



FCC 47 CFR PART 15 SUBPART E

CERTIFICATION TEST REPORT

FOR

GSM/WCDMA Phone + Bluetooth, DTS/UNII a/b/g/n & ANT+

MODEL NUMBER: SM-G7108V

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--	2/5/14	Initial Issue	P. Kim
A	2/14/14	Updated EUT name; equipment list; PPSD limit at page 41; measurement procedure at page 16;	P. Kim

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SAMSUNG ELECTRONICS CO., LTD.
416, MAETAN 3-DONG, YEONGTONG-GU
SUWON-CITY, GYEONGGI-DO, 443-742, SOUTH KOREA

EUT DESCRIPTION: GSM/WCDMA Phone + Bluetooth, DTS/UNII a/b/g/n & ANT+

MODEL: SM-G7108V

SERIAL NUMBER: R38F104LVYK

DATE TESTED: JANUARY 27 – February 5, 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.

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UL Verification Services Inc. By:

Tested By:



PHILIP KIM
WISE PROGRAM MANAGER
UL Verification Services Inc.

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2. TEST METHODOLOGY

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

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <http://www.ccsemc.com>.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 18000 MHz	4.94 dB

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a GSM/WCDMA Phone + Bluetooth, DTS/UNII a/b/g/n & ANT+

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	13.11	20.46
5180-5240	802.11n HT20	10.08	10.19
5190-5230	802.11n HT40	10.11	10.26
5260-5320	802.11a	12.7	18.62
5260-5320	802.11n HT20	10.21	10.50
5270-5310	802.11n HT40	10.36	10.86
5500-5700	802.11a	12.46	17.62
5500-5700	802.11n HT20	10.47	11.14
5510-5670	802.11n HT40	10.86	12.19

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of -0.3 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

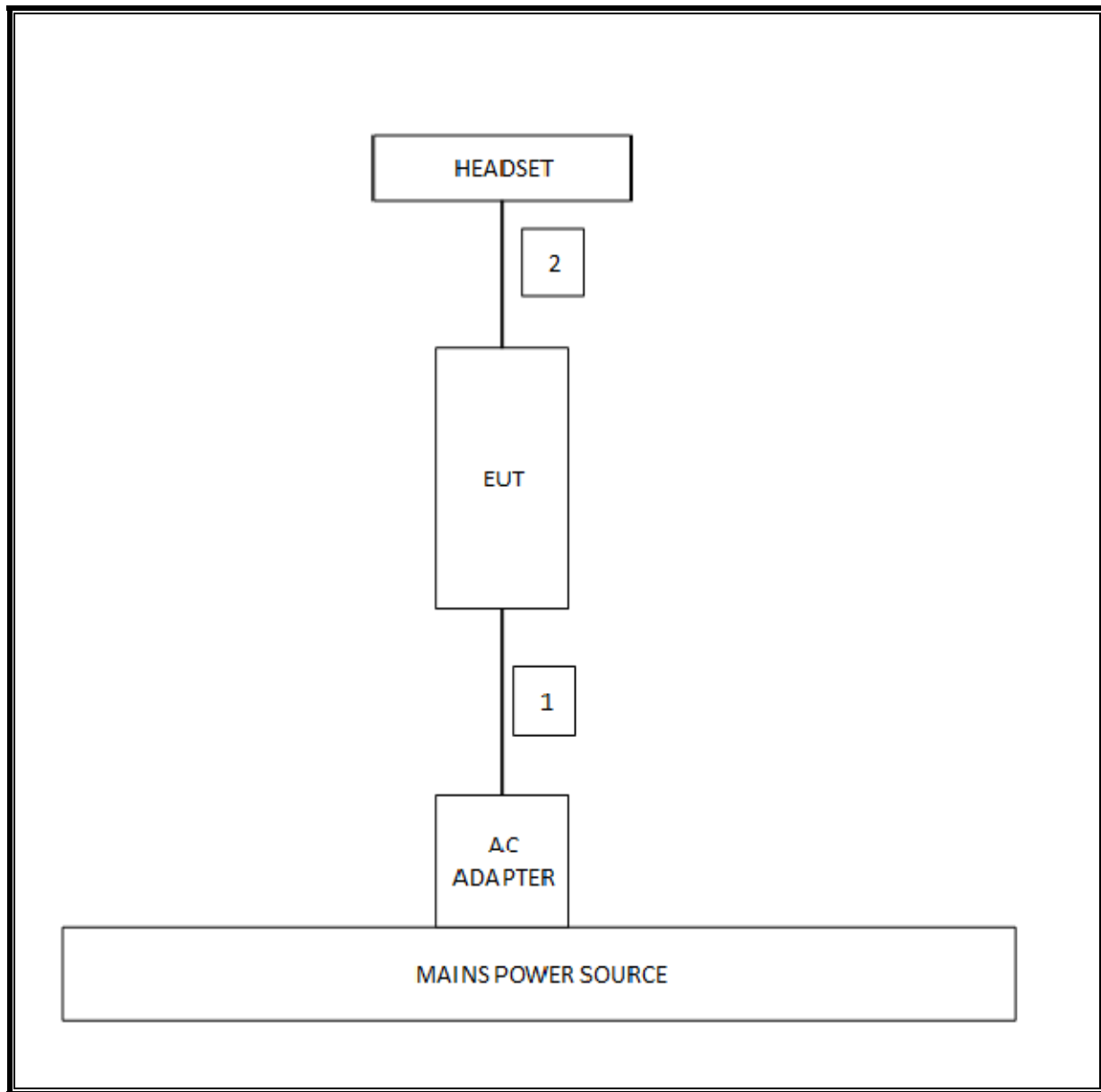
Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	SAMSUNG	FL-027A	N/A	N/A
Earphone	SAMSUNG	FL-027A	N/A	N/A

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.



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

7. SUMMARY TABLE

FCC Part Section	Test Description	Test Limit	Test Condition	Test Result	Worst Case
15.247 (a)	Occupied Band width (26dB)	N/A	Conducted	Pass	36.2 MHz
2.1051, 15.407 (b)	Band Edge / Conducted Spurious Emission	54dBuV/m (avg)		Pass	49.86dBuV/m
15.407 (a)(1)	TX Cond. Power 5.15-2.25	<17dBm or 4+10Log(OBW)		Pass	13.11dBm
15.407 (a)(2)	TX Cond. Power 5.25-5.35 & 5.47-5.725	<24dBm or 11+10Log(OBW)		Pass	12.46dBm
15.407 (a)(5)	PSD	<8dBm		Pass	1.80dBm
15.407 (a)(6)	Peak Excursion Ratio	13dB		Pass	8.89dB
15.207 (a)	AC Power Line conducted emissions	Section 10	Radiated	Pass	56.13 dBuV
15.407 (b) & 15.209	Radiated Spurious Emission	< 54dBuV/m		Pass	48.042 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.

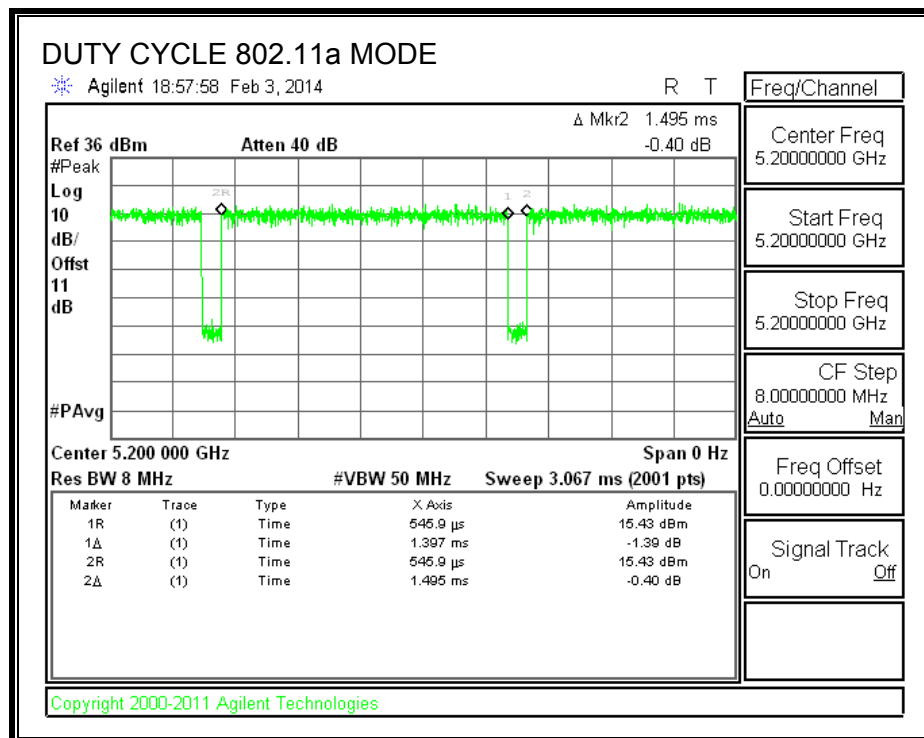
PROCEDURE

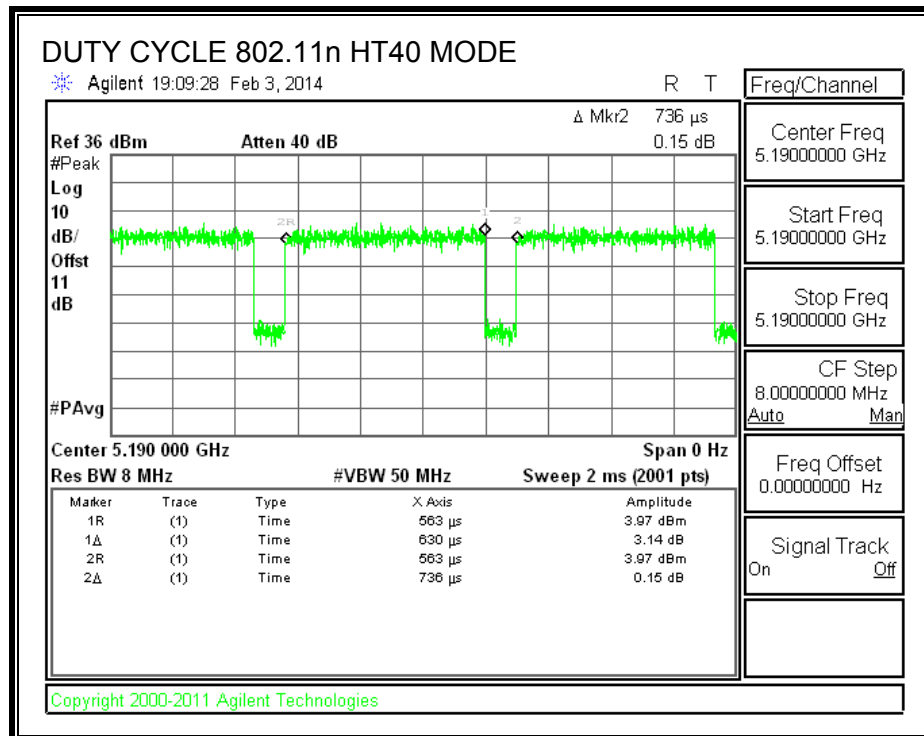
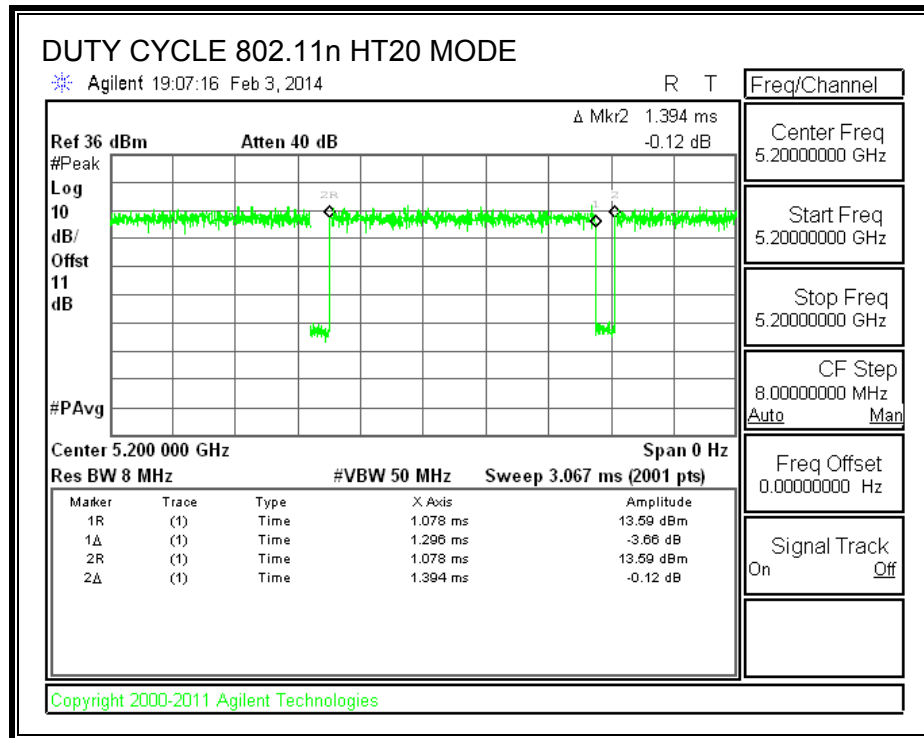
KDB 789033 Zero-Span Spectrum Analyzer Method.

8.1. ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)
802.11a	1.40	1.50	0.934	93.4%	0.29	0.716
802.11ac HT20	1.30	1	0.930	93.0%	0.32	0.772
802.11ac HT40	0.63	1	0.856	85.6%	0.68	1.587

8.2. DUTY CYCLE PLOTS





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.

The Duty Cycle is less than 98% and consistent, KDB 789033 UNII part H) 6) d) Method VB for radiated harmonic test

10. ANTENNA PORT TEST RESULTS

10.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

10.1.1. 802.11a MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5180	23.75
Mid	5200	23.20
High	5240	23.85
Worst		23.85

10.1.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5180	22.90
Mid	5200	23.20
High	5240	23.35
Worst		23.35

10.1.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5190	44.800
Mid	5230	44.500
Worst		44.800

10.1.4. 802.11a MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5260	23.60
Mid	5300	23.70
High	5320	22.95
Worst		23.70

10.1.5. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5260	23.05
Mid	5300	23.00
High	5320	23.00
Worst		23.05

10.1.6. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5270	44.3
High	5310	44.7
Worst		44.7

10.1.7. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5500	24.050
Mid	5580	22.950
High	5700	22.850
Worst		24.050

10.1.8. 802.11n HT20 MODE IN THE 5.5 GHz BAND

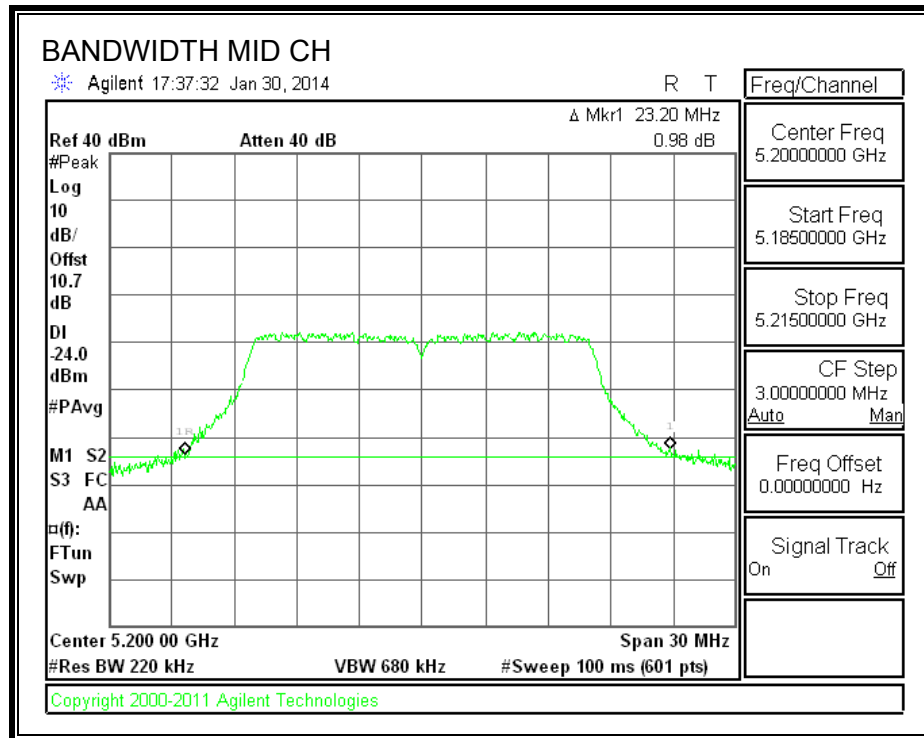
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5500	24.600
Mid	5580	23.450
High	5700	23.800
Worst		24.600

10.1.9. 802.11n HT40 MODE IN THE 5.5 GHz BAND

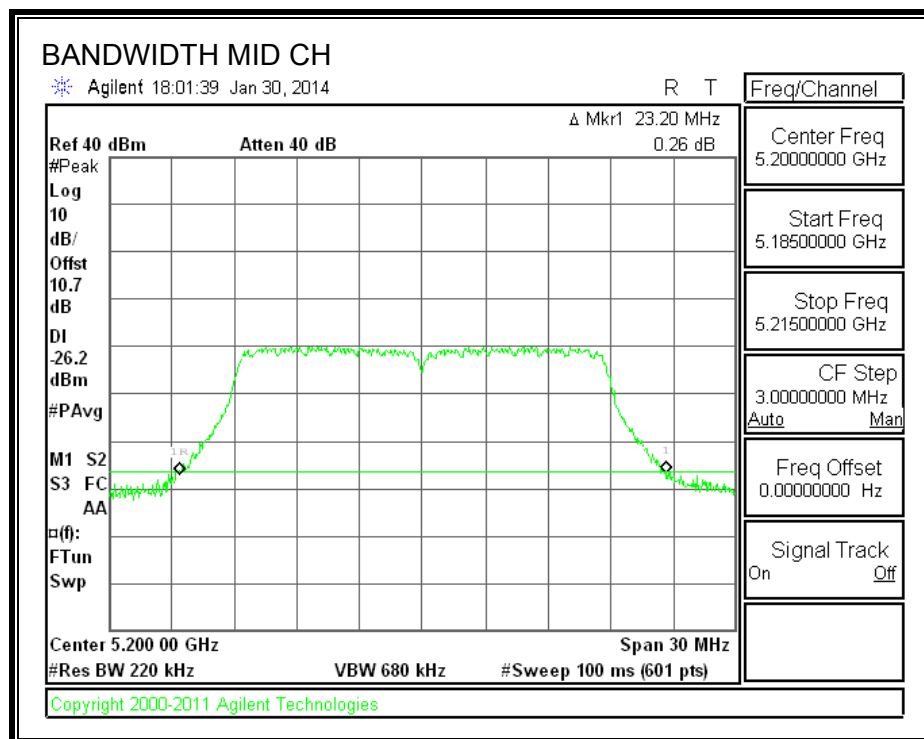
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5510	46.70
Mid	5550	45.97
High	5670	45.77
Worst		46.70

10.1.10. PLOTS

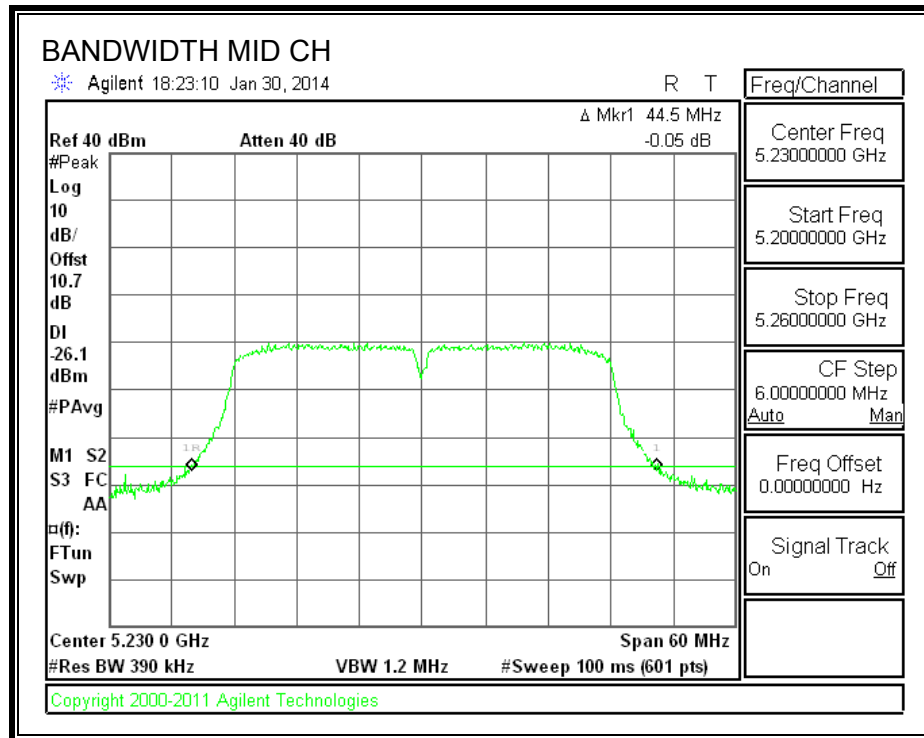
802.11a 5.2G 26 dB BANDWIDTH



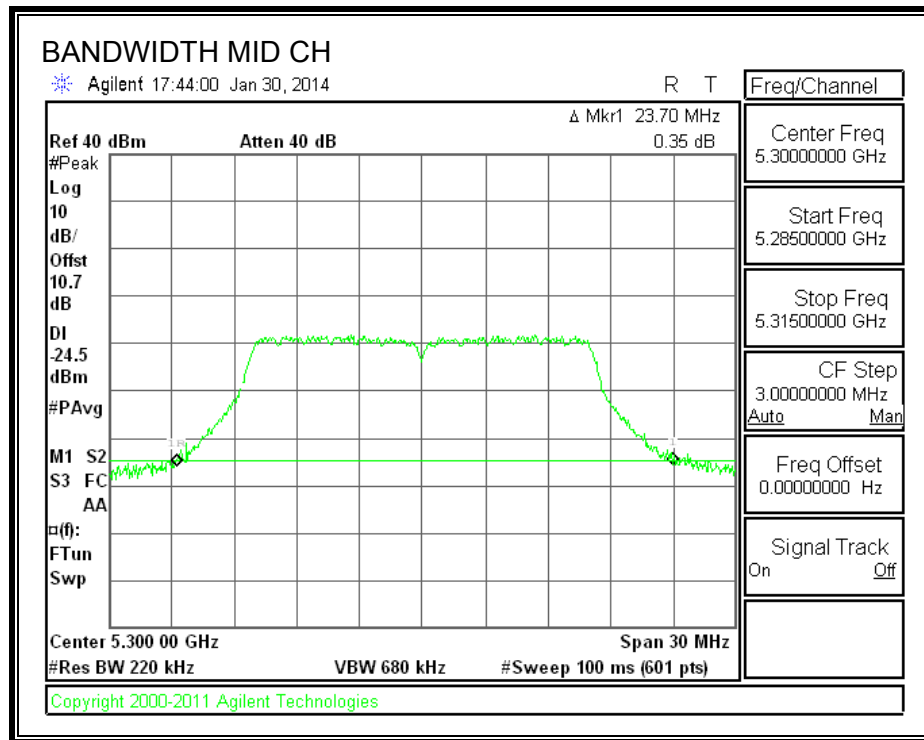
802.11n HT20 5.2G 26 dB BANDWIDTH



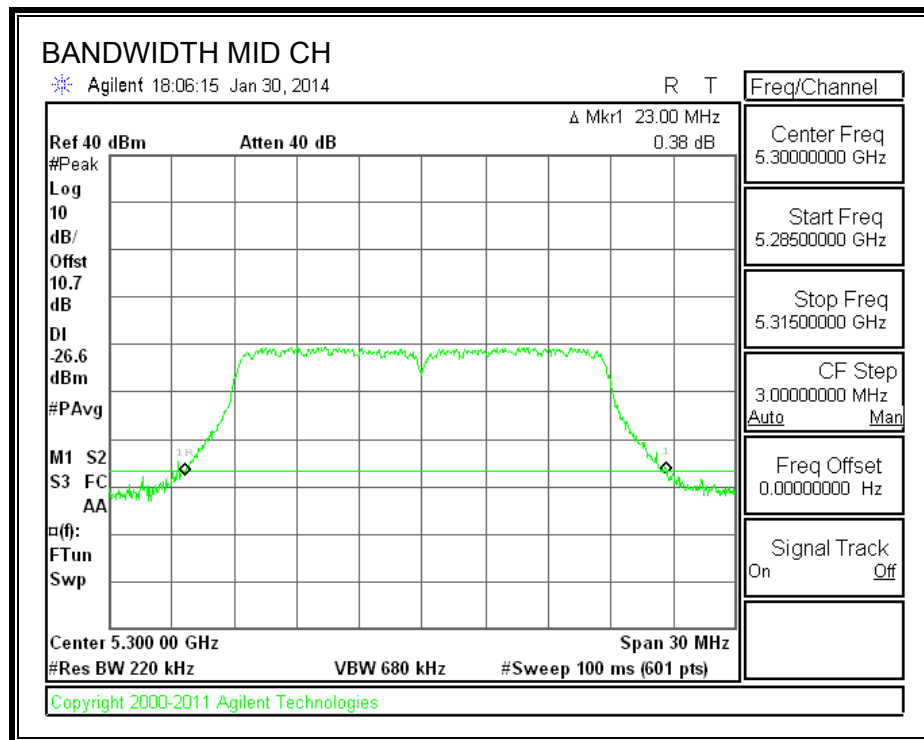
802.11n HT40 5.2G 26 dB BANDWIDTH

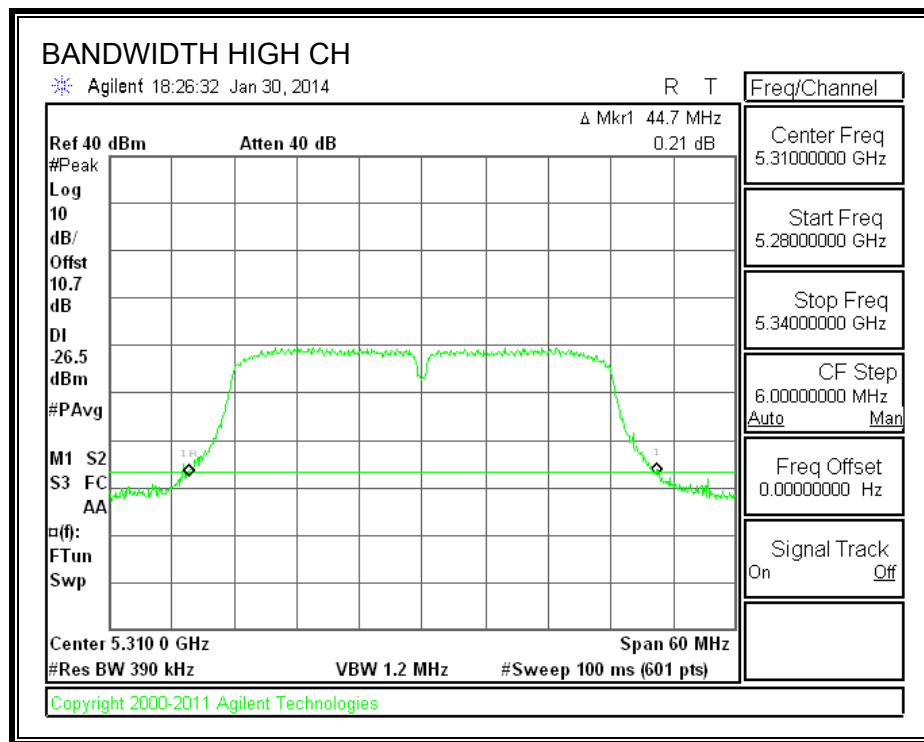


802.11a 5.3G 26 dB BANDWIDTH

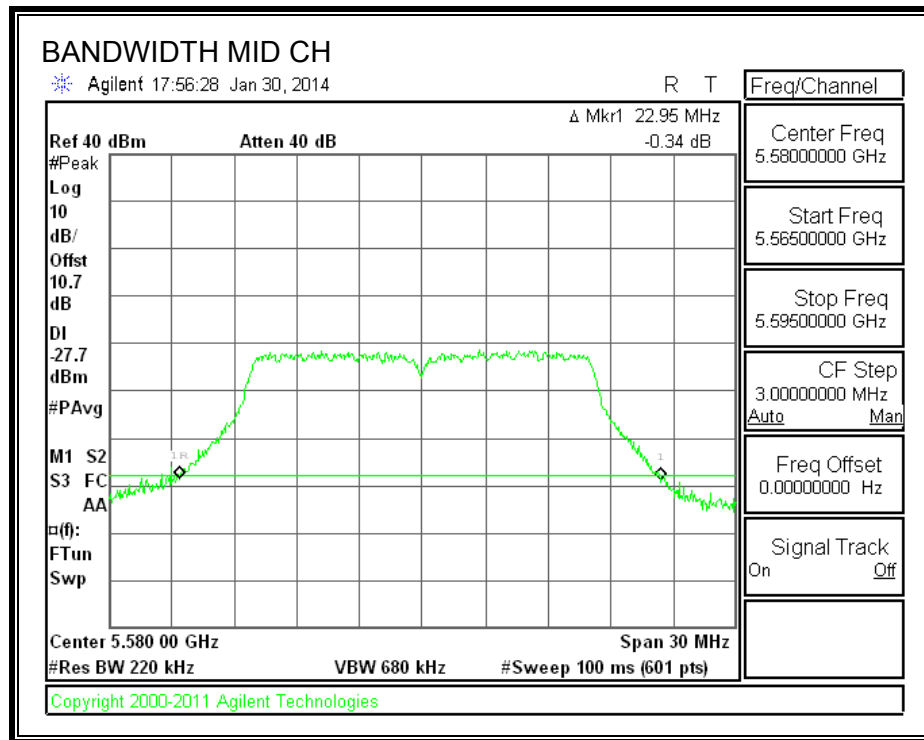


802.11n HT20 5.3G 26 dB BANDWIDTH

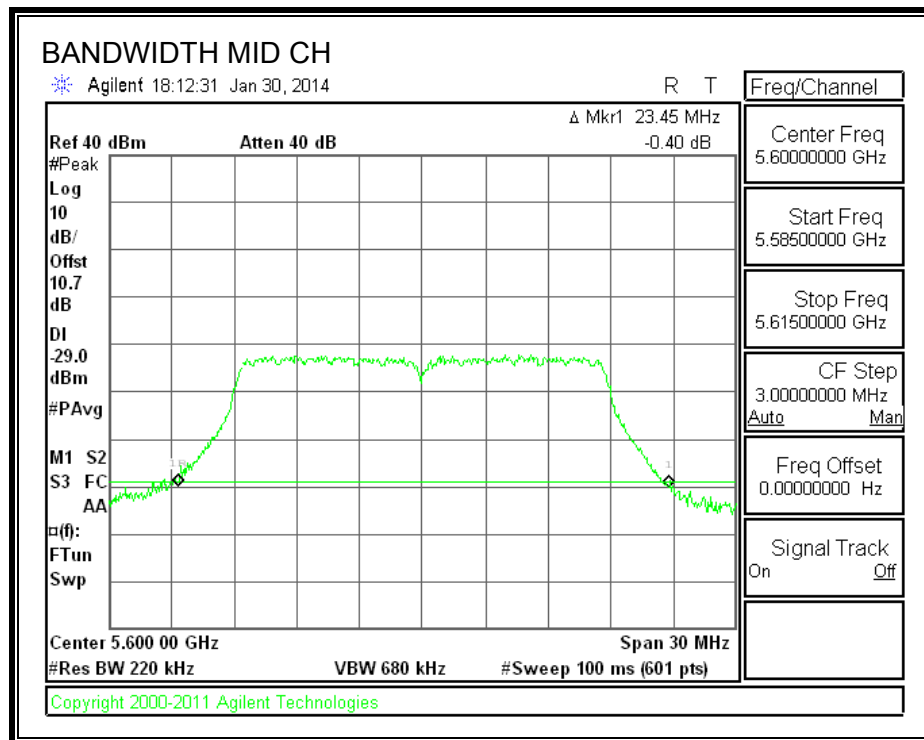


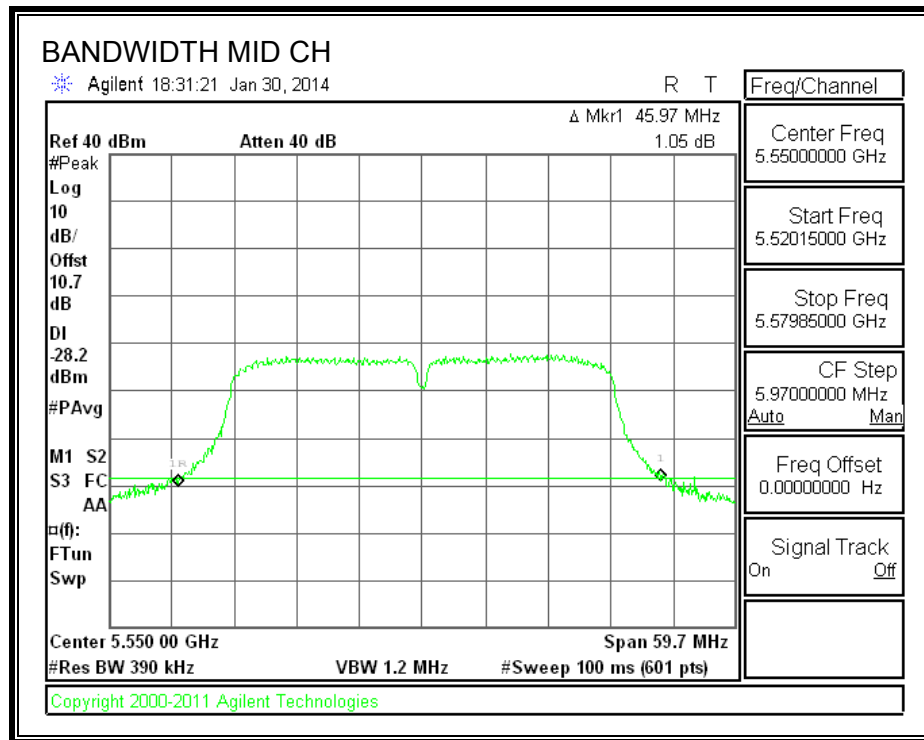


802.11a 5.5G 26 dB BANDWIDTH



802.11n HT20 5.5G 26 dB BANDWIDTH





10.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

10.2.1. 802.11a MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5180	16.57
Mid	5200	16.57
High	5240	16.56
Worst		16.57

10.2.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5180	17.89
Mid	5200	17.89
High	5240	17.89
Worst		17.89

10.2.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5190	36.194
Mid	5230	36.228
Worst		36.228

10.2.4. 802.11a MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5260	16.56
Mid	5300	16.56
High	5320	16.73
Worst		16.73

10.2.5. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5260	17.88
Mid	5300	17.69
High	5320	17.89
Worst		17.89

10.2.6. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5270	36.2
High	5310	36.2
Worst		36.2

10.2.7. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5500	16.670
Mid	5580	16.609
High	5700	16.750
Worst		16.750

10.2.8. 802.11n HT20 MODE IN THE 5.5 GHz BAND

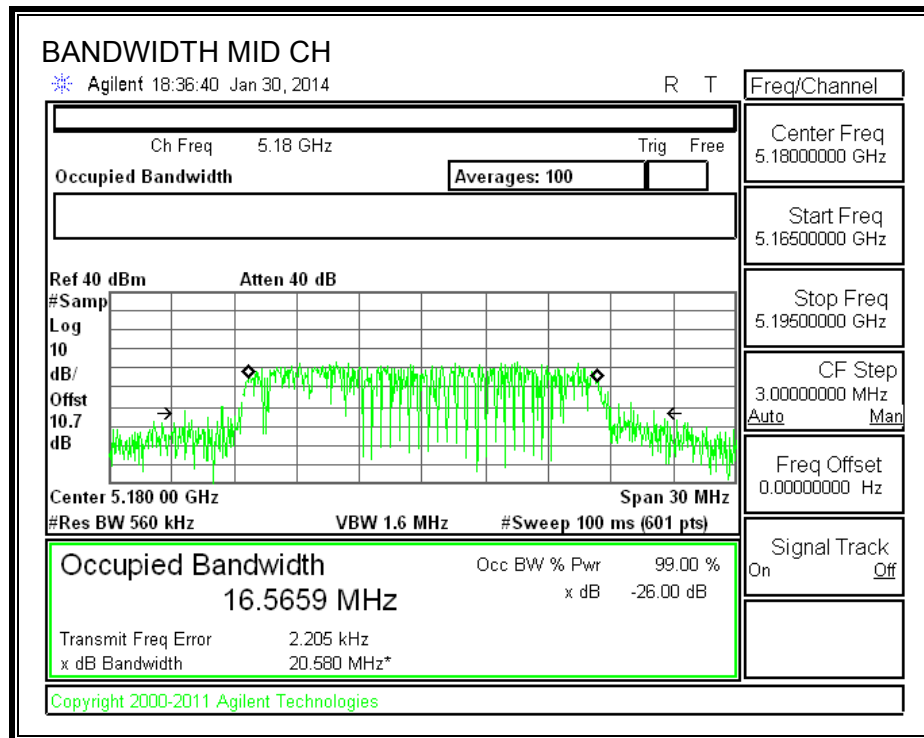
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5500	17.900
Mid	5580	17.893
High	5700	17.890
Worst		17.900

10.2.9. 802.11n HT40 MODE IN THE 5.5 GHz BAND

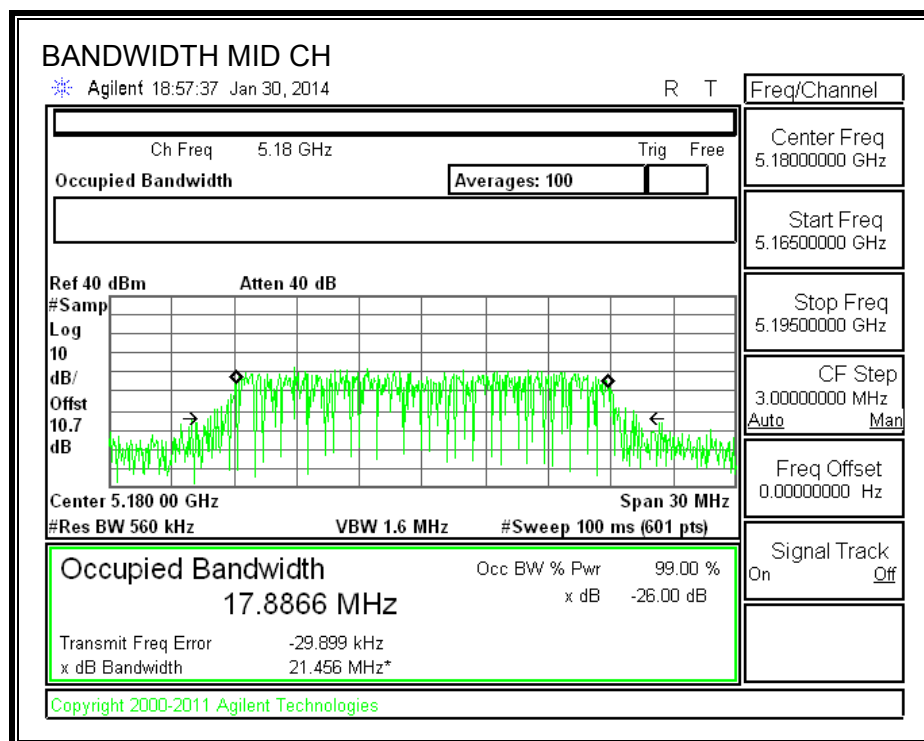
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5510	36.24
Mid	5550	36.24
High	5670	36.19
Worst		36.24

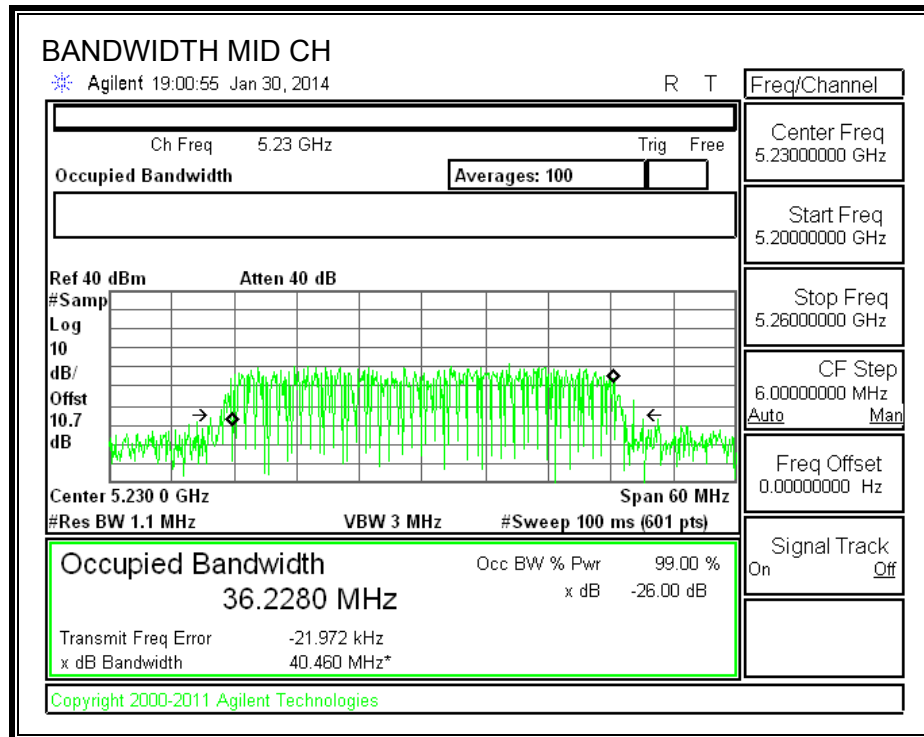
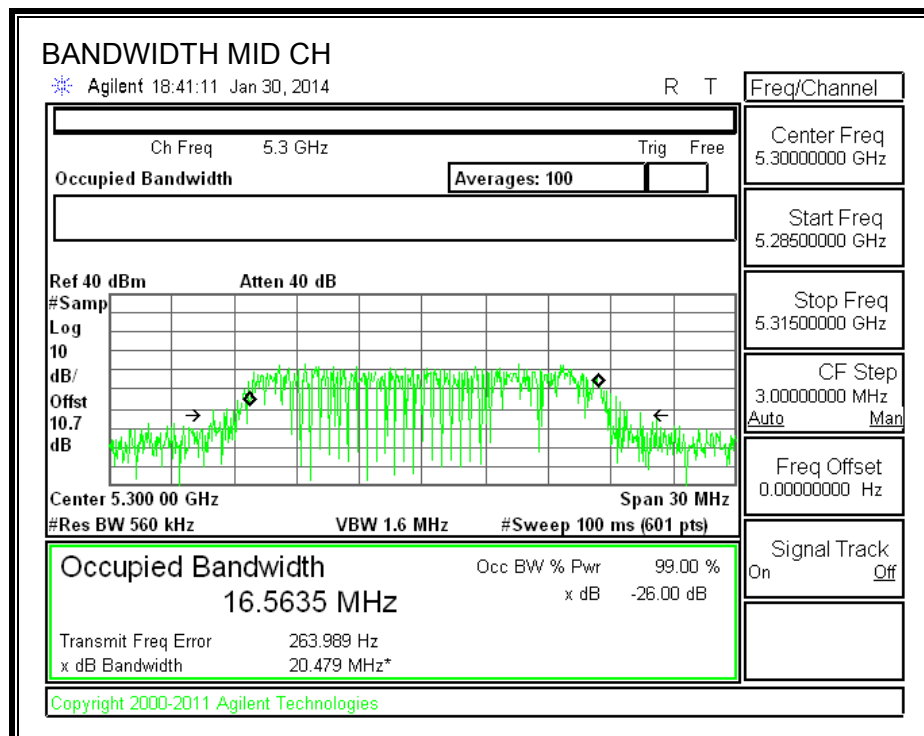
10.2.10. PLOTS

802.11a 5.2G 99% BANDWIDTH

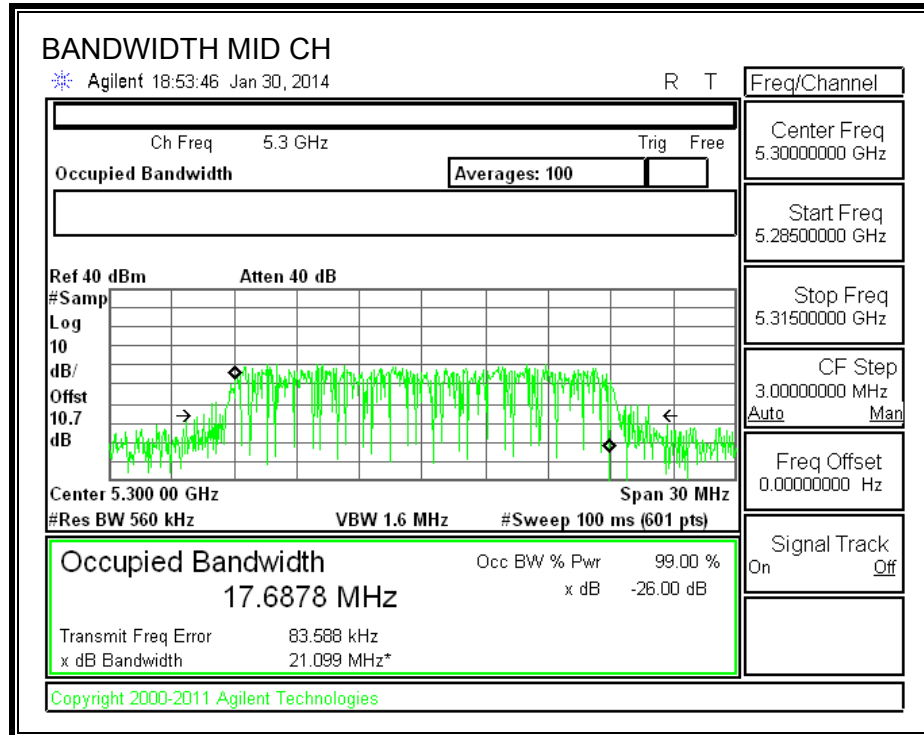


802.11n HT20 5.2G 99% BANDWIDTH



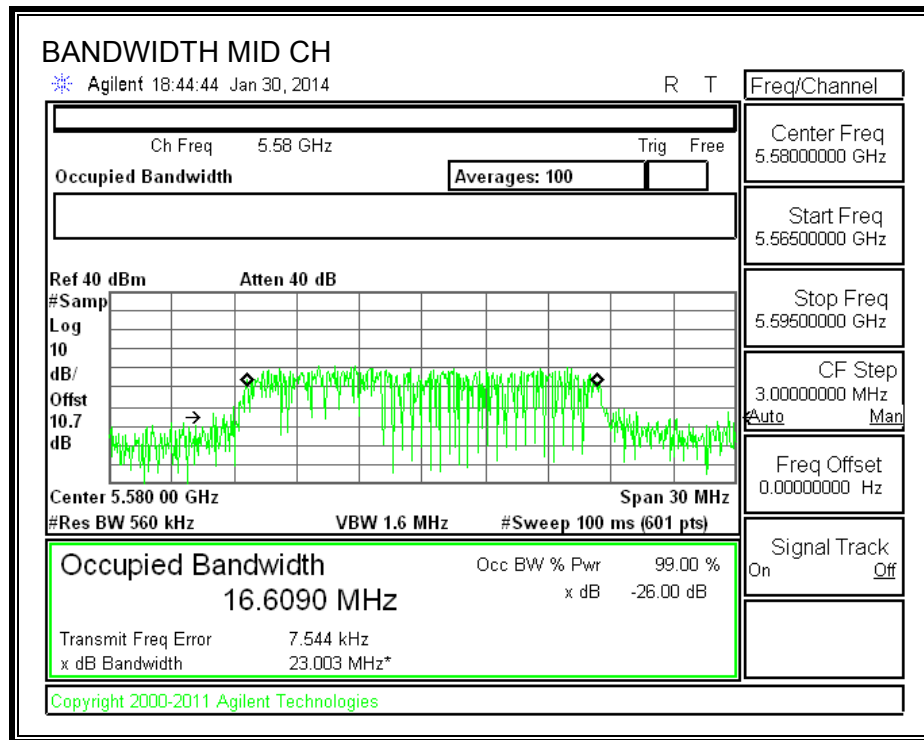
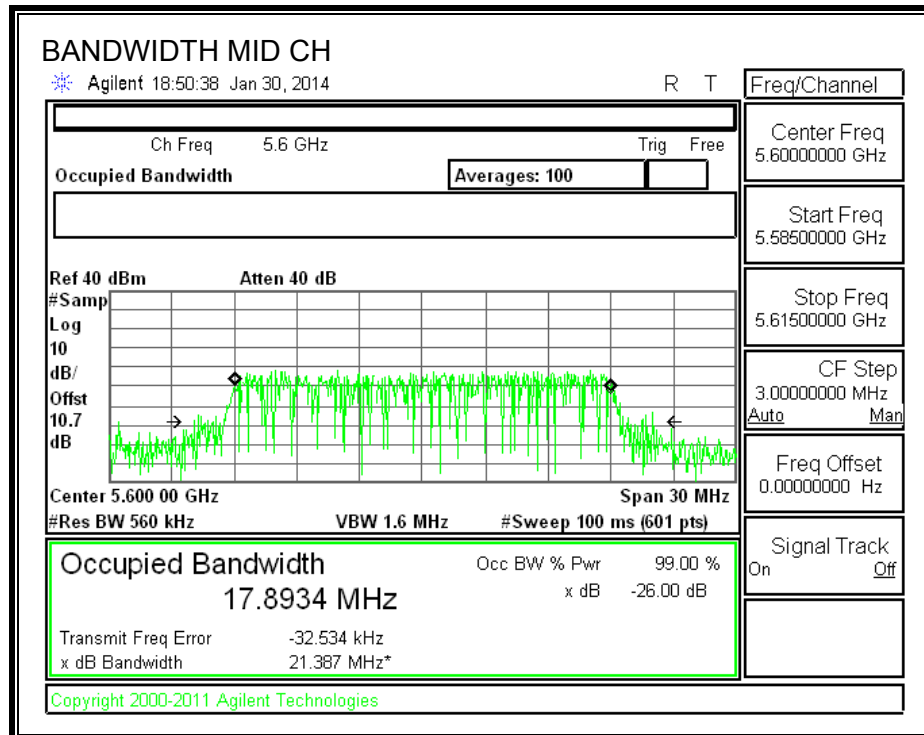
802.11n HT40 5.2G 99% BANDWIDTH**802.11a 5.3G 99% BANDWIDTH**

802.11n HT20 5.3G 99% BANDWIDTH

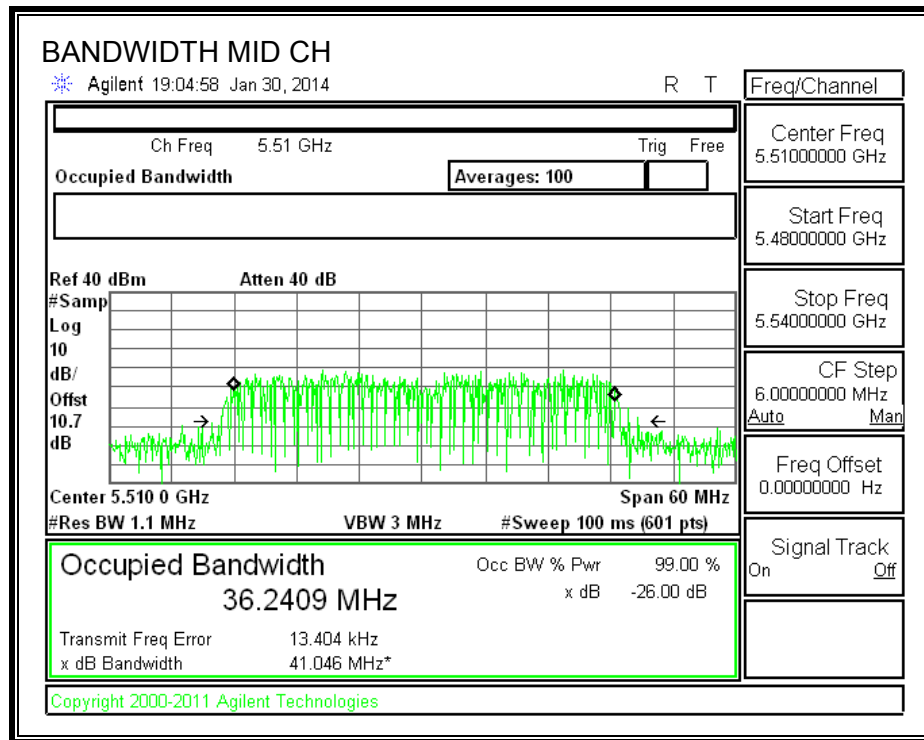


802.11n HT40 5.3G 99% BANDWIDTH



802.11a 5.5G 99% BANDWIDTH**802.11n HT20 5.5G 99% BANDWIDTH**

802.11n HT40 5.5G 99% BANDWIDTH



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

10.3.1. 802.11a MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5180	11.80
Mid	5200	11.40
High	5240	11.60
Worst		11.80

10.3.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5180	9.90
Mid	5200	9.40
High	5240	9.80
Worst		9.90

10.3.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5190	10.100
Mid	5230	9.900
Worst		10.100

10.3.4. 802.11a MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5260	11.60
Mid	5300	11.90
High	5320	11.80
Worst		11.90

10.3.5. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5260	9.70
Mid	5300	10.10
High	5320	10.00
Worst		10.10

10.3.6. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5270	10.1
High	5310	9.9
Worst		10.1

10.3.7. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5500	11.800
Mid	5580	12.100
High	5700	12.000
Worst		12.100

