FCC 47 CFR PART 15 SUBPART E

Phone with Bluetooth, DTS/UNII a/b/g/n, ANT+ & NFC

CERTIFICATION TEST REPORT

FOR

FCC ID: A3LSMA500FU

REPORT NUMBER: 14U19260-E4, REVISION B

ISSUE DATE December 8, 2014

Prepared for
SAMSUNG ELECTRONICS CO., LTD.
129 Samsung-ro, Yeongtong-gu, Suwon-si,
Gyeonggi-do, 443-742, Korea

Prepared by
UL VERIFICATION SERVICES INC.
47173 BENICIA STREET
FREMONT, CA 94538, U.S.A.
TEL: (510) 771-1000
FAX: (510) 661-0888

NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	11/10/14	Initial Issue	D. Coronia
A	12/1/14	Updated section 2 and radiated band edge	P. Zhang
B	12/8/14	Updated company address;	P. Zhang

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	SAMSUNG ELECTRONICS CO., LTD.
EUT DESCRIPTION:	Phone with Bluetooth, DTS/UNII a/b/g/n, ANT+ & NFC
MODEL:	SM-A500FU
SERIAL NUMBER:	1989213 (CONDUCTED); 1989211 (RADIATED)
DATE TESTED:	NOVEMBER 3-10, 2014

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.

Approved & Released For
UL Verification Services Inc. By:

DAN CORONIA
CONSUMER TECHNOLOGY DIVISION
PROJECT LEAD
UL VERIFICATION SERVICES INC

Tested By:

STEVEN TRAN
CONSUMER TECHNOLOGY DIVISION
LAB ENGINEER
UL VERIFICATION SERVICES INC

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15 Subpart E, and ANSI C63.4-2009.
KDB 789033 D01 General UNII Test Procedures Old Rules v01r04 is used for demonstrate compliance. U-NII procedures and limits were applied for operations in the frequency band from 5.725-5.850 GHz in accordance with this KDB 644545 D01 Guidance for IEEE 802.11ac v01r01; 644545 D02 Alternative Guidance for 802.11ac v01 publication to demonstrate compliance with 15.247 requirements in that band.

3. FACILITIES AND ACCREDITATION

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

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

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

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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 18000 MHz	4.94 dB

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a Phone with Bluetooth, DTS/UNII a/b/g/n, ANT+ & NFC.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
5180 - 5240	802.11a	13.31	21.43
5180 - 5240	802.11n HT20	12.59	18.16
5190 - 5230	802.11n HT40	12.06	16.07
5260 - 5320	802.11a	14.69	29.44
5260 - 5320	802.11n HT20	13.37	21.73
5270 - 5310	802.11n HT40	13.39	21.83
5500 - 5700	802.11a	14.96	31.33
5500 - 5700	802.11n HT20	13.99	25.06
5510 - 5670	802.11n HT40	13.04	20.14
5745 - 5825	802.11a	13.48	22.28
5745 - 5825	802.11n HT20	12.09	16.18
5755 - 5795	802.11n HT40	11.73	14.89

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of -3.46 dBi.

5.4. WORST-CASE CONFIGURATION AND MODE

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

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

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

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

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
AC Adapter	SAMSUNG	EP-TA50EWE	N/A	N/A
Earphone	SAMSUNG	EHS64AVFWE	N/A	N/A

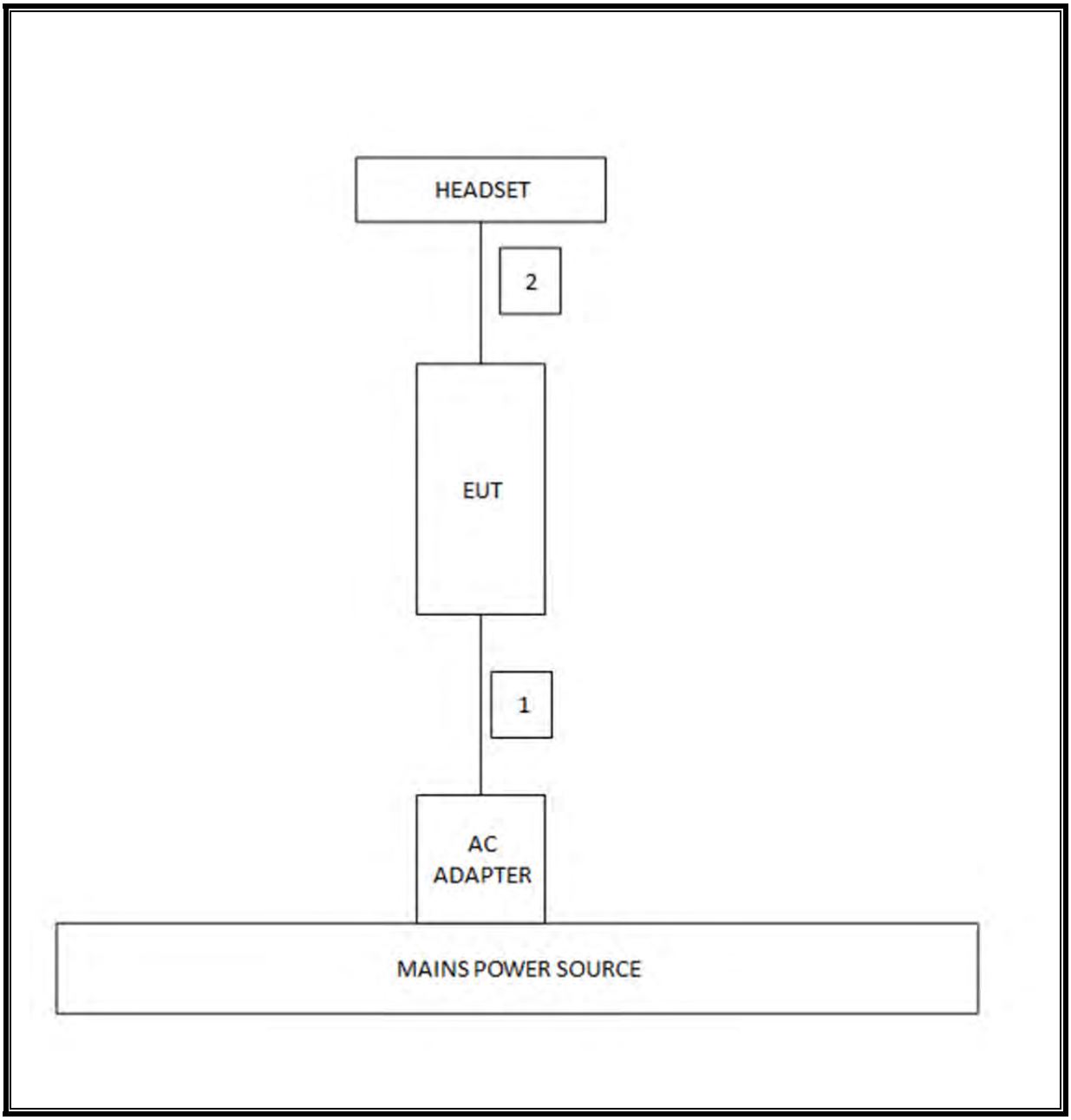
I/O CABLES

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

TEST SETUP

The EUT is setup as a stand-alone device.

5.6. SETUP DIAGRAM FOR TESTS



6. TEST AND MEASUREMENT EQUIPMENT

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

Test Equipment List				
Description	**Manufacturer**	**Model**	**Asset**	**Cal Due**
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01069	12/20/14
Spectrum Analyzer,9KHz-40GHz	HP	8564E	C00986	04/01/15
EMI Test Receiver, 9 kHz-7 GHz	R & S	ESCI 7	1000741	08/13/15
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	08/18/15
Peak Power Meter	Agilent / HP	E4416A	C00963	12/13/14
Peak / Average Power Sensor	Agilent / HP	E9327A	C00964	12/13/14
Antenna, Horn, 1-18 GHz	ETS	3117	C01022	02/21/15
Antenna, Horn,18- 26 GHz	ARA	MWH-1826/B	C00946	11/12/14
Antenna, Horn, 26-40 GHz	ARA	MWH-2640	C00891	06/28/15
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	T243	03/06/15
RF Preamplifier, 100KHz -> 1300MHz	HP	TBD	C00825	06/01/15
RF Preamplifier, 1GHz - 18GHz	Miteq	NSP4000-SP2	924343	03/23/15
RF Preamplifier, 1GHz - 26.5GHz	HP	8449B	F00351	06/27/15
AC Power Supply, 2,500VA 45-500Hz	Elgar-Ametek	CW2501M	F00013	CNR
RF Preamplifier, 1GHz - 40GHz	Miteq	NSP4000-SP2	C00990	08/20/15
Attenuator / Switch driver	HP	11713A	F00204	CNR
Low Pass Filter 3GHz	Micro-Tronics	LPS17541	F00219	05/23/15
High Pass Filter 5GHz	Micro-Tronics	HPS17542	F00222	05/22/15
High Pass Filter 6GHz	Micro-Tronics	HPM17543	F00224	05/22/15

7. SUMMARY TABLE

FCC Part Section	Test Description	Test Limit	Test Condition	Test Result	Worst Case
2.1051, 15.407 (b)	Occupied Band width (26dB)	N/A	Conducted	Pass	86.8 MHz
15.407 (a)(1)	TX Cond. Power 5.15-2.25	<17dBm or 4+10Log(OBW)		Pass	13.31 dBm
15.407 (a)(2)	TX Cond. Power 5.25-5.35 & 5.47-5.725	<24dBm or 11+10Log(OBW)		Pass	14.96 dBm
15.407 (a)(3)	TX Cond. Power 5.725-5.825	< 30dBm or 17+10Log(OBW)		Pass	13.48 dBm
15.407 (a)(5)	PSD	<8dBm		Pass	1.11 dBm
15.407 (a)(6)	Peak Excursion Ratio	13dB		Pass	12.18 dBm
15.207 (a)	AC Power Line conducted emissions	Section 10	Radiated	Pass	41.72dBuV/m
15.407 (b) & 15.209	Radiated Spurious Emission	< 54dBuV/m		Pass	51.74 dBuV/m
15.407 (h)(2)	Dynamic Frequency Selection	N/A	Radiated / Conducted	Pass	N/A

8. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

LIMITS

None; for reporting purposes only.

PROCEDURE

KDB 789033 Zero-Span Spectrum Analyzer Method.

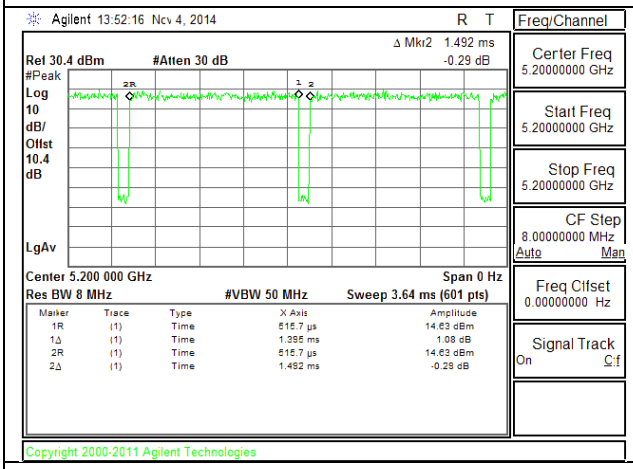
RESULTS

8.1. ON TIME AND DUTY CYCLE PLOTS AND TABLE

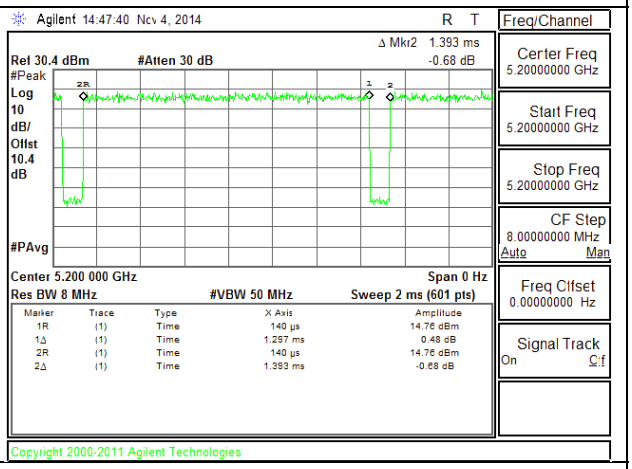
ON TIME AND DUTY CYCLE TEST RESULT TABLE

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	1.395	1.492	0.935	93.5%	0.29	0.717
802.11n HT20	1.297	1.383	0.938	93.8%	0.28	0.771
802.11n HT40	0.628	0.730	0.861	86.1%	0.65	1.592

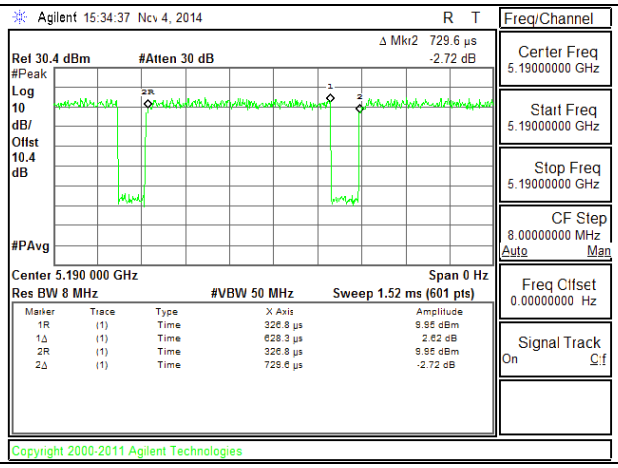
DUTY CYCLE 802.11a MODE



DUTY CYCLE 802.11n HT20 MODE



DUTY CYCLE 802.11n HT40 MODE



NOTE: --

9. MEASUREMENT METHOD

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

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

10. ANTENNA PORT TEST RESULTS

10.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only

RESULTS

26 dB BANDWIDTH PLOTS AND TABLE

10.1.1. 802.11a/n HT20, HT40 MODE IN THE 5.2 GHz BAND

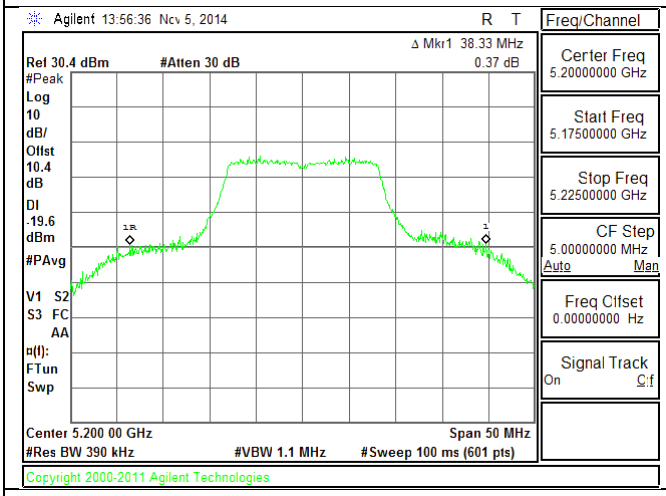
802.11a MODE IN THE 5.2 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5180	40.42
Mid	5200	38.33
High	5240	42.17
Worst		42.17

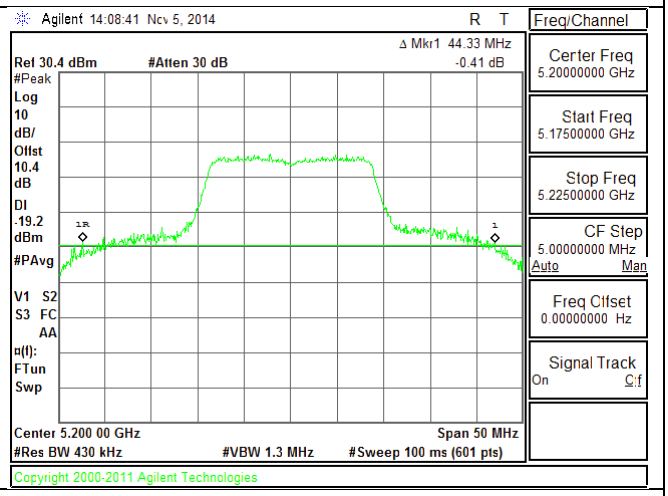
802.11n HT20 MODE IN THE 5.2 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5180	43.67
Mid	5200	44.33
High	5240	44.75
Worst		44.75

802.11a 5.2 Mid Channel



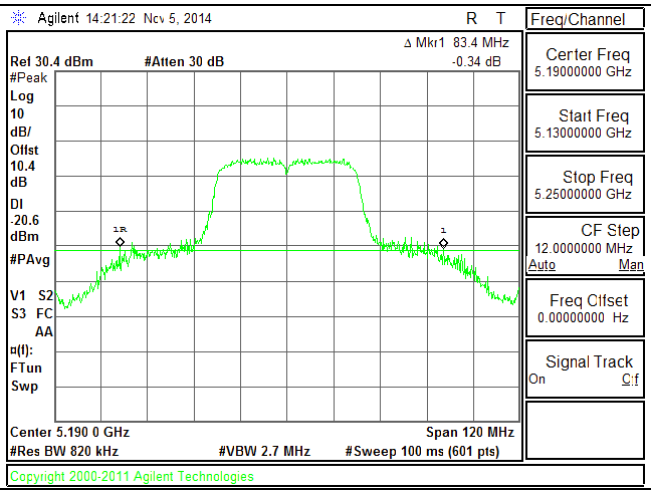
802.11n HT20 5.2 Mid Channel



802.11n HT40 MODE IN THE 5.2 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	26 Bandwidth (MHz)
Low	5190	83.40
Mid	5230	86.80
Worst		86.80

802.11n HT40 5.2 Low Channel



10.1.2. 802.11a/n HT20, HT40 MODE IN THE 5.3 GHz BAND

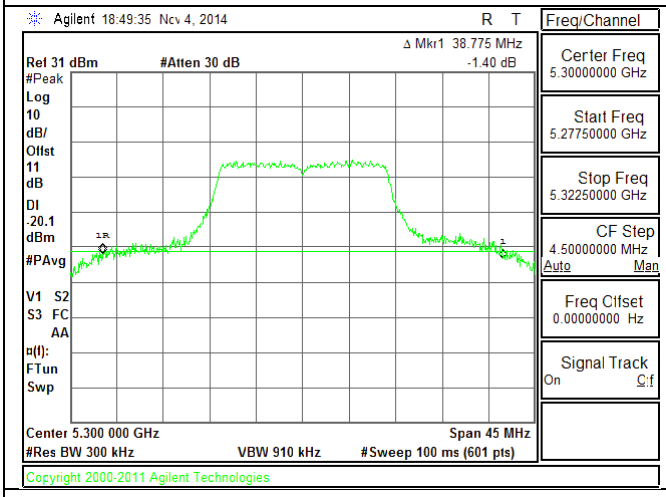
802.11a MODE IN THE 5.3 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5260	38.78
Mid	5300	38.78
High	5320	41.03
Worst		41.03

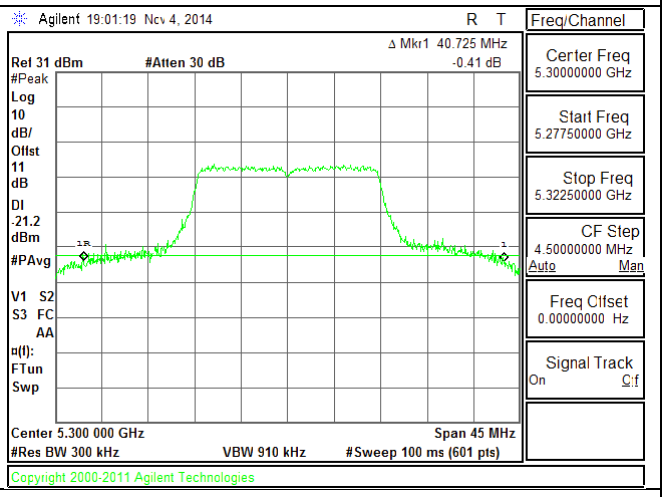
802.11n HT20 MODE IN THE 5.3 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5260	39.15
Mid	5300	40.73
High	5320	41.18
Worst		41.18

802.11a 5.3 Mid Channel



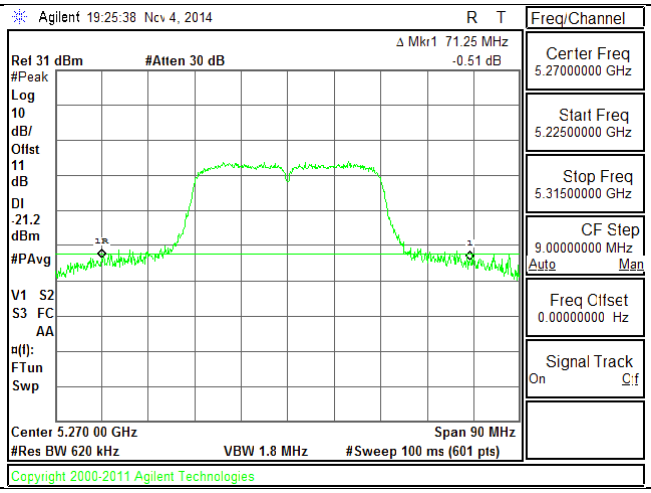
802.11n HT20 5.3 Mid Channel



802.11n HT40 MODE IN THE 5.3 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5270	71.25
High	5310	71.55
Worst		71.55

802.11n HT40 5.3 Low Channel



10.1.3. 802.11a/n HT20, HT40 MODE IN THE 5.5 GHz BAND

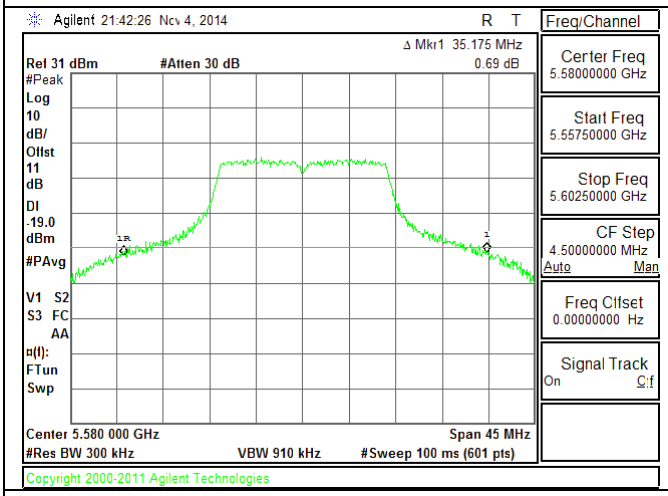
802.11a MODE IN THE 5.5 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5500	32.18
Mid	5580	35.18
High	5700	33.83
Worst		35.18

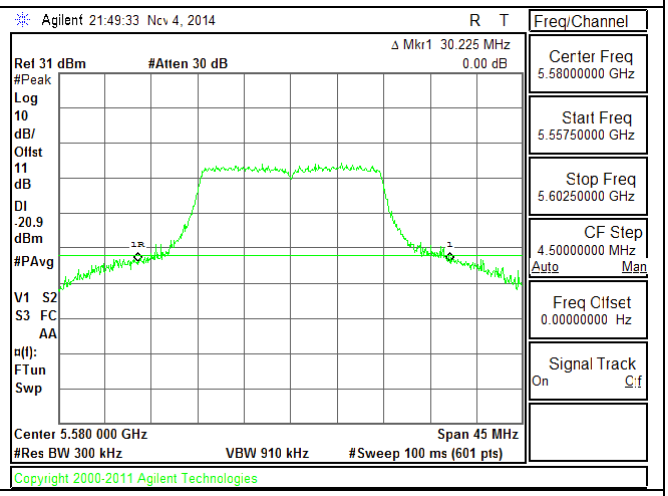
802.11n HT20 MODE IN THE 5.5 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5500	31.80
Mid	5580	30.23
High	5700	33.08
Worst		33.08

802.11a 5.5 Mid Channel



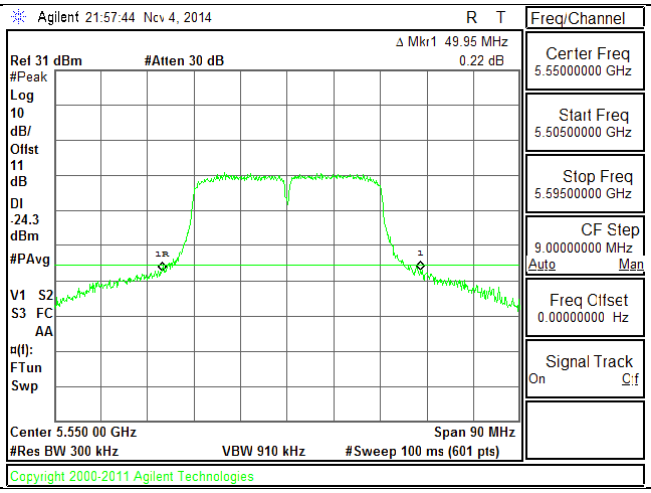
802.11n HT20 5.5 Mid Channel



802.11n HT40 MODE IN THE 5.5 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5510	47.70
Mid	5550	49.95
High	5670	54.60
Worst		54.60

802.11n HT40 5.5 Mid Channel



10.1.4. 802.11a/n HT20, HT40 MODE IN THE 5.8 GHz BAND

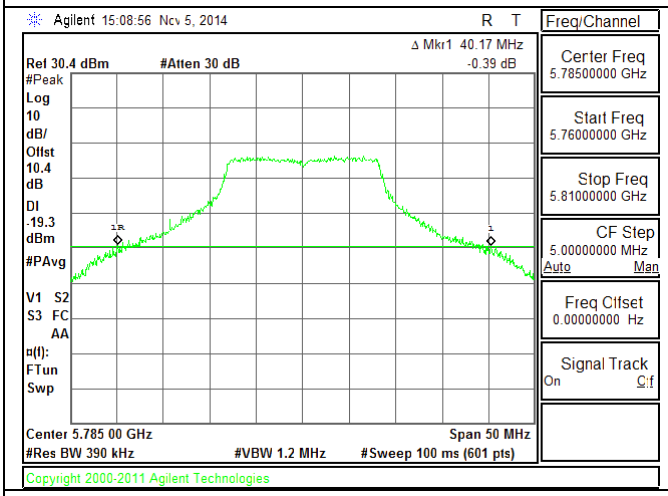
802.11a MODE IN THE 5.8 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5745	40.83
Mid	5785	40.17
High	5825	39.25
Worst		40.83

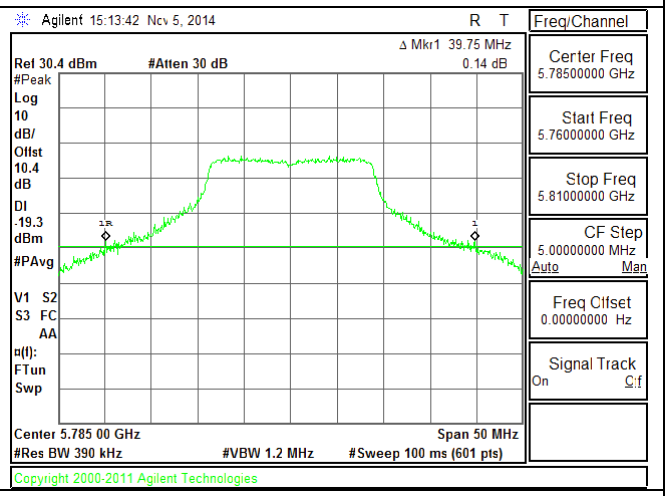
802.11n HT20 MODE IN THE 5.8 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5745	39.83
Mid	5785	39.75
High	5825	36.33
Worst		39.83

802.11a 5.8 Mid Channel



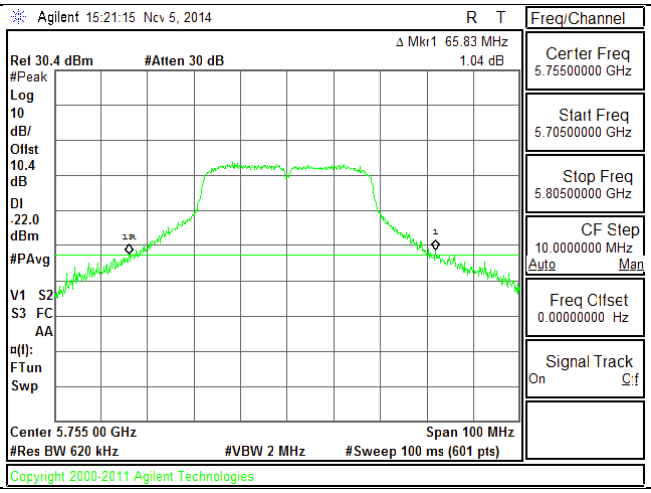
802.11n HT20 5.8 Mid Channel



802.11n HT40 MODE IN THE 5.8 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5755	65.83
High	5795	72.83
Worst		72.83

802.11n HT40 5.8 Low Channel



10.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

99% BANDWIDTH PLOTS AND TABLE

10.2.1. 802.11a/n HT20, HT40 MODE IN THE 5.2 GHz BAND

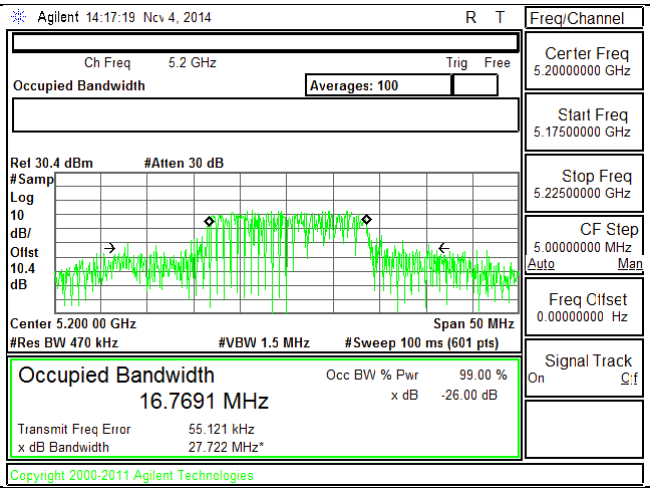
802.11a MODE IN THE 5.2 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5180	16.75
Mid	5200	16.77
High	5240	16.81
Worst		16.81

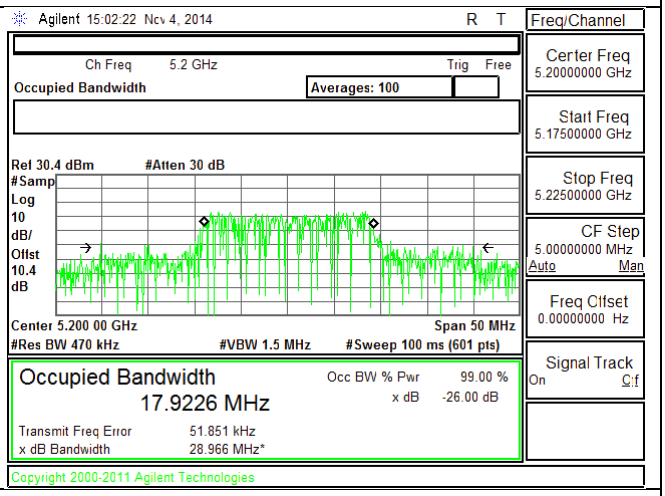
802.11n HT20 MODE IN THE 5.2 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5180	17.93
Mid	5200	17.92
High	5240	17.95
Worst		17.95

802.11a 5.2 Mid Channel



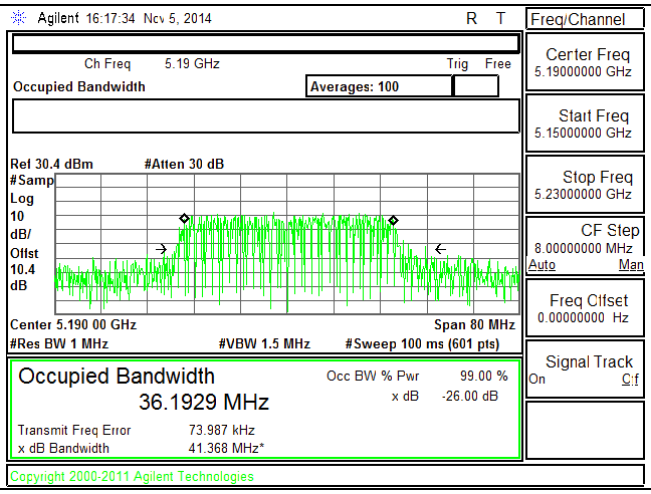
802.11n HT20 5.2 Mid Channel



802.11n HT40 MODE IN THE 5.2 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5190	36.19
Mid	5230	36.21
Worst		36.21

802.11n HT40 5.2 Low Channel



10.2.2. 802.11a/n HT20, HT40 MODE IN THE 5.3 GHz BAND

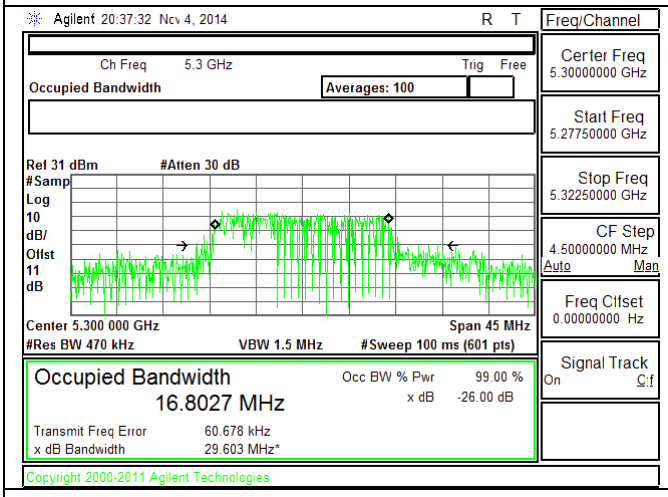
802.11a MODE IN THE 5.3 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5260	16.76
Mid	5300	16.80
High	5320	16.77
Worst		16.80

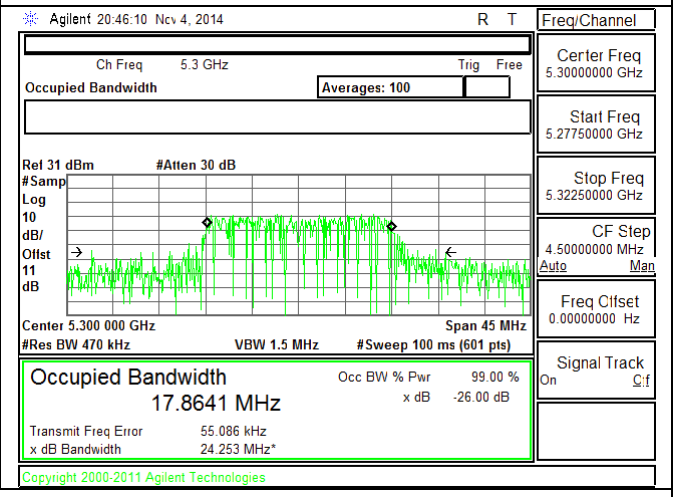
802.11n HT20 MODE IN THE 5.3 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5260	17.85
Mid	5300	17.86
High	5320	17.88
Worst		17.88

802.11a 5.3 Mid Channel



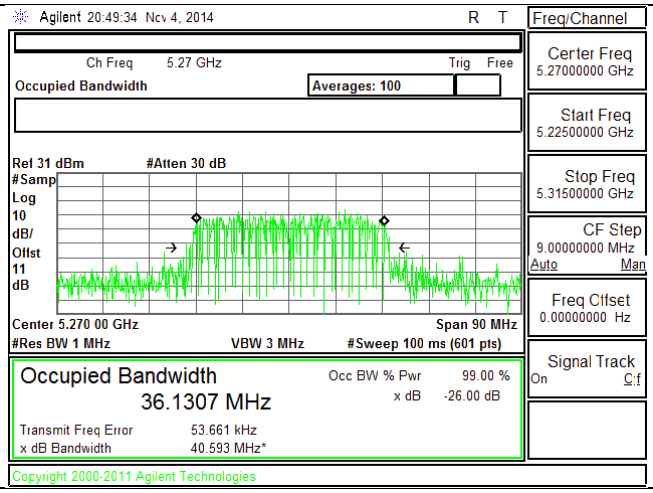
802.11n HT20 5.3 Mid Channel



802.11n HT40 MODE IN THE 5.3 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5270	36.13
High	5310	36.14
Worst		36.14

802.11n HT40 5.3 Low Channel



10.2.3. 802.11a/n HT20, HT40 MODE IN THE 5.5 GHz BAND

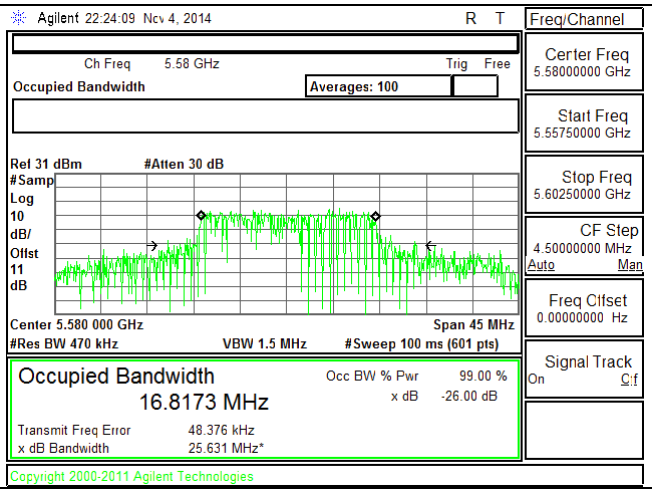
802.11a MODE IN THE 5.5 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5500	16.73
Mid	5580	16.82
High	5700	16.77
Worst		16.82

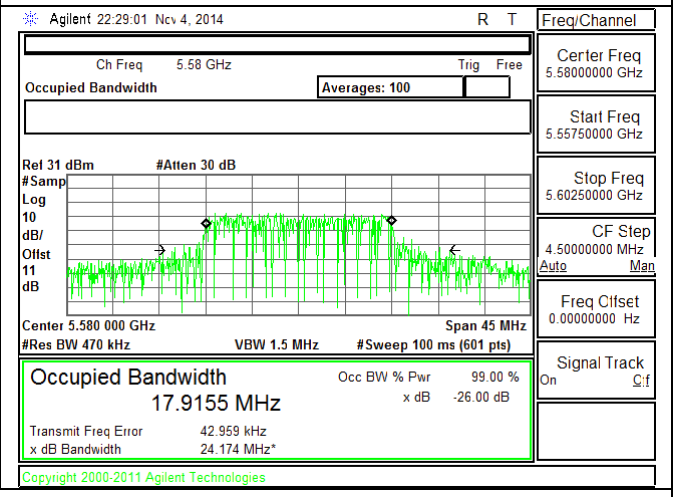
802.11n HT20 MODE IN THE 5.5 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5500	17.93
Mid	5580	17.92
High	5700	17.90
Worst		17.93

802.11a 5.5 Mid Channel



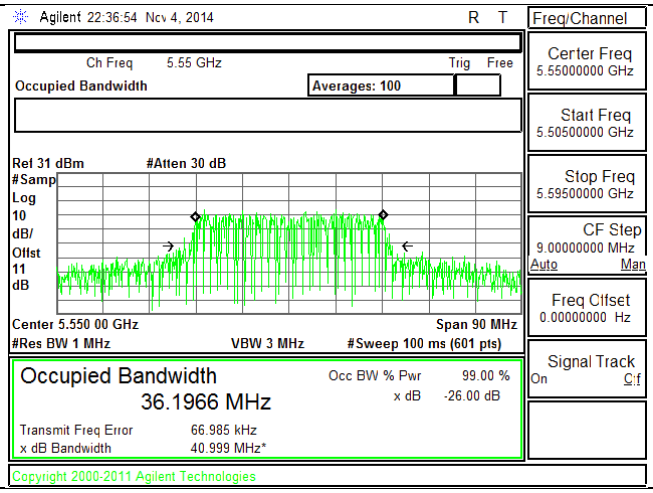
802.11n HT20 5.5 Mid Channel



802.11n HT40 MODE IN THE 5.5 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5510	36.18
Mid	5550	36.20
High	5670	36.20
Worst		36.20

802.11n HT40 5.5 Mid Channel



10.2.4. 802.11a/n HT20, HT40 MODE IN THE 5.8 GHz BAND

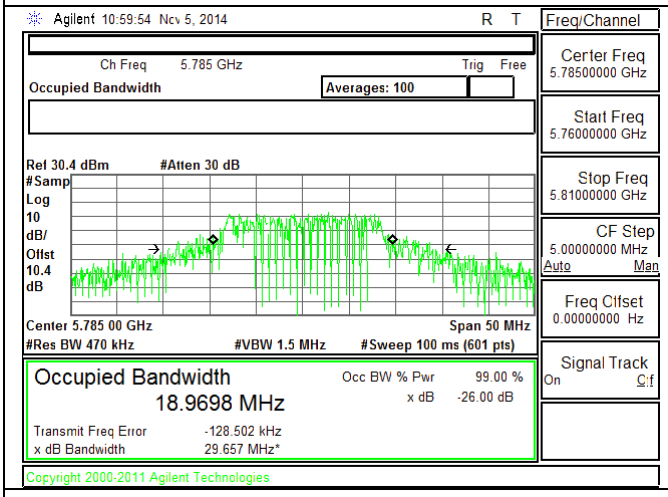
802.11a MODE IN THE 5.8 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5745	18.83
Mid	5785	18.97
High	5825	19.02
Worst		19.02

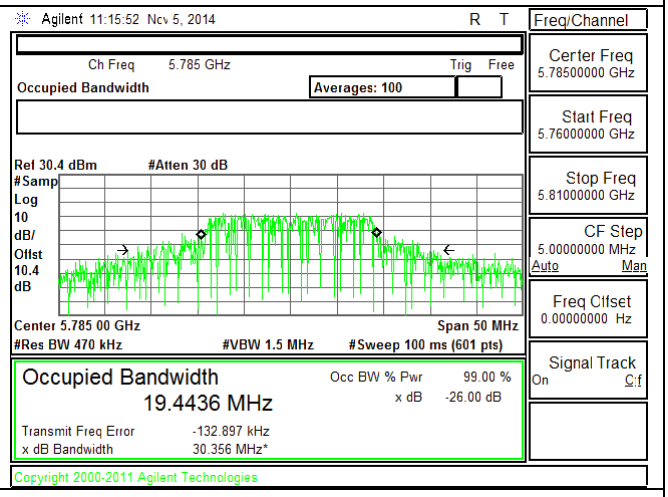
802.11n HT20 MODE IN THE 5.8 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5745	18.88
Mid	5785	19.44
High	5825	19.11
Worst		19.44

802.11a 5.8 Mid Channel



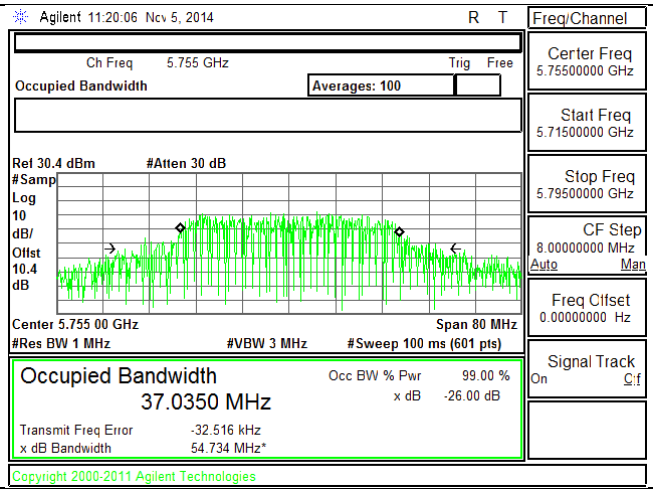
802.11n HT20 5.8 Mid Channel



802.11n HT40 MODE IN THE 5.8 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5755	37.04
High	5795	37.11
Worst		37.11

802.11n HT40 5.8 Low Channel



10.3. 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

AVERAGE TEST RESULTS TABLE

10.3.1. 802.11a/n HT20, HT40 MODE IN THE 5.2 GHz BAND

802.11a MODE IN THE 5.2 GHz BAND RESULT TABLE

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

802.11n HT20 MODE IN THE 5.2 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5180	11.20
Mid	5200	11.30
High	5240	11.70
Worst		11.70

802.11n HT40 MODE IN THE 5.2 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5190	11.10
Mid	5230	10.30
Worst		11.10

10.3.2. 802.11a/n HT20, HT40 MODE IN THE 5.3 GHz BAND

802.11a MODE IN THE 5.3 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5260	12.50
Mid	5300	12.40
High	5320	12.50
Worst		12.50

802.11n HT20 MODE IN THE 5.3 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5260	12.10
Mid	5300	11.10
High	5320	12.00
Worst		12.10

802.11n HT40 MODE IN THE 5.3 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5270	10.5
High	5310	10.7
Worst		10.7

10.3.3. 802.11a/n HT20, HT40 MODE IN THE 5.5 GHz BAND

802.11a MODE IN THE 5.5 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5500	12.50
Mid	5580	12.30
High	5700	12.50
Worst		12.50

802.11n HT20 MODE IN THE 5.5 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5500	12.10
Mid	5580	11.70
High	5700	11.90
Worst		12.10

802.11n HT40 MODE IN THE 5.5 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5510	10.6
Mid	5550	11.1
High	5670	10.9
Worst		11.1

10.3.4. 802.11a/n HT20, HT40 MODE IN THE 5.8 GHz BAND

802.11a MODE IN THE 5.8 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5745	12.50
Mid	5785	12.50
High	5825	12.50
Worst		12.50

802.11n HT20 MODE IN THE 5.8 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5745	11.30
Mid	5785	12.00
High	5825	11.40
Worst		12.00

802.11n HT40 MODE IN THE 5.8 GHz BAND RESULT TABLE

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5755	11.30
High	5795	11.30
Worst		11.30

10.4. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (1)

For the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or 4 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.

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

DIRECTIONAL ANTENNA GAIN

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

Test Methodology

RESULTS

10.4.1. 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	40.42	16.75	-3.46
Mid	5200	38.33	16.77	-3.46
High	5240	42.17	16.81	-3.46

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	17.00	22.24	25.70	17.00	4.00	10.00	4.00
Mid	5200	17.00	22.25	25.71	17.00	4.00	10.00	4.00
High	5240	17.00	22.26	25.72	17.00	4.00	10.00	4.00

Duty Cycle CF (dB)	0.29	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	12.899	13.19	17.00	-3.81
Mid	5200	12.531	12.82	17.00	-4.18
High	5240	13.017	13.31	17.00	-3.69

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5180	-1.170	-0.88	4.00	-4.88
Mid	5200	-1.510	-1.22	4.00	-5.22
High	5240	-1.270	-0.98	4.00	-4.98

10.4.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5180	43.67	17.93	-3.46
Mid	5200	44.33	17.92	-3.46
High	5240	44.75	17.95	-3.46

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	17.00	22.53	25.99	17.00	4.00	10.00	4.00
Mid	5200	17.00	22.53	25.99	17.00	4.00	10.00	4.00
High	5240	17.00	22.54	26.00	17.00	4.00	10.00	4.00

Duty Cycle CF (dB)	0.28	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	11.758	12.04	17.00	-4.96
Mid	5200	12.312	12.59	17.00	-4.41
High	5240	12.117	12.40	17.00	-4.60

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5180	0.180	0.46	4.00	-3.54
Mid	5200	0.830	1.11	4.00	-2.89
High	5240	0.580	0.86	4.00	-3.14

10.4.3. 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	83.40	36.19	-3.46
Mid	5230	86.80	36.21	-3.46

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	17.00	23.00	26.46	17.00	4.00	10.00	4.00
Mid	5230	17.00	23.00	26.46	17.00	4.00	10.00	4.00
Duty Cycle CF (dB)		0.65	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	11.410	12.06	17.00	-4.94
Mid	5230	10.584	11.23	17.00	-5.77

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5190	-3.900	-3.25	4.00	-7.25
Mid	5230	-3.690	-3.04	4.00	-7.04

10.4.4. 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	38.78	16.76	-3.46
Mid	5300	38.78	16.80	-3.46
High	5320	41.03	16.77	-3.46

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)	0.29	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	14.399	14.69	23.24	-8.55
Mid	5300	13.894	14.18	23.25	-9.07
High	5320	14.071	14.36	23.25	-8.89

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5260	3.250	3.54	11.00	-7.46
Mid	5300	2.680	2.97	11.00	-8.03
High	5320	2.760	3.05	11.00	-7.95

10.4.5. 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	39.15	17.85	-3.46
Mid	5300	40.73	17.86	-3.46
High	5320	41.18	17.88	-3.46

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	23.52	29.52	23.52	11.00	11.00	11.00
Mid	5300	24.00	23.52	29.52	23.52	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)	0.28	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	13.091	13.37	23.52	-10.15
Mid	5300	13.010	13.29	23.52	-10.23
High	5320	13.002	13.28	23.52	-10.24

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5260	1.570	1.85	11.00	-9.15
Mid	5300	1.490	1.77	11.00	-9.23
High	5320	1.480	1.76	11.00	-9.24

10.4.6. 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	71.25	36.13	-3.46
High	5310	71.55	36.14	-3.46

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)	0.65	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	12.20	12.85	24.00	-11.15
High	5310	12.74	13.39	24.00	-10.61

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5270	-2.24	-1.59	11.00	-12.59
High	5310	-1.65	-1.00	11.00	-12.00

10.4.7. 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	32.18	16.73	-3.46
Mid	5580	35.18	16.82	-3.46
High	5700	33.83	16.77	-3.46

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	23.24	29.24	23.24	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)	0.29	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	13.872	14.16	23.24	-9.07
Mid	5580	14.671	14.96	23.26	-8.30
High	5700	14.520	14.81	23.25	-8.44

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5500	2.600	2.89	11.00	-8.11
Mid	5580	3.330	3.62	11.00	-7.38
High	5700	3.220	3.51	11.00	-7.49

10.4.8. 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	31.80	17.93	-3.46
Mid	5580	30.23	17.92	-3.46
High	5700	33.08	17.90	-3.46

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	23.53	29.53	23.53	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)	0.28	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	12.982	13.26	23.53	-10.27
Mid	5580	12.991	13.27	23.53	-10.26
High	5700	13.709	13.99	23.53	-9.54

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5500	1.118	1.40	11.00	-9.60
Mid	5580	1.120	1.40	11.00	-9.60
High	5700	1.950	2.23	11.00	-8.77

10.4.9. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5510	47.7	36.179	-3.46
Mid	5550	50.0	36.197	-3.46
High	5670	54.6	36.205	-3.46

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)	0.65	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	11.705	12.36	24.00	-11.65
Mid	5550	12.391	13.04	24.00	-10.96
High	5670	12.322	12.97	24.00	-11.03

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5510	-3.030	-2.38	11.00	-13.38
Mid	5550	-2.060	-1.41	11.00	-12.41
High	5670	-2.430	-1.78	11.00	-12.78

10.4.10. 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	40.83	18.8	-3.46
Mid	5785	40.17	19.0	-3.46
High	5825	39.25	19.0	-3.46

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	29.75	35.75	29.75	17.00	17.00	17.00
Mid	5785	30.00	29.78	35.78	29.78	17.00	17.00	17.00
High	5825	30.00	29.79	35.79	29.79	17.00	17.00	17.00

Duty Cycle CF (dB)	0.29	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	12.45	12.74	29.75	-17.01
Mid	5785	13.19	13.48	29.78	-16.30
High	5825	13.02	13.31	29.79	-16.48

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5745	-1.26	-0.97	17.00	-17.97
Mid	5785	-1.04	-0.75	17.00	-17.75
High	5825	-1.06	-0.77	17.00	-17.77

10.4.11. 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	39.83	18.88	-3.46
Mid	5785	39.75	19.44	-3.46
High	5825	36.33	19.11	-3.46

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	29.76	35.76	29.76	17.00	17.00	17.00
Mid	5785	30.00	29.89	35.89	29.89	17.00	17.00	17.00
High	5825	30.00	29.81	35.81	29.81	17.00	17.00	17.00

Duty Cycle CF (dB)	0.28	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	11.49	11.77	29.76	-17.99
Mid	5785	11.67	11.95	29.89	-17.94
High	5825	11.81	12.09	29.81	-17.72

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5745	-3.08	-2.80	17.00	-19.80
Mid	5785	-2.94	-2.66	17.00	-19.66
High	5825	-2.76	-2.48	17.00	-19.48

10.4.12. 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	65.83	37.04	-3.46
High	5795	72.83	37.11	-3.46

Limits

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

Duty Cycle CF (dB)	0.65	Included in Calculations of Corr'd Power & PPSD

Output Power Results

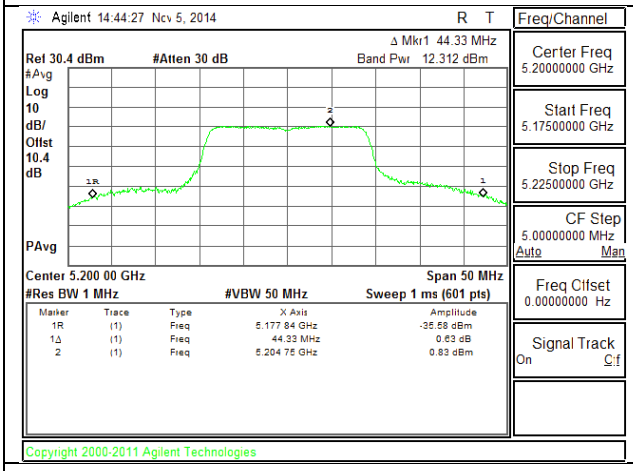
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5755	11.08	11.73	30.00	-18.27
High	5795	10.87	11.52	30.00	-18.48

PPSD Results

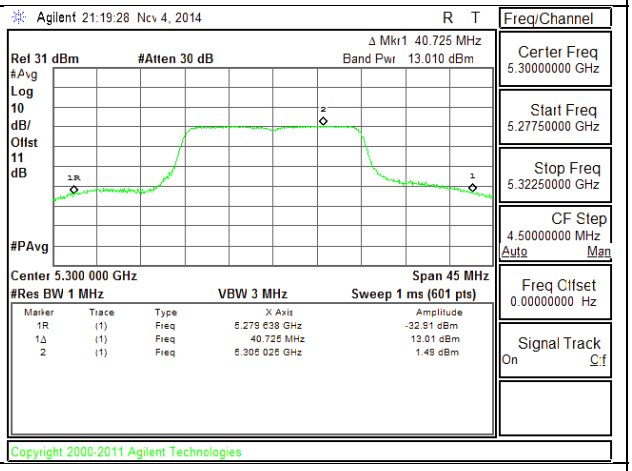
Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5755	-4.26	-3.61	17.00	-20.61
High	5795	-4.81	-4.16	17.00	-21.16

