FCC 47 CFR PART 15 SUBPART E

CERTIFICATION TEST REPORT

FOR

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

MODEL NUMBER: SM-P555

FCC ID: A3LSMP555

REPORT NUMBER: 15I19961-E5

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Prepared for

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	**SAMSUNG ELECTRONICS CO., LTD.**
EUT DESCRIPTION:	**GSM/WCDMA/LTE Tablet with Bluetooth, DTS/UNII a/b/g/n, and ANT+**
MODEL NUMBER:	**SM-P555**
SERIAL NUMBER:	**Radiated(2049241), Conducted(2058070)**
DATE TESTED:	**FEBRUARY 5 – 23, 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, DTS/UNII a/b/g/n and ANT+.

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	12.55	17.99
5260 - 5320	802.11a	12.58	18.11
5500 - 5700	802.11a	12.7	18.62
5745 - 5825	802.11a	12.63	18.32
5180 - 5240	802.11n HT20	12.41	17.42
5260 - 5320	802.11n HT20	12.63	18.32
5500 - 5700	802.11n HT20	12.82	19.14
5745 - 5825	802.11n HT20	12.48	17.70
5190 - 5230	802.11n HT40	10.46	11.12
5270 - 5310	802.11n HT40	10.27	10.64
5510 - 5670	802.11n HT40	11.06	12.76
5755 - 5795	802.11n HT40	11	12.59

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of -2.02 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	EP-TA12EWE	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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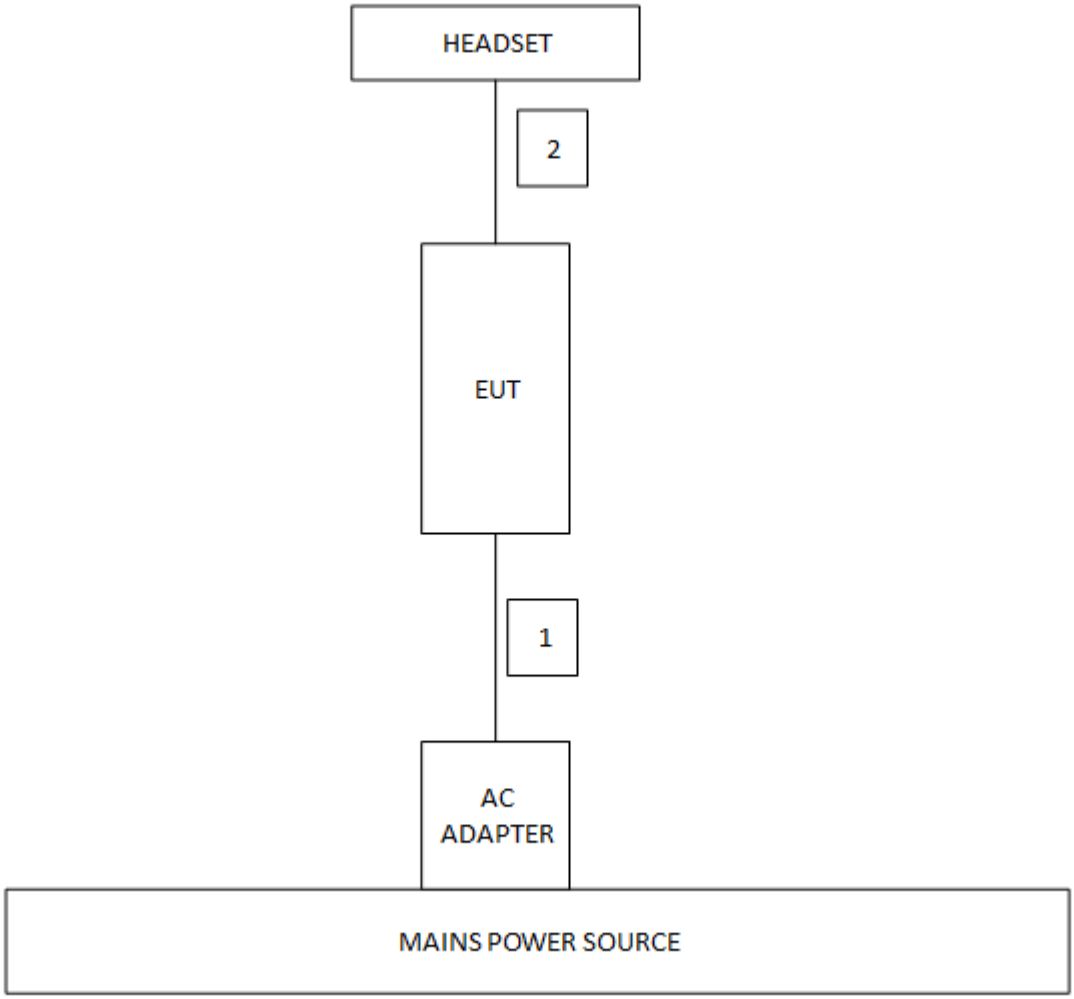
SETUP DIAGRAM FOR TESTS



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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	47.97MHz
15.407	6dB Band width (5.8Ghz)	500KHz		Pass	16.36MHz
15.407 (a)(2)	TX Cond. Power5.15-2.25, 5.25-5.35 & 5.47-5.725	<24dBm or 11+10Log(OBW)		Pass	12.82dBm
15.407 (a)(3)	TX Cond. Power 5.725-5.825	< 30dBm or 17+10Log(OBW)		Pass	12.63dBm
15.407 (a)(5)	PSD (5.2,5.3,5.5GHz)	<11dBm		Pass	1.14dBm
15.407 (a)(5)	PSD (5.8GHz)	30dBm per 500kHz		Pass	-1.72dBm
15.207 (a)	AC Power Line conducted emissions	Section 10	Radiated	Pass	43.43dBuV(PK)
15.407 (b) & 15.209	Radiated Spurious Emission	< 54dBuV/m		Pass	44.4dBuV/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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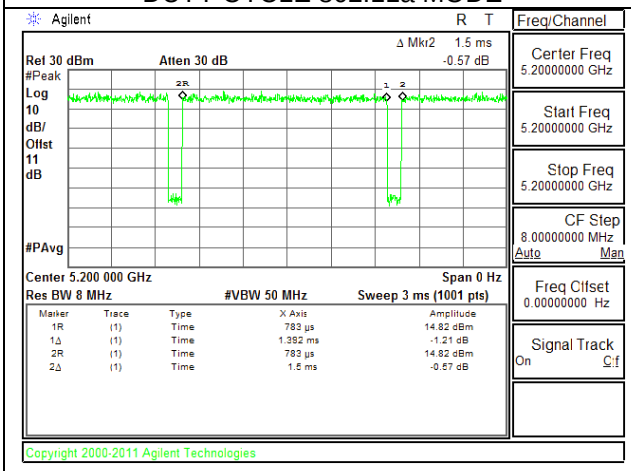
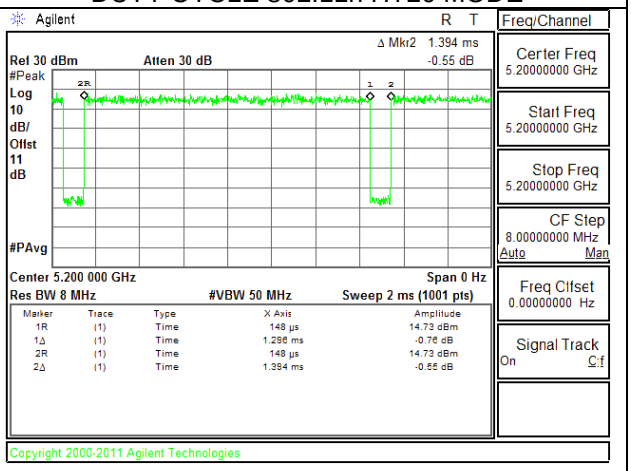
ON TIME AND DUTY CYCLE RESULT AND PLOTS

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	1.39	1.50	0.928	92.8%	0.32	0.718
802.11n HT20	1.30	1	0.930	93.0%	0.32	0.772
802.11n HT40	0.64	1	0.864	86.4%	0.64	1.575

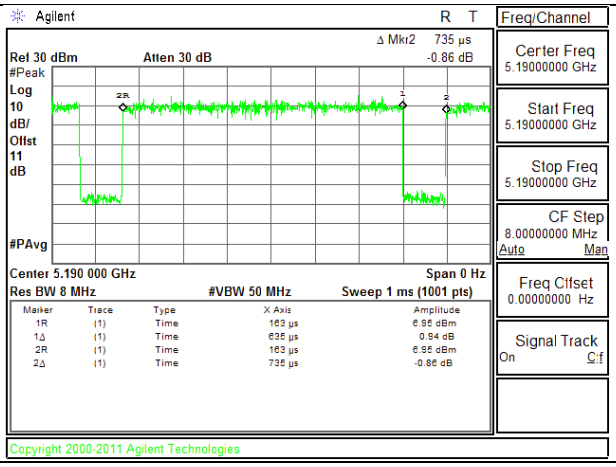
DUTY CYCLE 802.11a MODE



DUTY CYCLE 802.11n HT20 MODE



DUTY CYCLE 802.11n HT40 MODE



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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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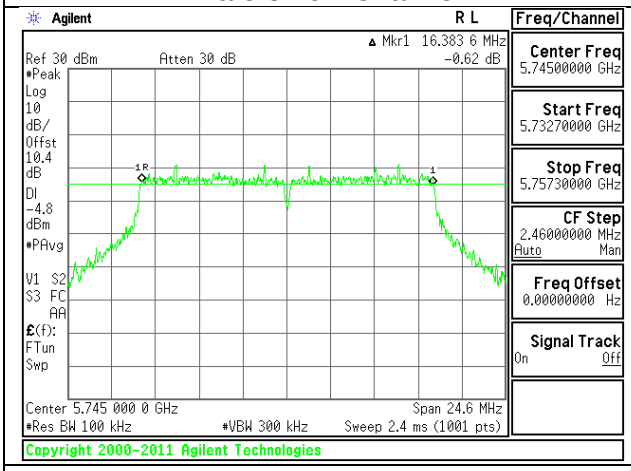
6 dB BANDWIDTH PLOTS AND TABLE

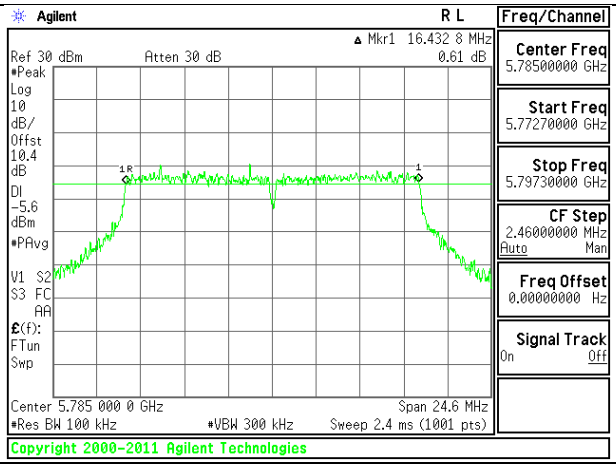
802.11a MODE IN THE 5.8 GHz BAND TEST RESULT TABLE

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	16.400	0.5
Mid	5785	16.400	0.5
High	5825	16.360	0.5
Worst		16.400	

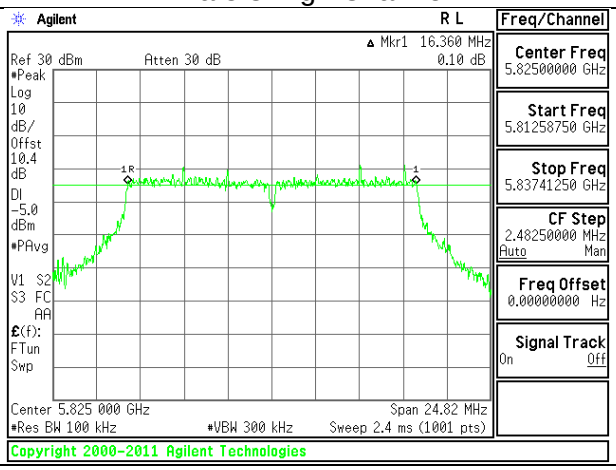
11a 5.8 Low Channel



11a 5.8 Mid Channel



11a 5.8 High Channel



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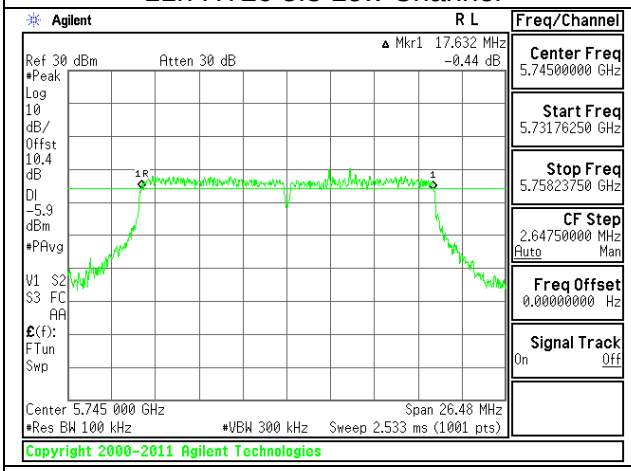
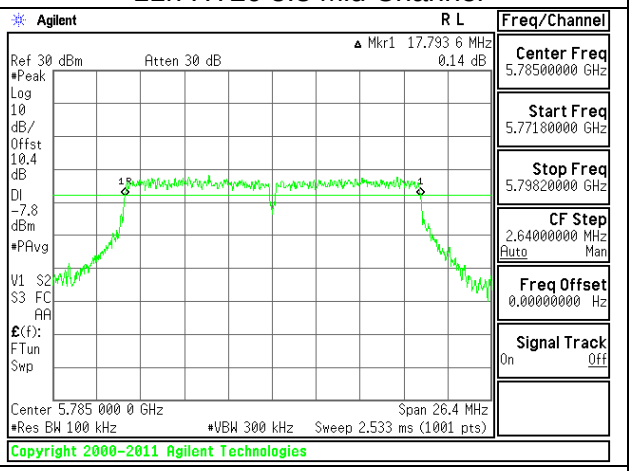
802.11n HT20 MODE IN THE 5.8 GHz BAND TEST RESULT TABLE

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	17.630	0.5
Mid	5785	17.790	0.5
High	5825	17.820	0.5
Worst		17.820	

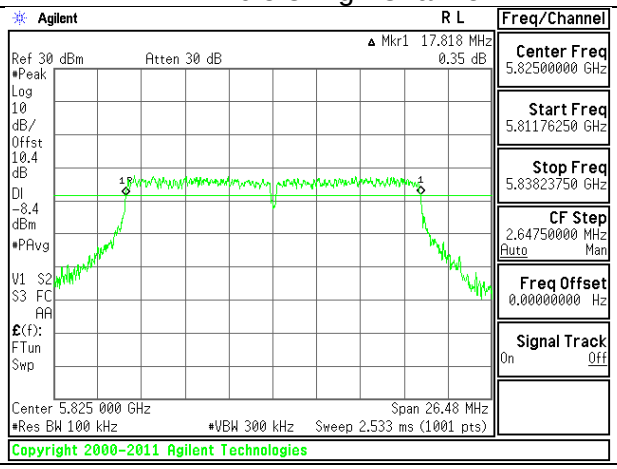
11n HT20 5.8 Low Channel



11n HT20 5.8 Mid Channel



11n HT20 5.8 High Channel



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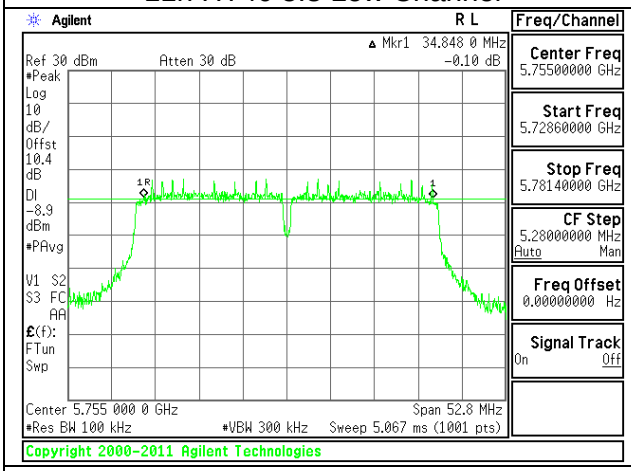
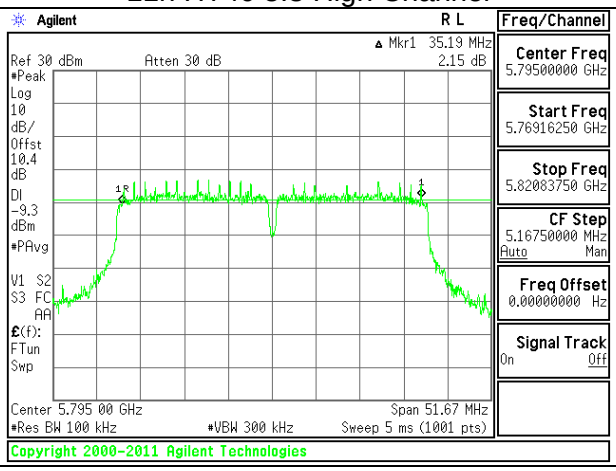
802.11n HT40 MODE IN THE 5.8 GHz BAND TEST RESULT TABLE

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5755	34.850	0.5
High	5795	35.190	0.5
Worst		35.190	

11n HT40 5.8 Low Channel



11n HT40 5.8 High Channel



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NOTE:

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10.2. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

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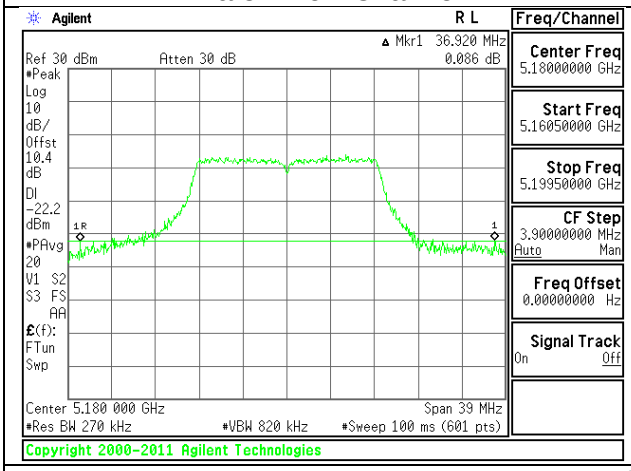
26 dB BANDWIDTH PLOTS AND TABLE

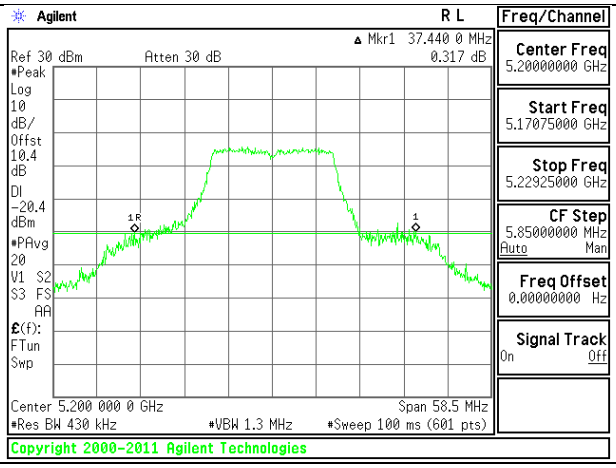
802.11a MODE IN THE 5.2 GHz BAND TEST RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5180	36.92
Mid	5200	37.44
High	5240	25.54
Worst		37.44

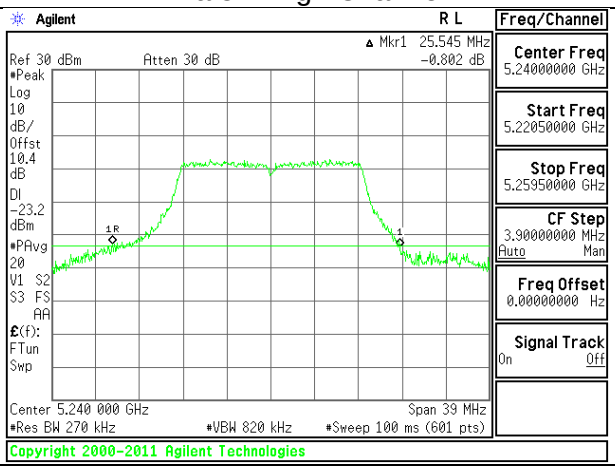
11a 5.2 Low Channel



11a 5.2 Mid Channel



11a 5.2 High Channel



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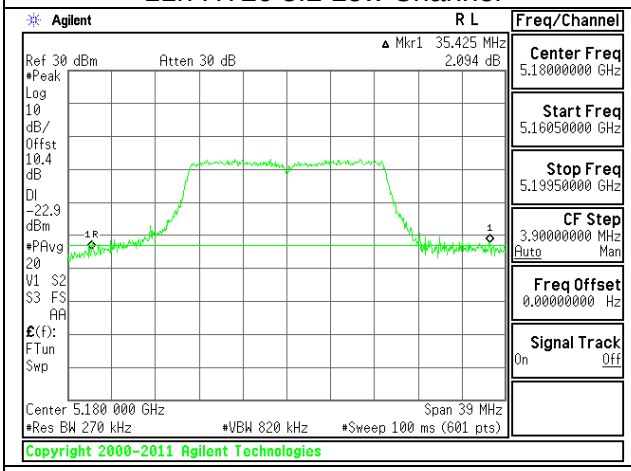
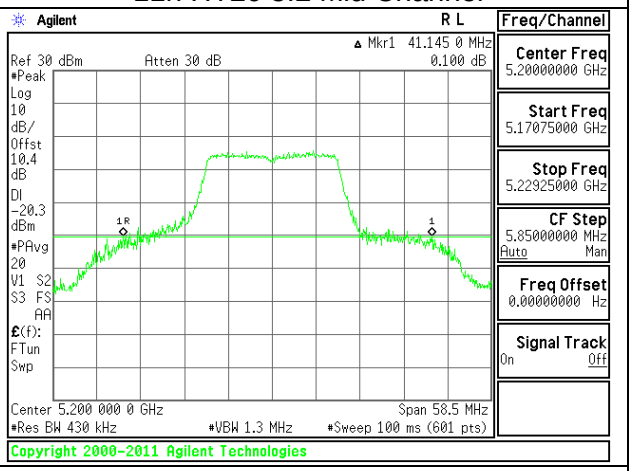
802.11n HT20 MODE IN THE 5.2 GHz BAND TEST RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5180	35.42
Mid	5200	41.14
High	5240	27.88
Worst		41.14

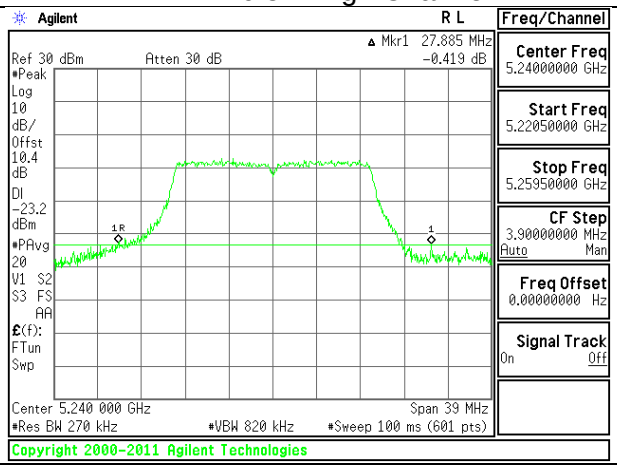
11n HT20 5.2 Low Channel



11n HT20 5.2 Mid Channel



11n HT20 5.2 High Channel



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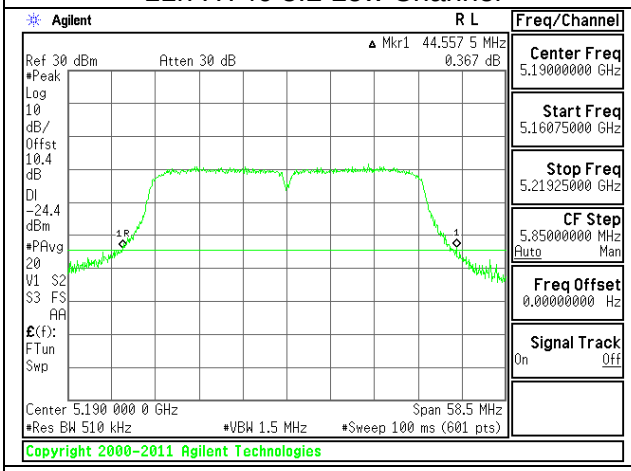
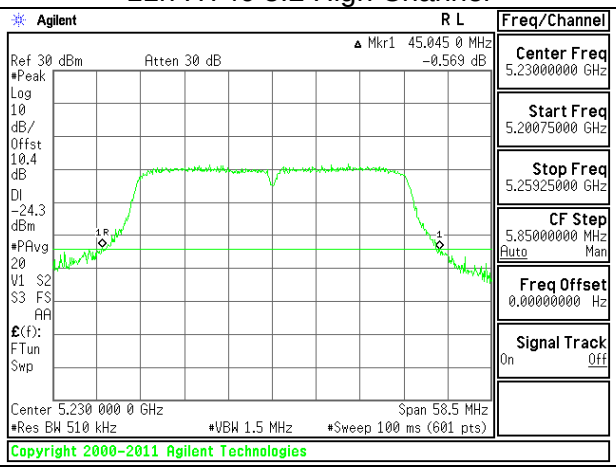
802.11n HT40 MODE IN THE 5.2 GHz BAND TEST RESULT TABLE

Channel	Frequency (MHz)	26dB Bandwidth (MHz)
Low	5190	44.55
Mid	5230	45.05
Worst		45.05

11n HT40 5.2 Low Channel



11n HT40 5.2 High Channel



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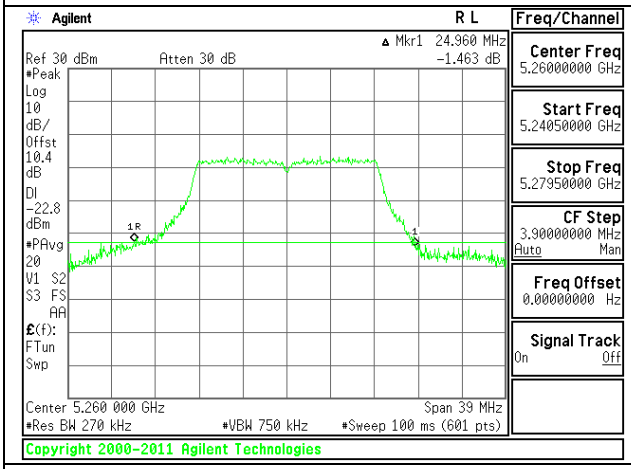
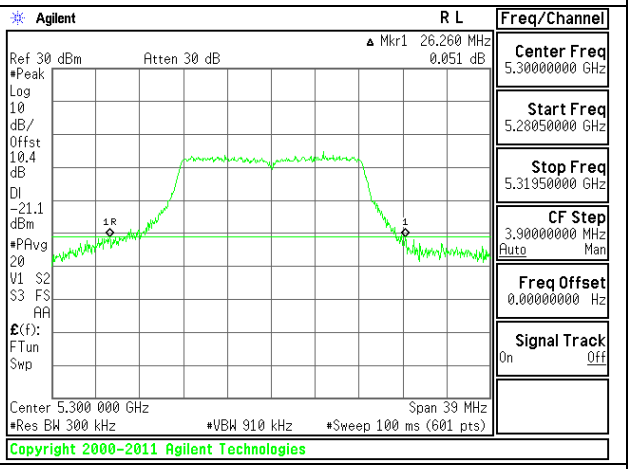
802.11a MODE IN THE 5.3 GHz BAND TEST RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5260	24.96
Mid	5300	26.26
High	5320	31.72
Worst		31.72

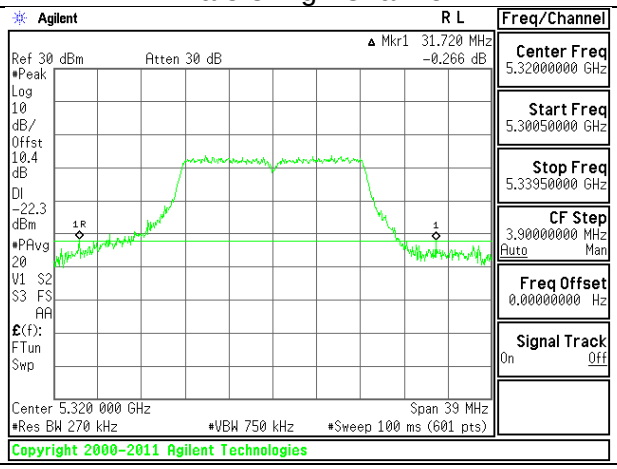
11a 5.3 Low Channel



11a 5.3 Mid Channel



11a 5.3 High Channel



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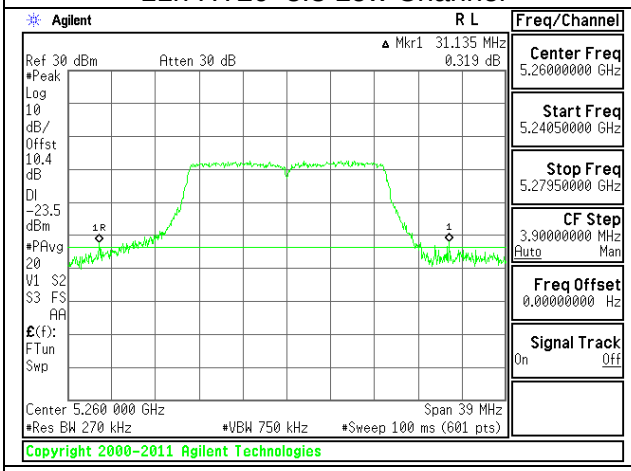
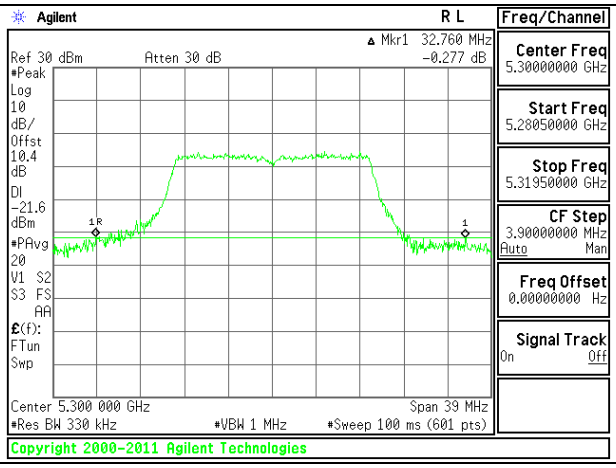
802.11n HT20 MODE IN THE 5.3 GHz BAND TEST RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5260	31.14
Mid	5300	32.76
High	5320	29.58
Worst		32.76

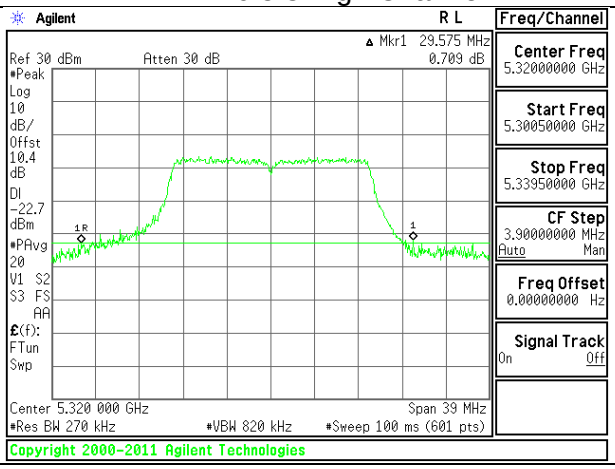
11n HT20 5.3 Low Channel



11n HT20 5.3 Mid Channel



11n HT20 5.3 High Channel



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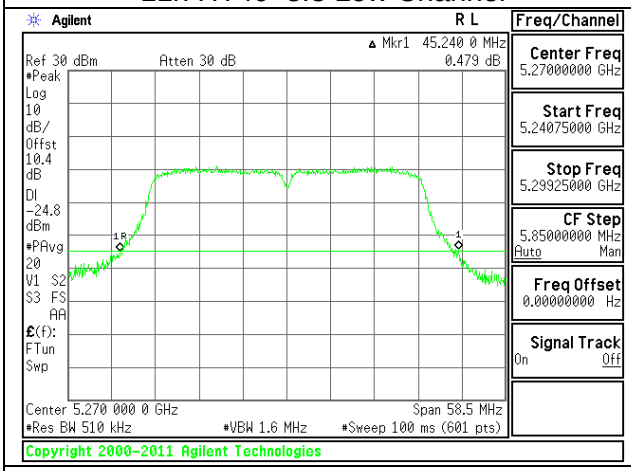
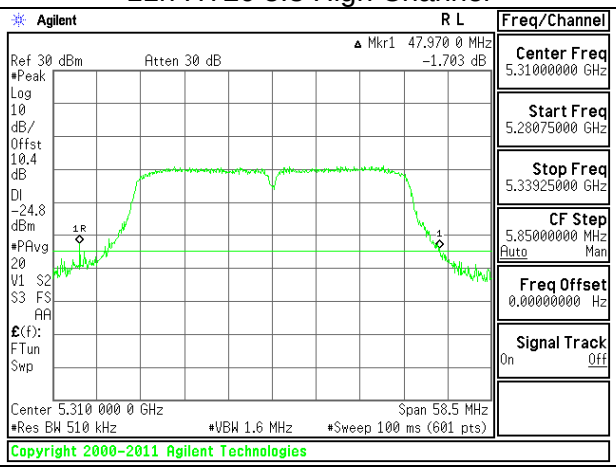
802.11n HT40 MODE IN THE 5.3 GHz BAND TEST RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5270	45.24
High	5310	47.97
Worst		47.97

11n HT40 5.3 Low Channel



11n HT20 5.3 High Channel



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NOTE:

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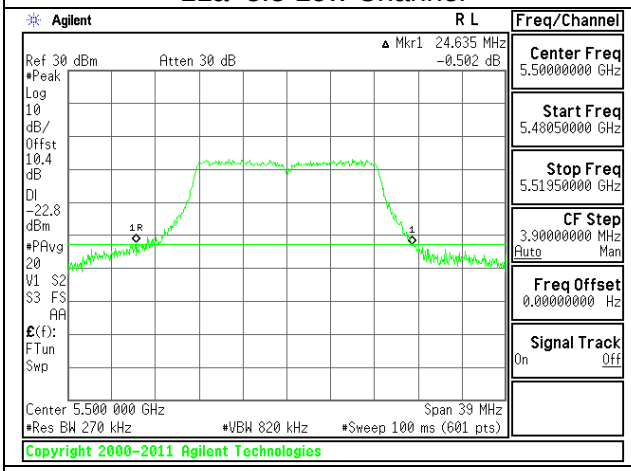
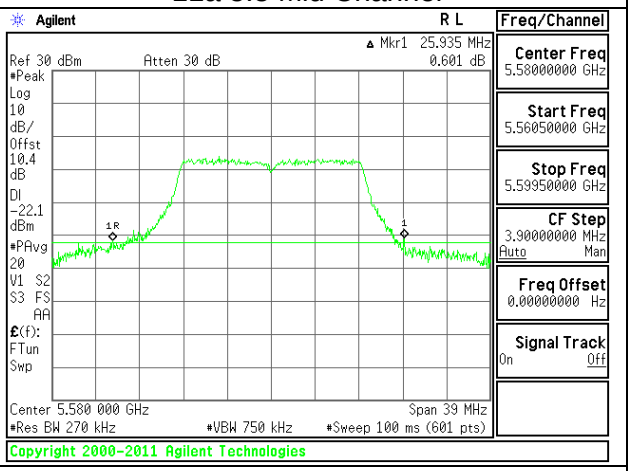
802.11a MODE IN THE 5.5 GHz BAND TEST RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5500	24.64
Mid	5580	25.94
High	5700	26.91
Worst		26.91

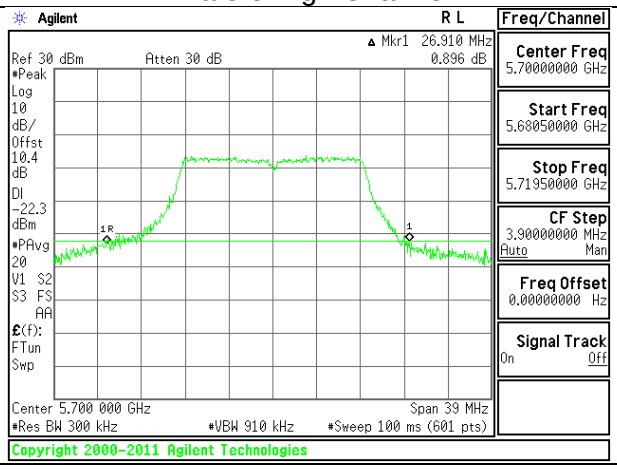
11a 5.5 Low Channel



11a 5.5 Mid Channel



11a 5.5 High Channel



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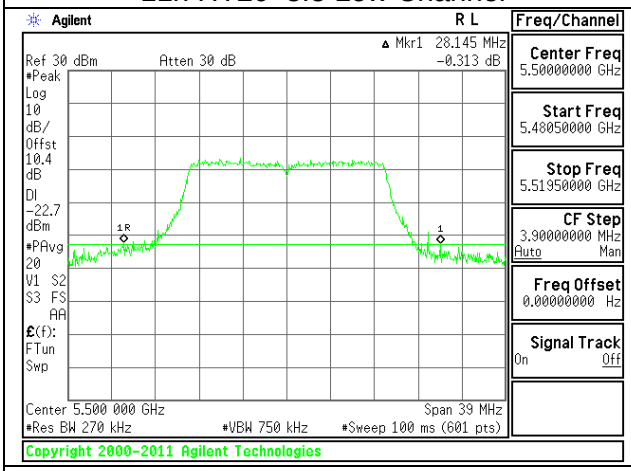
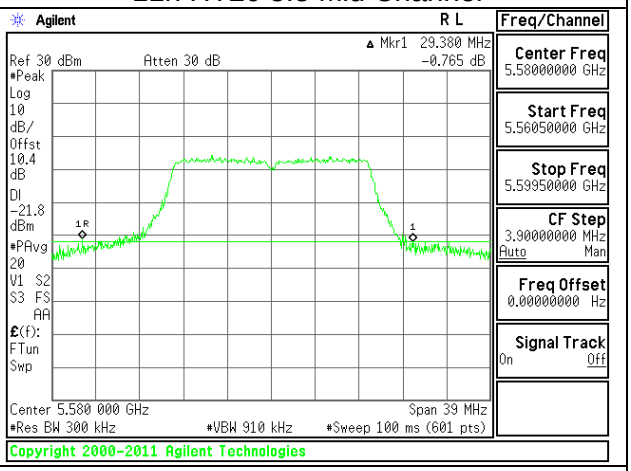
802.11n HT20 MODE IN THE 5.5 GHz BAND TEST RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5500	28.15
Mid	5580	29.38
High	5700	33.93
Worst		33.93

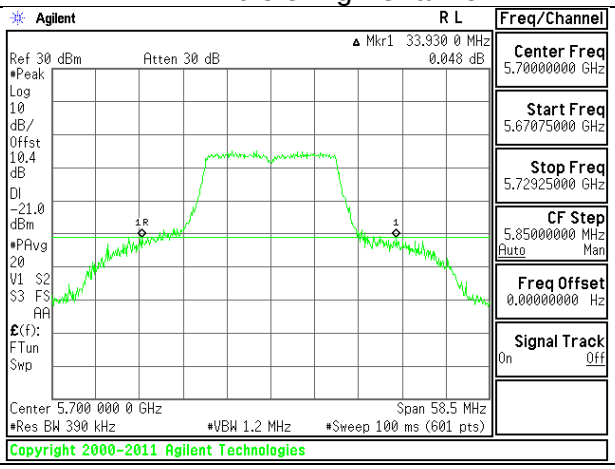
11n HT20 5.5 Low Channel



11n HT20 5.5 Mid Channel



11n HT20 5.5 High Channel



NOTE:

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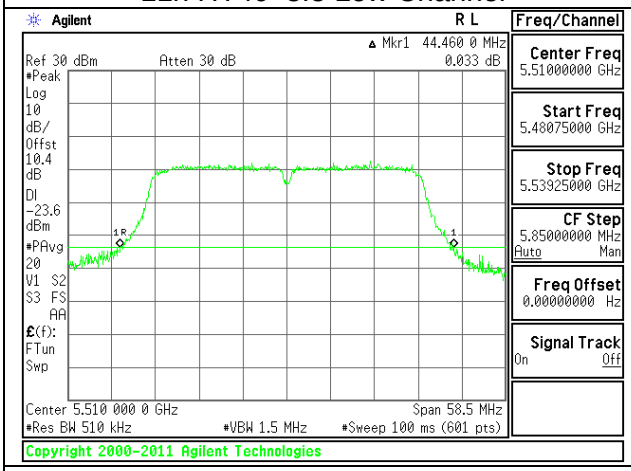
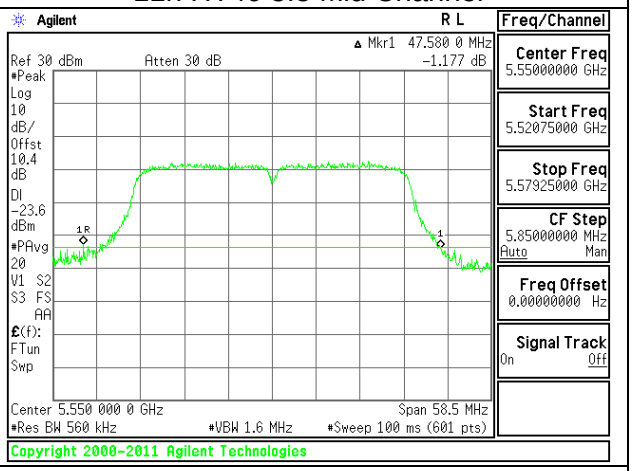
802.11n HT40 MODE IN THE 5.5 GHz BAND TEST RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5510	44.46
Mid	5550	47.58
High	5670	45.53
Worst		47.58

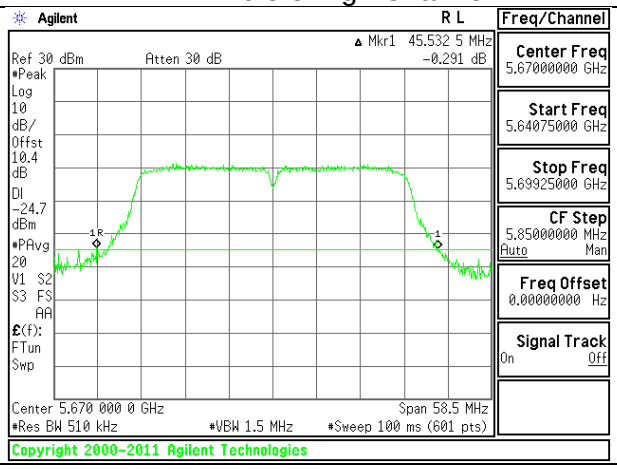
11n HT40 5.5 Low Channel



11n HT40 5.5 Mid Channel



11n HT40 5.5 High Channel



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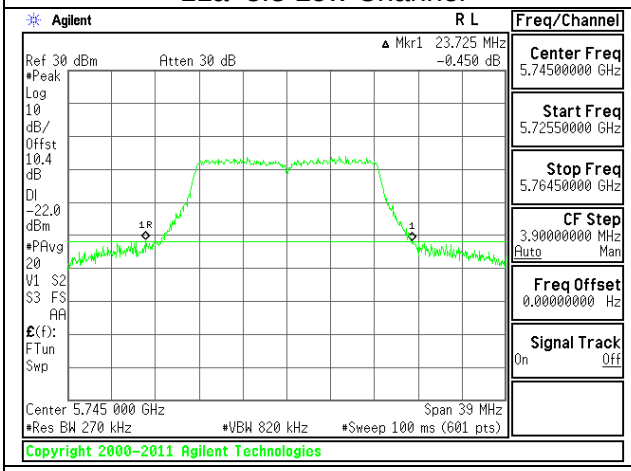
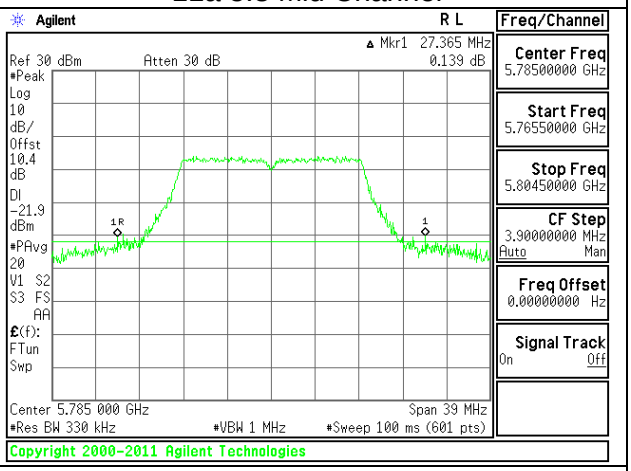
802.11a MODE IN THE 5.8 GHz BAND TEST RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5745	23.73
Mid	5785	27.37
High	5825	28.28
Worst		28.28

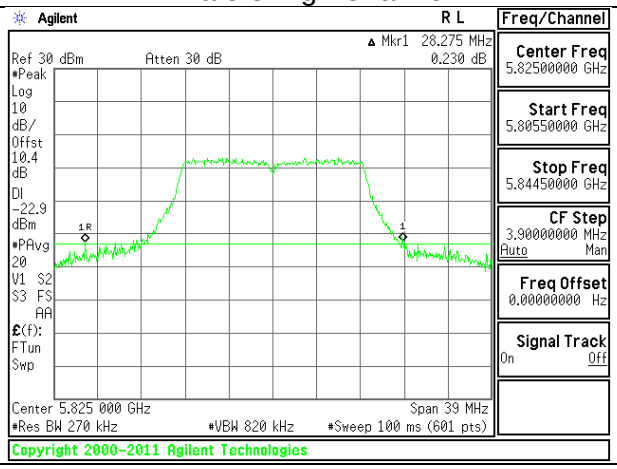
11a 5.8 Low Channel



11a 5.8 Mid Channel



11a 5.8 High Channel



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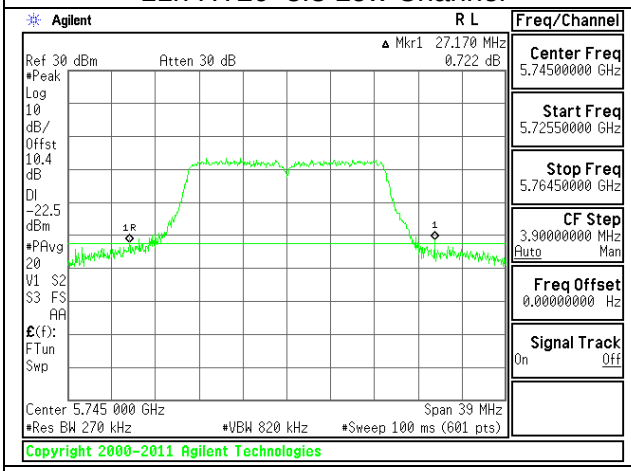
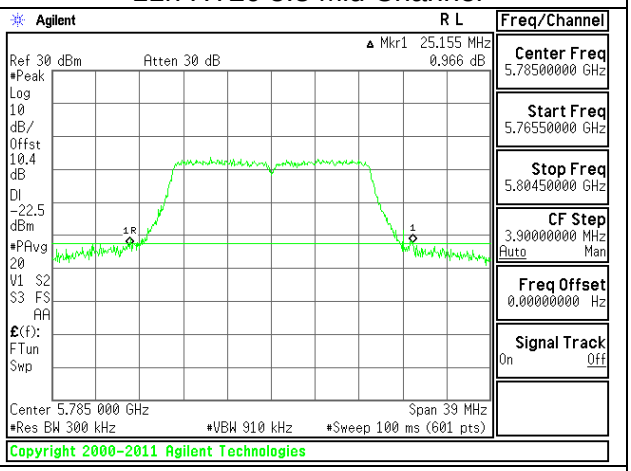
802.11n HT20 MODE IN THE 5.8 GHz BAND TEST RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5745	27.17
Mid	5785	25.16
High	5825	27.11
Worst		27.17

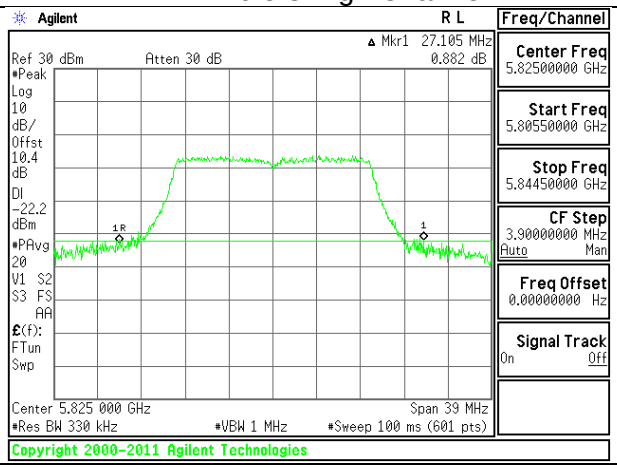
11n HT20 5.8 Low Channel



11n HT20 5.8 Mid Channel



11n HT20 5.8 High Channel



NOTE:

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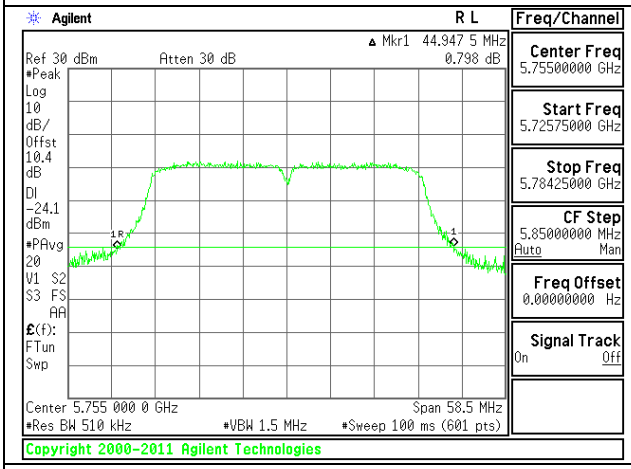
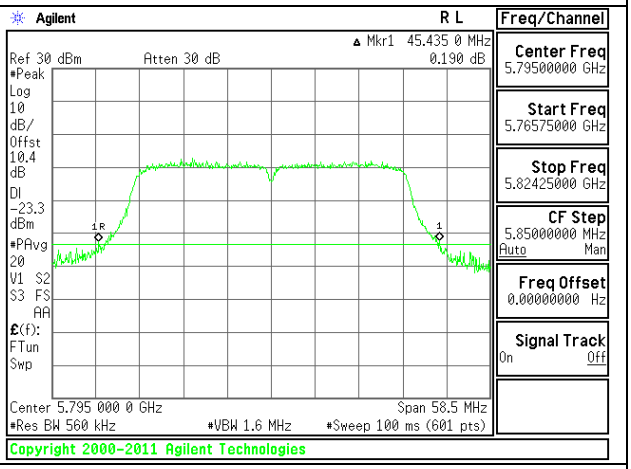
802.11n HT40 MODE IN THE 5.8 GHz BAND TEST RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5755	44.95
High	5795	45.44
Worst		45.44

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	17.10
Mid	5200	17.01
High	5240	16.82
Worst		17.10

10.3.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5180	18.08
Mid	5200	18.08
High	5240	17.97
Worst		18.08

10.3.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5190	36.11
Mid	5230	36.24
Worst		36.24

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10.3.1. 802.11a MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5260	16.95
Mid	5300	17.02
High	5320	16.98
Worst		17.02

10.3.1. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5260	17.97
Mid	5300	18.00
High	5320	17.97
Worst		18.00

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	36.22
Worst		36.22

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10.3.3. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5500	16.90
Mid	5580	16.94
High	5700	16.90
Worst		16.94

10.3.4. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5500	17.94
Mid	5580	17.97
High	5700	17.96
Worst		17.97

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	36.22
High	5670	36.21
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	16.89
Mid	5785	16.88
High	5825	16.87
Worst		16.89

10.3.7. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5745	17.93
Mid	5785	17.93
High	5825	17.90
Worst		17.93

10.3.8. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5755	36.22
High	5795	36.22
Worst		36.22

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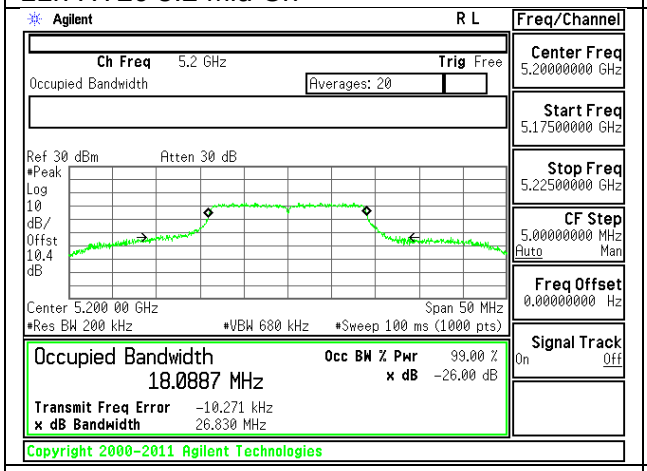
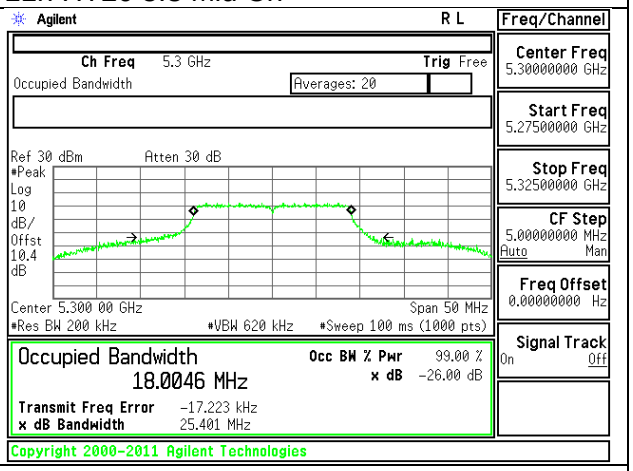
10.3.1. 99% BANDWIDTH PLOTS

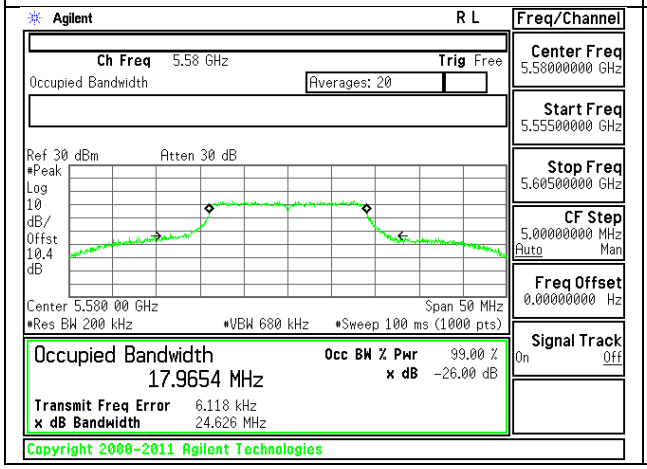
11n HT20 5.2 Mid Ch



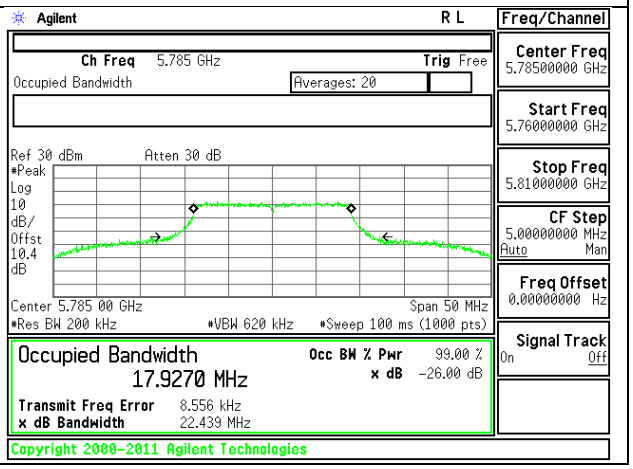
11n HT20 5.3 Mid Ch



11n HT20 5.5 Mid Ch



11n HT20 5.8 Mid Ch



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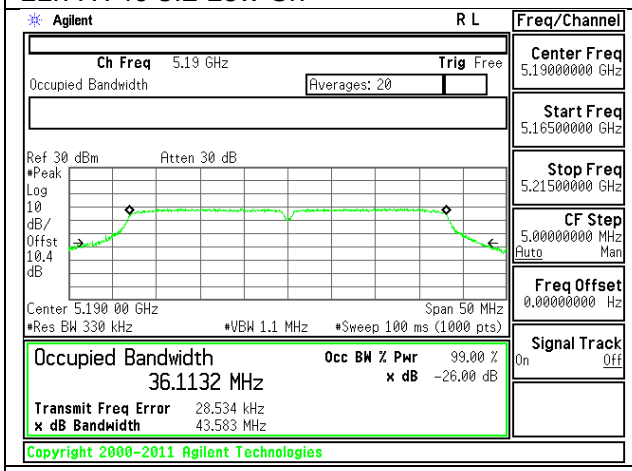
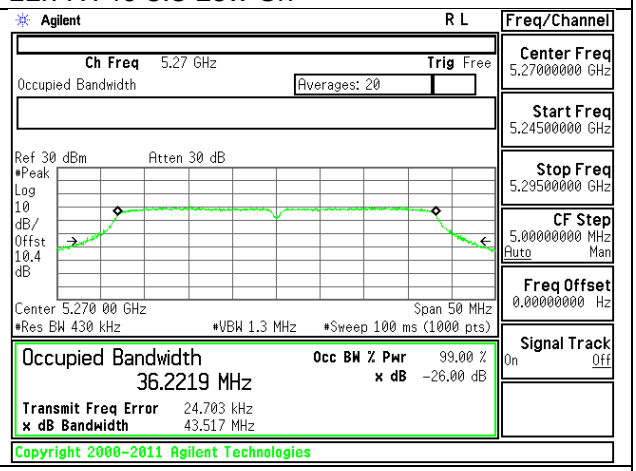
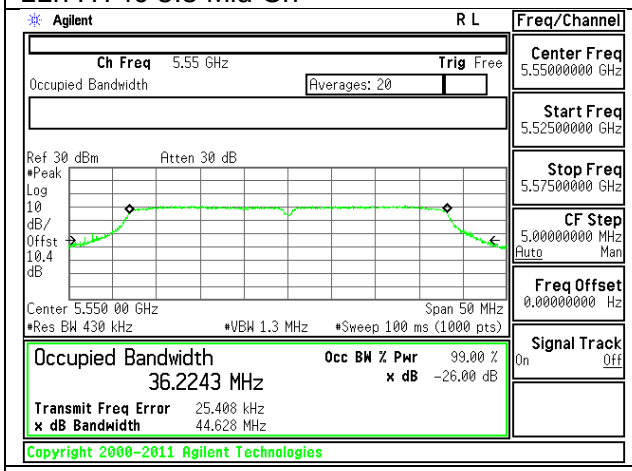
11n HT40 5.2 Low Ch



