FCC 47 CFR PART 15 SUBPART E

CERTIFICATION TEST REPORT

FOR

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

MODEL NUMBER: SM-P355; SM-T355Y

FCC ID: A3LSMP355

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	**SAMSUNG ELECTRONICS CO., LTD.**
EUT DESCRIPTION:	**GSM/WCDMA/LTE Tablet + Bluetooth + DTS/UNII a/b/g/n and ANT+**
MODEL:	**SM-P355; SM-T355Y**
SERIAL NUMBER:	**R32G102MK2R (Radiated), R32G102MKSF (Conducted)**
DATE TESTED:	**FEBRUARY 6-18, 2015**

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

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

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

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2. TEST METHODOLOGY

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

3. FACILITIES AND ACCREDITATION

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

47173 Benicia Street	47266 Benicia Street
☐ 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)

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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 + Bluetooth + DTS/UNII a/b/g/n and ANT+.

SM-P355 and SM-T355Y all the parts are the same and only difference is SM-P355 support WACOM while SM-T355Y not. Also WACOM parts being removed from SM-T355Y.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Frequency Range (MHz)	Mode	Total Output Power (dBm)	Total Output Power (mW)
5180 - 5240	802.11n HT20	11.22	13.24
5260 - 5320	802.11n HT20	11.58	14.39
5500 - 5700	802.11n HT20	11.78	15.07
5745 - 5825	802.11n HT20	11.99	15.81
5190 - 5230	802.11n HT40	9.46	8.83
5270 - 5310	802.11n HT40	9.83	9.62
5510 - 5670	802.11n HT40	10.35	10.84
5755 - 5795	802.11n HT40	9.47	8.85
5180 - 5240	802.11a	11.11	12.91
5260 - 5320	802.11a	11.67	14.69
5500 - 5700	802.11a	11.66	14.66
5745 - 5825	802.11a	11.79	15.10

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of 2.4 dBi.

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5.4. WORST-CASE CONFIGURATION AND MODE

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

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

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

802.11a mode: 6 Mbps

802.11n HT20mode: MCS0

802.11n HT40mode: MCS0

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5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

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

I/O CABLES

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

TEST SETUP

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

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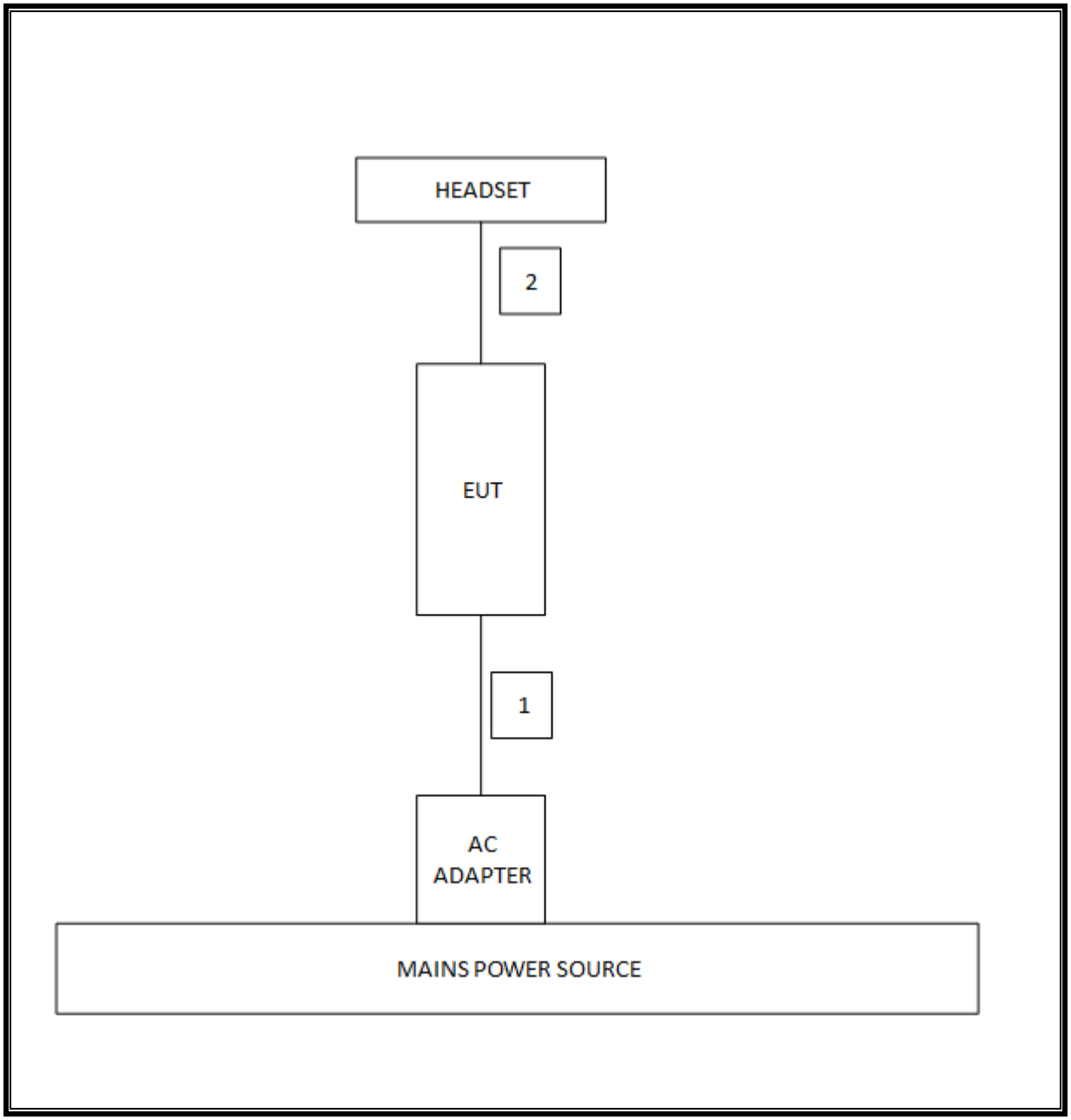
SETUP DIAGRAM FOR TESTS



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6. TEST AND MEASUREMENT EQUIPMENT

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

Test Equipment List				
Description	**Manufacturer**	**Model**	**Asset**	**Cal Due**
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01069	10/28/15
Spectrum Analyzer,9KHz-40GHz	HP	8564E	C00986	08/06/15
EMI Test Receiver, 9 kHz-7 GHz	R & S	ESCI 7	1000741	08/14/15
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	08/18/15
Peak Power Meter	Agilent / HP	E4416A	C00963	01/26/16
Peak / Average Power Sensor	Agilent / HP	E9327A	C00964	04/08/15
Antenna, Horn, 1-18 GHz	ETS	3117	C01022	02/21/15
Antenna, Horn,18- 26 GHz	ARA	MWH-1826/B	C00946	01/29/16
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	09/03/15
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
Radiated Software	UL	UL EMC	Ver 9.5, July 22, 2014	
Conducted Software	UL	UL EMC	Ver 9.5, May 17 2012	
CLT Software	UL	UL RF	Ver 1.0, Feb 2 2015	
Antenna Port Software	UL	UL RF	Ver 2.1.1.1, Jan 20 2015	

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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	44.56MHz
15.407	6dB Band width (5.8Ghz)	500KHz		Pass	16.359MHz
15.407 (a)(2)	TX Cond. Power5.15-2.25, 5.25-5.35 & 5.47-5.725	<24dBm or 11+10Log(OBW)		Pass	11.78dBm
15.407 (a)(3)	TX Cond. Power 5.725-5.825	< 30dBm or 17+10Log(OBW)		Pass	11.99dBm
15.407 (a)(5)	PSD (5.2,5.3,5.5GHz)	<11dBm		Pass	0.19dBm
15.407 (a)(5)	PSD (5.8GHz)	30dBm per 500kHz		Pass	-1.84dBm
15.207 (a)	AC Power Line conducted emissions	Section 10	Radiated	Pass	45.04dBuV(PK)
15.407 (b) & 15.209	Radiated Spurious Emission	< 54dBuV/m		Pass	50.08dBuV/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.

8.1. ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)
802.11a	1.40	1.49	0.934	93.4%	0.30	0.717
802.11n HT20	1.30	1	0.929	92.9%	0.32	0.772
802.11n HT40	0.64	1	0.857	85.7%	0.67	1.572

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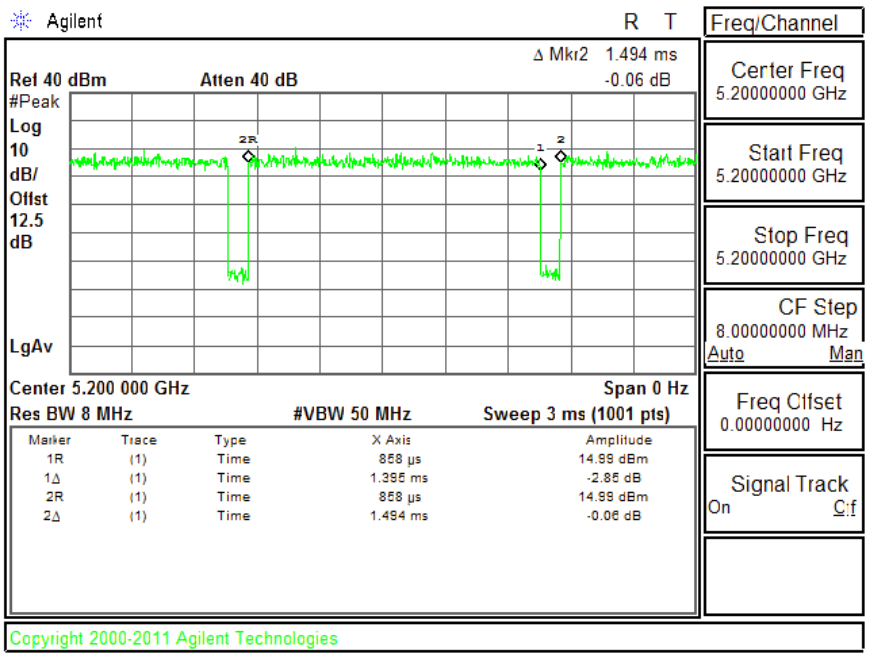
8.2. DUTY CYCLE PLOTS

DUTY CYCLE 802.11a MODE



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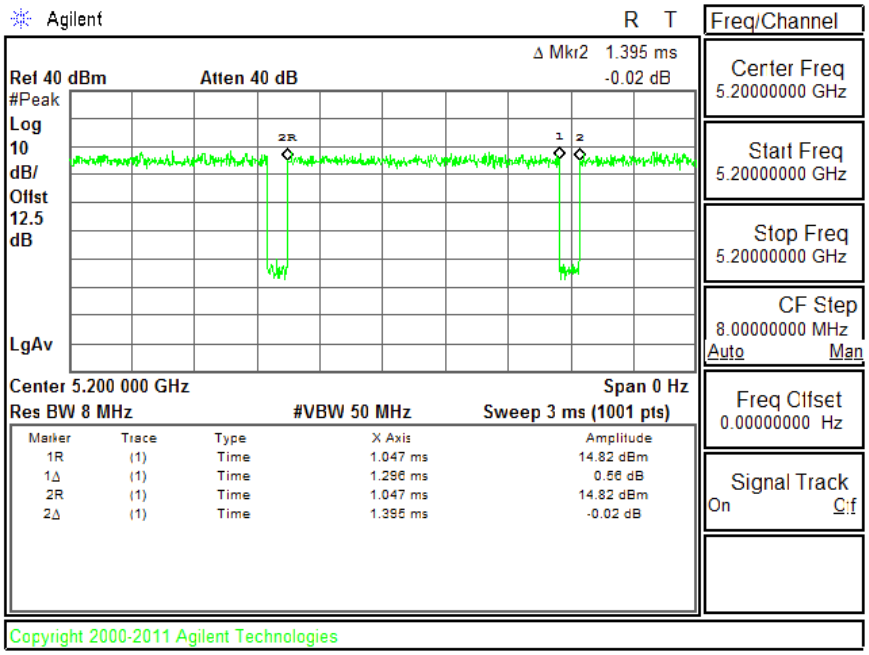
DUTY CYCLE 802.11n HT20 MODE



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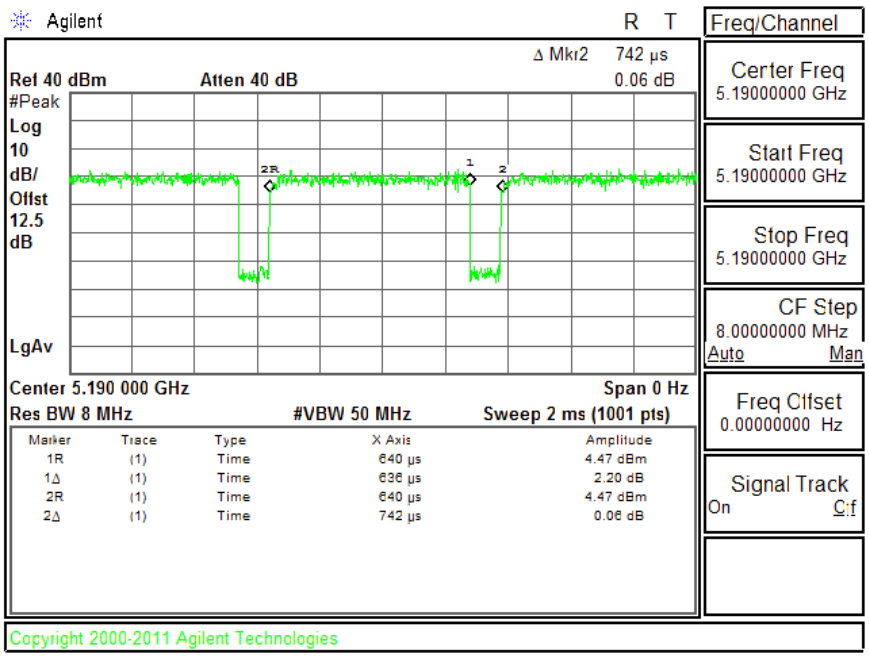
DUTY CYCLE 802.11n HT40 MODE



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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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10.1.1. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	16.433	0.5
Mid	5785	16.359	0.5
High	5825	16.384	0.5
Worst		16.433	

10.1.2. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	17.677	0.5
Mid	5785	17.556	0.5
High	5825	17.582	0.5
Worst		17.677	

10.1.3. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5755	34.060	0.5
High	5795	35.218	0.5
Worst		35.218	

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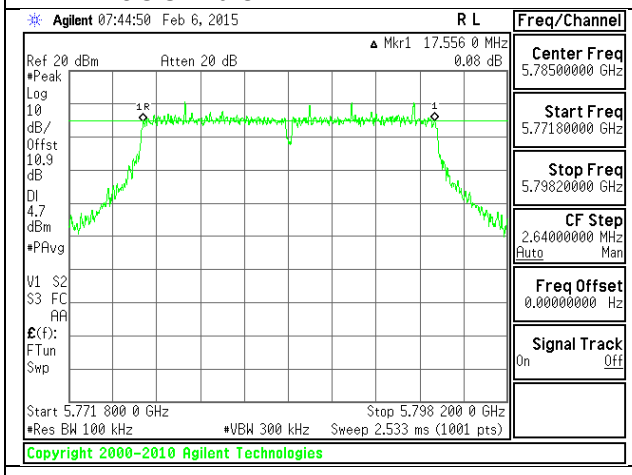
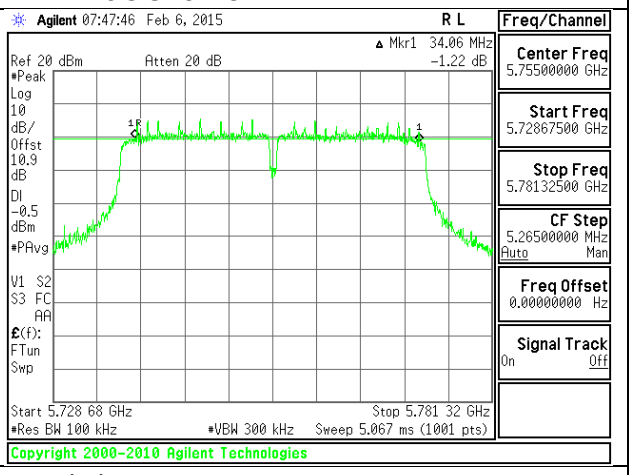
10.1.4. 6 dB BANDWIDTH MID CH PLOTS

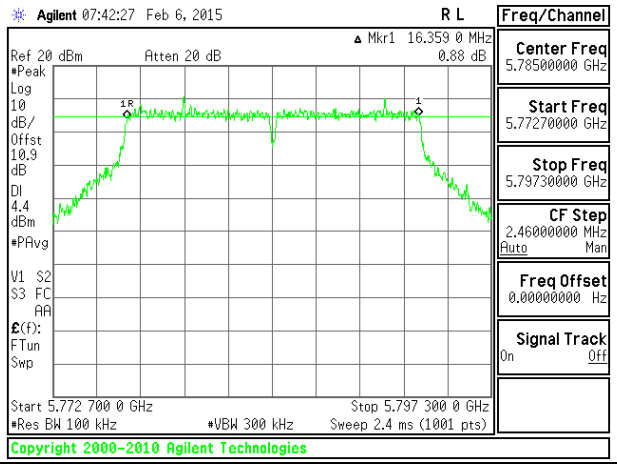
11n HT20 5.8 Mid Ch



11n HT40 5.8 Low Ch



11a HT20 5.8 Mid Ch



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10.2. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

10.2.1. 802.11a MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5180	22.36
Mid	5200	22.27
High	5240	22.23
Worst		22.36

10.2.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5180	22.84
Mid	5200	22.53
High	5240	22.45
Worst		22.84

10.2.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	26dB Bandwidth (MHz)
Low	5190	43.97
Mid	5230	43.68
Worst		43.97

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10.2.1. 802.11a MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5260	22.92
Mid	5300	22.97
High	5320	22.27
Worst		22.97

10.2.1. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5260	23.10
Mid	5300	22.75
High	5320	22.84
Worst		23.10

10.2.2. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5270	43.29
High	5310	44.56
Worst		44.56

10.2.3. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5500	22.58
Mid	5580	23.01
High	5700	22.40
Worst		23.01

10.2.4. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5500	23.05
Mid	5580	22.92
High	5700	22.92
Worst		23.05

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10.2.5. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5510	43.68
Mid	5550	44.17
High	5670	43.49
Worst		44.17

10.2.6. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5745	22.23
Mid	5785	22.06
High	5825	22.32
Worst		22.32

10.2.7. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5745	23.14
Mid	5785	22.97
High	5825	23.31
Worst		23.31

10.2.8. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5755	44.07
High	5795	44.46
Worst		44.46

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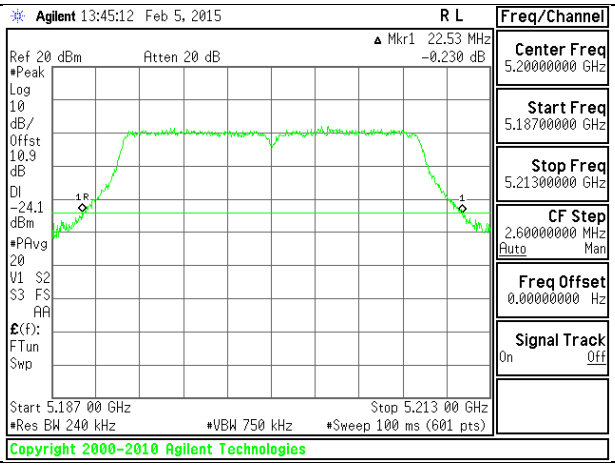
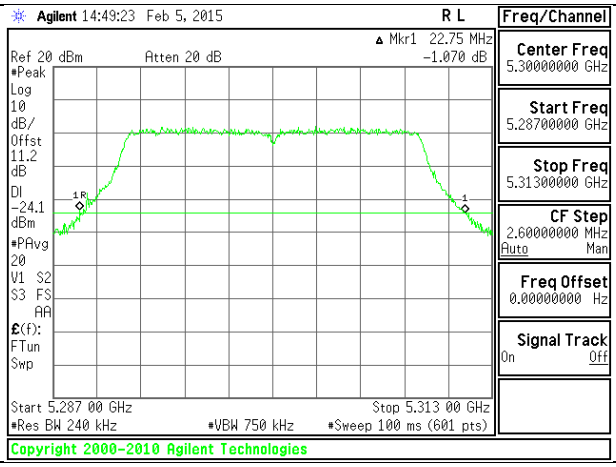
10.2.1. 26 dB BANDWIDTH PLOTS

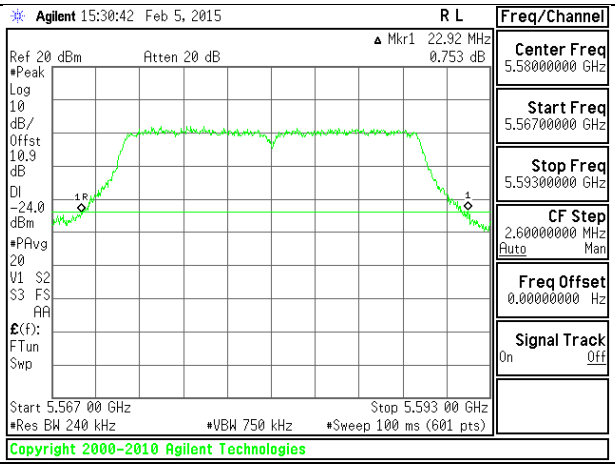
11n HT20 5.2 Mid Ch



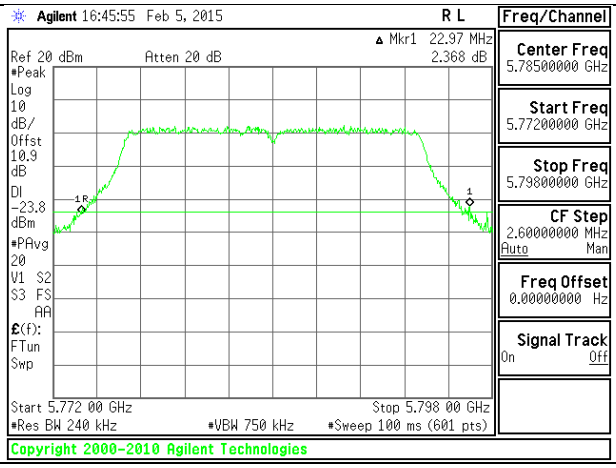
11n HT20 5.3 Mid Ch



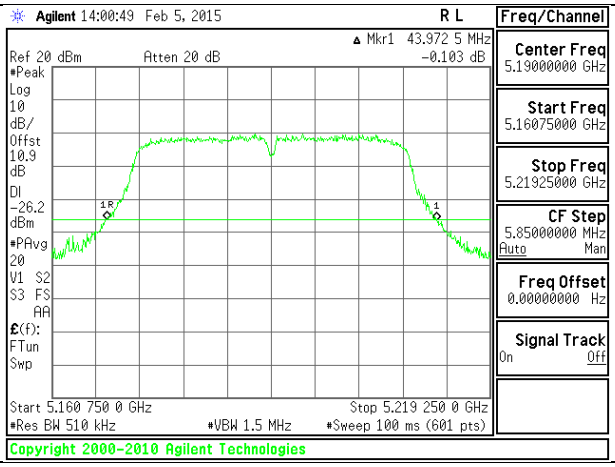
11n HT20 5.5 Mid Ch



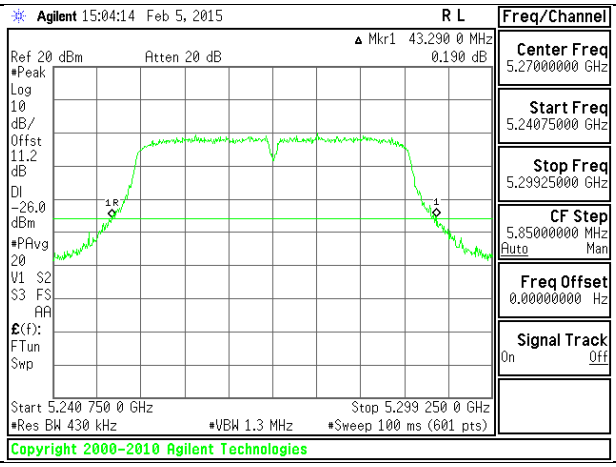
11n HT20 5.8 Mid Ch



11n HT40 5.2 Low Ch



11n HT40 5.3 Low Ch



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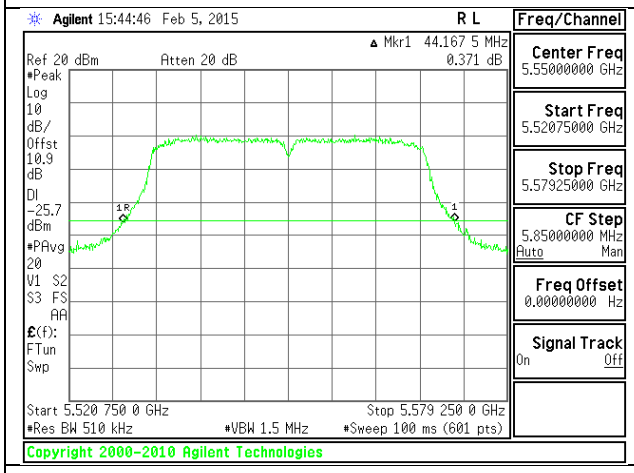
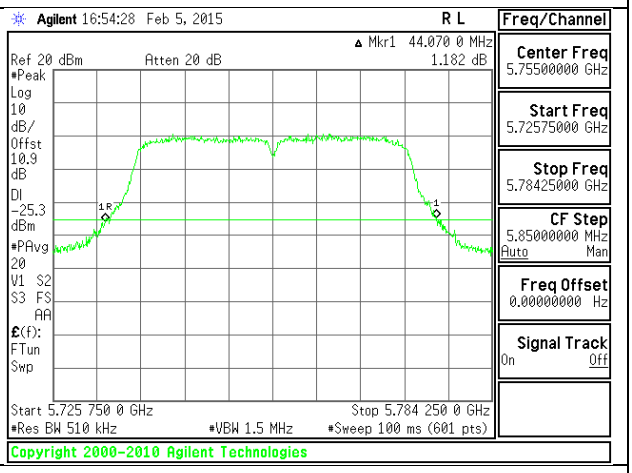
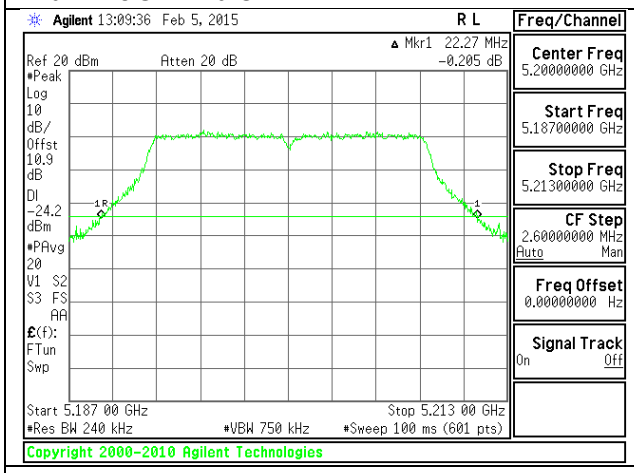
11n HT40 5.5 Mid Ch



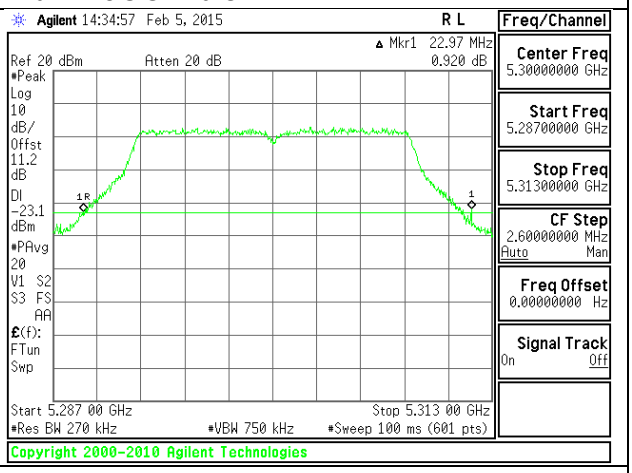
11n HT40 5.8 Low Ch



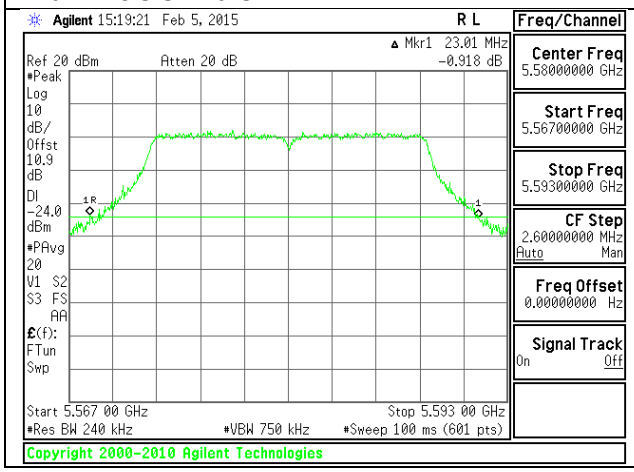
11a HT20 5.2 Mid Ch



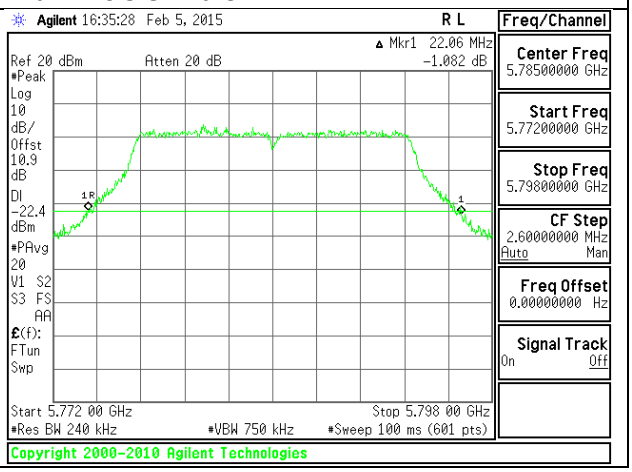
11a HT20 5.3 Mid Ch



11a HT20 5.5 Mid Ch



11a HT20 5.8 Mid Ch



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10.3. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

10.3.1. 802.11a MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5180	16.70
Mid	5200	16.77
High	5240	16.78
Worst		16.78

10.3.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5180	17.88
Mid	5200	17.87
High	5240	17.85
Worst		17.88

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	36.19
Worst		36.19

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10.3.4. 802.11a MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5260	16.73
Mid	5300	16.80
High	5320	16.79
Worst		16.80

10.3.5. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5260	17.89
Mid	5300	17.83
High	5320	17.86
Worst		17.89

10.3.6. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5270	36.14
High	5310	36.02
Worst		36.14

10.3.7. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5500	16.84
Mid	5580	16.81
High	5700	16.79
Worst		16.84

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10.3.8. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5500	17.90
Mid	5580	17.88
High	5700	17.90
Worst		17.90

10.3.9. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5510	36.17
Mid	5550	36.16
High	5670	36.18
Worst		36.18

10.3.10. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5745	16.84
Mid	5785	16.74
High	5825	16.79
Worst		16.84

10.3.11. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5745	17.87
Mid	5785	17.89
High	5825	17.87
Worst		17.89

10.3.12. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5755	36.13
High	5795	36.13
Worst		36.13

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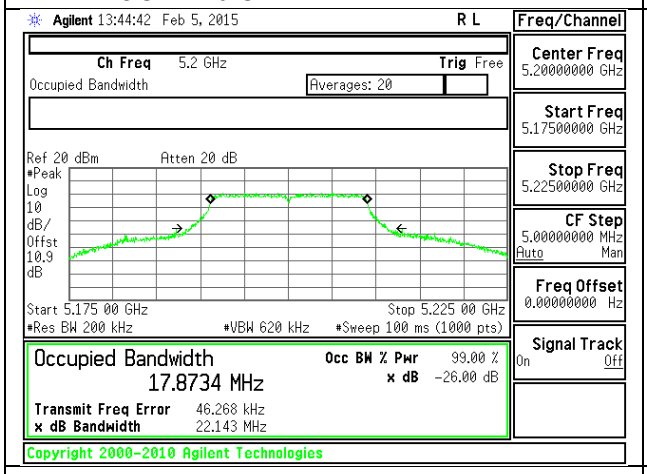
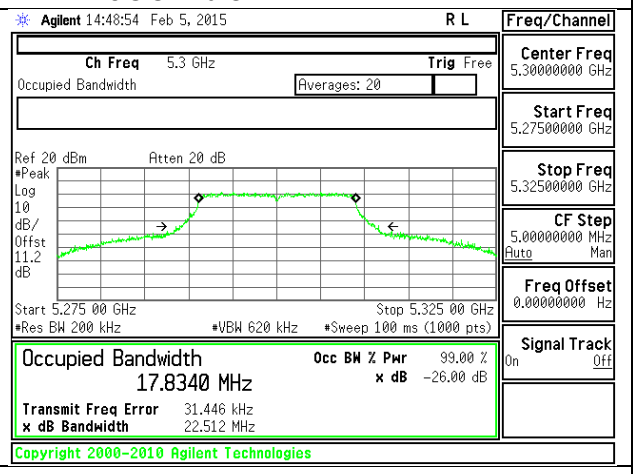
10.3.1. 99% BANDWIDTH PLOTS

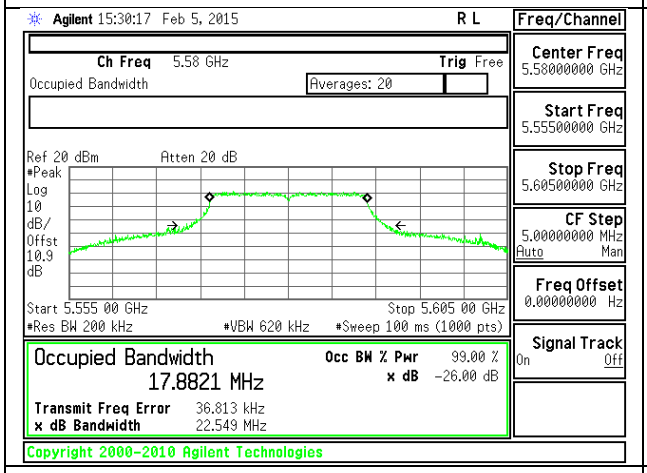
11n HT20 5.2 Mid Ch



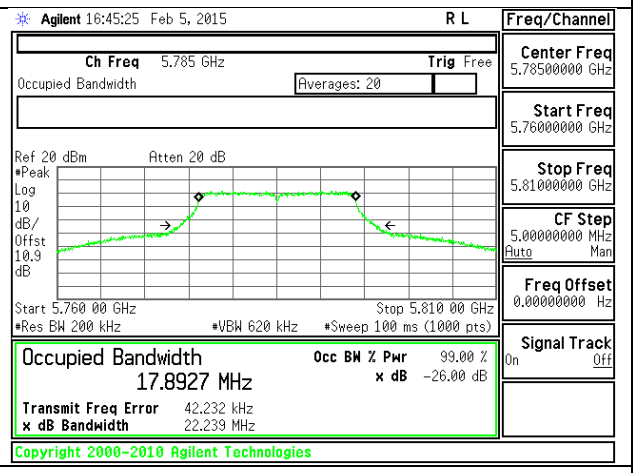
11n HT20 5.3 Mid Ch



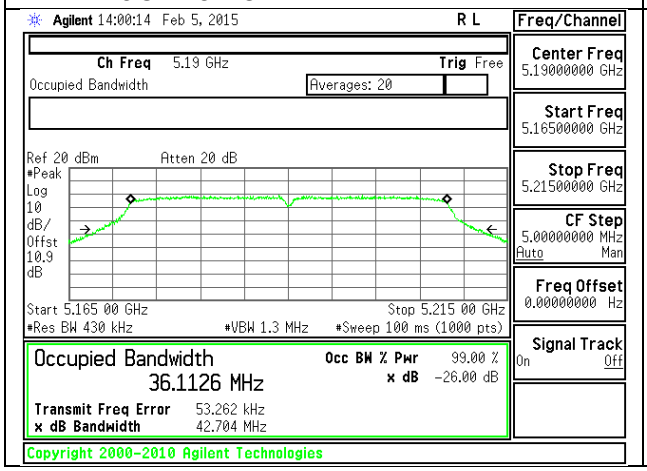
11n HT20 5.5 Mid Ch



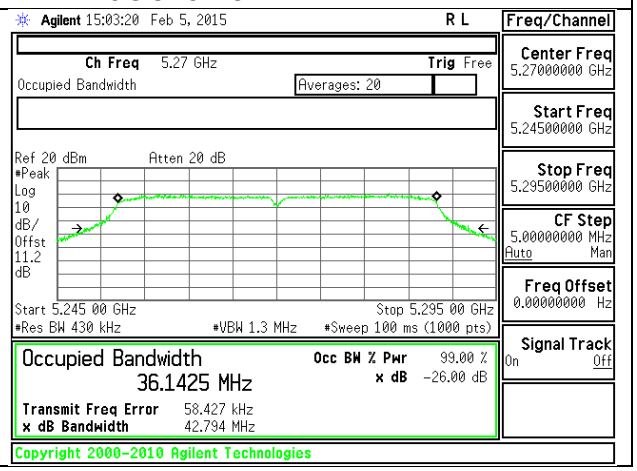
11n HT20 5.8 Mid Ch



11n HT40 5.2 Low Ch



11n HT40 5.3 Low Ch



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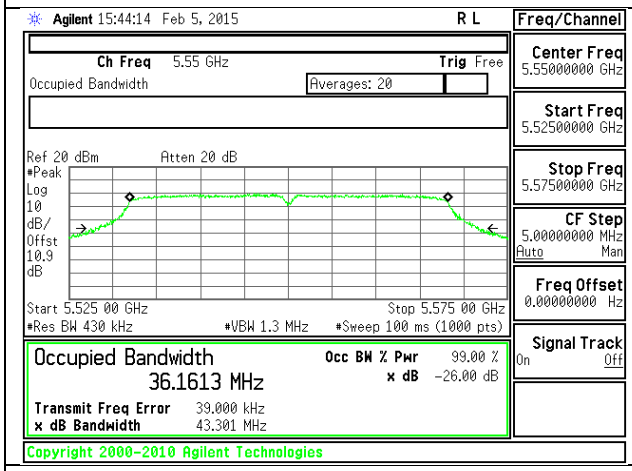
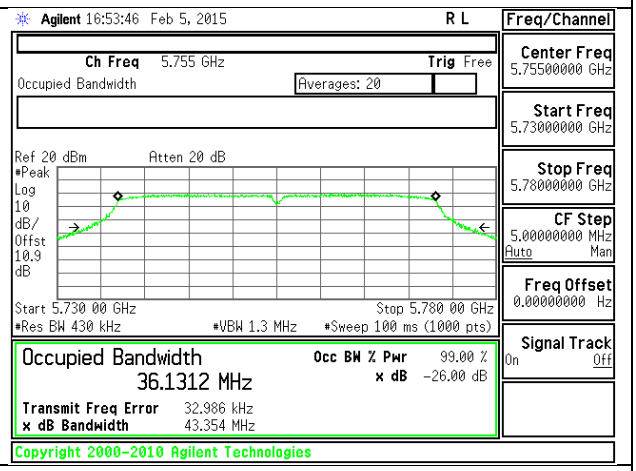
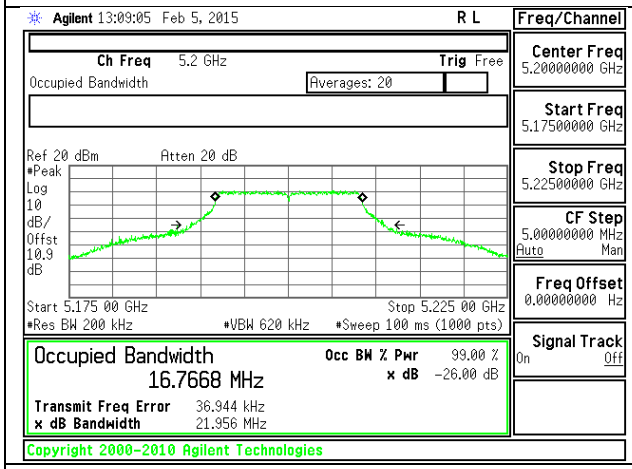
11n HT40 5.5 Mid Ch



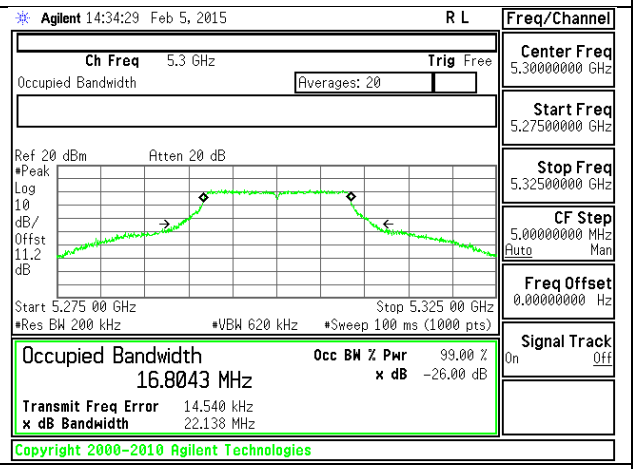
11n HT40 5.8 Low Ch



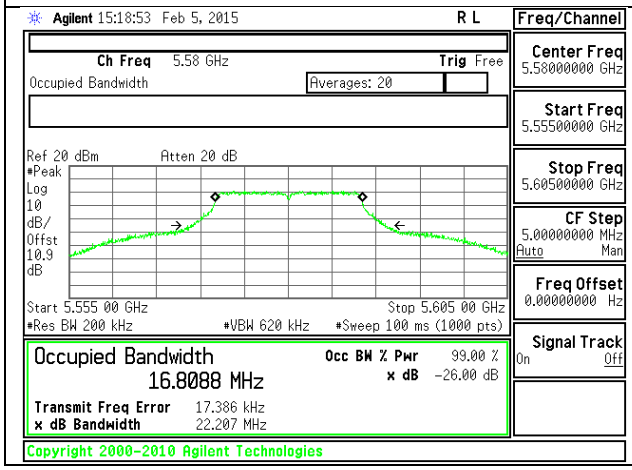
11a HT20 5.2 Mid Ch



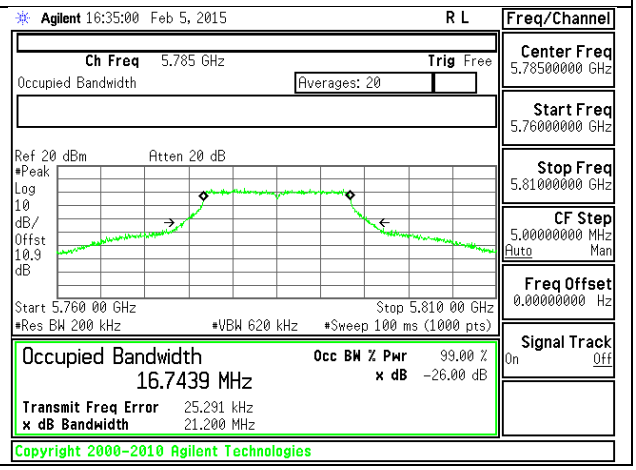
11a HT20 5.3 Mid Ch



11a HT20 5.5 Mid Ch



11a HT20 5.8 Mid Ch



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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

10.4.1. 802.11a MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5180	10.90
Mid	5200	10.60
High	5240	10.50
Worst		10.90

10.4.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5180	10.80
Mid	5200	10.60
High	5240	10.60
Worst		10.80

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10.4.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5190	8.40
Mid	5230	8.30
Worst		8.40

10.4.4. 802.11a MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5260	11.10
Mid	5300	11.00
High	5320	10.90
Worst		11.10

10.4.5. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5260	11.00
Mid	5300	11.10
High	5320	10.90
Worst		11.10

10.4.6. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5270	8.80
High	5310	8.80
Worst		8.80

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10.4.7. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5500	10.70
Mid	5580	11.00
High	5700	11.20
Worst		11.20

10.4.8. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5500	10.80
Mid	5580	11.10
High	5700	11.10
Worst		11.10

10.4.9. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5510	8.90
Mid	5550	8.90
High	5670	9.10
Worst		9.10

10.4.10. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5745	11.00
Mid	5785	10.90
High	5825	10.90
Worst		11.00

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10.4.11. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5745	11.20
Mid	5785	10.90
High	5825	10.90
Worst		11.20

10.4.12. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5755	9.00
High	5795	8.60
Worst		9.00

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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

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701J
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
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RESULTS

10.5.1. 802.11a MODE IN THE 5.2 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5180	22.360	16.697	2.40
Mid	5200	22.270	16.767	2.40
High	5240	22.230	16.783	2.40

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	22.23	19.83	19.83	11.00	10.00	10.00
Mid	5200	24.00	22.24	19.84	19.84	11.00	10.00	10.00
High	5240	24.00	22.25	19.85	19.85	11.00	10.00	10.00

Duty Cycle CF (dB)	0.30	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	10.808	11.11	24.00	-12.89
Mid	5200	10.718	11.02	24.00	-12.98
High	5240	10.784	11.08	24.00	-12.92

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5180	-0.710	-0.41	11.00	-11.41
Mid	5200	-0.790	-0.49	11.00	-11.49
High	5240	-0.710	-0.41	11.00	-11.41

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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	22.840	17.876	2.40
Mid	5200	22.530	17.873	2.40
High	5240	22.450	17.853	2.40

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	22.52	20.12	20.12	11.00	10.00	10.00
Mid	5200	24.00	22.52	20.12	20.12	11.00	10.00	10.00
High	5240	24.00	22.52	20.12	20.12	11.00	10.00	10.00

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	10.818	11.14	24.00	-12.86
Mid	5200	10.791	11.11	24.00	-12.89
High	5240	10.903	11.22	24.00	-12.78

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5180	-1.040	-0.72	11.00	-11.72
Mid	5200	-1.110	-0.79	11.00	-11.79
High	5240	-0.920	-0.60	11.00	-11.60

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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	43.9725	36.113	2.40
Mid	5230	43.68	36.191	2.40

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	20.60	20.60	11.00	10.00	10.00
Mid	5230	24.00	23.00	20.60	20.60	11.00	10.00	10.00
Duty Cycle CF (dB)		0.67	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	8.611	9.28	24.00	-14.72
Mid	5230	8.785	9.46	24.00	-14.55

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5190	-5.930	-5.26	11.00	-16.26
Mid	5230	-5.940	-5.27	11.00	-16.27

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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	22.92	16.732	2.40
Mid	5300	22.97	16.804	2.40
High	5320	22.27	16.785	2.40

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5260	24.00	23.24	29.24	23.24	11.00	11.00	11.00
Mid	5300	24.00	23.25	29.25	23.25	11.00	11.00	11.00
High	5320	24.00	23.25	29.25	23.25	11.00	11.00	11.00

Duty Cycle CF (dB)	0.30	**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	11.228	11.53	24.00	-12.47
Mid	5300	11.371	11.67	24.00	-12.33
High	5320	11.016	11.32	24.00	-12.68

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5260	-0.340	-0.04	11.00	-11.04
Mid	5300	-0.220	0.08	11.00	-10.92
High	5320	-0.550	-0.25	11.00	-11.25

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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	23.10	17.893	2.40
Mid	5300	22.75	17.834	2.40
High	5320	22.84	17.856	2.40

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5260	24.00	23.53	29.53	23.53	11.00	11.00	11.00
Mid	5300	24.00	23.51	29.51	23.51	11.00	11.00	11.00
High	5320	24.00	23.52	29.52	23.52	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	11.189	11.51	24.00	-12.49
Mid	5300	11.257	11.58	24.00	-12.42
High	5320	11.009	11.33	24.00	-12.67

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5260	-0.700	-0.38	11.00	-11.38
Mid	5300	-0.560	-0.24	11.00	-11.24
High	5320	-0.890	-0.57	11.00	-11.57

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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	43.3	36.1	2.40
High	5310	44.6	36.0	2.40

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	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)	0.67	**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	9.16	9.83	24.00	-14.17
High	5310	9.11	9.78	24.00	-14.22

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5270	-5.35	-4.68	11.00	-15.68
High	5310	-5.40	-4.73	11.00	-15.73

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10.5.6. 802.11a MODE IN THE 5.5 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5500	22.58	16.843	2.40
Mid	5580	23.01	16.809	2.40
High	5700	22.40	16.787	2.40

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5500	24.00	23.26	29.26	23.26	11.00	11.00	11.00
Mid	5580	24.00	23.26	29.26	23.26	11.00	11.00	11.00
High	5700	24.00	23.25	29.25	23.25	11.00	11.00	11.00

Duty Cycle CF (dB)	0.30	**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	10.924	11.22	24.00	-12.78
Mid	5580	11.163	11.46	24.00	-12.54
High	5700	11.358	11.66	24.00	-12.34

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5500	-0.570	-0.27	11.00	-11.27
Mid	5580	-0.410	-0.11	11.00	-11.11
High	5700	-0.110	0.19	11.00	-10.81

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10.5.7. 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	23.05	17.899	2.40
Mid	5580	22.92	17.882	2.40
High	5700	22.92	17.896	2.40

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5500	24.00	23.53	29.53	23.53	11.00	11.00	11.00
Mid	5580	24.00	23.52	29.52	23.52	11.00	11.00	11.00
High	5700	24.00	23.53	29.53	23.53	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	10.936	11.26	24.00	-12.74
Mid	5580	11.024	11.34	24.00	-12.66
High	5700	11.461	11.78	24.00	-12.22

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5500	-0.970	-0.65	11.00	-11.65
Mid	5580	-0.880	-0.56	11.00	-11.56
High	5700	-0.410	-0.09	11.00	-11.09

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10.5.8. 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	43.7	36.168	2.40
Mid	5550	44.2	36.161	2.40
High	5670	43.5	36.179	2.40

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	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)	0.67	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	9.129	9.80	24.00	-14.20
Mid	5550	9.481	10.15	24.00	-13.85
High	5670	9.680	10.35	24.00	-13.65

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5510	-5.520	-4.85	11.00	-15.85
Mid	5550	-5.150	-4.48	11.00	-15.48
High	5670	-4.920	-4.25	11.00	-15.25

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10.5.9. 802.11a MODE IN THE 5.8 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5745	22.2	16.8	2.40
Mid	5785	22.1	16.7	2.40
High	5825	22.3	16.8	2.40

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5745	30.00	29.26	35.26	29.26	30.00	17.00	17.00
Mid	5785	30.00	29.24	35.24	29.24	30.00	17.00	17.00
High	5825	30.00	29.25	35.25	29.25	30.00	17.00	17.00

Duty Cycle CF (dB)	0.30	**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	11.42	11.72	30.00	-18.28
Mid	5785	11.48	11.78	30.00	-18.22
High	5825	11.49	11.79	30.00	-18.22

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5745	-2.14	-1.84	30.00	-31.84
Mid	5785	-2.58	-2.28	30.00	-32.28
High	5825	-2.32	-2.02	30.00	-32.02

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10.5.10. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5745	23.1	17.9	2.40
Mid	5785	23.0	17.9	2.40
High	5825	23.3	17.9	2.40

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5745	30.00	29.52	35.52	29.52	30.00	17.00	17.00
Mid	5785	30.00	29.53	35.53	29.53	30.00	17.00	17.00
High	5825	30.00	29.52	35.52	29.52	30.00	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	11.67	11.99	30.00	-18.01
Mid	5785	11.48	11.80	30.00	-18.20
High	5825	11.48	11.80	30.00	-18.20

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5745	-2.65	-2.33	30.00	-32.33
Mid	5785	-2.83	-2.51	30.00	-32.51
High	5825	-2.80	-2.48	30.00	-32.48

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10.5.11. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5755	44.1	36.1	2.40
High	5795	44.5	36.1	2.40

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5755	30.00	30.00	36.00	30.00	30.00	17.00	17.00
High	5795	30.00	30.00	36.00	30.00	30.00	17.00	17.00

Duty Cycle CF (dB)	0.67	**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	8.80	9.47	30.00	-20.54
High	5795	8.51	9.18	30.00	-20.82

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5755	-7.92	-7.25	30.00	-37.25
High	5795	-8.49	-7.82	30.00	-37.82

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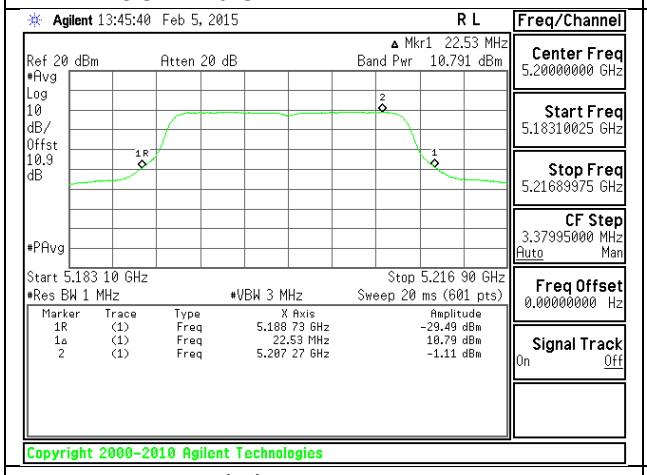
10.5.1. OUTPUT POWER AND PPSD PLOTS, Chain 0

