



**FCC 47 CFR PART 15 SUBPART E
INDUSTRY CANADA RSS-247 ISSUE 1**

CERTIFICATION TEST REPORT

**FOR
Dolphin CT50**

**MODEL NUMBER: CT50L0N
FCC ID: HD5-CT50L0N
IC ID: 1693B-CT50L0N**

**REPORT NUMBER: 15U20259-E11, Revision A
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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: HONEYWELL INTERNATIONAL INC
HONEYWELL SCANNING & MOBILITY

EUT DESCRIPTION: Dolphin CT50

MODEL: CT50L0N

SERIAL NUMBER: 15099404A2

DATE TESTED: MAY 11 – JUNE 4, 2015

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart E	Pass
INDUSTRY CANADA RSS-247 Issue 1	Pass
INDUSTRY CANADA RSS-GEN Issue 4	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, KDB 789033 D02 v01, ANSI C63.10-2009 for FCC and ANSI C63.10-2013 for IC, RSS-GEN Issue 4, RSS-247 Issue 1.

3. FACILITIES AND ACCREDITATION

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

47173 Benicia Street	47266 Benicia Street
☒ Chamber A(IC: 2324B-1)	☐ Chamber D(IC: 2324B-4)
☐ Chamber B(IC: 2324B-2)	☐ Chamber E(IC: 2324B-5)
☒ Chamber C(IC: 2324B-3)	☐ Chamber F(IC: 2324B-6)
	☐ Chamber G(IC: 2324B-7)
	☐ Chamber H(IC: 2324B-8)

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

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:

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

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 Dolphin CT50 Mobile Computer (Terminal).

The model CT50L0N shares the same enclosure and circuit board as model CT50LFN. The unlicensed radios (WLAN/BT/NFC) including antenna, are identical between the two units.

Difference is CT50L0N has only unlicensed radio but CT50LFN has unlicensed radio and licensed radio.

After confirming through preliminary radiated emissions that the performance of the CT50LFN data remains representative of this model (CT50L0N), CT50L0N leveraged test data from CT50LFN.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Frequency Range (MHz)	Mode	Total Output Power (dBm)	Total Output Power (mW)
5180 - 5240	802.11n HT20	14.79	30.13
5260 - 5320	802.11n HT20	14.67	29.31
5500 - 5700	802.11n HT20	14.7	29.51
5745 - 5825	802.11n HT20	12	15.85
5190 - 5230	802.11n HT40	14.39	27.48
5270 - 5310	802.11n HT40	14.36	27.29
5510 - 5670	802.11n HT40	14.64	29.11
5755 - 5795	802.11n HT40	11.59	14.42
5180 - 5240	802.11a	14.62	28.97
5260 - 5320	802.11a	14.83	30.41
5500 - 5700	802.11a	14.46	27.93
5745 - 5825	802.11a	12.05	16.03
5210 - 5210	802.11ac HT80	14.35	27.23
5290 - 5290	802.11ac HT80	15.55	35.89
5530 - 5610	802.11ac HT80	15.52	35.65
5775 - 5775	802.11ac HT80	11.99	15.81

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an embedded antenna, with a maximum gain of 2.7dBi.

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

802.11AC HT80mode: MCS0

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	PHIHONG	PSA10F-050Q	N/A	N/A
USB CUP Adapter	Honeywell	N/A	N/A	N/A

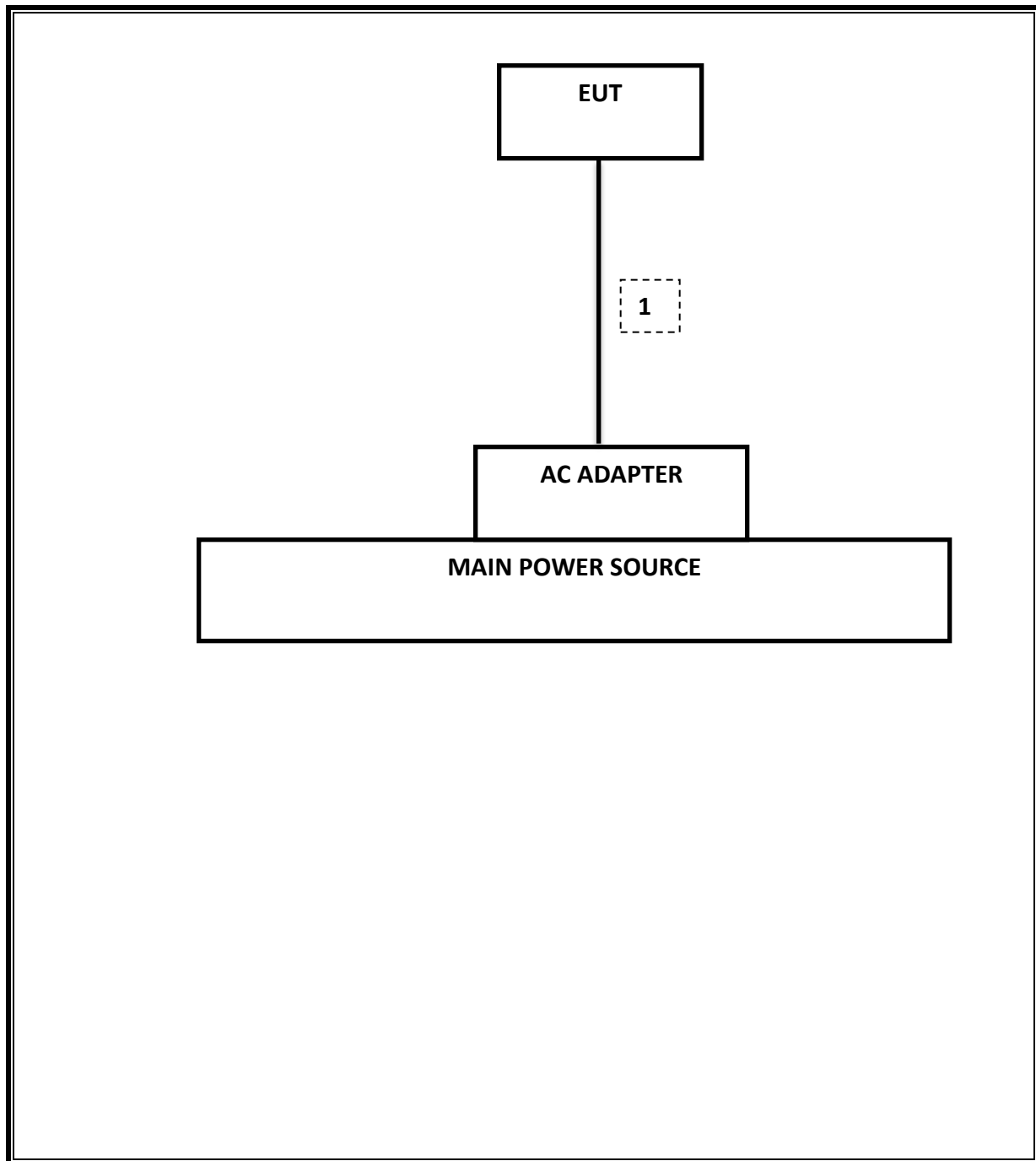
I/O CABLES

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	8447D	T10	01/06/16
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	RSS Section	Test Description	Test Limit	Test Condition	Test Result
15.407 (a)	RSS-247	Occupied Band width (26dB)	N/A	Conducted	85.44 MHz
15.407	RSS-247 6.2.4	6dB Band width (5.8Ghz)	500KHz		75.14 MHz
15.407 (a)(2)	RSS-247 6.2	TX Cond. Power 5.15-2.25, 5.25-5.35 & 5.47-5.725	<24dBm or 11+10Log(OBW)		15.55dBm
15.407 (a)(3)	RSS-247 6.2.4	TX Cond. Power 5.725-5.825	< 30dBm or 17+10Log(OBW)		12.05 dBm
15.407 (a)(5)	RSS-247 6.2	PSD (5.2,5.3,5.5GHz)	<11dBm		3.46 dBm
15.407 (a)(5)	RSS-247 6.2.4	PSD (5.8GHz)	30dBm per 500kHz		0.85 dBm
15.207 (a)	RSS-GEN 8.8	AC Power Line conducted emissions	Section 10	Radiated	40.32 dBuV
15.407 (b) & 15.209	RSS-GEN 8.9/7	Radiated Spurious Emission	< 54dBuV/m		20.04 dBuV/m
15.407 (h)(2)	RSS-247 6.3	Dynamic Frequency Selection	N/A	Radiated / Conducted	Pass

8. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

LIMITS

None; for reporting purposes only.

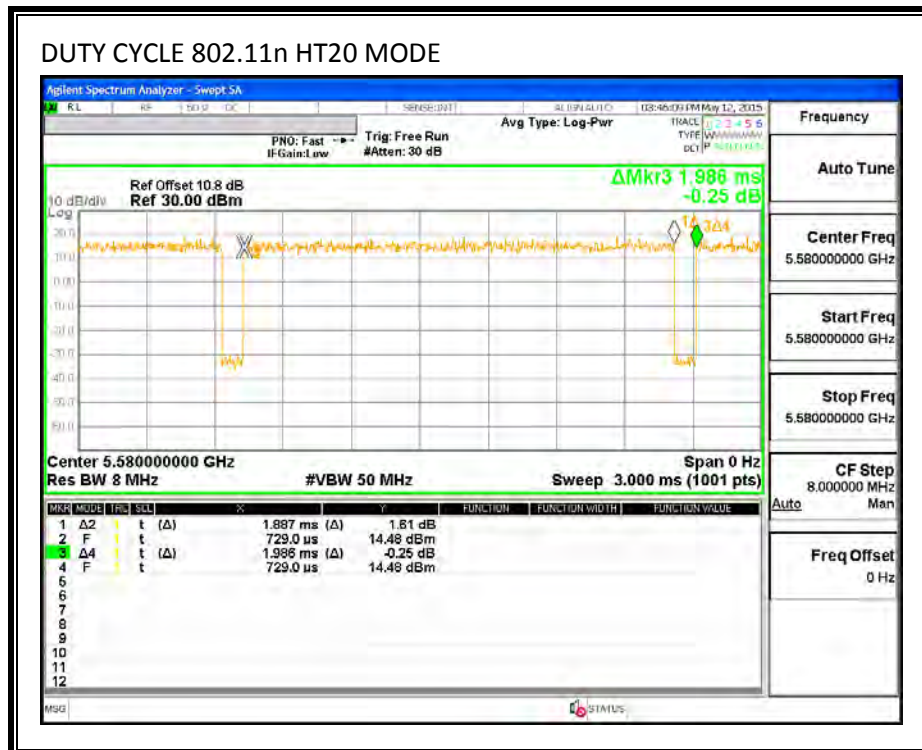
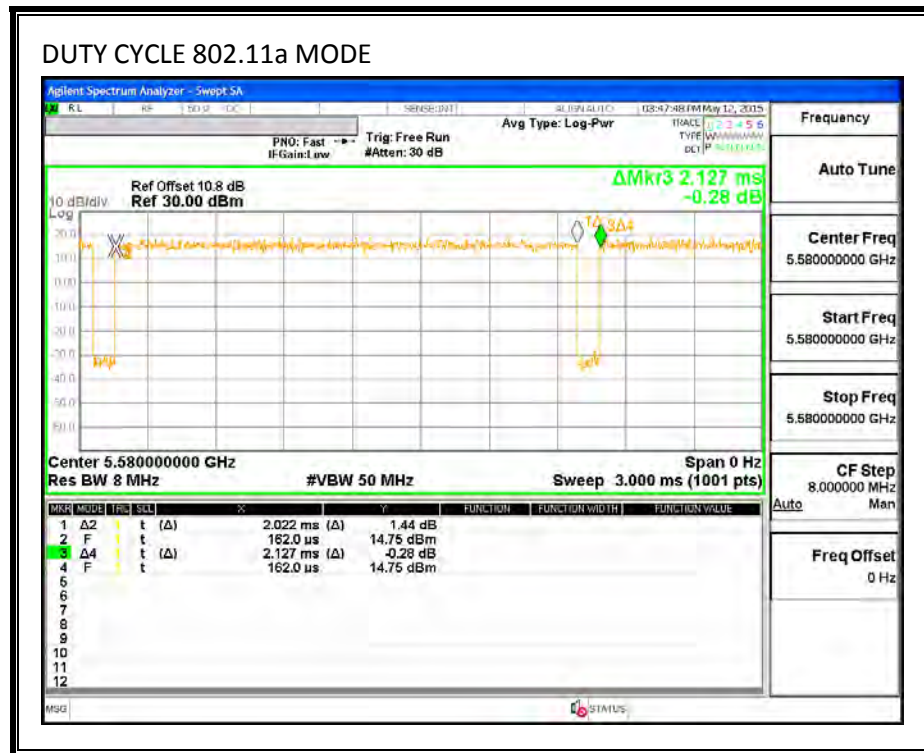
PROCEDURE

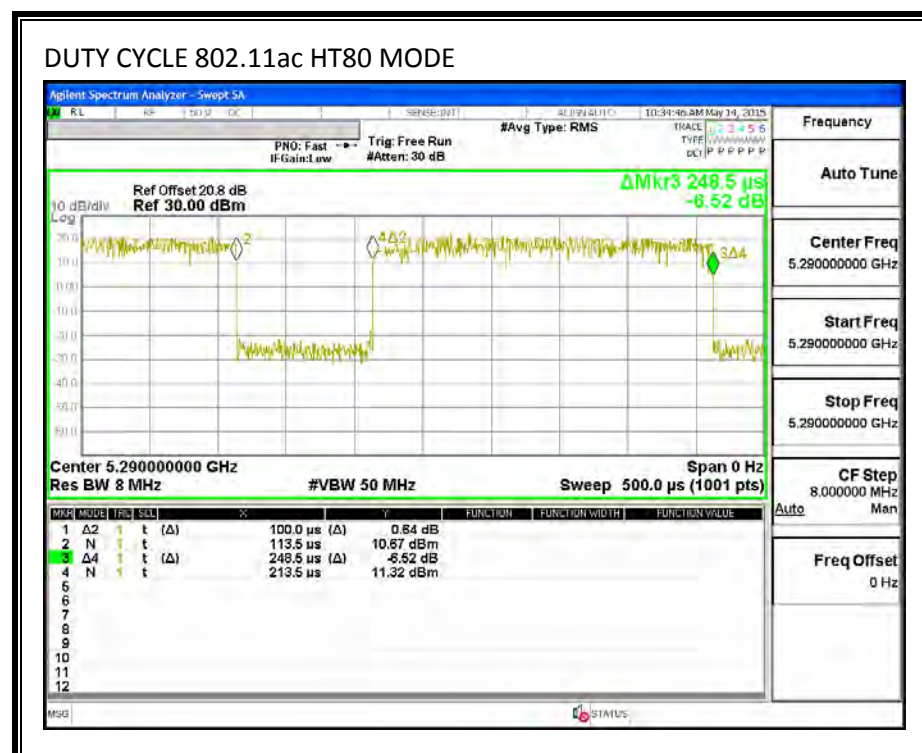
KDB 789033 Zero-Span Spectrum Analyzer Method.

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	2.022	2.127	0.951	95.1%	0.22	0.495
802.11n HT20	1.887	1.986	0.950	95.0%	0.22	0.530
802.11n HT40	0.836	0.937	0.892	89.2%	0.50	1.197
802.11ac HT80	0.114	0.214	0.532	53.2%	2.74	8.811

8.2. DUTY CYCLE PLOTS





9. MEASUREMENT METHOD

789033 D02 General UNII Test Procedures New Rules v01

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

RSS-247 6.2.4

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	16.550	0.5
Mid	5785	16.400	0.5
High	5825	16.550	0.5
Worst		16.550	

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	17.577	0.5
Mid	5785	17.793	0.5
High	5825	17.631	0.5
Worst		17.793	

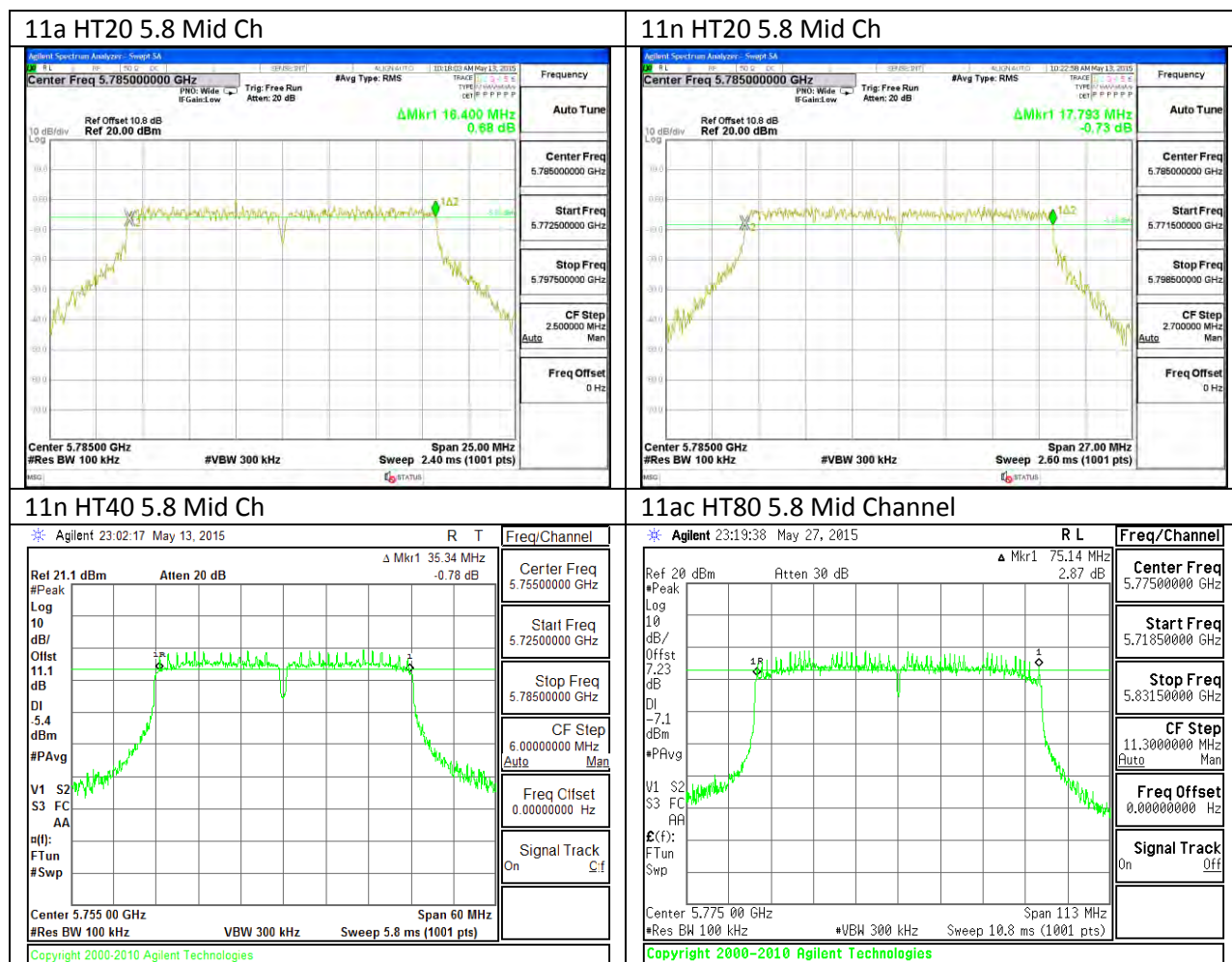
10.1.3. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5755	35.340	0.5
High	5795	35.280	0.5
Worst		35.340	

10.1.4. 802.11ac HT80 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5775	75.140	0.5
Worst		75.140	

10.1.5. 6 dB BANDWIDTH MID CH PLOTS



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	22.282
Mid	5200	22.282
High	5240	22.100
Worst		22.282

10.2.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5180	22.724
Mid	5200	22.724
High	5240	22.334
Worst		22.724

10.2.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	26dB Bandwidth (MHz)
Low	5190	42.600
Mid	5230	42.960
Worst		42.960

10.2.4. 802.11ac HT80 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5210	83.884

10.2.5. 802.11a MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5260	21.996
Mid	5300	22.126
High	5320	22.256
Worst		22.256

10.2.6. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5260	22.386
Mid	5300	22.620
High	5320	22.256
Worst		22.620

10.2.7. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5270	42.540
High	5310	42.960
Worst		42.960

10.2.8. 802.11ac HT80 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5290	83.616

10.2.9. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5500	22.308
Mid	5580	22.126
High	5700	21.996
Worst		22.308

10.2.10. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5500	22.360
Mid	5580	22.334
High	5700	22.620
Worst		22.620

10.2.11. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5510	42.240
Mid	5550	42.180
High	5670	42.900
Worst		42.900

10.2.12. 802.11ac HT80 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5530	83.21
High	5610	85.44
Worst		85.44

10.2.13. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5745	21.780
Mid	5785	21.510
High	5825	22.290
Worst		22.290

10.2.14. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5745	22.080
Mid	5785	22.140
High	5825	22.080
Worst		22.140

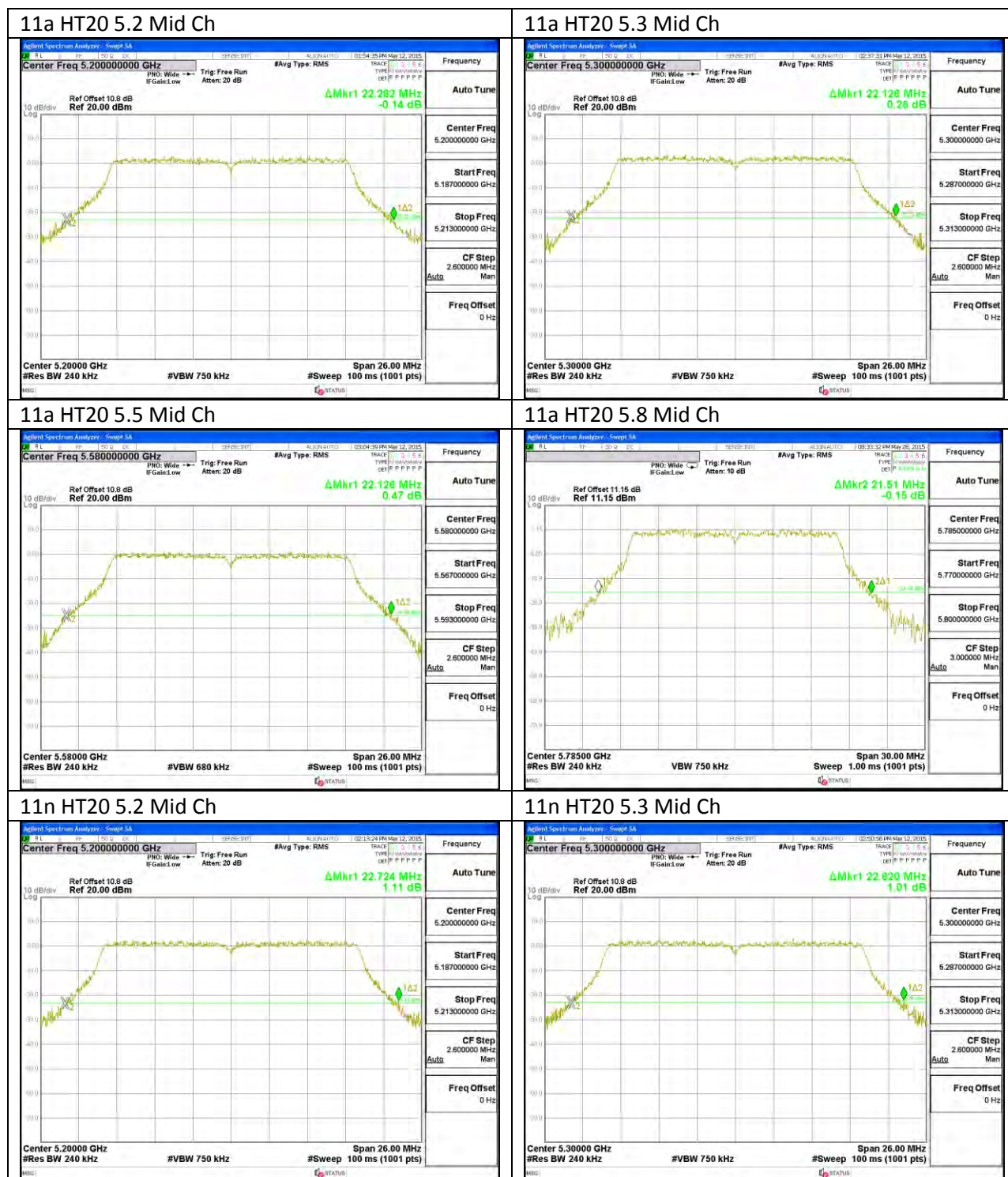
10.2.15. 802.11n HT40 MODE IN THE 5.8 GHz BAND

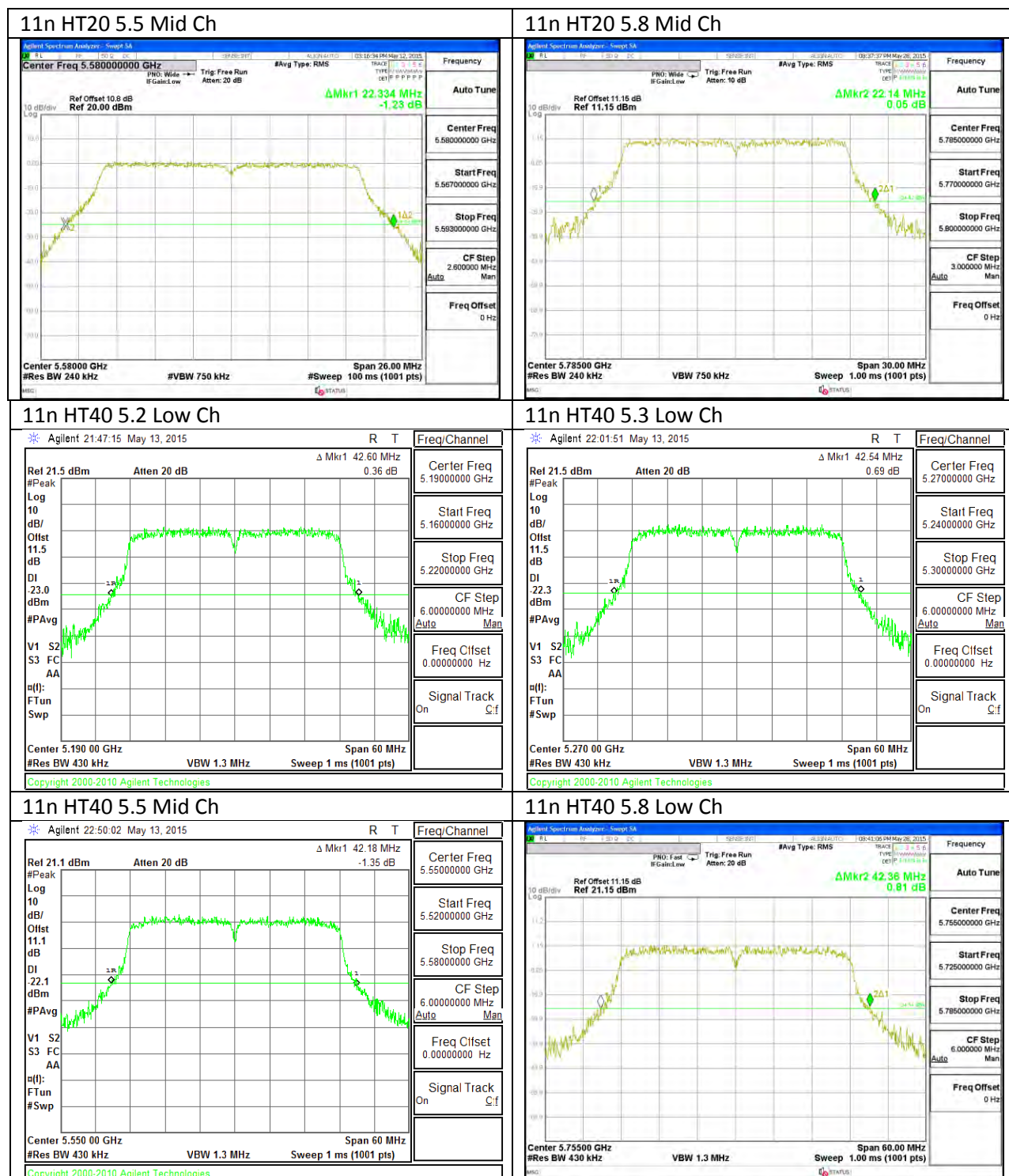
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5755	42.360
High	5795	42.660
Worst		42.660

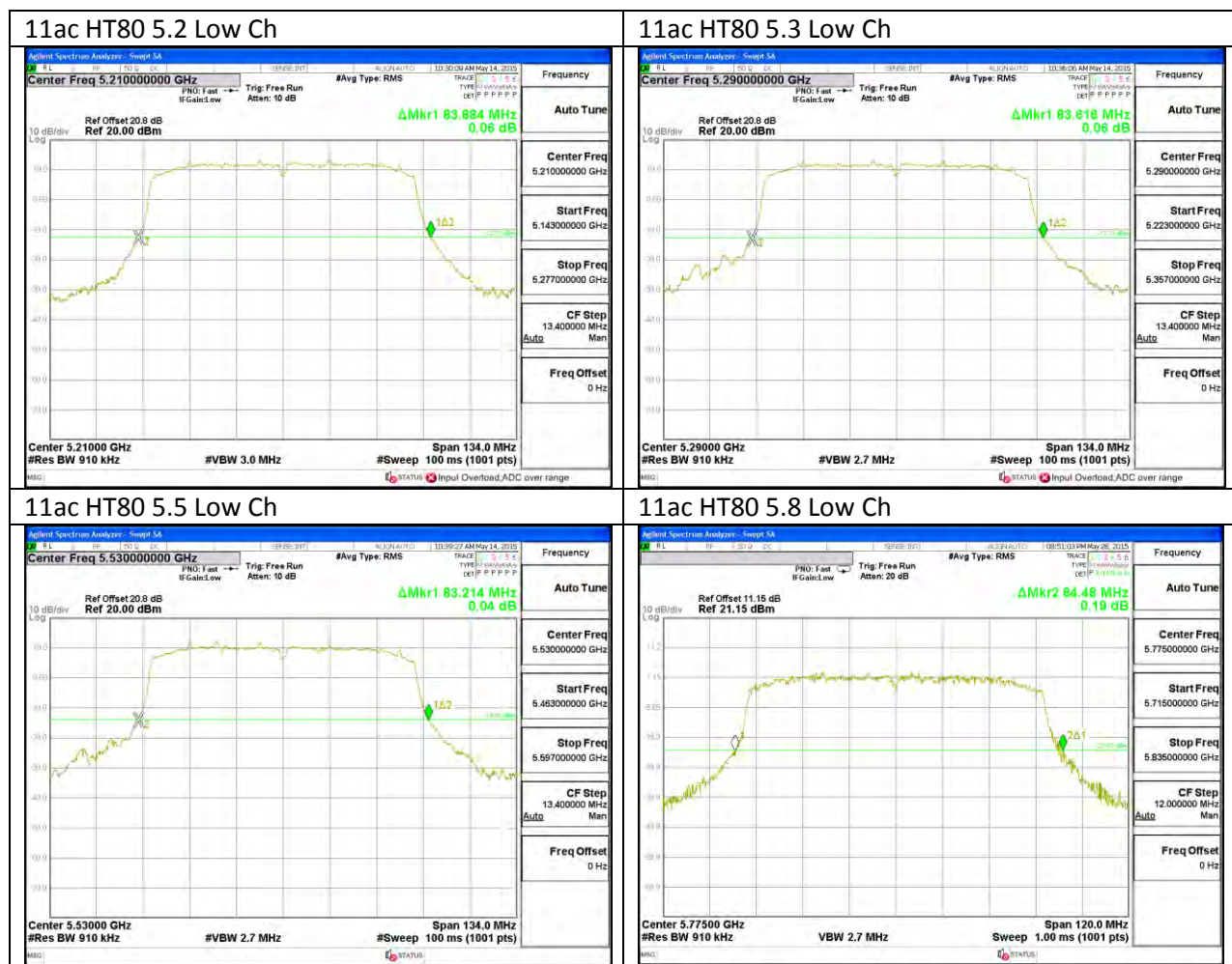
10.2.16. 802.11ac HT80 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5775	84.48

