



FCC 47 CFR PART 15 SUBPART E

CERTIFICATION TEST REPORT

FOR

GSM/WCDMA/LTE Tablet + Bluetooth, DTS/UNII a/b/g/n/ac & ANT +

MODEL NUMBER: SM-T805

FCC ID: A3LSMT805

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Prepared for

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SAMSUNG ELECTRONICS CO., LTD.
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SUWON-CITY, GYEONGGI-DO 443-742, SOUTH KOREA

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

MODEL: SM-T805

SERIAL NUMBER: R32F108JLEK (CONDUCTED); R32F108JLDM (RADIATED)

DATE TESTED: February 6-21, 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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2. TEST METHODOLOGY

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

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 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/LTE Tablet + Bluetooth, DTS/UNII a/b/g/n/ac & ANT+.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Frequency Range (MHz)	Mode	Total Output Power (dBm)	Total Output Power (mW)
5180-5240	802.11a	13.7	23.44
5180-5240	802.11n HT20	13.94	24.77
5190-5230	802.11n HT40	14.63	29.04
5210	802.11ac HT80	14.53	28.38
5260-5320	802.11a	13.69	23.39
5260-5320	802.11n HT20	14.45	27.86
5270-5310	802.11n HT40	14	25.12
5290	802.11ac HT80	14.72	29.65
5500-5700	802.11a	13.84	24.21
5500-5700	802.11n HT20	14.36	27.29
5510-5670	802.11n HT40	15.01	31.70
5530	802.11ac HT80	14.25	26.61

The transmitter has average conducted output power as follows:

Band (GHz)	Mode	Mode	Mode	Ch #	Freq. (MHz)	Avg Pwr (dBm)		
						Wi-Fi 1	Wi-Fi 2	
5.2 (UNII)	1 Tx	802.11a	6 Mbps	36	5180	10.5		
				40	5200	10.4		
				48	5240	10.5		
				36	5180		10.5	
				40	5200		10.5	
				48	5240		10.5	
				2 Tx	36	5180	10.5	10.5
					40	5200	10.4	10.5
					48	5240	10.5	10.5
	1 Tx	802.11n (HT20)	MCS0	36	5180	10.3		
				40	5200	10.3		
				48	5240	10.4		
				36	5180		10.4	
				40	5200		10.5	
				48	5240		10.5	
				2 Tx	36	5180	10.3	10.4
					40	5200	10.3	10.5
					48	5240	10.4	10.5
	1 Tx	802.11n (HT40)	MCS0	38	5190	10.4		
				46	5230	10.5		
				38	5190		10.4	
				46	5230		10.5	
				2 Tx	38	5190	10.4	10.4
					46	5230	10.5	10.5
	1 Tx	802.11ac (20 MHz)	MCS0	36	5180	10.3		
				40	5200	10.3		
				48	5240	10.3		
				36	5180		10.5	
				40	5200		10.4	
				48	5240		10.3	
				2 Tx	36	5180	10.3	10.5
					40	5200	10.3	10.4
					48	5240	10.3	10.3
	1 Tx	802.11ac (40 MHz)	MCS0	38	5190	10.5		
				46	5230	10.5		
				38	5190		9.6	
				46	5230		9.5	
				2 Tx	38	5190	10.5	9.6
					46	5230	10.5	9.5
	1 Tx	802.11ac (80 MHz)	MCS0	42	5210	10.4		
				42	5210		10.4	
				2 Tx	42	5210	10.4	10.4

5.3(UNII)	1 Tx	802.11a	6 Mbps	52	5260	9.7		
				60	5300	9.9		
				64	5320	9.8		
	1 Tx	802.11a	6 Mbps	52	5260		9.5	
				60	5300		9.4	
				64	5320		9.6	
	2 Tx	802.11a	6 Mbps	52	5260	9.7	9.6	
				60	5300	9.8	9.6	
				64	5320	9.9	9.7	
	1 Tx	802.11n (HT20)	MCS0	52	5260	9.7		
				60	5300	9.7		
				64	5320	9.8		
				52	5260		9.4	
				60	5300		9.4	
				64	5320		9.5	
				2 Tx	52	5260	10.3	10.2
					60	5300	10.4	10.2
					64	5320	10.4	10.3
	1 Tx	802.11n (HT40)	MCS0	54	5270	9.7		
				62	5310	9.7		
				54	5270		9.5	
				62	5310		9.6	
				2 Tx	54	5270	10.2	10.1
	62	5310	10.3		10.1			
	1 Tx	802.11ac (20 MHz)	MCS0	52	5260	9.7		
				60	5300	9.7		
				64	5320	9.8		
				52	5260		9.4	
				60	5300		9.5	
				64	5320		9.5	
				2 Tx	52	5260	10.3	10.1
					60	5300	10.3	10.2
					64	5320	10.4	10.3
	1 Tx	802.11ac (40 MHz)	MCS0	54	5270	9.7		
				62	5310	9.7		
				54	5270		9.5	
				62	5310		9.5	
				2 Tx	54	5270	10.2	10.1
					62	5310	10.3	10.1
	1 Tx	802.11ac (80 MHz)	MCS0	58	5290	10.5		
				58	5290		10.3	
				58	5290	10.5	10.3	
	5.5(UNII)	1 Tx	802.11a	6 Mbps	100	5500	9.9	
					120	5600	9.8	
140					5700	9.8		
100					5500		9.7	
120					5600		9.6	

				140	5700		9.5
	2 Tx			100	5500	9.9	9.9
				120	5600	9.8	9.8
				140	5700	9.8	9.9
	1 Tx	802.11n (HT20)	MCS0	100	5500	9.7	
				120	5600	9.7	
				140	5700	9.6	
				100	5500		9.7
				120	5600		9.5
				140	5700		9.7
	2 Tx	100	5500	10.4	10.3		
		120	5600	10.3	10.3		
		140	5700	10.2	10.3		
	1 Tx	802.11n (HT40)	MCS0	102	5510	9.9	
				118	5590	9.8	
				134	5670	9.7	
				102	5510		9.7
				118	5590		9.6
				134	5670		9.6
	2 Tx	102	5510	10.2	10.2		
		118	5590	10.2	10.3		
		134	5670	10.2	10.3		
	1 Tx	802.11ac (20 MHz)	MCS0	100	5500	9.7	
				120	5600	9.7	
				140	5700	9.6	
				100	5500		9.6
				120	5600		9.5
				140	5700		9.7
	2 Tx	100	5500	10.4	10.3		
		120	5600	10.3	10.3		
		140	5700	10.2	10.3		
	1 Tx	802.11ac (40 MHz)	MCS0	102	5510	9.9	
				118	5590	9.8	
				134	5670	9.7	
				102	5510		9.5
				118	5590		9.6
				134	5670		9.7
	2 Tx	102	5510	10.2	10.2		
		118	5590	10.2	10.3		
		134	5670	10.2	10.3		
	1 Tx	802.11ac (80 MHz)	MCS0	106	5530	10.5	
				138	5690	10.5	
				106	5530		10.5
				138	5690		10.5
				106	5530	10.5	10.5
				138	5690	10.5	10.5

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes two FPCB antennas, with a maximum gain of -3.18 dBi and -0.4dBi dBi for 5GHz.

5.4. List of test reduction and modes covering other modes:

5.2GHz BAND Authorized Frequency Band (Antenna Port & Radiated Testing)		
Frequency Range (MHz)	Mode	Covered by
5180 - 5240	802.11a Legacy 1TX	802.11a CDD 2TX
5180 - 5240	802.11n/ac HT20 1TX	802.11n HT20 CDD 2TX
5180 - 5240	802.11n/ac HT20 STBC 2TX	802.11n HT20 CDD 2TX
5190 - 5230	802.11n/ac HT40 1TX	802.11n HT40 CDD 2TX
5190 - 5230	802.11n/ac HT40 STBC 2TX	802.11n HT40 CDD 2TX
5210	802.11ac VHT80 1TX	802.11ac VHT80 CDD 2TX
5210	802.11ac VHT80 STBC 2TX	802.11ac VHT80 CDD 2TX

5.3GHz BAND Authorized Frequency Band (Antenna Port & Radiated Testing)		
Frequency Range (MHz)	Mode	Covered by
5260 - 5320	802.11a Legacy 1TX	802.11a CDD 2TX
5260 - 5320	802.11n/ac HT20 1TX	802.11n HT20 CDD 2TX
5260 - 5320	802.11n/ac HT20 STBC 2TX	802.11n HT20 CDD 2TX
5270 - 5310	802.11n/ac HT40 1TX	802.11n HT40 CDD 2TX
5270 - 5310	802.11n/ac HT40 STBC 2TX	802.11n HT40 CDD 2TX
5290	802.11ac VHT80 1TX	802.11ac VHT80 CDD 2TX
5290	802.11ac VHT80 STBC 2TX	802.11ac VHT80 CDD 2TX

5.6GHz BAND Authorized Frequency Band (Antenna Port & Radiated Testing)		
Frequency Range (MHz)	Mode	Covered by
5500 - 5700	802.11a Legacy 1TX	802.11a CDD 2TX
5500 - 5700	802.11n/ac HT20 1TX	802.11n HT20 CDD 2TX
5500 - 5700	802.11n/ac HT20 STBC 2TX	802.11n HT20 CDD 2TX
5510 - 5670	802.11n/ac HT40 1TX	802.11n HT40 CDD 2TX
5510 - 5670	802.11n/ac HT40 STBC 2TX	802.11n HT40 CDD 2TX
5530	802.11ac VHT80 1TX	802.11ac VHT80 CDD 2TX
5530	802.11ac VHT80 STBC 2TX	802.11ac VHT80 CDD 2TX

5.5. 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

802.11ac VHT80mode: MCS0

Both one port and two ports transmit configuration were verified. 2x2 CDD mode was the worst case which has equal or higher power than the other configurations.

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

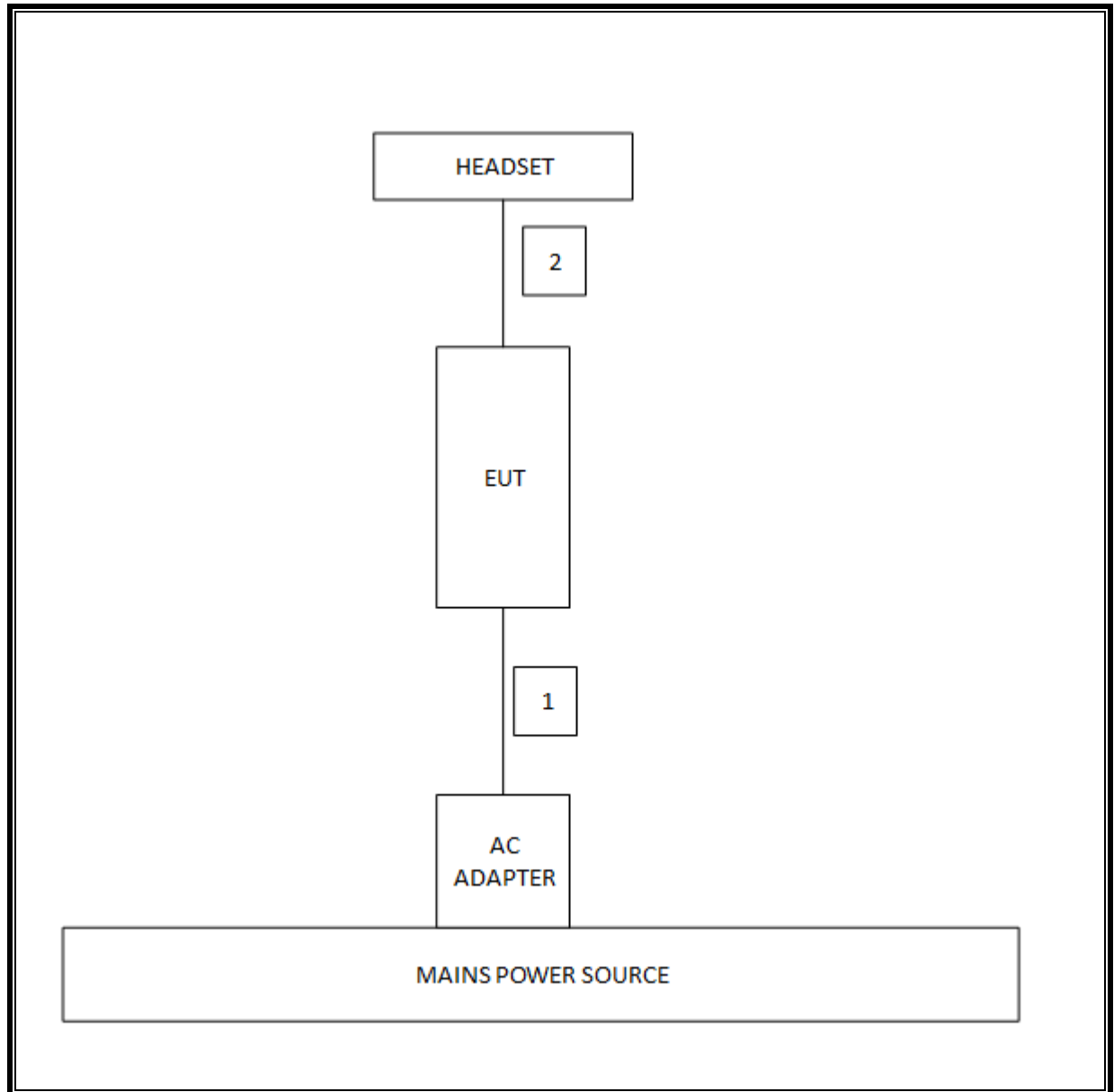
Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	Samsung	Samsung	N/A	N/A
Earphone	Samsung	Samsung	N/A	N/A

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	84.8MHz
15.407 (a)(1)	TX Cond. Power 5.15-2.25	<17dBm or 4+10Log(OBW)		Pass	14.63dBm
15.407 (a)(2)	TX Cond. Power 5.25-5.35 & 5.47-5.725	<24dBm or 11+10Log(OBW)		Pass	15.01dBm
15.407 (a)(5)	PSD	<4dBm for UNII 1 <11dBm for UNII 2&3		Pass	2.85dBm
15.407 (a)(6)	Peak Excursion Ratio	13dB		Pass	8.94dB
15.207 (a)	AC Power Line conducted emissions	Section 10	Radiated	Pass	50 dBuV
15.407 (b) & 15.209	Radiated Spurious Emission	< 54dBuV/m		Pass	50.96 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.

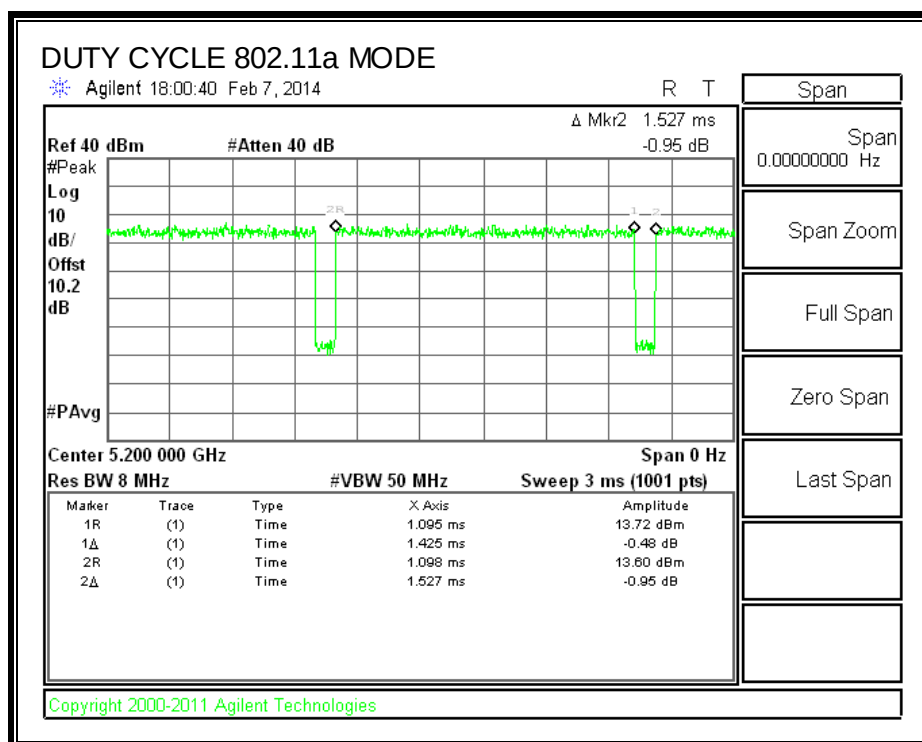
PROCEDURE

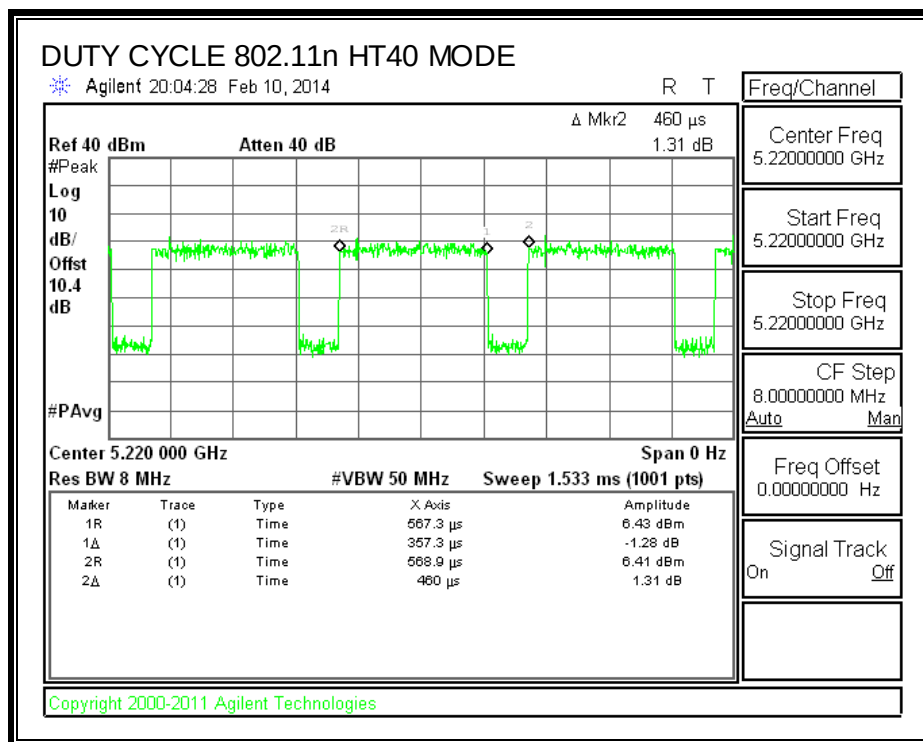
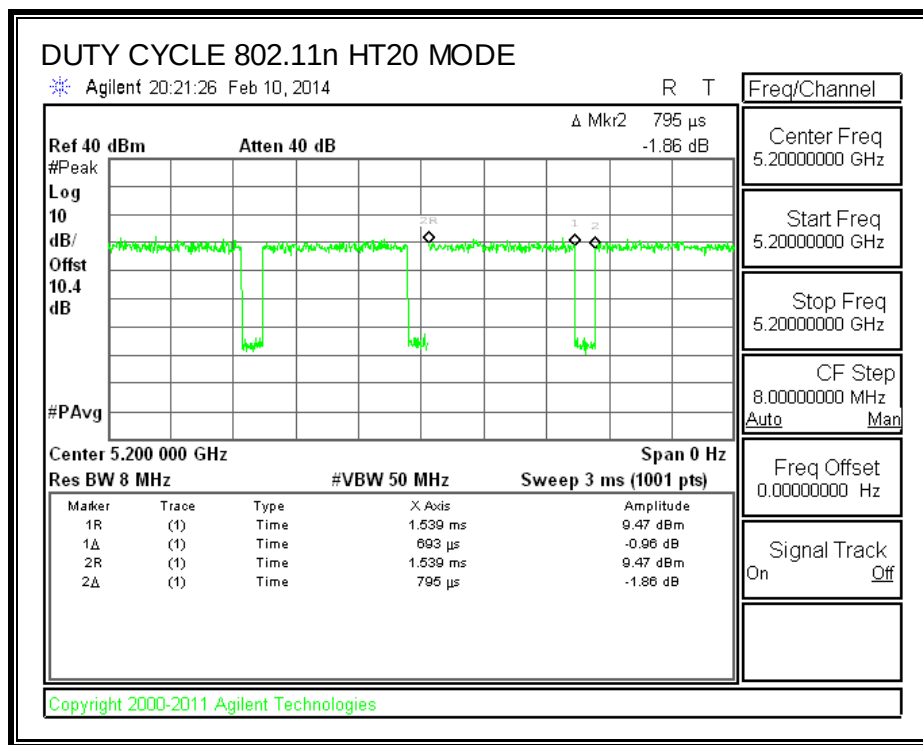
KDB 789033 Zero-Span Spectrum Analyzer Method.

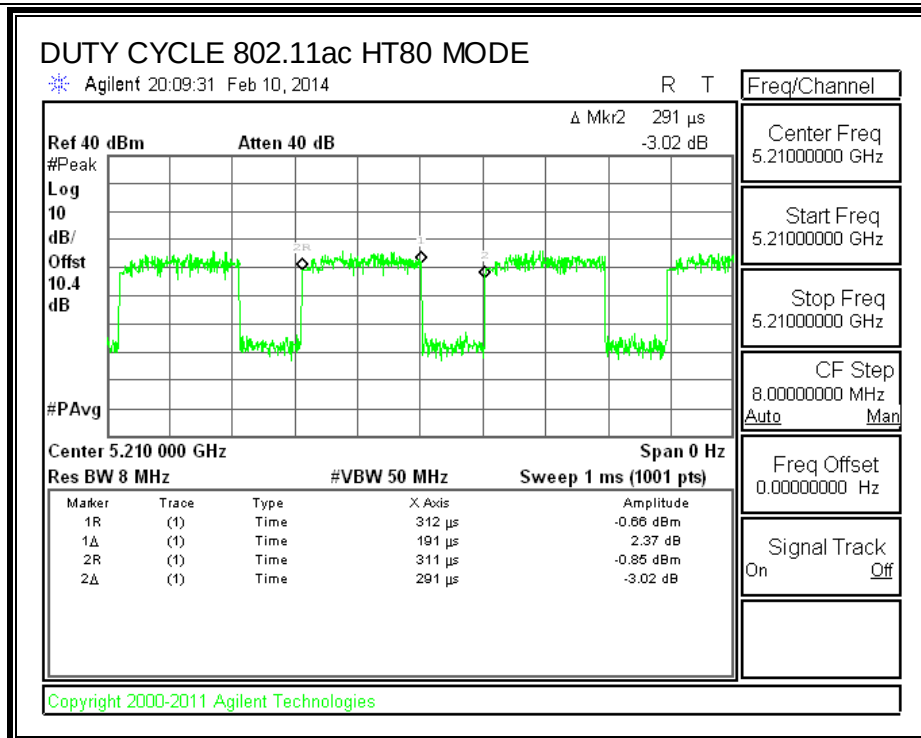
8.1. ON TIME AND DUTY CYCLE RESULTS

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	1.425	1.527	0.933	93.3%	0.30	0.702
802.11n HT20	0.693	0.795	0.872	87.2%	0.60	1.443
802.11n HT40	0.357	0.460	0.777	77.7%	1.10	2.799
802.11ac HT80	0.191	0.291	0.656	65.6%	1.83	5.236

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.

For band edge: KDB 789033 Method AD with Power RMS Averaging and duty cycle correction is used

For Harmonic: Max RMS average method is used.

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 BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5180	22.7	22.3
Mid	5200	22.7	22.3
High	5240	22.7	22.2

10.1.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5180	22.8	22.4
Mid	5200	22.8	22.5
High	5240	22.9	22.5

10.1.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5190	42.1	41.6
Mid	5230	42.8	41.9

10.1.4. 802.11ac HT80 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5210	84.7	84.7

10.1.1. 802.11a MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5260	22.7	22.3
Mid	5300	22.7	22.3
High	5320	22.7	22.2

10.1.1. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5260	22.9	22.4
Mid	5300	22.9	22.4
High	5320	22.8	22.5

10.1.2. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5270	41.9	41.7
Mid	5310	42.1	41.5

10.1.3. 802.11ac HT80 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5290	84.5	84.8

10.1.4. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5500	22.8	22.3
Mid	5580	22.7	22.4
High	5700	22.7	22.2

10.1.5. 802.11n HT20 MODE IN THE 5.5 GHz BAND

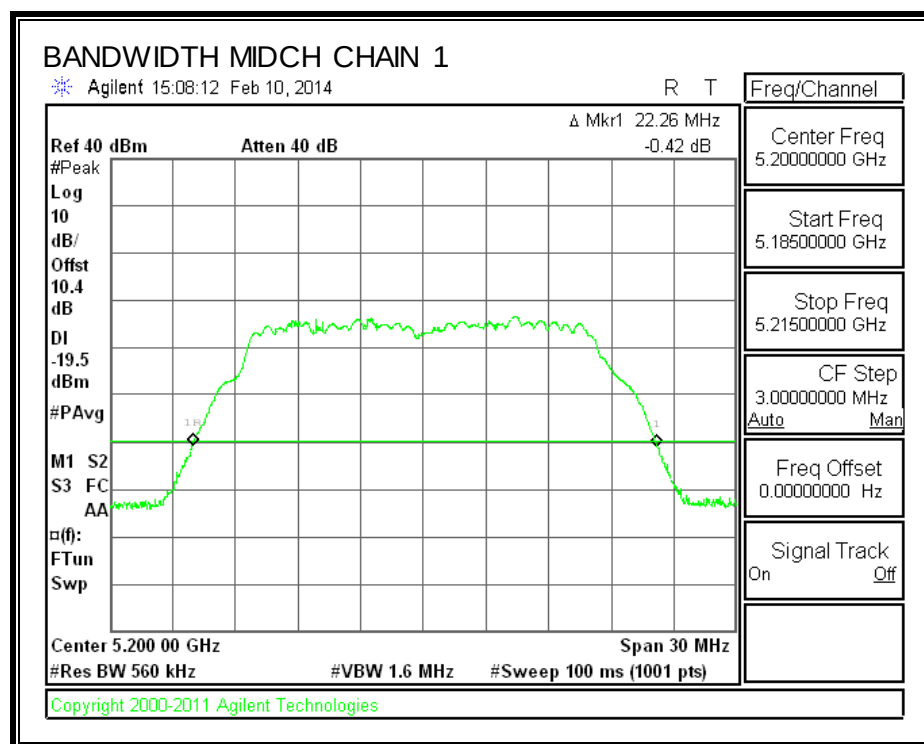
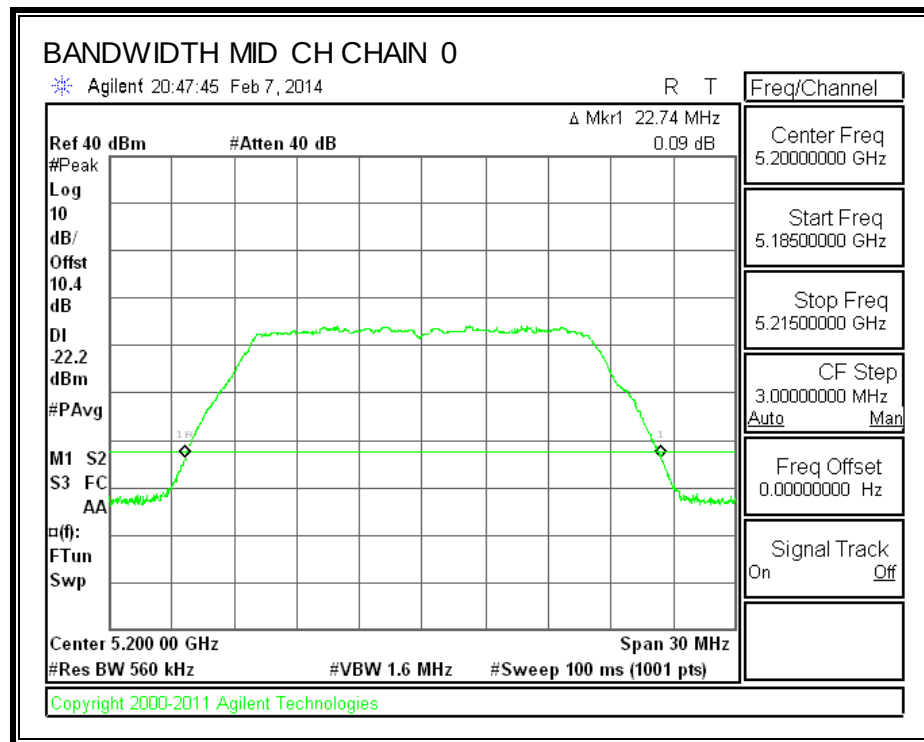
Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5500	22.8	22.4
Mid	5580	22.7	22.6
High	5700	22.7	22.5

10.1.6. 802.11n HT40 MODE IN THE 5.5 GHz BAND

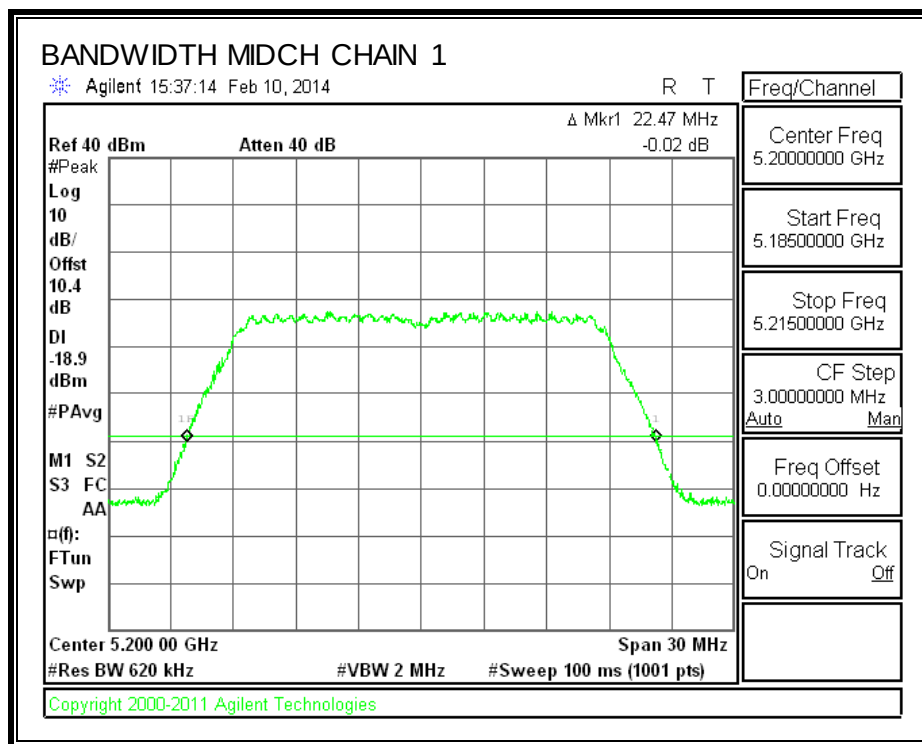
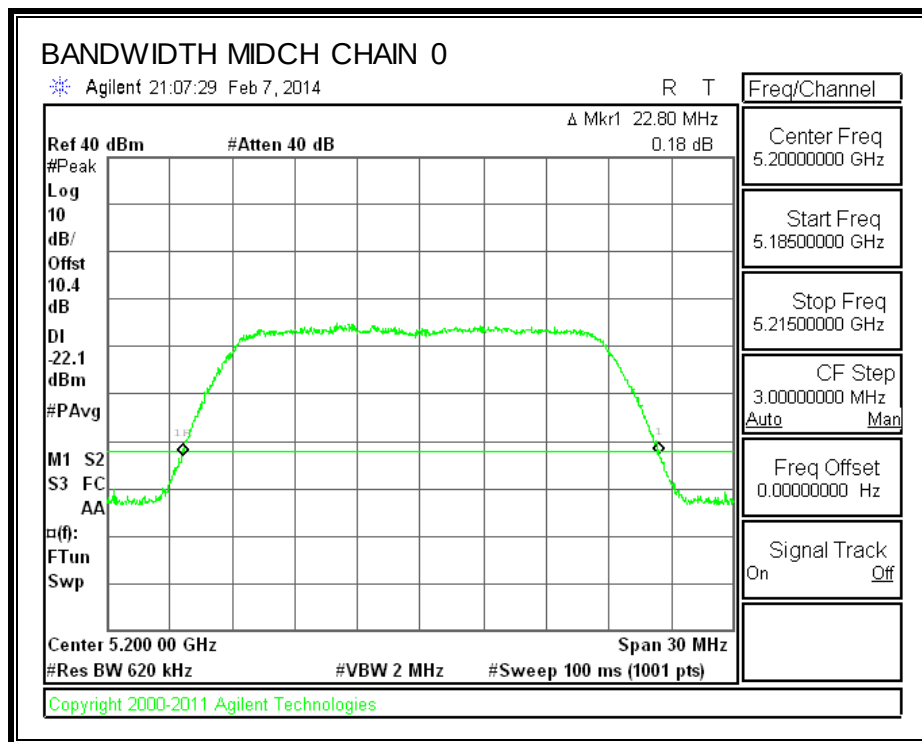
Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5510	41.9	41.7
Mid	5550	41.9	41.6
High	5670	42.0	41.8

10.1.7. 802.11ac HT80 MODE IN THE 5.5 GHz BAND

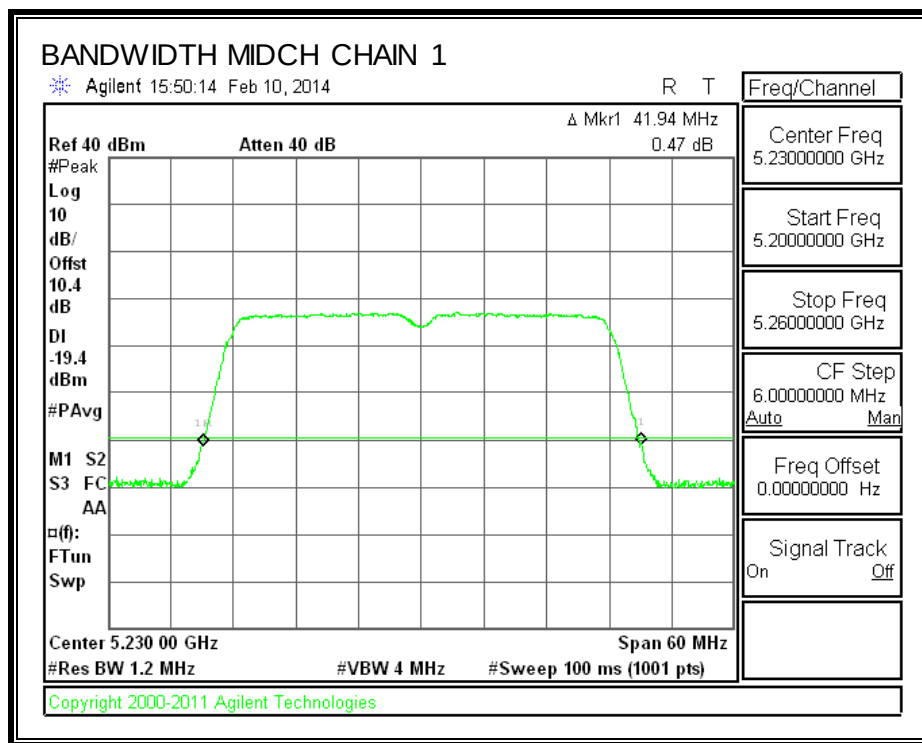
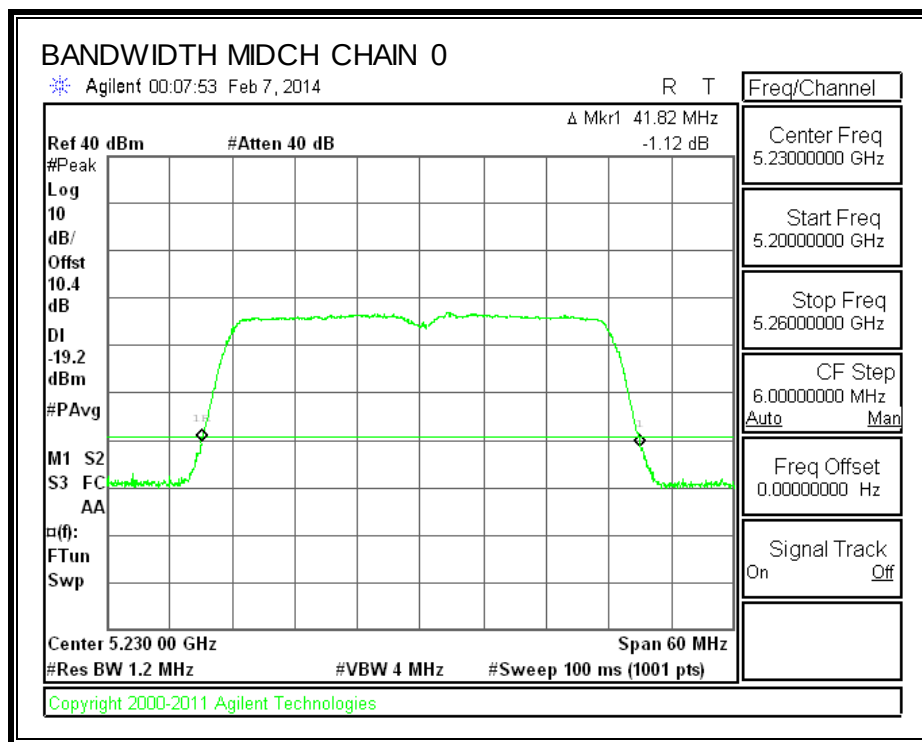
Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5530	84.7	84.5



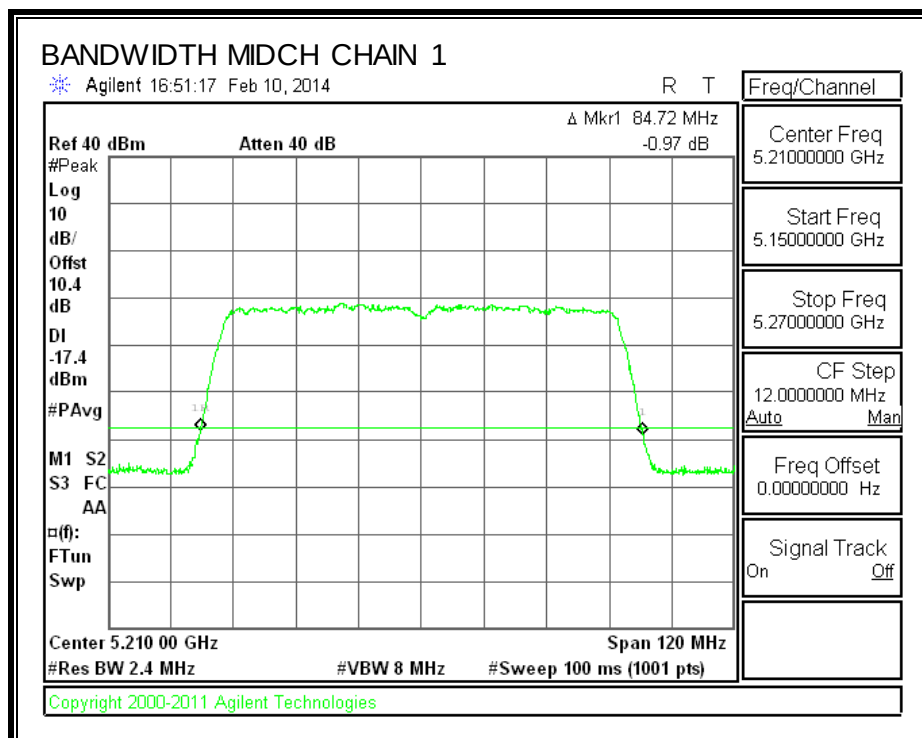
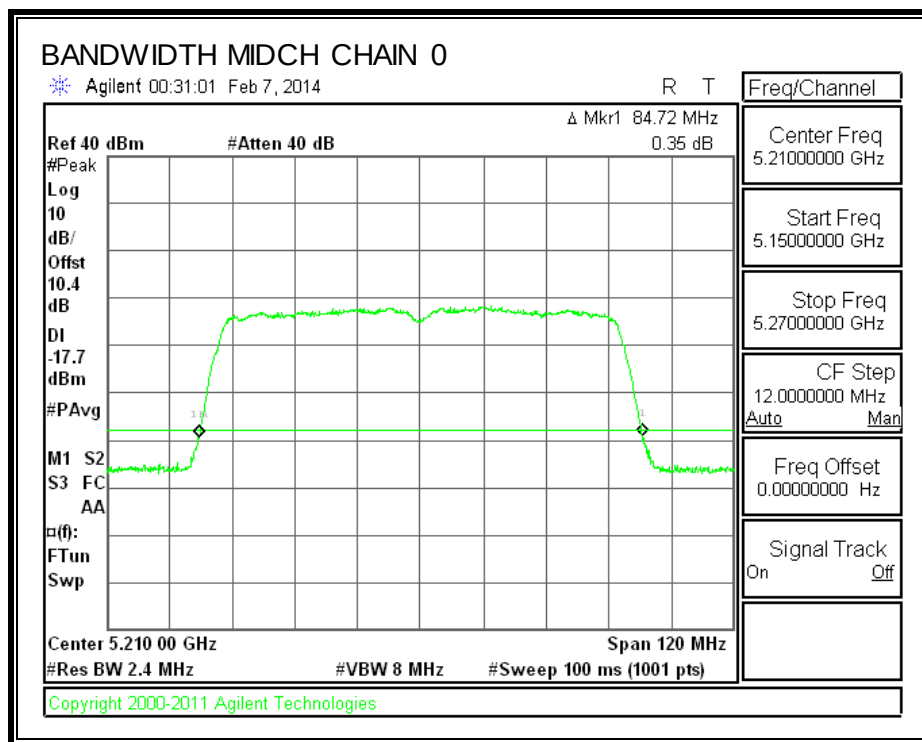
802.11n HT20 5.2G 26 dB BANDWIDTH



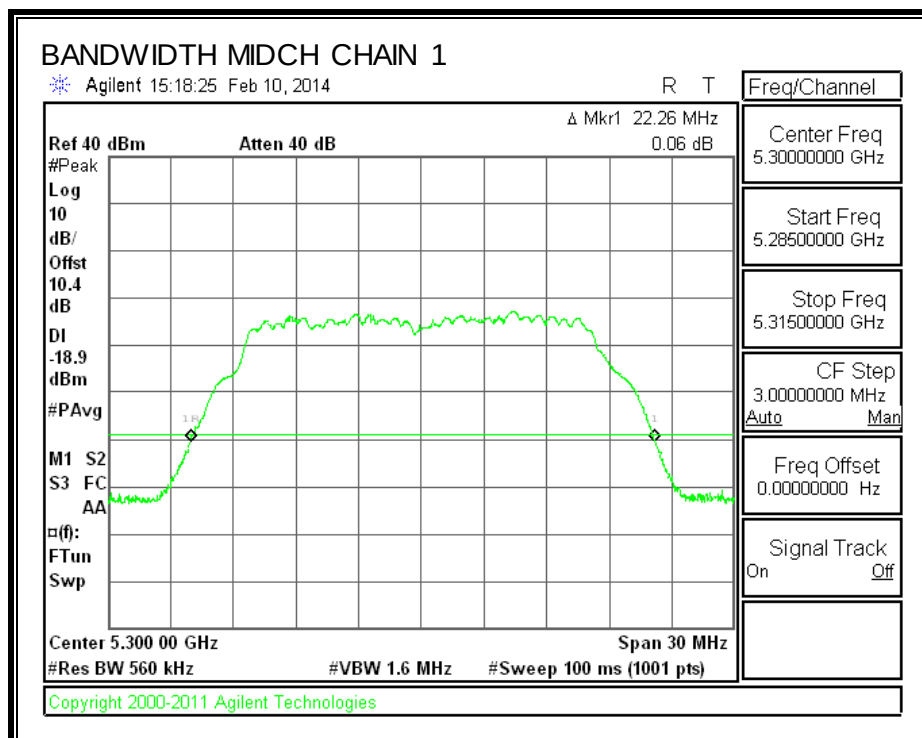
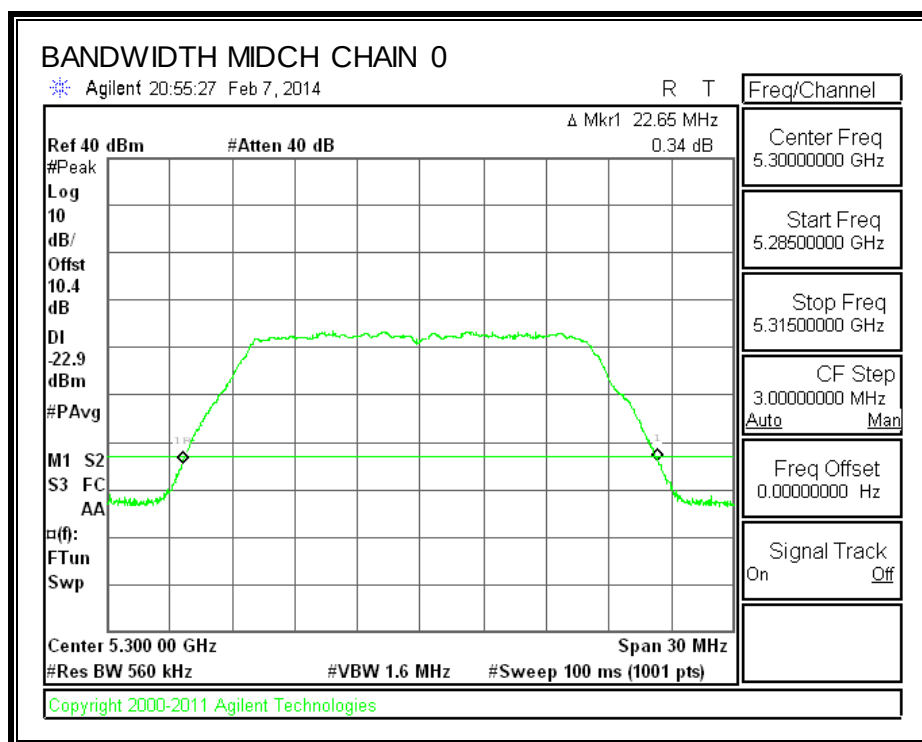
802.11n HT40 5.2G 26 dB BANDWIDTH



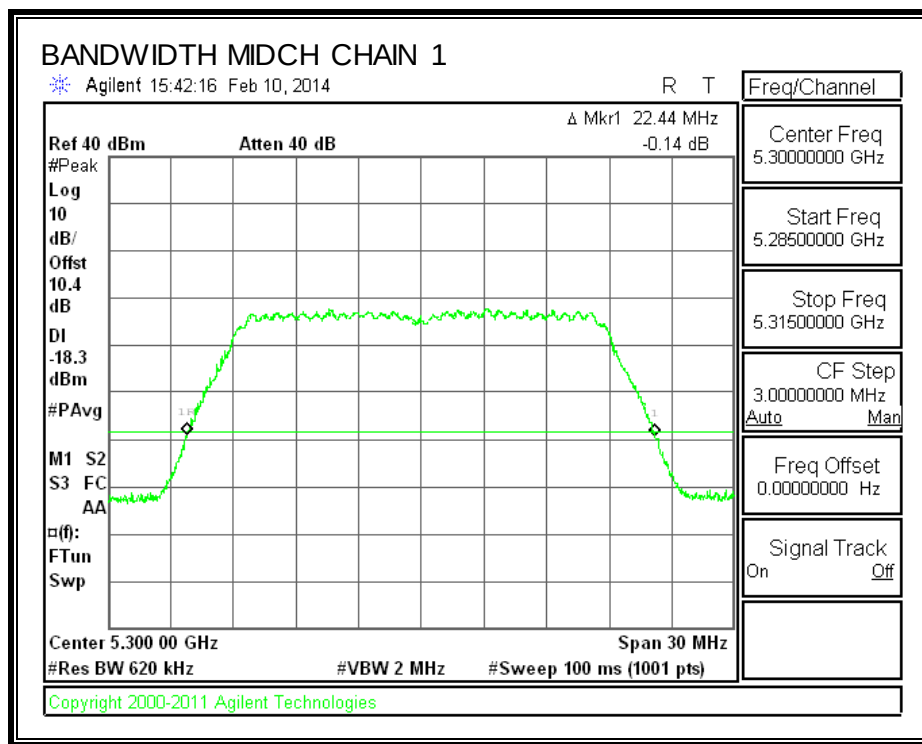
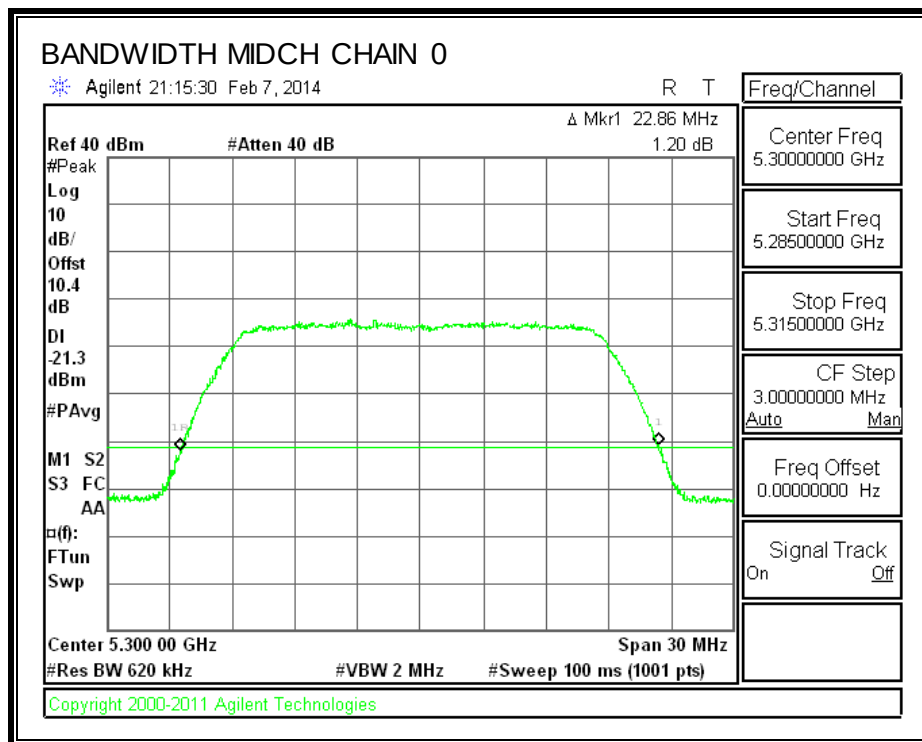
802.11ac HT80 5.2G 26 dB BANDWIDTH

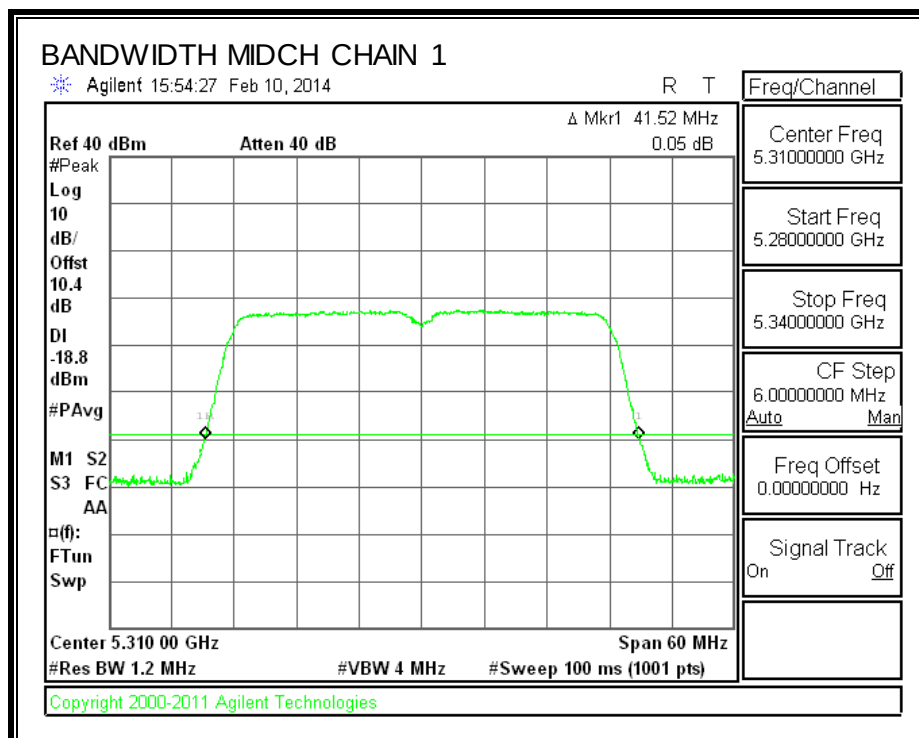
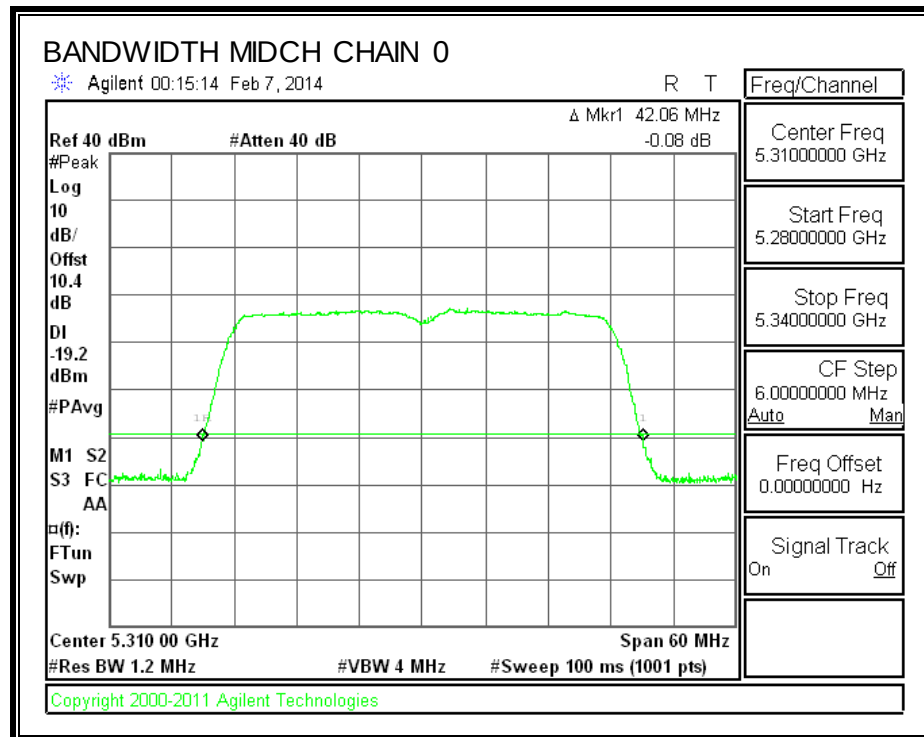


802.11a 5.3G 26 dB BANDWIDTH

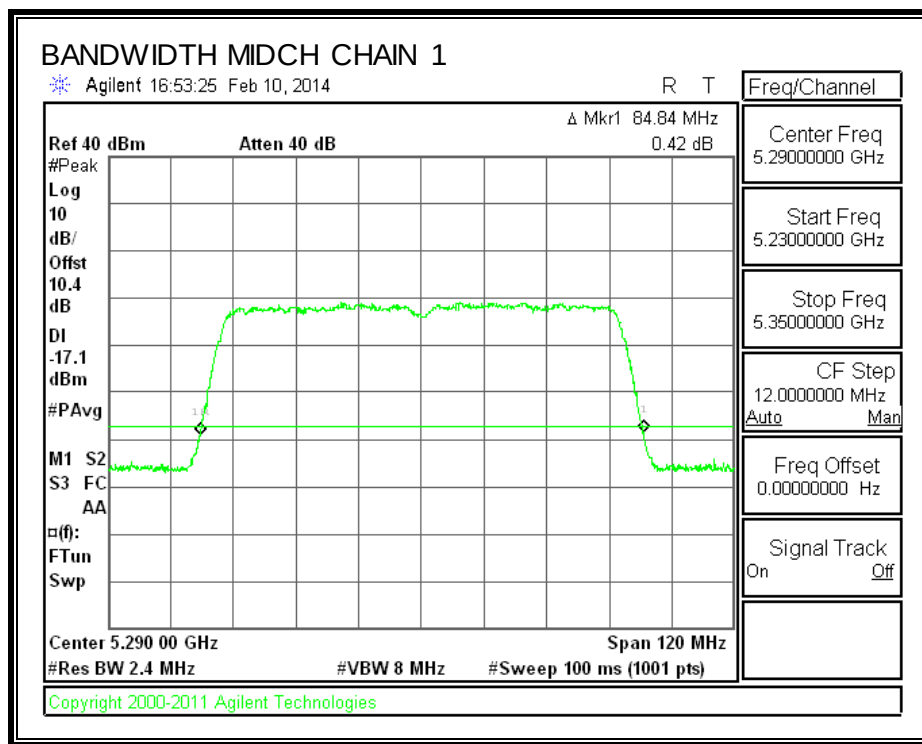
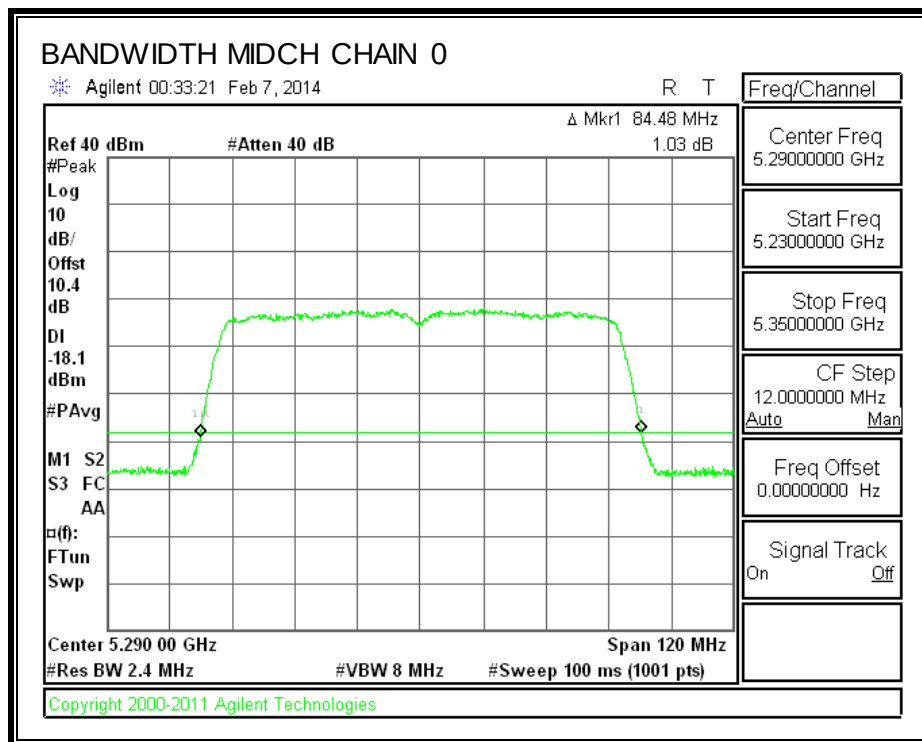


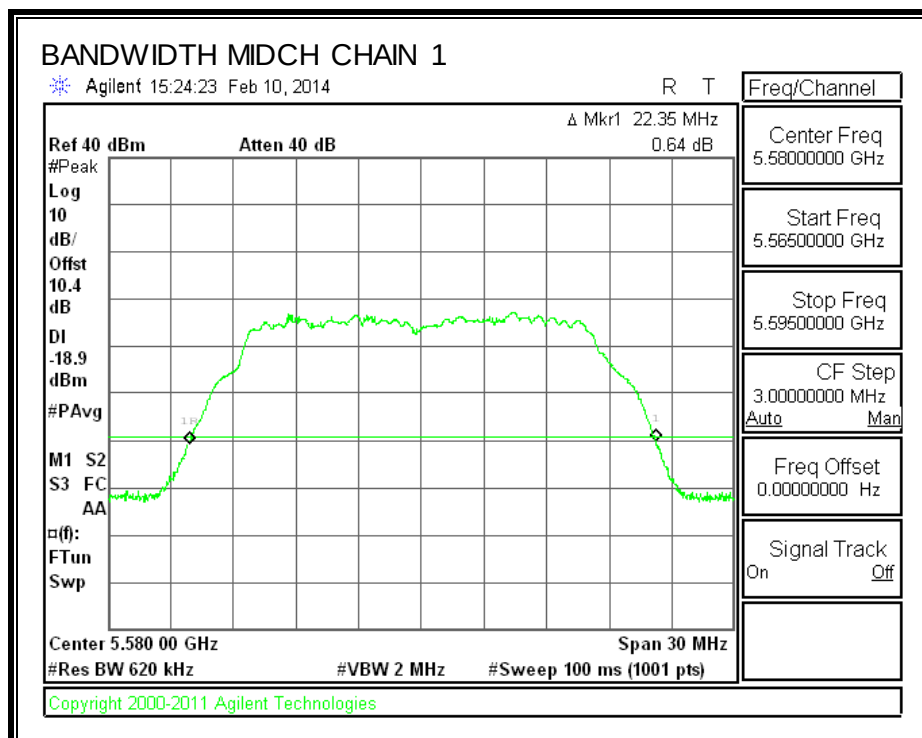
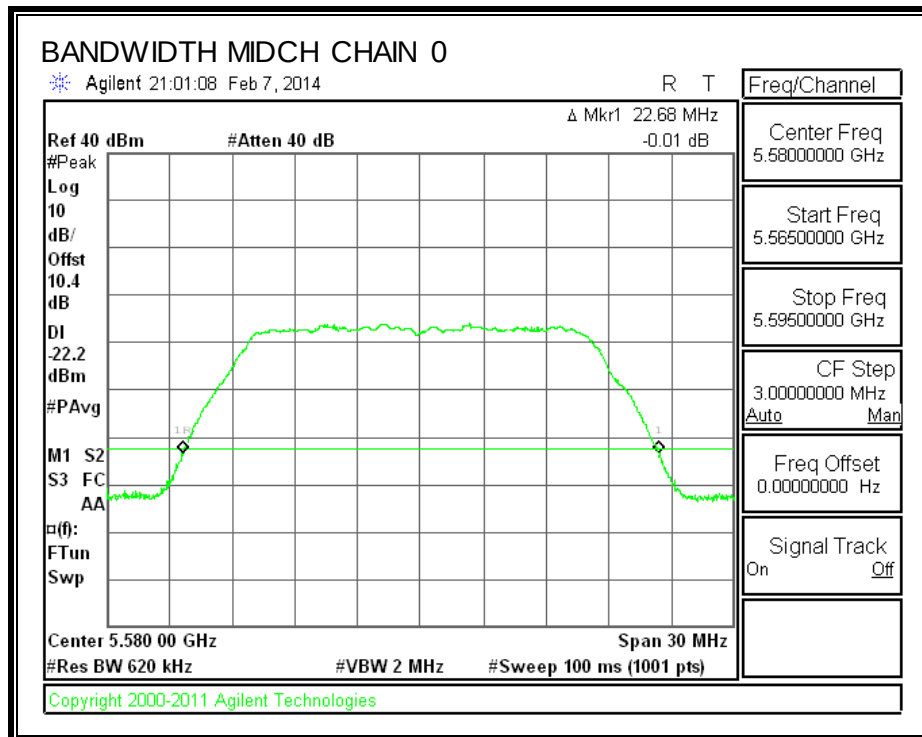
802.11n HT20 5.3G 26 dB BANDWIDTH

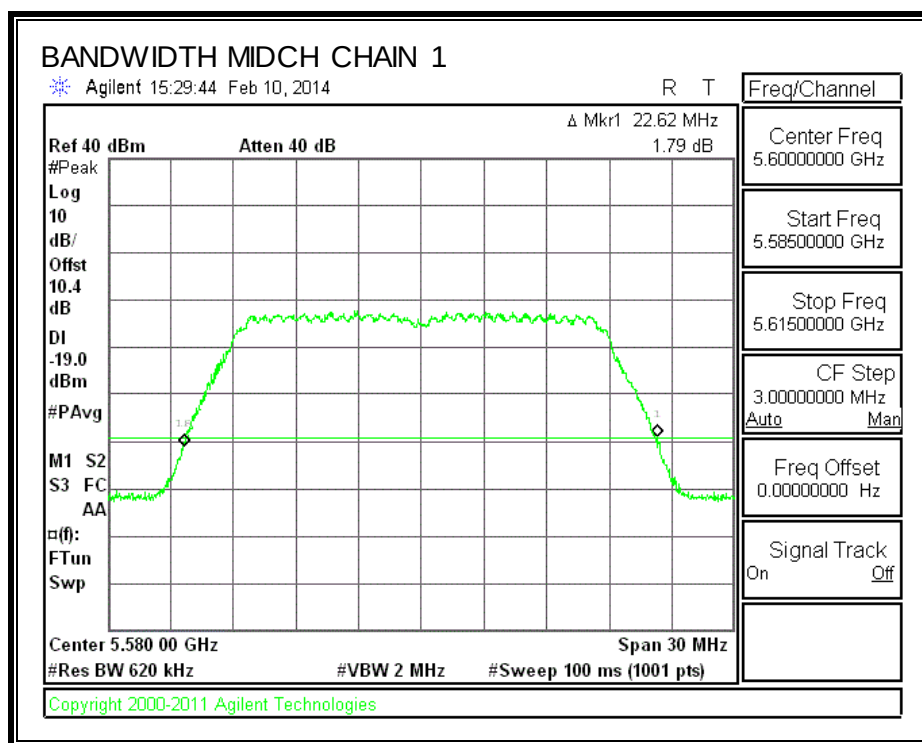
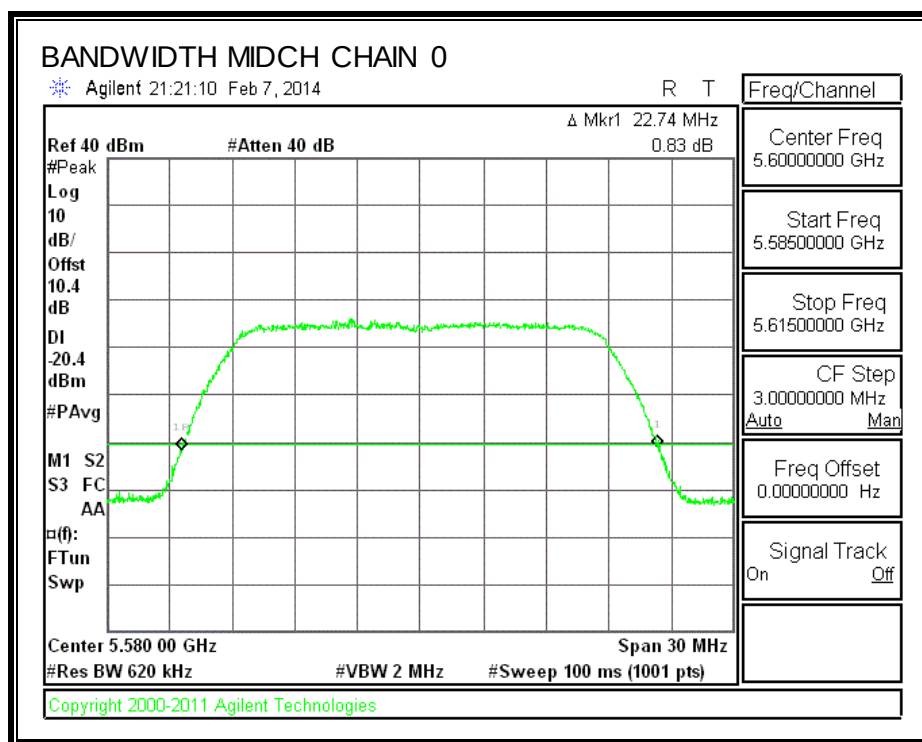




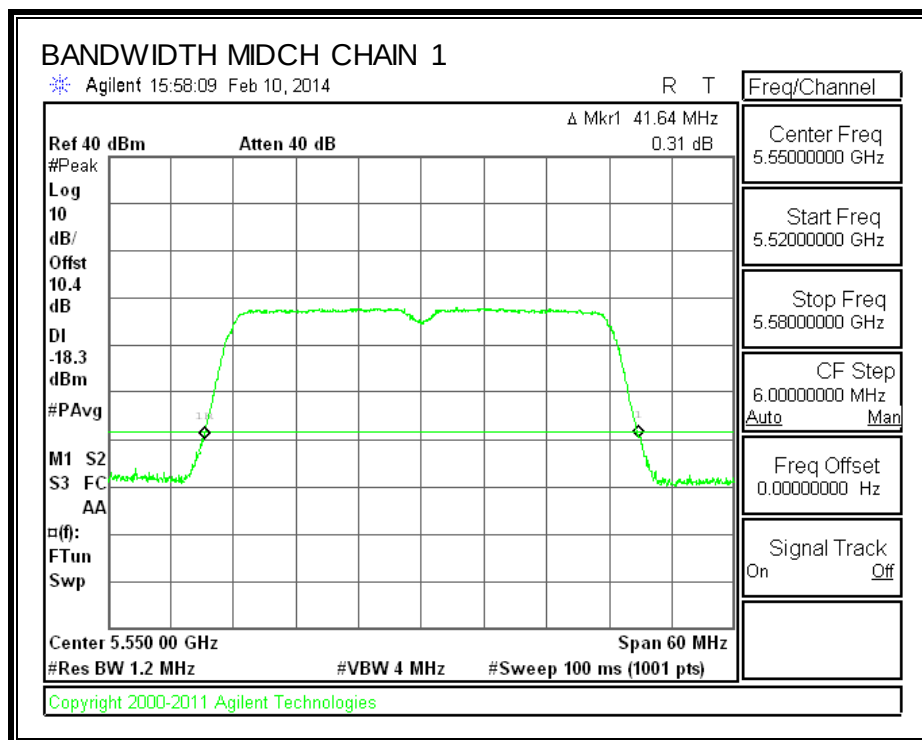
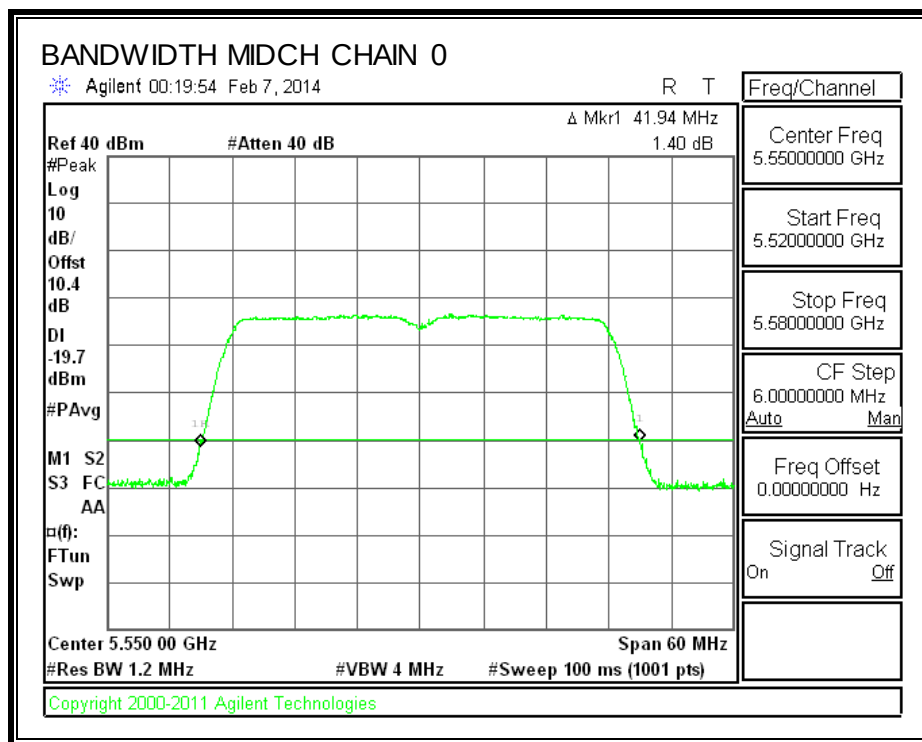
802.11ac HT80 5.3G 26 dB BANDWIDTH



