



DFS PORTION of FCC 47 CFR PART 15 SUBPART E

TEST REPORT

FOR

GSM//WCDMA Phone + Bluetooth & WLAN (2.4GHz & 5GHz) and NFC

MODEL NUMBER: SHV-E370K

FCC ID: A3LSHVE370K

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Revision History

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--	08/20/13	Initial Issue	
A	8/23/13	Update Frequency values in the summary table.	P. Kim

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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: 802.11 B/G/N 1X1 HT20, HT40, + BT4.0 (LE) +
GSM1900 AND WCDMA1900MHz BAR PHONE

MODEL: SHV-E370K

Serial Number: 1693692-VS

DATE TESTED: August 13-19, 2013

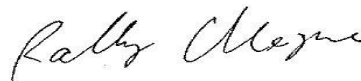
APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
DFS Portion of CFR 47 Part 15 Subpart E	Pass

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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Tested By:



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WISE PROGRAM MANAGER
UL Verification Services Inc.

ROLLY ALEGRE
WISE EMC ENGINEER
UL Verification Services Inc.

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with the DFS portion of FCC CFR 47 Part 2, FCC CFR 47 Part 15, FCC 06-96, FCC KDB 789033, ANSI C63.10-2009.

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:

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

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 1000 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 802.11 B/G/N 1X1 HT20, HT40, + BT4.0 (LE) + GSM1900 AND WCDMA1900MHz BAR PHONE

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
5180-5240	802.11a	12.1	16.22
5180-5240	802.11n HT20	12.3	16.98
5190-5230	802.11n HT40	12.2	16.60
5260-5320	802.11a	12.3	16.98
5260-5320	802.11n HT20	12.3	16.98
5270-5310	802.11n HT40	12.4	17.38
5500-5700	802.11a	12.2	16.60
5500-5700	802.11n HT20	12.3	16.98
5510-5670	802.11n HT40	12.4	17.38

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of 1.5 dBi.

5.4. SOFTWARE AND FIRMWARE

Software version was 3.4.0-g9f6ebe1-00072-gcee1ab4b

The firmware used was M8974A-0.0.19.0.01.

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

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

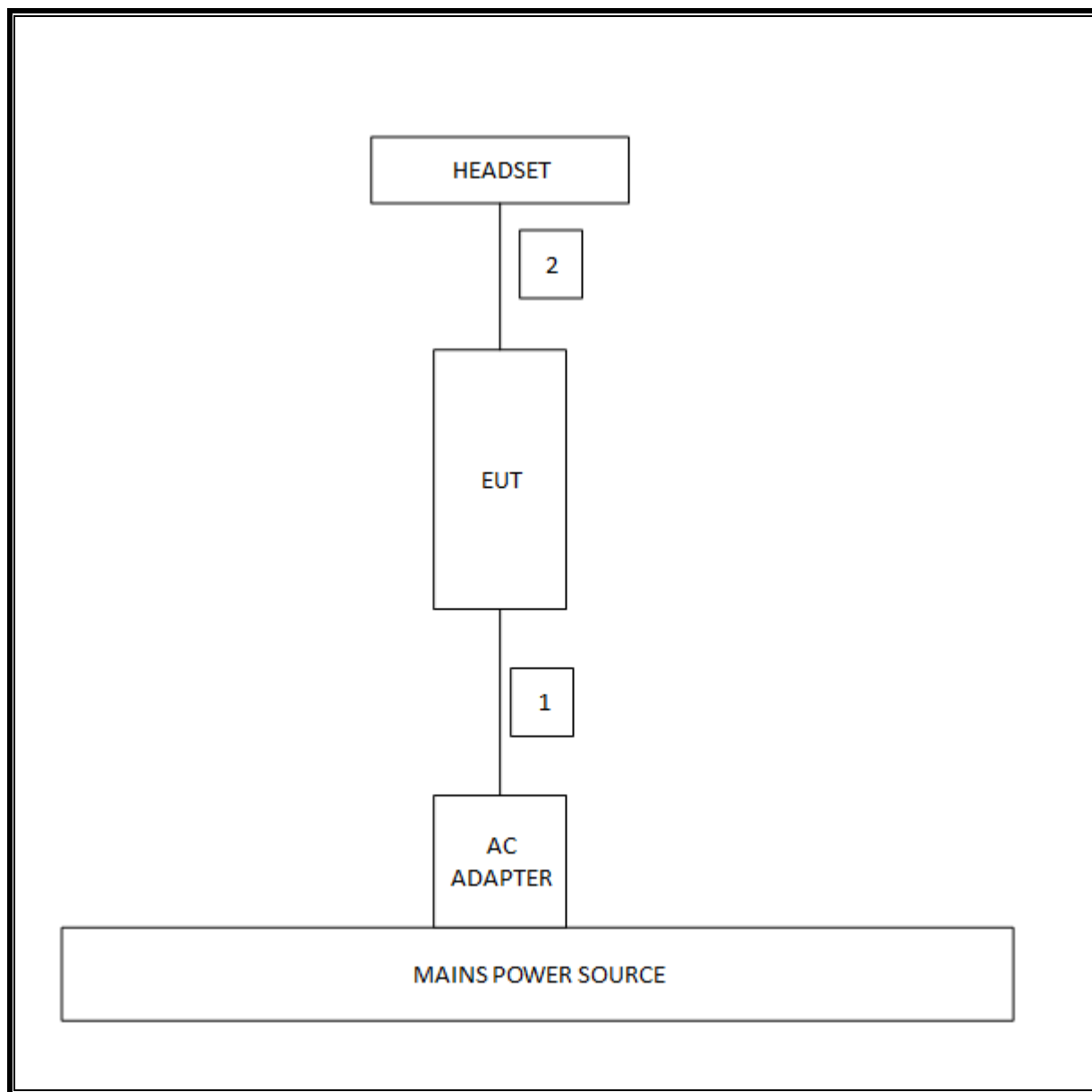
Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	Samsung Electronics	ETA0U18KWK	N/A	N/A
Headset	Samsung Electronics	EHS64AVFWE	N/A	N/A

I/O CABLES

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	RF out	1	Antenna Port	Shielded	0.1m	NA
2	RF in	1	Spectrum Analyzer	None	None	NA

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 Due
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C00986	4/1/2014
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01179	2/26/2014
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	8/8/2014
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00580	1/28/2014
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01063	10/22/2013
Preamplifier, 40 GHz	Miteq	NSP4000-SP2	C00990	8/2/2014
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	N/A	3/6/2014
Antenna, Horn, 18 GHz	ETS	3117	C01022	2/21/2014
Antenna, Horn, 26.5 GHz	ARA	MWH-1826/B	C00589	12/17/2013
Peak Power Meter	Agilent / HP	E4416A	C00963	12/13/2013
Peak / Average Power Sensor	Agilent / HP	E9327A	C00964	12/13/2013
LISN, 30 MHz	FCC	50/250-25-2	C00626	01/14/14
Reject Filter, 5.725-5.825 GHz	Micro-Tronics	BRC13192	N02676	CNR

7. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

LIMITS

None; for reporting purposes only.

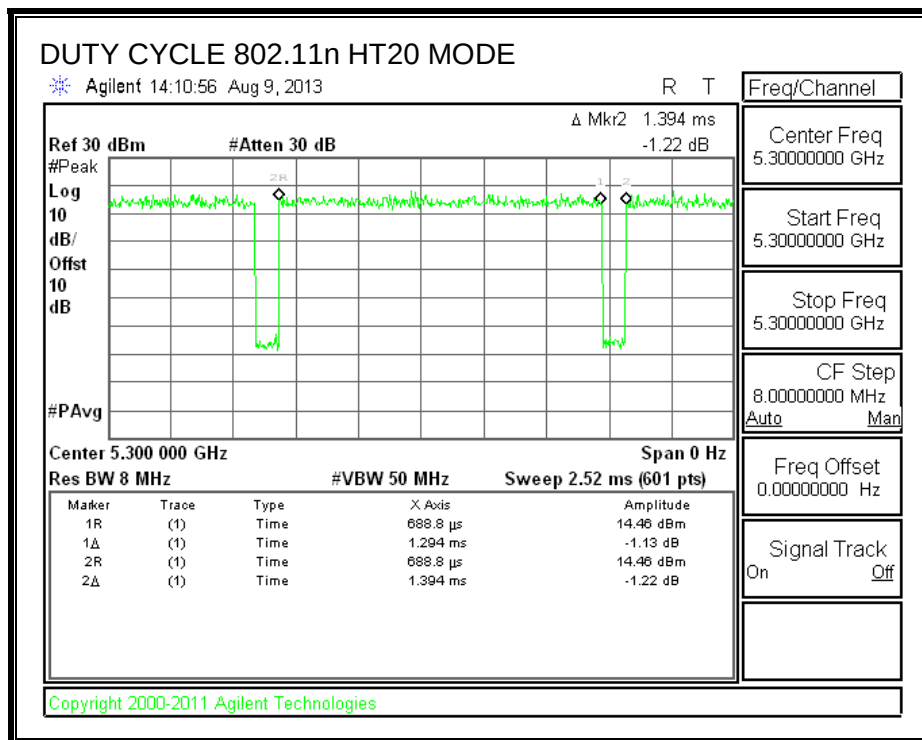
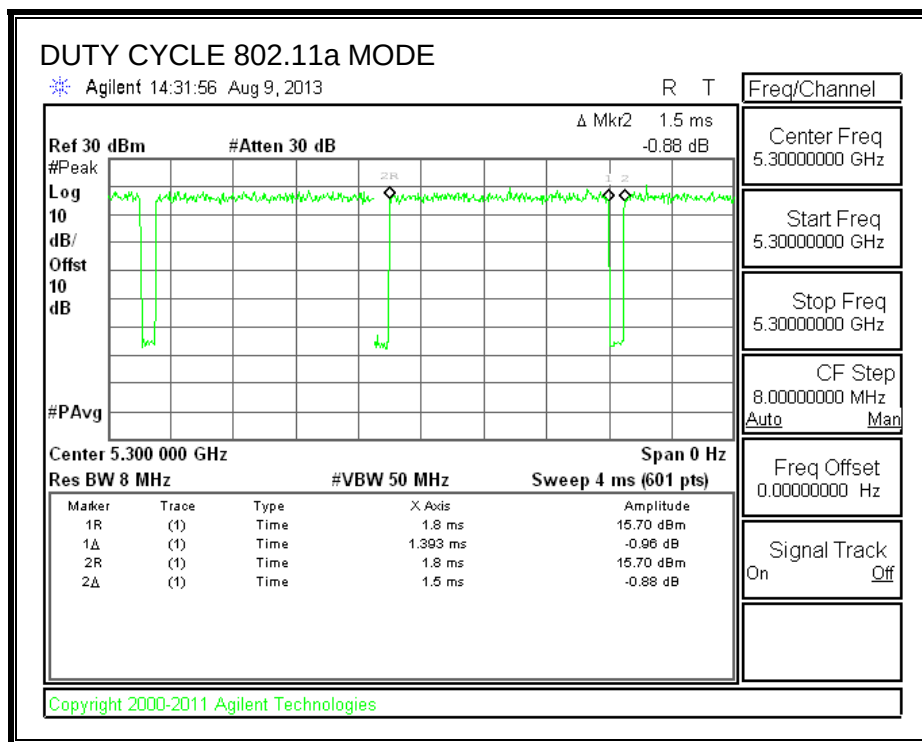
PROCEDURE

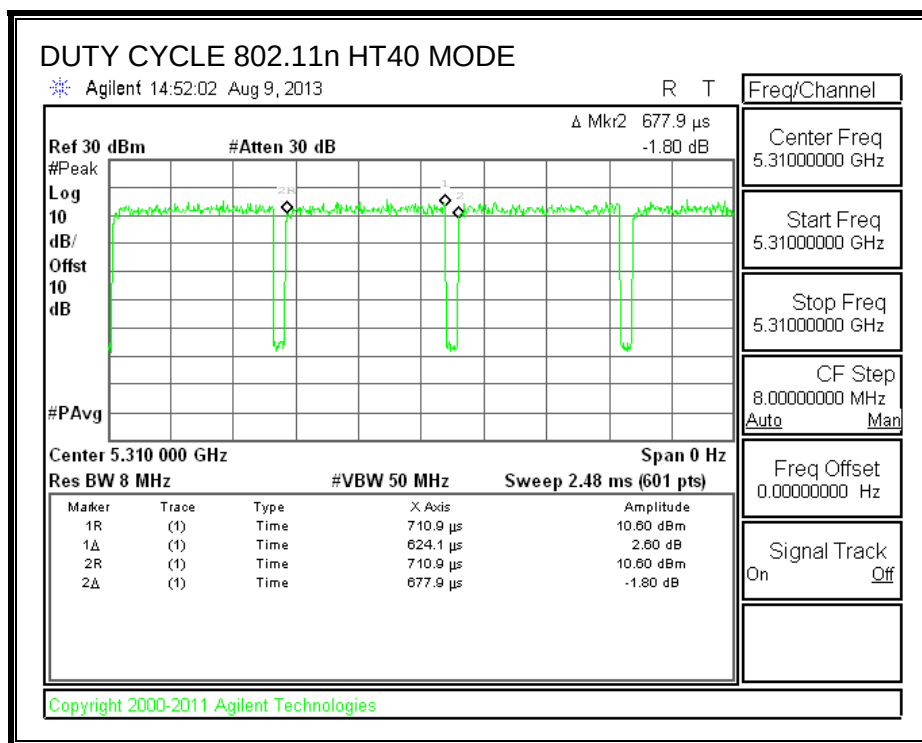
KDB 789033 Zero-Span Spectrum Analyzer Method.

7.1. 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	1.39	1.50	0.929	92.9%	0.32	0.718
802.11n HT20	1.29	1	0.928	92.8%	0.32	0.773
802.11n HT40	624.10	678	0.921	92.1%	0.36	0.002

7.2. DUTY CYCLE PLOTS





8. 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.

9. ANTENNA PORT TEST RESULTS

9.1. 802.11a MODE IN THE 5.2 GHz BAND

9.1.1. 26 dB BANDWIDTH

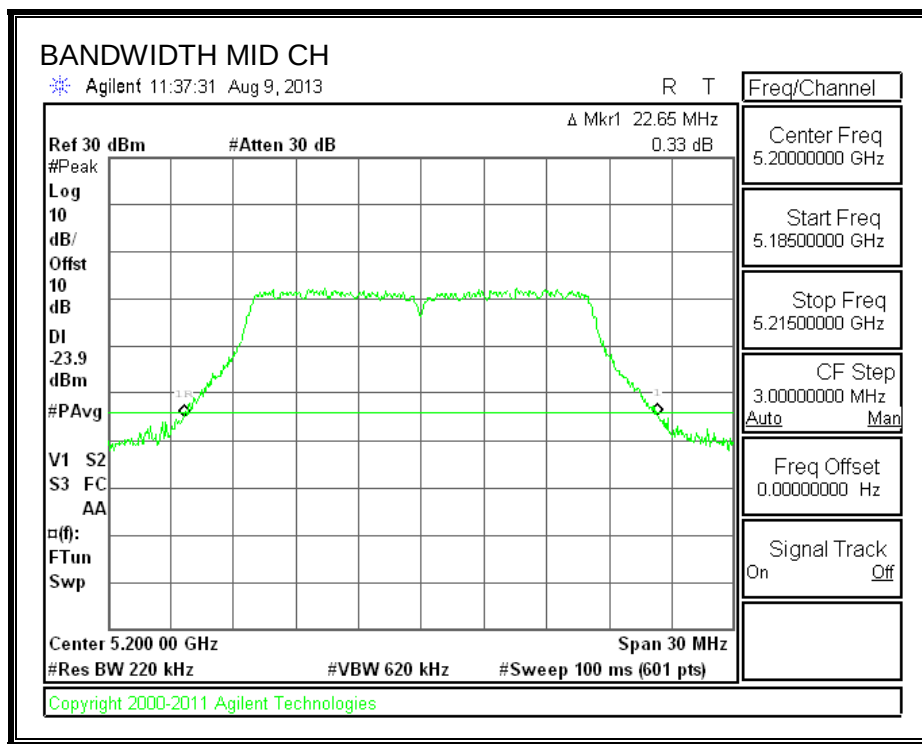
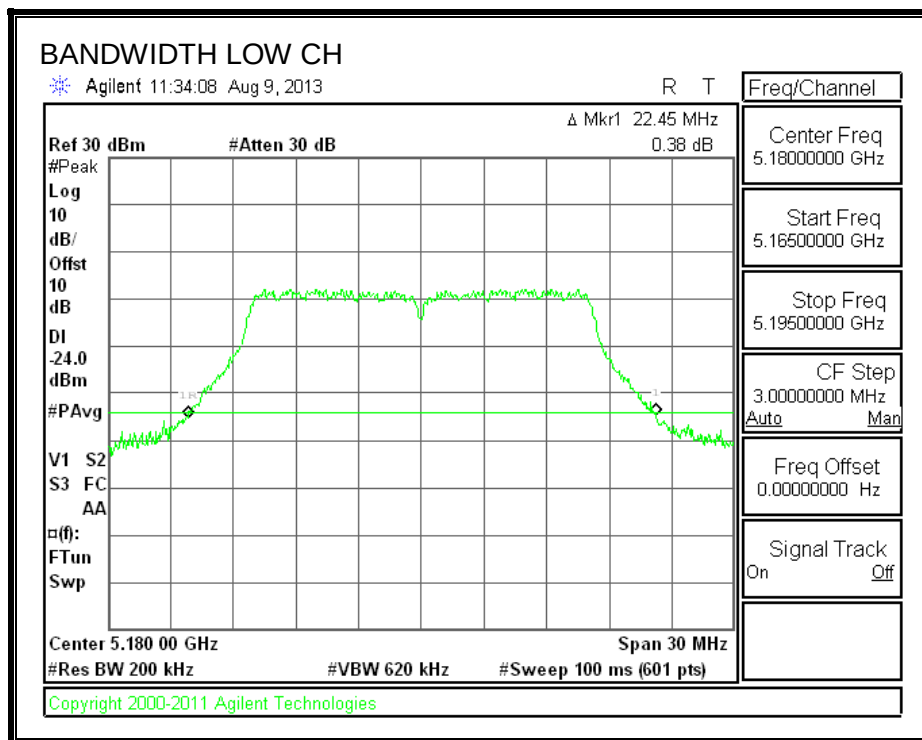
LIMITS

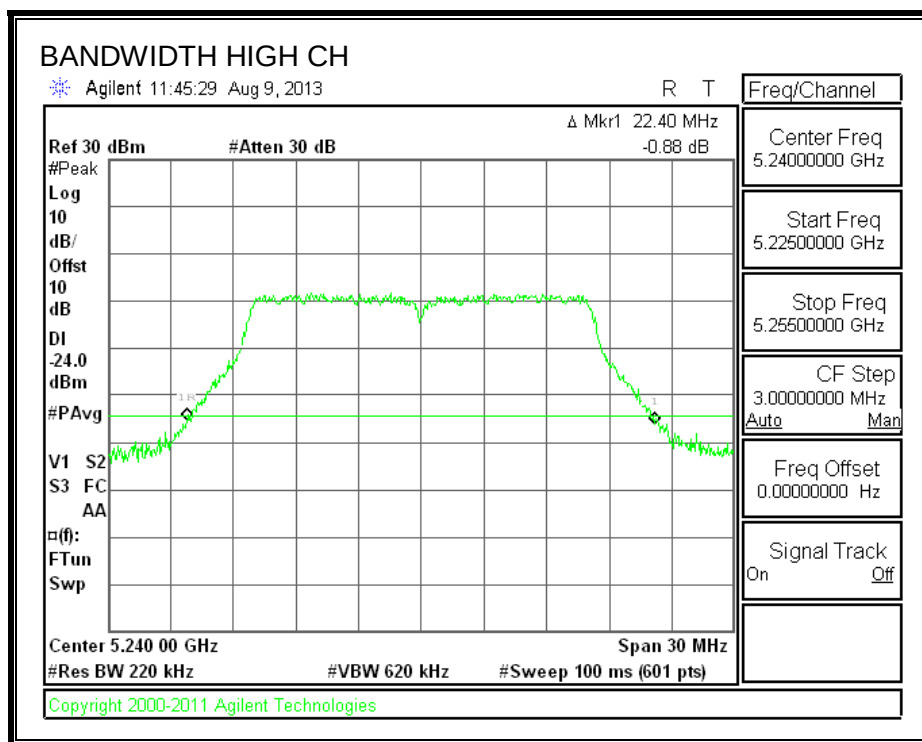
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5180	22.450
Mid	5200	22.650
High	5240	22.400

26 dB BANDWIDTH





9.1.2. 99% BANDWIDTH

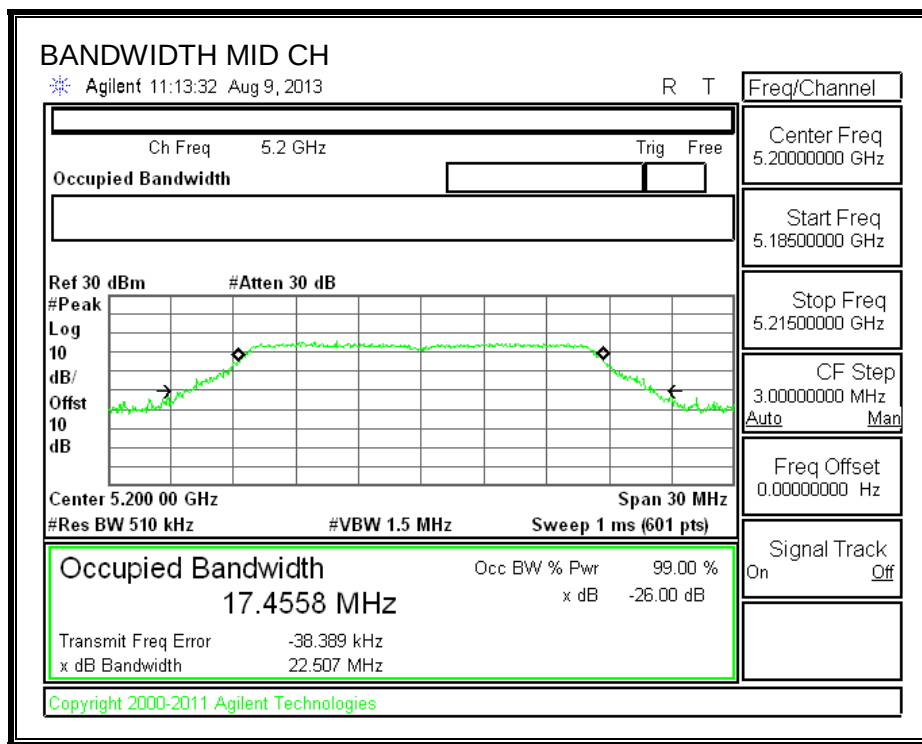
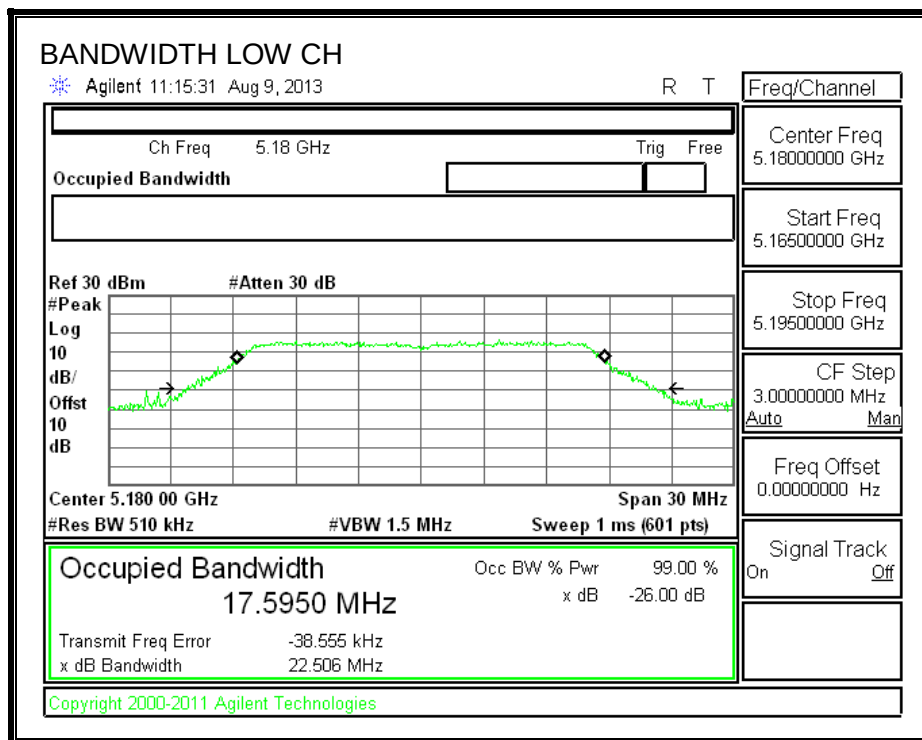
LIMITS

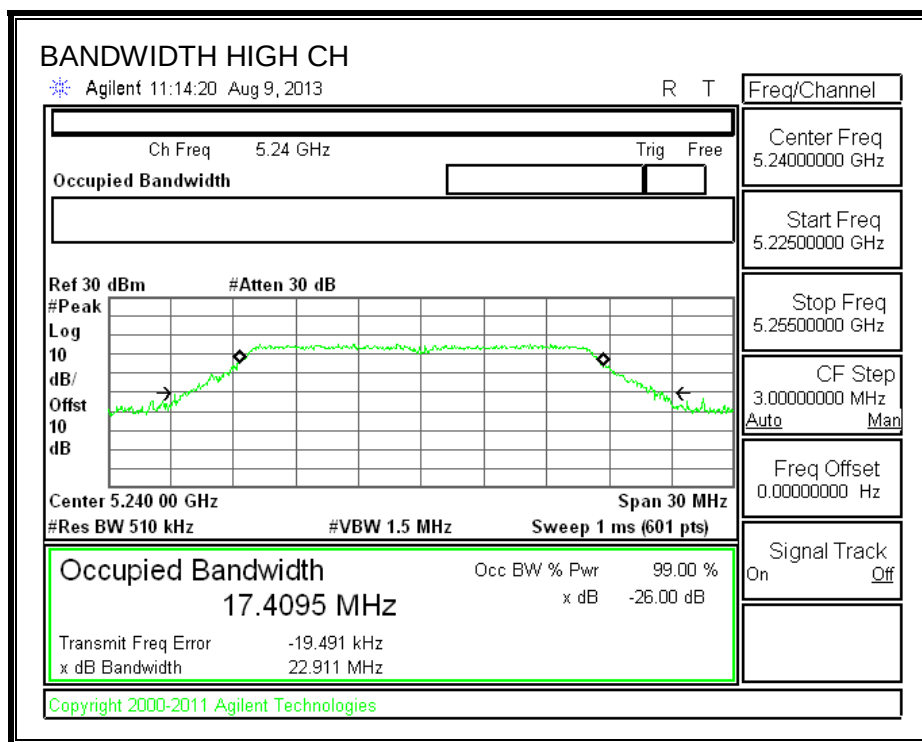
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5180	17.596
Mid	5200	17.456
High	5240	17.410

99% BANDWIDTH





9.1.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11 dB (including 10 dB pad and 1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	5180	12.1
Mid	5200	11.7
High	5240	11.3

9.1.4. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (1)

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

IC RSS-210 A9.2 (1)

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

DIRECTIONAL ANTENNA GAIN

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

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5180	21.580	17.522	-2.00
Mid	5200	21.580	17.522	-2.00
High	5240	21.580	17.522	-2.00

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	22.44	24.44	17.00	4.00	10.00	4.00
Mid	5200	17.00	22.44	24.44	17.00	4.00	10.00	4.00
High	5240	17.00	22.44	24.44	17.00	4.00	10.00	4.00

Duty Cycle CF (dB)	0.21	Included in Calculations of Corr'd Power & PSD
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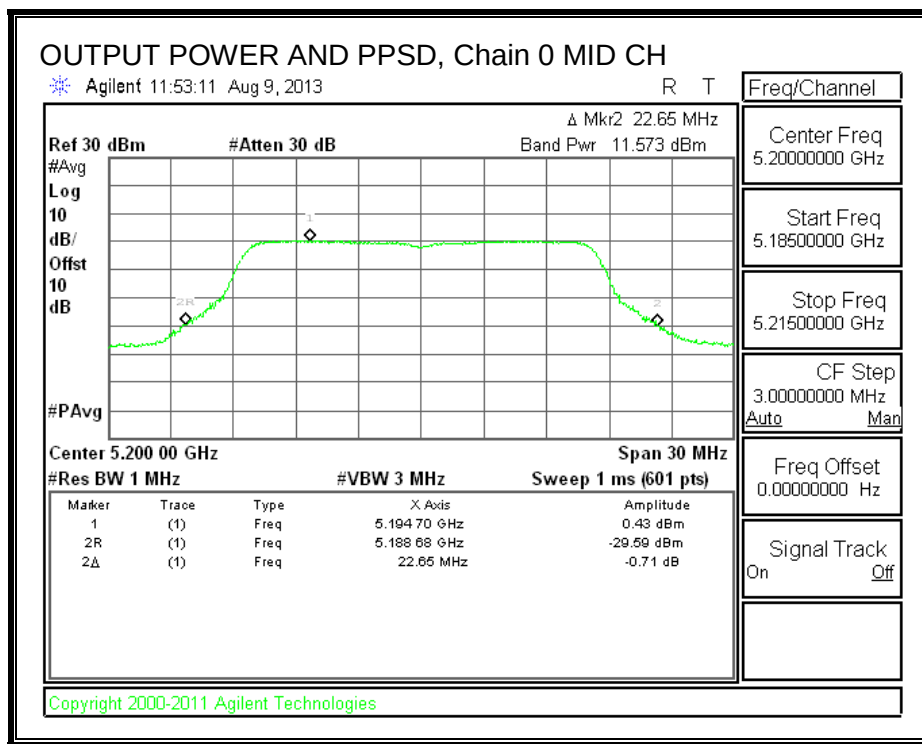
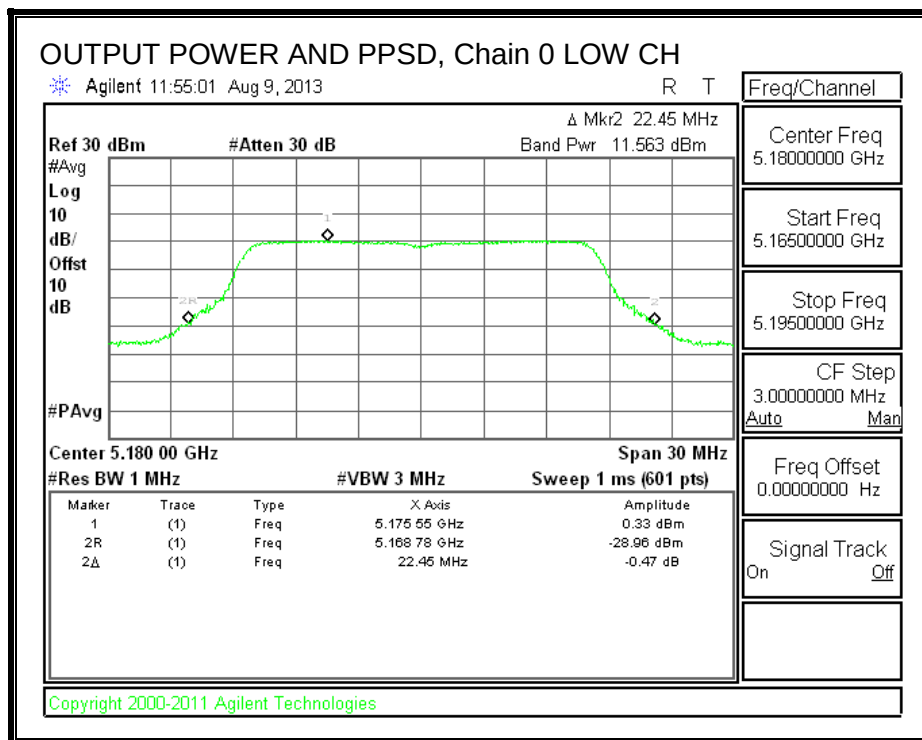
Output Power Results

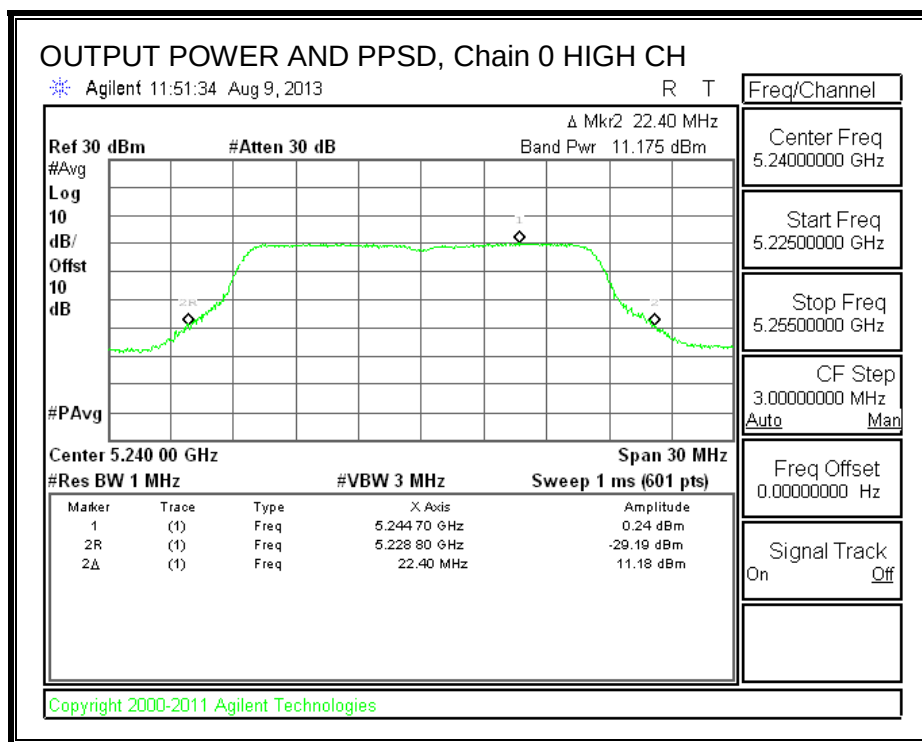
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	11.563	11.77	17.00	-5.23
Mid	5200	11.573	11.78	17.00	-5.22
High	5240	11.175	11.39	17.00	-5.62

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5180	0.330	0.54	4.00	-3.46
Mid	5200	0.430	0.64	4.00	-3.36
High	5240	0.240	0.45	4.00	-3.55

OUTPUT POWER AND PPSD, Chain 0





9.1.5. PEAK EXCURSION

LIMITS

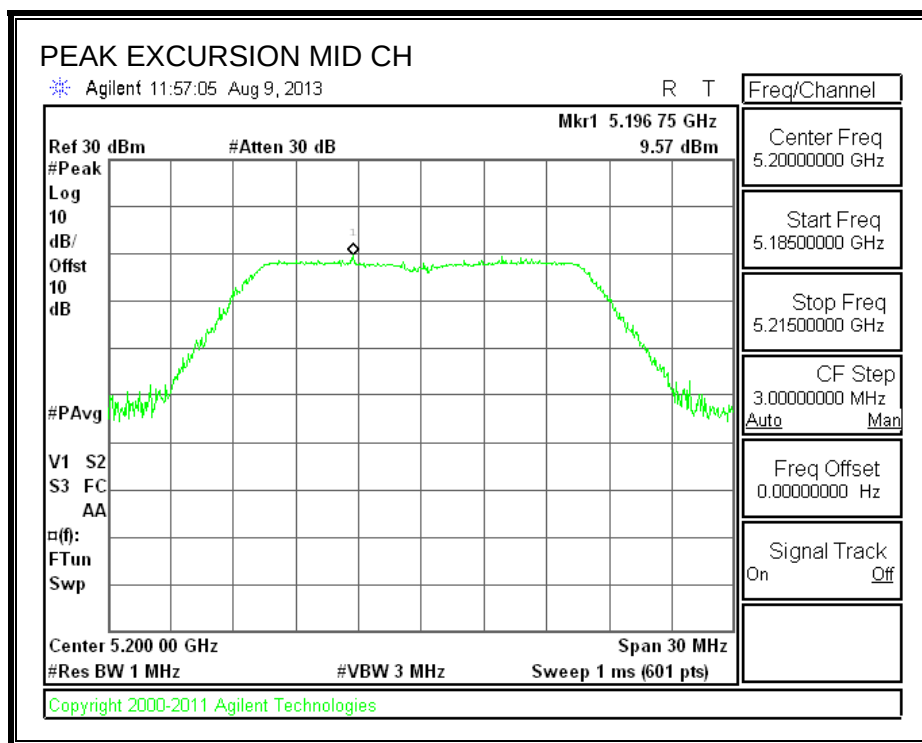
FCC §15.407 (a) (6)

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

RESULTS

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5200	9.570	0.64	0.22	8.71	13	-4.29

PEAK EXCURSION



9.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

9.2.1. 26 dB BANDWIDTH

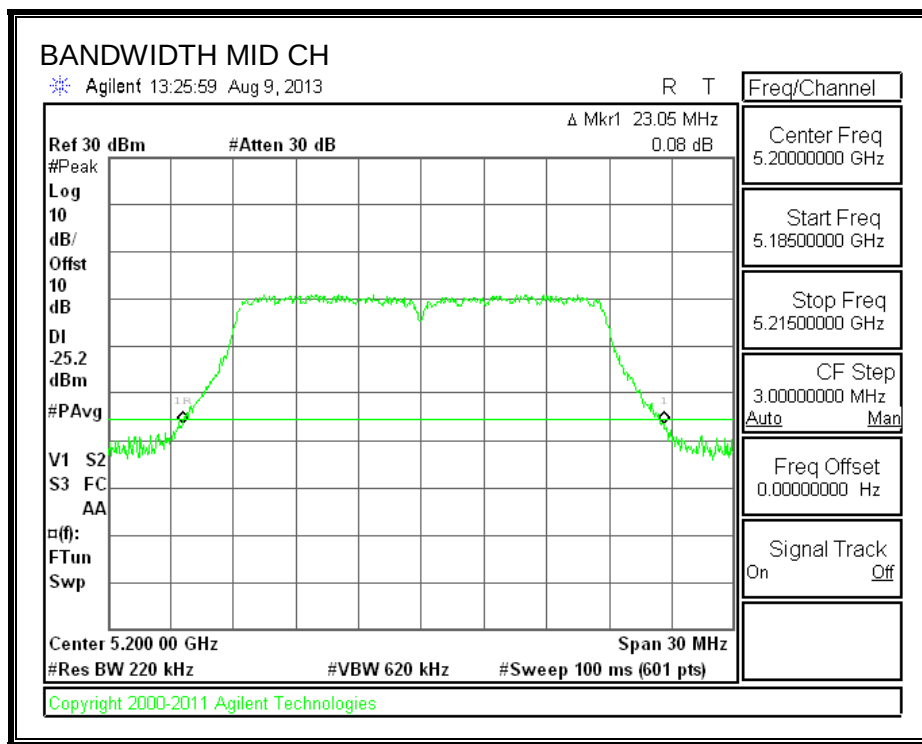
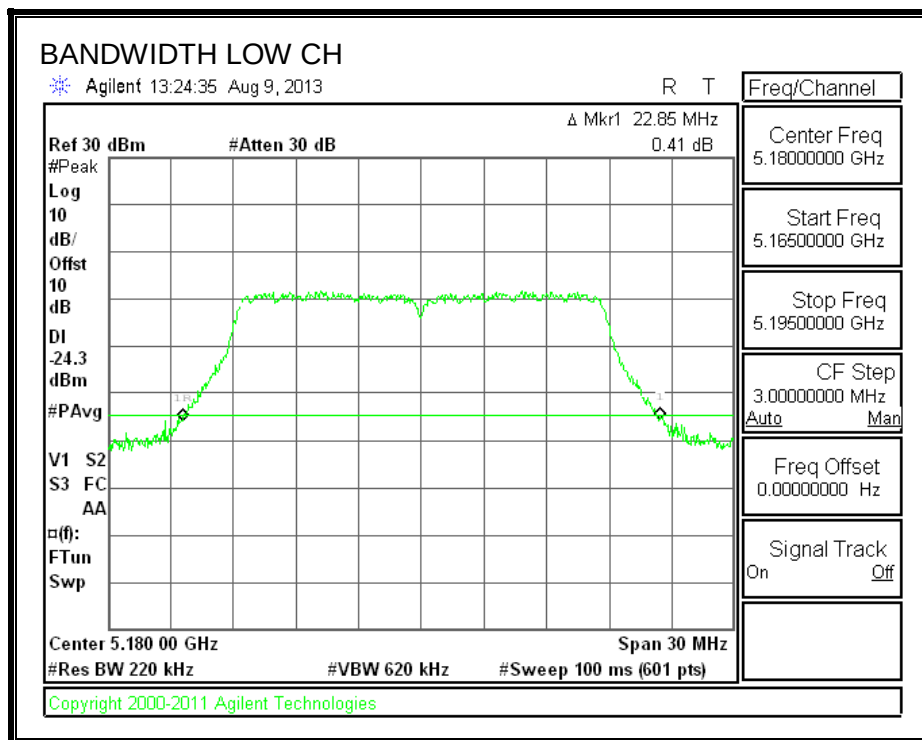
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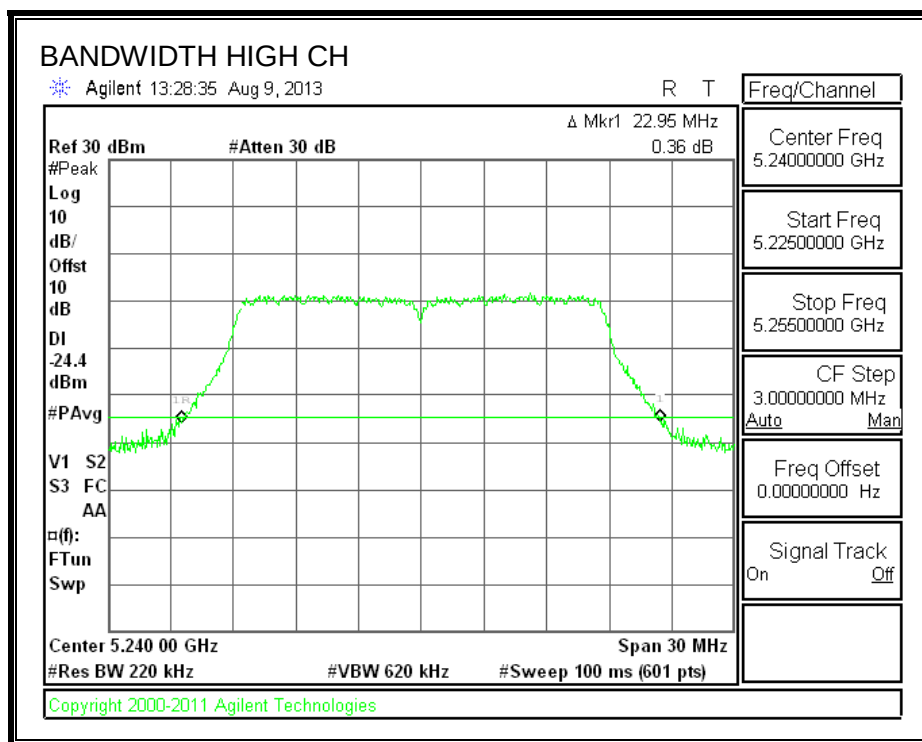
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5180	22.85
Mid	5200	23.05
High	5240	22.95