10.2.17. 26 dB BANDWIDTH PLOTS







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	16.61
Mid	5200	16.63
High	5240	16.62
Worst		16.63

10.3.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5180	17.80
Mid	5200	17.81
High	5240	17.81
Worst		17.81

10.3.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5190	36.96
Mid	5230	36.18
Worst		36.96

10.3.4. 802.11ac HT80 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5210	74.83

10.3.5. 802.11a MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5260	16.62
Mid	5300	16.62
High	5320	16.62
Worst		16.62

10.3.6. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5260	17.82
Mid	5300	17.81
High	5320	17.80
Worst		17.82

10.3.7. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5270	35.97
High	5310	36.05
Worst		36.05

10.3.8. 802.11ac HT80 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5290	74.84

10.3.9. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5500	16.62
Mid	5580	16.62
High	5700	16.62
Worst		16.62

10.3.10. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5500	17.80
Mid	5580	17.81
High	5700	17.80
Worst		17.81

10.3.11. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5510	36.02
Mid	5550	36.08
High	5670	36.02
Worst		36.08

10.3.12. 802.11ac HT80 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5530	74.82
High	5610	74.61
Worst		74.82

10.3.13. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5745	16.62
Mid	5785	16.62
High	5825	16.63
Worst		16.63

10.3.14. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5745	17.80
Mid	5785	17.81
High	5825	17.81
Worst		17.81

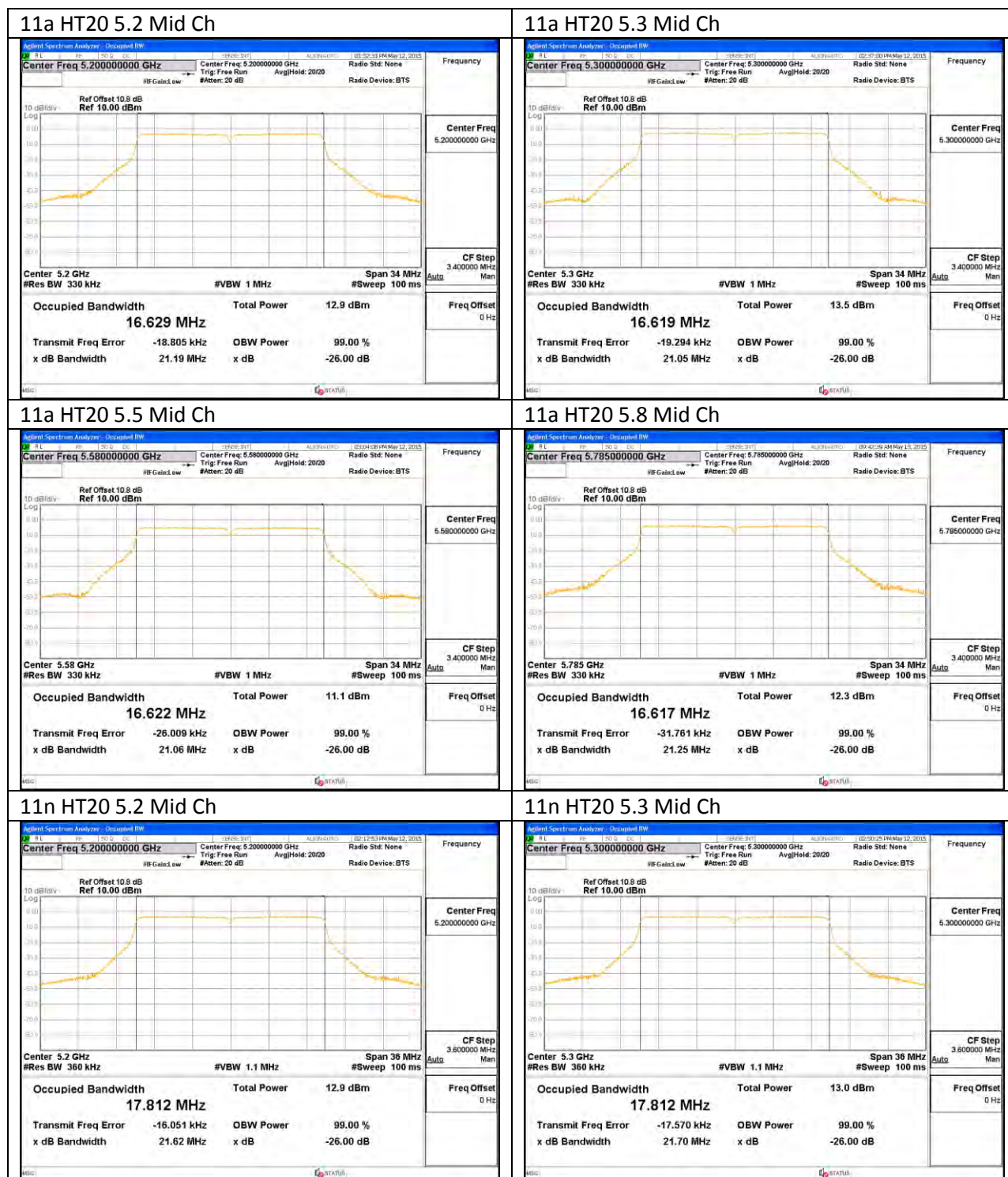
10.3.15. 802.11n HT40 MODE IN THE 5.8 GHz BAND

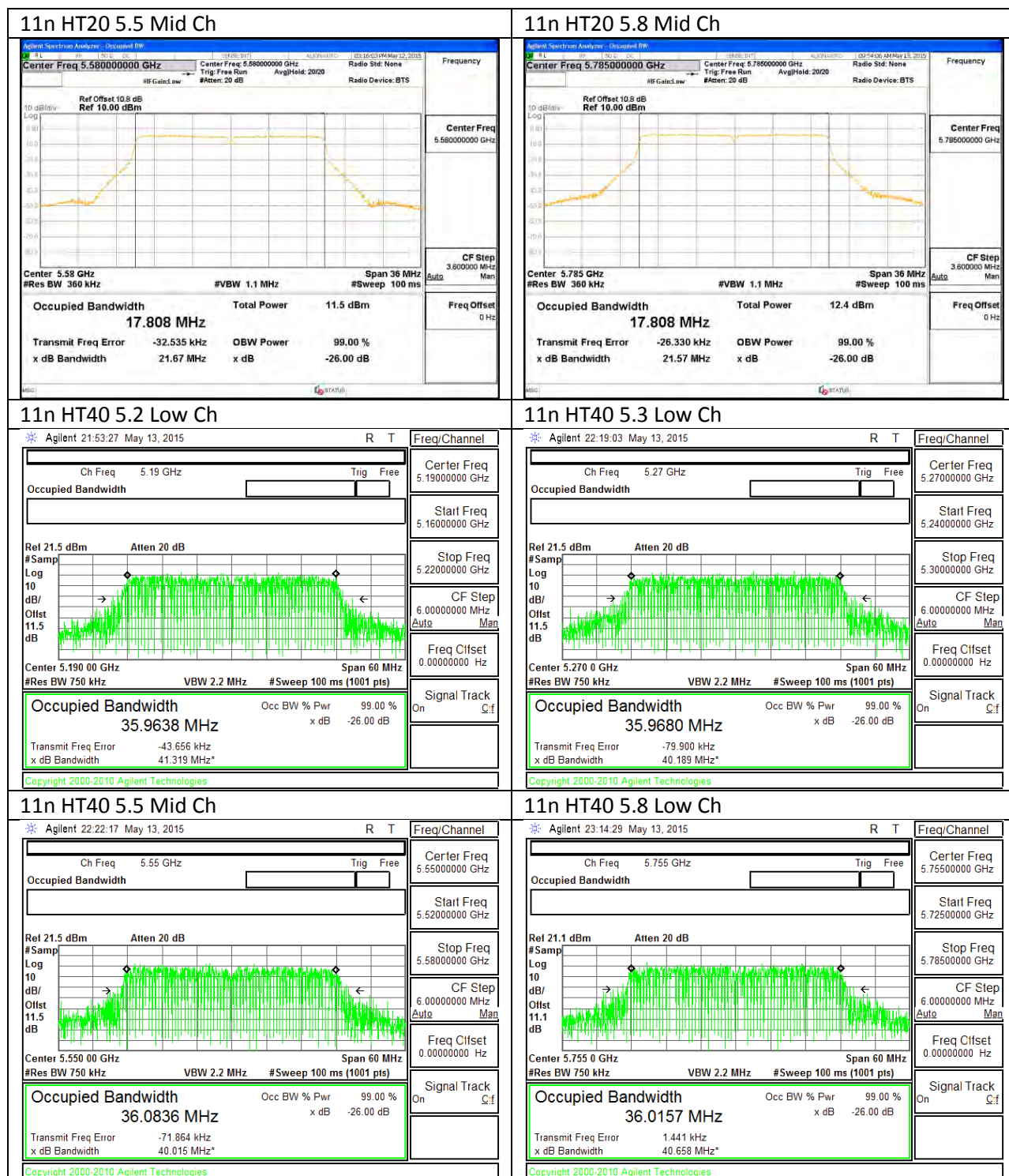
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5755	36.02
High	5795	36.01
Worst		36.02

10.3.16. 802.11ac HT80 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5775	74.95

10.3.17. 99% BANDWIDTH PLOTS







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	14.3
Mid	5200	14.3
High	5240	14.3
Worst		14.3

10.4.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5180	14.3
Mid	5200	14.3
High	5240	14.3
Worst		14.3

10.4.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5190	14.0
Mid	5230	14.0
Worst		14.0

10.4.4. 802.11ac HT80 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5210	14.4

10.4.5. 802.11a MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5260	14.3
Mid	5300	14.4
High	5320	14.2
Worst		14.4

10.4.6. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5260	13.7
Mid	5300	14.3
High	5320	14.1
Worst		14.3

10.4.7. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5270	13.9
High	5310	14.0
Worst		14.0

10.4.8. 802.11ac HT80 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5290	14.1

10.4.9. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5500	13.9
Mid	5580	13.7
High	5700	14.2
Worst		14.2

10.4.10. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5500	13.8
Mid	5580	13.8
High	5700	14.2
Worst		14.2

10.4.11. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5510	13.7
Mid	5550	14.3
High	5670	14.0
Worst		14.30

10.4.12. 802.11ac HT80 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5530	13.8
High	5610	13.9
Worst		13.75

10.4.13. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5745	11.4
Mid	5785	11.7
High	5825	11.3
Worst		11.7

10.4.14. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5745	11.4
Mid	5785	11.6
High	5825	11.3
Worst		11.6

10.4.15. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5755	11.0
High	5795	11.1
Worst		11.1

10.4.16. 802.11ac HT80 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5775	10.32

10.5. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (1) (2) (3)

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 250 mW or $11 \text{ dBm} + 10 \log B$, 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. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band.

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Band 5150-5250 MHz:

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.

Band 5250-5350 MHz:

The maximum conducted output power shall not exceed 250 mW or $11 + 10 \log_{10} B$, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log_{10} B$, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

Bands 5470-5600 MHz and 5650-5725 MHz:

The maximum conducted output power shall not exceed 250 mW or $11 + 10 \log_{10} B$, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log_{10} B$, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

Band 5725-5850 MHz:

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. However, fixedpoint-to-point devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed point-to-point operations exclude the use of point-to-multipoint [Footnote3](#) systems, omnidirectional applications and multiple collocated transmitters transmitting the same information.

DIRECTIONAL ANTENNA GAIN

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

Test Methodology

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	22.282	16.61	2.70
Mid	5200	22.282	16.63	2.70
High	5240	22.100	16.62	2.70

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	22.20	19.50	19.50	11.00	10.00	10.00
Mid	5200	24.00	22.21	19.51	19.51	11.00	10.00	10.00
High	5240	24.00	22.21	19.51	19.51	11.00	10.00	10.00

Duty Cycle CF (dB)	0.22	Included in Calculations of Corr'd Power & PPSD
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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	14.30	14.52	19.50	-4.98
Mid	5200	14.40	14.62	19.51	-4.89
High	5240	14.30	14.52	19.51	-4.99

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5180	3.05	3.27	10.00	-6.73
Mid	5200	3.24	3.46	10.00	-6.55
High	5240	3.16	3.38	10.00	-6.62

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	22.724	17.80	2.70
Mid	5200	22.724	17.81	2.70
High	5240	22.334	17.81	2.70

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	22.51	19.81	19.81	11.00	10.00	10.00
Mid	5200	24.00	22.51	19.81	19.81	11.00	10.00	10.00
High	5240	24.00	22.51	19.81	19.81	11.00	10.00	10.00

Duty Cycle CF (dB)	0.22	Included in Calculations of Corr'd Power & PPSD
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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	14.50	14.72	19.81	-5.09
Mid	5200	14.57	14.79	19.81	-5.01
High	5240	14.31	14.53	19.81	-5.28

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5180	2.97	3.19	10.00	-6.81
Mid	5200	3.05	3.27	10.00	-6.73
High	5240	2.90	3.12	10.00	-6.88

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 for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5190	42.60	36.96	2.70	2.70
High	5230	42.96	36.18	2.70	2.70

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 (dBm)	PPSD Limit (dBm)
Low	5190	24.00	23.00	20.30	21.30	11.00	10.00	8.30
High	5230	24.00	23.00	20.30	21.30	11.00	10.00	8.30

Duty Cycle CF (dB)	0.50	Included in Calculations of Corr'd Power & PPSD
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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	5190	13.74	14.24	21.30	-7.06
High	5230	13.89	14.39	21.30	-6.91

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5190	-0.59	-0.09	8.30	-8.39
High	5230	-0.45	0.05	8.30	-8.25

10.5.4. 802.11ac HT80 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	5210	83.880	74.832	2.70

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	5210	24.00	23.00	20.30	20.30	11.00	10.00	7.30
Duty Cycle CF (dB)		2.74	Included in Calculations of Corr'd Power & PPSP					

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5210	11.613	14.35	20.30	-5.95

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5210	-7.853	-5.11	7.30	-12.41

10.5.5. 802.11a MODE IN THE 5.3 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5260	22.00	16.624	2.50
Mid	5300	22.13	16.619	2.50
High	5320	22.26	16.622	2.50

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	5260	24.00	23.21	29.21	23.21	11.00	11.00	11.00
Mid	5300	24.00	23.21	29.21	23.21	11.00	11.00	11.00
High	5320	24.00	23.21	29.21	23.21	11.00	11.00	11.00

Duty Cycle CF (dB)	0.22	Included in Calculations of Corr'd Power & PPSD
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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	5260	14.610	14.83	23.21	-8.38
Mid	5300	14.320	14.54	23.21	-8.67
High	5320	13.813	14.03	23.21	-9.17

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5260	3.090	3.31	11.00	-7.69
Mid	5300	3.078	3.30	11.00	-7.70
High	5320	2.656	2.88	11.00	-8.12

10.5.6. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5260	22.39	17.815	2.50
Mid	5300	22.62	17.812	2.50
High	5320	22.26	17.804	2.50

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	5260	24.00	23.51	29.51	23.51	11.00	11.00	11.00
Mid	5300	24.00	23.51	29.51	23.51	11.00	11.00	11.00
High	5320	24.00	23.51	29.51	23.51	11.00	11.00	11.00

Duty Cycle CF (dB)	0.22	Included in Calculations of Corr'd Power & PPSP
--------------------	------	---

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	14.04	14.26	23.51	-9.24
Mid	5300	14.45	14.67	23.51	-8.83
High	5320	13.94	14.16	23.51	-9.34

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5260	2.61	2.83	11.00	-8.18
Mid	5300	0.94	1.16	11.00	-9.84
High	5320	2.42	2.64	11.00	-8.36

10.5.7. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5270	42.5	36.0	2.50
High	5310	43.0	36.1	2.50

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	5270	24.00	24.00	30.00	24.00	11.00	11.00	11.00
High	5310	24.00	24.00	30.00	24.00	11.00	11.00	11.00

Duty Cycle CF (dB)	0.50	Included in Calculations of Corr'd Power & PSD
--------------------	------	--

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5270	13.86	14.36	24.00	-9.64
High	5310	13.84	14.34	24.00	-9.66

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5270	-0.34	0.16	11.00	-10.84
High	5310	-0.52	-0.02	11.00	-11.02

10.5.8. 802.11ac HT80 MODE IN THE 5.3 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5290	83.616	74.8	2.50

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	5290	24.00	24.00	30.00	24.00	11.00	11.00	11.00

Duty Cycle CF (dB)	2.74	Included in Calculations of Corr'd Power & PSD
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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	5290	12.81	15.55	24.00	-8.45

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5290	-3.72	-0.98	11.00	-11.98

10.5.9. 802.11a MODE IN THE 5.5 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5500	22.308	16.620	2.50
Mid	5580	22.126	16.622	2.50
High	5700	21.996	16.621	2.50

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	5500	24.00	23.21	29.21	23.21	11.00	11.00	11.00
Mid	5580	24.00	23.21	29.21	23.21	11.00	11.00	11.00
High	5700	24.00	23.21	29.21	23.21	11.00	11.00	11.00

Duty Cycle CF (dB)	0.22	Included in Calculations of Corr'd Power & PPSP
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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	5500	12.830	13.05	23.21	-10.16
Mid	5580	13.188	13.41	23.21	-9.80
High	5700	14.236	14.46	23.21	-8.75

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5500	1.559	1.78	11.00	-9.22
Mid	5580	2.147	2.37	11.00	-8.63
High	5700	3.008	3.23	11.00	-7.77

10.5.10. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5500	22.360	17.80	2.50
Mid	5580	22.334	17.81	2.50
High	5700	22.620	17.80	2.50

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	5500	24.00	23.50	29.50	23.50	11.00	11.00	11.00
Mid	5580	24.00	23.51	29.51	23.51	11.00	11.00	11.00
High	5700	24.00	23.50	29.50	23.50	11.00	11.00	11.00

Duty Cycle CF (dB)	0.22	Included in Calculations of Corr'd Power & PSD
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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	5500	13.053	13.27	23.50	-10.23
Mid	5580	13.250	13.47	23.51	-10.04
High	5700	14.476	14.70	23.50	-8.81

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5500	1.700	1.92	11.00	-9.08
Mid	5580	1.680	1.90	11.00	-9.10
High	5700	3.083	3.30	11.00	-7.70

10.5.11. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5510	42.240	36.022	2.50
Mid	5550	42.180	36.084	2.50
High	5670	42.900	36.023	2.50

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	5510	24.00	24.00	30.00	24.00	11.00	11.00	11.00
Mid	5550	24.00	24.00	30.00	24.00	11.00	11.00	11.00
High	5670	24.00	24.00	30.00	24.00	11.00	11.00	11.00

Duty Cycle CF (dB)	0.50	Included in Calculations of Corr'd Power & PSD
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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	5510	13.33	13.83	24.00	-10.17
Mid	5550	13.93	14.43	24.00	-9.57
High	5670	14.14	14.64	24.00	-9.37

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5510	-0.99	-0.49	11.00	-11.49
Mid	5550	-0.62	-0.12	11.00	-11.12
High	5670	-0.18	0.32	11.00	-10.68

10.5.12. 802.11ac HT80 MODE IN THE 5.5 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5530	83.214	74.816	2.50
High	5610	85.440	74.614	2.50

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	5530	24.00	24.00	30.00	24.00	11.00	11.00	11.00
High	5610	24.00	24.00	30.00	24.00	11.00	11.00	11.00

Duty Cycle CF (dB)	2.74	Included in Calculations of Corr'd Power & PPSD
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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	5530	11.40	14.14	24.00	-9.86
High	5610	11.70	14.44	24.00	-9.56

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5530	-5.55	-2.81	11.00	-13.81
High	5610	-5.21	-2.47	11.00	-13.47

10.5.13. 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	21.780	16.62	2.40
Mid	5785	21.510	16.62	2.40
High	5825	22.290	16.63	2.40

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	29.21	35.21	29.21	30.00	17.00	17.00
Mid	5785	30.00	29.21	35.21	29.21	30.00	17.00	17.00
High	5825	30.00	29.21	35.21	29.21	30.00	17.00	17.00

Duty Cycle CF (dB)	0.22	Included in Calculations of Corr'd Power & PPSP
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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	11.71	11.93	29.21	-17.28
Mid	5785	11.83	12.05	29.21	-17.15
High	5825	11.57	11.79	29.21	-17.42

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5745	0.51	0.73	17.00	-16.27
Mid	5785	0.63	0.85	17.00	-16.15
High	5825	0.38	0.60	17.00	-16.40

10.5.14. 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	22.080	17.80	2.40
Mid	5785	22.140	17.81	2.40
High	5825	22.080	17.81	1.80

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	29.50	35.50	29.50	30.00	17.00	17.00
Mid	5785	30.00	29.51	35.51	29.51	30.00	17.00	17.00
High	5825	30.00	29.51	35.51	29.51	30.00	17.00	17.00

Duty Cycle CF (dB)	0.22	Included in Calculations of Corr'd Power & PSD
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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	11.67	11.89	29.50	-17.61
Mid	5785	11.78	12.00	29.51	-17.51
High	5825	11.71	11.93	29.51	-17.58

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5745	-0.05	0.17	17.00	-16.83
Mid	5785	0.25	0.47	17.00	-16.53
High	5825	0.32	0.54	17.00	-16.46

10.5.15. 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	42.360	36.02	2.40
High	5795	42.660	36.01	2.40

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	17.00	17.00
High	5795	30.00	30.00	36.00	30.00	30.00	17.00	17.00

Duty Cycle CF (dB)	0.50	Included in Calculations of Corr'd Power & PSD
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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	10.84	11.34	30.00	-18.66
High	5795	11.09	11.59	30.00	-18.41

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5755	-3.26	-2.76	17.00	-19.76
High	5795	-3.25	-2.75	17.00	-19.75

10.5.16. 802.11ac HT80 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	5775	84.5	74.9	2.40

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	5775	30.00	30.00	36.00	30.00	30.00	17.00	17.00

Duty Cycle CF (dB)	2.74	Included in Calculations of Corr'd Power & PPSD
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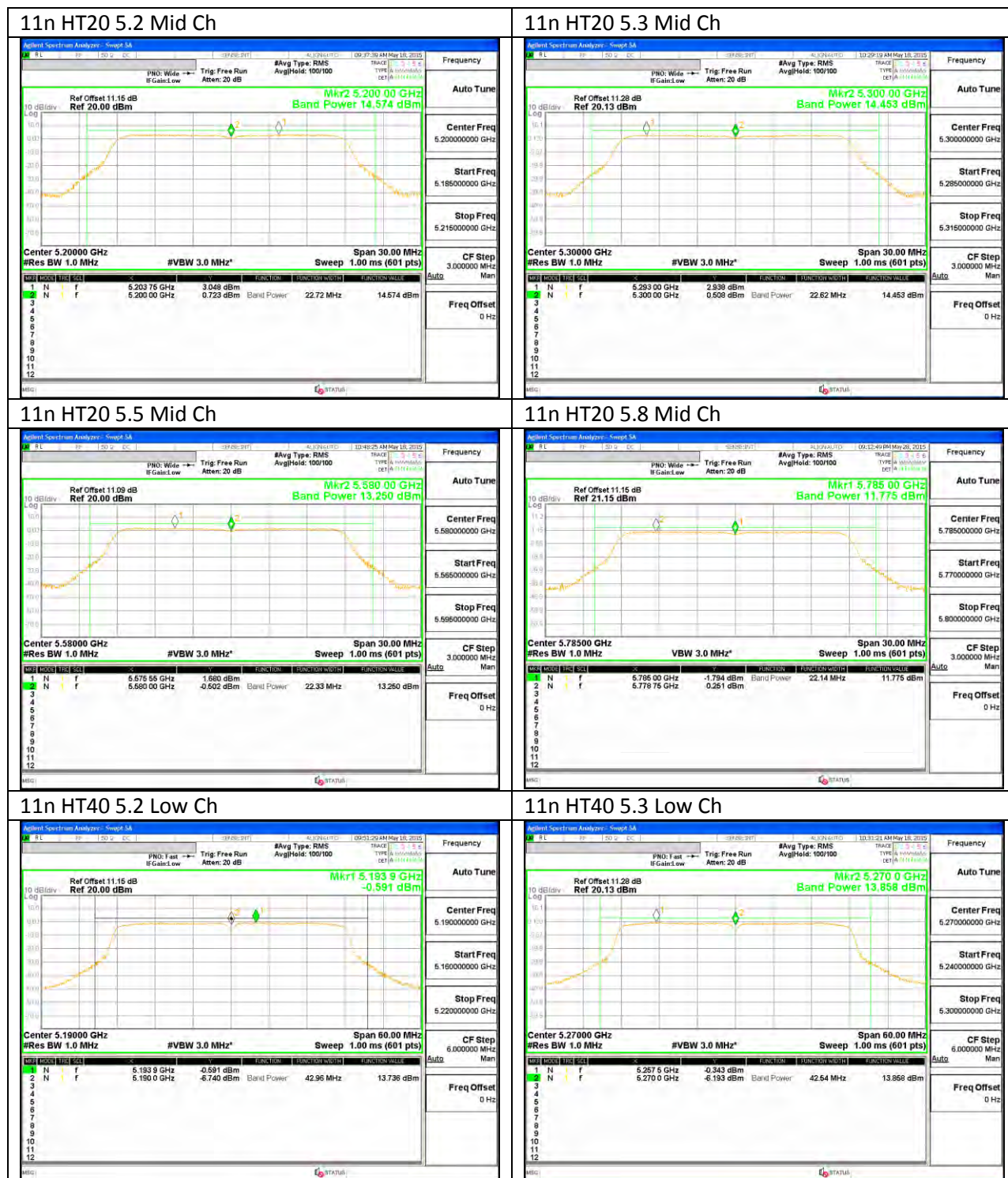
Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5775	9.25	11.99	30.00	-18.01

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5775	-4.84	-2.10	17.00	-19.10

10.5.17. OUTPUT POWER AND PPSD PLOTS, Chain 0



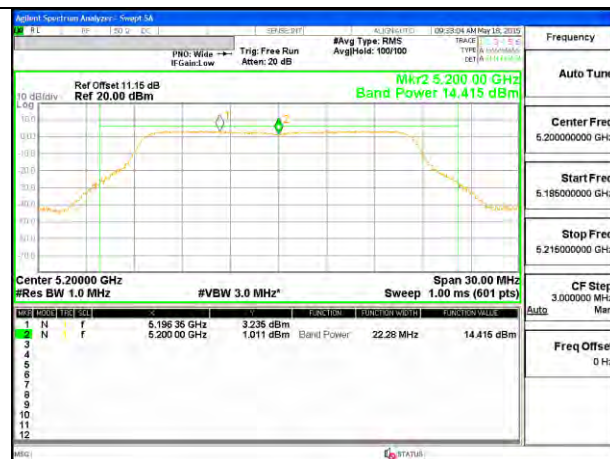
11n HT40 5.5 Mid Ch



11n HT40 5.8 Low Ch



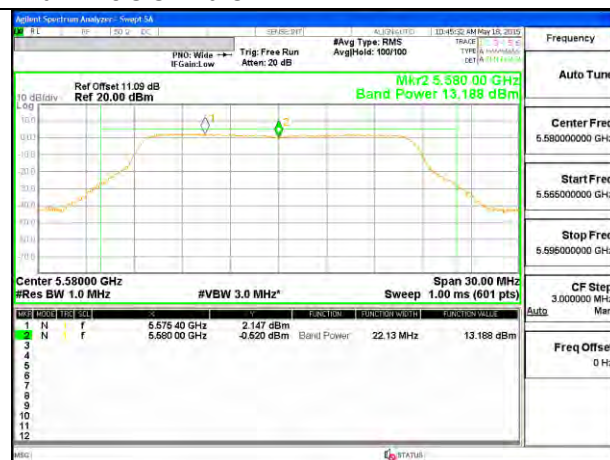
11a HT20 5.2 Mid Ch



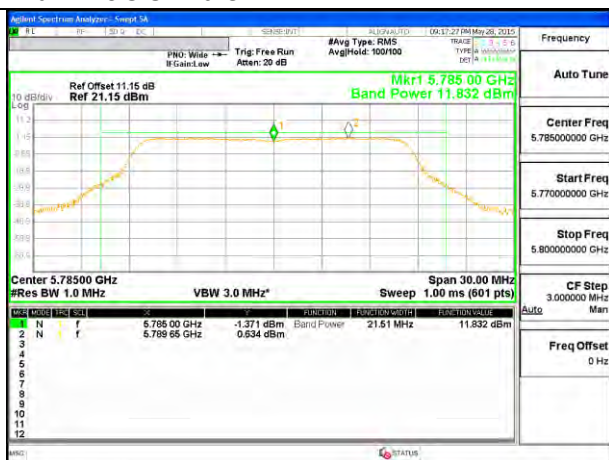
11a HT20 5.3 Mid Ch



11a HT20 5.5 Mid Ch



11a HT20 5.8 Mid Ch



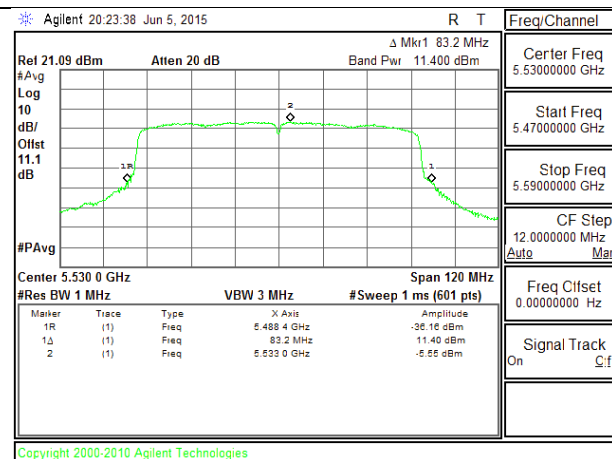
1ac HT80 5.2 Low Ch



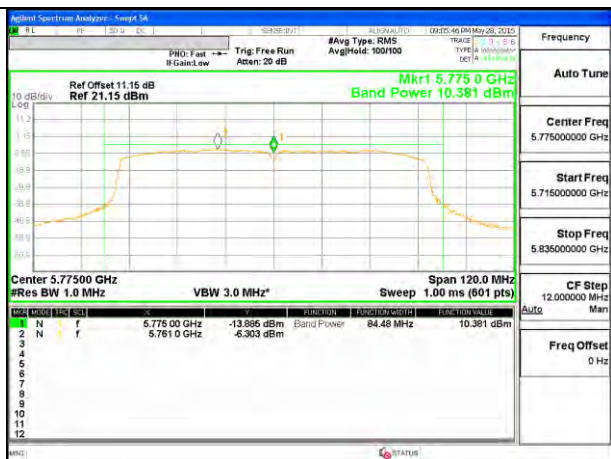
1ac HT80 5.3 Low Ch



11ac HT80 5.5 Low Ch



11ac HT80 5.8 Low Ch



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11. TRANSMITTER ABOVE 1 GHz

LIMITS

FCC §15.205 and §15.209

Frequency Range (MHz)	Field Strength Limit ($\mu\text{V}/\text{m}$) at 3 m	Field Strength Limit (dB $\mu\text{V}/\text{m}$) 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 G) 6) d) Method AD:

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.