10.4.13. OUTPUT POWER AND PPSD PLOTS, Chain 0

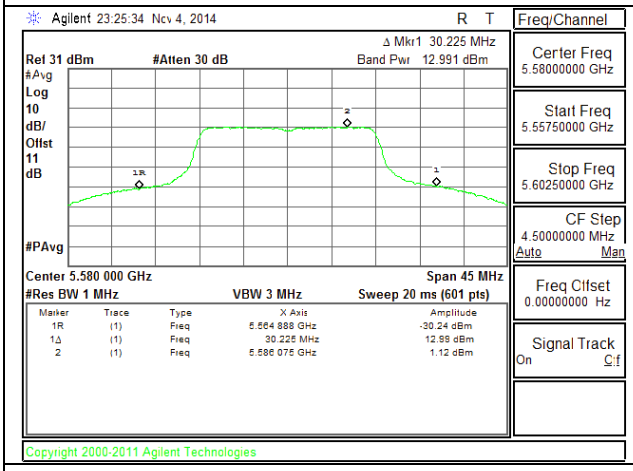
11n HT20 5.2 Mid Ch



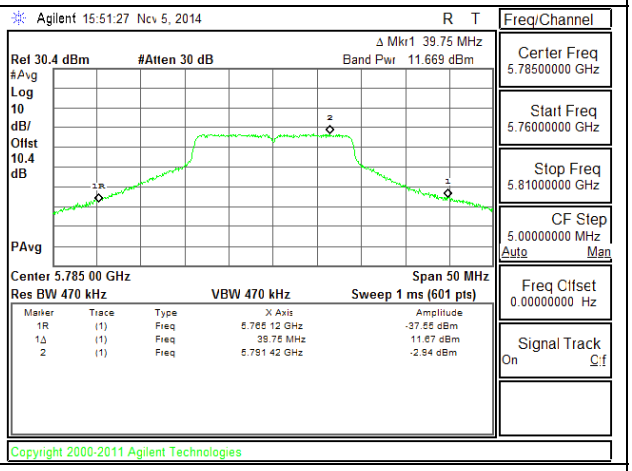
11n HT20 5.3 Mid Ch



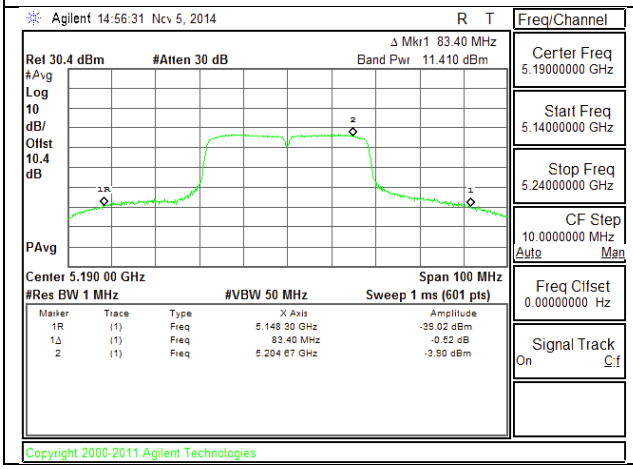
11n HT20 5.5 Mid Ch



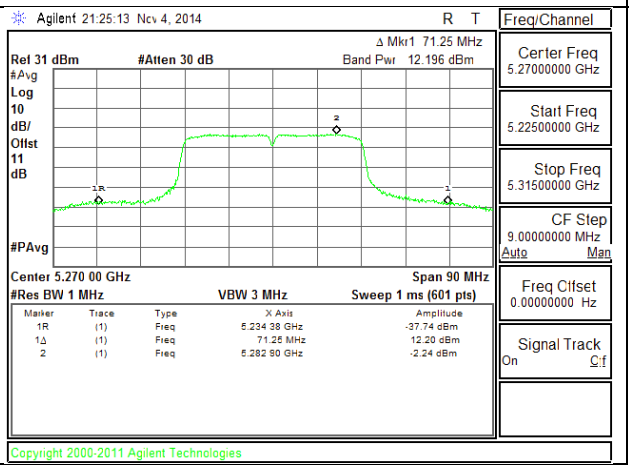
11n HT20 5.8 Mid Ch



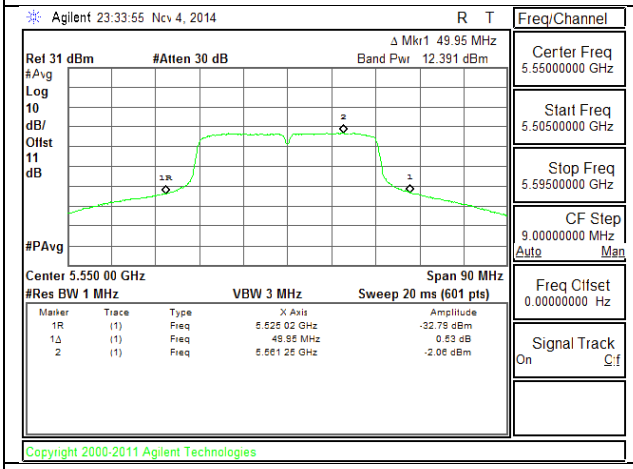
11n HT40 5.2 Low Ch



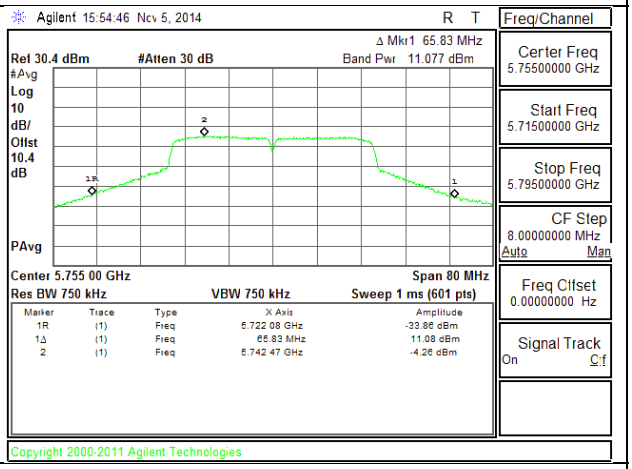
11n HT40 5.3 Low Ch



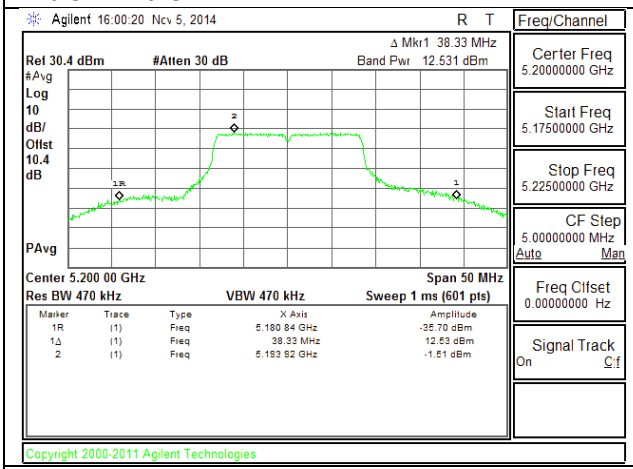
11n HT40 5.5 Mid Ch



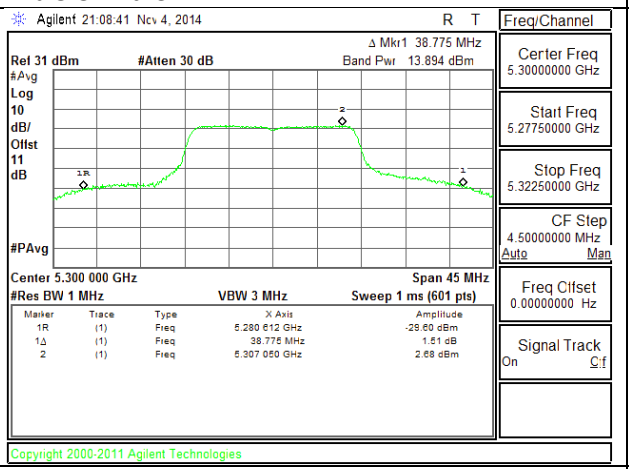
11n HT40 5.8 Low Ch



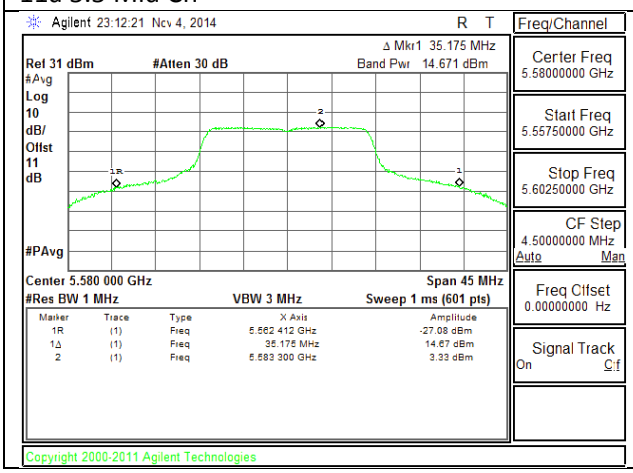
11a 5.2 Mid Ch



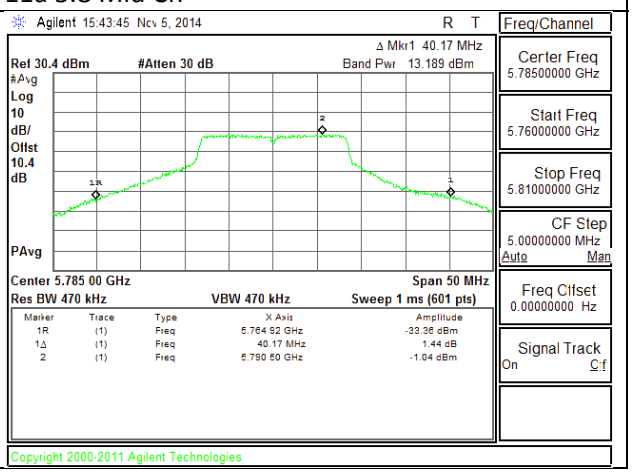
11a 5.3 Mid Ch



11a 5.5 Mid Ch



11a 5.8 Mid Ch



10.5. PEAK EXCURSION

LIMITS

FCC §15.407 (a) (6)

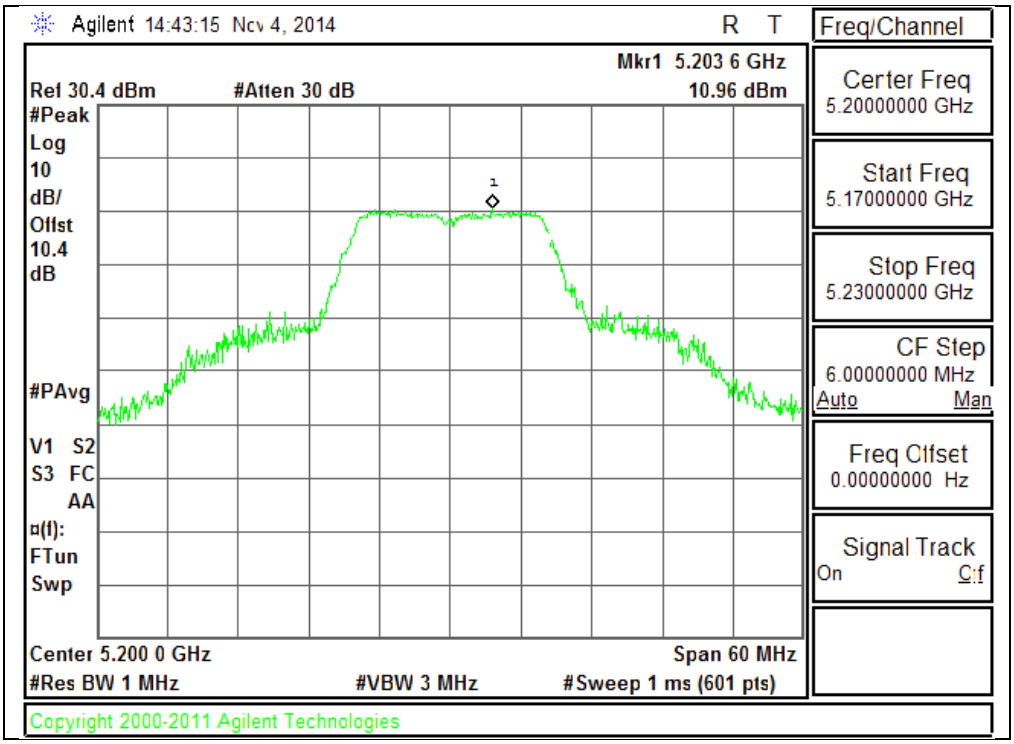
The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

RESULTS

10.5.1. 802.11a MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5200	10.960	-1.51	0.29	12.18	13	-0.82

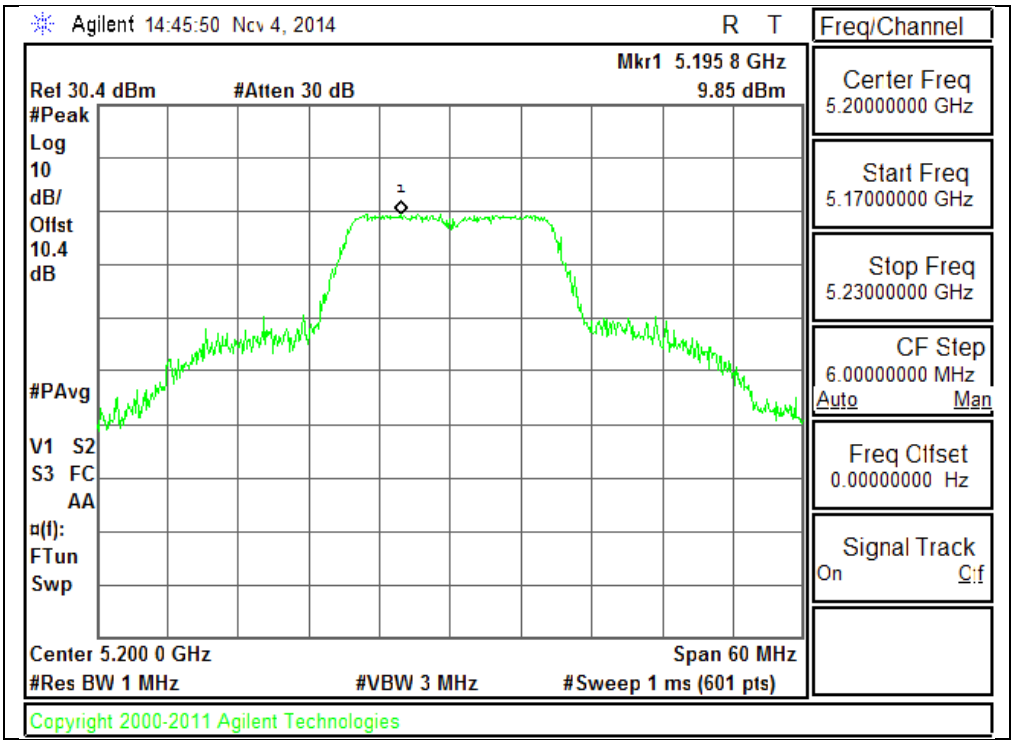
PEAK EXCURSION



10.5.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5200	9.850	0.83	0.28	8.74	13	-4.26

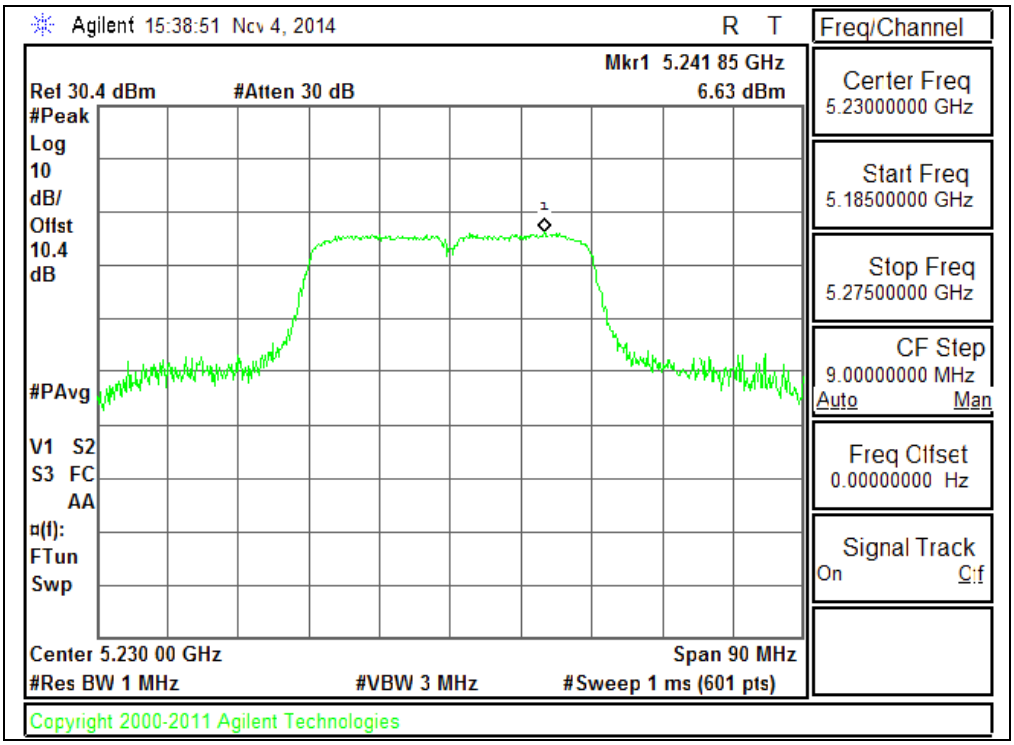
PEAK EXCURSION



10.5.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5230	6.630	-3.69	0.65	9.67	13	-3.33

PEAK EXCURSION



11. TRANSMITTER ABOVE 1 GHz

LIMITS

FCC §15.205 and §15.209

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

TEST PROCEDURE

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

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

Reference to KDB 789033 UNII part H) 6) d) Method VB:
For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and add duty cycle factor to the reading offset for average measurements.

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

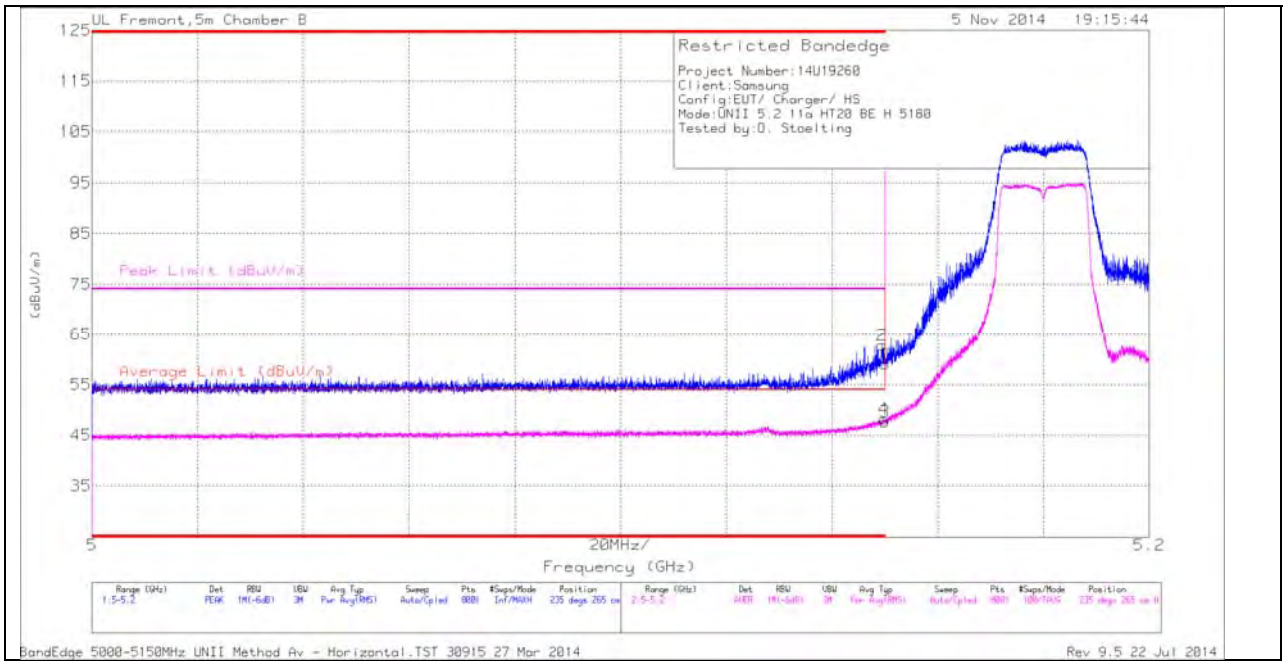
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

11.1. 5.2 GHz

11.1.1. TX ABOVE 1 GHz 802.11a MODE IN THE 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

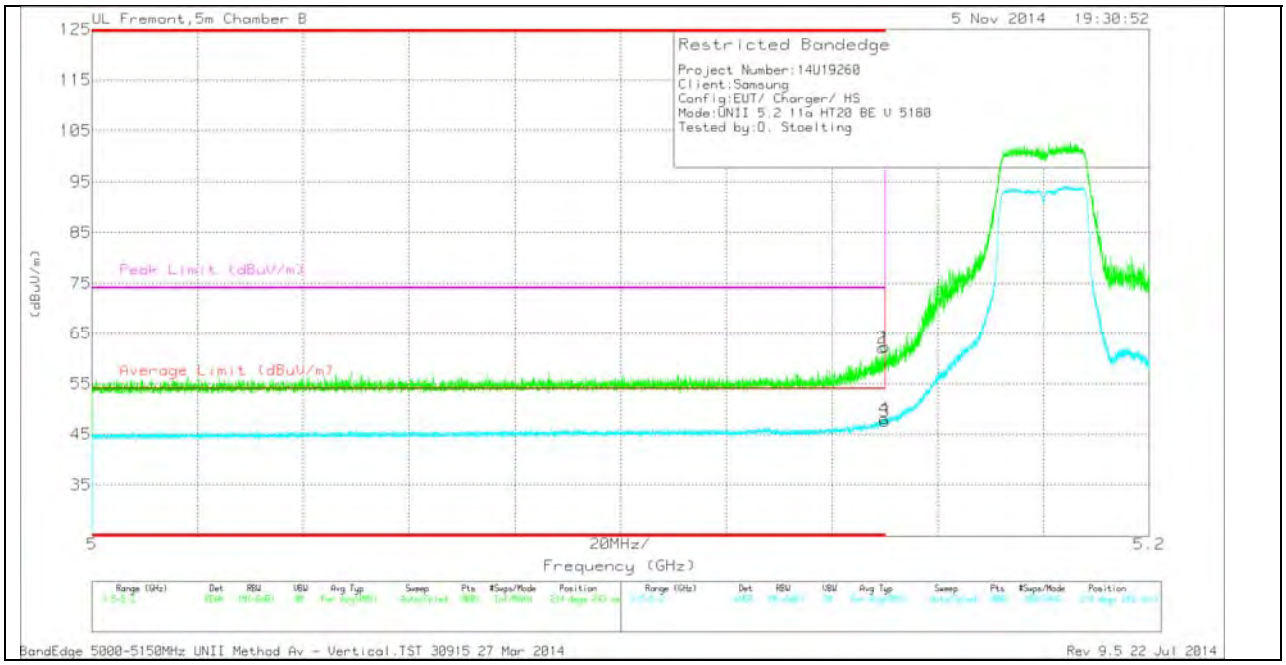
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	45.32	PK	34.3	-20.5	0	59.12	-	-	74	-14.88	235	265	H
2	* 5.149	49.01	PK	34.3	-20.5	0	62.81	-	-	74	-11.19	235	265	H
3	* 5.15	33.58	RMS	34.3	-20.5	.29	47.67	54	-6.33	-	-	235	265	H
4	* 5.15	34.04	RMS	34.3	-20.5	.29	48.13	54	-5.87	-	-	235	265	H

VERTICAL PEAK AND AVERAGE PLOT

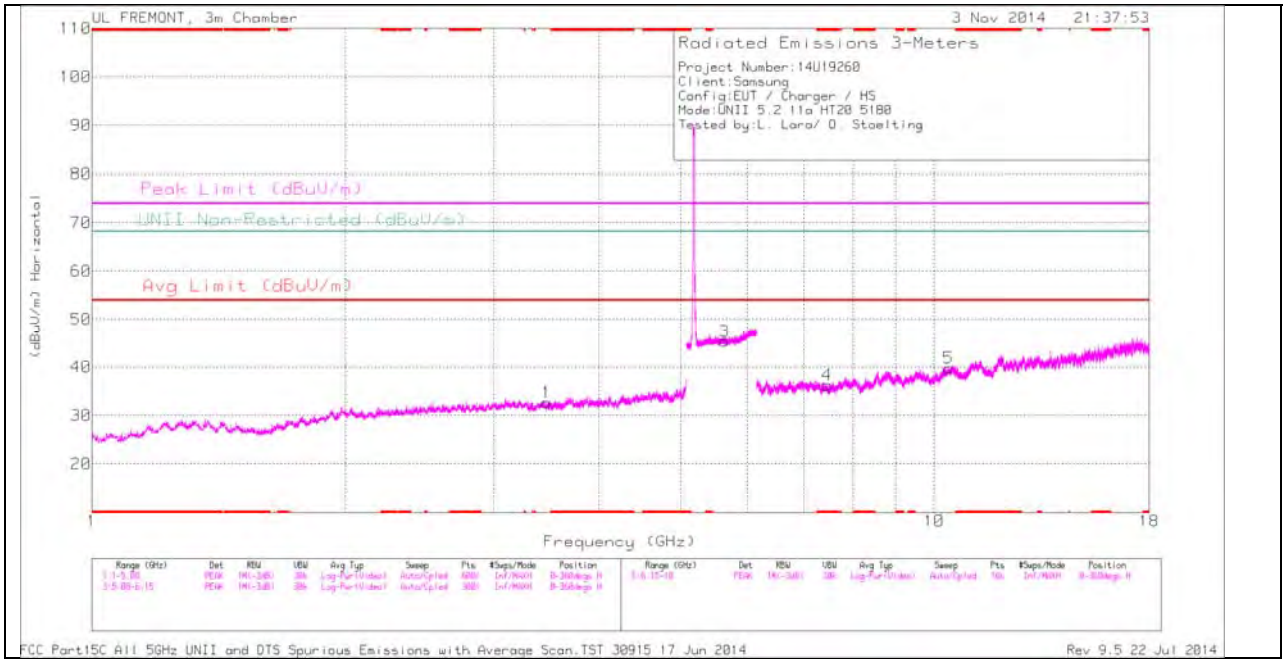


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	48.5	PK	34.3	-20.5	0	62.3	-	-	74	-11.7	214	243	V
2	* 5.15	48.24	PK	34.3	-20.5	0	62.04	-	-	74	-11.96	214	243	V
3	* 5.15	33.5	RMS	34.3	-20.5	.29	47.59	54	-6.41	-	-	214	243	V
4	* 5.15	34.01	RMS	34.3	-20.5	.29	48.1	54	-5.9	-	-	214	243	V

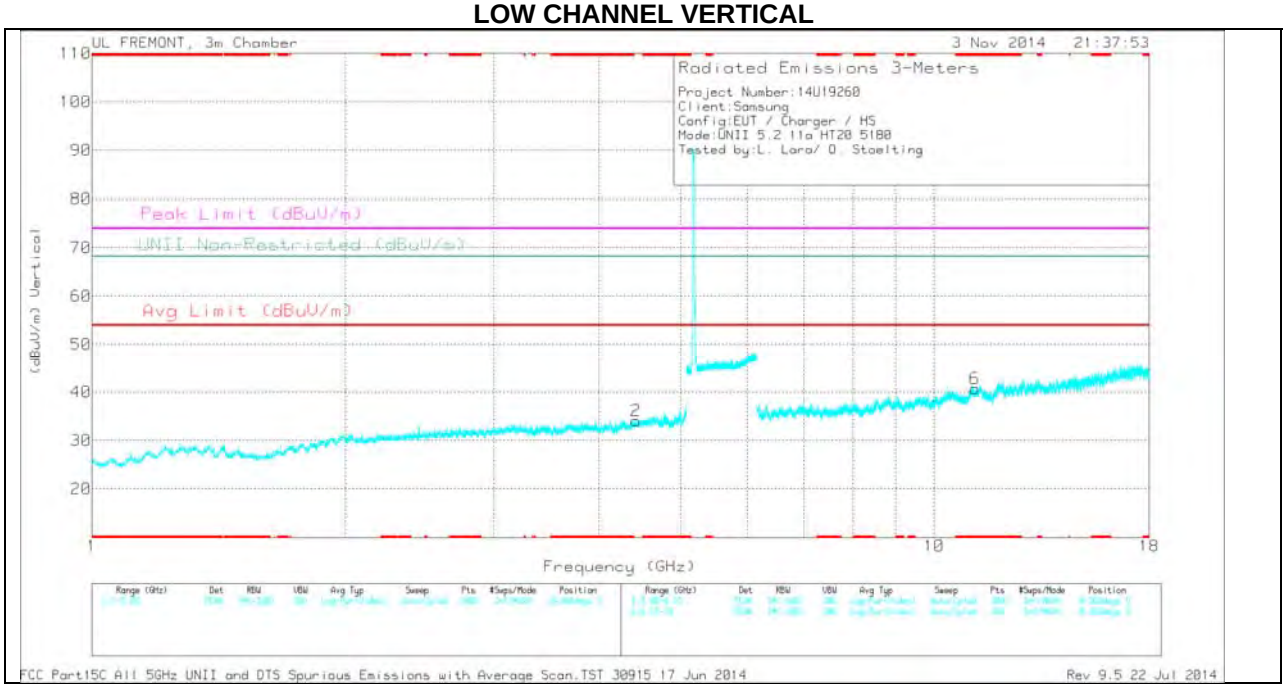
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



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

LOW CHANNEL VERTICAL



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

LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 7.462	29.32	PK	35.7	-28.7	0	36.32	-	-	74	-37.68	-	-	0-360	200	H
6	* 11.184	28.66	PK	37.9	-25.9	0	40.66	-	-	74	-33.34	-	-	0-360	200	V
1	3.466	30.8	PK	33	-31.2	0	32.6	-	-	-	-	68.2	-35.6	0-360	200	H
2	4.426	30.76	PK	33.7	-30.4	0	34.06	-	-	-	-	68.2	-34.14	0-360	100	V
3	5.639	31.62	PK	34.7	-20.9	0	45.42	-	-	-	-	68.2	-22.78	0-360	100	H
5	10.391	28.39	PK	37.3	-25.9	0	39.79	-	-	-	-	68.2	-28.41	0-360	100	H

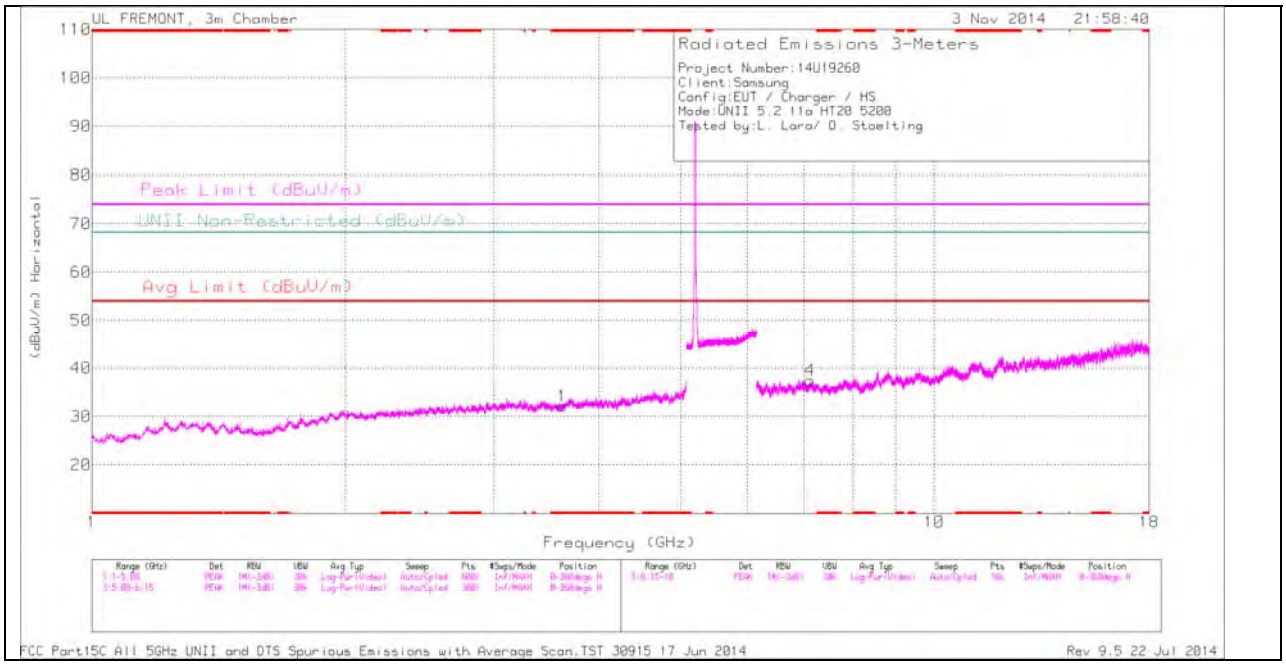
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 7.46	38.96	PK1	35.7	-28.7	0	45.96	-	-	74	-28.04	-	-	0	200	H
* 7.462	27.81	AD1	35.7	-28.7	.29	35.13	54	-18.87	-	-	-	-	0	200	H

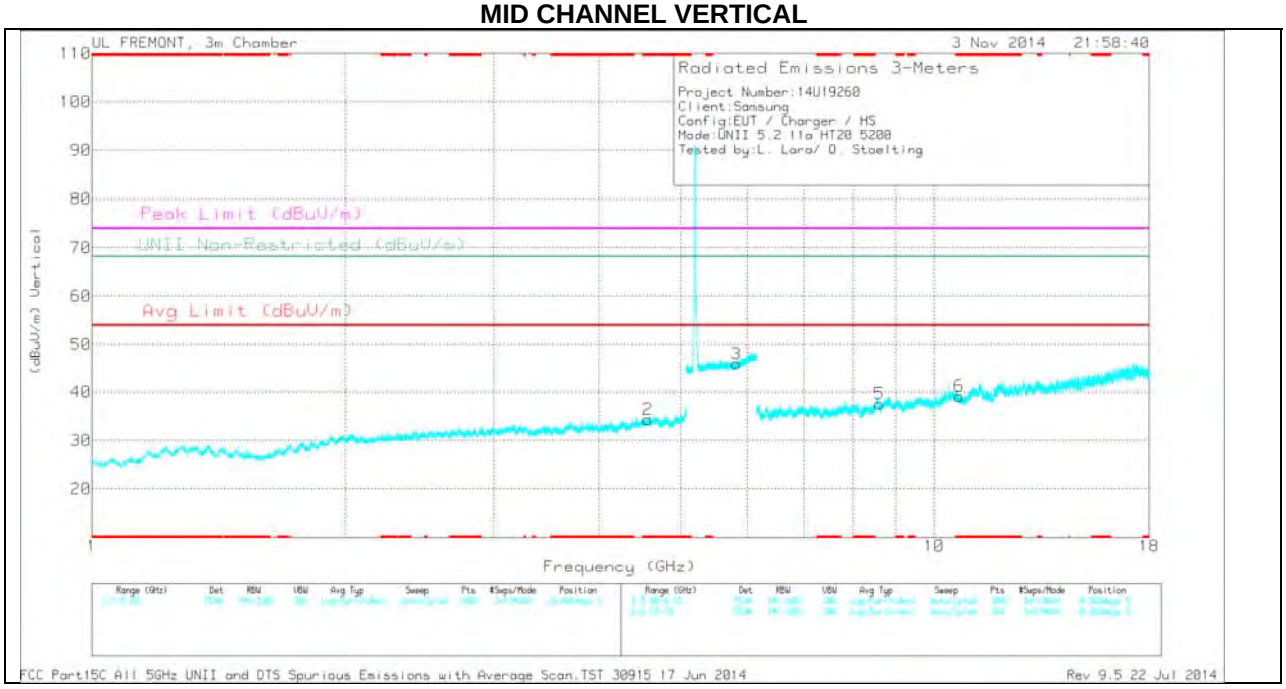
FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

MID CHANNEL HORIZONTAL



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

MID CHANNEL VERTICAL



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

MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ 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	* 3.619	30.43	PK	33	-31.3	0	32.13	-	-	74	-41.87	-	-	0-360	100	H
2	* 4.575	31.07	PK	34	-30.7	0	34.37	-	-	74	-39.63	-	-	0-360	200	V
6	* 10.699	27.03	PK	37.9	-25.8	0	39.13	-	-	74	-34.87	-	-	0-360	200	V
3	5.826	32.26	PK	34.9	-21.3	0	45.86	-	-	-	-	68.2	-22.34	0-360	100	V
4	7.125	30.95	PK	35.6	-29.1	0	37.45	-	-	-	-	68.2	-30.75	0-360	100	H
5	8.611	28.16	PK	35.8	-26.4	0	37.56	-	-	-	-	68.2	-30.64	0-360	100	V

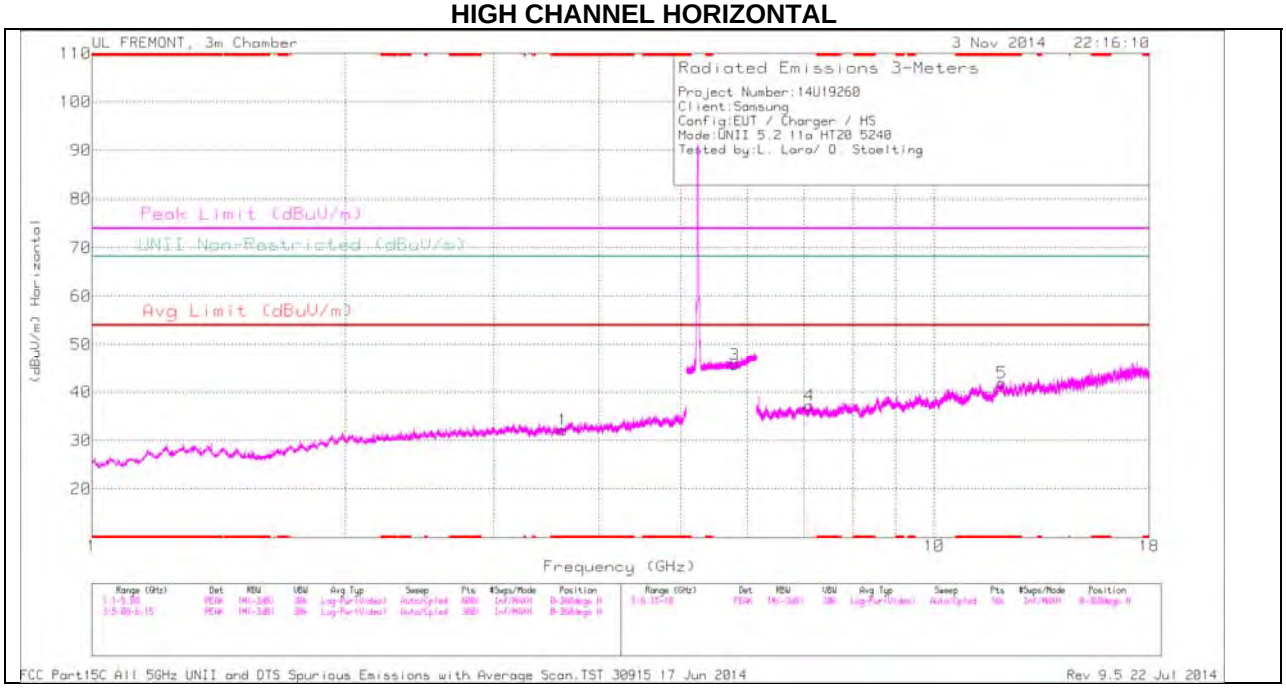
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 10.7	36.99	PK1	37.9	-25.8	0	49.09	-	-	74	-24.91	-	-	0	200	V
* 10.701	25.47	AD1	37.9	-25.8	.29	37.89	54	-16.11	-	-	-	-	0	200	V

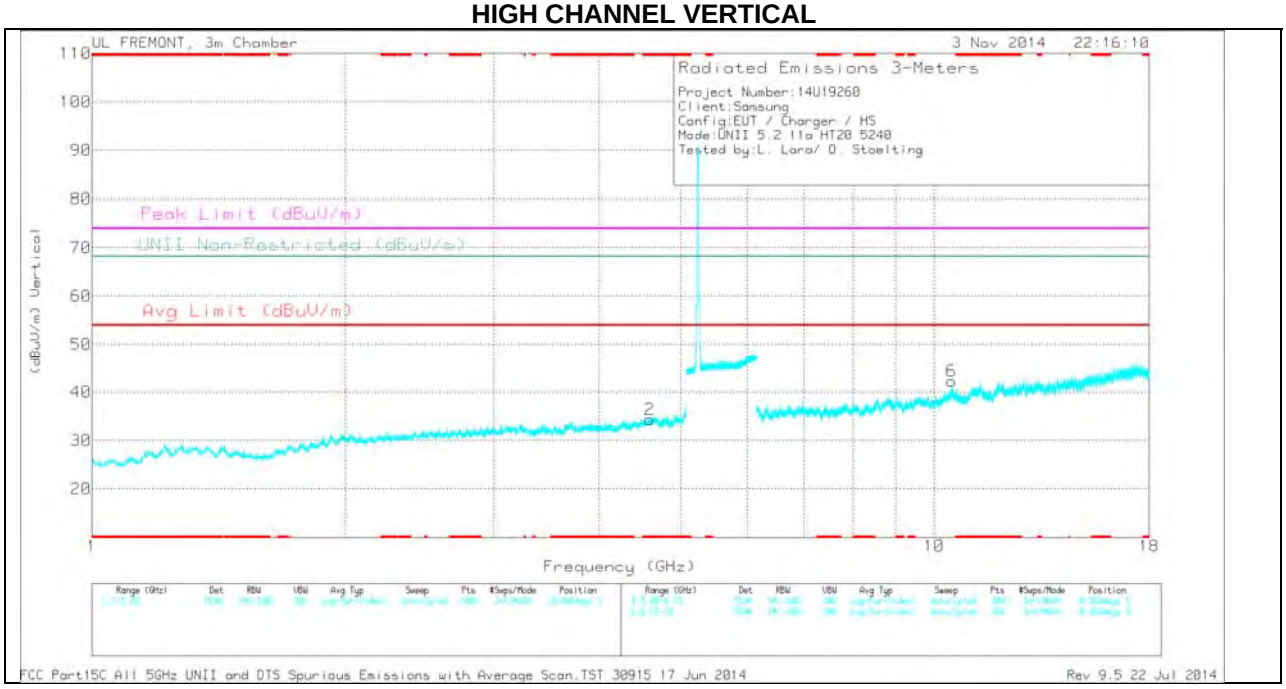
FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

HIGH CHANNEL HORIZONTAL



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

HIGH CHANNEL VERTICAL



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

HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ 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	* 3.623	30.33	PK	33.1	-31.3	0	32.13	-	-	74	-41.87	-	-	0-360	100	H
2	* 4.592	30.98	PK	34	-30.6	0	34.38	-	-	74	-39.62	-	-	0-360	100	V
5	* 12.043	28.95	PK	39.1	-26.2	0	41.85	-	-	74	-32.15	-	-	0-360	200	H
3	5.795	32.19	PK	34.9	-21.3	0	45.79	-	-	-	-	68.2	-22.41	0-360	100	H
4	7.111	30.7	PK	35.6	-29.1	0	37.2	-	-	-	-	68.2	-31	0-360	100	H
6	10.48	30.46	PK	37.5	-25.7	0	42.26	-	-	-	-	68.2	-25.94	0-360	200	V

PK - Peak detector

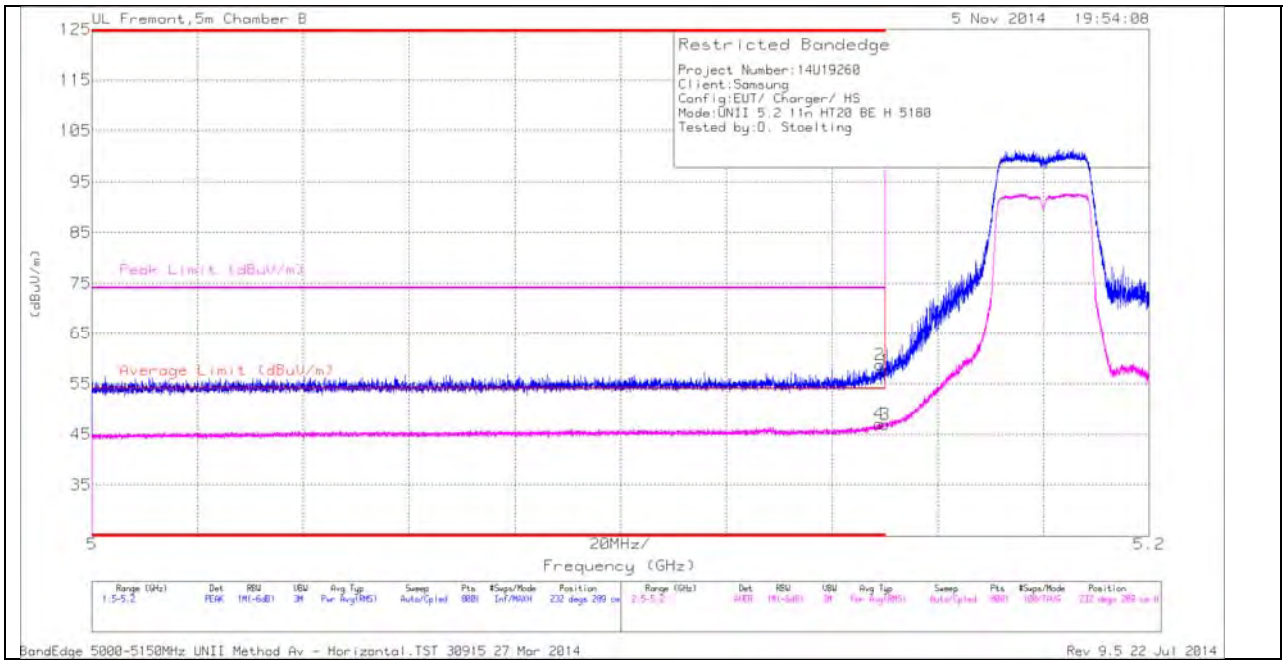
RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 12.045	37.56	PK1	39.1	-26.2	0	50.46	-	-	74	-23.54	-	-	0	200	H
* 12.045	26.29	AD1	39.1	-26.2	.29	39.51	54	-14.49	-	-	-	-	0	200	H

FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

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

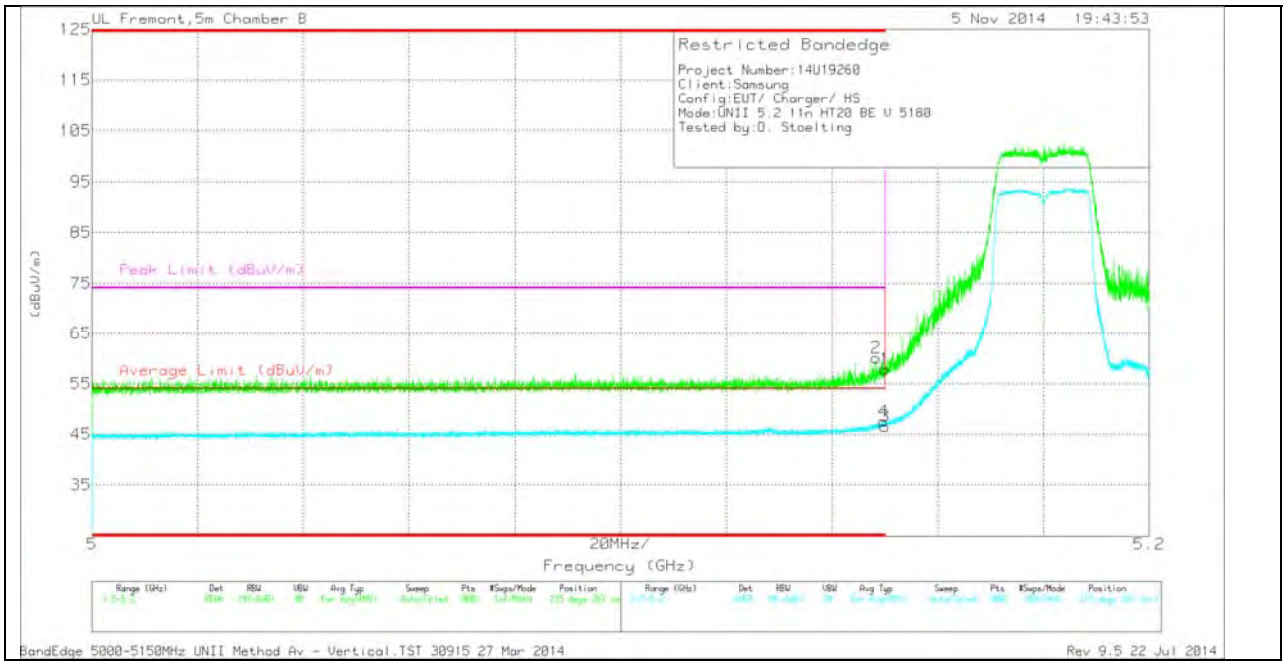
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	43.77	PK	34.3	-20.5	0	57.57	-	-	74	-16.43	232	289	H
2	* 5.149	44.95	PK	34.3	-20.5	0	58.75	-	-	74	-15.25	232	289	H
3	* 5.15	32.88	RMS	34.3	-20.5	.28	46.99	54	-7.01	-	-	232	289	H
4	* 5.149	32.95	RMS	34.3	-20.5	.28	47.06	54	-6.94	-	-	232	289	H

VERTICAL PEAK AND AVERAGE PLOT

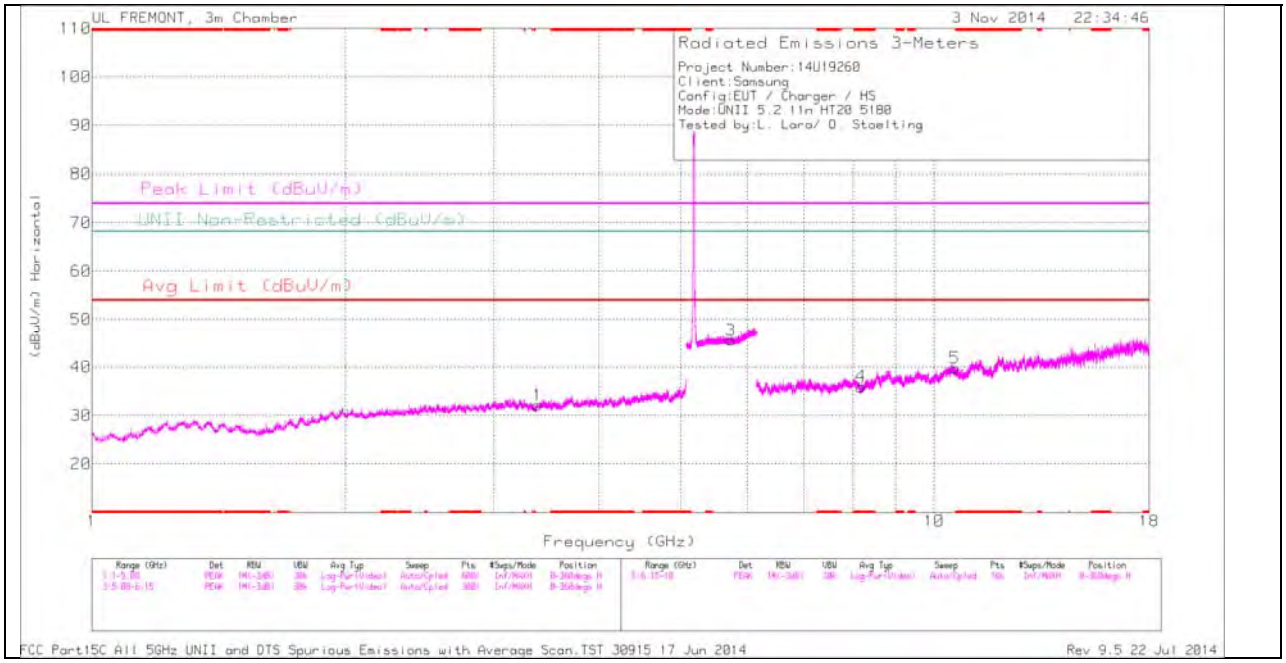


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	44.03	PK	34.3	-20.5	0	57.83	-	-	74	-16.17	215	267	V
2	* 5.148	46.35	PK	34.3	-20.5	0	60.15	-	-	74	-13.85	215	267	V
3	* 5.15	32.41	RMS	34.3	-20.5	.28	46.52	54	-7.48	-	-	215	267	V
4	* 5.15	33.49	RMS	34.3	-20.5	.28	47.6	54	-6.4	-	-	215	267	V

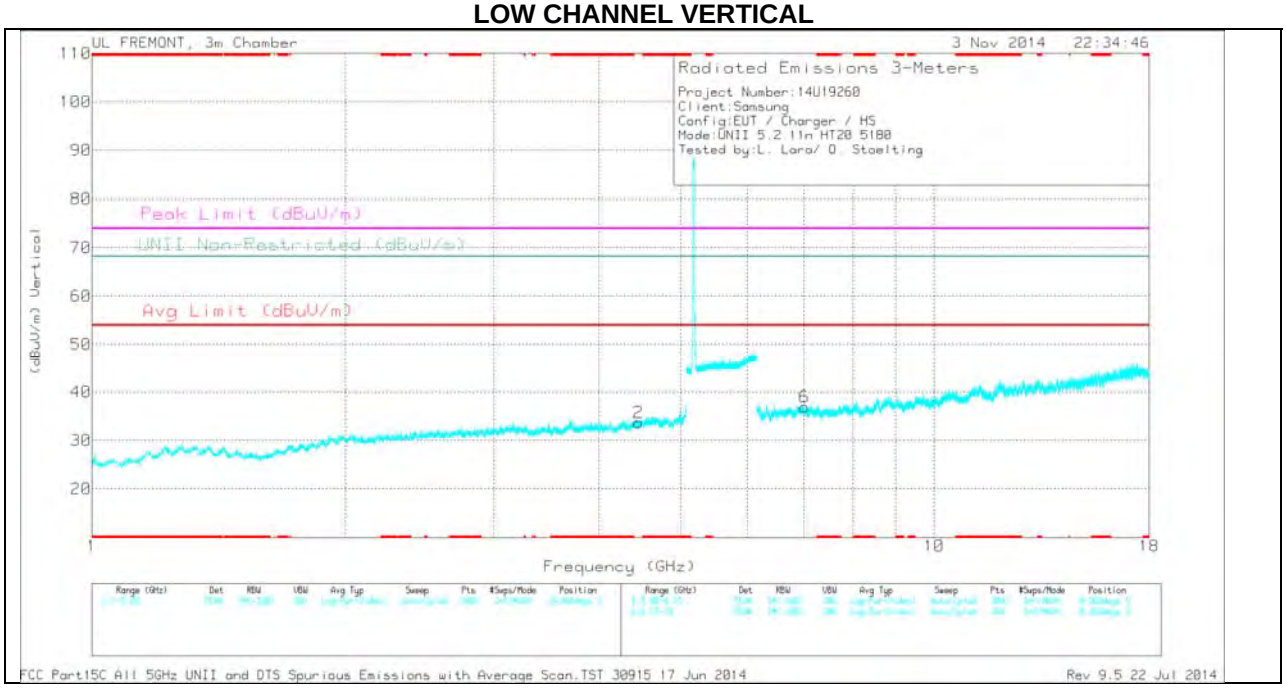
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



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

LOW CHANNEL VERTICAL



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

LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 8.186	28.86	PK	35.8	-28.7	0	35.96	-	-	74	-38.04	-	-	0-360	200	H
1	3.383	31.18	PK	32.9	-31.9	0	32.18	-	-	-	-	68.2	-36.02	0-360	100	H
2	4.456	30.8	PK	33.8	-30.9	0	33.7	-	-	-	-	68.2	-34.5	0-360	100	V
3	5.737	32.02	PK	34.8	-21.2	0	45.62	-	-	-	-	68.2	-22.58	0-360	200	H
6	7.01	30.3	PK	35.6	-29	0	36.9	-	-	-	-	68.2	-31.3	0-360	200	V
5	10.572	26.97	PK	37.6	-24.8	0	39.77	-	-	-	-	68.2	-28.43	0-360	200	H

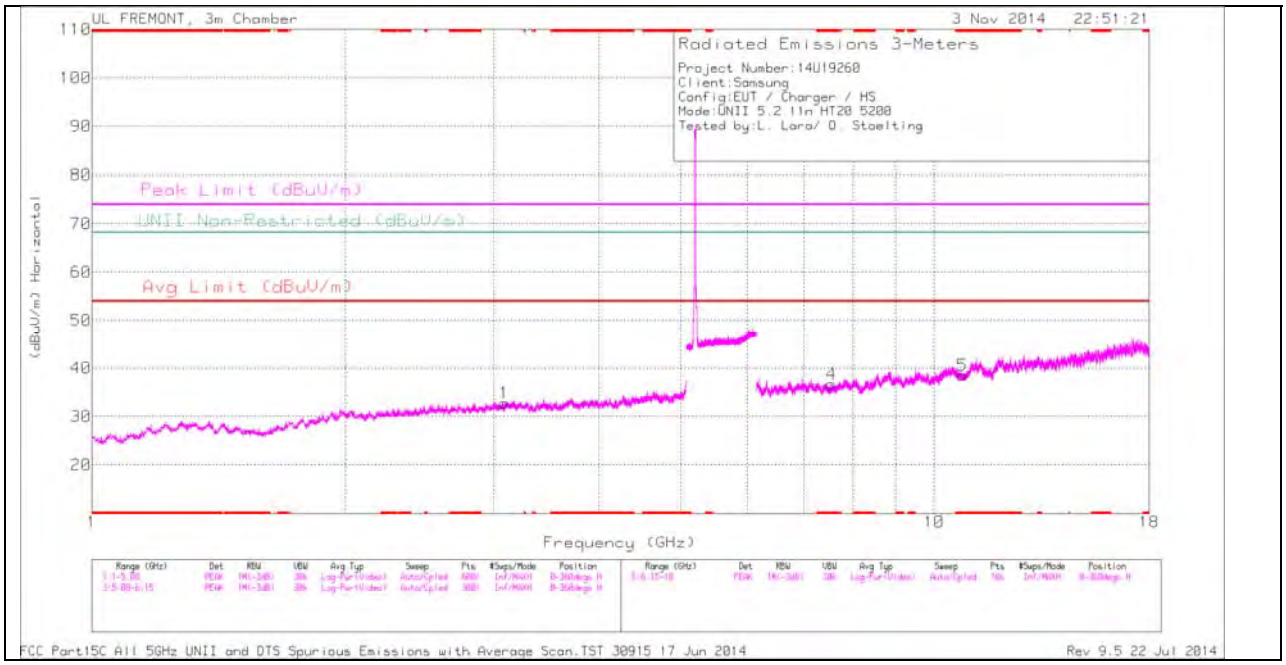
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 8.187	39.13	PK1	35.8	-28.8	0	46.13	-	-	74	-27.87	-	-	0	200	H
* 8.188	27.52	AD1	35.8	-28.8	.28	34.87	54	-19.13	-	-	-	-	0	200	H