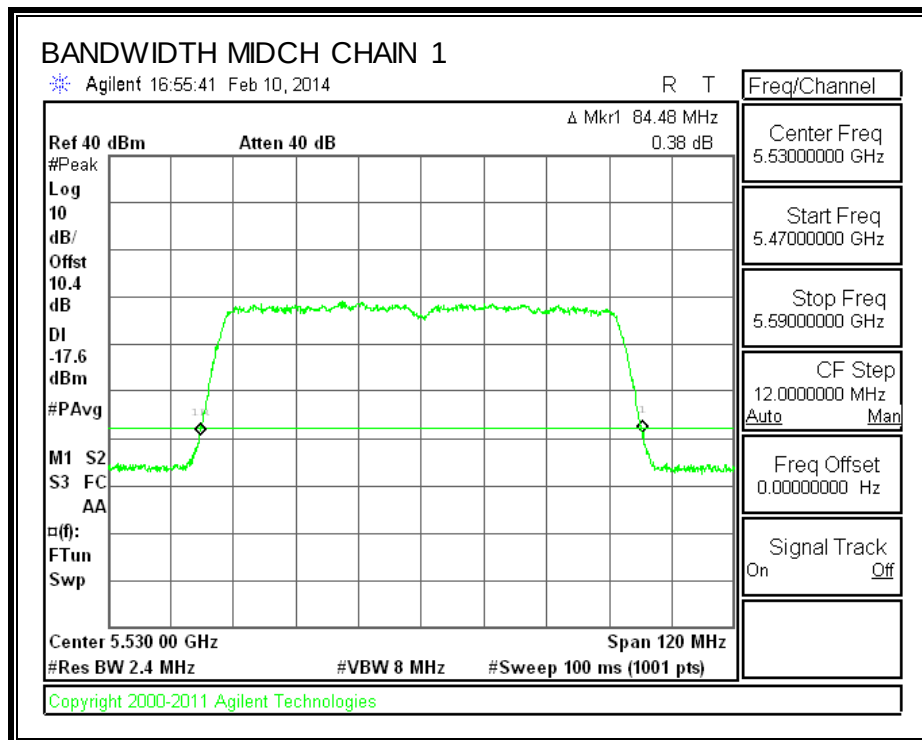
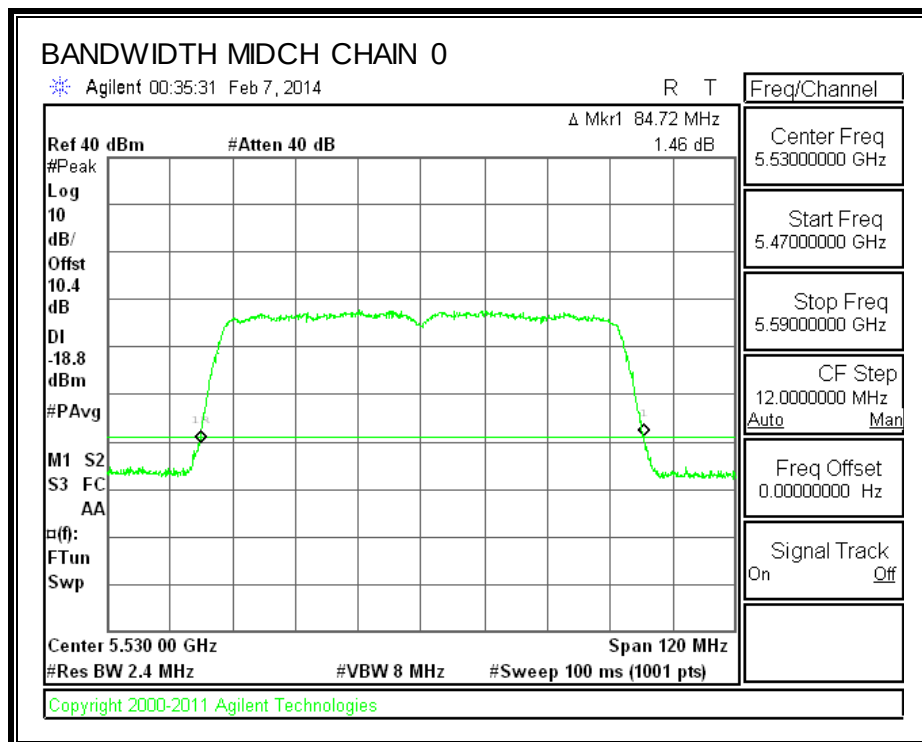
802.11a 5.5G 26 dB BANDWIDTH



802.11n HT40 5.5G 26 dB BANDWIDTH



802.11ac HT80 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% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5180	16.8	16.8
Mid	5200	16.8	16.7
High	5240	16.7	16.7

10.2.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5180	17.9	17.9
Mid	5200	17.9	17.9
High	5240	17.9	17.9

10.2.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5190	36.4	36.4
High	5230	36.4	36.4

10.2.4. 802.11ac HT80 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5210	76.0	76.0

10.2.5. 802.11a MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5260	16.7	16.7
Mid	5300	16.8	16.7
High	5320	16.8	16.7

10.2.6. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5260	17.9	17.9
Mid	5300	17.9	17.9
High	5320	17.9	17.9

10.2.7. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5270	36.4	36.4
High	5310	36.4	36.4

10.2.8. 802.11ac HT80 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5290	76.0	75.9

10.2.9. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5500	16.8	16.7
Mid	5580	16.7	16.7
High	5700	16.8	16.7

10.2.10. 802.11n HT20 MODE IN THE 5.5 GHz BAND

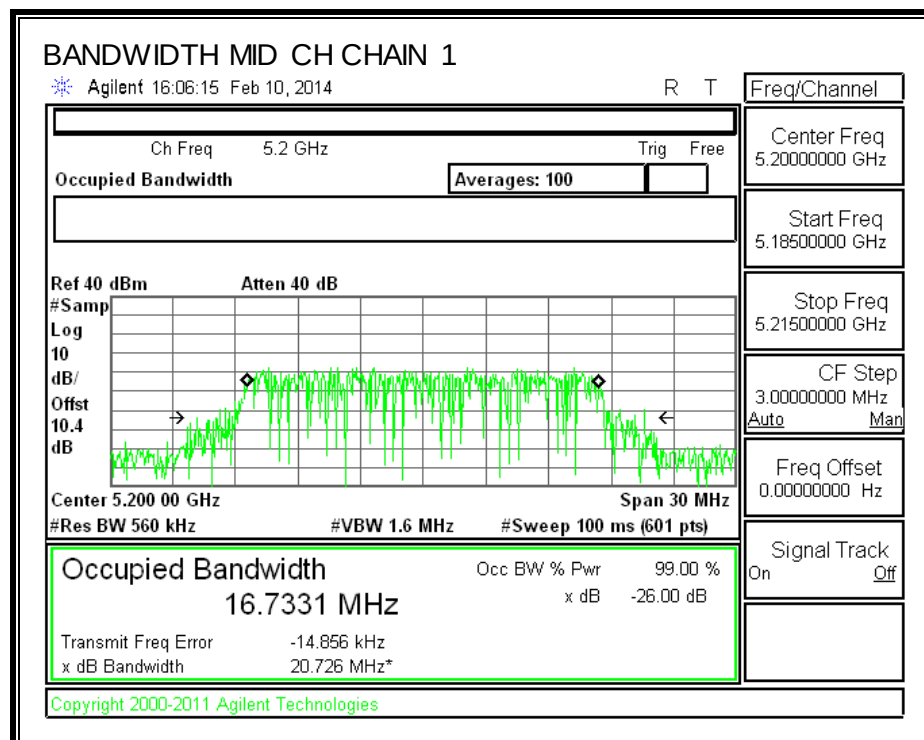
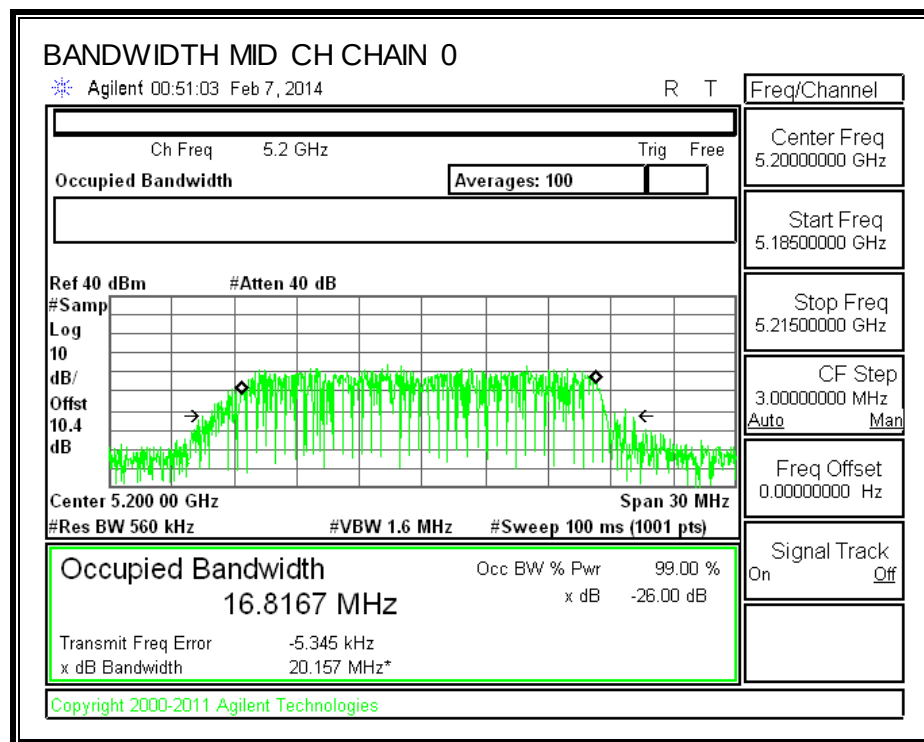
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5500	17.9	17.9
Mid	5580	17.9	17.9
High	5700	17.9	17.9

10.2.11. 802.11n HT40 MODE IN THE 5.5 GHz BAND

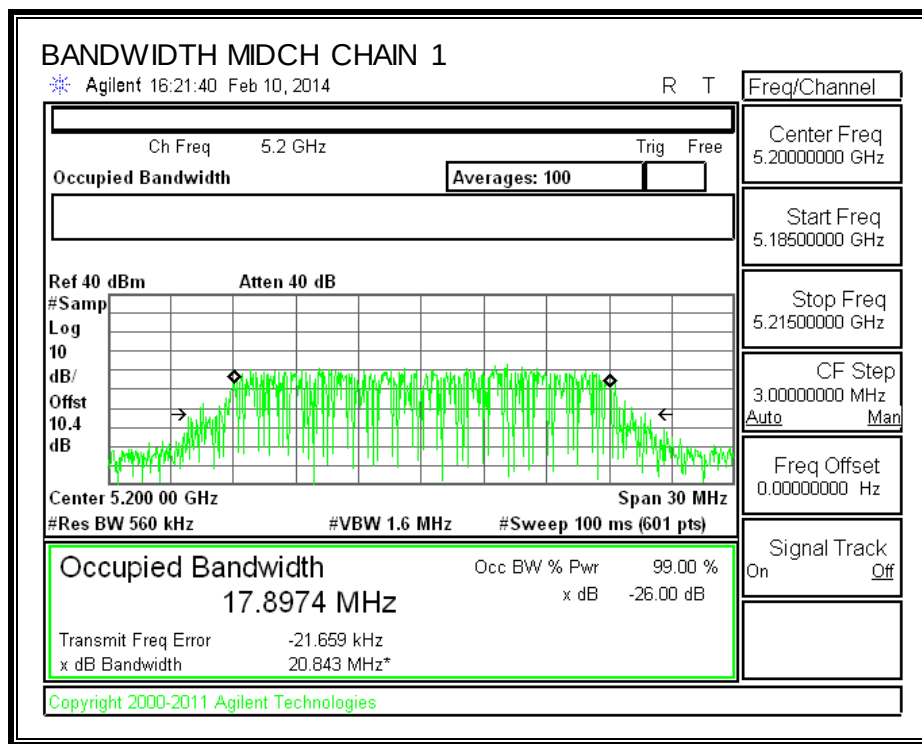
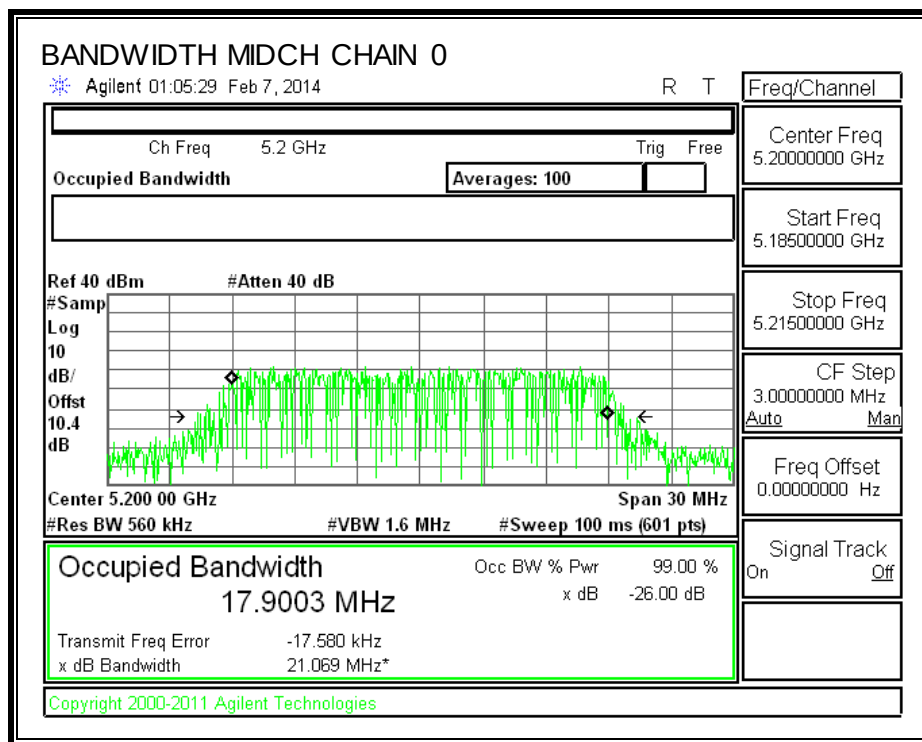
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5510	36.4	36.4
Mid	5550	36.4	36.4
High	5670	36.4	36.4

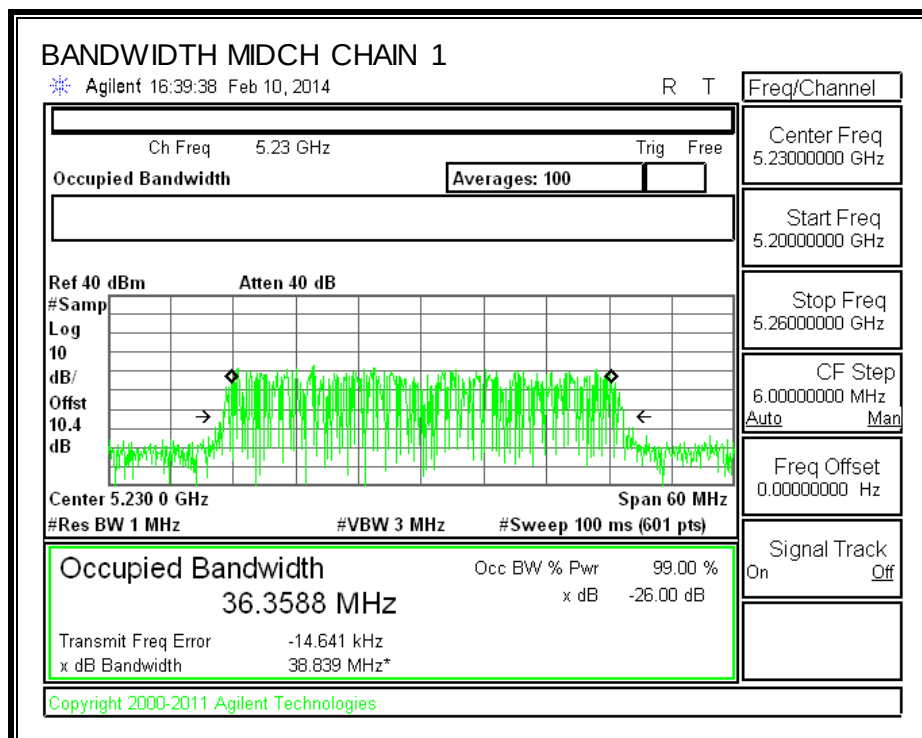
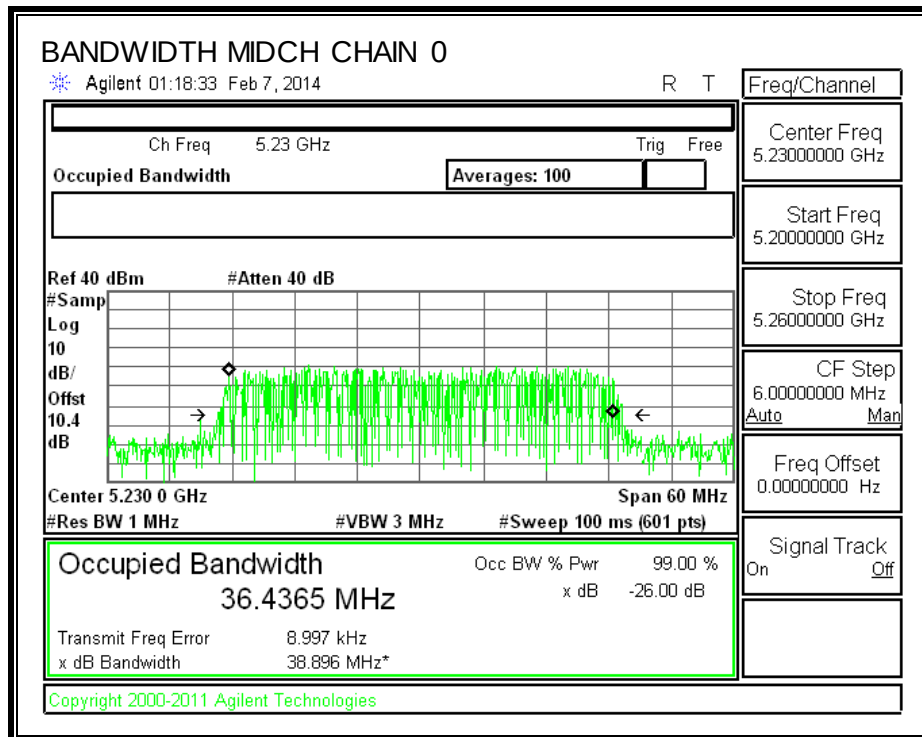
10.2.12. 802.11ac HT80 MODE IN THE 5.5 GHz BAND

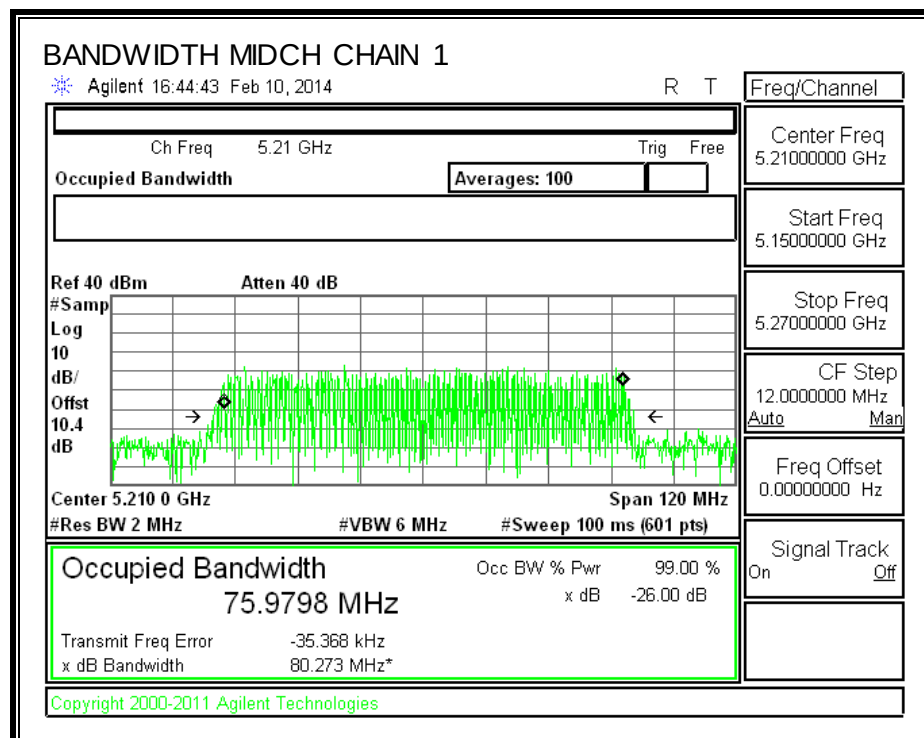
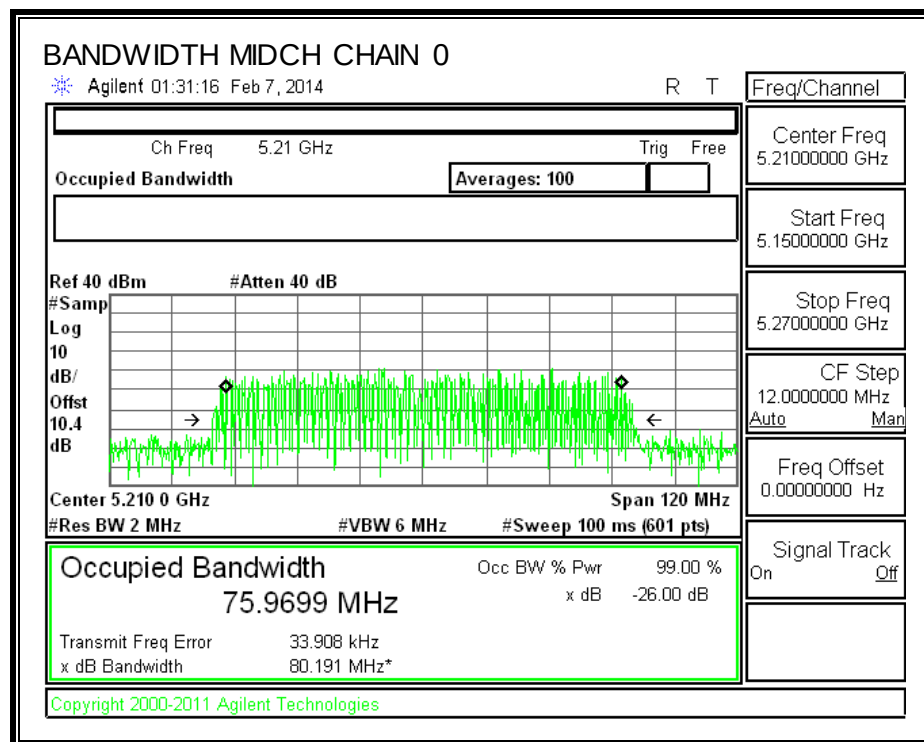
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5530	76.1	75.9

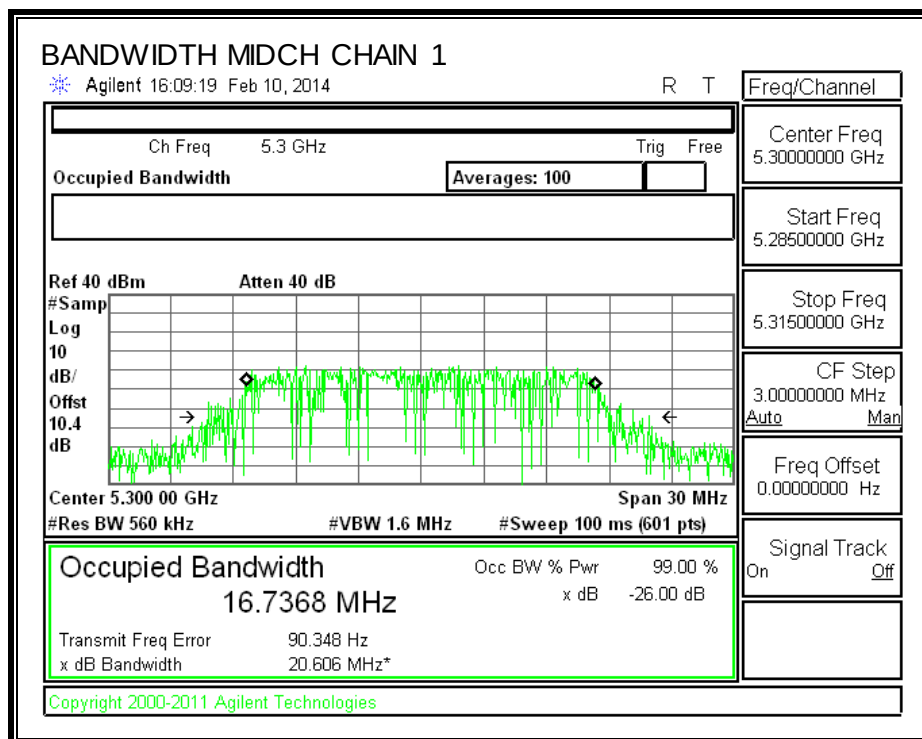
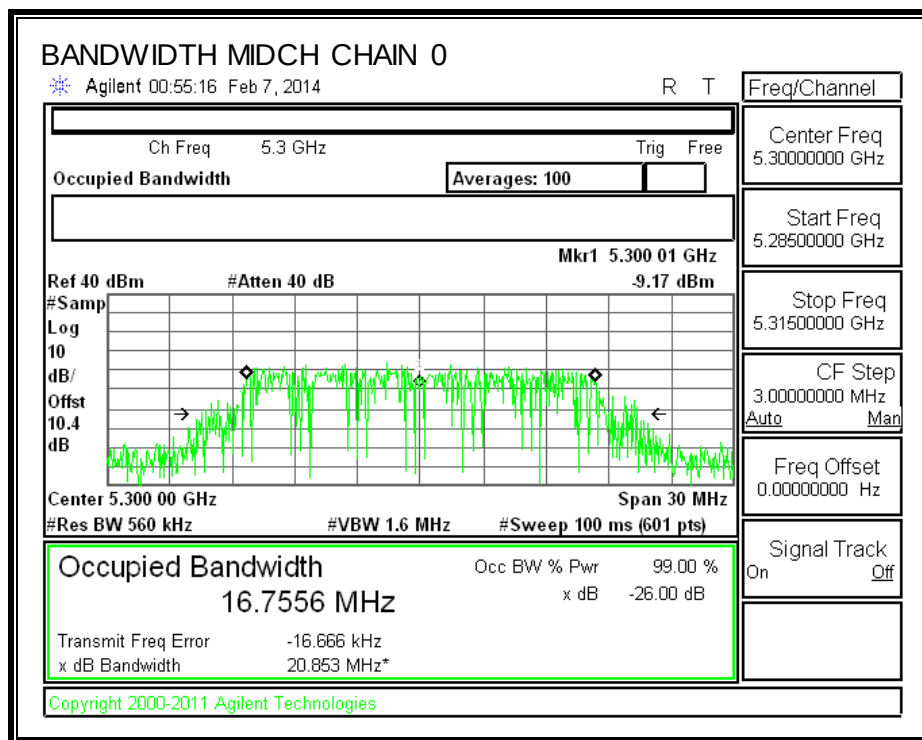


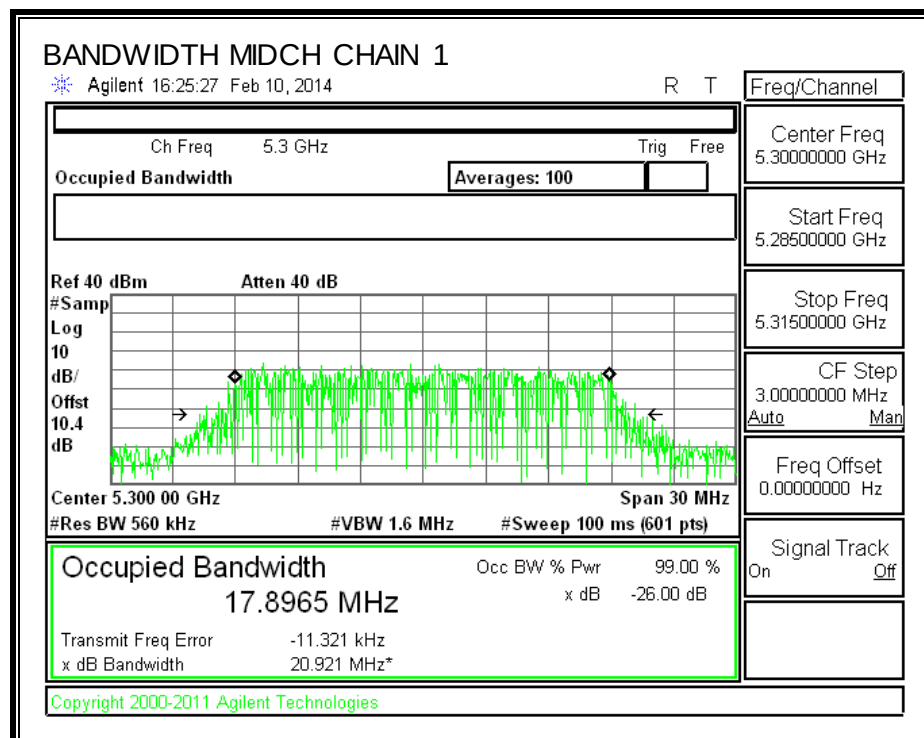
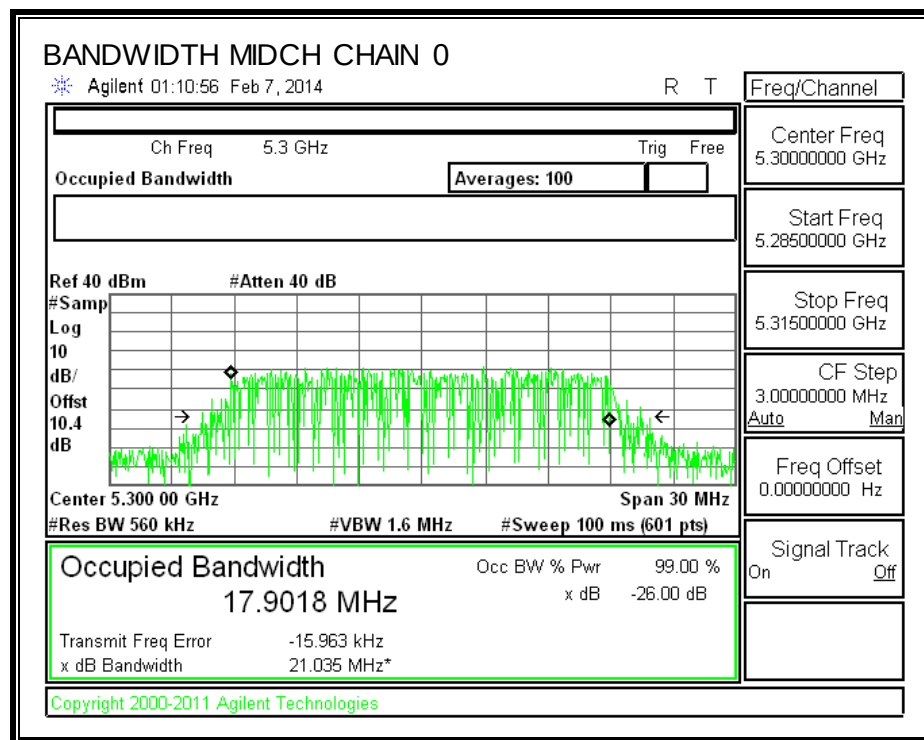
802.11n HT20 5.2G 99% BANDWIDTH

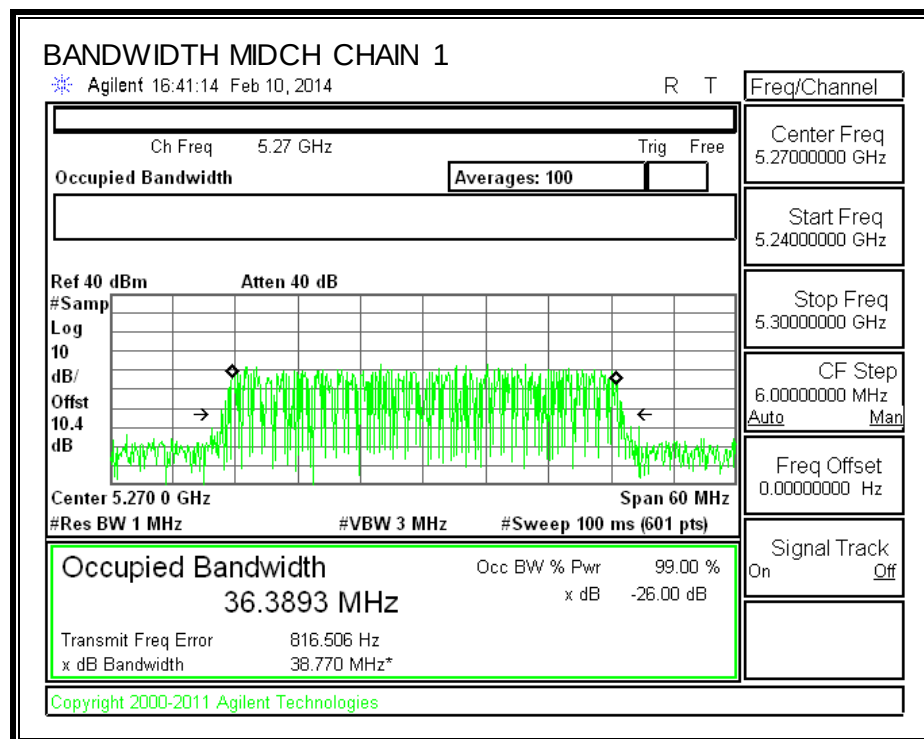
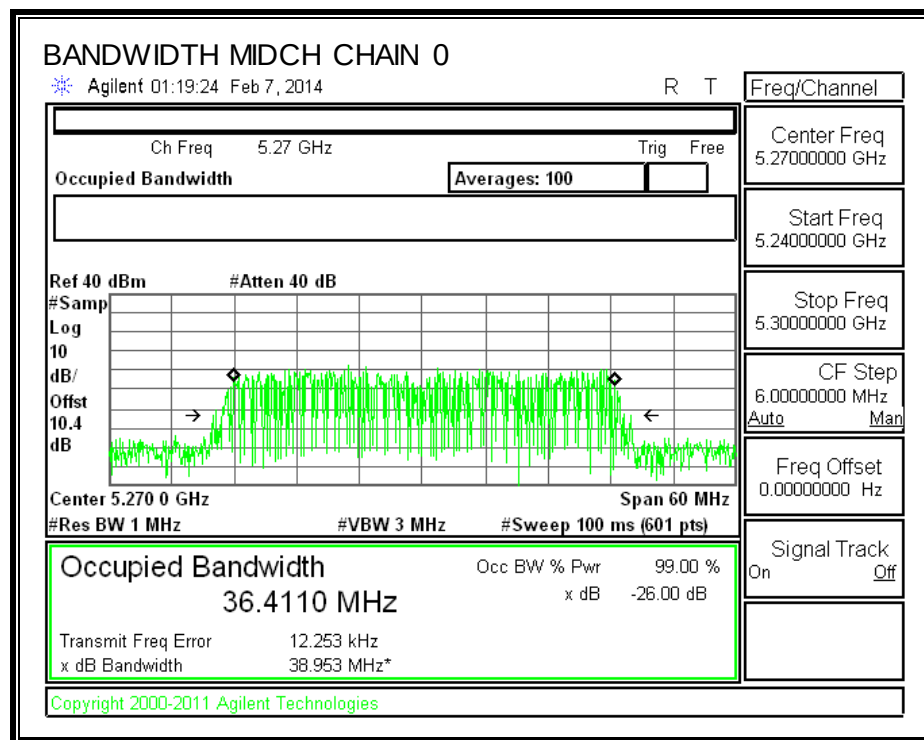


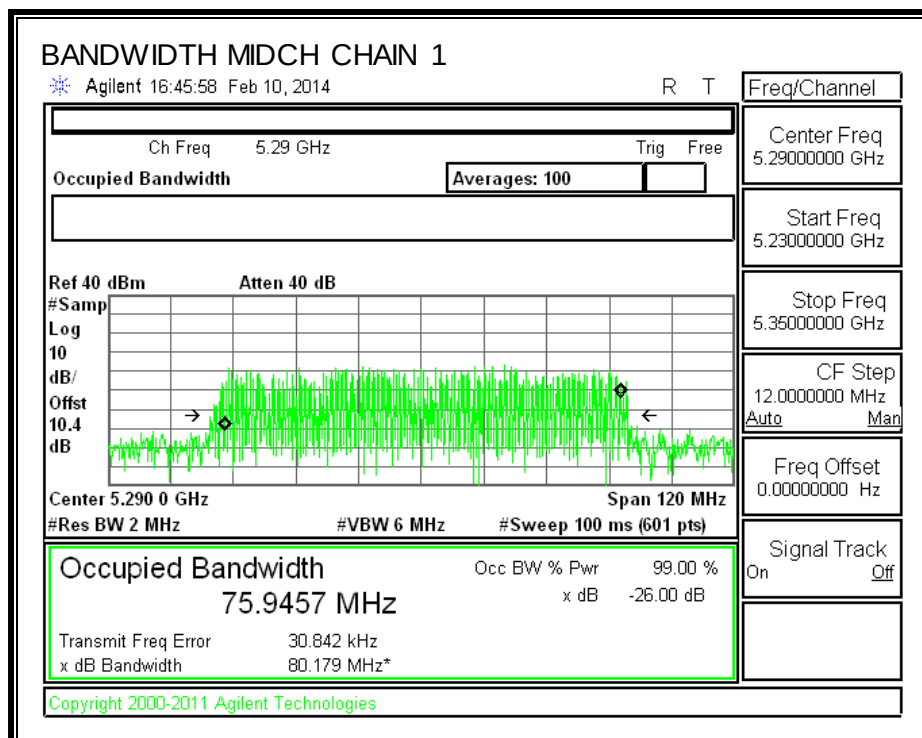
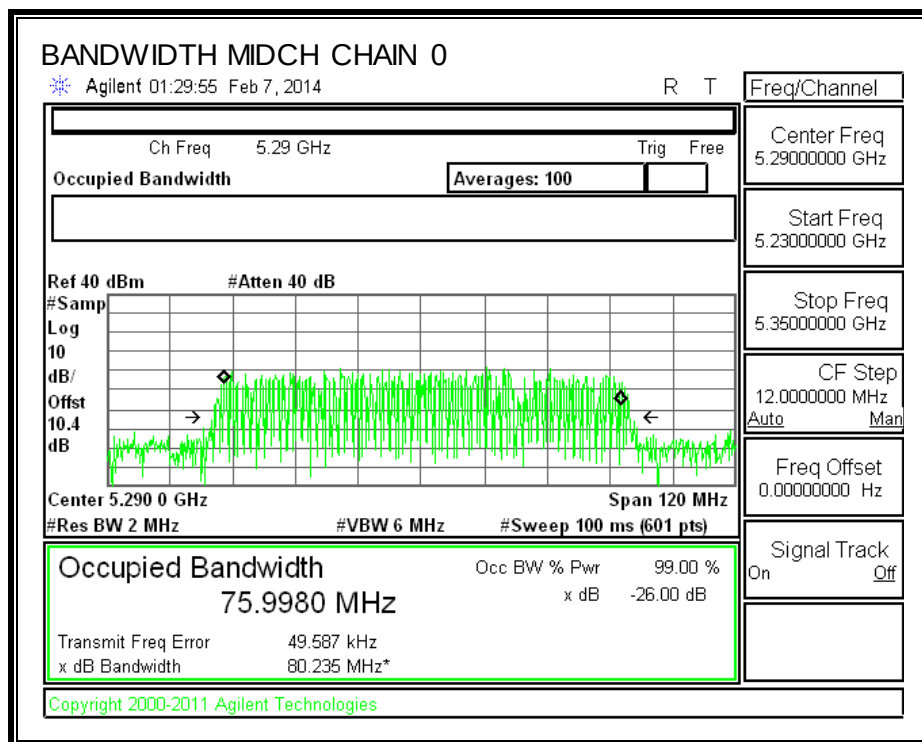


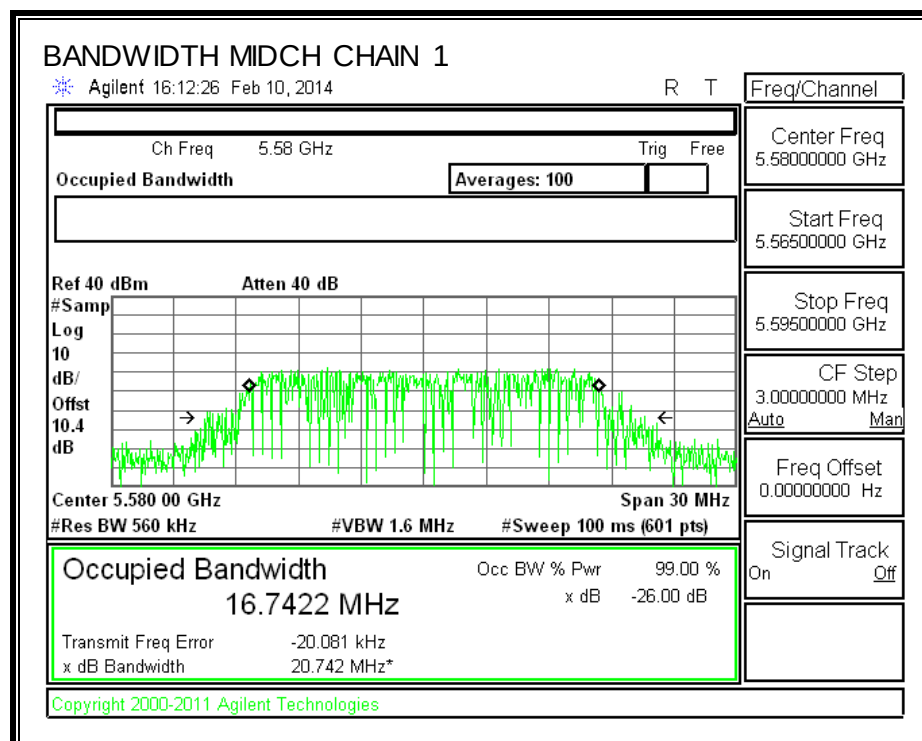
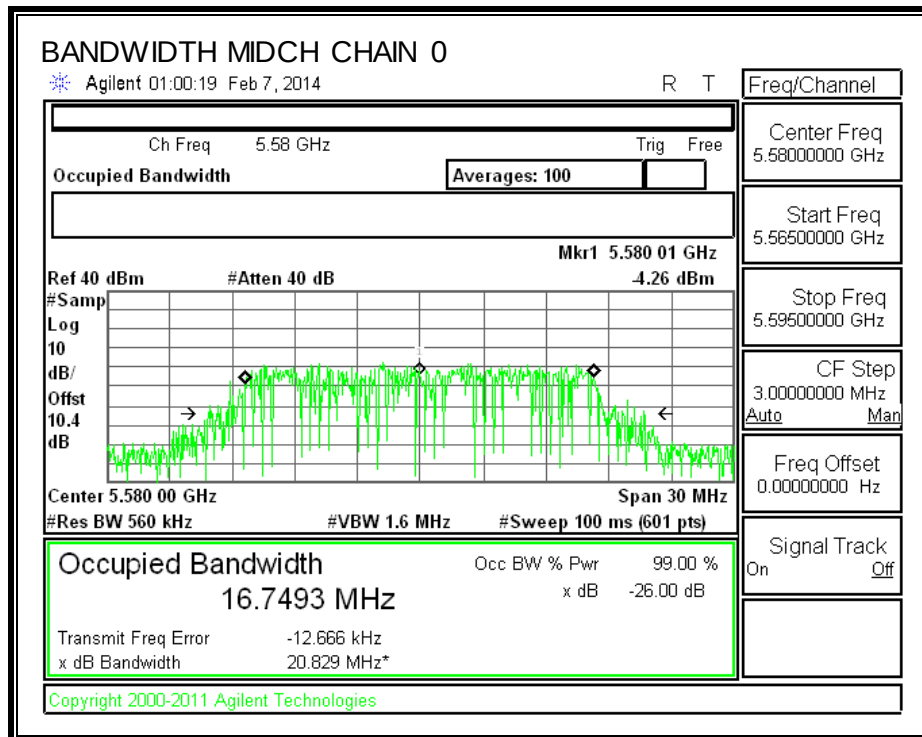


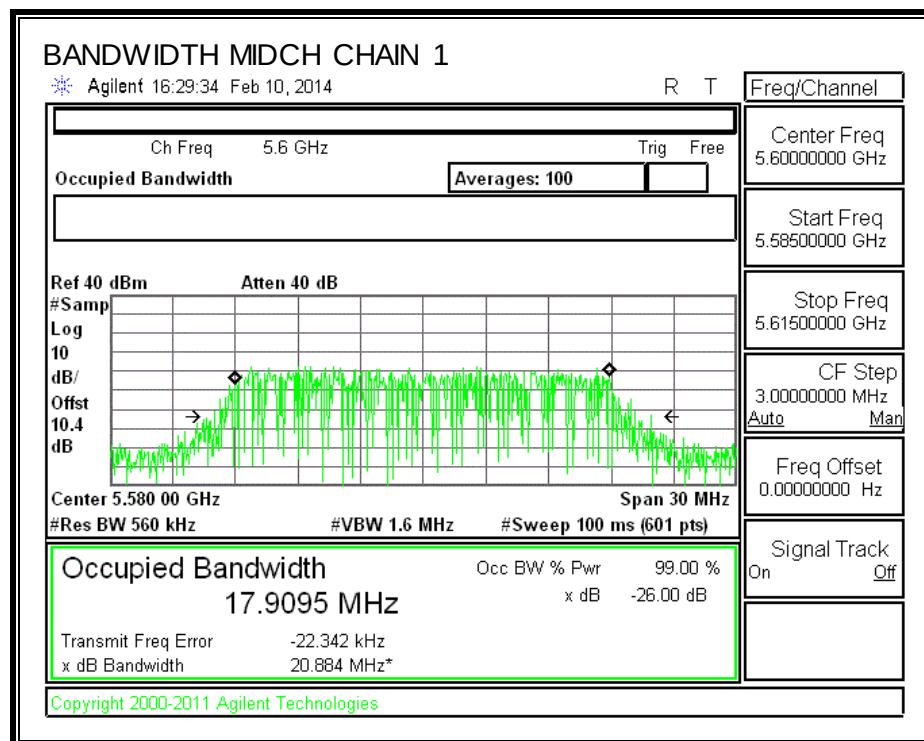
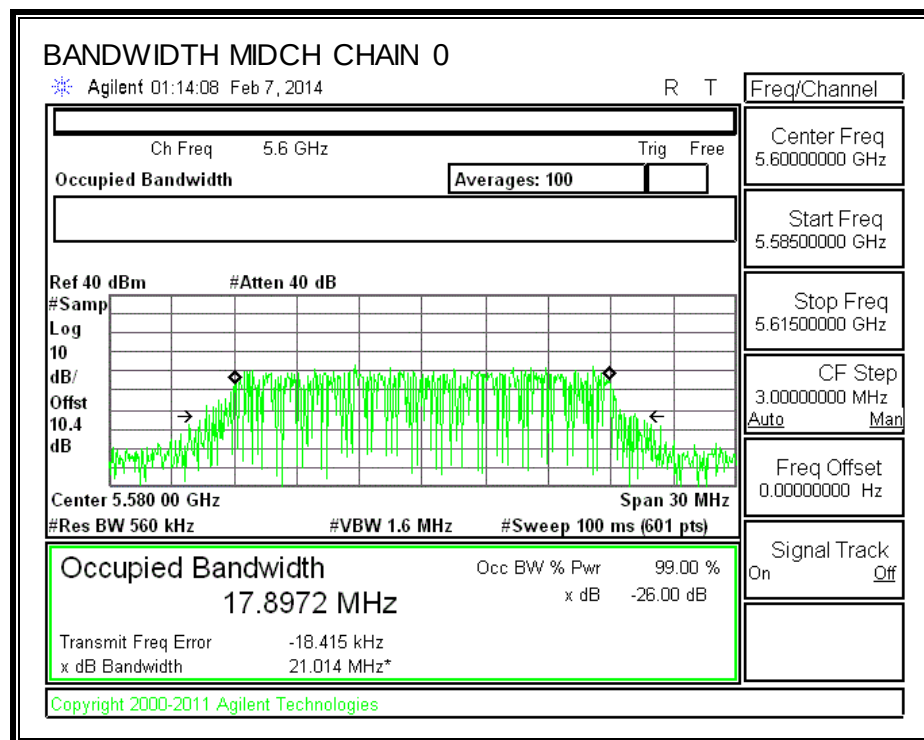




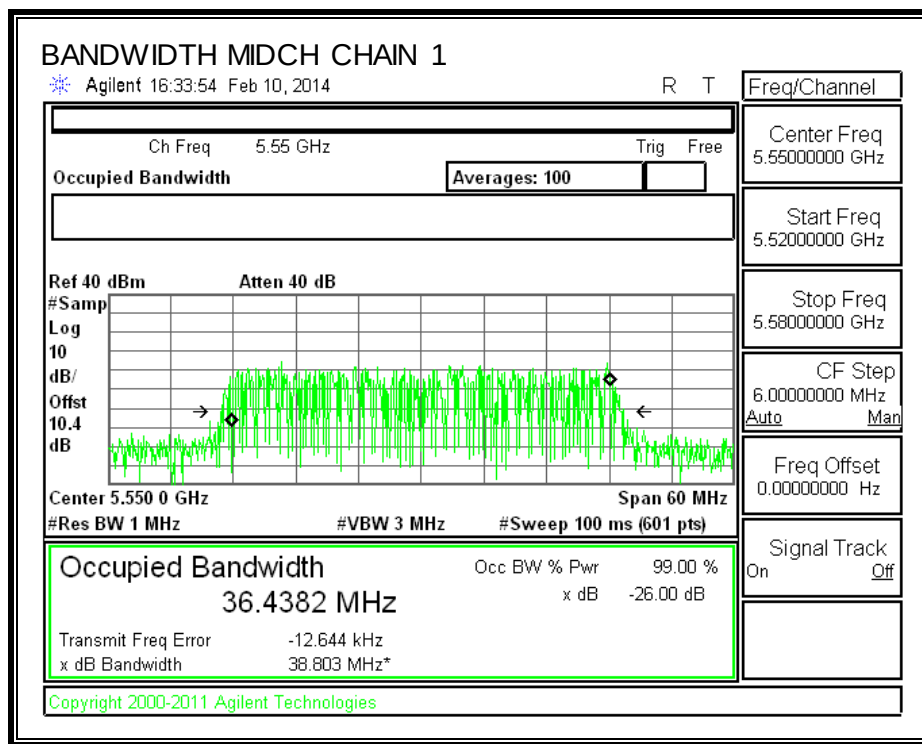
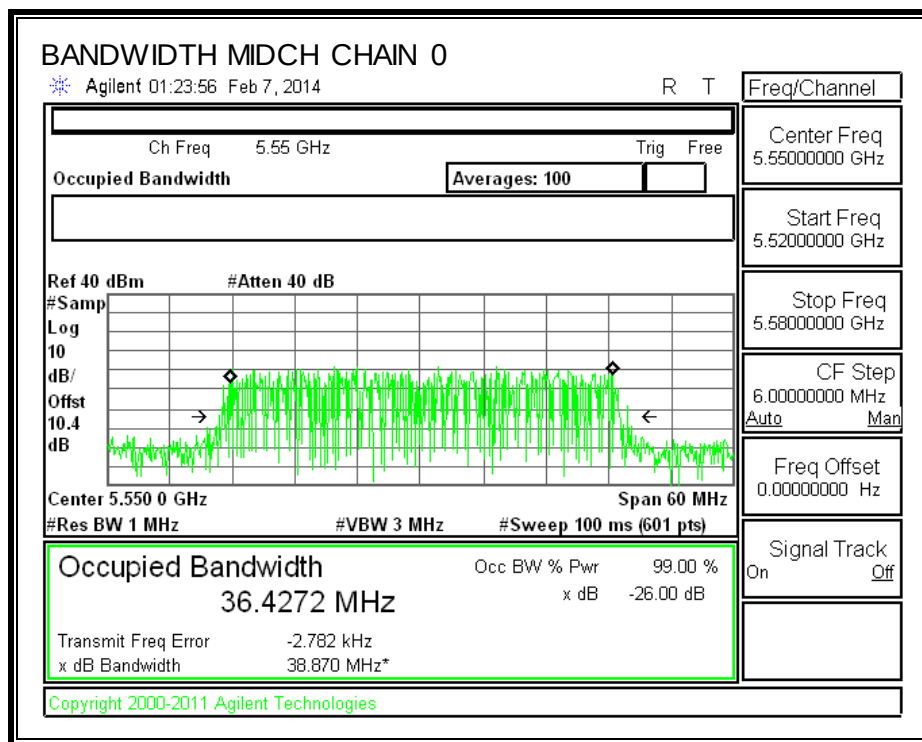




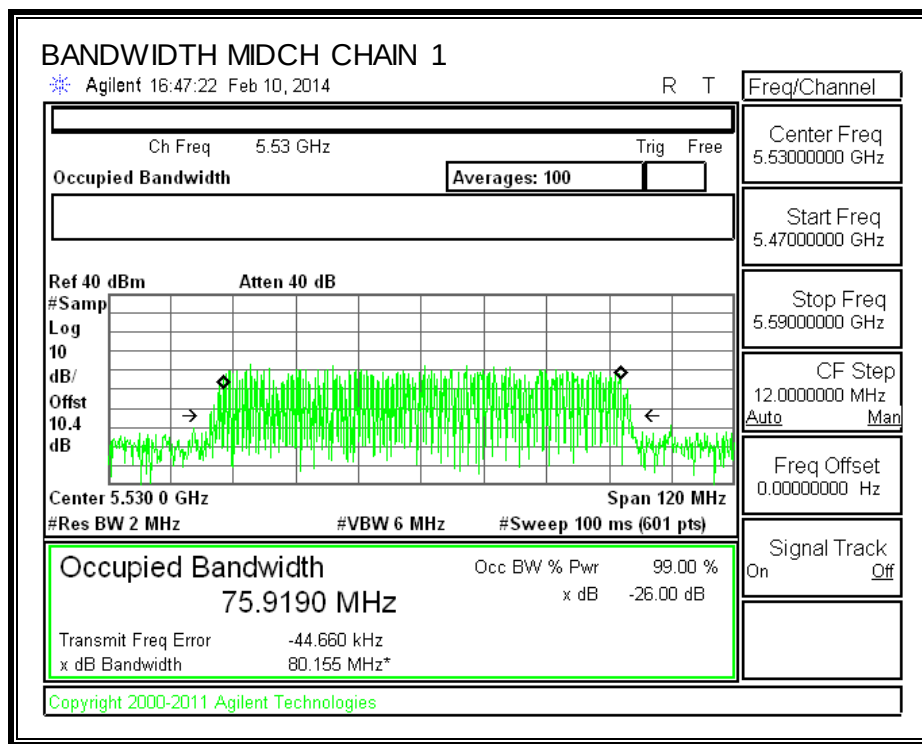
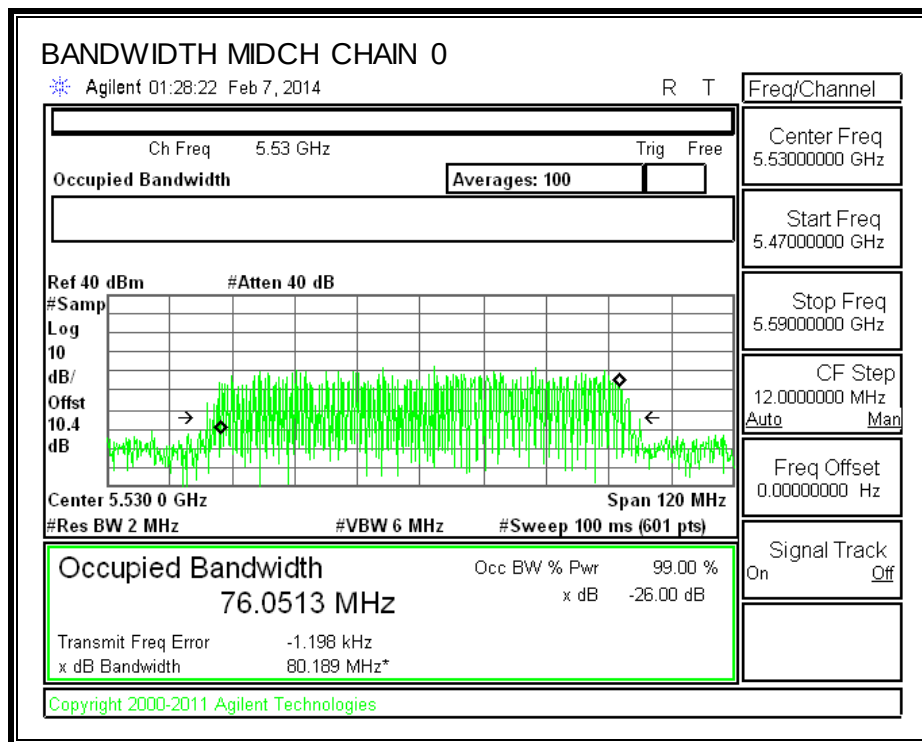




802.11n HT40 5.5G 99% BANDWIDTH



802.11ac HT80 5.5G 99% BANDWIDTH



10.3. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (1)

For the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or 4 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 4 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

IC RSS-210 A9.2 (1)

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

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
-3.18	-0.40	-1.57

The TX chains are correlated and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
-3.18	-0.40	1.33

Test Methodology

RESULTS

10.3.1. 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 for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5180	22.30	16.8000	-1.57	1.33
Mid	5200	22.30	16.7000	-1.57	1.33
High	5240	22.20	16.7000	-1.57	1.33

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	22.25	23.82	17.00	4.00	10.00	4.00
Mid	5200	17.00	22.23	23.80	17.00	4.00	10.00	4.00
High	5240	17.00	22.23	23.80	17.00	4.00	10.00	4.00

Duty Cycle CF (dB)	0.30	Included in Calculations of Corr'd Power & PPSP
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	10.12	10.41	13.57	17.00	-3.43
Mid	5200	9.77	10.55	13.49	17.00	-3.51
High	5240	9.97	10.76	13.70	17.00	-3.30

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5180	-1.27	-1.49	1.93	4.00	-2.07
Mid	5200	-1.70	-0.78	2.09	4.00	-1.91
High	5240	-1.65	-0.54	2.25	4.00	-1.75

10.3.2. 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 for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5180	22.40	17.9000	-1.57	1.33
Mid	5200	22.50	17.9000	-1.57	1.33
High	5240	22.50	17.9000	-1.57	1.33

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	24.10	17.00	4.00	10.00	4.00
Mid	5200	17.00	22.53	24.10	17.00	4.00	10.00	4.00
High	5240	17.00	22.53	24.10	17.00	4.00	10.00	4.00

Duty Cycle CF (dB)	0.60	Included in Calculations of Corr'd Power & PPSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	10.17	10.10	13.75	17.00	-3.25
Mid	5200	10.38	10.16	13.88	17.00	-3.12
High	5240	10.38	10.27	13.94	17.00	-3.06

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5180	-1.45	-1.53	2.12	4.00	-1.88
Mid	5200	-1.45	-1.72	2.03	4.00	-1.97
High	5240	-1.73	-1.69	1.90	4.00	-2.10

10.3.3. 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 for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5190	41.60	36.4000	-1.57	1.33
High	5230	41.90	36.4000	-1.57	1.33

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	24.57	17.00	4.00	10.00	4.00
High	5230	17.00	23.00	24.57	17.00	4.00	10.00	4.00

Duty Cycle CF (dB)	1.10	Included in Calculations of Corr'd Power & PPSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5190	9.48	10.08	13.90	17.00	-3.10
High	5230	10.83	10.20	14.63	17.00	-2.37

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5190	-4.79	-4.77	-0.67	4.00	-4.67
High	5230	-3.44	-4.49	0.18	4.00	-3.82

10.3.4. 802.11ac HT80 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 for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5210	84.70	76.0000	-1.57	1.33

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	5210	17.00	23.00	24.57	17.00	4.00	10.00	4.00

Duty Cycle CF (dB)	1.83	Included in Calculations of Corr'd Power & PPSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5210	9.44	9.93	14.53	17.00	-2.47

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5210	-7.23	-7.51	-2.53	4.00	-6.53

10.3.5. 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 for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5260	22.70	16.7000	-1.57	1.33
Mid	5300	22.70	16.7000	-1.57	1.33
High	5320	22.20	16.7000	-1.57	1.33

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	23.23	29.23	23.23	11.00	11.00	11.00
Mid	5300	24.00	23.23	29.23	23.23	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)	0.30	Included in Calculations of Corr'd Power & PPSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	9.86	10.83	13.68	23.23	-9.55
Mid	5300	9.91	10.79	13.69	23.23	-9.54
High	5320	9.40	10.96	13.56	23.23	-9.67

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5260	-1.52	-0.56	2.30	11.00	-8.70
Mid	5300	-2.13	-0.34	2.17	11.00	-8.83
High	5320	-1.94	-0.62	2.08	11.00	-8.92

10.3.6. 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 for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5260	22.40	17.9000	-1.57	1.33
Mid	5300	22.40	17.9000	-1.57	1.33
High	5320	22.50	17.9000	-1.57	1.33

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5260	24.00	23.53	29.53	23.53	11.00	11.00	11.00
Mid	5300	24.00	23.53	29.53	23.53	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)	0.60	Included in Calculations of Corr'd Power & PPSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	10.74	10.48	14.22	23.53	-9.30
Mid	5300	10.93	10.54	14.35	23.53	-9.18
High	5320	10.99	10.68	14.45	23.53	-9.08

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5260	-0.85	-1.01	2.68	11.00	-8.32
Mid	5300	-1.00	-0.89	2.67	11.00	-8.33
High	5320	-0.40	-1.16	2.85	11.00	-8.15

10.3.7. 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 for Power (dBi)	Directional Gain for PPSP (dBi)
Low	5270	41.70	36.4000	-1.57	1.33
High	5310	41.50	36.4000	-1.57	1.33

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSP Limit (dBm)	IC PSD Limit (dBm)	PPSP 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)	1.10	Included in Calculations of Corr'd Power & PPSP
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5270	9.11	10.54	14.00	24.00	-10.00
High	5310	8.86	10.46	13.84	24.00	-10.16

PPSP Results

Channel	Frequency (MHz)	Chain 0 Meas PPSP (dBm)	Chain 1 Meas PPSP (dBm)	Total Corr'd PPSP (dBm)	PPSP Limit (dBm)	PPSP Margin (dB)
Low	5270	-6.32	-4.10	-0.96	11.00	-11.96
High	5310	-6.01	-3.57	-0.51	11.00	-11.51

10.3.8. 802.11ac HT80 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 for Power (dBi)	Directional Gain for PPSP (dBi)
Low	5290	84.50	75.9000	-1.57	1.33

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	5290	24.00	24.00	30.00	24.00	11.00	11.00	11.00

Duty Cycle CF (dB)	1.83	Included in Calculations of Corr'd Power & PPSP
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5290	9.51	10.22	14.72	24.00	-9.28

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5290	-8.56	-7.40	-3.10	11.00	-14.10

10.3.9. 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 for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5500	22.30	16.7000	-1.57	1.33
Mid	5580	22.40	16.7000	-1.57	1.33
High	5700	22.20	16.7000	-1.57	1.33

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	23.23	29.23	23.23	11.00	11.00	11.00
Mid	5580	24.00	23.23	29.23	23.23	11.00	11.00	11.00
High	5700	24.00	23.23	29.23	23.23	11.00	11.00	11.00

Duty Cycle CF (dB)	0.30	Included in Calculations of Corr'd Power & PPSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	10.55	10.41	13.79	23.23	-9.44
Mid	5580	10.38	10.45	13.72	23.23	-9.50
High	5700	9.85	11.13	13.84	23.23	-9.38

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5500	-1.17	-1.16	2.15	11.00	-8.85
Mid	5580	-0.77	-1.06	2.40	11.00	-8.60
High	5700	-1.40	0.02	2.68	11.00	-8.32

10.3.10. 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 for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5500	22.40	17.9000	-1.57	1.33
Mid	5580	22.60	17.9000	-1.57	1.33
High	5700	22.50	17.9000	-1.57	1.33

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)	0.60	Included in Calculations of Corr'd Power & PPSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	10.71	10.05	14.00	23.53	-9.53
Mid	5580	11.15	10.31	14.36	23.53	-9.17
High	5700	10.88	10.59	14.34	23.53	-9.18

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5500	-1.27	-1.73	2.12	11.00	-8.88
Mid	5580	-0.63	-1.52	2.56	11.00	-8.44
High	5700	-1.28	-1.25	2.35	11.00	-8.65

10.3.11. 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 for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5510	41.70	36.4000	-1.57	1.33
Mid	5550	41.60	36.4000	-1.57	1.33
High	5670	41.80	36.4000	-1.57	1.33

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)	1.10	Included in Calculations of Corr'd Power & PPSD
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Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	9.83	10.98	14.55	24.00	-9.45
Mid	5550	9.73	11.07	14.56	24.00	-9.44
High	5670	9.88	11.72	15.01	24.00	-8.99

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5510	-4.88	-3.40	0.03	11.00	-10.97
Mid	5550	-5.05	-3.78	-0.26	11.00	-11.26
High	5670	-4.52	-2.67	0.61	11.00	-10.39

10.3.12. 802.11ac HT80 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 for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5530	84.50	75.9000	-1.57	1.33

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	5530	24.00	24.00	30.00	24.00	11.00	11.00	11.00

Duty Cycle CF (dB)	1.83	Included in Calculations of Corr'd Power & PPSD
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Output Power Results

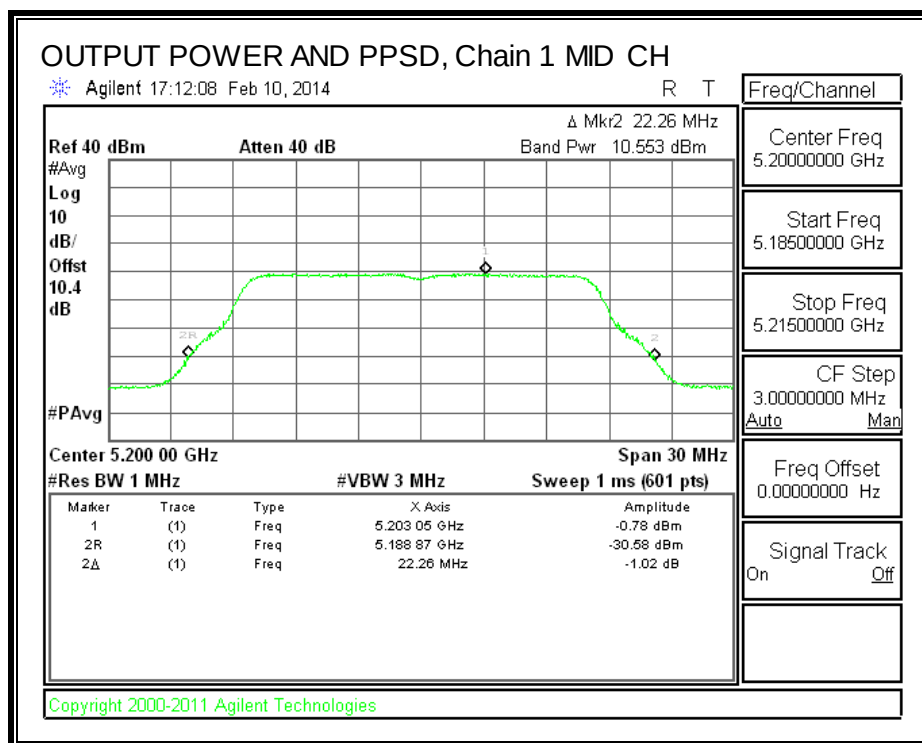
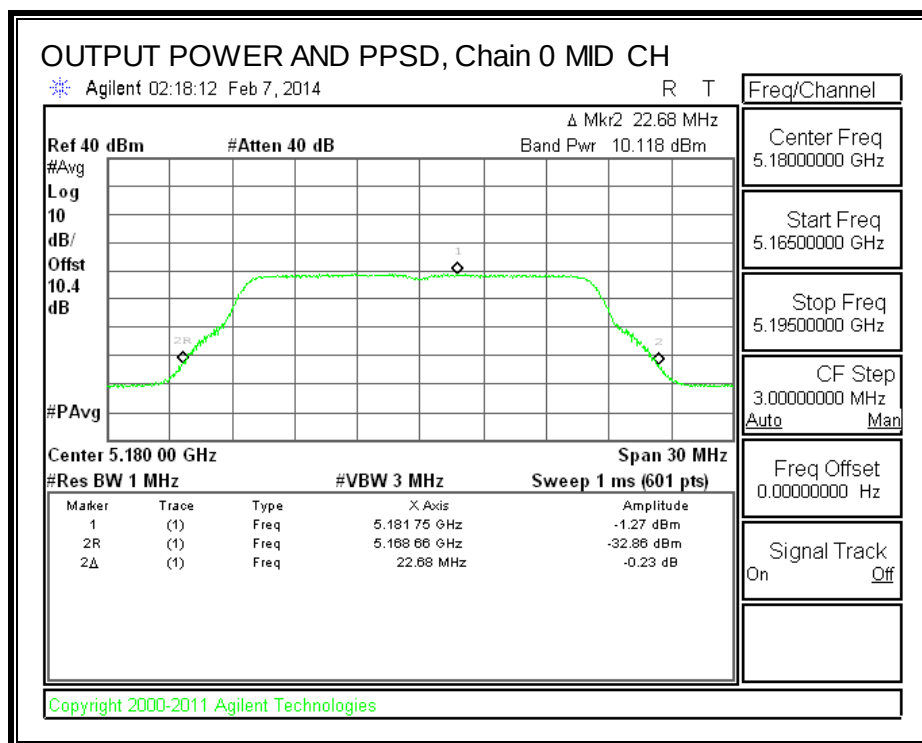
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5530	9.15	9.65	14.25	24.00	-9.75

PPSD Results

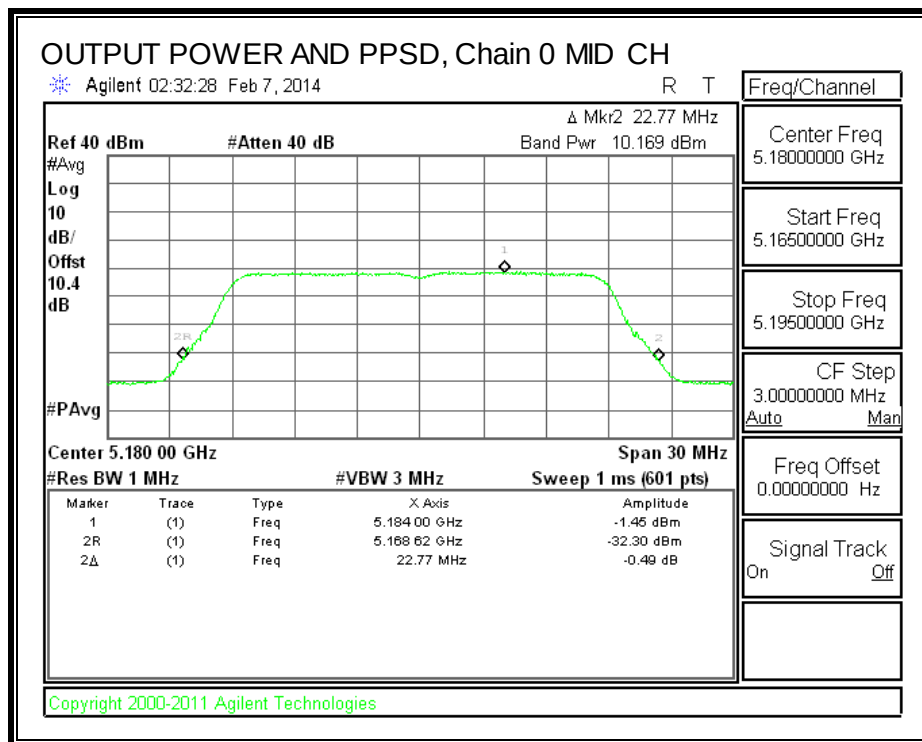
Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5530	-7.72	-7.86	-2.95	11.00	-13.95