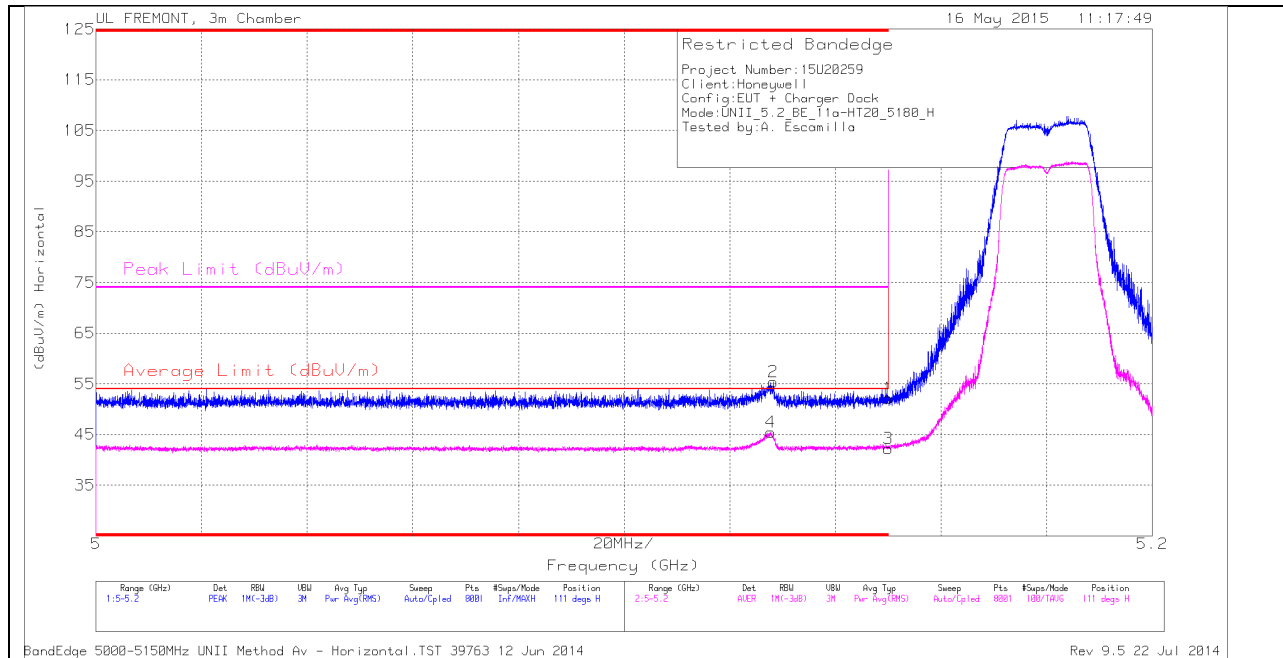
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

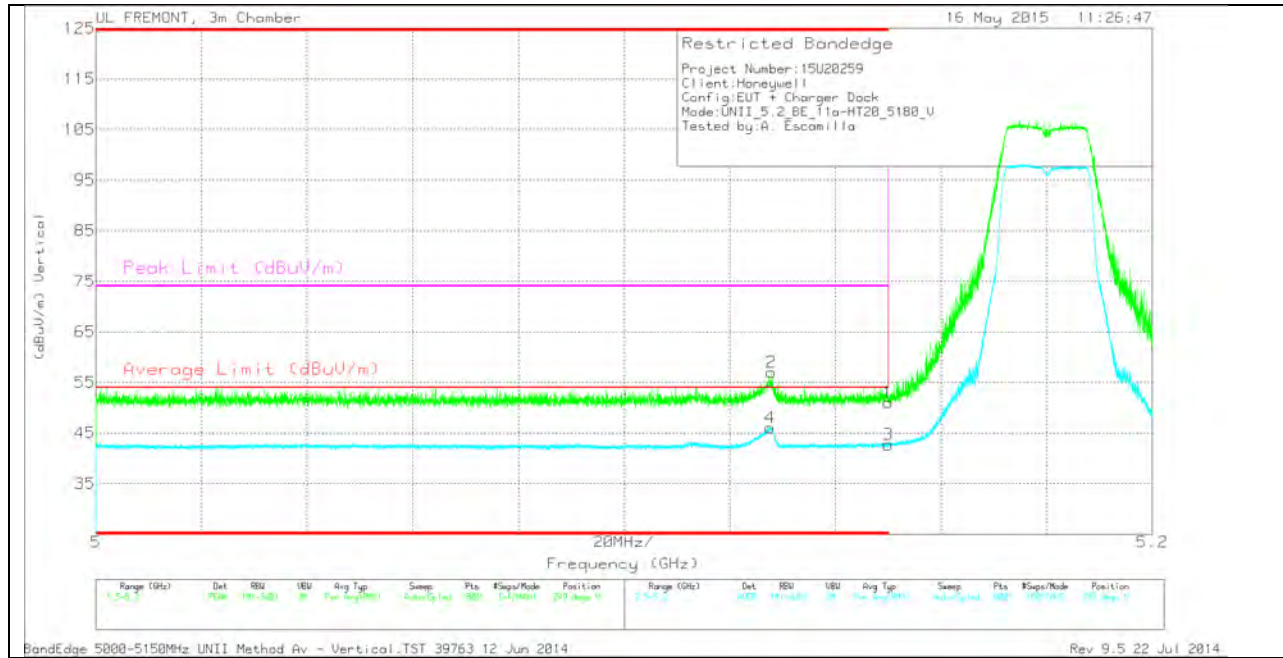
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AFT119 (dB/m)	Amp/Cb/Filt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 5.128	42.71	PK	34.2	-21.5	0	55.41	-	-	74	-18.59	111	312	H
4	* 5.128	32.49	RMS	34.2	-21.5	.21	45.4	54	-8.6	-	-	111	312	H
1	* 5.15	39.59	PK	34.2	-21.6	0	52.19	-	-	74	-21.81	111	312	H
3	* 5.15	29.45	RMS	34.2	-21.6	.21	42.26	54	-11.74	-	-	111	312	H

VERTICAL PEAK AND AVERAGE PLOT

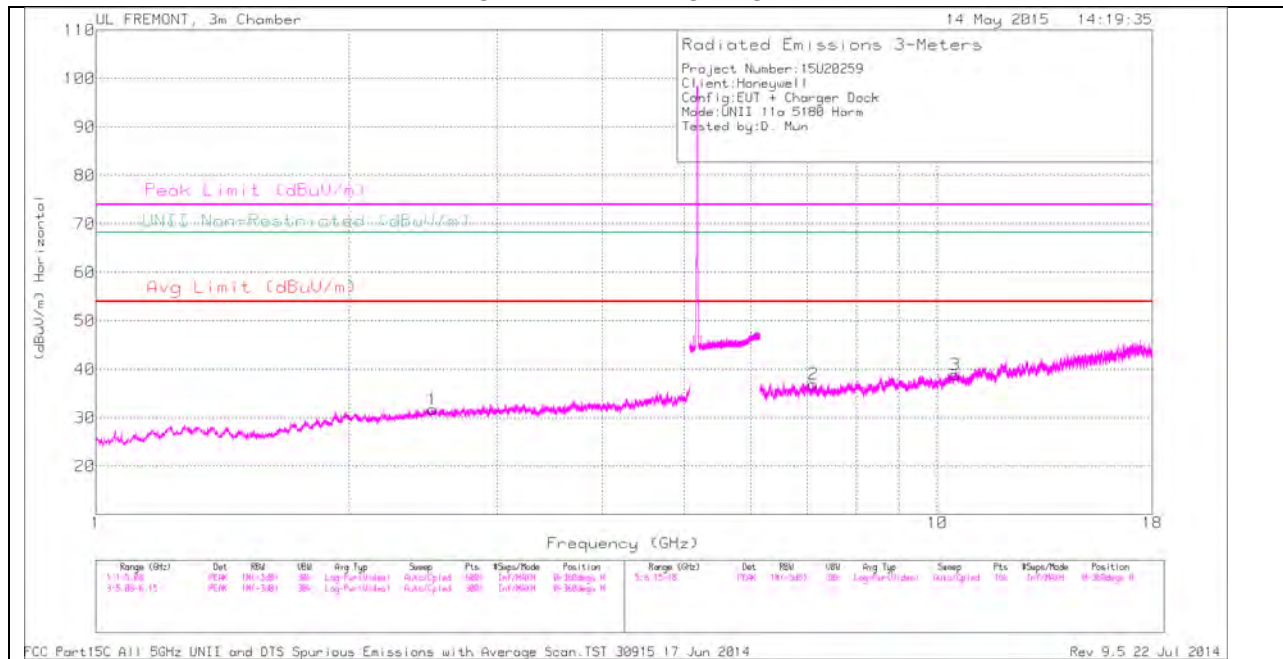


VERTICAL DATA

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
2	* 5.128	44.35	PK	34.2	-21.5	0	57.05	-	-	74	-16.95	249	100	V
4	* 5.128	33.11	RMS	34.2	-21.5	.21	46.02	54	-7.98	-	-	249	100	V
1	* 5.15	38.4	PK	34.2	-21.6	0	51	-	-	74	-23	249	100	V
3	* 5.15	29.85	RMS	34.2	-21.6	.21	42.66	54	-11.34	-	-	249	100	V

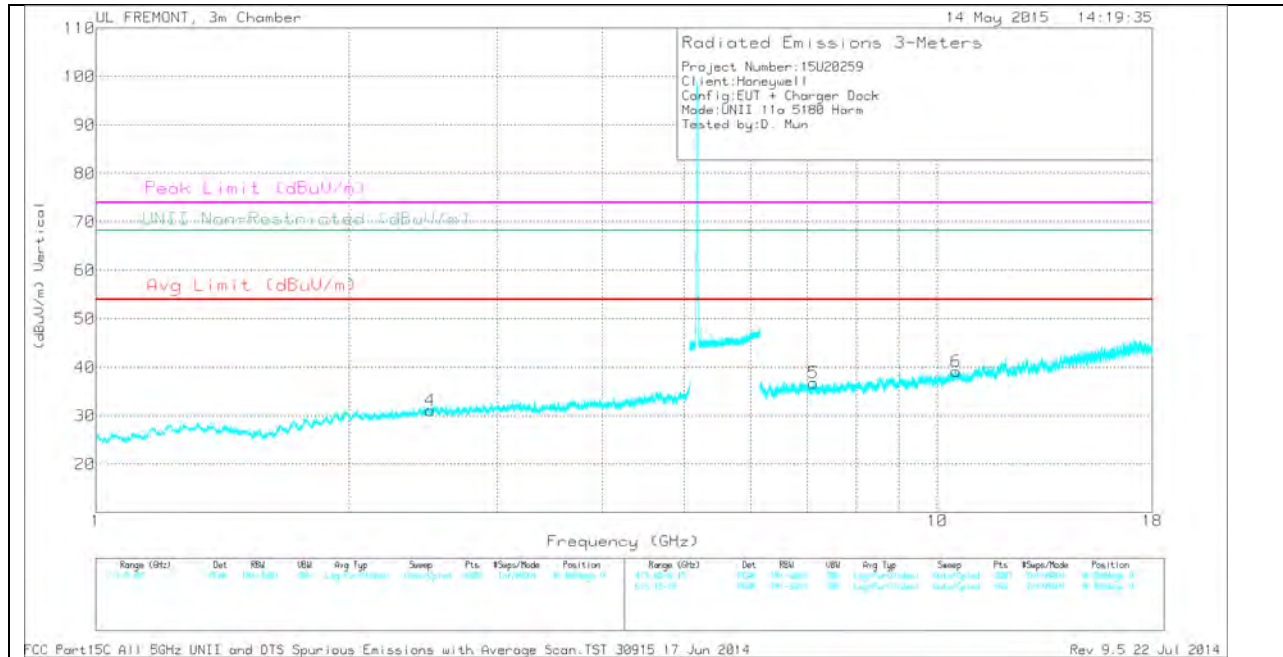
HARMONICS AND SPURIOUS EMISSIONS

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.

LOW CHANNEL VERTICAL



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

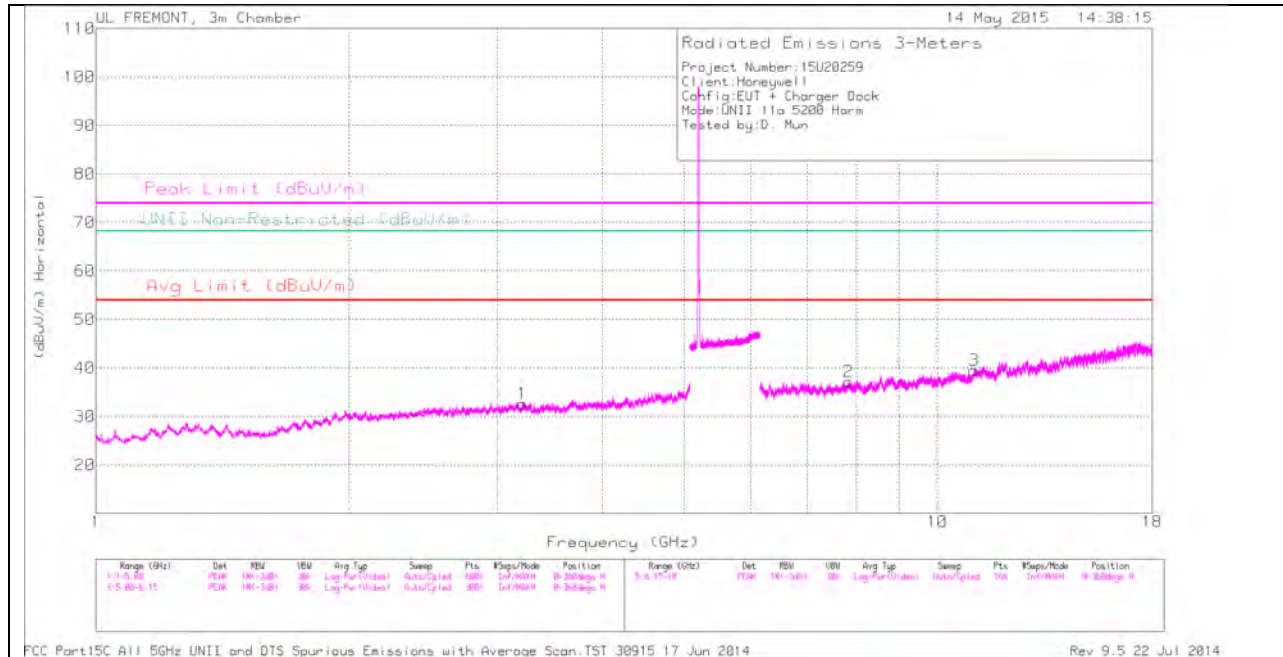
LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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
4	2.497	30.84	PK	32.3	-32	31.14	-	-	74	-42.86	-	-	0-360	100	V
1	2.512	31.53	PK	32.3	-32.1	31.73	-	-	-	-	68.2	-36.47	0-360	100	H
5	7.119	30.15	PK	35.6	-28.9	36.85	-	-	-	-	68.2	-31.35	0-360	100	V
2	7.128	30.36	PK	35.6	-29	36.96	-	-	-	-	68.2	-31.24	0-360	200	H
3	10.496	26.97	PK	37.5	-25.6	38.87	-	-	-	-	68.2	-29.33	0-360	100	H
6	10.517	26.79	PK	37.5	-25.1	39.19	-	-	-	-	68.2	-29.01	0-360	100	V

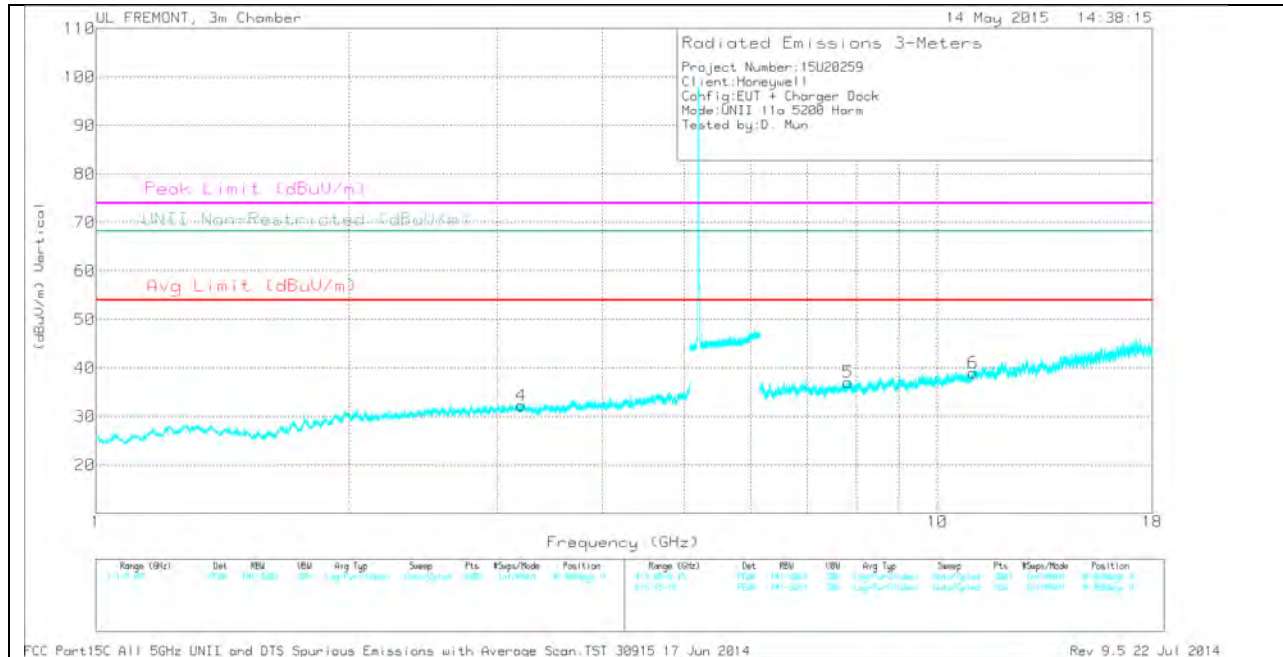
PK - Peak detector

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.

MID CHANNEL VERTICAL



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

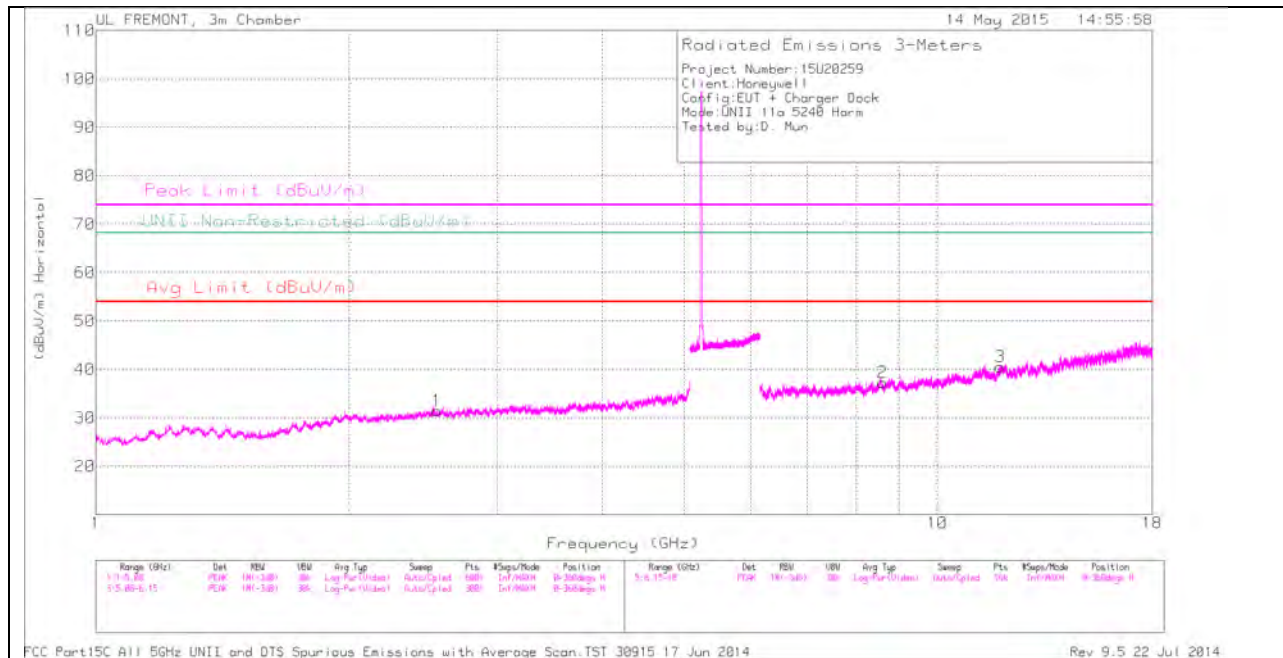
MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Chl/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
4	3.205	30.71	PK	32.6	-31.1	32.21	-	-	-	-	68.2	-35.99	0-360	100	V
1	3.215	31.34	PK	32.6	-31.3	32.64	-	-	-	-	68.2	-35.56	0-360	200	H
5	7.833	29.07	PK	35.8	-27.8	37.07	-	-	-	-	68.2	-31.13	0-360	200	V
2	7.838	29.22	PK	35.8	-27.8	37.22	-	-	-	-	68.2	-30.98	0-360	100	H
6	11.018	26.58	PK	37.9	-25.5	38.98	-	-	74	-35.02	-	-	0-360	100	V
3	11.053	26.89	PK	37.8	-25.2	39.49	-	-	74	-34.51	-	-	0-360	100	H

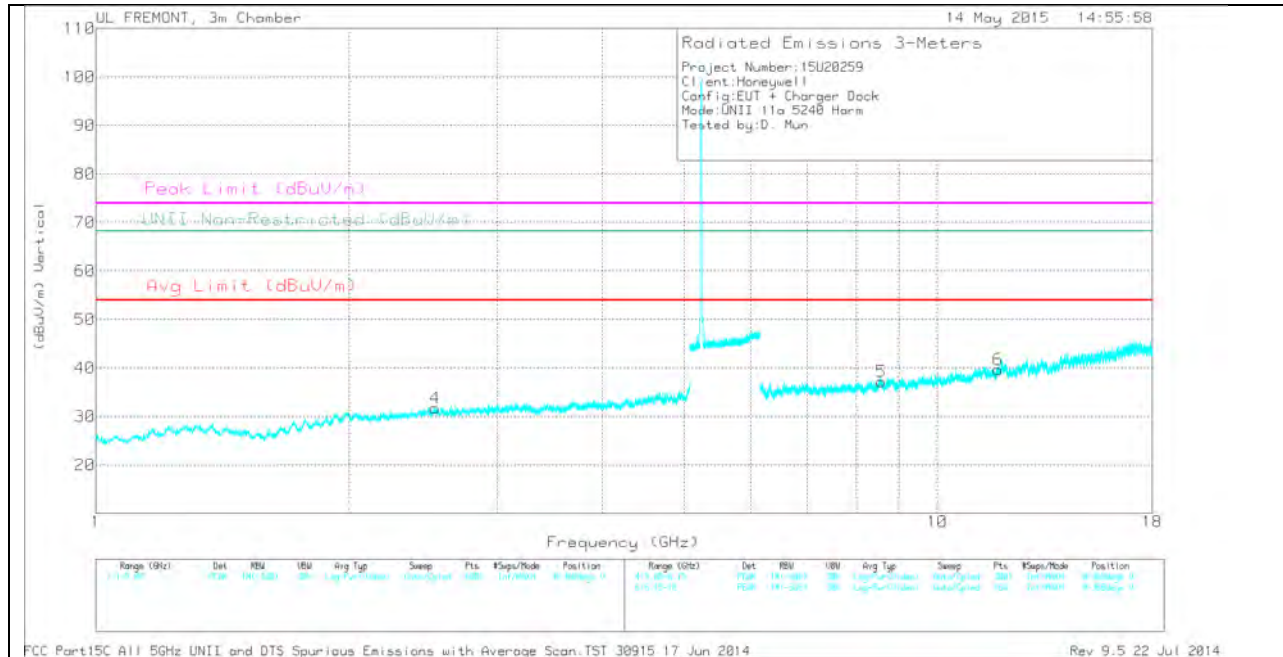
PK - Peak detector

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.

HIGH CHANNEL VERTICAL



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

HIGH CHANNEL DATA

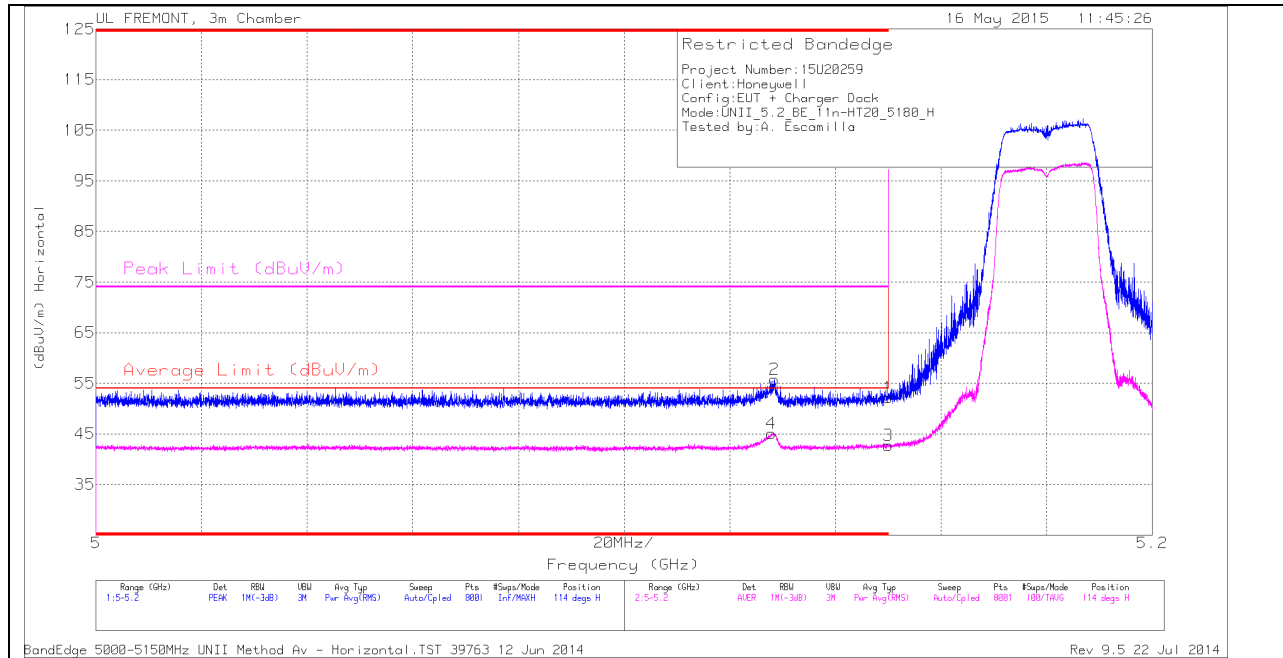
TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/CbI/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
4	2.531	31.5	PK	32.4	-32.1	31.8	-	-	-	-	68.2	-36.4	0-360	200	V
1	2.543	31.03	PK	32.4	-32	31.43	-	-	-	-	68.2	-36.77	0-360	100	H
5	8.582	27.75	PK	35.8	-26.4	37.15	-	-	-	-	68.2	-31.05	0-360	100	V
2	8.609	27.92	PK	35.8	-26.4	37.32	-	-	-	-	68.2	-30.88	0-360	100	H
6	11.818	26.97	PK	39	-26.3	39.67	-	-	74	-34.33	-	-	0-360	100	V
3	11.867	27.9	PK	39.1	-26.4	40.6	-	-	74	-33.4	-	-	0-360	100	H

PK - Peak detector

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

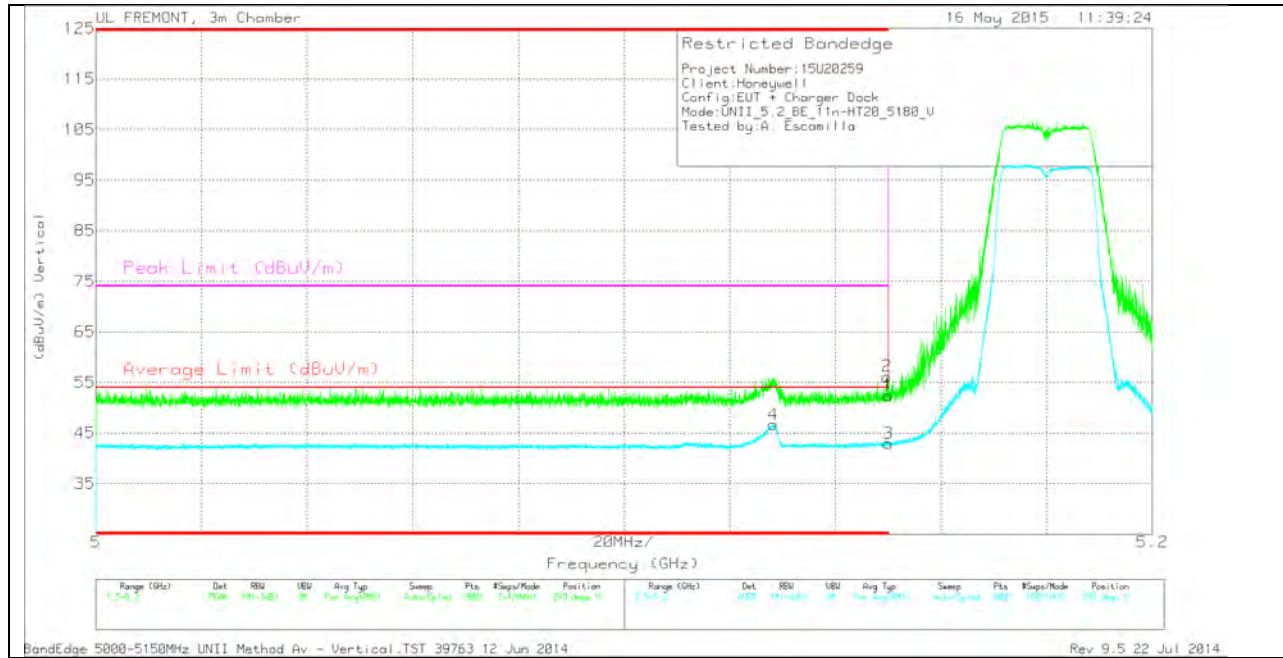
HORIZONTAL PEAK AND AVERAGE PLOT



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	* 5.128	32.21	RMS	34.2	-21.5	.22	45.13	54	-8.87	-	-	114	343	H
2	* 5.129	43.06	PK	34.2	-21.5	0	55.76	-	-	74	-18.24	114	343	H
1	* 5.15	39.5	PK	34.2	-21.6	0	52.1	-	-	74	-21.9	114	343	H
3	* 5.15	29.91	RMS	34.2	-21.6	.22	42.73	54	-11.27	-	-	114	343	H

VERTICAL PEAK AND AVERAGE PLOT

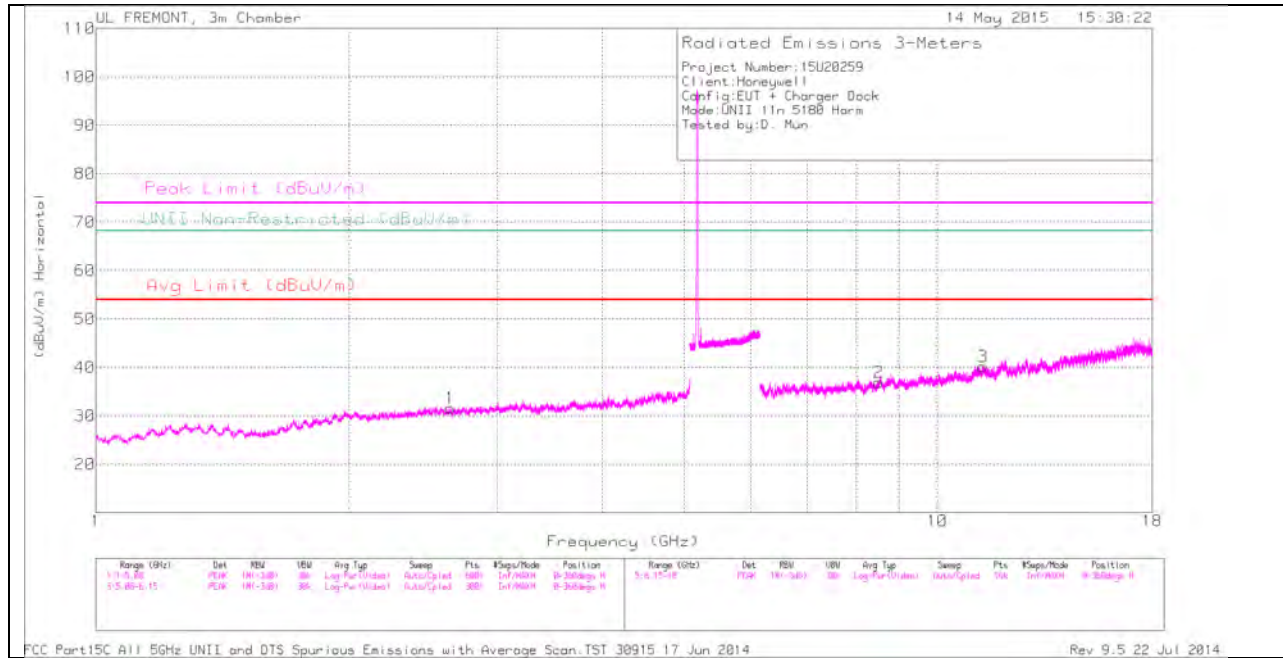


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cb/Filt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 5.128	33.81	RMS	34.2	-21.5	.22	46.73	54	-7.27	-	-	249	100	V
1	* 5.15	39.86	PK	34.2	-21.6	0	52.46	-	-	74	-21.54	249	100	V
2	* 5.15	43.59	PK	34.2	-21.6	0	56.19	-	-	74	-17.81	249	100	V
3	* 5.15	30.14	RMS	34.2	-21.6	.22	42.96	54	-11.04	-	-	249	100	V

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.