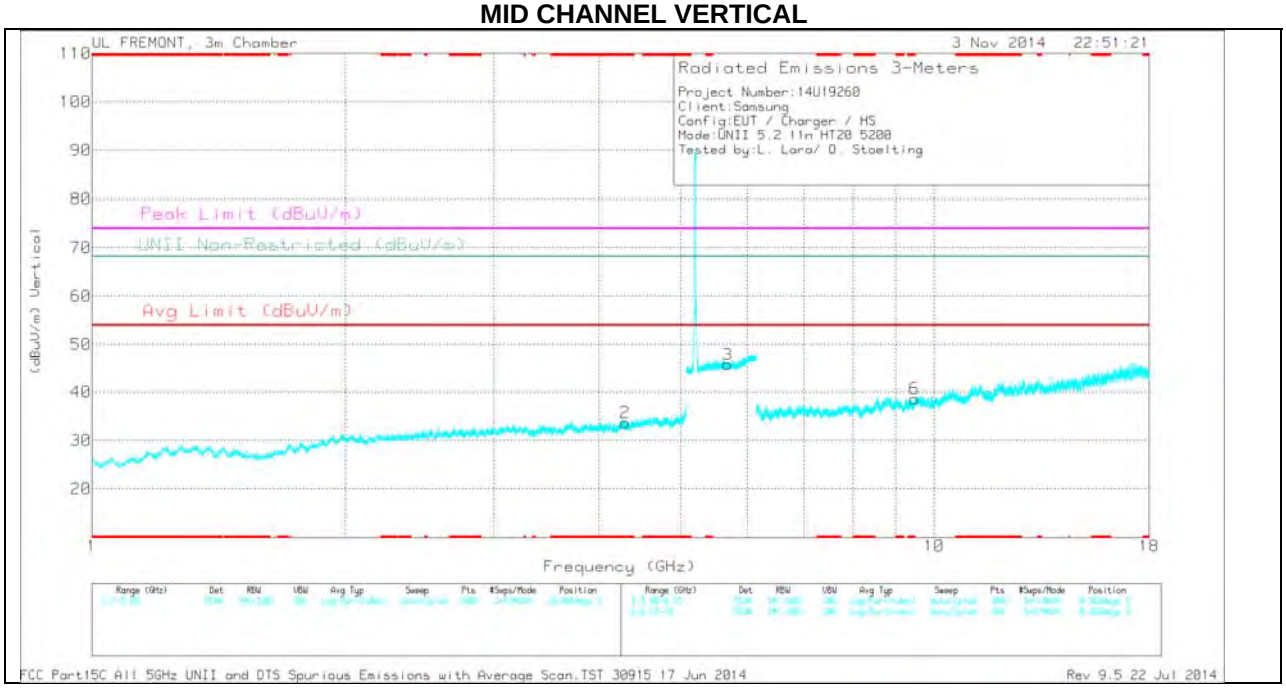
FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

MID CHANNEL HORIZONTAL



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

MID CHANNEL VERTICAL



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

MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 4.299	30.36	PK	33.6	-30.3	0	33.66	-	-	74	-40.34	-	-	0-360	200	V
4	* 7.554	29.53	PK	35.7	-28.6	0	36.63	-	-	74	-37.37	-	-	0-360	100	H
5	* 10.797	26.11	PK	37.9	-25.5	0	38.51	-	-	74	-35.49	-	-	0-360	100	H
6	* 9.469	28.56	PK	36.5	-26.4	0	38.66	-	-	74	-35.34	-	-	0-360	200	V
1	3.087	31.77	PK	33.1	-32.1	0	32.77	-	-	-	-	68.2	-35.43	0-360	200	H
3	5.687	31.92	PK	34.8	-21	0	45.72	-	-	-	-	68.2	-22.48	0-360	200	V

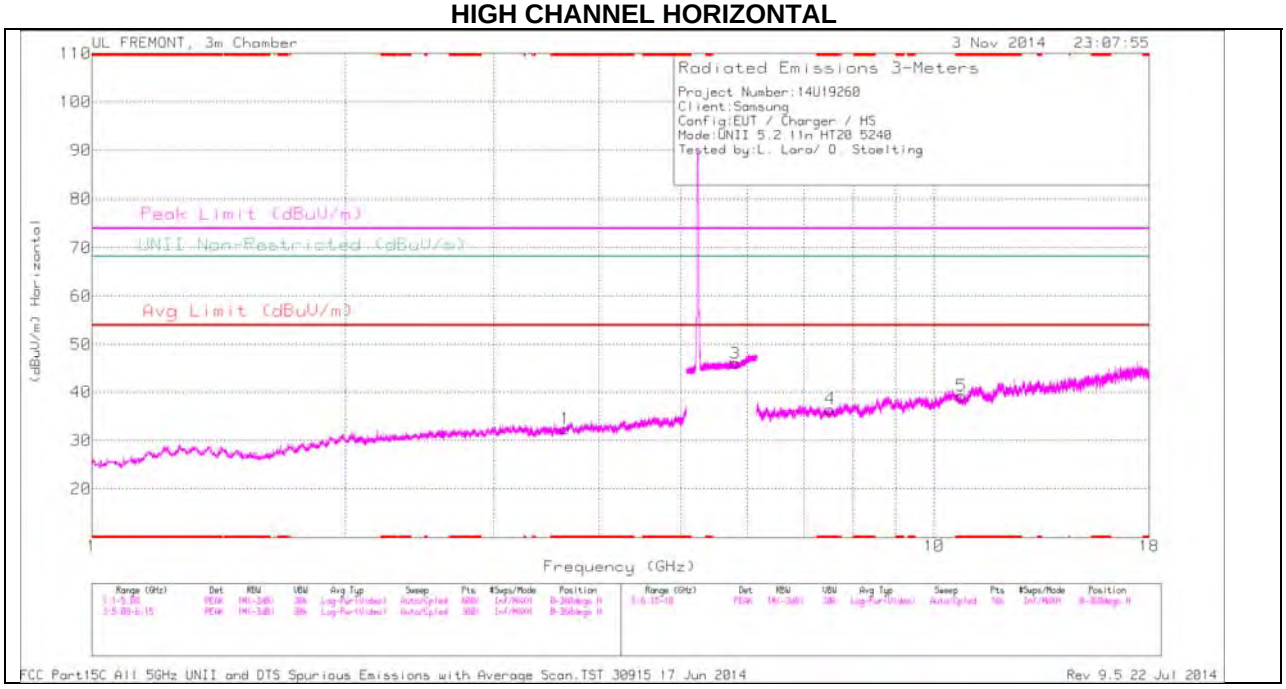
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 10.798	36.82	PK1	37.9	-25.5	0	49.22	-	-	74	-24.78	-	-	0	100	H
* 10.799	25.21	AD1	37.9	-25.5	.28	37.96	54	-16.04	-	-	-	-	0	100	H

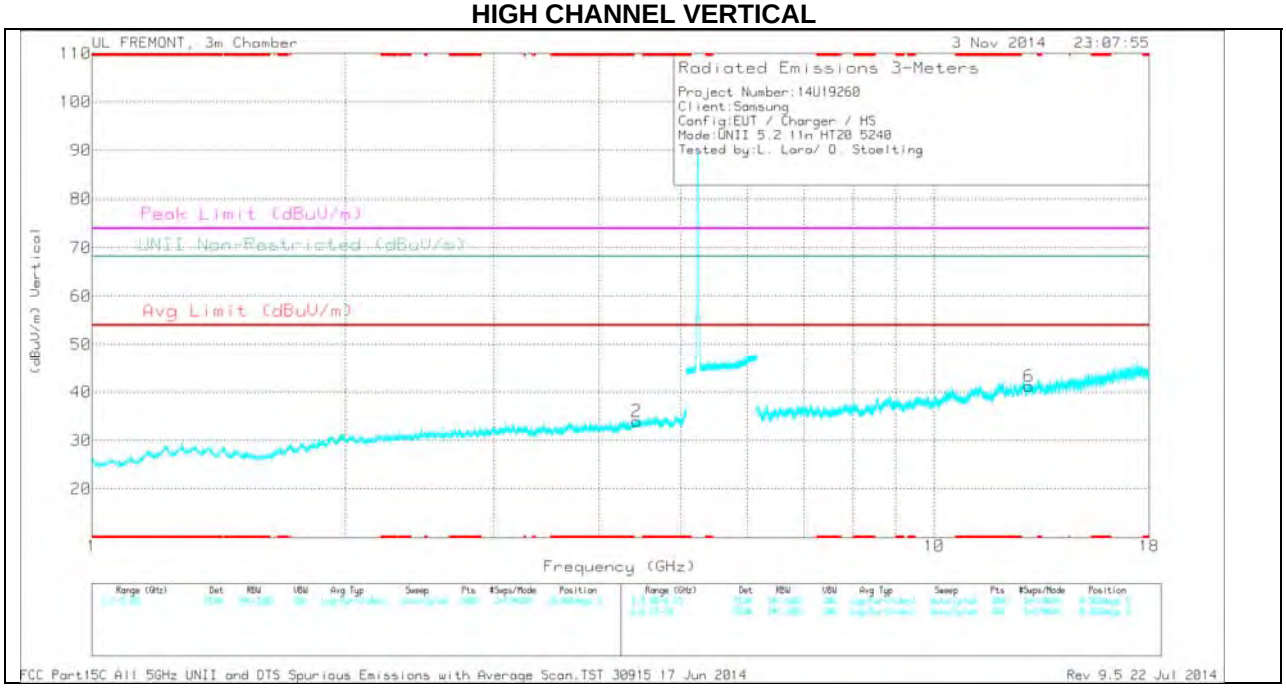
FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

HIGH CHANNEL HORIZONTAL



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

HIGH CHANNEL VERTICAL



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

HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ 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	* 3.648	30.44	PK	33.1	-31.1	0	32.44	-	-	74	-41.56	-	-	0-360	200	H
4	* 7.522	29.68	PK	35.7	-28.9	0	36.48	-	-	74	-37.52	-	-	0-360	200	H
5	* 10.775	26.95	PK	37.9	-25.6	0	39.25	-	-	74	-34.75	-	-	0-360	200	H
2	4.435	30.81	PK	33.8	-30.6	0	34.01	-	-	-	-	68.2	-34.19	0-360	200	V
3	5.804	32.4	PK	34.9	-21.3	0	46	-	-	-	-	68.2	-22.2	0-360	200	H
6	12.963	29.44	PK	39.1	-27.3	0	41.24	-	-	-	-	68.2	-26.96	0-360	200	V

PK - Peak detector

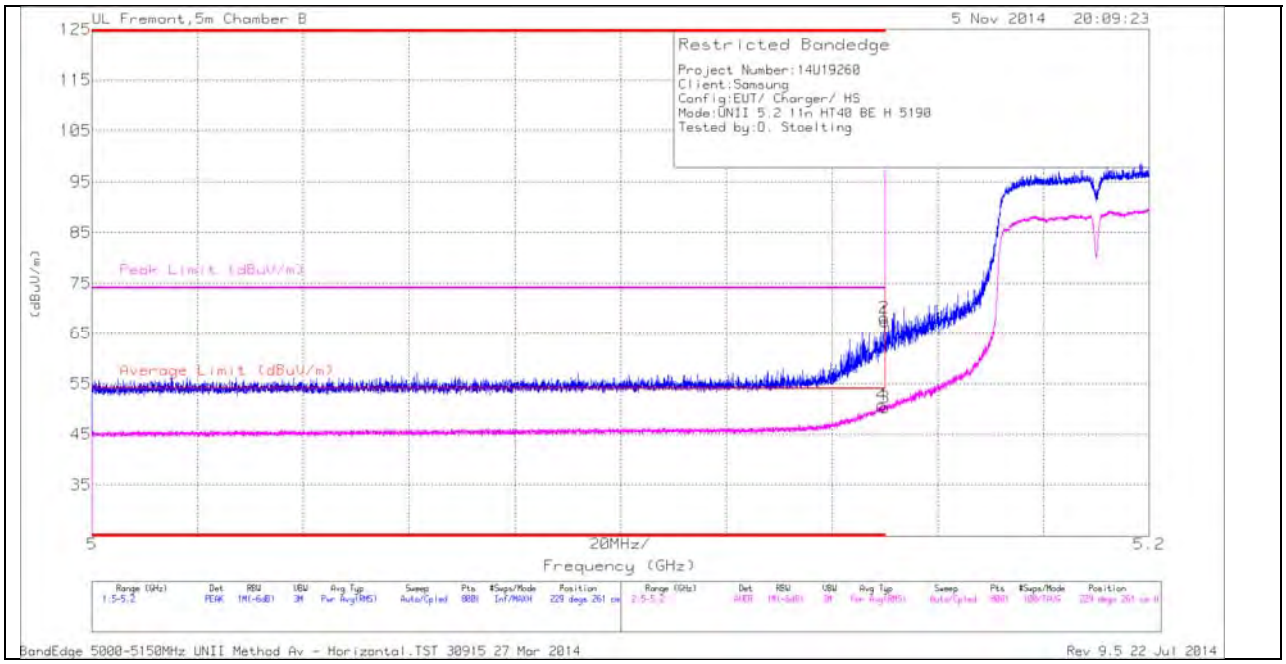
RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 10.774	37.71	PK1	37.9	-25.6	0	50.01	-	-	74	-23.99	-	-	0	200	H
* 10.775	25.6	AD1	37.9	-25.6	.28	38.25	54	-15.75	-	-	-	-	0	200	H

FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

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

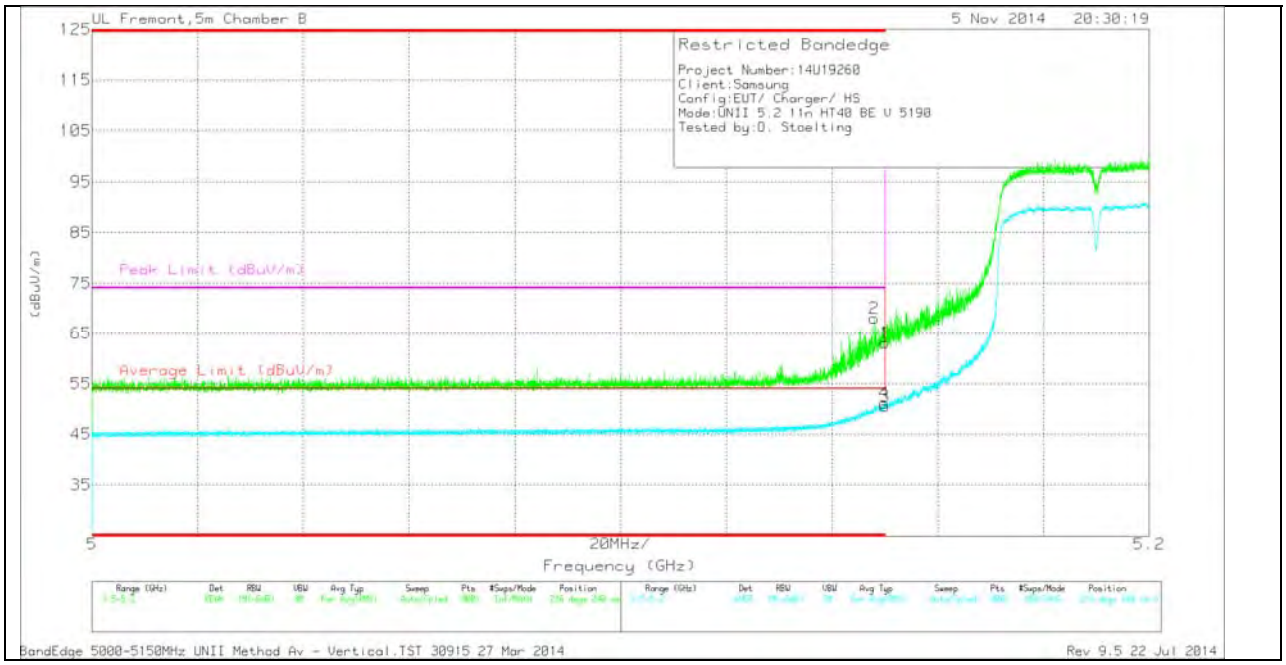
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	53.6	PK	34.3	-20.5	0	67.4	-	-	74	-6.6	229	261	H
2	* 5.15	54.37	PK	34.3	-20.5	0	68.17	-	-	74	-5.83	229	261	H
3	* 5.15	35.87	RMS	34.3	-20.5	.65	50.32	54	-3.68	-	-	229	261	H
4	* 5.149	36.39	RMS	34.3	-20.5	.65	50.84	54	-3.16	-	-	229	261	H

VERTICAL PEAK AND AVERAGE PLOT

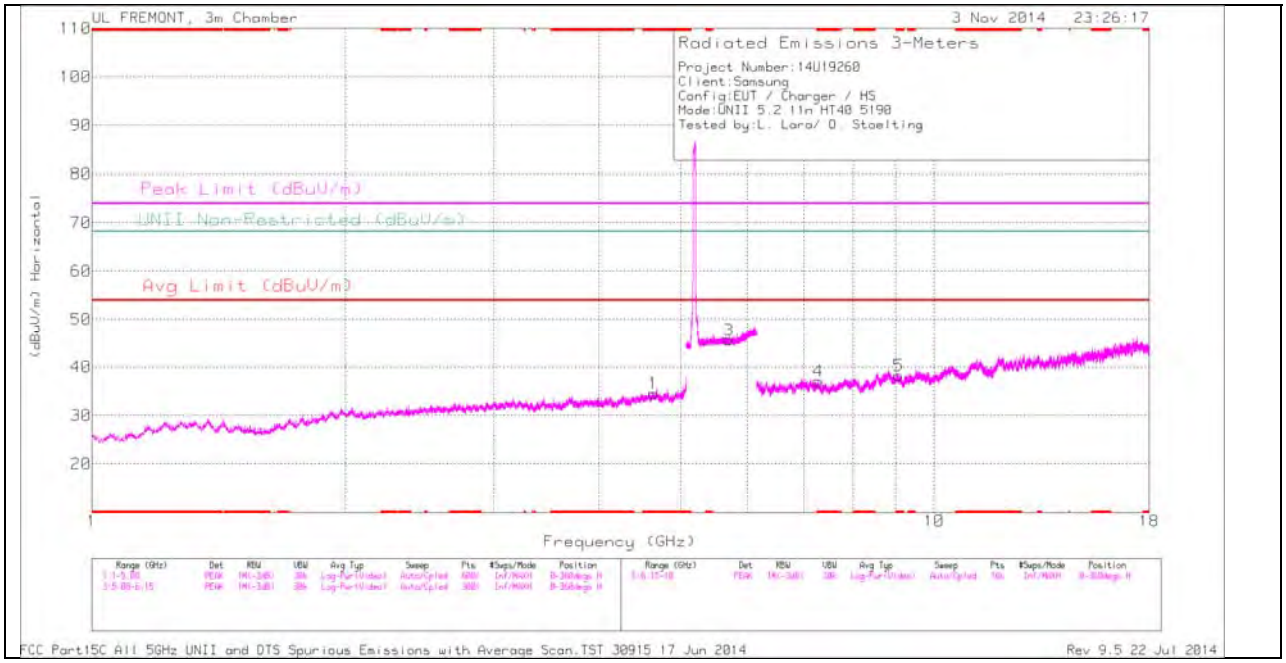


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	49.31	PK	34.3	-20.5	0	63.11	-	-	74	-10.89	216	240	V
2	* 5.148	54.23	PK	34.3	-20.5	0	68.03	-	-	74	-5.97	216	240	V
3	* 5.15	36.1	RMS	34.3	-20.5	.65	50.55	54	-3.45	-	-	216	240	V
4	* 5.15	36.67	RMS	34.3	-20.5	.65	51.12	54	-2.88	-	-	216	240	V

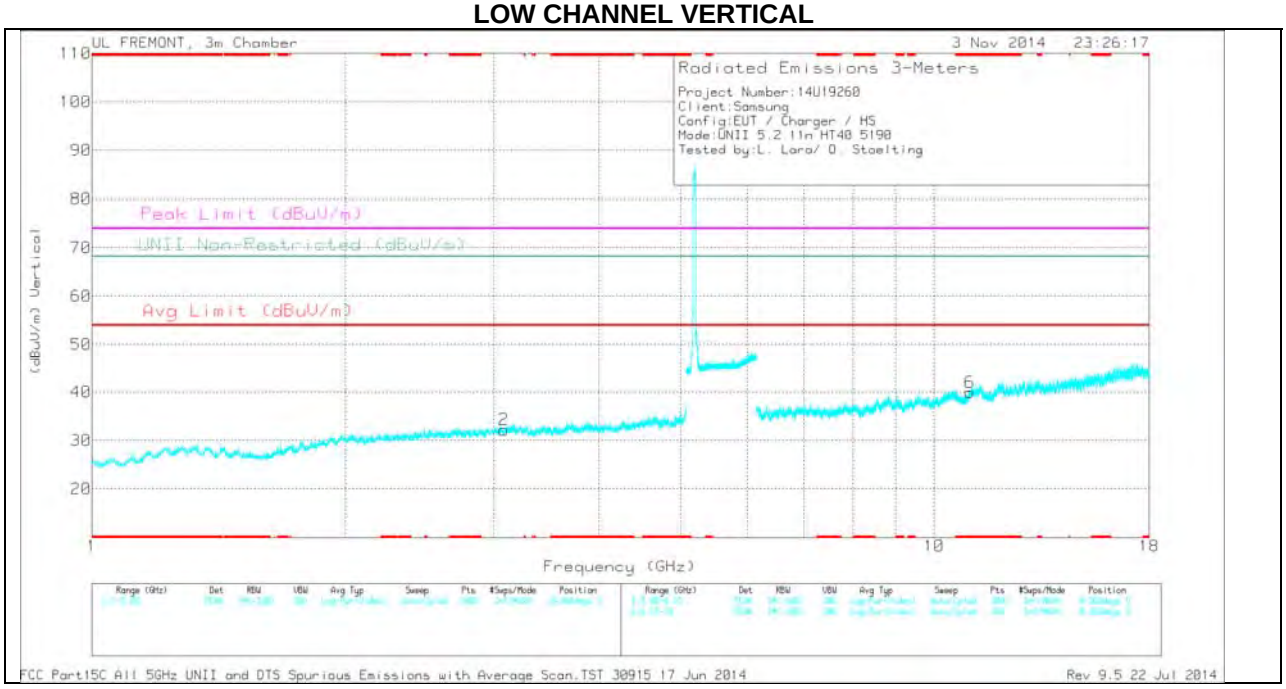
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



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

LOW CHANNEL VERTICAL



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

LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ 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	* 4.646	30.71	PK	34.1	-30.3	0	34.51	-	-	74	-39.49	-	-	0-360	100	H
4	* 7.283	30.76	PK	35.6	-29.3	0	37.06	-	-	74	-36.94	-	-	0-360	100	H
5	* 9.072	27.4	PK	36.1	-25.3	0	38.2	-	-	74	-35.8	-	-	0-360	100	H
6	* 11.027	27.63	PK	37.9	-25.6	0	39.93	-	-	74	-34.07	-	-	0-360	100	V
2	3.085	31.3	PK	33.1	-32.2	0	32.2	-	-	-	-	68.2	-36	0-360	100	V
3	5.706	31.8	PK	34.8	-21	0	45.6	-	-	-	-	68.2	-22.6	0-360	100	H

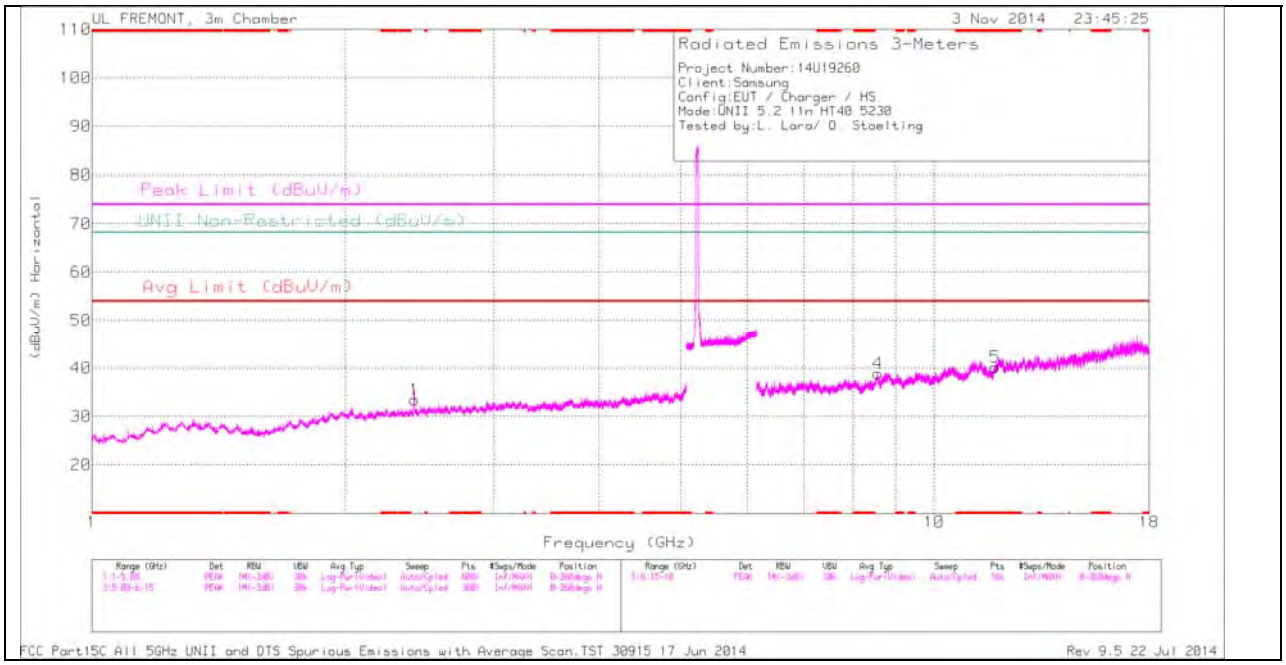
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 11.025	37.91	PK1	37.9	-25.6	0	50.21	-	-	74	-23.79	-	-	360	100	V
* 11.025	25.66	AD1	37.9	-25.6	.65	38.65	54	-15.35	-	-	-	-	360	100	V

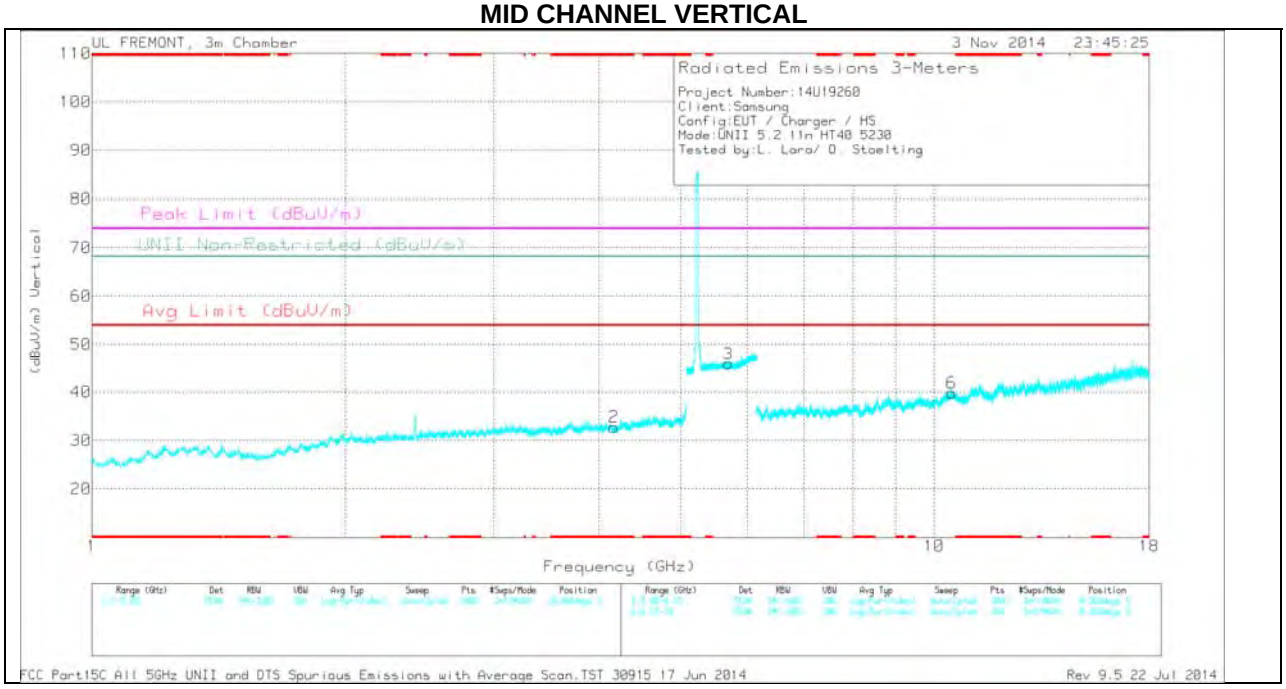
FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

MID CHANNEL HORIZONTAL



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

MID CHANNEL VERTICAL



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

MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 4.168	30.41	PK	33.5	-31.1	0	32.81	-	-	74	-41.19	-	-	0-360	200	V
5	* 11.8	27.59	PK	38.9	-26.3	0	40.19	-	-	74	-33.81	-	-	0-360	100	H
1	2.415	34.02	PK	32.1	-32.7	0	33.42	-	-	-	-	68.2	-34.78	0-360	200	H
3	5.697	32.09	PK	34.8	-21	0	45.89	-	-	-	-	68.2	-22.31	0-360	100	V
4	8.573	29.44	PK	35.8	-26.3	0	38.94	-	-	-	-	68.2	-29.26	0-360	100	H
6	10.488	28.15	PK	37.5	-25.8	0	39.85	-	-	-	-	68.2	-28.35	0-360	100	V

PK - Peak detector

RADIATED EMISSIONS

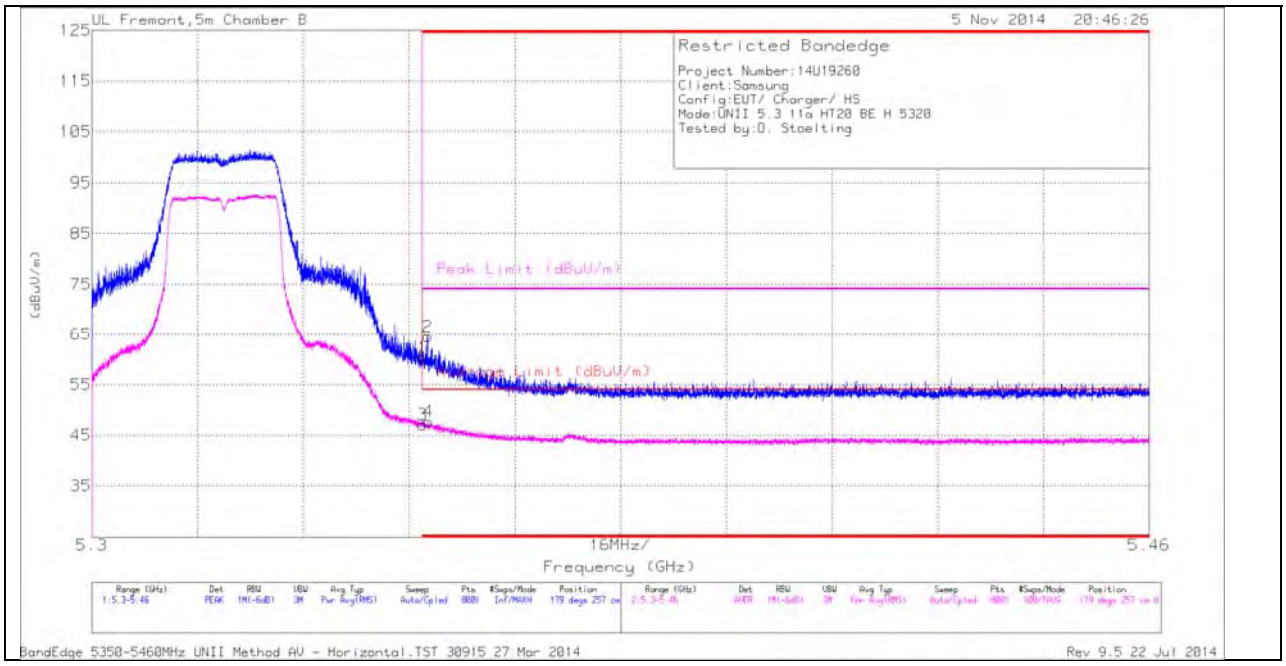
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 11.799	37.6	PK1	38.8	-26.3	0	50.1	-	-	74	-23.9	-	-	360	100	H
* 11.798	26.31	AD1	38.8	-26.3	.65	39.5	54	-14.5	-	-	-	-	360	100	H

FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

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)

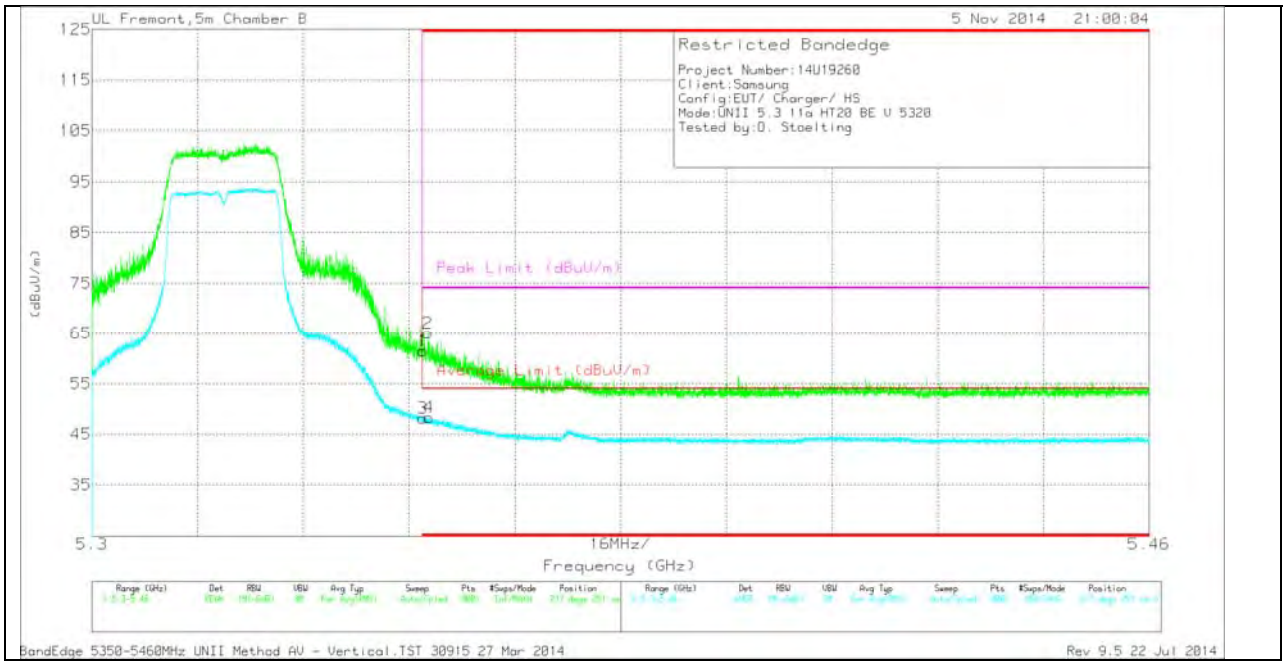
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	46	PK	34.5	-20.1	0	60.4	-	-	74	-13.6	179	257	H
2	* 5.351	50.3	PK	34.5	-20.2	0	64.6	-	-	74	-9.4	179	257	H
3	* 5.35	32.33	RMS	34.5	-20.1	.29	47.02	54	-6.98	-	-	179	257	H
4	* 5.351	33.12	RMS	34.5	-20.2	.29	47.71	54	-6.29	-	-	179	257	H

VERTICAL PEAK AND AVERAGE PLOT

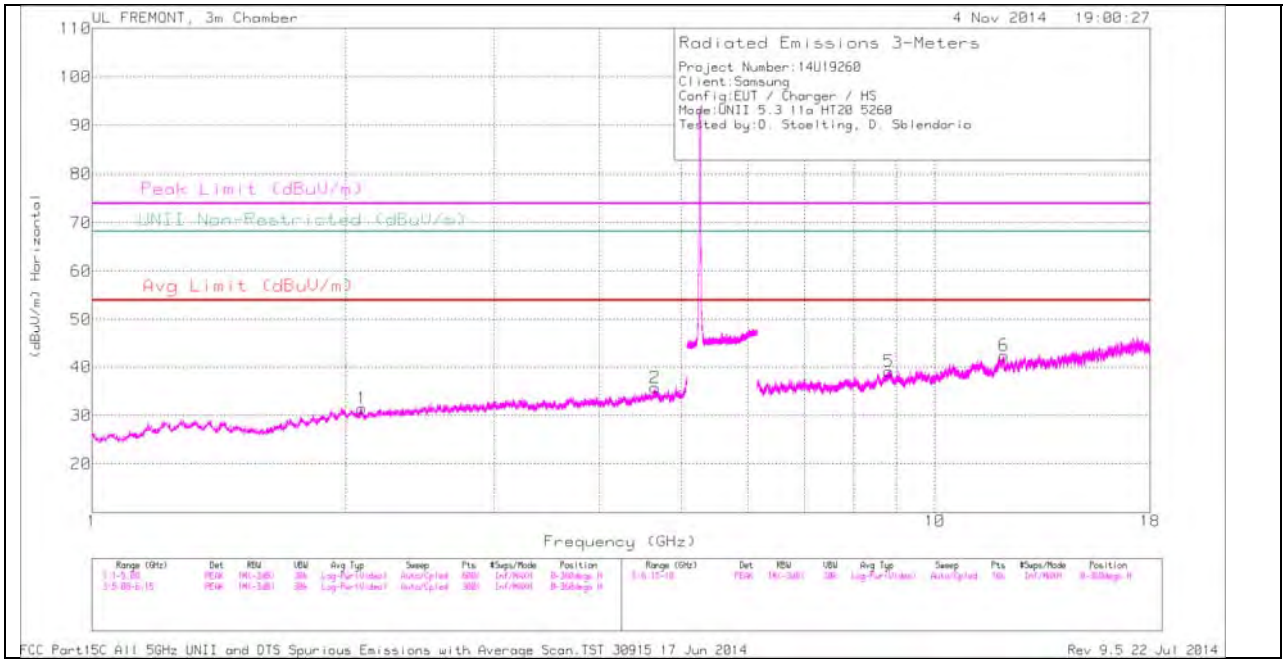


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	47.01	PK	34.5	-20.1	0	61.41	-	-	74	-12.59	217	251	V
2	* 5.351	50.72	PK	34.5	-20.2	0	65.02	-	-	74	-8.98	217	251	V
3	* 5.35	33.44	RMS	34.5	-20.1	.29	48.13	54	-5.87	-	-	217	251	V
4	* 5.351	33.74	RMS	34.5	-20.2	.29	48.33	54	-5.67	-	-	217	251	V

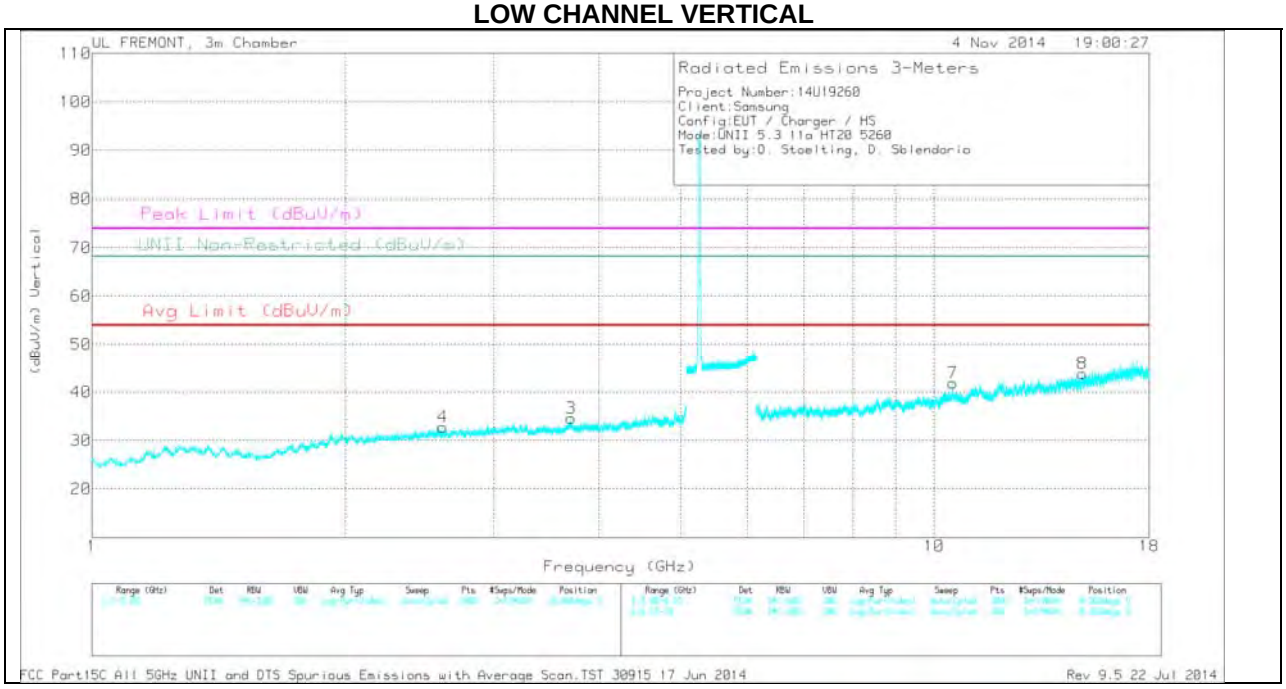
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



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

LOW CHANNEL VERTICAL



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

LOW CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ 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	2.089	32.94	PK	31.5	-33	0	31.44	-	-	-	-	68.2	-36.76	0-360	100	H
4	2.608	32.73	PK	32.5	-32.4	0	32.83	-	-	-	-	68.2	-35.37	0-360	100	V
3	3.708	32.19	PK	33.2	-30.8	0	34.59	-	-	74	-39.41	-	-	0-360	200	V
2	4.654	32.04	PK	34.1	-30.4	0	35.74	-	-	74	-38.26	-	-	0-360	200	H
5	8.809	28.81	PK	36	-25.7	0	39.11	-	-	-	-	68.2	-29.09	0-360	200	H
7	10.519	29.32	PK	37.5	-25	0	41.82	-	-	-	-	68.2	-26.38	0-360	200	V
6	12.072	29.75	PK	39.1	-26.4	0	42.45	-	-	74	-31.55	-	-	0-360	200	H
8	14.995	30.79	PK	39.8	-26.8	0	43.79	-	-	-	-	68.2	-24.41	0-360	200	V

PK - Peak detector

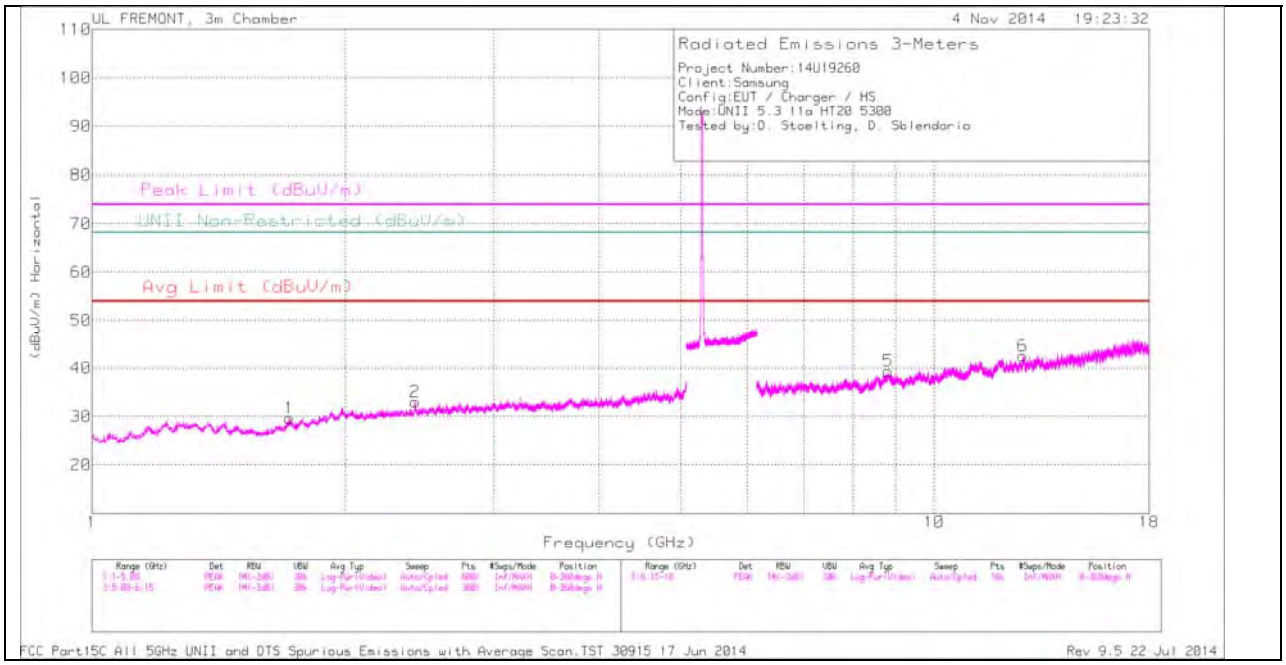
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
10.518	41.07	PK1	37.5	-25.1	0	53.47	-	-	-	-	68.2	-14.73	123	309	V
10.52	26.71	AD1	37.5	-25	.28	39.51	-	-	-	-	-	-	123	309	V

PK1 - KDB789033 Method: Peak

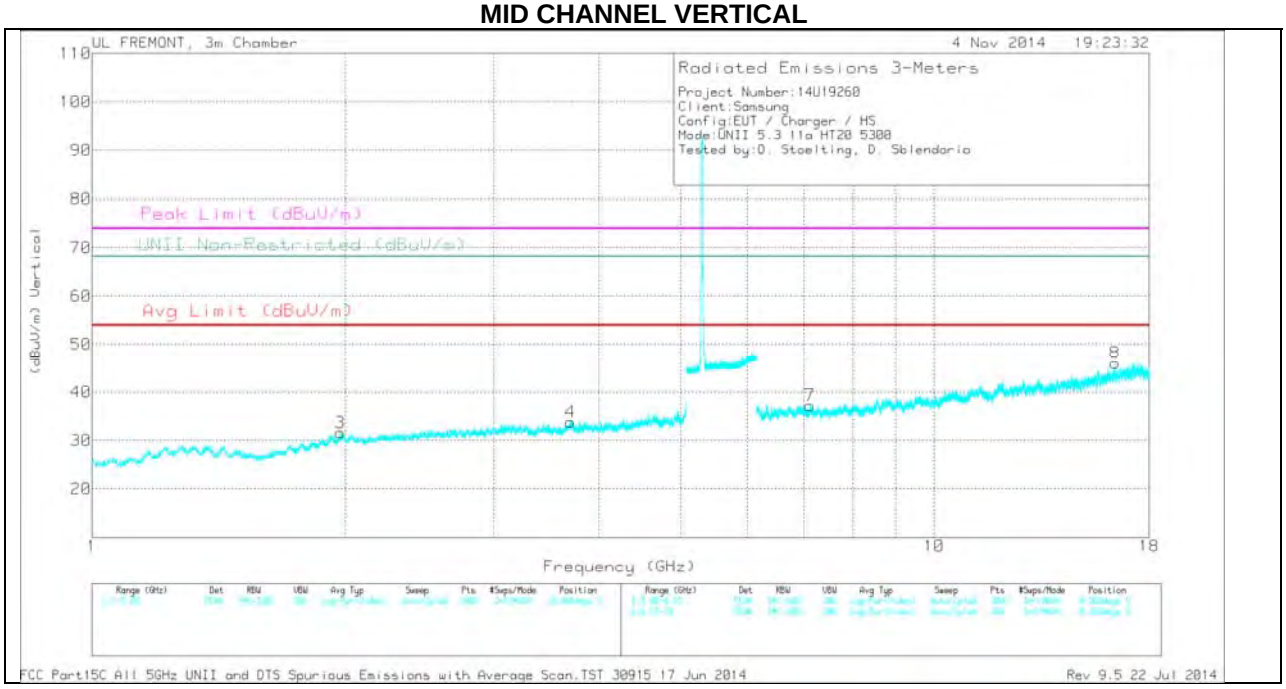
AD1 - KDB789033 Method: AD Primary Power Average

MID CHANNEL HORIZONTAL



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

MID CHANNEL VERTICAL



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

MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ 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	1.717	32.43	PK	29.2	-32	0	29.63	-	-	-	-	68.2	-38.57	0-360	100	H
3	1.971	32.3	PK	31.5	-32.2	0	31.6	-	-	-	-	68.2	-36.6	0-360	100	V
2	2.418	33.63	PK	32.1	-32.7	0	33.03	-	-	-	-	68.2	-35.17	0-360	200	H
4	3.699	31.27	PK	33.2	-30.7	0	33.77	-	-	74	-40.23	-	-	0-360	200	V
7	7.117	30.66	PK	35.6	-29	0	37.26	-	-	-	-	68.2	-30.94	0-360	100	V
5	8.816	28.96	PK	36	-25.5	0	39.46	-	-	-	-	68.2	-28.74	0-360	100	H
6	12.743	29.27	PK	39.2	-25.9	0	42.57	-	-	-	-	68.2	-25.63	0-360	100	H
8	16.394	29.29	PK	41	-24.2	0	46.09	-	-	-	-	68.2	-22.11	0-360	200	V

PK - Peak detector

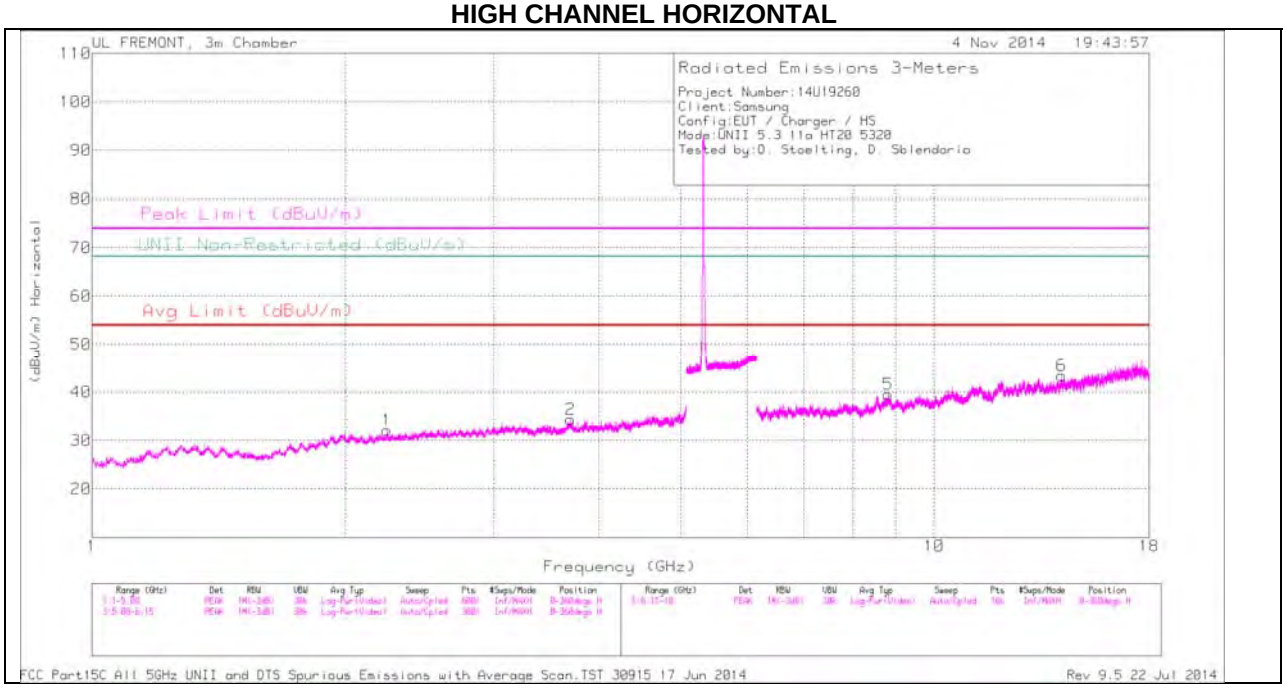
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
8.818	37.78	PK1	36	-25.6	0	48.18	-	-	-	-	68.2	-20.02	194	381	H
8.818	25.66	AD1	36	-25.6	.28	36.36	-	-	-	-	-	-	194	381	H

PK1 - KDB789033 Method: Peak

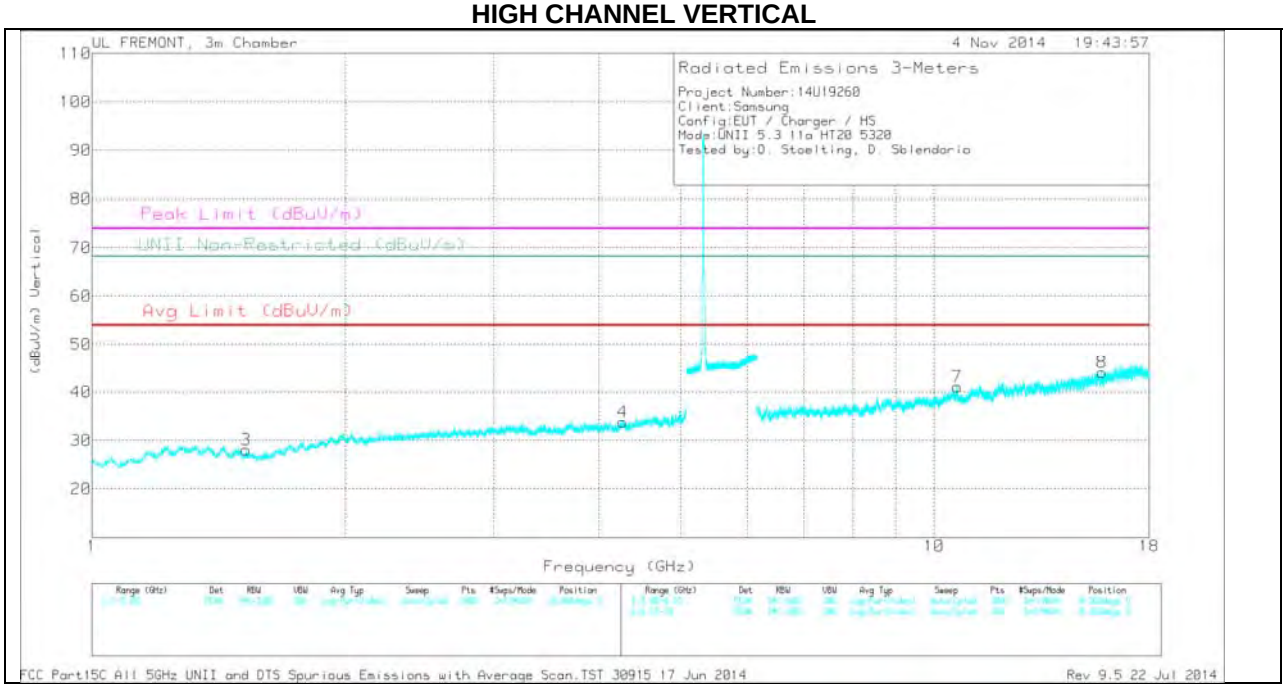
AD1 - KDB789033 Method: AD Primary Power Average

