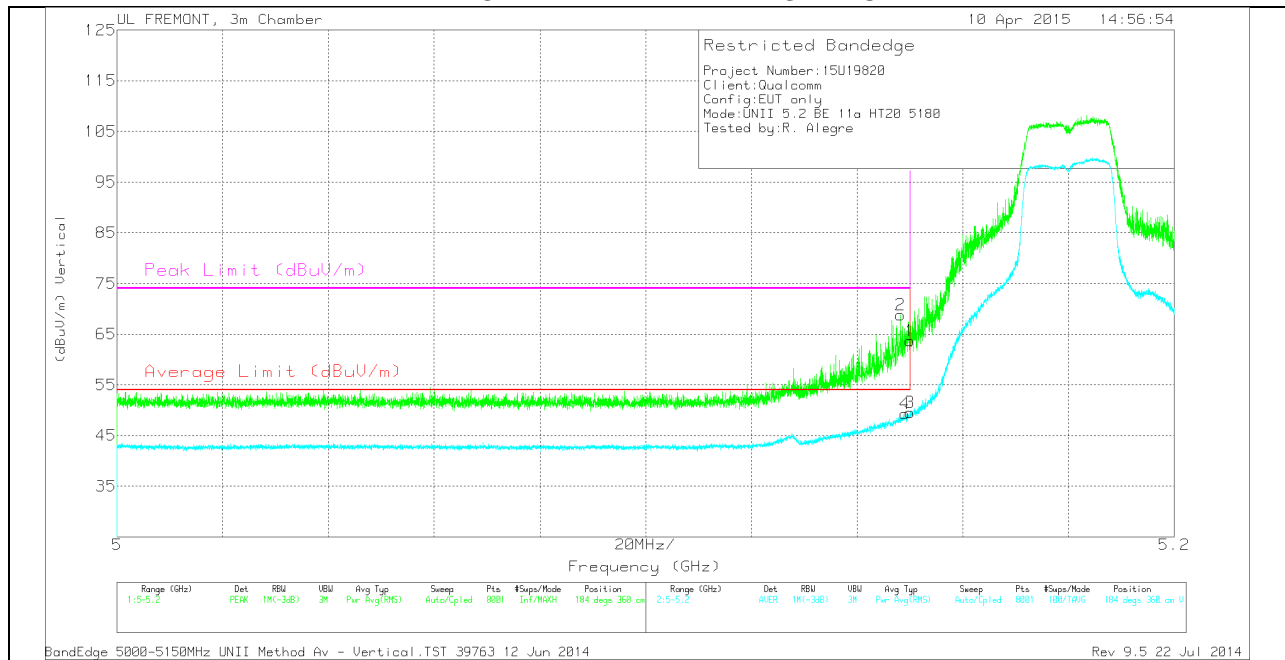
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.149	59.53	PK	34.2	-21.6	0	72.13	-	-	74	-1.87	346	276	H
4	5.149	39.29	RMS	34.2	-21.6	.6	52.49	54	-1.51	-	-	346	276	H
1	5.15	53.57	PK	34.2	-21.6	0	66.17	-	-	74	-7.83	346	276	H
3	5.15	39.13	RMS	34.2	-21.6	.6	52.33	54	-1.67	-	-	346	276	H

\* - indicates frequency in CFR 47, Part 15 and Industry Canada RSS-Restricted Band.

PK - Peak detector

RMS - RMS detection

**VERTICAL PEAK AND AVERAGE PLOT**



**VERTICAL DATA**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.148	56.24	PK	34.2	-21.6	0	68.84	-	-	74	-5.16	184	360	V
4	5.149	36.12	RMS	34.2	-21.6	.6	49.32	54	-4.68	-	-	184	360	V
1	5.15	51.14	PK	34.2	-21.6	0	63.74	-	-	74	-10.26	184	360	V
3	5.15	36.36	RMS	34.2	-21.6	.6	49.56	54	-4.44	-	-	184	360	V

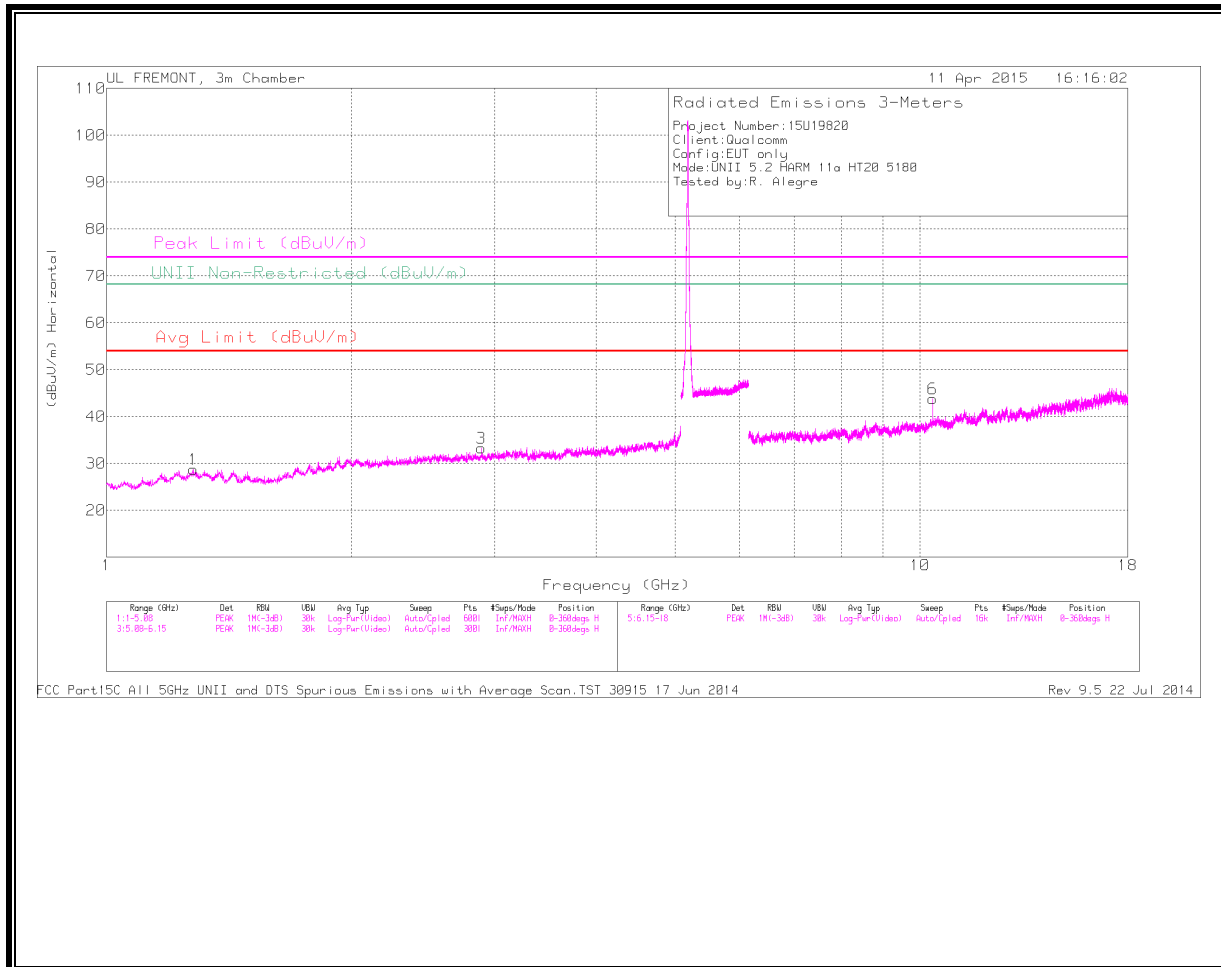
\* - indicates frequency in CFR 47, Part 15 and Industry Canada RSS-Restricted Band.

PK - Peak detector

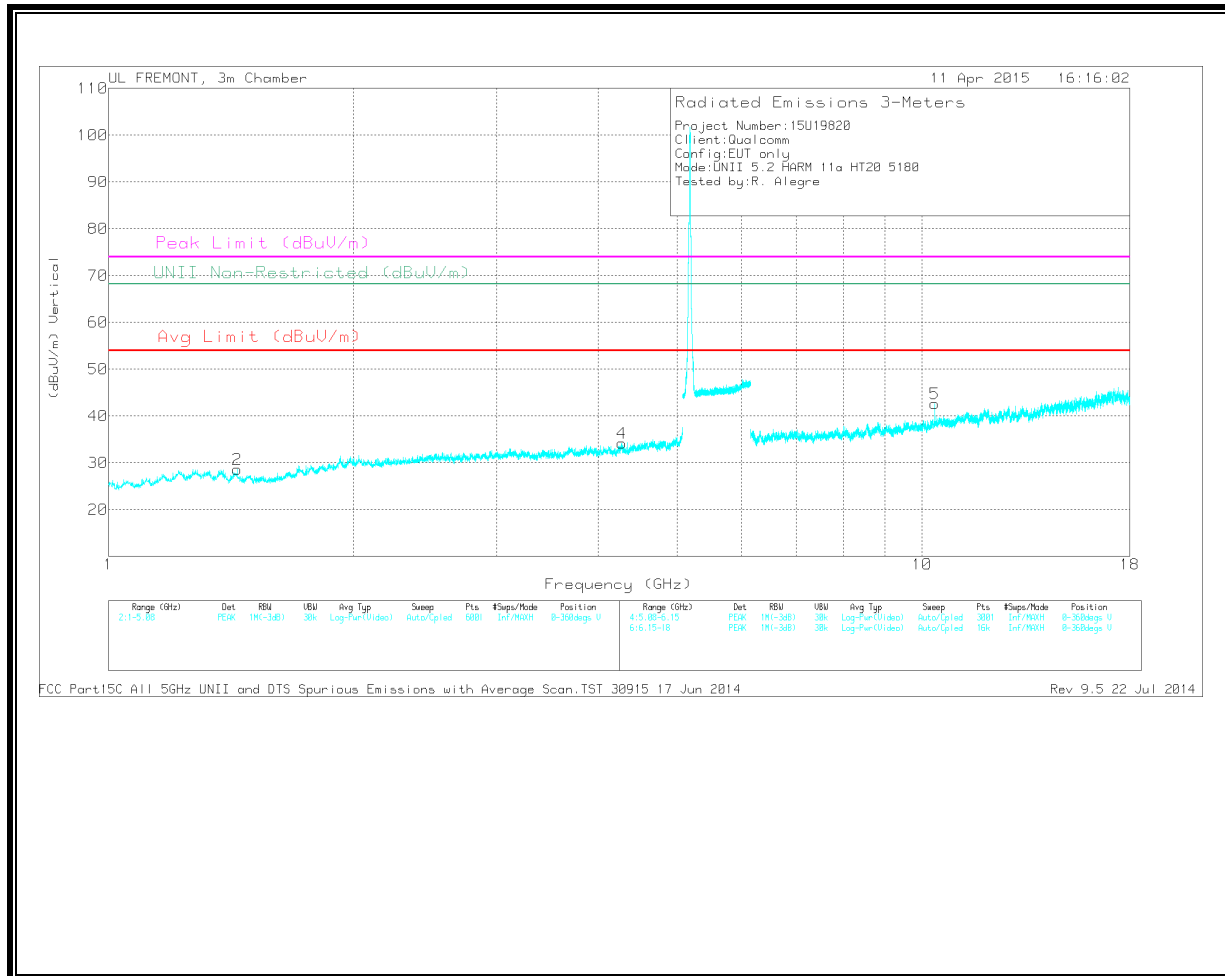
RMS - RMS detection

### HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL  
 HORIZONTAL



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



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



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	** 2.888	32.84	PK	32.6	-32.1	0	33.34	-	-	74	-40.66	-	-	0-360	200	H
2	** 1.439	32.91	PK	28.4	-32.7	0	28.61	-	-	74	-45.39	-	-	0-360	100	V
4	** 4.272	31.05	PK	33.5	-30.3	0	34.25	-	-	74	-39.75	-	-	0-360	100	V
1	1.277	32.59	PK	29.7	-33.5	0	28.79	-	-	74	-45.21	-	-	0-360	200	H
6	10.359	32.05	PK	37.2	-25.4	0	43.85	-	-	-	-	68.2	-24.35	0-360	200	H
5	10.36	30.87	PK	37.2	-25.4	0	42.67	-	-	-	-	68.2	-25.53	0-360	200	V

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

PK - Peak detector

### Radiated Emissions

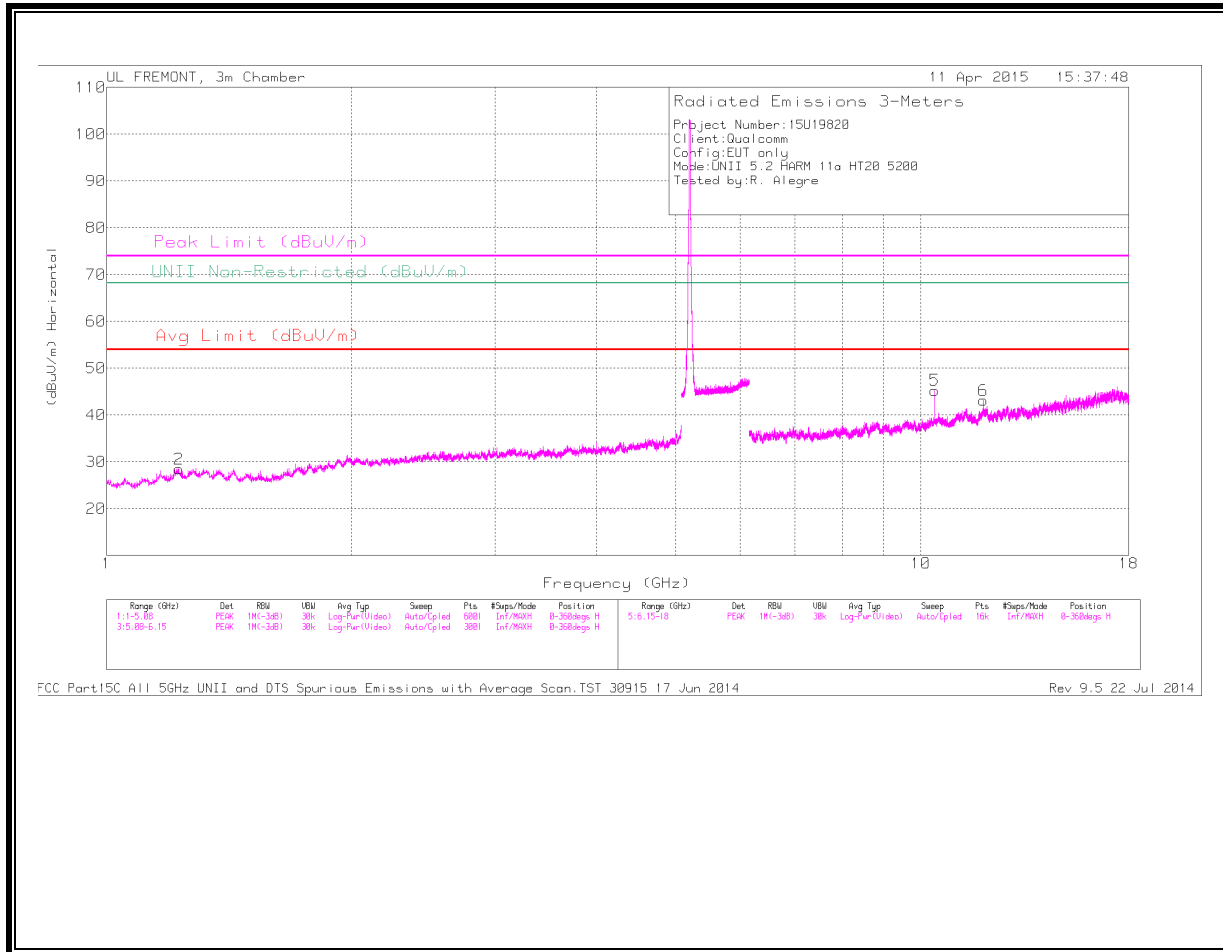
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
10.36	38.56	PK1	37.2	-25.4	0	50.36	-	-	-	-	68.2	-17.84	11	230	H
10.36	29.38	AD1	37.2	-25.4	.6	41.78	-	-	-	-	-	-	11	230	H

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

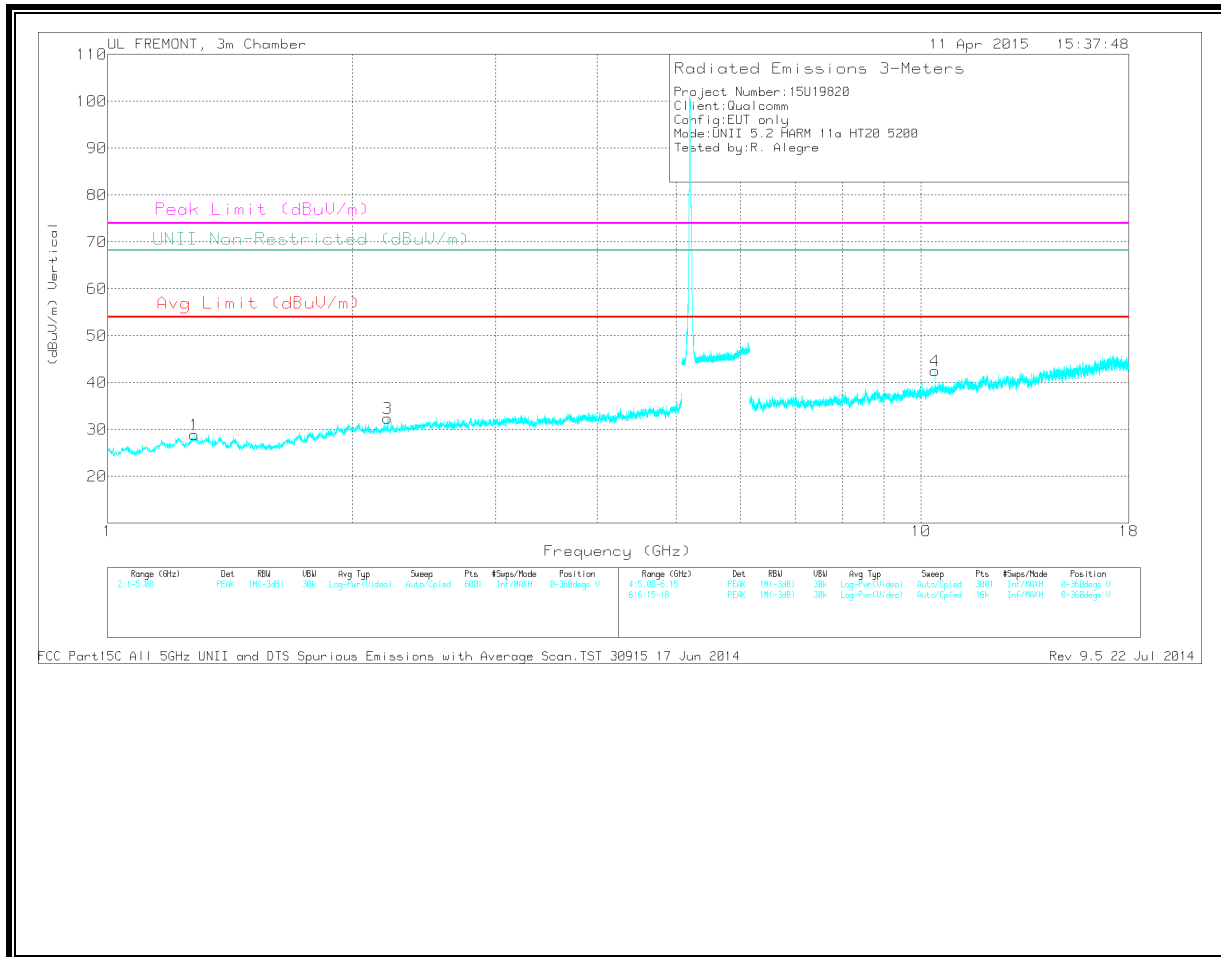
PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

MID CHANNEL  
 HORIZONTAL



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



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

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	** 1.226	32.62	PK	29.2	-33.3	0	28.52	-	-	74	-45.48	-	-	0-360	200	H
3	** 2.21	33.29	PK	31.4	-32.3	0	32.39	-	-	74	-41.61	-	-	0-360	200	V
6	** 11.928	30.23	PK	39.1	-26.2	0	43.13	-	-	74	-30.87	-	-	0-360	100	H
1	1.279	32.81	PK	29.7	-33.6	0	28.91	-	-	74	-45.09	-	-	0-360	200	V
4	10.399	31.01	PK	37.3	-25.8	0	42.51	-	-	-	-	68.2	-25.69	0-360	200	V
5	10.4	33.81	PK	37.3	-25.8	0	45.31	-	-	-	-	68.2	-22.89	0-360	200	H

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

PK - Peak detector

### Radiated Emissions

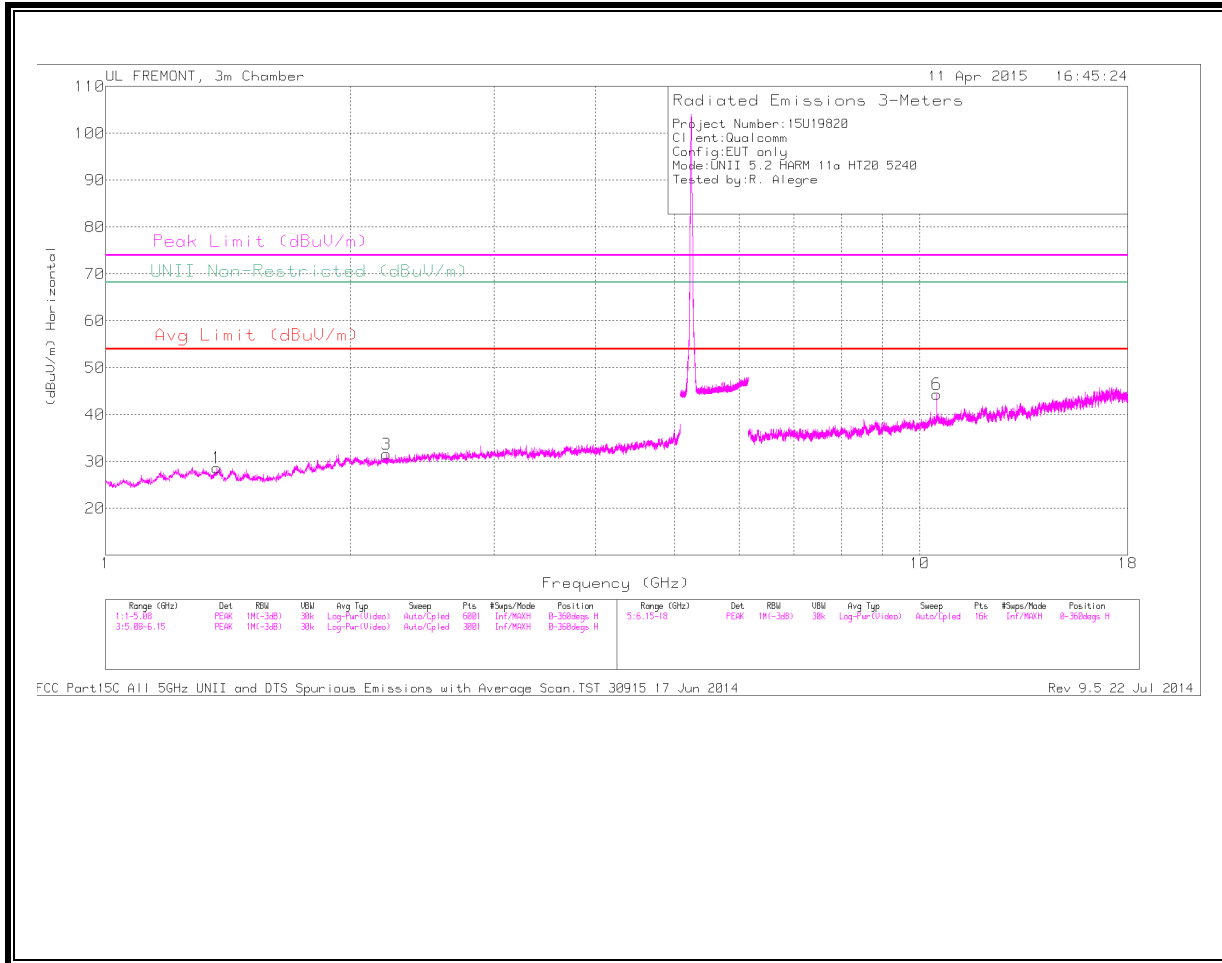
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
** 11.928	38.46	PK1	39.1	-26.2	0	51.36	-	-	74	-22.64	-	-	344	121	H
** 11.926	26.12	AD1	39.1	-26.2	.6	39.62	54	-14.38	-	-	-	-	344	121	H
10.4	40.17	PK1	37.3	-25.8	0	51.67	-	-	-	-	68.2	-16.53	82	177	H
10.4	31.8	AD1	37.3	-25.8	.6	43.9	54	-7.1	-	-	-	-	82	177	H