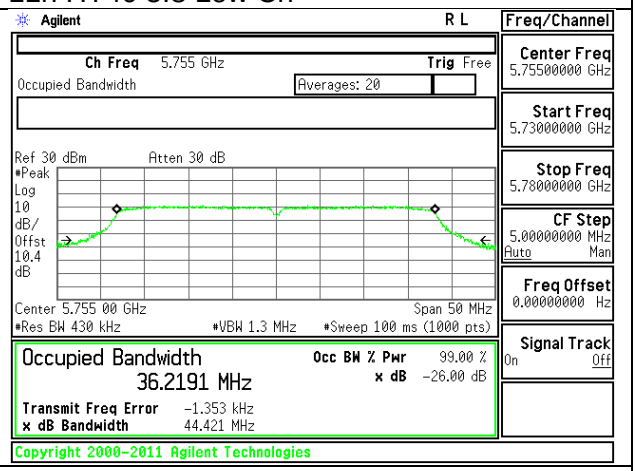
11n HT40 5.3 Low Ch



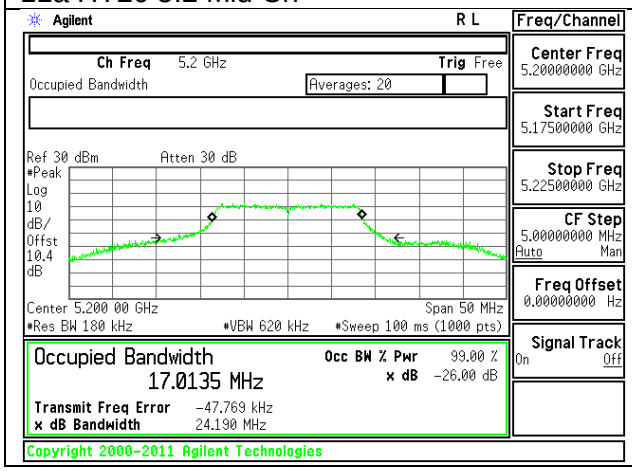
11n HT40 5.5 Mid Ch



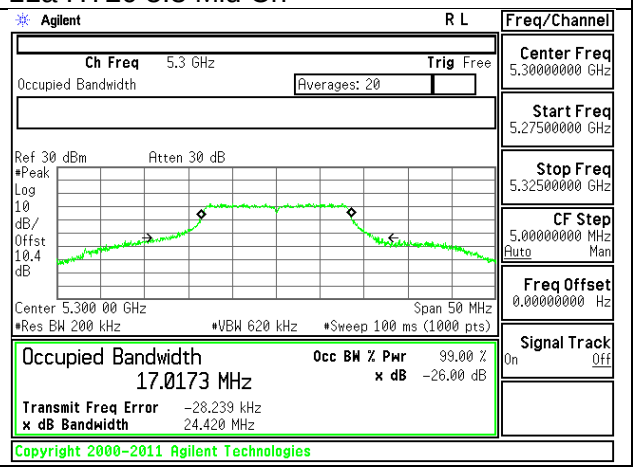
11n HT40 5.8 Low Ch



11a HT20 5.2 Mid Ch



11a HT20 5.3 Mid Ch



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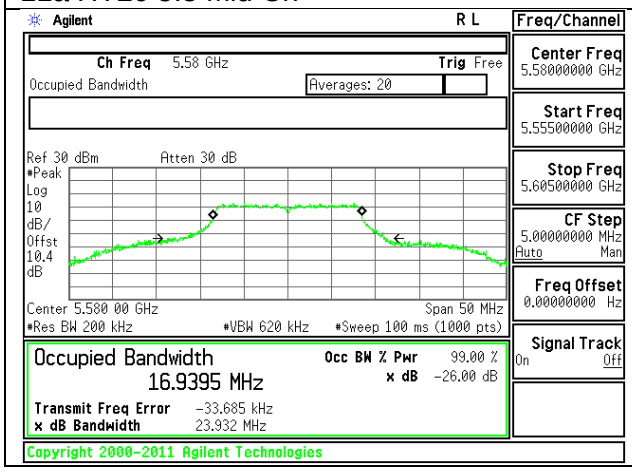
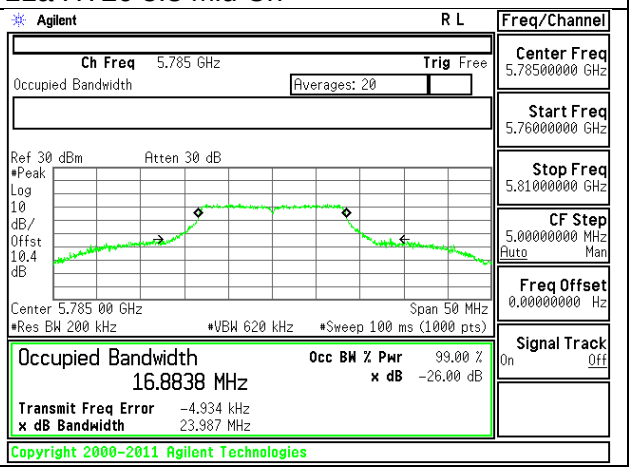
11a HT20 5.5 Mid Ch



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	12.00
Mid	5200	12.30
High	5240	12.50
Worst		12.50

10.4.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5180	12.20
Mid	5200	12.40
High	5240	12.50
Worst		12.50

10.4.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5190	10.00
Mid	5230	10.30
Worst		10.30

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10.4.4. 802.11a MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5260	11.50
Mid	5300	12.00
High	5320	12.10
Worst		12.10

10.4.5. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5260	11.70
Mid	5300	11.90
High	5320	12.00
Worst		12.00

10.4.6. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5270	10.20
High	5310	10.50
Worst		10.50

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10.4.7. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5500	11.80
Mid	5580	12.10
High	5700	11.90
Worst		12.10

10.4.8. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5500	11.80
Mid	5580	12.20
High	5700	11.90
Worst		12.20

10.4.9. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5510	10.20
Mid	5550	10.20
High	5670	10.50
Worst		10.50

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10.4.10. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5745	11.50
Mid	5785	11.40
High	5825	11.30
Worst		11.50

10.4.11. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5745	11.50
Mid	5785	11.60
High	5825	11.50
Worst		11.60

10.4.12. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5755	10.10
High	5795	10.10
Worst		10.10

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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	36.92	17.09	-2.02
Mid	5200	37.44	17.01	-2.02
High	5240	25.55	16.82	-2.02

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	22.33	24.35	24.00	11.00	10.00	11.00
Mid	5200	24.00	22.31	24.33	24.00	11.00	10.00	11.00
High	5240	24.00	22.26	24.28	24.00	11.00	10.00	11.00

Duty Cycle CF (dB)	0.32	**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	12.230	12.55	24.00	-11.45
Mid	5200	12.070	12.07	24.00	-11.93
High	5240	11.590	11.59	24.00	-12.41

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5180	0.750	1.07	11.00	-9.93
Mid	5200	0.450	0.77	11.00	-10.23
High	5240	0.070	0.39	11.00	-10.61

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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	35.42	18.08	-2.02
Mid	5200	41.15	18.08	-2.02
High	5240	27.89	17.97	-2.02

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	22.57	24.59	24.00	11.00	10.00	11.00
Mid	5200	24.00	22.57	24.59	24.00	11.00	10.00	11.00
High	5240	24.00	22.55	24.57	24.00	11.00	10.00	11.00

Duty Cycle CF (dB)	0.32	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	12.090	12.41	24.00	-11.59
Mid	5200	12.230	12.23	24.00	-11.77
High	5240	11.507	11.51	24.00	-12.49

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5180	0.270	0.59	11.00	-10.41
Mid	5200	0.350	0.67	11.00	-10.33
High	5240	-0.240	0.08	11.00	-10.92

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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	44.560	36.110	-2.02
Mid	5230	45.050	36.240	-2.02

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	25.02	24.00	11.00	10.00	11.00
Mid	5230	24.00	23.00	25.02	24.00	11.00	10.00	11.00
Duty Cycle CF (dB)		0.64	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	9.630	10.27	24.00	-13.73
Mid	5230	9.818	10.46	24.00	-13.54

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5190	-4.920	-4.28	11.00	-15.28
Mid	5230	-4.780	-4.14	11.00	-15.14

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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	24.96	16.95	-2.02
Mid	5300	26.26	17.02	-2.02
High	5320	31.72	16.99	-2.02

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	23.29	29.29	23.29	11.00	11.00	11.00
Mid	5300	24.00	23.31	29.31	23.31	11.00	11.00	11.00
High	5320	24.00	23.30	29.30	23.30	11.00	11.00	11.00

Duty Cycle CF (dB)	0.32	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	11.790	12.11	24.00	-11.89
Mid	5300	12.150	12.47	24.00	-11.53
High	5320	12.258	12.58	24.00	-11.42

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5260	0.230	0.55	11.00	-10.45
Mid	5300	0.640	0.96	11.00	-10.04
High	5320	0.660	0.98	11.00	-10.02

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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	31.14	17.97	-2.02
Mid	5300	32.76	18.00	-2.02
High	5320	29.58	17.97	-2.02

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	23.55	29.55	23.55	11.00	11.00	11.00
Mid	5300	24.00	23.55	29.55	23.55	11.00	11.00	11.00
High	5320	24.00	23.55	29.55	23.55	11.00	11.00	11.00

Duty Cycle CF (dB)	0.32	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	11.910	12.23	24.00	-11.77
Mid	5300	12.150	12.47	24.00	-11.53
High	5320	12.313	12.63	24.00	-11.37

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5260	0.050	0.37	11.00	-10.63
Mid	5300	0.360	0.68	11.00	-10.32
High	5320	0.480	0.80	11.00	-10.20

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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	45.2	36.2	-2.02
High	5310	48.0	36.2	-2.02

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)	0.64	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	9.3	9.97	24.00	-14.03
High	5310	9.6	10.27	24.00	-13.74

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5270	-5.30	-4.66	11.00	-15.66
High	5310	-4.98	-4.34	11.00	-15.34

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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	24.640	16.900	-2.02
Mid	5580	25.940	16.940	-2.02
High	5700	26.910	16.900	-2.02

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	29.28	24.00	11.00	11.00	11.00
Mid	5580	24.00	24.00	29.29	24.00	11.00	11.00	11.00
High	5700	24.00	24.00	29.28	24.00	11.00	11.00	11.00

Duty Cycle CF (dB)	0.32	**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	11.950	12.27	24.00	-11.73
Mid	5580	12.380	12.70	24.00	-11.30
High	5700	11.947	12.27	24.00	-11.73

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5500	0.400	0.72	11.00	-10.28
Mid	5580	0.820	1.14	11.00	-9.86
High	5700	0.400	0.72	11.00	-10.28

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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	28.150	17.940	-2.02
Mid	5580	29.380	17.970	-2.02
High	5700	33.930	17.960	-2.02

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	29.54	24.00	11.00	11.00	11.00
Mid	5580	24.00	24.00	29.55	24.00	11.00	11.00	11.00
High	5700	24.00	24.00	29.54	24.00	11.00	11.00	11.00

Duty Cycle CF (dB)	0.32	**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	12.080	12.40	24.00	-11.60
Mid	5580	12.500	12.82	24.00	-11.18
High	5700	12.150	12.47	24.00	-11.53

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5500	0.250	0.57	11.00	-10.43
Mid	5580	0.540	0.86	11.00	-10.14
High	5700	0.250	0.57	11.00	-10.43

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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	44.5	36.3	-2.02
Mid	5550	47.6	36.2	-2.02
High	5670	45.5	36.2	-2.02

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)	0.64	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	10.360	11.00	24.00	-13.00
Mid	5550	10.415	11.06	24.00	-12.95
High	5670	9.684	10.32	24.00	-13.68

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5510	-4.310	-3.67	11.00	-14.67
Mid	5550	-4.200	-3.56	11.00	-14.56
High	5670	-4.870	-4.23	11.00	-15.23

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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	23.730	16.890	-2.02
Mid	5785	27.370	16.880	-2.02
High	5825	28.280	16.870	-2.02

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	35.28	30.00	17.00	17.00	17.00
Mid	5785	30.00	30.00	35.27	30.00	17.00	17.00	17.00
High	5825	30.00	30.00	35.27	30.00	17.00	17.00	17.00

Duty Cycle CF (dB)	0.32	**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	12.31	12.63	30.00	-17.37
Mid	5785	11.91	12.23	30.00	-17.78
High	5825	11.78	12.10	30.00	-17.90

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5745	-2.04	-1.72	17.00	-18.72
Mid	5785	-2.41	-2.09	17.00	-19.09
High	5825	-2.41	-2.09	17.00	-19.09

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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	27.170	17.930	-2.02
Mid	5785	25.160	17.920	-2.02
High	5825	27.110	17.900	-2.02

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	35.54	30.00	17.00	17.00	17.00
Mid	5785	30.00	30.00	35.53	30.00	17.00	17.00	17.00
High	5825	30.00	30.00	35.53	30.00	17.00	17.00	17.00

Duty Cycle CF (dB)	0.32	**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	12.16	12.48	30.00	-17.52
Mid	5785	11.82	12.14	30.00	-17.86
High	5825	11.75	12.07	30.00	-17.93

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5745	-2.43	-2.11	17.00	-19.11
Mid	5785	-2.76	-2.44	17.00	-19.44
High	5825	-2.93	-2.61	17.00	-19.61

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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	45.0	36.2	-2.02
High	5795	45.4	36.2	-2.02

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)	0.64	**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	10.36	11.00	30.00	-19.00
High	5795	10.12	10.76	30.00	-19.24

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5755	-6.81	-6.17	17.00	-23.17
High	5795	-7.33	-6.69	17.00	-23.69

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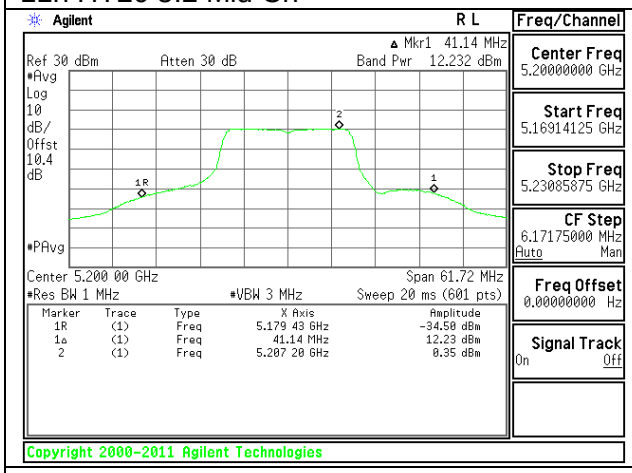
10.5.1. OUTPUT POWER AND PPSD PLOTS, Chain 0

11n HT20 5.2 Mid Ch



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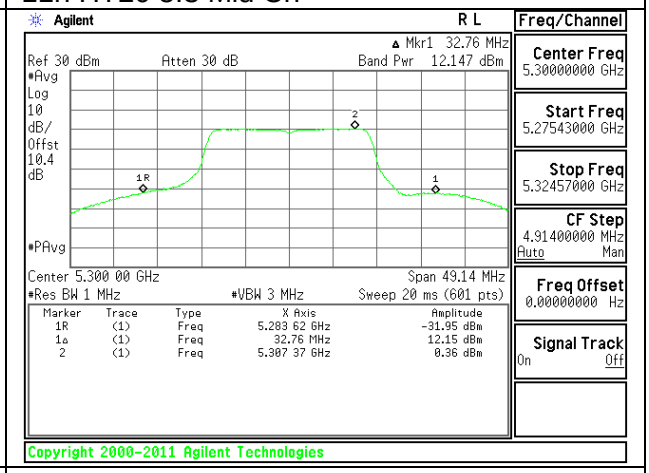
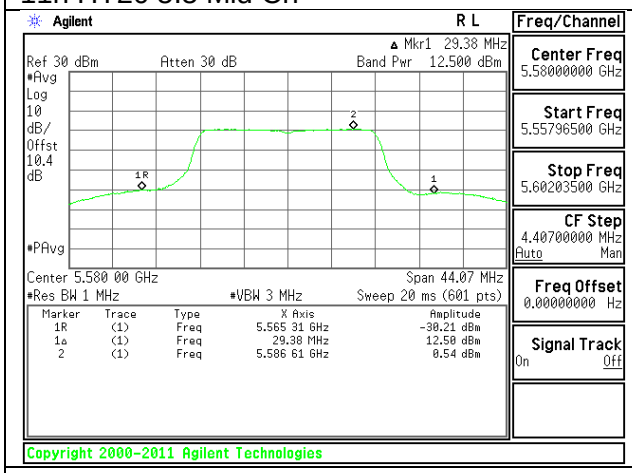
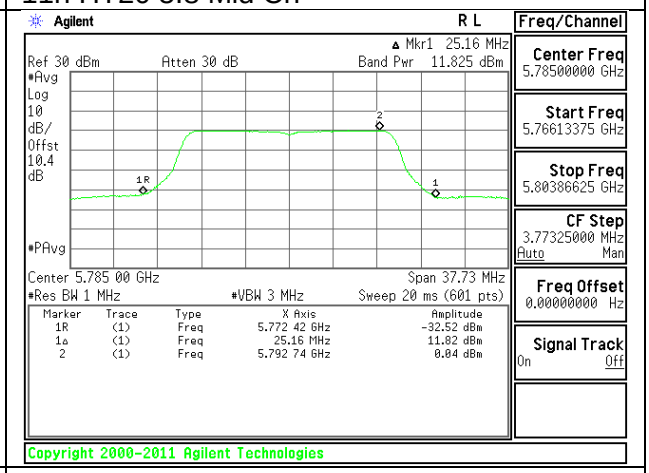


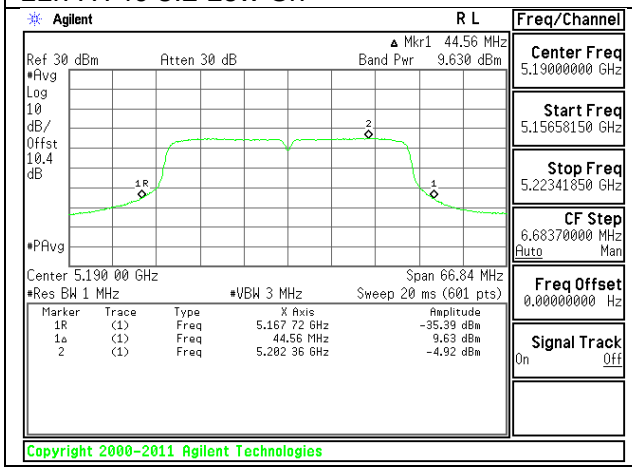
11n HT20 5.5 Mid Ch



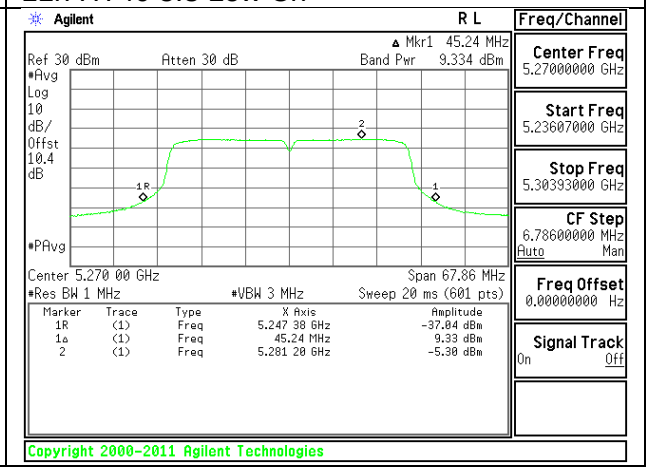
11n HT20 5.8 Mid Ch



11n HT40 5.2 Low Ch



11n HT40 5.3 Low Ch



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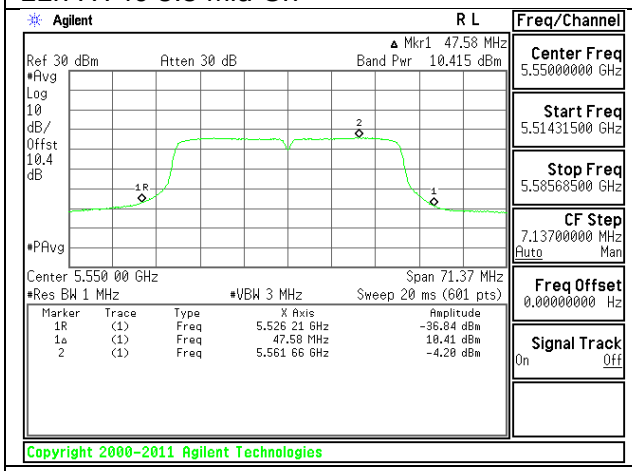
11n HT40 5.5 Mid Ch



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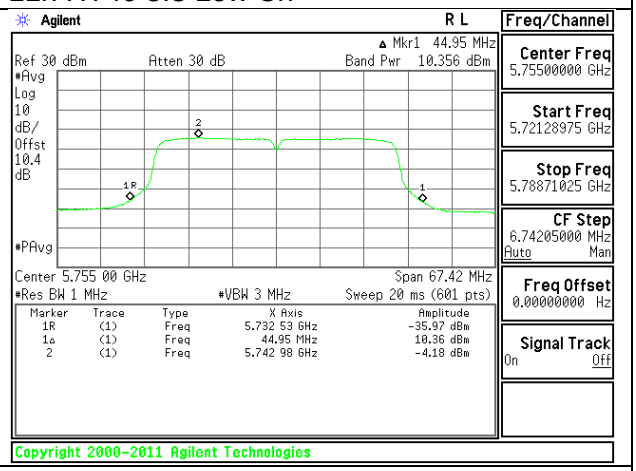
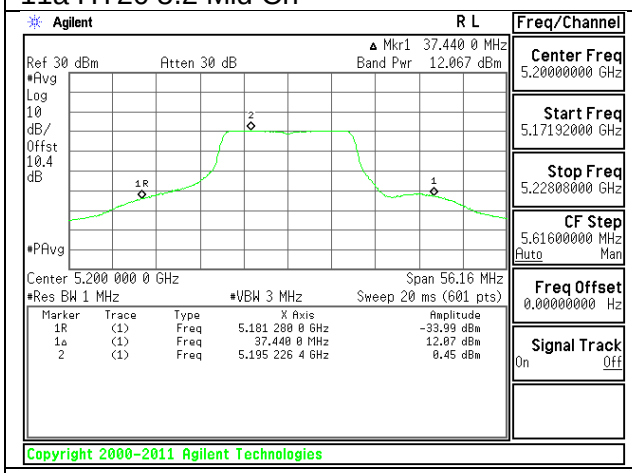


11a HT20 5.2 Mid Ch



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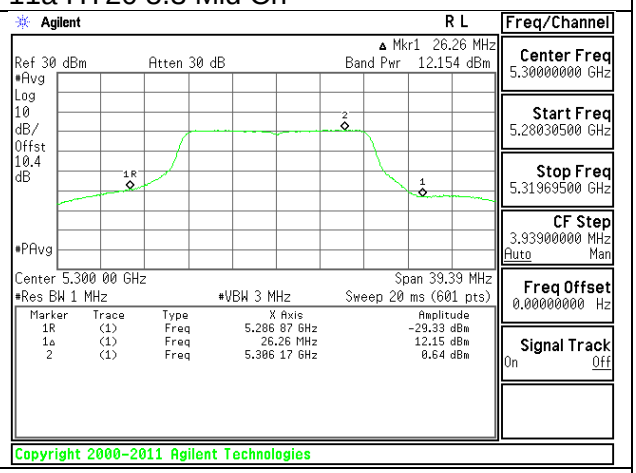

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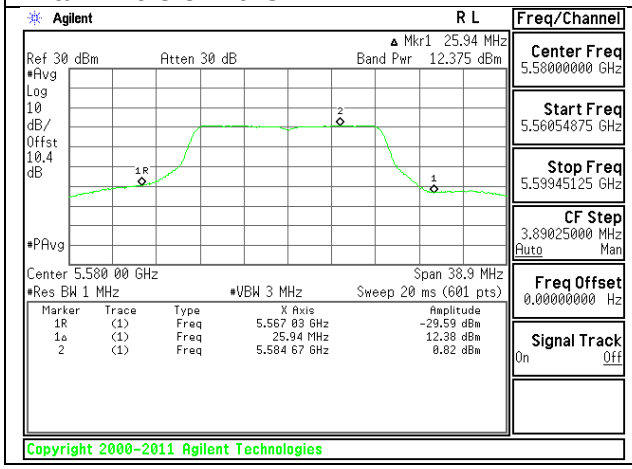
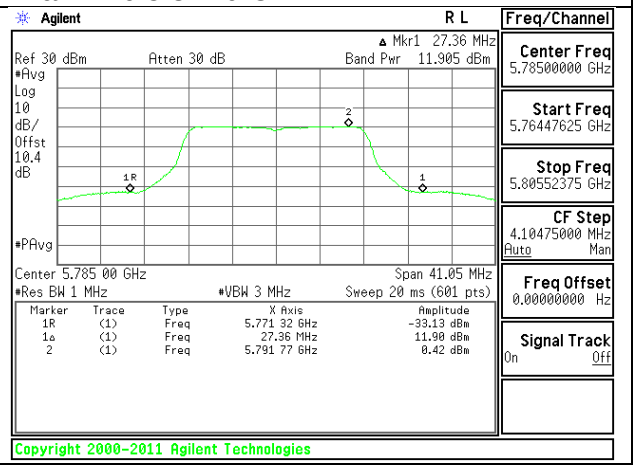


11a HT20 5.8 Mid Ch



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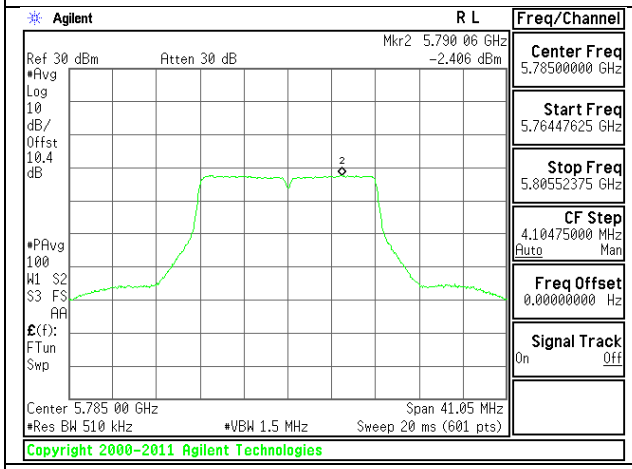
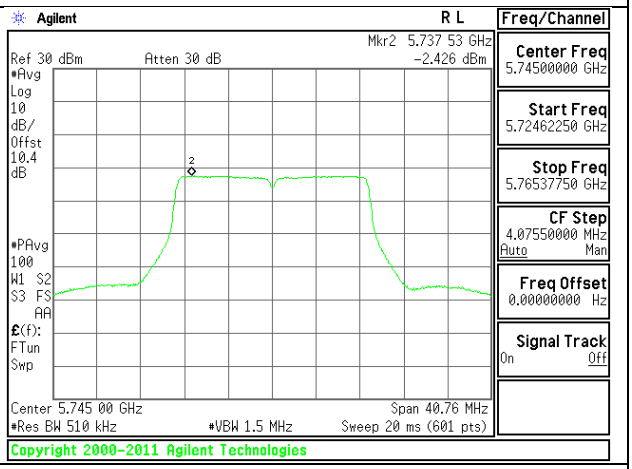
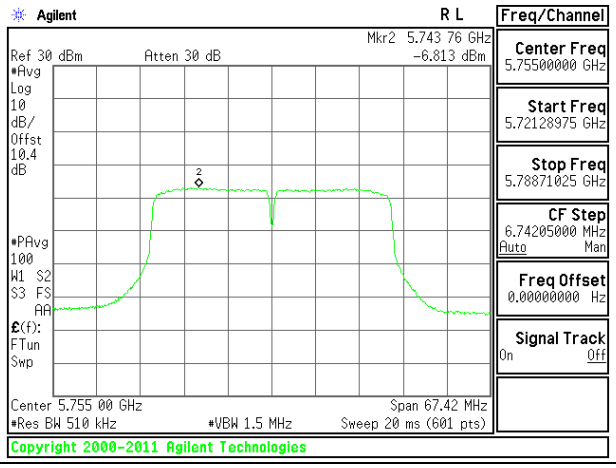
11a HT20 5.8 PSD Mid Ch



11n HT20 5.8 PSD Mid Ch



11n HT40 5.8 PSD 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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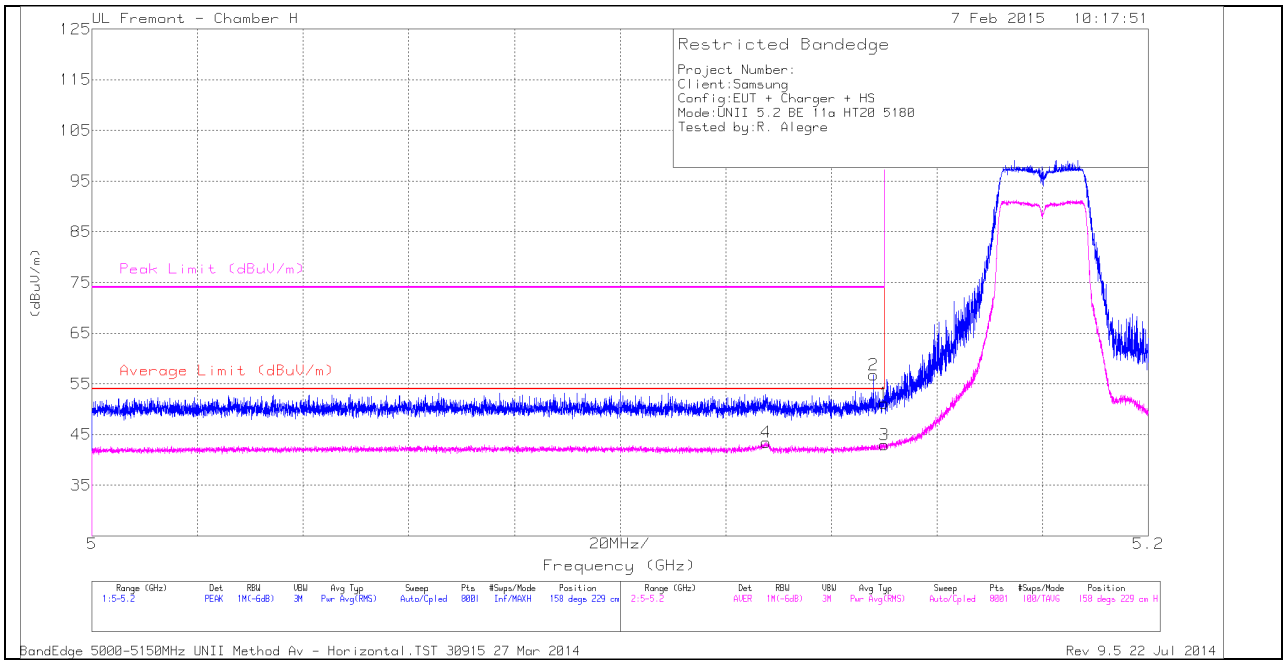
11.1. 5.2 GHz

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 T863 (dB/m)	Amp/Cbl/Fltr/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	39.43	PK	34.5	-22.8	0	51.13	-	-	74	-22.87	158	229	H
2	* 5.148	45.1	PK	34.5	-22.8	0	56.8	-	-	74	-17.2	158	229	H
3	* 5.15	30.95	RMS	34.5	-22.8	.3	42.95	54	-11.05	-	-	158	229	H
4	* 5.128	31.5	RMS	34.5	-22.8	.3	43.5	54	-10.5	-	-	158	229	H

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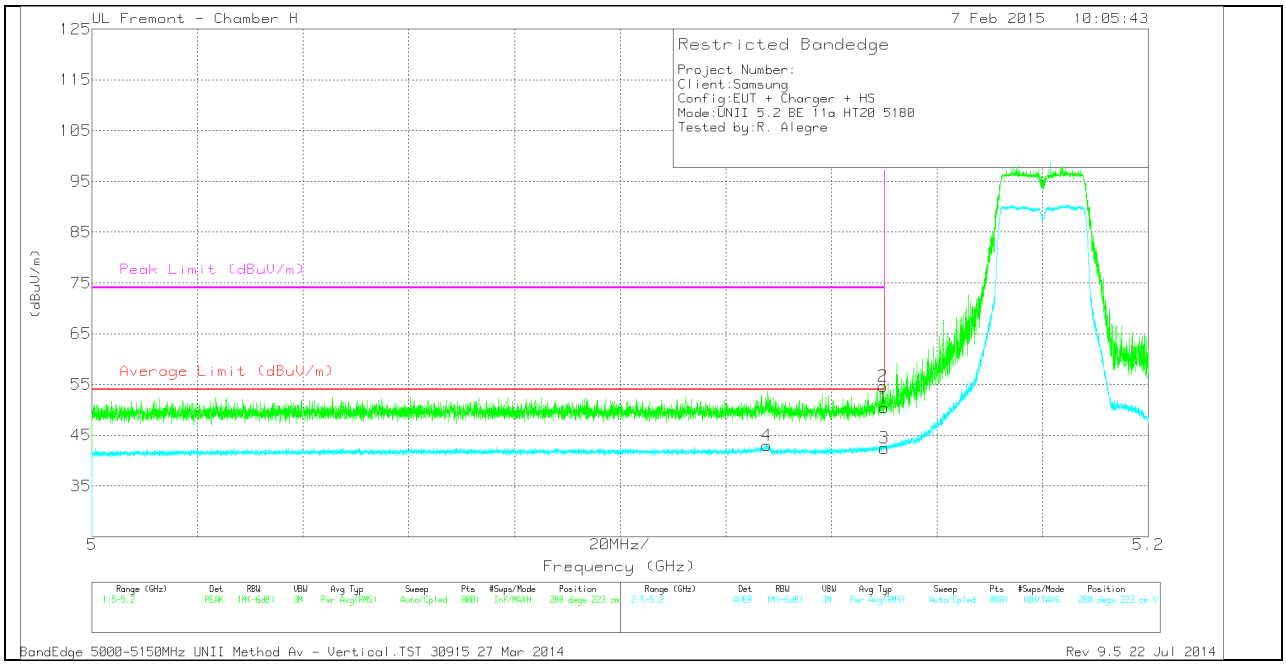
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Fltr/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	38.77	PK	34.5	-22.8	0	50.47	-	-	74	-23.53	288	223	V
2	* 5.15	42.96	PK	34.5	-22.8	0	54.66	-	-	74	-19.34	288	223	V
3	* 5.15	30.41	RMS	34.5	-22.8	.3	42.41	54	-11.59	-	-	288	223	V
4	* 5.128	30.98	RMS	34.5	-22.8	.3	42.98	54	-11.02	-	-	288	223	V

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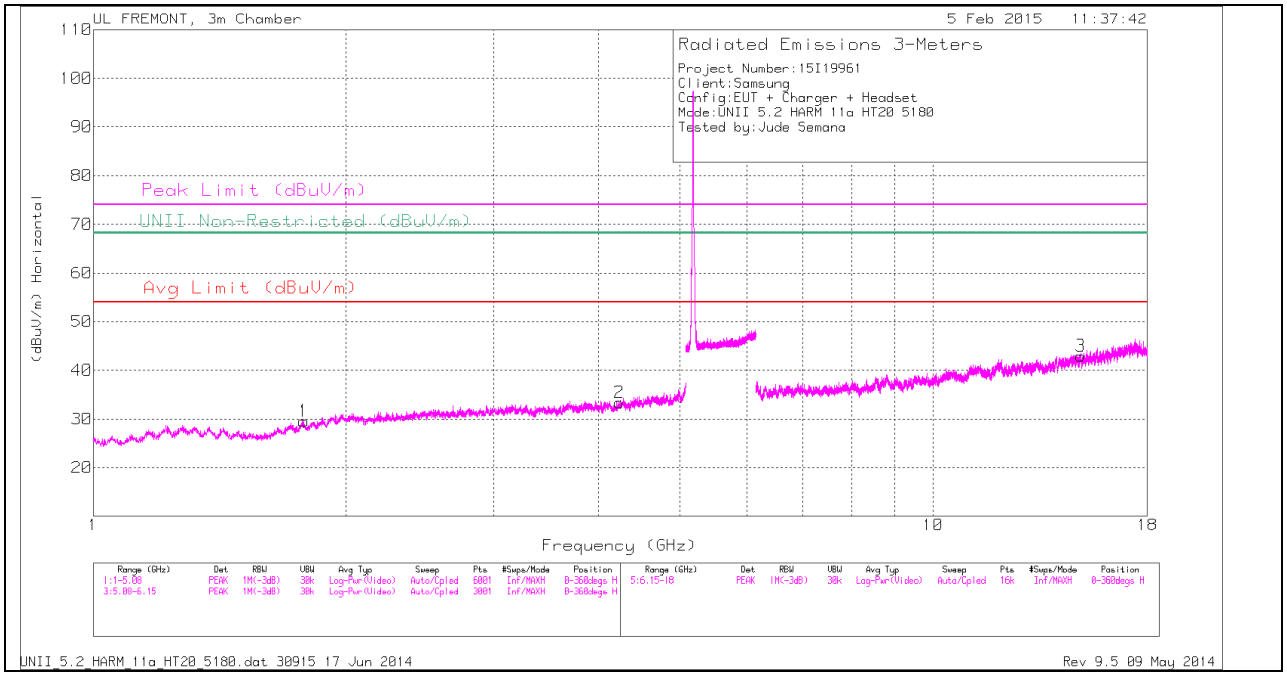
HARMONICS AND SPURIOUS EMISSIONS

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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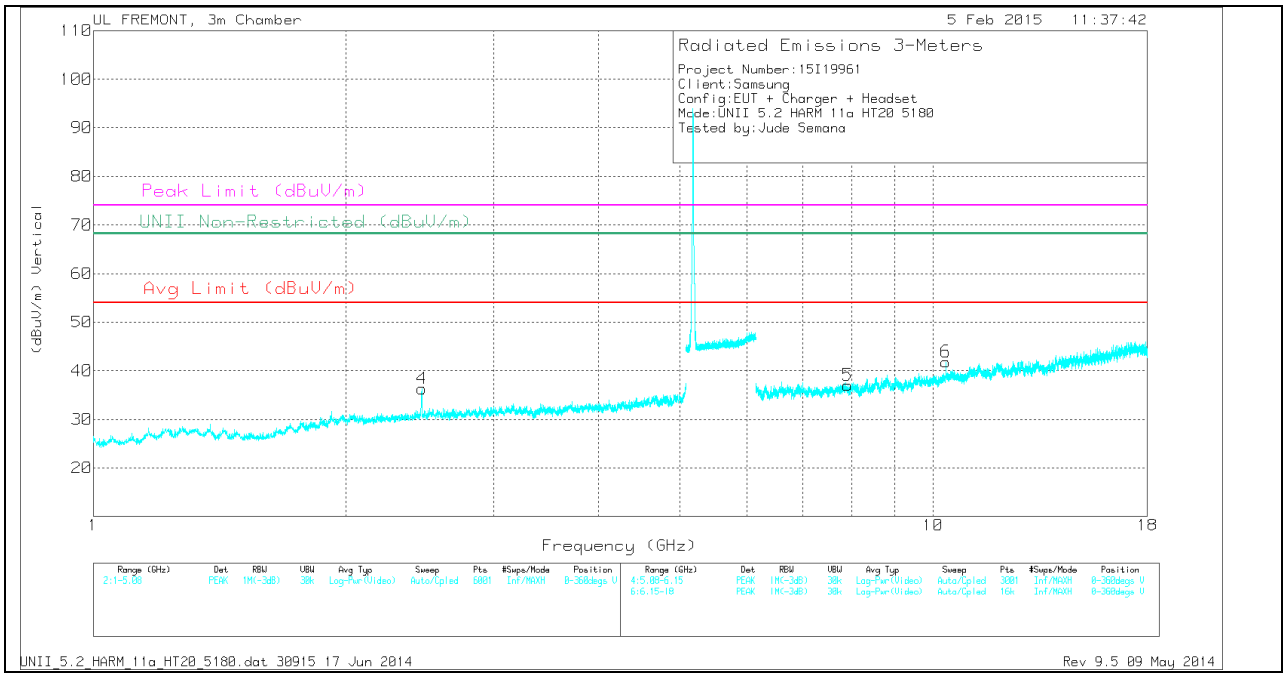
LOW CHANNEL VERTICAL



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	1.782	32.17	PK	30	-32.6	0	29.57	-	-	-	-	68.2	-38.63	0-360	100	H
4	2.465	36.65	PK	32.2	-32.5	0	36.35	-	-	-	-	68.2	-31.85	0-360	100	V
2	4.231	31.31	PK	33.4	-31.3	0	33.41	-	-	74	-40.59	-	-	0-360	200	H
5	7.913	29.43	PK	35.8	-28.2	0	37.03	-	-	-	-	68.2	-31.17	0-360	100	V
6	10.359	30.03	PK	37.2	-25.4	0	41.83	-	-	-	-	68.2	-26.37	0-360	200	V
3	14.996	30.05	PK	39.7	-26.8	0	42.95	-	-	-	-	68.2	-25.25	0-360	100	H

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
10.36	37.42	PK1	37.2	-25.4	0	49.22	-	-	-	-	68.2	-18.98	224	197	V
10.36	26.33	AD1	37.2	-25.4	.3	38.43	-	-	-	-	-	-	224	197	V

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

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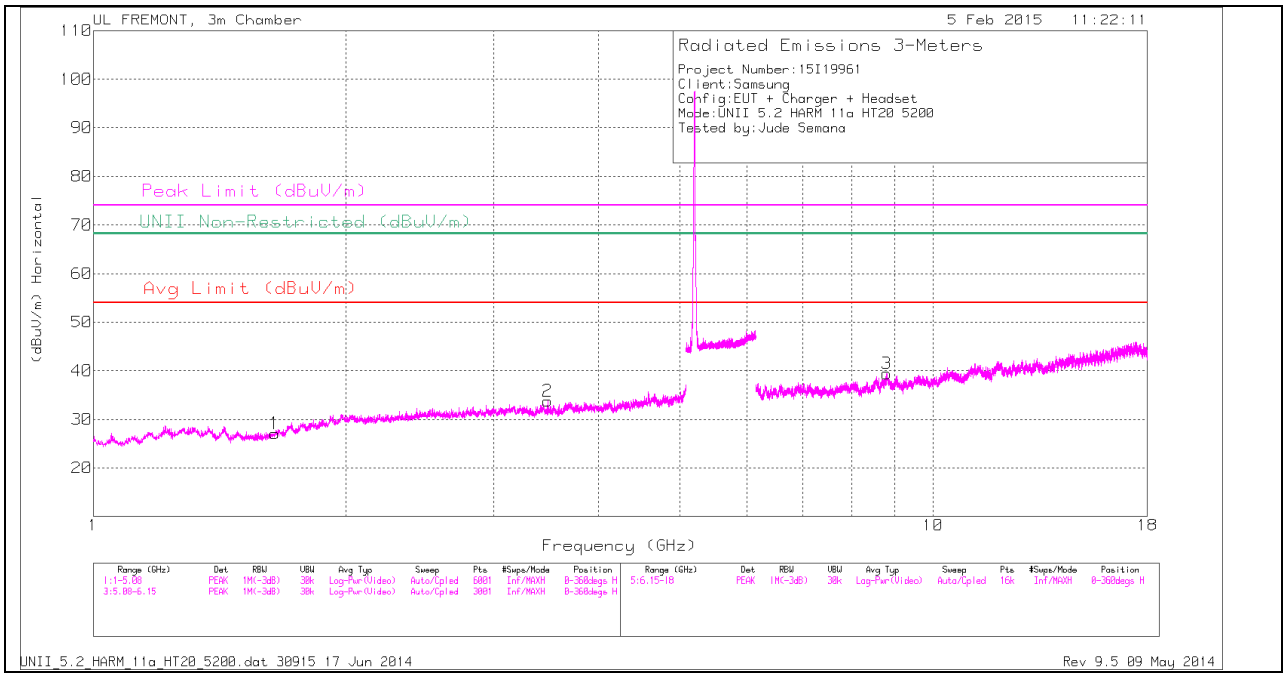
MID CHANNEL HORIZONTAL



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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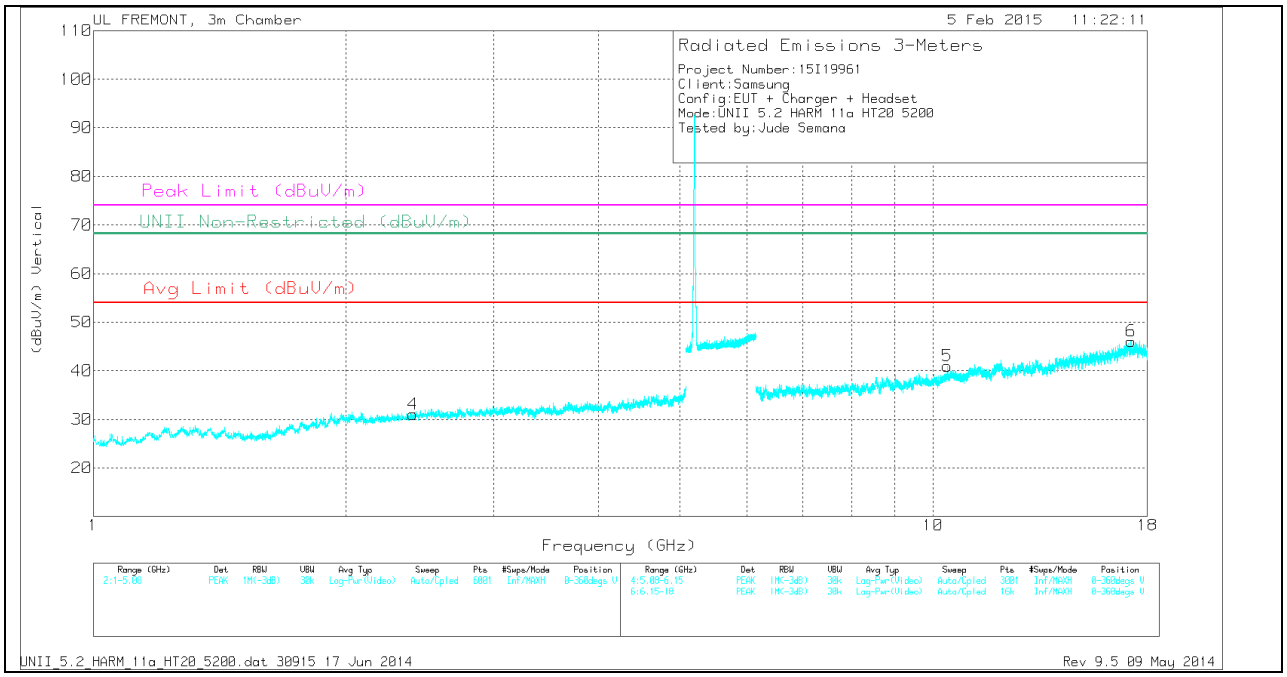
MID CHANNEL VERTICAL



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	1.646	31.28	PK	28.5	-32.7	0	27.08	-	-	74	-46.92	-	-	0-360	100	H
4	2.404	31.82	PK	32	-32.8	0	31.02	-	-	-	-	68.2	-37.18	0-360	100	V
2	3.477	32.39	PK	32.8	-31.4	0	33.79	-	-	-	-	68.2	-34.41	0-360	200	H
3	8.809	29.24	PK	35.9	-25.7	0	39.44	-	-	-	-	68.2	-28.76	0-360	100	H
5	10.399	29.48	PK	37.3	-25.8	0	40.98	-	-	-	-	68.2	-27.22	0-360	200	V
6	17.227	28.27	PK	41.3	-23.5	0	46.07	-	-	-	-	68.2	-22.13	0-360	200	V

PK - Peak detector

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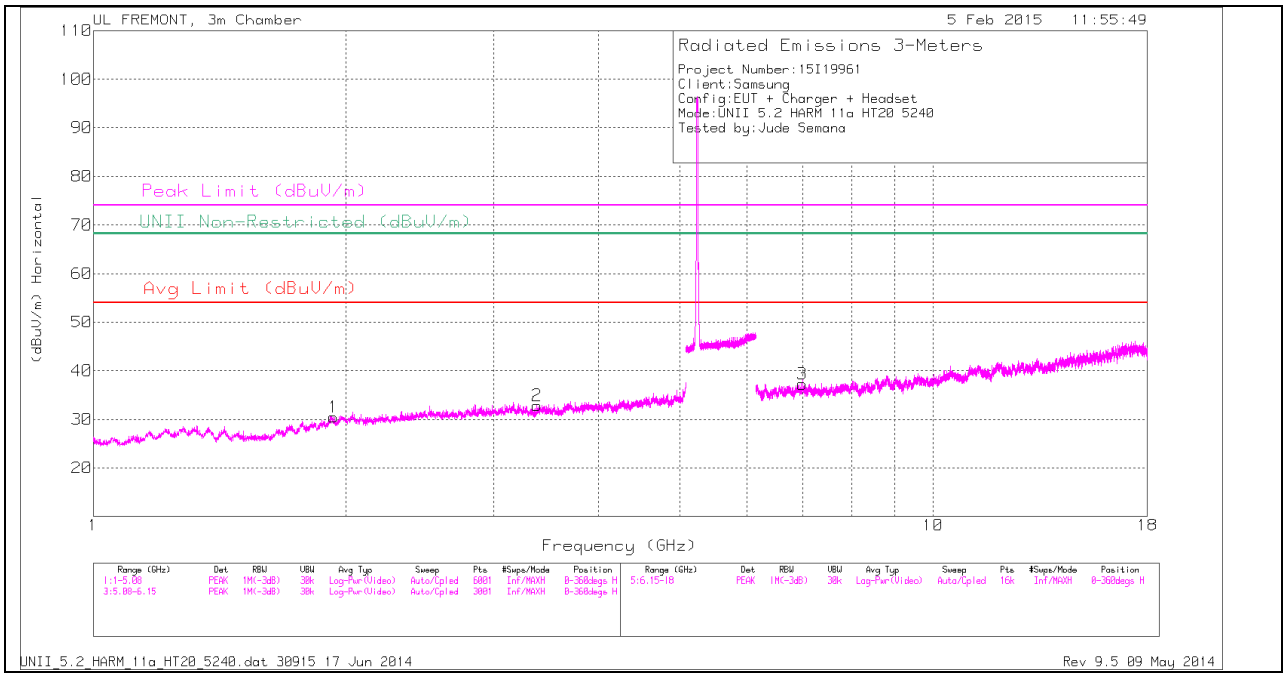
HIGH CHANNEL HORIZONTAL



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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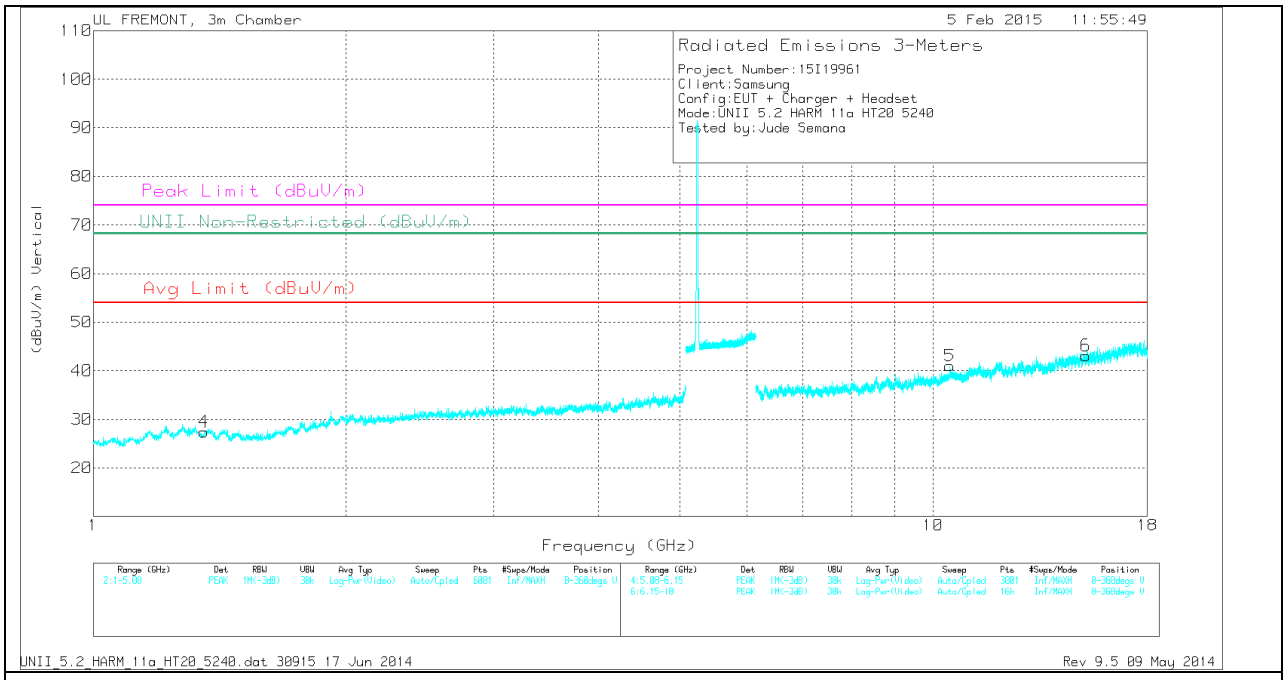
HIGH CHANNEL VERTICAL



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
4	1.356	31.51	PK	29.2	-33.3	0	27.41	-	-	74	-46.59	-	-	0-360	200	V
1	1.932	31.67	PK	31.2	-32.4	0	30.47	-	-	-	-	68.2	-37.73	0-360	200	H
2	3.377	32.15	PK	32.6	-31.9	0	32.85	-	-	-	-	68.2	-35.35	0-360	200	H
3	6.991	30.26	PK	35.6	-28.6	0	37.26	-	-	-	-	68.2	-30.94	0-360	200	H
5	10.474	29.34	PK	37.4	-25.7	0	41.04	-	-	-	-	68.2	-27.16	0-360	200	V
6	15.207	30.09	PK	39.9	-26.9	0	43.09	-	-	-	-	68.2	-25.11	0-360	200	V

PK - Peak detector

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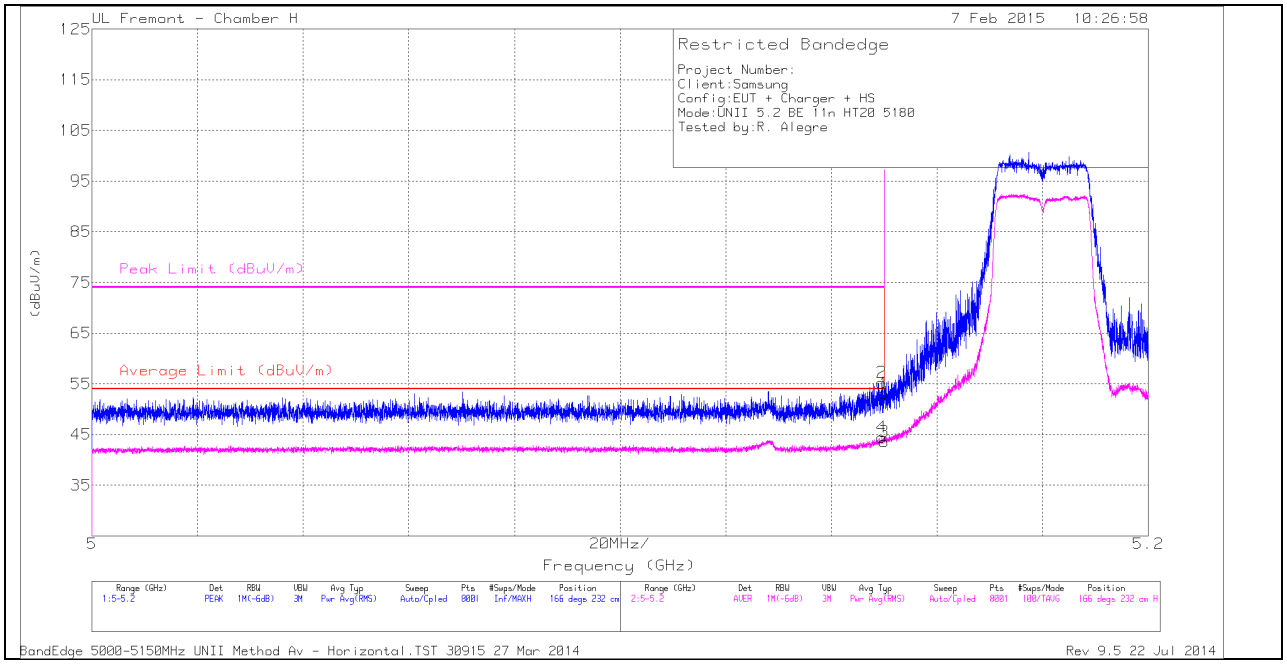
11.1.2. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.2 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Fltr/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	41.48	PK	34.5	-22.8	0	53.18	-	-	74	-20.82	166	232	H
2	* 5.15	43.5	PK	34.5	-22.8	0	55.2	-	-	74	-18.8	166	232	H
3	* 5.15	31.61	RMS	34.5	-22.8	.3	43.61	54	-10.39	-	-	166	232	H
4	* 5.15	32.4	RMS	34.5	-22.8	.3	44.4	54	-9.6	-	-	166	232	H