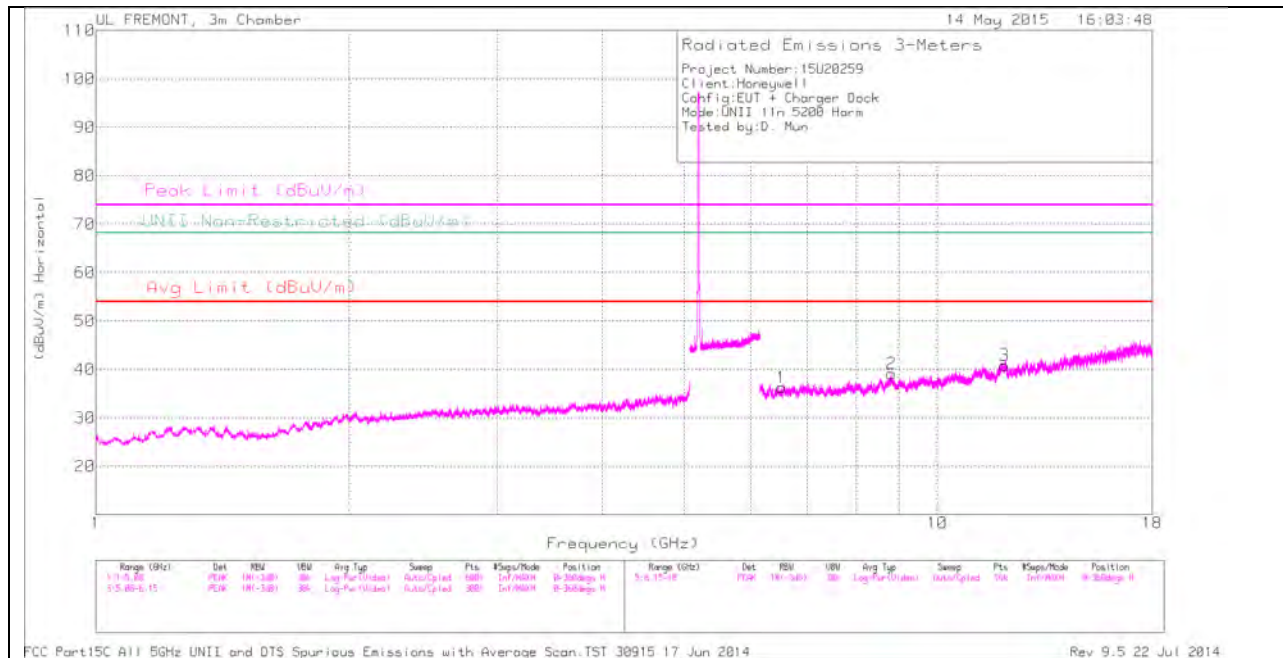
LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Chl/Filt /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
4	2.632	31.95	PK	32.4	-32.4	31.95	-	-	-	-	68.2	-36.25	0-360	200	V
1	2.638	31.66	PK	32.4	-32.5	31.56	-	-	-	-	68.2	-36.64	0-360	100	H
2	8.512	28.47	PK	35.8	-27.3	36.97	-	-	-	-	68.2	-31.23	0-360	100	H
5	8.53	28.58	PK	35.8	-26.7	37.68	-	-	-	-	68.2	-30.52	0-360	200	V
6	11.267	27.64	PK	38	-25.8	39.84	-	-	74	-34.16	-	-	0-360	200	V
3	11.321	27.54	PK	38.1	-25.4	40.24	-	-	74	-33.76	-	-	0-360	100	H

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.

UL FREMONT, 3m Chamber

14 May 2015 16:03:48

Radiated Emissions 3-Meters

Project Number: 15U20259
 Client: Honeywell
 Config: EUT + Charger Dock
 Mode: UNII 1 in 5200 Harm
 Tested by: D. Mun

Peak Limit (dBuV/m)
 UNI Non-Restricted (dBuV/m)
 Avg Limit (dBuV/m)

(dBuV/m) User1.col

Frequency (GHz)

Range (GHz)	Det	RBW	VBW	Res Type	Sweep	Pts	Kepts/Mode	Position	Range (GHz)	Det	RBW	VBW	Res Type	Sweep	Pts	Kepts/Mode	Position
1 to 5.00	Peak	100 kHz	300 Hz	Log Post-Filter	Auto-Sweep	1024	10000	0	4 to 5.00 GHz	Peak	100 kHz	300 Hz	Log Post-Filter	Auto-Sweep	1024	10000	0
									5 to 10 GHz	Peak	100 kHz	300 Hz	Log Post-Filter	Auto-Sweep	1024	10000	0

FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST.30915.17 Jun 2014

Rev 9.5 22 Jul 2014

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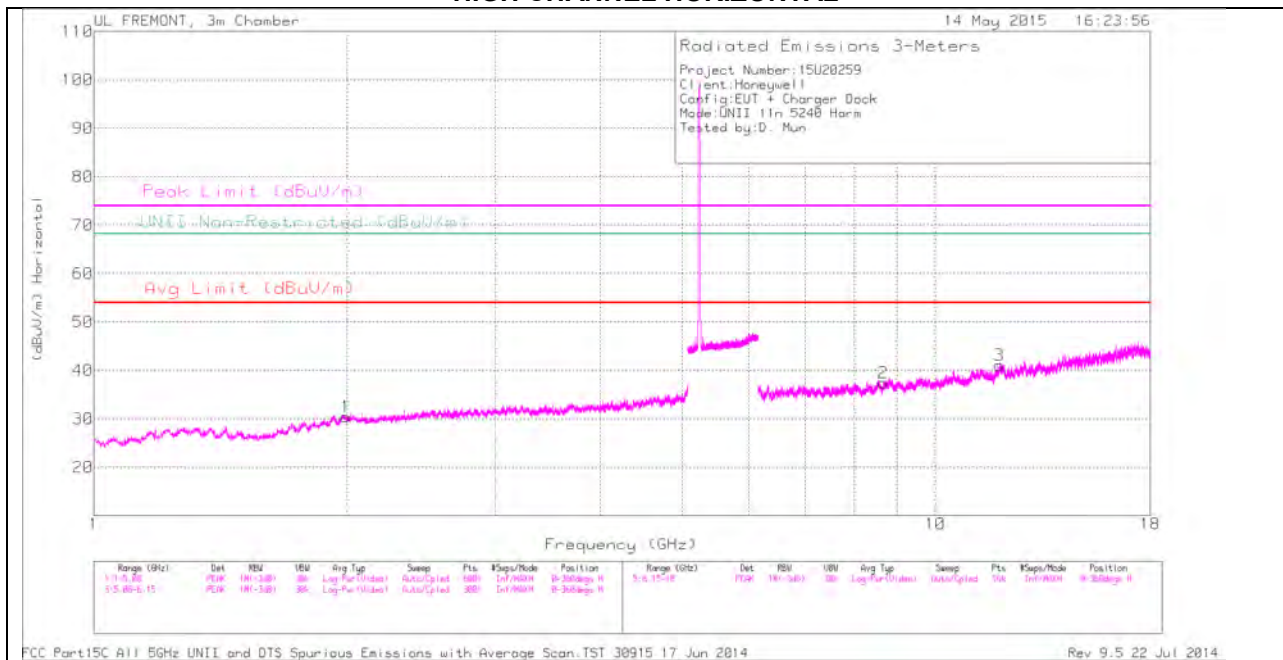
MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cb/Ftr /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	6.529	29.94	PK	35.6	-29.3	36.24	-	-	-	-	68.2	-31.96	0-360	100	H
4	6.895	30.68	PK	35.6	-29.3	36.98	-	-	-	-	68.2	-31.22	0-360	100	V
5	8.629	27.86	PK	35.8	-27.1	36.56	-	-	-	-	68.2	-31.64	0-360	200	V
2	8.821	28.99	PK	35.9	-25.7	39.19	-	-	-	-	68.2	-29.01	0-360	100	H
6	11.93	28.29	PK	39.1	-26.2	41.19	-	-	74	-32.81	-	-	0-360	200	V
3	12.016	27.89	PK	39.1	-26.1	40.89	-	-	74	-33.11	-	-	0-360	100	H

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.

UL FREMONT, 3m Chamber

14 May 2015 16:23:56

Radiated Emissions 3-Meters

Project Number: 15U20259
Client: Honeywell
Config: EUT + Charger Dock
Made: UNII 11n 5248 Harm
Tested by: D. Mun

Peak Limit (dBUV/m)
UNII-Non-Restricted (dBUV/m)
Avg Limit (dBUV/m)

(dBUV/m) Vertical

Frequency (GHz)

Range (GHz)	Det	RBW	VBW	Avg Type	Sweep	Pts	Setup/Mode	Position
1-18 GHz	Peak	100 kHz	300 Hz	Log-Peak(Average)	Auto-Sweep	1024	11n/5248 Harm	0: 5000pts, 0

FCC Part 15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

Rev 9.5 22 Jul 2014

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HIGH CHANNEL DATA

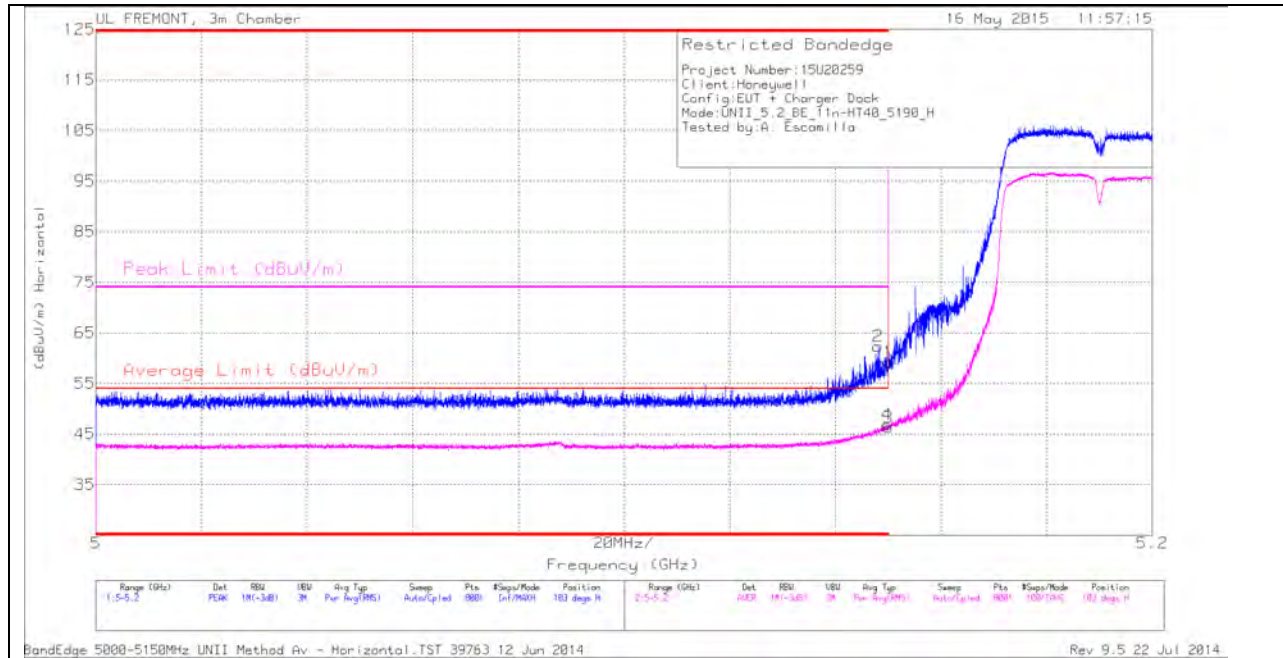
TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Chl/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
4	1.985	31.93	PK	31.4	-32	31.33	-	-	-	-	68.2	-36.87	0-360	200	V
1	1.991	30.94	PK	31.5	-32	30.44	-	-	-	-	68.2	-37.76	0-360	200	H
5	8.61	27.43	PK	35.8	-26.4	36.83	-	-	-	-	68.2	-31.37	0-360	200	V
2	8.669	29.35	PK	35.9	-27.8	37.45	-	-	-	-	68.2	-30.75	0-360	200	H
6	11.916	28.22	PK	39.1	-26.2	41.12	-	-	74	-32.88	-	-	0-360	100	V
3	11.918	28.24	PK	39.1	-26.2	41.14	-	-	74	-32.86	-	-	0-360	100	H

PK - Peak detector

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

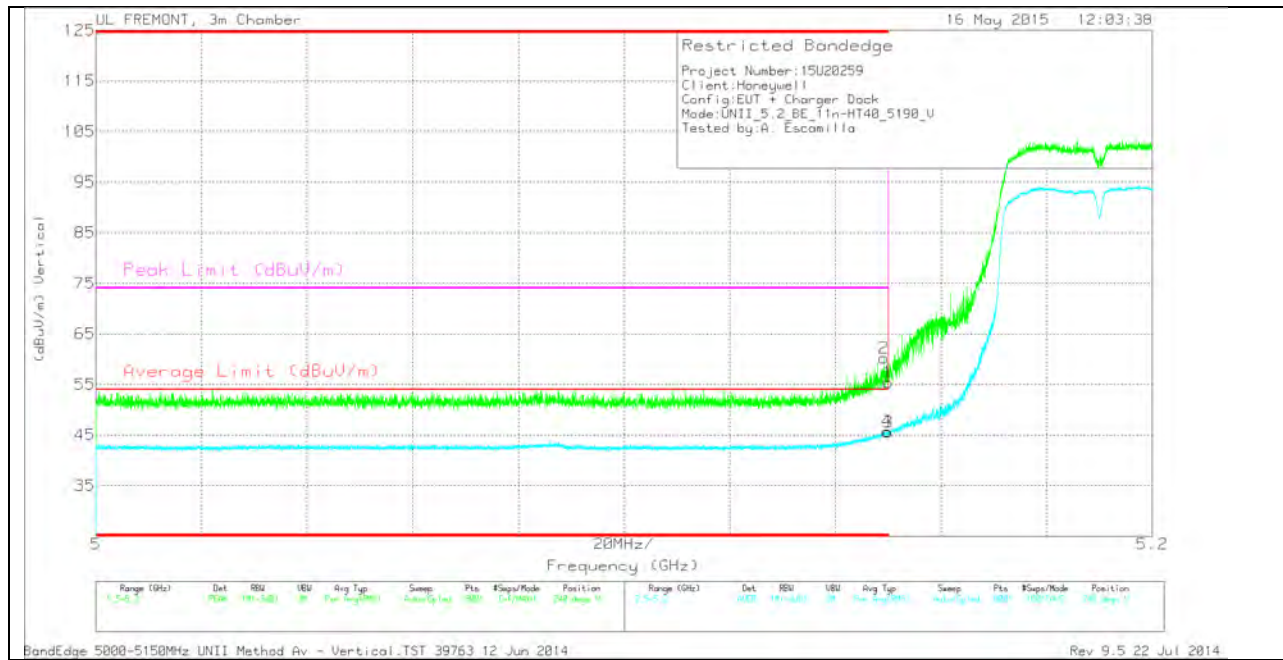
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/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	* 5.148	49.73	PK	34.2	-21.6	0	62.33	-	-	74	-11.67	103	287	H
1	* 5.15	46.63	PK	34.2	-21.6	0	59.23	-	-	74	-14.77	103	287	H
3	* 5.15	33.19	RMS	34.2	-21.6	.5	46.29	54	-7.71	-	-	103	287	H
4	* 5.15	33.77	RMS	34.2	-21.6	.5	46.87	54	-7.13	-	-	103	287	H

VERTICAL PEAK AND AVERAGE PLOT

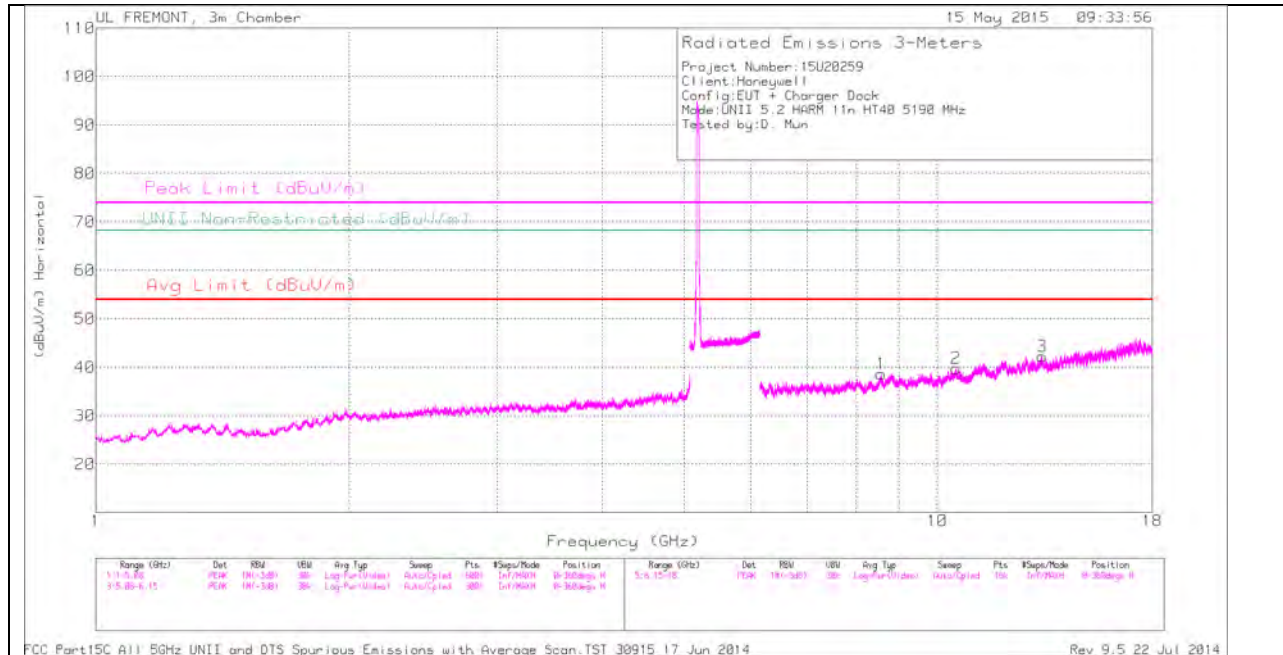


VERTICAL DATA

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	* 5.149	47.61	PK	34.2	-21.6	0	60.21	-	-	74	-13.79	240	230	V
1	* 5.15	42.74	PK	34.2	-21.6	0	55.34	-	-	74	-18.66	240	230	V
3	* 5.15	32.45	RMS	34.2	-21.6	.5	45.55	54	-8.45	-	-	240	230	V
4	* 5.15	32.57	RMS	34.2	-21.6	.5	45.67	54	-8.33	-	-	240	230	V

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.

UL FREMONT, 3m Chamber

15 May 2015 09:33:56

Radiated Emissions 3-Meters

Project Number: 15U20259
 Client: Honeywell
 Config: EUT + Charger Dock
 Mode: UNII 5.2 HARM 1 in HT48 5190 MHz
 Tested by: D. Mun

Peak Limit (dBuV/m)
 UNII Non-Protected (dBuV/m)
 Avg Limit (dBuV/m)

(dBuV/m) Vertical

Frequency (GHz)

Range (GHz)	Det	RBW	VBW	Avg Type	Sweep	Pts	ResolvMode	Position
1.0 - 5.0	Peak	100 kHz	300 Hz	Log PerChannel	Normal	4096	Off	Bottom
Range (GHz)	Det	RBW	VBW	Avg Type	Sweep	Pts	ResolvMode	Position
4.75 - 5.25 GHz	Peak	100 kHz	300 Hz	Log PerChannel	Normal	4096	Off	Bottom

FCC Part 15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

Rev 9.5 22 Jul 2014

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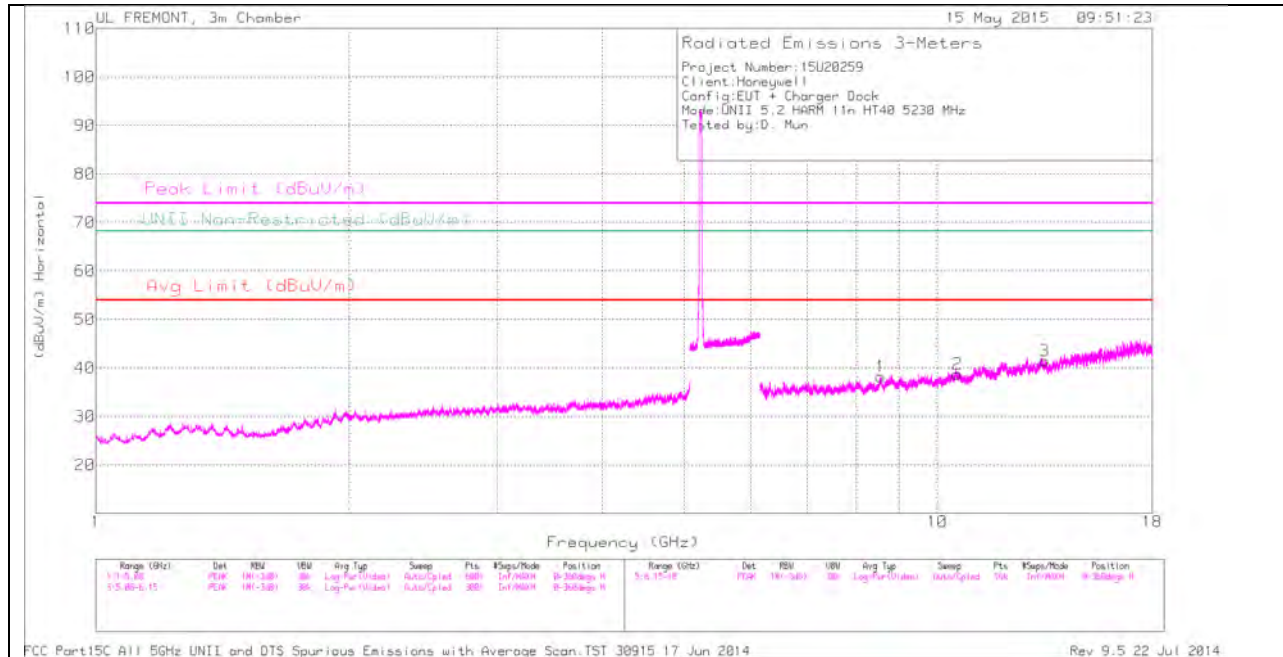
MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Chl/Filt /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
4	8.549	28.18	PK	35.8	-26	37.98	-	-	-	-	68.2	-30.22	0-360	100	V
1	8.569	28.97	PK	35.8	-26.2	38.57	-	-	-	-	68.2	-29.63	0-360	200	H
5	10.482	27.14	PK	37.4	-25.7	38.84	-	-	-	-	68.2	-29.36	0-360	100	V
2	10.517	27.33	PK	37.5	-25.1	39.73	-	-	-	-	68.2	-28.47	0-360	100	H
3	13.316	30.31	PK	39	-27	42.31	-	-	74	-31.69	-	-	0-360	200	H
6	13.337	29.14	PK	39	-27	41.14	-	-	74	-32.86	-	-	0-360	100	V

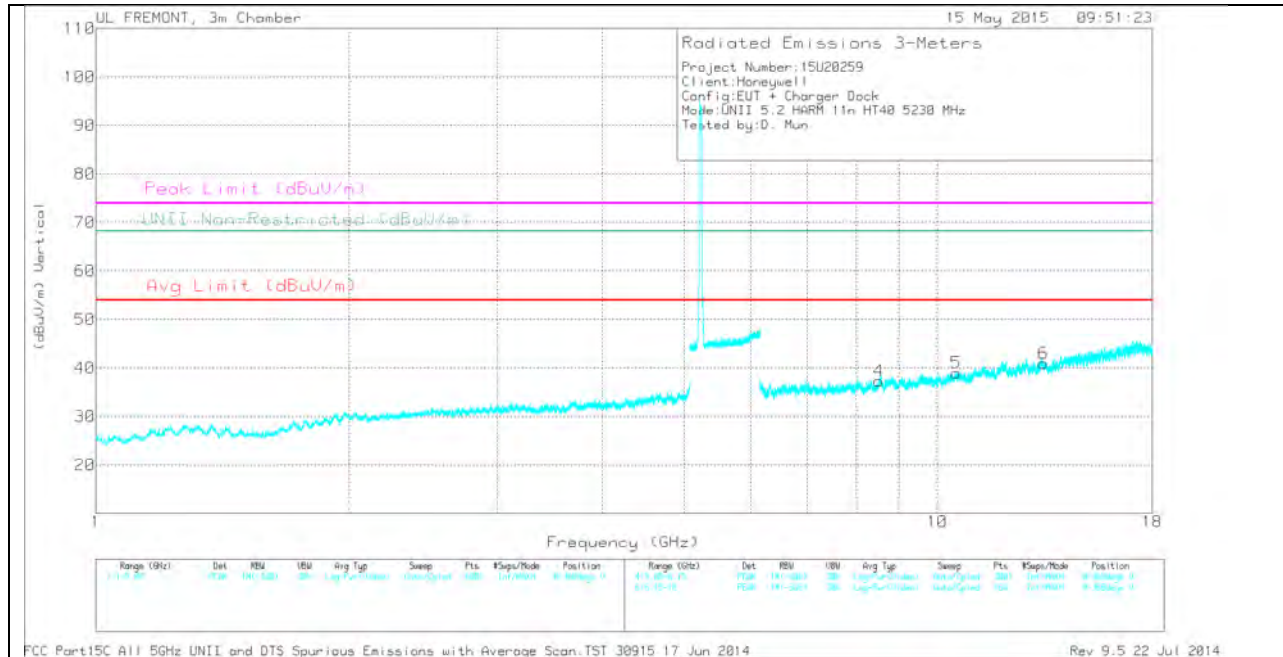
PK - Peak detector

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.

HIGH CHANNEL VERTICAL



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

HIGH CHANNEL DATA

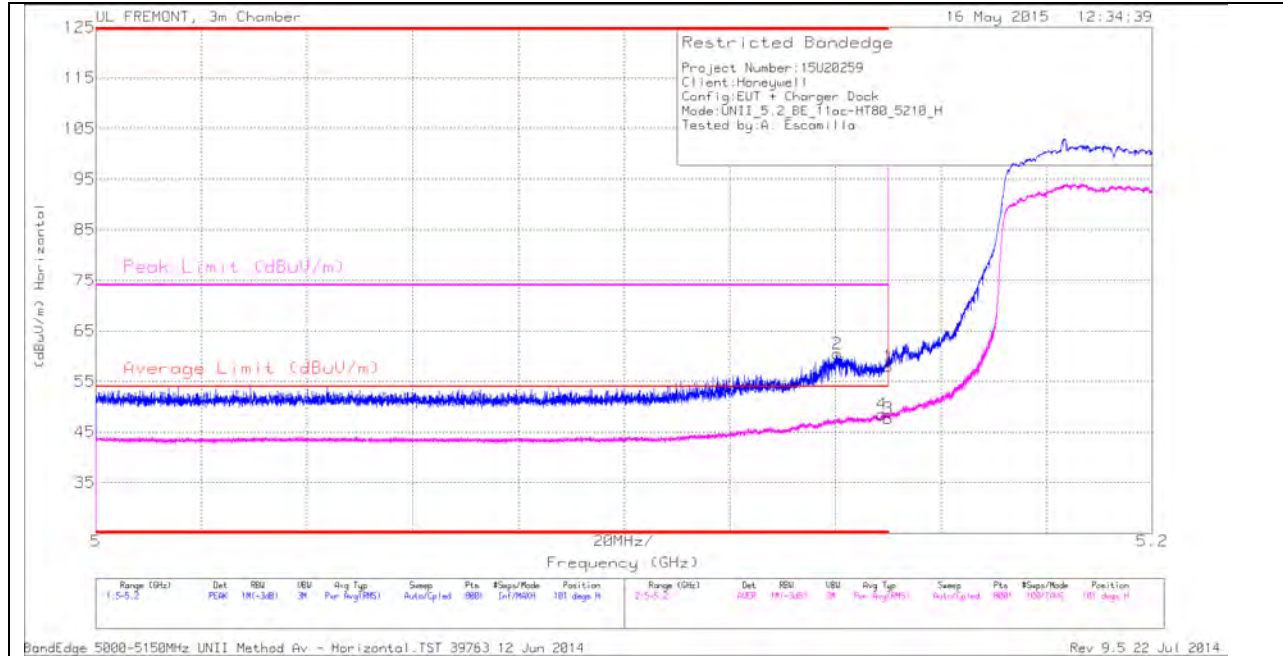
TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Chl/Filt /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
4	8.516	28.68	PK	35.8	-27.2	37.28	-	-	-	-	68.2	-30.92	0-360	200	V
1	8.56	28.56	PK	35.8	-26.1	38.26	-	-	-	-	68.2	-29.94	0-360	100	H
5	10.519	26.47	PK	37.5	-25	38.97	-	-	-	-	68.2	-29.23	0-360	200	V
2	10.556	26.41	PK	37.6	-25.3	38.71	-	-	-	-	68.2	-29.49	0-360	100	H
6	13.361	29.46	PK	39	-27.5	40.96	-	-	74	-33.04	-	-	0-360	200	V
3	13.408	30.01	PK	39	-27.5	41.51	-	-	-	-	68.2	-26.69	0-360	100	H

