FCC 47 CFR PART 15 SUBPART E

CERTIFICATION TEST REPORT

FOR

GSM/WCDMA/LTE Tablet with Bluetooth and DTS/UNII a/b/g/n

MODEL NUMBER: SM-T239

FCC ID: A3LSMT239

REPORT NUMBER: 15I19878-E5

ISSUE DATE: FEBRUARY 6, 2015

Prepared for

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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
-	02/6/15	Initial Issue	P. ZHANG

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	**SAMSUNG ELECTRONICS CO., LTD.**
EUT DESCRIPTION:	**GSM/WCDMA/LTE Tablet with Bluetooth and WLAN DTS/UNII a/b/g/n**
MODEL NUMBER:	**SM-T239**
SERIAL NUMBER:	**R32G101E1FD (Conducted), R32G1025LTJ (Radiated)**
DATE TESTED:	**JANUARY 27 – FEBRUARY 6, 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. 789033 D02 General UNII Test Procedures New Rules v01
The tests documented in this report were performed in accordance with the DFS portion of FCC CFR 47 Part 2, FCC CFR 47 Part 15, FCC 06-96, FCC KDB 789033, KDB 905462 D02 and D03, ANSI C63.10-2009.

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
☐ 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.

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4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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

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

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 40000 MHz	4.94 dB

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

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a GSM/WCDMA/LTE Tablet with Bluetooth and DTS/UNII a/b/g/n.

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	802.11a	9.87	9.71
5260 - 5320	802.11a	9.39	8.69
5500 - 5700	802.11a	9.86	9.68
5745 - 5825	802.11a	9.81	9.57
5180 - 5240	802.11n HT20	8.64	7.31
5260 - 5320	802.11n HT20	7.99	6.30
5500 - 5700	802.11n HT20	8.86	7.69
5745 - 5825	802.11n HT20	9.18	8.28
5190 - 5230	802.11n HT40	8.55	7.16
5270 - 5310	802.11n HT40	7.9	6.17
5510 - 5670	802.11n HT40	8.97	7.89
5755 - 5795	802.11n HT40	8.6	7.24

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of 0.79 dBi.

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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

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5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
AC Adapter	SAMSUNG	ETA0U83EWE	N/A	N/A
Earphone	SAMSUNG	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

EUT was set in the Hidden menu mode to enable WLAN UNII communications.

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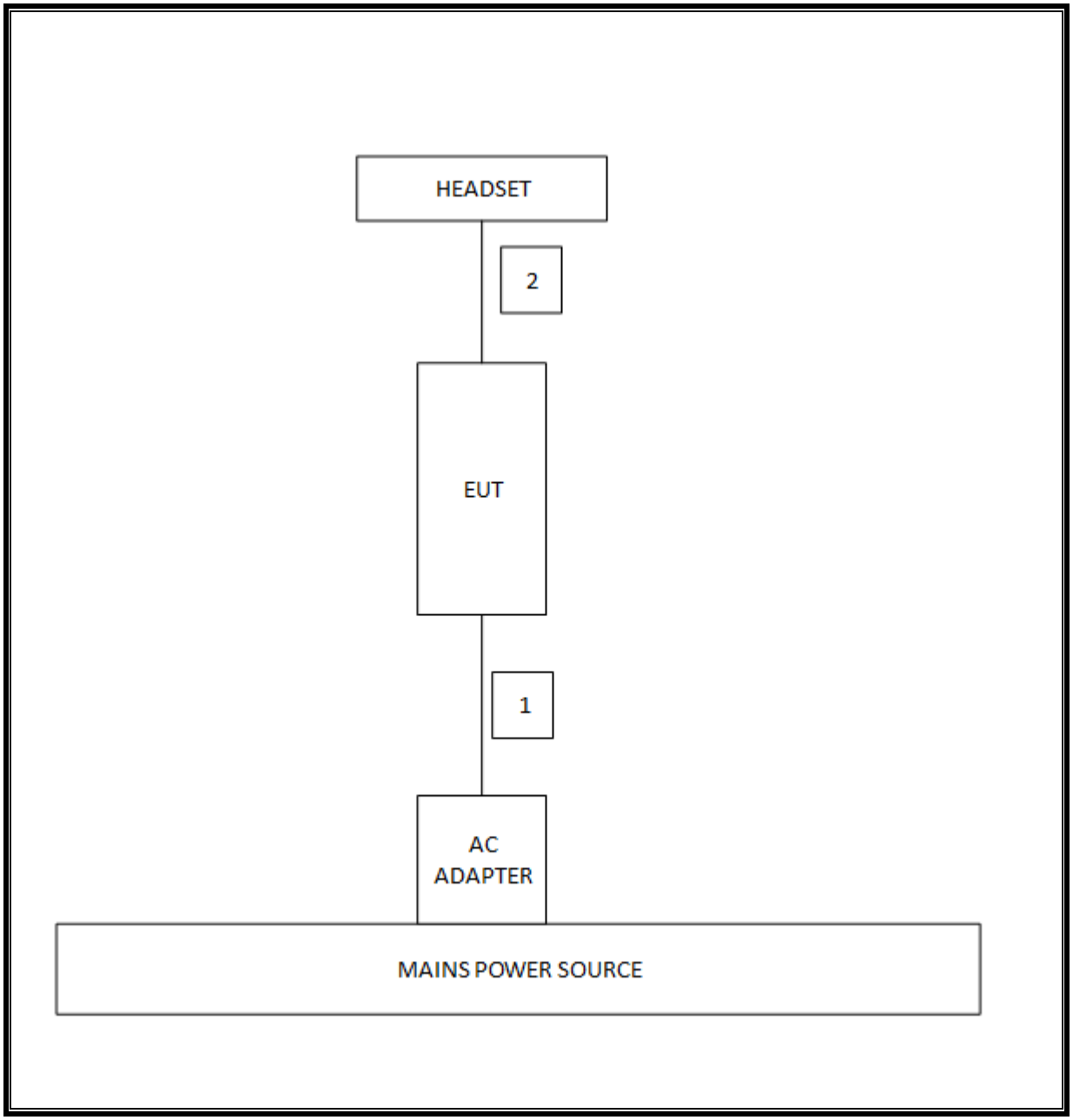
SETUP DIAGRAM FOR TESTS



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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	04/01/15
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	02/21/15
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	03/06/15
RF Preamplifier, 100KHz -> 1300MHz	HP	TBD	C00825	06/01/15
RF Preamplifier, 1GHz - 18GHz	Miteq	NSP4000-SP2	924343	03/23/15
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 3GHz	Micro-Tronics	LPS17541	F00219	05/23/15
High Pass Filter 5GHz	Micro-Tronics	HPS17542	F00222	05/22/15
High Pass Filter 6GHz	Micro-Tronics	HPM17543	F00224	05/22/15

Test Equipment 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

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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	50.58MHz
15.407	6dB Band width (5.8Ghz)	500KHz		Pass	16.38MHz
15.407 (a)(2)	TX Cond. Power5.15-2.25, 5.25-5.35 & 5.47-5.725	<24dBm or 11+10Log(OBW)		Pass	9.87dBm
15.407 (a)(3)	TX Cond. Power 5.725-5.825	< 30dBm or 17+10Log(OBW)		Pass	9.81dBm
15.407 (a)(5)	PSD (5.2,5.3,5.5GHz)	<11dBm		Pass	-0.93dBm
15.407 (a)(5)	PSD (5.8GHz)	30dBm per 500kHz		Pass	-3.42dBm
15.207 (a)	AC Power Line conducted emissions	Section 10	Radiated	Pass	46.34dBuV(PK)
15.407 (b) & 15.209	Radiated Spurious Emission	< 54dBuV/m		Pass	50.23dBuV/m
15.407 (h)(2)	Dynamic Frequency Selection	N/A	Radiated / Condcuted	Pass	N/A

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8. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

LIMITS

None; for reporting purposes only.

PROCEDURE

KDB 789033 Zero-Span Spectrum Analyzer Method.

RESULTS

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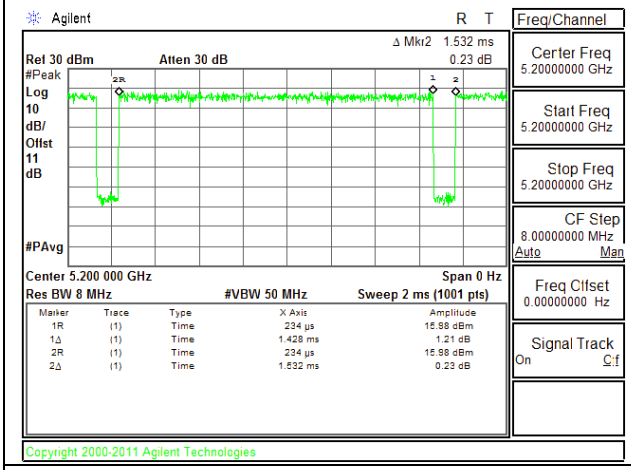
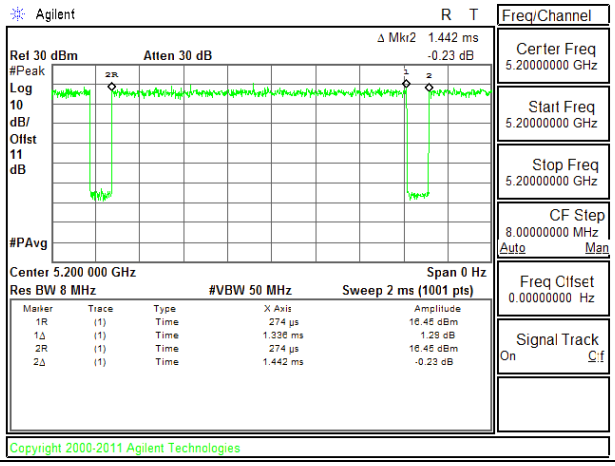
ON TIME AND DUTY CYCLE RESULT AND PLOTS

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	1.43	1.53	0.932	93.2%	0.31	0.700
802.11n HT20	1.34	1	0.926	92.6%	0.33	0.749
802.11n HT40	0.66	1	0.866	86.6%	0.63	1.508

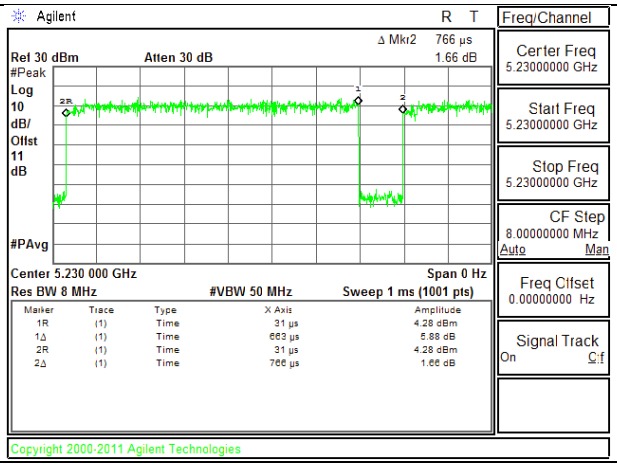
DUTY CYCLE 802.11a MODE



DUTY CYCLE 802.11n HT20 MODE



DUTY CYCLE 802.11n HT40 MODE



NOTE:

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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.

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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 to100KHz, the VBW >= 3 x RBW, peak detector and max hold.

RESULTS

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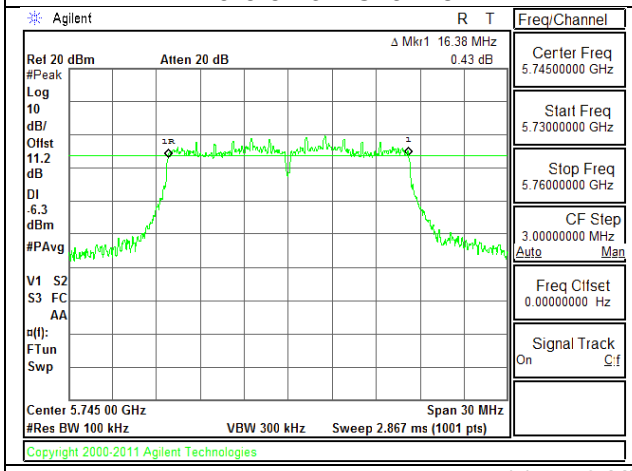
6 dB BANDWIDTH PLOTS AND TABLE

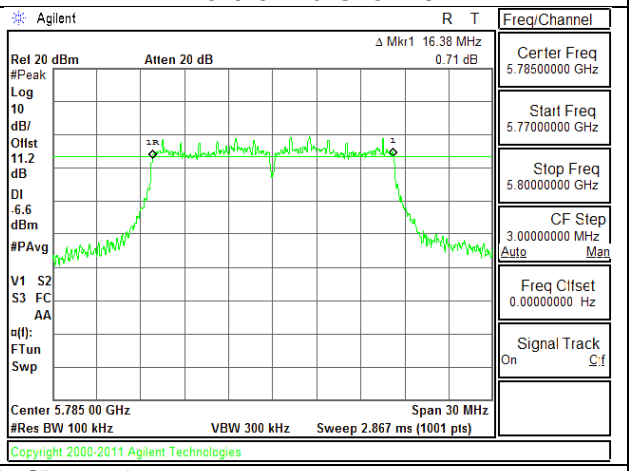
802.11a MODE IN THE 5.8 GHz BAND TEST RESULT TABLE

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	16.380	0.5
Mid	5785	16.380	0.5
High	5825	16.380	0.5
Worst		16.380	

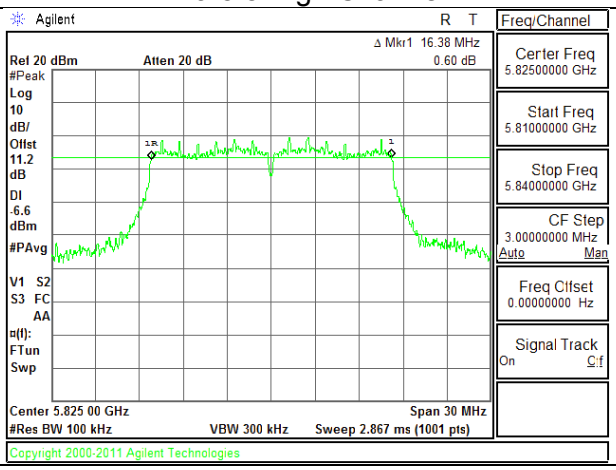
11a 5.8 Low Channel



11a 5.8 Mid Channel



11a 5.8 High Channel



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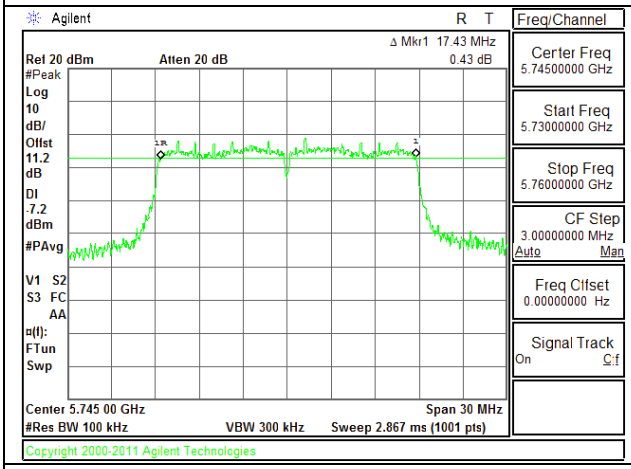
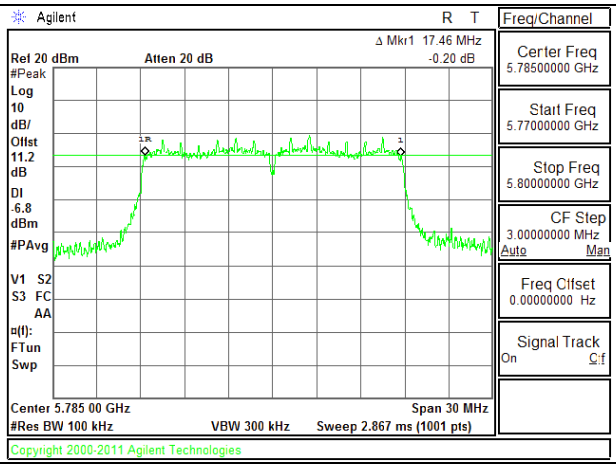
802.11n HT20 MODE IN THE 5.8 GHz BAND TEST RESULT TABLE

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	17.430	0.5
Mid	5785	17.460	0.5
High	5825	17.520	0.5
Worst		17.520	

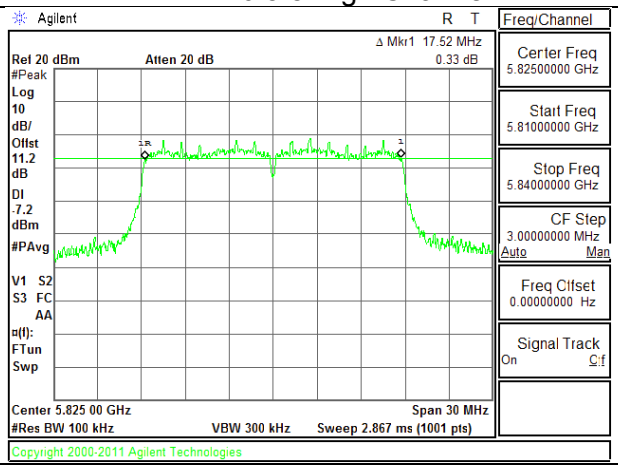
11n HT20 5.8 Low Channel



11n HT20 5.8 Mid Channel



11n HT20 5.8 High Channel



NOTE:

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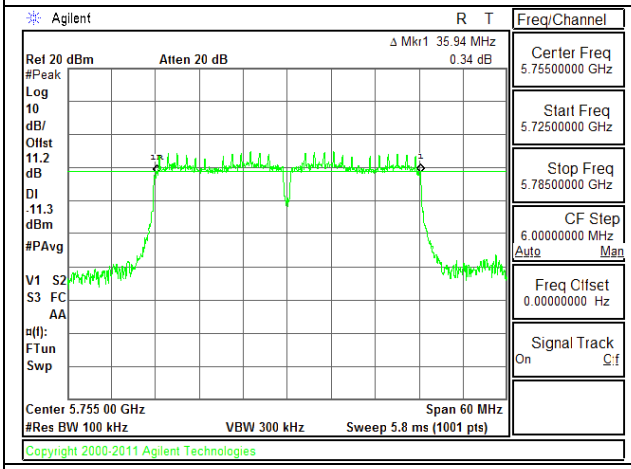
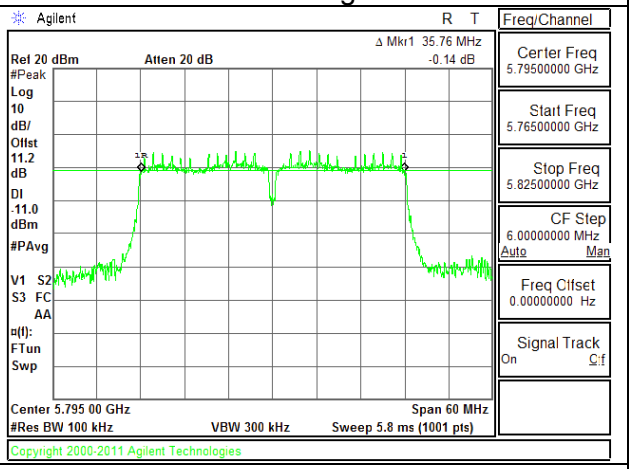
802.11n HT40 MODE IN THE 5.8 GHz BAND TEST RESULT TABLE

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5755	35.940	0.5
High	5795	35.760	0.5
Worst		35.940	

11n HT40 5.8 Low Channel



11n HT40 5.8 High Channel



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10.2. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

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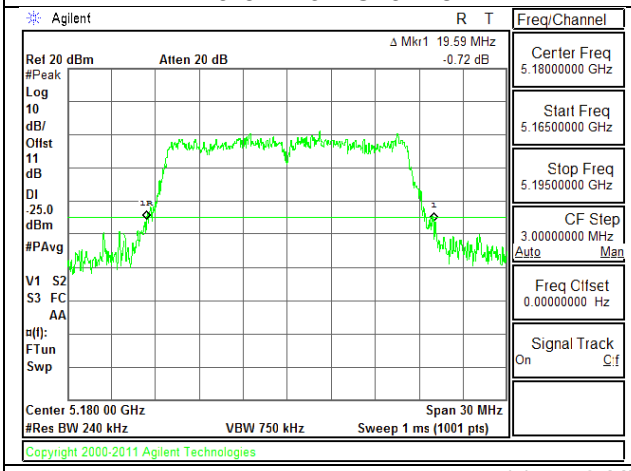
26 dB BANDWIDTH PLOTS AND TABLE

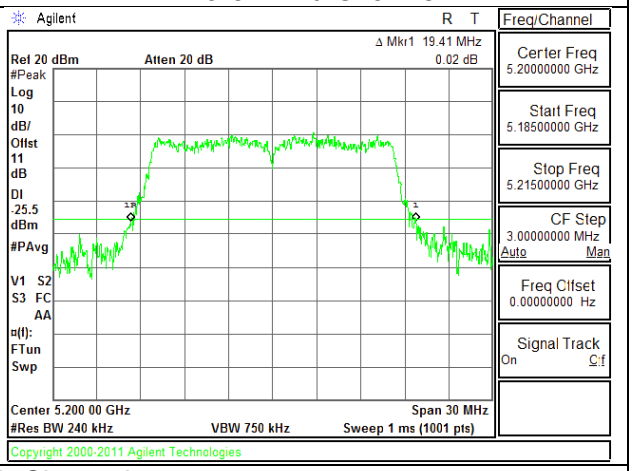
802.11a MODE IN THE 5.2 GHz BAND TEST RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5180	19.59
Mid	5200	19.41
High	5240	19.56
Worst		19.59

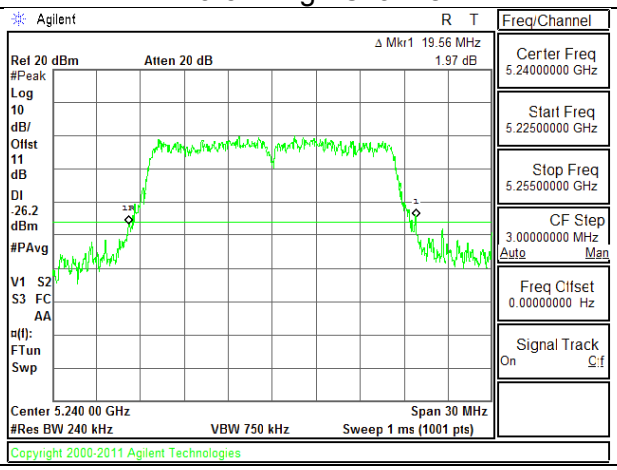
11a 5.2 Low Channel



11a 5.2 Mid Channel



11a 5.2 High Channel



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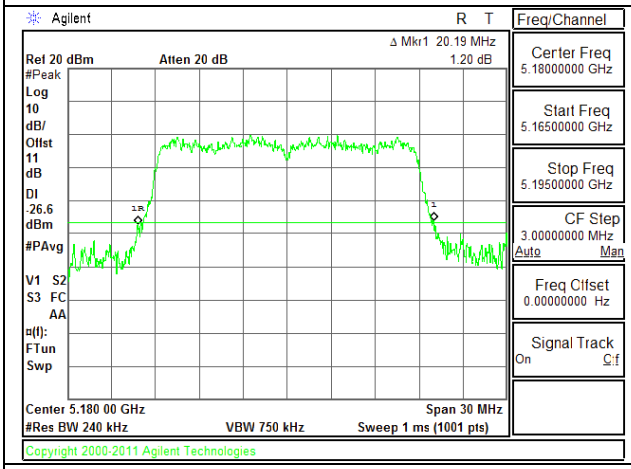
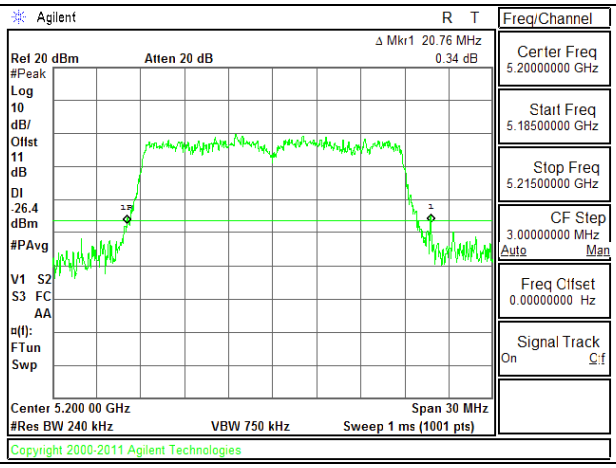
802.11n HT20 MODE IN THE 5.2 GHz BAND TEST RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5180	20.19
Mid	5200	20.76
High	5240	20.04
Worst		20.76

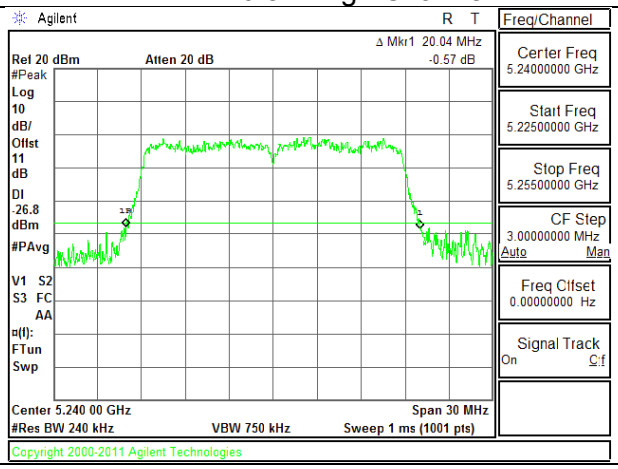
11n HT20 5.2 Low Channel



11n HT20 5.2 Mid Channel



11n HT20 5.2 High Channel



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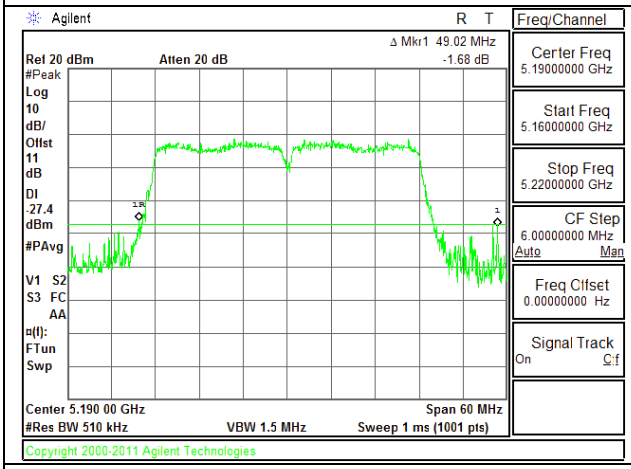
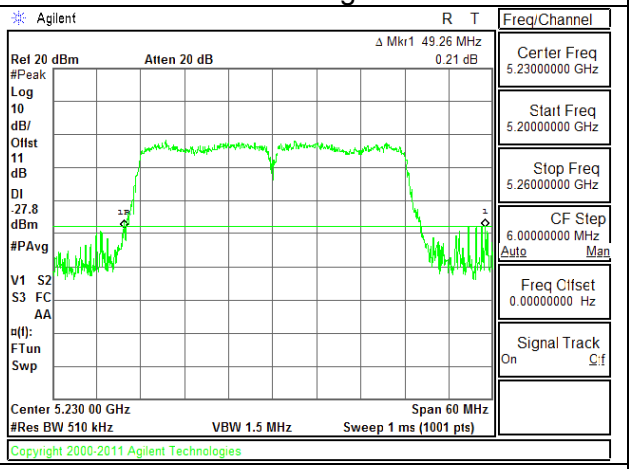
802.11n HT40 MODE IN THE 5.2 GHz BAND TEST RESULT TABLE

Channel	Frequency (MHz)	26dB Bandwidth (MHz)
Low	5190	49.02
Mid	5230	49.26
Worst		49.26

11n HT40 5.2 Low Channel



11n HT40 5.2 High Channel



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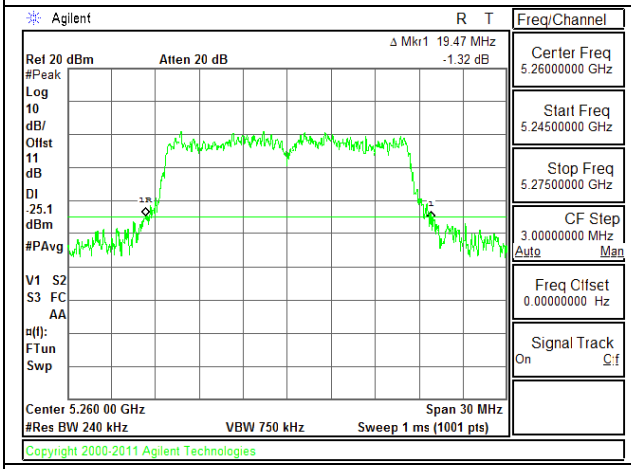
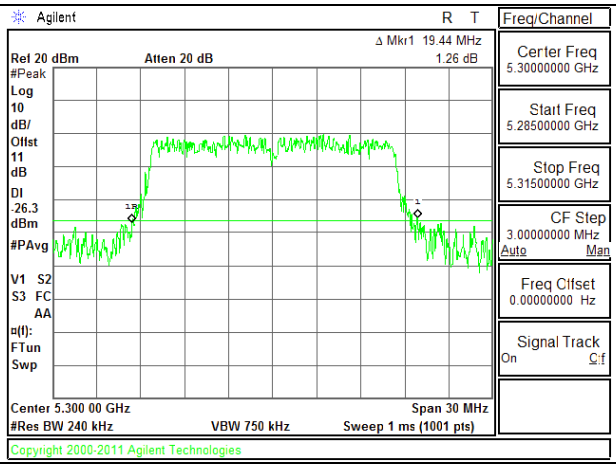
802.11a MODE IN THE 5.3 GHz BAND TEST RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5260	19.47
Mid	5300	19.44
High	5320	19.62
Worst		19.62

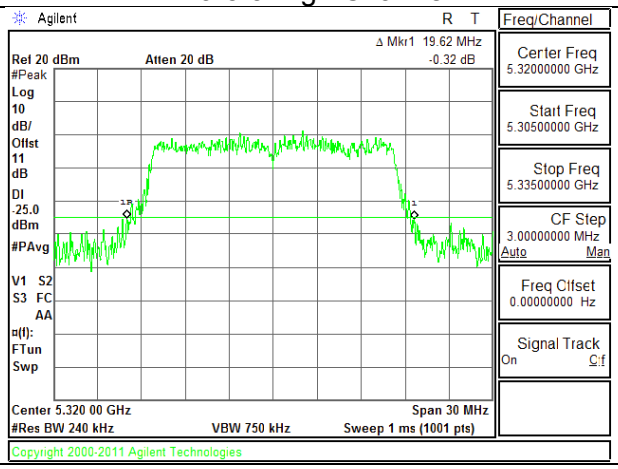
11a 5.3 Low Channel



11a 5.3 Mid Channel



11a 5.3 High Channel



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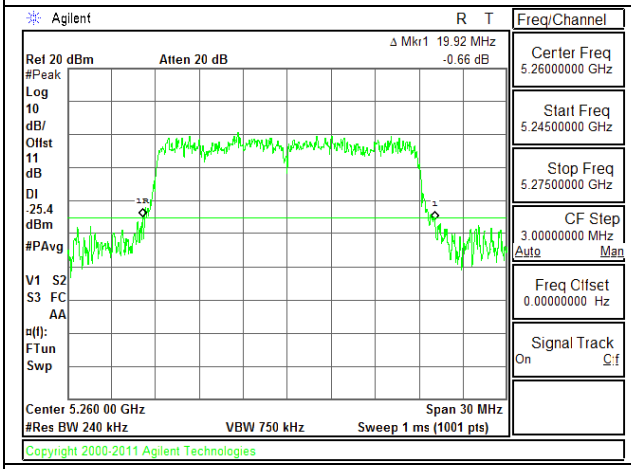
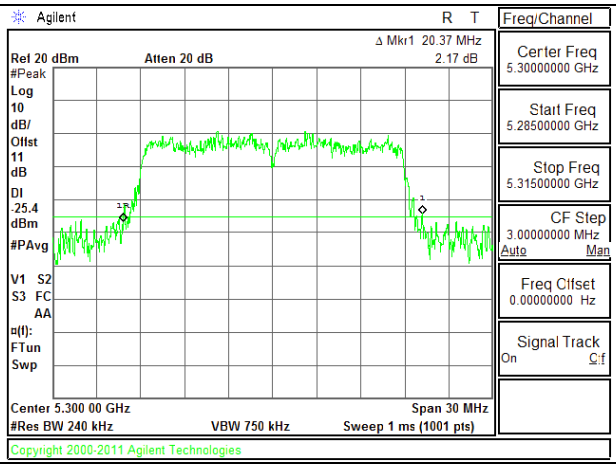
802.11n HT20 MODE IN THE 5.3 GHz BAND TEST RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5260	19.92
Mid	5300	20.37
High	5320	20.40
Worst		20.40

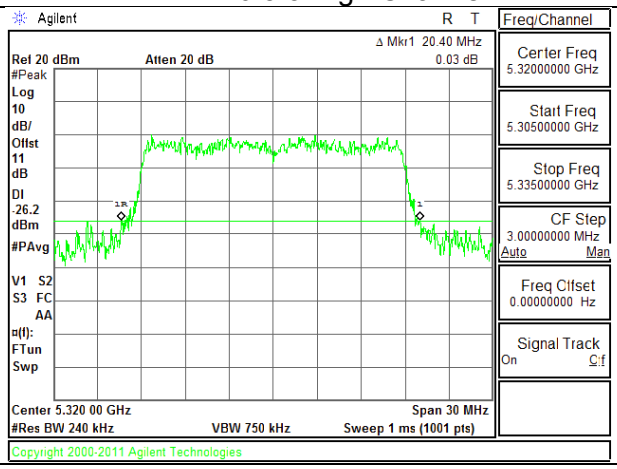
11n HT20 5.3 Low Channel



11n HT20 5.3 Mid Channel



11n HT20 5.3 High Channel



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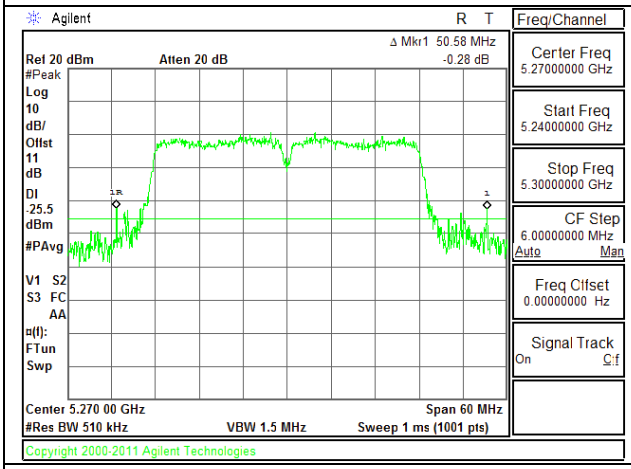
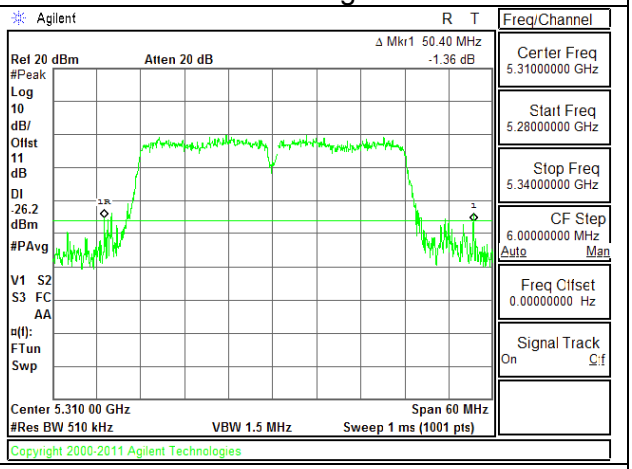
802.11n HT40 MODE IN THE 5.3 GHz BAND TEST RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5270	50.58
High	5310	50.40
Worst		50.58

11n HT40 5.3 Low Channel



11n HT20 5.3 High Channel



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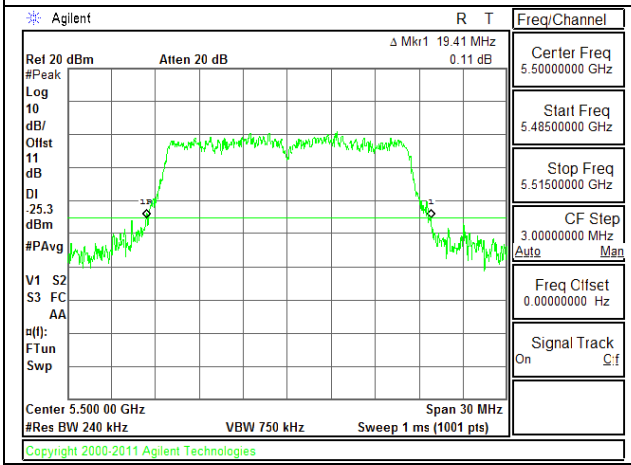
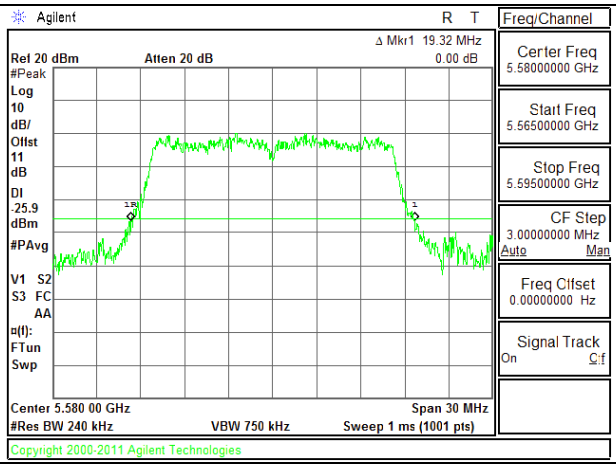
802.11a MODE IN THE 5.5 GHz BAND TEST RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5500	19.41
Mid	5580	19.32
High	5700	19.53
Worst		19.53