11n HT20 5.2 Mid Ch



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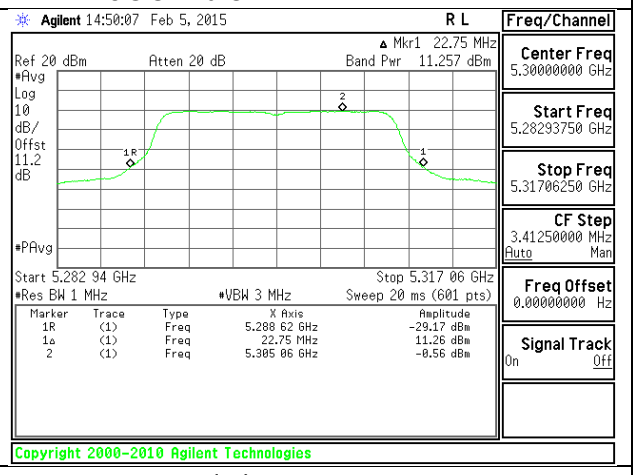
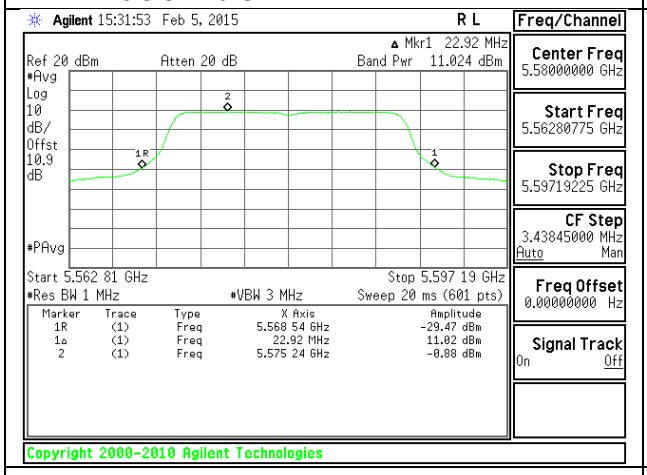
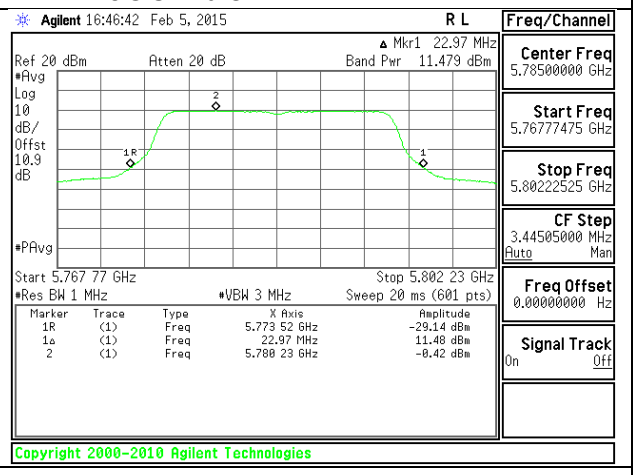


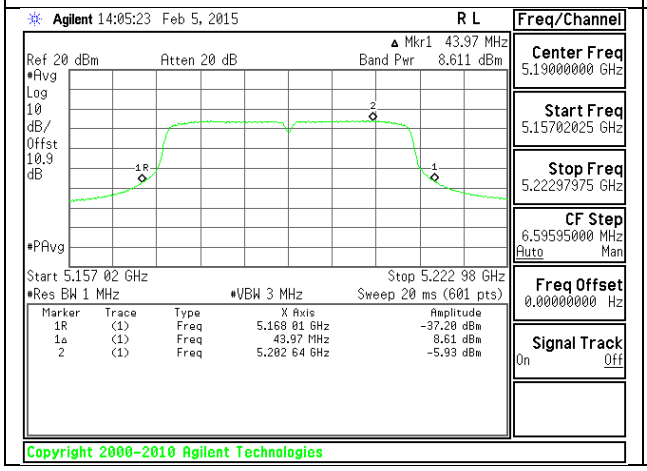
11n HT20 5.5 Mid Ch



11n HT20 5.8 Mid Ch



11n HT40 5.2 Low Ch



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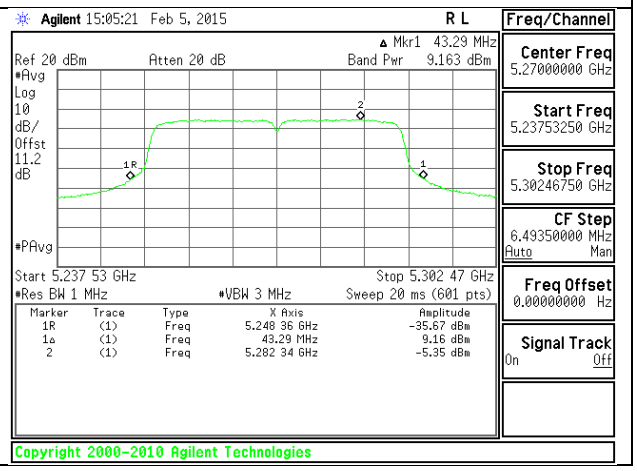

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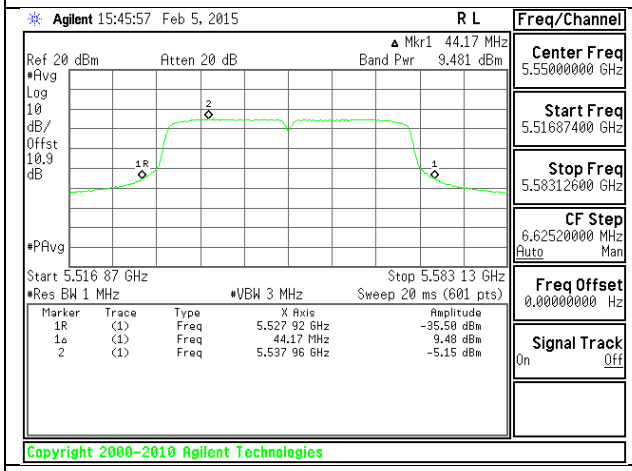
11n HT40 5.5 Mid Ch



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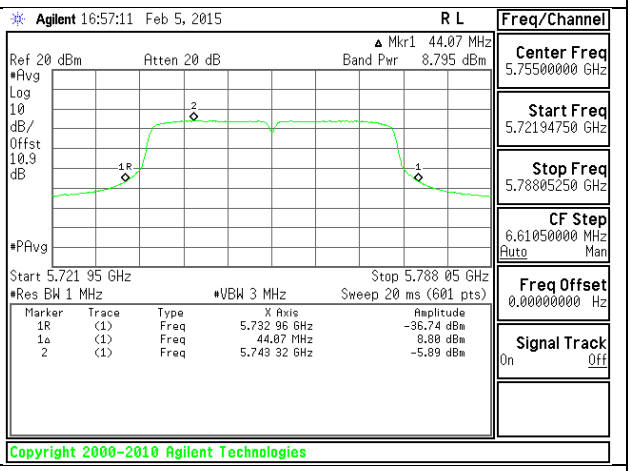

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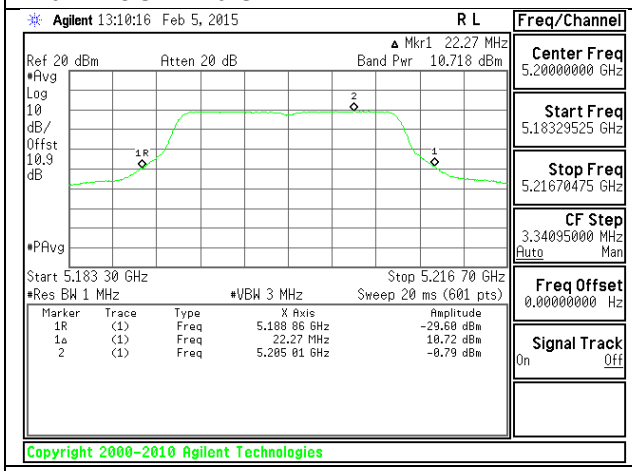

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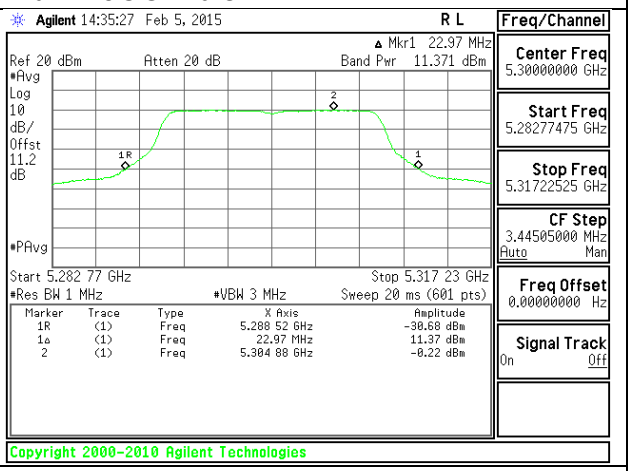
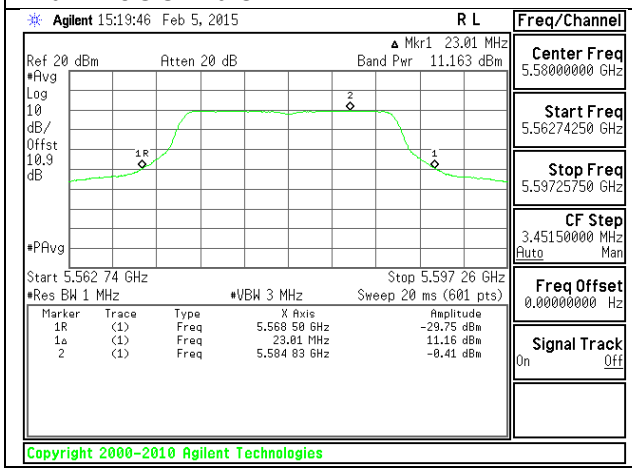
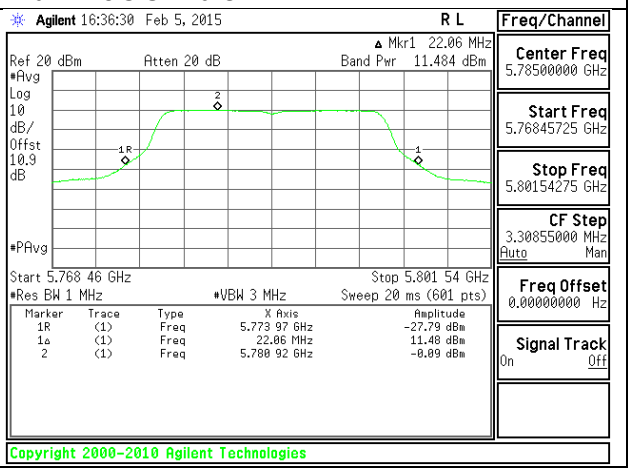


11a HT20 5.5 Mid Ch



11a HT20 5.8 Mid Ch



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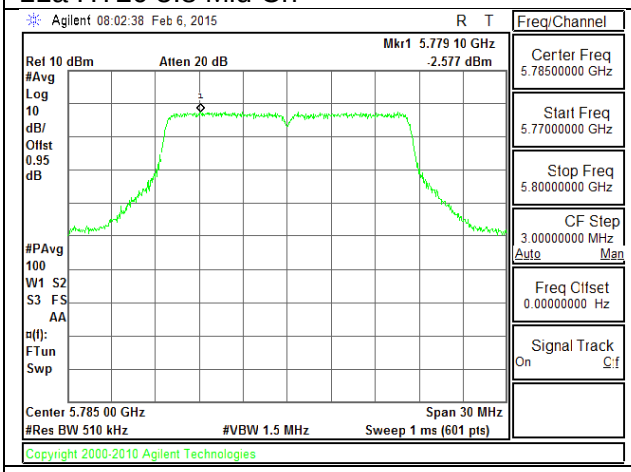
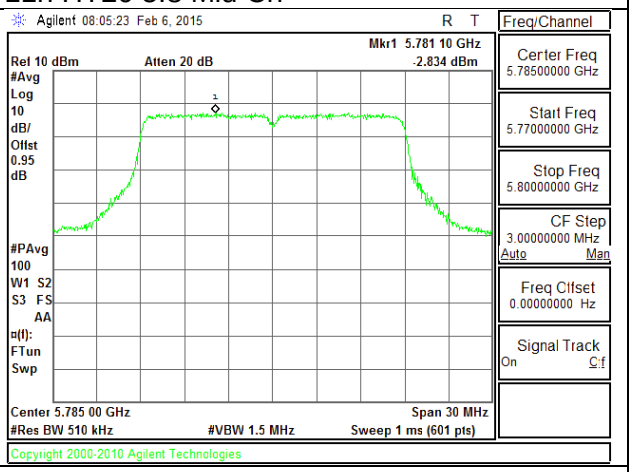
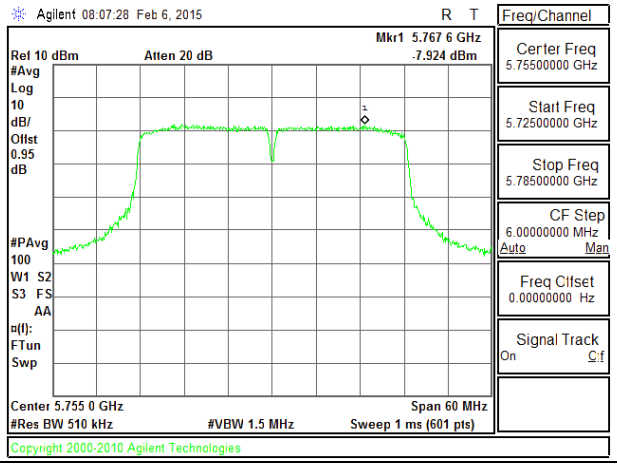
11a HT20 5.8 Mid Ch



11n HT20 5.8 Mid Ch



11n HT40 5.8 Low Ch



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11. TRANSMITTER ABOVE 1 GHz

LIMITS

FCC §15.205 and §15.209

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

TEST PROCEDURE

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

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

Reference to KDB 789033 UNII part G) 6) d) Method AD:

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

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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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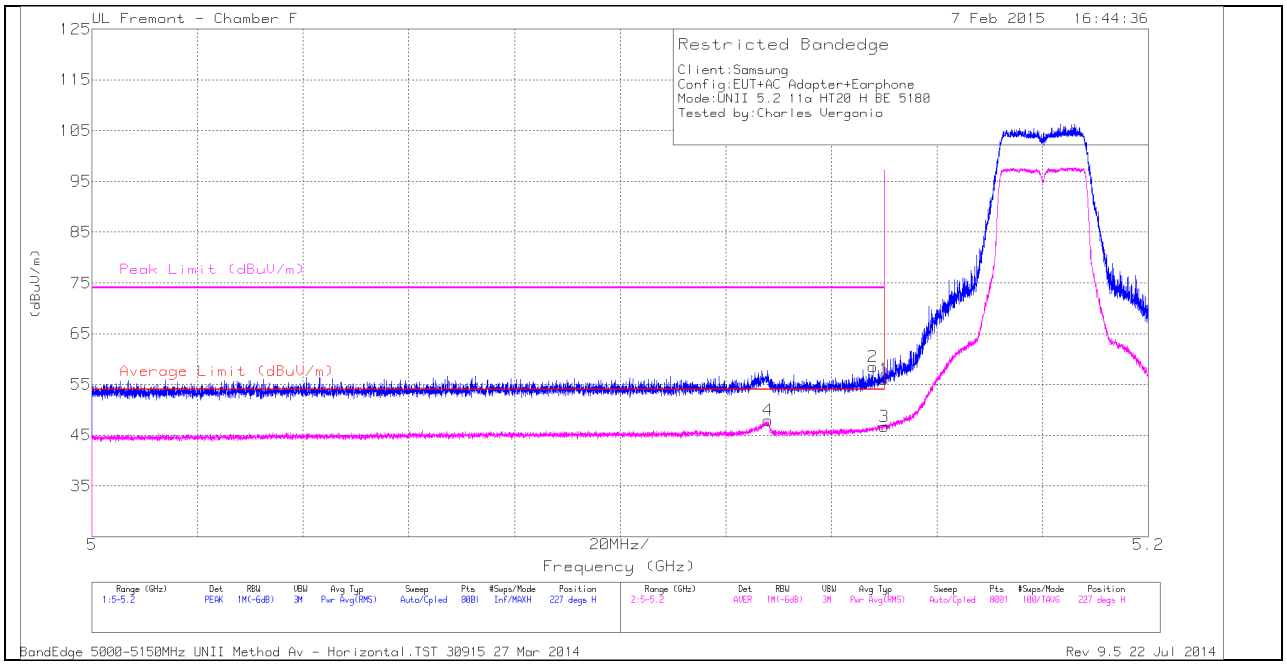
11.1. 5.2 GHz

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 T120 (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	40.24	PK	34.4	-18.6	0	56.04	-	-	74	-17.96	227	301	H
2	* 5.148	42.74	PK	34.4	-18.6	0	58.54	-	-	74	-15.46	227	301	H
3	* 5.15	30.62	RMS	34.4	-18.6	.3	46.72	54	-7.28	-	-	227	301	H
4	* 5.128	31.89	RMS	34.4	-18.7	.3	47.89	54	-6.11	-	-	227	301	H

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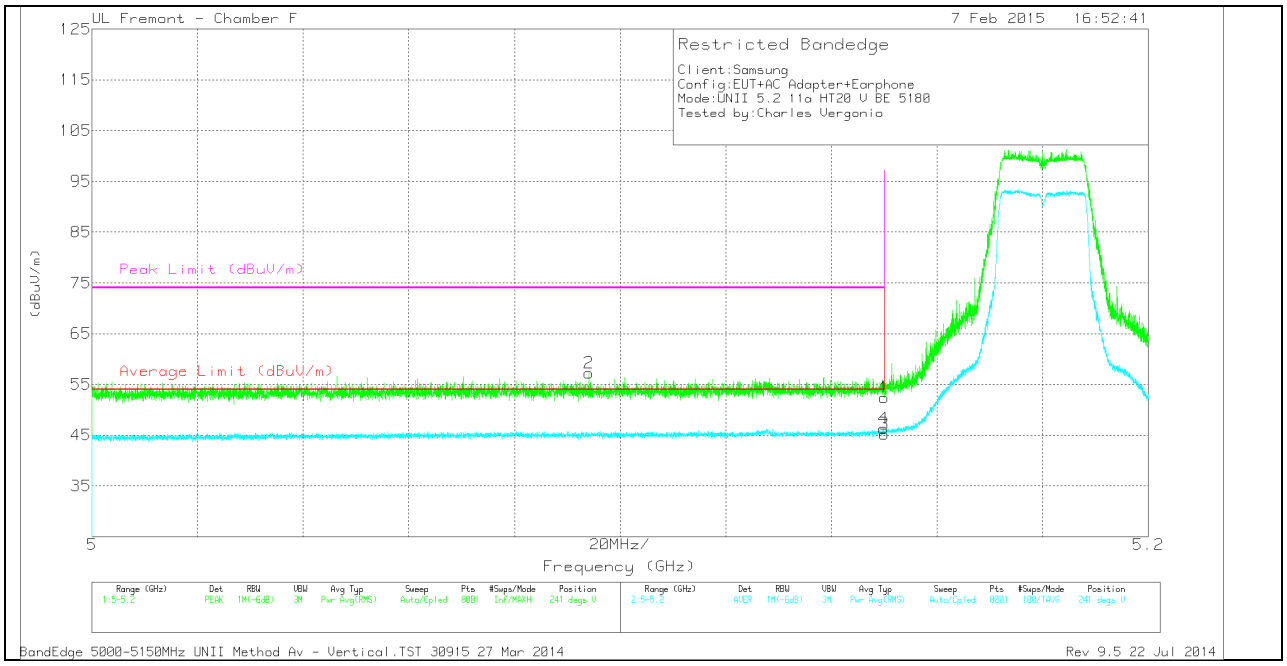
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	36.64	PK	34.4	-18.6	0	52.44	-	-	74	-21.56	241	336	V
2	* 5.094	41.65	PK	34.3	-18.7	0	57.25	-	-	74	-16.75	241	336	V
3	* 5.15	29.15	RMS	34.4	-18.6	.3	45.25	54	-8.75	-	-	241	336	V
4	* 5.15	30.22	RMS	34.4	-18.6	.3	46.32	54	-7.68	-	-	241	336	V

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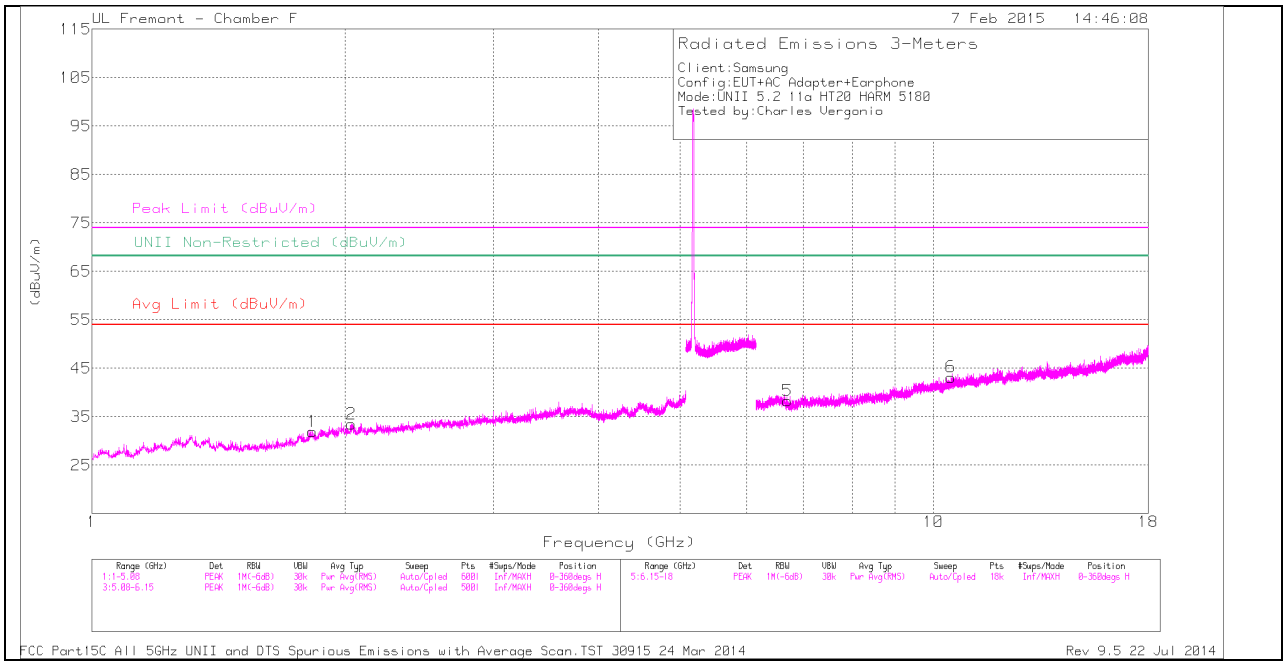
HARMONICS AND SPURIOUS EMISSIONS

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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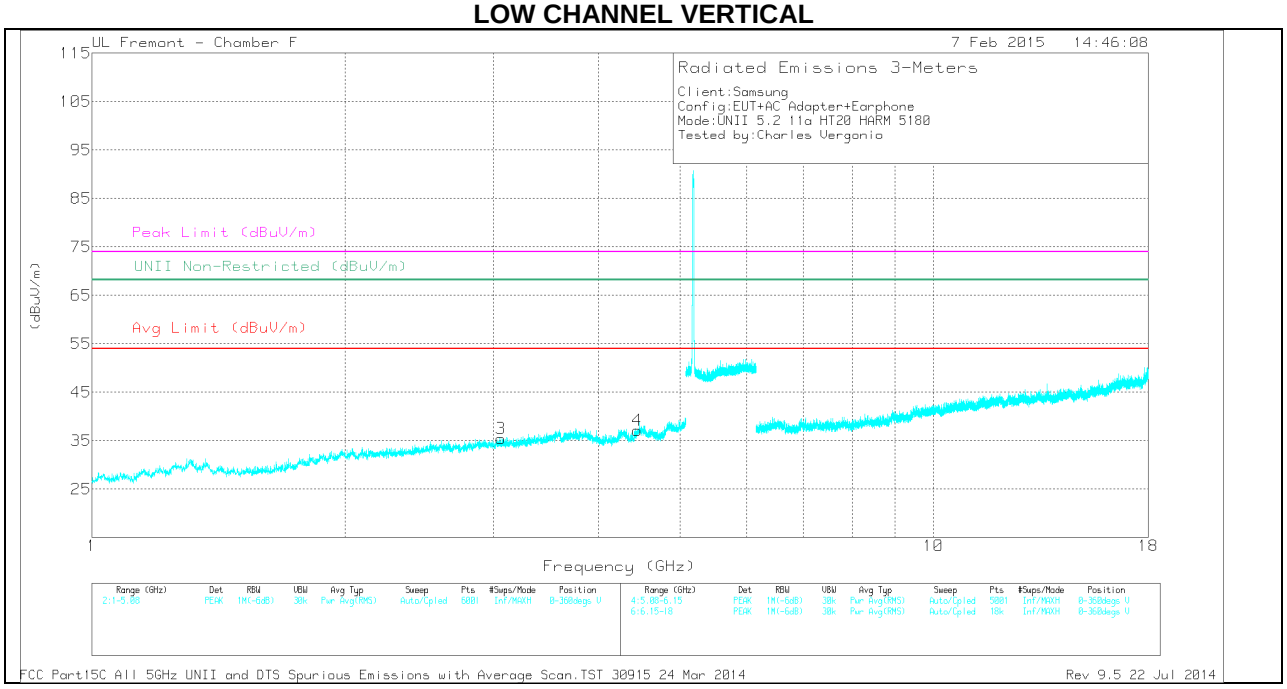
LOW CHANNEL VERTICAL



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 T120 (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	1.828	32.42	PK	30.6	-31.1	0	31.92	-	-	-	-	68.2	-36.28	0-360	100	H
2	2.035	32.57	PK	31.7	-30.8	0	33.47	-	-	-	-	68.2	-34.73	0-360	201	H
3	3.061	31.56	PK	33.3	-29.4	0	35.46	-	-	-	-	68.2	-32.74	0-360	101	V
4	4.444	30.33	PK	33.9	-27.1	0	37.13	-	-	-	-	68.2	-31.07	0-360	101	V
5	6.71	29.61	PK	35.6	-26.9	0	38.31	-	-	-	-	68.2	-29.89	0-360	201	H
6	10.495	27.27	PK	37.7	-21.8	0	43.17	-	-	-	-	68.2	-25.03	0-360	201	H

PK - Peak detector

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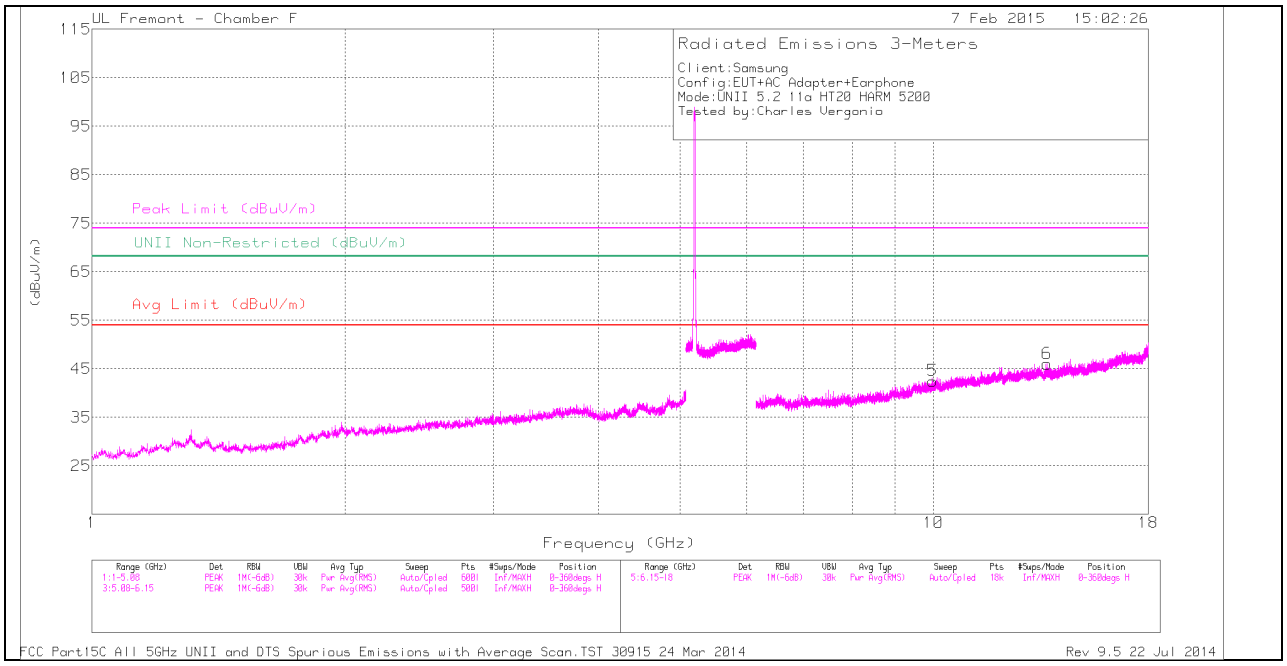
MID CHANNEL HORIZONTAL



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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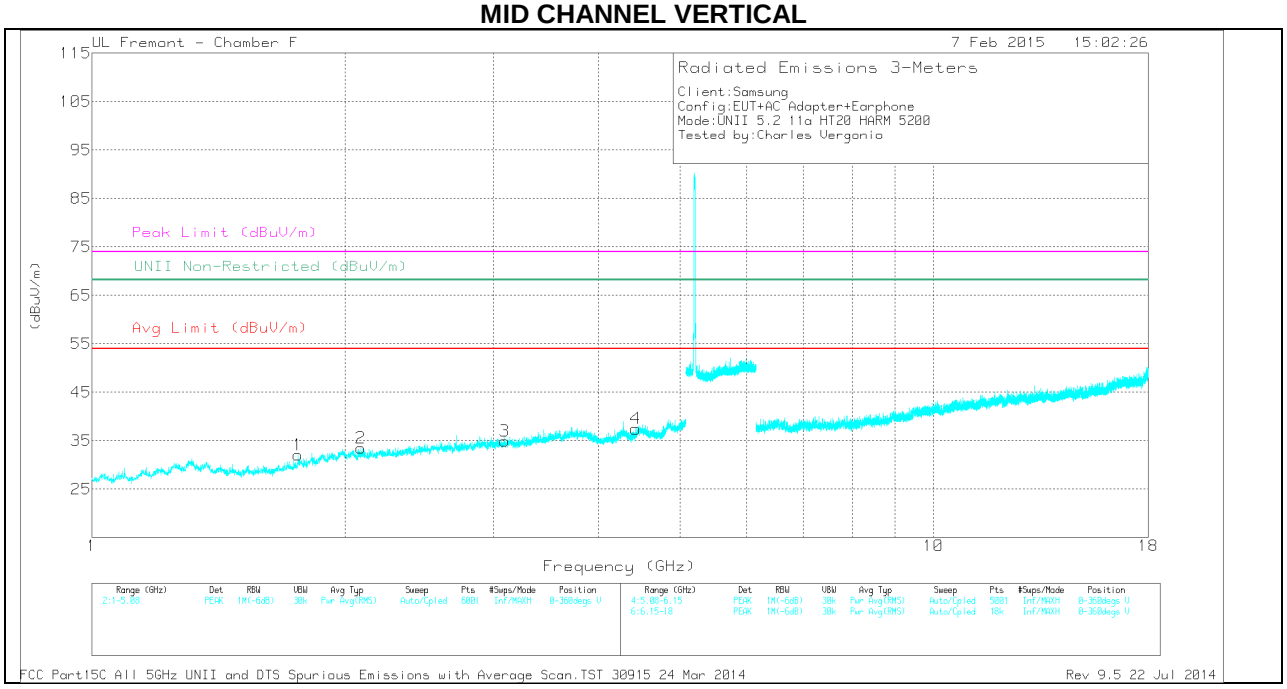
MID CHANNEL VERTICAL



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 T120 (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	1.757	33.46	PK	29.8	-31.2	0	32.06	-	-	-	-	68.2	-36.14	0-360	101	V
2	2.087	32.64	PK	31.8	-31	0	33.44	-	-	-	-	68.2	-34.76	0-360	101	V
3	3.094	31.05	PK	33.3	-29.4	0	34.95	-	-	-	-	68.2	-33.25	0-360	101	V
4	4.428	31.26	PK	33.9	-27.7	0	37.46	-	-	-	-	68.2	-30.74	0-360	101	V
5	9.985	27.32	PK	37.2	-22	0	42.52	-	-	-	-	68.2	-25.68	0-360	201	H
6	13.652	29.53	PK	38.7	-22.2	0	46.03	-	-	-	-	68.2	-22.17	0-360	201	H

PK - Peak detector

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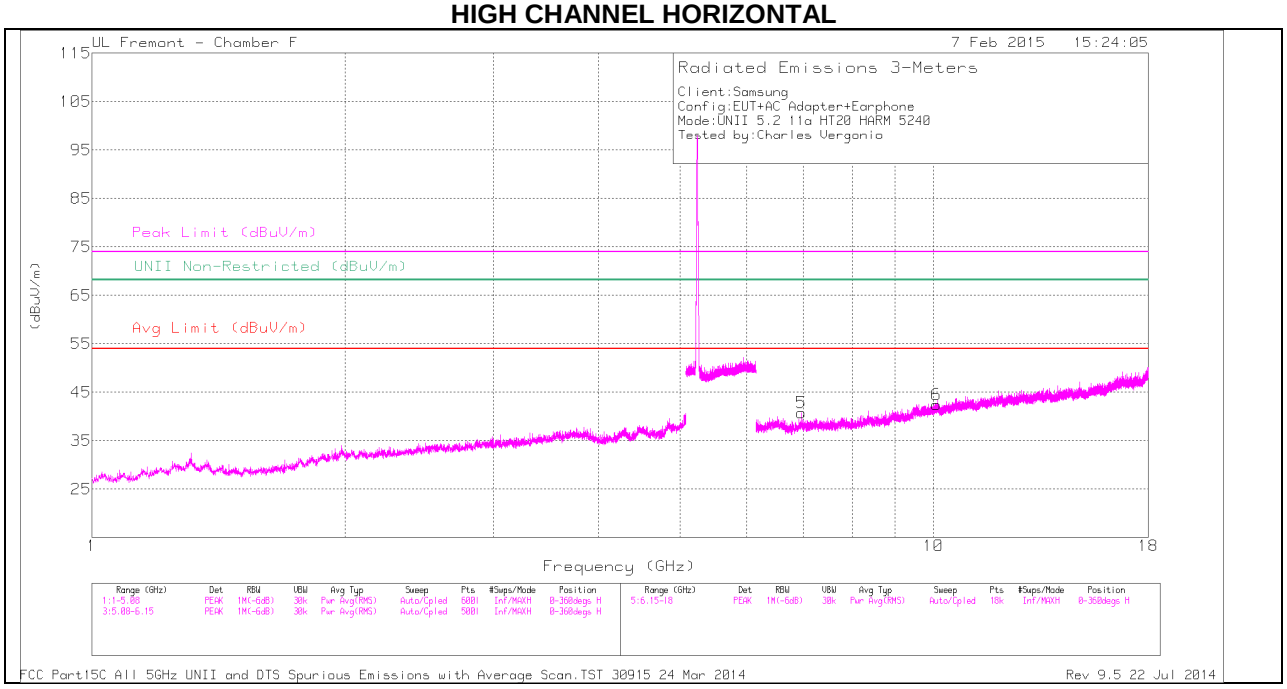
HIGH CHANNEL HORIZONTAL



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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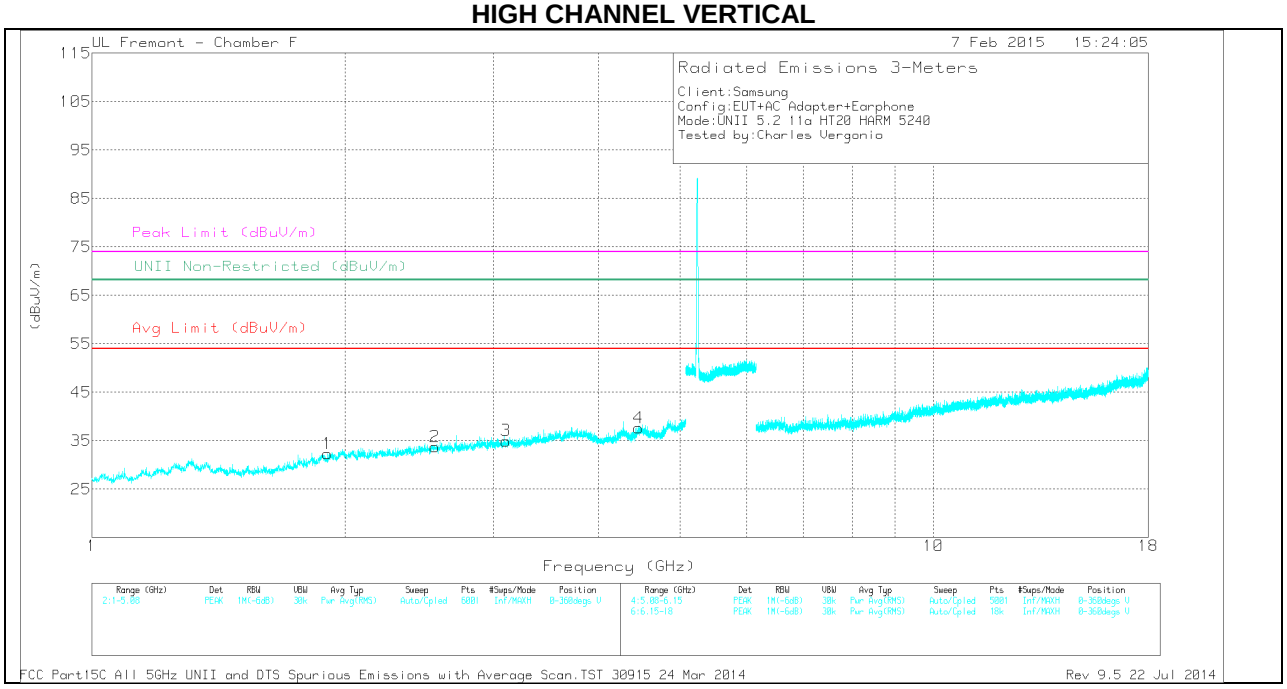
HIGH CHANNEL VERTICAL



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 T120 (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	1.905	32.11	PK	31.4	-31.2	0	32.31	-	-	-	-	68.2	-35.89	0-360	101	V
2	2.555	31.23	PK	32.7	-30.2	0	33.73	-	-	-	-	68.2	-34.47	0-360	101	V
3	3.105	30.99	PK	33.3	-29.3	0	34.99	-	-	-	-	68.2	-33.21	0-360	201	V
4	4.465	30.64	PK	33.9	-26.9	0	37.64	-	-	-	-	68.2	-30.56	0-360	101	V
5	6.967	30.72	PK	35.5	-25.5	0	40.72	-	-	-	-	68.2	-27.48	0-360	201	H
6	10.078	26.5	PK	37.2	-21.2	0	42.5	-	-	-	-	68.2	-25.7	0-360	201	H

PK - Peak detector

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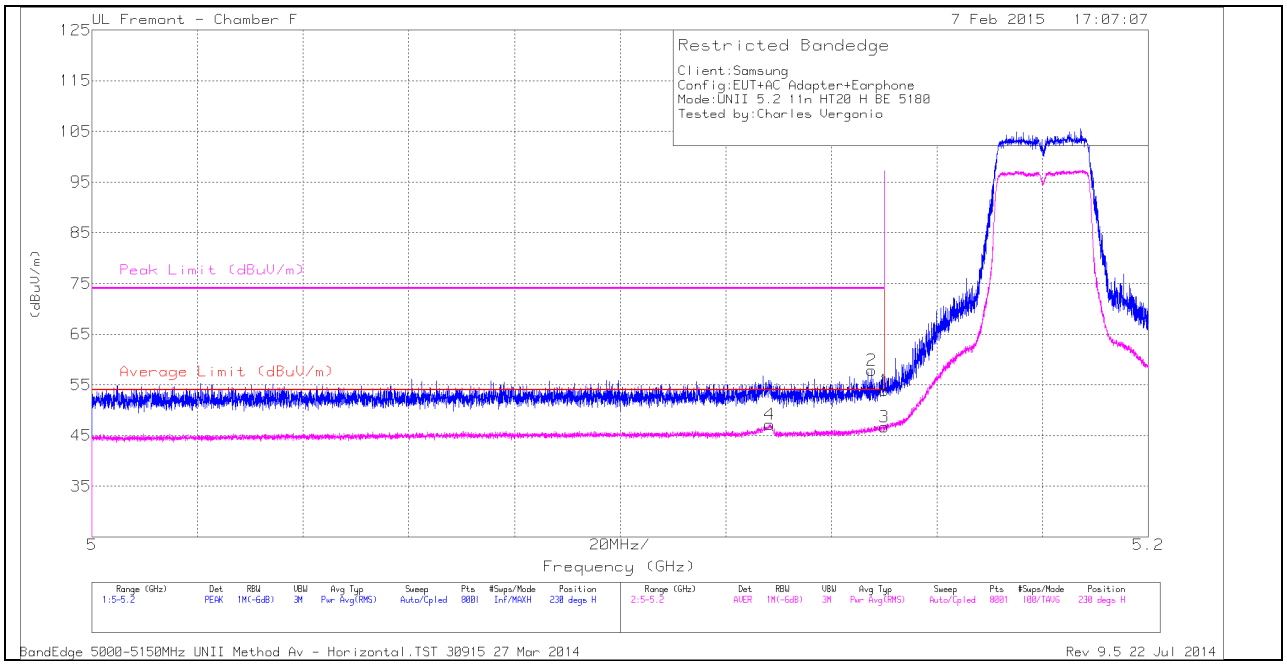
11.1.2. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.2 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	38.11	PK	34.4	-18.6	0	53.91	-	-	74	-20.09	230	268	H
2	* 5.148	42.07	PK	34.4	-18.6	0	57.87	-	-	74	-16.13	230	268	H
3	* 5.15	30.51	RMS	34.4	-18.6	.32	46.63	54	-7.37	-	-	230	268	H
4	* 5.128	31.19	RMS	34.4	-18.7	.32	47.21	54	-6.79	-	-	230	268	H

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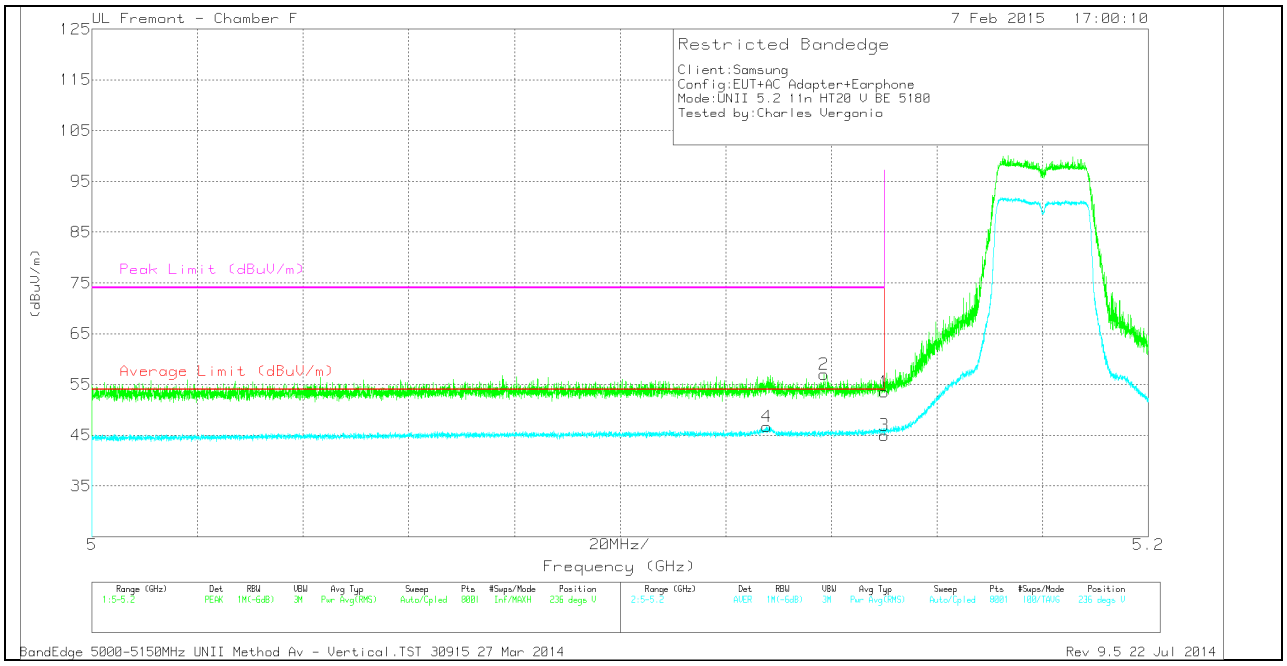
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	37.77	PK	34.4	-18.6	0	53.57	-	-	74	-20.43	236	302	V
2	* 5.139	41.18	PK	34.4	-18.6	0	56.98	-	-	74	-17.02	236	302	V
3	* 5.15	28.88	RMS	34.4	-18.6	.32	45.00	54	-9.0	-	-	236	302	V
4	* 5.128	30.61	RMS	34.4	-18.7	.32	46.63	54	-7.37	-	-	236	302	V

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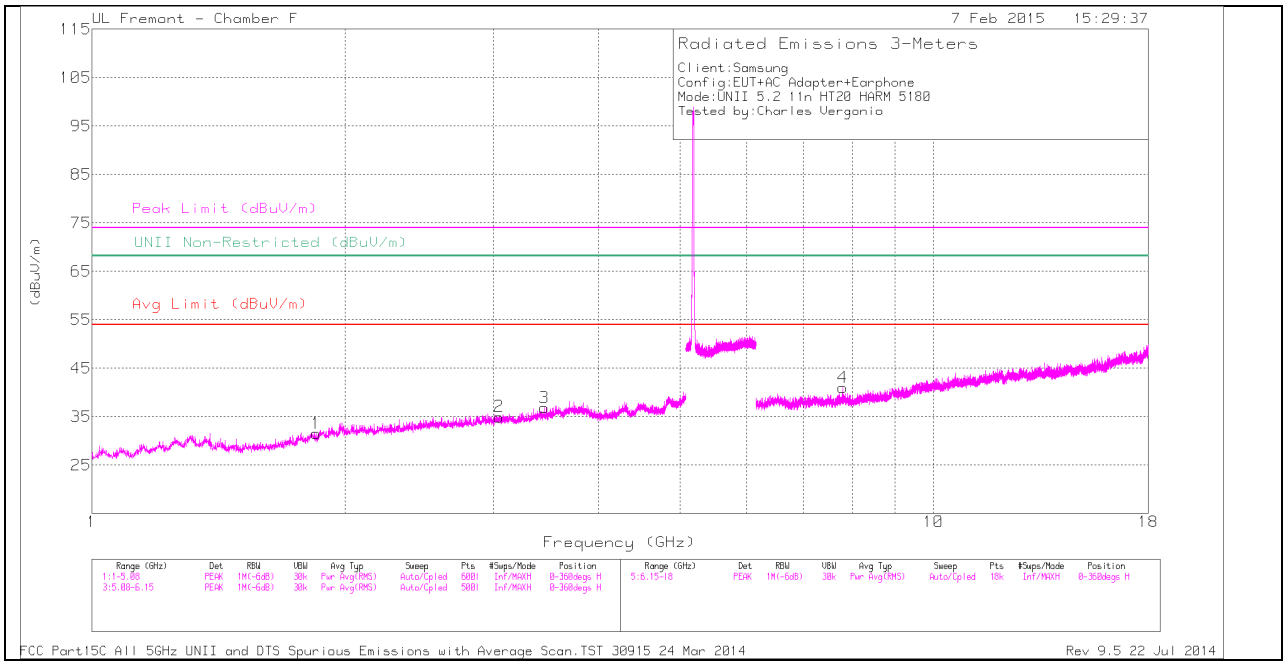
HARMONICS AND SPURIOUS EMISSIONS

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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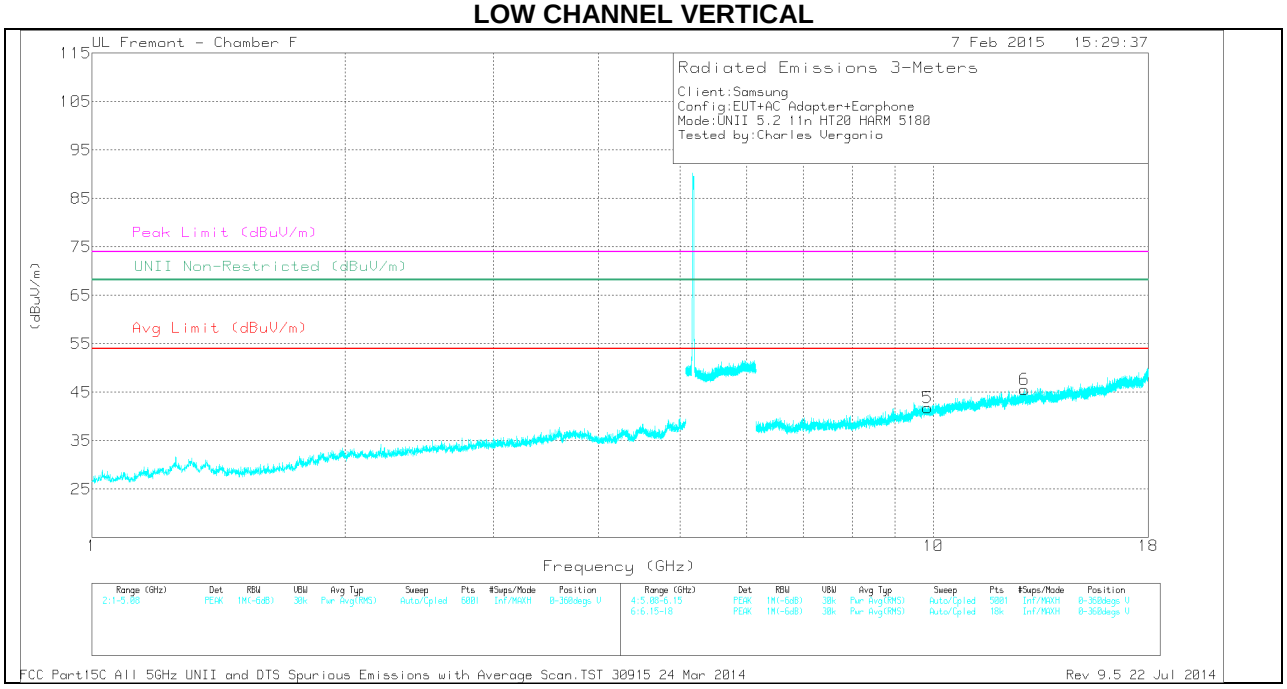
LOW CHANNEL VERTICAL



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 T120 (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	1.846	31.86	PK	30.8	-31.1	0	31.56	-	-	-	-	68.2	-36.64	0-360	101	H
2	3.044	31.29	PK	33.3	-29.6	0	34.99	-	-	-	-	68.2	-33.21	0-360	101	H
3	3.449	31.93	PK	34.2	-29.3	0	36.83	-	-	-	-	68.2	-31.37	0-360	201	H
4	7.796	30.36	PK	35.7	-25	0	41.06	-	-	-	-	68.2	-27.14	0-360	201	H
5	9.834	27.04	PK	37.1	-22.3	0	41.84	-	-	-	-	68.2	-26.36	0-360	201	V
6	12.815	28.74	PK	39.1	-22.3	0	45.54	-	-	-	-	68.2	-22.66	0-360	201	V

PK - Peak detector

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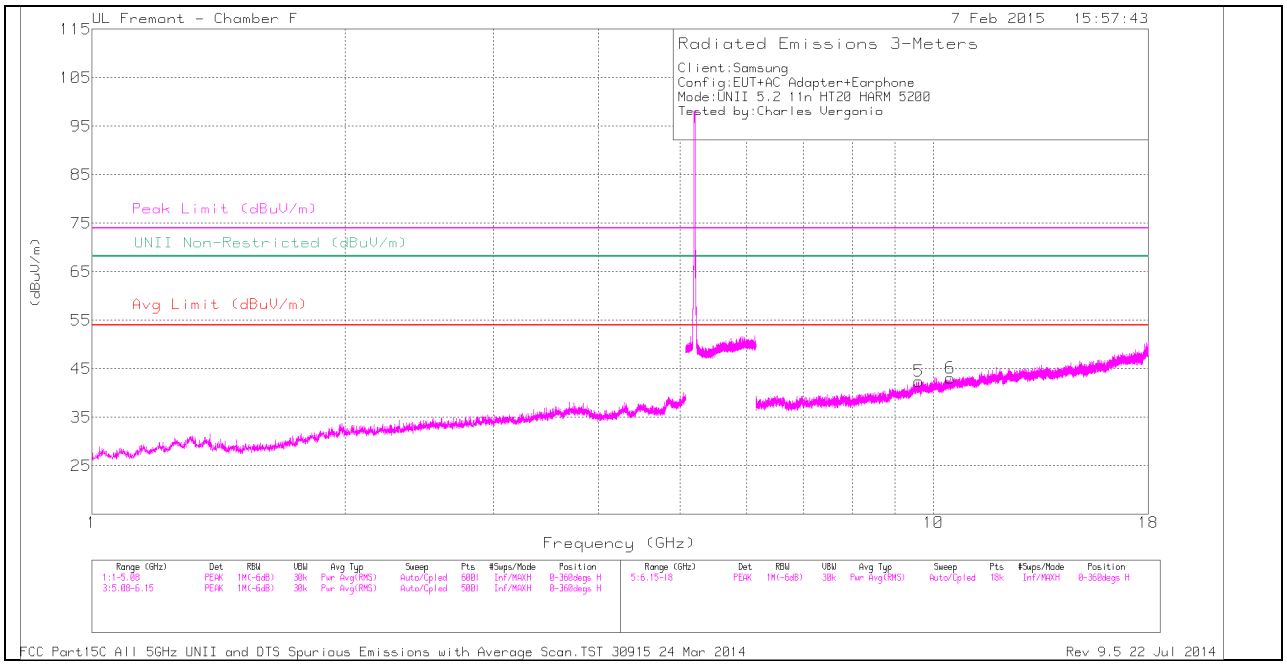
MID CHANNEL HORIZONTAL



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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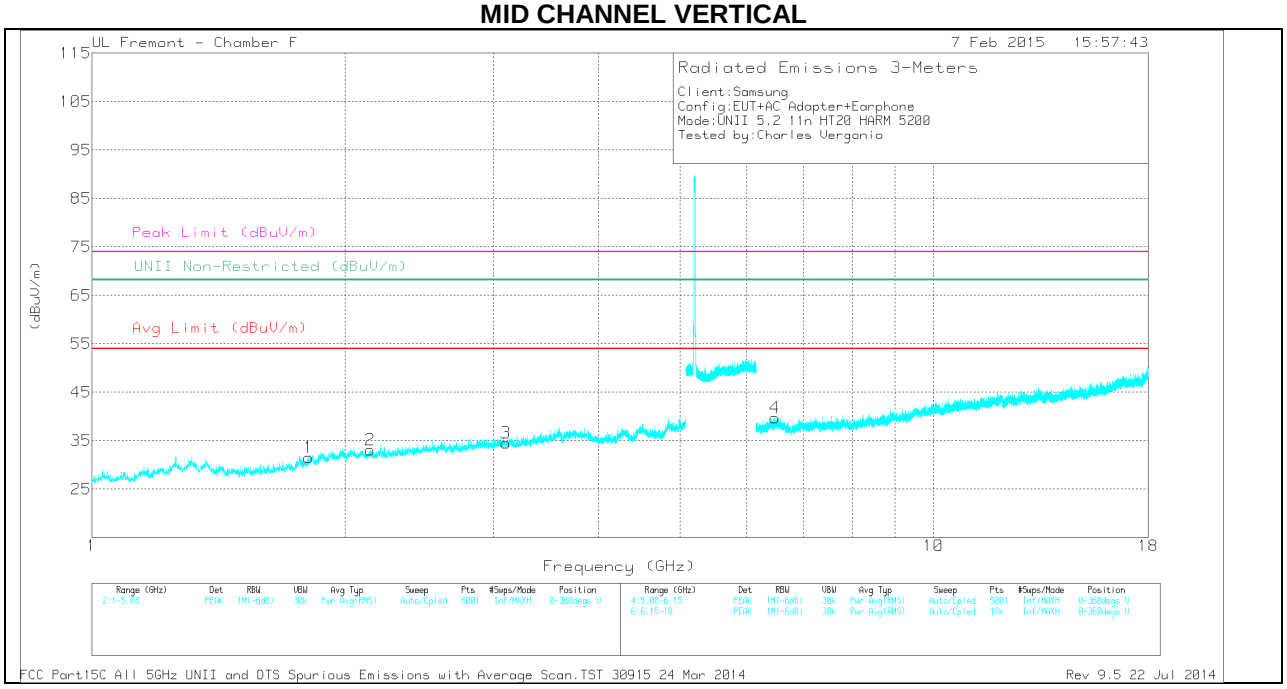
MID CHANNEL VERTICAL