PK - Peak detector

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

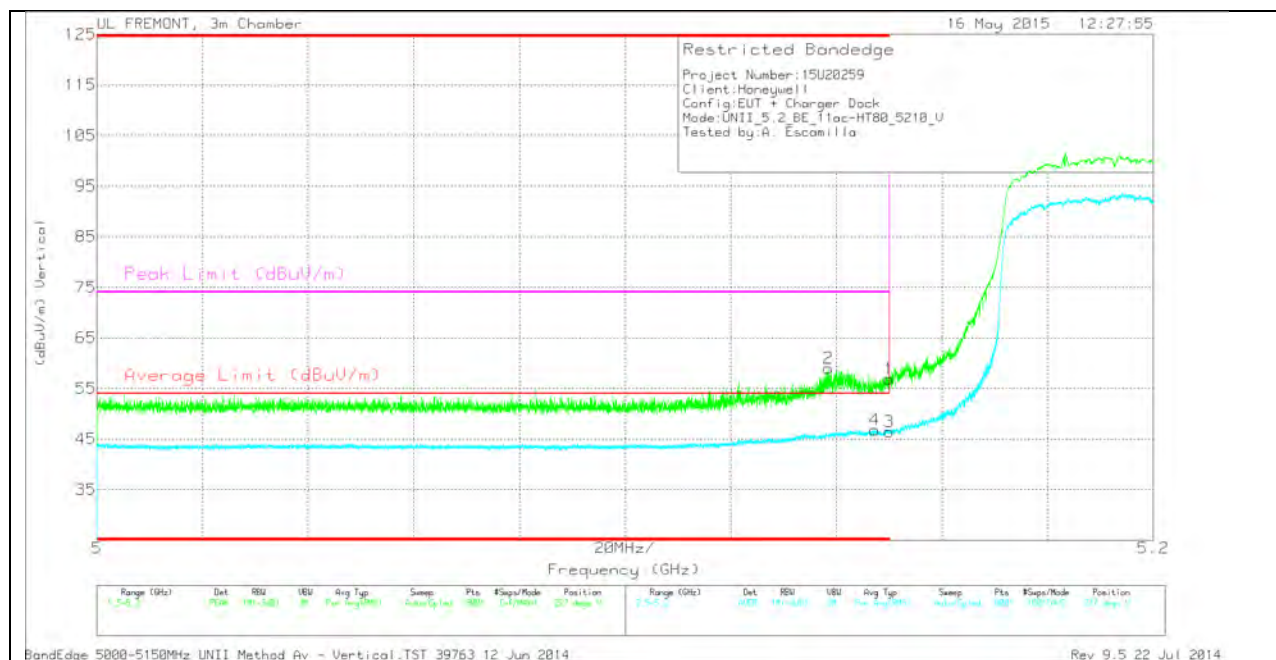
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Filt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 5.14	47.88	PK	34.2	-21.6	0	60.48	-	-	74	-13.52	101	286	H
4	* 5.149	34.53	RMS	34.2	-21.6	1.47	48.6	54	-5.4	-	-	101	286	H
1	* 5.15	45.37	PK	34.2	-21.6	0	57.97	-	-	74	-16.03	101	286	H
3	* 5.15	33.56	RMS	34.2	-21.6	1.47	47.63	54	-6.37	-	-	101	286	H

VERTICAL PEAK AND AVERAGE PLOT

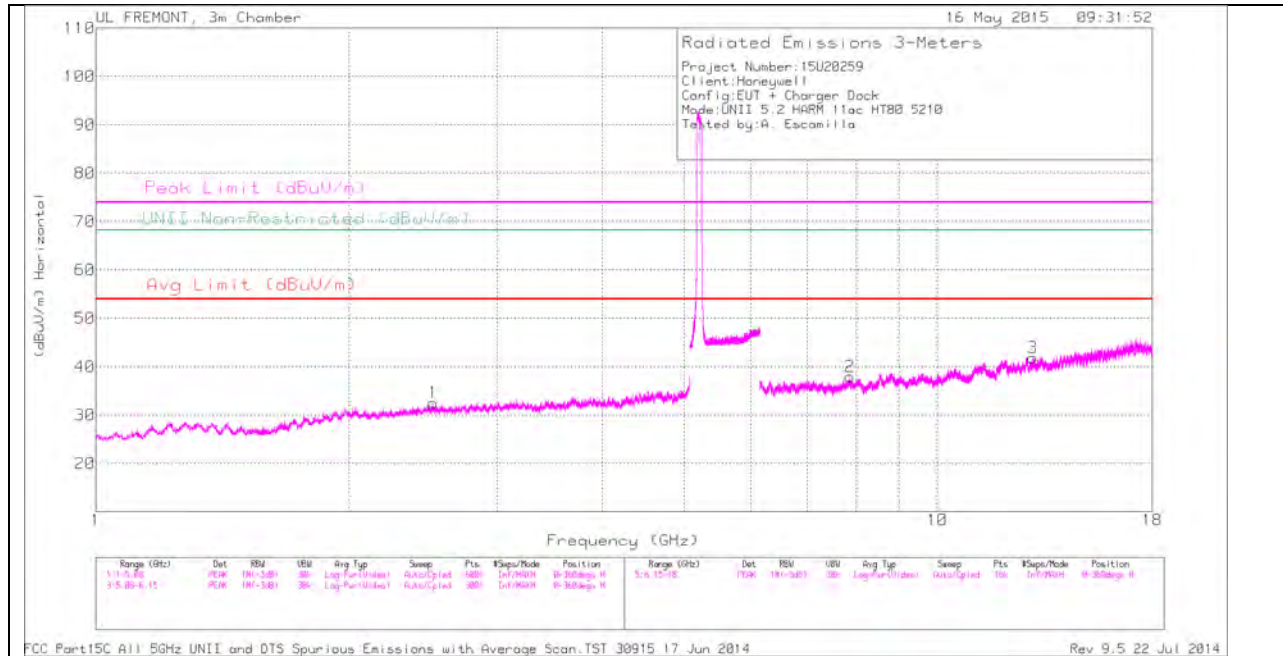


VERTICAL DATA

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	* 5.138	46.42	PK	34.2	-21.6	0	59.02	-	-	74	-14.98	227	228	V
4	* 5.147	32.77	RMS	34.2	-21.6	1.47	46.84	54	-7.16	-	-	227	228	V
1	* 5.15	44.25	PK	34.2	-21.6	0	56.85	-	-	74	-17.15	227	228	V
3	* 5.15	32.34	RMS	34.2	-21.6	1.47	46.41	54	-7.59	-	-	227	228	V

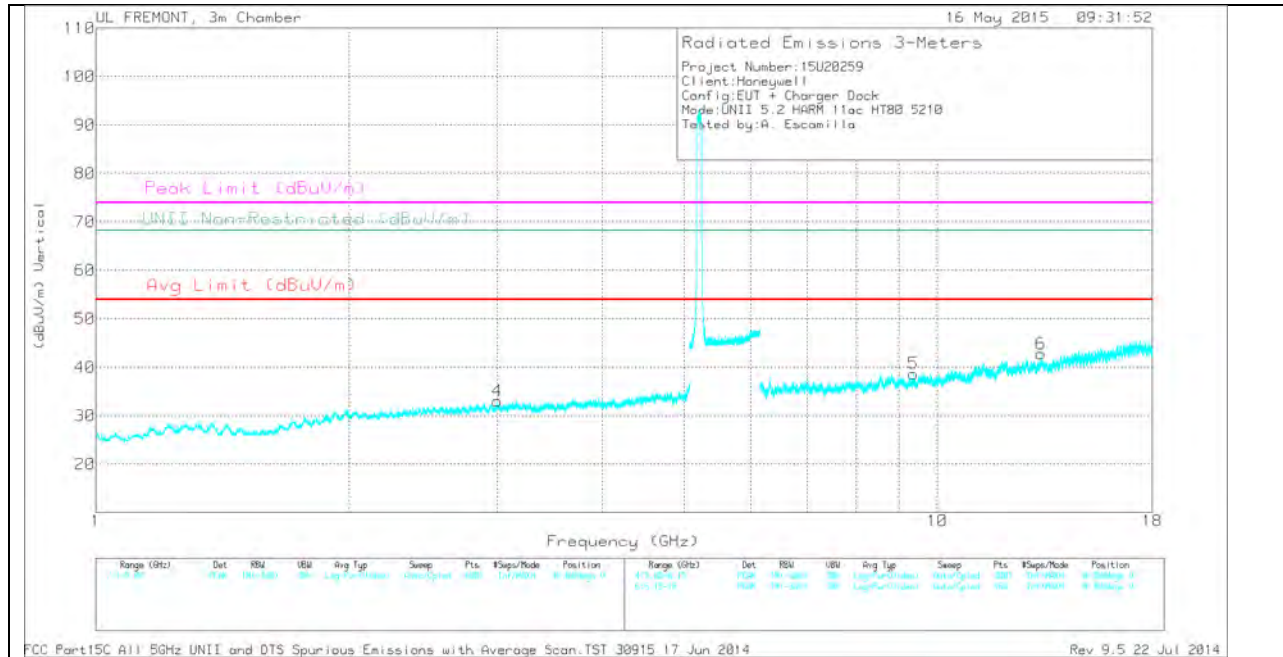
HARMONICS AND SPURIOUS EMISSIONS

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.

LOW CHANNEL VERTICAL



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

LOW CHANNEL DATA

TRACE MARKERS

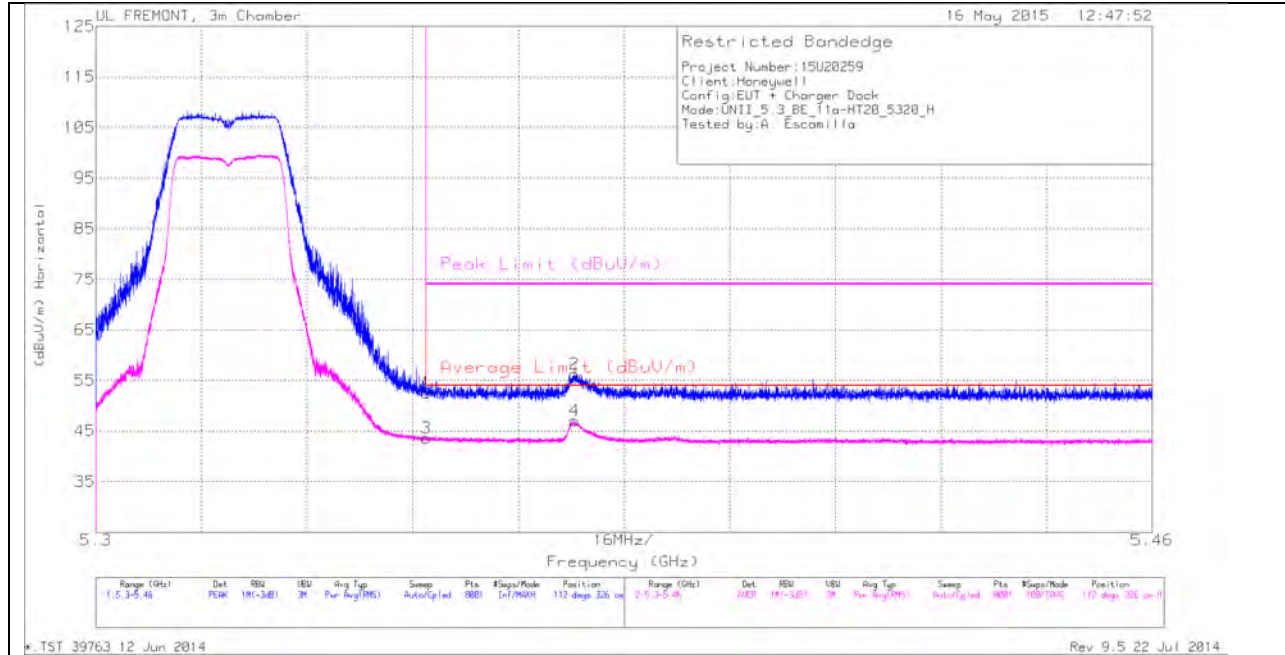
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fitr /Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.517	32.44	PK	32.3	-32.2	32.54	-	-	-	-	68.2	-35.66	0-360	200	H
4	3.002	32.18	PK	32.7	-31.8	33.08	-	-	-	-	68.2	-35.12	0-360	200	V
2	7.865	29.63	PK	35.8	-27.5	37.93	-	-	-	-	68.2	-30.27	0-360	100	H
5	9.357	27.99	PK	36.4	-25.7	38.69	-	-	74	-35.31	-	-	0-360	100	V
3	12.991	29.81	PK	39	-27	41.81	-	-	-	-	68.2	-26.39	0-360	100	H
6	13.271	29.83	PK	39	-26.1	42.73	-	-	74	-31.27	-	-	0-360	200	V

PK - Peak detector

11.2. 5.3 GHz

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

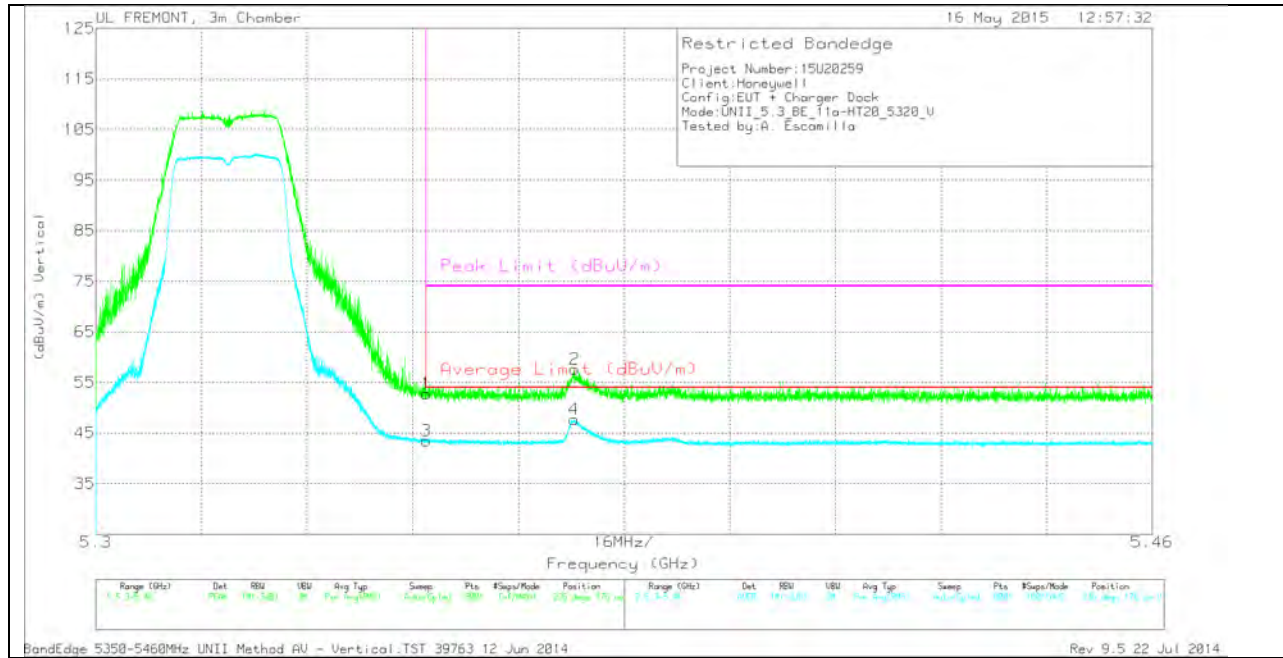
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AFT119 (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	5.35	39.42	PK	34.5	-21.4	0	52.52	-	-	74	-21.48	112	326	H
3	5.35	30.27	RMS	34.5	-21.4	.21	43.58	54	-10.42	-	-	112	326	H
2	5.373	43.1	PK	34.6	-21.5	0	56.2	-	-	74	-17.8	112	326	H
4	5.373	33.74	RMS	34.6	-21.5	.21	47.05	54	-6.95	-	-	112	326	H

VERTICAL PEAK AND AVERAGE PLOT

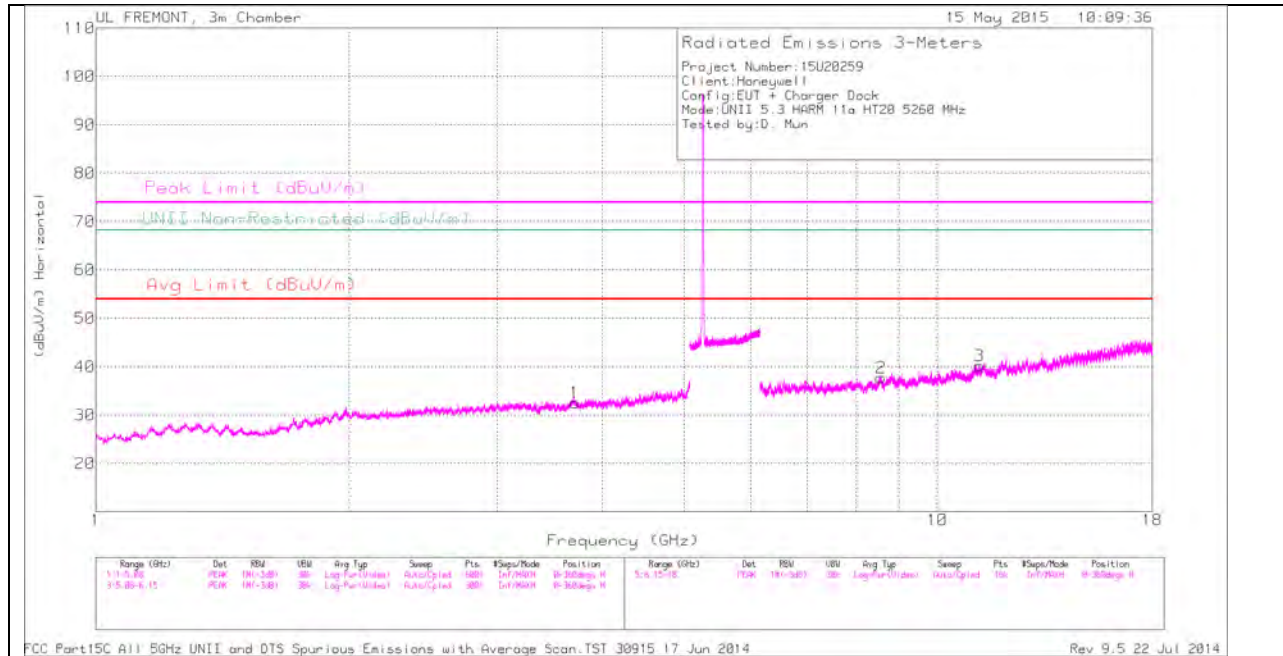


VERTICAL DATA

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	5.35	39.67	PK	34.5	-21.4	0	52.77	-	-	74	-21.23	236	176	V
3	5.35	30.1	RMS	34.5	-21.4	.21	43.41	54	-10.59	-	-	236	176	V
2	5.372	44.5	PK	34.6	-21.5	0	57.6	-	-	74	-16.4	236	176	V
4	5.372	34.33	RMS	34.6	-21.5	.21	47.64	54	-6.36	-	-	236	176	V

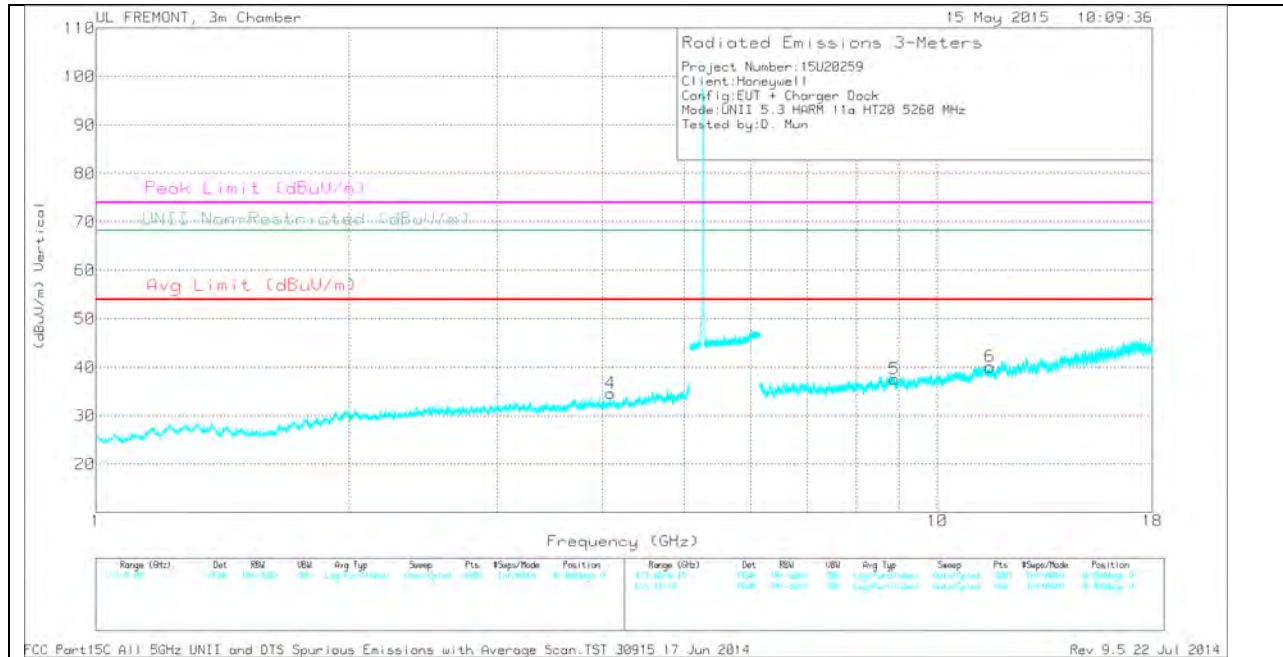
HARMONICS AND SPURIOUS EMISSIONS

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.

LOW CHANNEL VERTICAL

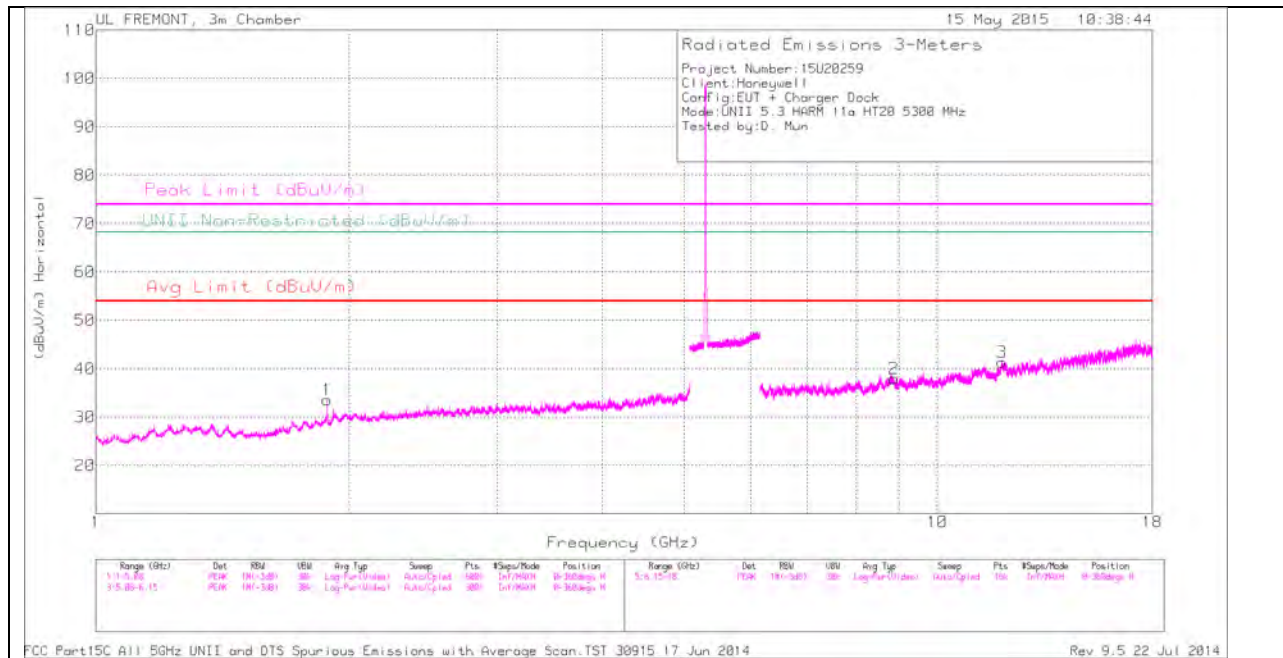


Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

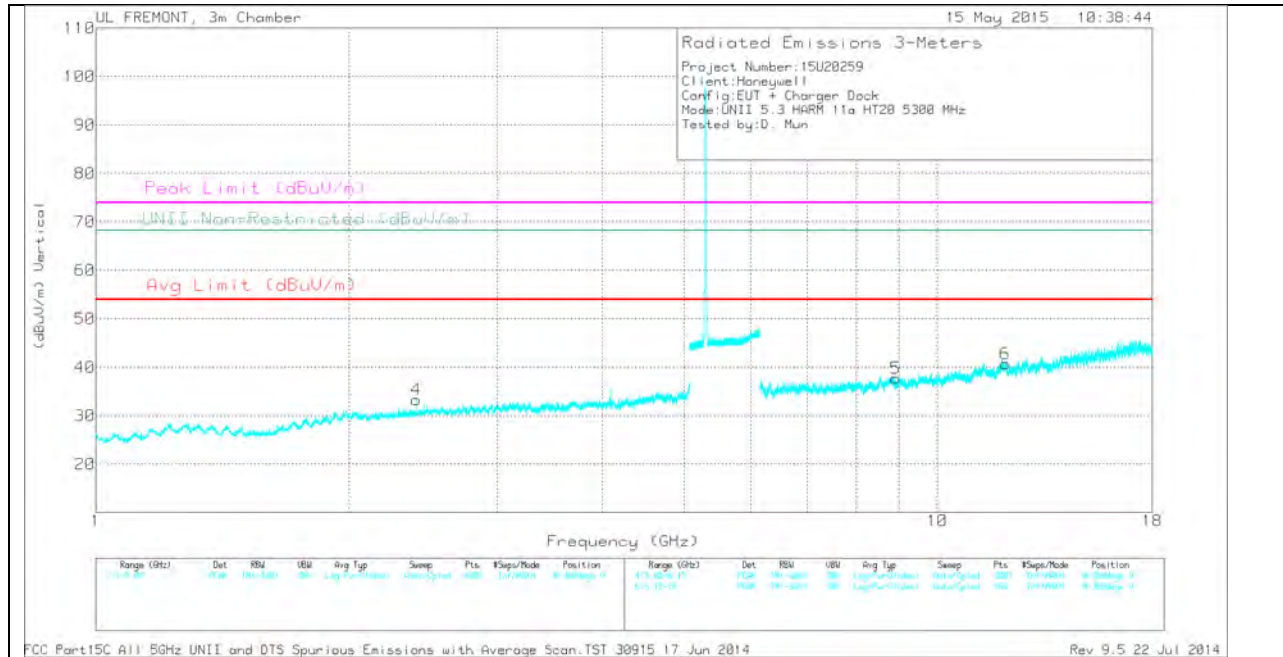
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fitr /Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non- Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	3.707	30.35	PK	33	-30.8	32.55	-	-	74	-41.45	-	-	0-360	200	H
4	4.085	32.66	PK	33.3	-31.3	34.66	-	-	74	-39.34	-	-	0-360	200	V
2	8.569	28.14	PK	35.8	-26.2	37.74	-	-	-	-	68.2	-30.46	0-360	100	H
5	8.885	28.36	PK	35.9	-26.7	37.56	-	-	-	-	68.2	-30.64	0-360	100	V
3	11.215	28.08	PK	37.9	-25.8	40.18	-	-	74	-33.82	-	-	0-360	100	H
6	11.553	27.62	PK	38.5	-26	40.12	-	-	74	-33.88	-	-	0-360	100	V

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.

MID CHANNEL VERTICAL

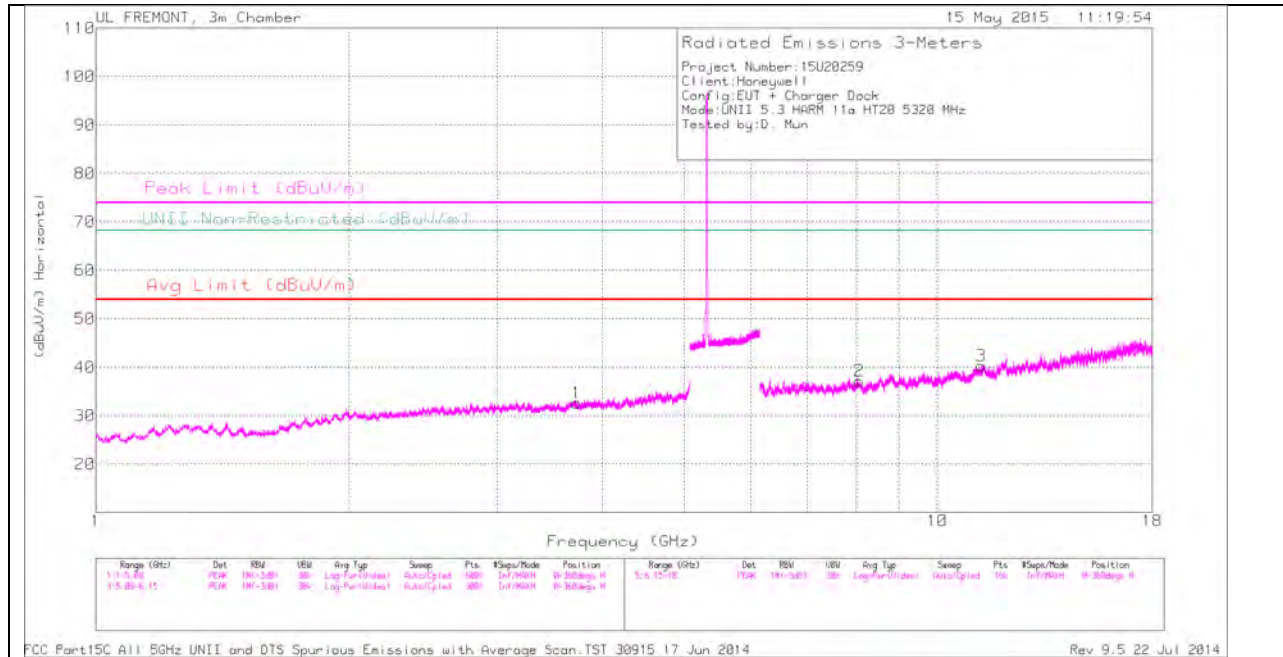


Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

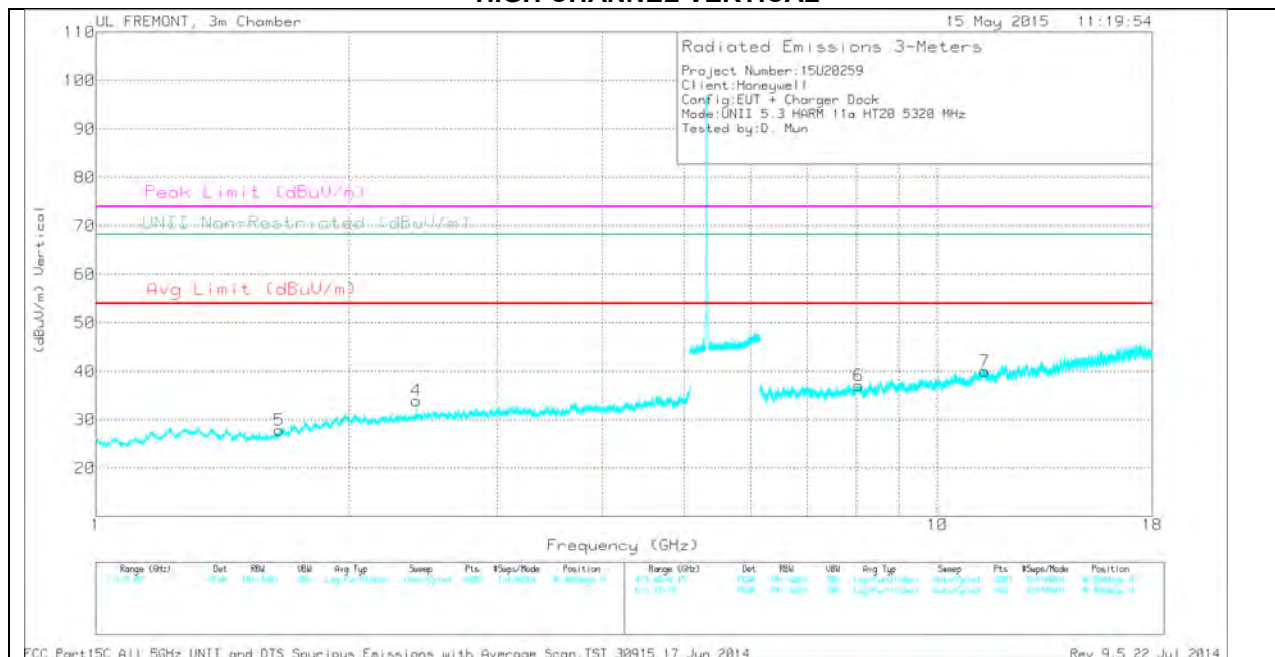
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fitr /Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non- Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.883	35.71	PK	30.9	-33	33.61	-	-	-	-	68.2	-34.59	0-360	100	H
4	2.403	34.09	PK	32	-32.8	33.29	-	-	-	-	68.2	-34.91	0-360	100	V
2	8.882	28.65	PK	35.9	-26.6	37.95	-	-	-	-	68.2	-30.25	0-360	100	H
5	8.92	29.09	PK	36	-27.4	37.69	-	-	-	-	68.2	-30.51	0-360	100	V
3	11.925	28.44	PK	39.1	-26.2	41.34	-	-	74	-32.66	-	-	0-360	200	H
6	12.041	27.83	PK	39.1	-26.2	40.73	-	-	74	-33.27	-	-	0-360	100	V

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.