10.3.8. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5500	9.900
Mid	5580	10.200
High	5700	9.500
Worst		10.200

10.3.9. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5510	10.3
Mid	5550	10.6
High	5670	10.3
Worst		10.6

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 $4 \text{ dBm} + 10 \log B$, where B is the 26-dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 4 dBm in any 1-MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or $10 + 10 \log_{10} B$, dBm, whichever power is less. B is the 99% emission bandwidth in 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	23.750	16.566	-0.30
Mid	5200	23.200	16.560	-0.30
High	5240	23.850	16.560	-0.30

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	22.19	22.49	17.00	4.00	10.00	4.00
Mid	5200	17.00	22.19	22.49	17.00	4.00	10.00	4.00
High	5240	17.00	22.19	22.49	17.00	4.00	10.00	4.00

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

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	12.821	13.11	17.00	-3.89
Mid	5200	12.508	12.80	17.00	-4.20
High	5240	12.418	12.71	17.00	-4.29

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5180	1.510	1.80	4.00	-2.20
Mid	5200	1.350	1.64	4.00	-2.36
High	5240	1.310	1.60	4.00	-2.40

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	22.900	17.887	-0.30
Mid	5200	23.200	17.887	-0.30
High	5240	23.350	17.895	-0.30

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	22.83	17.00	4.00	10.00	4.00
Mid	5200	17.00	22.53	22.83	17.00	4.00	10.00	4.00
High	5240	17.00	22.53	22.83	17.00	4.00	10.00	4.00

Duty Cycle CF (dB)	0.32	Included in Calculations of Corr'd Power & PSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	9.759	10.08	17.00	-6.92
Mid	5200	9.644	9.96	17.00	-7.04
High	5240	9.577	9.90	17.00	-7.10

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5180	-2.400	-2.08	4.00	-6.08
Mid	5200	-1.770	-1.45	4.00	-5.45
High	5240	-2.230	-1.91	4.00	-5.91

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	44.8	36.194	-0.30
Mid	5230	44.5	36.228	-0.30

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	23.30	17.00	4.00	10.00	4.00
Mid	5230	17.00	23.00	23.30	17.00	4.00	10.00	4.00
Duty Cycle CF (dB)		0.68	Included in Calculations of Corr'd Power & PPSP					

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5190	9.429	10.11	17.00	-6.89
Mid	5230	9.258	9.94	17.00	-7.06

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5190	-5.060	-4.38	4.00	-8.38
Mid	5230	-4.850	-4.17	4.00	-8.17

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	23.60	16.56	-0.30
Mid	5300	23.70	16.56	-0.30
High	5320	23.95	16.73	-0.30

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	23.19	29.19	23.19	11.00	11.00	11.00
Mid	5300	24.00	23.19	29.19	23.19	11.00	11.00	11.00
High	5320	24.00	23.23	29.23	23.23	11.00	11.00	11.00

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

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	12.409	12.70	23.19	-10.49
Mid	5300	12.072	12.36	23.19	-10.83
High	5320	12.009	12.30	23.23	-10.94

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5260	1.120	1.41	11.00	-9.59
Mid	5300	0.750	1.04	11.00	-9.96
High	5320	0.670	0.96	11.00	-10.04

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	23.05	17.880	-0.30
Mid	5300	23.00	17.690	-0.30
High	5320	23.00	17.890	-0.30

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	23.48	29.48	23.48	11.00	11.00	11.00
High	5320	24.00	23.53	29.53	23.53	11.00	11.00	11.00

Duty Cycle CF (dB)	0.32	Included in Calculations of Corr'd Power & PSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	9.593	9.91	23.52	-13.61
Mid	5300	9.889	10.21	23.48	-13.27
High	5320	9.831	10.15	23.53	-13.38

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5260	-2.010	-1.69	11.00	-12.69
Mid	5300	-1.690	-1.37	11.00	-12.37
High	5320	-1.670	-1.35	11.00	-12.35

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	44.3	36.200	-0.30
High	5310	44.7	36.200	-0.30

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)	0.68	Included in Calculations of Corr'd Power & PPSP
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5270	9.682	10.36	24.00	-13.64
High	5310	9.562	10.24	24.00	-13.76

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5270	-4.660	-3.98	11.00	-14.98
High	5310	-4.810	-4.13	11.00	-15.13

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	24.05	16.670	-0.30
Mid	5580	22.95	16.610	-0.30
High	5700	22.85	16.750	-0.30

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	23.22	29.22	23.22	11.00	11.00	11.00
Mid	5580	24.00	23.20	29.20	23.20	11.00	11.00	11.00
High	5700	24.00	23.24	29.24	23.24	11.00	11.00	11.00

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

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	12.074	12.36	23.22	-10.86
Mid	5580	12.172	12.46	23.20	-10.74
High	5700	11.973	12.26	23.24	-10.98

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5500	0.800	1.09	11.00	-9.91
Mid	5580	0.920	1.21	11.00	-9.79
High	5700	-0.030	0.26	11.00	-10.74

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	24.600	17.900	-0.30
Mid	5580	23.450	17.890	-0.30
High	5700	23.800	17.890	-0.30

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)	0.32	Included in Calculations of Corr'd Power & PPSP
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	9.876	10.20	23.53	-13.33
Mid	5580	10.000	10.32	23.53	-13.21
High	5700	10.147	10.47	23.53	-13.06

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5500	-1.690	-1.37	11.00	-12.37
Mid	5580	-1.450	-1.13	11.00	-12.13
High	5700	-1.510	-1.19	11.00	-12.19

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	46.7	36.200	-0.30
Mid	5550	46.0	36.200	-0.30
High	5670	45.8	36.200	-0.30

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)	0.68	Included in Calculations of Corr'd Power & PPSP
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Output Power Results

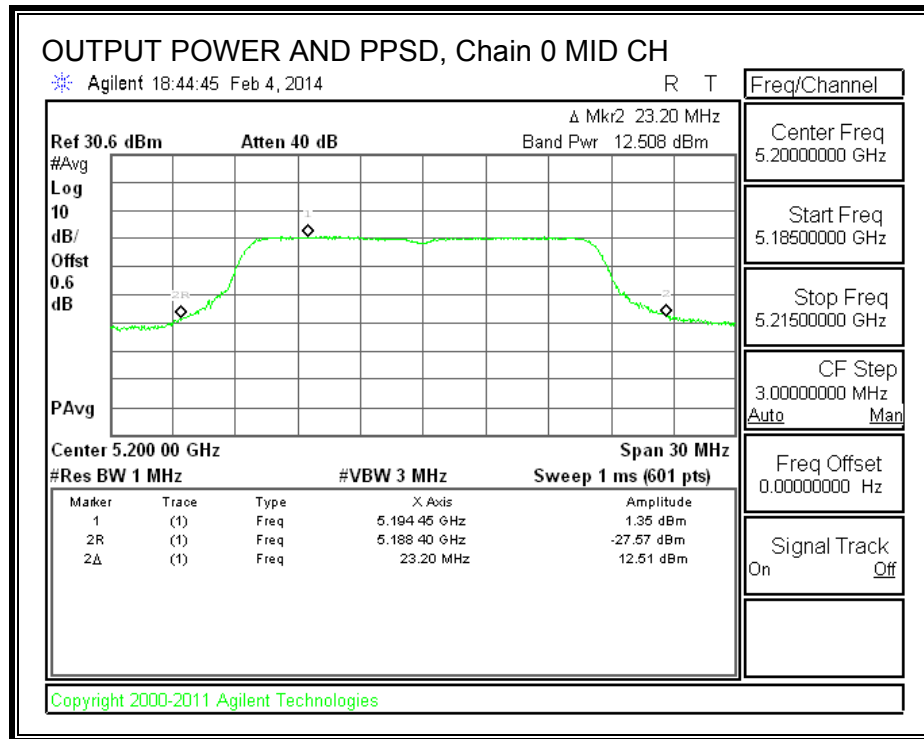
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	9.928	10.61	24.00	-13.39
Mid	5550	10.176	10.86	24.00	-13.14
High	5670	9.734	10.41	24.00	-13.59

PPSD Results

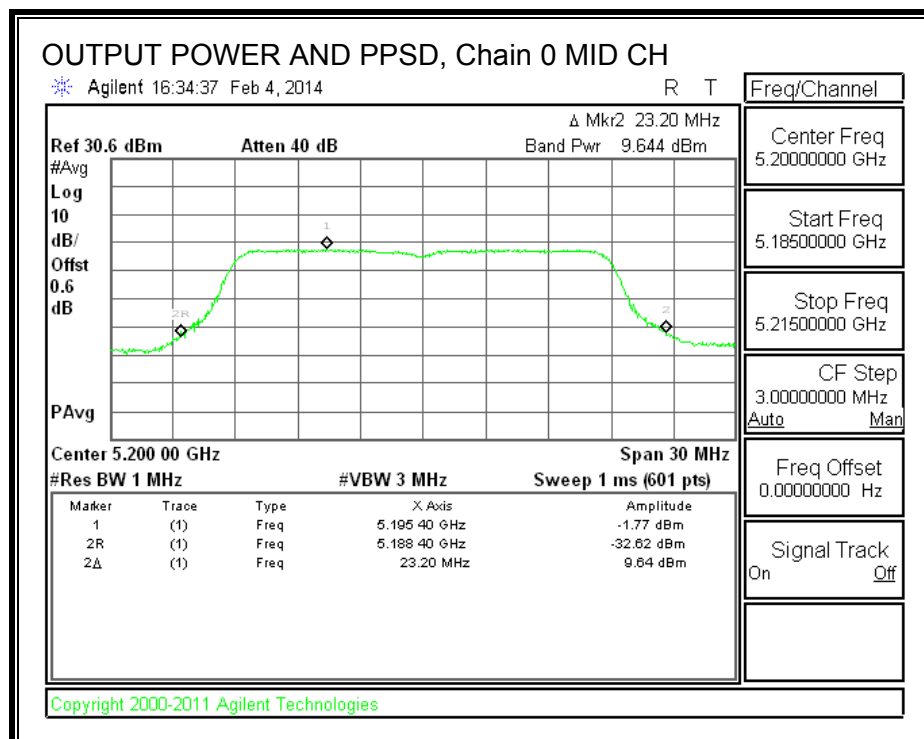
Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5510	-4.510	-3.83	11.00	-14.83
Mid	5550	-3.980	-3.30	11.00	-14.30
High	5670	-4.480	-3.80	11.00	-14.80

10.4.10. PLOTS

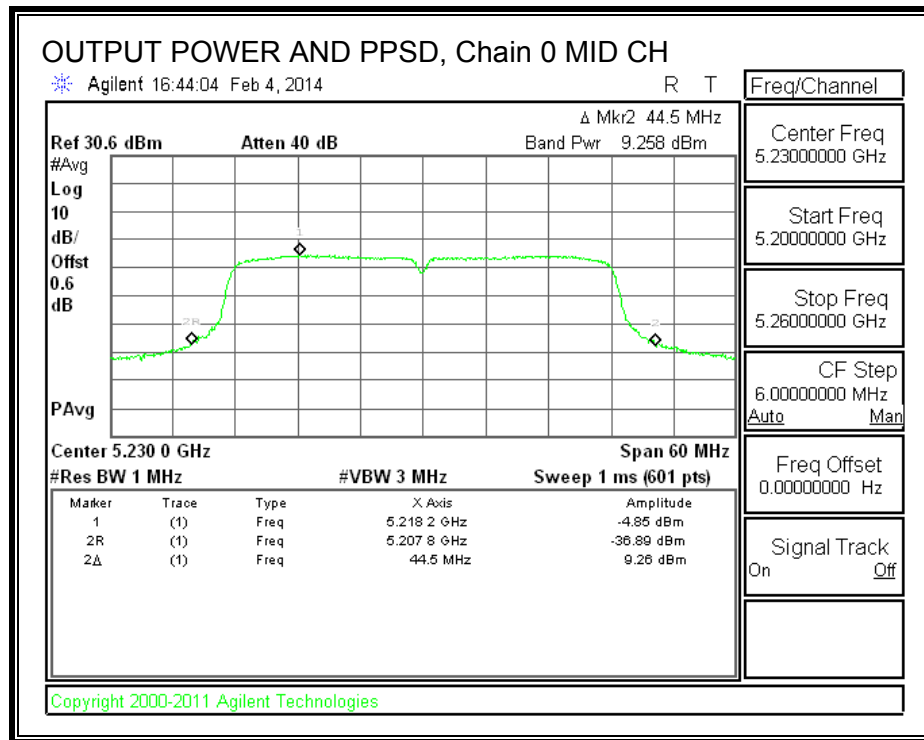
802.11a 5.2G OUTPUT POWER AND PPSD, Chain 0



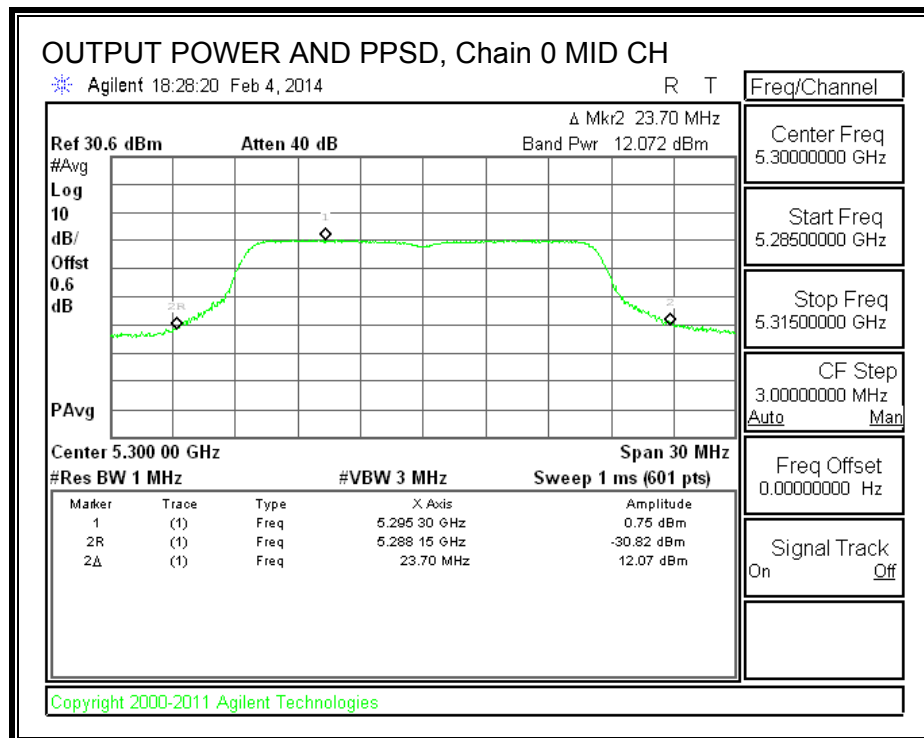
802.11n HT20 5.2G OUTPUT POWER AND PPSD, Chain 0



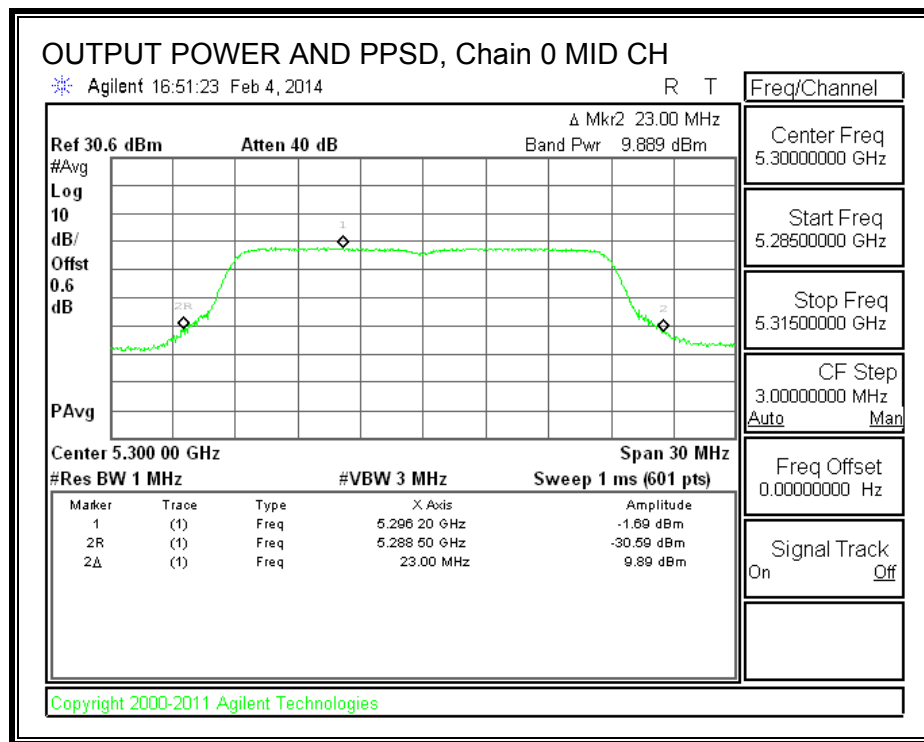
802.11n HT40 5.2G OUTPUT POWER AND PPSD, Chain 0



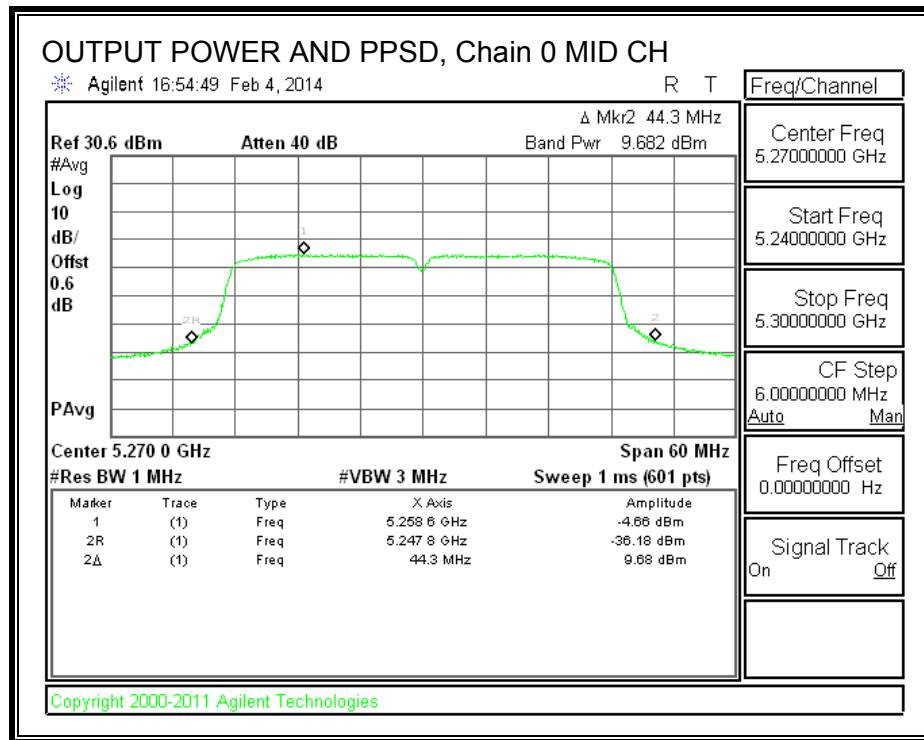
802.11a 5.3G OUTPUT POWER AND PPSD, Chain 0



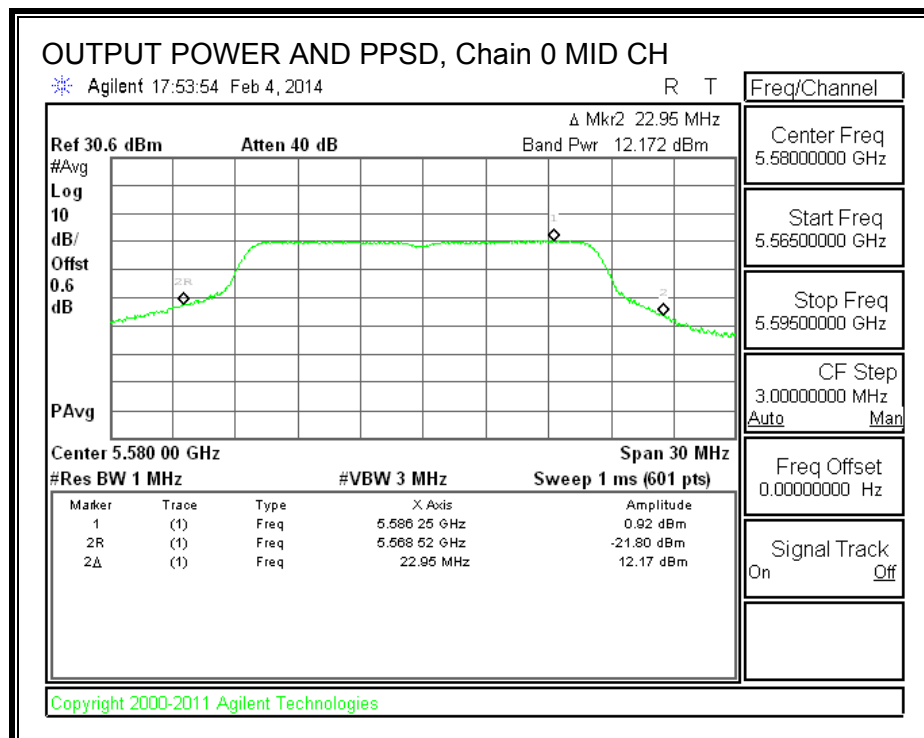
802.11n HT20 5.3G OUTPUT POWER AND PPSD, Chain 0



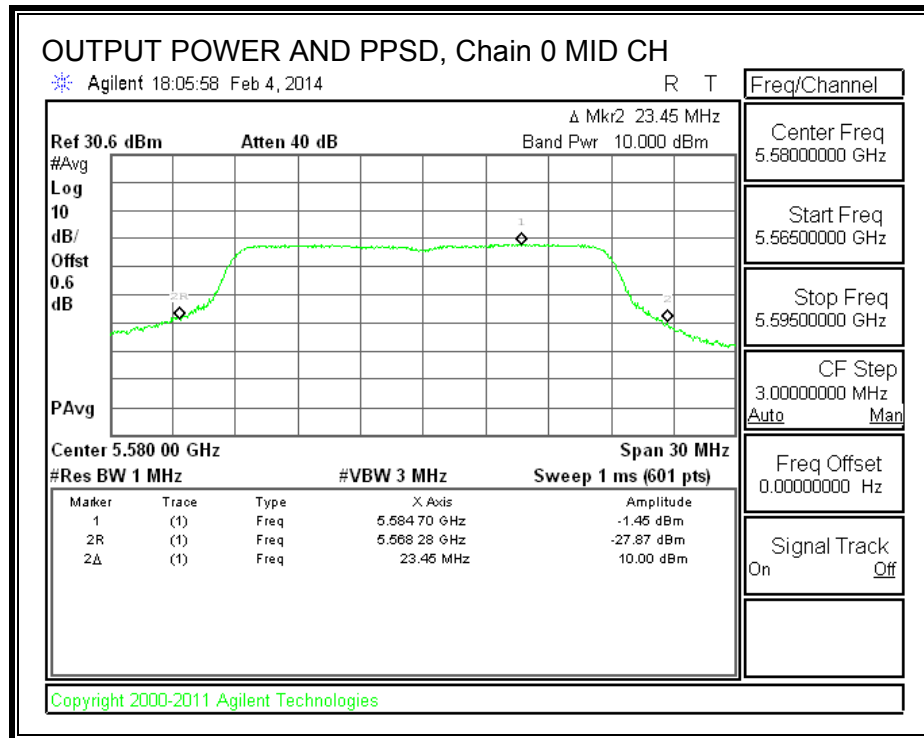
802.11n HT40 5.3G OUTPUT POWER AND PPSD, Chain 0



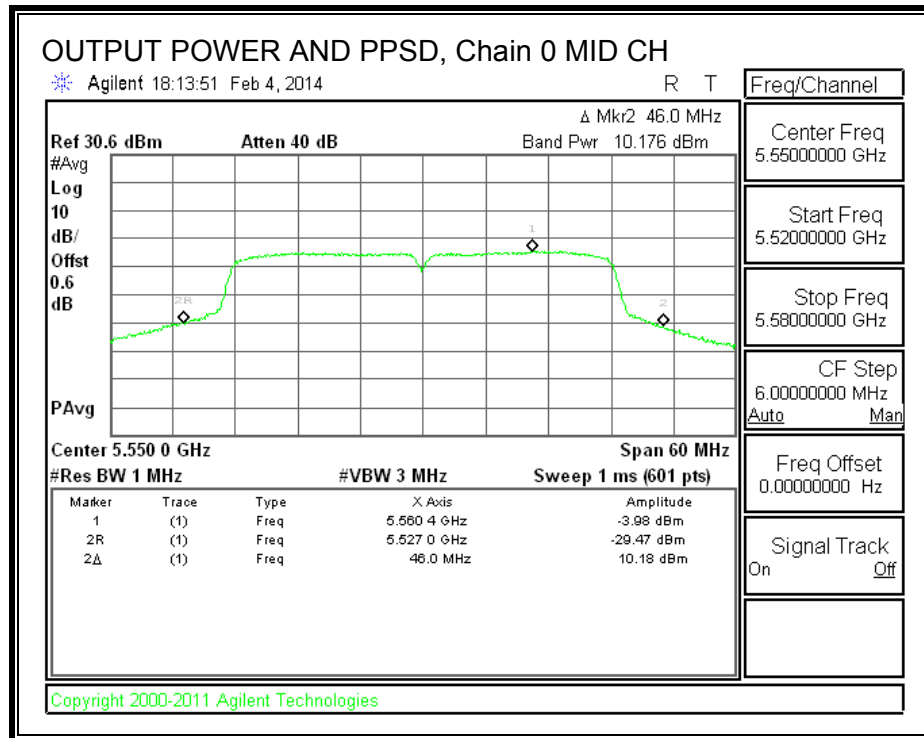
802.11a 5.5G OUTPUT POWER AND PPSD, Chain 0



802.11n HT20 5.5G OUTPUT POWER AND PPSD, Chain 0



802.11n HT40 5.5G OUTPUT POWER AND PPSD, Chain 0



10.5. PEAK EXCURSION

LIMITS

FCC §15.407 (a) (6)

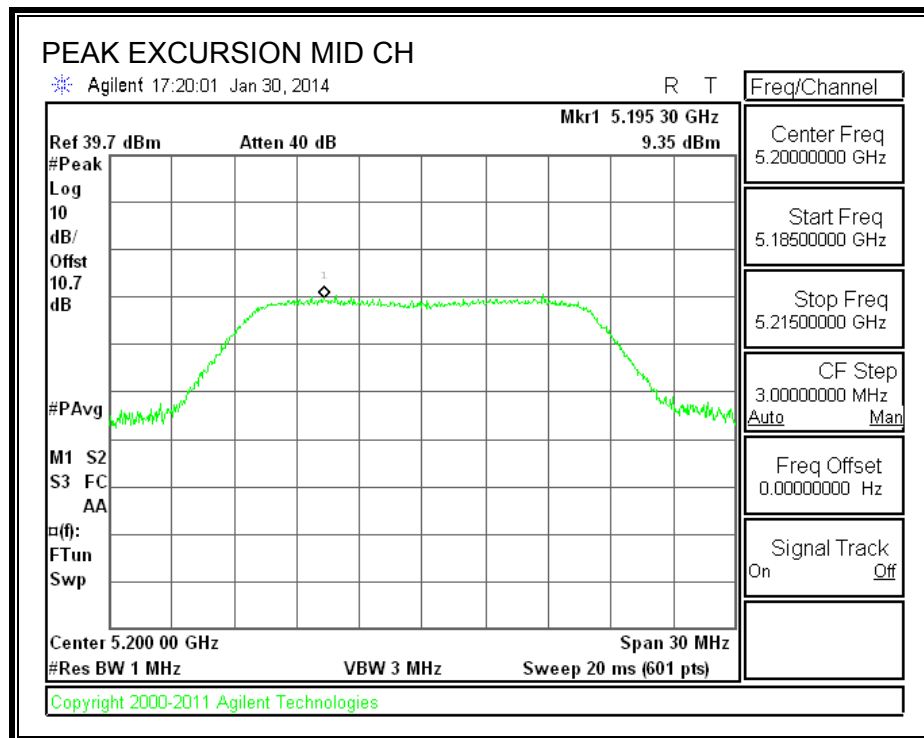
The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

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	9.350	1.35	0.29	7.71	13	-5.29

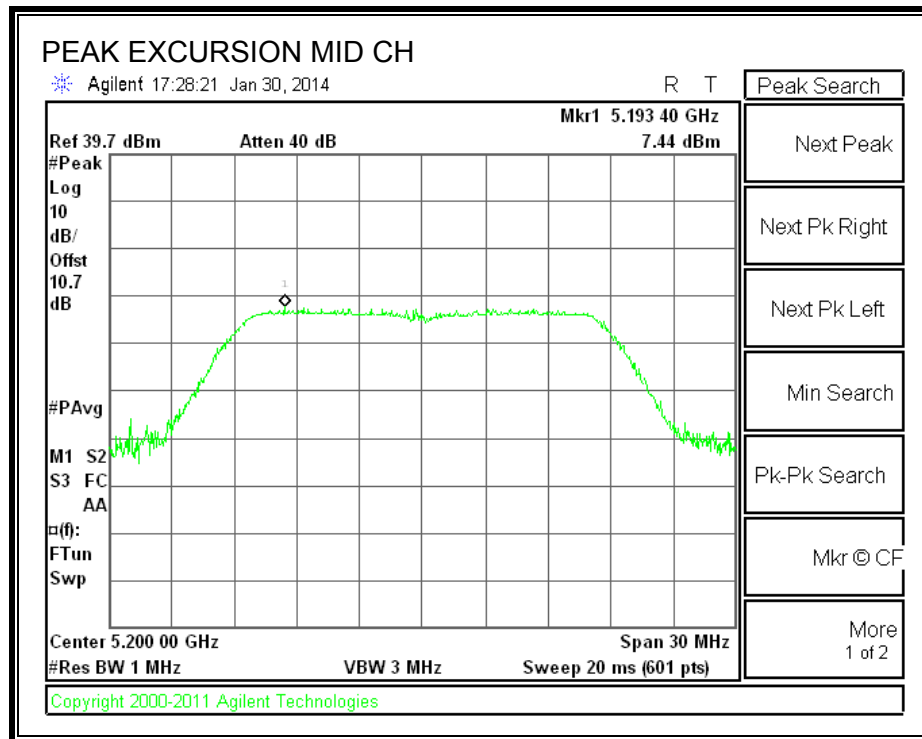
PEAK EXCURSION



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	7.440	-1.77	0.32	8.89	13	-4.11

PEAK EXCURSION



Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5230	2.990	-4.85	0.68	7.16	13	-5.84

PEAK EXCURSION MID CH

Agilent 14:09:13 Feb 3, 2014 R T

Ref 28 dBm	Atten 30 dB	Mkr1 5.187 5 GHz	2.99 dBm	Freq/Channel
#Peak				Center Freq 5.19000000 GHz
Log				Start Freq 5.16000000 GHz
10				Stop Freq 5.22000000 GHz
dB/				CF Step 6.00000000 MHz
Offset				Auto Man
11				Freq Offset 0.00000000 Hz
dB				Signal Track On Off
#PAvg				
V1 S2				
V3 FC				
AA				
□(f):				
FTun				
Swp				

Center 5.190 0 GHz Span 60 MHz

#Res BW 1 MHz #VBW 3 MHz Sweep 1 ms (601 pts)

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11. TRANSMITTER ABOVE 1 GHz

LIMITS

FCC §15.205 and §15.209

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

TEST PROCEDURE

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

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

Reference to KDB 789033 UNII part H) 6) d) Method VB:

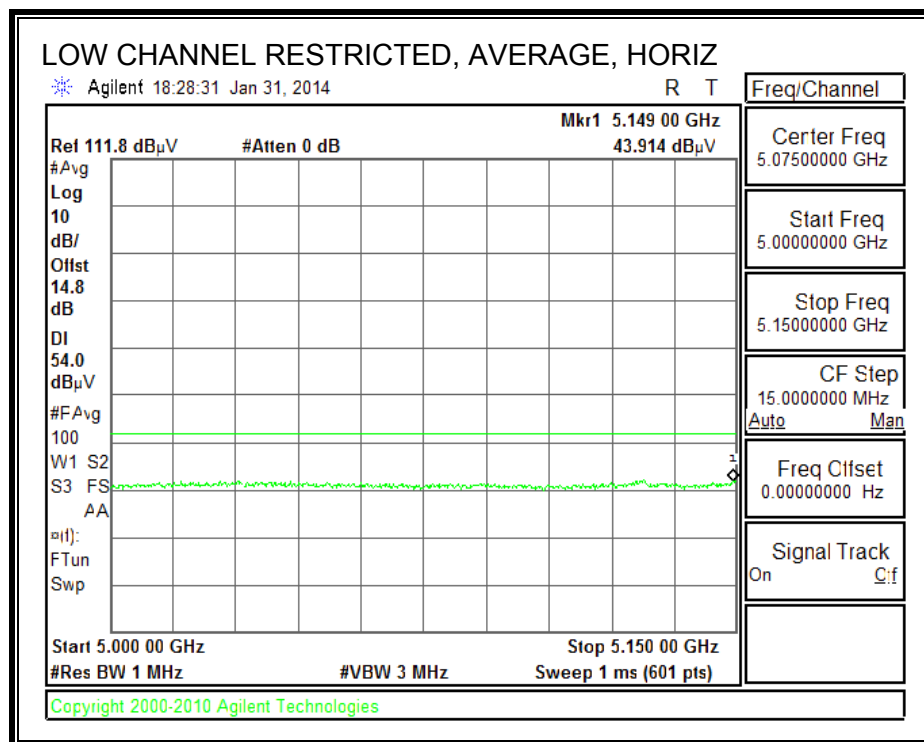
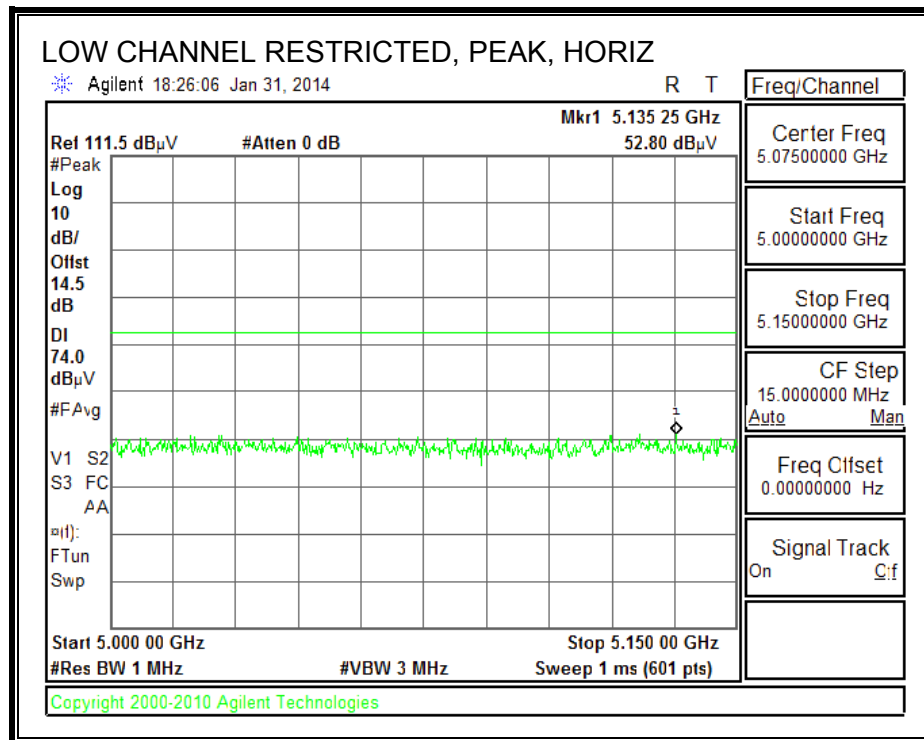
For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and add duty cycle factor to the reading offset for average measurements.

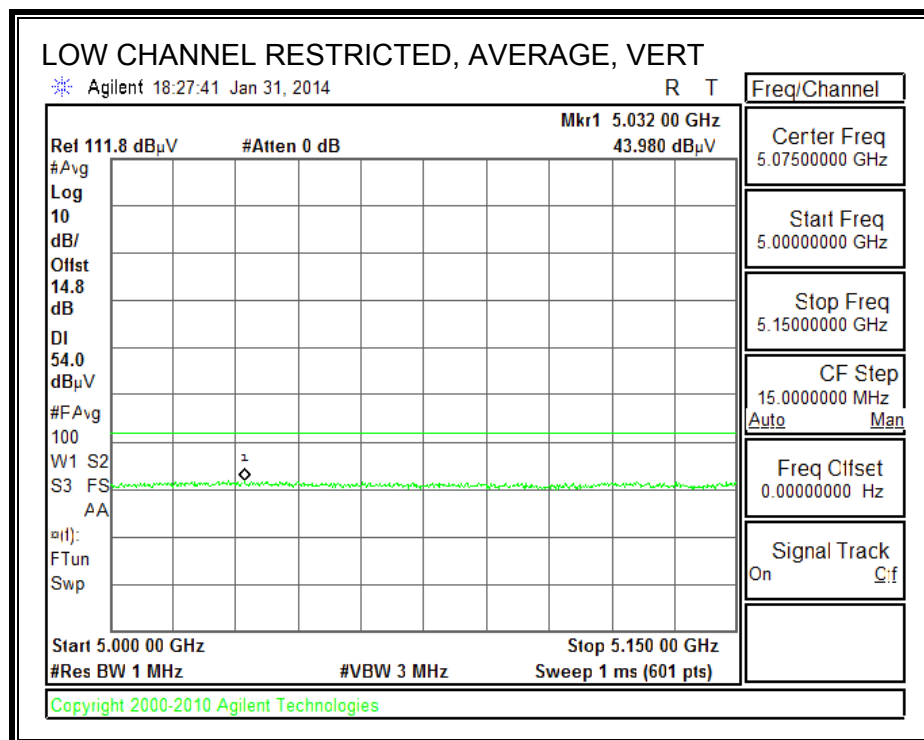
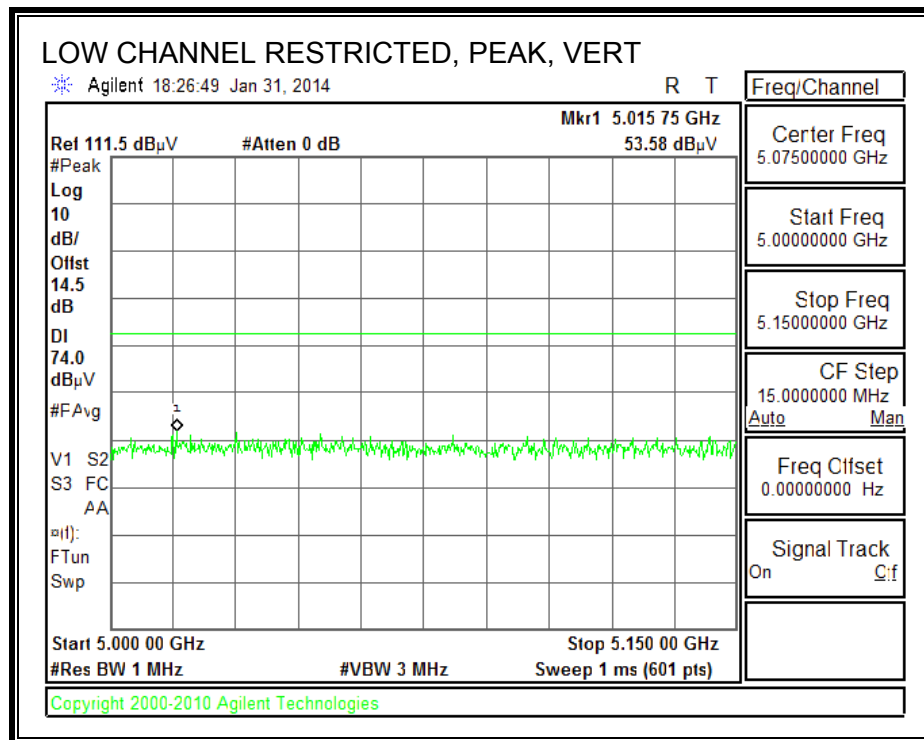
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

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

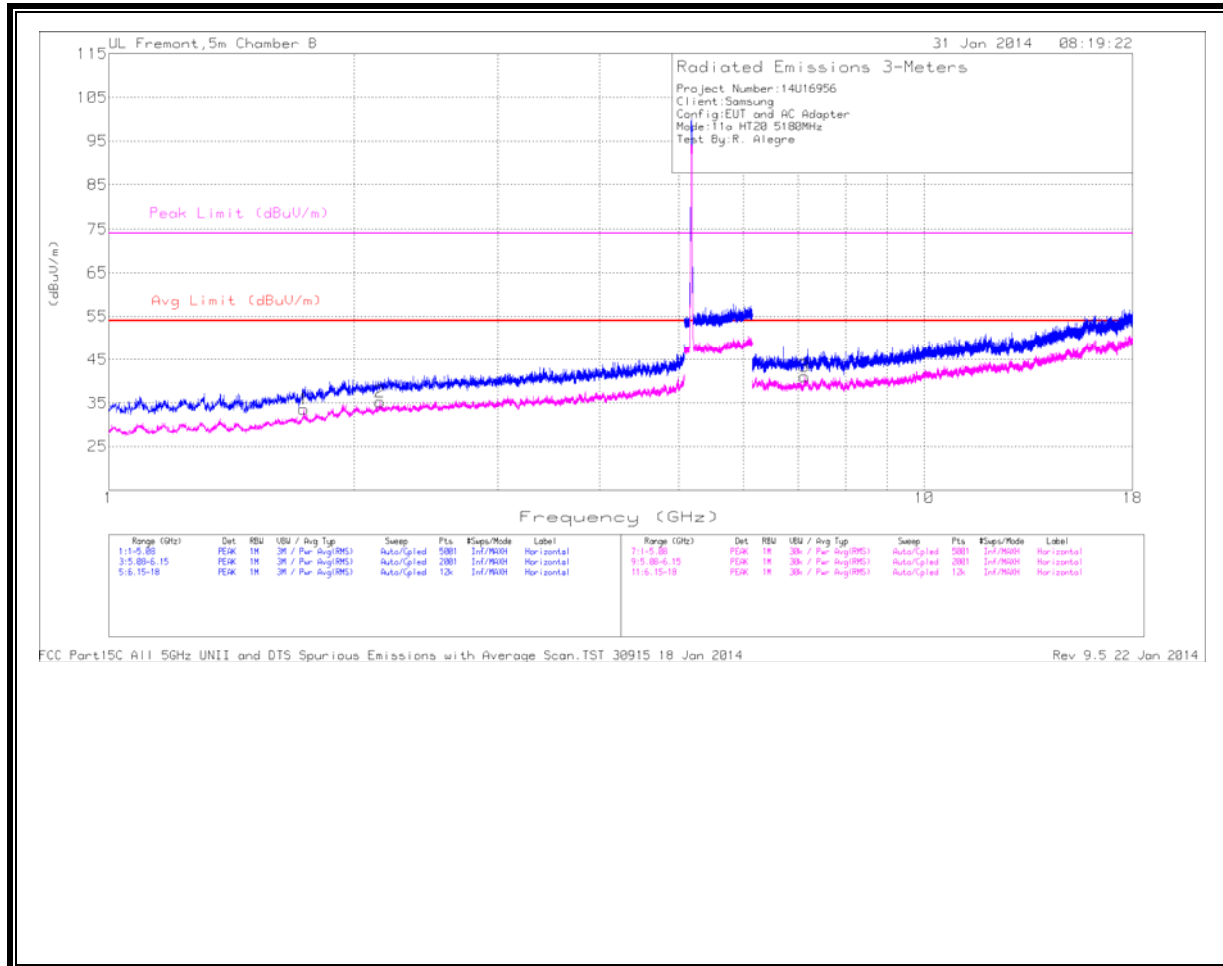
11.1.1. TX ABOVE 1 GHz 802.11a MODE IN THE 5.2 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)



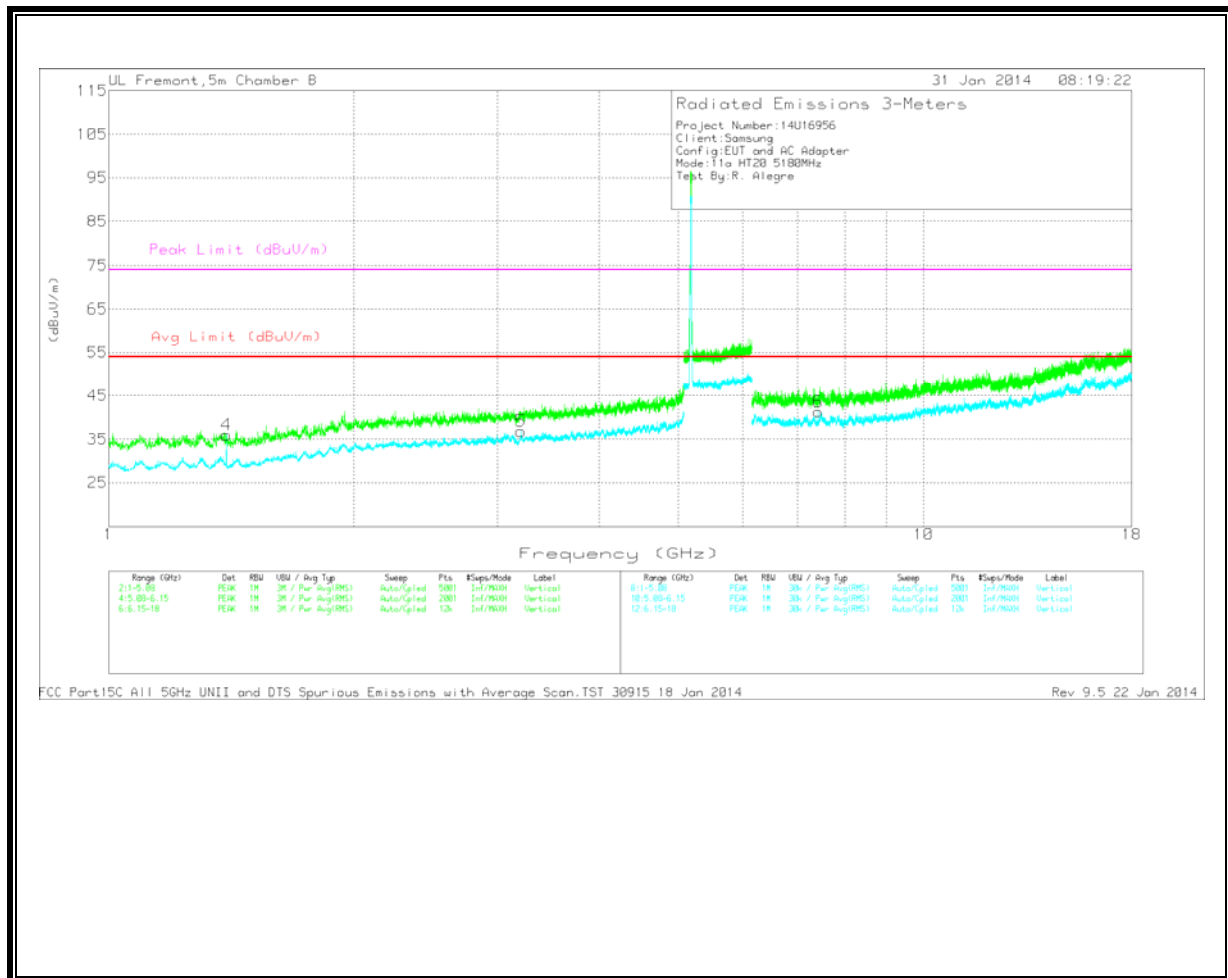


HARMONICS AND SPURIOUS EMISSIONS

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.

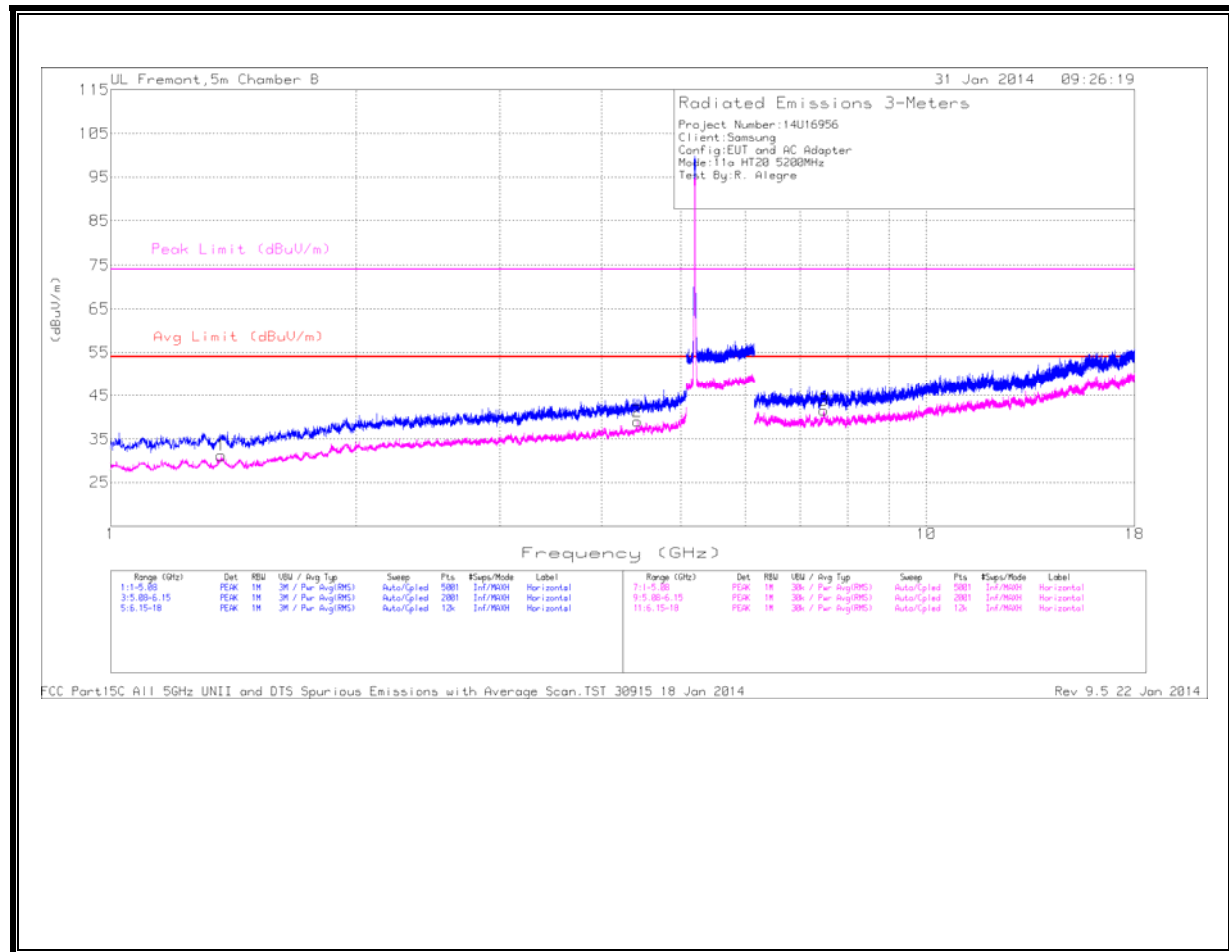


Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

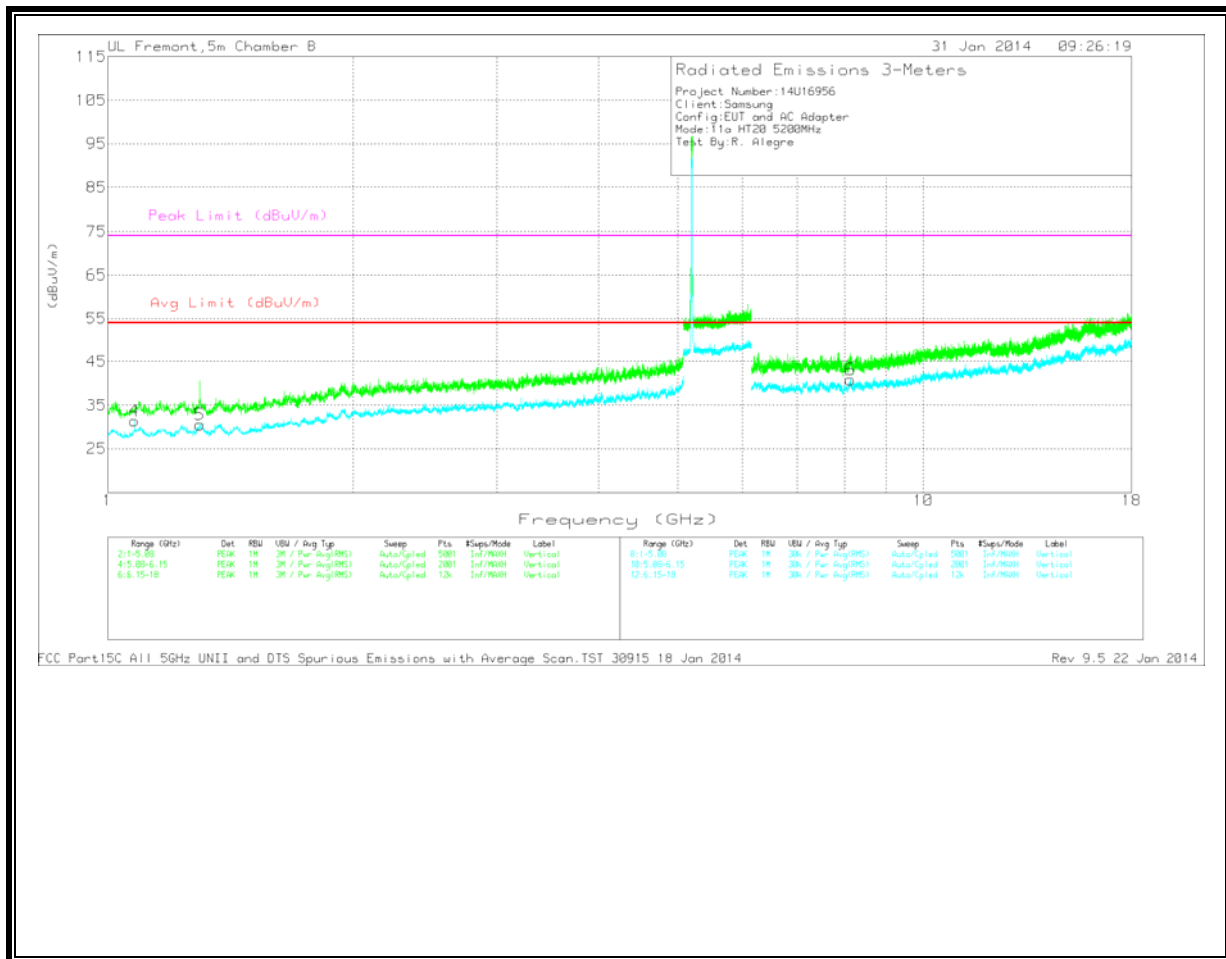
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	1.395	41.34	Avg	28.4	-33.8	35.94	54	-18.06	-	-	0-360	202	V
1	1.735	37.06	Avg	30	-33.5	33.56	54	-20.44	-	-	0-360	99	H
2	2.151	35.95	Avg	32	-32.7	35.25	54	-18.75	-	-	0-360	99	H
5	3.206	35.29	Avg	33.3	-31.8	36.79	54	-17.21	-	-	0-360	99	V
3	7.13	33.2	Avg	35.8	-27.9	41.1	54	-12.9	-	-	0-360	202	H
6	7.424	32.88	Avg	35.9	-27.5	41.28	54	-12.72	-	-	0-360	202	V

Note: All peak readings were 20dB below the peak limit. Average measurements at discrete frequencies are provided in the table above for frequencies that are within 6dB of the average limit.