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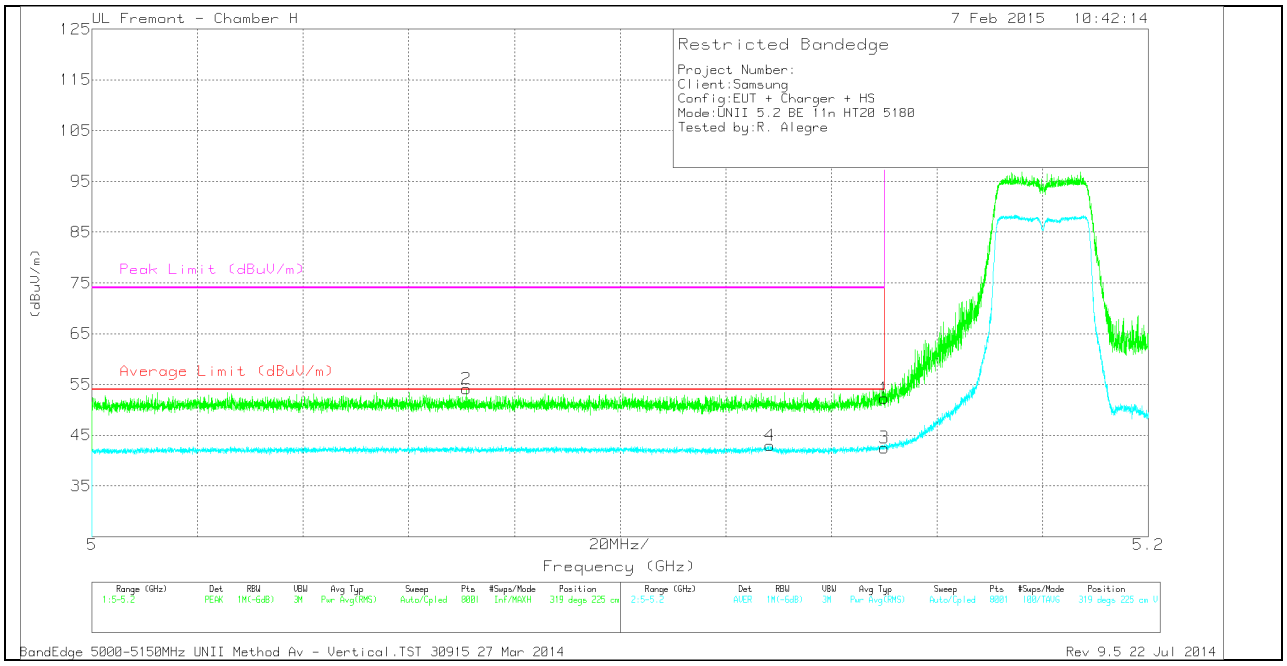
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Fltr/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	40.62	PK	34.5	-22.8	0	52.32	-	-	74	-21.68	319	225	V
2	* 5.071	42.5	PK	34.4	-22.8	0	54.1	-	-	74	-19.9	319	225	V
3	* 5.15	30.53	RMS	34.5	-22.8	.3	42.53	54	-11.47	-	-	319	225	V
4	* 5.128	30.95	RMS	34.5	-22.8	.3	42.95	54	-11.05	-	-	319	225	V

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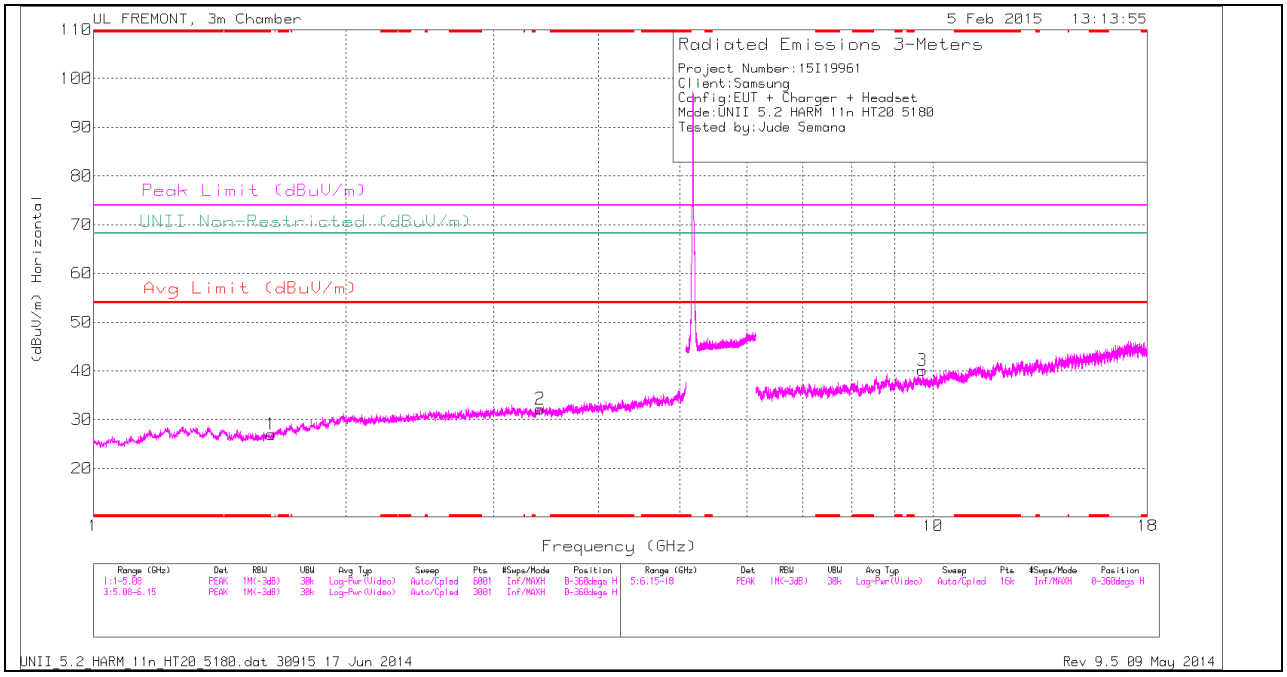
HARMONICS AND SPURIOUS EMISSIONS

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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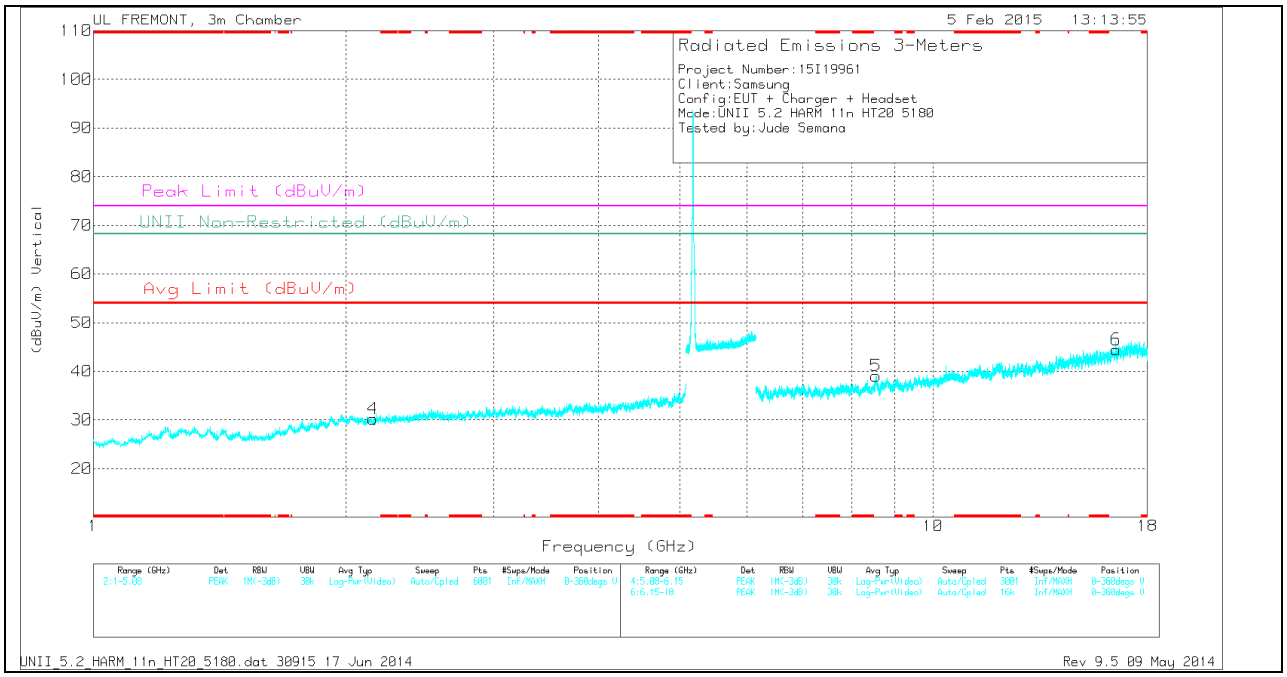
LOW CHANNEL VERTICAL



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	1.63	31.66	PK	28.3	-33	0	26.96	-	-	-	-	68.2	-41.24	0-360	100	H
4	2.154	31.45	PK	31.5	-32.7	0	30.25	-	-	-	-	68.2	-37.95	0-360	100	V
2	3.408	31.09	PK	32.7	-31.6	0	32.19	-	-	-	-	68.2	-36.01	0-360	200	H
5	8.552	29.37	PK	35.8	-26.1	0	39.07	-	-	-	-	68.2	-29.13	0-360	100	V
3	9.711	29.4	PK	36.8	-26.1	0	40.1	-	-	-	-	68.2	-28.1	0-360	200	H
6	16.529	28.43	PK	41	-25	0	44.43	-	-	-	-	68.2	-23.77	0-360	200	V

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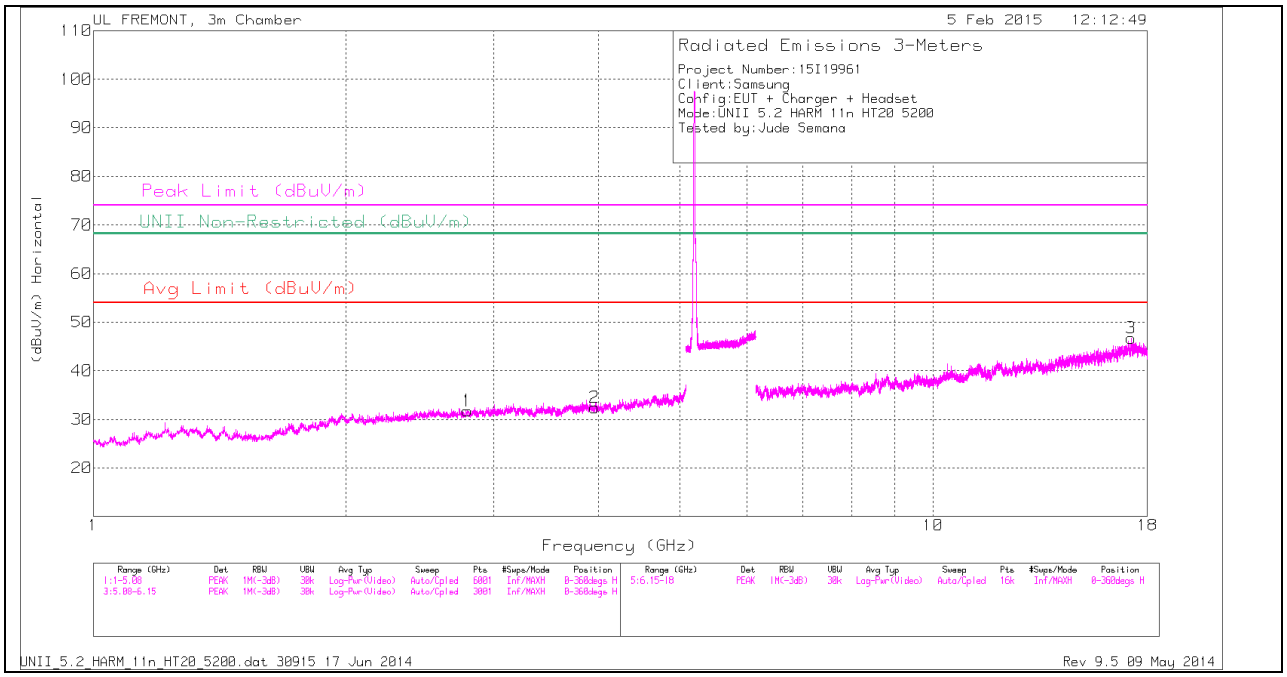
MID CHANNEL HORIZONTAL



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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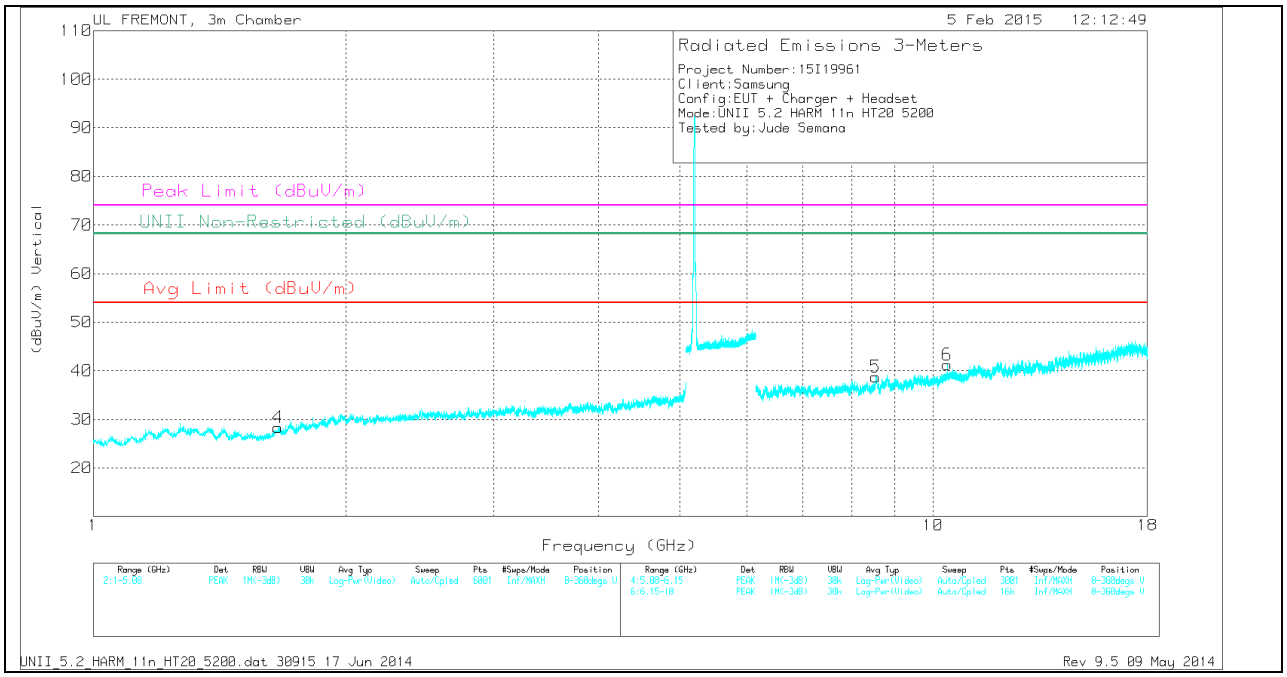
MID CHANNEL VERTICAL



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	1.661	32.23	PK	28.6	-32.5	0	28.33	-	-	74	-45.67	-	-	0-360	200	V
1	2.79	31.57	PK	32.6	-32.4	0	31.77	-	-	74	-42.23	-	-	0-360	100	H
2	3.955	30.54	PK	33.2	-31.3	0	32.44	-	-	74	-41.56	-	-	0-360	100	H
5	8.546	28.94	PK	35.8	-26	0	38.74	-	-	-	-	68.2	-29.46	0-360	200	V
6	10.399	29.73	PK	37.3	-25.8	0	41.23	-	-	-	-	68.2	-26.97	0-360	200	V
3	17.216	28.52	PK	41.3	-23.1	0	46.72	-	-	-	-	68.2	-21.48	0-360	100	H

PK - Peak detector

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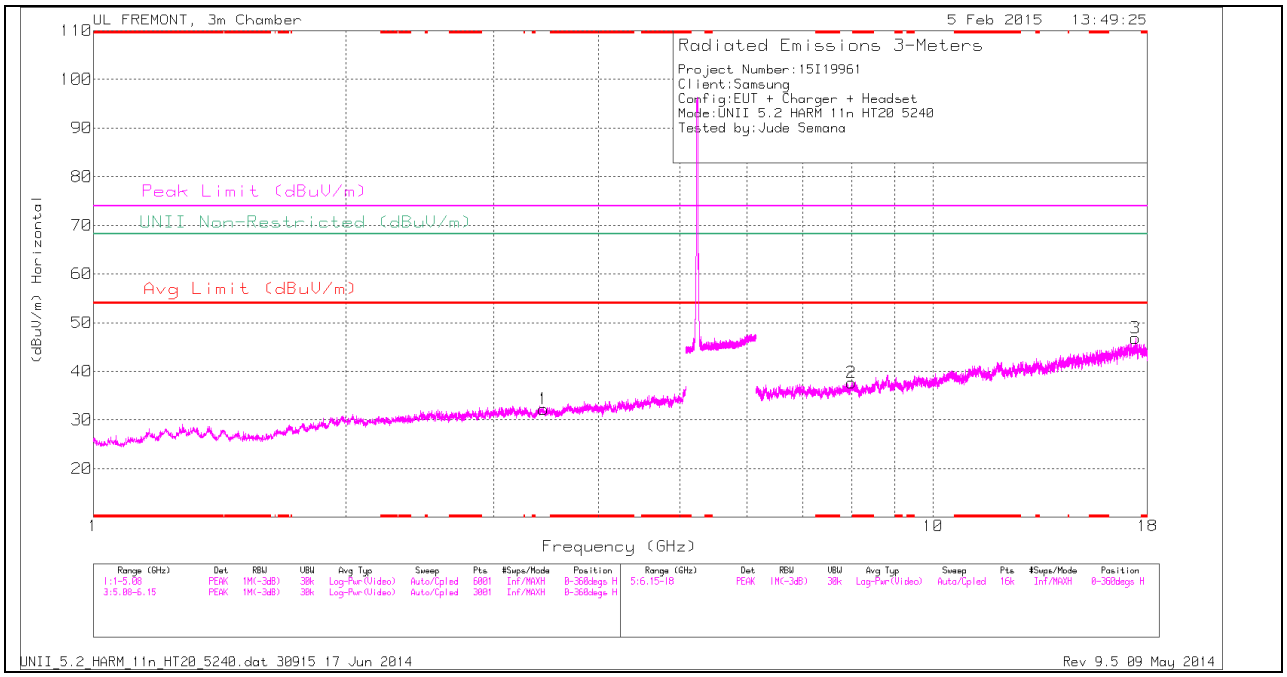
HIGH CHANNEL HORIZONTAL



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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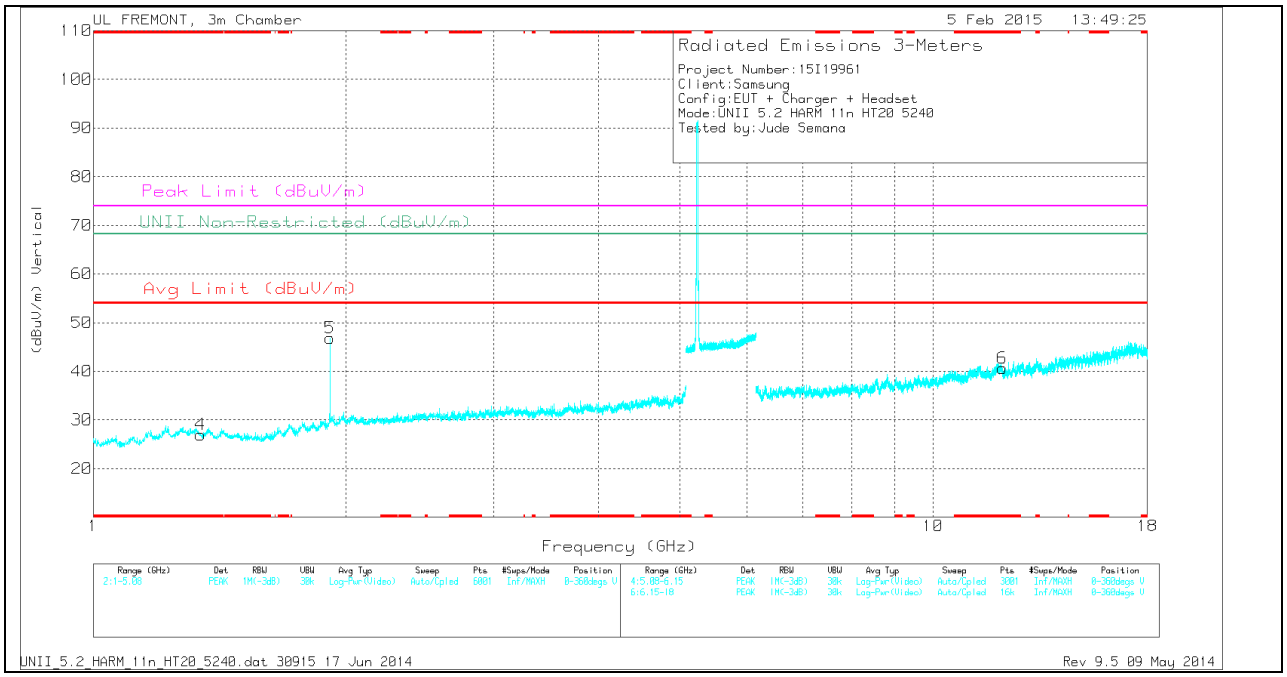
HIGH CHANNEL VERTICAL



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
4	* 1.343	31.18	PK	29.3	-33.5	0	26.98	-	-	74	-47.02	-	-	0-360	200	V
6	* 12.099	28.33	PK	39	-26.7	0	40.63	-	-	74	-33.37	-	-	0-360	100	V
5	1.915	48.42	PK	31.2	-32.8	0	46.82	-	-	-	-	68.2	-21.38	0-360	100	V
1	3.438	31.02	PK	32.7	-31.5	0	32.22	-	-	-	-	68.2	-35.98	0-360	200	H
2	7.996	30.05	PK	35.8	-28.2	0	37.65	-	-	-	-	68.2	-30.55	0-360	100	H
3	17.424	27.8	PK	41.4	-22.4	0	46.8	-	-	-	-	68.2	-21.4	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
1.914	52.4	PK1	31.2	-32.8	0	50.8	-	-	-	-	68.2	-17.4	304	393	V
1.915	29.74	AD1	31.2	-32.8	.3	28.44	-	-	-	-	-	-	304	393	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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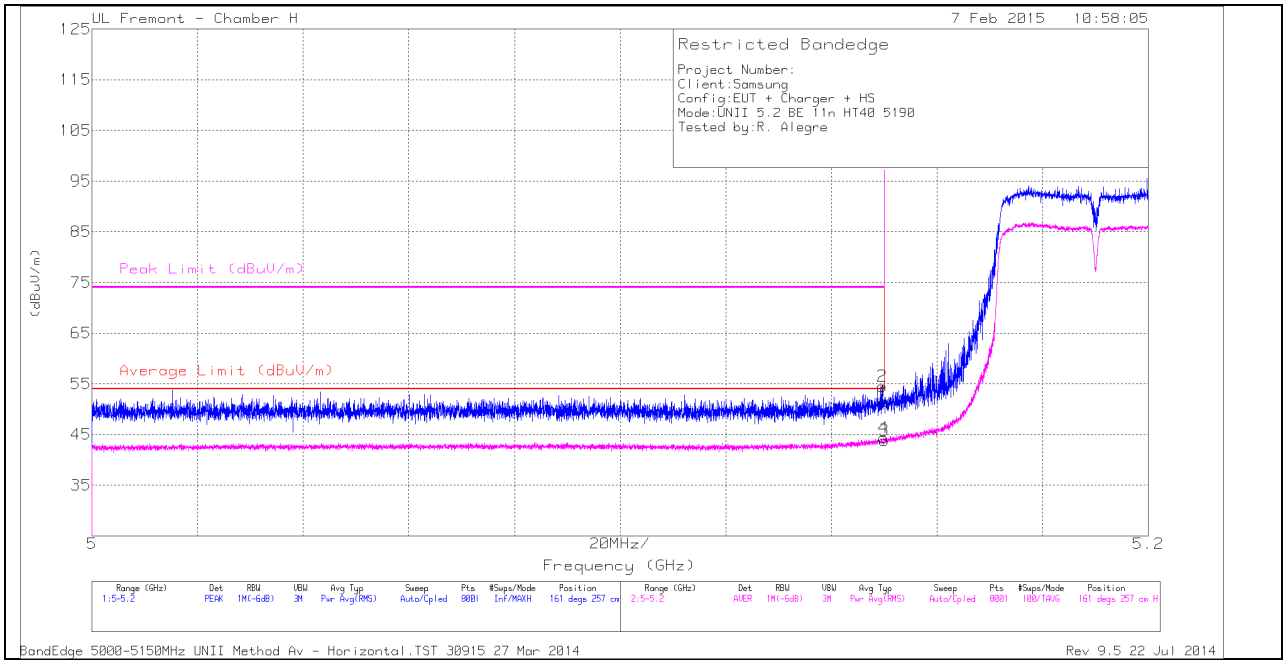
11.1.3. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.2 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (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	39.82	PK	34.5	-22.8	0	51.52	-	-	74	-22.48	161	257	H
2	* 5.15	42.8	PK	34.5	-22.8	0	54.5	-	-	74	-19.5	161	257	H
3	* 5.15	31.45	RMS	34.5	-22.8	.64	43.79	54	-10.21	-	-	161	257	H
4	* 5.15	31.92	RMS	34.5	-22.8	.64	44.26	54	-9.74	-	-	161	257	H

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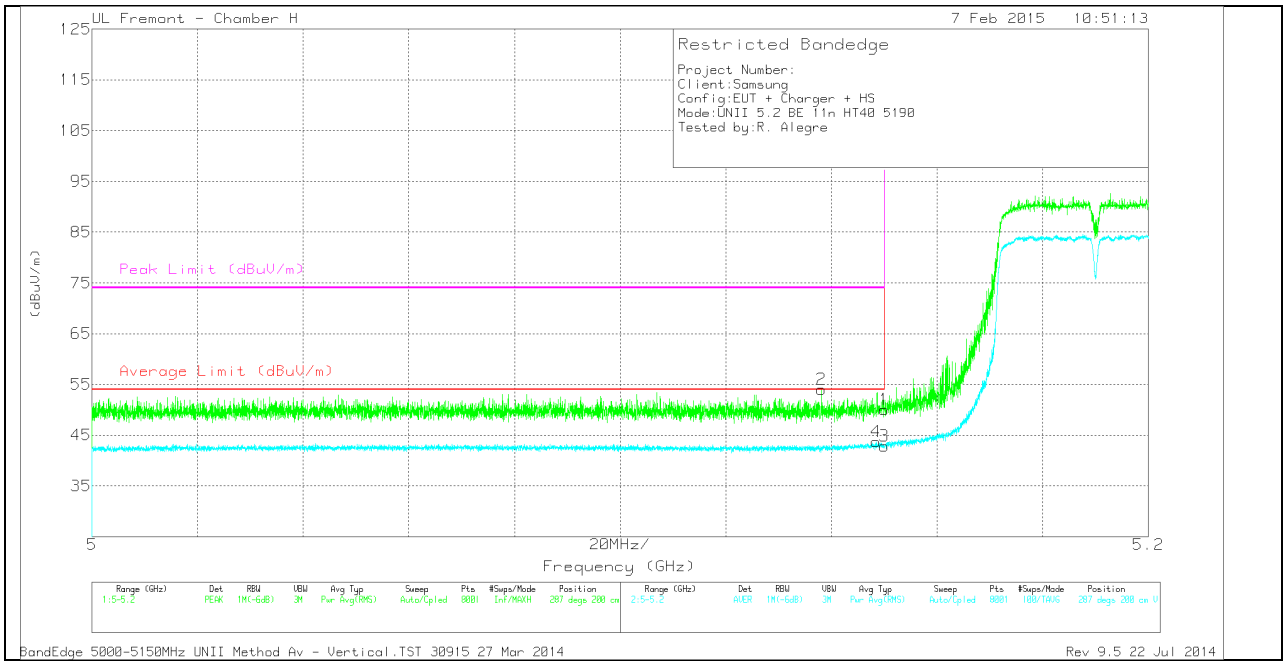
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (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	38.32	PK	34.5	-22.8	0	50.02	-	-	74	-23.98	287	200	V
2	* 5.138	42.26	PK	34.5	-22.8	0	53.96	-	-	74	-20.04	287	200	V
3	* 5.15	30.4	RMS	34.5	-22.8	.64	42.74	54	-11.26	-	-	287	200	V
4	* 5.148	31.3	RMS	34.5	-22.8	.64	43.64	54	-10.36	-	-	287	200	V

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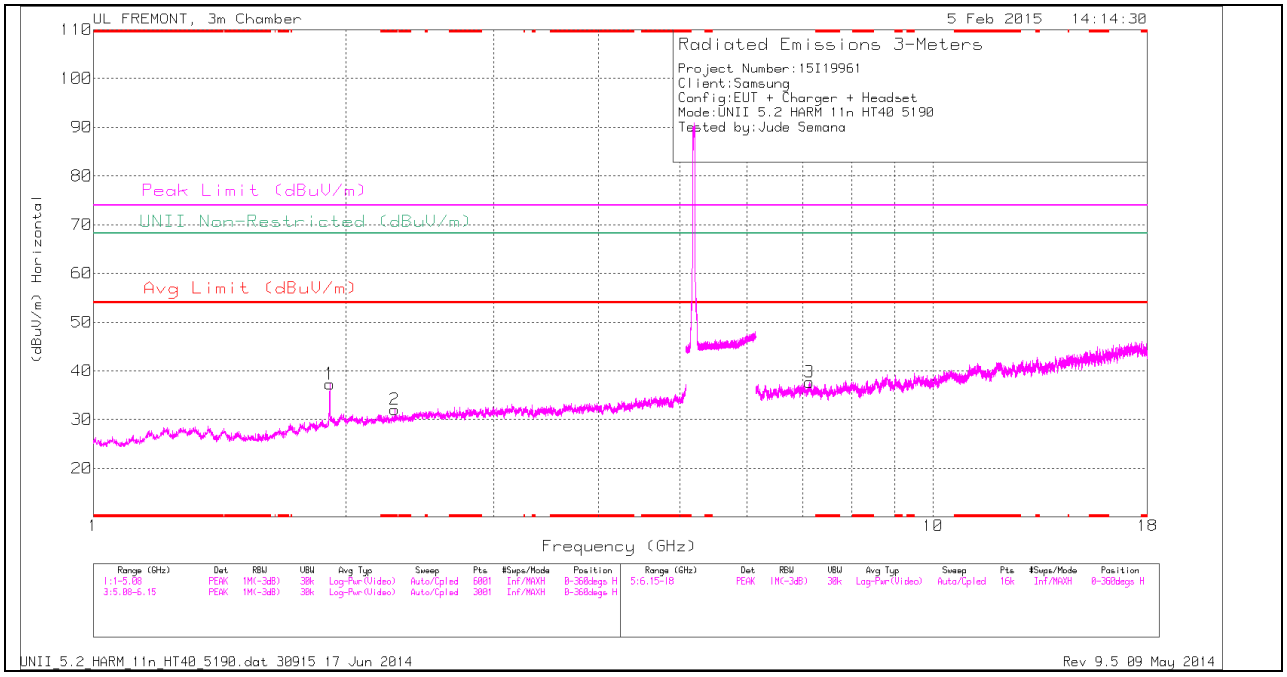
HARMONICS AND SPURIOUS EMISSIONS

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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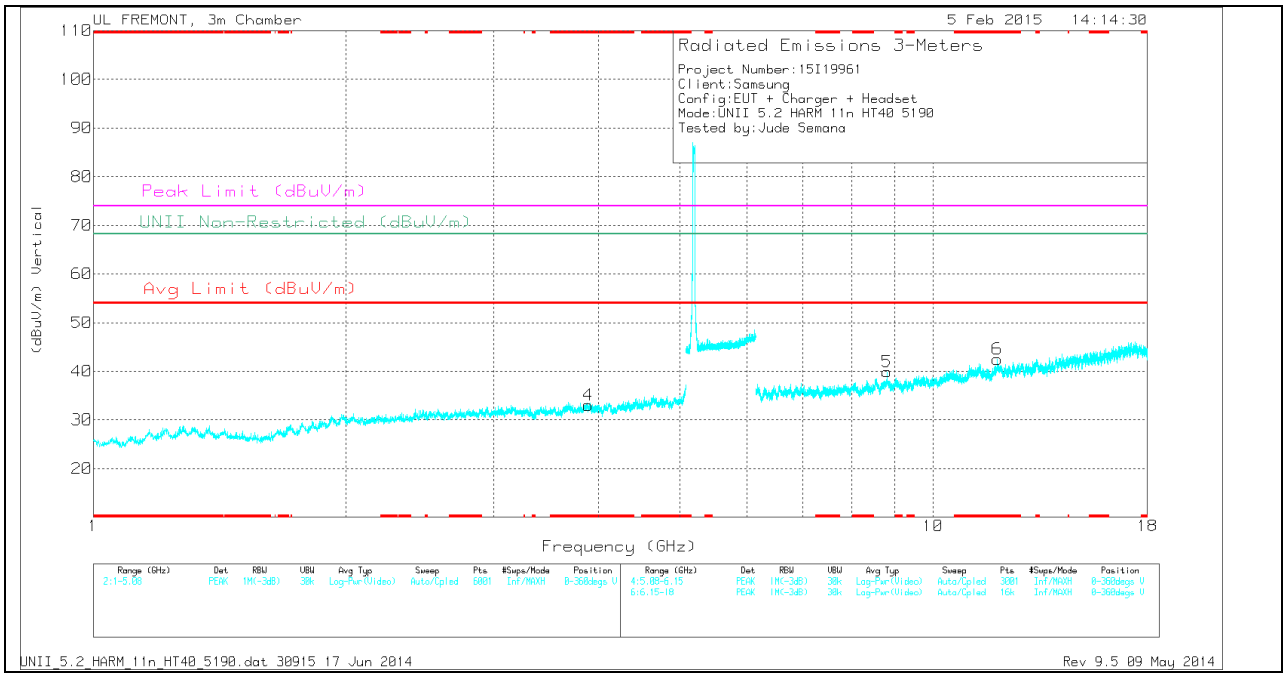
LOW CHANNEL VERTICAL



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	* 2.286	32.65	PK	31.6	-32.2	0	32.05	-	-	74	-41.95	-	-	0-360	200	H
4	* 3.886	30.64	PK	33.2	-30.8	0	33.04	-	-	74	-40.96	-	-	0-360	100	V
6	* 11.928	29.61	PK	39.1	-26.2	0	42.51	-	-	74	-31.49	-	-	0-360	200	V
1	1.915	38.9	PK	31.2	-32.8	0	37.3	-	-	-	-	68.2	-30.9	0-360	100	H
3	7.128	31.11	PK	35.6	-29	0	37.71	-	-	-	-	68.2	-30.49	0-360	100	H
5	8.817	29.61	PK	35.9	-25.6	0	39.91	-	-	-	-	68.2	-28.29	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
1.914	30.97	AD1	31.2	-32.8	.64	30.01	-	-	-	-	-	-	307	292	H
1.915	41.62	PK1	31.2	-32.8	0	40.02	-	-	-	-	68.2	-28.18	307	292	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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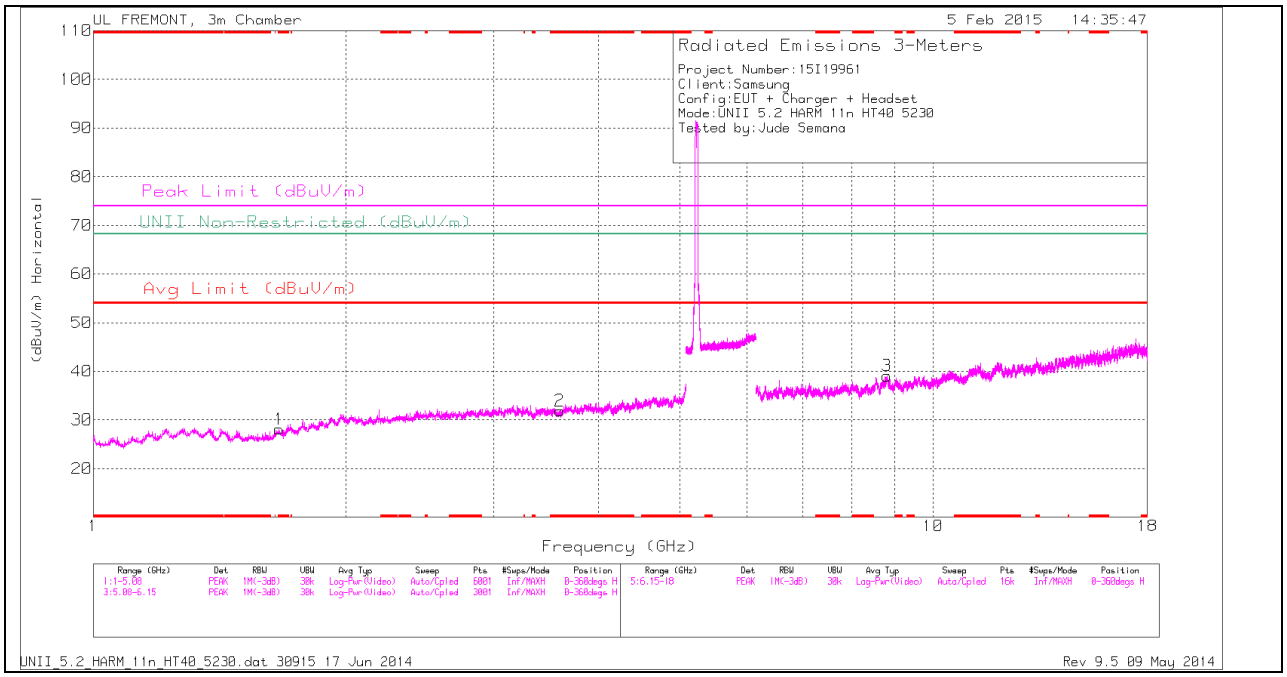
MID CHANNEL HORIZONTAL



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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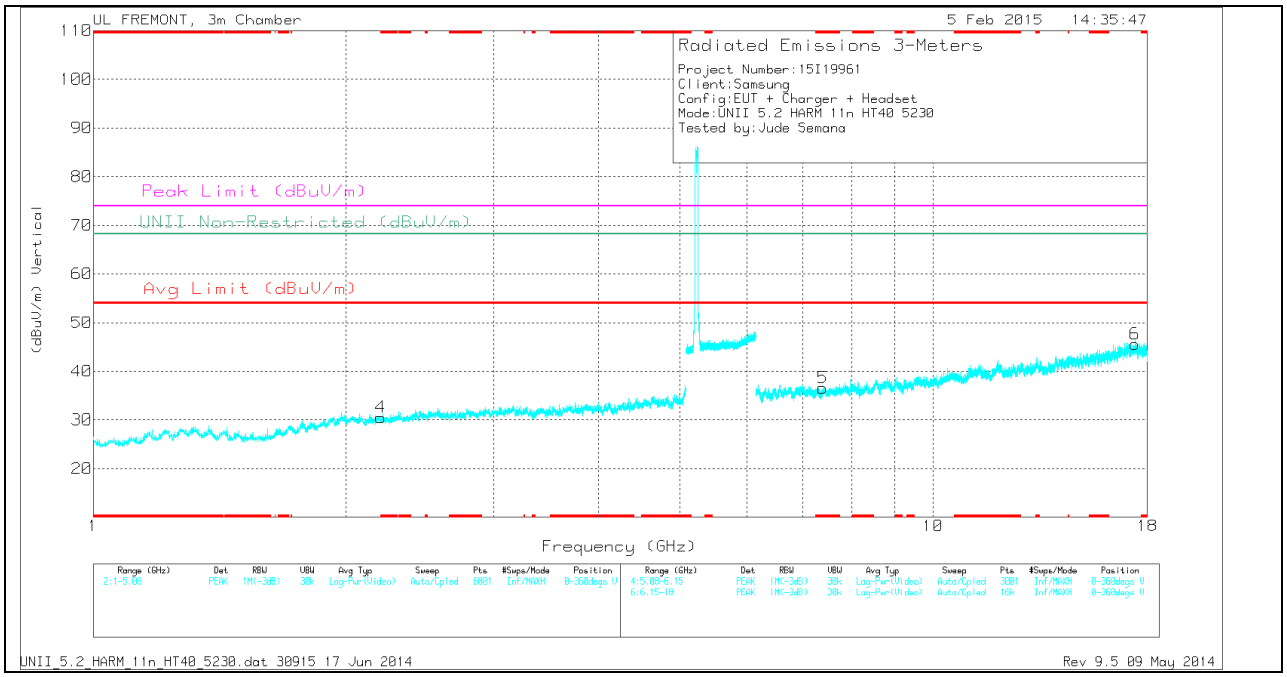
MID CHANNEL VERTICAL



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	* 1.666	31.92	PK	28.7	-32.5	0	28.12	-	-	74	-45.88	-	-	0-360	200	H
2	* 3.594	30.89	PK	32.8	-31.8	0	31.89	-	-	74	-42.11	-	-	0-360	200	H
4	* 2.2	31.7	PK	31.4	-32.6	0	30.5	-	-	74	-43.5	-	-	0-360	200	V
5	* 7.39	29.69	PK	35.6	-28.7	0	36.59	-	-	74	-37.41	-	-	0-360	100	V
3	8.818	28.79	PK	35.9	-25.6	0	39.09	-	-	-	-	68.2	-29.11	0-360	200	H
6	17.393	27.28	PK	41.4	-23.1	0	45.58	-	-	-	-	68.2	-22.62	0-360	200	V

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

PK - Peak detector

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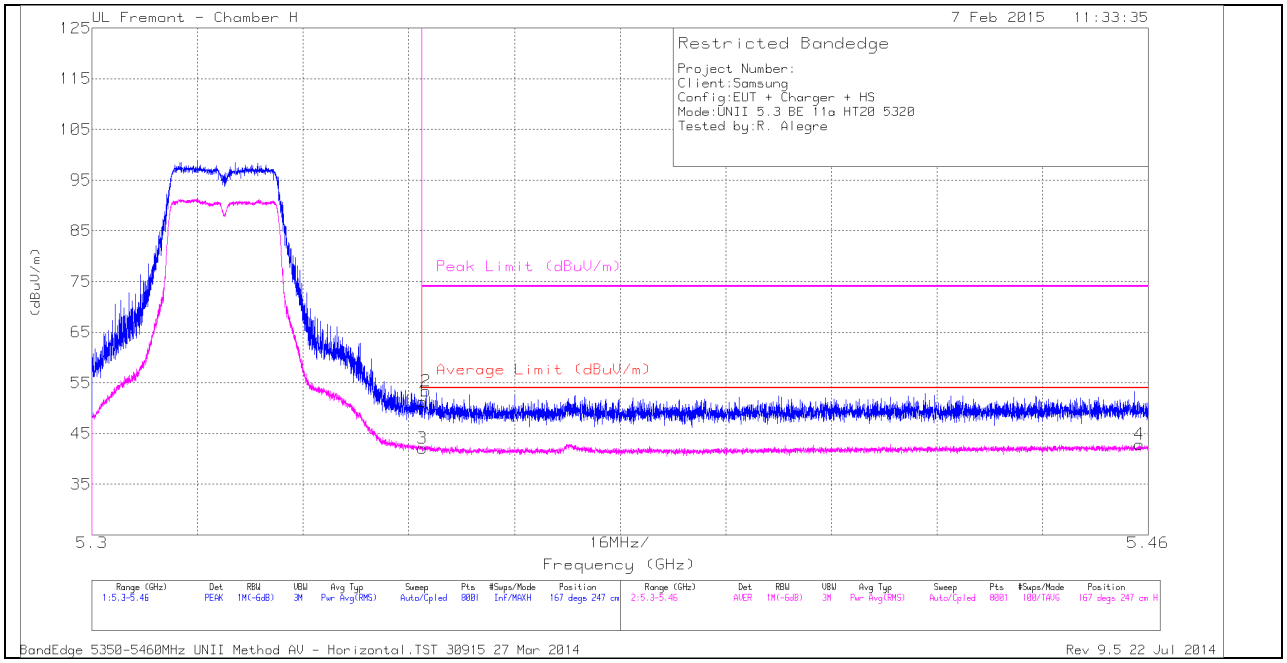
11.2. 5.3 GHz

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 T863 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	39.07	PK	34.9	-22.7	0	51.27	-	-	74	-22.73	167	247	H
2	* 5.351	41.18	PK	34.9	-22.7	0	53.38	-	-	74	-20.62	167	247	H
3	* 5.35	29.59	RMS	34.9	-22.7	.3	42.09	54	-11.91	-	-	167	247	H
4	* 5.459	30.1	RMS	35	-22.5	.3	42.9	54	-11.1	-	-	167	247	H

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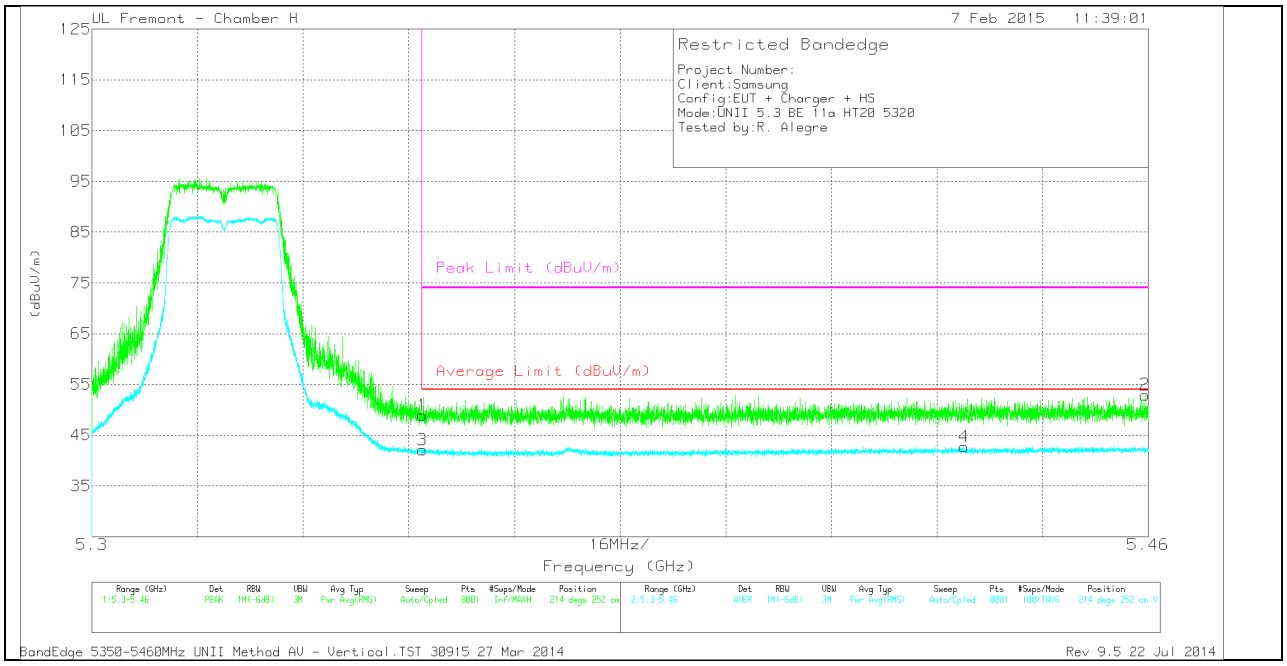
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Fltr/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	36.76	PK	34.9	-22.7	0	48.96	-	-	74	-25.04	214	252	V
2	* 5.46	40.46	PK	35	-22.5	0	52.96	-	-	74	-21.04	214	252	V
3	* 5.35	29.55	RMS	34.9	-22.7	.3	42.05	54	-11.95	-	-	214	252	V
4	* 5.432	29.97	RMS	35	-22.5	.3	42.77	54	-11.23	-	-	214	252	V

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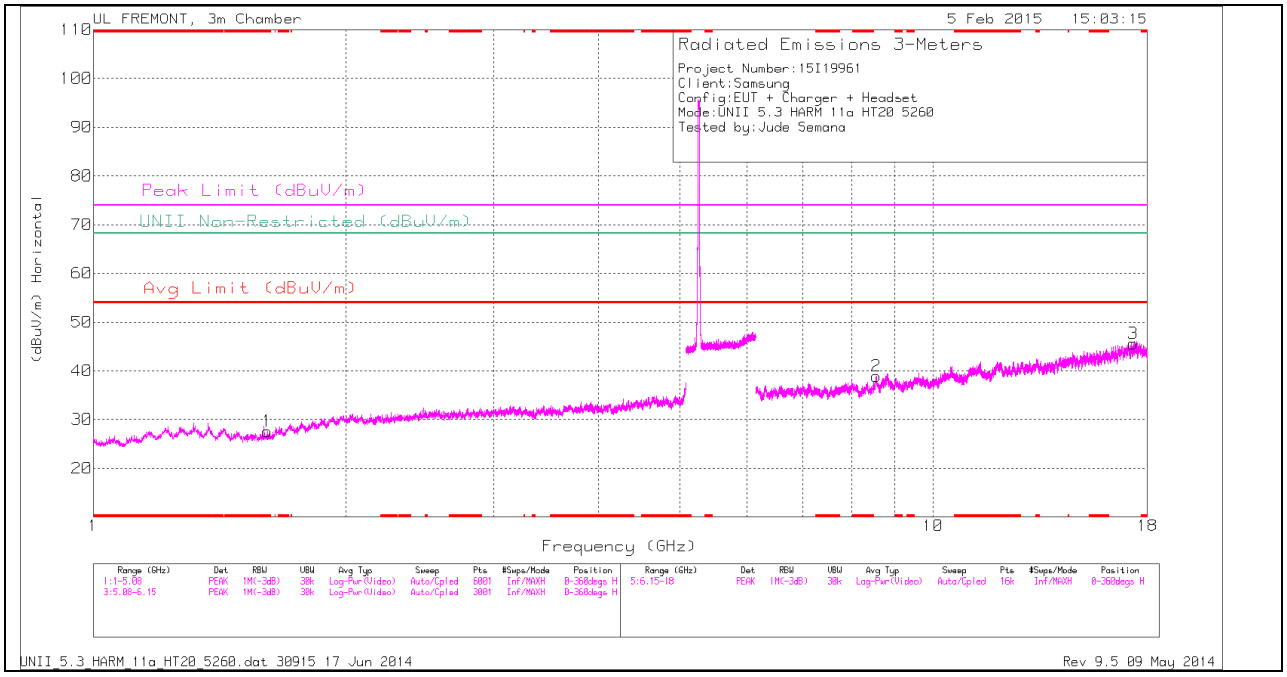
HARMONICS AND SPURIOUS EMISSIONS

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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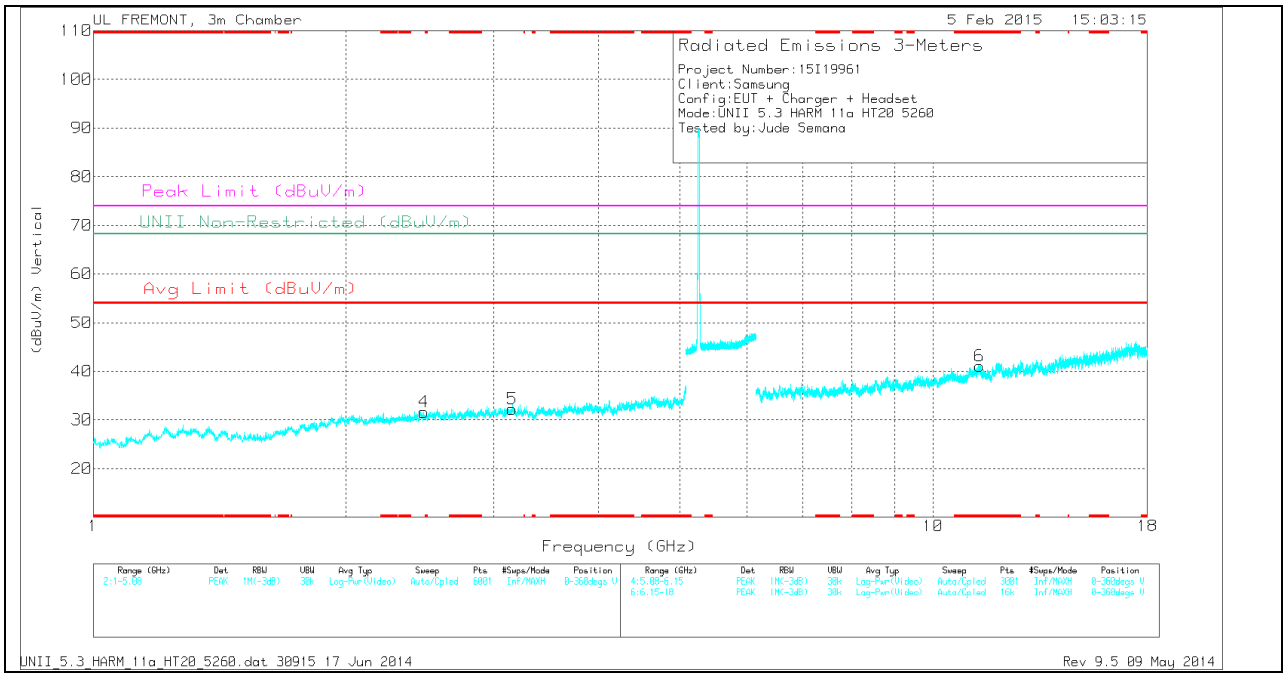
LOW CHANNEL VERTICAL



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	* 1.612	32.7	PK	28.1	-33.2	0	27.6	-	-	74	-46.4	-	-	0-360	100	H
6	* 11.366	28.77	PK	38.2	-25.9	0	41.07	-	-	74	-32.93	-	-	0-360	200	V
4	2.477	31.76	PK	32.3	-32.4	0	31.66	-	-	-	-	68.2	-36.54	0-360	200	V
5	3.155	31.17	PK	32.7	-31.6	0	32.27	-	-	-	-	68.2	-35.93	0-360	100	V
2	8.561	29.19	PK	35.8	-26.1	0	38.89	-	-	-	-	68.2	-29.31	0-360	200	H
3	17.317	28.1	PK	41.4	-23.9	0	45.6	-	-	-	-	68.2	-22.6	0-360	100	H

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

PK - Peak detector

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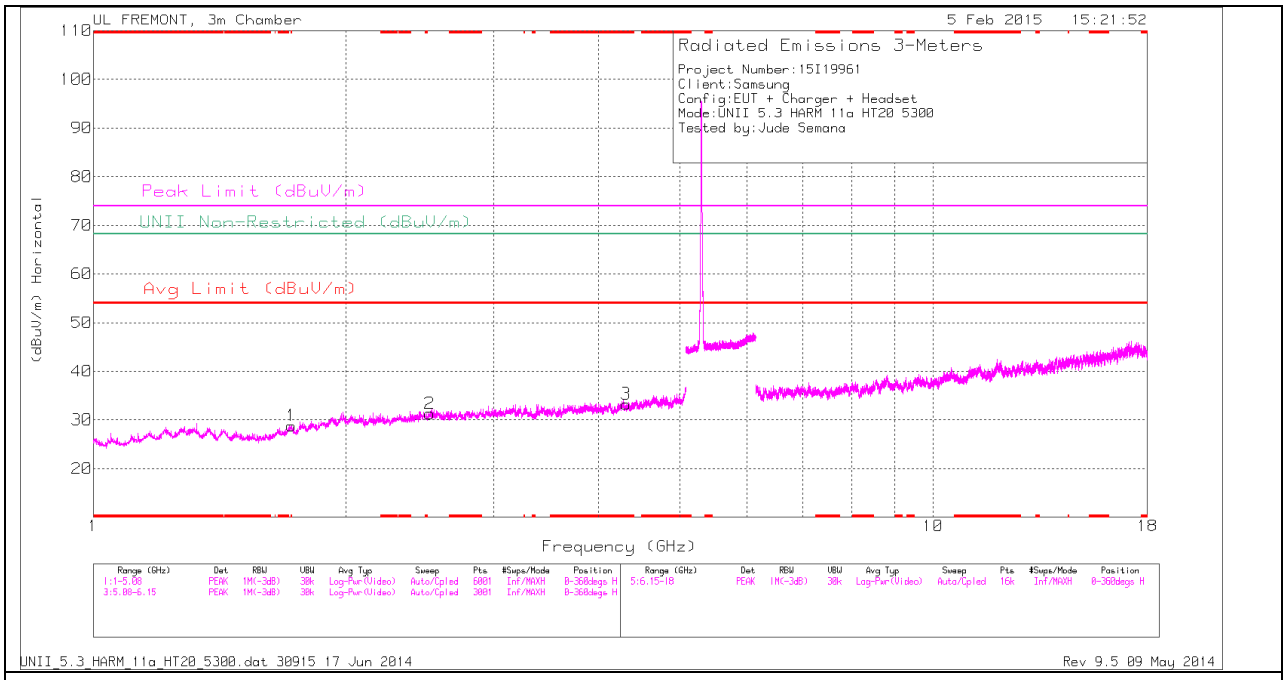
MID CHANNEL HORIZONTAL



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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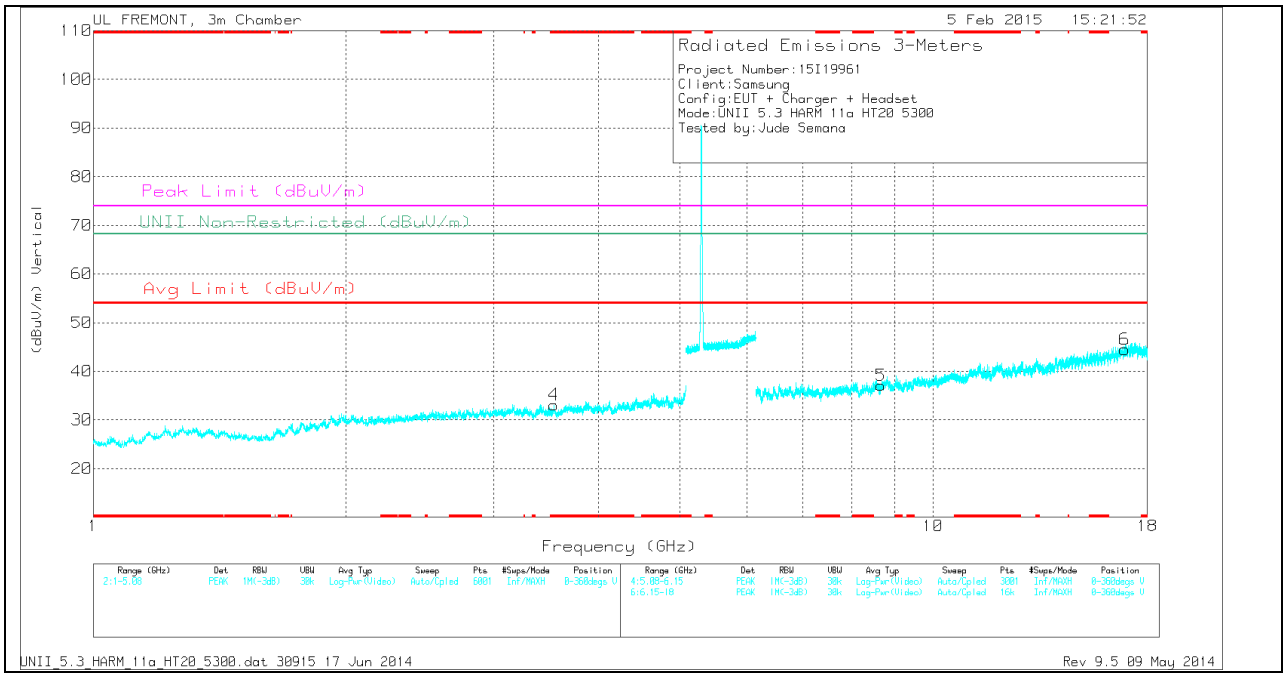
MID CHANNEL VERTICAL