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 T120 (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	1.811	32.24	PK	30.4	-31.1	0	31.54	-	-	-	-	68.2	-36.66	0-360	101	V
2	2.142	32.2	PK	31.8	-30.9	0	33.1	-	-	-	-	68.2	-35.1	0-360	201	V
3	3.103	30.54	PK	33.3	-29.3	0	34.54	-	-	-	-	68.2	-33.66	0-360	101	V
5	9.611	27.33	PK	36.9	-21.8	0	42.43	-	-	-	-	68.2	-25.77	0-360	201	H
6	10.475	27.66	PK	37.6	-22.1	0	43.16	-	-	-	-	68.2	-25.04	0-360	100	H
4	6.486	30.62	PK	35.6	-26.5	0	39.72	-	-	-	-	68.2	-28.48	0-360	201	V

PK - Peak detector

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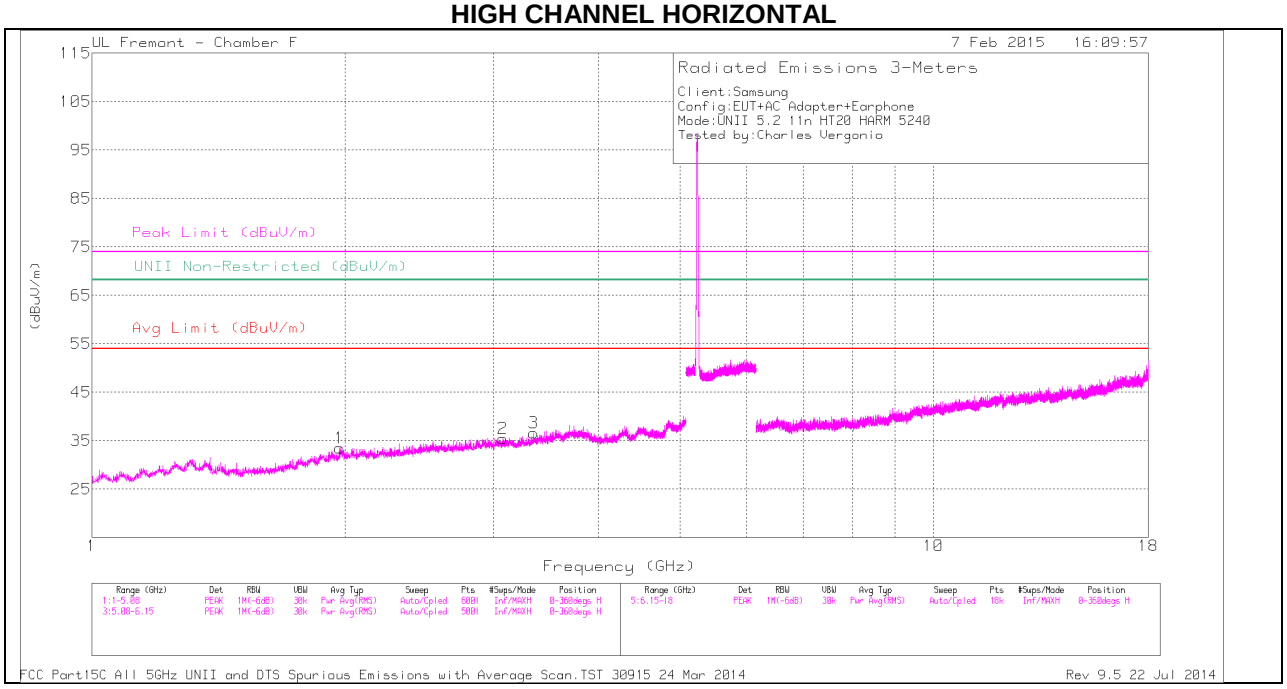
HIGH CHANNEL HORIZONTAL



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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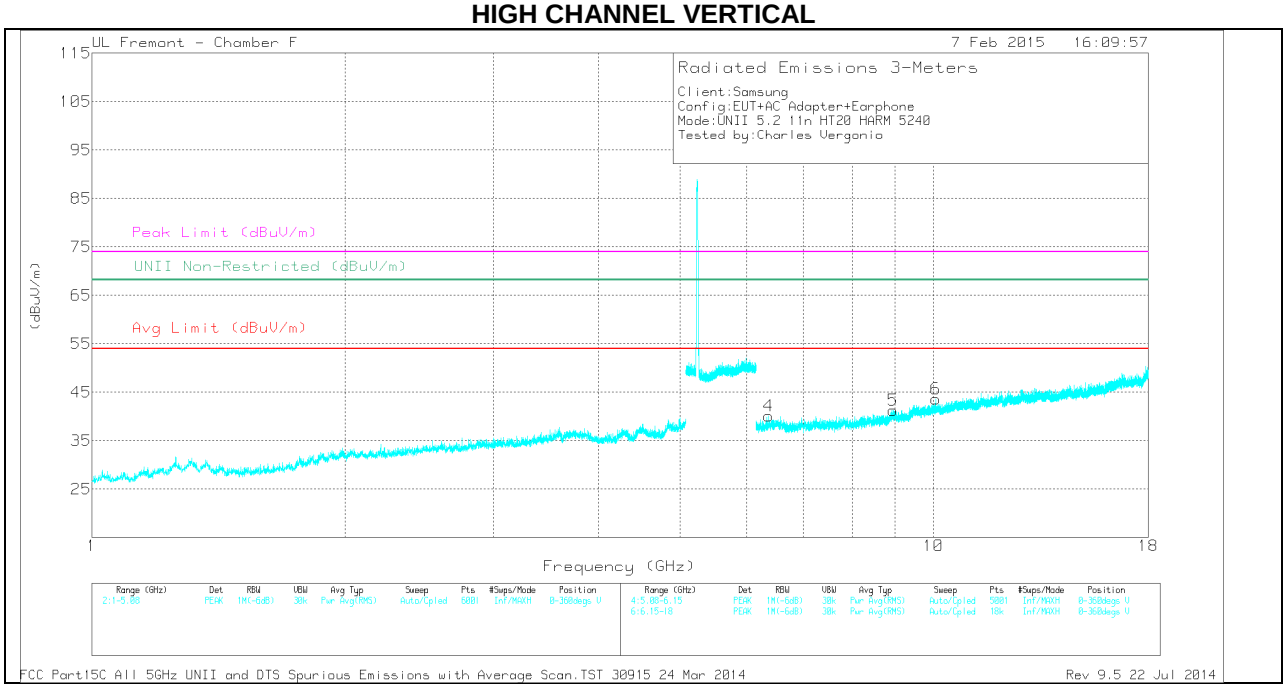
HIGH CHANNEL VERTICAL



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 T120 (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	1.97	32.93	PK	31.6	-31	0	33.53	-	-	-	-	68.2	-34.67	0-360	201	H
2	3.08	31.49	PK	33.3	-29.4	0	35.39	-	-	-	-	68.2	-32.81	0-360	201	H
3	* 3.349	31.9	PK	33.8	-29.1	0	36.6	-	-	74	-37.4	-	-	0-360	101	H
4	6.369	30.68	PK	35.6	-26.2	0	40.08	-	-	-	-	68.2	-28.12	0-360	101	V
5	8.958	27.76	PK	36.1	-22.6	0	41.26	-	-	-	-	68.2	-26.94	0-360	201	V
6	10.056	28.08	PK	37.2	-21.6	0	43.68	-	-	-	-	68.2	-24.52	0-360	101	V

PK - Peak detector

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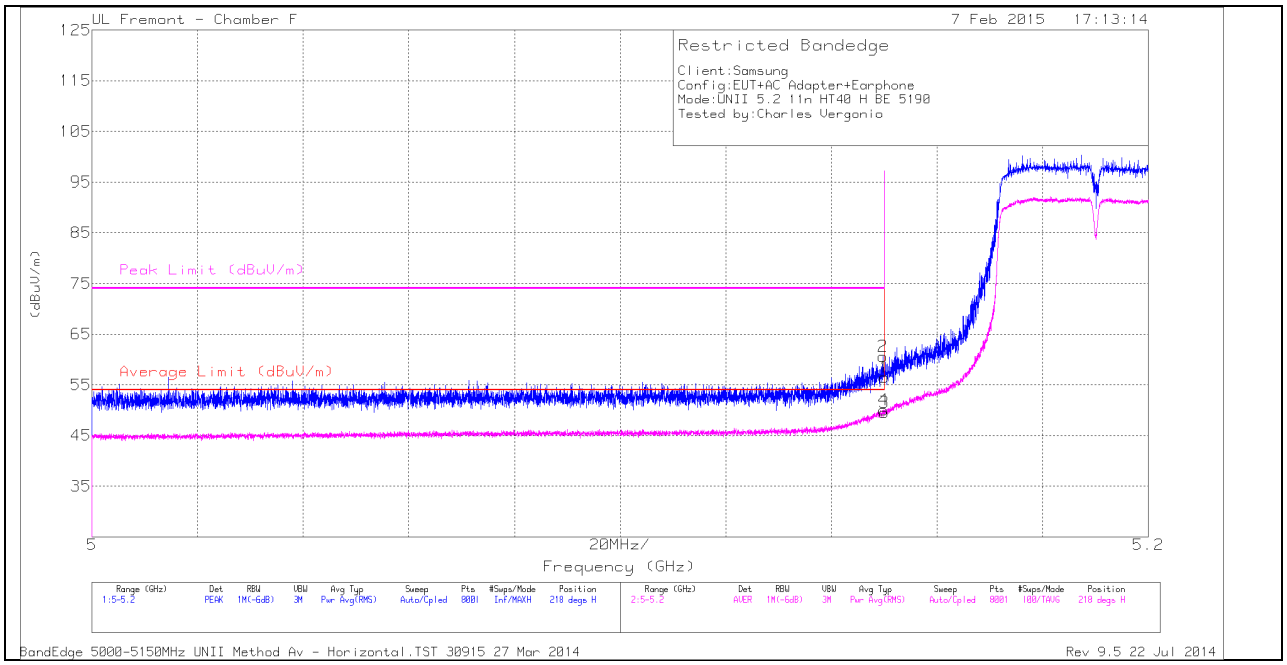
11.1.3. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.2 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	40.74	PK	34.4	-18.6	0	56.54	-	-	74	-17.46	218	301	H
2	* 5.15	44.74	PK	34.4	-18.6	0	60.54	-	-	74	-13.46	218	301	H
3	* 5.15	33.17	RMS	34.4	-18.6	.67	49.64	54	-4.36	-	-	218	301	H
4	* 5.15	33.61	RMS	34.4	-18.6	.67	50.08	54	-3.92	-	-	218	301	H

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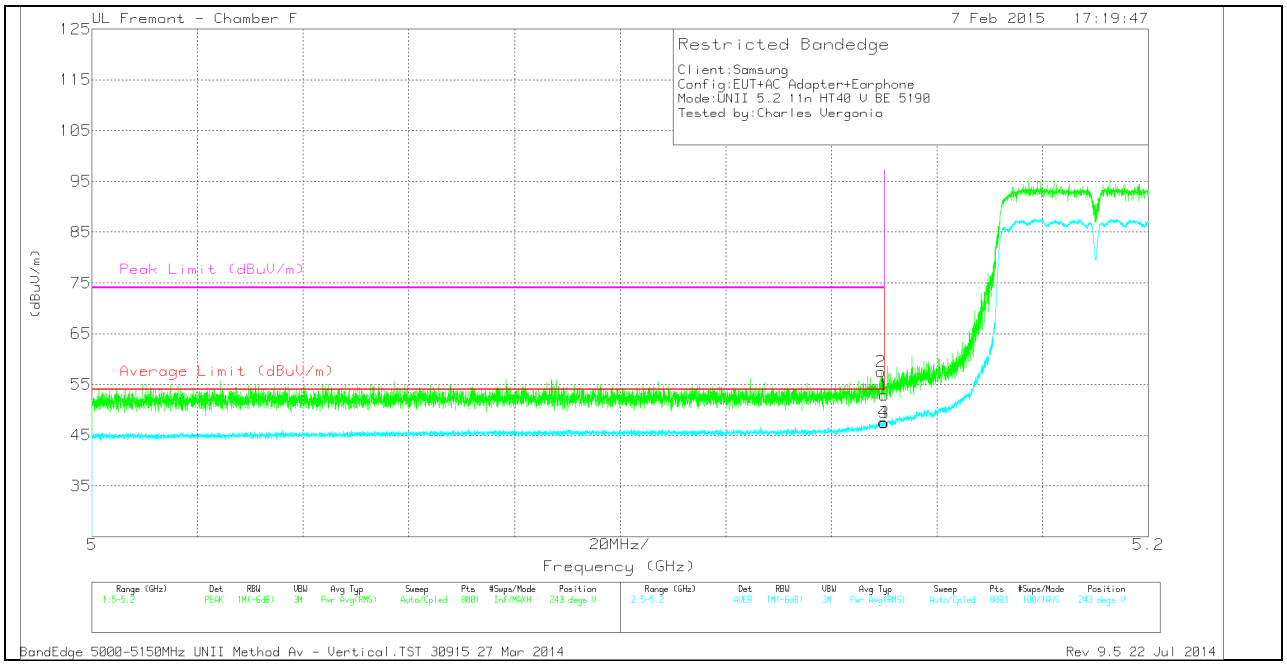
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	37.08	PK	34.4	-18.6	0	52.88	-	-	74	-21.12	243	335	V
2	* 5.149	41.65	PK	34.4	-18.6	0	57.45	-	-	74	-16.55	243	335	V
3	* 5.15	30.98	RMS	34.4	-18.6	.67	47.45	54	-6.55	-	-	243	335	V
4	* 5.15	31.18	RMS	34.4	-18.6	.67	47.65	54	-6.35	-	-	243	335	V

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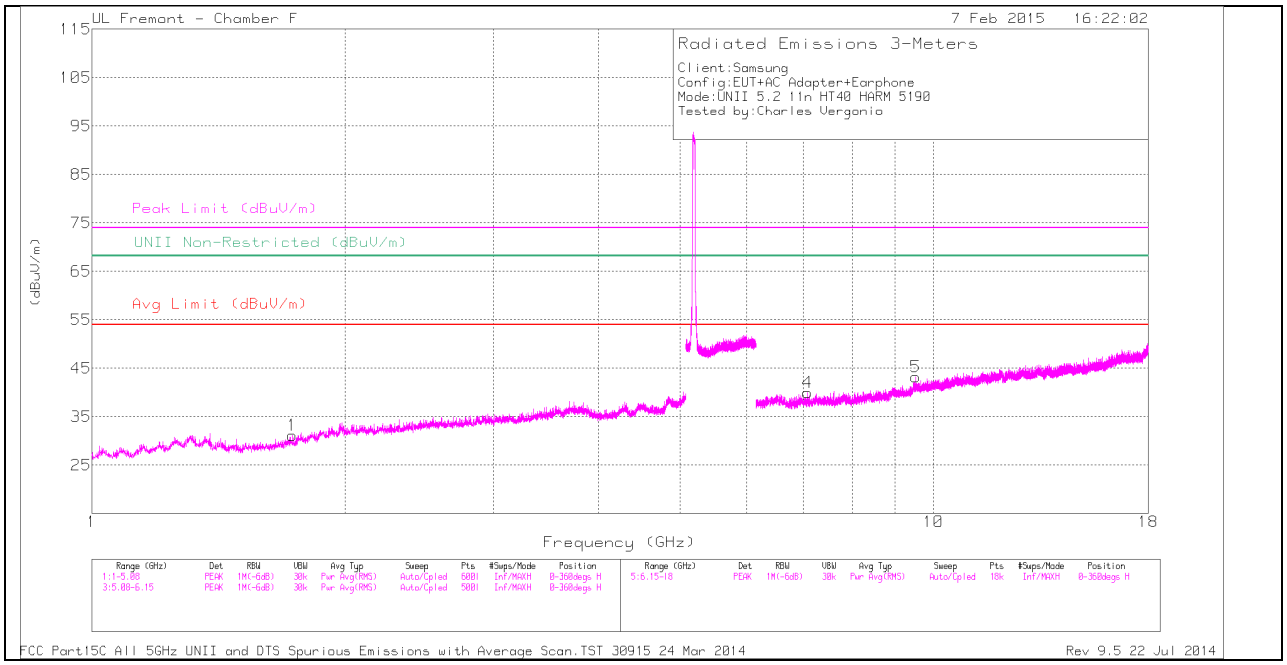
HARMONICS AND SPURIOUS EMISSIONS

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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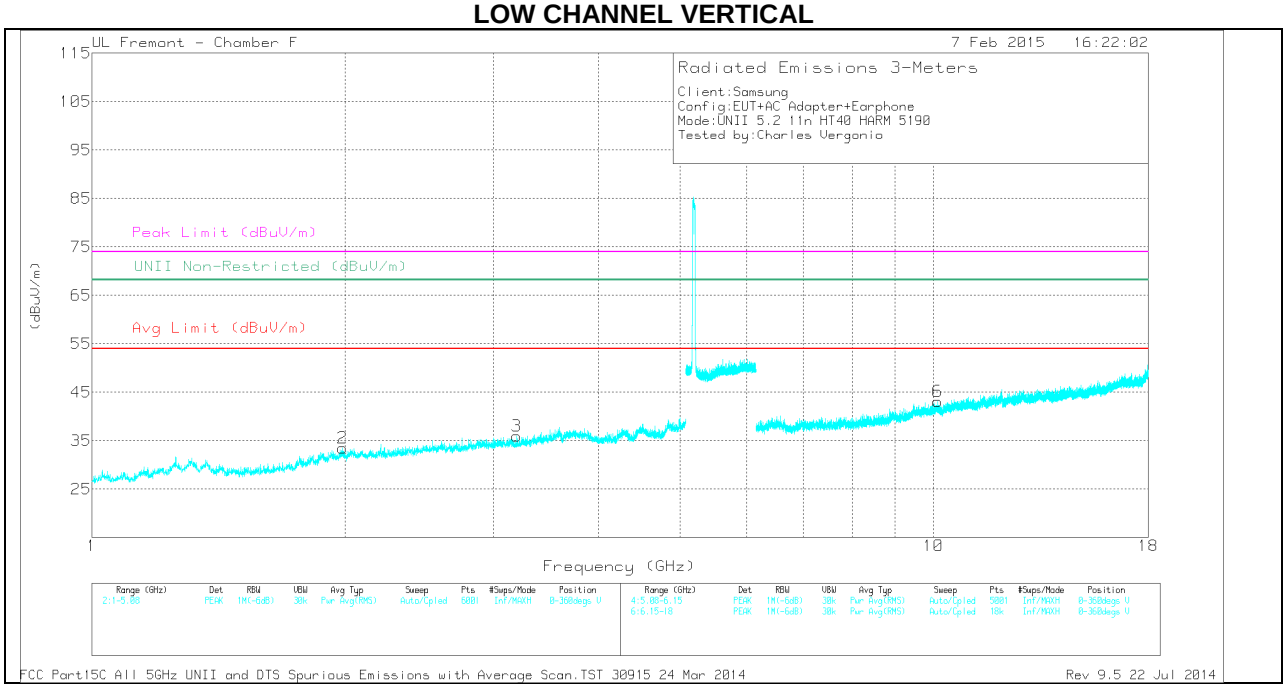
LOW CHANNEL VERTICAL



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 T120 (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	1.731	32.91	PK	29.5	-31.3	0	31.11	-	-	-	-	68.2	-37.09	0-360	201	H
2	1.986	32.47	PK	31.7	-30.7	0	33.47	-	-	-	-	68.2	-34.73	0-360	201	V
3	3.198	32.72	PK	33.3	-30.1	0	35.92	-	-	-	-	68.2	-32.28	0-360	101	V
4	7.089	30.73	PK	35.5	-26.2	0	40.03	-	-	-	-	68.2	-28.17	0-360	100	H
5	9.524	28.1	PK	36.9	-21.8	0	43.2	-	-	-	-	68.2	-25	0-360	100	H
6	10.117	27.59	PK	37.2	-21.7	0	43.09	-	-	-	-	68.2	-25.11	0-360	101	V

PK - Peak detector

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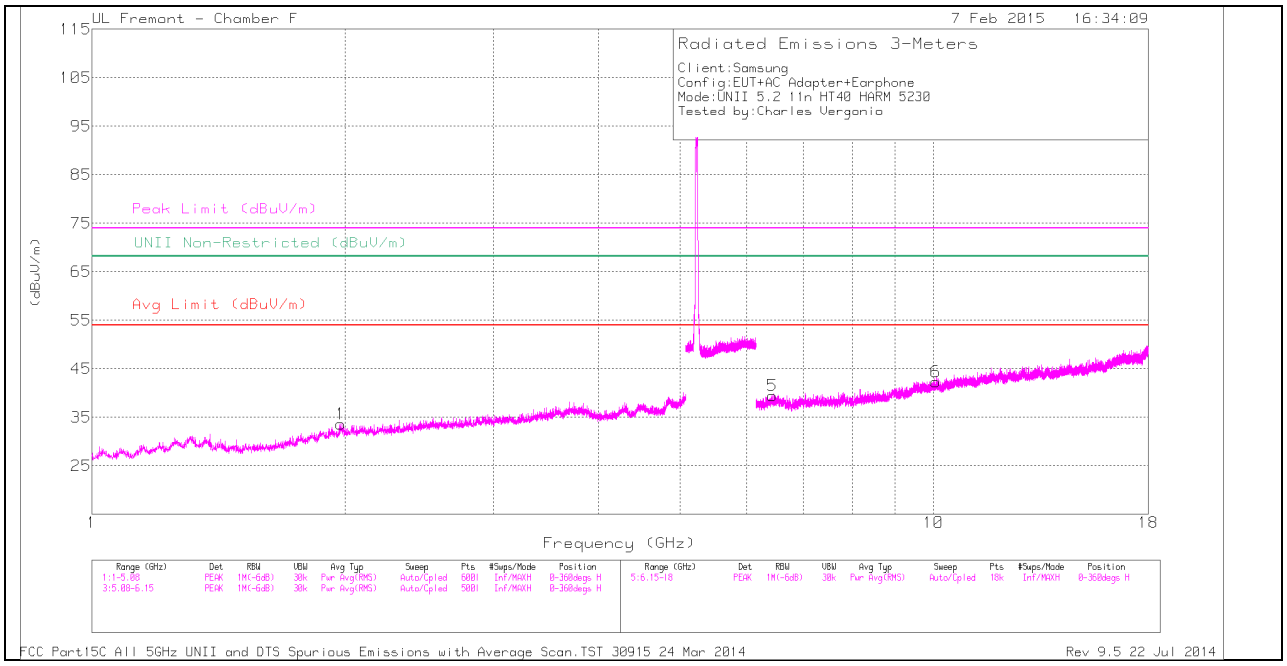
MID CHANNEL HORIZONTAL



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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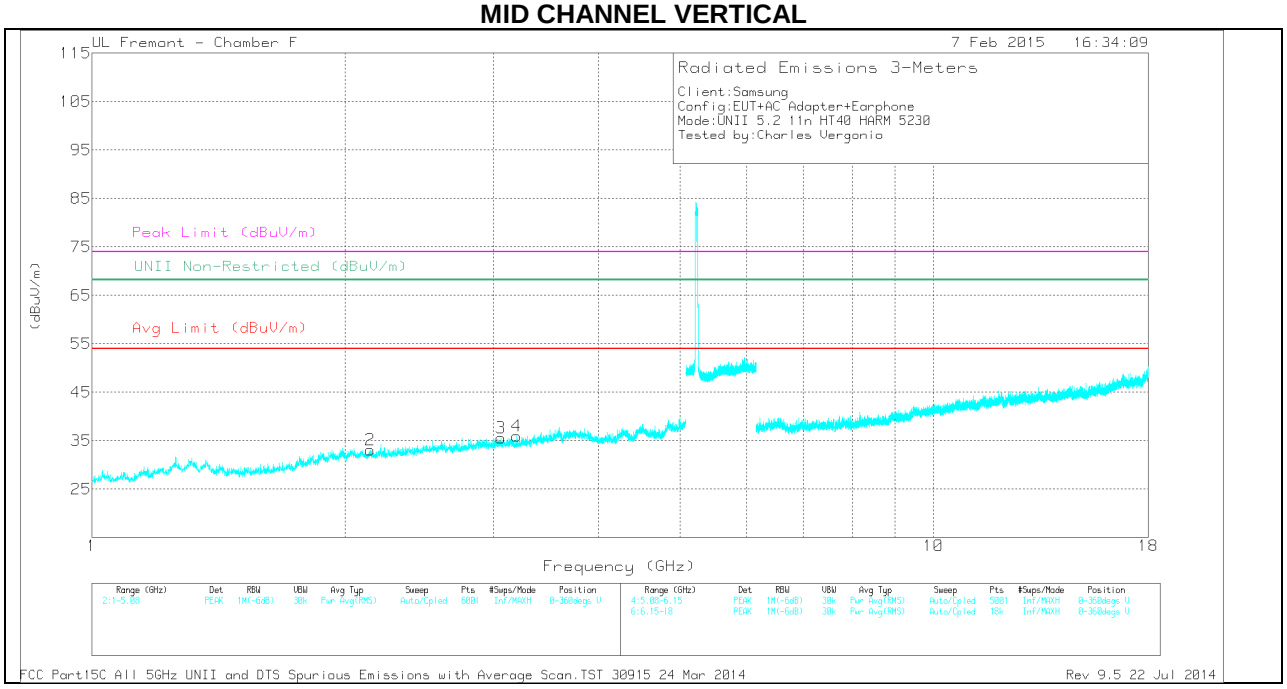
MID CHANNEL VERTICAL



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 T120 (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	1.974	32.93	PK	31.6	-30.9	0	33.63	-	-	-	-	68.2	-34.57	0-360	201	H
2	2.142	32.2	PK	31.8	-30.9	0	33.1	-	-	-	-	68.2	-35.1	0-360	201	V
3	3.06	31.73	PK	33.3	-29.4	0	35.63	-	-	-	-	68.2	-32.57	0-360	101	V
4	3.198	32.72	PK	33.3	-30.1	0	35.92	-	-	-	-	68.2	-32.28	0-360	101	V
5	6.44	30.71	PK	35.6	-26.8	0	39.51	-	-	-	-	68.2	-28.69	0-360	100	H
6	10.068	26.45	PK	37.2	-21.3	0	42.35	-	-	-	-	68.2	-25.85	0-360	201	H

PK - Peak detector

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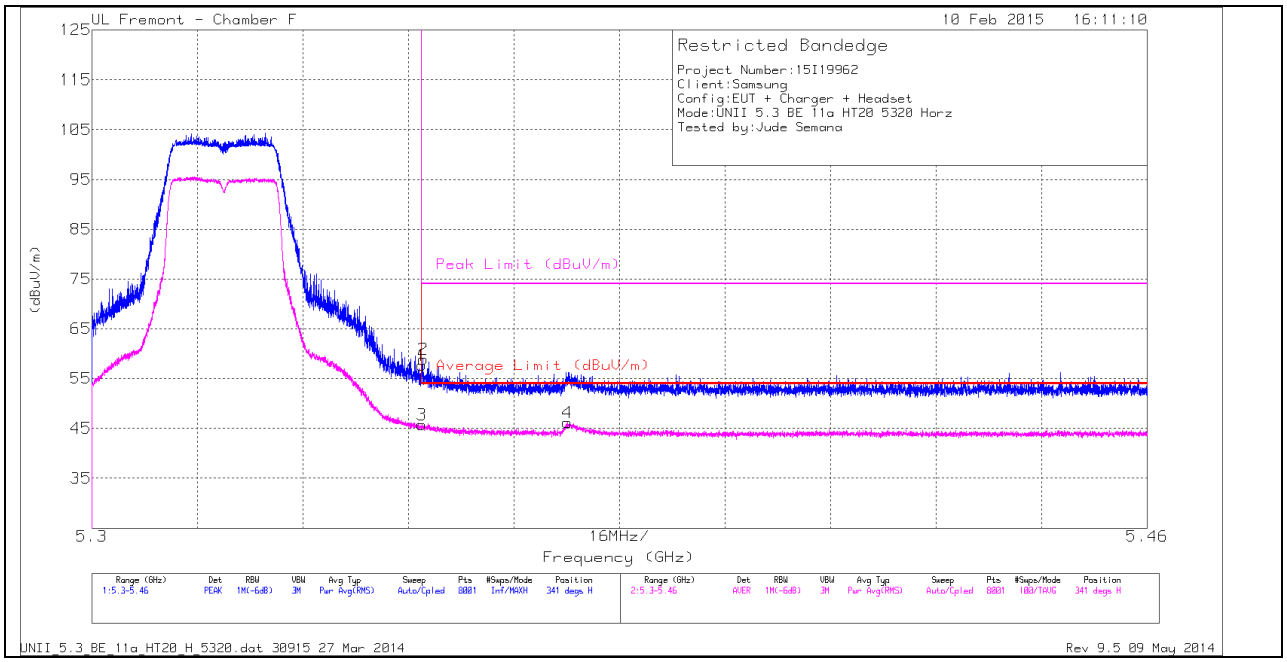
11.2. 5.3 GHz

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 T120 (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	41.69	PK	34.5	-18.5	0	57.69	-	-	74	-16.31	341	237	H
2	* 5.35	42.89	PK	34.5	-18.5	0	58.89	-	-	74	-15.11	341	237	H
3	* 5.35	29.47	RMS	34.5	-18.5	.3	45.77	54	-8.23	-	-	341	237	H
4	* 5.372	30	RMS	34.5	-18.6	.3	46.2	54	-7.8	-	-	341	237	H

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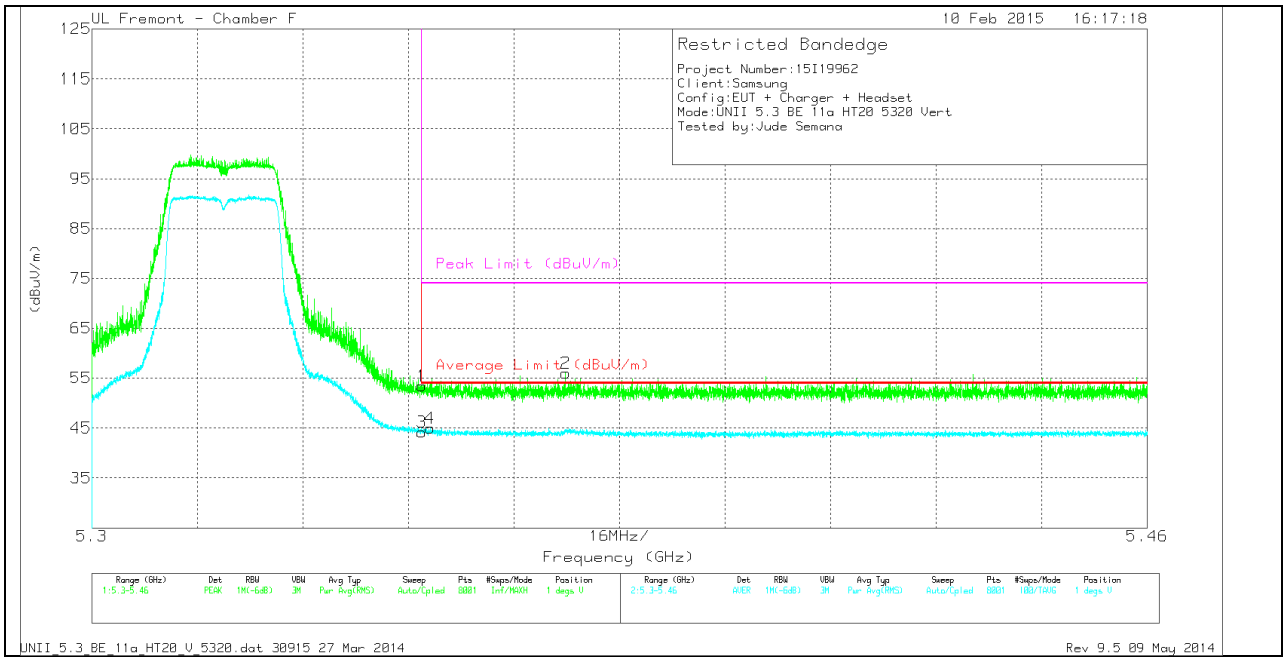
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	37.45	PK	34.5	-18.5	0	53.45	-	-	74	-20.55	1	363	V
2	* 5.372	40.15	PK	34.5	-18.6	0	56.05	-	-	74	-17.95	1	363	V
3	* 5.35	27.87	RMS	34.5	-18.5	.3	44.17	54	-9.83	-	-	1	363	V
4	* 5.351	28.69	RMS	34.5	-18.5	.3	44.99	54	-9.01	-	-	1	363	V

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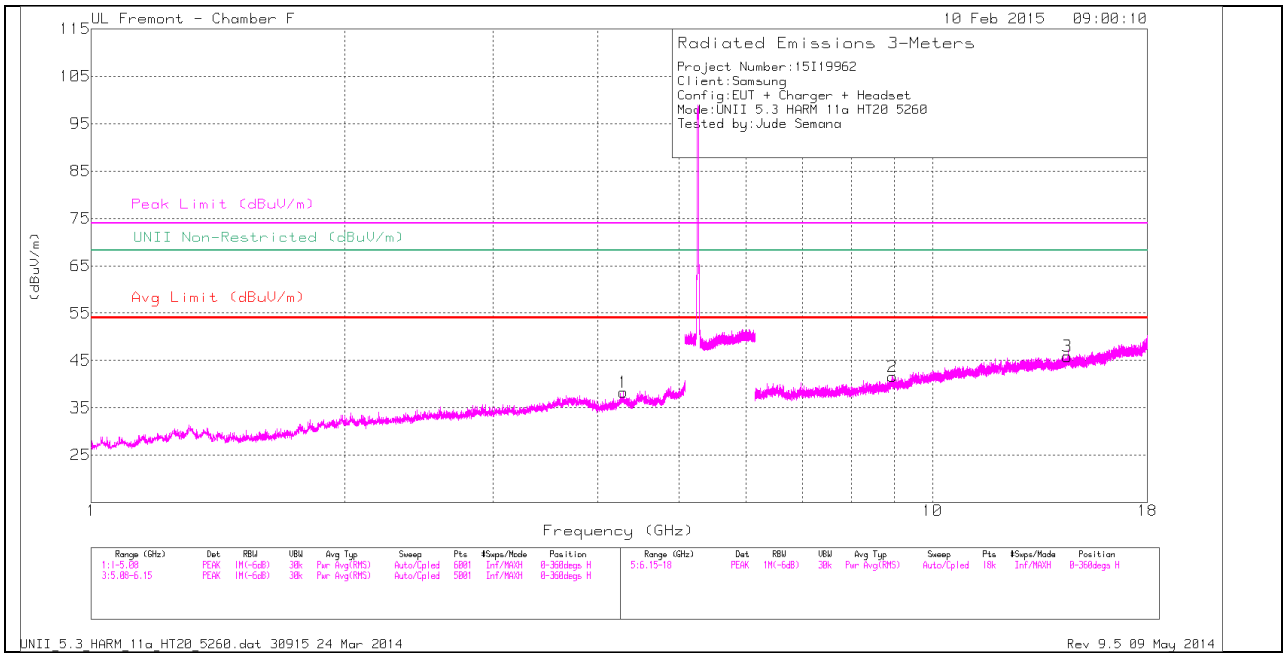
HARMONICS AND SPURIOUS EMISSIONS

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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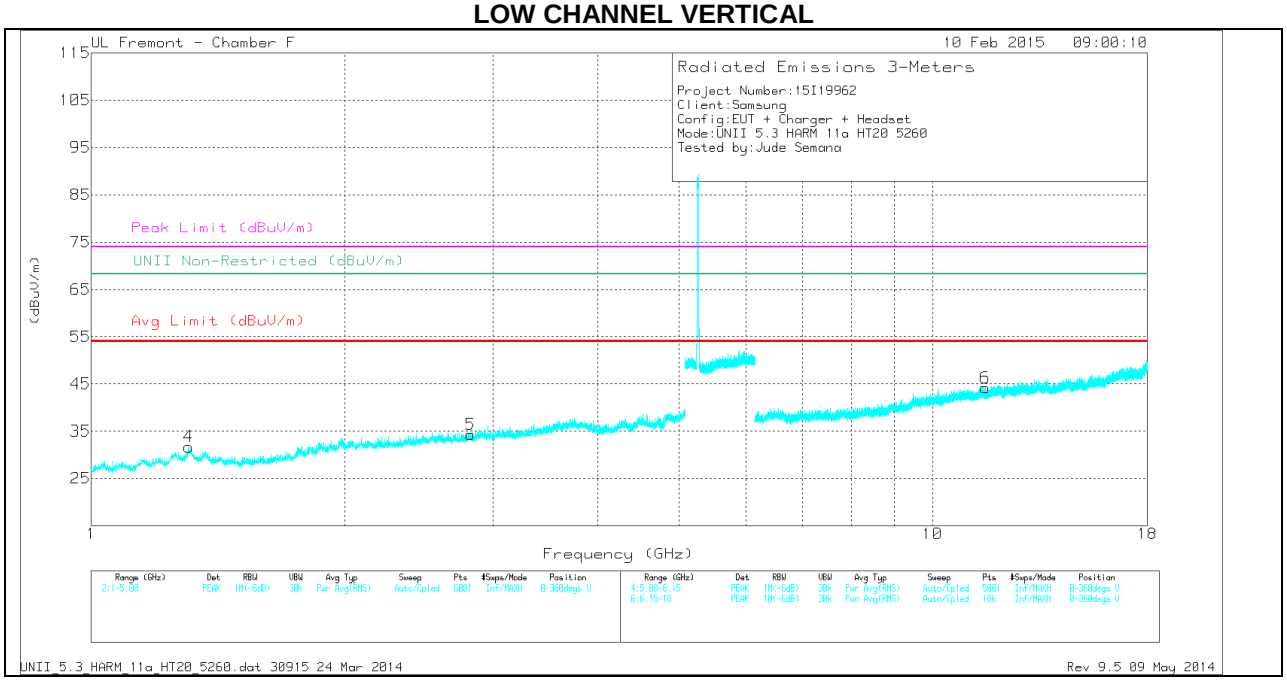
LOW CHANNEL VERTICAL



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 T120 (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	* 4.29	31.72	PK	33.7	-27.1	0	38.32	-	-	74	-35.68	-	-	0-360	201	H
4	* 1.305	33.2	PK	30	-31.5	0	31.7	-	-	74	-42.3	-	-	0-360	201	V
5	* 2.824	31.25	PK	33	-29.9	0	34.35	-	-	74	-39.65	-	-	0-360	101	V
2	8.959	28.13	PK	36.1	-22.6	0	41.63	-	-	-	-	68.2	-26.57	0-360	201	H
3	14.461	29.46	PK	39.8	-23.4	0	45.86	-	-	-	-	68.2	-22.34	0-360	100	H
6	* 11.551	28.4	PK	38.4	-22.6	0	44.2	-	-	74	-29.8	-	-	0-360	101	V

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

PK - Peak detector

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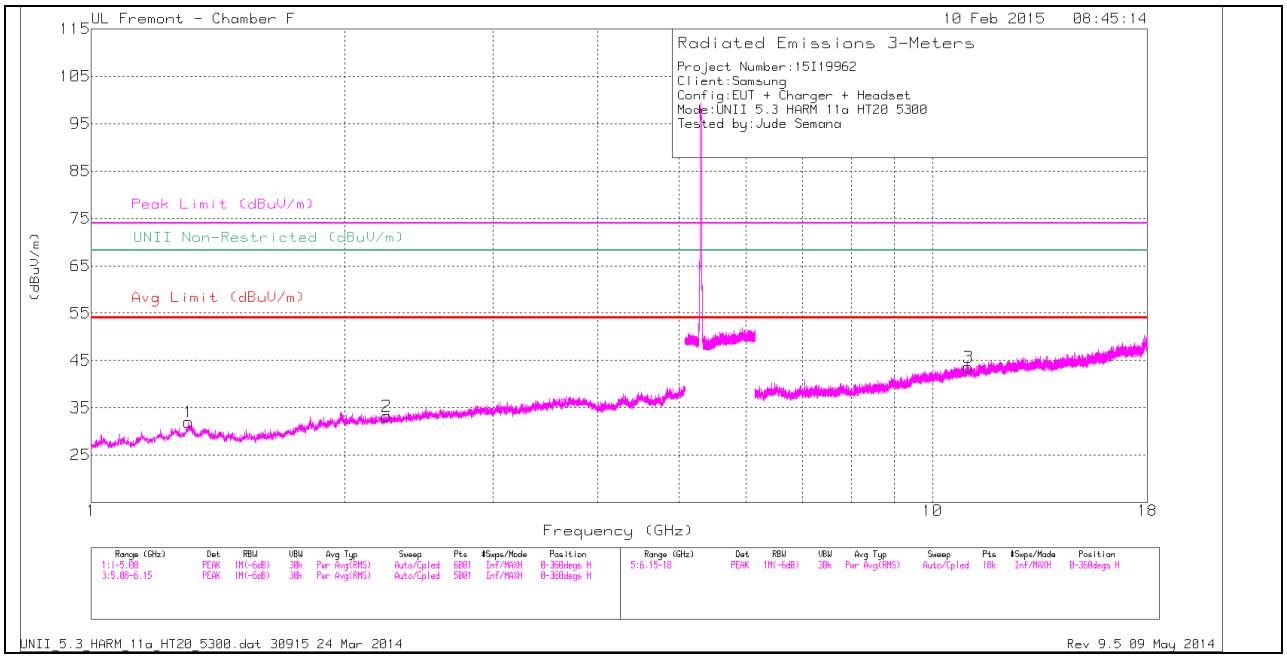
MID CHANNEL HORIZONTAL



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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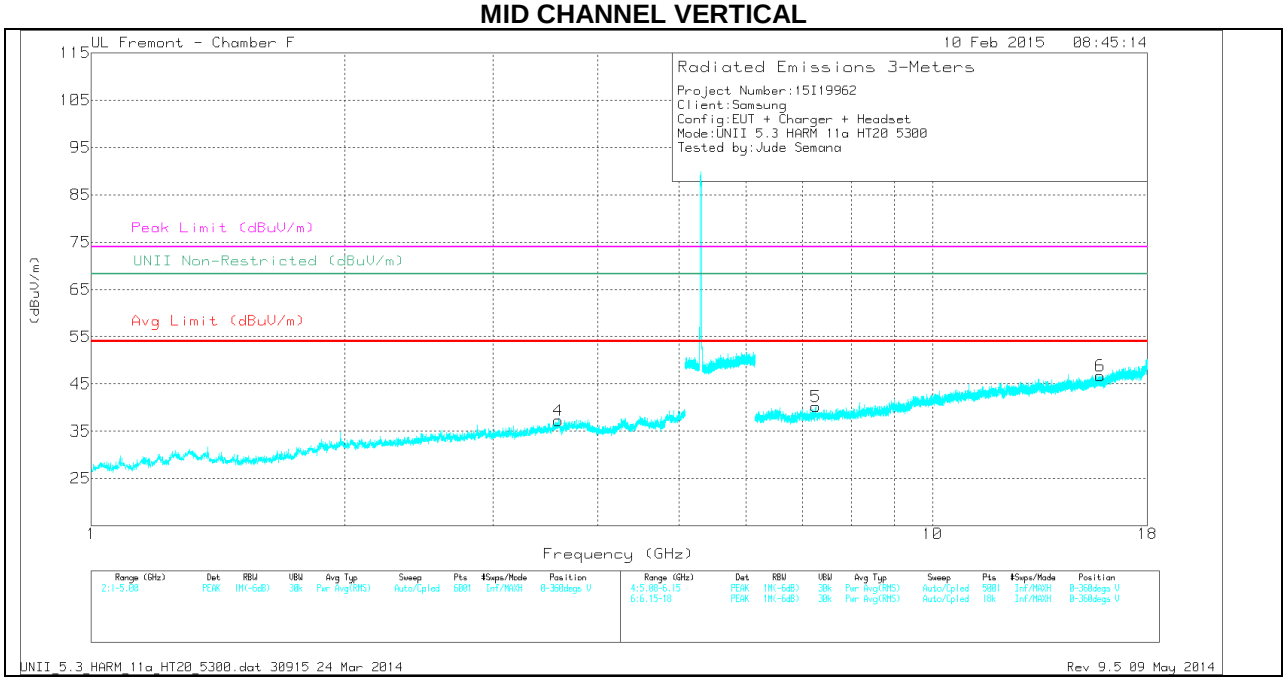
MID CHANNEL VERTICAL



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 T120 (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	* 1.305	33.5	PK	30	-31.5	0	32	-	-	74	-42	-	-	0-360	101	H
2	* 2.246	31.97	PK	31.8	-30.5	0	33.27	-	-	74	-40.73	-	-	0-360	201	H
4	* 3.589	31.45	PK	34.9	-29.1	0	37.25	-	-	74	-36.75	-	-	0-360	201	V
3	* 11.029	27.4	PK	38.1	-21.9	0	43.6	-	-	74	-30.4	-	-	0-360	100	H
5	* 7.268	30.01	PK	35.5	-25.3	0	40.21	-	-	74	-33.79	-	-	0-360	101	V
6	* 15.814	28.8	PK	40.5	-22.6	0	46.7	-	-	74	-27.3	-	-	0-360	201	V

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

PK - Peak detector

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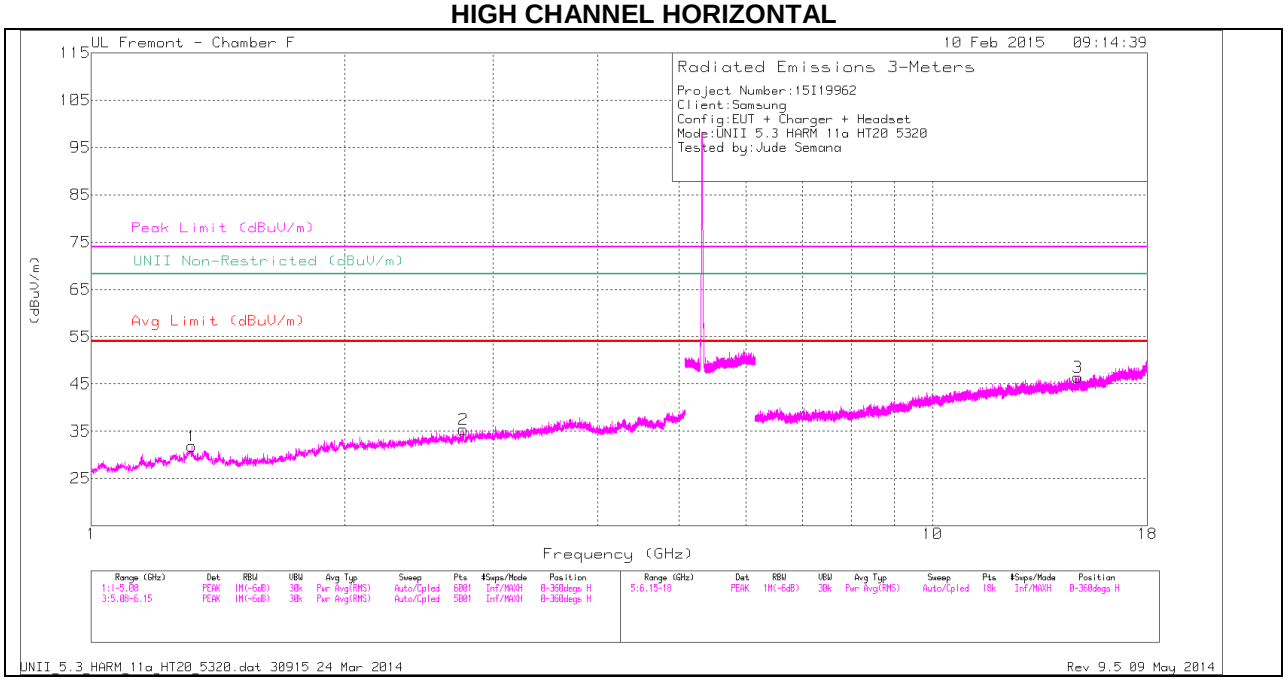
HIGH CHANNEL HORIZONTAL



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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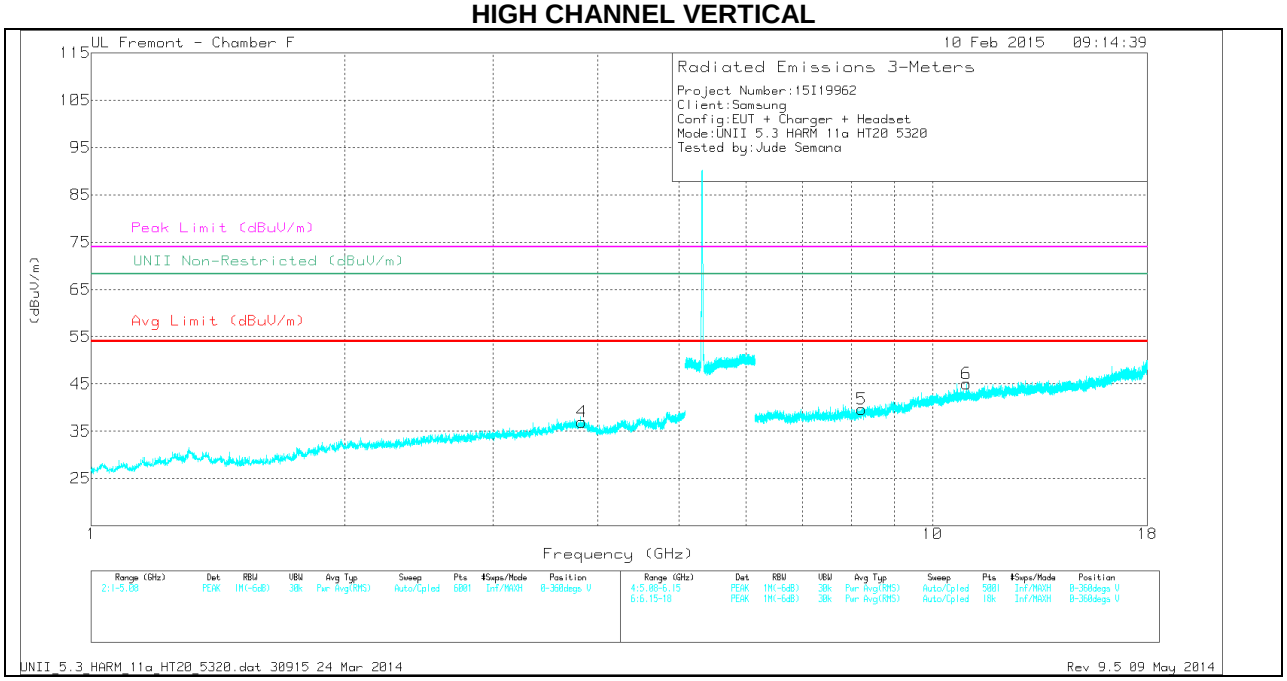
HIGH CHANNEL VERTICAL



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 T120 (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	* 1.317	33.34	PK	29.9	-31.4	0	31.84	-	-	74	-42.16	-	-	0-360	201	H
2	* 2.767	32.74	PK	32.8	-30.2	0	35.34	-	-	74	-38.66	-	-	0-360	100	H
4	* 3.83	31.66	PK	34.3	-29	0	36.96	-	-	74	-37.04	-	-	0-360	101	V
3	14.874	29.91	PK	39.8	-23.3	0	46.41	-	-	-	-	68.2	-21.79	0-360	201	H
5	* 8.236	28.66	PK	35.8	-24.8	0	39.66	-	-	74	-34.34	-	-	0-360	201	V
6	* 10.973	28.86	PK	38.1	-21.9	0	45.06	-	-	74	-28.94	-	-	0-360	201	V

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

PK - Peak detector

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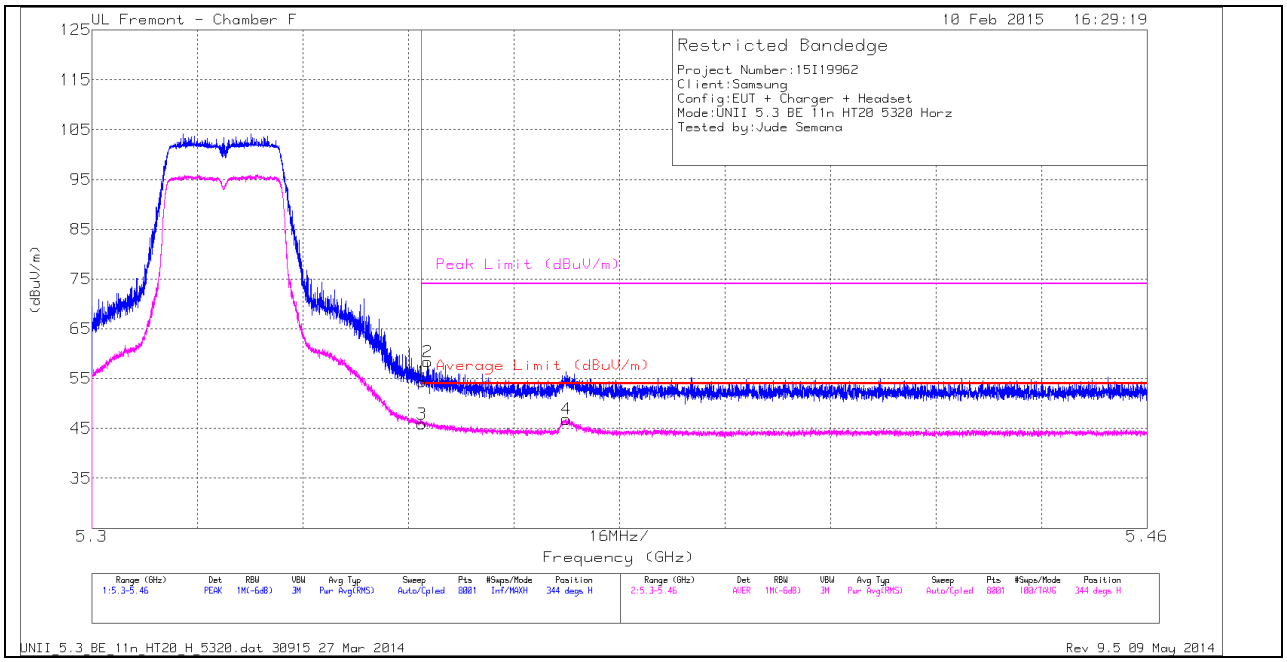
11.2.2. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.3 GHz BAND