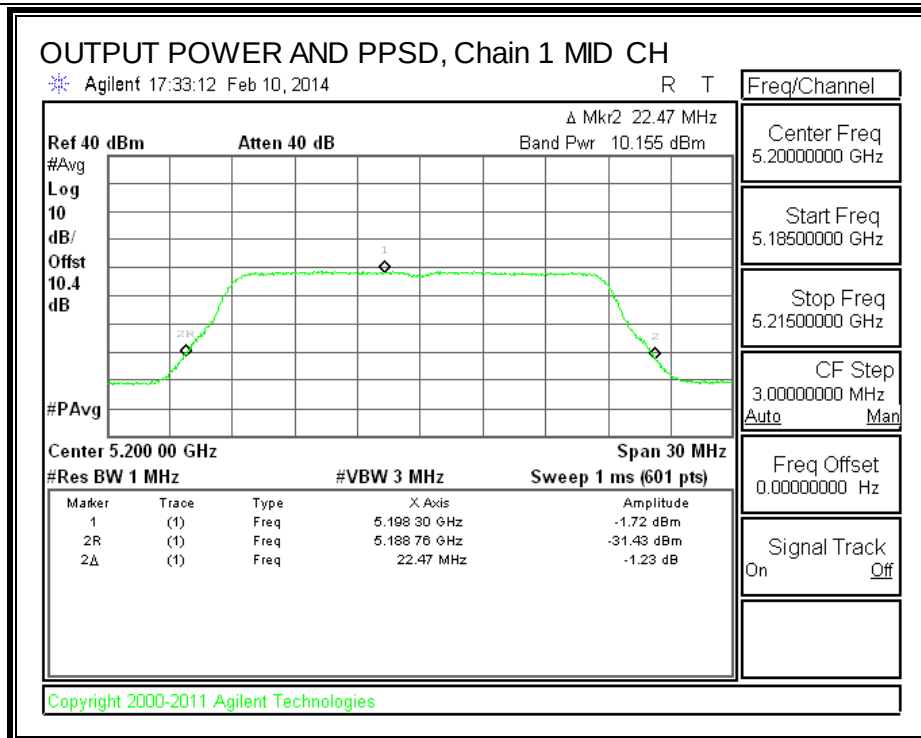
10.3.13. Plots

802.11a 5.2G OUTPUT POWER AND PPSD, Chain 0

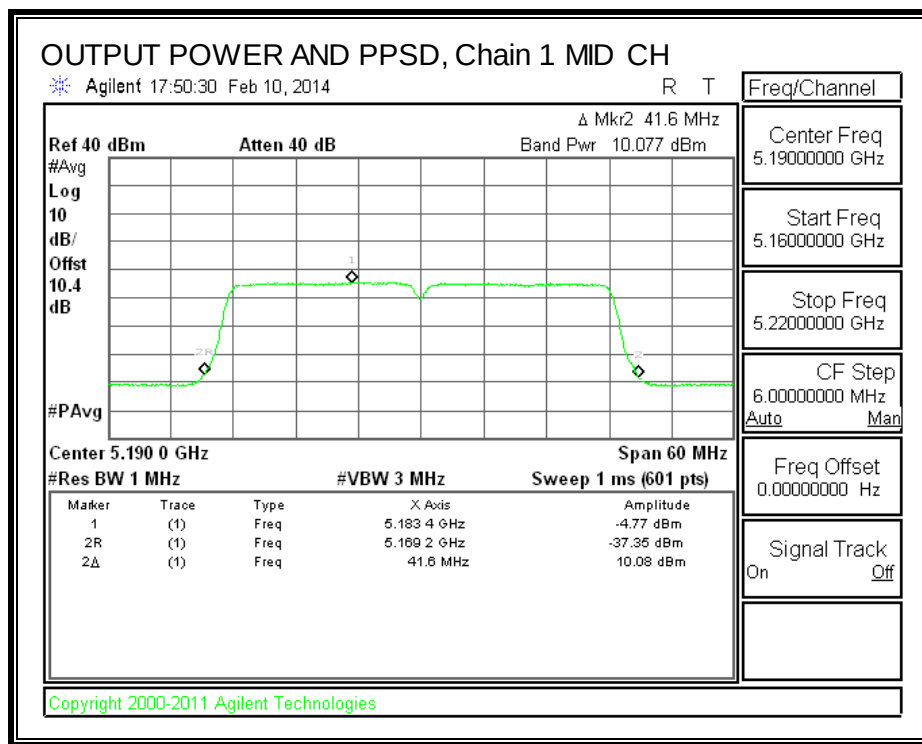
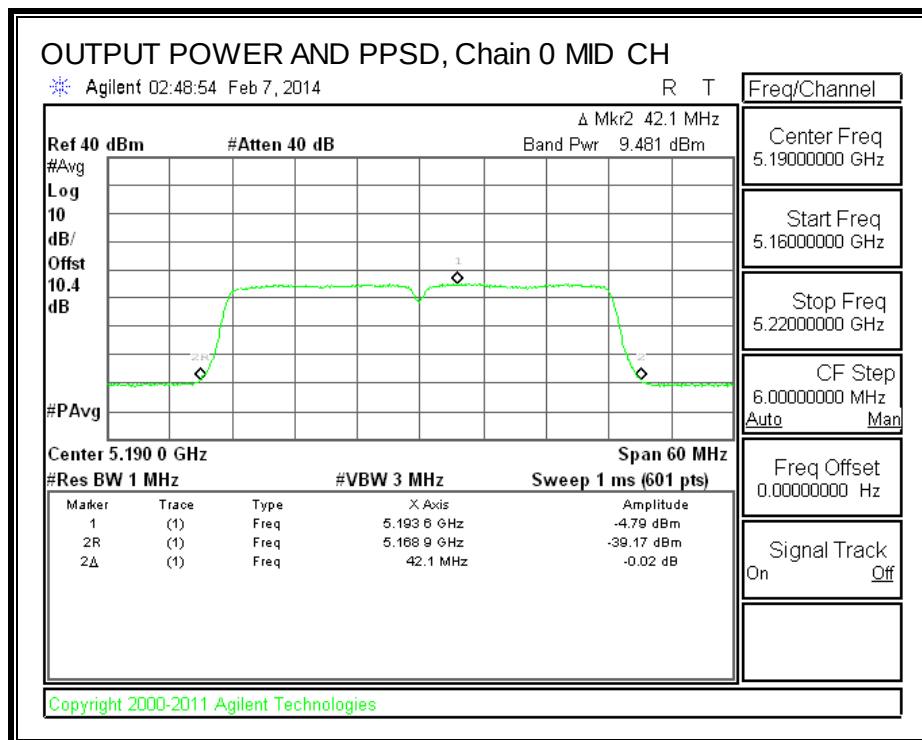


802.11n HT20 5.2G OUTPUT POWER AND PPSD, Chain 0

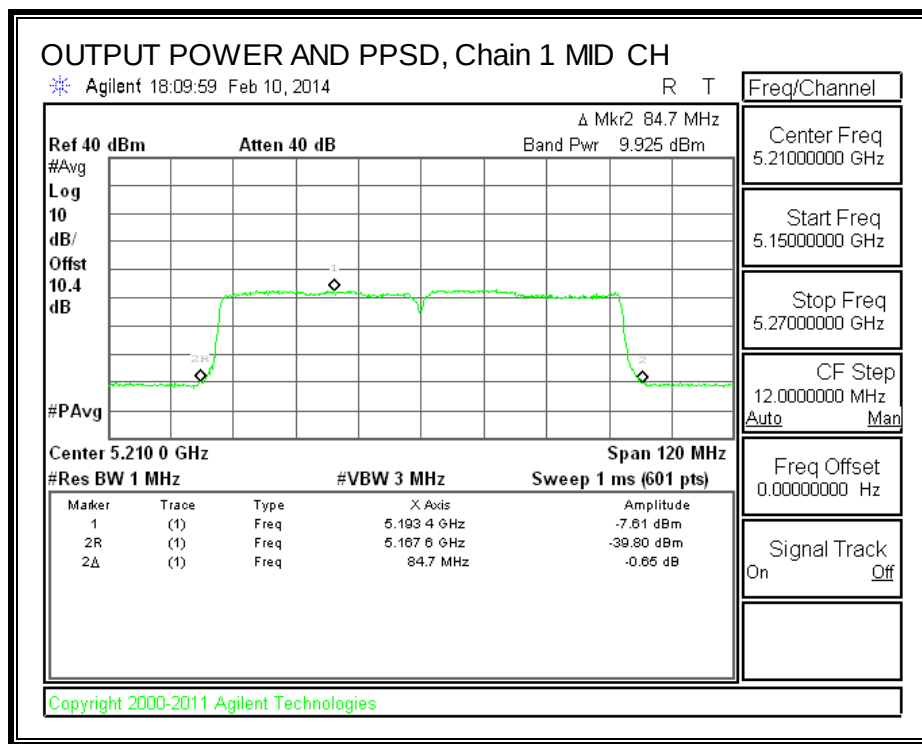
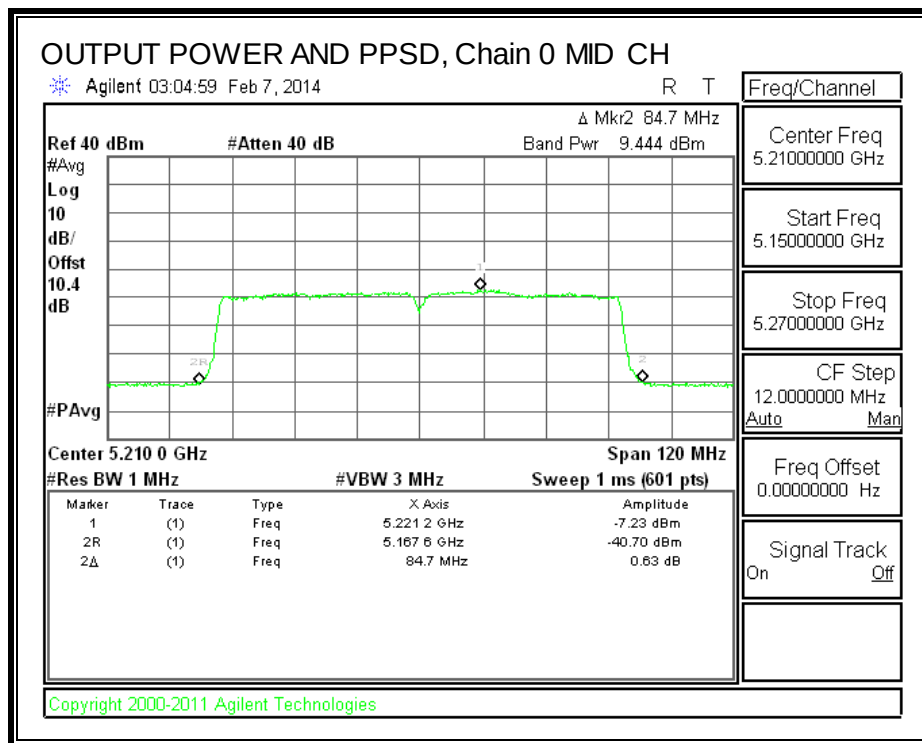




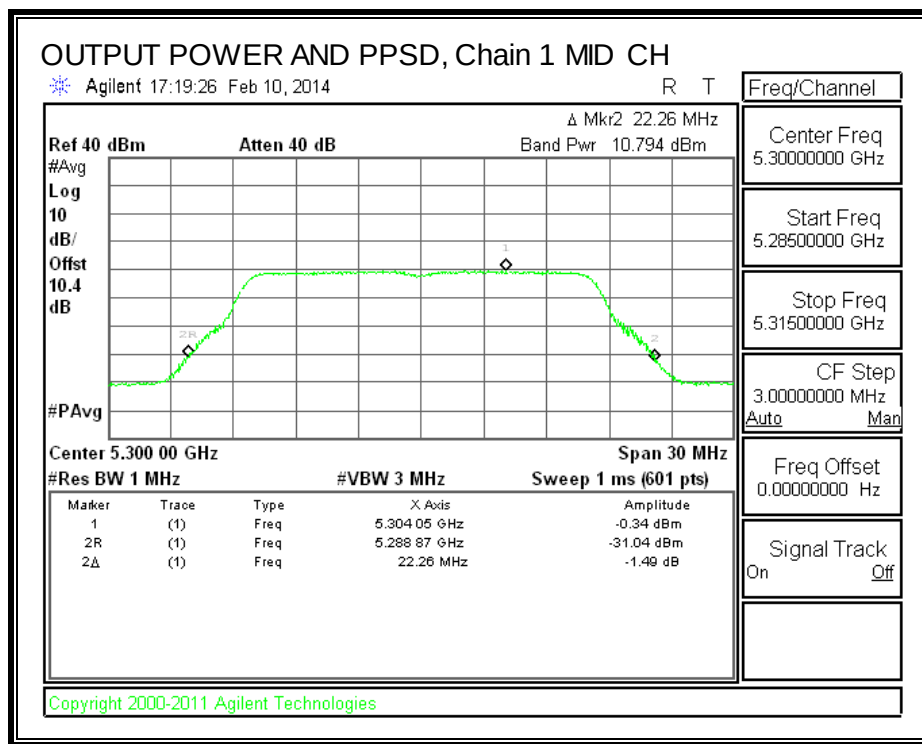
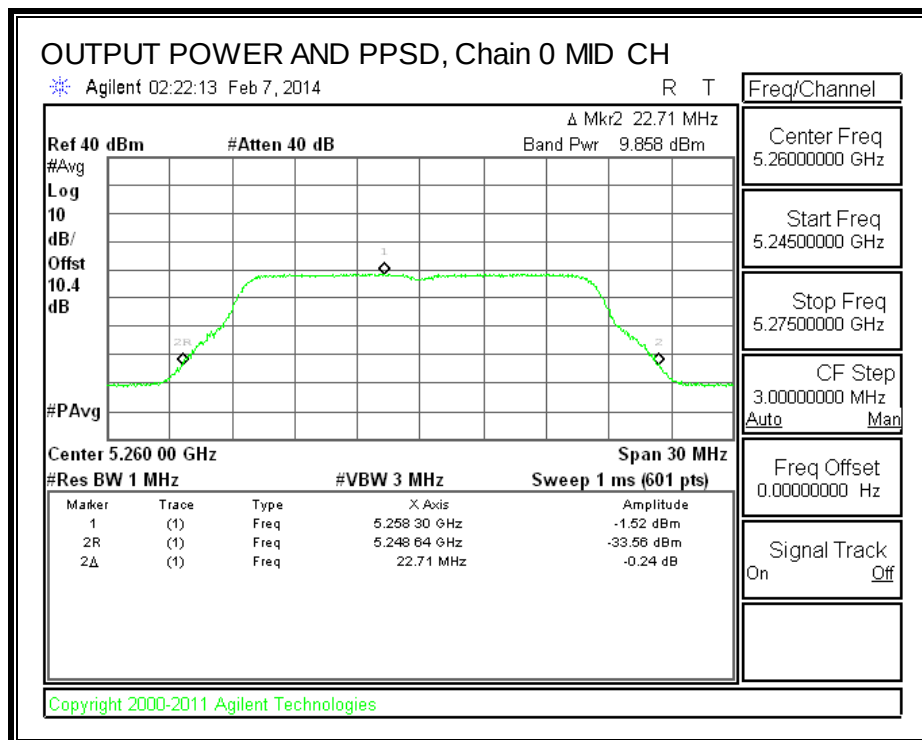
802.11n HT40 5.2G OUTPUT POWER AND PPSD, Chain 0



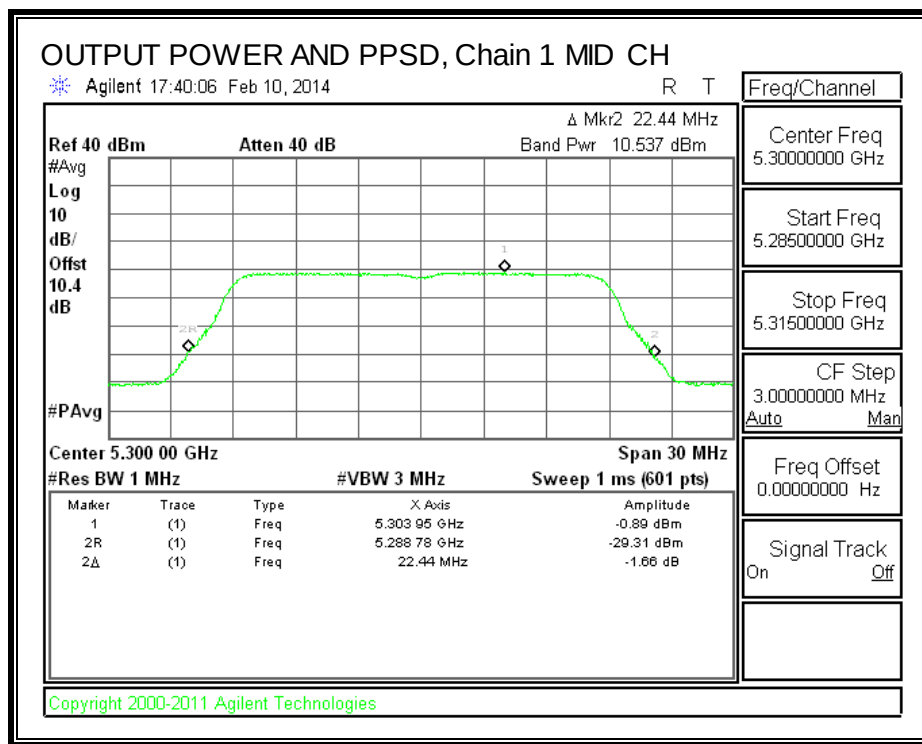
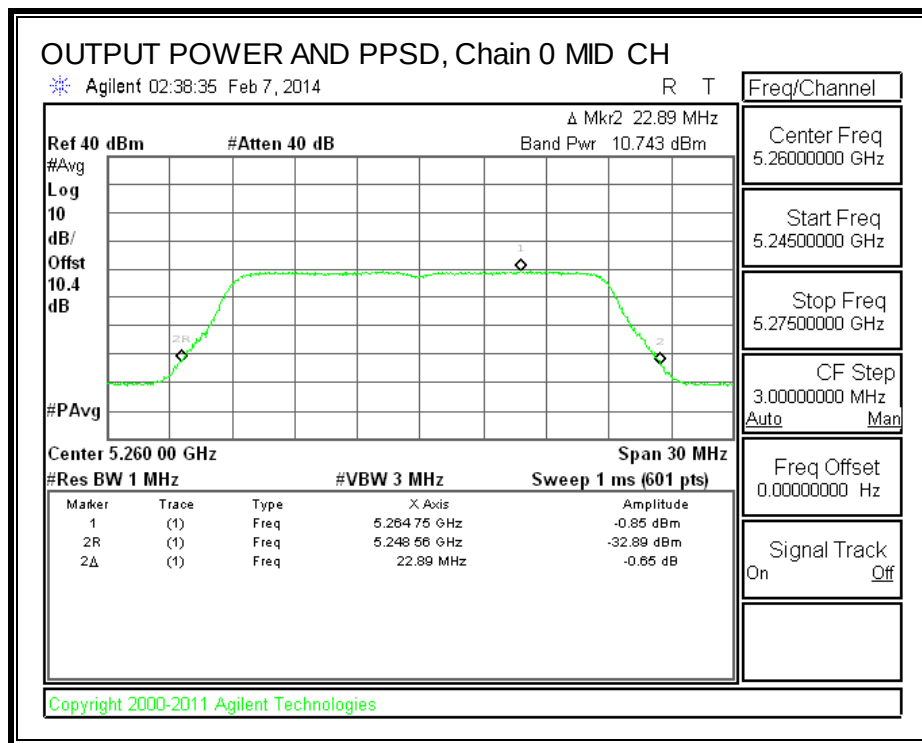
802.11ac HT80 5.2G OUTPUT POWER AND PPSD, Chain 0



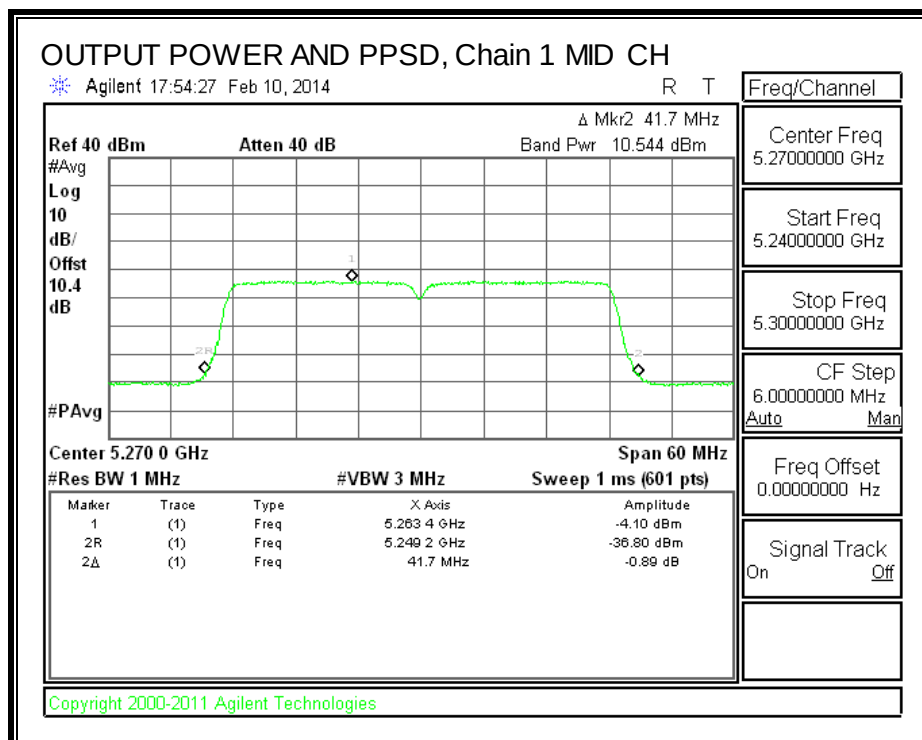
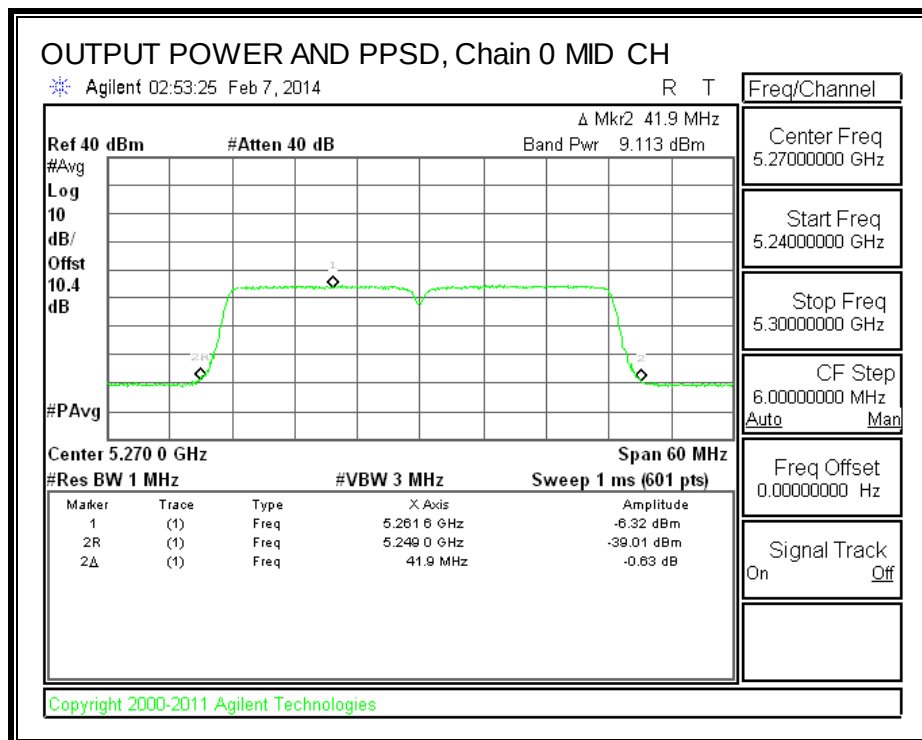
802.11a 5.3G OUTPUT POWER AND PPSD, Chain 0



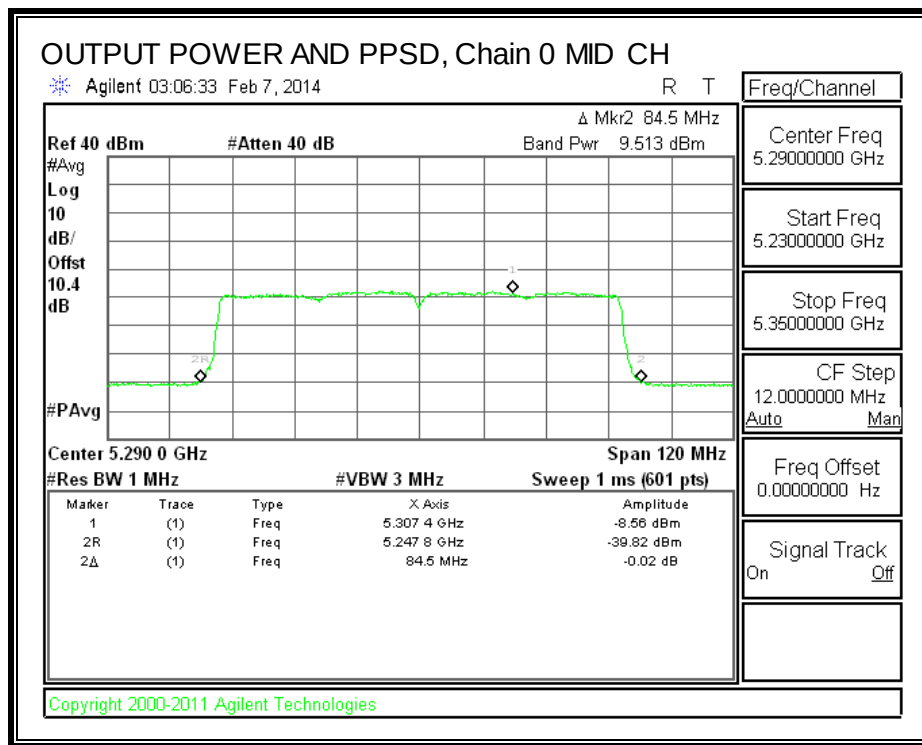
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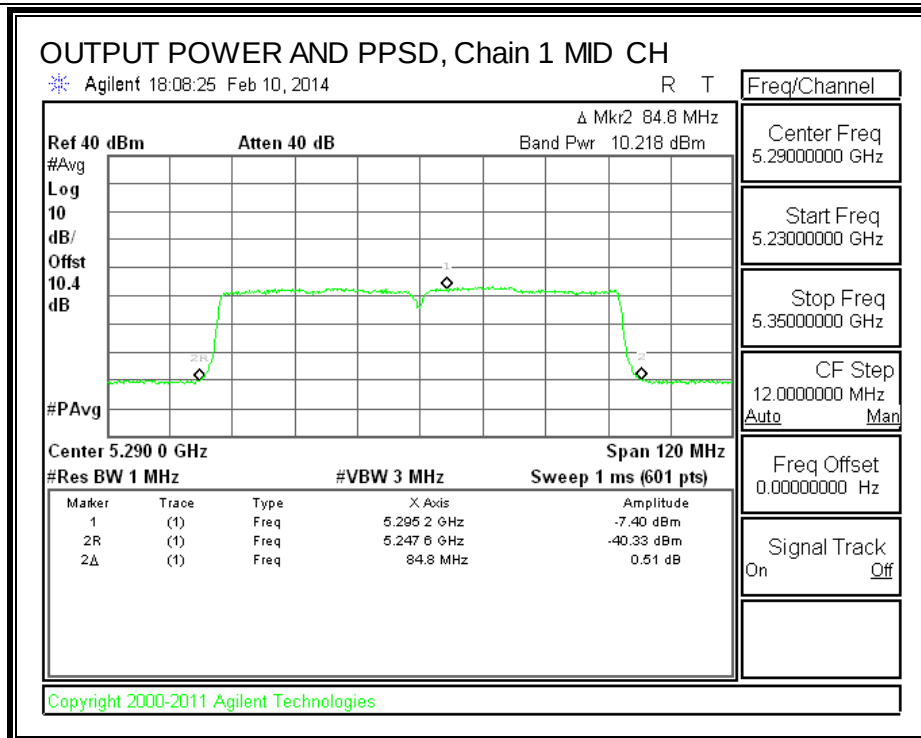


802.11n HT40 5.3G OUTPUT POWER AND PPSD, Chain 0

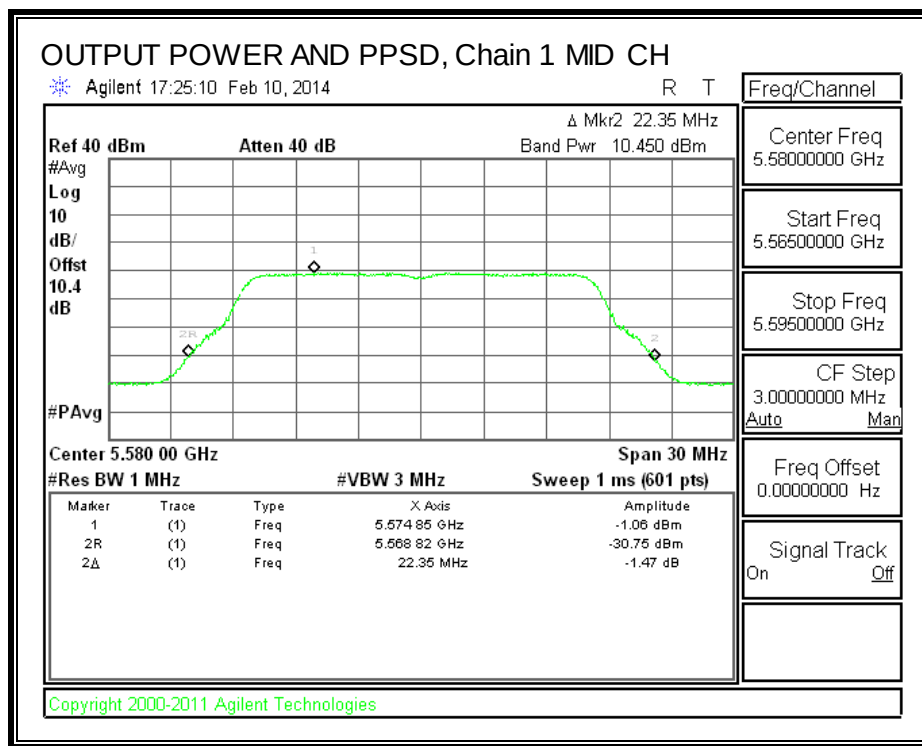
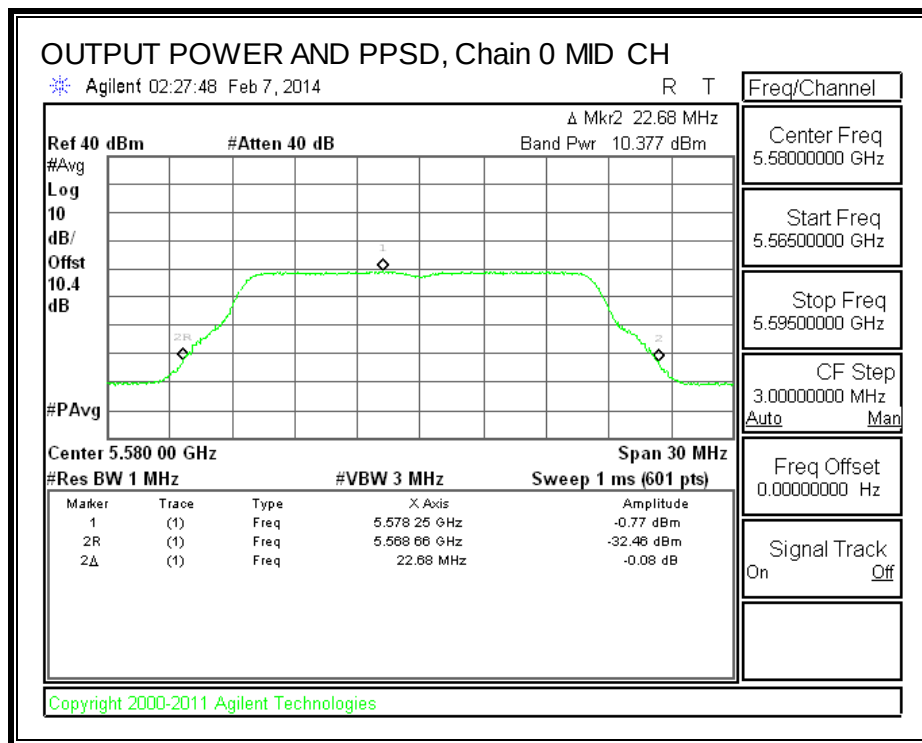


802.11ac HT80 5.3G OUTPUT POWER AND PPSD, Chain 0

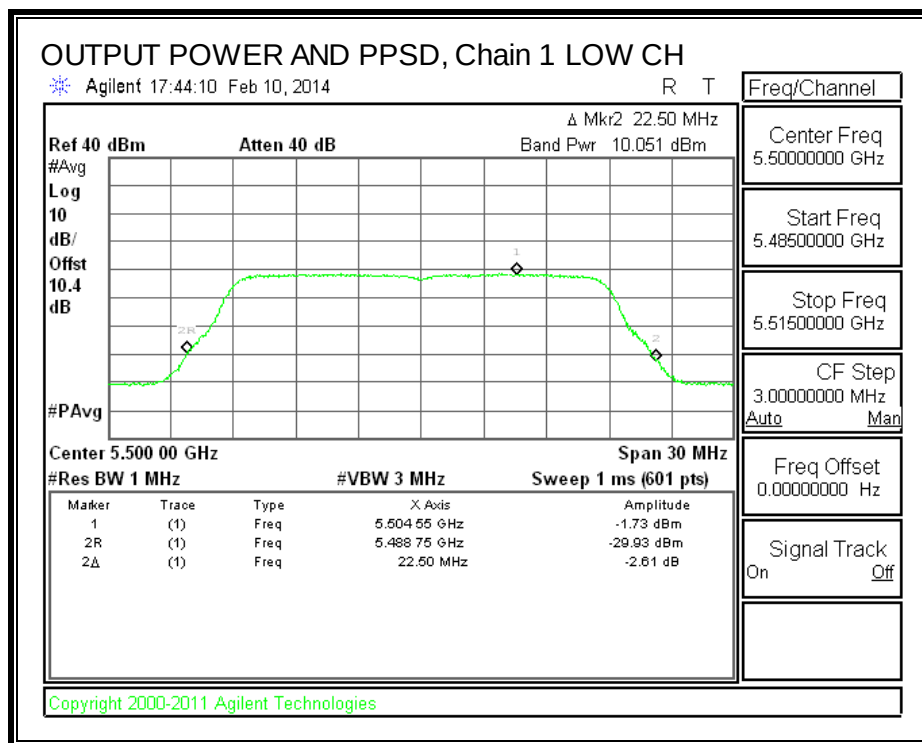
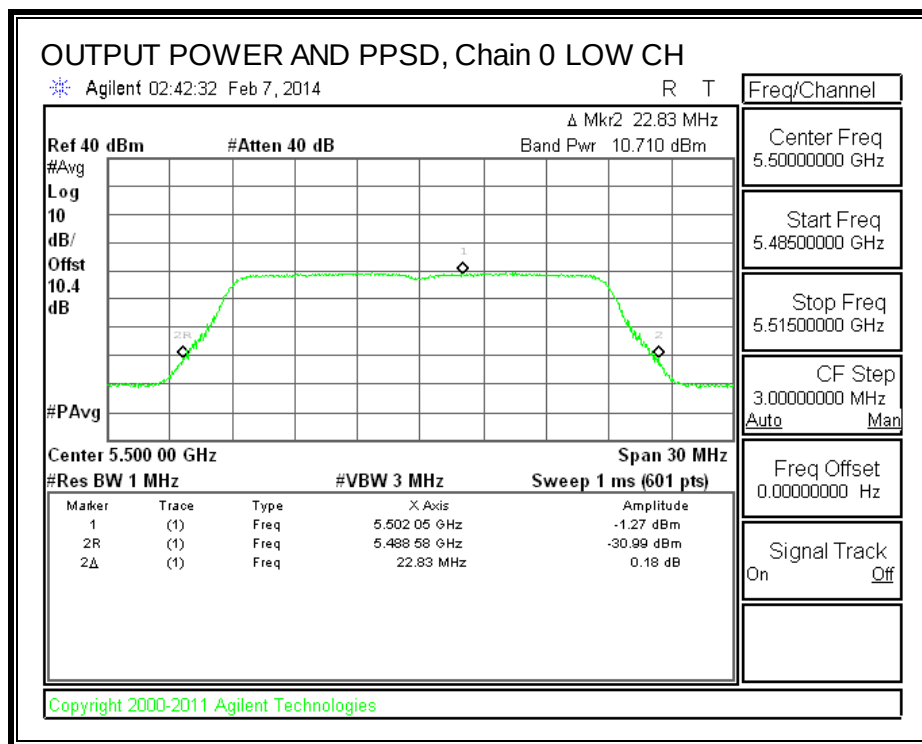




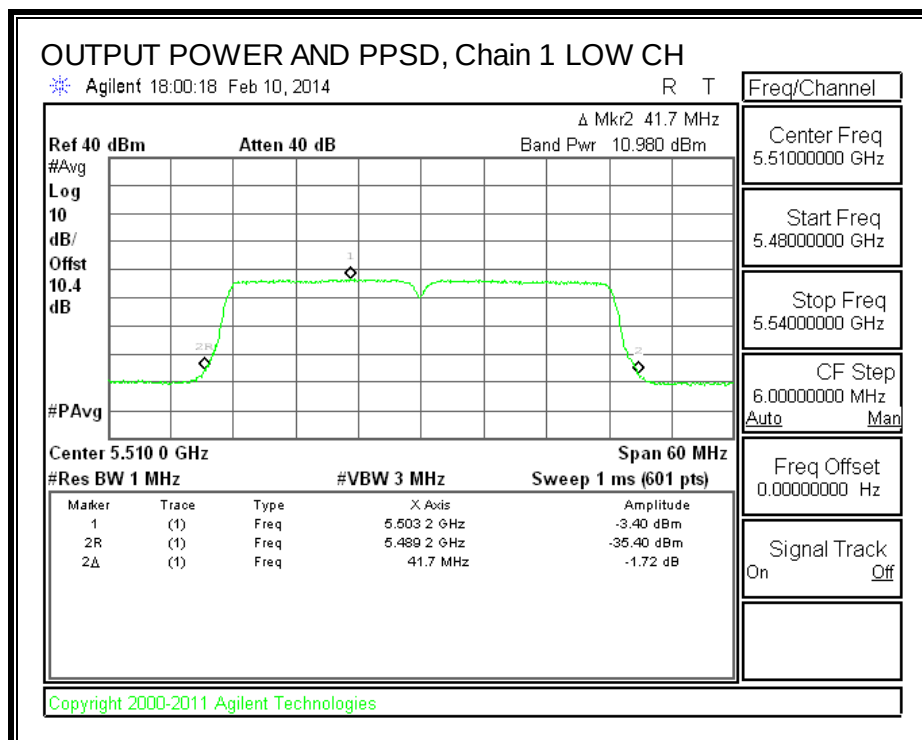
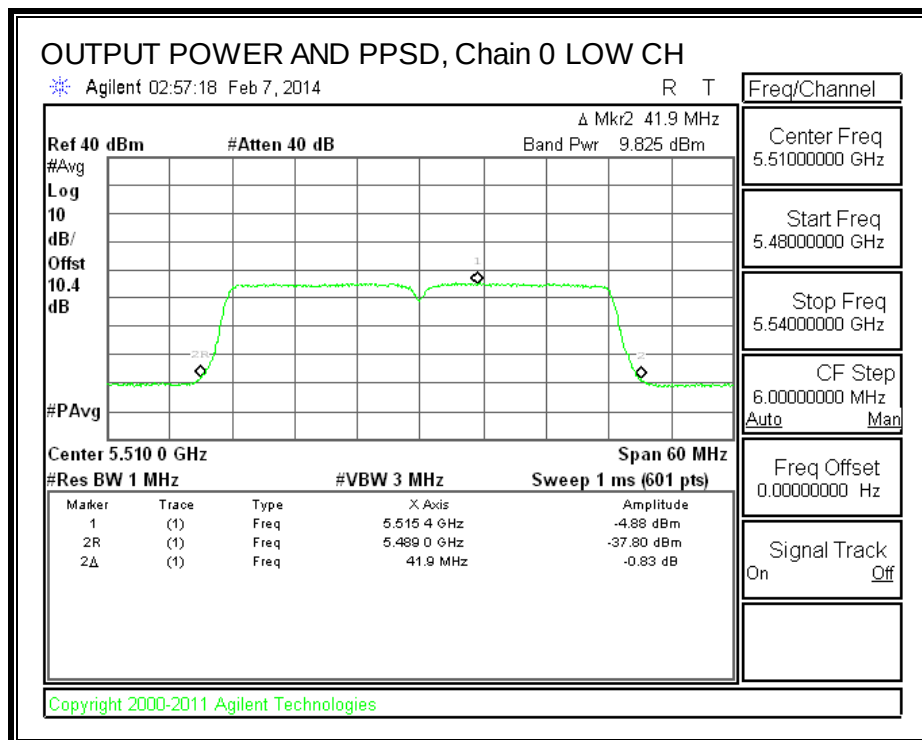
802.11a 5.5G OUTPUT POWER AND PPSD, Chain 0



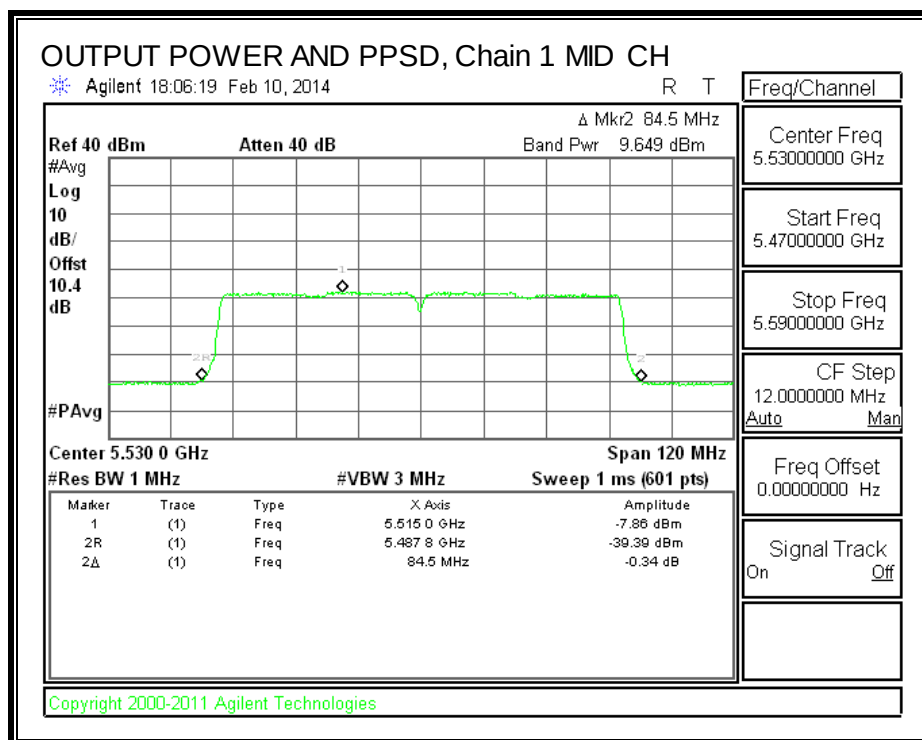
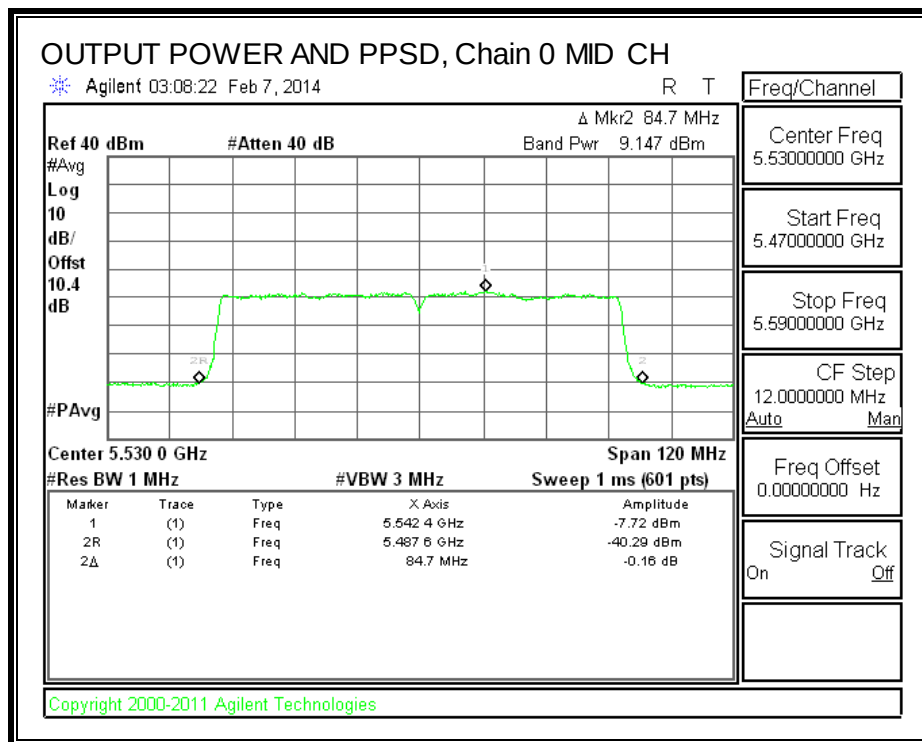
802.11n HT20 5.5G OUTPUT POWER AND PPSD, Chain 0 LOW CH



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



802.11ac HT80 5.5G OUTPUT POWER AND PPSD, Chain 0



10.4. 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

10.4.1. 802.11a MODE IN THE 5.2 GHz BAND

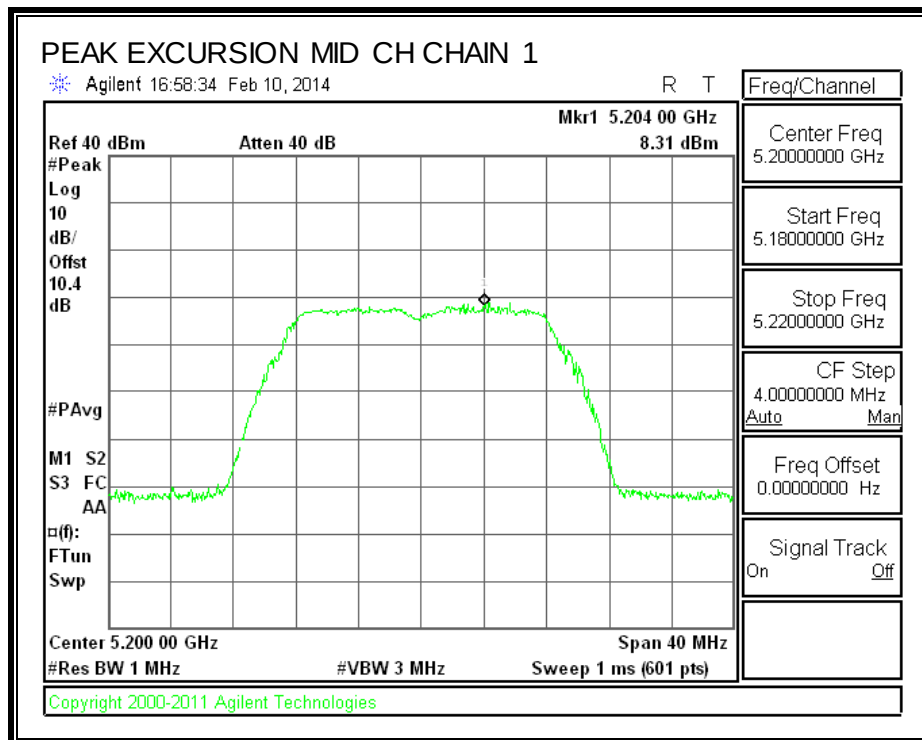
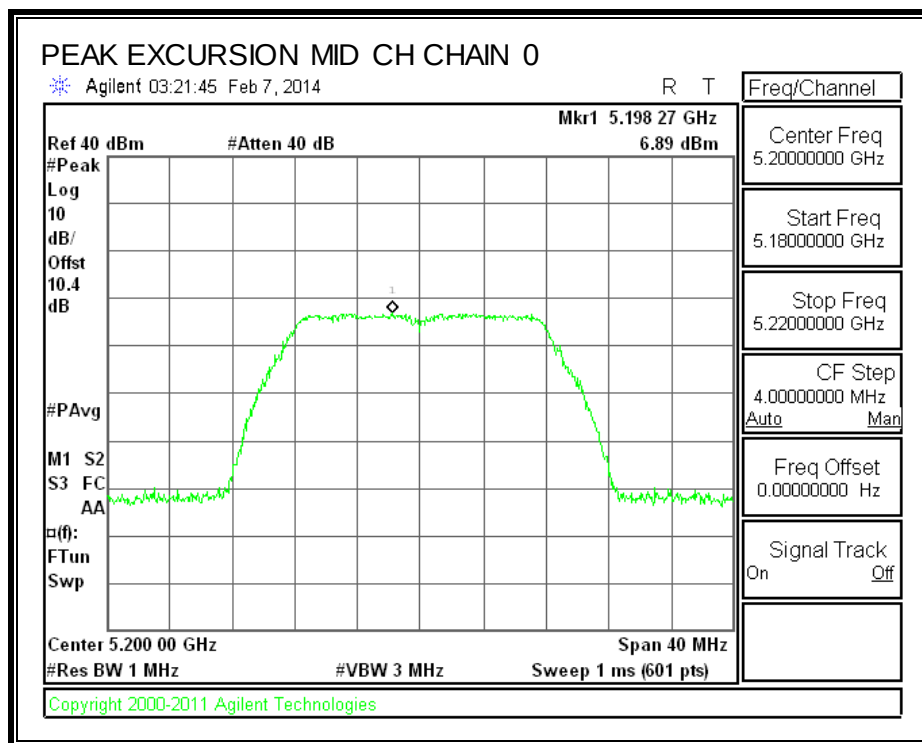
Chain 0

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5200	6.89	-1.70	0.30	8.29	13	-4.71

Chain 1

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5200	8.31	-0.78	0.30	8.79	13	-4.21

PEAK EXCURSION



10.4.1. 802.11n HT20 MODE IN THE 5.2 GHz BAND

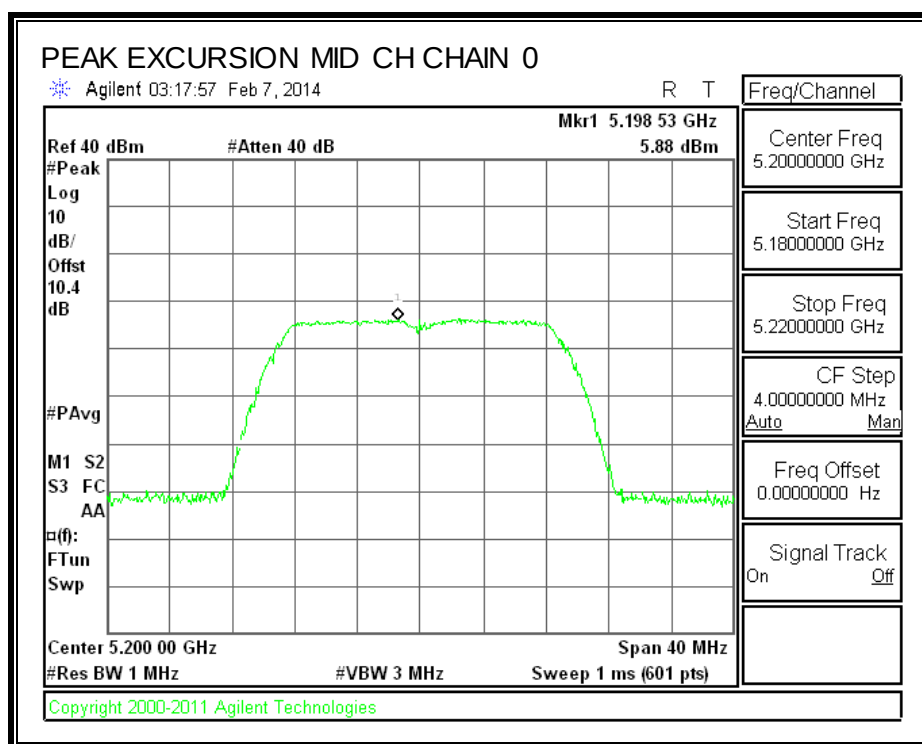
Chain 0

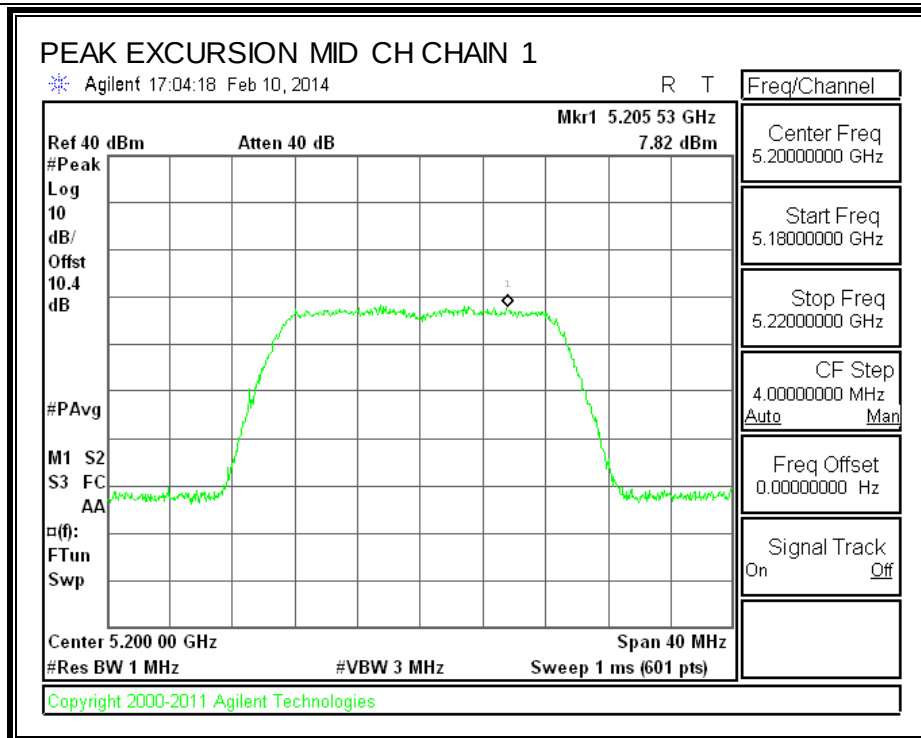
Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5200	5.88	-1.45	0.60	6.73	13	-6.27

Chain 1

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5200	7.82	-1.72	0.60	8.94	13	-4.06

PEAK EXCURSION





10.4.1. 802.11n HT40 MODE IN THE 5.2 GHz BAND

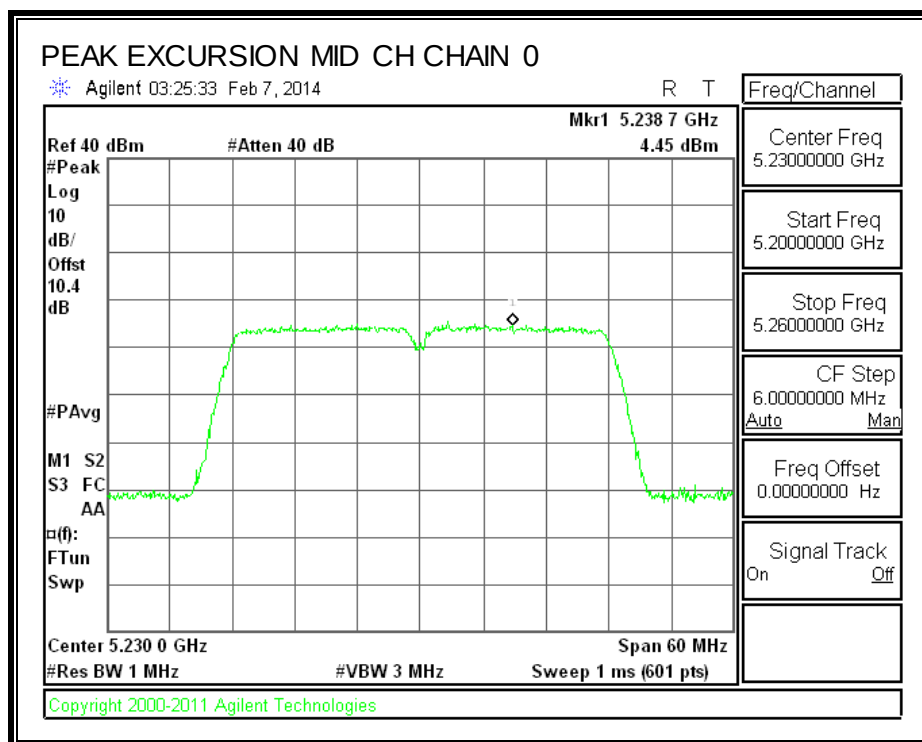
Chain 0

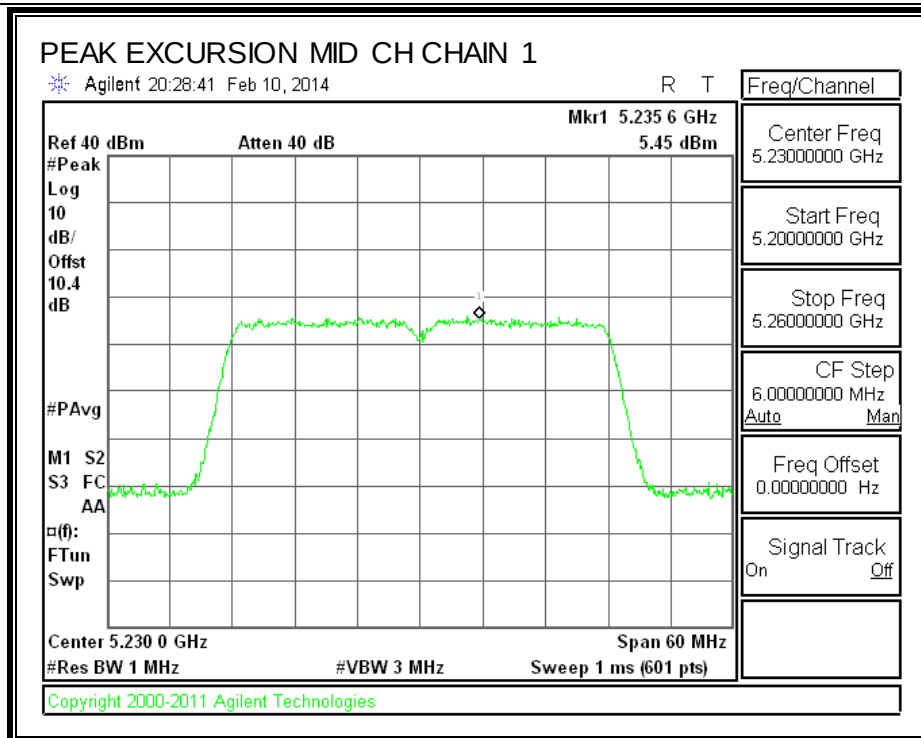
Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5230	4.450	-3.44	1.10	6.79	13	-6.21

Chain 1

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5230	5.450	-4.49	1.10	8.84	13	-4.16

PEAK EXCURSION





10.4.1. 802.11ac HT80 MODE IN THE 5.2 GHz BAND

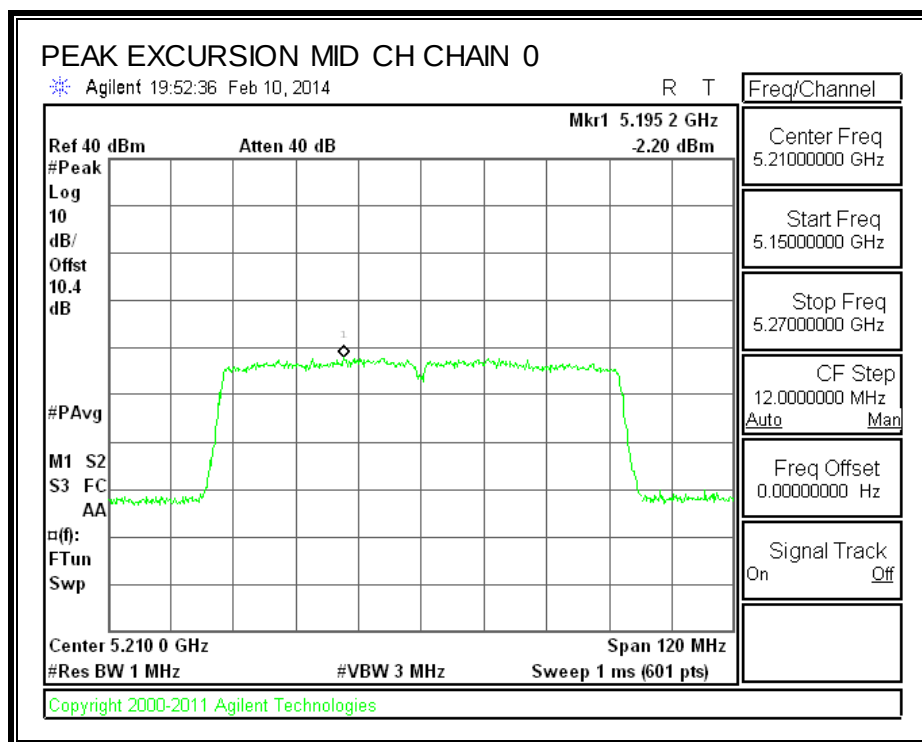
Chain 0

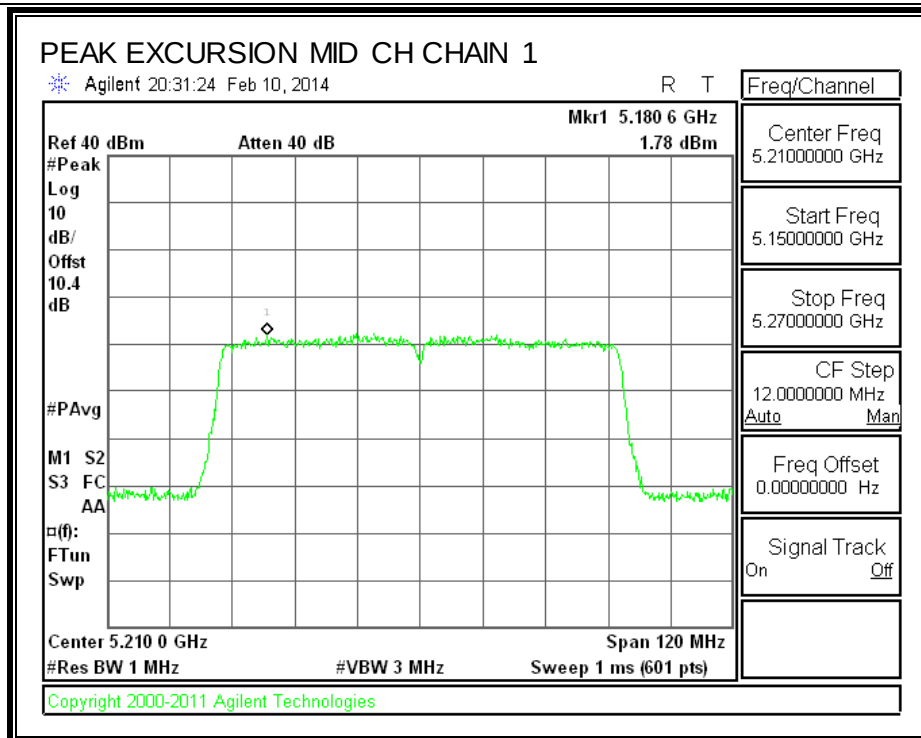
Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5210	-2.200	-7.23	1.83	3.20	13	-9.80

Chain 1

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5210	1.780	-7.51	1.83	7.46	13	-5.54

PEAK EXCURSION





11. TRANSMITTER ABOVE 1 GHz

LIMITS

FCC §15.205 and §15.209

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

TEST PROCEDURE

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

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

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

For Band edge 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.

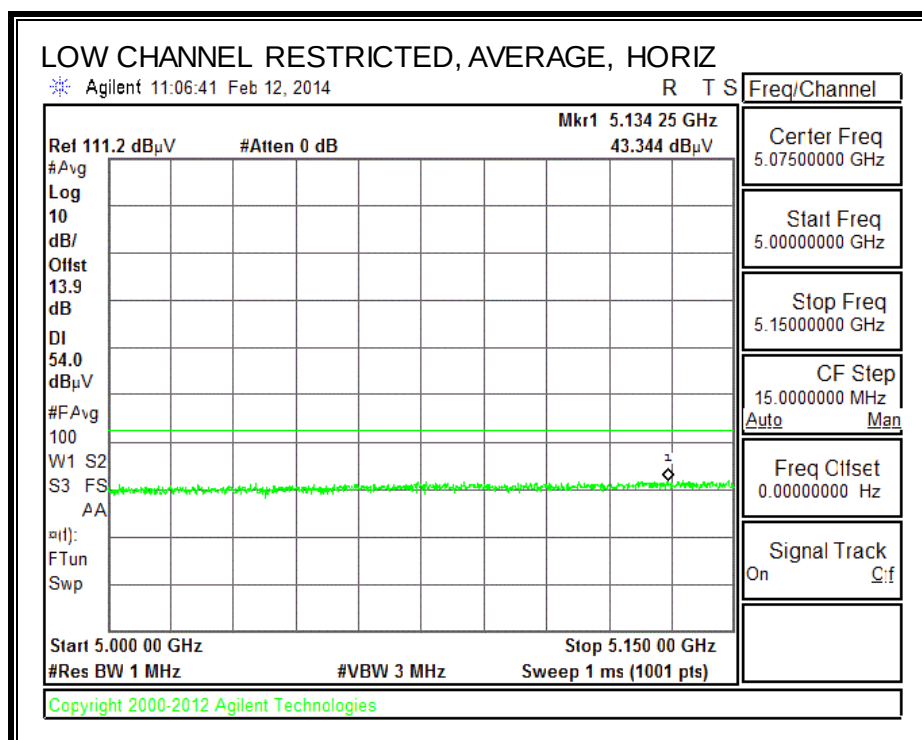
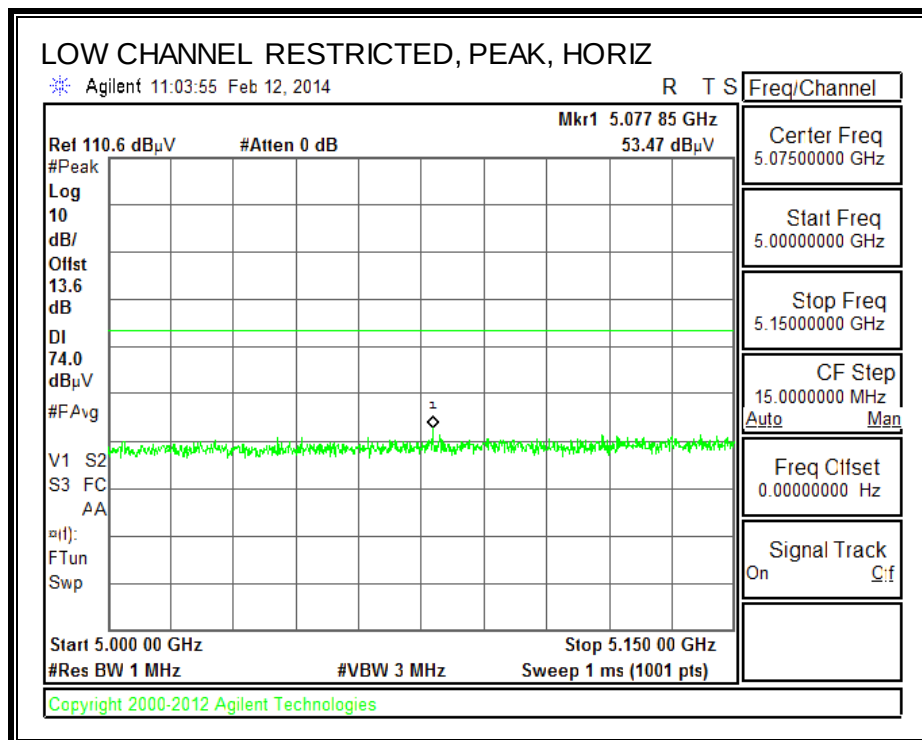
For Harmonic measurements using Max RMS method.