HIGH CHANNEL VERTICAL



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

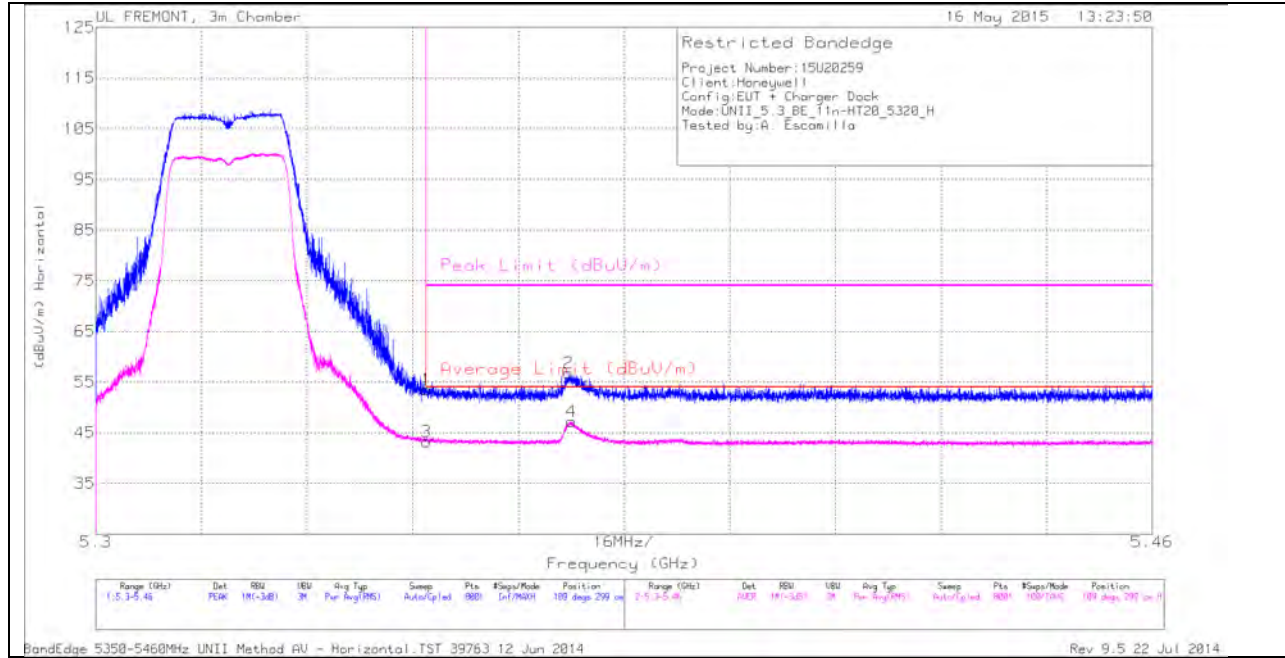
HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr /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
5	1.652	32.05	PK	28.5	-32.7	27.85	-	-	-	-	68.2	-40.35	0-360	100	V
4	2.403	34.71	PK	32	-32.8	33.91	-	-	-	-	68.2	-34.29	0-360	100	V
1	3.728	30.85	PK	33	-31.2	32.65	-	-	74	-41.35	-	-	0-360	100	H
6	8.056	28.65	PK	35.7	-27.3	37.05	-	-	74	-36.95	-	-	0-360	200	V
2	8.07	28.67	PK	35.7	-27.2	37.17	-	-	74	-36.83	-	-	0-360	100	H
3	11.27	28.1	PK	38	-25.8	40.3	-	-	74	-33.7	-	-	0-360	100	H
7	11.382	27.7	PK	38.2	-25.9	40	-	-	74	-34	-	-	0-360	100	V

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

AUTHORIZED BANDEDGE (HIGH CHANNEL)

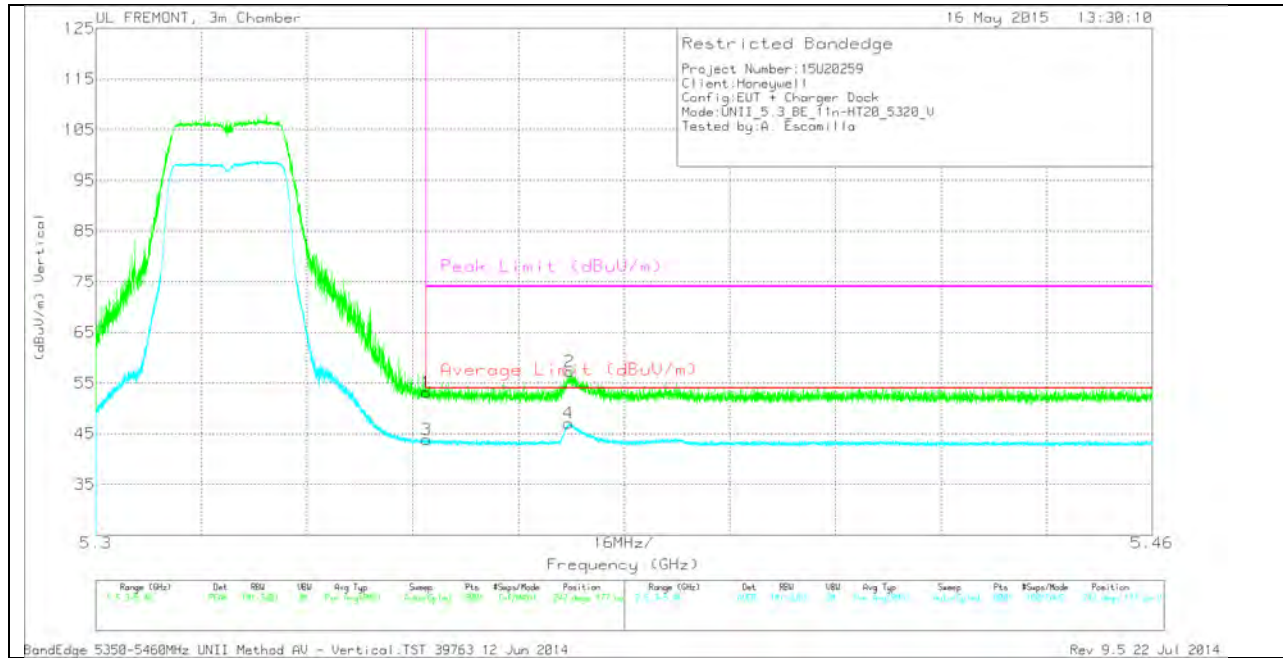
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Filt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.35	40.47	PK	34.5	-21.4	0	53.57	-	-	74	-20.43	109	299	H
3	5.35	29.94	RMS	34.5	-21.4	.22	43.26	54	-10.74	-	-	109	299	H
2	5.372	43.7	PK	34.6	-21.5	0	56.8	-	-	74	-17.2	109	299	H
4	5.372	33.82	RMS	34.6	-21.5	.22	47.14	54	-6.86	-	-	109	299	H

VERTICAL PEAK AND AVERAGE PLOT

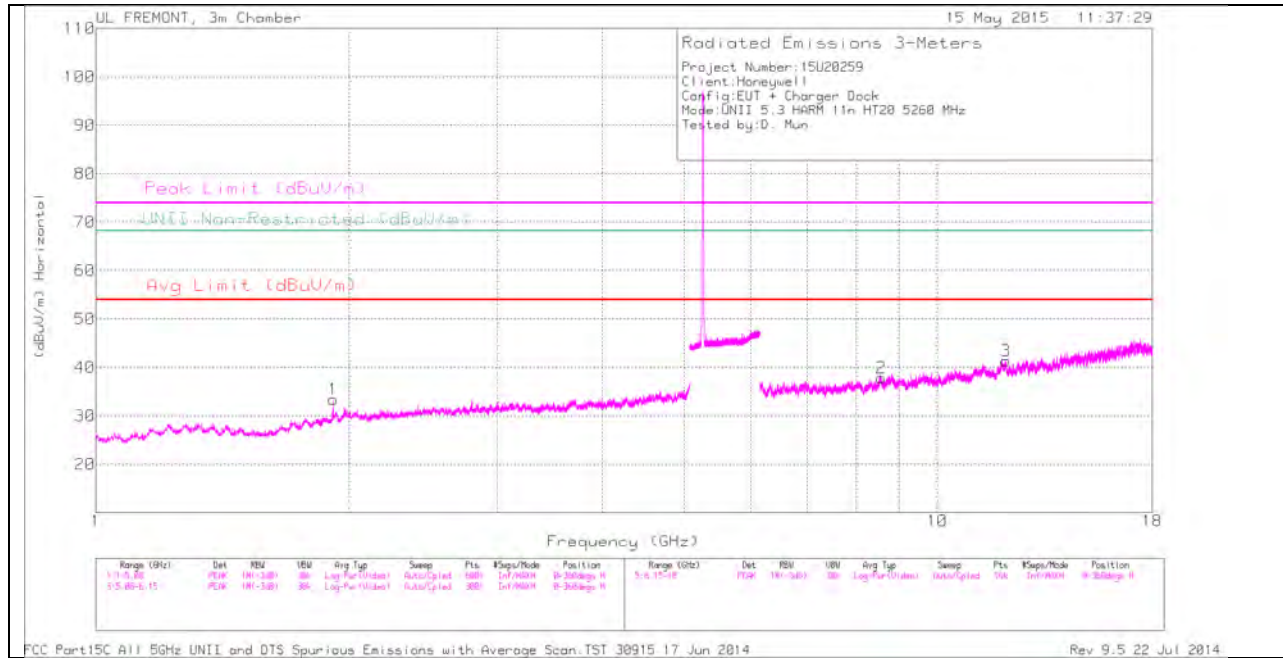


VERTICAL DATA

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	5.35	40.01	PK	34.5	-21.4	0	53.11	-	-	74	-20.89	242	177	V
3	5.35	30.53	RMS	34.5	-21.4	.22	43.85	54	-10.15	-	-	242	177	V
2	5.372	44.11	PK	34.6	-21.5	0	57.21	-	-	74	-16.79	242	177	V
4	5.372	33.71	RMS	34.6	-21.5	.22	47.03	54	-6.97	-	-	242	177	V

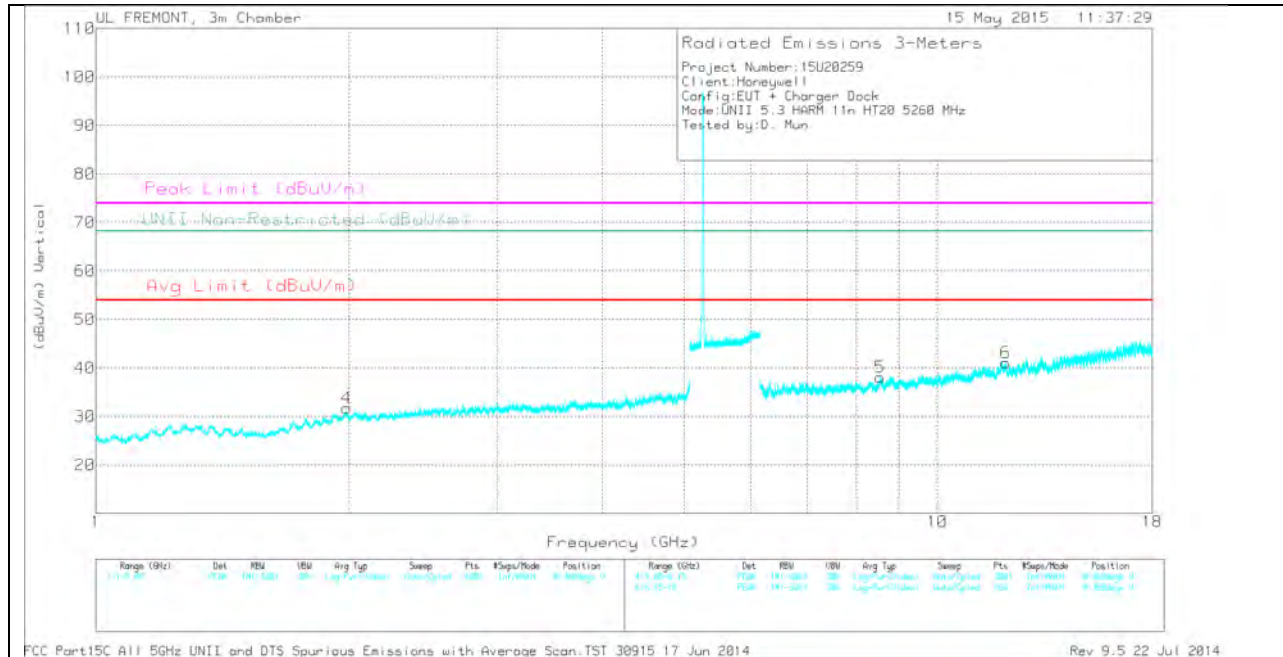
HARMONICS AND SPURIOUS EMISSIONS

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.

LOW CHANNEL VERTICAL



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

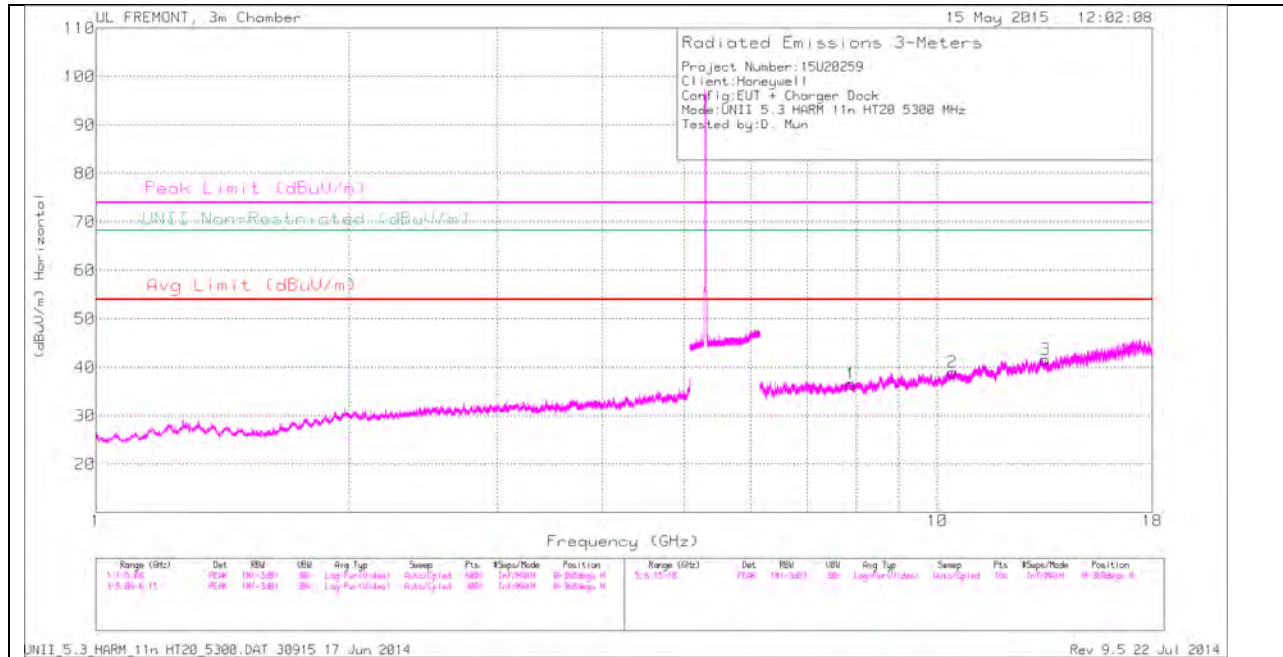
LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Chl/Filt /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	1.883	35.71	PK	30.9	-33	33.61	-	-	-	-	68.2	-34.59	0-360	100	H
4	2.403	34.09	PK	32	-32.8	33.29	-	-	-	-	68.2	-34.91	0-360	100	V
2	8.882	28.65	PK	35.9	-26.6	37.95	-	-	-	-	68.2	-30.25	0-360	100	H
5	8.92	29.09	PK	36	-27.4	37.69	-	-	-	-	68.2	-30.51	0-360	100	V
3	11.925	28.44	PK	39.1	-26.2	41.34	-	-	74	-32.66	-	-	0-360	200	H
6	12.041	27.83	PK	39.1	-26.2	40.73	-	-	74	-33.27	-	-	0-360	100	V

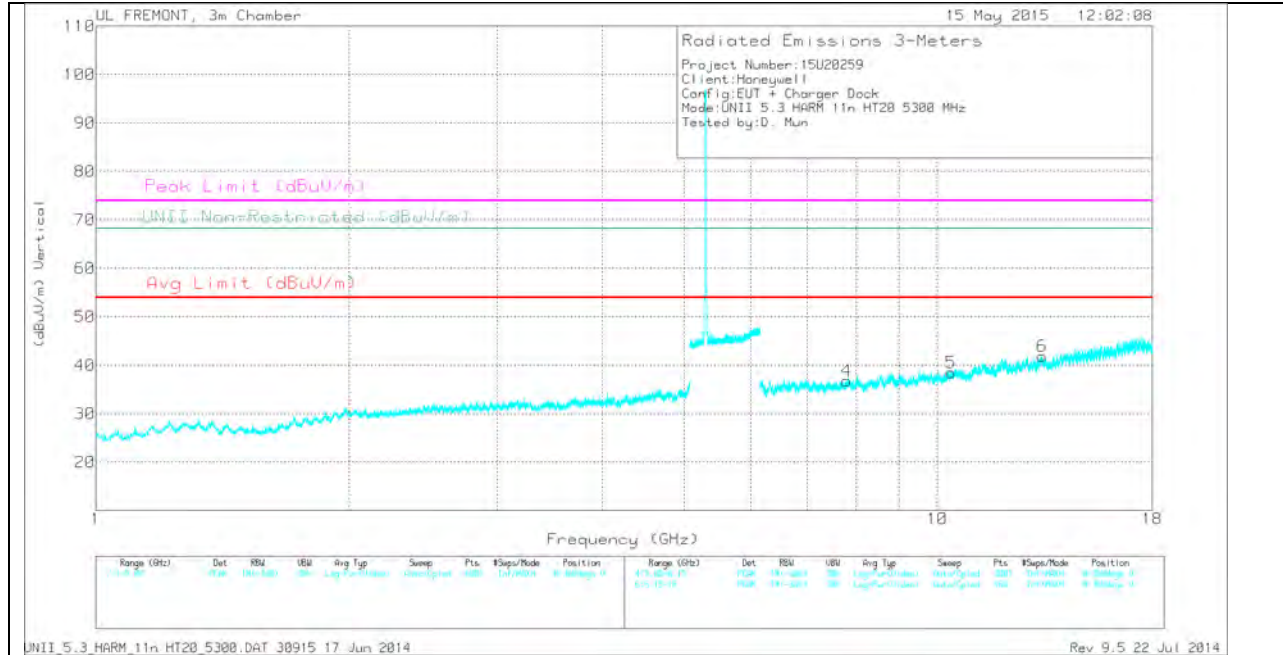
PK - Peak detector

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.

MID CHANNEL VERTICAL



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

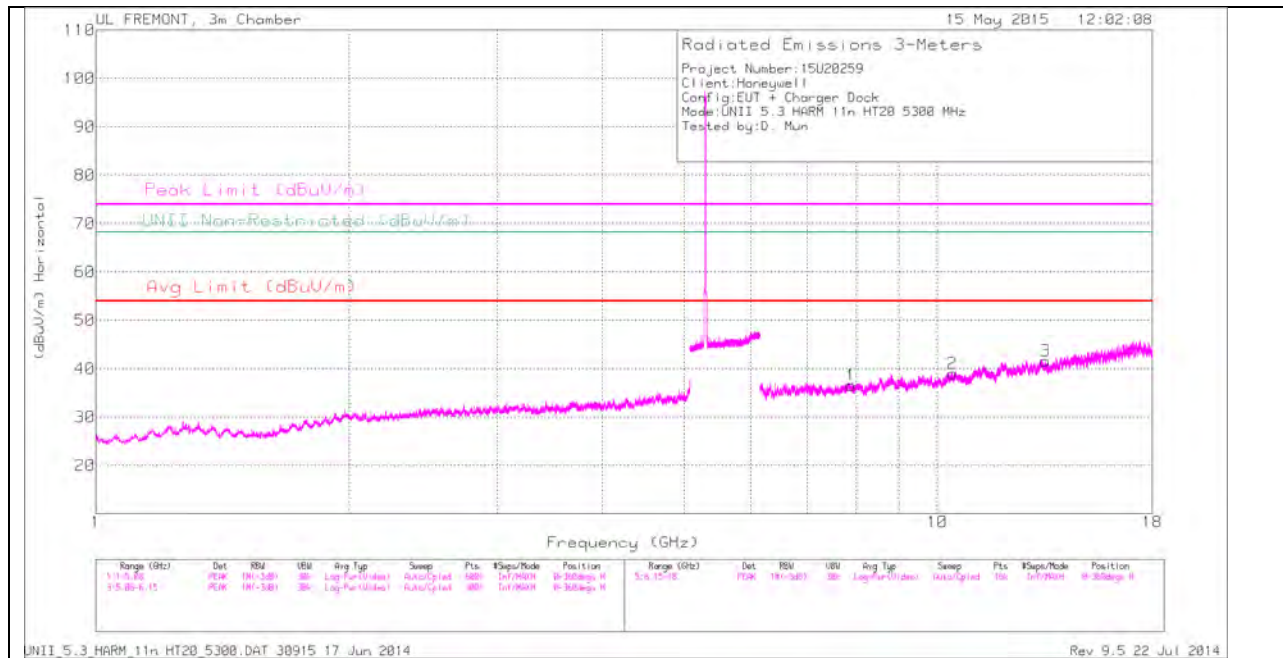
MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Ftr /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
4	7.807	29.16	PK	35.8	-28.2	36.76	-	-	-	-	68.2	-31.44	0-360	200	V
1	7.902	28.8	PK	35.8	-28.1	36.5	-	-	-	-	68.2	-31.7	0-360	100	H
5	10.388	27.17	PK	37.2	-25.9	38.47	-	-	-	-	68.2	-29.73	0-360	100	V
2	10.424	27.35	PK	37.3	-25.6	39.05	-	-	-	-	68.2	-29.15	0-360	200	H
6	13.329	29.81	PK	39	-26.9	41.91	-	-	74	-32.09	-	-	0-360	100	V
3	13.434	30.2	PK	38.9	-27.5	41.6	-	-	-	-	68.2	-26.6	0-360	200	H

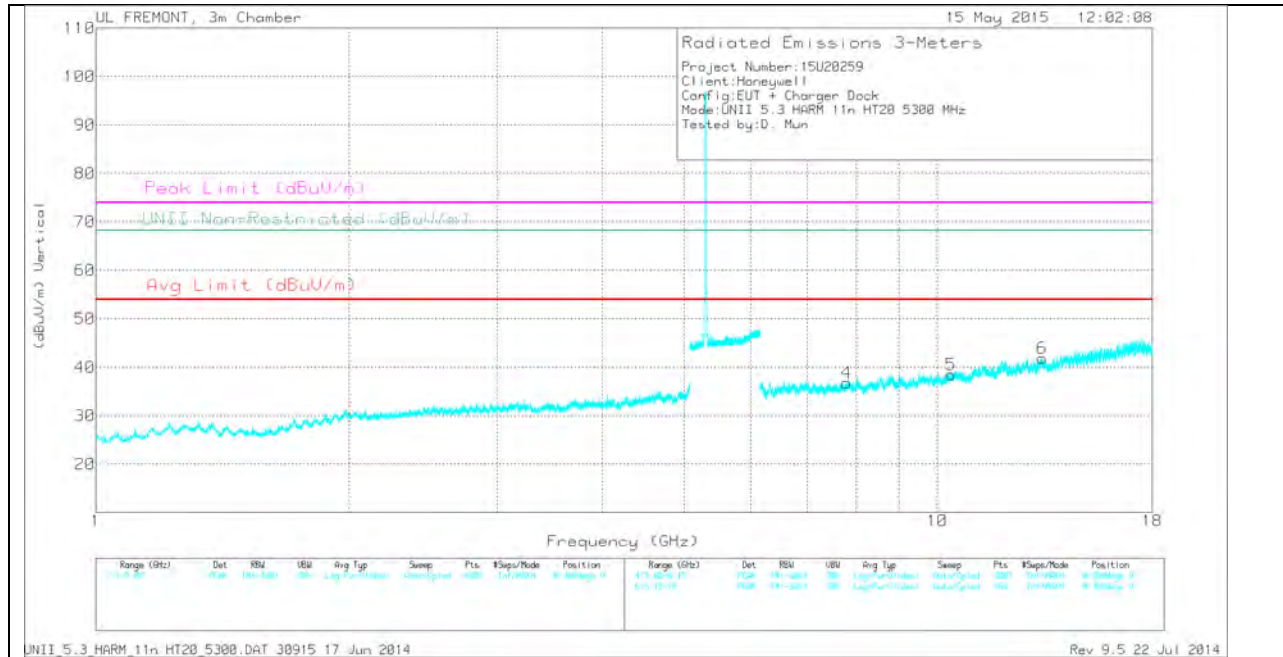
PK - Peak detector

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.

HIGH CHANNEL VERTICAL



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

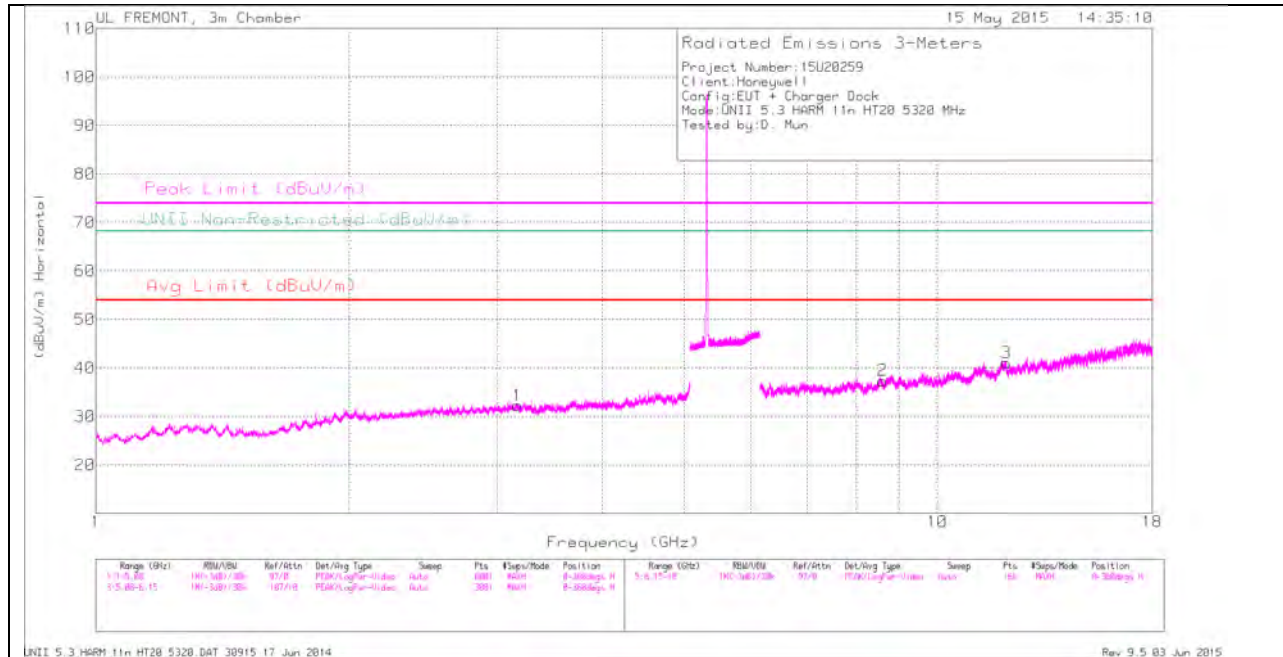
HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/CbI/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
4	7.807	29.16	PK	35.8	-28.2	36.76	-	-	-	-	68.2	-31.44	0-360	200	V
1	7.902	28.8	PK	35.8	-28.1	36.5	-	-	-	-	68.2	-31.7	0-360	100	H
5	10.388	27.17	PK	37.2	-25.9	38.47	-	-	-	-	68.2	-29.73	0-360	100	V
2	10.424	27.35	PK	37.3	-25.6	39.05	-	-	-	-	68.2	-29.15	0-360	200	H
6	13.329	29.81	PK	39	-26.9	41.91	-	-	74	-32.09	-	-	0-360	100	V
3	13.434	30.2	PK	38.9	-27.5	41.6	-	-	-	-	68.2	-26.6	0-360	200	H

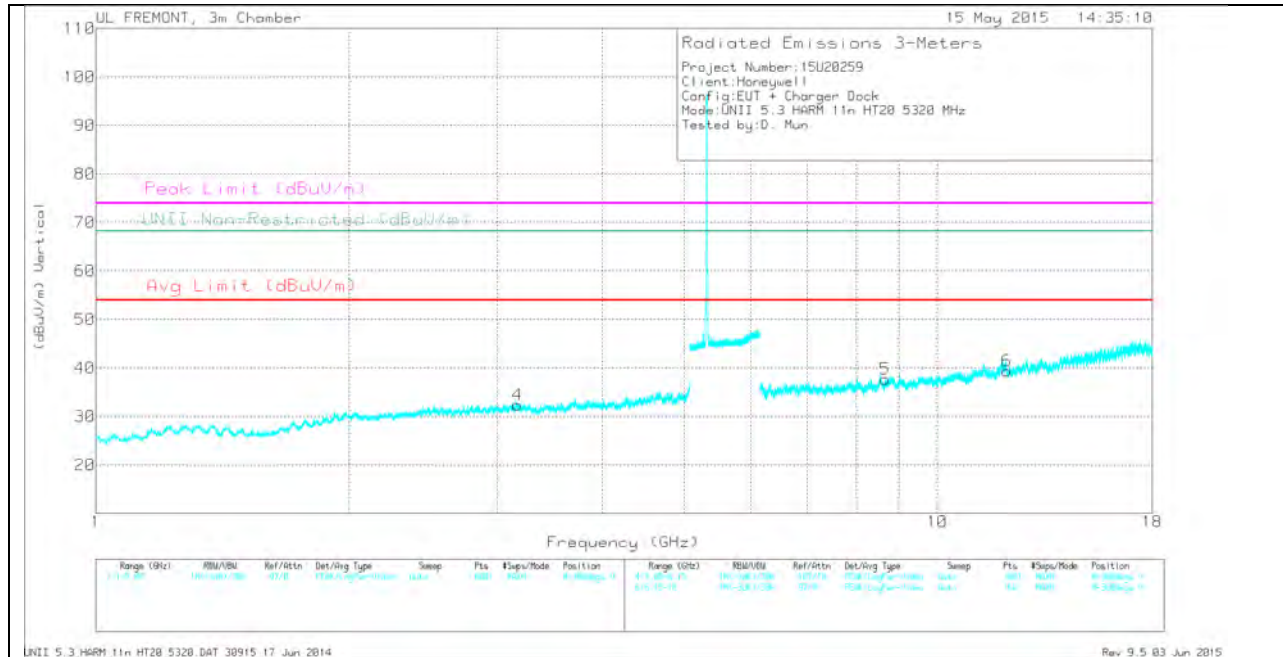
PK - Peak detector

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.