26 dB BANDWIDTH





9.2.2. 99% BANDWIDTH

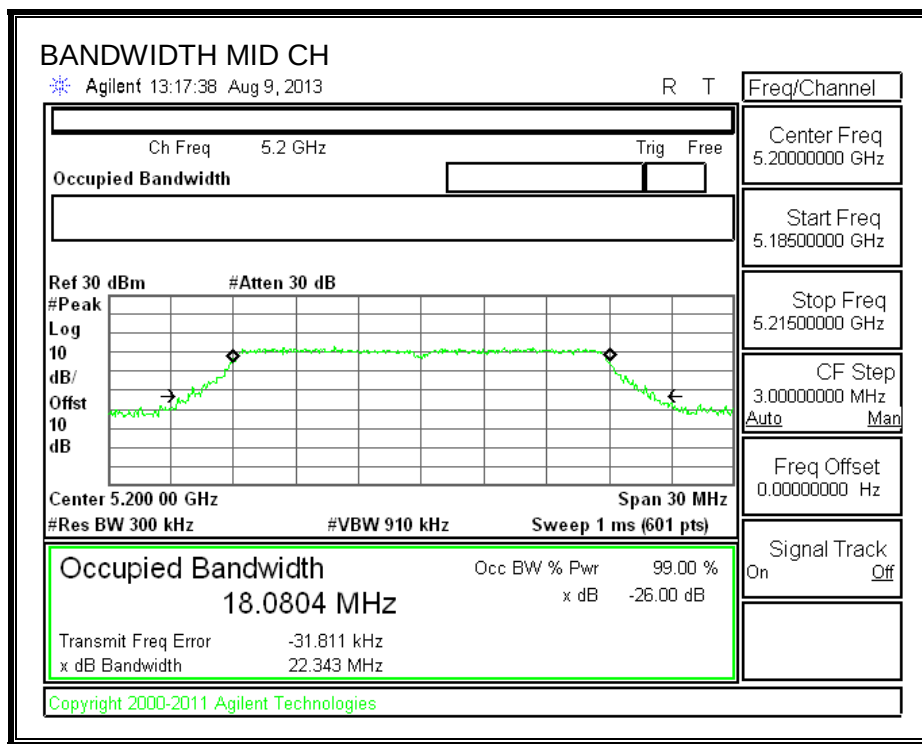
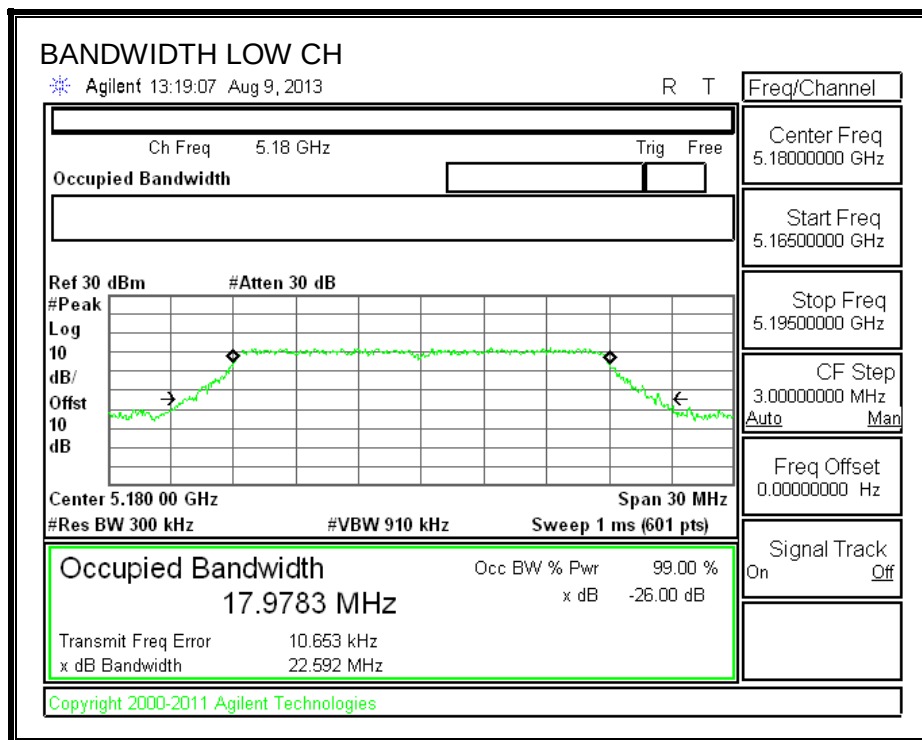
LIMITS

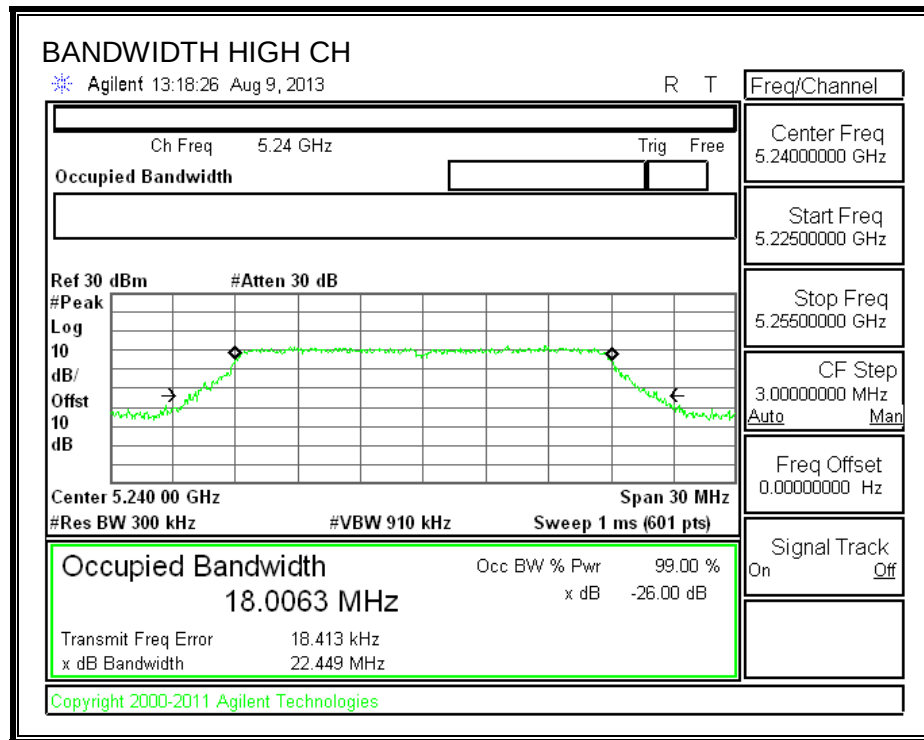
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5180	17.978
Mid	5200	18.080
High	5240	18.006

99% BANDWIDTH





9.2.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11 dB (including 10 dB pad and 1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	5180	12.2
Mid	5200	11.7
High	5240	12.3

9.2.4. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (1)

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

IC RSS-210 A9.2 (1)

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

DIRECTIONAL ANTENNA GAIN

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

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5180	21.83	18.494	-2.00
Mid	5200	21.83	18.494	-2.00
High	5240	21.83	18.494	-2.00

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	22.67	24.67	17.00	4.00	10.00	4.00
Mid	5200	17.00	22.67	24.67	17.00	4.00	10.00	4.00
High	5240	17.00	22.67	24.67	17.00	4.00	10.00	4.00

Duty Cycle CF (dB)	0.22	Included in Calculations of Corr'd Power & PPSP
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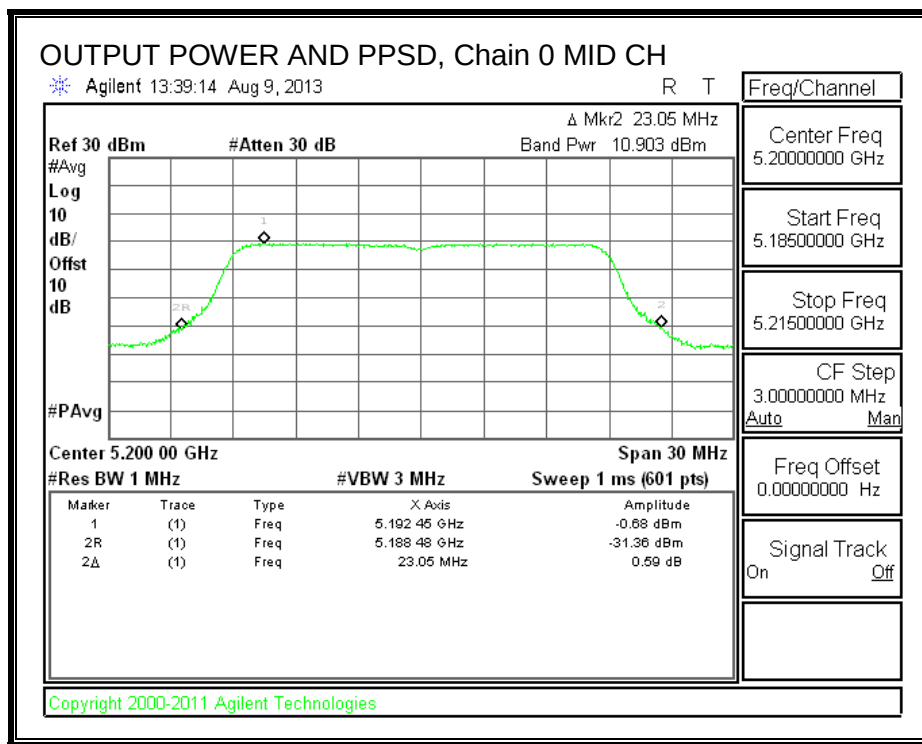
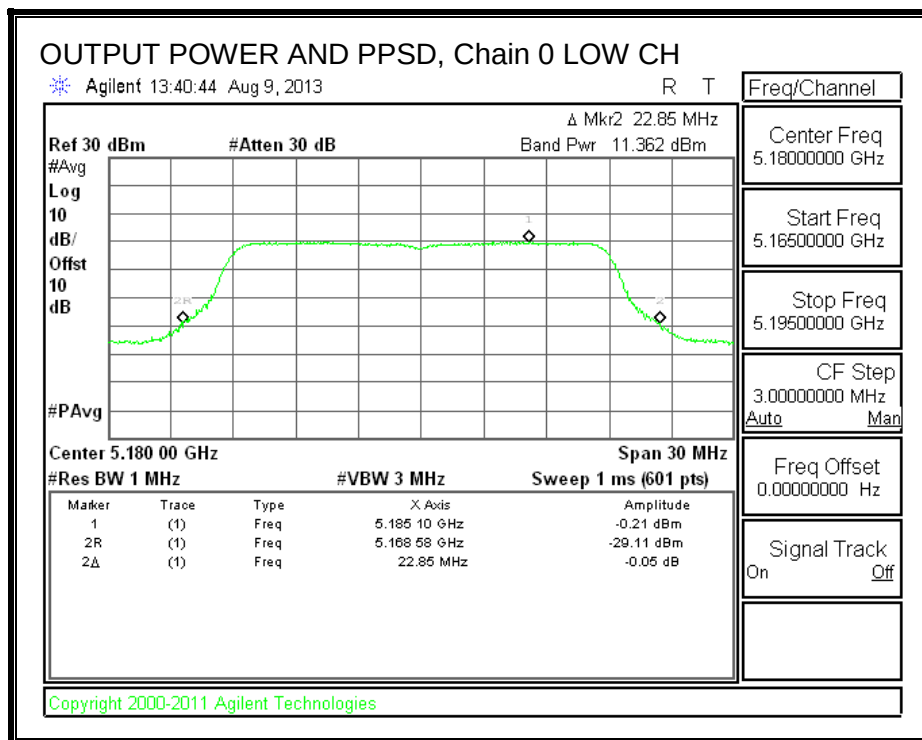
Output Power Results

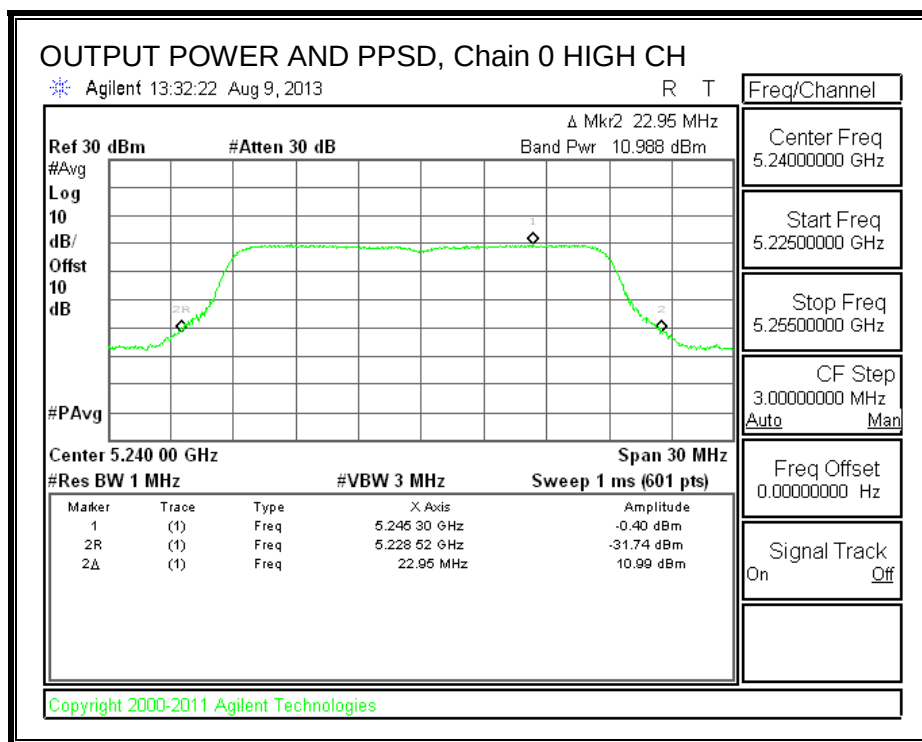
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	11.362	11.58	17.00	-5.42
Mid	5200	10.903	11.12	17.00	-5.88
High	5240	10.988	11.21	17.00	-5.79

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5180	-0.210	0.01	4.00	-3.99
Mid	5200	-0.680	-0.46	4.00	-4.46
High	5240	-0.400	-0.18	4.00	-4.18

OUTPUT POWER AND PPSD, Chain 0





9.2.5. PEAK EXCURSION

LIMITS

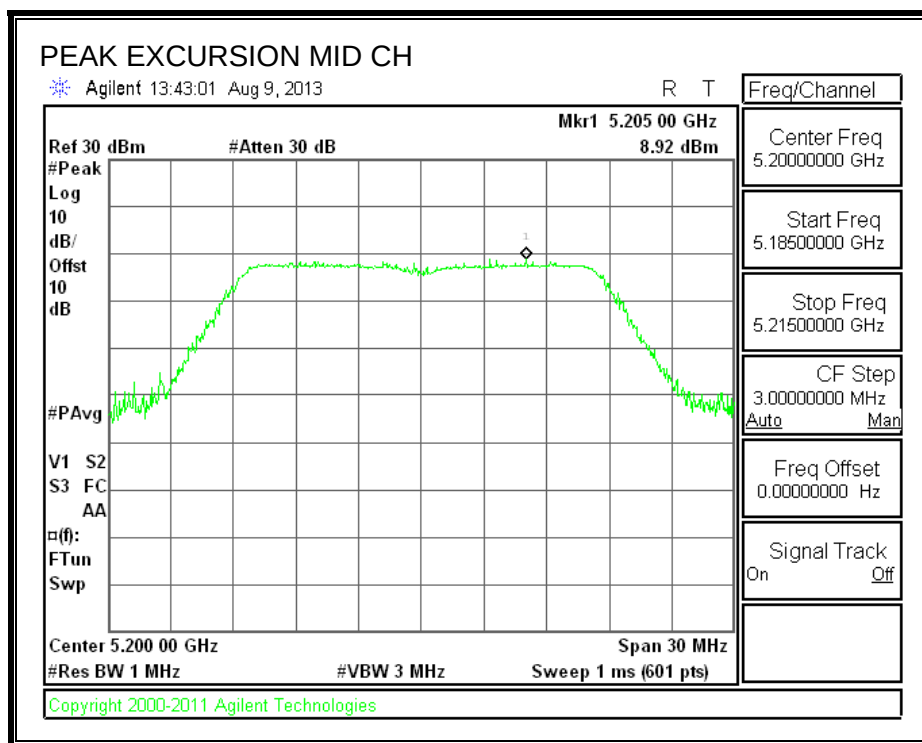
FCC §15.407 (a) (6)

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

RESULTS

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5200	8.920	-0.46	0.22	9.16	13	-3.84

PEAK EXCURSION



9.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

9.3.1. 26 dB BANDWIDTH

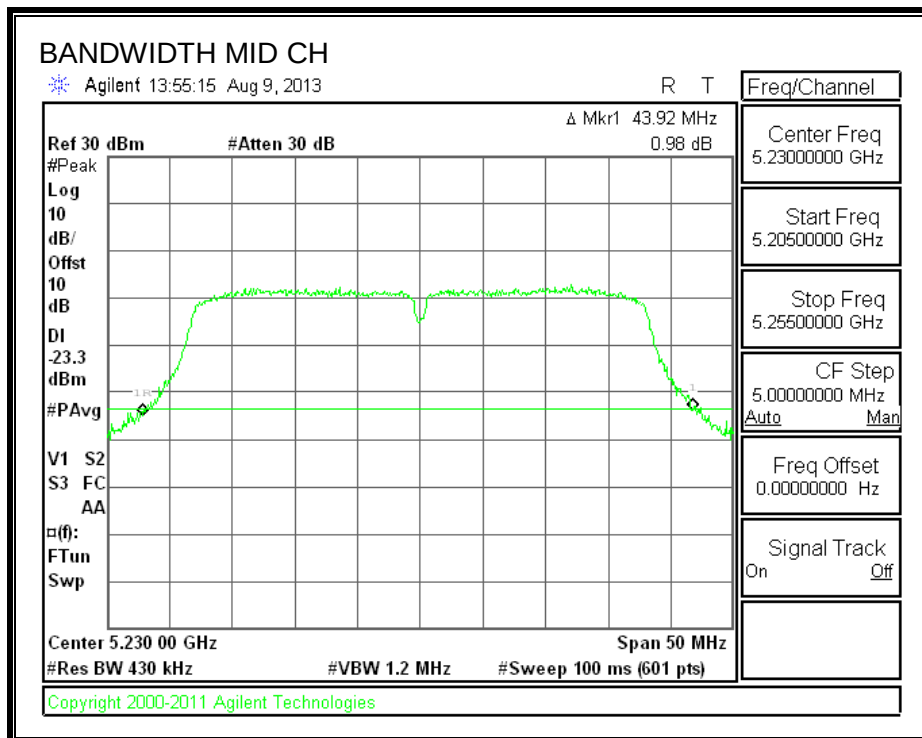
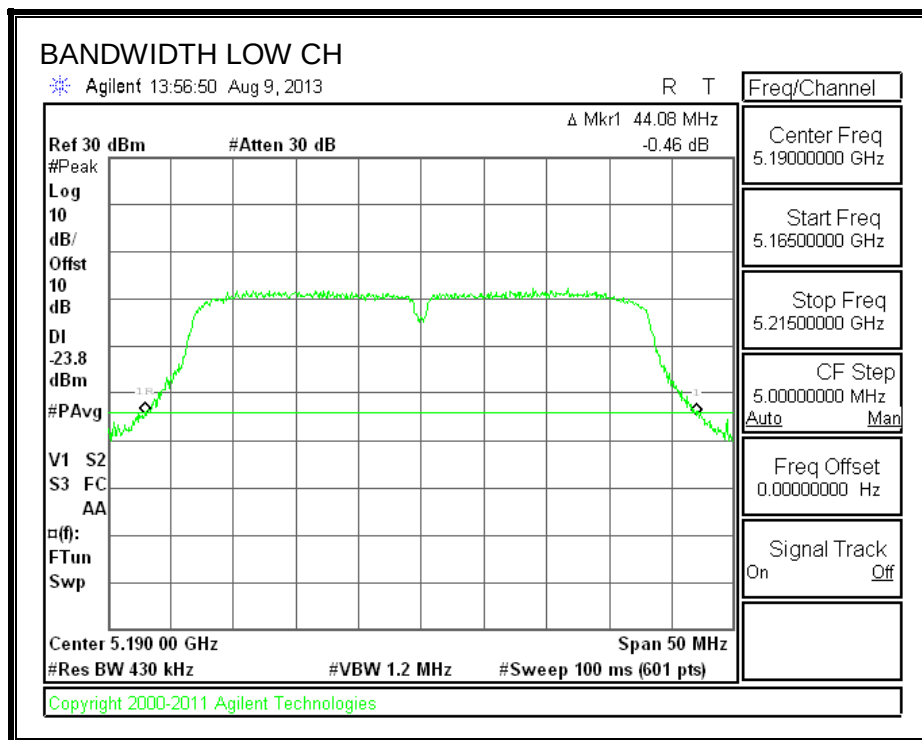
LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5190	44.1
High	5270	43.9

26 dB BANDWIDTH



9.3.2. 99% BANDWIDTH

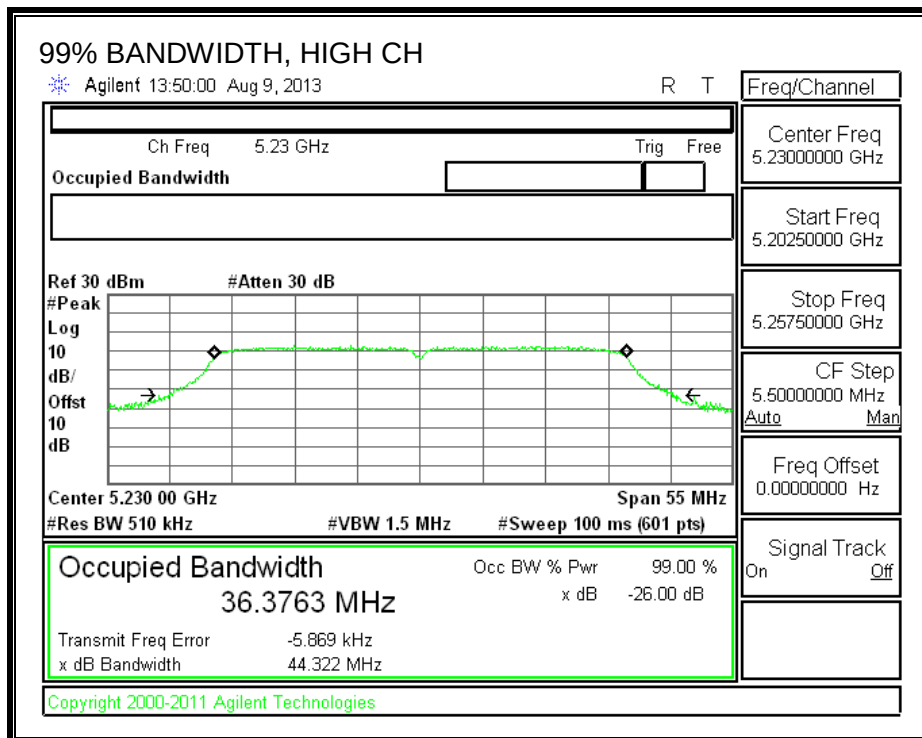
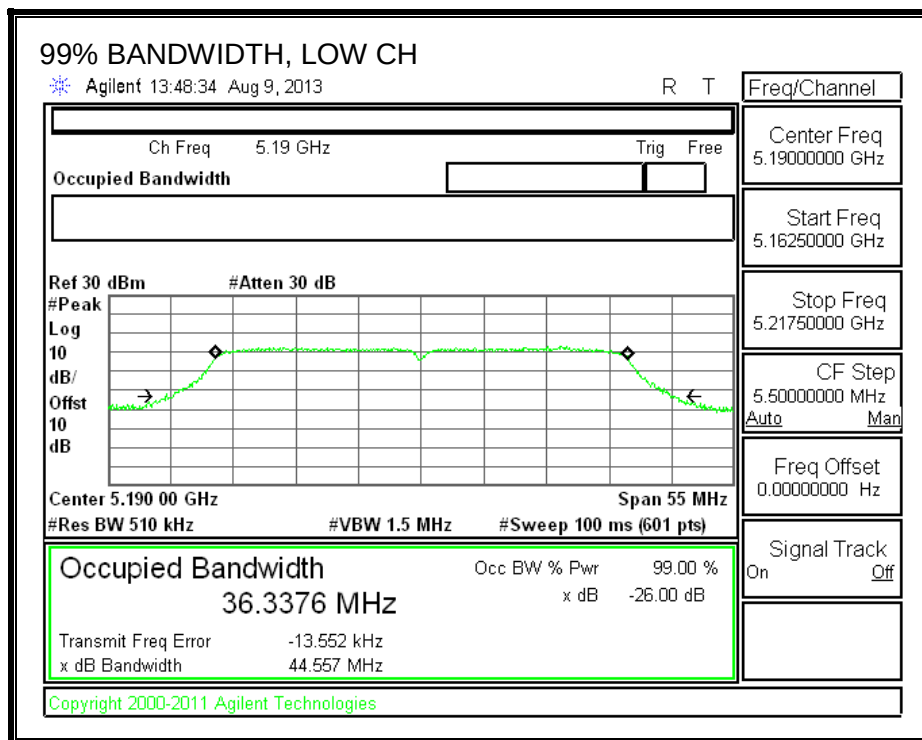
LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5190	36.338
High	5230	36.376

99% BANDWIDTH



9.3.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11 dB (including 10 dB pad and 1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	5190	12.1
High	5230	12.2

9.3.4. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (1)

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

IC RSS-210 A9.2 (1)

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

DIRECTIONAL ANTENNA GAIN

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

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5190	40.3	36.523	-2.00
Mid	5230	40.3	36.523	-2.00

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	25.00	17.00	4.00	10.00	4.00
Mid	5230	17.00	23.00	25.00	17.00	4.00	10.00	4.00
Duty Cycle CF (dB)		0.49	Included in Calculations of Corr'd Power & PSD					

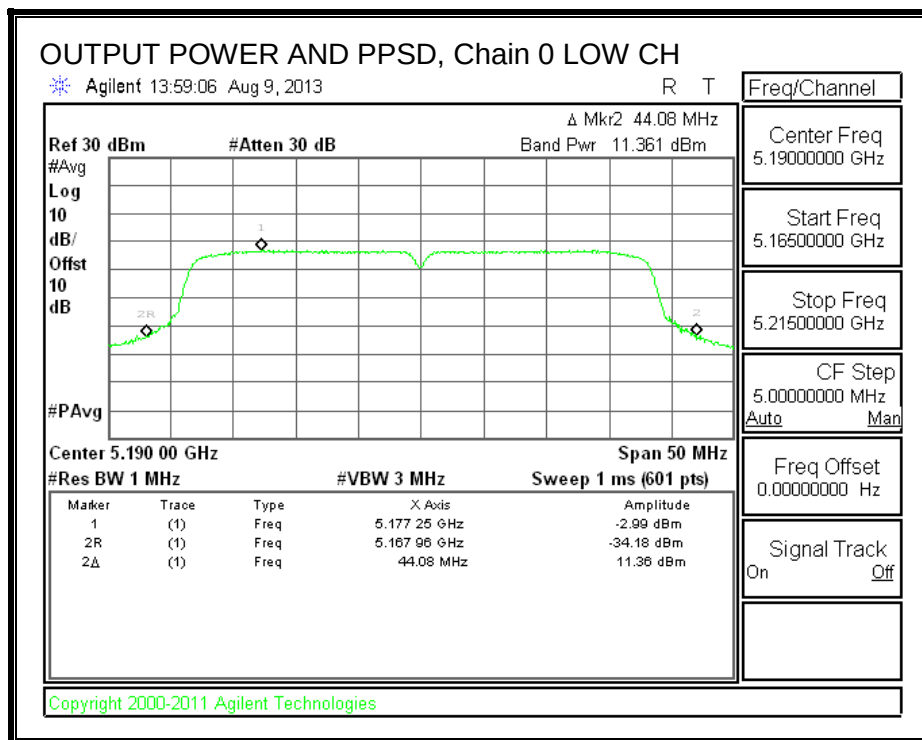
Output Power Results

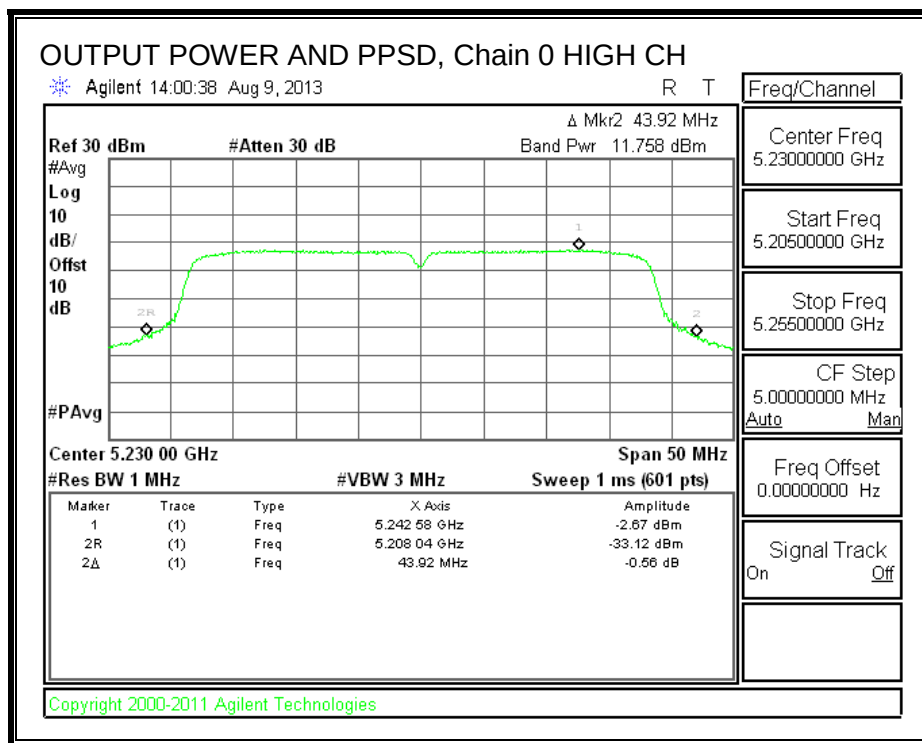
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5190	11.361	11.85	17.00	-5.15
Mid	5230	11.758	12.25	17.00	-4.75

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5190	-2.990	-2.50	4.00	-6.50
Mid	5230	-2.670	-2.18	4.00	-6.18

OUTPUT POWER AND PPSD, Chain 0





9.3.5. PEAK EXCURSION

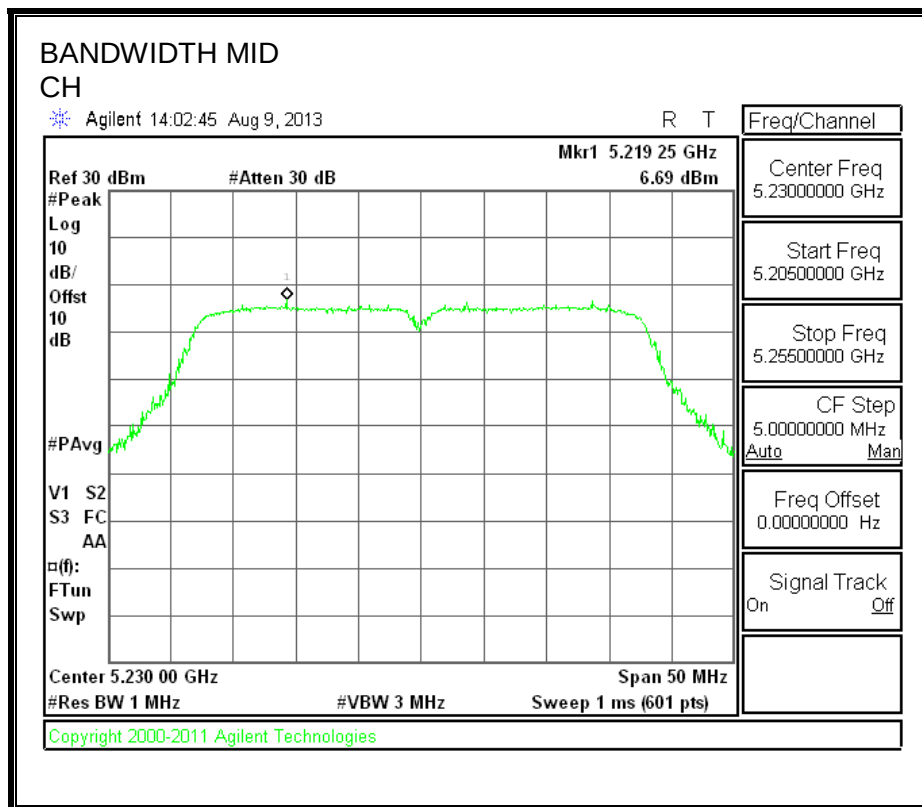
LIMITS

FCC §15.407 (a) (6)

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

RESULTS

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5230	6.690	-2.18	0.22	8.65	13	-4.35



9.4. 802.11a MODE IN THE 5.3 GHz BAND

9.4.1. 26 dB BANDWIDTH

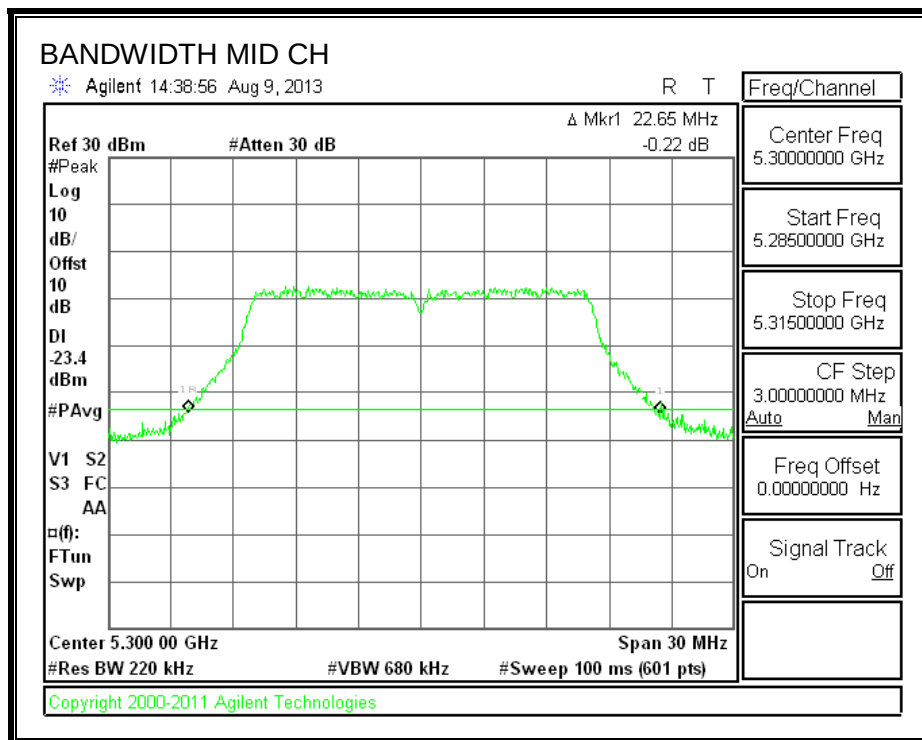
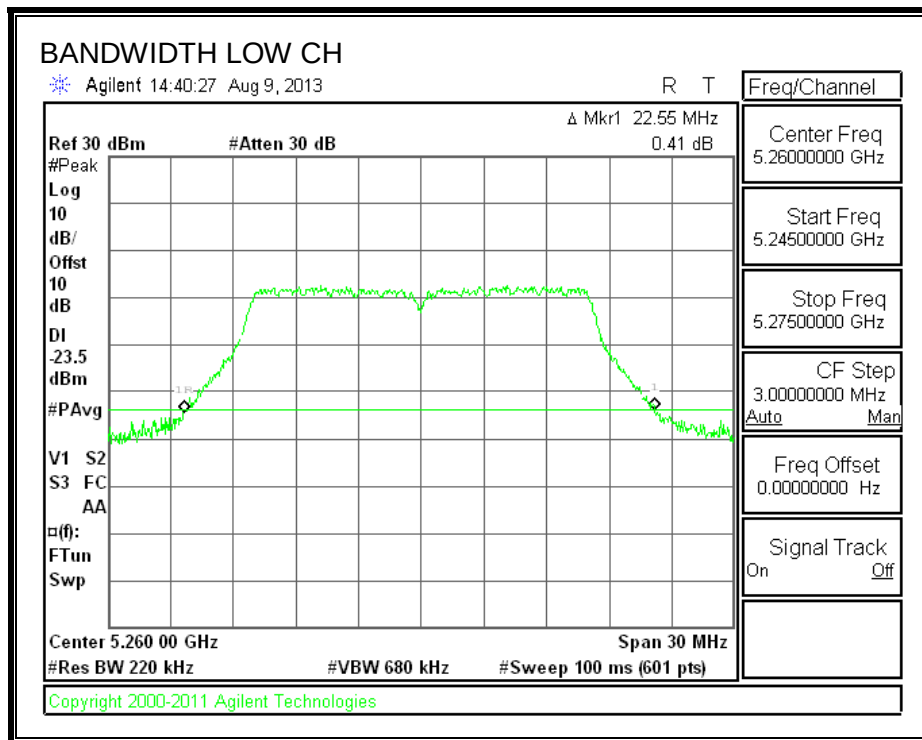
LIMITS