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	38.38	PK	34.5	-18.5	0	54.38	-	-	74	-19.62	344	236	H
2	* 5.351	42.42	PK	34.5	-18.5	0	58.42	-	-	74	-15.58	344	236	H
3	* 5.35	29.58	RMS	34.5	-18.5	.32	45.90	54	-8.10	-	-	344	236	H
4	* 5.372	30.62	RMS	34.5	-18.6	.32	46.84	54	-7.16	-	-	344	236	H

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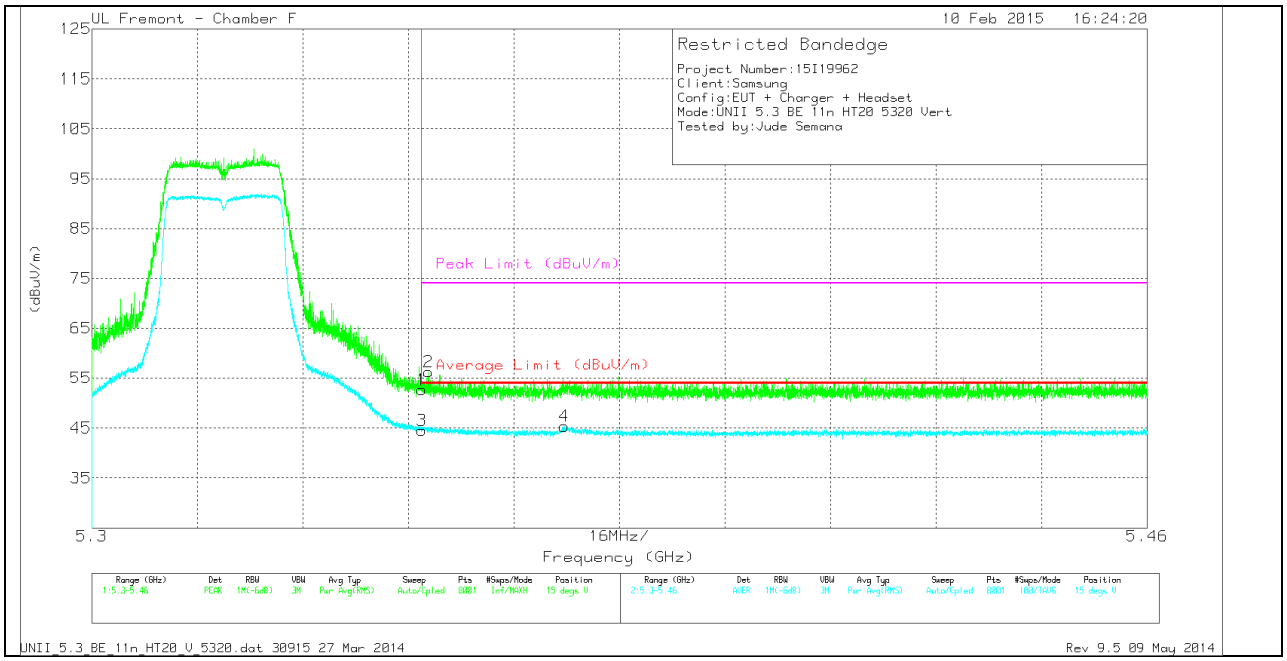
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	36.69	PK	34.5	-18.5	0	52.69	-	-	74	-21.31	15	360	V
2	* 5.351	40.26	PK	34.5	-18.5	0	56.26	-	-	74	-17.74	15	360	V
3	* 5.35	28.2	RMS	34.5	-18.5	.32	44.52	54	-9.48	-	-	15	360	V
4	* 5.372	29.13	RMS	34.5	-18.6	.32	45.35	54	-8.65	-	-	15	360	V

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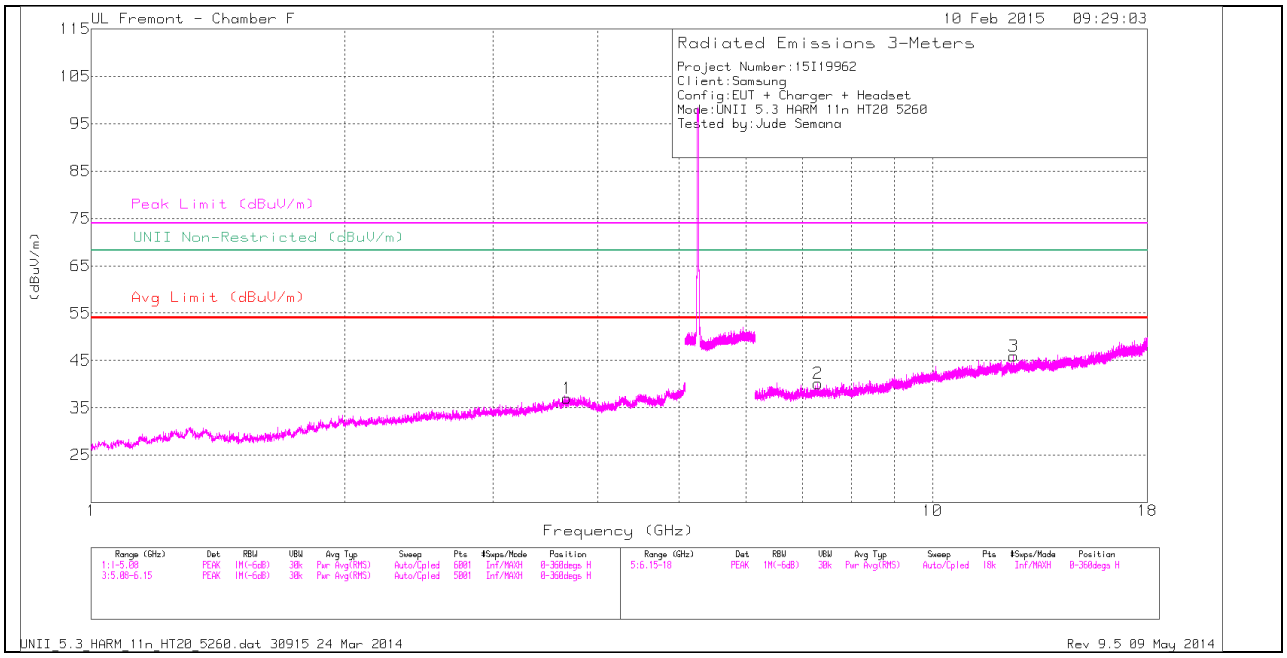
HARMONICS AND SPURIOUS EMISSIONS

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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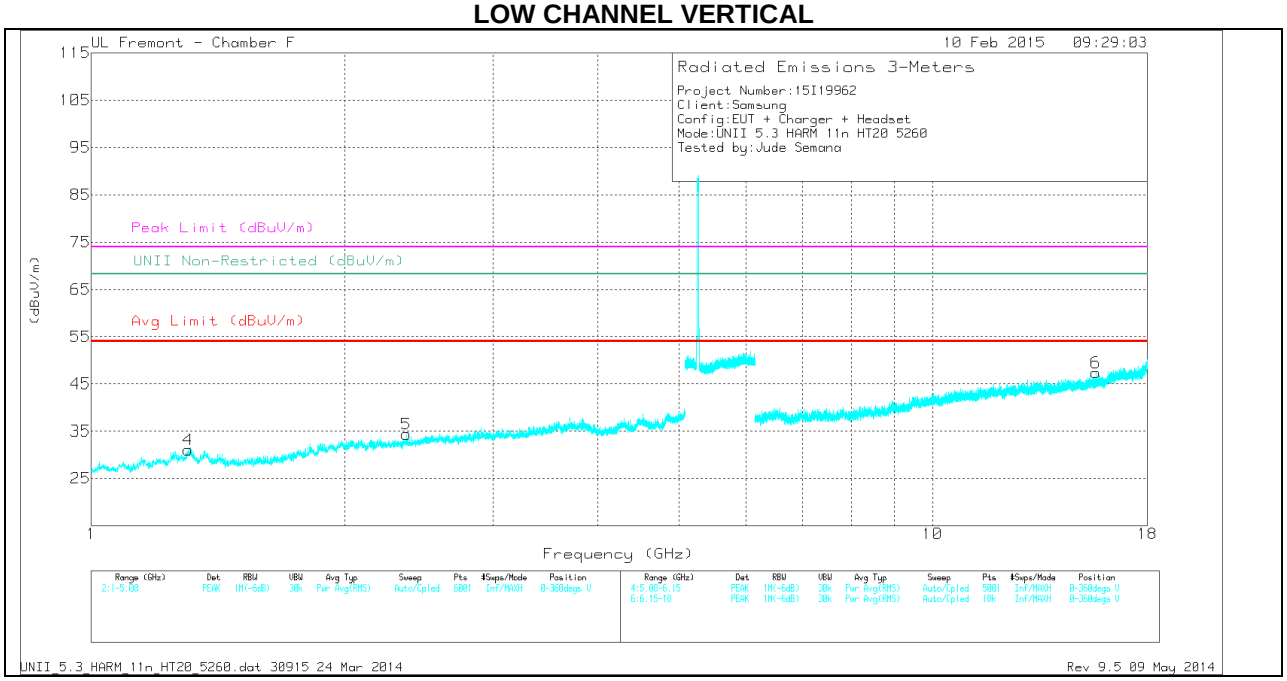
LOW CHANNEL VERTICAL



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 T120 (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	* 4.29	31.72	PK	33.7	-27.1	0	38.32	-	-	74	-35.68	-	-	0-360	201	H
4	* 1.305	33.2	PK	30	-31.5	0	31.7	-	-	74	-42.3	-	-	0-360	201	V
5	* 2.824	31.25	PK	33	-29.9	0	34.35	-	-	74	-39.65	-	-	0-360	101	V
2	8.959	28.13	PK	36.1	-22.6	0	41.63	-	-	-	-	68.2	-26.57	0-360	201	H
3	14.461	29.46	PK	39.8	-23.4	0	45.86	-	-	-	-	68.2	-22.34	0-360	100	H
6	* 11.551	28.4	PK	38.4	-22.6	0	44.2	-	-	74	-29.8	-	-	0-360	101	V

PK - Peak detector

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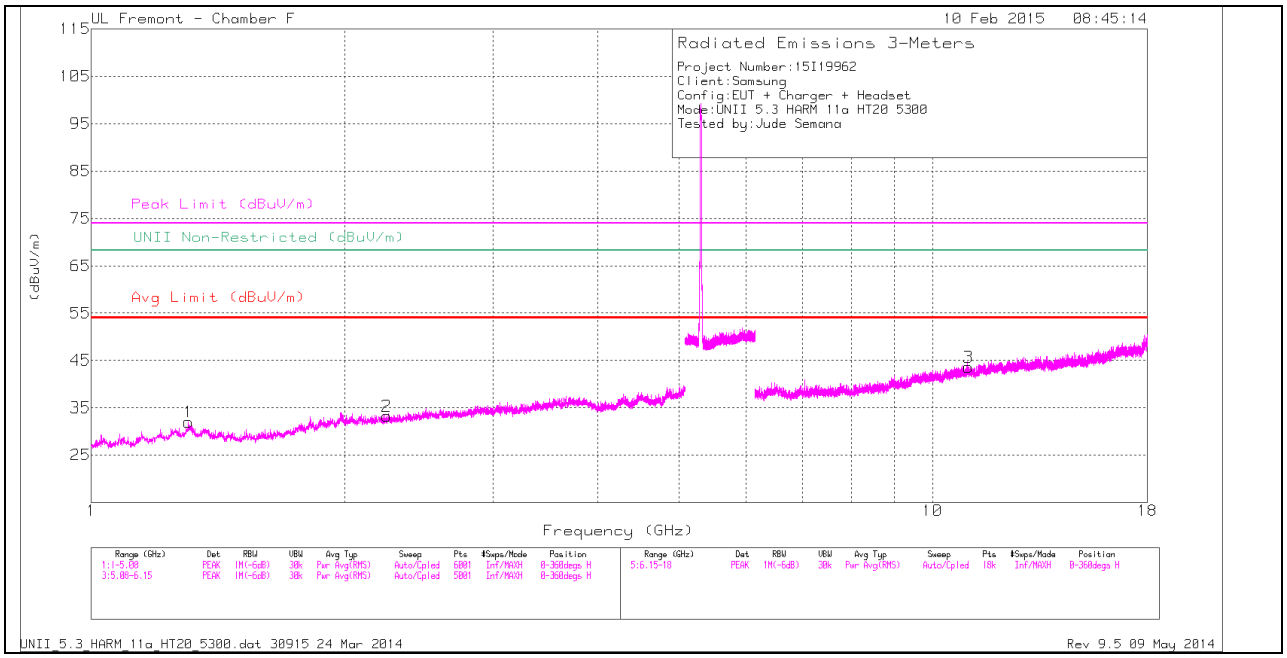
MID CHANNEL HORIZONTAL



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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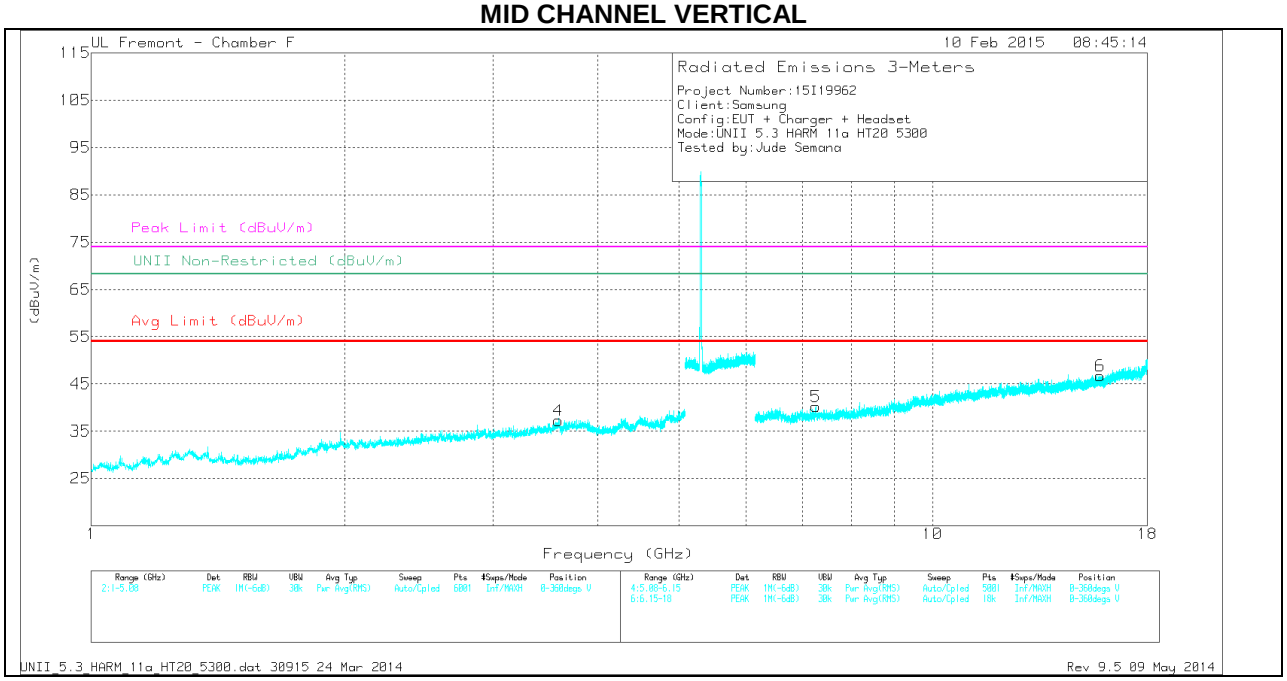
MID CHANNEL VERTICAL



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 T120 (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	* 1.305	33.5	PK	30	-31.5	0	32	-	-	74	-42	-	-	0-360	101	H
2	* 2.246	31.97	PK	31.8	-30.5	0	33.27	-	-	74	-40.73	-	-	0-360	201	H
4	* 3.589	31.45	PK	34.9	-29.1	0	37.25	-	-	74	-36.75	-	-	0-360	201	V
3	* 11.029	27.4	PK	38.1	-21.9	0	43.6	-	-	74	-30.4	-	-	0-360	100	H
5	* 7.268	30.01	PK	35.5	-25.3	0	40.21	-	-	74	-33.79	-	-	0-360	101	V
6	* 15.814	28.8	PK	40.5	-22.6	0	46.7	-	-	74	-27.3	-	-	0-360	201	V

PK - Peak detector

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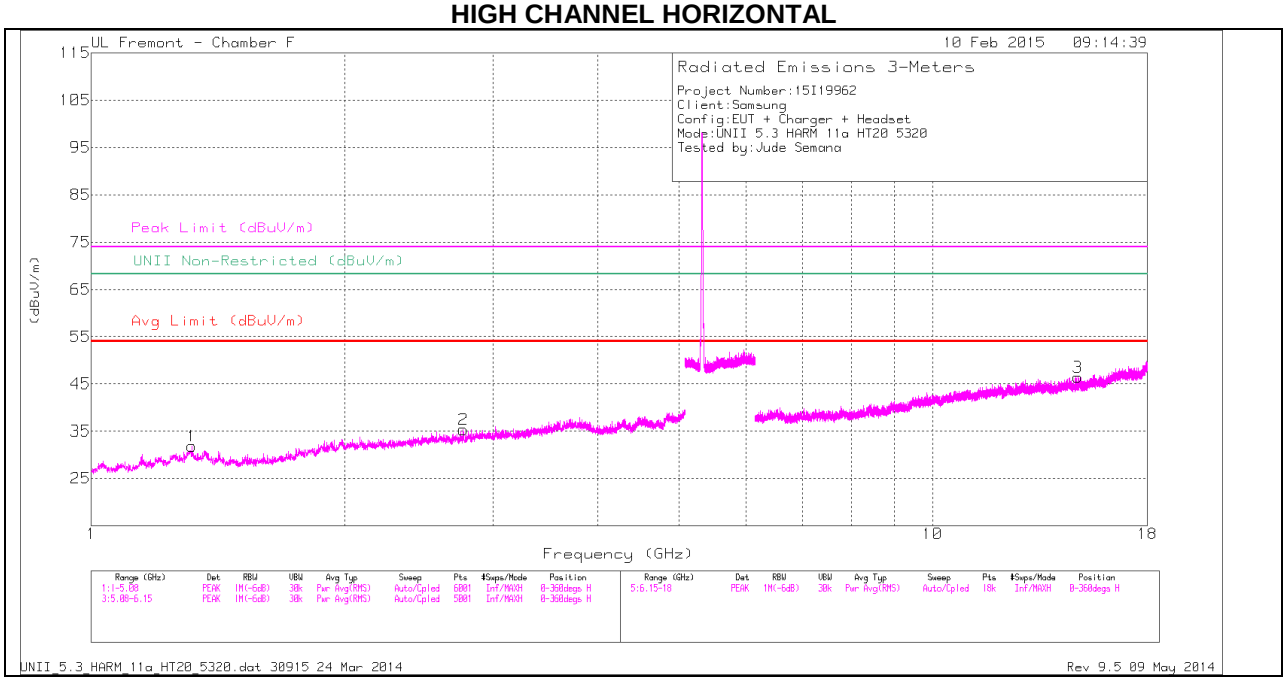
HIGH CHANNEL HORIZONTAL



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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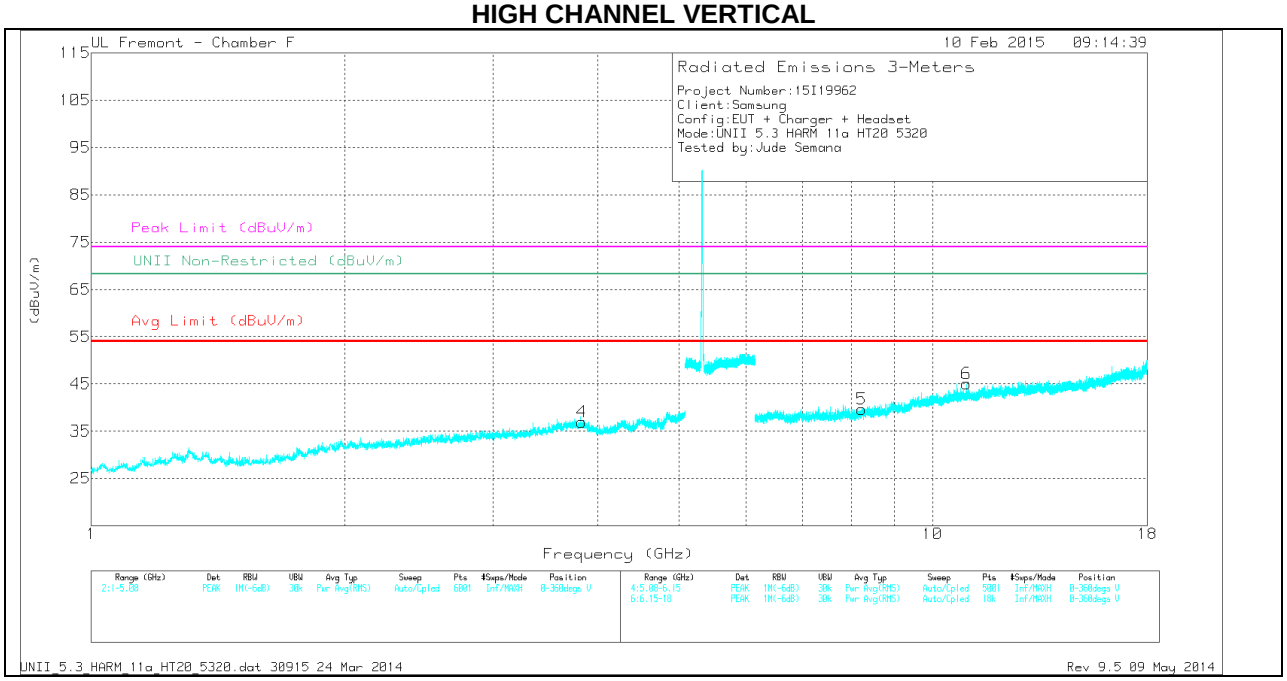
HIGH CHANNEL VERTICAL



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 T120 (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	* 1.317	33.34	PK	29.9	-31.4	0	31.84	-	-	74	-42.16	-	-	0-360	201	H
2	* 2.767	32.74	PK	32.8	-30.2	0	35.34	-	-	74	-38.66	-	-	0-360	100	H
4	* 3.83	31.66	PK	34.3	-29	0	36.96	-	-	74	-37.04	-	-	0-360	101	V
3	14.874	29.91	PK	39.8	-23.3	0	46.41	-	-	-	-	68.2	-21.79	0-360	201	H
5	* 8.236	28.66	PK	35.8	-24.8	0	39.66	-	-	74	-34.34	-	-	0-360	201	V
6	* 10.973	28.86	PK	38.1	-21.9	0	45.06	-	-	74	-28.94	-	-	0-360	201	V

PK - Peak detector

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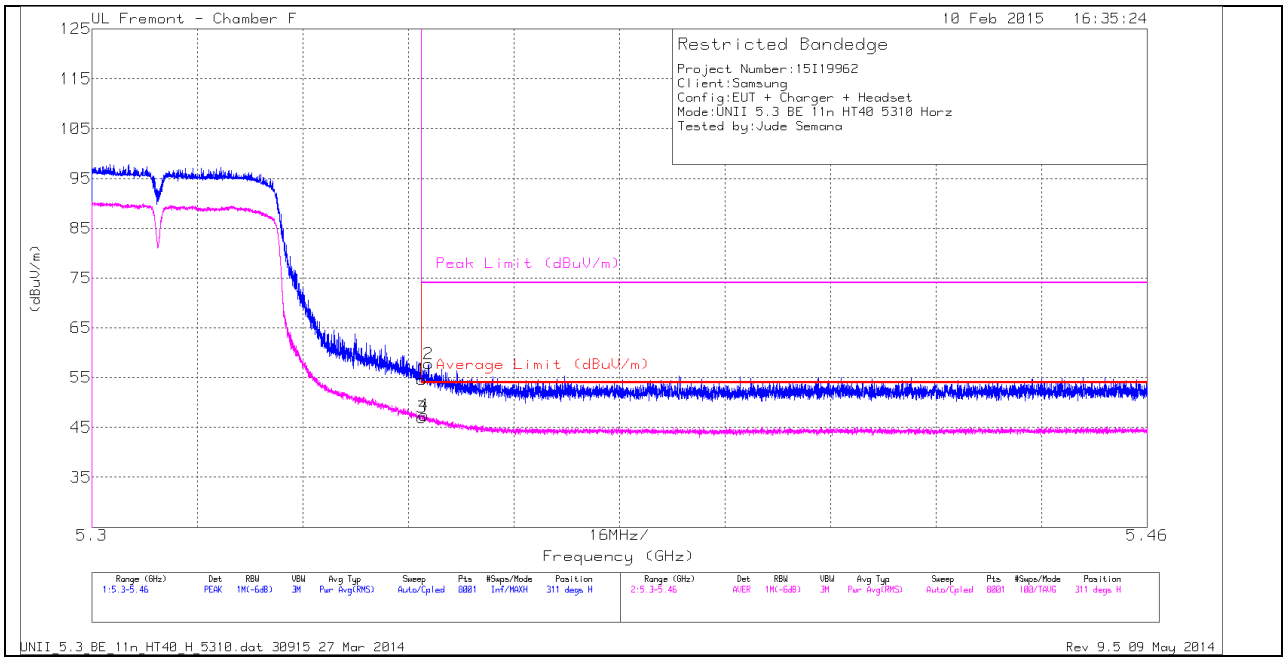
11.2.3. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.3 GHz BAND AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	38.6	PK	34.5	-18.5	0	54.6	-	-	74	-19.4	311	359	H
2	* 5.351	41.8	PK	34.5	-18.5	0	57.8	-	-	74	-16.2	311	359	H
3	* 5.35	30.38	RMS	34.5	-18.5	.67	47.05	54	-6.95	-	-	311	359	H
4	* 5.35	30.86	RMS	34.5	-18.5	.67	47.53	54	-6.47	-	-	311	359	H

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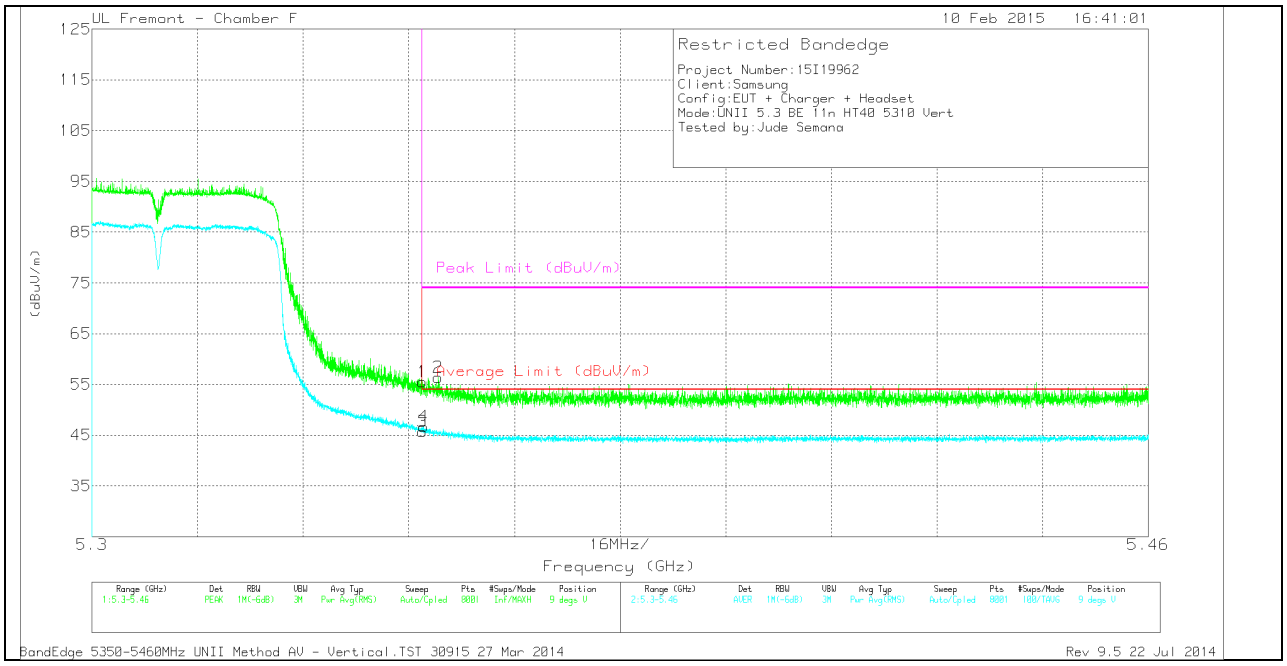
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	39.5	PK	34.5	-18.5	0	55.5	-	-	74	-18.5	9	366	V
2	* 5.352	40.38	PK	34.5	-18.5	0	56.38	-	-	74	-17.62	9	366	V
3	* 5.35	29.09	RMS	34.5	-18.5	.67	45.76	54	-8.24	-	-	9	366	V
4	* 5.35	30.02	RMS	34.5	-18.5	.67	46.69	54	-7.31	-	-	9	366	V

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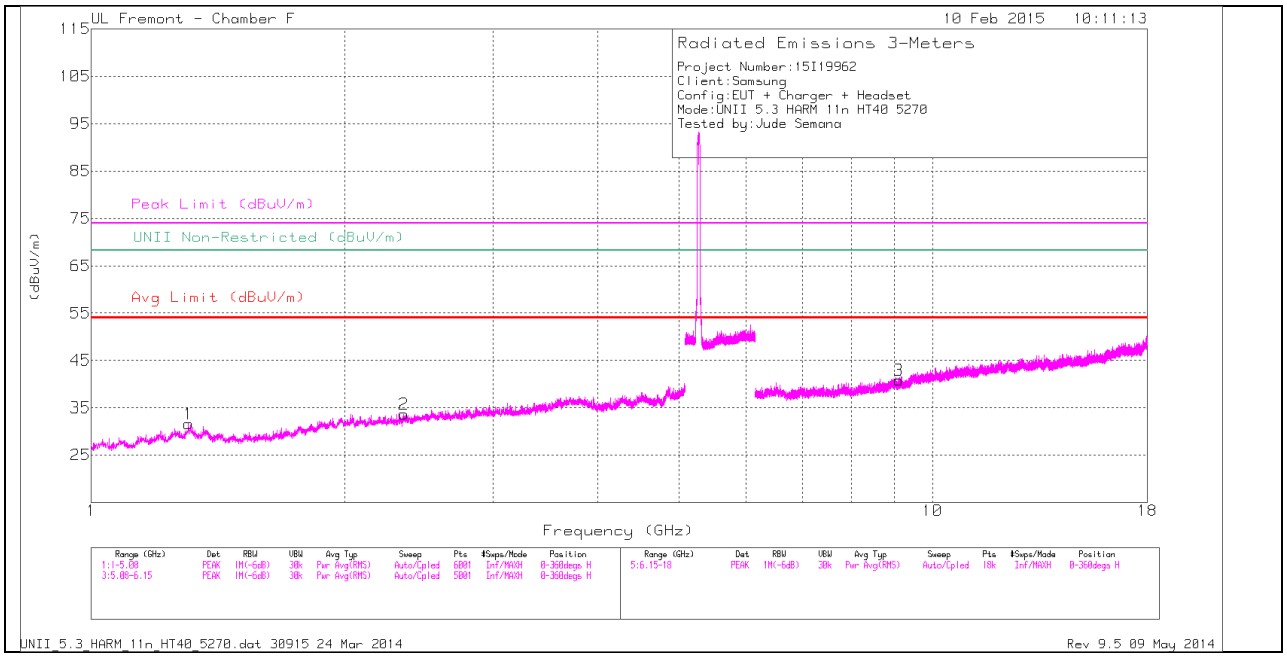
HARMONICS AND SPURIOUS EMISSIONS

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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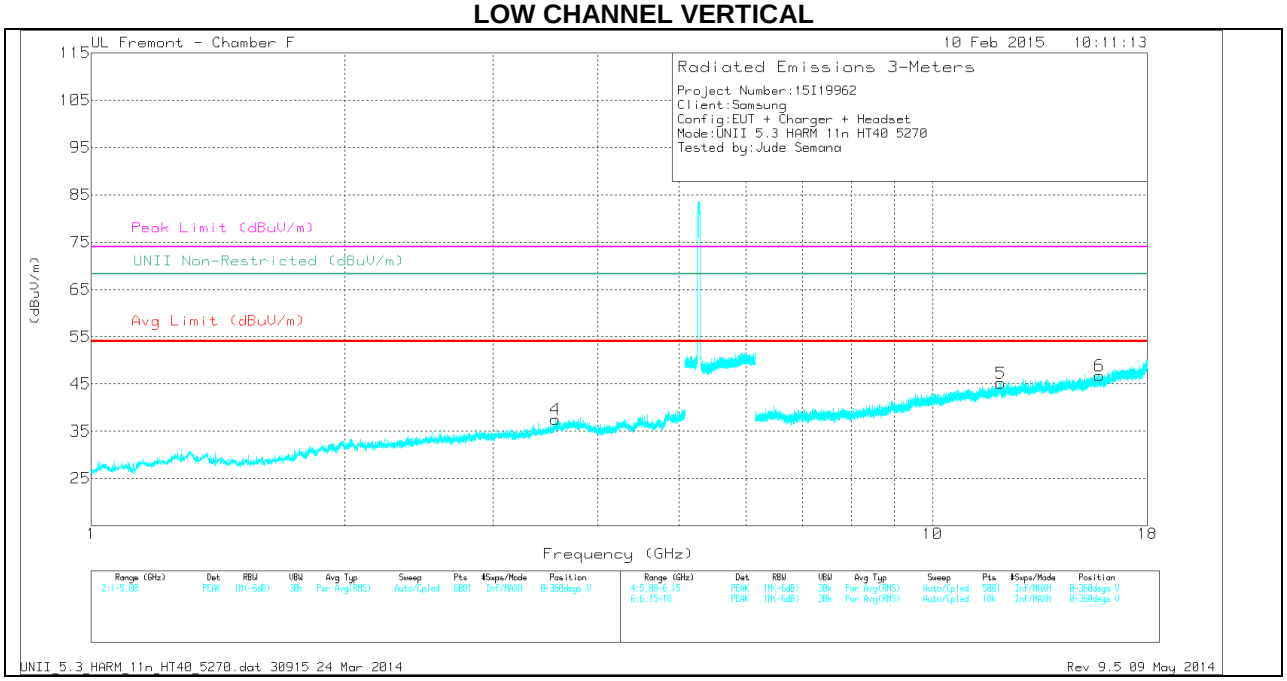
LOW CHANNEL VERTICAL



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 T120 (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	* 1.305	33.13	PK	30	-31.5	0	31.63	-	-	74	-42.37	-	-	0-360	100	H
2	* 2.352	32.04	PK	32	-30.4	0	33.64	-	-	74	-40.36	-	-	0-360	201	H
4	* 3.564	31.73	PK	34.7	-28.9	0	37.53	-	-	74	-36.47	-	-	0-360	201	V
3	* 9.119	27.7	PK	36.2	-23.1	0	40.8	-	-	74	-33.2	-	-	0-360	100	H
5	* 12.045	27.79	PK	39	-21.6	0	45.19	-	-	74	-28.81	-	-	0-360	201	V
6	* 15.777	28.75	PK	40.5	-22.5	0	46.75	-	-	74	-27.25	-	-	0-360	201	V

PK - Peak detector

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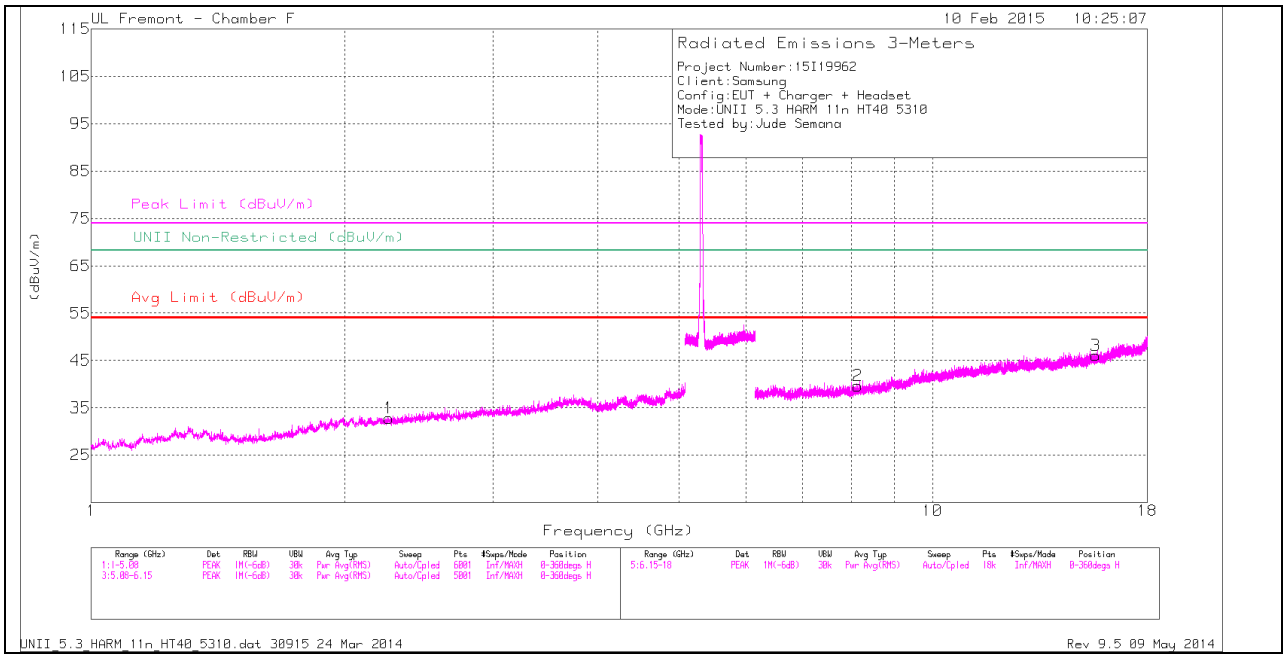
HIGH CHANNEL HORIZONTAL



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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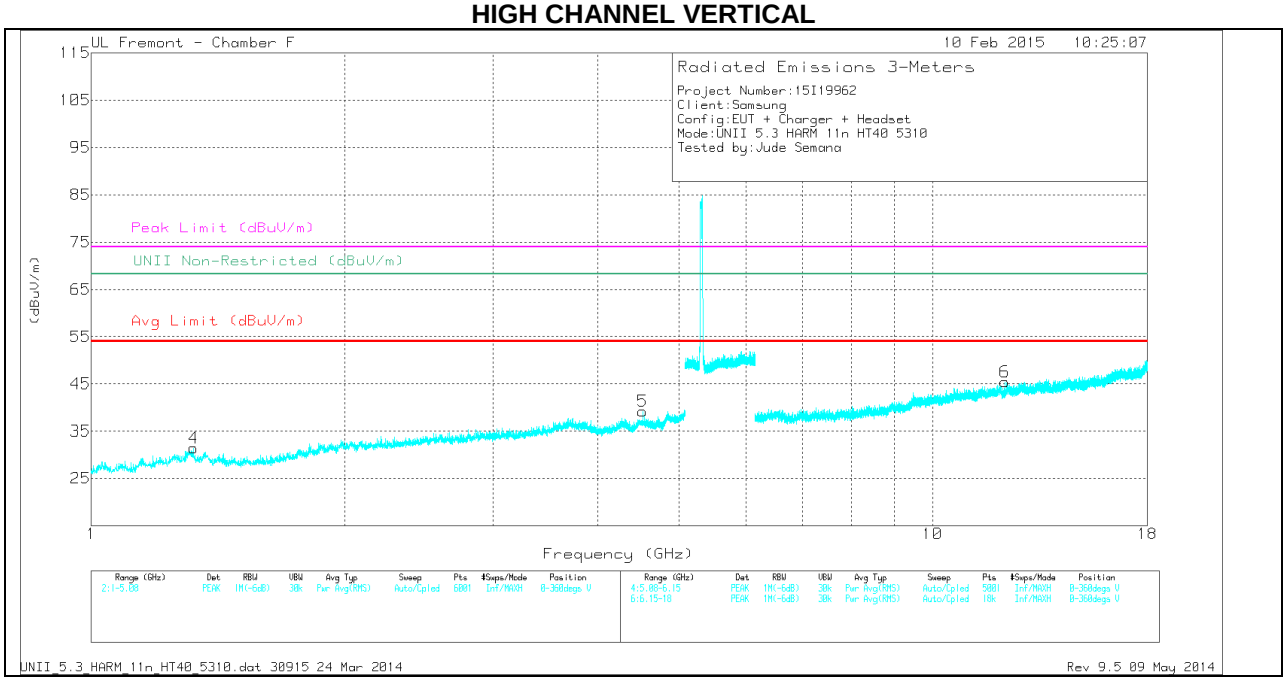
HIGH CHANNEL VERTICAL



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 T120 (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	* 2.257	31.53	PK	31.8	-30.5	0	32.83	-	-	74	-41.17	-	-	0-360	101	H
4	* 1.323	32.92	PK	29.9	-31.4	0	31.42	-	-	74	-42.58	-	-	0-360	201	V
5	* 4.523	33.32	PK	34	-28.1	0	39.22	-	-	74	-34.78	-	-	0-360	101	V
2	* 8.147	28.86	PK	35.7	-24.9	0	39.66	-	-	74	-34.34	-	-	0-360	101	H
3	* 15.614	28.16	PK	40.3	-22.4	0	46.06	-	-	74	-27.94	-	-	0-360	201	H
6	* 12.188	29.15	PK	38.9	-22.6	0	45.45	-	-	74	-28.55	-	-	0-360	101	V

PK - Peak detector

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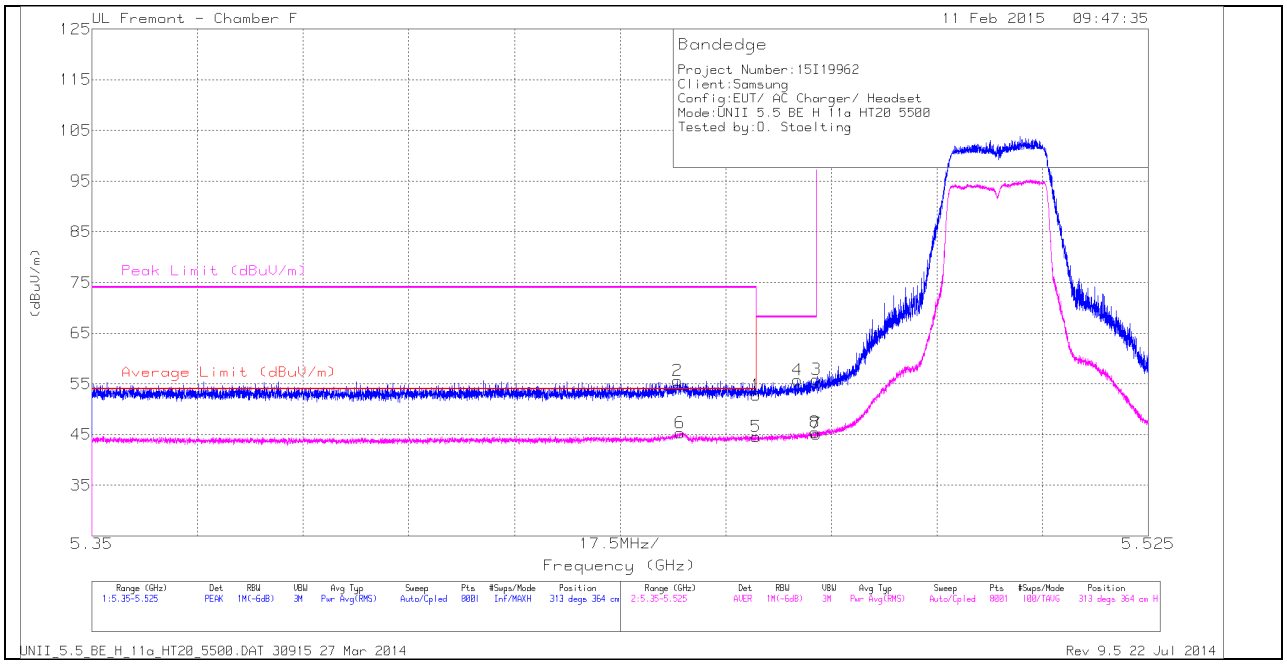
11.3. 5.5-5.6 GHz

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 T120 (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	36.99	PK	34.6	-18.8	0	52.79	-	-	74	-21.21	313	364	H
2	* 5.447	39.88	PK	34.6	-18.8	0	55.68	-	-	74	-18.32	313	364	H
3	5.47	40.13	PK	34.6	-18.8	0	55.93	-	-	68.2	-12.27	313	364	H
4	5.467	39.9	PK	34.6	-18.8	0	55.7	-	-	68.2	-12.5	313	364	H
5	* 5.46	28.46	RMS	34.6	-18.8	.3	44.56	54	-9.44	-	-	313	364	H
6	* 5.447	29.27	RMS	34.6	-18.8	.3	45.37	54	-8.63	-	-	313	364	H
7	5.47	29.05	RMS	34.6	-18.8	.3	45.15	-	-	-	-	313	364	H
8	5.47	29.39	RMS	34.6	-18.8	.3	45.49	-	-	-	-	313	364	H

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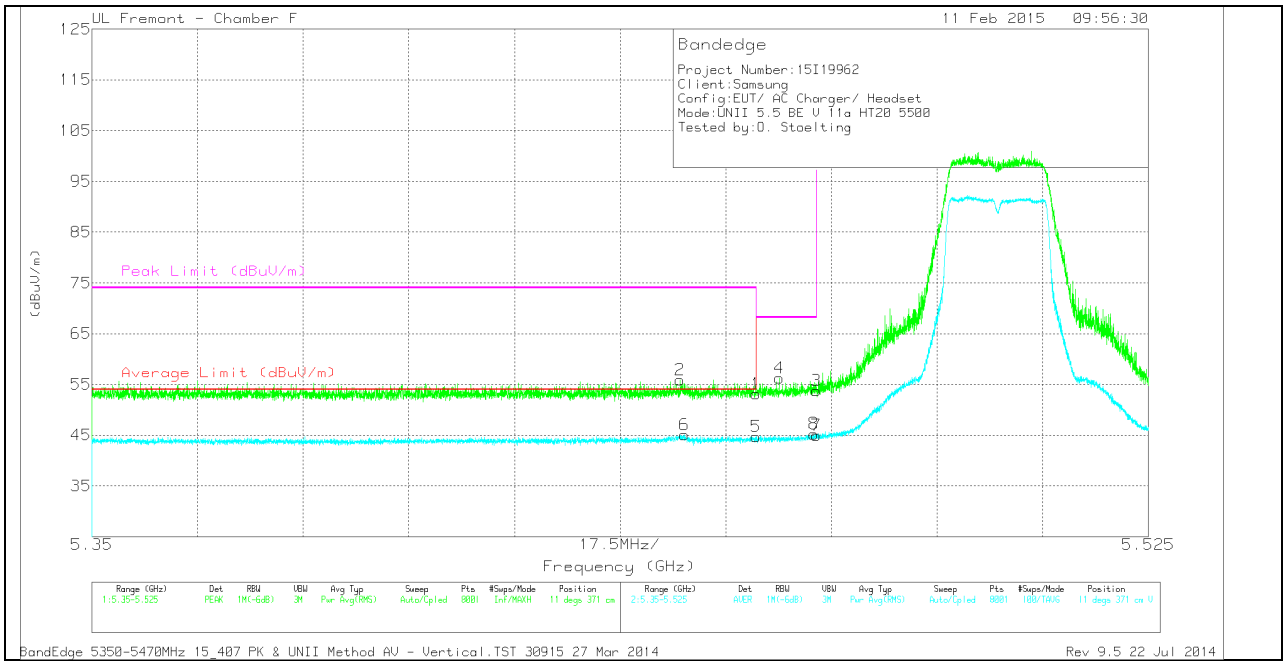
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	37.38	PK	34.6	-18.8	0	53.18	-	-	74	-20.82	11	371	V
2	* 5.447	40.13	PK	34.6	-18.8	0	55.93	-	-	74	-18.07	11	371	V
3	5.47	37.98	PK	34.6	-18.8	0	53.78	-	-	68.2	-14.42	11	371	V
4	5.464	40.49	PK	34.6	-18.8	0	56.29	-	-	68.2	-11.91	11	371	V
5	* 5.46	28.57	RMS	34.6	-18.8	.3	44.67	54	-9.33	-	-	11	371	V
6	* 5.448	29.04	RMS	34.6	-18.8	.3	45.14	54	-8.86	-	-	11	371	V
7	5.47	28.86	RMS	34.6	-18.8	.3	44.96	-	-	-	-	11	371	V
8	5.47	29.17	RMS	34.6	-18.8	.3	45.27	-	-	-	-	11	371	V

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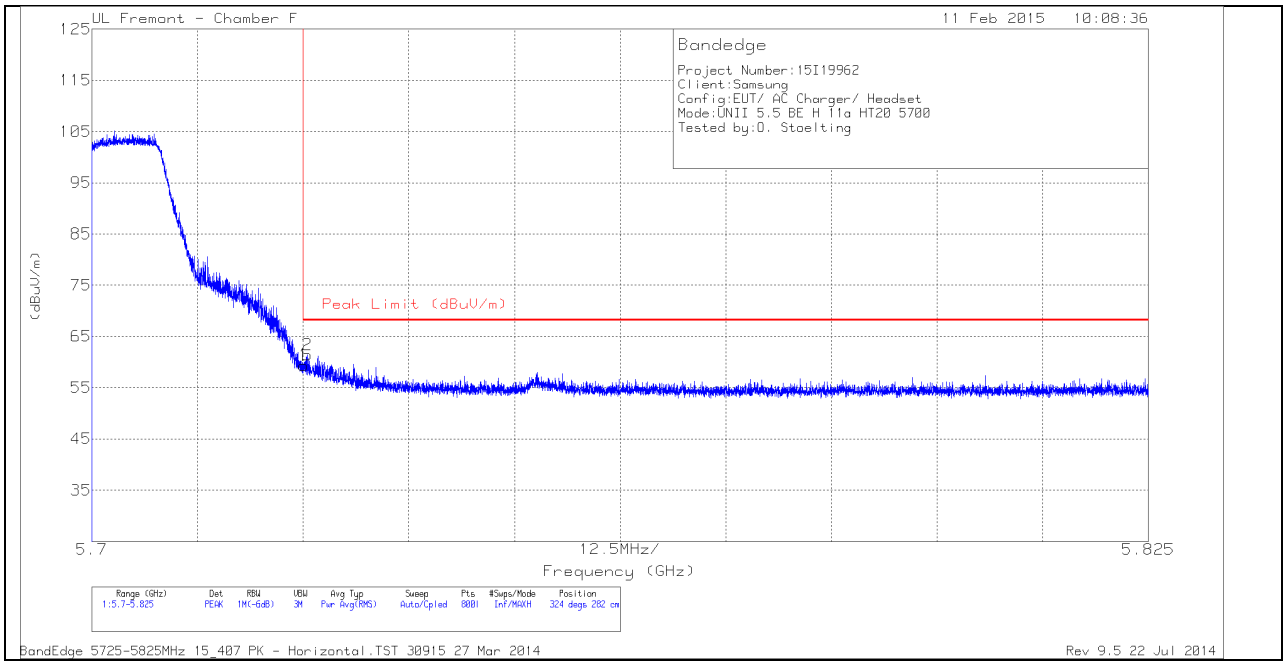
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	42.69	PK	34.8	-18.1	0	59.39	68.2	-8.81	324	282	H
2	5.725	44.77	PK	34.8	-18.1	0	61.47	68.2	-6.73	324	282	H

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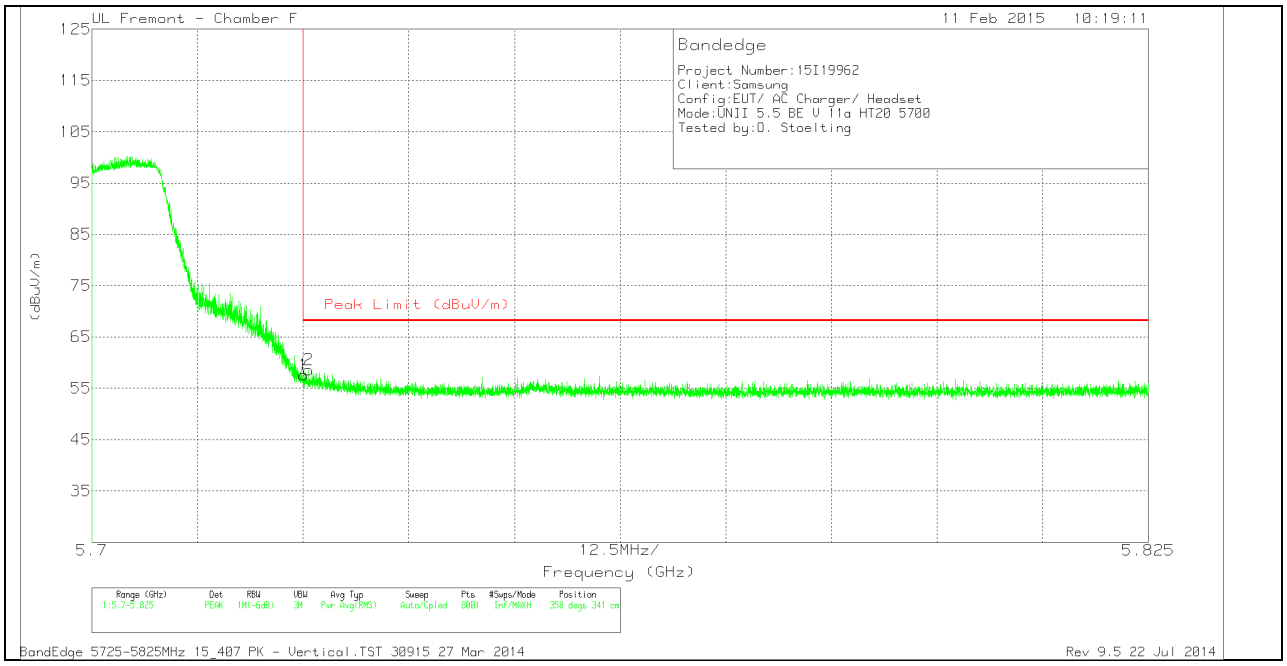
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	40.94	PK	34.8	-18.1	0	57.64	68.2	-10.56	358	341	V
2	5.726	41.88	PK	34.8	-18.1	0	58.58	68.2	-9.62	358	341	V