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
3	* 4.312	30.15	PK	33.5	-30.4	0	33.25	-	-	74	-40.75	-	-	0-360	100	H
4	* 3.537	32.1	PK	32.8	-31.8	0	33.1	-	-	74	-40.9	-	-	0-360	100	V
1	1.723	31.6	PK	29.3	-32.1	0	28.8	-	-	-	-	68.2	-39.4	0-360	200	H
2	2.517	31.23	PK	32.3	-32.2	0	31.33	-	-	-	-	68.2	-36.87	0-360	100	H
5	8.669	29	PK	35.9	-27.8	0	37.1	-	-	-	-	68.2	-31.1	0-360	200	V
6	16.915	27.08	PK	41.2	-23.8	0	44.48	-	-	-	-	68.2	-23.72	0-360	100	V

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

PK - Peak detector

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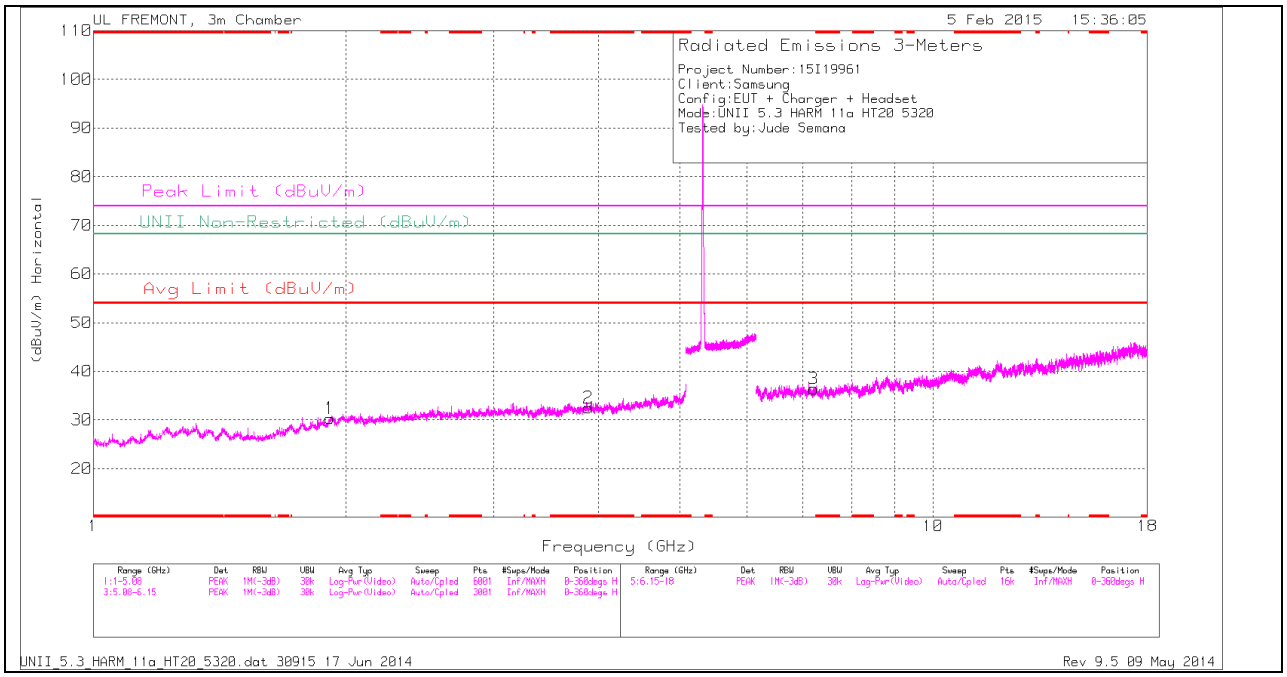
HIGH CHANNEL HORIZONTAL



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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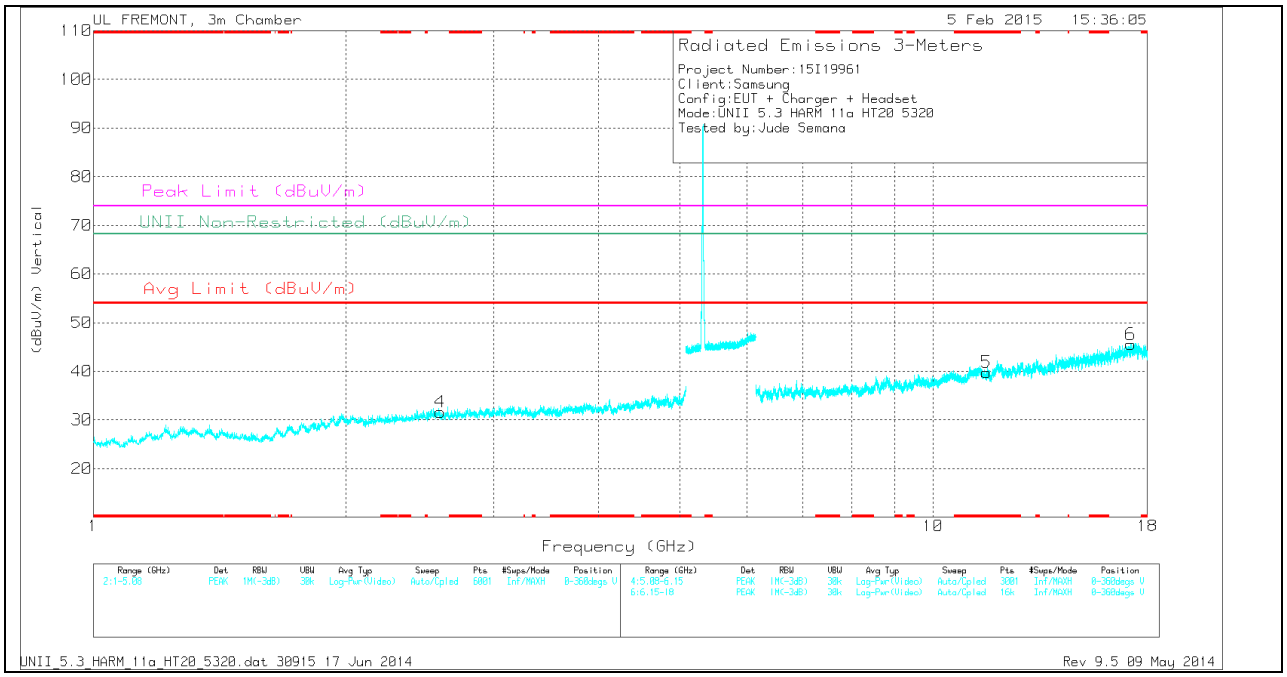
HIGH CHANNEL VERTICAL



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
2	* 3.885	30.1	PK	33.2	-30.8	0	32.5	-	-	74	-41.5	-	-	0-360	100	H
5	* 11.582	27.07	PK	38.6	-25.9	0	39.77	-	-	74	-34.23	-	-	0-360	200	V
1	1.915	31.94	PK	31.2	-32.8	0	30.34	-	-	-	-	68.2	-37.86	0-360	200	H
4	2.591	31.76	PK	32.4	-32.5	0	31.66	-	-	-	-	68.2	-36.54	0-360	200	V
3	7.21	30.02	PK	35.6	-29.2	0	36.42	-	-	-	-	68.2	-31.78	0-360	200	H
6	17.194	27.44	PK	41.3	-23.2	0	45.54	-	-	-	-	68.2	-22.66	0-360	100	V

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

PK - Peak detector

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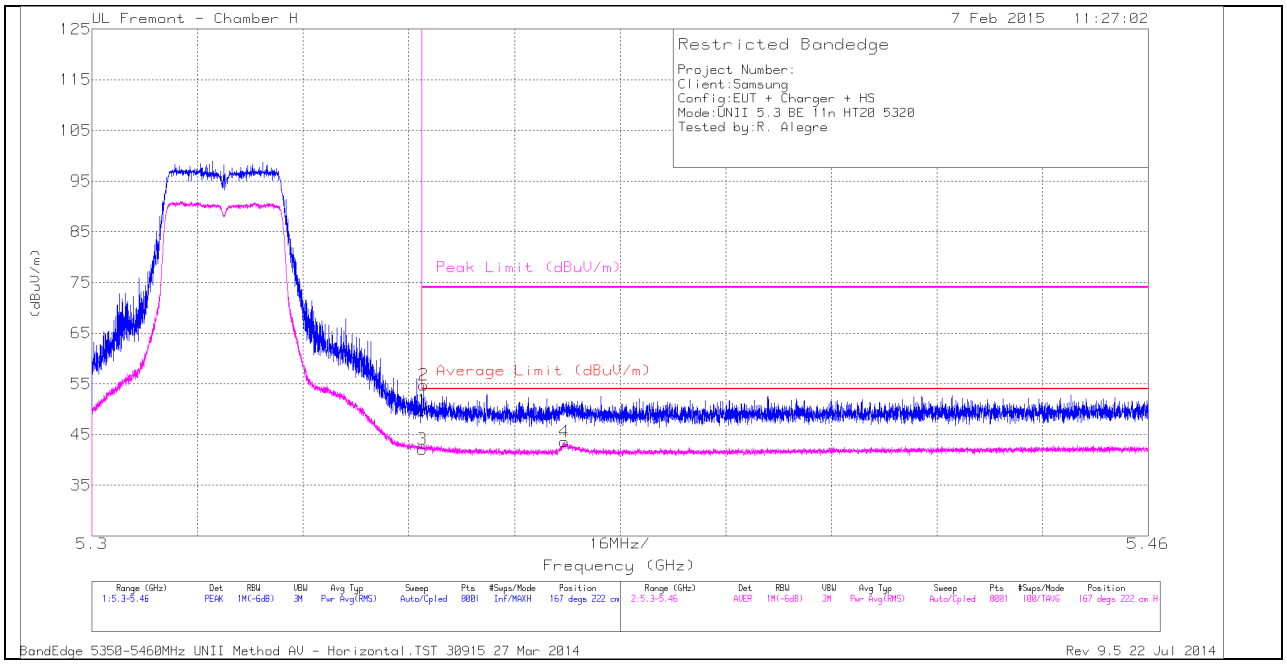
11.2.2. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.3 GHz BAND

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (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	37.54	PK	34.9	-22.7	0	49.74	-	-	74	-24.26	167	222	H
2	* 5.35	42.61	PK	34.9	-22.7	0	54.81	-	-	74	-19.19	167	222	H
3	* 5.35	29.55	RMS	34.9	-22.7	.3	42.05	54	-11.95	-	-	167	222	H
4	* 5.372	31.04	RMS	34.9	-22.7	.3	43.54	54	-10.46	-	-	167	222	H

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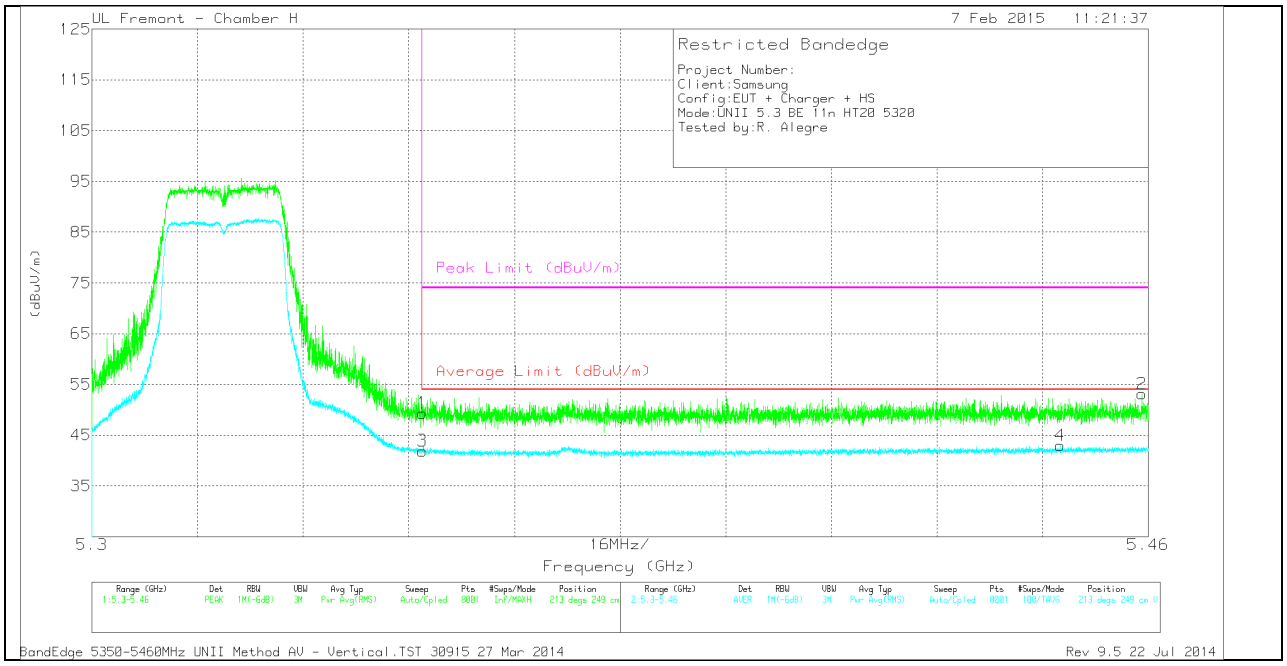
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Fltr/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	37.16	PK	34.9	-22.7	0	49.36	-	-	74	-24.64	213	249	V
2	* 5.459	40.62	PK	35	-22.5	0	53.12	-	-	74	-20.88	213	249	V
3	* 5.35	29.41	RMS	34.9	-22.7	.3	41.91	54	-12.09	-	-	213	249	V
4	* 5.447	30.16	RMS	35	-22.5	.3	42.96	54	-11.04	-	-	213	249	V

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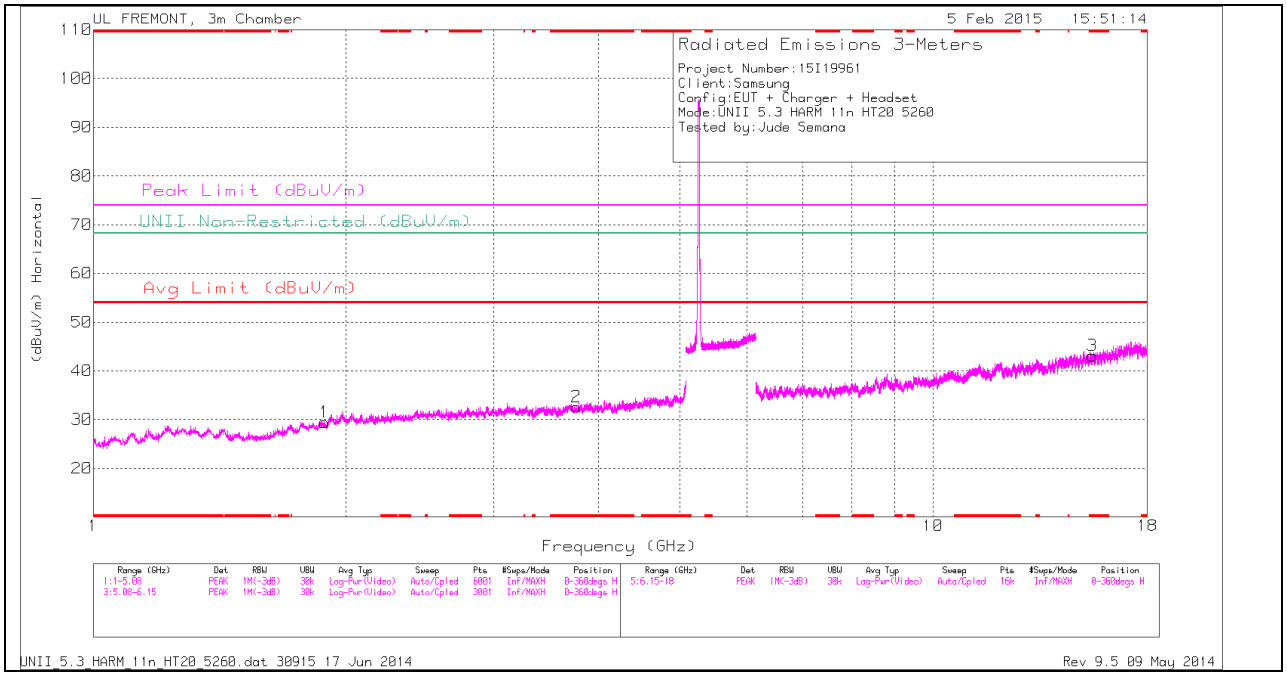
HARMONICS AND SPURIOUS EMISSIONS

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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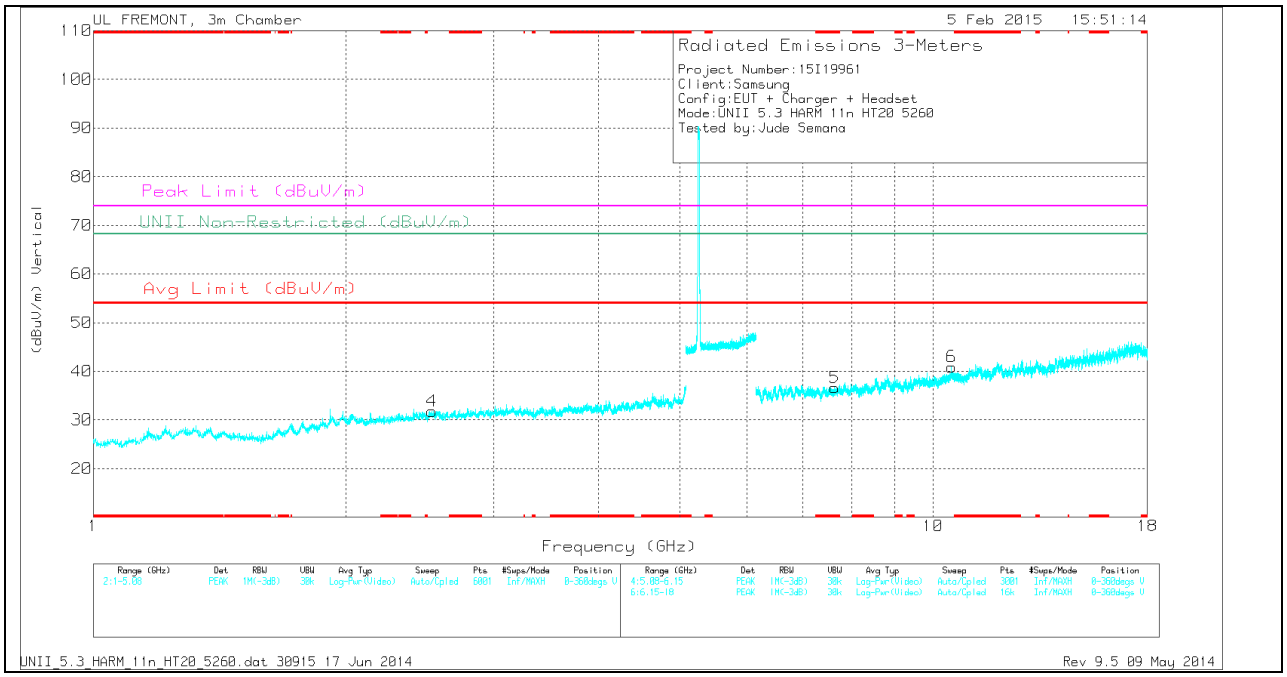
LOW CHANNEL VERTICAL



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	* 3.761	31.32	PK	33.1	-31.8	0	32.62	-	-	74	-41.38	-	-	0-360	200	H
3	* 15.478	29.81	PK	40.2	-26.9	0	43.11	-	-	74	-30.89	-	-	0-360	100	H
5	* 7.639	29.45	PK	35.8	-28.6	0	36.65	-	-	74	-37.35	-	-	0-360	200	V
1	1.885	31.43	PK	31	-33	0	29.43	-	-	-	-	68.2	-38.77	0-360	200	H
4	2.533	31.51	PK	32.4	-32.1	0	31.81	-	-	-	-	68.2	-36.39	0-360	100	V
6	10.519	28.4	PK	37.5	-25	0	40.9	-	-	-	-	68.2	-27.3	0-360	200	V

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

PK - Peak detector

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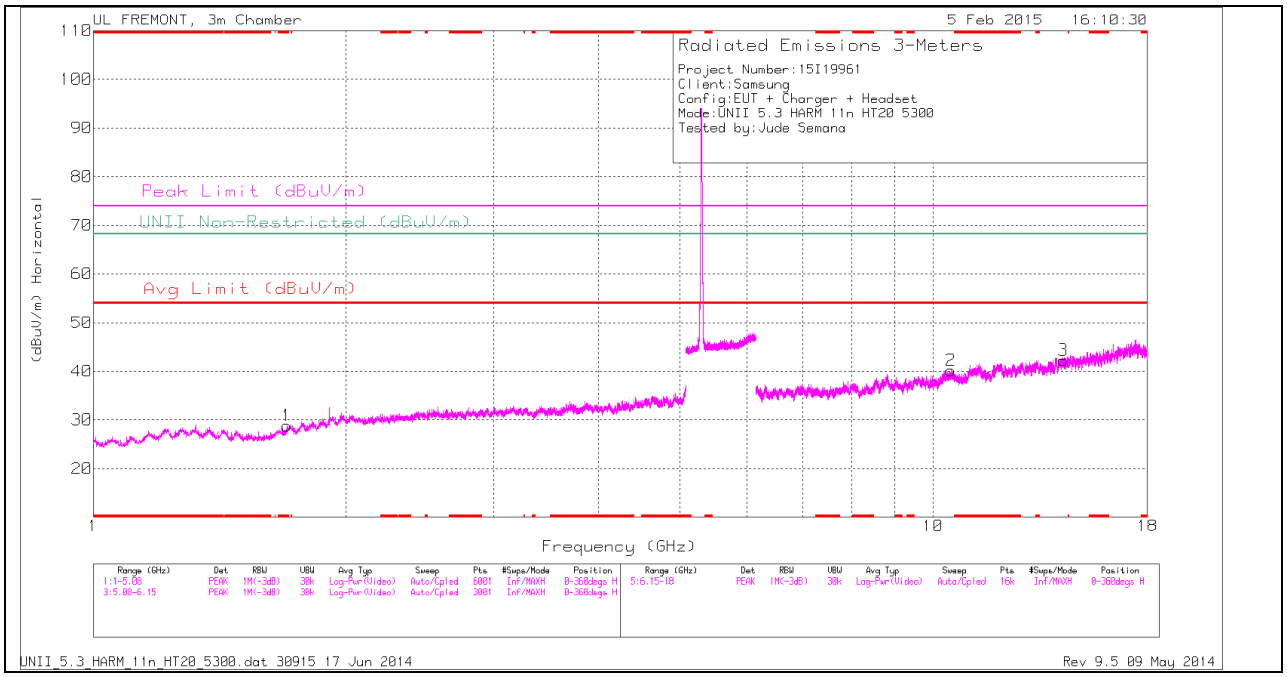
MID CHANNEL HORIZONTAL



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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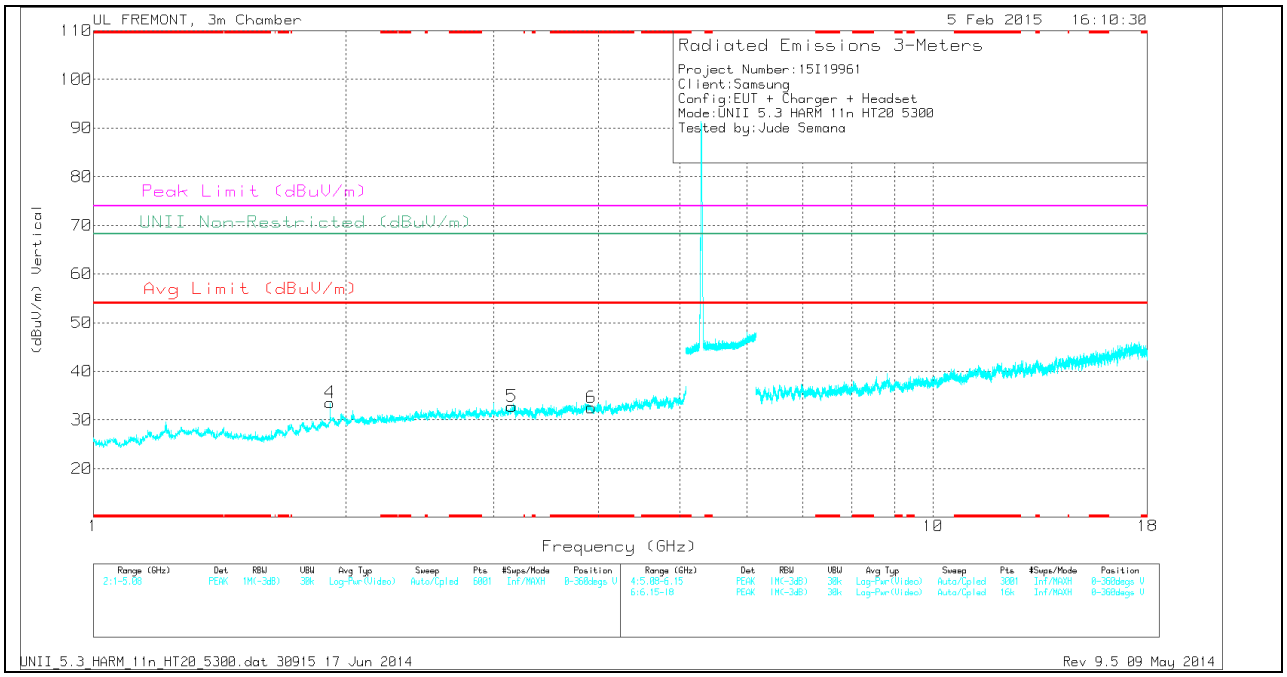
MID CHANNEL VERTICAL



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
1	* 1.701	32.01	PK	29	-32.2	0	28.81	-	-	74	-45.19	-	-	0-360	100	H
6	* 3.919	30.57	PK	33.2	-31.2	0	32.57	-	-	74	-41.43	-	-	0-360	100	V
4	1.915	35.16	PK	31.2	-32.8	0	33.56	-	-	-	-	68.2	-34.64	0-360	100	V
5	3.152	31.7	PK	32.7	-31.6	0	32.8	-	-	-	-	68.2	-35.4	0-360	200	V
2	10.503	27.99	PK	37.5	-25.3	0	40.19	-	-	-	-	68.2	-28.01	0-360	100	H
3	14.292	30.17	PK	39.3	-27.2	0	42.27	-	-	-	-	68.2	-25.93	0-360	200	H

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

PK - Peak detector

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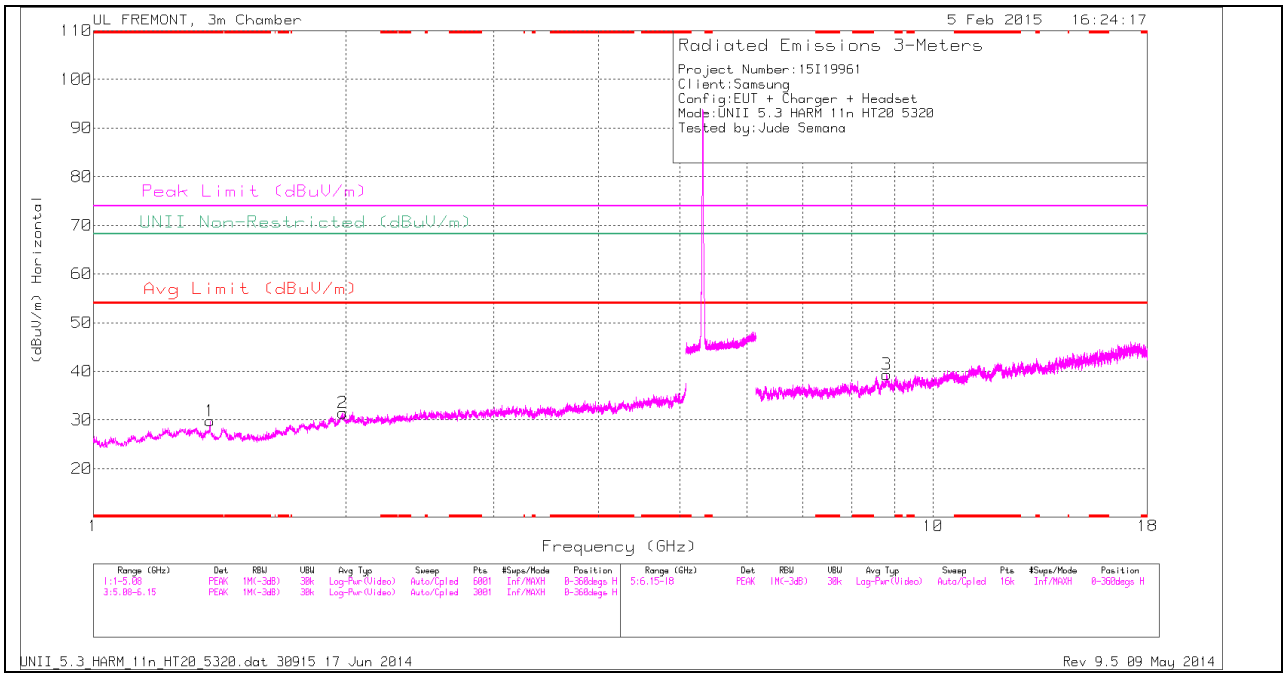
HIGH CHANNEL HORIZONTAL



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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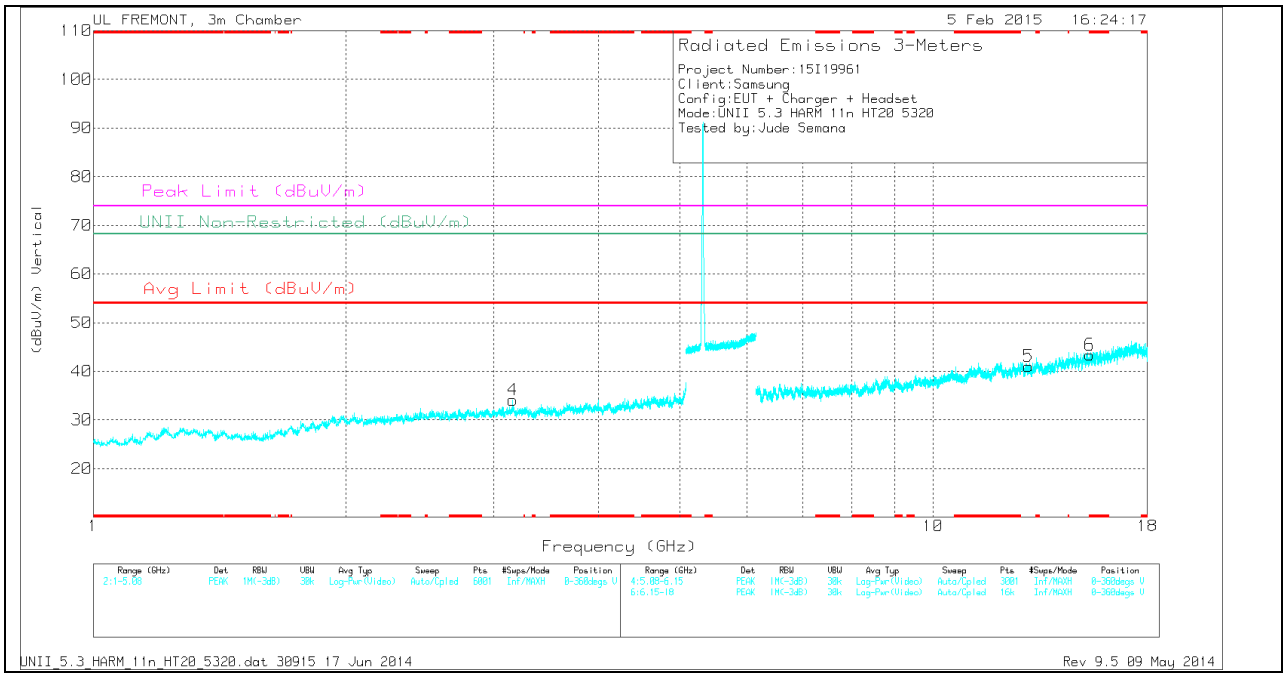
HIGH CHANNEL VERTICAL



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	* 1.378	33.91	PK	28.9	-33	0	29.81	-	-	74	-44.19	-	-	0-360	200	H
6	* 15.369	30.37	PK	40	-27	0	43.37	-	-	74	-30.63	-	-	0-360	100	V
2	1.984	32.06	PK	31.4	-32	0	31.46	-	-	-	-	68.2	-36.74	0-360	100	H
4	3.161	32.94	PK	32.7	-31.5	0	34.14	-	-	-	-	68.2	-34.06	0-360	200	V
3	8.807	29.04	PK	35.9	-25.6	0	39.34	-	-	-	-	68.2	-28.86	0-360	100	H
5	12.994	29.02	PK	39	-27	0	41.02	-	-	-	-	68.2	-27.18	0-360	200	V

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

PK - Peak detector

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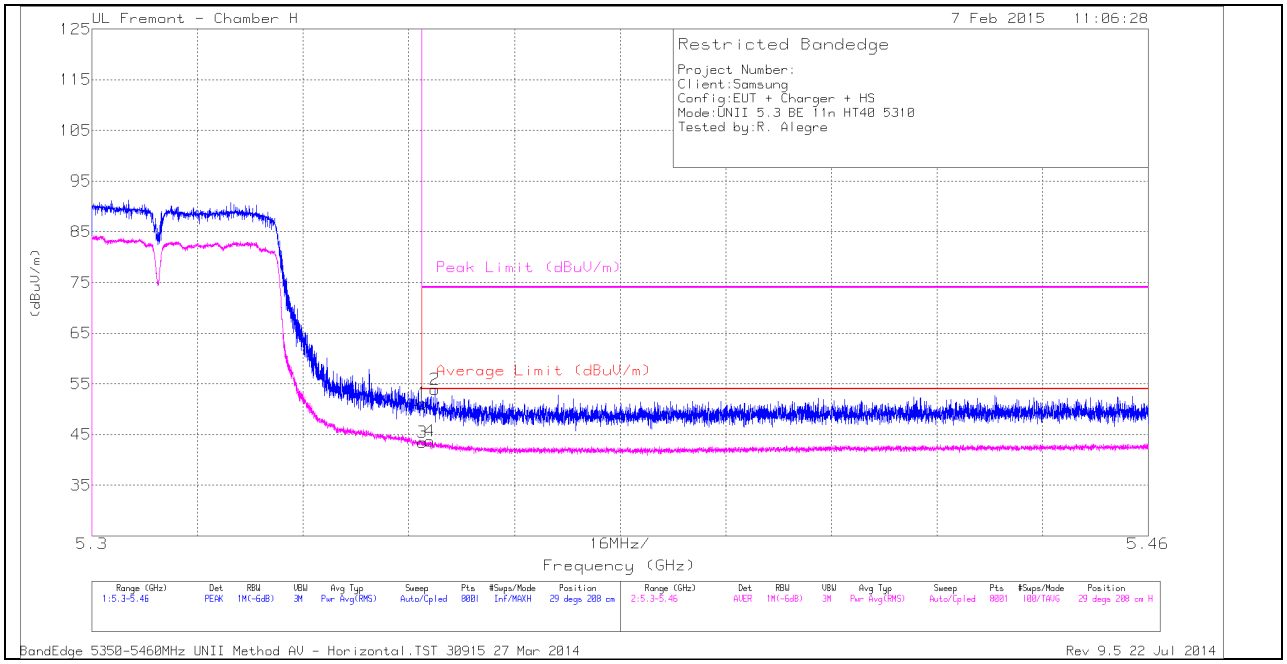
11.2.3. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.3 GHz BAND AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (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	38.95	PK	34.9	-22.7	0	51.15	-	-	74	-22.85	29	208	H
2	* 5.352	41.65	PK	34.9	-22.7	0	53.85	-	-	74	-20.15	29	208	H
3	* 5.35	30.55	RMS	34.9	-22.7	.64	43.39	54	-10.61	-	-	29	208	H
4	* 5.351	30.83	RMS	34.9	-22.7	.64	43.67	54	-10.33	-	-	29	208	H

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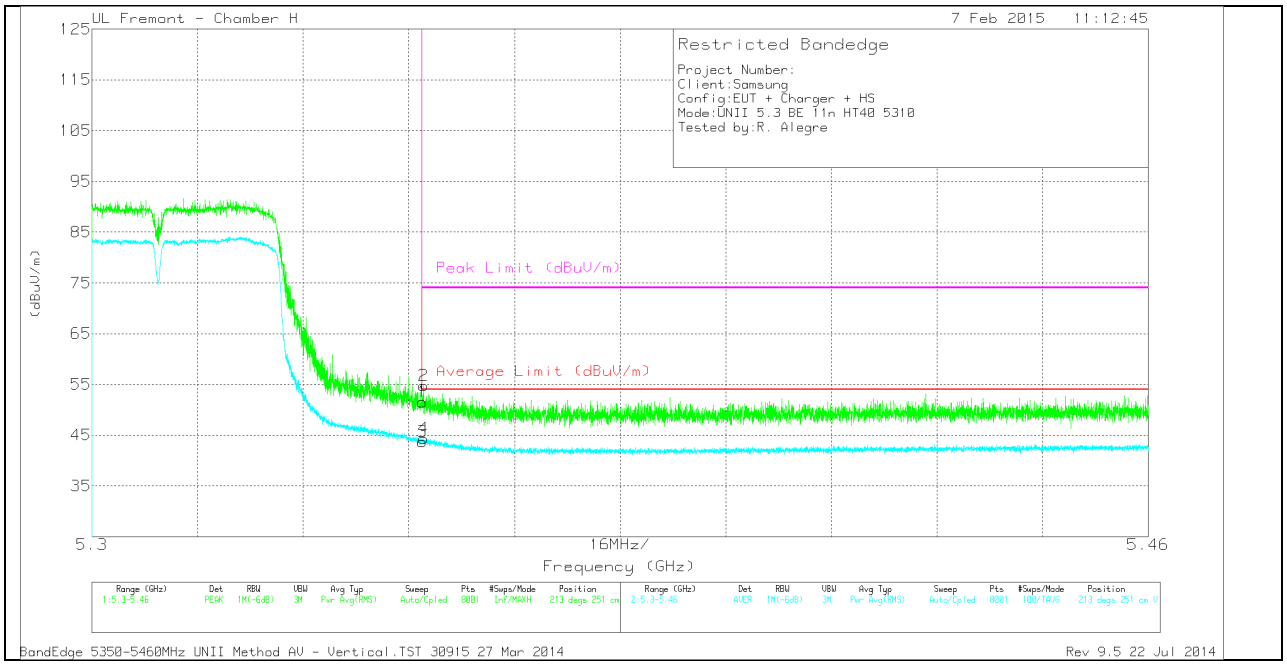
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	39.39	PK	34.9	-22.7	0	51.59	-	-	74	-22.41	213	251	V
2	* 5.35	42.58	PK	34.9	-22.7	0	54.78	-	-	74	-19.22	213	251	V
3	* 5.35	30.84	RMS	34.9	-22.7	.64	43.68	54	-10.32	-	-	213	251	V
4	* 5.35	31.42	RMS	34.9	-22.7	.64	44.26	54	-9.74	-	-	213	251	V

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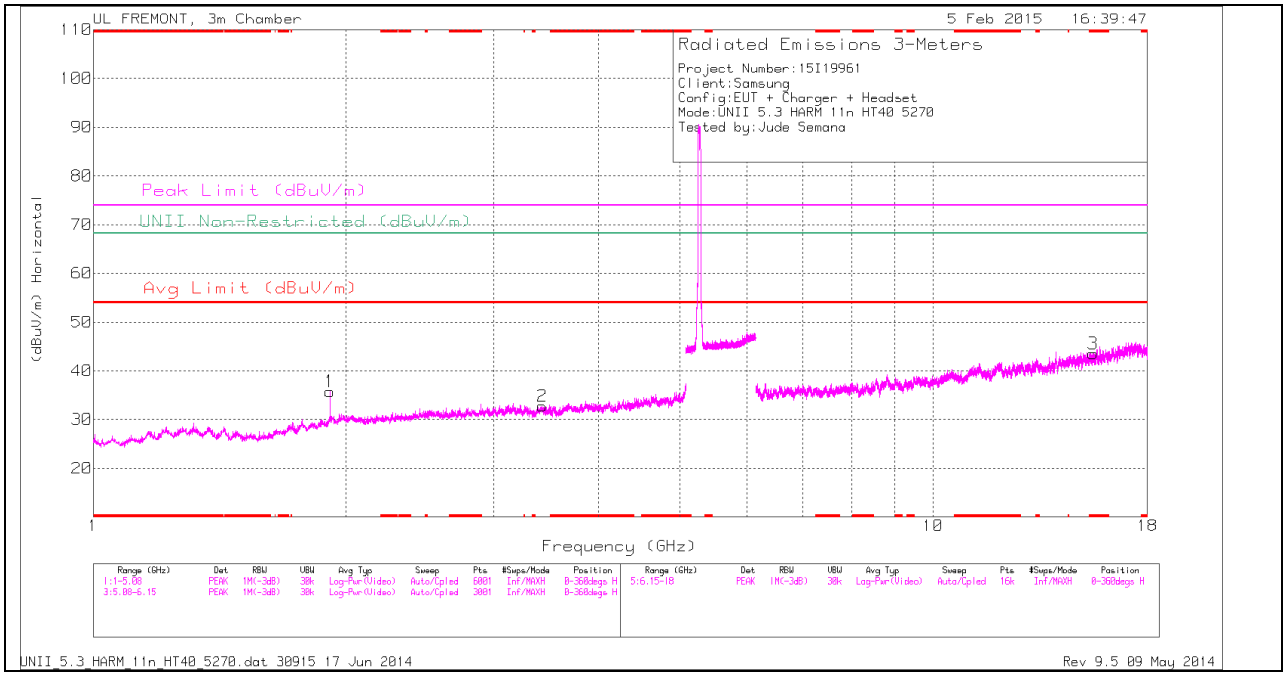
HARMONICS AND SPURIOUS EMISSIONS

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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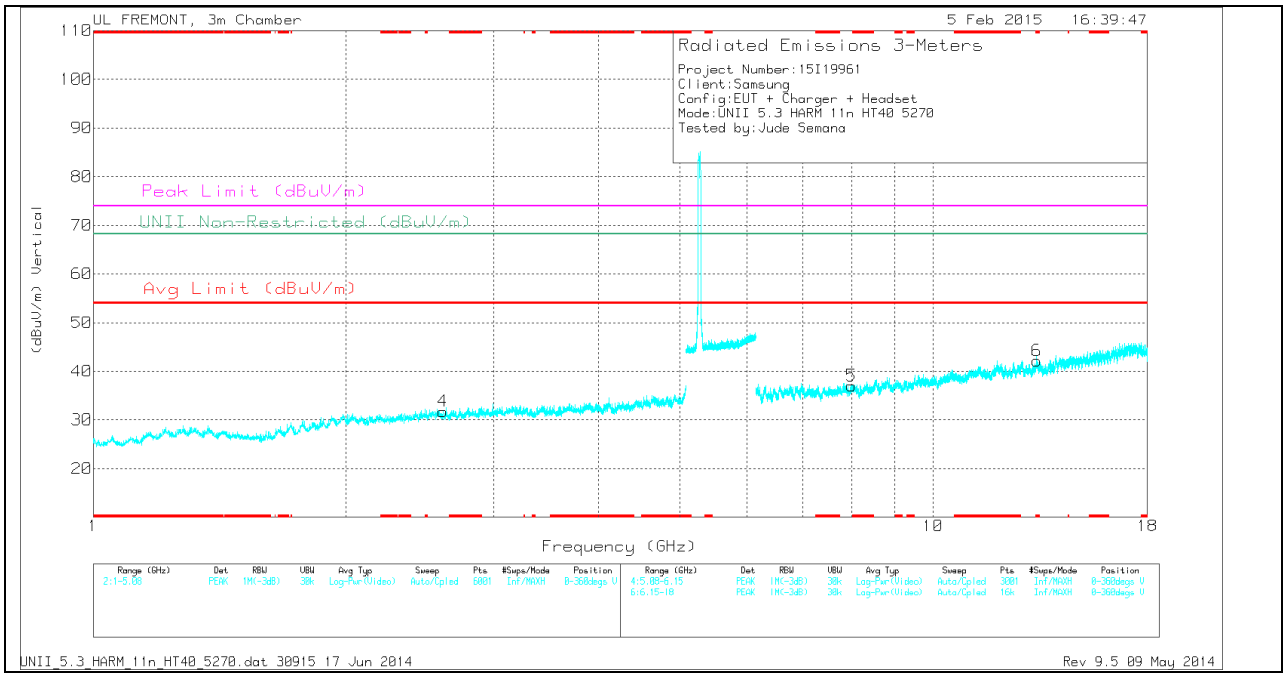
LOW CHANNEL VERTICAL



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	* 15.509	30.12	PK	40.2	-26.8	0	43.52	-	-	74	-30.48	-	-	0-360	200	H
6	* 13.294	29.96	PK	39	-26.8	0	42.16	-	-	74	-31.84	-	-	0-360	200	V
1	1.915	37.35	PK	31.2	-32.8	0	35.75	-	-	-	-	68.2	-32.45	0-360	200	H
4	2.609	31.75	PK	32.4	-32.4	0	31.75	-	-	-	-	68.2	-36.45	0-360	100	V
2	3.426	31.56	PK	32.7	-31.5	0	32.76	-	-	-	-	68.2	-35.44	0-360	200	H
5	8	29.31	PK	35.8	-28.1	0	37.01	-	-	-	-	68.2	-31.19	0-360	100	V

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

PK - Peak detector

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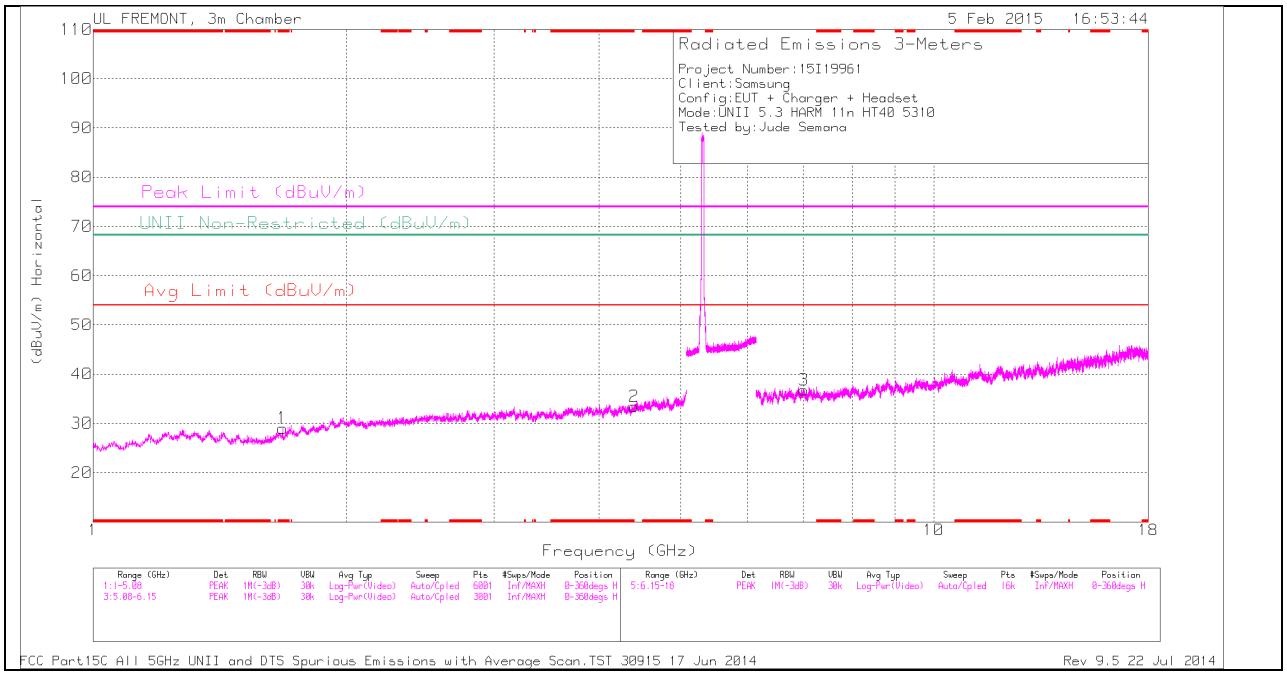
HIGH CHANNEL HORIZONTAL



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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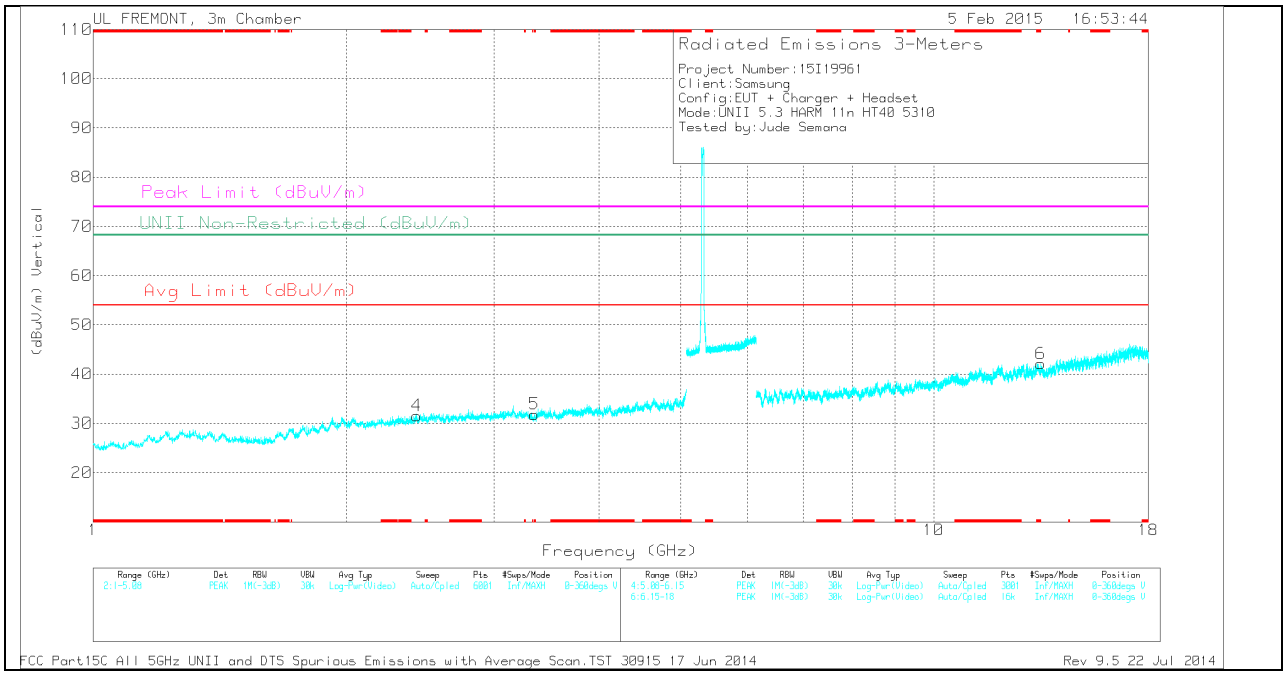
HIGH CHANNEL VERTICAL



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	* 1.681	32.61	PK	28.8	-32.4	0	29.01	-	-	74	-44.99	-	-	0-360	200	H
5	* 3.35	31.35	PK	32.6	-32.1	0	31.85	-	-	74	-42.15	-	-	0-360	100	V
4	2.427	32.05	PK	32.1	-32.6	0	31.55	-	-	-	-	68.2	-36.65	0-360	100	V
2	4.405	30.93	PK	33.6	-31.1	0	33.43	-	-	-	-	68.2	-34.77	0-360	200	H
3	7.004	29.86	PK	35.6	-28.7	0	36.76	-	-	-	-	68.2	-31.44	0-360	200	H
6	13.411	30.71	PK	39	-27.6	0	42.11	-	-	-	-	68.2	-26.09	0-360	100	V

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

PK - Peak detector

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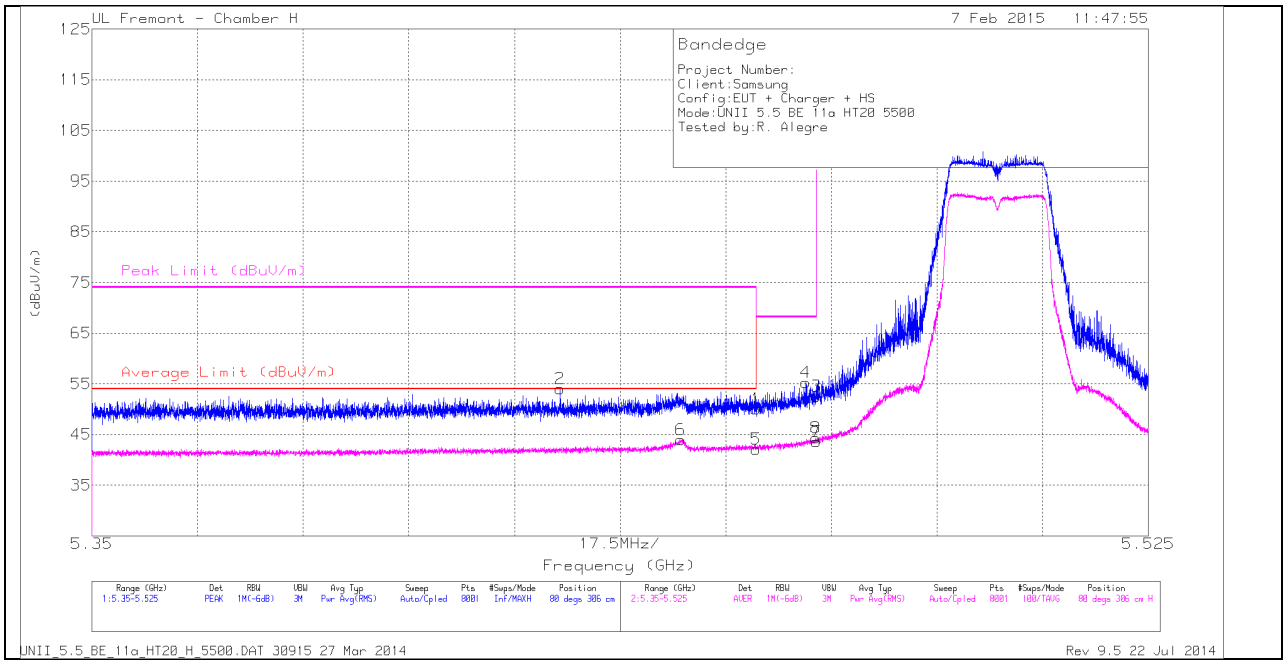
11.3. 5.5-5.6 GHz

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 T863 (dB/m)	Amp/Cbl/Fltr/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	* 5.46	37.57	PK	35	-22.5	0	50.07	-	-	74	-23.93	80	306	H
2	* 5.428	41.53	PK	35	-22.5	0	54.03	-	-	74	-19.97	80	306	H
5	* 5.46	29.27	RMS	35	-22.5	.3	42.07	54	-11.93	-	-	80	306	H
6	* 5.448	31.19	RMS	35	-22.5	.3	43.99	54	-10.01	-	-	80	306	H
4	5.468	42.64	PK	35	-22.4	0	55.24	-	-	68.2	-12.96	80	306	H
3	5.47	39.87	PK	35.1	-22.4	0	52.57	-	-	68.2	-15.63	80	306	H
7	5.47	30.64	RMS	35.1	-22.4	.3	43.64	-	-	-	-	80	306	H
8	5.47	31.38	RMS	35.1	-22.4	.3	44.38	-	-	-	-	80	306	H

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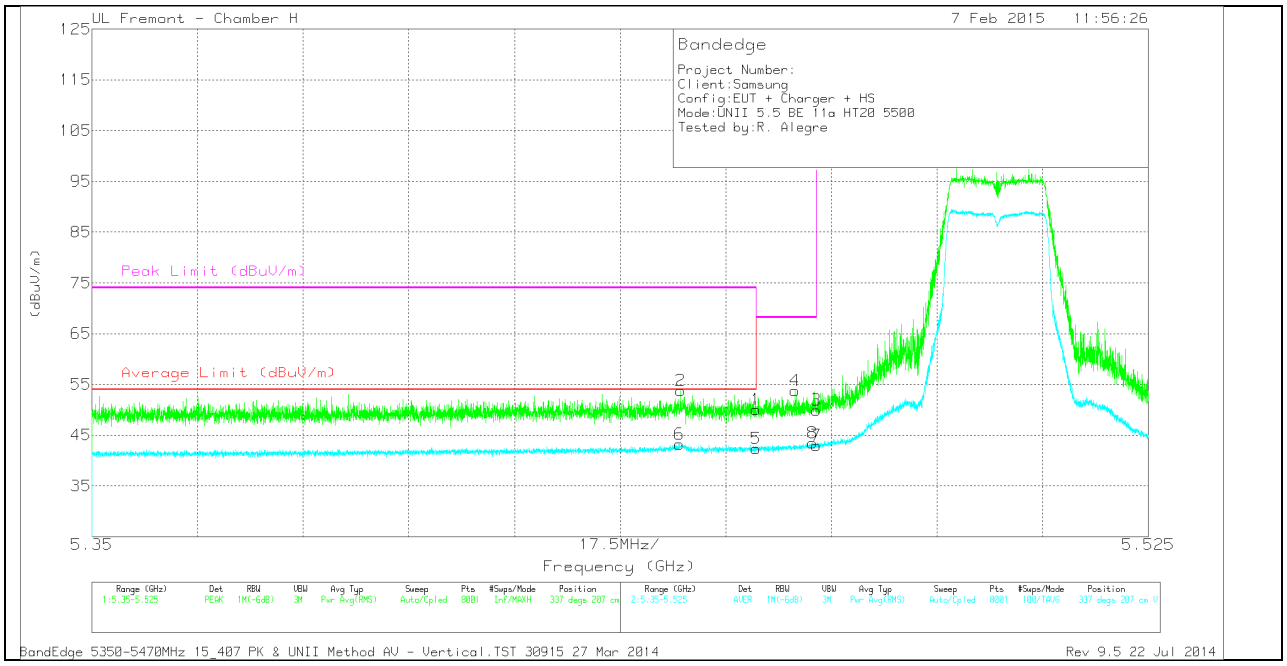
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Fltr/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	* 5.46	37.55	PK	35	-22.5	0	50.05	-	-	74	-23.95	337	207	V
2	* 5.447	41.31	PK	35	-22.5	0	53.81	-	-	74	-20.19	337	207	V
5	* 5.46	29.54	RMS	35	-22.5	.3	42.34	54	-11.66	-	-	337	207	V
6	* 5.447	30.43	RMS	35	-22.5	.3	43.23	54	-10.77	-	-	337	207	V
4	5.467	41.14	PK	35	-22.4	0	53.74	-	-	68.2	-14.46	337	207	V
8	5.469	30.45	RMS	35.1	-22.4	.3	43.45	-	-	-	-	337	207	V
3	5.47	37.19	PK	35.1	-22.4	0	49.89	-	-	68.2	-18.31	337	207	V
7	5.47	29.95	RMS	35.1	-22.4	.3	42.95	-	-	-	-	337	207	V