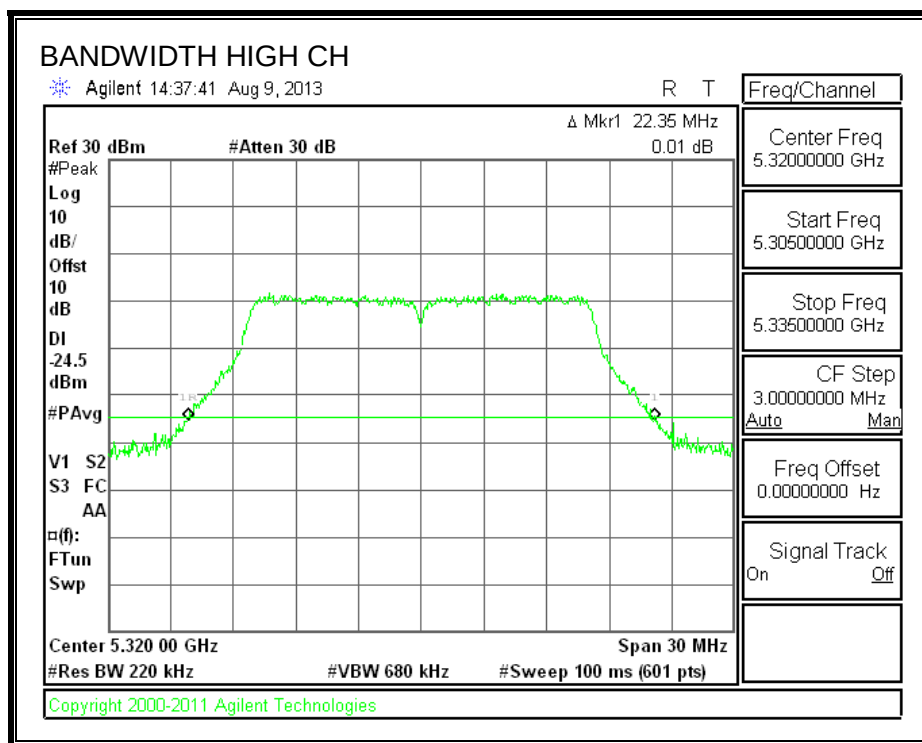
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5260	22.55
Mid	5300	22.65
High	5320	22.35

26 dB BANDWIDTH





9.4.2. 99% BANDWIDTH

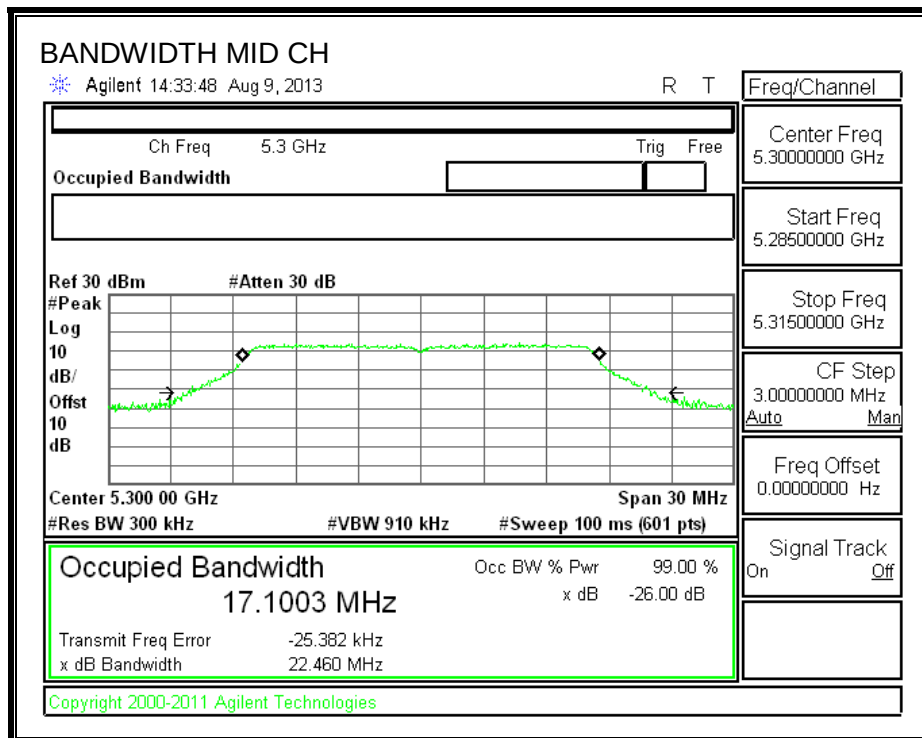
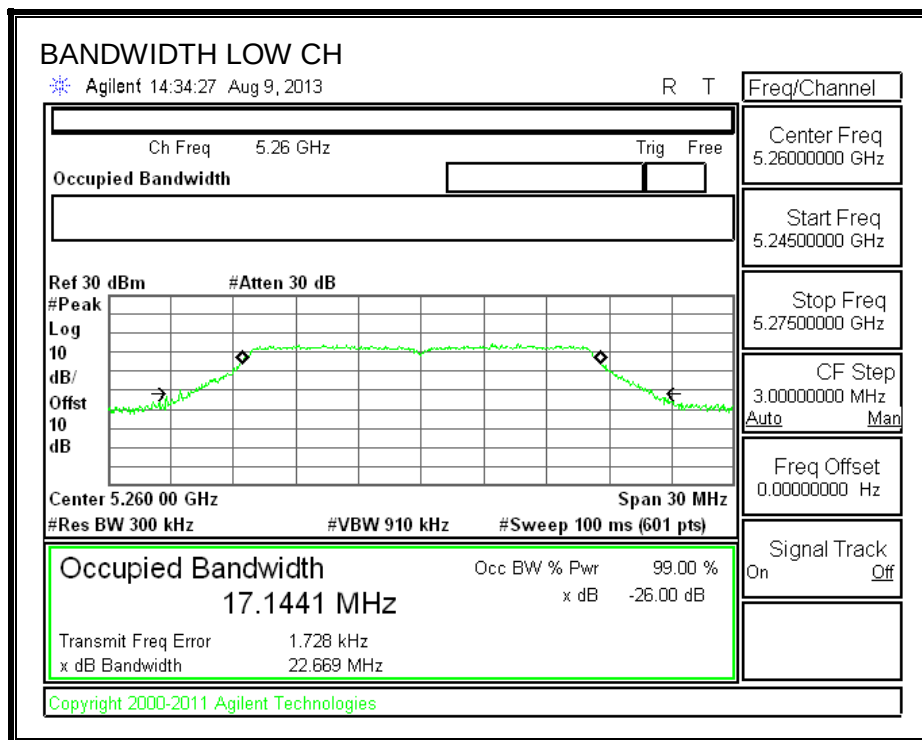
LIMITS

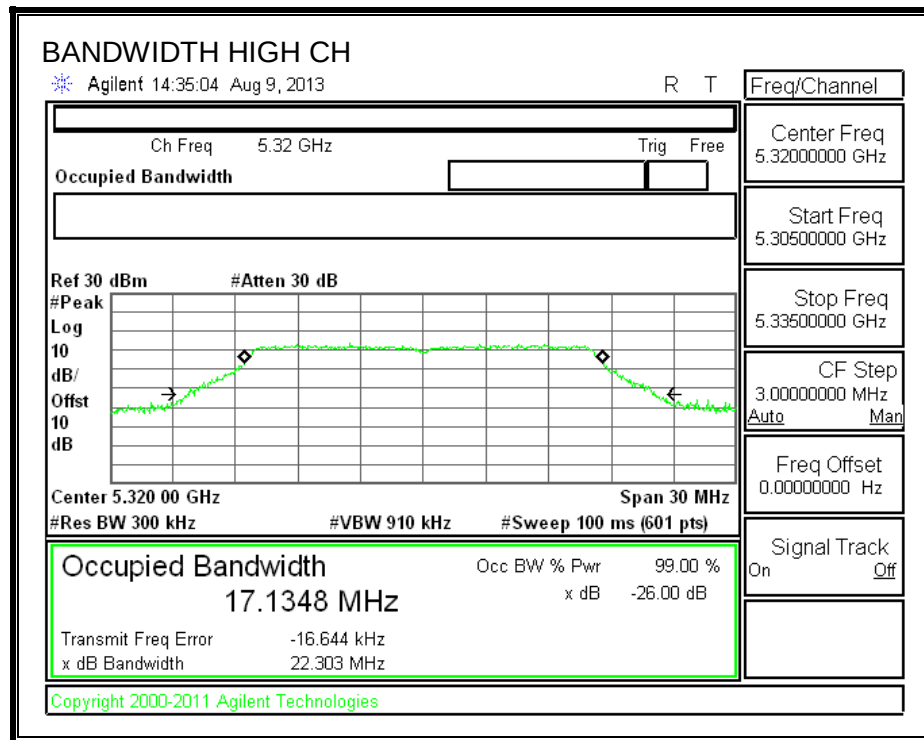
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5260	17.144
Mid	5300	17.100
High	5320	17.135

99% BANDWIDTH





9.4.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11 dB (including 10 dB pad and 1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	5260	12.10
Mid	5300	12.30
High	5320	11.40

9.4.4. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (2)

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

IC RSS-210 A9.2 (1)

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

DIRECTIONAL ANTENNA GAIN

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

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5260	21.41	16.924	-2.00
Mid	5300	21.41	16.924	-2.00
High	5320	21.41	16.924	-2.00

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5260	24.00	23.29	29.29	23.29	11.00	11.00	11.00
Mid	5300	24.00	23.29	29.29	23.29	11.00	11.00	11.00
High	5320	24.00	23.29	29.29	23.29	11.00	11.00	11.00

Duty Cycle CF (dB)	0.21	Included in Calculations of Corr'd Power & PPSD
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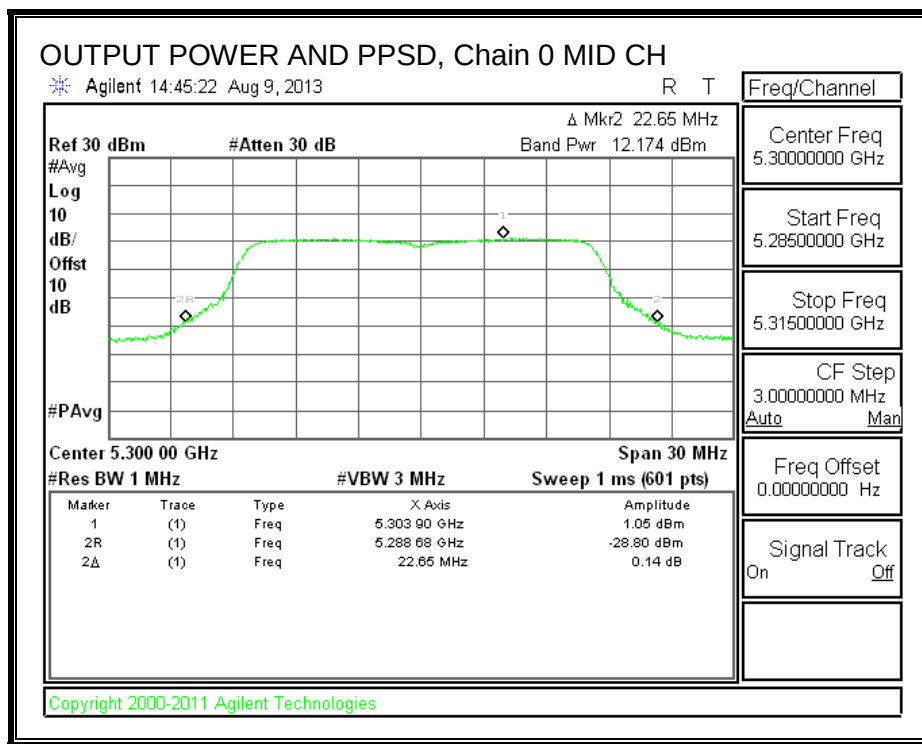
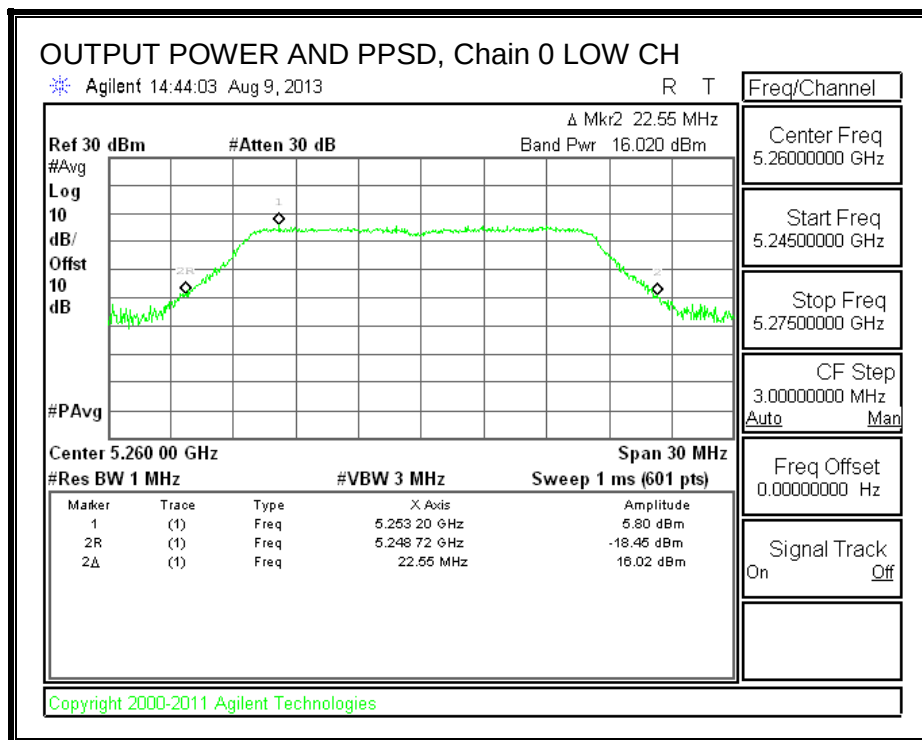
Output Power Results

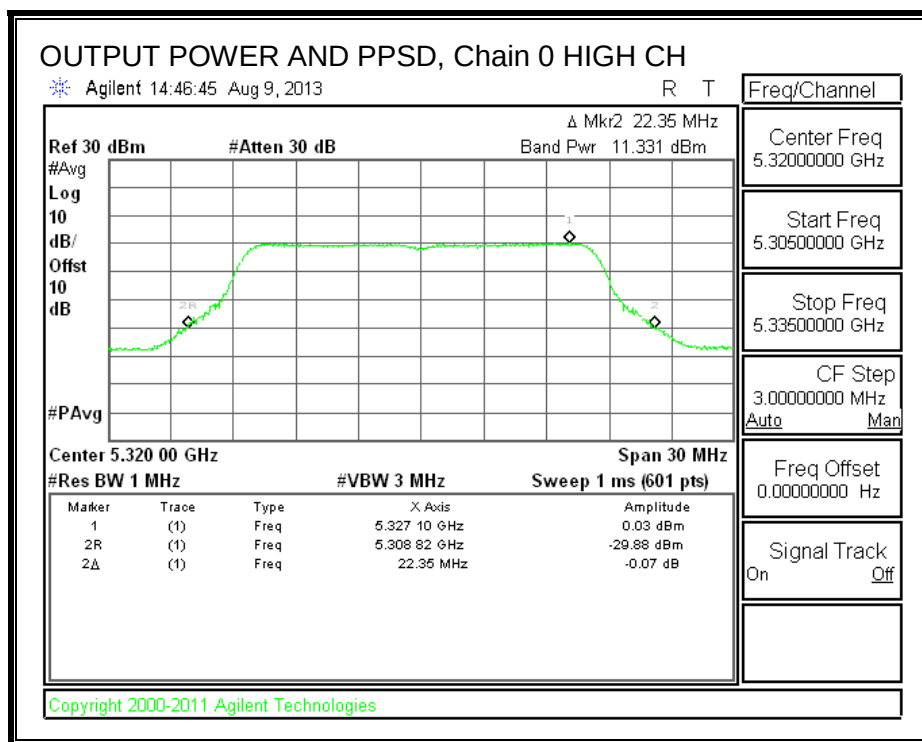
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	16.020	16.23	23.29	-7.06
Mid	5300	12.174	12.38	23.29	-10.90
High	5320	11.331	11.54	23.29	-11.74

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5260	5.800	6.01	11.00	-4.99
Mid	5300	1.050	1.26	11.00	-9.74
High	5320	0.030	0.24	11.00	-10.76

OUTPUT POWER AND PPSD, Chain 0





9.5. 802.11n HT20 MODE IN THE 5.3 GHz BAND

9.5.1. 26 dB BANDWIDTH

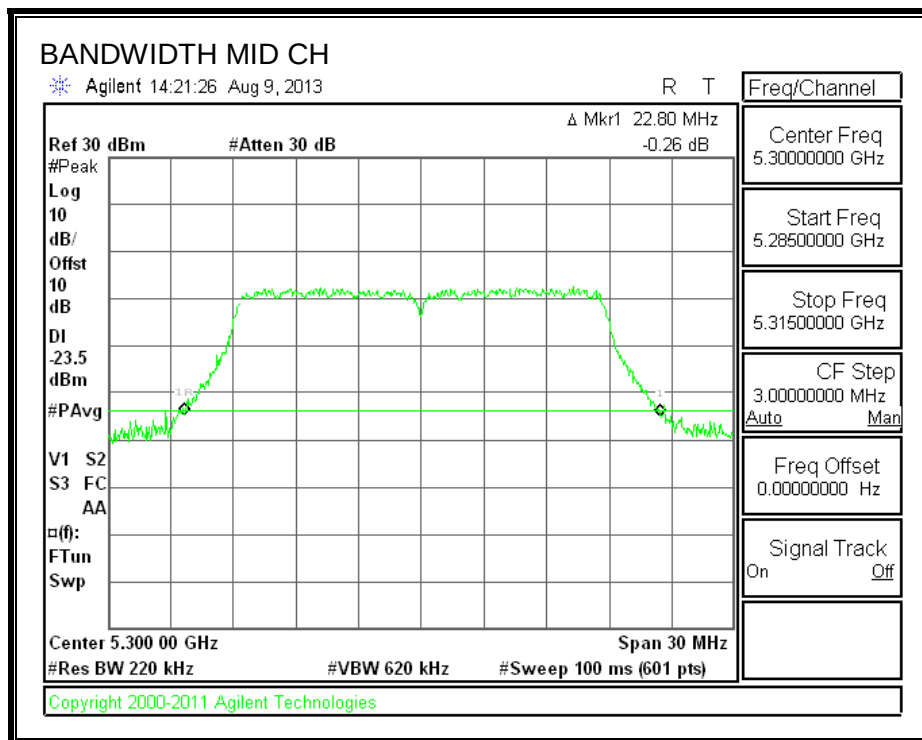
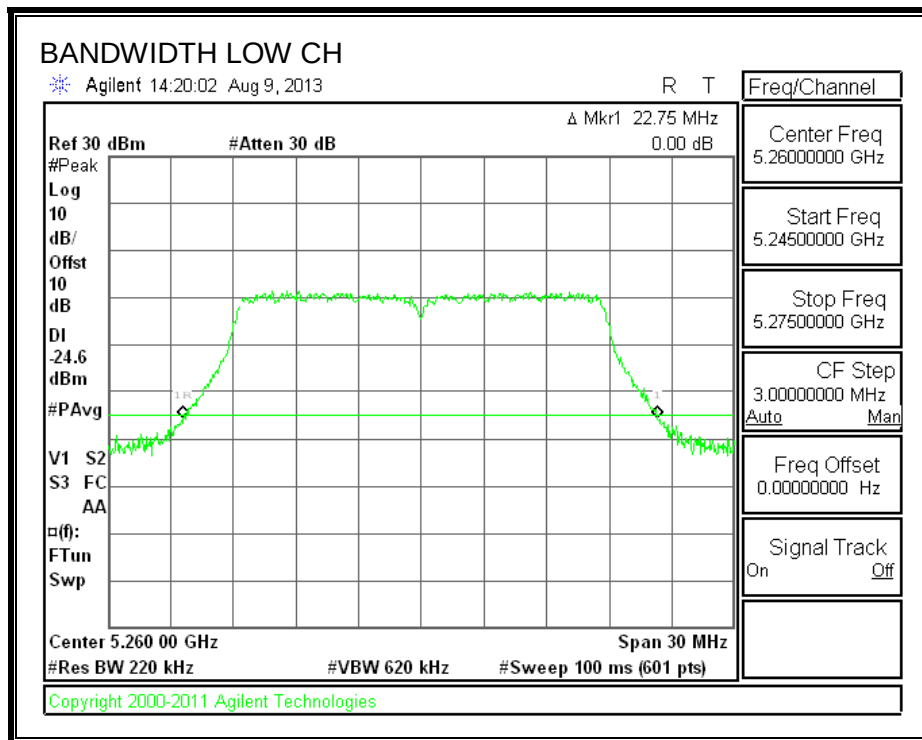
LIMITS

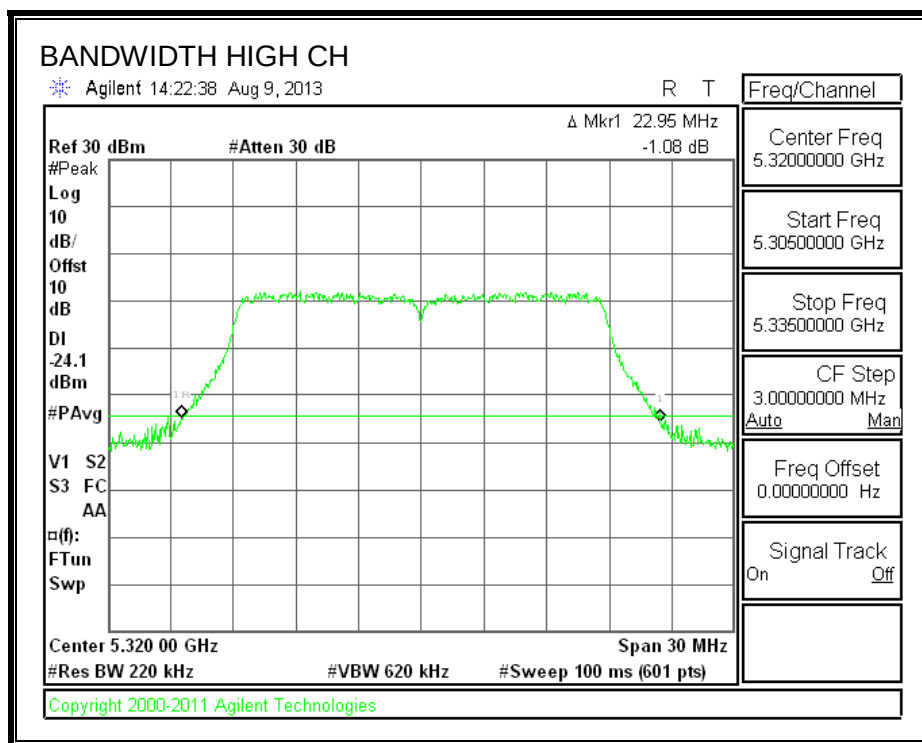
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5260	22.75
Mid	5300	22.80
High	5320	22.95

26 dB BANDWIDTH





9.5.2. 99% BANDWIDTH

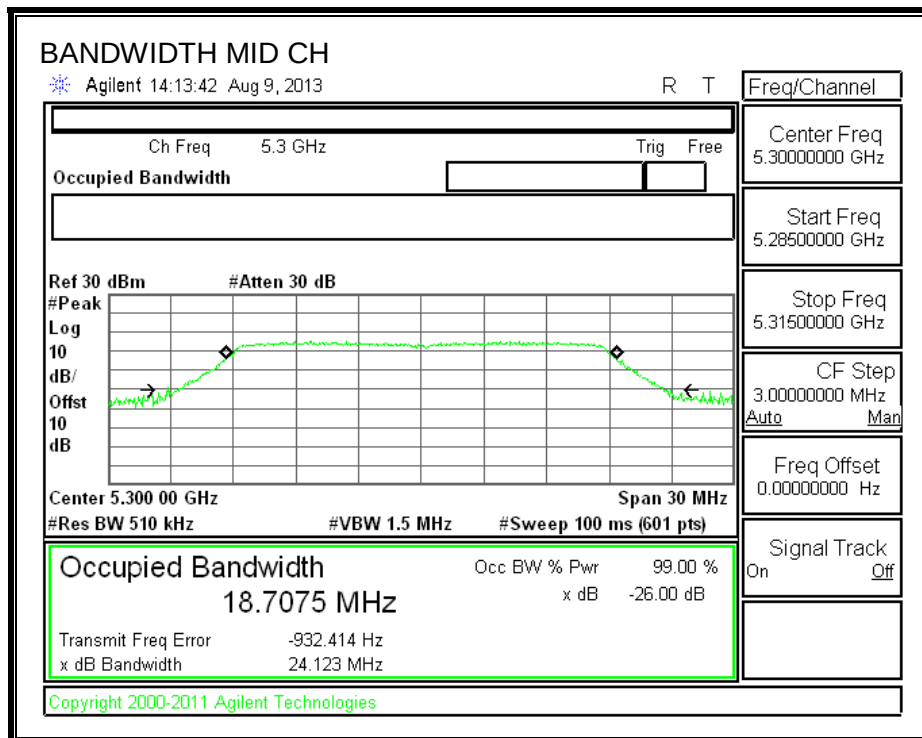
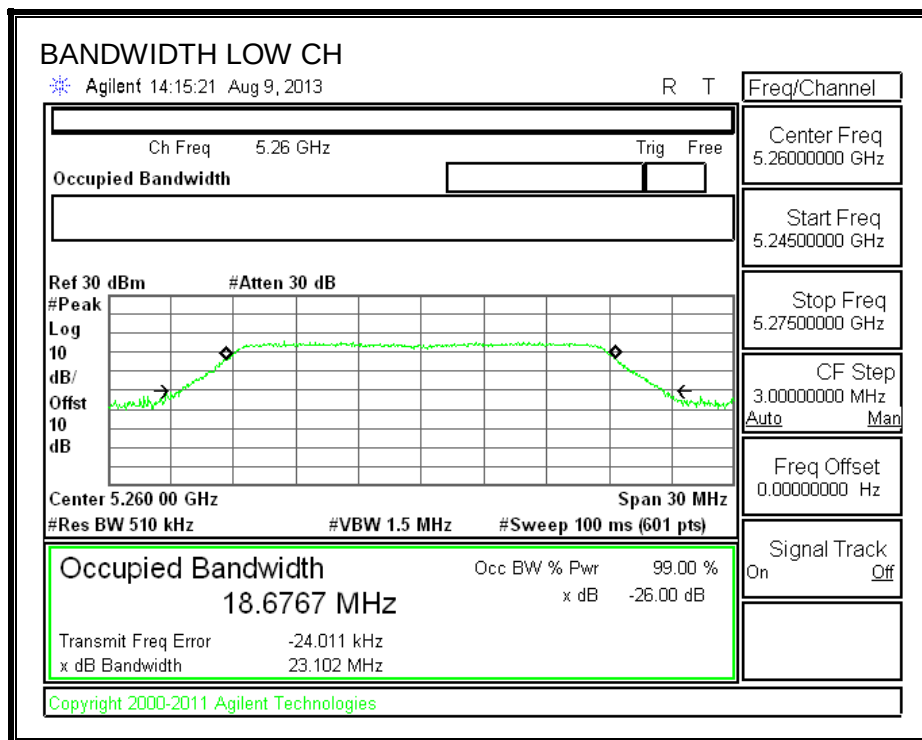
LIMITS

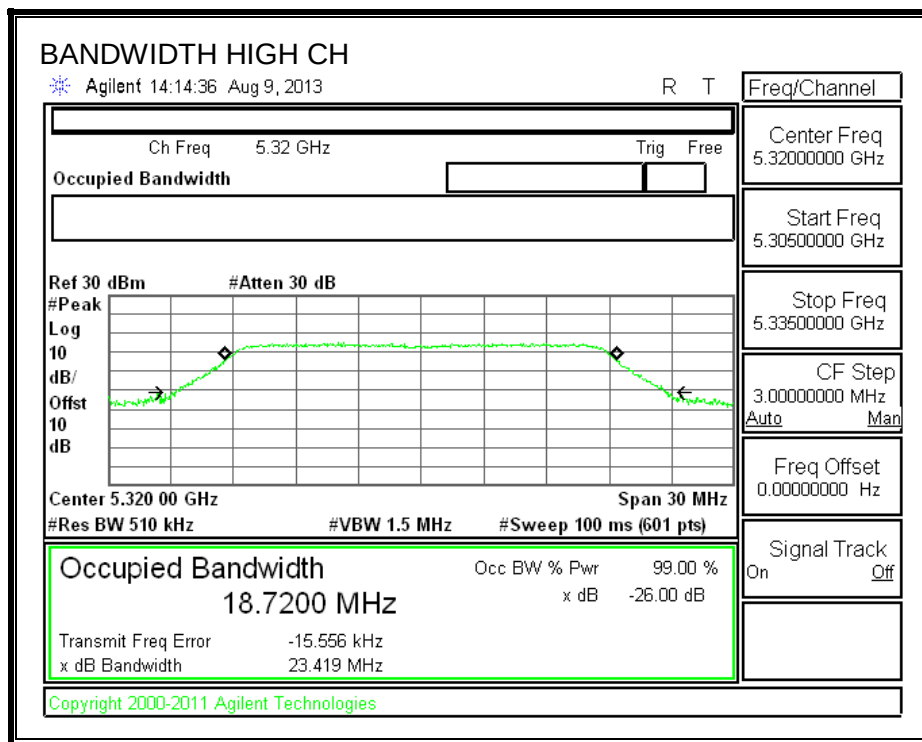
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5260	18.677
Mid	5300	18.708
High	5320	18.720

99% BANDWIDTH





9.5.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11 dB (including 10 dB pad and 1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	5260	12.3
Mid	5300	11.6
High	5320	11.6

9.5.4. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (2)

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

IC RSS-210 A9.2 (1)

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

DIRECTIONAL ANTENNA GAIN

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

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5260	21.64	18.019	-2.00
Mid	5300	21.64	18.019	-2.00
High	5320	21.64	18.019	-2.00

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	23.56	29.56	23.56	11.00	11.00	11.00
Mid	5300	24.00	23.56	29.56	23.56	11.00	11.00	11.00
High	5320	24.00	23.56	29.56	23.56	11.00	11.00	11.00

Duty Cycle CF (dB)	0.22	Included in Calculations of Corr'd Power & PPSD
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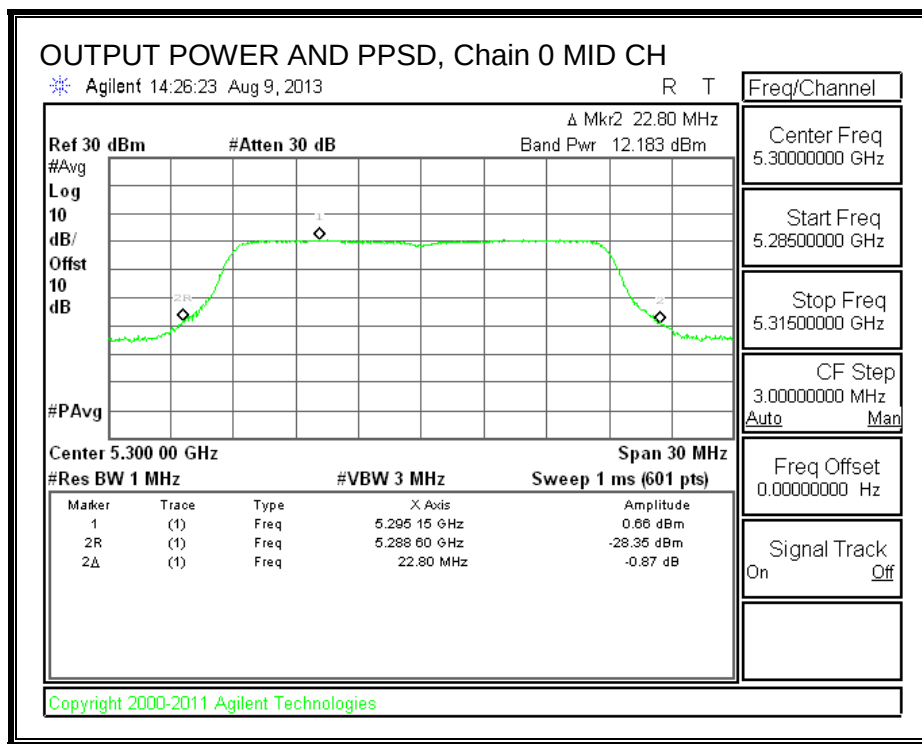
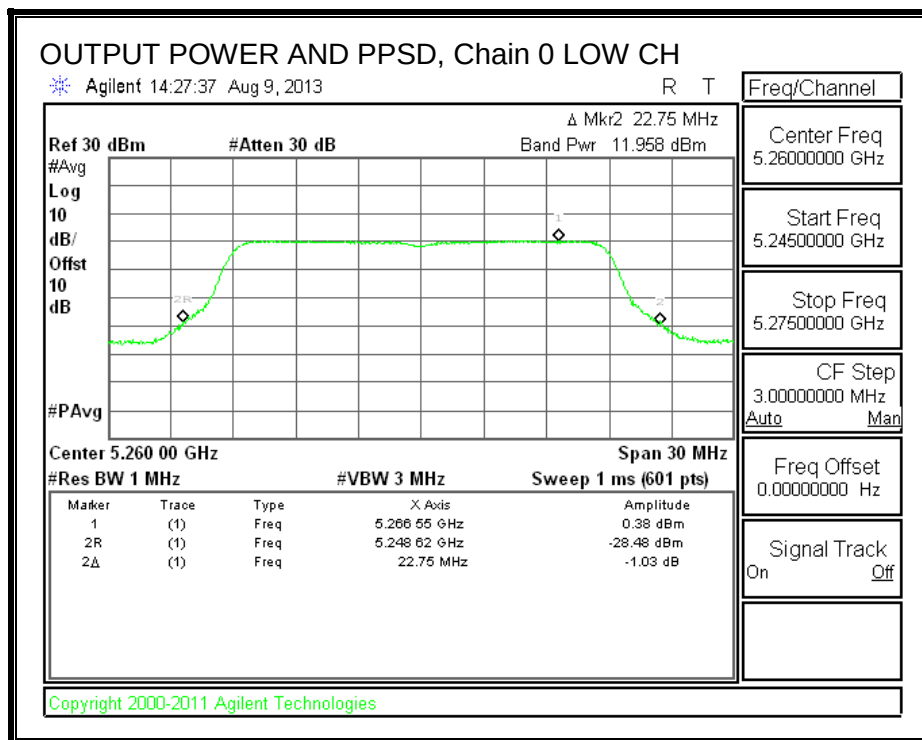
Output Power Results

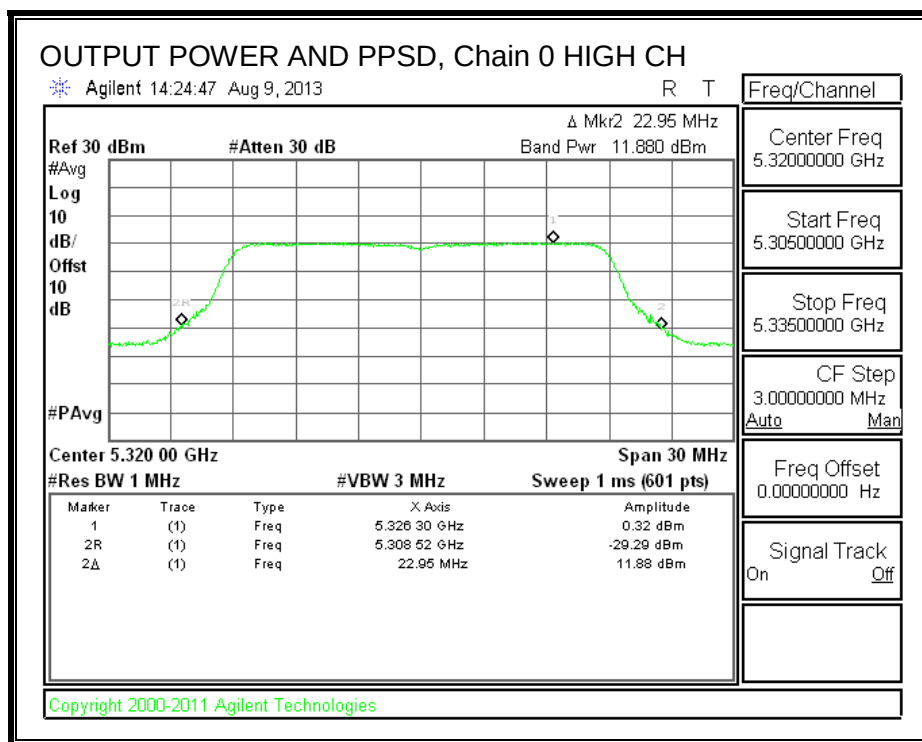
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	11.958	12.18	23.56	-11.38
Mid	5300	12.183	12.40	23.56	-11.15
High	5320	11.880	12.10	23.56	-11.46

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5260	0.380	0.60	11.00	-10.40
Mid	5300	0.660	0.88	11.00	-10.12
High	5320	0.320	0.54	11.00	-10.46

OUTPUT POWER AND PPSD, Chain 0





9.6. 802.11n HT40 MODE IN THE 5.3 GHz BAND

9.6.1. 26 dB BANDWIDTH

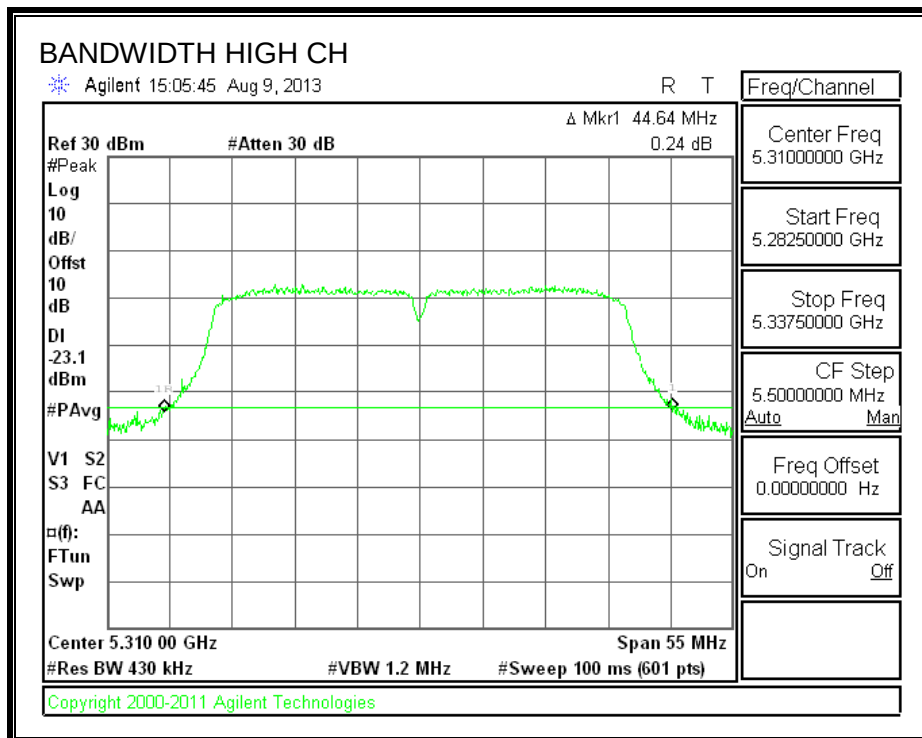
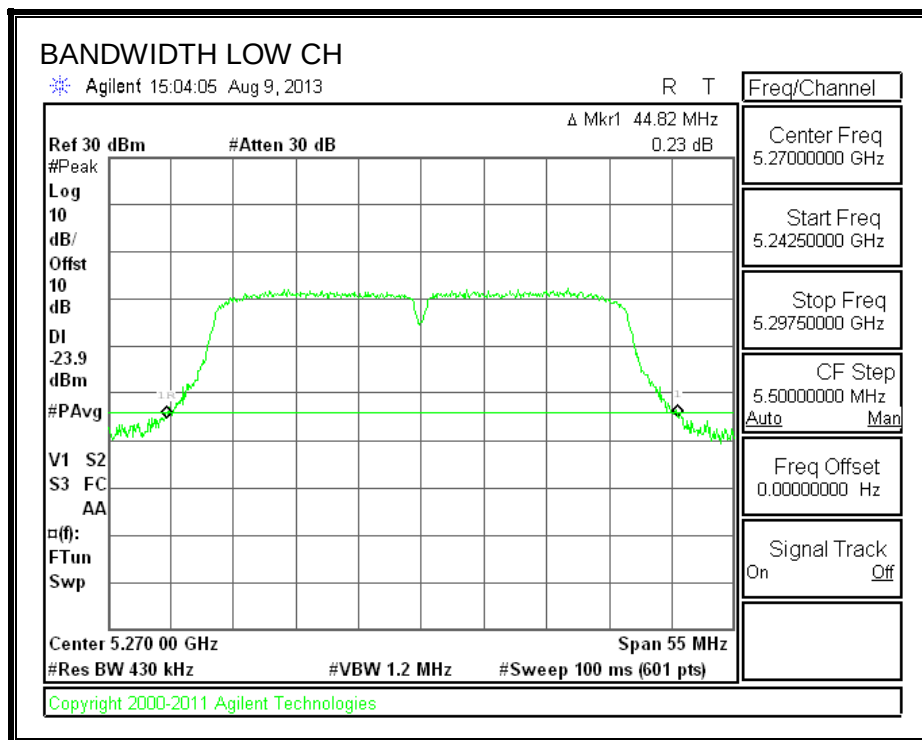
LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5270	44.8
High	5310	44.6