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

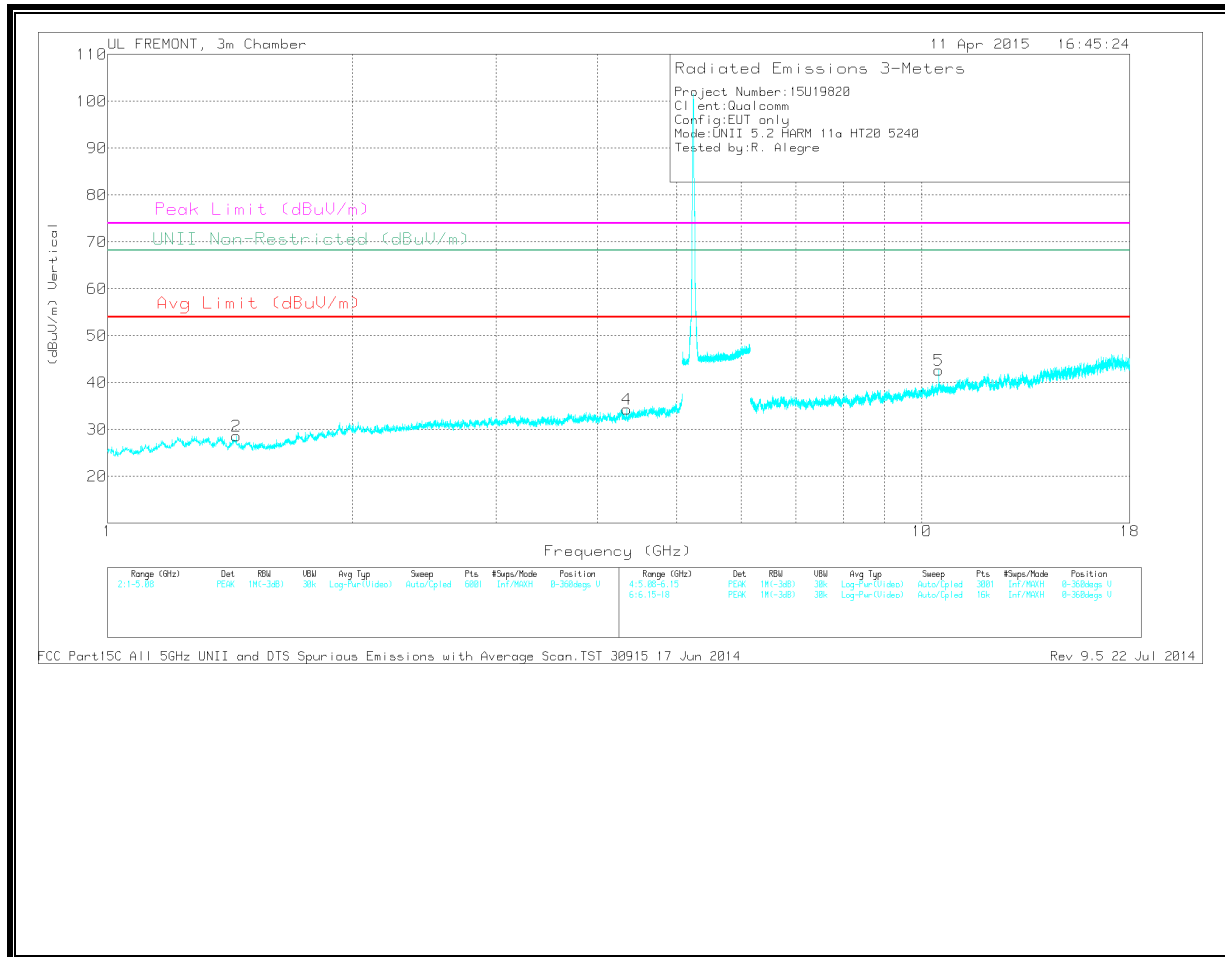
PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

HIGH CHANNEL  
 HORIZONTAL



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



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

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	** 1.369	32.79	PK	29	-33.1	0	28.69	-	-	74	-45.31	-	-	0-360	100	H
3	** 2.212	32.57	PK	31.4	-32.3	0	31.67	-	-	74	-42.33	-	-	0-360	100	H
2	** 1.439	32.91	PK	28.4	-32.7	0	28.61	-	-	74	-45.39	-	-	0-360	100	V
4	** 4.342	31.3	PK	33.6	-30.6	0	34.3	-	-	74	-39.7	-	-	0-360	200	V
6	10.479	32.7	PK	37.4	-25.7	0	44.4	-	-	-	-	68.2	-23.8	0-360	200	H
5	10.479	30.94	PK	37.4	-25.7	0	42.64	-	-	-	-	68.2	-25.56	0-360	200	V

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

PK - Peak detector

### Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr/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
10.48	38.65	PK1	37.4	-25.7	0	50.35	-	-	-	-	68.2	-17.85	35	185	H
10.48	30.19	AD1	37.4	-25.7	.6	42.49	54	-11.51	-	-	-	-	35	185	H

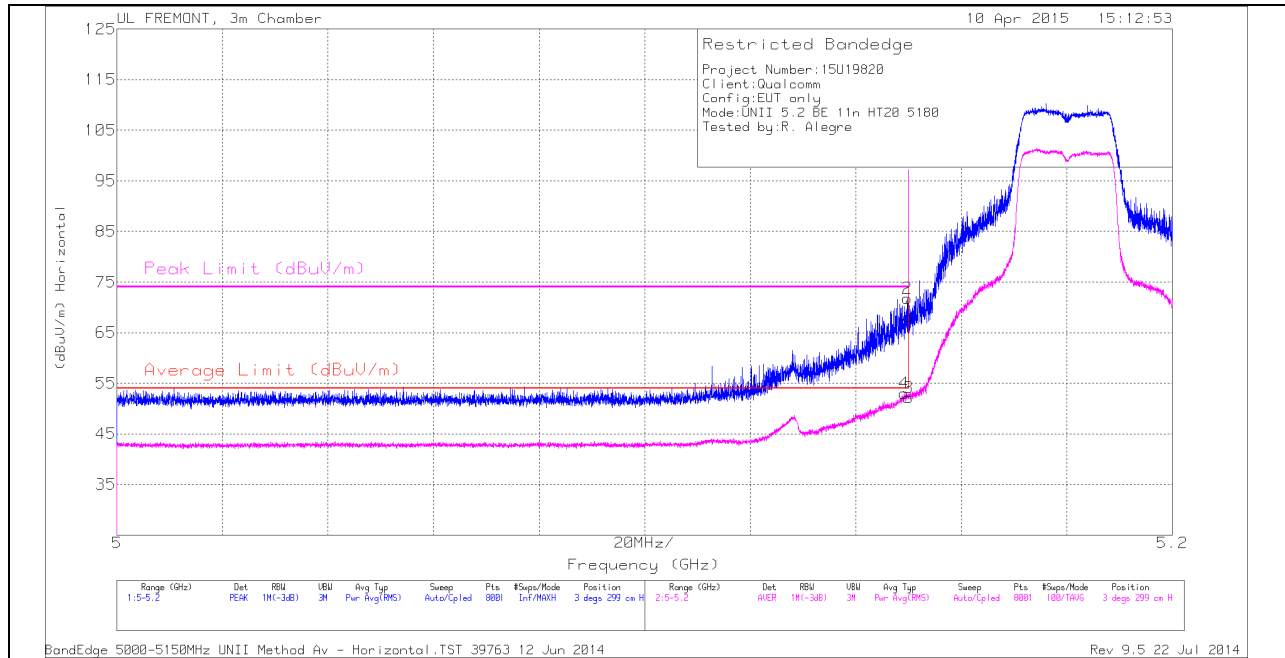
\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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

**HORIZONTAL PEAK AND AVERAGE PLOT**



**HORIZONTAL DATA**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cb/Filter/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	5.149	39.8	RMS	34.2	-21.6	.64	53.04	54	-.96	-	-	3	299	H
1	5.15	55.62	PK	34.2	-21.6	0	68.22	-	-	74	-5.78	3	299	H
2	5.15	59.12	PK	34.2	-21.6	0	71.72	-	-	74	-2.28	3	299	H
3	5.15	38.86	RMS	34.2	-21.6	.64	52.1	54	-1.9	-	-	3	299	H

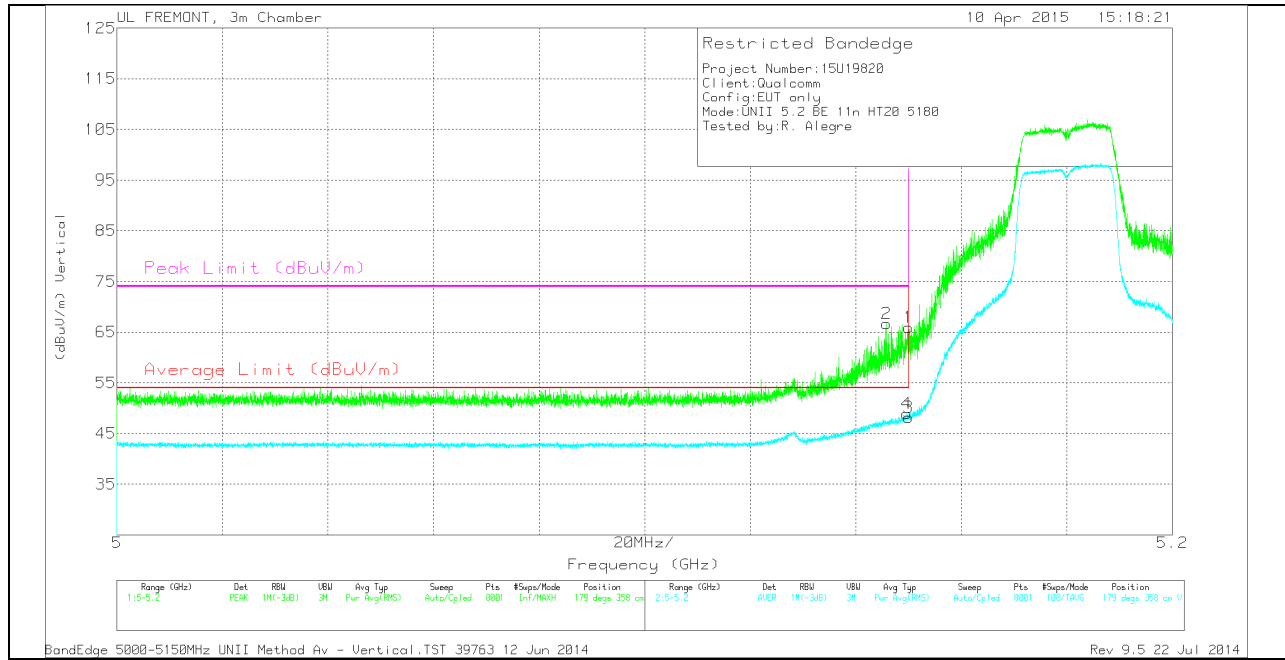
\* - indicates frequency in CFR 47, Part 15 and Industry Canada RSS-Restricted Band.

PK - Peak detector

RMS - RMS detection



**VERTICAL PEAK AND AVERAGE PLOT**



**VERTICAL DATA**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.146	54.03	PK	34.2	-21.6	0	66.63	-	-	74	-7.37	179	358	V
1	5.15	53.39	PK	34.2	-21.6	0	65.99	-	-	74	-8.01	179	358	V
3	5.15	34.98	RMS	34.2	-21.6	.64	48.22	54	-5.78	-	-	179	358	V
4	5.15	35.64	RMS	34.2	-21.6	.64	48.88	54	-5.12	-	-	179	358	V

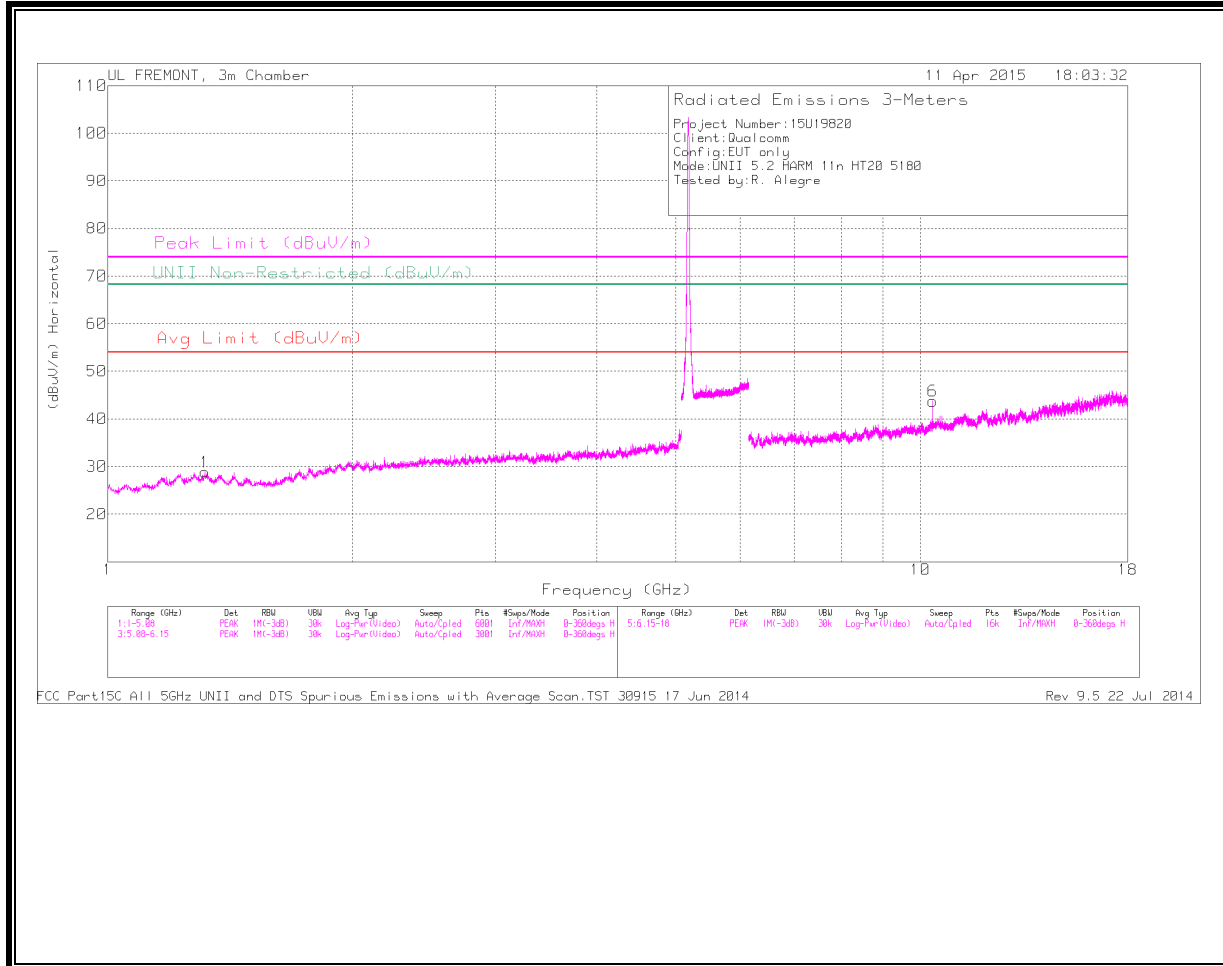
\* - indicates frequency in CFR 47, Part 15 and Industry Canada RSS-Restricted Band.

PK - Peak detector

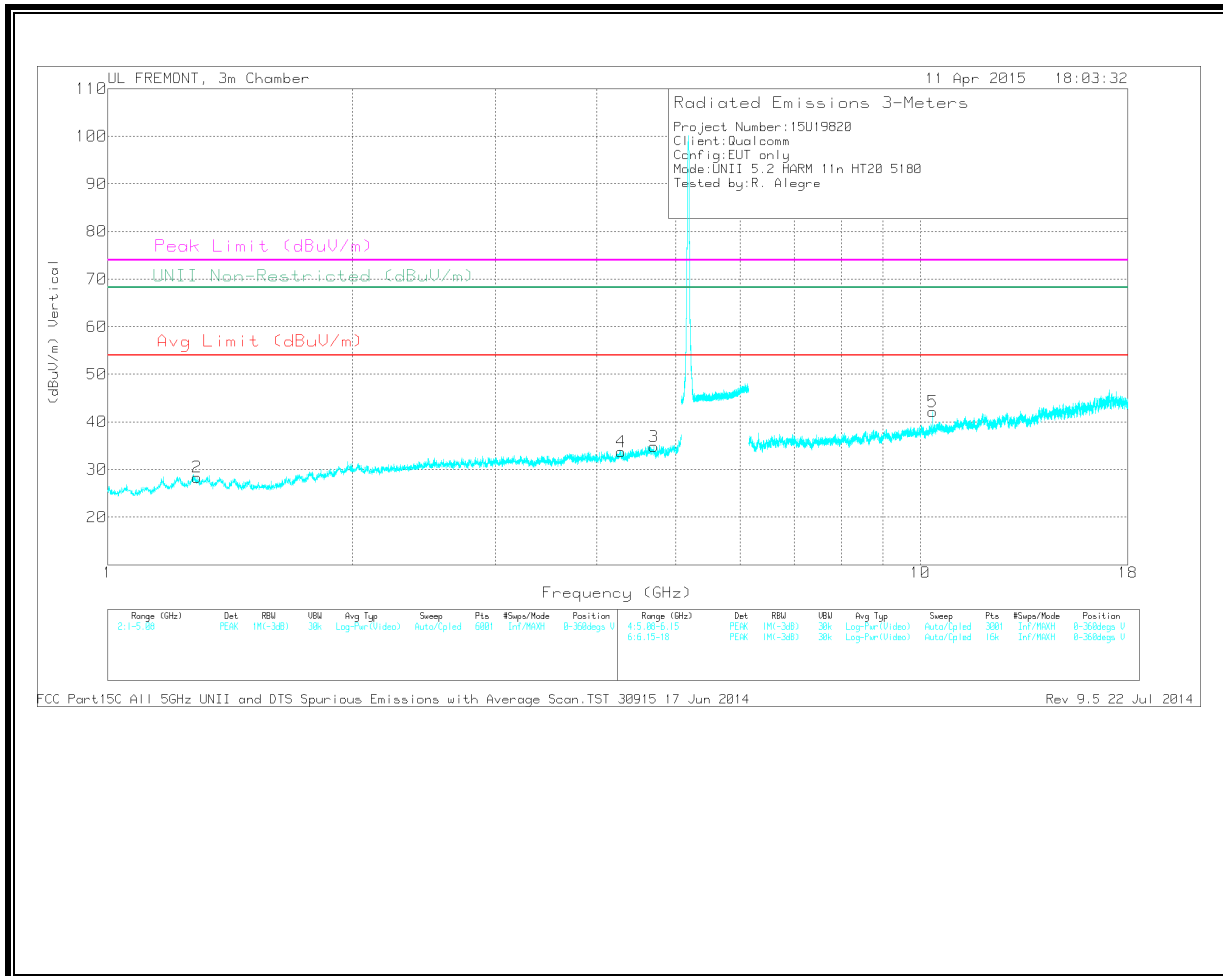
RMS - RMS detection

**HARMONICS AND SPURIOUS EMISSIONS**

**LOW CHANNEL  
 HORIZONTAL**



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



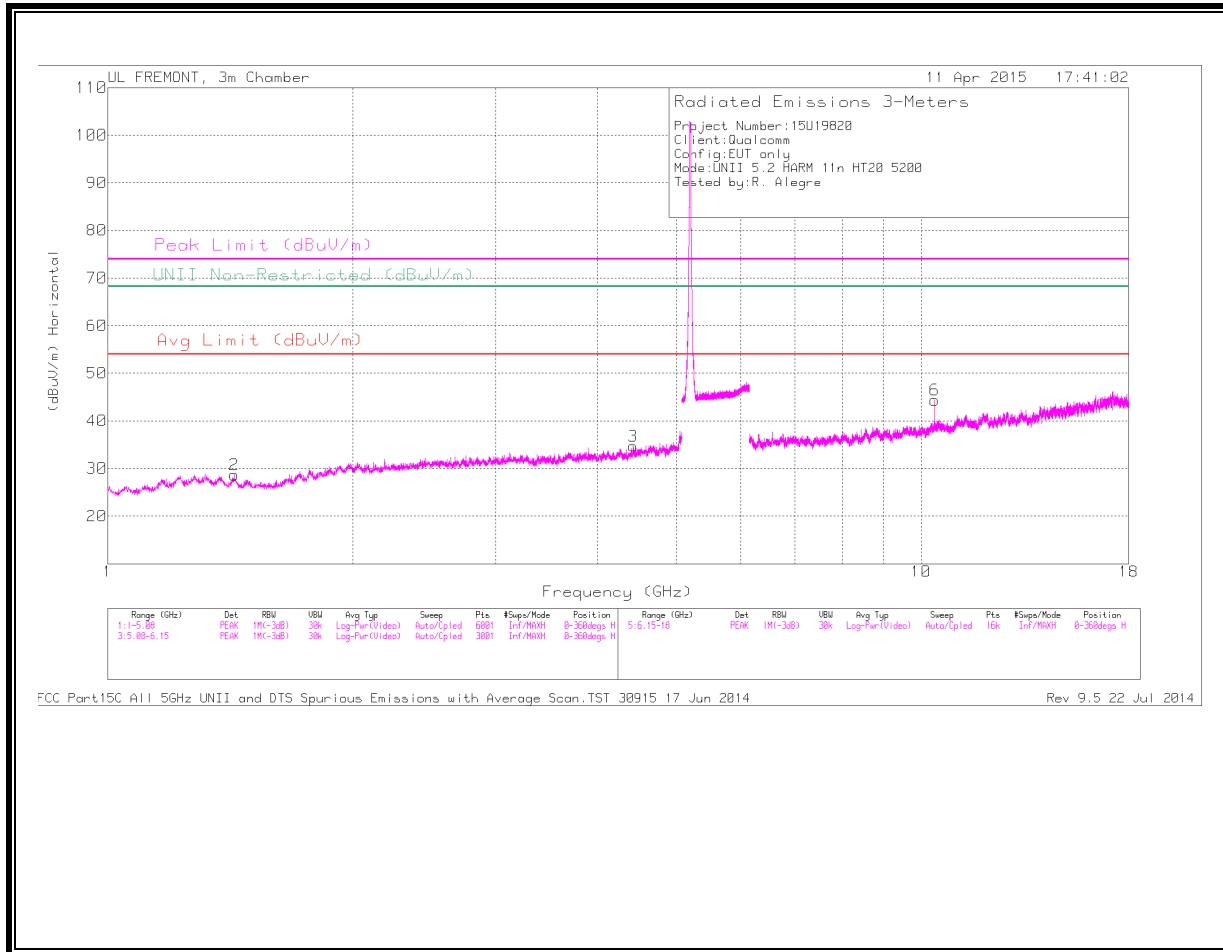
Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	** 1.317	32.75	PK	29.7	-33.6	0	28.85	-	-	74	-45.15	-	-	0-360	200	H
3	** 4.701	31.35	PK	34.1	-30.6	0	34.85	-	-	74	-39.15	-	-	0-360	100	V
4	** 4.28	30.65	PK	33.5	-30.4	0	33.75	-	-	74	-40.25	-	-	0-360	100	V
2	1.289	32.2	PK	29.8	-33.6	0	28.4	-	-	74	-45.6	-	-	0-360	100	V
6	10.359	31.94	PK	37.2	-25.4	0	43.74	-	-	-	-	68.2	-24.46	0-360	200	H
5	10.359	30.36	PK	37.2	-25.4	0	42.16	-	-	-	-	68.2	-26.04	0-360	100	V

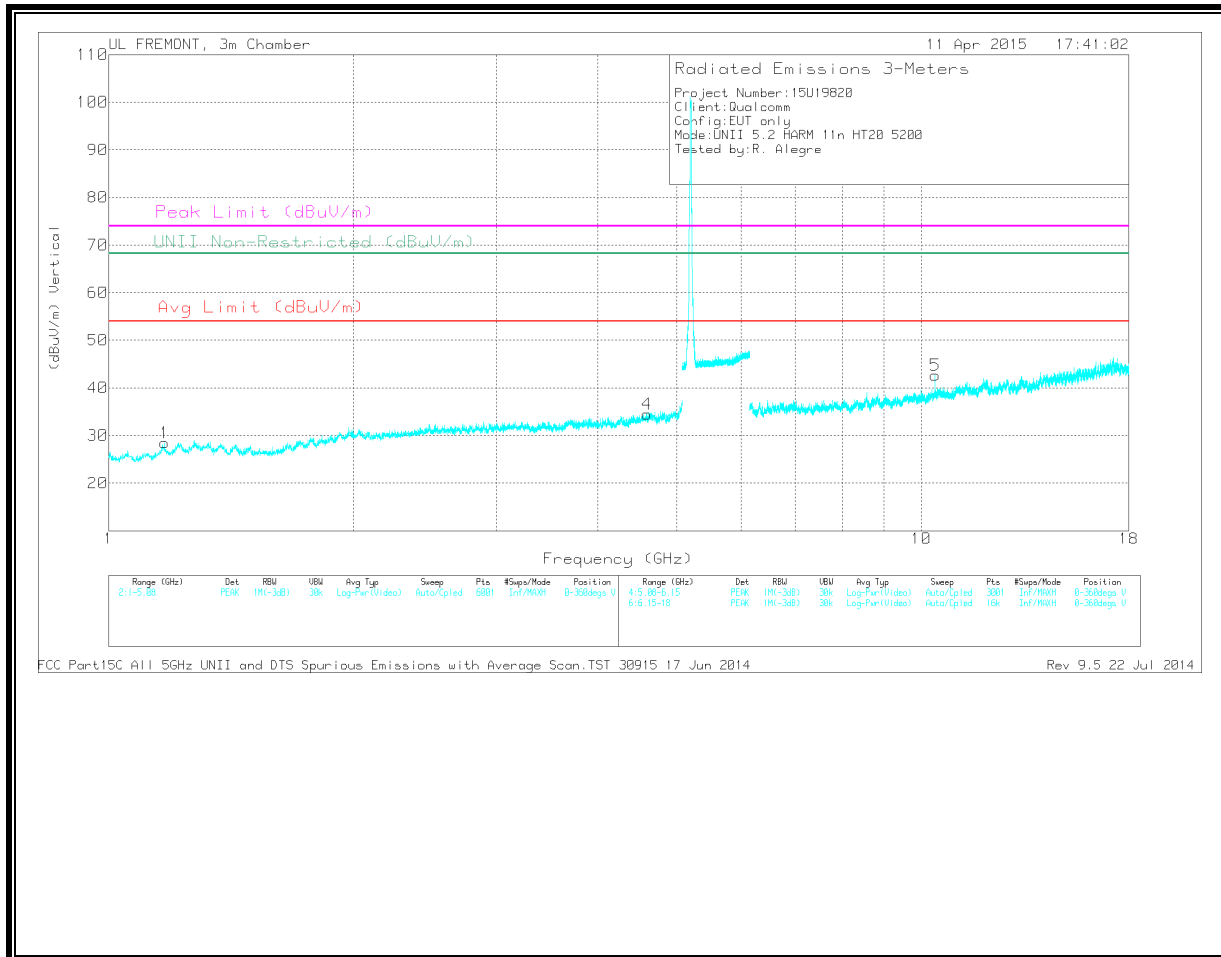
\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