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

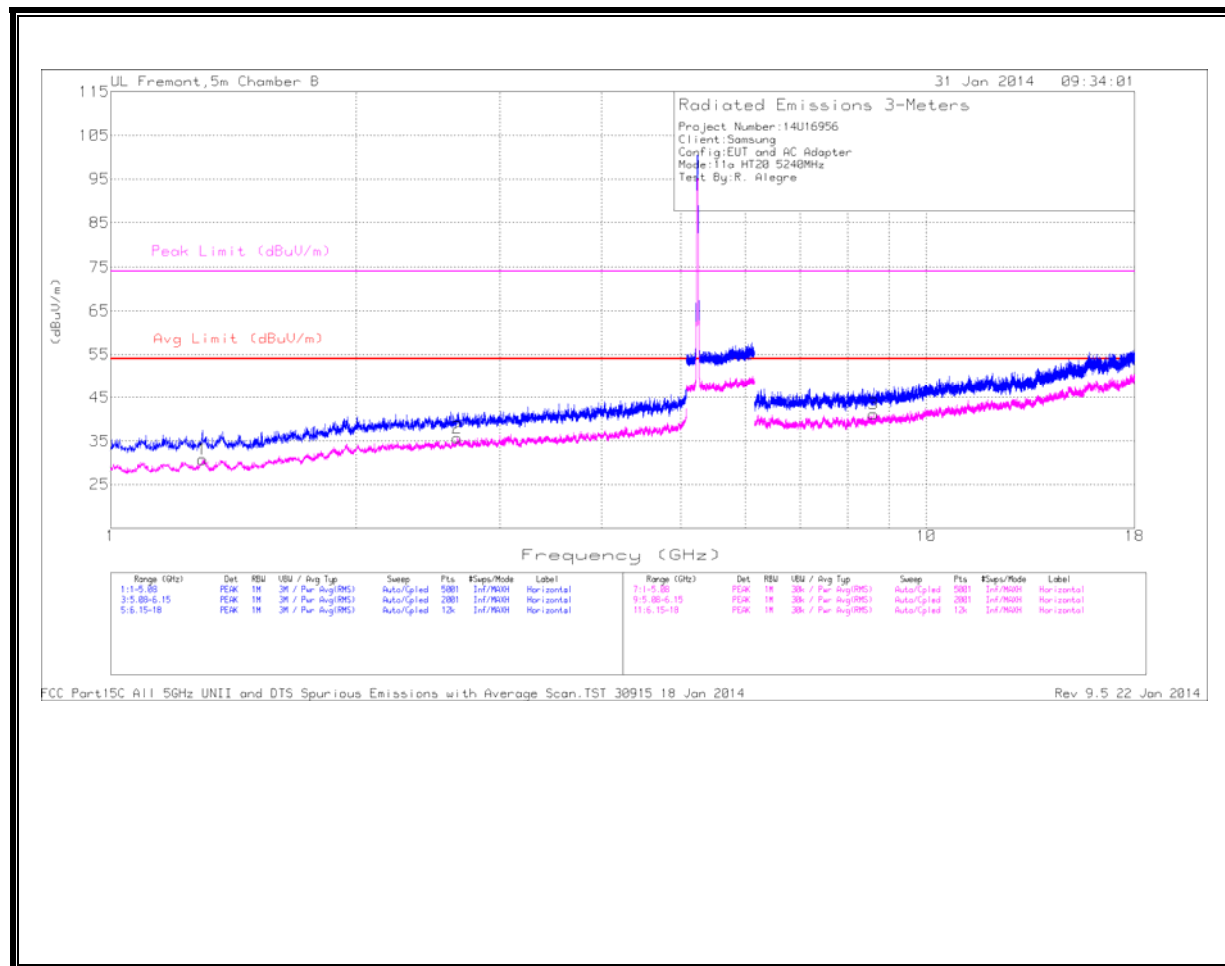


Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

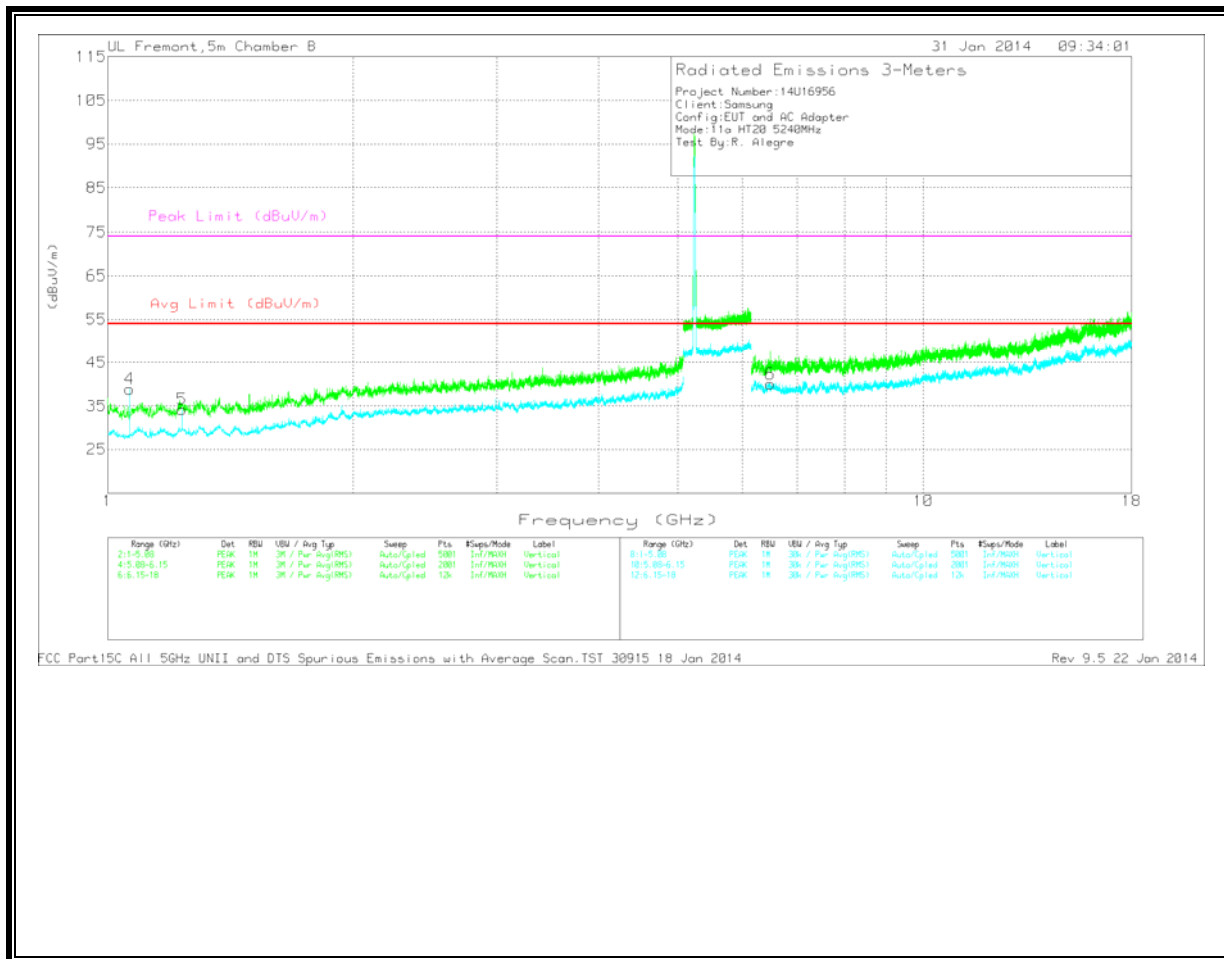
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	1.078	38.1	Avg	27.8	-34.5	31.4	54	-22.6	-	-	0-360	99	V
5	1.297	36.31	Avg	28.5	-34.3	30.51	54	-23.49	-	-	0-360	202	V
1	1.366	36.6	Avg	28.4	-33.8	31.2	54	-22.8	-	-	0-360	201	H
2	4.426	34.38	Avg	34.4	-29.7	39.08	54	-14.92	-	-	0-360	99	H
3	7.489	31.36	Avg	36	-25.8	41.56	54	-12.44	-	-	0-360	99	H
6	8.14	31.32	Avg	36.1	-26.6	40.82	54	-13.18	-	-	0-360	99	V

Note: All peak readings were 20dB below the peak limit. Average measurements at discrete frequencies are provided in the table above for frequencies that are within 6dB of the average limit.



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



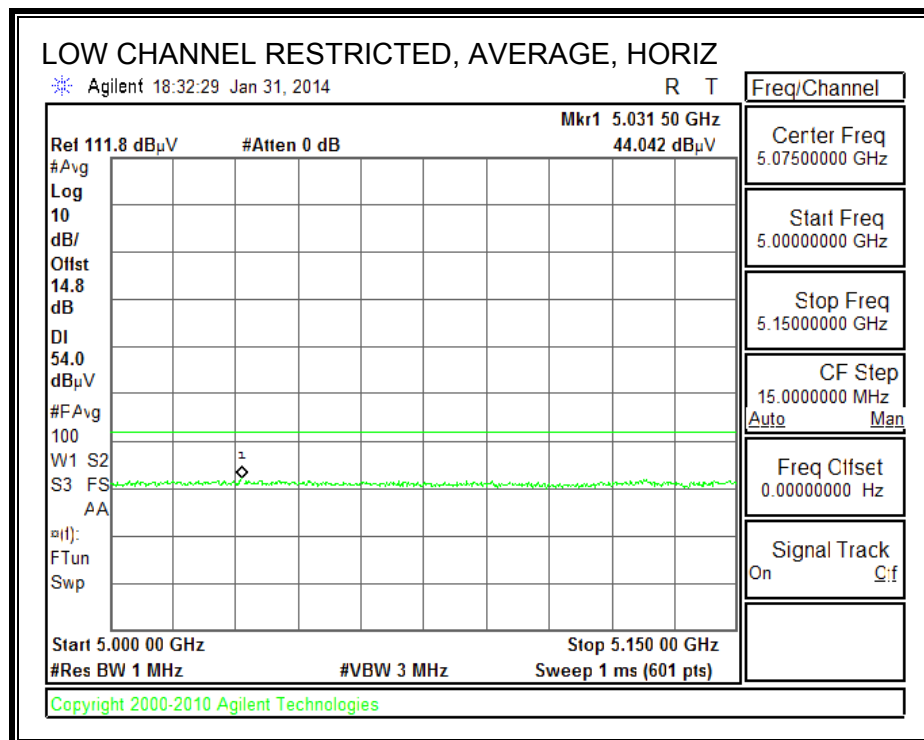
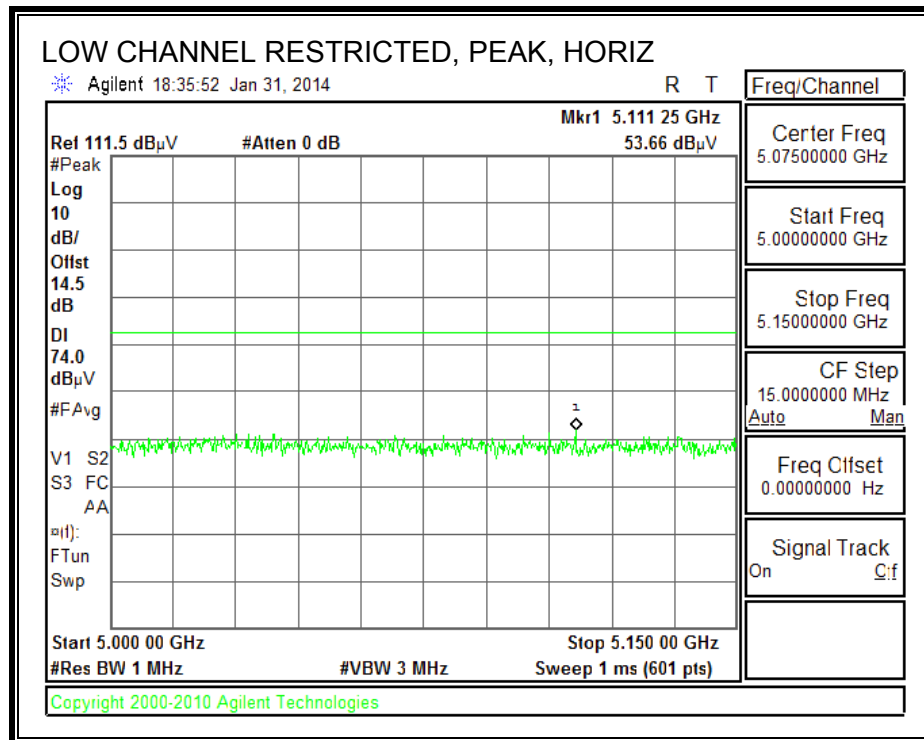
Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

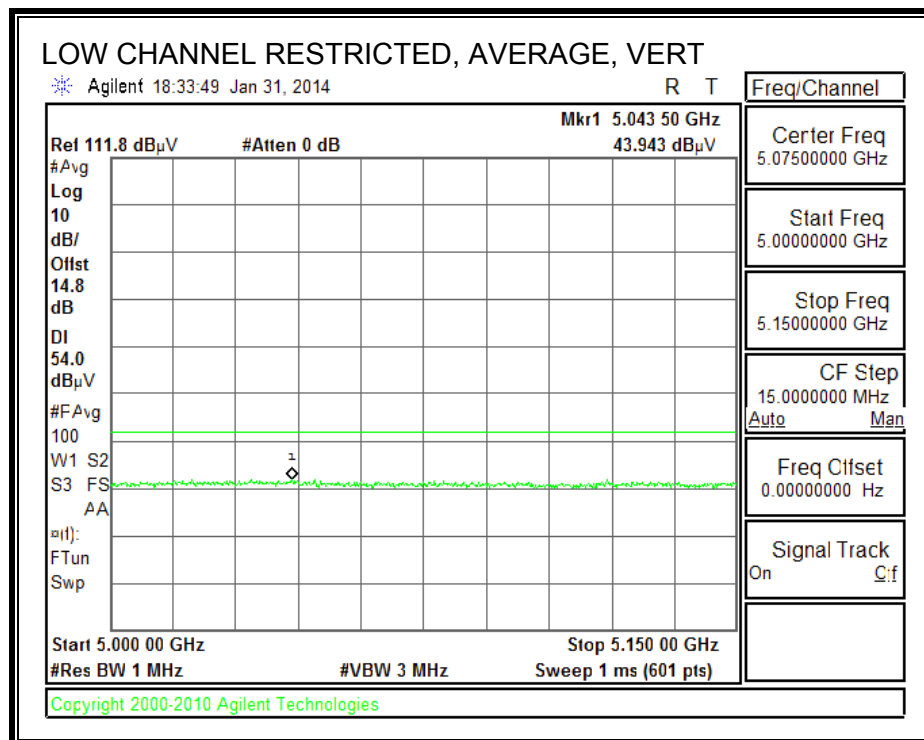
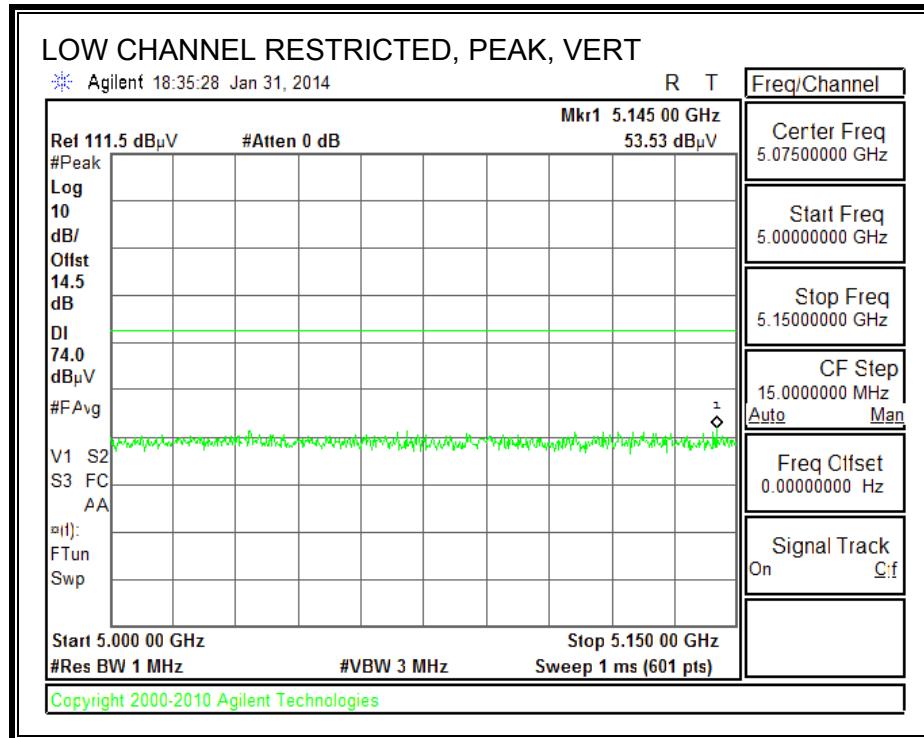
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cb/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	1.064	45.69	Avg	27.7	-34.5	38.89	54	-15.11	-	-	0-360	202	V
5	1.233	40.43	Avg	28.5	-34.7	34.23	54	-19.77	-	-	0-360	99	V
1	1.296	36.57	Avg	28.5	-34.3	30.77	54	-23.23	-	-	0-360	201	H
2	2.659	34.93	Avg	32.7	-31.9	35.73	54	-18.27	-	-	0-360	201	H
6	6.492	32.84	Avg	35.9	-28.7	40.04	54	-13.96	-	-	0-360	99	V
3	8.616	31.21	Avg	36.3	-26.3	41.21	54	-12.79	-	-	0-360	201	H

Note: All peak readings were 20dB below the peak limit. Average measurements at discrete frequencies are provided in the table above for frequencies that are within 6dB of the average limit.

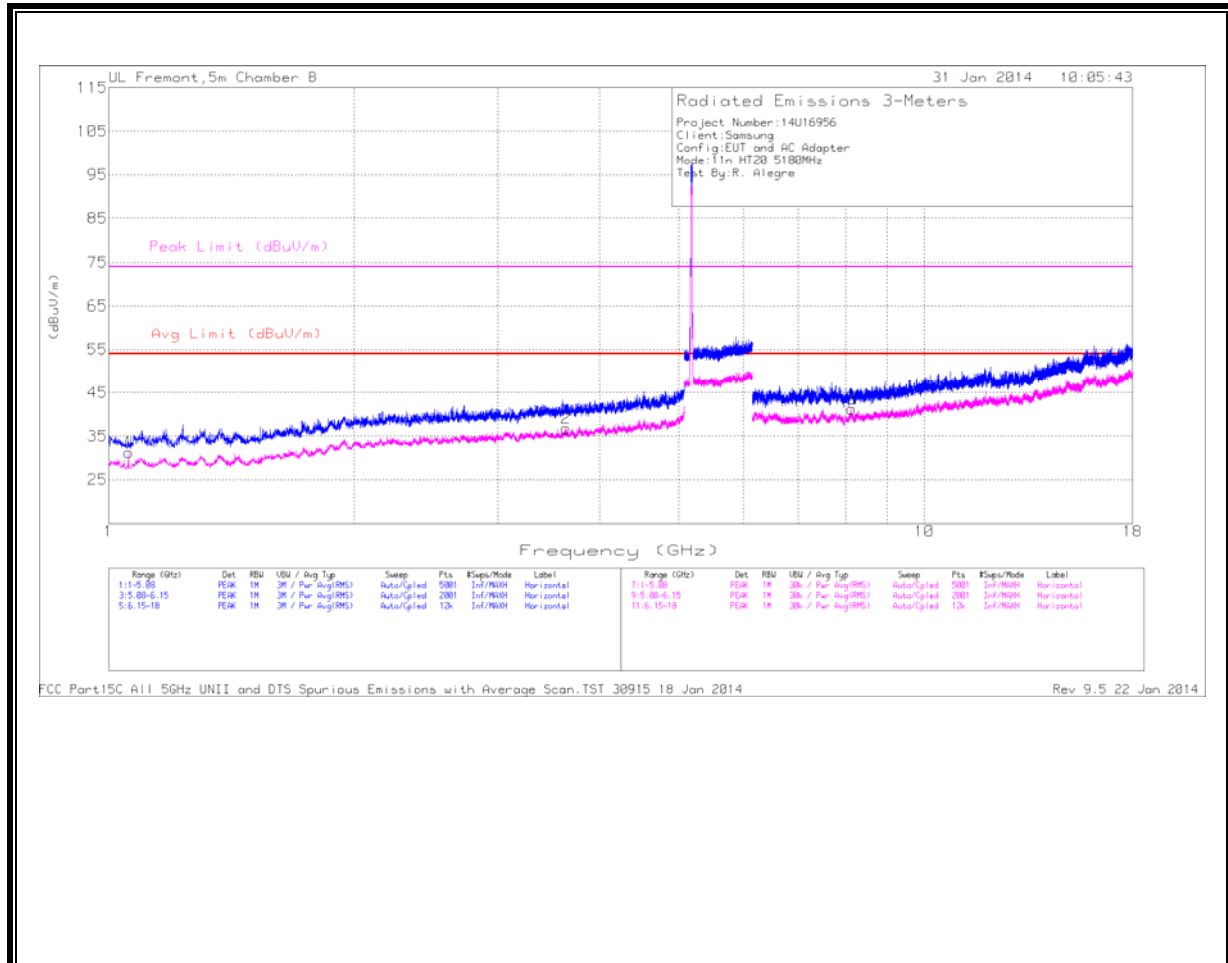
11.1.2. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.2 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)



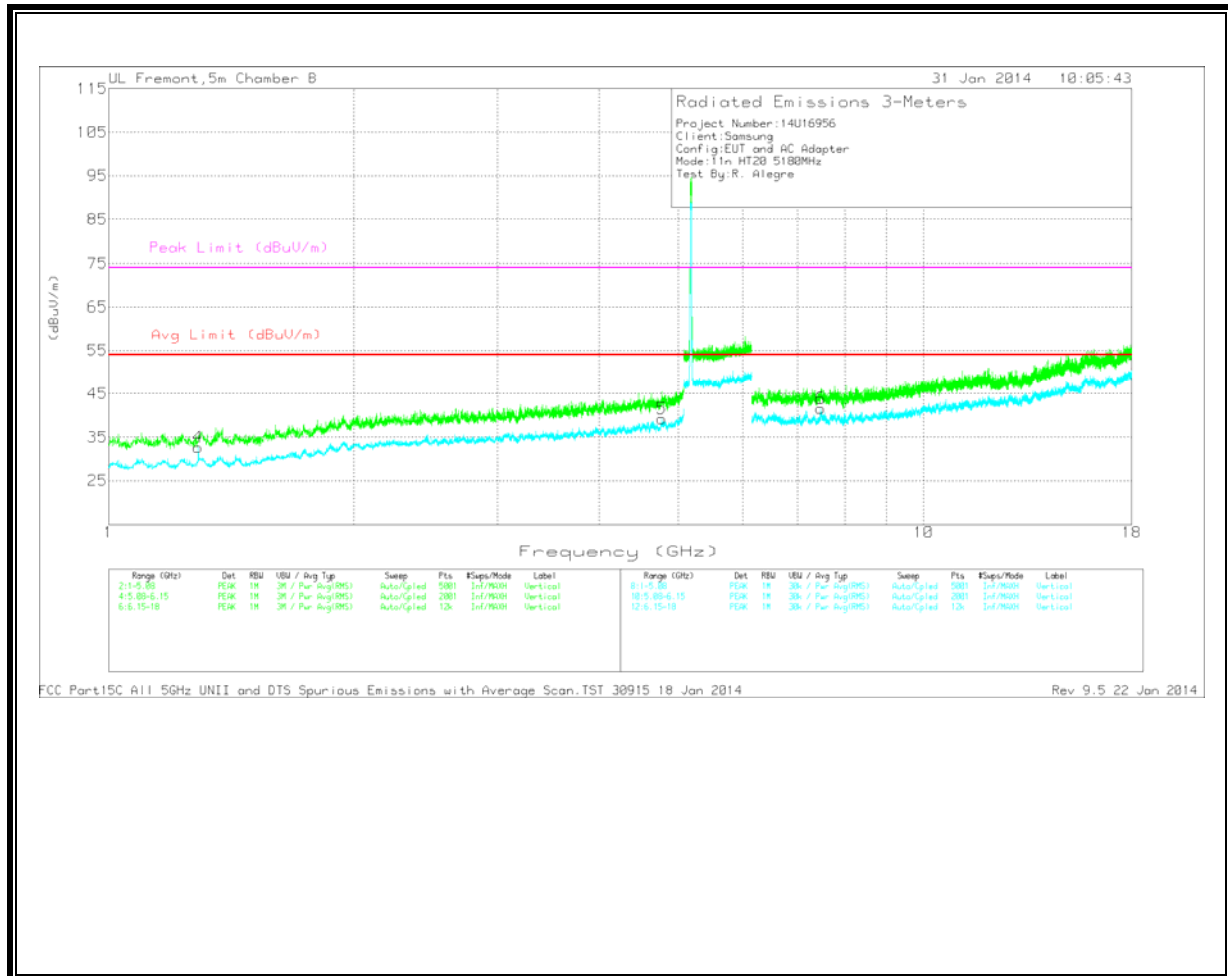


HARMONICS AND SPURIOUS EMISSIONS

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.



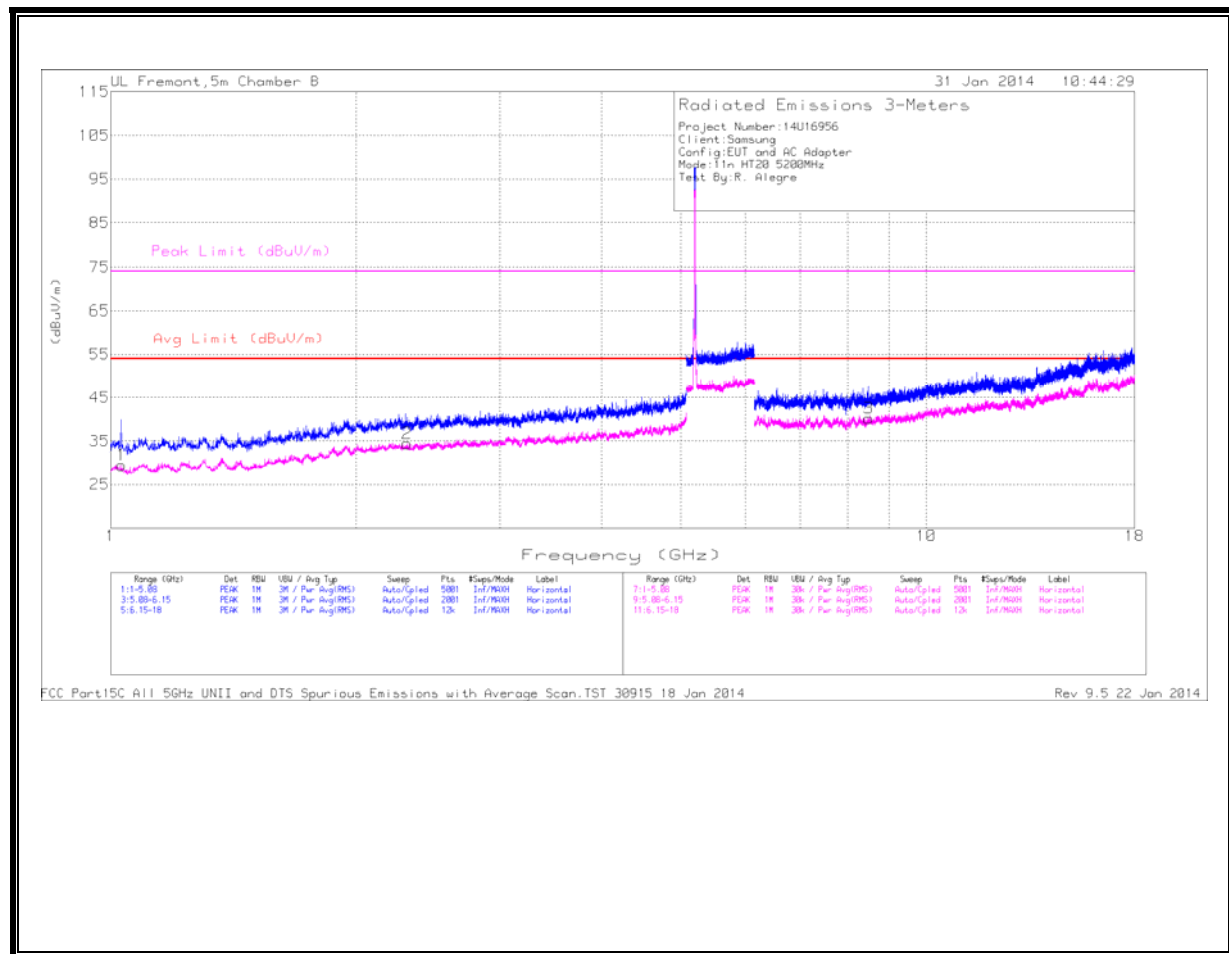
Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

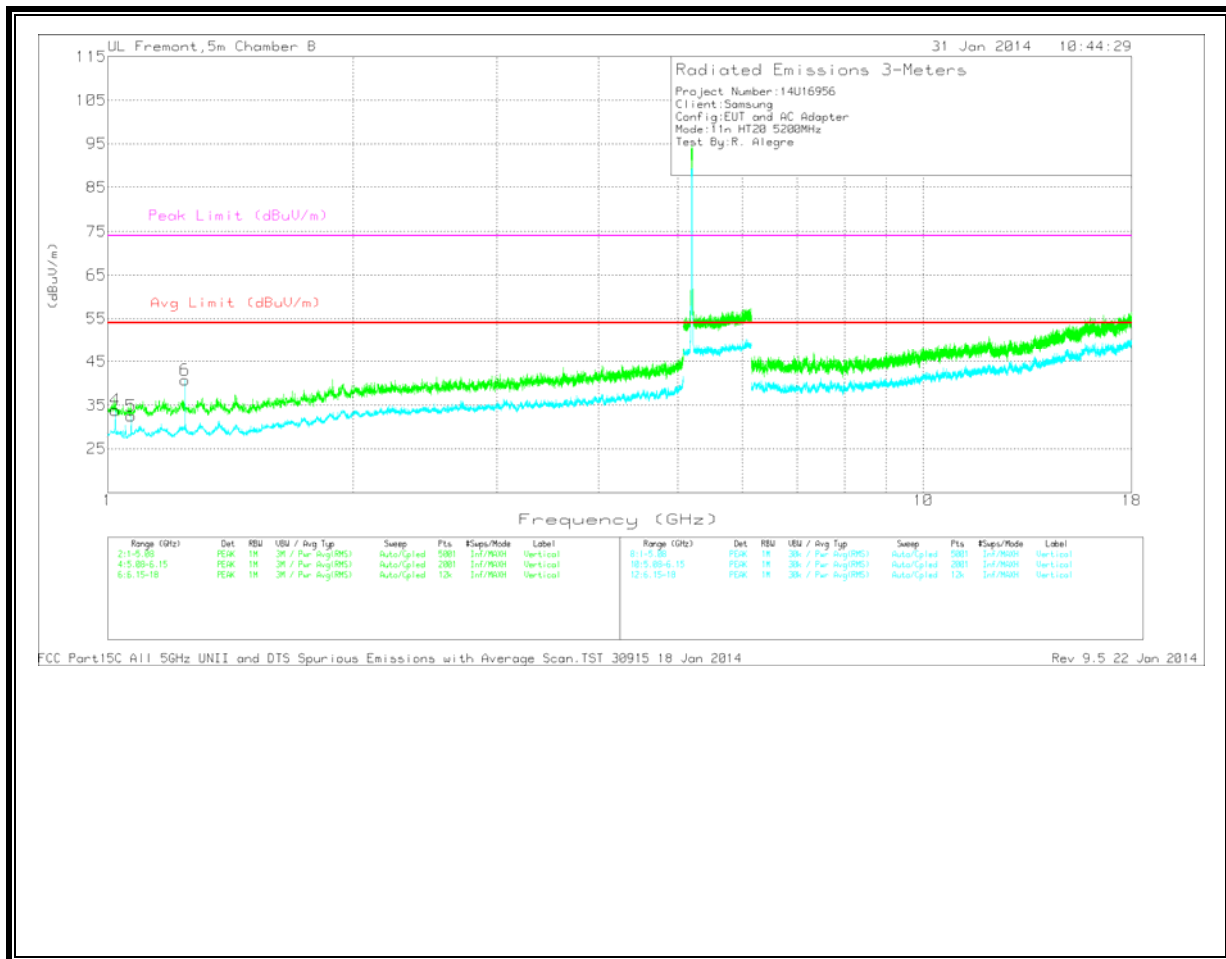
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Ampl/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.058	37.99	Avg	27.7	-34.4	31.29	54	-22.71	-	-	0-360	99	H
4	1.288	38.58	Avg	28.5	-34.4	32.68	54	-21.32	-	-	0-360	99	V
2	3.636	34.49	Avg	33.5	-31.2	36.79	54	-17.21	-	-	0-360	99	H
5	4.774	33.62	Avg	34.7	-29.1	39.22	54	-14.78	-	-	0-360	99	V
6	7.476	31.88	Avg	36	-26.3	41.58	54	-12.42	-	-	0-360	202	V
3	8.149	31.96	Avg	36.1	-26.8	41.26	54	-12.74	-	-	0-360	202	H

Note: All peak readings were 20dB below the peak limit. Average measurements at discrete frequencies are provided in the table above for frequencies that are within 6dB of the average limit.



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



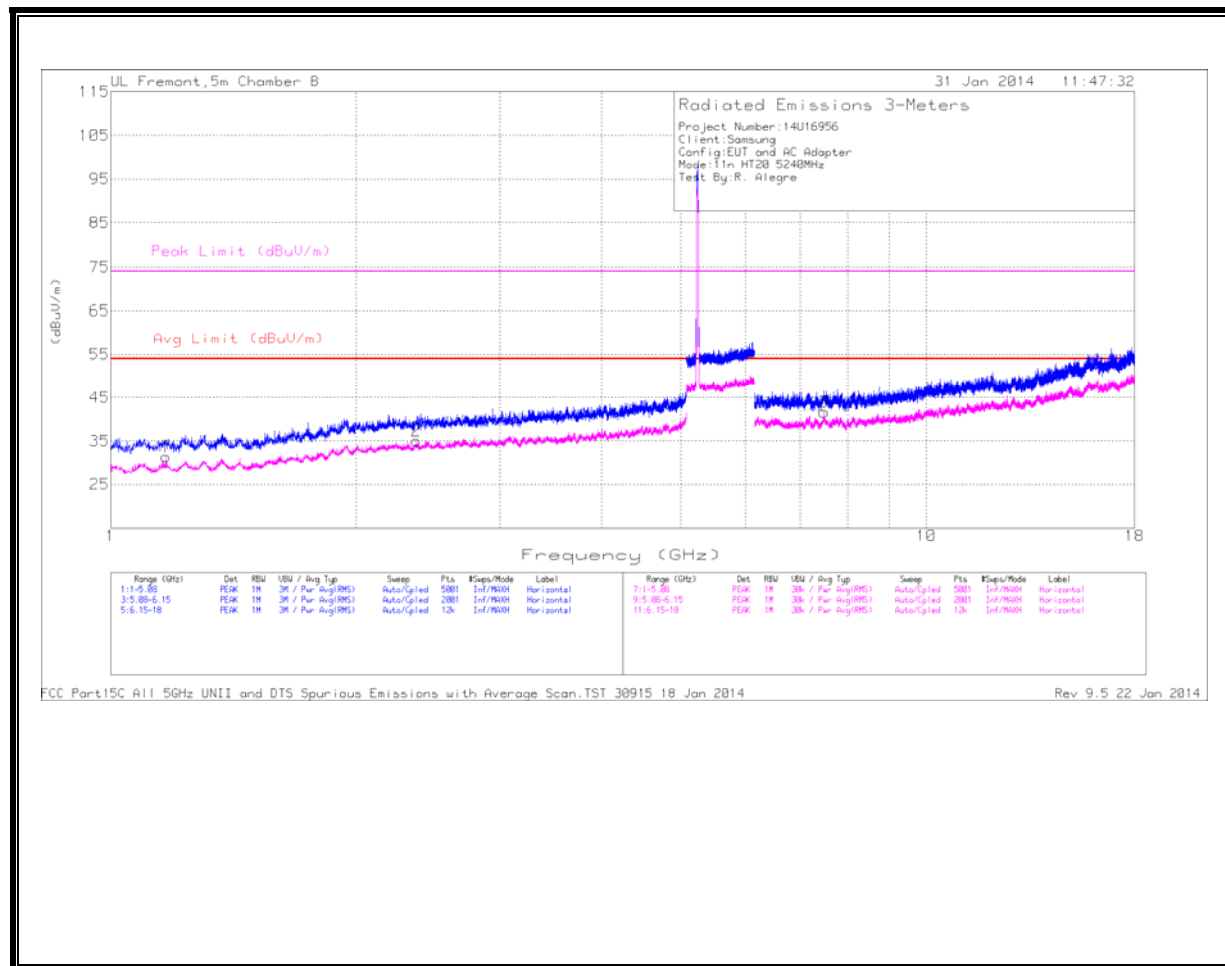
Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

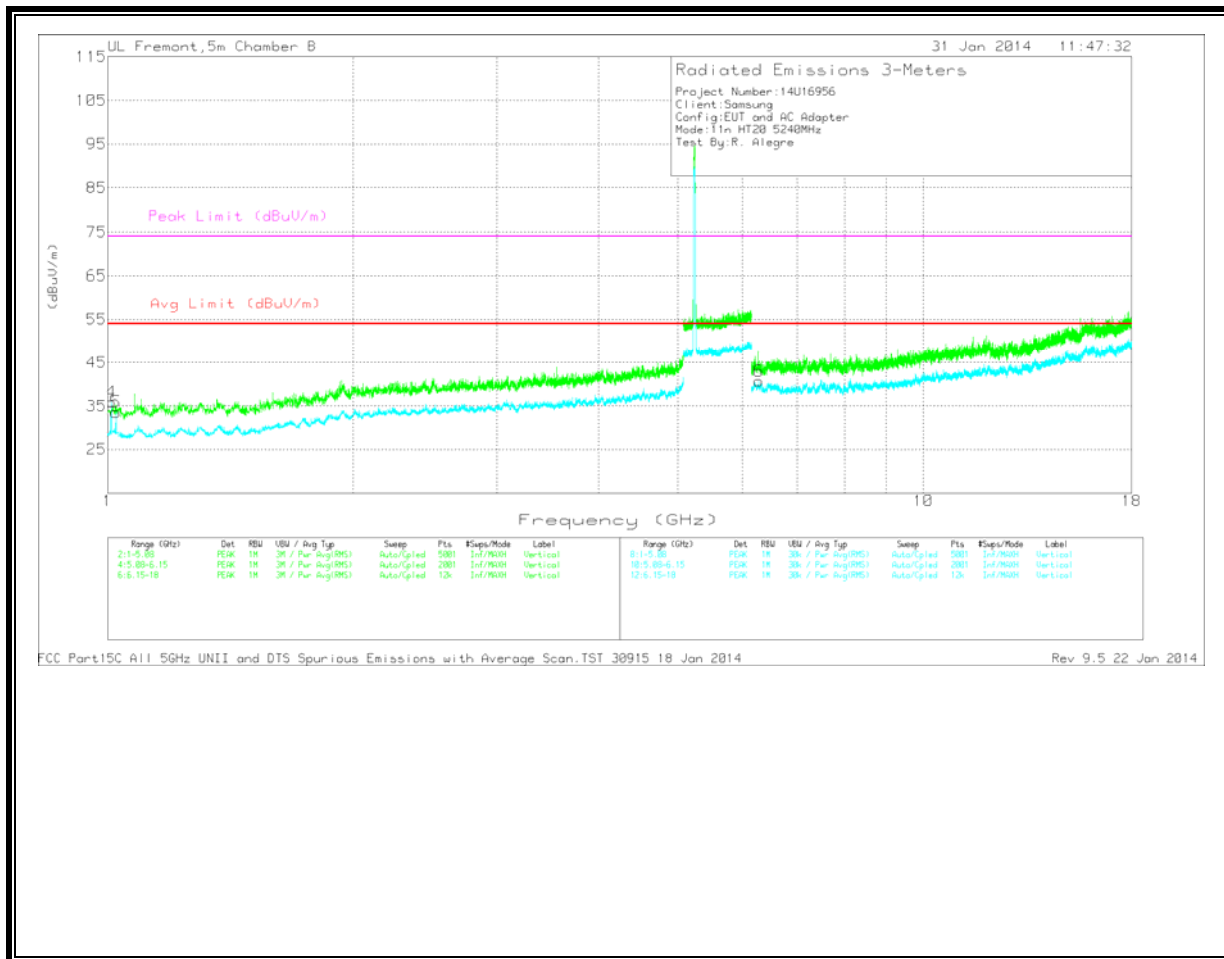
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Ampl/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	1.022	41.05	Avg	27.5	-34.7	33.85	54	-20.15	-	-	0-360	202	V
1	1.032	36.51	Avg	27.6	-34.7	29.41	54	-24.59	-	-	0-360	99	H
5	1.069	39.28	Avg	27.7	-34.5	32.48	54	-21.52	-	-	0-360	202	V
6	1.244	46.83	Avg	28.6	-34.7	40.73	54	-13.27	-	-	0-360	202	V
2	2.309	35.22	Avg	32.2	-33	34.42	54	-19.58	-	-	0-360	99	H
3	8.496	30.71	Avg	36.2	-26.7	40.21	54	-13.79	-	-	0-360	99	H

Note: All peak readings were 20dB below the peak limit. Average measurements at discrete frequencies are provided in the table above for frequencies that are within 6dB of the average limit.



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

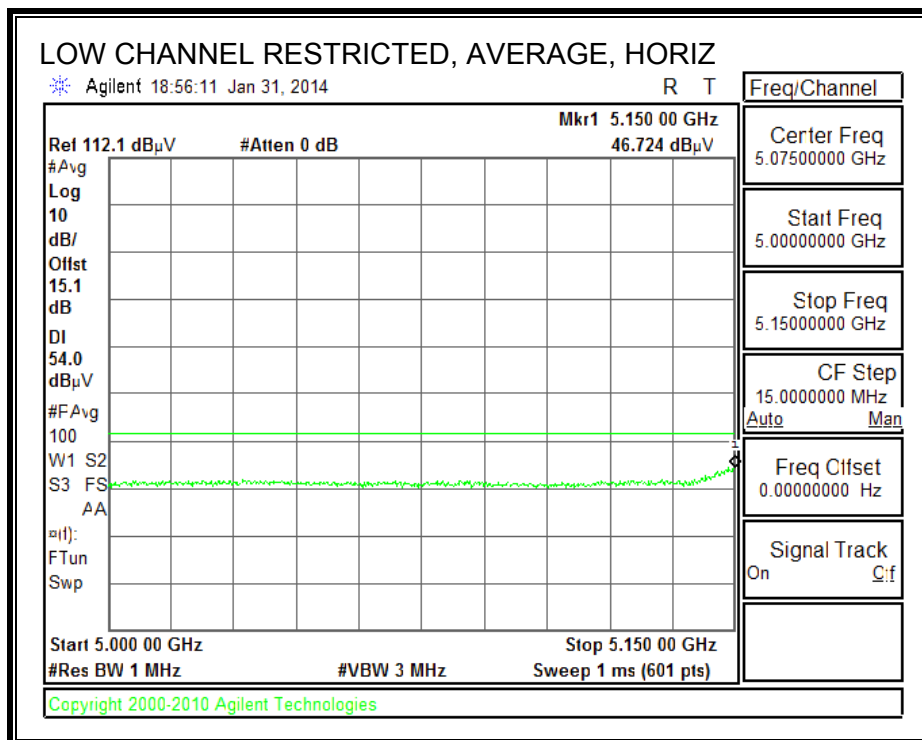
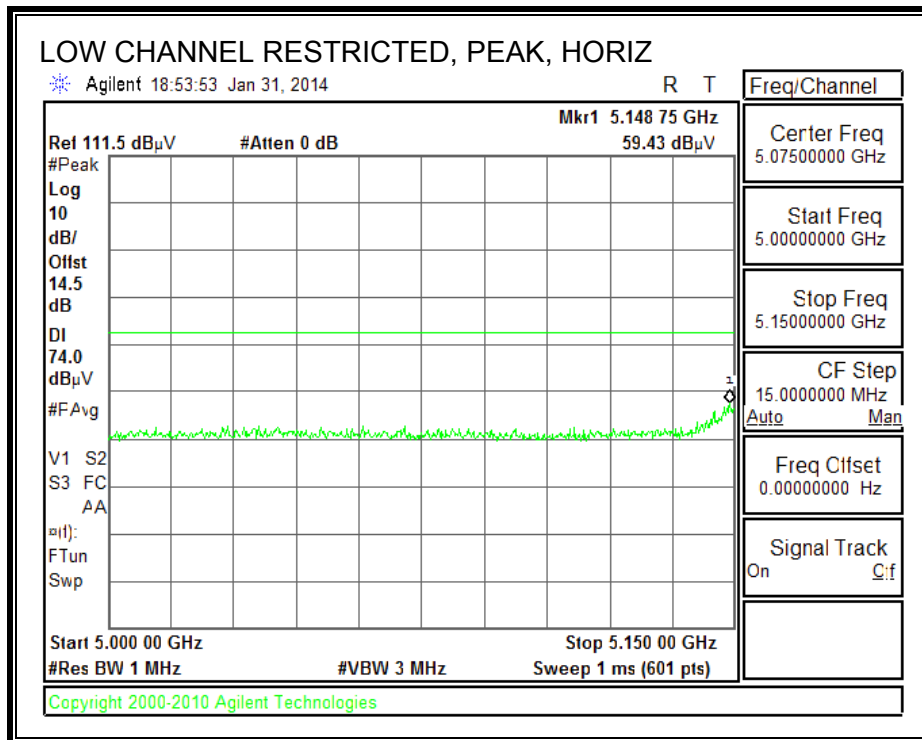
HIGH CHANNEL DATA

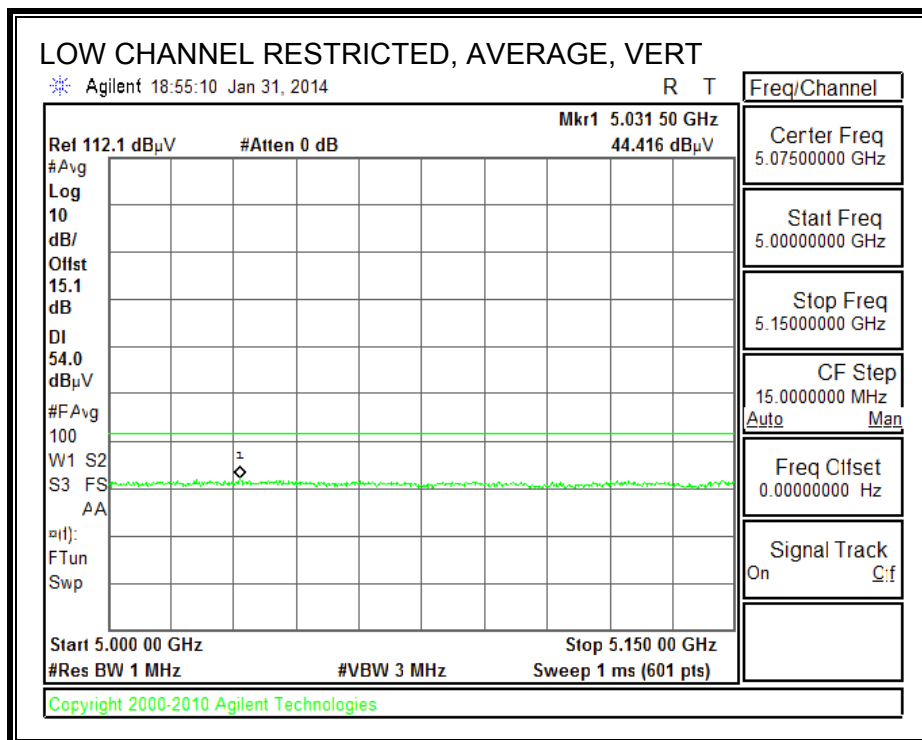
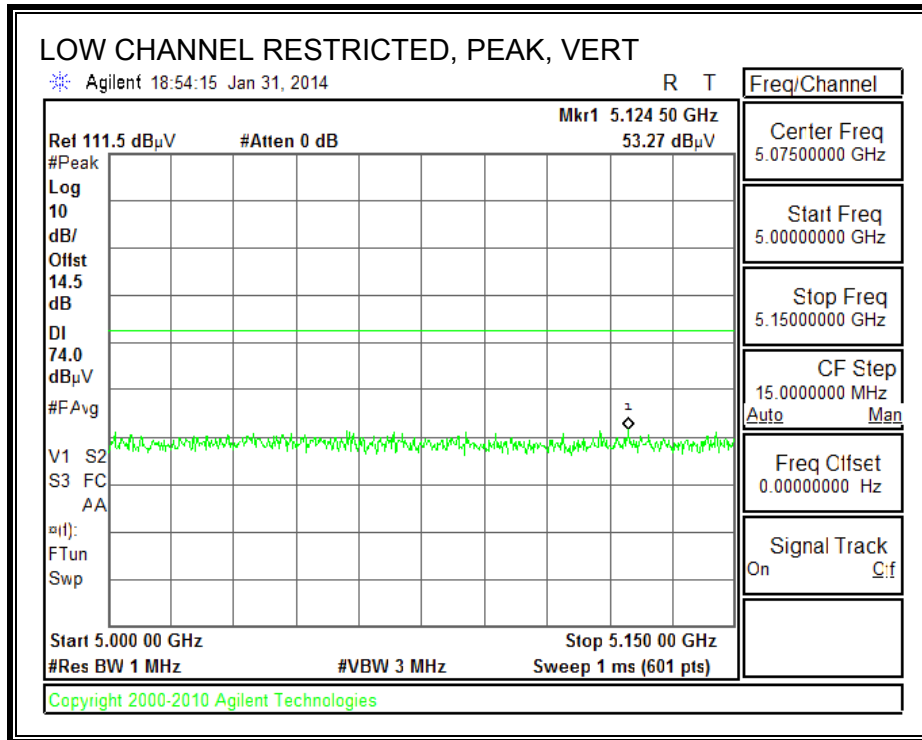
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	1.01	42.93	Avg	27.4	-34.5	35.83	54	-18.17	-	-	0-360	99	V
5	1.024	40.76	Avg	27.5	-34.7	33.56	54	-20.44	-	-	0-360	201	V
1	1.169	37.91	Avg	28.2	-34.7	31.41	54	-22.59	-	-	0-360	201	H
2	2.37	35.4	Avg	32.3	-32.7	35	54	-19	-	-	0-360	201	H
6	6.284	32.95	Avg	36	-28.2	40.75	54	-13.25	-	-	0-360	99	V
3	7.492	31.34	Avg	36	-25.7	41.64	54	-12.36	-	-	0-360	99	H

Note: All peak readings were 20dB below the peak limit. Average measurements at discrete frequencies are provided in the table above for frequencies that are within 6dB of the average limit.