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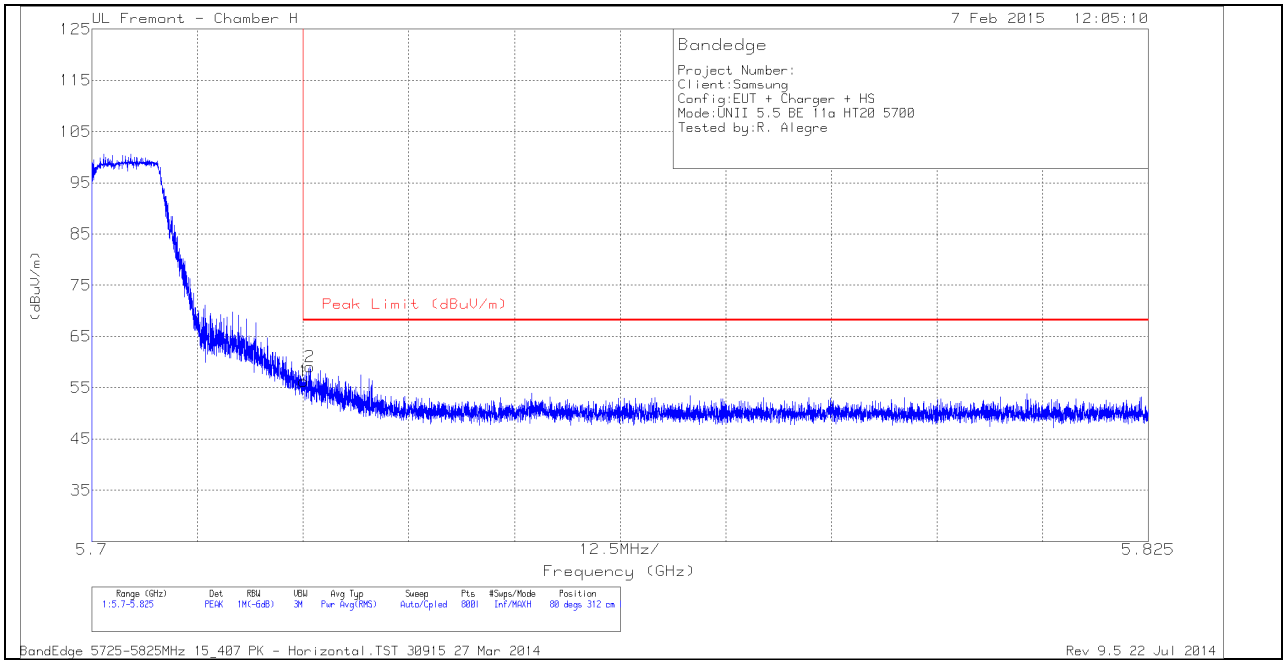
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	43.7	PK	35	-22.4	0	56.3	68.2	-11.9	80	312	H
2	5.726	46.45	PK	35	-22.4	0	59.05	68.2	-9.15	80	312	H

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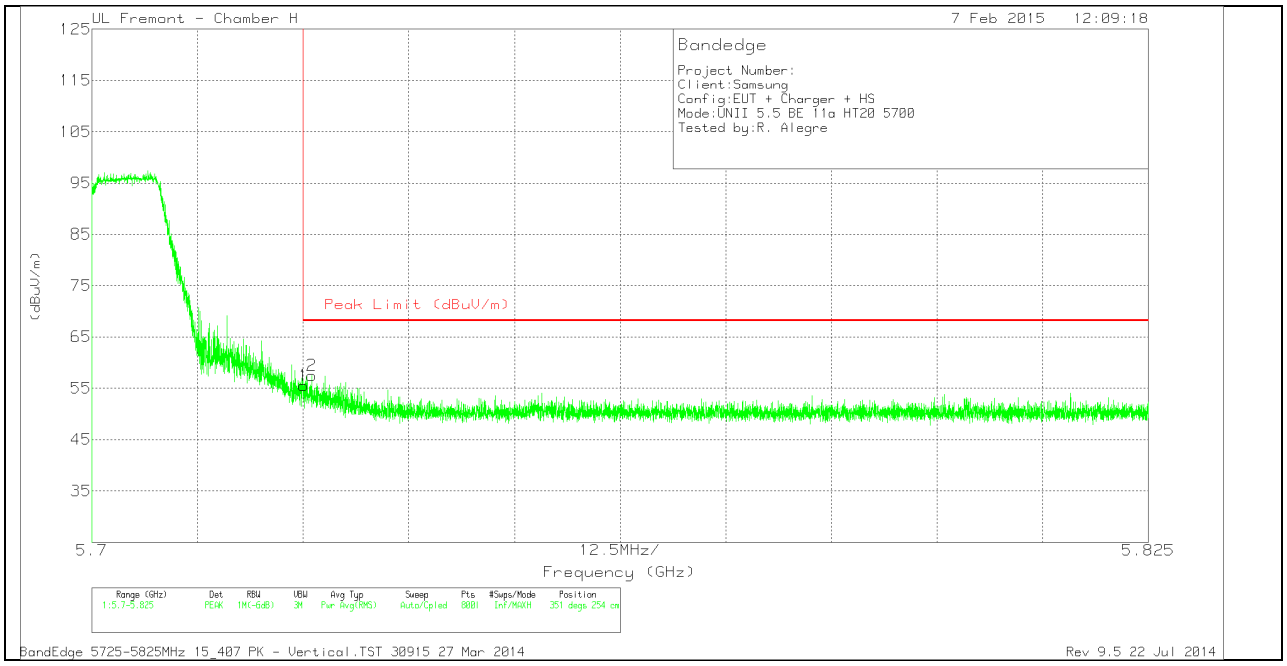
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	42.96	PK	35	-22.4	0	55.56	68.2	-12.64	351	254	V
2	5.726	44.86	PK	35	-22.4	0	57.46	68.2	-10.74	351	254	V

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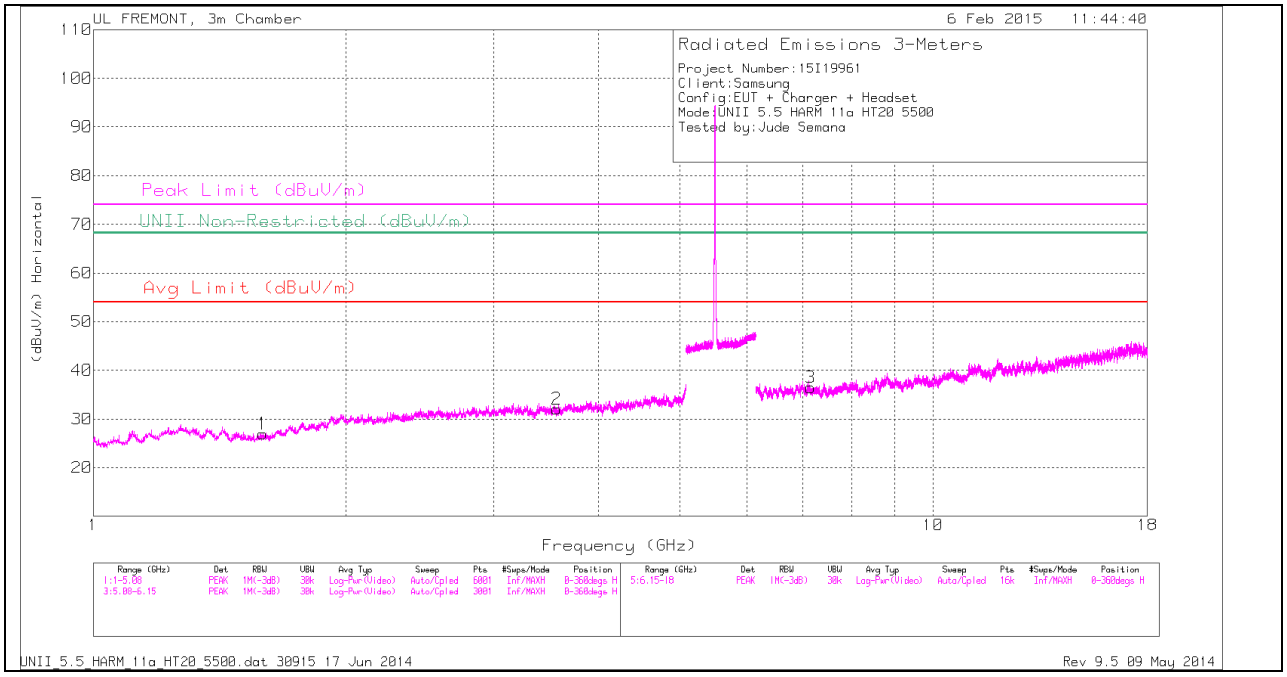
HARMONICS AND SPURIOUS EMISSIONS

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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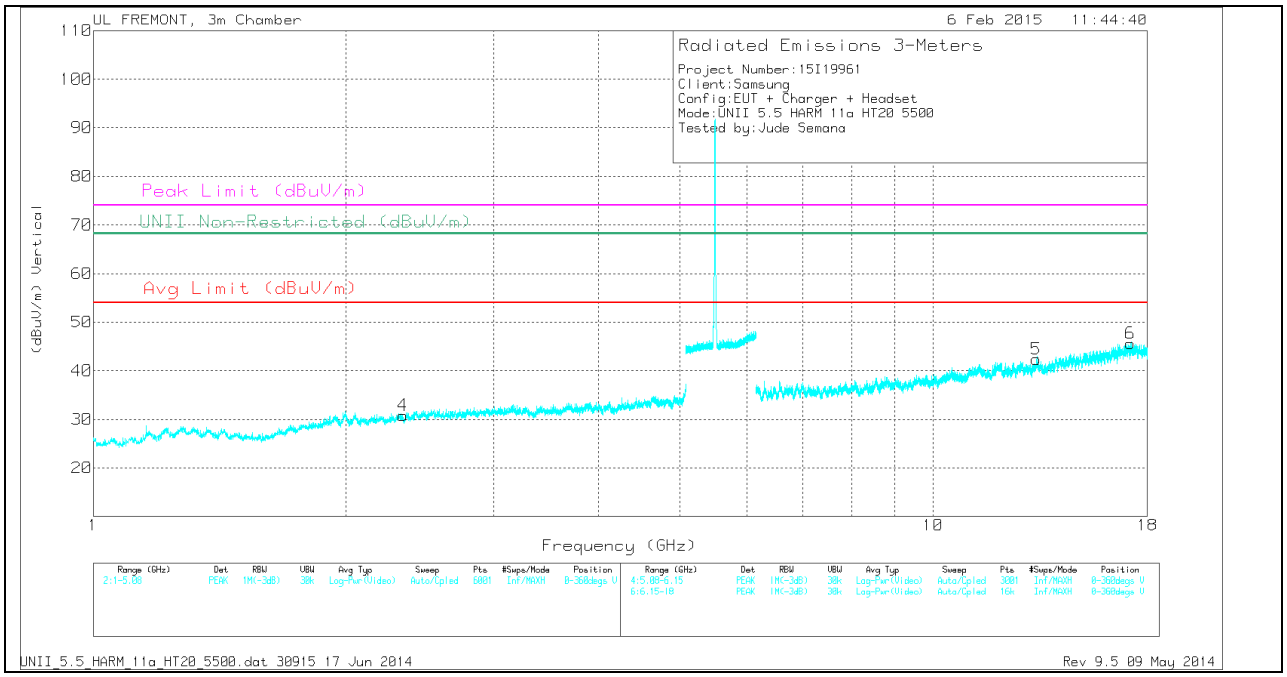
LOW CHANNEL VERTICAL



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	1.592	32.35	PK	28	-33.4	0	26.95	-	-	74	-47.05	-	-	0-360	200	H
4	2.337	31.61	PK	31.8	-32.6	0	30.81	-	-	74	-43.19	-	-	0-360	200	V
2	3.564	31.16	PK	32.8	-31.9	0	32.06	-	-	74	-41.94	-	-	0-360	100	H
3	7.148	29.65	PK	35.6	-28.8	0	36.45	-	-	-	-	68.2	-31.75	0-360	100	H
5	13.276	29.46	PK	39	-26.1	0	42.36	-	-	74	-31.64	-	-	0-360	100	V
6	17.182	28.5	PK	41.3	-24.2	0	45.6	-	-	-	-	68.2	-22.6	0-360	200	V

PK - Peak detector

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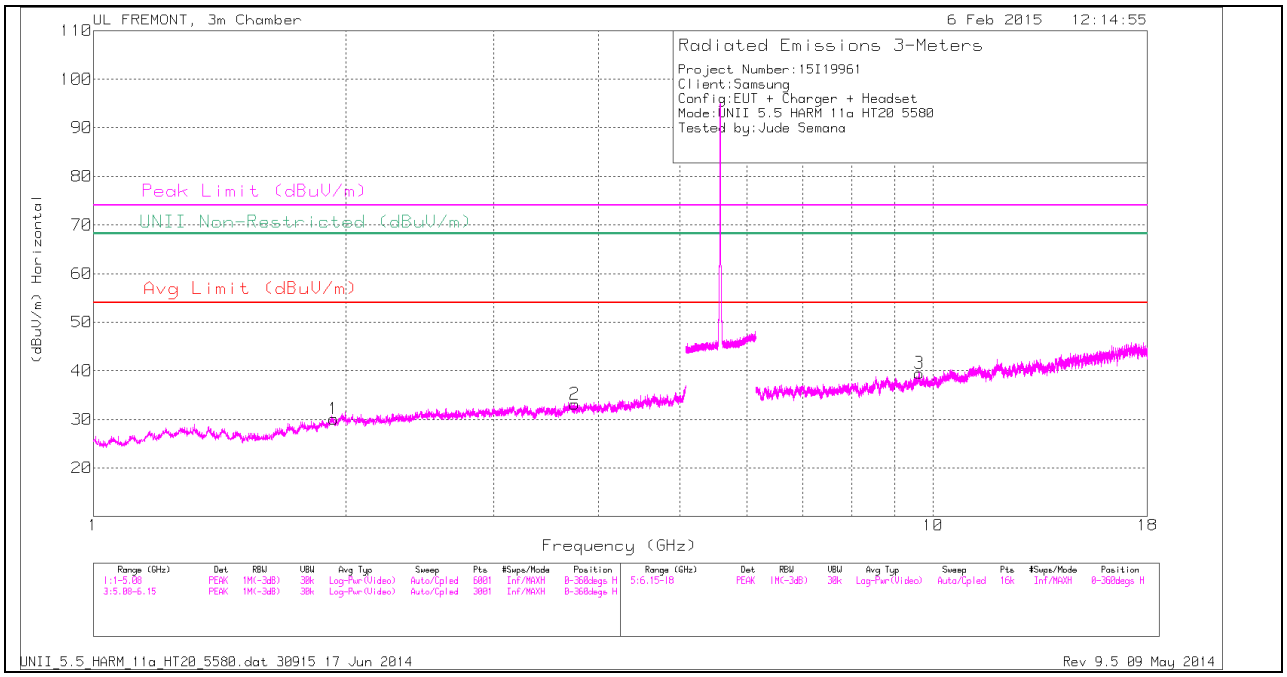
MID CHANNEL HORIZONTAL



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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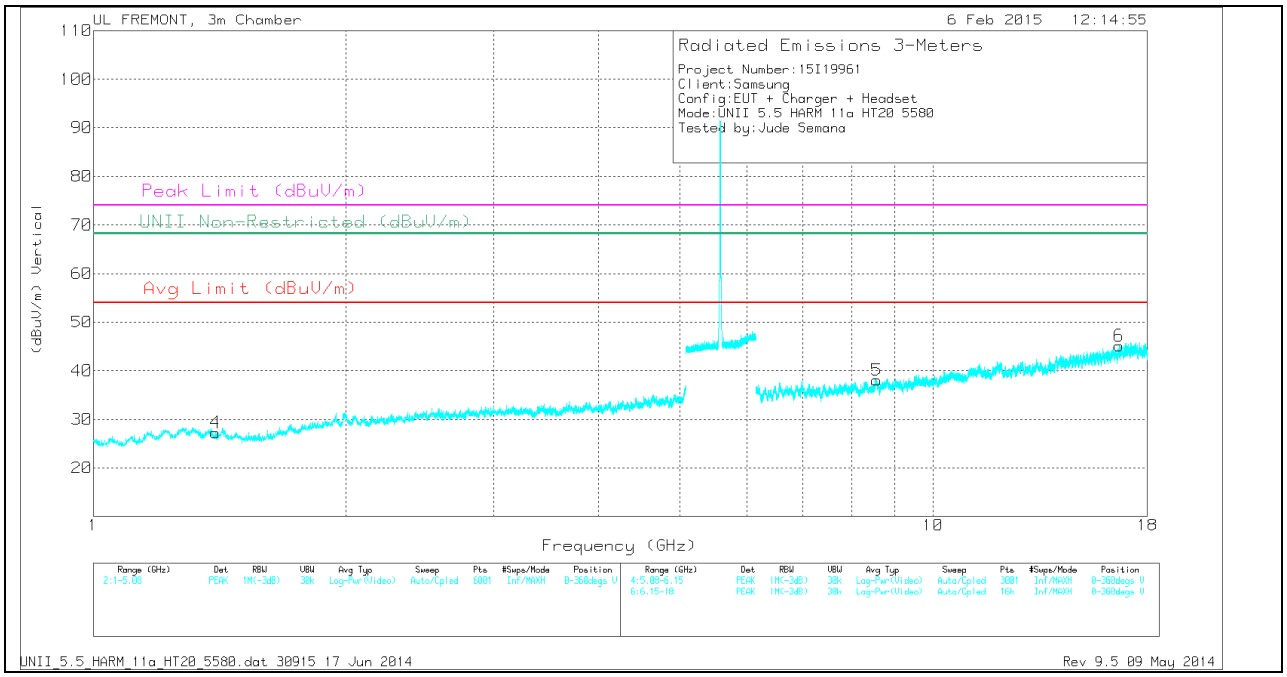
MID CHANNEL VERTICAL



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	1.399	31.56	PK	28.6	-32.9	0	27.26	-	-	74	-46.74	-	-	0-360	100	V
1	1.934	31.18	PK	31.2	-32.3	0	30.08	-	-	-	-	68.2	-38.12	0-360	100	H
2	3.744	31.57	PK	33	-31.4	0	33.17	-	-	74	-40.83	-	-	0-360	200	H
5	8.571	28.48	PK	35.8	-26.2	0	38.08	-	-	-	-	68.2	-30.12	0-360	200	V
3	9.634	28.6	PK	36.8	-25.9	0	39.5	-	-	-	-	68.2	-28.7	0-360	100	H
6	16.654	28.62	PK	41.1	-24.6	0	45.12	-	-	-	-	68.2	-23.08	0-360	100	V

PK - Peak detector

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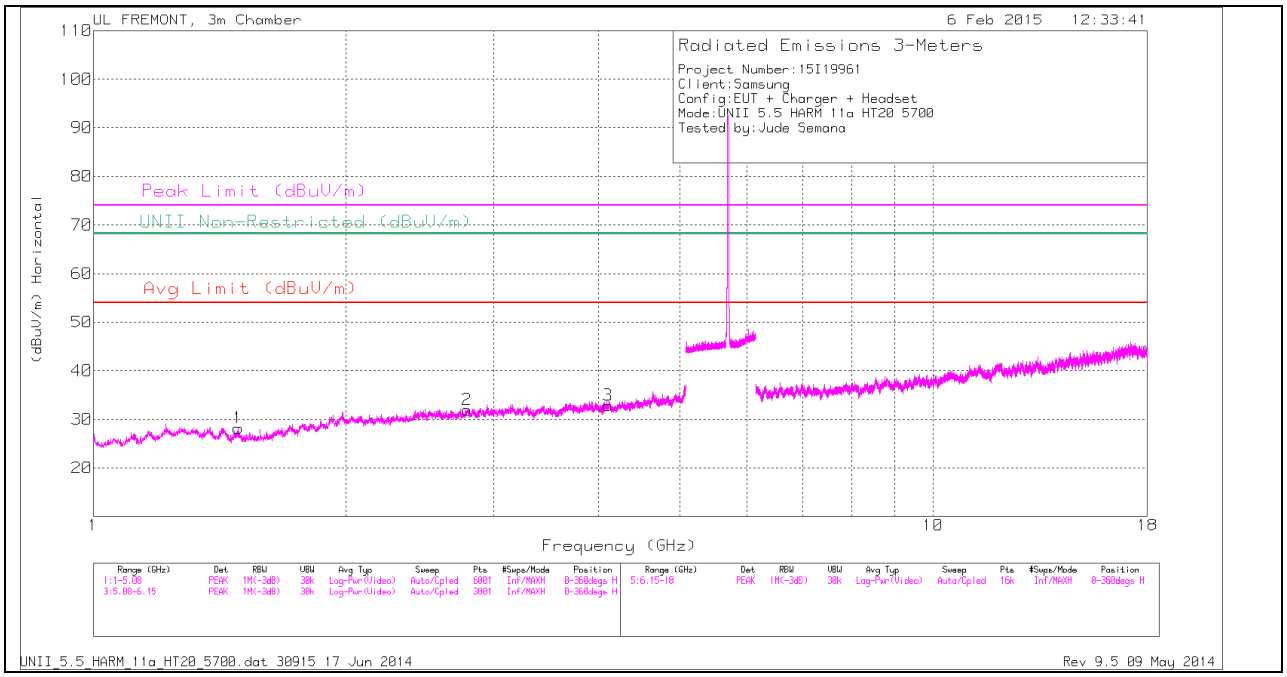
HIGH CHANNEL HORIZONTAL



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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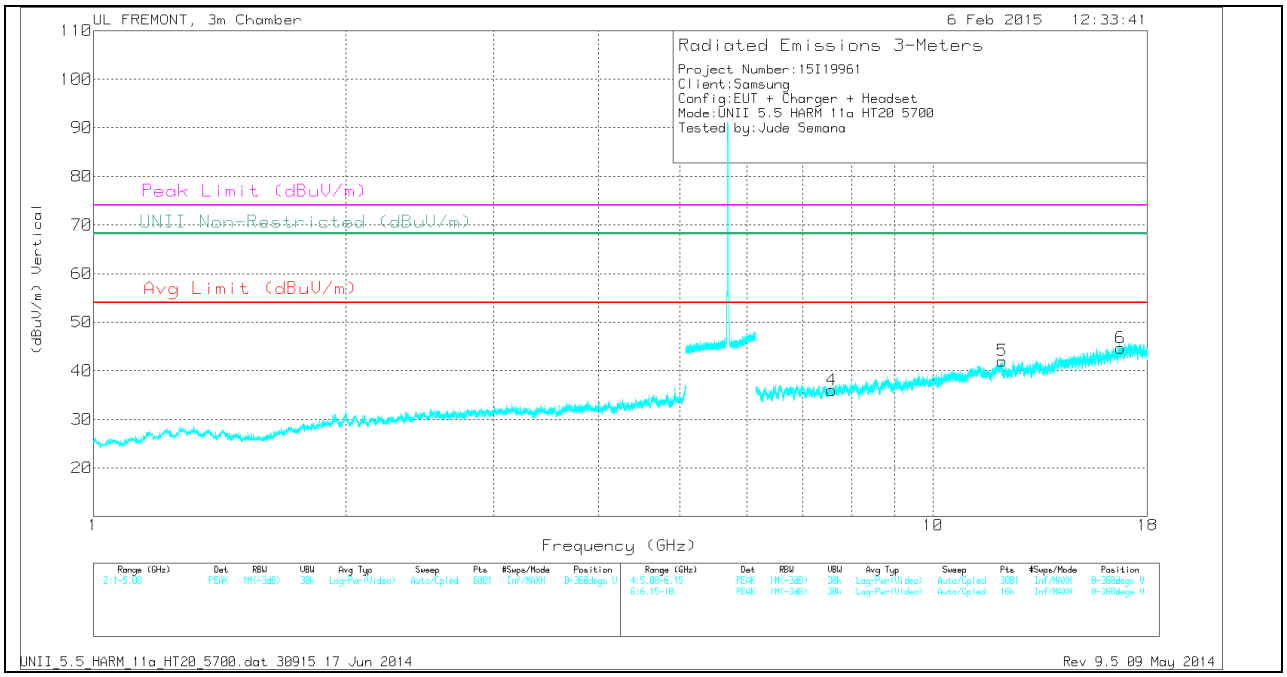
HIGH CHANNEL VERTICAL



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	1.489	32.91	PK	28.1	-32.8	0	28.21	-	-	74	-45.79	-	-	0-360	100	H
2	2.788	31.75	PK	32.6	-32.4	0	31.95	-	-	74	-42.05	-	-	0-360	200	H
3	4.104	30.67	PK	33.3	-31.1	0	32.87	-	-	74	-41.13	-	-	0-360	200	H
4	7.573	28.93	PK	35.7	-28.6	0	36.03	-	-	74	-37.97	-	-	0-360	100	V
5	12.098	29.73	PK	39	-26.7	0	42.03	-	-	74	-31.97	-	-	0-360	100	V
6	16.725	28.18	PK	41.2	-24.7	0	44.68	-	-	-	-	68.2	-23.52	0-360	200	V

PK - Peak detector

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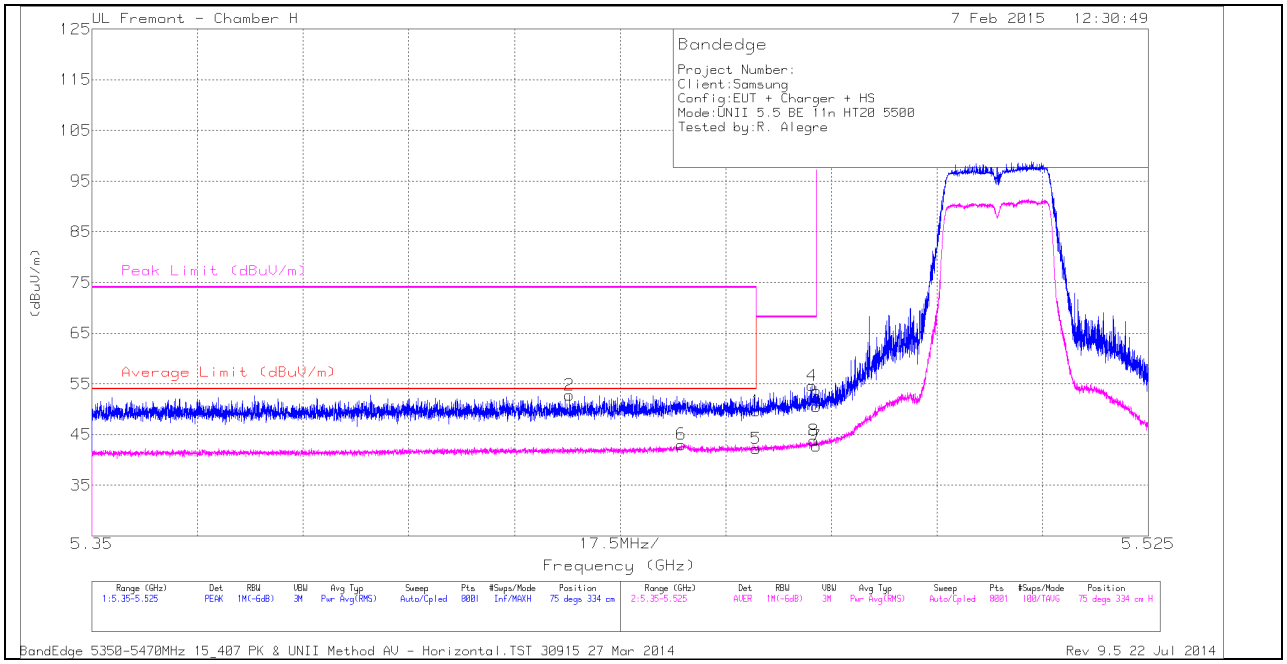
11.3.2. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.5 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Fltr/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	* 5.46	37.14	PK	35	-22.5	0	49.64	-	-	74	-24.36	75	334	H
2	* 5.429	40.33	PK	35	-22.5	0	52.83	-	-	74	-21.17	75	334	H
5	* 5.46	29.44	RMS	35	-22.5	.3	42.24	54	-11.76	-	-	75	334	H
6	* 5.448	30.23	RMS	35	-22.5	.3	43.03	54	-10.97	-	-	75	334	H
4	5.469	41.92	PK	35.1	-22.4	0	54.62	-	-	68.2	-13.58	75	334	H
3	5.47	37.9	PK	35.1	-22.4	0	50.6	-	-	68.2	-17.6	75	334	H
7	5.47	29.77	RMS	35.1	-22.4	.3	42.77	-	-	-	-	75	334	H
8	5.47	30.8	RMS	35.1	-22.4	.3	43.8	-	-	-	-	75	334	H

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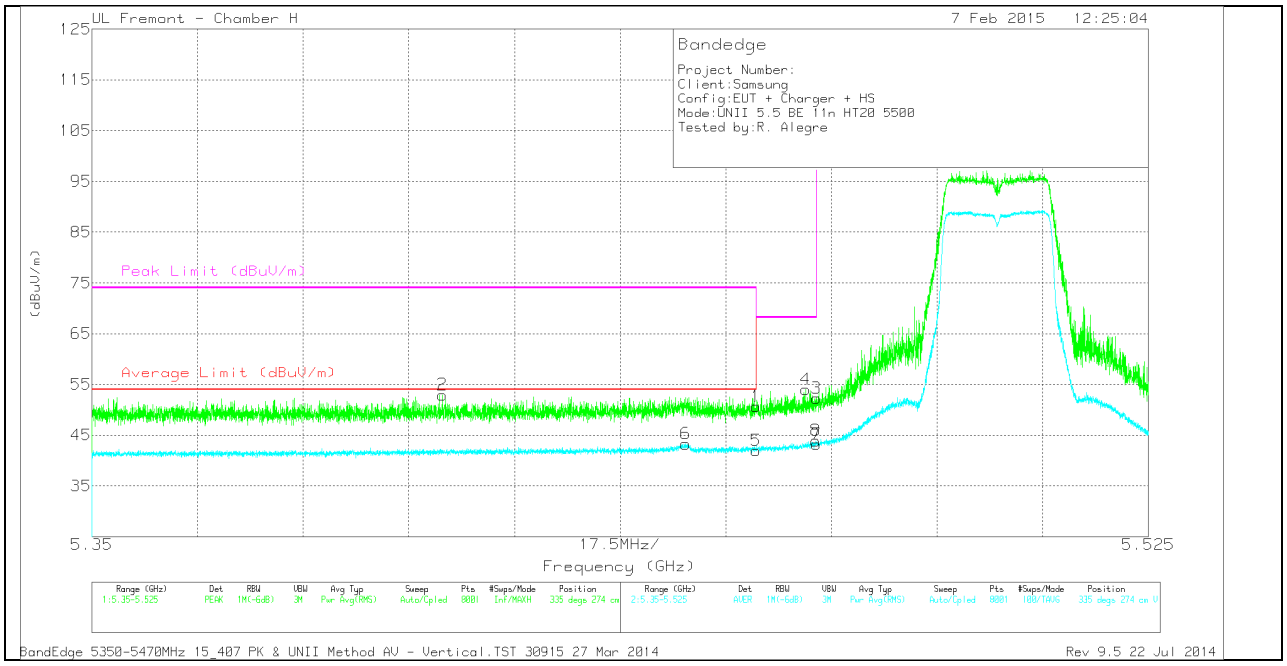
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Fltr/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	* 5.46	38.22	PK	35	-22.5	0	50.72	-	-	74	-23.28	335	274	V
2	* 5.408	40.46	PK	35	-22.5	0	52.96	-	-	74	-21.04	335	274	V
5	* 5.46	29.15	RMS	35	-22.5	.3	41.95	54	-12.05	-	-	335	274	V
6	* 5.448	30.48	RMS	35	-22.5	.3	43.28	54	-10.72	-	-	335	274	V
4	5.468	41.4	PK	35	-22.4	0	54	-	-	68.2	-14.2	335	274	V
3	5.47	39.62	PK	35.1	-22.4	0	52.32	-	-	68.2	-15.88	335	274	V
7	5.47	30.23	RMS	35.1	-22.4	.3	43.23	-	-	-	-	335	274	V
8	5.47	30.9	RMS	35.1	-22.4	.3	43.9	-	-	-	-	335	274	V

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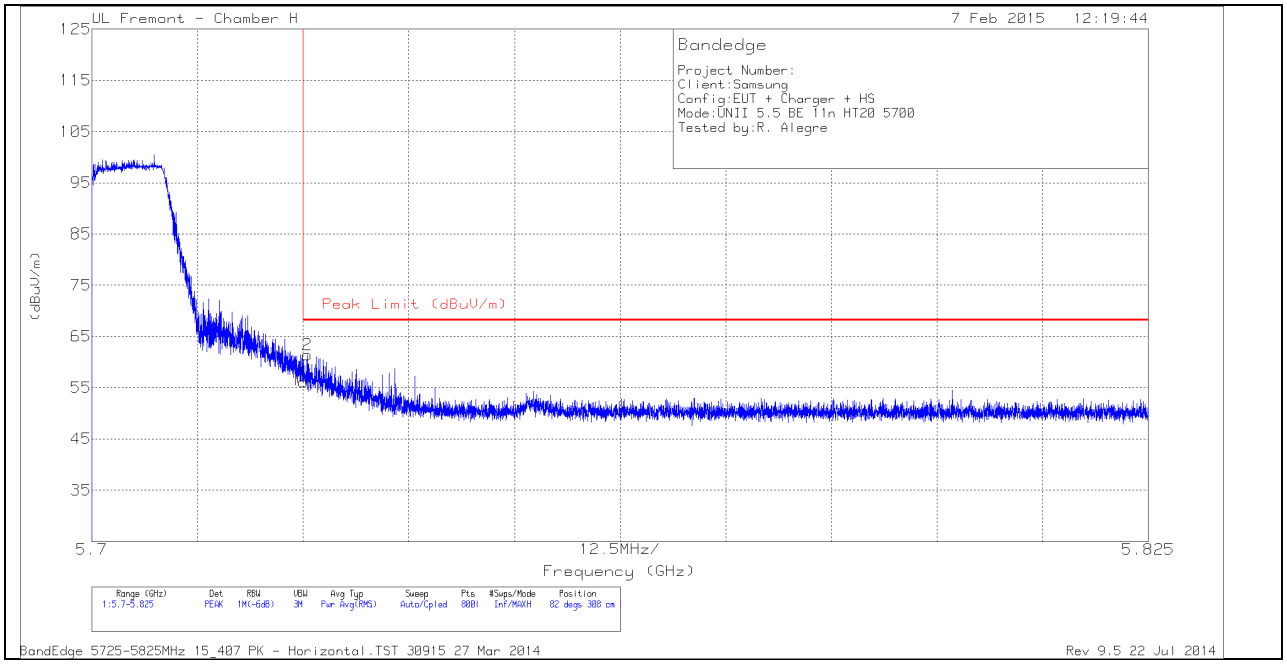
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	43.51	PK	35	-22.4	0	56.11	68.2	-12.09	82	308	H
2	5.726	48.78	PK	35	-22.4	0	61.38	68.2	-6.82	82	308	H

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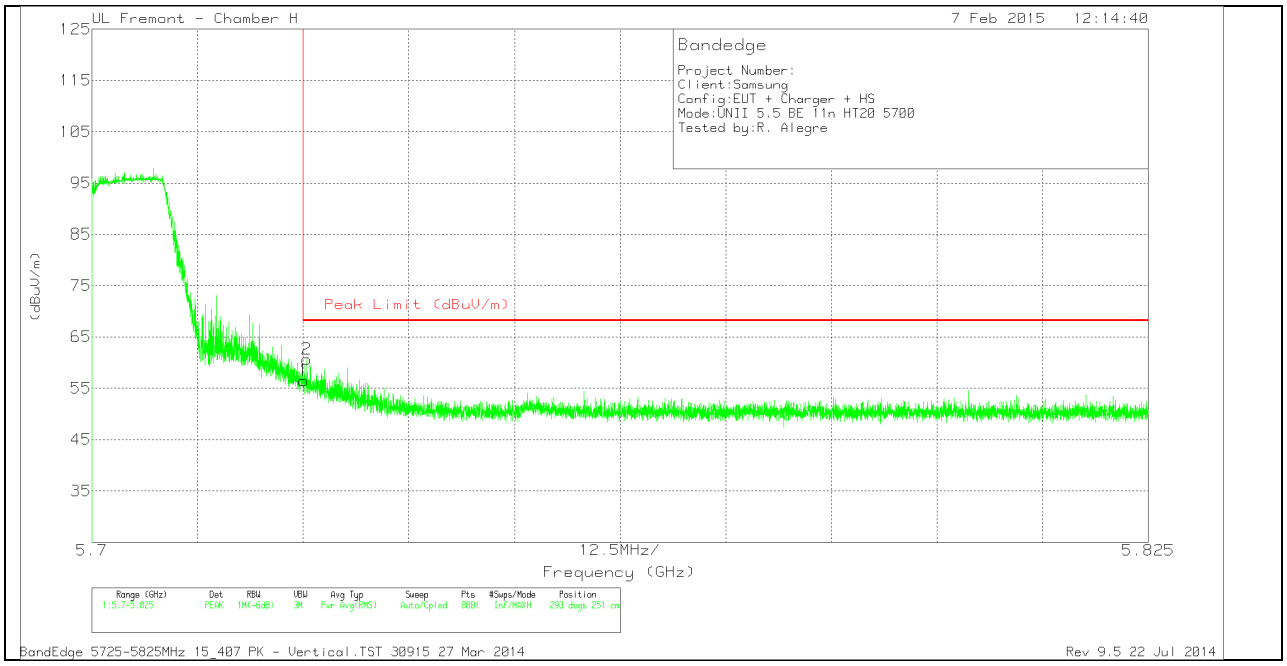
VERTICAL PEAK PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	43.92	PK	35	-22.4	0	56.52	68.2	-11.68	293	251	V
2	5.725	48.05	PK	35	-22.4	0	60.65	68.2	-7.55	293	251	V

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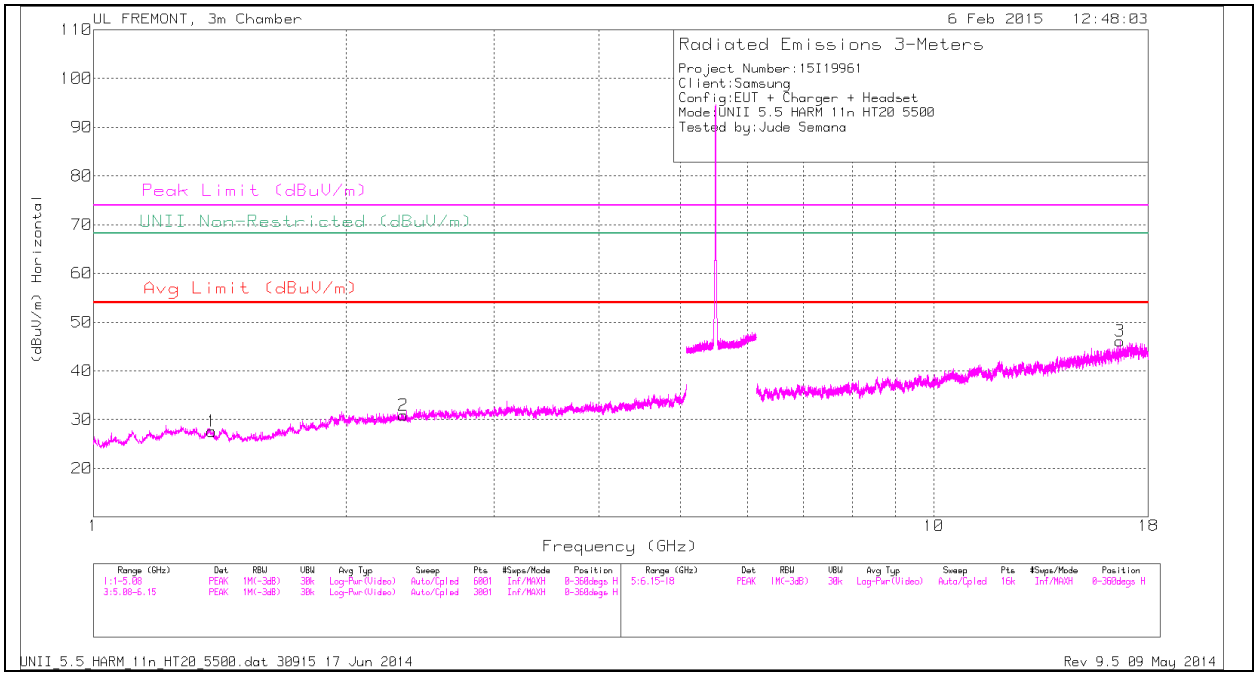
HARMONICS AND SPURIOUS EMISSIONS

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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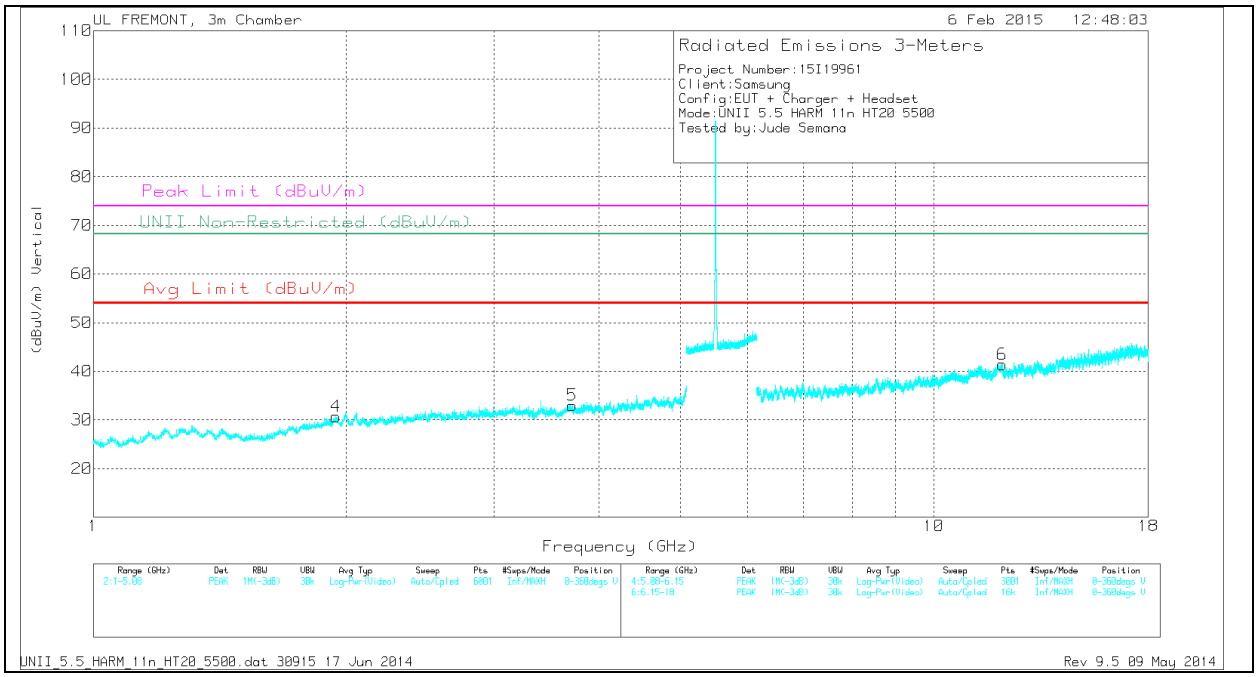
LOW CHANNEL VERTICAL



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	1.385	31.78	PK	28.8	-33	0	27.58	-	-	74	-46.42	-	-	0-360	200	H
4	1.945	31.8	PK	31.3	-32.4	0	30.7	-	-	-	-	68.2	-37.5	0-360	100	V
2	2.34	31.72	PK	31.8	-32.6	0	30.92	-	-	74	-43.08	-	-	0-360	200	H
5	3.715	31.09	PK	33	-31.1	0	32.99	-	-	74	-41.01	-	-	0-360	200	V
6	12.066	28.87	PK	39	-26.5	0	41.37	-	-	74	-32.63	-	-	0-360	200	V
3	16.658	29.52	PK	41.1	-24.5	0	46.12	-	-	-	-	68.2	-22.08	0-360	100	H

PK - Peak detector

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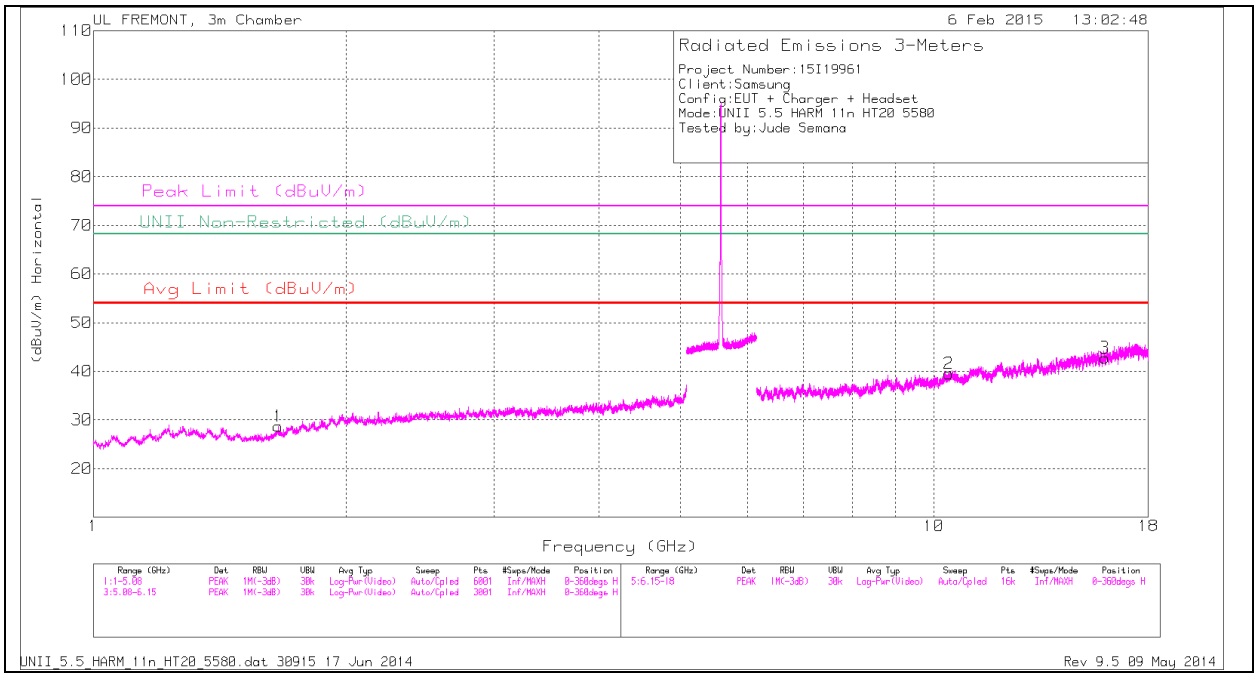
MID CHANNEL HORIZONTAL



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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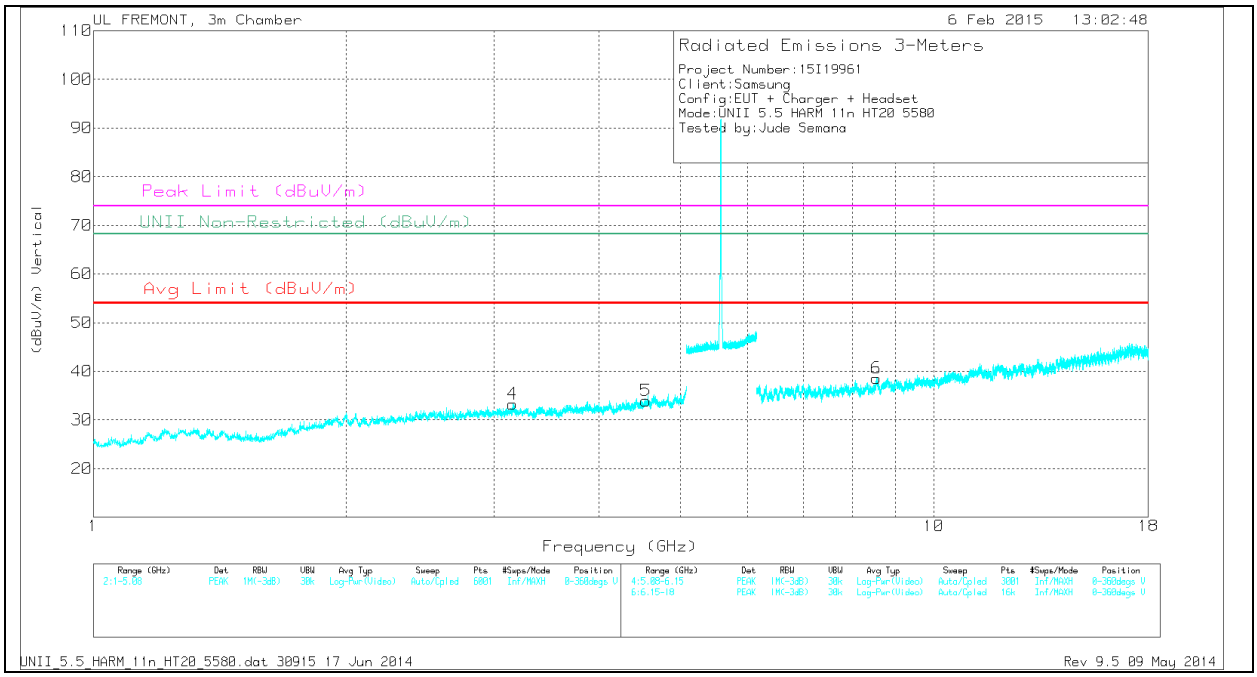
MID CHANNEL VERTICAL



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)	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	1.661	32.64	PK	28.6	-32.5	0	28.74	-	-	74	-45.26	-	-	0-360	200	H
4	3.155	32.18	PK	32.7	-31.6	0	33.28	-	-	-	-	68.2	-34.92	0-360	200	V
5	4.546	31.69	PK	33.8	-31.5	0	33.99	-	-	74	-40.01	-	-	0-360	200	V
6	8.548	28.77	PK	35.8	-26	0	38.57	-	-	-	-	68.2	-29.63	0-360	100	V
2	10.422	27.92	PK	37.3	-25.7	0	39.52	-	-	-	-	68.2	-28.68	0-360	200	H
3	15.977	27.93	PK	40.3	-25.5	0	42.73	-	-	74	-31.27	-	-	0-360	200	H

PK - Peak detector

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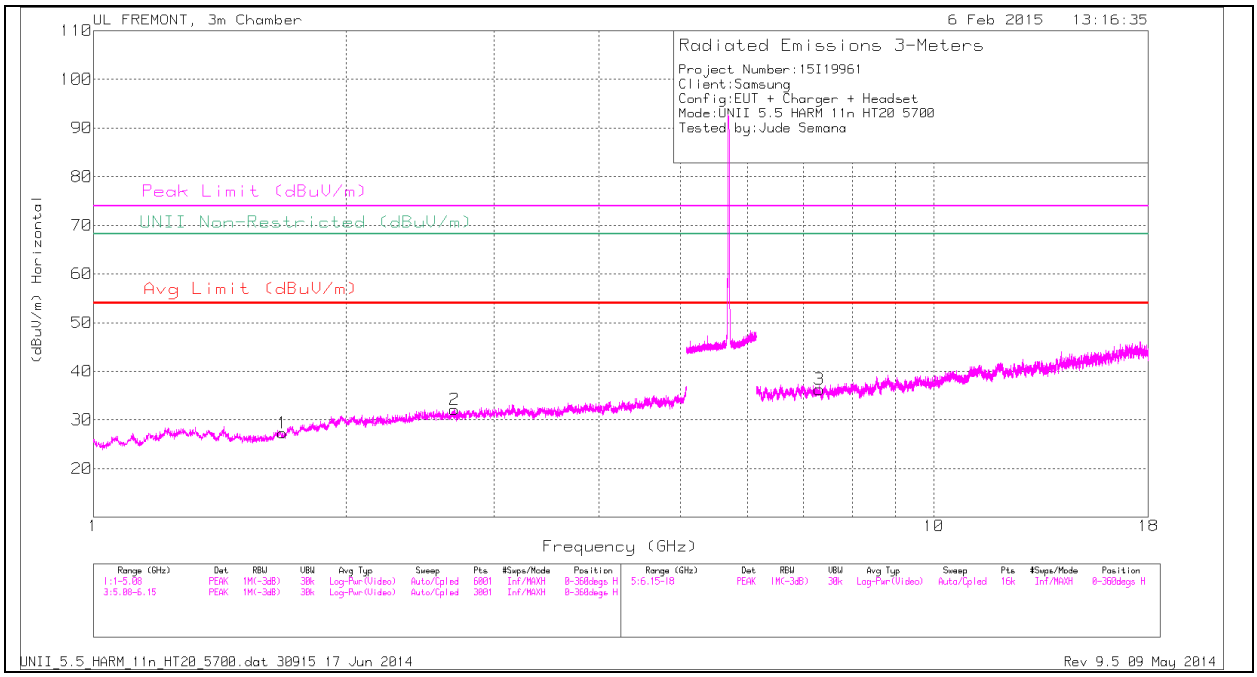
HIGH CHANNEL HORIZONTAL



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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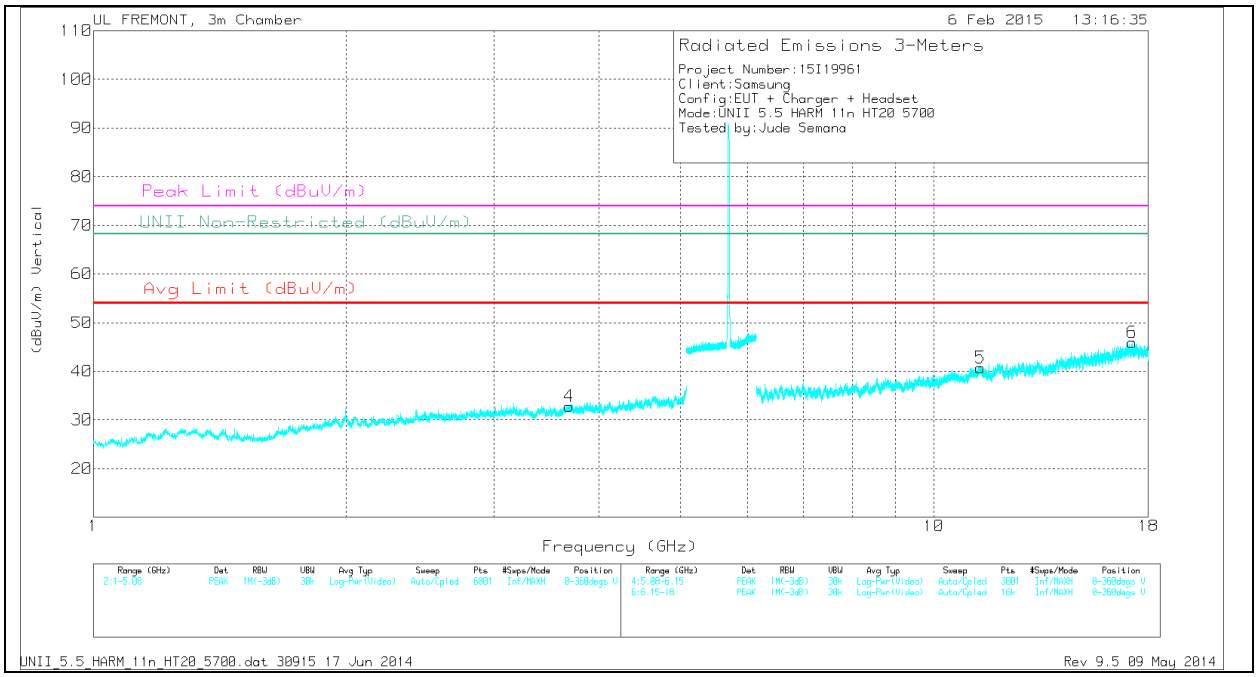
HIGH CHANNEL VERTICAL



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	1.681	30.95	PK	28.8	-32.4	0	27.35	-	-	74	-46.65	-	-	0-360	100	H
2	2.69	32.14	PK	32.3	-32.3	0	32.14	-	-	74	-41.86	-	-	0-360	100	H
4	3.684	30.31	PK	33	-30.5	0	32.81	-	-	74	-41.19	-	-	0-360	100	V
3	7.31	30.2	PK	35.6	-29.5	0	36.3	-	-	74	-37.7	-	-	0-360	200	H
5	11.362	28.41	PK	38.1	-25.8	0	40.71	-	-	74	-33.29	-	-	0-360	100	V
6	17.221	27.74	PK	41.3	-23.1	0	45.94	-	-	-	-	68.2	-22.26	0-360	200	V