PK - Peak detector

MID CHANNEL  
HORIZONTAL



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



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

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	** 1.172	33.28	PK	28.5	-33.3	0	28.48	-	-	74	-45.52	-	-	0-360	100	V
4	** 4.595	31.21	PK	33.9	-30.6	0	34.51	-	-	74	-39.49	-	-	0-360	100	V
2	1.43	32.78	PK	28.5	-32.6	0	28.68	-	-	-	-	68.2	-39.52	0-360	200	H
3	4.428	31.41	PK	33.7	-30.4	0	34.71	-	-	-	-	68.2	-33.49	0-360	200	H
6	10.399	32.88	PK	37.3	-25.8	0	44.38	-	-	-	-	68.2	-23.82	0-360	200	H
5	10.4	31.18	PK	37.3	-25.8	0	42.68	-	-	-	-	68.2	-25.52	0-360	200	V

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

PK - Peak detector

### Radiated Emissions

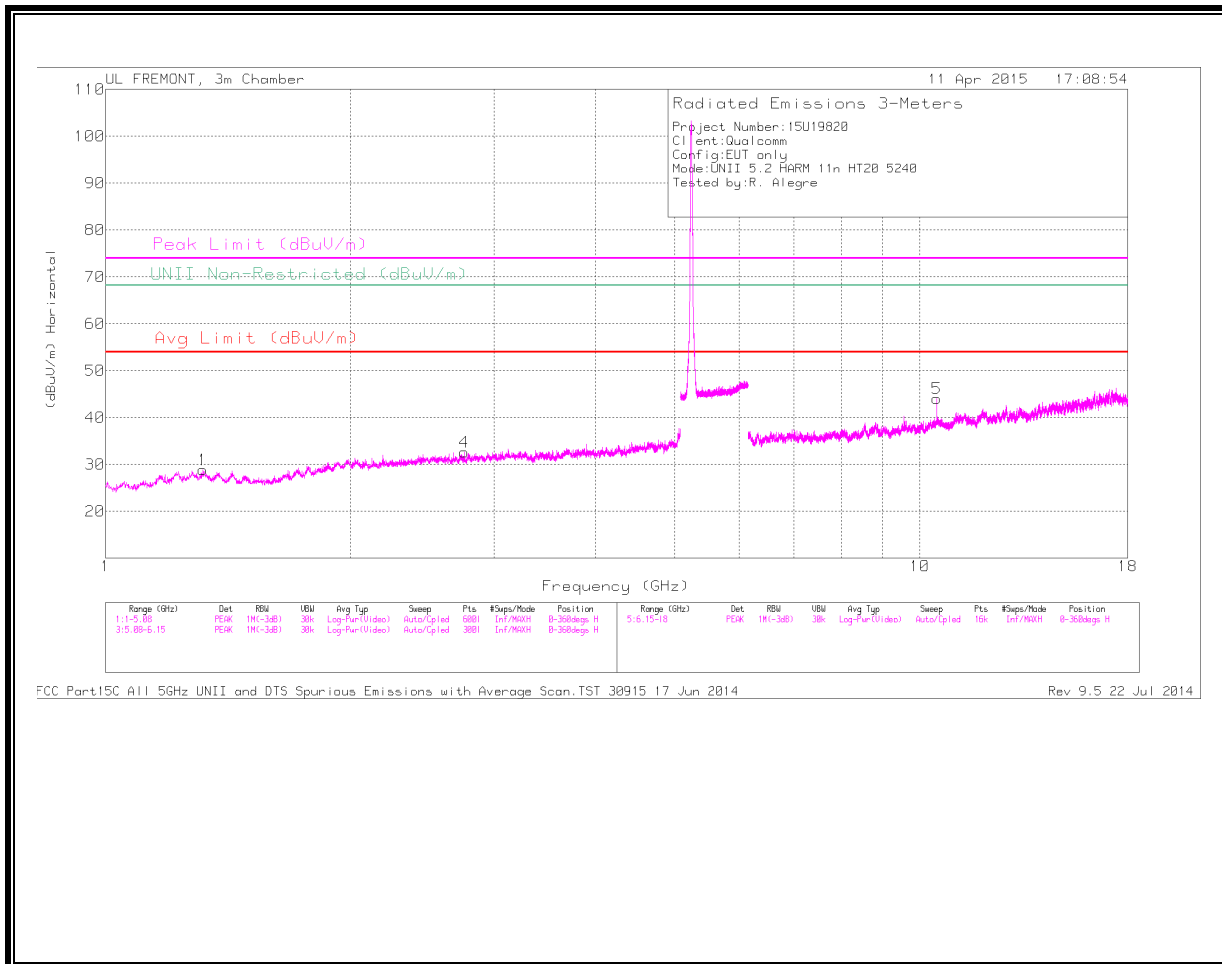
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
10.4	39.42	PK1	37.3	-25.8	0	50.92	-	-	-	-	68.2	-17.28	48	232	H
10.4	31.7	AD1	37.3	-25.8	.64	43.84	54	-10.16	-	-	-	-	48	232	H

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

PK1 - KDB789033 Method: Peak

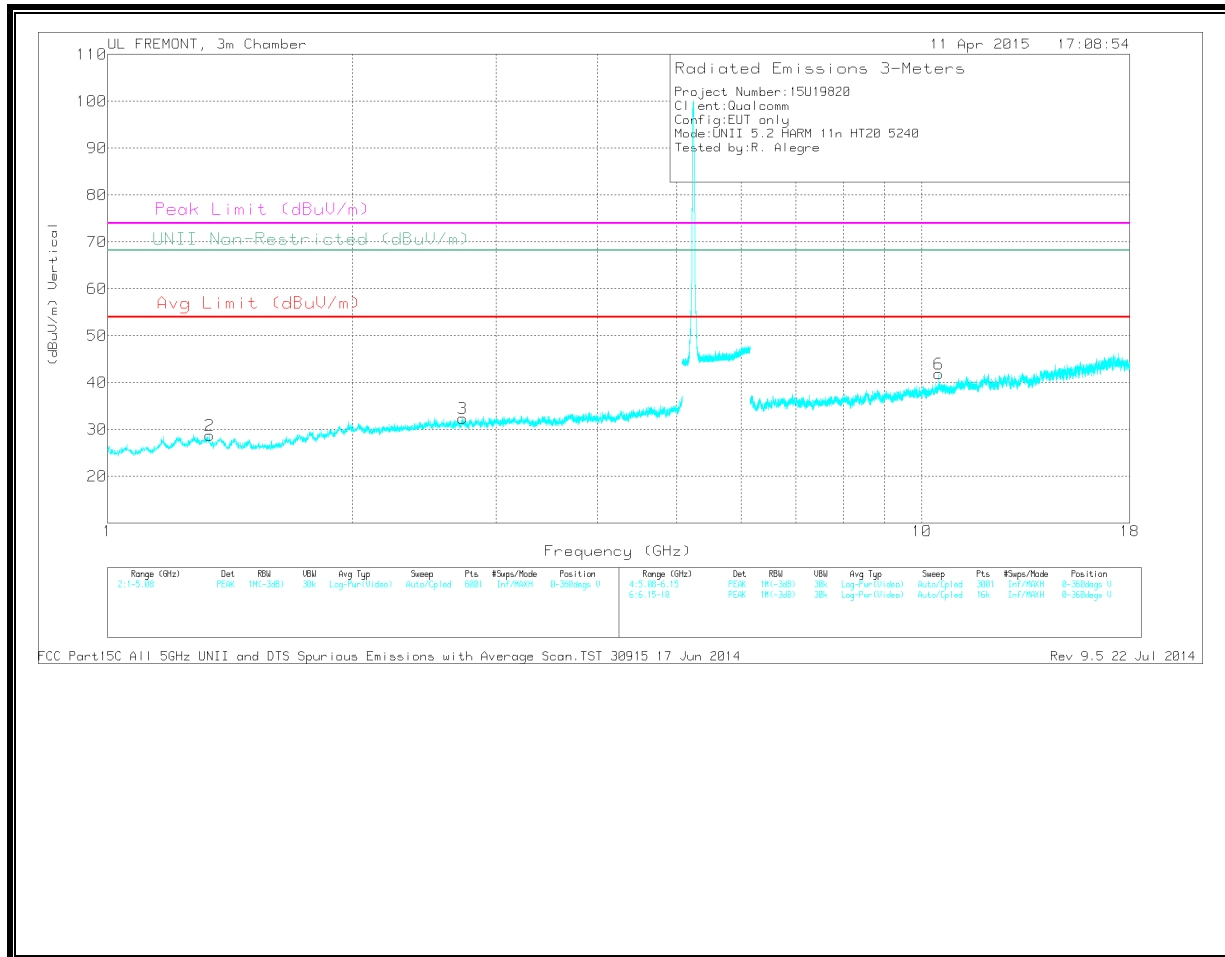
AD1 - KDB789033 Method: AD Primary Power Average

HIGH CHANNEL  
 HORIZONTAL



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





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

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	** 1.317	32.75	PK	29.7	-33.6	0	28.85	-	-	74	-45.15	-	-	0-360	200	H
4	** 2.758	32.33	PK	32.5	-32.2	0	32.63	-	-	74	-41.37	-	-	0-360	200	H
2	** 1.334	32.71	PK	29.5	-33.5	0	28.71	-	-	74	-45.29	-	-	0-360	100	V
3	** 2.727	32.2	PK	32.4	-32.2	0	32.4	-	-	74	-41.6	-	-	0-360	200	V
5	10.479	32.33	PK	37.4	-25.7	0	44.03	-	-	-	-	68.2	-24.17	0-360	200	H
6	10.479	30.15	PK	37.4	-25.7	0	41.85	-	-	-	-	68.2	-26.35	0-360	100	V

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

PK - Peak detector

### Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr/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
10.48	39.26	PK1	37.4	-25.7	0	50.96	-	-	-	-	68.2	-17.24	34	188	H
10.48	31	AD1	37.4	-25.7	.64	43.34	54	-10.66	-	-	-	-	34	188	H

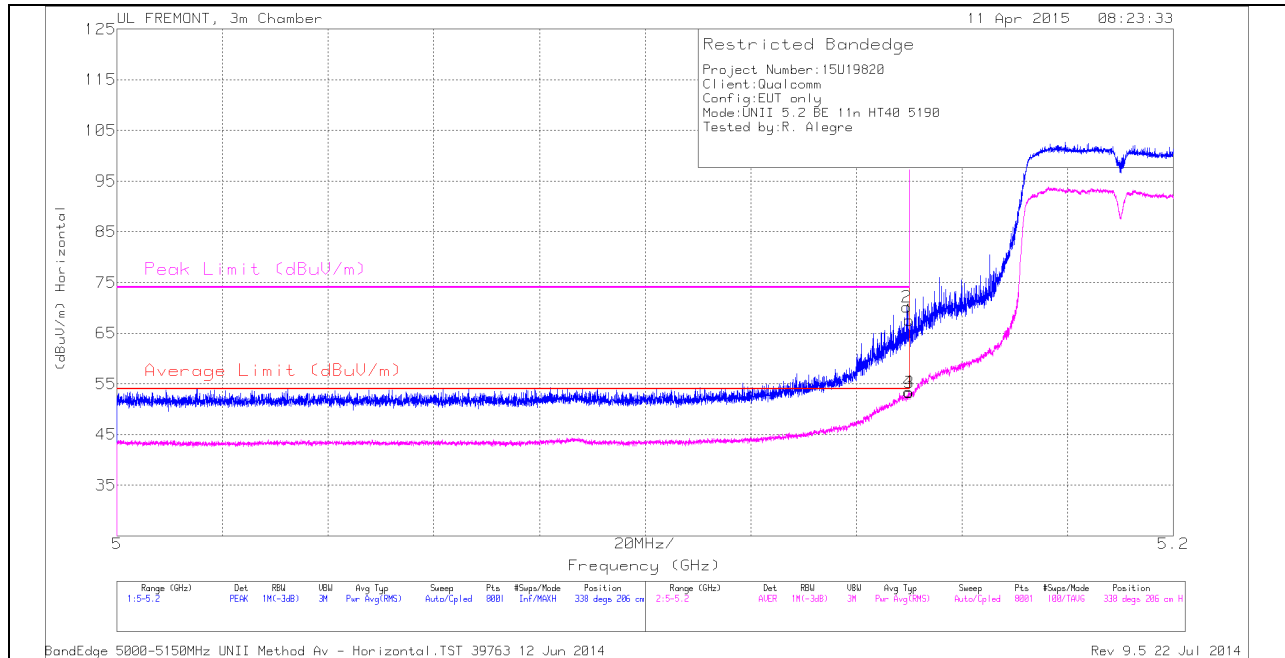
\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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

**HORIZONTAL PEAK AND AVERAGE PLOT**



**HORIZONTAL DATA**

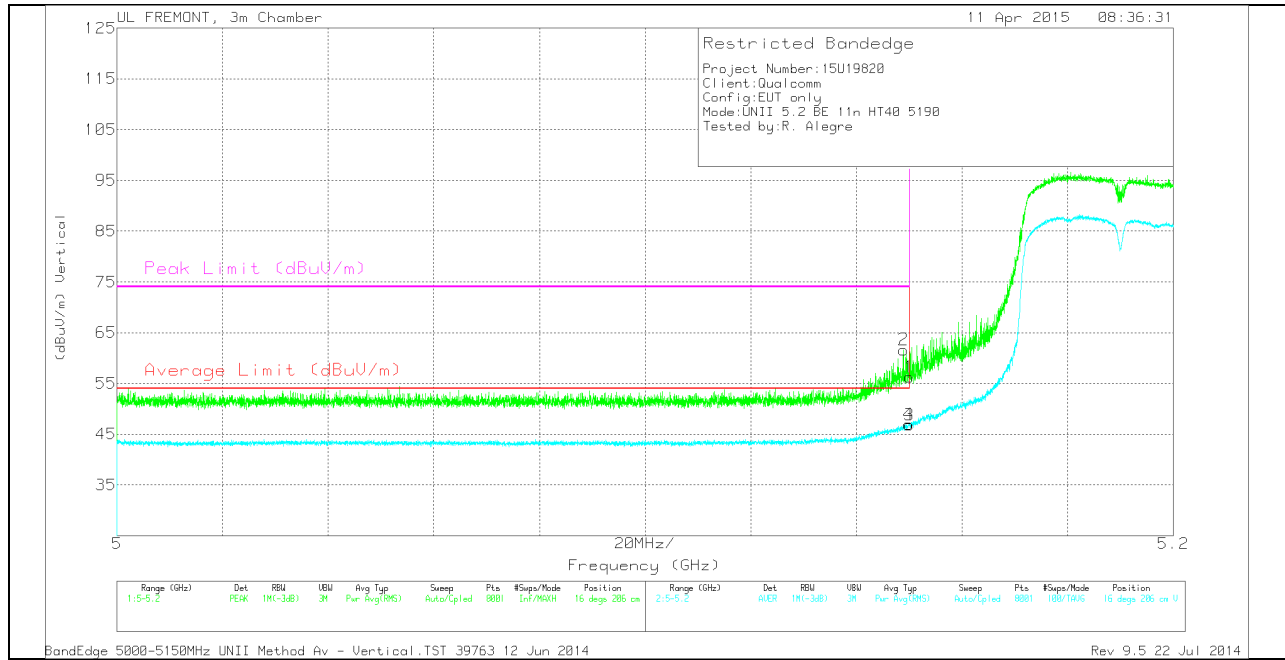
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cb/Filter/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.15	54.9	PK	34.2	-21.6	0	67.5	-	-	74	-6.5	338	206	H
2	5.15	57.61	PK	34.2	-21.6	0	70.21	-	-	74	-3.79	338	206	H
3	5.15	39.45	RMS	34.2	-21.6	1.19	53.24	54	-0.76	-	-	338	206	H
4	5.15	39.56	RMS	34.2	-21.6	1.19	53.35	54	-0.65	-	-	338	206	H

\* - indicates frequency in CFR 47, Part 15 and Industry Canada RSS-Restricted Band.

PK - Peak detector

RMS - RMS detection

**VERTICAL PEAK AND AVERAGE PLOT**



**VERTICAL DATA**

Marker	Frequency (GHz)	Meter Reading (dBUV)	Det	AF T119 (dB/m)	Amp/Cb/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBUV/m)	Average Limit (dBUV/m)	Margin (dB)	Peak Limit (dBUV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.149	49.05	PK	34.2	-21.6	0	61.65	-	-	74	-12.35	16	206	V
1	5.15	43.69	PK	34.2	-21.6	0	56.29	-	-	74	-17.71	16	206	V
3	5.15	33	RMS	34.2	-21.6	1.19	46.79	54	-7.21	-	-	16	206	V
4	5.15	33.18	RMS	34.2	-21.6	1.19	46.97	54	-7.03	-	-	16	206	V

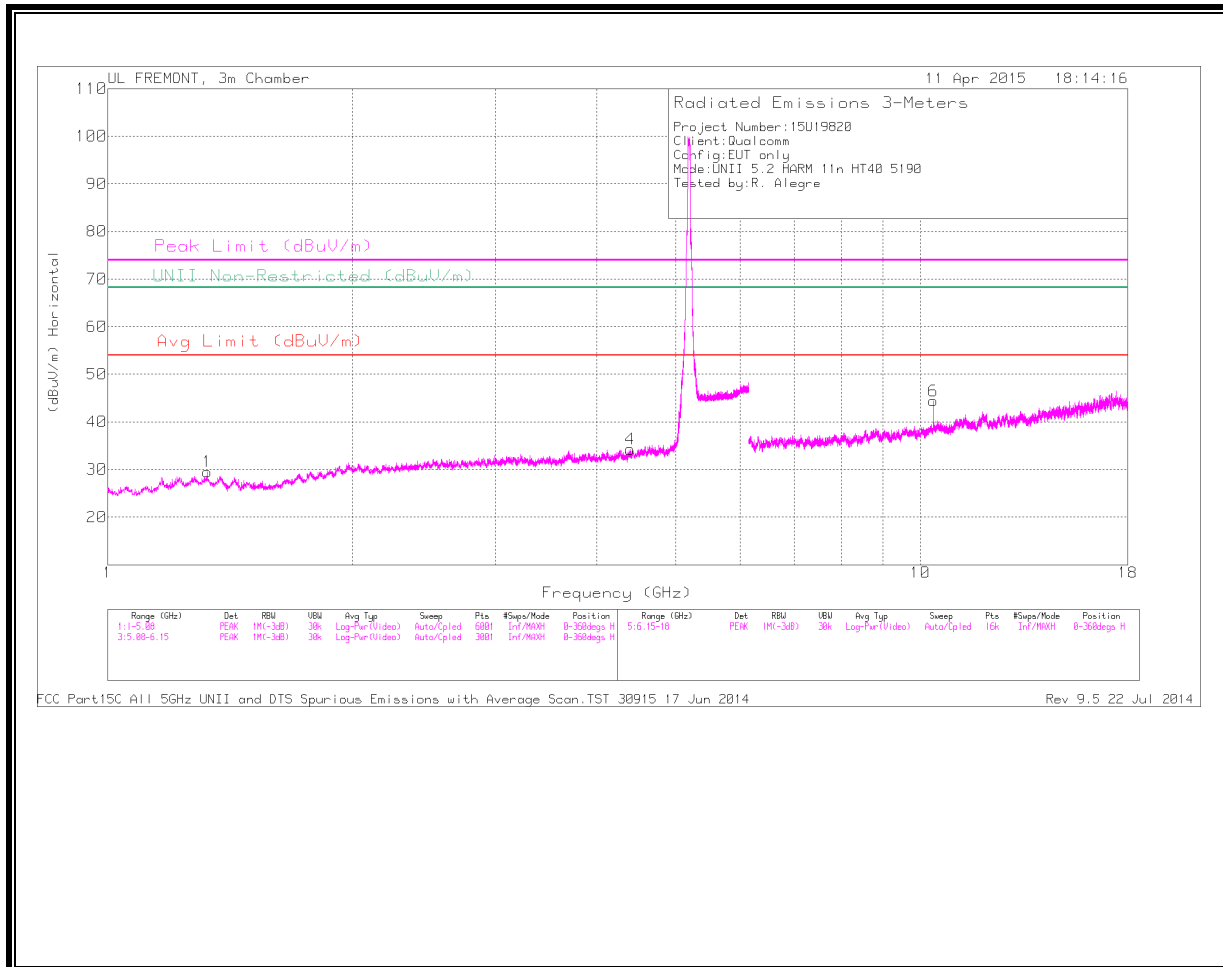
\* - indicates frequency in CFR 47, Part 15 and Industry Canada RSS-Restricted Band.