HIGH CHANNEL HORIZONTAL



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

HIGH CHANNEL VERTICAL



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

HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	1.524	32.91	PK	28.4	-33.2	0	28.11	-	-	74	-45.89	-	-	0-360	200	V
1	2.239	32.84	PK	31.7	-32.4	0	32.14	-	-	74	-41.86	-	-	0-360	200	H
2	3.698	31.79	PK	33.2	-30.7	0	34.29	-	-	74	-39.71	-	-	0-360	100	H
4	4.268	30.67	PK	33.5	-30.3	0	33.87	-	-	74	-40.13	-	-	0-360	100	V
5	8.821	29.18	PK	36	-25.7	0	39.48	-	-	-	-	68.2	-28.72	0-360	100	H
7	10.643	28.53	PK	37.8	-25.2	0	41.13	-	-	74	-32.87	-	-	0-360	200	V
6	14.177	31.24	PK	39.1	-26.9	0	43.44	-	-	-	-	68.2	-24.76	0-360	100	H
8	15.808	30.12	PK	40.4	-26.5	0	44.02	-	-	74	-29.98	-	-	0-360	200	V

PK - Peak detector

Radiated Emissions

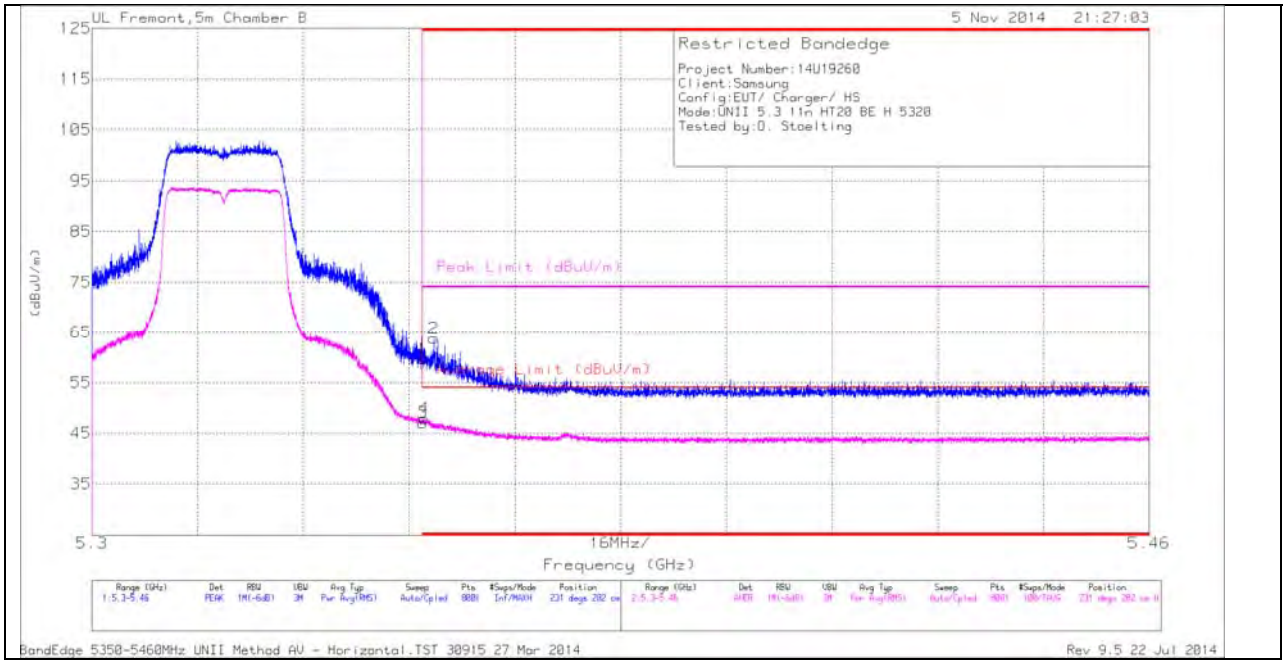
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
10.642	45.91	PK1	37.8	-25.2	0	58.51	-	-	74	-15.49	-	-	122	176	V
10.644	26.97	AD1	37.8	-25.3	28	39.77	54	-14.23	-	-	-	-	122	176	V

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

11.2.2. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.3 GHz BAND AUTHORIZED BANDEDGE (HIGH CHANNEL)

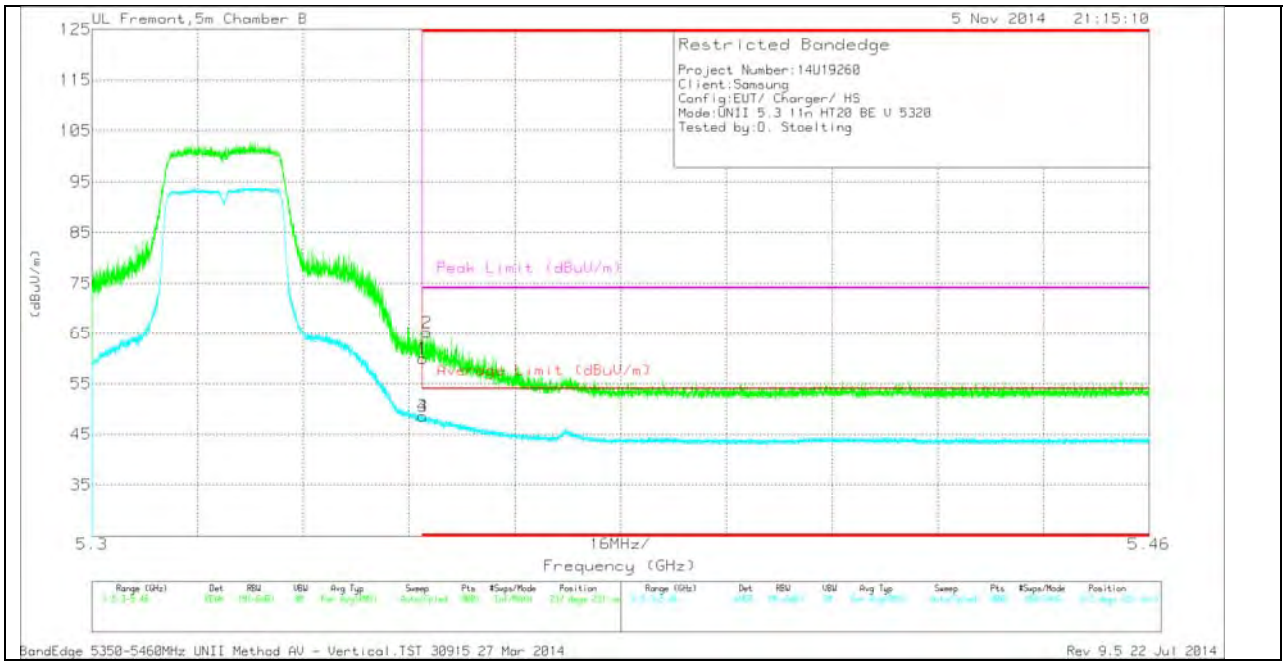
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	45.37	PK	34.5	-20.1	0	59.77	-	-	74	-14.23	231	282	H
2	* 5.352	49.46	PK	34.5	-20.1	0	63.86	-	-	74	-10.14	231	282	H
3	* 5.35	32.36	RMS	34.5	-20.1	.28	47.07	54	-6.93	-	-	231	282	H
4	* 5.35	33.17	RMS	34.5	-20.1	.28	47.88	54	-6.12	-	-	231	282	H

VERTICAL PEAK AND AVERAGE PLOT

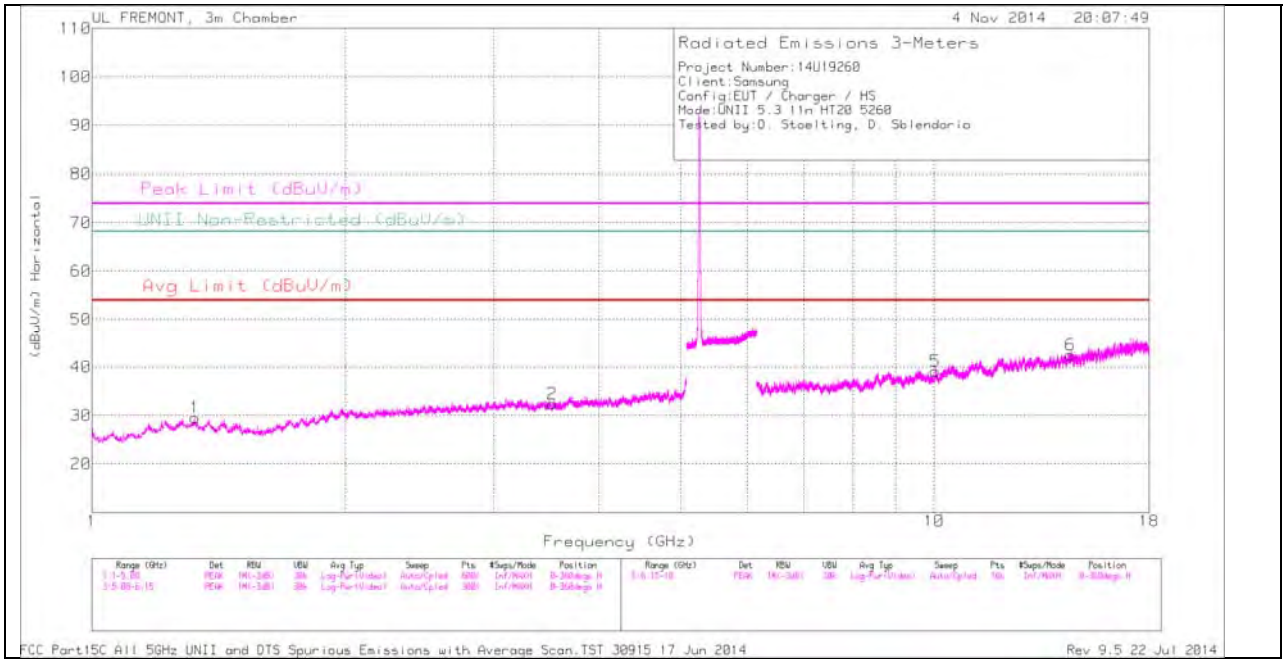


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	45.59	PK	34.5	-20.1	0	59.99	-	-	74	-14.01	212	231	V
2	* 5.351	50.91	PK	34.5	-20.2	0	65.21	-	-	74	-8.79	212	231	V
3	* 5.35	33.82	RMS	34.5	-20.1	.28	48.53	54	-5.47	-	-	212	231	V
4	* 5.35	33.89	RMS	34.5	-20.1	.28	48.6	54	-5.4	-	-	212	231	V

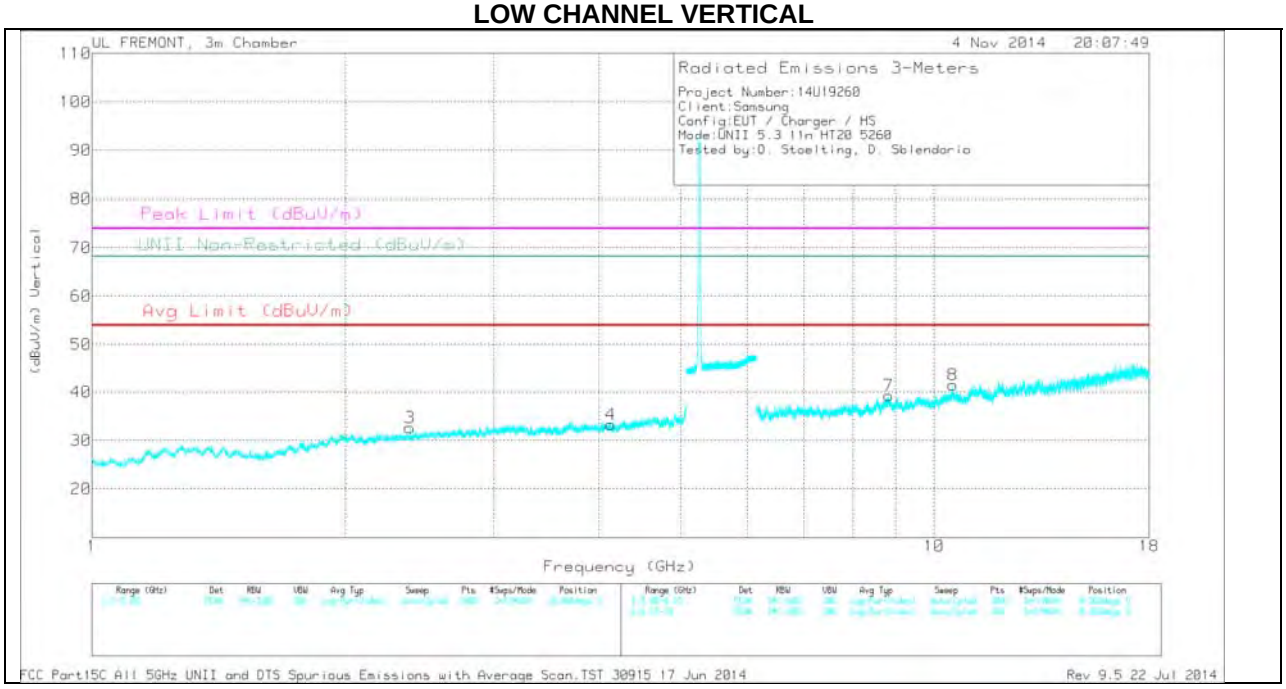
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



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

LOW CHANNEL VERTICAL



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

LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ 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	2.089	32.94	PK	31.5	-33	0	31.44	-	-	-	-	68.2	-36.76	0-360	100	H
4	2.608	32.73	PK	32.5	-32.4	0	32.83	-	-	-	-	68.2	-35.37	0-360	100	V
3	3.708	32.19	PK	33.2	-30.8	0	34.59	-	-	74	-39.41	-	-	0-360	200	V
2	4.654	32.04	PK	34.1	-30.4	0	35.74	-	-	74	-38.26	-	-	0-360	200	H
5	8.809	28.81	PK	36	-25.7	0	39.11	-	-	-	-	68.2	-29.09	0-360	200	H
7	10.519	29.32	PK	37.5	-25	0	41.82	-	-	-	-	68.2	-26.38	0-360	200	V
6	12.072	29.75	PK	39.1	-26.4	0	42.45	-	-	74	-31.55	-	-	0-360	200	H
8	14.995	30.79	PK	39.8	-26.8	0	43.79	-	-	-	-	68.2	-24.41	0-360	200	V

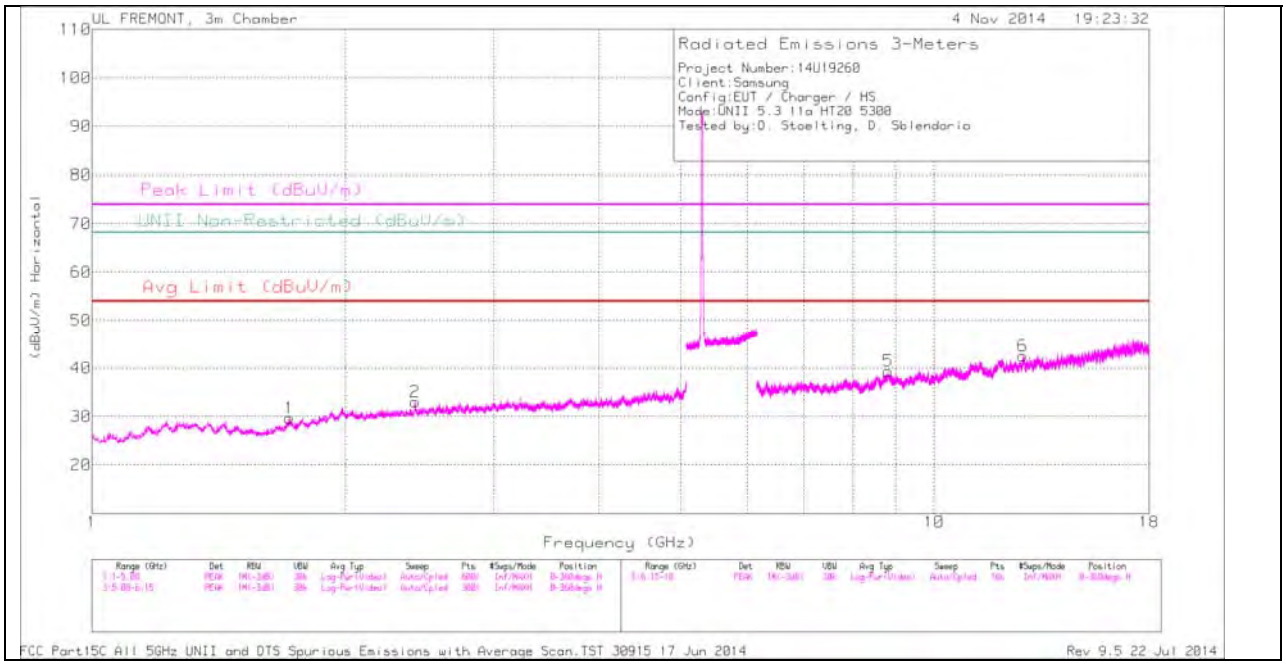
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
10.518	41.07	PK1	37.5	-25.1	0	53.47	-	-	-	-	68.2	-14.73	123	309	V
10.52	26.71	AD1	37.5	-25	.28	39.51	-	-	-	-	-	-	123	309	V

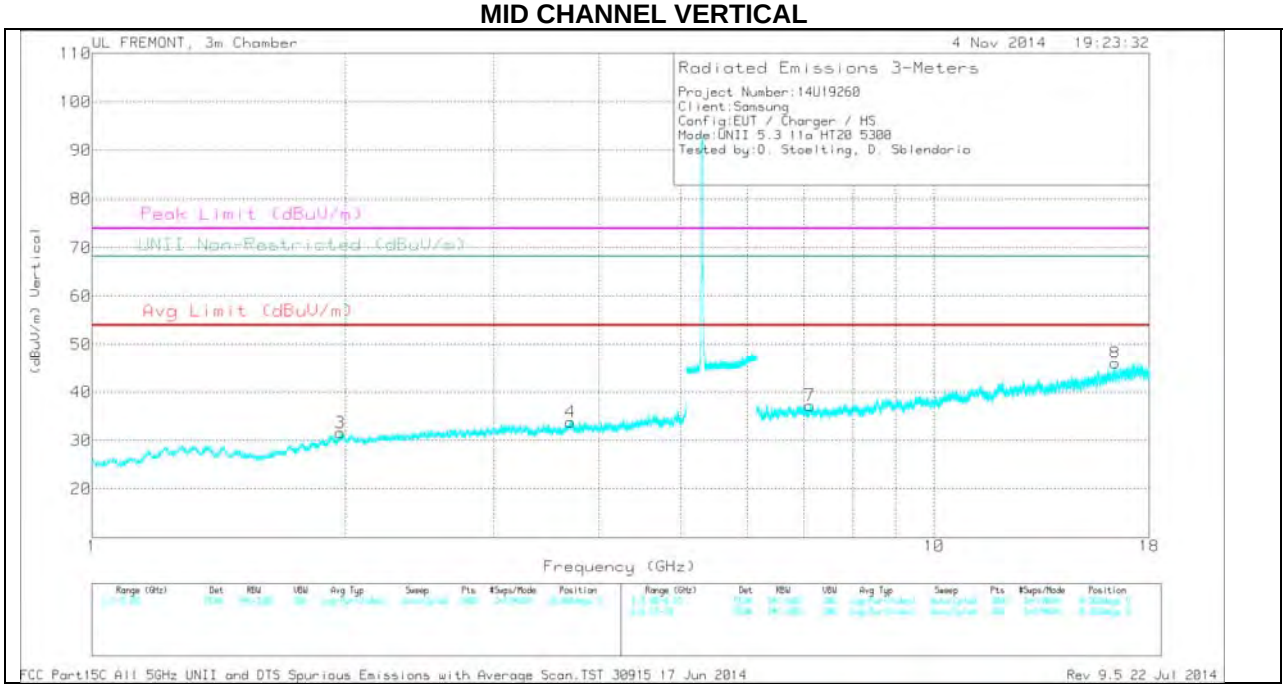
FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

MID CHANNEL HORIZONTAL



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

MID CHANNEL VERTICAL



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

MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ 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	1.717	32.43	PK	29.2	-32	0	29.63	-	-	-	-	68.2	-38.57	0-360	100	H
3	1.971	32.3	PK	31.5	-32.2	0	31.6	-	-	-	-	68.2	-36.6	0-360	100	V
2	2.418	33.63	PK	32.1	-32.7	0	33.03	-	-	-	-	68.2	-35.17	0-360	200	H
4	3.699	31.27	PK	33.2	-30.7	0	33.77	-	-	74	-40.23	-	-	0-360	200	V
7	7.117	30.66	PK	35.6	-29	0	37.26	-	-	-	-	68.2	-30.94	0-360	100	V
5	8.816	28.96	PK	36	-25.5	0	39.46	-	-	-	-	68.2	-28.74	0-360	100	H
6	12.743	29.27	PK	39.2	-25.9	0	42.57	-	-	-	-	68.2	-25.63	0-360	100	H
8	16.394	29.29	PK	41	-24.2	0	46.09	-	-	-	-	68.2	-22.11	0-360	200	V

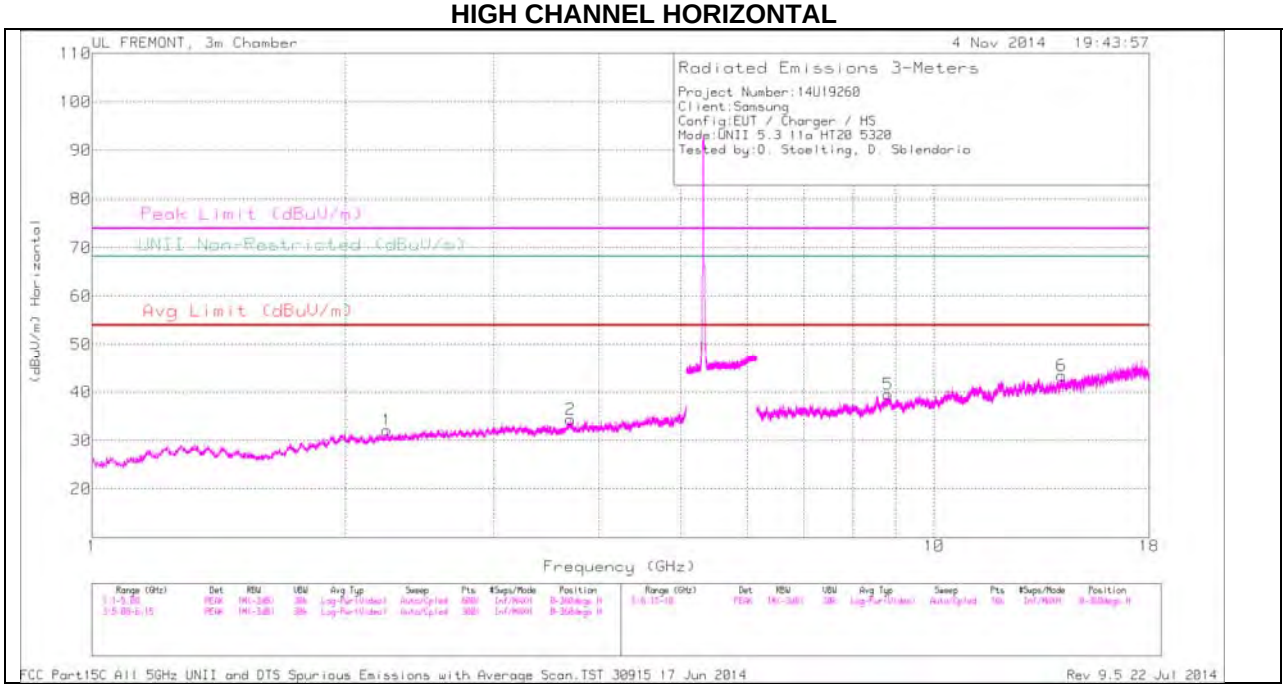
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
8.818	37.78	PK1	36	-25.6	0	48.18	-	-	-	-	68.2	-20.02	194	381	H
8.818	25.66	AD1	36	-25.6	.28	36.36	-	-	-	-	-	-	194	381	H

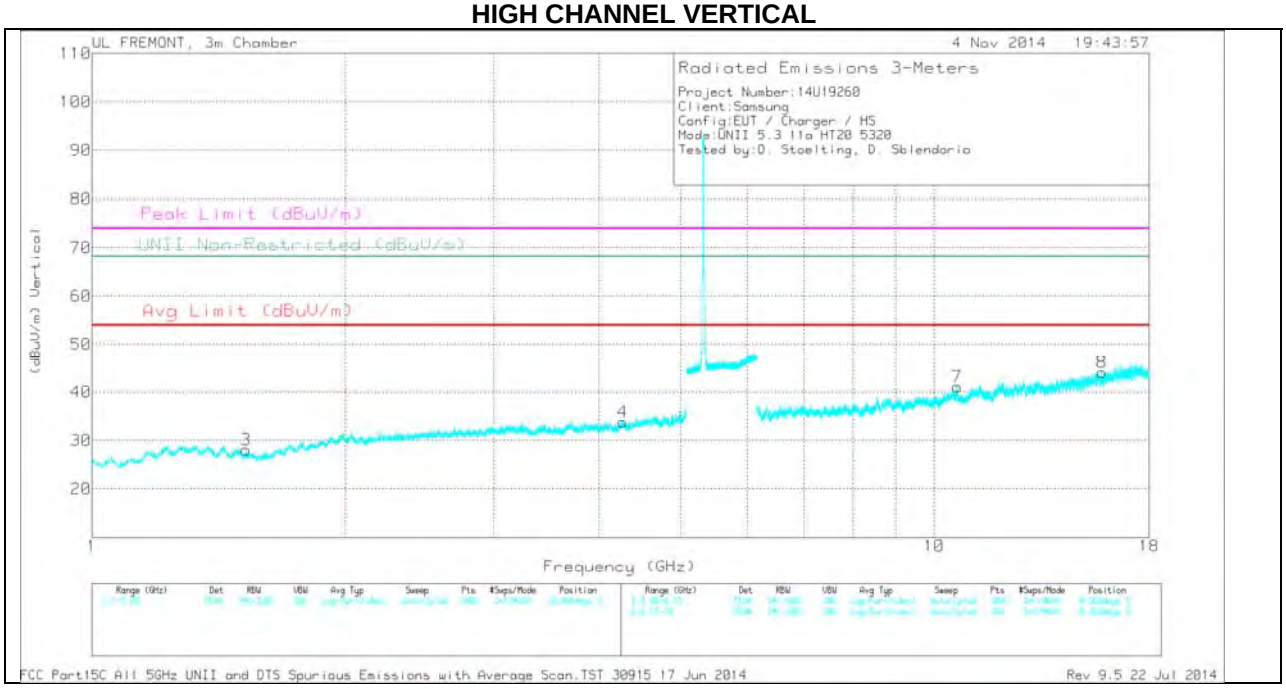
FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

HIGH CHANNEL HORIZONTAL



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

HIGH CHANNEL VERTICAL



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

HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	1.524	32.91	PK	28.4	-33.2	0	28.11	-	-	74	-45.89	-	-	0-360	200	V
1	2.239	32.84	PK	31.7	-32.4	0	32.14	-	-	74	-41.86	-	-	0-360	200	H
2	3.698	31.79	PK	33.2	-30.7	0	34.29	-	-	74	-39.71	-	-	0-360	100	H
4	4.268	30.67	PK	33.5	-30.3	0	33.87	-	-	74	-40.13	-	-	0-360	100	V
5	8.821	29.18	PK	36	-25.7	0	39.48	-	-	-	-	68.2	-28.72	0-360	100	H
7	10.643	28.53	PK	37.8	-25.2	0	41.13	-	-	74	-32.87	-	-	0-360	200	V
6	14.177	31.24	PK	39.1	-26.9	0	43.44	-	-	-	-	68.2	-24.76	0-360	100	H
8	15.808	30.12	PK	40.4	-26.5	0	44.02	-	-	74	-29.98	-	-	0-360	200	V

PK - Peak detector

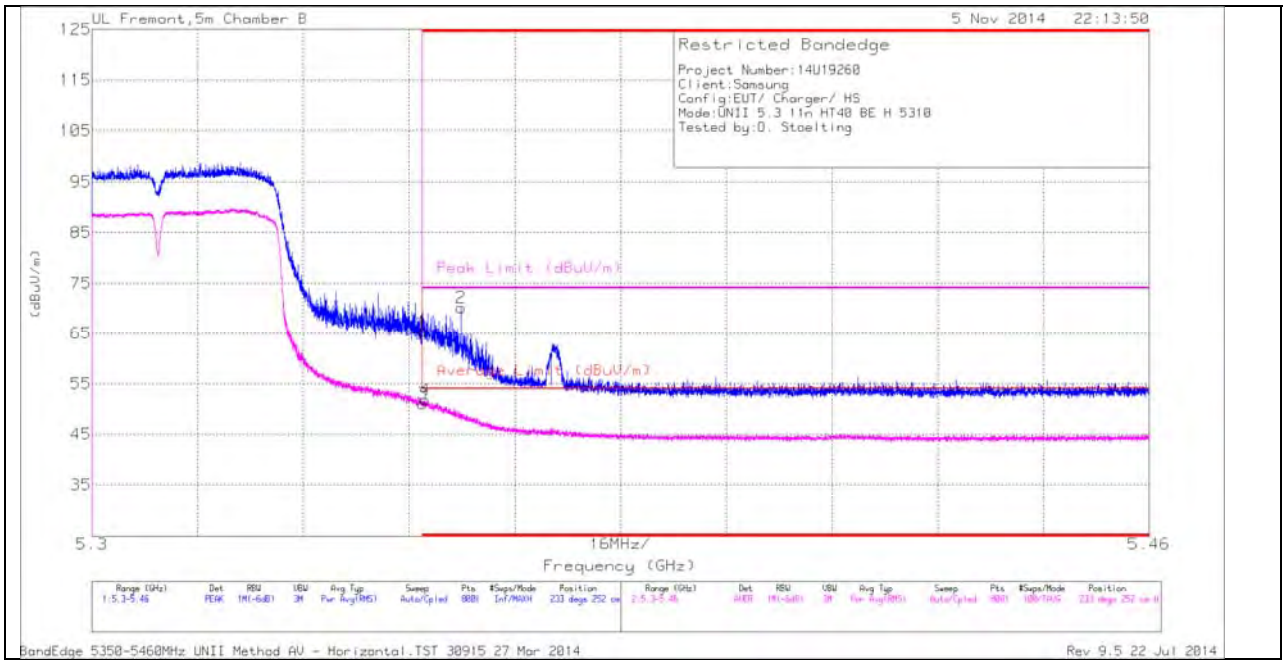
RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
10.642	45.91	PK1	37.8	-25.2	0	58.51	-	-	74	-15.49	-	-	122	176	V
10.644	26.97	AD1	37.8	-25.3	.28	39.77	54	-14.23	-	-	-	-	122	176	V

FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

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

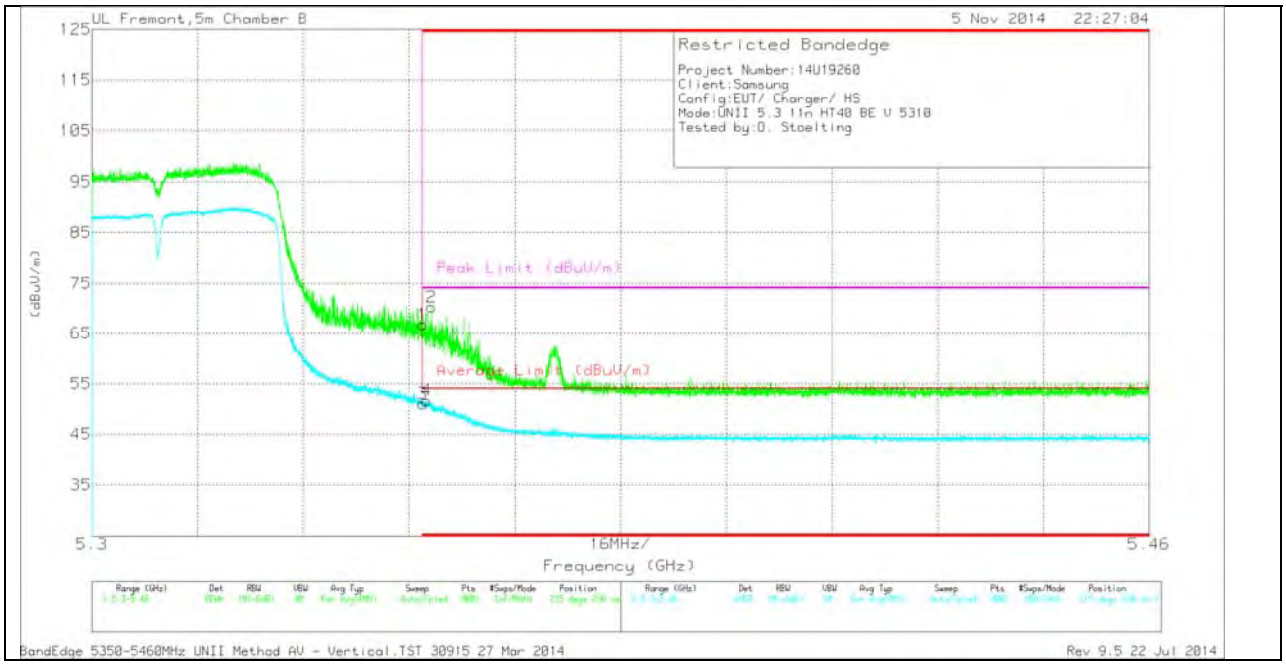
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	51.08	PK	34.5	-20.1	0	65.48	-	-	74	-8.52	233	252	H
2	* 5.356	55.62	PK	34.5	-20	0	70.12	-	-	74	-3.88	233	252	H
3	* 5.35	36.01	RMS	34.5	-20.1	.65	51.06	54	-2.94	-	-	233	252	H
4	* 5.35	36.69	RMS	34.5	-20.1	.65	51.74	54	-2.26	-	-	233	252	H

VERTICAL PEAK AND AVERAGE PLOT

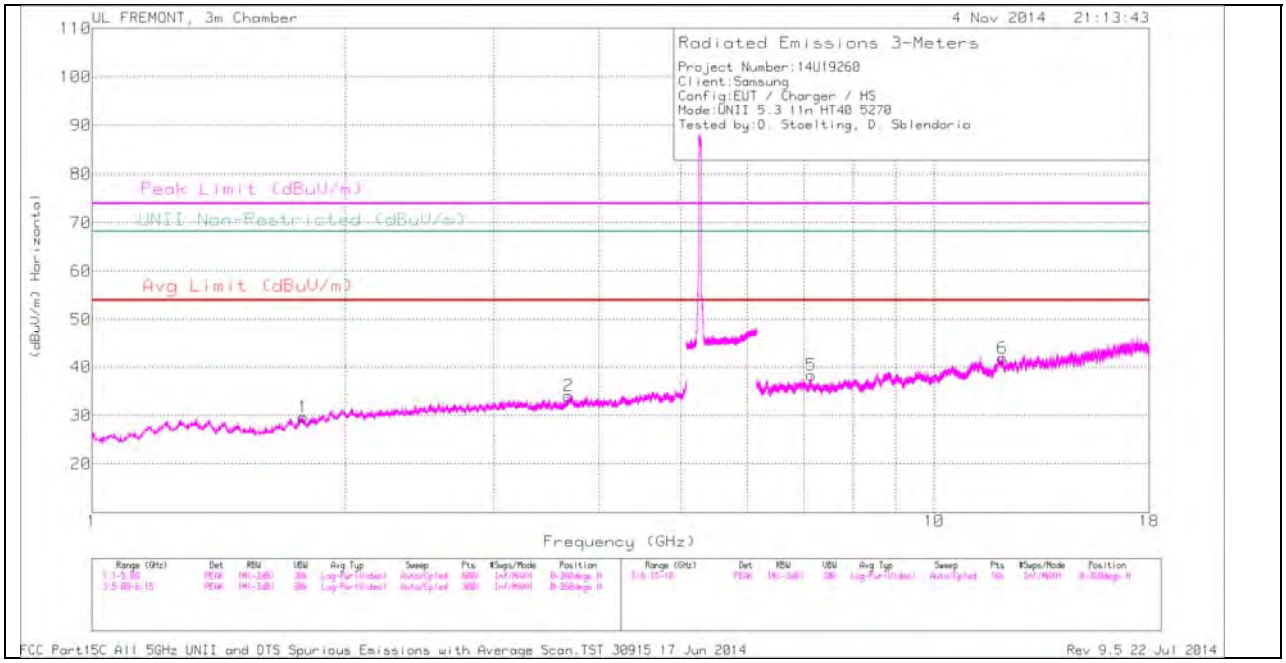


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	52.37	PK	34.5	-20.1	0	66.77	-	-	74	-7.23	215	230	V
3	* 5.35	35.93	RMS	34.5	-20.1	.65	50.98	54	-3.02	-	-	215	230	V
2	* 5.351	55.84	PK	34.5	-20.1	0	70.24	-	-	74	-3.76	215	230	V
4	* 5.351	36.59	RMS	34.5	-20.1	.65	51.64	54	-2.36	-	-	215	230	V

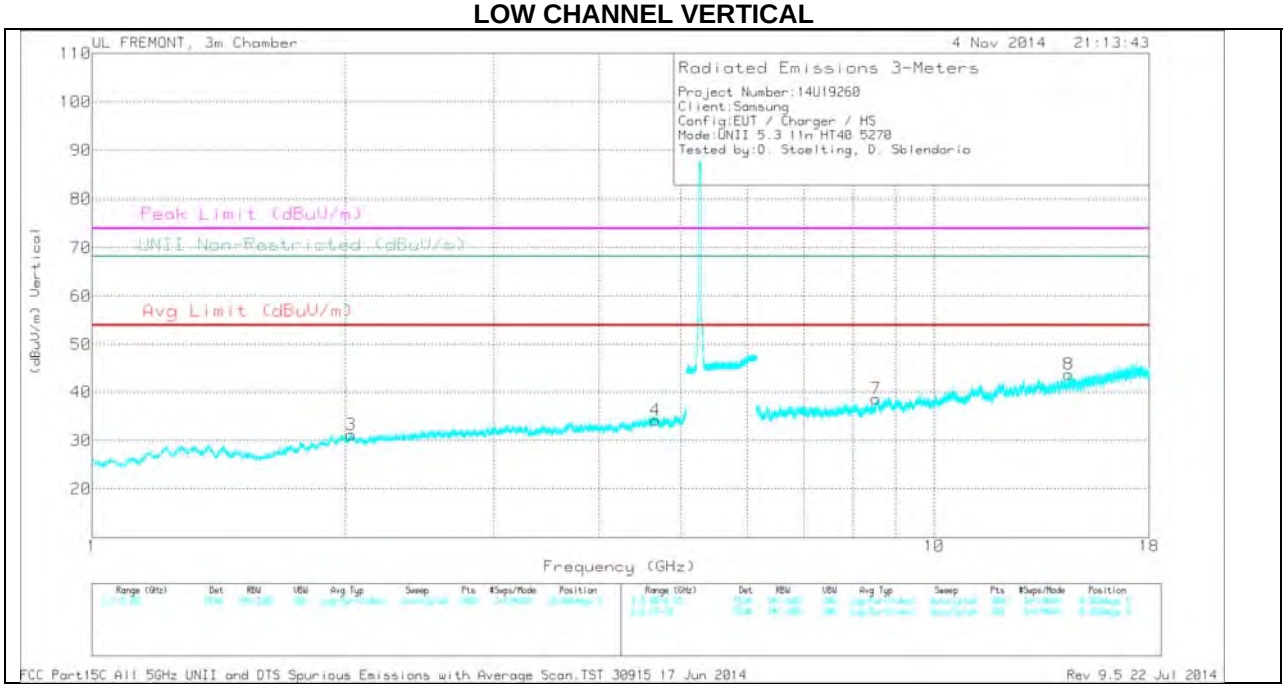
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



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

LOW CHANNEL VERTICAL



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

LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ 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	1.781	32.26	PK	29.9	-32.5	0	29.66	-	-	-	-	68.2	-38.54	0-360	200	H
3	2.031	31.98	PK	31.6	-32.3	0	31.28	-	-	-	-	68.2	-36.92	0-360	100	V
2	3.683	31.38	PK	33.2	-30.5	0	34.08	-	-	74	-39.92	-	-	0-360	100	H
4	4.667	30.65	PK	34.1	-30.5	0	34.25	-	-	74	-39.75	-	-	0-360	200	V
5	7.148	31.52	PK	35.6	-28.8	0	38.32	-	-	-	-	68.2	-29.88	0-360	100	H
7	8.538	29.1	PK	35.8	-26.3	0	38.6	-	-	-	-	68.2	-29.6	0-360	200	V
6	12.056	29.21	PK	39.1	-26.4	0	41.91	-	-	74	-32.09	-	-	0-360	200	H
8	14.452	31.53	PK	39.6	-27.4	0	43.73	-	-	-	-	68.2	-24.47	0-360	200	V

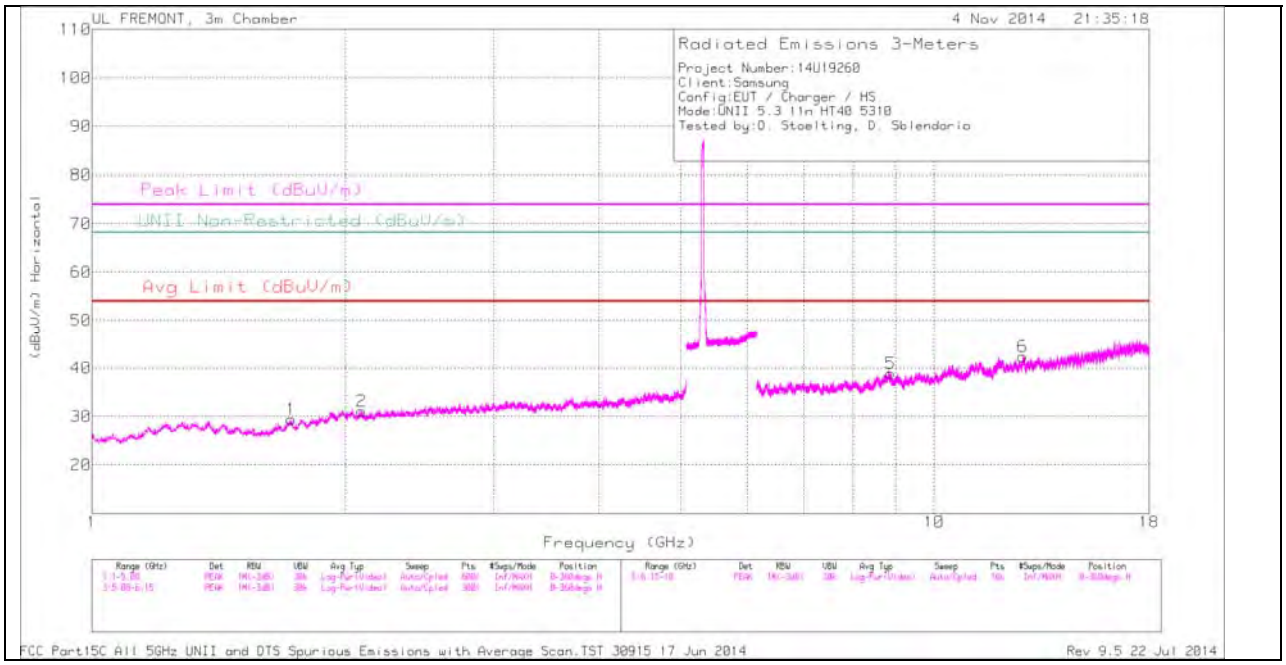
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
14.453	39.84	PK1	39.6	-27.4	0	52.04	-	-	-	-	68.2	-16.16	323	167	V
14.453	27.59	AD1	39.6	-27.4	.65	40.48	-	-	-	-	-	-	323	167	V

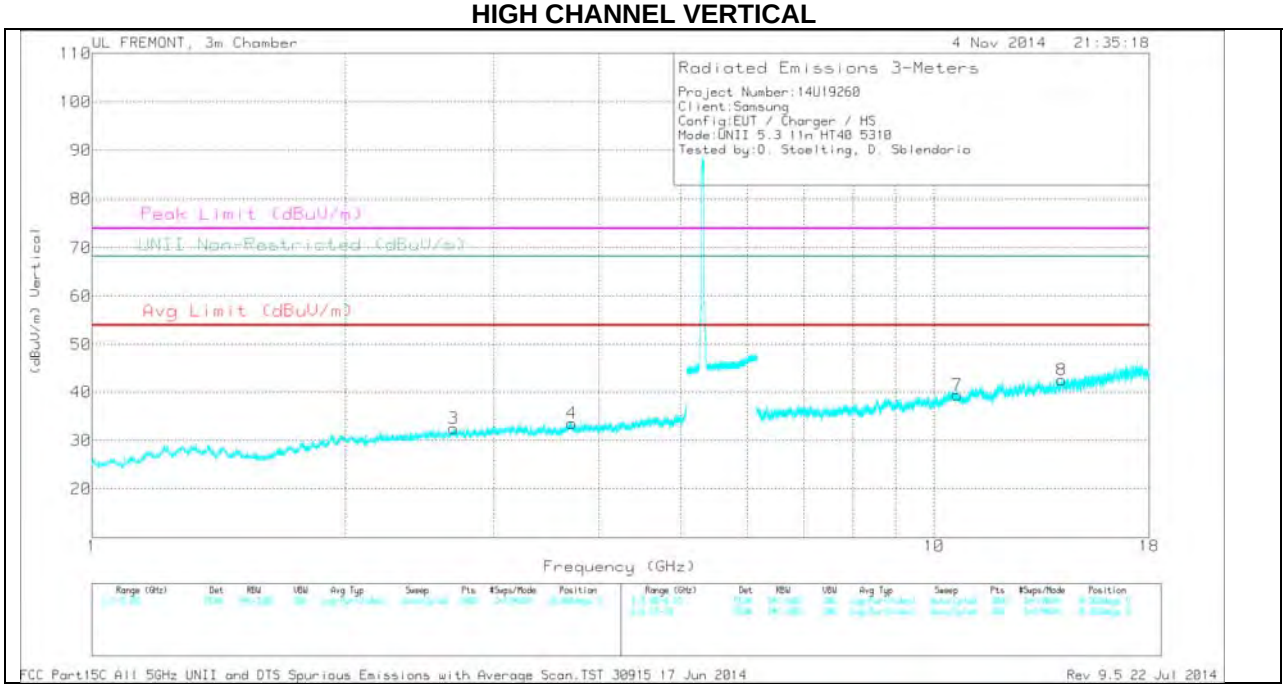
FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

HIGH CHANNEL HORIZONTAL



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

HIGH CHANNEL VERTICAL



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

HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ 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	1.724	32.16	PK	29.3	-32.1	0	29.36	-	-	-	-	68.2	-38.84	0-360	200	H
2	2.091	32.47	PK	31.5	-32.9	0	31.07	-	-	-	-	68.2	-37.13	0-360	200	H
3	2.686	32.25	PK	32.6	-32.3	0	32.55	-	-	74	-41.45	-	-	0-360	200	V
4	3.71	31.14	PK	33.2	-30.8	0	33.54	-	-	74	-40.46	-	-	0-360	100	V
5	8.875	29.3	PK	36	-26.4	0	38.9	-	-	-	-	68.2	-29.3	0-360	100	H
7	10.643	26.78	PK	37.8	-25.2	0	39.38	-	-	74	-34.62	-	-	0-360	100	V
6	12.732	29.02	PK	39.2	-25.8	0	42.42	-	-	-	-	68.2	-25.78	0-360	100	H
8	14.169	30.42	PK	39.1	-27	0	42.52	-	-	-	-	68.2	-25.68	0-360	200	V

PK - Peak detector

RADIATED EMISSIONS

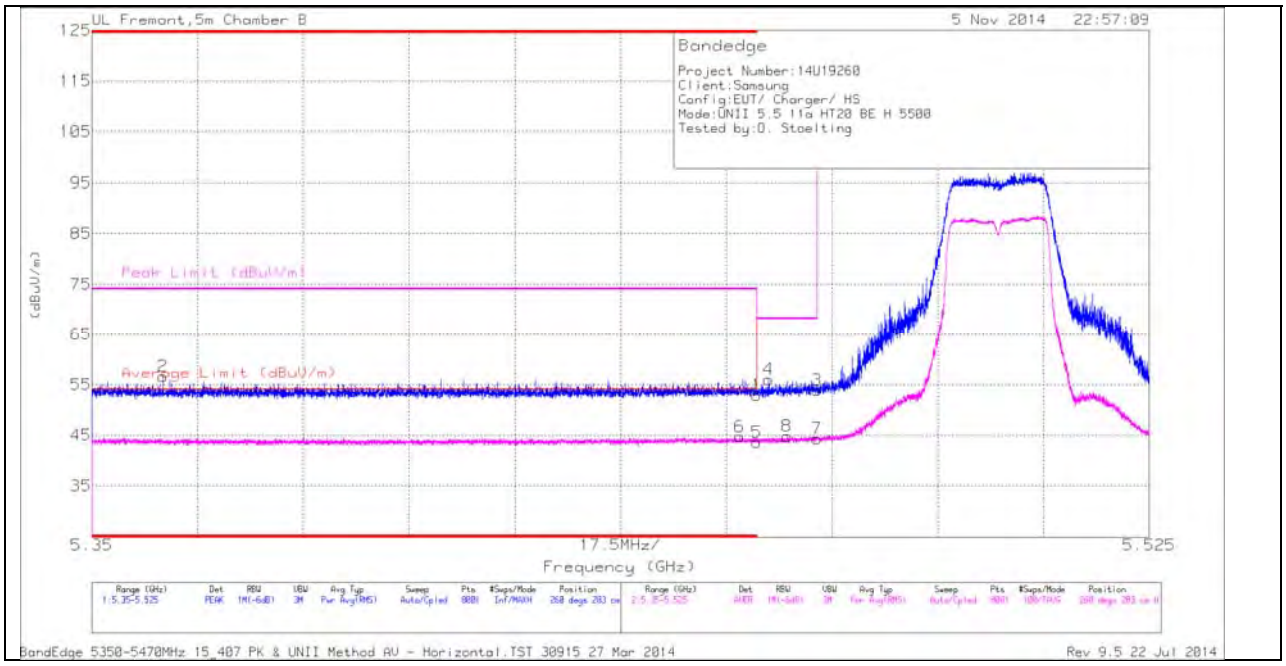
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
8.875	37.61	PK1	36	-26.4	0	47.21	-	-	-	-	68.2	-20.99	359	100	H
8.877	26.22	AD1	36	-26.5	.65	36.41	-	-	-	-	-	-	359	100	H

FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

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)

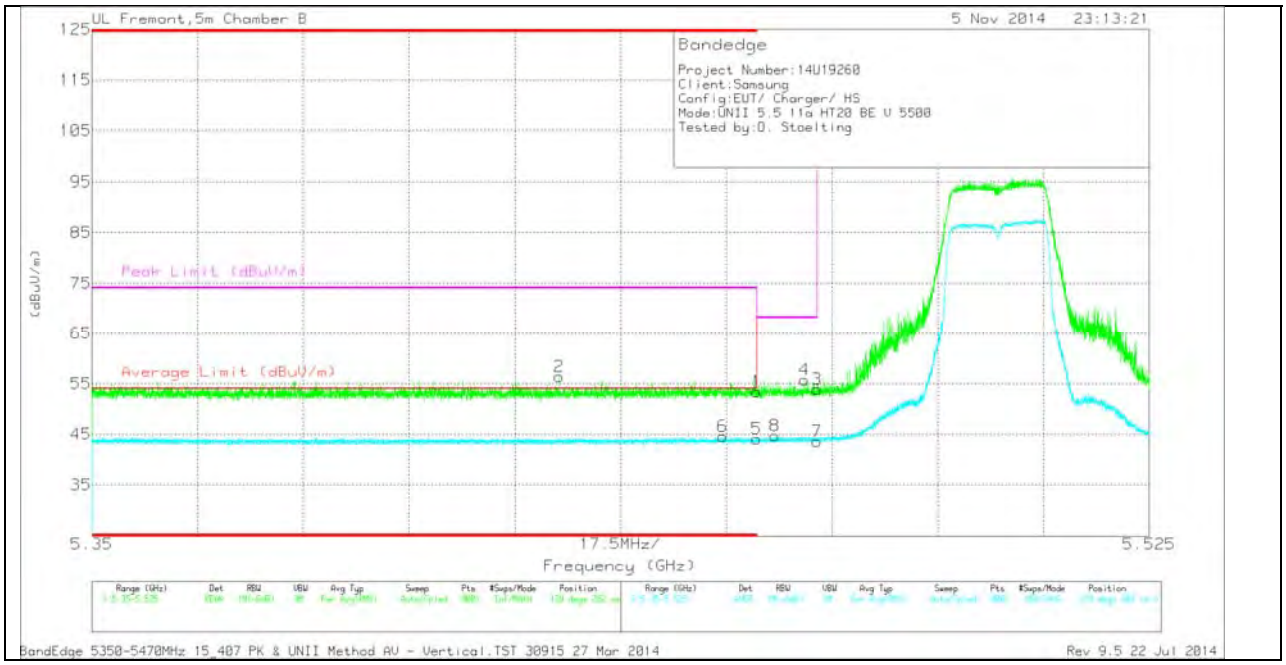
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
2	* 5.362	42.24	PK	34.5	-20.1	0	56.64	-	-	74	-17.36	260	283	H
6	* 5.457	30.27	RMS	34.5	-20.3	.29	44.76	54	-9.24	-	-	260	283	H
1	* 5.46	38.72	PK	34.5	-20.3	0	52.92	-	-	74	-21.08	260	283	H
5	* 5.46	29.15	RMS	34.5	-20.3	.29	43.64	54	-10.36	-	-	260	283	H
4	5.462	41.86	PK	34.5	-20.3	0	56.06	-	-	68.2	-12.14	260	283	H
8	5.465	30.28	RMS	34.5	-20.3	.29	44.77	-	-	-	-	260	283	H
3	5.47	39.74	PK	34.5	-20.3	0	53.94	-	-	68.2	-14.26	260	283	H
7	5.47	29.83	RMS	34.5	-20.3	.29	44.32	-	-	-	-	260	283	H