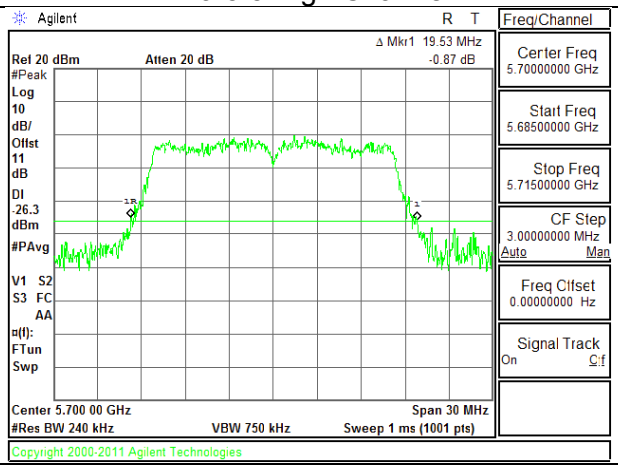
11a 5.5 Low Channel



11a 5.5 Mid Channel



11a 5.5 High Channel



NOTE:

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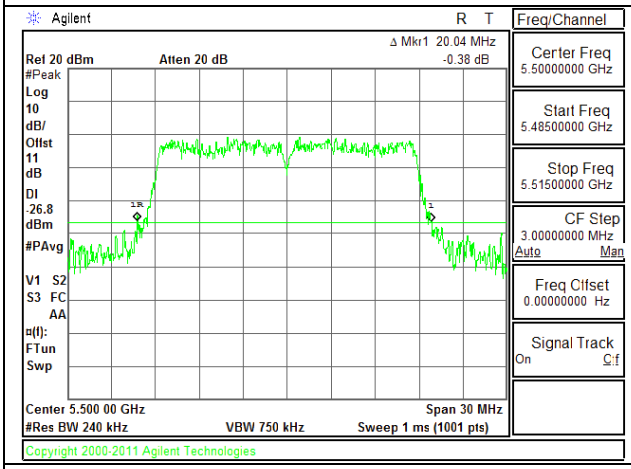
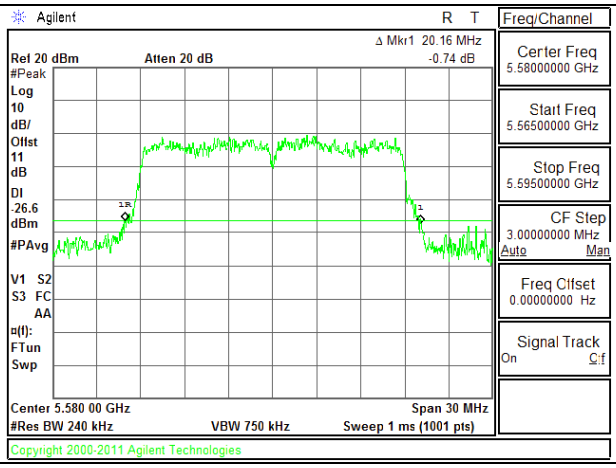
802.11n HT20 MODE IN THE 5.5 GHz BAND TEST RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5500	20.04
Mid	5580	20.16
High	5700	19.95
Worst		20.16

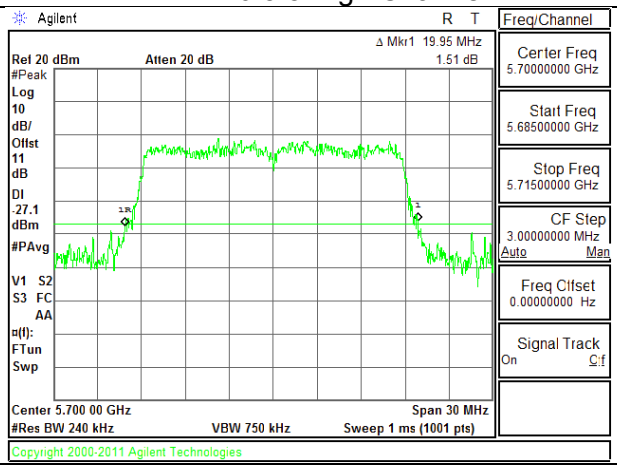
11n HT20 5.5 Low Channel



11n HT20 5.5 Mid Channel



11n HT20 5.5 High Channel



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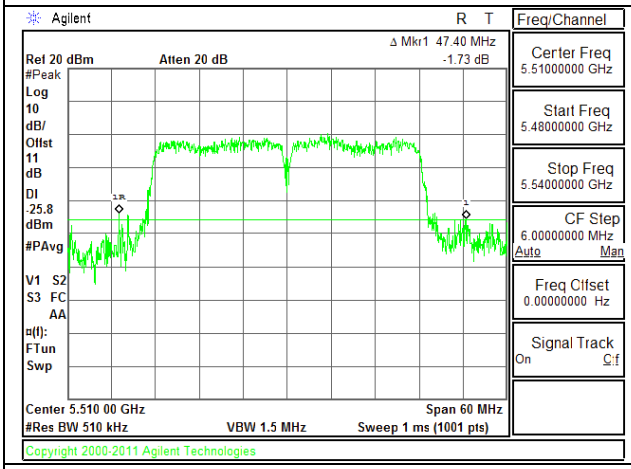
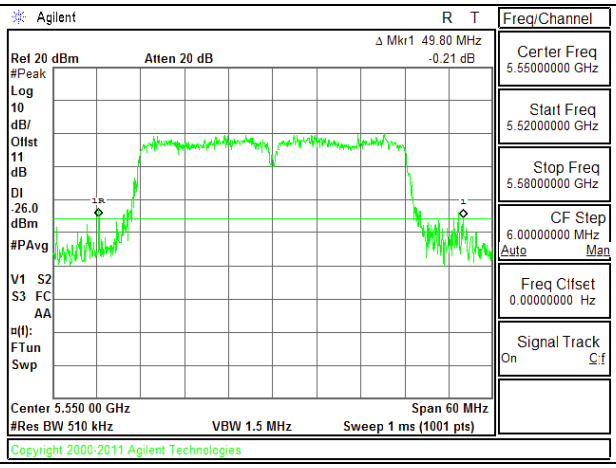
802.11n HT40 MODE IN THE 5.5 GHz BAND TEST RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5510	47.40
Mid	5550	49.80
High	5670	50.10
Worst		50.10

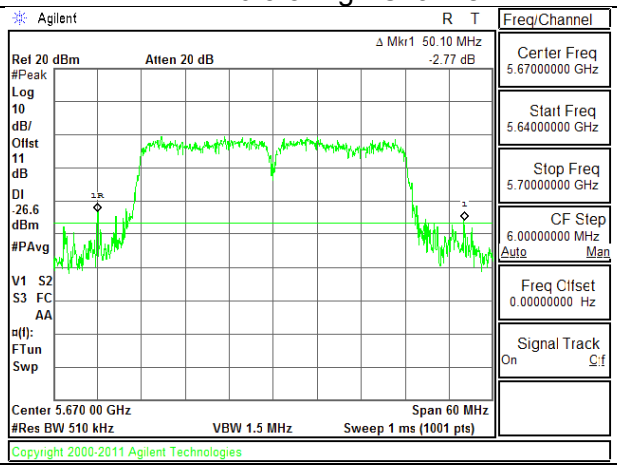
11n HT40 5.5 Low Channel



11n HT40 5.5 Mid Channel



11n HT40 5.5 High Channel



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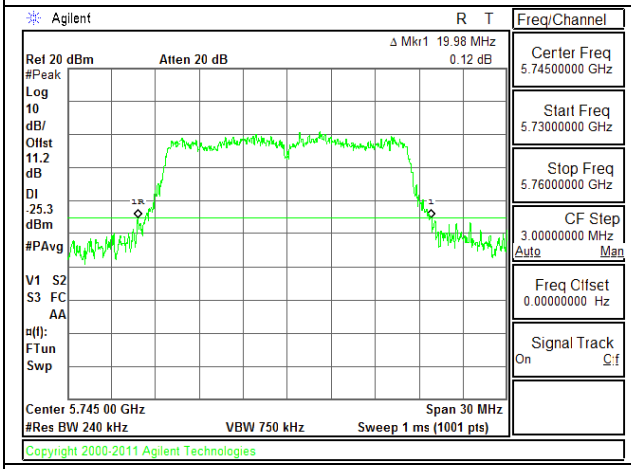
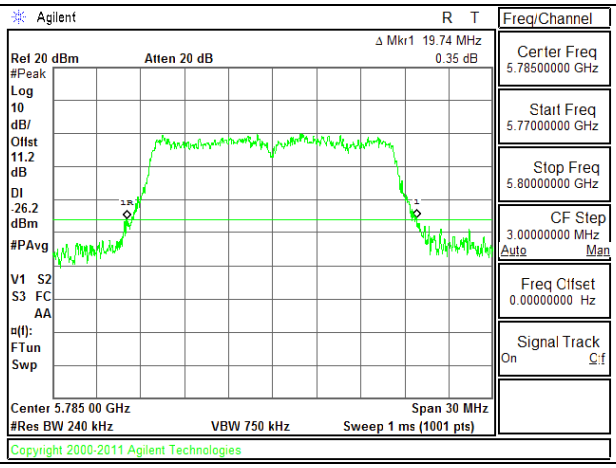
802.11a MODE IN THE 5.8 GHz BAND TEST RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5745	19.98
Mid	5785	19.74
High	5825	19.35
Worst		19.98

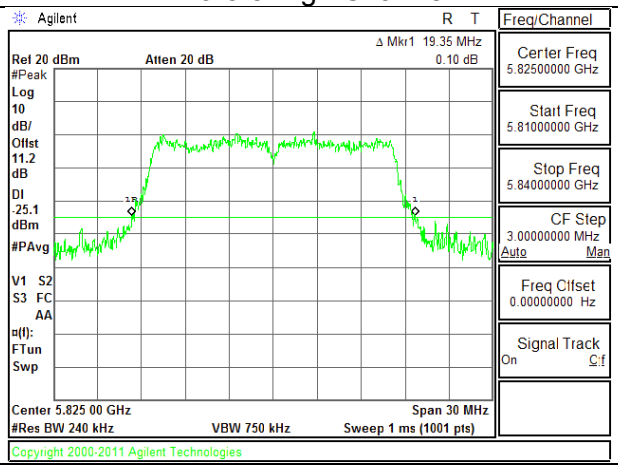
11a 5.8 Low Channel



11a 5.8 Mid Channel



11a 5.8 High Channel



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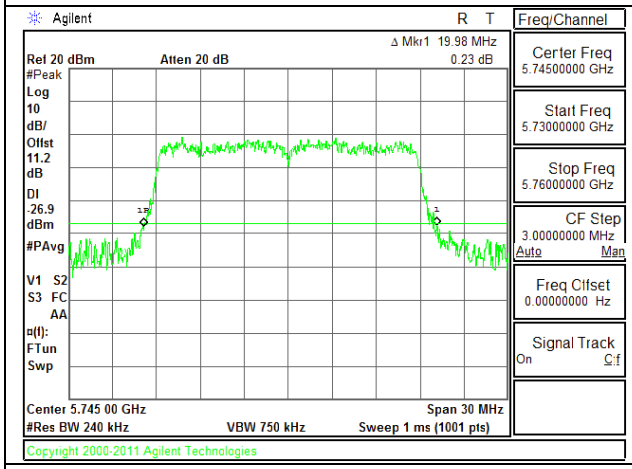
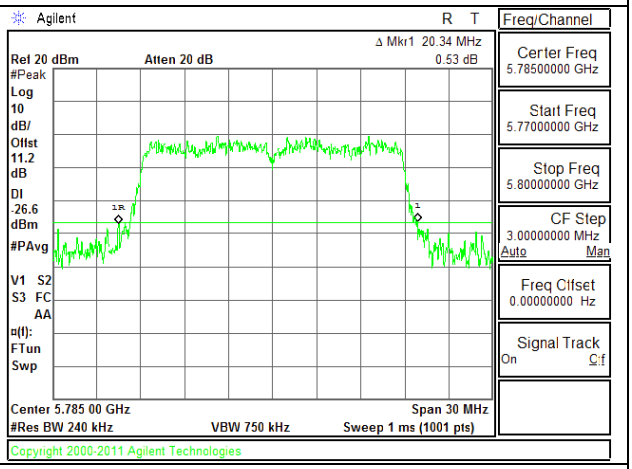
802.11n HT20 MODE IN THE 5.8 GHz BAND TEST RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5745	19.98
Mid	5785	20.34
High	5825	20.28
Worst		20.34

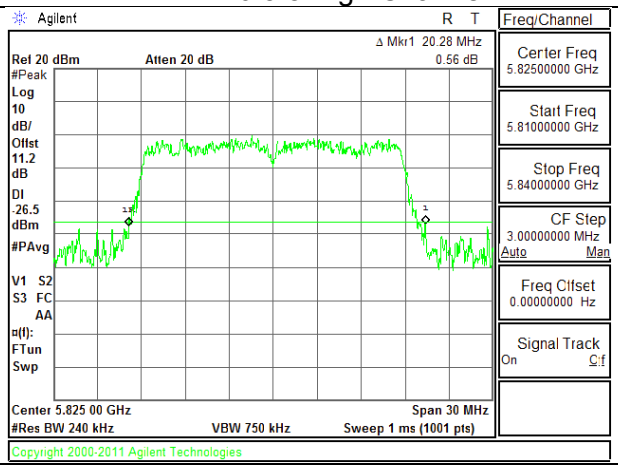
11n HT20 5.8 Low Channel



11n HT20 5.8 Mid Channel



11n HT20 5.8 High Channel



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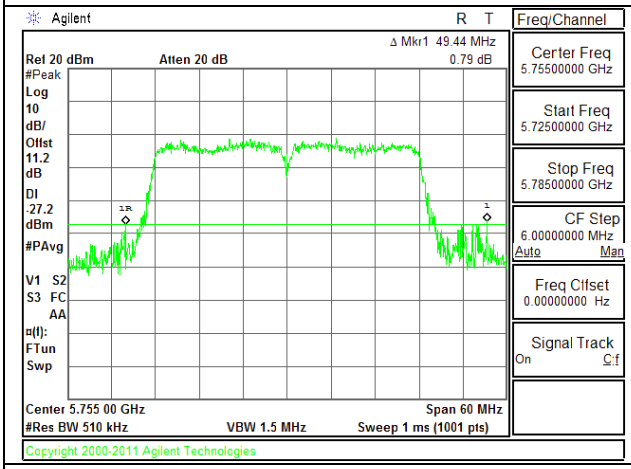
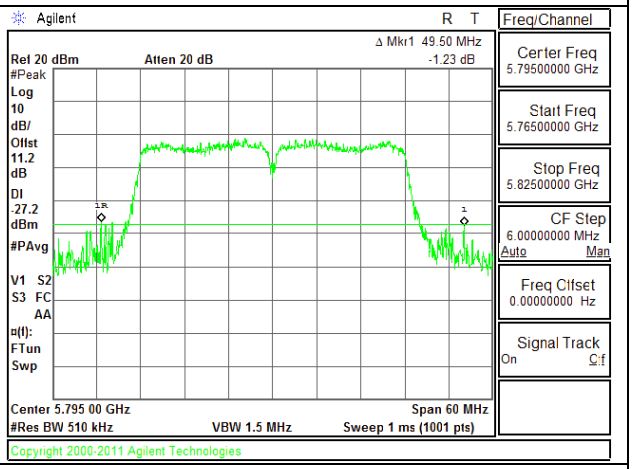
802.11n HT40 MODE IN THE 5.8 GHz BAND TEST RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5755	49.44
High	5795	49.50
Worst		49.50

11n HT40 5.8 Low Channel



11n HT40 5.8 Mid Channel



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10.3. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

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10.3.1. 802.11a MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5180	16.46
Mid	5200	16.38
High	5240	16.46
Worst		16.46

10.3.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5180	17.53
Mid	5200	17.57
High	5240	17.64
Worst		17.64

10.3.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5190	36.27
Mid	5230	36.24
Worst		36.27

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10.3.1. 802.11a MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5260	16.50
Mid	5300	16.49
High	5320	16.47
Worst		16.50

10.3.1. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5260	17.56
Mid	5300	17.66
High	5320	17.58
Worst		17.66

10.3.2. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5270	36.22
High	5310	36.27
Worst		36.27

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10.3.3. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5500	16.48
Mid	5580	16.47
High	5700	16.47
Worst		16.48

10.3.4. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5500	17.60
Mid	5580	17.53
High	5700	17.56
Worst		17.60

10.3.5. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5510	36.25
Mid	5550	36.20
High	5670	36.16
Worst		36.25

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10.3.6. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5745	16.48
Mid	5785	16.37
High	5825	16.44
Worst		16.48

10.3.7. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5745	17.60
Mid	5785	17.54
High	5825	17.50
Worst		17.60

10.3.8. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5755	36.10
High	5795	35.95
Worst		36.10

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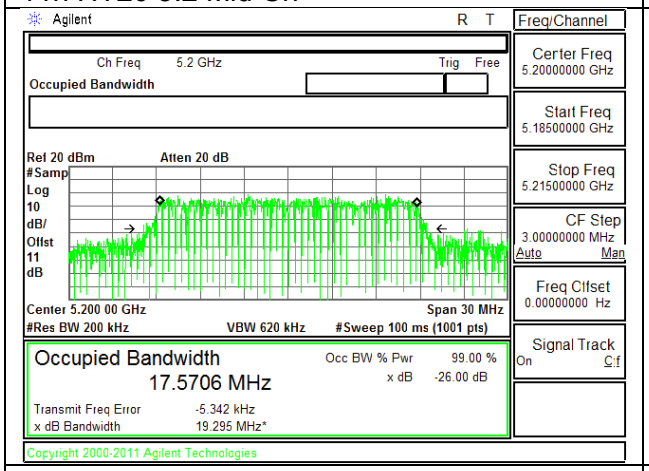
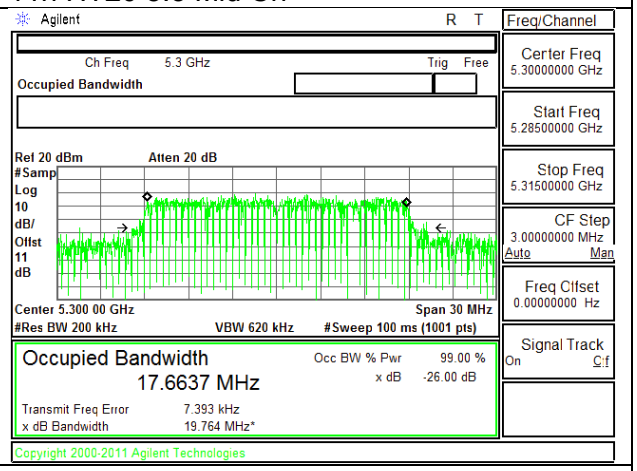
10.3.1. 99% BANDWIDTH PLOTS

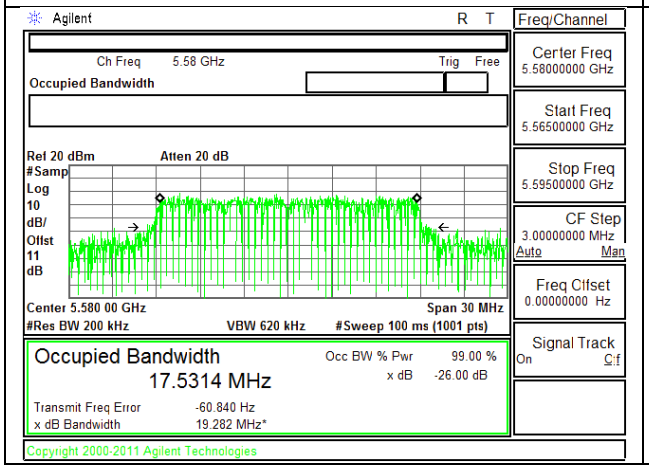
11n HT20 5.2 Mid Ch



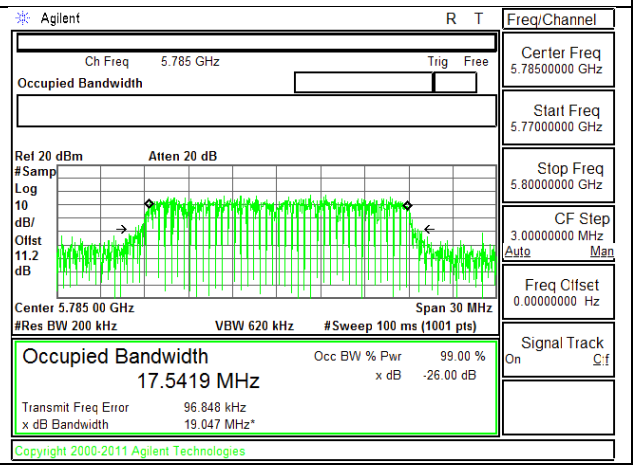
11n HT20 5.3 Mid Ch



11n HT20 5.5 Mid Ch



11n HT20 5.8 Mid Ch



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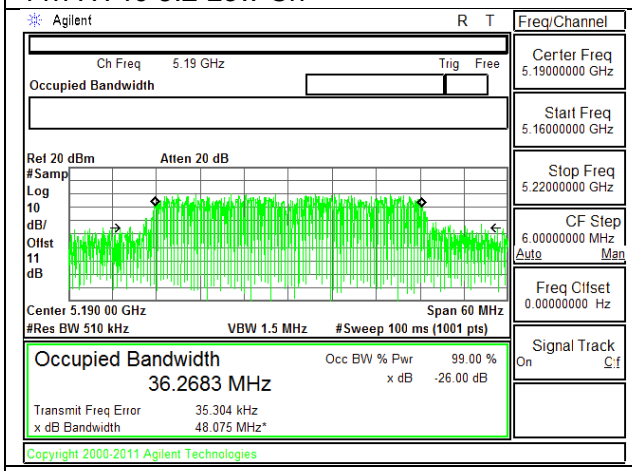
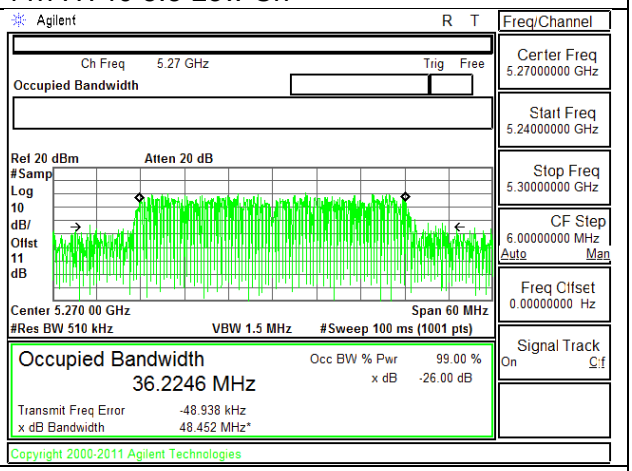
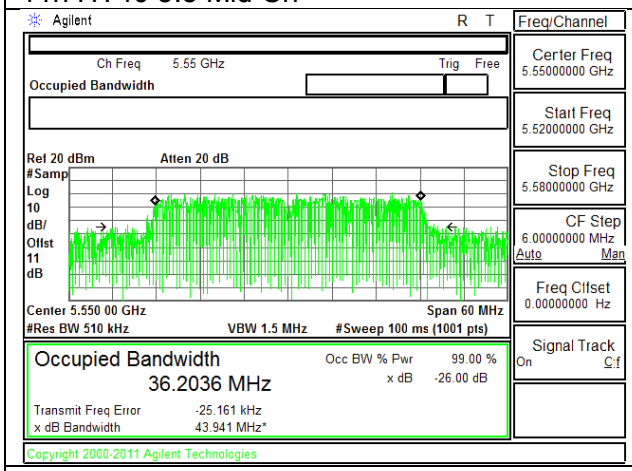
11n HT40 5.2 Low Ch



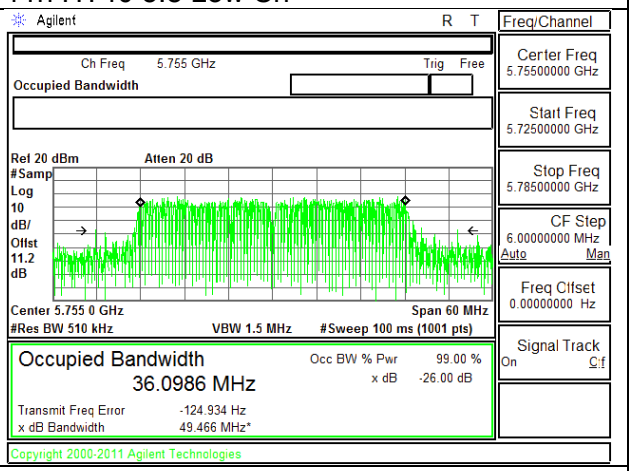
11n HT40 5.3 Low Ch



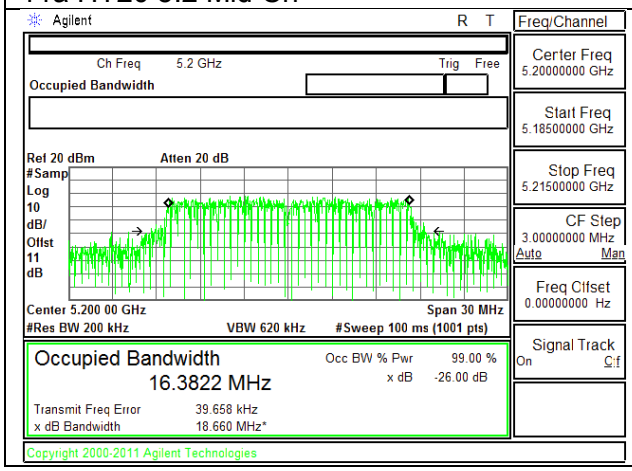
11n HT40 5.5 Mid Ch



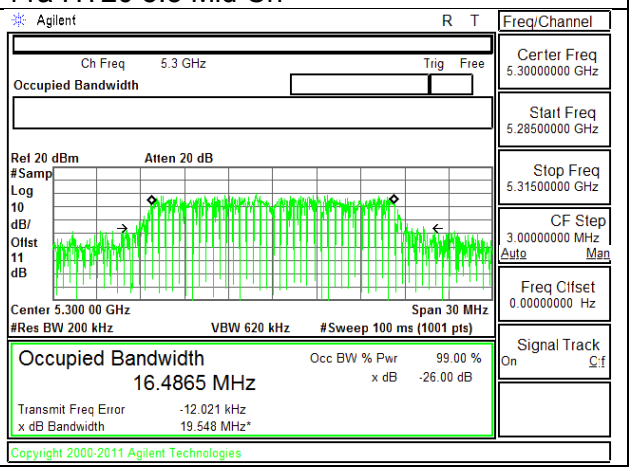
11n HT40 5.8 Low Ch



11a HT20 5.2 Mid Ch



11a HT20 5.3 Mid Ch



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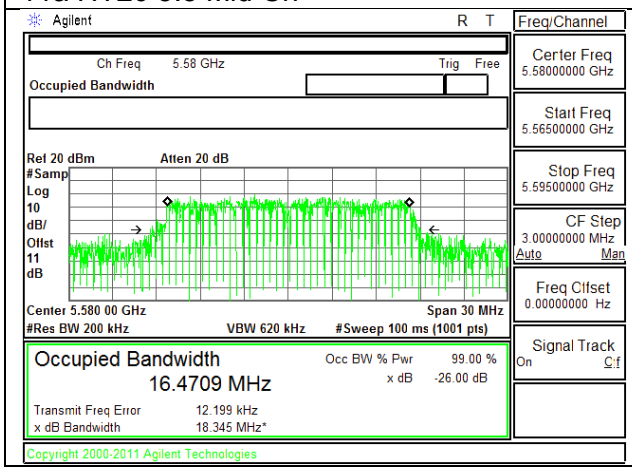
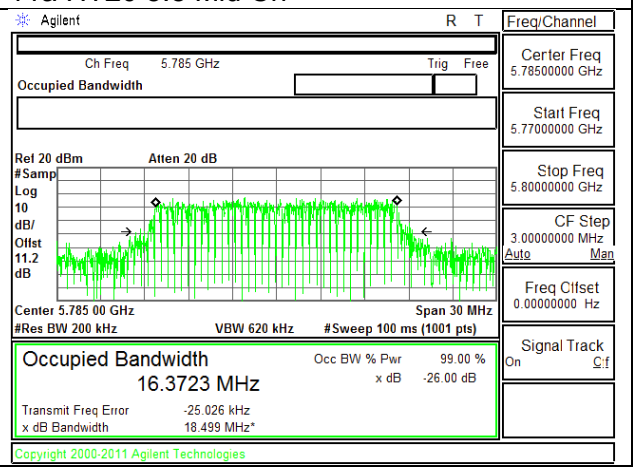
11a HT20 5.5 Mid Ch



11a HT20 5.8 Mid Ch



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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

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10.4.1. 802.11a MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5180	9.50
Mid	5200	9.10
High	5240	8.90
Worst		9.50

10.4.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5180	8.20
Mid	5200	8.10
High	5240	7.80
Worst		8.20

10.4.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5190	8.40
Mid	5230	8.20
Worst		8.40

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10.4.4. 802.11a MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5260	8.60
Mid	5300	8.70
High	5320	8.70
Worst		8.70

10.4.5. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5260	8.10
Mid	5300	7.50
High	5320	7.80
Worst		8.10

10.4.6. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5270	8.10
High	5310	7.90
Worst		8.10

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10.4.7. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5500	9.40
Mid	5580	9.10
High	5700	9.20
Worst		9.40

10.4.8. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5500	8.40
Mid	5580	8.40
High	5700	8.20
Worst		8.40

10.4.9. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5510	8.40
Mid	5550	8.40
High	5670	8.50
Worst		8.50

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10.4.10. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5745	9.10
Mid	5785	9.20
High	5825	8.80
Worst		9.20

10.4.11. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5745	8.40
Mid	5785	8.20
High	5825	8.20
Worst		8.40

10.4.12. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5755	8.40
High	5795	8.40
Worst		8.40

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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 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 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.

DIRECTIONAL ANTENNA GAIN

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

Test Methodology

RESULTS

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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	19.59	16.46	0.79
Mid	5200	19.41	16.38	0.79
High	5240	19.56	16.46	0.79

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	22.16	21.37	21.37	11.00	10.00	9.21
Mid	5200	24.00	22.14	21.35	21.35	11.00	10.00	9.21
High	5240	24.00	22.16	21.37	21.37	11.00	10.00	9.21

Duty Cycle CF (dB)	0.31	**Included in Calculations of Corr'd Power & PPSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	9.56	9.87	24.00	-14.13
Mid	5200	8.97	9.28	24.00	-14.72
High	5240	9.12	9.43	24.00	-14.57

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5180	-1.430	-1.12	11.00	-12.12
Mid	5200	-1.810	-1.50	11.00	-12.50
High	5240	-1.570	-1.26	11.00	-12.26

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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	20.19	17.53	0.79
Mid	5200	20.76	17.57	0.79
High	5240	20.04	17.64	0.79

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	22.44	21.65	21.65	11.00	10.00	9.21
Mid	5200	24.00	22.45	21.66	21.66	11.00	10.00	9.21
High	5240	24.00	22.46	21.67	21.67	11.00	10.00	9.21

Duty Cycle CF (dB)	0.33	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	8.306	8.64	24.00	-15.36
Mid	5200	8.157	8.16	24.00	-15.84
High	5240	7.828	7.83	24.00	-16.17

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5180	-2.840	-2.51	11.00	-13.51
Mid	5200	-2.840	-2.51	11.00	-13.51
High	5240	-3.220	-2.89	11.00	-13.89

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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	49.020	36.270	0.79
Mid	5230	49.260	36.240	0.79

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	22.21	22.21	11.00	10.00	9.21
Mid	5230	24.00	23.00	22.21	22.21	11.00	10.00	9.21
Duty Cycle CF (dB)		0.63	Included in Calculations of Corr'd Power & PPSD					

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5190	7.918	8.55	24.00	-15.45
Mid	5230	7.600	8.23	24.00	-15.77

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5190	-6.090	-5.46	11.00	-16.46
Mid	5230	-6.410	-5.78	11.00	-16.78

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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	19.47	16.50	0.79
Mid	5300	19.44	16.49	0.79
High	5320	19.62	16.47	0.79

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	23.17	29.17	23.17	11.00	11.00	11.00
Mid	5300	24.00	23.17	29.17	23.17	11.00	11.00	11.00
High	5320	24.00	23.17	29.17	23.17	11.00	11.00	11.00

Duty Cycle CF (dB)	0.31	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	9.075	9.39	24.00	-14.62
Mid	5300	8.323	8.63	24.00	-15.37
High	5320	8.635	8.95	24.00	-15.06

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5260	-1.690	-1.38	11.00	-12.38
Mid	5300	-2.310	-2.00	11.00	-13.00
High	5320	-2.000	-1.69	11.00	-12.69

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10.5.4. 802.11n HT20 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	19.92	17.56	0.79
Mid	5300	20.37	17.66	0.79
High	5320	20.40	17.58	0.79

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	23.99	23.45	29.45	23.45	11.00	11.00	11.00
Mid	5300	24.00	23.47	29.47	23.47	11.00	11.00	11.00
High	5320	24.00	23.45	29.45	23.45	11.00	11.00	11.00

Duty Cycle CF (dB)	0.33	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	7.640	7.97	24.00	-16.03
Mid	5300	7.490	7.82	24.00	-16.18
High	5320	7.661	7.99	24.00	-16.01

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5260	-3.290	-2.96	11.00	-13.96
Mid	5300	-3.460	-3.13	11.00	-14.13
High	5320	-3.320	-2.99	11.00	-13.99

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10.5.5. 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	50.6	36.2	0.79
High	5310	50.4	36.3	0.79

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)	0.63	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5270	7.3	7.90	24.00	-16.10
High	5310	7.2	7.82	24.00	-16.19

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5270	-6.73	-6.10	11.00	-17.10
High	5310	-6.62	-5.99	11.00	-16.99

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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	19.410	16.480	0.79
Mid	5580	19.320	16.470	0.79
High	5700	19.530	16.470	0.79

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	23.88	24.00	29.17	23.88	11.00	11.00	11.00
Mid	5580	23.86	24.00	29.17	23.86	11.00	11.00	11.00
High	5700	23.91	24.00	29.17	23.91	11.00	11.00	11.00

Duty Cycle CF (dB)	0.31	**Included in Calculations of Corr'd Power & PPSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	9.551	9.86	23.88	-14.02
Mid	5580	9.394	9.70	23.86	-14.16
High	5700	9.507	9.82	23.91	-14.09

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5500	-1.240	-0.93	11.00	-11.93
Mid	5580	-1.380	-1.07	11.00	-12.07
High	5700	-1.290	-0.98	11.00	-11.98

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10.5.6. 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	20.040	17.590	0.79
Mid	5580	20.160	17.530	0.79
High	5700	19.950	17.560	0.79

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	24.00	29.45	24.00	11.00	11.00	11.00
Mid	5580	24.00	24.00	29.44	24.00	11.00	11.00	11.00
High	5700	24.00	24.00	29.45	24.00	11.00	11.00	11.00

Duty Cycle CF (dB)	0.33	**Included in Calculations of Corr'd Power & PPSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	8.487	8.82	24.00	-15.18
Mid	5580	8.526	8.86	24.00	-15.14
High	5700	8.530	8.86	24.00	-15.14

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5500	-2.470	-2.14	11.00	-13.14
Mid	5580	-2.500	-2.17	11.00	-13.17
High	5700	-2.550	-2.22	11.00	-13.22

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10.5.7. 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	47.4	36.3	0.79
Mid	5550	49.8	36.2	0.79
High	5670	50.1	36.2	0.79

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)	0.63	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	8.198	8.83	24.00	-15.17
Mid	5550	8.026	8.66	24.00	-15.34
High	5670	8.339	8.97	24.00	-15.03

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5510	-5.560	-4.93	11.00	-15.93
Mid	5550	-6.150	-5.52	11.00	-16.52
High	5670	-5.620	-4.99	11.00	-15.99

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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	19.980	16.480	0.79
Mid	5785	19.740	16.370	0.79
High	5825	19.350	16.440	0.79

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	35.17	30.00	17.00	17.00	17.00
Mid	5785	29.95	30.00	35.14	29.95	17.00	17.00	17.00
High	5825	29.87	30.00	35.16	29.87	17.00	17.00	17.00

Duty Cycle CF (dB)	0.31	**Included in Calculations of Corr'd Power & PPSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	9.50	9.81	30.00	-20.19
Mid	5785	9.49	9.80	29.95	-20.15
High	5825	9.31	9.62	29.87	-20.25

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5745	-3.73	-3.42	17.00	-20.42
Mid	5785	-3.91	-3.60	17.00	-20.60
High	5825	-4.03	-3.72	17.00	-20.72

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10.5.8. 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	19.980	17.600	0.79
Mid	5785	20.340	17.540	0.79
High	5825	20.280	17.500	0.79

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	35.46	30.00	17.00	17.00	17.00
Mid	5785	30.00	30.00	35.44	30.00	17.00	17.00	17.00
High	5825	30.00	30.00	35.43	30.00	17.00	17.00	17.00

Duty Cycle CF (dB)	0.33	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	8.85	9.18	30.00	-20.82
Mid	5785	8.29	8.62	30.00	-21.38
High	5825	8.50	8.83	30.00	-21.17

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5745	-4.72	-4.39	17.00	-21.39
Mid	5785	-5.43	-5.10	17.00	-22.10
High	5825	-5.28	-4.95	17.00	-21.95

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10.5.9. 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	49.4	36.1	0.79
High	5795	49.5	36.0	0.79

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	17.00	17.00	17.00
High	5795	30.00	30.00	36.00	30.00	17.00	17.00	17.00

Duty Cycle CF (dB)	0.63	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5755	7.92	8.55	30.00	-21.46
High	5795	7.97	8.60	30.00	-21.40