PK - Peak detector

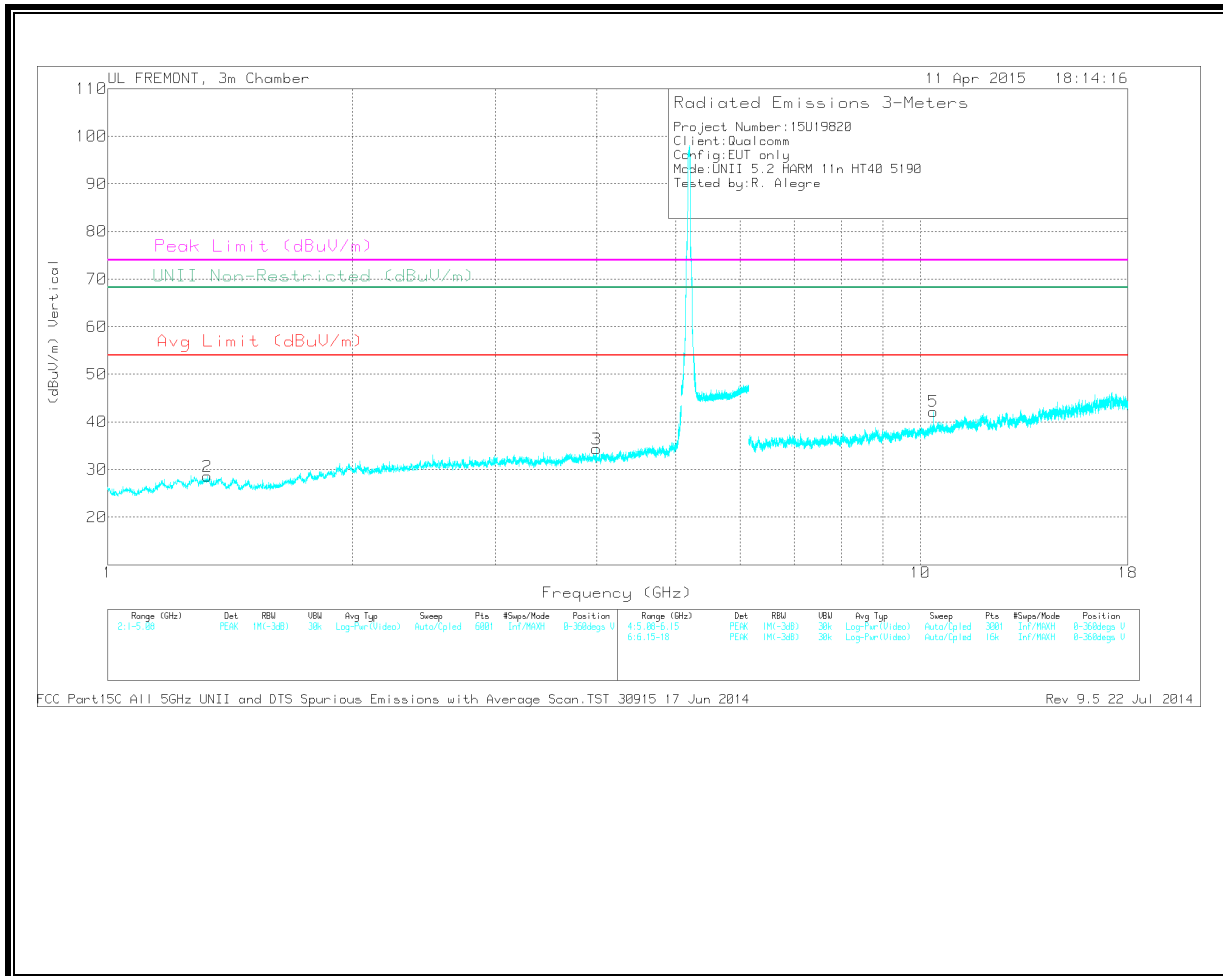
RMS - RMS detection

### HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL  
 HORIZONTAL



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



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

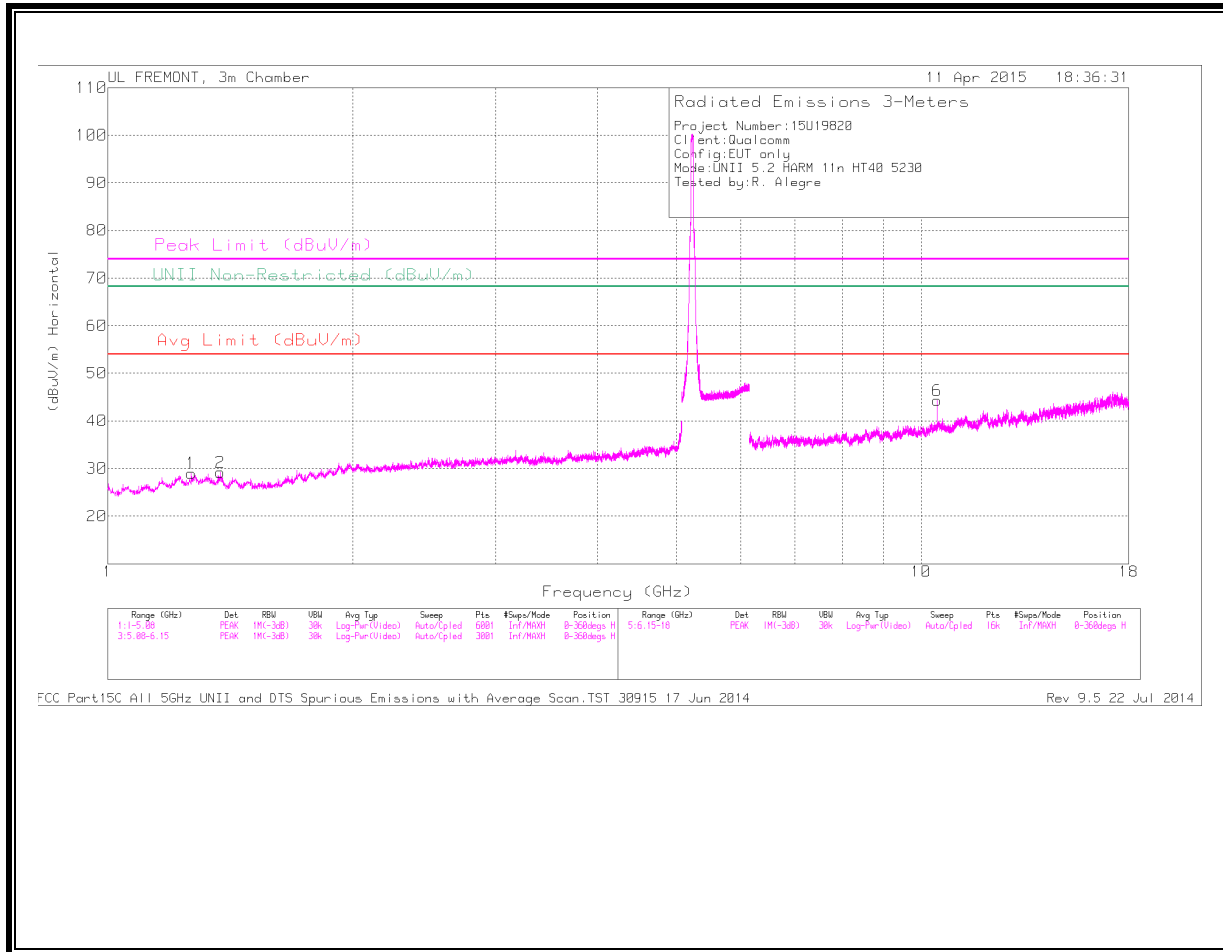
LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Chl/ Filtz/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	** 1.326	33.55	PK	29.6	-33.6	0	29.55	-	-	74	-44.45	-	-	0-360	100	H
4	** 4.393	31.58	PK	33.6	-30.9	0	34.28	-	-	74	-39.72	-	-	0-360	200	H
2	** 1.327	32.68	PK	29.5	-33.6	0	28.58	-	-	74	-45.42	-	-	0-360	100	V
3	** 3.995	32.71	PK	33.2	-31.6	0	34.31	-	-	74	-39.69	-	-	0-360	200	V
6	10.379	32.84	PK	37.2	-25.6	0	44.44	-	-	-	-	68.2	-23.76	0-360	200	H
5	10.38	30.59	PK	37.2	-25.6	0	42.19	-	-	-	-	68.2	-26.01	0-360	200	V

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

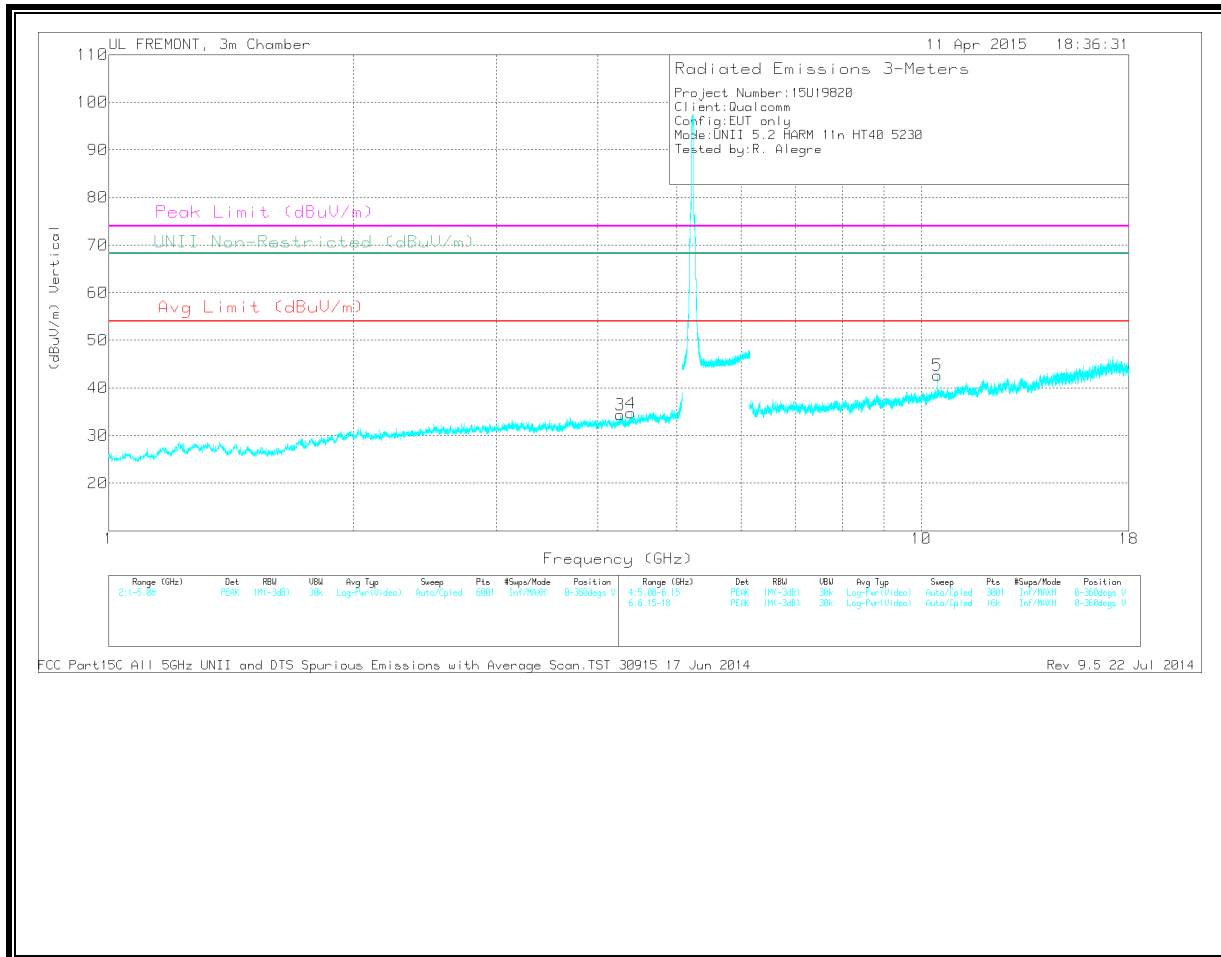
PK - Peak detector

MID CHANNEL  
HORIZONTAL



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





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

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	** 1.375	33.29	PK	28.9	-33	0	29.19	-	-	74	-44.81	-	-	0-360	100	H
3	** 4.262	31.59	PK	33.4	-30.6	0	34.39	-	-	74	-39.61	-	-	0-360	100	V
4	** 4.392	32.01	PK	33.6	-30.9	0	34.71	-	-	74	-39.29	-	-	0-360	100	V
1	1.267	32.9	PK	29.6	-33.5	0	29	-	-	74	-45	-	-	0-360	200	H
6	10.459	32.59	PK	37.4	-25.7	0	44.29	-	-	-	-	68.2	-23.91	0-360	200	H
5	10.46	30.98	PK	37.4	-25.7	0	42.68	-	-	-	-	68.2	-25.52	0-360	200	V

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

PK - Peak detector

### Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr/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
10.46	38.64	PK1	37.4	-25.7	0	50.34	-	-	-	-	68.2	-17.86	62	187	H
10.46	29.88	AD1	37.4	-25.7	1.19	42.77	-	-	-	-	-	-	62	187	H

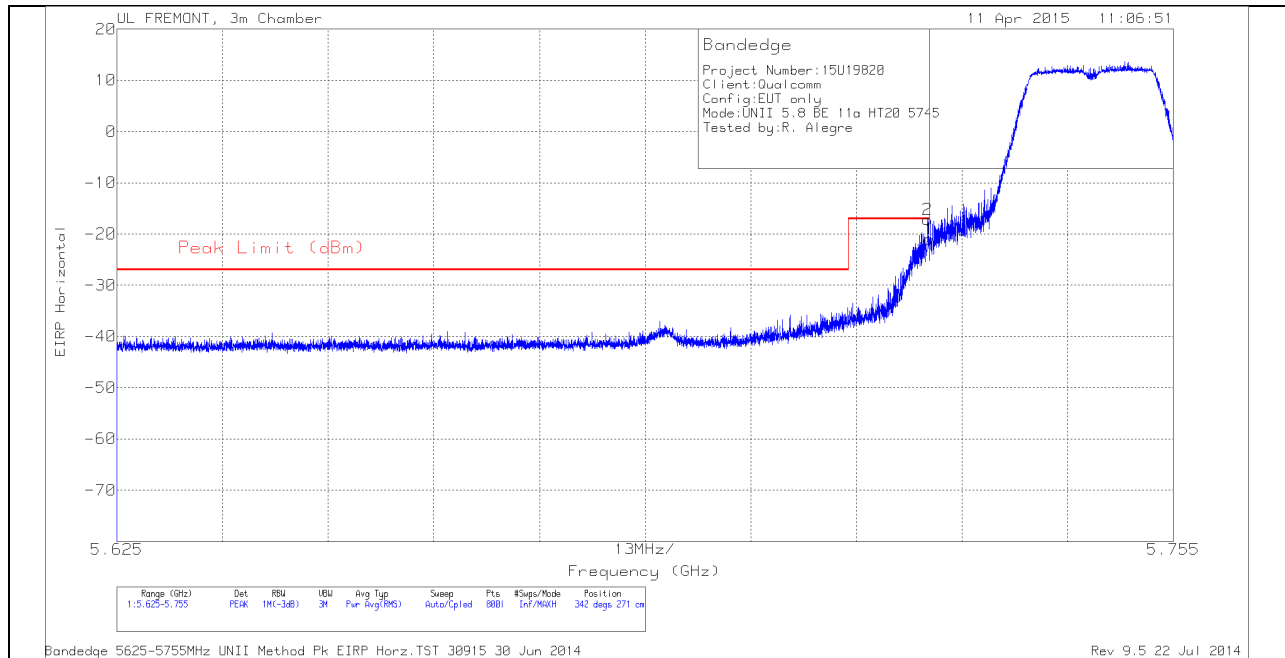
\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

**11.2. 5.8 GHz**

**11.2.1. TX ABOVE 1 GHz 802.11a MODE IN THE 5.8 GHz BAND  
 RESTRICTED BANDEDGE (LOW CHANNEL)  
 HORIZONTAL PEAK AND AVERAGE PLOT**



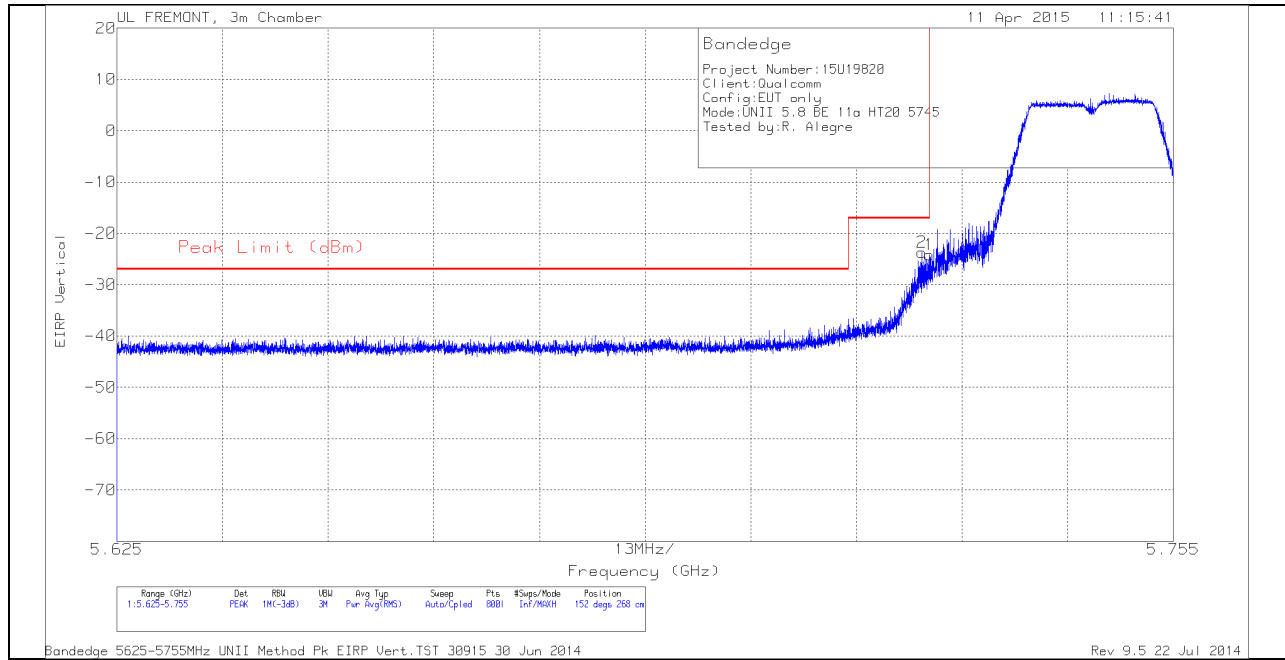
**HORIZONTAL DATA**

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AFT119 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-46.5	PK	34.8	-21.1	11.8	0	-21	-17	-4	342	271	H
2	5.725	-42.71	PK	34.8	-21.1	11.8	0	-17.21	-17	-21	342	271	H

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

PK - Peak detector

**VERTICAL PEAK AND AVERAGE PLOT**



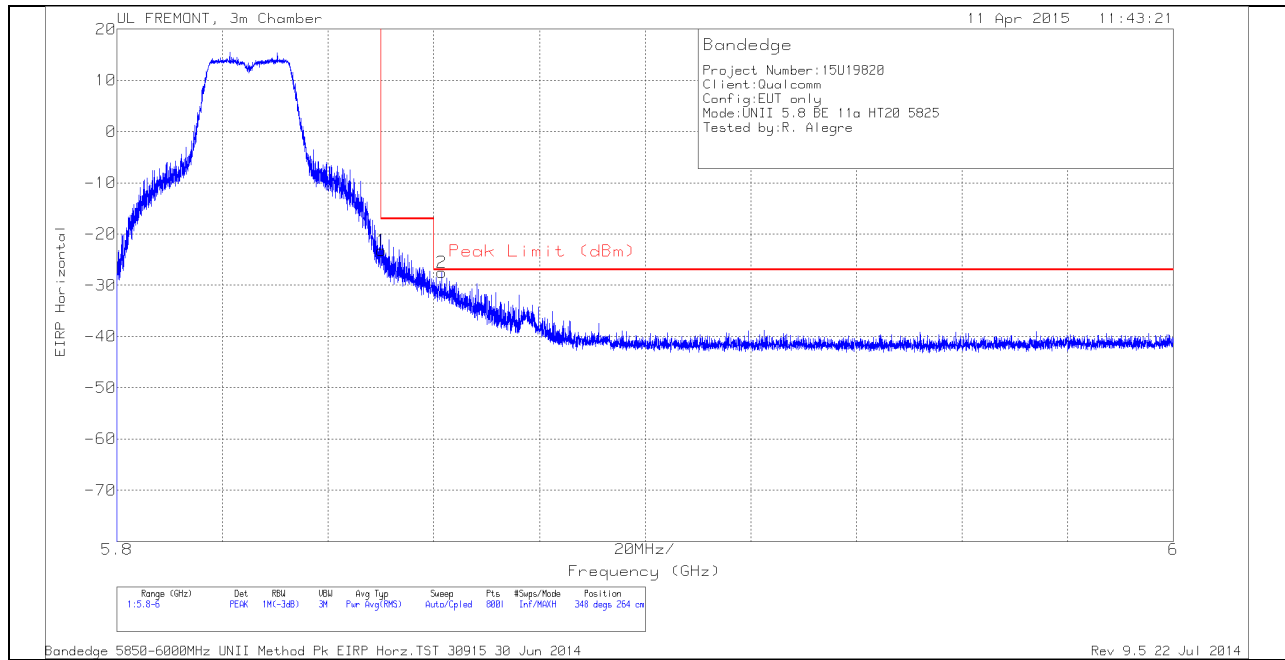
**VERTICAL DATA**

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AFT119 (dB/m)	Amp/Cb/ Ftr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.724	-49.28	PK	34.8	-21	11.8	0	-23.68	-17	-6.68	152	268	V
1	5.725	-49.64	PK	34.8	-21.1	11.8	0	-24.14	-17	-7.14	152	268	V

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

PK - Peak detector

**AUTHORIZED BANDEDGE (HIGH CHANNEL)  
 HORIZONTAL PEAK AND AVERAGE PLOT**



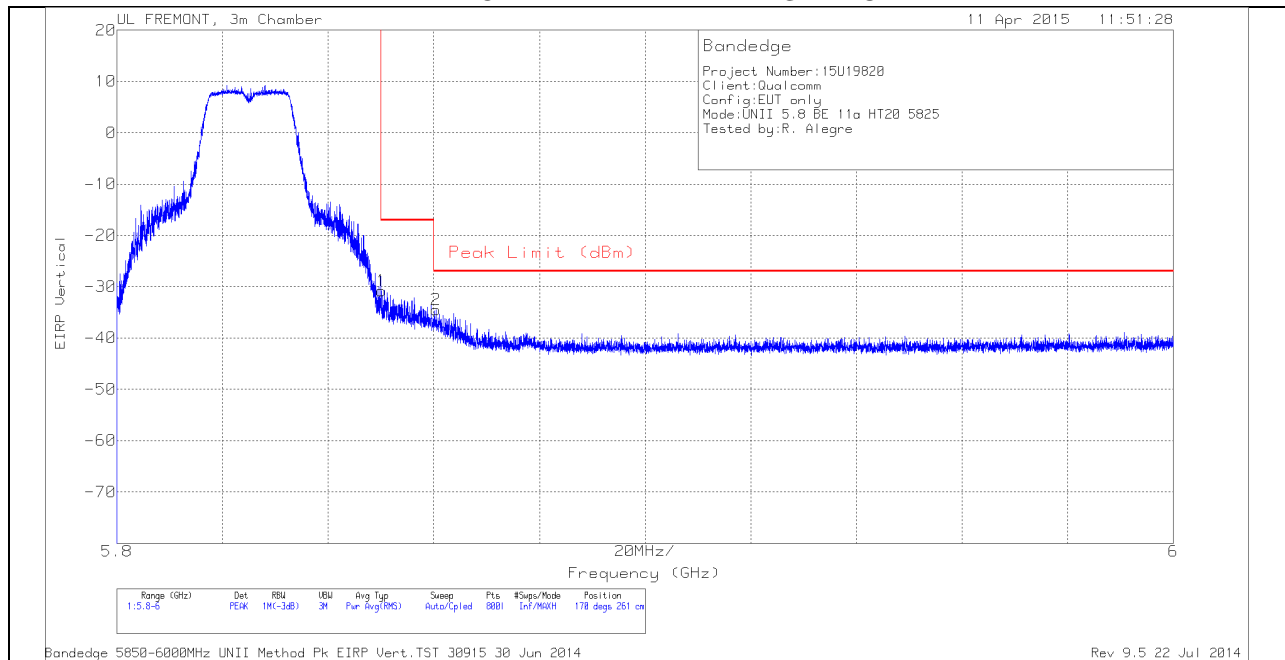
**HORIZONTAL DATA**

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cb/ Ftr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-48.56	PK	34.9	-21.3	11.8	0	-23.16	-17	-6.16	348	264	H
2	5.861	-52.89	PK	34.9	-21.3	11.8	0	-27.49	-27	-4.9	348	264	H

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

PK - Peak detector

**VERTICAL PEAK AND AVERAGE PLOT**



**VERTICAL DATA**

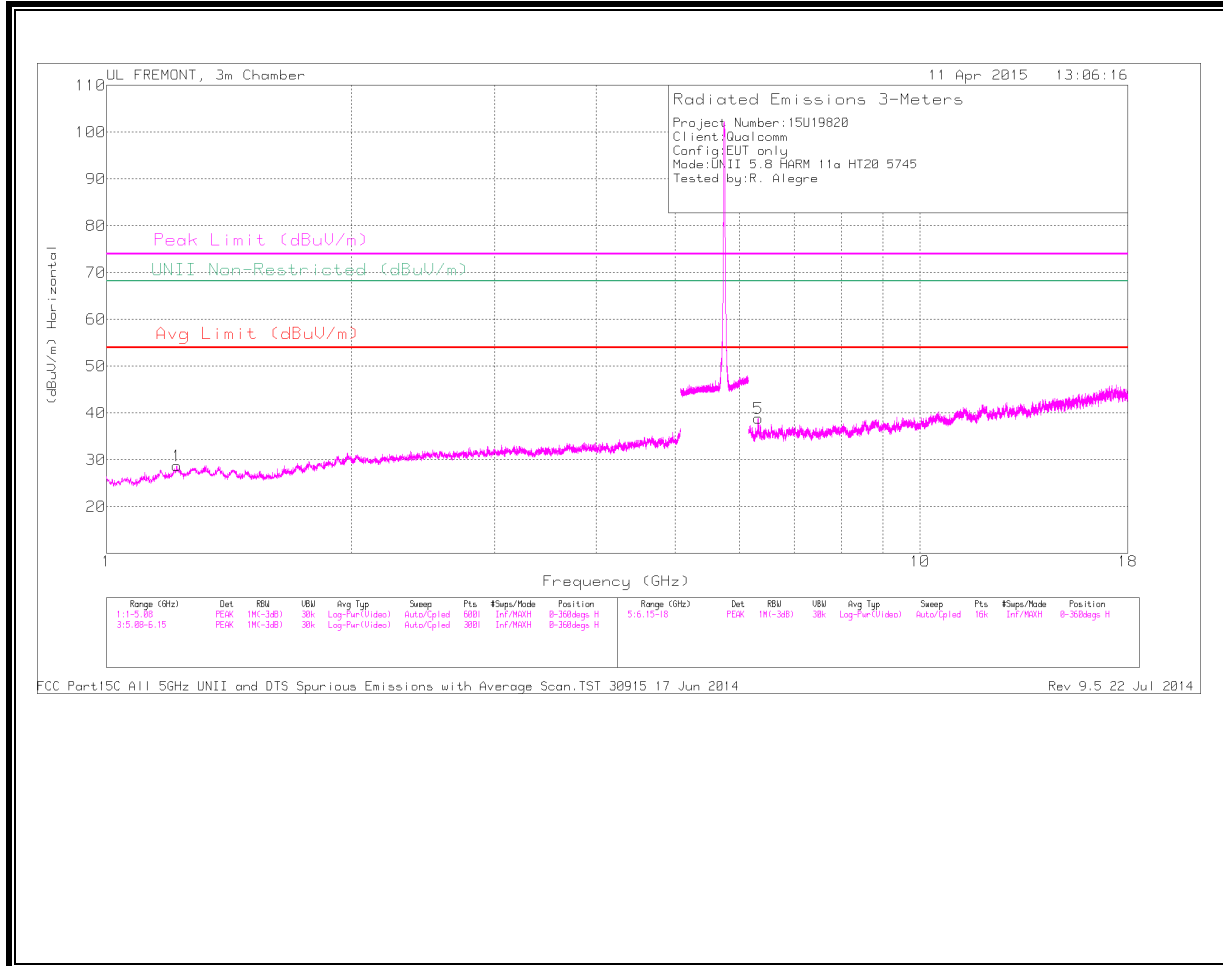
Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AFT119 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-56.21	PK	34.9	-21.3	11.8	0	-30.81	-17	-13.81	170	261	V
2	5.86	-59.85	PK	34.9	-21.3	11.8	0	-34.45	-27	-7.45	170	261	V