26 dB BANDWIDTH



9.6.2. 99% BANDWIDTH

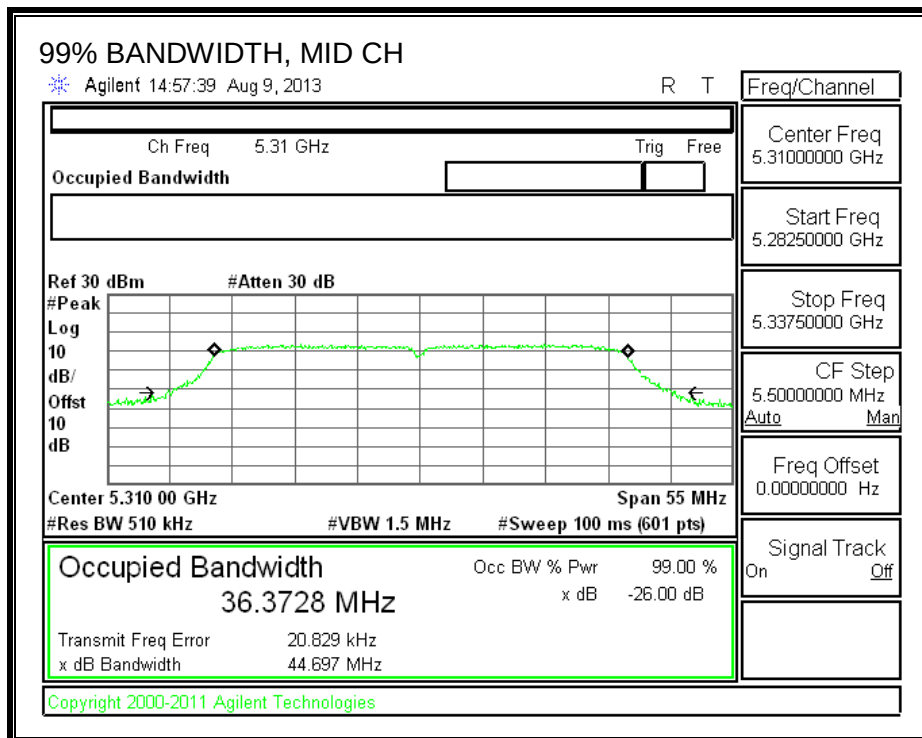
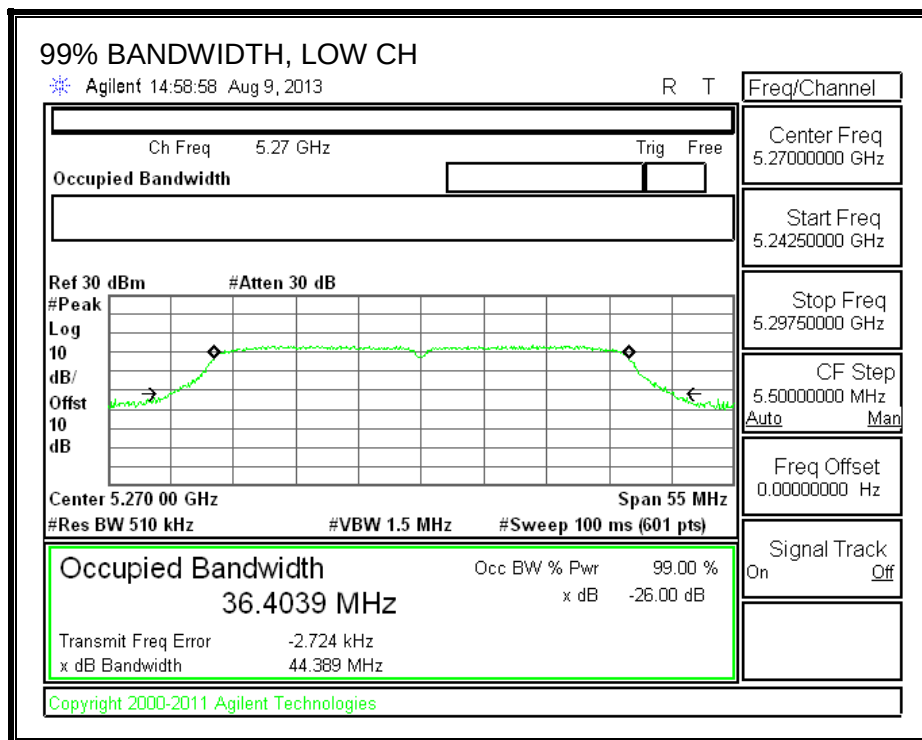
LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5270	36.404
High	5310	36.373

99% BANDWIDTH



9.6.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11 dB (including 10 dB pad and 1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	5270	12.2
High	5310	12.4

9.6.4. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (2)

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

IC RSS-210 A9.2 (1)

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

DIRECTIONAL ANTENNA GAIN

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

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5270	40.1	36.535	-2.00
High	5310	40.1	36.535	-2.00

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	5270	17.00	23.00	25.00	17.00	4.00	10.00	4.00
High	5310	17.00	23.00	25.00	17.00	4.00	10.00	4.00
Duty Cycle CF (dB)		0.49	Included in Calculations of Corr'd Power & PPSP					

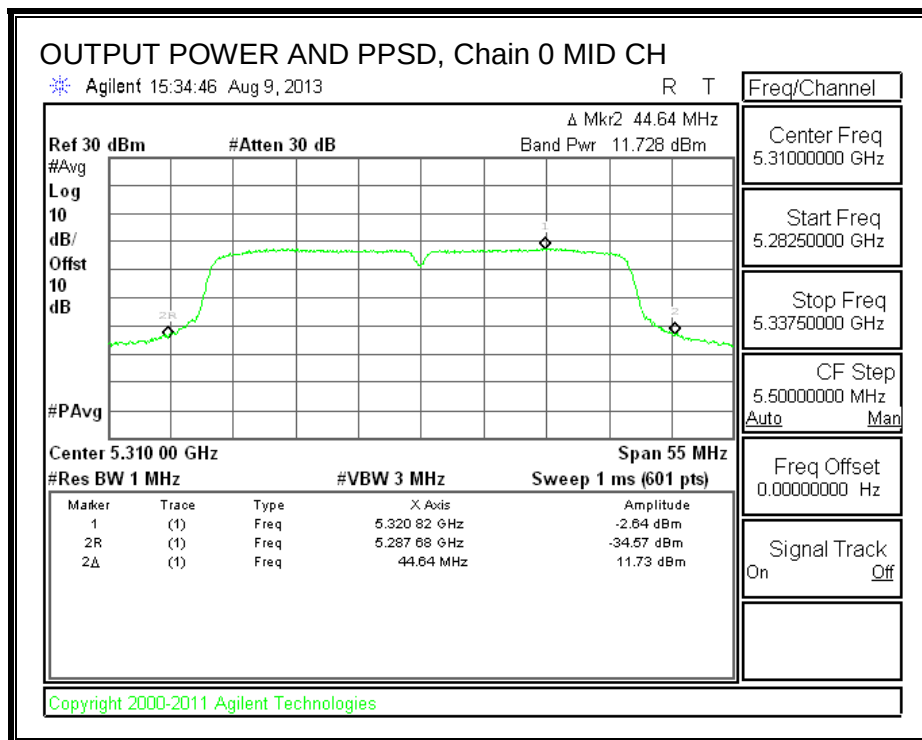
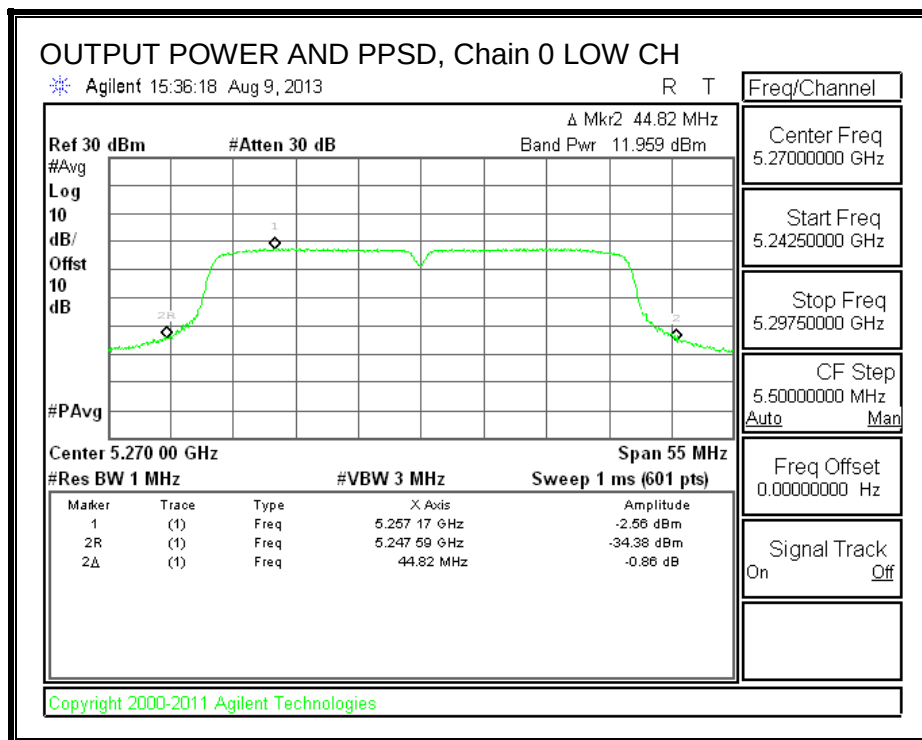
Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5270	11.959	12.45	17.00	-4.55
High	5310	11.728	12.22	17.00	-4.78

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5270	-2.560	-2.07	4.00	-6.07
High	5310	-2.640	-2.15	4.00	-6.15

OUTPUT POWER AND PPSD, Chain 0



9.7. 802.11a MODE IN THE 5.5 GHz BAND

9.7.1. 26 dB BANDWIDTH

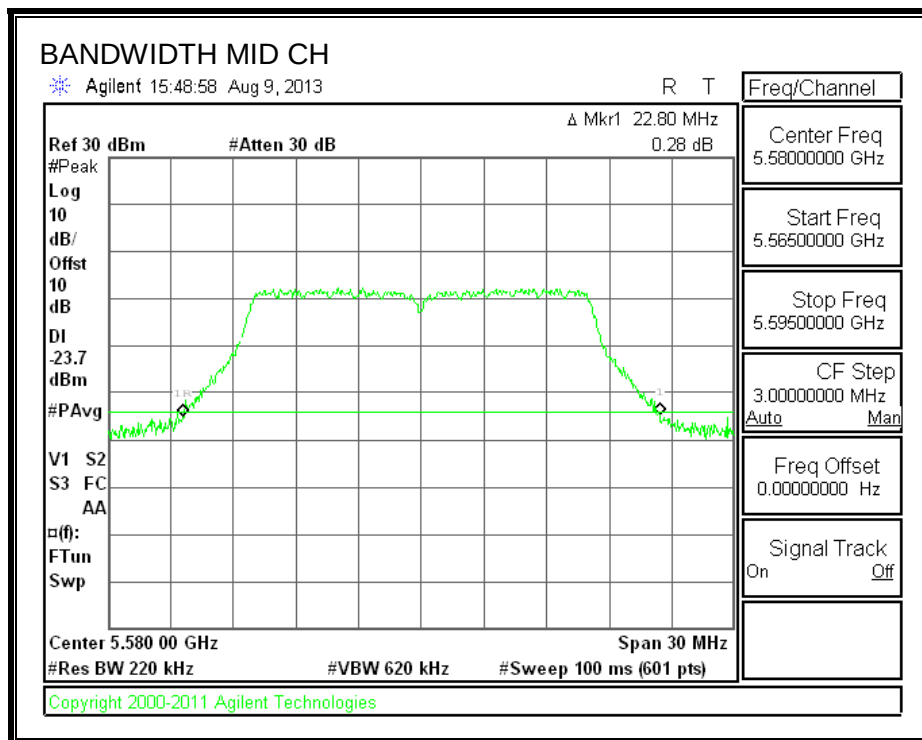
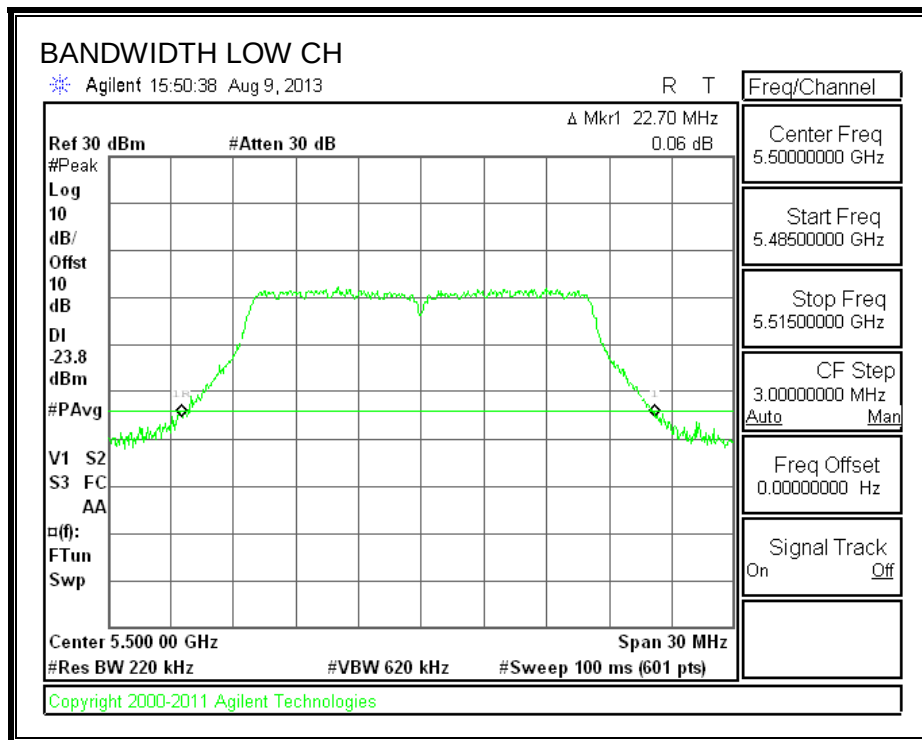
LIMITS

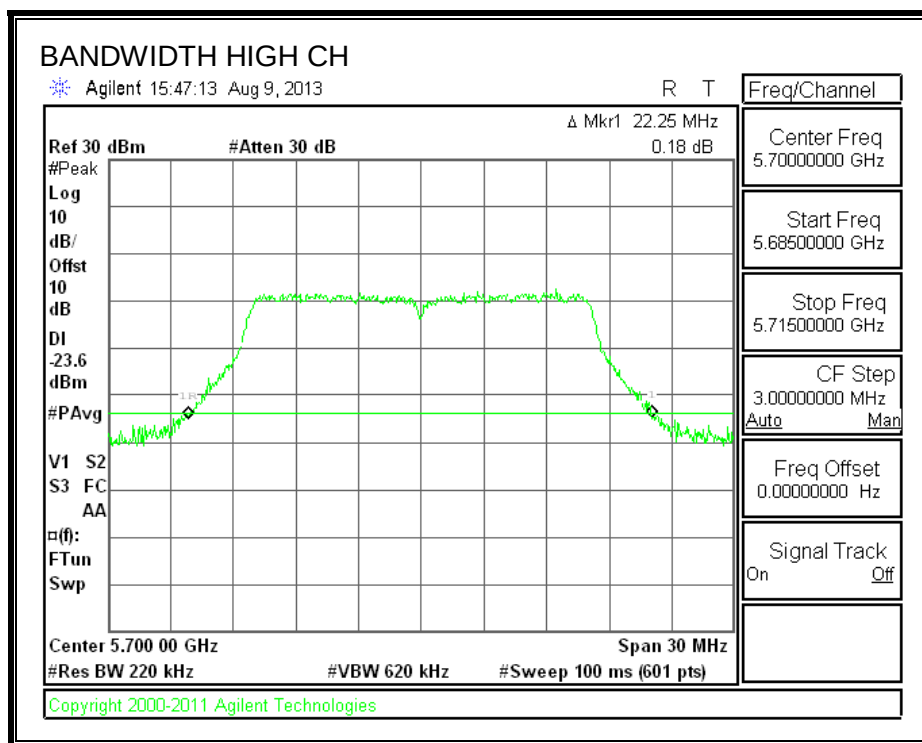
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5500	22.70
Mid	5580	22.80
High	5700	22.25

26 dB BANDWIDTH





9.7.2. 99% BANDWIDTH

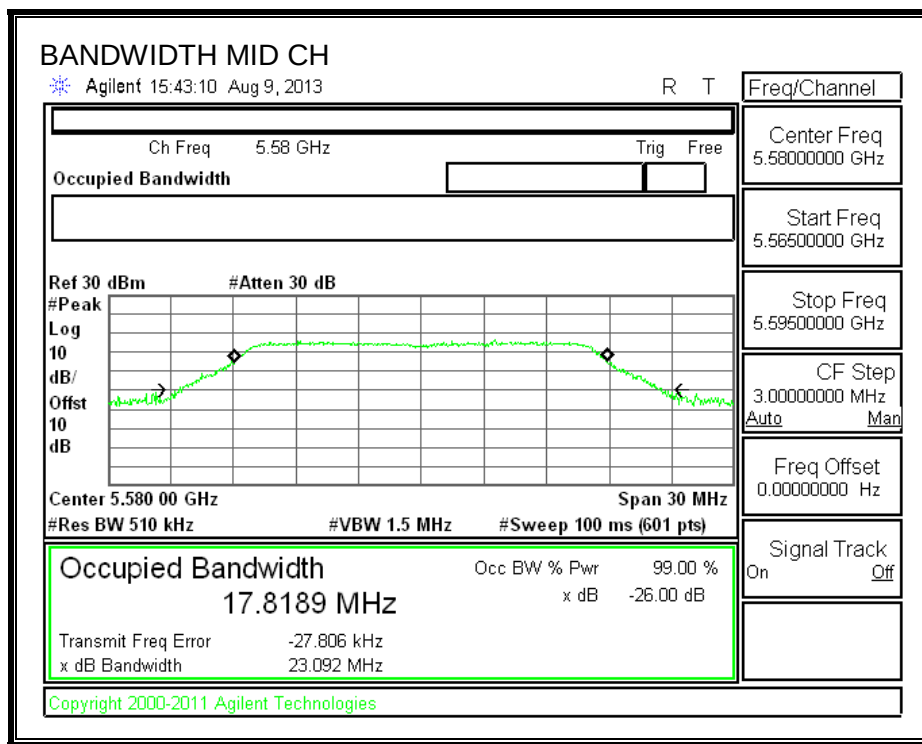
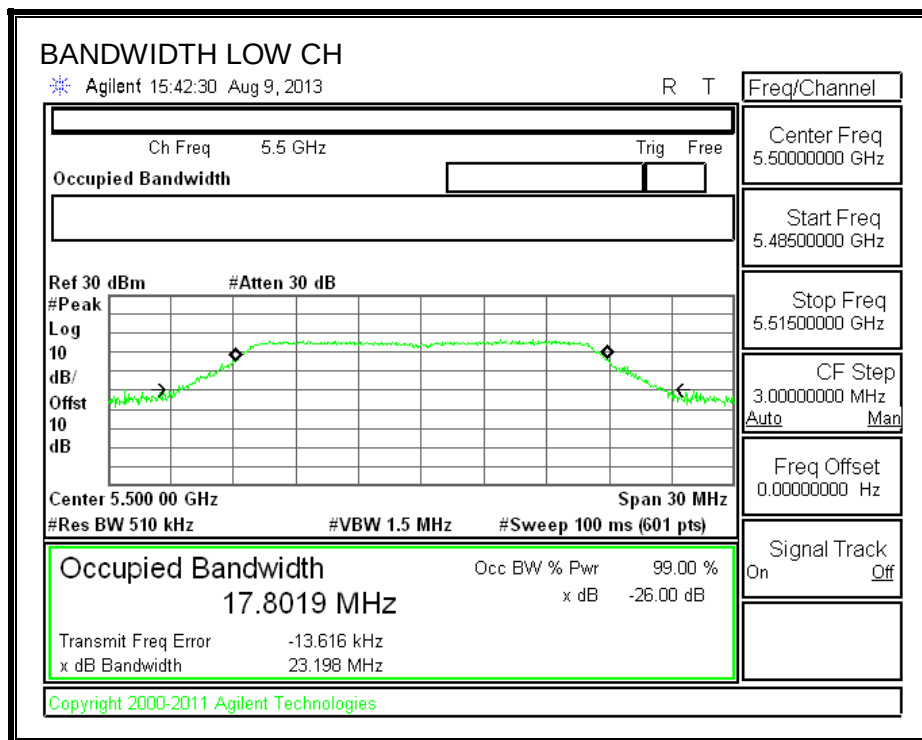
LIMITS

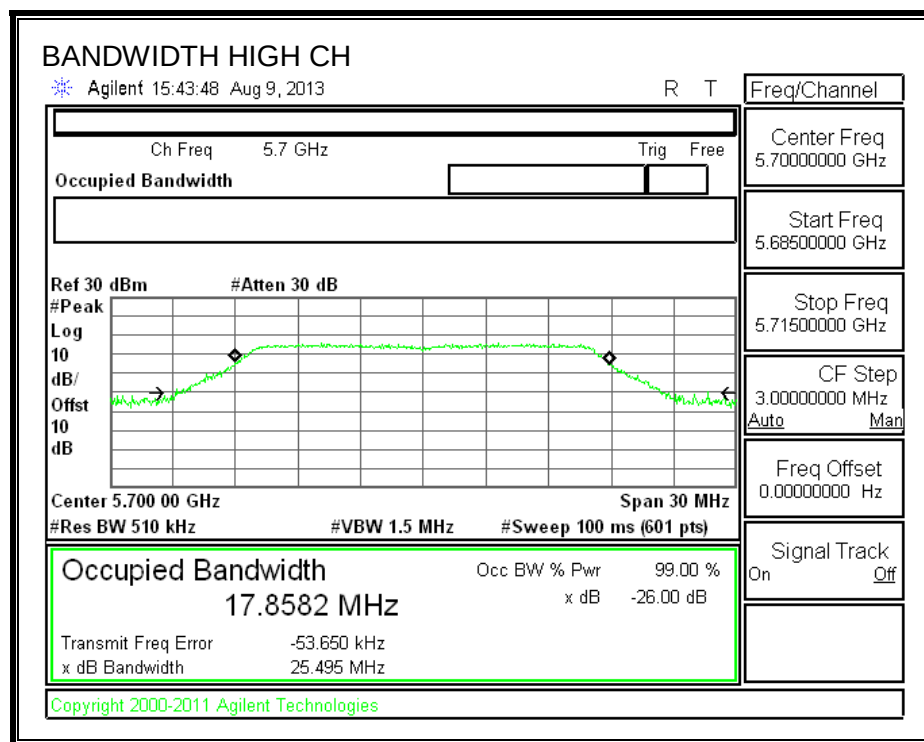
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5500	17.802
Mid	5580	17.819
High	5700	17.858

99% BANDWIDTH





9.7.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11 dB (including 10 dB pad and 1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	5500	12.20
Mid	5580	11.60
High	5700	11.90

9.7.4. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (2)

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

IC RSS-210 A9.2 (1)

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

DIRECTIONAL ANTENNA GAIN

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

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5500	21.69	16.931	-2.00
Mid	5580	21.69	16.931	-2.00
High	5700	21.69	16.931	-2.00

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	23.29	29.29	23.29	11.00	11.00	11.00
Mid	5580	24.00	23.29	29.29	23.29	11.00	11.00	11.00
High	5700	24.00	23.29	29.29	23.29	11.00	11.00	11.00

Duty Cycle CF (dB)	0.21	Included in Calculations of Corr'd Power & PPSP
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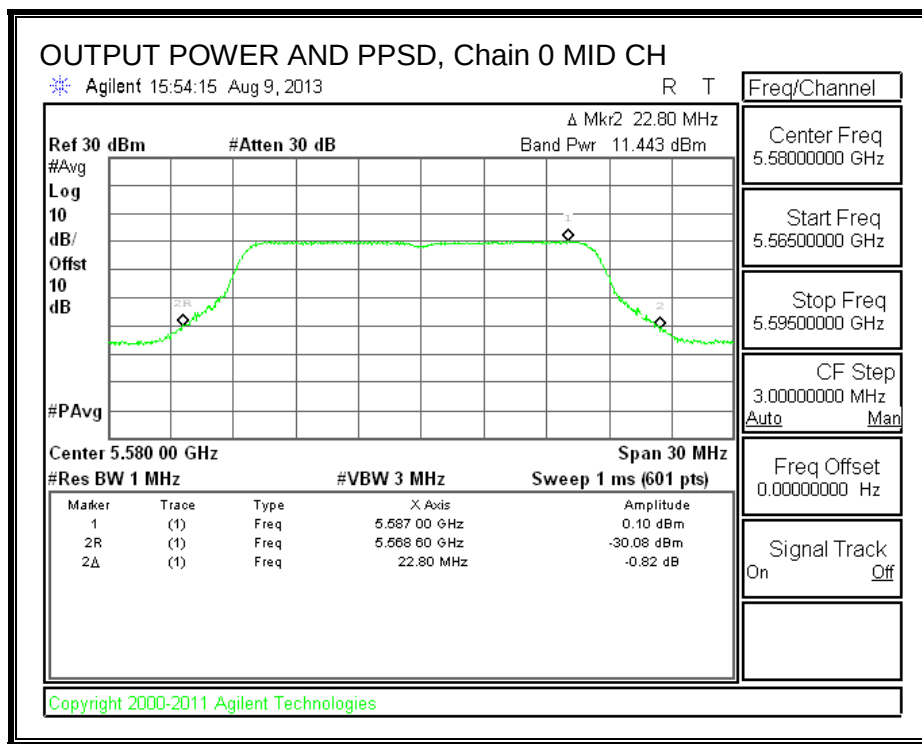
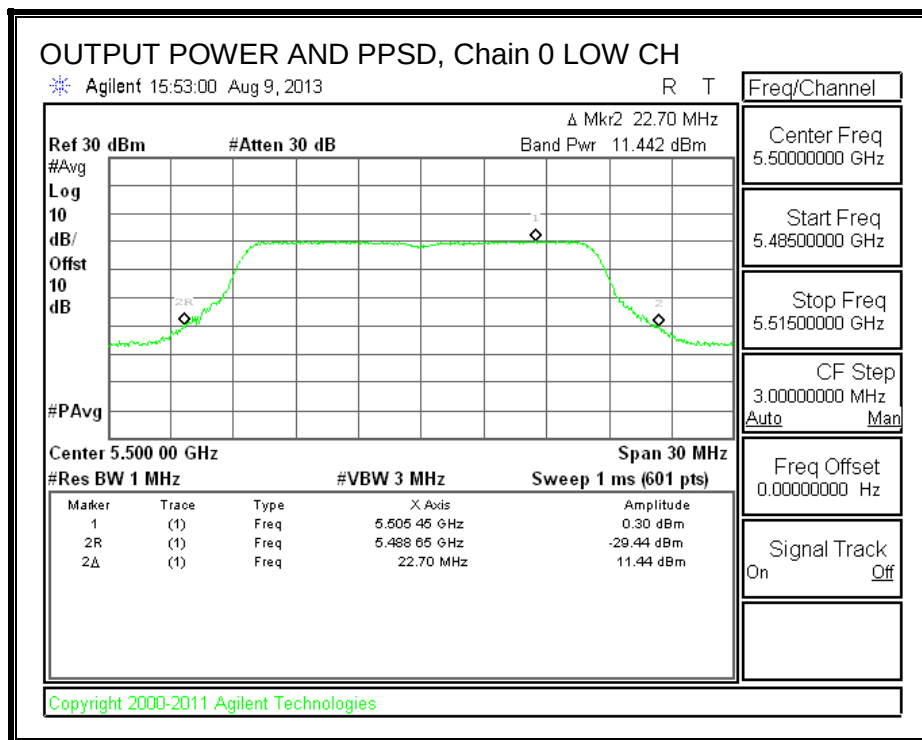
Output Power Results

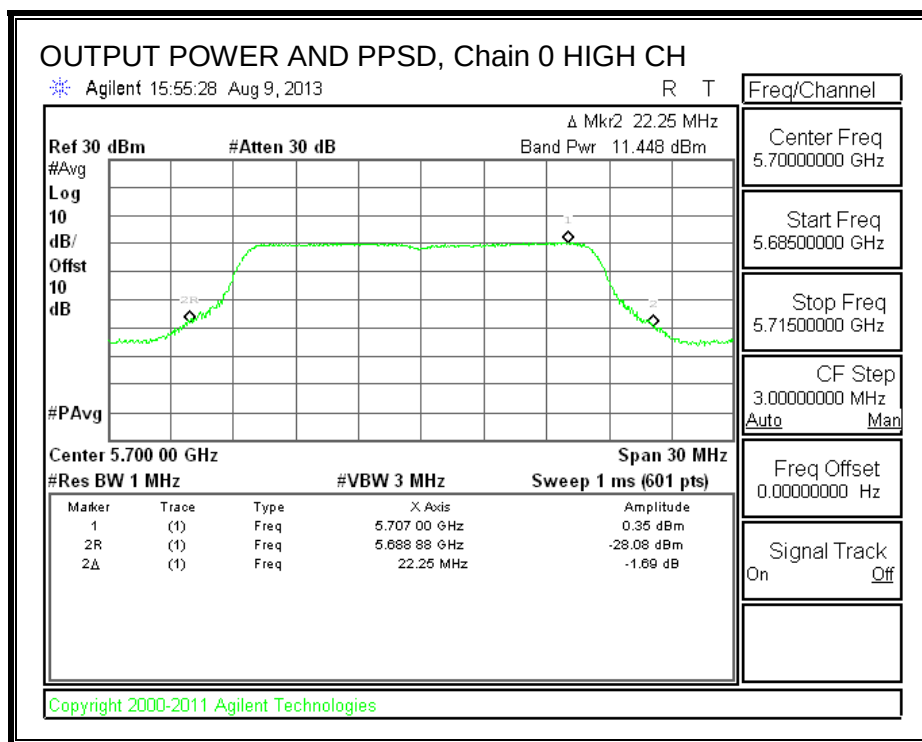
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	11.442	11.65	23.29	-11.63
Mid	5580	11.443	11.65	23.29	-11.63
High	5700	11.448	11.66	23.29	-11.63

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5500	0.300	0.51	11.00	-10.49
Mid	5580	0.100	0.31	11.00	-10.69
High	5700	0.350	0.56	11.00	-10.44

OUTPUT POWER AND PPSD, Chain 0





9.8. 802.11n HT20 MODE IN THE 5.5 GHz BAND

9.8.1. 26 dB BANDWIDTH

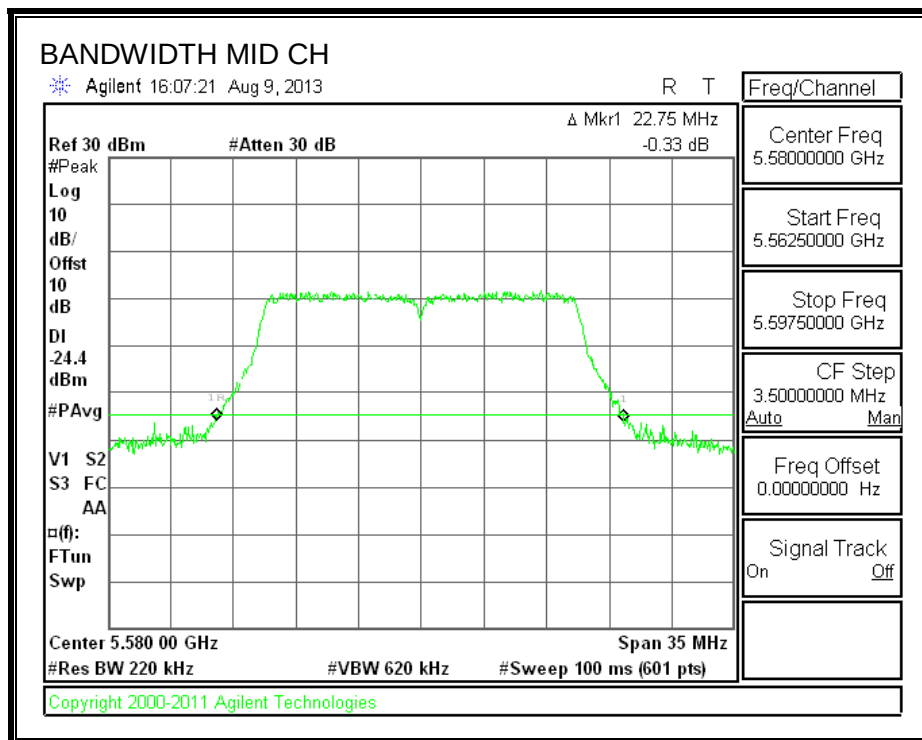
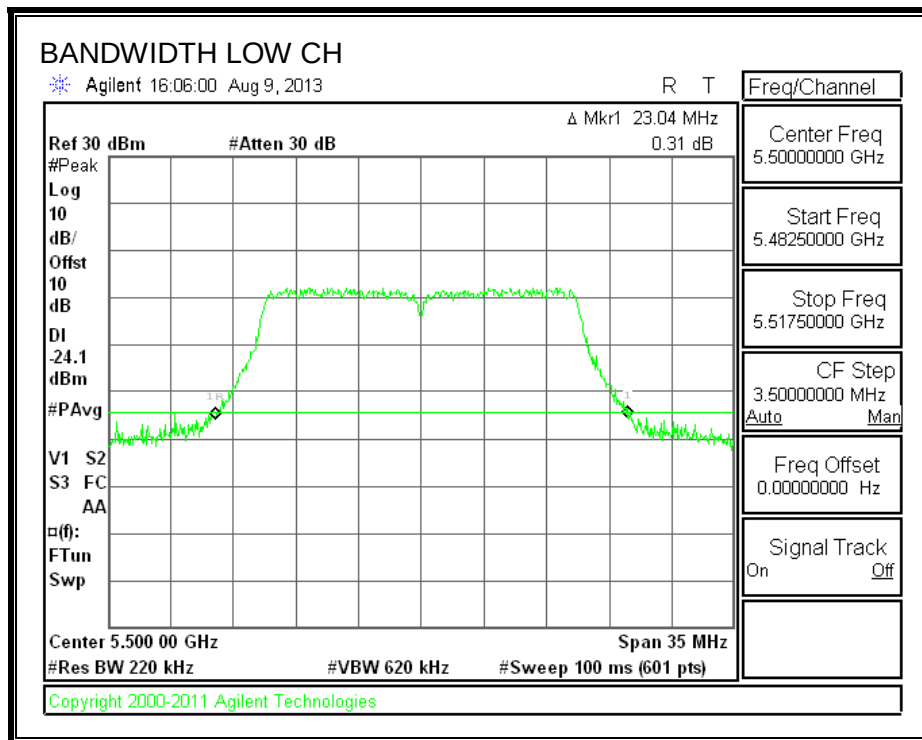
LIMITS

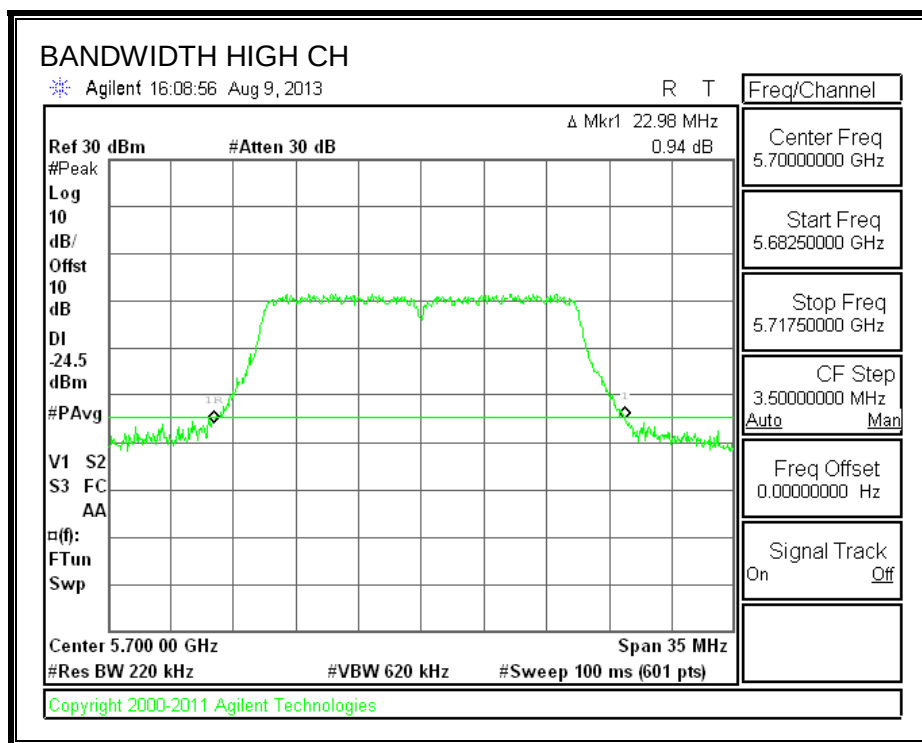
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5500	23.04
Mid	5580	22.75
High	5700	22.98