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5755	-8.14	-7.51	17.00	-24.51
High	5795	-8.58	-7.95	17.00	-24.95

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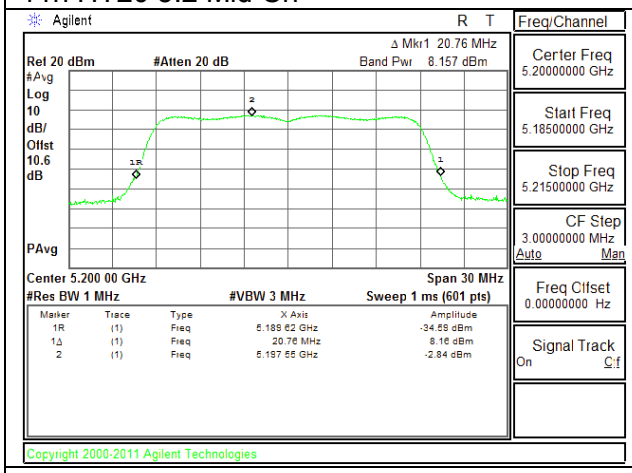
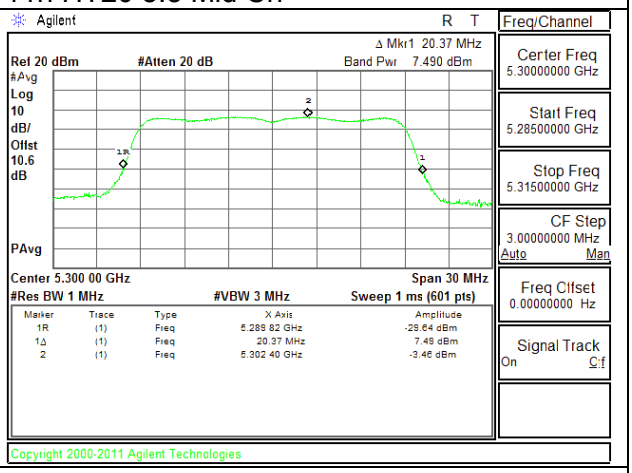
10.5.1. OUTPUT POWER AND PPSD PLOTS, Chain 0

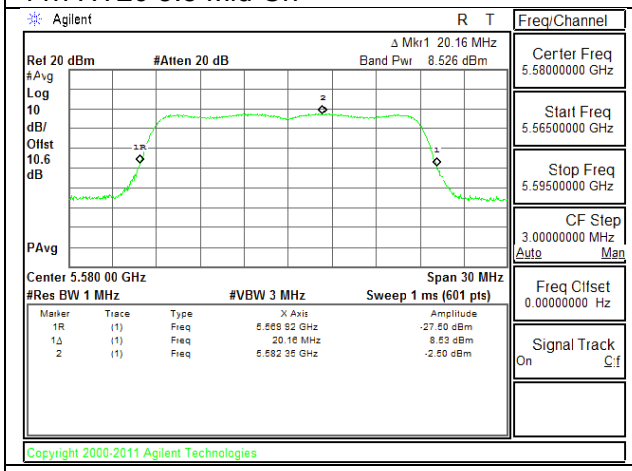
11n HT20 5.2 Mid Ch



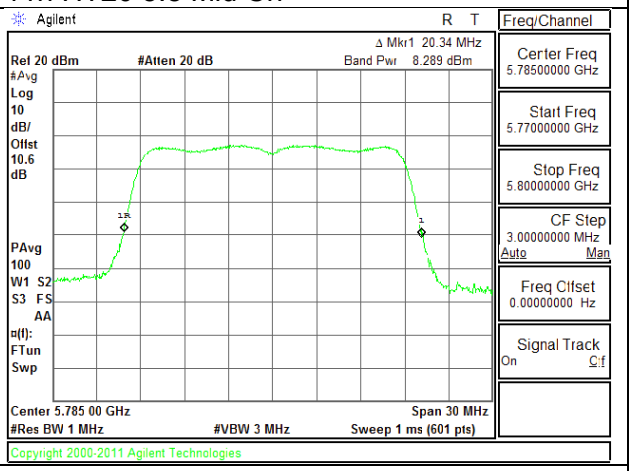
11n HT20 5.3 Mid Ch



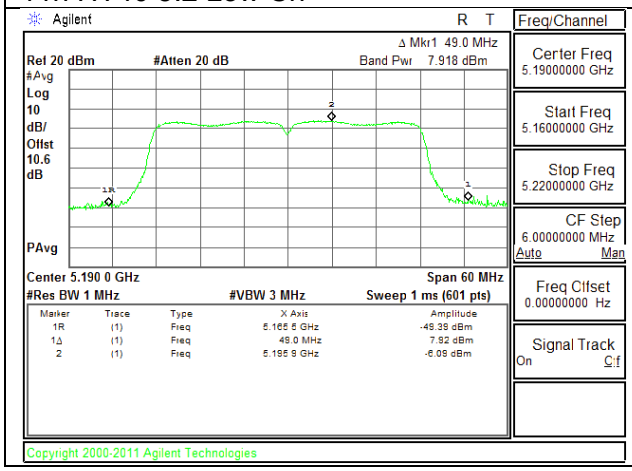
11n HT20 5.5 Mid Ch



11n HT20 5.8 Mid Ch



11n HT40 5.2 Low Ch



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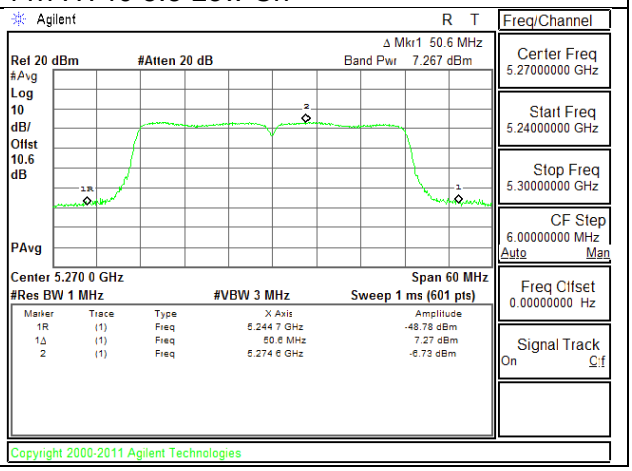

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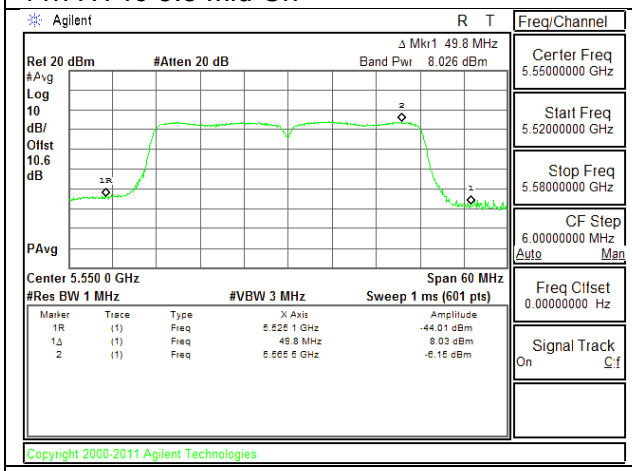
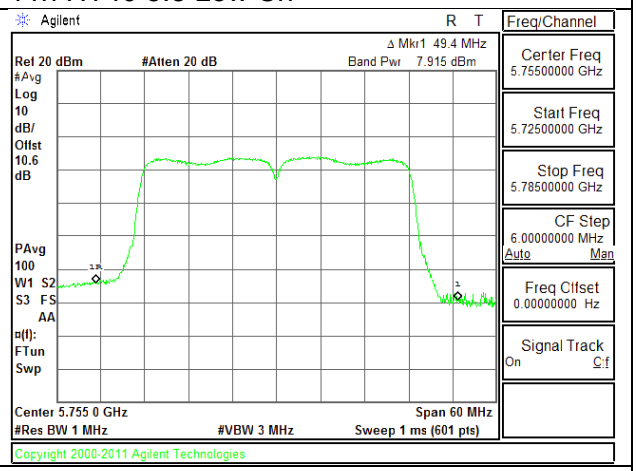
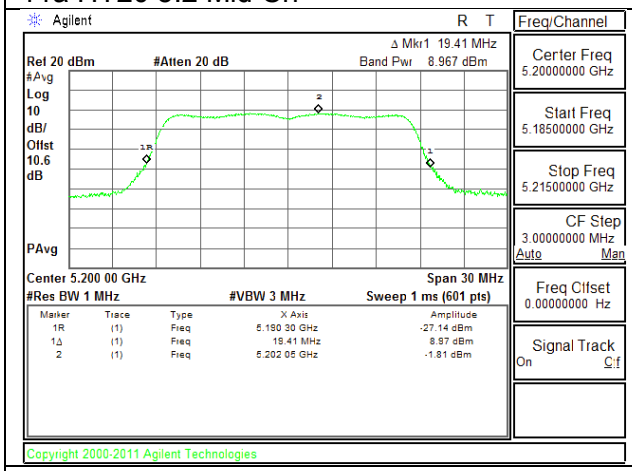
11n HT40 5.5 Mid Ch



11n HT40 5.8 Low Ch



11a HT20 5.2 Mid Ch



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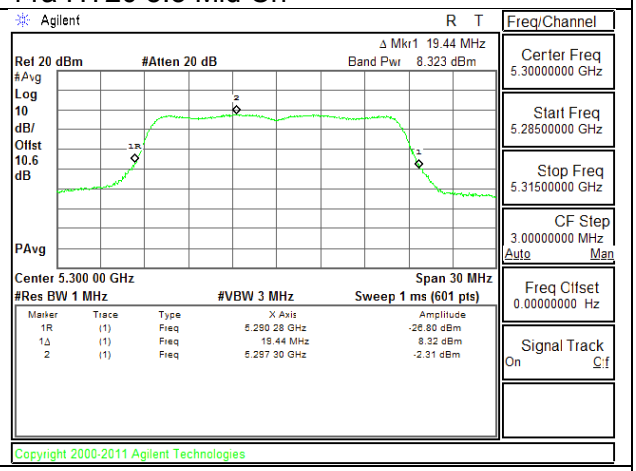

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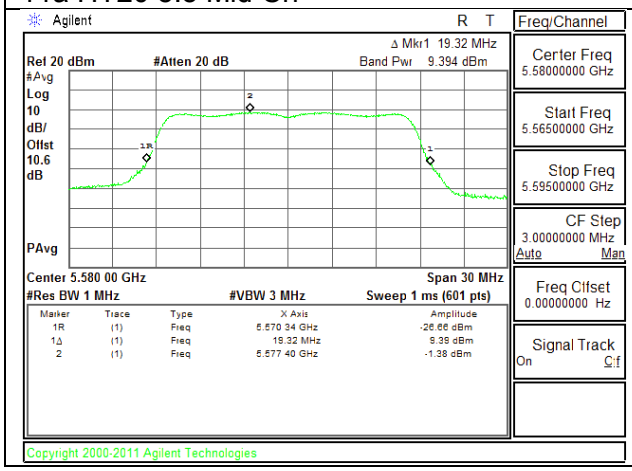

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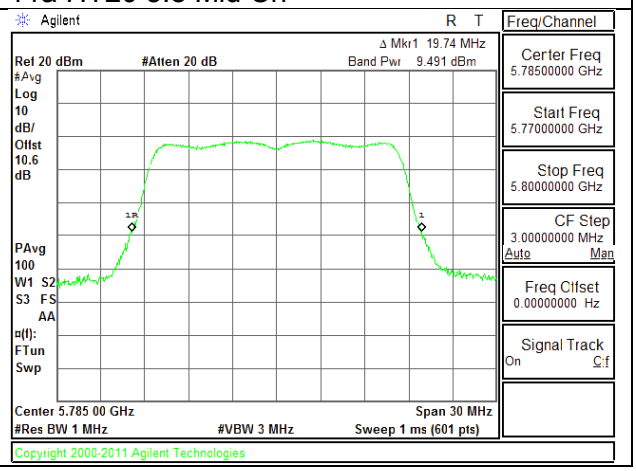

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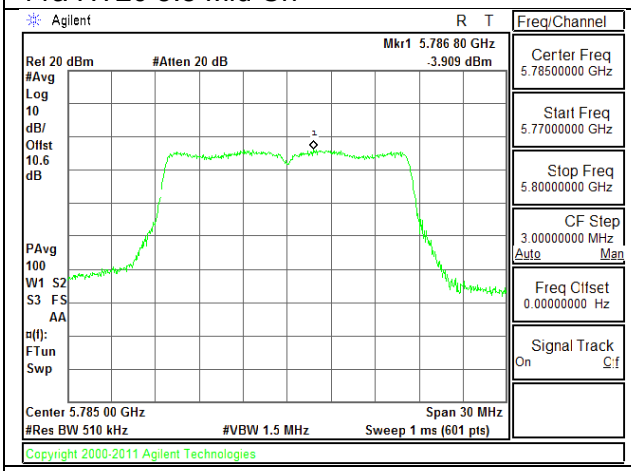
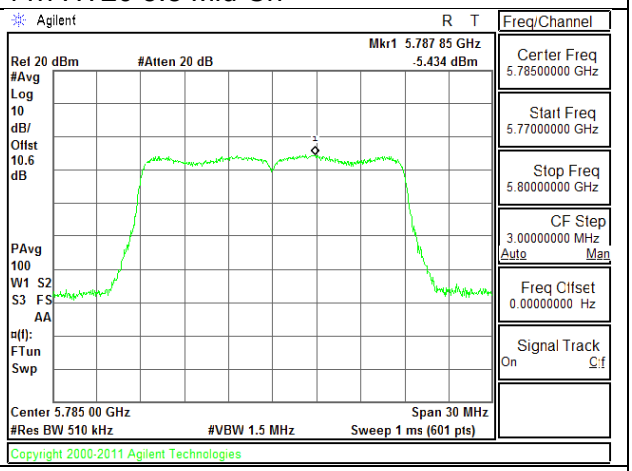
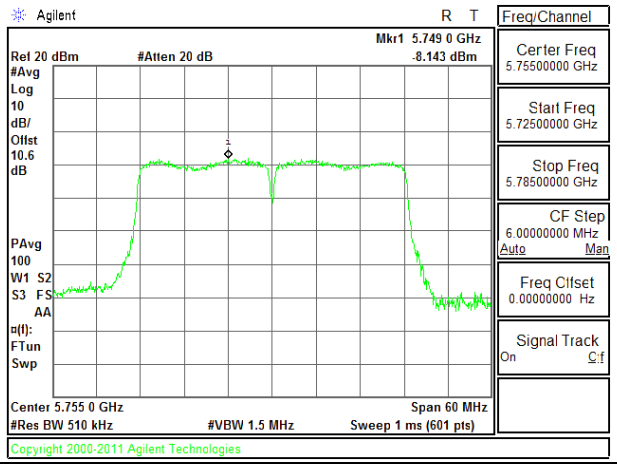
11a HT20 5.8 Mid Ch



11n HT20 5.8 Mid Ch



11n HT40 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 (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 G) 6) c) 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.

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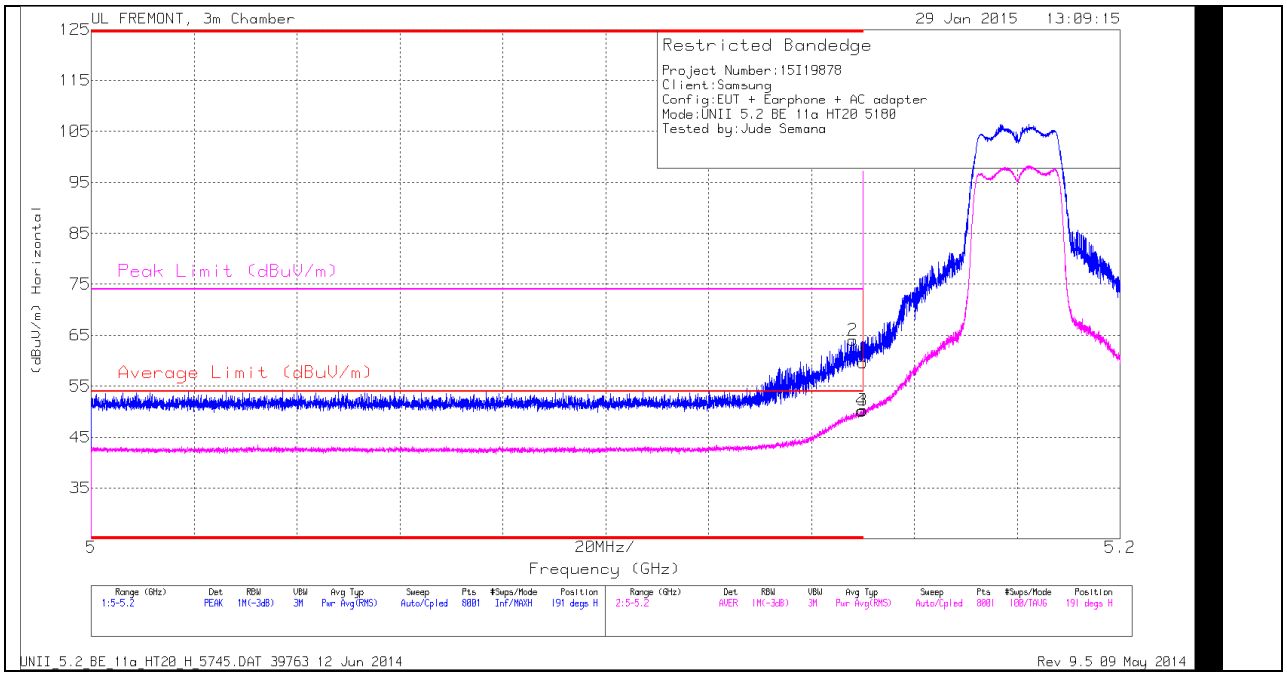
11.1. 5.2 GHz

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/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	47.07	PK	34.2	-21.6	0	59.67	-	-	74	-14.33	191	239	H
2	* 5.148	51.43	PK	34.2	-21.6	0	64.03	-	-	74	-9.97	191	239	H
3	* 5.15	37.33	RMS	34.2	-21.6	.3	50.23	54	-3.77	-	-	191	239	H
4	* 5.15	37.24	RMS	34.2	-21.6	.3	50.14	54	-3.86	-	-	191	239	H

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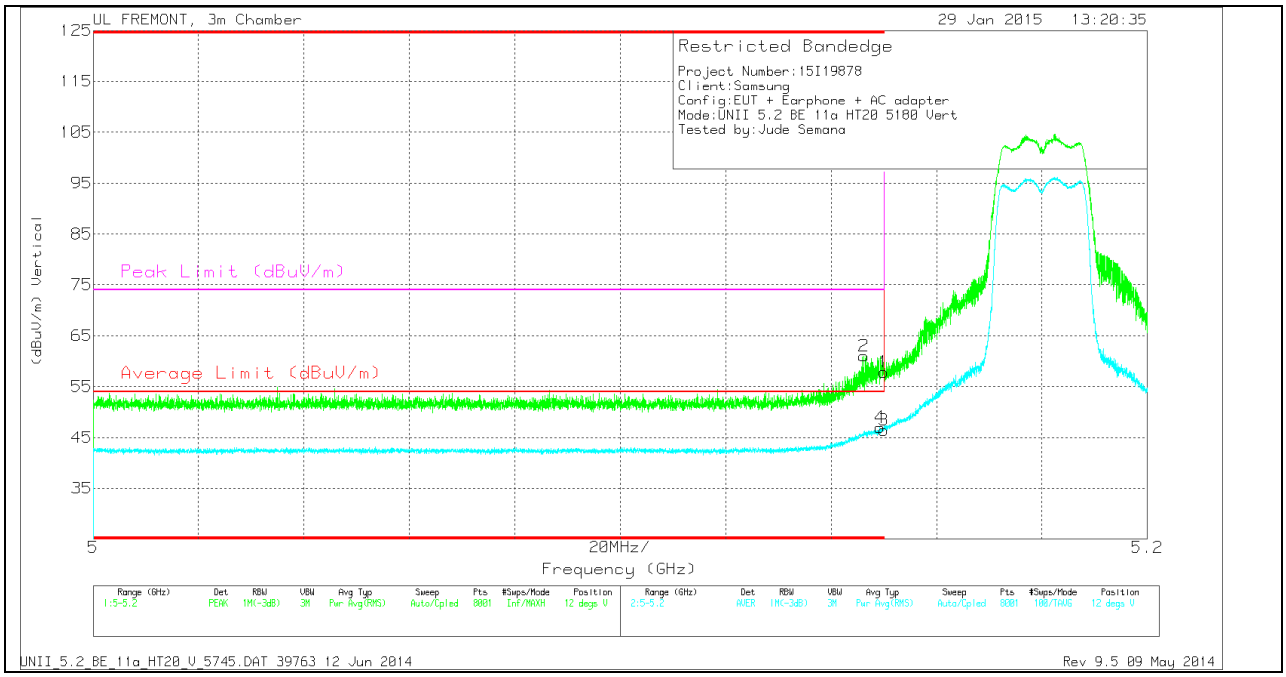
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	45.22	PK	34.2	-21.6	0	57.82	-	-	74	-16.18	12	236	V
2	* 5.146	48.41	PK	34.2	-21.6	0	61.01	-	-	74	-12.99	12	236	V
3	* 5.15	33.51	RMS	34.2	-21.6	.3	46.41	54	-7.59	-	-	12	236	V
4	* 5.149	34.03	RMS	34.2	-21.6	.3	46.93	54	-7.07	-	-	12	236	V

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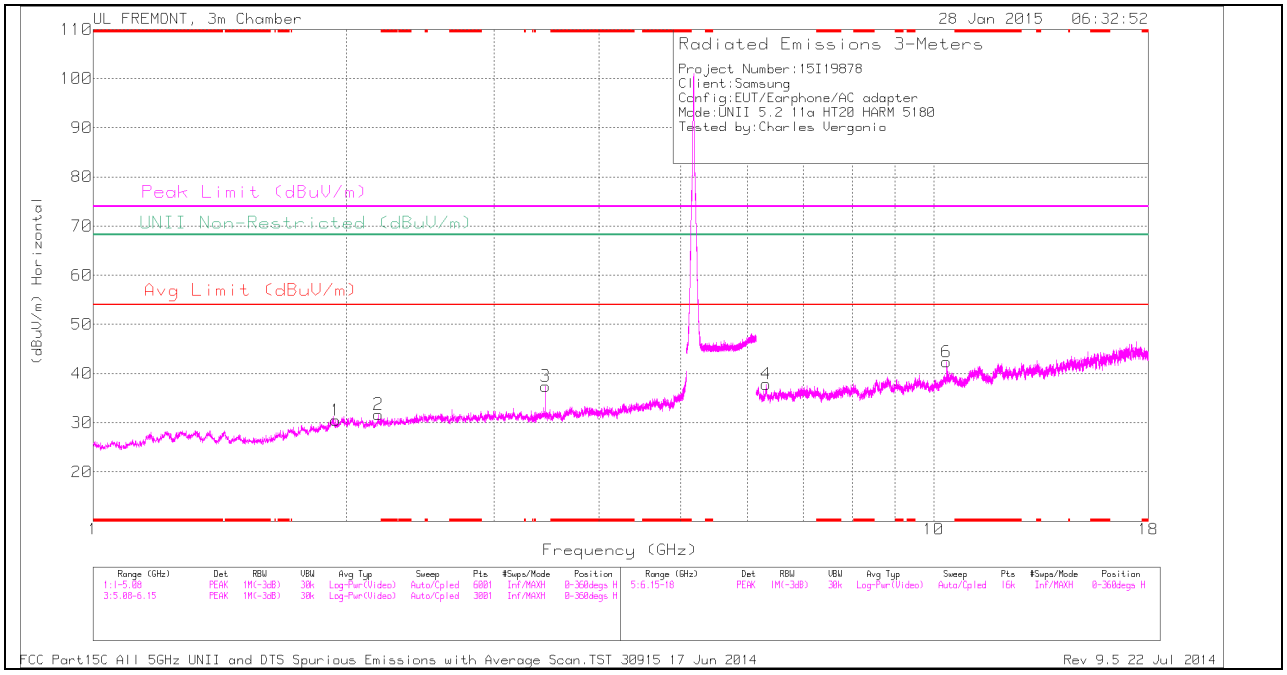
HARMONICS AND SPURIOUS EMISSIONS

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.

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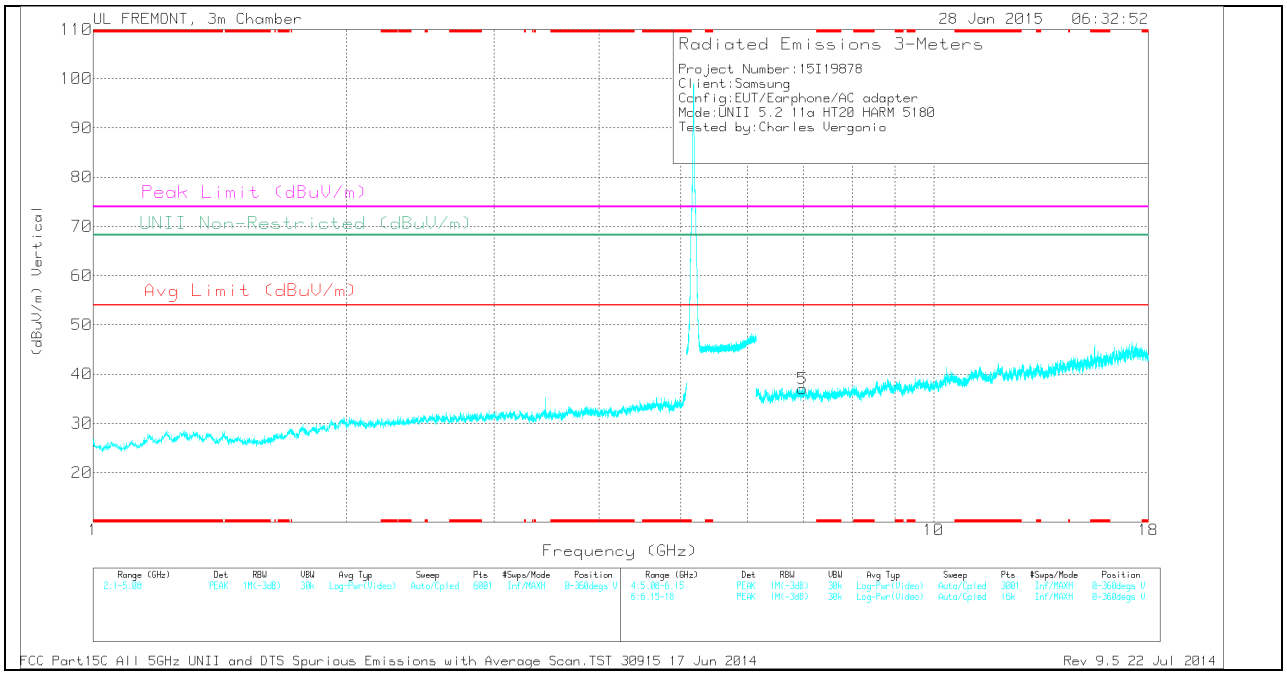
LOW CHANNEL VERTICAL



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

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LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr /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	1.943	31.51	PK	31.3	-32.3	30.51	-	-	-	-	68.2	-37.69	0-360	200	H
2	2.186	32.88	PK	31.4	-32.6	31.68	-	-	-	-	68.2	-36.52	0-360	200	H
3	3.453	35.92	PK	32.8	-31.3	37.42	-	-	-	-	68.2	-30.78	0-360	100	H
4	6.323	31.76	PK	35.4	-29.3	37.86	-	-	-	-	68.2	-30.34	0-360	100	H
5	6.986	30.03	PK	35.6	-28.6	37.03	-	-	-	-	68.2	-31.17	0-360	200	V
6	10.364	30.49	PK	37.2	-25.3	42.39	-	-	-	-	68.2	-25.81	0-360	100	H

PK - Peak detector

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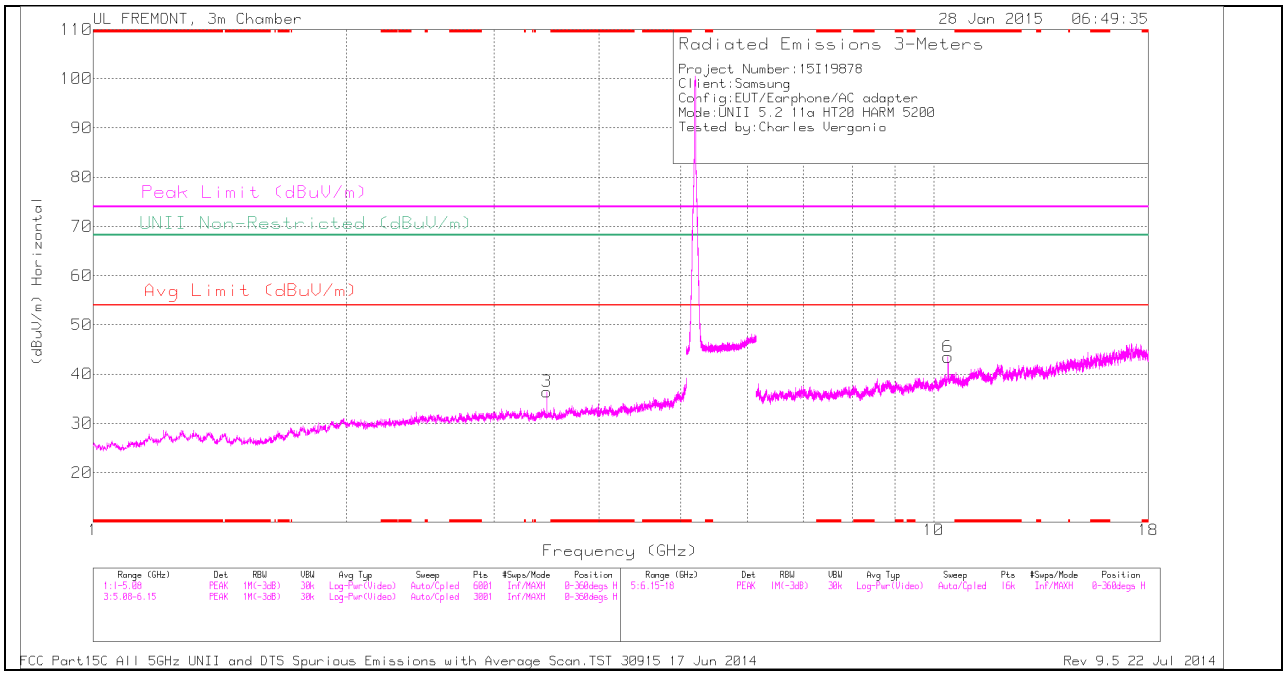
MID CHANNEL HORIZONTAL



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

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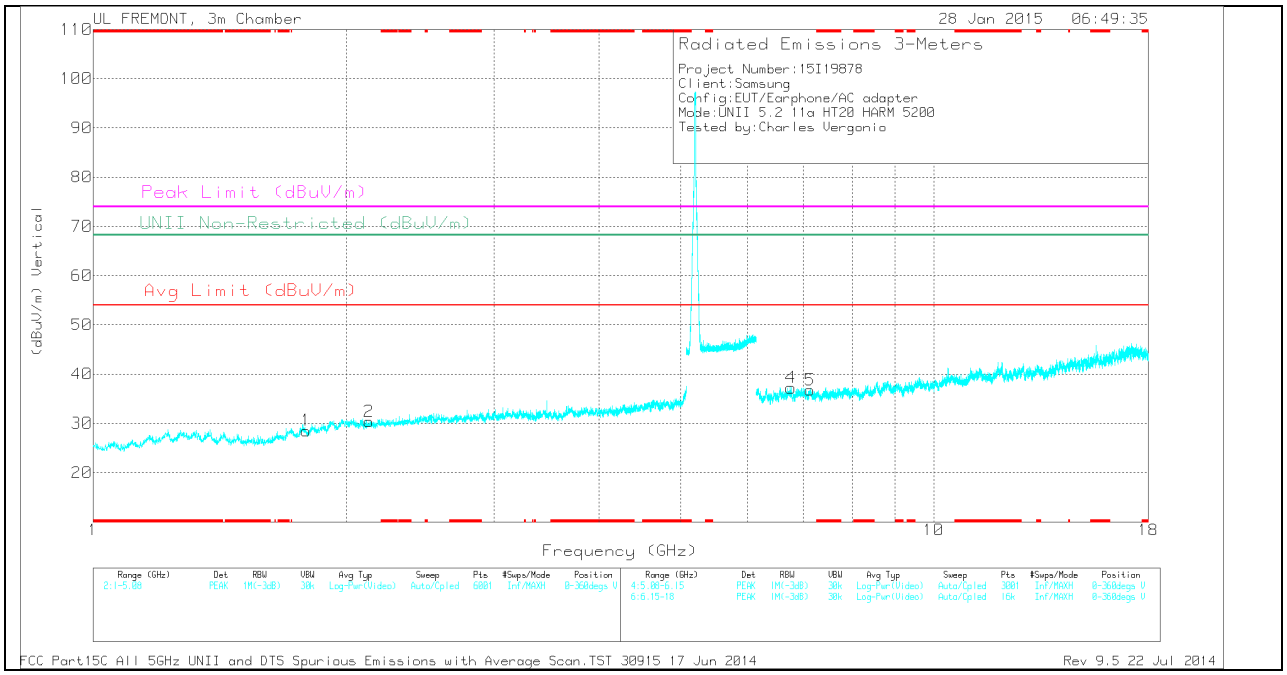
MID CHANNEL VERTICAL



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

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MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr /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	1.794	31.22	PK	30.1	-32.8	28.52	-	-	-	-	68.2	-39.68	0-360	200	V
2	2.129	31.76	PK	31.5	-32.9	30.36	-	-	-	-	68.2	-37.84	0-360	200	V
3	3.466	34.85	PK	32.8	-31.2	36.45	-	-	-	-	68.2	-31.75	0-360	200	H
4	6.765	31.23	PK	35.6	-29.6	37.23	-	-	-	-	68.2	-30.97	0-360	200	V
5	7.125	30.23	PK	35.6	-29.1	36.73	-	-	-	-	68.2	-31.47	0-360	200	V
6	10.4	32	PK	37.3	-25.8	43.5	-	-	-	-	68.2	-24.7	0-360	100	H

PK - Peak detector

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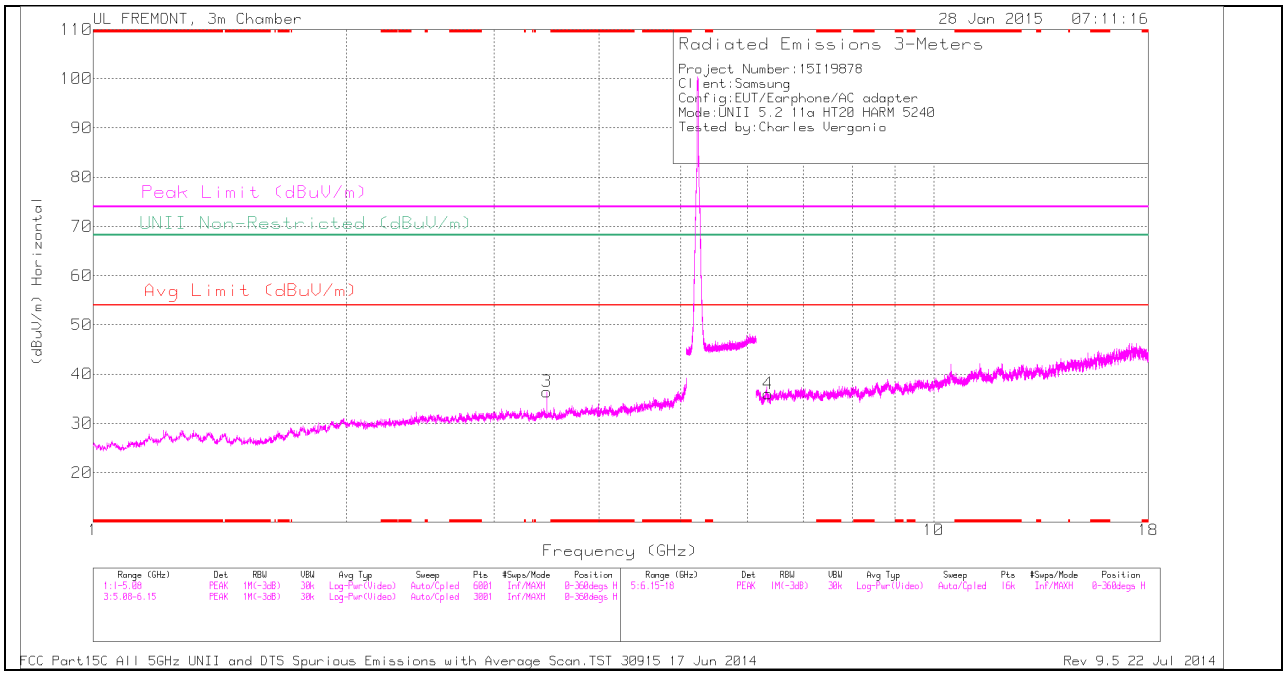
HIGH CHANNEL HORIZONTAL