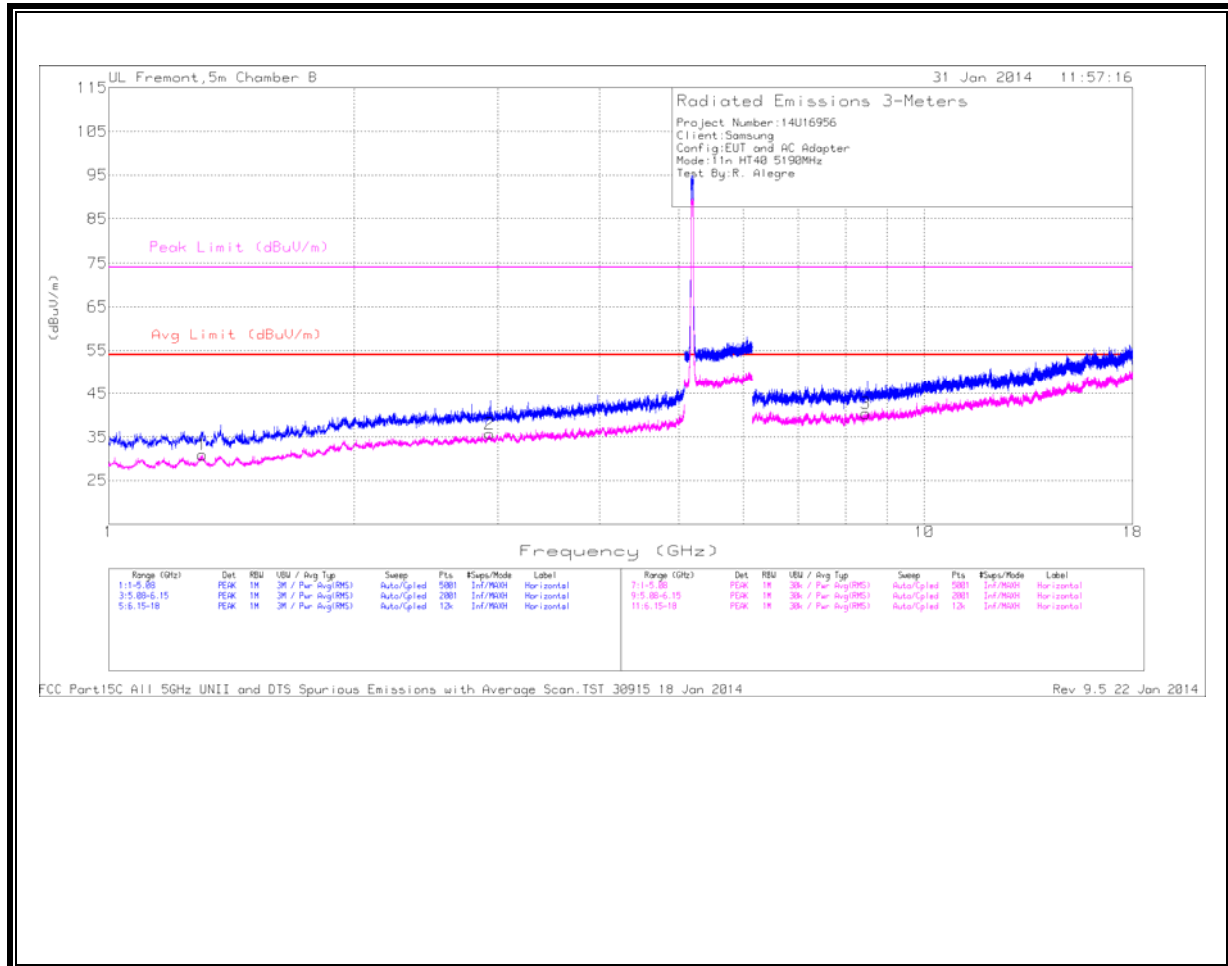
11.1.3. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.2 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)



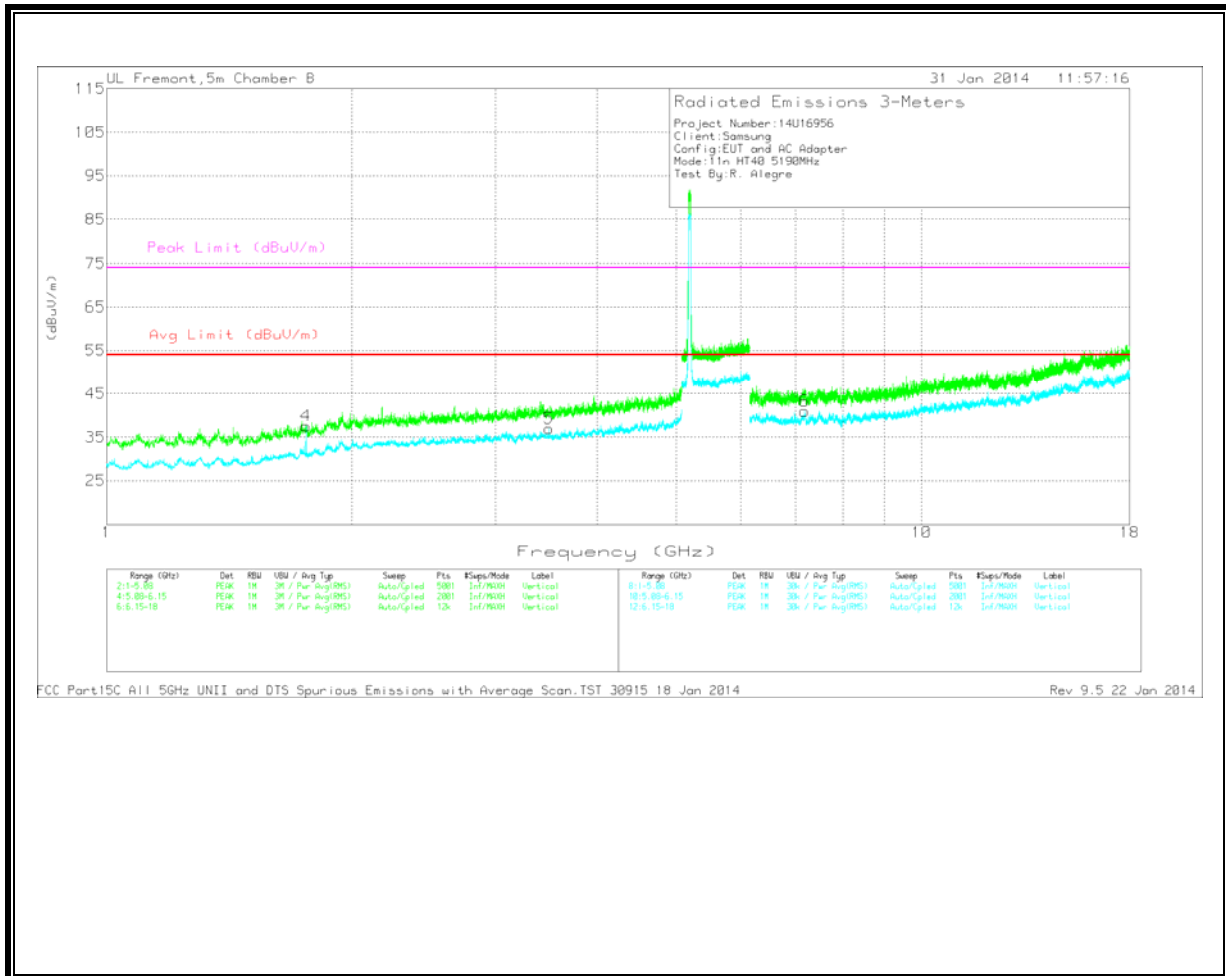


HARMONICS AND SPURIOUS EMISSIONS

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.



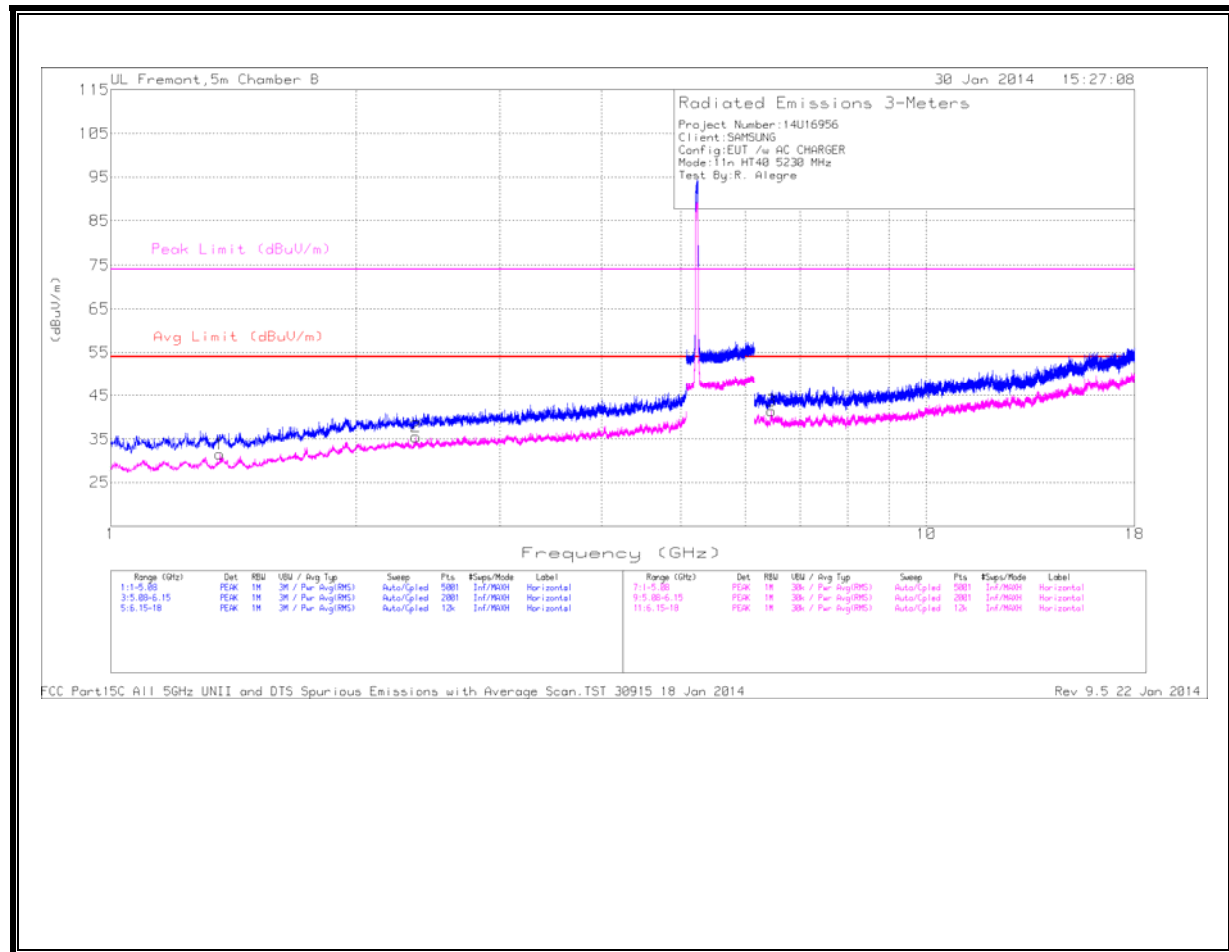
Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

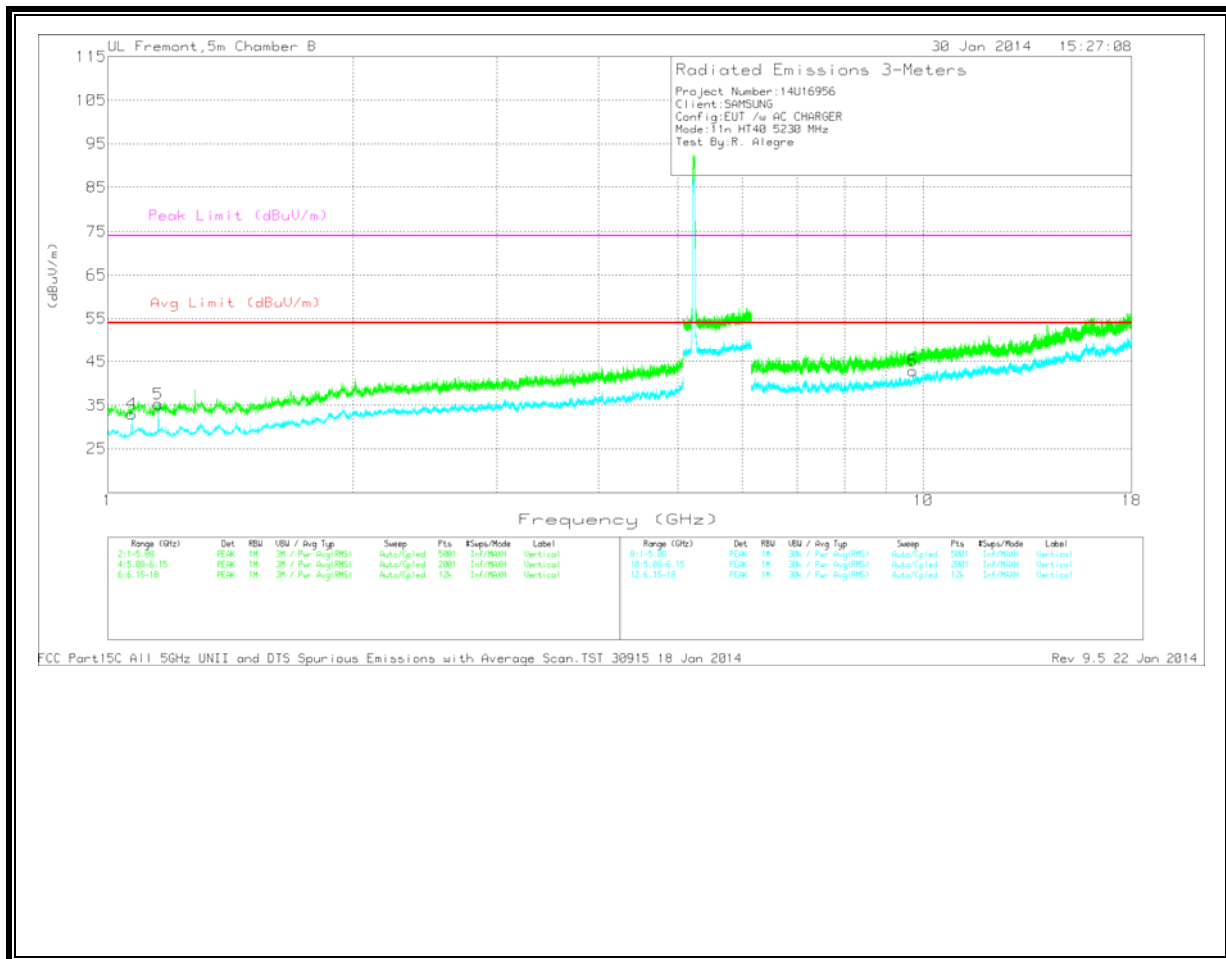
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Ampl/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.303	36.62	Avg	28.5	-34.2	30.92	54	-23.08	-	-	0-360	202	H
4	1.756	41.56	Avg	30.1	-34.1	37.56	54	-16.44	-	-	0-360	202	V
2	2.932	34.4	Avg	33	-31.7	35.7	54	-18.3	-	-	0-360	202	H
5	3.491	35.59	Avg	33.2	-31.8	36.99	54	-17.01	-	-	0-360	99	V
6	7.185	31.65	Avg	35.8	-26.5	40.95	54	-13.05	-	-	0-360	99	V
3	8.477	30.6	Avg	36.2	-26.4	40.4	54	-13.6	-	-	0-360	201	H

Note: All peak readings were 20dB below the peak limit. Average measurements at discrete frequencies are provided in the table above for frequencies that are within 6dB of the average limit.



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: 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

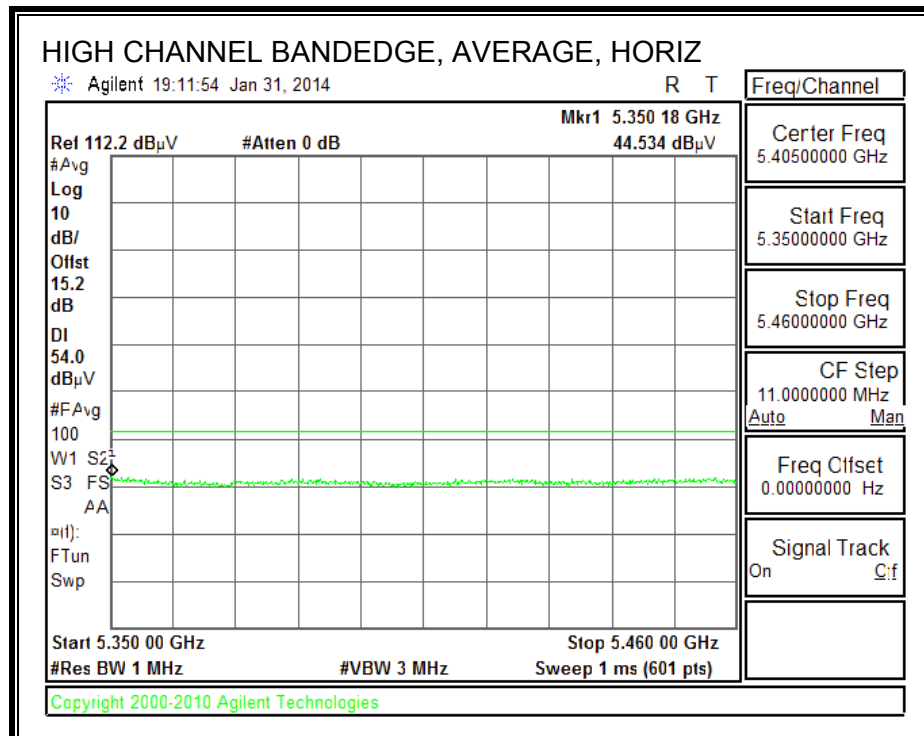
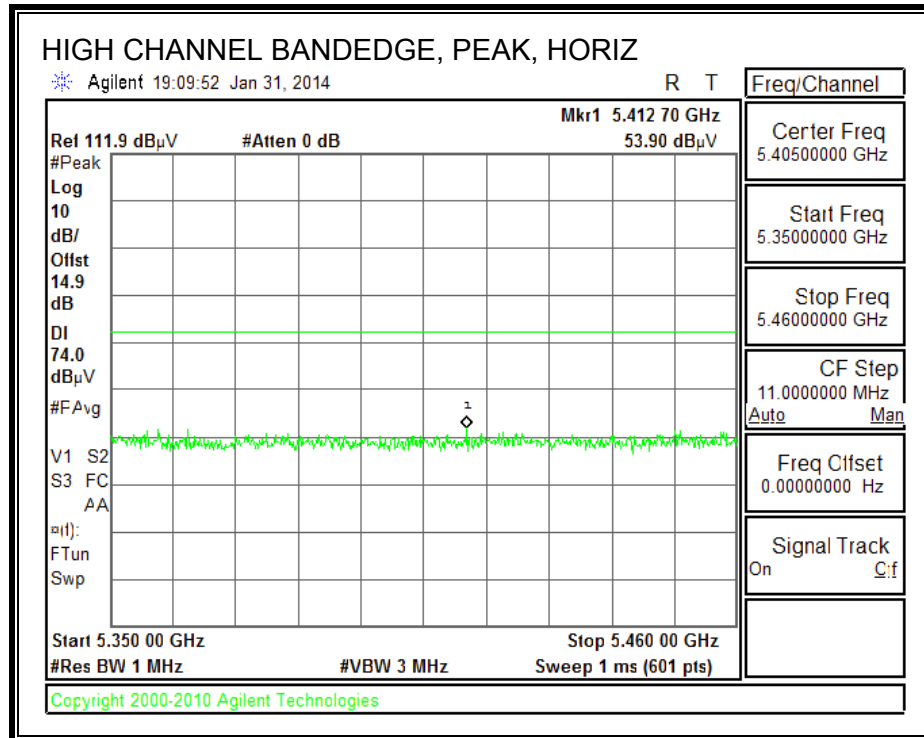
Trace Markers

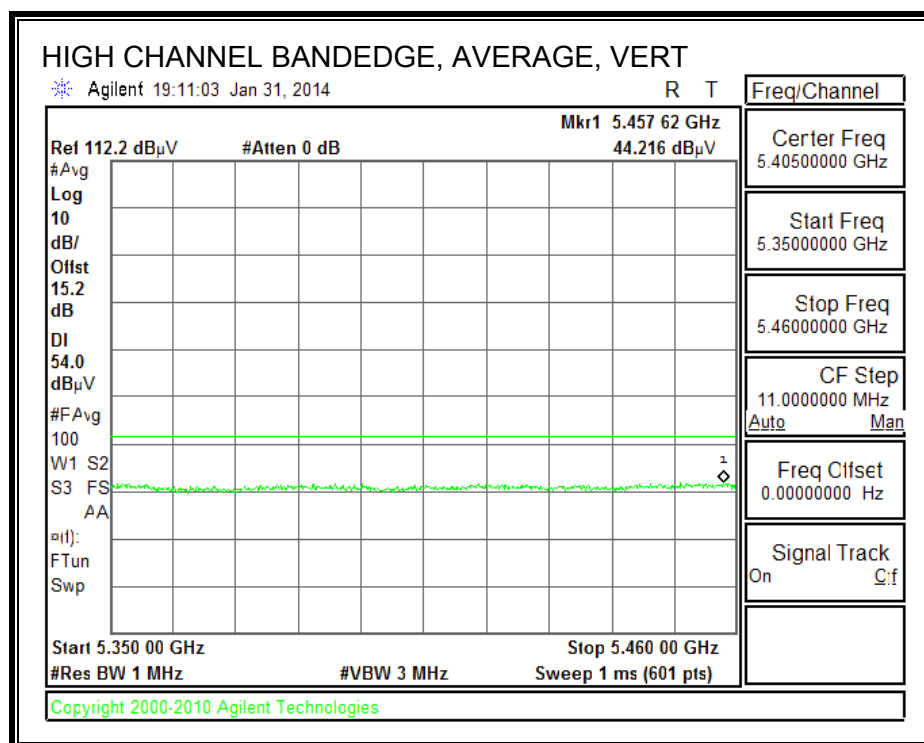
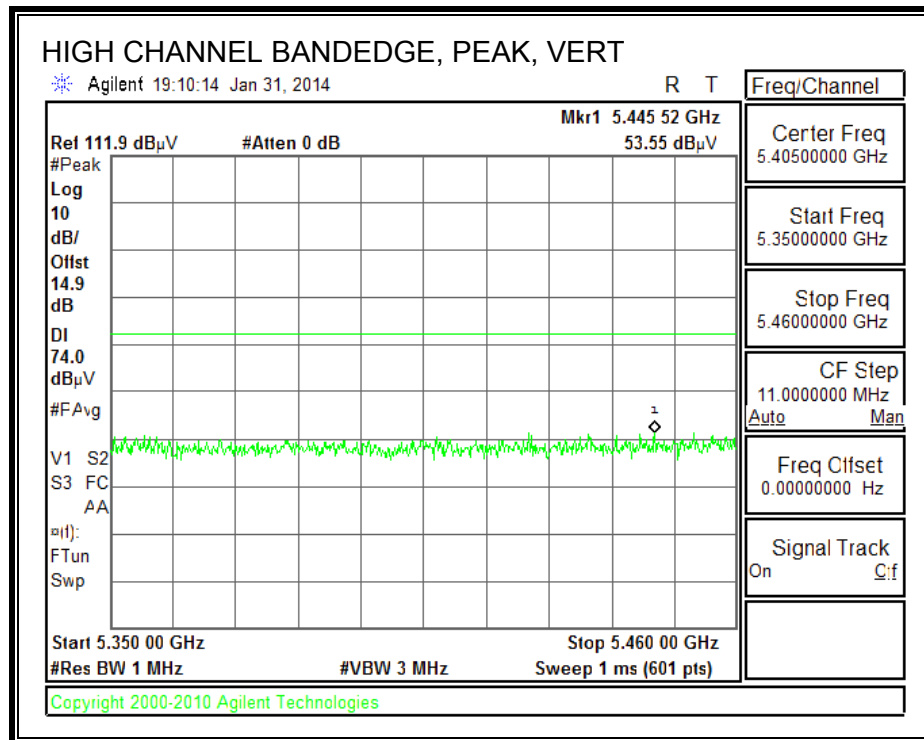
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	1.07	39.76	Avg	27.7	-34.5	32.96	54	-21.04	-	-	0-360	201	V
5	1.153	41.72	Avg	28.1	-34.6	35.22	54	-18.78	-	-	0-360	99	V
1	1.361	36.93	Avg	28.4	-33.8	31.53	54	-22.47	-	-	0-360	99	H
2	2.368	35.9	Avg	32.3	-32.7	35.5	54	-18.5	-	-	0-360	201	H
3	6.46	34.24	Avg	35.9	-28.7	41.44	54	-12.56	-	-	0-360	99	H
6	9.708	29.27	Avg	37.4	-23.8	42.87	54	-11.13	-	-	0-360	202	V

Note: All peak readings were 20dB below the peak limit. Average measurements at discrete frequencies are provided in the table above for frequencies that are within 6dB of the average limit.

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)

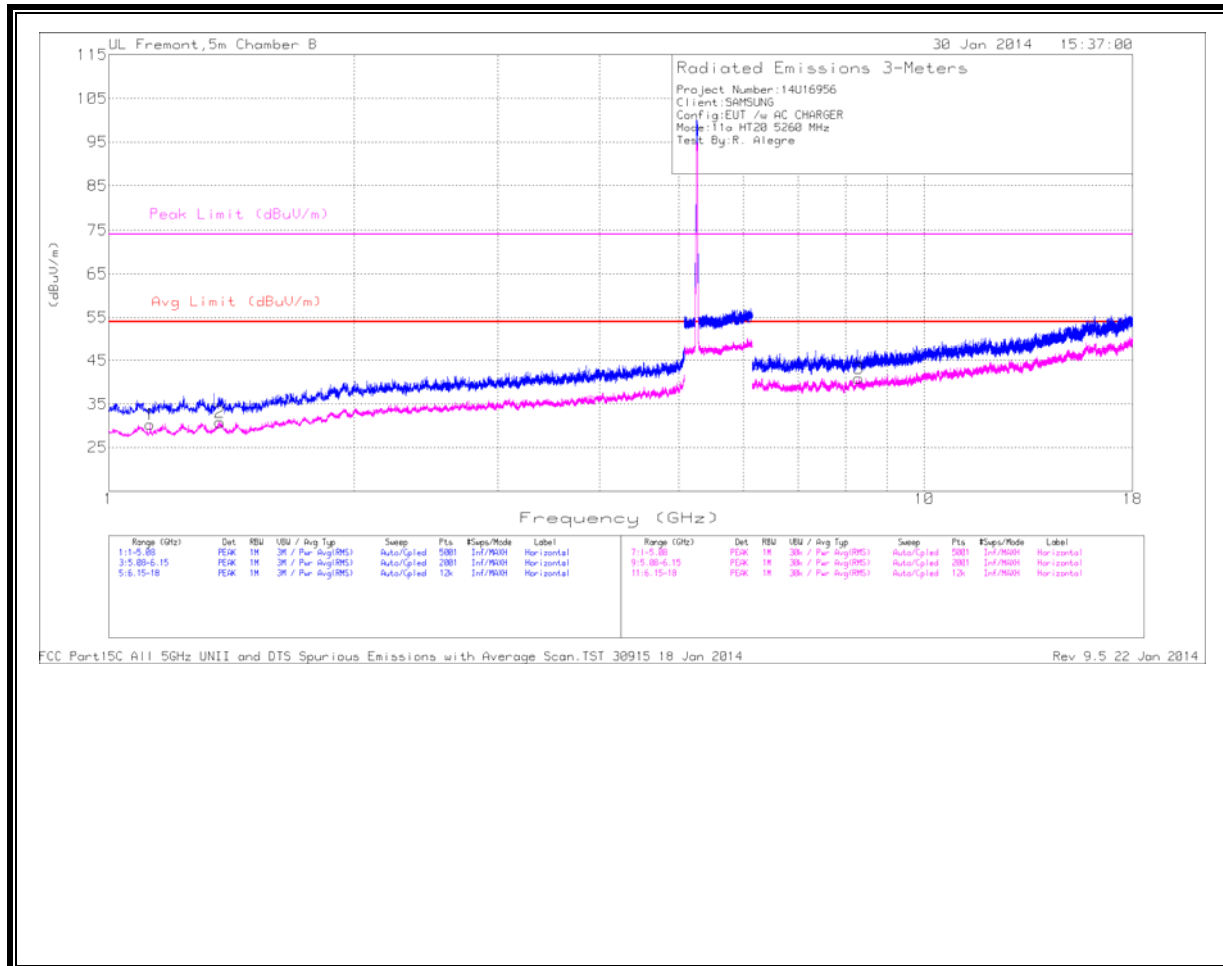




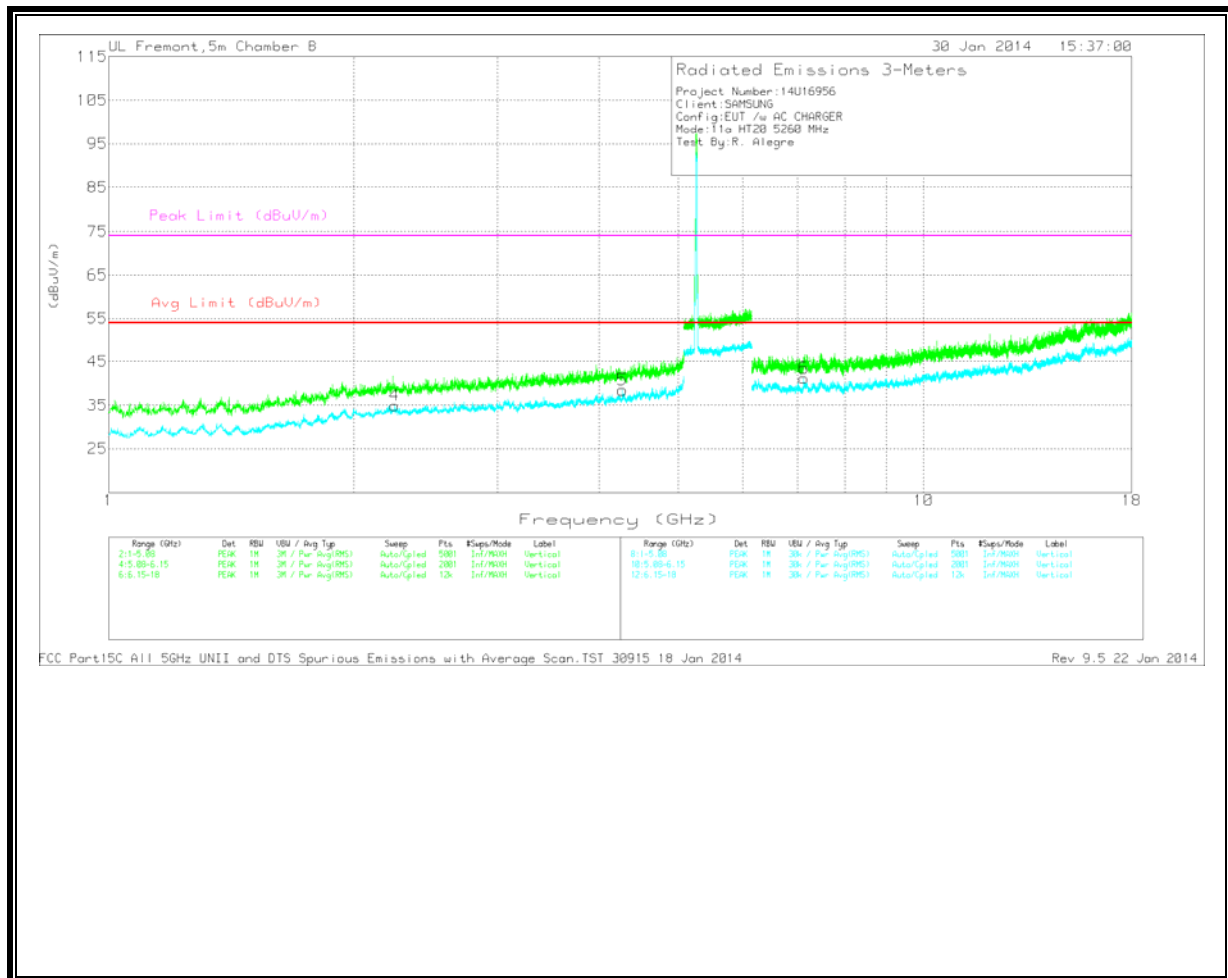
11.2.2.

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.



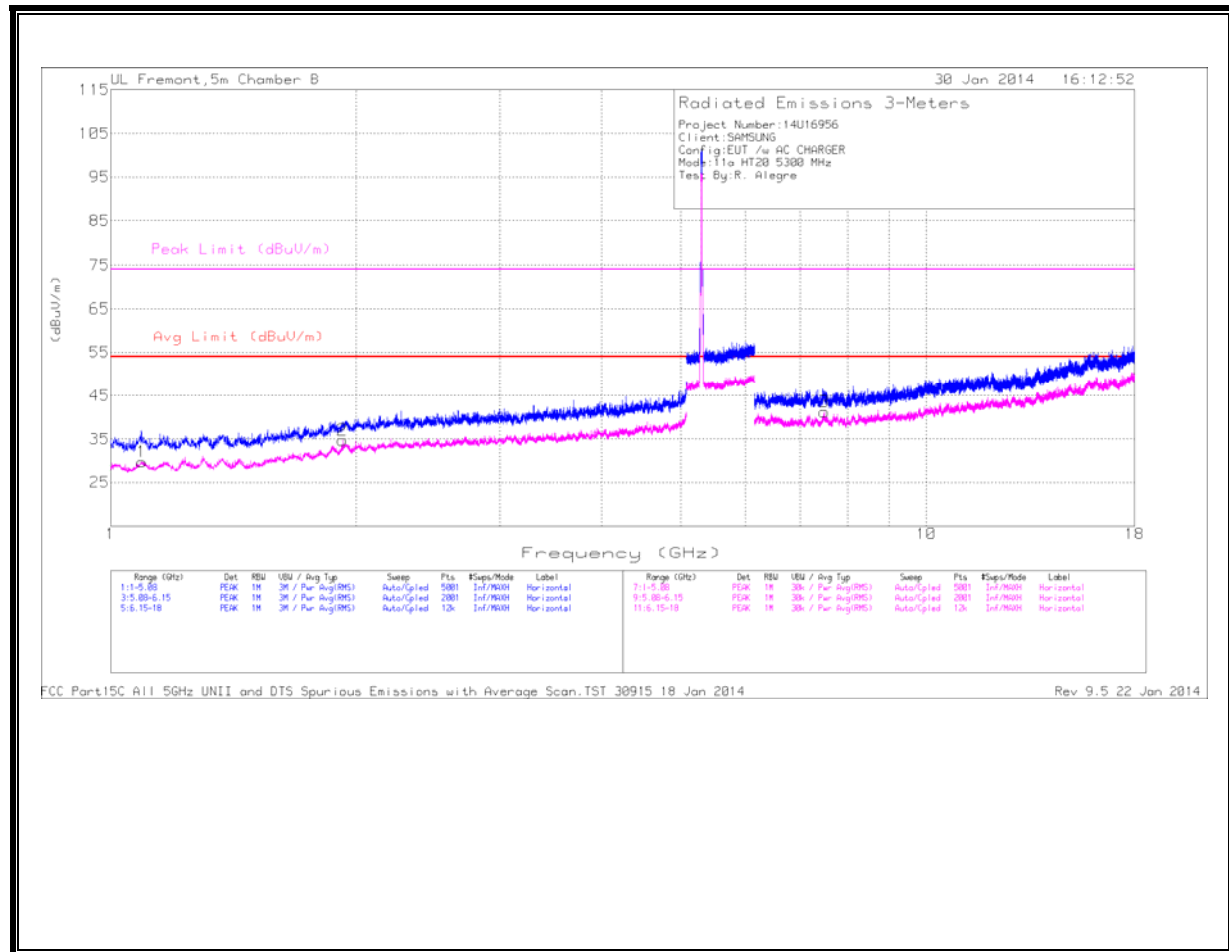
Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

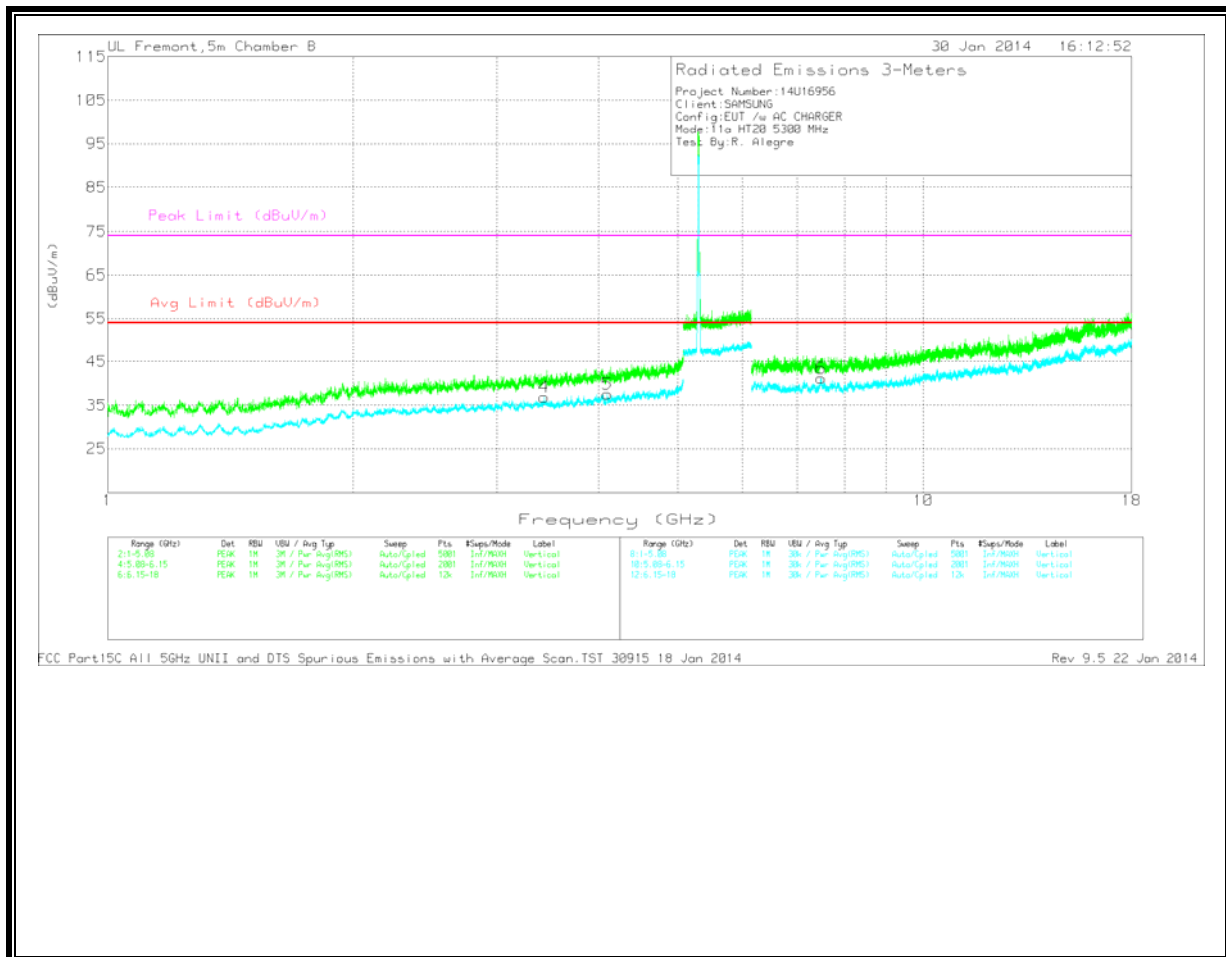
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.124	36.79	Avg	28	-34.5	30.29	54	-23.71	-	-	0-360	99	H
2	1.369	36.2	Avg	28.4	-33.8	30.8	54	-23.2	-	-	0-360	202	H
4	2.244	35.21	Avg	32.1	-32.4	34.91	54	-19.09	-	-	0-360	202	V
5	4.271	34.57	Avg	34.1	-30.2	38.47	54	-15.53	-	-	0-360	99	V
6	7.129	33.28	Avg	35.8	-27.9	41.18	54	-12.82	-	-	0-360	202	V
3	8.309	31.3	Avg	36.1	-26.5	40.9	54	-13.1	-	-	0-360	202	H

Note: All peak readings were 20dB below the peak limit. Average measurements at discrete frequencies are provided in the table above for frequencies that are within 6dB of the average limit.



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



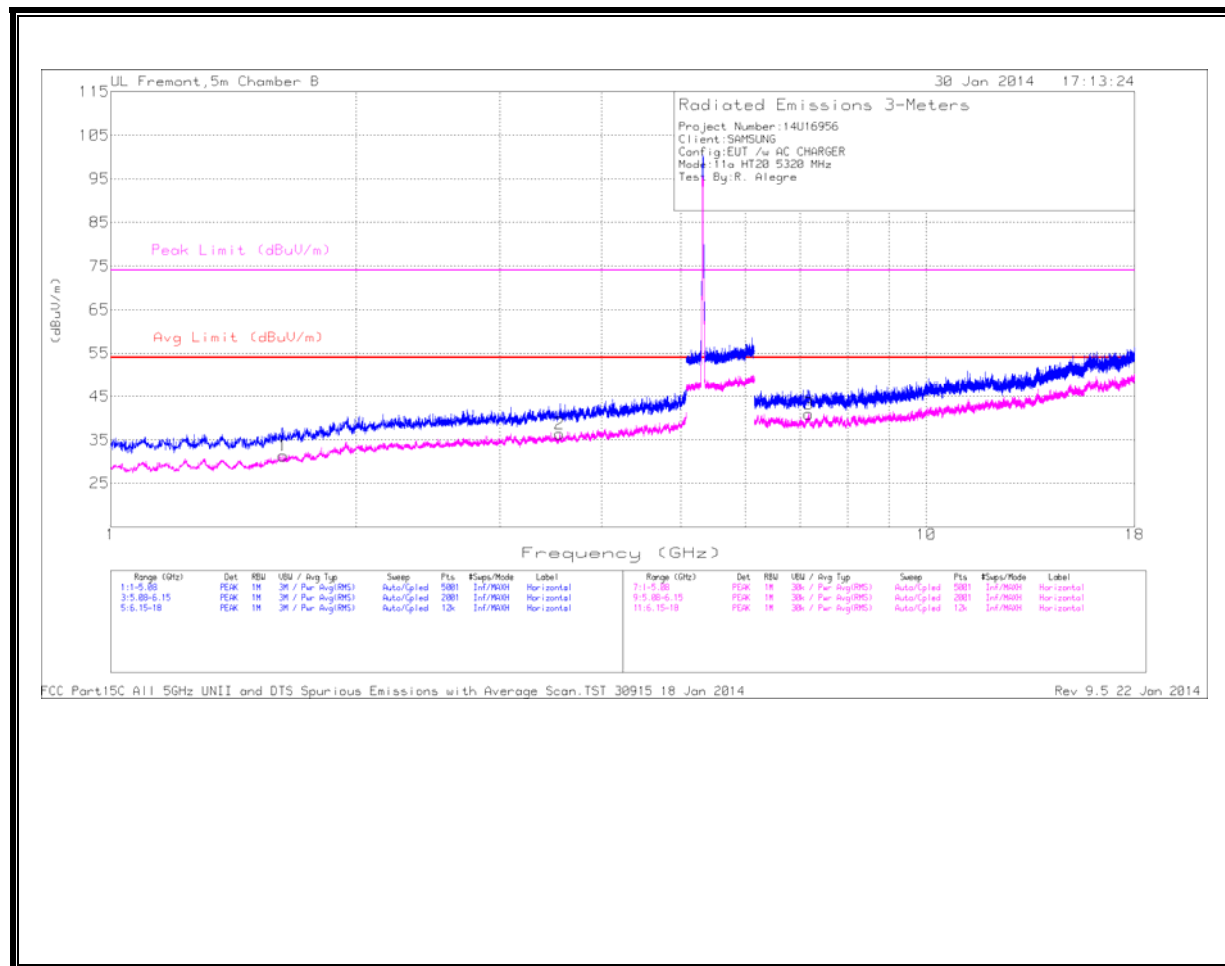
Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

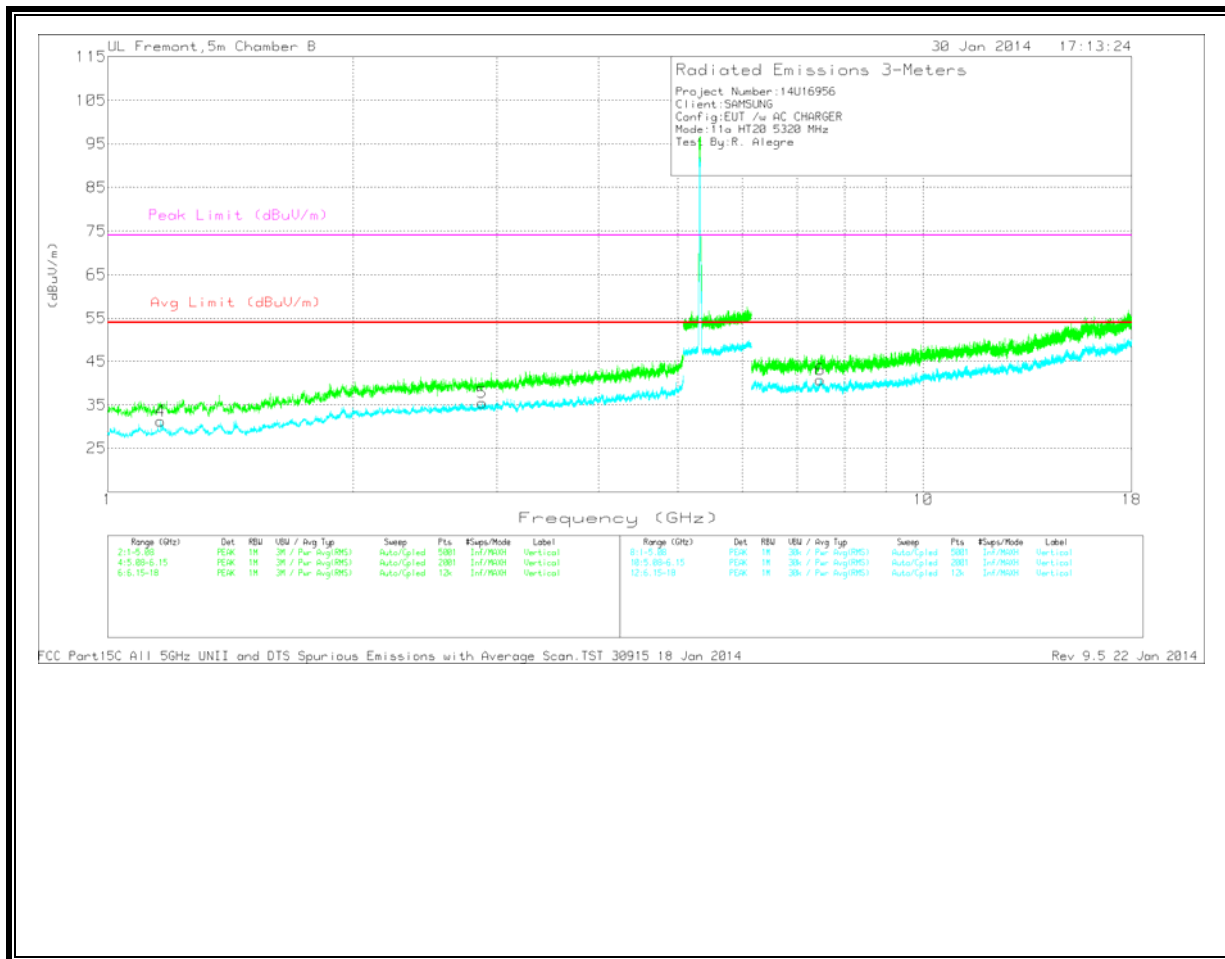
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.092	36.37	Avg	27.8	-34.4	29.77	54	-24.23	-	-	0-360	202	H
2	1.924	36.11	Avg	31.3	-32.7	34.71	54	-19.29	-	-	0-360	99	H
4	3.428	34.73	Avg	33.2	-31.1	36.83	54	-17.17	-	-	0-360	99	V
5	4.098	34.34	Avg	34	-30.8	37.54	54	-16.46	-	-	0-360	99	V
6	7.492	30.87	Avg	36	-25.7	41.17	54	-12.83	-	-	0-360	99	V
3	7.495	31.05	Avg	36	-25.8	41.25	54	-12.75	-	-	0-360	202	H

Note: All peak readings were 20dB below the peak limit. Average measurements at discrete frequencies are provided in the table above for frequencies that are within 6dB of the average limit.



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

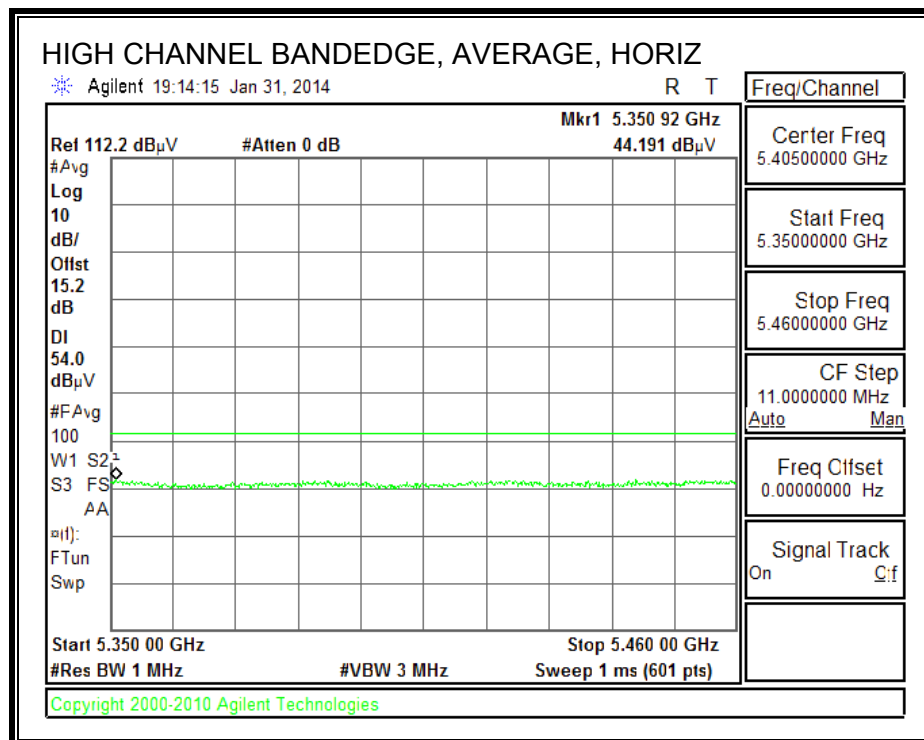
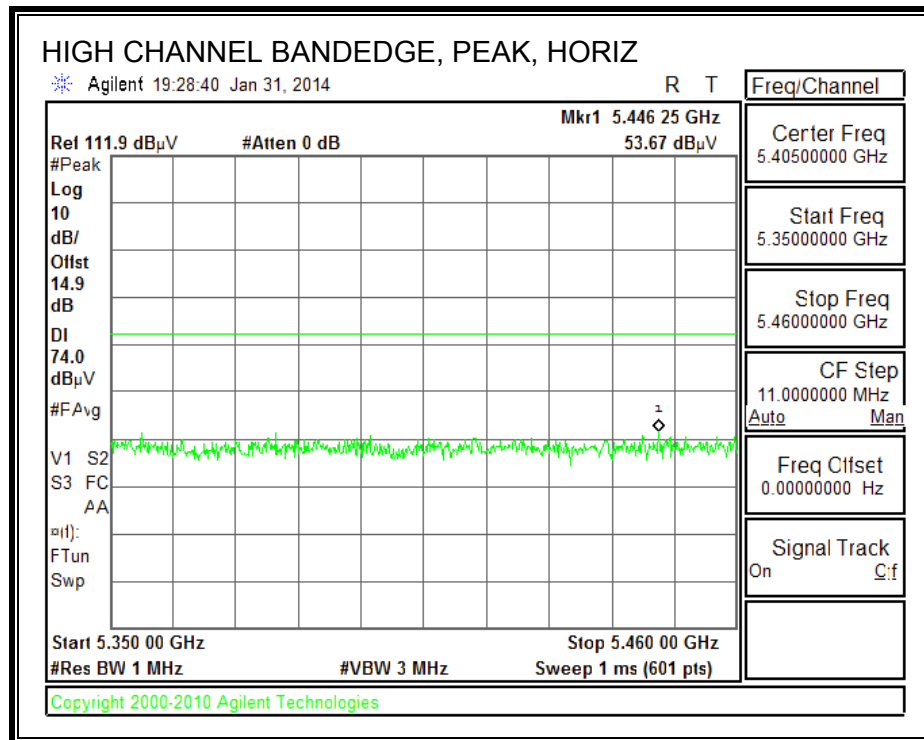
HIGH CHANNEL DATA

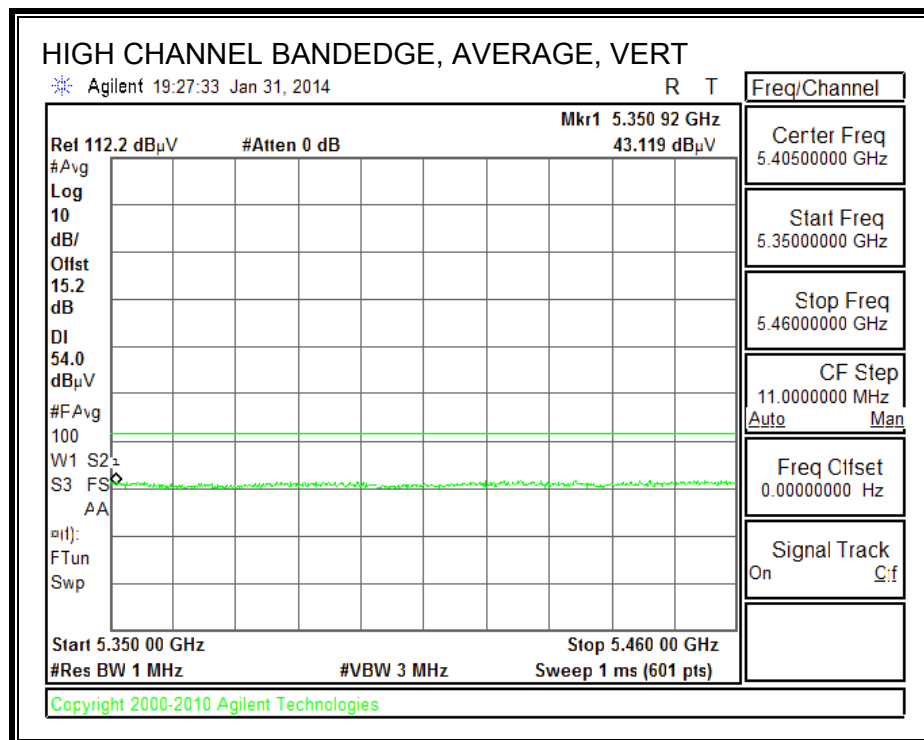
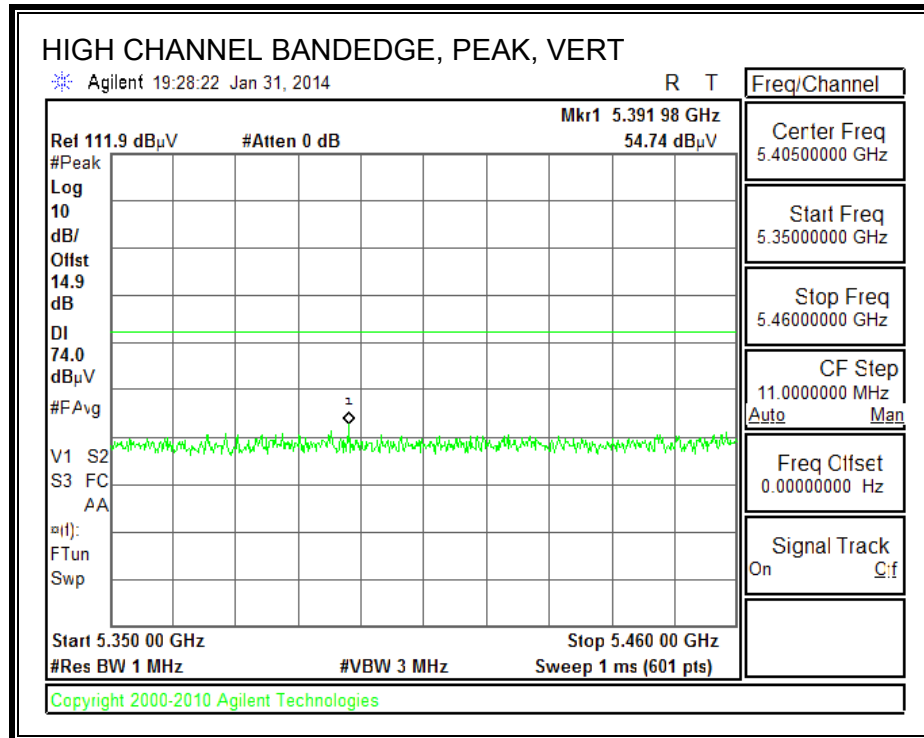
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Ampl/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	1.162	37.74	Avg	28.2	-34.7	31.24	54	-22.76	-	-	0-360	99	V
1	1.628	35.46	Avg	29.2	-33.3	31.36	54	-22.64	-	-	0-360	201	H
5	2.879	34.49	Avg	33	-32	35.49	54	-18.51	-	-	0-360	99	V
2	3.549	34.88	Avg	33.3	-31.8	36.38	54	-17.62	-	-	0-360	99	H
3	7.17	32.25	Avg	35.8	-27.1	40.95	54	-13.05	-	-	0-360	99	H
6	7.475	31.17	Avg	36	-26.4	40.77	54	-13.23	-	-	0-360	202	V

Note: All peak readings were 20dB below the peak limit. Average measurements at discrete frequencies are provided in the table above for frequencies that are within 6dB of the average limit.