26 dB BANDWIDTH





9.8.2. 99% BANDWIDTH

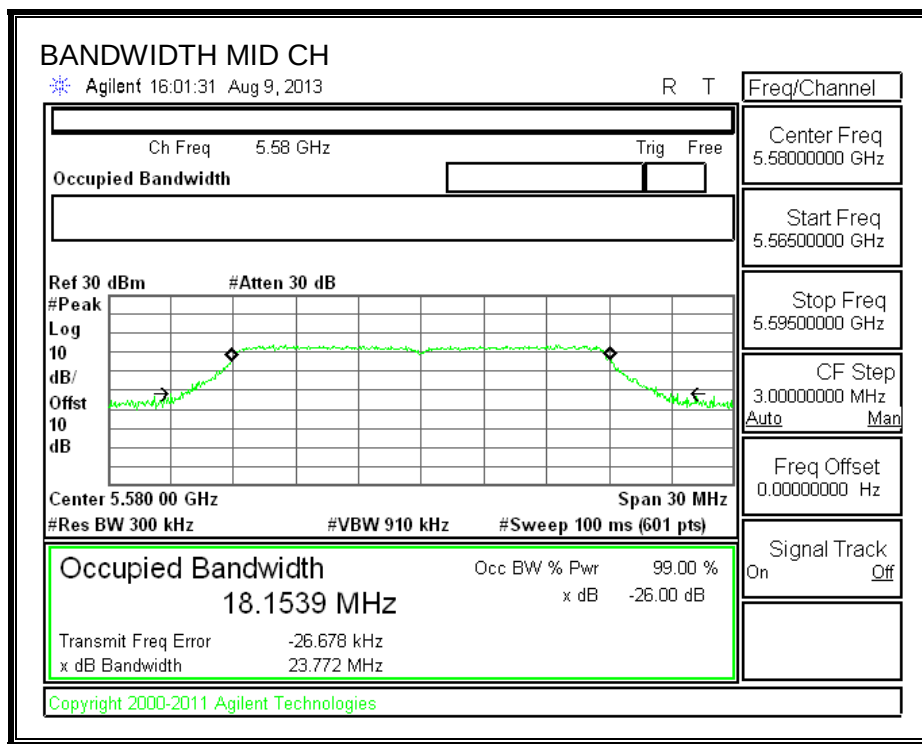
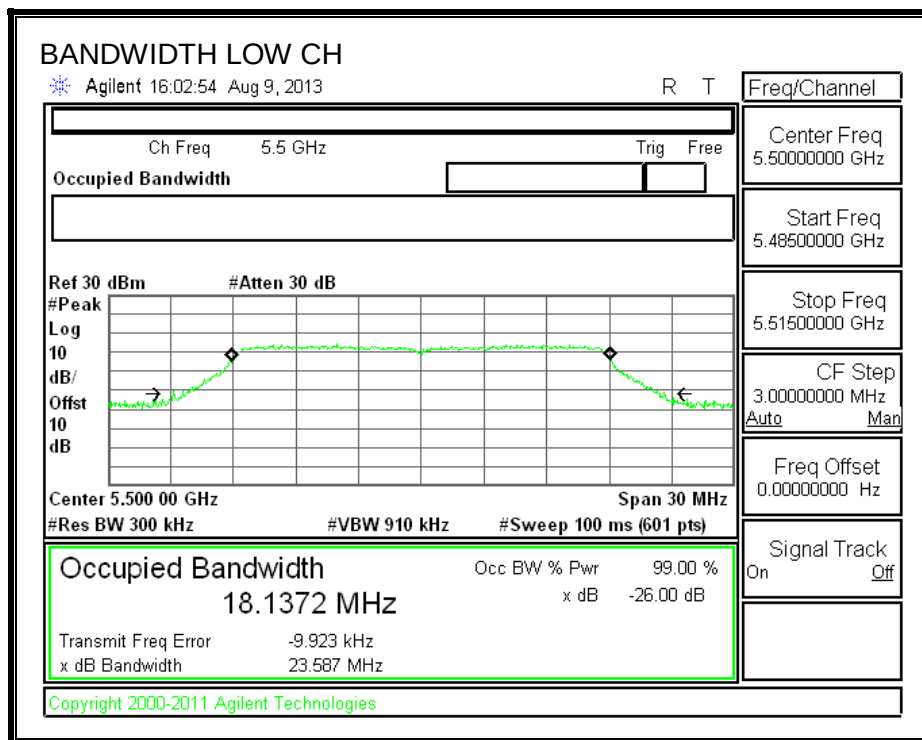
LIMITS

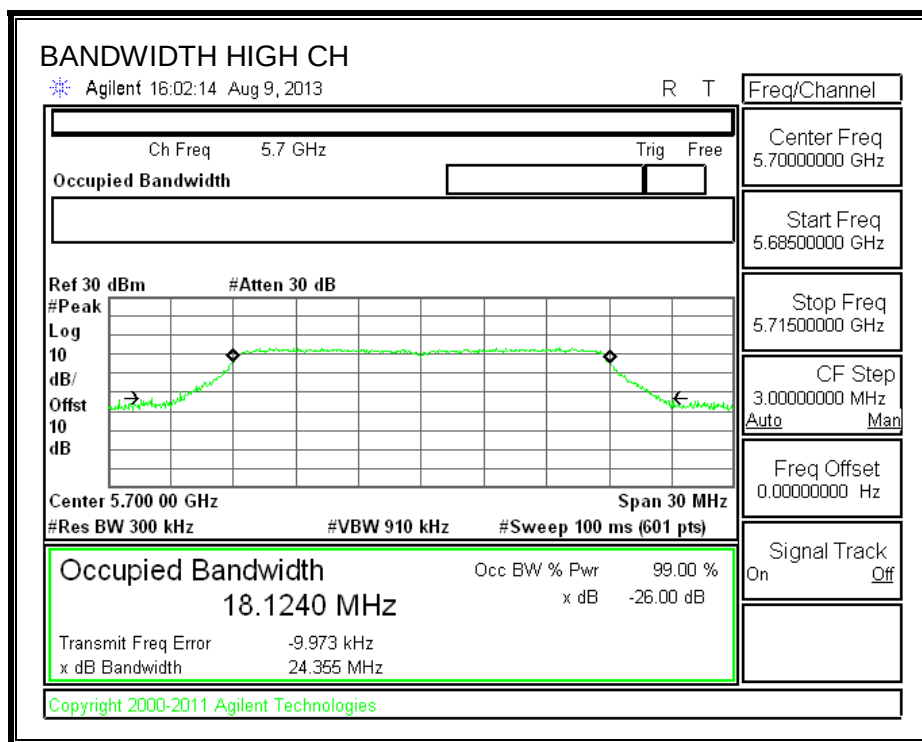
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5500	18.137
Mid	5580	18.154
High	5700	18.124

99% BANDWIDTH





9.8.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11 dB (including 10 dB pad and 1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	5500	12.3
Mid	5580	11.9
High	5700	12.0

9.8.4. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (1)

For the band 5.5–5.7 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26–dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

IC RSS-210 A9.2 (1)

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

DIRECTIONAL ANTENNA GAIN

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

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5500	21.95	18.028	-2.00
Mid	5580	21.95	18.028	-2.00
High	5700	21.95	18.028	-2.00

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	23.56	29.56	23.56	11.00	11.00	11.00
Mid	5580	24.00	23.56	29.56	23.56	11.00	11.00	11.00
High	5700	24.00	23.56	29.56	23.56	11.00	11.00	11.00

Duty Cycle CF (dB)	0.22	Included in Calculations of Corr'd Power & PPSP
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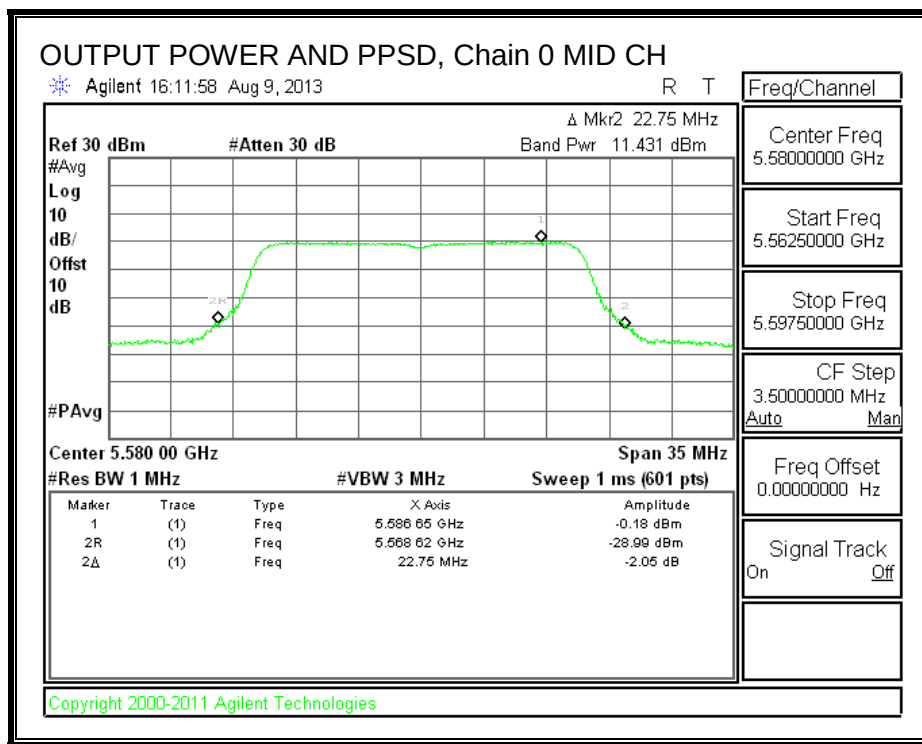
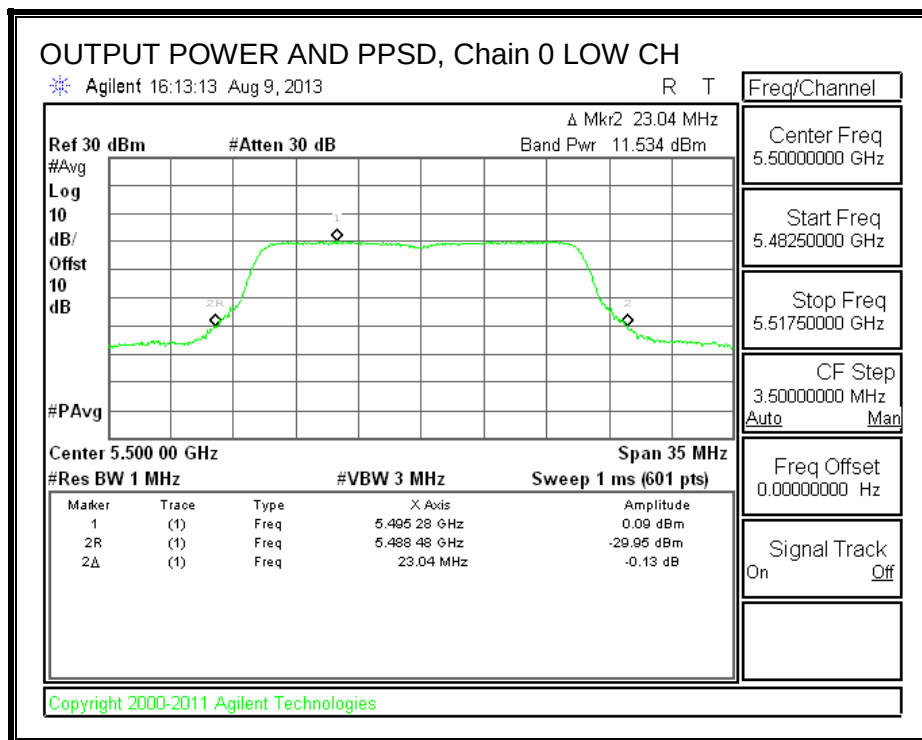
Output Power Results

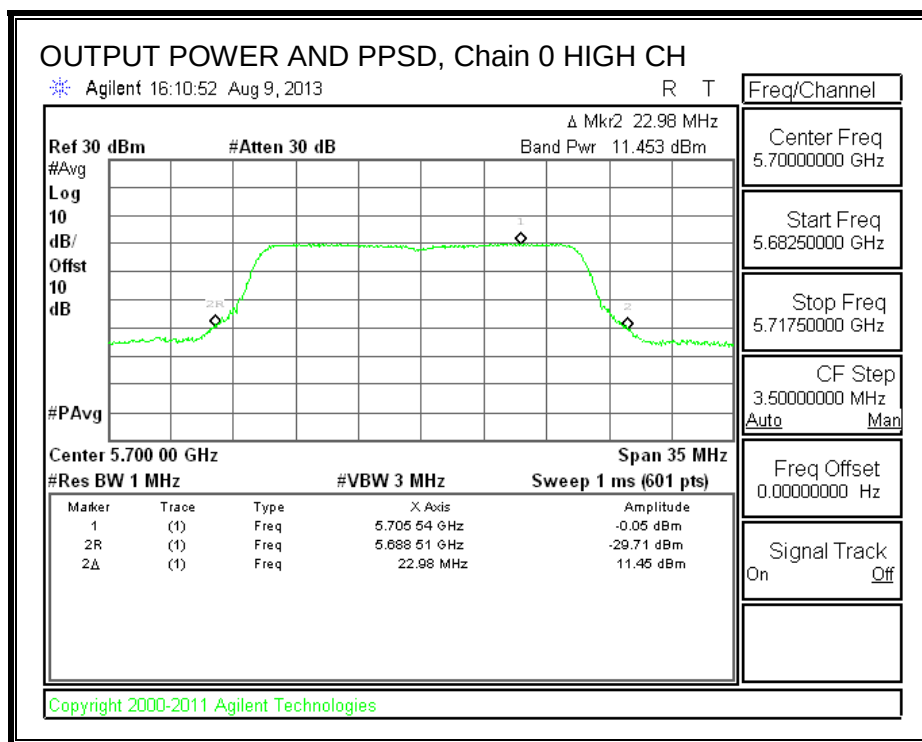
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	11.534	11.75	23.56	-11.81
Mid	5580	11.431	11.65	23.56	-11.91
High	5700	11.453	11.67	23.56	-11.89

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5500	0.090	0.31	11.00	-10.69
Mid	5580	-0.180	0.04	11.00	-10.96
High	5700	-0.050	0.17	11.00	-10.83

OUTPUT POWER AND PPSD, Chain 0





9.9. 802.11n HT40 MODE IN THE 5.5 GHz BAND

9.9.1. 26 dB BANDWIDTH

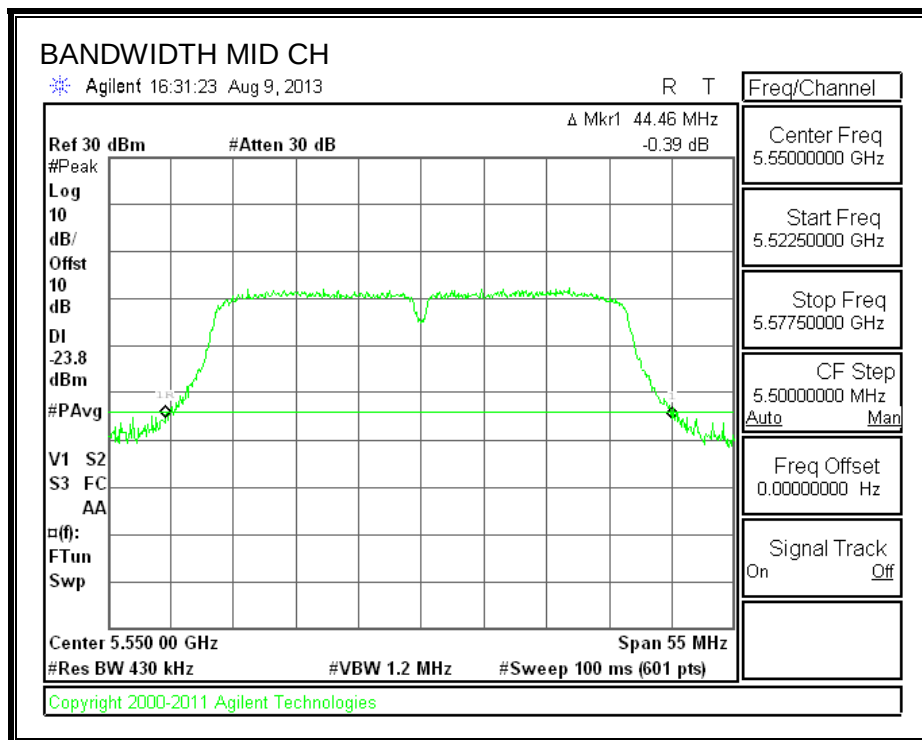
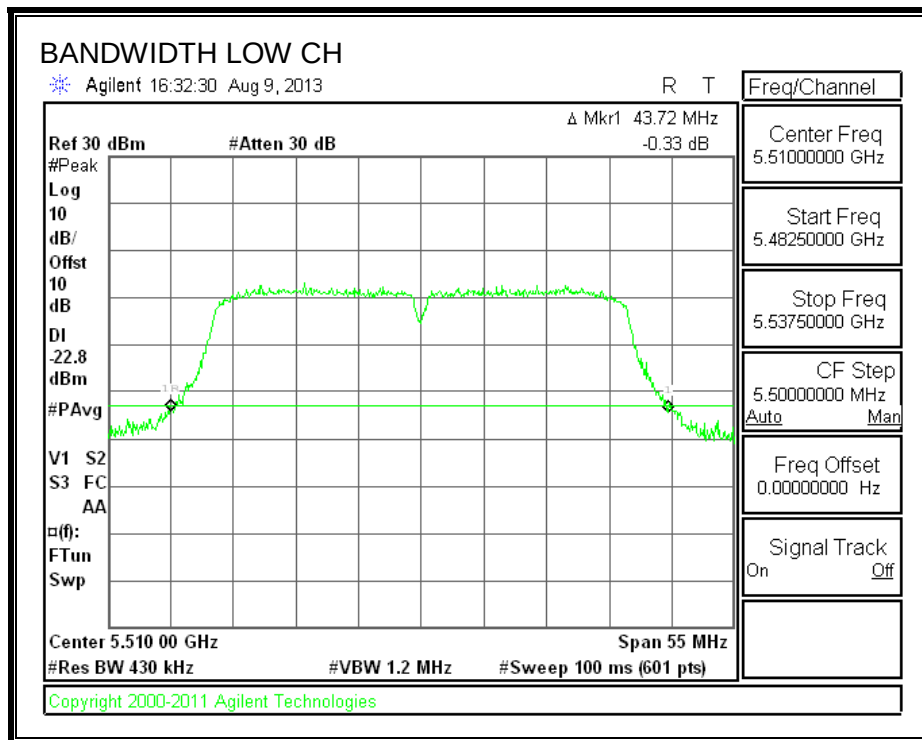
LIMITS

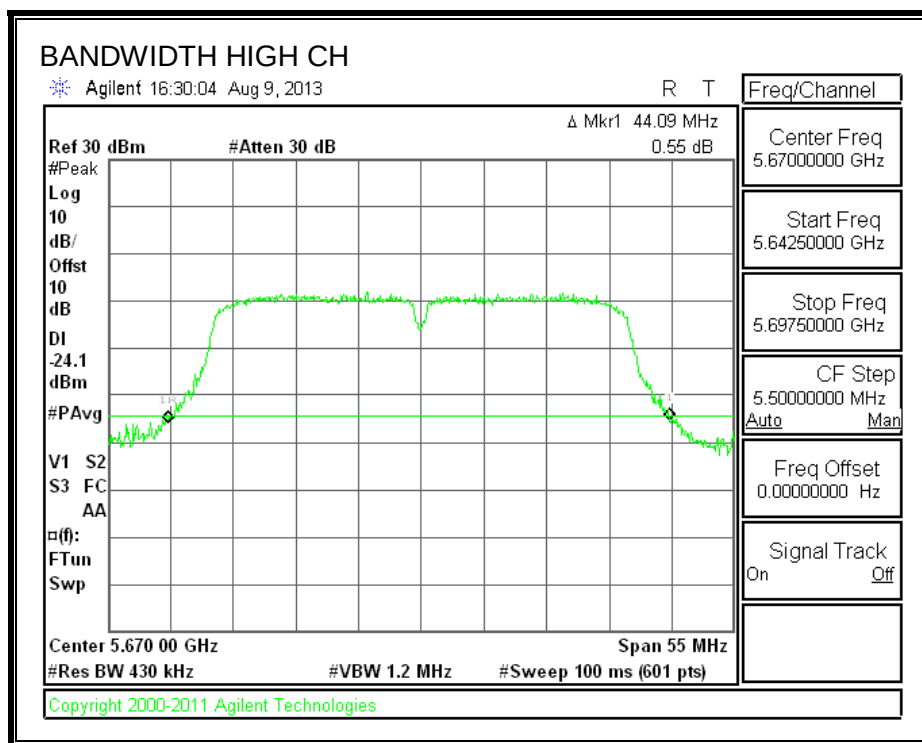
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5510	43.7
Mid	5550	44.5
High	5670	44.1

26 dB BANDWIDTH





9.9.2. 99% BANDWIDTH

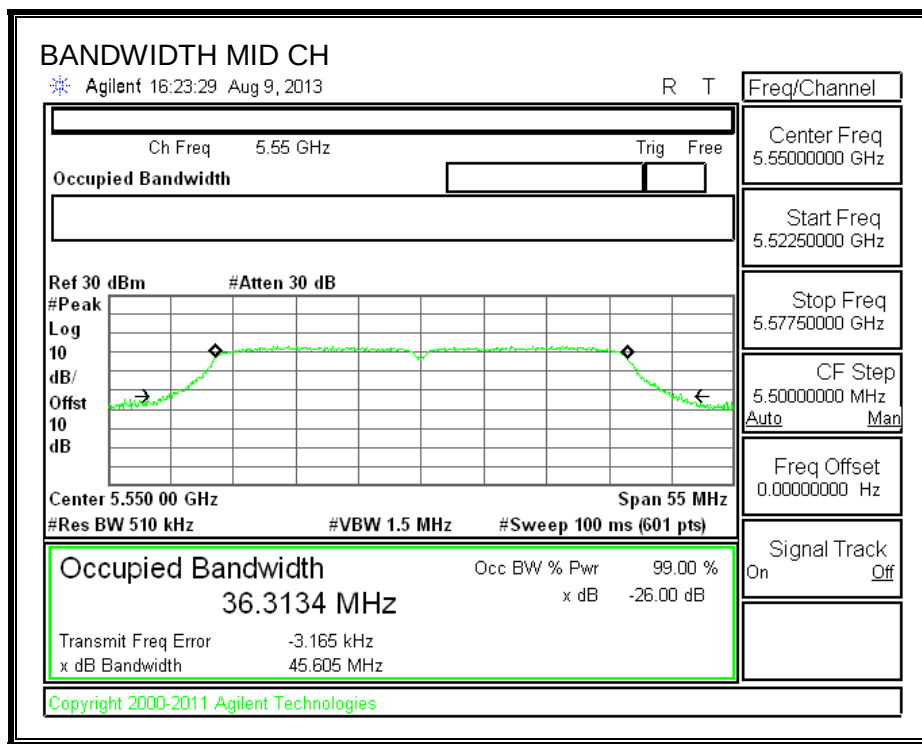
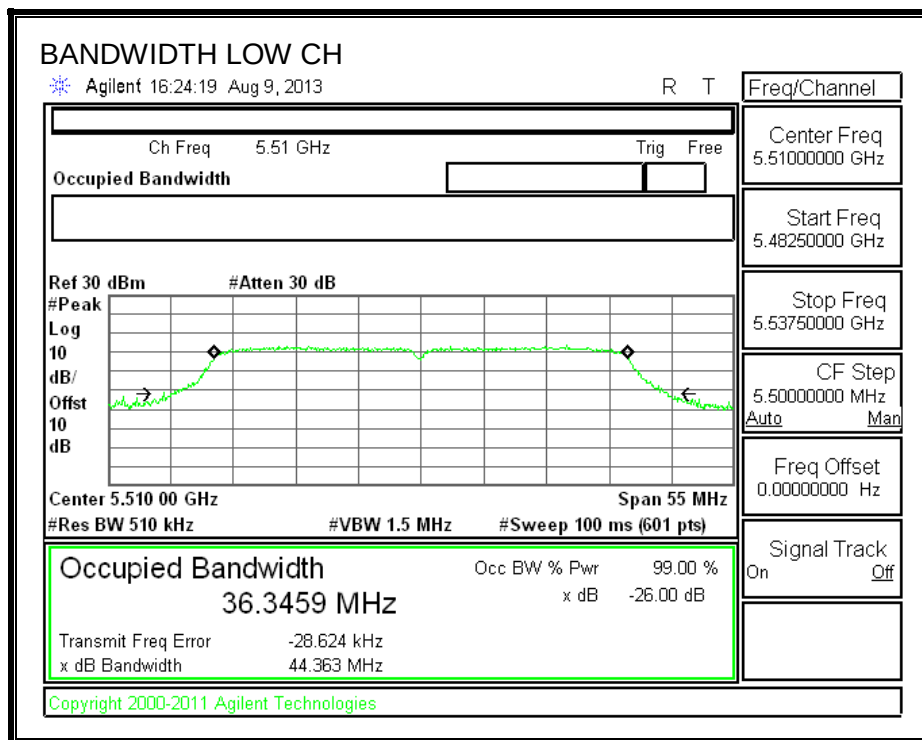
LIMITS

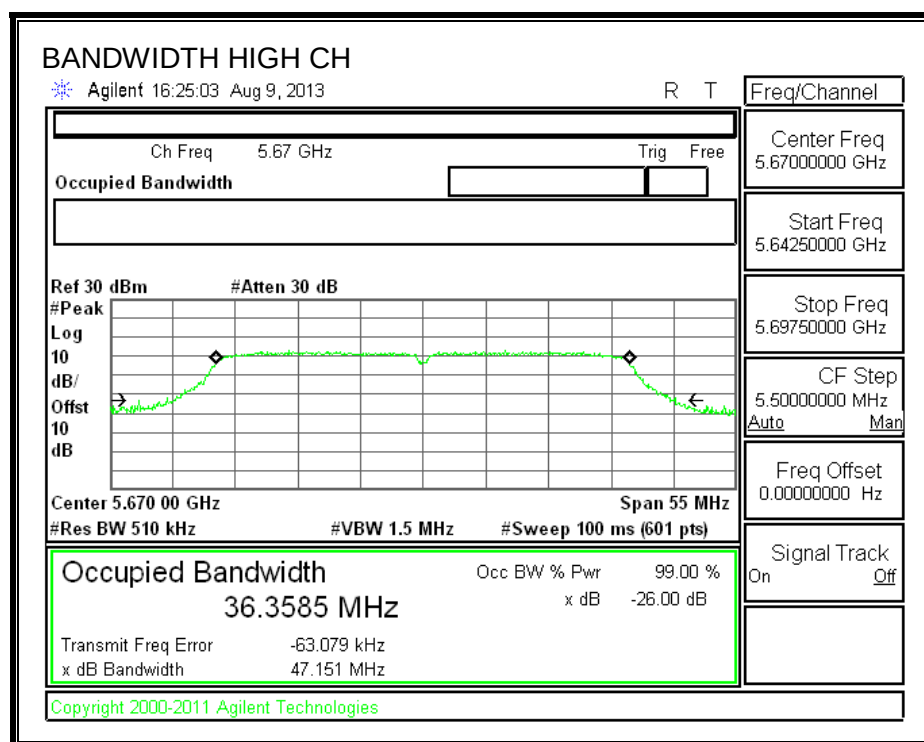
None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5510	36.346
Mid	5550	36.313
High	5670	36.359

99% BANDWIDTH





9.9.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11 dB (including 10 dB pad and 1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

Channel	Frequency (MHz)	Power (dBm)
Low	5510	12.40
Mid	5550	11.90
High	5670	11.80

9.9.4. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (2)

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

IC RSS-210 A9.2 (1)

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

DIRECTIONAL ANTENNA GAIN

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

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5510	40.3	36.357	-2.00
Mid	5550	40.3	36.357	-2.00
High	5670	40.3	36.357	-2.00

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5510	24.00	24.00	30.00	24.00	11.00	11.00	11.00
Mid	5550	24.00	24.00	30.00	24.00	11.00	11.00	11.00
High	5670	24.00	24.00	30.00	24.00	11.00	11.00	11.00

Duty Cycle CF (dB)	0.49	Included in Calculations of Corr'd Power & PPSP
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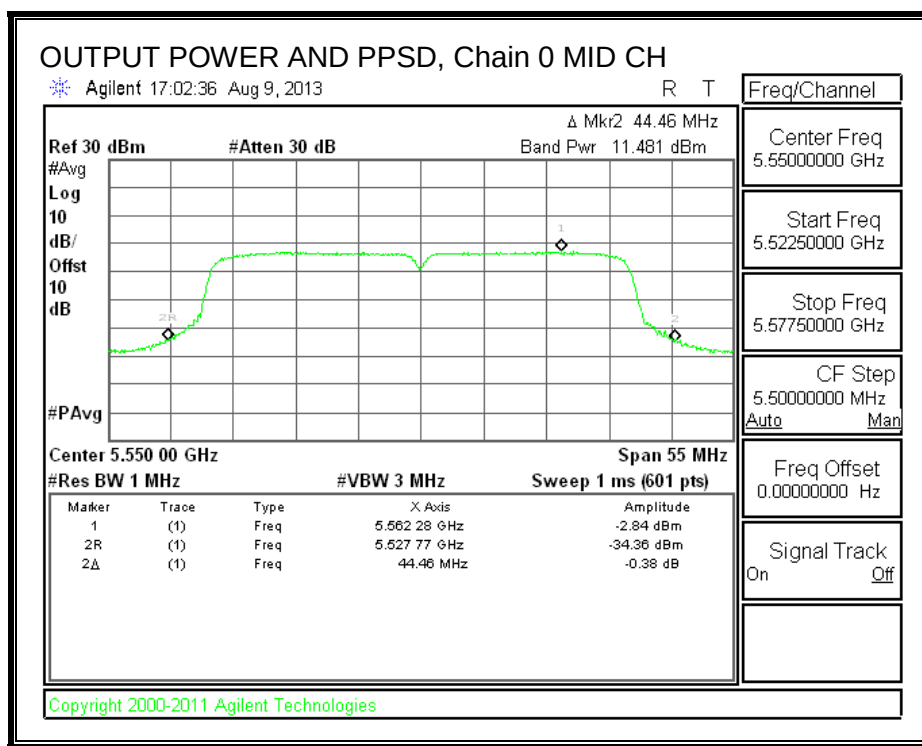
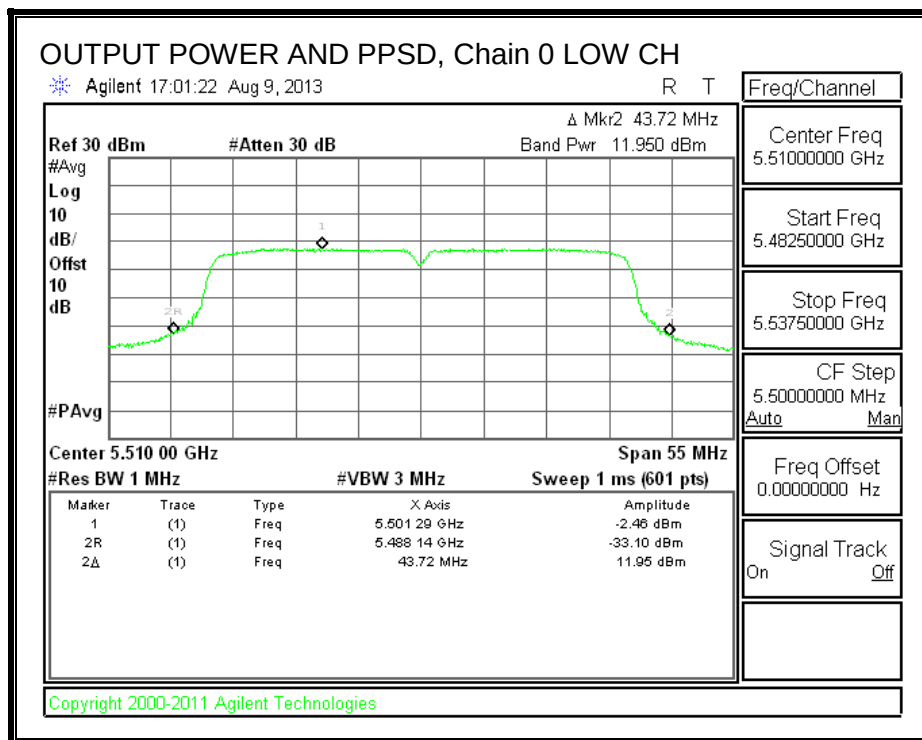
Output Power Results

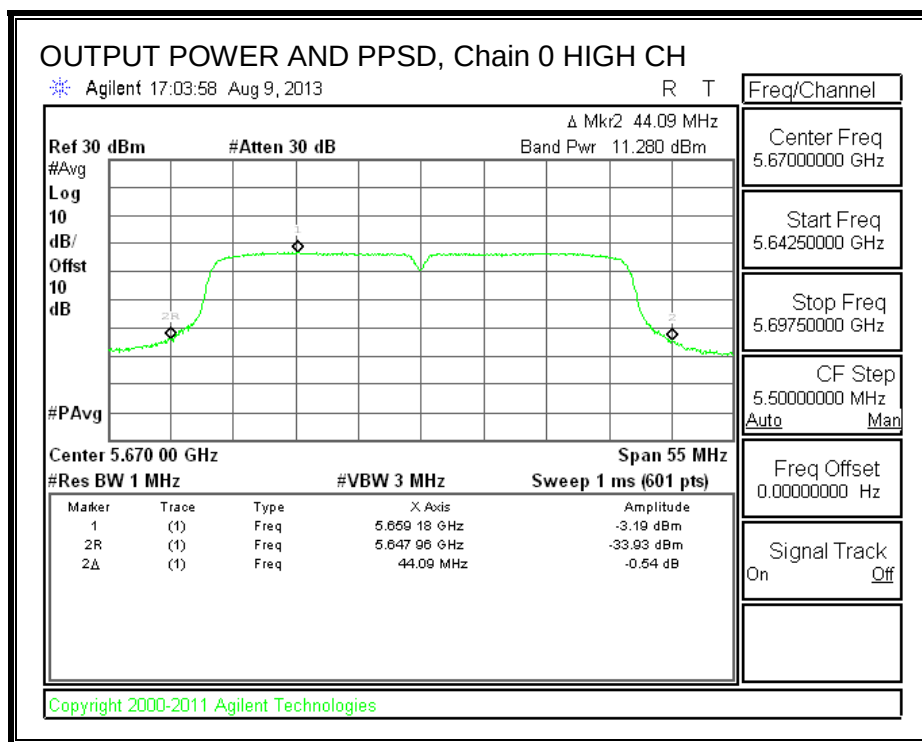
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	11.950	12.44	24.00	-11.56
Mid	5550	11.481	11.97	24.00	-12.03
High	5670	11.453	11.94	24.00	-12.06

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5510	-2.460	-1.97	11.00	-12.97
Mid	5550	-2.840	-2.35	11.00	-13.35
High	5670	-3.190	-2.70	11.00	-13.70

OUTPUT POWER AND PPSD, Chain 0





10. TRANSMITTER ABOVE 1 GHz

10.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

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

TEST PROCEDURE

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

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

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

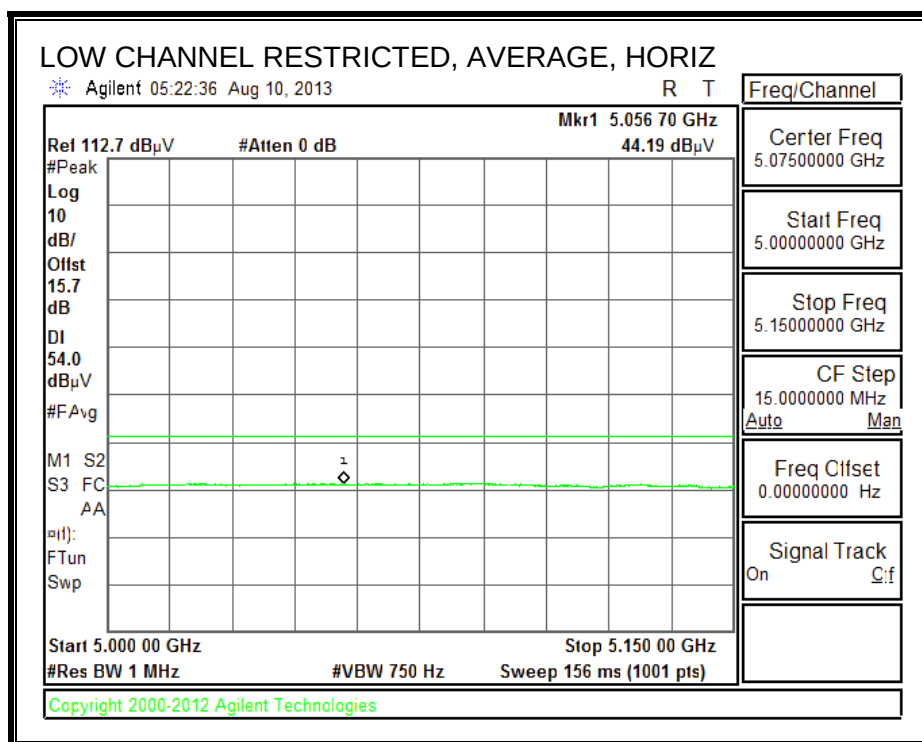
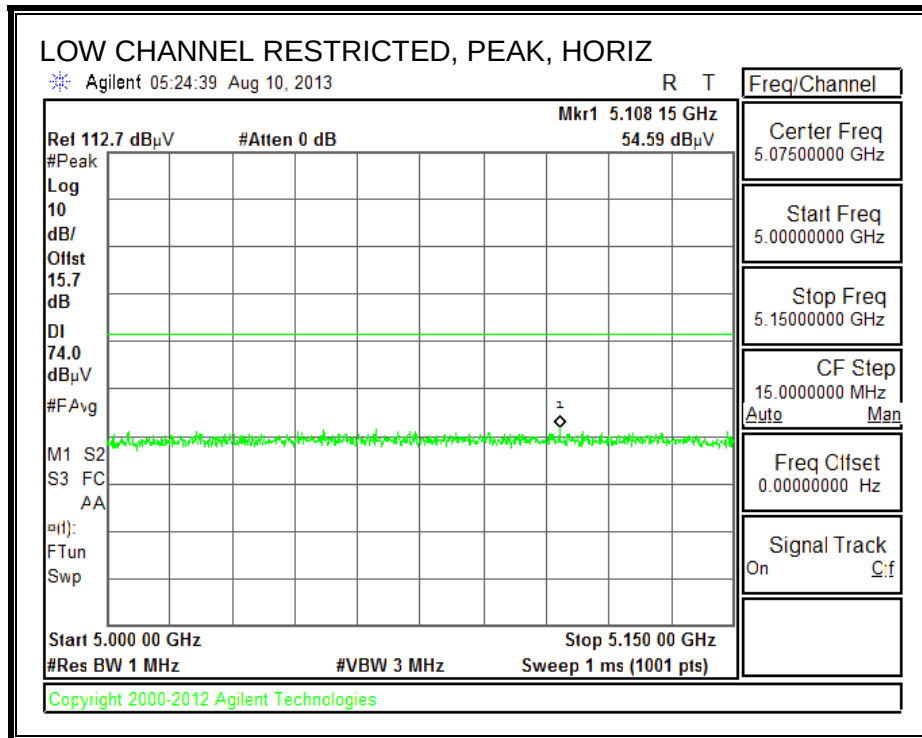
For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and reduce VBW to 1/T for average measurements. For example: A mode : $VBW \geq 1 / 0.001394s = 717 \text{ Hz}$