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

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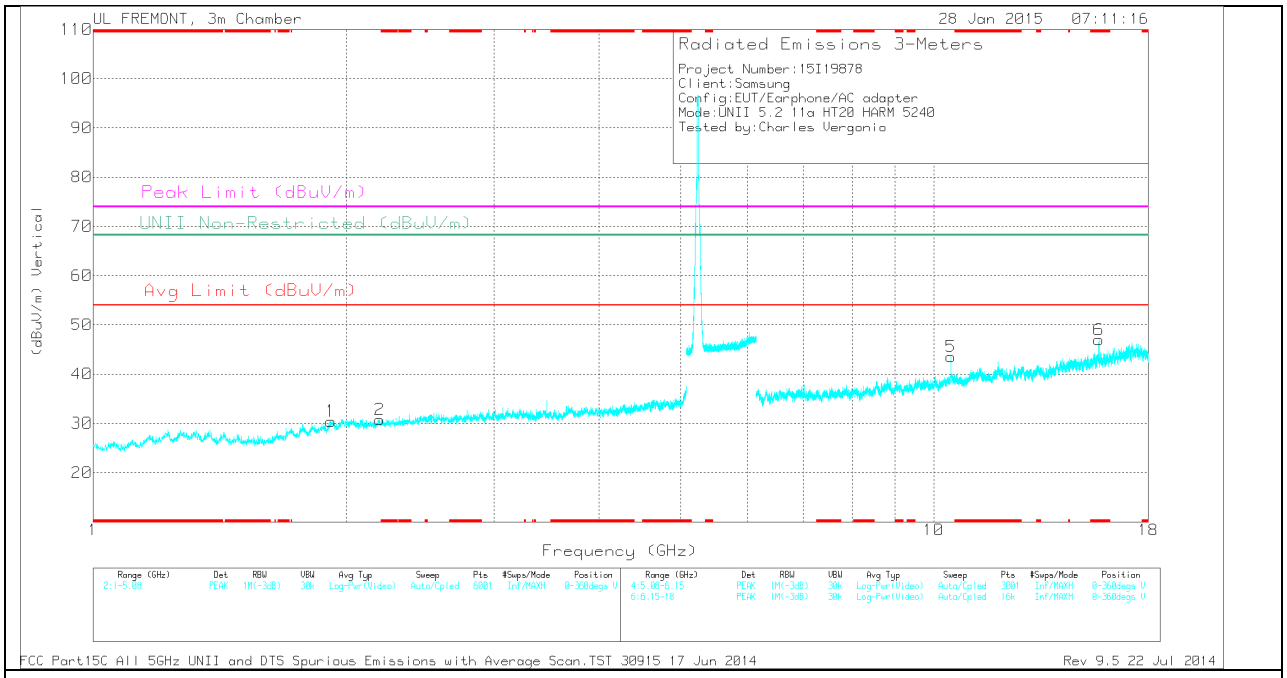
HIGH CHANNEL VERTICAL



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

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HIGH CHANNEL DATA

TRACE MARKERS

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
6	* 15.723	33.26	PK	40.4	-26.7	0	46.96	-	-	74	-27.04	-	-	0-360	100	V
1	1.919	31.81	PK	31.2	-32.6	0	30.41	-	-	-	-	68.2	-37.79	0-360	100	V
2	2.192	32.04	PK	31.4	-32.7	0	30.74	-	-	-	-	68.2	-37.46	0-360	200	V
3	3.466	34.85	PK	32.8	-31.2	0	36.45	-	-	-	-	68.2	-31.75	0-360	200	H
4	6.356	29.93	PK	35.5	-29.4	0	36.03	-	-	-	-	68.2	-32.17	0-360	100	H
5	10.481	31.83	PK	37.4	-25.7	0	43.53	-	-	-	-	68.2	-24.67	0-360	100	V

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Flt r/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
* 15.723	43.81	PK1	40.4	-26.7	0	57.51	-	-	74	-16.49	-	-	52	109	V
* 15.723	31.02	AD1	40.4	-26.7	.31	45.03	54	-8.97	-	-	-	-	52	109	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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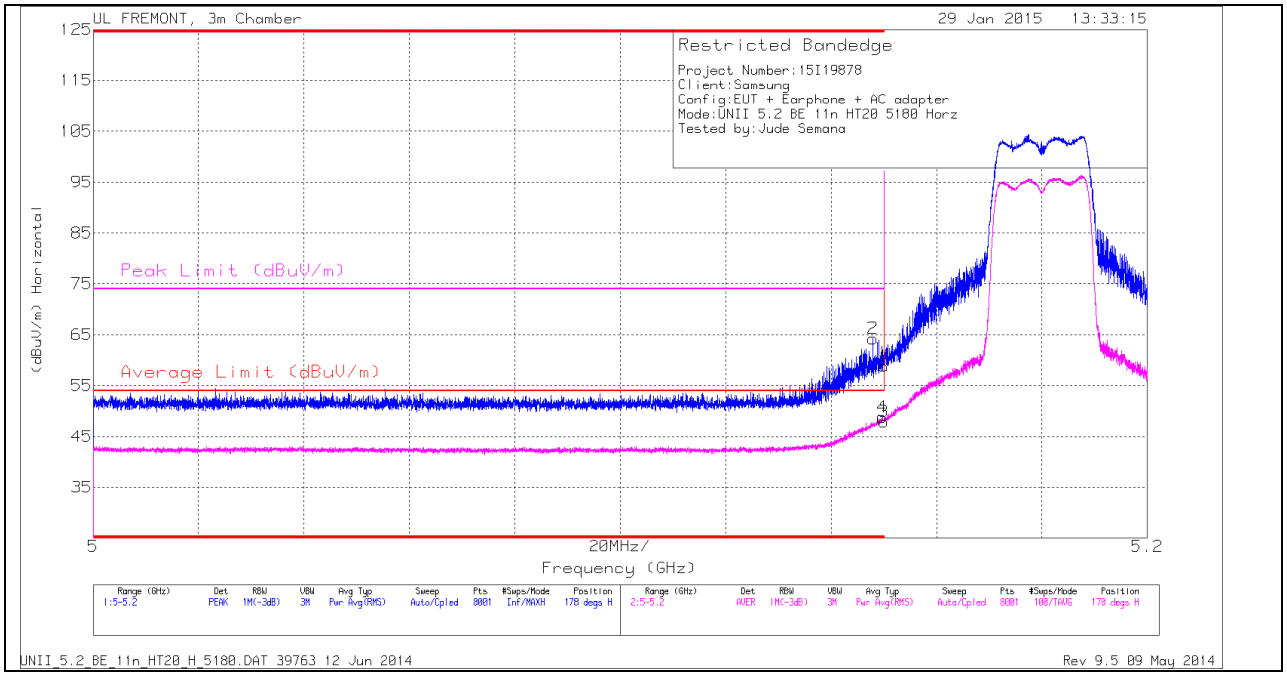
11.1.2. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.2 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	46.19	PK	34.2	-21.6	0	58.79	-	-	74	-15.21	178	258	H
2	* 5.148	51.67	PK	34.2	-21.6	0	64.27	-	-	74	-9.73	178	258	H
3	* 5.15	34.99	RMS	34.2	-21.6	.33	47.92	54	-6.08	-	-	178	258	H
4	* 5.15	35.85	RMS	34.2	-21.6	.33	48.78	54	-5.22	-	-	178	258	H

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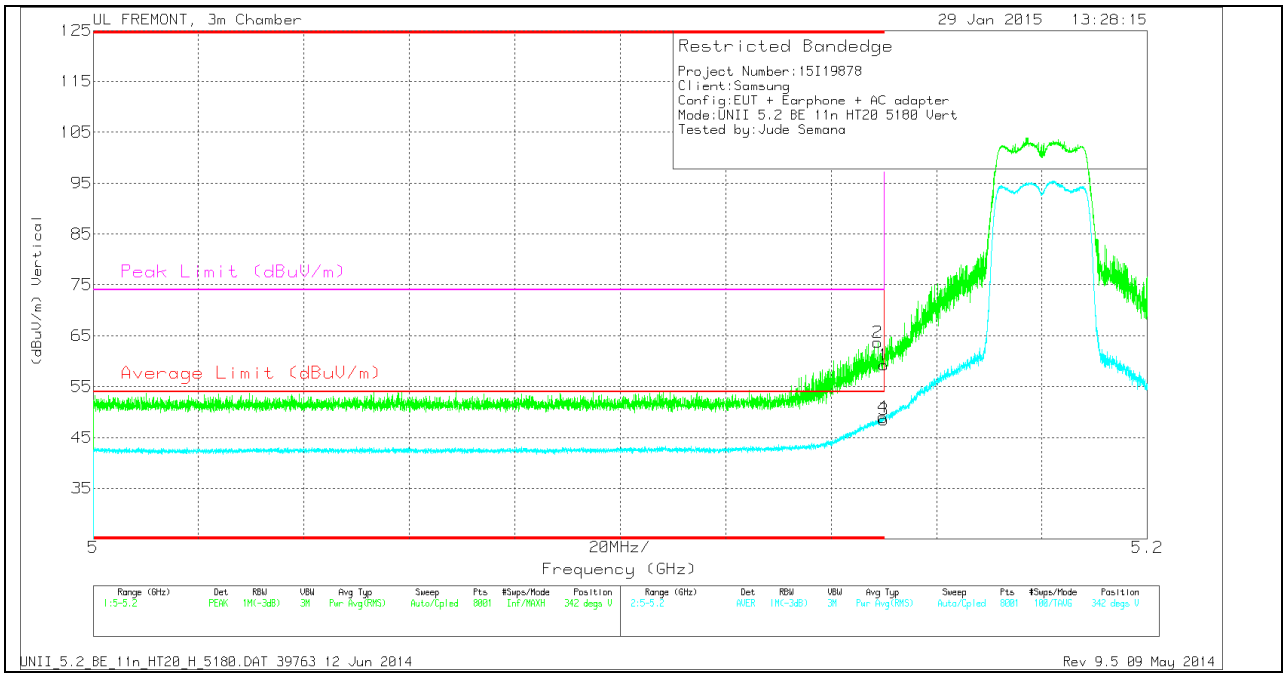
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	46.63	PK	34.2	-21.6	0	59.23	-	-	74	-14.77	342	260	V
2	* 5.149	51.1	PK	34.2	-21.6	0	63.7	-	-	74	-10.3	342	260	V
3	* 5.15	35.56	RMS	34.2	-21.6	.33	48.49	54	-5.51	-	-	342	260	V
4	* 5.15	36.03	RMS	34.2	-21.6	.33	48.96	54	-5.04	-	-	342	260	V

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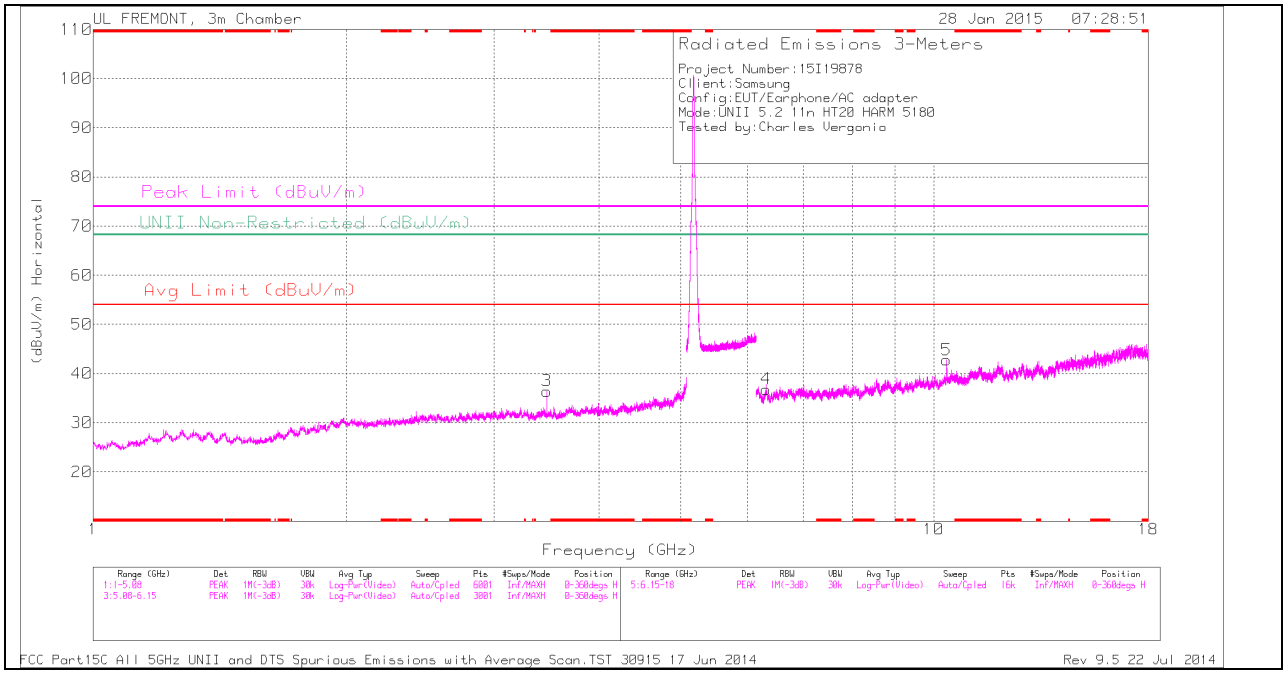
HARMONICS AND SPURIOUS EMISSIONS

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.

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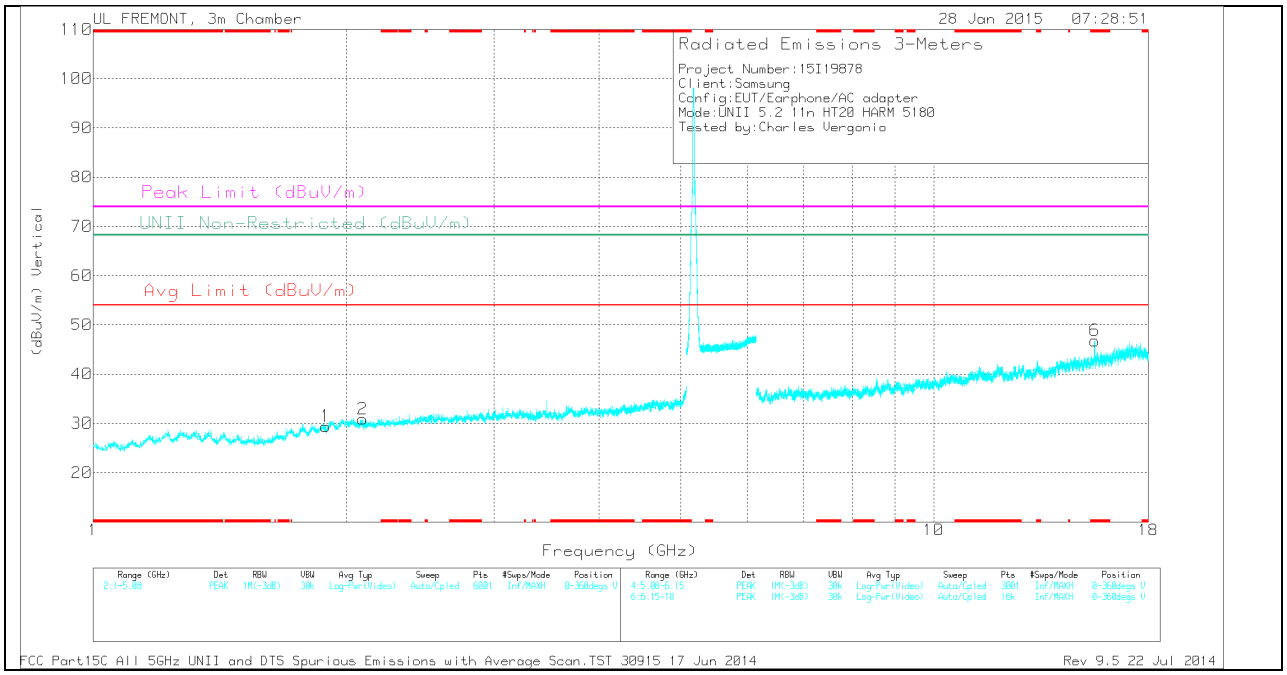
LOW CHANNEL VERTICAL



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

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LOW CHANNEL DATA

TRACE MARKERS

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
6	* 15.544	33.4	PK	40.2	-26.8	0	46.8	-	-	74	-27.2	-	-	0-360	100	V
1	1.891	31.38	PK	31	-33	0	29.38	-	-	-	-	68.2	-38.82	0-360	100	V
2	2.093	32.17	PK	31.5	-32.8	0	30.87	-	-	-	-	68.2	-37.33	0-360	100	V
3	3.466	34.85	PK	32.8	-31.2	0	36.45	-	-	-	-	68.2	-31.75	0-360	200	H
4	6.319	30.83	PK	35.4	-29.4	0	36.83	-	-	-	-	68.2	-31.37	0-360	200	H
5	10.363	30.88	PK	37.2	-25.3	0	42.78	-	-	-	-	68.2	-25.42	0-360	100	H

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Flt r/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
* 15.544	39.88	PK1	40.2	-26.8	0	53.28	-	-	74	-20.72	-	-	0	100	V
* 15.544	28.38	AD1	40.2	-26.8	.33	42.1	54	-11.9	-	-	-	-	0	100	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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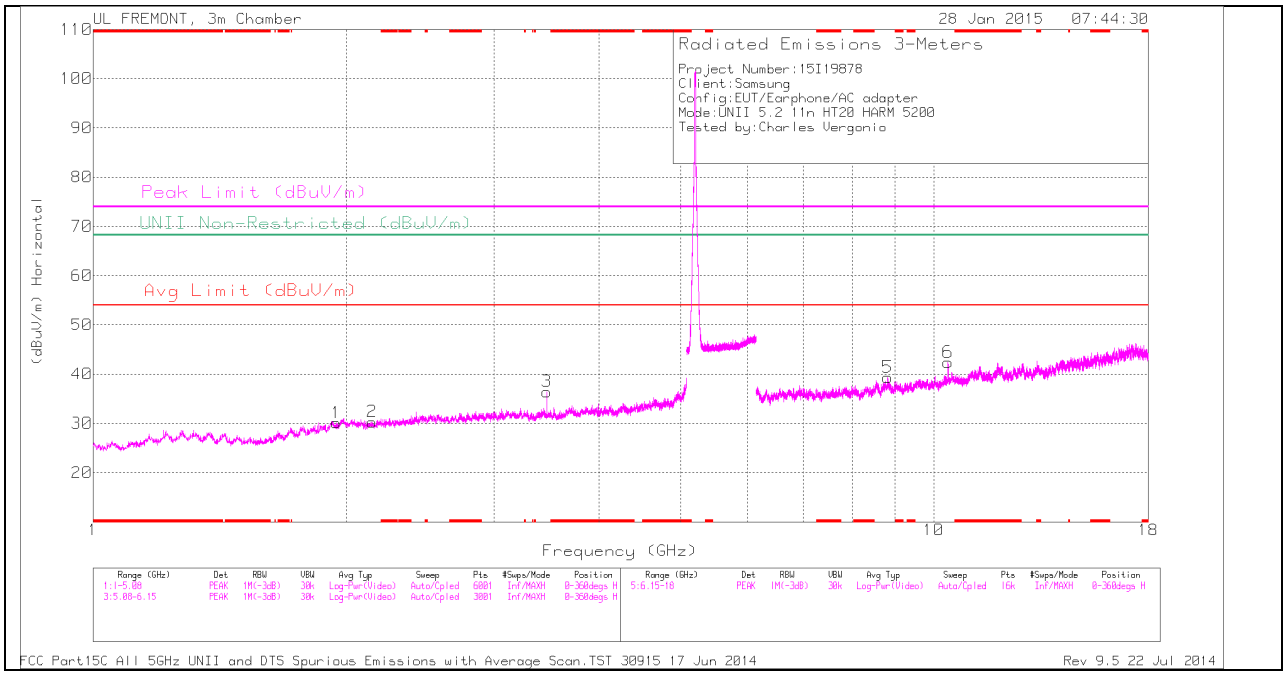
MID CHANNEL HORIZONTAL



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

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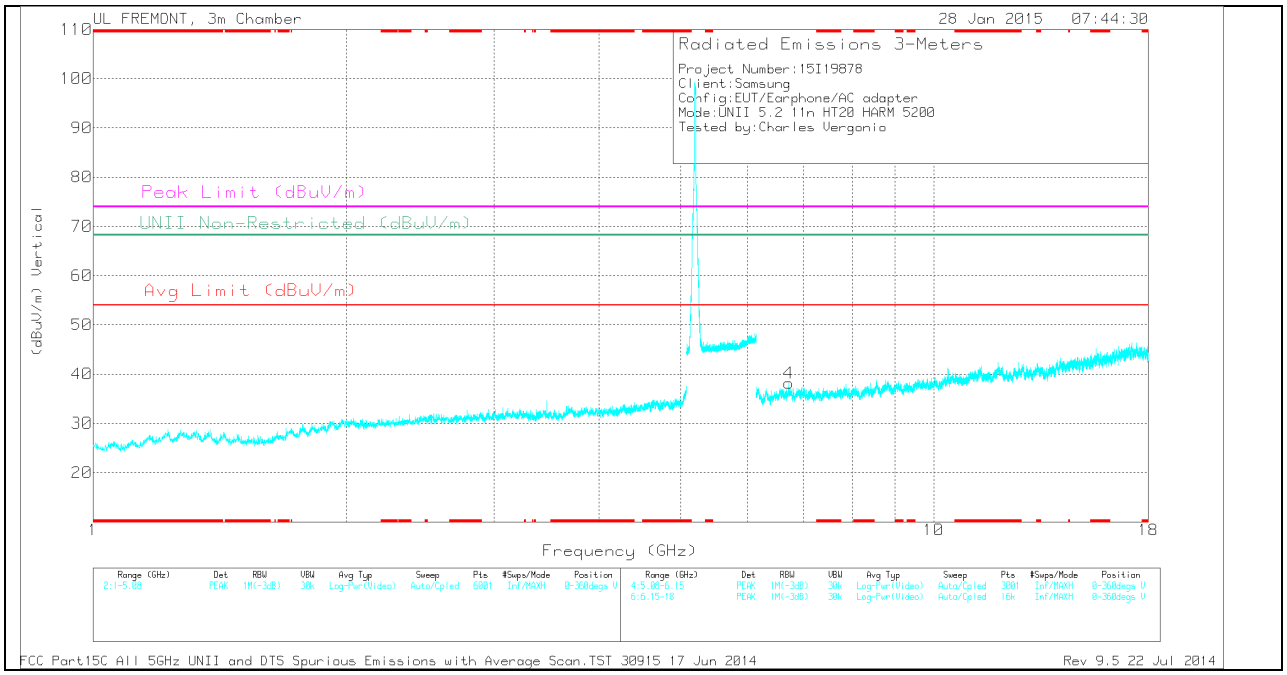
MID CHANNEL VERTICAL



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

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MID CHANNEL DATA

TRACE MARKERS

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
1	1.947	31.23	PK	31.3	-32.4	0	30.13	-	-	-	-	68.2	-38.07	0-360	200	H
2	2.149	31.61	PK	31.5	-32.8	0	30.31	-	-	-	-	68.2	-37.89	0-360	200	H
3	3.466	34.85	PK	32.8	-31.2	0	36.45	-	-	-	-	68.2	-31.75	0-360	200	H
4	6.725	31.66	PK	35.6	-29.1	0	38.16	-	-	-	-	68.2	-30.04	0-360	200	V
5	8.817	29.04	PK	35.9	-25.6	0	39.34	-	-	-	-	68.2	-28.86	0-360	100	H
6	10.4	30.92	PK	37.3	-25.8	0	42.42	-	-	-	-	68.2	-25.78	0-360	100	H

PK - Peak detector

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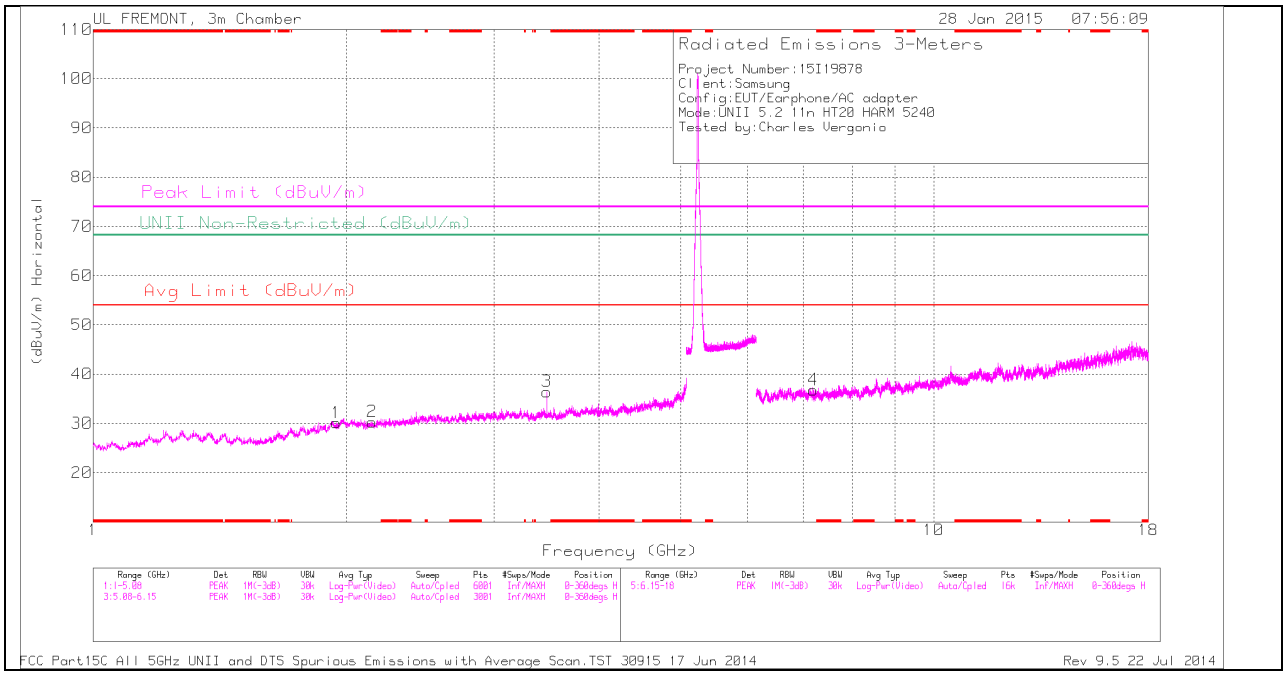
HIGH CHANNEL HORIZONTAL



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

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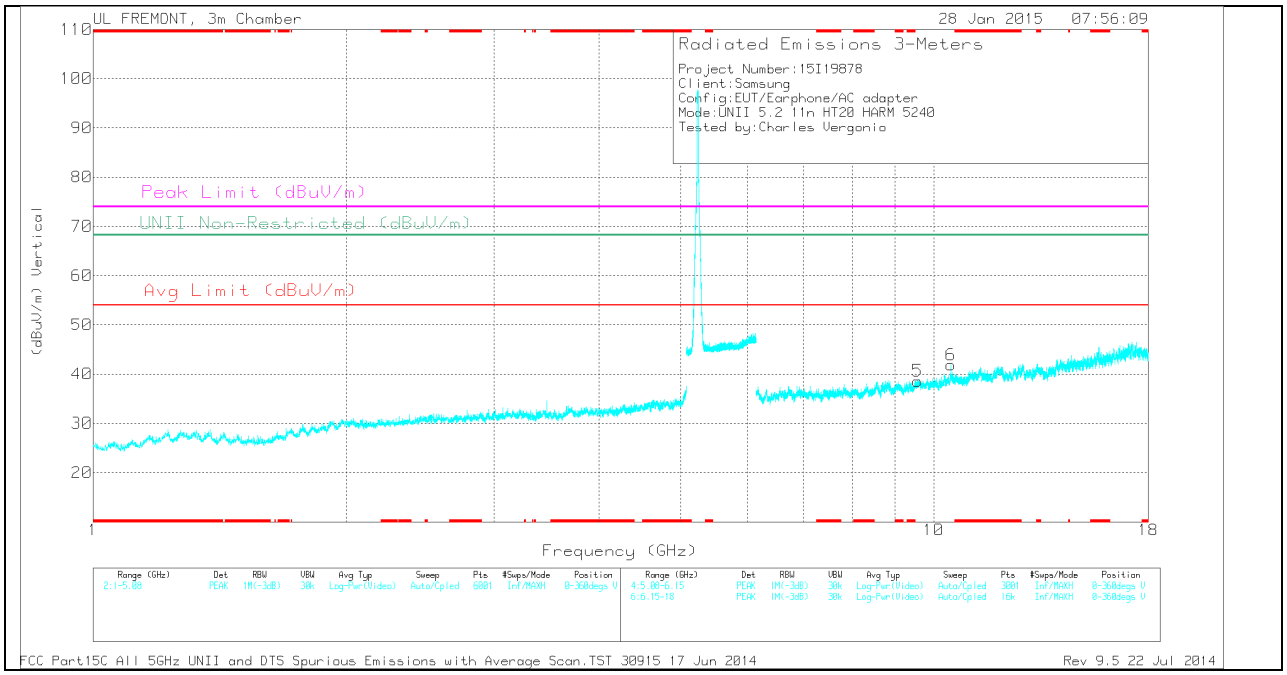
HIGH CHANNEL VERTICAL



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

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HIGH CHANNEL DATA

TRACE MARKERS

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
1	1.947	31.23	PK	31.3	-32.4	0	30.13	-	-	-	-	68.2	-38.07	0-360	200	H
2	2.149	31.61	PK	31.5	-32.8	0	30.31	-	-	-	-	68.2	-37.89	0-360	200	H
3	3.466	34.85	PK	32.8	-31.2	0	36.45	-	-	-	-	68.2	-31.75	0-360	200	H
4	7.186	30.3	PK	35.6	-29.1	0	36.8	-	-	-	-	68.2	-31.4	0-360	100	H
5	9.574	27.1	PK	36.7	-25.2	0	38.6	-	-	-	-	68.2	-29.6	0-360	200	V
6	10.482	30.17	PK	37.4	-25.7	0	41.87	-	-	-	-	68.2	-26.33	0-360	200	V

PK - Peak detector

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701J
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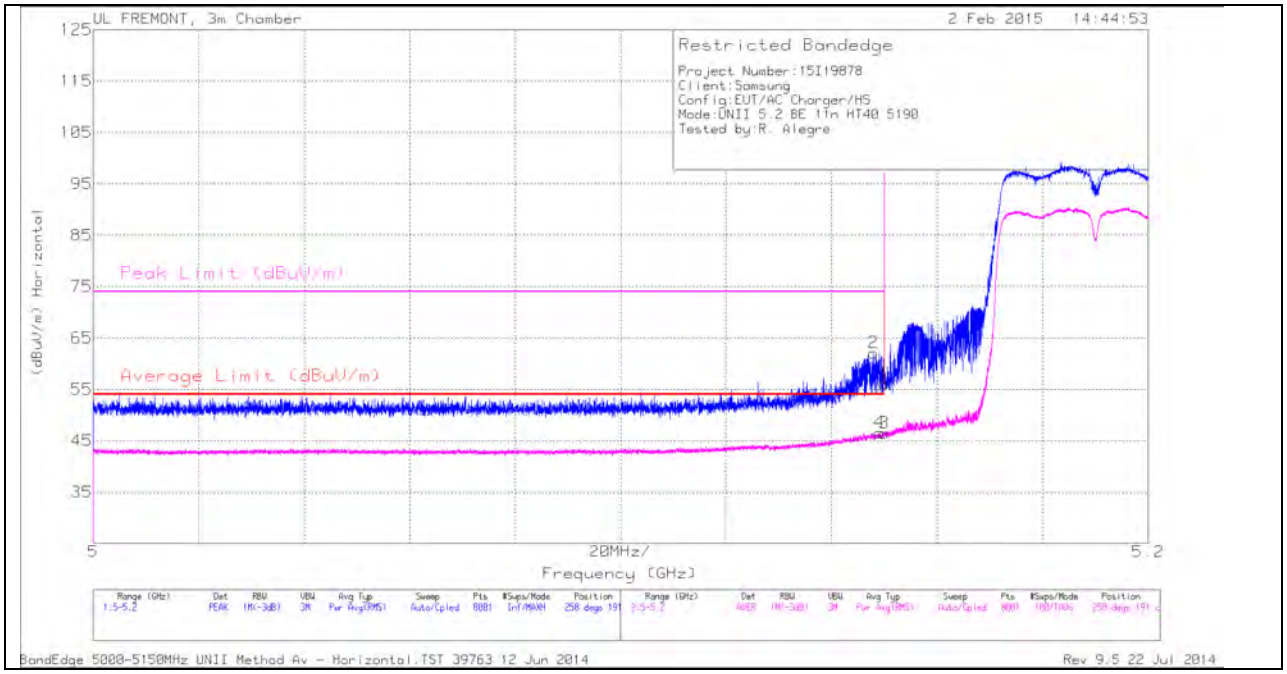
11.1.3. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.2 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.148	49.51	PK	34.2	-21.6	0	62.11	-	-	74	-11.89	258	191	H
4	5.149	33.36	RMS	34.2	-21.6	.63	46.6	54	-7.4	-	-	258	191	H
1	5.15	43.46	PK	34.2	-21.6	0	56.06	-	-	74	-17.94	258	191	H
3	5.15	33.23	RMS	34.2	-21.6	.63	46.47	54	-7.53	-	-	258	191	H

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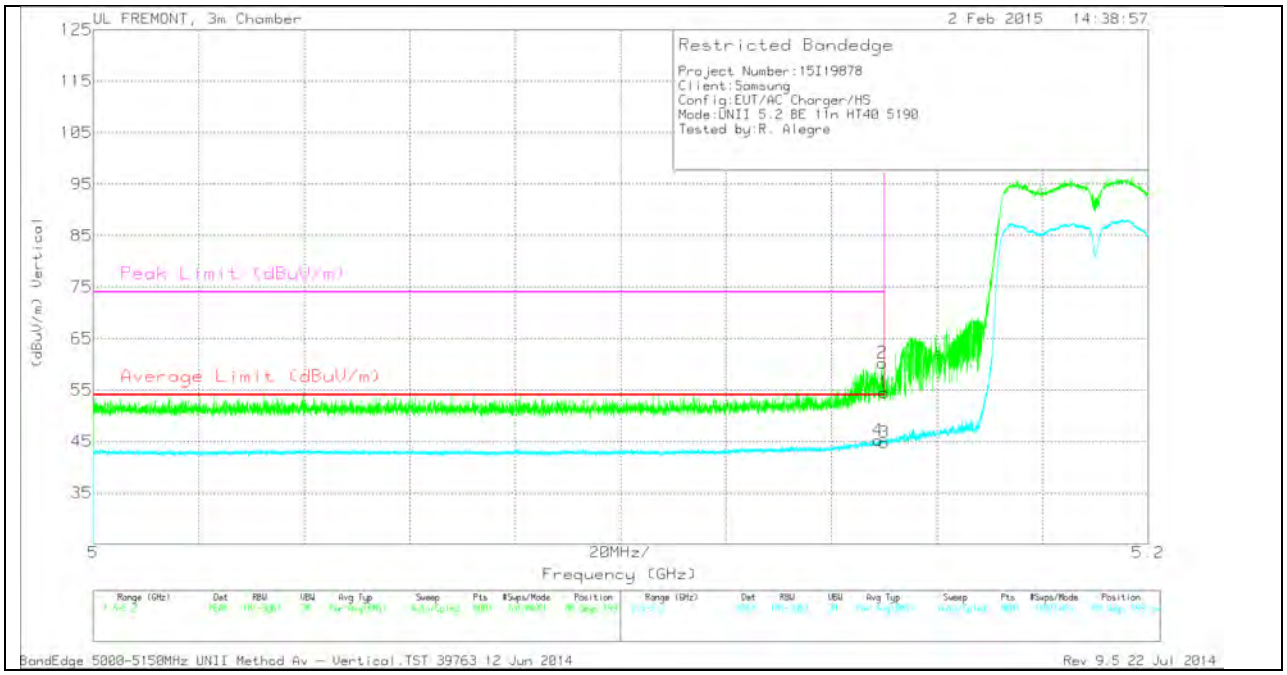
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	5.149	31.99	RMS	34.2	-21.6	.63	45.23	54	-8.77	-	-	88	199	V
1	5.15	41.88	PK	34.2	-21.6	0	54.48	-	-	74	-19.52	88	199	V
2	5.15	47.67	PK	34.2	-21.6	0	60.27	-	-	74	-13.73	88	199	V
3	5.15	31.6	RMS	34.2	-21.6	.63	44.84	54	-9.16	-	-	88	199	V

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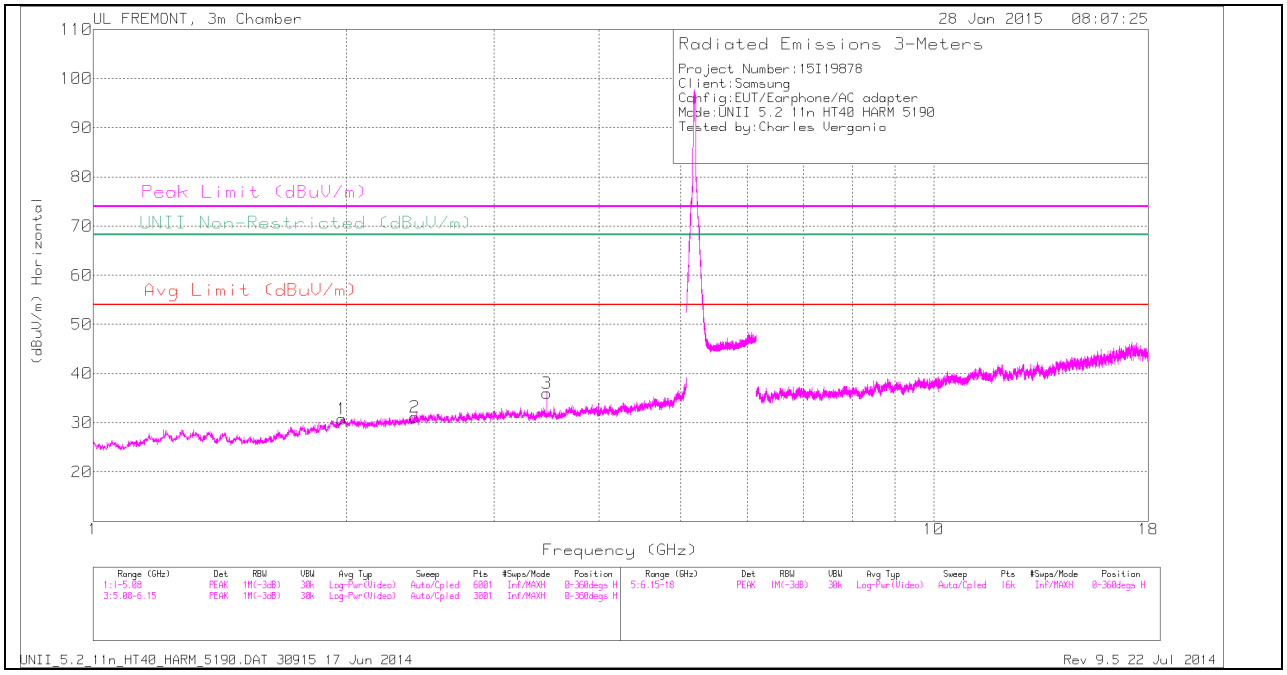
HARMONICS AND SPURIOUS EMISSIONS

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.