VERTICAL PEAK AND AVERAGE PLOT

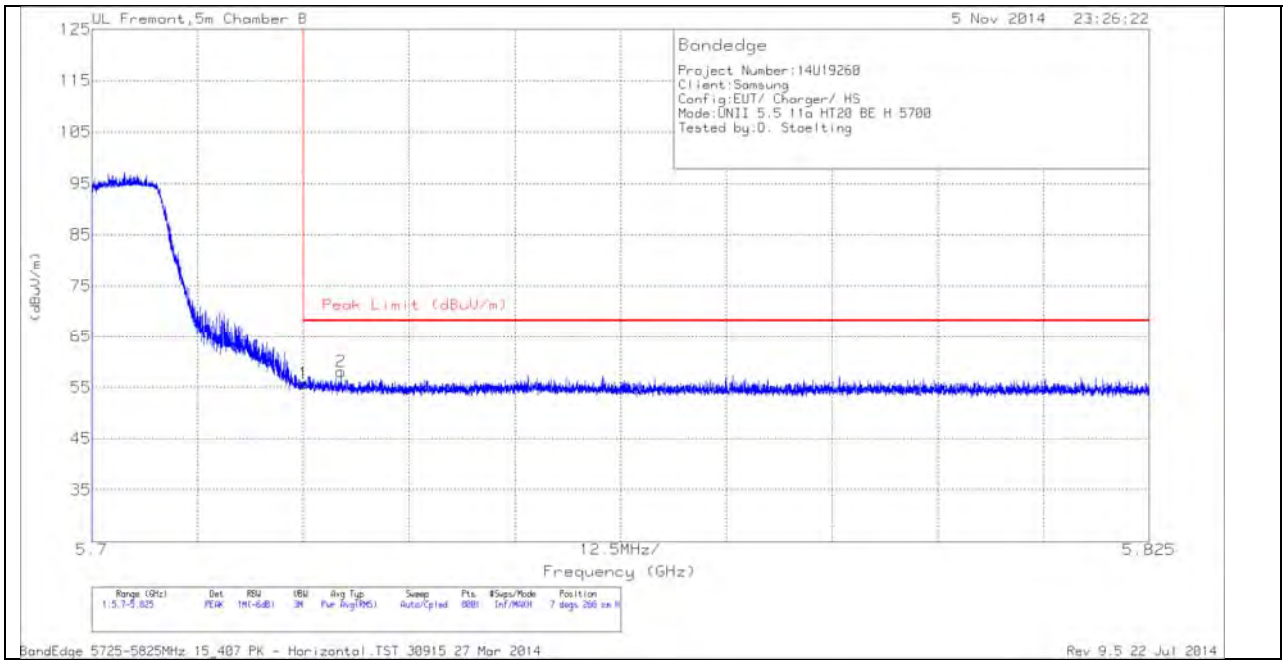


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
2	* 5.427	42.17	PK	34.5	-20.3	0	56.37	-	-	74	-17.63	129	282	V
6	* 5.454	30.08	RMS	34.5	-20.3	.29	44.57	54	-9.43	-	-	129	282	V
1	* 5.46	39.2	PK	34.5	-20.3	0	53.4	-	-	74	-20.6	129	282	V
5	* 5.46	29.6	RMS	34.5	-20.3	.29	44.09	54	-9.91	-	-	129	282	V
8	5.463	30.19	RMS	34.5	-20.3	.29	44.68	-	-	-	-	129	282	V
4	5.468	41.51	PK	34.5	-20.3	0	55.71	-	-	68.2	-12.49	129	282	V
3	5.47	39.67	PK	34.5	-20.3	0	53.87	-	-	68.2	-14.33	129	282	V
7	5.47	29.1	RMS	34.5	-20.3	.29	43.59	-	-	-	-	129	282	V

AUTHORIZED BANDEDGE (HIGH CHANNEL)

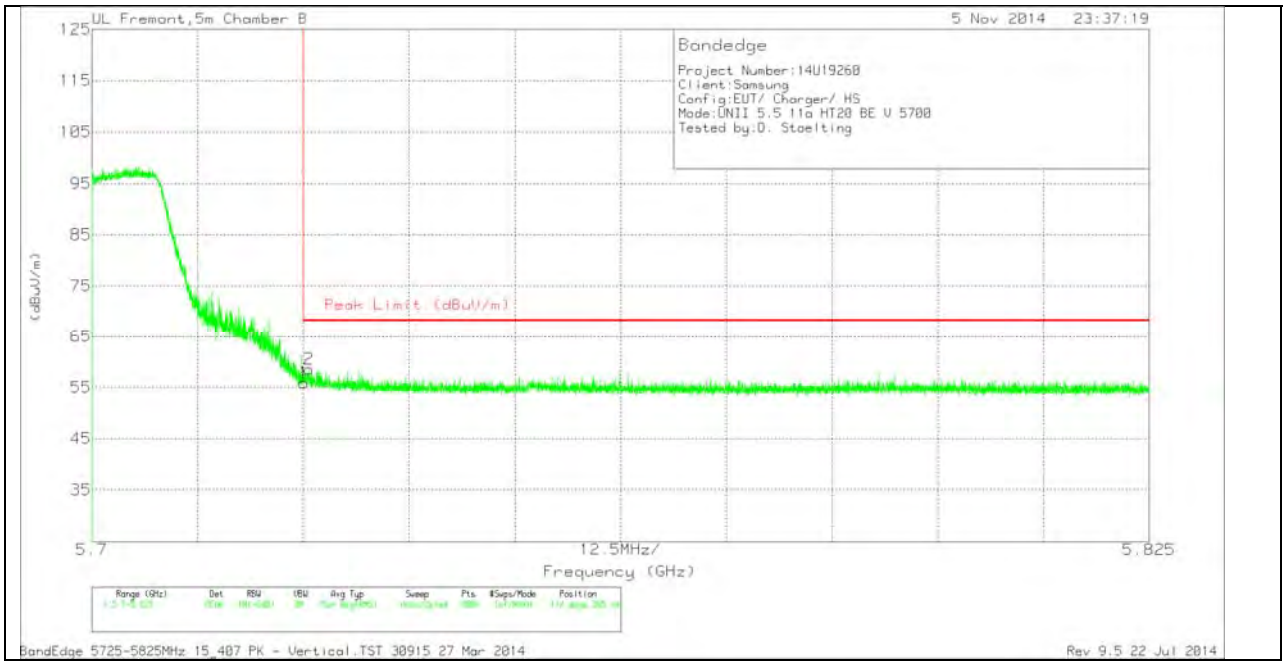
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	41.3	PK	34.6	-20.1	0	55.8	68.2	-12.4	7	266	H
2	5.729	43.58	PK	34.6	-20.1	0	58.08	68.2	-10.12	7	266	H

VERTICAL PEAK AND AVERAGE PLOT

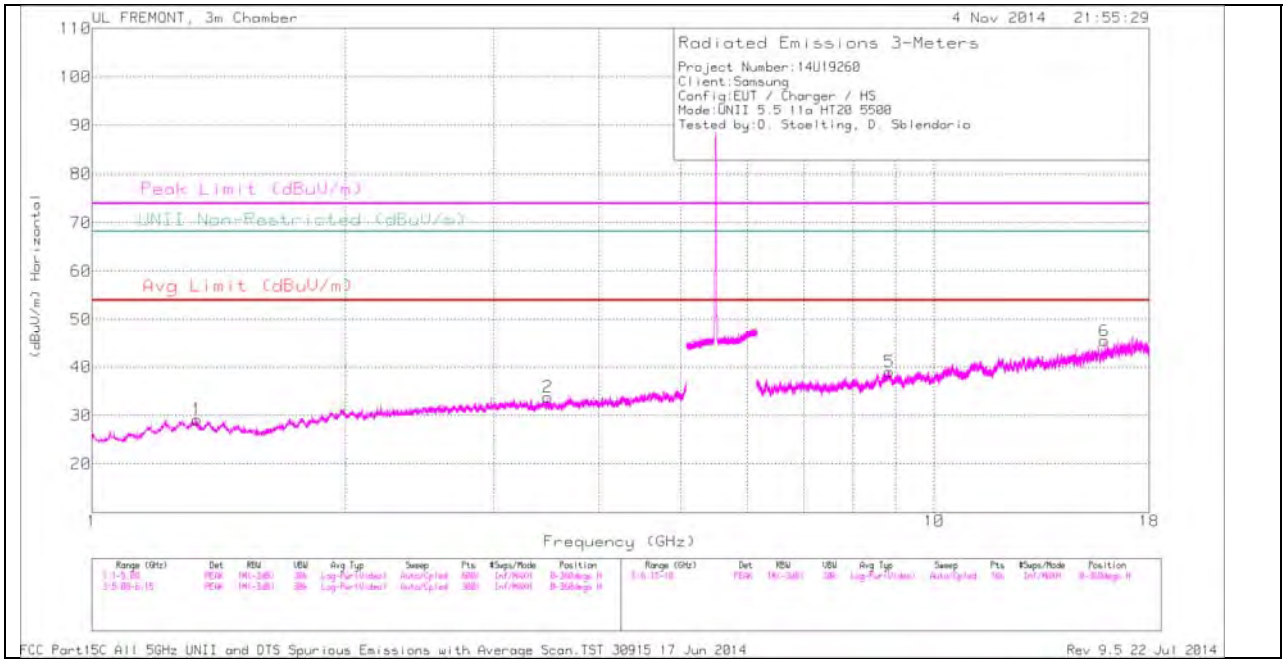


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	41.43	PK	34.6	-20.1	0	55.93	68.2	-12.27	112	265	V
2	5.726	44.06	PK	34.6	-20.1	0	58.56	68.2	-9.64	112	265	V

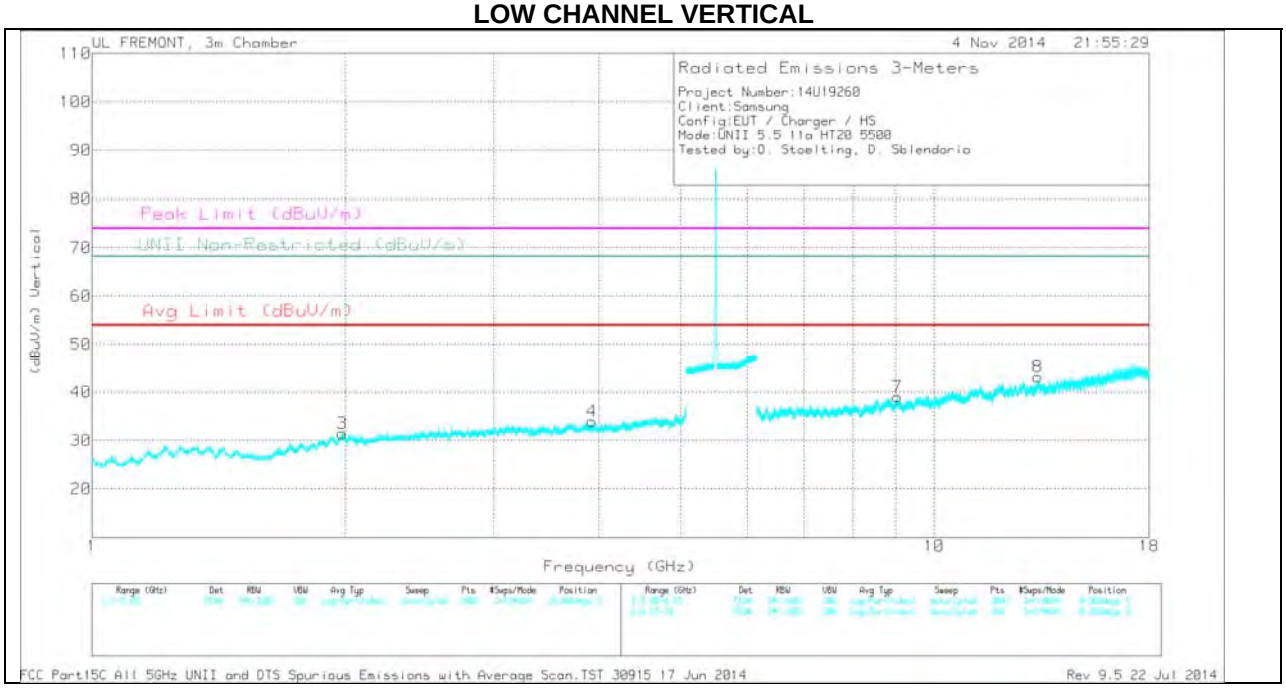
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



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

LOW CHANNEL VERTICAL



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

LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ 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	1.333	32.72	PK	29.9	-33.5	0	29.12	-	-	74	-44.88	-	-	0-360	100	H
3	1.981	32.14	PK	31.5	-32.1	0	31.54	-	-	-	-	68.2	-36.66	0-360	200	V
2	3.475	32.18	PK	33	-31.4	0	33.78	-	-	-	-	68.2	-34.42	0-360	100	H
4	3.919	31.79	PK	33.3	-31.2	0	33.89	-	-	74	-40.11	-	-	0-360	200	V
5	8.851	29.62	PK	36	-26.6	0	39.02	-	-	-	-	68.2	-29.18	0-360	100	H
7	9.042	28.29	PK	36.1	-25.4	0	38.99	-	-	74	-35.01	-	-	0-360	200	V
8	13.276	30.14	PK	39.1	-26.1	0	43.14	-	-	74	-30.86	-	-	0-360	200	V
6	15.92	30.96	PK	40.5	-26	0	45.46	-	-	74	-28.54	-	-	0-360	100	H

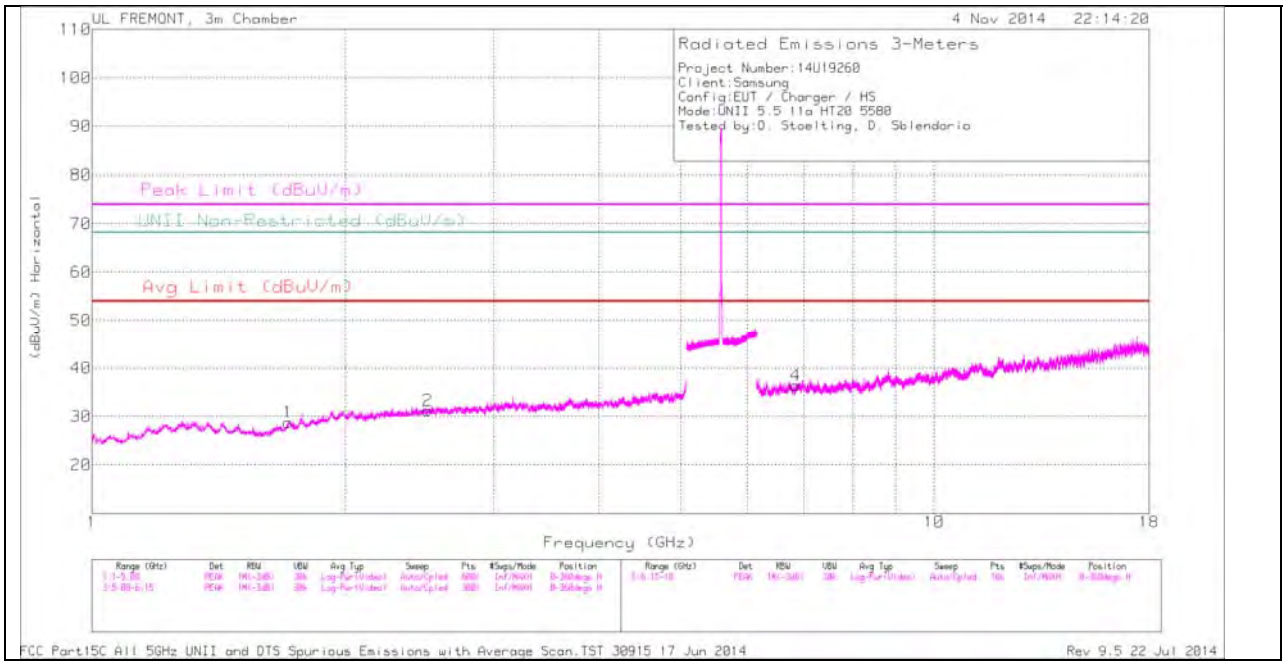
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
15.919	38.96	PK1	40.5	-26	0	53.46	-	-	74	-20.54	-	-	360	100	H
15.919	27.35	AD1	40.5	-26	.29	42.15	54	-11.85	-	-	-	-	360	100	H

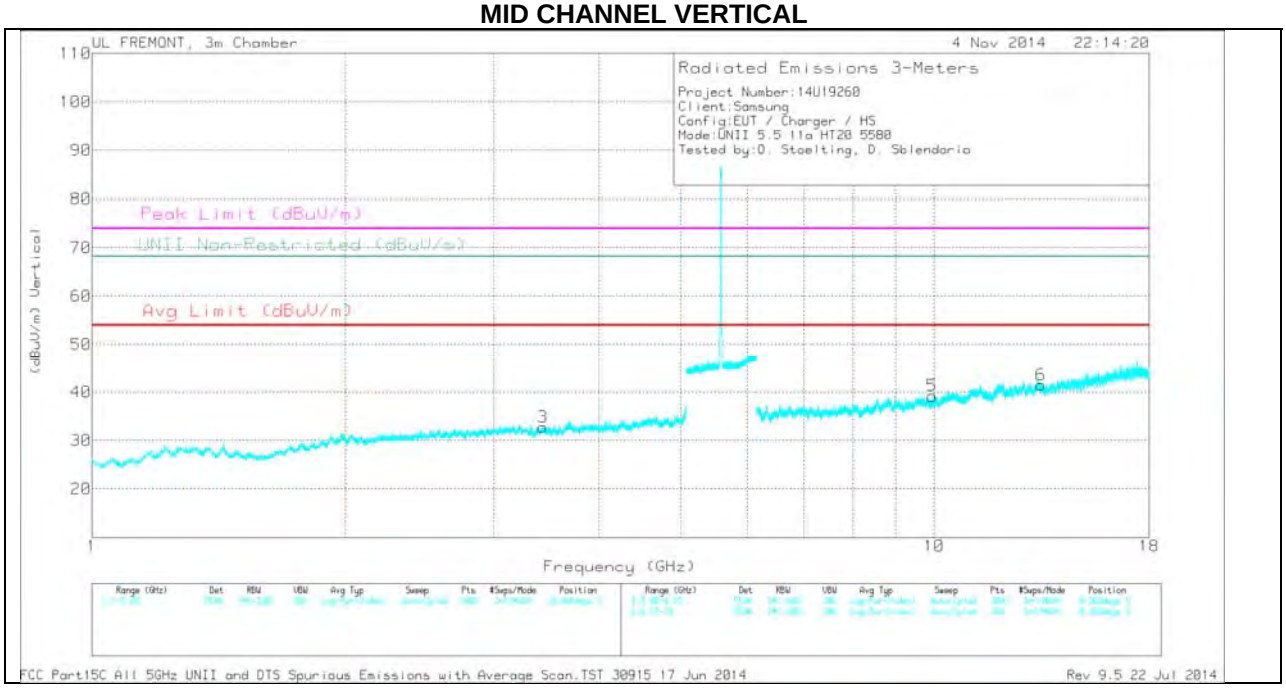
FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

MID CHANNEL HORIZONTAL



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

MID CHANNEL VERTICAL



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

MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ 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	1.709	31.74	PK	29.1	-32.1	0	28.74	-	-	74	-45.26	-	-	0-360	200	H
2	2.503	30.87	PK	32.3	-32	0	31.17	-	-	-	-	68.2	-37.03	0-360	200	H
3	3.432	31.26	PK	32.9	-31.4	0	32.76	-	-	-	-	68.2	-35.44	0-360	100	V
4	6.845	30.18	PK	35.6	-29.4	0	36.38	-	-	-	-	68.2	-31.82	0-360	100	H
5	9.936	28.31	PK	36.9	-26	0	39.21	-	-	-	-	68.2	-28.99	0-360	100	V
6	13.391	29.98	PK	39.1	-27.6	0	41.48	-	-	74	-32.52	-	-	0-360	100	V

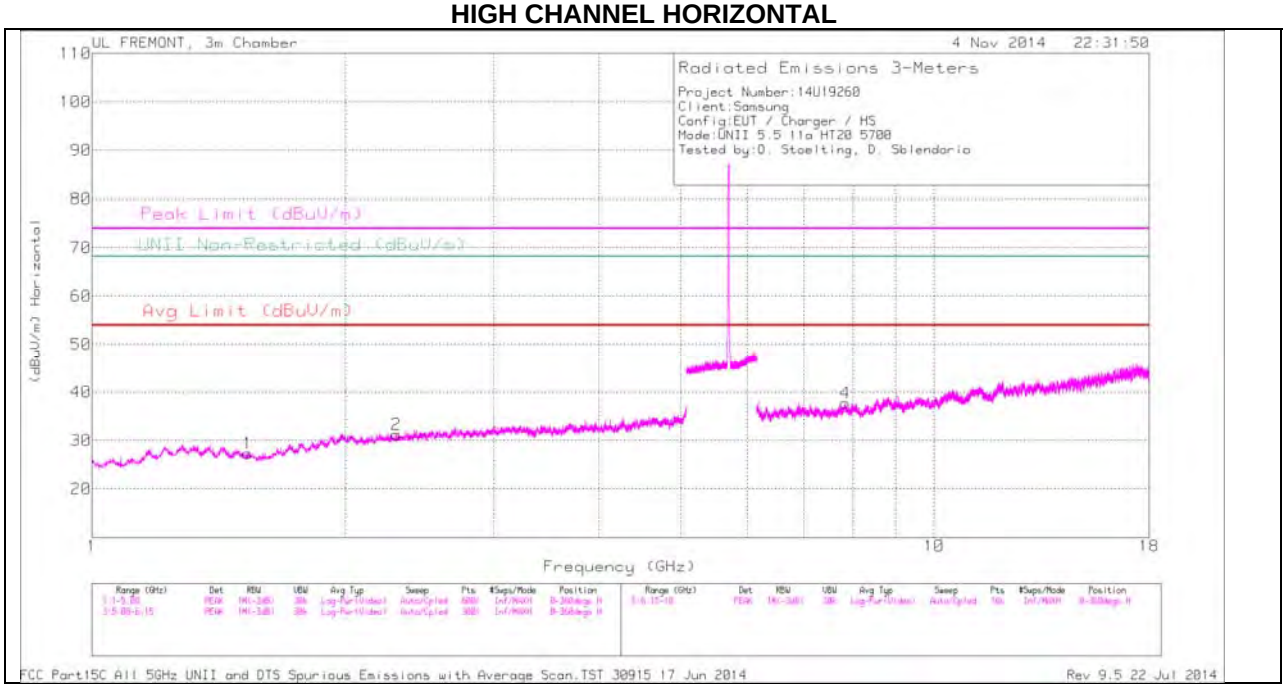
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.707	41.36	PK1	29.1	-32	0	38.46	-	-	74	-35.54	-	-	360	200	H
1.71	29.74	AD1	29.2	-32.1	.29	27.14	-	-	-	-	-	-	360	200	H

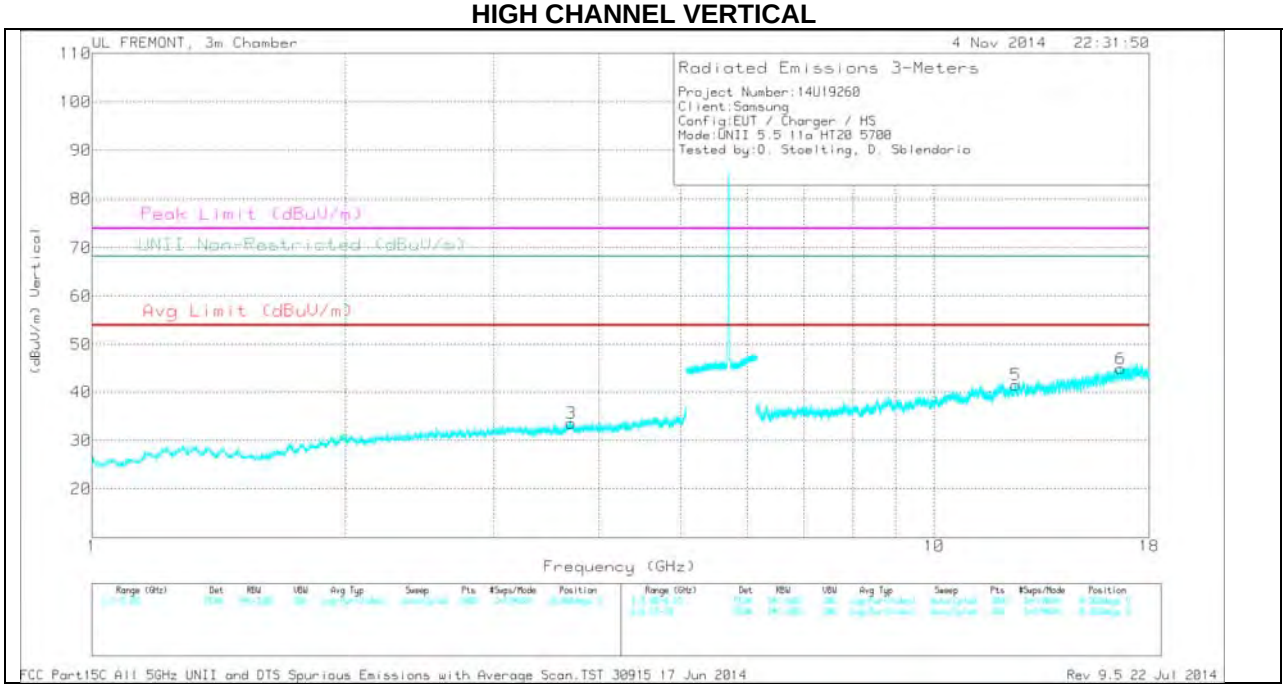
FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

HIGH CHANNEL HORIZONTAL



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

HIGH CHANNEL VERTICAL



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

HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ 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	1.532	32.15	PK	28.4	-33.2	0	27.35	-	-	74	-46.65	-	-	0-360	200	H
2	2.299	31.9	PK	31.8	-32.5	0	31.2	-	-	74	-42.8	-	-	0-360	100	H
3	3.706	31.13	PK	33.2	-30.8	0	33.53	-	-	74	-40.47	-	-	0-360	200	V
4	7.841	29.76	PK	35.8	-27.8	0	37.76	-	-	-	-	68.2	-30.44	0-360	100	H
5	12.499	28.68	PK	39.2	-26.4	0	41.48	-	-	74	-32.52	-	-	0-360	200	V
6	16.659	28.13	PK	41.2	-24.5	0	44.83	-	-	-	-	68.2	-23.37	0-360	200	V

PK - Peak detector

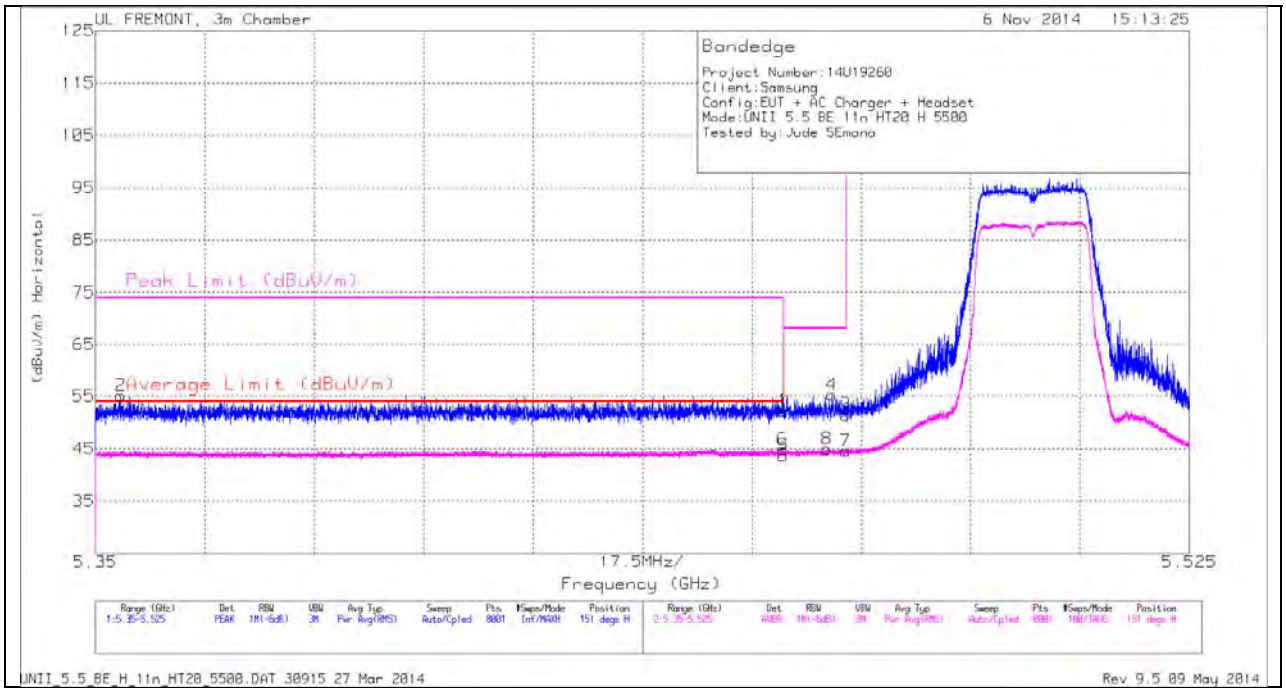
RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.532	41.63	PK1	28.4	-33.2	0	36.83	-	-	74	-37.17	-	-	360	200	H
1.532	30.23	AD1	28.4	-33.2	.29	25.73	54	-28.27	-	-	-	-	360	200	H

FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

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

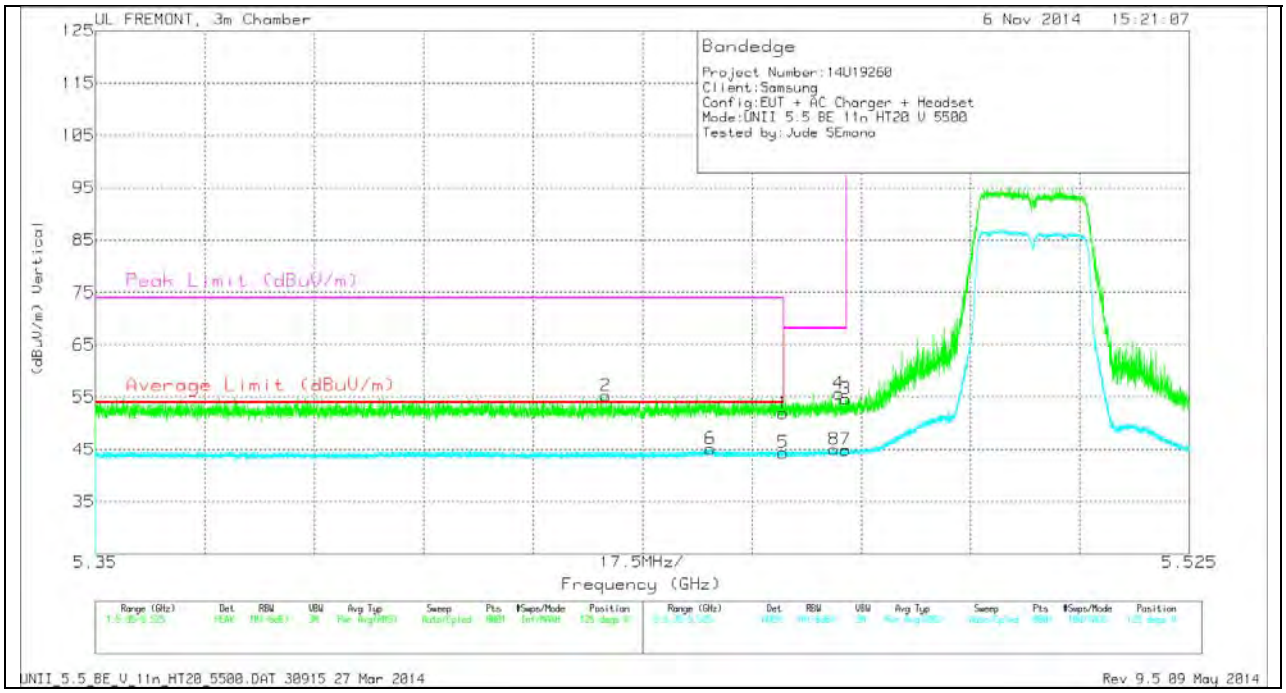
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
2	5.354	40.71	PK	34.5	-20.1	0	55.11	-	-	74	-18.89	151	198	H
1	5.46	38.01	PK	34.5	-20.3	0	52.21	-	-	74	-21.79	151	198	H
5	5.46	29.21	RMS	34.5	-20.3	.28	43.71	54	-10.29	-	-	151	198	H
6	5.46	30.33	RMS	34.5	-20.3	.28	44.83	54	-9.17	-	-	151	198	H
8	5.467	30.43	RMS	34.5	-20.3	.28	44.93	-	-	-	-	151	198	H
4	5.468	41.08	PK	34.5	-20.3	0	55.28	-	-	68.2	-12.92	151	198	H
3	5.47	37.23	PK	34.5	-20.3	0	51.43	-	-	68.2	-16.77	151	198	H
7	5.47	30.04	RMS	34.5	-20.3	.28	44.54	-	-	-	-	151	198	H

VERTICAL PEAK AND AVERAGE PLOT

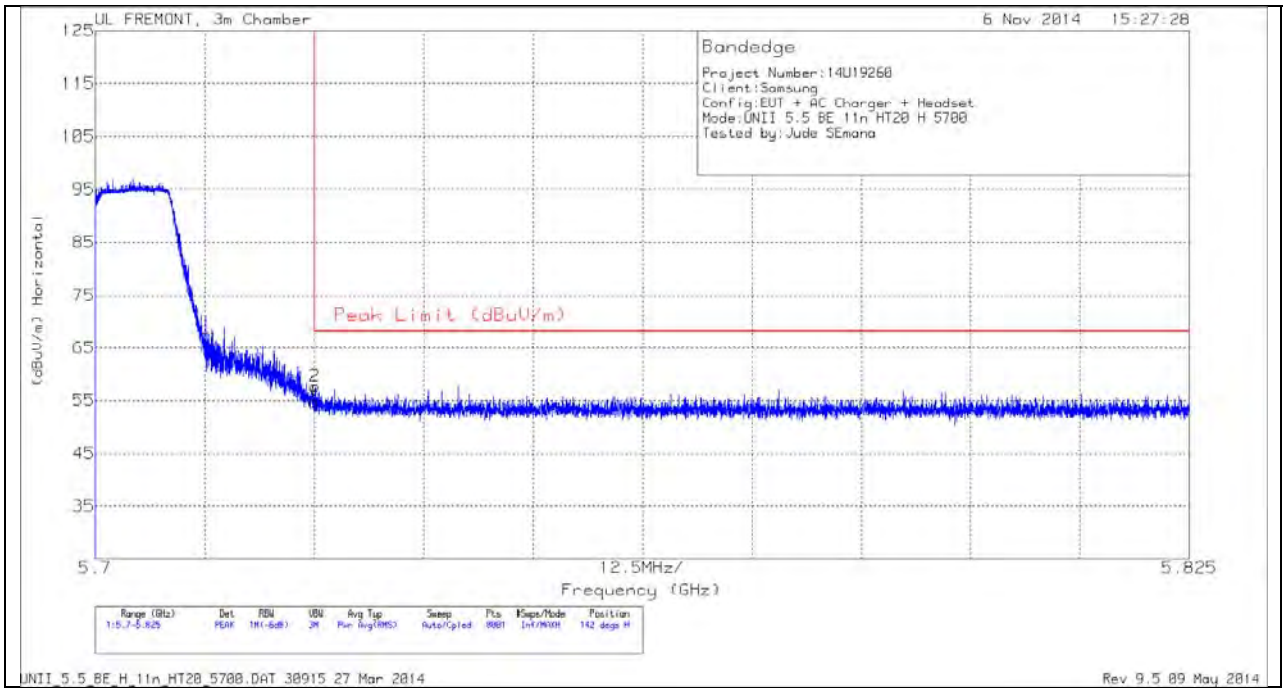


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
2	5.432	41.07	PK	34.5	-20.3	0	55.27	-	-	74	-18.73	125	245	V
6	5.448	30.56	RMS	34.5	-20.3	.28	45.06	54	-8.94	-	-	125	245	V
1	5.46	37.73	PK	34.5	-20.3	0	51.93	-	-	74	-22.07	125	245	V
5	5.46	29.81	RMS	34.5	-20.3	.28	44.31	54	-9.69	-	-	125	245	V
8	5.468	30.45	RMS	34.5	-20.3	.28	44.95	-	-	-	-	125	245	V
4	5.469	41.49	PK	34.5	-20.3	0	55.69	-	-	68.2	-12.51	125	245	V
3	5.47	40.46	PK	34.5	-20.3	0	54.66	-	-	68.2	-13.54	125	245	V
7	5.47	30.37	RMS	34.5	-20.3	.28	44.87	-	-	-	-	125	245	V

AUTHORIZED BANDEDGE (HIGH CHANNEL)

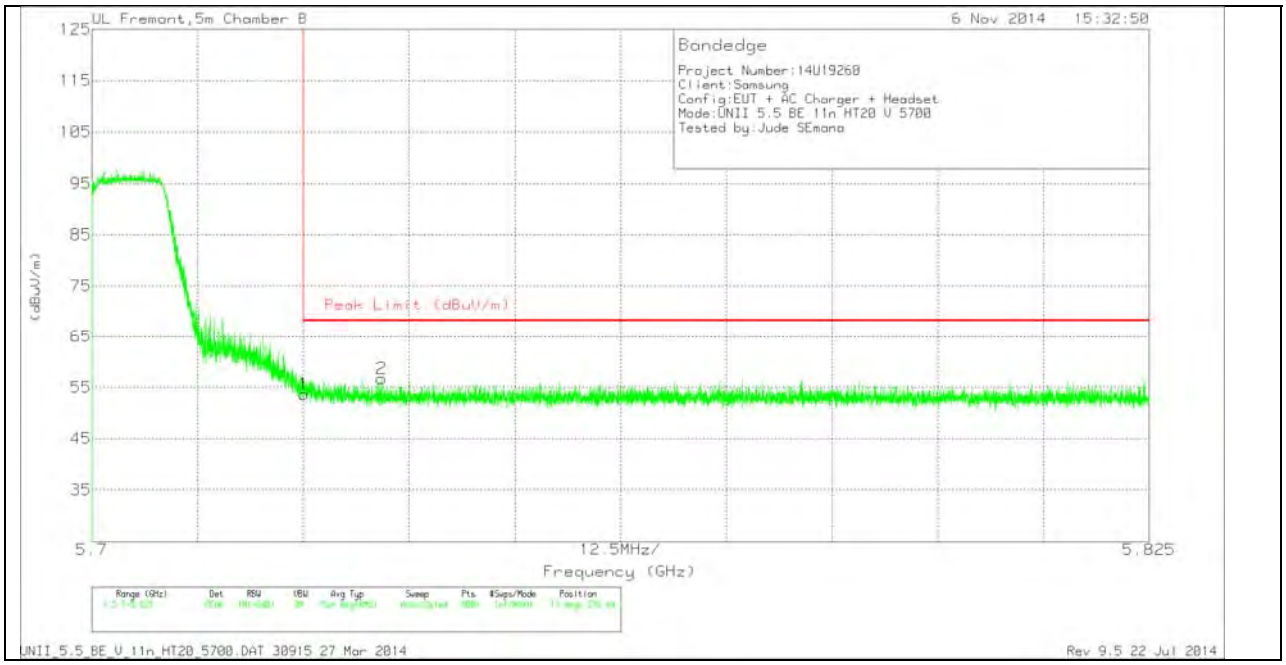
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	40.17	PK	34.6	-20.1	0	54.67	68.2	-13.53	142	247	H
2	5.725	43.14	PK	34.6	-20.1	0	57.64	68.2	-10.56	142	247	H

VERTICAL PEAK AND AVERAGE PLOT

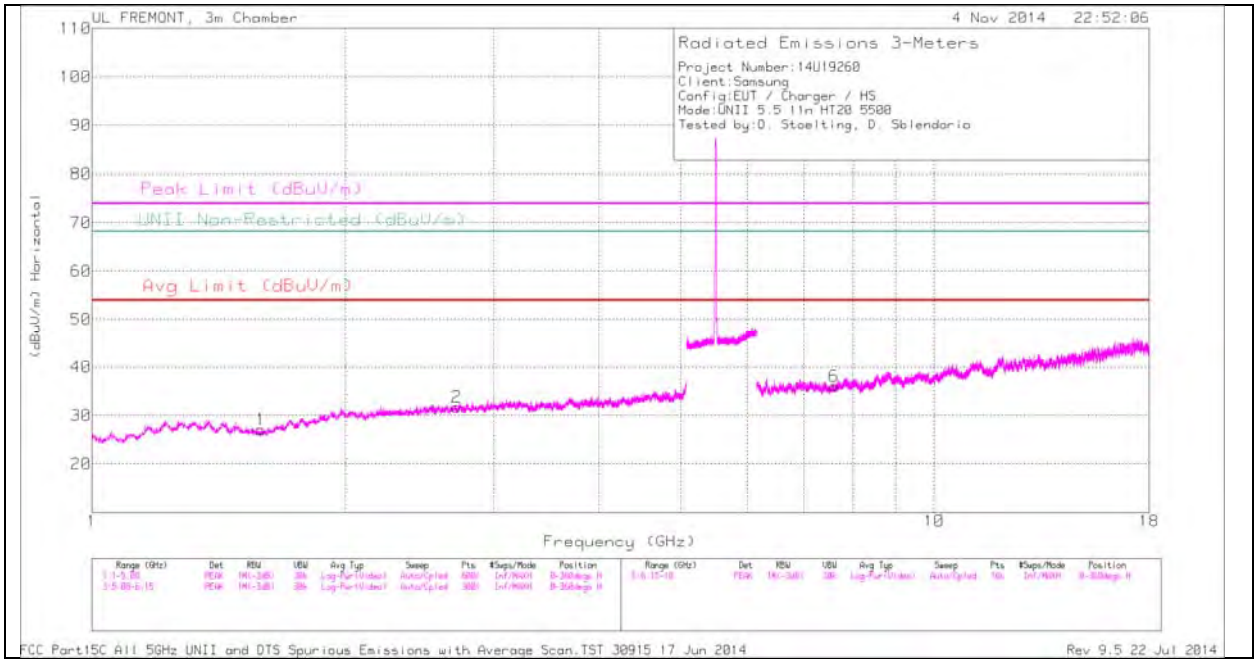


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	39.2	PK	34.6	-20.1	0	53.7	68.2	-14.5	17	276	V
2	5.734	42.3	PK	34.6	-20.1	0	56.8	68.2	-11.4	17	276	V

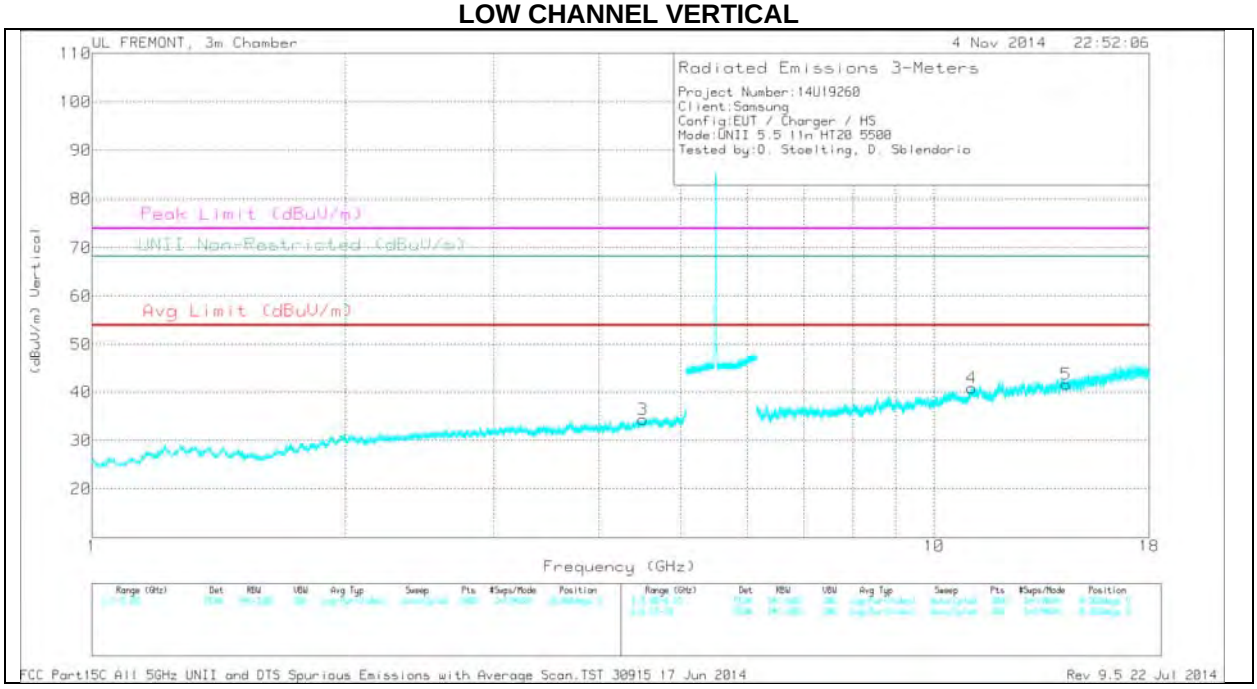
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



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

LOW CHANNEL VERTICAL



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

LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ 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	1.589	32.41	PK	28.1	-33.4	0	27.11	-	-	74	-46.89	-	-	0-360	200	H
2	2.71	31.31	PK	32.6	-32.2	0	31.71	-	-	74	-42.29	-	-	0-360	100	H
3	4.511	31.8	PK	33.9	-31.4	0	34.3	-	-	74	-39.7	-	-	0-360	200	V
6	7.604	28.78	PK	35.7	-28.4	0	36.08	-	-	74	-37.92	-	-	0-360	100	H
4	11.076	27.99	PK	37.9	-25.1	0	40.79	-	-	74	-33.21	-	-	0-360	200	V
5	14.34	29.72	PK	39.4	-27.5	0	41.62	-	-	-	-	68.2	-26.58	0-360	200	V

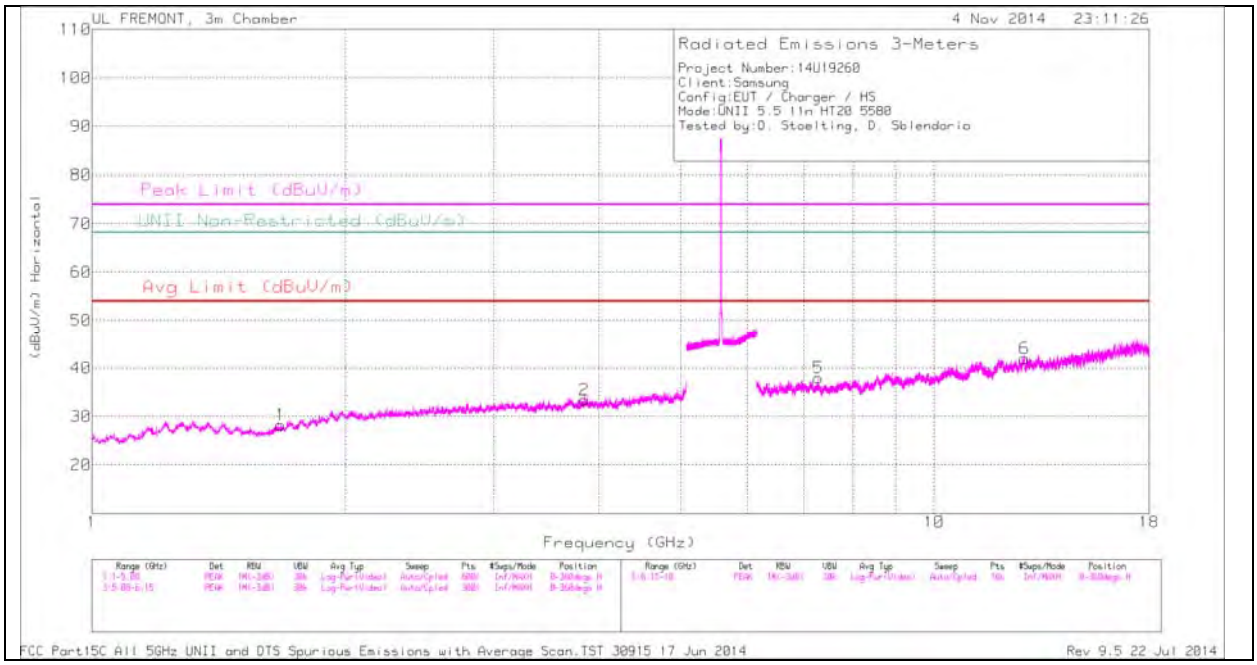
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.589	42.24	PK1	28.1	-33.4	0	36.94	-	-	74	-37.06	-	-	360	200	H
1.59	30.34	AD1	28.1	-33.4	.28	25.38	54	-28.62	-	-	-	-	360	200	H

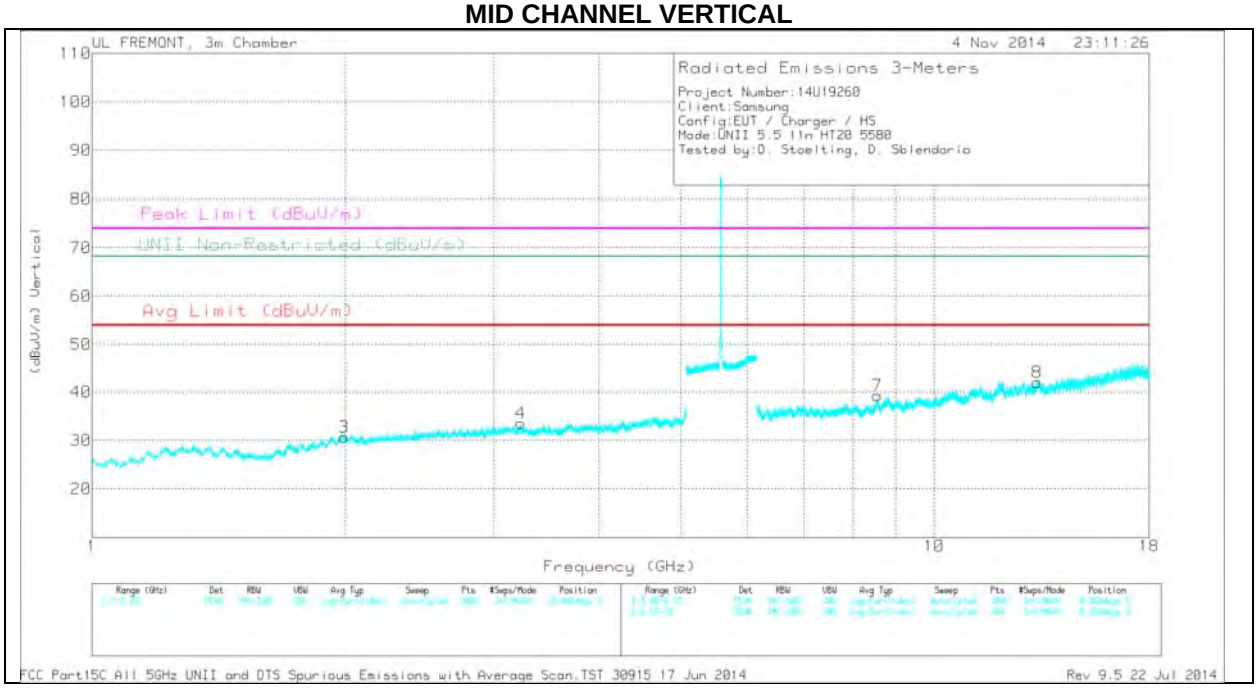
FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

MID CHANNEL HORIZONTAL



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

MID CHANNEL VERTICAL



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

MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ 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	1.674	31.86	PK	28.8	-32.4	0	28.26	-	-	74	-45.74	-	-	0-360	100	H
3	1.991	31.08	PK	31.6	-32	0	30.68	-	-	-	-	68.2	-37.52	0-360	200	V
4	3.23	32.05	PK	32.9	-31.4	0	33.55	-	-	-	-	68.2	-34.65	0-360	100	V
2	3.84	31.13	PK	33.2	-30.9	0	33.43	-	-	74	-40.57	-	-	0-360	100	H
5	7.285	31.7	PK	35.6	-29.3	0	38	-	-	74	-36	-	-	0-360	100	H
7	8.569	29.67	PK	35.8	-26.2	0	39.27	-	-	-	-	68.2	-28.93	0-360	100	V
6	12.8	28.97	PK	39.2	-26.2	0	41.97	-	-	-	-	68.2	-26.23	0-360	100	H
8	13.254	29.35	PK	39.1	-26.4	0	42.05	-	-	74	-31.95	-	-	0-360	200	V

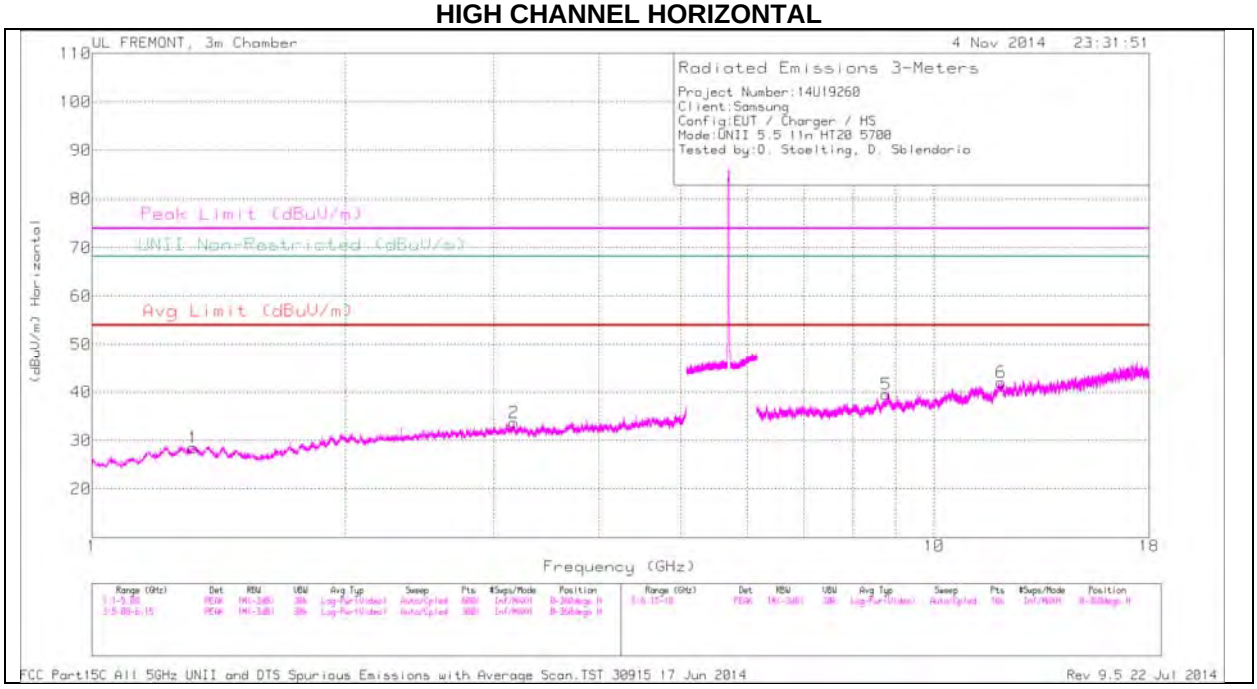
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
8.568	26.45	AD1	35.8	-26.2	.28	36.39	-	-	-	-	-	-	360	100	V
8.57	37.83	PK1	35.8	-26.2	0	47.43	-	-	-	-	68.2	-20.77	360	100	V

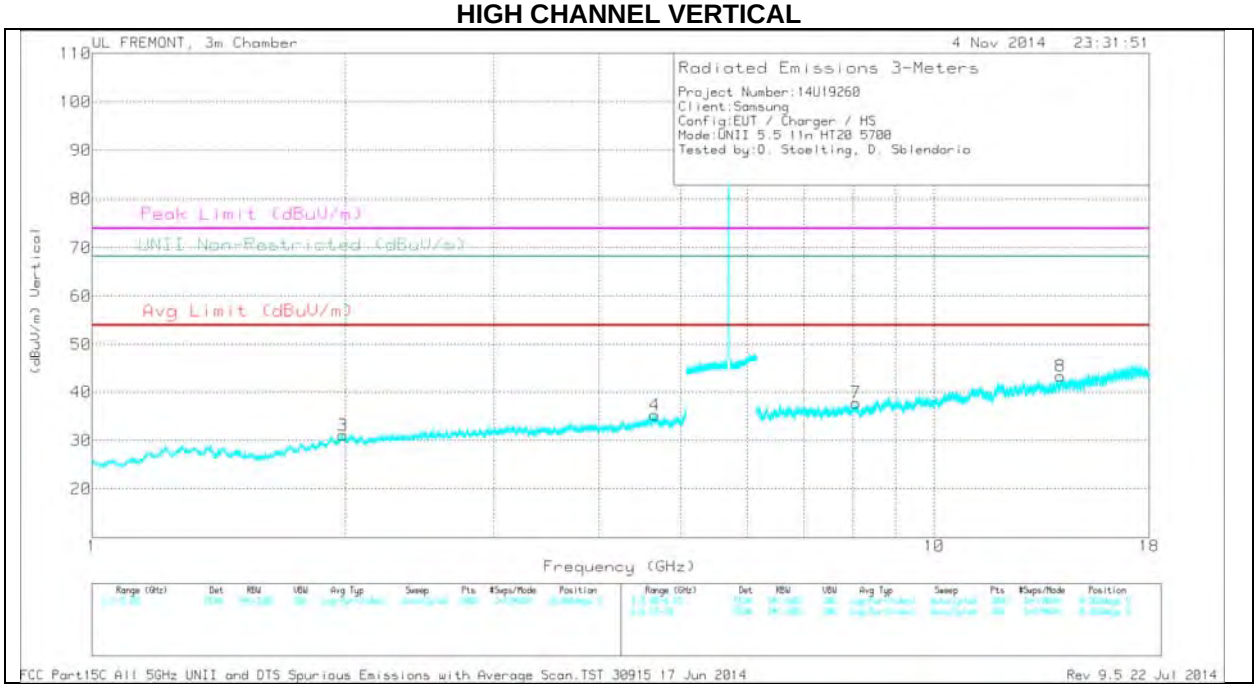
FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