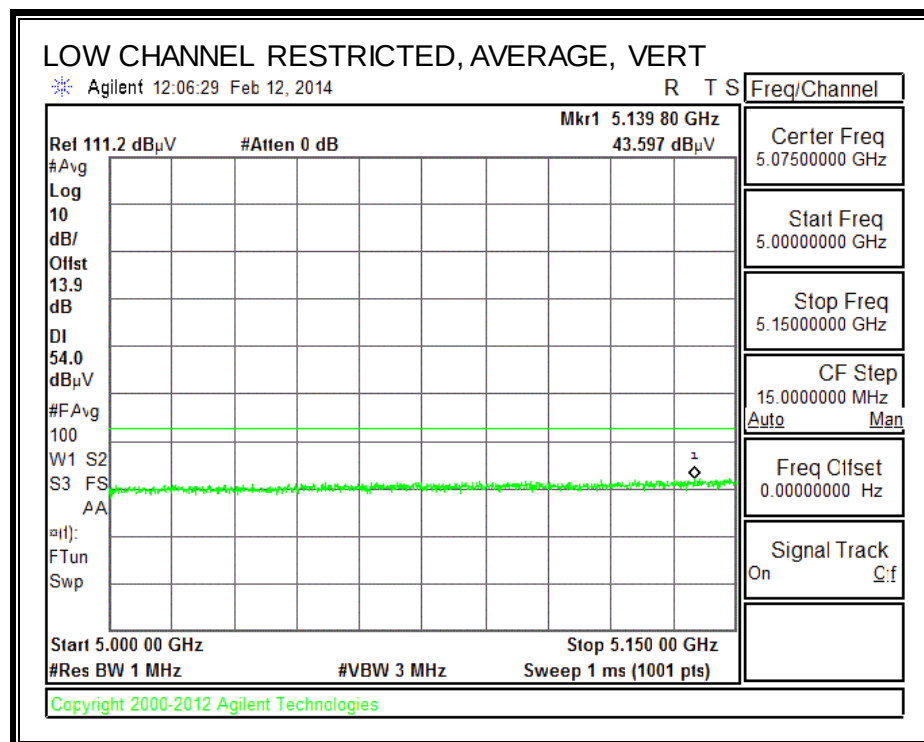
The spectrum from 1GHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

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

11.1. 5.2 GHz

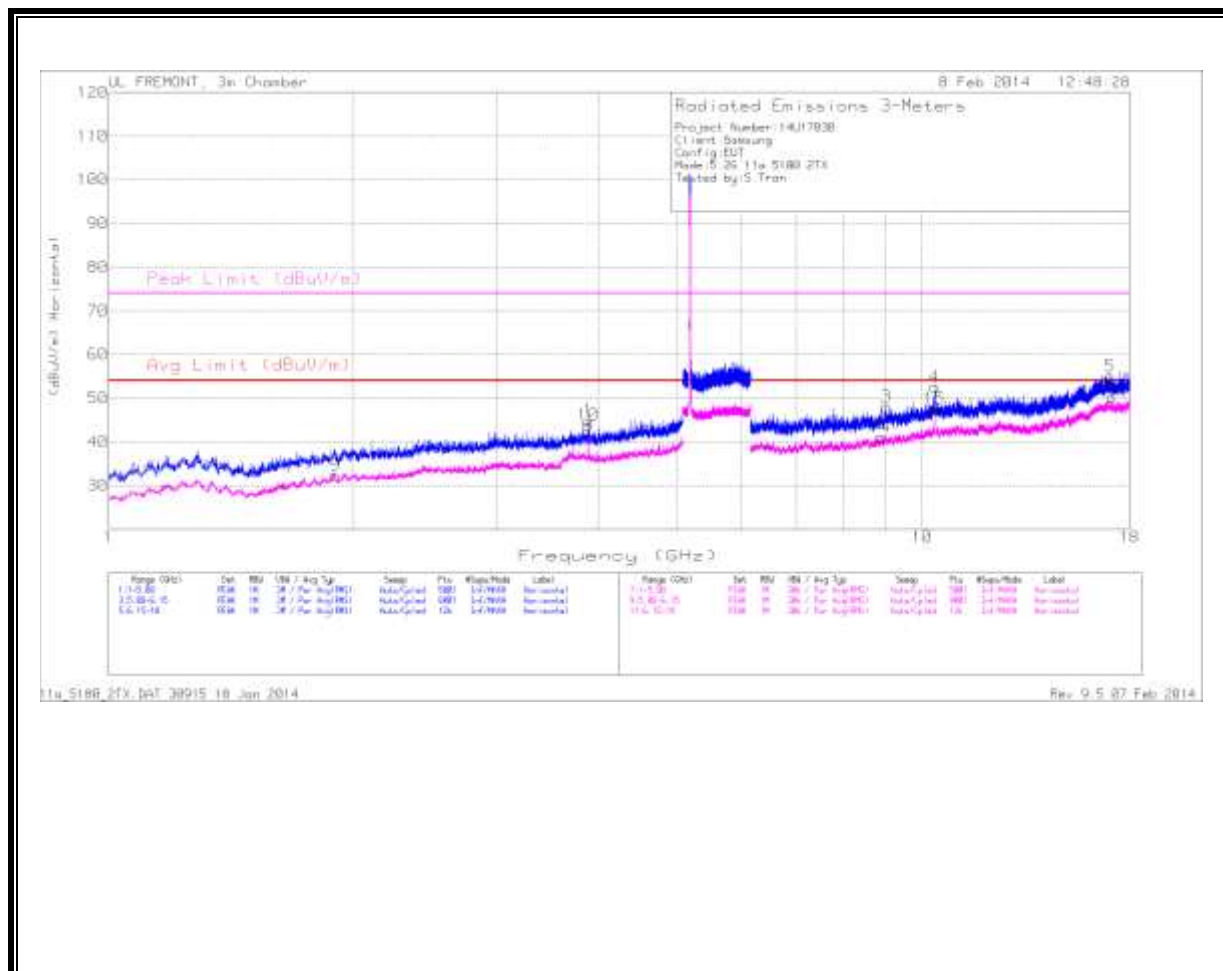
11.1.1. TX ABOVE 1 GHz 802.11a MODE IN THE 5.2 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)



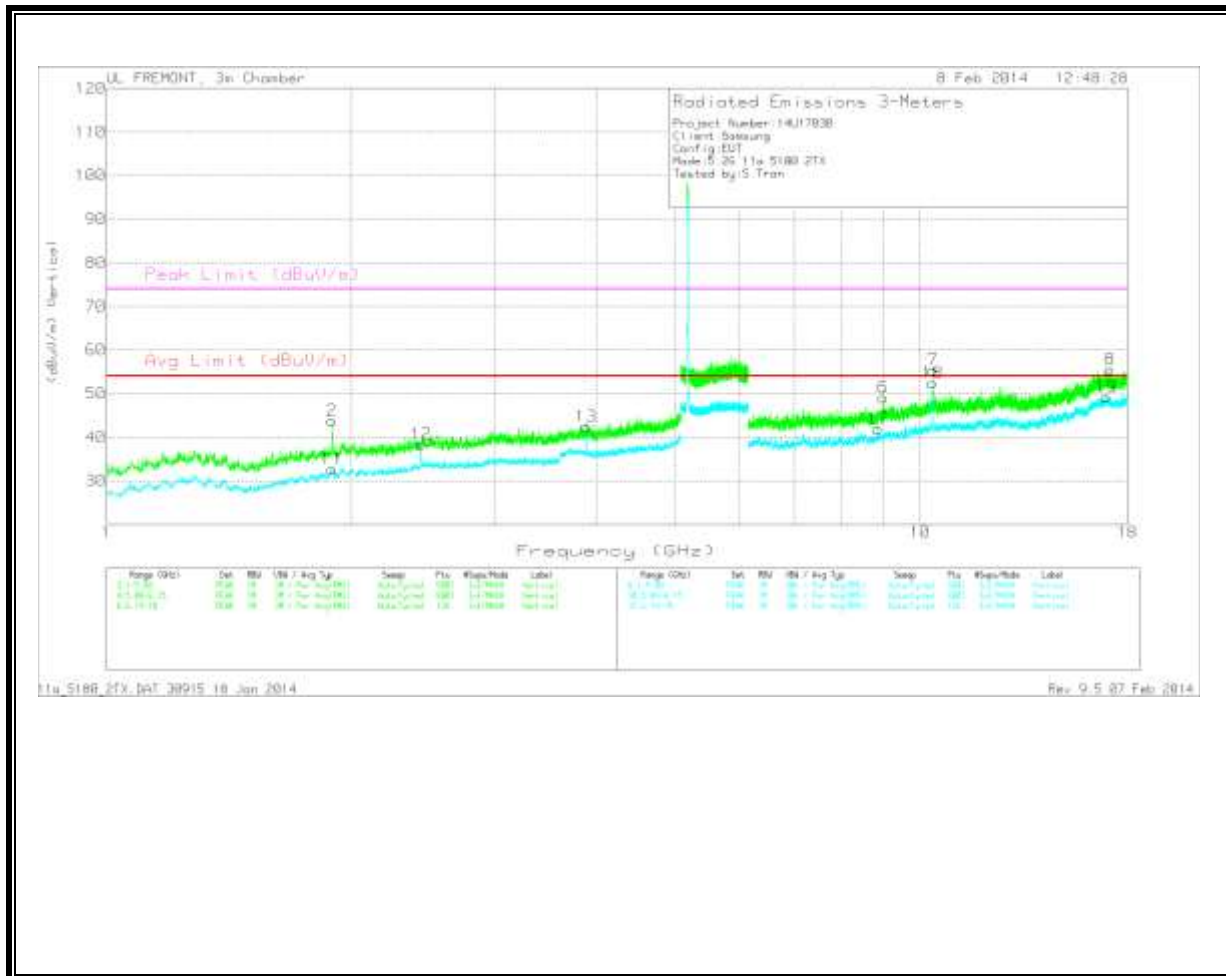


HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL
HORIZONTAL

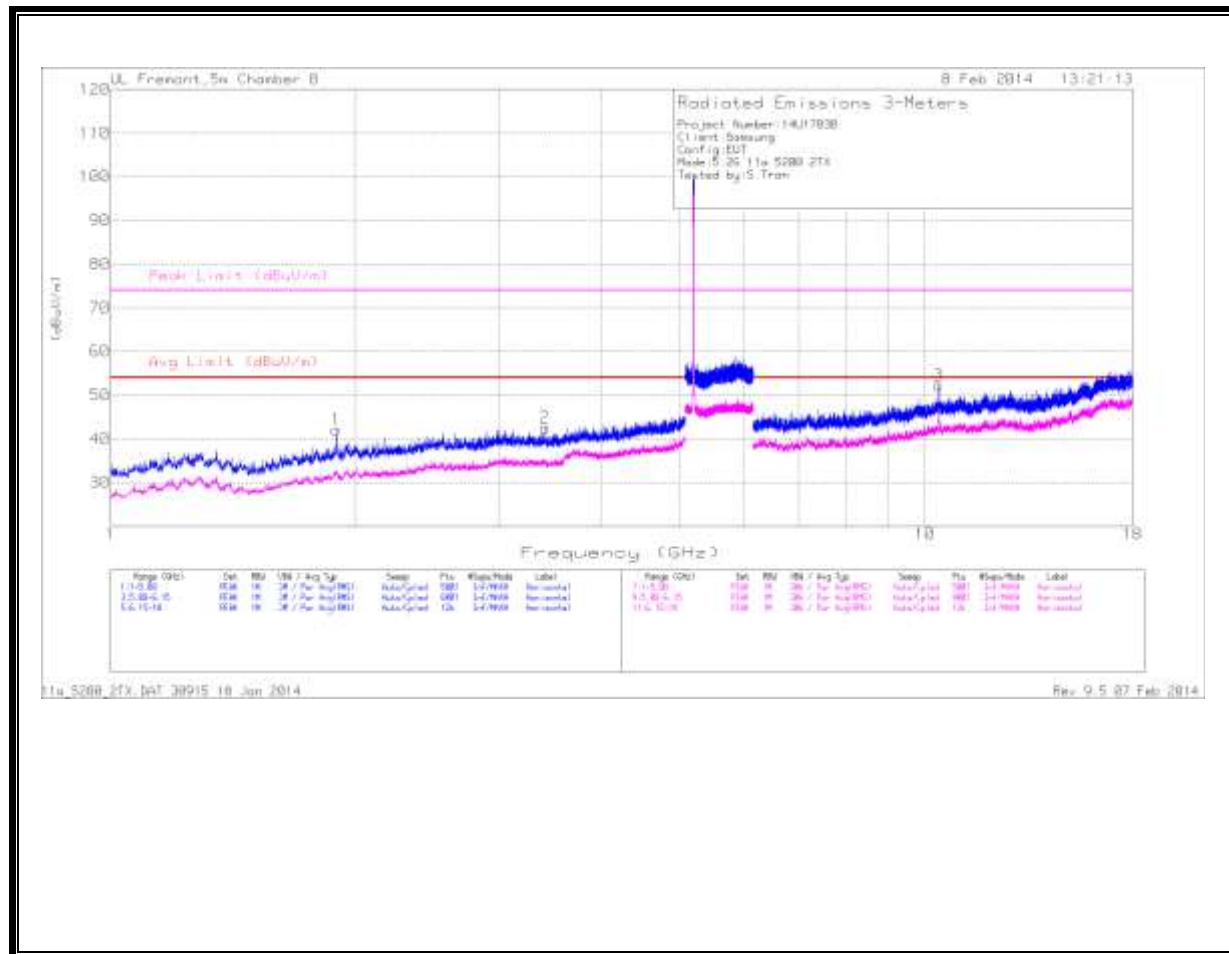


Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

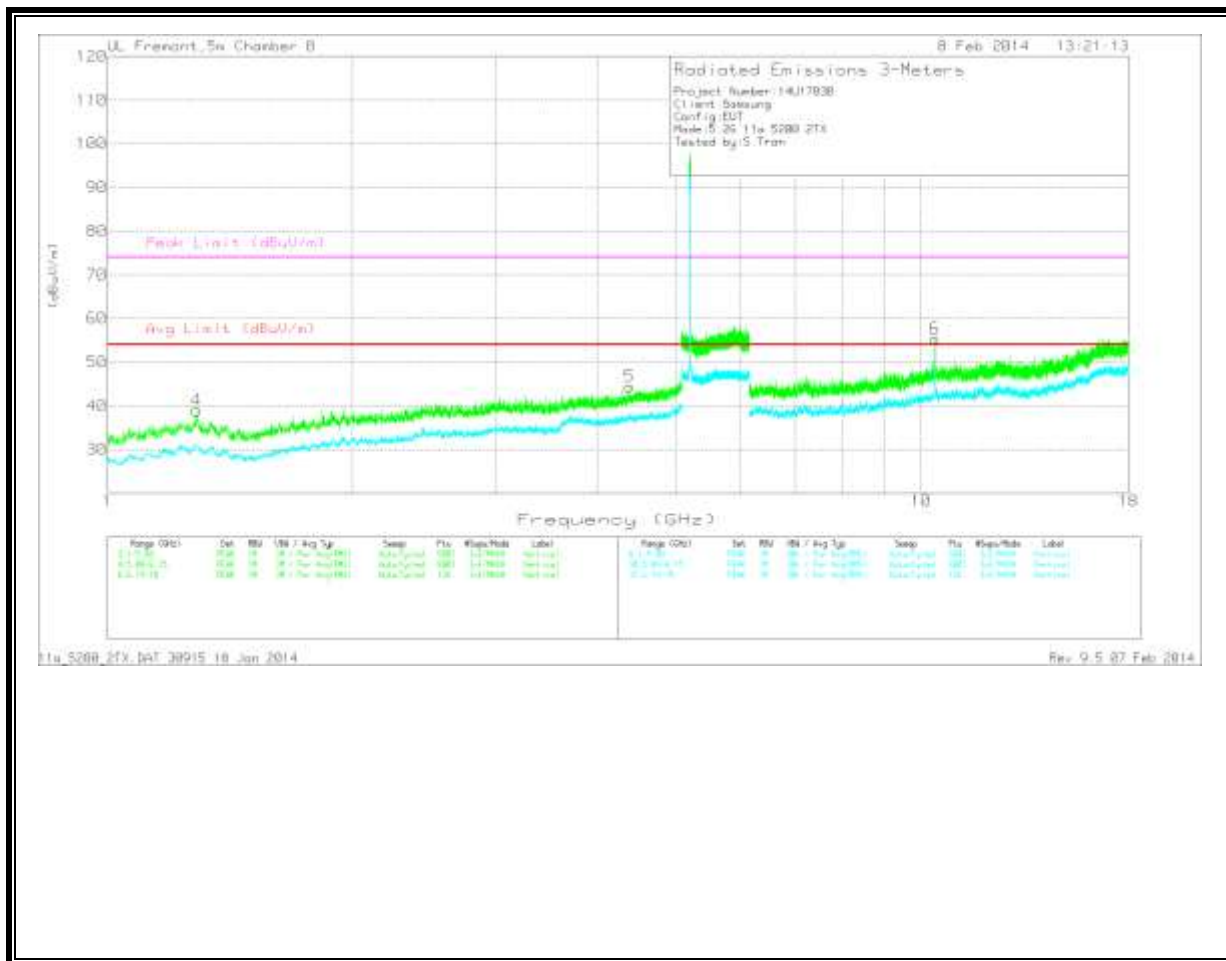


Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/ Ftr/Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	1.893	43.95	PK	30.1	-30.3	43.75	-	-	74	-30.25	0-360	201	V
11	1.894	32.88	Avq	30.1	-30.3	32.68	54	-21.32	-	-	0-360	201	V
9	1.9	32.56	Avq	30.2	-30.4	32.36	54	-21.64	-	-	0-360	201	H
12	2.435	36.73	Avq	31.8	-30.1	38.43	54	-15.57	-	-	0-360	201	V
10	3.885	39.72	Avq	32.8	-28.7	43.82	54	-10.18	-	-	0-360	100	H
13	3.885	38.36	Avq	32.8	-28.7	42.46	54	-11.54	-	-	0-360	201	V
1	3.886	40.78	PK	32.8	-28.7	44.88	-	-	74	-29.12	0-360	201	H
17	8.872	29.25	Avq	35.7	-23	41.95	54	-12.05	-	-	0-360	201	V
14	8.902	28.78	Avq	35.7	-23.4	41.08	54	-12.92	-	-	0-360	100	H
6	9.008	36.62	PK	35.8	-23.3	49.12	-	-	74	-24.88	0-360	201	V
3	9.036	35.23	PK	35.8	-22.9	48.13	-	-	74	-25.87	0-360	201	H
15	10.358	31.6	Avq	37	-21	47.6	54	-6.4	-	-	0-360	201	H
4	10.36	36.49	PK	37	-20.9	52.59	-	-	74	-21.41	0-360	201	H
7	10.369	39.34	PK	37	-21	55.34	-	-	74	-18.66	0-360	201	V
19	16.929	26.82	Avq	41.7	-19.3	49.22	54	-4.78	-	-	0-360	100	V
5	17.031	32.84	PK	41.6	-19.4	55.04	-	-	74	-18.96	0-360	201	H
8	17.118	33.43	PK	41.2	-19.1	55.53	-	-	74	-18.47	0-360	201	V
16	17.125	28.24	Avq	41.2	-19.3	50.14	54	-3.86	-	-	0-360	201	H



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



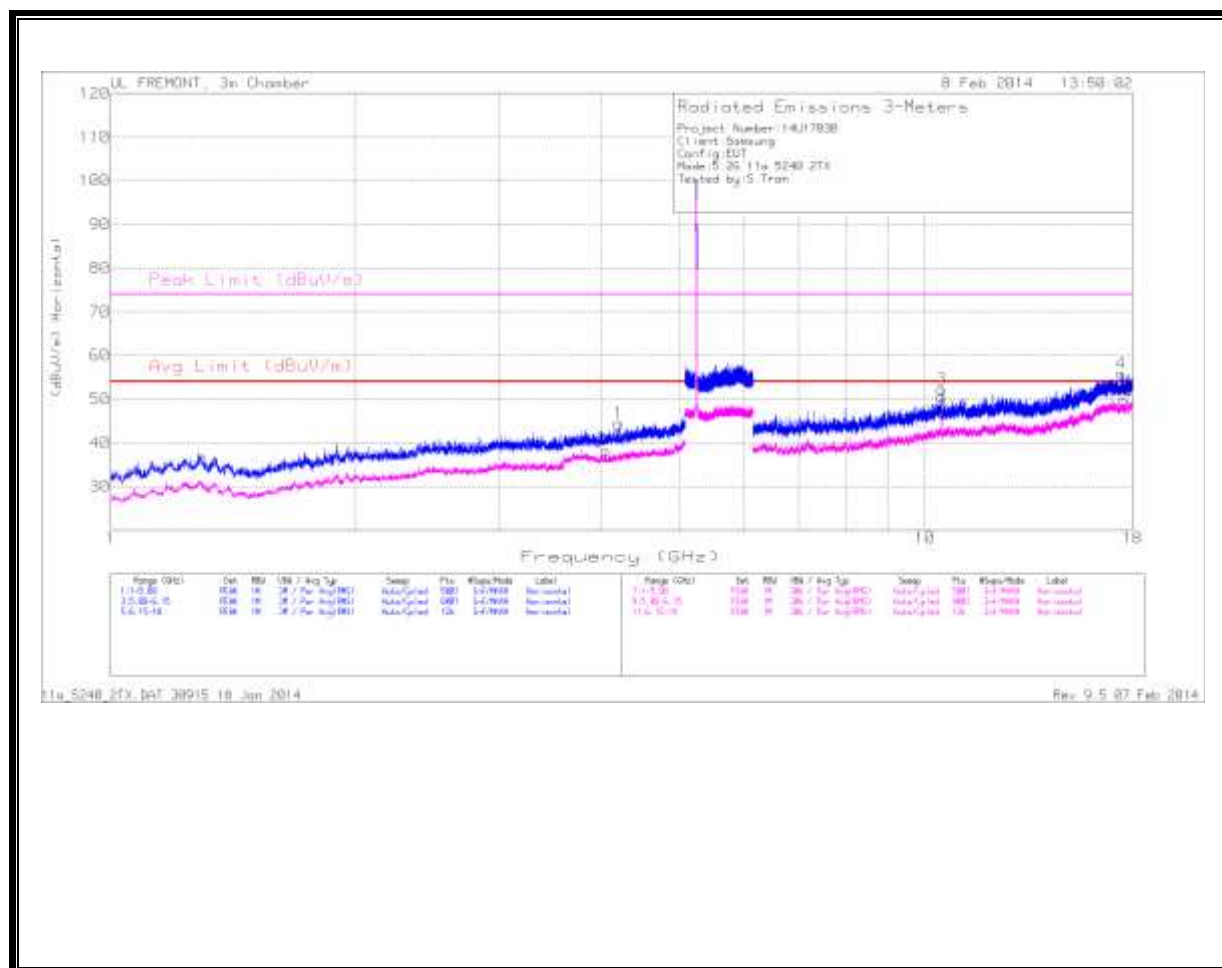
Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

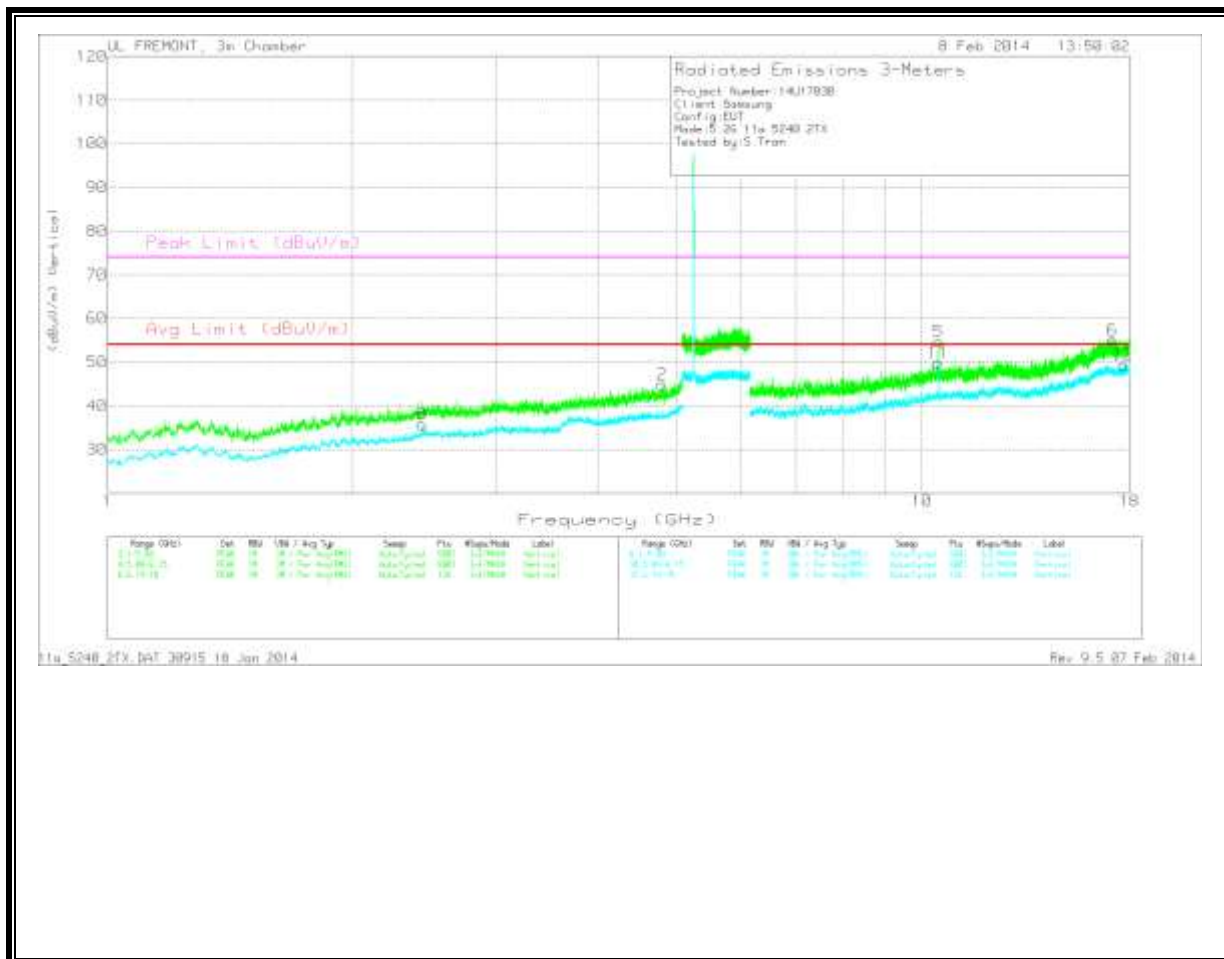
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 1.286	41.01	PK	29.2	-31.2	39.01	-	-	74	-34.99	0-360	100	V
5	* 4.382	38.99	PK	33.2	-27.8	44.39	-	-	74	-29.61	0-360	201	V
1	1.893	42.33	PK	30.1	-30.3	42.13	-	-	74	-31.87	0-360	201	H
2	3.418	39.13	PK	32.4	-29	42.53	-	-	74	-31.47	0-360	100	H
3	10.399	36.7	PK	37.1	-21.5	52.3	-	-	74	-21.7	0-360	201	H
6	10.404	39.95	PK	37.1	-21.7	55.35	-	-	74	-18.65	0-360	201	V

* - indicates frequency in CFR 15.205/IC 7.2.2 Restricted Band

PK - Peak detector



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

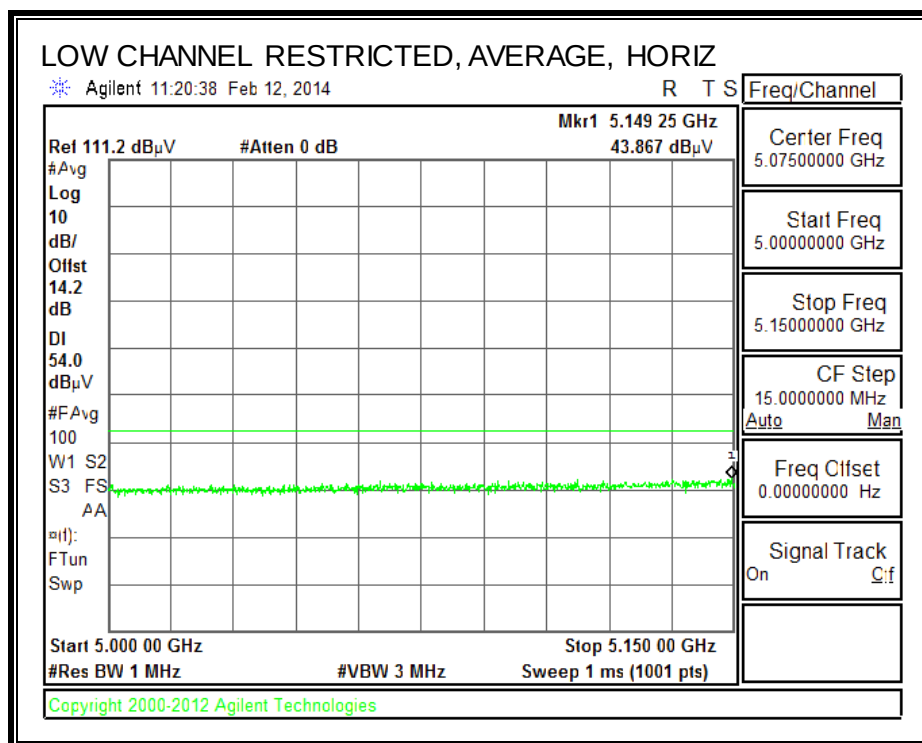
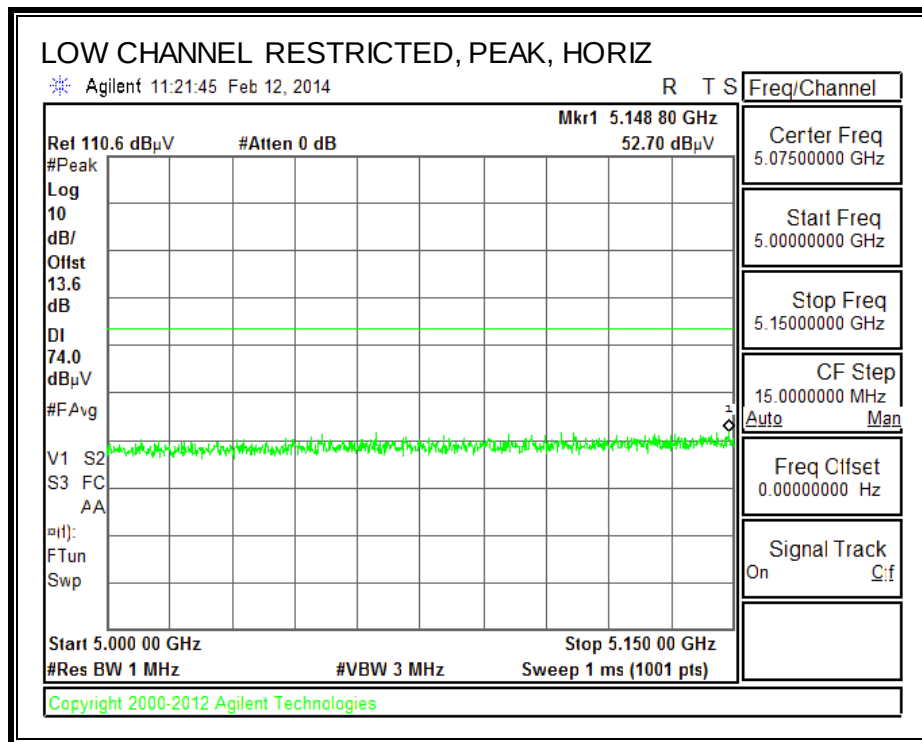


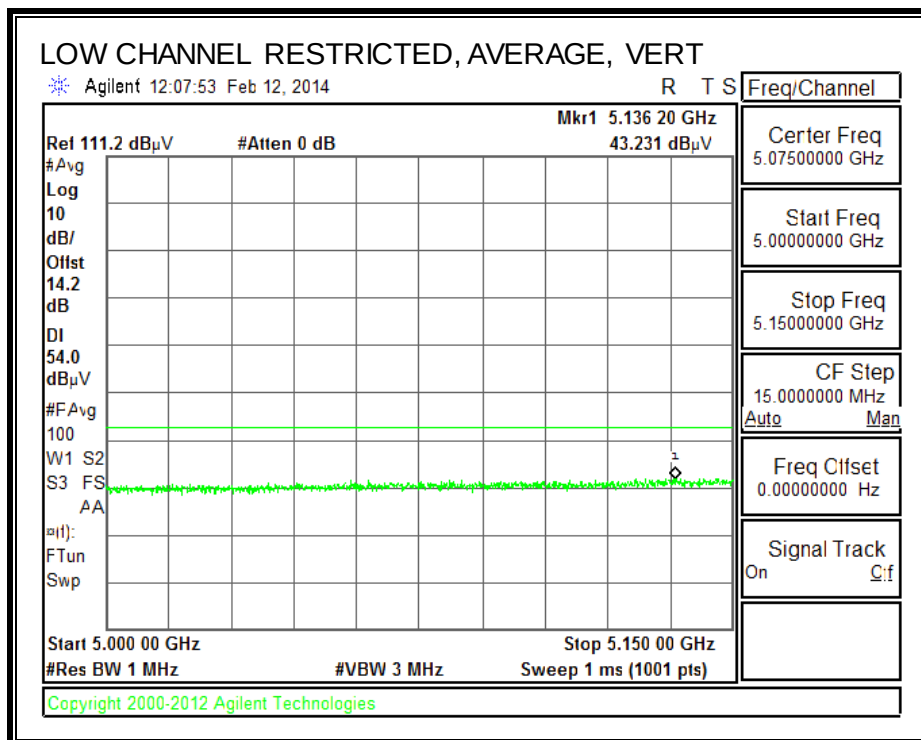
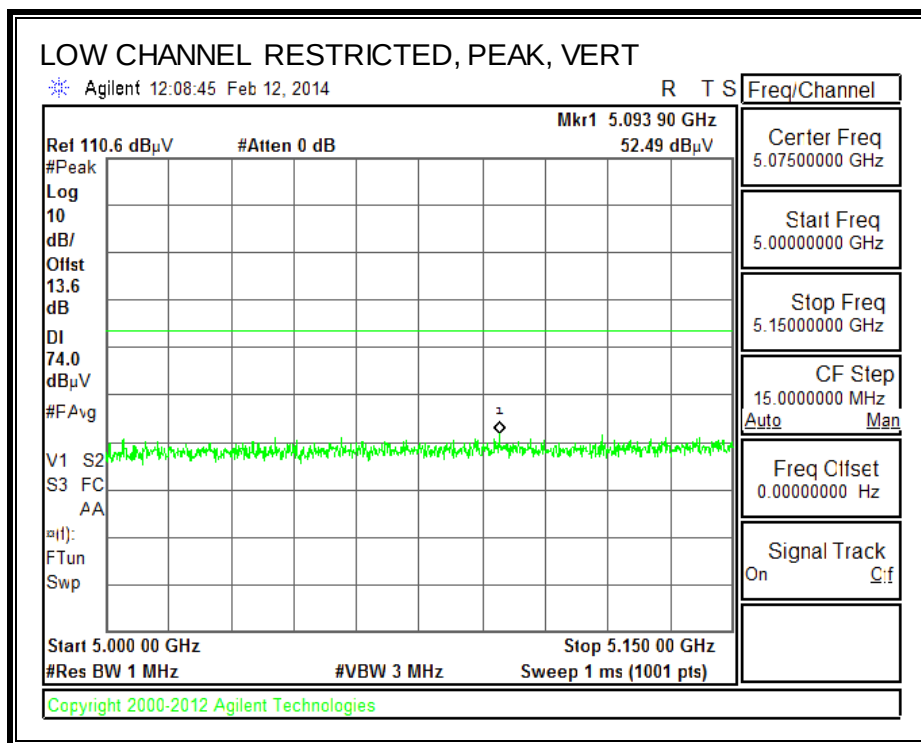
Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/ Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
8	2.434	34.06	Avg	31.8	-30.1	35.76	54	-18.24	-	-	0-360	100	V
7	4.058	33.5	Avg	32.9	-28.3	38.1	54	-15.9	-	-	0-360	201	H
1	4.206	40.15	PK	32.9	-28.6	44.45	-	-	74	-29.55	0-360	201	H
2	4.798	38.25	PK	33.5	-26.9	44.85	-	-	74	-29.15	0-360	100	V
11	10.475	34.44	Avg	37.2	-21.7	49.94	54	-4.06	-	-	0-360	201	V
9	10.48	31.68	Avg	37.2	-21.7	47.18	54	-6.82	-	-	0-360	100	H
5	10.484	39.21	PK	37.2	-21.7	54.71	-	-	74	-19.29	0-360	201	V
3	10.491	36.8	PK	37.2	-21.7	52.3	-	-	74	-21.7	0-360	201	H
6	17.142	33.45	PK	41.1	-19.5	55.05	-	-	74	-18.95	0-360	201	V
4	17.424	33.47	PK	40.7	-18.2	55.97	-	-	74	-18.03	0-360	100	H
10	17.527	27.42	Avg	40.8	-18.3	49.92	54	-4.08	-	-	0-360	201	H
12	17.69	26.22	Avg	41	-17.8	49.42	54	-4.58	-	-	0-360	201	V

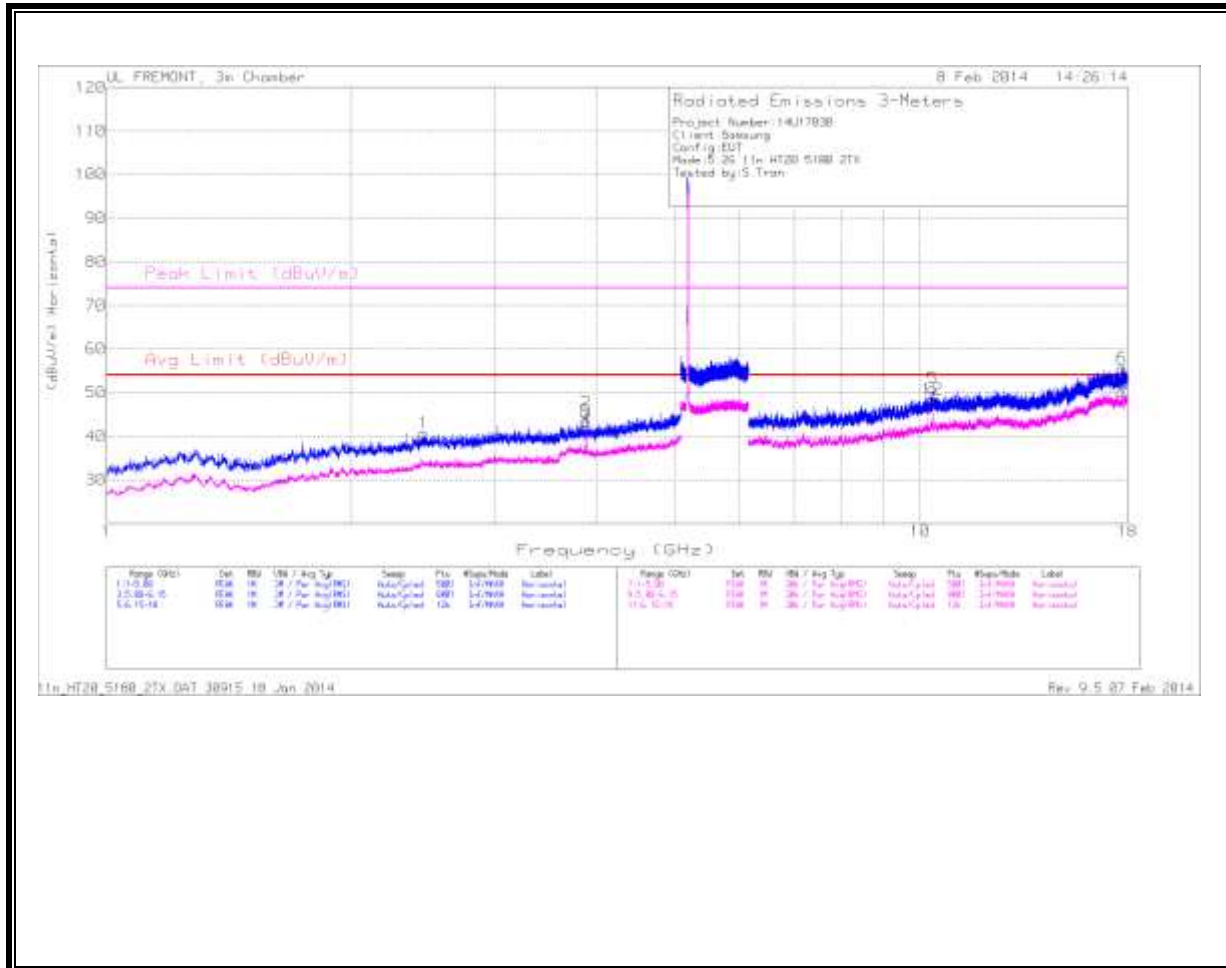
11.1.2. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.2 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)





HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL

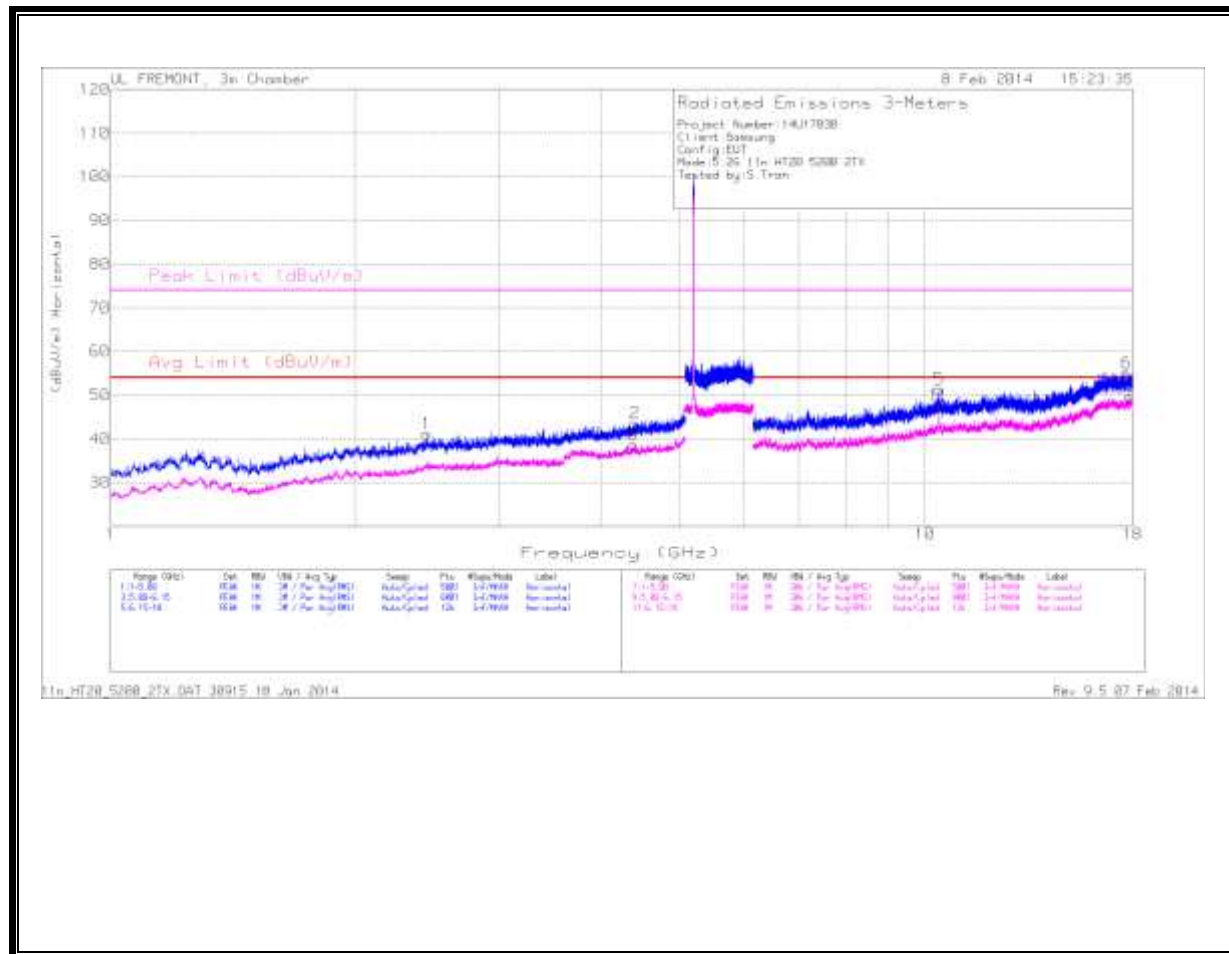


Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

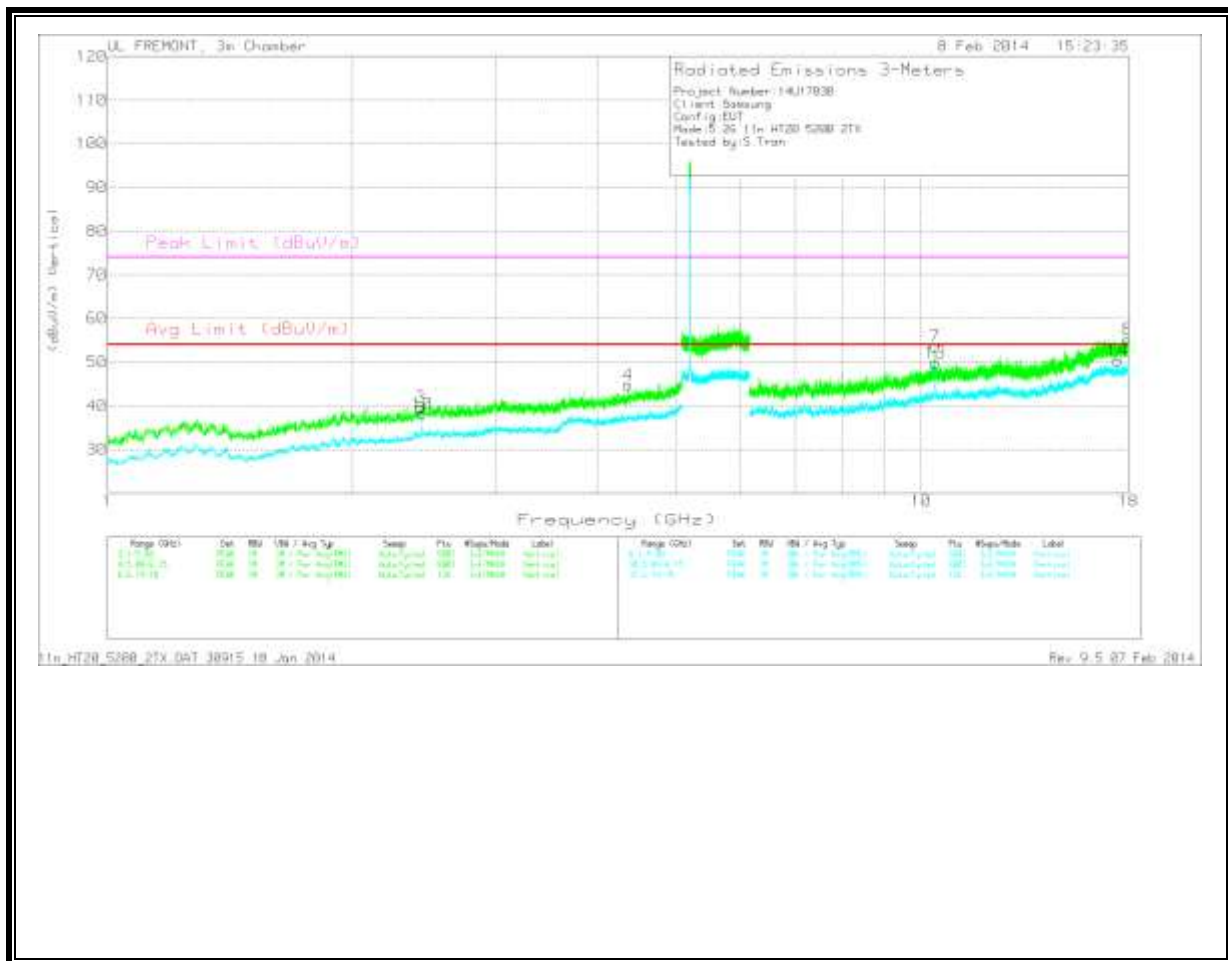


Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/ Ftr/Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
10	2.435	36.41	Avg	31.8	-30.1	38.11	54	-15.89	-	-	0-360	100	V
1	2.452	38.58	PK	31.9	-29.8	40.68	-	-	74	-33.32	0-360	201	H
3	2.452	38.83	PK	31.9	-29.8	40.93	-	-	74	-33.07	0-360	201	V
4	3.885	40.19	PK	32.8	-28.7	44.29	-	-	74	-29.71	0-360	201	V
9	3.885	39.36	Avg	32.8	-28.7	43.46	54	-10.54	-	-	0-360	100	H
11	3.885	37.81	Avg	32.8	-28.7	41.91	54	-12.09	-	-	0-360	201	V
2	3.886	41.31	PK	32.8	-28.7	45.41	-	-	74	-28.59	0-360	100	H
12	10.358	32.36	Avg	37	-21	48.36	54	-5.64	-	-	0-360	201	H
7	10.359	38.19	PK	37	-21	54.19	-	-	74	-19.81	0-360	201	V
5	10.366	35.05	PK	37	-21	51.05	-	-	74	-22.95	0-360	100	H
14	10.369	31.75	Avg	37	-21	47.75	54	-6.25	-	-	0-360	201	V
8	17.653	31.86	PK	41	-18.3	54.56	-	-	74	-19.44	0-360	100	V
13	17.687	26.84	Avg	41	-17.8	50.04	54	-3.96	-	-	0-360	100	H
15	17.692	26.23	Avg	41	-17.8	49.43	54	-4.57	-	-	0-360	201	V
6	17.71	33.31	PK	41.1	-18.9	55.51	-	-	74	-18.49	0-360	100	H



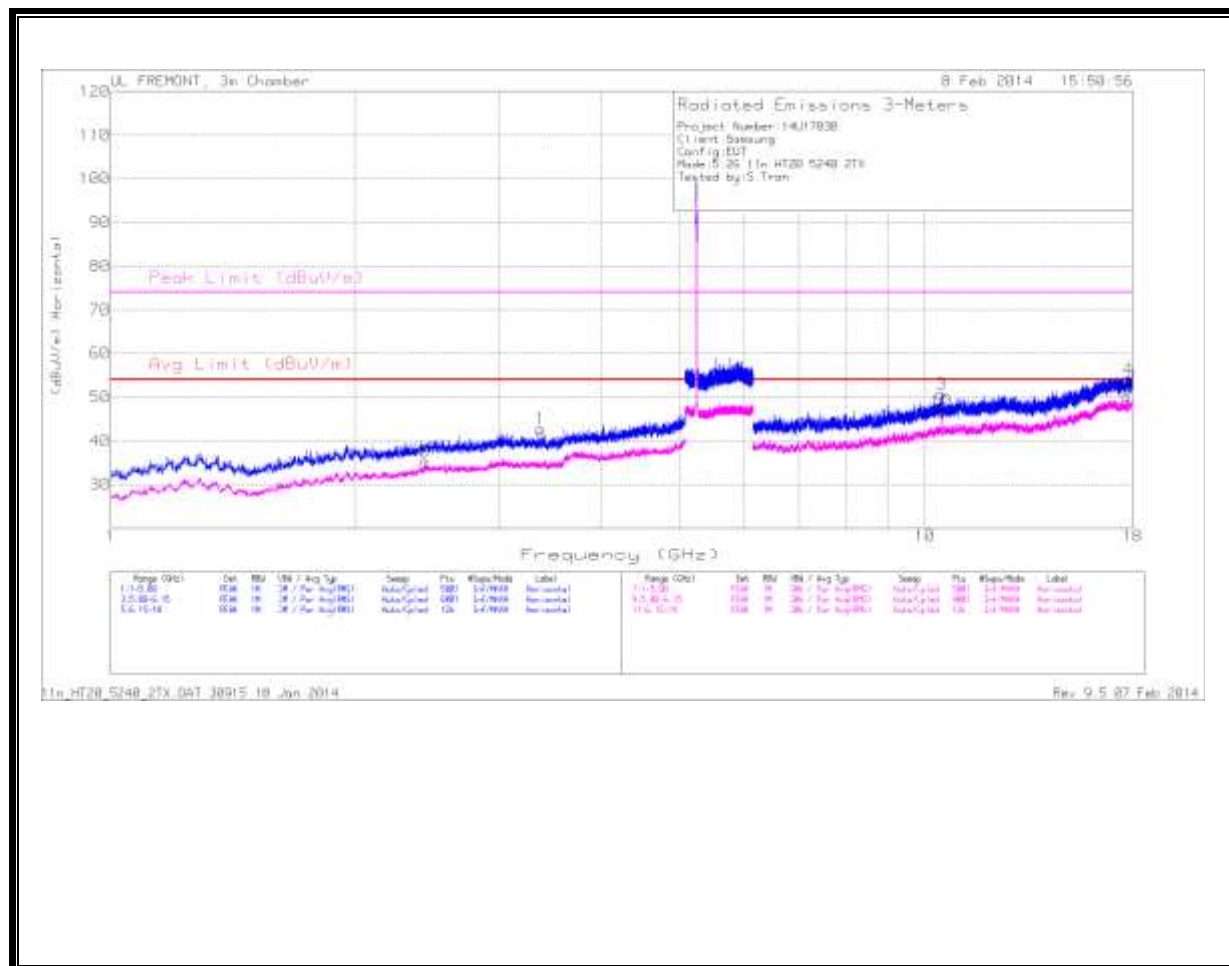
Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.



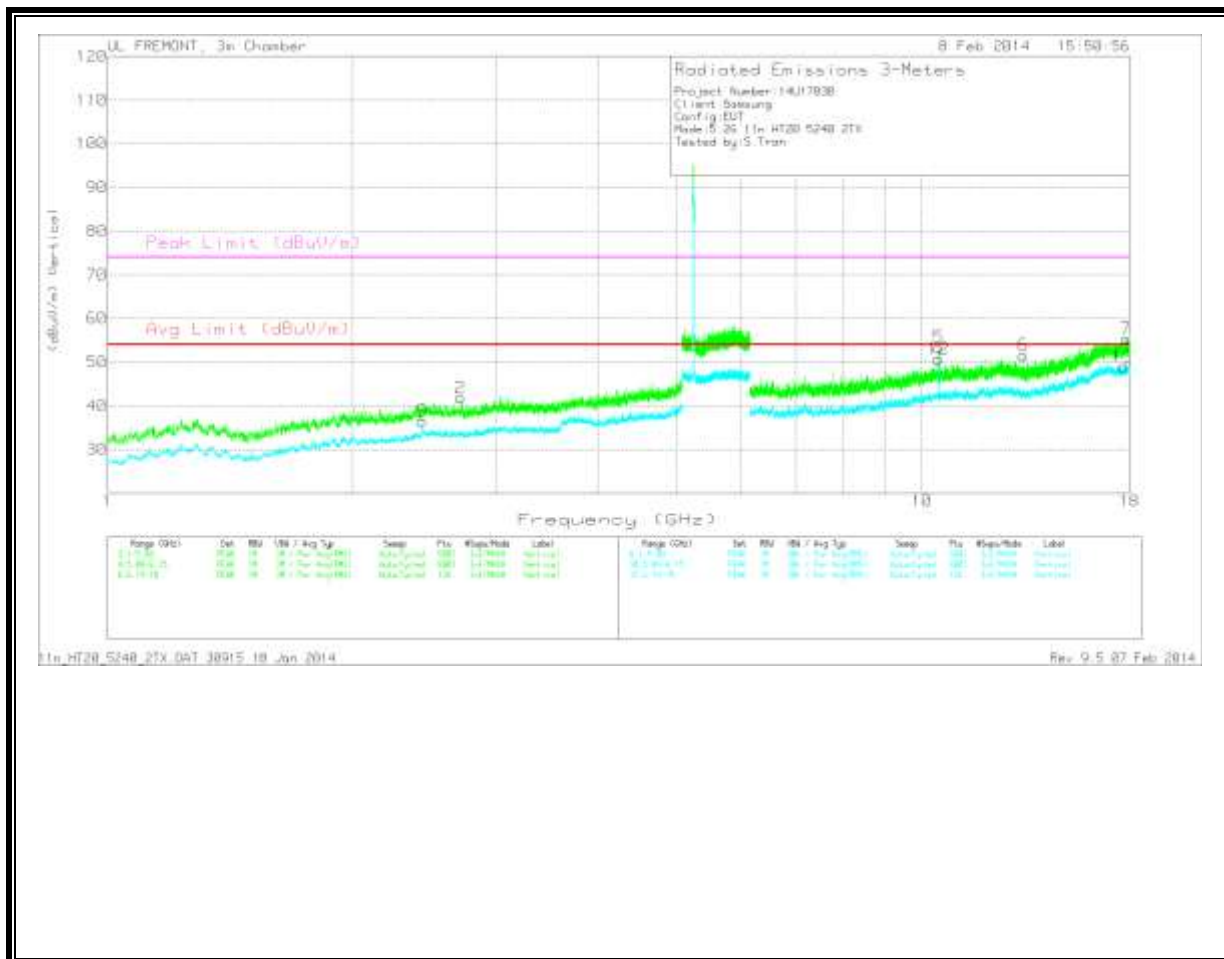
Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	2.422	37.98	PK	31.7	-30.1	39.58	-	-	74	-34.42	0-360	201	V
10	2.436	36.41	Avg	31.8	-30.1	38.11	54	-15.89	-	-	0-360	201	V
1	2.445	39.14	PK	31.8	-29.8	41.14	-	-	74	-32.86	0-360	201	H
4	4.364	39.63	PK	33.2	-28	44.83	-	-	74	-29.17	0-360	201	V
9	4.385	33.31	Avg	33.2	-27.9	38.61	54	-15.39	-	-	0-360	201	H
2	4.406	38.16	PK	33.3	-27.9	43.56	-	-	74	-30.44	0-360	100	H
11	10.399	31.93	Avg	37.1	-21.5	47.53	54	-6.47	-	-	0-360	100	H
7	10.409	38.23	PK	37.1	-21.7	53.63	-	-	74	-20.37	0-360	201	V
13	10.409	34.49	Avg	37.1	-21.7	49.89	54	-4.11	-	-	0-360	201	V
5	10.411	35.89	PK	37.1	-21.7	51.29	-	-	74	-22.71	0-360	201	H
14	17.451	27.39	Avg	40.8	-17.8	50.39	54	-3.61	-	-	0-360	100	V
6	17.693	31.98	PK	41	-17.9	55.08	-	-	74	-18.92	0-360	201	H
12	17.817	26.59	Avg	41.2	-18.2	49.59	54	-4.41	-	-	0-360	201	H
8	17.965	32.43	PK	41.4	-18.6	55.23	-	-	74	-18.77	0-360	100	V



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

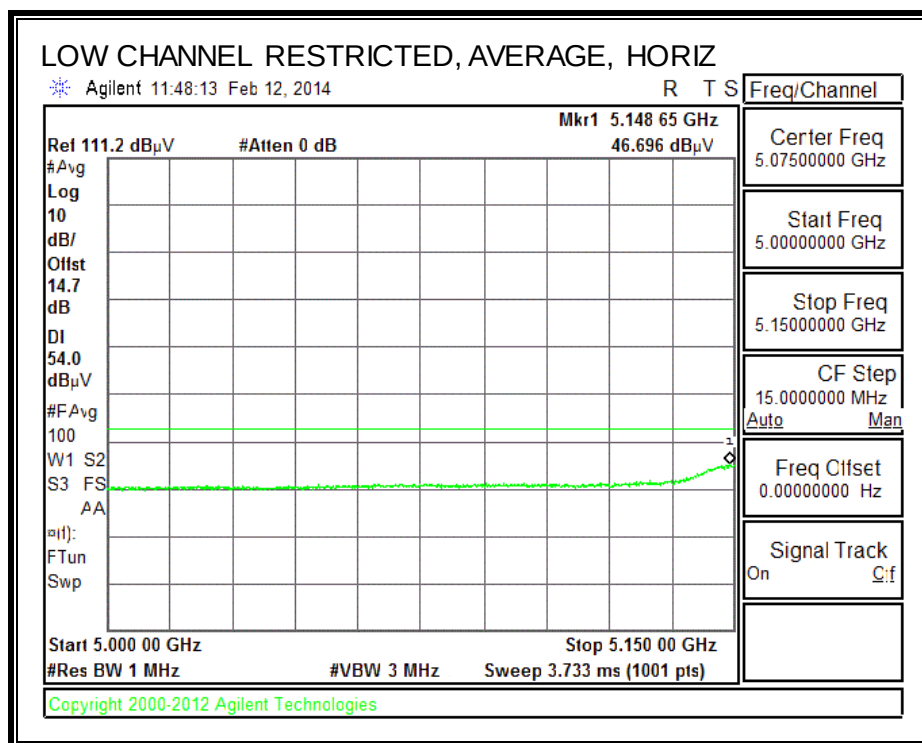
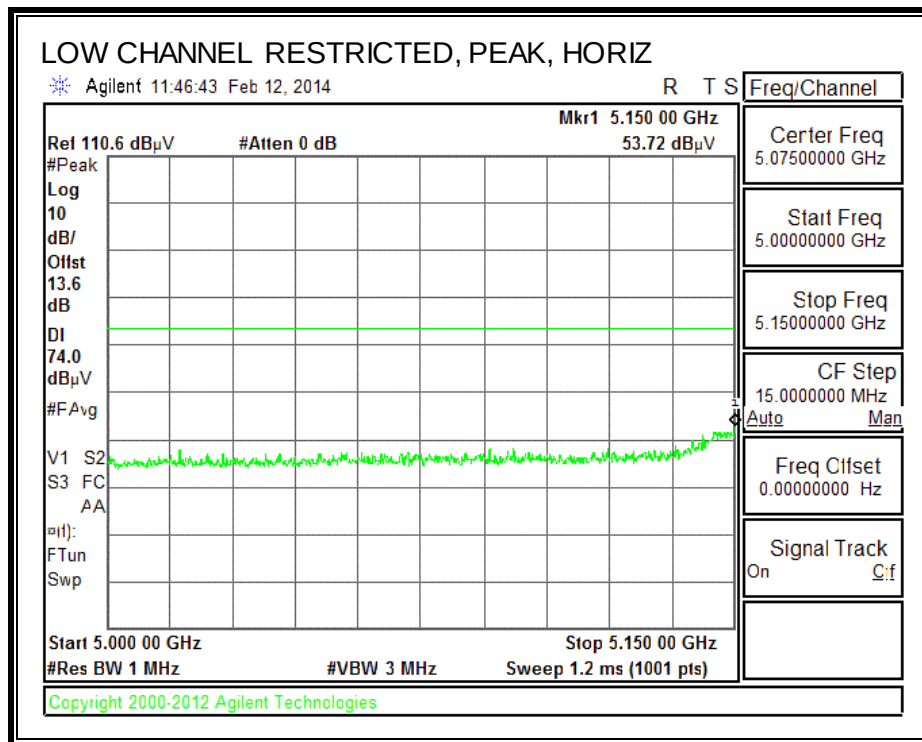


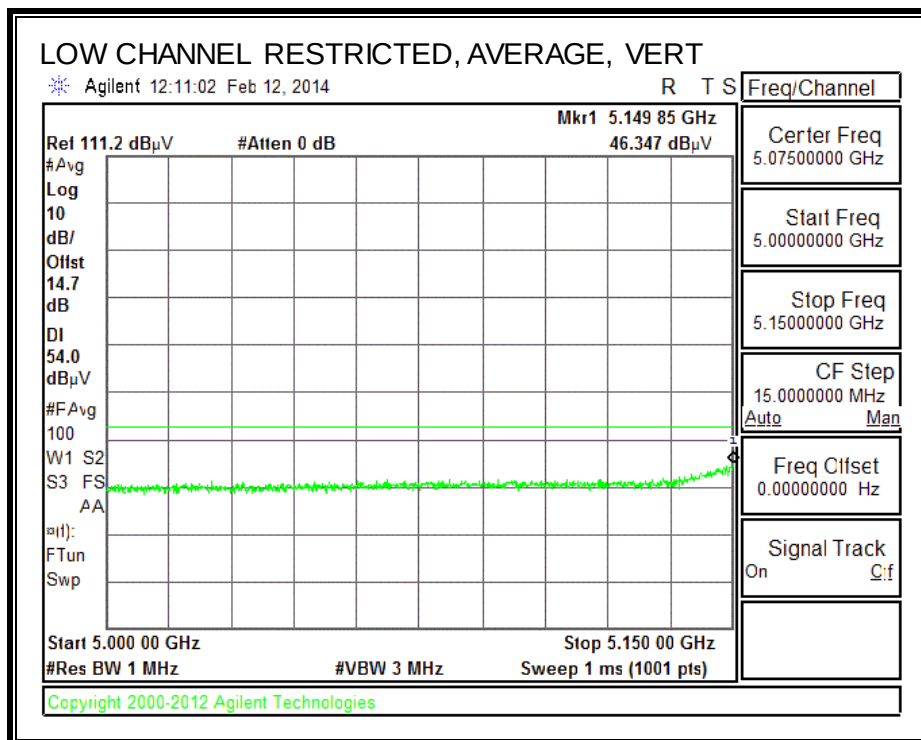
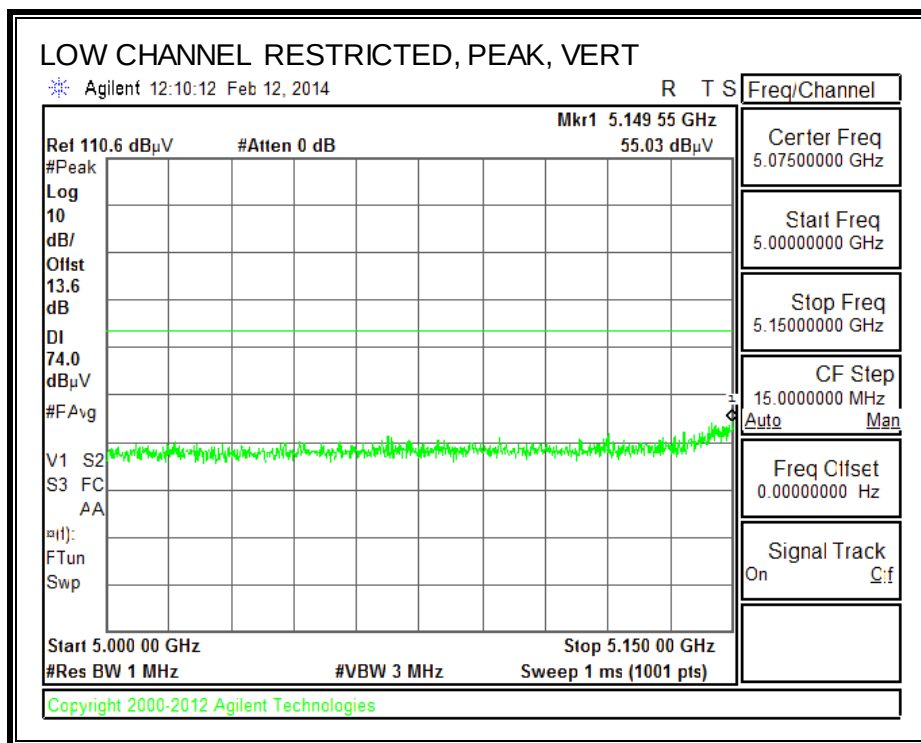
Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
8	2.434	33.51	Avg	31.8	-30.1	35.21	54	-18.79	-	-	0-360	201	H
9	2.435	34.85	Avg	31.8	-30.1	36.55	54	-17.45	-	-	0-360	100	V
2	2.714	39.75	PK	31.6	-29.5	41.85	-	-	74	-32.15	0-360	100	V
1	3.371	39.37	PK	32.4	-29.1	42.67	-	-	74	-31.33	0-360	201	H
10	10.481	31.15	Avg	37.2	-21.7	46.65	54	-7.35	-	-	0-360	100	H
3	10.482	35.18	PK	37.2	-21.7	50.68	-	-	74	-23.32	0-360	100	H
5	10.482	37.94	PK	37.2	-21.7	53.44	-	-	74	-20.56	0-360	201	V
12	10.484	35.21	Avg	37.2	-21.7	50.71	54	-3.29	-	-	0-360	201	V
6	13.329	35.95	PK	37.9	-22.3	51.55	-	-	74	-22.45	0-360	100	V
13	17.685	25.73	Avg	41	-17.7	49.03	54	-4.97	-	-	0-360	100	V
11	17.692	26.92	Avg	41	-17.8	50.12	54	-3.88	-	-	0-360	100	H
4	17.789	31.56	PK	41.2	-18.7	54.06	-	-	74	-19.94	0-360	100	H
7	17.81	32.29	PK	41.2	-18.2	55.29	-	-	74	-18.71	0-360	100	V

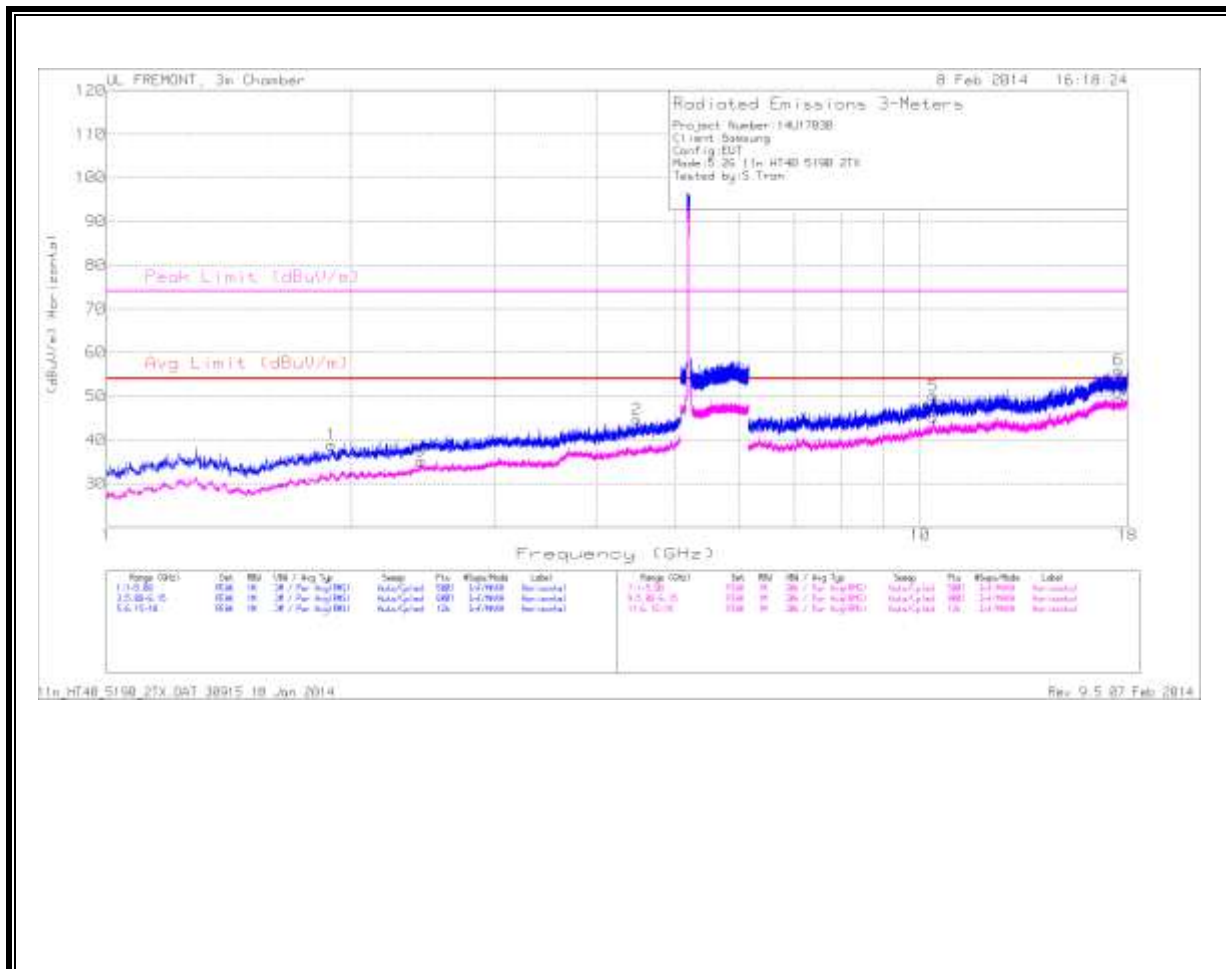
11.1.3. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.2 GHz BAND
RESTRICTED BANDEDGE (LOW CHANNEL)



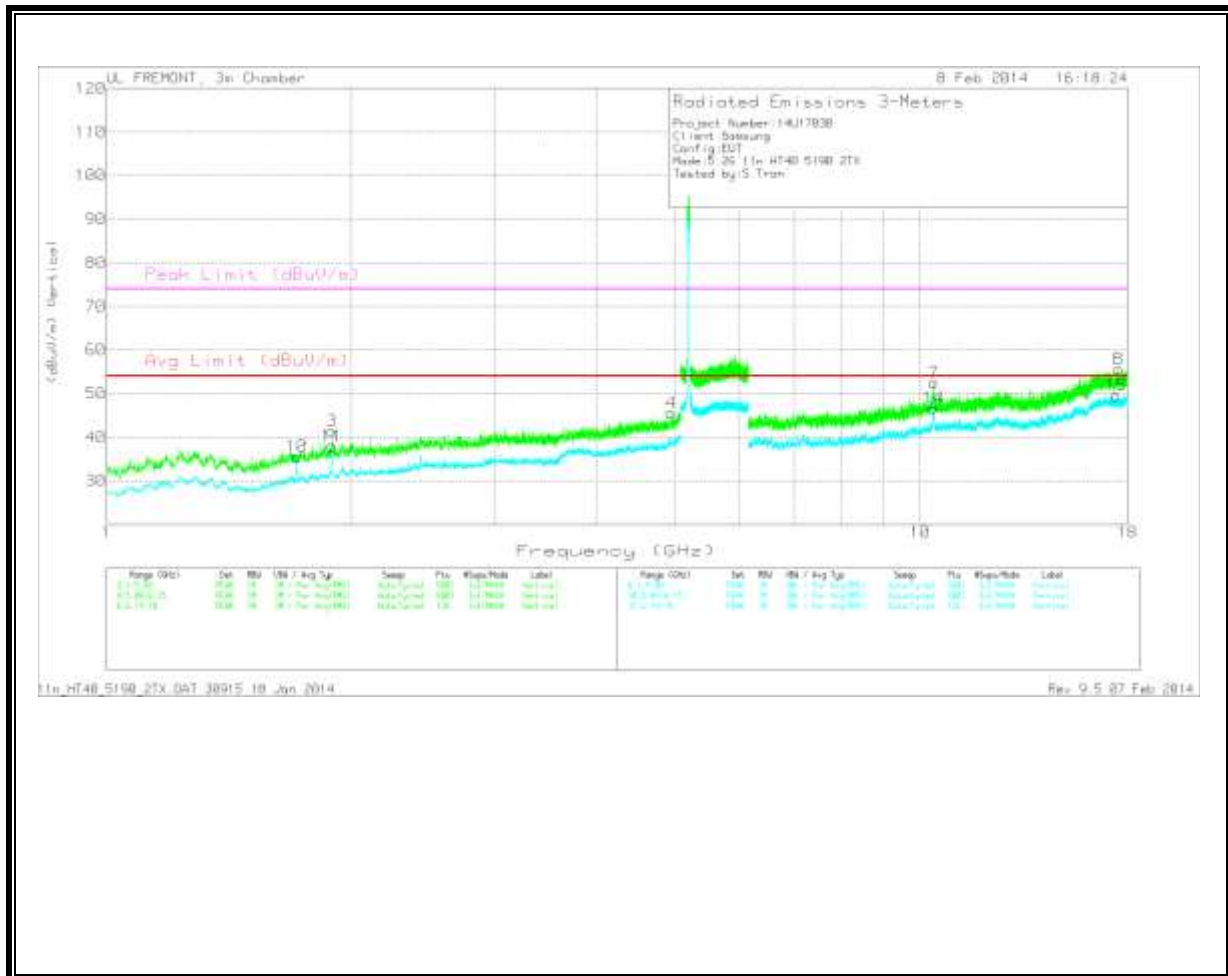


HARMONICS AND SPURIOUS EMISSIONS

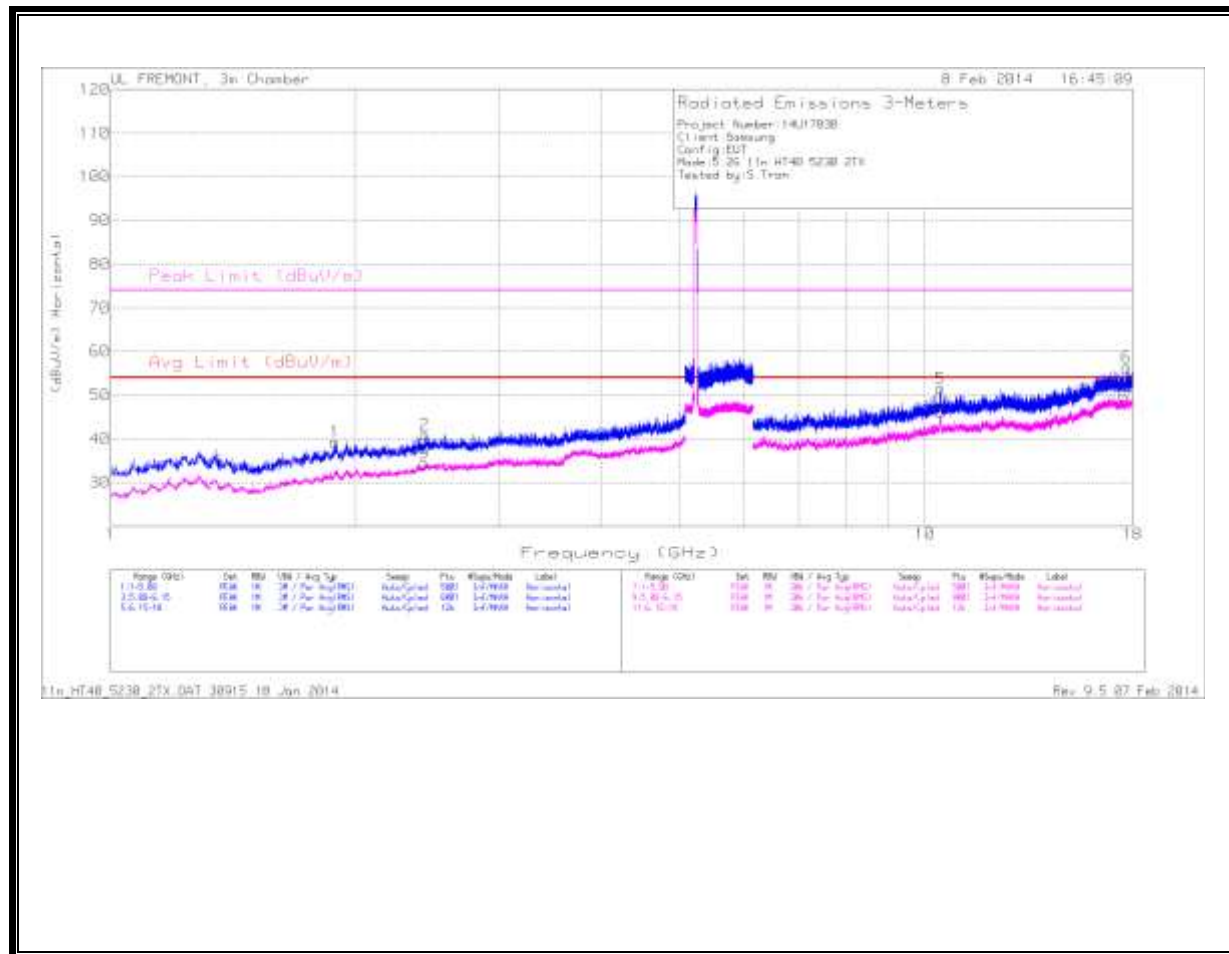
LOW CHANNEL
HORIZONTAL



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



Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/ Ftr/Pad (dB)	Correcte d Reading (dBuV/m)	Av g Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
10	1.713	37.61	Avg	29	-31	35.61	54	-18.39	-	-	0-360	100	V
1	1.889	39.15	PK	30.1	-30.4	38.85	-	-	74	-35.15	0-360	201	H
3	1.892	41.55	PK	30.1	-30.3	41.35	-	-	74	-32.65	0-360	201	V
11	1.892	38.2	Avg	30.1	-30.3	38	54	-16	-	-	0-360	100	V
9	2.434	33.39	Avg	31.8	-30.1	35.09	54	-18.91	-	-	0-360	201	H
2	4.484	38.37	PK	33.5	-27.2	44.67	-	-	74	-29.33	0-360	201	H
4	4.945	38.24	PK	33.5	-26.2	45.54	-	-	74	-28.46	0-360	201	V
5	10.378	33.95	PK	37.1	-21	50.05	-	-	74	-23.95	0-360	100	H
12	10.381	29.1	Avg	37.1	-21	45.2	54	-8.8	-	-	0-360	201	H
14	10.387	30.76	Avg	37.1	-21.1	46.76	54	-7.24	-	-	0-360	201	V
7	10.398	36.89	PK	37.1	-21.5	52.49	-	-	74	-21.51	0-360	201	V
15	17.422	27.17	Avg	40.7	-18.3	49.57	54	-4.43	-	-	0-360	100	V
8	17.518	33.03	PK	40.8	-18.2	55.63	-	-	74	-18.37	0-360	100	V
6	17.524	33.34	PK	40.8	-18.2	55.94	-	-	74	-18.06	0-360	100	H
13	17.53	26.88	Avg	40.8	-18.4	49.28	54	-4.72	-	-	0-360	100	H