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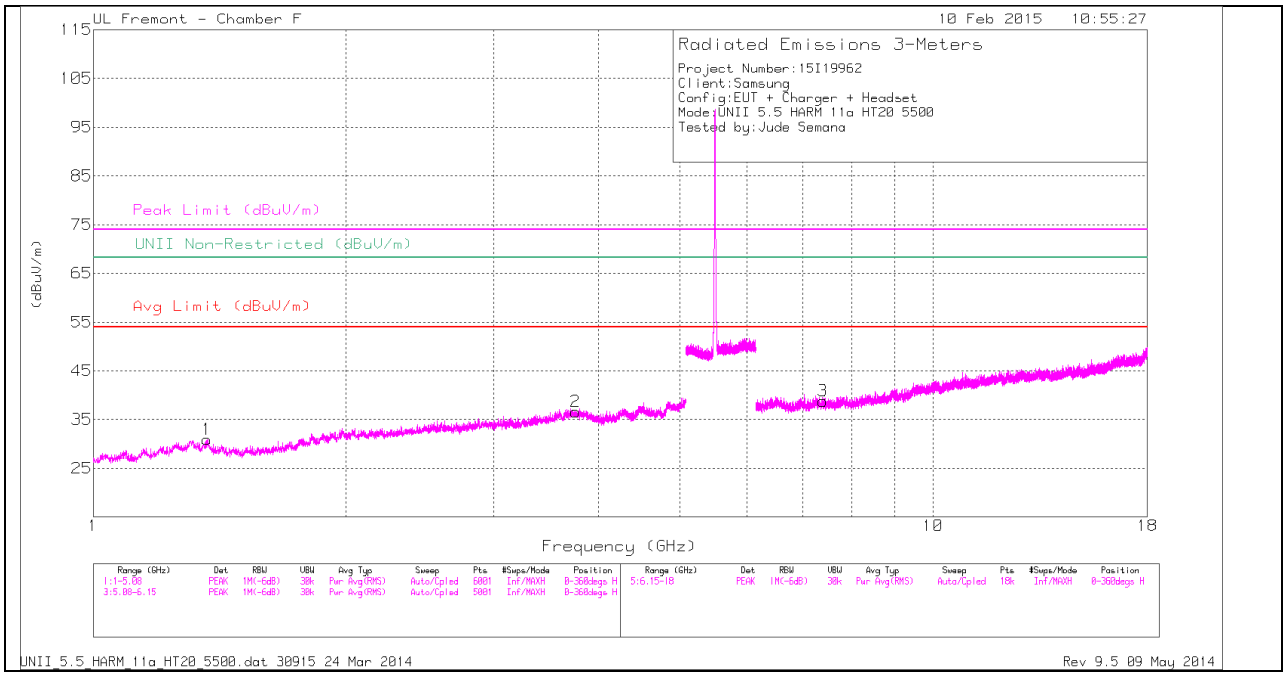
HARMONICS AND SPURIOUS EMISSIONS

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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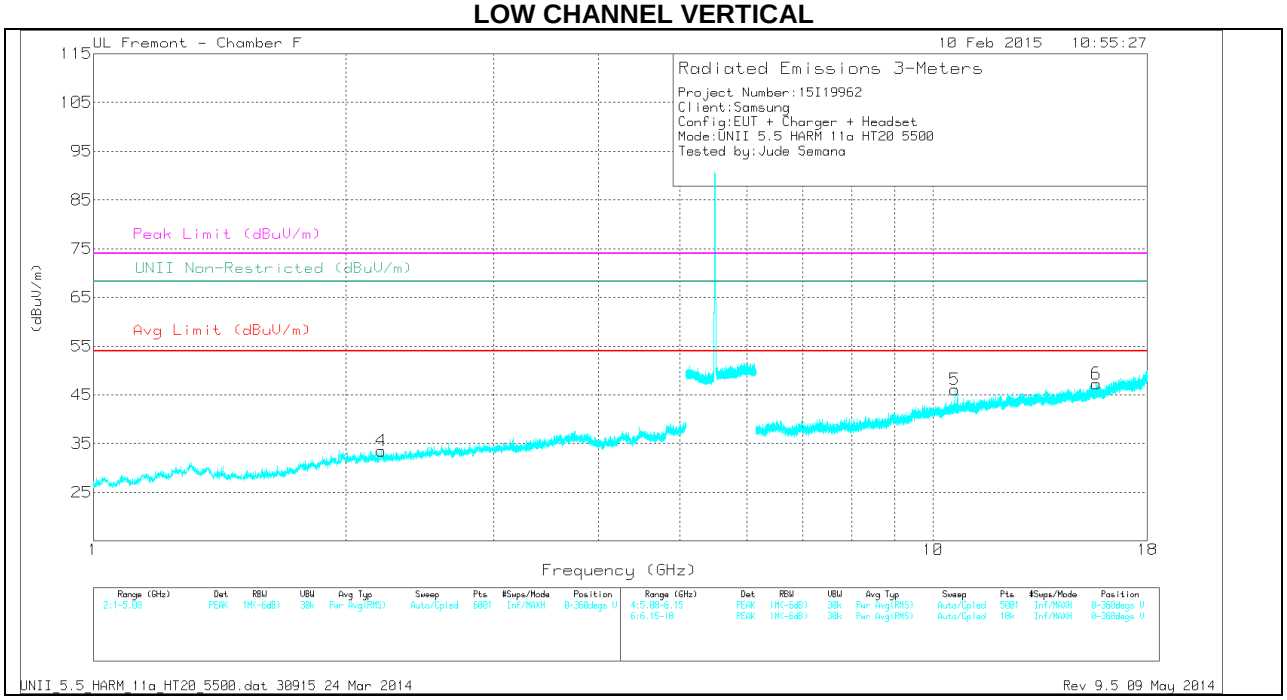
LOW CHANNEL VERTICAL



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 T120 (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	* 1.367	33.05	PK	29.5	-31.6	0	30.95	-	-	74	-43.05	-	-	0-360	201	H
2	* 3.755	31.54	PK	34.6	-29.5	0	36.64	-	-	74	-37.36	-	-	0-360	201	H
4	* 2.204	32.45	PK	31.8	-30.7	0	33.55	-	-	74	-40.45	-	-	0-360	201	V
3	* 7.396	29.41	PK	35.6	-26.2	0	38.81	-	-	74	-35.19	-	-	0-360	101	H
5	* 10.621	29.56	PK	37.9	-21.4	0	46.06	-	-	74	-27.94	-	-	0-360	201	V
6	* 15.646	28.96	PK	40.3	-22	0	47.26	-	-	74	-26.74	-	-	0-360	101	V

PK - Peak detector

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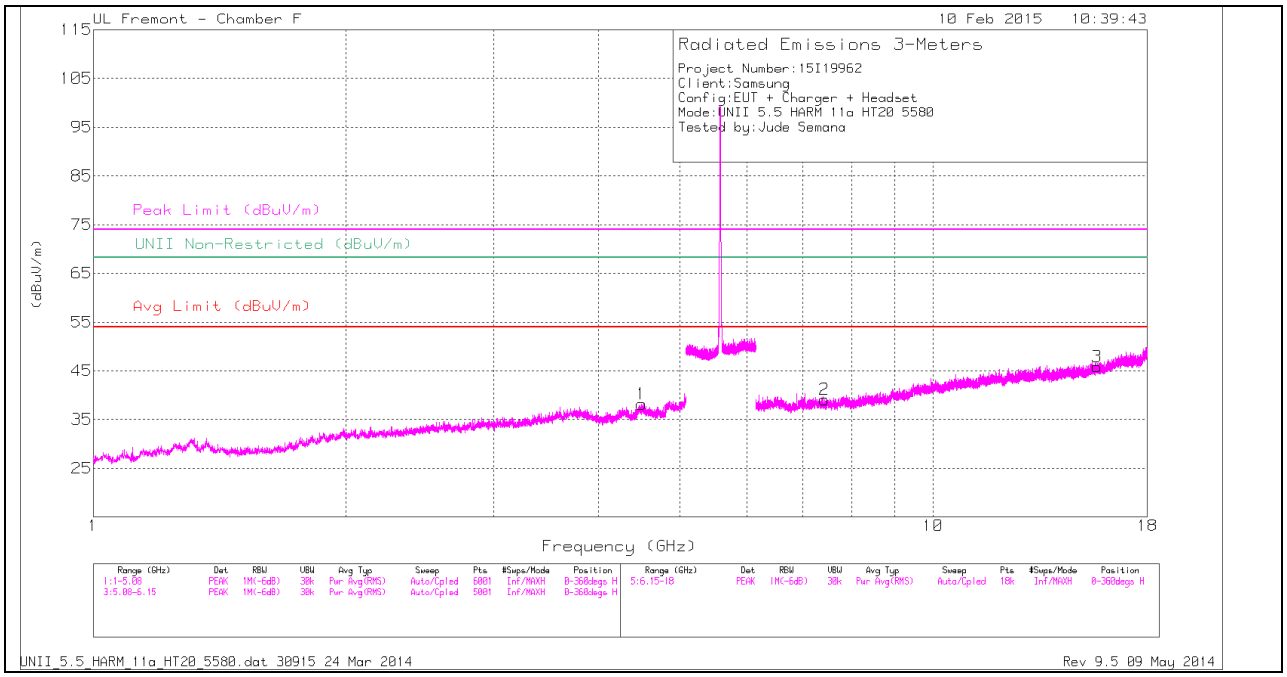
MID CHANNEL HORIZONTAL



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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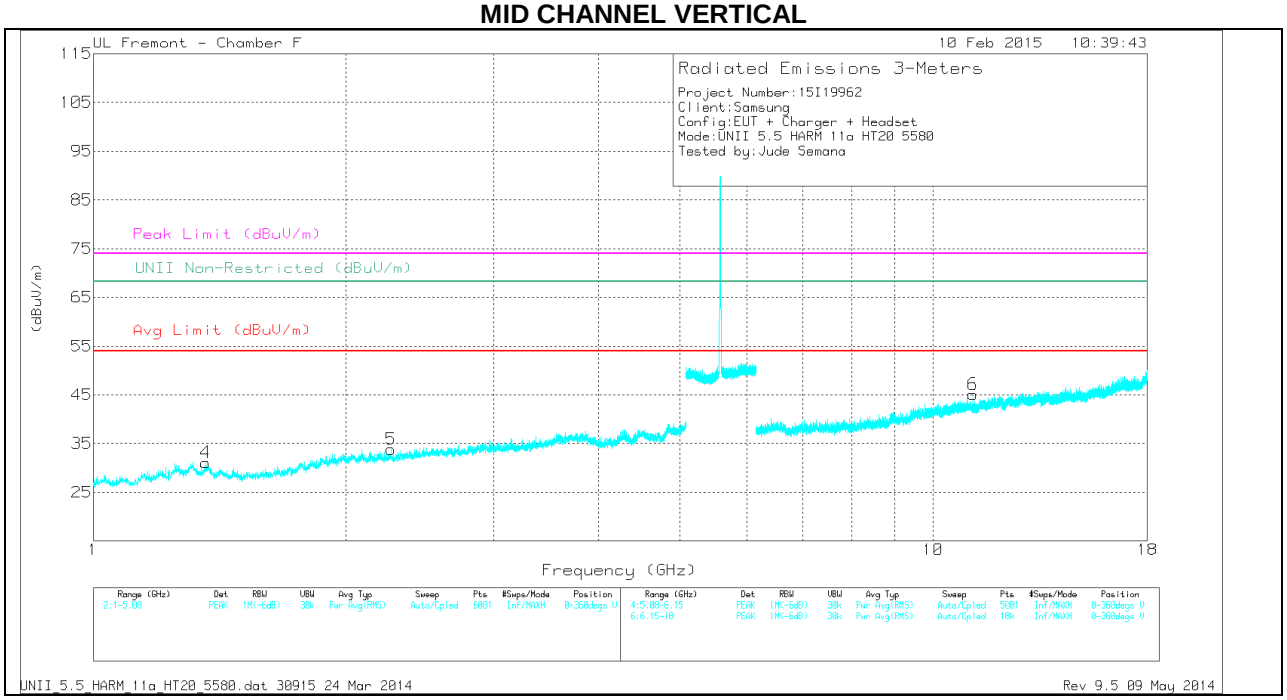
MID CHANNEL VERTICAL



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 T120 (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	4.497	31.37	PK	34	-27.2	0	38.17	-	-	-	-	68.2	-30.03	0-360	100	H
4	* 1.362	33.12	PK	29.5	-31.5	0	31.12	-	-	74	-42.88	-	-	0-360	101	V
5	* 2.263	32.67	PK	31.8	-30.6	0	33.87	-	-	74	-40.13	-	-	0-360	201	V
2	* 7.43	29.53	PK	35.6	-26	0	39.13	-	-	74	-34.87	-	-	0-360	101	H
3	* 15.676	28.03	PK	40.4	-22.6	0	45.83	-	-	74	-28.17	-	-	0-360	101	H
6	* 11.16	28.98	PK	38.1	-22	0	45.08	-	-	74	-28.92	-	-	0-360	101	V

PK - Peak detector

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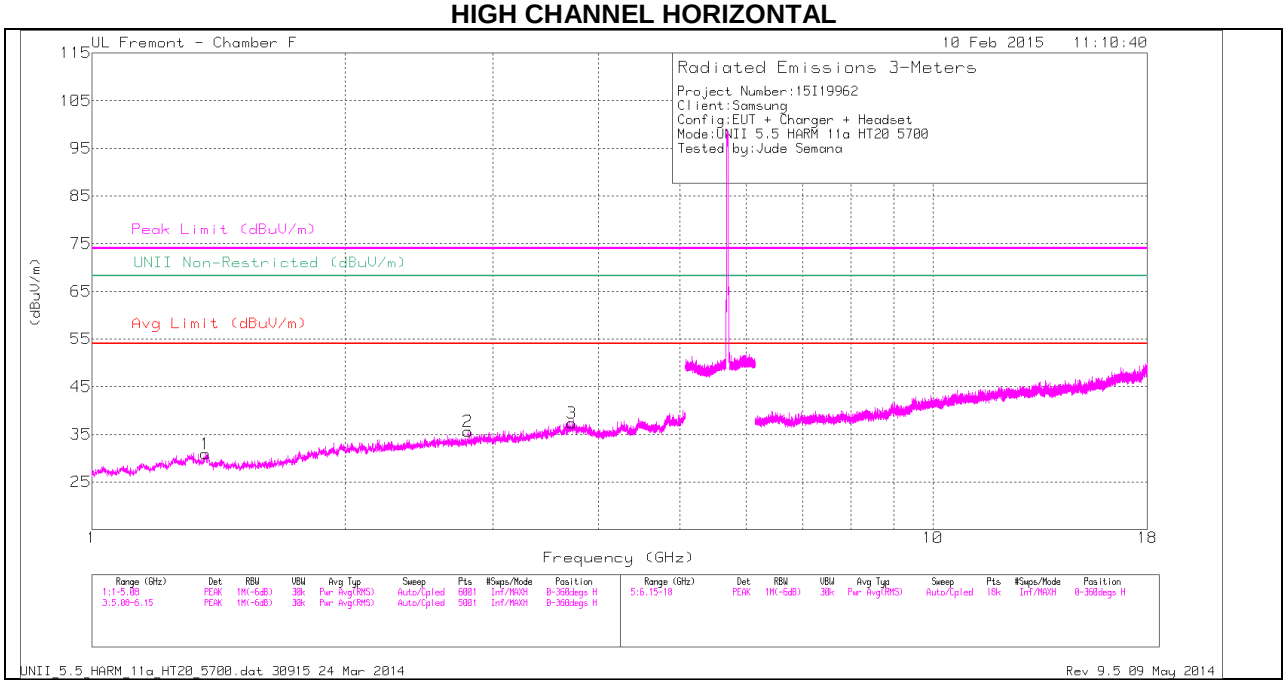
HIGH CHANNEL HORIZONTAL



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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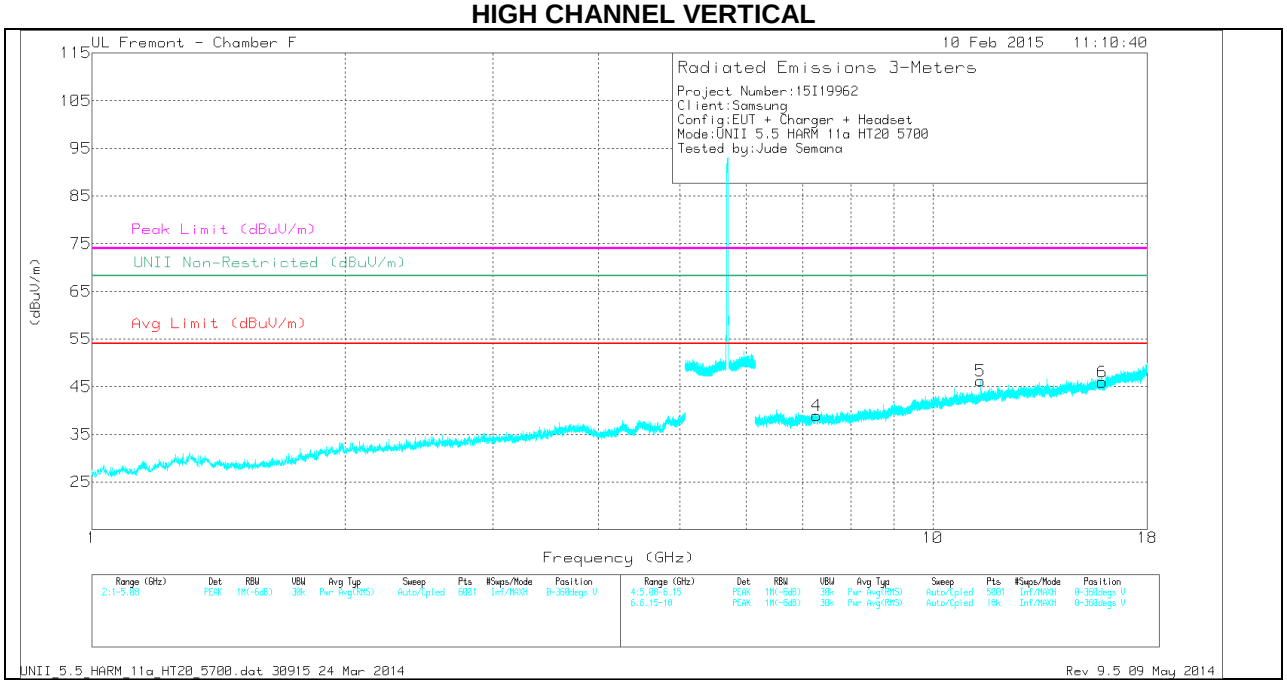
HIGH CHANNEL VERTICAL



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 T120 (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	* 1.365	33.04	PK	29.5	-31.6	0	30.94	-	-	74	-43.06	-	-	0-360	201	H
2	* 2.802	32.63	PK	32.9	-29.9	0	35.63	-	-	74	-38.37	-	-	0-360	100	H
3	* 3.722	31.66	PK	34.7	-29	0	37.36	-	-	74	-36.64	-	-	0-360	201	H
4	* 7.275	28.95	PK	35.5	-25.5	0	38.95	-	-	74	-35.05	-	-	0-360	201	V
5	* 11.4	29.41	PK	38.2	-21.4	0	46.21	-	-	74	-27.79	-	-	0-360	101	V
6	* 15.9	28.16	PK	40.4	-22.6	0	45.96	-	-	74	-28.04	-	-	0-360	201	V

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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
* 11.4	36.87	PK1	38.2	-21.4	0	53.67	-	-	74	-20.33	-	-	333	168	V
* 11.4	28.14	AD1	38.2	-21.4	.3	45.24	54	-8.76	-	-	-	-	333	168	V

FCC Part15 Subpart C T186 2400MHz Spurious Emissions.TST 12746Rev 9.5 12 Jun 2013

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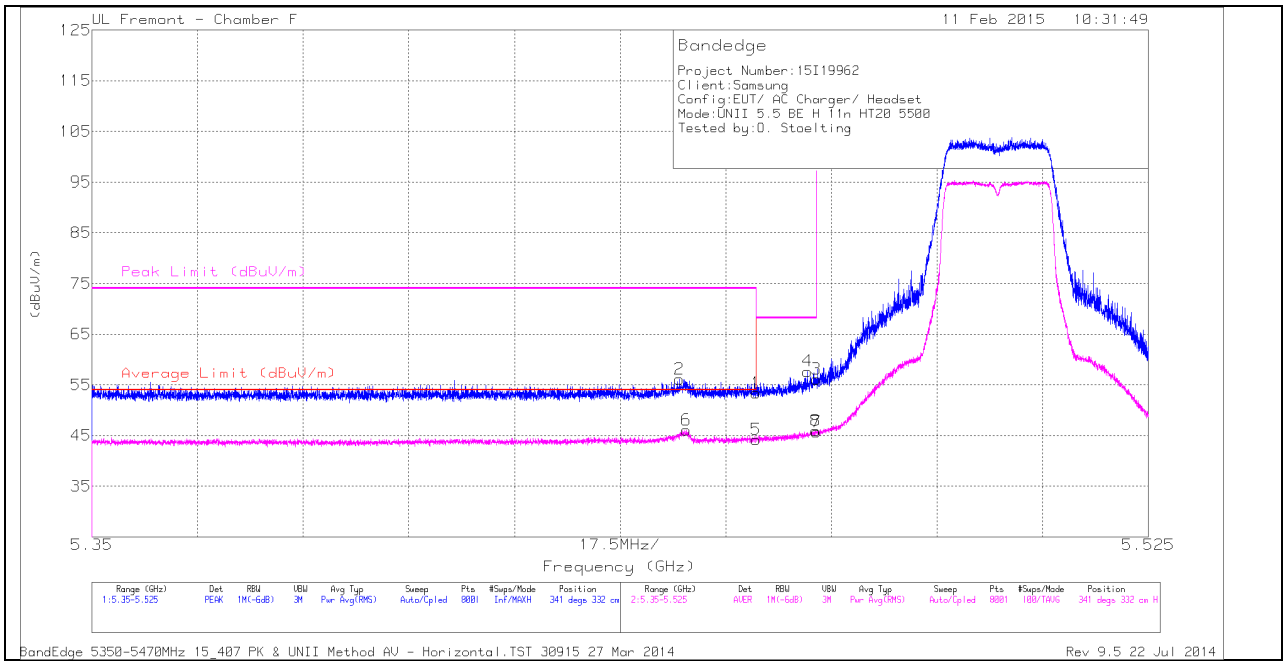
11.3.2. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.5 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	37.58	PK	34.6	-18.8	0	53.38	-	-	74	-20.62	341	332	H
2	* 5.447	40.28	PK	34.6	-18.8	0	56.08	-	-	74	-17.92	341	332	H
3	5.47	40.29	PK	34.6	-18.8	0	56.09	-	-	68.2	-12.11	341	332	H
4	5.469	41.88	PK	34.6	-18.8	0	57.68	-	-	68.2	-10.52	341	332	H
5	* 5.46	28.07	RMS	34.6	-18.8	.32	44.19	54	-9.81	-	-	341	332	H
6	* 5.449	29.91	RMS	34.6	-18.8	.32	46.03	54	-7.97	-	-	341	332	H
7	5.47	29.51	RMS	34.6	-18.8	.32	45.63	-	-	-	-	341	332	H
8	5.47	29.84	RMS	34.6	-18.8	.32	45.96	-	-	-	-	341	332	H

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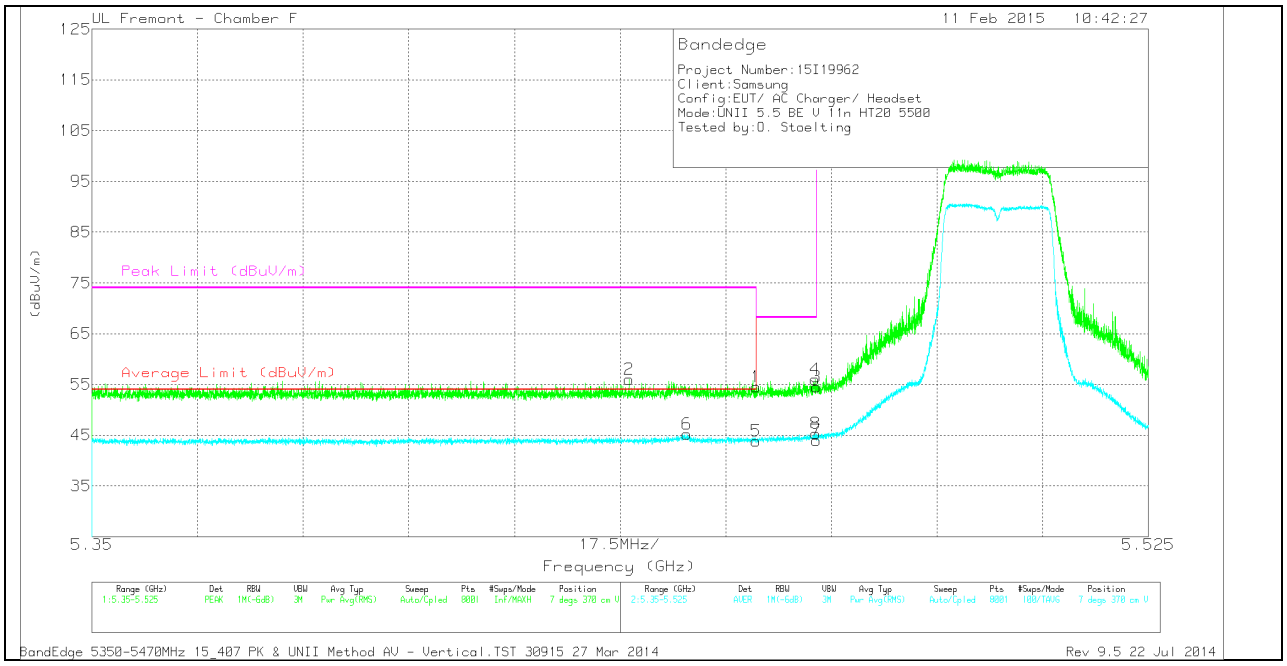
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	38.67	PK	34.6	-18.8	0	54.47	-	-	74	-19.53	7	370	V
2	* 5.439	40.11	PK	34.6	-18.7	0	56.01	-	-	74	-17.99	7	370	V
3	5.47	38.69	PK	34.6	-18.8	0	54.49	-	-	68.2	-13.71	7	370	V
4	5.47	40.16	PK	34.6	-18.8	0	55.96	-	-	68.2	-12.24	7	370	V
5	* 5.46	27.68	RMS	34.6	-18.8	.32	43.80	54	-10.20	-	-	7	370	V
6	* 5.449	29.05	RMS	34.6	-18.8	.32	45.17	54	-8.83	-	-	7	370	V
7	5.47	27.8	RMS	34.6	-18.8	.32	43.92	-	-	-	-	7	370	V
8	5.47	29.17	RMS	34.6	-18.8	.32	45.29	-	-	-	-	7	370	V

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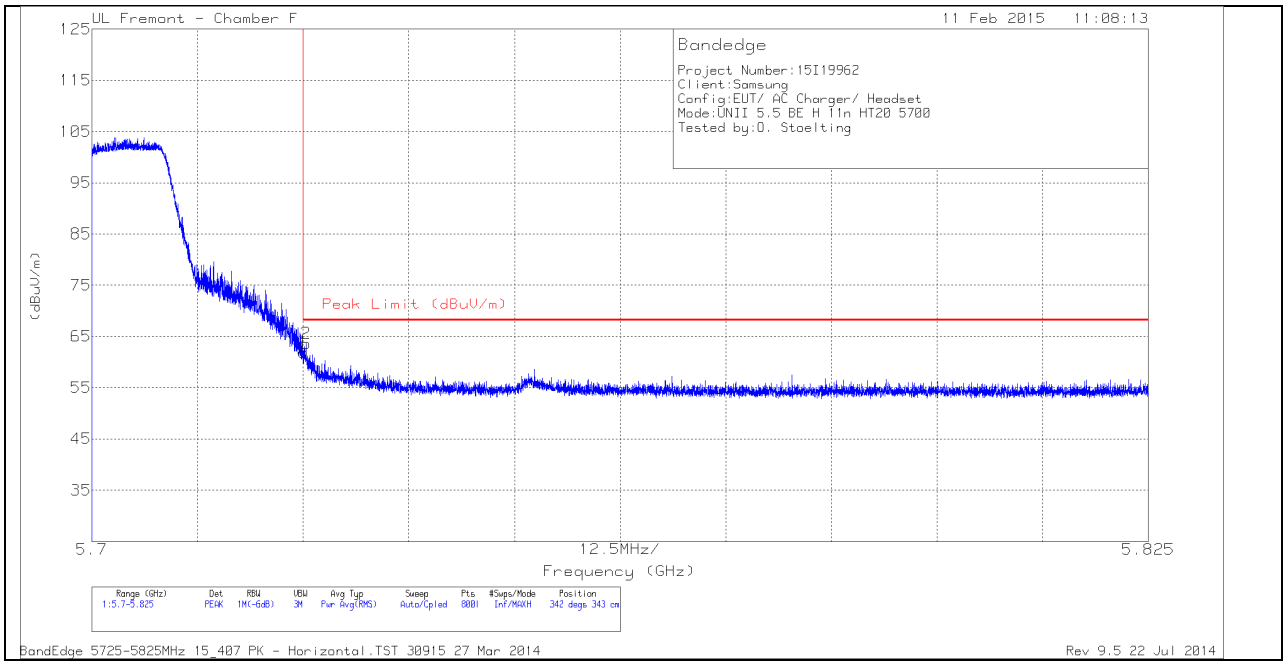
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	45.2	PK	34.8	-18.1	0	61.9	68.2	-6.3	342	343	H
2	5.725	46.92	PK	34.8	-18.1	0	63.62	68.2	-4.58	342	343	H

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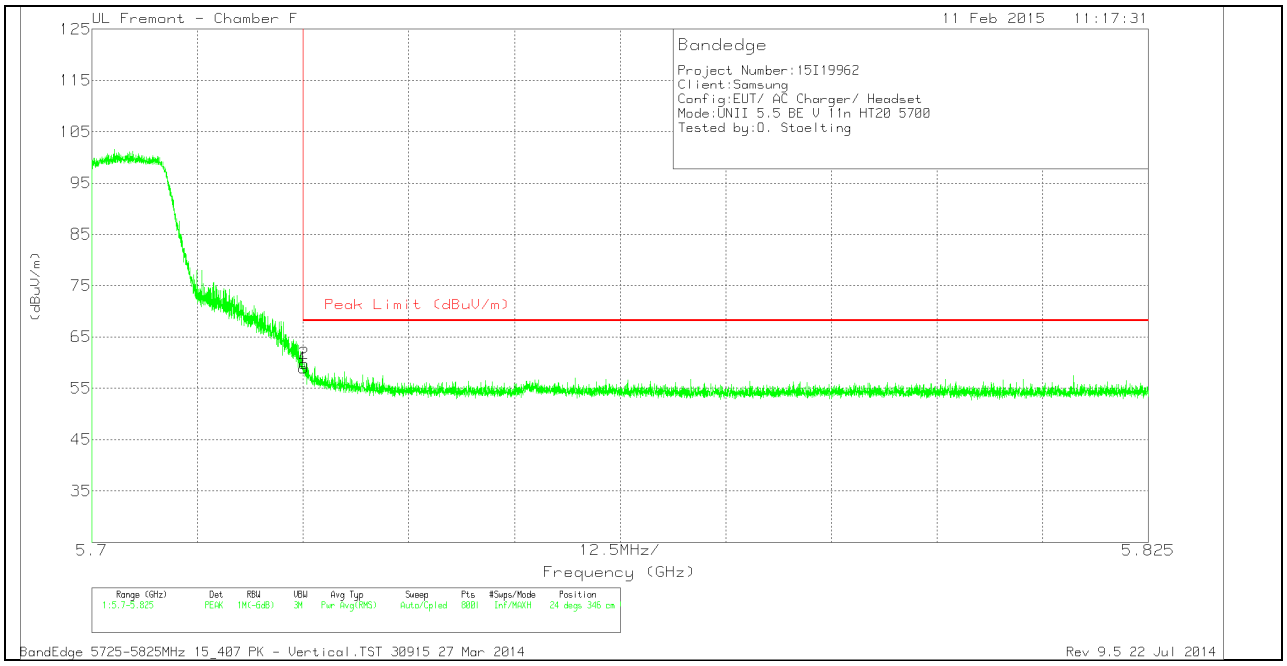
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	42.3	PK	34.8	-18.1	0	59	68.2	-9.2	24	346	V
2	5.725	43.15	PK	34.8	-18.1	0	59.85	68.2	-8.35	24	346	V

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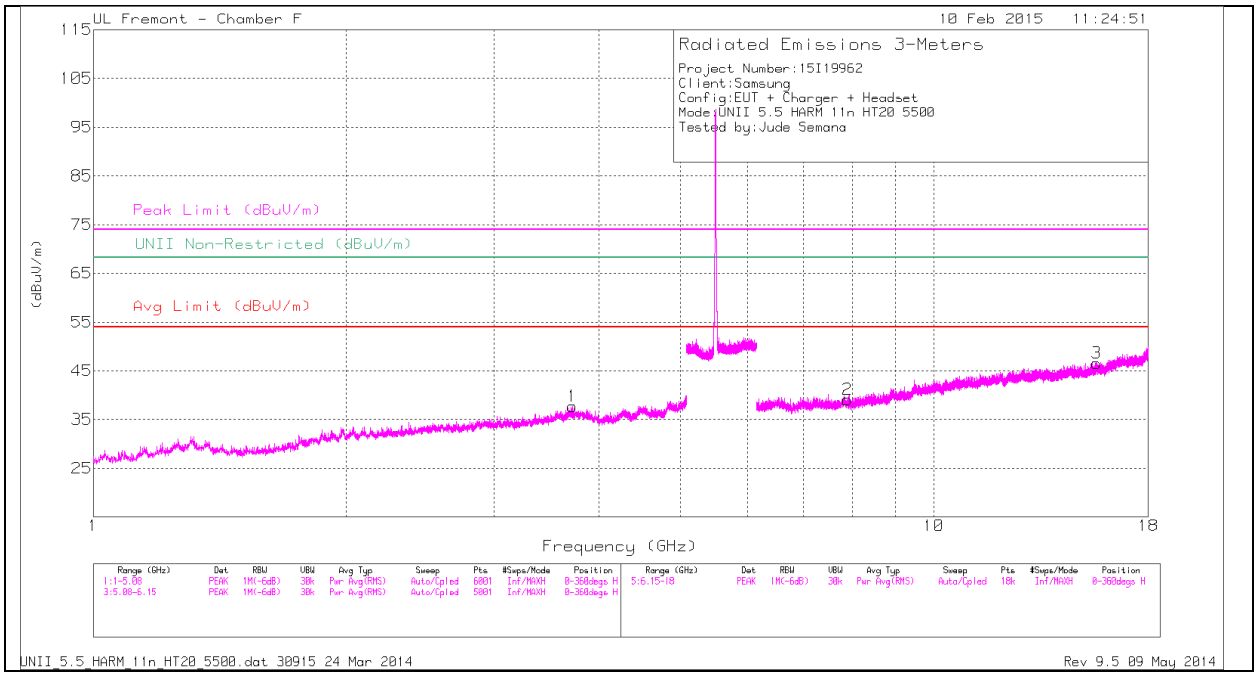
HARMONICS AND SPURIOUS EMISSIONS

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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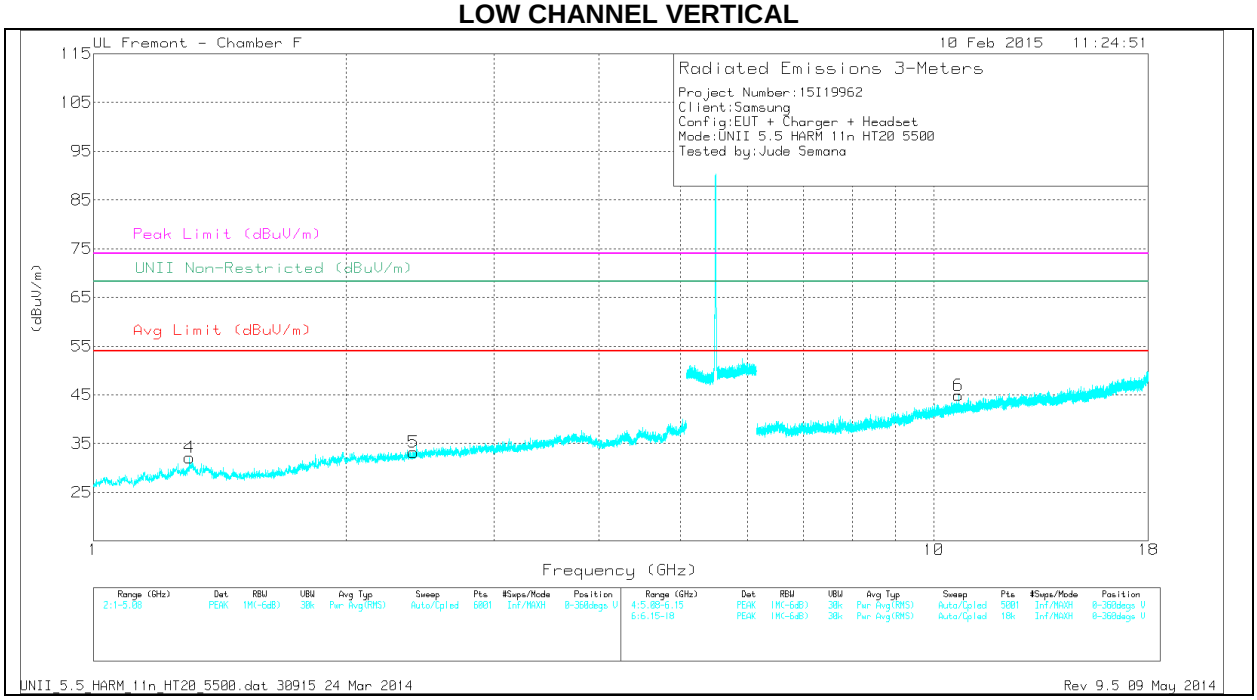
LOW CHANNEL VERTICAL



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 T120 (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	* 3.717	31.89	PK	34.8	-29	0	37.69	-	-	74	-36.31	-	-	0-360	101	H
4	* 1.302	33.73	PK	30	-31.6	0	32.13	-	-	74	-41.87	-	-	0-360	101	V
5	2.405	31.65	PK	32.2	-30.6	0	33.25	-	-	-	-	68.2	-34.95	0-360	201	V
2	7.896	28.62	PK	35.7	-25.2	0	39.12	-	-	-	-	68.2	-29.08	0-360	201	H
3	* 15.62	28.68	PK	40.3	-22.4	0	46.58	-	-	74	-27.42	-	-	0-360	201	H
6	* 10.699	29.01	PK	38.1	-22.2	0	44.91	-	-	74	-29.09	-	-	0-360	101	V

PK - Peak detector

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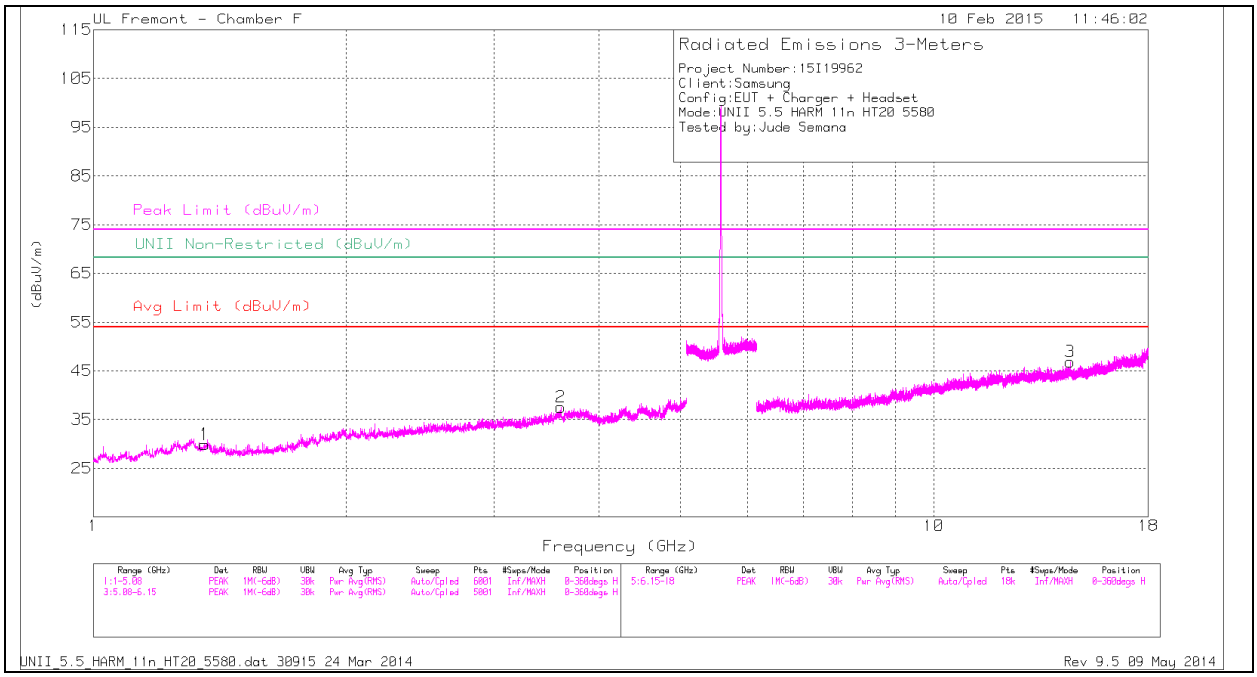
MID CHANNEL HORIZONTAL



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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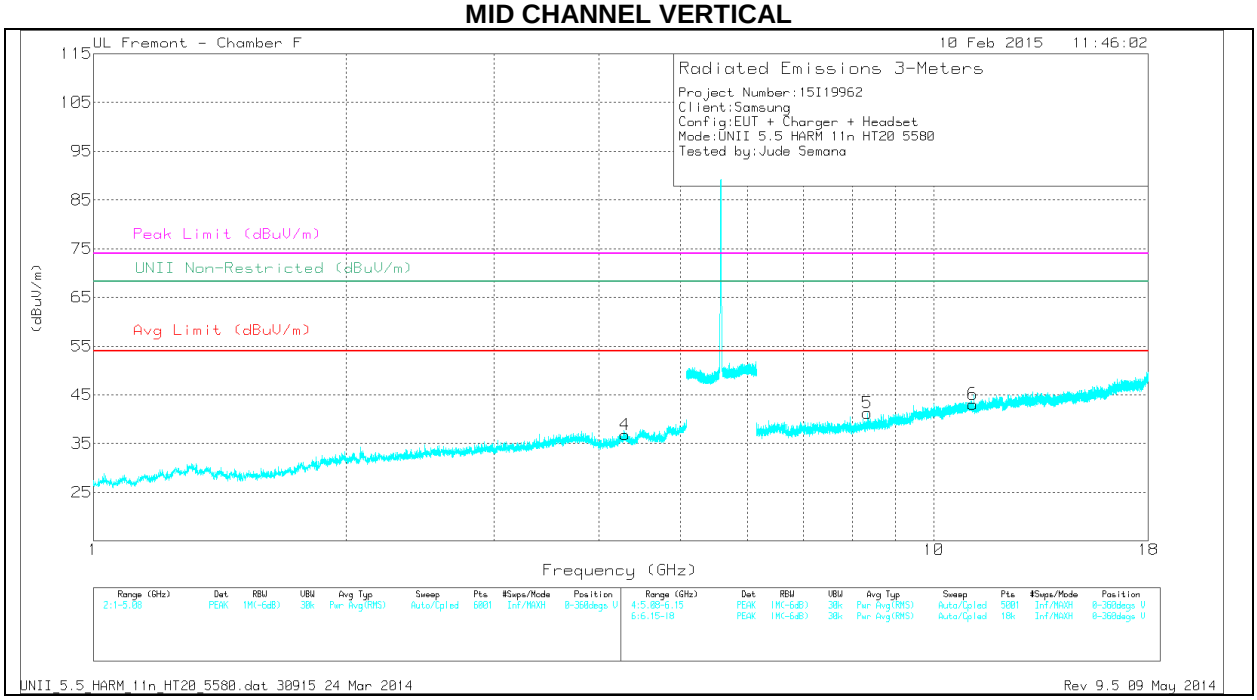
MID CHANNEL VERTICAL



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 T120 (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	* 1.357	31.79	PK	29.6	-31.5	0	29.89	-	-	74	-44.11	-	-	0-360	100	H
2	* 3.601	31.83	PK	34.9	-29.2	0	37.53	-	-	74	-36.47	-	-	0-360	201	H
4	* 4.293	30.34	PK	33.7	-27.2	0	36.84	-	-	74	-37.16	-	-	0-360	101	V
3	14.531	30.46	PK	39.8	-23.4	0	46.86	-	-	-	-	68.2	-21.34	0-360	101	H
5	* 8.341	29.99	PK	35.7	-24.4	0	41.29	-	-	74	-32.71	-	-	0-360	101	V
6	* 11.13	27.07	PK	38.1	-22.1	0	43.07	-	-	74	-30.93	-	-	0-360	201	V

PK - Peak detector

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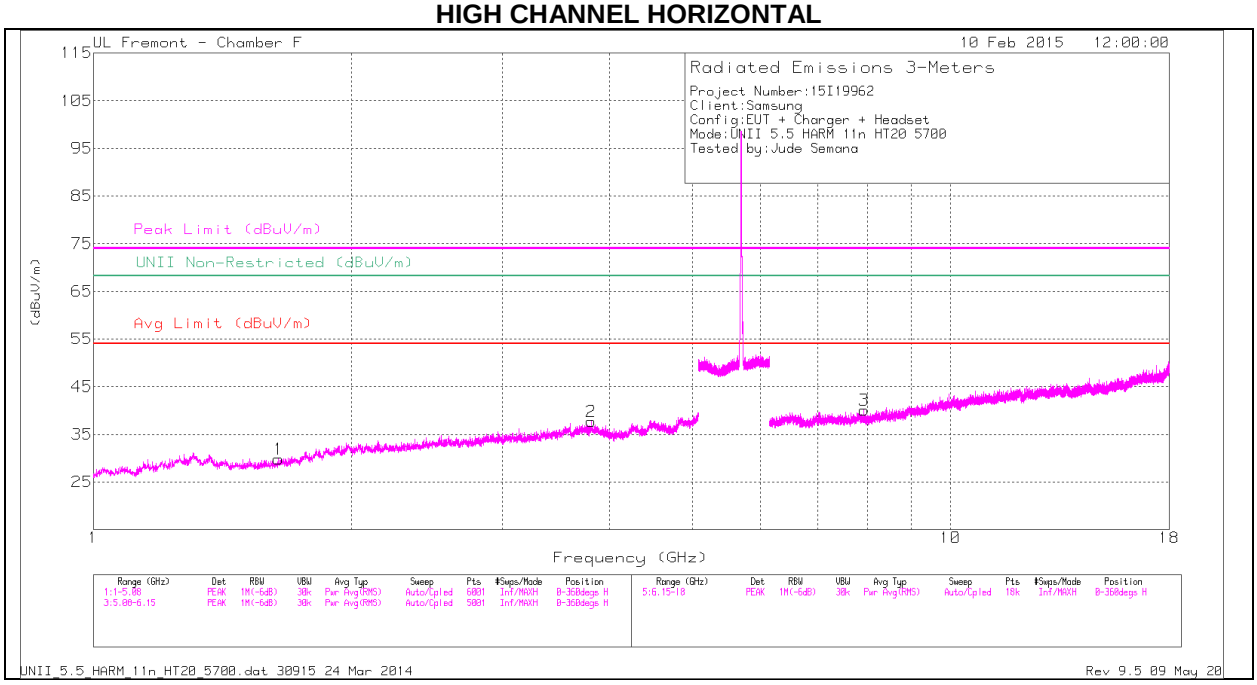
HIGH CHANNEL HORIZONTAL



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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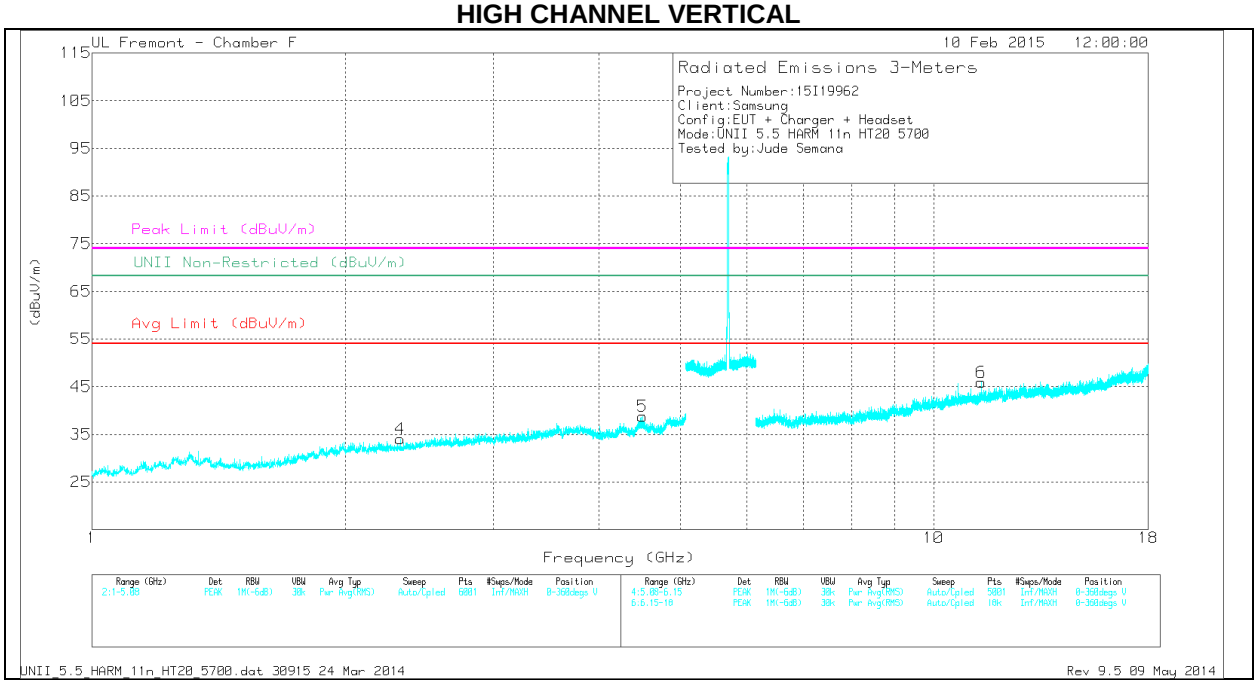
HIGH CHANNEL VERTICAL



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 T120 (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	1.645	32.49	PK	28.8	-31.5	0	29.79	-	-	-	-	68.2	-38.41	0-360	201	H
2	* 3.811	32.49	PK	34.3	-29.1	0	37.69	-	-	74	-36.31	-	-	0-360	100	H
4	* 2.325	32.65	PK	31.9	-30.5	0	34.05	-	-	74	-39.95	-	-	0-360	101	V
5	* 4.512	32.49	PK	34	-27.7	0	38.79	-	-	74	-35.21	-	-	0-360	201	V
3	7.927	29.78	PK	35.7	-25.4	0	40.08	-	-	-	-	68.2	-28.12	0-360	201	H
6	* 11.4	29.11	PK	38.2	-21.4	0	45.91	-	-	74	-28.09	-	-	0-360	101	V

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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
* 11.4	36.24	PK1	38.2	-21.4	0	53.04	-	-	74	-20.96	-	-	330	150	V
* 11.4	26.95	AD1	38.2	-21.4	.3	44.05	54	-9.95	-	-	-	-	330	150	V

FCC Part15 Subpart C T186 2400MHz Spurious Emissions.TST 12746Rev 9.5 12 Jun 2013

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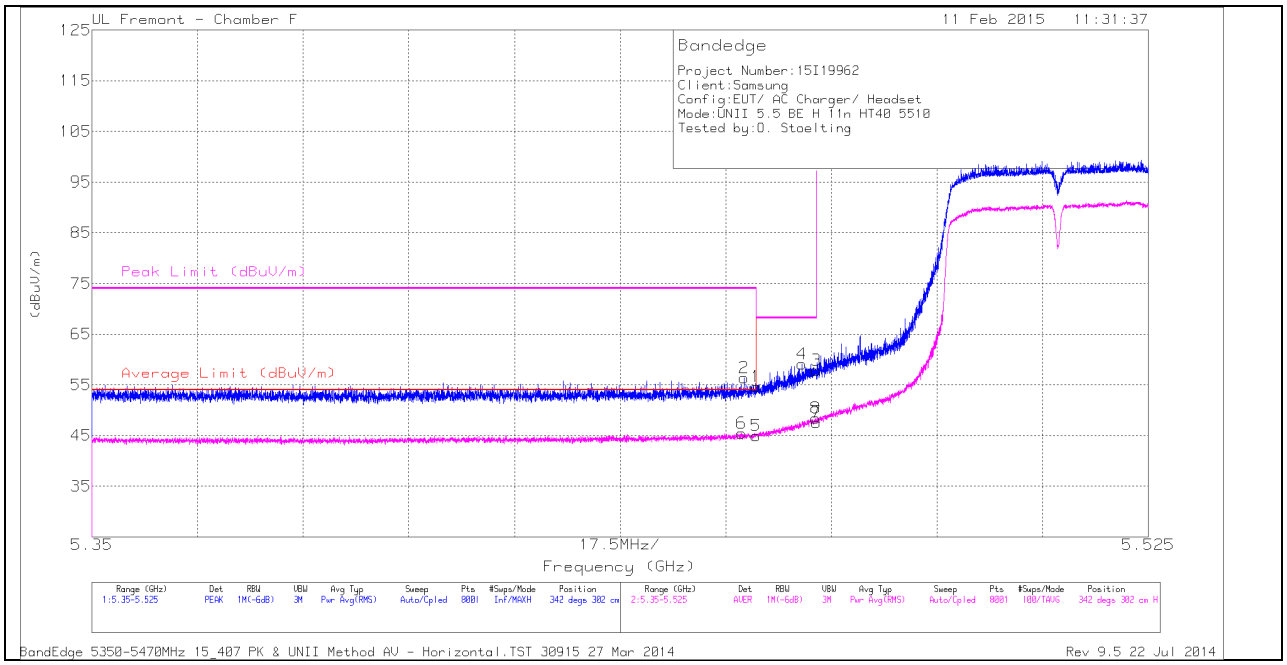
11.3.3. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.5 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	38.78	PK	34.6	-18.8	0	54.58	-	-	74	-19.42	342	302	H
2	* 5.458	40.56	PK	34.6	-18.8	0	56.36	-	-	74	-17.64	342	302	H
3	5.47	42.01	PK	34.6	-18.8	0	57.81	-	-	68.2	-10.39	342	302	H
4	5.468	43.31	PK	34.6	-18.8	0	59.11	-	-	68.2	-9.09	342	302	H
5	* 5.46	28.52	RMS	34.6	-18.8	.67	44.99	54	-9.01	-	-	342	302	H
6	* 5.458	29.03	RMS	34.6	-18.8	.67	45.50	54	-8.50	-	-	342	302	H
7	5.47	31.2	RMS	34.6	-18.8	.67	47.67	-	-	-	-	342	302	H
8	5.47	31.98	RMS	34.6	-18.8	.67	48.45	-	-	-	-	342	302	H