HIGH CHANNEL HORIZONTAL



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

HIGH CHANNEL VERTICAL



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

HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ 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	1.319	32.12	PK	30	-33.6	0	28.52	-	-	74	-45.48	-	-	0-360	100	H
3	1.984	31.56	PK	31.5	-32	0	31.06	-	-	-	-	68.2	-37.14	0-360	100	V
2	3.169	32.37	PK	32.9	-31.6	0	33.67	-	-	-	-	68.2	-34.53	0-360	100	H
4	4.656	31.54	PK	34.1	-30.4	0	35.24	-	-	74	-38.76	-	-	0-360	200	V
7	8.074	29.38	PK	35.7	-27.3	0	37.78	-	-	74	-36.22	-	-	0-360	200	V
5	8.769	29.51	PK	35.9	-25.9	0	39.51	-	-	-	-	68.2	-28.69	0-360	100	H
6	12.021	28.94	PK	39.1	-26.1	0	41.94	-	-	74	-32.06	-	-	0-360	200	H
8	14.124	32.01	PK	39	-27.7	0	43.31	-	-	-	-	68.2	-24.89	0-360	100	V

PK - Peak detector

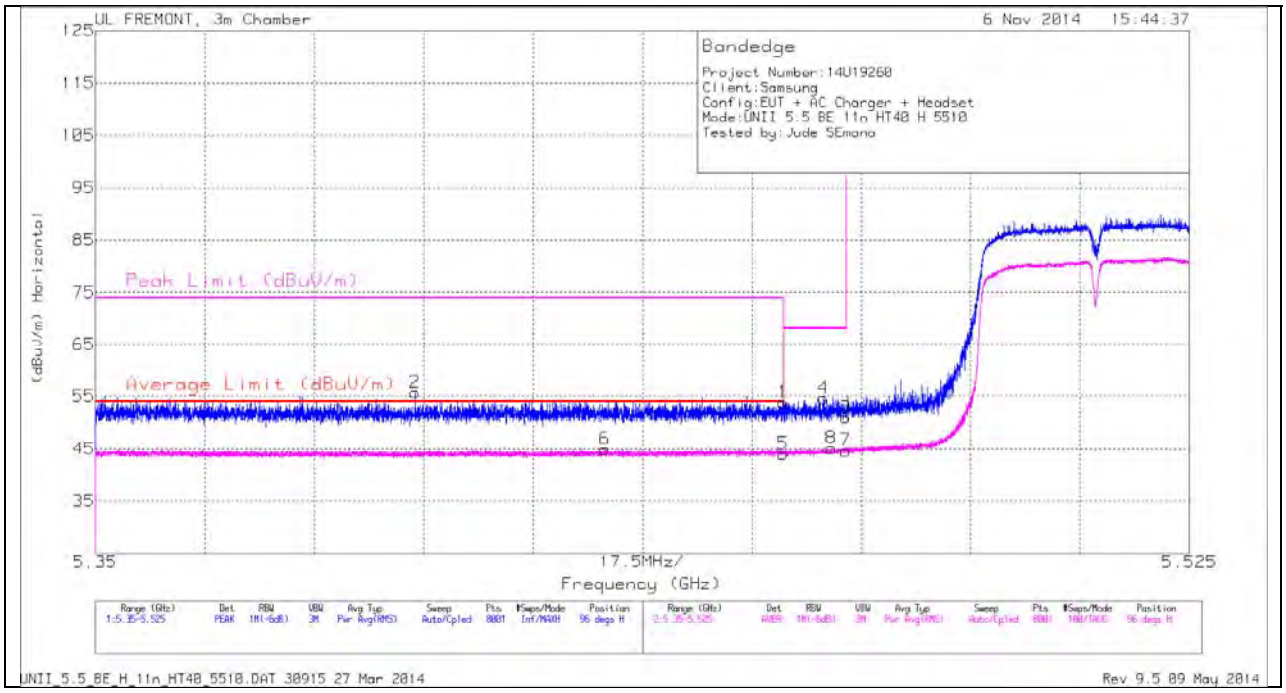
RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
8.768	25.37	AD1	35.9	-25.9	.28	35.71	-	-	-	-	-	-	359	100	H
8.77	36.75	PK1	35.9	-25.9	0	46.75	-	-	-	-	68.2	-21.45	359	100	H

FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

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

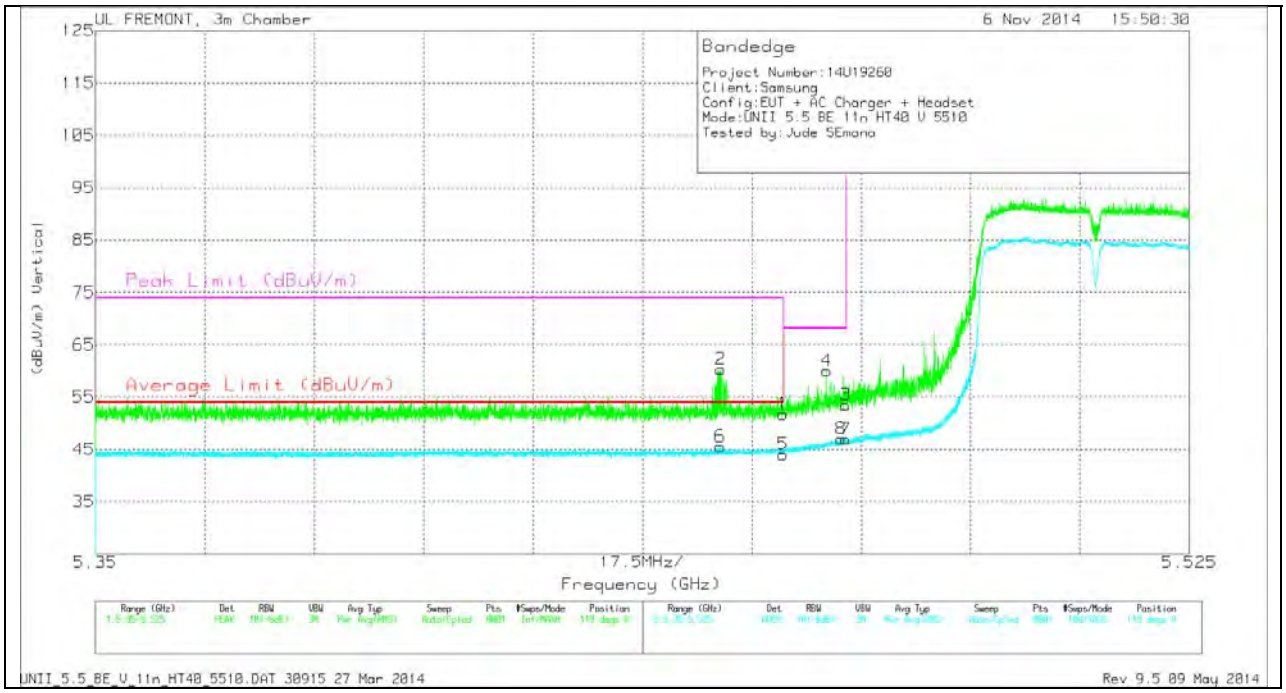
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
2	5.401	41.53	PK	34.5	-20.3	0	55.73	-	-	74	-18.27	96	241	H
6	5.431	30.07	RMS	34.5	-20.3	.65	44.87	54	-9.13	-	-	96	241	H
1	5.46	39.63	PK	34.5	-20.3	0	53.83	-	-	74	-20.17	96	241	H
5	5.46	29.14	RMS	34.5	-20.3	.65	43.94	54	-10.06	-	-	96	241	H
4	5.466	40.41	PK	34.5	-20.3	0	54.61	-	-	68.2	-13.59	96	241	H
8	5.468	30.27	RMS	34.5	-20.3	.65	45.07	-	-	-	-	96	241	H
3	5.47	36.74	PK	34.5	-20.3	0	50.94	-	-	68.2	-17.26	96	241	H
7	5.47	29.8	RMS	34.5	-20.3	.65	44.6	-	-	-	-	96	241	H

VERTICAL PEAK AND AVERAGE PLOT

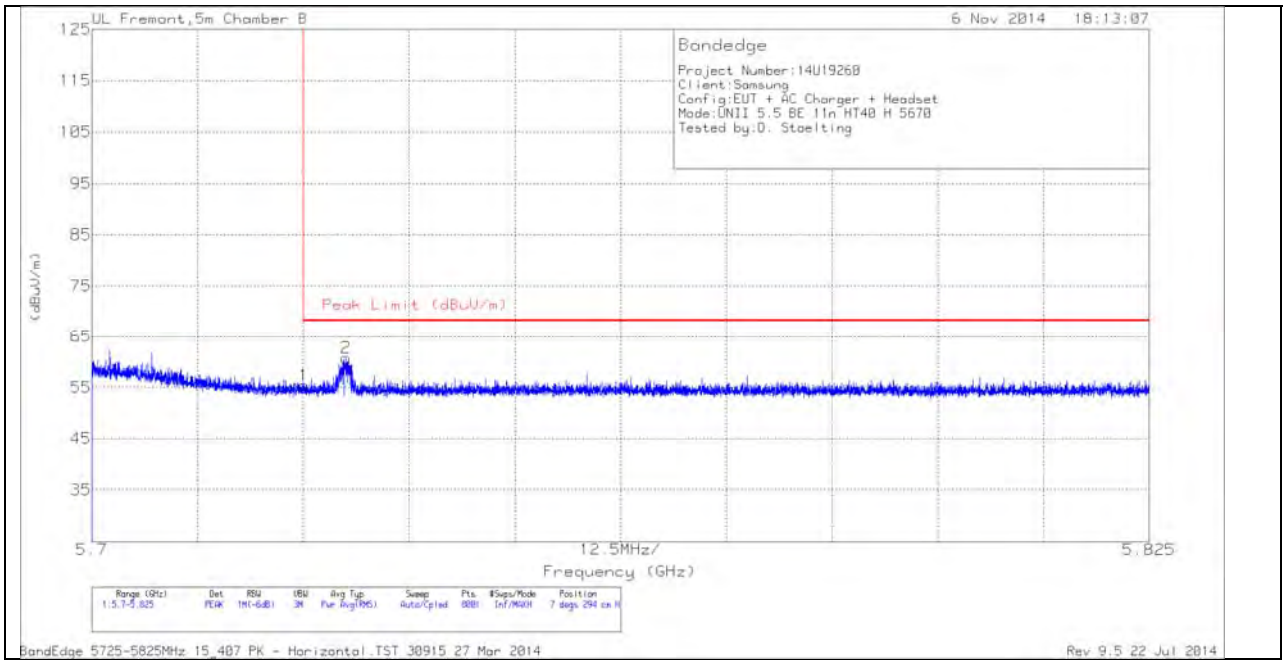


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
2	5.45	46.12	PK	34.5	-20.3	0	60.32	-	-	74	-13.68	119	244	V
6	5.45	30.65	RMS	34.5	-20.3	.65	45.45	54	-8.55	-	-	119	244	V
1	5.46	37.54	PK	34.5	-20.3	0	51.74	-	-	74	-22.26	119	244	V
5	5.46	29.17	RMS	34.5	-20.3	.65	43.97	54	-10.03	-	-	119	244	V
4	5.467	45.83	PK	34.5	-20.3	0	60.03	-	-	68.2	-8.17	119	244	V
8	5.469	32.15	RMS	34.5	-20.3	.65	46.95	-	-	-	-	119	244	V
3	5.47	39.3	PK	34.5	-20.3	0	53.5	-	-	68.2	-14.7	119	244	V
7	5.47	32.1	RMS	34.5	-20.3	.65	46.9	-	-	-	-	119	244	V

AUTHORIZED BANDEDGE (HIGH CHANNEL)

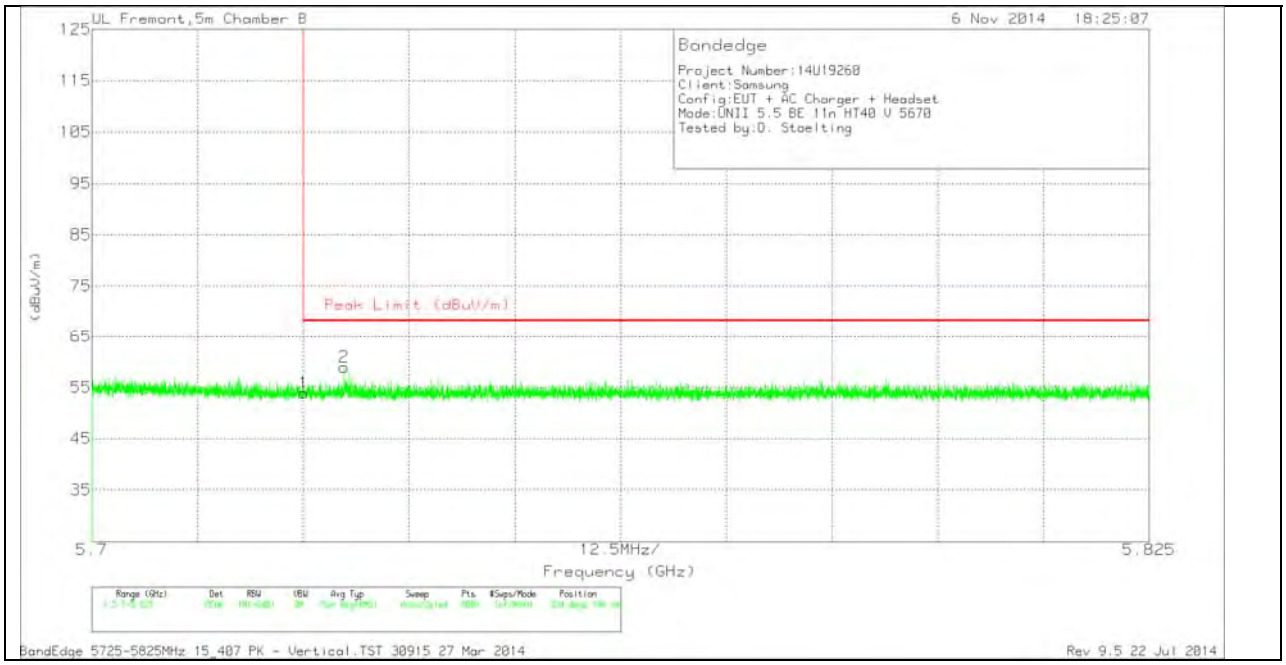
HORIZONTAL PEAK PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	40.89	PK	34.6	-20.1	0	55.39	68.2	-12.81	7	294	H
2	5.73	46.27	PK	34.6	-20.1	0	60.77	68.2	-7.43	7	294	H

VERTICAL PEAK PLOT

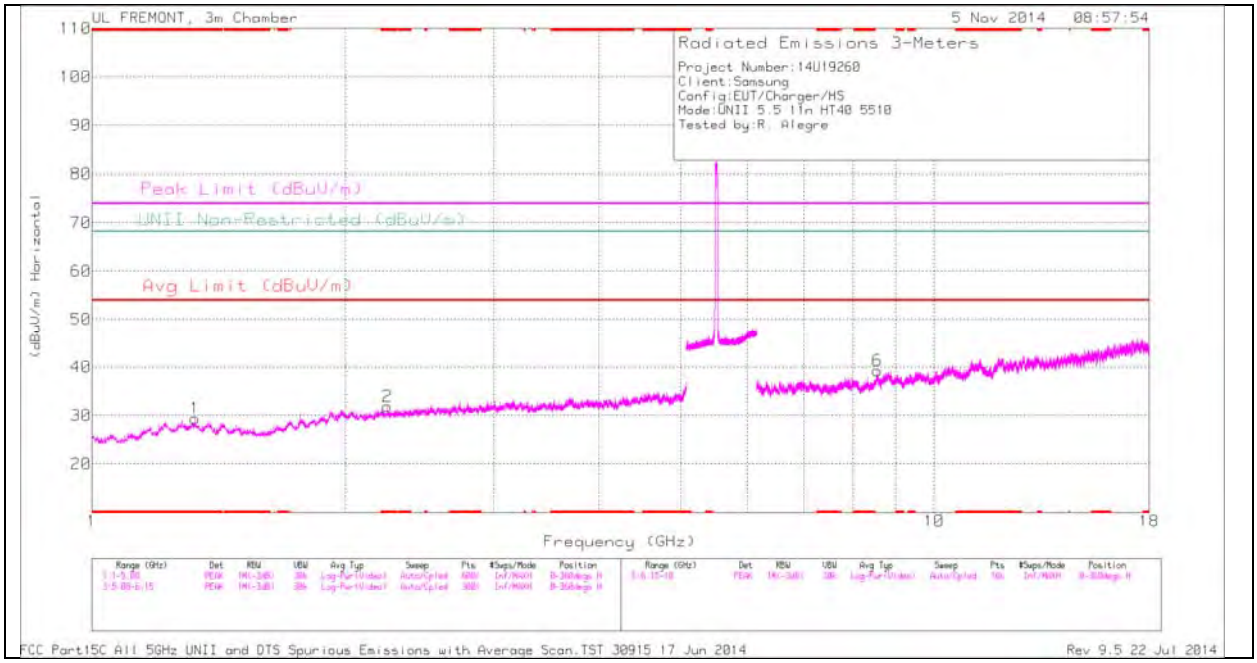


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	39.41	PK	34.6	-20.1	0	53.91	68.2	-14.29	334	196	V
2	5.73	44.51	PK	34.6	-20.1	0	59.01	68.2	-9.19	334	196	V

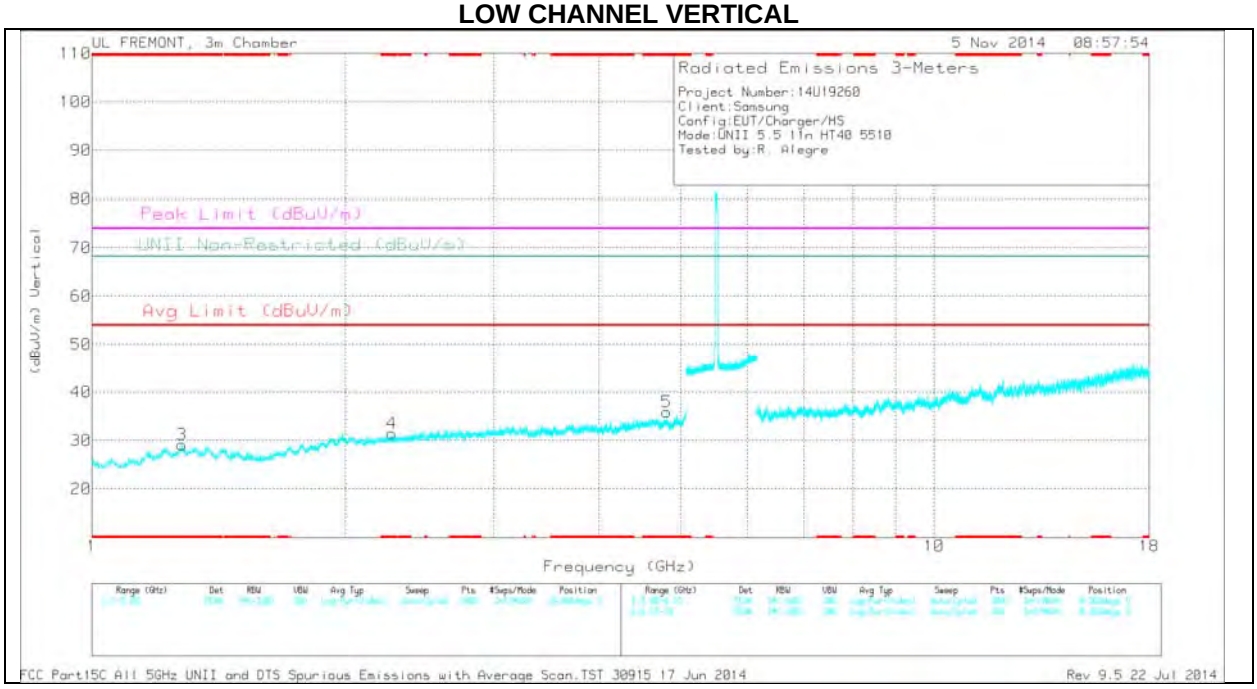
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



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

LOW CHANNEL VERTICAL



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

LOW CHANNEL DATA

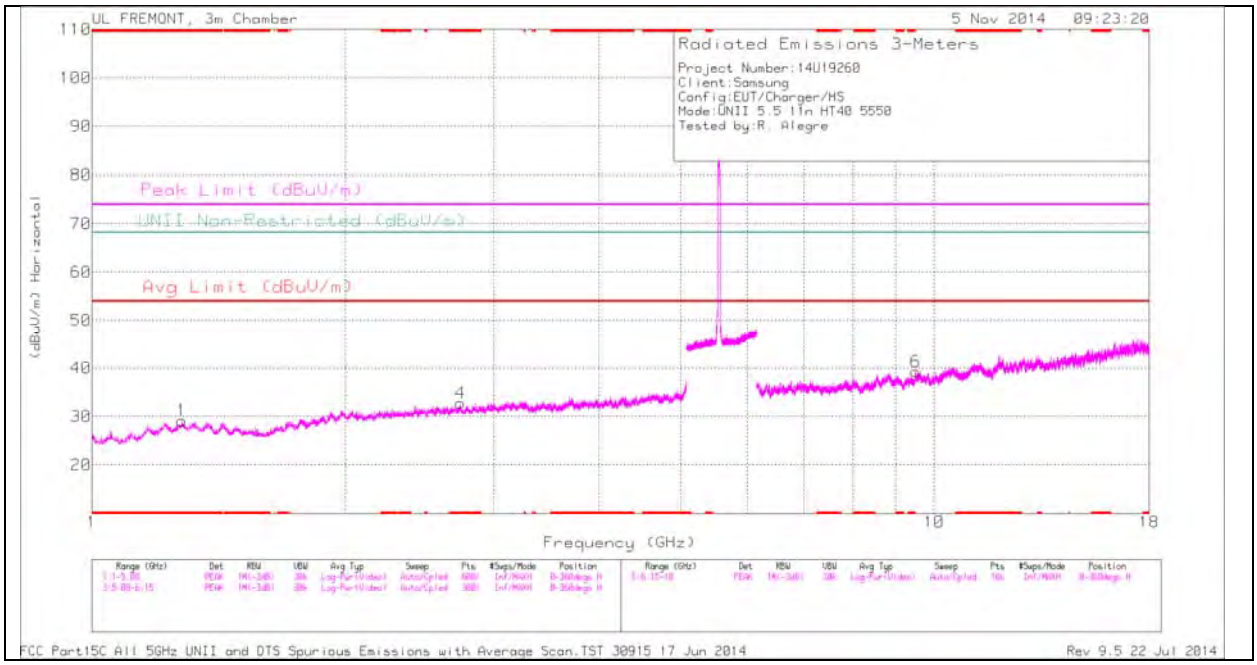
TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ 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	* 1.325	33.05	PK	30	-33.6	0	29.45	-	-	74	-44.55	-	-	0-360	200	H
2	* 2.244	32.53	PK	31.7	-32.4	0	31.83	-	-	74	-42.17	-	-	0-360	100	H
3	* 1.278	32.73	PK	30	-33.6	0	29.13	-	-	74	-44.87	-	-	0-360	200	V
4	* 2.27	31.93	PK	31.8	-32.2	0	31.53	-	-	74	-42.47	-	-	0-360	200	V
5	* 4.813	32.09	PK	34	-30.2	0	35.89	-	-	74	-38.11	-	-	0-360	200	V
6	8.563	29.67	PK	35.8	-26.2	0	39.27	-	-	-	-	68.2	-28.93	0-360	200	H

PK - Peak detector

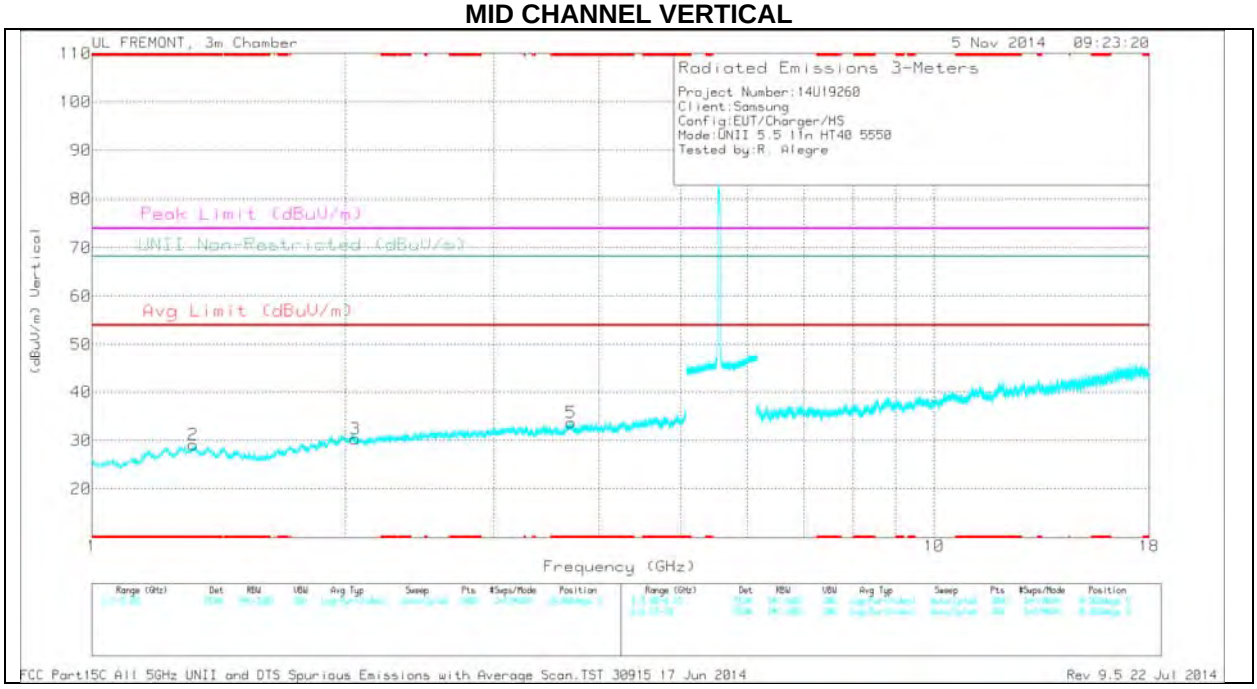
FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

MID CHANNEL HORIZONTAL



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

MID CHANNEL VERTICAL



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

MID CHANNEL DATA

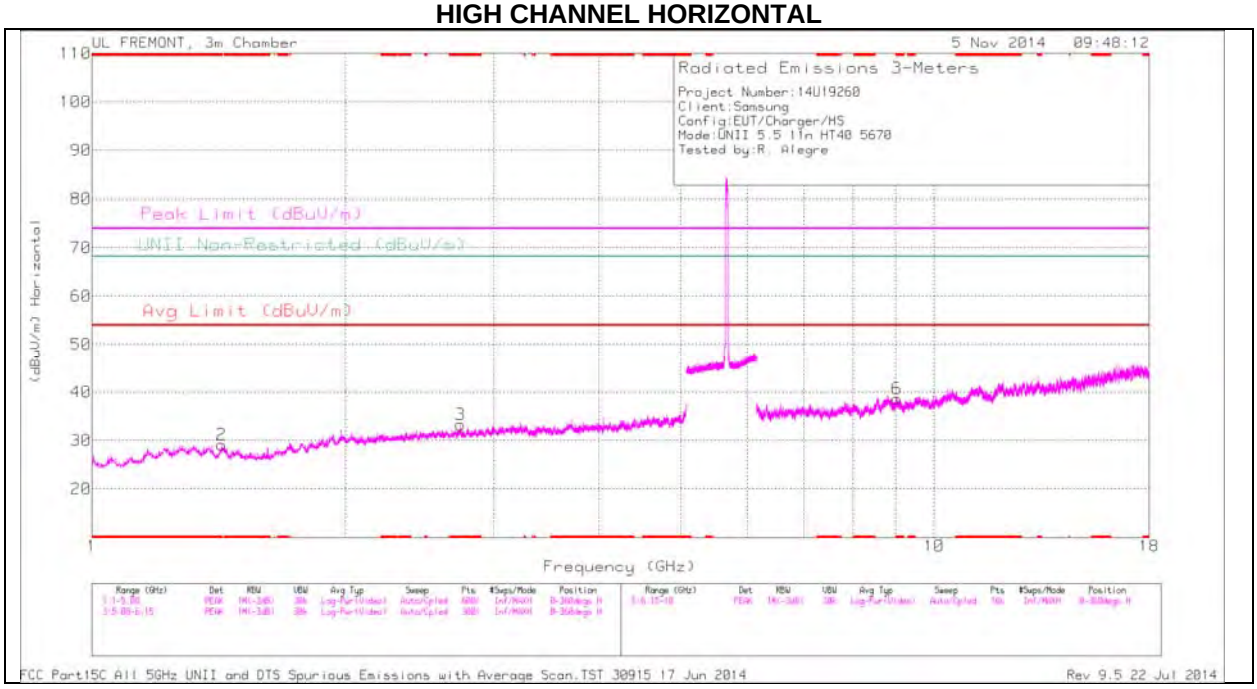
TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ 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	* 1.278	32.75	PK	30	-33.6	0	29.15	-	-	74	-44.85	-	-	0-360	100	H
4	* 2.738	32.34	PK	32.7	-32.3	0	32.74	-	-	74	-41.26	-	-	0-360	100	H
2	* 1.318	32.7	PK	30	-33.6	0	29.1	-	-	74	-44.9	-	-	0-360	200	V
5	* 3.704	31.34	PK	33.2	-30.8	0	33.74	-	-	74	-40.26	-	-	0-360	200	V
3	2.056	31.07	PK	31.6	-32.4	0	30.27	-	-	-	-	68.2	-37.93	0-360	200	V
6	9.501	28.53	PK	36.6	-25.8	0	39.33	-	-	-	-	68.2	-28.87	0-360	100	H

PK - Peak detector

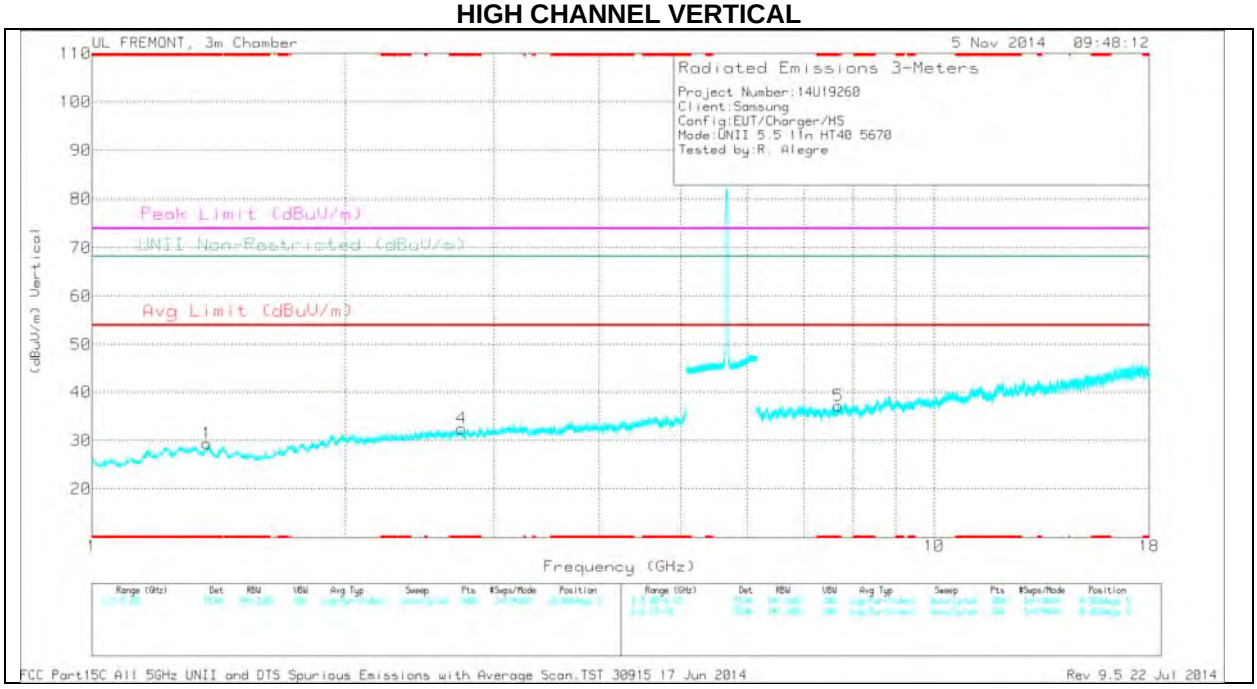
FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

HIGH CHANNEL HORIZONTAL



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

HIGH CHANNEL VERTICAL



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

HIGH CHANNEL DATA

TRACE MARKERS

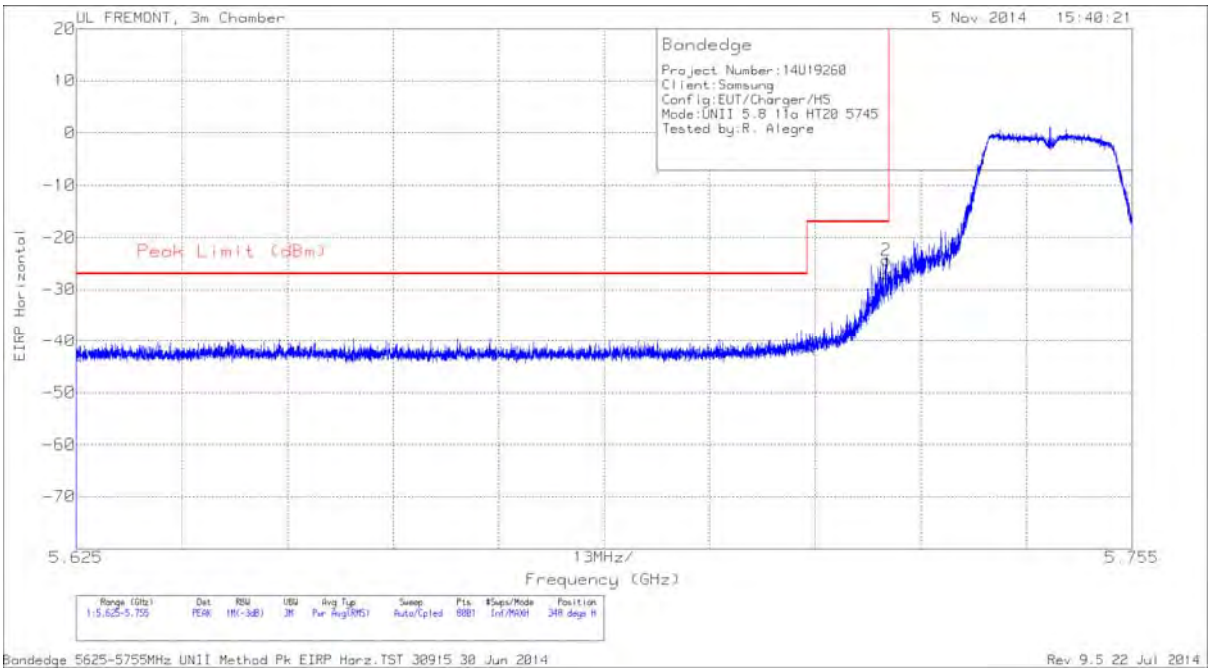
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.371	33.05	PK	29.4	-33.1	0	29.35	-	-	74	-44.65	-	-	0-360	100	V
2	* 1.424	32.86	PK	29	-32.7	0	29.16	-	-	74	-44.84	-	-	0-360	200	H
3	* 2.74	32.84	PK	32.7	-32.3	0	33.24	-	-	74	-40.76	-	-	0-360	100	H
4	* 2.748	32.06	PK	32.7	-32.3	0	32.46	-	-	74	-41.54	-	-	0-360	100	V
5	* 7.69	30.32	PK	35.8	-28.9	0	37.22	-	-	74	-36.78	-	-	0-360	200	V
6	* 9.036	27.78	PK	36.1	-25.3	0	38.58	-	-	74	-35.42	-	-	0-360	100	H

PK - Peak detector

FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

11.4. 5.8 GHz

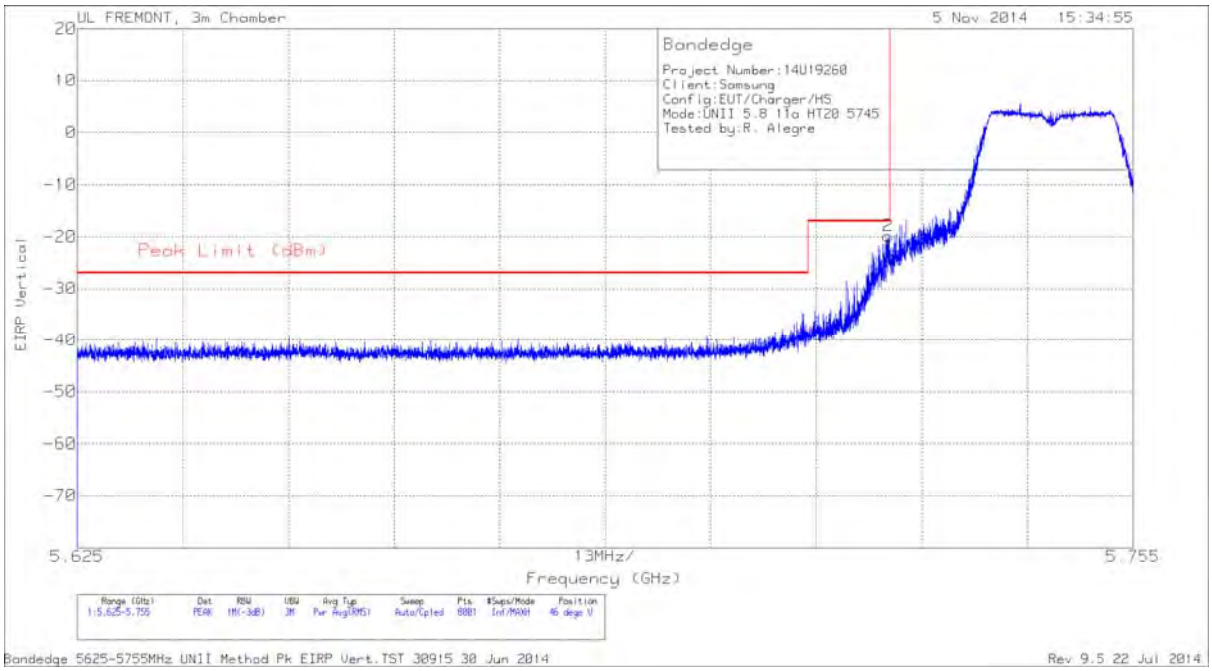
11.4.1. TX ABOVE 1 GHz 802.11a MODE IN THE 5.8 GHz BAND HARMONICS AND SPURIOUS EMISSIONS



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-52.49	PK	34.8	-21.1	11.8	-26.99	-17	-9.99	348	126	H
2	5.725	-49.85	PK	34.8	-21.1	11.8	-24.35	-17	-7.35	348	126	H

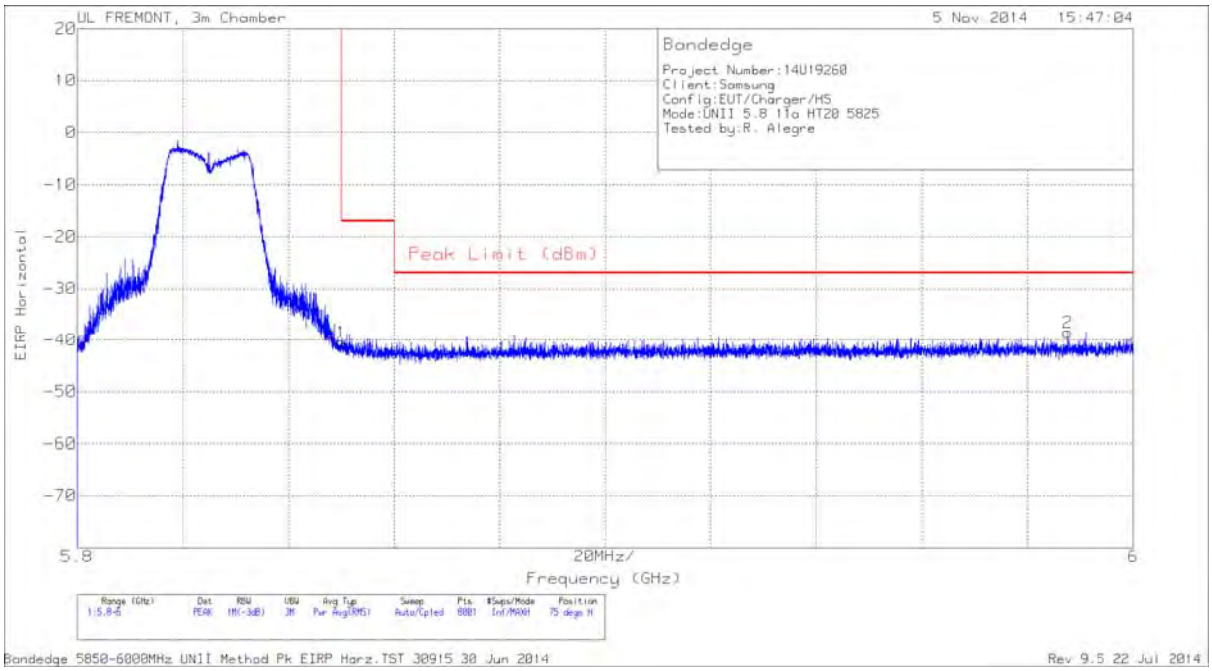
PK - Peak detector



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-49.17	PK	34.8	-21.1	11.8	0	-23.67	-17	-6.67	46	351	V
2	5.725	-45.35	PK	34.8	-21.1	11.8	0	-19.85	-17	-2.85	46	351	V

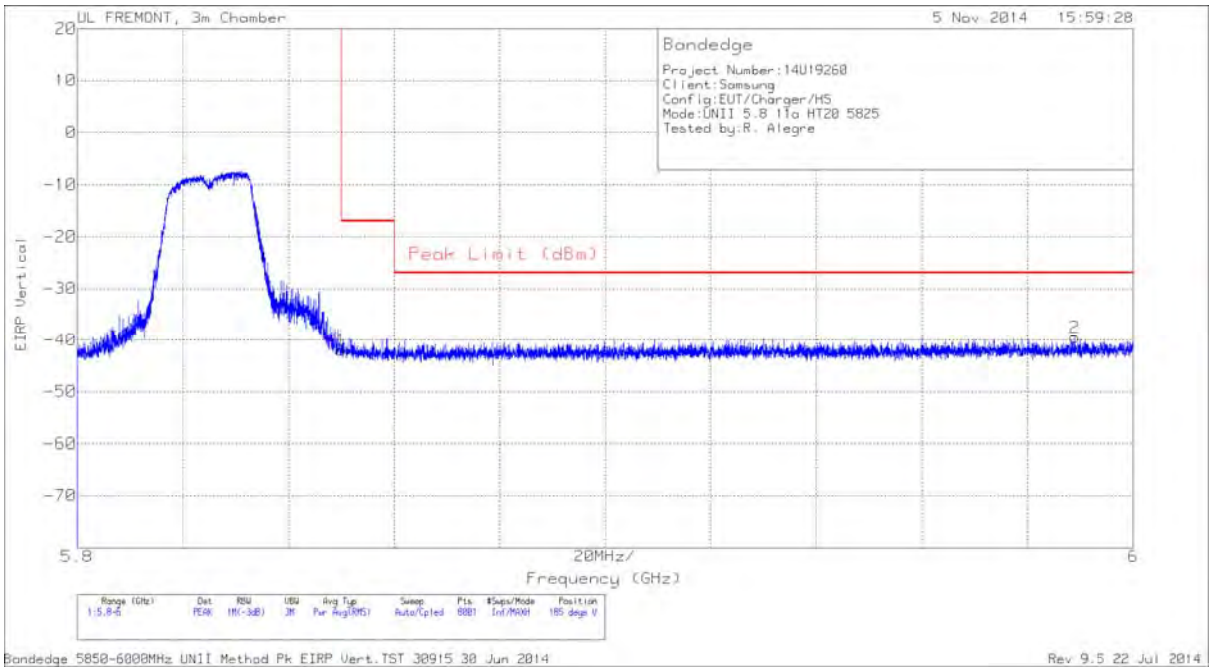
PK - Peak detector



Note: above table is from pre-scan data and data table showing final data.

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-65.98	PK	35	-21.3	11.8	-40.48	-27	-13.48	75	231	H
2	5.988	-64.76	PK	35.3	-20.9	11.8	-38.56	-27	-11.56	75	231	H

PK - Peak detector

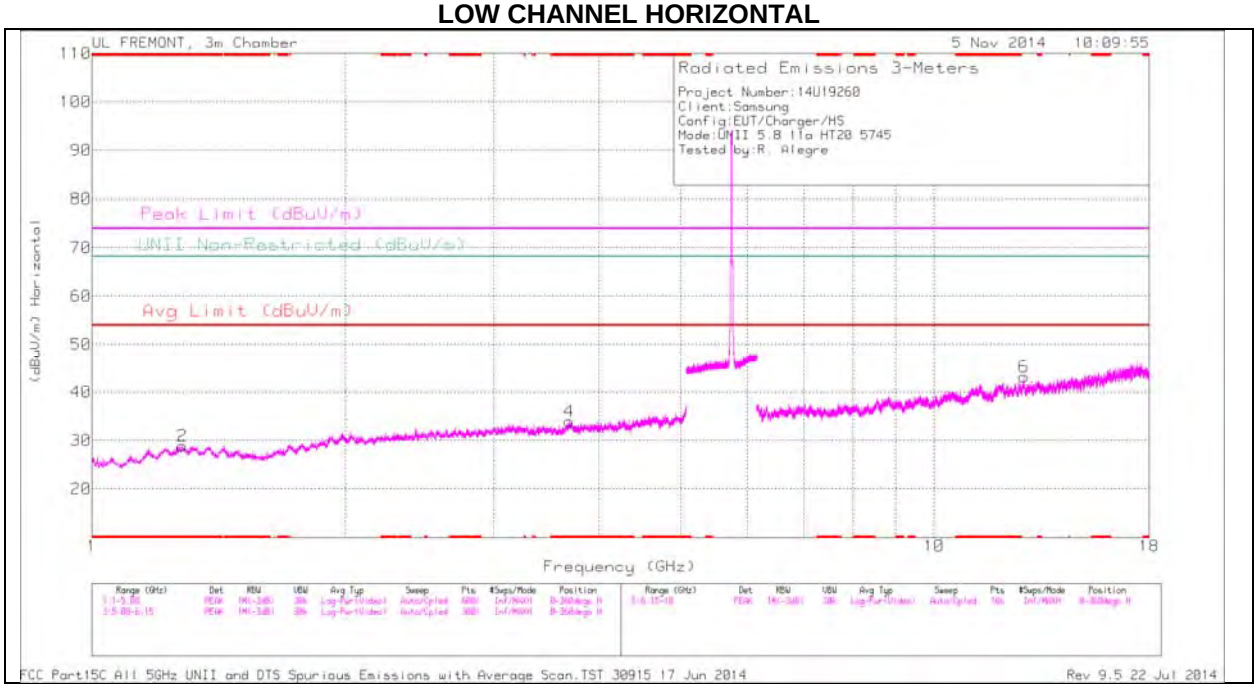


Note: above table is from pre-scan data and data table showing final data.

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-67.5	PK	35	-21.3	11.8	-42	-27	-15	185	283	V
2	5.989	-65.71	PK	35.3	-20.9	11.8	-39.51	-27	-12.51	185	283	V

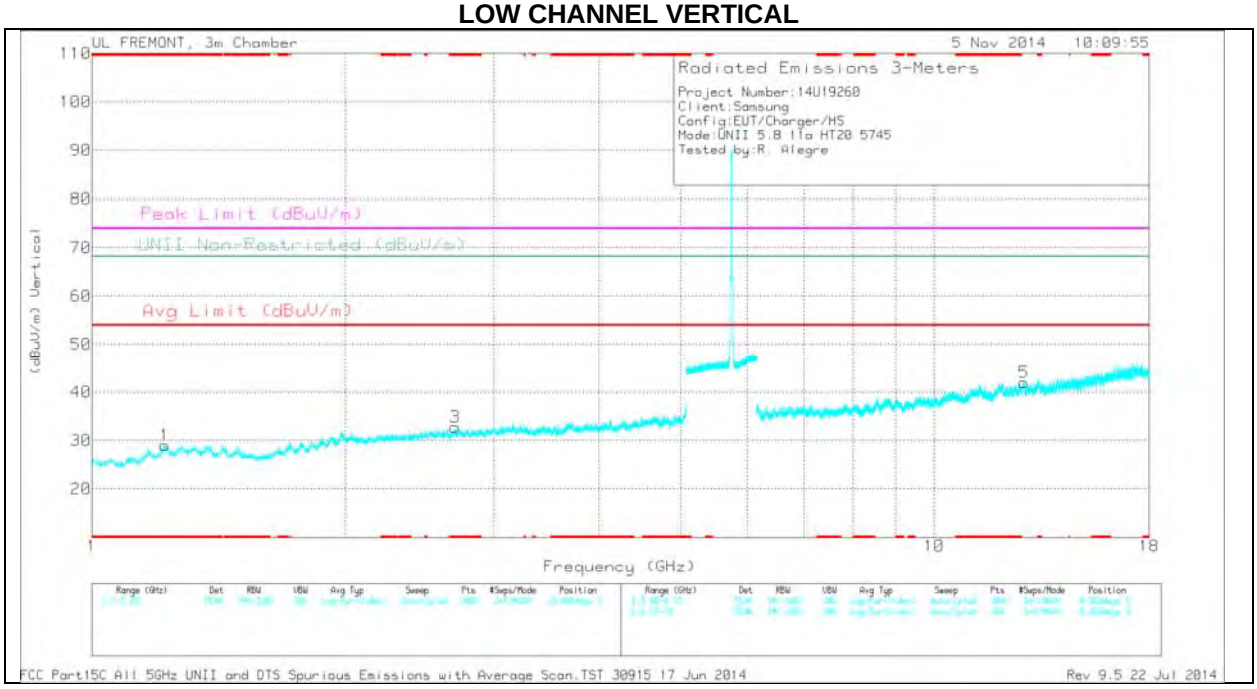
PK - Peak detector

LOW CHANNEL HORIZONTAL



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

LOW CHANNEL VERTICAL



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

LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ 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	* 1.22	32.84	PK	29.4	-33.2	0	29.04	-	-	74	-44.96	-	-	0-360	100	V
2	* 1.281	32.49	PK	30	-33.6	0	28.89	-	-	74	-45.11	-	-	0-360	100	H
3	* 2.699	32.33	PK	32.6	-32.2	0	32.73	-	-	74	-41.27	-	-	0-360	100	V
4	* 3.69	31.34	PK	33.2	-30.6	0	33.94	-	-	74	-40.06	-	-	0-360	100	H
6	12.774	29.91	PK	39.2	-25.9	0	43.21	-	-	-	-	68.2	-24.99	0-360	100	H
5	12.779	28.74	PK	39.2	-25.9	0	42.04	-	-	-	-	68.2	-26.16	0-360	200	V

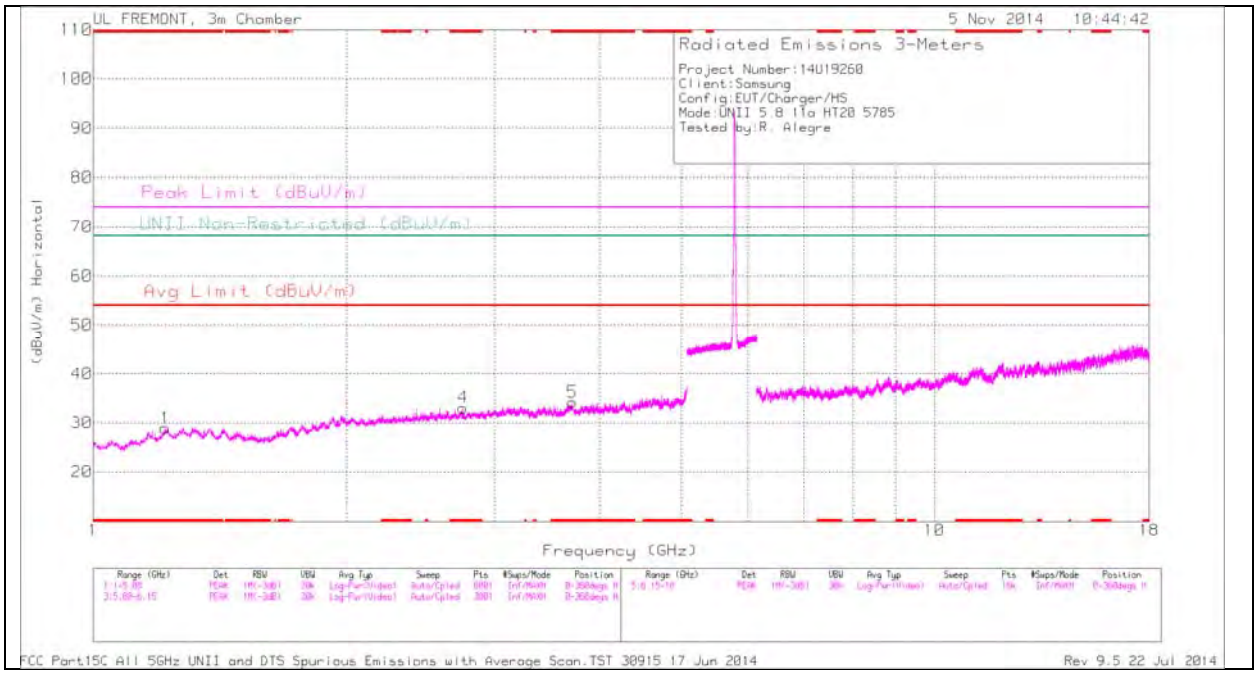
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
12.773	38.26	PK1	39.2	-26	0	51.46	-	-	-	-	68.2	-16.74	0	100	H
12.773	26.72	AD1	39.2	-26	.3	40.22	-	-	-	-	-	-	0	100	H

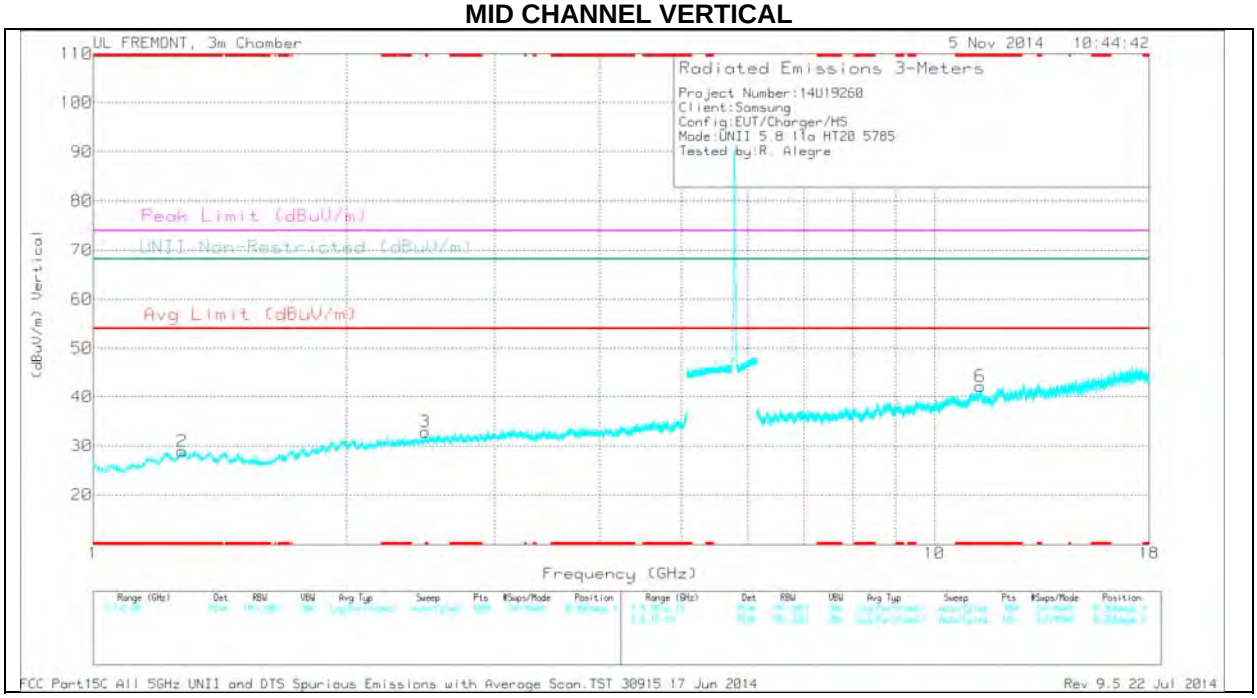
FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