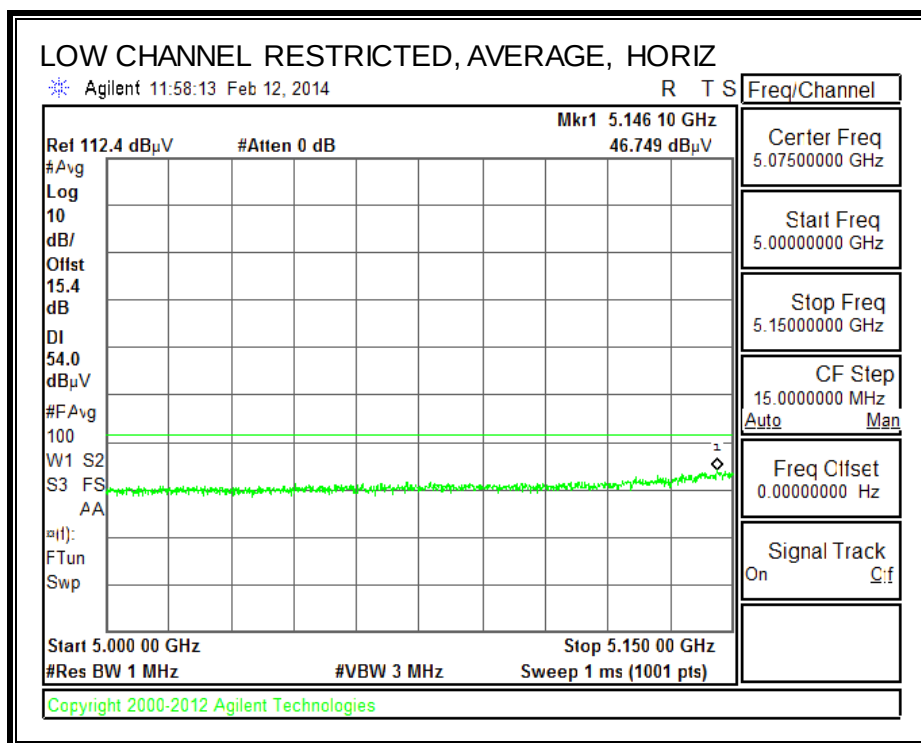
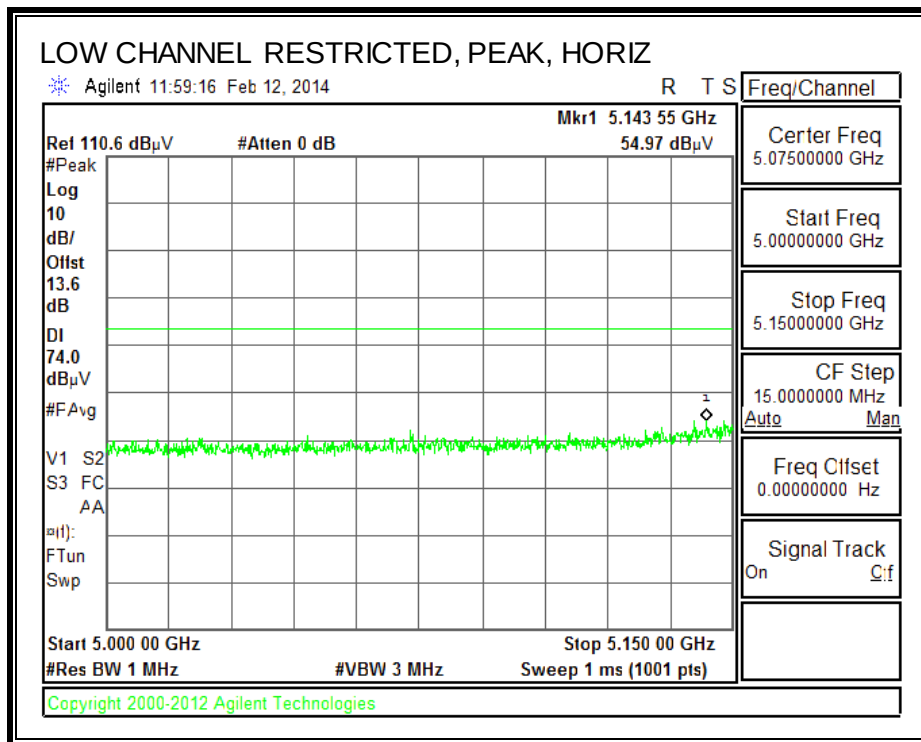


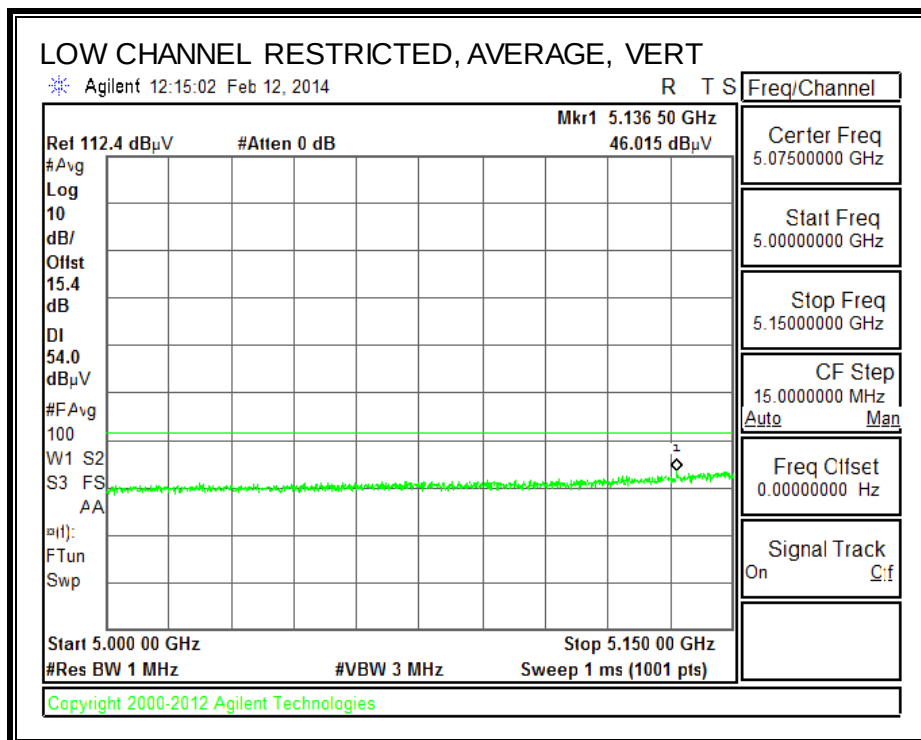
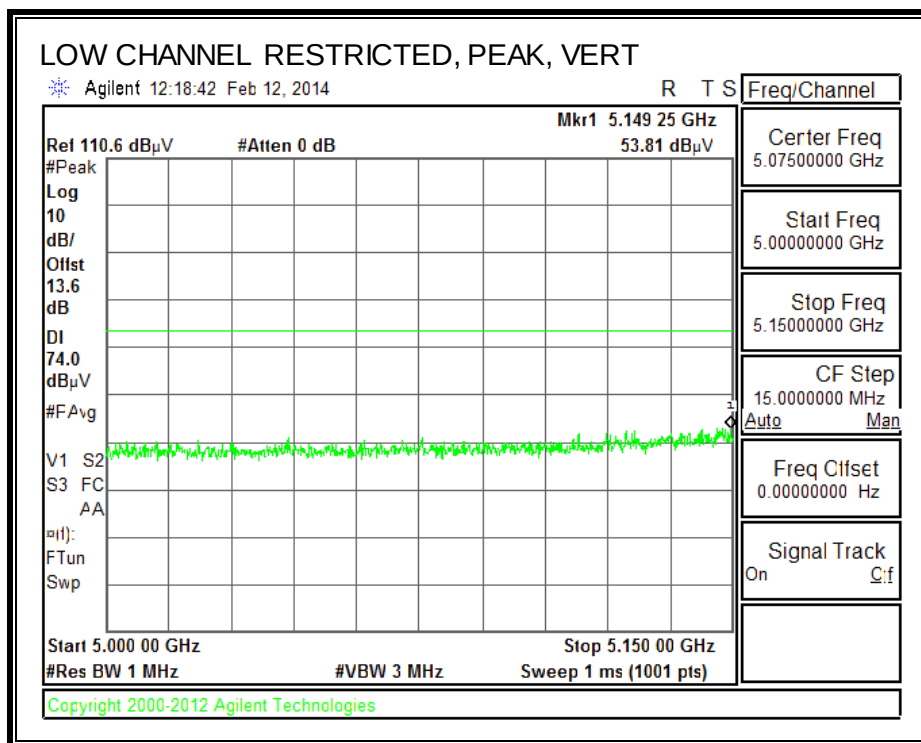
Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filt/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.886	39.67	PK	30.1	-30.5	39.27	-	-	74	-34.73	0-360	100	H
3	1.897	39.5	PK	30.2	-30.3	39.4	-	-	74	-34.6	0-360	201	V
4	2.389	39.86	PK	31.5	-30.2	41.16	-	-	74	-32.84	0-360	100	V
9	2.427	32.77	Avg	31.7	-30.1	34.37	54	-19.63	-	-	0-360	100	H
2	2.432	39.17	PK	31.8	-30.1	40.87	-	-	74	-33.13	0-360	201	H
10	2.435	35.4	Avg	31.8	-30.1	37.1	54	-16.9	-	-	0-360	100	V
5	10.453	36.02	PK	37.1	-21.6	51.52	-	-	74	-22.48	0-360	201	H
7	10.453	38.1	PK	37.1	-21.6	53.6	-	-	74	-20.4	0-360	201	V
13	10.454	32.69	Avg	37.1	-21.6	48.19	54	-5.81	-	-	0-360	201	V
11	10.461	30.55	Avg	37.2	-21.7	46.05	54	-7.95	-	-	0-360	100	H
12	17.528	27.27	Avg	40.8	-18.3	49.77	54	-4.23	-	-	0-360	201	H
6	17.683	33.09	PK	41	-17.7	56.39	-	-	74	-17.61	0-360	201	H
14	17.812	26.39	Avg	41.2	-18.2	49.39	54	-4.61	-	-	0-360	100	V
8	17.936	33.13	PK	41.4	-18.2	56.33	-	-	74	-17.67	0-360	100	V

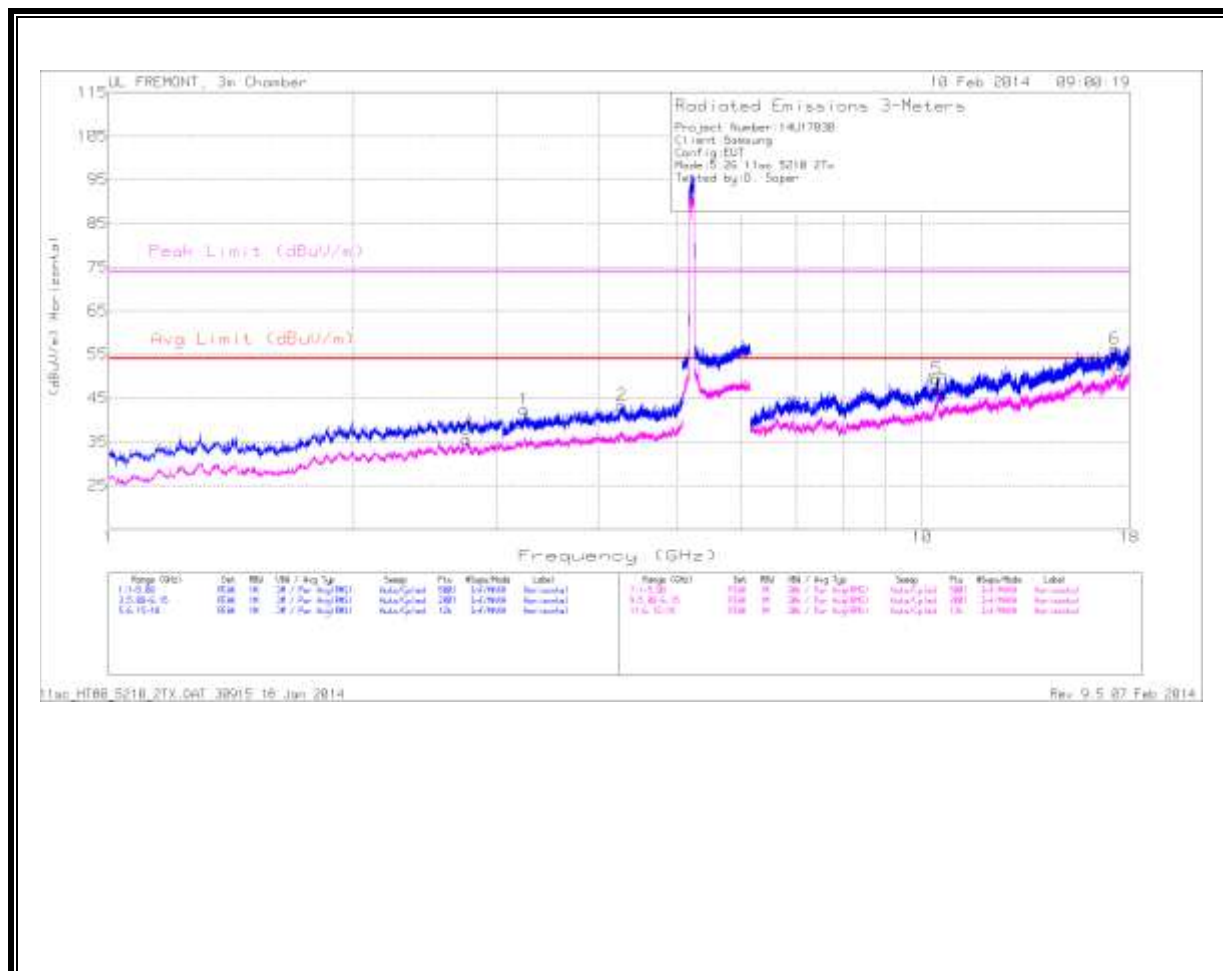
11.1.4. TX ABOVE 1 GHz 802.11ac HT80 MODE IN THE 5.2 GHz BAND
RESTRICTED BANDEDGE (LOW CHANNEL)



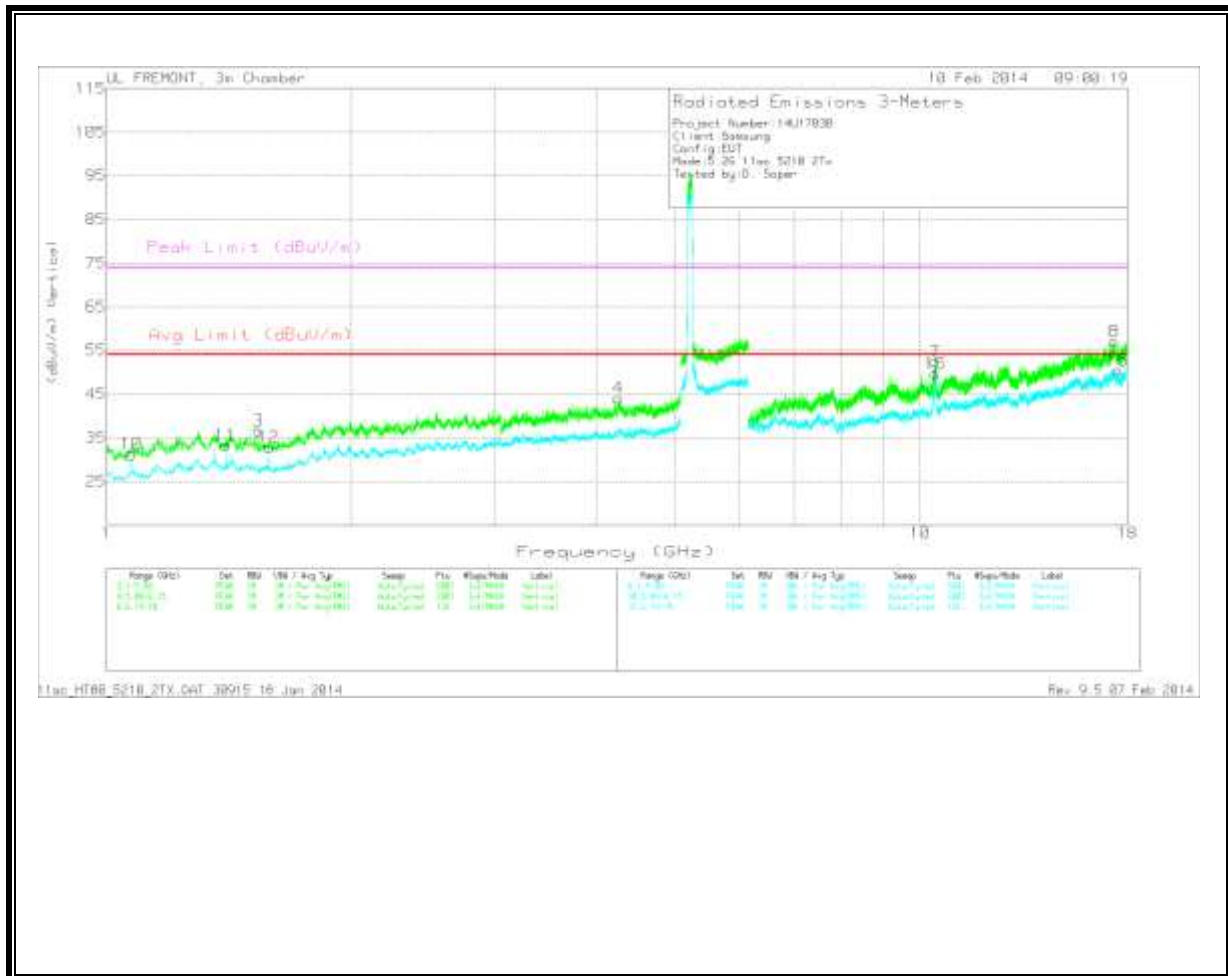


HARMONICS AND SPURIOUS EMISSIONS

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

Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
10	1.073	40.62	Avg	28	-37.4	31.22	54	-22.78	-	-	0-360	101	V
11	1.401	39.91	Avg	29.8	-36.5	33.21	54	-20.79	-	-	0-360	101	V
3	1.537	43.95	PK	28.7	-36	36.65	54	-17.35	74	-37.35	0-360	101	V
12	1.584	40.12	Avg	28.4	-35.7	32.82	54	-21.18	-	-	0-360	201	V
9	2.755	34.74	Avg	32.6	-31.8	35.54	54	-18.46	-	-	0-360	200	H
1	3.242	40.85	PK	33.3	-31.7	42.45	54	-11.55	74	-31.55	0-360	101	H
4	4.258	38.9	PK	33.6	-28.4	44.1	54	-9.9	74	-29.9	0-360	101	V
2	4.275	38.45	PK	33.6	-28.7	43.35	54	-10.65	74	-30.65	0-360	200	H
5	10.427	33.84	PK	37.4	-21.8	49.44	54	-4.56	74	-24.56	0-360	200	H
15	10.434	34.77	Avg	37.4	-22.5	49.67	54	-4.33	-	-	0-360	201	V
7	10.436	37.55	PK	37.4	-22.5	52.45			74	-21.55	0-360	201	V
13	10.44	31.97	Avg	37.4	-22.5	46.87	54	-7.13	-	-	0-360	200	H
6	17.256	35.08	PK	41	-19.7	56.38			74	-17.62	0-360	200	H
8	17.318	35.54	PK	41	-19.5	57.04			74	-16.96	0-360	101	V
16	17.499	27.6	Avg	40.9	-18	50.5	54	-3.5	-	-	0-360	201	V

PK - Peak detector

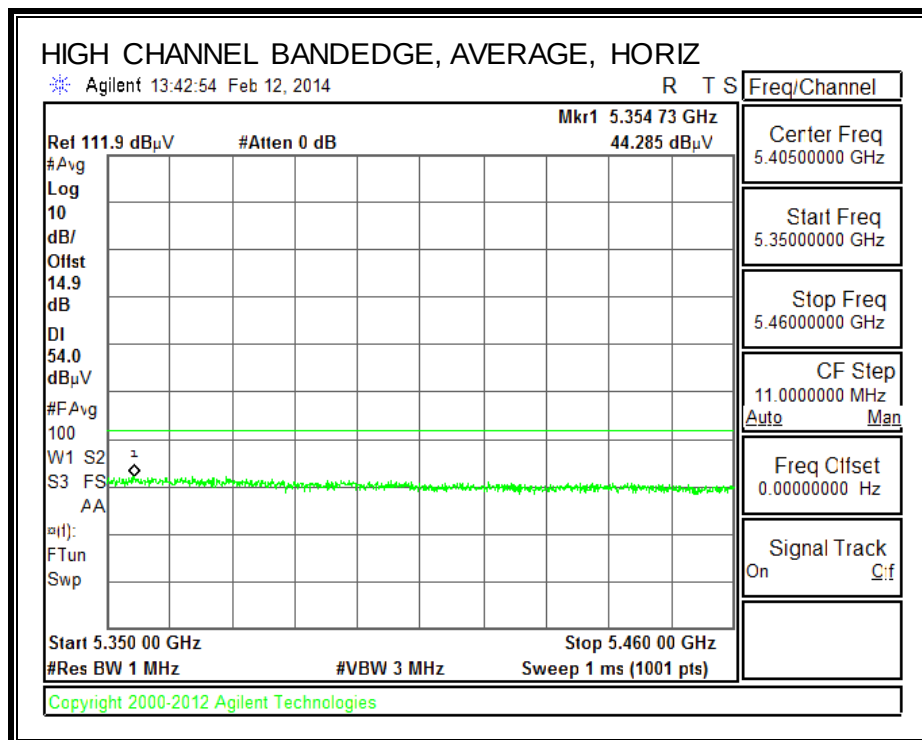
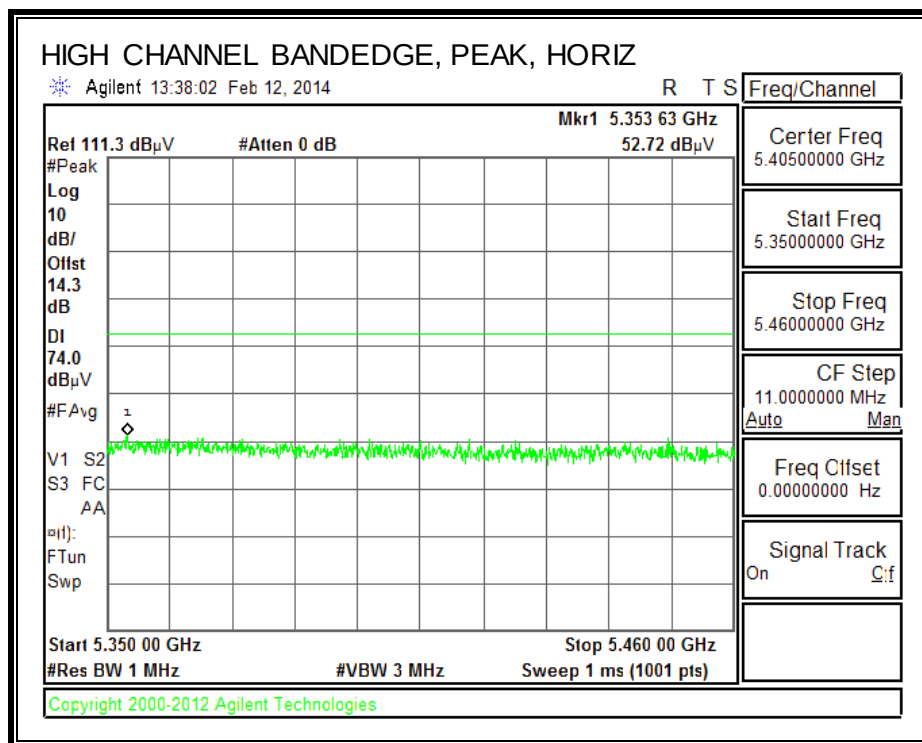
Radiated Emissions

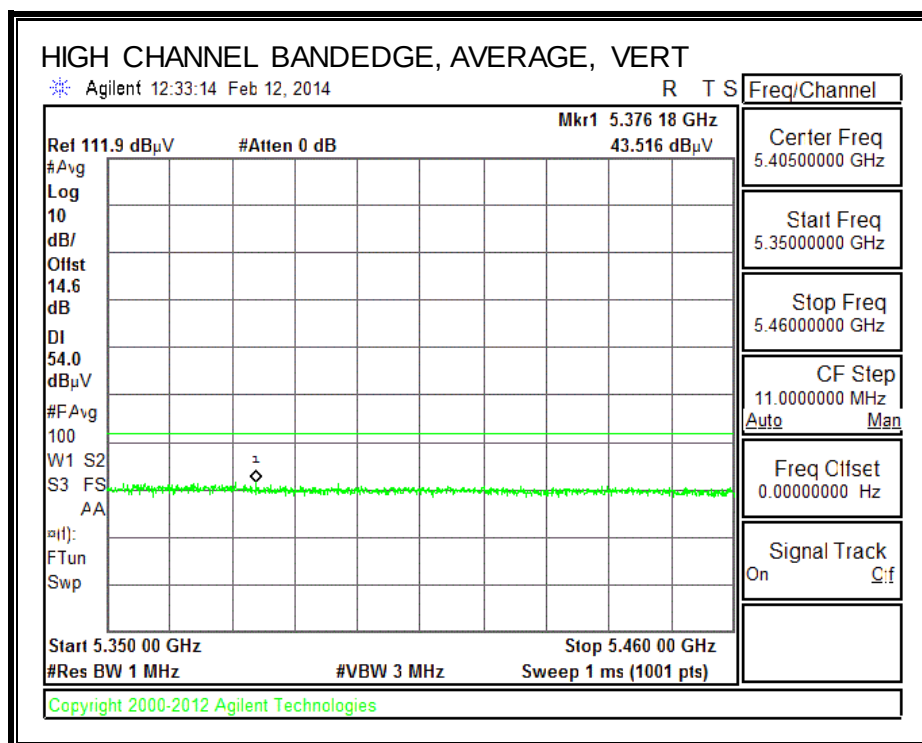
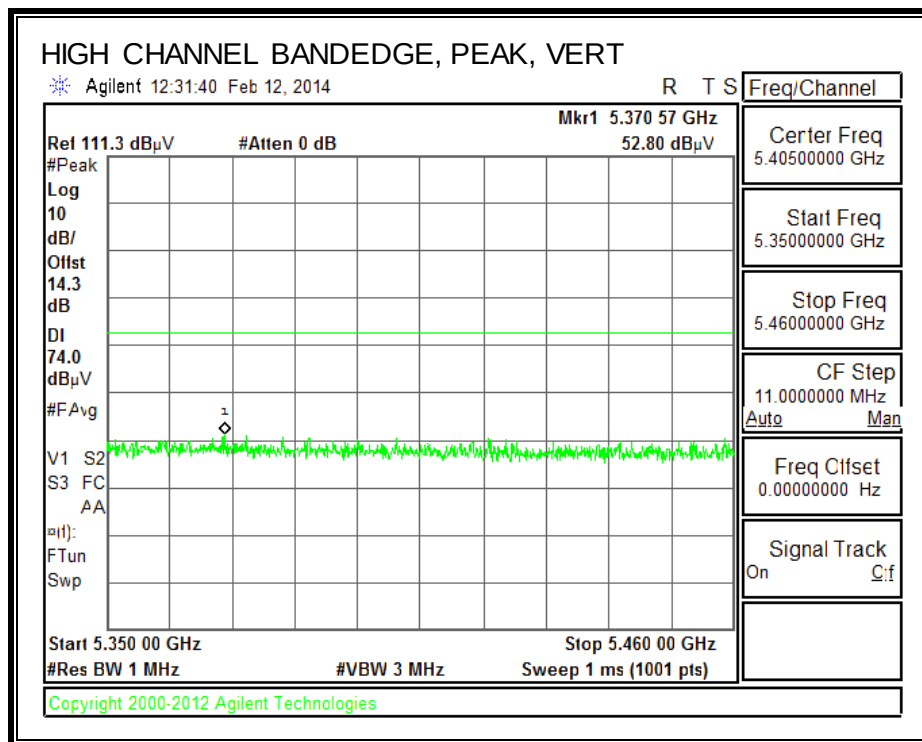
Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
10.429	33.86	PK	37.4	-22	49.26	54	-4.74	74	-24.74	182	148	V

PK - Peak detector

11.2. 5.3 GHz

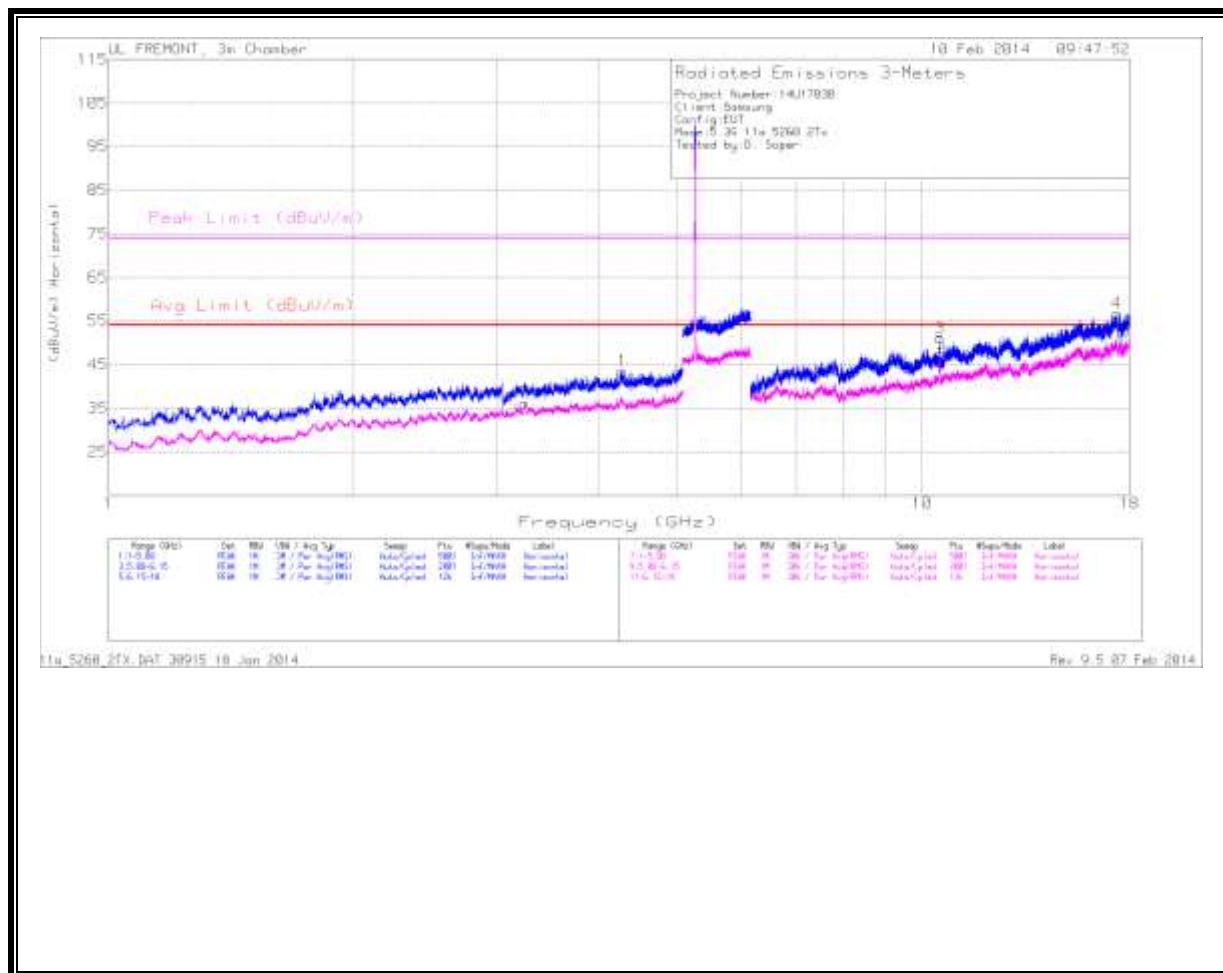
11.2.1. TX ABOVE 1 GHz 802.11a MODE IN THE 5.3 GHz BAND AUTHORIZED BANDEDGE (HIGH CHANNEL)



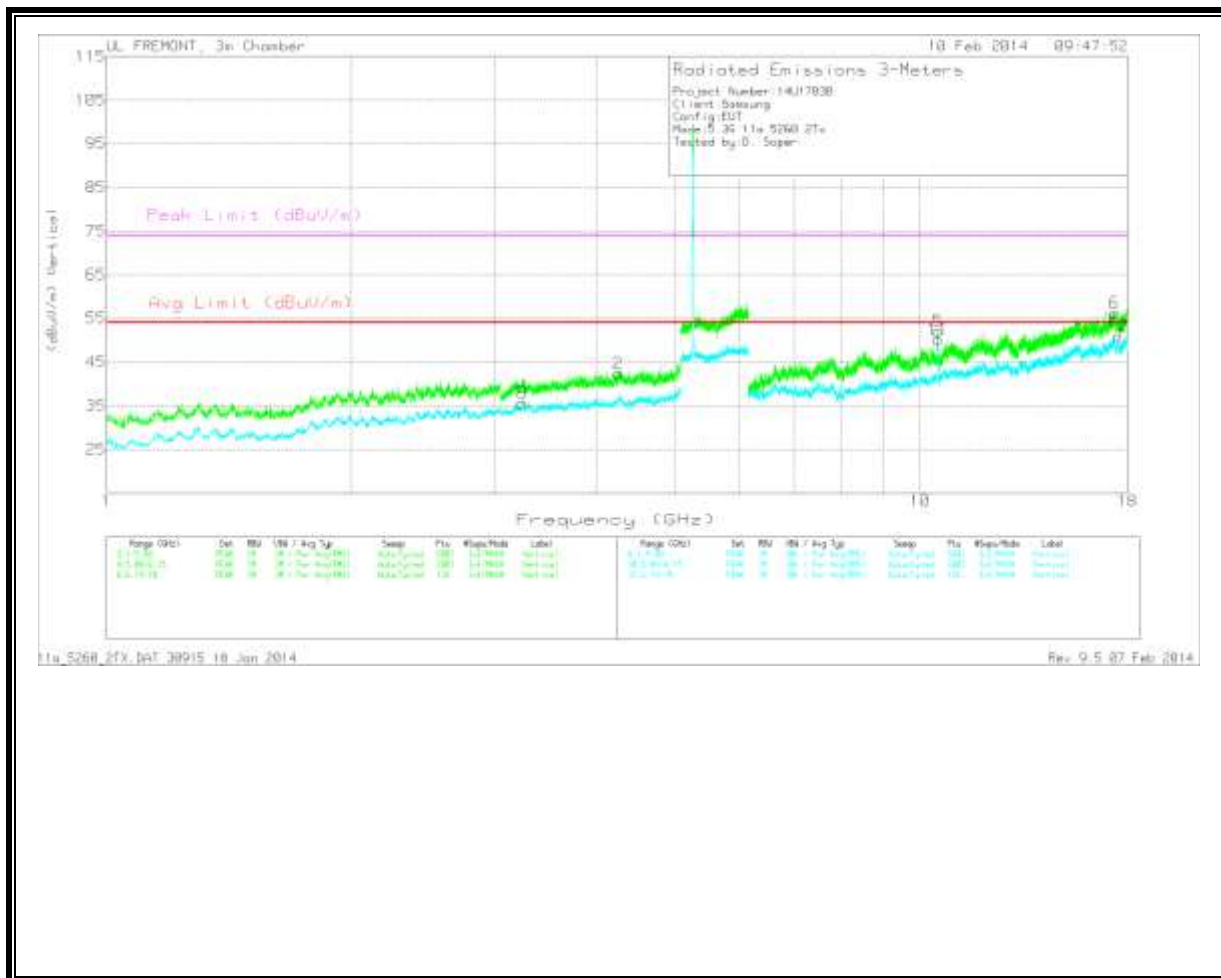


HARMONICS AND SPURIOUS EMISSIONS

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.

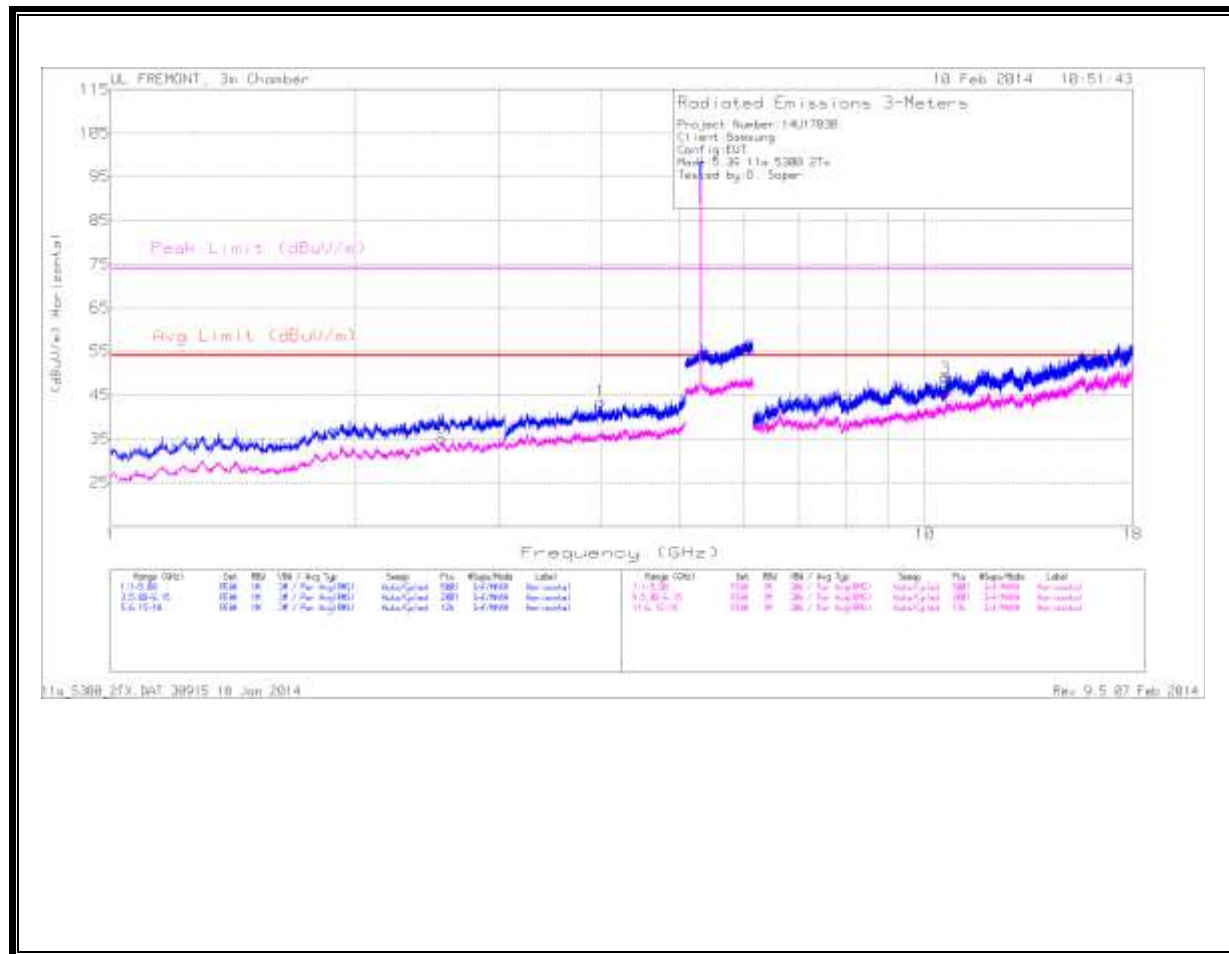


Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

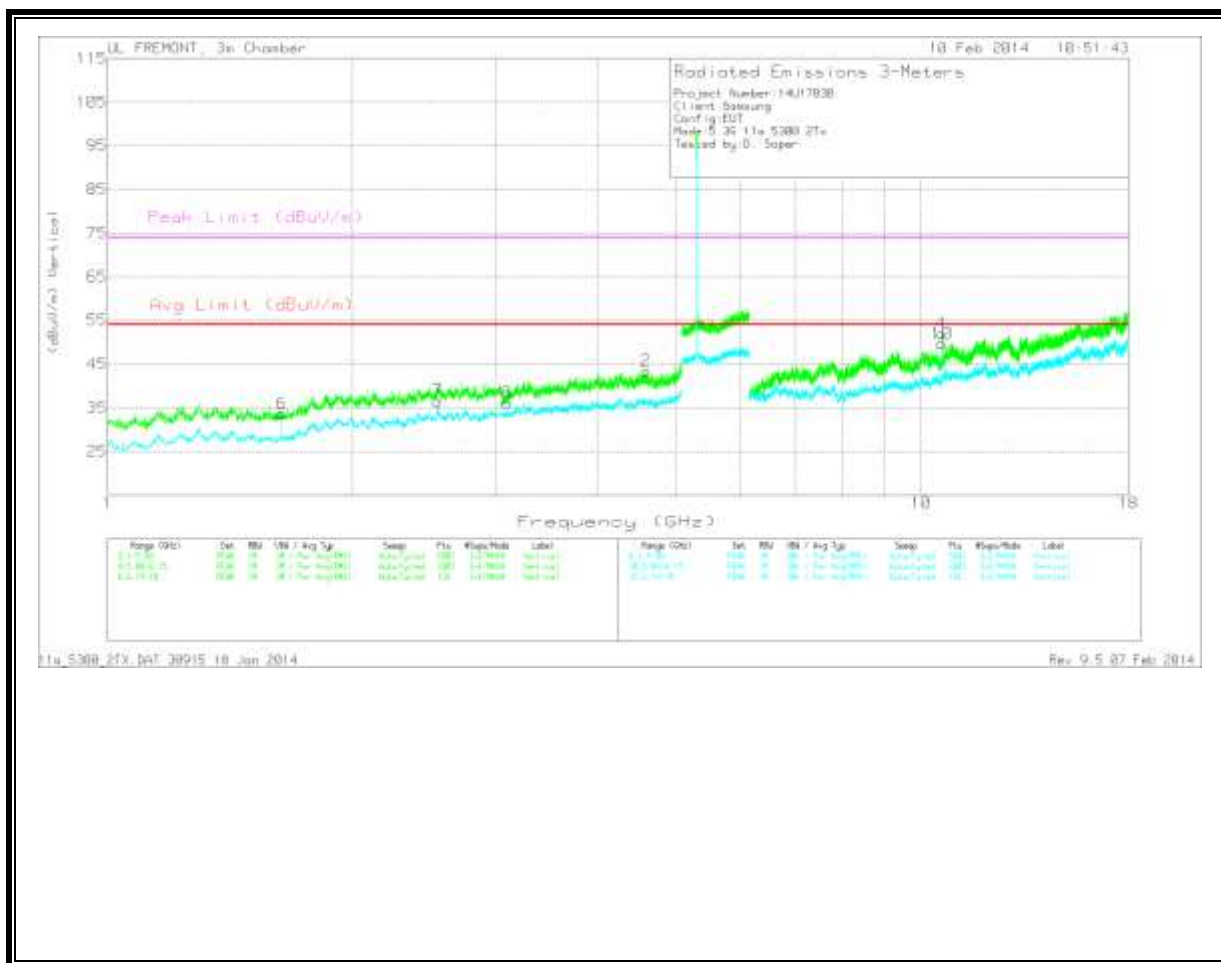
LOW CHANNEL DATA

Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
8	3.243	34.07	Avg	33.3	-31.7	35.67	54	-18.33	-	-	0-360	100	V
7	3.248	34.63	Avg	33.3	-31.8	36.13	54	-17.87	-	-	0-360	200	H
2	4.254	37.67	PK	33.6	-28.9	42.37	54	-11.63	74	-31.63	0-360	101	V
1	4.283	38.57	PK	33.6	-28.7	43.47	54	-10.53	74	-30.53	0-360	101	H
11	10.518	35.55	Avg	37.6	-23	50.15	54	-3.85	-	-	0-360	200	V
9	10.52	32.97	Avg	37.6	-23	47.57	54	-6.43	-	-	0-360	200	H
5	10.523	37.39	PK	37.6	-22.9	52.09			74	-21.91	0-360	201	V
3	10.524	36.31	PK	37.6	-22.8	51.11			74	-22.89	0-360	101	H
6	17.327	34.85	PK	41	-19.7	56.15			74	-17.85	0-360	201	V
4	17.355	35.18	PK	40.9	-19.3	56.78			74	-17.22	0-360	200	H
10	17.502	27.72	Avg	40.9	-18.1	50.52	54	-3.48	-	-	0-360	101	H
12	17.502	28.16	Avg	40.9	-18.1	50.96	54	-3.04	-	-	0-360	200	V

- indicates frequency in CFR 15.205/IC 7.2.2 Restricted Band



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

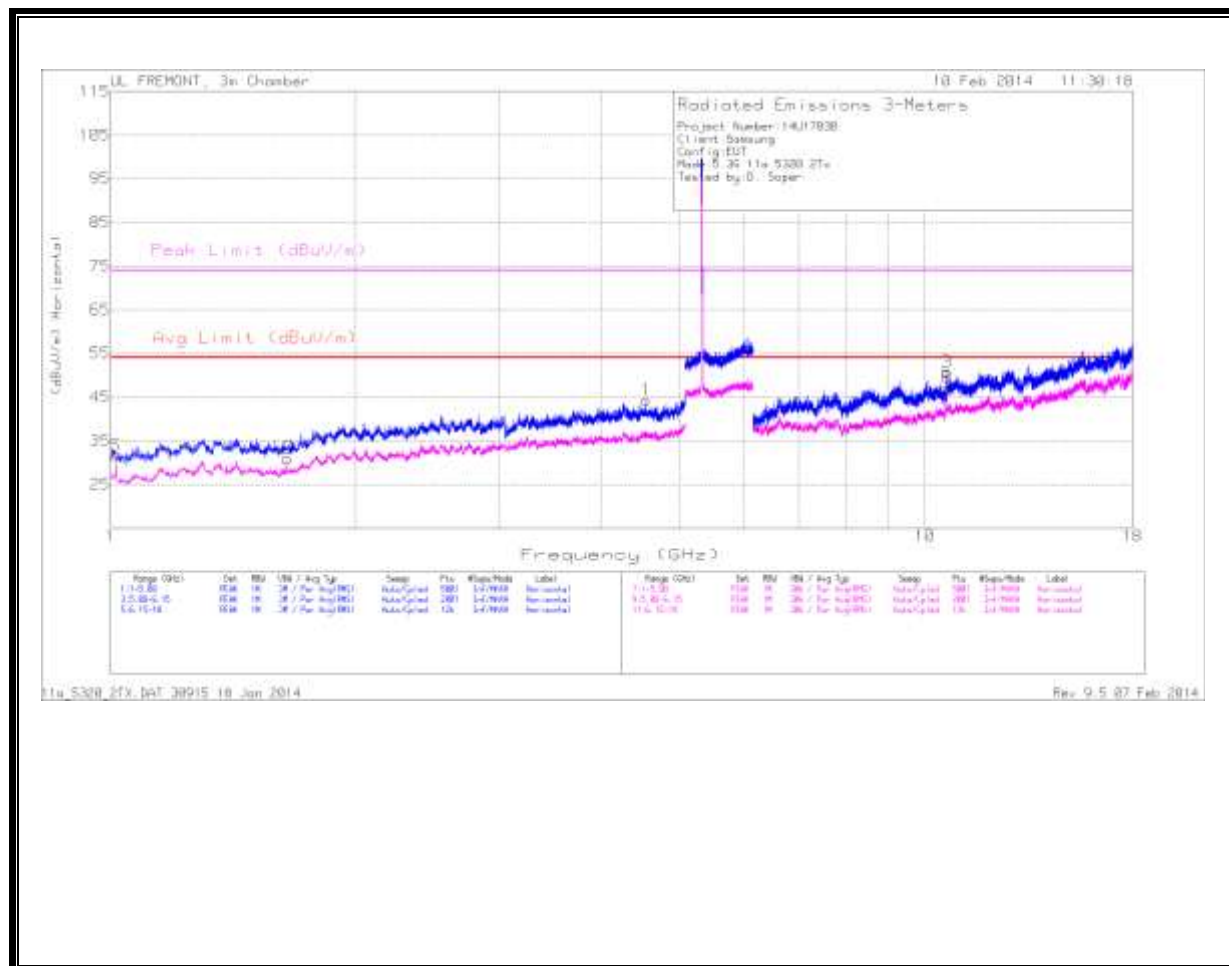


Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

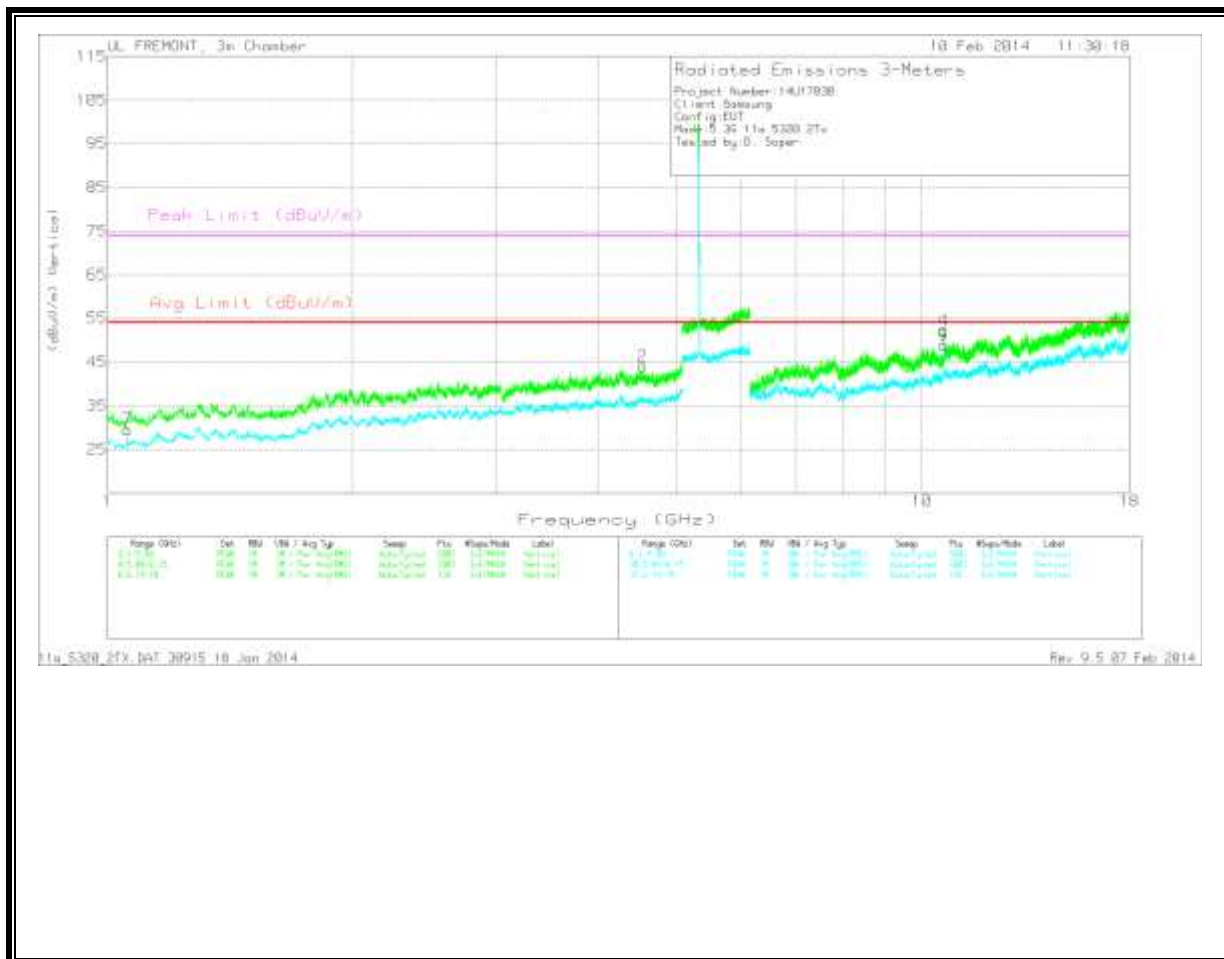
MID CHANNEL DATA

Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6	1.637	40.94	Avg	28.7	-36	33.64	54	-20.36	-	-	0-360	101	V
7	2.546	36.74	Avg	32.6	-32.7	36.64	54	-17.36	-	-	0-360	101	V
5	2.551	34.97	Avg	32.7	-32.6	35.07	54	-18.93	-	-	0-360	200	H
8	3.099	35.79	Avg	32.8	-32.4	36.19	54	-17.81	-	-	0-360	200	V
1	3.997	39.37	PK	33.8	-29.6	43.57	54	-10.43	74	-30.43	0-360	101	H
2	4.59	39.08	PK	33.9	-29.6	43.38	54	-10.62	74	-30.62	0-360	200	V
3	10.6	34.32	PK	37.8	-23.3	48.82	54	-5.18	74	-25.18	0-360	200	H
4	10.602	37.55	PK	37.8	-23.3	52.05	54	-8.2	74	-21.95	0-360	200	V
9	10.602	31.3	Avg	37.8	-23.3	45.8	54	-8.2	-	-	0-360	200	H
10	10.603	35.16	Avg	37.8	-23.3	49.66	54	-4.34	-	-	0-360	201	V

- indicates frequency in CFR 15.205/IC 7.2.2 Restricted Band



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

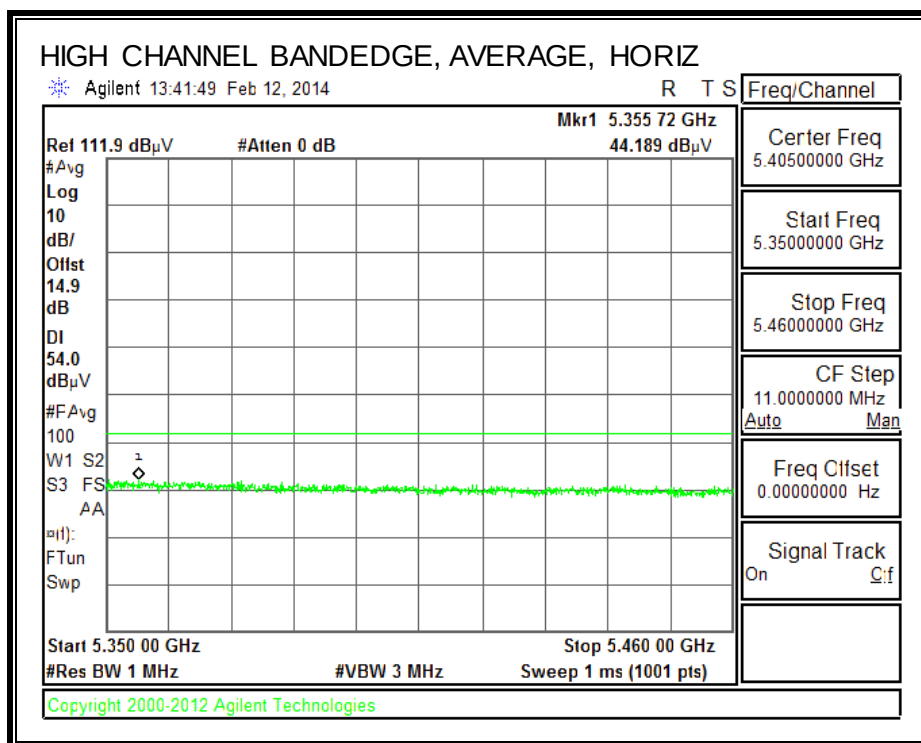
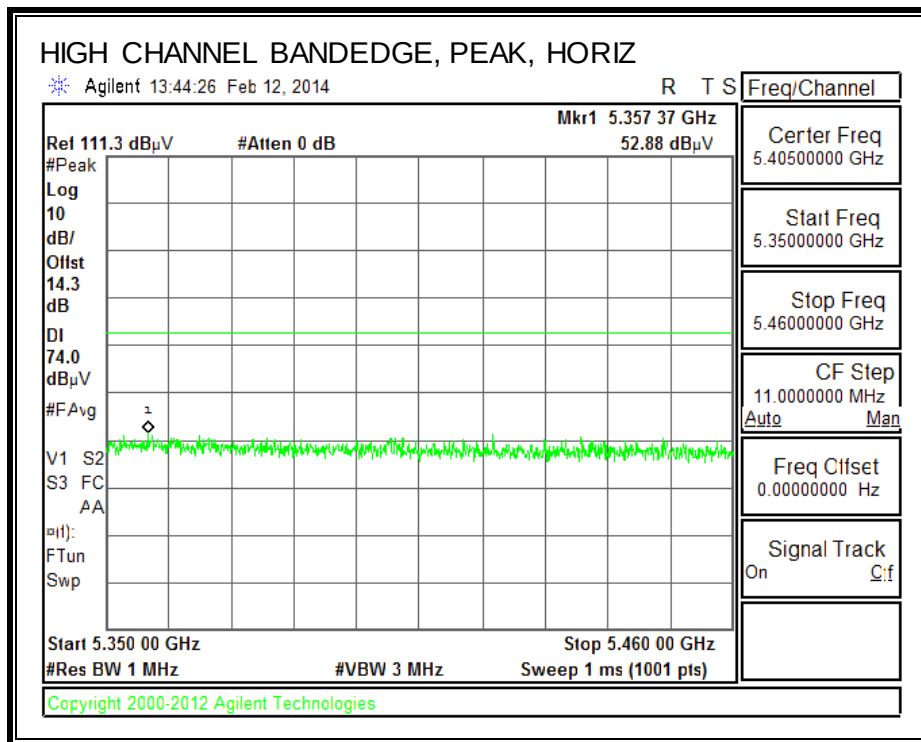


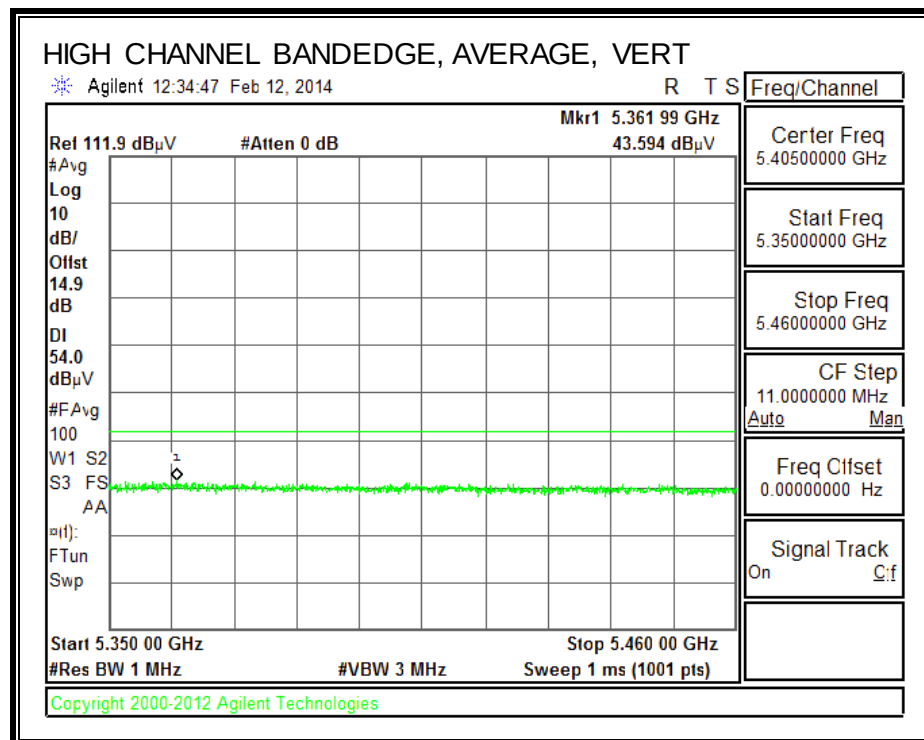
Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
5	1.015	41.69	Avg	28.1	-38.1	31.69	54	-22.31	-	-	0-360	200	H
7	1.057	39.04	Avg	28	-37.5	29.54	54	-24.46	-	-	0-360	101	V
6	1.648	38.31	Avg	28.8	-36.2	30.91	54	-23.09	-	-	0-360	200	H
2	4.538	39.71	PK	33.8	-29.5	44.01	54	-9.99	74	-29.99	0-360	100	V
1	4.547	40.72	PK	33.8	-30.2	44.32	54	-9.68	74	-29.68	0-360	101	H
4	10.639	37.37	PK	37.8	-23	52.17			74	-21.83	0-360	201	V
9	10.639	34.13	Avg	37.8	-23	48.93	54	-5.07	-	-	0-360	201	V
8	10.642	32.38	Avg	37.8	-23	47.18	54	-6.82	-	-	0-360	200	H
3	10.645	35.86	PK	37.8	-22.9	50.76	54	-3.24	74	-23.24	0-360	200	H

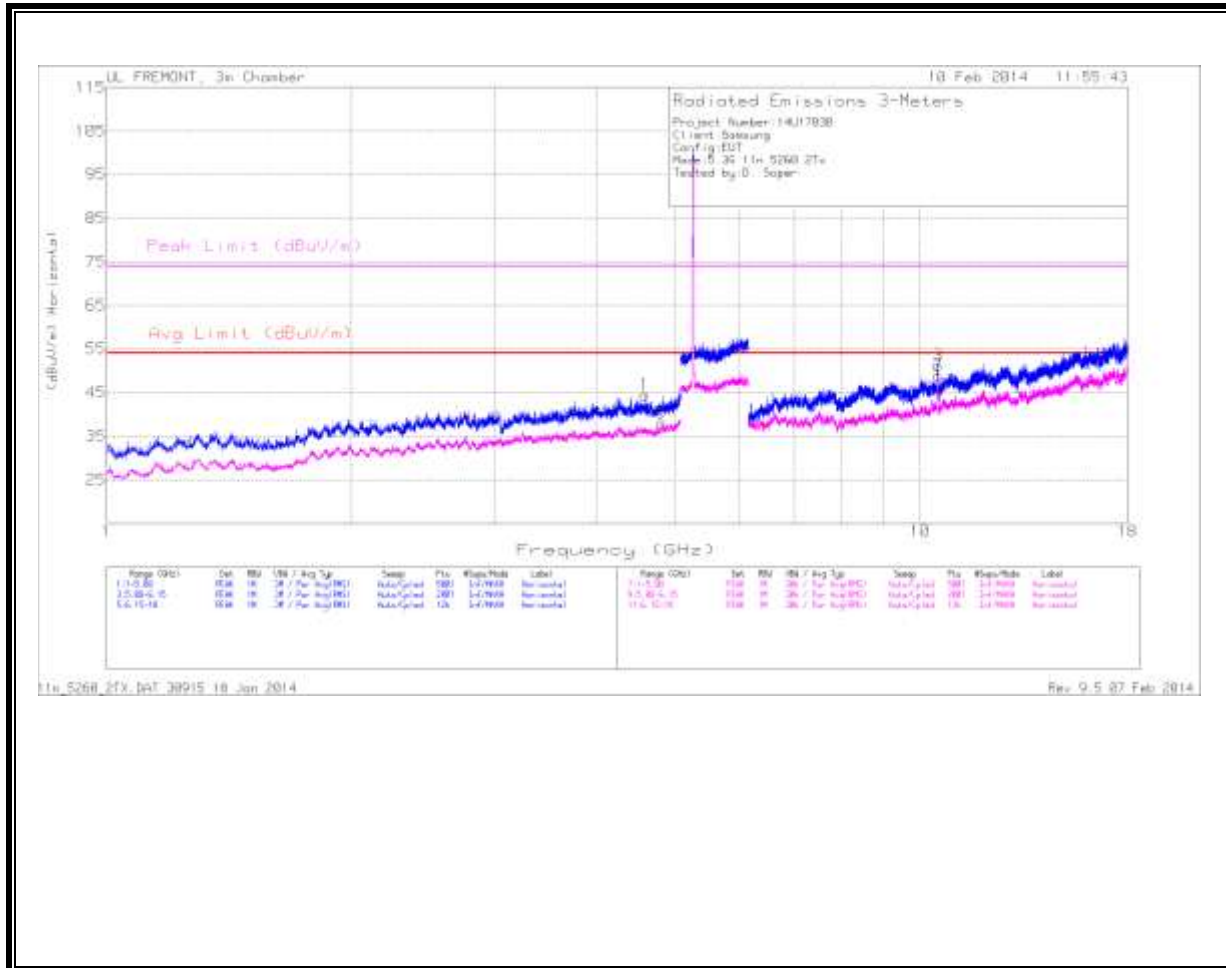
11.2.3. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.3 GHz BAND AUTHORIZED BANDEDGE (HIGH CHANNEL)



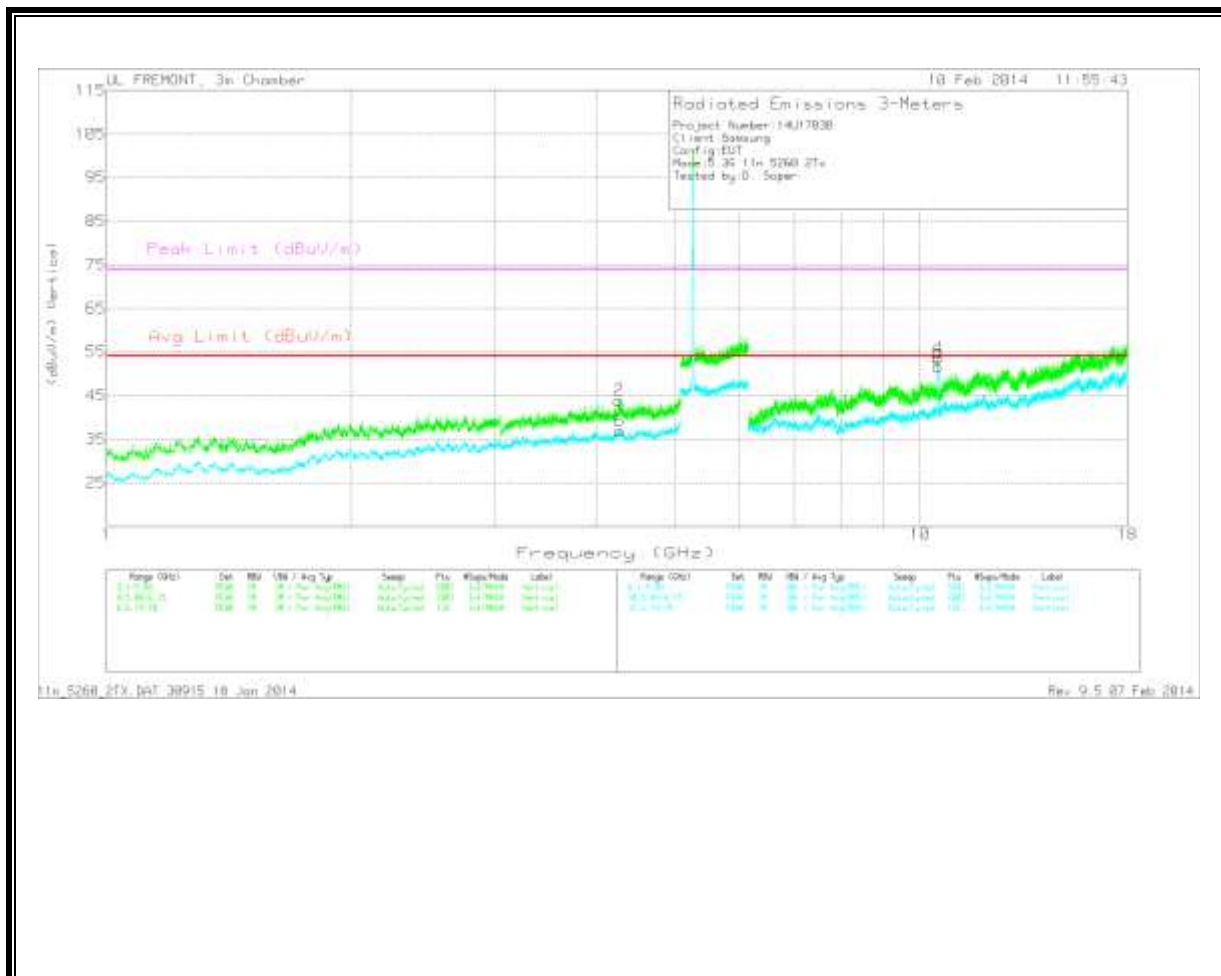


HARMONICS AND SPURIOUS EMISSIONS

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

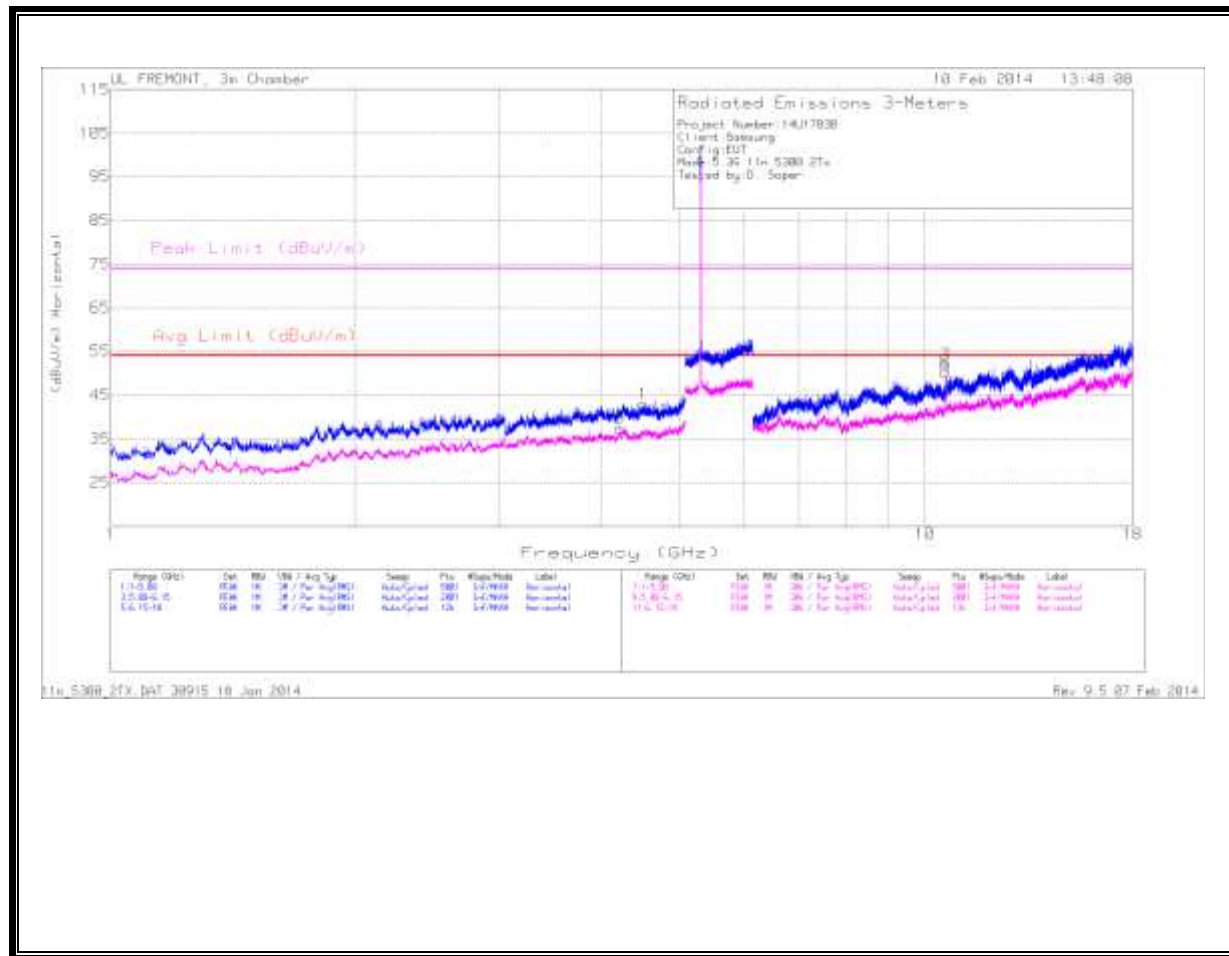
Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	4.265	38.48	PK	33.6	-28.2	43.88	54	-10.12	74	-30.12	0-360	101	V
6	4.272	31.97	Avg	33.6	-28.7	36.87	54	-17.13	-	-	0-360	101	V
1	4.587	40.16	PK	33.9	-29.6	44.46	54	-9.54	74	-29.54	0-360	101	H
5	4.816	33.2	Avg	33.9	-29	38.1	54	-15.9	-	-	0-360	100	H
4	10.516	39.17	PK	37.5	-23.1	53.57			74	-20.43	0-360	201	V
8	10.519	36.97	Avg	37.6	-23	51.57	54	-2.43	-	-	0-360	200	V
7	10.52	34.39	Avg	37.6	-23	48.99	54	-5.01	-	-	0-360	101	H
3	10.521	36.55	PK	37.6	-22.9	51.25	54	-2.75	74	-22.75	0-360	101	H