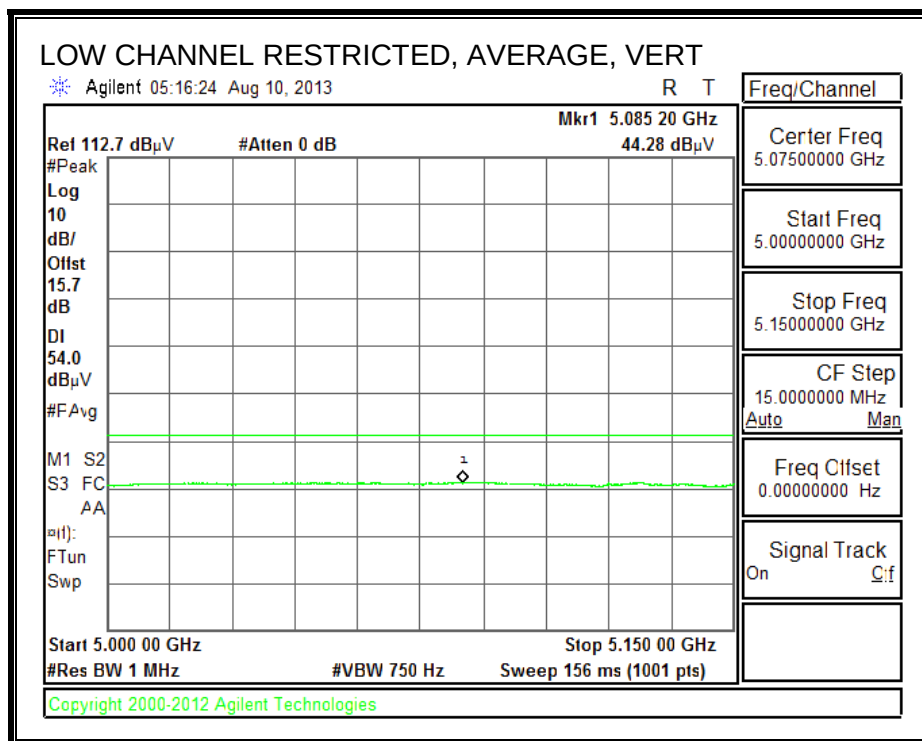
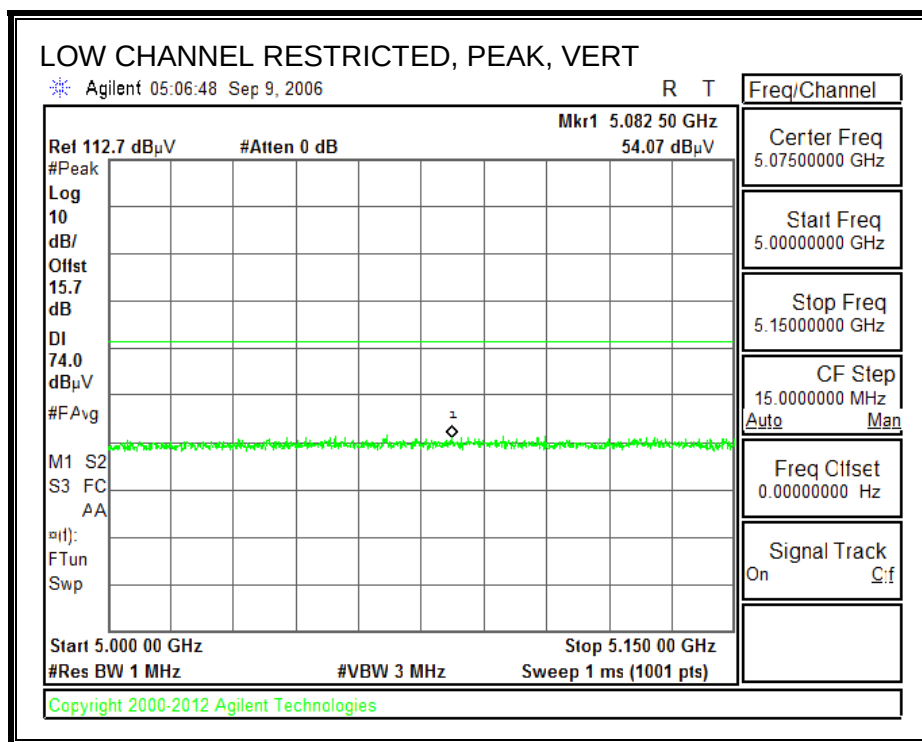
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

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

10.2. 5.2 GHz

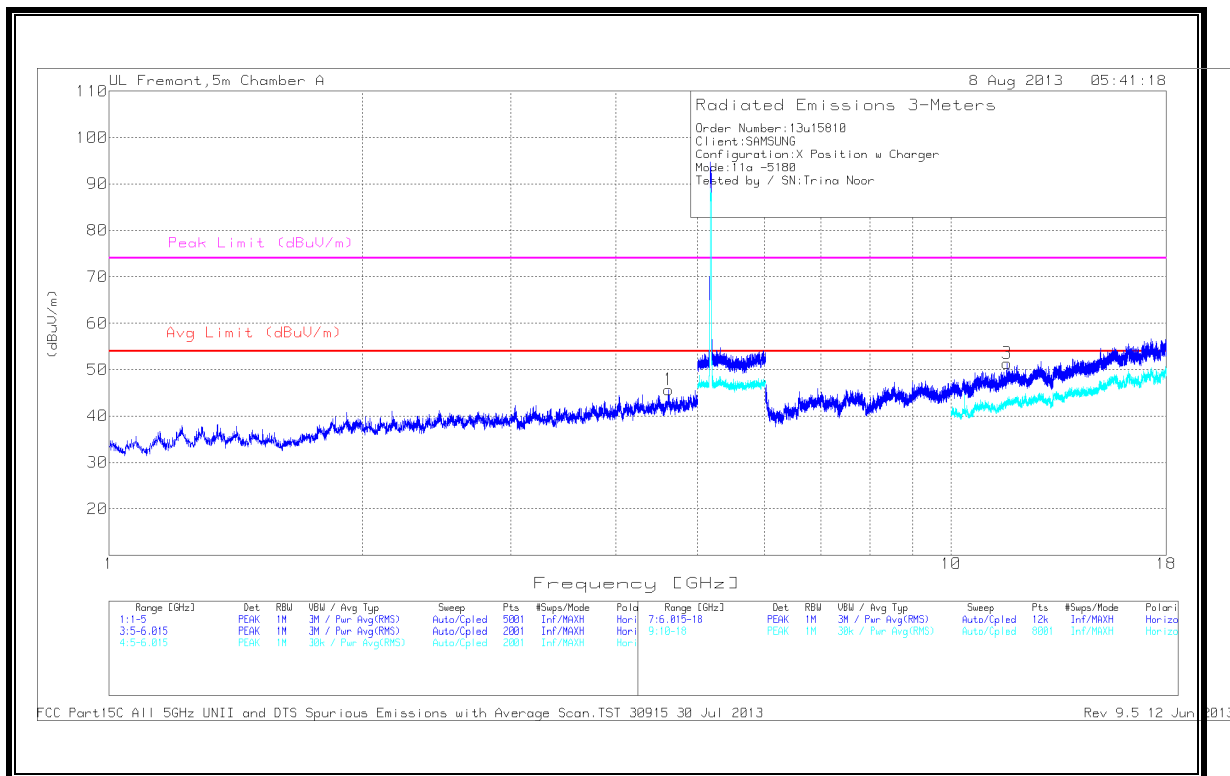
10.2.1. TX ABOVE 1 GHz 802.11a MODE IN THE 5.2 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)



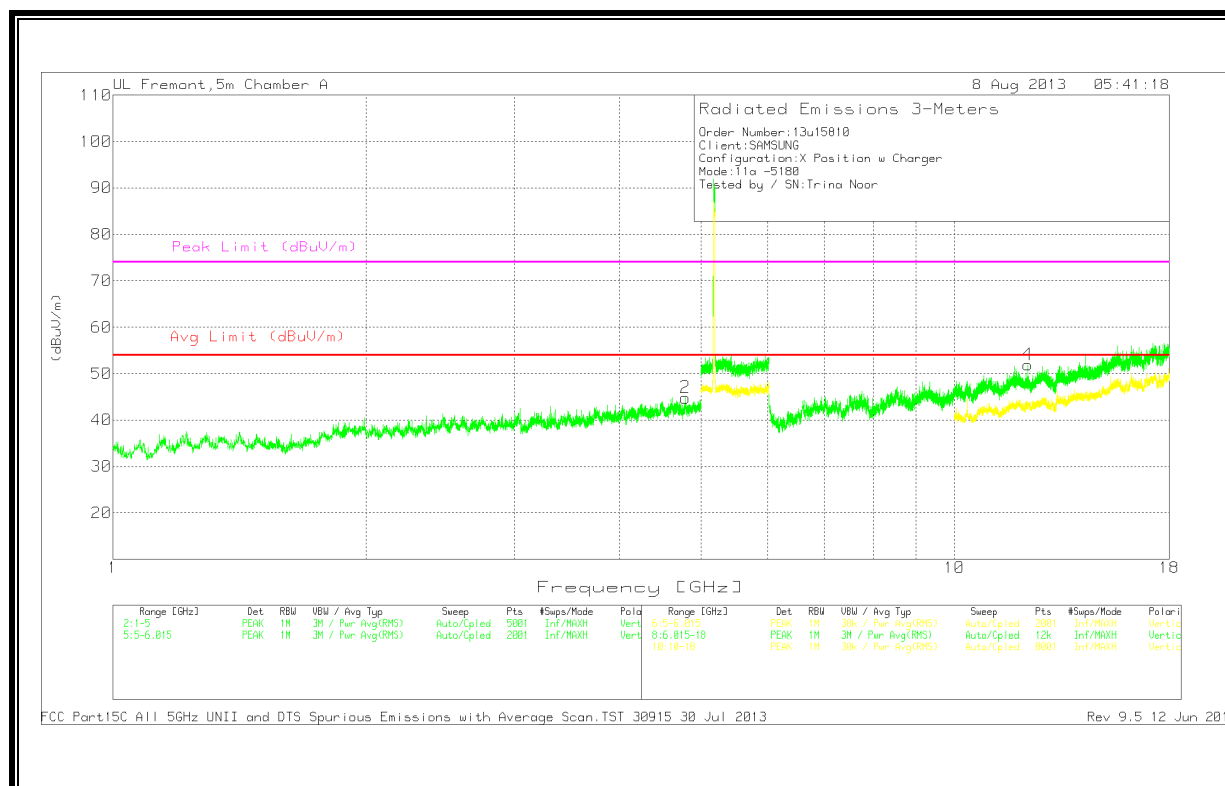


HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



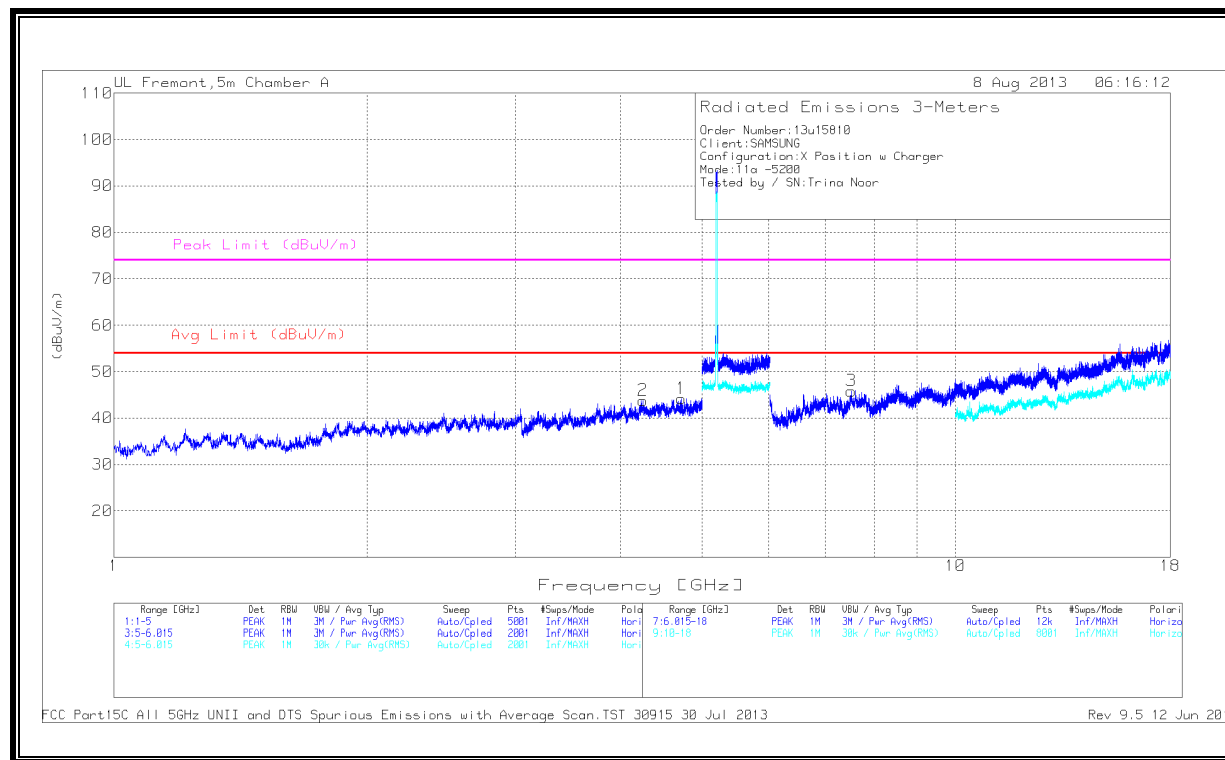
VERTICAL



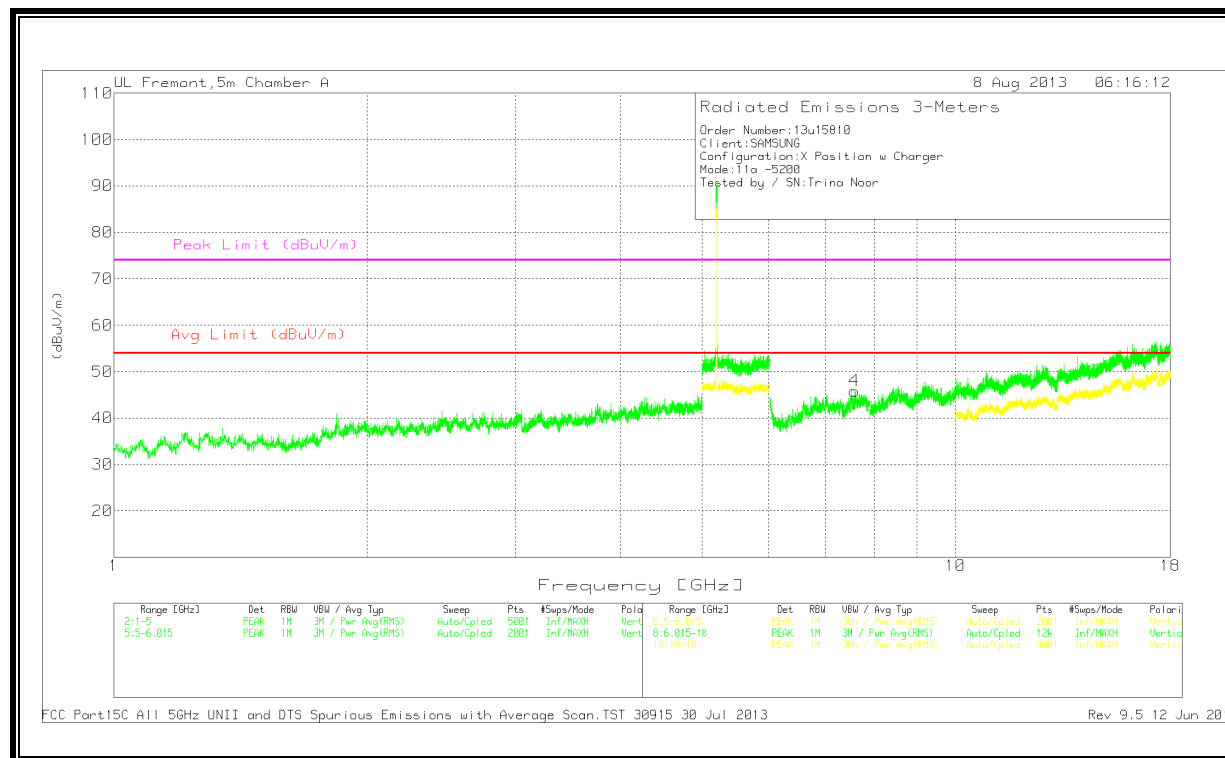
LOW CHANNEL DATA

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
4.621	39.16	PK	33.9	-27.4	45.66	53.97	-8.31	74	-28.34	0-360	100	H
4.789	37.92	PK	33.9	-27	44.82	53.97	-9.15	74	-29.18	0-360	200	V
11.646	34.65	PK	38.4	-21.7	51.35	53.97	-2.62	74	-22.65	0-360	200	H
12.227	35.01	PK	39	-22.1	51.91	53.97	-2.06	74	-22.09	0-360	200	V

MID CHANNEL
HORIZONTAL



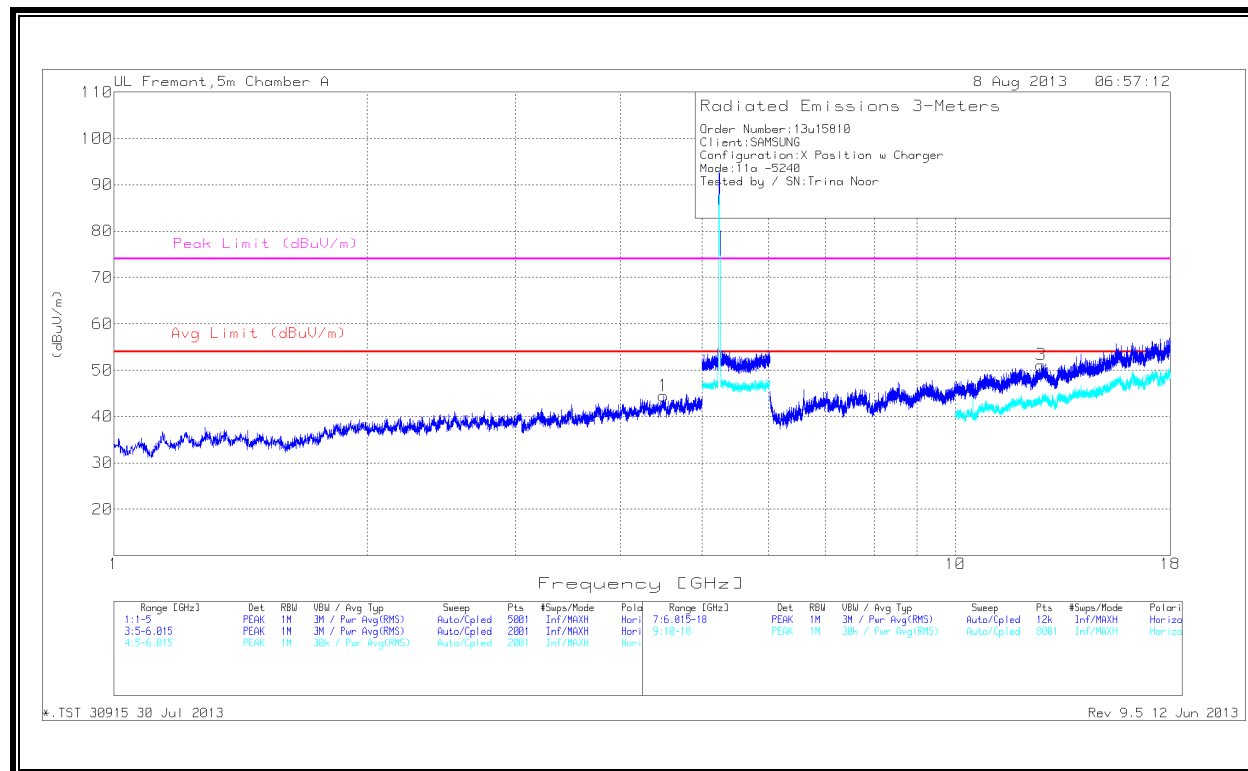
VERTICAL



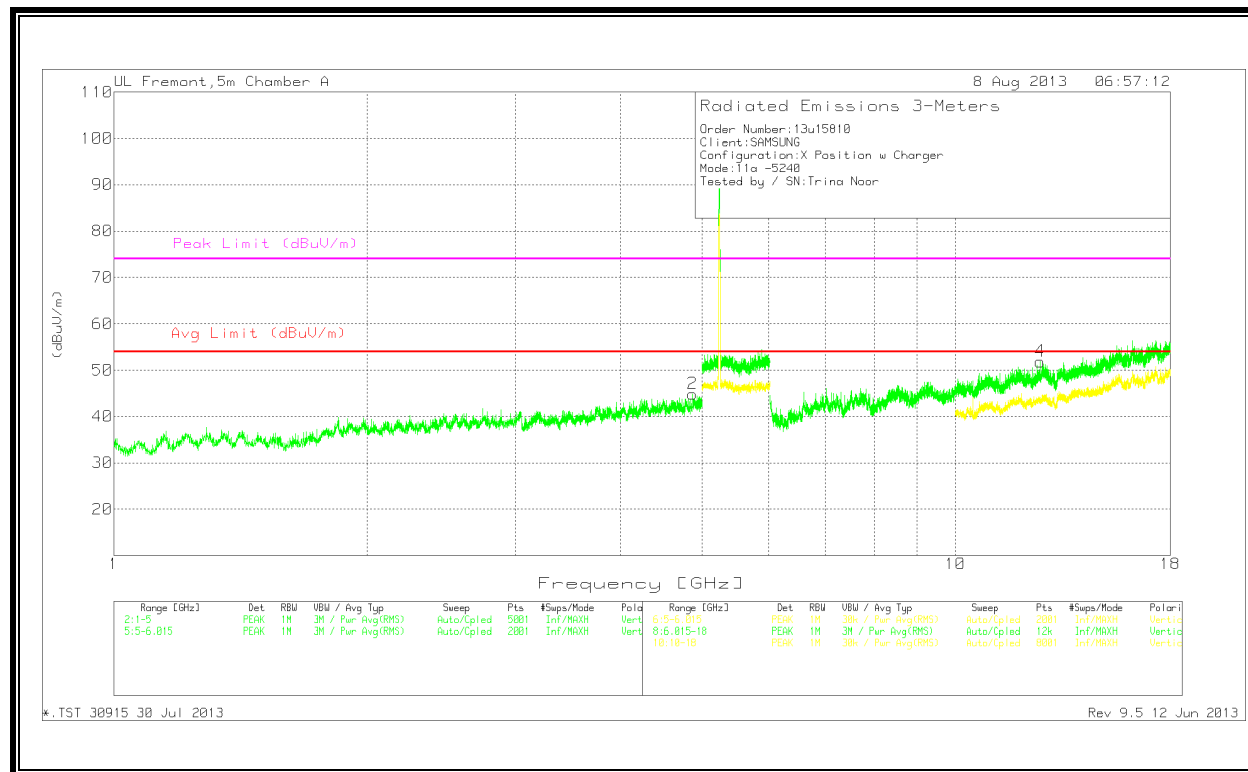
MID CHANNEL DATA

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
4.725	38.11	PK	33.9	-27.8	44.21	53.97	-9.76	74	-29.79	0-360	100	H
4.252	38.5	PK	33.6	-28.3	43.8	53.97	-10.17	74	-30.2	0-360	100	H
7.521	34.76	PK	35.4	-24.3	45.86	53.97	-8.11	74	-28.14	0-360	100	H
7.586	36.11	PK	35.5	-25.8	45.81	53.97	-8.16	74	-28.19	0-360	100	V

HIGH CHANNEL
HORIZONTAL



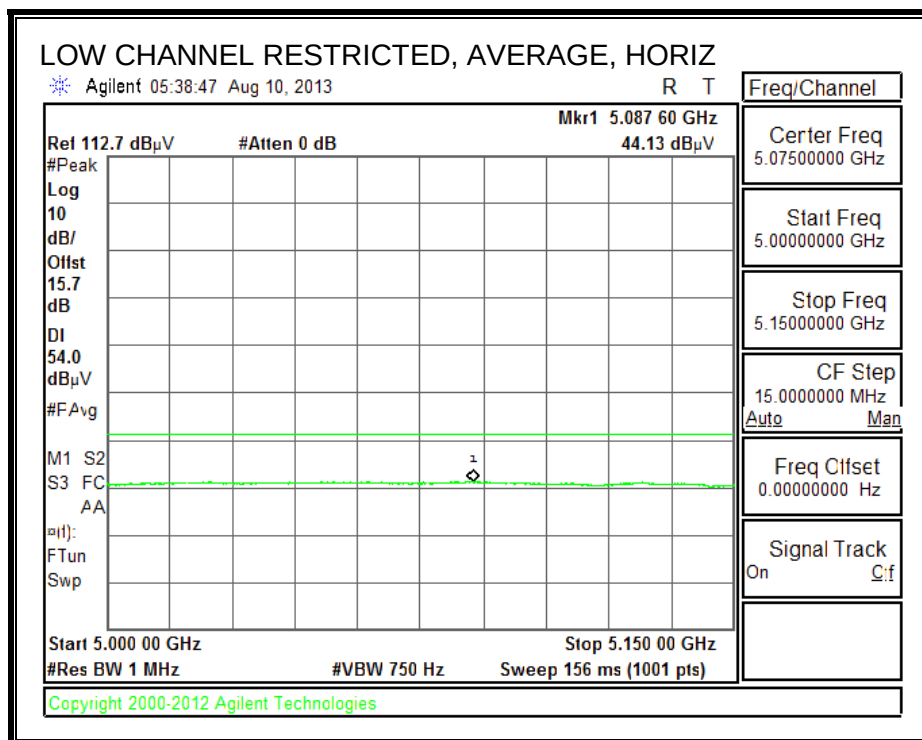
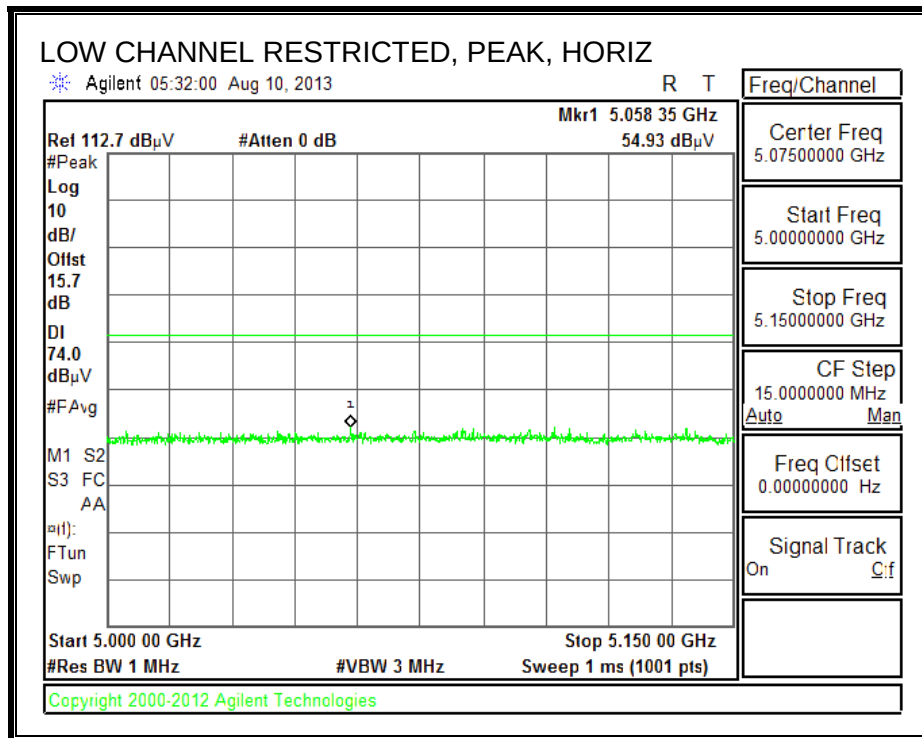
VERTICAL

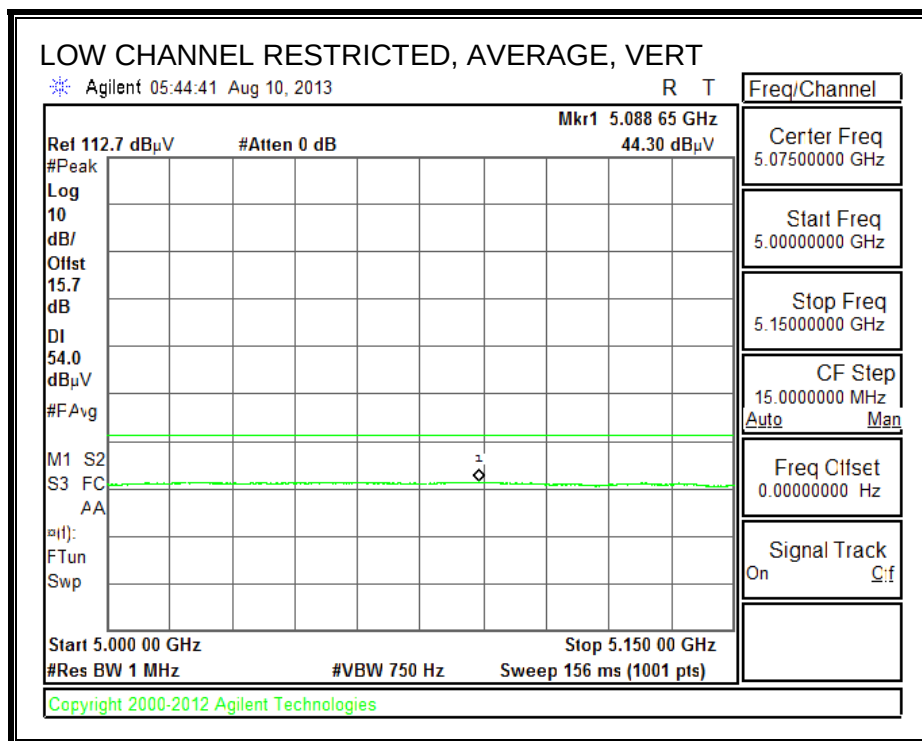
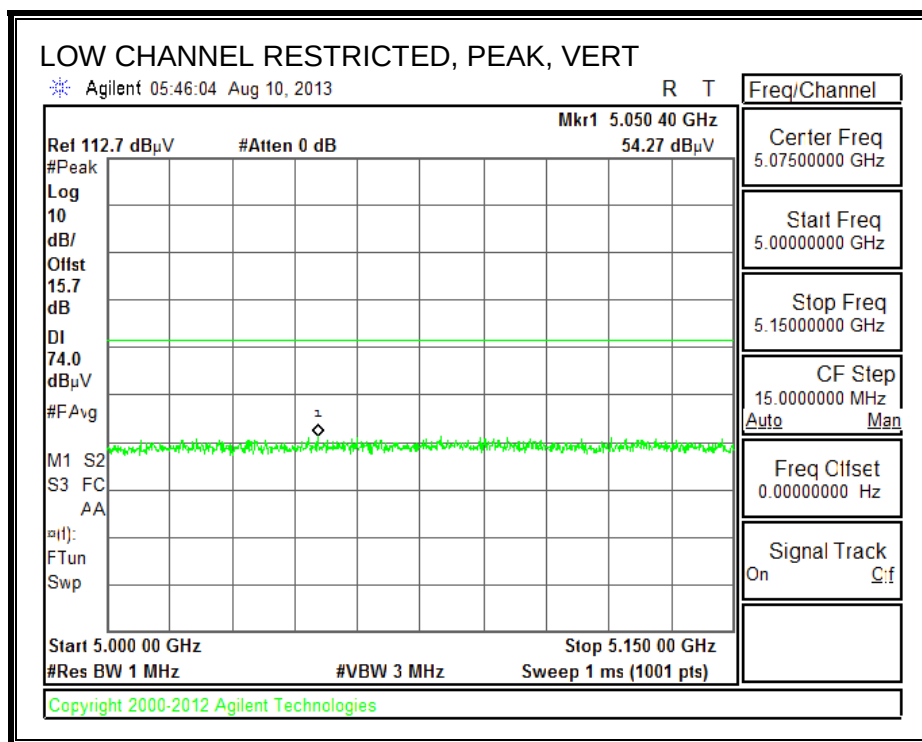


HIGH CHANNEL DATA

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
4.498	38.36	PK	33.8	-27.7	44.46	53.97	-9.51	74	-29.54	0-360	100	H
4.87	38.81	PK	34	-27.9	44.91	53.97	-9.06	74	-29.09	0-360	100	V
12.642	34.54	PK	39.2	-22.6	51.14	53.97	-2.83	74	-22.86	0-360	200	H
12.603	35.25	PK	39.2	-22.6	51.85	53.97	-2.12	74	-22.15	0-360	100	V

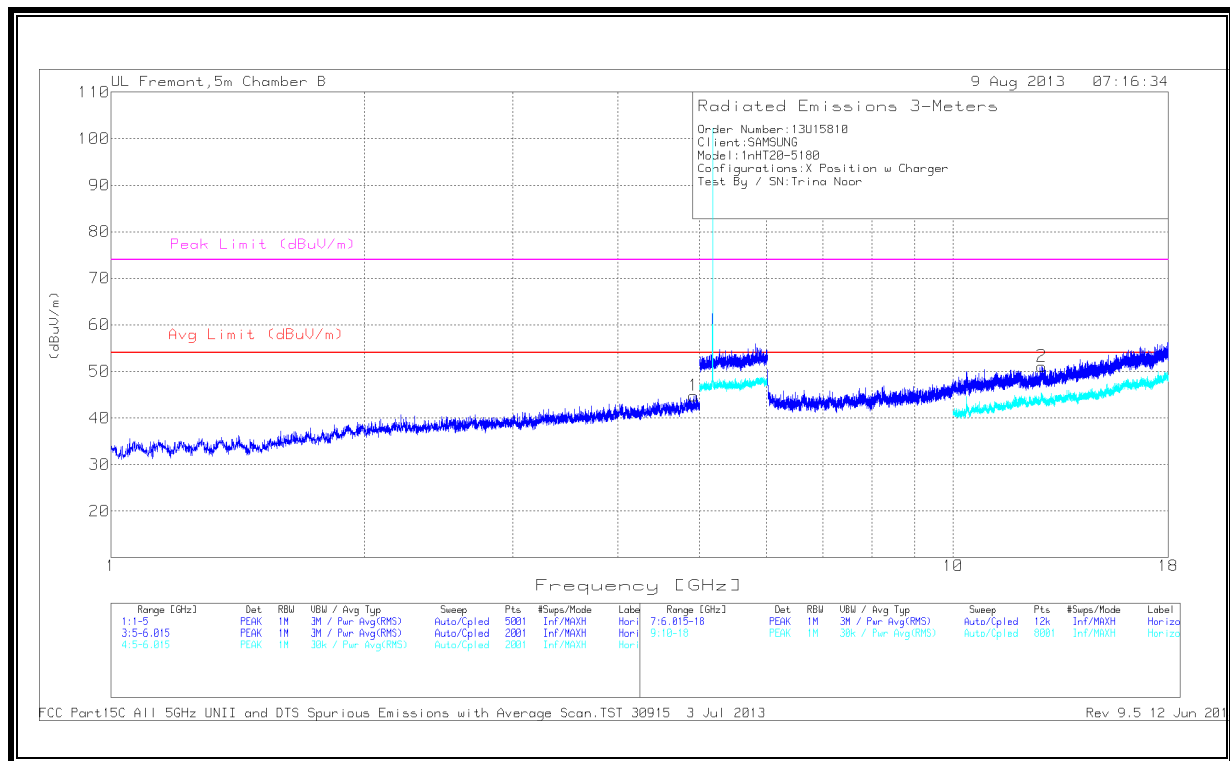
10.2.2. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.2 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)



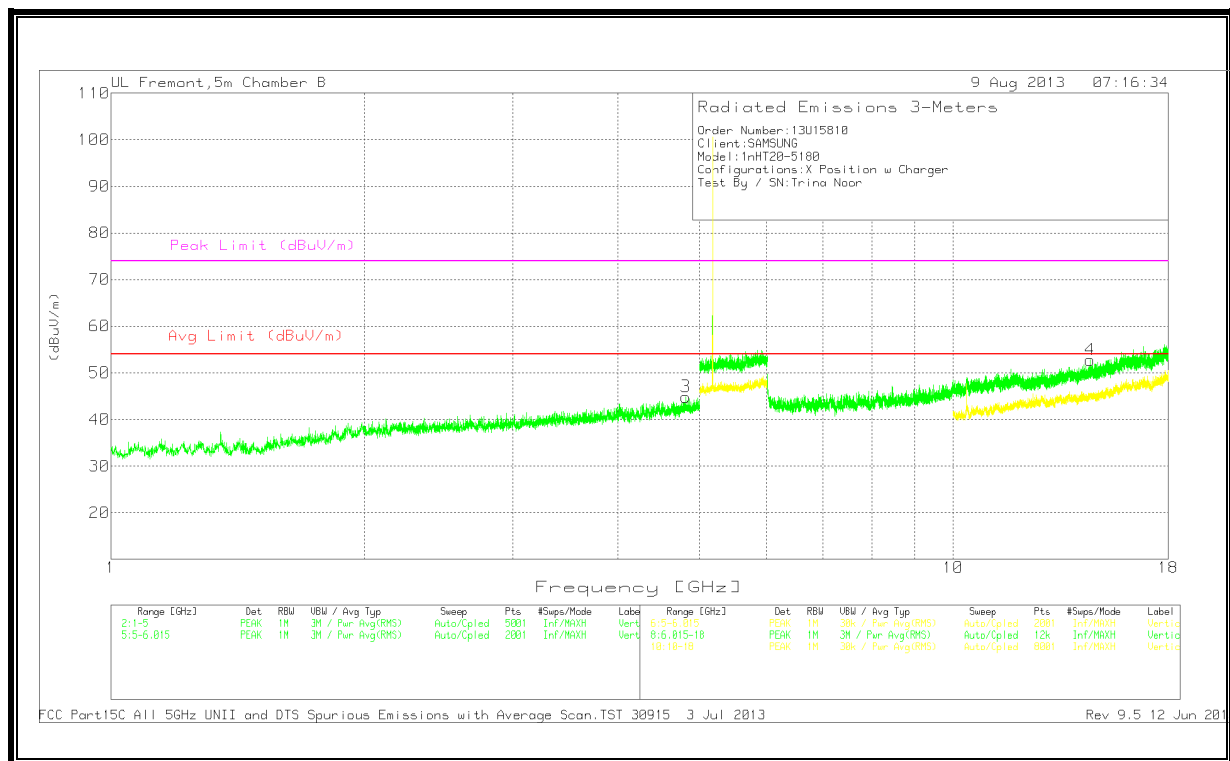


HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



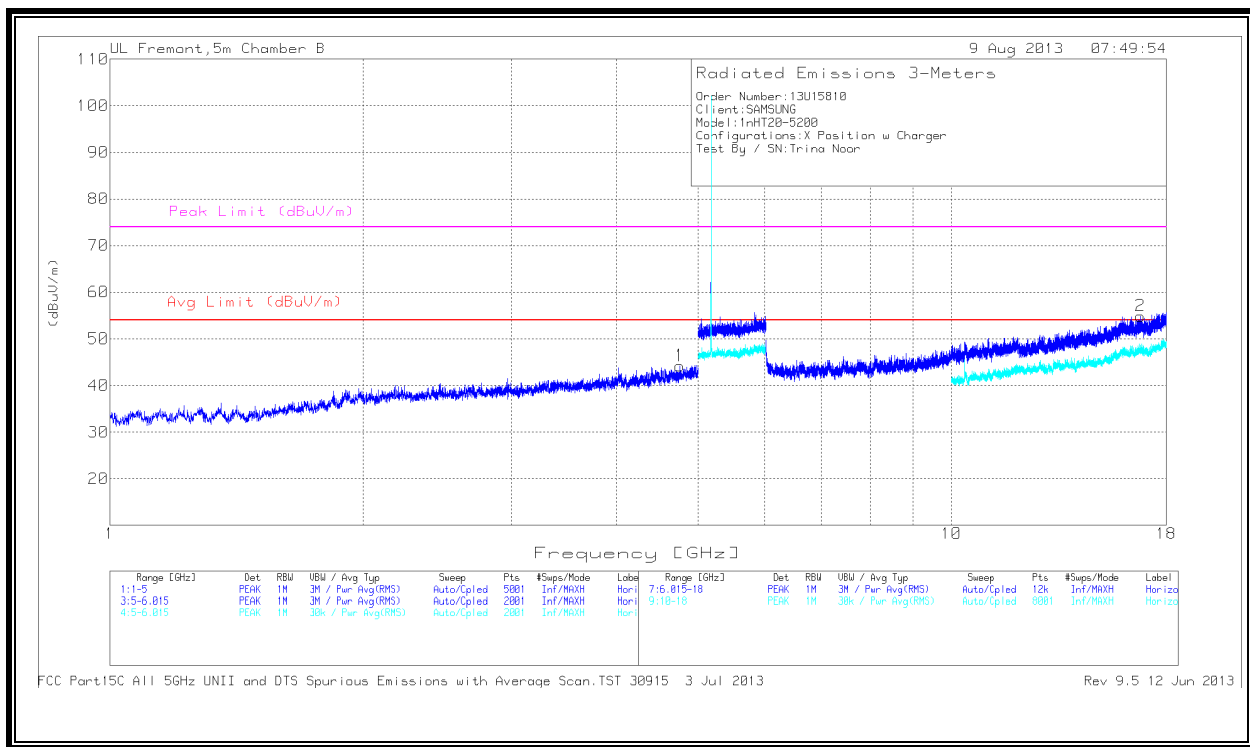
VERTICAL



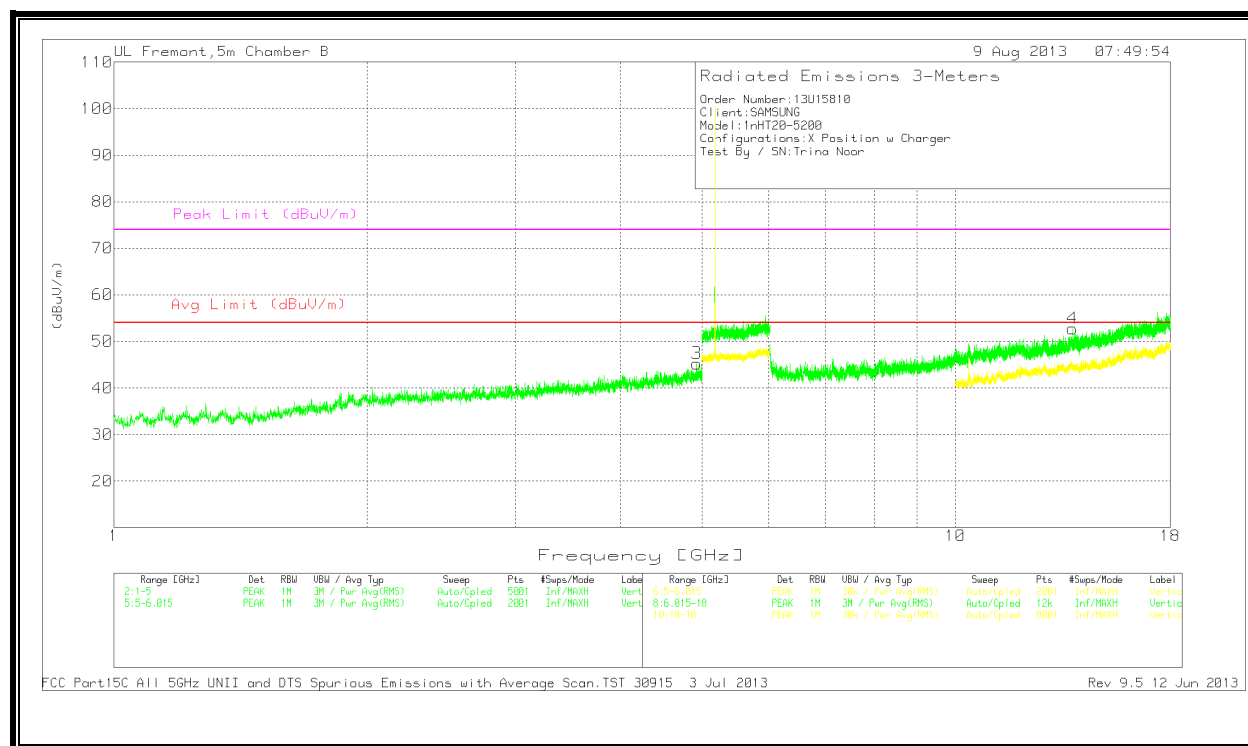
LOW CHANNEL DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
4.918	40.37	PK	34.6	-30.2	44.77	53.97	-9.2	74	-29.23	0-360	100	H
4.814	40.43	PK	34.7	-30.3	44.83	53.97	-9.14	74	-29.17	0-360	200	V
12.735	33.55	PK	39.2	-21.7	51.05	53.97	-2.92	74	-22.95	0-360	200	H
14.539	34.66	PK	39.7	-21.6	52.76	53.97	-1.21	74	-21.24	0-360	100	V