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

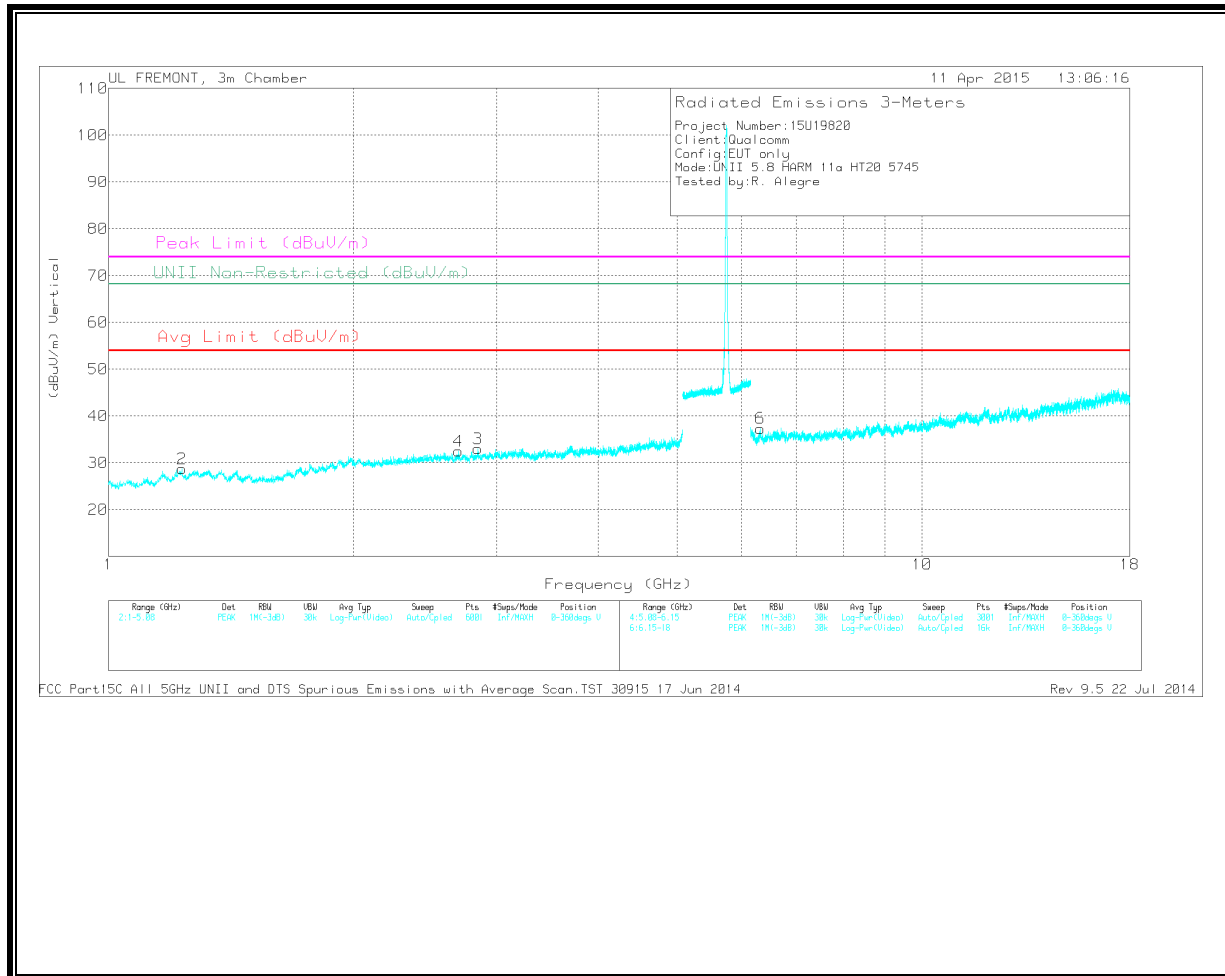
PK - Peak detector

**HARMONICS AND SPURIOUS EMISSIONS**

**LOW CHANNEL  
 HORIZONTAL**



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



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



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	** 1.22	32.91	PK	29.1	-33.2	0	28.81	-	-	74	-45.19	-	-	0-360	100	H
2	** 1.231	32.81	PK	29.2	-33.3	0	28.71	-	-	74	-45.29	-	-	0-360	200	V
3	** 2.845	32.8	PK	32.6	-32.4	0	33	-	-	74	-41	-	-	0-360	200	V
4	** 2.692	32.49	PK	32.3	-32.3	0	32.49	-	-	74	-41.51	-	-	0-360	100	V
5	6.323	32.78	PK	35.4	-29.3	0	38.88	-	-	-	-	68.2	-29.32	0-360	200	H
6	6.323	31.29	PK	35.4	-29.3	0	37.39	-	-	-	-	68.2	-30.81	0-360	100	V

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

PK - Peak detector

### Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6.322	40.5	PK1	35.4	-29.4	0	46.5	-	-	-	-	68.2	-21.7	283	200	H
6.324	28.78	AD1	35.4	-29.3	.6	35.48	-	-	-	-	-	-	283	200	H

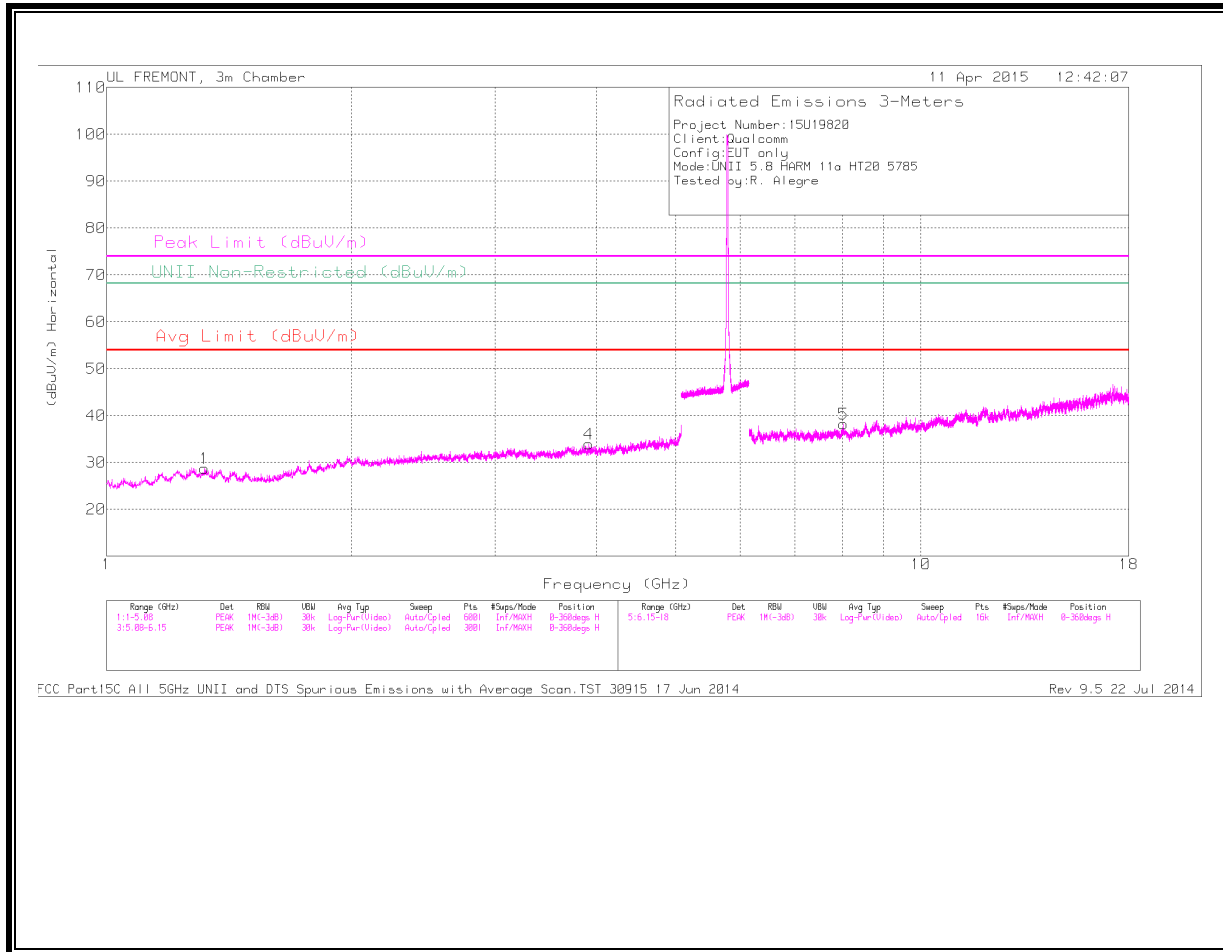
\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

PK1 - KDB789033 Method: Peak

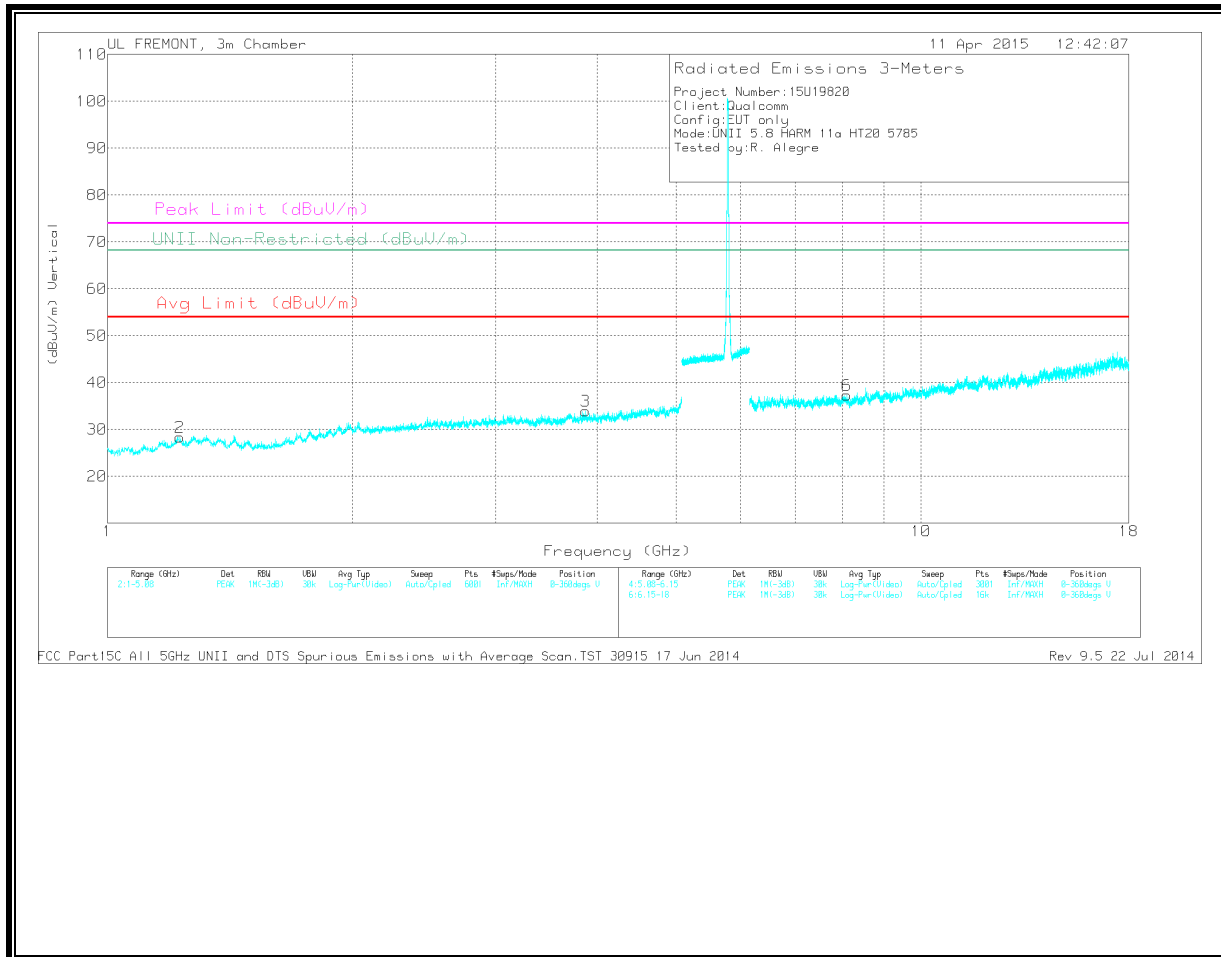
AD1 - KDB789033 Method: AD Primary Power Average

MID CHANNEL

HORIZONTAL



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



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

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	** 1.32	32.73	PK	29.6	-33.6	0	28.73	-	-	74	-45.27	-	-	0-360	100	H
4	** 3.907	31.6	PK	33.2	-30.9	0	33.9	-	-	74	-40.1	-	-	0-360	100	H
2	** 1.226	32.51	PK	29.2	-33.3	0	28.41	-	-	74	-45.59	-	-	0-360	100	V
3	** 3.869	31.96	PK	33.1	-31.1	0	33.96	-	-	74	-40.04	-	-	0-360	200	V
5	** 8.04	30.18	PK	35.7	-27.7	0	38.18	-	-	74	-35.82	-	-	0-360	100	H
6	** 8.099	28.92	PK	35.7	-27.3	0	37.32	-	-	74	-36.68	-	-	0-360	100	V

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

PK - Peak detector

### Radiated Emissions

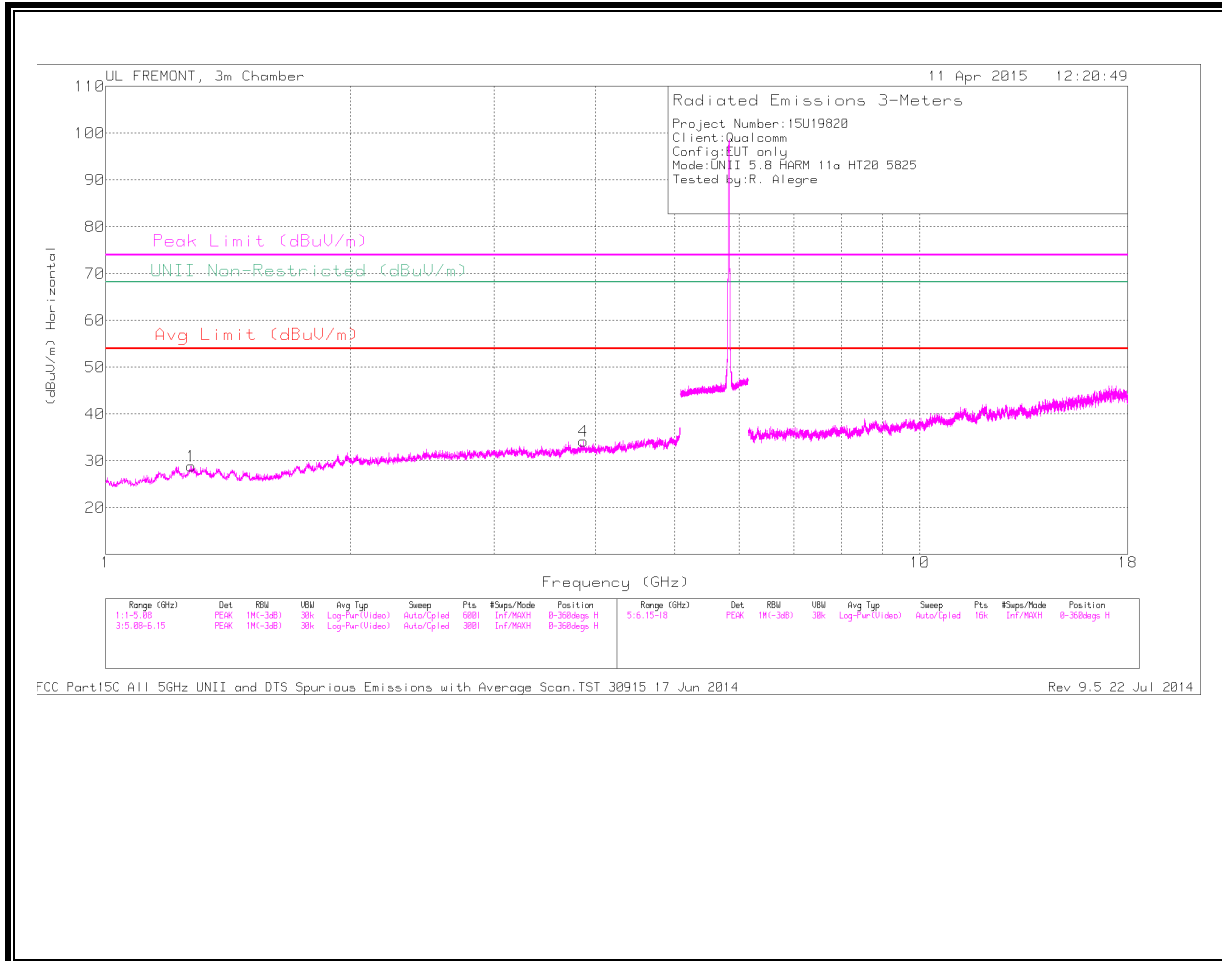
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
** 8.041	38.6	PK1	35.7	-27.7	0	46.6	-	-	74	-27.4	-	-	256	100	H
** 8.041	27.05	AD1	35.7	-27.7	.6	35.65	54	-18.35	-	-	-	-	256	100	H

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

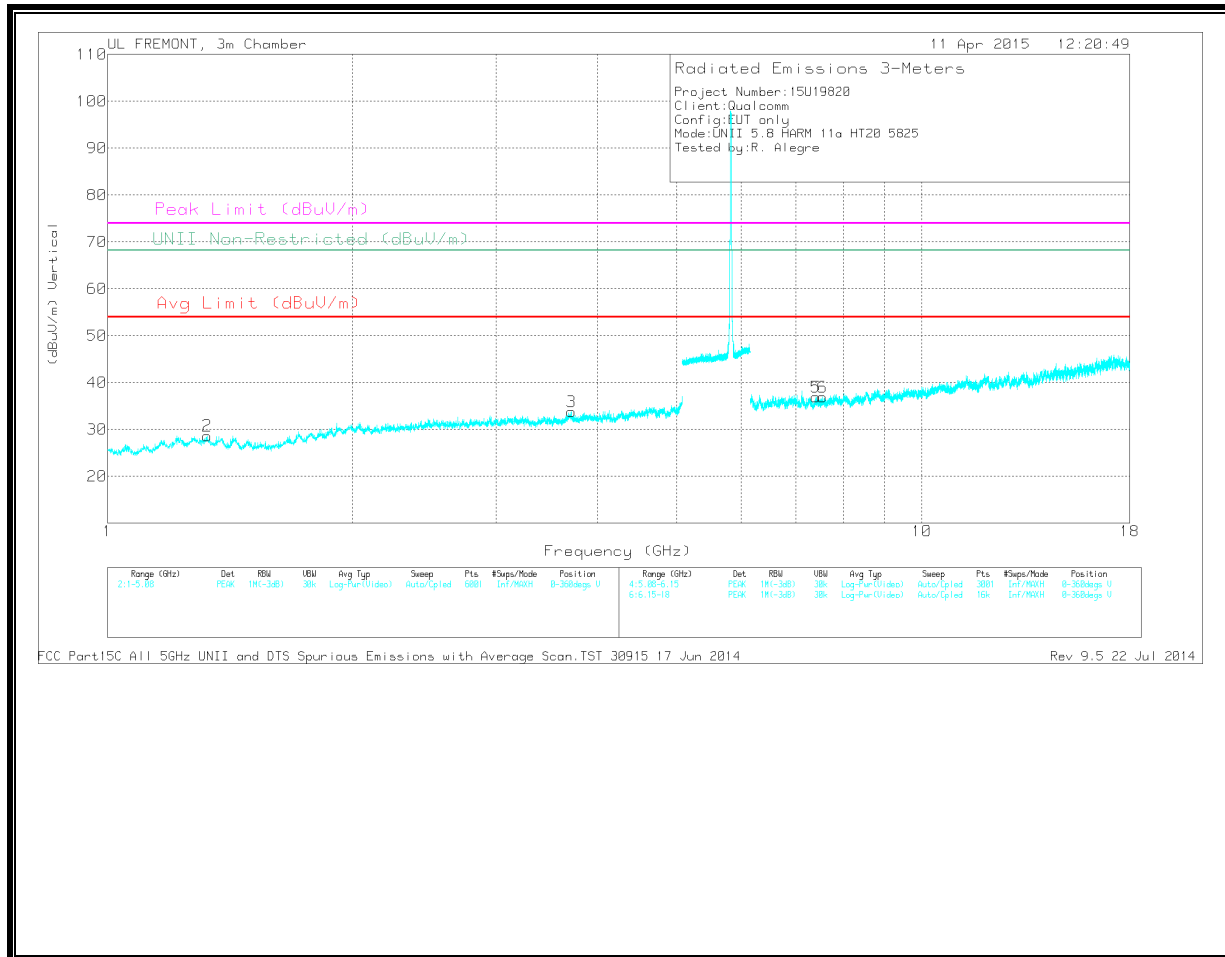
PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

HIGH CHANNEL  
 HORIZONTAL



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



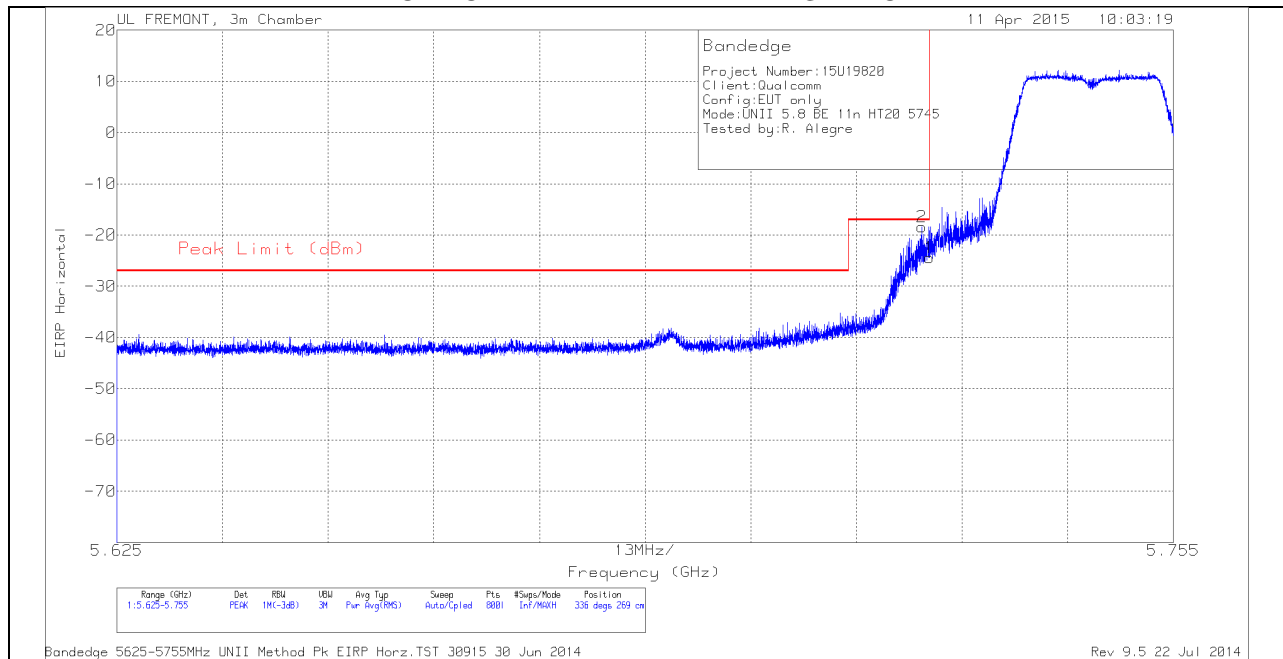
Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	** 3.861	32	PK	33.1	-30.9	0	34.2	-	-	74	-39.8	-	-	0-360	100	H
2	** 1.326	32.69	PK	29.6	-33.6	0	28.69	-	-	74	-45.31	-	-	0-360	100	V
3	** 3.711	31.72	PK	33	-30.9	0	33.82	-	-	74	-40.18	-	-	0-360	200	V
5	** 7.407	29.9	PK	35.6	-28.6	0	36.9	-	-	74	-37.1	-	-	0-360	100	V
6	** 7.556	29.87	PK	35.7	-28.6	0	36.97	-	-	74	-37.03	-	-	0-360	100	V
1	1.273	32.78	PK	29.6	-33.5	0	28.88	-	-	74	-45.12	-	-	0-360	100	H

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

PK - Peak detector

**11.2.2. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.8 GHz BAND  
 RESTRICTED BANDEDGE (LOW CHANNEL)  
 HORIZONTAL PEAK AND AVERAGE PLOT**