MID CHANNEL HORIZONTAL



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

MID CHANNEL VERTICAL



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

MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ 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	* 1.218	32.69	PK	29.4	-33.2	0	28.89	-	-	74	-45.11	-	-	0-360	200	H
4	* 2.751	32.66	PK	32.7	-32.3	0	33.06	-	-	74	-40.94	-	-	0-360	200	H
5	* 3.711	31.87	PK	33.2	-30.9	0	34.17	-	-	74	-39.83	-	-	0-360	100	H
2	* 1.276	32.4	PK	30	-33.5	0	28.9	-	-	74	-45.1	-	-	0-360	100	V
6	* 11.336	29.6	PK	38	-25.5	0	42.1	-	-	74	-31.9	-	-	0-360	100	V
3	2.482	32.73	PK	32.3	-32.2	0	32.83	-	-	-	-	68.2	-35.37	0-360	200	V

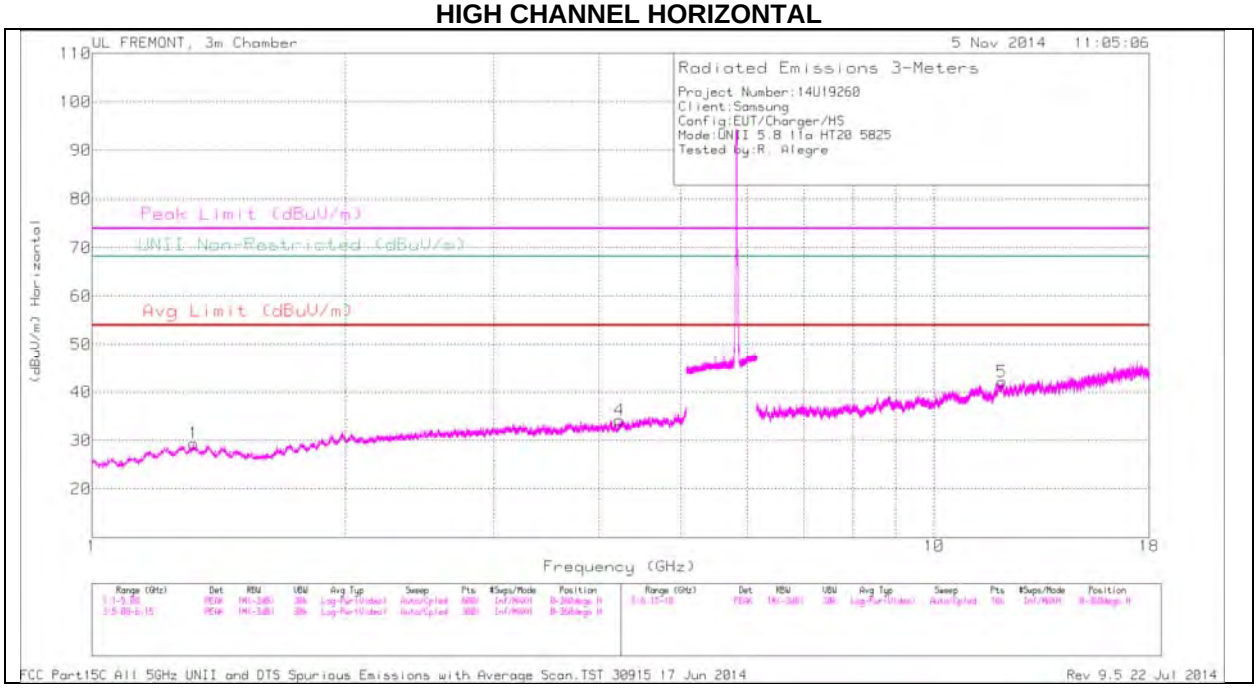
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 11.337	37.74	PK1	38	-25.5	0	50.24	-	-	74	-23.76	-	-	43	100	V
* 11.337	25.78	AD1	38	-25.5	.3	38.58	54	-15.42	-	-	-	-	43	100	V

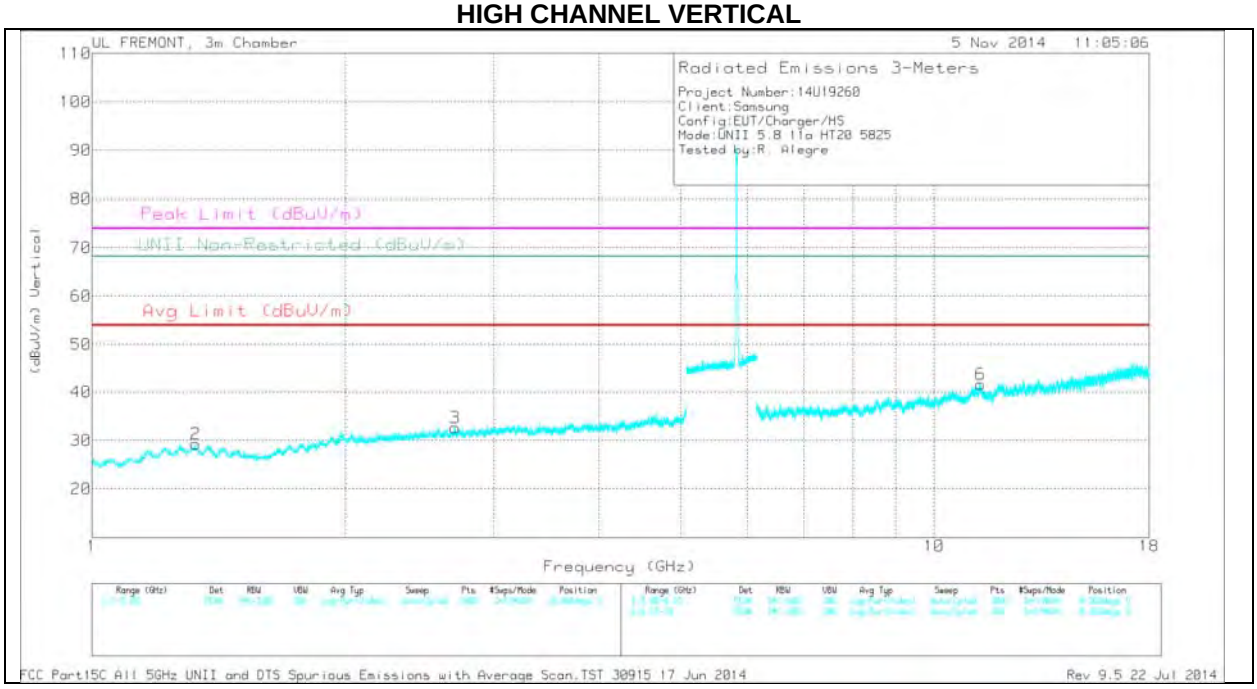
FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

HIGH CHANNEL HORIZONTAL



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

HIGH CHANNEL VERTICAL



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

HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ 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	1.322	32.98	PK	30	-33.6	0	29.38	-	-	74	-44.62	-	-	0-360	100	H
2	1.327	32.96	PK	29.9	-33.6	0	29.26	-	-	74	-44.74	-	-	0-360	100	V
3	2.699	32.26	PK	32.6	-32.2	0	32.66	-	-	74	-41.34	-	-	0-360	100	V
4	4.234	32.02	PK	33.5	-31.3	0	34.22	-	-	74	-39.78	-	-	0-360	100	H
6	11.343	29.06	PK	38	-25.5	0	41.56	-	-	74	-32.44	-	-	0-360	200	V
5	12.04	29.19	PK	39.1	-26.2	0	42.09	-	-	74	-31.91	-	-	0-360	100	H

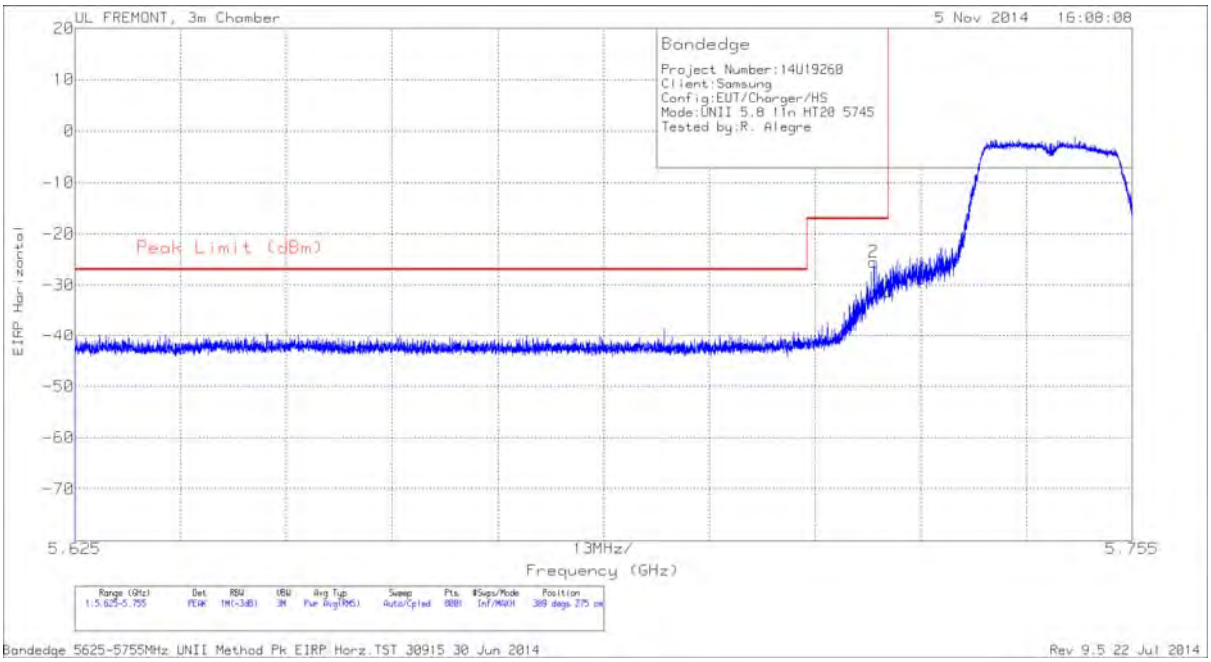
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
12.042	37.64	PK1	39.1	-26.2	0	50.54	-	-	74	-23.46	-	-	0	100	H
12.042	26.16	AD1	39.1	-26.2	.3	39.36	54	-14.64	-	-	-	-	0	100	H

FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

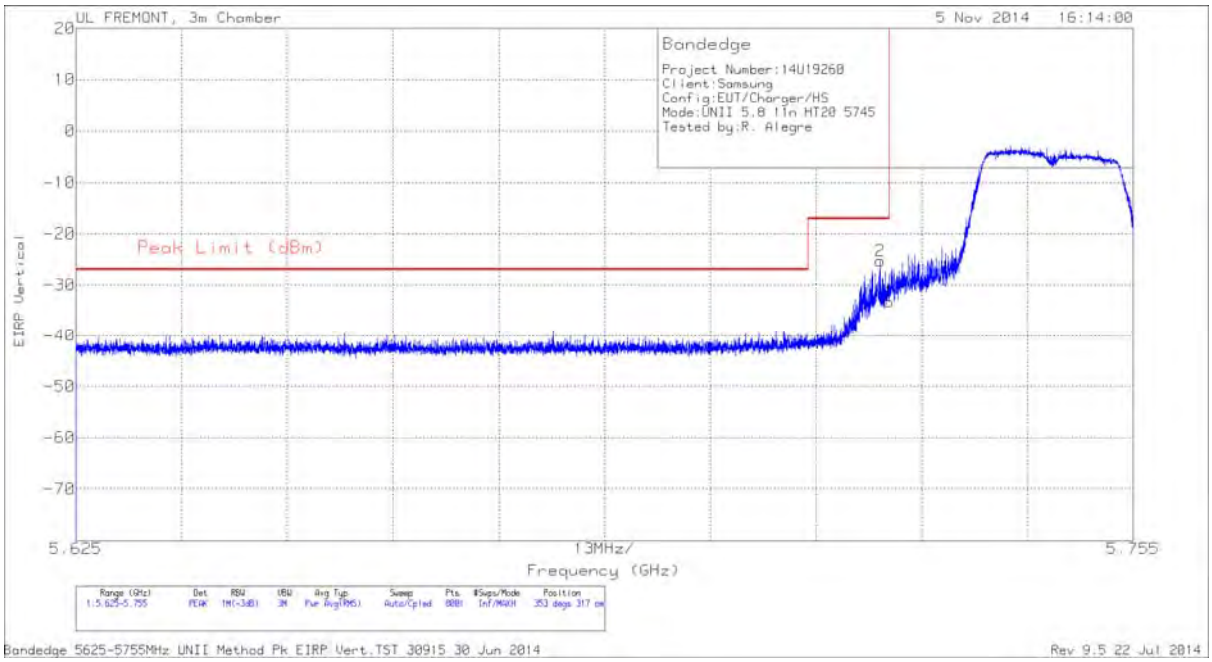
11.4.2. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.8 GHz BAND HARMONICS AND SPURIOUS EMISSIONS



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.723	-51.07	PK	34.8	-21	11.8	-25.47	-17	-8.47	309	275	H
1	5.725	-56.78	PK	34.8	-21.1	11.8	-31.28	-17	-14.28	309	275	H

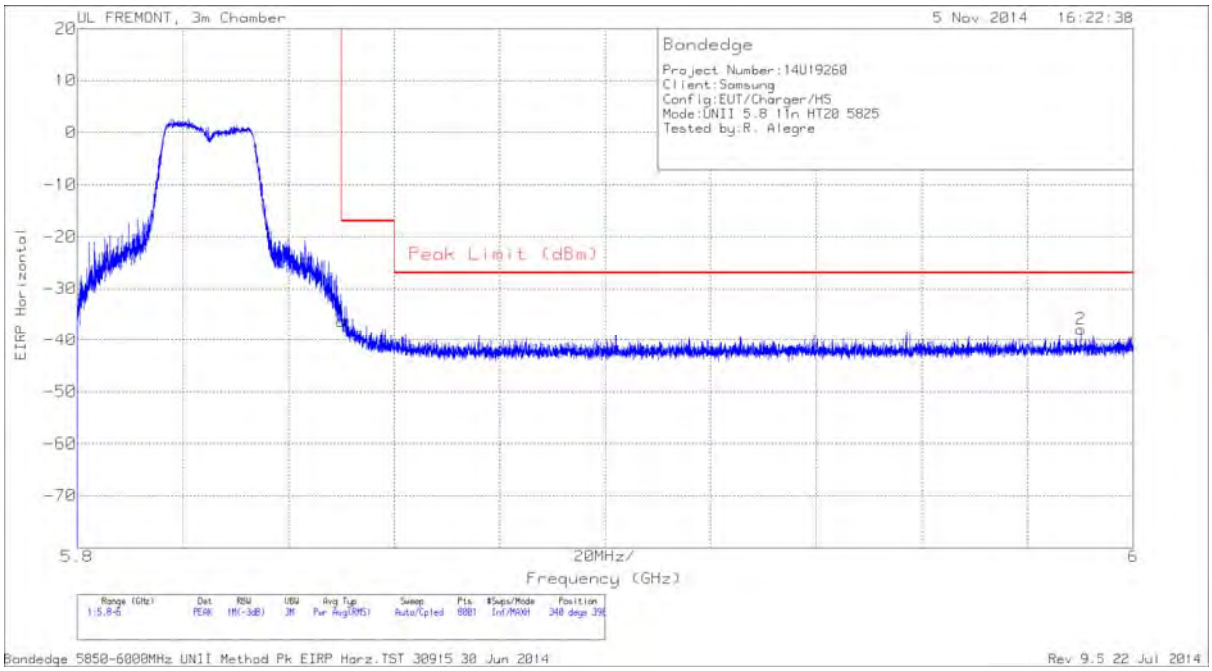
PK - Peak detector



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.724	-50.9	PK	34.8	-21	11.8	-25.3	-17	-8.3	353	317	V
1	5.725	-58.73	PK	34.8	-21.1	11.8	-33.23	-17	-16.23	353	317	V

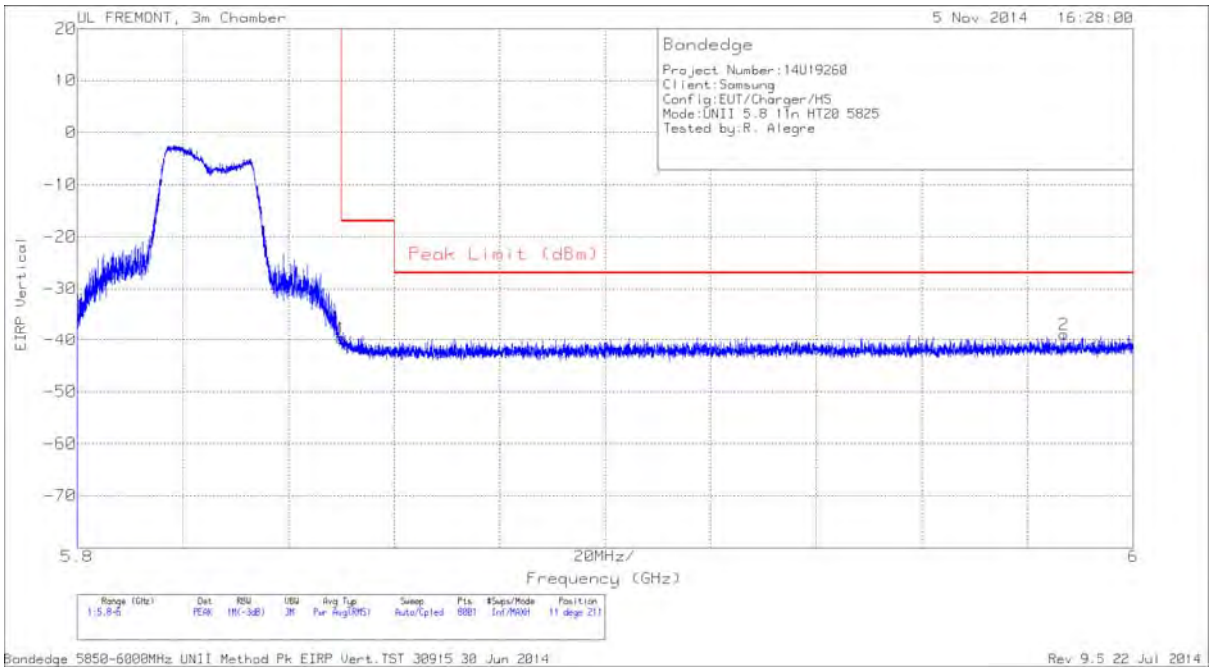
PK - Peak detector



Note: above table is from pre-scan data and data table showing final data.

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-61.82	PK	35	-21.3	11.8	-36.32	-27	-9.32	340	396	H
2	5.99	-64.06	PK	35.3	-20.9	11.8	-37.86	-27	-10.86	340	396	H

PK - Peak detector

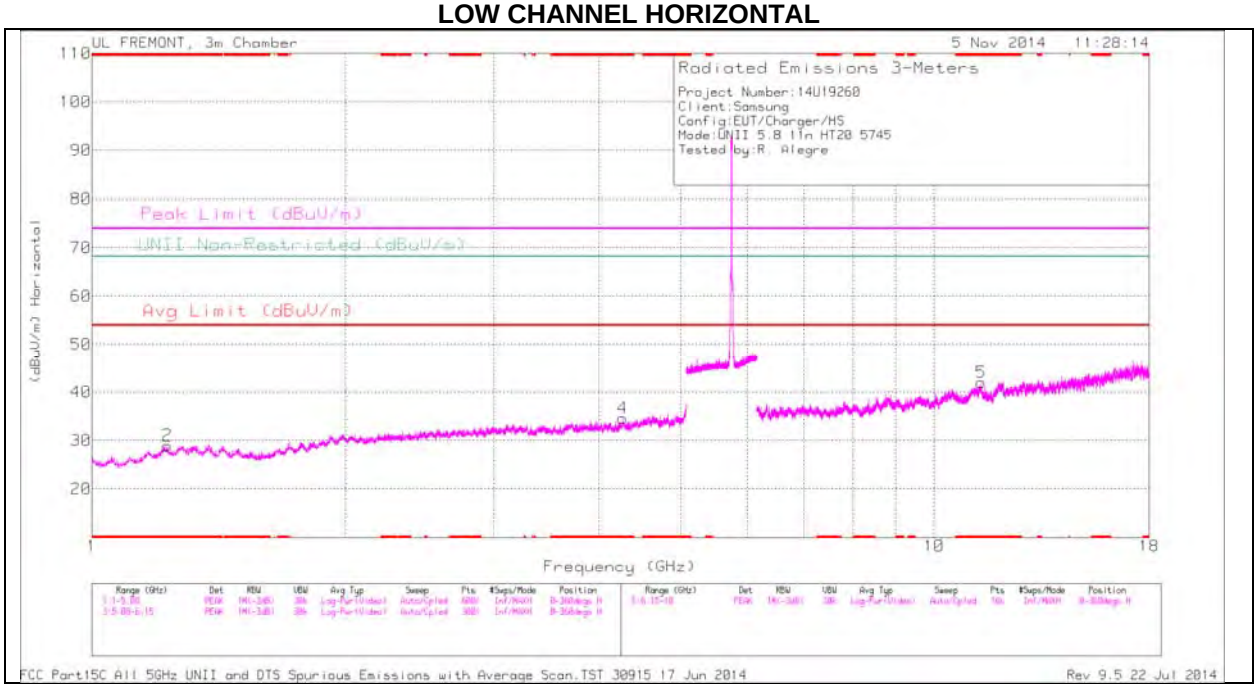


Note: above table is from pre-scan data and data table showing final data.

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-65.26	PK	35	-21.3	11.8	-39.76	-27	-12.76	11	211	V
2	5.987	-65.07	PK	35.3	-20.9	11.8	-38.87	-27	-11.87	11	211	V

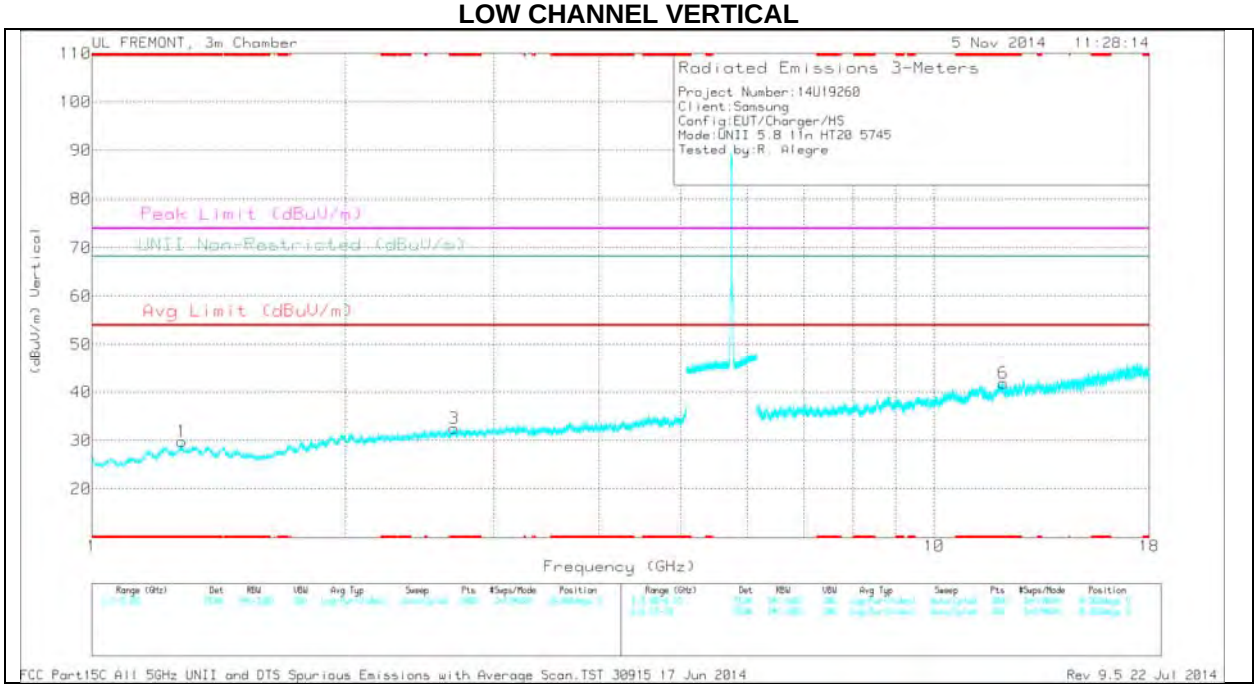
PK - Peak detector

LOW CHANNEL HORIZONTAL



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

LOW CHANNEL VERTICAL



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

LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 1.228	32.75	PK	29.5	-33.3	0	28.95	-	-	74	-45.05	-	-	0-360	200	H
4	* 4.27	31.35	PK	33.6	-30.3	0	34.65	-	-	74	-39.35	-	-	0-360	100	H
1	* 1.278	33.4	PK	30	-33.6	0	29.8	-	-	74	-44.2	-	-	0-360	200	V
3	* 2.69	32.17	PK	32.6	-32.3	0	32.47	-	-	74	-41.53	-	-	0-360	200	V
5	* 11.378	29.89	PK	38.1	-26	0	41.99	-	-	74	-32.01	-	-	0-360	100	H
6	* 12.072	29.2	PK	39.1	-26.4	0	41.9	-	-	74	-32.1	-	-	0-360	100	V

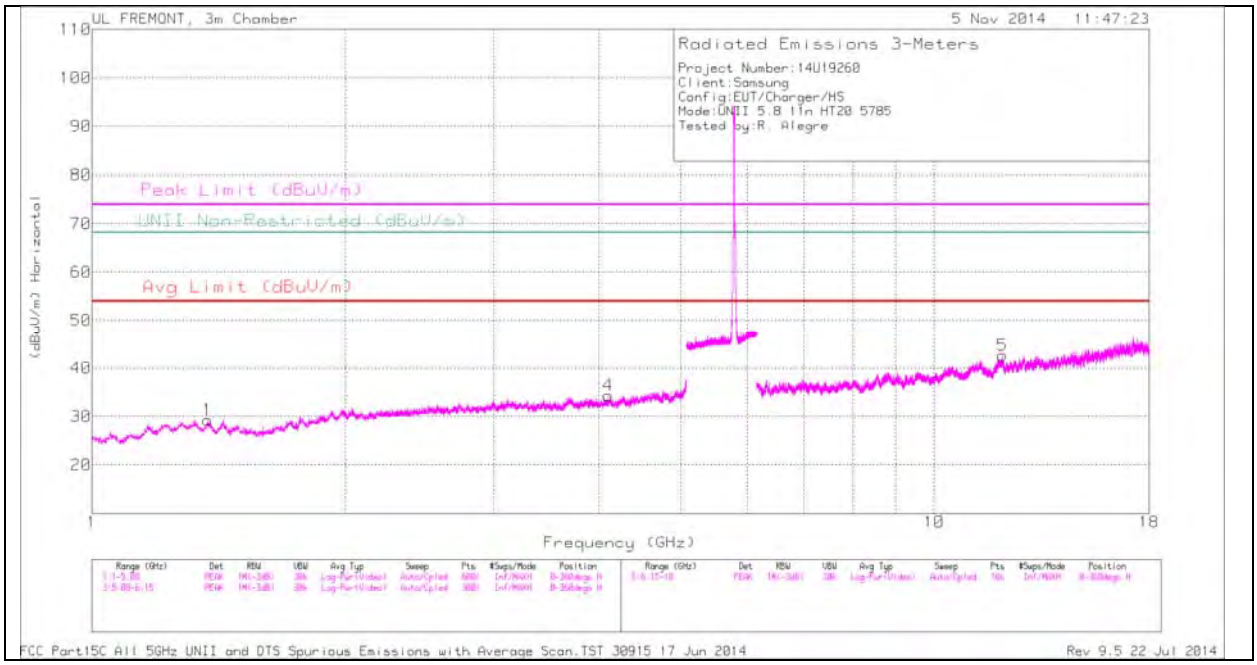
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 12.073	37.52	PK1	39.1	-26.4	0	50.22	-	-	74	-23.78	-	-	0	100	V
* 12.074	26.46	AD1	39.1	-26.4	.3	39.46	54	-14.54	-	-	-	-	0	100	V

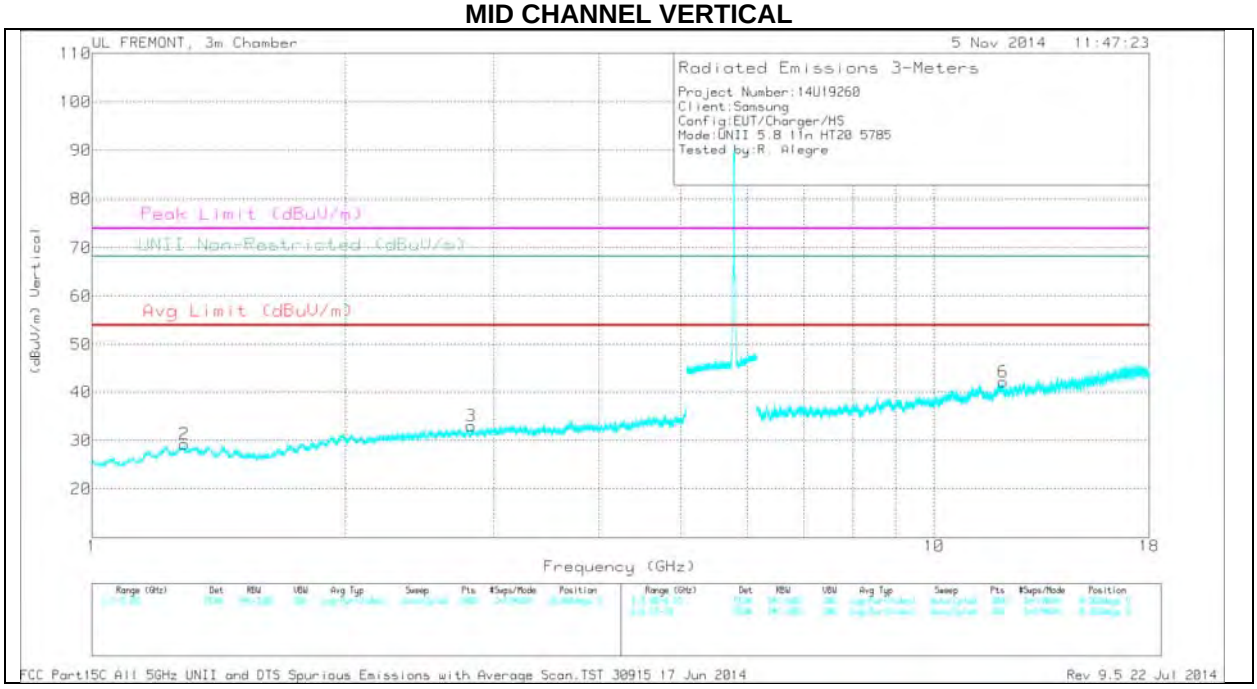
FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

MID CHANNEL HORIZONTAL



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

MID CHANNEL VERTICAL



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

MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	1.287	32.77	PK	30.1	-33.6	0	29.27	-	-	74	-44.73	-	-	0-360	200	V
1	1.371	33.02	PK	29.4	-33.1	0	29.32	-	-	74	-44.68	-	-	0-360	200	H
3	2.82	32.74	PK	32.7	-32.4	0	33.04	-	-	74	-40.96	-	-	0-360	100	V
4	4.103	31.9	PK	33.5	-31.1	0	34.3	-	-	74	-39.7	-	-	0-360	200	H
5	12.064	29.89	PK	39.1	-26.4	0	42.59	-	-	74	-31.41	-	-	0-360	100	H
6	12.069	29.42	PK	39.1	-26.4	0	42.12	-	-	74	-31.88	-	-	0-360	100	V

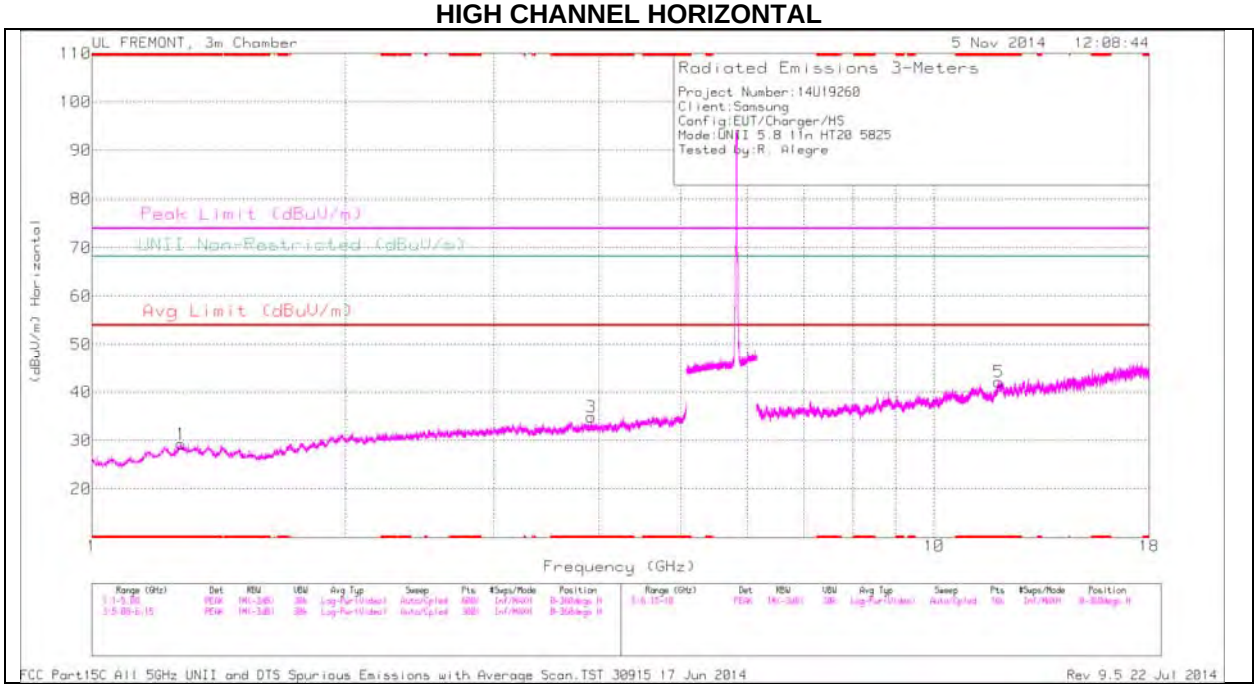
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
12.062	38.23	PK1	39.1	-26.4	0	50.93	-	-	74	-23.07	-	-	0	100	H
12.065	26.35	AD1	39.1	-26.4	.3	39.35	54	-14.65	-	-	-	-	0	100	H

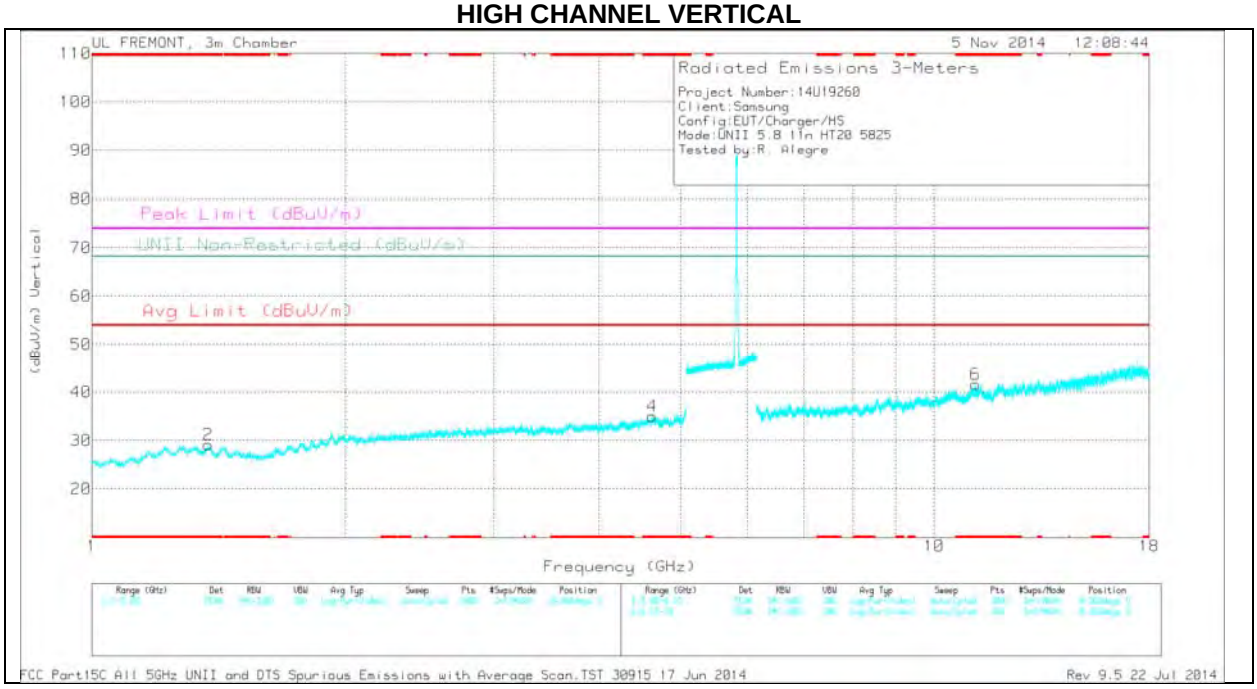
FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

HIGH CHANNEL HORIZONTAL



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

HIGH CHANNEL VERTICAL



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

HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ 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	* 1.276	32.81	PK	30	-33.5	0	29.31	-	-	74	-44.69	-	-	0-360	100	H
3	* 3.917	32.64	PK	33.3	-31.1	0	34.84	-	-	74	-39.16	-	-	0-360	200	H
2	* 1.375	32.71	PK	29.4	-33	0	29.11	-	-	74	-44.89	-	-	0-360	200	V
4	* 4.626	31.13	PK	34	-30.1	0	35.03	-	-	74	-38.97	-	-	0-360	100	V
5	* 11.927	29.32	PK	39	-26.2	0	42.12	-	-	74	-31.88	-	-	0-360	100	H
6	* 11.204	29.58	PK	37.9	-25.9	0	41.58	-	-	74	-32.42	-	-	0-360	100	V

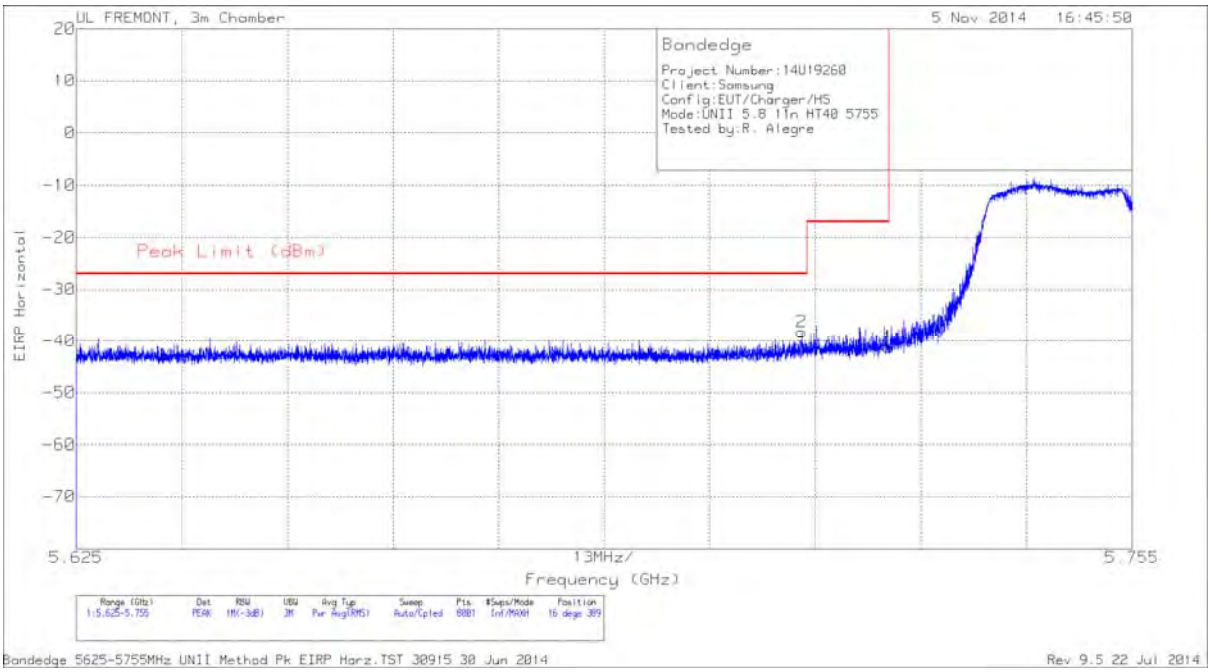
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 11.929	38.3	PK1	39	-26.2	0	51.1	-	-	74	-22.9	-	-	3	100	H
* 11.931	26.73	AD1	39	-26.2	.3	39.83	54	-14.17	-	-	-	-	3	100	H

FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

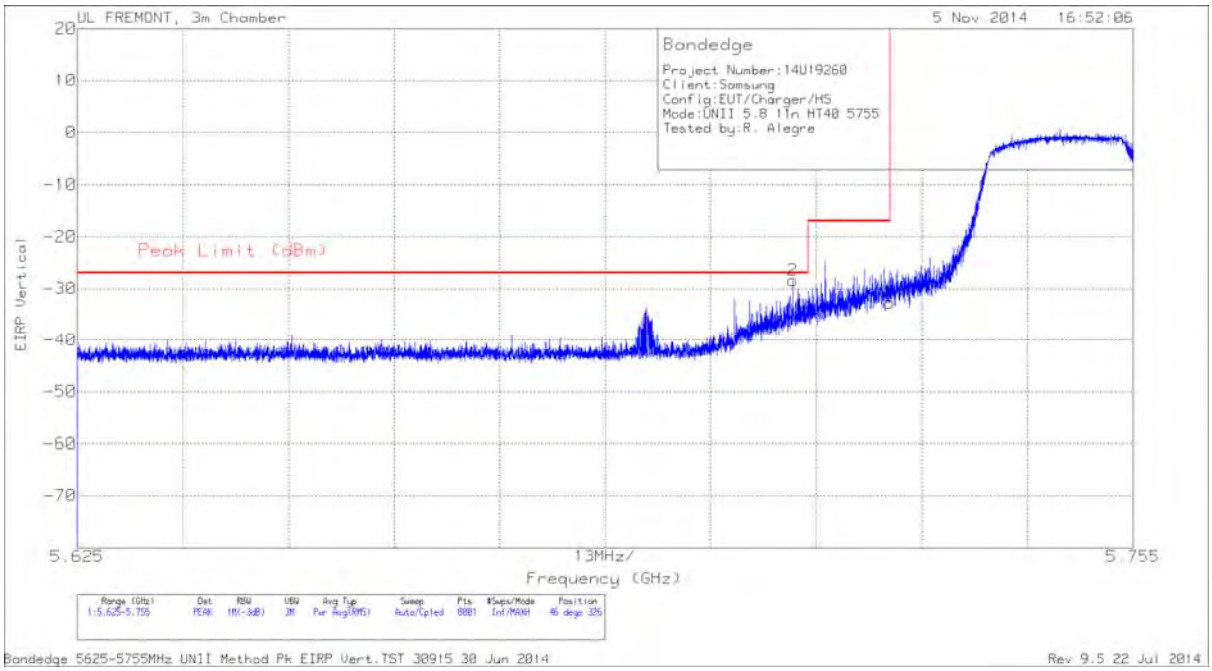
11.4.3. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.8 GHz BAND HARMONICS AND SPURIOUS EMISSIONS



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.714	-63.72	PK	34.8	-21.1	11.8	-38.22	-27	-11.22	16	389	H
1	5.725	-66.81	PK	34.8	-21.1	11.8	-41.31	-17	-24.31	16	389	H

PK - Peak detector

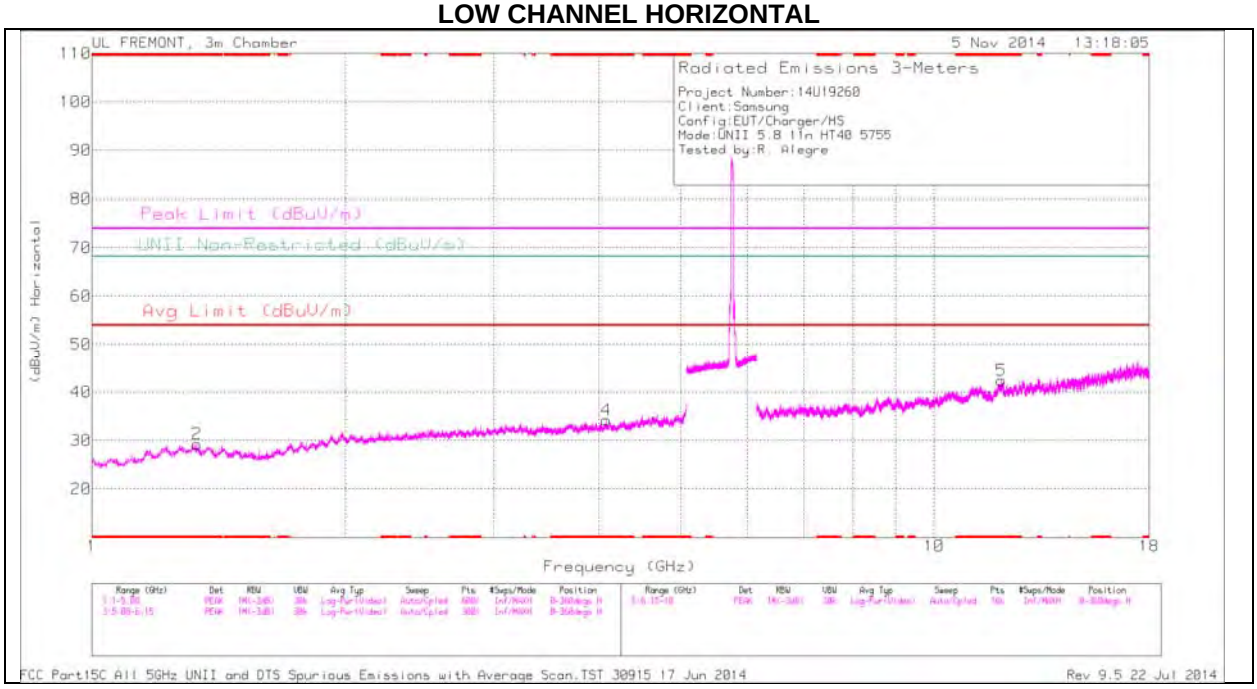


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.713	-54.01	PK	34.8	-21	11.8	-28.41	-27	-1.41	46	326	V
1	5.725	-58.27	PK	34.8	-21.1	11.8	-32.77	-17	-15.77	46	326	V

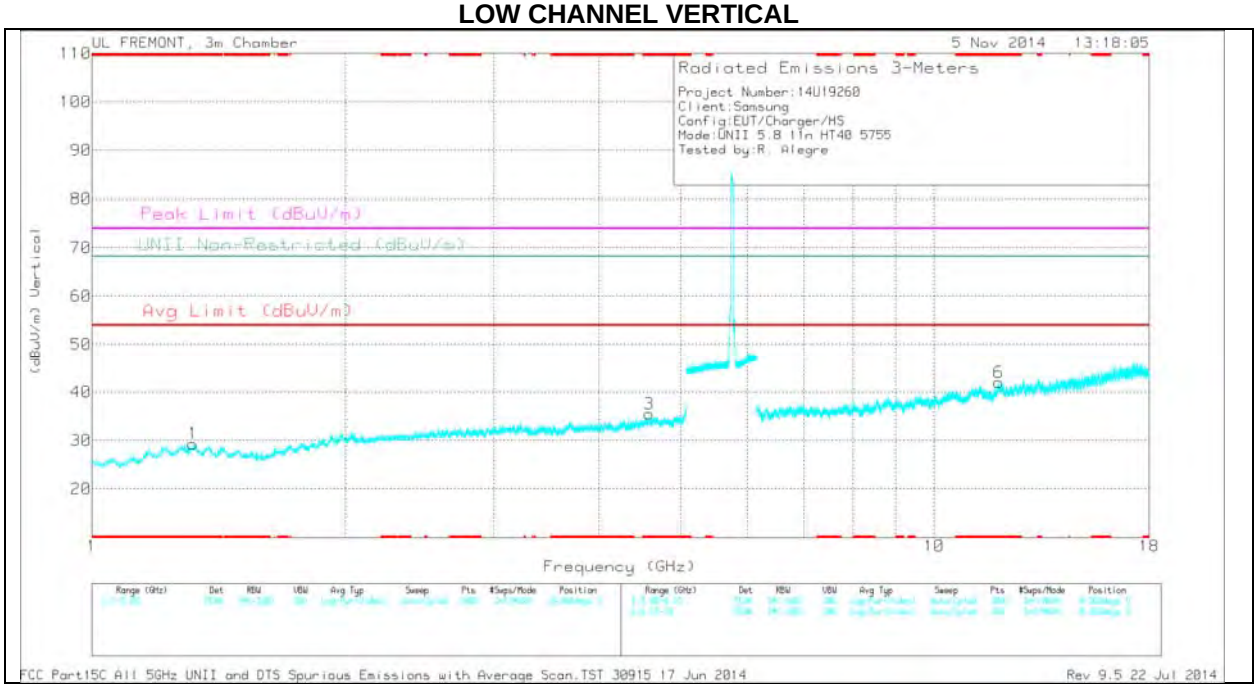
PK - Peak detector

LOW CHANNEL HORIZONTAL

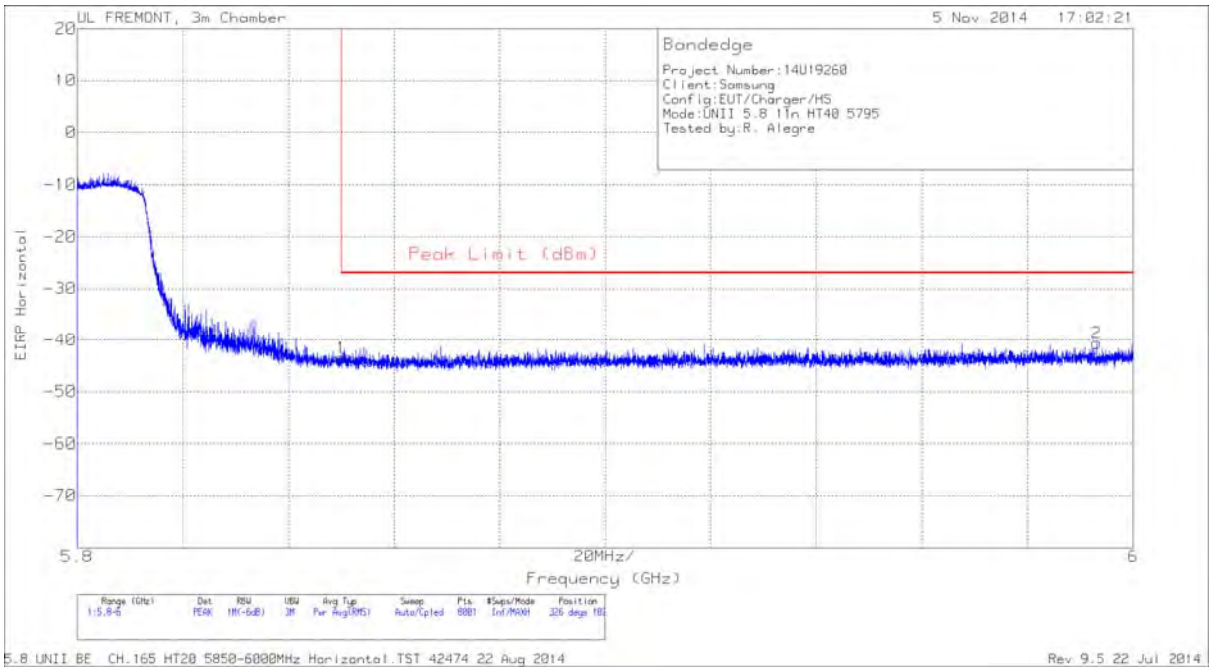


Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL VERTICAL



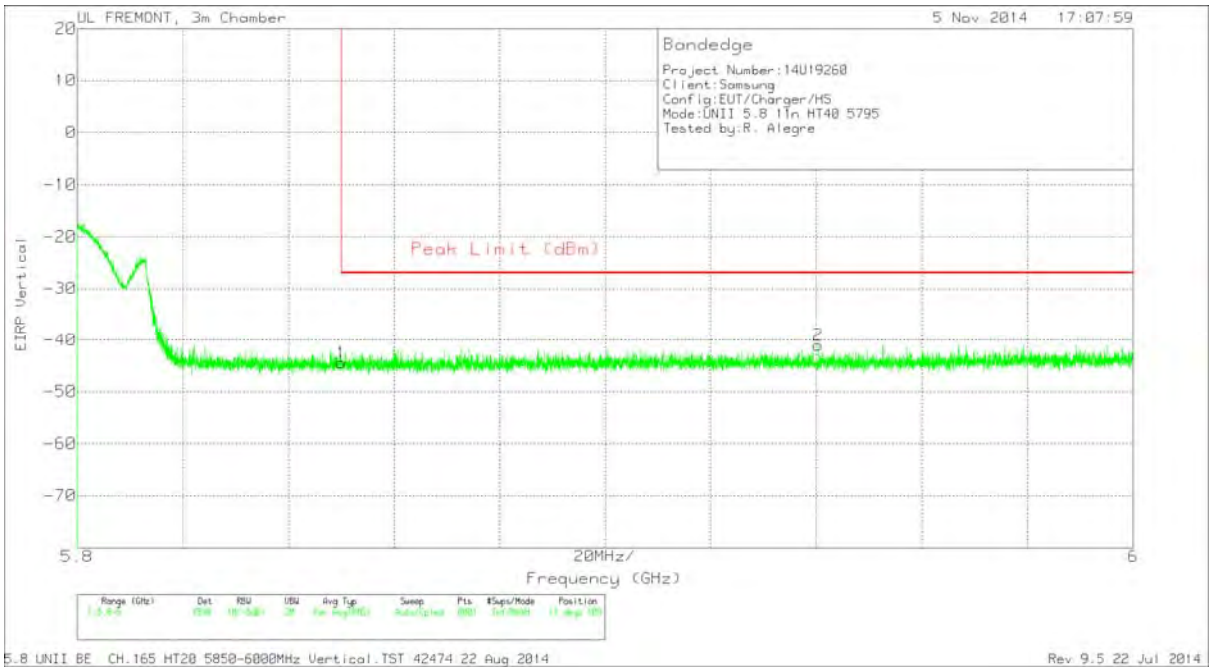
Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.



Note: above table is from pre-scan data and data table showing final data.

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-69	PK	35	-21.3	11.8	-43.5	-27	-16.5	326	102	H
2	5.993	-66.81	PK	35.3	-20.9	11.8	-40.61	-27	-13.61	326	102	H

PK - Peak detector



Note: above table is from pre-scan data and data table showing final data.