MID CHANNEL
HORIZONTAL



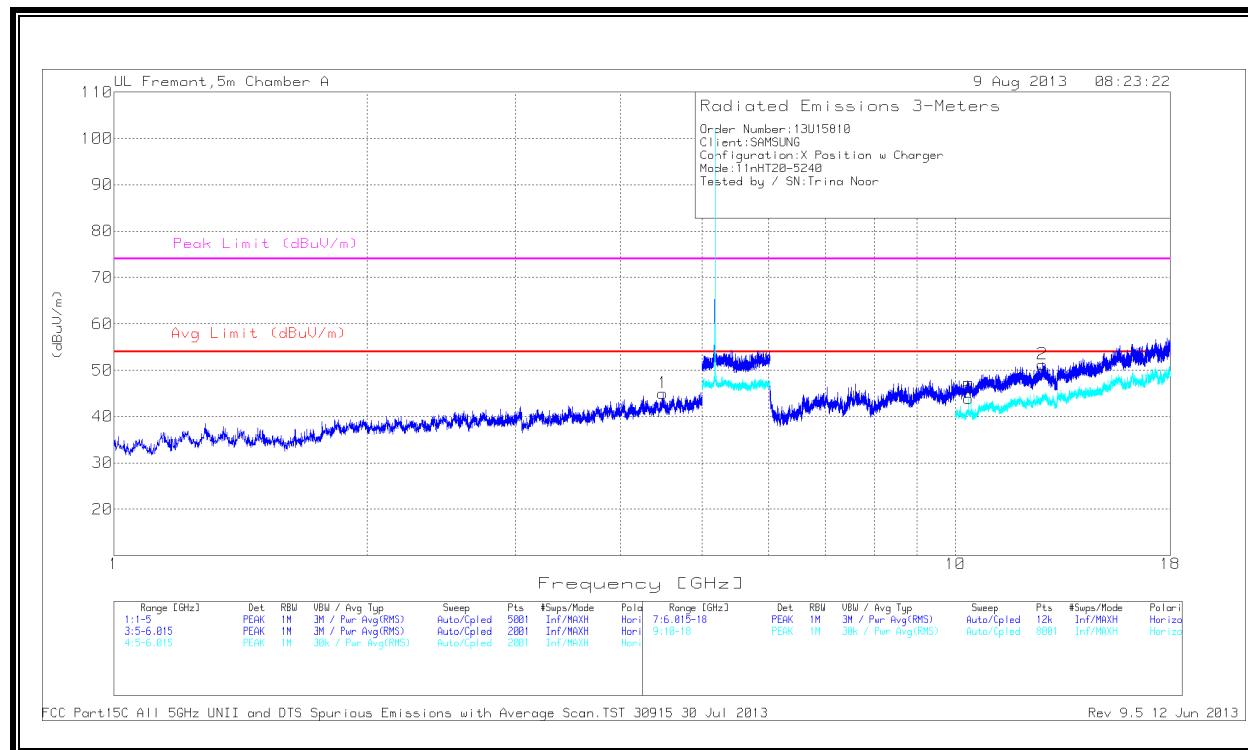
VERTICAL



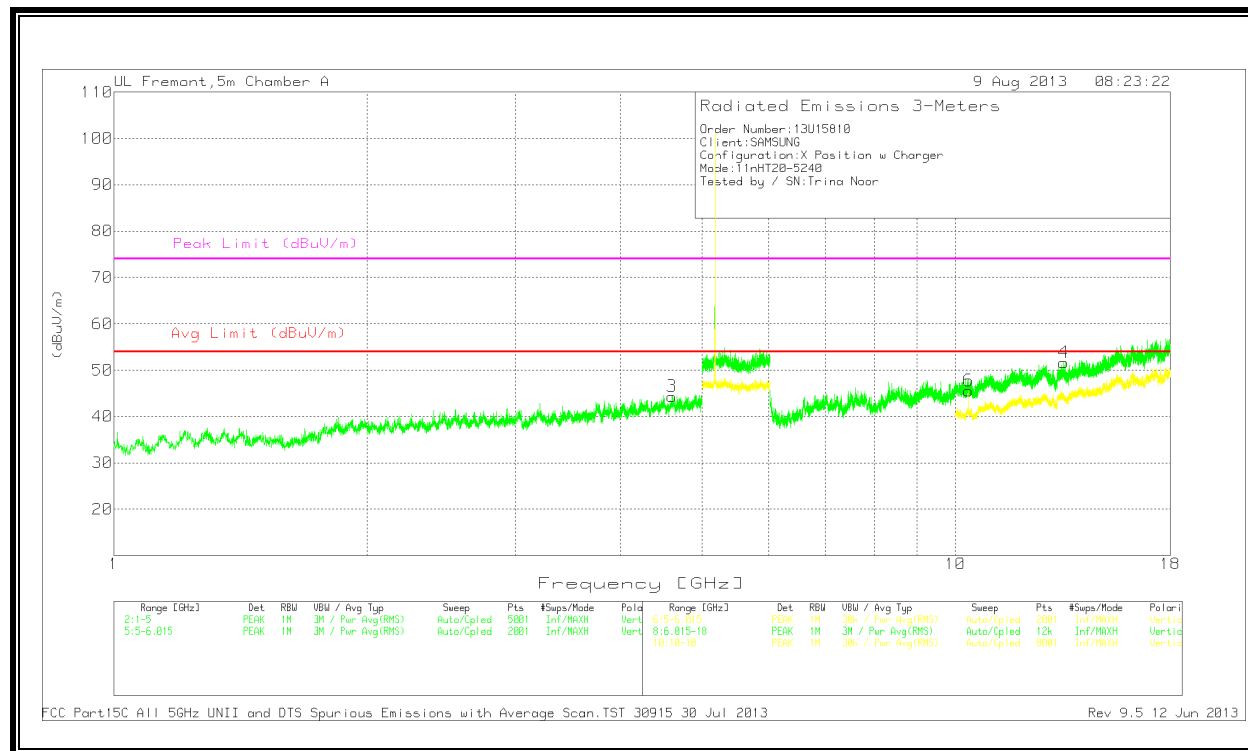
MID CHANNEL DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
4.757	39.41	PK	34.7	-29.9	44.21	53.97	-9.76	74	-29.79	0-360	100	H
4.926	40.73	PK	34.6	-30.1	45.23	53.97	-8.74	74	-28.77	0-360	200	V
16.772	33.2	PK	41.6	-19.9	54.9	53.97	.93	74	-19.1	0-360	100	H
13.778	36.05	PK	39.1	-22.4	52.75	53.97	-1.22	74	-21.25	0-360	100	V

HIGH CHANNEL
HORIZONTAL



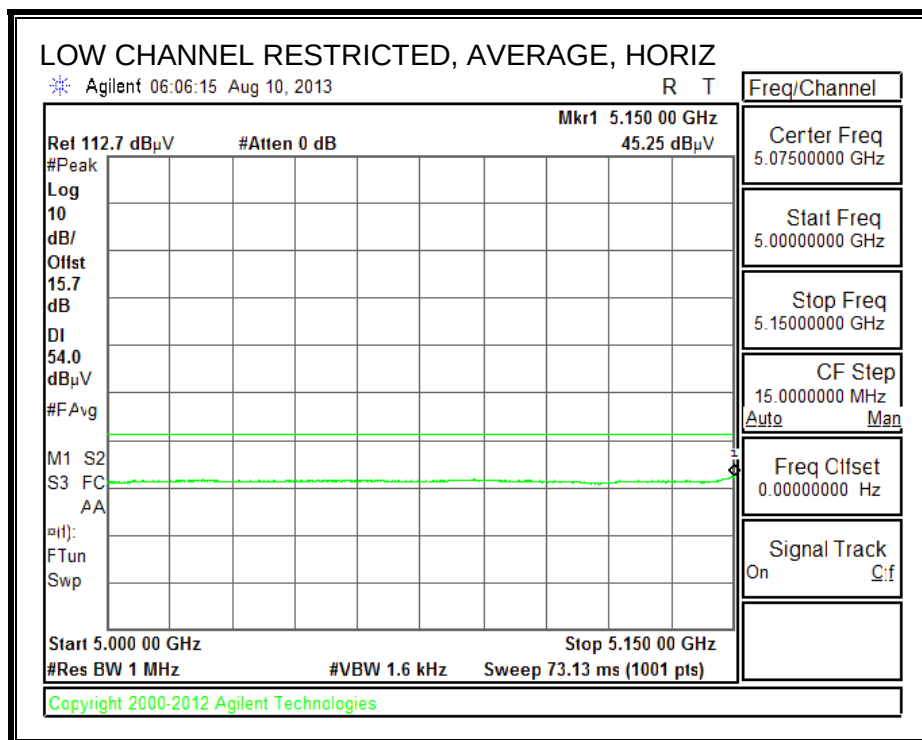
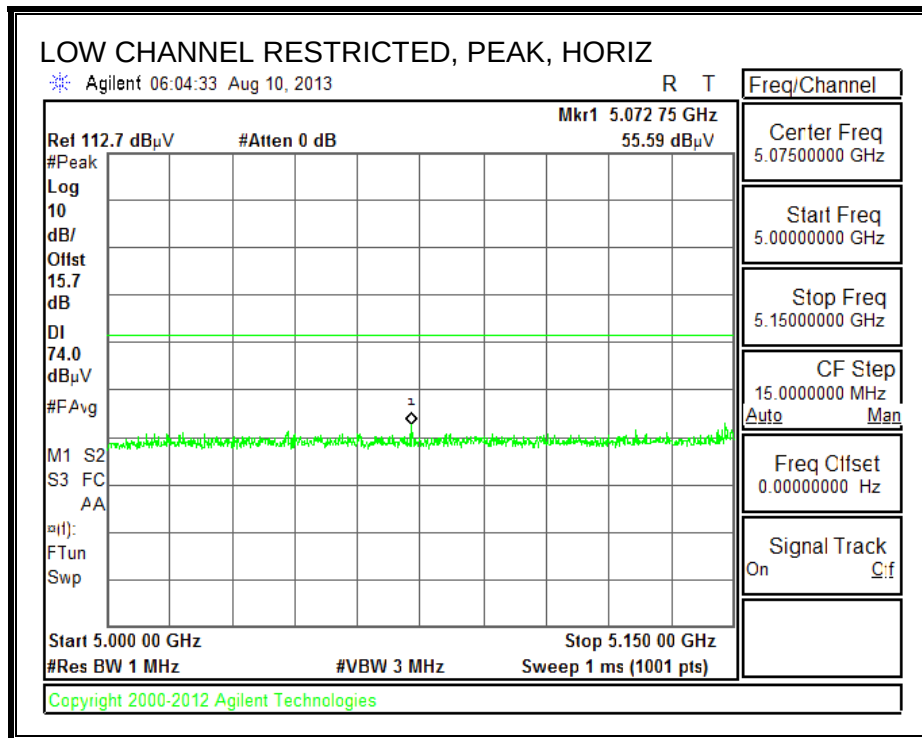
VERTICAL

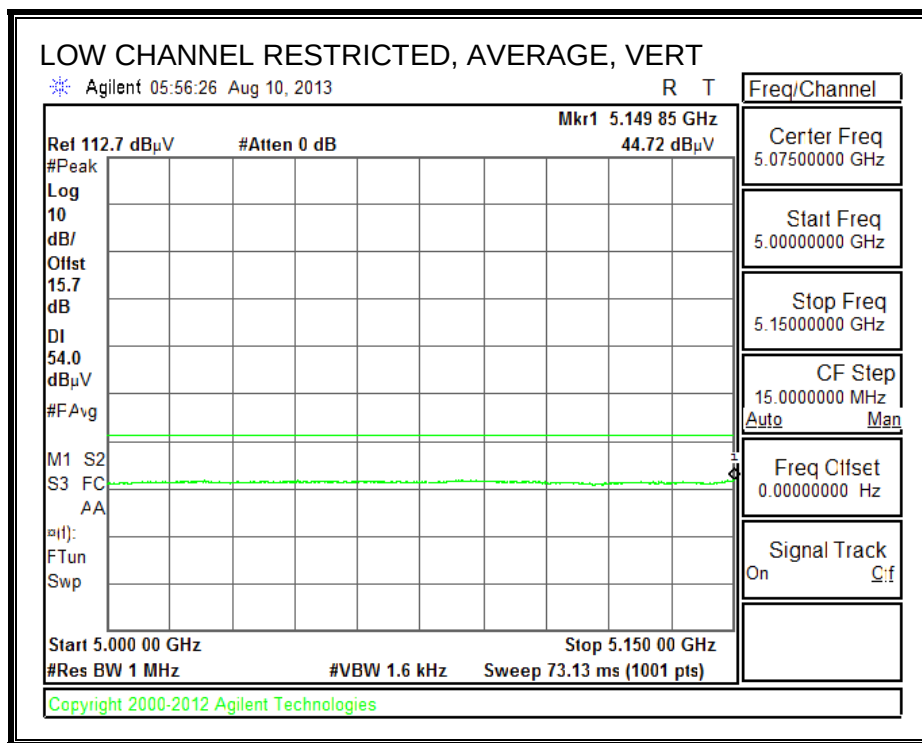
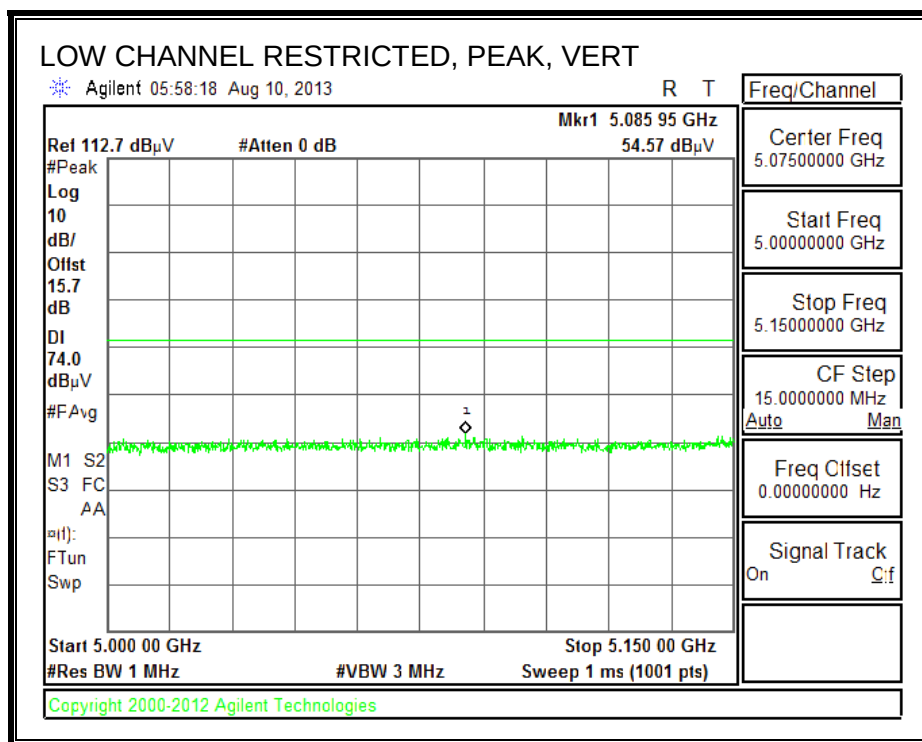


HIGH CHANNEL DATA

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
4.49	38.63	PK	33.8	-27.4	45.03	53.97	-8.94	74	-28.97	0-360	100	H
4.602	38.43	PK	33.9	-28	44.33	53.97	-9.64	74	-29.67	0-360	200	V
12.683	34.36	PK	39.2	-22.3	51.26	53.97	-2.71	74	-22.74	0-360	100	H
13.444	35.04	PK	39	-22.4	51.64	53.97	-2.33	74	-22.36	0-360	200	V
10.36	28.66	PK	37.4	-22.1	43.96	53.97	-10.01	74	-30.04	0-360	100	H
10.36	30.26	PK	37.4	-22.1	45.56	53.97	-8.41	74	-28.44	0-360	100	V

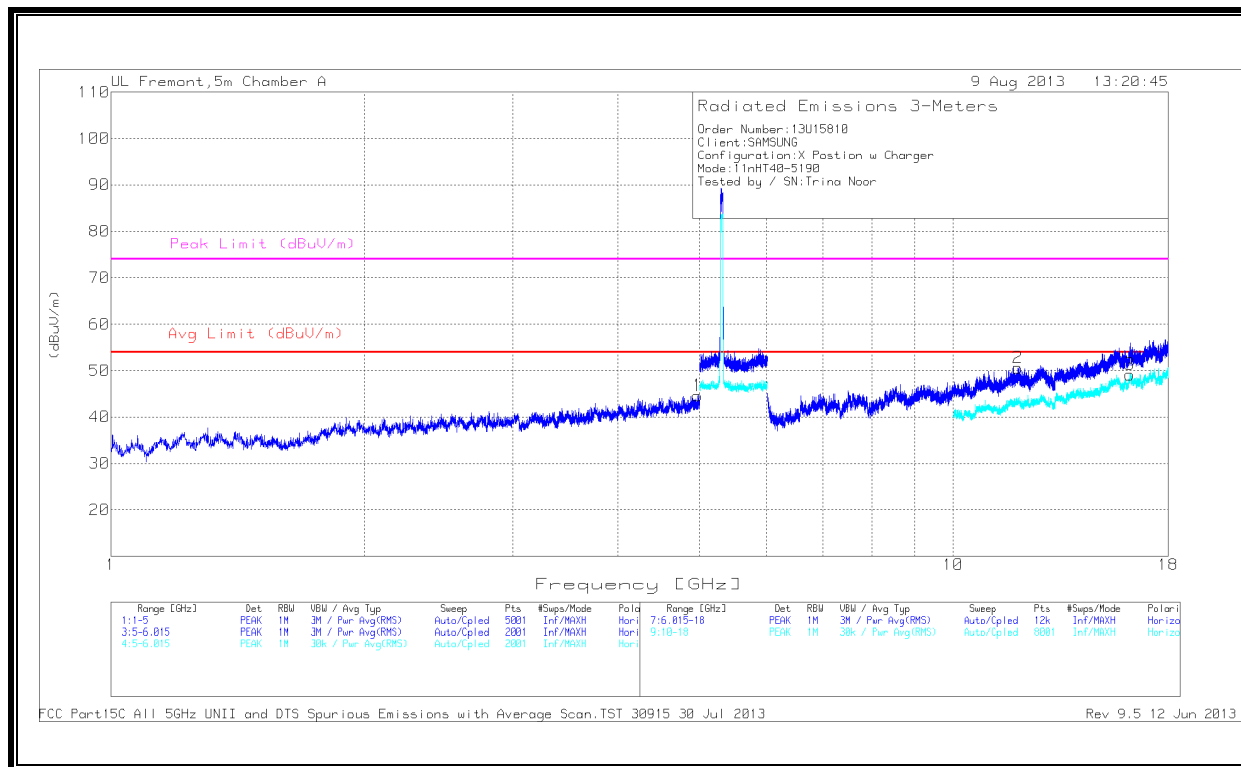
10.2.3. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.2 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)



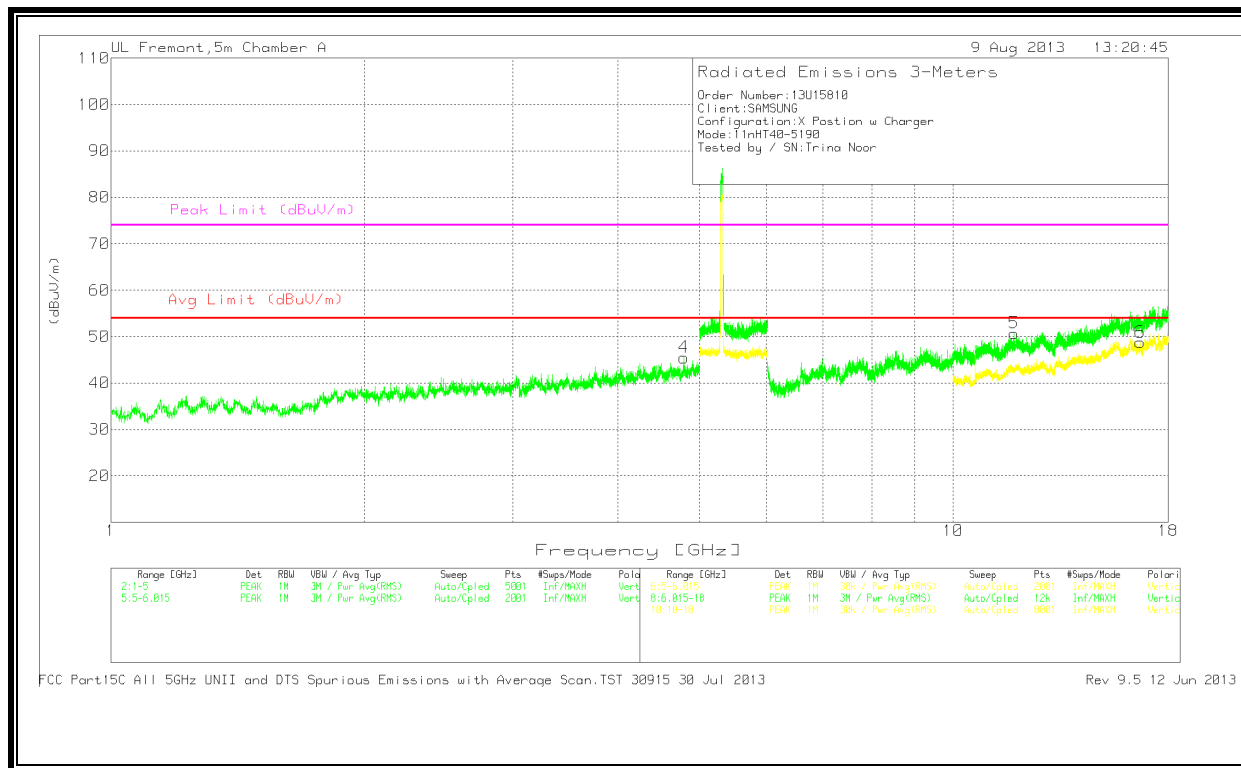


HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL
HORIZONTAL



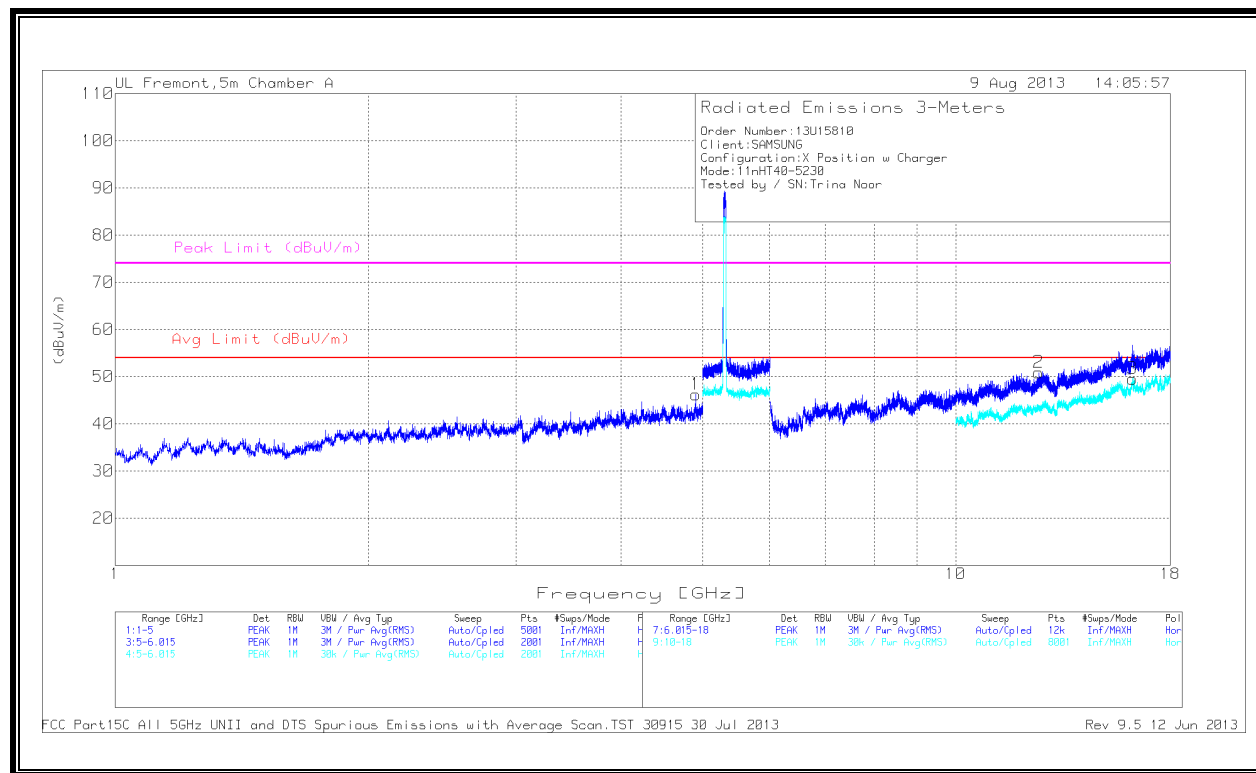
VERTICAL



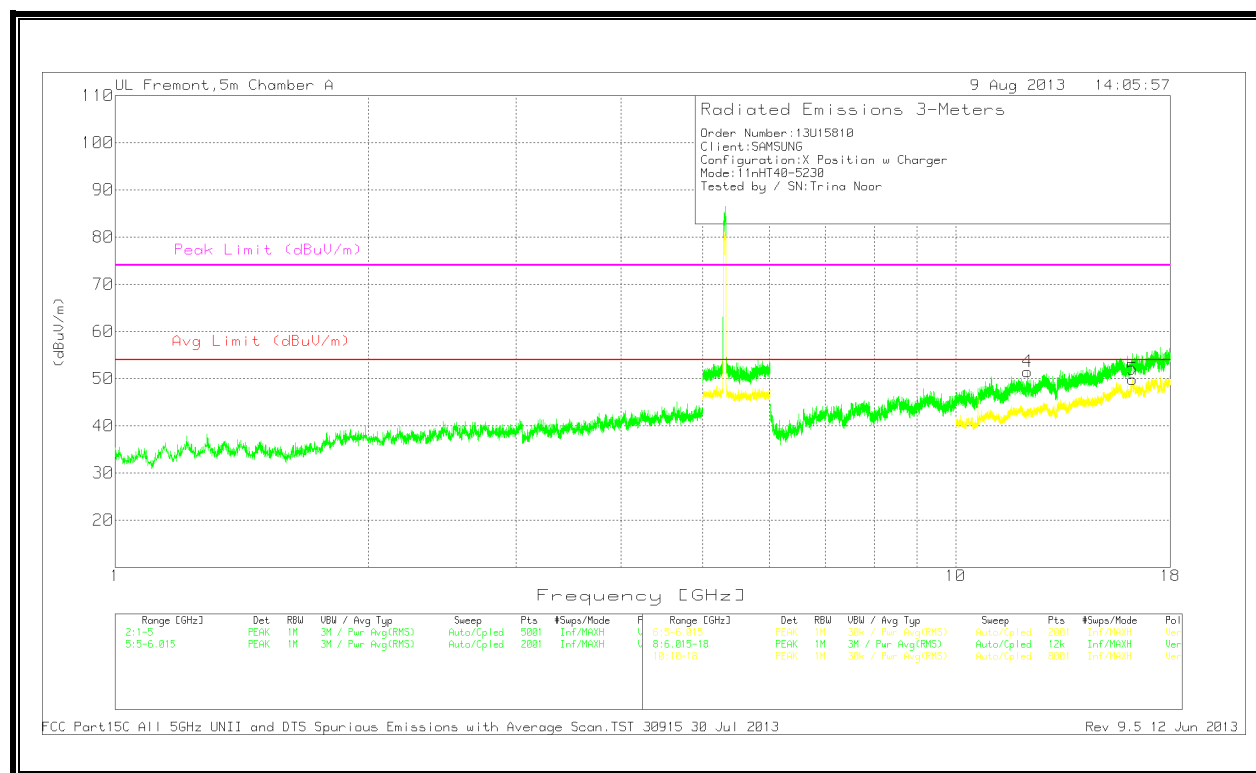
LOW CHANNEL DATA

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
4.97	38.29	PK	33.9	-27.6	44.59	53.97	-9.38	74	-29.41	0-360	200	H
4.789	38.59	PK	33.9	-27	45.49	53.97	-8.48	74	-28.51	0-360	100	V
11.933	33.92	PK	38.7	-22	50.62	53.97	-3.35	74	-23.38	0-360	200	H
11.807	34.04	PK	38.6	-21.9	50.74	53.97	-3.23	74	-23.26	0-360	100	V
16.203	28.97	PK	40.7	-20.5	49.17	53.97	-4.8	74	-24.83	0-360	100	H
16.677	27.51	PK	40.7	-19.4	48.81	53.97	-5.16	74	-25.19	0-360	100	V

HIGH CHANNEL
HORIZONTAL



VERTICAL

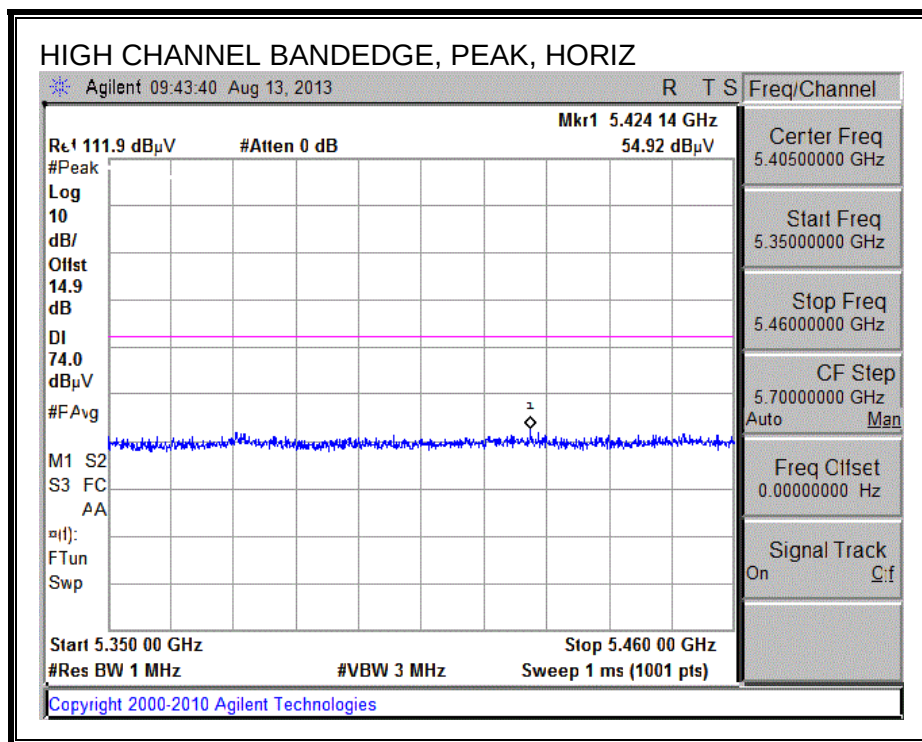


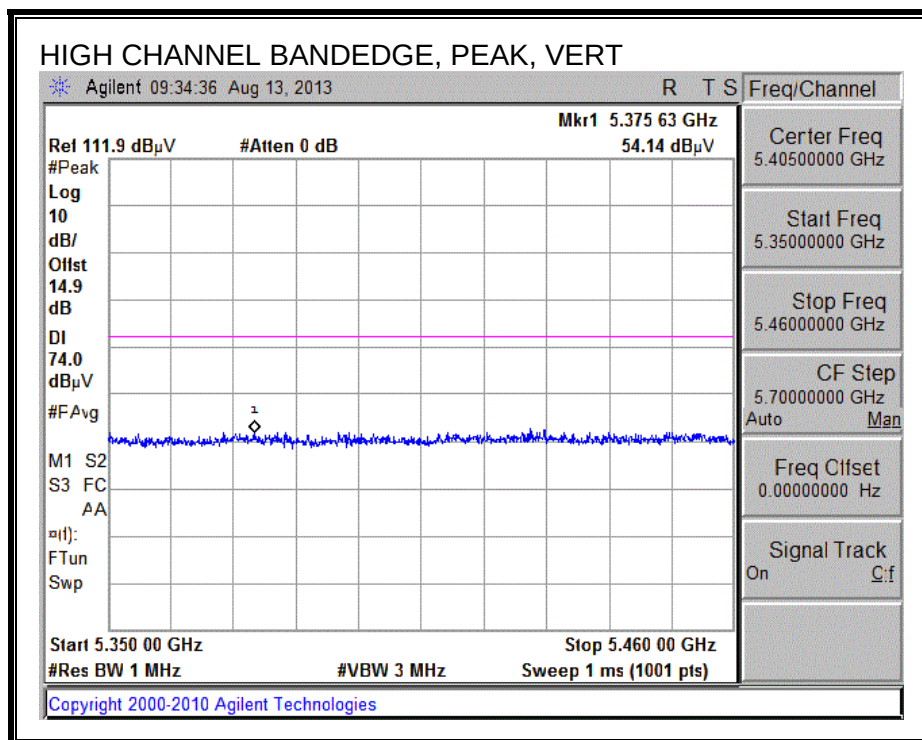
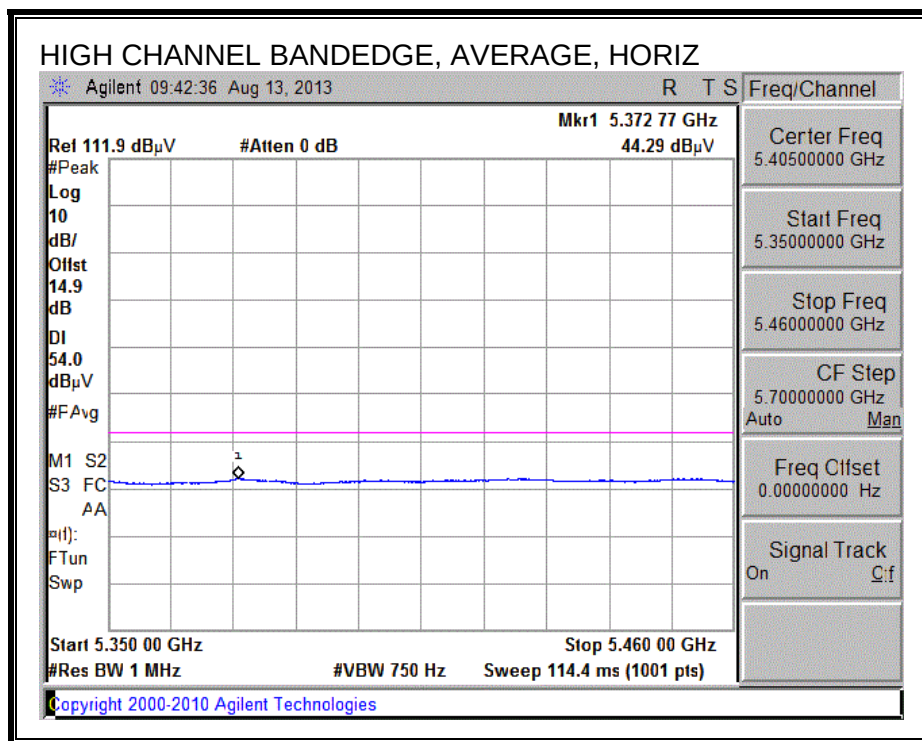
HIGH CHANNEL DATA

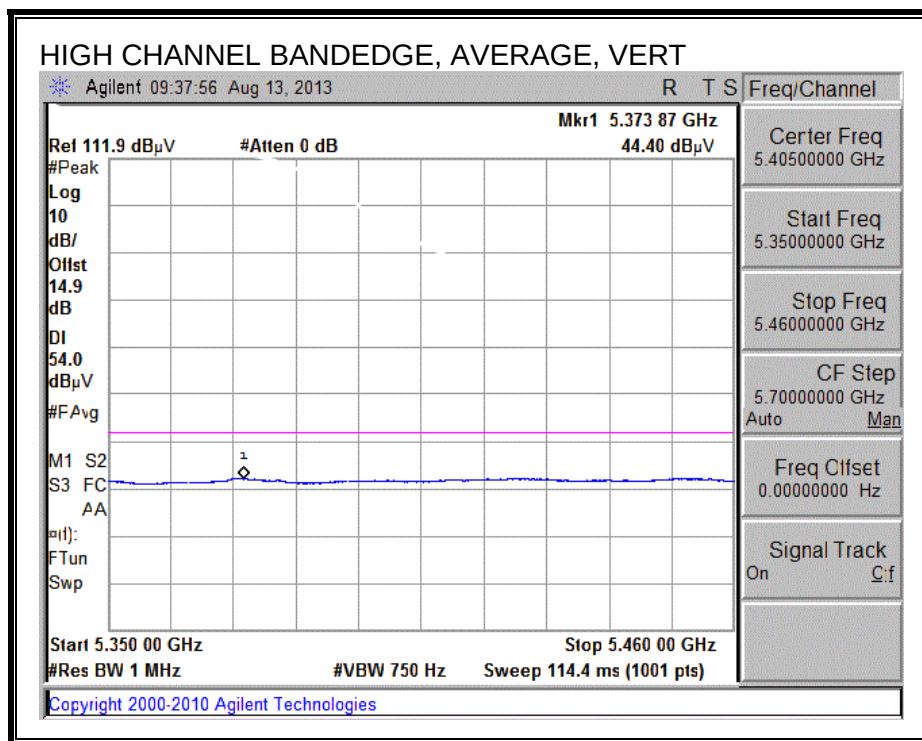
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4.906	39.32	PK	34	-27.1	46.22	53.97	-7.75	74	-27.78	0-360	200	H
12.551	33.64	PK	39.2	-22	50.84	53.97	-3.13	74	-23.16	0-360	200	H
12.18	33.94	PK	39	-21.5	51.44	53.97	-2.53	74	-22.56	0-360	100	V
16.236	27.84	PK	40.7	-19	49.54	53.97	-4.43	74	-24.46	0-360	200	H
16.229	28.25	PK	40.7	-19.1	49.85	53.97	-4.12	74	-24.15	0-360	200	V