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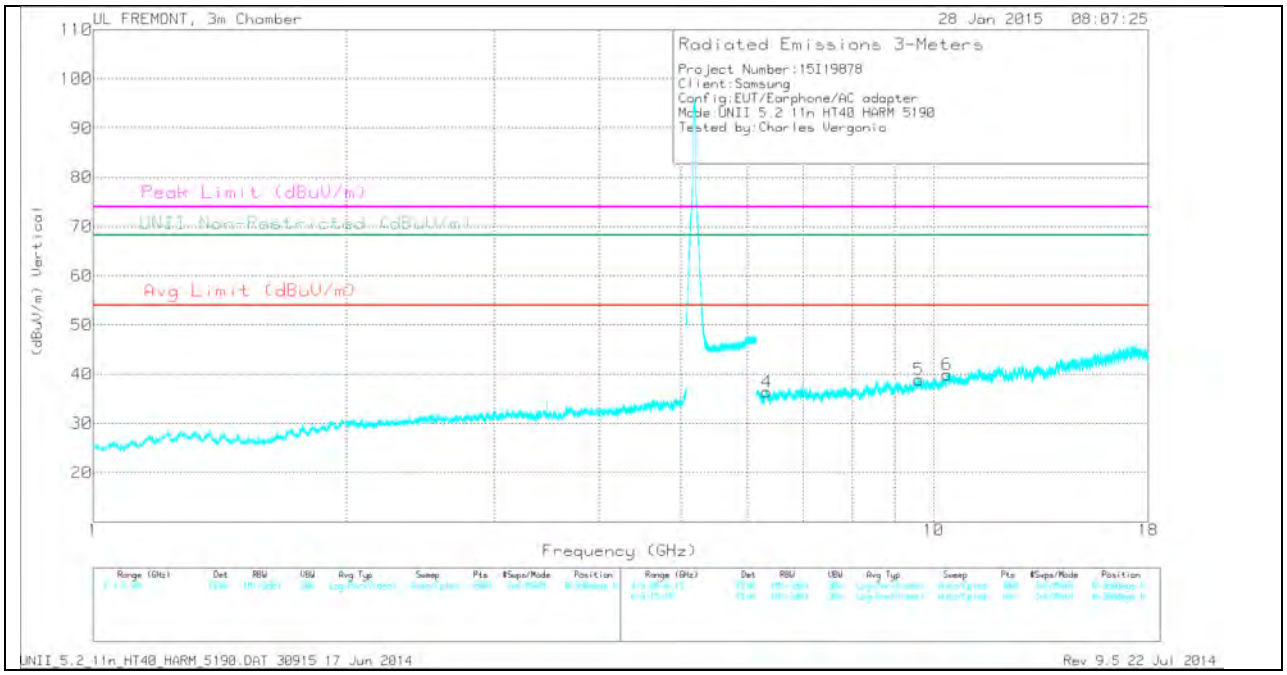
LOW CHANNEL VERTICAL



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

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LOW CHANNEL DATA

TRACE MARKERS

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
1	1.977	31.54	PK	31.4	-32.2	0	30.74	-	-	-	-	68.2	-37.46	0-360	200	H
2	2.414	31.74	PK	32.1	-32.7	0	31.14	-	-	-	-	68.2	-37.06	0-360	200	H
3	3.467	34.51	PK	32.8	-31.3	0	36.01	-	-	-	-	68.2	-32.19	0-360	200	H
4	6.329	30.17	PK	35.4	-29.2	0	36.37	-	-	-	-	68.2	-31.83	0-360	100	V
5	9.605	27.28	PK	36.7	-25.1	0	38.88	-	-	-	-	68.2	-29.32	0-360	100	V
6	10.371	28.11	PK	37.2	-25.4	0	39.91	-	-	-	-	68.2	-28.29	0-360	100	V

PK - Peak detector

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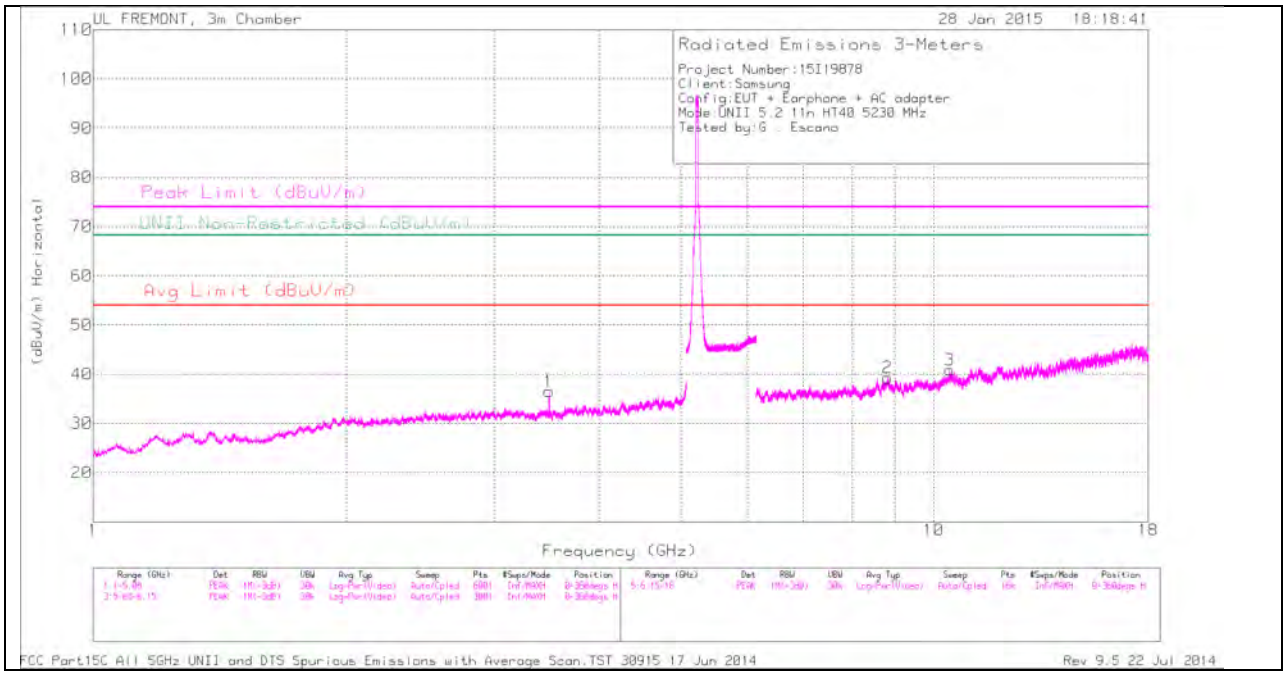
MID CHANNEL HORIZONTAL



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

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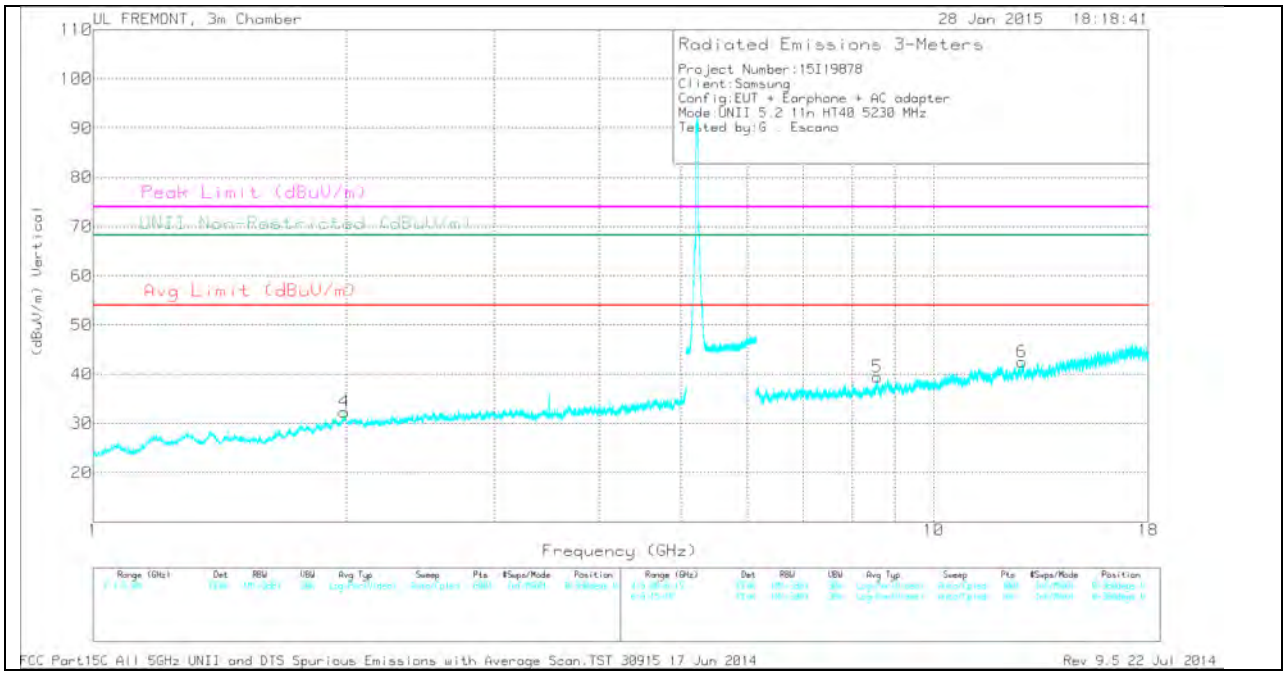
MID CHANNEL VERTICAL



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

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MID CHANNEL DATA

TRACE MARKERS

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
4	1.989	32.85	PK	31.5	-32	0	32.35	-	-	-	-	68.2	-35.85	0-360	100	V
1	3.487	35.18	PK	32.8	-31.5	0	36.48	-	-	-	-	68.2	-31.72	0-360	100	H
5	8.57	29.77	PK	35.8	-26.1	0	39.47	-	-	-	-	68.2	-28.73	0-360	100	V
2	8.813	28.88	PK	35.9	-25.5	0	39.28	-	-	-	-	68.2	-28.92	0-360	200	H
3	10.448	29.23	PK	37.4	-25.8	0	40.83	-	-	-	-	68.2	-27.37	0-360	200	H
6	12.741	29.2	PK	39.1	-25.8	0	42.5	-	-	-	-	68.2	-25.7	0-360	200	V

PK - Peak detector

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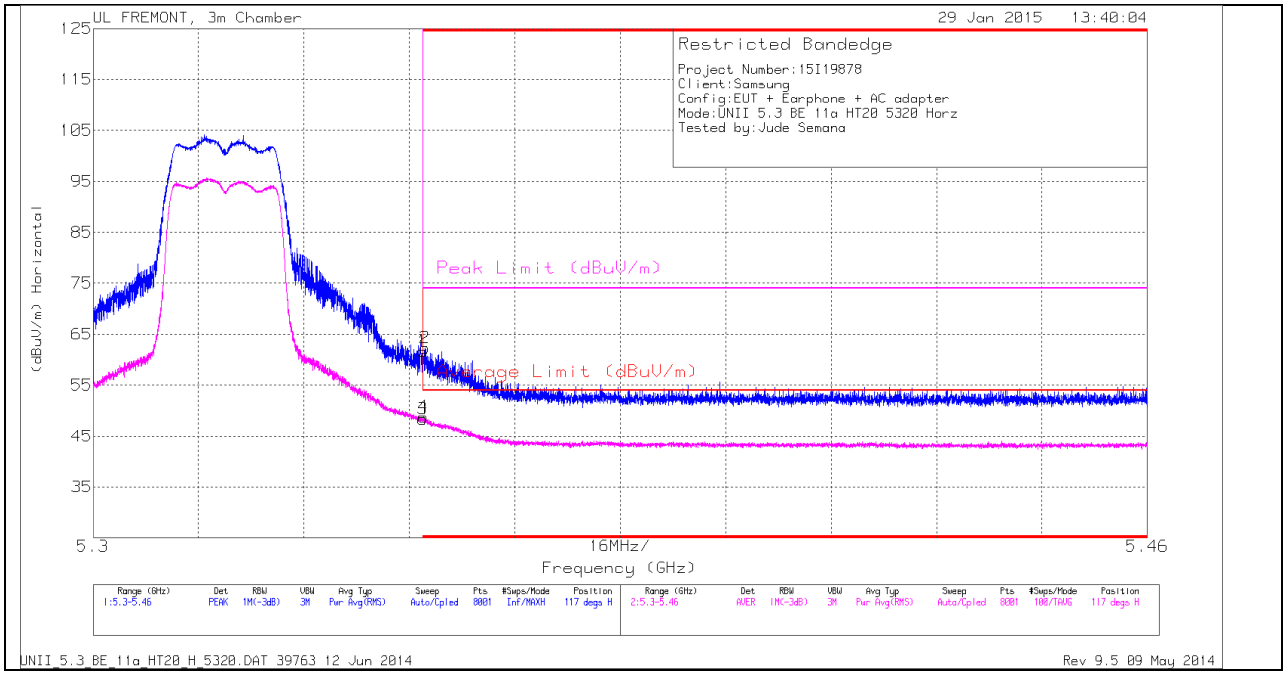
11.2. 5.3 GHz

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	AF T119 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	48.56	PK	34.5	-21.4	0	61.66	-	-	74	-12.34	117	275	H
2	* 5.35	49.23	PK	34.5	-21.4	0	62.33	-	-	74	-11.67	117	275	H
3	* 5.35	34.96	RMS	34.5	-21.4	.3	48.36	54	-5.64	-	-	117	275	H
4	* 5.35	35.33	RMS	34.5	-21.4	.3	48.73	54	-5.27	-	-	117	275	H

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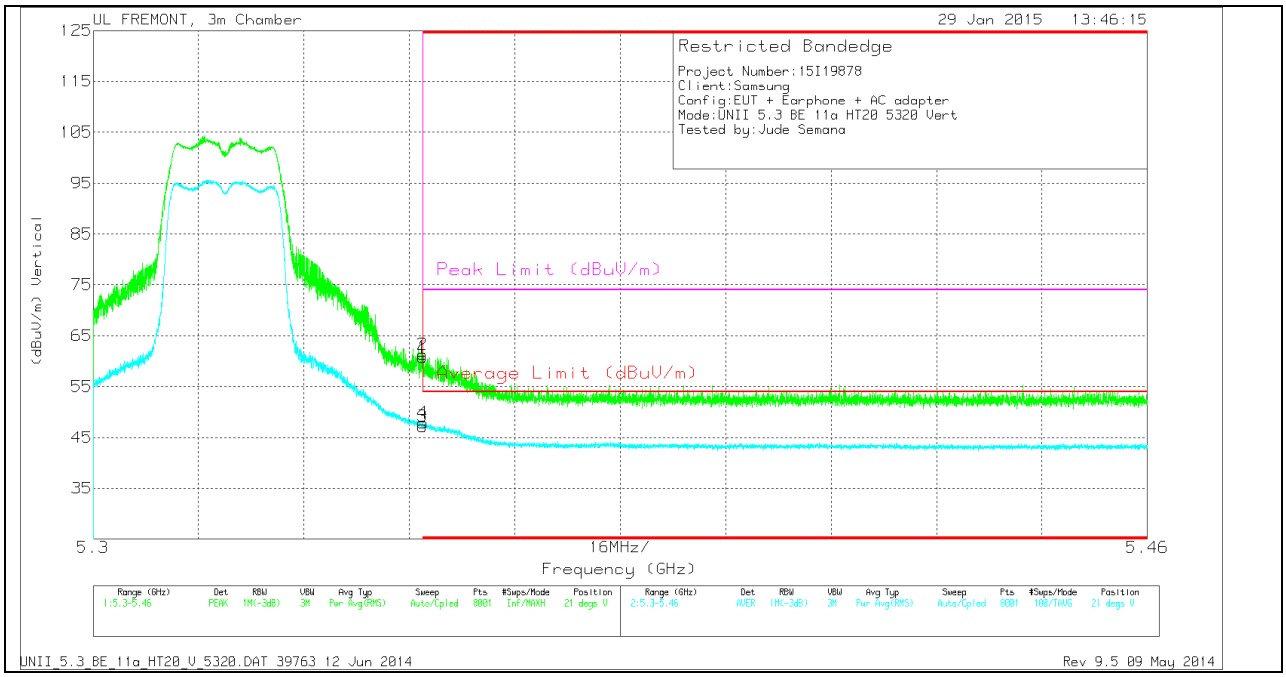
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	47.66	PK	34.5	-21.4	0	60.76	-	-	74	-13.24	21	277	V
2	* 5.35	48.23	PK	34.5	-21.4	0	61.33	-	-	74	-12.67	21	277	V
3	* 5.35	33.76	RMS	34.5	-21.4	.3	47.16	54	-6.84	-	-	21	277	V
4	* 5.35	34.41	RMS	34.5	-21.4	.3	47.81	54	-6.19	-	-	21	277	V

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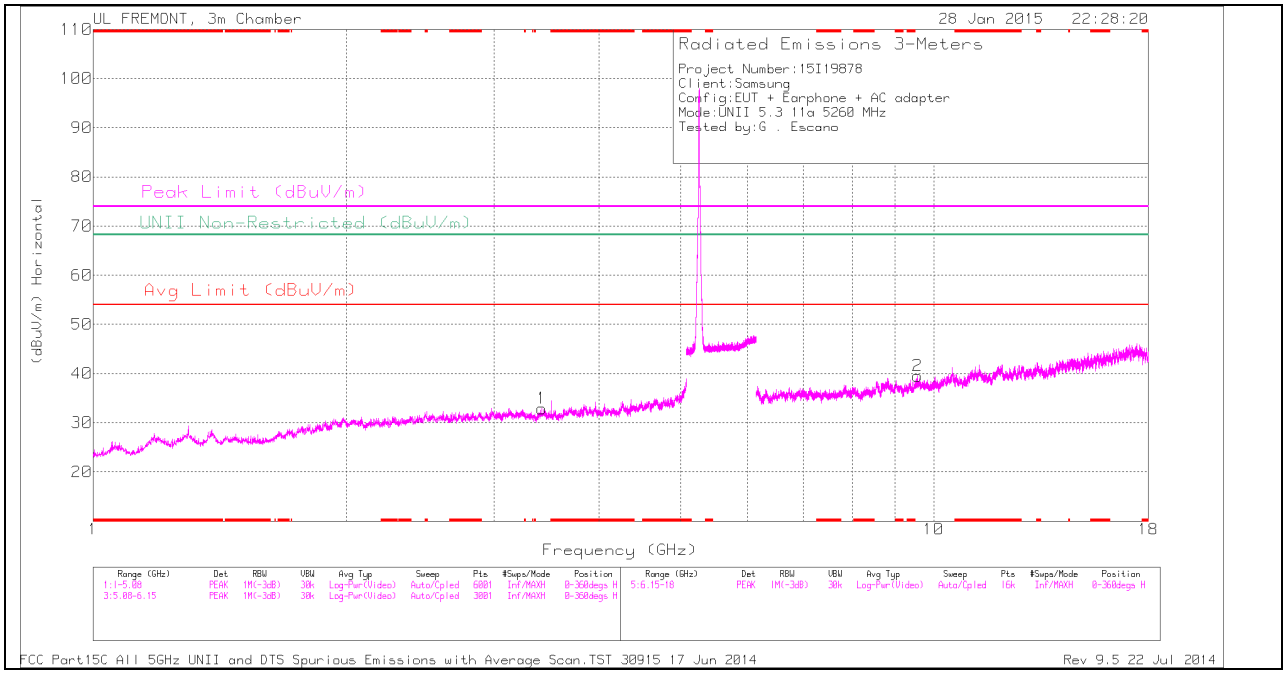
HARMONICS AND SPURIOUS EMISSIONS

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.

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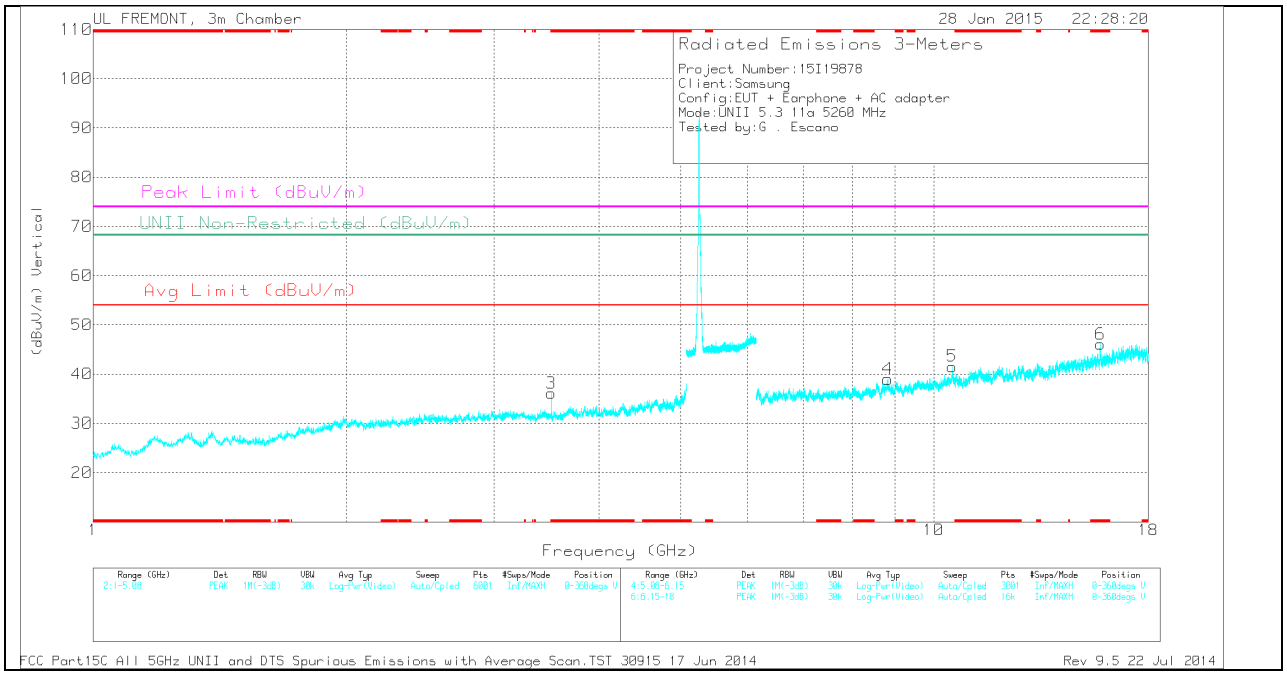
LOW CHANNEL VERTICAL



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

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LOW CHANNEL DATA

Trace Markers

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	* 3.506	34.83	PK	32.8	-31.5	0	36.13	-	-	74	-37.87	-	-	0-360	200	V
6	* 15.783	32.19	PK	40.3	-26.4	0	46.09	-	-	74	-27.91	-	-	0-360	200	V
1	3.417	31.69	PK	32.7	-31.5	0	32.89	-	-	-	-	68.2	-35.31	0-360	200	H
4	8.818	28.71	PK	35.9	-25.6	0	39.01	-	-	-	-	68.2	-29.19	0-360	100	V
2	9.566	28.03	PK	36.7	-25.2	0	39.53	-	-	-	-	68.2	-28.67	0-360	100	H
5	10.519	29.06	PK	37.5	-25	0	41.56	-	-	-	-	68.2	-26.64	0-360	200	V

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Flt r/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
* 3.507	43.16	PK1	32.8	-31.5	0	44.46	-	-	74	-29.54	-	-	261	237	V
* 3.507	34.88	AD1	32.8	-31.5	.31	36.5	54	-17.5	-	-	-	-	261	237	V
* 15.783	42.91	PK1	40.3	-26.4	0	56.81	-	-	74	-17.19	-	-	263	219	V
* 15.783	30.54	AD1	40.3	-26.4	.31	44.76	54	-9.24	-	-	-	-	263	219	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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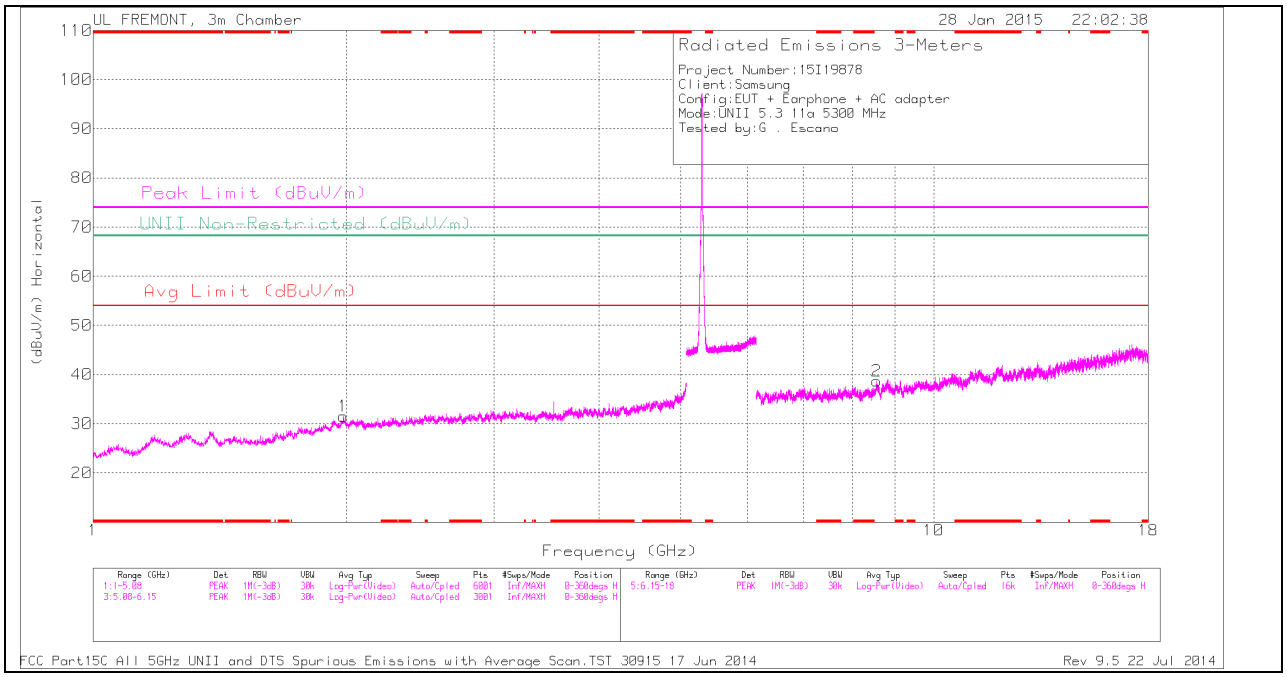
MID CHANNEL HORIZONTAL



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

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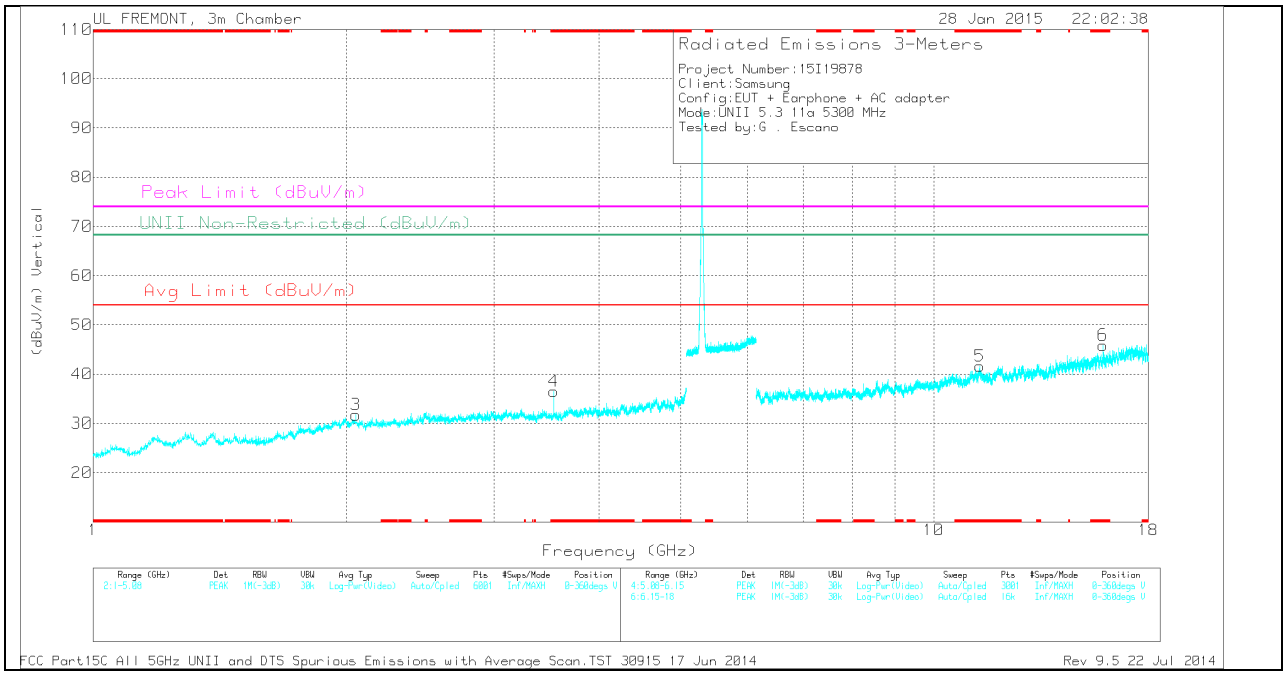
MID CHANNEL VERTICAL



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

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MID CHANNEL DATA

Trace Markers

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
4	* 3.534	35.6	PK	32.8	-31.9	0	36.5	-	-	74	-37.5	-	-	0-360	200	V
5	* 11.353	29.22	PK	38.1	-25.7	0	41.62	-	-	74	-32.38	-	-	0-360	200	V
6	* 15.9	31.39	PK	40.3	-25.8	0	45.89	-	-	74	-28.11	-	-	0-360	200	V
1	1.983	32.12	PK	31.4	-32	0	31.52	-	-	-	-	68.2	-36.68	0-360	200	H
3	2.054	32.54	PK	31.5	-32.3	0	31.74	-	-	-	-	68.2	-36.46	0-360	100	V
2	8.56	28.99	PK	35.8	-26.1	0	38.69	-	-	-	-	68.2	-29.51	0-360	200	H

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fl tr/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
* 3.534	43.28	PK1	32.8	-31.8	0	44.28	-	-	74	-29.72	-	-	246	361	V
* 3.533	35.86	AD1	32.8	-31.8	.31	37.18	54	-16.82	-	-	-	-	246	361	V
* 11.353	37.59	PK1	38.1	-25.7	0	49.99	-	-	74	-24.01	-	-	45	103	V
* 11.355	25.37	AD1	38.1	-25.7	.31	38.09	54	-15.91	-	-	-	-	45	103	V
* 15.899	43.37	PK1	40.3	-25.8	0	57.87	-	-	74	-16.13	-	-	133	209	V
* 15.899	30.5	AD1	40.3	-25.8	.31	45.32	54	-8.68	-	-	-	-	133	209	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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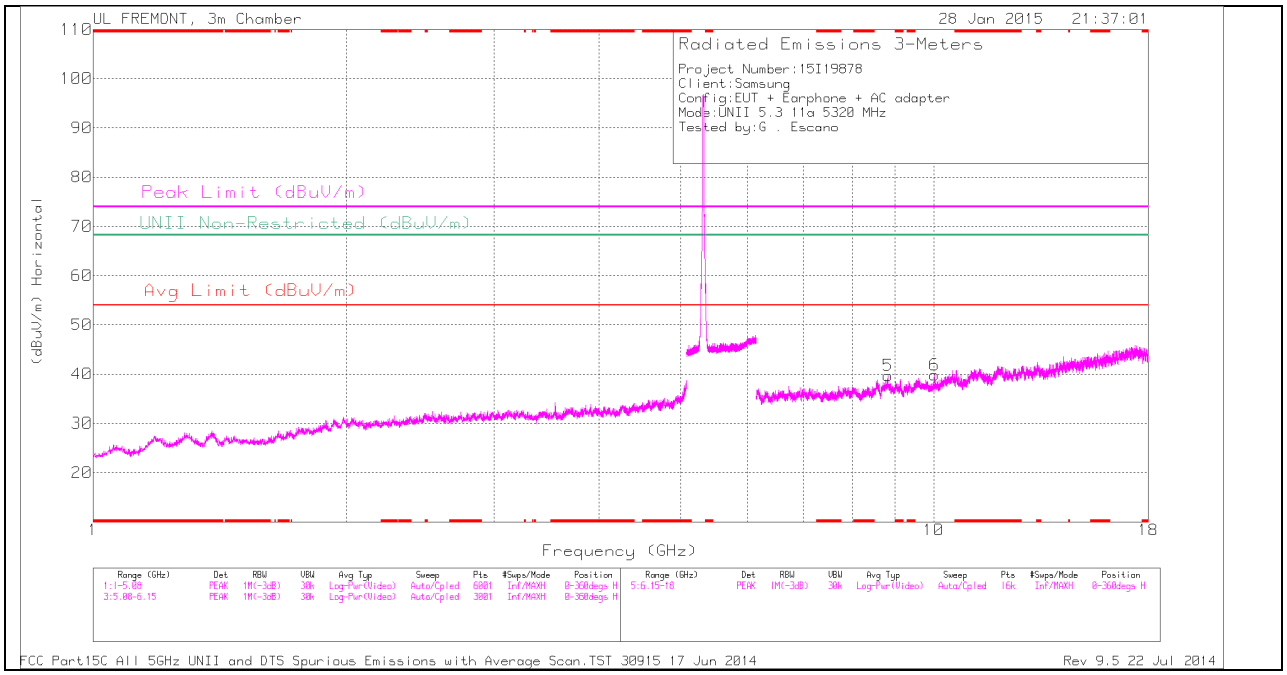
HIGH CHANNEL HORIZONTAL



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 VERIFICATION SERVICES INC. FORM NO: CCSUP4701J
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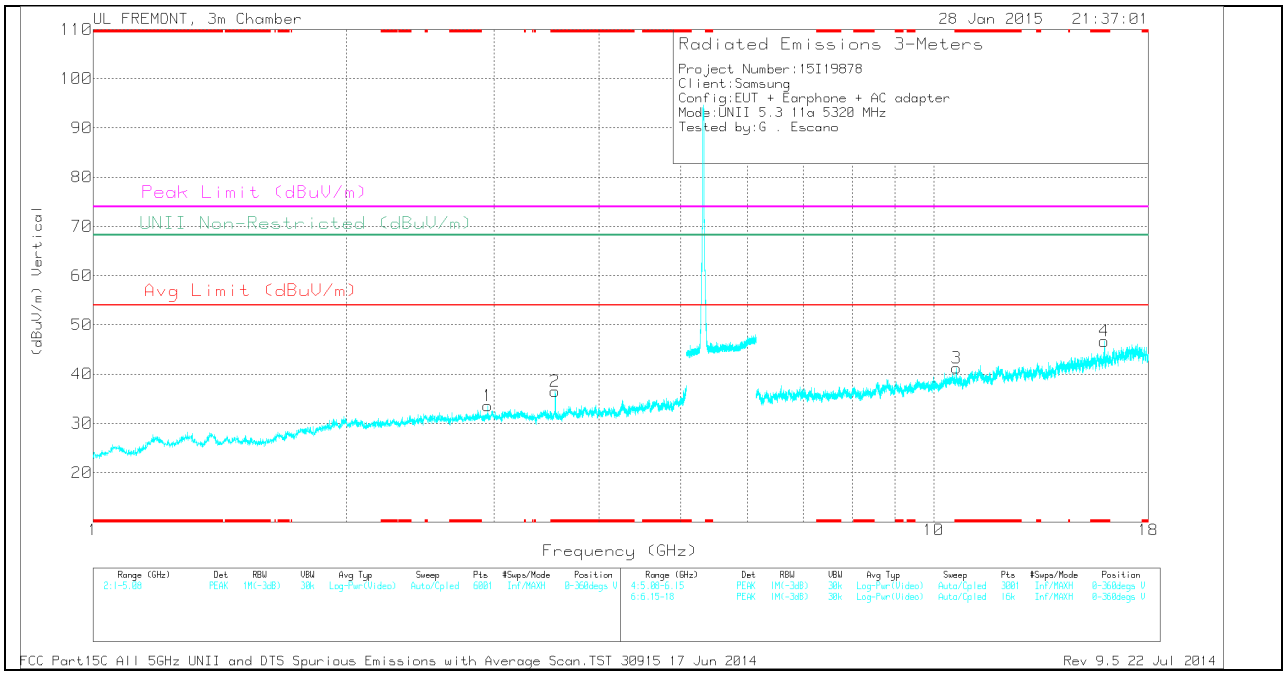
HIGH CHANNEL VERTICAL



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

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HIGH CHANNEL DATA

Trace Markers

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
2	* 3.547	35.58	PK	32.8	-31.9	0	36.48	-	-	74	-37.52	-	-	0-360	200	V
3	* 10.639	28.64	PK	37.7	-25.1	0	41.24	-	-	74	-32.76	-	-	0-360	200	V
4	* 15.961	32.29	PK	40.3	-25.9	0	46.69	-	-	74	-27.31	-	-	0-360	200	V
1	2.947	32.88	PK	32.7	-32	0	33.58	-	-	-	-	68.2	-34.62	0-360	100	V
5	8.823	29.59	PK	35.9	-25.8	0	39.69	-	-	-	-	68.2	-28.51	0-360	100	H
6	10.03	27.71	PK	36.9	-24.8	0	39.81	-	-	-	-	68.2	-28.39	0-360	200	H