**HORIZONTAL DATA**

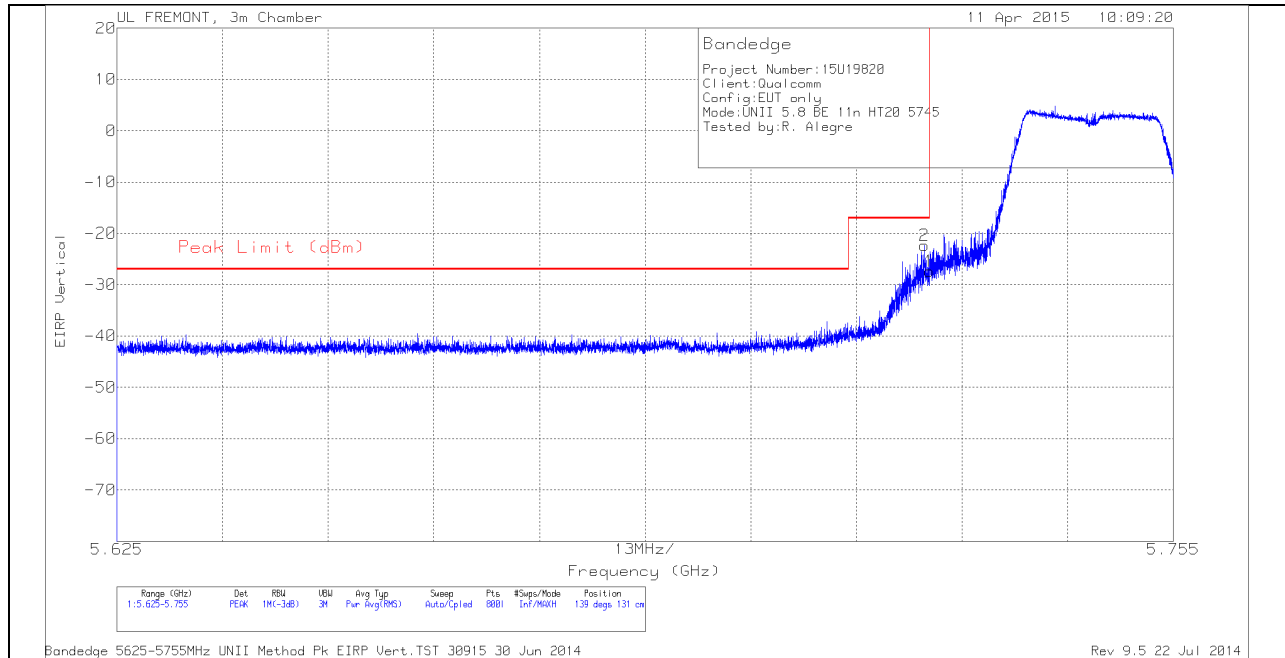
Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cb/ Fitr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.724	-43.97	PK	34.8	-21	11.8	0	-18.37	-17	-1.37	336	269	H
1	5.725	-49.91	PK	34.8	-21.1	11.8	0	-24.41	-17	-7.41	336	269	H

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

PK - Peak detector



**VERTICAL PEAK AND AVERAGE PLOT**



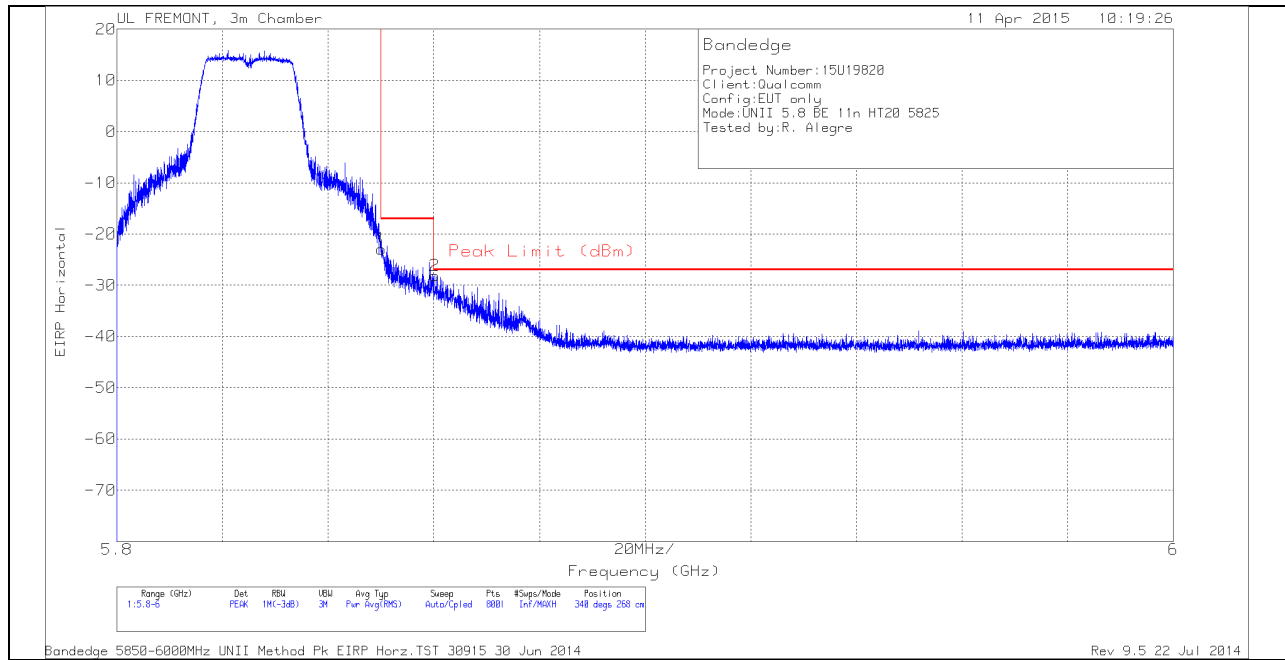
**VERTICAL DATA**

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AFT119 (dB/m)	Amp/Cb/ Ftr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.724	-47.9	PK	34.8	-21	11.8	0	-22.3	-17	-5.3	139	131	V
1	5.725	-52.88	PK	34.8	-21.1	11.8	0	-27.38	-17	-10.38	139	131	V

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

PK - Peak detector

**AUTHORIZED BANDEDGE (HIGH CHANNEL)  
 HORIZONTAL PEAK AND AVERAGE PLOT**



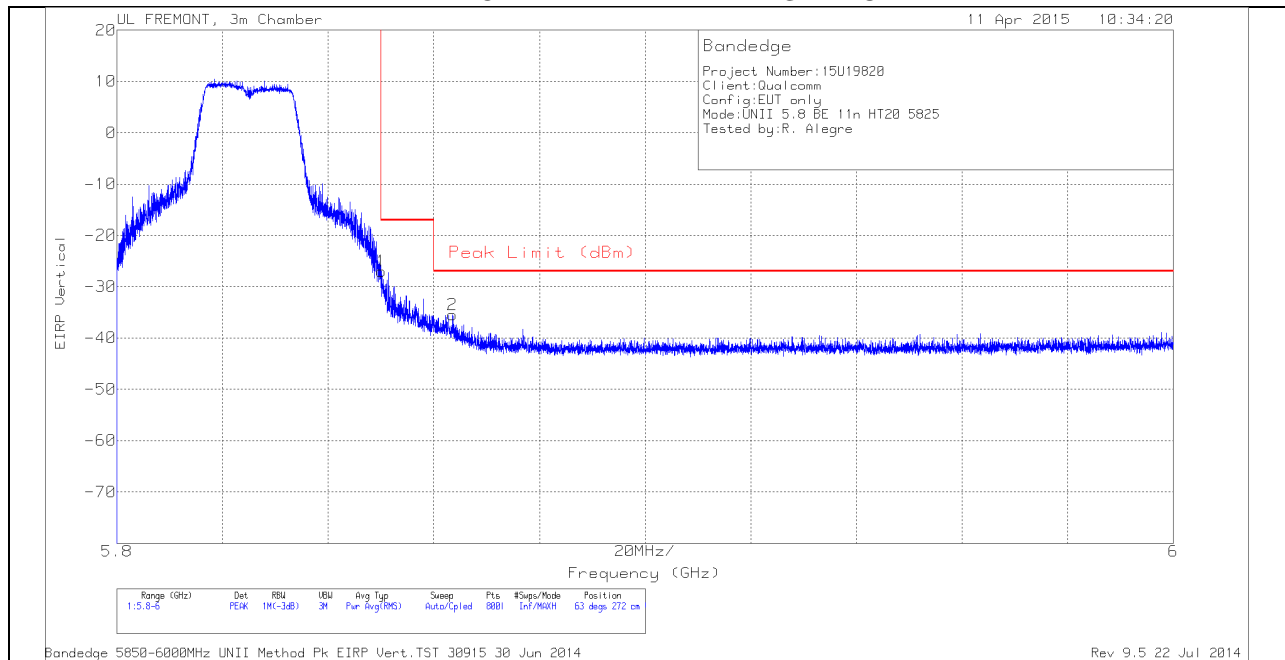
**HORIZONTAL DATA**

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cb/ Ftr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-48.29	PK	34.9	-21.3	11.8	0	-22.89	-17	-5.89	340	268	H
2	5.86	-53.53	PK	34.9	-21.3	11.8	0	-28.13	-27	-1.13	340	268	H

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

PK - Peak detector

**VERTICAL PEAK AND AVERAGE PLOT**



**VERTICAL DATA**

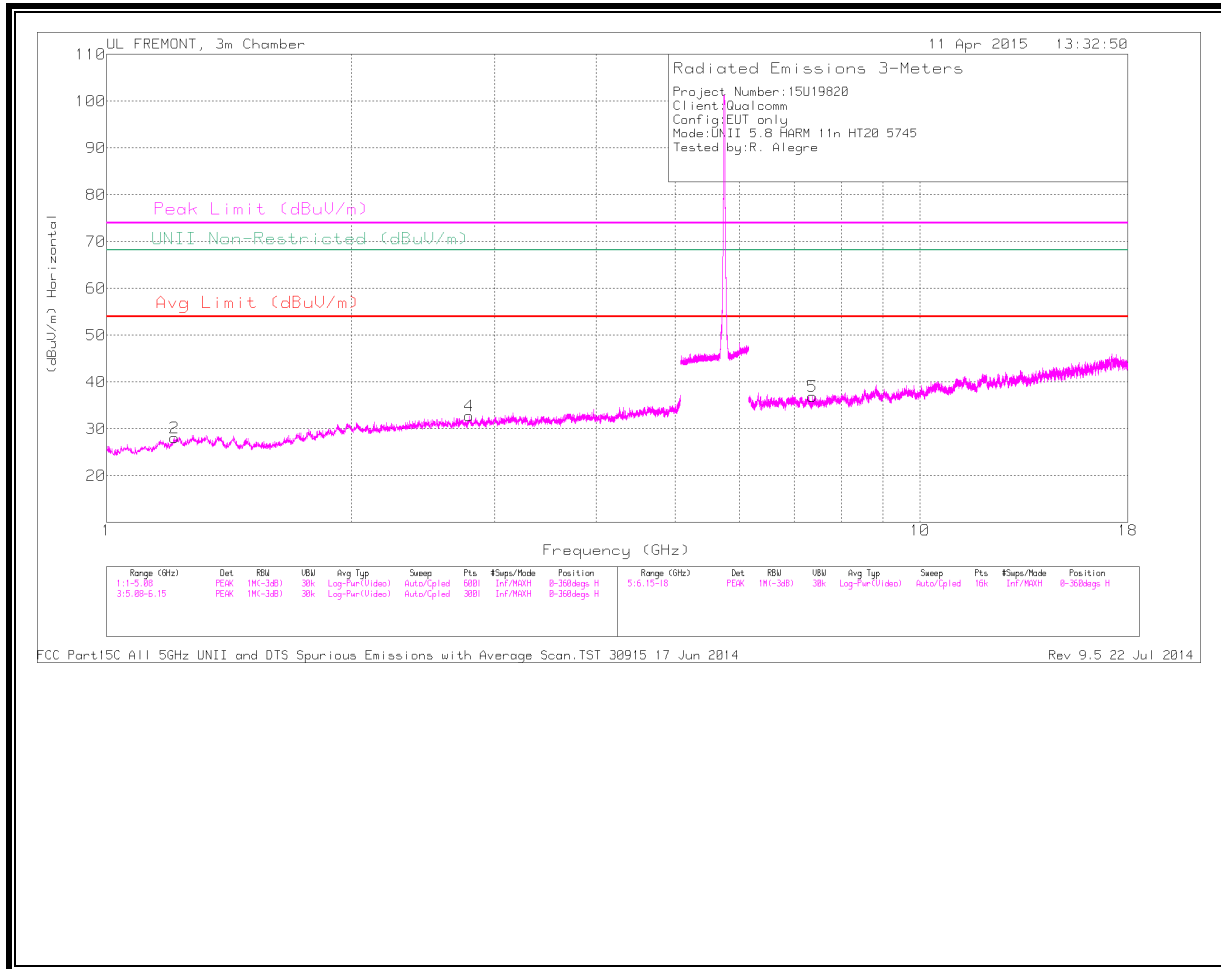
Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AFT119 (dB/m)	Amp/Cb/ Ftr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-52.41	PK	34.9	-21.3	11.8	0	-27.01	-17	-10.01	63	272	V
2	5.864	-60.86	PK	34.9	-21.3	11.8	0	-35.46	-27	-8.46	63	272	V

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

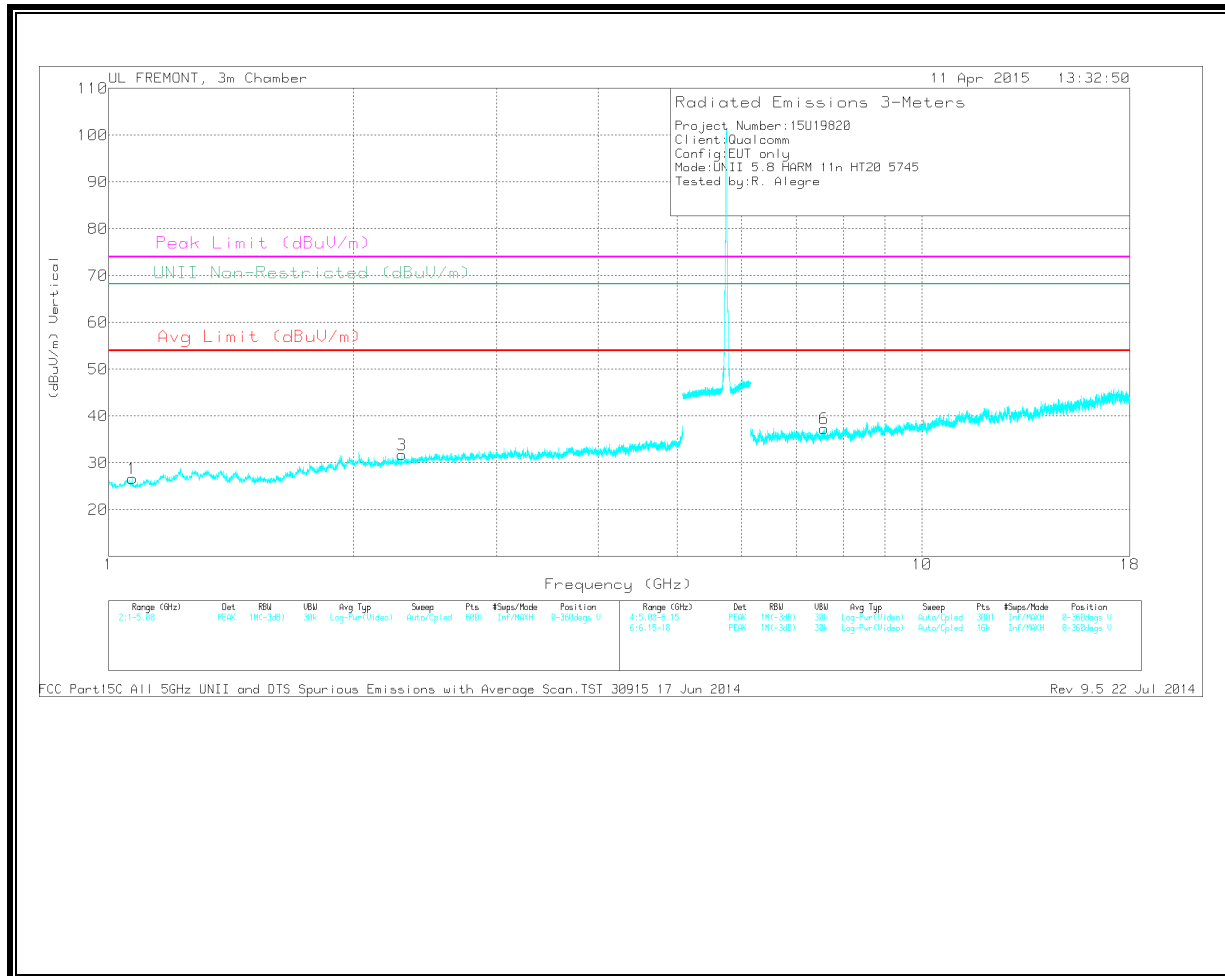
PK - Peak detector

**HARMONICS AND SPURIOUS EMISSIONS**

LOW CHANNEL  
 HORIZONTAL



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



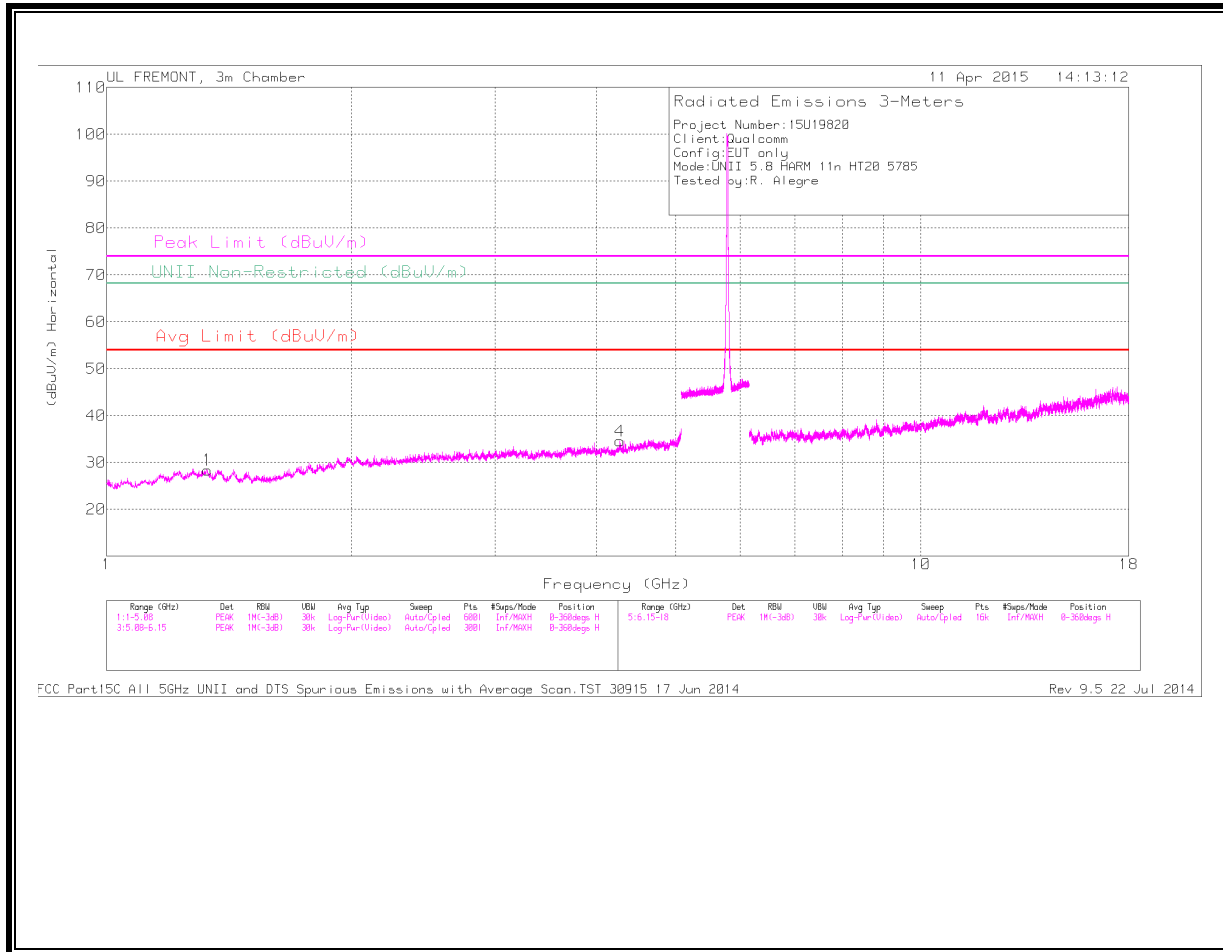
Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	** 1.212	32.24	PK	29	-33.1	0	28.14	-	-	74	-45.86	-	-	0-360	200	H
4	** 2.788	32.59	PK	32.6	-32.4	0	32.79	-	-	74	-41.21	-	-	0-360	200	H
1	** 1.07	33.02	PK	27.3	-33.6	0	26.72	-	-	74	-47.28	-	-	0-360	100	V
3	** 2.293	32.59	PK	31.6	-32.5	0	31.69	-	-	74	-42.31	-	-	0-360	200	V
5	** 7.372	30.32	PK	35.6	-29	0	36.92	-	-	74	-37.08	-	-	0-360	200	H
6	** 7.581	30.18	PK	35.7	-28.6	0	37.28	-	-	74	-36.72	-	-	0-360	100	V

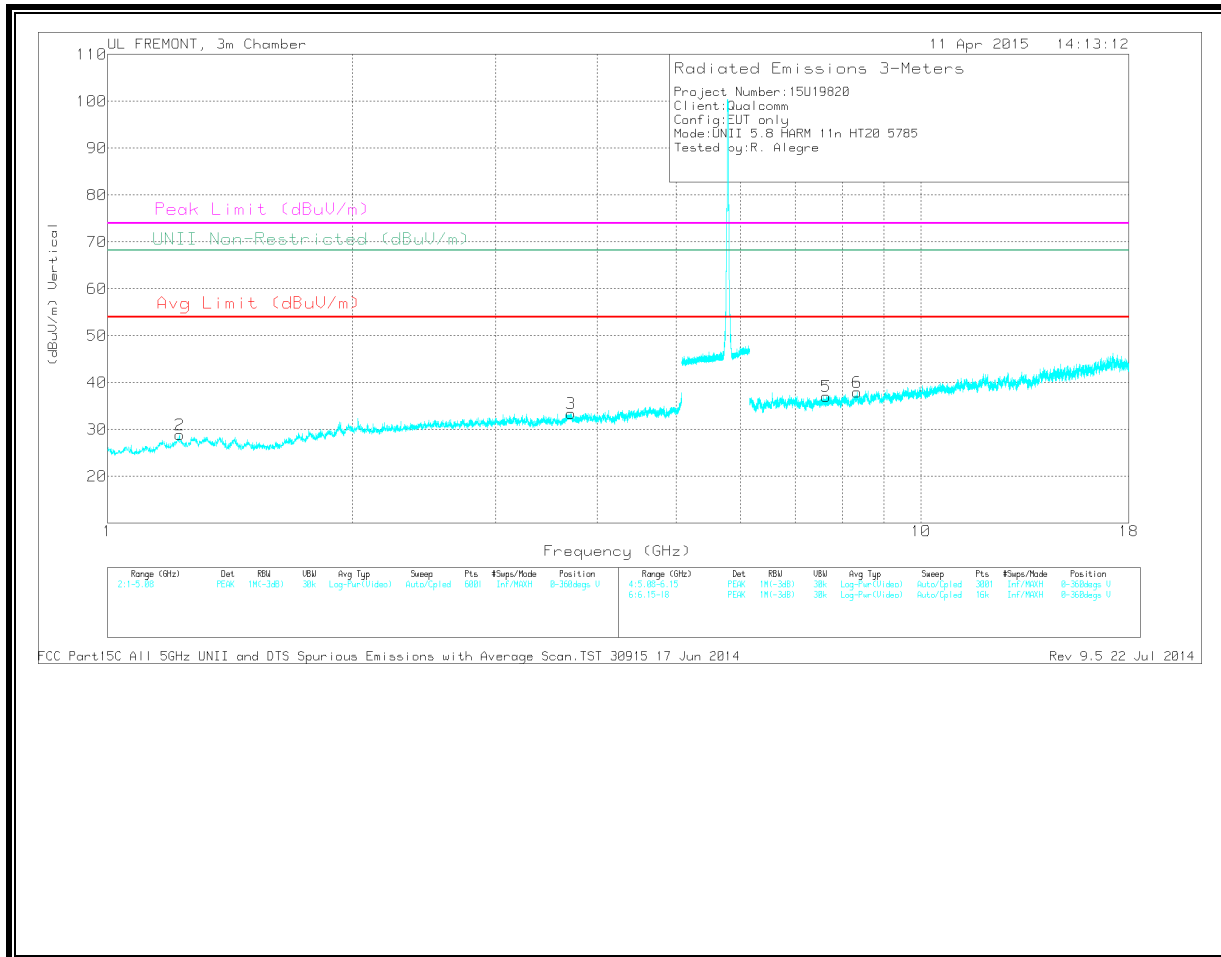
\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