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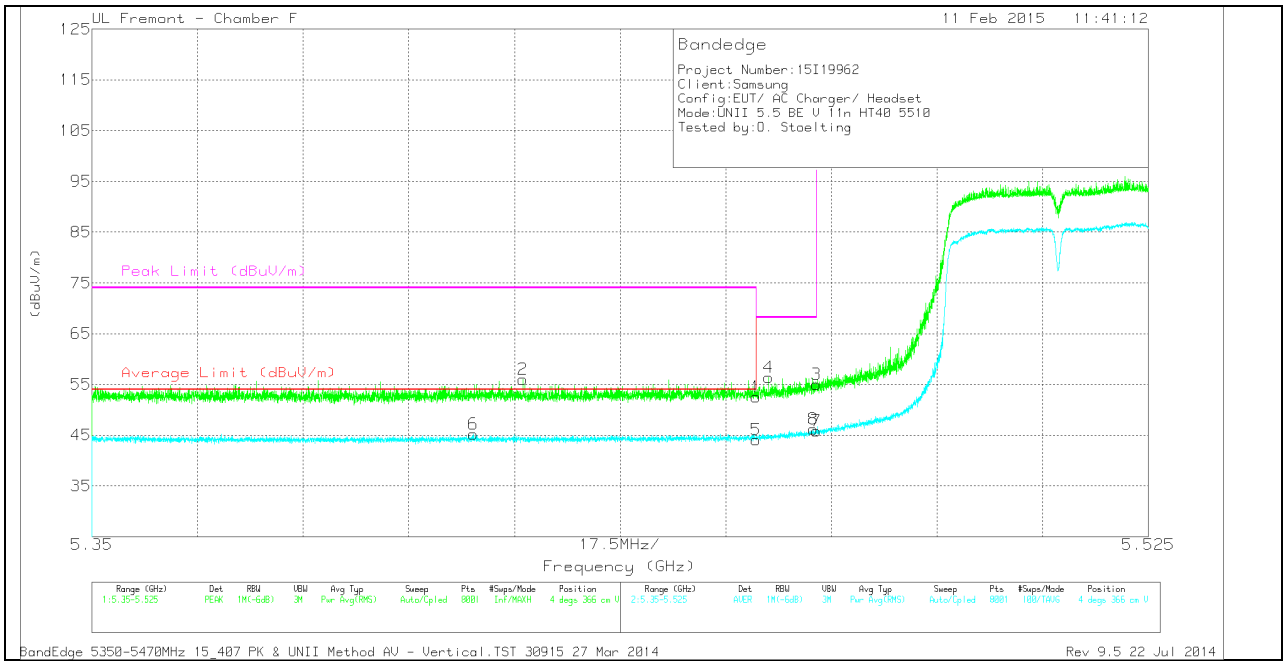
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	36.67	PK	34.6	-18.8	0	52.47	-	-	74	-21.53	4	366	V
2	* 5.421	40.24	PK	34.6	-18.8	0	56.04	-	-	74	-17.96	4	366	V
3	5.47	39.16	PK	34.6	-18.8	0	54.96	-	-	68.2	-13.24	4	366	V
4	5.462	40.54	PK	34.6	-18.8	0	56.34	-	-	68.2	-11.86	4	366	V
5	* 5.46	27.72	RMS	34.6	-18.8	.67	44.19	54	-9.81	-	-	4	366	V
6	* 5.413	28.7	RMS	34.6	-18.7	.67	45.27	54	-8.73	-	-	4	366	V
7	5.47	29.39	RMS	34.6	-18.8	.67	45.86	-	-	-	-	4	366	V
8	5.47	29.77	RMS	34.6	-18.8	.67	46.24	-	-	-	-	4	366	V

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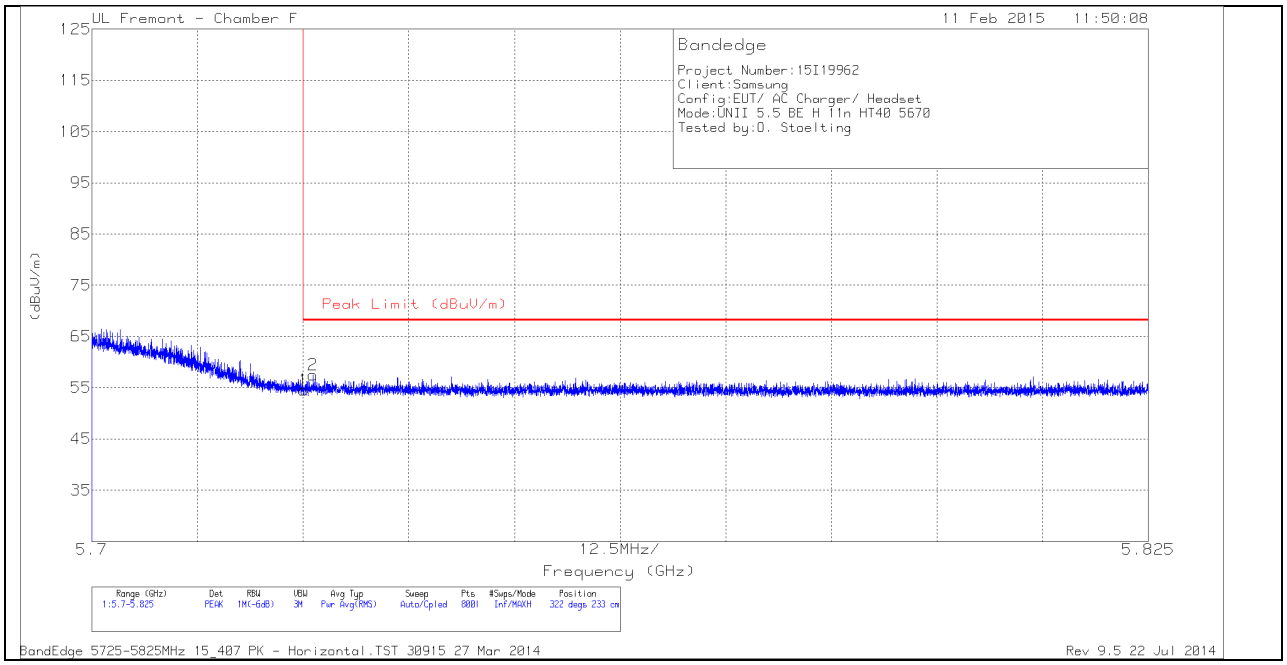
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	37.79	PK	34.8	-18.1	0	54.49	68.2	-13.71	322	233	H
2	5.726	40.74	PK	34.8	-18.1	0	57.44	68.2	-10.76	322	233	H

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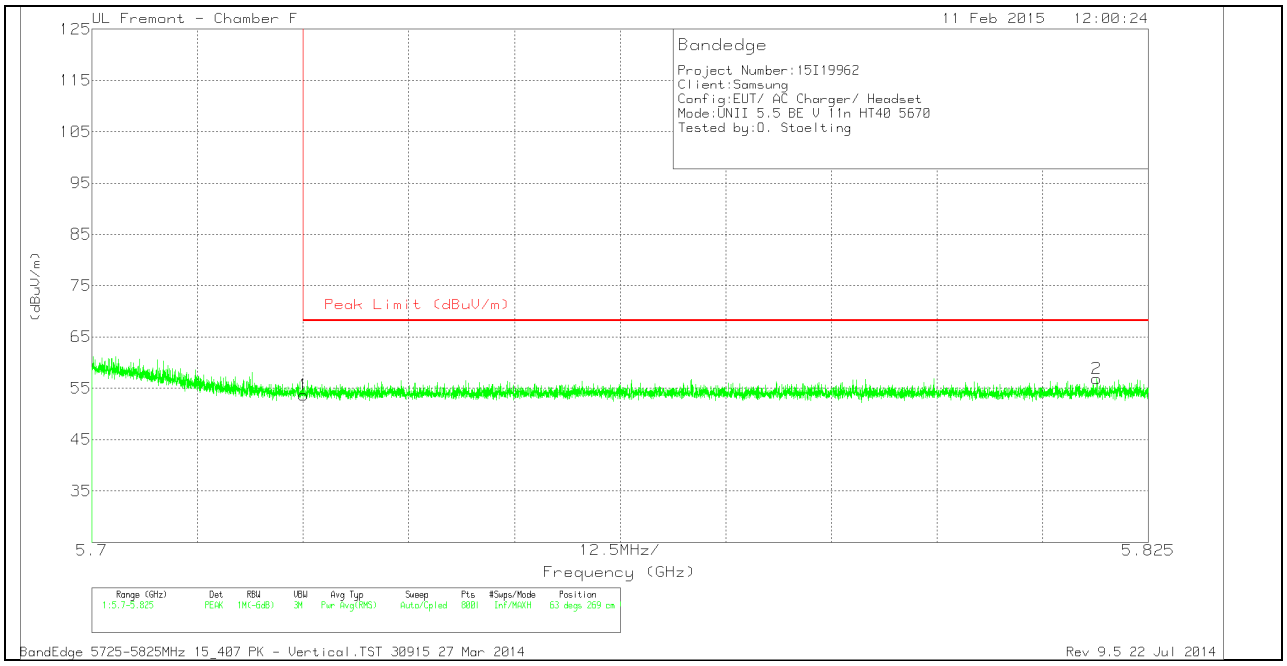
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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	36.98	PK	34.8	-18.1	0	53.68	68.2	-14.52	63	269	V
2	5.819	40.11	PK	35	-18.2	0	56.91	68.2	-11.29	63	269	V

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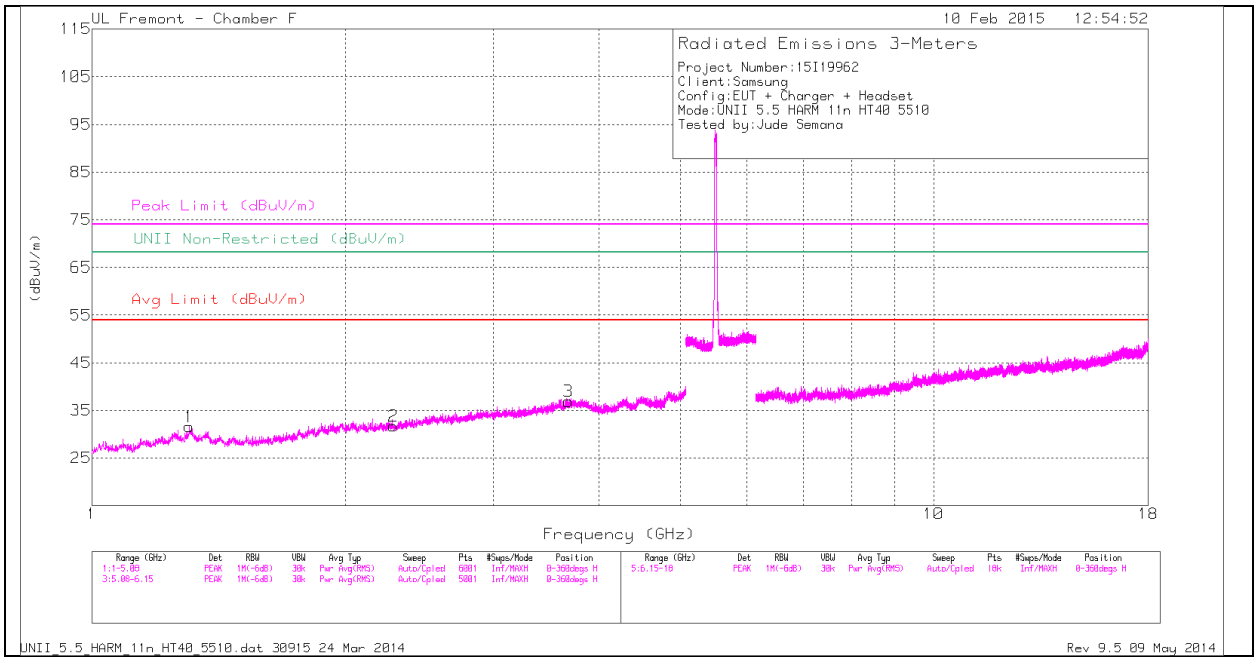
HARMONICS AND SPURIOUS EMISSIONS

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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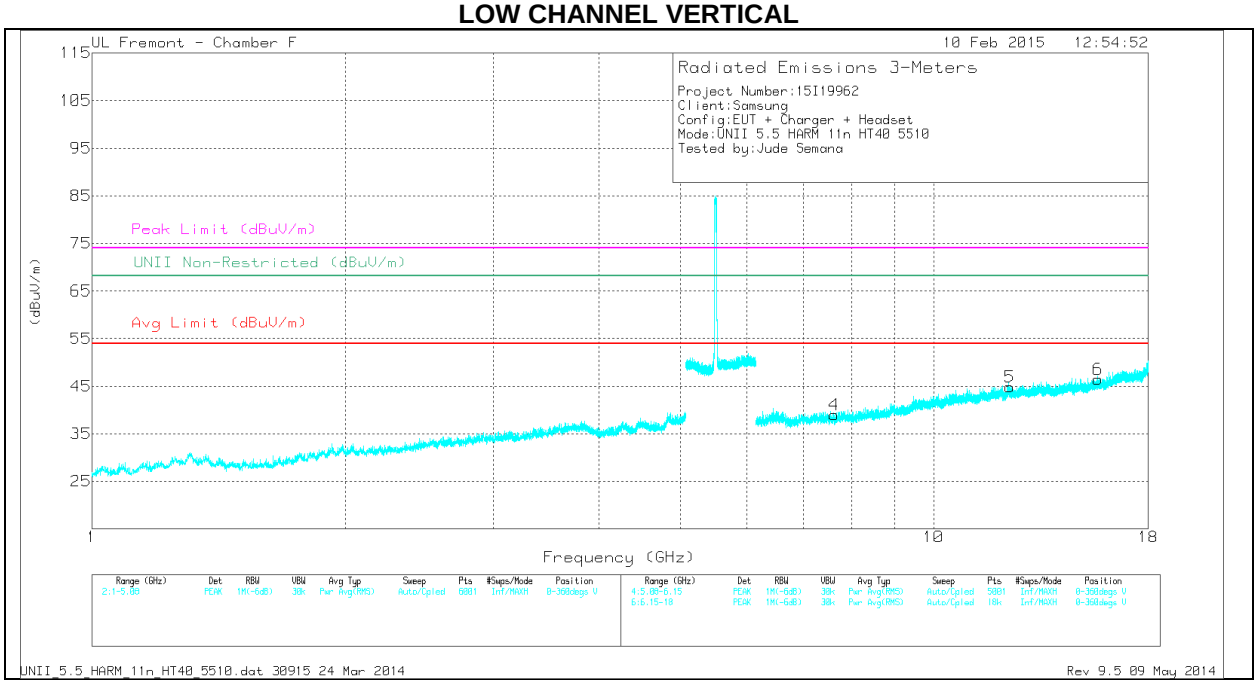
LOW CHANNEL VERTICAL



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 T120 (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	* 1.305	33.13	PK	30	-31.5	0	31.63	-	-	74	-42.37	-	-	0-360	201	H
2	* 2.28	30.44	PK	31.8	-30.5	0	31.74	-	-	74	-42.26	-	-	0-360	100	H
3	* 3.683	30.58	PK	34.9	-28.6	0	36.88	-	-	74	-37.12	-	-	0-360	201	H
4	* 7.621	28.78	PK	35.6	-25.4	0	38.98	-	-	74	-35.02	-	-	0-360	101	V
5	* 12.313	28.12	PK	38.9	-22.2	0	44.82	-	-	74	-29.18	-	-	0-360	201	V
6	* 15.672	28.68	PK	40.4	-22.6	0	46.48	-	-	74	-27.52	-	-	0-360	201	V

PK - Peak detector

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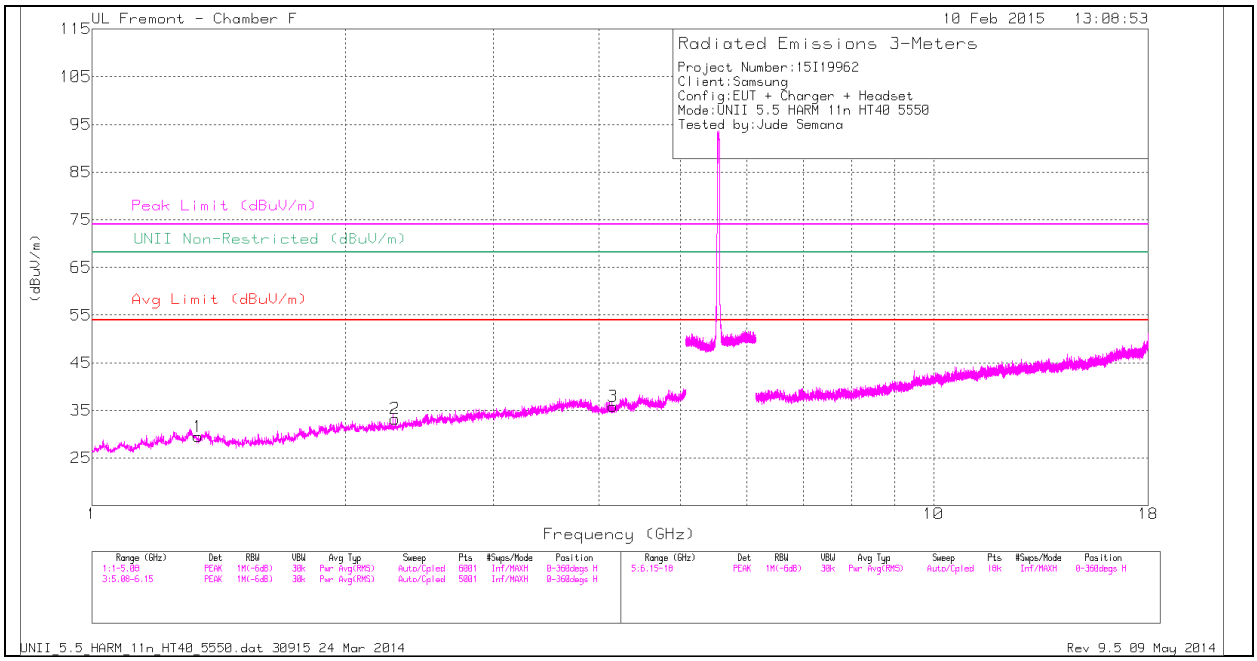
MID CHANNEL HORIZONTAL



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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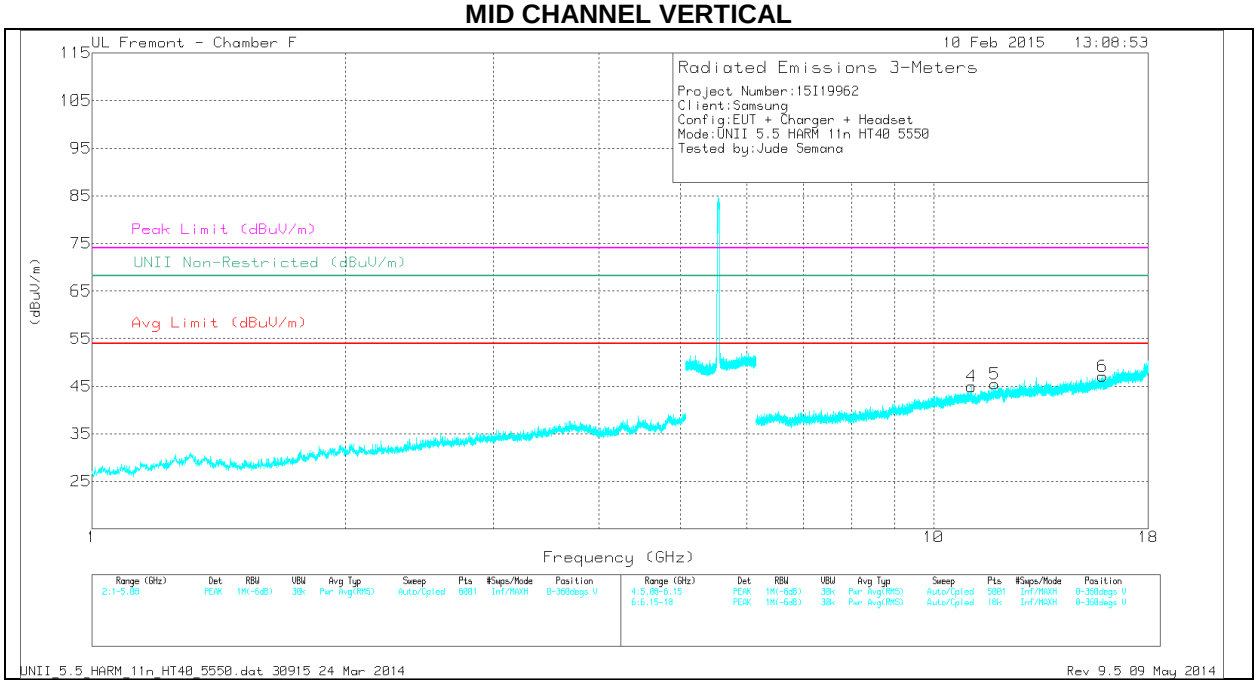
MID CHANNEL VERTICAL



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 T120 (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	* 1.337	31.27	PK	29.7	-31.4	0	29.57	-	-	74	-44.43	-	-	0-360	101	H
2	* 2.293	32.04	PK	31.8	-30.6	0	33.24	-	-	74	-40.76	-	-	0-360	201	H
3	* 4.162	30.86	PK	33.7	-28.7	0	35.86	-	-	74	-38.14	-	-	0-360	201	H
4	* 11.1	28.96	PK	38.1	-22.1	0	44.96	-	-	74	-29.04	-	-	0-360	101	V
5	* 11.823	29.08	PK	38.8	-22.4	0	45.48	-	-	74	-28.52	-	-	0-360	201	V
6	* 15.887	29.11	PK	40.4	-22.4	0	47.11	-	-	74	-26.89	-	-	0-360	101	V

PK - Peak detector

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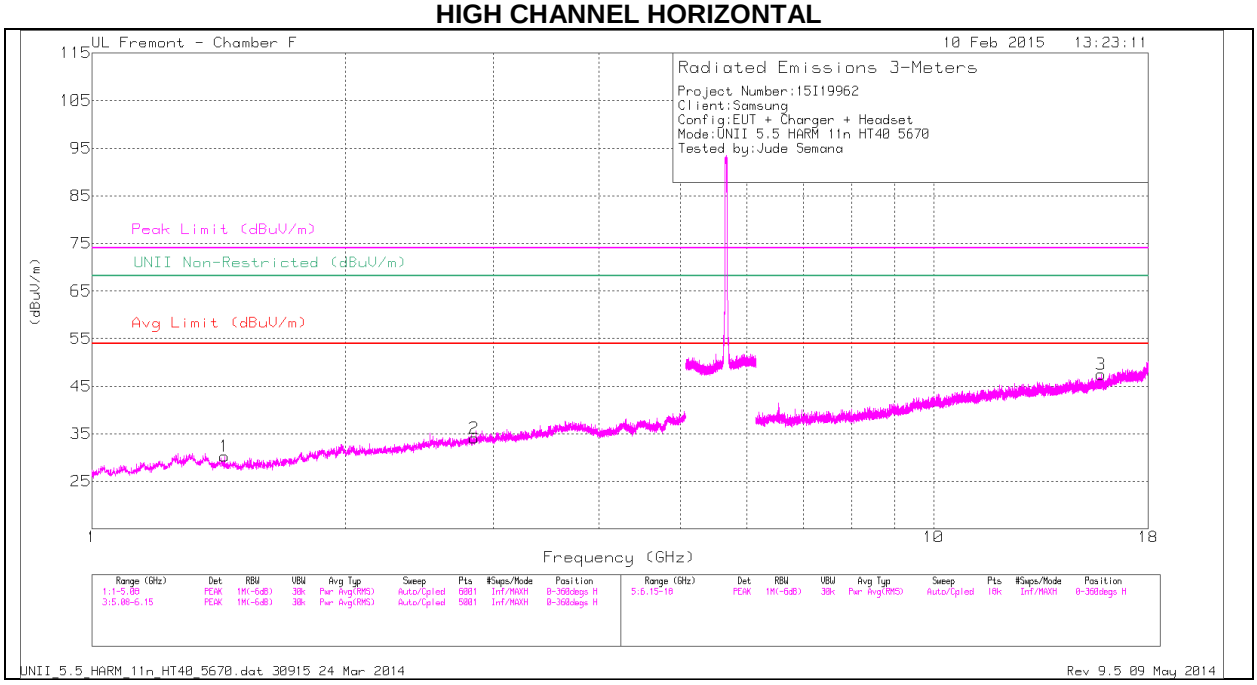
HIGH CHANNEL HORIZONTAL



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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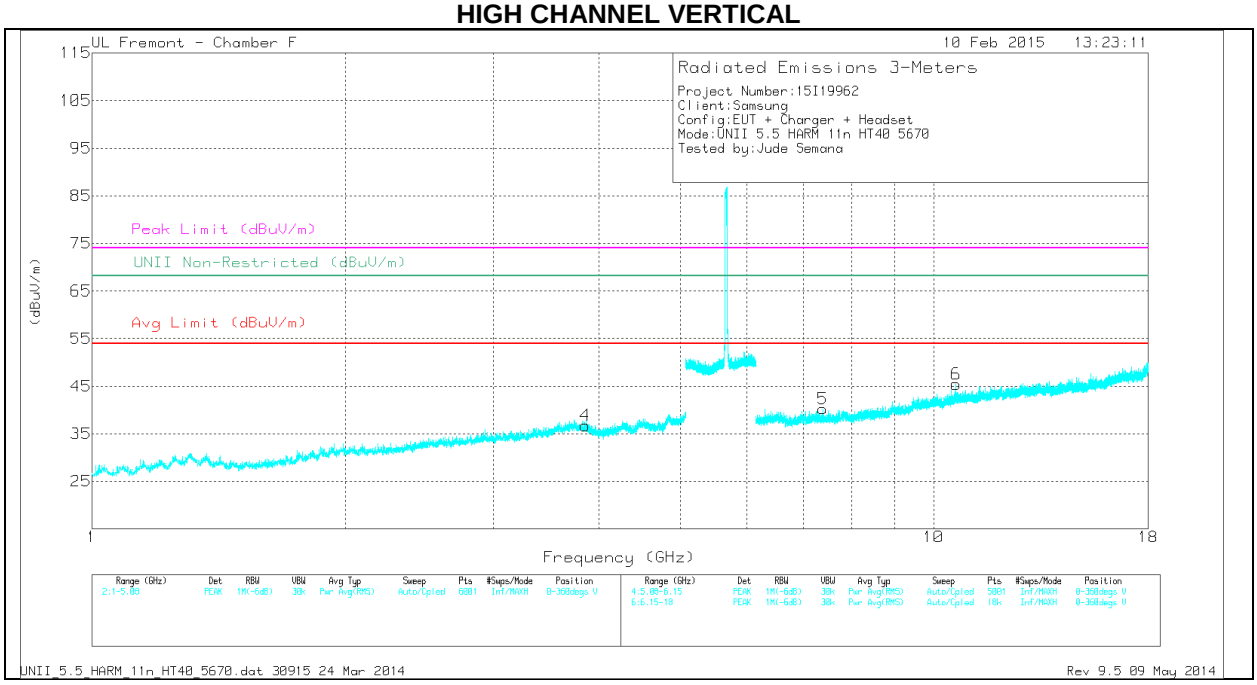
HIGH CHANNEL VERTICAL



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 T120 (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	* 1.437	33.3	PK	28.9	-31.9	0	30.3	-	-	74	-43.7	-	-	0-360	201	H
2	* 2.846	30.78	PK	33	-29.7	0	34.08	-	-	74	-39.92	-	-	0-360	201	H
4	* 3.858	31.54	PK	34.2	-29	0	36.74	-	-	74	-37.26	-	-	0-360	201	V
3	* 15.815	29.6	PK	40.5	-22.6	0	47.5	-	-	74	-26.5	-	-	0-360	201	H
5	* 7.386	30.86	PK	35.6	-26.2	0	40.26	-	-	74	-33.74	-	-	0-360	101	V
6	* 10.638	29.33	PK	37.9	-21.8	0	45.43	-	-	74	-28.57	-	-	0-360	101	V

PK - Peak detector

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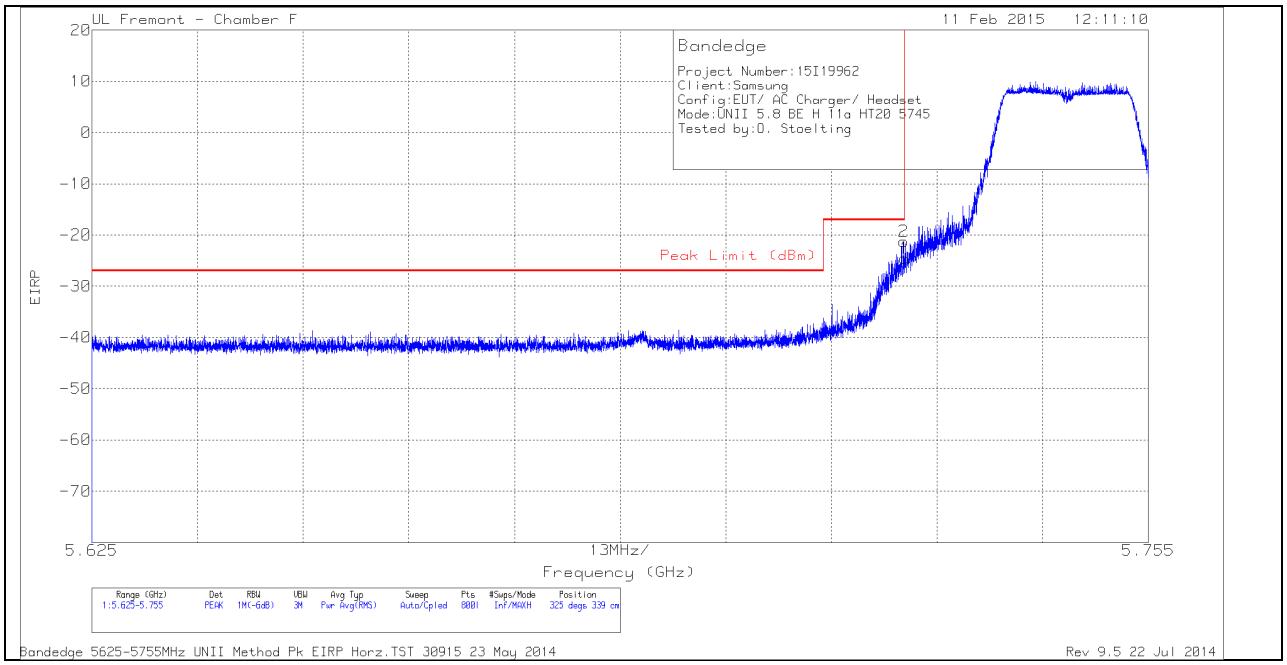
11.4. 5.8 GHz

11.4.1. TX ABOVE 1 GHz 802.11a MODE IN THE 5.8 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T120 (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	-53.09	PK	34.8	-18.1	11.8	0	-24.59	-17	-7.59	325	339	H
2	5.725	-49.73	PK	34.8	-18.1	11.8	0	-21.23	-17	-4.23	325	339	H

PK - Peak detector

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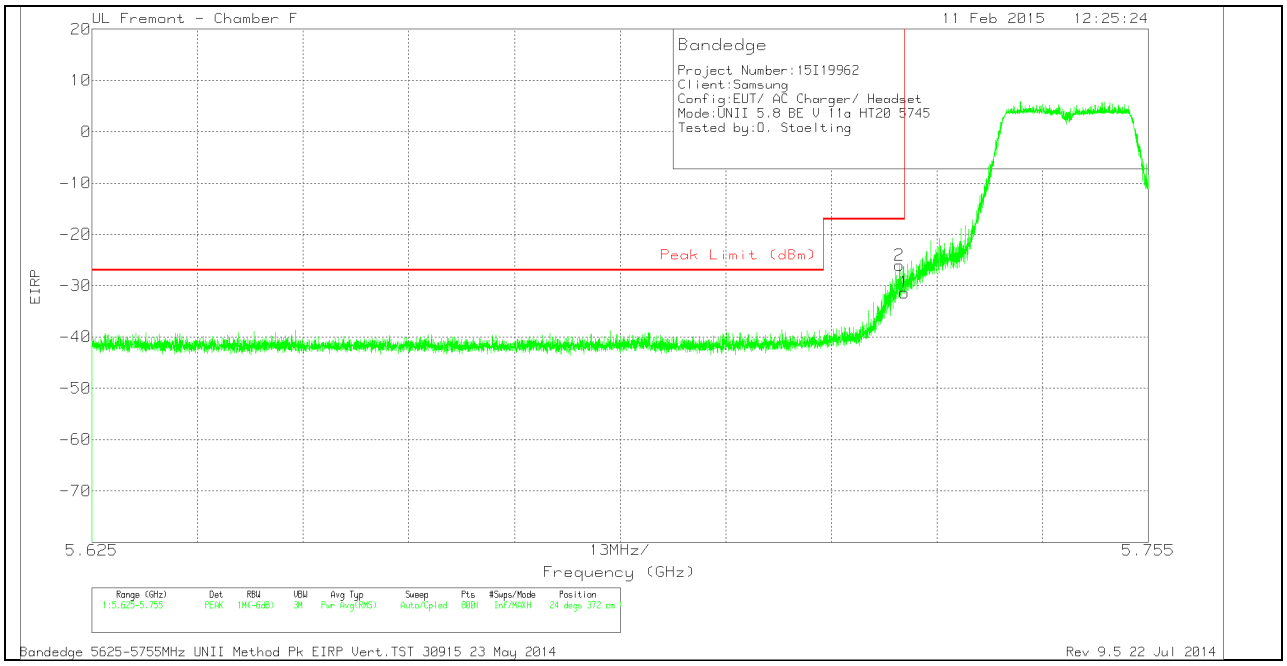
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T120 (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	-59.86	PK	34.8	-18.1	11.8	0	-31.36	-17	-14.36	24	372	V
2	5.724	-54.55	PK	34.8	-18.1	11.8	0	-26.05	-17	-9.05	24	372	V

PK - Peak detector

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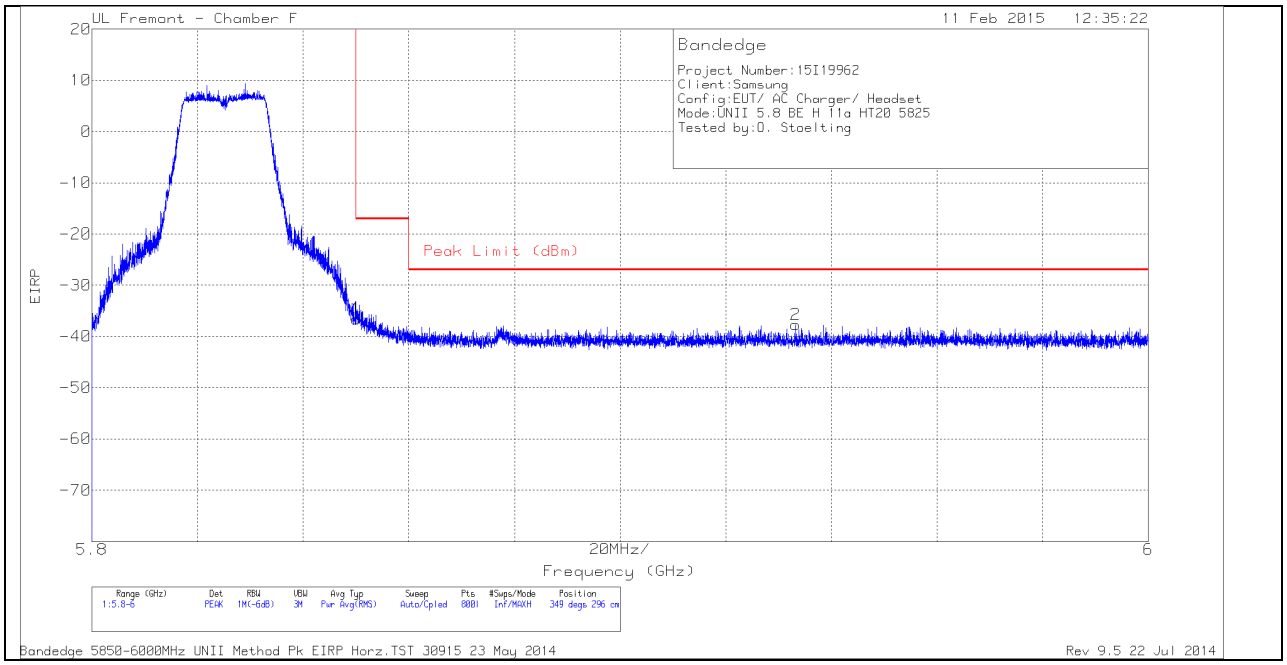
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T120 (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	-65.21	PK	35	-18.2	11.8	0	-36.61	-17	-19.61	349	296	H
2	5.933	-66.61	PK	35.2	-18.1	11.8	0	-37.71	-27	-10.71	349	296	H

PK - Peak detector

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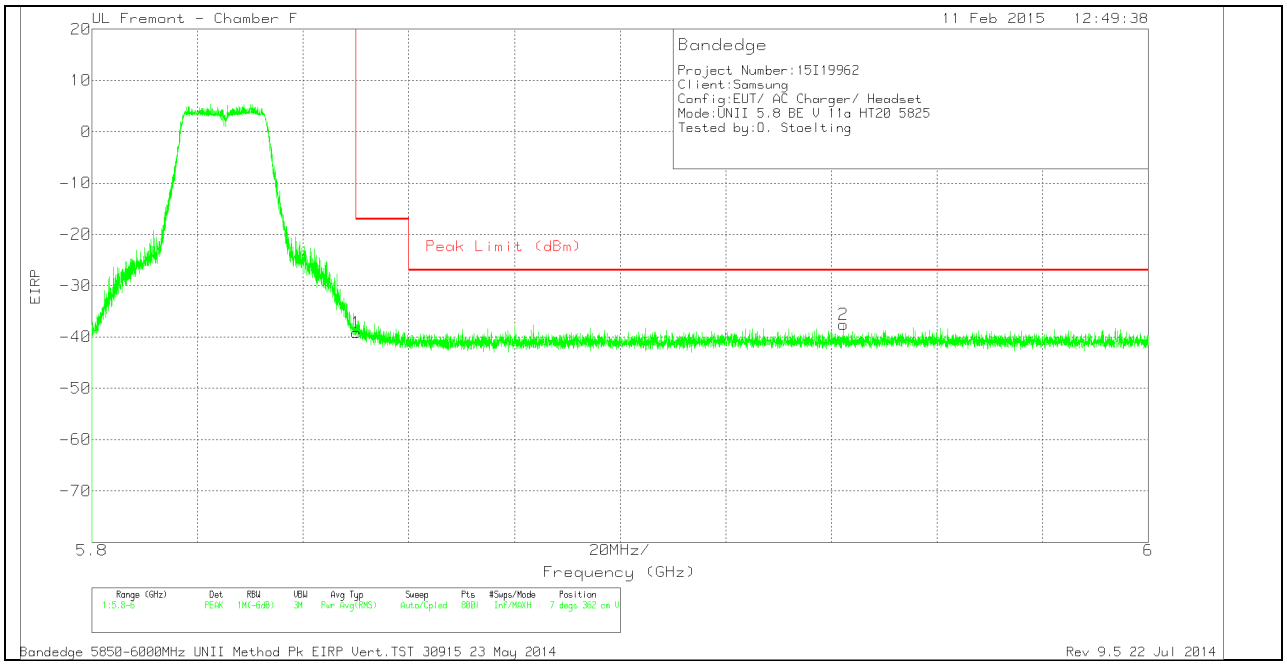
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T120 (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	-67.78	PK	35	-18.2	11.8	0	-39.18	-17	-22.18	7	362	V
2	5.942	-66.36	PK	35.2	-18.2	11.8	0	-37.56	-27	-10.56	7	362	V

PK - Peak detector

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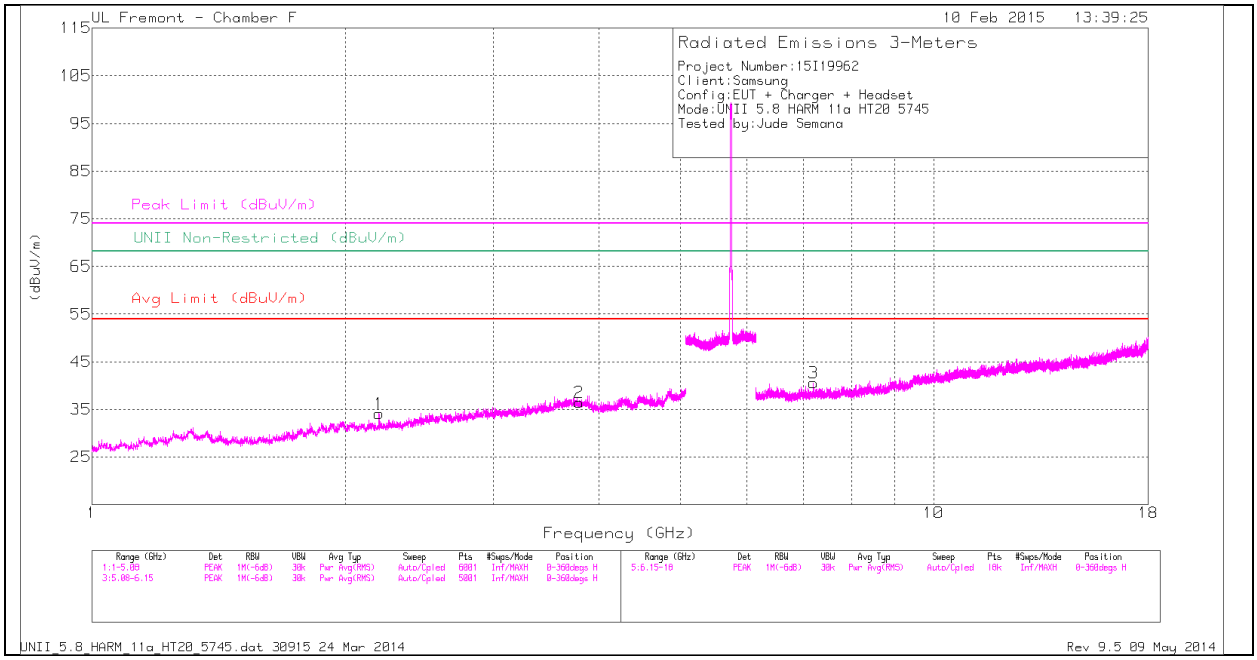
HARMONICS AND SPURIOUS EMISSIONS

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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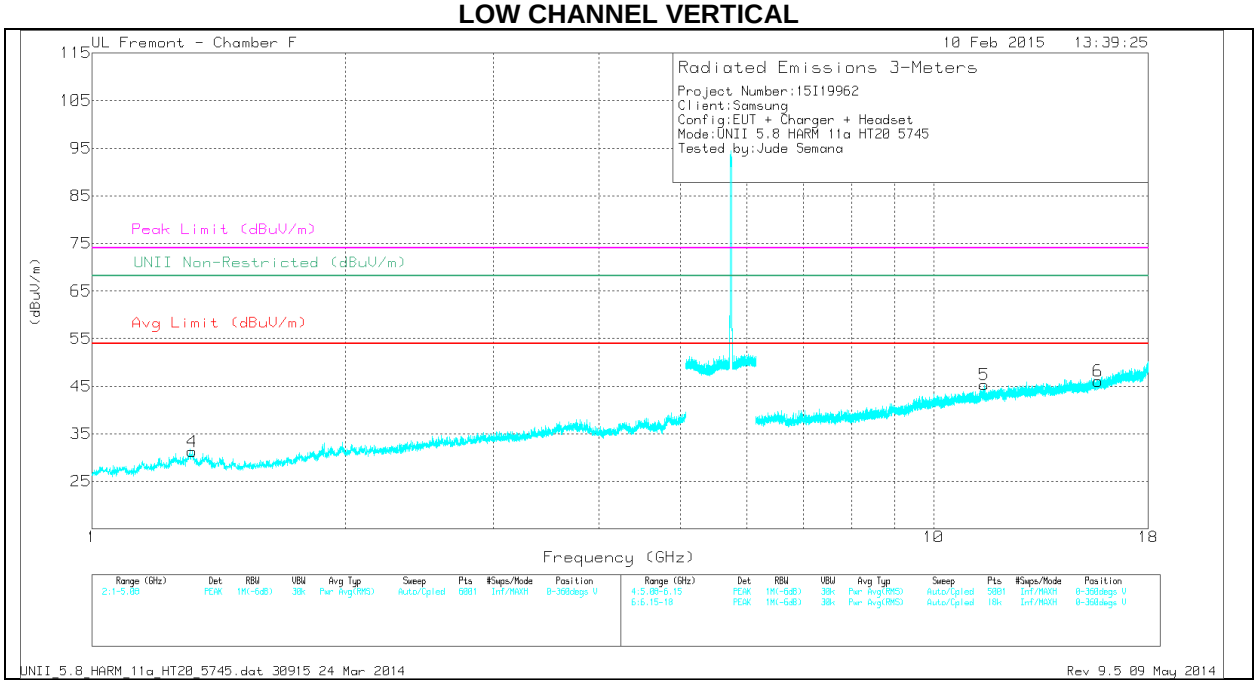
LOW CHANNEL VERTICAL



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 T120 (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	2.193	33.15	PK	31.8	-30.8	0	34.15	-	-	-	-	68.2	-34.05	0-360	100	H
2	* 3.791	31.38	PK	34.4	-29.3	0	36.48	-	-	74	-37.52	-	-	0-360	100	H
4	* 1.316	32.78	PK	29.9	-31.4	0	31.28	-	-	74	-42.72	-	-	0-360	101	V
3	7.198	30.69	PK	35.5	-25.6	0	40.59	-	-	-	-	68.2	-27.61	0-360	101	H
5	* 11.49	29	PK	38.4	-22.1	0	45.3	-	-	74	-28.7	-	-	0-360	201	V
6	* 15.691	28.35	PK	40.4	-22.7	0	46.05	-	-	74	-27.95	-	-	0-360	101	V

PK - Peak detector

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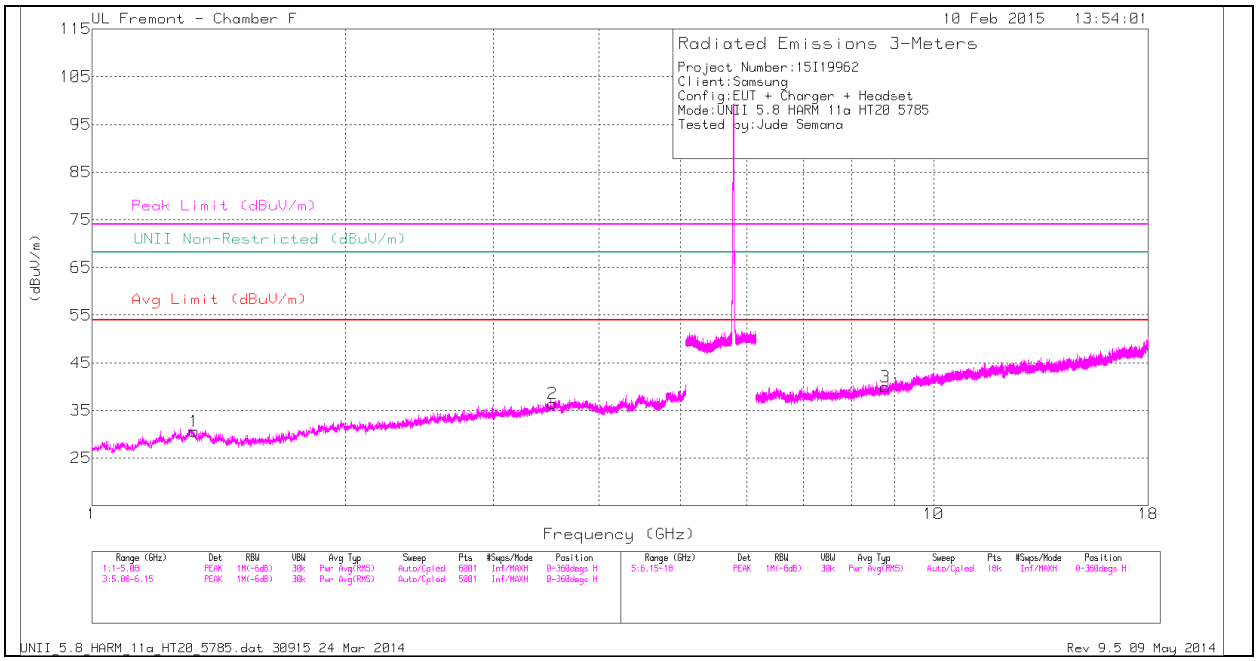
MID CHANNEL HORIZONTAL



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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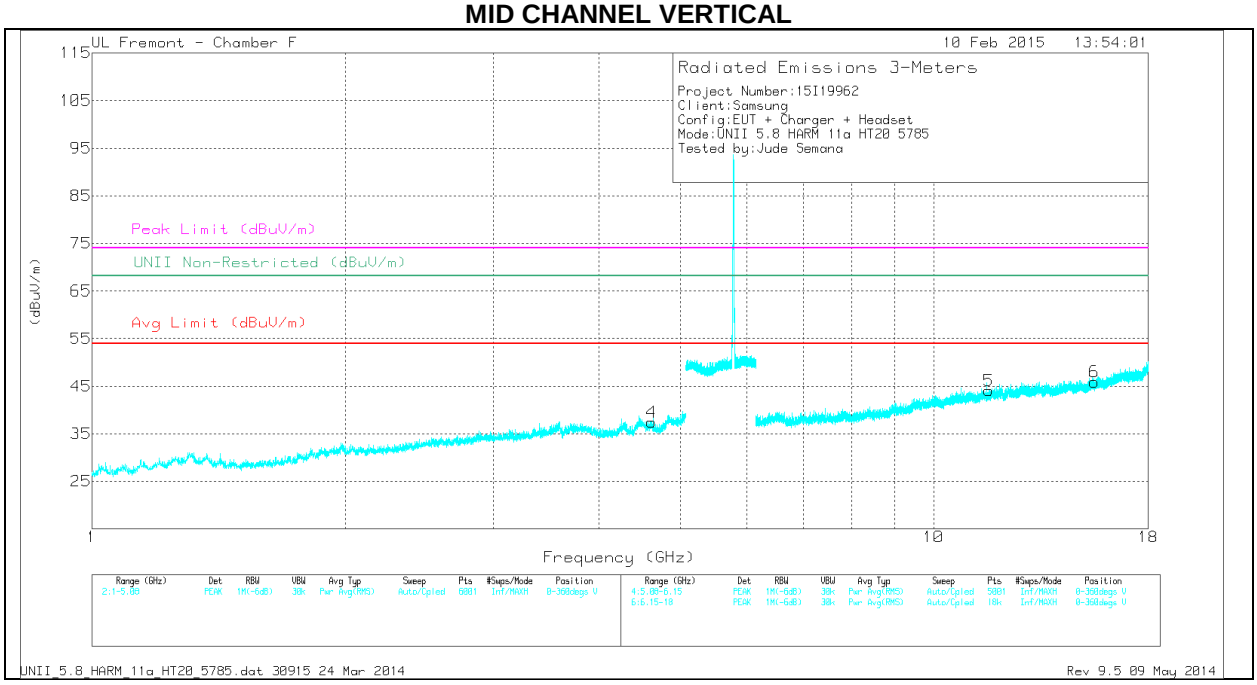
MID CHANNEL VERTICAL



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 T120 (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	* 1.323	32.17	PK	29.9	-31.4	0	30.67	-	-	74	-43.33	-	-	0-360	201	H
2	* 3.528	31.15	PK	34.5	-29.2	0	36.45	-	-	74	-37.55	-	-	0-360	101	H
4	* 4.627	29.94	PK	34.1	-26.6	0	37.44	-	-	74	-36.56	-	-	0-360	101	V
3	8.765	27.92	PK	35.9	-23.9	0	39.92	-	-	-	-	68.2	-28.28	0-360	100	H
5	* 11.638	27.78	PK	38.5	-22.2	0	44.08	-	-	74	-29.92	-	-	0-360	101	V
6	* 15.527	28.49	PK	40.3	-22.9	0	45.89	-	-	74	-28.11	-	-	0-360	201	V