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fl tr/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
* 3.547	44.58	PK1	32.8	-31.9	0	45.48	-	-	74	-28.52	-	-	262	315	V
* 3.547	37.1	AD1	32.8	-31.9	.31	38.32	54	-15.68	-	-	-	-	262	315	V
* 10.64	39.45	PK1	37.7	-25.2	0	51.95	-	-	74	-22.05	-	-	238	218	V
* 10.64	27.75	AD1	37.7	-25.1	.31	40.67	54	-13.33	-	-	-	-	238	218	V
* 15.962	42.12	PK1	40.3	-25.8	0	56.62	-	-	74	-17.38	-	-	127	241	V
* 15.962	29.37	AD1	40.3	-25.9	.31	44.09	54	-9.91	-	-	-	-	127	241	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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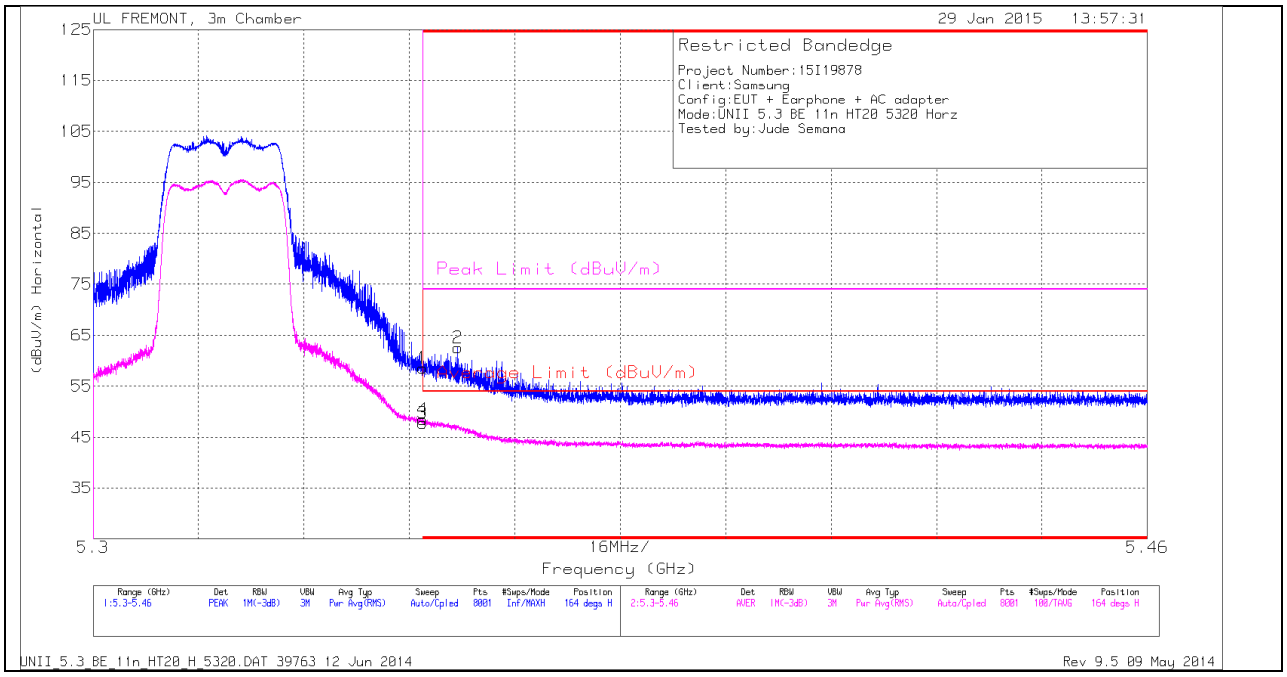
11.2.2. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.3 GHz BAND

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	45.44	PK	34.5	-21.4	0	58.54	-	-	74	-15.46	164	244	H
3	* 5.35	34.35	RMS	34.5	-21.4	.33	47.78	54	-6.22	-	-	164	244	H
4	* 5.35	35.02	RMS	34.5	-21.4	.33	48.45	54	-5.55	-	-	164	244	H
2	* 5.355	49.55	PK	34.5	-21.5	0	62.55	-	-	74	-11.45	164	244	H

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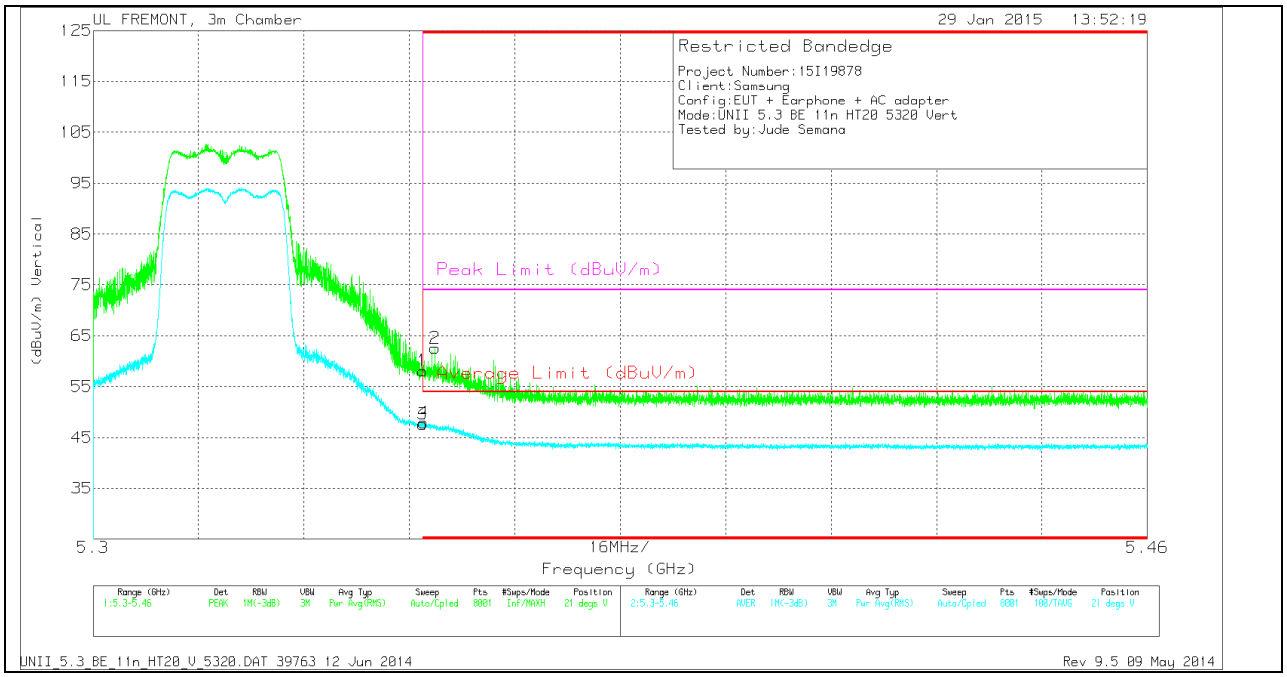
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	44.97	PK	34.5	-21.4	0	58.07	-	-	74	-15.93	21	273	V
3	* 5.35	34.22	RMS	34.5	-21.4	.33	47.65	54	-6.35	-	-	21	273	V
4	* 5.35	34.48	RMS	34.5	-21.4	.33	47.91	54	-6.09	-	-	21	273	V
2	* 5.352	49.45	PK	34.5	-21.4	0	62.55	-	-	74	-11.45	21	273	V

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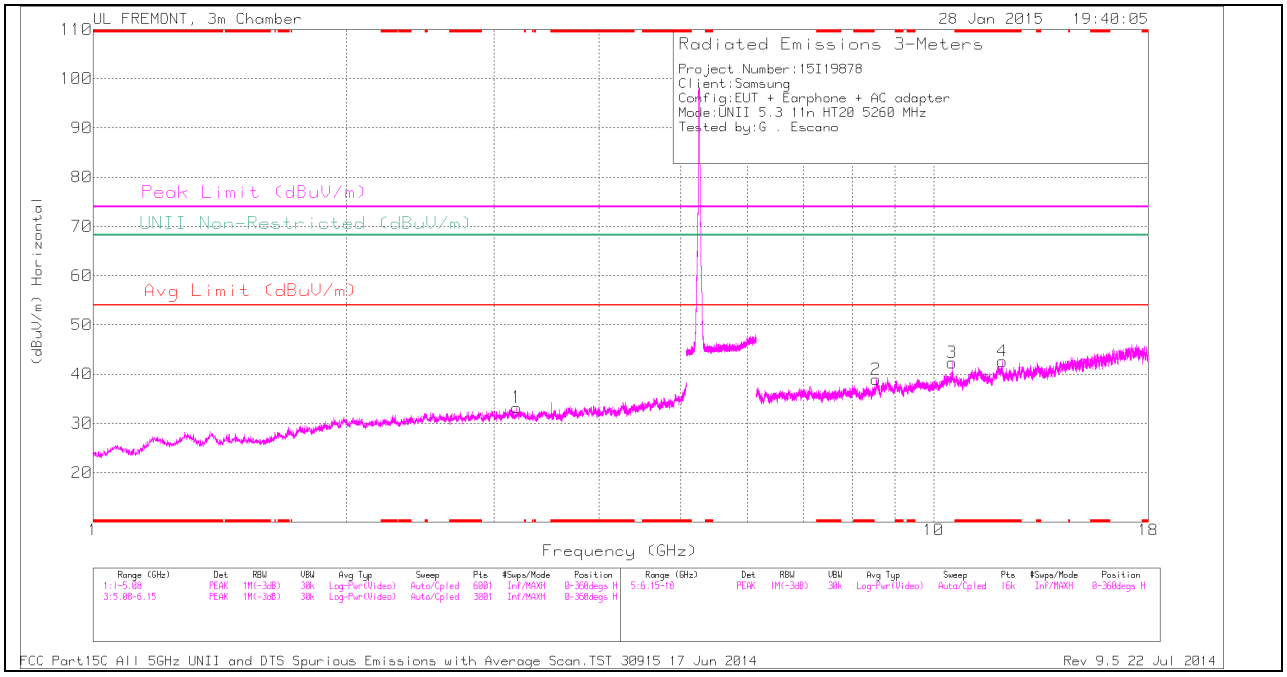
HARMONICS AND SPURIOUS EMISSIONS

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.

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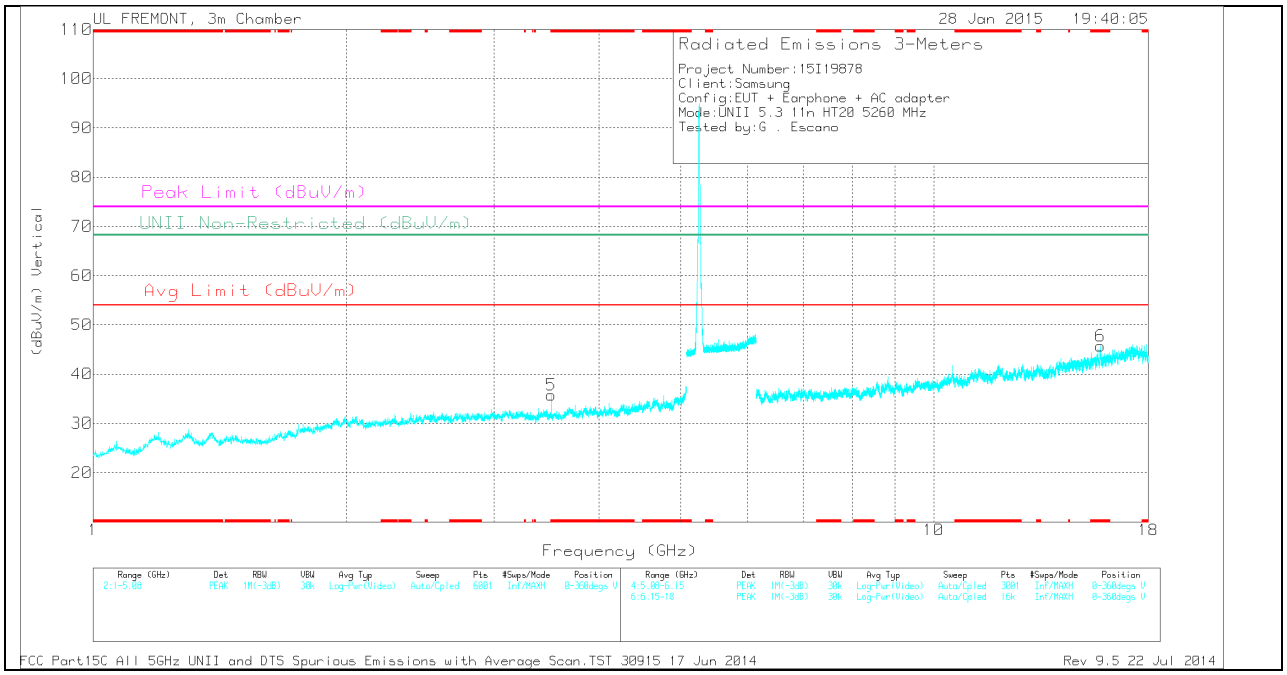
LOW CHANNEL VERTICAL



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

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LOW CHANNEL DATA

TRACE MARKERS

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
5	* 3.506	34.44	PK	32.8	-31.5	0	35.74	-	-	74	-38.26	-	-	0-360	200	V
4	* 12.065	29.99	PK	39	-26.4	0	42.59	-	-	74	-31.41	-	-	0-360	200	H
6	* 15.789	31.71	PK	40.3	-26.3	0	45.71	-	-	74	-28.29	-	-	0-360	200	V
1	3.19	32.04	PK	32.6	-31.4	0	33.24	-	-	-	-	68.2	-34.96	0-360	200	H
2	8.547	29.11	PK	35.8	-26	0	38.91	-	-	-	-	68.2	-29.29	0-360	200	H
3	10.519	29.84	PK	37.5	-25	0	42.34	-	-	-	-	68.2	-25.86	0-360	200	H

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fl tr/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
* 3.507	43.33	PK1	32.8	-31.5	0	44.63	-	-	74	-29.37	-	-	255	270	V
* 3.507	35.27	AD1	32.8	-31.5	.33	36.89	54	-17.11	-	-	-	-	255	270	V
* 12.065	37.61	PK1	39	-26.4	0	50.21	-	-	74	-23.79	-	-	278	155	H
* 12.065	25.4	AD1	39	-26.5	.33	38.22	54	-15.78	-	-	-	-	278	155	H
* 15.79	42.03	PK1	40.3	-26.3	0	56.03	-	-	74	-17.97	-	-	264	224	V
* 15.788	29.04	AD1	40.3	-26.3	.33	43.36	54	-10.64	-	-	-	-	264	224	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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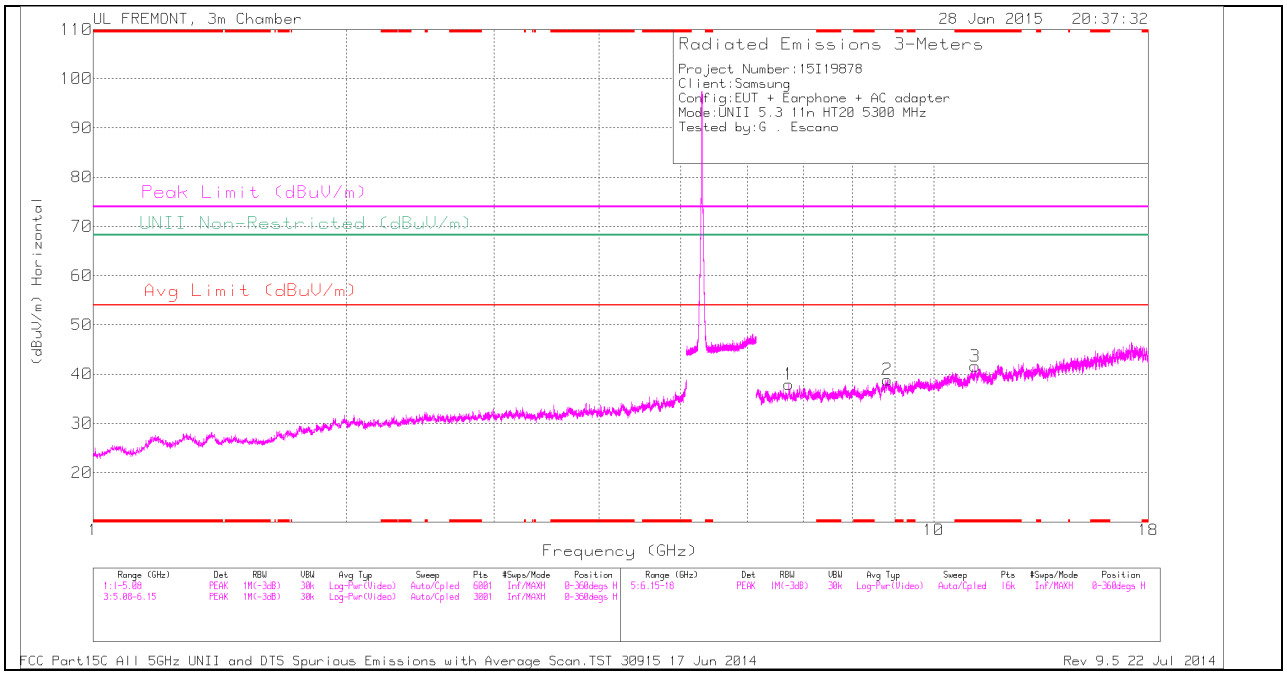
MID CHANNEL HORIZONTAL



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

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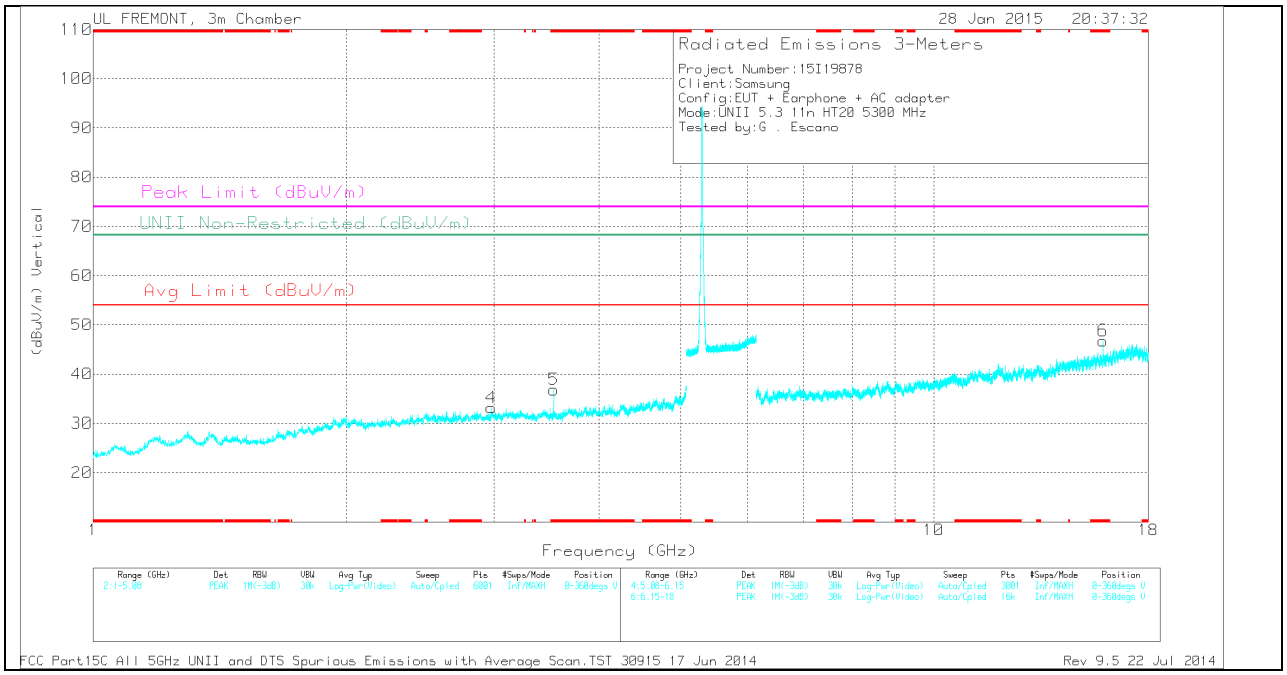
MID CHANNEL VERTICAL



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

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MID CHANNEL DATA

TRACE MARKERS

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
5	* 3.533	35.84	PK	32.8	-31.8	0	36.84	-	-	74	-37.16	-	-	0-360	200	V
3	* 11.2	29.59	PK	37.9	-25.9	0	41.59	-	-	74	-32.41	-	-	0-360	200	H
6	* 15.9	32.27	PK	40.3	-25.8	0	46.77	-	-	74	-27.23	-	-	0-360	200	V
4	2.977	32.38	PK	32.7	-31.9	0	33.18	-	-	-	-	68.2	-35.02	0-360	200	V
1	6.72	31.53	PK	35.6	-29.2	0	37.93	-	-	-	-	68.2	-30.27	0-360	200	H
2	8.815	28.47	PK	35.9	-25.5	0	38.87	-	-	-	-	68.2	-29.33	0-360	100	H

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fl tr/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
* 3.533	43.63	PK1	32.8	-31.8	0	44.63	-	-	74	-29.37	-	-	252	232	V
* 3.533	36.57	AD1	32.8	-31.8	.33	37.89	54	-16.11	-	-	-	-	252	232	V
* 11.201	37.26	PK1	37.9	-25.9	0	49.26	-	-	74	-24.74	-	-	296	350	H
* 11.202	25.48	AD1	37.9	-25.9	.33	37.8	54	-16.2	-	-	-	-	296	350	H
* 15.9	43.95	PK1	40.3	-25.8	0	58.45	-	-	74	-15.55	-	-	49	193	V
* 15.9	30.15	AD1	40.3	-25.8	.33	44.97	54	-9.03	-	-	-	-	49	193	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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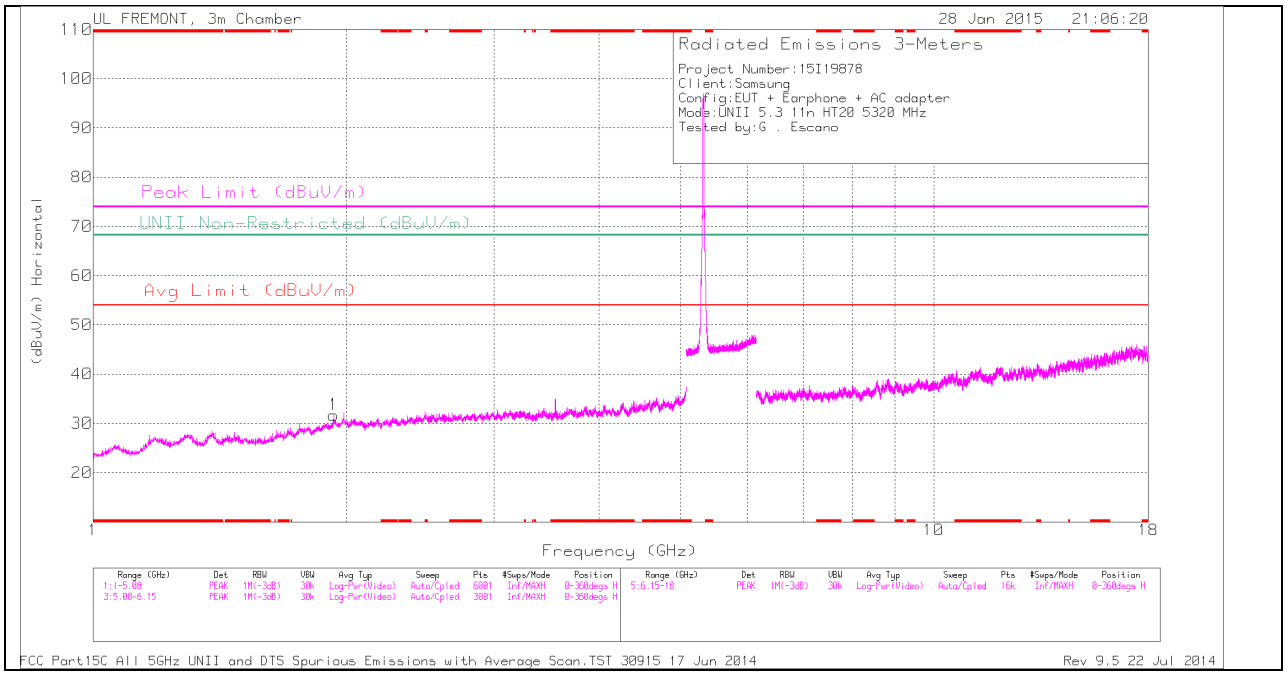
HIGH CHANNEL HORIZONTAL



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

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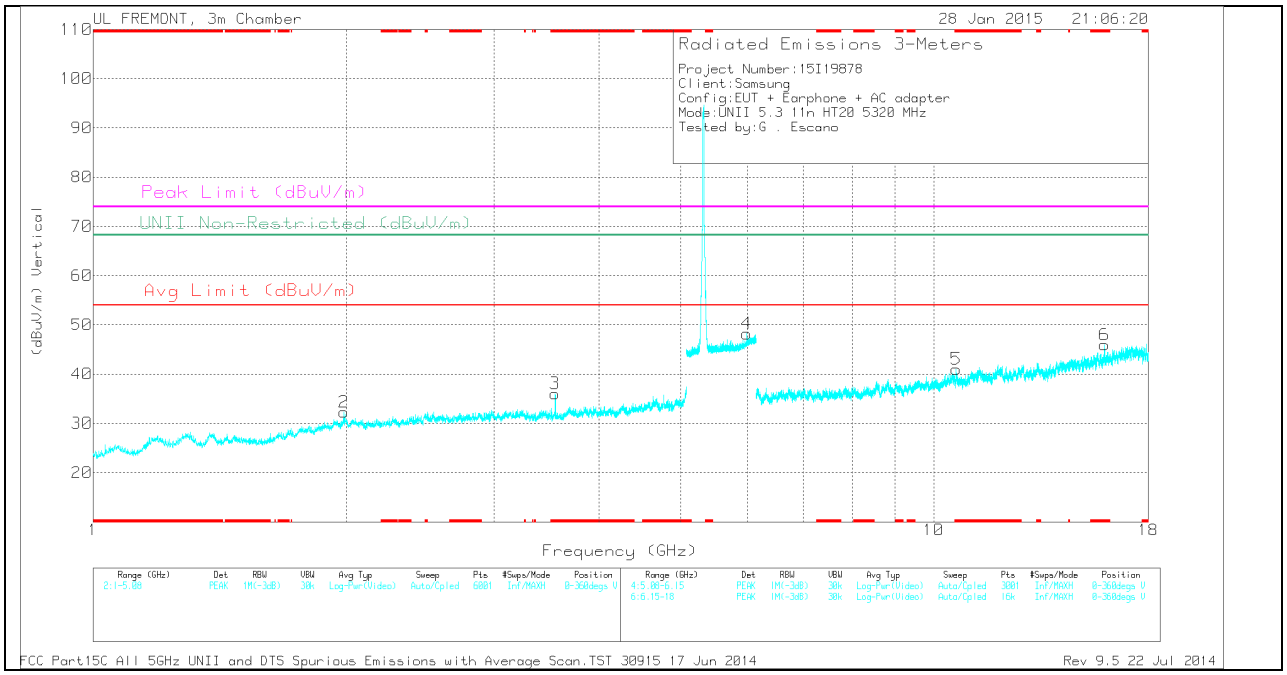
HIGH CHANNEL VERTICAL



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

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HIGH CHANNEL DATA

TRACE MARKERS

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	* 3.547	35.14	PK	32.8	-31.9	0	36.04	-	-	74	-37.96	-	-	0-360	200	V
5	* 10.636	28.31	PK	37.7	-25	0	41.01	-	-	74	-32.99	-	-	0-360	200	V
6	* 15.966	31.26	PK	40.3	-25.6	0	45.96	-	-	74	-28.04	-	-	0-360	200	V
1	1.932	32.92	PK	31.2	-32.4	0	31.72	-	-	-	-	68.2	-36.48	0-360	200	H
2	1.988	32.78	PK	31.5	-32	0	32.28	-	-	-	-	68.2	-35.92	0-360	200	V
4	5.993	33.92	PK	35.2	-20.9	0	48.22	-	-	-	-	68.2	-19.98	0-360	100	V

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fl tr/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
* 3.547	44.17	PK1	32.8	-31.9	0	45.07	-	-	74	-28.93	-	-	259	356	V
* 3.547	36.93	AD1	32.8	-31.9	.33	38.15	54	-15.85	-	-	-	-	259	356	V
* 10.636	38.39	PK1	37.7	-25.1	0	50.99	-	-	74	-23.01	-	-	352	151	V
* 10.636	25.32	AD1	37.7	-25.1	.33	38.24	54	-15.76	-	-	-	-	352	151	V
* 15.966	43.53	PK1	40.3	-25.6	0	58.23	-	-	74	-15.77	-	-	49	186	V
* 15.965	30.72	AD1	40.3	-25.6	.33	45.74	54	-8.26	-	-	-	-	49	186	V
5.991	30.02	AD1	35.2	-20.9	.33	44.64	-	-	-	-	-	-	320	117	V
5.994	42.07	PK1	35.2	-20.9	0	56.37	-	-	-	-	68.2	-11.83	320	117	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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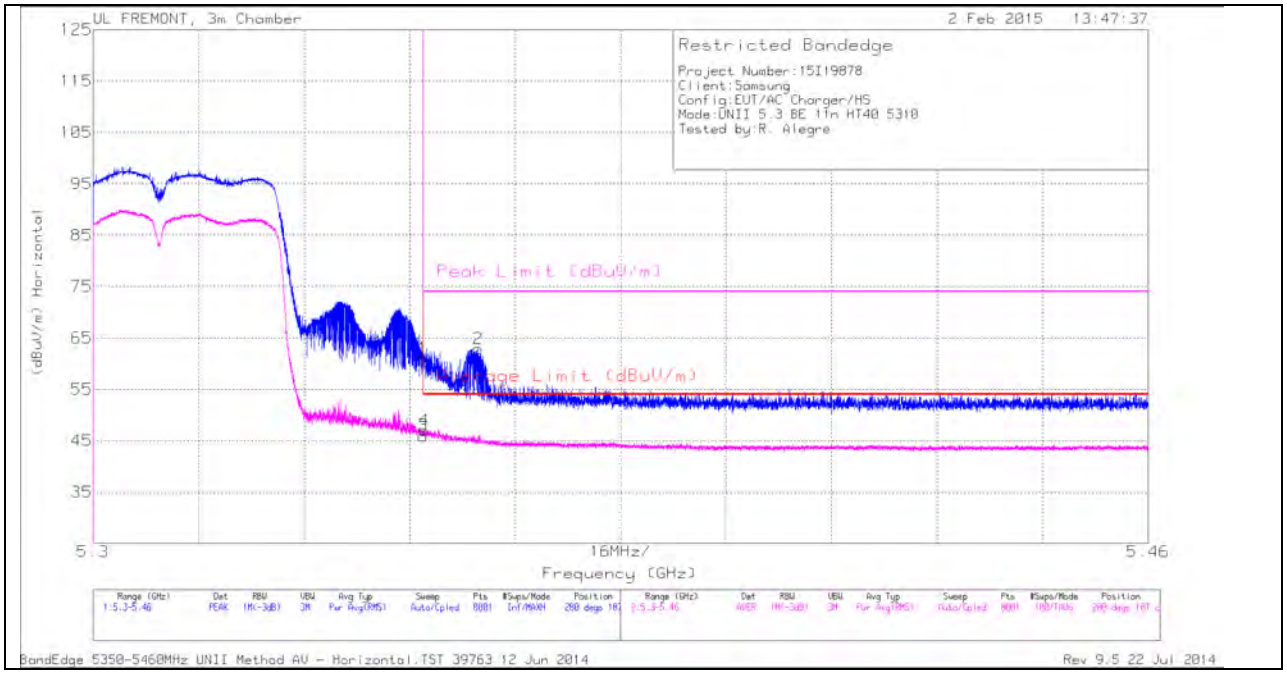
11.2.3. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.3 GHz BAND AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.35	47.95	PK	34.5	-21.4	0	61.05	-	-	74	-12.95	280	187	H
3	5.35	32.25	RMS	34.5	-21.4	.63	45.97	54	-8.03	-	-	280	187	H
4	5.35	33.28	RMS	34.5	-21.4	.63	47	54	-7	-	-	280	187	H
2	5.358	49.9	PK	34.5	-21.5	0	62.9	-	-	74	-11.1	280	187	H

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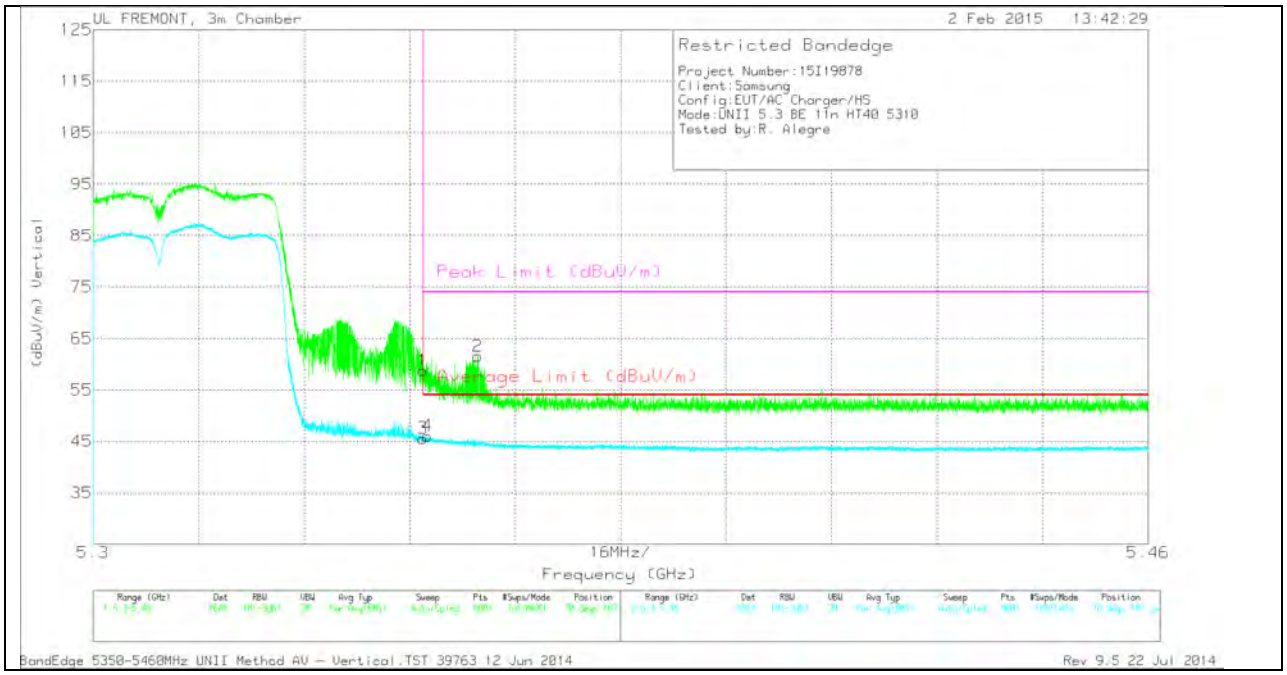
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.35	45.72	PK	34.5	-21.4	0	58.82	-	-	74	-15.18	70	187	V
3	5.35	31.88	RMS	34.5	-21.4	.63	45.6	54	-8.4	-	-	70	187	V
4	5.351	32.35	RMS	34.5	-21.4	.63	46.07	54	-7.93	-	-	70	187	V
2	5.358	48.56	PK	34.5	-21.5	0	61.56	-	-	74	-12.44	70	187	V

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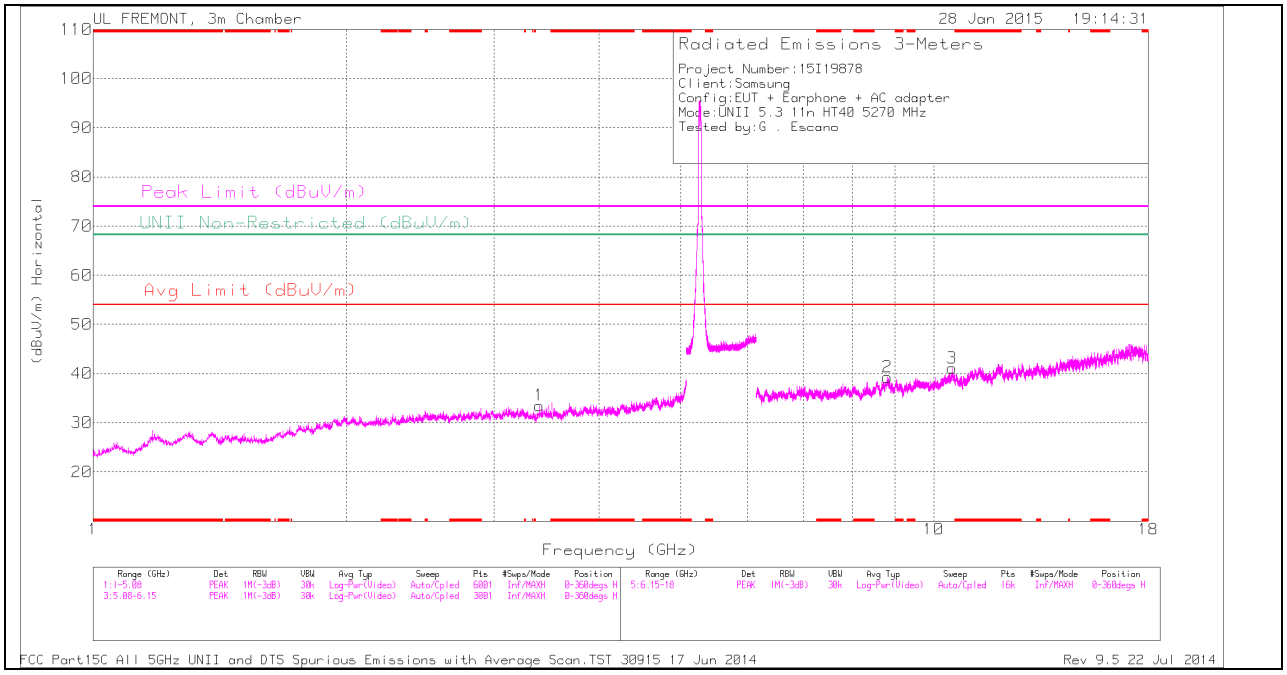
HARMONICS AND SPURIOUS EMISSIONS

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.