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

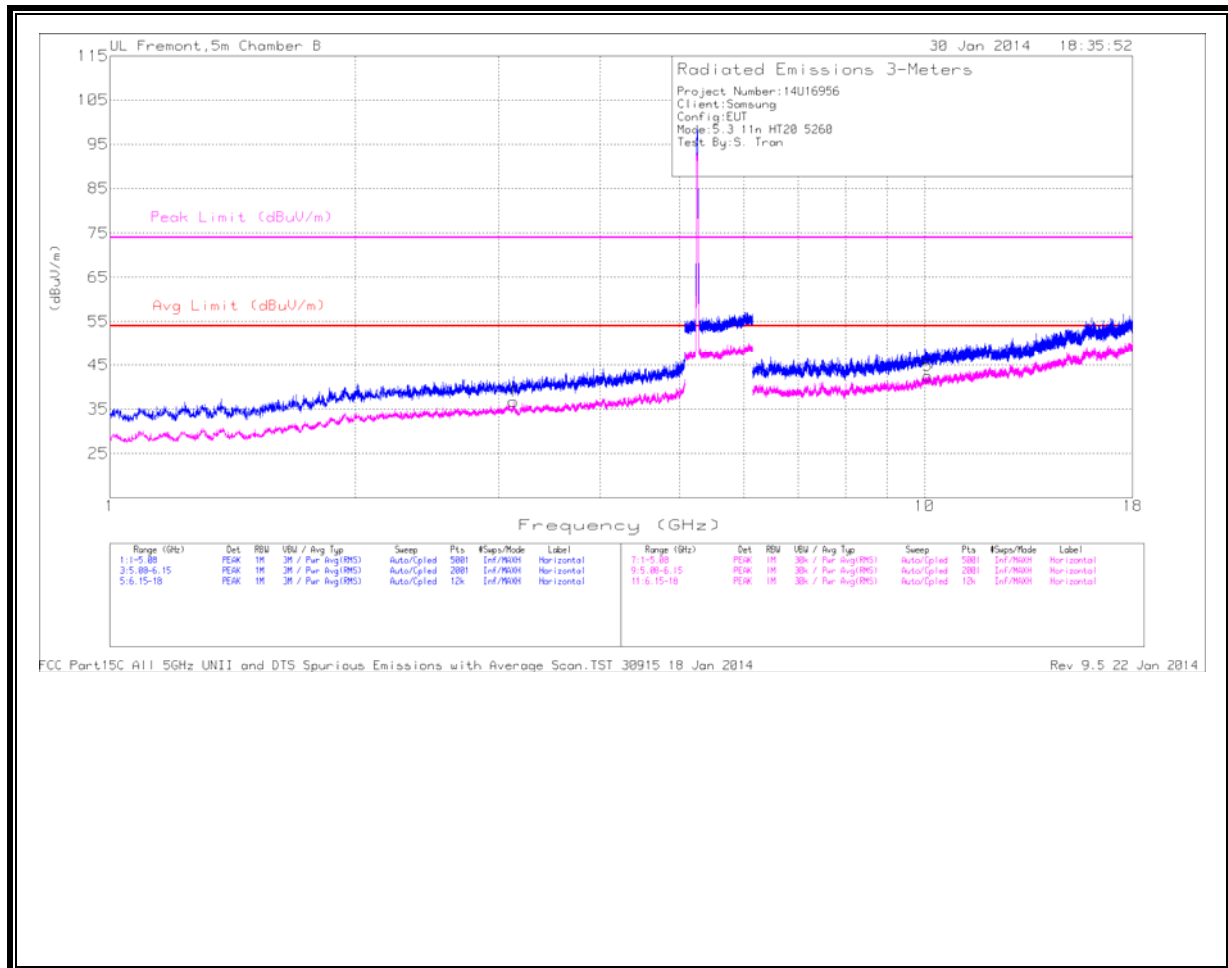




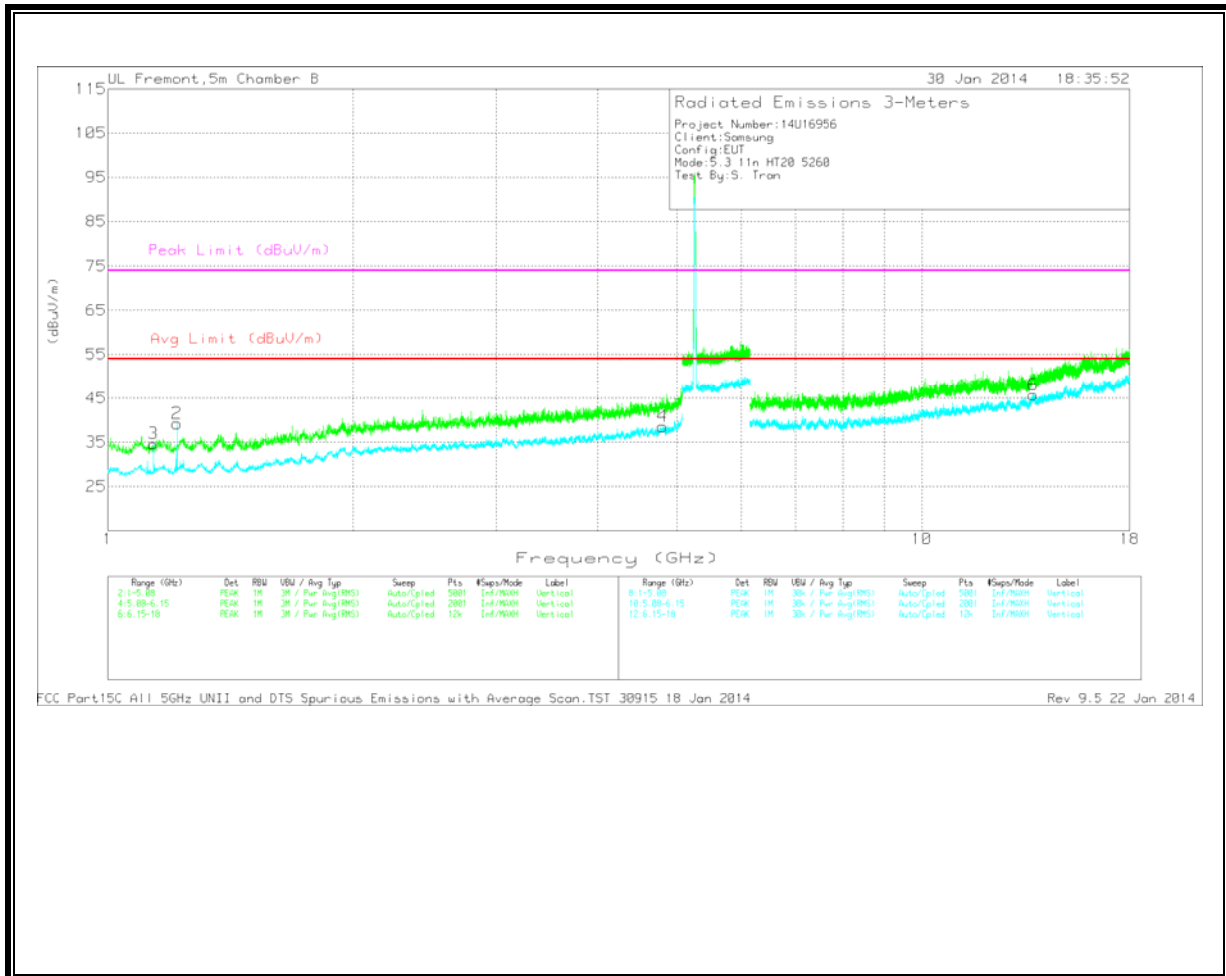
11.2.4.

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.



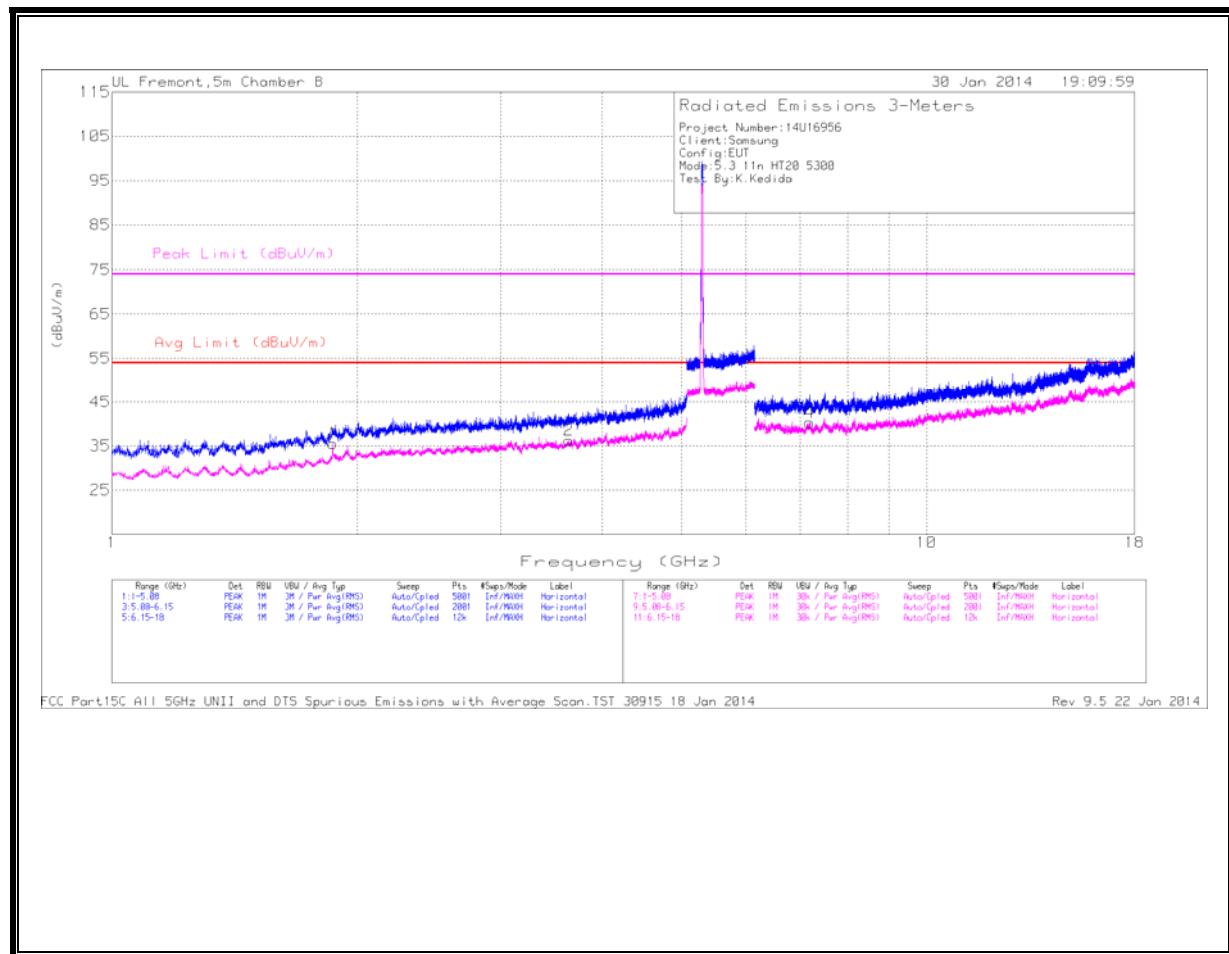
Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

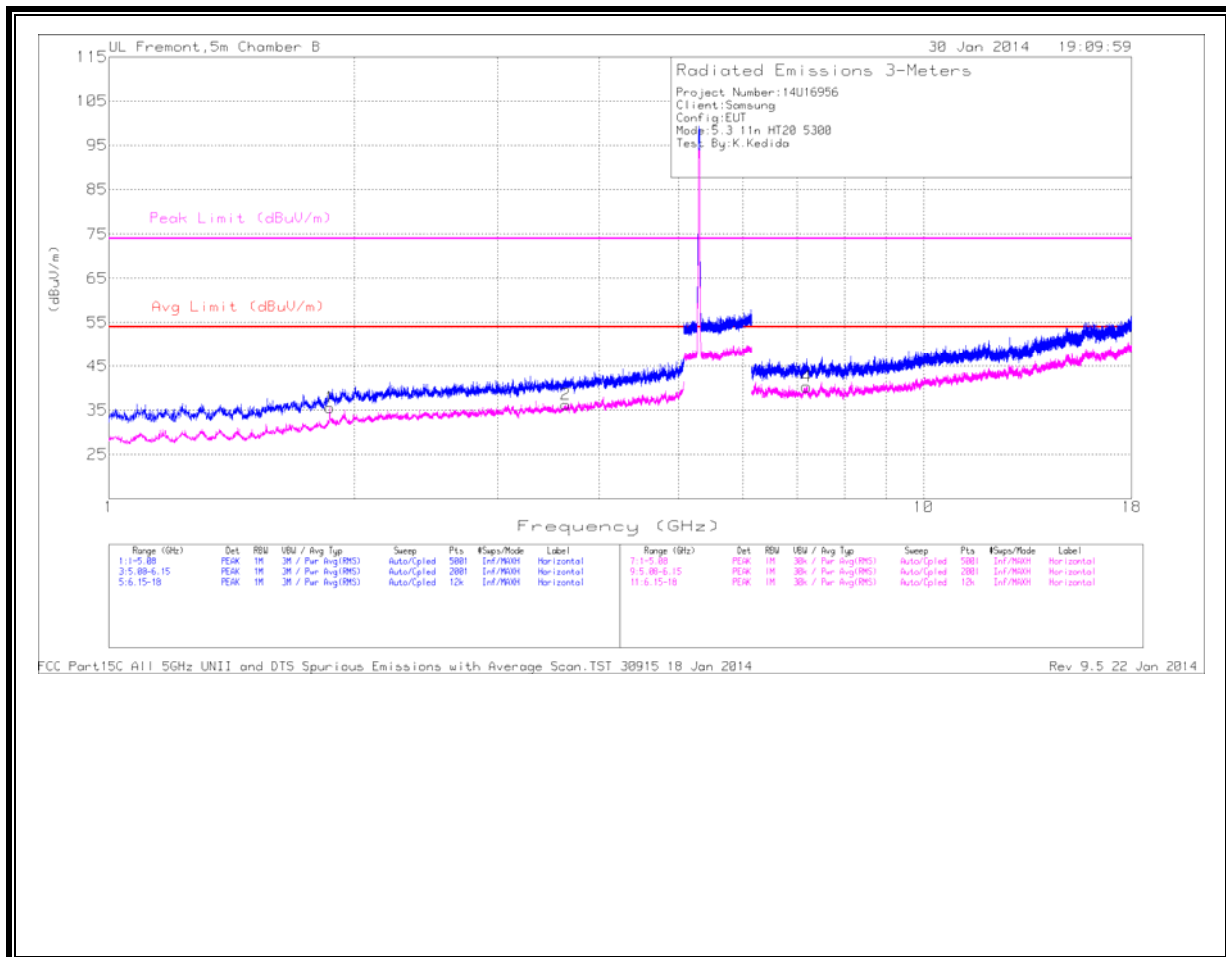
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Ampl/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	1.138	40.82	Avg	28.1	-34.3	34.62	54	-19.38	-	-	0-360	202	V
2	1.216	45.63	Avg	28.4	-34.8	39.23	54	-14.77	-	-	0-360	202	V
1	3.131	35.44	Avg	33.2	-31.9	36.74	54	-17.26	-	-	0-360	99	H
4	4.806	33.05	Avg	34.7	-29.2	38.55	54	-15.45	-	-	0-360	202	V
5	10.092	28.18	Avg	37.9	-23.6	42.48	54	-11.52	-	-	0-360	99	H
6	13.699	28.24	Avg	39.1	-21.6	45.74	54	-8.26	-	-	0-360	99	V

Note: All peak readings were 20dB below the peak limit. Average measurements at discrete frequencies are provided in the table above for frequencies that are within 6dB of the average limit.



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

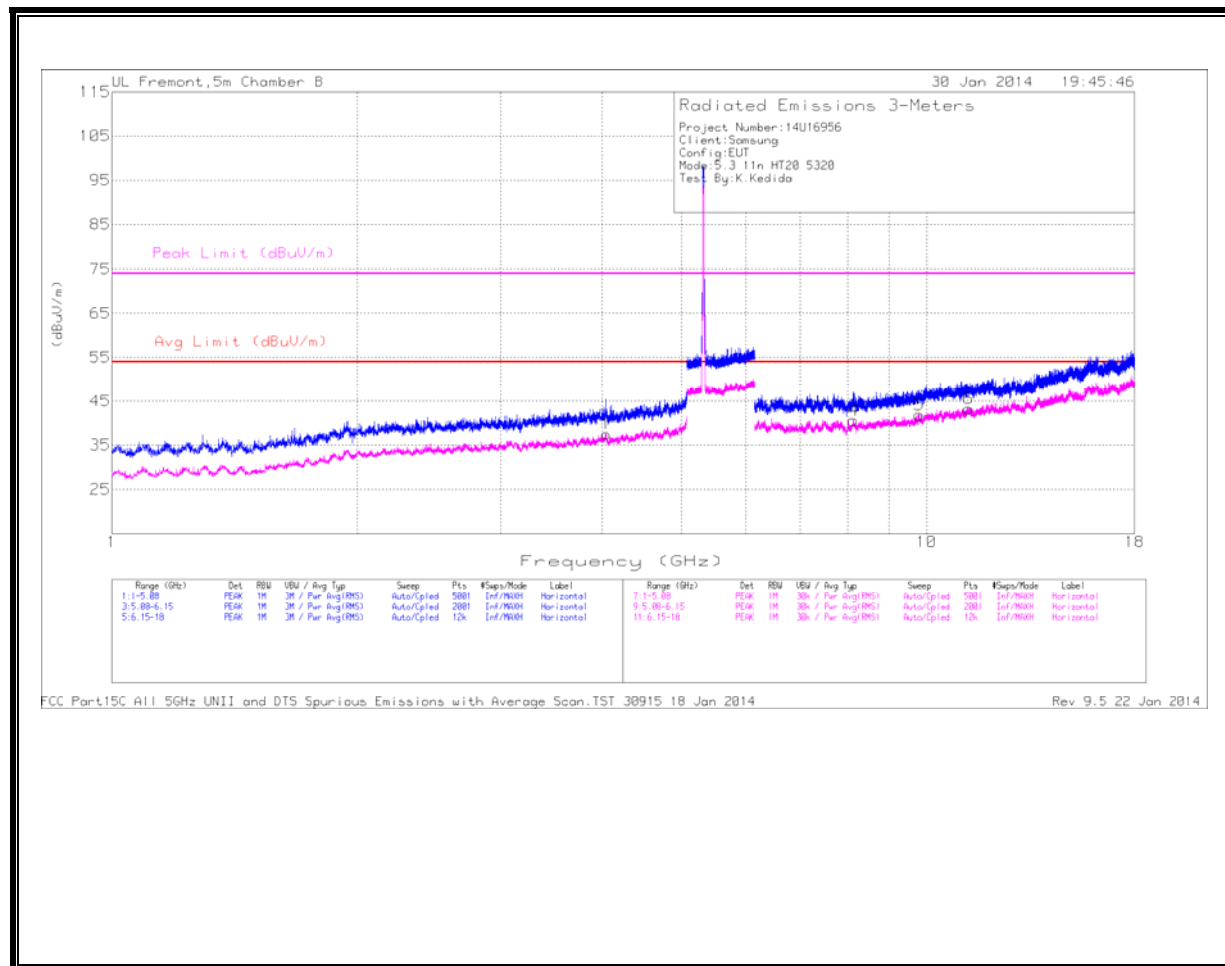


Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

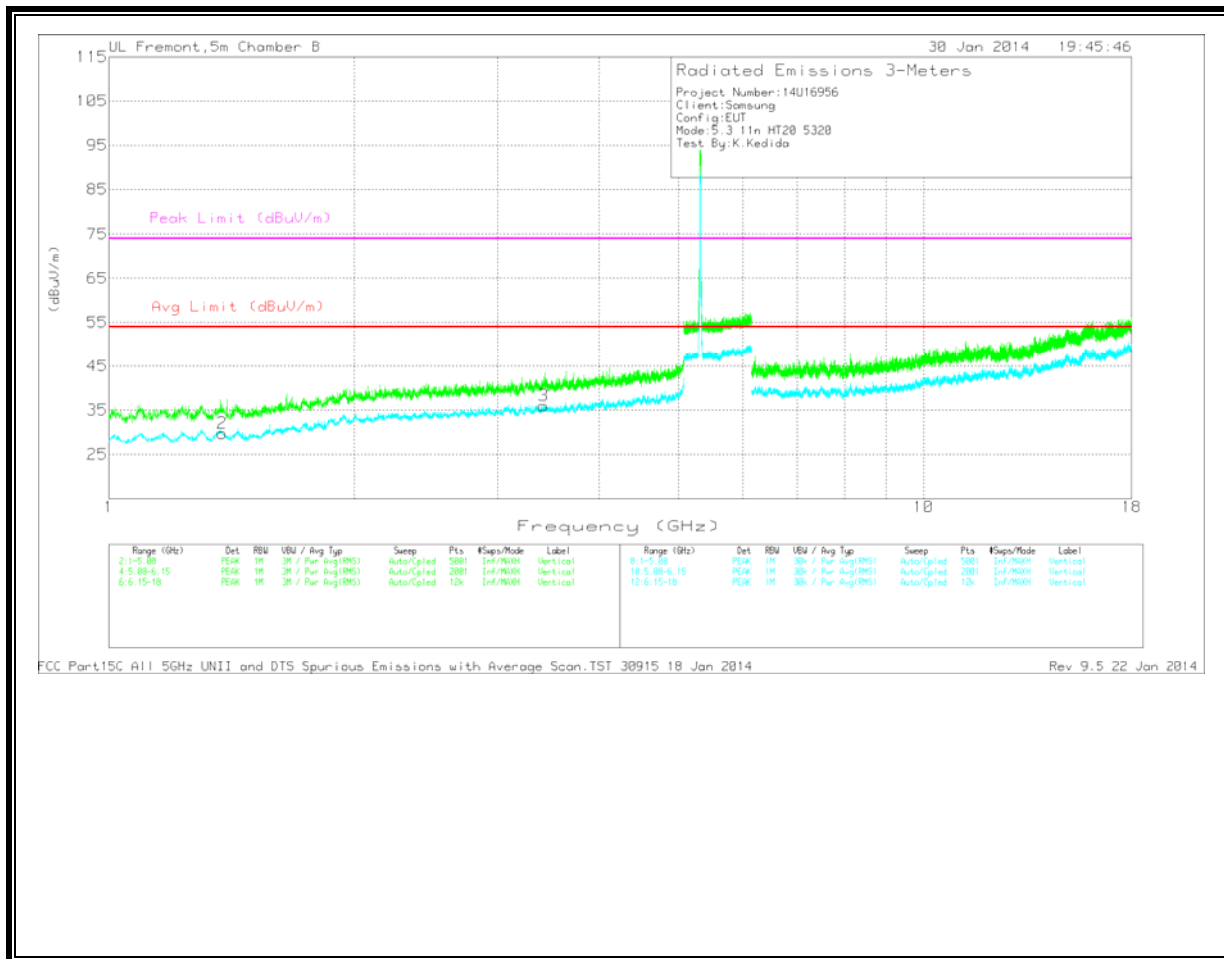
MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	1.124	44.35	Avg	28	-34.5	37.85	54	-16.15	-	-	0-360	99	V
1	1.869	37.77	Avg	30.9	-33.1	35.57	54	-18.43	-	-	0-360	99	H
2	3.636	33.96	Avg	33.5	-31.2	36.26	54	-17.74	-	-	0-360	202	H
4	7.183	31.08	Avg	35.8	-26.6	40.28	54	-13.72	-	-	0-360	99	H
5	8.479	32.02	Avg	36.2	-26.4	41.82	54	-12.18	-	-	0-360	99	V
6	14.964	27.81	Avg	40	-20.3	47.51	54	-6.49	-	-	0-360	202	V

Note: All peak readings were 20dB below the peak limit. Average measurements at discrete frequencies are provided in the table above for frequencies that are within 6dB of the average limit.



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

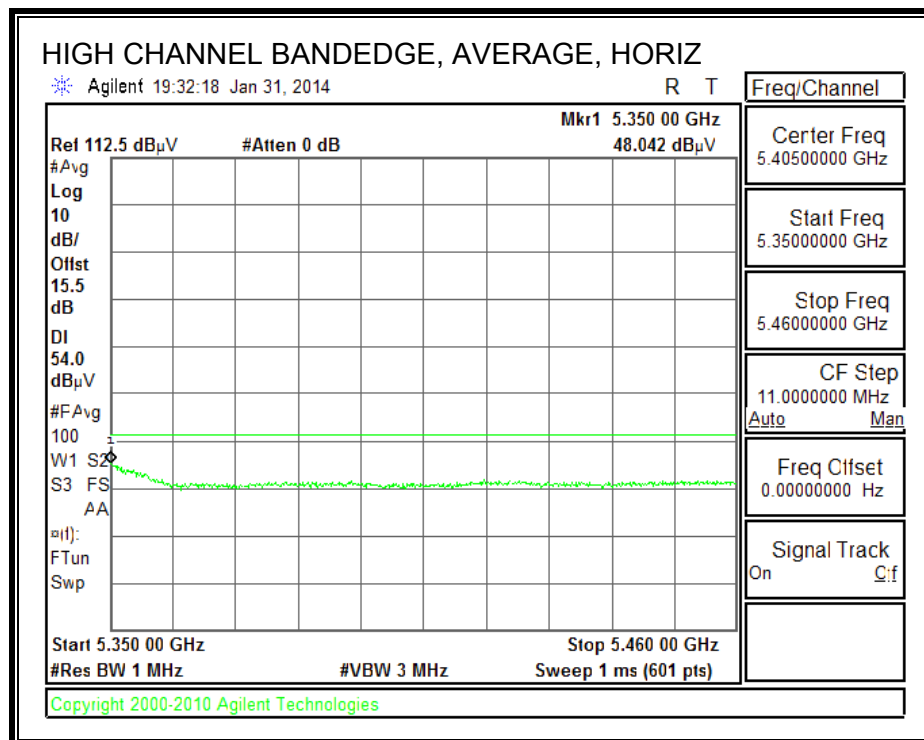
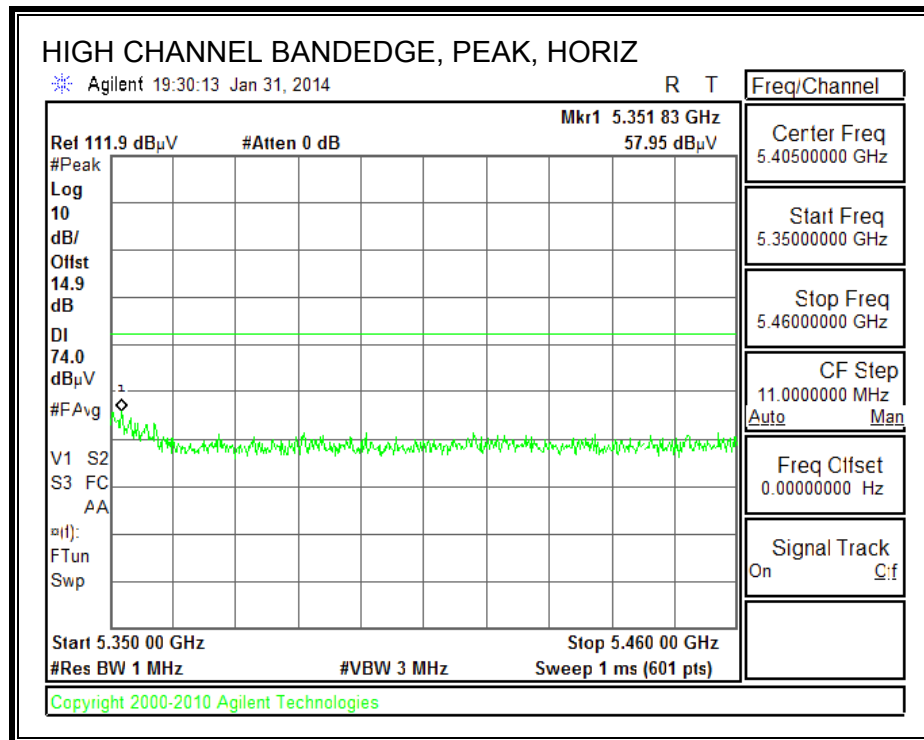
HIGH CHANNEL DATA

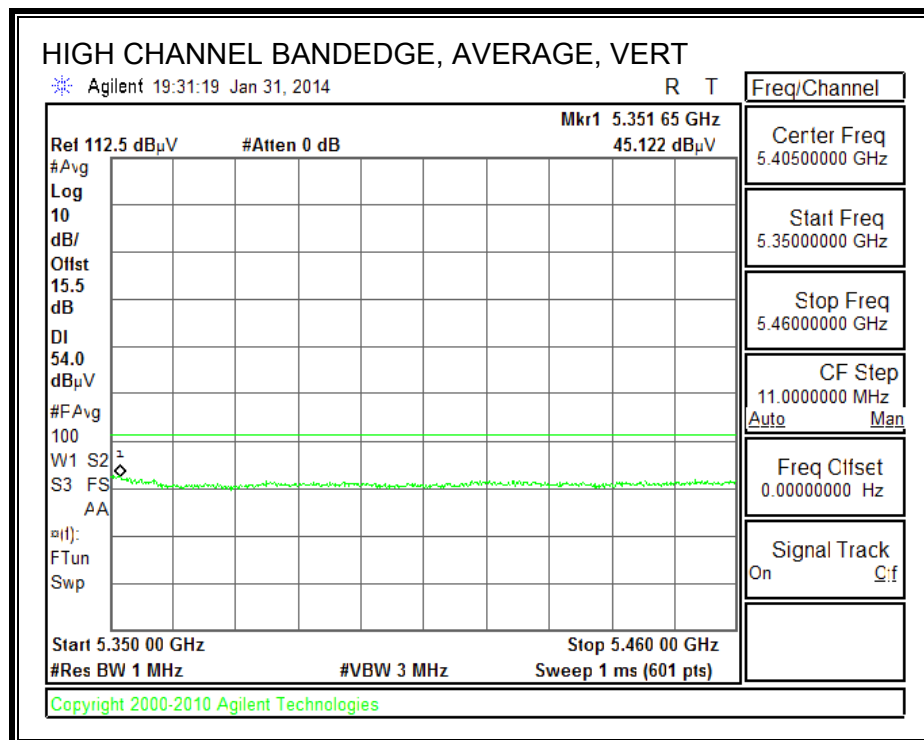
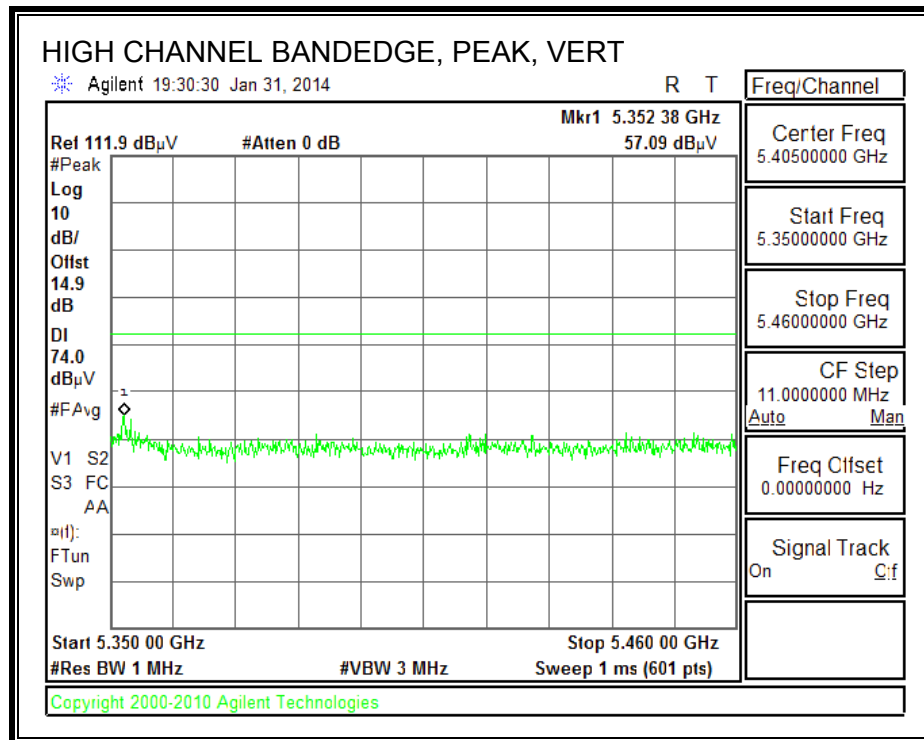
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Ampl/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	1.378	35.16	Avg	28.4	-33.8	29.76	54	-24.24	-	-	0-360	99	V
3	3.415	34.01	Avg	33.2	-31.2	36.01	54	-17.99	-	-	0-360	202	V
1	4.048	33.42	Avg	33.9	-29.8	37.52	54	-16.48	-	-	0-360	99	H
4	8.132	31.21	Avg	36.1	-26.7	40.61	54	-13.39	-	-	0-360	202	H
5	9.796	28.02	Avg	37.6	-23.8	41.82	54	-12.18	-	-	0-360	202	H
6	11.255	27.17	Avg	38.5	-22.4	43.27	54	-10.73	-	-	0-360	202	H

Note: All peak readings were 20dB below the peak limit. Average measurements at discrete frequencies are provided in the table above for frequencies that are within 6dB of the average limit.

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

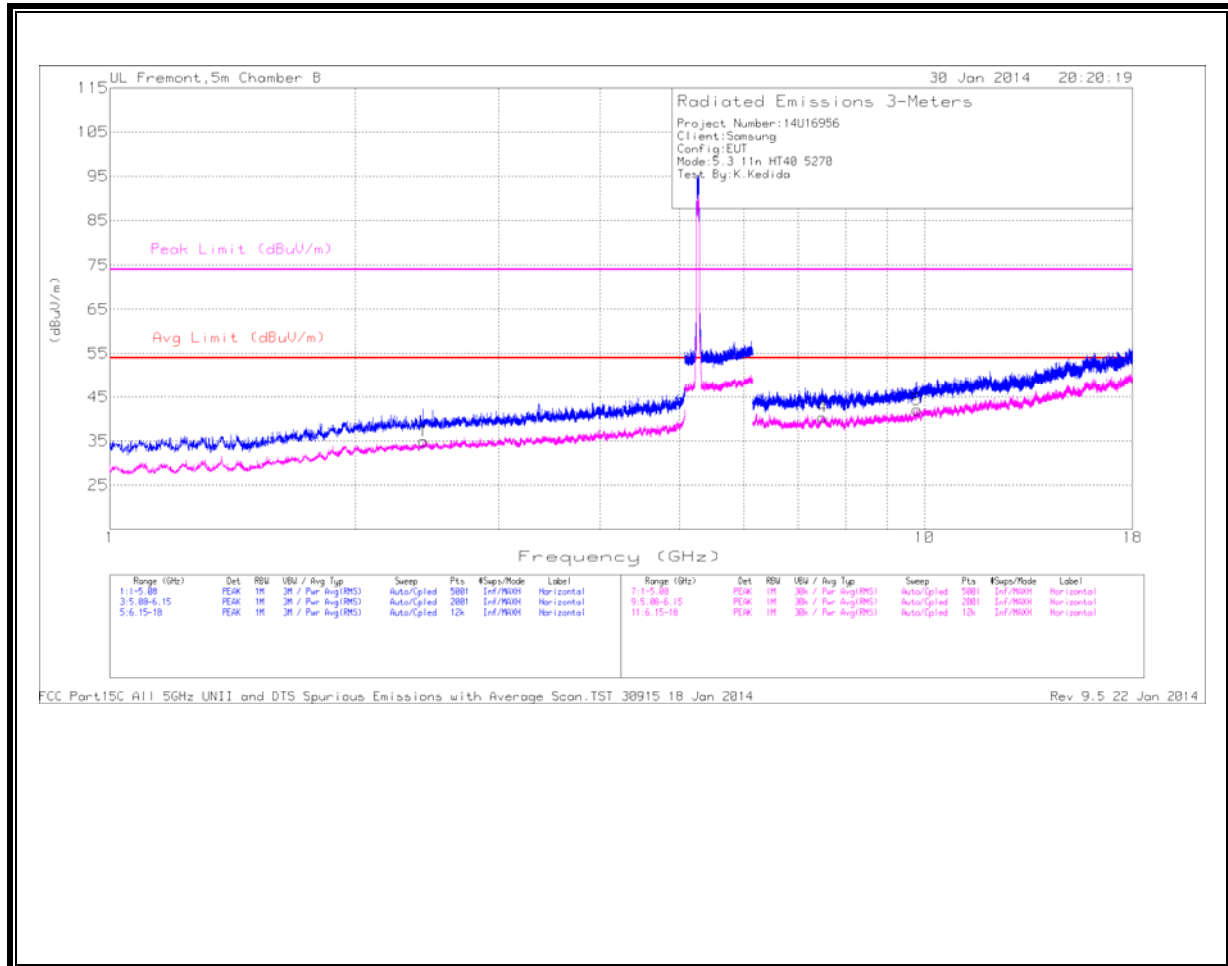




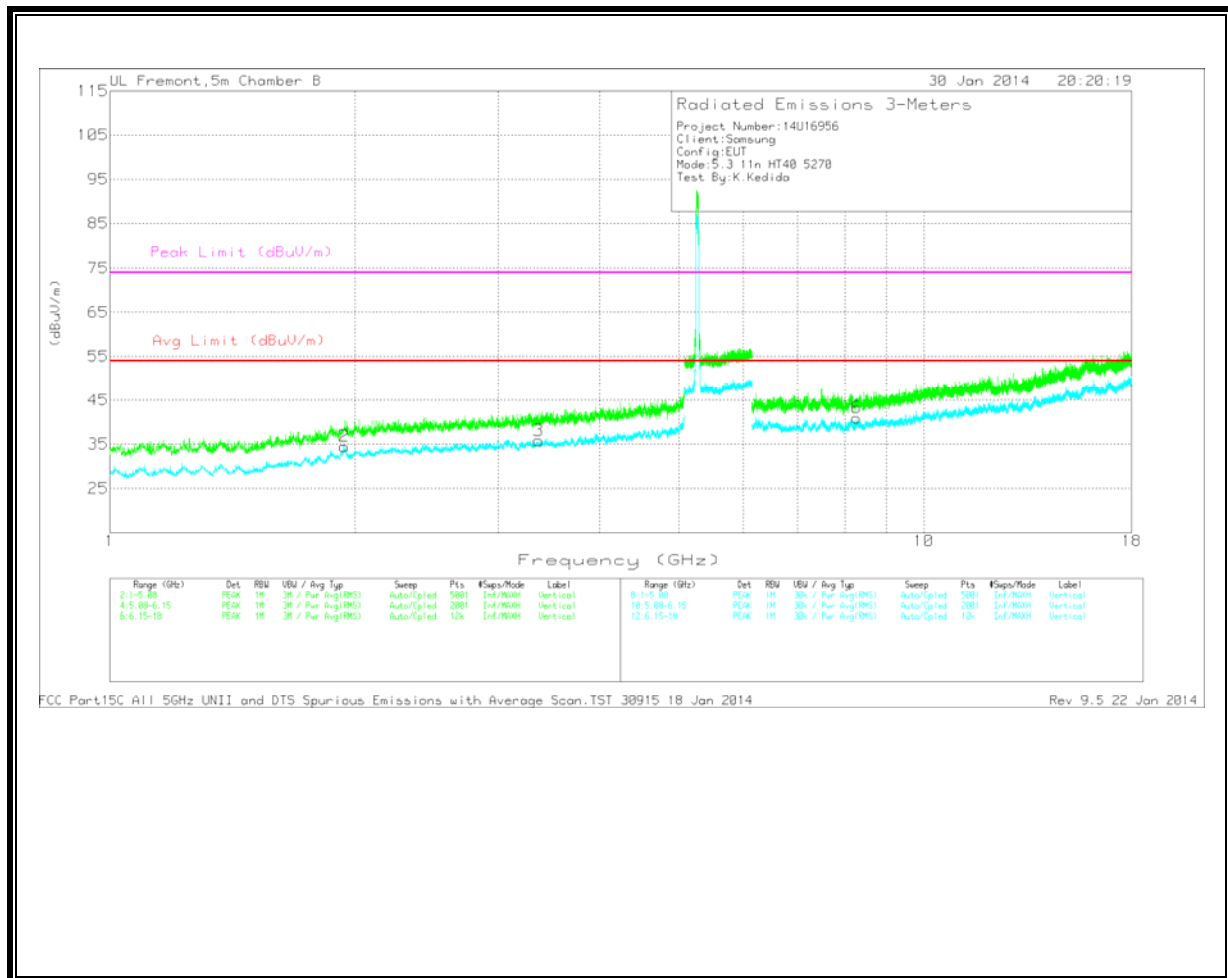
11.2.6.

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.

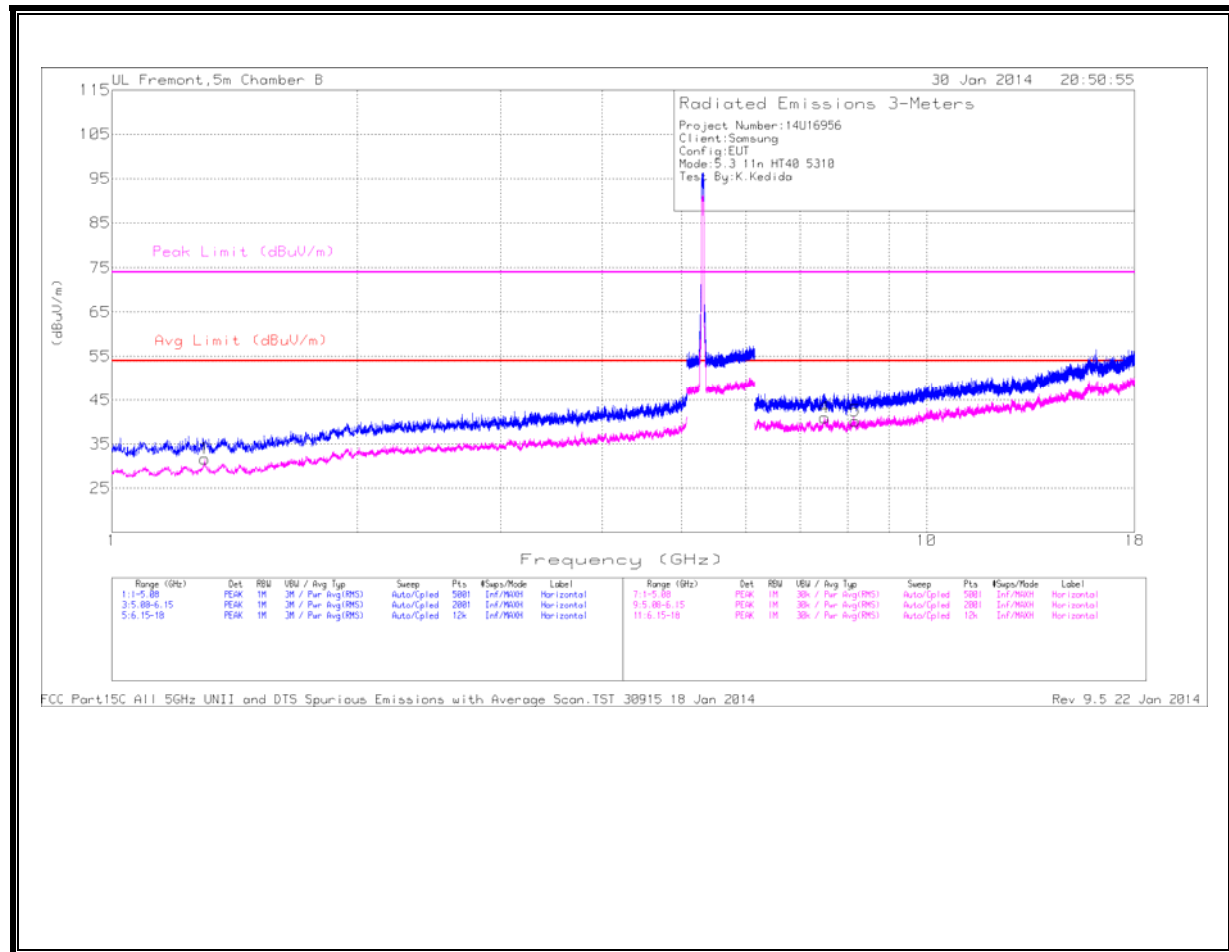


Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

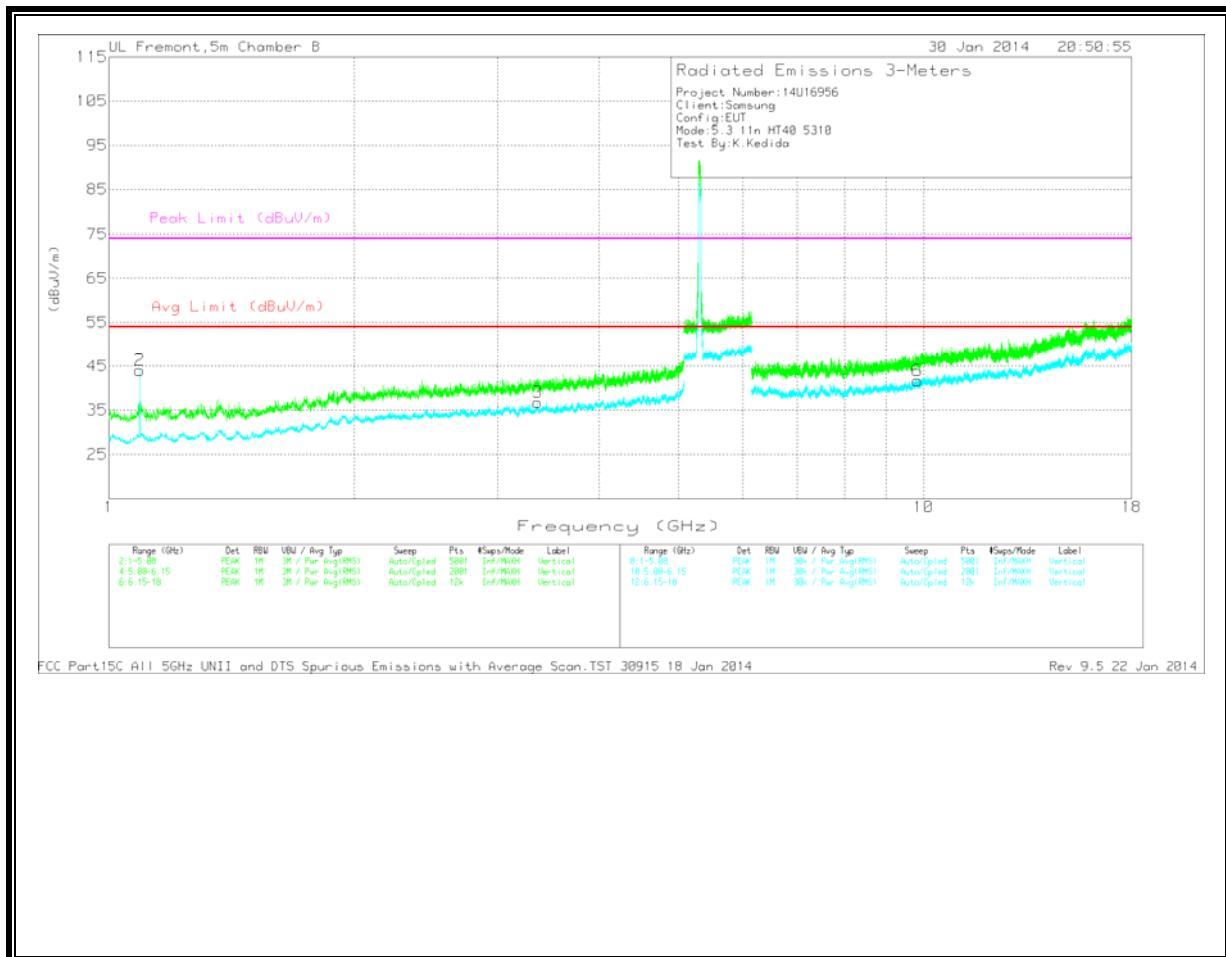
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	1.942	35.61	Avg	31.4	-32.5	34.51	54	-19.49	-	-	0-360	202	V
1	2.428	34.69	Avg	32.4	-32.1	34.99	54	-19.01	-	-	0-360	99	H
3	3.364	33.97	Avg	33.3	-31.5	35.77	54	-18.23	-	-	0-360	202	V
4	7.494	30.1	Avg	36	-25.7	40.4	54	-13.6	-	-	0-360	202	H
6	8.267	31.36	Avg	36.1	-26.5	40.96	54	-13.04	-	-	0-360	99	V
5	9.797	28.36	Avg	37.6	-23.9	42.06	54	-11.94	-	-	0-360	99	H

Note: All peak readings were 20dB below the peak limit. Average measurements at discrete frequencies are provided in the table above for frequencies that are within 6dB of the average limit.