PK - Peak detector

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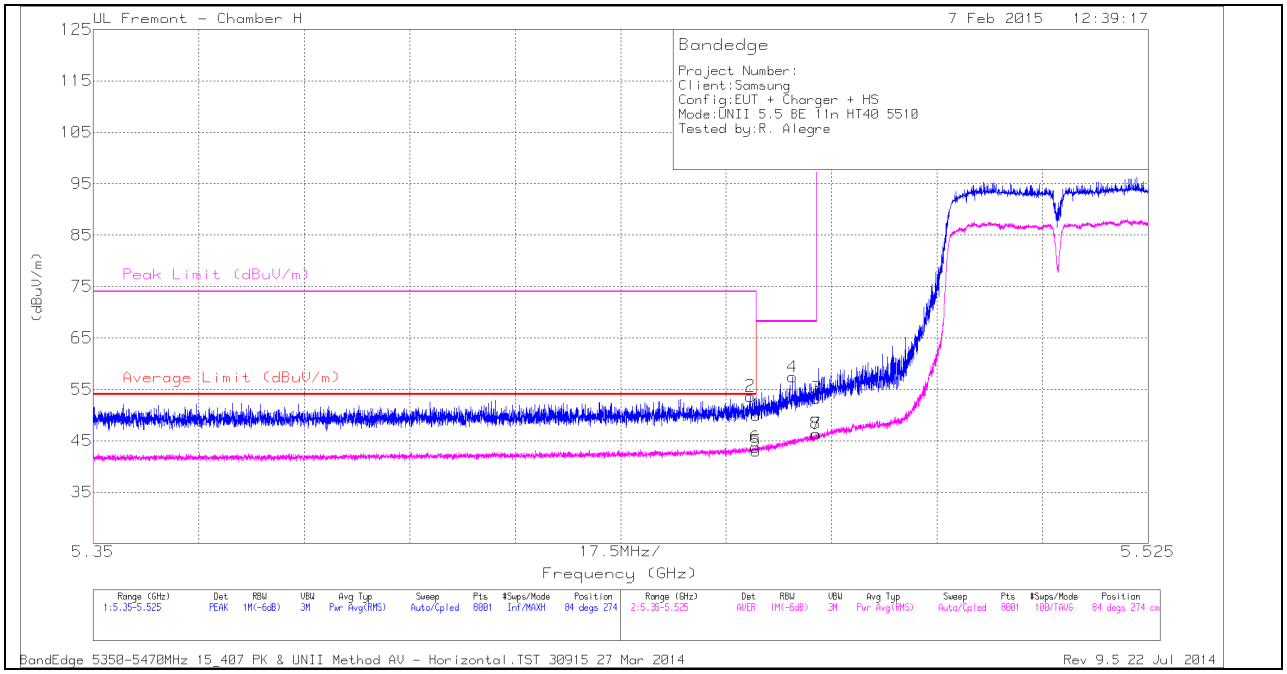
11.3.3. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.5 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (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	* 5.46	37.48	PK	35	-22.5	0	49.98	-	-	74	-24.02	84	274	H
2	* 5.459	41.17	PK	35	-22.5	0	53.67	-	-	74	-20.33	84	274	H
5	* 5.46	29.8	RMS	35	-22.5	.64	42.94	54	-11.06	-	-	84	274	H
6	* 5.46	30.54	RMS	35	-22.5	.64	43.68	54	-10.32	-	-	84	274	H
4	5.466	44.79	PK	35	-22.4	0	57.39	-	-	68.2	-10.81	84	274	H
3	5.47	40.59	PK	35.1	-22.4	0	53.29	-	-	68.2	-14.91	84	274	H
7	5.47	32.91	RMS	35.1	-22.4	.64	46.25	-	-	-	-	84	274	H
8	5.47	32.96	RMS	35.1	-22.4	.64	46.30	-	-	-	-	84	274	H

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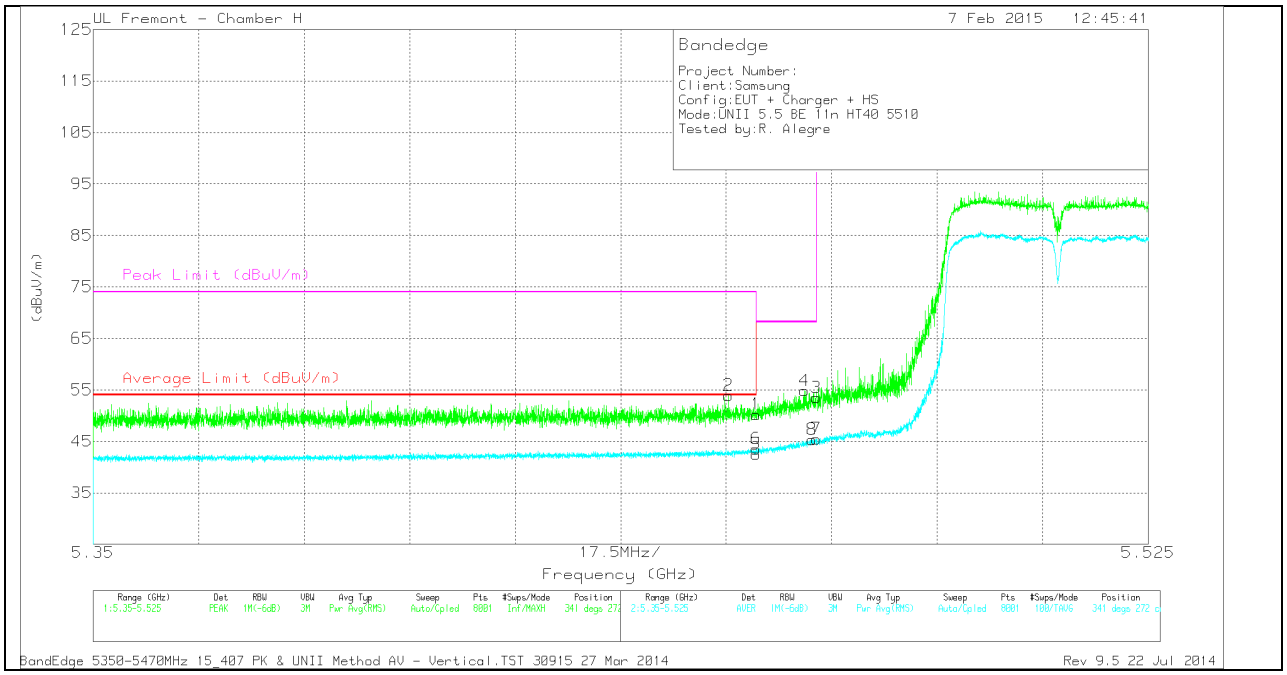
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (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	* 5.46	37.76	PK	35	-22.5	0	50.26	-	-	74	-23.74	341	272	V
2	* 5.455	41.4	PK	35	-22.5	0	53.9	-	-	74	-20.1	341	272	V
5	* 5.46	29.33	RMS	35	-22.5	.64	42.47	54	-11.53	-	-	341	272	V
6	* 5.46	30.35	RMS	35	-22.5	.64	43.49	54	-10.51	-	-	341	272	V
4	5.468	42.24	PK	35	-22.4	0	54.84	-	-	68.2	-13.36	341	272	V
8	5.469	31.94	RMS	35.1	-22.4	.64	45.28	-	-	-	-	341	272	V
3	5.47	40.77	PK	35.1	-22.4	0	53.47	-	-	68.2	-14.73	341	272	V
7	5.47	32.07	RMS	35.1	-22.4	.64	45.41	-	-	-	-	341	272	V

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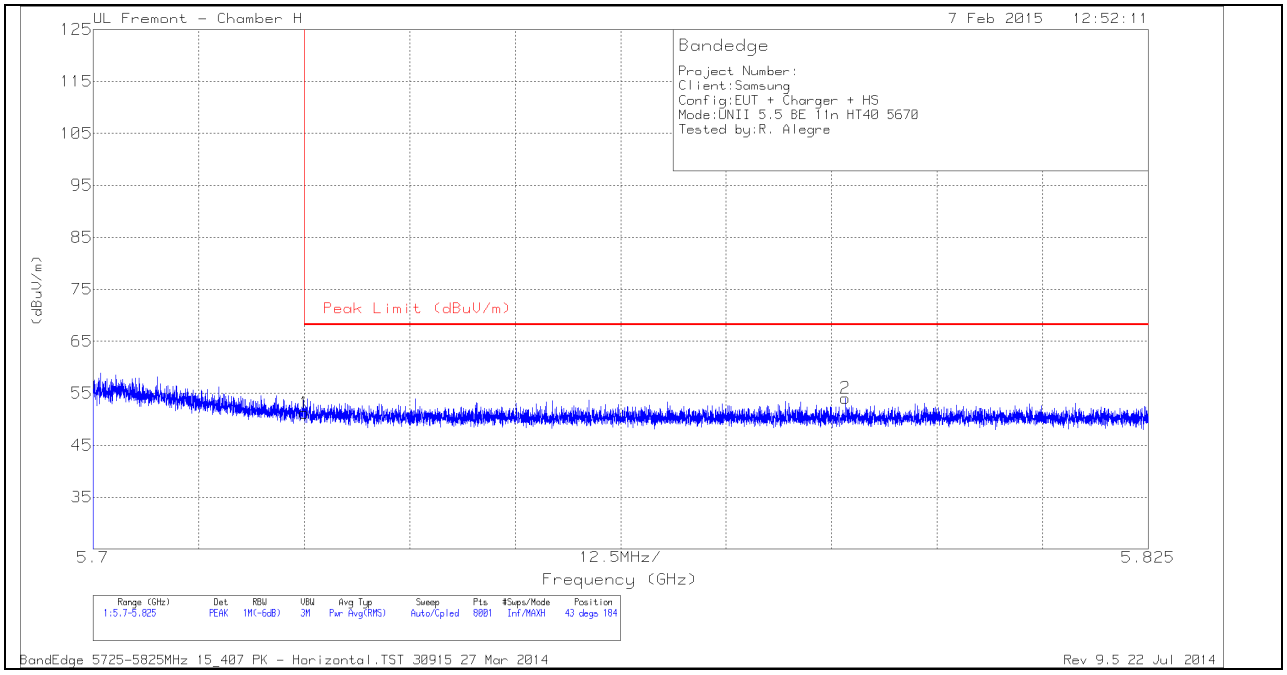
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	38.61	PK	35	-22.4	0	51.21	68.2	-16.99	43	184	H
2	5.789	41.25	PK	35	-22.2	0	54.05	68.2	-14.15	43	184	H

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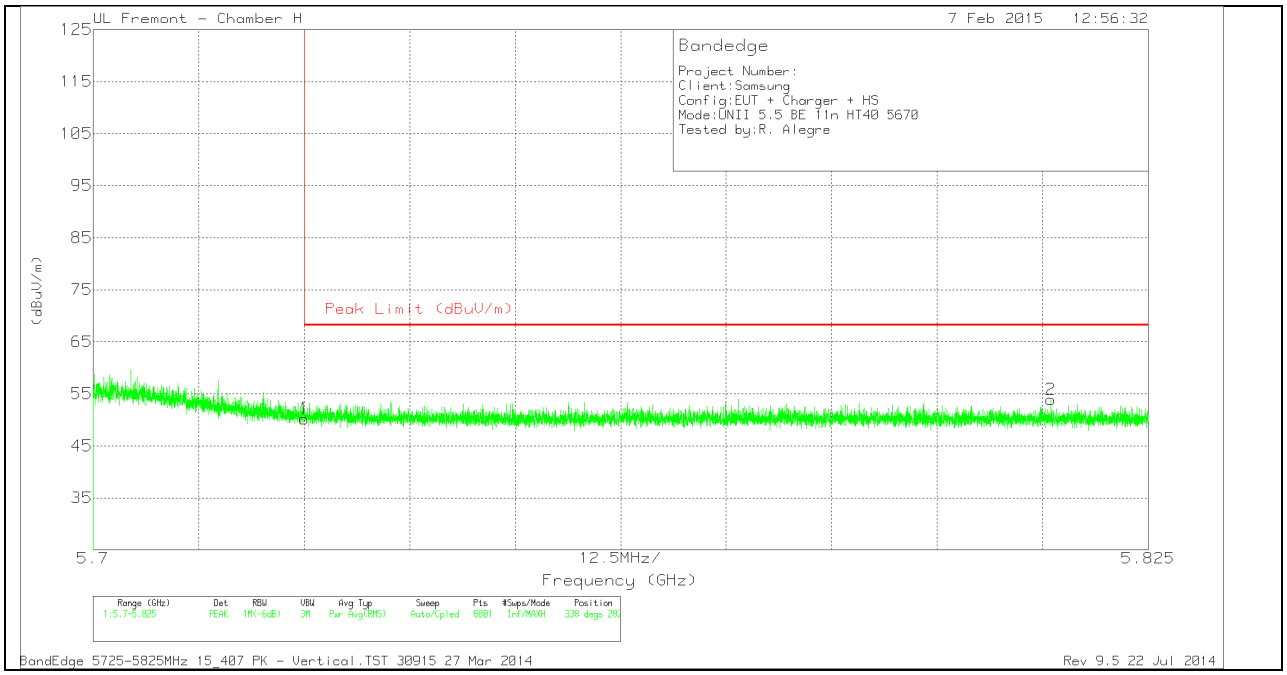
VERTICAL PEAK PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	37.61	PK	35	-22.4	0	50.21	68.2	-17.99	338	282	V
2	5.813	41.09	PK	35.1	-22.3	0	53.89	68.2	-14.31	338	282	V

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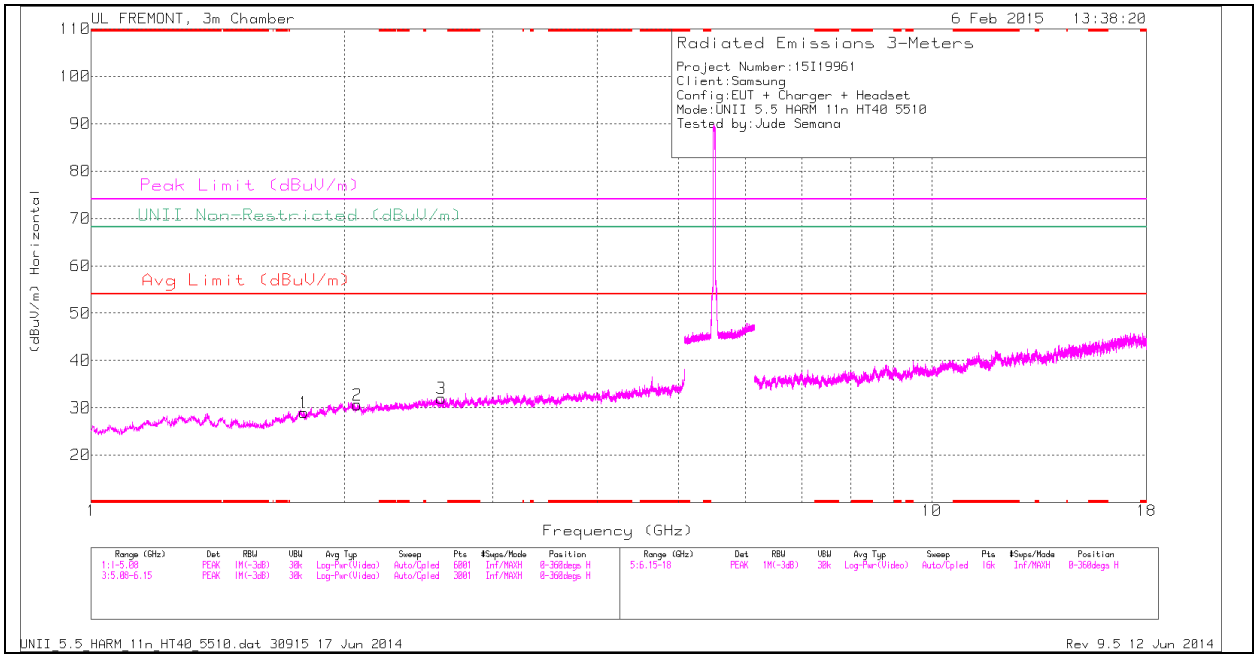
HARMONICS AND SPURIOUS EMISSIONS

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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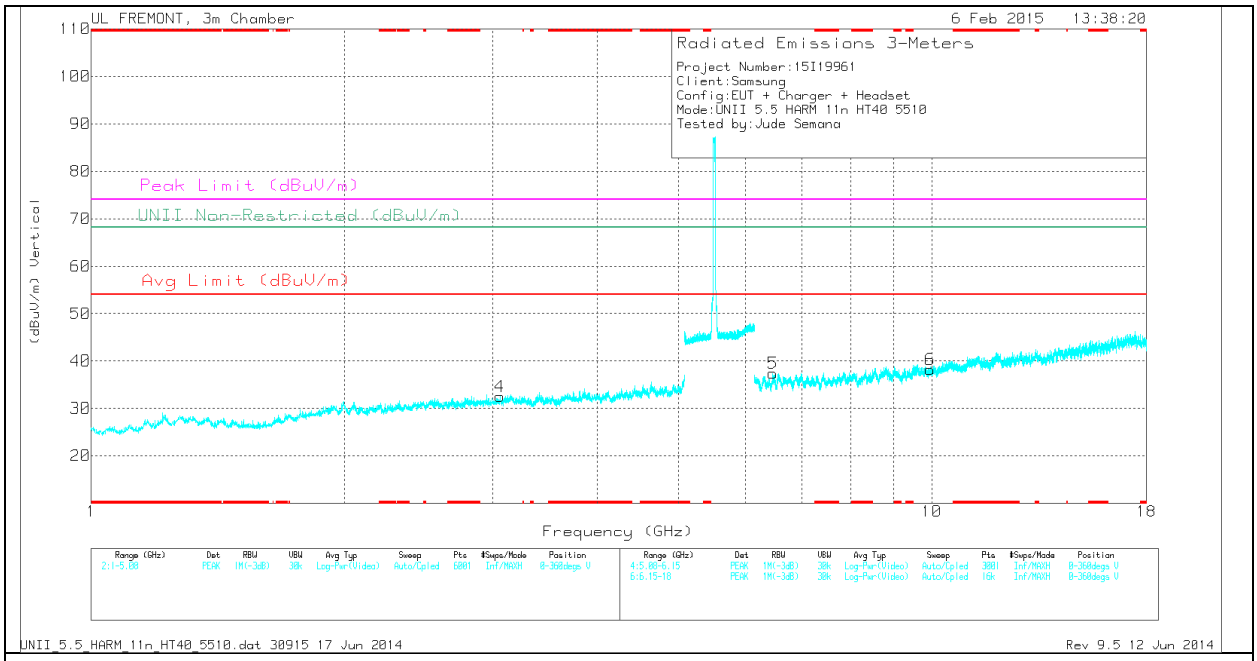
LOW CHANNEL VERTICAL



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	1.791	31.76	PK	30.1	-32.8	0	29.06	-	-	-	-	68.2	-39.14	0-360	200	H
2	2.073	31.85	PK	31.5	-32.7	0	30.65	-	-	-	-	68.2	-37.55	0-360	200	H
3	2.611	31.97	PK	32.4	-32.4	0	31.97	-	-	-	-	68.2	-36.23	0-360	200	H
4	3.063	31.95	PK	32.7	-32.1	0	32.55	-	-	-	-	68.2	-35.65	0-360	200	V
5	6.468	31.4	PK	35.6	-29.6	0	37.4	-	-	-	-	68.2	-30.8	0-360	200	V
6	9.949	27.5	PK	36.9	-26.2	0	38.2	-	-	-	-	68.2	-30	0-360	100	V

PK - Peak detector

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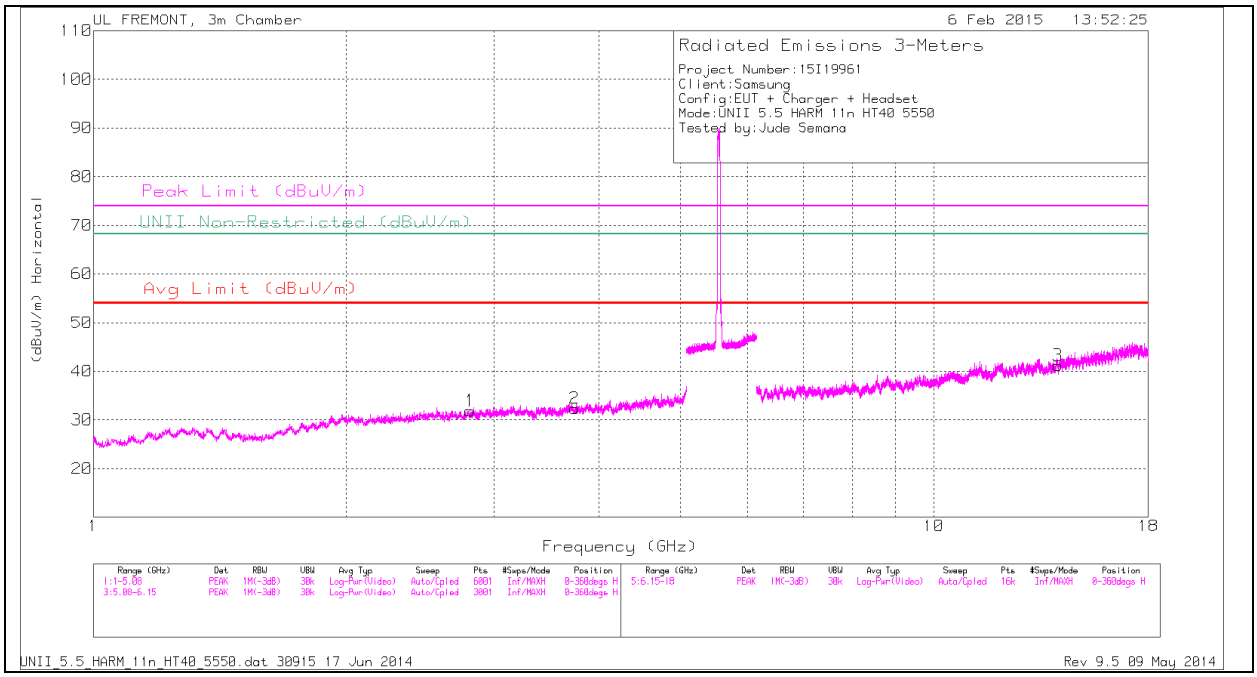
MID CHANNEL HORIZONTAL



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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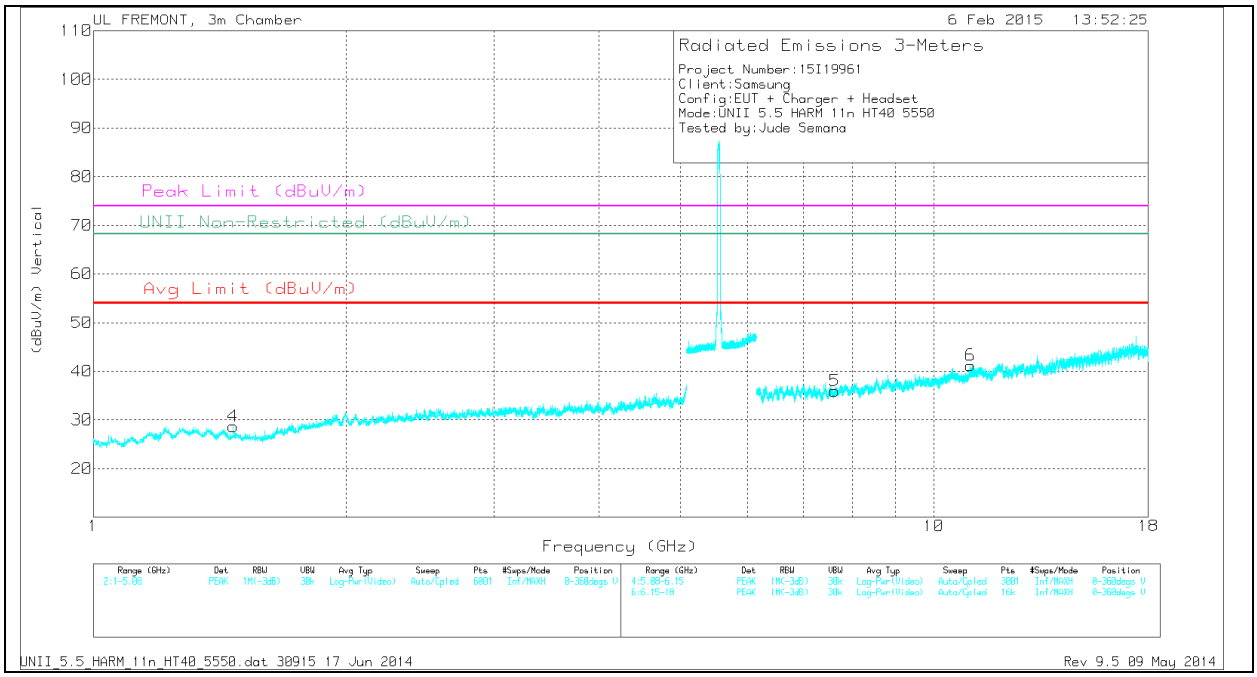
MID CHANNEL VERTICAL



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	1.468	33.3	PK	28.3	-32.9	0	28.7	-	-	74	-45.3	-	-	0-360	100	V
1	2.808	31.77	PK	32.6	-32.5	0	31.87	-	-	74	-42.13	-	-	0-360	200	H
2	3.738	30.67	PK	33	-31.3	0	32.37	-	-	74	-41.63	-	-	0-360	200	H
5	7.621	28.78	PK	35.7	-28.5	0	35.98	-	-	74	-38.02	-	-	0-360	100	V
6	11.055	28.51	PK	37.8	-25.1	0	41.21	-	-	74	-32.79	-	-	0-360	100	V
3	14.055	30.09	PK	38.9	-27.8	0	41.19	-	-	-	-	68.2	-27.01	0-360	200	H

PK - Peak detector

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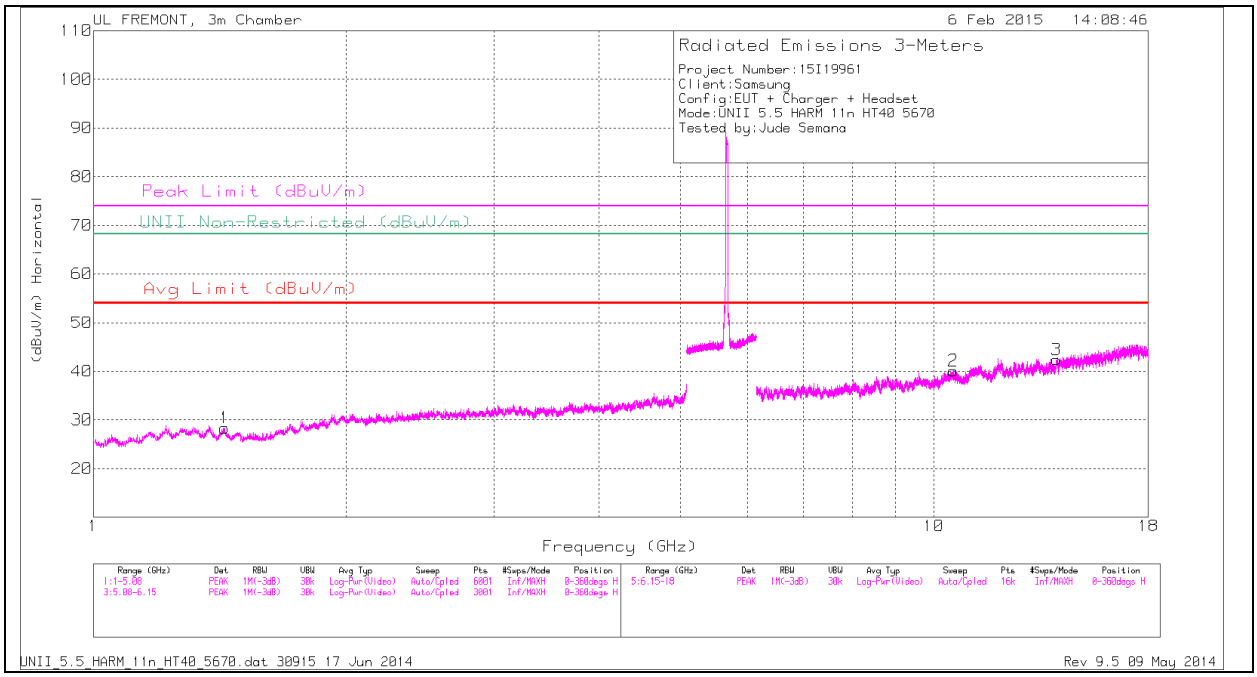
HIGH CHANNEL HORIZONTAL



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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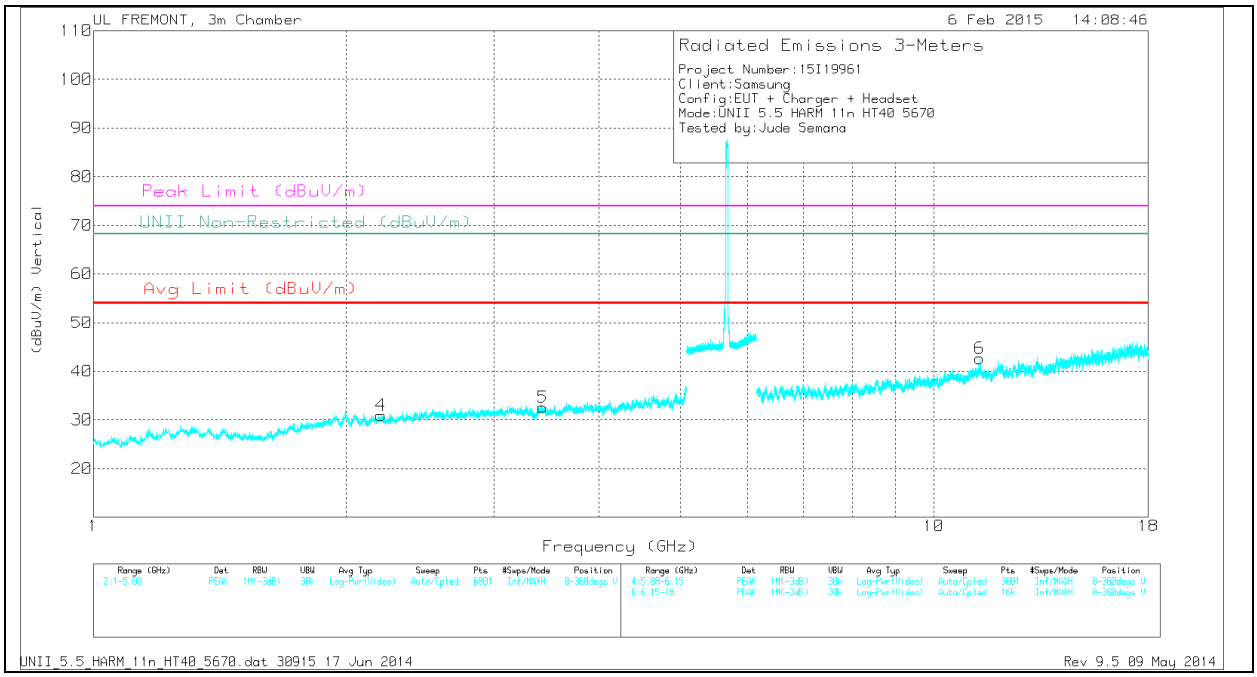
HIGH CHANNEL VERTICAL



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	1.434	32.54	PK	28.4	-32.6	0	28.34	-	-	-	-	68.2	-39.86	0-360	100	H
4	2.201	32.16	PK	31.4	-32.6	0	30.96	-	-	74	-43.04	-	-	0-360	100	V
5	3.425	31.32	PK	32.7	-31.4	0	32.62	-	-	-	-	68.2	-35.58	0-360	100	V
2	10.551	27.99	PK	37.5	-25.4	0	40.09	-	-	-	-	68.2	-28.11	0-360	200	H
6	11.339	30.07	PK	38.1	-25.5	0	42.67	-	-	74	-31.33	-	-	0-360	200	V
3	13.993	31.29	PK	38.8	-27.7	0	42.39	-	-	-	-	68.2	-25.81	0-360	200	H

PK - Peak detector

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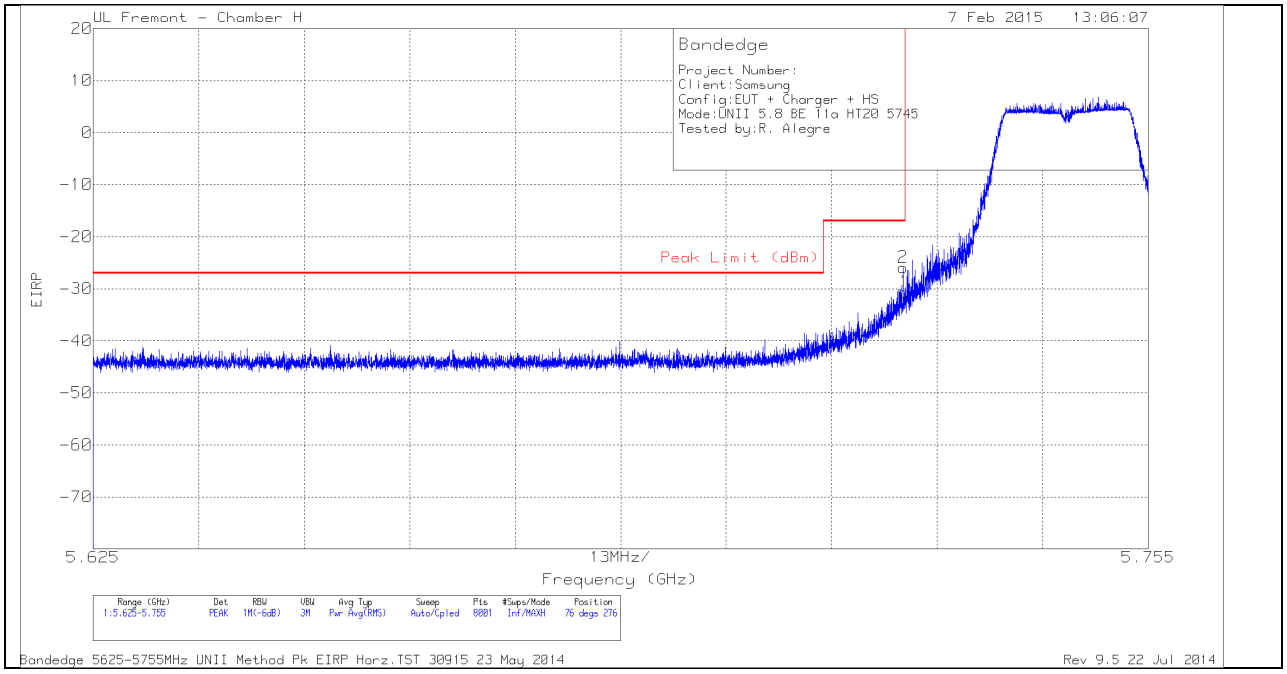
11.4. 5.8 GHz

11.4.1. TX ABOVE 1 GHz 802.11a MODE IN THE 5.8 GHz BAND

AUTHORIZED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T863 (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	-55.02	PK	35	-22.4	11.8	0	-30.62	-17	-13.62	76	276	H
2	5.725	-50.3	PK	35	-22.4	11.8	0	-25.9	-17	-8.9	76	276	H

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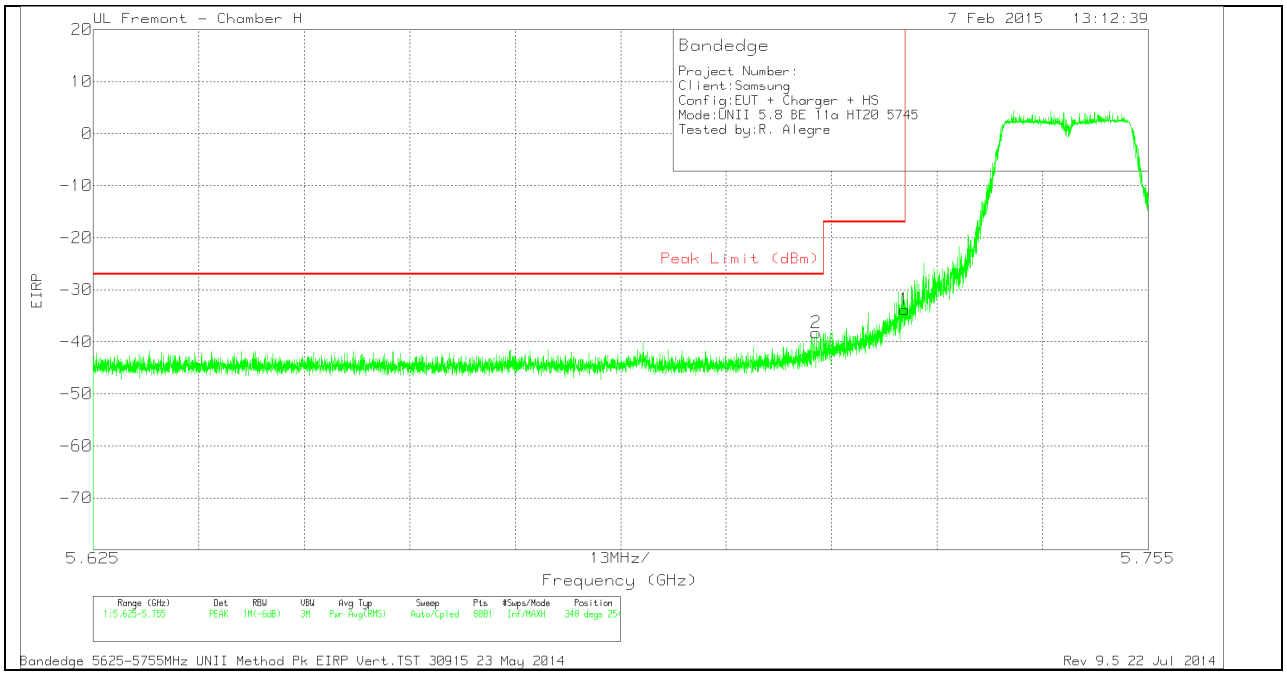
VERTICAL PEAK PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T863 (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
2	5.714	-62.64	PK	35	-22.4	11.8	0	-38.24	-27	-11.24	348	254	V
1	5.725	-58.17	PK	35	-22.4	11.8	0	-33.77	-17	-16.77	348	254	V

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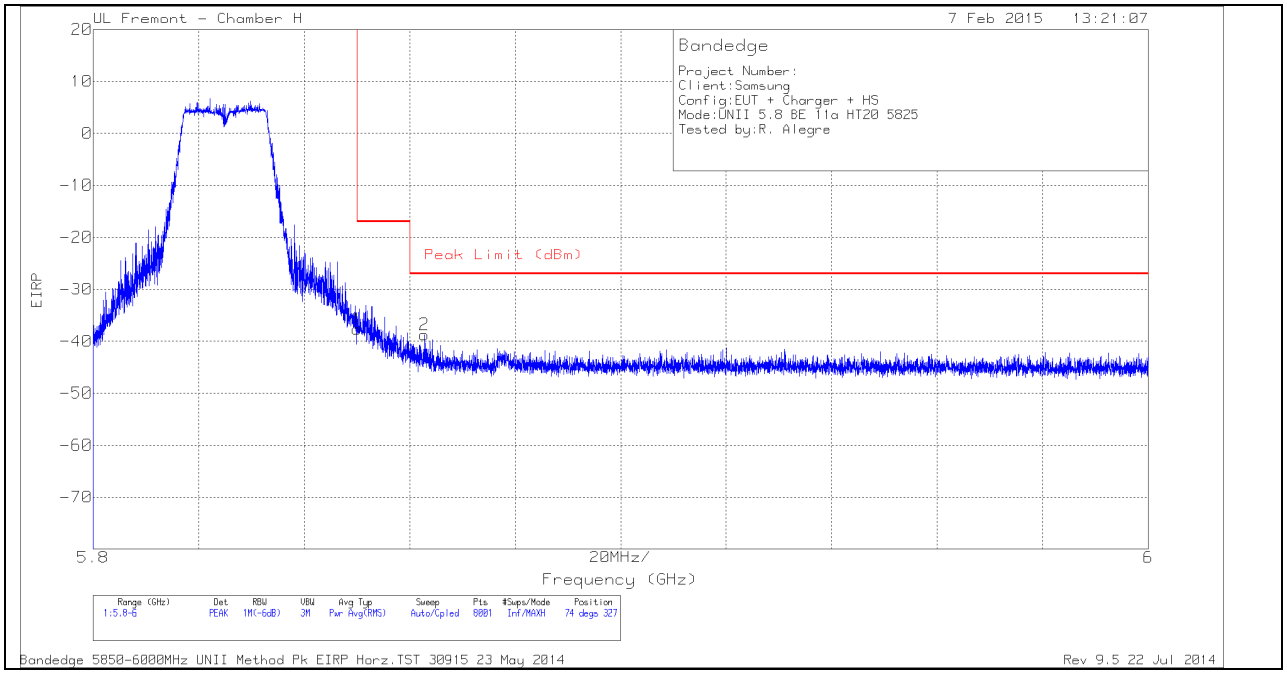
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T863 (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	5.85	-62.38	PK	35.1	-22.2	11.8	0	-37.68	-17	-20.68	74	327	H
2	5.863	-63.43	PK	35.1	-22.2	11.8	0	-38.73	-27	-11.73	74	327	H

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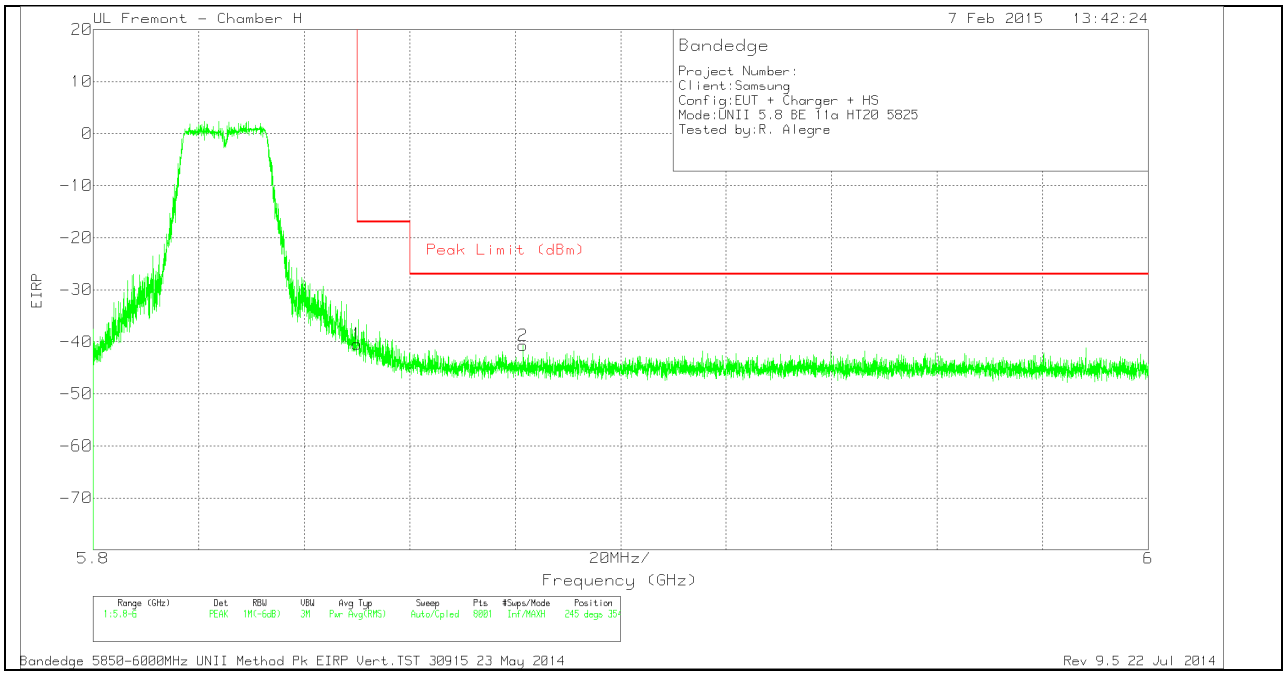
VERTICAL PEAK PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T863 (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	5.85	-65.15	PK	35.1	-22.2	11.8	0	-40.45	-17	-23.45	245	354	V
2	5.882	-65.41	PK	35.1	-22.2	11.8	0	-40.71	-27	-13.71	245	354	V

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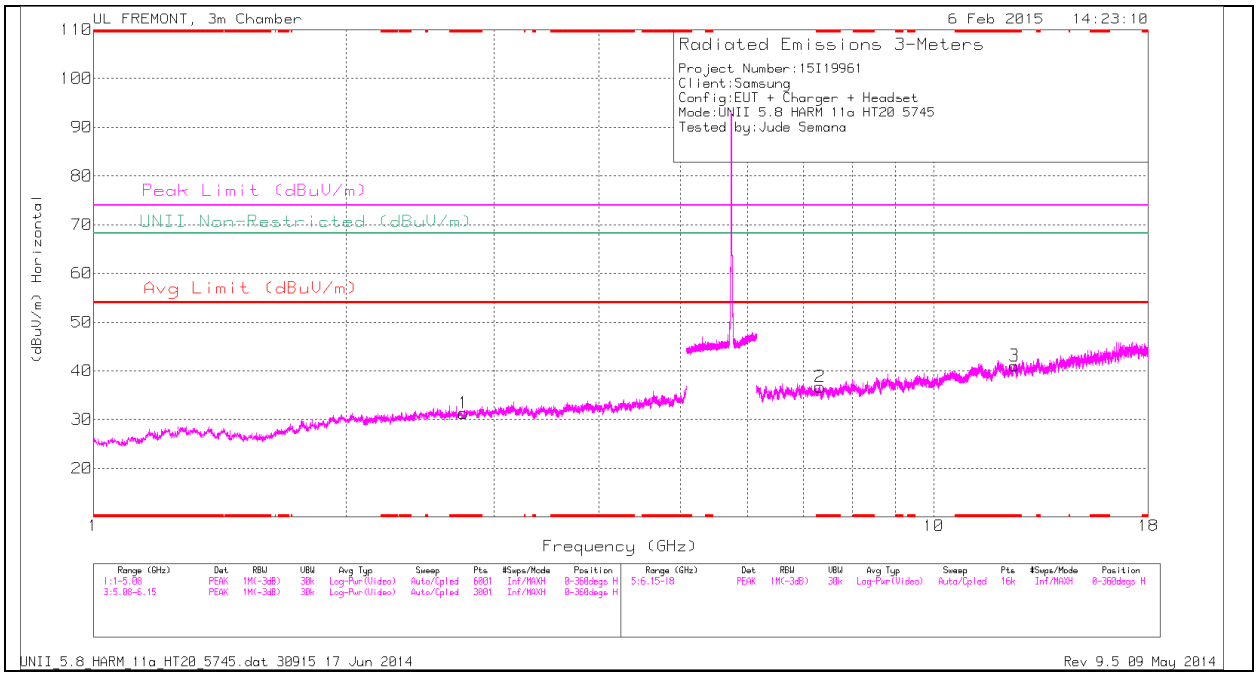
HARMONICS AND SPURIOUS EMISSIONS

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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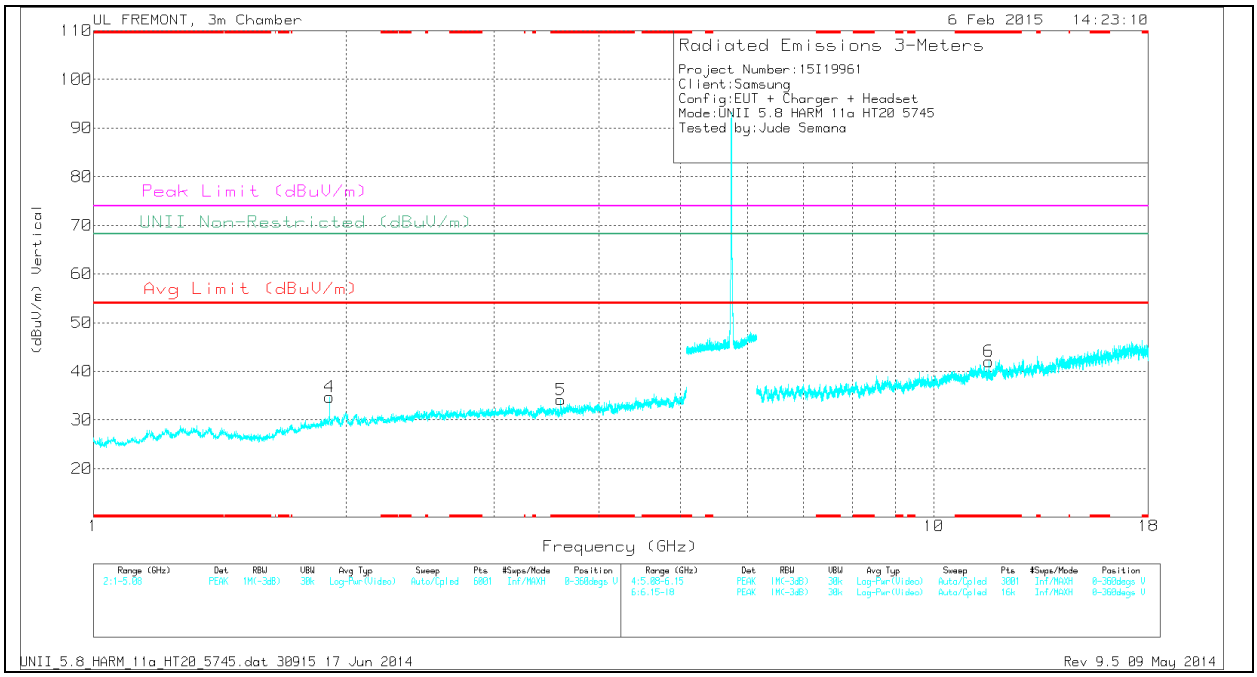
LOW CHANNEL VERTICAL



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	* 2.758	31.06	PK	32.5	-32.2	0	31.36	-	-	74	-42.64	-	-	0-360	100	H
5	* 3.6	33.16	PK	32.8	-31.8	0	34.16	-	-	74	-39.84	-	-	0-360	200	V
2	* 7.325	30.62	PK	35.6	-29.5	0	36.72	-	-	74	-37.28	-	-	0-360	100	H
3	* 12.475	28.63	PK	39	-26.6	0	41.03	-	-	74	-32.97	-	-	0-360	200	H
6	* 11.63	29.53	PK	38.7	-26.2	0	42.03	-	-	74	-31.97	-	-	0-360	100	V
4	1.911	36.46	PK	31.1	-32.8	0	34.76	-	-	-	-	68.2	-33.44	0-360	200	V

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

PK - Peak detector

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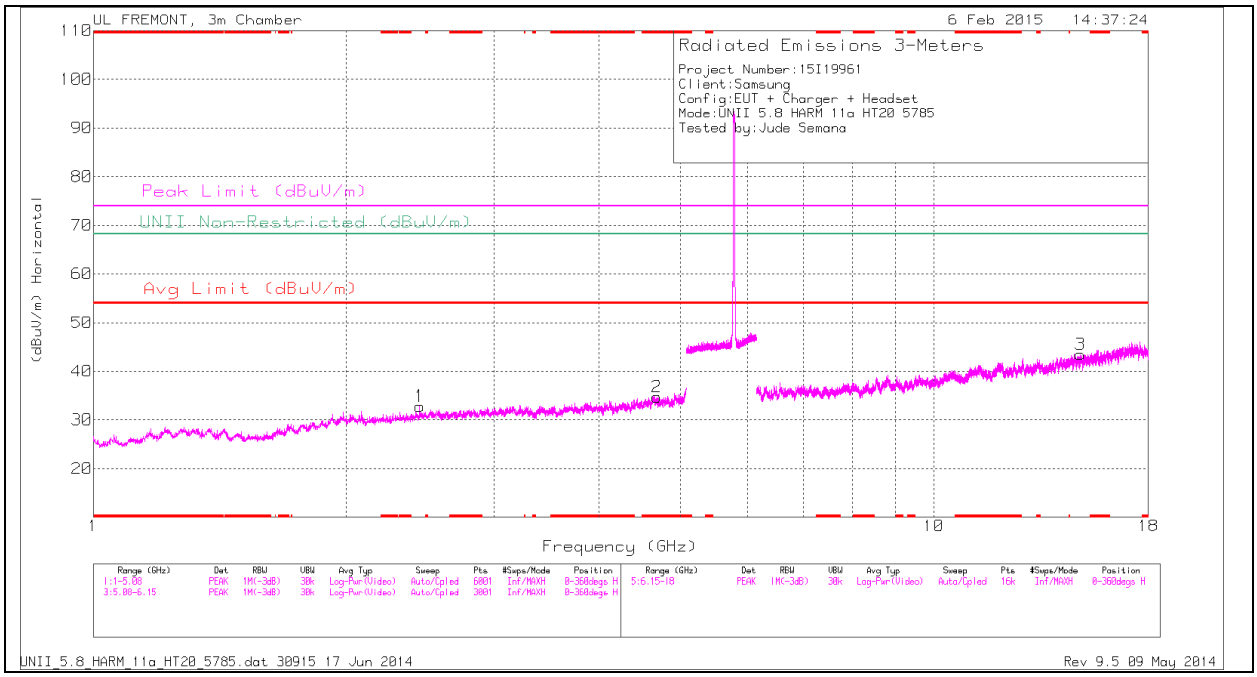
MID CHANNEL HORIZONTAL



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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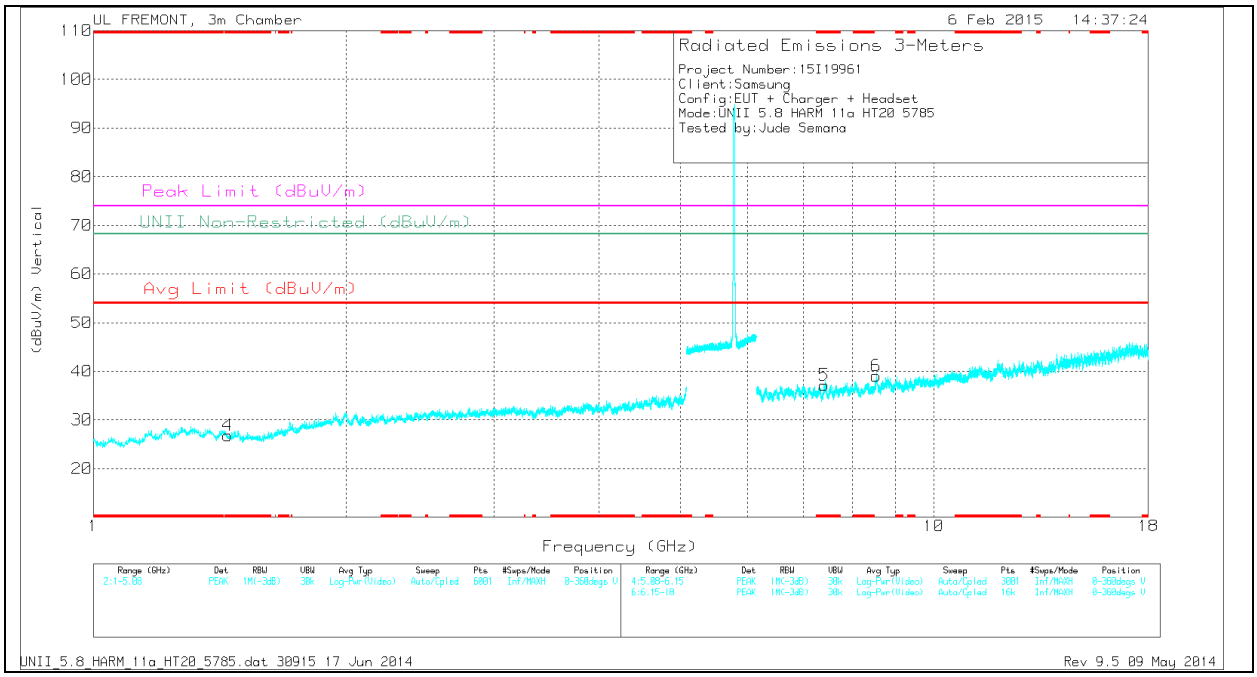
MID CHANNEL VERTICAL



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
2	* 4.684	31.01	PK	34	-30.3	0	34.71	-	-	74	-39.29	-	-	0-360	100	H
4	* 1.446	31.13	PK	28.4	-32.7	0	26.83	-	-	74	-47.17	-	-	0-360	100	V
5	* 7.403	30.15	PK	35.6	-28.6	0	37.15	-	-	74	-36.85	-	-	0-360	200	V
1	2.446	33.1	PK	32.2	-32.5	0	32.8	-	-	-	-	68.2	-35.4	0-360	200	H
6	8.541	29.46	PK	35.8	-26.2	0	39.06	-	-	-	-	68.2	-29.14	0-360	200	V
3	14.941	31.07	PK	39.8	-27.4	0	43.47	-	-	-	-	68.2	-24.73	0-360	200	H

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

PK - Peak detector

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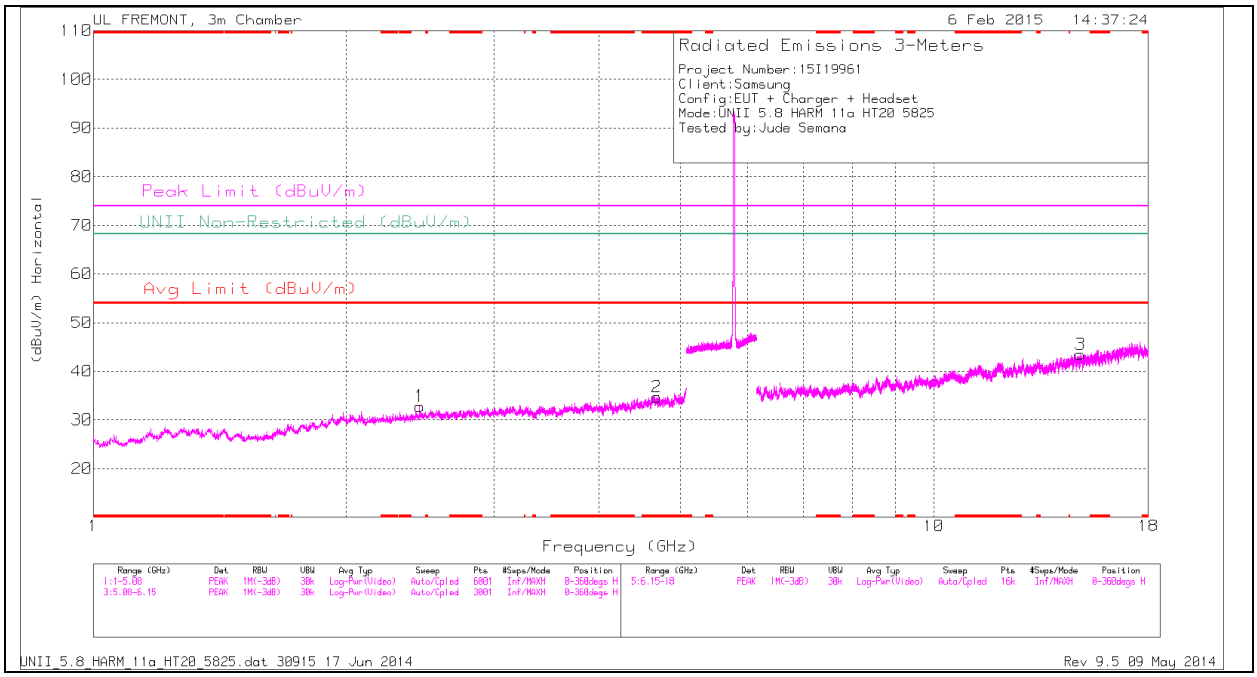
HIGH CHANNEL HORIZONTAL