HIGH CHANNEL VERTICAL



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

HIGH CHANNEL DATA

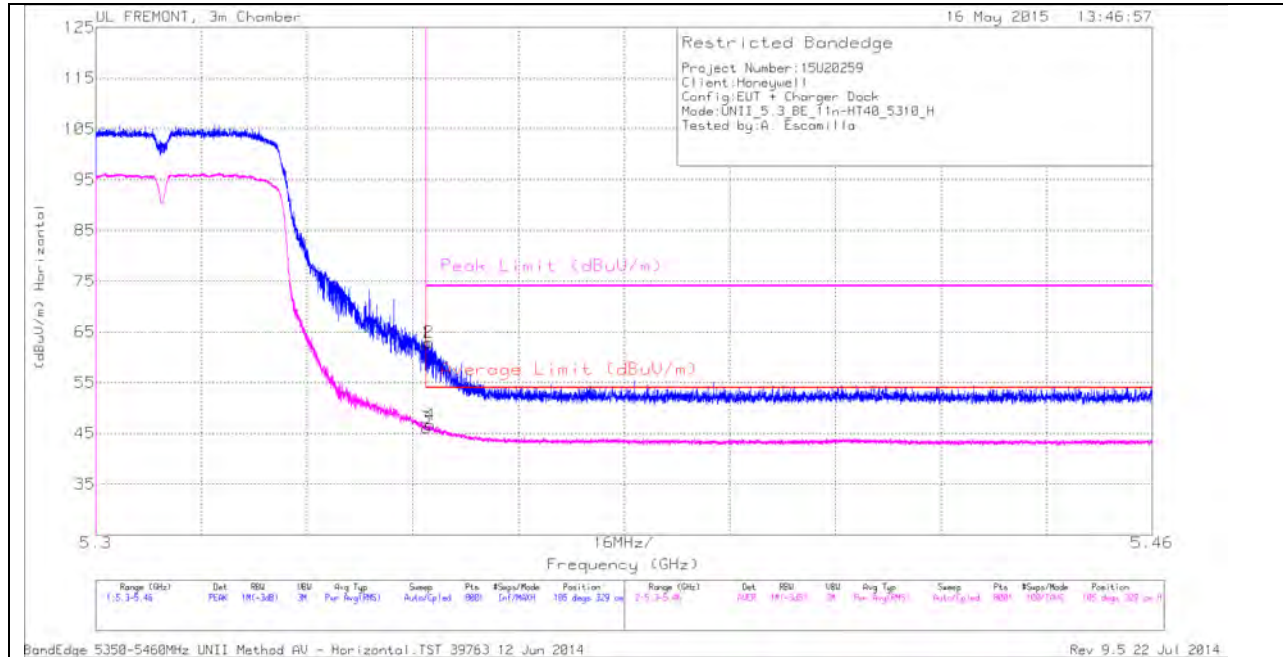
TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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
4	3.17	31.22	Pk	32.7	-31.5	32.42	-	-	74	-41.58	68.2	-35.78	0-360	100	V
1	3.172	31.1	Pk	32.7	-31.5	32.3	-	-	74	-41.7	68.2	-35.9	0-360	200	H
2	8.609	27.99	Pk	35.8	-26.4	37.39	-	-	74	-36.61	68.2	-30.81	0-360	200	H
5	8.664	29.6	Pk	35.9	-27.8	37.7	-	-	74	-36.3	68.2	-30.5	0-360	200	V
3	12.069	28.44	Pk	39	-26.4	41.04	-	-	74	-32.96	68.2	-27.16	0-360	100	H
6	12.106	27.14	Pk	39	-26.7	39.44	-	-	74	-34.56	68.2	-28.76	0-360	200	V

PK - Peak detector

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

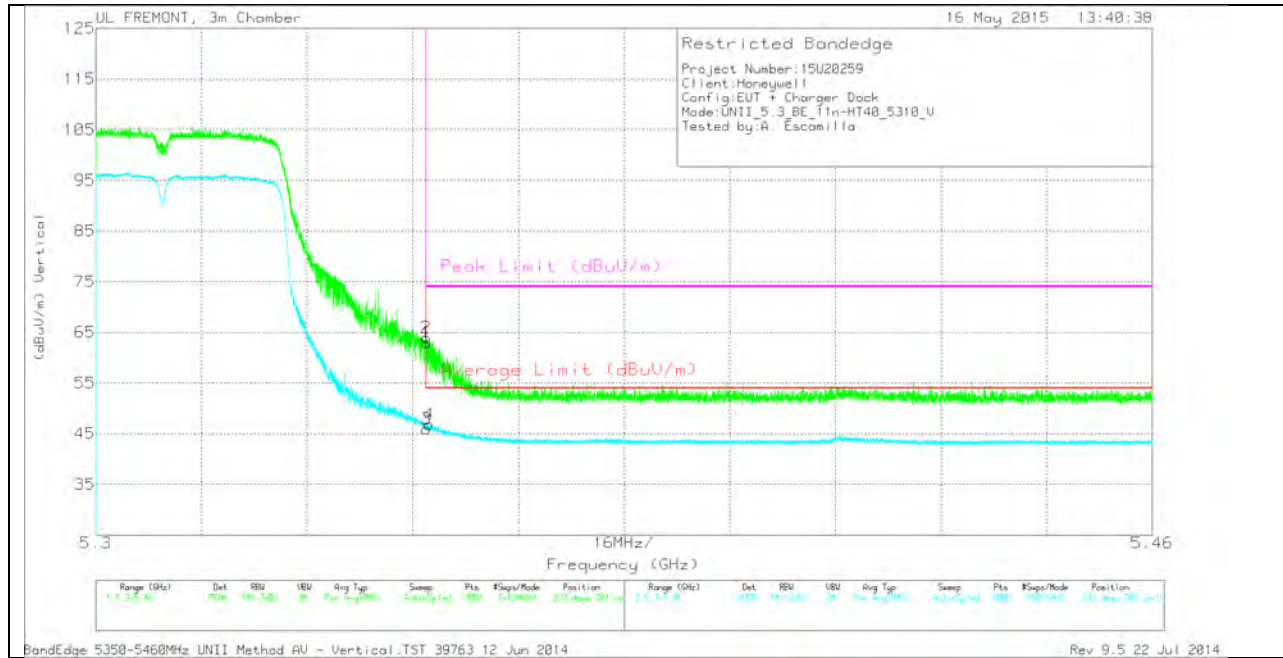
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fil r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.35	49.63	PK	34.5	-21.4	0	62.73	-	-	74	-11.27	105	329	H
2	5.35	49.9	PK	34.5	-21.4	0	63	-	-	74	-11	105	329	H
3	5.35	32.51	RMS	34.5	-21.4	.49	46.1	54	-7.9	-	-	105	329	H
4	5.351	33.05	RMS	34.5	-21.4	.49	46.64	54	-7.36	-	-	105	329	H

VERTICAL PEAK AND AVERAGE PLOT

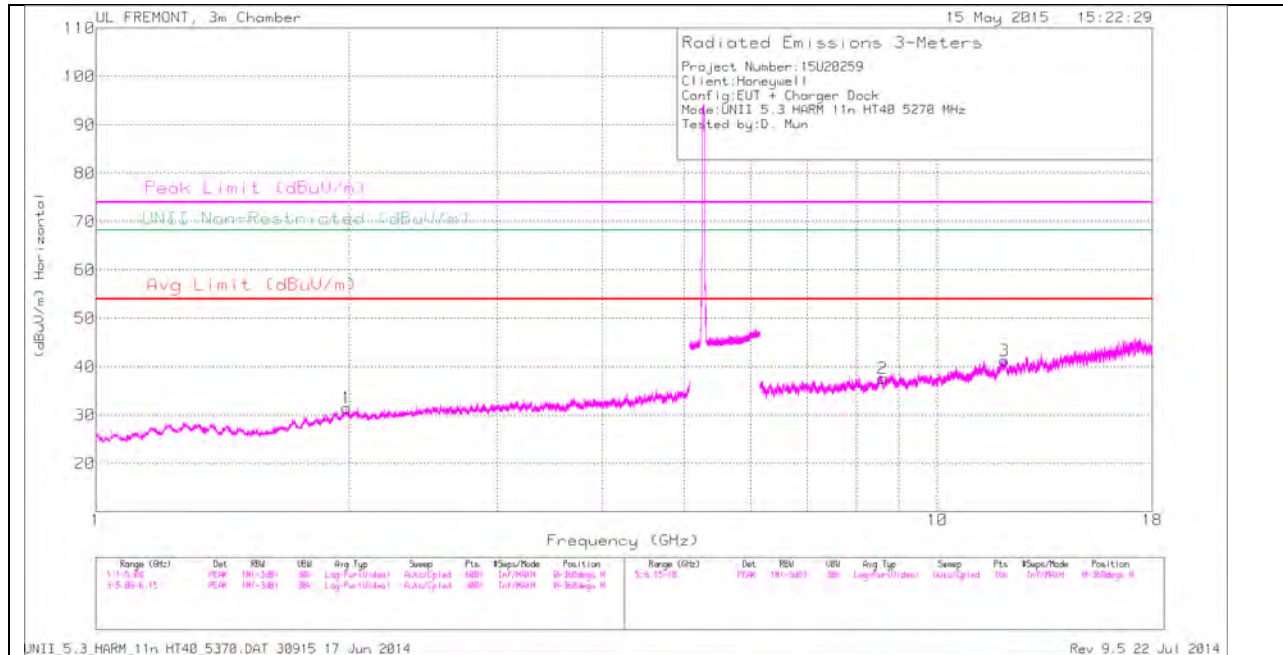


VERTICAL DATA

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
1	5.35	49.83	PK	34.5	-21.4	0	62.93	-	-	74	-11.07	233	201	V
2	5.35	50.88	PK	34.5	-21.4	0	63.98	-	-	74	-10.02	233	201	V
3	5.35	32.3	RMS	34.5	-21.4	.49	45.89	54	-8.11	-	-	233	201	V
4	5.35	33.27	RMS	34.5	-21.4	.49	46.86	54	-7.14	-	-	233	201	V

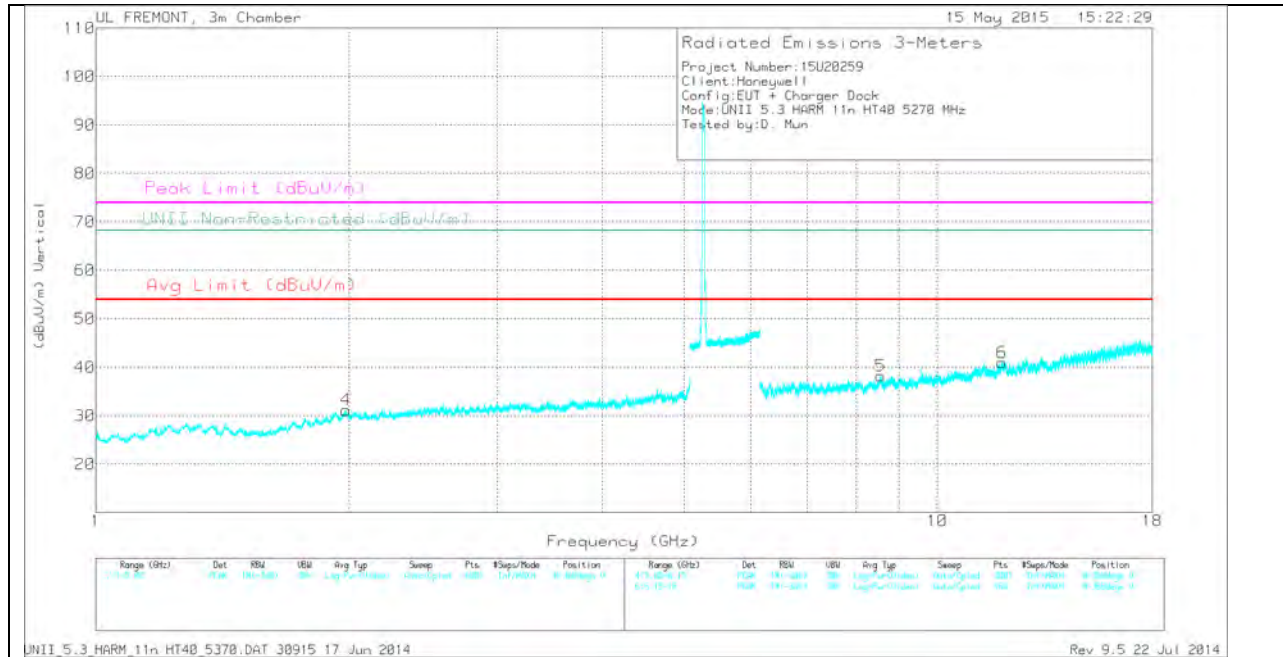
HARMONICS AND SPURIOUS EMISSIONS

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.

LOW CHANNEL VERTICAL



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

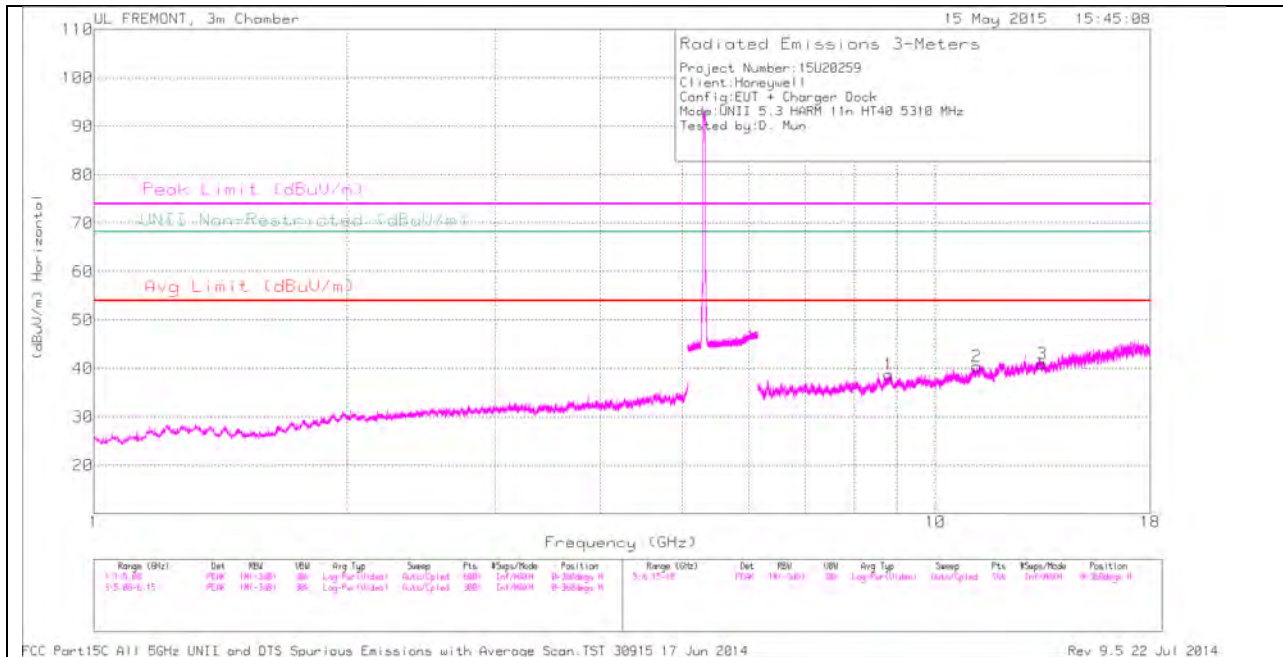
HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Chl/Filt /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
4	1.983	31.76	PK	31.4	-32	31.16	-	-	-	-	68.2	-37.04	0-360	200	V
1	1.985	32.1	PK	31.4	-32	31.5	-	-	-	-	68.2	-36.7	0-360	200	H
5	8.564	28.65	PK	35.8	-26.2	38.25	-	-	-	-	68.2	-29.95	0-360	100	V
2	8.604	28.19	PK	35.8	-26.4	37.59	-	-	-	-	68.2	-30.61	0-360	100	H
6	11.935	28.13	PK	39.1	-26.3	40.93	-	-	74	-33.07	-	-	0-360	100	V
3	12.021	28.37	PK	39.1	-26.2	41.27	-	-	74	-32.73	-	-	0-360	100	H

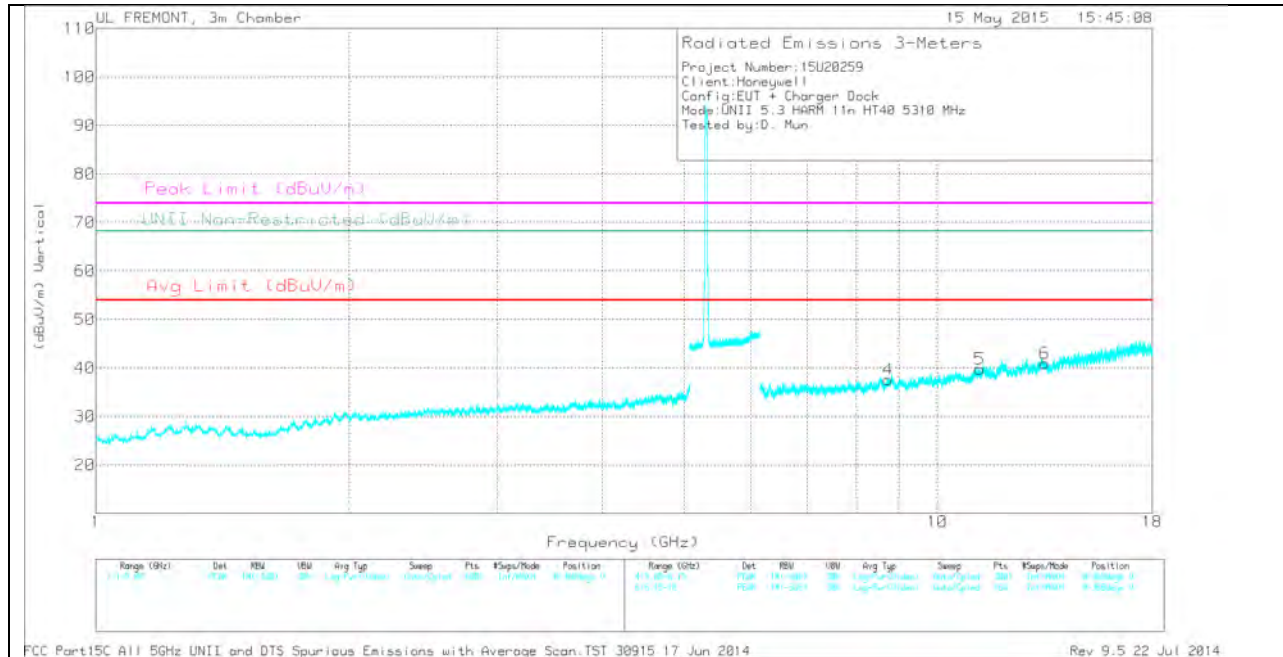
PK - Peak detector

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.

HIGH CHANNEL VERTICAL



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

HIGH CHANNEL DATA

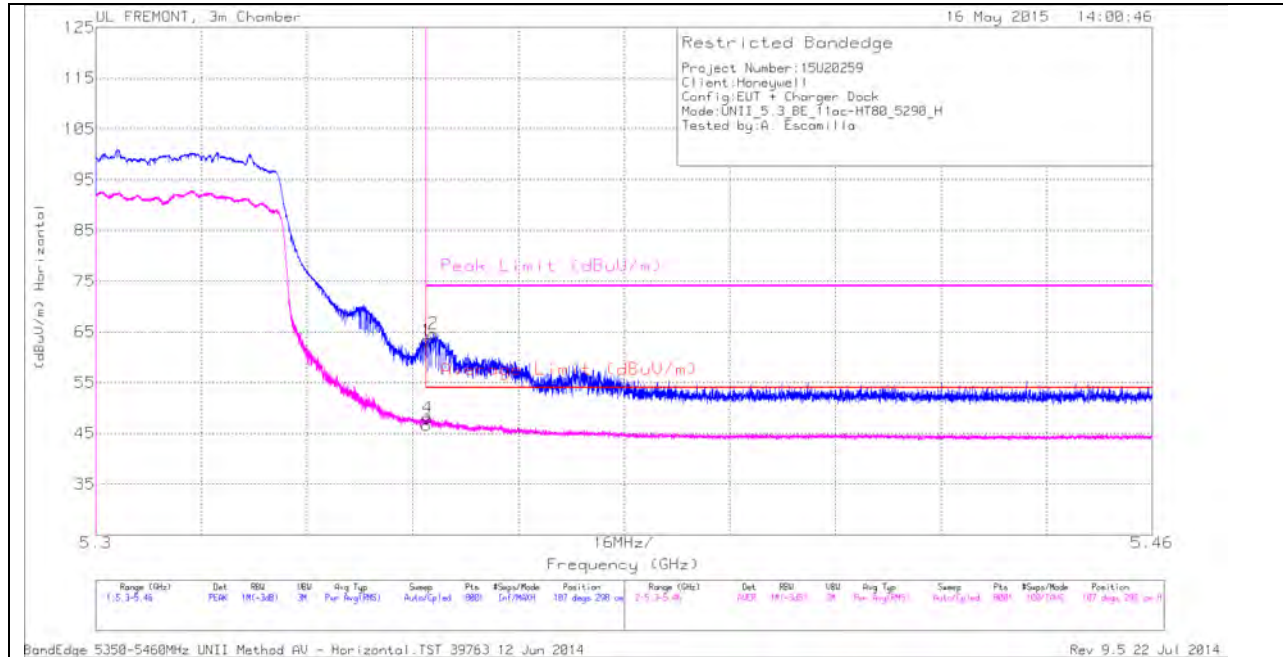
TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Chl/Filt /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
4	8.738	28.71	PK	35.9	-27	37.61	-	-	-	-	68.2	-30.59	0-360	200	V
1	8.802	28.47	PK	35.9	-25.6	38.77	-	-	-	-	68.2	-29.43	0-360	100	H
2	11.201	28.46	PK	37.9	-25.9	40.46	-	-	74	-33.54	-	-	0-360	200	H
5	11.224	27.54	PK	37.9	-25.7	39.74	-	-	74	-34.26	-	-	0-360	100	V
3	13.388	29.57	PK	39	-27.6	40.97	-	-	74	-33.03	-	-	0-360	100	H
6	13.401	29.52	PK	39	-27.6	40.92	-	-	-	-	68.2	-27.28	0-360	100	V

PK - Peak detector

11.2.4. TX ABOVE 1 GHz 802.11ac HT80 MODE IN THE 5.3 GHz BAND AUTHORIZED BANDEDGE (HIGH CHANNEL)

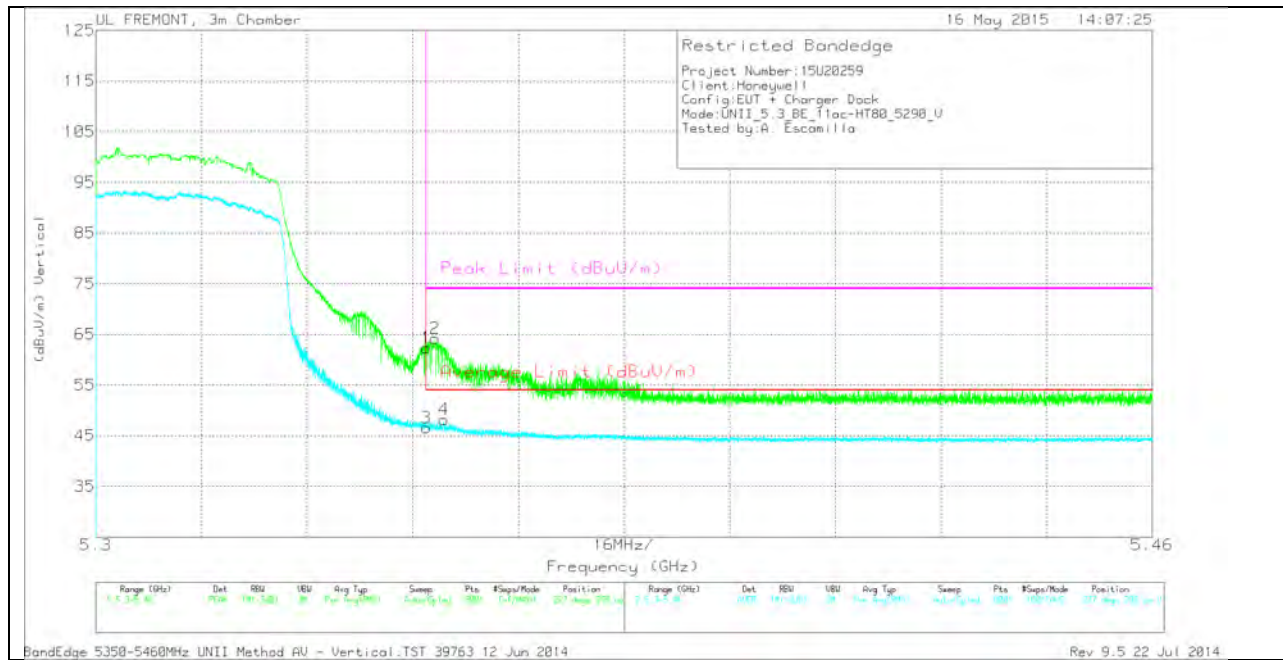
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fil r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.35	50.28	PK	34.5	-21.4	0	63.38	-	-	74	-10.62	107	298	H
3	5.35	31.94	RMS	34.5	-21.4	1.47	46.51	54	-7.49	-	-	107	298	H
4	5.35	33.54	RMS	34.5	-21.4	1.47	48.11	54	-5.89	-	-	107	298	H
2	5.351	51.53	PK	34.5	-21.4	0	64.63	-	-	74	-9.37	107	298	H

VERTICAL PEAK AND AVERAGE PLOT

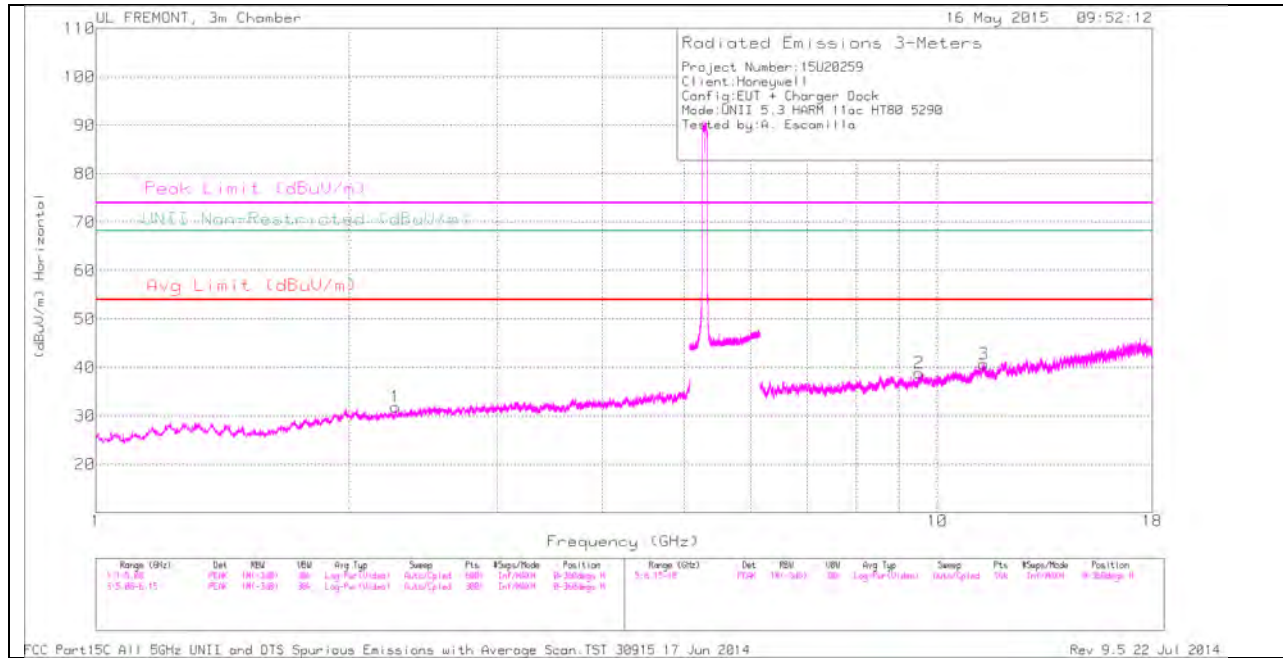


VERTICAL DATA

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	5.35	49.29	PK	34.5	-21.4	0	62.39	-	-	74	-11.61	227	298	V
3	5.35	31.98	RMS	34.5	-21.4	1.47	46.55	54	-7.45	-	-	227	298	V
2	5.351	51.05	PK	34.5	-21.4	0	64.15	-	-	74	-9.85	227	298	V
4	5.353	33.67	RMS	34.5	-21.4	1.47	48.24	54	-5.76	-	-	227	298	V

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.

LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Chl/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	2.271	32.44	PK	31.6	-32.2	31.84	-	-	74	-42.16	-	-	0-360	100	H
4	3.81	32.16	PK	33.1	-31.5	33.76	-	-	74	-40.24	-	-	0-360	100	V
5	8.552	28.95	PK	35.8	-26	38.75	-	-	-	-	68.2	-29.45	0-360	200	V
2	9.501	28.06	PK	36.6	-25.8	38.86	-	-	-	-	68.2	-29.34	0-360	100	H
3	11.343	28.15	PK	38.1	-25.5	40.75	-	-	74	-33.25	-	-	0-360	200	H
6	11.947	28.41	PK	39.1	-26.4	41.11	-	-	74	-32.89	-	-	0-360	100	V

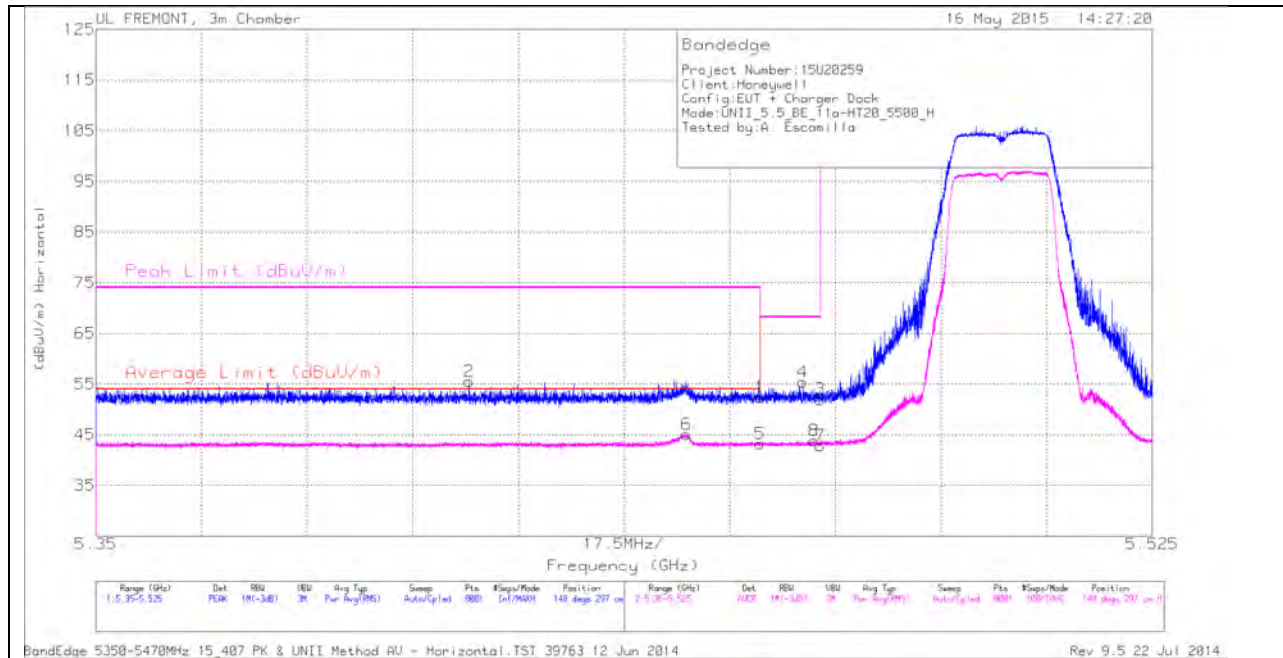
PK - Peak detector

11.3. 5.5-5.6 GHz

11.3.1. TX ABOVE 1 GHz 802.11a MODE IN THE 5.5 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

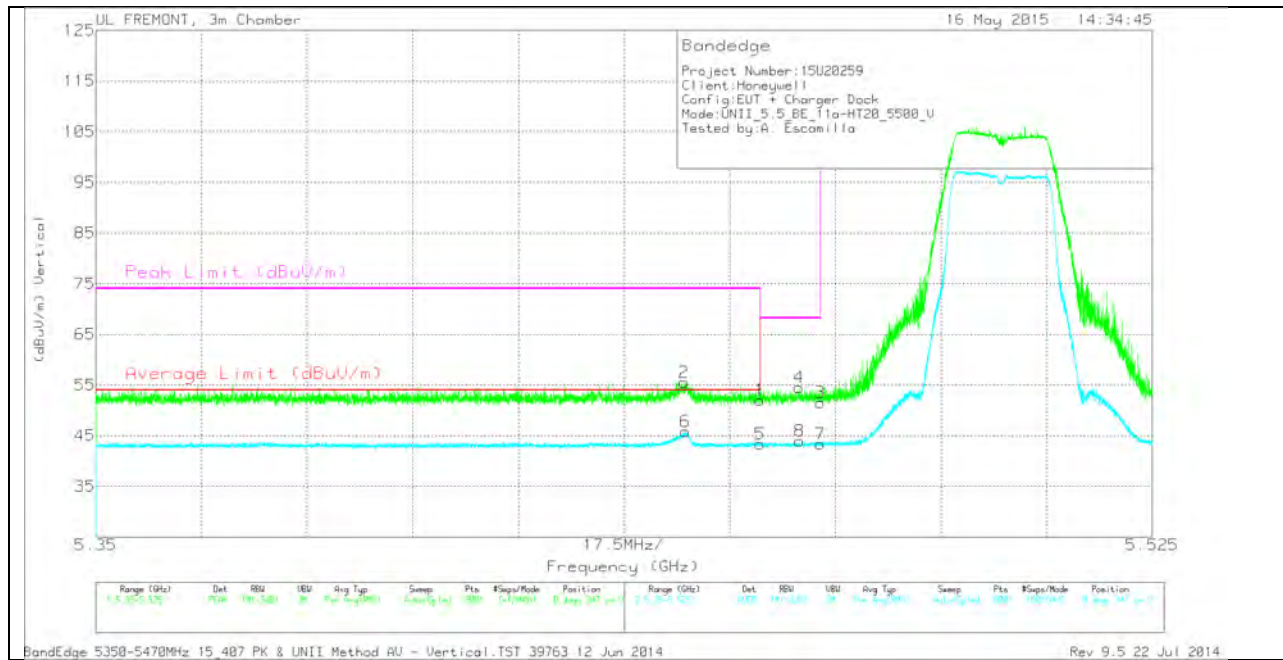
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AFT119 (dB/m)	Amp/Cb/r/Pd (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	5.412	42.32	PK	34.6	-21.4	0	55.52	-	-	74	-18.48	148	297	H
6	5.448	31.65	RMS	34.6	-21.4	.21	45.06	54	-8.94	-	-	148	297	H
1	5.46	39.2	PK	34.6	-21.4	0	52.4	-	-	74	-21.6	148	297	H
5	5.46	29.8	RMS	34.6	-21.4	.21	43.21	54	-10.79	-	-	148	297	H
4	5.467	42.03	PK	34.6	-21.3	0	55.33	-	-	68.2	-12.87	148	297	H
8	5.469	30.34	RMS	34.6	-21.3	.21	43.85	-	-	-	-	148	297	H
3	5.47	38.67	PK	34.6	-21.3	0	51.97	-	-	68.2	-16.23	148	297	H
7	5.47	29.28	RMS	34.6	-21.3	.21	42.79	-	-	-	-	148	297	H

VERTICAL PEAK AND AVERAGE PLOT

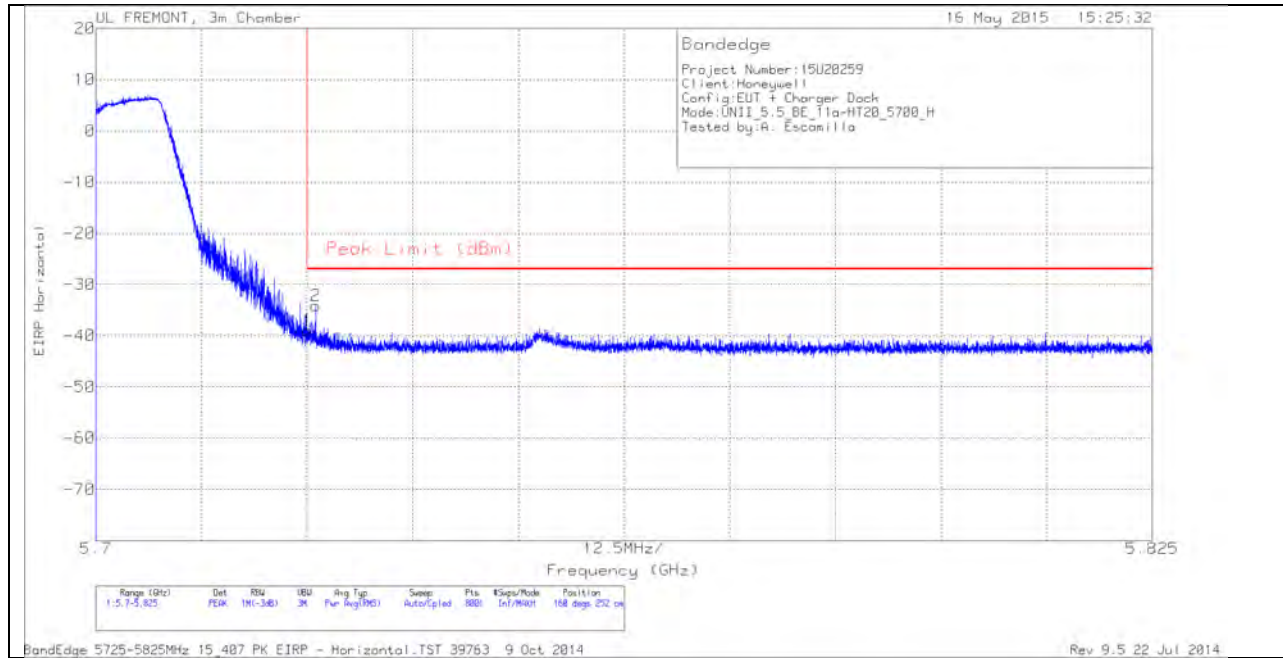


VERTICAL DATA

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
2	5.447	42.36	PK	34.6	-21.4	0	55.56	-	-	74	-18.44	0	347	V
6	5.448	32.39	RMS	34.6	-21.4	.21	45.8	54	-8.2	-	-	0	347	V
1	5.46	38.87	PK	34.6	-21.4	0	52.07	-	-	74	-21.93	0	347	V
5	5.46	29.92	RMS	34.6	-21.4	.21	43.33	54	-10.67	-	-	0	347	V
4	5.467	41.19	PK	34.6	-21.3	0	54.49	-	-	68.2	-13.71	0	347	V
8	5.467	30.43	RMS	34.6	-21.3	.21	43.94	-	-	-	-	0	347	V
3	5.47	38.21	PK	34.6	-21.3	0	51.51	-	-	68.2	-16.69	0	347	V
7	5.47	29.87	RMS	34.6	-21.3	.21	43.38	-	-	-	-	0	347	V

AUTHORIZED BANDEDGE (HIGH CHANNEL)

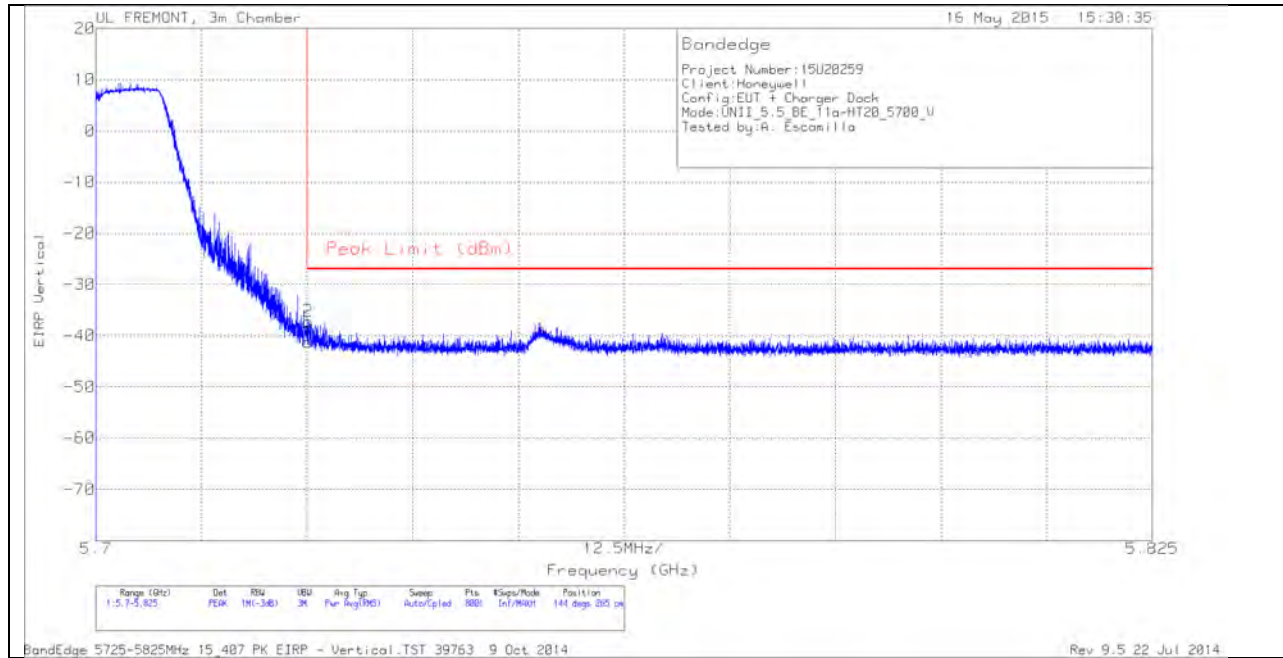
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (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	-64.58	PK	34.8	-21.1	11.8	0	-39.08	-27	-12.08	160	252	H
2	5.726	-59.67	PK	34.8	-21.1	11.8	0	-34.17	-27	-7.17	160	252	H

VERTICAL PEAK AND AVERAGE PLOT

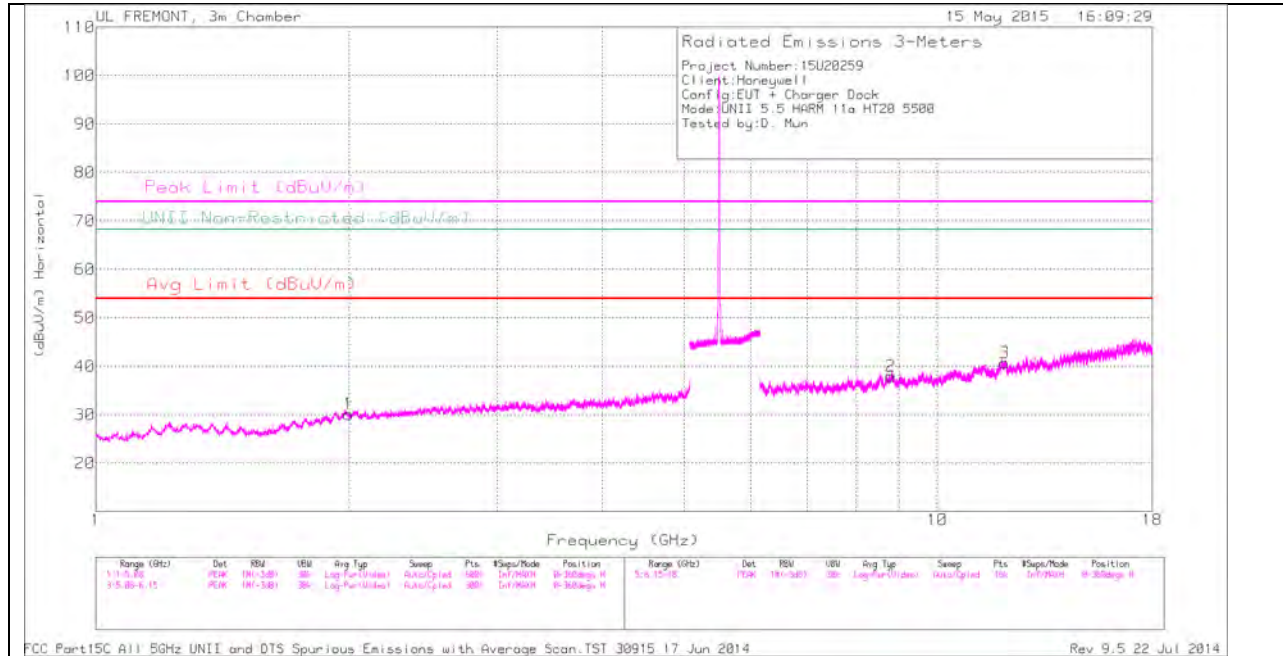


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-66.76	PK	34.8	-21.1	11.8	-41.26	-27	-14.26	144	265	V
2	5.725	-62.64	PK	34.8	-21.1	11.8	-37.14	-27	-10.14	144	265	V

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.

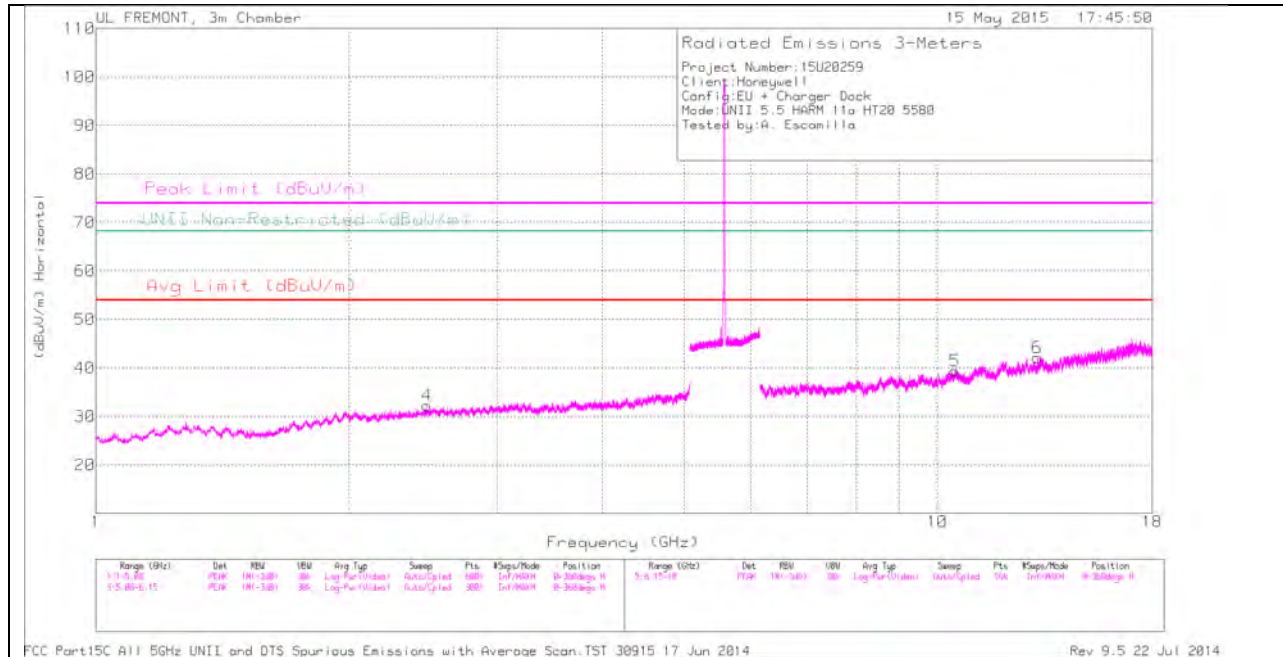
HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Chl/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
4	1.993	32.4	PK	31.5	-32	31.9	-	-	-	-	68.2	-36.3	0-360	100	V
1	1.996	30.52	PK	31.5	-31.9	30.12	-	-	-	-	68.2	-38.08	0-360	100	H
5	8.722	30.22	PK	35.9	-27.7	38.42	-	-	-	-	68.2	-29.78	0-360	100	V
2	8.798	27.9	PK	35.9	-25.8	38	-	-	-	-	68.2	-30.2	0-360	200	H
3	12.008	27.85	PK	39.1	-26.3	40.65	-	-	74	-33.35	-	-	0-360	200	H
6	12.069	28.59	PK	39	-26.4	41.19	-	-	74	-32.81	-	-	0-360	100	V

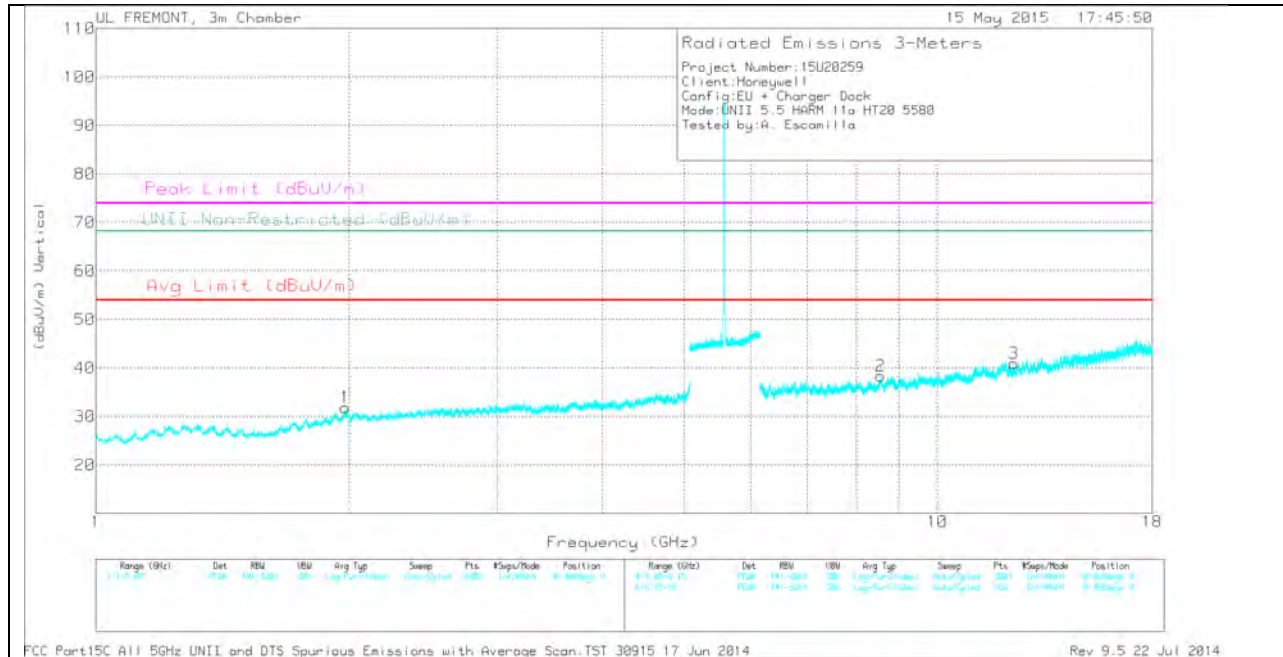
PK - Peak detector

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.

MID CHANNEL VERTICAL



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

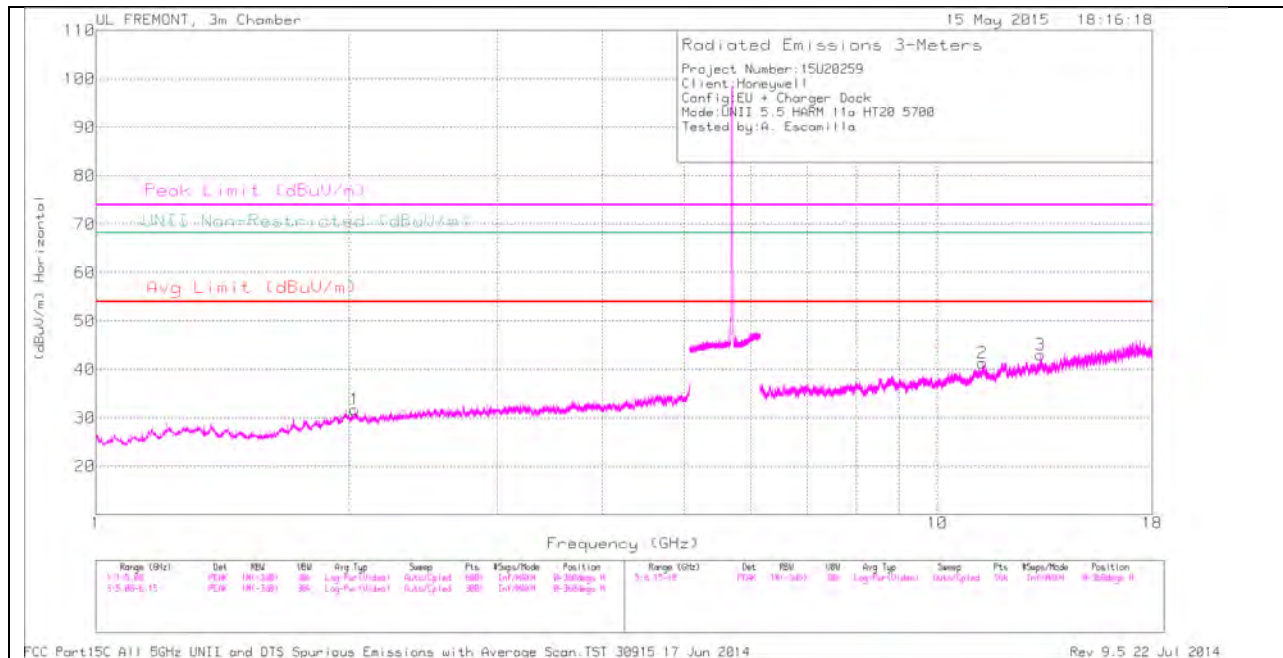
MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Chl/ 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	1.98	32.52	PK	31.4	-32.1	0	31.82	-	-	-	-	68.2	-36.38	0-360	100	V
4	2.474	32.37	PK	32.3	-32.4	0	32.27	-	-	-	-	68.2	-35.93	0-360	200	H
2	8.556	28.67	PK	35.8	-26.1	0	38.37	-	-	-	-	68.2	-29.83	0-360	200	V
5	10.495	27.53	PK	37.5	-25.6	0	39.43	-	-	-	-	68.2	-28.77	0-360	100	H
3	12.33	28.66	PK	38.9	-26.6	0	40.96	-	-	74	-33.04	-	-	0-360	100	V
6	13.137	30.49	PK	39	-27.4	0	42.09	-	-	-	-	68.2	-26.11	0-360	100	H

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.

UL FREMONT, 3m Chamber

15 May 2015 18:16:18

Radiated Emissions 3-Meters

Project Number: 15U20259
 Client: Honeywell
 Config: EU + Charger Dock
 Mode: UNII 5.5 HARM 11a HT20 5700
 Tested by: A. Escamilla

Peak Limit (dBuV/m)
 UNII-Non-Restricted (dBuV/m)
 Avg Limit (dBuV/m)

(dBuV/m) Vertical

Frequency (GHz)

Range (GHz)	Det	BW	RBW	Avg Type	Sweep	Pts	Steps/Mode	Position
1 to 20	Peak	100 kHz	300 Hz	Log Per Channel	Contiguous	1024	100/1000	R-Range 1

Range (GHz)	Det	BW	RBW	Avg Type	Sweep	Pts	Steps/Mode	Position
4 to 20.5 GHz	Peak	100 kHz	300 Hz	Log Per Channel	Contiguous	1024	100/1000	R-Range 1

FCC Part 15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

Rev 9.5 22 Jul 2014

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HIGH CHANNEL DATA

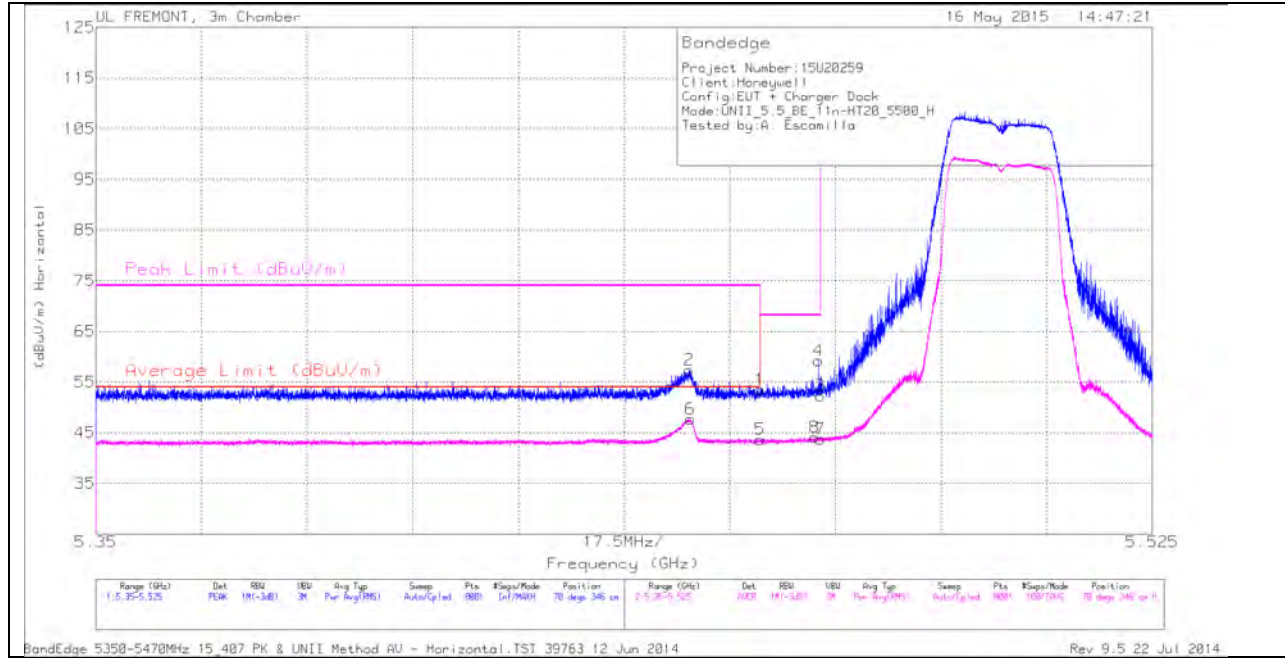
TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Chl/ 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	2.031	32.57	PK	31.5	-32.3	0	31.77	-	-	-	-	68.2	-36.43	0-360	100	H
4	2.514	32.54	PK	32.3	-32.2	0	32.64	-	-	-	-	68.2	-35.56	0-360	200	V
5	7.822	29.92	PK	35.8	-28.2	0	37.52	-	-	-	-	68.2	-30.68	0-360	100	V
2	11.304	29.05	PK	38.1	-25.8	0	41.35	-	-	74	-32.65	-	-	0-360	100	H
6	12.772	28.8	PK	39.1	-26	0	41.9	-	-	-	-	68.2	-26.3	0-360	100	V
3	13.255	30.43	PK	39	-26.4	0	43.03	-	-	74	-30.97	-	-	0-360	100	H

PK - Peak detector

11.3.2. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.5 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

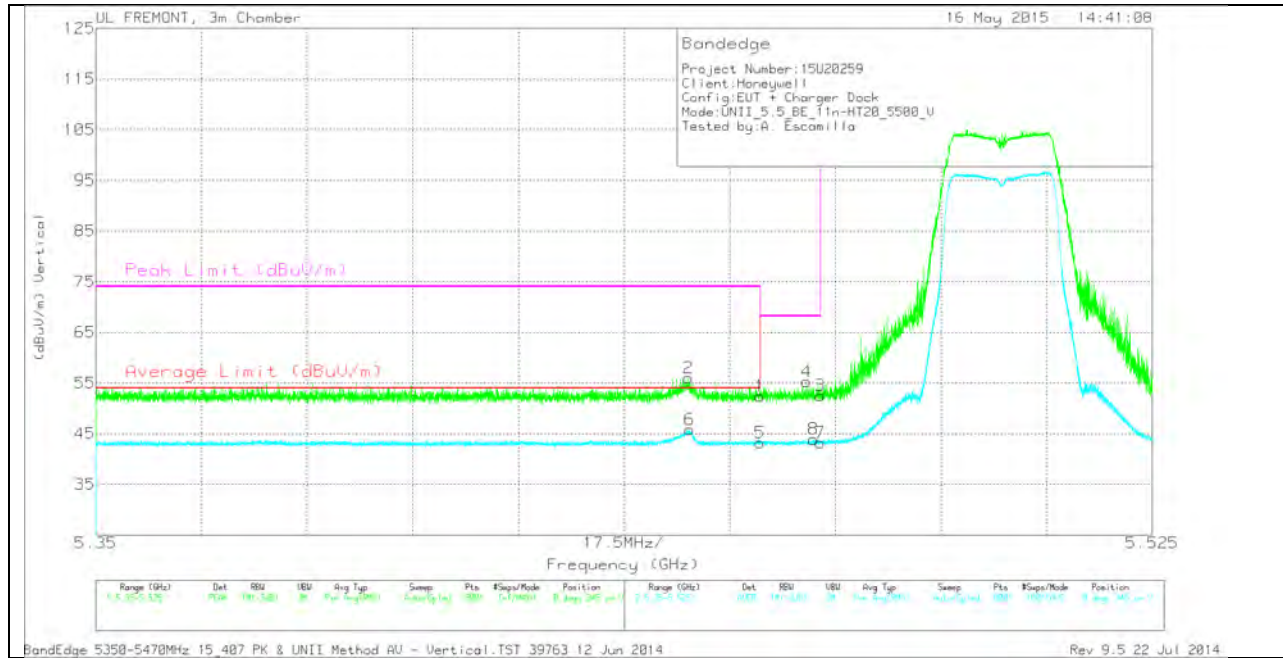
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Filt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.448	44.18	PK	34.6	-21.4	0	57.38	-	-	74	-16.62	70	346	H
6	5.448	34.26	RMS	34.6	-21.4	.22	47.68	54	-6.32	-	-	70	346	H
1	5.46	40.32	PK	34.6	-21.4	0	53.52	-	-	74	-20.48	70	346	H
5	5.46	30.23	RMS	34.6	-21.4	.22	43.65	54	-10.35	-	-	70	346	H
8	5.469	30.6	RMS	34.6	-21.3	.22	44.12	-	-	-	-	70	346	H
3	5.47	38.98	PK	34.6	-21.3	0	52.28	-	-	68.2	-15.92	70	346	H
4	5.47	45.94	PK	34.6	-21.3	0	59.24	-	-	68.2	-8.96	70	346	H
7	5.47	30.2	RMS	34.6	-21.3	.22	43.72	-	-	-	-	70	346	H

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL 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
2	5.448	42.81	PK	34.6	-21.4	0	56.01	-	-	74	-17.99	0	345	V
6	5.448	32.36	RMS	34.6	-21.4	.22	45.78	54	-8.22	-	-	0	345	V
1	5.46	39.19	PK	34.6	-21.4	0	52.39	-	-	74	-21.61	0	345	V
5	5.46	29.74	RMS	34.6	-21.4	.22	43.16	54	-10.84	-	-	0	345	V
4	5.468	41.94	PK	34.6	-21.3	0	55.24	-	-	68.2	-12.96	0	345	V
8	5.469	30.38	RMS	34.6	-21.3	.22	43.9	-	-	-	-	0	345	V
3	5.47	39.21	PK	34.6	-21.3	0	52.51	-	-	68.2	-15.69	0	345	V
7	5.47	29.64	RMS	34.6	-21.3	.22	43.16	-	-	-	-	0	345	V