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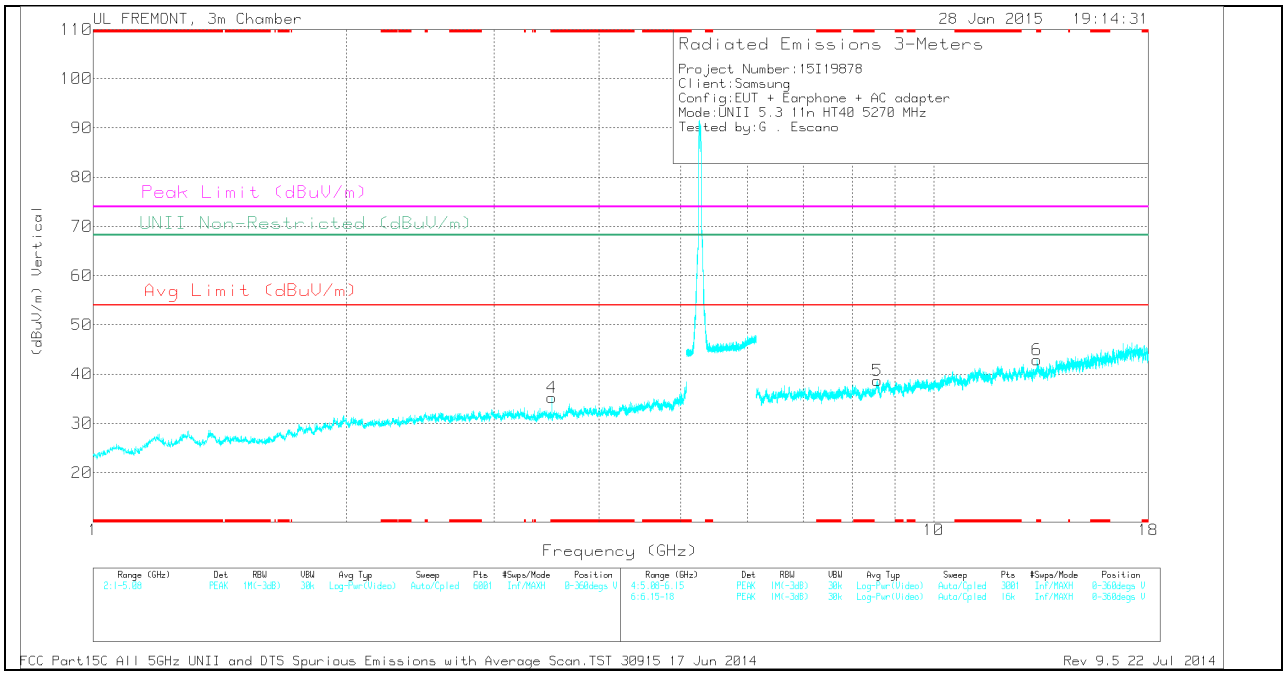
LOW CHANNEL VERTICAL



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LOW CHANNEL DATA

TRACE MARKERS

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
4	* 3.513	34.2	PK	32.8	-31.8	0	35.2	-	-	74	-38.8	-	-	0-360	200	V
6	* 13.275	29.99	PK	39	-26.1	0	42.89	-	-	74	-31.11	-	-	0-360	100	V
1	3.397	32.61	PK	32.7	-31.8	0	33.51	-	-	-	-	68.2	-34.69	0-360	200	H
5	8.572	29.07	PK	35.8	-26.2	0	38.67	-	-	-	-	68.2	-29.53	0-360	200	V
2	8.809	29.07	PK	35.9	-25.7	0	39.27	-	-	-	-	68.2	-28.93	0-360	100	H
3	10.525	28.6	PK	37.5	-25	0	41.1	-	-	-	-	68.2	-27.1	0-360	200	H

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fl tr/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
* 3.513	43.14	PK1	32.8	-31.8	0	44.14	-	-	74	-29.86	-	-	255	231	V
* 3.513	34.99	AD1	32.8	-31.8	.64	36.63	54	-17.37	-	-	-	-	255	231	V
* 13.275	38.63	PK1	39	-26.1	0	51.53	-	-	74	-22.47	-	-	323	335	V
* 13.275	26.76	AD1	39	-26.1	.64	40.3	54	-13.7	-	-	-	-	323	335	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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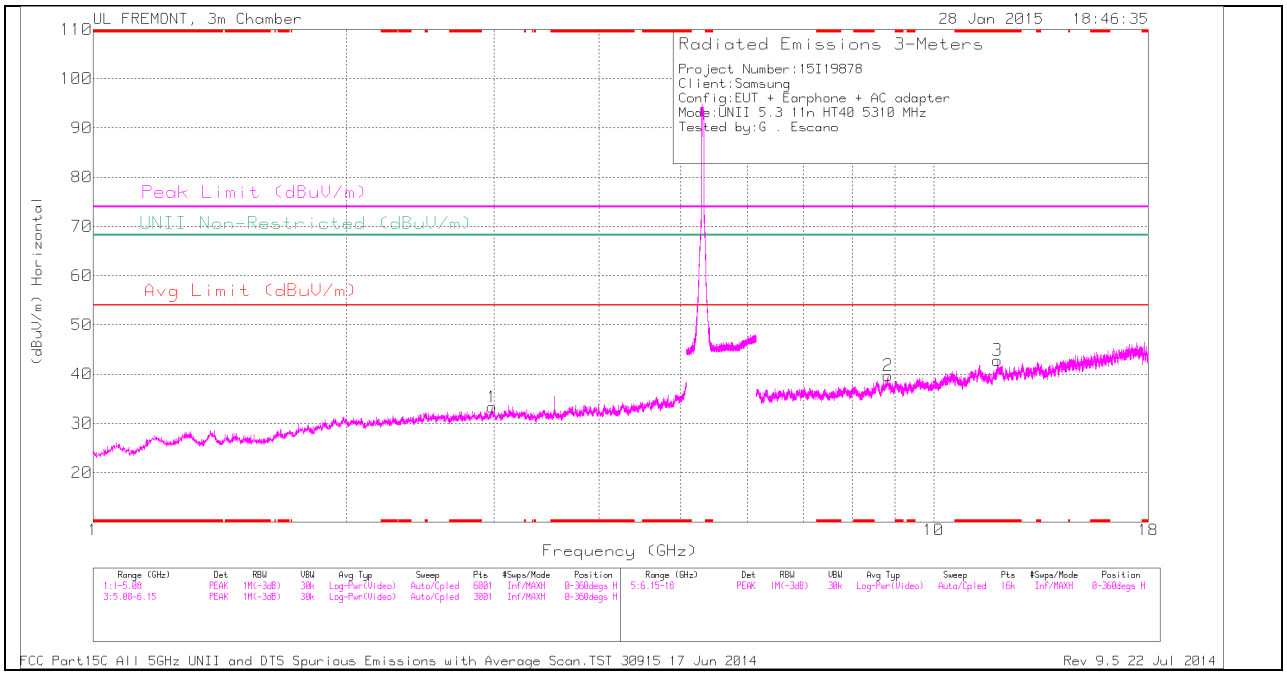
HIGH CHANNEL HORIZONTAL



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

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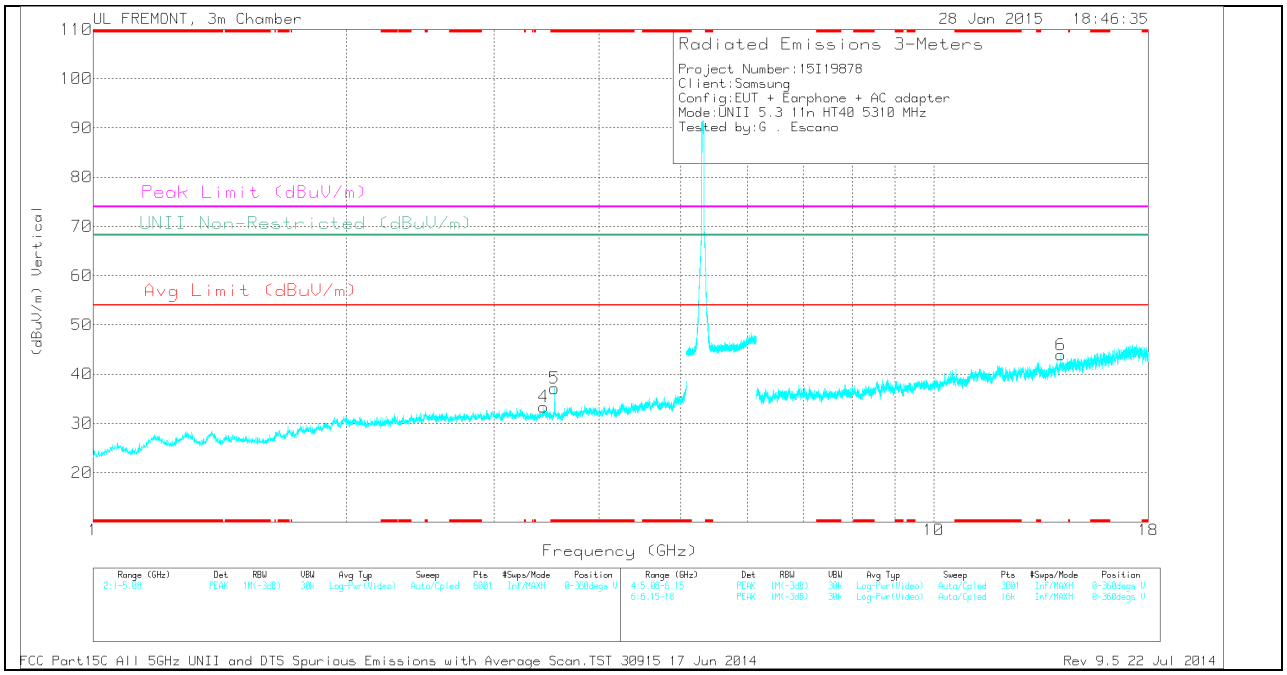
HIGH CHANNEL VERTICAL



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

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HIGH CHANNEL DATA

TRACE MARKERS

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
5	* 3.54	36.11	PK	32.8	-31.8	0	37.11	-	-	74	-36.89	-	-	0-360	200	V
3	* 11.915	30	PK	39.1	-26.3	0	42.8	-	-	74	-31.2	-	-	0-360	200	H
1	2.984	32.29	PK	32.7	-31.7	0	33.29	-	-	-	-	68.2	-34.91	0-360	200	H
4	3.438	32.14	PK	32.7	-31.5	0	33.34	-	-	-	-	68.2	-34.86	0-360	100	V
2	8.82	29.52	PK	35.9	-25.7	0	39.72	-	-	-	-	68.2	-28.48	0-360	100	H
6	14.171	31.81	PK	39.1	-27	0	43.91	-	-	-	-	68.2	-24.29	0-360	200	V

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fl tr/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
* 3.54	43.45	PK1	32.8	-31.8	0	44.45	-	-	74	-29.55	-	-	261	236	V
* 3.54	36.62	AD1	32.8	-31.8	.63	38.26	54	-15.74	-	-	-	-	261	236	V
* 11.915	37.82	PK1	39.1	-26.2	0	50.72	-	-	74	-23.28	-	-	33	210	H
* 11.915	25.81	AD1	39.1	-26.2	.63	39.35	54	-14.65	-	-	-	-	33	210	H

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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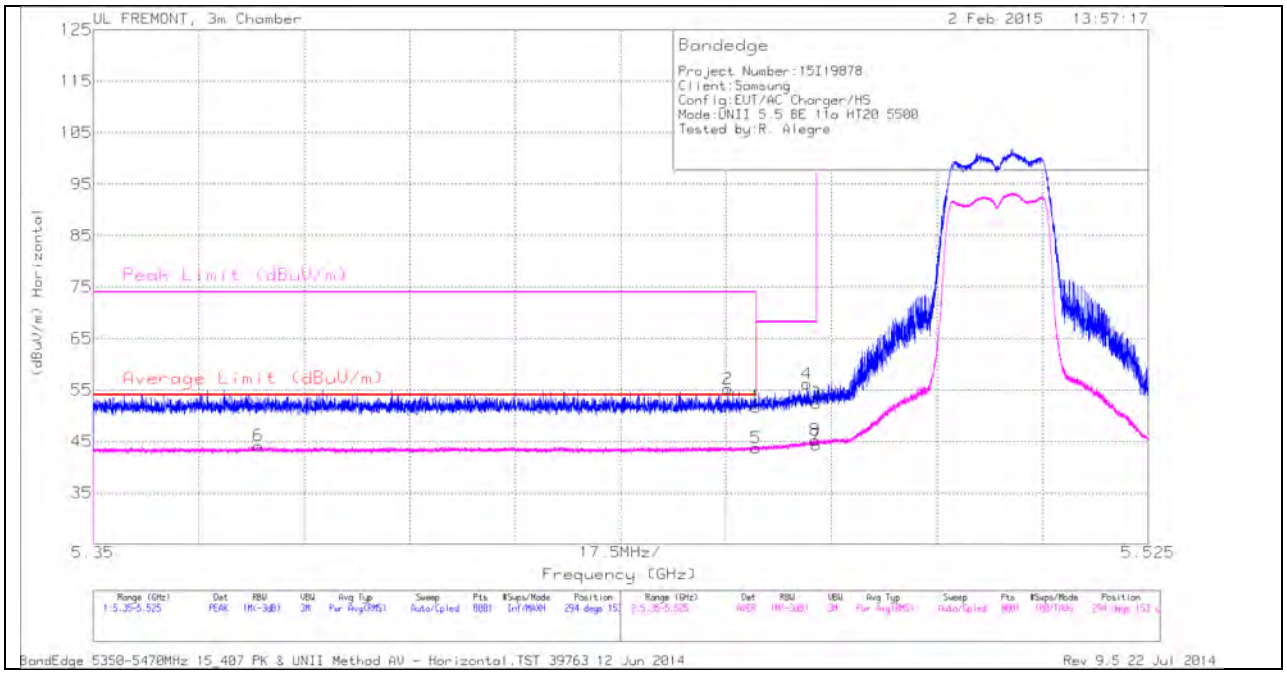
11.3. 5.5-5.6 GHz

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	AF T119 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6	5.377	30.55	RMS	34.6	-21.3	.3	44.15	54	-9.85	-	-	294	153	H
2	5.455	41.99	PK	34.6	-21.4	0	55.19	-	-	74	-18.81	294	153	H
1	5.46	38.53	PK	34.6	-21.4	0	51.73	-	-	74	-22.27	294	153	H
5	5.46	30.24	RMS	34.6	-21.4	.3	43.74	54	-10.26	-	-	294	153	H
4	5.468	42.86	PK	34.6	-21.3	0	56.16	-	-	68.2	-12.04	294	153	H
3	5.47	39.11	PK	34.6	-21.3	0	52.41	-	-	68.2	-15.79	294	153	H
7	5.47	30.73	RMS	34.6	-21.3	.3	44.33	-	-	-	-	294	153	H
8	5.47	31.61	RMS	34.6	-21.3	.3	45.21	-	-	-	-	294	153	H

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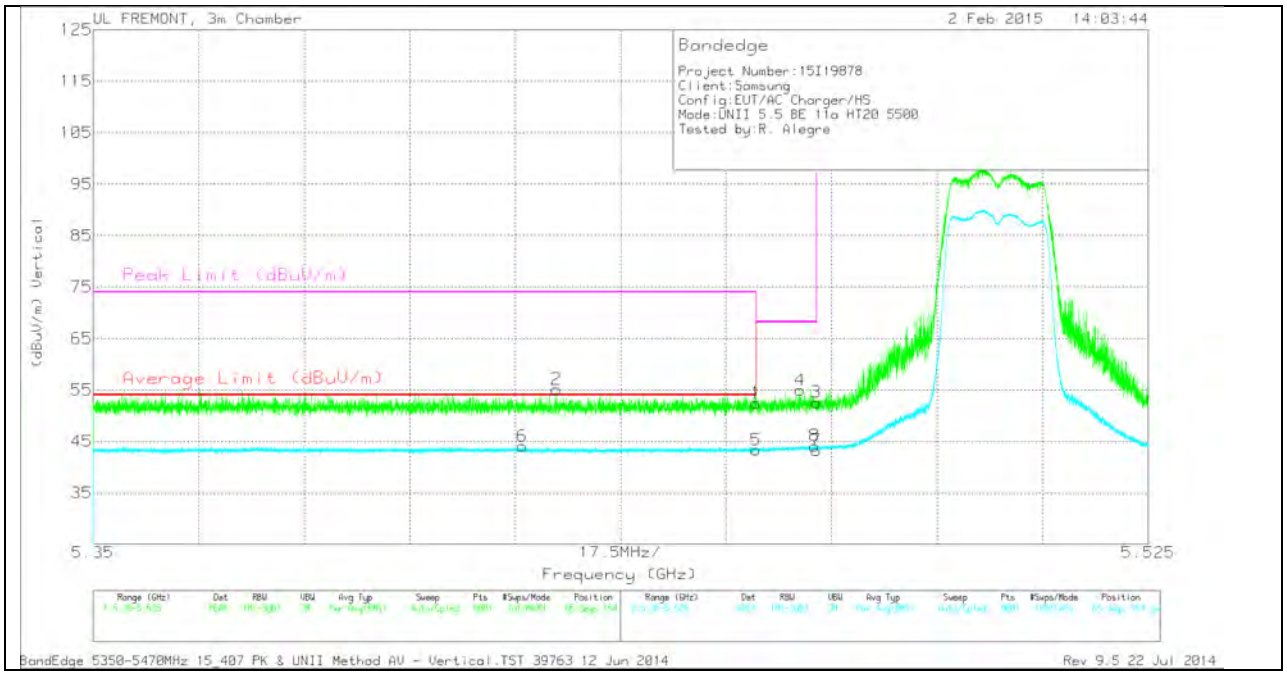
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6	5.421	30.57	RMS	34.6	-21.4	.3	44.07	54	-9.93	-	-	65	154	V
2	5.427	41.93	PK	34.6	-21.4	0	55.13	-	-	74	-18.87	65	154	V
1	5.46	39.24	PK	34.6	-21.4	0	52.44	-	-	74	-21.56	65	154	V
5	5.46	29.85	RMS	34.6	-21.4	.3	43.35	54	-10.65	-	-	65	154	V
4	5.467	41.67	PK	34.6	-21.3	0	54.97	-	-	68.2	-13.23	65	154	V
3	5.47	39.28	PK	34.6	-21.3	0	52.58	-	-	68.2	-15.62	65	154	V
7	5.47	29.7	RMS	34.6	-21.3	.3	43.3	-	-	-	-	65	154	V
8	5.47	30.56	RMS	34.6	-21.3	.3	44.16	-	-	-	-	65	154	V

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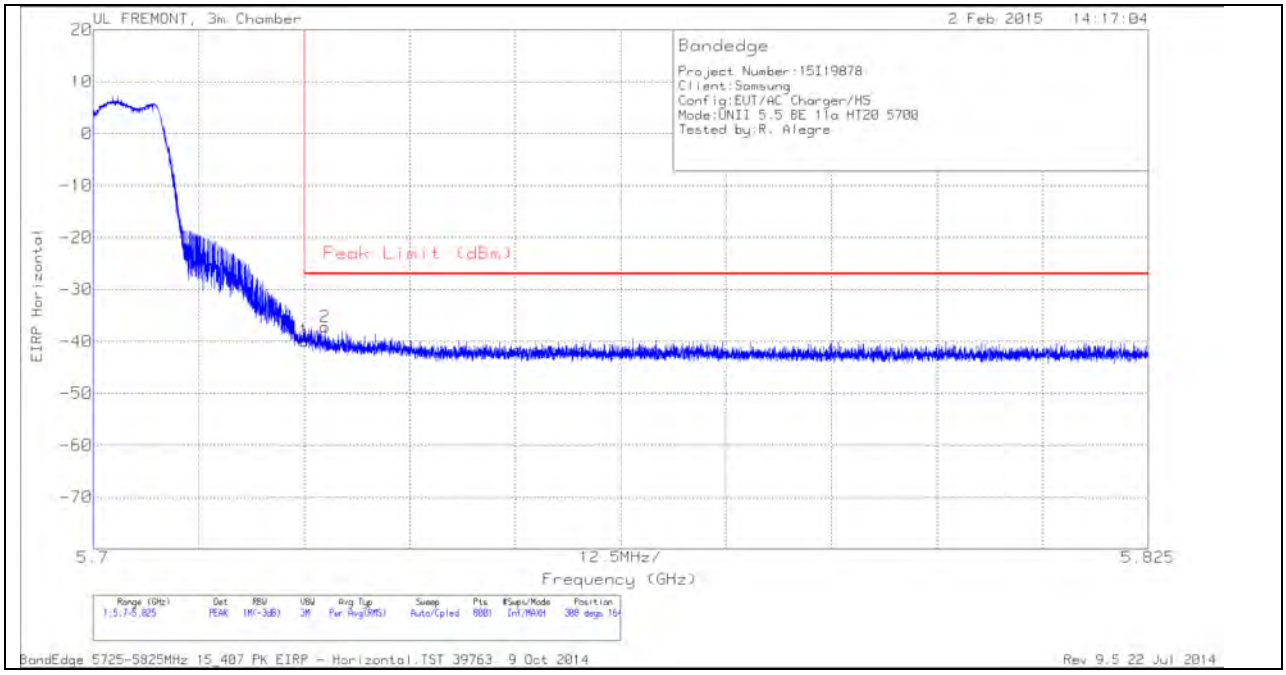
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cbl/ Fltr/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	-65.42	PK	34.8	-21.1	11.8	0	-39.92	-27	-12.92	308	164	H
2	5.728	-62.62	PK	34.8	-21.2	11.8	0	-37.22	-27	-10.22	308	164	H

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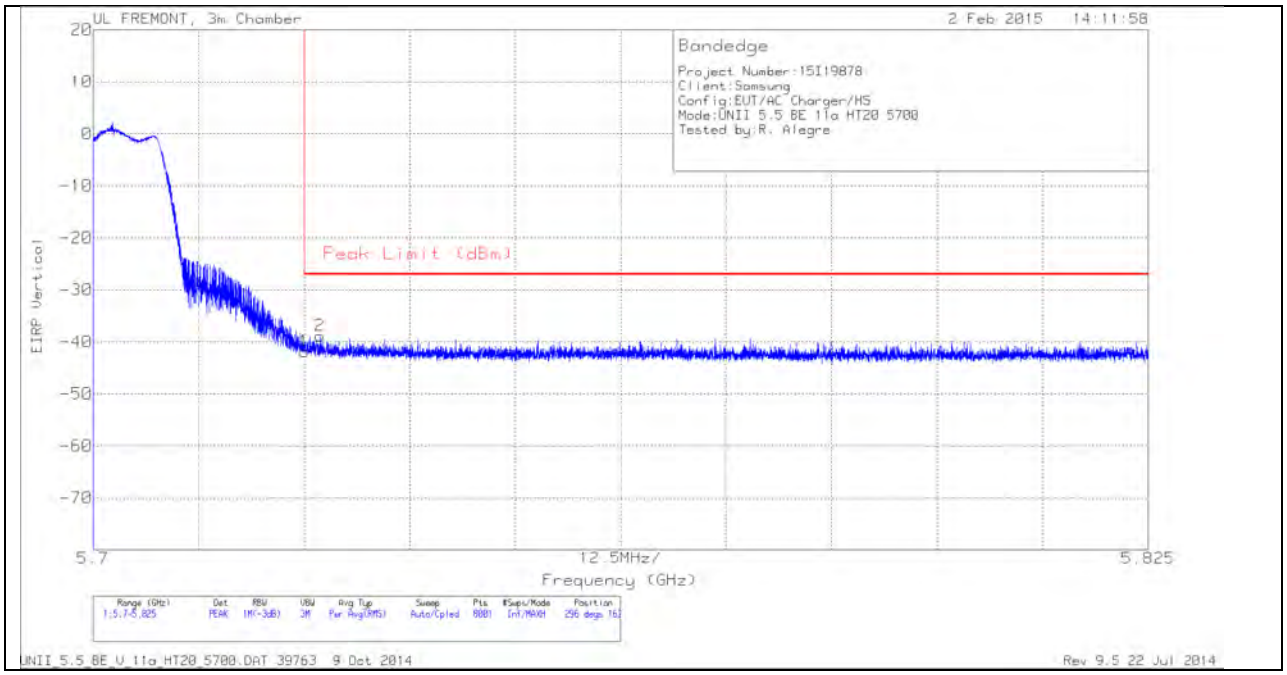
VERTICAL PEAK PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cbl/ Fltr/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	-67.35	PK	34.8	-21.1	11.8	0	-41.85	-27	-14.85	296	162	V
2	5.727	-64.32	PK	34.8	-21.1	11.8	0	-38.82	-27	-11.82	296	162	V

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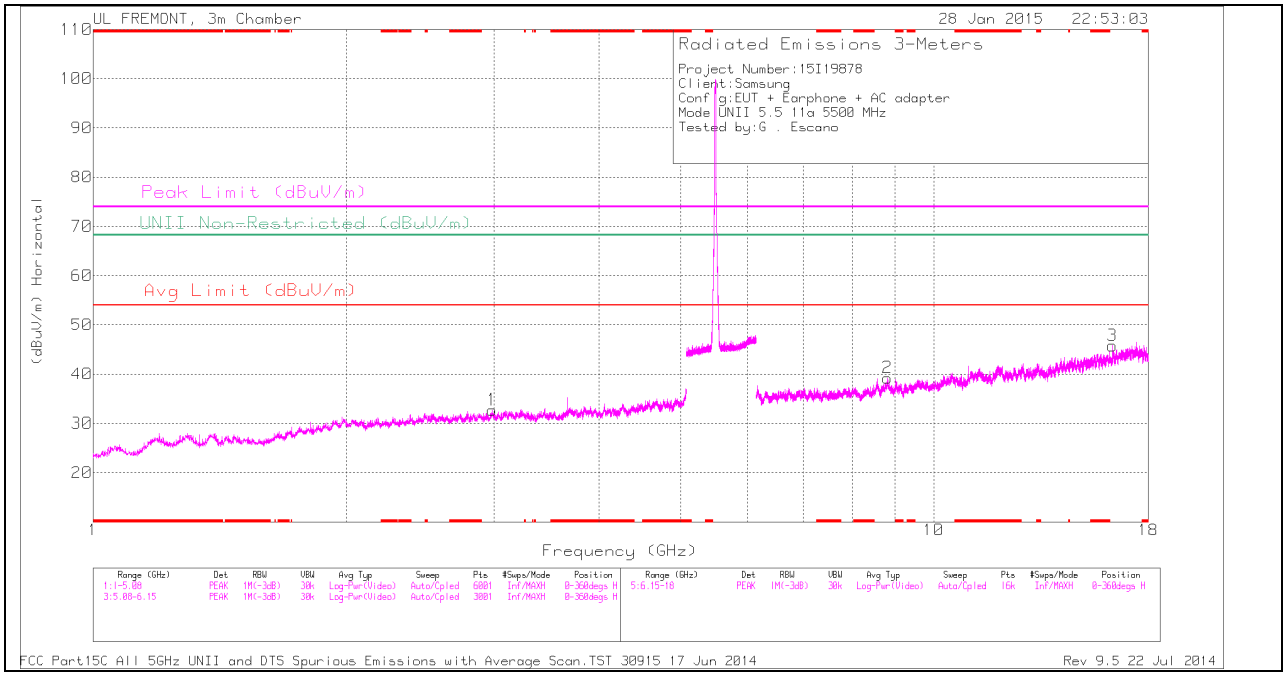
HARMONICS AND SPURIOUS EMISSIONS

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.

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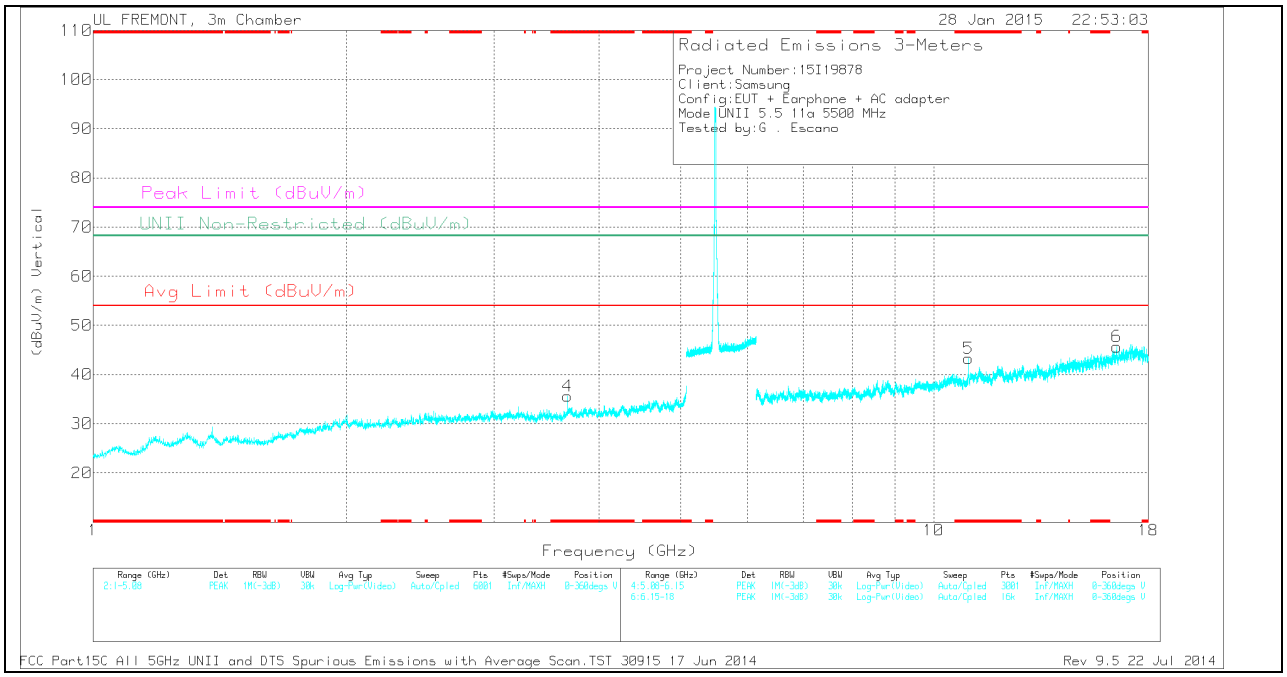
LOW CHANNEL VERTICAL



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

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LOW CHANNEL DATA

TRACE MARKERS

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
4	* 3.667	33.39	PK	32.9	-30.7	0	35.59	-	-	74	-38.41	-	-	0-360	200	V
5	* 10.999	30.85	PK	37.9	-25.5	0	43.25	-	-	74	-30.75	-	-	0-360	200	V
1	2.984	31.72	PK	32.7	-31.7	0	32.72	-	-	-	-	68.2	-35.48	0-360	100	H
2	8.811	28.95	PK	35.9	-25.6	0	39.25	-	-	-	-	68.2	-28.95	0-360	200	H
3	16.323	30.19	PK	40.6	-25	0	45.79	-	-	-	-	68.2	-22.41	0-360	200	H
6	16.512	29.66	PK	41	-25	0	45.66	-	-	-	-	68.2	-22.54	0-360	200	V

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fl tr/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
* 3.667	42.42	PK1	32.9	-30.7	0	44.62	-	-	74	-29.38	-	-	282	336	V
* 3.667	34.64	AD1	32.9	-30.7	.31	37.16	54	-16.84	-	-	-	-	282	336	V
* 10.997	39.56	PK1	37.9	-25.5	0	51.96	-	-	74	-22.04	-	-	227	270	V
* 11	27.98	AD1	37.9	-25.4	.31	40.8	54	-13.2	-	-	-	-	227	270	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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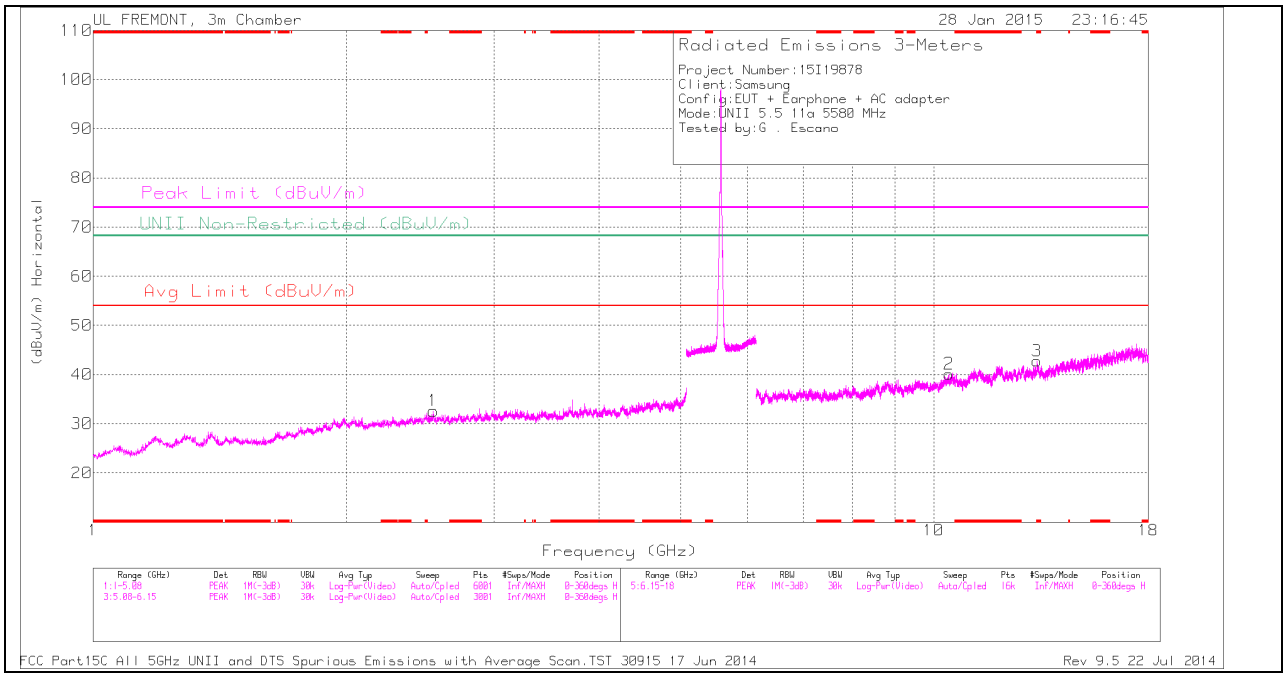
MID CHANNEL HORIZONTAL



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

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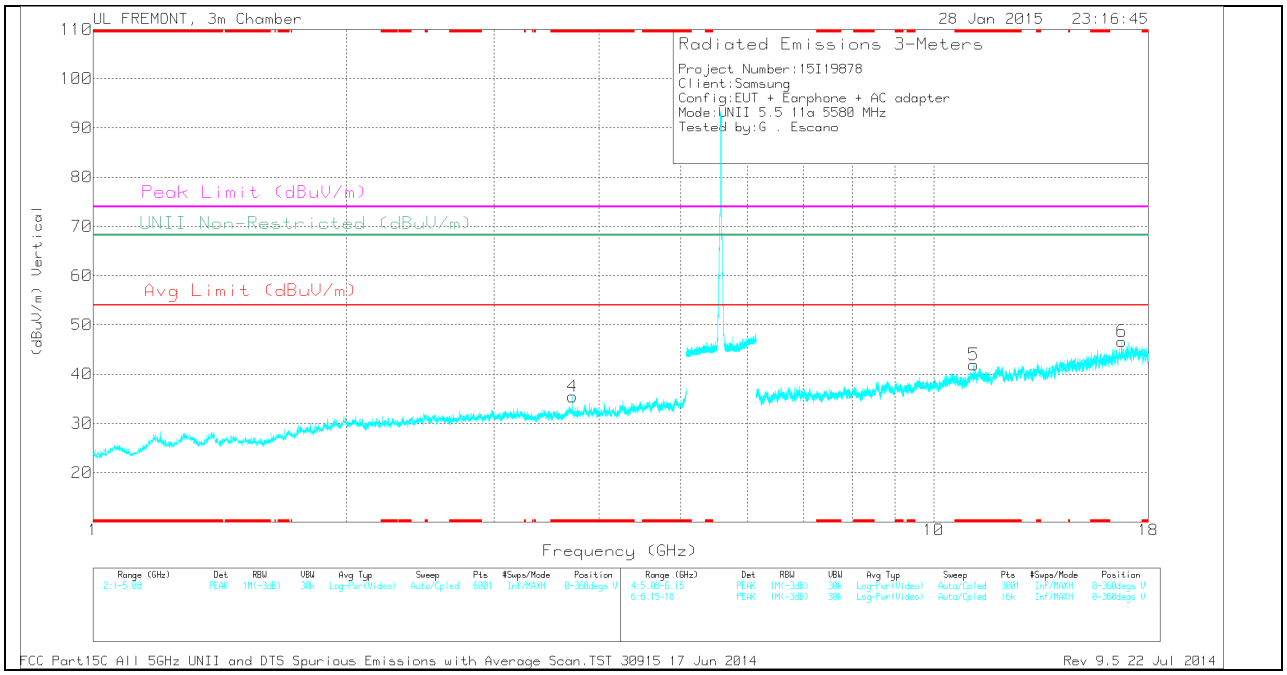
MID CHANNEL VERTICAL