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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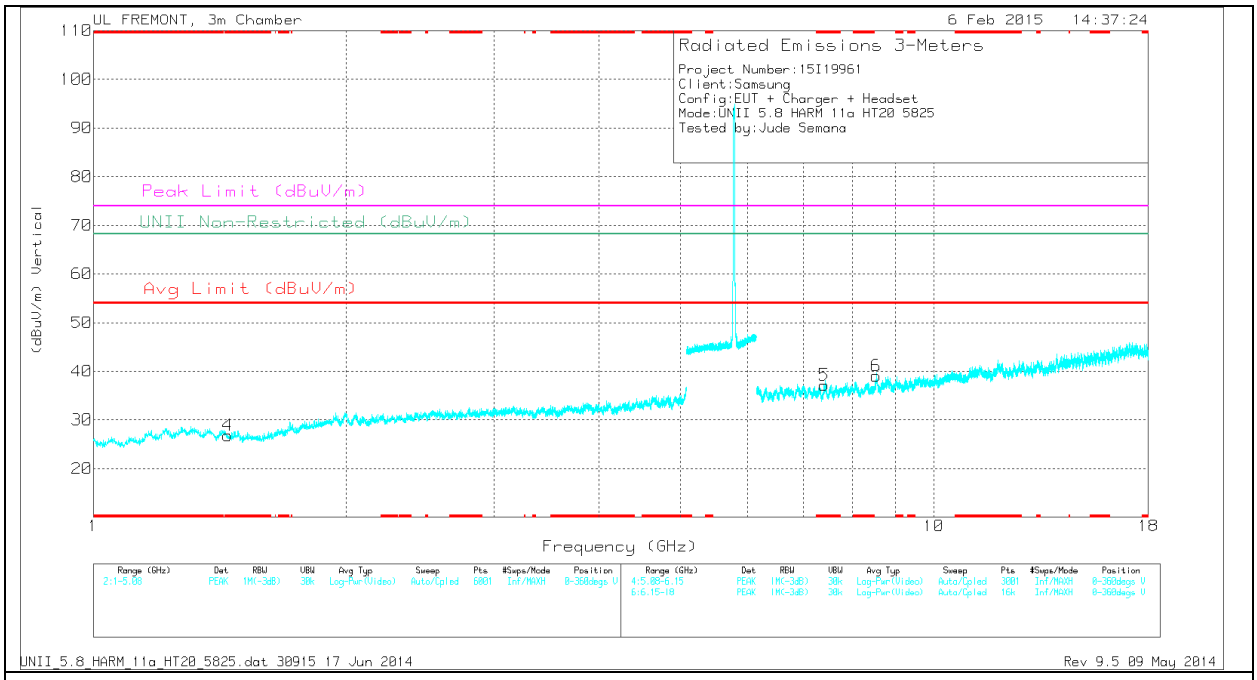
HIGH CHANNEL VERTICAL



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
2	* 4.684	31.01	PK	34	-30.3	0	34.71	-	-	74	-39.29	-	-	0-360	100	H
4	* 1.446	31.13	PK	28.4	-32.7	0	26.83	-	-	74	-47.17	-	-	0-360	100	V
5	* 7.403	30.15	PK	35.6	-28.6	0	37.15	-	-	74	-36.85	-	-	0-360	200	V
1	2.446	33.1	PK	32.2	-32.5	0	32.8	-	-	-	-	68.2	-35.4	0-360	200	H
6	8.541	29.46	PK	35.8	-26.2	0	39.06	-	-	-	-	68.2	-29.14	0-360	200	V
3	14.941	31.07	PK	39.8	-27.4	0	43.47	-	-	-	-	68.2	-24.73	0-360	200	H

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

PK - Peak detector

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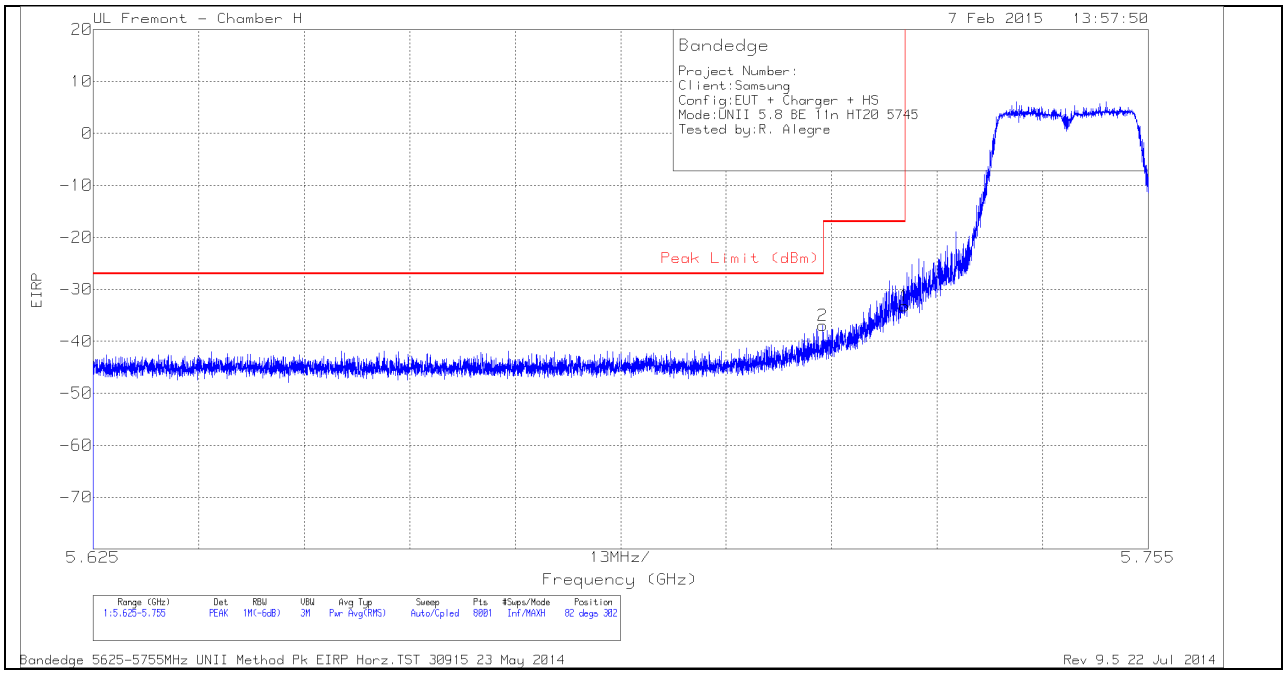
11.4.2. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.8 GHz BAND

AUTHORIZED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T863 (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
2	5.715	-61.36	PK	35	-22.4	11.8	0	-36.96	-27	-9.96	82	302	H
1	5.725	-57.58	PK	35	-22.4	11.8	0	-33.18	-17	-16.18	82	302	H

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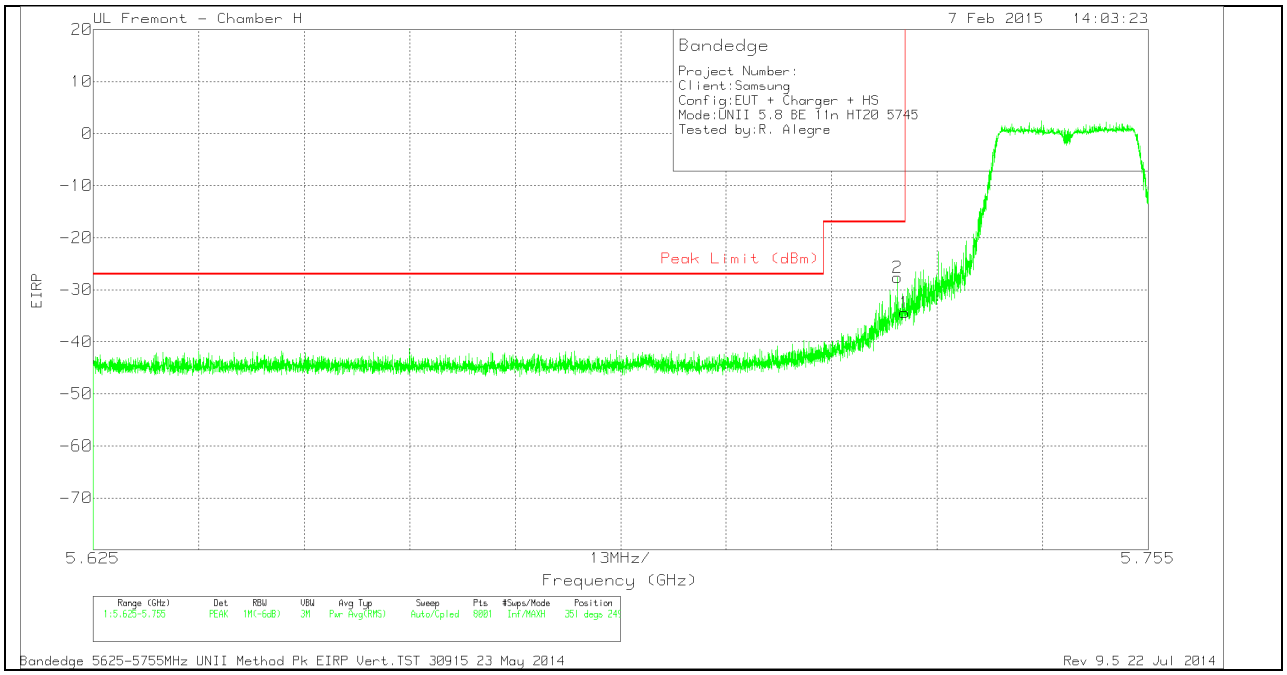
VERTICAL PEAK PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T863 (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
2	5.724	-52.07	PK	35	-22.4	11.8	0	-27.67	-17	-10.67	351	249	V
1	5.725	-58.84	PK	35	-22.4	11.8	0	-34.44	-17	-17.44	351	249	V

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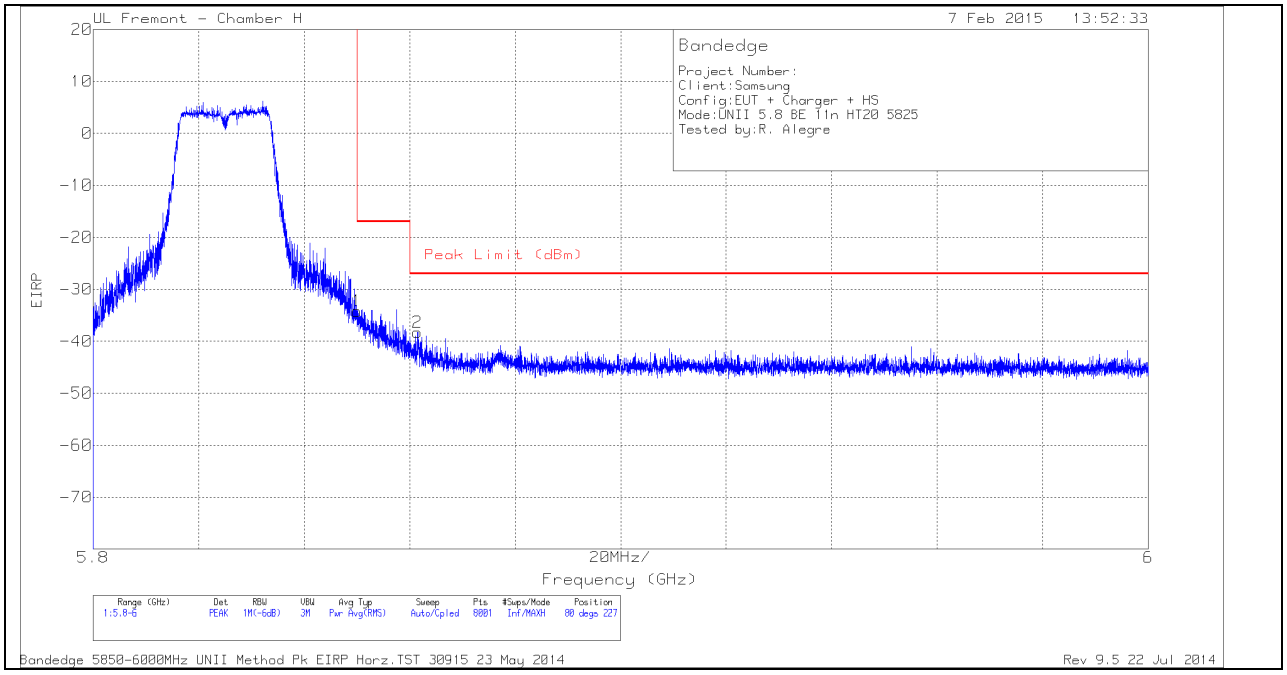
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T863 (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	5.85	-58.92	PK	35.1	-22.2	11.8	0	-34.22	-17	-17.22	80	227	H
2	5.861	-62.97	PK	35.1	-22.2	11.8	0	-38.27	-27	-11.27	80	227	H

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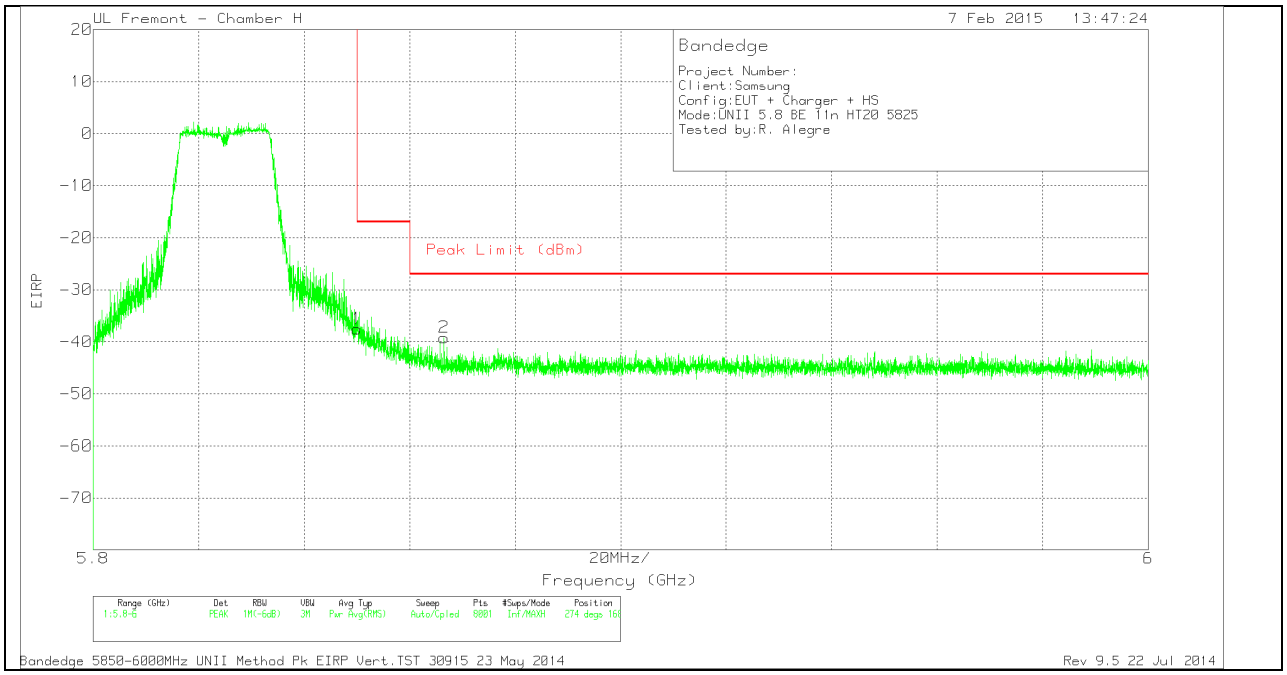
VERTICAL PEAK PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T863 (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	5.85	-62.2	PK	35.1	-22.2	11.8	0	-37.5	-17	-20.5	274	168	V
2	5.867	-63.88	PK	35.1	-22.2	11.8	0	-39.18	-27	-12.18	274	168	V

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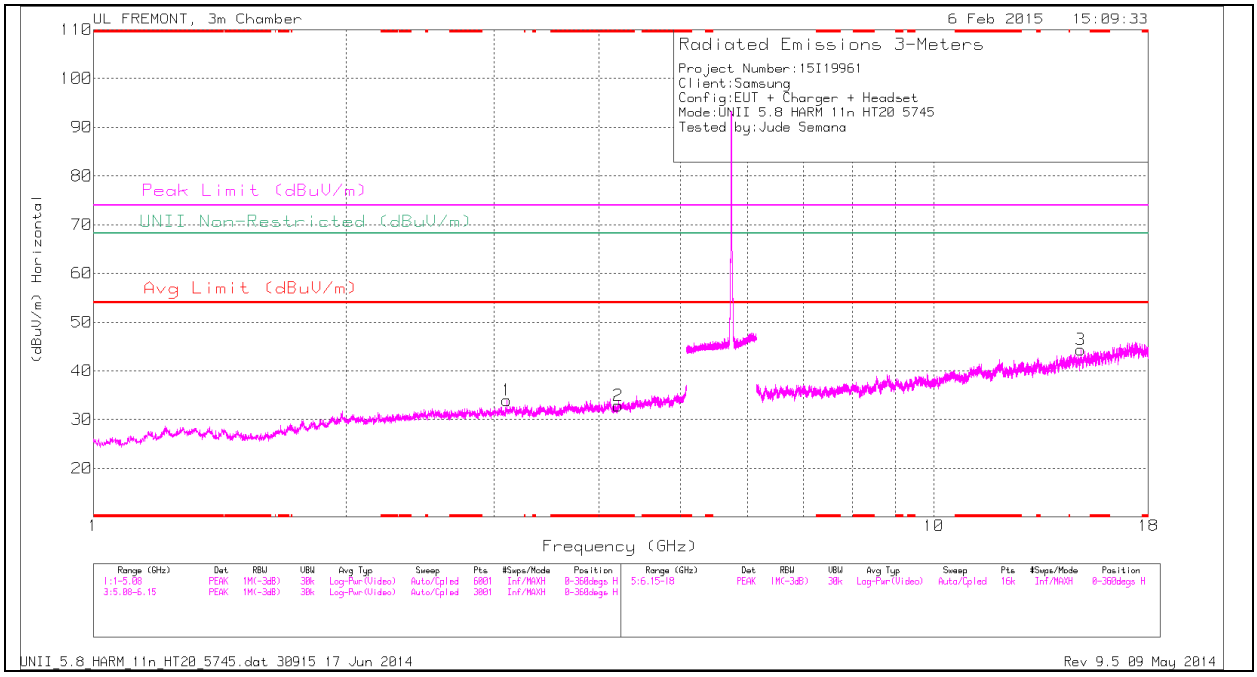
HARMONICS AND SPURIOUS EMISSIONS

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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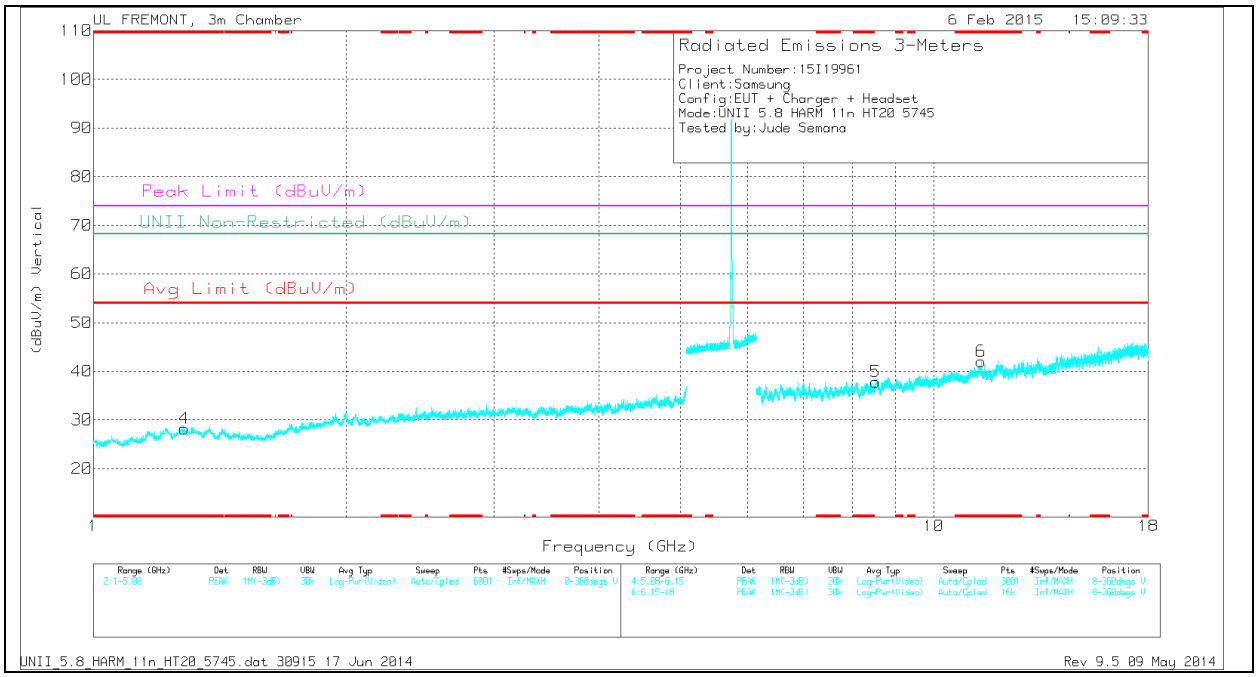
LOW CHANNEL VERTICAL



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	* 4.213	30.97	PK	33.3	-31.4	0	32.87	-	-	74	-41.13	-	-	0-360	200	H
4	* 1.284	32.13	PK	29.7	-33.6	0	28.23	-	-	74	-45.77	-	-	0-360	100	V
6	* 11.385	29.71	PK	38.2	-25.9	0	42.01	-	-	74	-31.99	-	-	0-360	100	V
1	3.107	33.28	PK	32.8	-32.1	0	33.98	-	-	-	-	68.2	-34.22	0-360	100	H
5	8.526	28.92	PK	35.8	-26.9	0	37.82	-	-	-	-	68.2	-30.38	0-360	100	V
3	14.958	31.82	PK	39.8	-27.3	0	44.32	-	-	-	-	68.2	-23.88	0-360	200	H

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

PK - Peak detector

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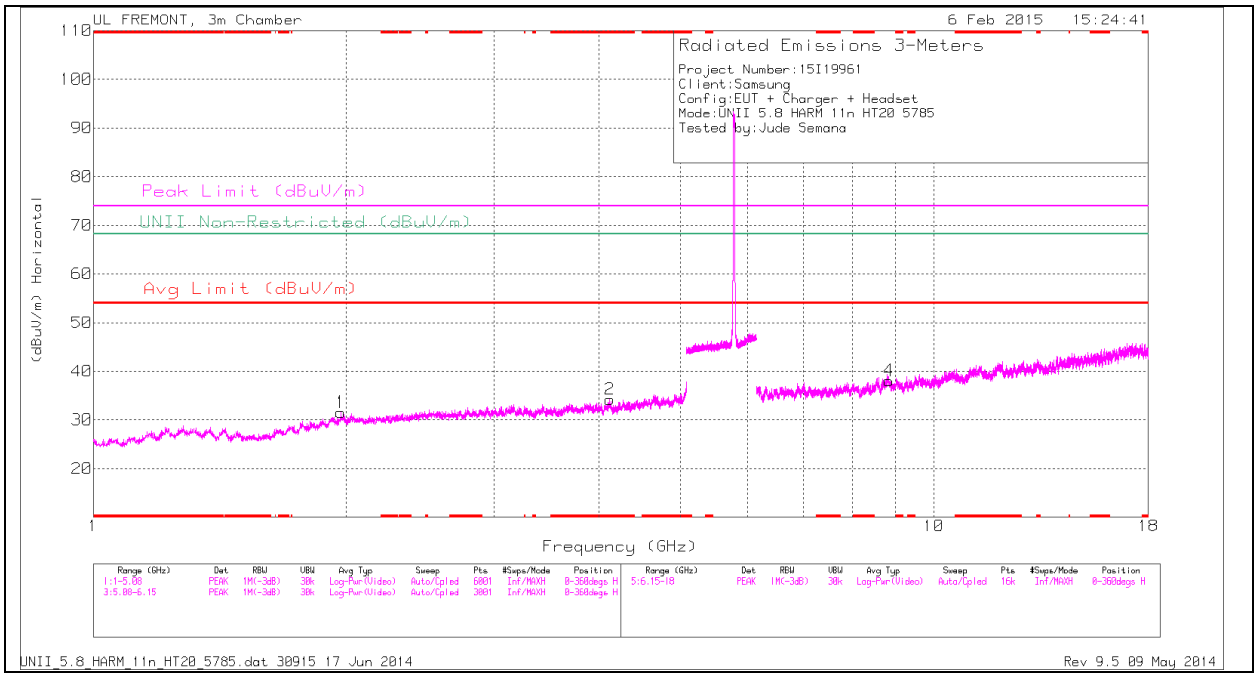
MID CHANNEL HORIZONTAL



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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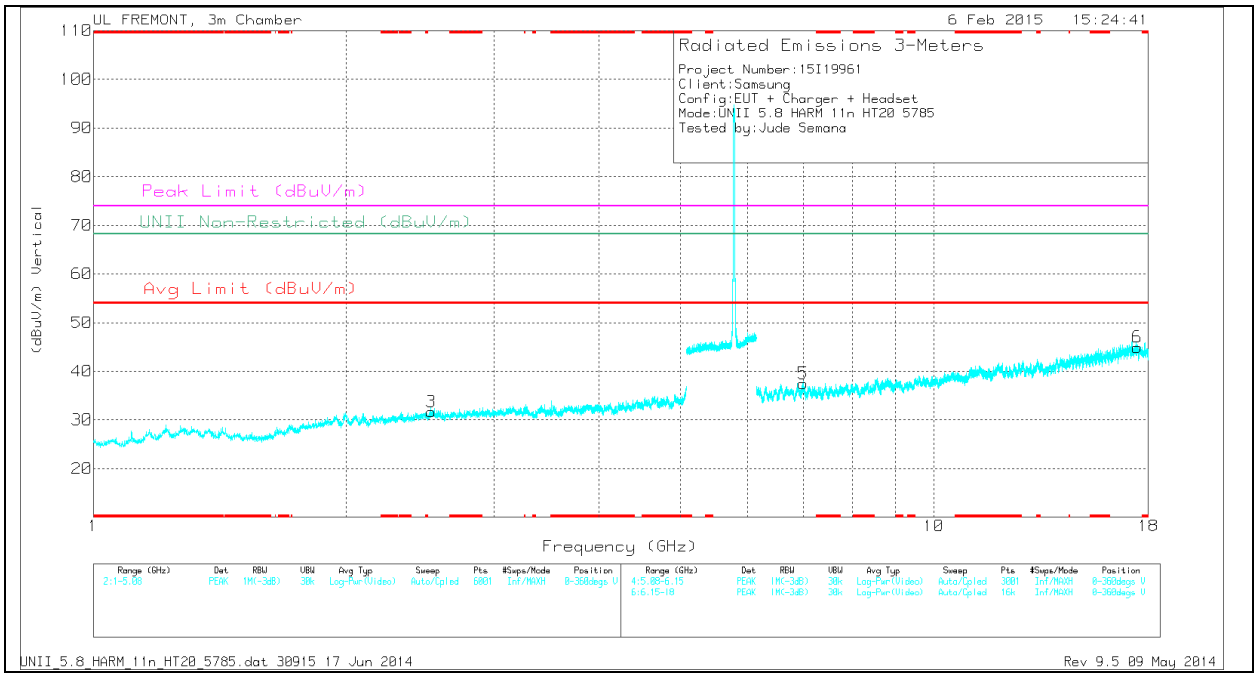
MID CHANNEL VERTICAL



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
2	* 4.117	31.82	PK	33.3	-30.9	0	34.22	-	-	74	-39.78	-	-	0-360	100	H
1	1.971	32.36	PK	31.4	-32.2	0	31.56	-	-	-	-	68.2	-36.64	0-360	200	H
3	2.525	31.49	PK	32.4	-32.2	0	31.69	-	-	-	-	68.2	-36.51	0-360	100	V
5	6.993	30.57	PK	35.6	-28.7	0	37.47	-	-	-	-	68.2	-30.73	0-360	100	V
4	8.843	28.46	PK	35.9	-26.3	0	38.06	-	-	-	-	68.2	-30.14	0-360	100	H
6	17.451	27.53	PK	41.4	-24	0	44.93	-	-	-	-	68.2	-23.27	0-360	200	V

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

PK - Peak detector

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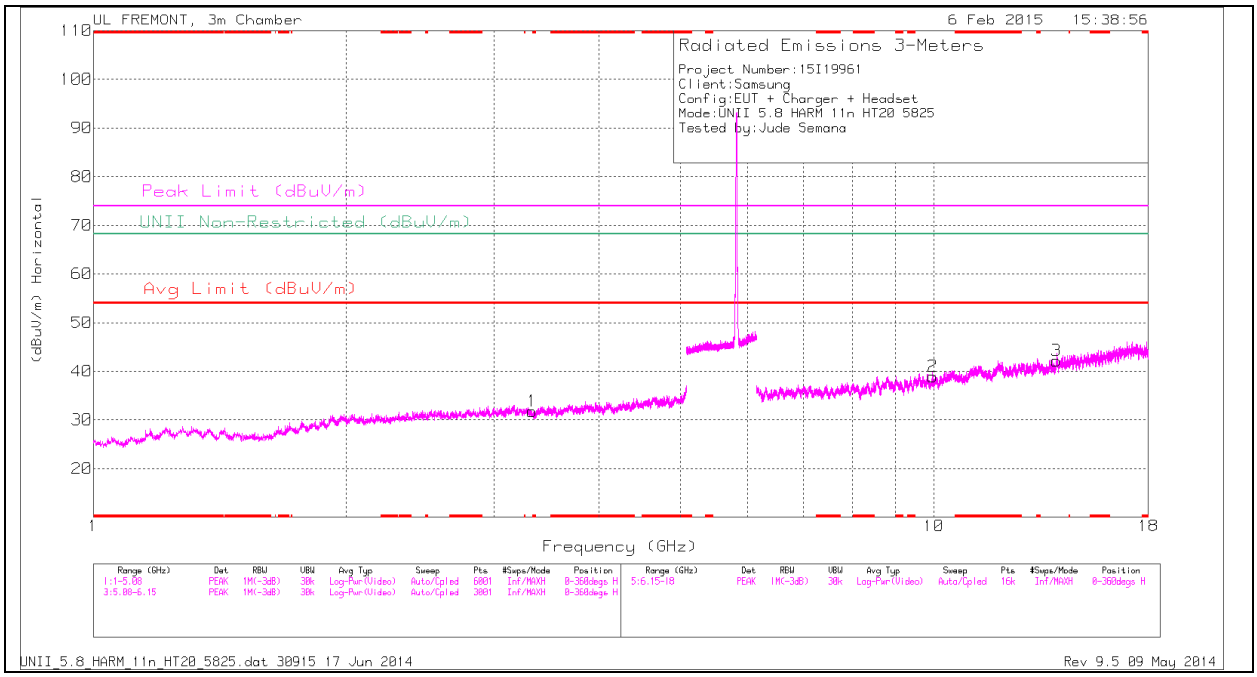
HIGH CHANNEL HORIZONTAL



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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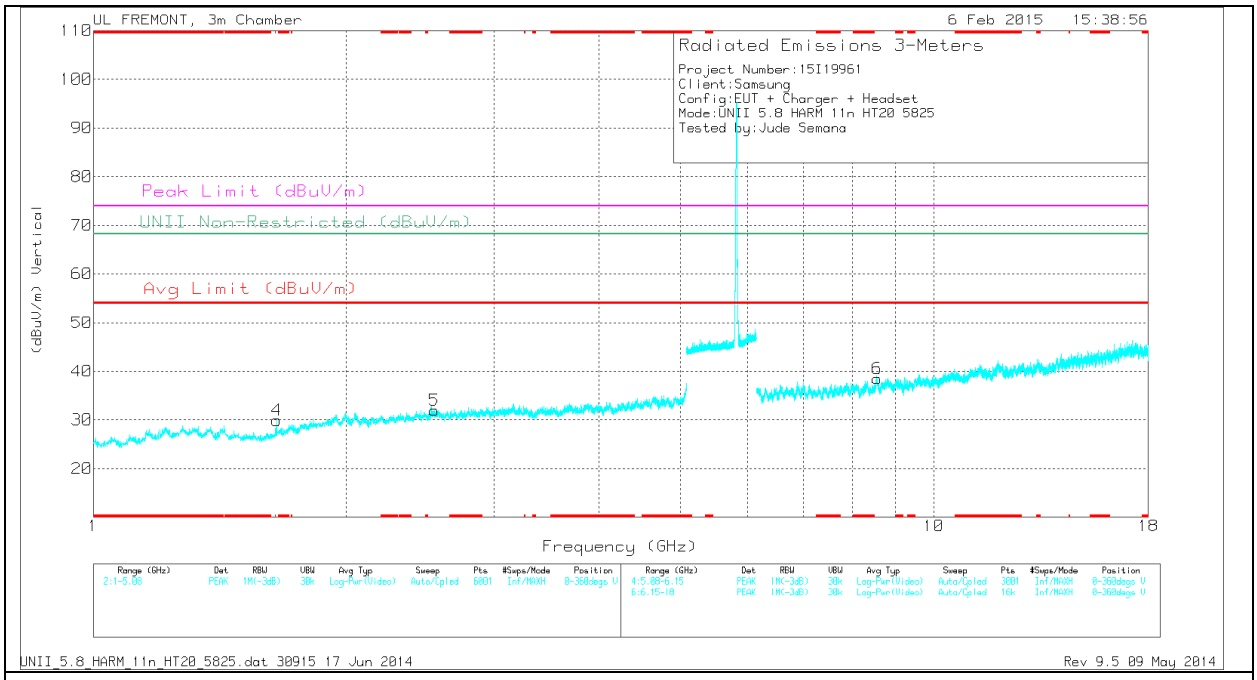
HIGH CHANNEL VERTICAL



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
4	1.654	34	PK	28.5	-32.6	0	29.9	-	-	-	-	68.2	-38.3	0-360	100	V
5	2.547	31.7	PK	32.4	-32.1	0	32	-	-	-	-	68.2	-36.2	0-360	100	V
1	3.328	31.46	PK	32.6	-32.3	0	31.76	-	-	-	-	68.2	-36.44	0-360	100	H
6	8.569	28.92	PK	35.8	-26.2	0	38.52	-	-	-	-	68.2	-29.68	0-360	200	V
2	9.974	27.96	PK	36.9	-25.9	0	38.96	-	-	-	-	68.2	-29.24	0-360	200	H
3	13.993	31.09	PK	38.8	-27.7	0	42.19	-	-	-	-	68.2	-26.01	0-360	100	H

PK - Peak detector

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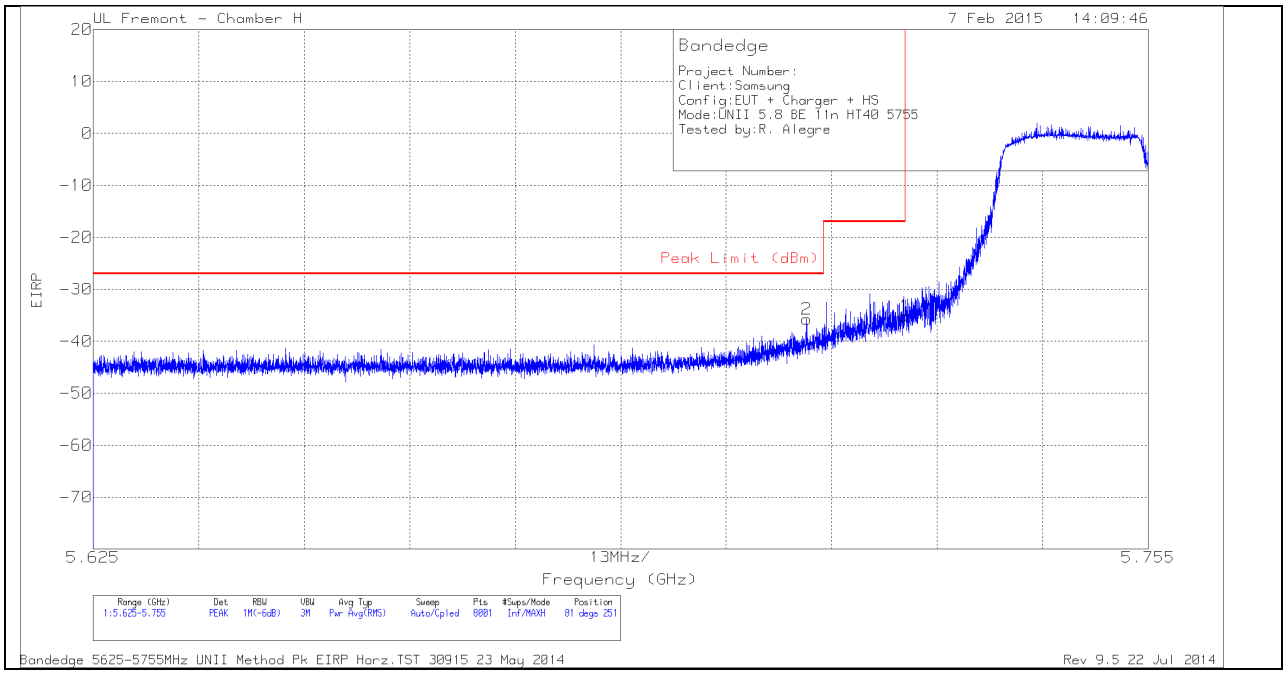
11.4.3. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.8 GHz BAND

AUTHORIZED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T863 (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
2	5.713	-60.13	PK	35	-22.4	11.8	0	-35.73	-27	-8.73	81	251	H
1	5.725	-59.53	PK	35	-22.4	11.8	0	-35.13	-17	-18.13	81	251	H

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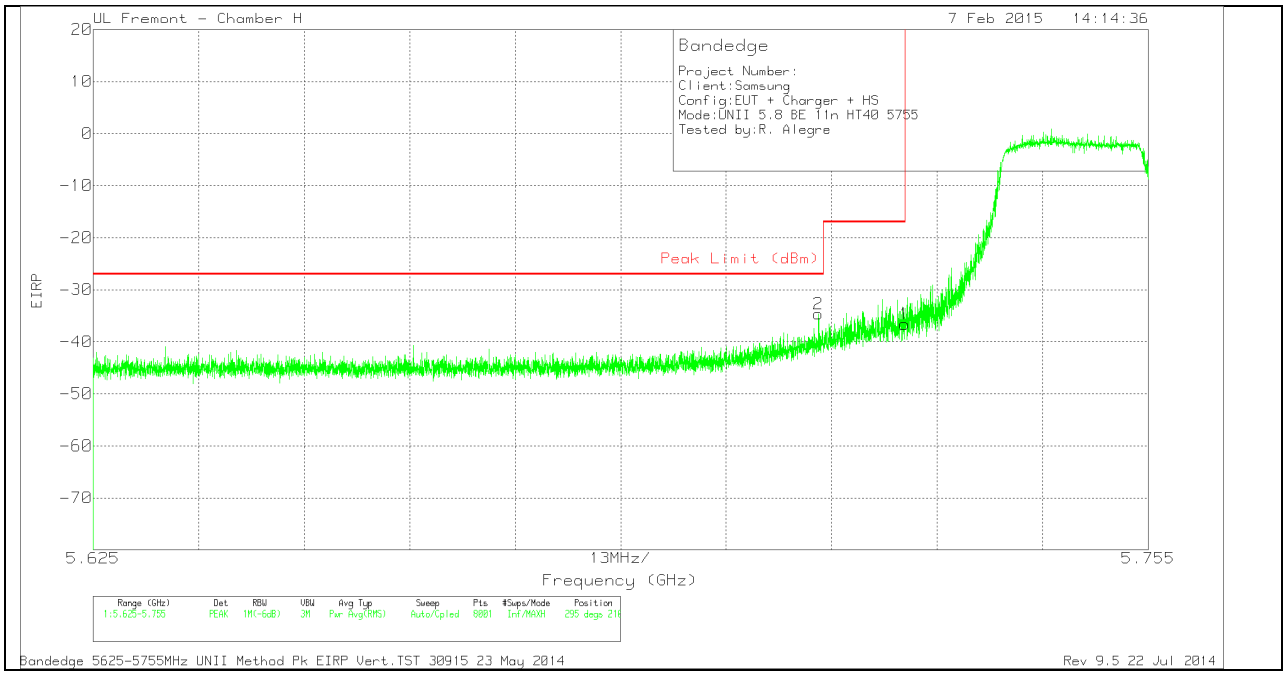
VERTICAL PEAK PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T863 (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
2	5.714	-59.04	PK	35	-22.4	11.8	0	-34.64	-27	-7.64	295	210	V
1	5.725	-61.02	PK	35	-22.4	11.8	0	-36.62	-17	-19.62	295	210	V

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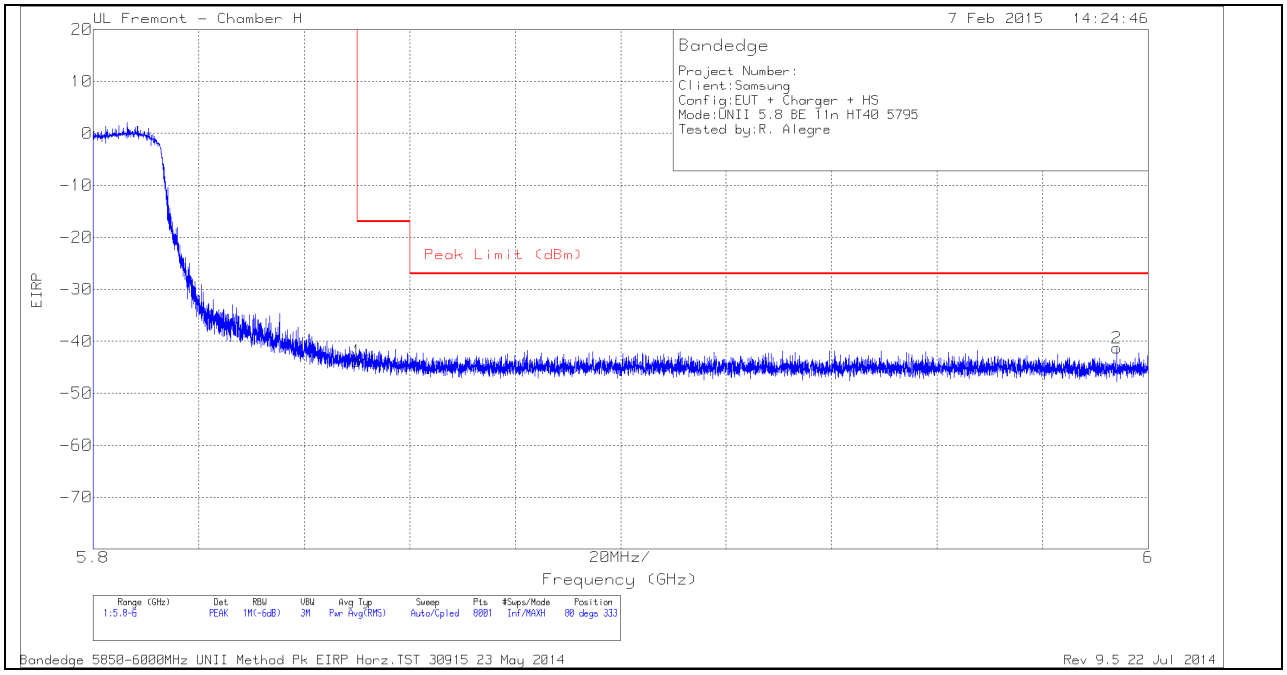
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T863 (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	5.85	-68.52	PK	35.1	-22.2	11.8	0	-43.82	-17	-26.82	80	333	H
2	5.994	-66.12	PK	35.2	-22.2	11.8	0	-41.32	-27	-14.32	80	333	H

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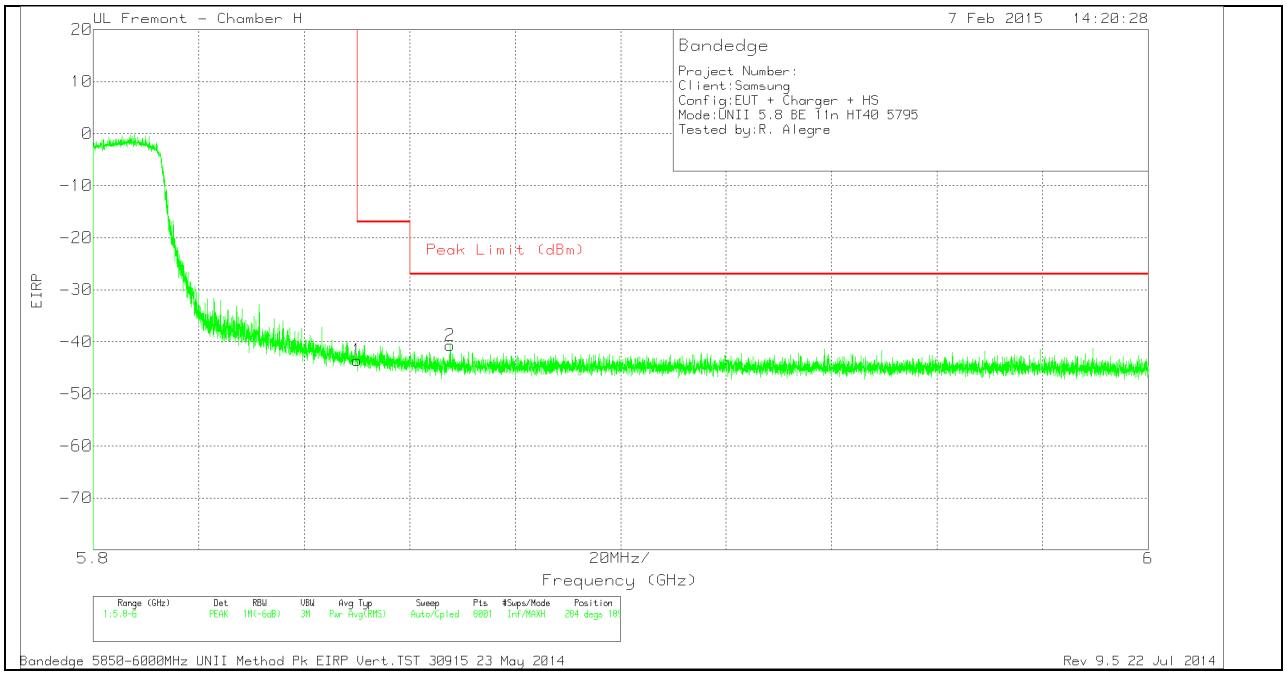
VERTICAL PEAK PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T863 (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	5.85	-68.23	PK	35.1	-22.2	11.8	0	-43.53	-17	-26.53	284	189	V
2	5.868	-65.38	PK	35.1	-22.2	11.8	0	-40.68	-27	-13.68	284	189	V

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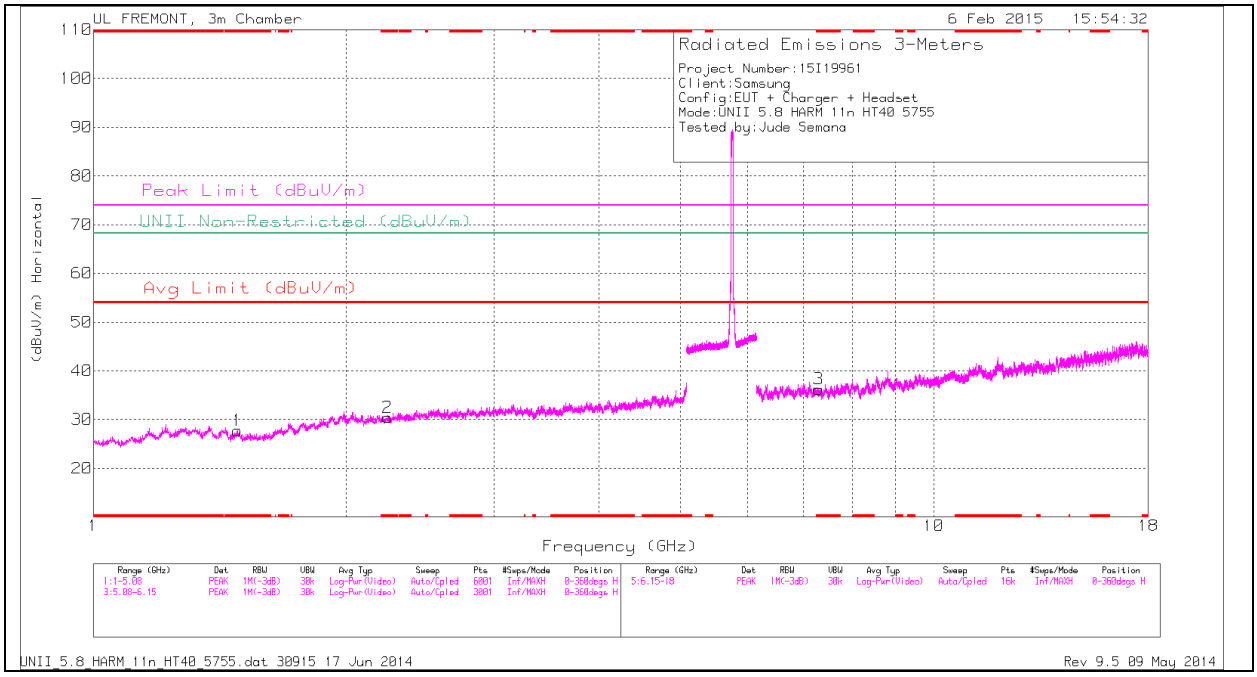
HARMONICS AND SPURIOUS EMISSIONS

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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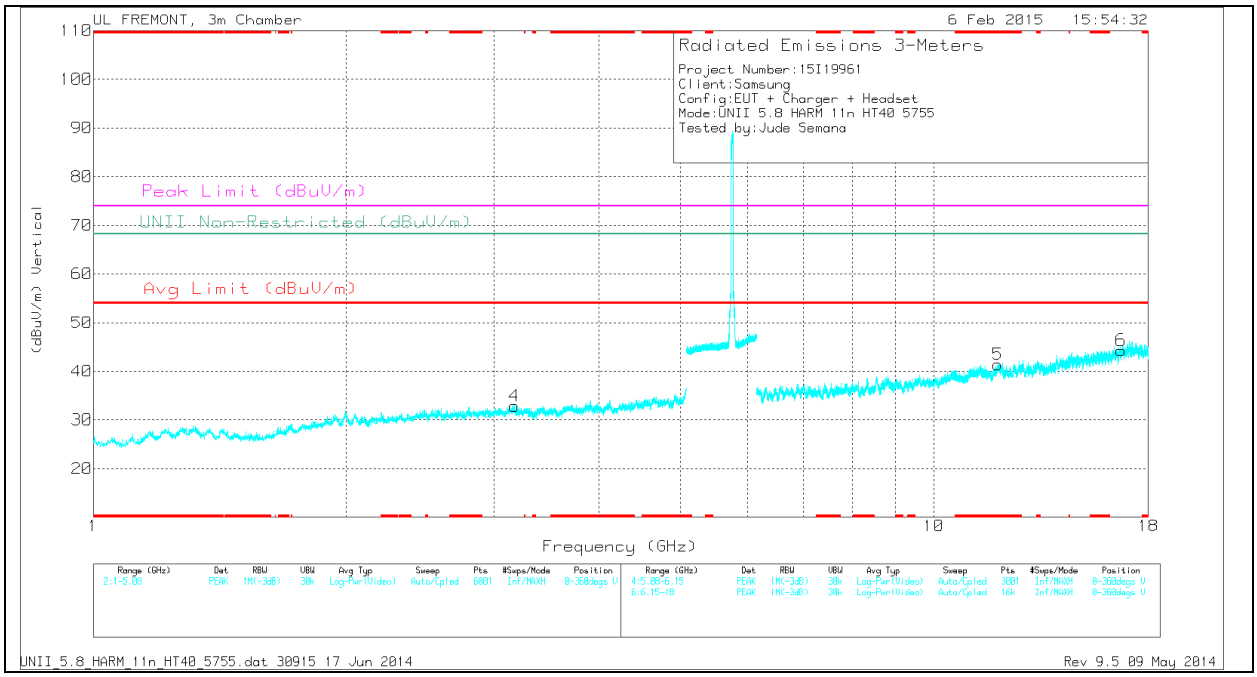
LOW CHANNEL VERTICAL



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	* 1.486	32.39	PK	28.2	-32.8	0	27.79	-	-	74	-46.21	-	-	0-360	200	H
2	* 2.24	31.33	PK	31.5	-32.4	0	30.43	-	-	74	-43.57	-	-	0-360	100	H
3	* 7.295	30.04	PK	35.6	-29.4	0	36.24	-	-	74	-37.76	-	-	0-360	200	H
5	* 11.918	28.53	PK	39.1	-26.2	0	41.43	-	-	74	-32.57	-	-	0-360	100	V
4	3.171	31.65	PK	32.7	-31.5	0	32.85	-	-	-	-	68.2	-35.35	0-360	100	V
6	16.707	27.89	PK	41.2	-24.8	0	44.29	-	-	-	-	68.2	-23.91	0-360	100	V

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

PK - Peak detector

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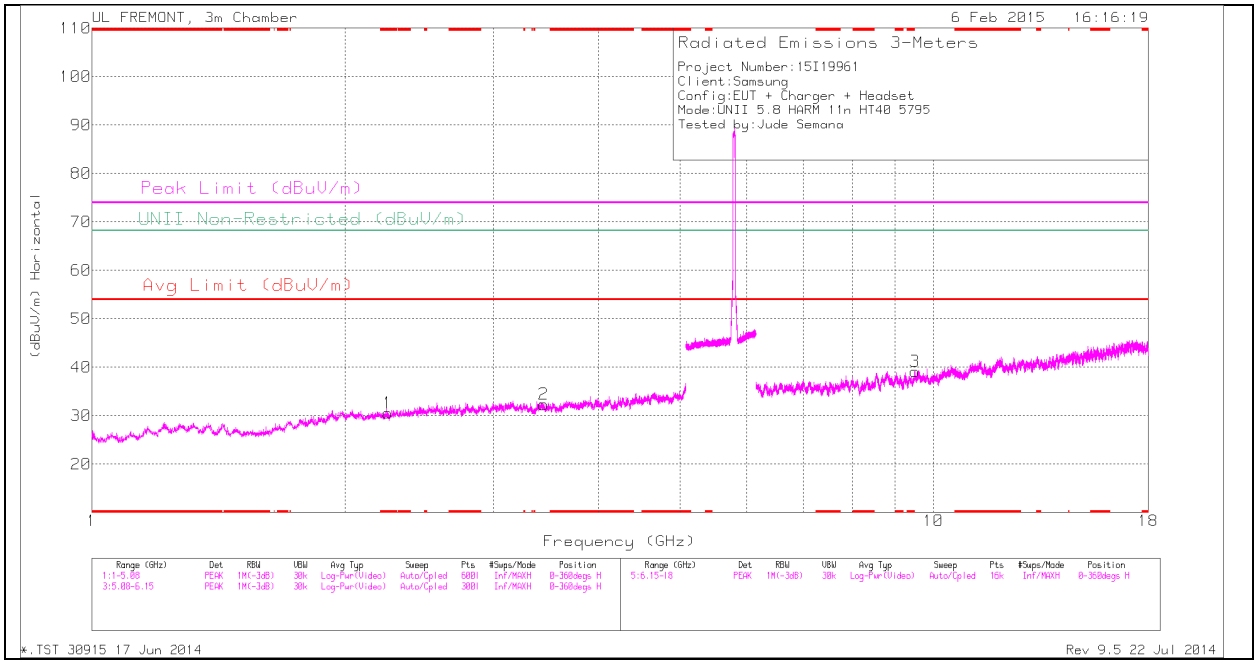
HIGH CHANNEL HORIZONTAL



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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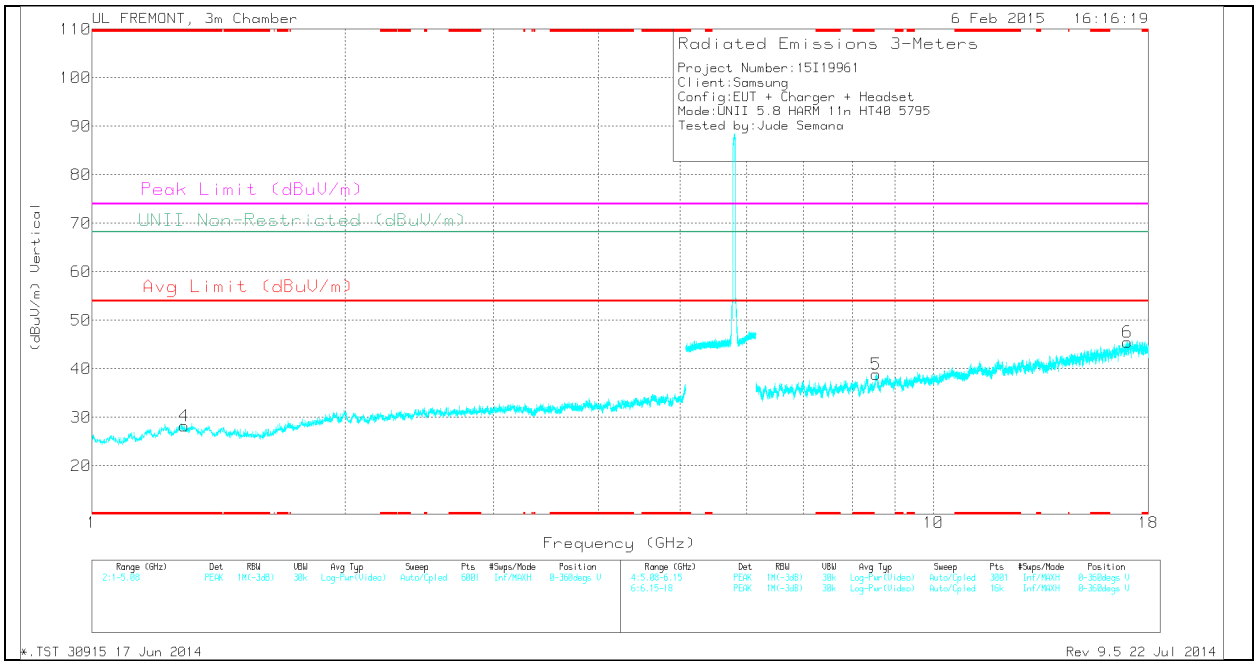
HIGH CHANNEL VERTICAL



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	* 2.247	31.52	PK	31.5	-32.4	0	30.62	-	-	74	-43.38	-	-	0-360	200	H
4	* 1.287	32.06	PK	29.8	-33.6	0	28.26	-	-	74	-45.74	-	-	0-360	100	V
2	3.441	31.13	PK	32.7	-31.5	0	32.33	-	-	-	-	68.2	-35.87	0-360	200	H
5	8.553	29.18	PK	35.8	-26.1	0	38.88	-	-	-	-	68.2	-29.32	0-360	100	V
3	9.509	28.32	PK	36.6	-25.8	0	39.12	-	-	-	-	68.2	-29.08	0-360	200	H
6	16.991	27.85	PK	41.4	-23.8	0	45.45	-	-	-	-	68.2	-22.75	0-360	200	V

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

PK - Peak detector

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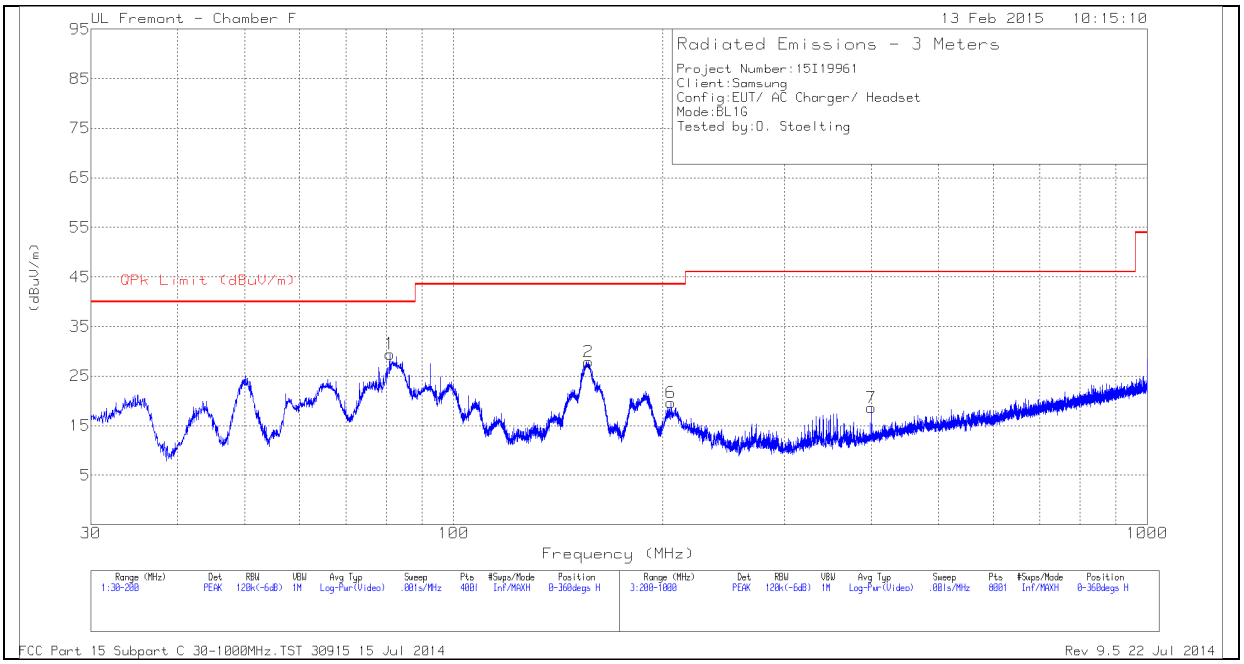
12. WORST-CASE BELOW 1 GHz (in the 5.3 GHz Band)

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



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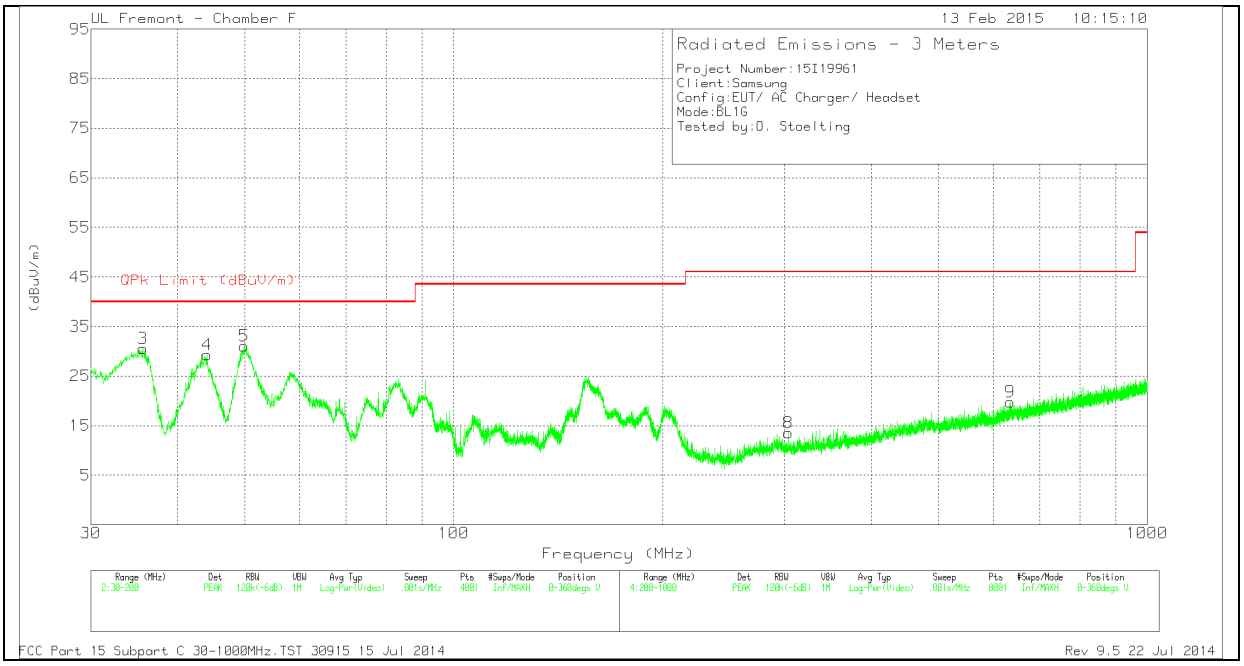
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, VERTICAL)



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Below 1G Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T477 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	80.8725	53.57	PK	7.6	-31.7	29.47	40	-10.53	0-360	401	H
2	156.395	46.8	PK	12.4	-31.3	27.9	43.52	-15.62	0-360	201	H
3	35.6525	45.45	PK	17.1	-32	30.55	40	-9.45	0-360	100	V
4	44.1525	50.33	PK	10.8	-31.9	29.23	40	-10.77	0-360	100	V
5	49.89	54.98	PK	7.9	-31.8	31.08	40	-8.92	0-360	100	V
6	205.7	39.76	PK	10.9	-31	19.66	43.52	-23.86	0-360	100	H
7	* 400	33.51	PK	15.5	-30.4	18.61	46.02	-27.41	0-360	100	H
8	303.8	30.64	PK	13.5	-30.6	13.54	46.02	-32.48	0-360	100	V
9	634.7	29.95	PK	19.7	-29.9	19.75	46.02	-26.27	0-360	100	V

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

PK - Peak detector

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13. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

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

* Decreases with the logarithm of the frequency.