PK - Peak detector

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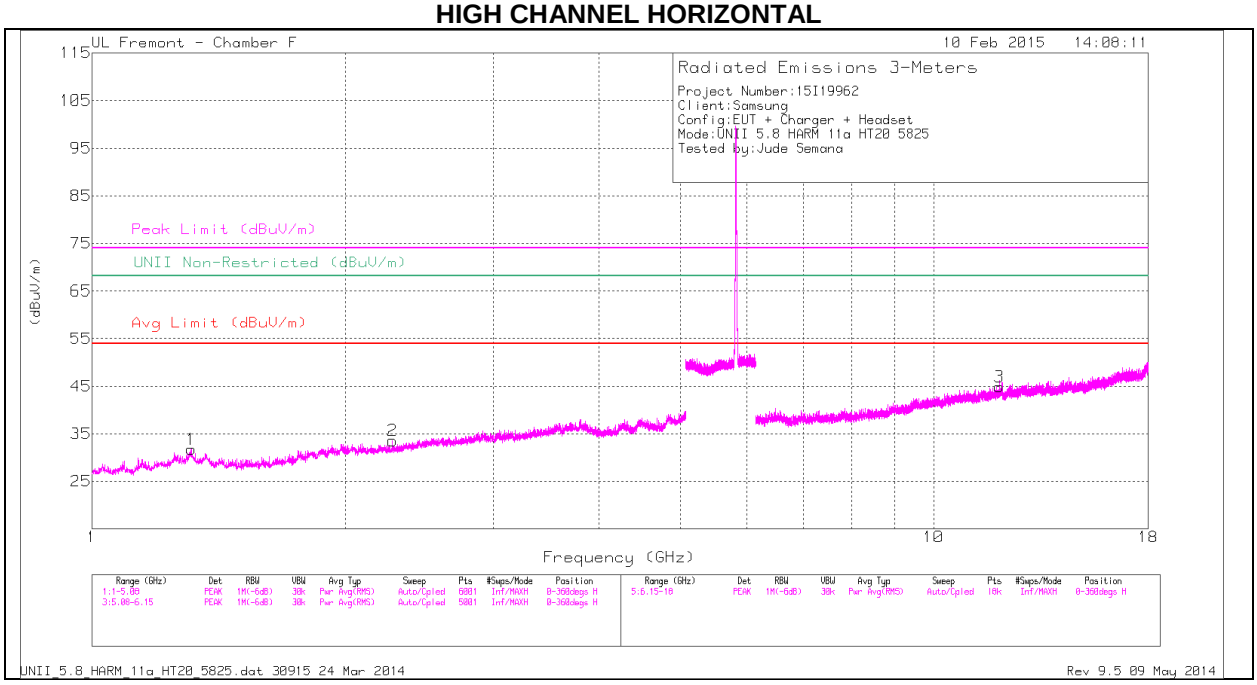
HIGH CHANNEL HORIZONTAL



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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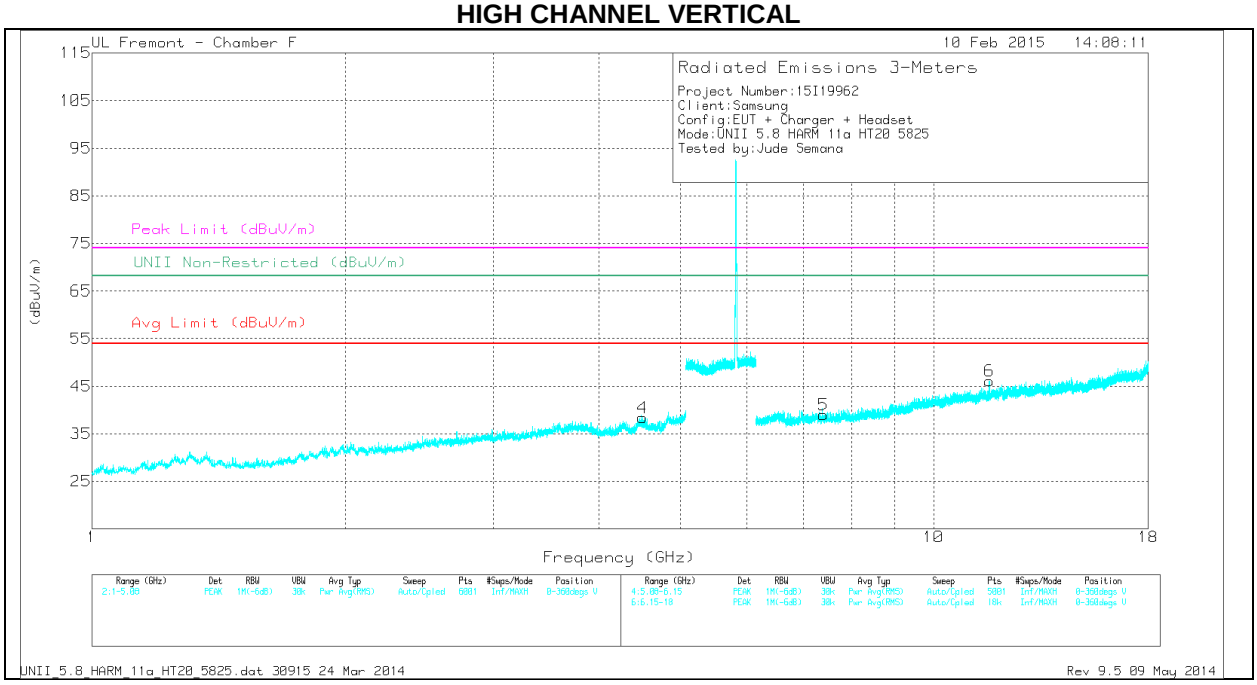
HIGH CHANNEL VERTICAL



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 T120 (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	* 1.313	33.17	PK	30	-31.4	0	31.77	-	-	74	-42.23	-	-	0-360	101	H
2	* 2.277	32.28	PK	31.8	-30.5	0	33.58	-	-	74	-40.42	-	-	0-360	101	H
4	* 4.514	32.19	PK	34	-27.8	0	38.39	-	-	74	-35.61	-	-	0-360	101	V
3	* 11.971	28.12	PK	38.9	-22.1	0	44.92	-	-	74	-29.08	-	-	0-360	201	H
5	* 7.398	29.59	PK	35.6	-26.2	0	38.99	-	-	74	-35.01	-	-	0-360	101	V
6	* 11.65	29.9	PK	38.6	-22.4	0	46.1	-	-	74	-27.9	-	-	0-360	201	V

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Fl tr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 11.651	36.36	PK1	38.6	-22.4	0	52.56	-	-	74	-21.44	-	-	333	275	V
* 11.65	26.55	AD1	38.6	-22.4	.3	43.05	54	-10.95	-	-	-	-	333	275	V

FCC Part15 Subpart C T186 2400MHz Spurious Emissions.TST 12746Rev 9.5 12 Jun 2013

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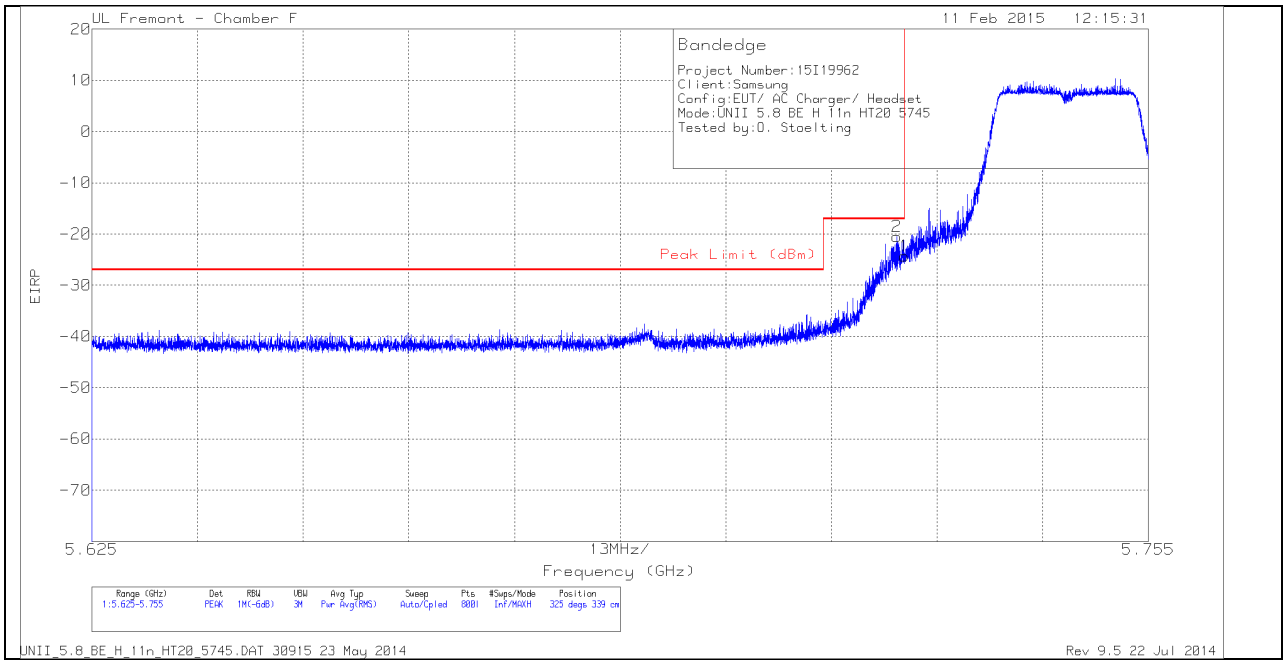
11.4.2. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.8 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T120 (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	-52.78	PK	34.8	-18.1	11.8	0	-24.28	-17	-7.28	325	339	H
2	5.724	-48.98	PK	34.8	-18.1	11.8	0	-20.48	-17	-3.48	325	339	H

PK - Peak detector

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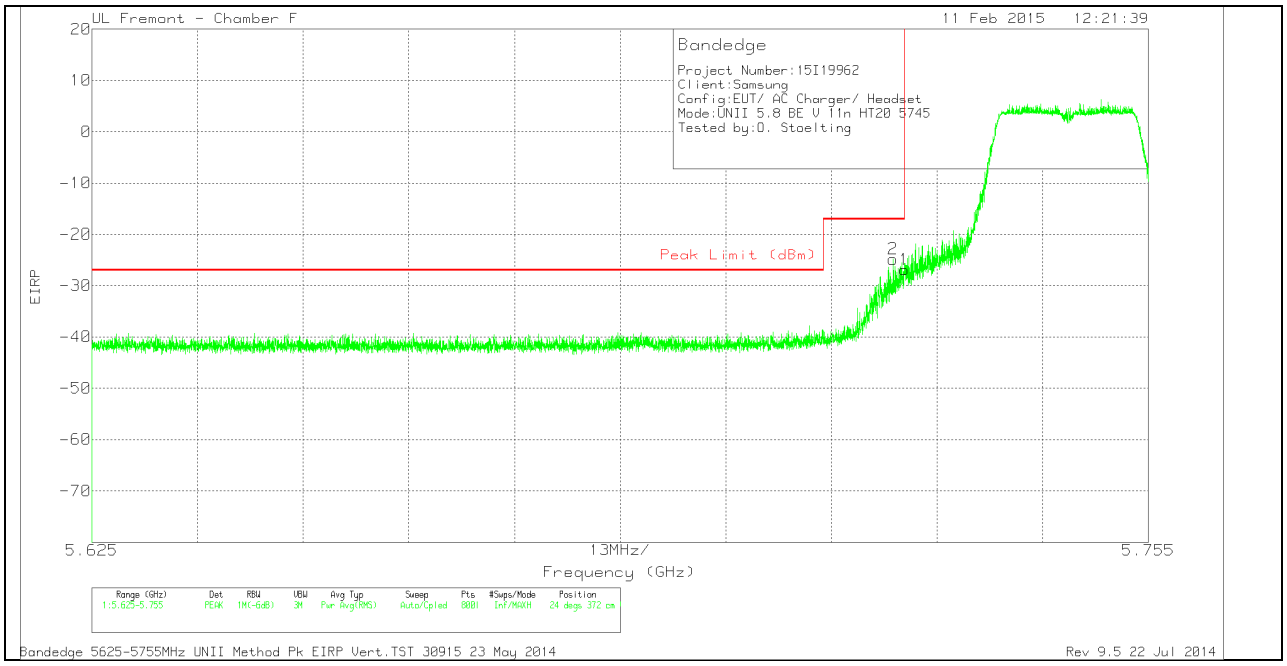
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T120 (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	-55.39	PK	34.8	-18.1	11.8	0	-26.89	-17	-9.89	24	372	V
2	5.724	-53.35	PK	34.8	-18.1	11.8	0	-24.85	-17	-7.85	24	372	V

PK - Peak detector

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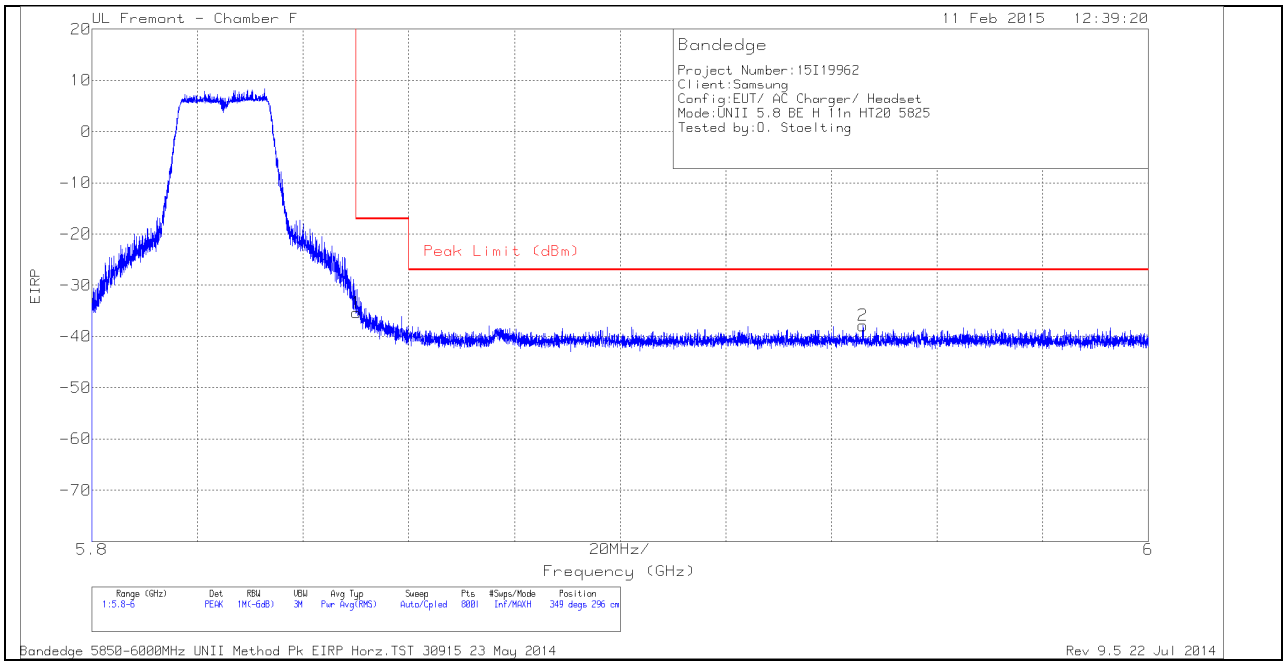
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T120 (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	-63.98	PK	35	-18.2	11.8	0	-35.38	-17	-18.38	349	296	H
2	5.946	-66.67	PK	35.2	-18.2	11.8	0	-37.87	-27	-10.87	349	296	H

PK - Peak detector

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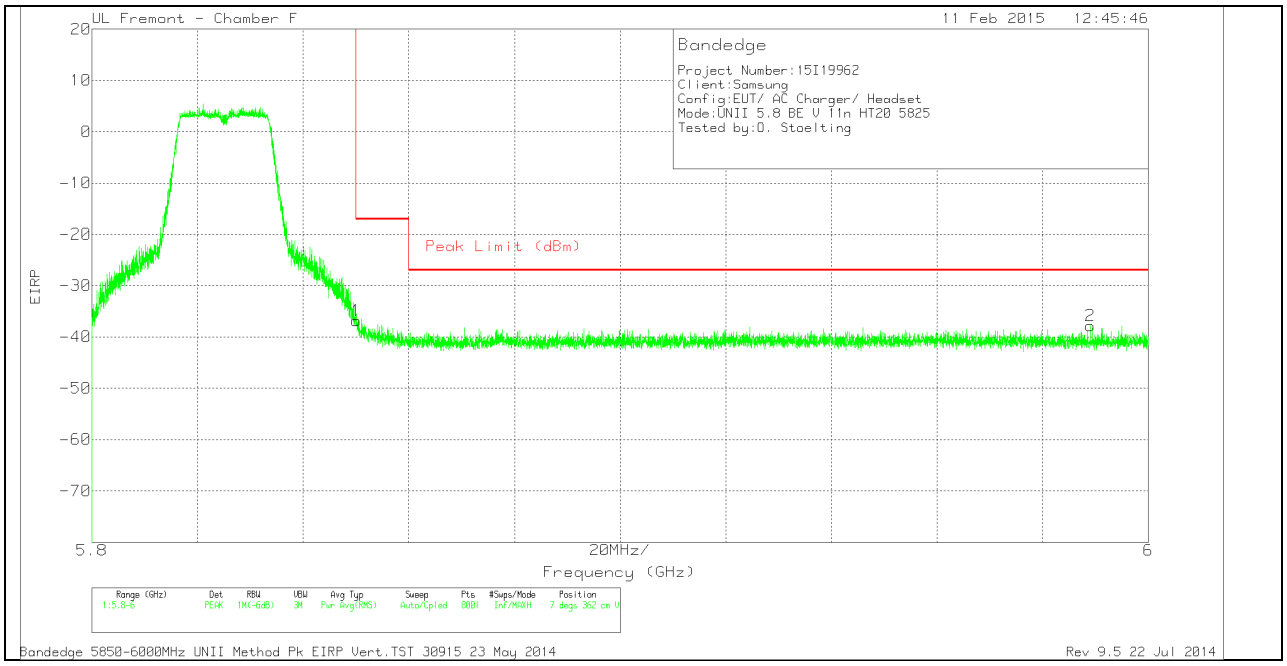
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T120 (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	-65.47	PK	35	-18.2	11.8	0	-36.87	-17	-19.87	7	362	V
2	5.989	-66.68	PK	35.3	-18.2	11.8	0	-37.78	-27	-10.78	7	362	V

PK - Peak detector

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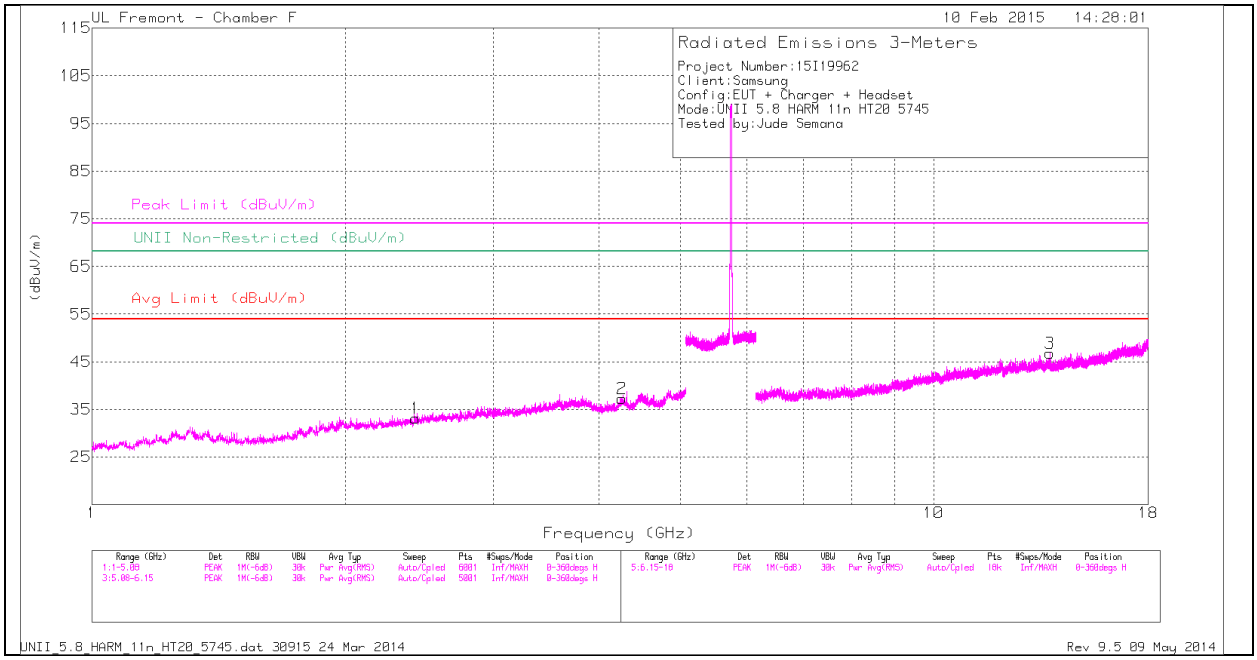
HARMONICS AND SPURIOUS EMISSIONS

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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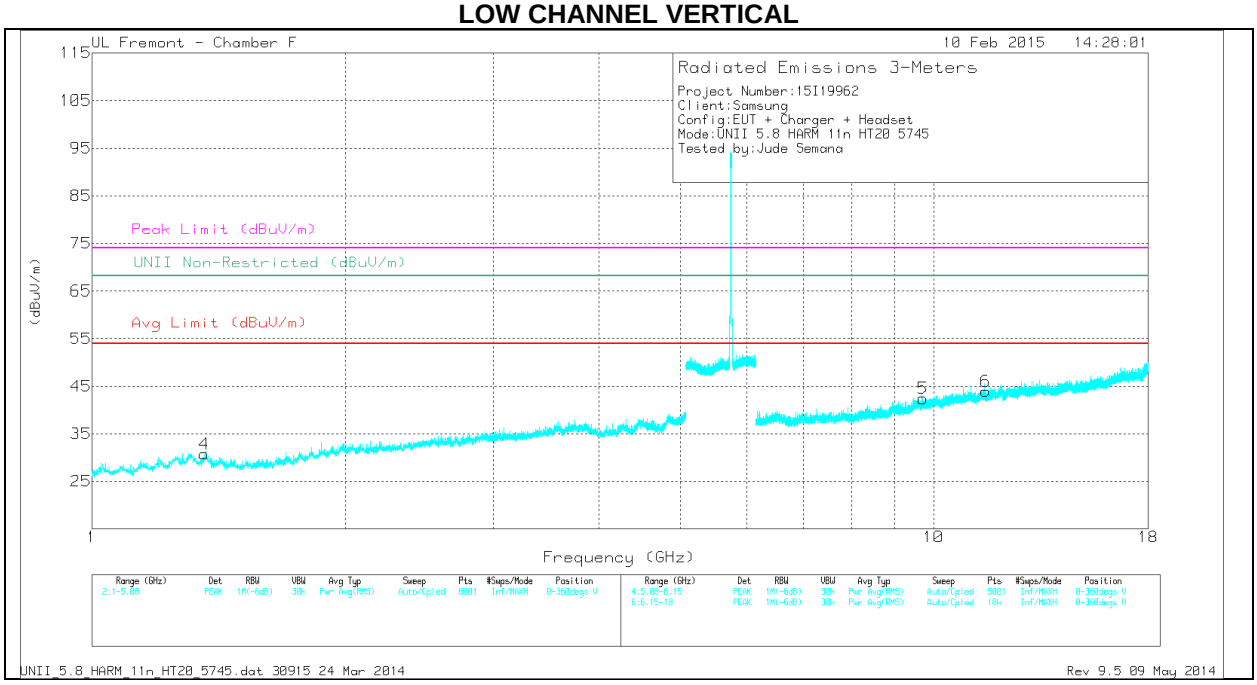
LOW CHANNEL VERTICAL



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 T120 (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	2.425	31.56	PK	32.3	-30.7	0	33.16	-	-	-	-	68.2	-35.04	0-360	201	H
2	* 4.264	30.32	PK	33.7	-26.7	0	37.32	-	-	74	-36.68	-	-	0-360	100	H
4	* 1.361	32.64	PK	29.6	-31.5	0	30.74	-	-	74	-43.26	-	-	0-360	201	V
3	13.755	31.01	PK	38.6	-22.8	0	46.81	-	-	-	-	68.2	-21.39	0-360	100	H
5	9.714	27.53	PK	37.1	-22.2	0	42.43	-	-	-	-	68.2	-25.77	0-360	101	V
6	* 11.531	27.77	PK	38.4	-22.2	0	43.97	-	-	74	-30.03	-	-	0-360	201	V

PK - Peak detector

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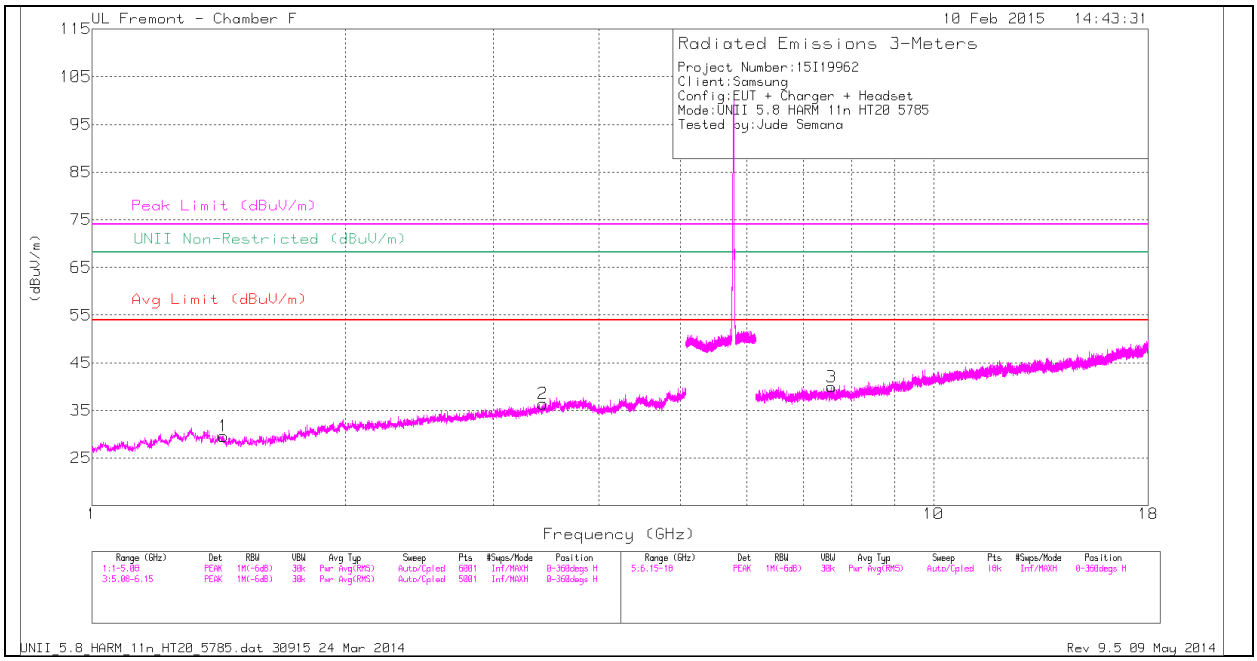
MID CHANNEL HORIZONTAL



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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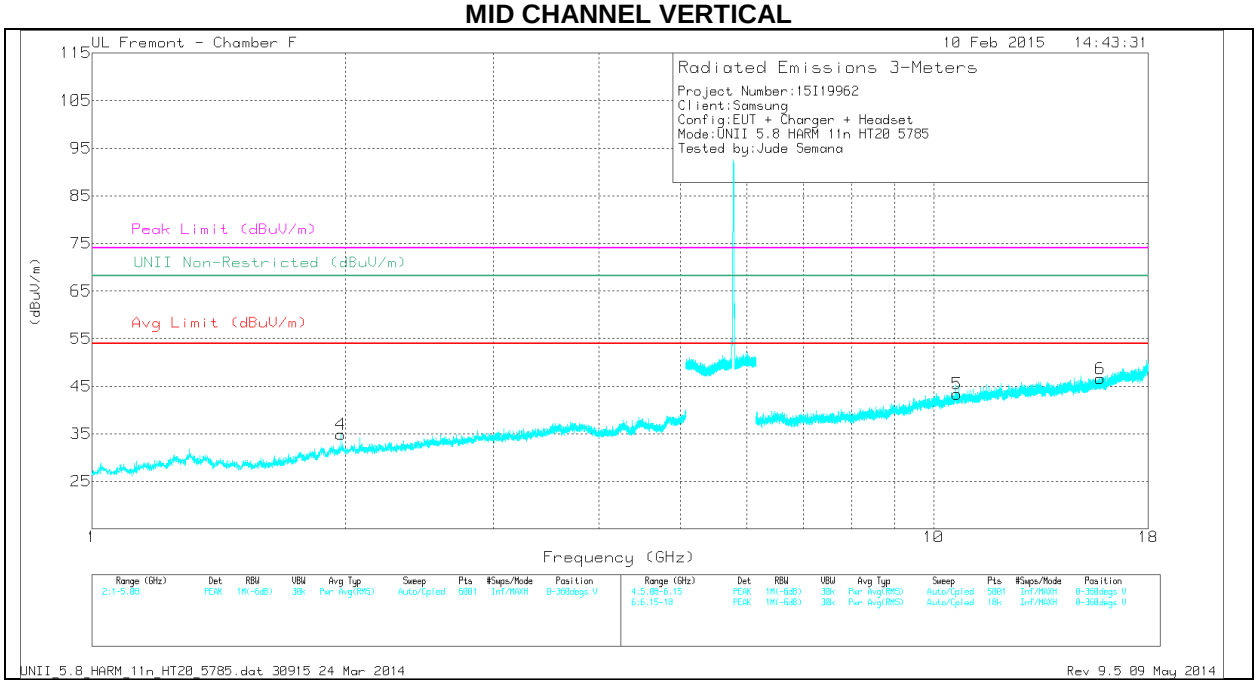
MID CHANNEL VERTICAL



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 T120 (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	32.59	PK	28.9	-31.9	0	29.59	-	-	-	-	68.2	-38.61	0-360	201	H
2	3.436	31.71	PK	34.1	-29.4	0	36.41	-	-	-	-	68.2	-31.79	0-360	201	H
4	1.976	34.19	PK	31.6	-30.9	0	34.89	-	-	-	-	68.2	-33.31	0-360	201	V
3	* 7.568	29.43	PK	35.6	-25.1	0	39.93	-	-	74	-34.07	-	-	0-360	201	H
5	* 10.667	27.39	PK	38	-22	0	43.39	-	-	74	-30.61	-	-	0-360	101	V
6	* 15.772	28.71	PK	40.4	-22.5	0	46.61	-	-	74	-27.39	-	-	0-360	201	V

PK - Peak detector

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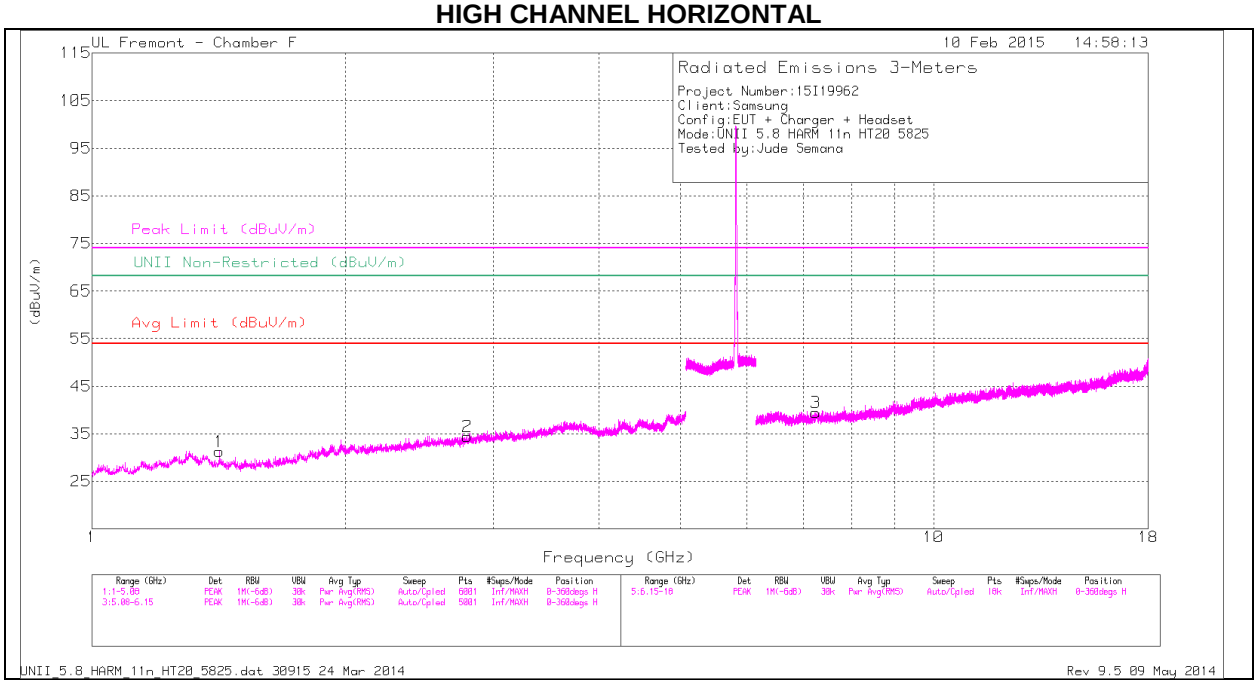
HIGH CHANNEL HORIZONTAL



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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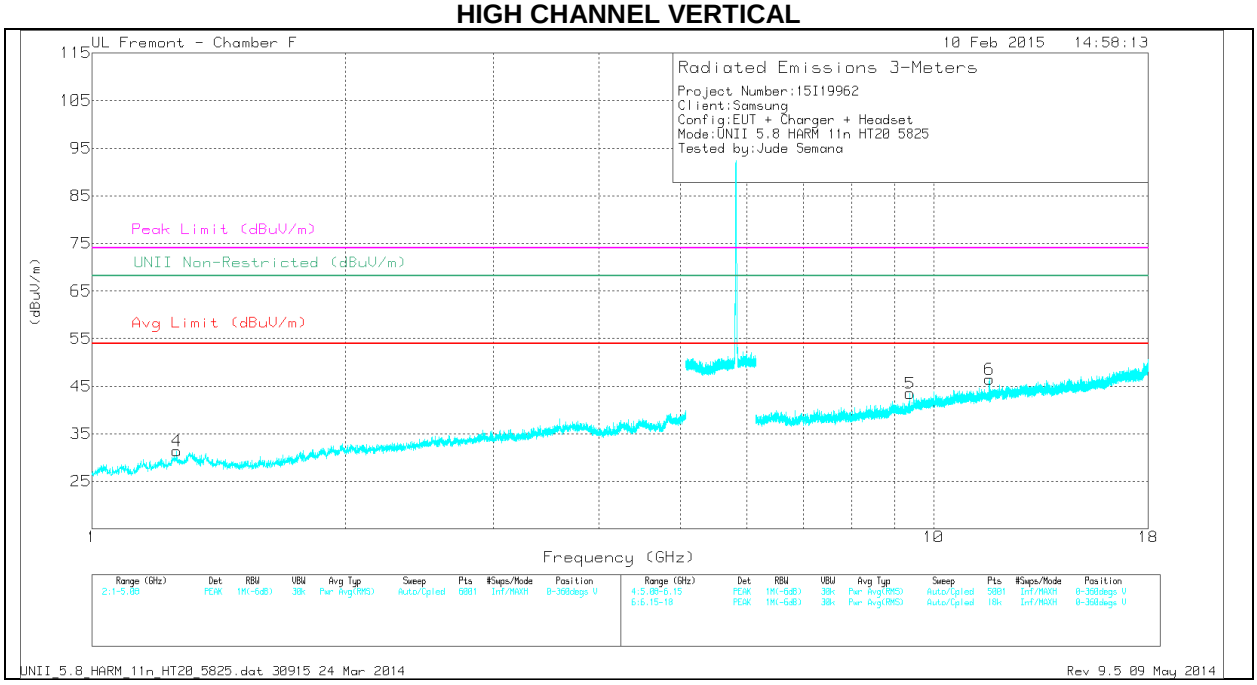
HIGH CHANNEL VERTICAL



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 T120 (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	* 1.418	34.08	PK	29.1	-31.9	0	31.28	-	-	74	-42.72	-	-	0-360	101	H
2	* 2.792	31.47	PK	32.9	-29.9	0	34.47	-	-	74	-39.53	-	-	0-360	101	H
4	* 1.261	33.71	PK	29.6	-31.9	0	31.41	-	-	74	-42.59	-	-	0-360	101	V
3	7.243	29.29	PK	35.5	-25.3	0	39.49	-	-	-	-	68.2	-28.71	0-360	201	H
5	* 9.379	30	PK	36.6	-23.1	0	43.5	-	-	74	-30.5	-	-	0-360	101	V
6	* 11.65	30.27	PK	38.6	-22.4	0	46.47	-	-	74	-27.53	-	-	0-360	201	V

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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
* 11.65	36.35	PK1	38.6	-22.4	0	52.55	-	-	74	-21.45	-	-	240	300	V
* 11.65	27.53	AD1	38.6	-22.4	.3	44.03	54	-9.97	-	-	-	-	240	300	V

FCC Part15 Subpart C T186 2400MHz Spurious Emissions.TST 12746Rev 9.5 12 Jun 2013

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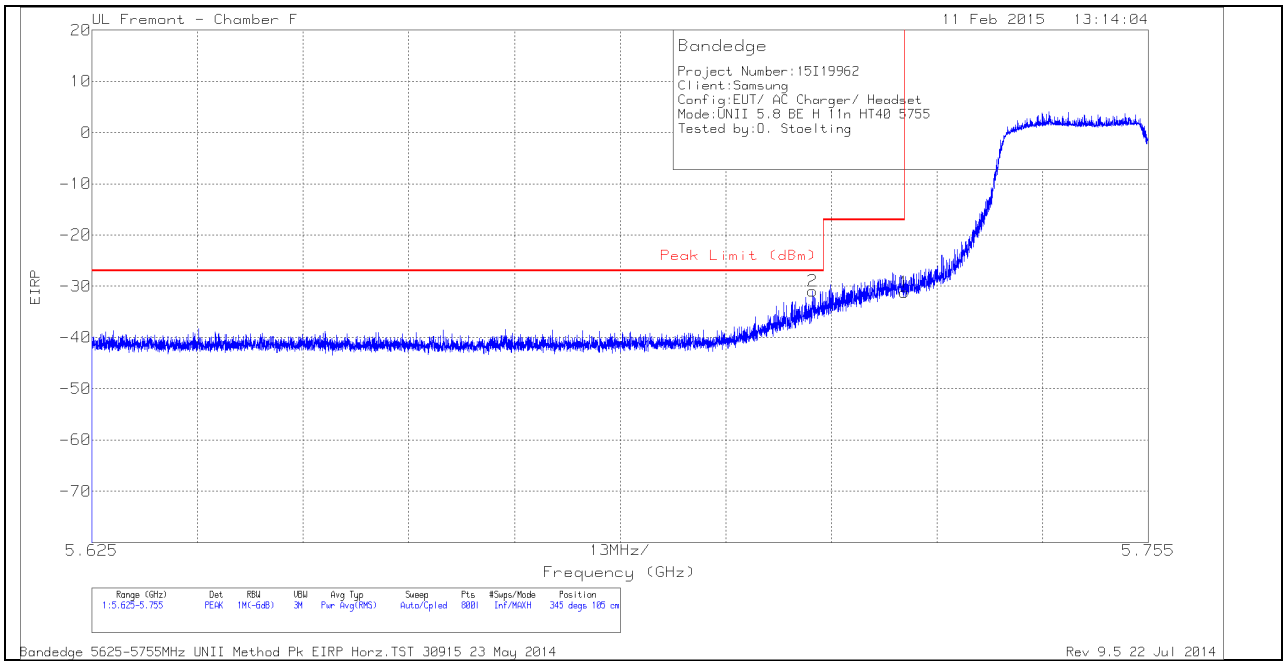
11.4.3. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.8 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T120 (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	-59.7	PK	34.8	-18.1	11.8	0	-31.2	-17	-14.2	345	105	H
2	5.714	-59.46	PK	34.8	-18.1	11.8	0	-30.96	-27	-3.96	345	105	H

PK - Peak detector

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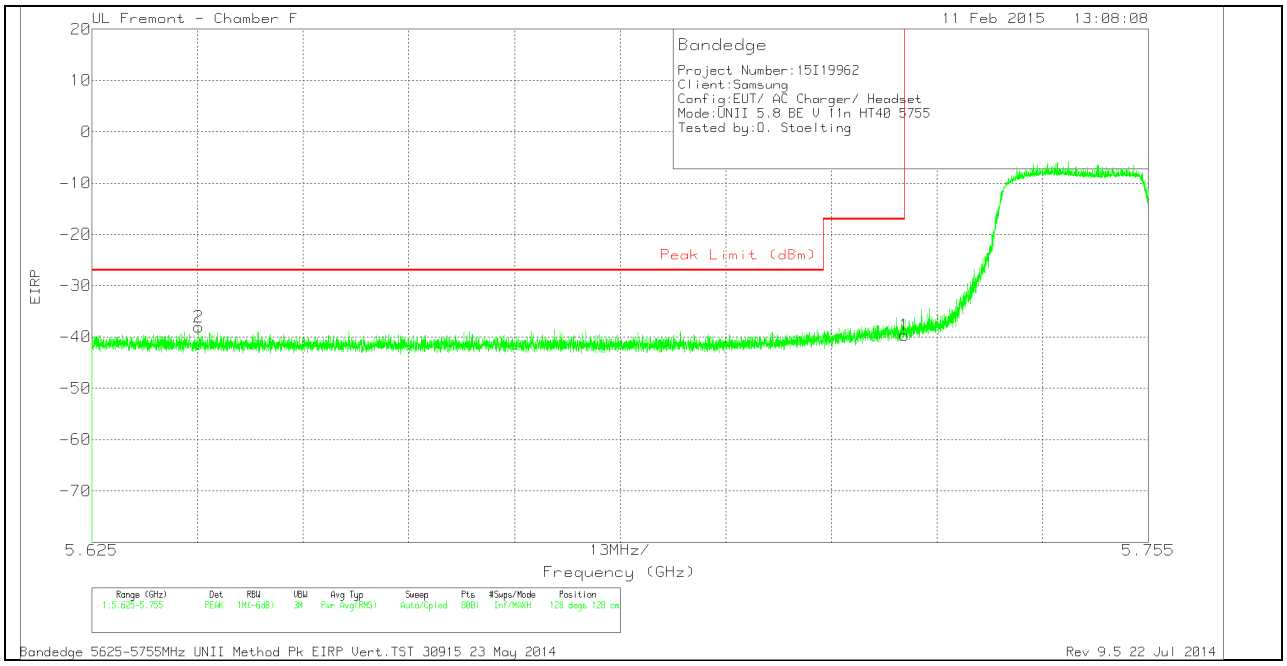
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T120 (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	-68.11	PK	34.8	-18.1	11.8	0	-39.61	-17	-22.61	128	128	V
2	5.638	-66.24	PK	34.7	-18.3	11.8	0	-38.04	-27	-11.04	128	128	V

PK - Peak detector

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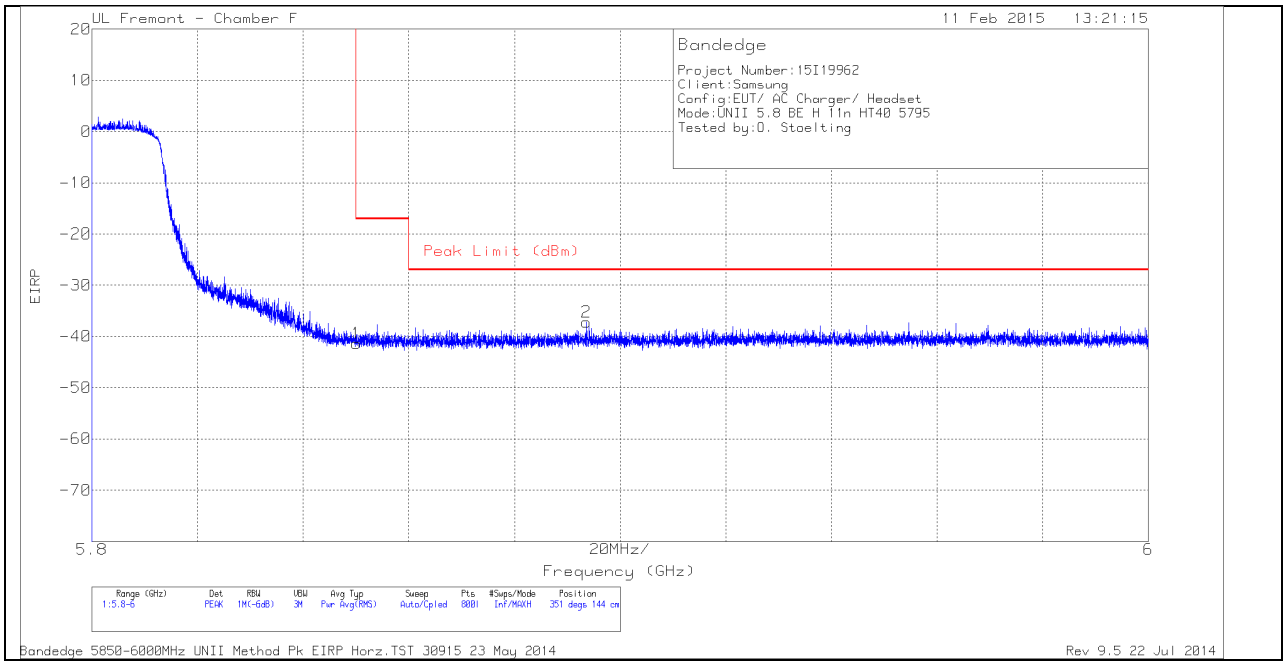
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T120 (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	-70	PK	35	-18.2	11.8	0	-41.4	-17	-24.4	351	144	H
2	5.894	-65.86	PK	35.1	-18.2	11.8	0	-37.16	-27	-10.16	351	144	H

PK - Peak detector

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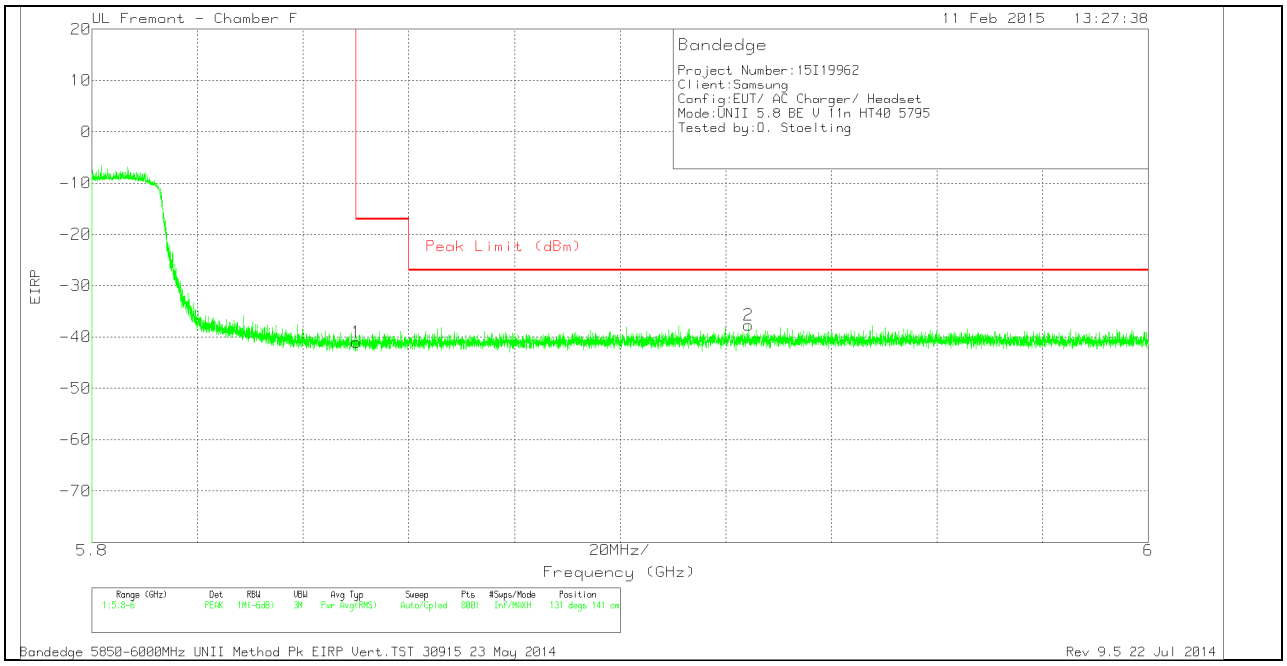
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T120 (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	-69.62	PK	35	-18.2	11.8	0	-41.02	-17	-24.02	131	141	V
2	5.924	-66.59	PK	35.2	-18.1	11.8	0	-37.69	-27	-10.69	131	141	V

PK - Peak detector

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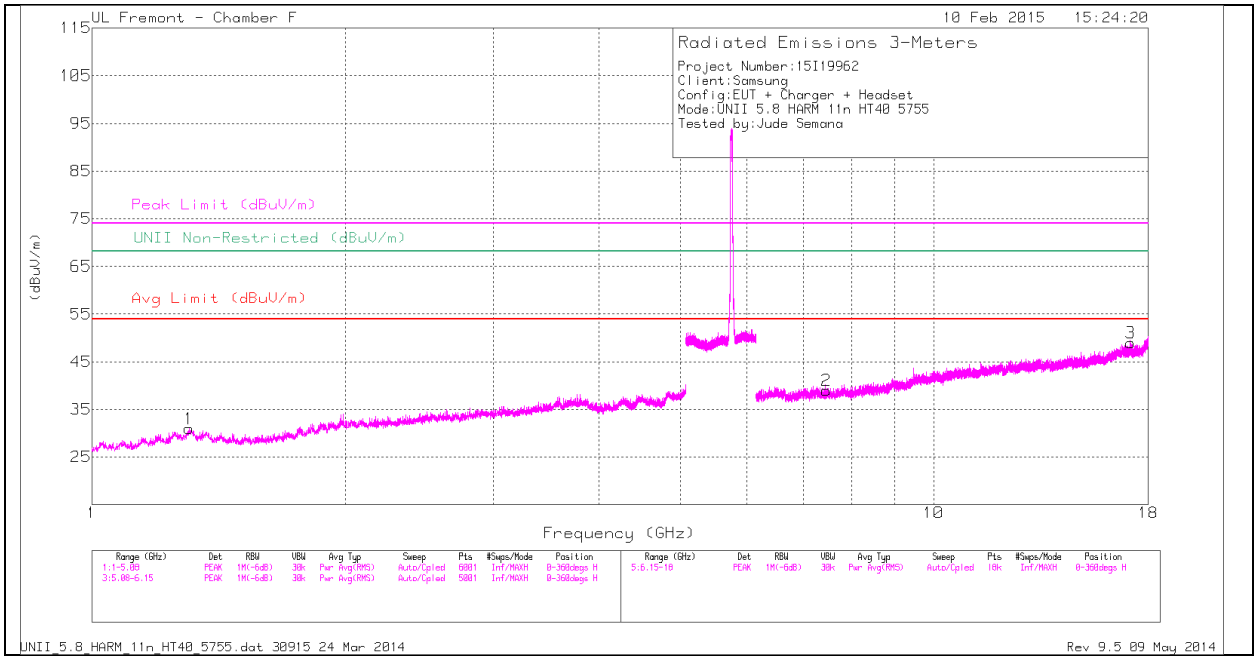
HARMONICS AND SPURIOUS EMISSIONS

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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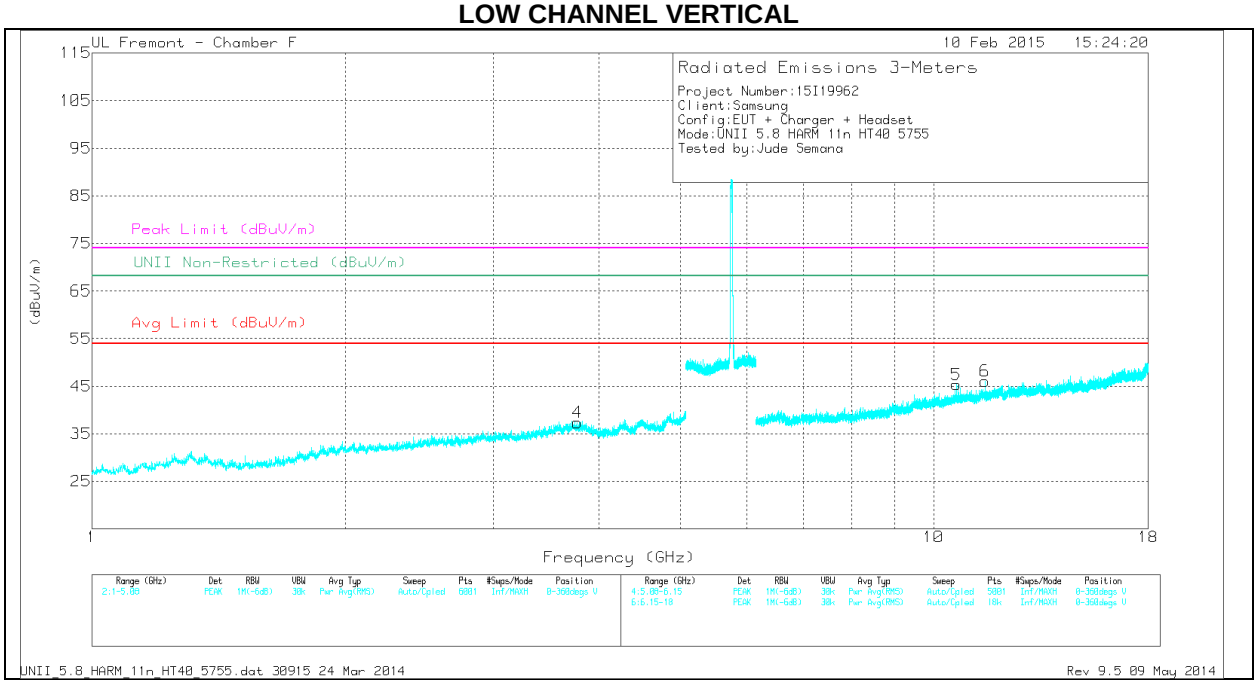
LOW CHANNEL VERTICAL



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 T120 (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	* 1.305	32.45	PK	30	-31.5	0	30.95	-	-	74	-43.05	-	-	0-360	100	H
4	* 3.775	32.18	PK	34.5	-29.3	0	37.38	-	-	74	-36.62	-	-	0-360	201	V
2	* 7.459	29.01	PK	35.6	-25.6	0	39.01	-	-	74	-34.99	-	-	0-360	101	H
3	17.155	28.95	PK	41.1	-21.1	0	48.95	-	-	-	-	68.2	-19.25	0-360	201	H
5	* 10.649	29.37	PK	38	-22	0	45.37	-	-	74	-28.63	-	-	0-360	101	V
6	* 11.51	29.66	PK	38.4	-22	0	46.06	-	-	74	-27.94	-	-	0-360	201	V

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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
* 11.51	36.83	PK1	38.4	-22	0	53.23	-	-	74	-20.77	-	-	334	149	V
* 11.51	28.18	AD1	38.4	-22	.6	45.18	54	-8.82	-	-	-	-	334	149	V

FCC Part15 Subpart C T186 2400MHz Spurious Emissions.TST 12746Rev 9.5 12 Jun 2013