PK - Peak detector

MID CHANNEL  
HORIZONTAL



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



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



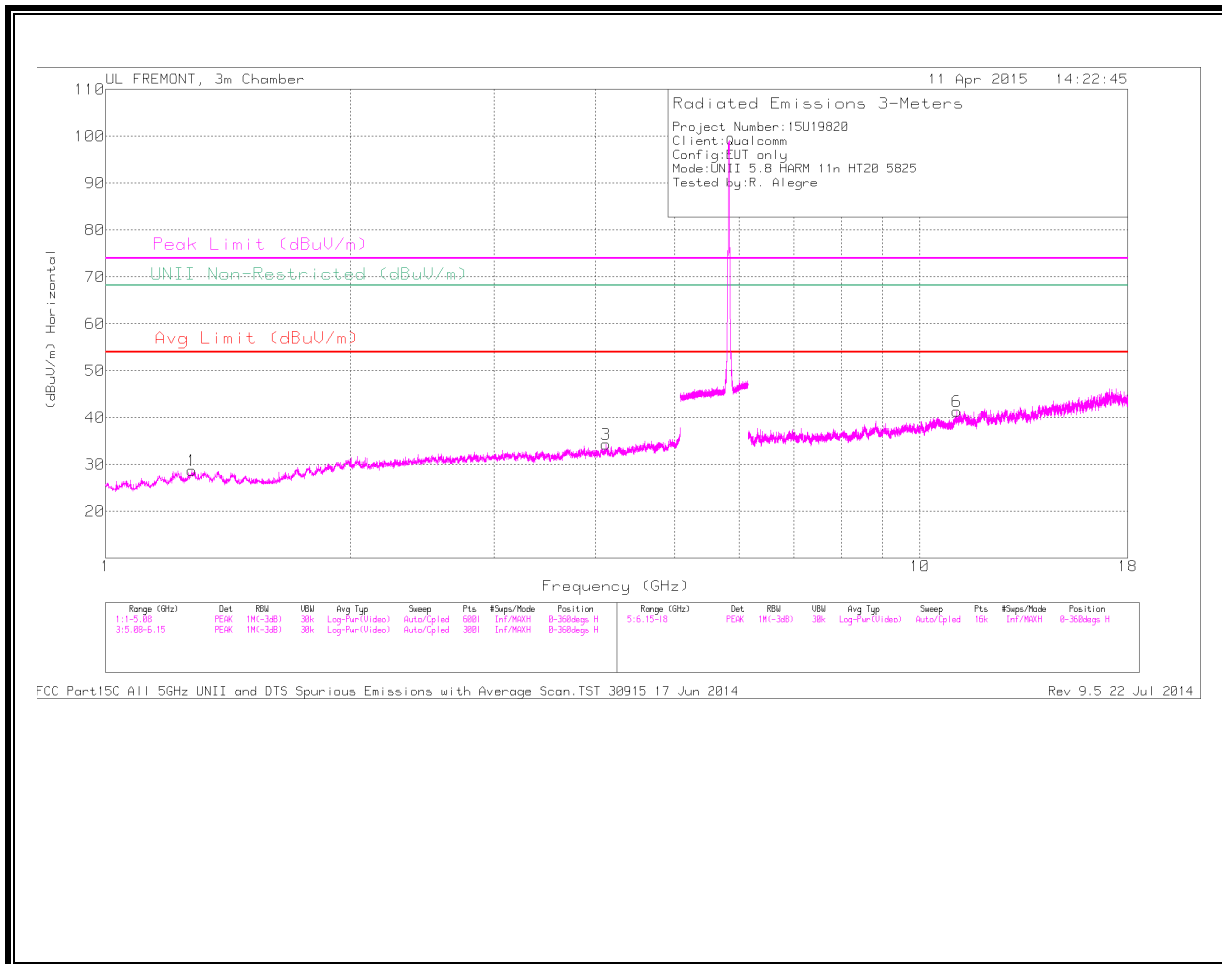
MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	** 1.33	32.53	PK	29.5	-33.6	0	28.43	-	-	74	-45.57	-	-	0-360	100	H
4	** 4.271	31.45	PK	33.4	-30.3	0	34.55	-	-	74	-39.45	-	-	0-360	100	H
2	** 1.227	32.93	PK	29.2	-33.3	0	28.83	-	-	74	-45.17	-	-	0-360	100	V
3	** 3.711	31.33	PK	33	-30.9	0	33.43	-	-	74	-40.57	-	-	0-360	100	V
5	** 7.641	29.81	PK	35.8	-28.6	0	37.01	-	-	74	-36.99	-	-	0-360	100	V
6	** 8.341	28.61	PK	35.8	-26.4	0	38.01	-	-	74	-35.99	-	-	0-360	200	V

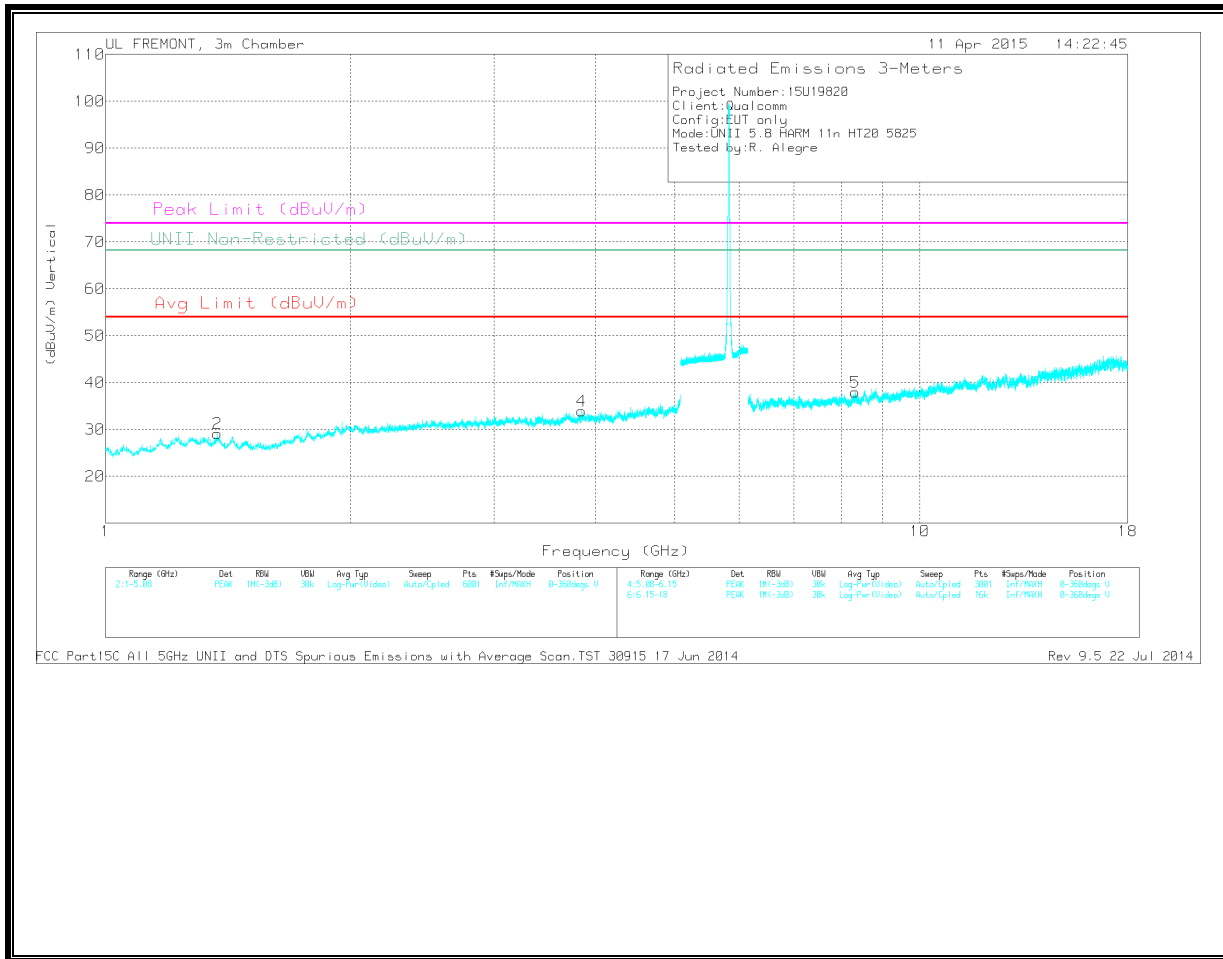
\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

PK - Peak detector

HIGH CHANNEL  
 HORIZONTAL



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



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

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Chl/ Filtz/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	** 4.115	31.79	PK	33.3	-30.8	0	34.29	-	-	74	-39.71	-	-	0-360	100	H
2	** 1.373	33.25	PK	29	-33.1	0	29.15	-	-	74	-44.85	-	-	0-360	200	V
4	** 3.84	31.78	PK	33.1	-30.9	0	33.98	-	-	74	-40.02	-	-	0-360	100	V
6	** 11.099	28.8	PK	37.8	-25.3	0	41.3	-	-	74	-32.7	-	-	0-360	100	H
5	** 8.334	28.58	PK	35.8	-26.4	0	37.98	-	-	74	-36.02	-	-	0-360	100	V
1	1.277	32.53	PK	29.7	-33.5	0	28.73	-	-	74	-45.27	-	-	0-360	100	H

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

PK - Peak detector

### Radiated Emissions

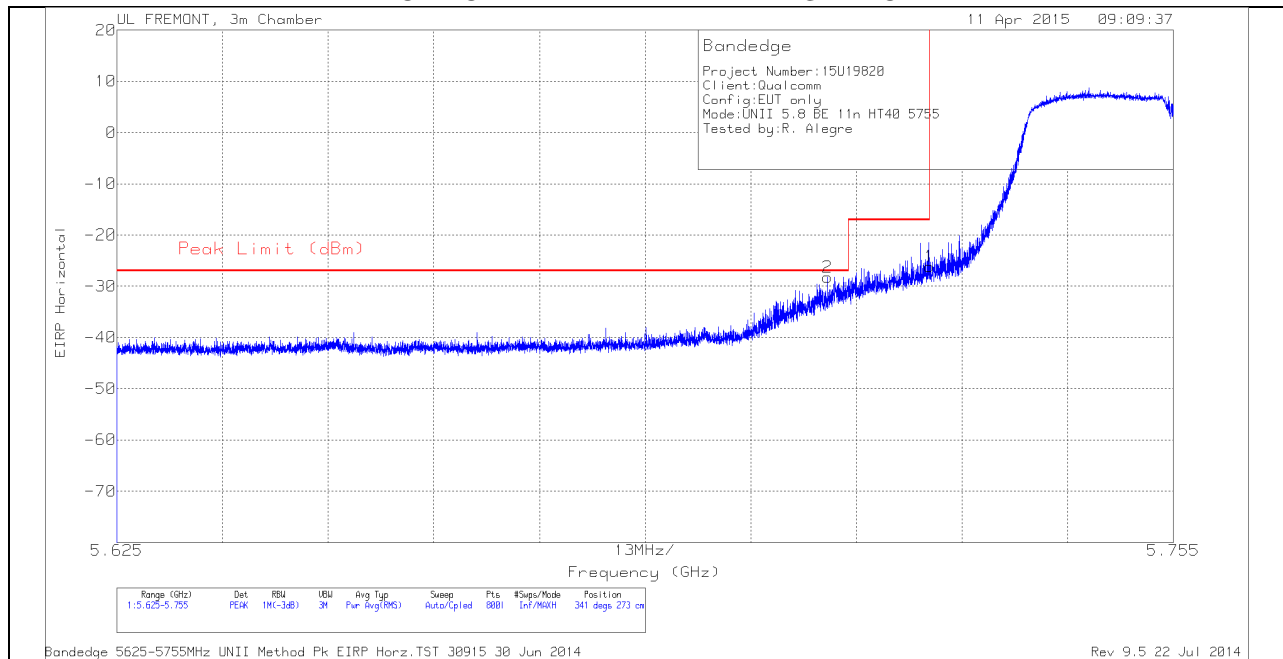
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Chl/ Filtz/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
** 11.101	36.63	PK1	37.8	-25.3	0	49.13	-	-	74	-24.87	-	-	289	100	H
** 11.098	25.35	AD1	37.8	-25.3	.64	38.49	54	-15.51	-	-	-	-	289	100	H

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

**11.2.3. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.8 GHz BAND  
 RESTRICTED BANDEDGE (LOW CHANNEL)  
 HORIZONTAL PEAK AND AVERAGE PLOT**



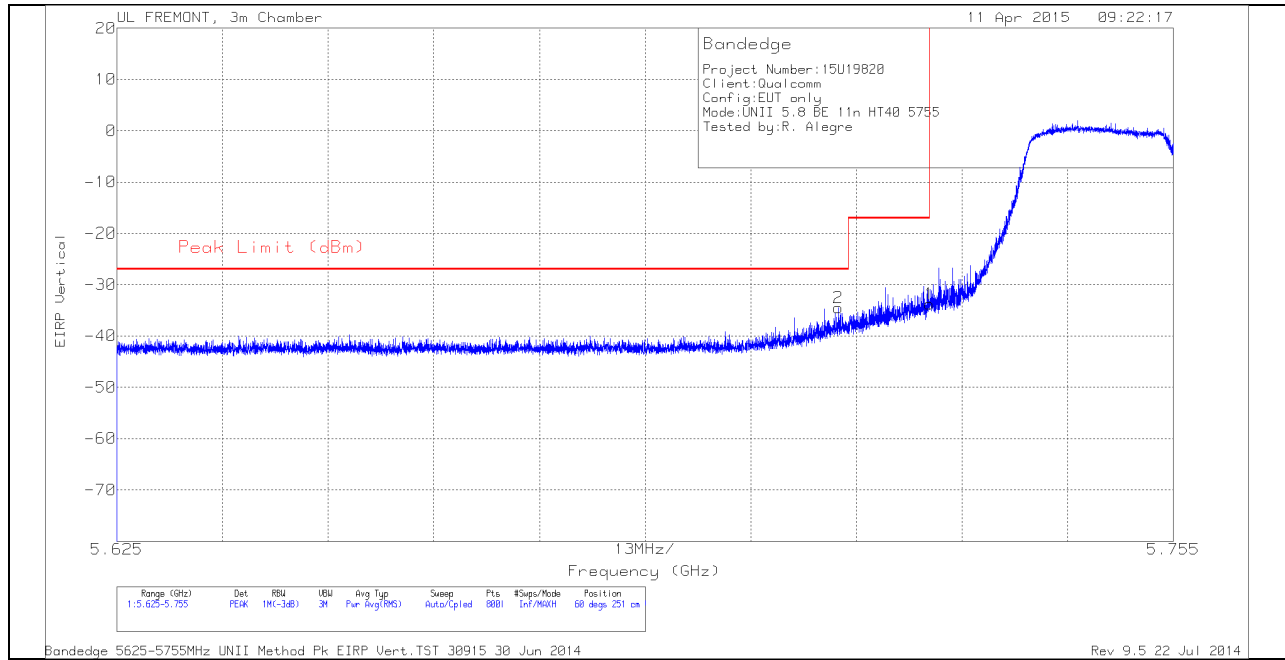
**HORIZONTAL DATA**

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cb/ Fitr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.712	-53.78	PK	34.8	-21	11.8	0	-28.18	-27	-1.18	341	273	H
1	5.725	-51.65	PK	34.8	-21.1	11.8	0	-26.15	-17	-9.15	341	273	H

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

PK - Peak detector

**VERTICAL PEAK AND AVERAGE PLOT**



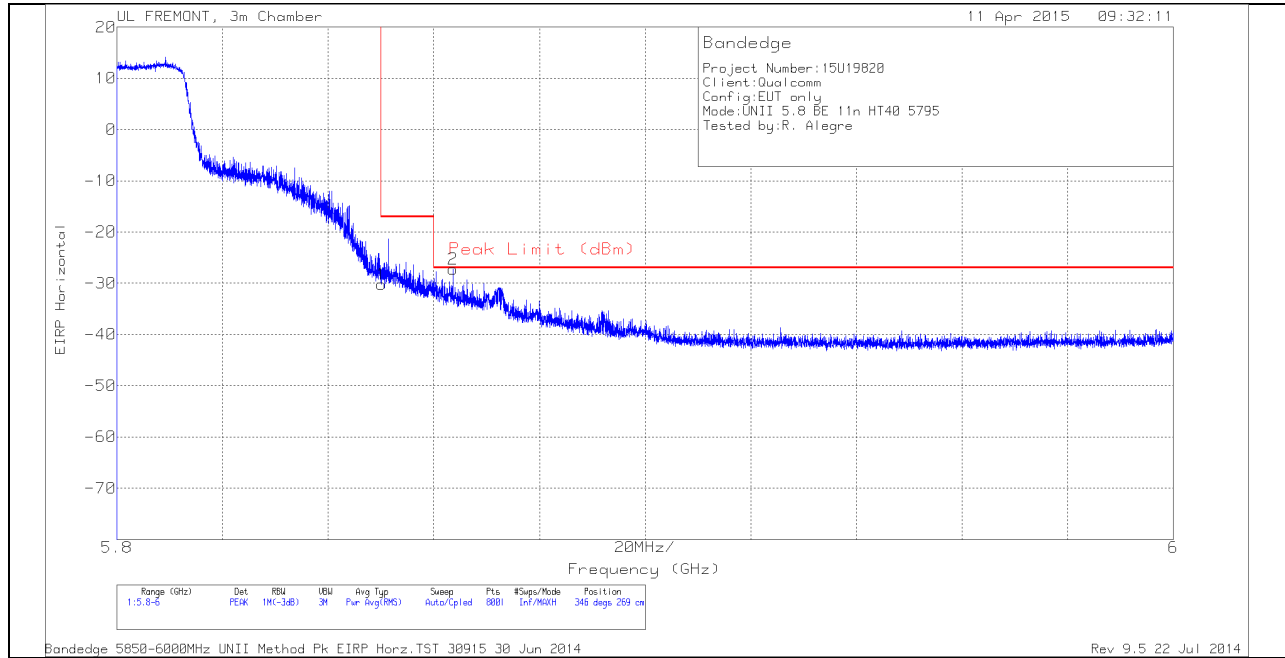
**VERTICAL DATA**

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AFT119 (dB/m)	Amp/Cb/ Ftr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.714	-60.06	PK	34.8	-21	11.8	0	-34.46	-27	-7.46	60	251	V
1	5.725	-59.28	PK	34.8	-21.1	11.8	0	-33.78	-17	-16.78	60	251	V

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

PK - Peak detector

**AUTHORIZED BANDEDGE (HIGH CHANNEL)  
 HORIZONTAL PEAK AND AVERAGE PLOT**



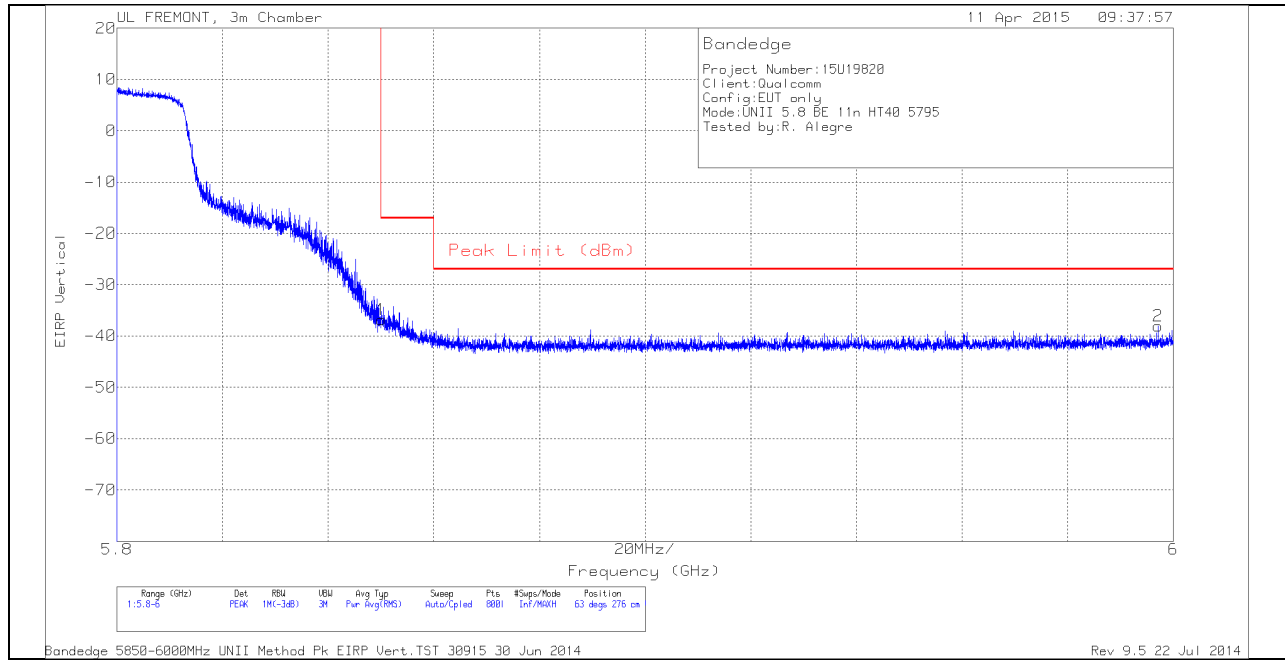
**HORIZONTAL DATA**

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cb/ Ftr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-55.63	PK	34.9	-21.3	11.8	0	-30.23	-17	-13.23	346	269	H
2	5.864	-52.62	PK	34.9	-21.3	11.8	0	-27.22	-27	-22	346	269	H

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

PK - Peak detector

**VERTICAL PEAK AND AVERAGE PLOT**



**VERTICAL DATA**

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AFT119 (dB/m)	Amp/Cb/ Fitr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-62.21	PK	34.9	-21.3	11.8	0	-36.81	-17	-19.81	63	276	V
2	5.997	-64.4	PK	35.2	-20.7	11.8	0	-38.1	-27	-11.1	63	276	V

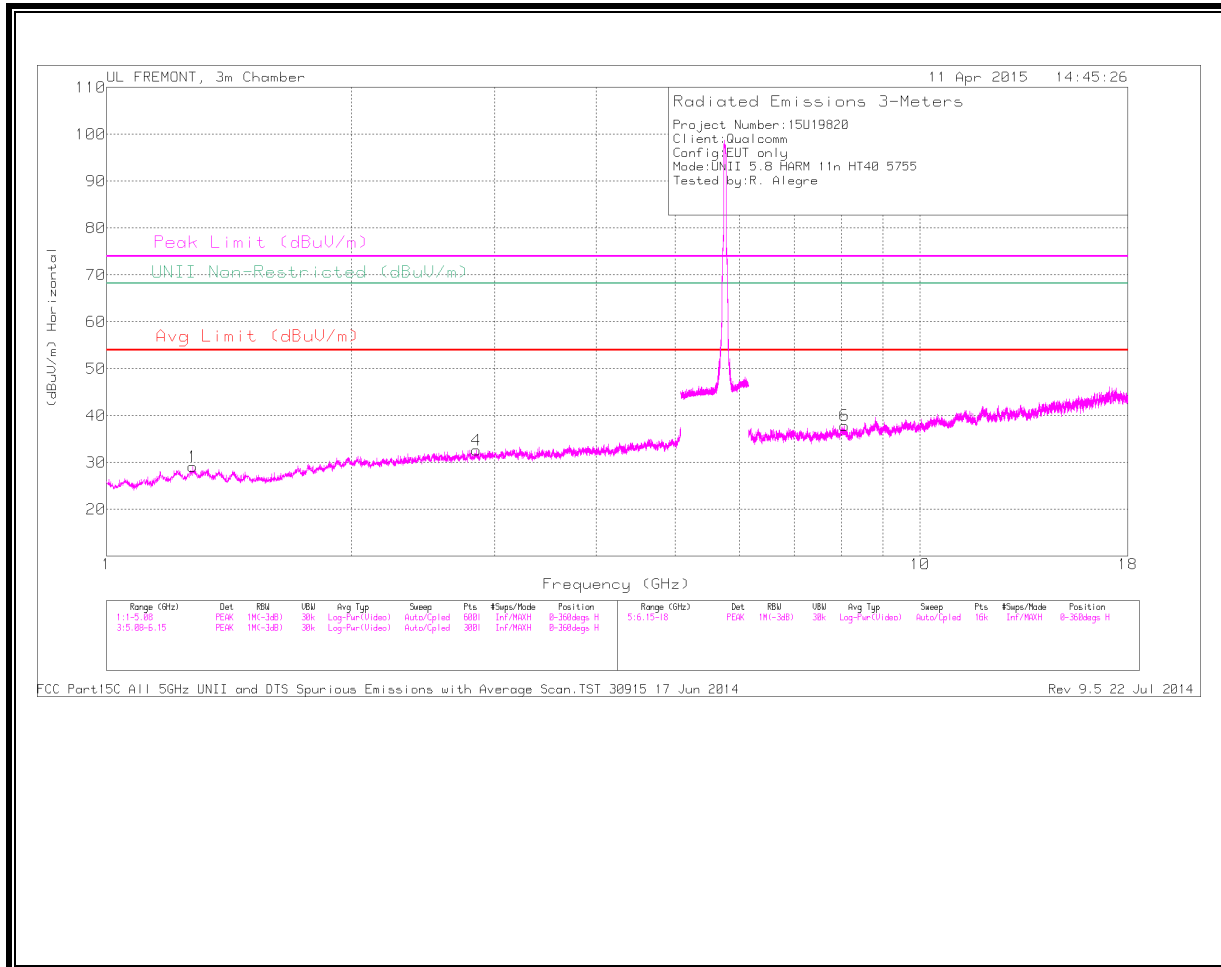
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