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: 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

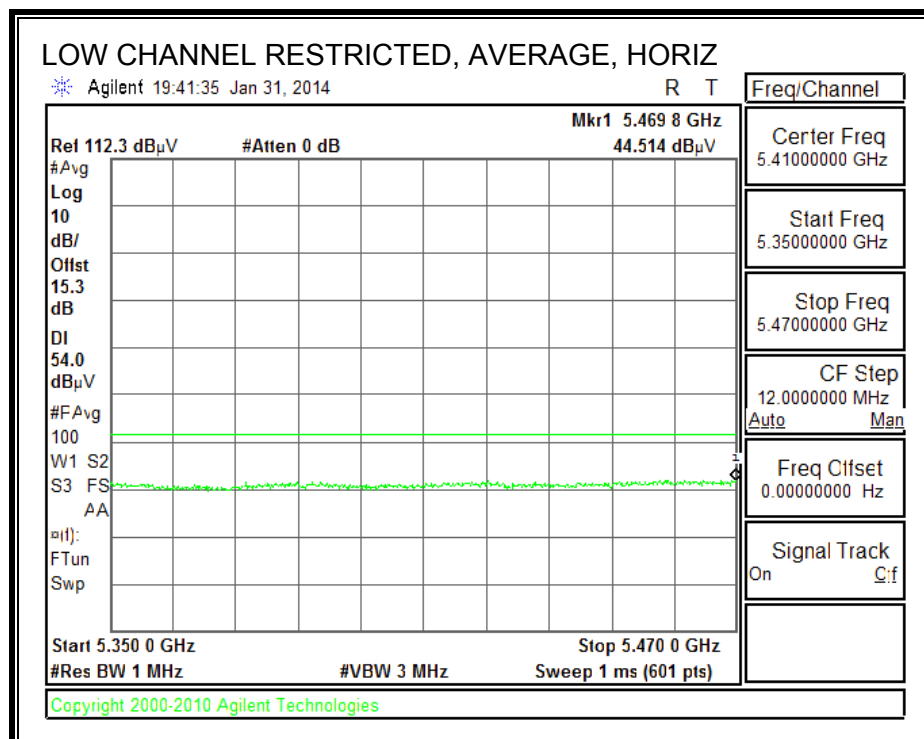
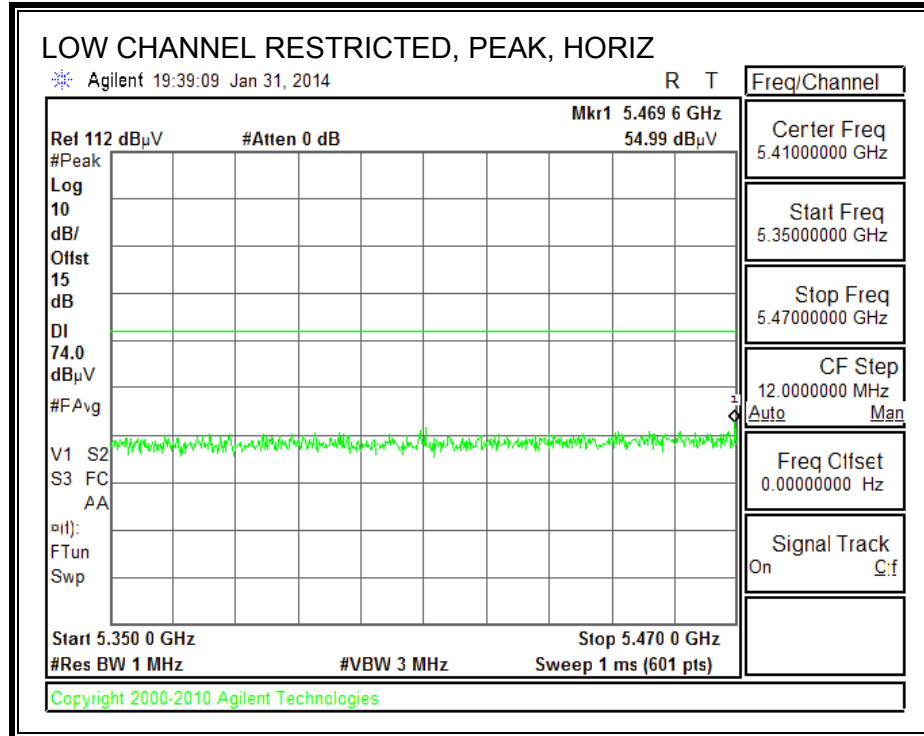
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 1.091	50.61	Avg	27.8	-34.4	44.01	54	-9.99	-	-	0-360	202	V
1	* 1.301	37.34	Avg	28.5	-34.2	31.64	54	-22.36	-	-	0-360	99	H
4	* 7.498	30.8	Avg	36	-25.8	41	54	-13	-	-	0-360	201	H
5	* 8.177	31.01	Avg	36.1	-26.9	40.21	54	-13.79	-	-	0-360	201	H
3	3.36	34.91	Avg	33.3	-31.5	36.71	54	-17.29	-	-	0-360	202	V
6	9.828	28.45	Avg	37.6	-24.4	41.65	54	-12.35	-	-	0-360	99	V

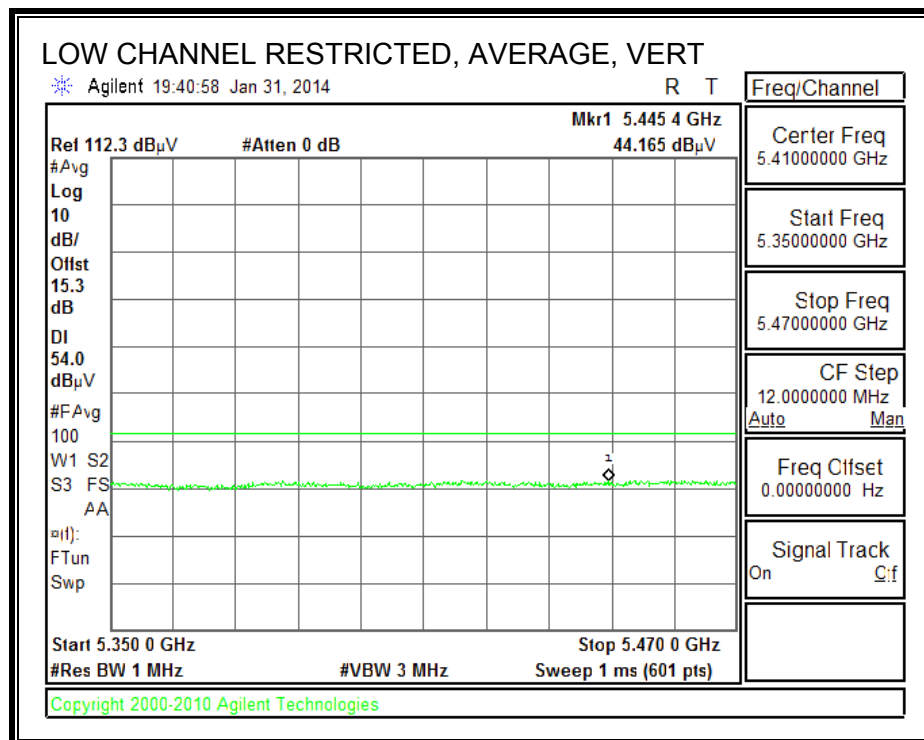
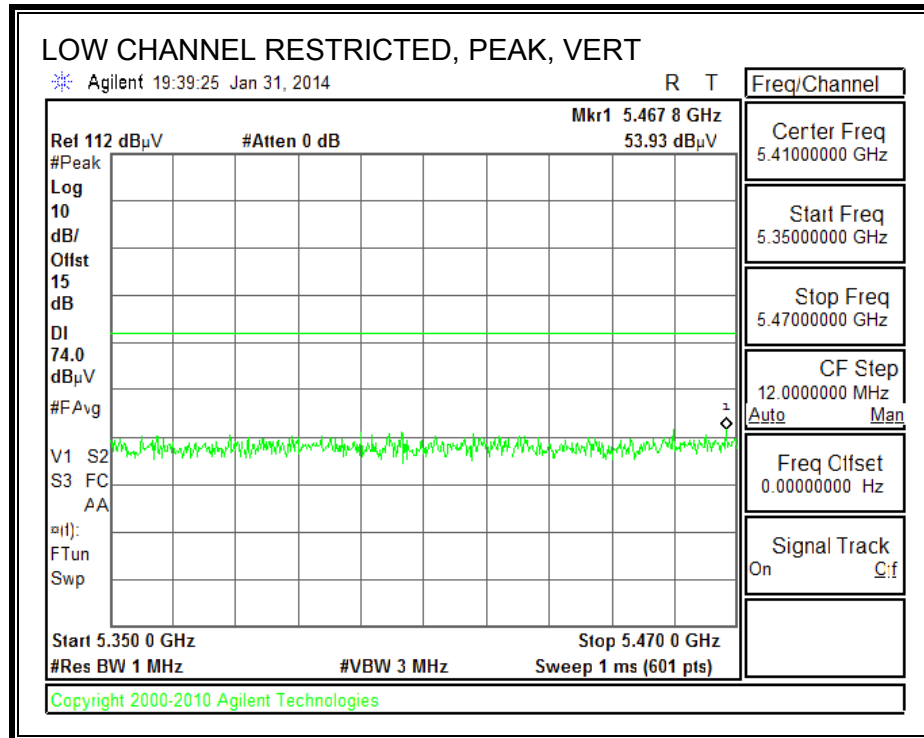
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Note: All peak readings were 20dB below the peak limit. Average measurements at discrete frequencies are provided in the table above for frequencies that are within 6dB of the average limit.

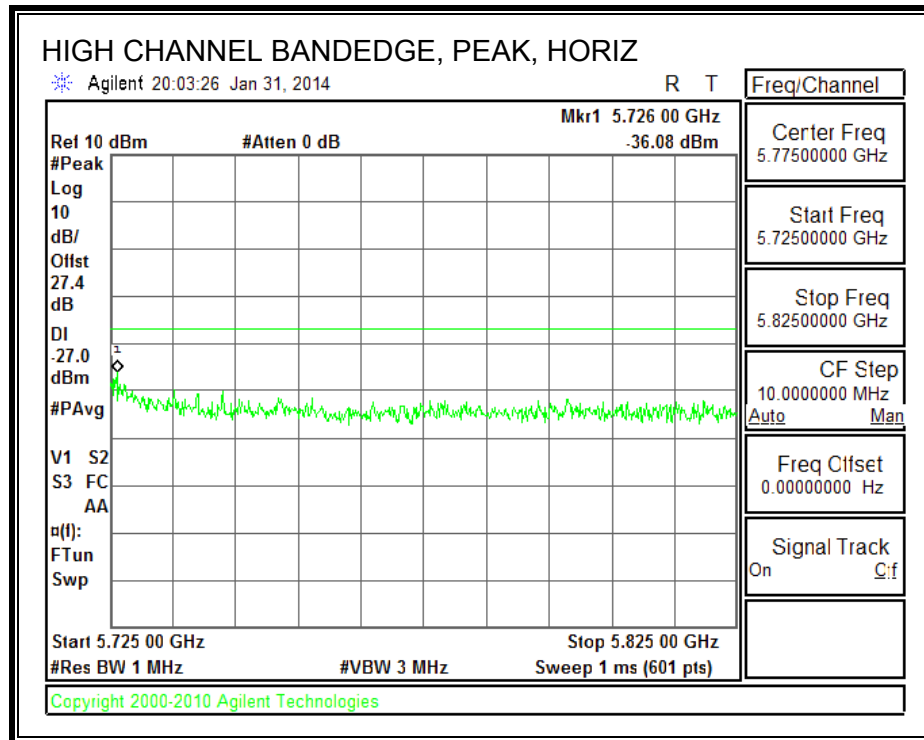
11.3. 5.5-5.6 GHz

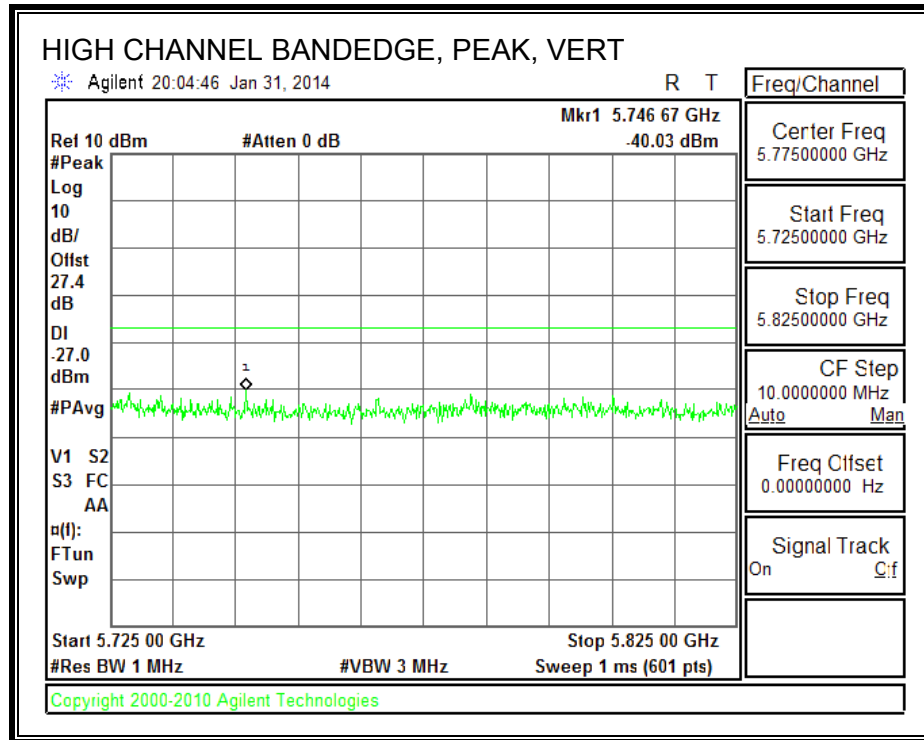
11.3.1. TX ABOVE 1 GHz 802.11a MODE IN THE 5.5 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)





AUTHORIZED BANDEDGE (HIGH CHANNEL)

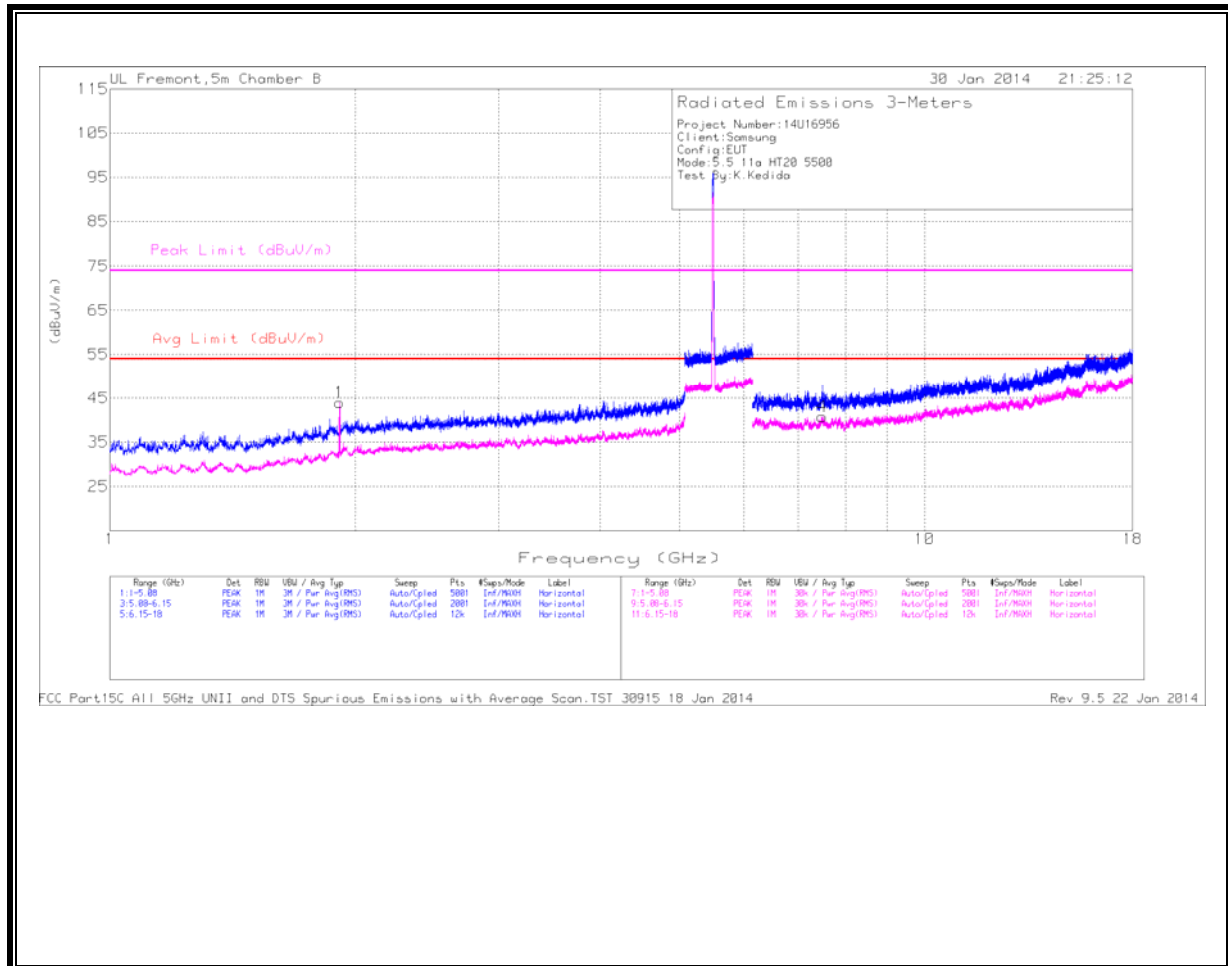




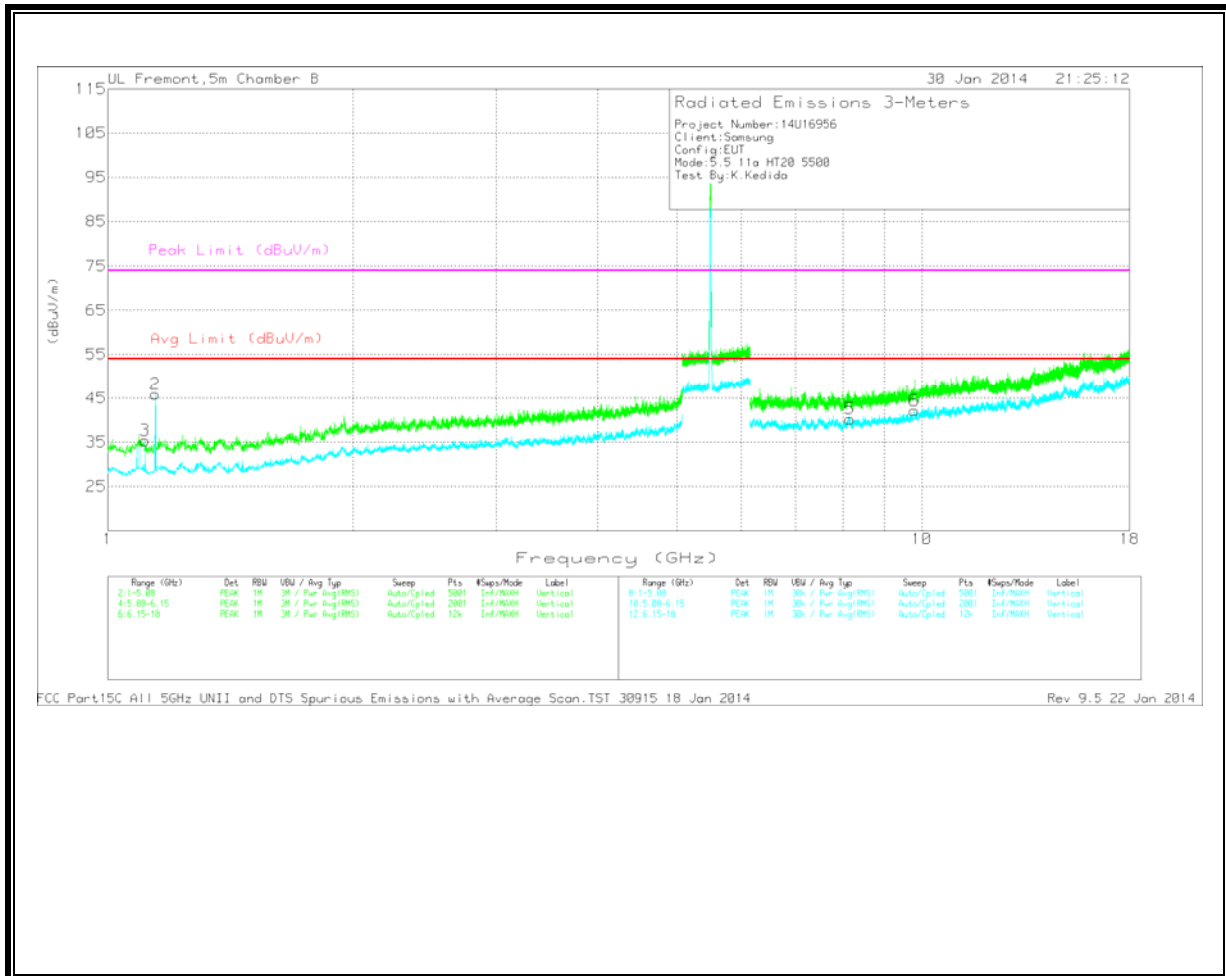
11.3.2.

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.



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

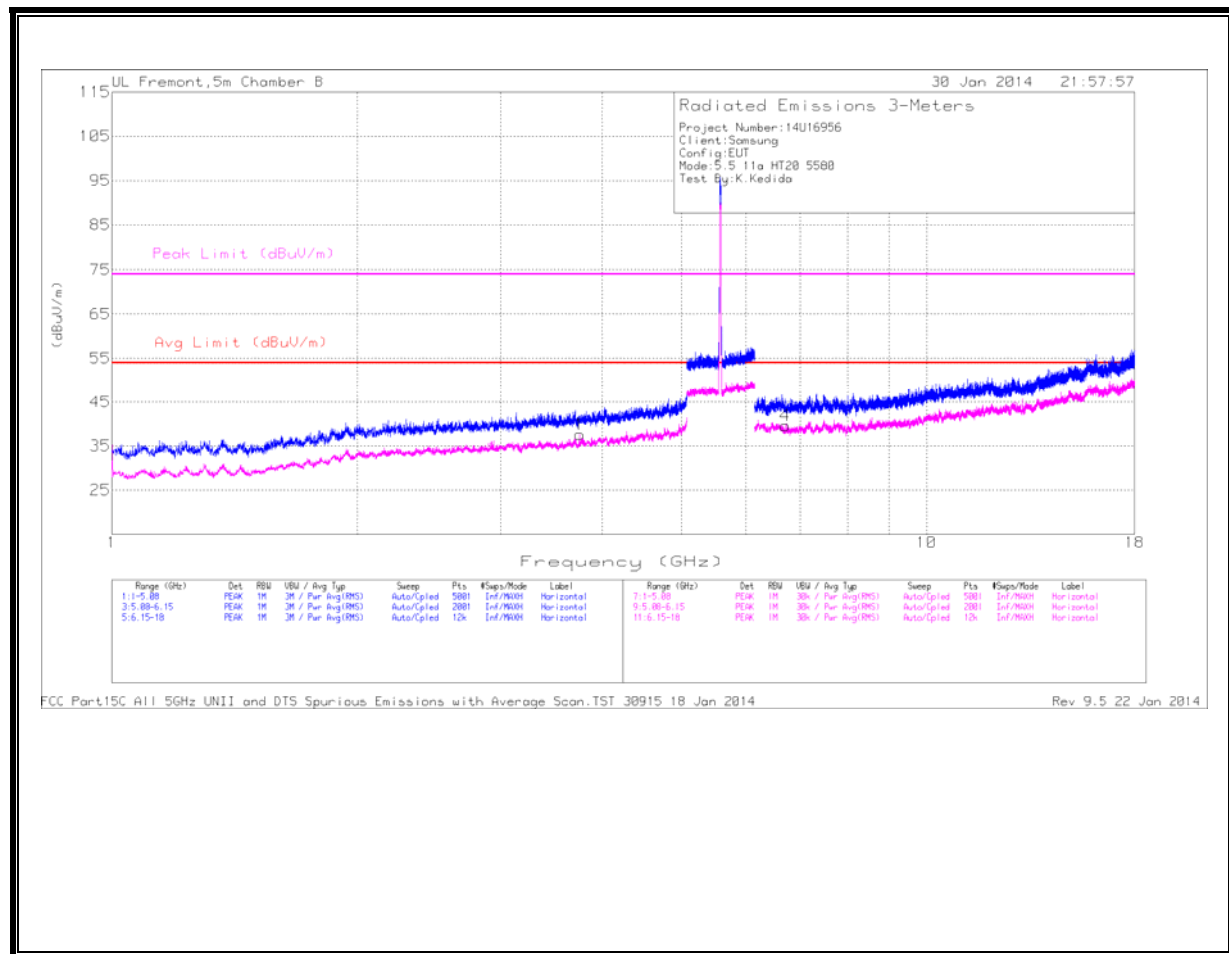
LOW CHANNEL DATA

Trace Markers

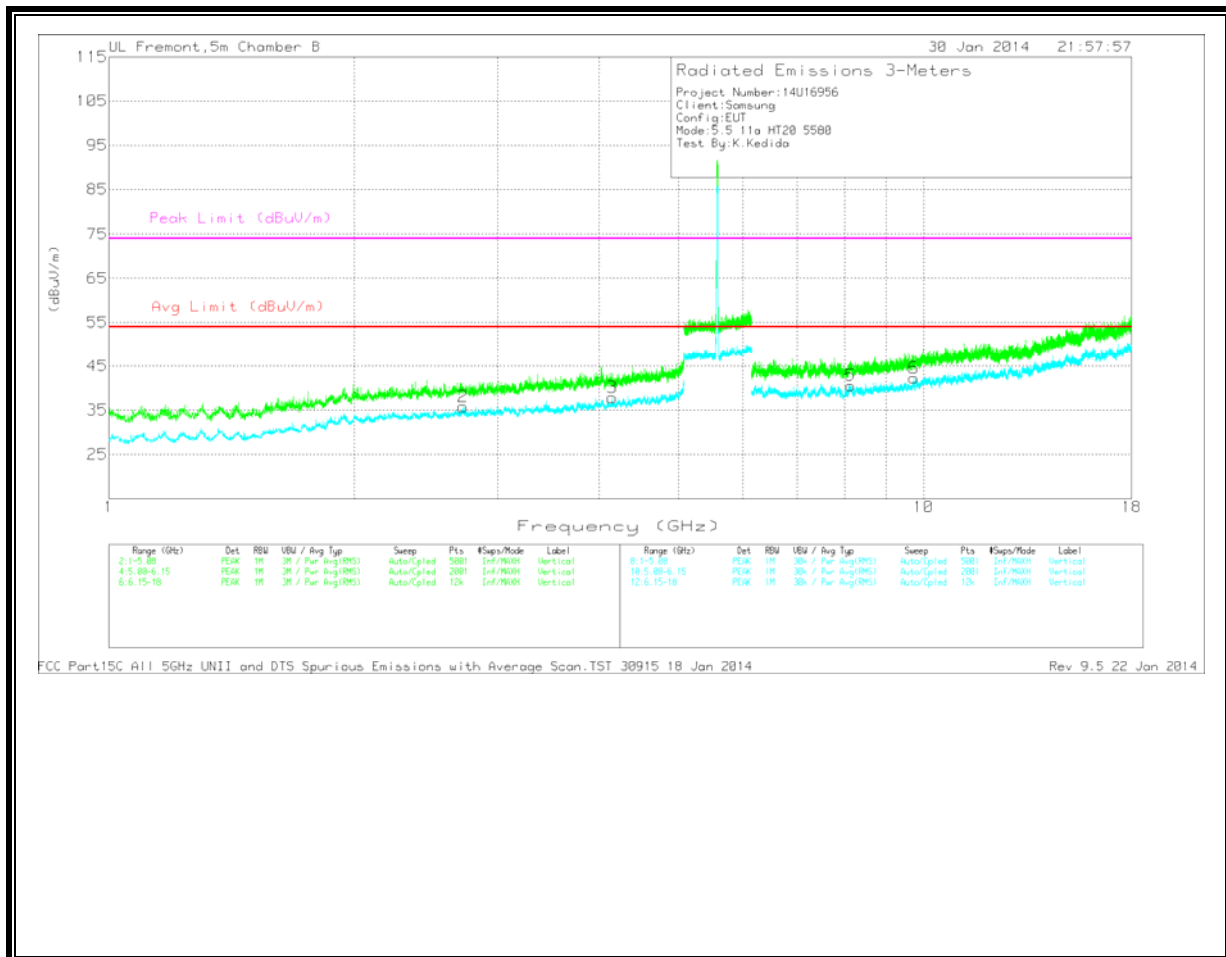
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 1.144	52.17	Avg	28.1	-34.4	45.87	54	-8.13	-	-	0-360	99	V
3	* 1.111	42	Avg	27.9	-34.5	35.4	54	-18.6	-	-	0-360	202	V
4	* 7.49	30.46	Avg	36	-25.7	40.76	54	-13.24	-	-	0-360	201	H
5	* 8.162	31.17	Avg	36.1	-27	40.27	54	-13.73	-	-	0-360	99	V
1	1.915	45.43	Avg	31.2	-32.7	43.93	54	-10.07	-	-	0-360	99	H
6	9.792	28.25	Avg	37.5	-23.6	42.15	54	-11.85	-	-	0-360	99	V

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

Note: All peak readings were 20dB below the peak limit. Average measurements at discrete frequencies are provided in the table above for frequencies that are within 6dB of the average limit.



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

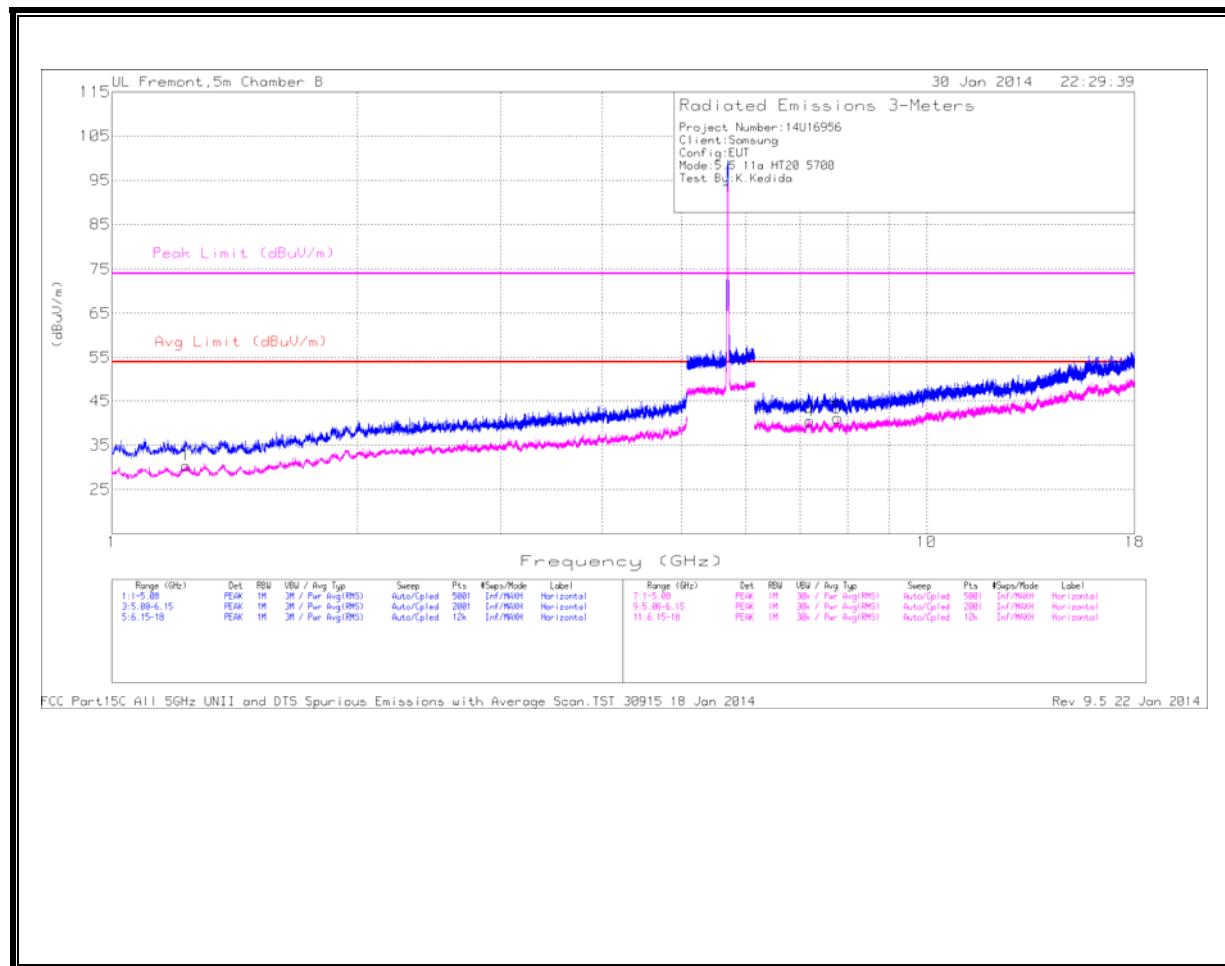
MID CHANNEL DATA

Trace Markers

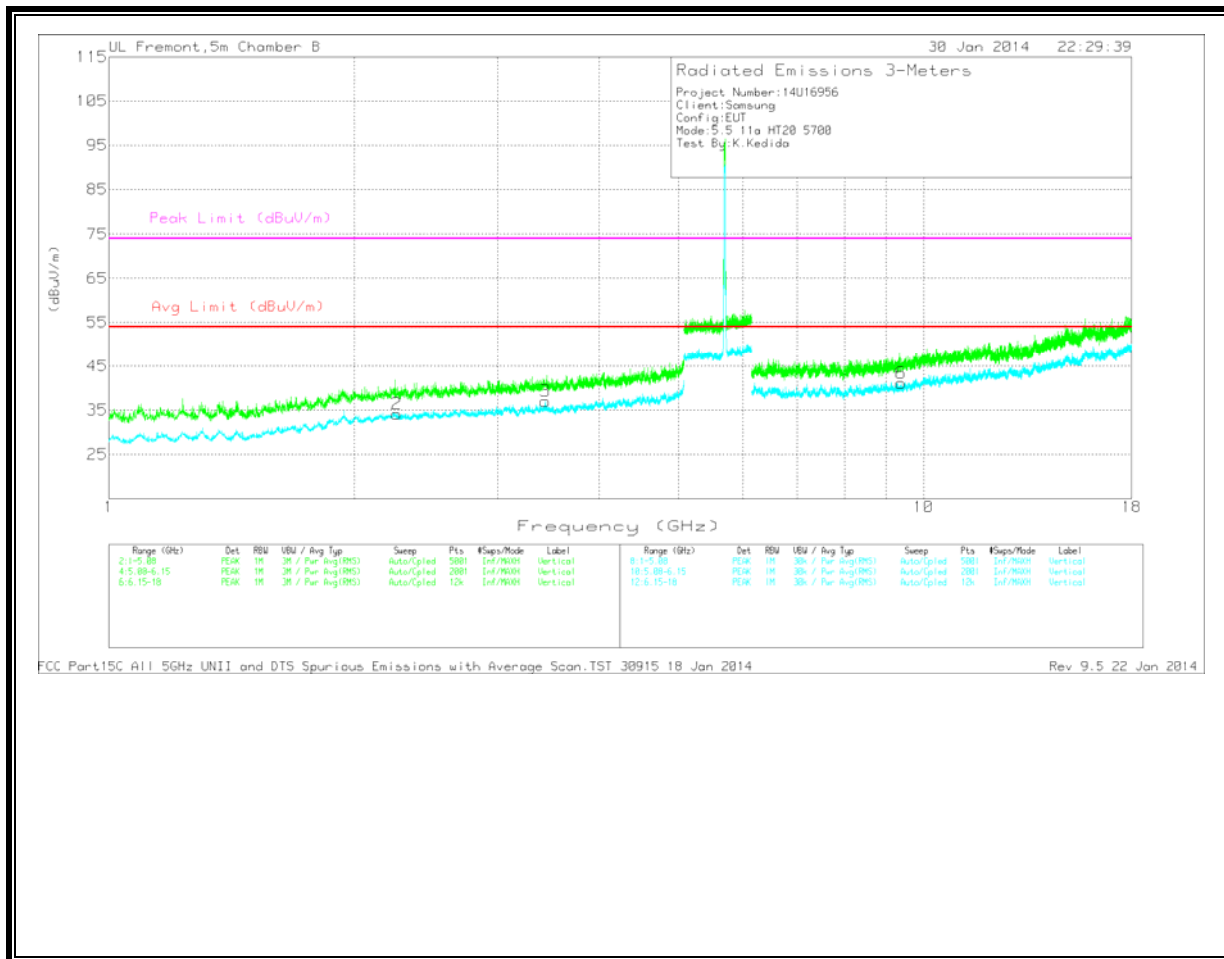
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.722	34.77	Avg	32.8	-31.8	35.77	54	-18.23	-	-	0-360	99	V
1	* 3.753	35.11	Avg	33.8	-31.3	37.61	54	-16.39	-	-	0-360	201	H
3	* 4.147	35.13	Avg	34	-31.3	37.83	54	-16.17	-	-	0-360	202	V
5	* 8.139	31.04	Avg	36.1	-26.6	40.54	54	-13.46	-	-	0-360	202	V
4	6.711	32.69	Avg	35.8	-28.9	39.59	54	-14.41	-	-	0-360	99	H
6	9.728	28.57	Avg	37.5	-23.8	42.27	54	-11.73	-	-	0-360	202	V

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

Note: All peak readings were 20dB below the peak limit. Average measurements at discrete frequencies are provided in the table above for frequencies that are within 6dB of the average limit.



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: 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

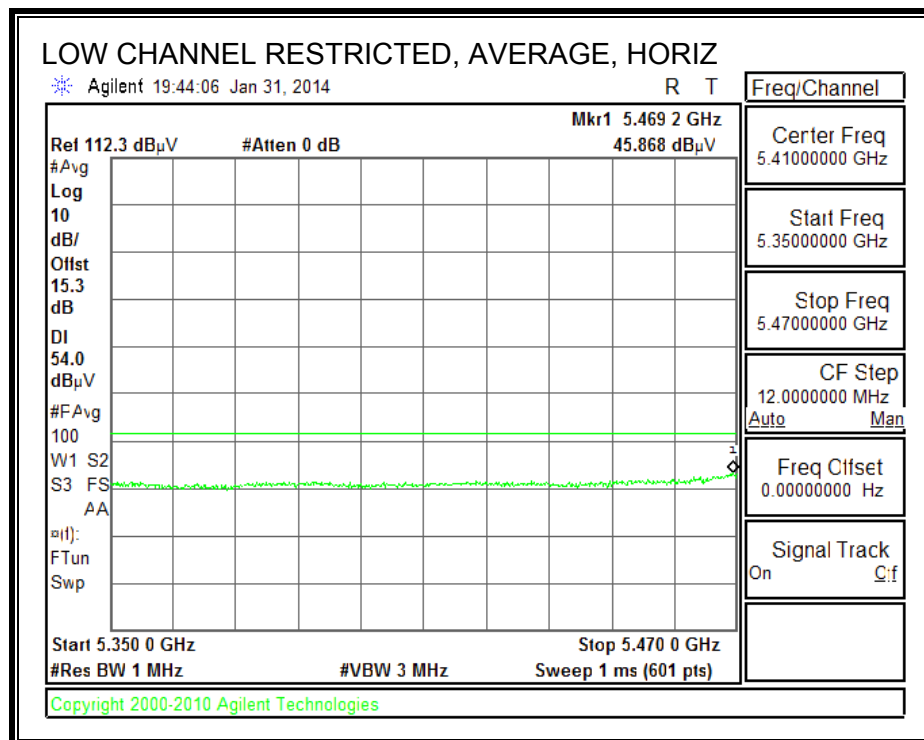
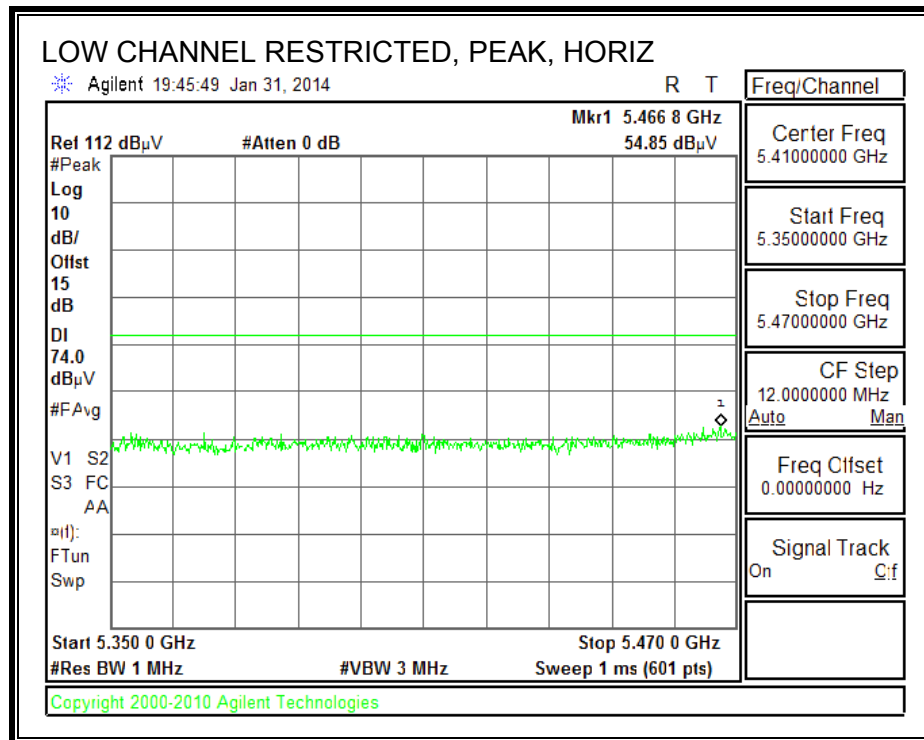
Trace Markers

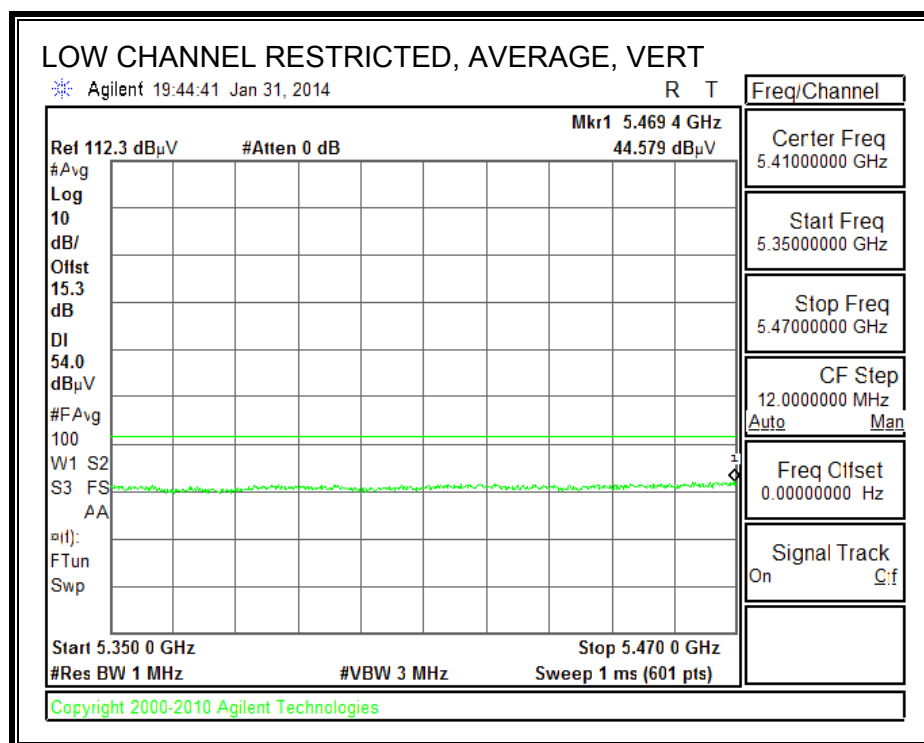
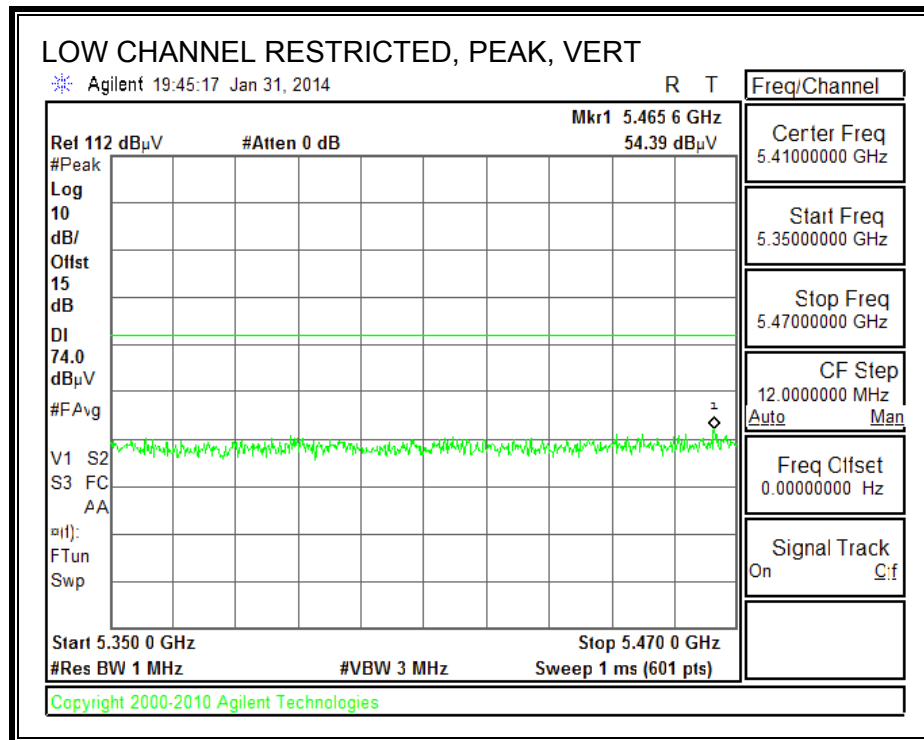
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.234	36.59	Avg	28.5	-34.7	30.39	54	-23.61	-	-	0-360	202	H
2	* 2.255	34.65	Avg	32.1	-32.6	34.15	54	-19.85	-	-	0-360	202	V
6	* 9.382	29.23	Avg	37.1	-25.2	41.13	54	-12.87	-	-	0-360	202	V
3	3.433	34.91	Avg	33.2	-31.1	37.01	54	-16.99	-	-	0-360	99	V
4	7.193	31.12	Avg	35.8	-26.5	40.42	54	-13.58	-	-	0-360	201	H
5	7.78	31.37	Avg	36.2	-26.4	41.17	54	-12.83	-	-	0-360	201	H

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

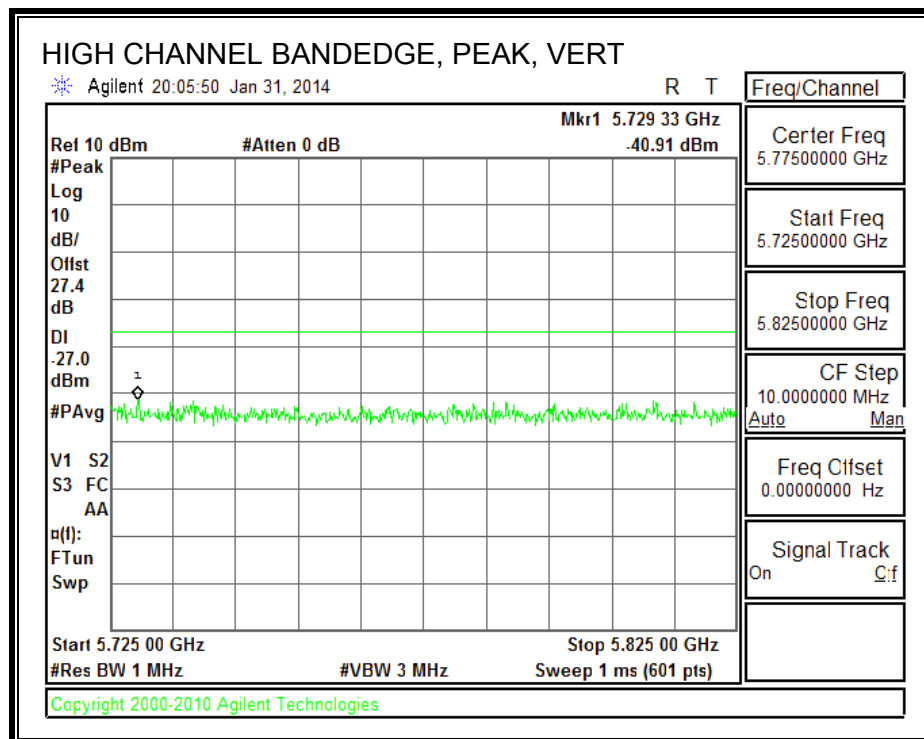
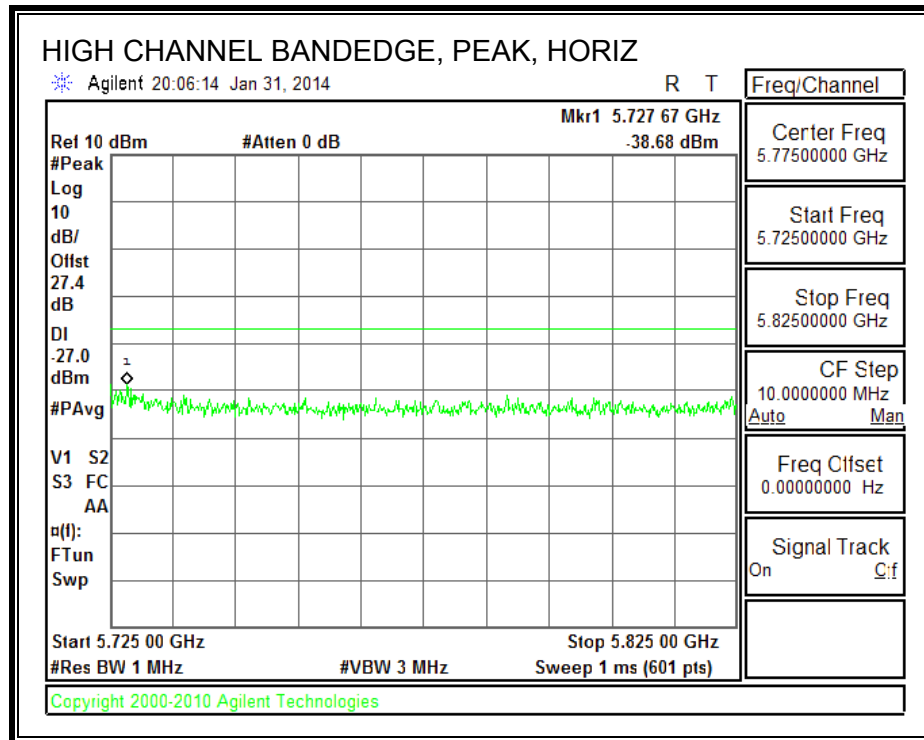
Note: All peak readings were 20dB below the peak limit. Average measurements at discrete frequencies are provided in the table above for frequencies that are within 6dB of the average limit.