PK - Peak detector

Radiated Emissions

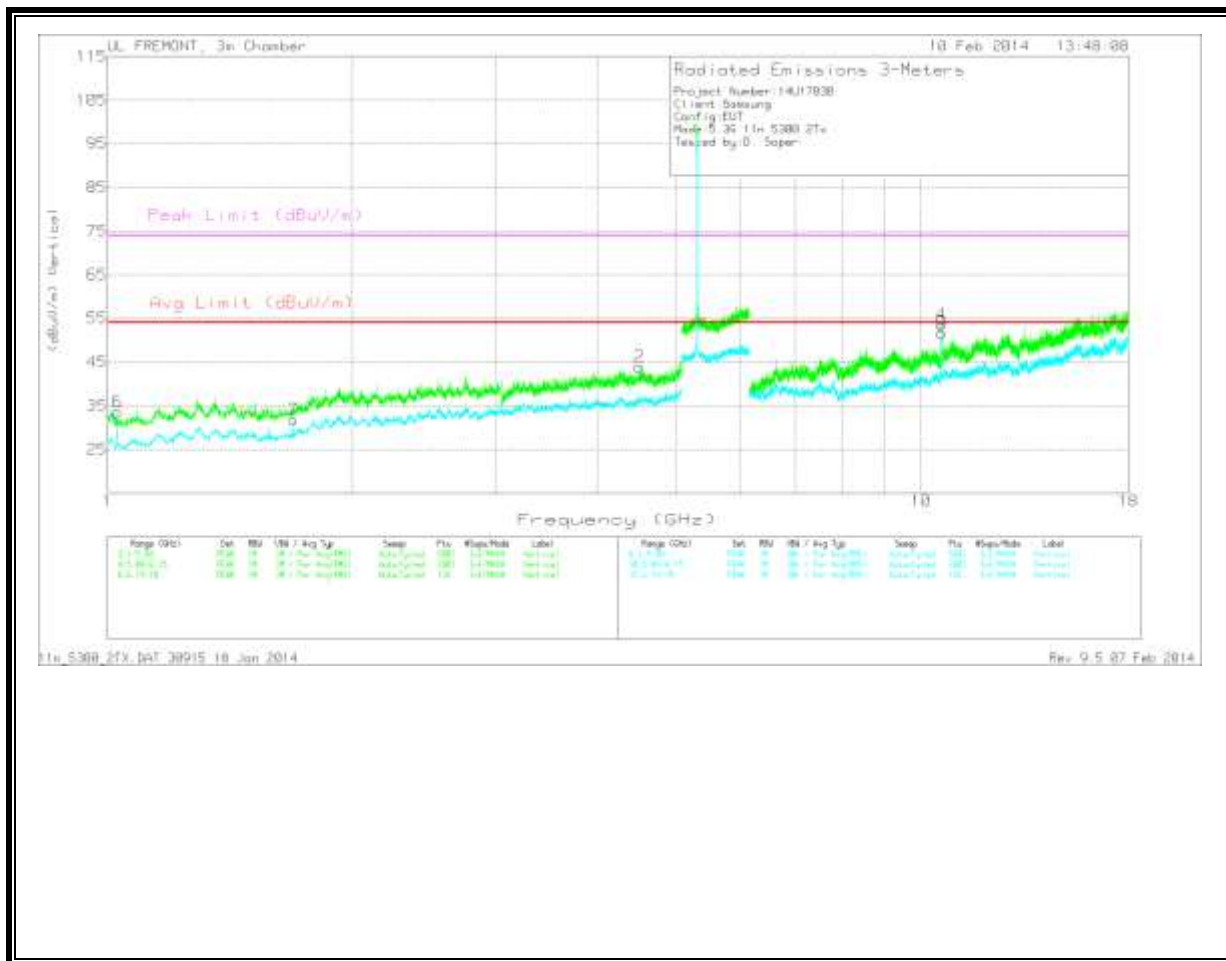
Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
10.521	29.44	MAV1	37.6	-22.9	44.14	54	-9.86	74	-29.86	181	144	V
10.639	29.44	MAV1	37.8	-23	44.24	54	-9.76	74	-29.76	188	166	V

MAV1 - KDB558074 Option 1 Maximum RMS Average



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

VERTICAL



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

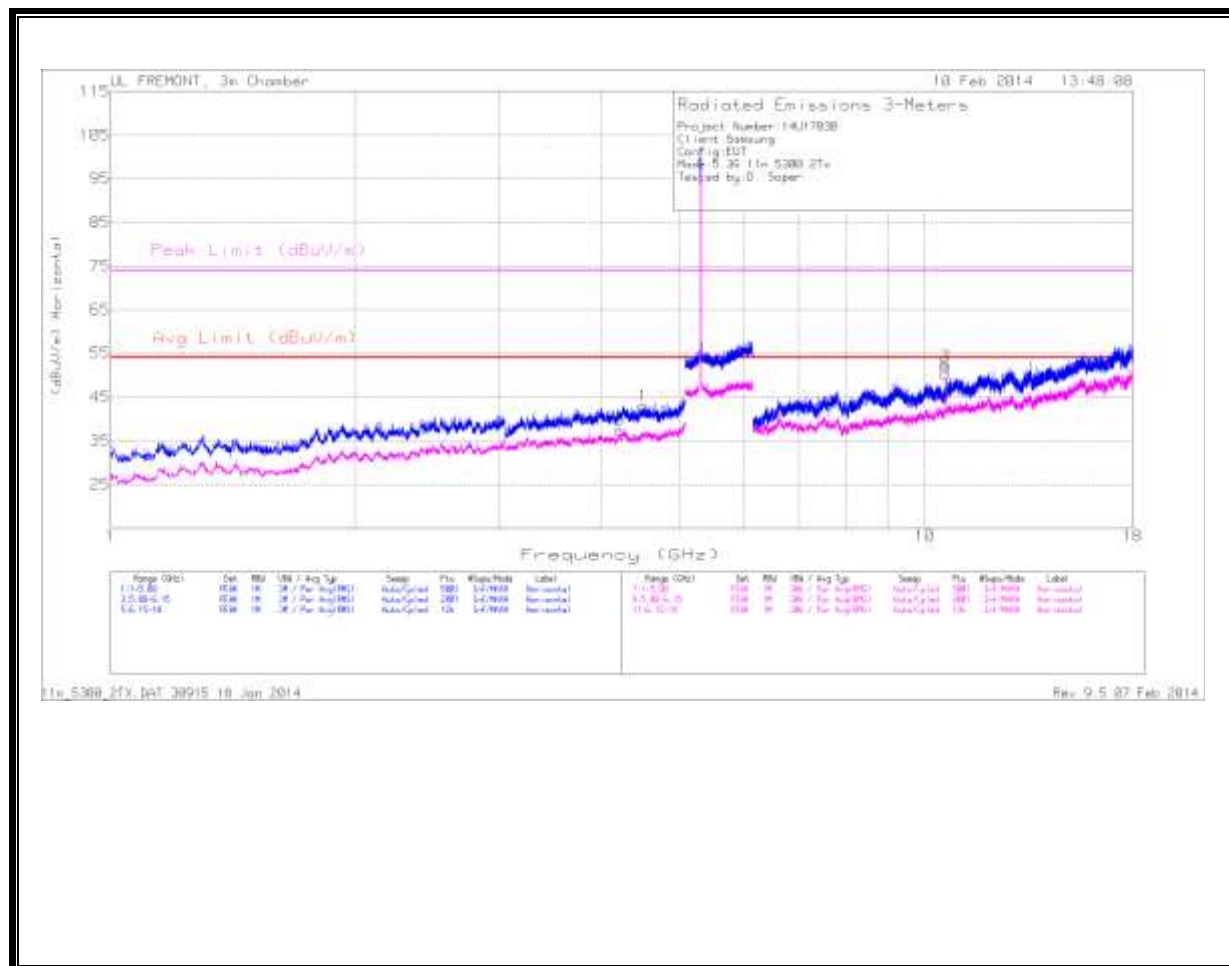
MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/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
6	1.029	43.56	Avg	28	-38	33.56	54	-20.44	-	-	0-360	101	V
7	1.693	38.94	Avg	29.3	-36.4	31.84	54	-22.16	-	-	0-360	101	V
5	4.222	33.46	Avg	33.5	-29.5	37.46	54	-16.54	-	-	0-360	101	H
1	4.506	37.97	PK	33.8	-28.8	42.97	54	-11.03	74	-31.03	0-360	200	H
2	4.506	38.89	PK	33.8	-28.8	43.89	54	-10.11	74	-30.11	0-360	200	V
3	10.595	37.48	PK	37.8	-23.3	51.98			74	-22.02	0-360	200	H
8	10.6	35.95	Avg	37.8	-23.3	50.45	54	-3.55	-	-	0-360	200	H
9	10.6	37.19	Avg	37.8	-23.3	51.69	54	-2.31	-	-	0-360	200	V
4	10.601	39.08	PK	37.8	-23.3	53.58			74	-20.42	0-360	201	V

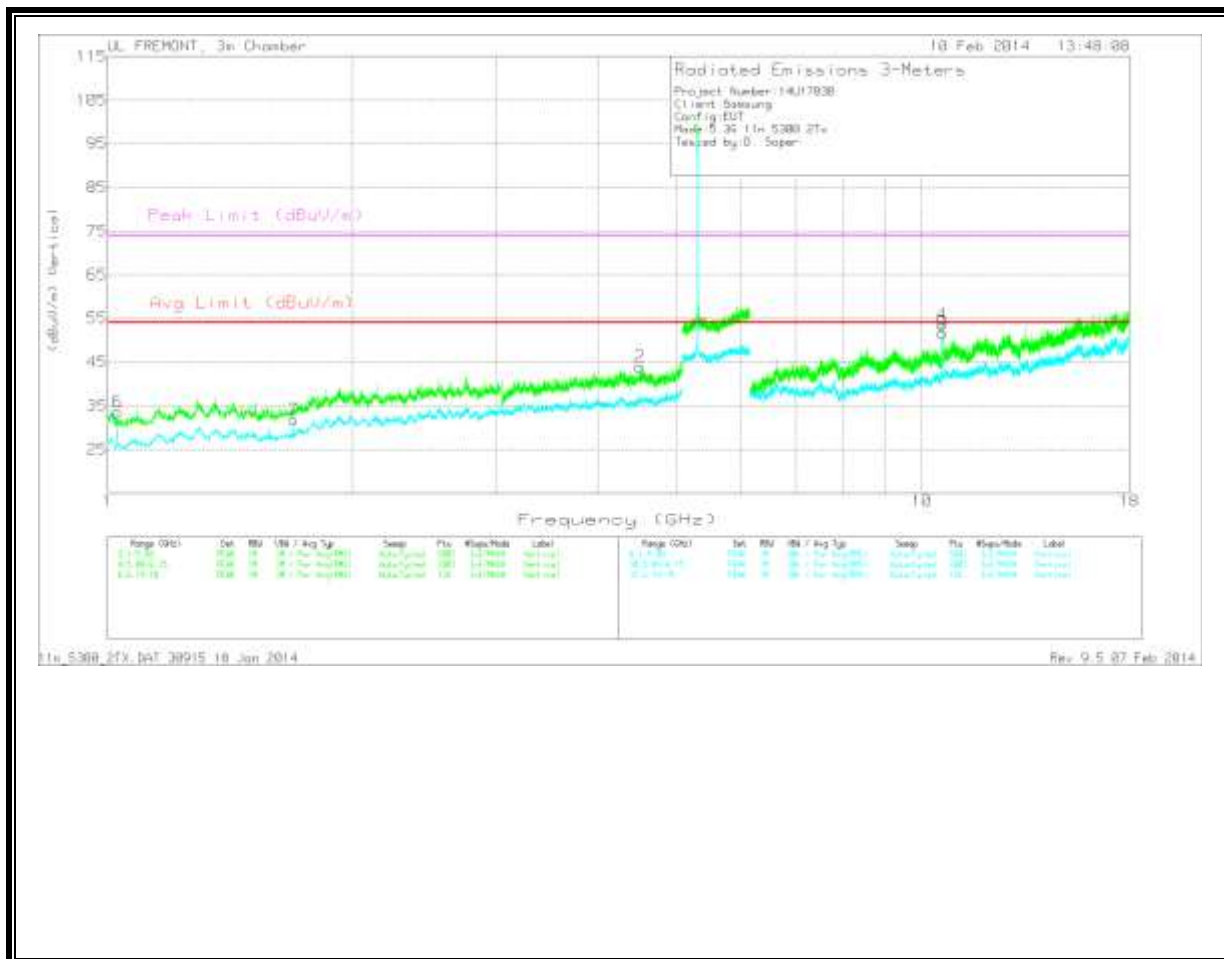
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
10.599	31.73	MAV1	37.8	-23.3	46.23	54	-7.77	74	-27.77	124	238	V
10.604	39.89	PK	37.8	-23.3	54.39			74	-19.61	124	238	V

PK - Peak detector

MAV1 - KDB558074 Option 1 Maximum RMS Average



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 T136 (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
6	1.029	43.56	Avg	28	-38	33.56	54	-20.44	-	-	0-360	101	V
7	1.693	38.94	Avg	29.3	-36.4	31.84	54	-22.16	-	-	0-360	101	V
5	4.222	33.46	Avg	33.5	-29.5	37.46	54	-16.54	-	-	0-360	101	H
1	4.506	37.97	PK	33.8	-28.8	42.97	54	-11.03	74	-31.03	0-360	200	H
2	4.506	38.89	PK	33.8	-28.8	43.89	54	-10.11	74	-30.11	0-360	200	V
3	10.595	37.48	PK	37.8	-23.3	51.98			74	-22.02	0-360	200	H
8	10.6	35.95	Avg	37.8	-23.3	50.45	54	-3.55	-	-	0-360	200	H
9	10.6	37.19	Avg	37.8	-23.3	51.69	54	-2.31	-	-	0-360	200	V
4	10.601	39.08	PK	37.8	-23.3	53.58			74	-20.42	0-360	201	V

PK - Peak detector

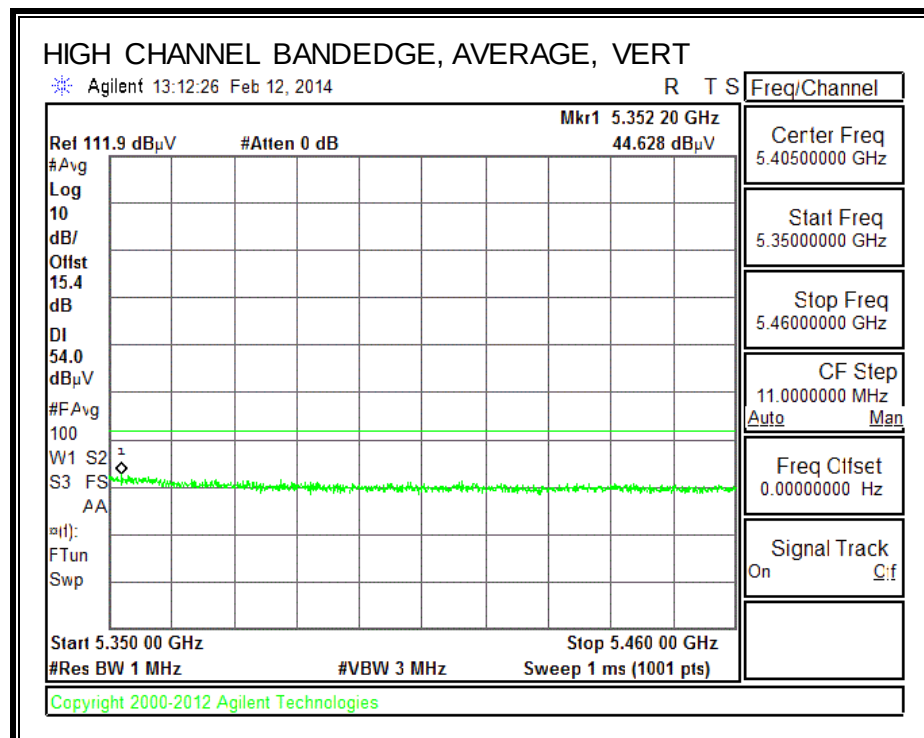
Avg - Video bandwidth < Resolution bandwidth

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
10.599	31.73	MAV1	37.8	-23.3	46.23	54	-7.77	74	-27.77	124	238	V
10.604	39.89	PK	37.8	-23.3	54.39			74	-19.61	124	238	V

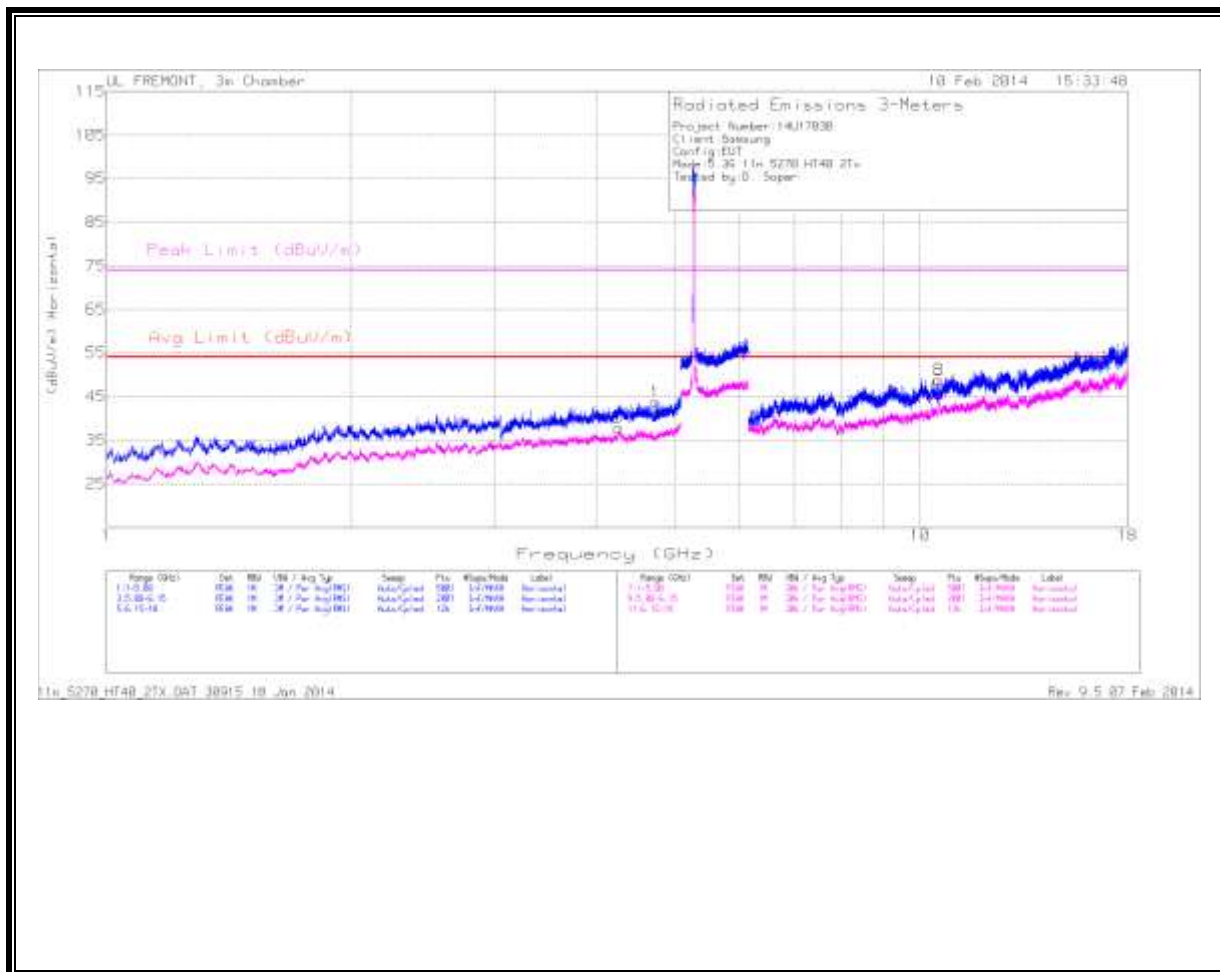
PK - Peak detector

MAV1 - KDB558074 Option 1 Maximum RMS Average

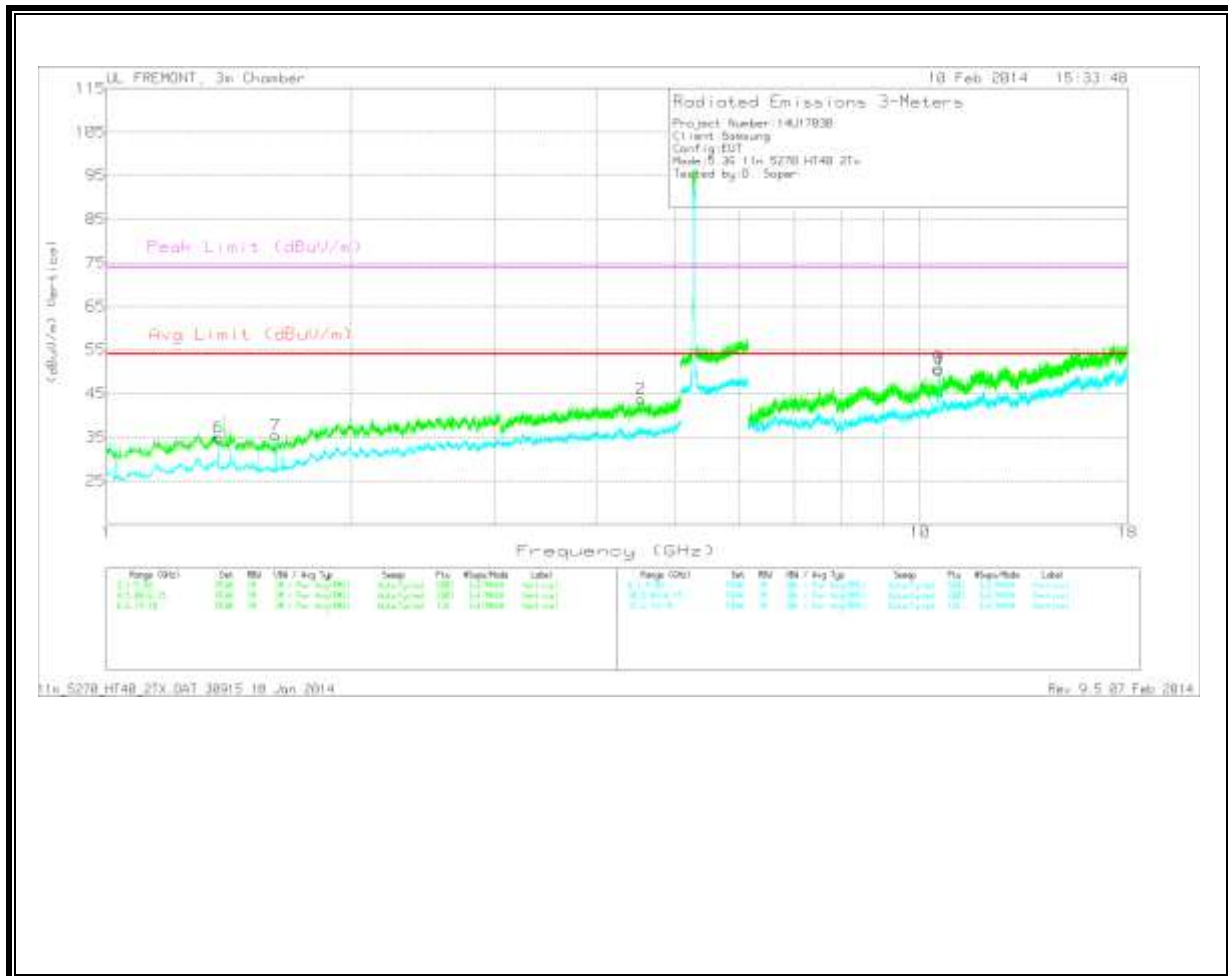


HARMONICS AND SPURIOUS EMISSIONS

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

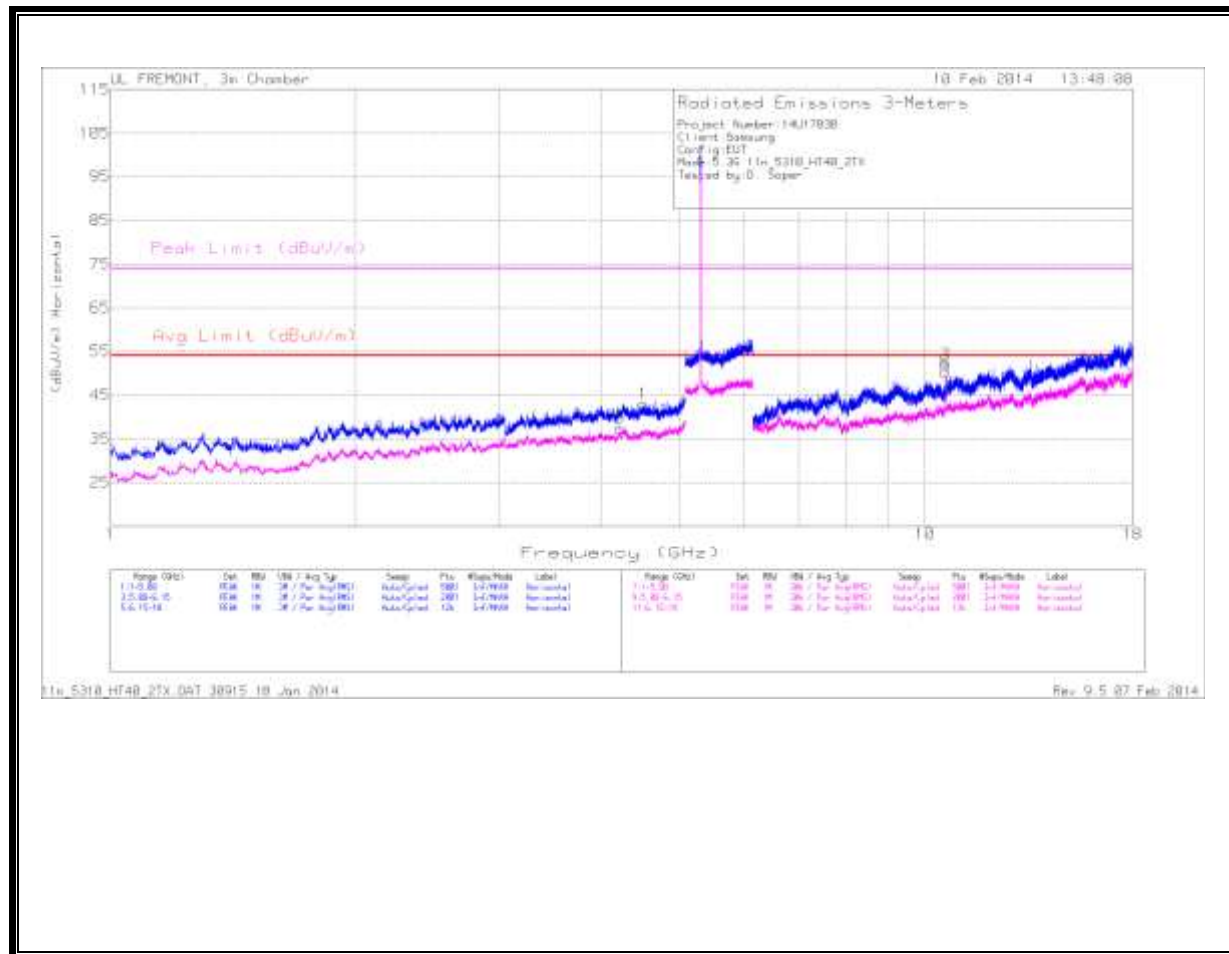
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6	1.374	41.91	Avg	29.9	-36.9	34.91	54	-19.09	-	-	0-360	200	V
7	1.614	42.92	Avg	28.4	-35.9	35.42	54	-18.58	-	-	0-360	200	V
5	4.262	32.16	Avg	33.6	-28	37.76	54	-16.24	-	-	0-360	101	H
2	4.54	39.49	PK	33.8	-29.6	43.69	54	-10.31	74	-30.31	0-360	201	V
1	4.724	39.94	PK	33.9	-30.1	43.74	54	-10.26	74	-30.26	0-360	200	H
3	10.537	34.02	PK	37.6	-22.8	48.82	54	-5.18	74	-25.18	0-360	101	H
9	10.538	36.05	Avg	37.6	-22.8	50.85	54	-3.15	-	-	0-360	201	V
8	10.541	34.15	Avg	37.6	-22.9	48.85	54	-5.15	-	-	0-360	200	H
4	10.546	36.08	PK	37.6	-23.3	50.38	54	-3.62	74	-23.62	0-360	201	V

PK - Peak detector

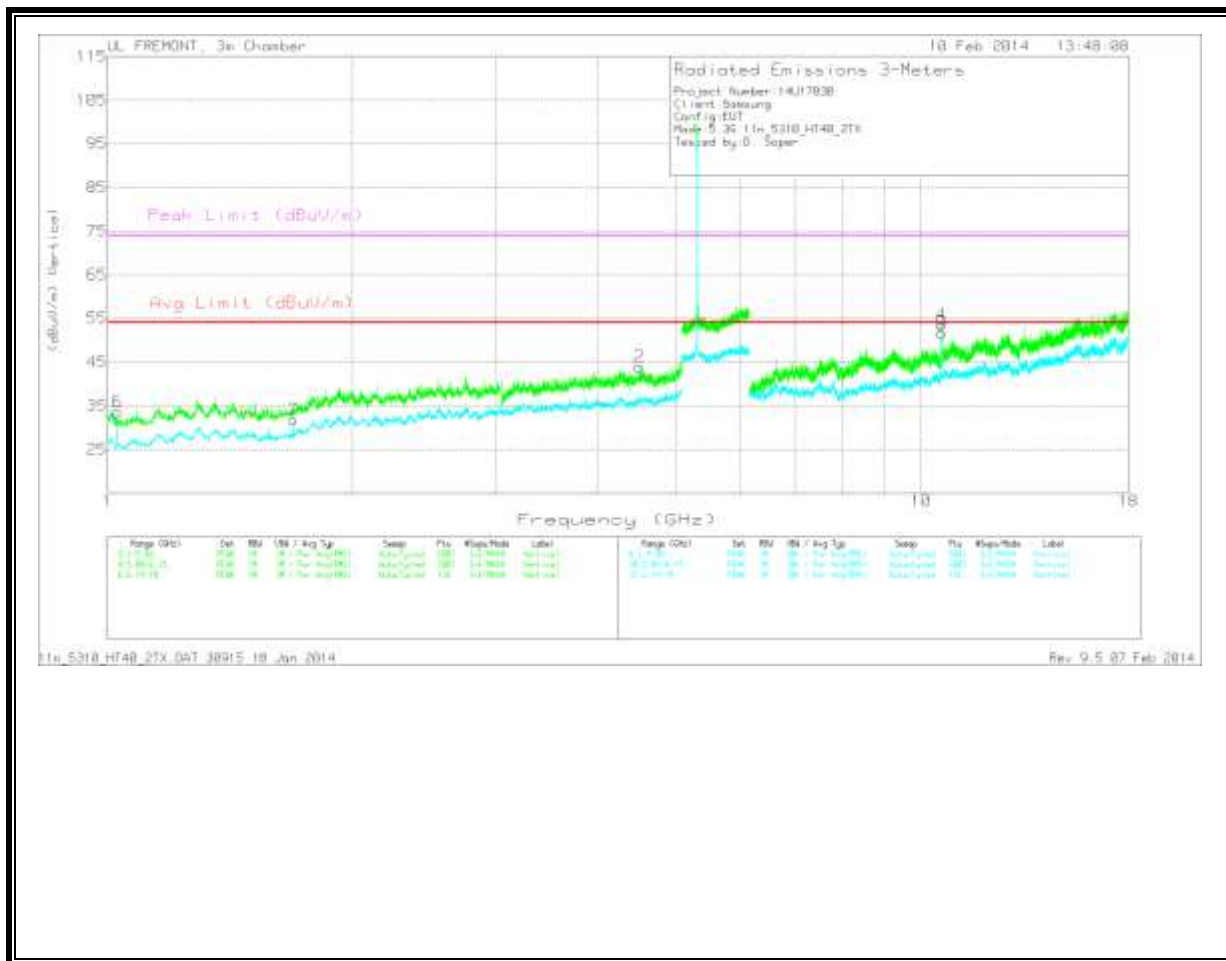
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
10.521	29.44	MAV1	37.6	-22.9	44.14	54	-9.86	74	-29.86	181	144	V
10.639	29.44	MAV1	37.8	-23	44.24	54	-9.76	74	-29.76	188	166	V

MAV1 - KDB558074 Option 1 Maximum RMS Average



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

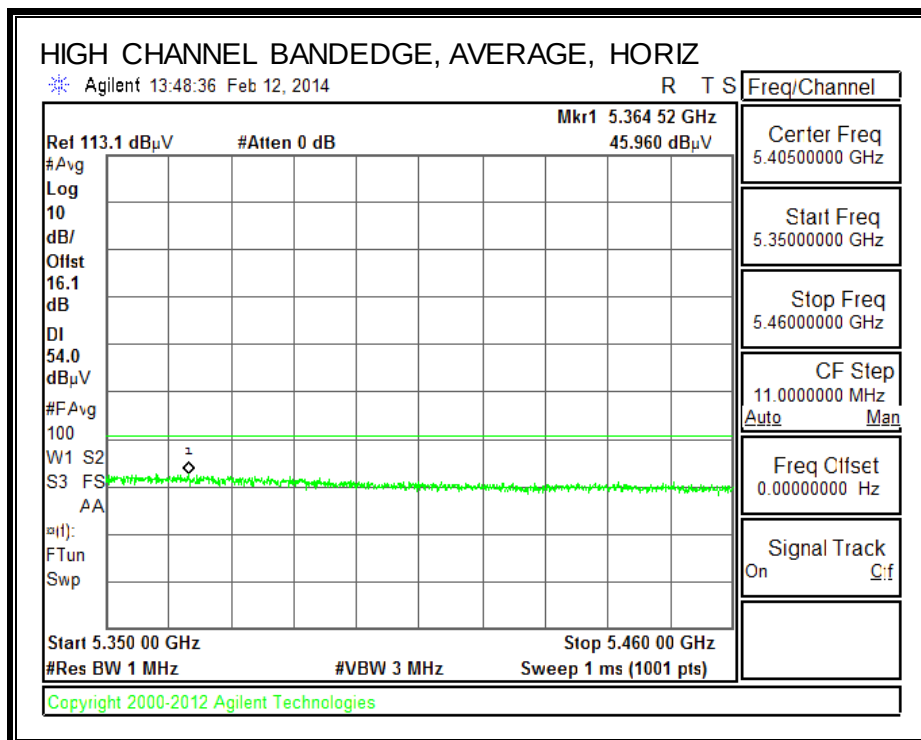
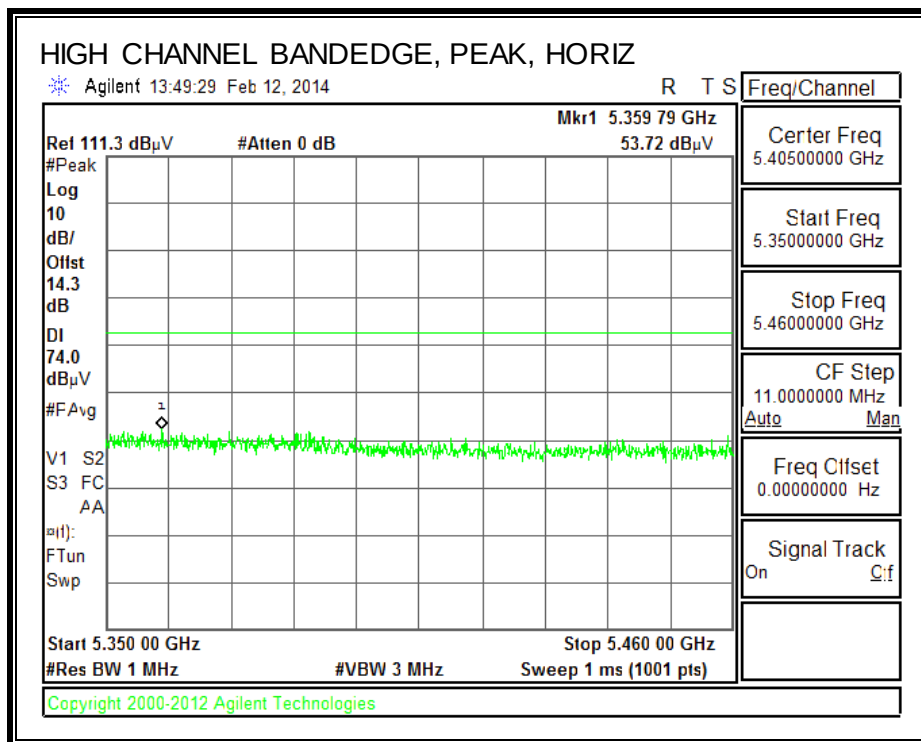


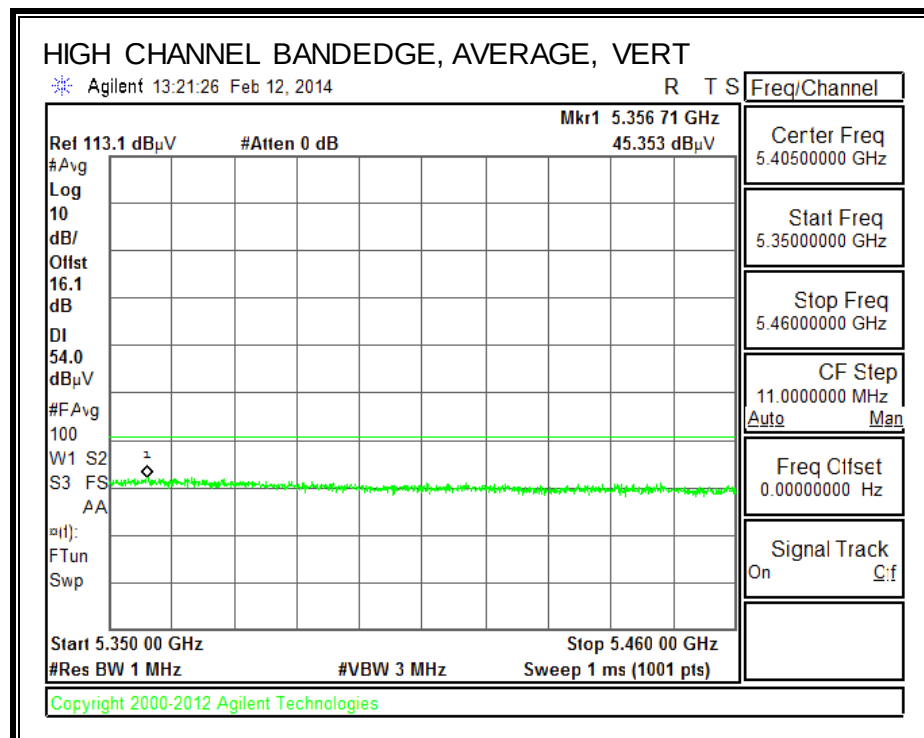
Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6	1.029	43.56	Avg	28	-38	33.56	54	-20.44	-	-	0-360	101	V
7	1.693	38.94	Avg	29.3	-36.4	31.84	54	-22.16	-	-	0-360	101	V
5	4.222	33.46	Avg	33.5	-29.5	37.46	54	-16.54	-	-	0-360	101	H
1	4.506	37.97	PK	33.8	-28.8	42.97	54	-11.03	74	-31.03	0-360	200	H
2	4.506	38.89	PK	33.8	-28.8	43.89	54	-10.11	74	-30.11	0-360	200	V
3	10.595	37.48	PK	37.8	-23.3	51.98			74	-22.02	0-360	200	H
8	10.6	35.95	Avg	37.8	-23.3	50.45	54	-3.55	-	-	0-360	200	H
4	10.601	39.08	PK	37.8	-23.3	53.58			74	-20.42	0-360	201	V

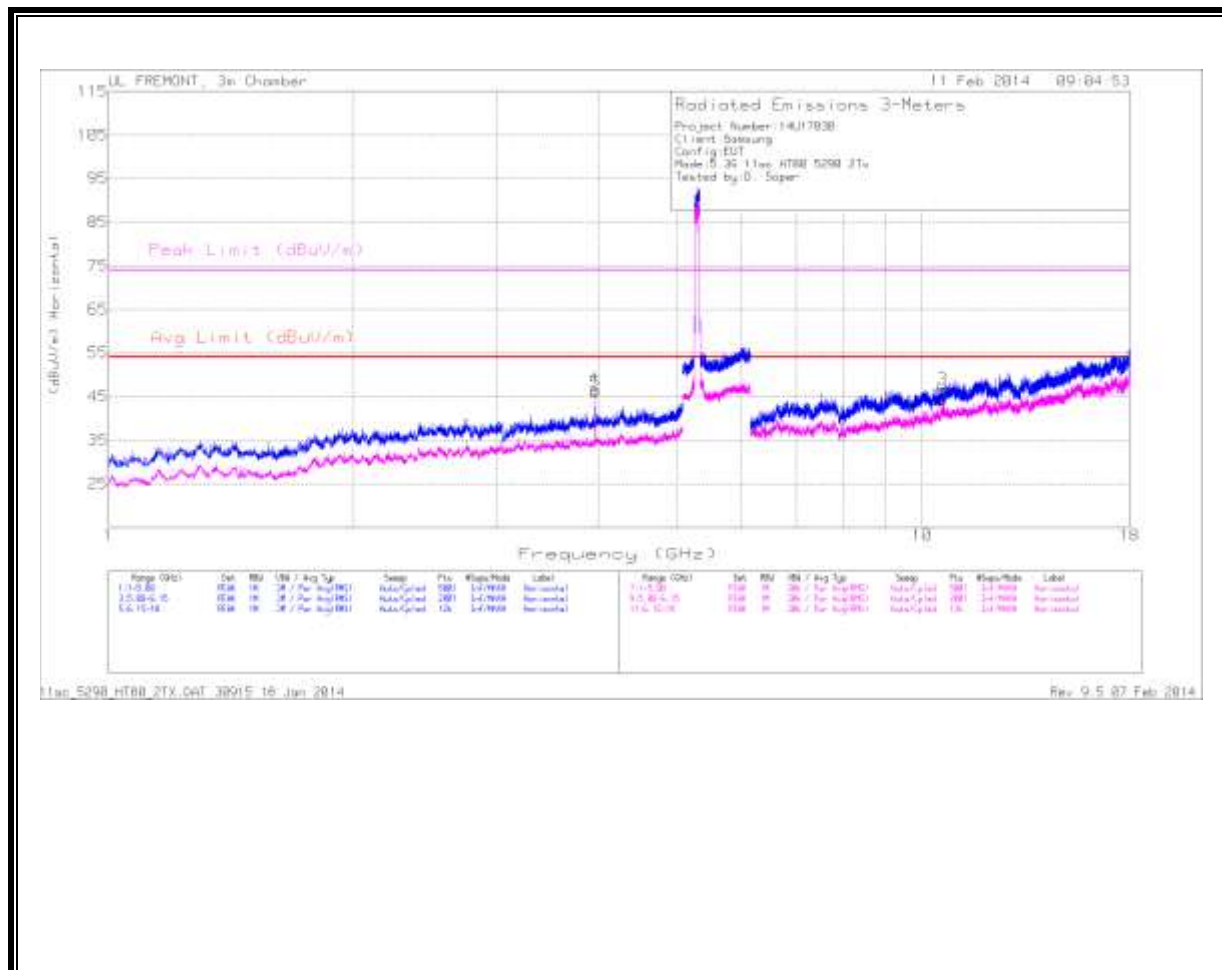
11.2.7. TX ABOVE 1 GHz 802.11ac HT80 MODE IN THE 5.3 GHz BAND AUTHORIZED BANDEDGE (HIGH CHANNEL)



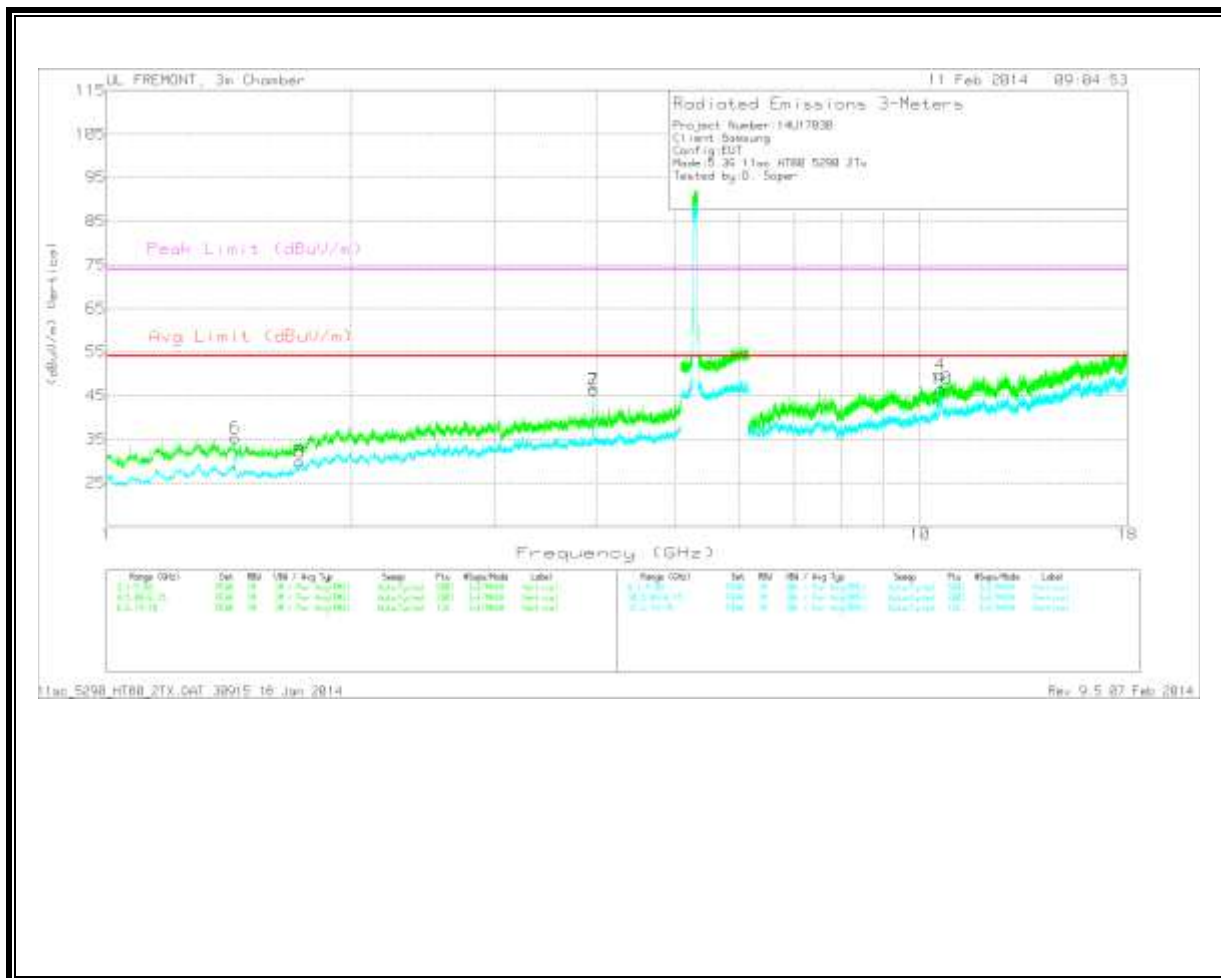


HARMONICS AND SPURIOUS EMISSIONS

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.

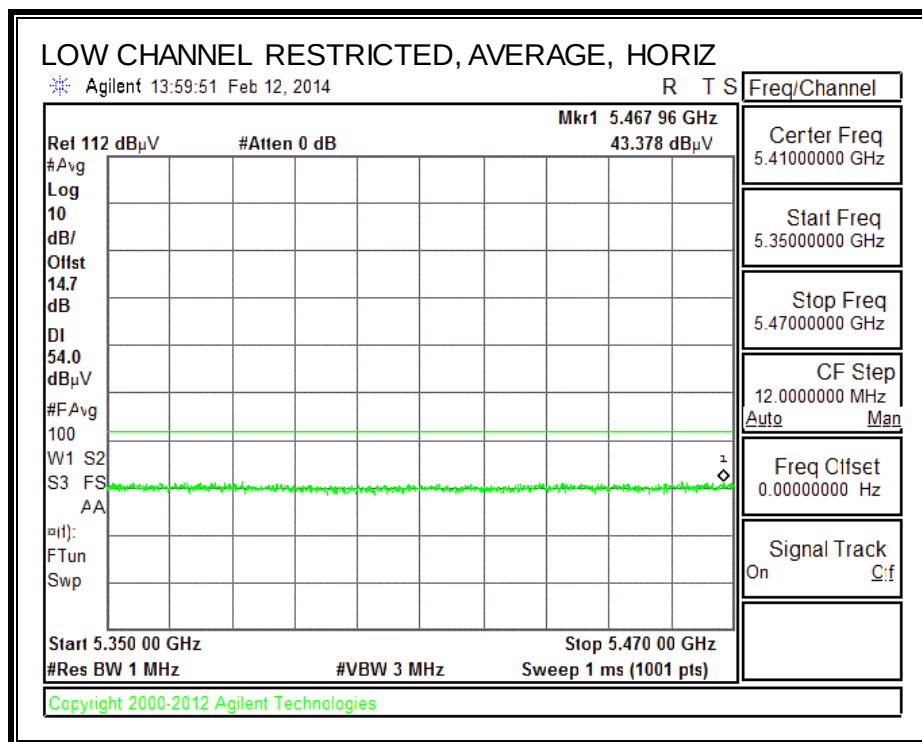
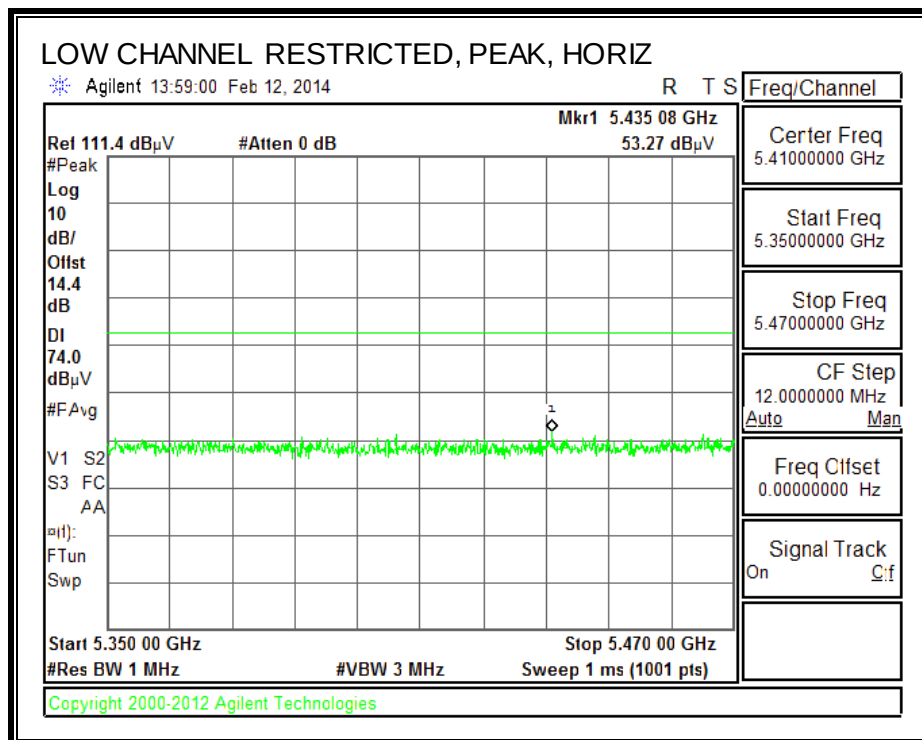
LOW CHANNEL DATA

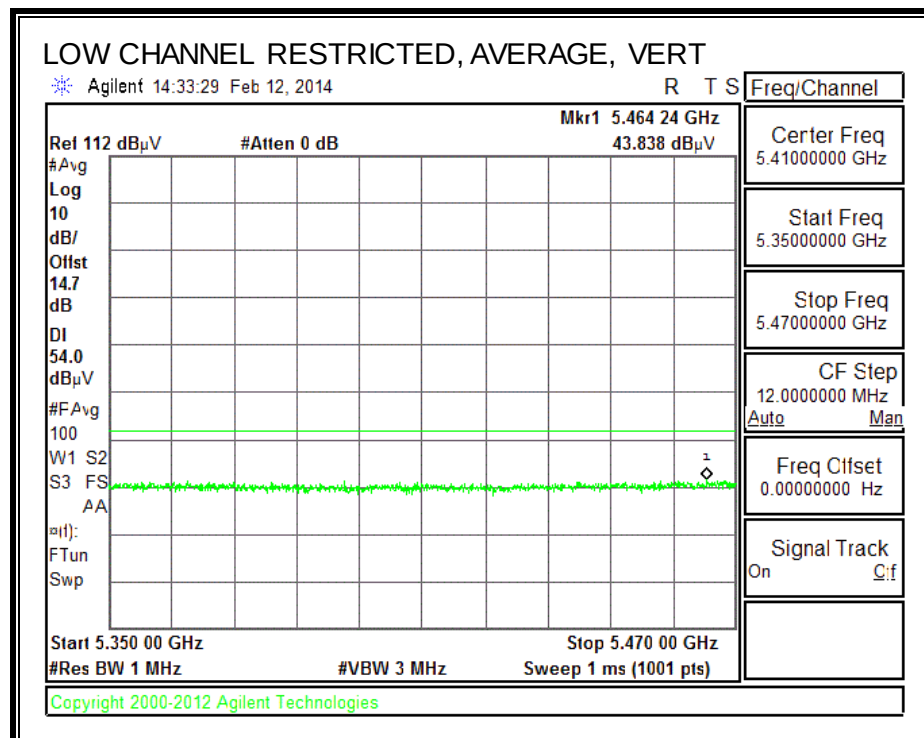
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6	1.438	41.79	Avg	29.5	-36	35.29	54	-18.71	-	-	0-360	200	V
8	1.729	35.66	Avg	29.7	-35.5	29.86	54	-24.14	-	-	0-360	101	V
1	3.968	43.35	PK	33.8	-30.4	46.75	54	-7.25	74	-27.25	0-360	100	H
2	3.968	43.01	PK	33.8	-30.4	46.41	54	-7.59	74	-27.59	0-360	200	V
5	3.968	42.66	Avg	33.8	-30.4	46.06	54	-7.94	-	-	0-360	101	H
7	3.968	42.93	Avg	33.8	-30.4	46.33	54	-7.67	-	-	0-360	200	V
9	10.596	29.75	Avg	37.8	-23.3	44.25	54	-9.75	-	-	0-360	200	H
4	10.598	35.25	PK	37.8	-23.3	49.75	54	-4.25	74	-24.25	0-360	200	V
3	10.599	32.28	PK	37.8	-23.3	46.78	54	-7.22	74	-27.22	0-360	101	H
10	10.618	31.81	Avg	37.8	-23	46.61	54	-7.39	-	-	0-360	201	V

* - indicates frequency in CFR 15.205/IC 7.2.2 Restricted Band

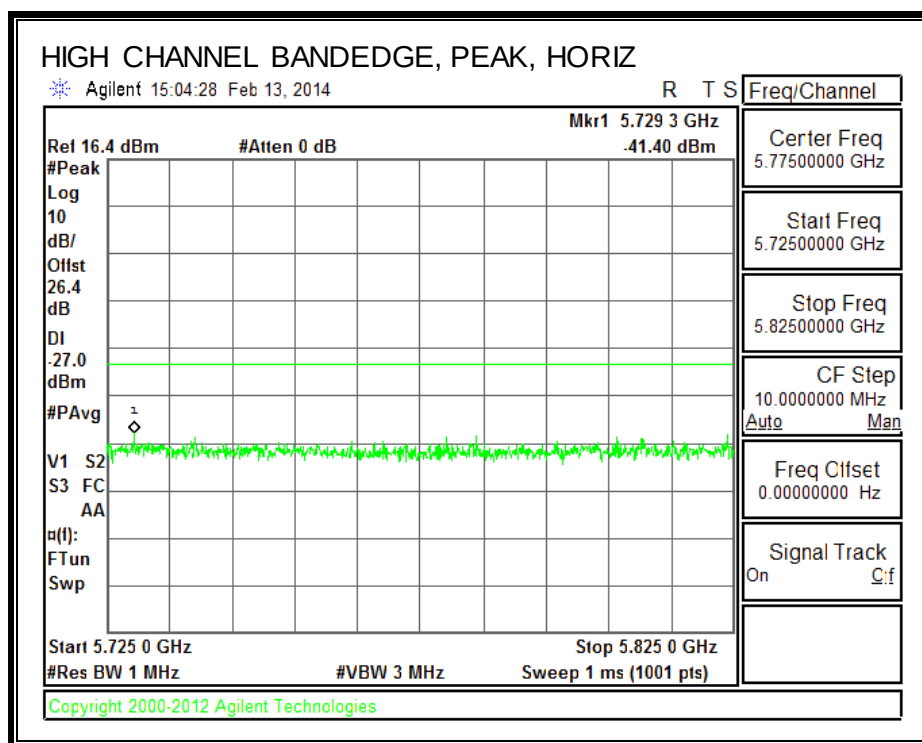
11.3. 5.5-5.6 GHz

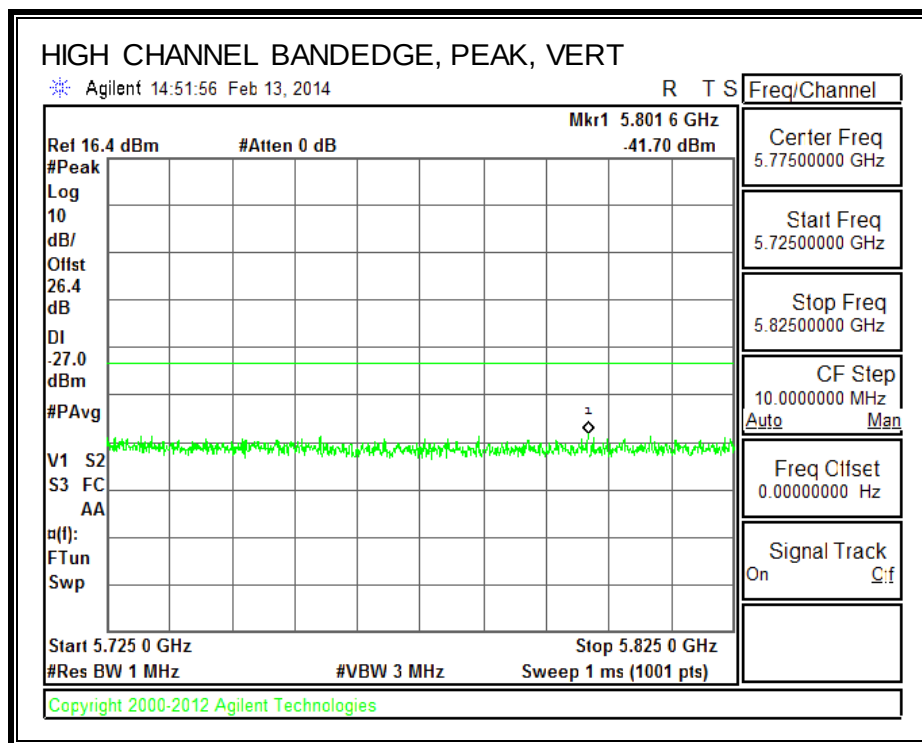
11.3.1. TX ABOVE 1 GHz 802.11a MODE IN THE 5.5 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)





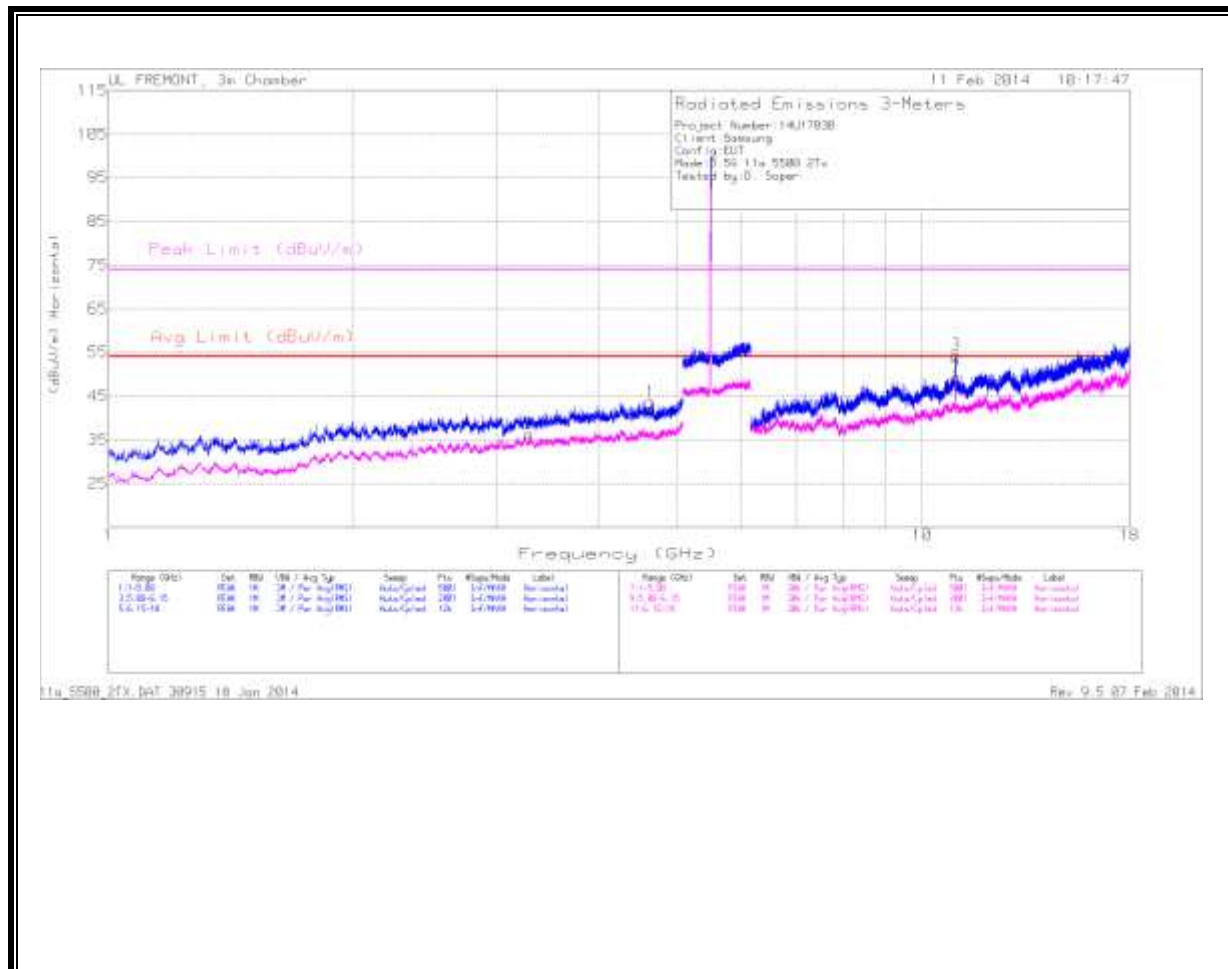
AUTHORIZED BANDEDGE (HIGH CHANNEL)



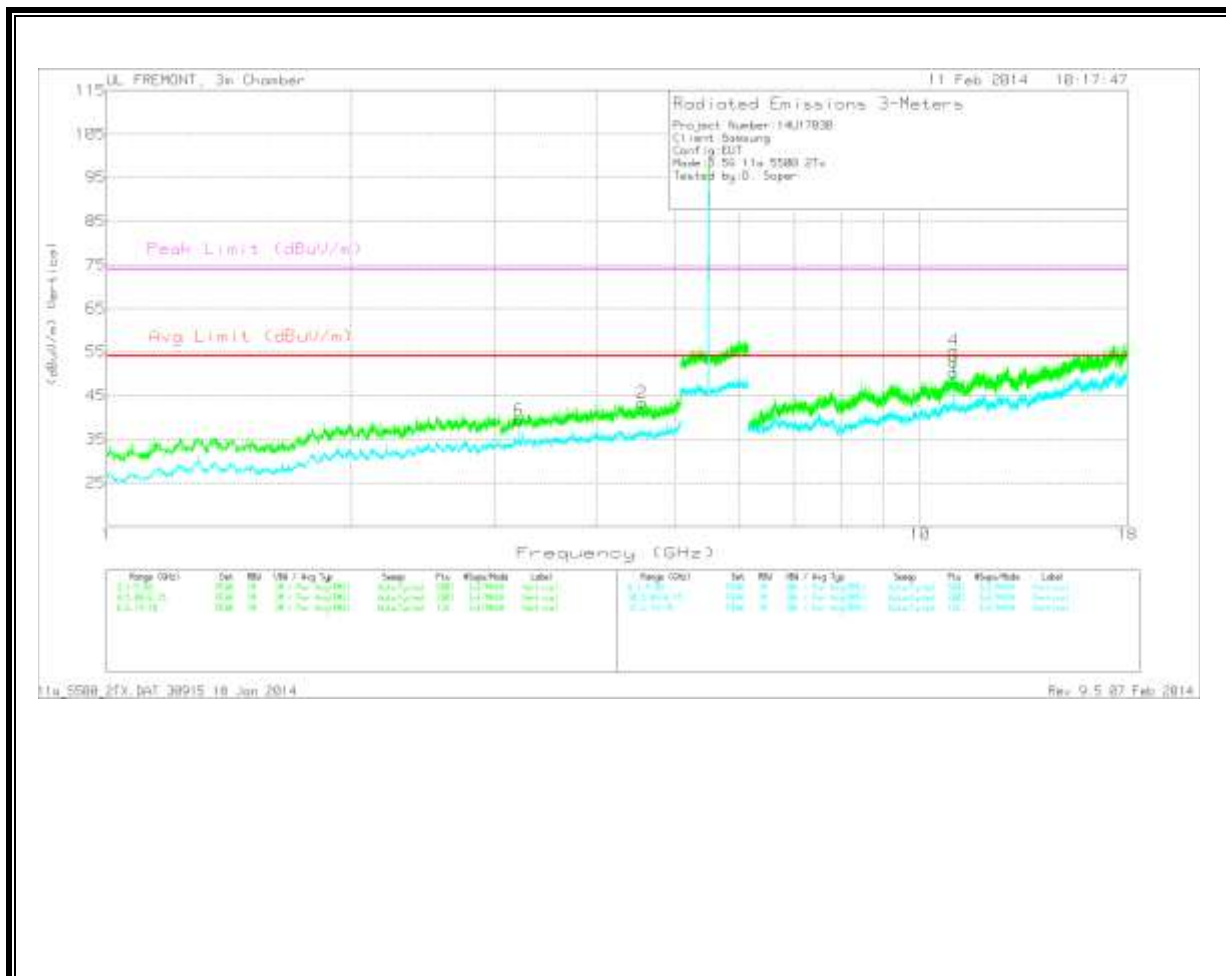


HARMONICS AND SPURIOUS EMISSIONS

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

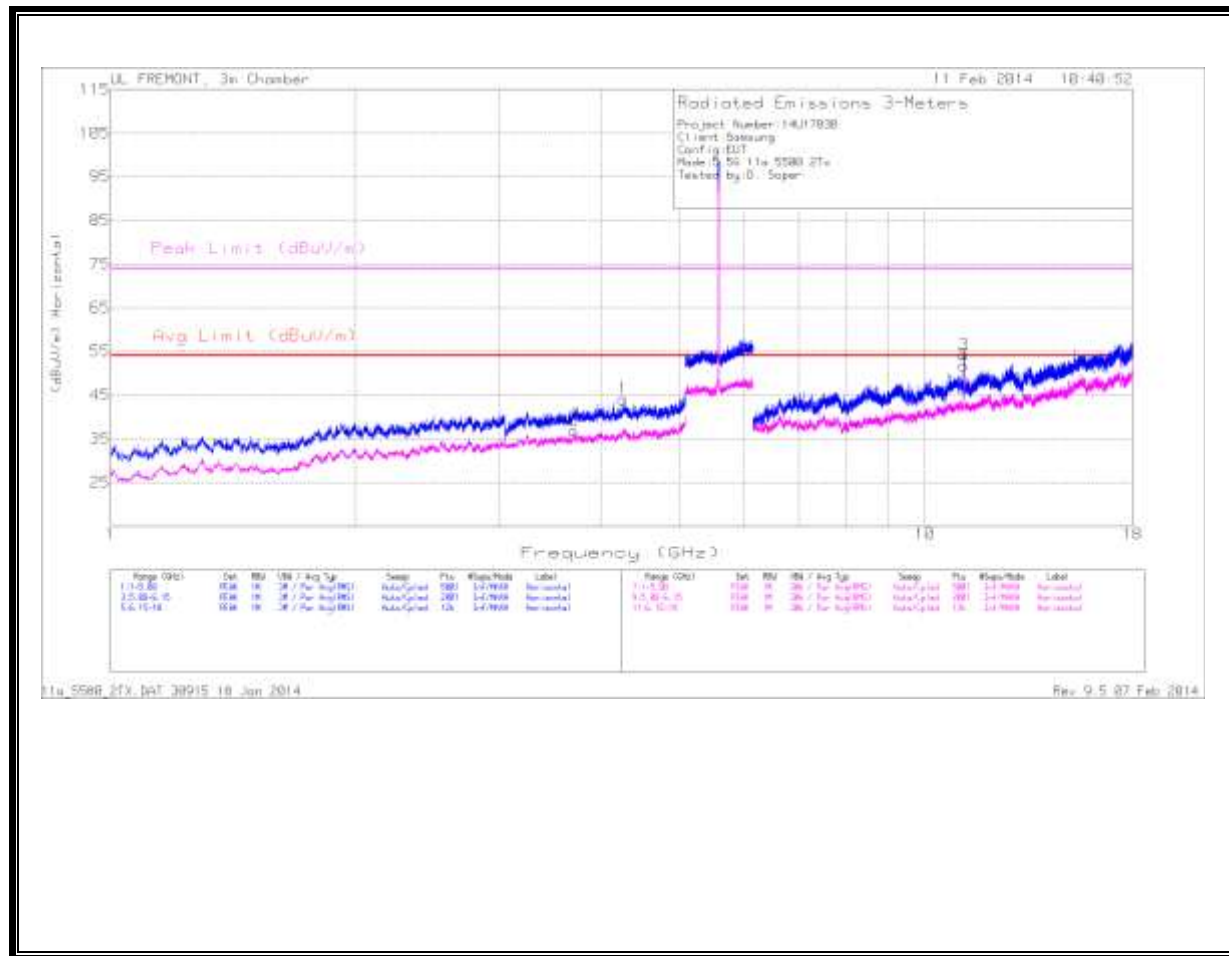
Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6	3.214	38.9	Avg	33.5	-33	39.4	54	-14.6	-	-	0-360	101	V
5	3.285	34.51	Avg	33	-31.2	36.31	54	-17.69	-	-	0-360	100	H
2	4.55	39.75	PK	33.9	-30.3	43.35	54	-10.65	74	-30.65	0-360	101	V
1	4.634	39.02	PK	33.9	-29.3	43.62	54	-10.38	74	-30.38	0-360	200	H
8	10.997	35.04	Avg	37.8	-22.5	50.34	54	-3.66	-	-	0-360	201	V
4	10.998	40.14	PK	37.8	-22.6	55.34			74	-18.66	0-360	200	V
7	11	34.05	Avg	37.8	-22.6	49.25	54	-4.75	-	-	0-360	200	H
3	11.01	39.16	PK	37.8	-22.5	54.46			74	-19.54	0-360	200	H