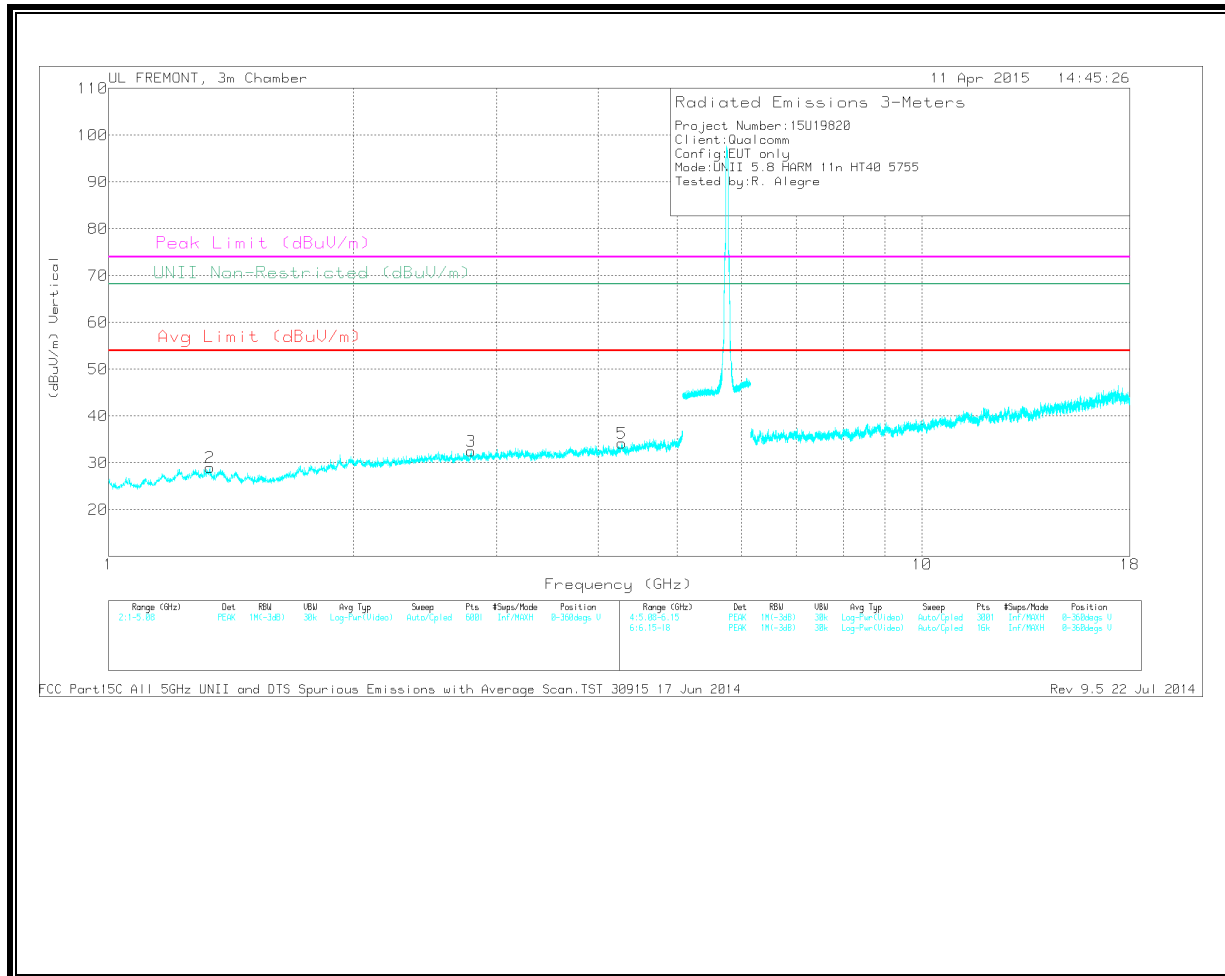


**HARMONICS AND SPURIOUS EMISSIONS**

LOW CHANNEL  
 HORIZONTAL



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



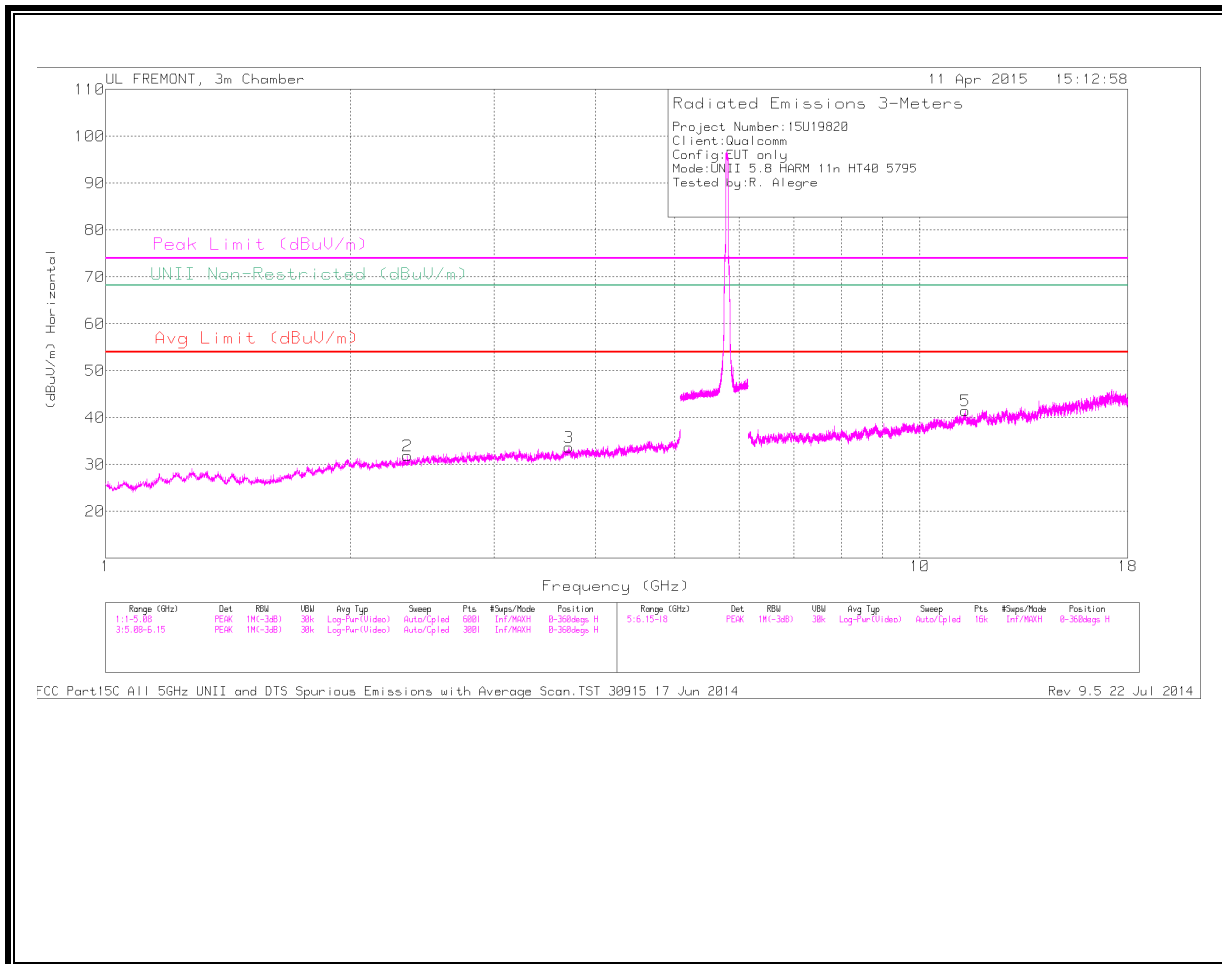
Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	** 2.849	32.47	PK	32.6	-32.4	0	32.67	-	-	74	-41.33	-	-	0-360	100	H
2	** 1.333	33.03	PK	29.5	-33.5	0	29.03	-	-	74	-44.97	-	-	0-360	100	V
3	** 2.788	32.37	PK	32.6	-32.4	0	32.57	-	-	74	-41.43	-	-	0-360	200	V
5	** 4.271	31.06	PK	33.5	-30.3	0	34.26	-	-	74	-39.74	-	-	0-360	100	V
6	** 8.08	29.61	PK	35.7	-27.4	0	37.91	-	-	74	-36.09	-	-	0-360	200	H
1	1.276	32.94	PK	29.7	-33.5	0	29.14	-	-	74	-44.86	-	-	0-360	100	H

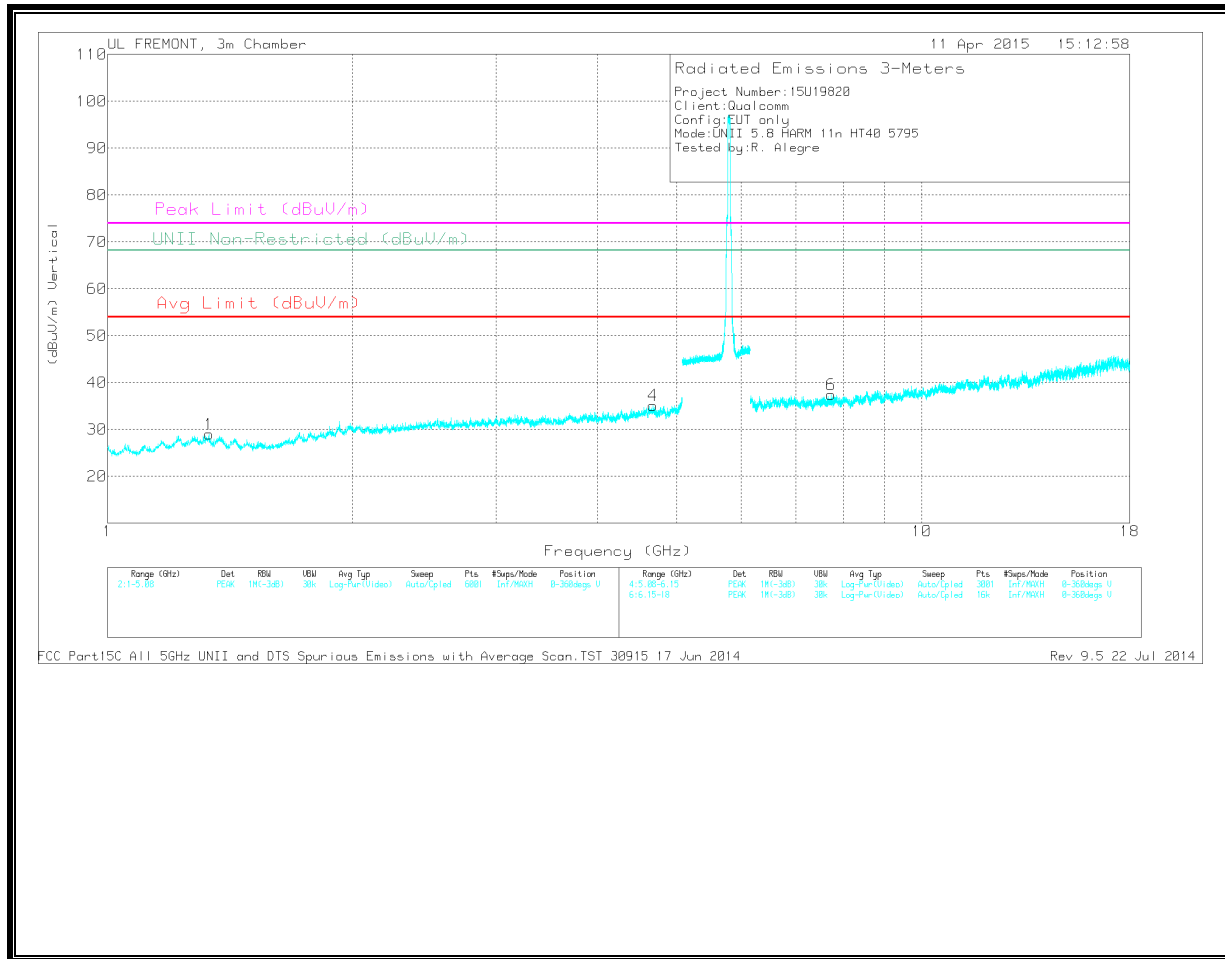
\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

PK - Peak detector

HIGH CHANNEL  
 HORIZONTAL



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



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

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	** 2.348	32.82	PK	31.8	-32.7	0	31.92	-	-	74	-42.08	-	-	0-360	200	H
3	** 3.706	31.52	PK	33	-30.8	0	33.72	-	-	74	-40.28	-	-	0-360	100	H
1	** 1.333	33.03	PK	29.5	-33.5	0	29.03	-	-	74	-44.97	-	-	0-360	100	V
4	** 4.673	31.58	PK	34	-30.4	0	35.18	-	-	74	-38.82	-	-	0-360	100	V
5	** 11.363	29.24	PK	38.1	-25.9	0	41.44	-	-	74	-32.56	-	-	0-360	100	H
6	** 7.738	30.82	PK	35.8	-29.2	0	37.42	-	-	74	-36.58	-	-	0-360	200	V

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

PK - Peak detector

### Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr/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
** 11.363	36.6	PK1	38.1	-25.8	0	48.9	-	-	74	-25.1	-	-	360	100	H
** 11.365	25.54	AD1	38.1	-25.9	1.19	38.93	54	-15.07	-	-	-	-	360	100	H

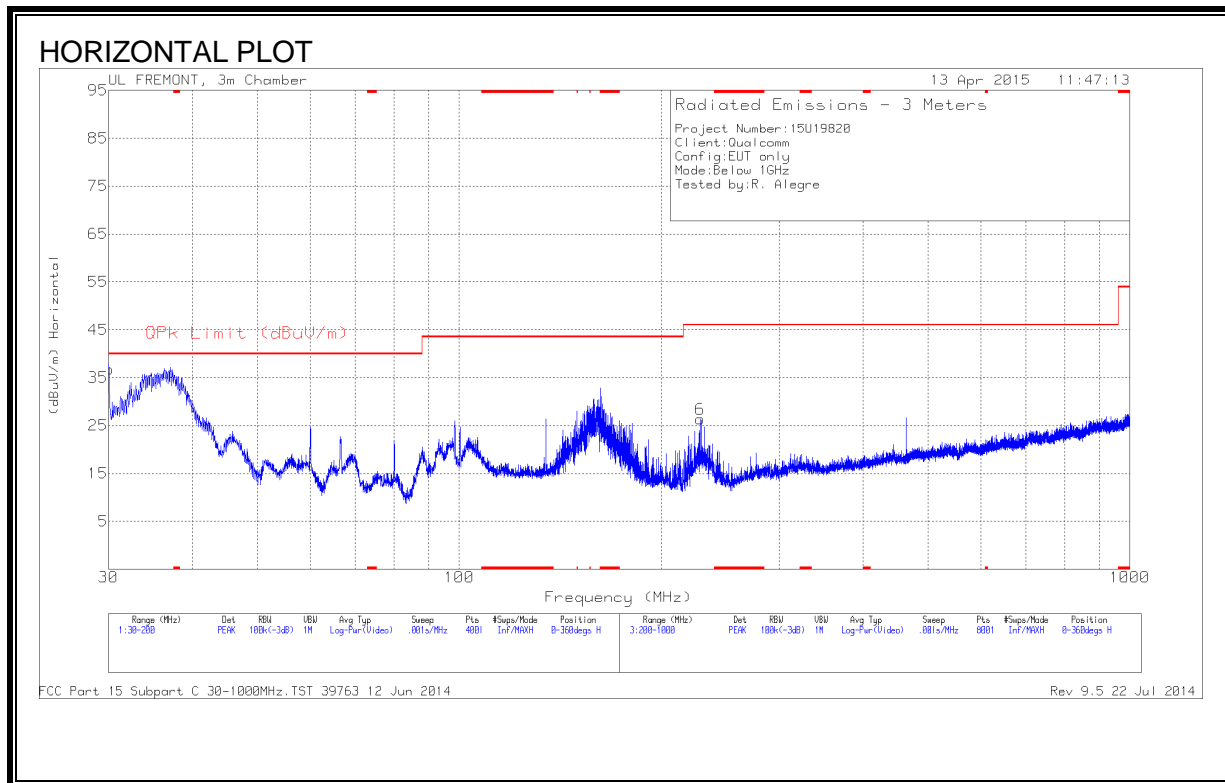
\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

PK1 - KDB789033 Method: Peak

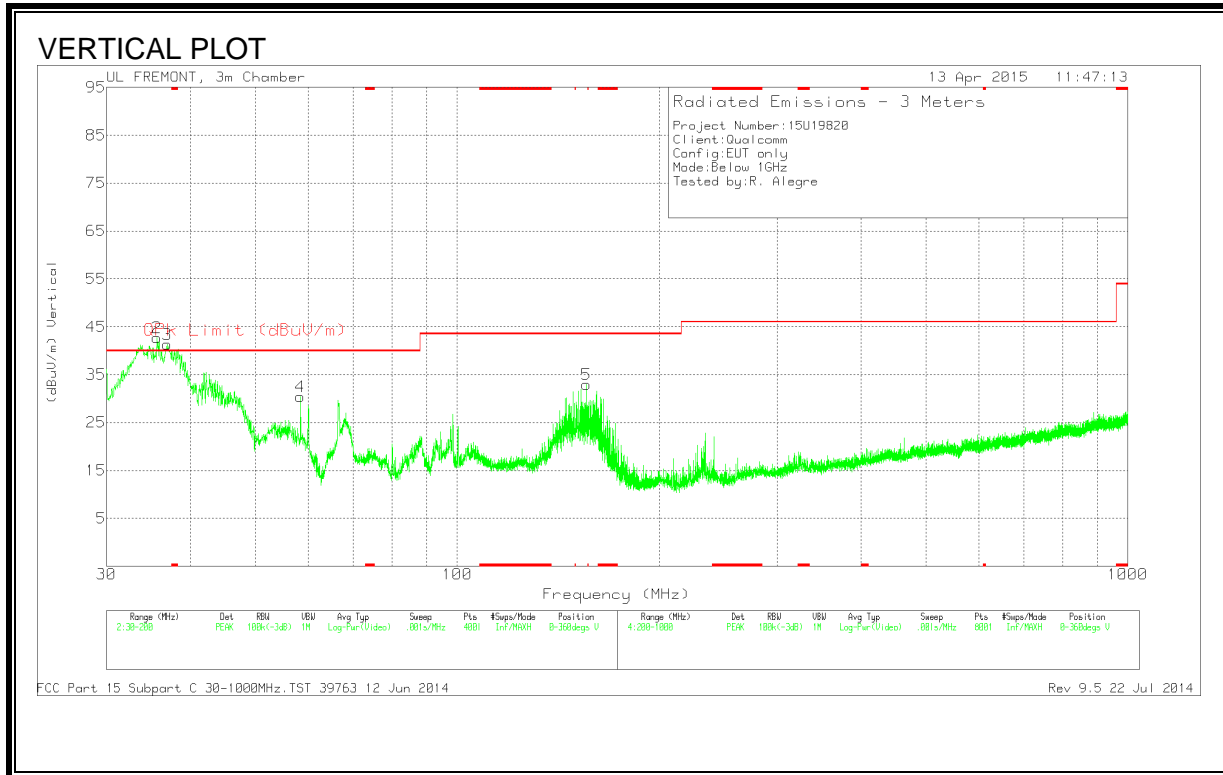
AD1 - KDB789033 Method: AD Primary Power Average

## 12. WORST-CASE BELOW 1 GHz (in the 5.2 GHz Band)

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



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





Worst Case Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T185 (dB/m)	Amp/Cbl (dB/m)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	30.0425	42.46	PK	21.8	-27.5	36.76	40	-3.24	0-360	300	H
2	35.695	52.78	PK	17.4	-27.5	42.68	40	2.68	0-360	100	V
3	36.9275	52.15	PK	16.6	-27.4	41.35	40	1.35	0-360	100	V
4	58.39	50.45	PK	7.2	-27.2	30.45	40	-9.55	0-360	100	V
5	155.715	47.22	PK	12	-26.2	33.02	43.52	-10.5	0-360	100	V
6	228.6	40.85	PK	11	-25.5	26.35	46.02	-19.67	0-360	100	H

PK - Peak detector

Radiated Emissions

Frequency (MHz)	Meter Reading (dBuV)	Det	AF T185 (dB/m)	Amp/Cbl (dB/m)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
35.6631	46.36	QP	17.5	-27.5	36.36	40	-3.64	206	106	V
36.8867	47.25	QP	16.6	-27.4	36.45	40	-3.55	226	104	V

QP - Quasi-Peak detector

### 13. AC POWER LINE CONDUCTED EMISSIONS

#### LIMITS

FCC §15.207 (a)

RSS-Gen 8.8

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

\* Decreases with the logarithm of the frequency.

#### TEST PROCEDURE

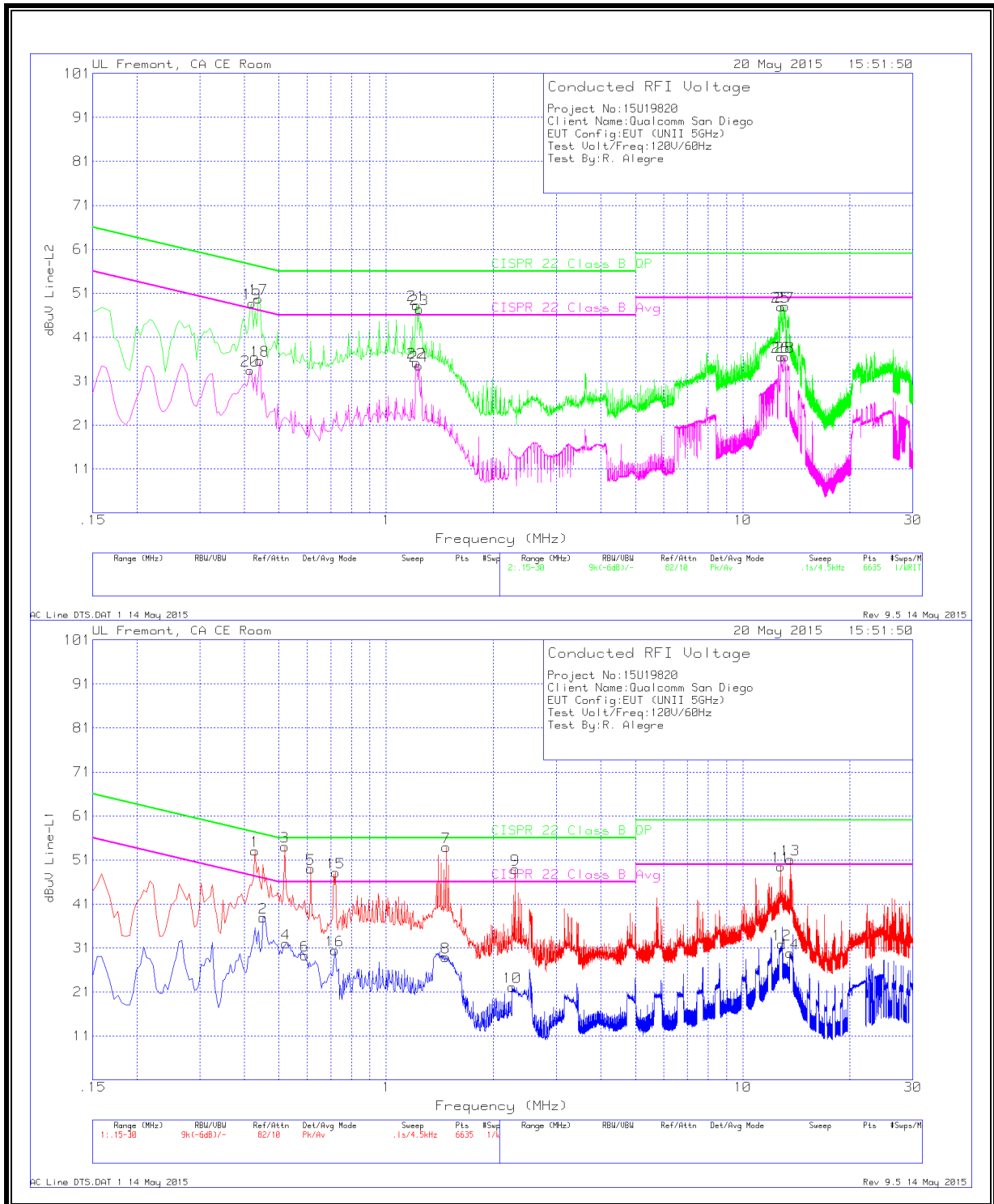
The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.4.

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**



**LINE 1 RESULTS**

Range 1: Line-L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1	LC Cables 1&3	Corrected Reading dBuV	CISPR 22 Class B QP	Margin (dB)	CISPR 22 Class B Avg	Margin (dB)
1	.429	52.65	Pk	.4	0	53.05	57.27	-4.22		
2	.4515	37.48	Av	.4	0	37.88	-	-	46.85	-8.97
3	.519	53.74	Pk	.3	0	54.04	56	-1.96		
4	.5235	31.68	Av	.3	0	31.98	-	-	46	-14.02
5	.6135	48.69	Pk	.3	0	48.99	56	-7.01		
6	.591	29.03	Av	.3	0	29.33	-	-	46	-16.67
7	1.473	53.6	Pk	.2	.1	53.9	56	-2.1		
8	1.4685	28.59	Av	.2	.1	28.89	-	-	46	-17.11
9	2.301	48.57	Pk	.2	.1	48.87	56	-7.13		
10	2.256	21.86	Av	.2	.1	22.16	-	-	46	-23.84
11	12.7905	49.09	Pk	.2	.2	49.49	60	-10.51		
12	12.8715	31.44	Av	.2	.2	31.84	-	-	50	-18.16
13	13.5825	50.71	Pk	.2	.2	51.11	60	-8.89		
14	13.569	29.39	Av	.2	.2	29.79	-	-	50	-20.21
15	.7215	47.83	Pk	.3	0	48.13	56	-7.87		
16	.717	30.14	Av	.3	0	30.44	-	-	46	-15.56

**LINE 2 RESULTS**

Range 2: Line-L2 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2	LC Cables 2&3	Corrected Reading dBuV	CISPR 22 Class B QP	Margin (dB)	CISPR 22 Class B Avg	Margin (dB)
17	.438	49.34	Pk	.4	0	49.74	57.1	-7.36		
18	.4425	35.23	Av	.4	0	35.63	-	-	47.01	-11.38
19	.42	48.3	Pk	.4	0	48.7	57.45	-8.75		
20	.4155	33.08	Av	.4	0	33.48	-	-	47.54	-14.06
21	1.2165	47.99	Pk	.2	.1	48.29	56	-7.71		
22	1.2165	34.93	Av	.2	.1	35.23	-	-	46	-10.77
23	1.239	47.04	Pk	.2	.1	47.34	56	-8.66		
24	1.2345	34.2	Av	.2	.1	34.5	-	-	46	-11.5
25	12.7995	47.53	Pk	.2	.2	47.93	60	-12.07		
26	12.7905	36.15	Av	.2	.2	36.55	-	-	50	-13.45
27	13.1505	47.6	Pk	.2	.2	48	60	-12		
28	13.146	36.15	Av	.2	.2	36.55	-	-	50	-13.45