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





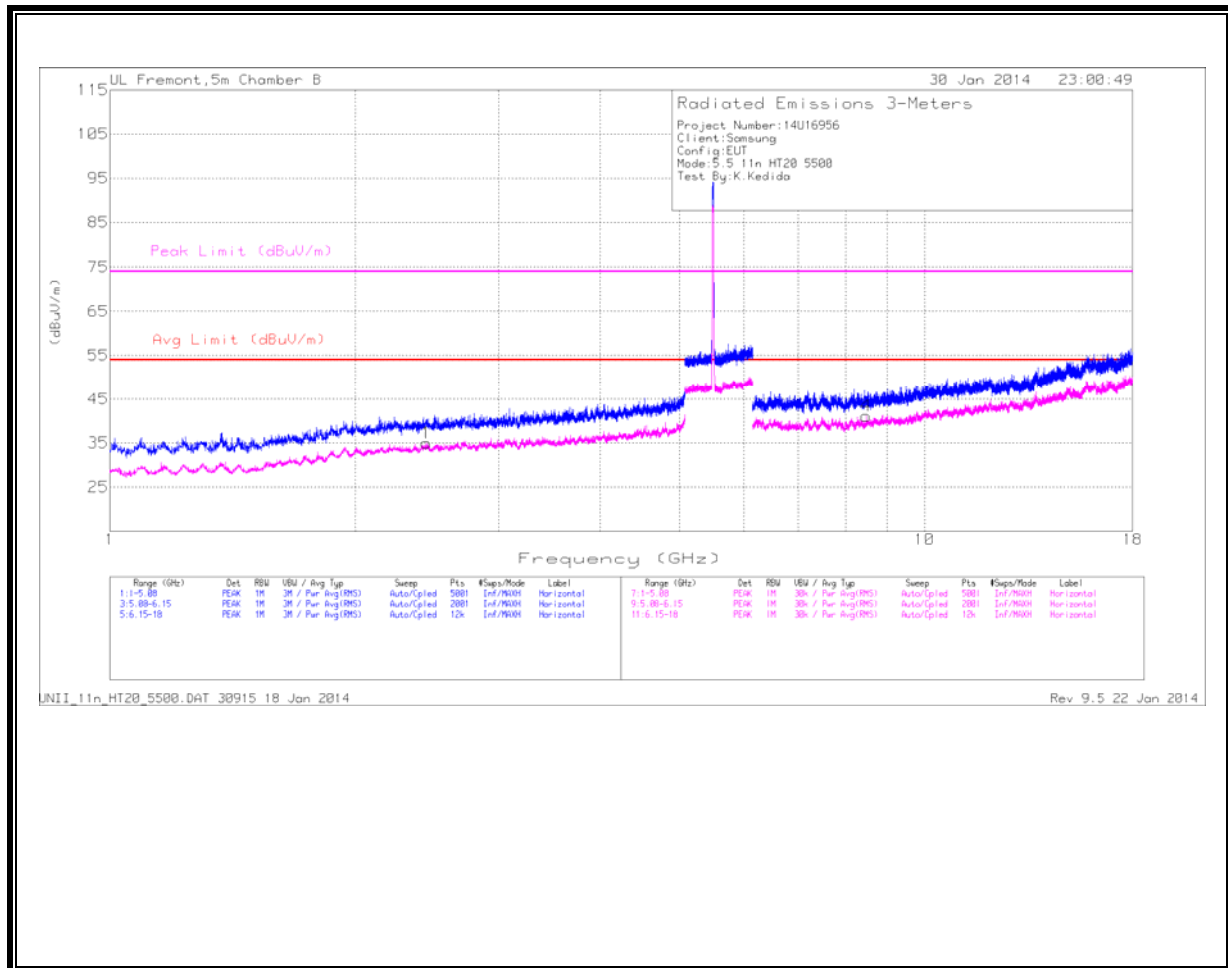
AUTHORIZED BANDEDGE (HIGH CHANNEL)



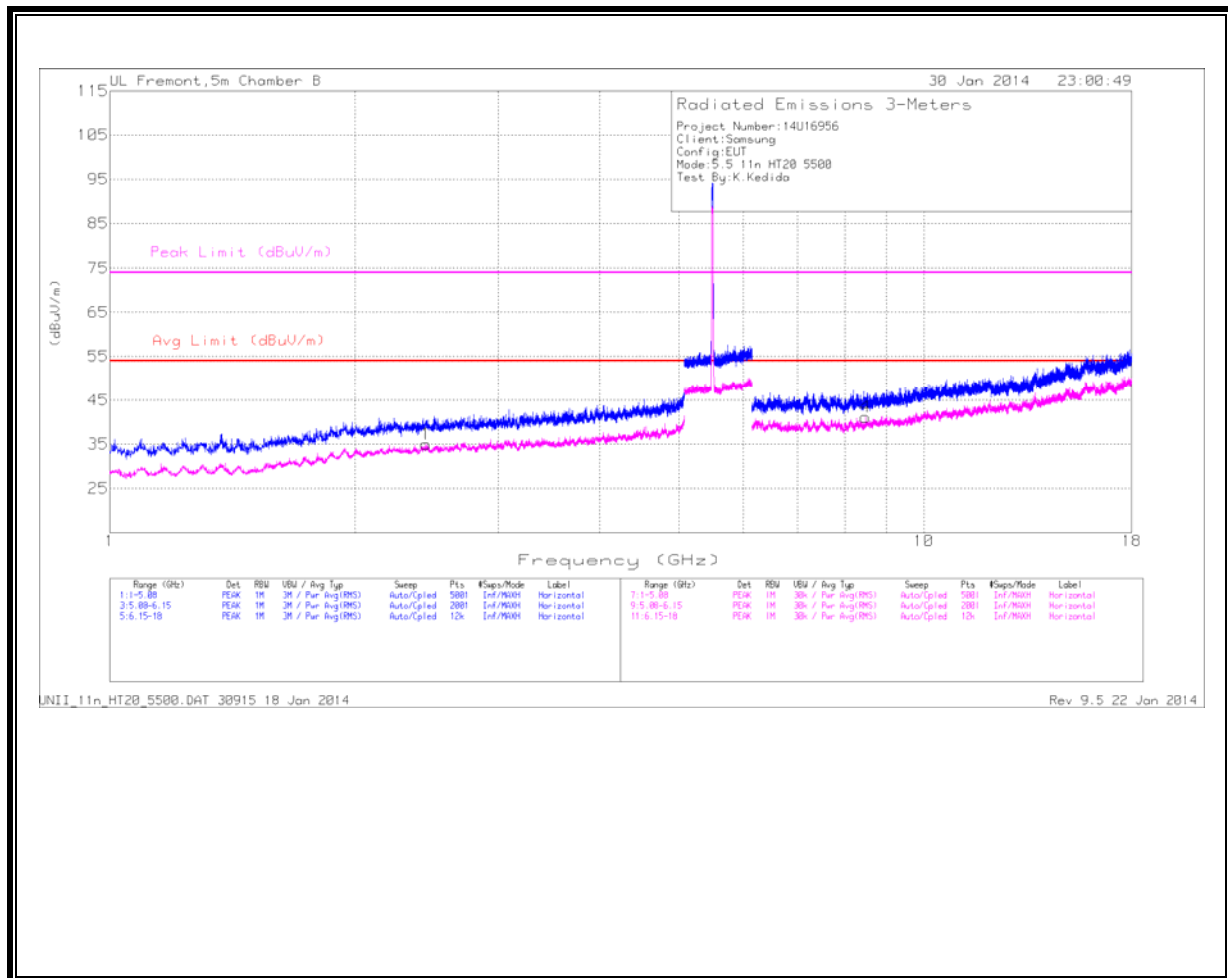
11.3.4.

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.



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

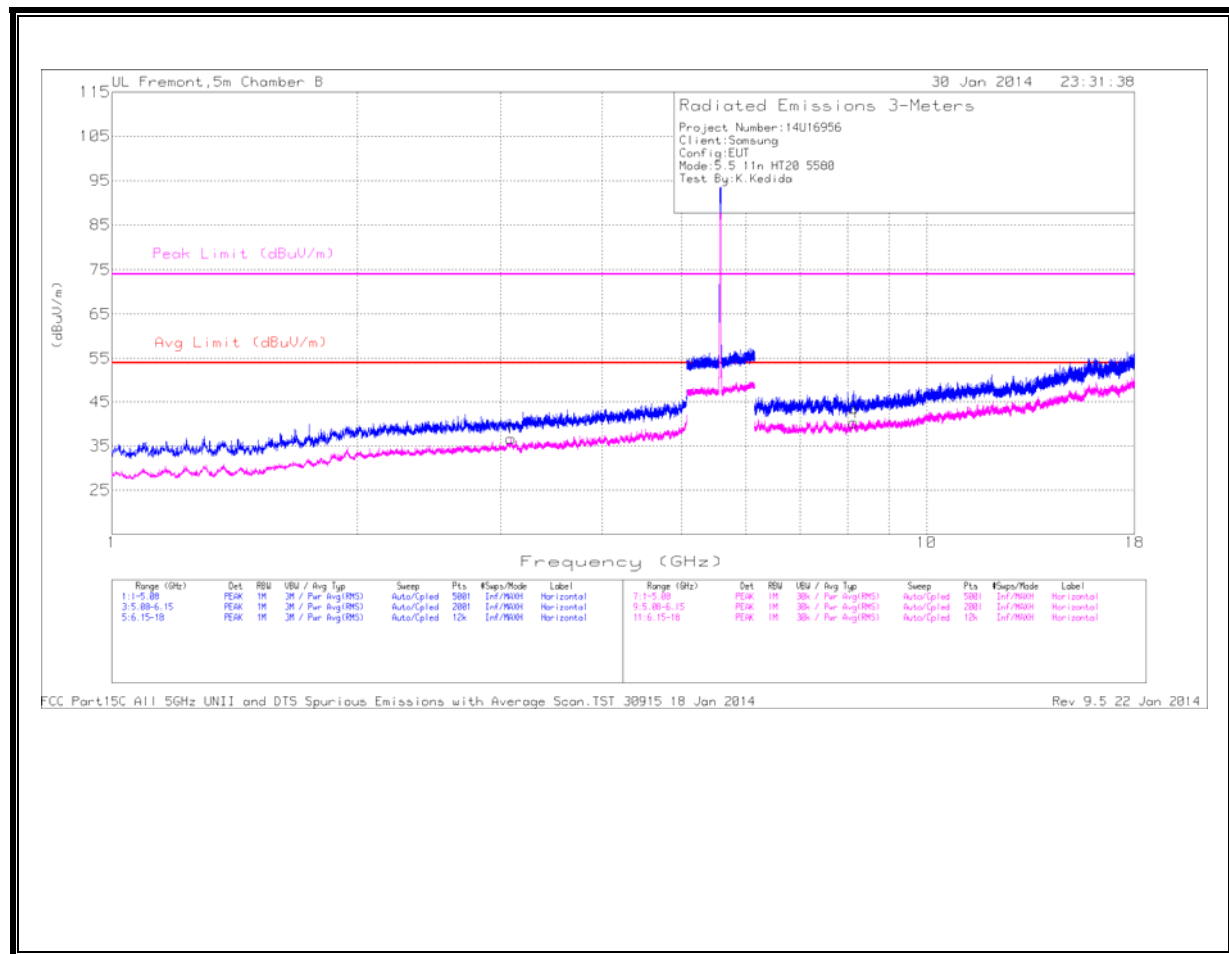
LOW CHANNEL DATA

Trace Markers

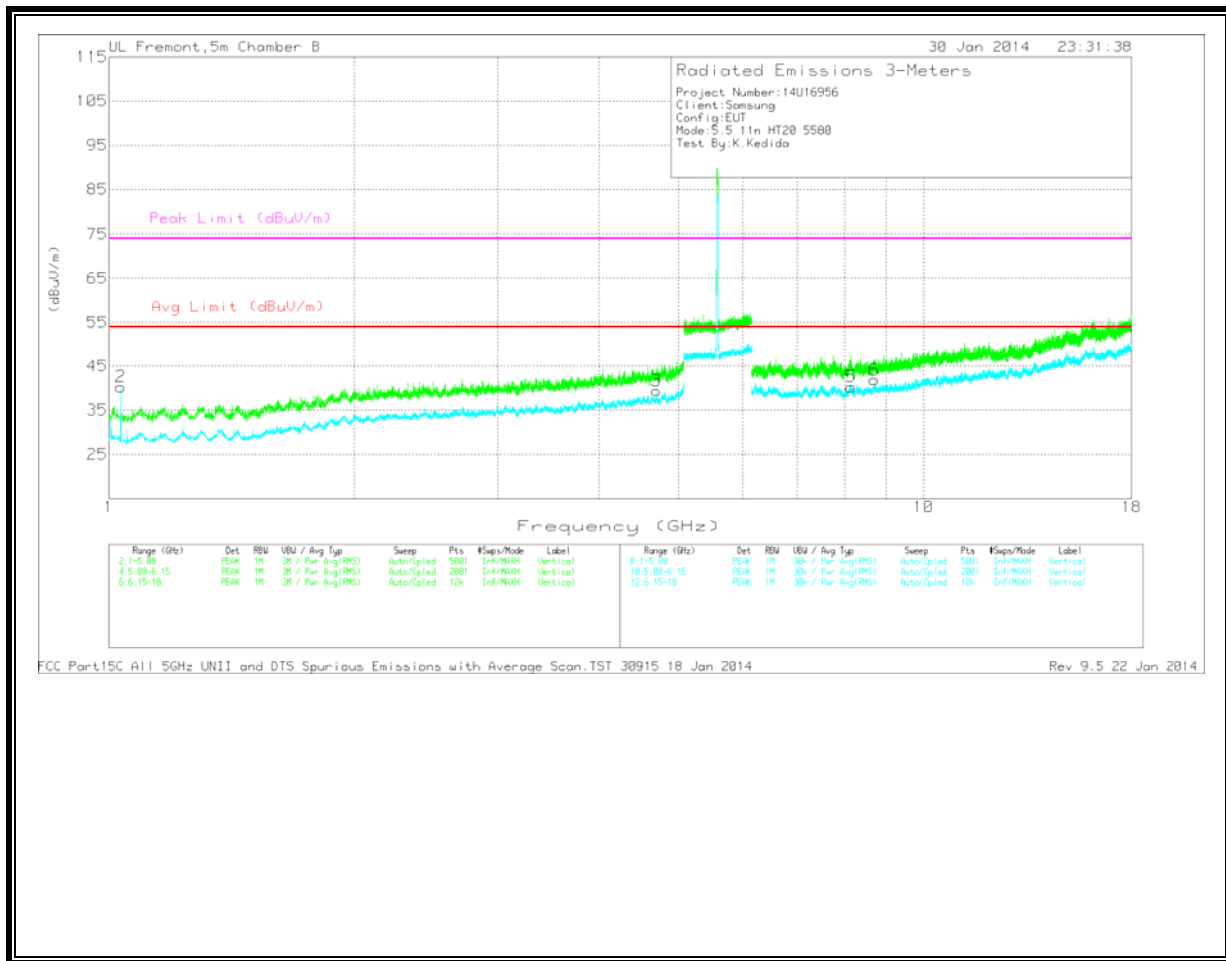
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Ampl/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 8.478	31.35	Avg	36.2	-26.4	41.15	54	-12.85	-	-	0-360	99	H
2	1.946	36.01	Avg	31.4	-32.5	34.91	54	-19.09	-	-	0-360	99	V
1	2.448	34.79	Avg	32.4	-32.2	34.99	54	-19.01	-	-	0-360	99	H
3	3.396	35.01	Avg	33.2	-31.2	37.01	54	-16.99	-	-	0-360	202	V
5	7.193	31.21	Avg	35.8	-26.5	40.51	54	-13.49	-	-	0-360	99	V
6	9.508	29.34	Avg	37.2	-24.5	42.04	54	-11.96	-	-	0-360	202	V

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

Note: All peak readings were 20dB below the peak limit. Average measurements at discrete frequencies are provided in the table above for frequencies that are within 6dB of the average limit.



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

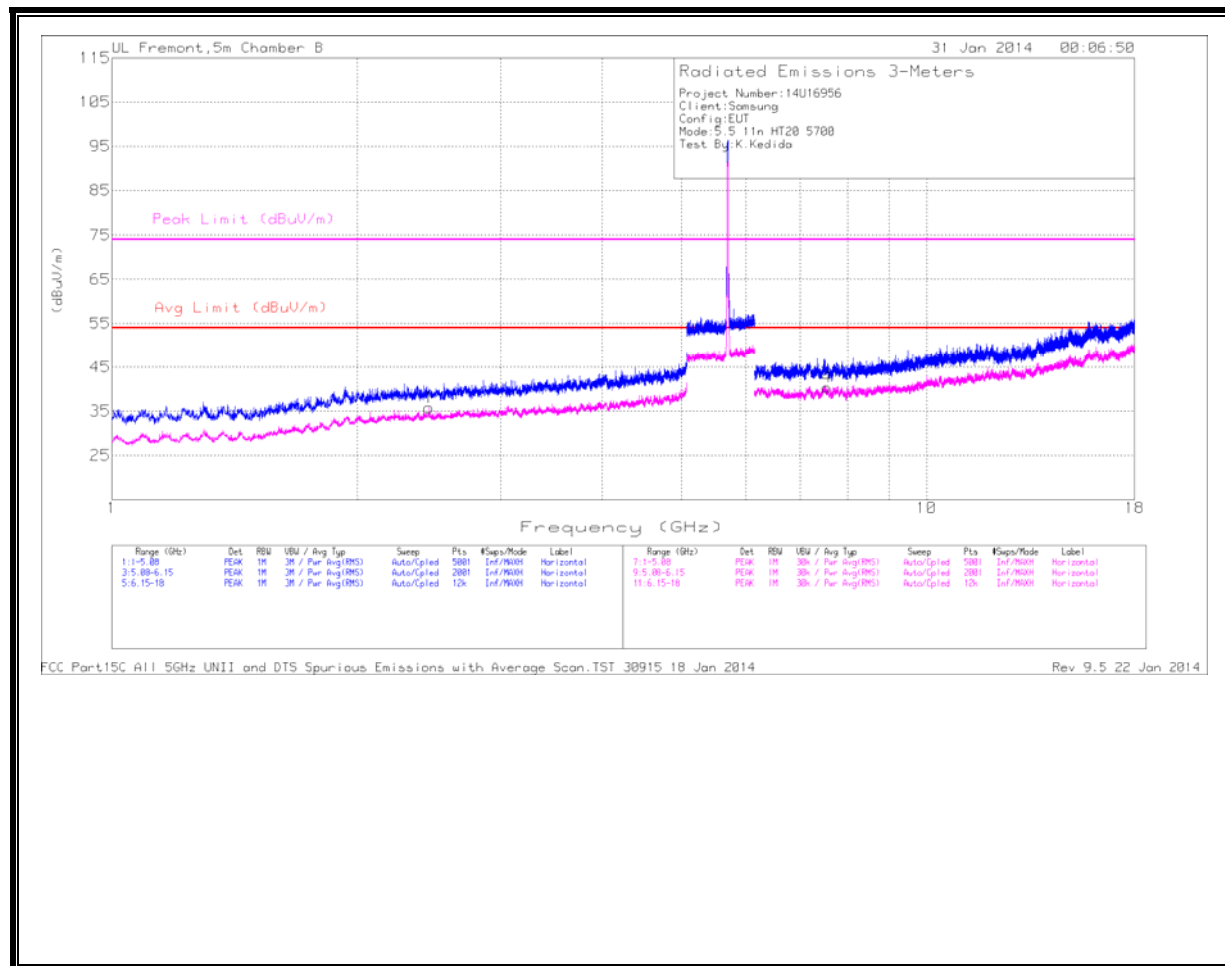
MID CHANNEL DATA

Trace Markers

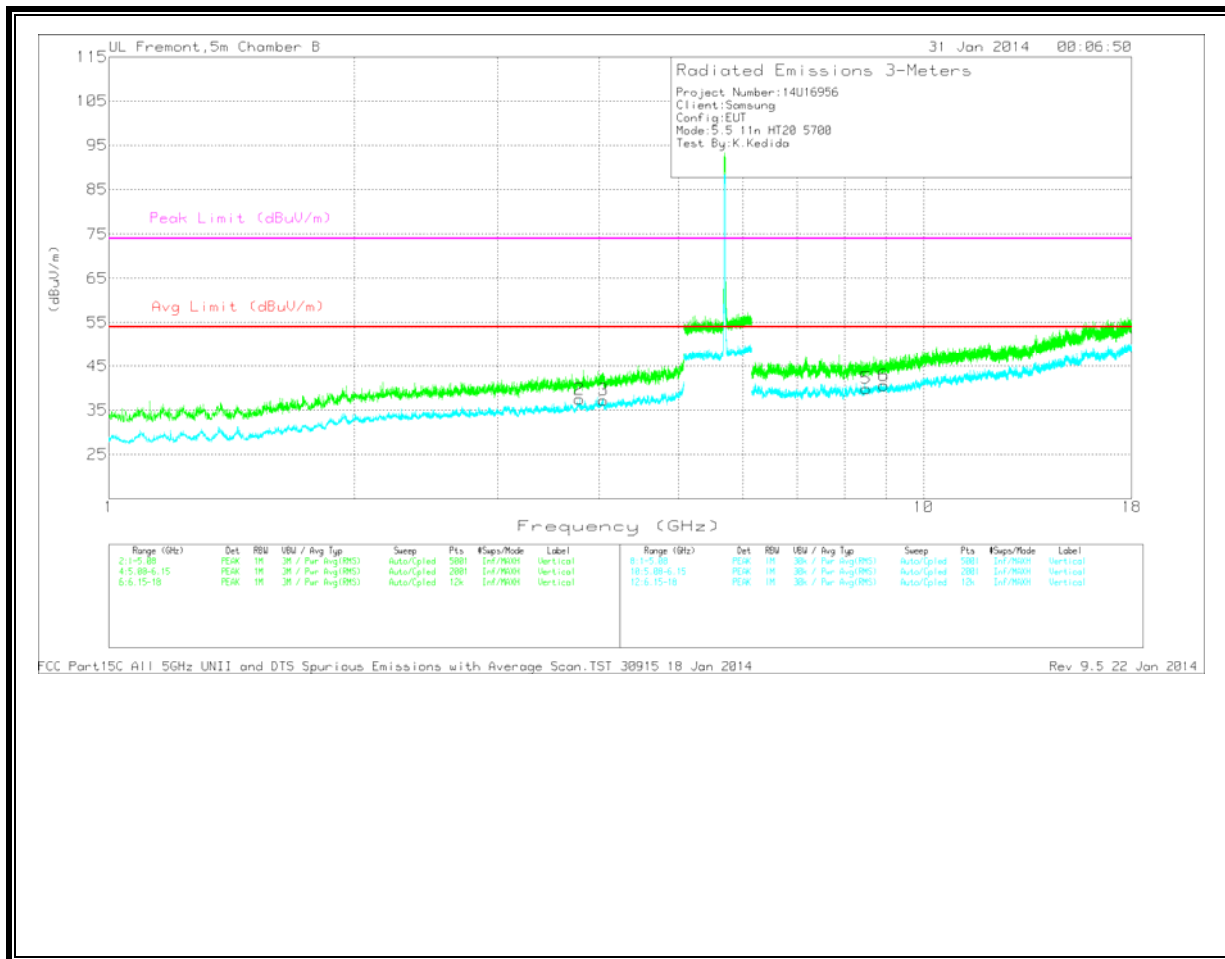
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 1.035	47.27	Avg	27.6	-34.6	40.27	54	-13.73	-	-	0-360	202	V
3	* 4.701	34.6	Avg	34.7	-29.9	39.4	54	-14.6	-	-	0-360	202	V
4	* 8.142	30.93	Avg	36.1	-26.7	40.33	54	-13.67	-	-	0-360	202	H
5	* 8.148	30.95	Avg	36.1	-26.8	40.25	54	-13.75	-	-	0-360	202	V
1	3.091	35.37	Avg	33.2	-31.9	36.67	54	-17.33	-	-	0-360	201	H
6	8.702	31.56	Avg	36.4	-26.1	41.86	54	-12.14	-	-	0-360	99	V

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

Note: All peak readings were 20dB below the peak limit. Average measurements at discrete frequencies are provided in the table above for frequencies that are within 6dB of the average limit.



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: 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

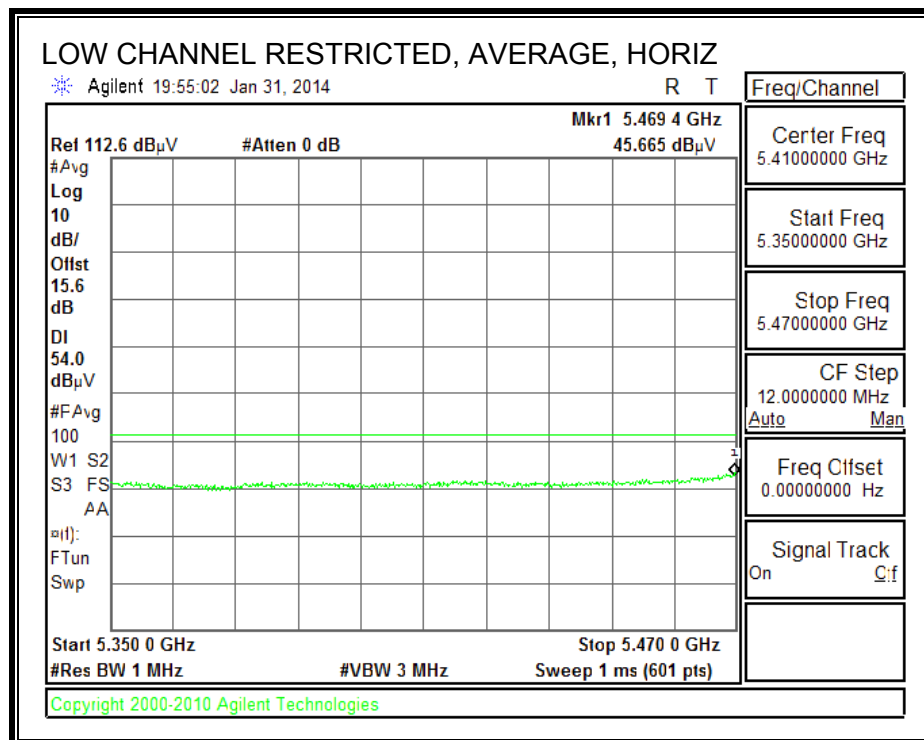
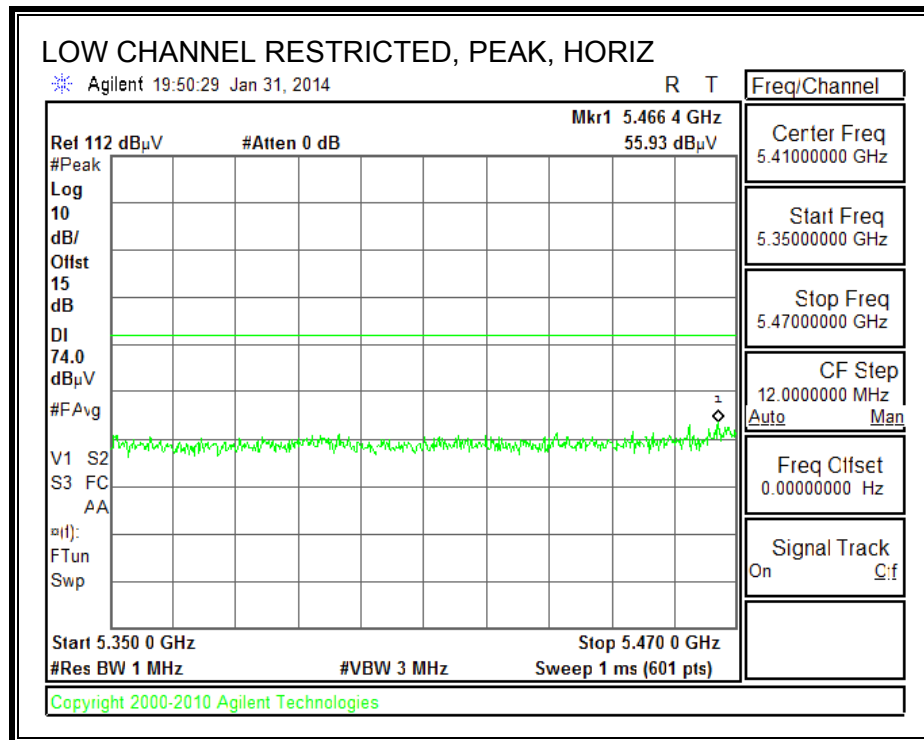
Trace Markers

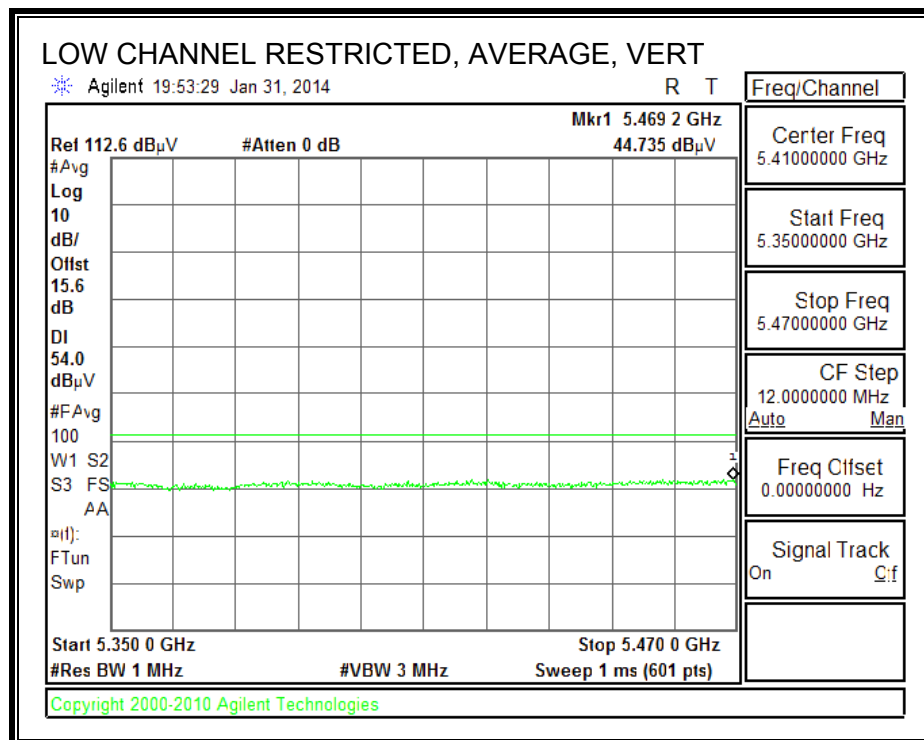
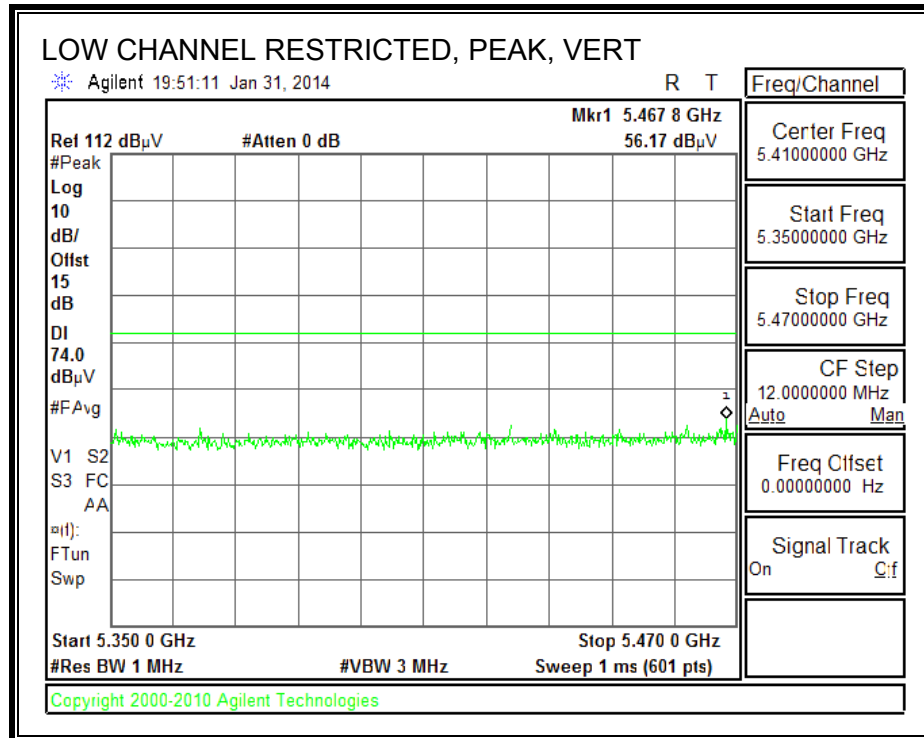
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 3.781	34.78	Avg	33.8	-31.1	37.48	54	-16.52	-	-	0-360	99	V
3	* 4.048	33.15	Avg	33.9	-29.8	37.25	54	-16.75	-	-	0-360	99	V
4	* 7.545	31.28	Avg	36	-26.9	40.38	54	-13.62	-	-	0-360	202	H
1	2.452	35.62	Avg	32.4	-32.2	35.82	54	-18.18	-	-	0-360	202	H
5	8.503	30.24	Avg	36.2	-26.6	39.84	54	-14.16	-	-	0-360	99	V
6	8.936	29.82	Avg	36.7	-25.9	40.62	54	-13.38	-	-	0-360	202	V

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

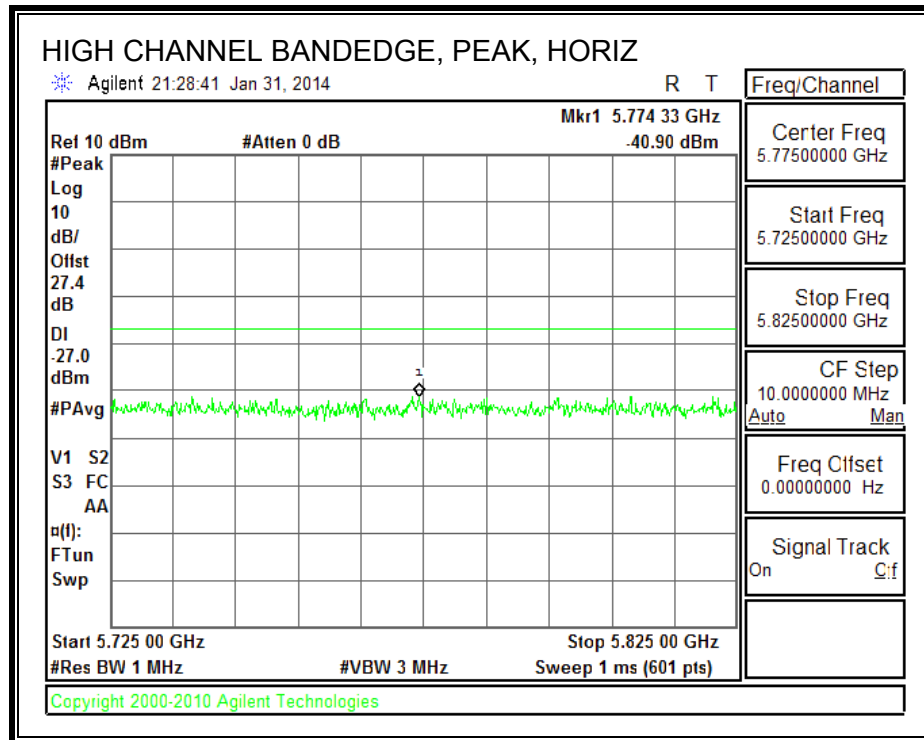
Note: All peak readings were 20dB below the peak limit. Average measurements at discrete frequencies are provided in the table above for frequencies that are within 6dB of the average limit.

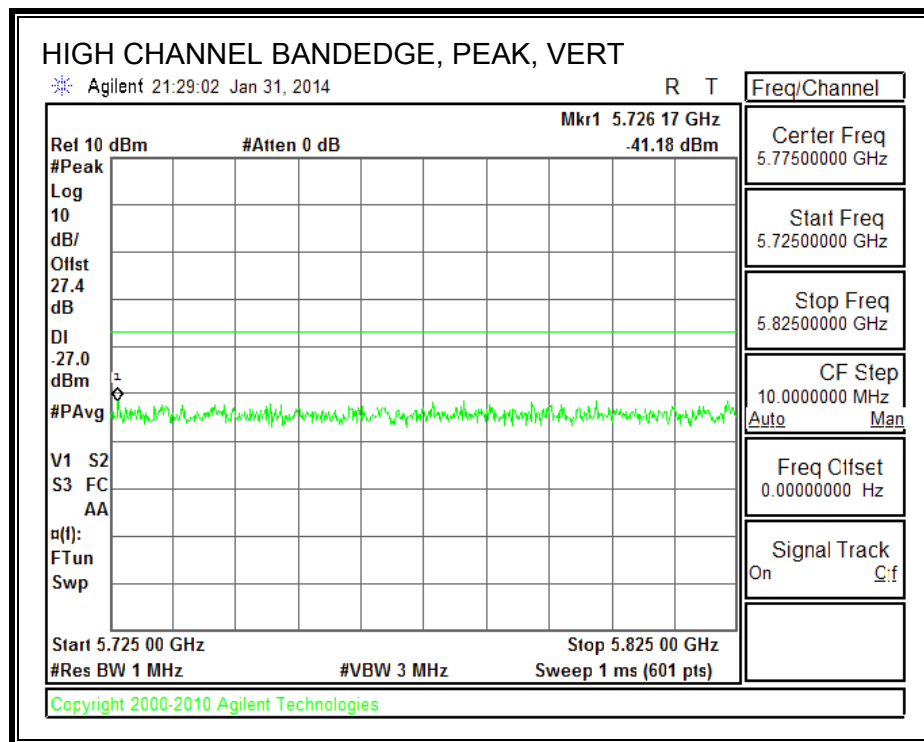
11.3.5. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.5 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)





AUTHORIZED BANDEDGE (HIGH CHANNEL)

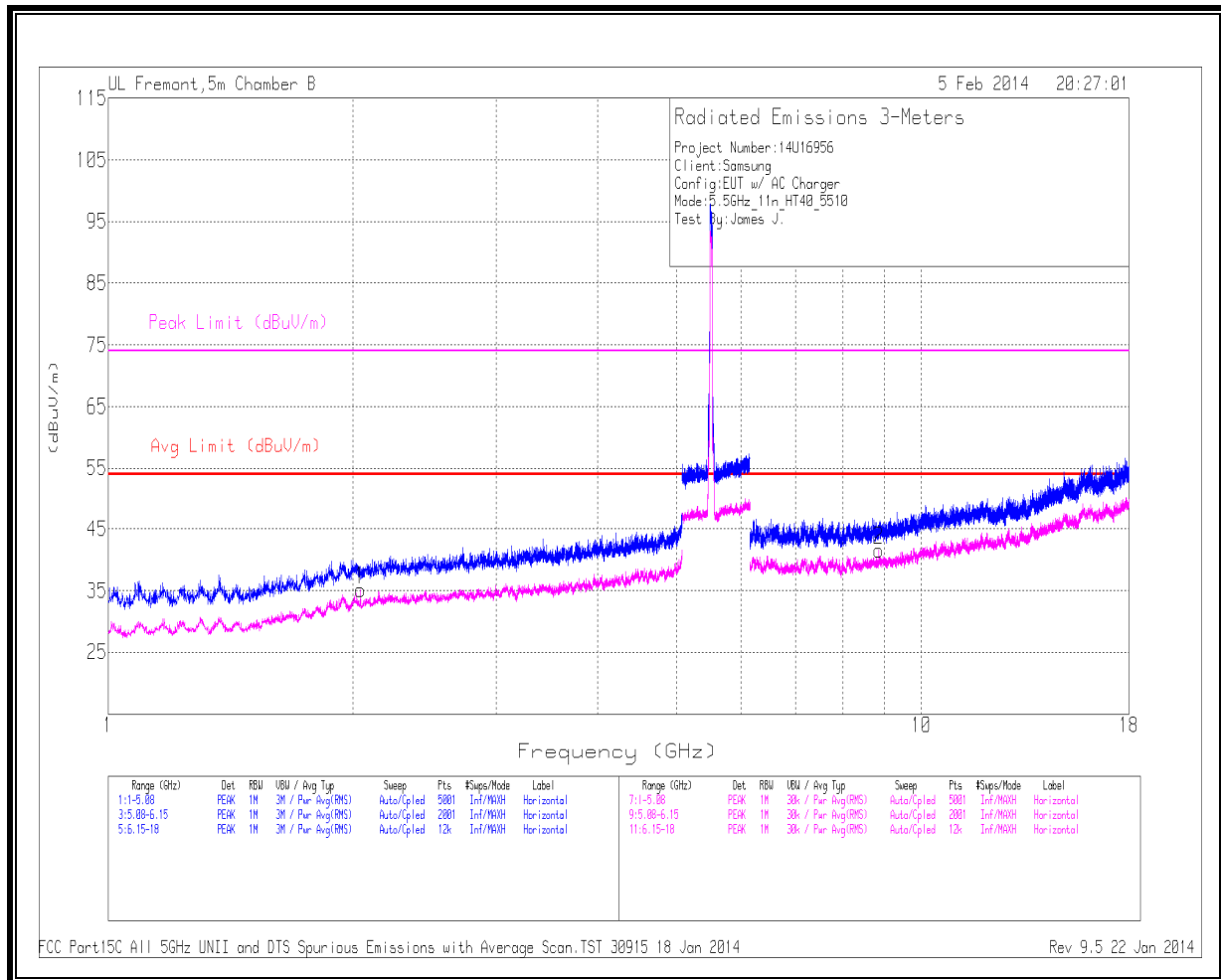




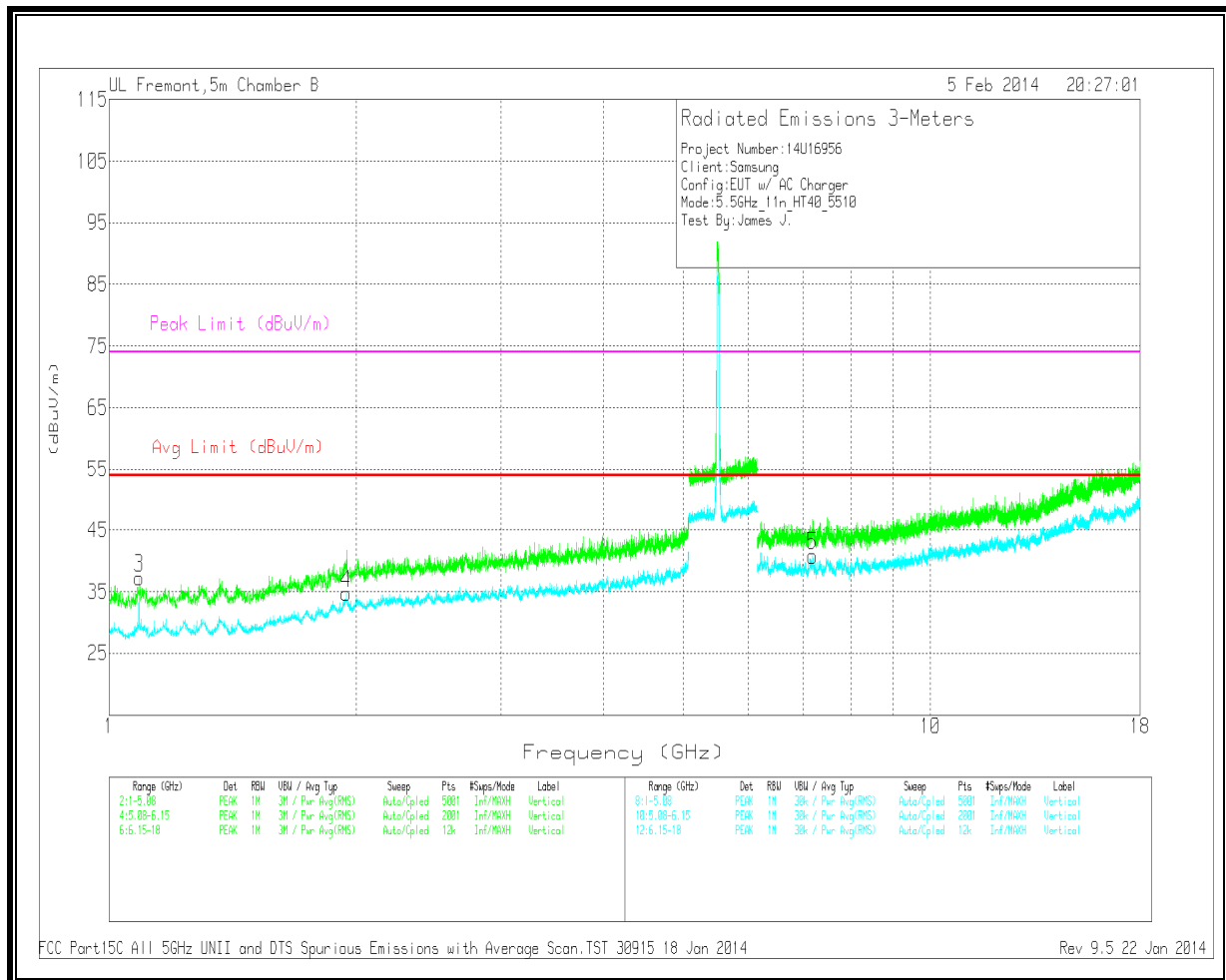
11.3.6.

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.



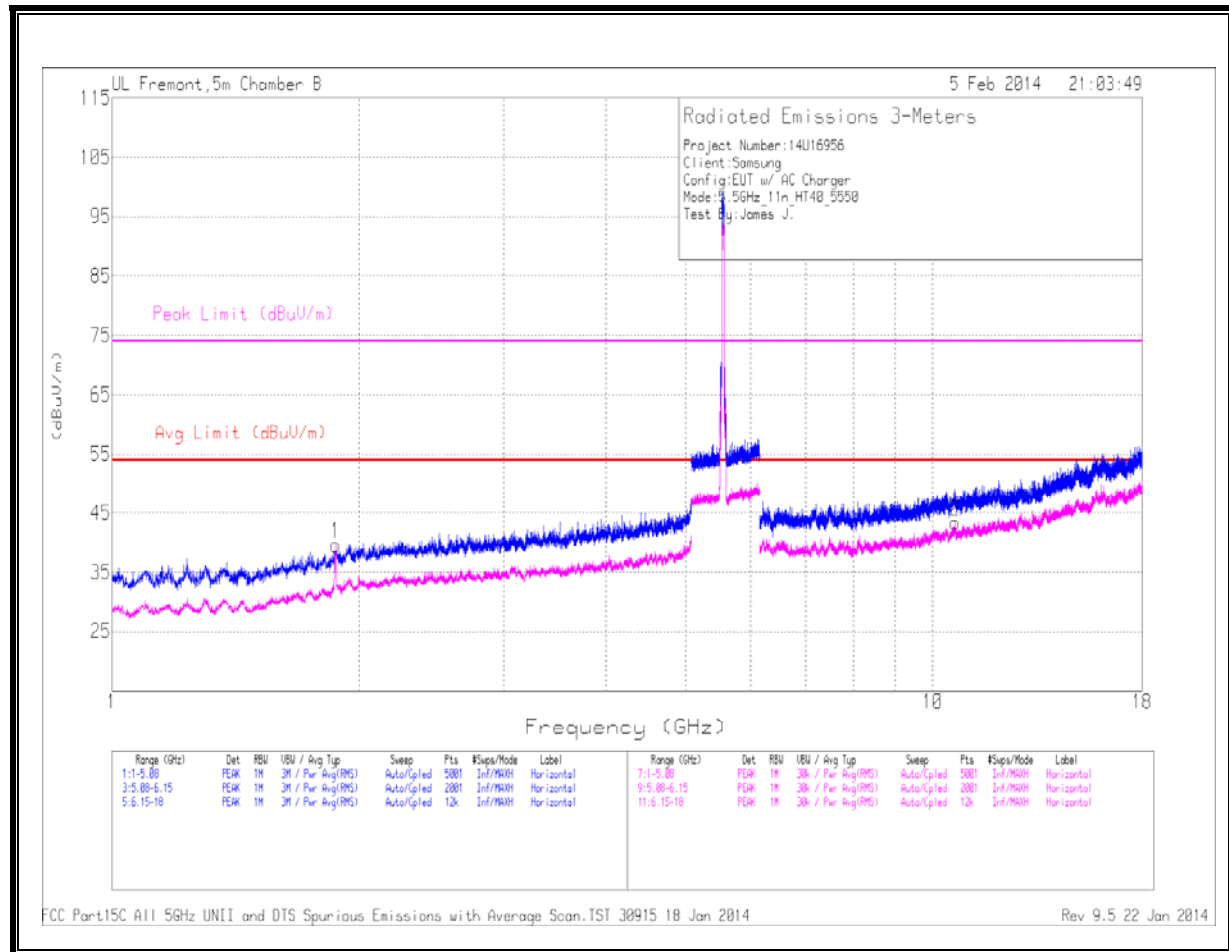
Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

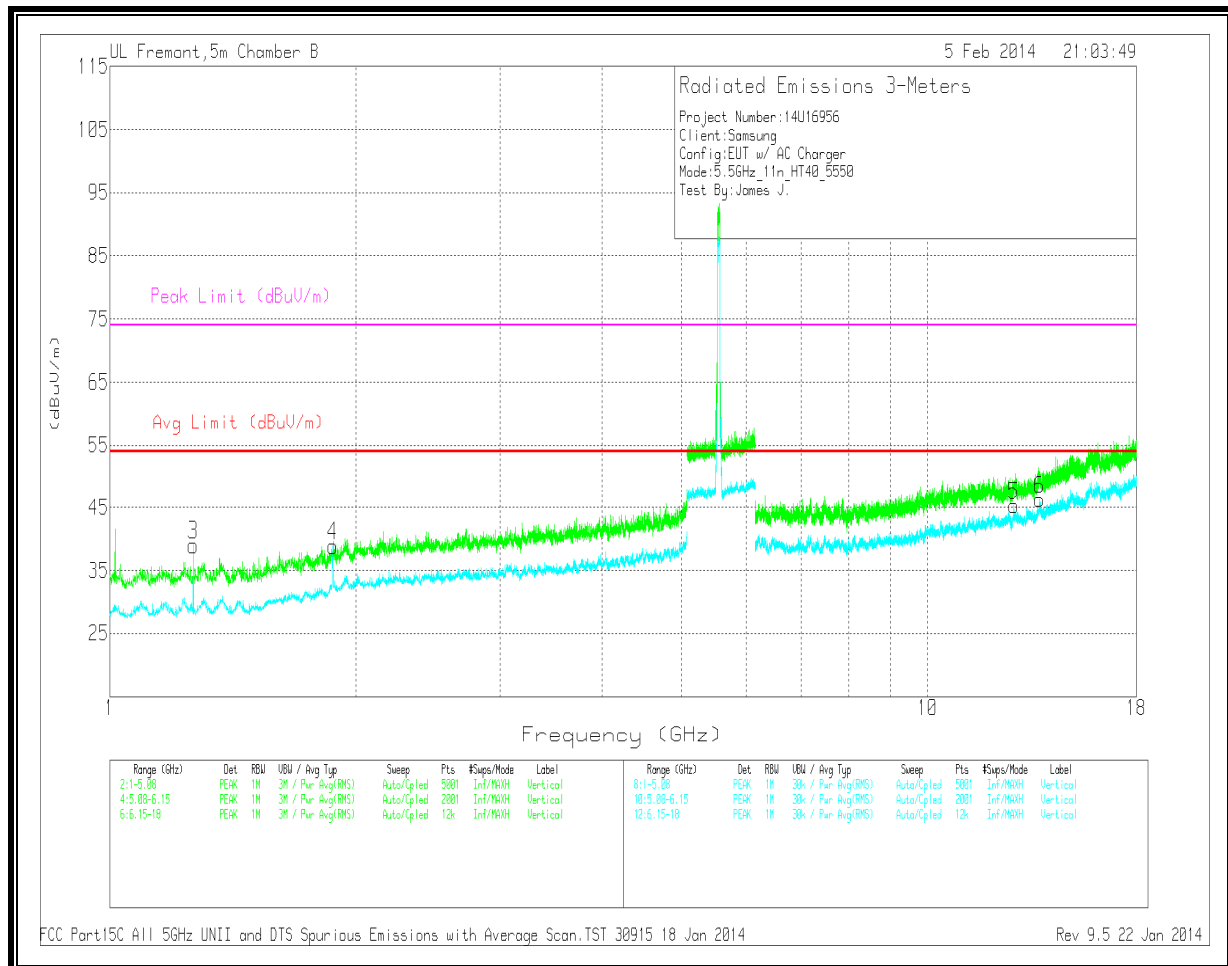
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	1.087	43.84	Avg	27.8	-34.4	37.24	54	-16.76	-	-	0-360	99	V
4	1.944	35.82	Avg	31.4	-32.5	34.72	54	-19.28	-	-	0-360	202	V
1	2.042	36.77	Avg	31.9	-33.5	35.17	54	-18.83	-	-	0-360	201	H
5	7.185	31.51	Avg	35.8	-26.5	40.81	54	-13.19	-	-	0-360	99	V
2	8.866	30.76	Avg	36.6	-25.8	41.56	54	-12.44	-	-	0-360	202	H

Note: All peak readings were 20dB below the peak limit. Average measurements at discrete frequencies are provided in the table above for frequencies that are within 6dB of the average limit.



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



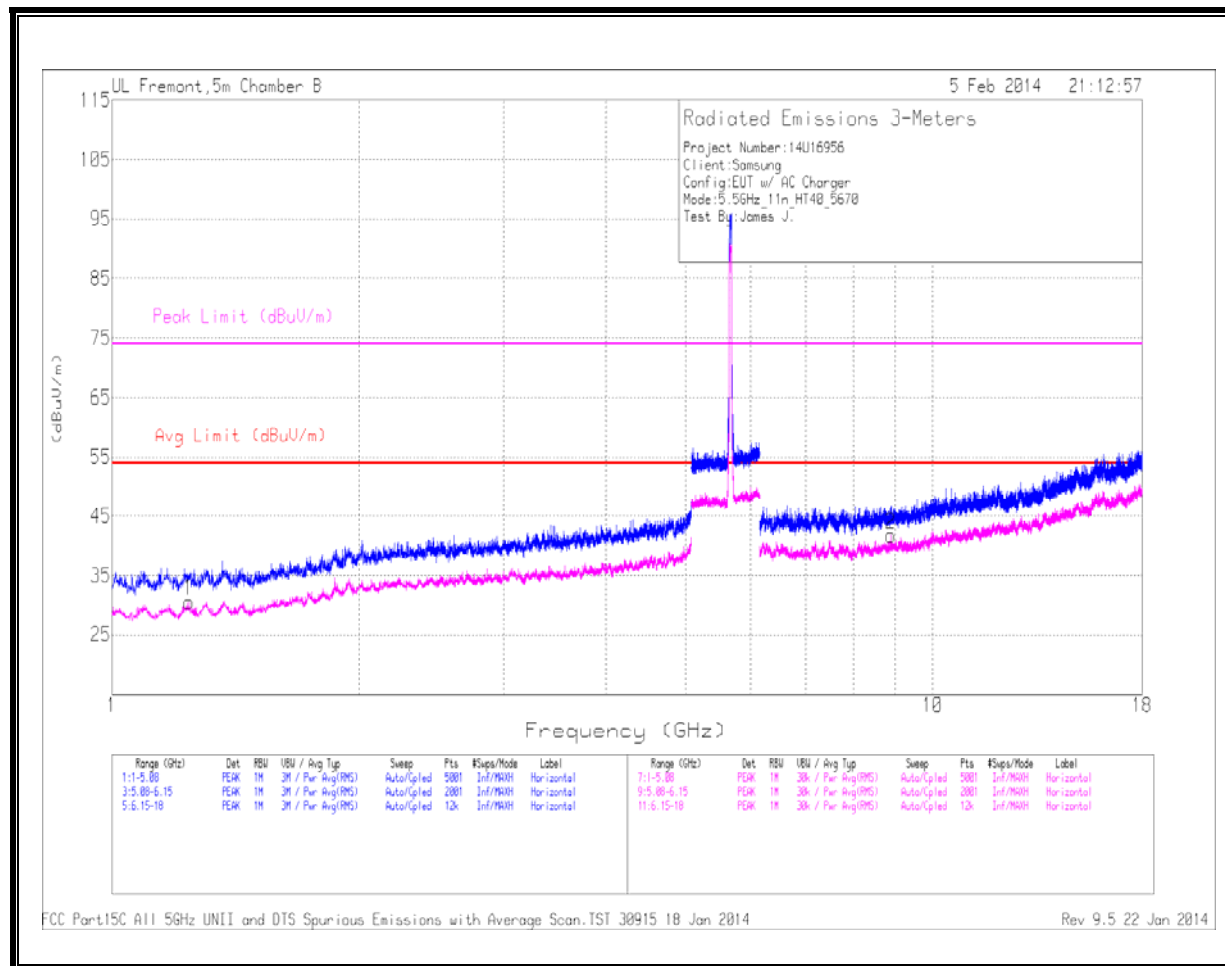
Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

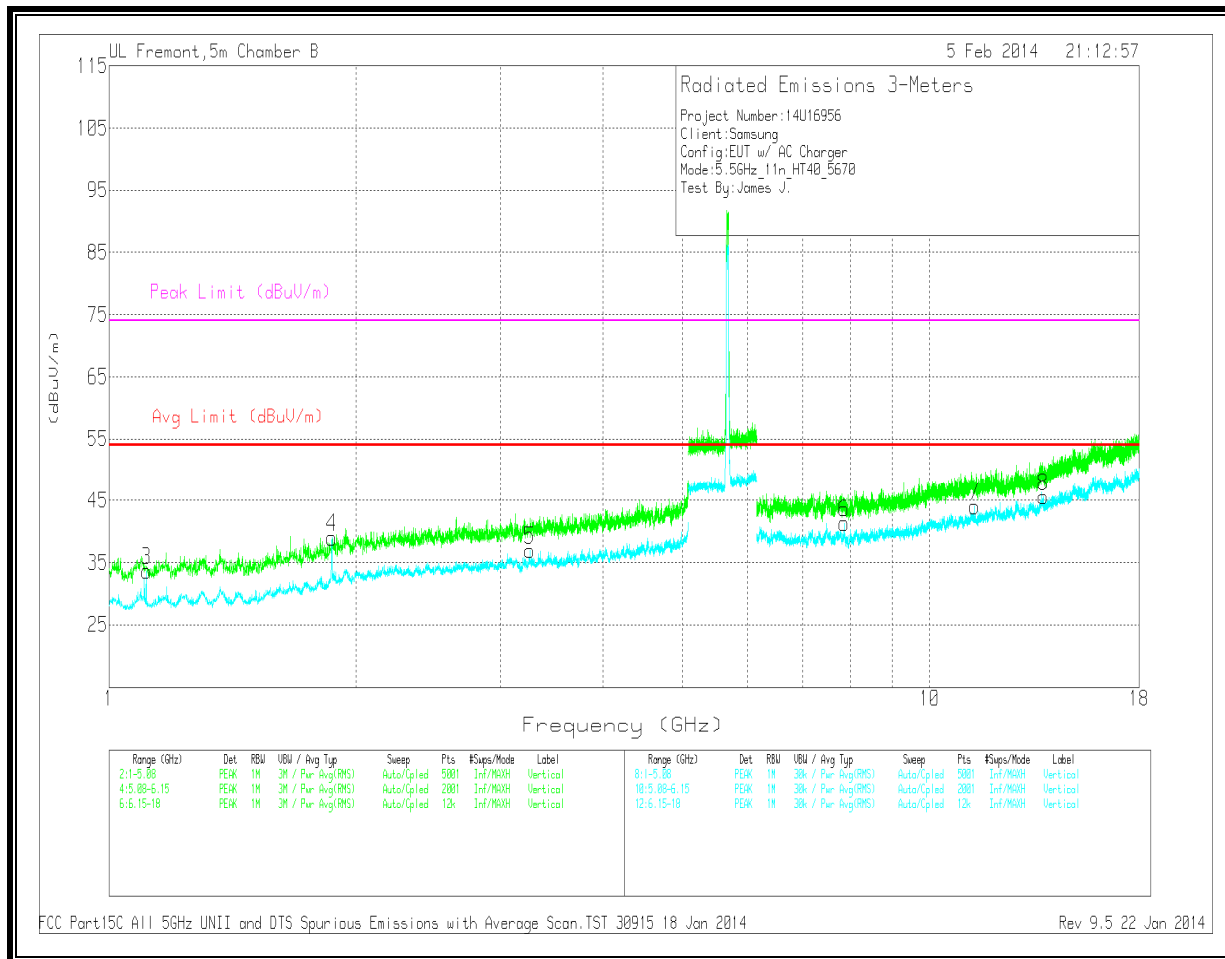
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	1.264	44.91	Avg	28.6	-34.5	39.01	54	-14.99	-	-	0-360	202	V
4	1.872	41.06	Avg	30.9	-33.1	38.86	54	-15.14	-	-	0-360	202	V
1	1.873	41.85	Avg	30.9	-33.1	39.65	54	-14.35	-	-	0-360	201	H
2	10.649	28.34	Avg	38.3	-23.2	43.44	54	-10.56	-	-	0-360	202	H
5	12.747	28.23	Avg	39.2	-22.1	45.33	54	-8.67	-	-	0-360	99	V
6	13.699	28.81	Avg	39.1	-21.6	46.31	54	-7.69	-	-	0-360	99	V

Note: All peak readings were 20dB below the peak limit. Average measurements at discrete frequencies are provided in the table above for frequencies that are within 6dB of the average limit.