TEST PROCEDURE

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

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

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

RESULTS

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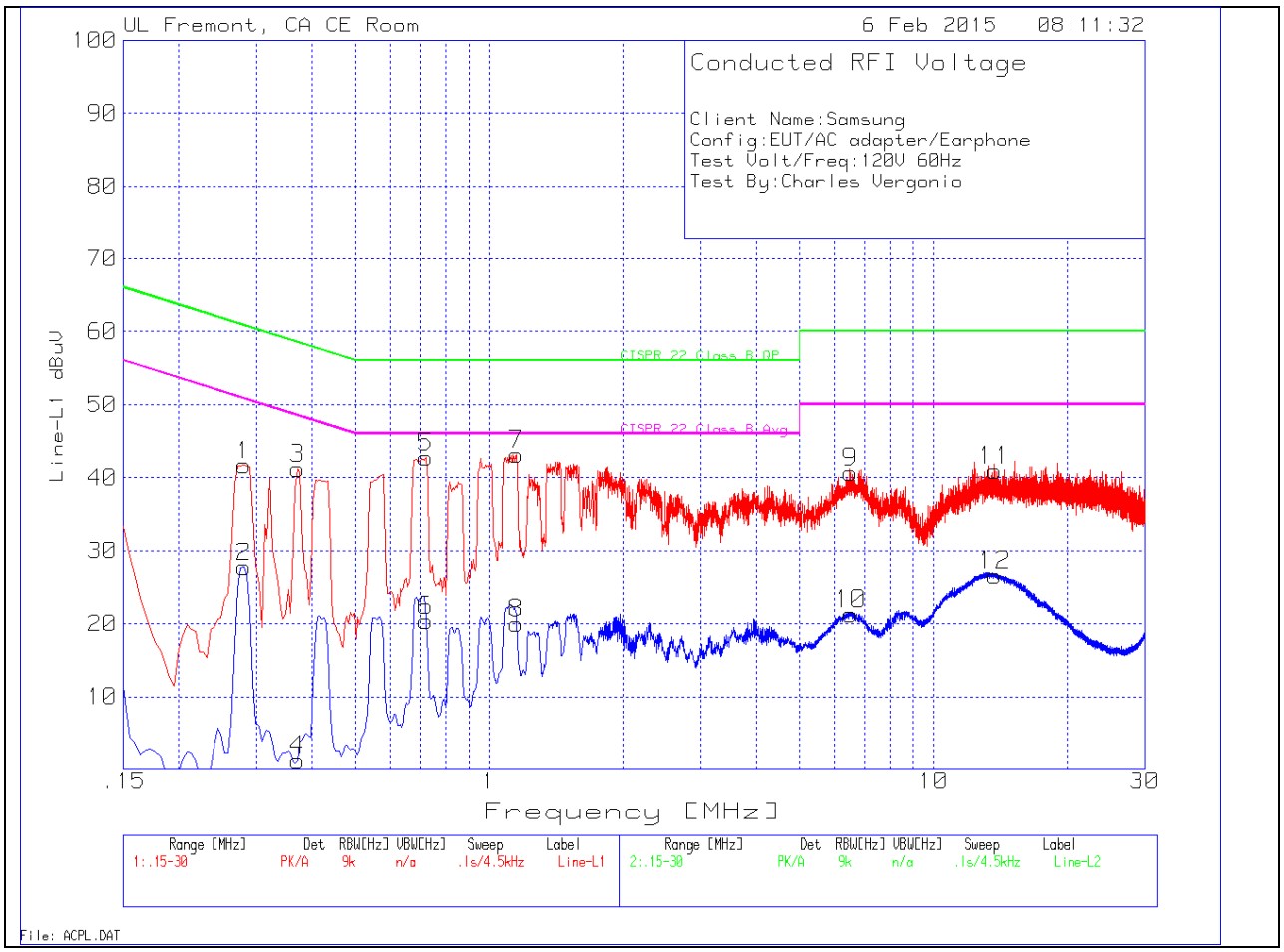
6 WORST EMISSIONS

LINE 1 PLOT



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LINE 1 RESULTS

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1 (dB)	LC Cables 1&3 (dB)	Corrected Reading dBuV	CISPR 22 Class B QP	Margin to Limit (dB)	CISPR 22 Class B Avg	Margin to Limit (dB)
1	.2805	41.06	PK	.6	0	41.66	60.8	-19.14	-	-
2	.2805	27.12	Av	.6	0	27.72	-	-	50.8	-23.08
3	.3705	40.8	PK	.4	0	41.2	58.5	-17.3	-	-
4	.3705	.76	Av	.4	0	1.16	-	-	48.5	-47.34
5	.7215	42.51	PK	.3	0	42.81	56	-13.19	-	-
6	.7215	20.08	Av	.3	0	20.38	-	-	46	-25.62
7	1.1535	42.98	PK	.2	0	43.18	56	-12.82	-	-
8	1.1535	19.8	Av	.2	0	20	-	-	46	-26
9	6.5265	40.39	PK	.2	.1	40.69	60	-19.31	-	-
10	6.5265	21.02	Av	.2	.1	21.32	-	-	50	-28.68
11	13.749	40.53	PK	.2	.2	40.93	60	-19.07	-	-
12	13.749	26.22	Av	.2	.2	26.62	-	-	50	-23.38

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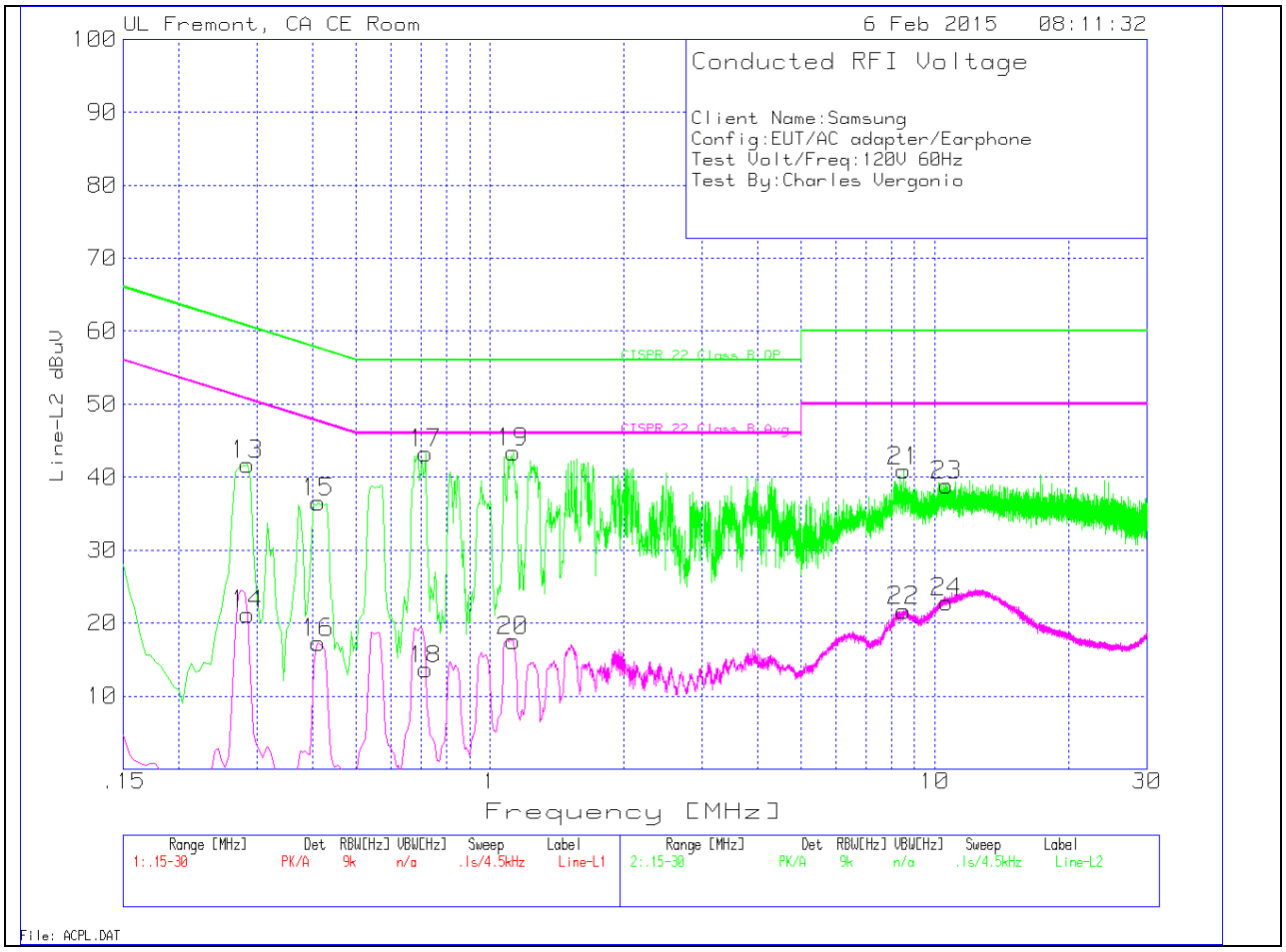
LINE 2 PLOT



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LINE 2 RESULTS

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2 (dB)	LC Cables 2&3 (dB)	Corrected Reading dBuV	CISPR 22 Class B QP	Margin to Limit (dB)	CISPR 22 Class B Avg	Margin to Limit (dB)
13	.285	41.08	PK	.6	0	41.68	60.7	-19.02	-	-
14	.285	20.6	Av	.6	0	21.2	-	-	50.7	-29.5
15	.411	36.21	PK	.4	0	36.61	57.6	-20.99	-	-
16	.411	16.9	Av	.4	0	17.3	-	-	47.6	-30.3
17	.717	42.99	PK	.3	0	43.29	56	-12.71	-	-
18	.717	13.33	Av	.3	0	13.63	-	-	46	-32.37
19	1.1265	43.03	PK	.3	.1	43.43	56	-12.57	-	-
20	1.1265	17.15	Av	.3	.1	17.55	-	-	46	-28.45
21	8.511	40.58	PK	.2	.1	40.88	60	-19.12	-	-
22	8.511	21.39	Av	.2	.1	21.69	-	-	50	-28.31
23	10.635	38.45	PK	.2	.2	38.85	60	-21.15	-	-
24	10.635	22.49	Av	.2	.2	22.89	-	-	50	-27.11

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14. DYNAMIC FREQUENCY SELECTION

14.1. OVERVIEW

14.1.1. LIMITS

INDUSTRY CANADA

IC RSS-210 is closely harmonized with FCC Part 15 DFS rules. The deviations are as follows:

RSS-210 Issue 8 A9.3

Note: For the band 5600–5650 MHz, no operation is permitted.

Until further notice, devices subject to this annex shall not be capable of transmitting in the band 5600–5650 MHz. This restriction is for the protection of Environment Canada weather radars operating in this band.

FCC

§15.407 (h), FCC KDB 905462 D02 "COMPLIANCE MEASUREMENT PROCEDURES FOR UNLICENSED-NATIONAL INFORMATION INFRASTRUCTURE DEVICES OPERATING IN THE 5250-5350 MHz AND 5470-5725 MHz BANDS INCORPORATING DYNAMIC FREQUENCY SELECTION" and KDB 905462 D03 "U-NII CLIENT DEVICES WITHOUT RADAR DETECTION CAPABILITY".

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Table 1: Applicability of DFS requirements prior to use of a channel

Requirement	Operational Mode		
	Master	Client (without radar detection)	Client (with radar detection)
Non-Occupancy Period	Yes	Not required	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Not required	Not required
U-NII Detection Bandwidth	Yes	Not required	Yes

Table 2: Applicability of DFS requirements during normal operation

Requirement	Operational Mode		
	Master	Client **(without DFS)**	Client **(with DFS)**
DFS Detection Threshold	Yes	Not required	Yes
Channel Closing Transmission Time	Yes	Yes	Yes
Channel Move Time	Yes	Yes	Yes
U-NII Detection Bandwidth	Yes	Not required	Yes

Additional requirements for devices with multiple bandwidth modes	Master Device or Client with Radar DFS	Client (without DFS)

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U-NII Detection Bandwidth and Statistical Performance Check	All BW modes must be tested	Not required
Channel Move Time and Channel Closing Transmission Time	Test using widest BW mode available	Test using the widest BW mode available for the link
All other tests	Any single BW mode	Not required
Note: Frequencies selected for statistical performance check (Section 7.8.4) should include several frequencies within the radar detection bandwidth and frequencies near the edge of the radar detection bandwidth. For 802.11 devices it is suggested to select frequencies in all 20 MHz channel blocks and a null frequency between the bonded 20 MHz channel blocks.		

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Table 3: Interference Threshold values, Master or Client incorporating In-Service Monitoring

Maximum Transmit Power	Value (see notes)
E.I.R.P. ≥ 200 mill watt	-64 dBm
E.I.R.P. < 200 mill watt and power spectral density < 10 dBm/MHz	-62 dBm
E.I.R.P. < 200 mill watt that do not meet power spectral density requirement	-64 dBm
Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna **Note 2:** Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response. **Note 3:** E.I.R.P. is based on the highest antenna gain. For MIMO devices refer to KDB publication 662911 D01.	

Table 4: DFS Response requirement values

Parameter	Value
Non-occupancy period	30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds (See Note 1)
Channel Closing Transmission Time	200 milliseconds + approx. 60 milliseconds over remaining 10 second period. (See Notes 1 and 2)

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U-NII Detection Bandwidth	Minimum 100% of the U-NII 99% transmission power bandwidth. (See Note 3)

Note 1: *Channel Move Time* and the *Channel Closing Transmission Time* should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.
Note 2: The *Channel Closing Transmission Time* is comprised of 200 milliseconds starting at the beginning of the *Channel Move Time* plus any additional intermittent control signals required to facilitate a *Channel* move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.
Note 3: During the *U-NII Detection Bandwidth* detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.

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Table 5 – Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (usec)	PRI (usec)	Pulses	Minimum Percentage of Successful Detection	Minimum Trials
0	1	1428	18	See Note 1	See Note 1
1	1	Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in table 5a	Roundup: $\{(1/360) \times (19 \times 10^6\ PRI_{usec})\}$	60%	30
		Test B: 15 unique PRI values randomly selected within the range of 518-3066 usec. With a minimum increment of 1 usec, excluding PRI values selected in Test A			
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120

Note 1: Short Pulse Radar Type 0 should be used for the *Detection Bandwidth* test, *Channel Move Time*, and *Channel Closing Time* tests.

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Table 6 – Long Pulse Radar Test Signal

Radar Waveform Type	Pulse Width (µsec)	Chirp Width (MHz)	PRI (µsec)	Pulses per Burst	Number of Bursts	Minimum Percentage of Successful Detection	Minimum Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

Table 7 – Frequency Hopping Radar Test Signal

Radar Waveform Type	Pulse Width (µsec)	PRI (µsec)	Pulses per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful Detection	Minimum Trials
6	1	333	9	0.333	300	70%	30

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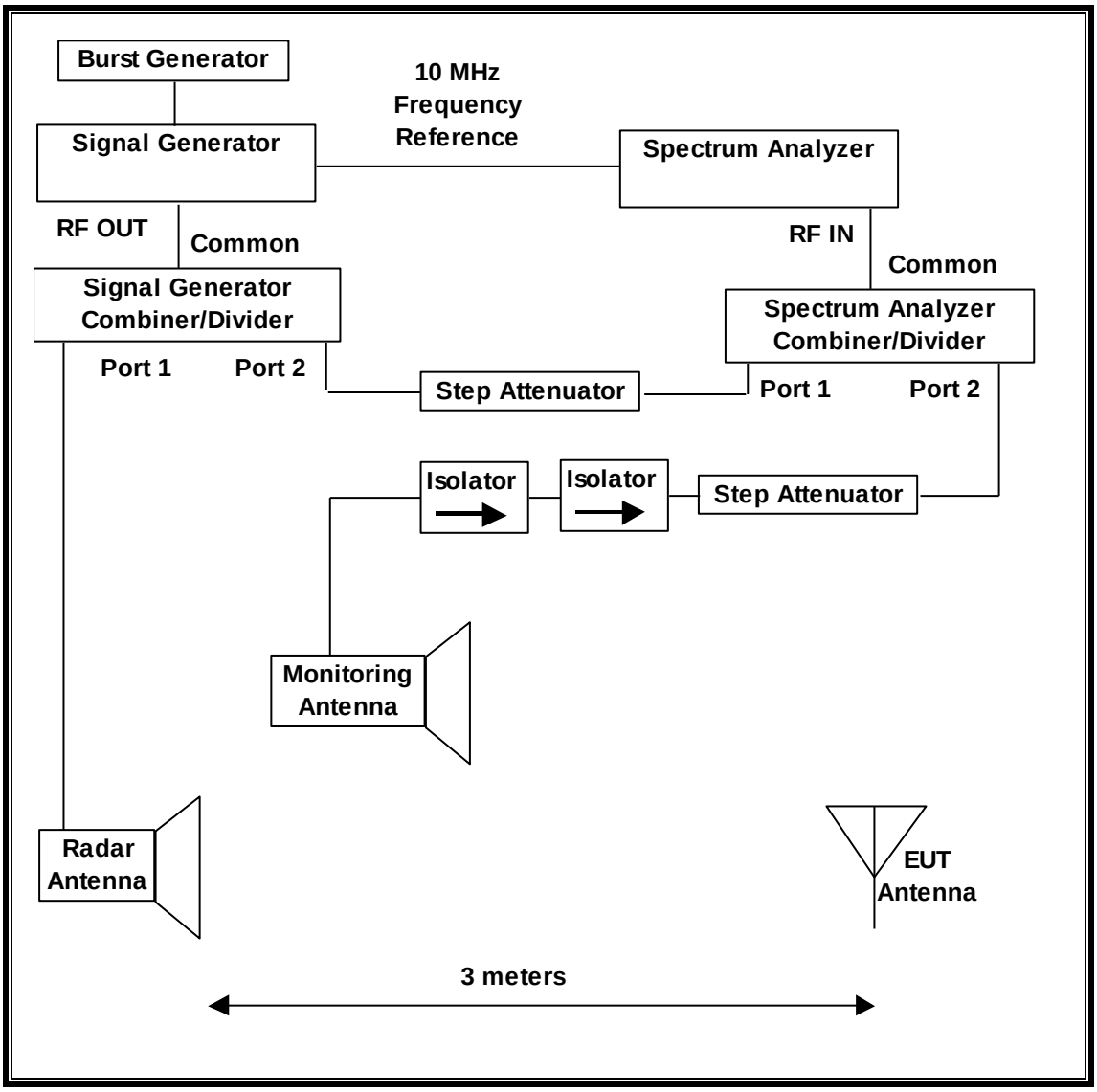
14.1.2. TEST AND MEASUREMENT SYSTEM

RADIATED METHOD SYSTEM BLOCK DIAGRAM



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SYSTEM OVERVIEW

The short pulse and long pulse signal generating system utilizes the NTIA software. The Vector Signal Generator has been validated by the NTIA. The hopping signal generating system utilizes the CCS simulated hopping method and system, which has been validated by the DoD, FCC and NTIA. The software selects waveform parameters from within the bounds of the signal type on a random basis using uniform distribution.

The short pulse types 1, 2, 3 and 4, and the long pulse type 5 parameters are randomized at run-time.

The hopping type 6 pulse parameters are fixed while the hopping sequence is based on the August 2005 NTIA Hopping Frequency List. The initial starting point randomized at run-time and each subsequent starting point is incremented by 475. Each frequency in the 100-length segment is compared to the boundaries of the EUT Detection Bandwidth and the software creates a hopping burst pattern in accordance with Section 7.4.1.3 Method #2 Simulated Frequency Hopping Radar Waveform Generating Subsystem of KDB 905462 D02. The frequency of the signal generator is incremented in 1 MHz steps from F_L to F_H for each successive trial. This incremental sequence is repeated as required to generate a minimum of 30 total trials and to maintain a uniform frequency distribution over the entire Detection Bandwidth.

The signal monitoring equipment consists of a spectrum analyzer. The aggregate ON time is calculated by multiplying the number of bins above a threshold during a particular observation period by the dwell time per bin, with the analyzer set to peak detection and max hold.

SYSTEM CALIBRATION

A 50-ohm load is connected in place of the spectrum analyzer, and the spectrum analyzer is connected to a horn antenna via a coaxial cable, with the reference level offset set to (horn antenna gain – coaxial cable loss). The signal generator is set to CW mode. The amplitude of the signal generator is adjusted to yield a level of –64 dBm as measured on the spectrum analyzer.

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Without changing any of the instrument settings, the spectrum analyzer is reconnected to the Common port of the Spectrum Analyzer Combiner/Divider. The Reference Level Offset of the spectrum analyzer is adjusted so that the displayed amplitude of the signal is –64 dBm.

The spectrum analyzer displays the level of the signal generator as received at the antenna ports of the Master Device. The interference detection threshold may be varied from the calibrated value of –64 dBm and the spectrum analyzer will still indicate the level as received by the Master Device.

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ADJUSTMENT OF DISPLAYED TRAFFIC LEVEL

A link is established between the Master and Slave and the distance between the units is adjusted as needed to provide a suitable received level at the Master and Slave devices. The video test file is streamed to generate WLAN traffic. The monitoring antenna is adjusted so that the WLAN traffic level, as displayed on the spectrum analyzer, is at lower amplitude than the radar detection threshold.

TEST AND MEASUREMENT EQUIPMENT

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

TEST EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Asset Number**	**Cal Due**
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01178	09/05/15
Vector Signal Generator, 20GHz	Agilent / HP	E8267C	C01066	09/03/15

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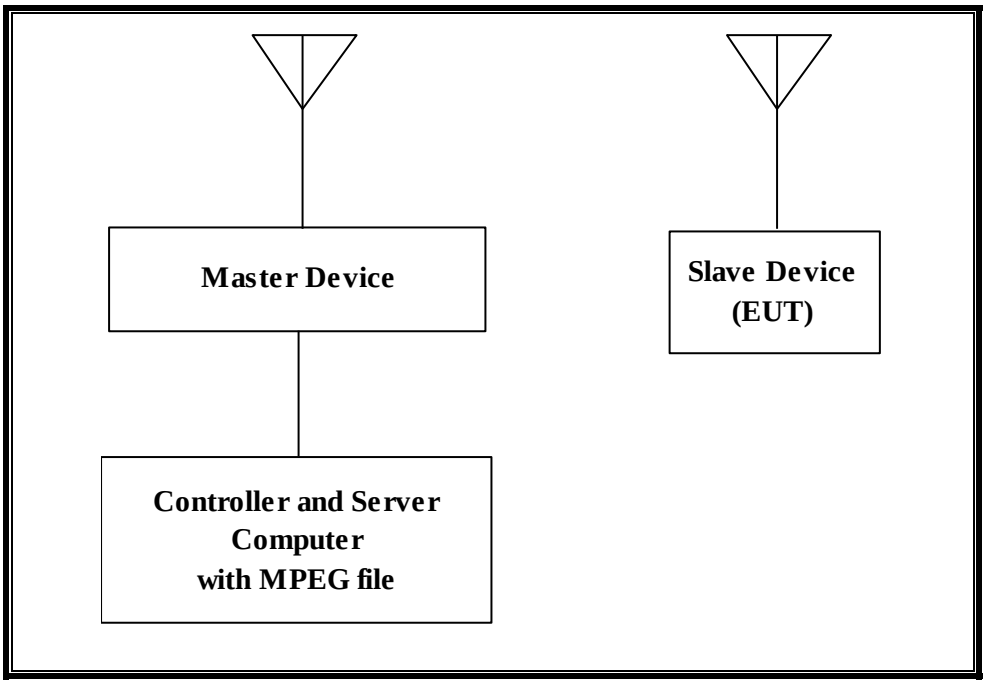
14.1.3. SETUP OF EUT

RADIATED METHOD EUT TEST SETUP



SUPPORT EQUIPMENT

The following support equipment was utilized for the DFS tests documented in this report:

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PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
802.11ac Access Point (Master Device)	Cisco	AIR-CAP3702E-A-K9	FTX181570A6	LDK102087
P.O.E. Injector (AP)	Phihong	POE30U-560(G)	PHI170102N2	DoC
Notebook PC (Controller/Server)	Lenovo	Type 20B7-S0A200	PF-02JN9J 14/06	DoC
AC Adapter (Controller/Server PC)	Lenovo	ADLX65NLC2A	11S45N0259Z1ZS9 74594A9	DoC

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14.1.4. DESCRIPTION OF EUT

For FCC the EUT operates over the 5250-5350 MHz and 5470-5725 MHz ranges.

For IC the EUT operates over the 5250-5350 MHz and 5470-5725 MHz ranges, excluding the 5600-5650 MHz range.

The EUT is a Slave Device without Radar Detection.

The highest power level within these bands is 12.58 dBm EIRP in the 5250-5350 MHz band and 12.82 dBm EIRP in the 5470-5725 MHz band.

The rated output power of the Master unit is > 23dBm (EIRP). Therefore the required interference threshold level is –64 dBm. After correction for procedural adjustments, the required radiated threshold at the antenna port is –64 + 1 = -63 dBm.

The calibrated radiated DFS Detection Threshold level is set to –64 dBm. The tested level is lower than the required level hence it provides a margin to the limit.

The EUT uses one transmitter/receiver chain connected to an antenna to perform radiated tests.

WLAN traffic that meets or exceeds the minimum required loading was generated by transferring a data stream from the controller/server PC to the EUT using iPerf version 2.0.5 software package.
TPC is not required since the maximum EIRP is less than 500 mW (27 dBm).

The EUT utilizes the 802.11a/n architecture. Two nominal channel bandwidths are implemented: 20 MHz and 40 MHz.

The software installed in the access point is Android revision 5.0.2.

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UNIFORM CHANNEL SPREADING

This is requirement not applicable to Slave Devices.

OVERVIEW OF MASTER DEVICE WITH RESPECT TO §15.407 (h) REQUIREMENTS

The Master Device is a Cisco Access Point, FCC ID: LDK102087. The minimum antenna gain for the Master Device is 6 dBi.

The rated output power of the Master unit is > 23dBm (EIRP). Therefore the required interference threshold level is –64 dBm. After correction for procedural adjustments, the required radiated threshold at the antenna port is –64 + 1 = -63 dBm.

The calibrated radiated DFS Detection Threshold level is set to –64 dBm. The tested level is lower than the required level hence it provides a margin to the limit.

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14.2. RESULTS FOR 20 MHz BANDWIDTH

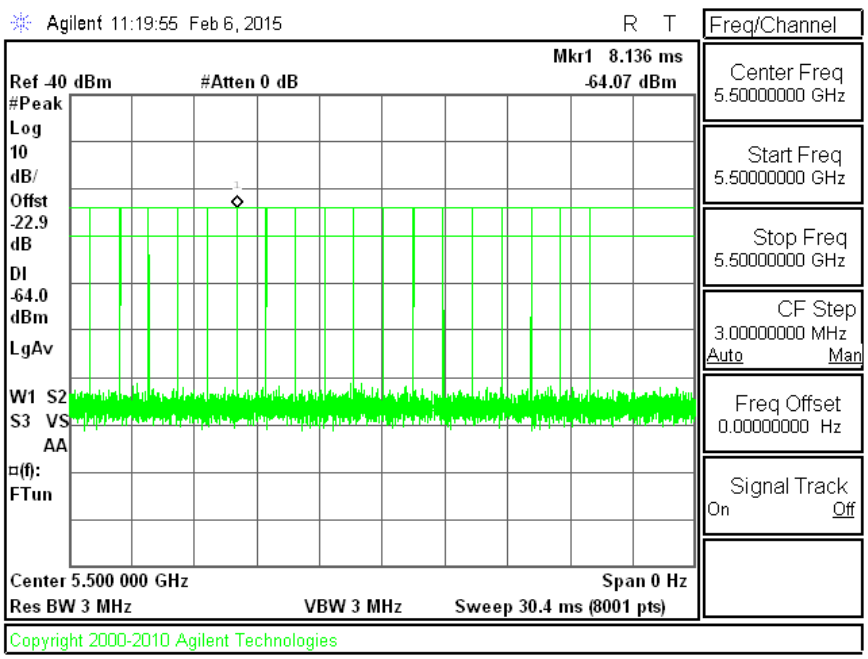
14.2.1. TEST CHANNEL

All tests were performed at a channel center frequency of 5500 MHz.

14.2.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM

SHORT PULSE RADAR TYPE 0 AT MASTER



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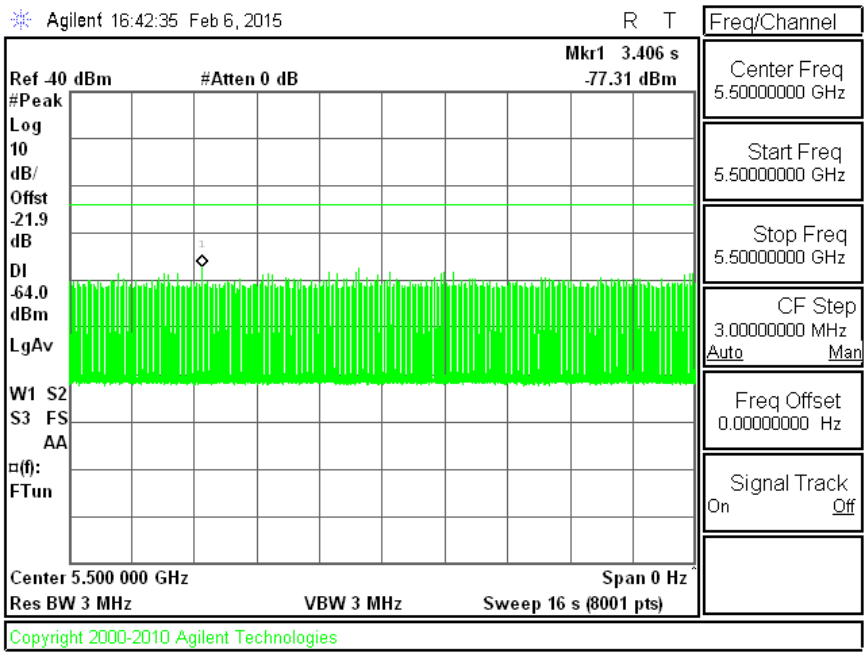
TRAFFIC

SLAVE TRAFFIC



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14.2.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

14.2.4. MOVE AND CLOSING TIME

REPORTING NOTES

The reference marker is set at the end of last radar pulse.

The delta marker is set at the end of the last WLAN transmission following the radar pulse. This delta is the channel move time.

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time =

(Number of analyzer bins showing transmission) * (dwell time per bin)

The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

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RESULTS

Channel Move Time (sec)	Limit (sec)
0.032	10

Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
0.0	60

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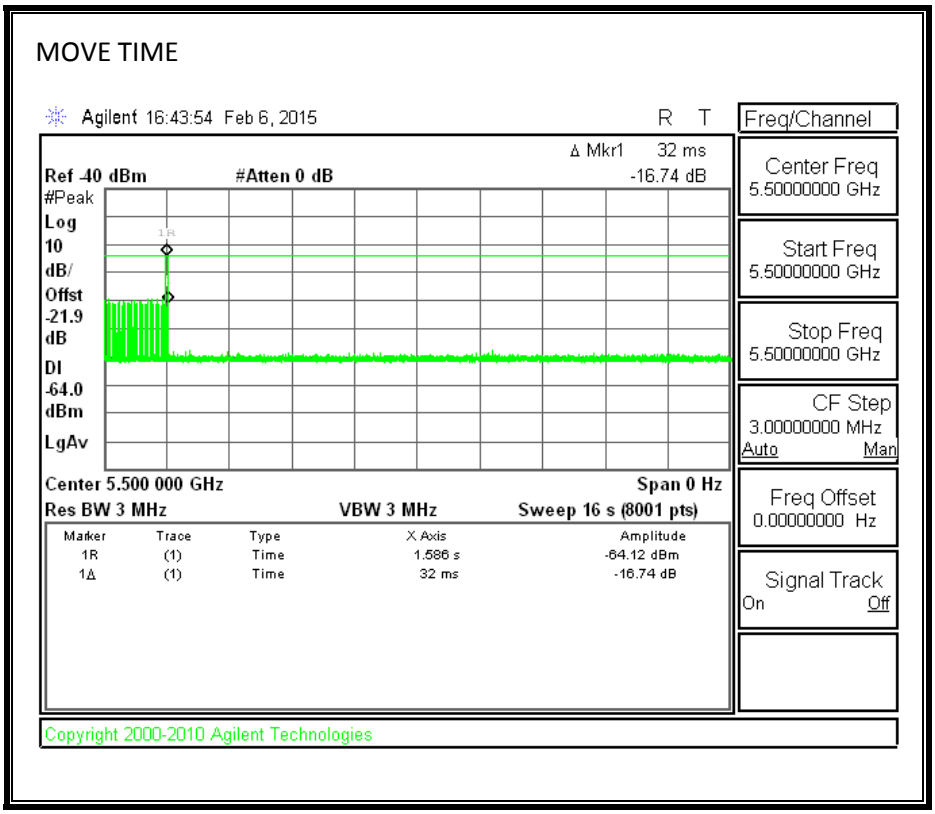
MOVE TIME



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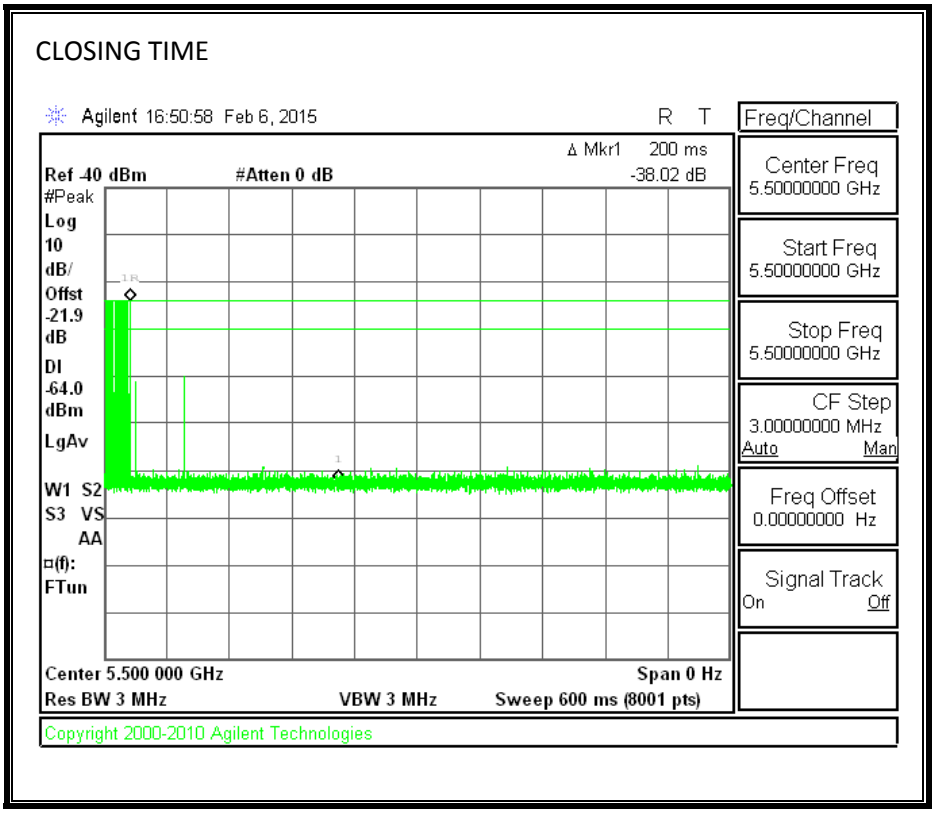
CHANNEL CLOSING TIME



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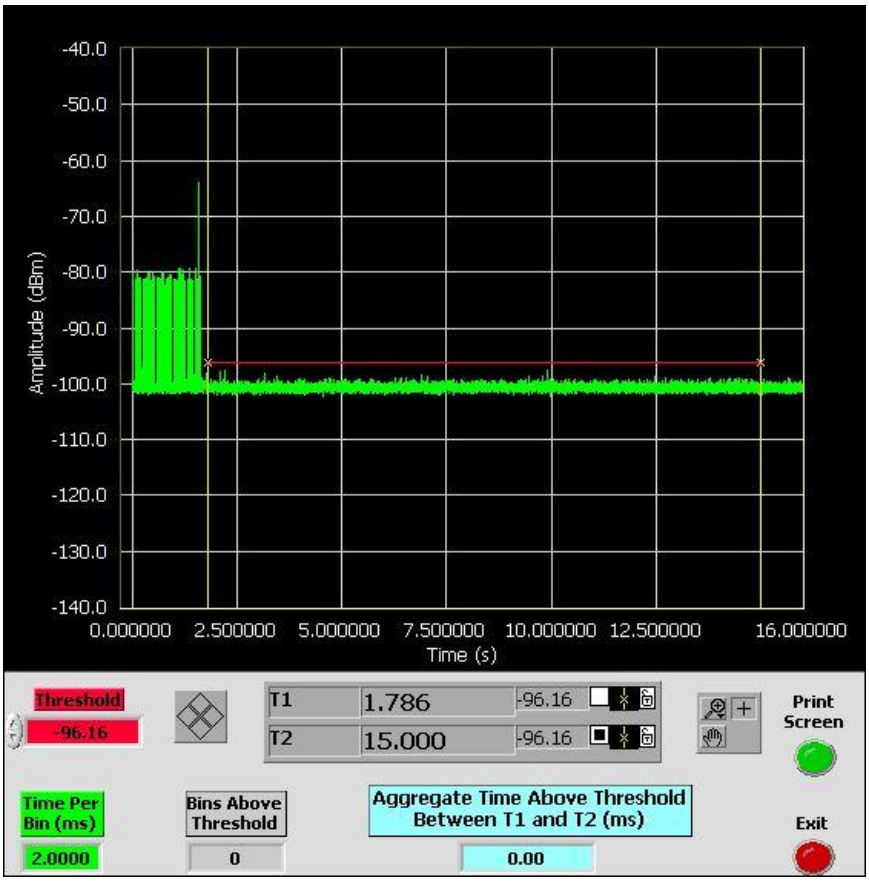
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.

AGGREGATE CLOSING TIME



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14.3. RESULTS FOR 40 MHz BANDWIDTH

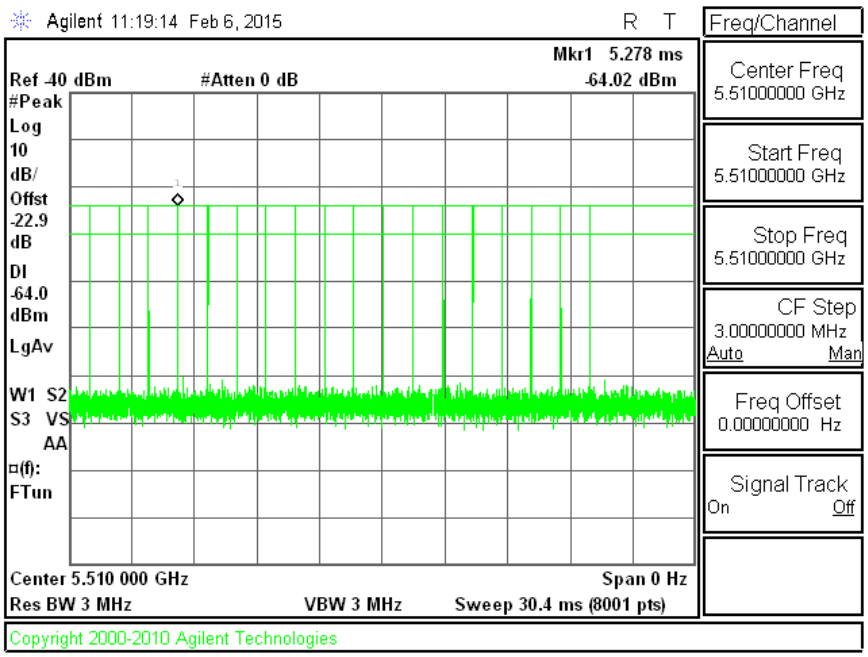
14.3.1. TEST CHANNEL

All tests were performed at a channel center frequency of 5510 MHz.

14.3.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM

SHORT PULSE RADAR TYPE 0 AT MASTER



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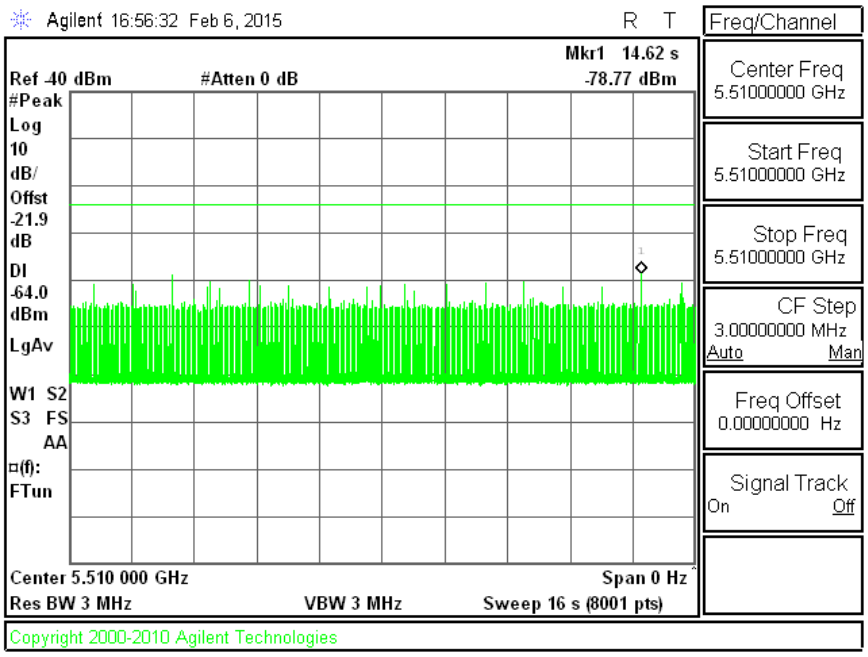
TRAFFIC

SLAVE TRAFFIC



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14.3.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

14.3.4. MOVE AND CLOSING TIME

REPORTING NOTES

The reference marker is set at the end of last radar pulse.

The delta marker is set at the end of the last WLAN transmission following the radar pulse. This delta is the channel move time.

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time =

(Number of analyzer bins showing transmission) * (dwell time per bin)

The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

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RESULTS

Channel Move Time (sec)	Limit (sec)
0.030	10

Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
0.0	60

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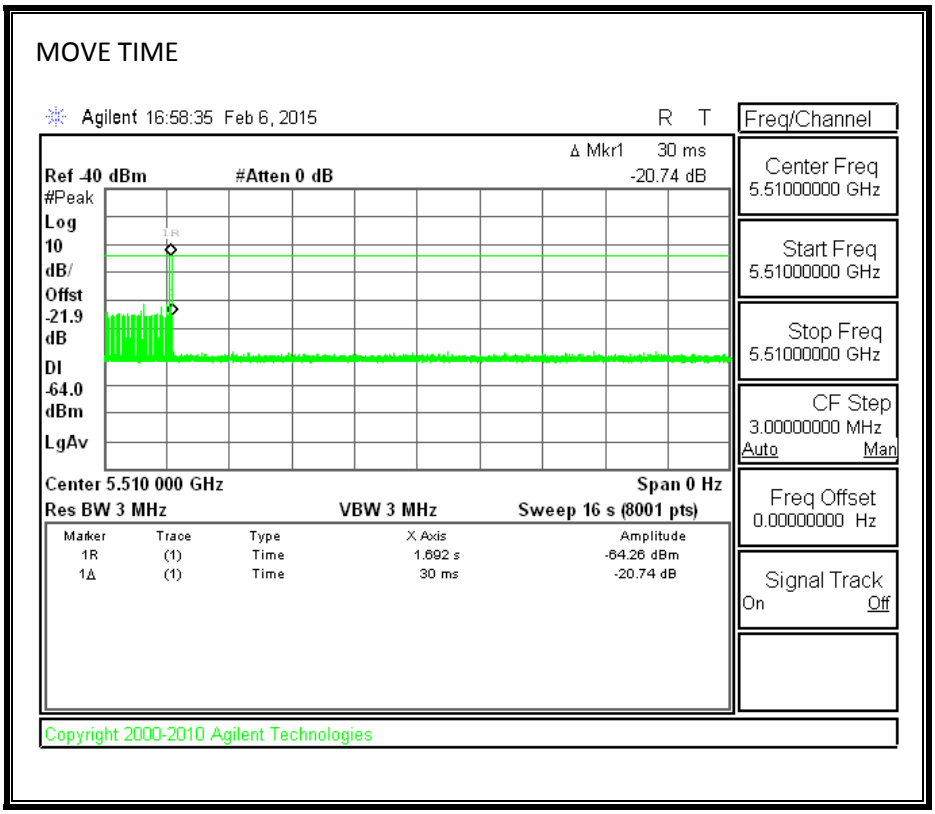
MOVE TIME



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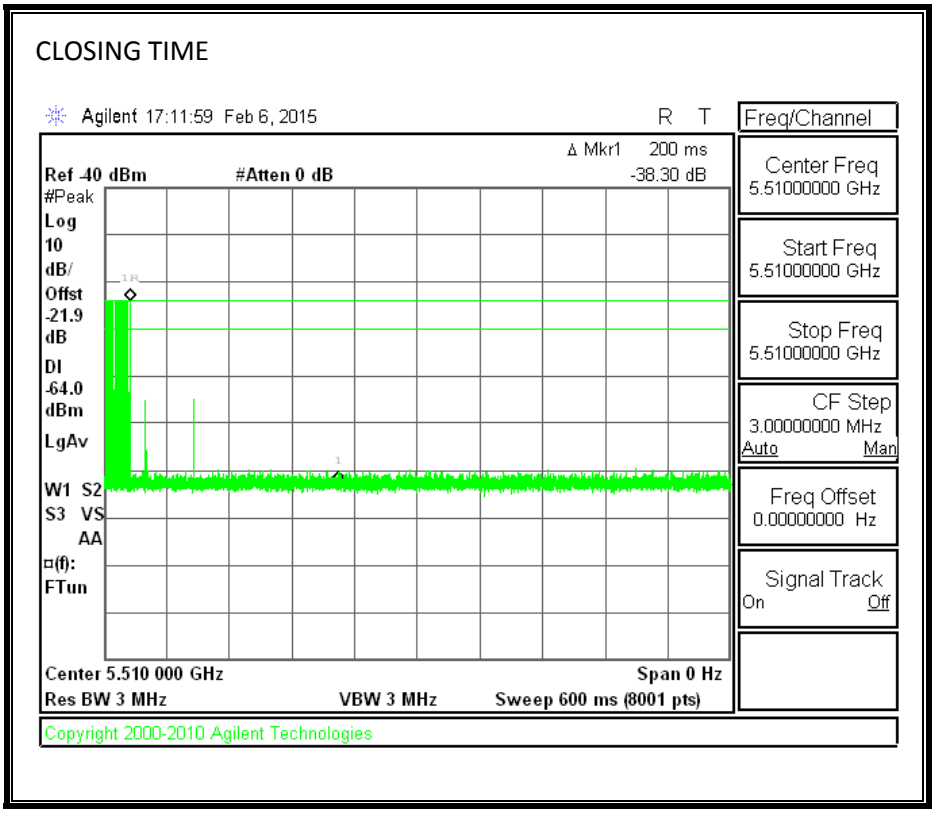
CHANNEL CLOSING TIME



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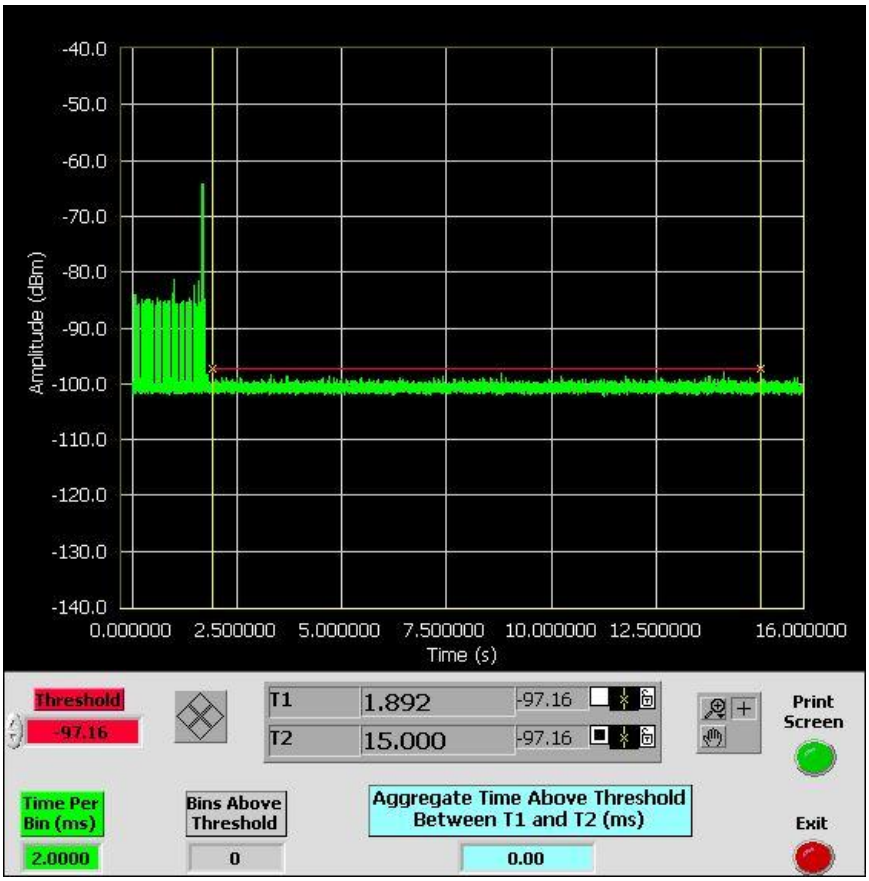
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.

AGGREGATE CLOSING TIME



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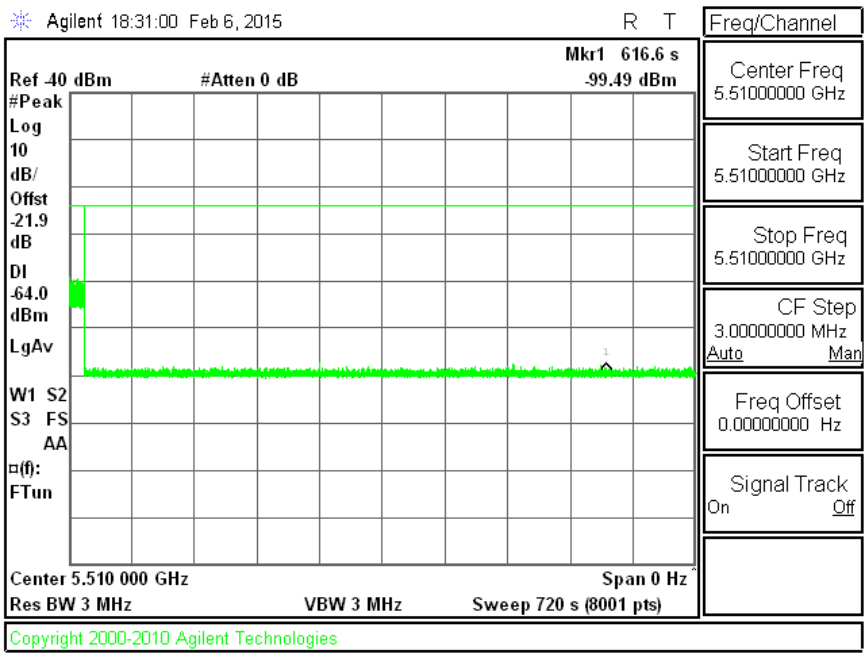
14.3.5. 10-MINUTE BEACON MONITORING PERIOD

RESULTS

No EUT transmissions were observed on the test channel during the 10-minute observation time.

10-MINUTE BEACON MONITORING PERIOD



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