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

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MID CHANNEL DATA

TRACE MARKERS

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
4	* 3.72	33.55	PK	33	-31.1	0	35.45	-	-	74	-38.55	-	-	0-360	100	V
3	* 13.276	29.86	PK	39	-26.1	0	42.76	-	-	74	-31.24	-	-	0-360	100	H
5	* 11.164	29.81	PK	37.9	-25.8	0	41.91	-	-	74	-32.09	-	-	0-360	200	V
1	2.54	32.22	PK	32.4	-32	0	32.62	-	-	-	-	68.2	-35.58	0-360	100	H
2	10.427	28.41	PK	37.3	-25.6	0	40.11	-	-	-	-	68.2	-28.09	0-360	100	H
6	16.743	30.65	PK	41.2	-25.2	0	46.65	-	-	-	-	68.2	-21.55	0-360	200	V

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fl tr/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
* 3.72	42.9	PK1	33	-31.1	0	44.8	-	-	74	-29.2	-	-	109	320	V
* 3.72	34.97	AD1	33	-31.1	.31	37.19	54	-16.81	-	-	-	-	109	320	V
* 13.278	39.23	PK1	39	-26.1	0	52.13	-	-	74	-21.87	-	-	351	230	H
* 13.278	26.78	AD1	39	-26.1	.31	40	54	-14	-	-	-	-	351	230	H
* 11.162	38.87	PK1	37.9	-25.8	0	50.97	-	-	74	-23.03	-	-	276	247	V
* 11.163	26.47	AD1	37.9	-25.8	.31	38.89	54	-15.11	-	-	-	-	276	247	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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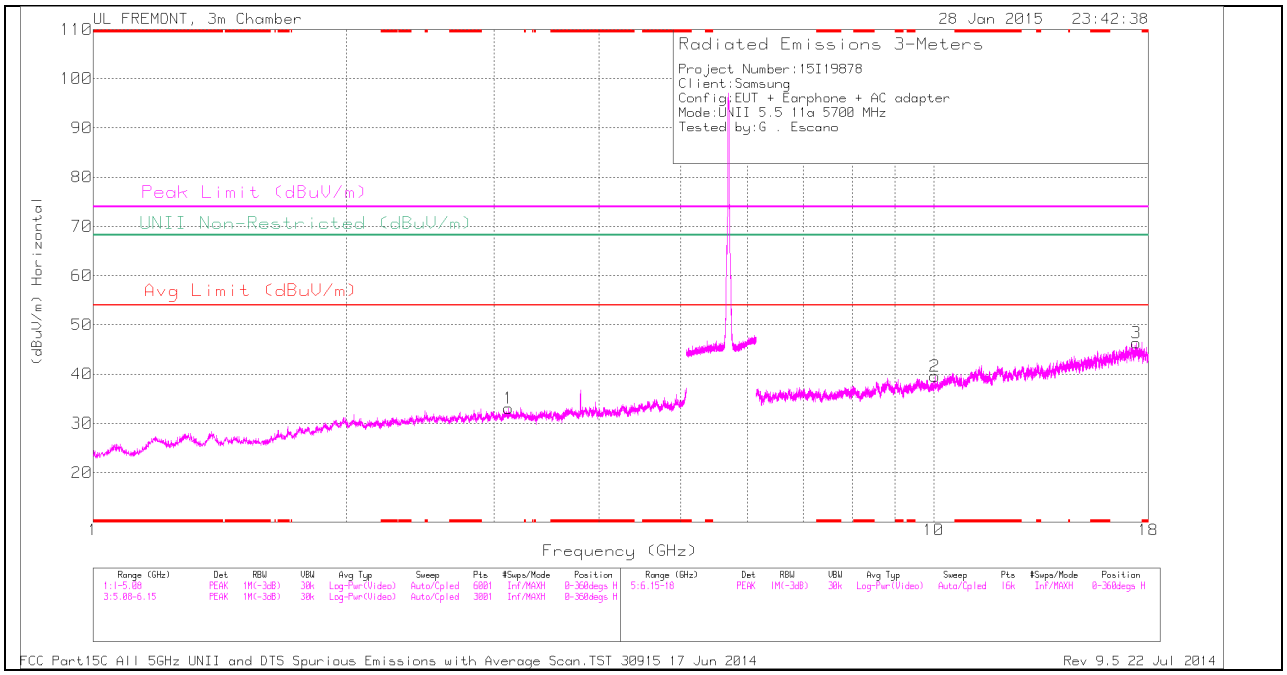
HIGH CHANNEL HORIZONTAL



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

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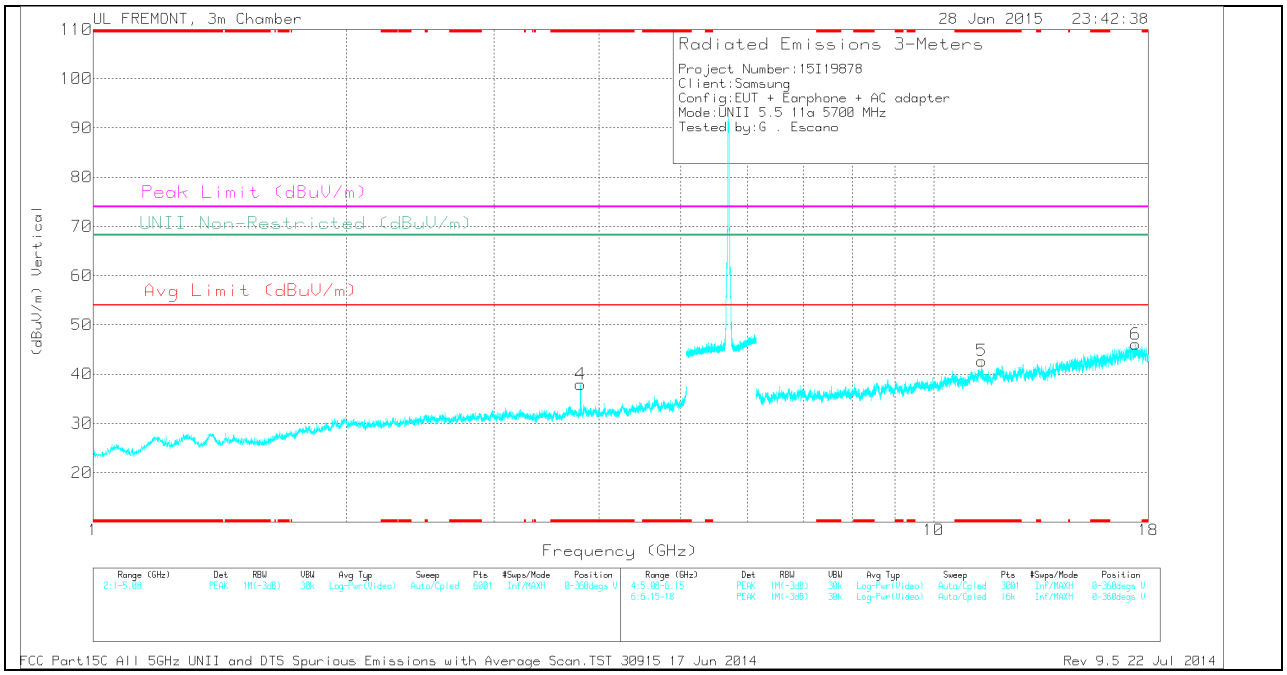
HIGH CHANNEL VERTICAL



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

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HIGH CHANNEL DATA

TRACE MARKERS

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
4	* 3.8	36.45	PK	33.1	-31.6	0	37.95	-	-	74	-36.05	-	-	0-360	200	V
5	* 11.4	30.5	PK	38.2	-26	0	42.7	-	-	74	-31.3	-	-	0-360	200	V
1	3.122	32.35	PK	32.7	-32	0	33.05	-	-	-	-	68.2	-35.15	0-360	100	H
2	10.034	27.48	PK	36.9	-24.8	0	39.58	-	-	-	-	68.2	-28.62	0-360	200	H
6	17.391	27.87	PK	41.4	-23.2	0	46.07	-	-	-	-	68.2	-22.13	0-360	200	V
3	17.422	27.02	PK	41.4	-22.1	0	46.32	-	-	-	-	68.2	-21.88	0-360	100	H

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fl tr/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
* 3.8	43.22	PK1	33.1	-31.6	0	44.72	-	-	74	-29.28	-	-	358	288	V
* 3.8	34.92	AD1	33.1	-31.6	.31	36.74	54	-17.26	-	-	-	-	358	288	V
* 11.401	39.33	PK1	38.2	-26.1	0	51.43	-	-	74	-22.57	-	-	239	217	V
* 11.4	27.79	AD1	38.2	-26	.31	40.31	54	-13.69	-	-	-	-	239	217	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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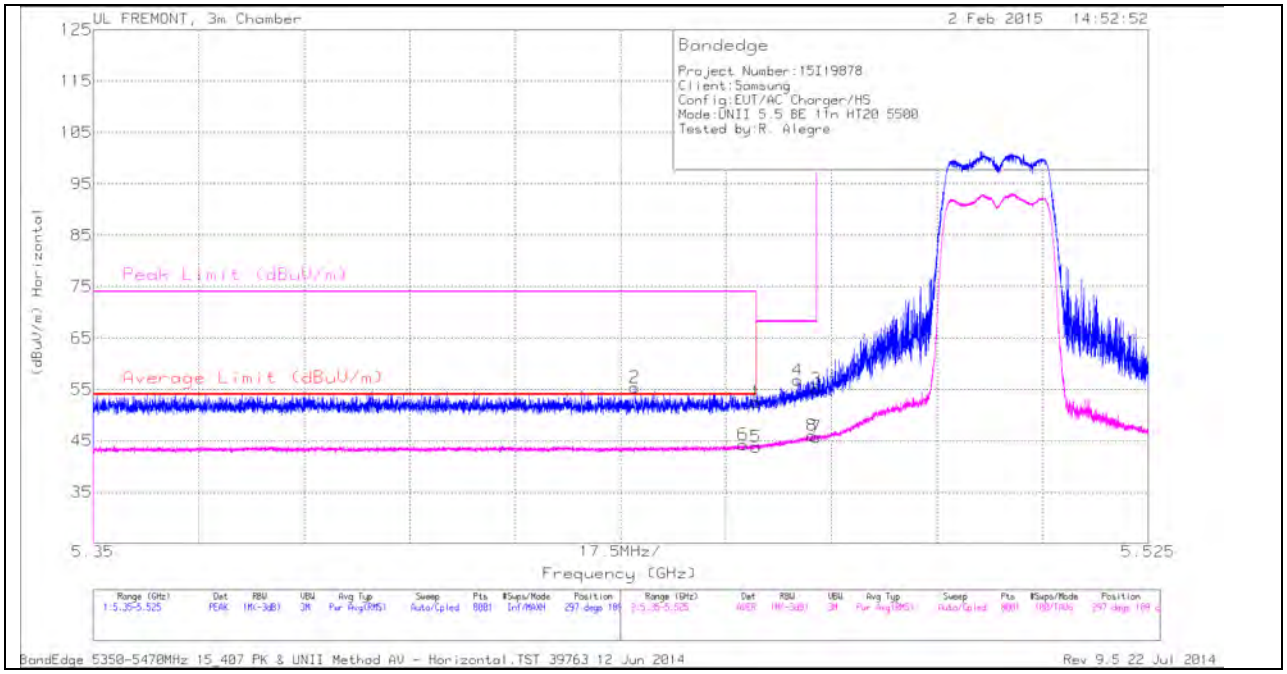
11.3.2. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.5 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.44	42.26	PK	34.6	-21.5	0	55.36	-	-	74	-18.64	297	189	H
6	5.458	30.75	RMS	34.6	-21.4	.33	44.27	54	-9.73	-	-	297	189	H
1	5.46	39.27	PK	34.6	-21.4	0	52.47	-	-	74	-21.53	297	189	H
5	5.46	30.29	RMS	34.6	-21.4	.33	43.81	54	-10.19	-	-	297	189	H
4	5.467	43.51	PK	34.6	-21.3	0	56.81	-	-	68.2	-11.39	297	189	H
8	5.469	32.4	RMS	34.6	-21.3	.33	46.02	-	-	-	-	297	189	H
3	5.47	41.8	PK	34.6	-21.3	0	55.1	-	-	68.2	-13.1	297	189	H
7	5.47	32.09	RMS	34.6	-21.3	.33	45.71	-	-	-	-	297	189	H

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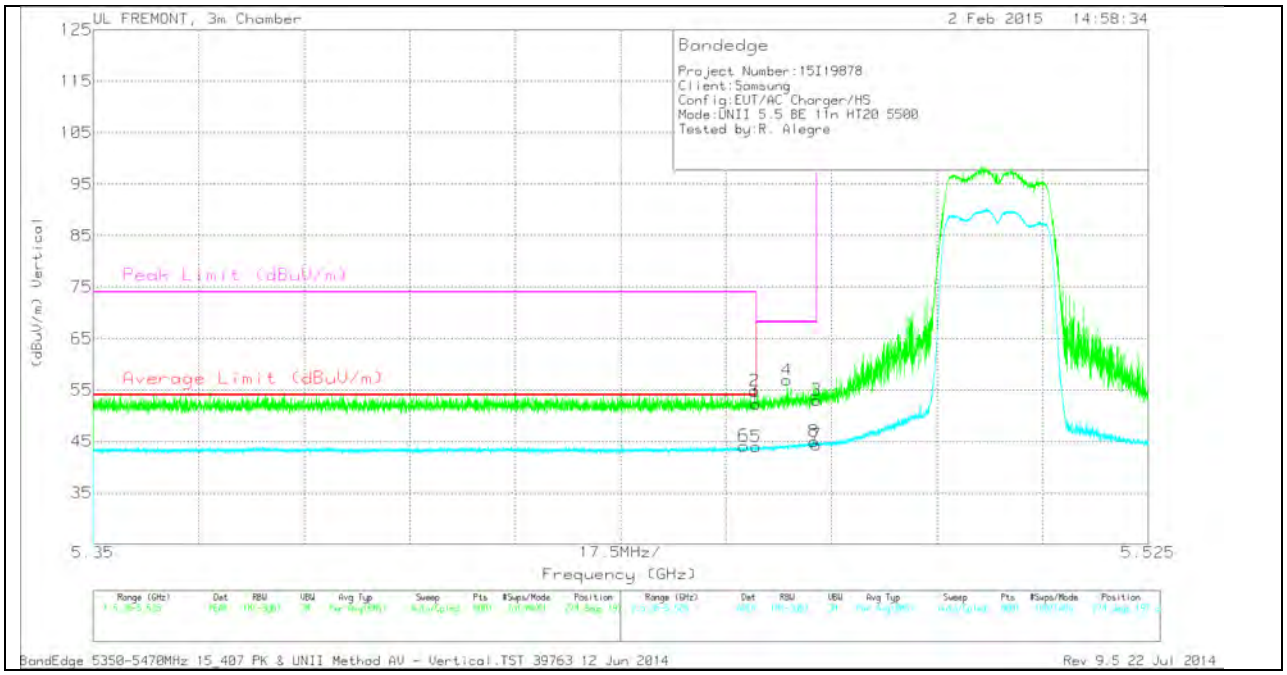
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6	5.458	30.61	RMS	34.6	-21.4	.33	44.13	54	-9.87	-	-	274	197	V
1	5.46	39.1	PK	34.6	-21.4	0	52.3	-	-	74	-21.7	274	197	V
2	5.46	41.6	PK	34.6	-21.4	0	54.8	-	-	74	-19.2	274	197	V
5	5.46	30.46	RMS	34.6	-21.4	.33	43.98	54	-10.02	-	-	274	197	V
4	5.465	43.61	PK	34.6	-21.3	0	56.91	-	-	68.2	-11.29	274	197	V
3	5.47	39.74	PK	34.6	-21.3	0	53.04	-	-	68.2	-15.16	274	197	V
7	5.47	30.72	RMS	34.6	-21.3	.33	44.34	-	-	-	-	274	197	V
8	5.47	31.38	RMS	34.6	-21.3	.33	45	-	-	-	-	274	197	V

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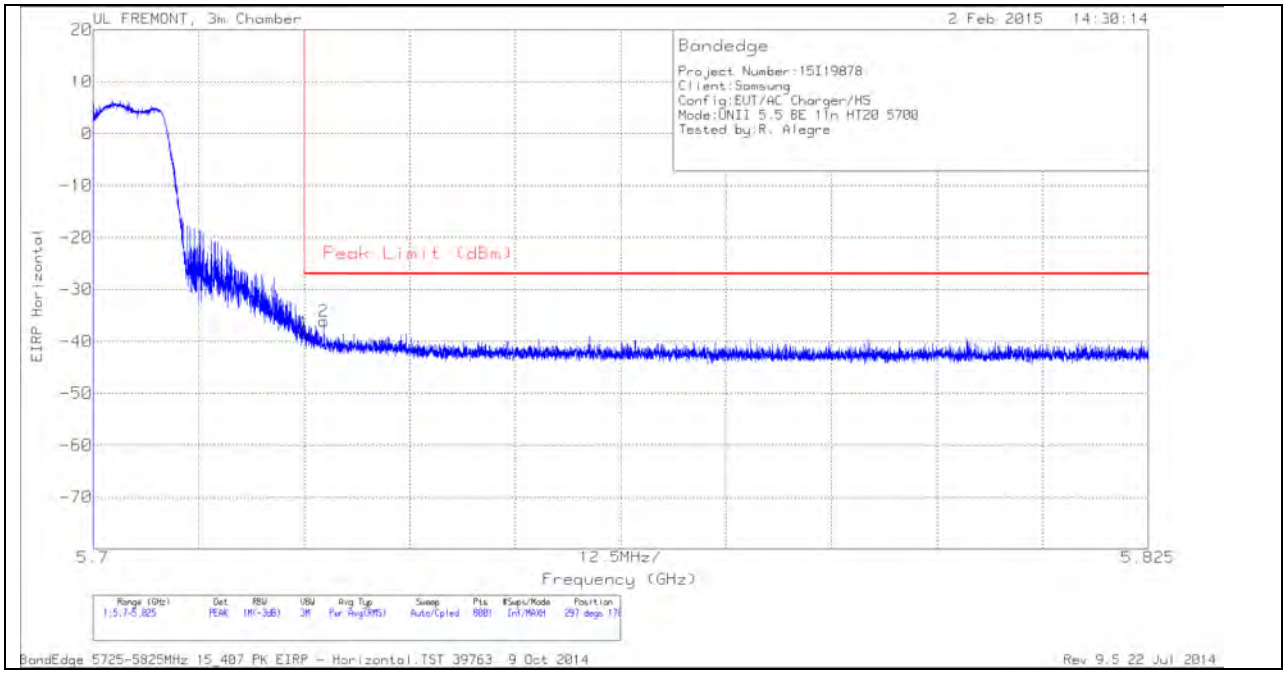
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cbl/ Fltr/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	-63.87	PK	34.8	-21.1	11.8	0	-38.37	-27	-11.37	297	178	H
2	5.727	-61.63	PK	34.8	-21.1	11.8	0	-36.13	-27	-9.13	297	178	H

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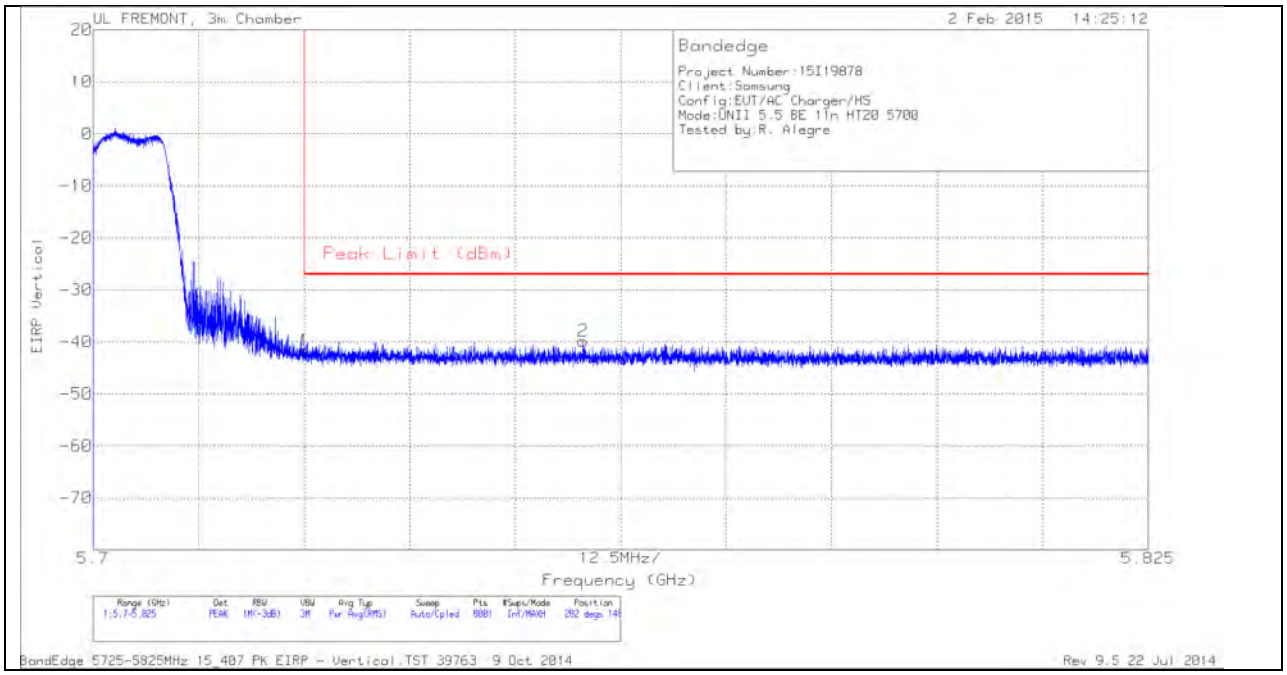
VERTICAL PEAK PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cbl/ Fltr/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	-67.14	PK	34.8	-21.1	11.8	0	-41.64	-27	-14.64	282	148	V
2	5.758	-65.23	PK	34.8	-21.2	11.8	0	-39.83	-27	-12.83	282	148	V

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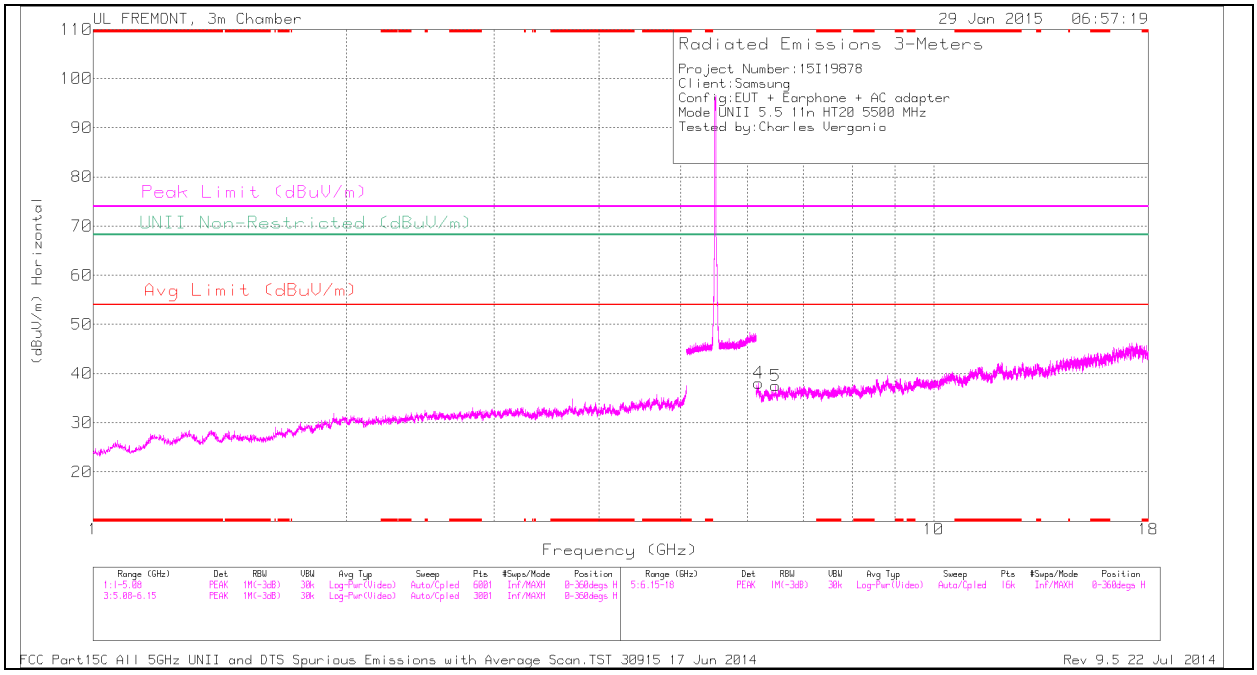
HARMONICS AND SPURIOUS EMISSIONS

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.

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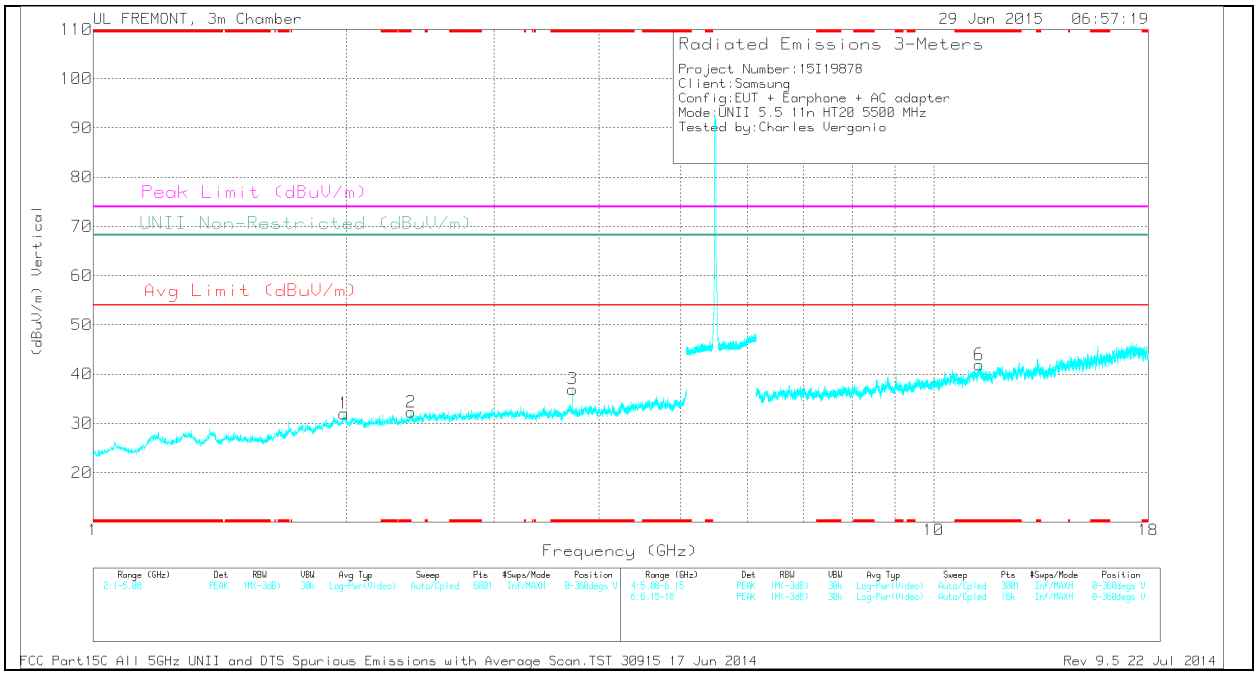
LOW CHANNEL VERTICAL



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

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LOW CHANNEL DATA

TRACE MARKERS

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
2	* 2.39	32.97	PK	32	-32.7	0	32.27	-	-	74	-41.73	-	-	0-360	100	V
3	* 3.72	35.05	PK	33	-31.1	0	36.95	-	-	74	-37.05	-	-	0-360	200	V
6	* 11.333	29.29	PK	38.1	-25.5	0	41.89	-	-	74	-32.11	-	-	0-360	200	V
1	1.987	32.49	PK	31.5	-32	0	31.99	-	-	-	-	68.2	-36.21	0-360	100	V
4	6.189	32.26	PK	35.3	-29.5	0	38.06	-	-	-	-	68.2	-30.14	0-360	100	H
5	6.488	31.44	PK	35.6	-29.5	0	37.54	-	-	-	-	68.2	-30.66	0-360	100	H

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Flt r/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
* 3.72	41.55	PK1	33	-31.1	0	43.45	-	-	74	-30.55	-	-	2	200	V
* 3.72	31.45	AD1	33	-31.1	.33	33.67	54	-20.33	-	-	-	-	2	200	V
* 3.721	41.01	PK1	33	-31.1	0	42.91	-	-	74	-31.09	-	-	0	106	V
* 3.719	28.76	AD1	33	-31.1	.33	30.98	54	-23.02	-	-	-	-	0	106	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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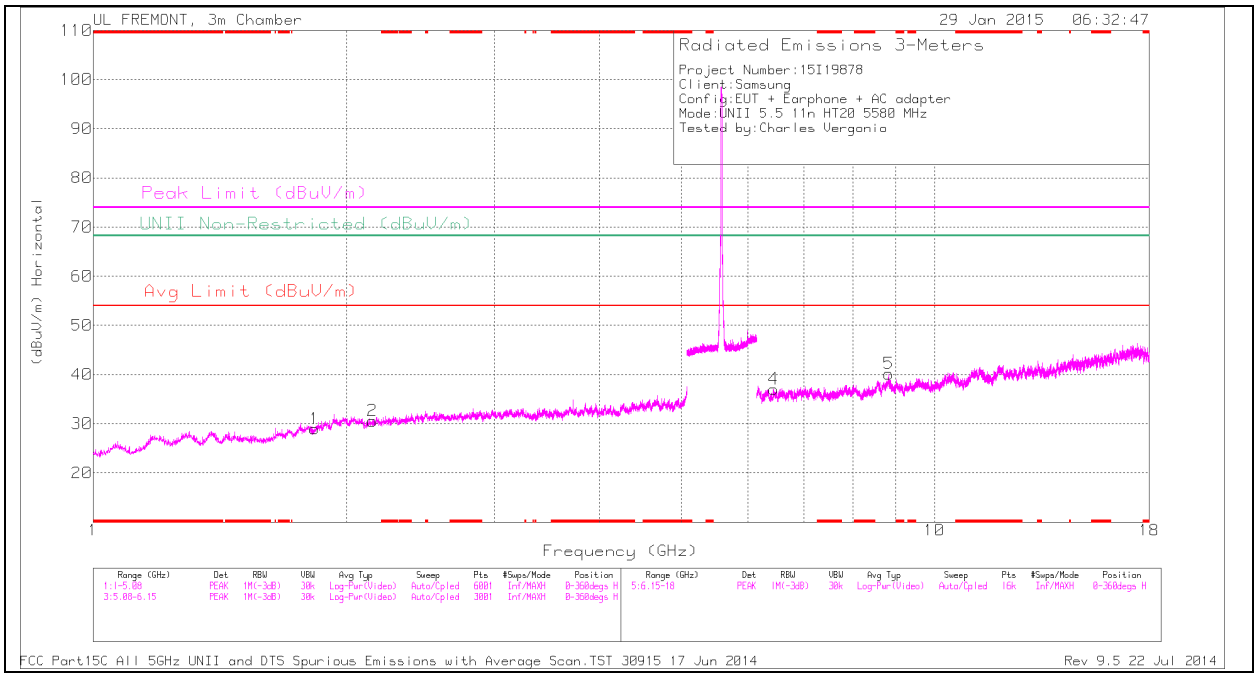
MID CHANNEL HORIZONTAL



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

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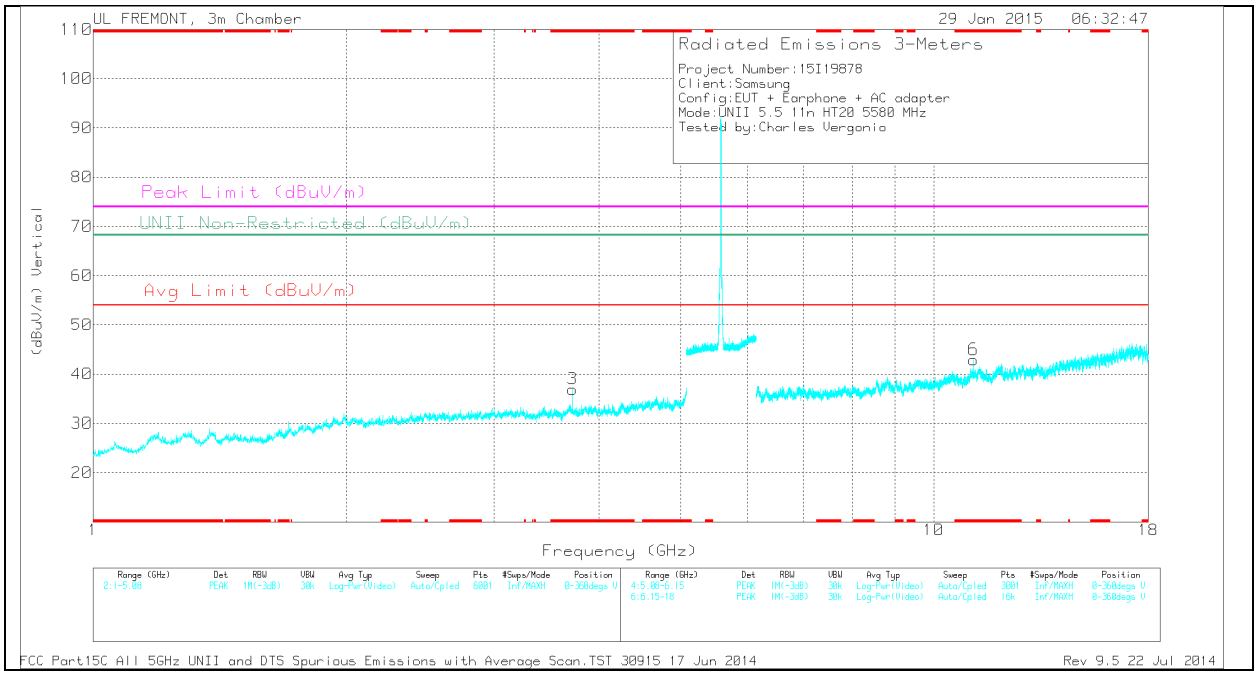
MID CHANNEL VERTICAL



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

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MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr /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
3	* 3.72	35.05	PK	33	-31.1	36.95	-	-	74	-37.05	-	-	0-360	200	V
6	* 11.159	30.84	PK	37.9	-25.8	42.94	-	-	74	-31.06	-	-	0-360	200	V
1	1.832	31.66	PK	30.5	-33.2	28.96	-	-	-	-	68.2	-39.24	0-360	200	H
2	2.149	31.88	PK	31.5	-32.8	30.58	-	-	-	-	68.2	-37.62	0-360	100	H
4	6.441	31.15	PK	35.5	-29.6	37.05	-	-	-	-	68.2	-31.15	0-360	100	H
5	8.826	30.06	PK	35.9	-25.8	40.16	-	-	-	-	68.2	-28.04	0-360	200	H

* - indicates frequency in CFR15.205/IC7.2.2 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
* 3.72	41.55	PK1	33	-31.1	0	43.45	-	-	74	-30.55	-	-	2	200	V
* 3.72	31.45	AD1	33	-31.1	.33	33.68	54	-20.32	-	-	-	-	2	200	V
* 11.16	36.61	PK1	37.9	-25.8	0	48.71	-	-	74	-25.29	-	-	2	200	V
* 11.16	25.62	AD1	37.9	-25.8	.33	38.05	54	-15.95	-	-	-	-	2	200	V

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

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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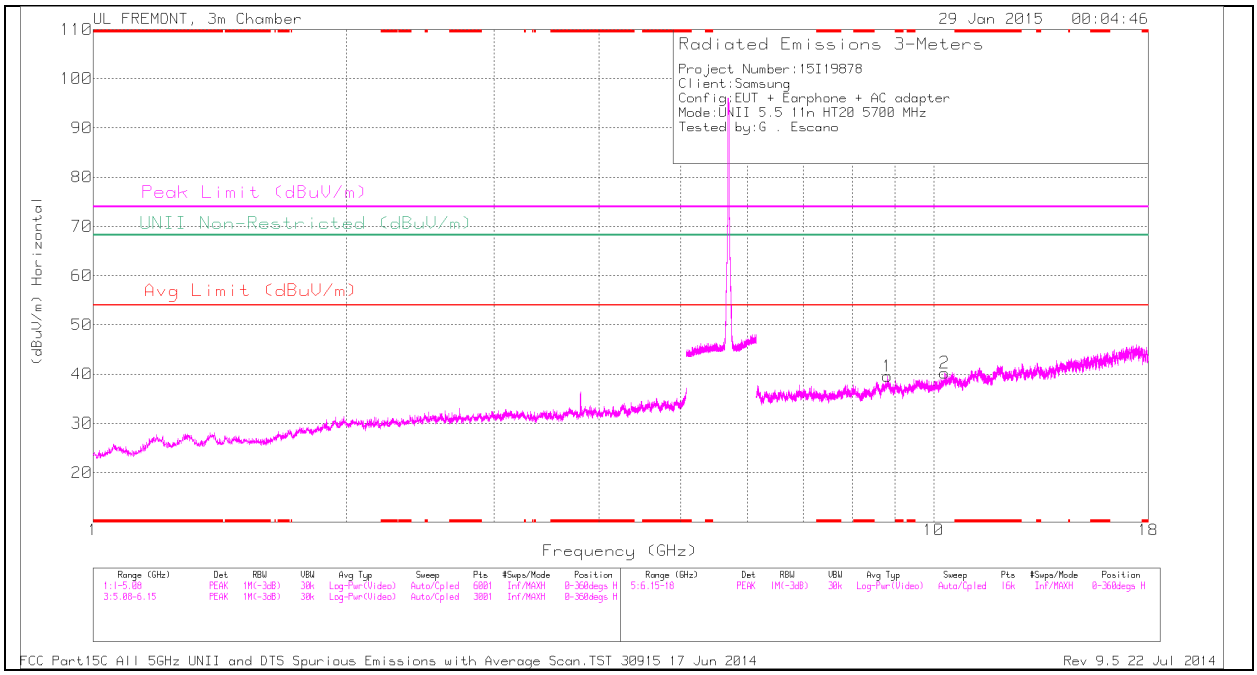
HIGH CHANNEL HORIZONTAL



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