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

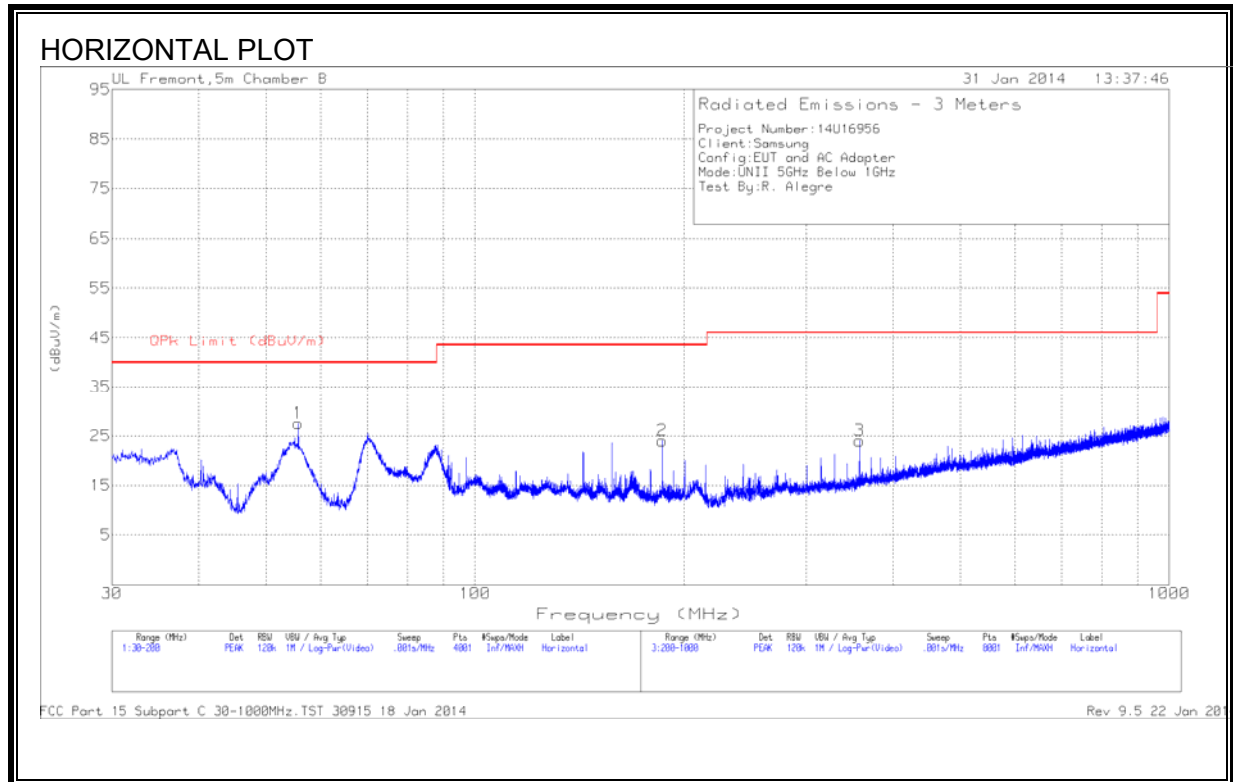
HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	1.11	40.29	Avg	27.9	-34.5	33.69	54	-20.31	-	-	0-360	99	V
1	1.241	36.69	Avg	28.6	-34.7	30.59	54	-23.41	-	-	0-360	202	H
4	1.868	41.21	Avg	30.9	-33.1	39.01	54	-14.99	-	-	0-360	99	V
5	3.256	35.37	Avg	33.3	-31.7	36.97	54	-17.03	-	-	0-360	202	V
6	7.866	32.56	Avg	36.2	-27.4	41.36	54	-12.64	-	-	0-360	99	V
2	8.889	30.88	Avg	36.6	-25.7	41.78	54	-12.22	-	-	0-360	202	H
7	11.339	28.65	Avg	38.6	-23.2	44.05	54	-9.95	-	-	0-360	202	V
8	13.756	28.59	Avg	39.1	-22.1	45.59	54	-8.41	-	-	0-360	99	V

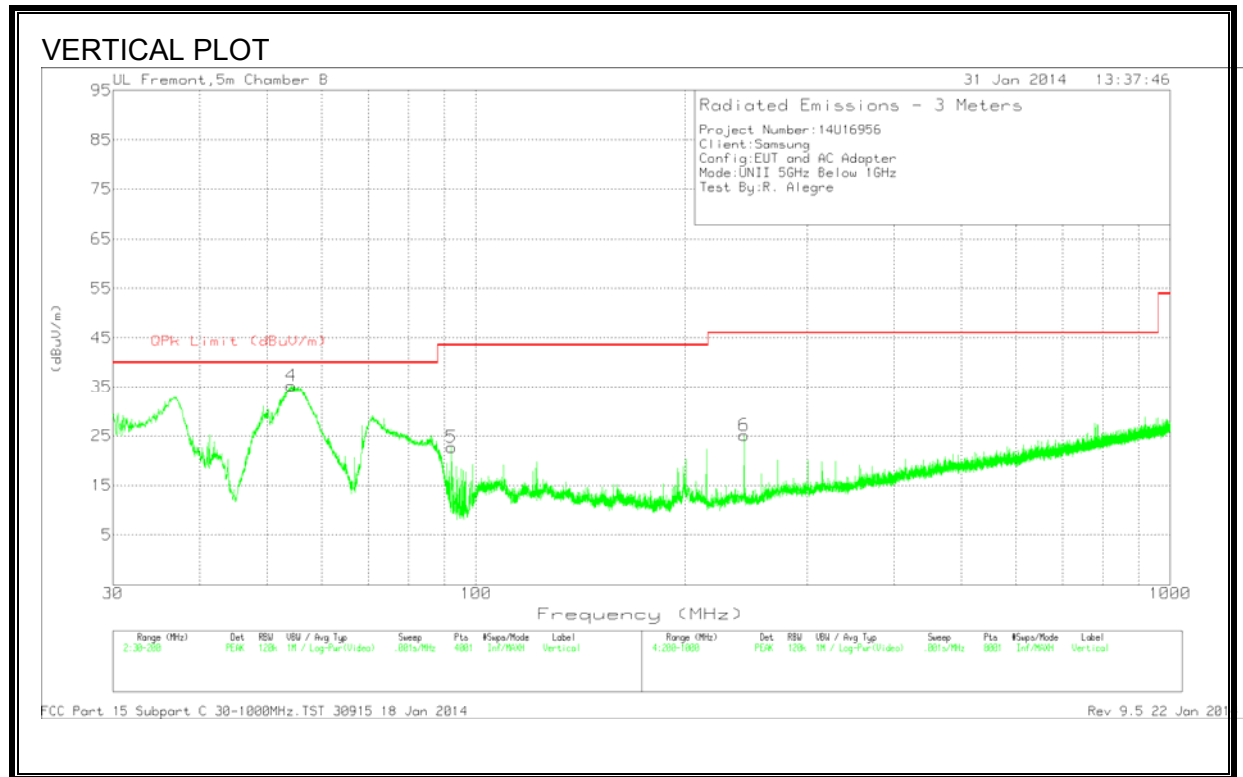
Note: All peak readings were 20dB below the peak limit. Average measurements at discrete frequencies are provided in the table above for frequencies that are within 6dB of the average limit.

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

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



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



Worst Case Data
Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T243 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	54.1825	56.96	PK	6.9	-28.6	35.26	40	-4.74	0-360	101	V
1	55.6275	49.19	PK	6.9	-28.6	27.49	40	-12.51	0-360	200	H
5	92.22	42.9	PK	7.9	-28.1	22.7	43.52	-20.82	0-360	101	V
2	186.145	40.12	PK	11	-27.1	24.02	43.52	-19.5	0-360	101	H
6	243.4	39.98	PK	11.6	-26.5	25.08	46.02	-20.94	0-360	200	V
3	357.9	35.22	PK	14.6	-25.8	24.02	46.02	-22	0-360	200	H

PK - Peak detector

FCC Part 15 Subpart C 30-1000MHz.TST 30915 18 Jan 2014 Rev 9.5 22 Jan 2014

13. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 7.2.2

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

^{*} Decreases with the logarithm of the frequency.

TEST PROCEDURE

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

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

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

RESULTS

6 WORST EMISSIONS

Line-L1 .15 - 30MHz

Trace Markers

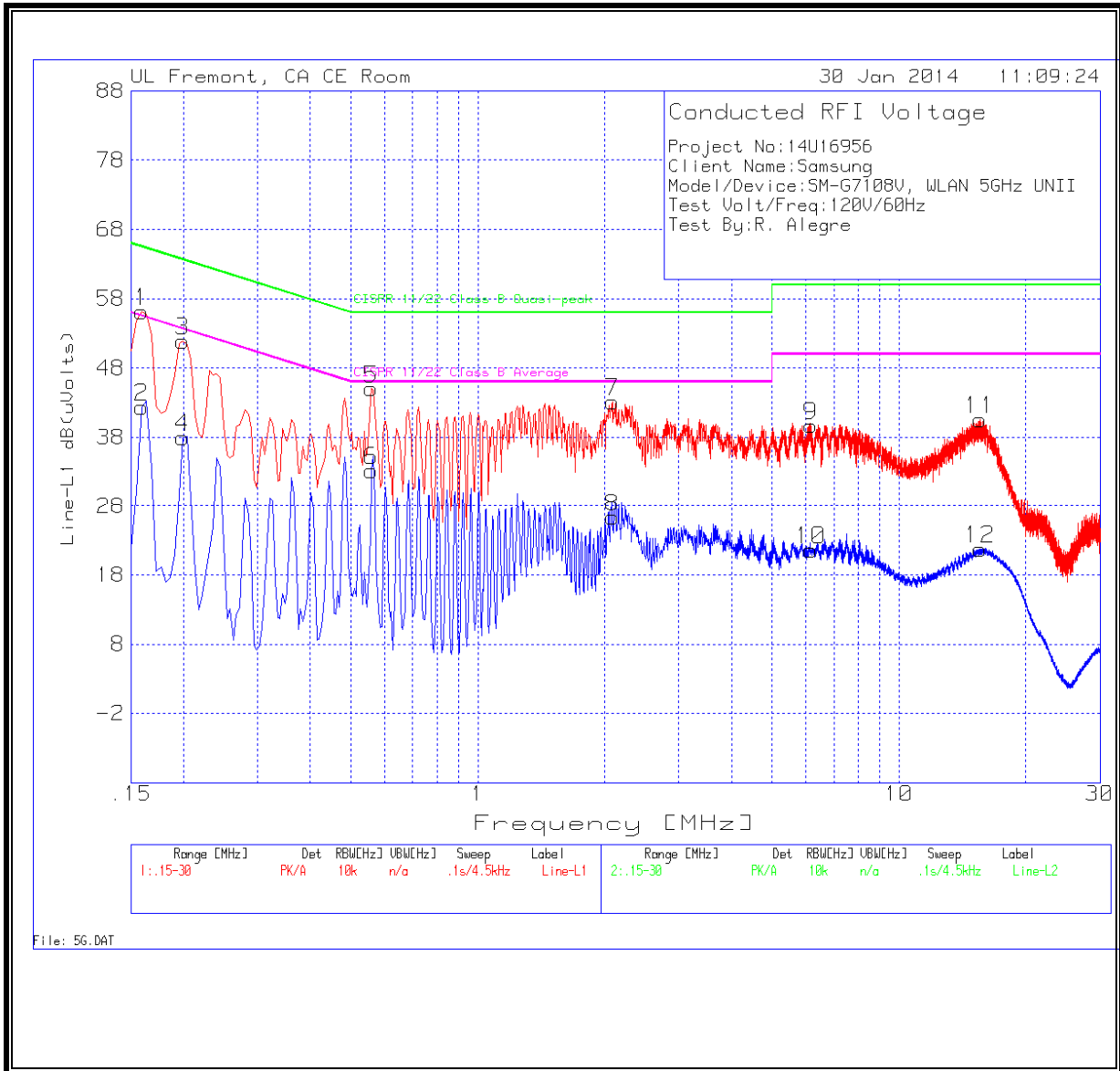
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1 (dB)	LC Cables 1&3 (dB)	Corrected Reading dB(uVolts)	CISPR 11/22 Class B Quasi-peak	Margin to Limit (dB)	CISPR 11/22 Class B Average	Margin to Limit (dB)
1	.159	54.83	PK	1.3	0	56.13	65.5	-9.37	-	-
2	.159	41.07	Av	1.3	0	42.37	-	-	55.5	-13.13
3	.1995	51.02	PK	.9	0	51.92	63.6	-11.68	-	-
4	.1995	37.11	Av	.9	0	38.01	-	-	53.6	-15.59
5	.5595	44.7	PK	.3	0	45	56	-11	-	-
6	.5595	32.88	Av	.3	0	33.18	-	-	46	-12.82
7	2.085	42.81	PK	.2	.1	43.11	56	-12.89	-	-
8	2.085	26.07	Av	.2	.1	26.37	-	-	46	-19.63
9	6.1845	39.41	PK	.2	.1	39.71	60	-20.29	-	-
10	6.1845	21.26	Av	.2	.1	21.56	-	-	50	-28.44
11	15.567	40.01	PK	.3	.2	40.51	60	-19.49	-	-
12	15.567	21.26	Av	.3	.2	21.76	-	-	50	-28.24

Line-L2 .15 - 30MHz

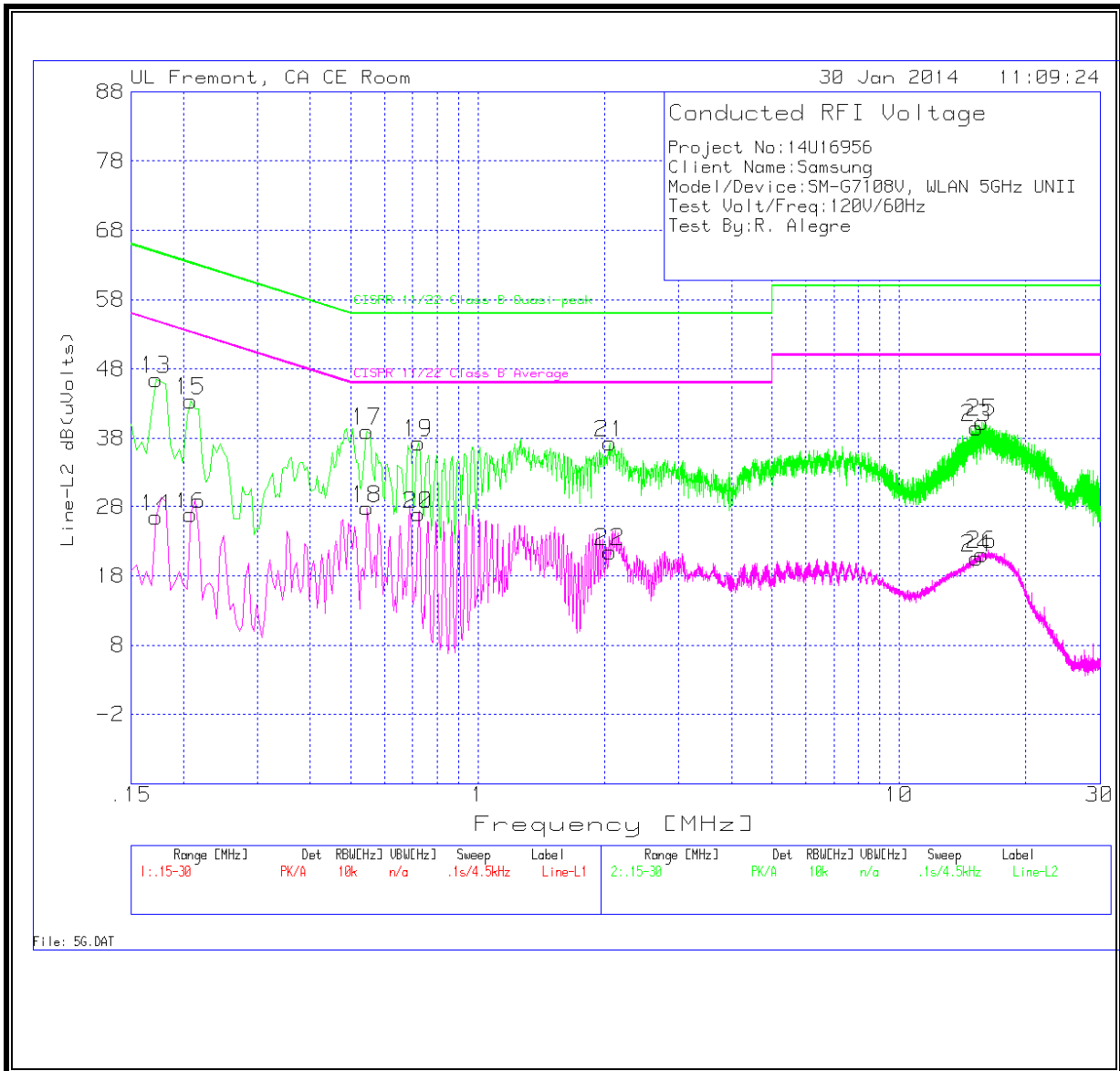
Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2 (dB)	LC Cables 2&3 (dB)	Corrected Reading dB(uVolts)	CISPR 11/22 Class B Quasi-peak	Margin to Limit (dB)	CISPR 11/22 Class B Average	Margin to Limit (dB)
13	.1725	45.27	PK	1.2	0	46.47	64.8	-18.33	-	-
14	.1725	25.33	Av	1.2	0	26.53	-	-	54.8	-28.27
15	.2085	42.42	PK	1	0	43.42	63.3	-19.88	-	-
16	.2085	25.83	Av	1	0	26.83	-	-	53.3	-26.47
17	.546	38.66	PK	.3	0	38.96	56	-17.04	-	-
18	.546	27.55	Av	.3	0	27.85	-	-	46	-18.15
19	.7215	36.98	PK	.3	0	37.28	56	-18.72	-	-
20	.7215	26.65	Av	.3	0	26.95	-	-	46	-19.05
21	2.058	36.97	PK	.2	.1	37.27	56	-18.73	-	-
22	2.058	21.13	Av	.2	.1	21.43	-	-	46	-24.57
23	15.297	39.06	PK	.3	.2	39.56	60	-20.44	-	-
24	15.297	20.05	Av	.3	.2	20.55	-	-	50	-29.45
25	15.7425	39.83	PK	.3	.2	40.33	60	-19.67	-	-
26	15.7425	20.62	Av	.3	.2	21.12	-	-	50	-28.88

LINE 1 RESULTS



LINE 2 RESULTS



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
<i>Non-occupancy period</i>	30 minutes
<i>Channel Availability Check Time</i>	60 seconds
<i>Channel Move Time</i>	10 seconds
<i>Channel Closing Transmission Time</i>	200 milliseconds + approx. 60 milliseconds over remaining 10 second period
The instant that the <i>Channel Move Time</i> and the <i>Channel Closing Transmission Time</i> begins is as follows: For the Short pulse radar Test Signals this instant is the end of the <i>Burst</i>. 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

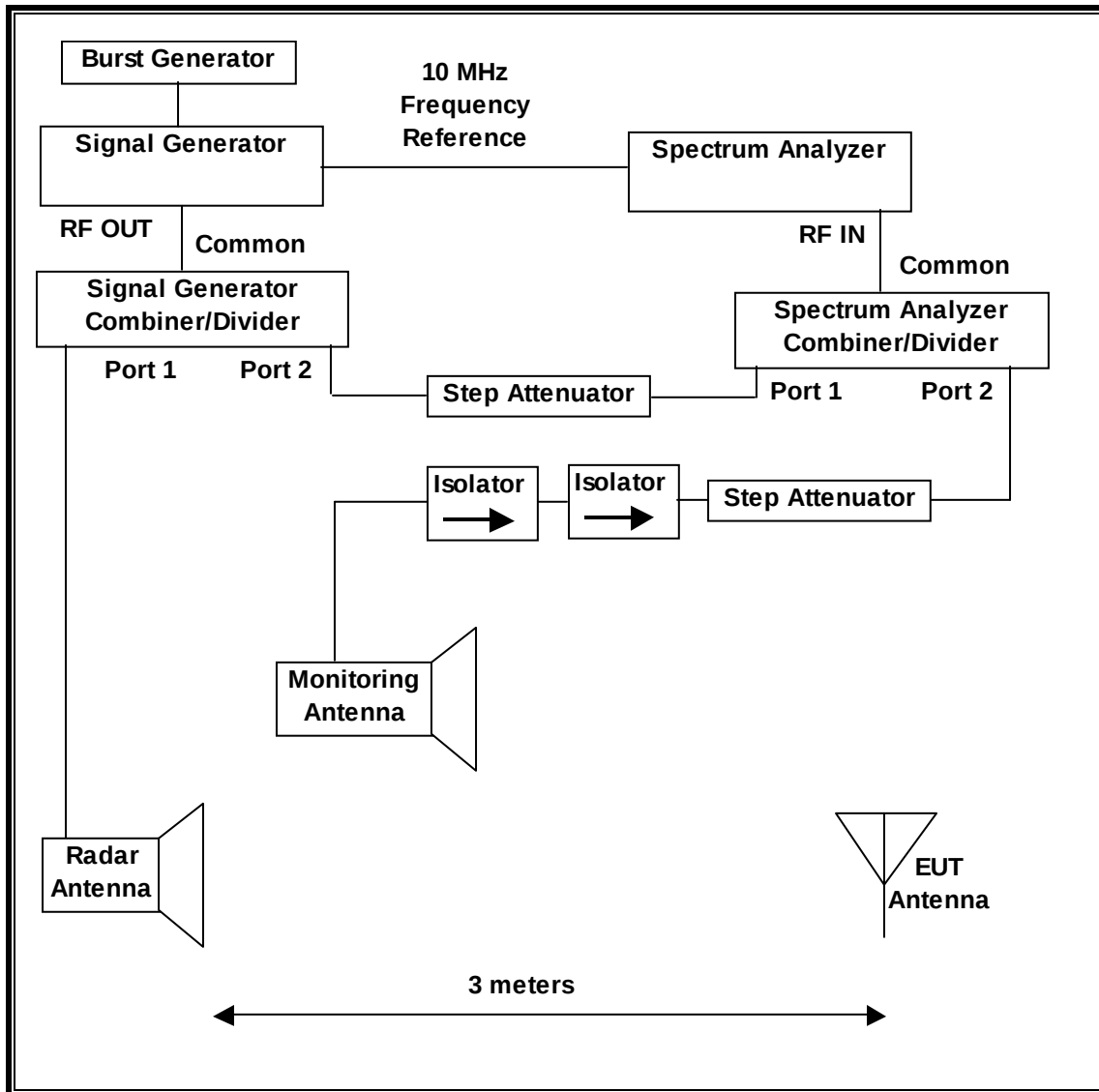
Radar Waveform	Bursts	Pulses per Burst	Pulse Width (μsec)	Chirp Width (MHz)	PRI (μsec)	Minimum Percentage of Successful Detection	Minimum Trials
5	8-20	1-3	50-100	5-20	1000-2000	80%	30

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 FCC 06-96 APPENDIX. 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.

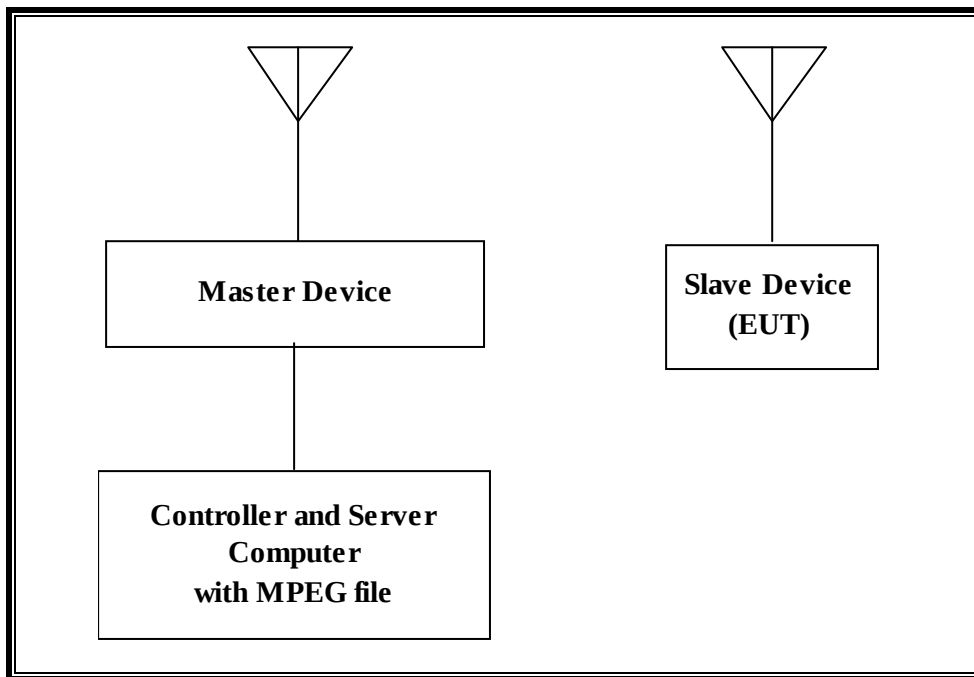
TEST AND MEASUREMENT EQUIPMENT

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

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
Wireless Access Point	Cisco	AIR-CT5522AG-A-K9	FTX120690N2	LDK102061
AC Adapter (AP)	Delta Electronics	EADP-45BBB	DTH112490BD	DoC
Notebook PC (Controller/Server)	Dell	PP18L	10657517725	DoC
AC Adapter (Controller/Server PC)	Dell	LA65SN0-00	CN-ODF263-71615-6AU-1019	DoC

14.1.3. 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
Wireless Access Point	Cisco	AIR-AP1252AG-A-K9	FTX120690N2	LDK102061
AC Adapter (AP)	Delta Electronics	EADP-45BB B	DTH112490BD	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 excluding the 5600-5650 MHz range.

The EUT is a Slave Device without Radar Detection.

The highest power level within these bands is 12.7 dBm EIRP in the 5250-5350 MHz band and 12.46 dBm EIRP in the 5470-5725 MHz band.

The only antenna assembly utilized with the EUT has a gain of -0.3 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 margin to the limit.

The EUT uses one transmitter/receiver chains connected 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 revision G7108V.001.

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 $> 23\text{dBm}$ (EIRP). Therefore the required interference threshold level is -64 dBm . After correction for procedural adjustments, the required radiated threshold at the antenna port is $-64 + 1 = -63\text{ dBm}$.

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

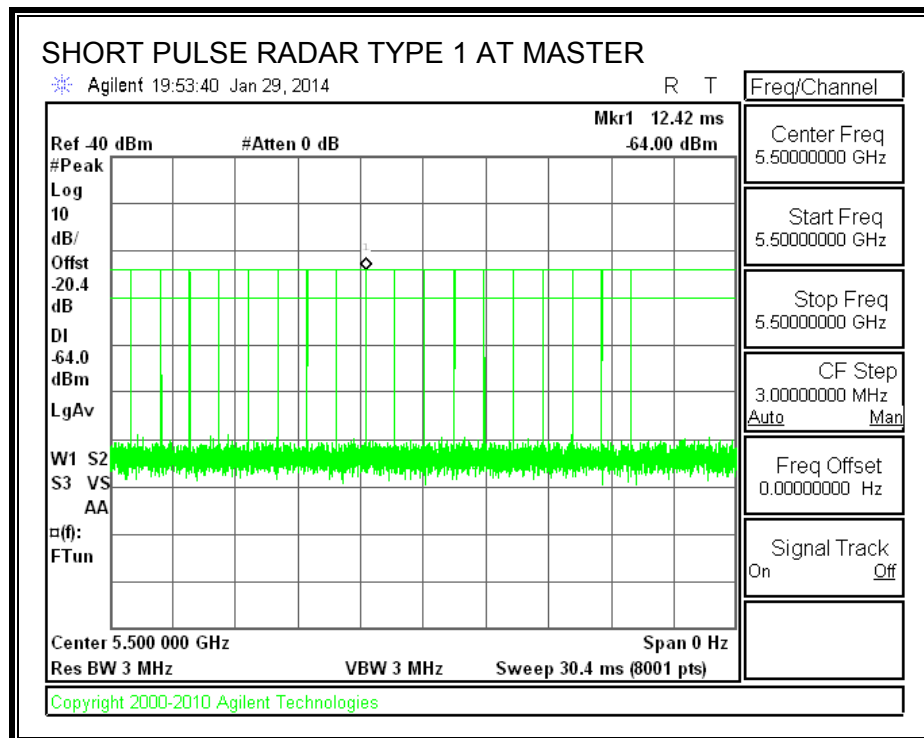
14.2. RESULTS FOR 20 MHz BANDWIDTH

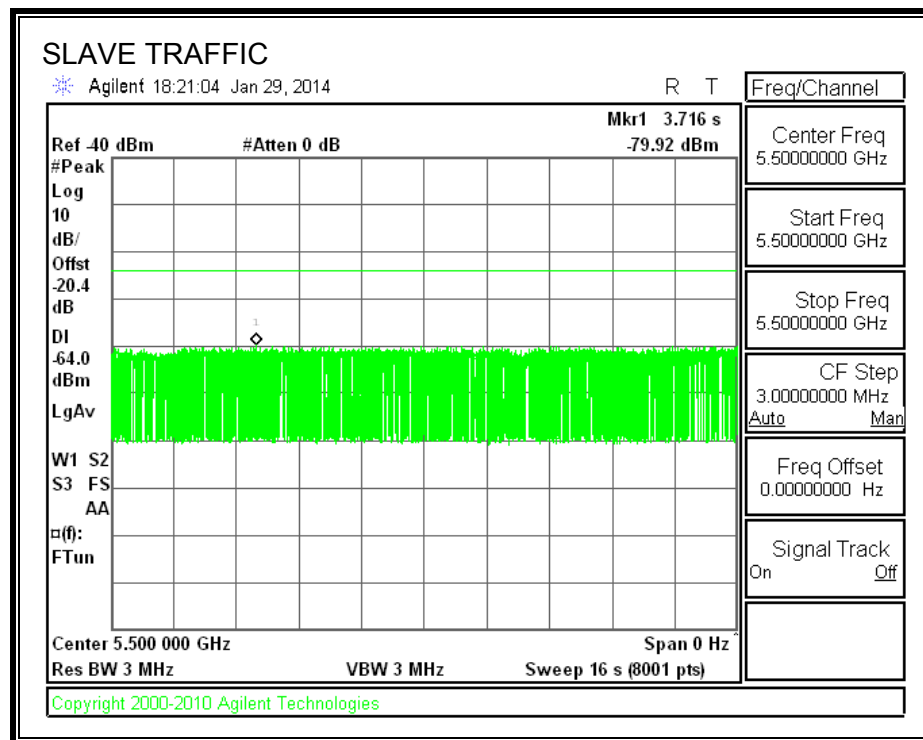
14.2.1. TEST CHANNEL

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

14.2.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM





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)

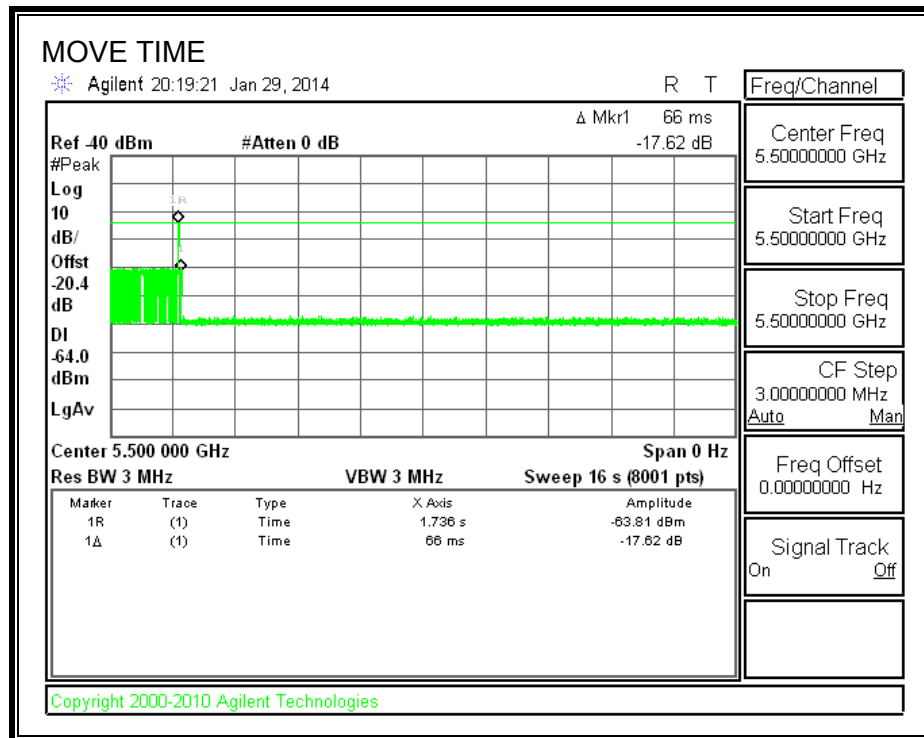
The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

RESULTS

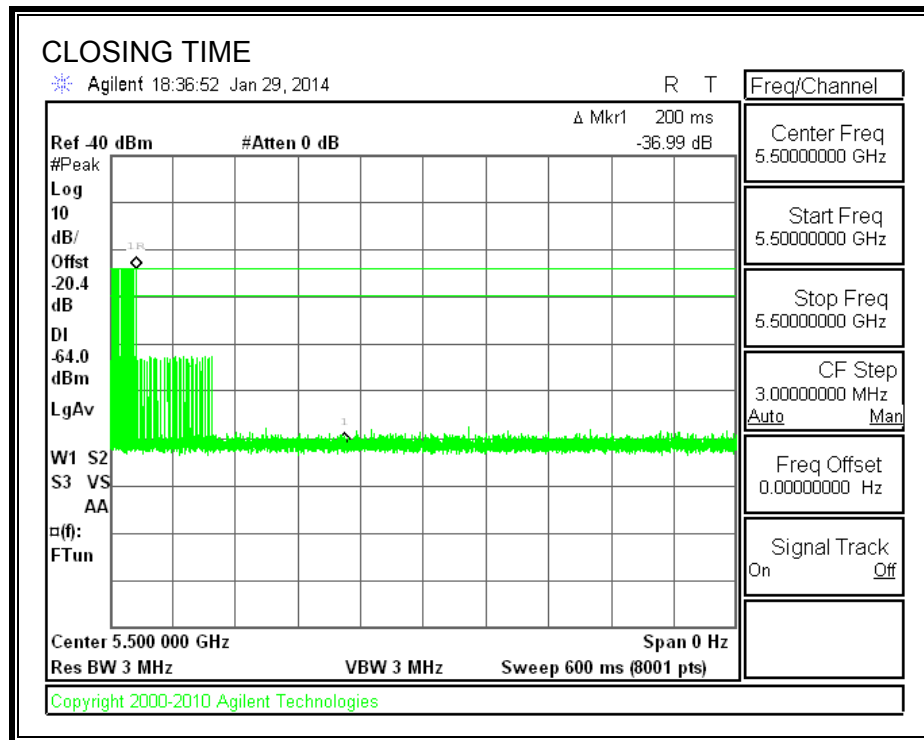
Channel Move Time (sec)	Limit (sec)
0.066	10

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

MOVE TIME

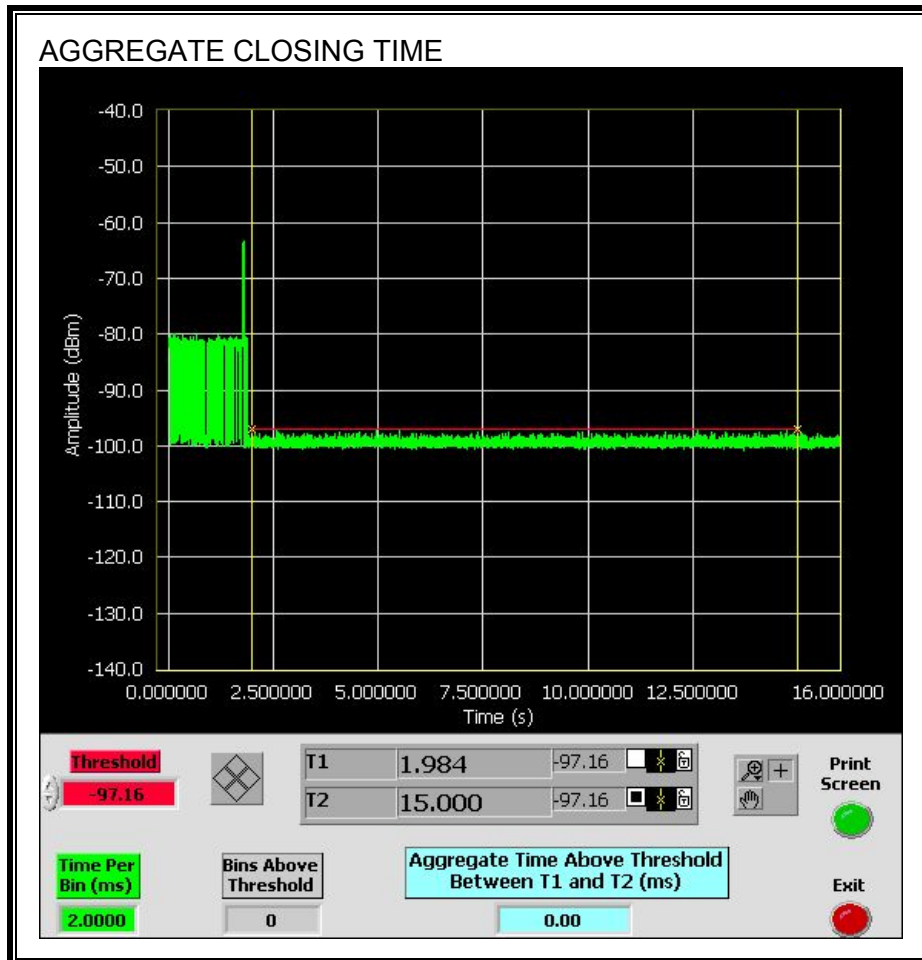


CHANNEL CLOSING TIME



AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



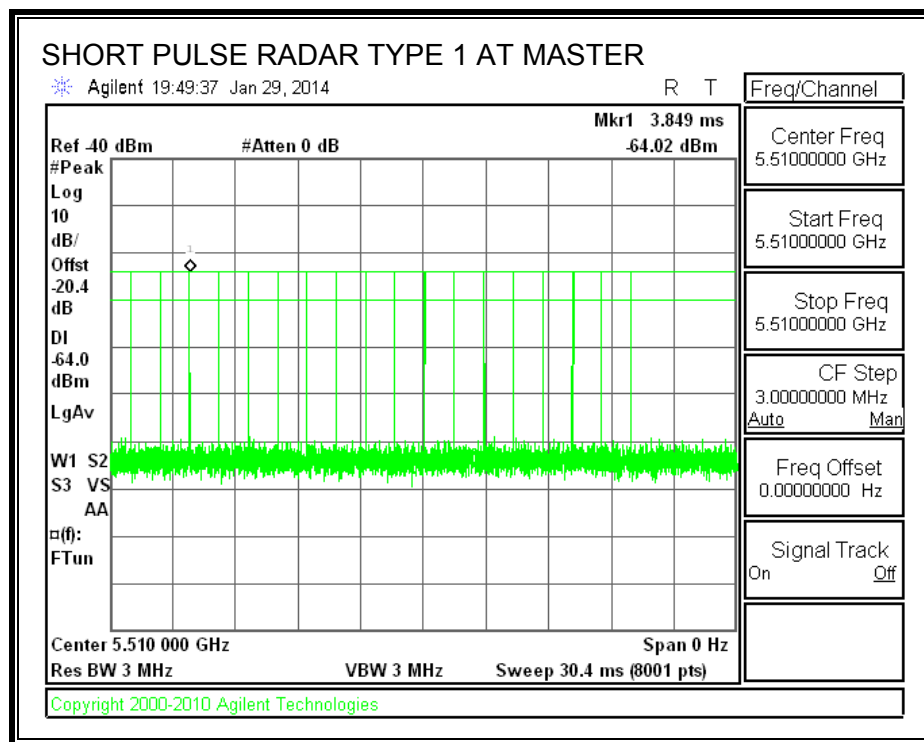
14.3. RESULTS FOR 40 MHz BANDWIDTH

14.3.1. TEST CHANNEL

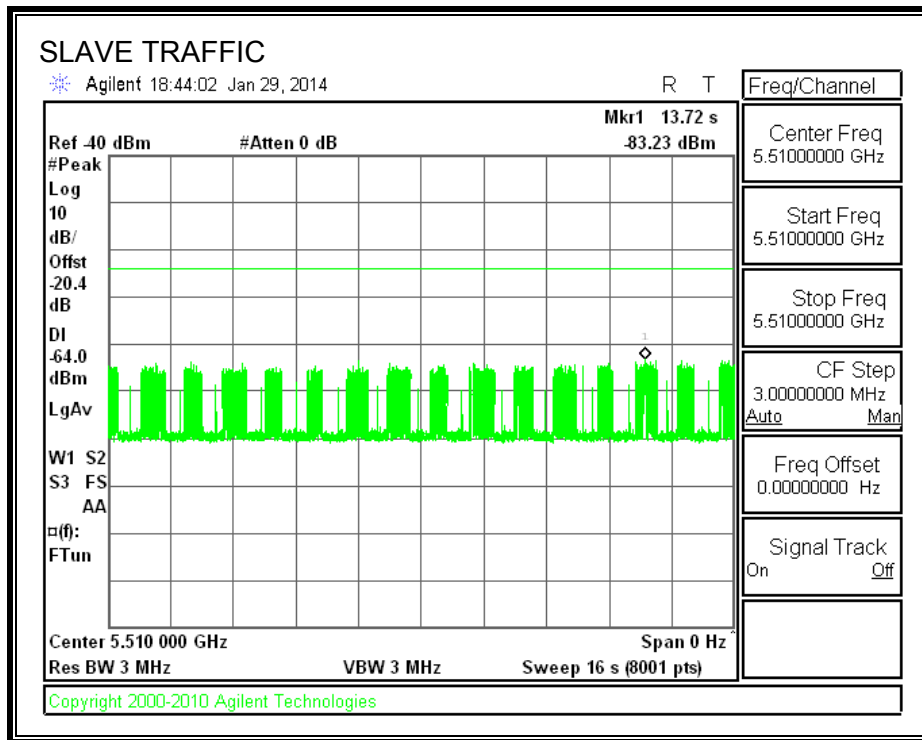
All tests were performed at a channel center frequency of 5510 MHz.

14.3.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM



TRAFFIC



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)

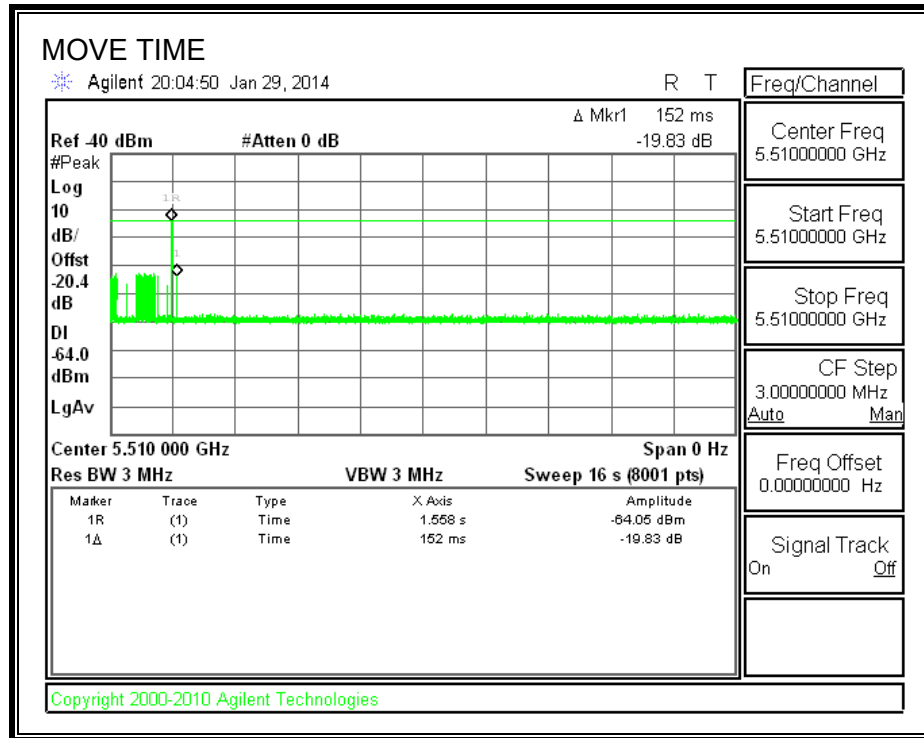
The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

RESULTS

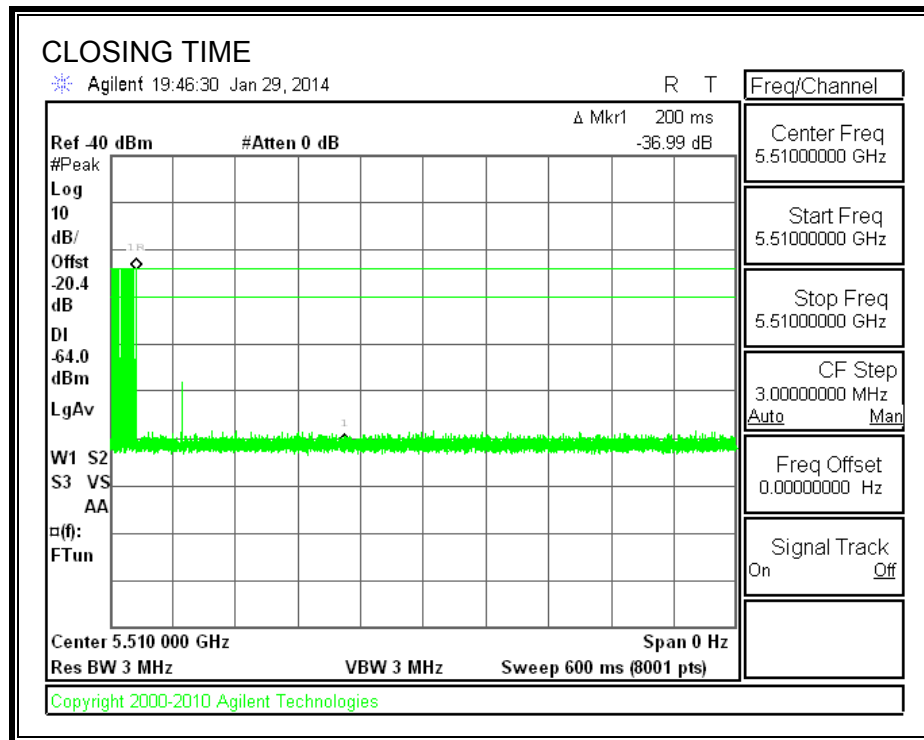
Channel Move Time (sec)	Limit (sec)
0.152	10

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

MOVE TIME

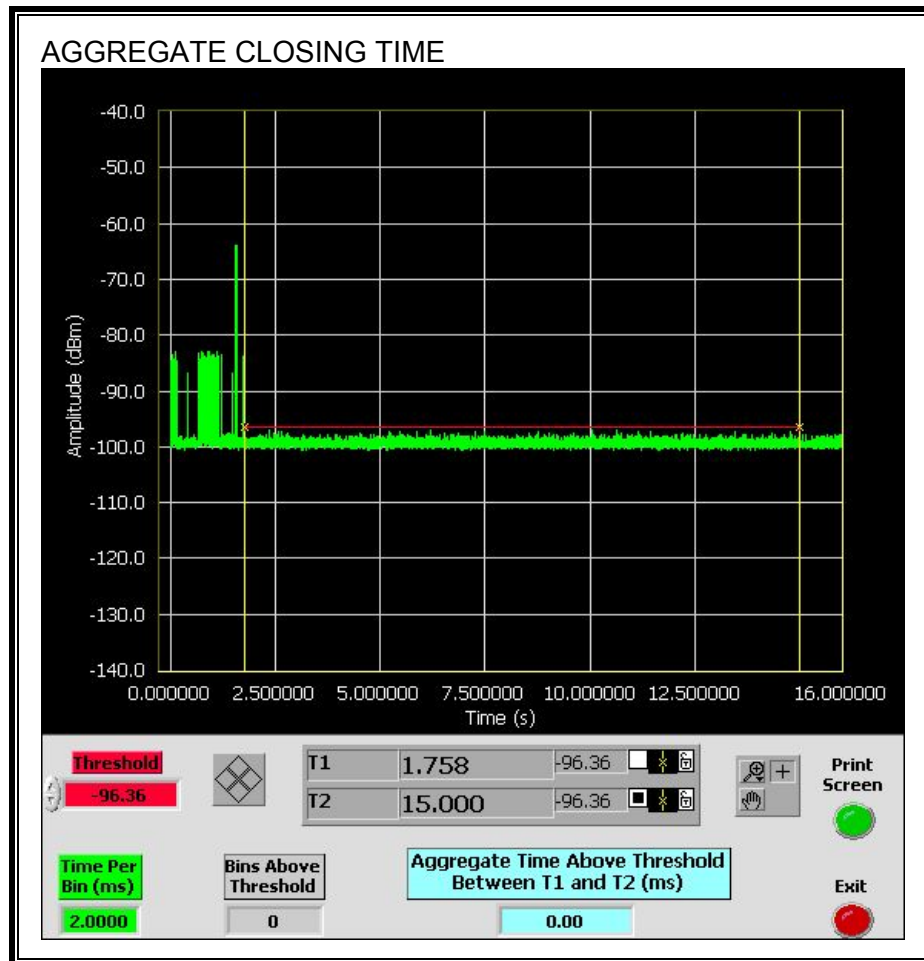


CHANNEL CLOSING TIME



AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



14.3.5. NON-OCCUPANCY PERIOD

RESULTS

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