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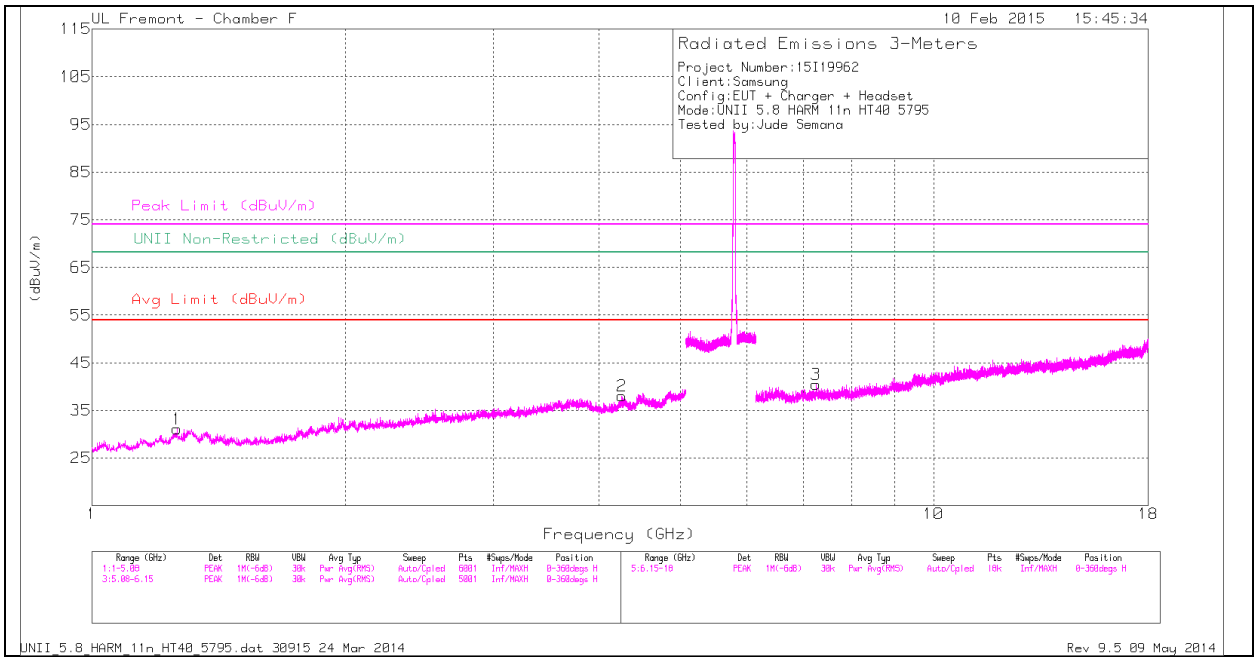
HIGH CHANNEL HORIZONTAL



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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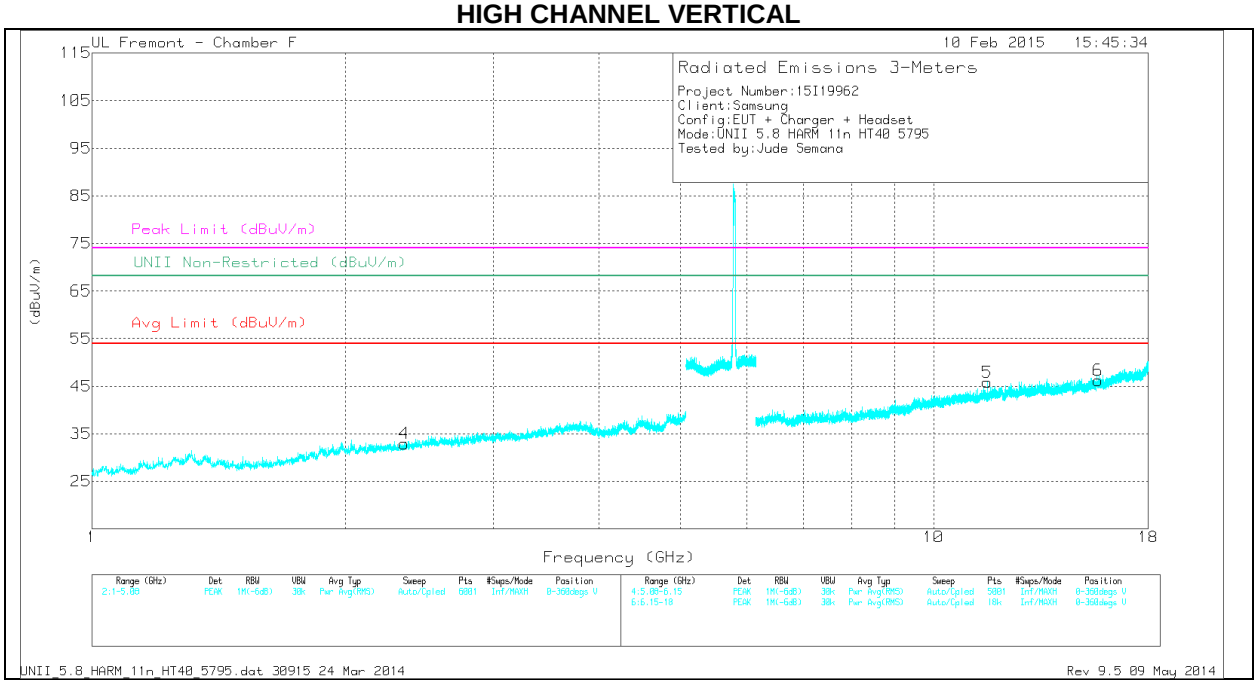
HIGH CHANNEL VERTICAL



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 T120 (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	* 1.263	33.31	PK	29.7	-31.9	0	31.11	-	-	74	-42.89	-	-	0-360	201	H
2	* 4.264	31.05	PK	33.7	-26.7	0	38.05	-	-	74	-35.95	-	-	0-360	201	H
4	* 2.352	31.32	PK	32	-30.4	0	32.92	-	-	74	-41.08	-	-	0-360	201	V
3	* 7.251	30.16	PK	35.5	-25.2	0	40.46	-	-	74	-33.54	-	-	0-360	201	H
5	* 11.59	29.95	PK	38.5	-22.6	0	45.85	-	-	74	-28.15	-	-	0-360	201	V
6	* 15.687	28.5	PK	40.4	-22.7	0	46.2	-	-	74	-27.8	-	-	0-360	201	V

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (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
* 11.59	38.73	PK1	38.5	-22.6	0	54.63	-	-	74	-19.37	-	-	339	176	V
* 11.59	29.56	AD1	38.5	-22.6	.6	46.06	54	-7.94	-	-	-	-	339	176	V

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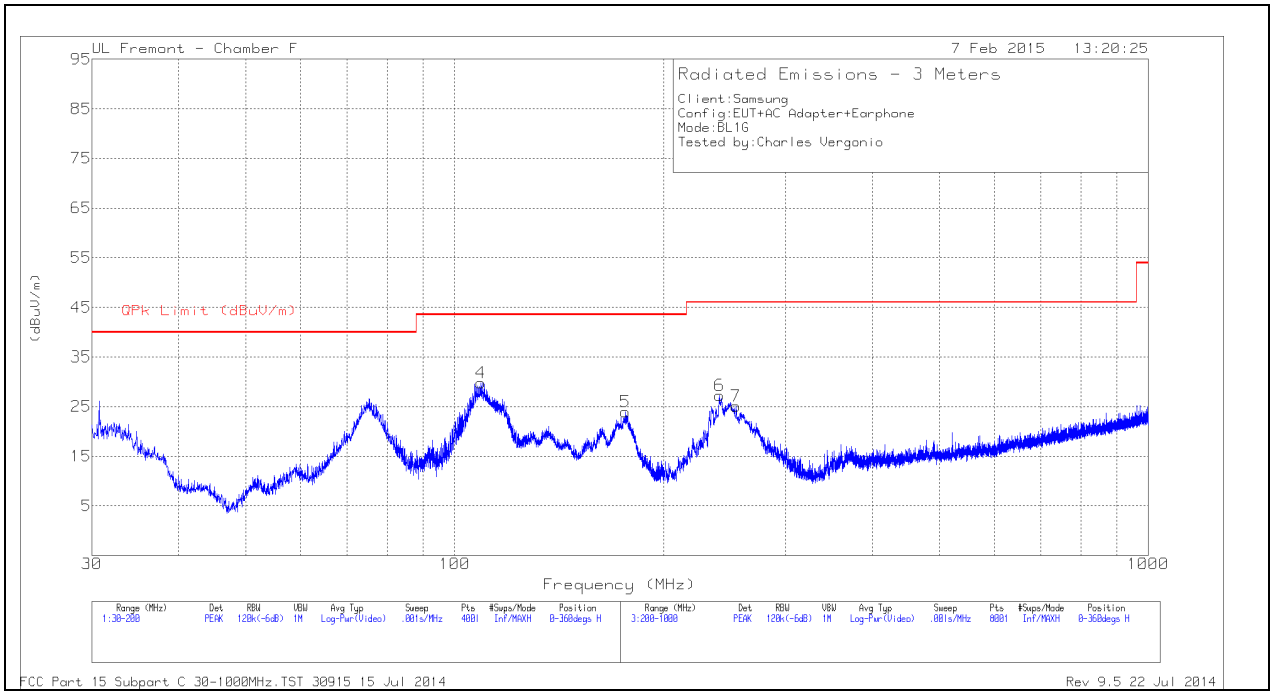
12. WORST-CASE BELOW 1 GHz (in the 5.3 GHz Band)

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



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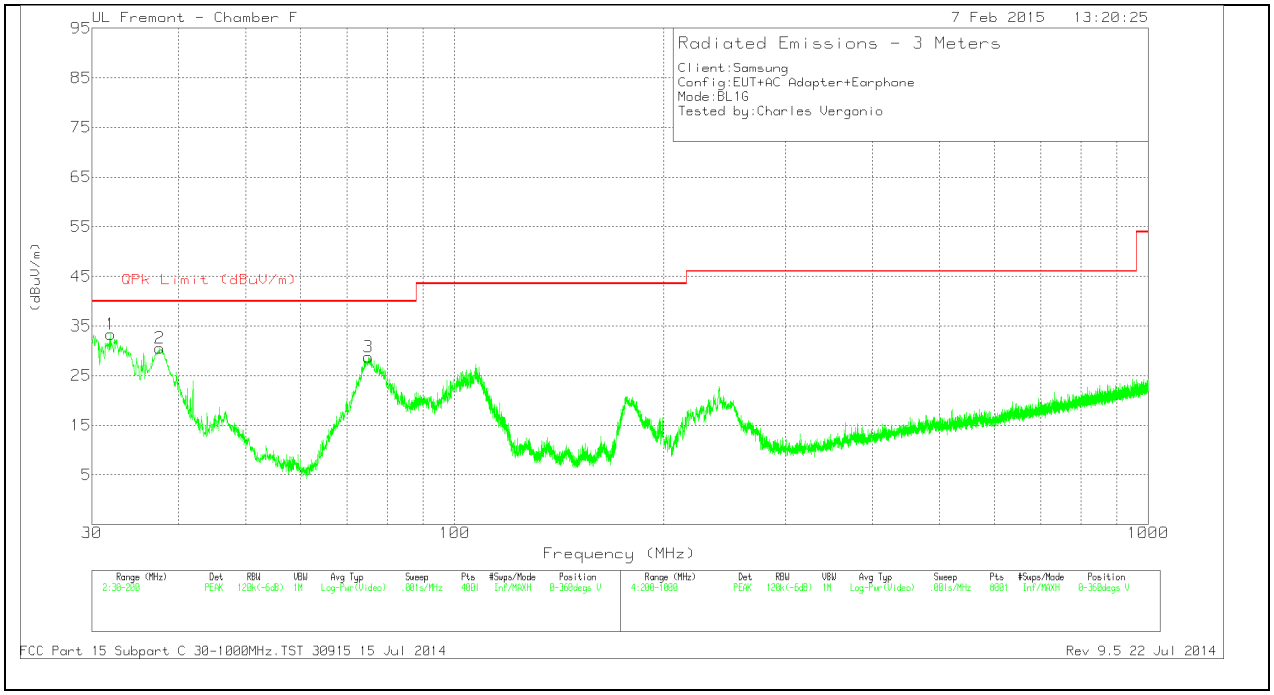
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, VERTICAL)



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Below 1G Data

Trace Markers

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
4	* 109.1775	48.79	PK	12.4	-31.4	29.79	43.52	-13.73	0-360	301	H
5	176.2425	43.6	PK	11.4	-31.1	23.9	43.52	-19.62	0-360	201	H
1	31.9125	45.3	PK	20	-32	33.3	40	-6.7	0-360	100	V
2	* 37.6075	46.81	PK	15.6	-31.9	30.51	40	-9.49	0-360	100	V
3	* 75.135	52.32	PK	8.1	-31.6	28.82	40	-11.18	0-360	100	V
6	* 240.8	46.55	PK	11.6	-30.9	27.25	46.02	-18.77	0-360	100	H
7	* 254.5	44.49	PK	11.5	-30.9	25.09	46.02	-20.93	0-360	100	H

* - 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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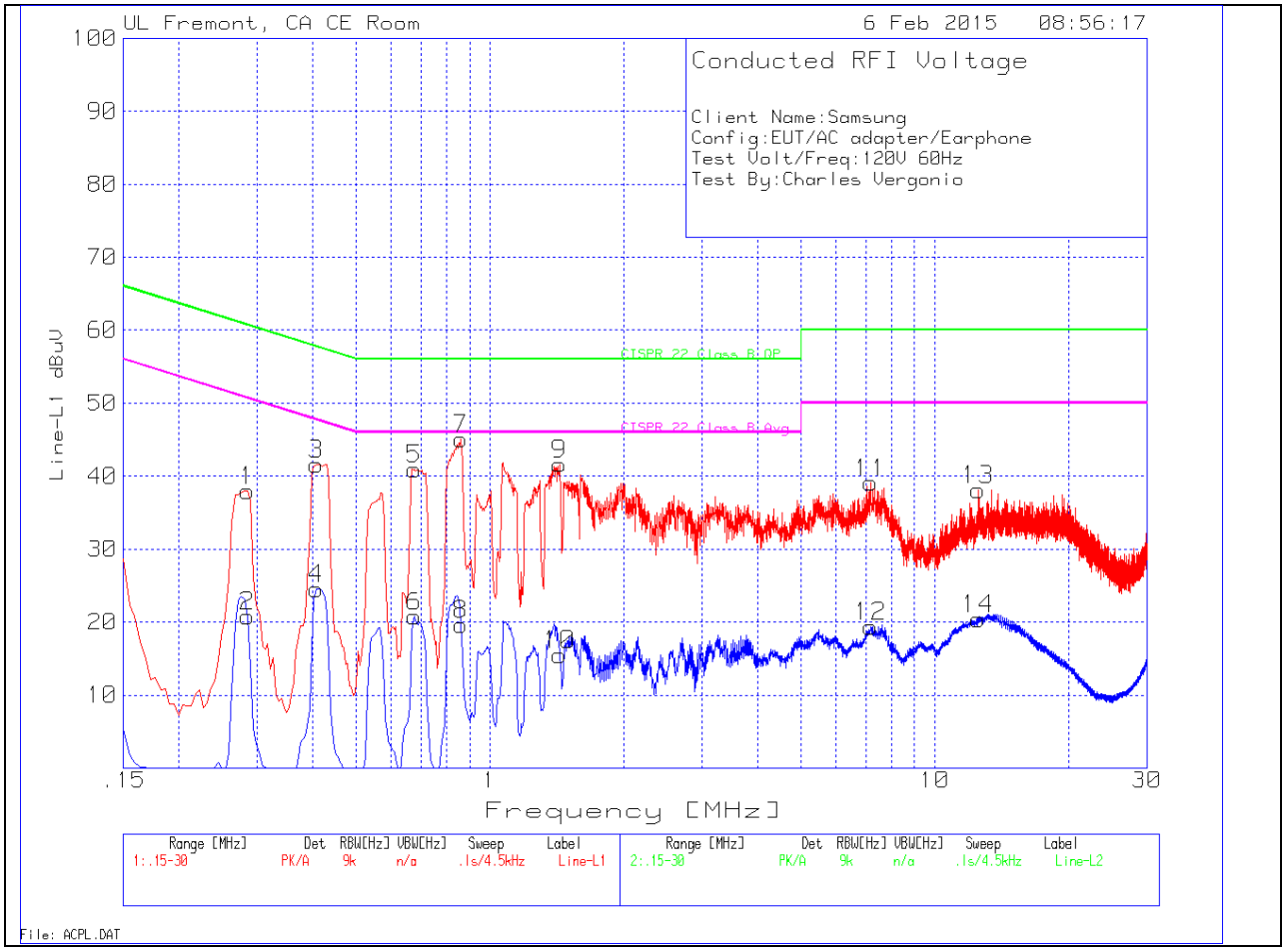
6 WORST EMISSIONS

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	.285	37.4	PK	.6	0	38	60.7	-22.7	-	-
2	.285	20.17	Av	.6	0	20.77	-	-	50.7	-29.93
3	.4065	41.24	PK	.4	0	41.64	57.7	-16.06	-	-
4	.4065	24.18	Av	.4	0	24.58	-	-	47.7	-23.12
5	.6765	40.69	PK	.3	0	40.99	56	-15.01	-	-
6	.6765	20.44	Av	.3	0	20.74	-	-	46	-25.26
7	.861	44.74	PK	.3	0	45.04	56	-10.96	-	-
8	.861	19.34	Av	.3	0	19.64	-	-	46	-26.36
9	1.437	41.35	PK	.2	.1	41.65	56	-14.35	-	-
10	1.437	15.16	Av	.2	.1	15.46	-	-	46	-30.54
11	7.17	38.78	PK	.2	.1	39.08	60	-20.92	-	-
12	7.17	19.05	Av	.2	.1	19.35	-	-	50	-30.65
13	12.543	37.73	PK	.2	.2	38.13	60	-21.87	-	-
14	12.543	20	Av	.2	.2	20.4	-	-	50	-29.6

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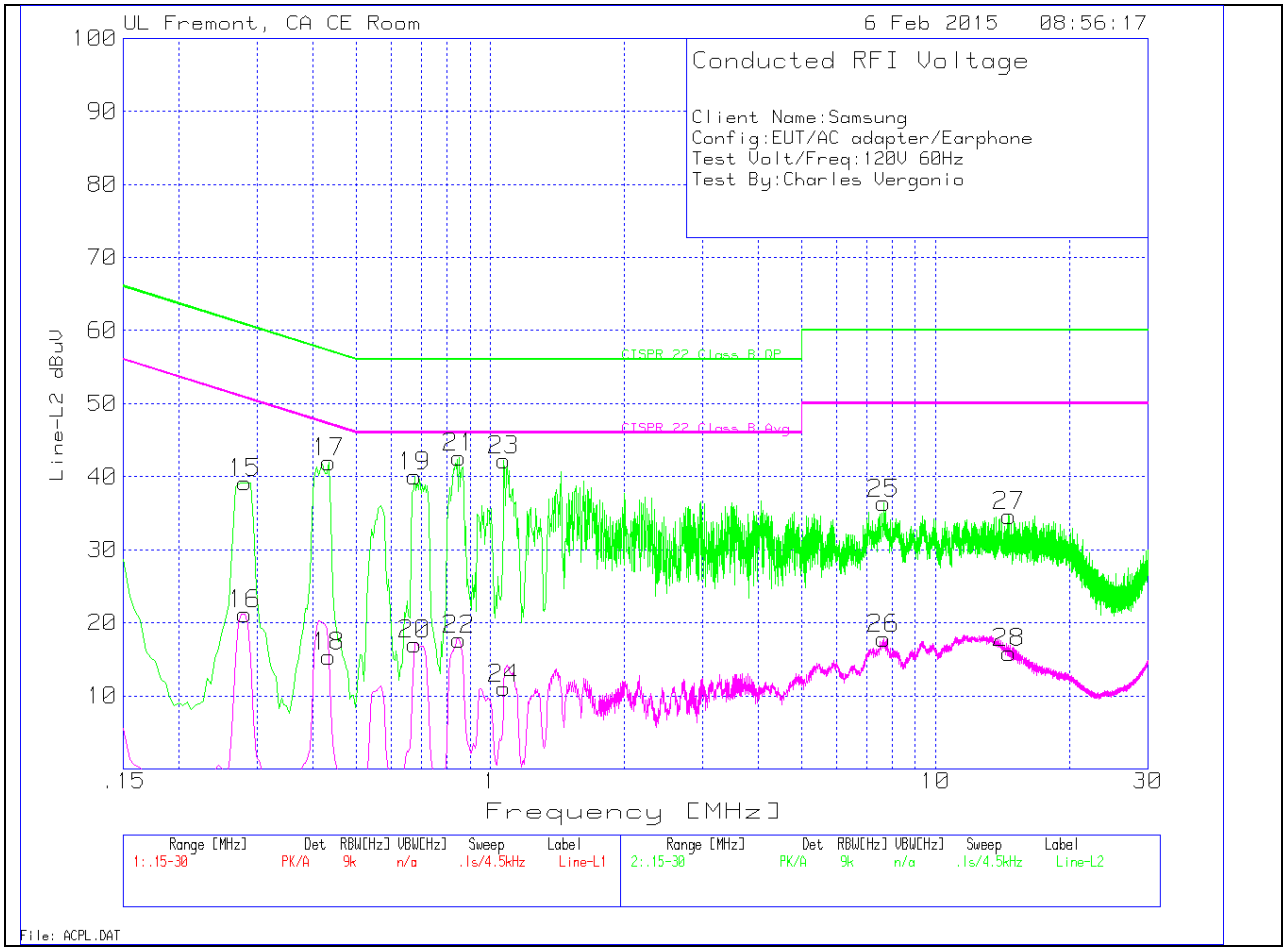
LINE 2 PLOT



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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)
15	.2805	38.6	PK	.6	0	39.2	60.8	-21.6	-	-
16	.2805	20.55	Av	.6	0	21.15	-	-	50.8	-29.65
17	.4335	41.58	PK	.4	0	41.98	57.2	-15.22	-	-
18	.4335	14.94	Av	.4	0	15.34	-	-	47.2	-31.86
19	.6765	39.76	PK	.3	0	40.06	56	-15.94	-	-
20	.6765	16.72	Av	.3	0	17.02	-	-	46	-28.98
21	.852	42.38	PK	.3	0	42.68	56	-13.32	-	-
22	.852	17.37	Av	.3	0	17.67	-	-	46	-28.33
23	1.0725	41.85	PK	.3	.1	42.25	56	-13.75	-	-
24	1.0725	10.64	Av	.3	.1	11.04	-	-	46	-34.96
25	7.638	36.06	PK	.2	.1	36.36	60	-23.64	-	-
26	7.638	17.57	Av	.2	.1	17.87	-	-	50	-32.13
27	14.649	34.17	PK	.2	.2	34.57	60	-25.43	-	-
28	14.649	15.53	Av	.2	.2	15.93	-	-	50	-34.07

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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)
U-NII Detection Bandwidth and Statistical Performance Check	All BW modes must be tested	Not required

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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)
U-NII Detection Bandwidth	Minimum 100% of the U-NII

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	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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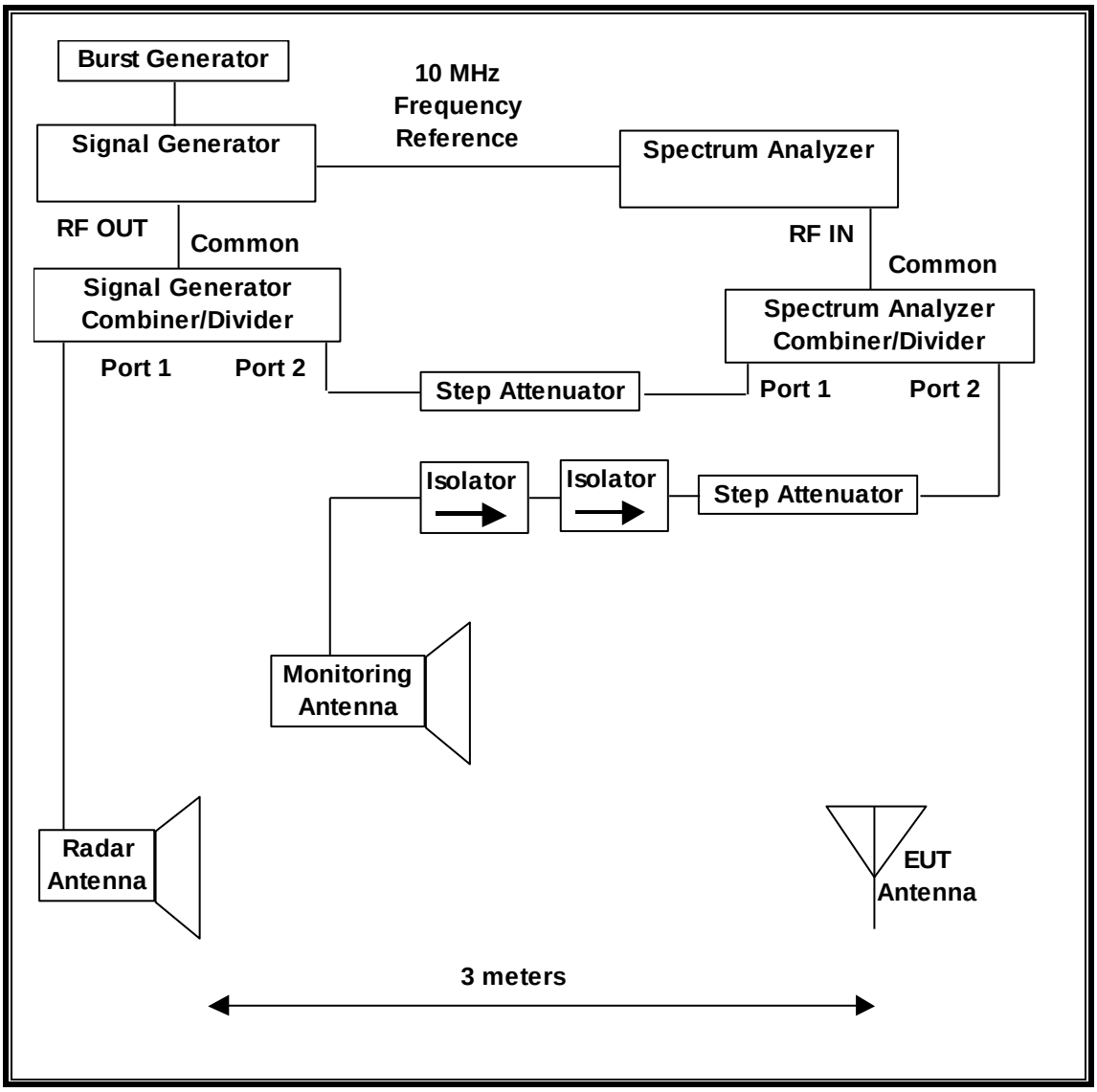
14.1.2. TEST AND MEASUREMENT SYSTEM

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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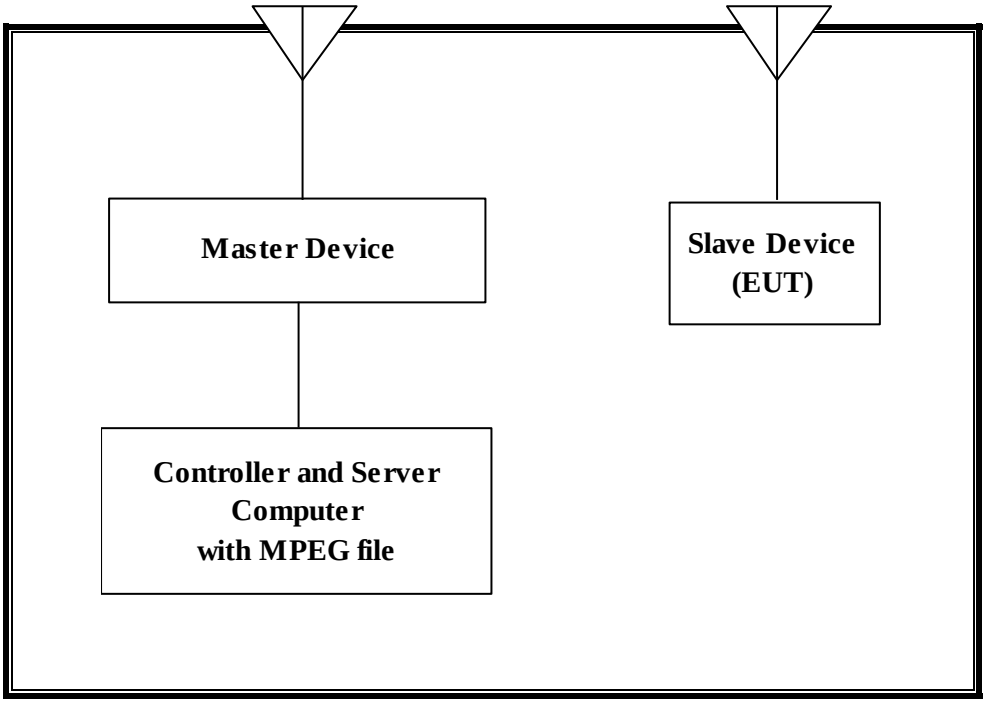
14.1.3. SETUP OF EUT

RADIATED METHOD EUT TEST SETUP



SUPPORT EQUIPMENT

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

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 11.67 dBm EIRP in the 5250-5350 MHz band and 11.66 dBm EIRP in the 5470-5725 MHz band.

The only antenna assembly utilized with the EUT has a gain of -8.2 dBi in the 5250-5350 MHz band and -8.0 dBi 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).

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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 AP3G2-K9W7-M version 15.2(4)JB4.

The software installed in the EUT 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

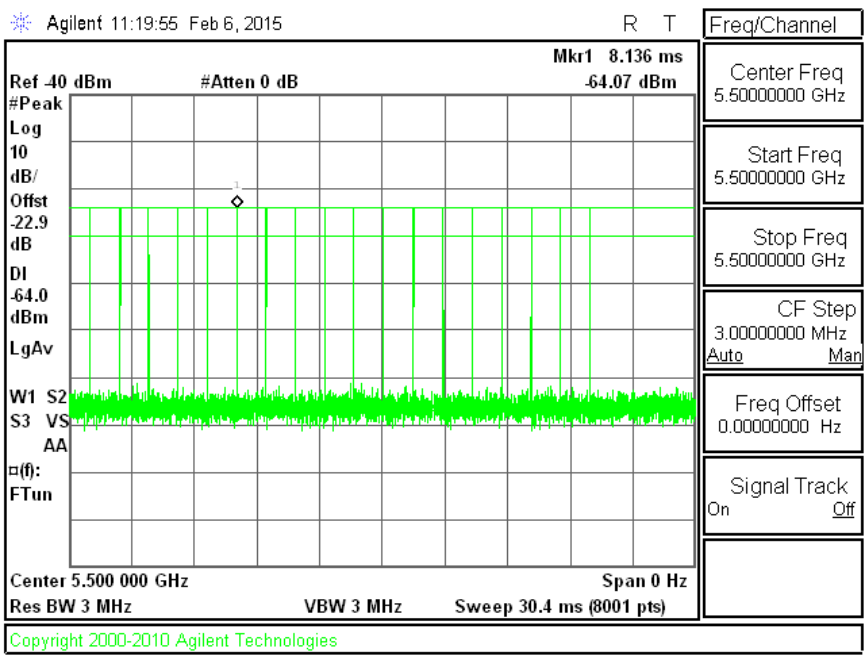
14.2.1. TEST CHANNEL

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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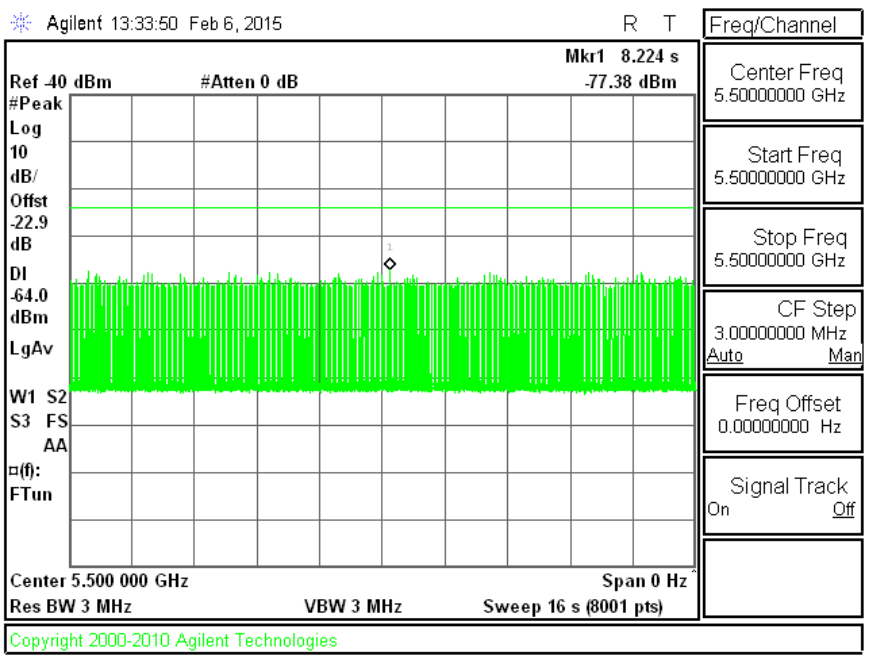
TRAFFIC

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)
0.046	10

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

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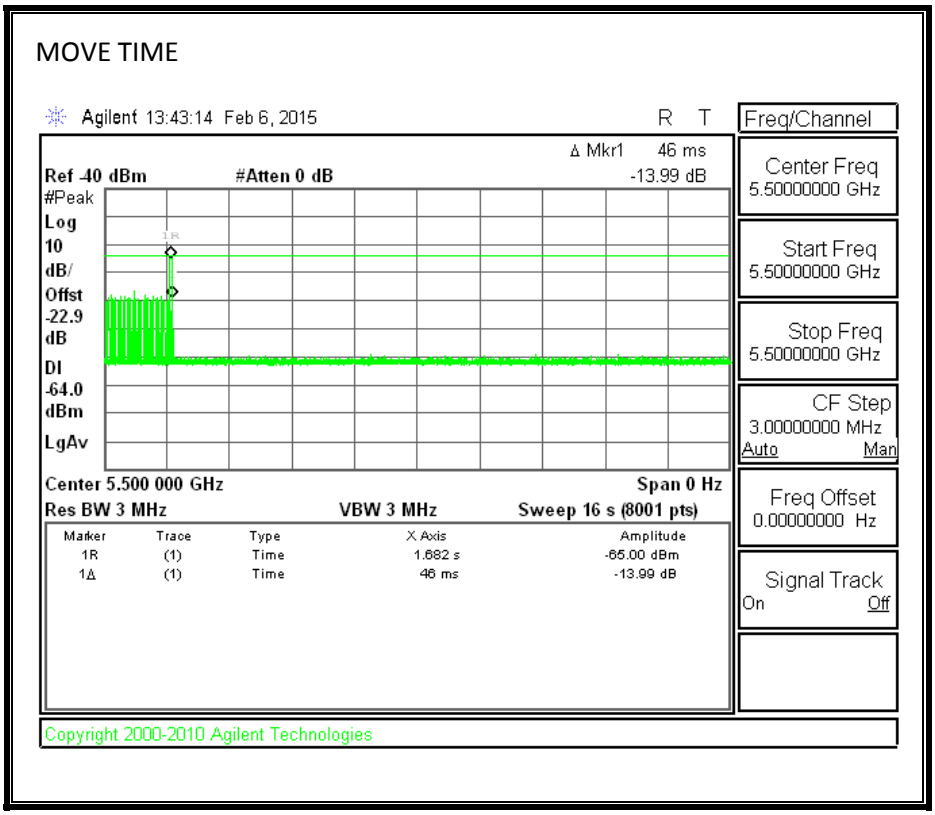
MOVE TIME



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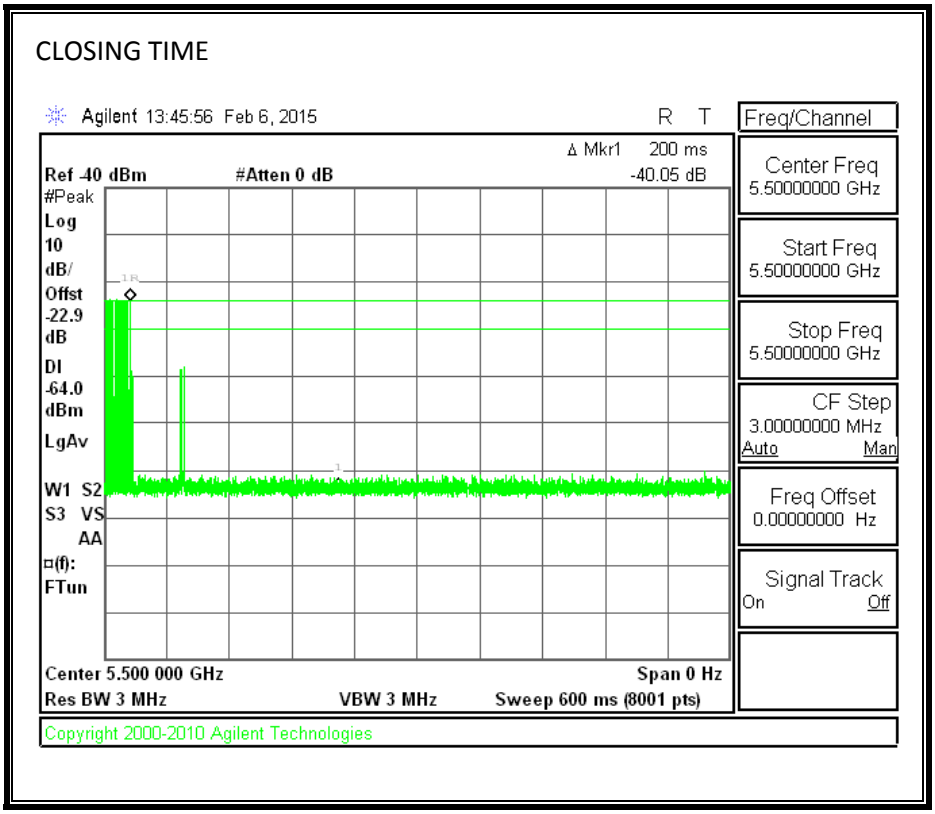
CHANNEL CLOSING TIME



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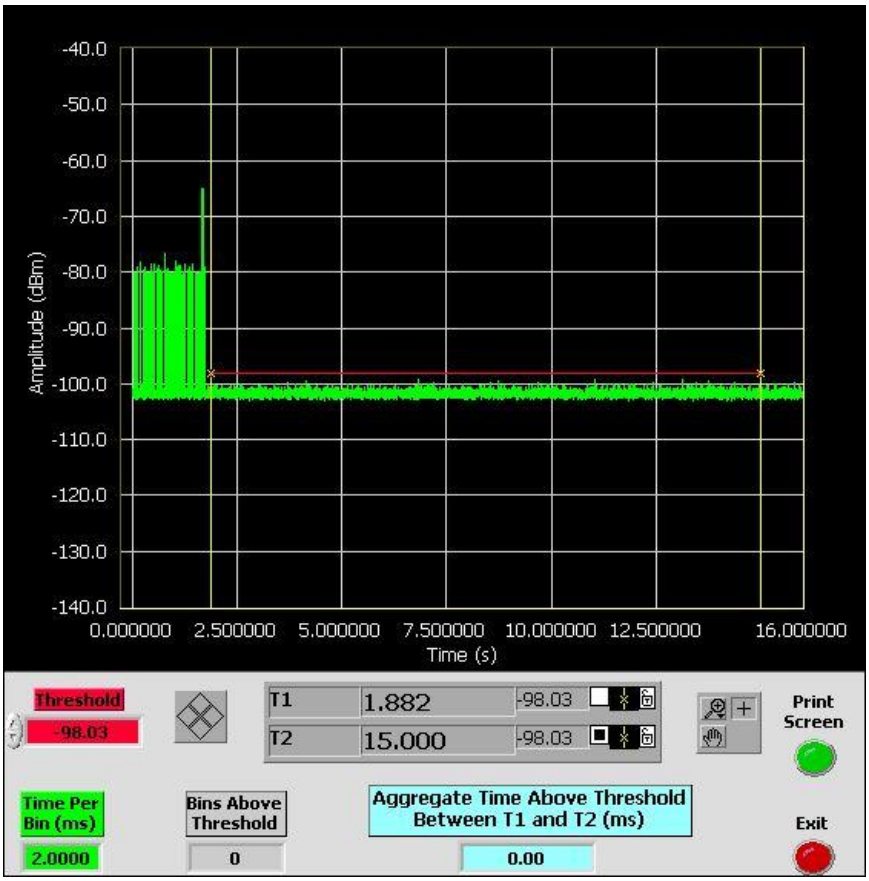
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.

AGGREGATE CLOSING TIME



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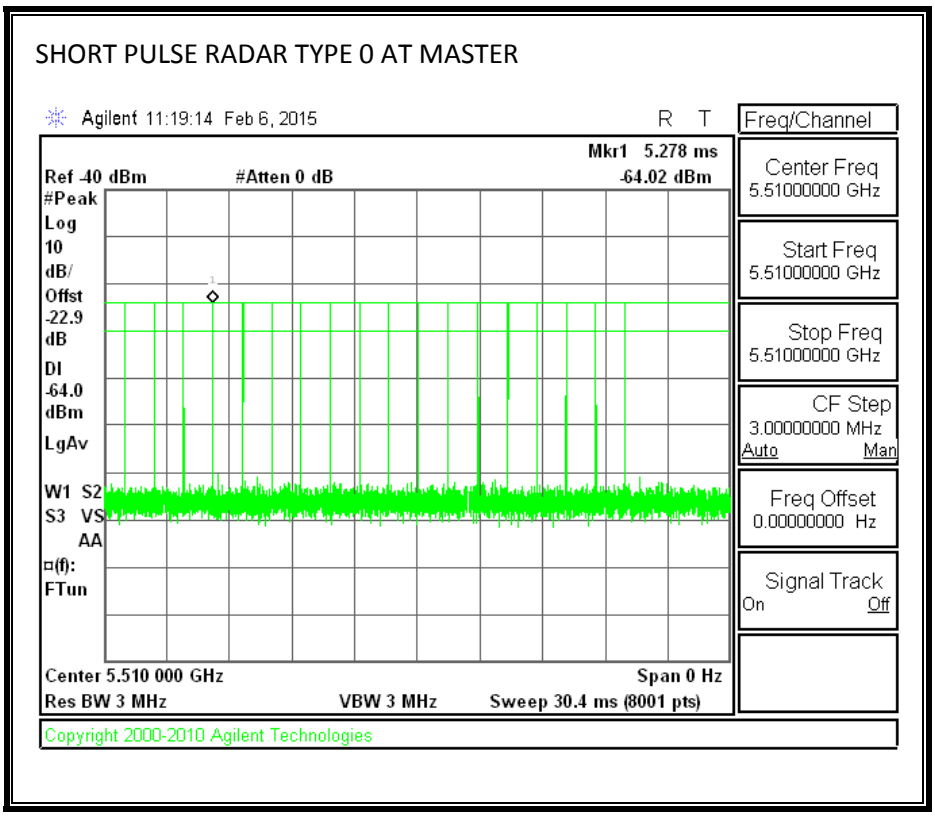
14.3. RESULTS FOR 40 MHz BANDWIDTH

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



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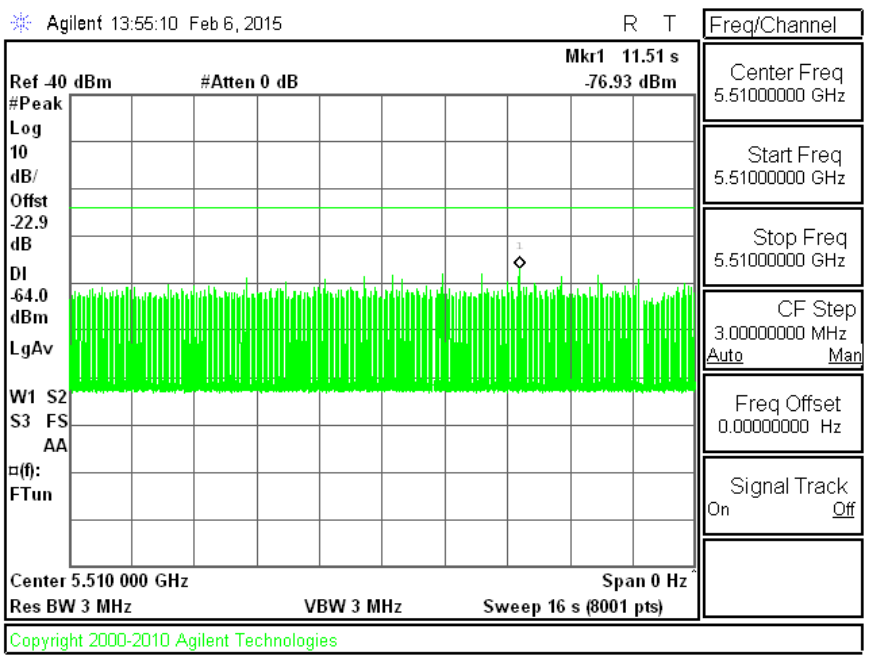
TRAFFIC

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).

RESULTS

Channel Move Time (sec)	Limit (sec)
0.056	10

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

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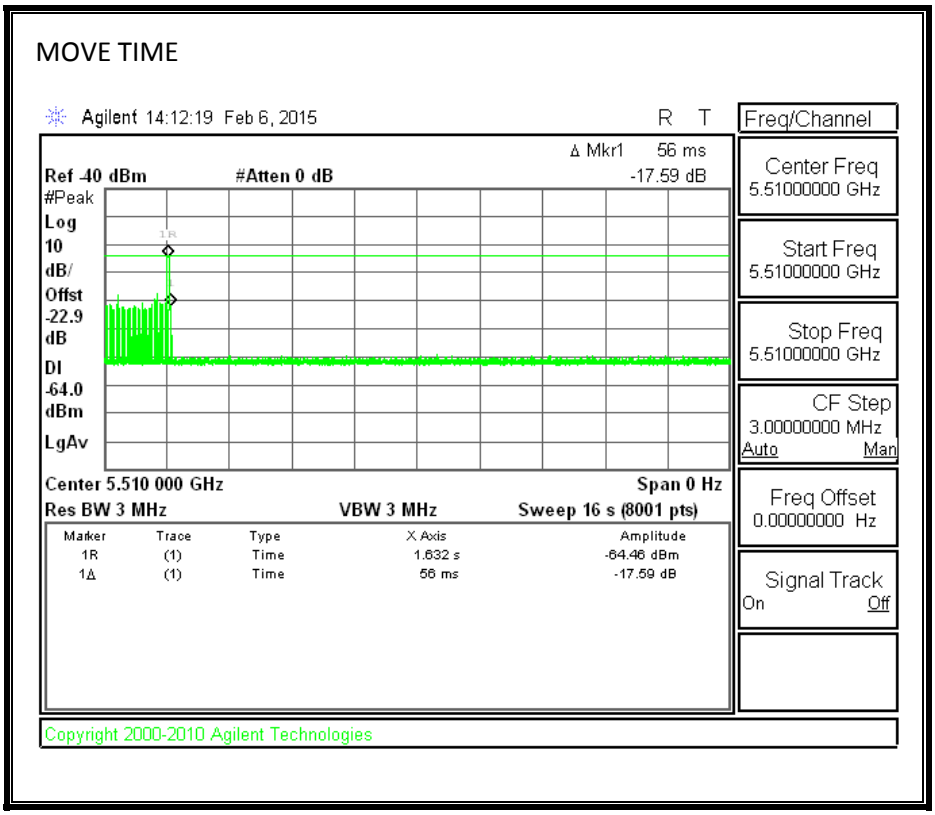
MOVE TIME



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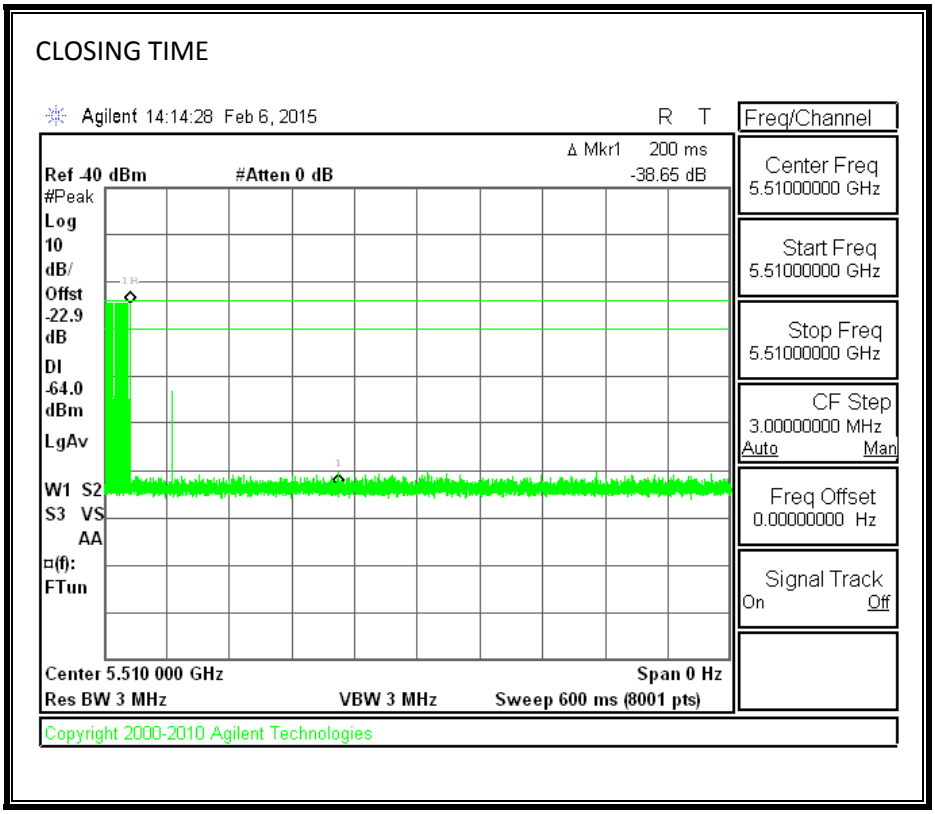
CHANNEL CLOSING TIME



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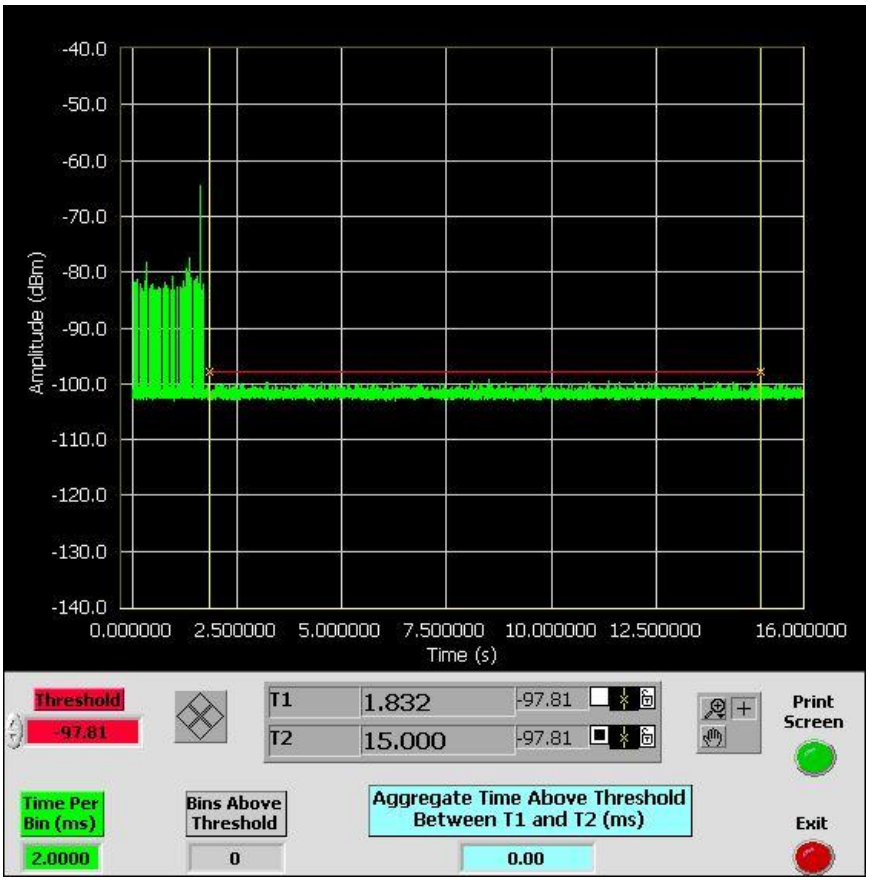
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.

AGGREGATE CLOSING TIME



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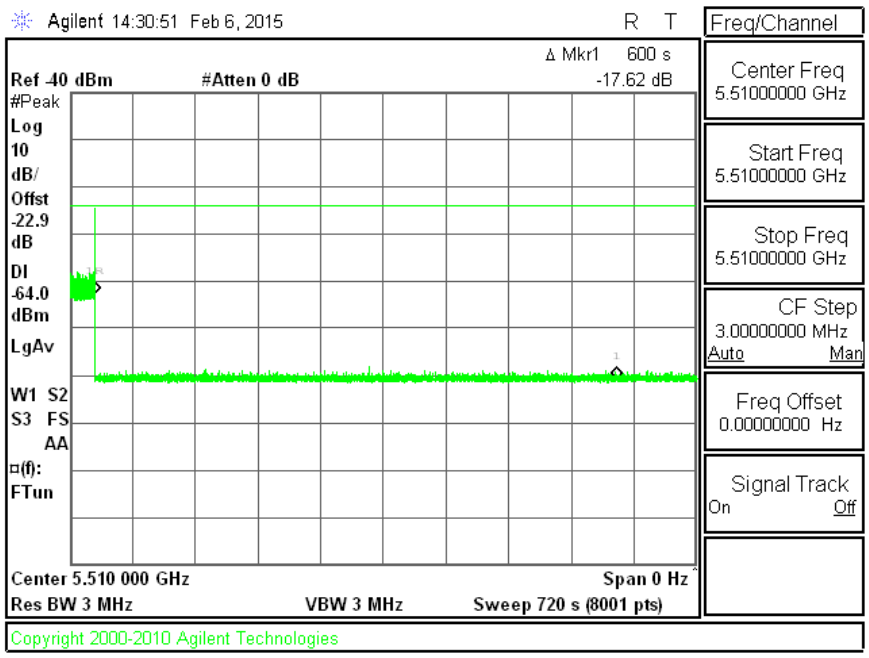
14.3.5. 10-MINUTE BEACON MONITORING PERIOD

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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