PK - Peak detector

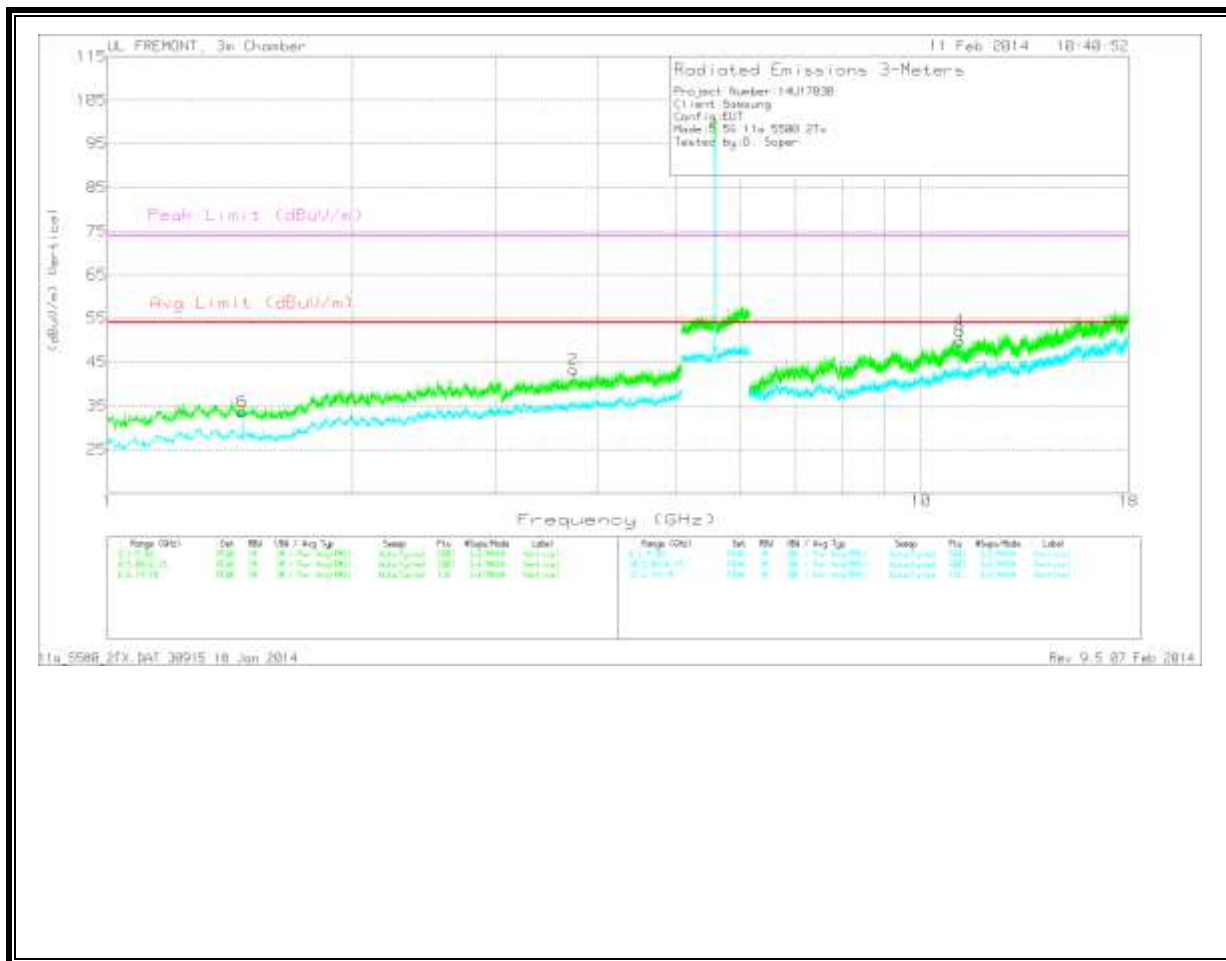
Radiated Emissions

Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
10.599	31.73	MAV1	37.8	-23.3	46.23	54	-7.77	74	-27.77	124	238	V
10.999	30.16	MAV1	37.8	-22.6	45.36	54	-8.64	74	-28.64	184	112	V

MAV1 - KDB558074 Option 1 Maximum RMS Average



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

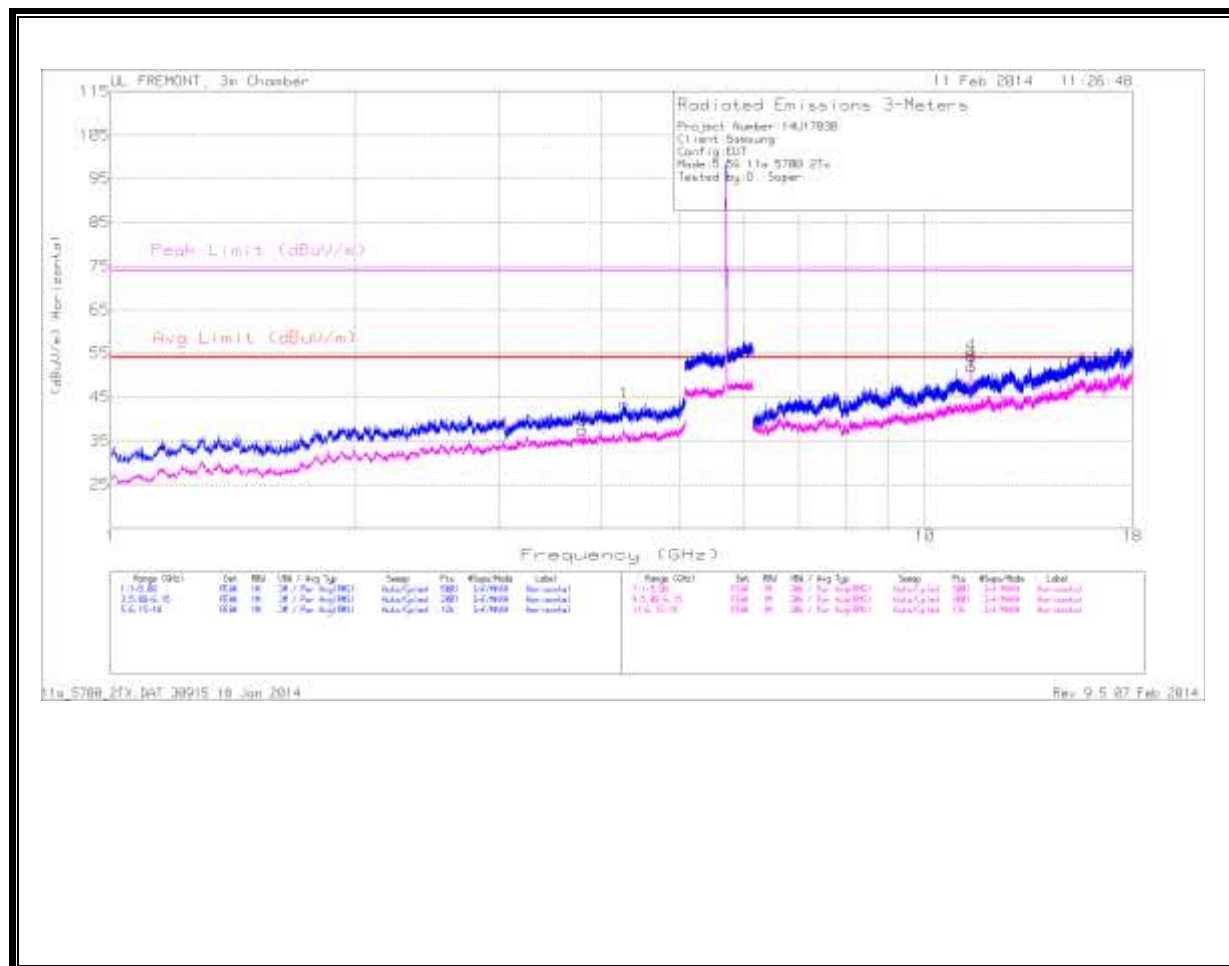
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6	1.466	40.22	Avg	29.2	-35.8	33.62	54	-20.38	-	-	0-360	101	V
5	3.705	33.84	Avg	33.3	-30.3	36.84	54	-17.16	-	-	0-360	200	H
2	3.737	39.7	PK	33.4	-29.8	43.3	54	-10.7	74	-30.7	0-360	201	V
1	4.261	38.55	PK	33.6	-28.1	44.05	54	-9.95	74	-29.95	0-360	200	H
4	11.158	36.67	PK	37.9	-22.4	52.17			74	-21.83	0-360	200	V
8	11.162	34.37	Avg	37.9	-22.4	49.87	54	-4.13	-	-	0-360	200	V
3	11.169	38.74	PK	37.9	-22.4	54.24			74	-19.76	0-360	200	H

PK - Peak detector

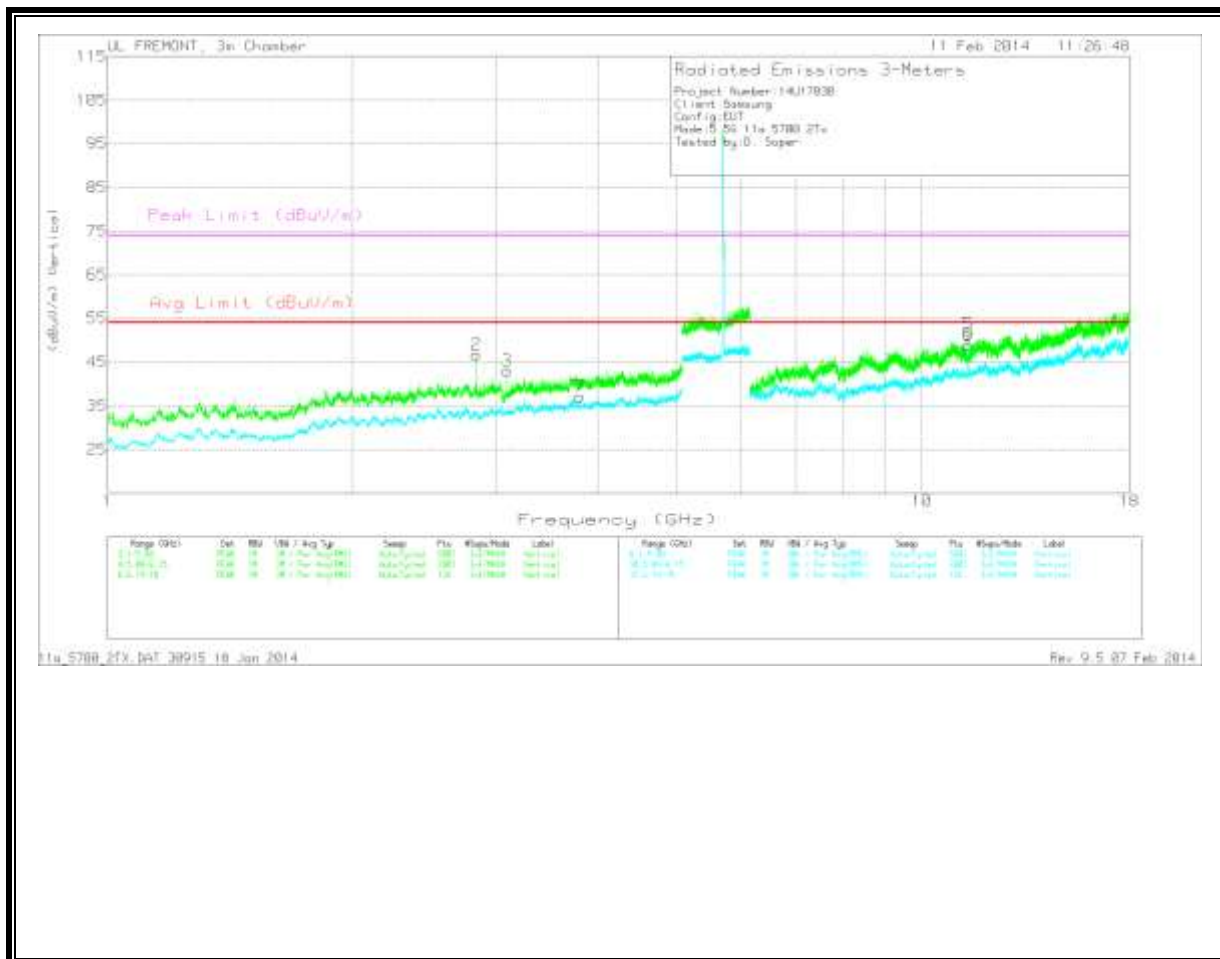
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
10.599	31.73	MAV1	37.8	-23.3	46.23	54	-7.77	74	-27.77	124	238	V
11.16	31.42	MAV1	37.9	-22.4	46.92	54	-7.08	74	-27.08	15	152	H

MAV1 - KDB558074 Option 1 Maximum RMS Average



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

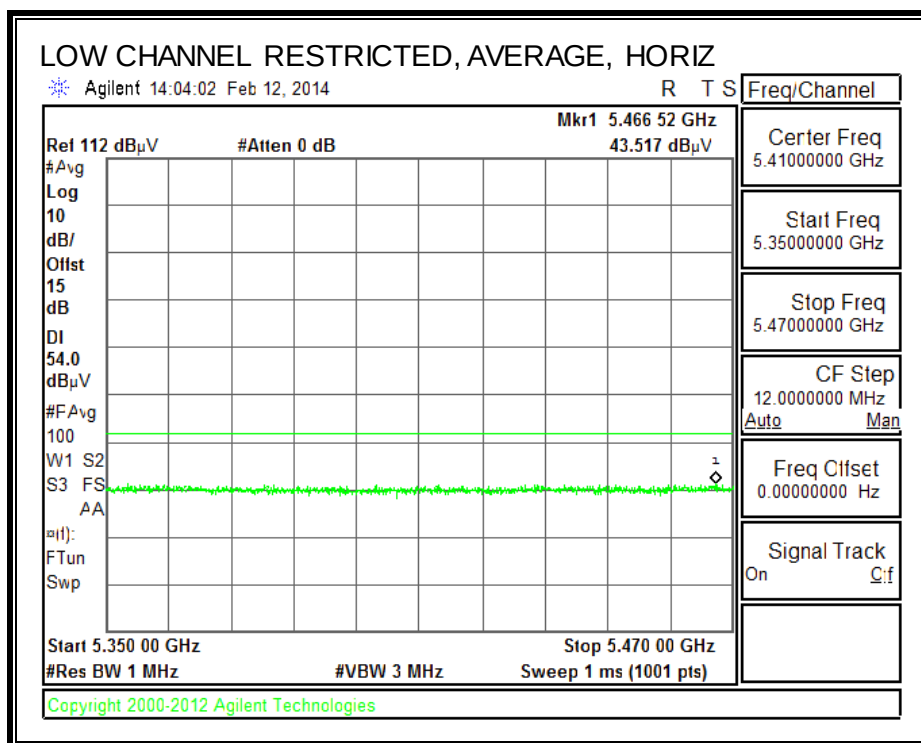
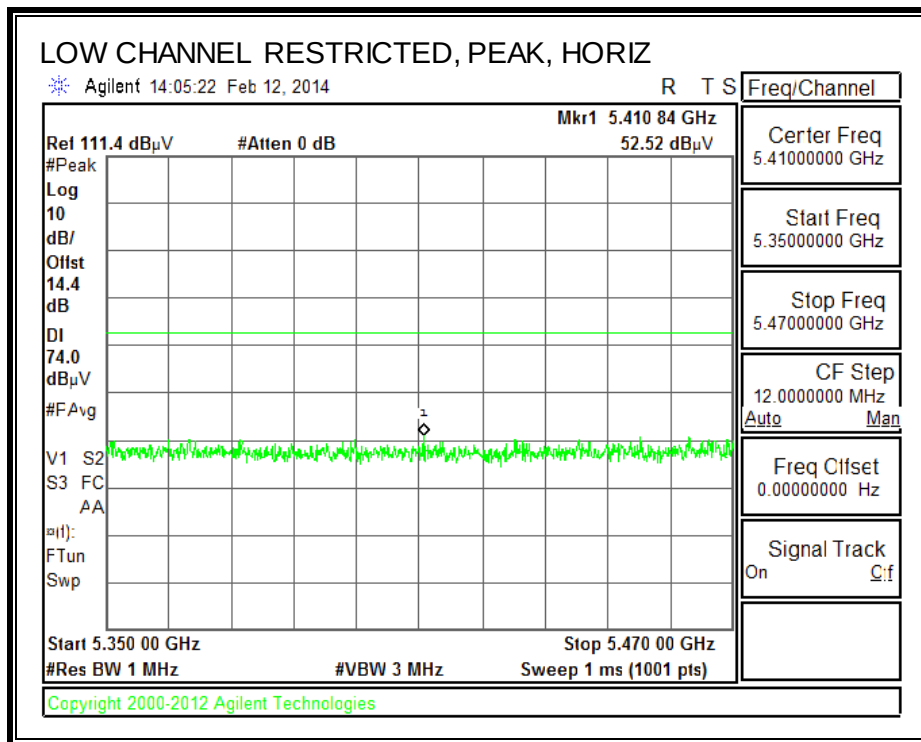
Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	2.838	47.53	PK	32.5	-33.3	46.73	54	-7.27	74	-27.27	0-360	201	V
3	3.095	42.57	PK	32.8	-32.3	43.07	54	-10.93	74	-30.93	0-360	100	V
6	3.8	35.26	Avg	33.5	-31.3	37.46	54	-16.54	-	-	0-360	101	H
7	3.8	34.88	Avg	33.5	-31.3	37.08	54	-16.92	-	-	0-360	201	V
1	4.275	38.67	PK	33.6	-28.7	43.57	54	-10.43	74	-30.43	0-360	200	H
4	11.4	39.69	PK	38.2	-23.4	54.49			74	-19.51	0-360	200	H
5	11.402	36.53	PK	38.2	-23.3	51.43			74	-22.57	0-360	101	V
9	11.402	34.03	Avg	38.2	-23.3	48.93	54	-5.07	-	-	0-360	200	V

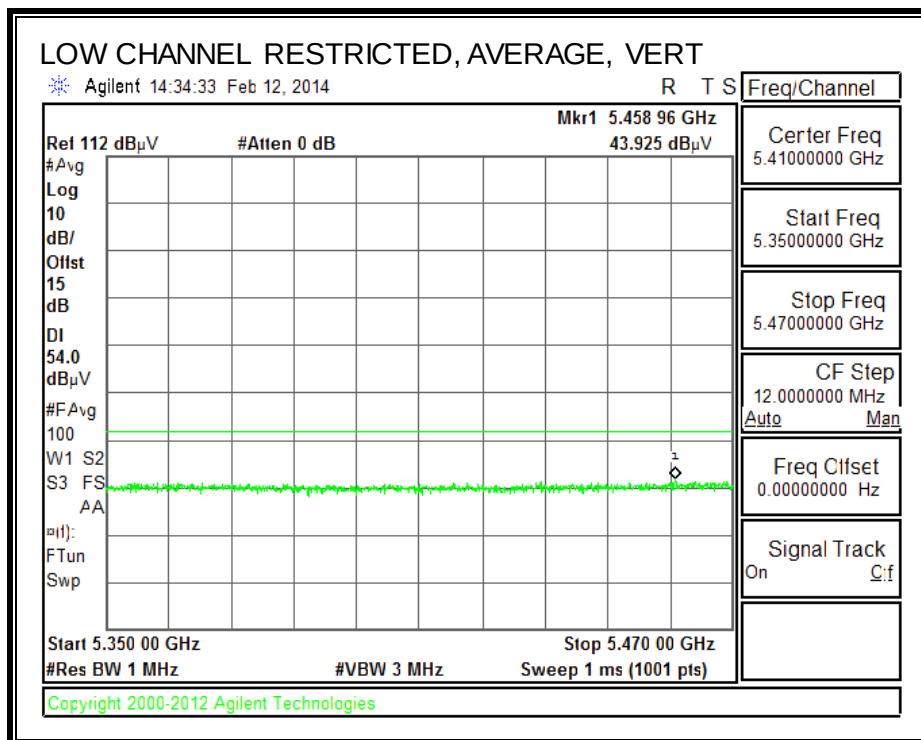
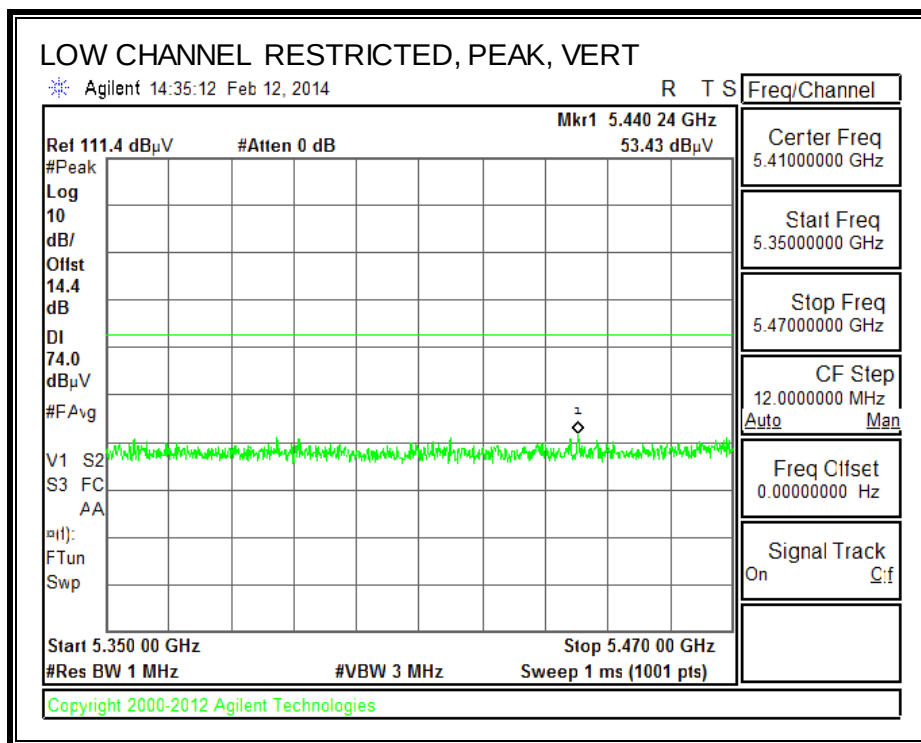
PK - Peak detector

Radiated Emissions

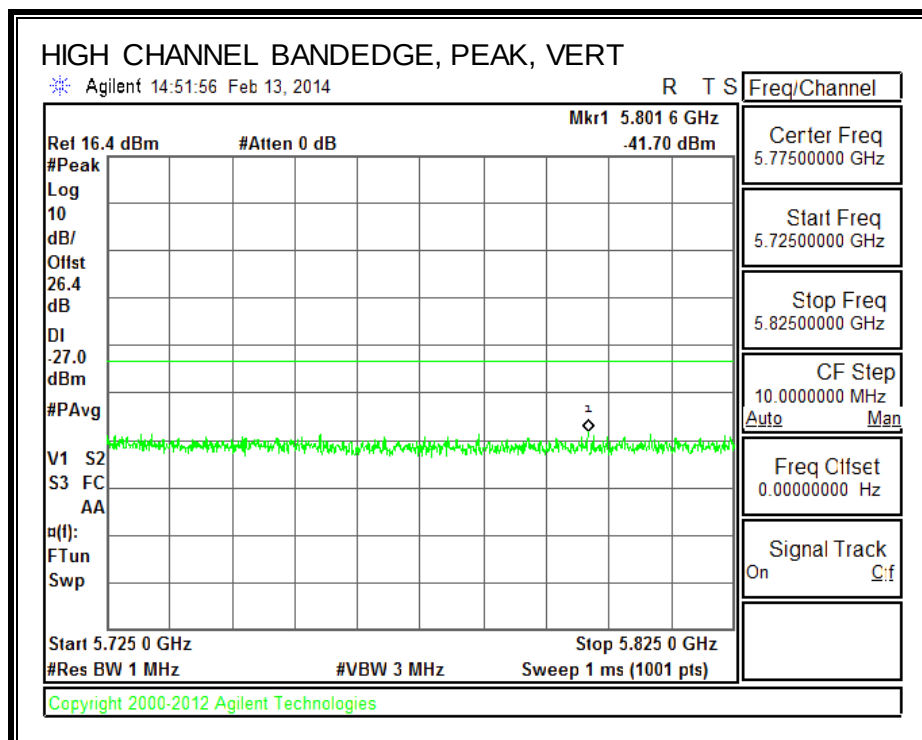
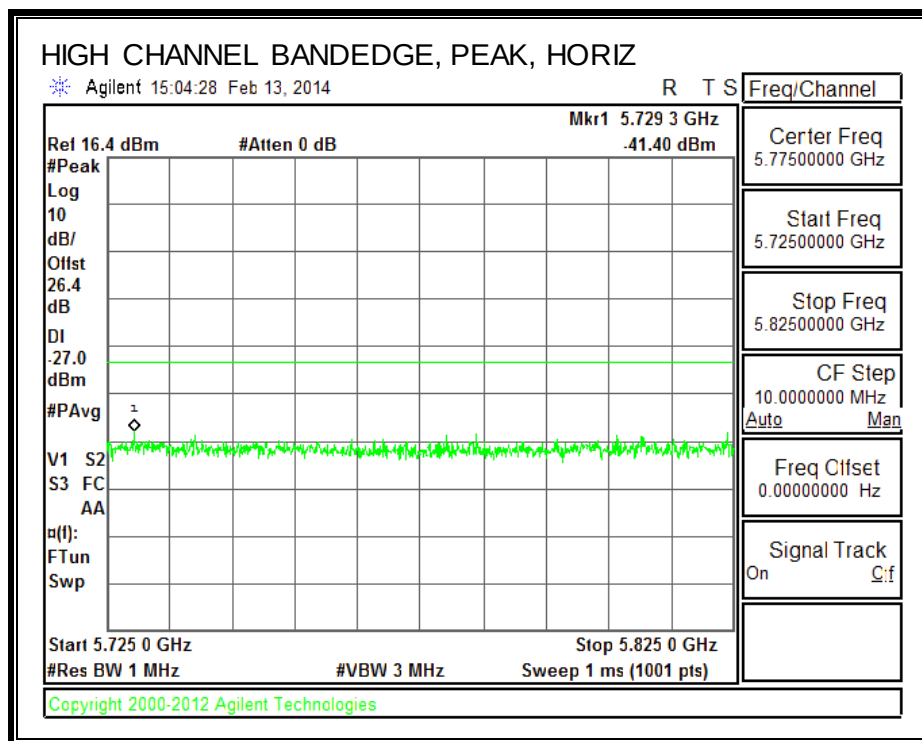
Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
10.599	31.73	MAV1	37.8	-23.3	46.23	54	-7.77	74	-27.77	124	238	V
11.4	33.06	MAV1	38.2	-23.4	47.86	54	-6.14	74	-26.14	19	183	H

MAV1 - KDB558074 Option 1 Maximum RMS Average



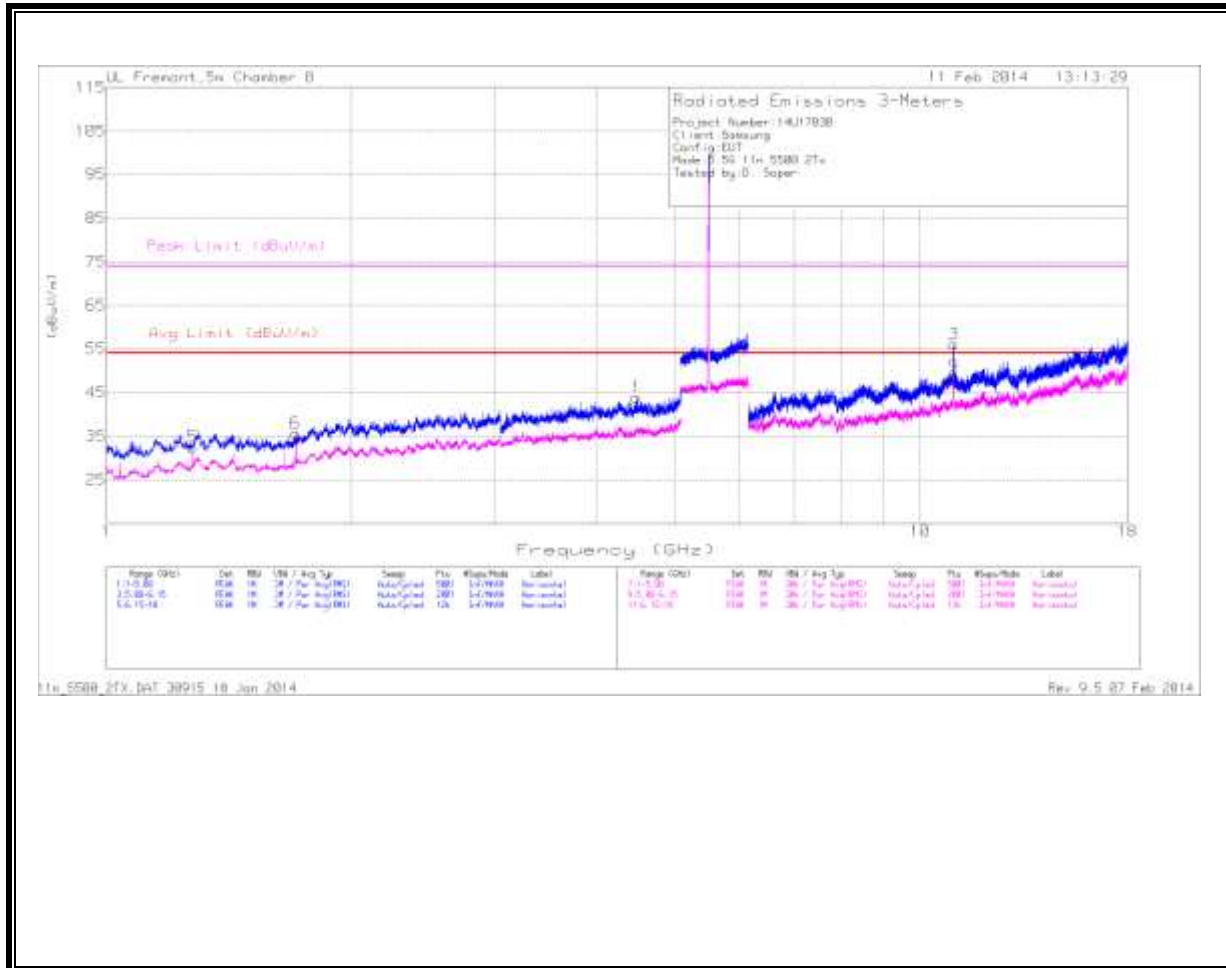


AUTHORIZED BANDEDGE (HIGH CHANNEL)

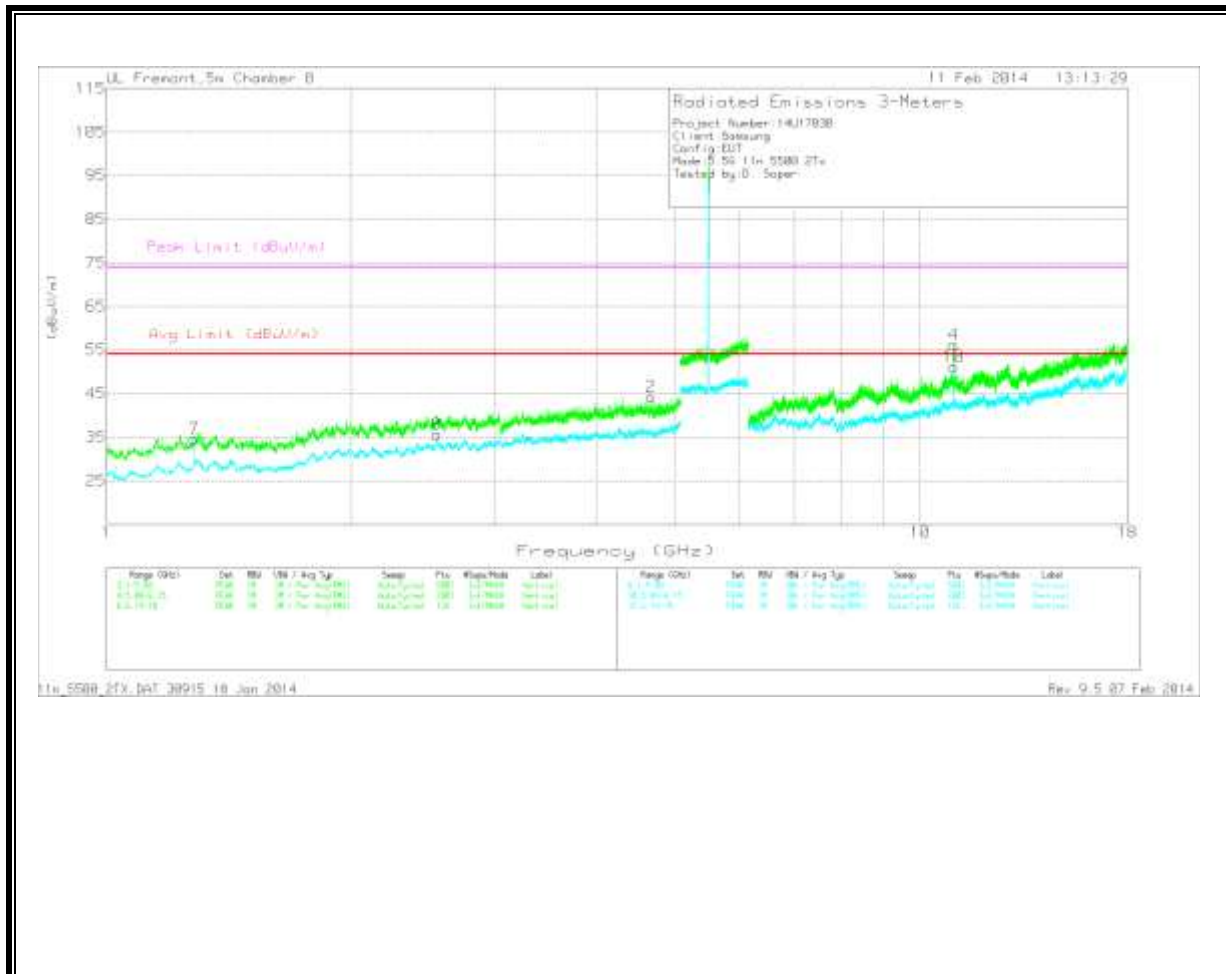


HARMONICS AND SPURIOUS EMISSIONS

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

Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 4.676	39.62	PK	33.9	-29.3	44.22	54	-9.78	74	-29.78	0-360	100	V
3	* 10.997	40.81	PK	37.8	-22.5	56.11			74	-17.89	0-360	200	H
4	* 10.995	40.76	PK	37.8	-22.4	56.16			74	-17.84	0-360	200	V
5	* 1.277	39.66	Avg	30.1	-37.2	32.56	54	-21.44	-	-	0-360	200	H
6	* 1.707	42.3	Avg	29.5	-36.1	35.7	54	-18.3	-	-	0-360	200	H
7	* 1.281	41.57	Avg	30.1	-37.1	34.57	54	-19.43	-	-	0-360	101	V
9	* 11.004	33.66	Avg	37.8	-22.6	48.86	54	-5.14	-	-	0-360	101	H
8	2.547	35.75	Avg	32.6	-32.7	35.65	54	-18.35	-	-	0-360	200	V
1	4.48	39.08	PK	33.8	-29	43.88	54	-10.12	74	-30.12	0-360	200	H

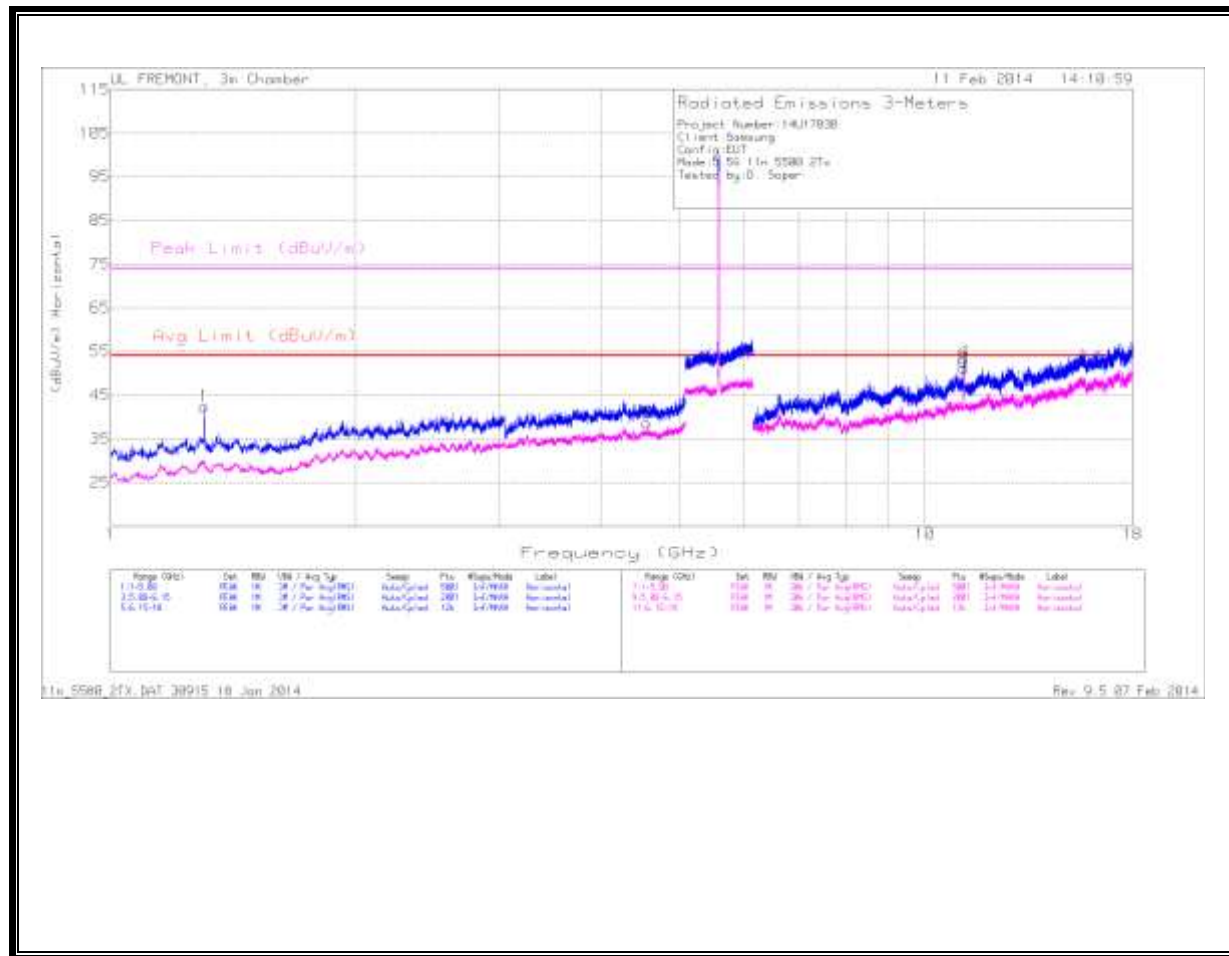
* - indicates frequency in CFR 15.205/IC 7.2.2 Restricted Band

PK - Peak detector

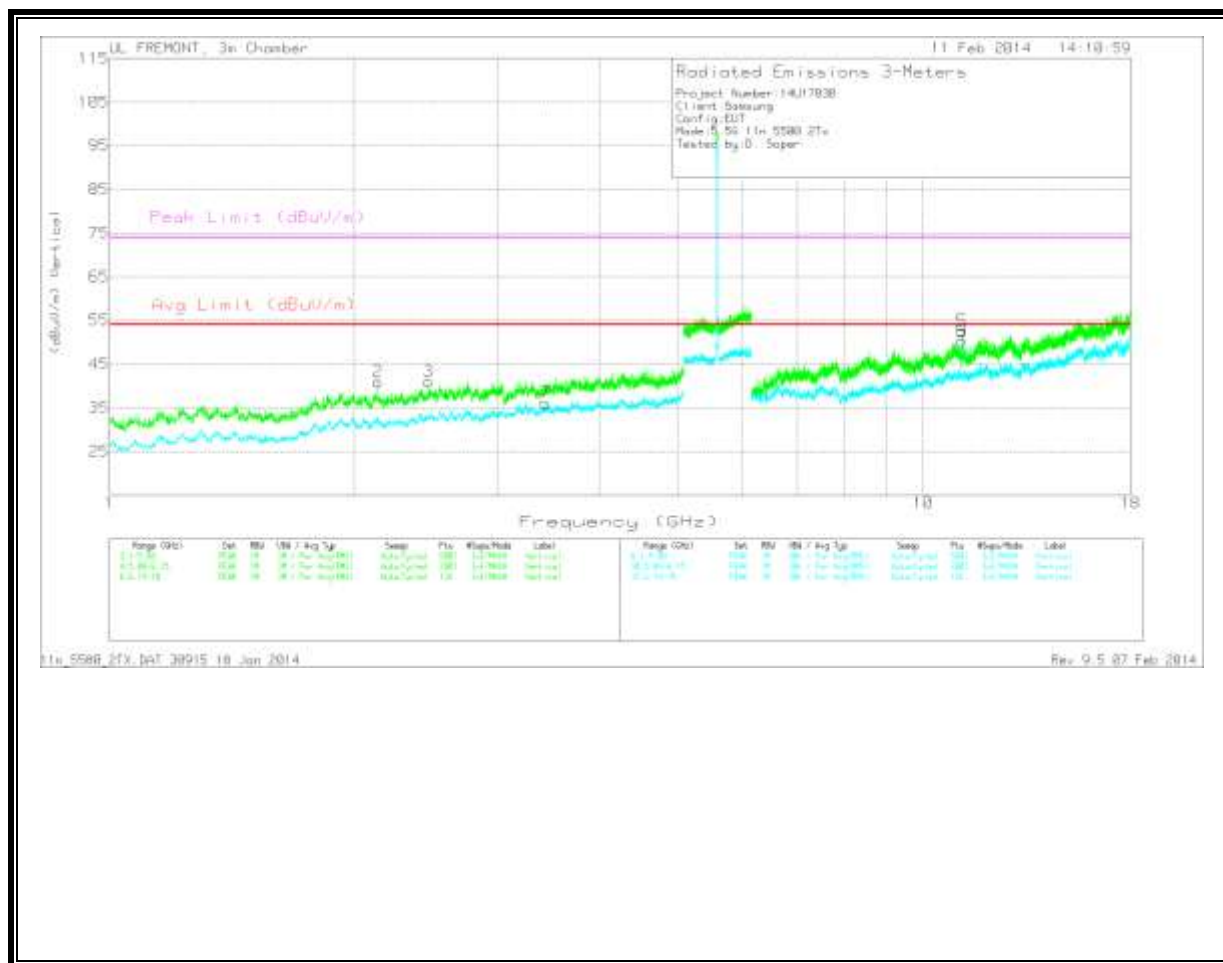
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 11.001	32.6	MAVL	37.8	-22.6	47.8	54	-6.2	74	-26.2	131	188	V

* - indicates frequency in CFR 15.205/IC 7.2.2 Restricted Band



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

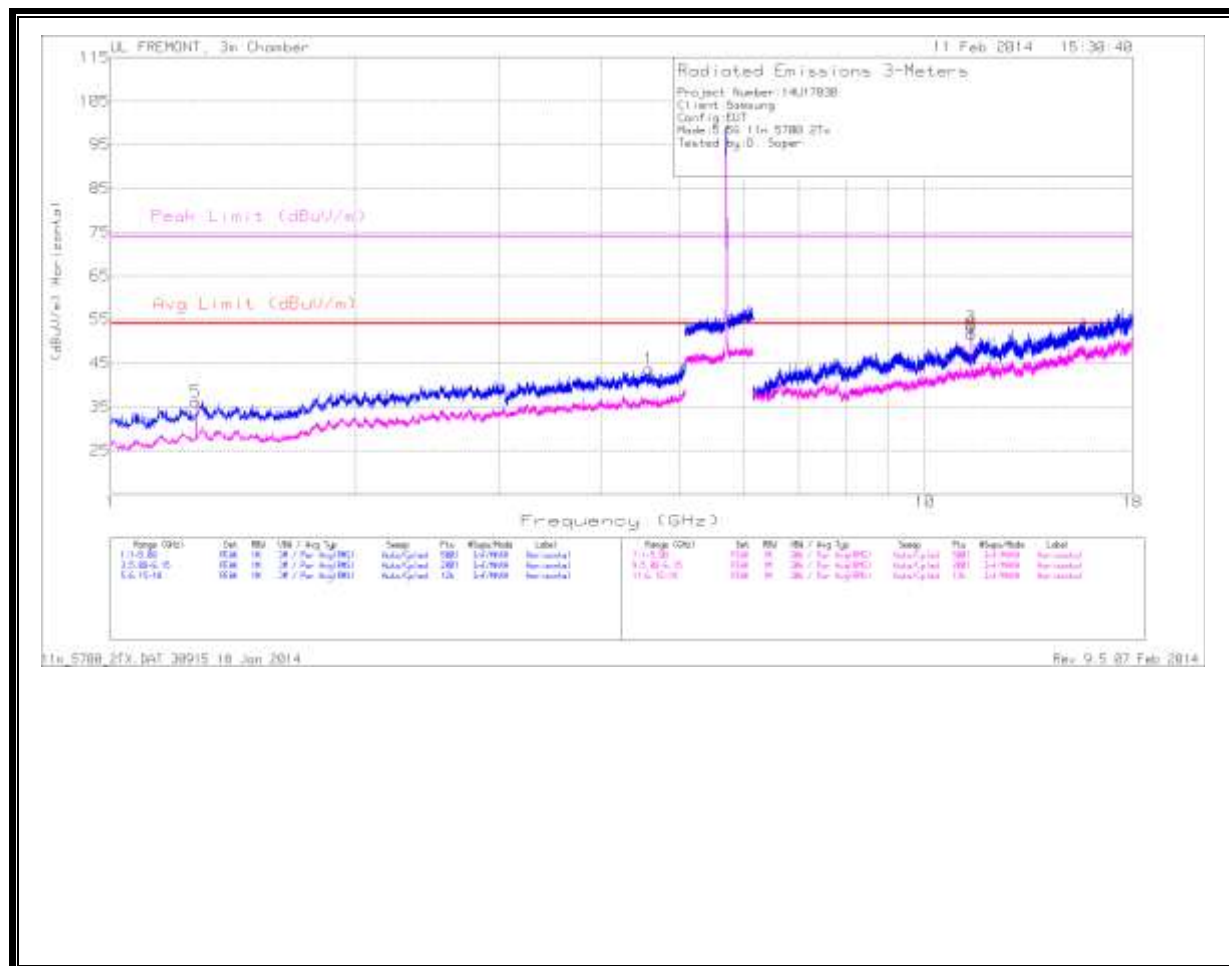
Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.304	49.07	PK	30.3	-37	42.37	54	-11.63	74	-31.63	0-360	200	H
2	2.138	43.26	PK	31.6	-33.9	40.96	54	-13.04	74	-33.04	0-360	200	V
3	2.467	42.15	PK	32.4	-33.5	41.05	54	-12.95	74	-32.95	0-360	100	V
7	3.429	34.1	Avg	33	-31	36.1	54	-17.9	-	-	0-360	101	V
6	4.558	34.92	Avg	33.9	-30.2	38.62	54	-15.38	-	-	0-360	200	H
9	11.153	34.96	Avg	37.9	-22.5	50.36	54	-3.64	-	-	0-360	201	V
5	11.164	37.03	PK	37.9	-22.4	52.53			74	-21.47	0-360	200	V
4	11.167	37.29	PK	37.9	-22.4	52.79	54	-1.21	74	-21.21	0-360	200	H

PK - Peak detector

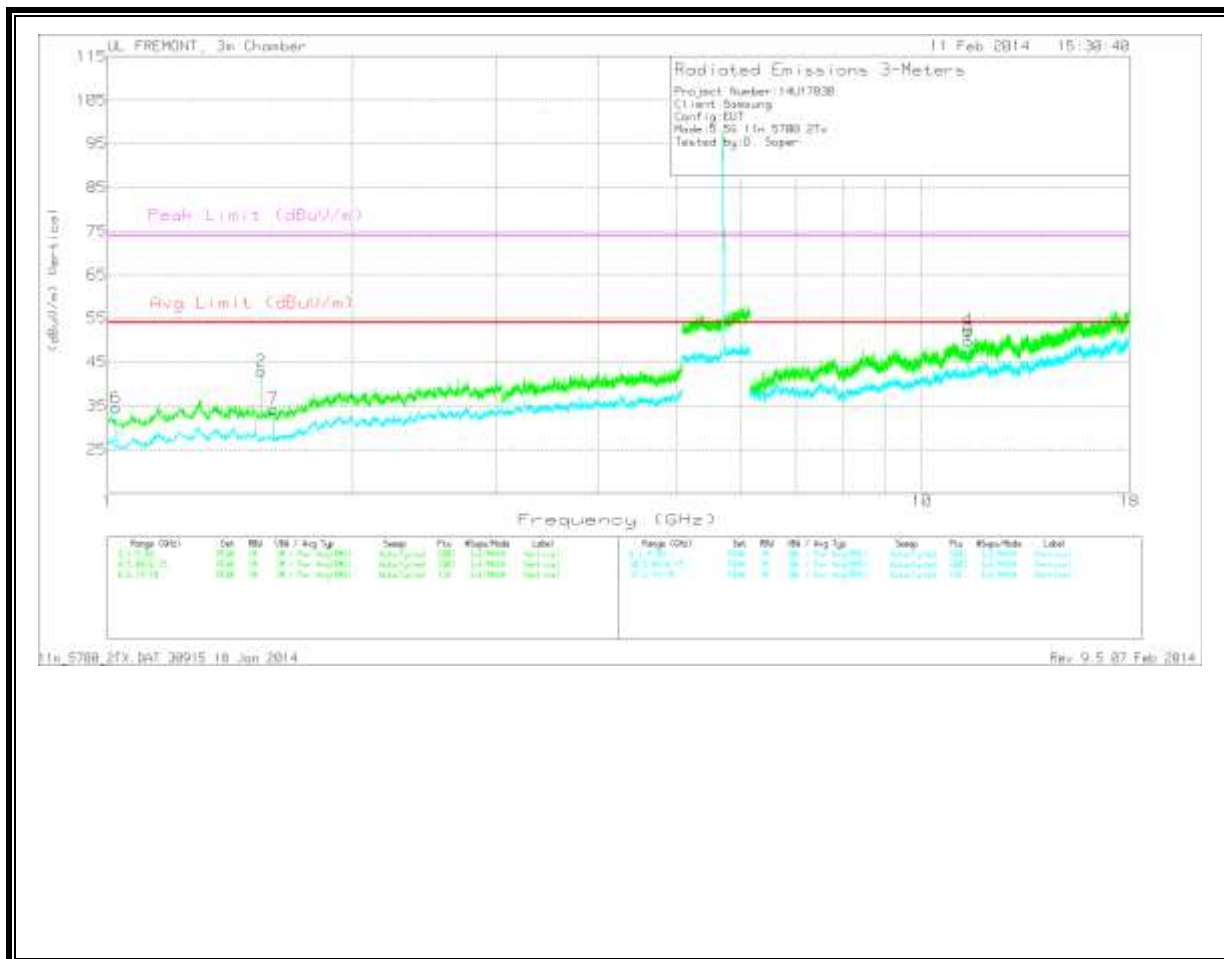
Radiated Emissions

Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
11.158	30.5	MAV1	37.9	-22.4	46	54	-8	74	-28	8	393	H

MAV1 - KDB558074 Option 1 Maximum RMS Average



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

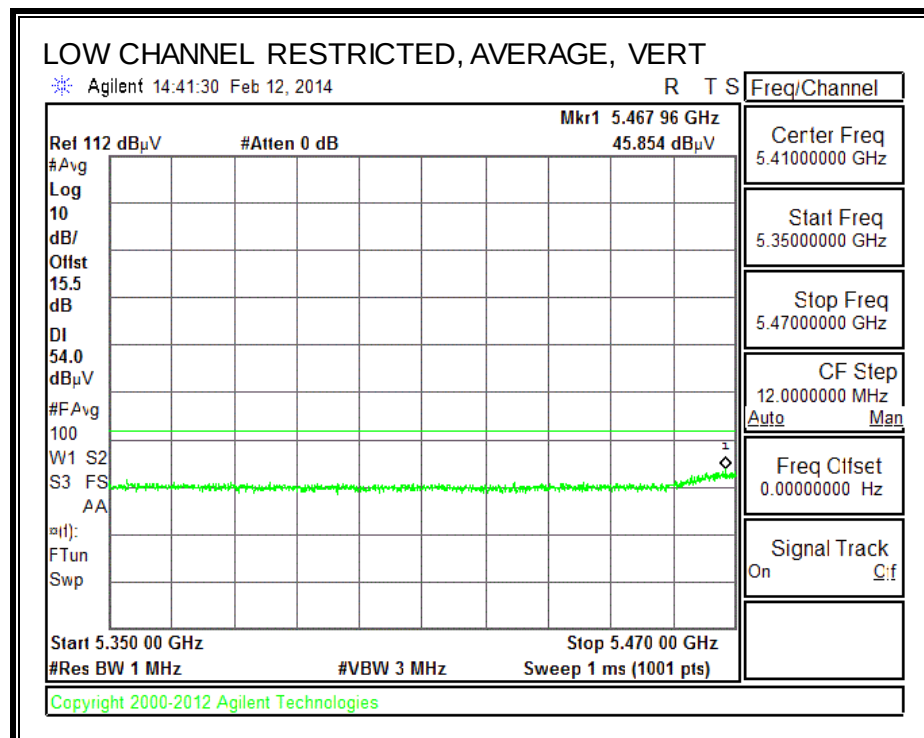
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6	1.024	44.81	Avg	28.1	-38.4	34.51	54	-19.49	-	-	0-360	201	V
5	1.273	43.23	Avg	30.1	-37.2	36.13	54	-17.87	-	-	0-360	200	H
2	1.545	50.46	PK	28.6	-36.1	42.96	54	-11.04	74	-31.04	0-360	101	V
7	1.598	41.69	Avg	28.3	-35.7	34.29	54	-19.71	-	-	0-360	100	V
1	4.583	39.5	PK	33.9	-29.8	43.6	54	-10.4	74	-30.4	0-360	201	H
3	11.391	38.61	PK	38.2	-23.5	53.31	54	-.69	74	-20.69	0-360	201	H
9	11.4	35.01	Avg	38.2	-23.4	49.81	54	-4.19	-	-	0-360	201	V
4	11.401	37.46	PK	38.2	-23.3	52.36	-	-	74	-21.64	0-360	201	V

PK - Peak detector

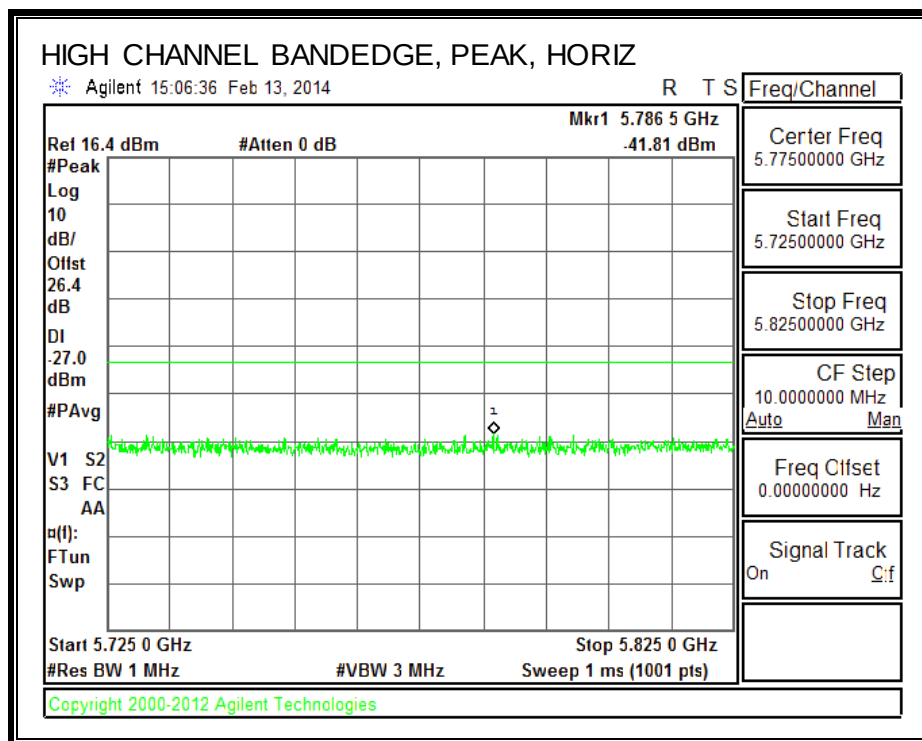
Radiated Emissions

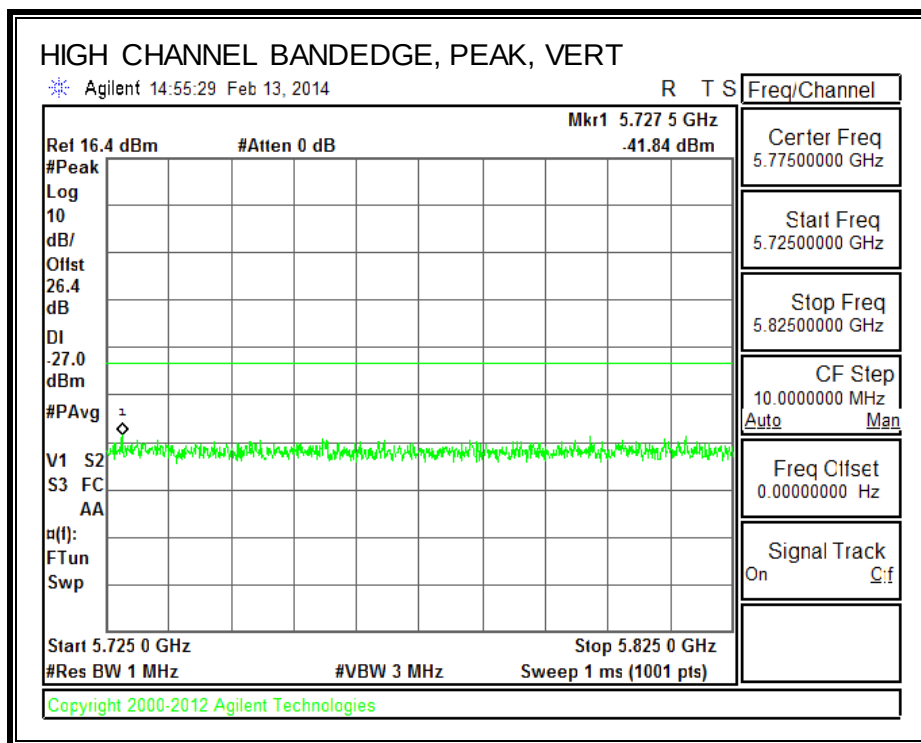
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
11.4	30.25	MAV1	38.2	-23.4	45.05	54	-8.95	74	-28.95	358	400	V

MAV1 - KDB558074 Option 1 Maximum RMS Average



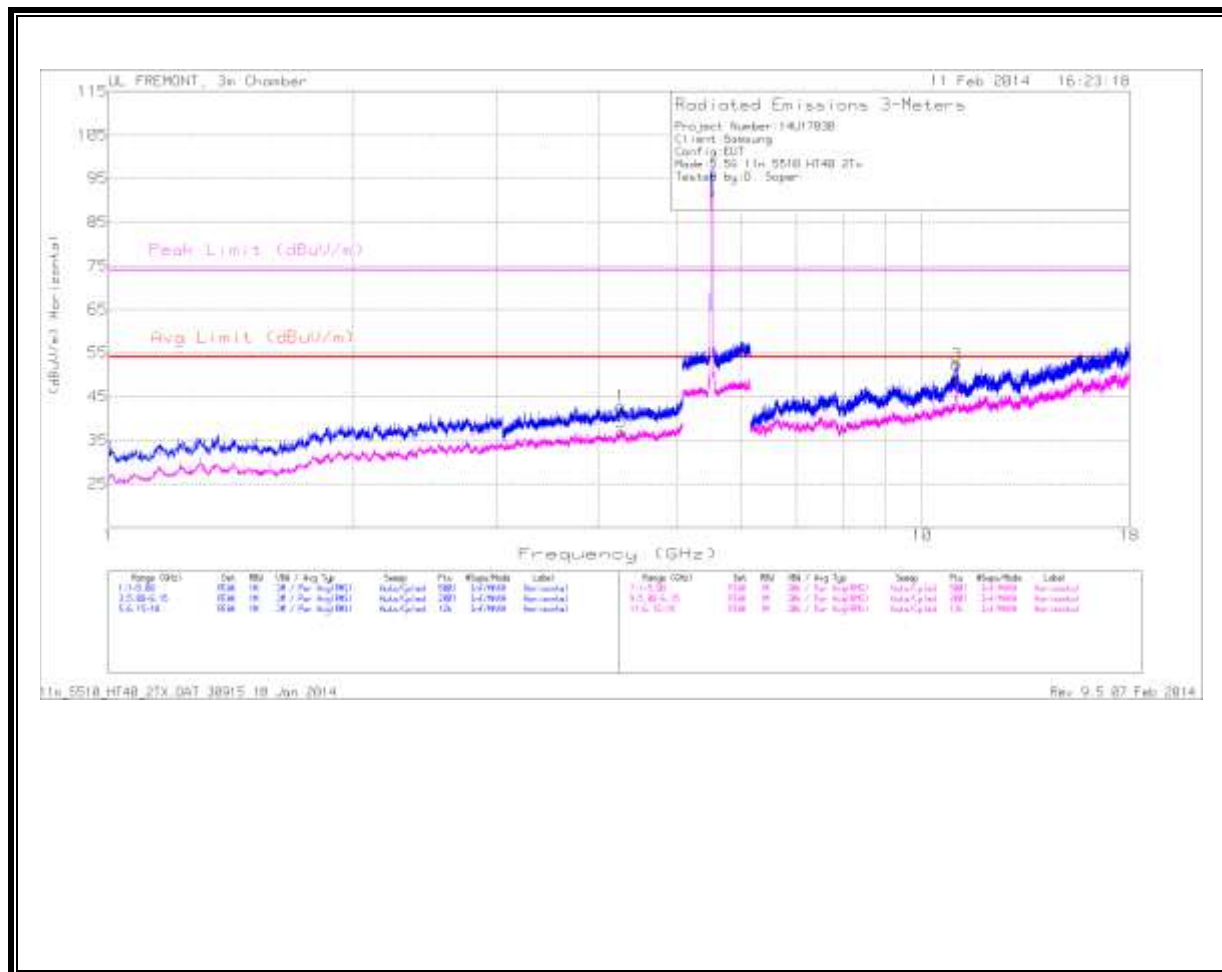
AUTHORIZED BANDEDGE (HIGH CHANNEL)



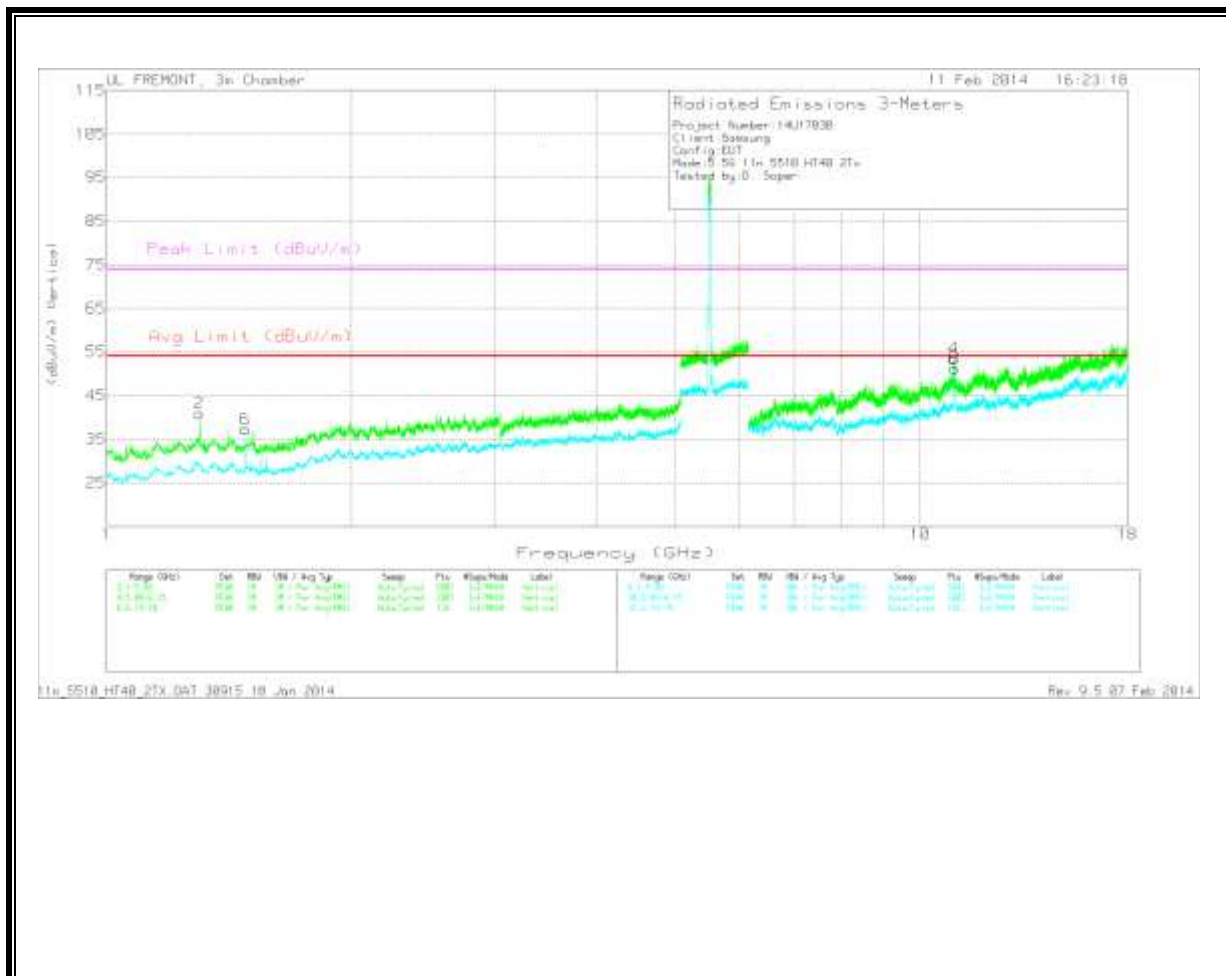


HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



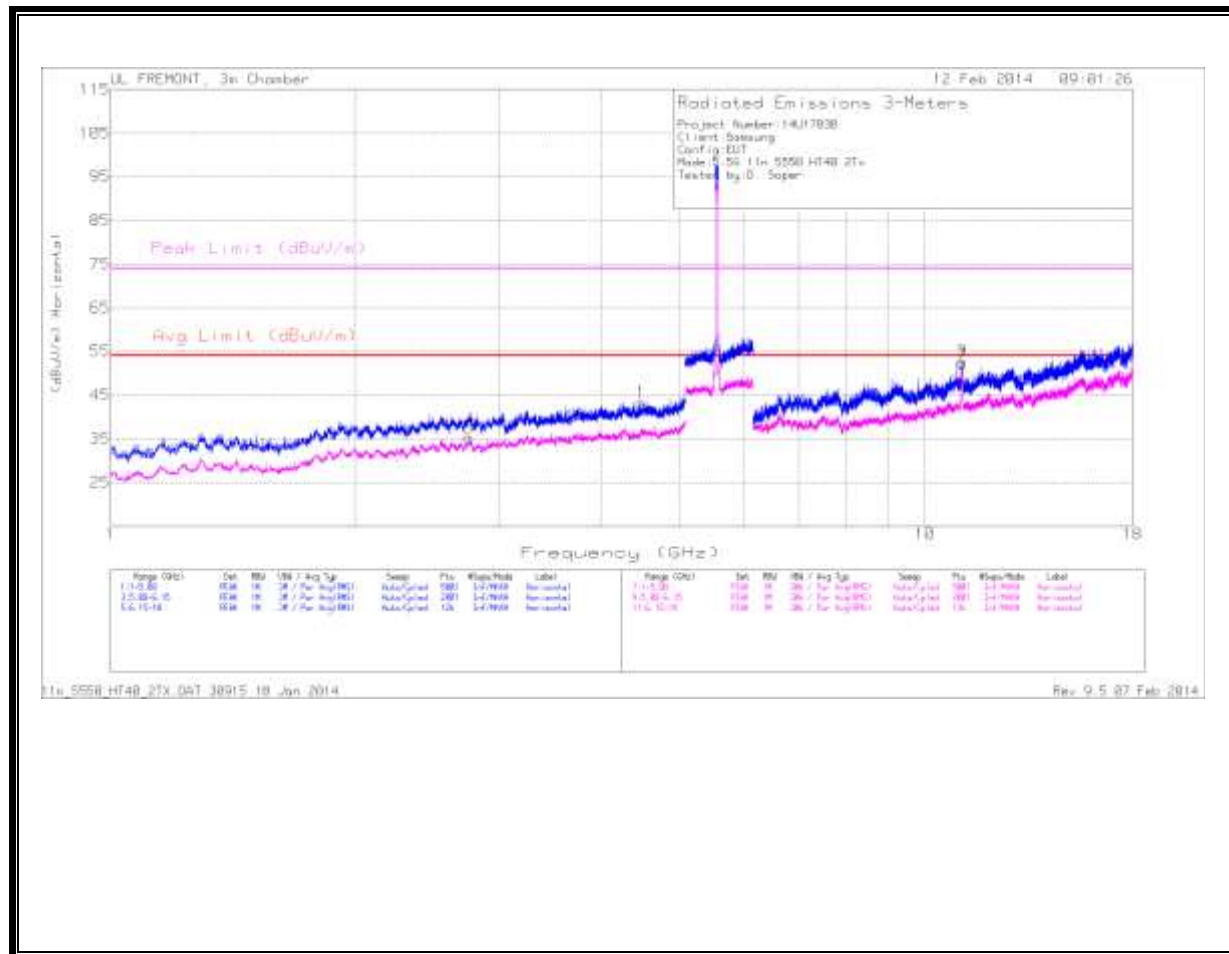
Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.