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-69.95	PK	35	-21.3	11.8	-44.45	-27	-17.45	11	109	V
2	5.94	-67.11	PK	35.2	-20.9	11.8	-41.01	-27	-14.01	11	109	V

PK - Peak detector

LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 1.332	32.9	PK	29.9	-33.5	0	29.3	-	-	74	-44.7	-	-	0-360	200	H
4	* 4.081	31.85	PK	33.5	-31.2	0	34.15	-	-	74	-39.85	-	-	0-360	100	H
1	* 1.318	32.94	PK	30	-33.6	0	29.34	-	-	74	-44.66	-	-	0-360	100	V
3	* 4.589	32.02	PK	34	-30.5	0	35.52	-	-	74	-38.48	-	-	0-360	200	V
5	* 12.019	29.34	PK	39.1	-26.1	0	42.34	-	-	74	-31.66	-	-	0-360	100	H
6	* 11.928	29.19	PK	39	-26.2	0	41.99	-	-	74	-32.01	-	-	0-360	200	V

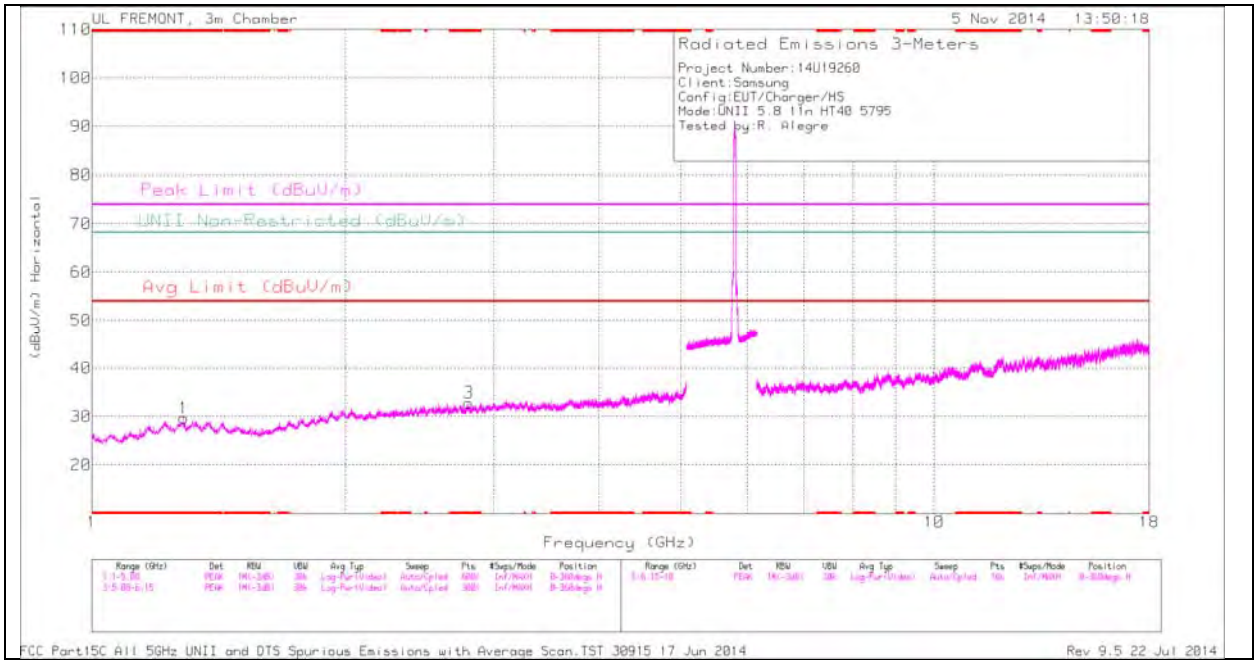
PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 12.018	37.13	PK1	39.1	-26.1	0	50.13	-	-	74	-23.87	-	-	0	100	H
* 12.021	25.66	AD1	39.1	-26.1	.3	38.96	54	-15.04	-	-	-	-	0	100	H

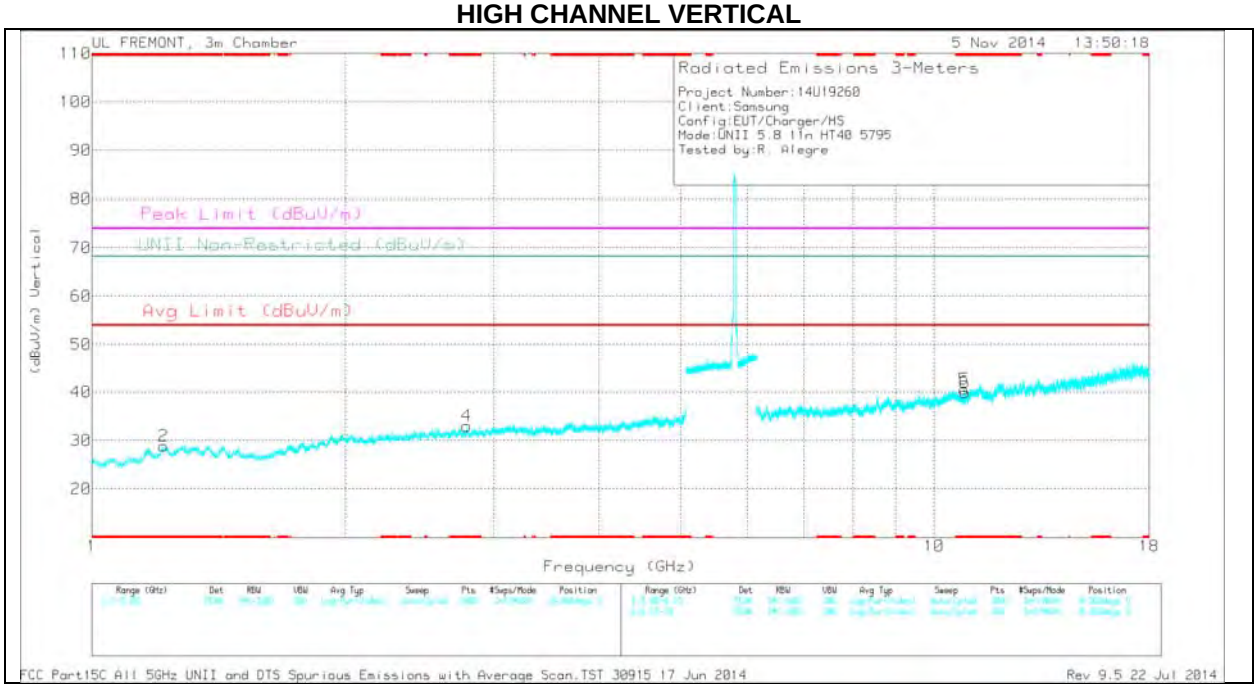
FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

HIGH CHANNEL HORIZONTAL



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

HIGH CHANNEL VERTICAL



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

HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ 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	* 1.285	33.18	PK	30.1	-33.6	0	29.68	-	-	74	-44.32	-	-	0-360	200	H
3	* 2.799	32.54	PK	32.7	-32.4	0	32.84	-	-	74	-41.16	-	-	0-360	100	H
2	* 1.216	32.68	PK	29.4	-33.2	0	28.88	-	-	74	-45.12	-	-	0-360	200	V
4	* 2.787	32.68	PK	32.7	-32.4	0	32.98	-	-	74	-41.02	-	-	0-360	100	V
5	* 10.861	28.09	PK	37.9	-25.4	0	40.59	-	-	74	-33.41	-	-	0-360	100	V
6	* 10.877	27.73	PK	37.9	-25.7	0	39.93	-	-	74	-34.07	-	-	0-360	200	V

PK - Peak detector

RADIATED EMISSIONS

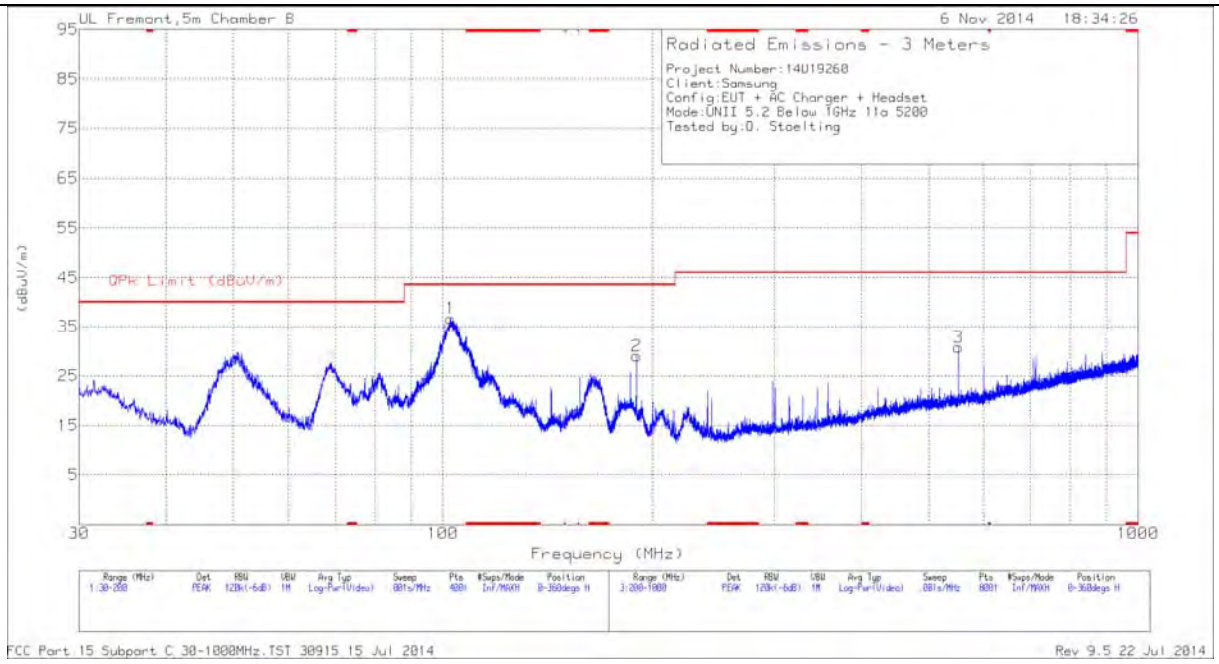
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 10.861	36.95	PK1	37.9	-25.4	0	49.45	-	-	74	-24.55	-	-	3	100	V
* 10.86	25.66	AD1	37.9	-25.4	.3	38.46	54	-15.54	-	-	-	-	3	100	V

FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 17 Jun 2014

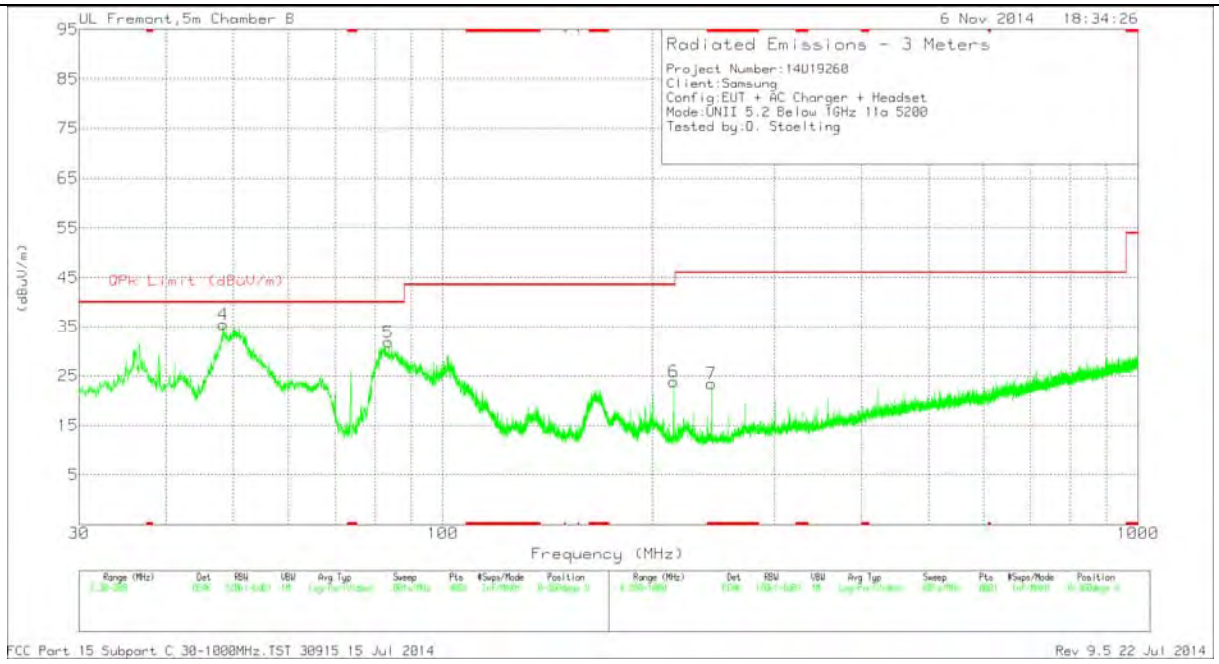
12. TRANSMITTER BELOW 1 GHz

SPURIOUS EMISSIONS 30 TO 1000 MHz (5.3 GHz BAND WORST-CASE CONFIGURATION)

HORIZONTAL PLOT



VERTICAL PLOT



Note: --

BELOW 1 GHz TABLE

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T243 (dB/m)	Amp/Cbl (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
7	* 243.4	38.09	PK	11.7	-26.4	0	23.39	46.02	-22.63	0-360	101	V
4	48.36	55.33	PK	8.7	-28.5	0	35.53	40	-4.47	0-360	101	V
5	83.5925	52.63	PK	7.4	-28.2	0	31.83	40	-8.17	0-360	101	V
1	102.675	53.81	PK	10.9	-28	0	36.71	43.52	-6.81	0-360	200	H
2	189.8425	44.93	PK	11.1	-27	0	29.03	43.52	-14.49	0-360	400	H
6	214.8	40.01	PK	10.6	-26.8	0	23.81	43.52	-19.71	0-360	200	V
3	552	38.26	PK	18.1	-25.6	0	30.76	46.02	-15.26	0-360	200	H

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

PK - Peak detector

Note: --

13. AC POWER LINE CONDUCTED EMISSIONS

LIMITS AND PROCEDURE

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.

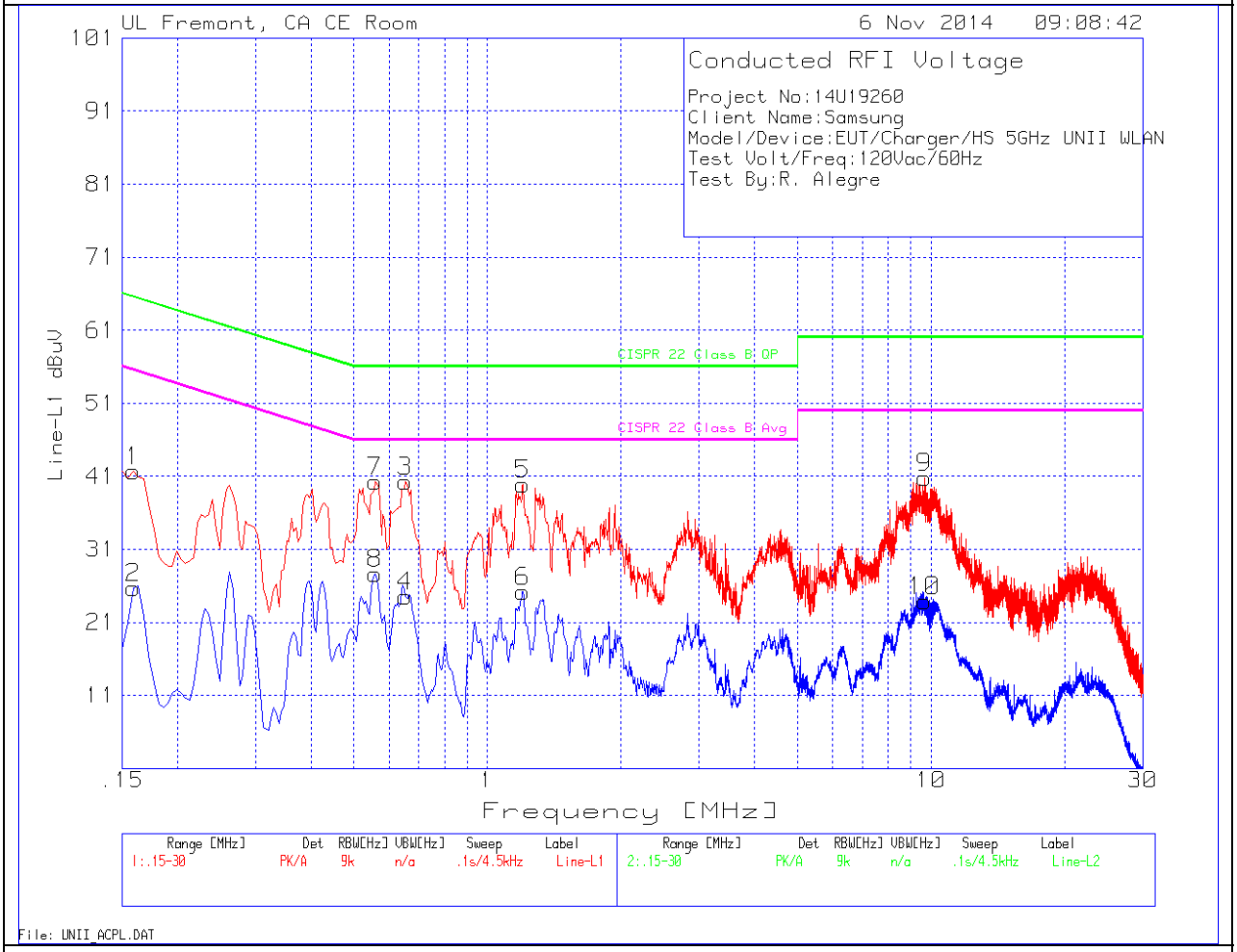
TEST PROCEDURE

ANSI C63.4 - 2009

RESULTS

6 WORST EMISSIONS

LINE 1 PLOT

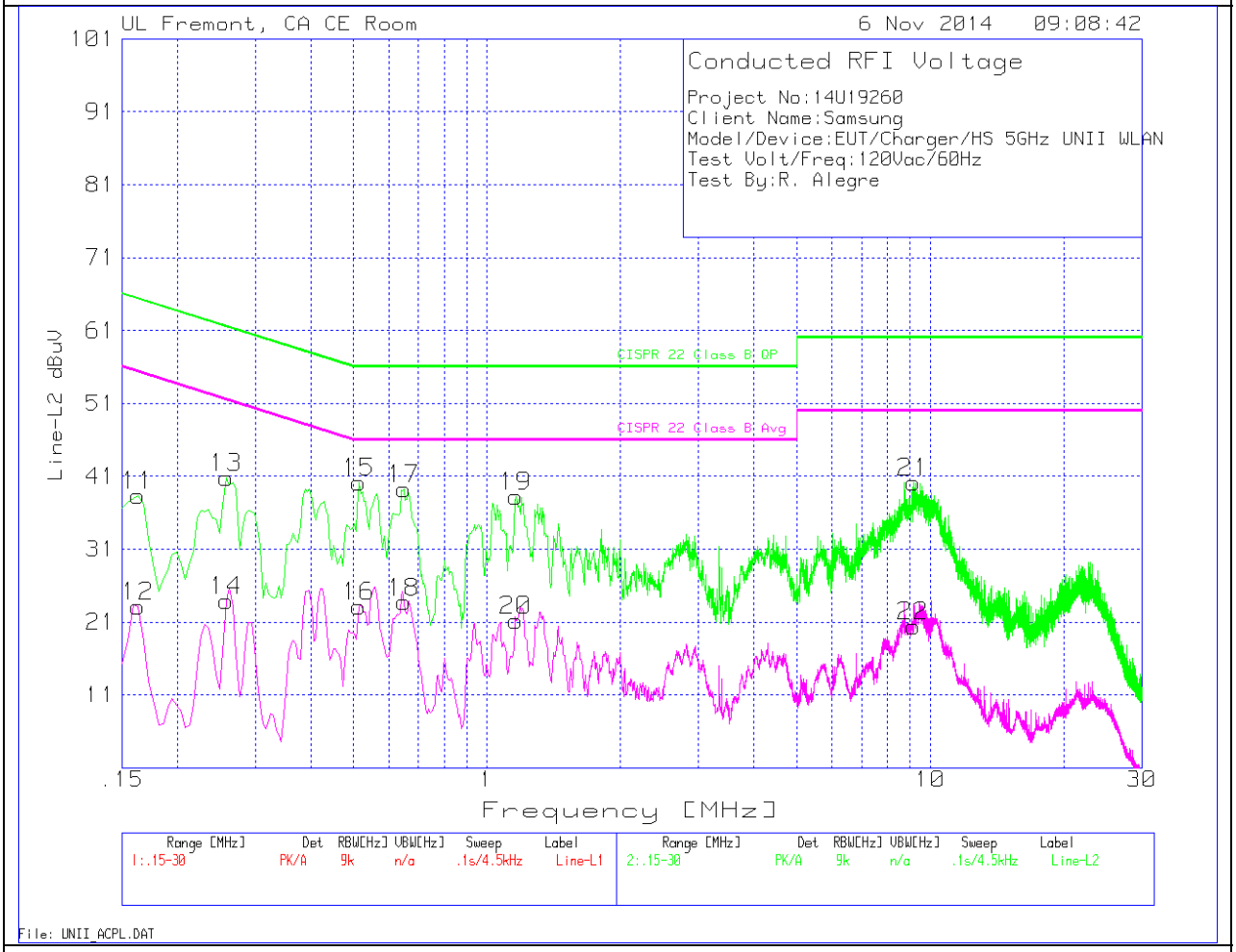


LINE 1 DATA

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	.159	40.42	PK	1.3	0	41.72	65.5	-23.78	-	-
2	.159	24.44	Av	1.3	0	25.74	-	-	55.5	-29.76
7	.5595	39.94	PK	.3	0	40.24	56	-15.76	-	-
8	.5595	27.37	Av	.3	0	27.67	-	-	46	-18.33
3	.654	39.98	PK	.3	0	40.28	56	-15.72	-	-
4	.654	24.21	Av	.3	0	24.51	-	-	46	-21.49
5	1.203	39.68	PK	.2	0	39.88	56	-16.12	-	-
6	1.203	25	Av	.2	0	25.2	-	-	46	-20.8
9	9.6495	40.39	PK	.2	.2	40.79	60	-19.21	-	-
10	9.6495	23.46	Av	.2	.2	23.86	-	-	50	-26.14

LINE 2 PLOT



LINE 2 DATA

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)
11	.1635	37.04	PK	1.3	0	38.34	65.3	-26.96	-	-
12	.1635	21.79	Av	1.3	0	23.09	-	-	55.3	-32.21
13	.258	40.1	PK	.7	0	40.8	61.5	-20.7	-	-
14	.258	23.15	Av	.7	0	23.85	-	-	51.5	-27.65
15	.5145	39.72	PK	.4	0	40.12	56	-15.88	-	-
16	.5145	22.76	Av	.4	0	23.16	-	-	46	-22.84
17	.6495	38.93	PK	.3	0	39.23	56	-16.77	-	-
18	.6495	23.41	Av	.3	0	23.71	-	-	46	-22.29
19	1.1625	37.93	PK	.3	0	38.23	56	-17.77	-	-
20	1.1625	20.93	Av	.3	0	21.23	-	-	46	-24.77
21	9.141	39.74	PK	.2	.2	40.14	60	-19.86	-	-
22	9.141	20.02	Av	.2	.2	20.42	-	-	50	-29.58

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 7 A9.4 (b) (ii) **Channel Availability Check Time:** …

Additional requirements for the band 5600-5650 MHz: Until further notice, devices subject to this Section shall not be capable of transmitting in the band 5600-5650 MHz, so that Environment Canada weather radars operating in this band are protected.

FCC

§15.407 (h) and FCC 06-96 APPENDIX “COMPLIANCE MEASUREMENT PROCEDURES FOR UNLICENSED-NATIONAL INFORMATION INFRASTRUCTURE DEVCIES OPERATING IN THE 5250-5350 MHz AND 5470-5725 MHz BANDS INCORPORATING DYNAMIC FREQUENCY SELECTION”.

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
Uniform Spreading	Yes	Not required	Not required

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

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

Maximum Transmit Power	Value (see note)
≥ 200 milliwatt	-64 dBm
< 200 milliwatt	-62 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.		

Table 4: DFS Response requirement values

Parameter	Value
Non-occupancy period	30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds
Channel Closing Transmission Time	200 milliseconds + approx. 60 milliseconds over remaining 10 second period
The instant that the *Channel Move Time* and the *Channel Closing Transmission Time* begins is as follows: For the Short pulse radar Test Signals this instant is the end of the *Burst*. For the Frequency Hopping radar Test Signal, this instant is the end of the last radar burst generated. For the Long Pulse radar Test Signal this instant is the end of the 12-second period defining the radar transmission. 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 channel changes (an aggregate of approximately 60 milliseconds) during the remainder of the 10-second period. The aggregate duration of control signals will not count quiet periods in between transmissions.	

Table 5 – Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (Microseconds)	PRI (Microseconds)	Pulses	Minimum Percentage of Successful Detection	Minimum Trials
1	1	1428	18	60%	30
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

Table 6 – Long Pulse Radar Test Signal

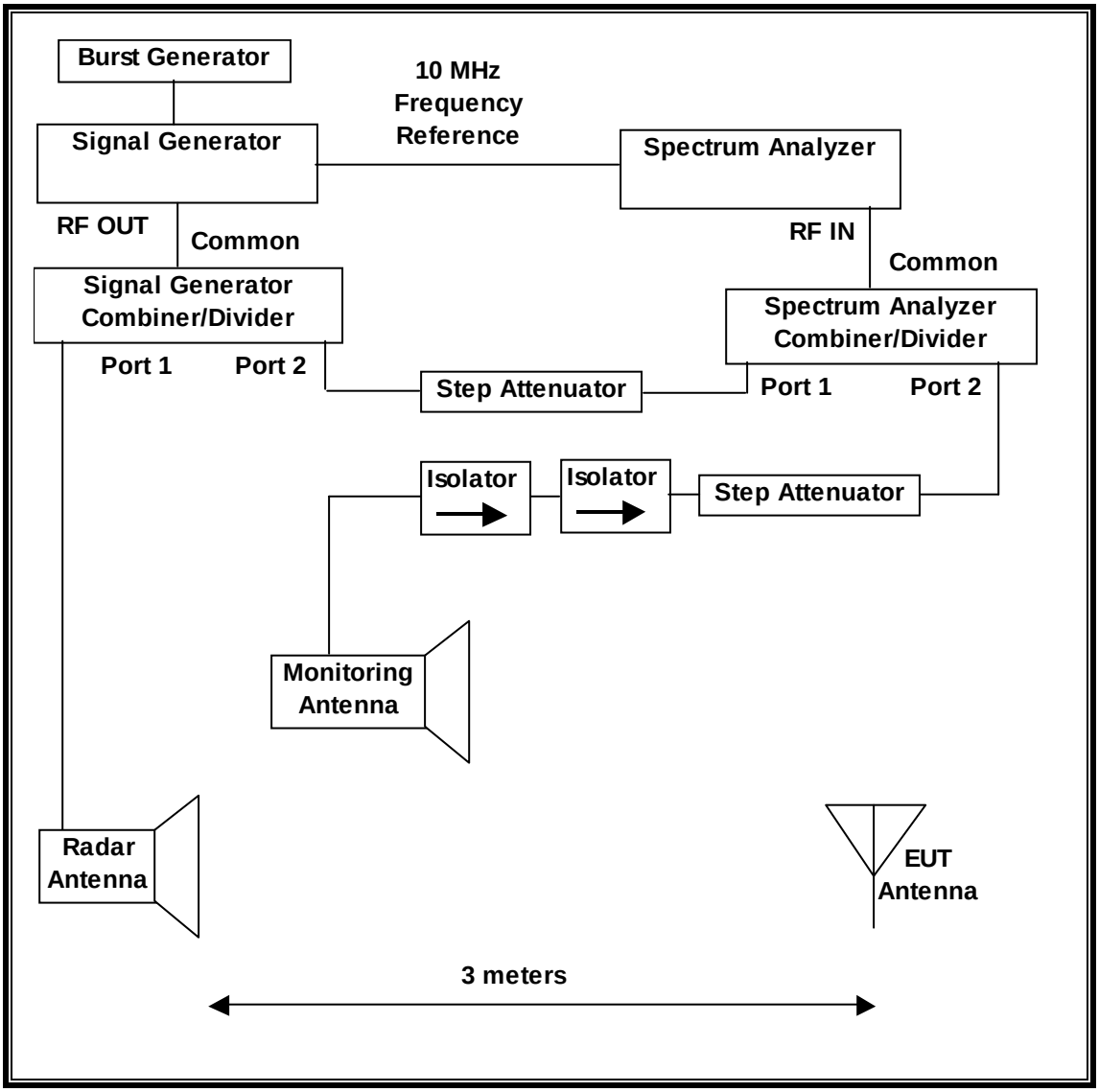
Radar Waveform	Bursts	Pulses per Burst	Pulse Width (µsec)	Chirp Width (MHz)	PRI (µsec)	Minimum Percentage of Successful Detection	Minimum Trials
5	8-20	1-3	50-100	5-20	1000-2000	80%	30

Table 7 – Frequency Hopping Radar Test Signal

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

14.1.2. TEST AND MEASUREMENT SYSTEM

RADIATED METHOD SYSTEM BLOCK DIAGRAM



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 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.

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.

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.

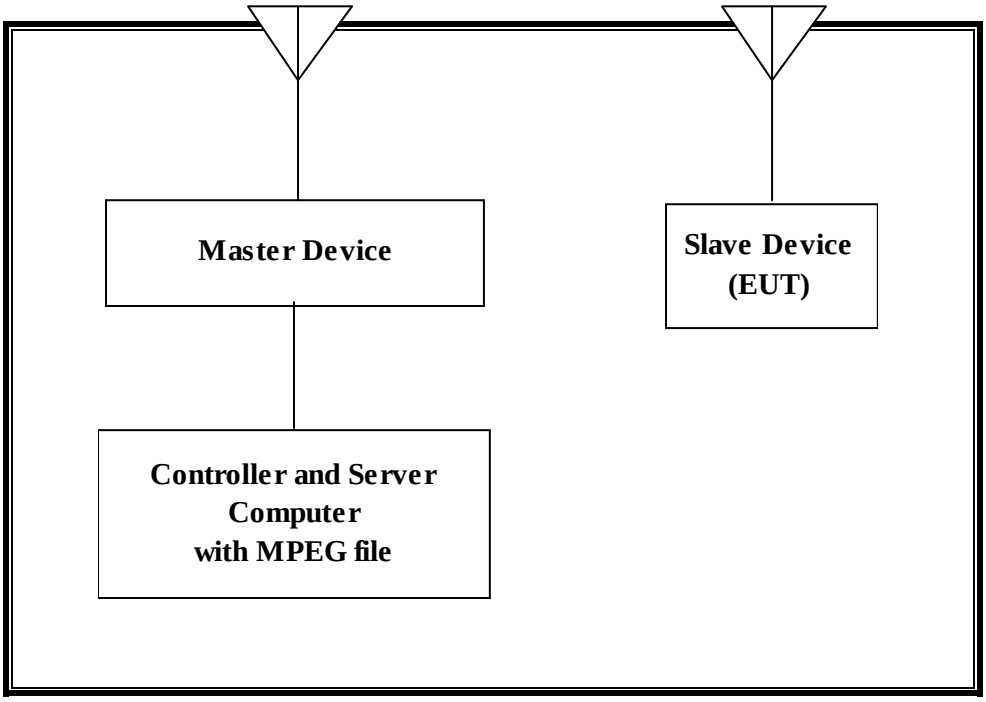
TEST AND MEASUREMENT EQUIPMENT

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

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 1)	Cisco	AIR-CAP3702E-A-K9	FTX181570A6	LDK102087
P.O.E. Injector (Master 1)	Phihong	POE30U-560(G)	PHI170102N2	DoC
Notebook PC (Controller/Server)	Dell	PP18L	10657517725	DoC
AC Adapter (Controller/Server PC)	Dell	LA65SN0-00	CN-ODF263-71615-6AU-1019	DoC

14.1.4. DESCRIPTION OF EUT

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

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

The EUT is a Slave Device without Radar Detection.

The highest power level within these bands is 14.69 dBm EIRP in the 5250-5350 MHz band and 14.96 dBm EIRP in the 5470-5725 MHz band.

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

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

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

WLAN traffic is generated by streaming the video file TestFile.mp2 “6 ½ Magic Hours” from the Master to the Slave in full motion video mode using the media player with the V2.61 Codec package.

TPC is not required since the maximum EIRP is less than 500 mW (27 dBm).

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

The software installed in the access point is 12.4(25d) JA1.

UNIFORM CHANNEL SPREADING

This requirement is not applicable to Slave radio devices.

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

The Master Device is a Cisco Access Point, FCC ID: LDK102061. The minimum antenna gain for the Master Device is 3.5 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.

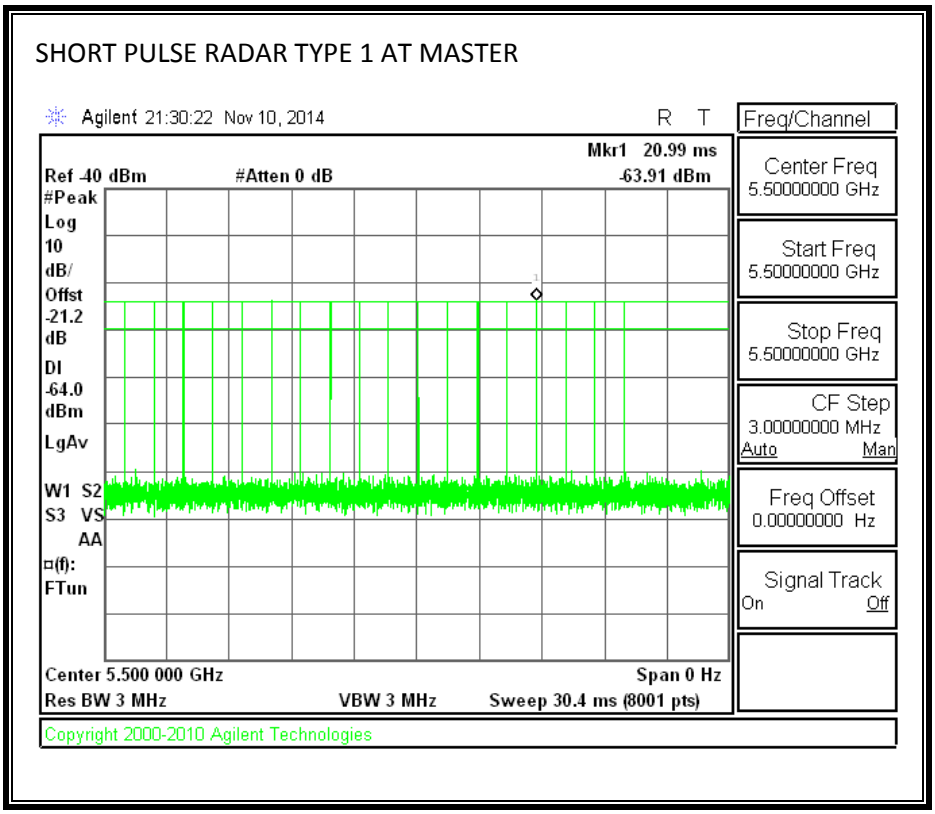
14.2. RESULTS FOR 20 MHz BANDWIDTH

14.2.1. TEST CHANNEL

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

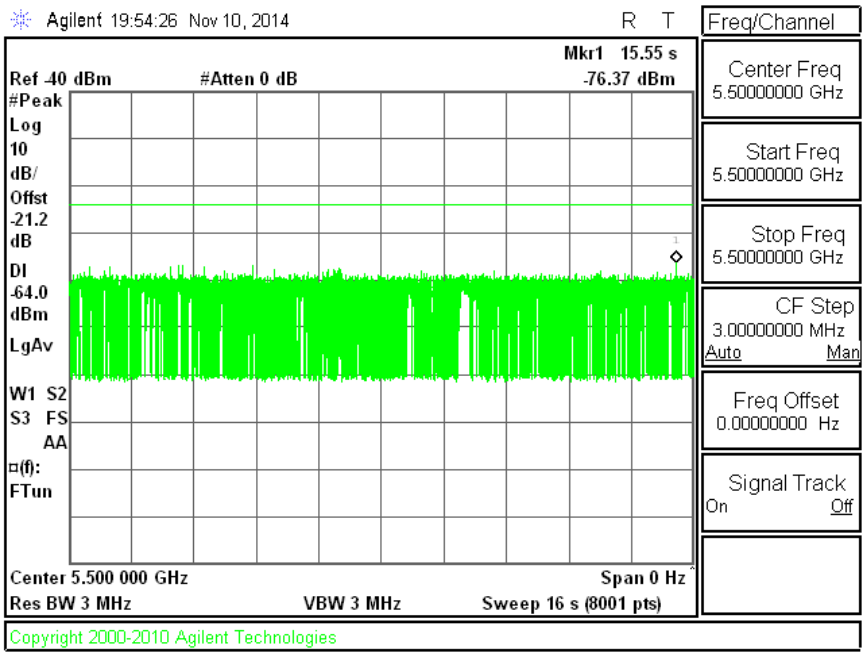
14.2.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM



TRAFFIC

SLAVE TRAFFIC



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)

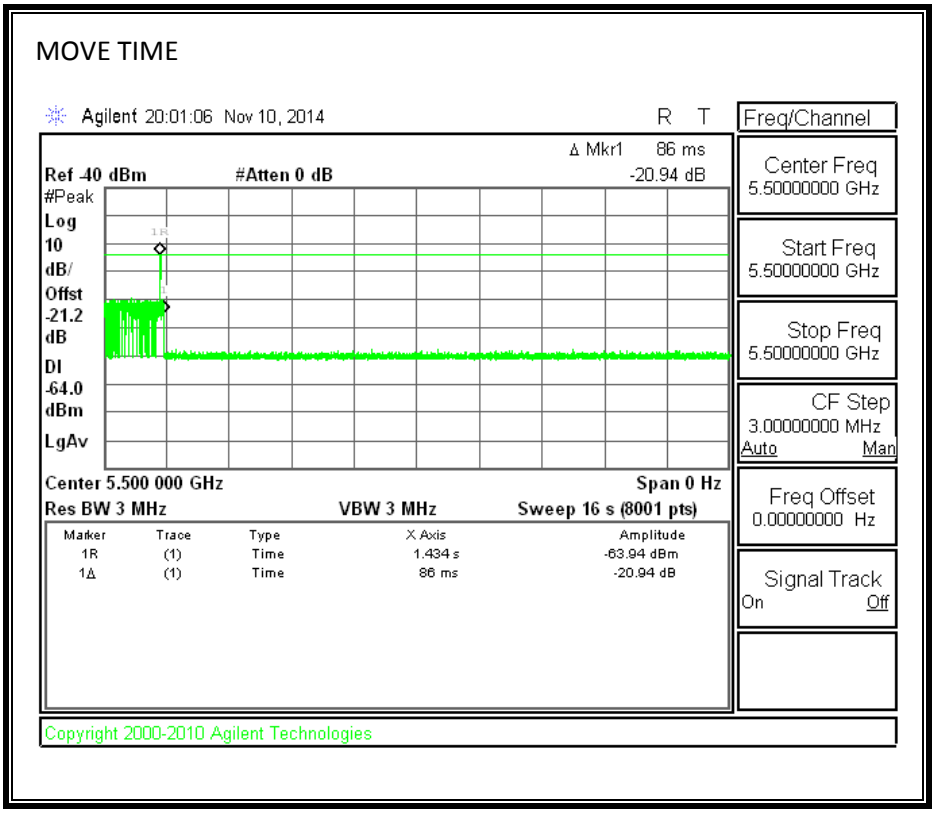
The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

RESULTS

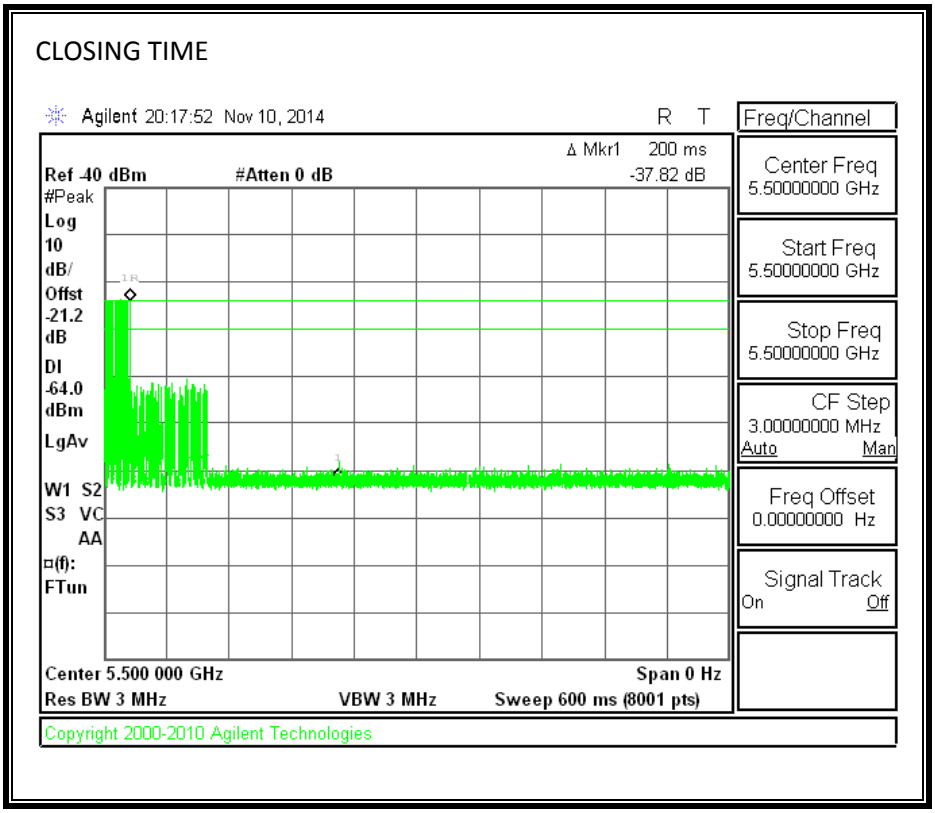
Channel Move Time (sec)	Limit (sec)
0.086	10

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

MOVE TIME



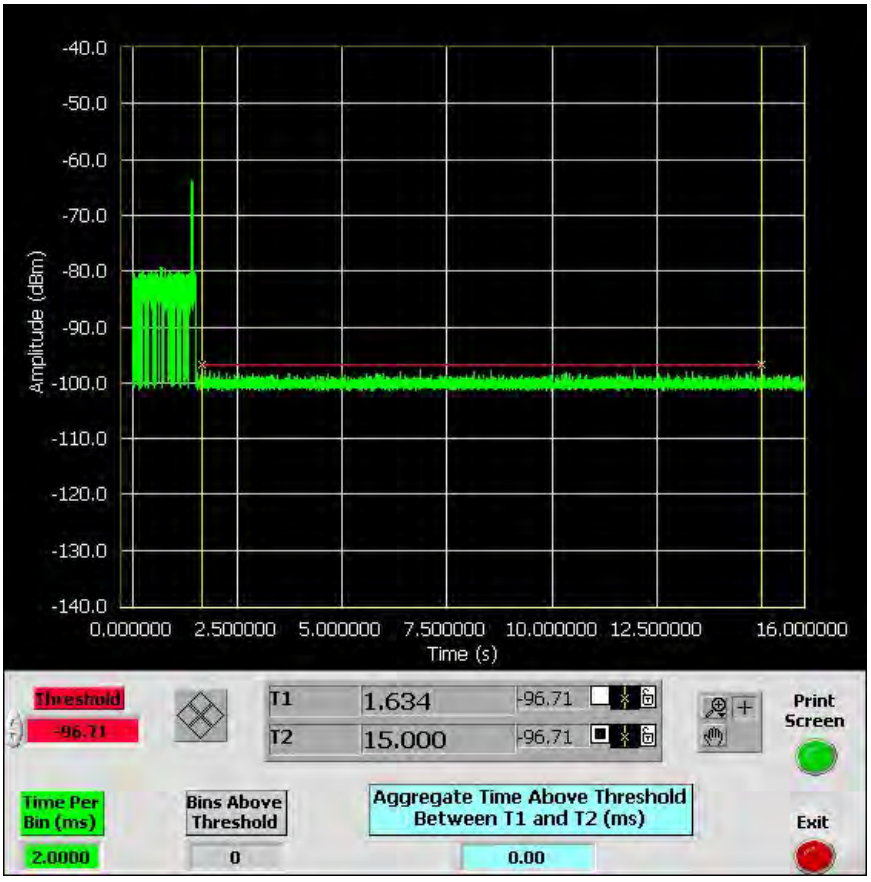
CHANNEL CLOSING TIME



AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.

AGGREGATE CLOSING TIME



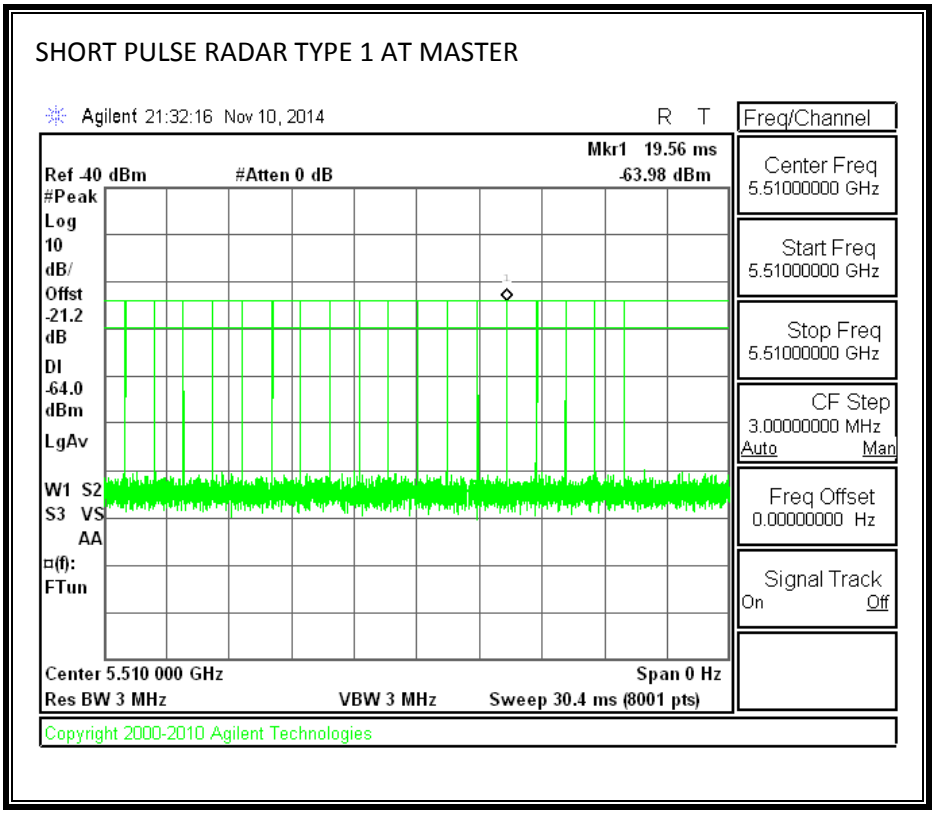
14.3. RESULTS FOR 40 MHz BANDWIDTH

14.3.1. TEST CHANNEL

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

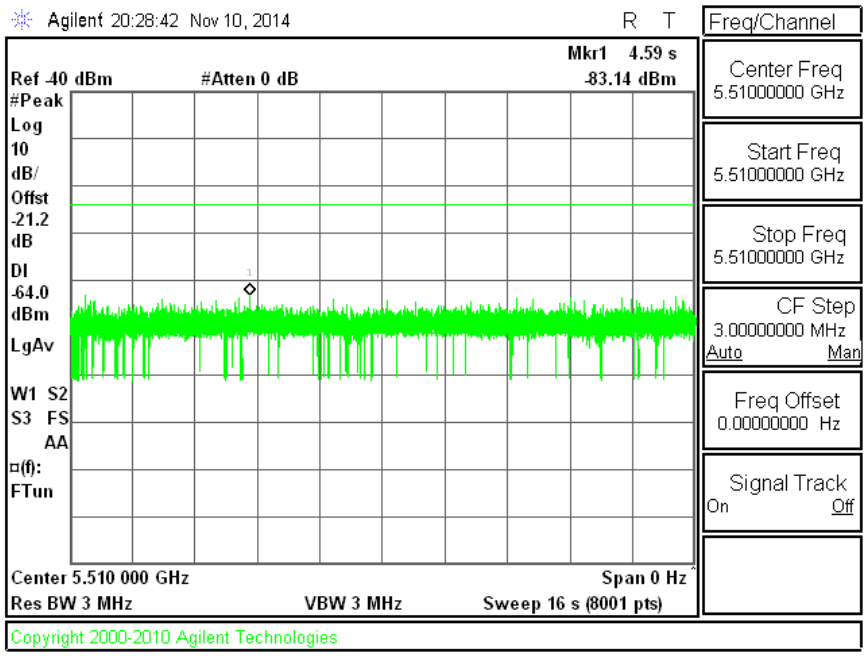
14.3.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM



TRAFFIC

SLAVE TRAFFIC



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)

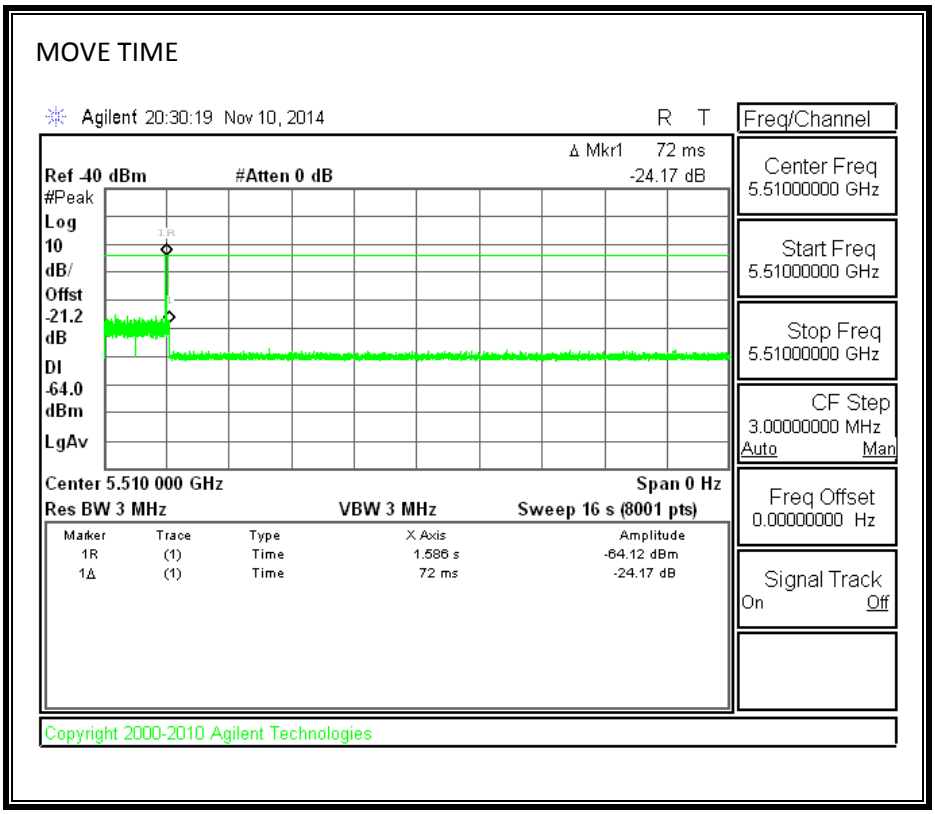
The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

RESULTS

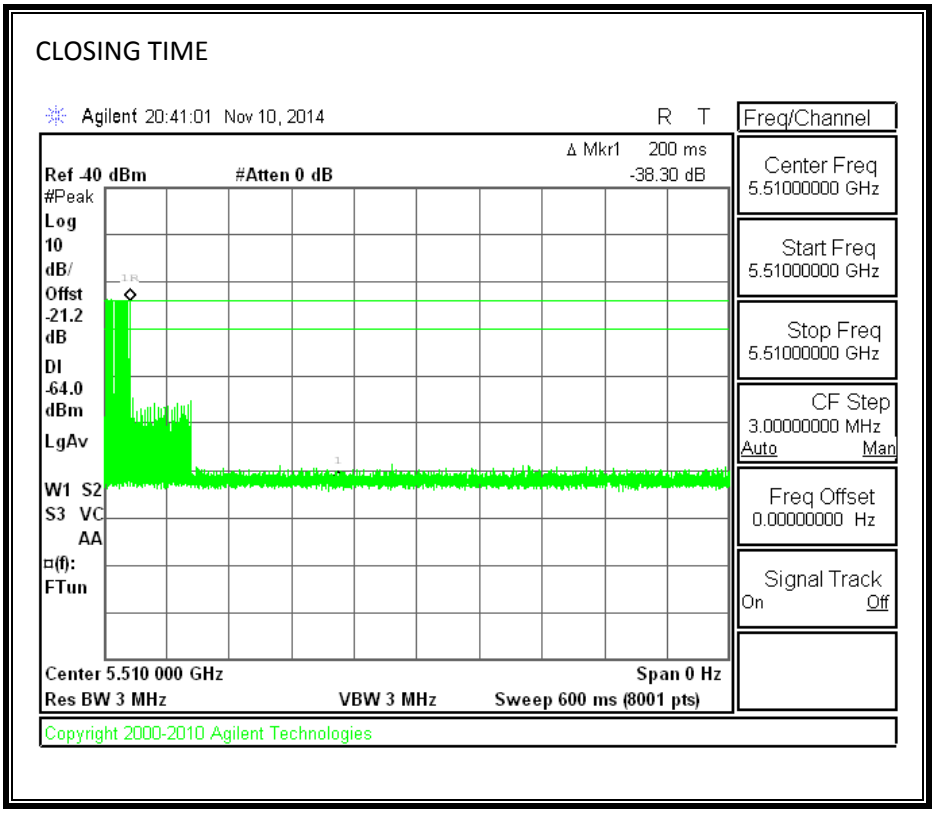
Channel Move Time (sec)	Limit (sec)
0.072	10

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

MOVE TIME



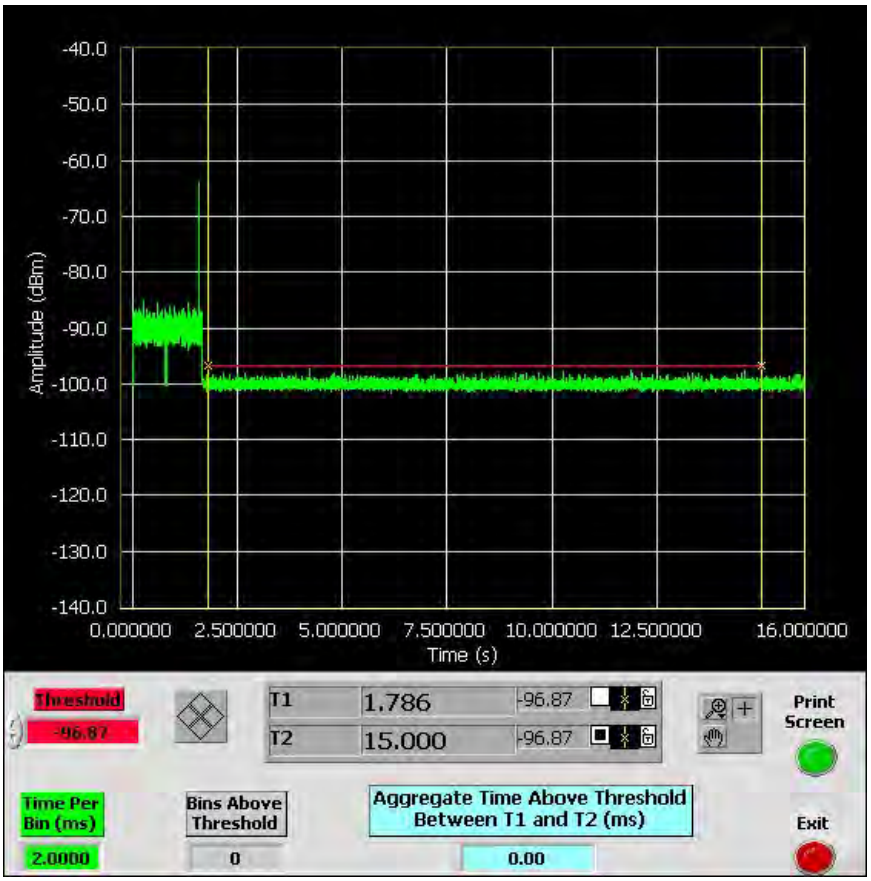
CHANNEL CLOSING TIME



AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.

AGGREGATE CLOSING TIME



14.3.5. NON-OCCUPANCY PERIOD

RESULTS

No EUT transmissions were observed on the test channel during the 30-minute observation time.