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

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	1.301	47.43	PK	30.3	-36.8	40.93	54	-13.07	74	-33.07	0-360	101	V
6	1.481	43.92	Avg	29.1	-35.7	37.32	54	-16.68	-	-	0-360	101	V
1	4.261	37.28	PK	33.6	-28.1	42.78	54	-11.22	74	-31.22	0-360	200	H
5	4.273	31.91	Avg	33.6	-28.7	36.81	54	-17.19	-	-	0-360	200	H
4	10.996	38.23	PK	37.8	-22.5	53.53			74	-20.47	0-360	201	V
7	11.014	33.66	Avg	37.8	-22.4	49.06	54	-4.94	-	-	0-360	101	H
3	11.018	36.72	PK	37.8	-22.2	52.32			74	-21.68	0-360	200	H



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 T136 (dB/m)	Amp/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	1.192	47.21	PK	29.4	-36.6	40.01	54	-13.99	74	-33.99	0-360	100	V
6	1.348	41.16	Avg	30.1	-36.7	34.56	54	-19.44	-	-	0-360	101	V
5	2.753	34.37	Avg	32.6	-31.7	35.27	54	-18.73	-	-	0-360	200	H
1	4.487	38.1	PK	33.8	-28.7	43.2	54	-10.8	74	-30.8	0-360	100	H
8	11.094	35.37	Avg	37.8	-22.2	50.97	54	-3.03	-	-	0-360	201	V
4	11.098	38.81	PK	37.8	-22.3	54.31			74	-19.69	0-360	200	V
3	11.108	37.47	PK	37.8	-22.5	52.77			74	-21.23	0-360	200	H

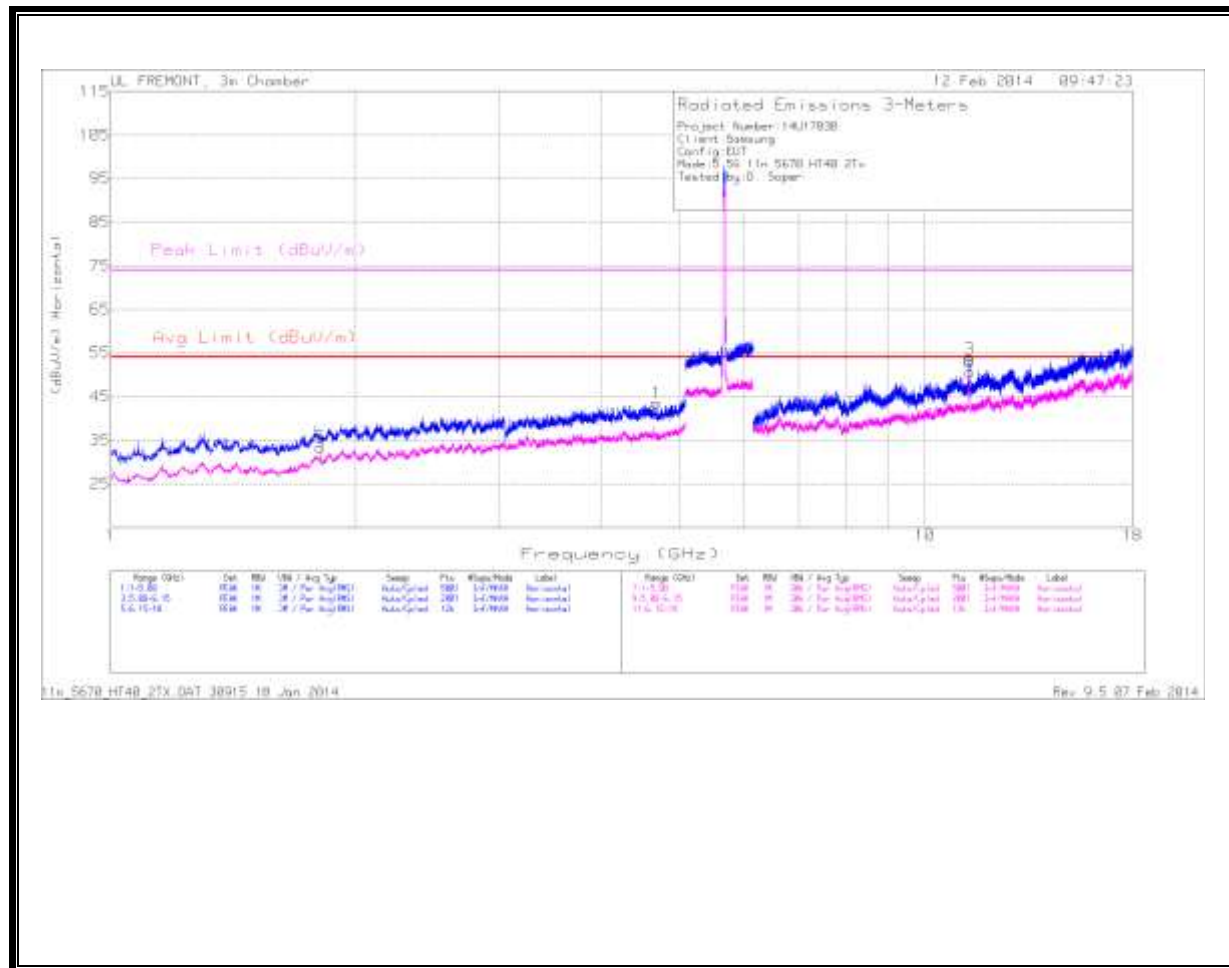
PK - Peak detector

Radiated Emissions

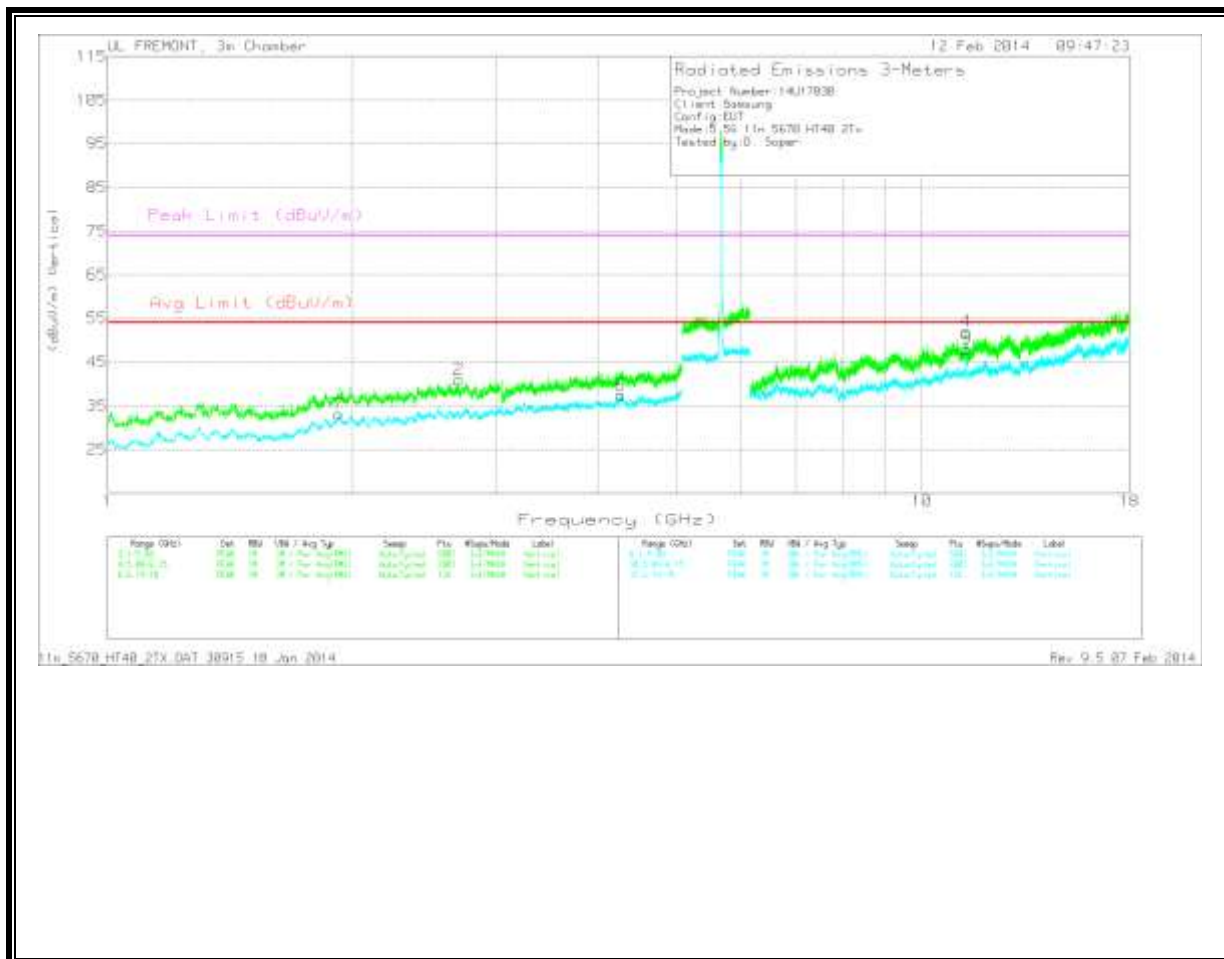
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
11.102	31.04	MAV1	37.8	-22.4	46.44	54	-7.56	74	-27.56	24	288	H

MAV1 - KDB558074 Option 1 Maximum RMS Average

HIGH CHANNEL HORIZONTAL



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



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 T136 (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
5	1.809	37.23	Avg	30.6	-34.5	33.33	54	-20.67	-	-	0-360	200	H
7	1.922	36	Avg	31.7	-34.6	33.1	54	-20.9	-	-	0-360	201	V
2	2.698	41.48	PK	32.7	-33.2	40.98	54	-13.02	74	-33.02	0-360	100	V
6	4.267	32.27	Avg	33.6	-28.4	37.47	54	-16.53	-	-	0-360	101	V
1	4.68	39.2	PK	33.9	-29.6	43.5	54	-10.5	74	-30.5	0-360	101	H
4	11.34	36.57	PK	38.1	-22.7	51.97			74	-22.03	0-360	200	V
3	11.341	38.27	PK	38.1	-22.7	53.67			74	-20.33	0-360	200	H
9	11.341	32.6	Avg	38.1	-22.7	48	54	-6	-	-	0-360	201	V
8	11.345	35.46	Avg	38.1	-22.9	50.66	54	-3.34	-	-	0-360	200	H

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
11.34	29.61	MAV1	38.1	-22.7	45.01	54	-8.99	74	-28.99	25	172	H

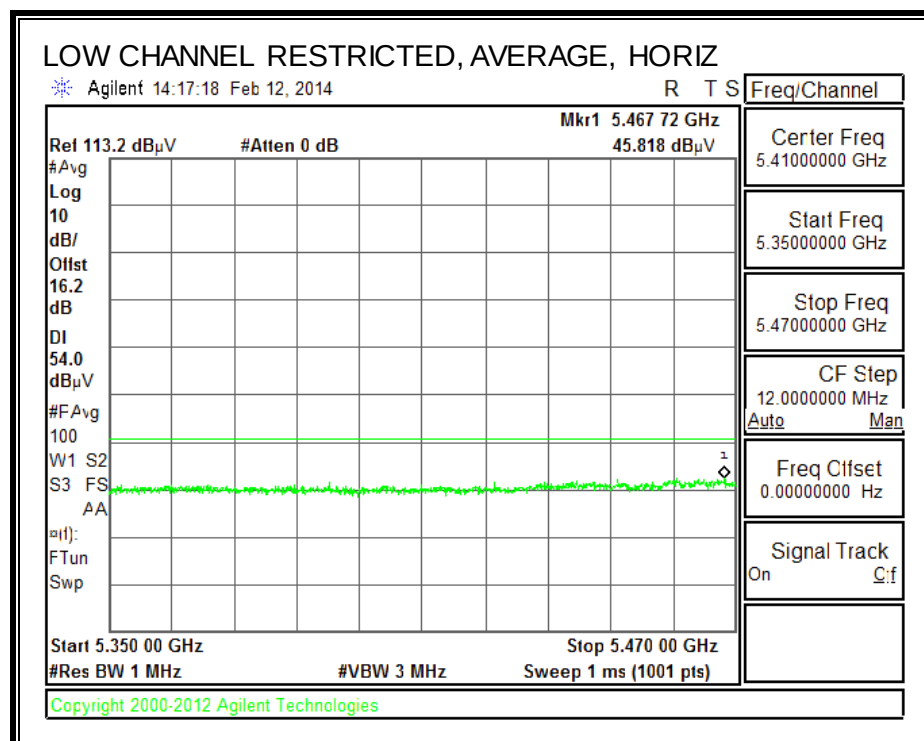
MAV1 - KDB558074 Option 1 Maximum RMS Average

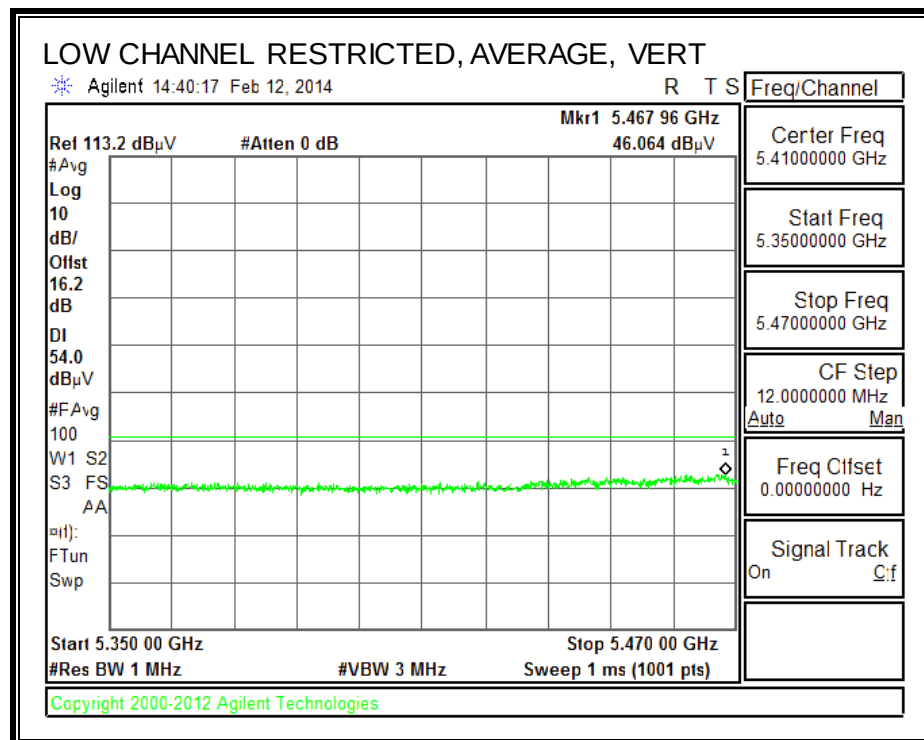
LOW CHANNEL RESTRICTED, PEAK, HORIZ

Agilent 14:18:06 Feb 12, 2014 R T S

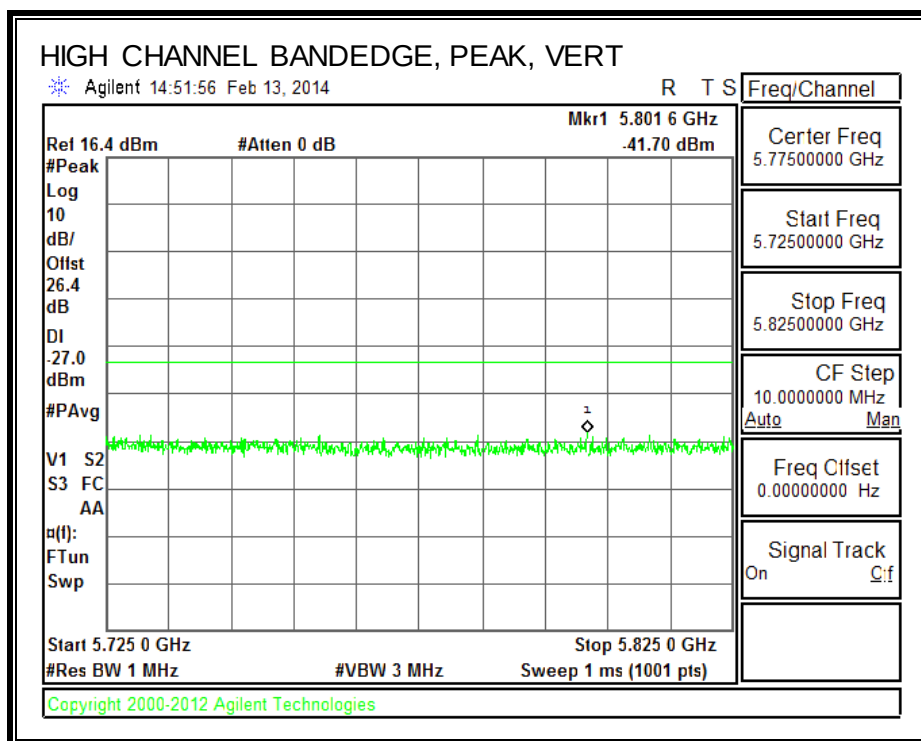
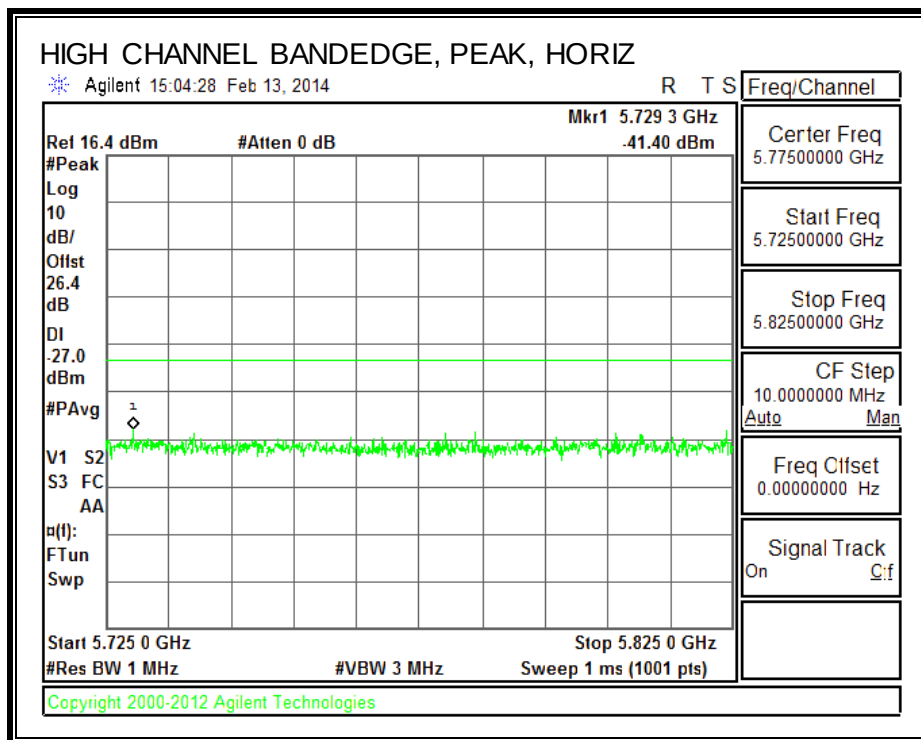
Ref 111.4 dBμV #Atten 0 dB		Mkr1 5.464 12 GHz 54.40 dBμV	
#Peak Log 10 dB/ Offst 14.4 dB DI 74.0 dBμV #FAvg		Center Freq 5.41000000 GHz	
V1 S2 S3 FC AA W(t): FTun Swp		Start Freq 5.35000000 GHz	
Start 5.350 00 GHz		Stop 5.470 00 GHz	
#Res BW 1 MHz		#VBW 3 MHz	
Sweep 1 ms (1001 pts)		CF Step 12.00000000 MHz Auto Man	
Freq Offset 0.00000000 Hz		Signal Track On Off	

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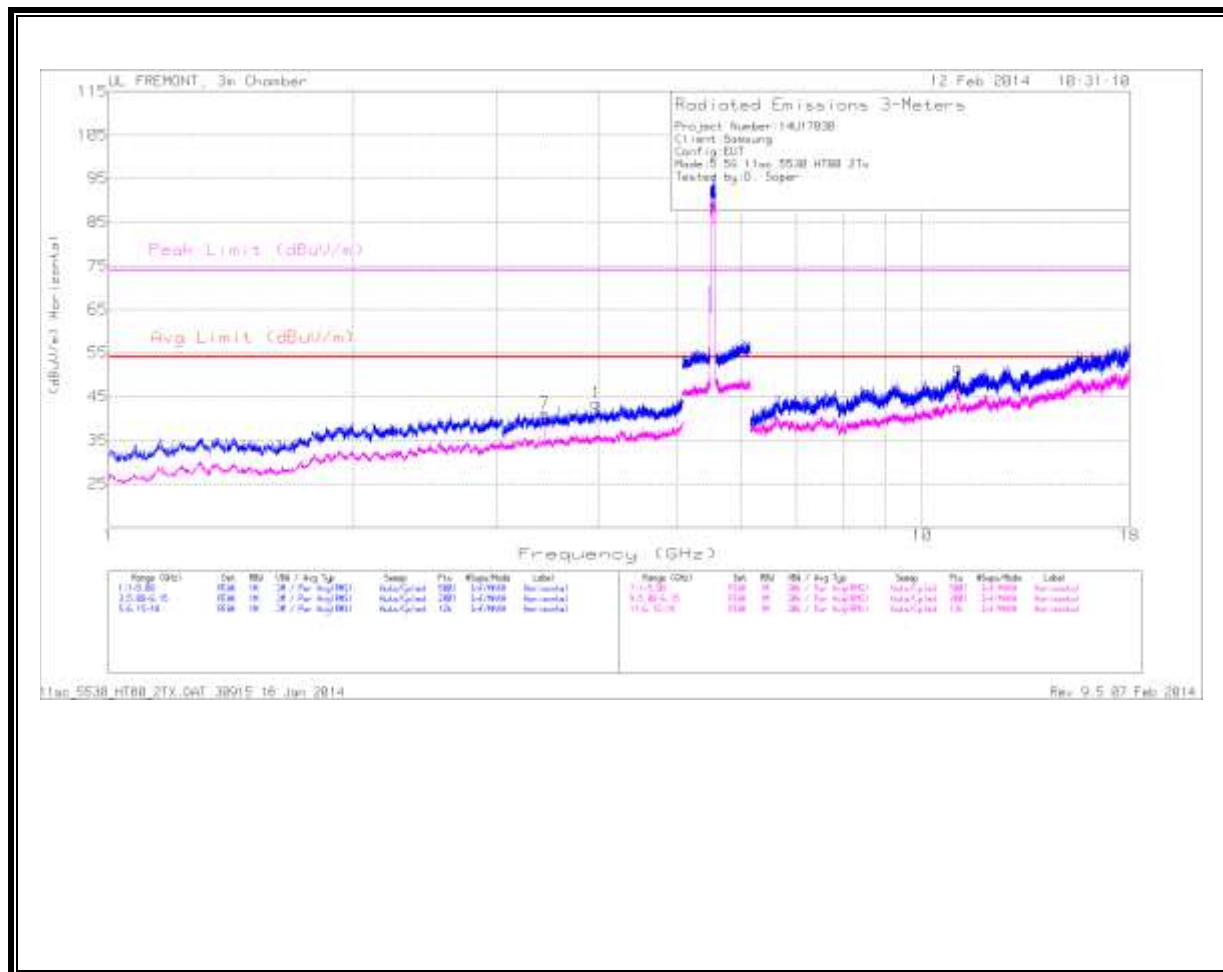


AUTHORIZED BANDEDGE (HIGH CHANNEL)

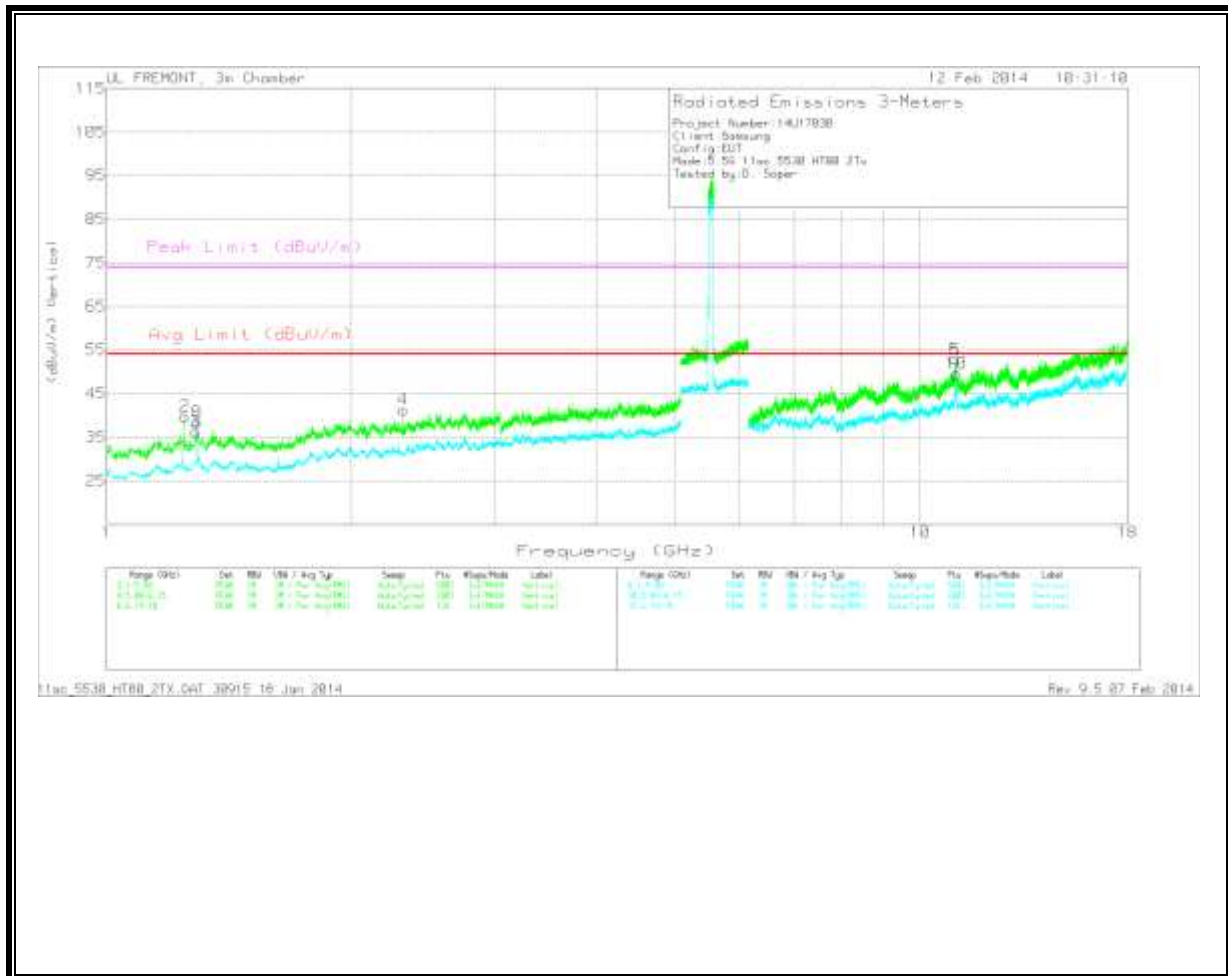


HARMONICS AND SPURIOUS EMISSIONS

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

Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	1.248	46.92	PK	29.9	-37	39.82	54	-14.18	74	-34.18	0-360	200	V
3	1.288	43.03	PK	30.2	-36.9	36.33	54	-17.67	74	-37.67	0-360	100	V
8	1.292	45.04	Avg	30.2	-36.8	38.44	54	-15.56	-	-	0-360	200	V
4	2.315	44.32	PK	31.7	-34.7	41.32	54	-12.68	74	-32.68	0-360	100	V
7	3.436	39.29	Avg	33	-31.2	41.09	54	-12.91	-	-	0-360	200	H
1	3.978	39.89	PK	33.8	-30.2	43.49	54	-10.51	74	-30.51	0-360	200	H
5	11.046	37.29	PK	37.8	-22.2	52.89			74	-21.11	0-360	201	V
6	11.046	37.29	PK	37.8	-22.2	52.89			74	-21.11	0-360	201	V
9	11.068	32.41	Avg	37.8	-21.9	48.31	54	-5.69	-	-	0-360	200	H
10	11.078	33.8	Avg	37.8	-22	49.6	54	-4.4	-	-	0-360	201	V

PK - Peak detector

Radiated Emissions

Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
10.599	31.73	MAV1	37.8	-23.3	46.23	54	-7.77	74	-27.77	124	238	V
11.4	33.06	MAV1	38.2	-23.4	47.86	54	-6.14	74	-26.14	19	183	H

MAV1 - KDB558074 Option 1 Maximum RMS Average

LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
7	1.237	38.29	Avg	29.8	-37.2	30.89	54	-23.11	-	-	0-360	200	V
9	1.743	35.11	Avg	29.9	-35.3	29.71	54	-24.29	-	-	0-360	101	V
5	3.433	34.47	Avg	33	-31	36.47	54	-17.53	-	-	0-360	101	H
6	3.793	34.98	Avg	33.5	-30.9	37.58	54	-16.42	-	-	0-360	200	H
8	3.793	34.62	Avg	33.5	-30.9	37.22	54	-16.78	-	-	0-360	200	V
1	4.216	40.01	PK	33.5	-29.7	43.81	54	-10.19	74	-30.19	0-360	200	H
2	4.587	38.74	PK	33.9	-29.6	43.04	54	-10.96	74	-30.96	0-360	200	V
10	11.394	33.93	Avg	38.2	-23.5	48.63	54	-5.37	-	-	0-360	200	H
11	11.394	32.76	Avg	38.2	-23.5	47.46	54	-6.54	-	-	0-360	200	V
3	11.396	36.66	PK	38.2	-23.4	51.46	54	-2.54	74	-22.54	0-360	200	H
4	11.746	36.04	PK	38.5	-22.4	52.14	54	-1.86	74	-21.86	0-360	101	V

PK - Peak detector

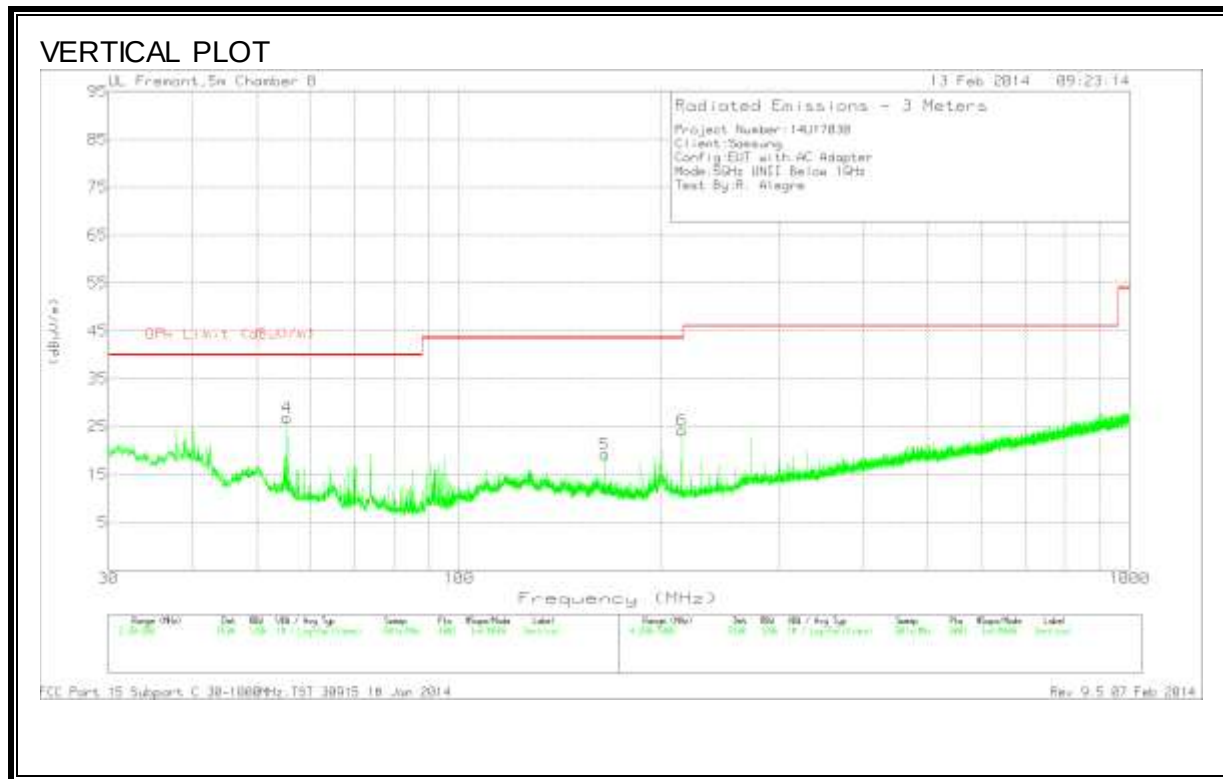
Avg - Video bandwidth < Resolution bandwidth

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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
10.599	31.73	MAV1	37.8	-23.3	46.23	54	-7.77	74	-27.77	124	238	V
11.4	33.06	MAV1	38.2	-23.4	47.86	54	-6.14	74	-26.14	19	183	H

MAV1 - KDB558074 Option 1 Maximum RMS Average

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



Worst Case Data

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
1	40.71	36.17	PK	12.9	-28.7	20.37	-	-	0-360	300	H
4	55.33	48.6	PK	6.8	-28.6	26.8	-	-	0-360	101	V
5	164.98	34.69	PK	11.8	-27.3	19.19	-	-	0-360	101	V
2	186.145	43.22	PK	11	-27.1	27.12	-	-	0-360	100	H
6	214.8	40.56	PK	10.5	-26.8	24.26	-	-	0-360	200	V
3	574.7	30.77	PK	18.7	-25.6	23.87	-	-	0-360	101	H

PK - Peak detector

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	.15	37.77	PK	1.4	0	39.17	66	-26.83	-	-
2	.15	14.23	Av	1.4	0	15.63	-	-	56	-40.37
3	.2805	35.76	PK	.6	0	36.36	60.8	-24.44	-	-
4	.2805	25.98	Av	.6	0	26.58	-	-	50.8	-24.22
5	1.086	41.09	PK	.2	0	41.29	56	-14.71	-	-
6	1.086	16.35	Av	.2	0	16.55	-	-	46	-29.45
7	2.3595	41.58	PK	.2	.1	41.88	56	-14.12	-	-
8	2.3595	20.28	Av	.2	.1	20.58	-	-	46	-25.42
9	4.7445	43.56	PK	.2	.1	43.86	56	-12.14	-	-
10	4.7445	21.51	Av	.2	.1	21.81	-	-	46	-24.19
11	16.1925	43.58	PK	.3	.2	44.08	60	-15.92	-	-
12	16.1925	28.16	Av	.3	.2	28.66	-	-	50	-21.34

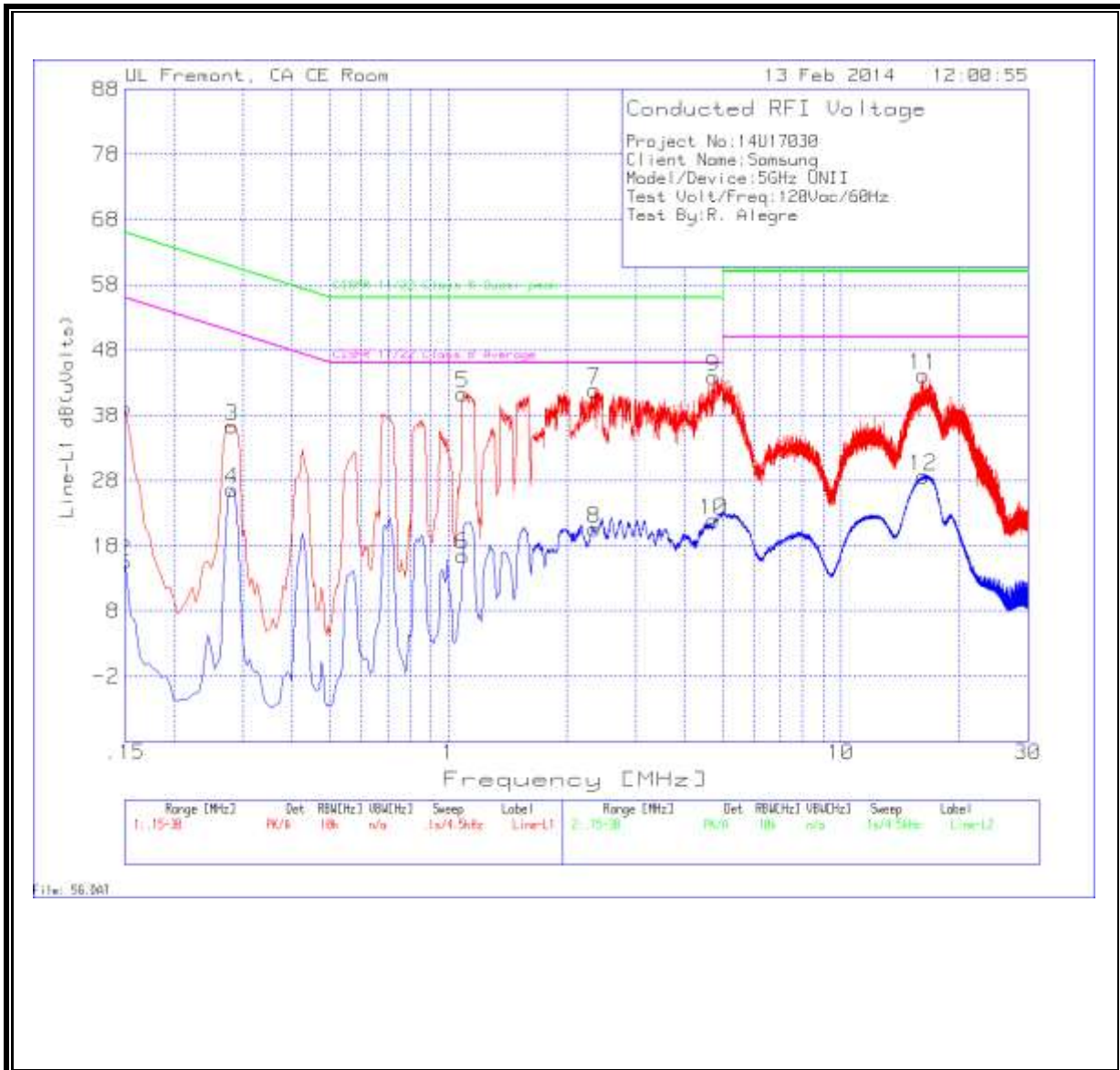
Line-L2 .15 - 30MHz**Trace Markers**

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	.15	44.07	PK	1.5	0	45.57	66	-20.43	-	-
14	.15	15.03	Av	1.5	0	16.53	-	-	56	-39.47
15	.276	37.87	PK	.7	0	38.57	60.9	-22.33	-	-
16	.276	20.67	Av	.7	0	21.37	-	-	50.9	-29.53
17	.8835	37.23	PK	.3	0	37.53	56	-18.47	-	-
18	.8835	12.01	Av	.3	0	12.31	-	-	46	-33.69
19	4.9425	40.31	PK	.2	.1	40.61	56	-15.39	-	-
20	4.9425	20.37	Av	.2	.1	20.67	-	-	46	-25.33
21	16.467	49.5	PK	.3	.2	50	60	-10	-	-
22	16.467	33.2	Av	.3	.2	33.7	-	-	50	-16.3

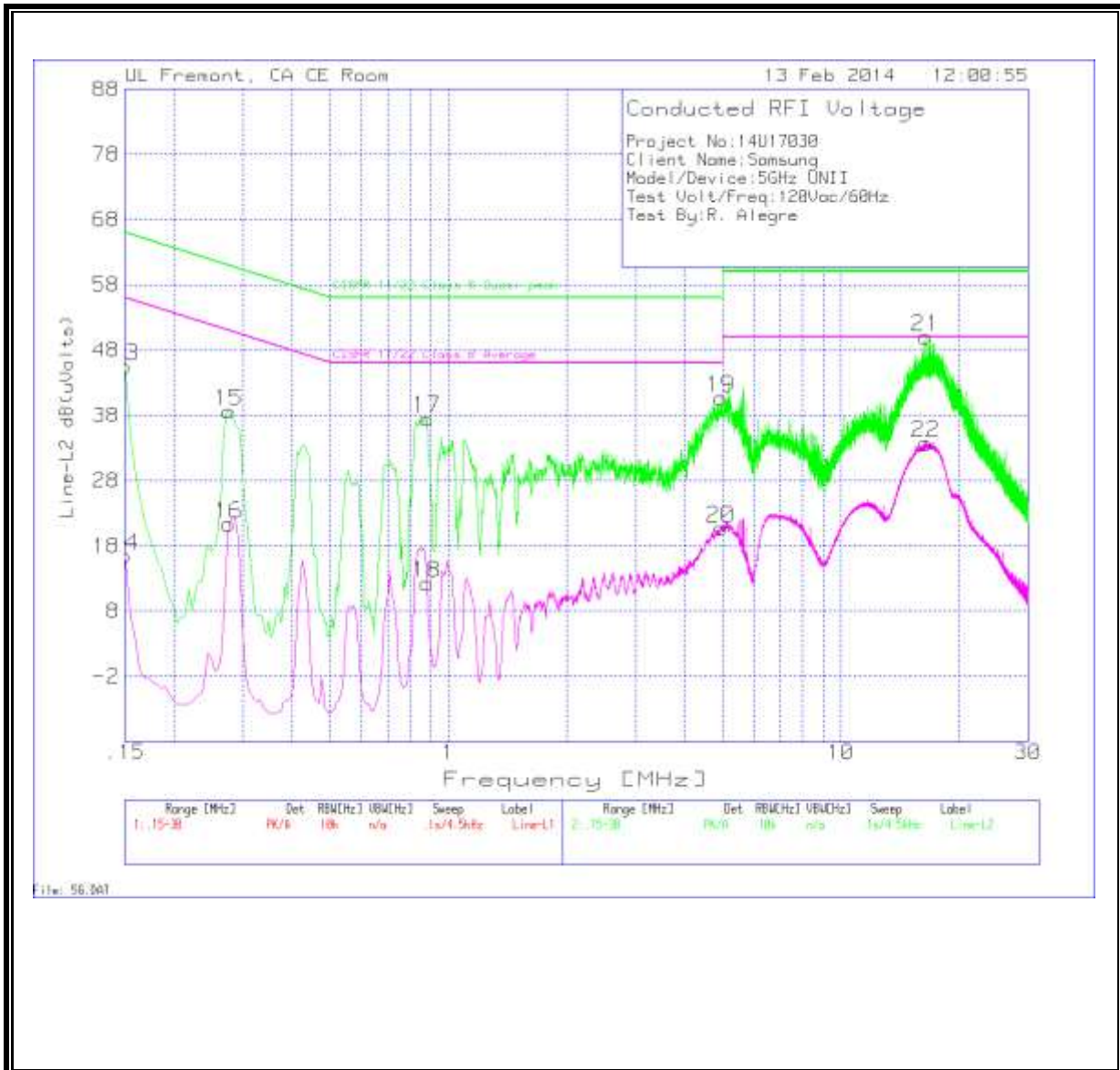
PK - Peak detector

Av - average detection

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

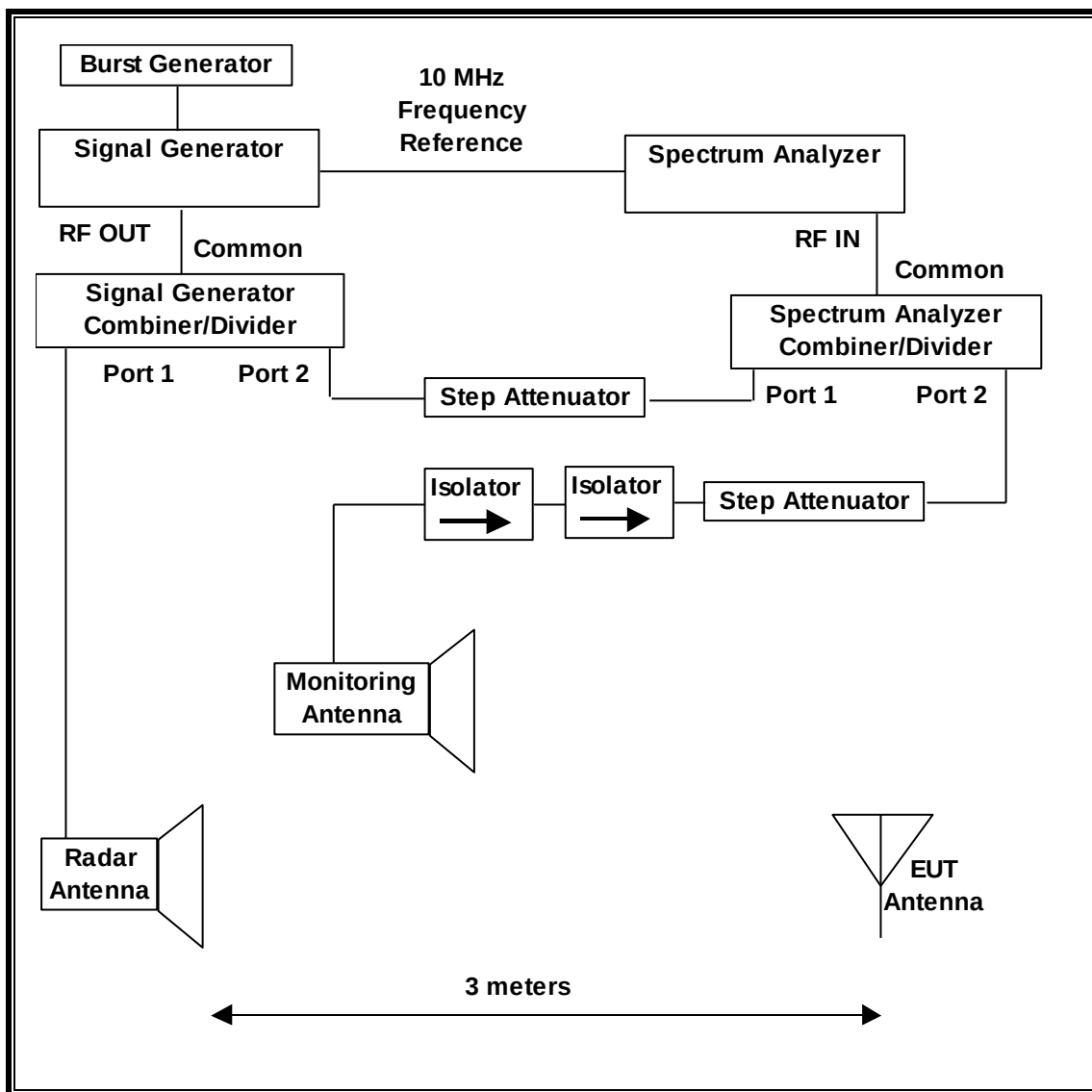
Radar Waveform	Bursts	Pulses per Burst	Pulse Width (μsec)	Chirp Width (MHz)	PRI (μsec)	Minimum Percentage of Successful Detection	Minimum Trials
5	8-20	1-3	50-100	5-20	1000-2000	80%	30

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.

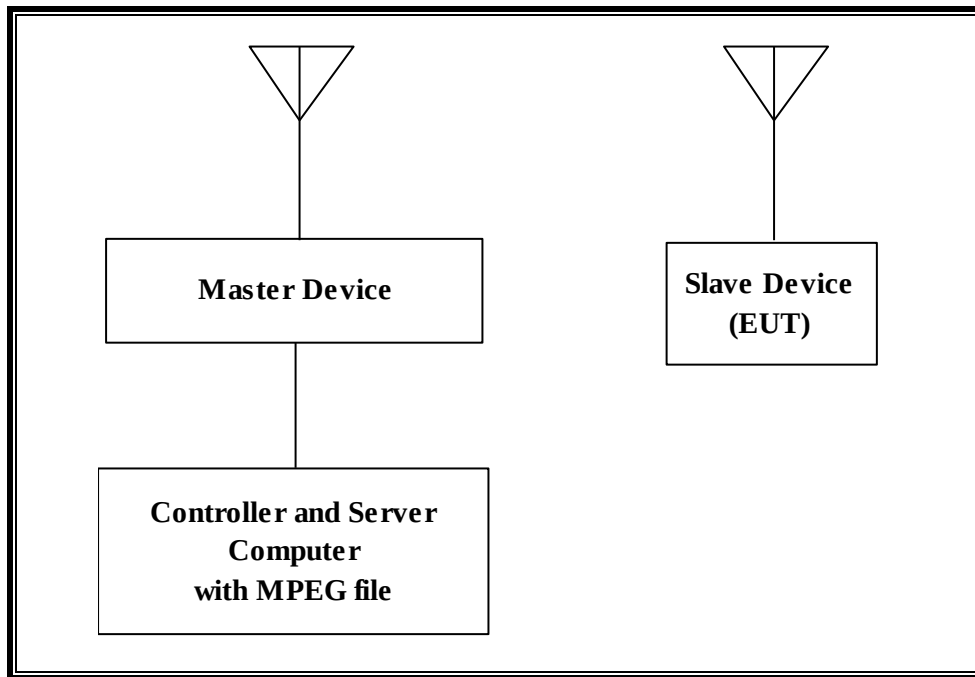
TEST AND MEASUREMENT EQUIPMENT

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

TEST EQUIPMENT LIST				
Description	Manufacturer	Model	Asset Number	Cal Due
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01178	09/10/14
Vector Signal Generator, 20GHz	Agilent / HP	E8267C	C01066	09/12/14

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 14.72 dBm EIRP in the 5250-5350 MHz band and 15.01 dBm EIRP in the 5470-5725 MHz band.

The antennas assembly utilized with the EUT has gain of -3.18 dBi and -0.4dBi dBi.

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

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

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

WLAN traffic is generated by streaming the video file TestFile.mp2 "6 ½ Magic Hours" from the Master to the Slave in full motion video mode using MX Player version 1.7.22 media player.

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

The EUT utilizes the 802.11ac architecture. Three nominal channel bandwidths are implemented: 20 MHz, 40 MHz and 80 MHz. However, pursuant to FCC KDB Publication 848637, "Client devices with 80 MHz BW mode can be tested with an approved master operating in 40 MHz BW mode". Therefore, 80MHz BW DFS testing was not performed and has been excluded from this report.

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.

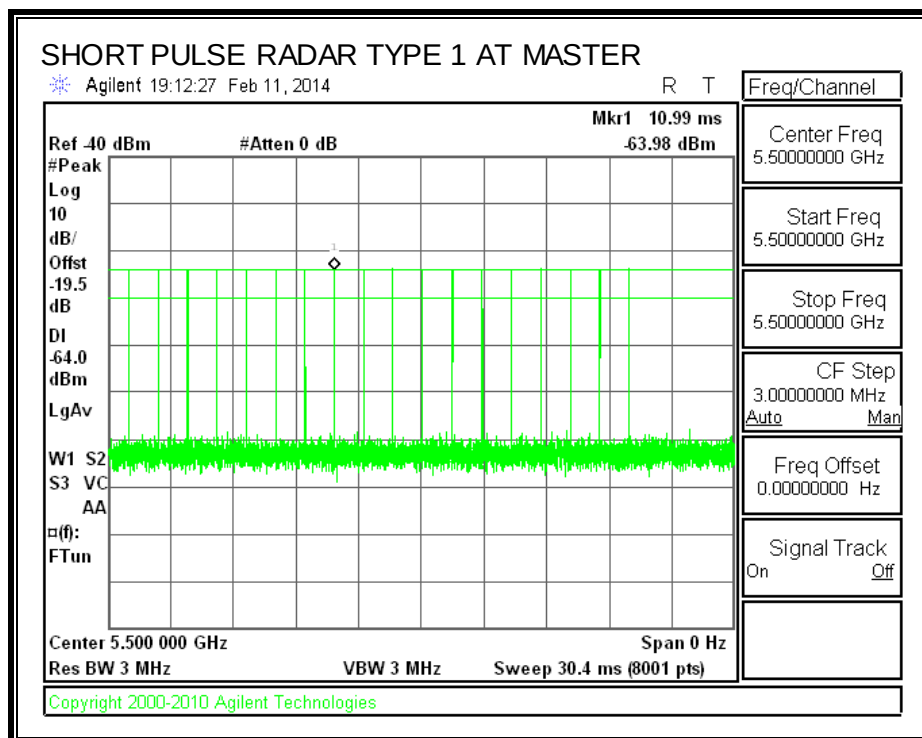
14.2. RESULTS FOR 20 MHz BANDWIDTH

14.2.1. TEST CHANNEL

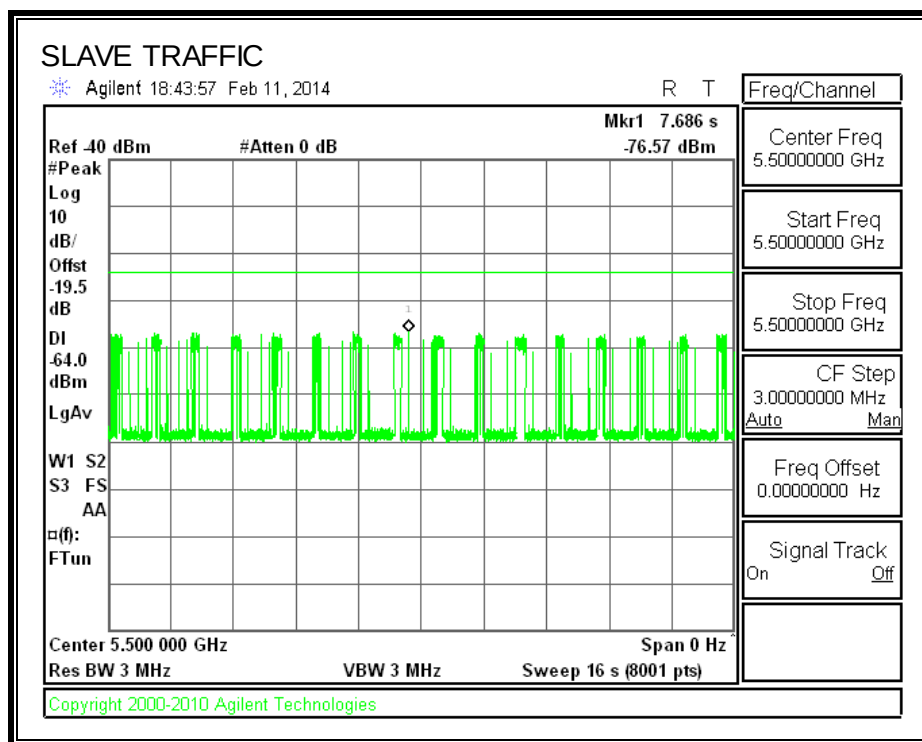
All tests were performed at a channel center frequency of 5500 MHz.

14.2.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM



TRAFFIC



14.2.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

14.2.4. MOVE AND CLOSING TIME

REPORTING NOTES

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

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

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time =
(Number of analyzer bins showing transmission) * (dwell time per bin)

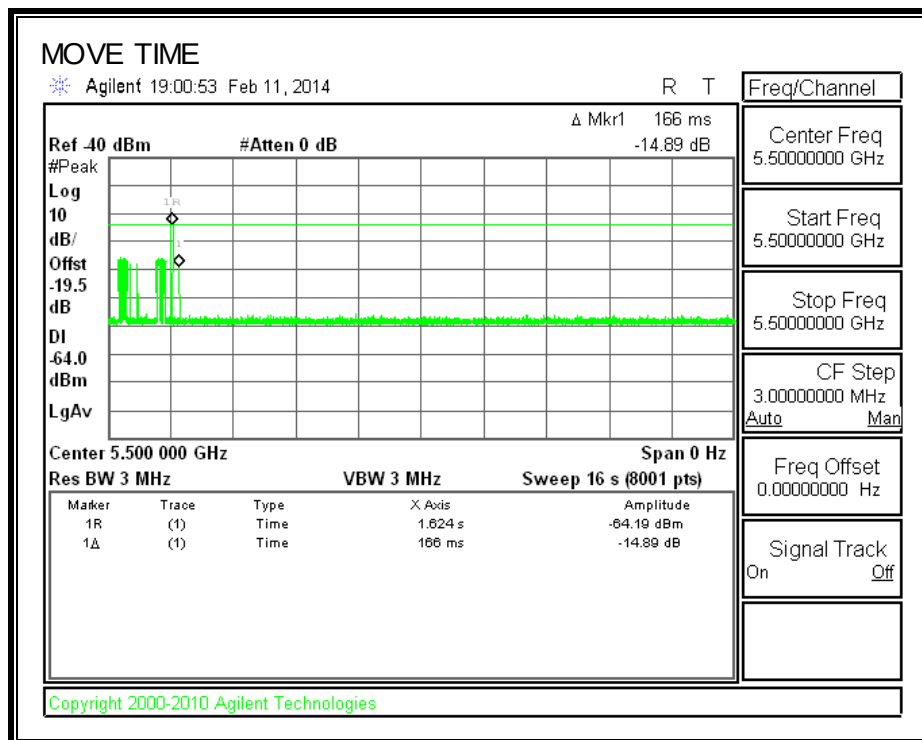
The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

RESULTS

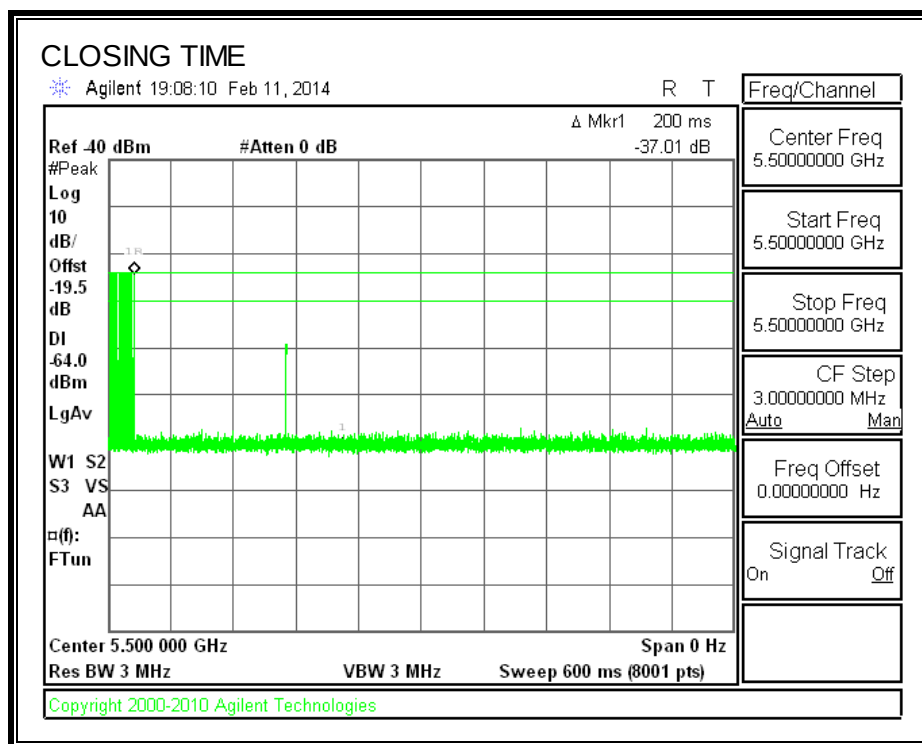
Channel Move Time (sec)	Limit (sec)
0.166	10

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

MOVE TIME

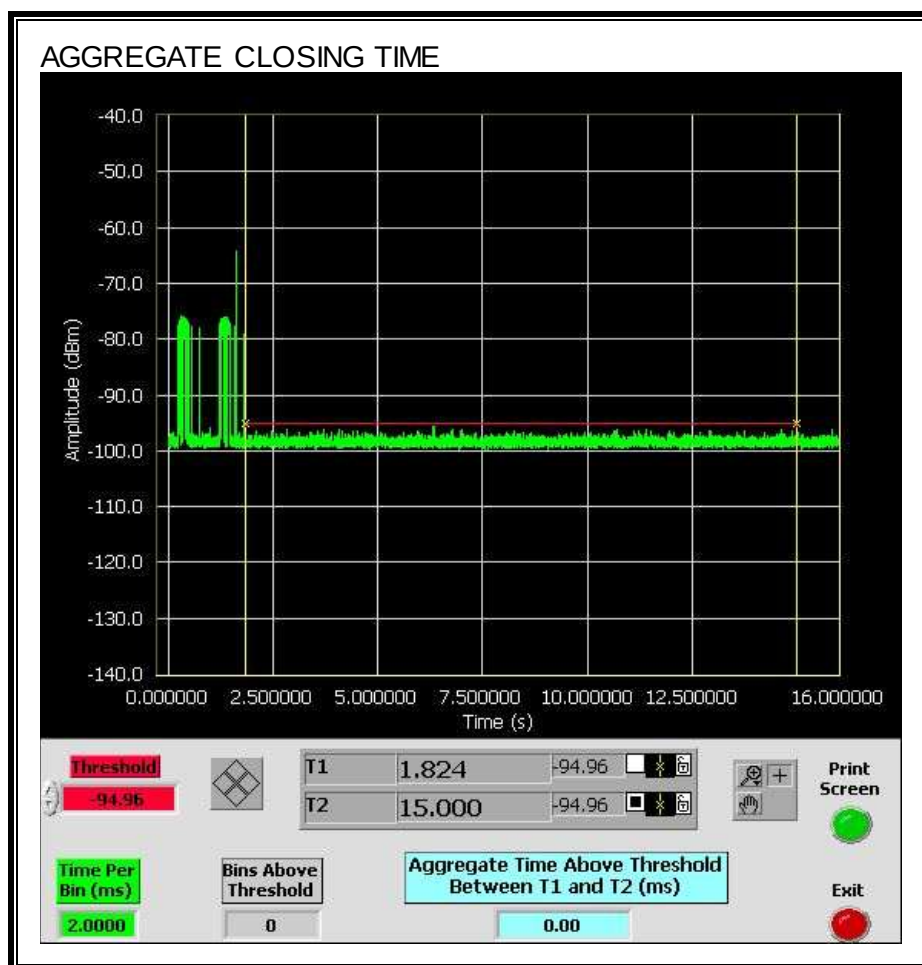


CHANNEL CLOSING TIME



AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



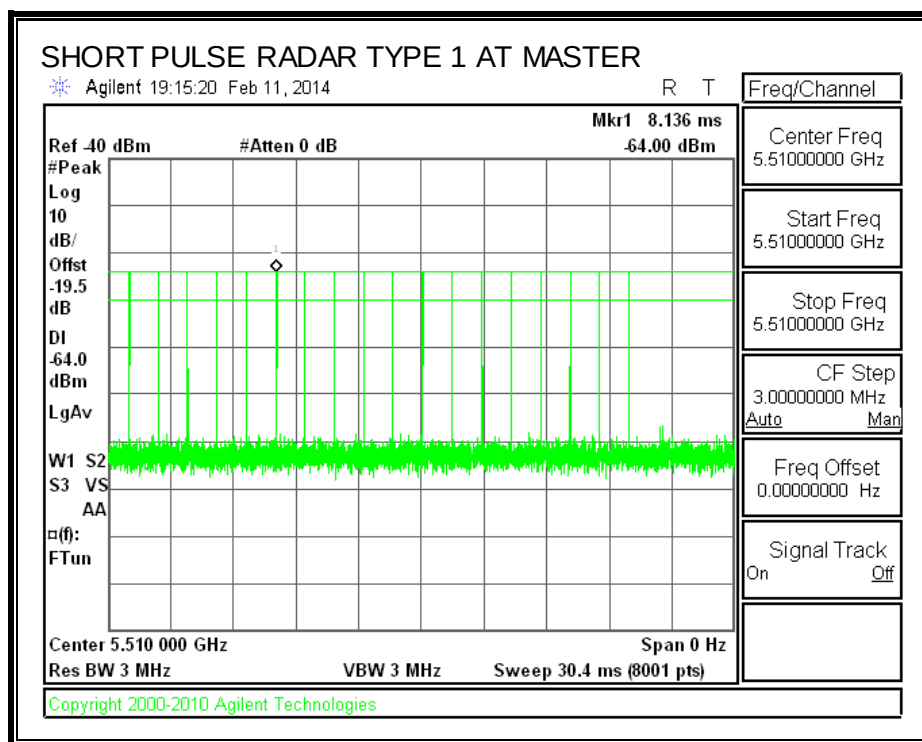
14.3. RESULTS FOR 40 MHz BANDWIDTH

14.3.1. TEST CHANNEL

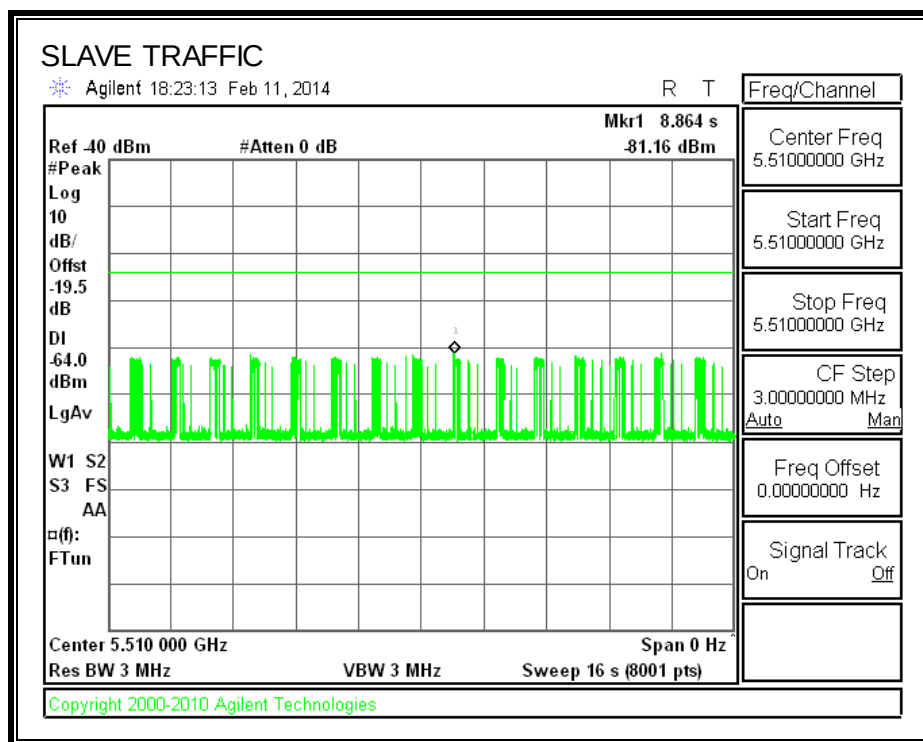
All tests were performed at a channel center frequency of 5510 MHz.

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)

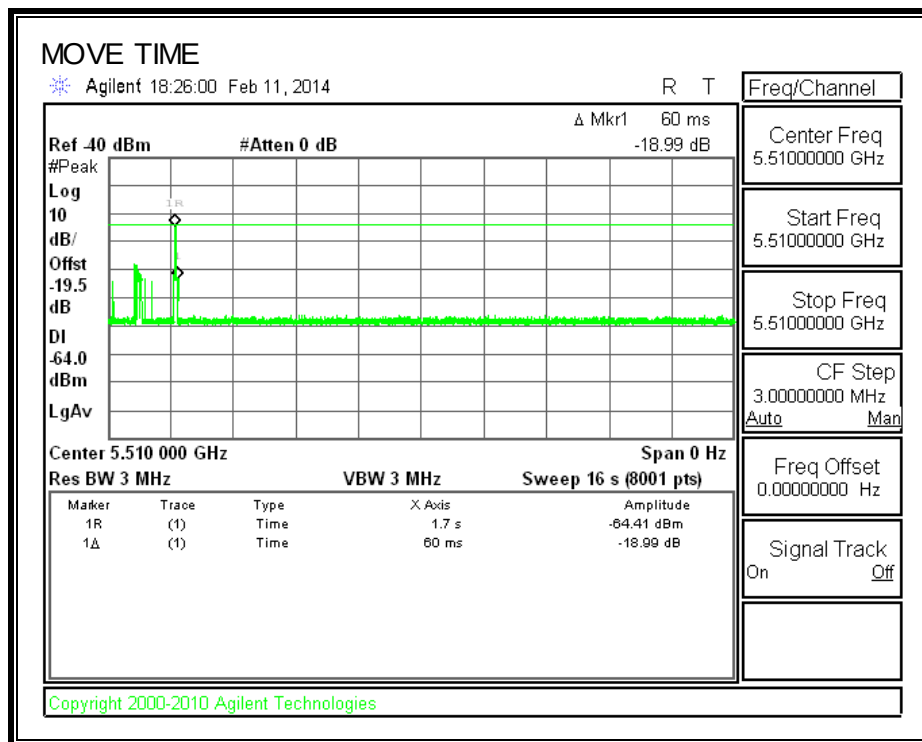
The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

RESULTS

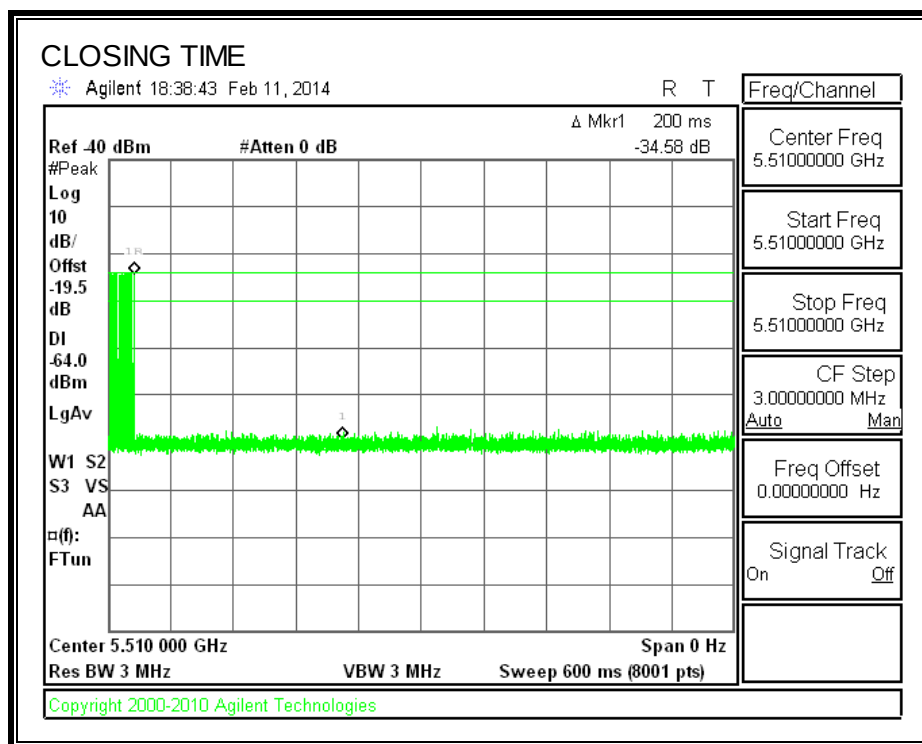
Channel Move Time (sec)	Limit (sec)
0.060	10

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

MOVE TIME

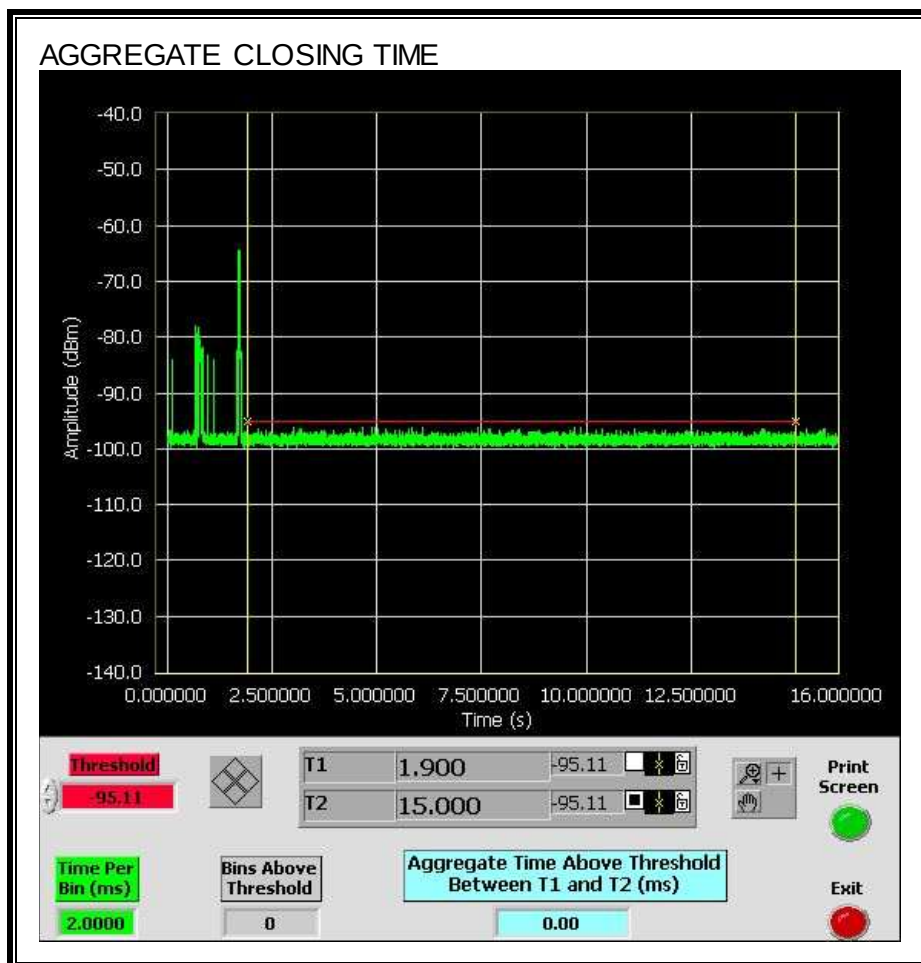


CHANNEL CLOSING TIME



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.