10.3. 5.3 GHz

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



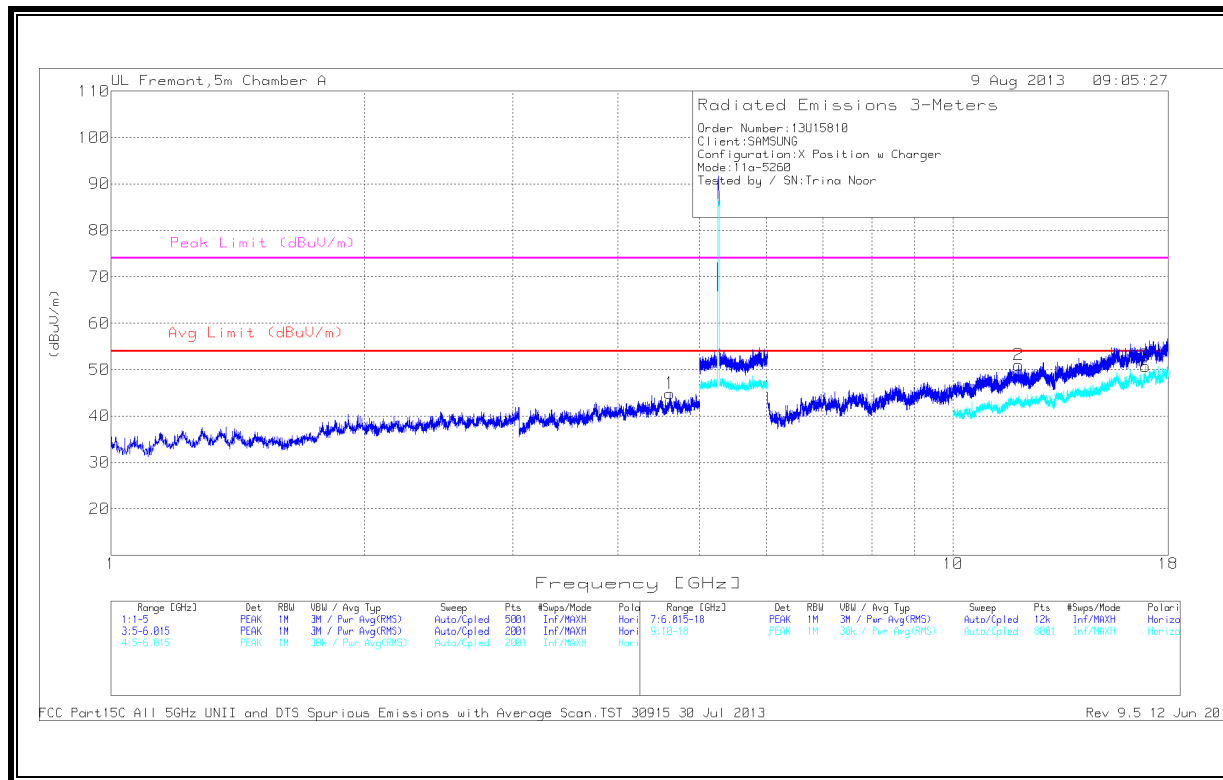




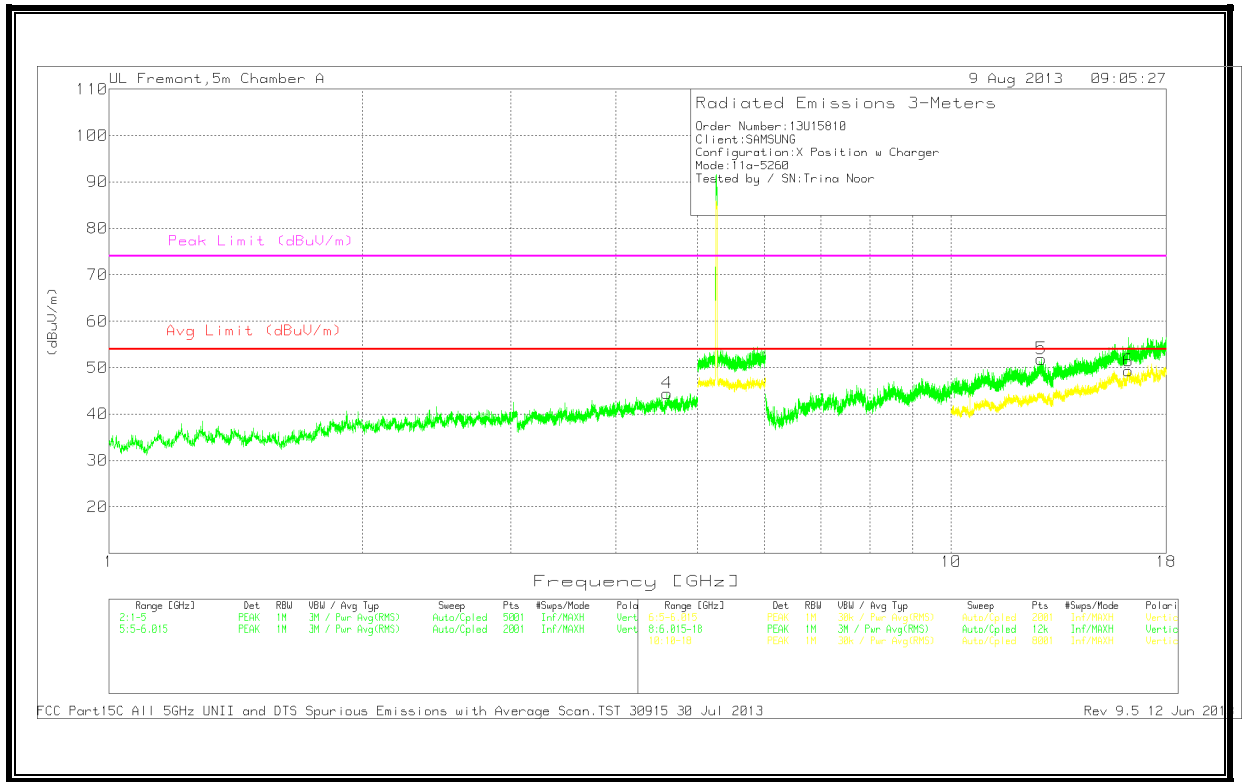
10.3.1.

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL
HORIZONTAL



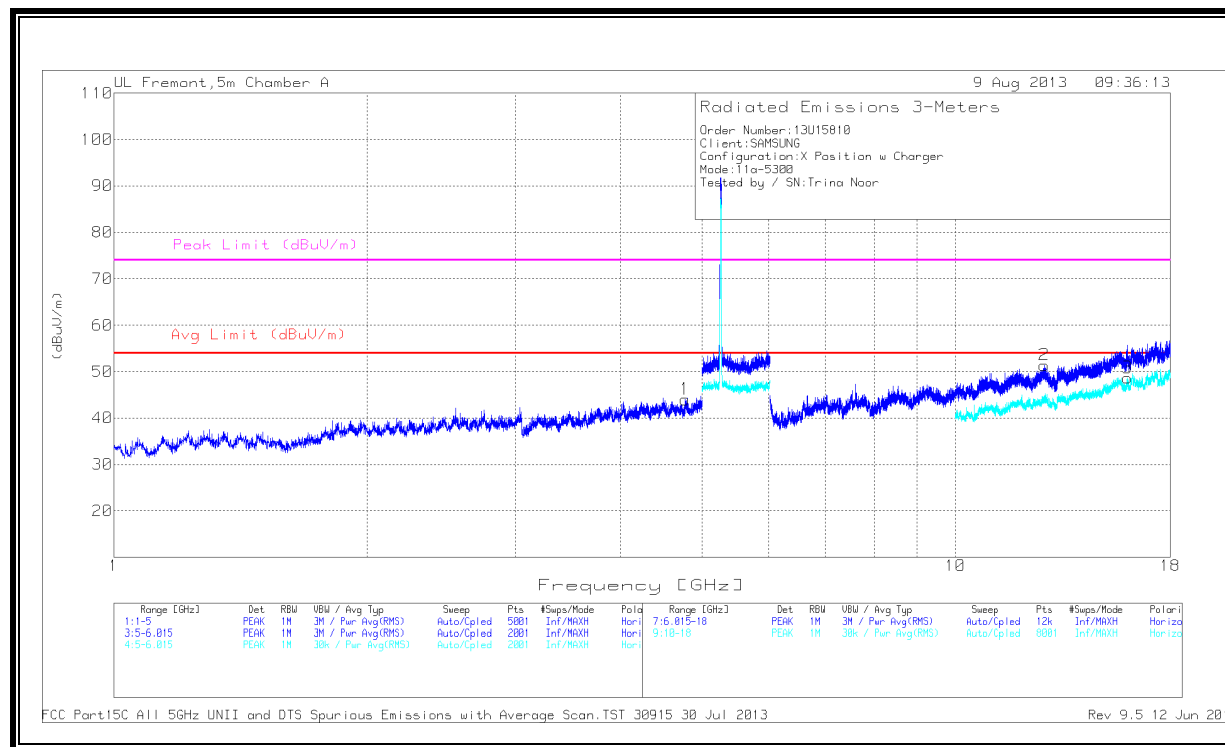
VERTICAL



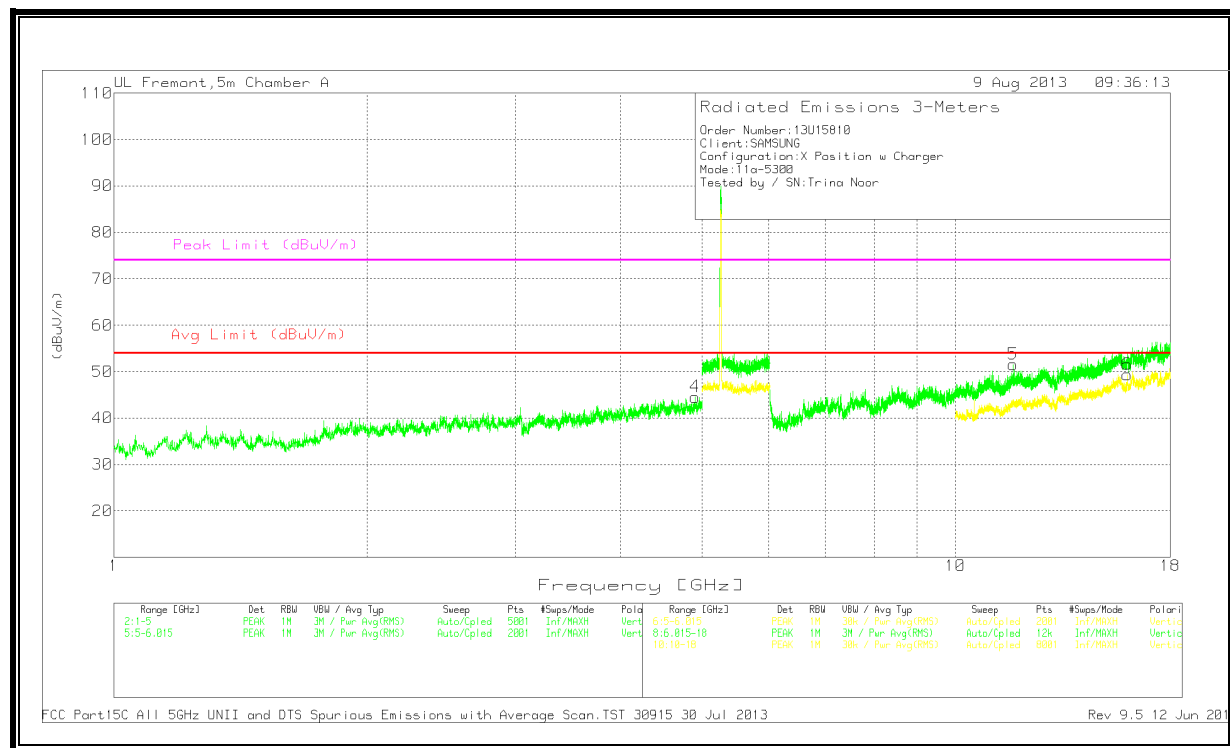
LOW CHANNEL DATA

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
4.609	38.75	PK	33.9	-27.8	44.85	53.97	-9.12	74	-29.15	0-360	100	H
4.598	38.89	PK	33.9	-28.3	44.49	53.97	-9.48	74	-29.51	0-360	200	V
11.96	34.12	PK	38.8	-21.9	51.02	53.97	-2.95	74	-22.98	0-360	100	H
12.793	34.48	PK	39.1	-21.7	51.88	53.97	-2.09	74	-22.12	0-360	200	V
16.92	28.27	PK	40.8	-18.3	50.77	53.97	-3.2	74	-23.23	0-360	100	H
16.238	27.61	PK	40.7	-19	49.31	53.97	-4.66	74	-24.69	0-360	200	V

MID CHANNEL
HORIZONTAL



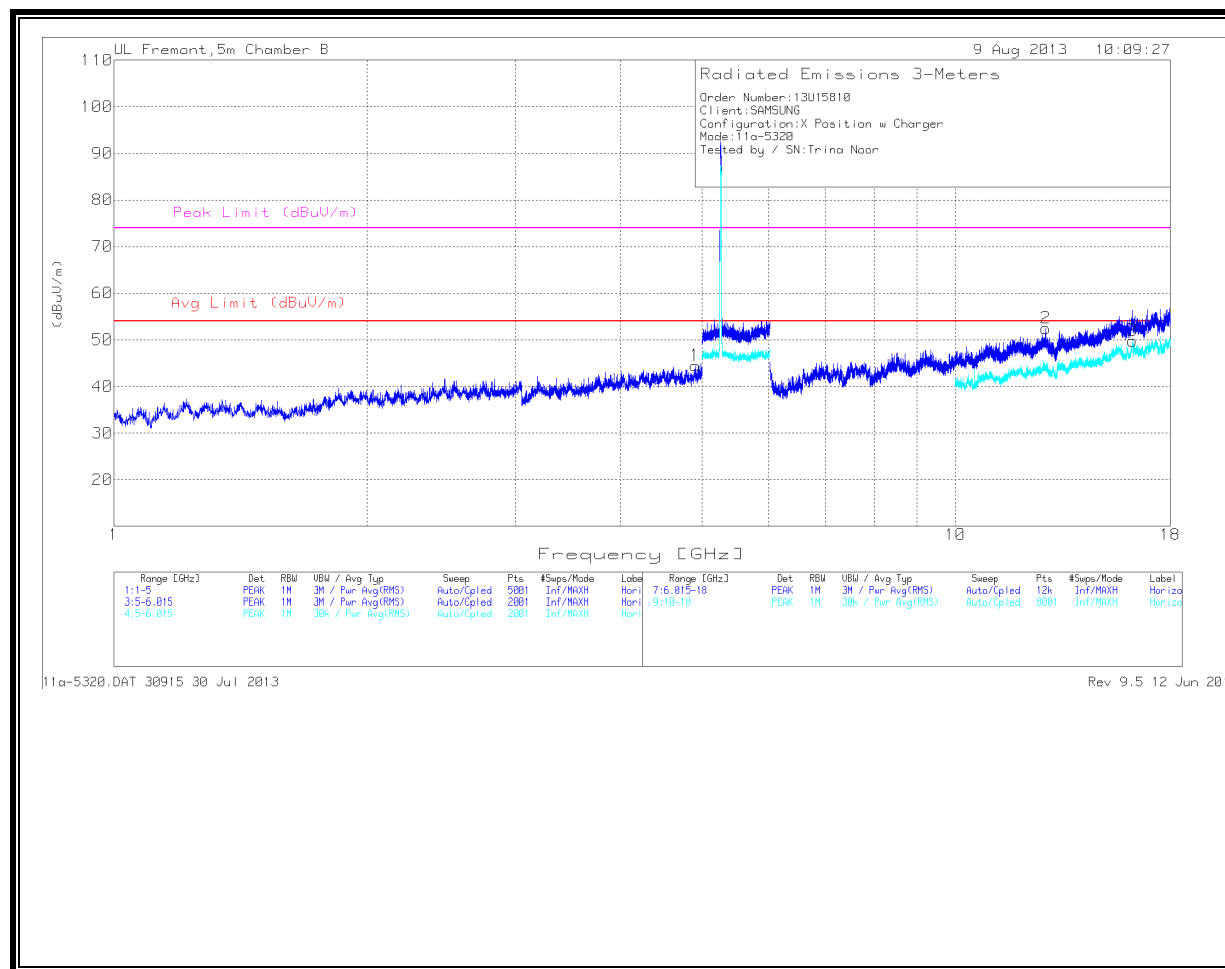
VERTICAL



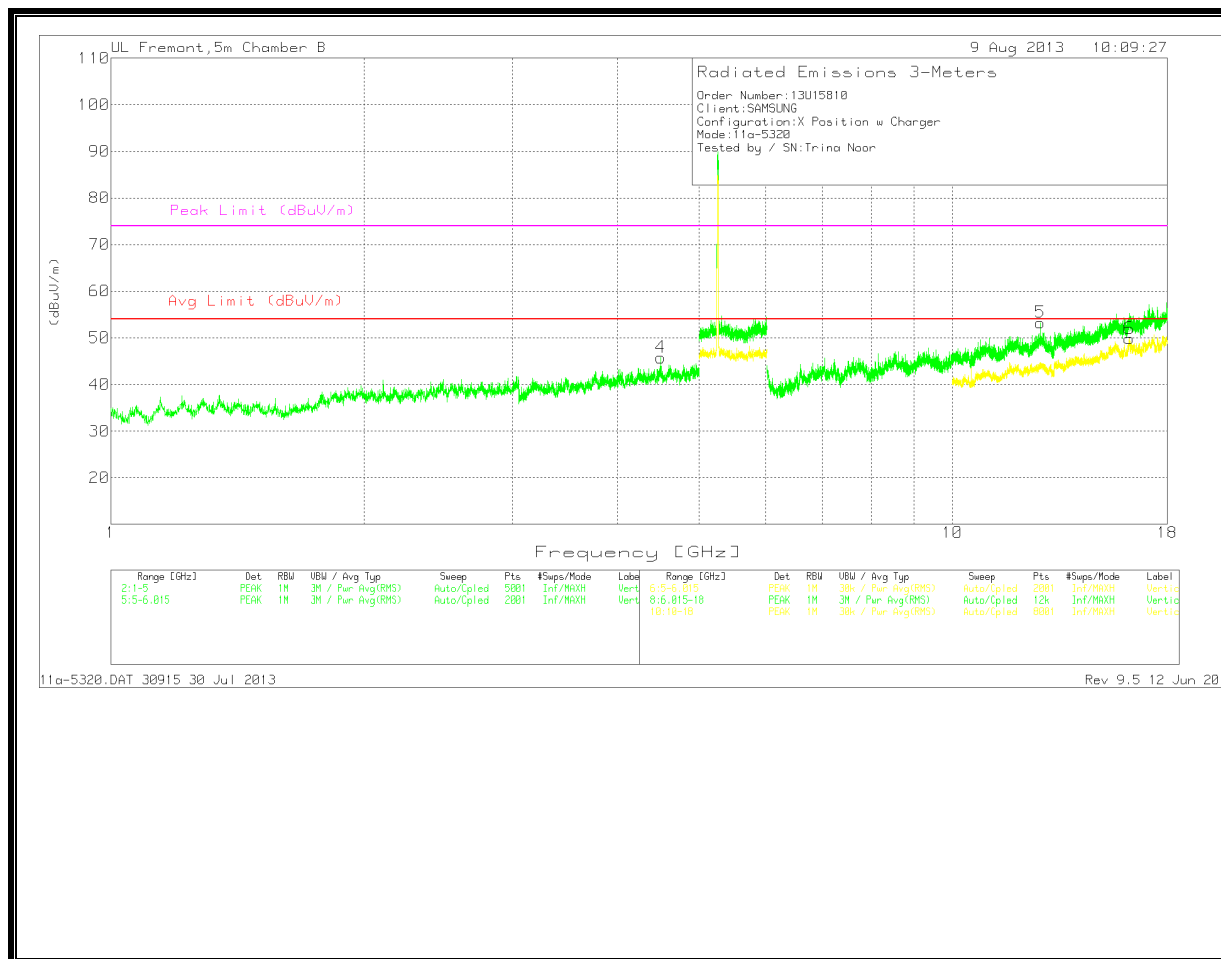
MID CHANNEL DATA

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
4.773	37.12	PK	33.9	-27	44.02	53.97	-9.95	74	-29.98	0-360	200	H
4.906	37.64	PK	34	-27.1	44.54	53.97	-9.43	74	-29.46	0-360	100	V
12.752	34.6	PK	39.1	-22.3	51.4	53.97	-2.57	74	-22.6	0-360	200	H
11.712	34.96	PK	38.5	-21.9	51.56	53.97	-2.41	74	-22.44	0-360	100	V
16.012	28.25	PK	40.4	-20	48.65	53.97	-5.32	74	-25.35	0-360	200	H
16.003	28.8	PK	40.4	-19.8	49.4	53.97	-4.57	74	-24.6	0-360	100	V

HIGH CHANNEL
HORIZONTAL



VERTICAL

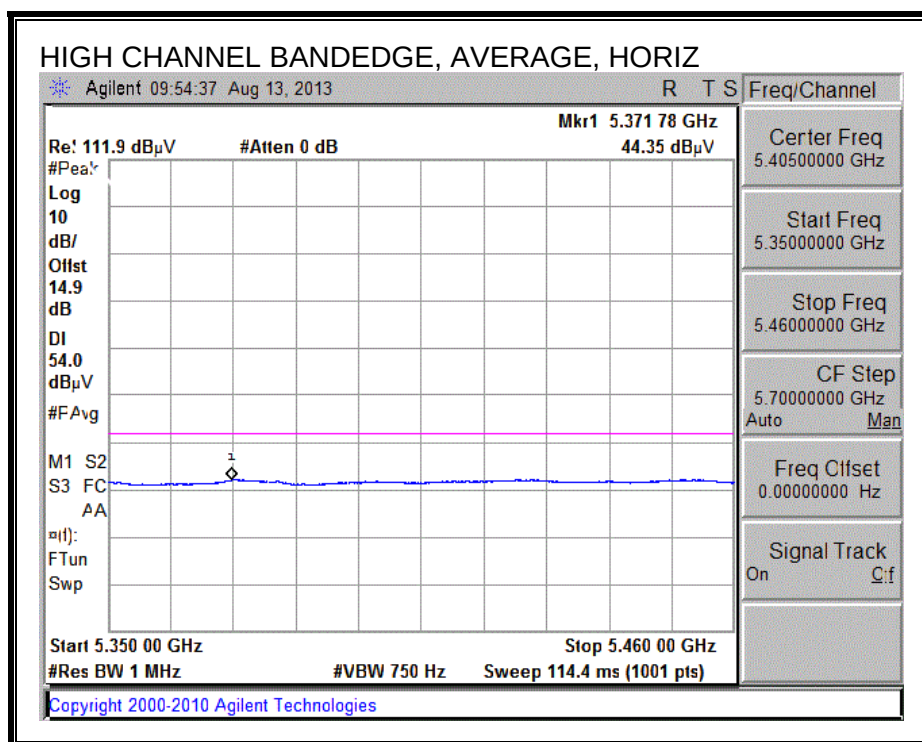
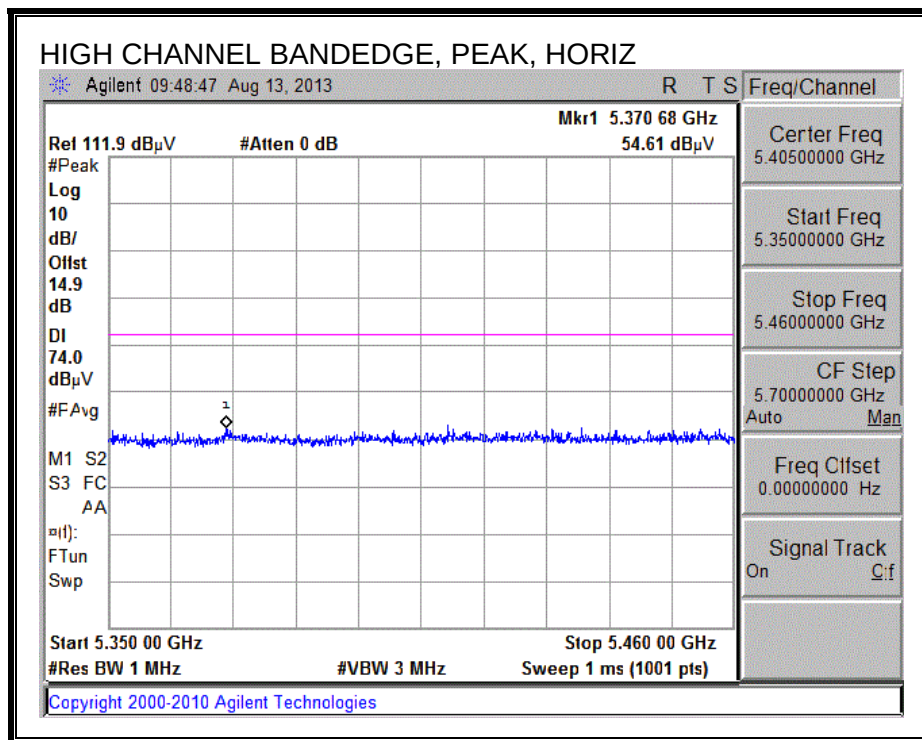


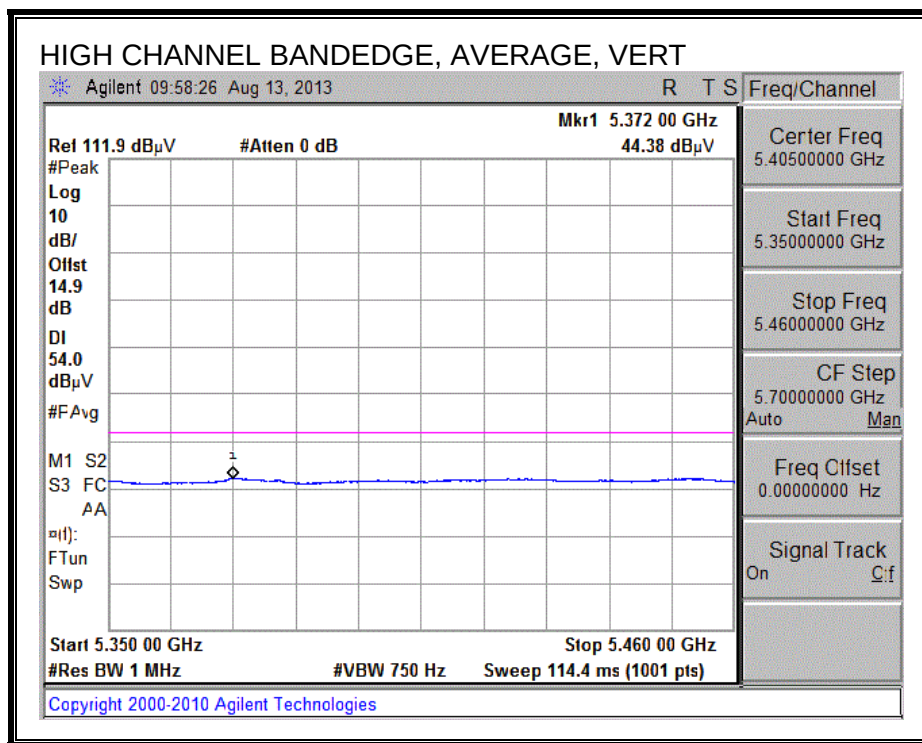
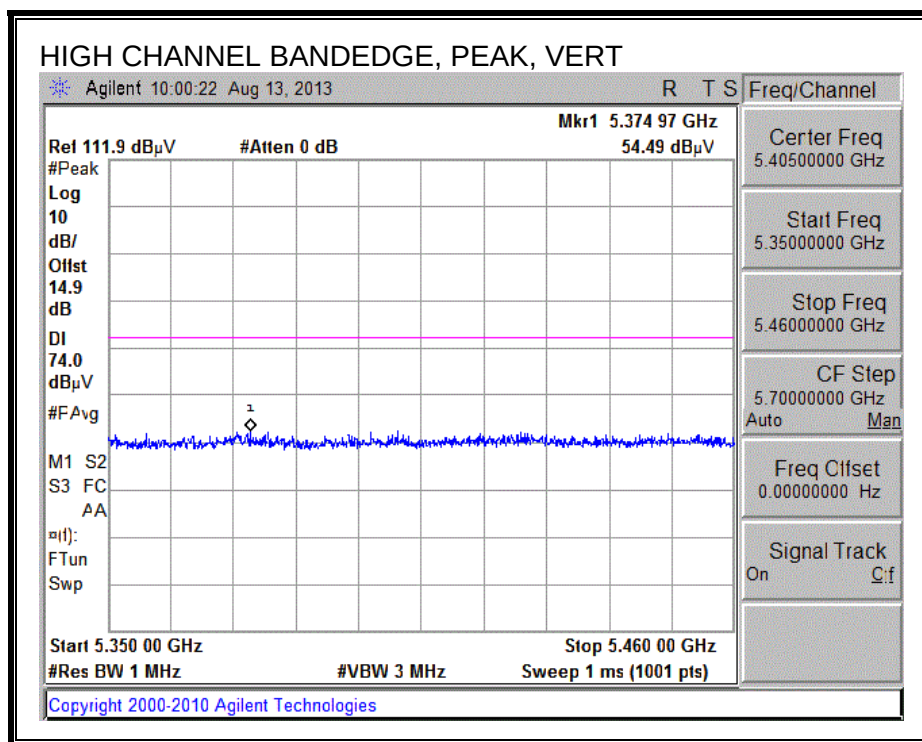
HIGH CHANNEL DATA

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
4.91	37.65	PK	34	-27.2	44.45	53.97	-9.52	74	-29.55	0-360	100	H
4.502	39.97	PK	33.8	-28	45.77	53.97	-8.2	74	-28.23	0-360	200	V
12.801	35.18	PK	39.1	-21.8	52.48	53.97	-1.49	74	-21.52	0-360	200	H
12.718	35.86	PK	39.2	-21.8	53.26	53.97	-.71	74	-20.74	0-360	200	V
16.237	28.12	PK	40.7	-19	49.82	53.97	-4.15	74	-24.18	0-360	200	H
16.224	28.43	PK	40.7	-19.3	49.83	53.97	-4.14	74	-24.17	0-360	100	V

PK - Peak detector

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

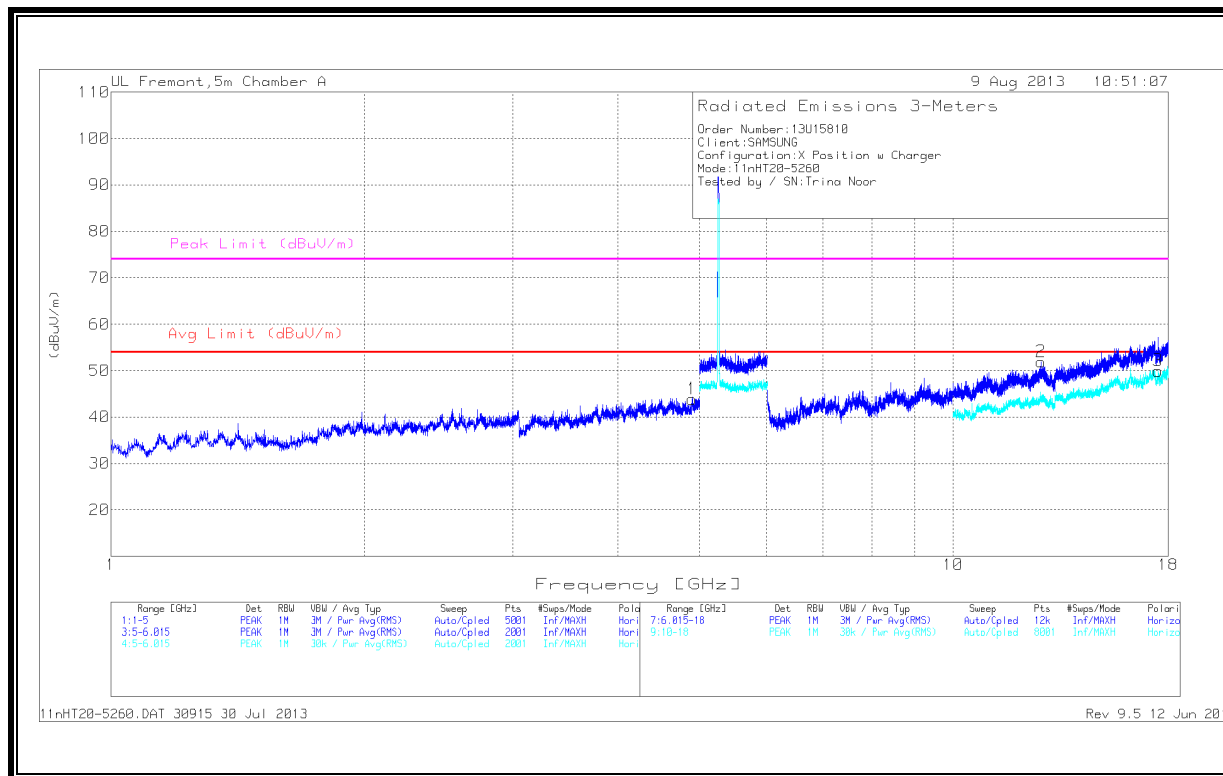




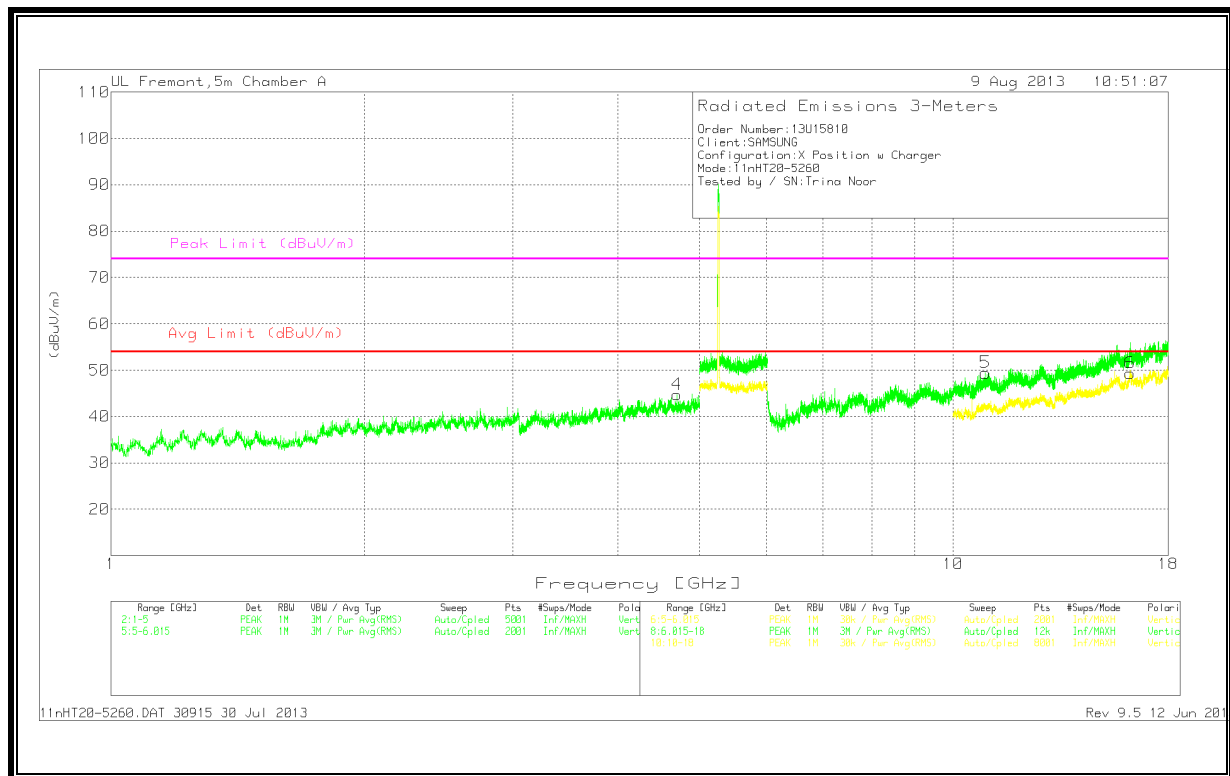
10.3.3.

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL
HORIZONTAL



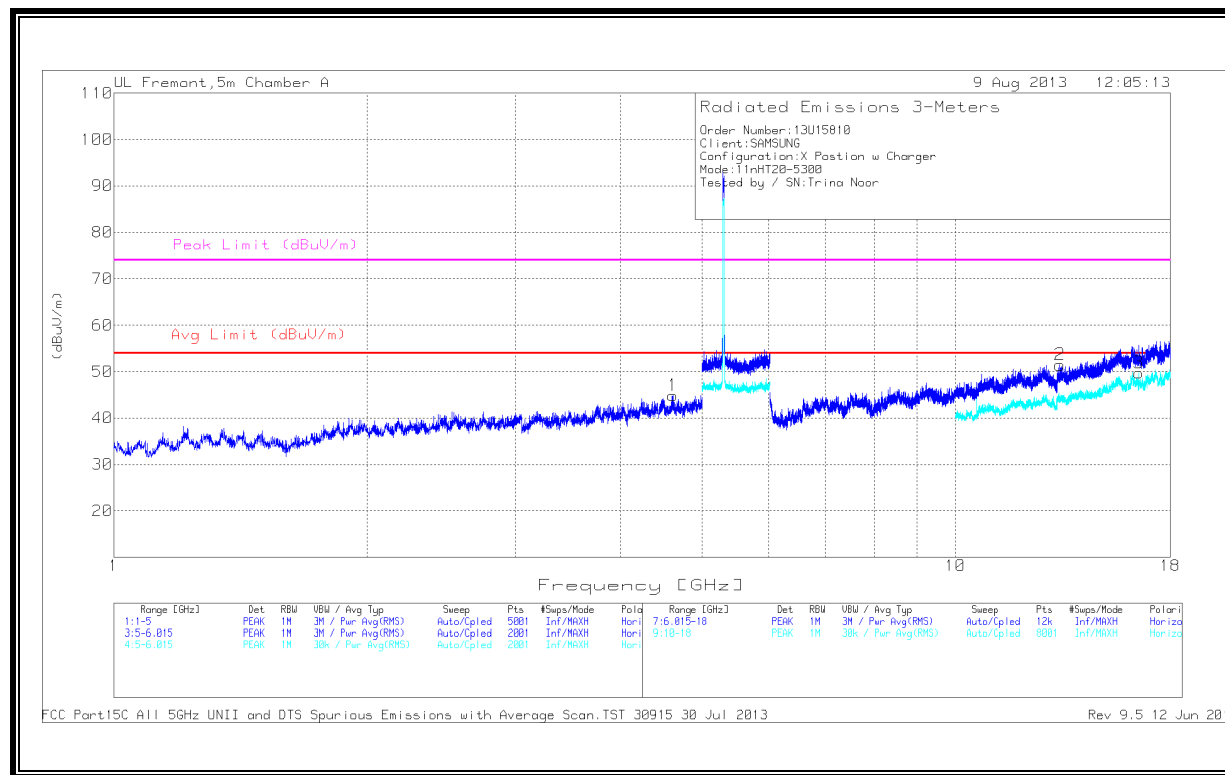
VERTICAL



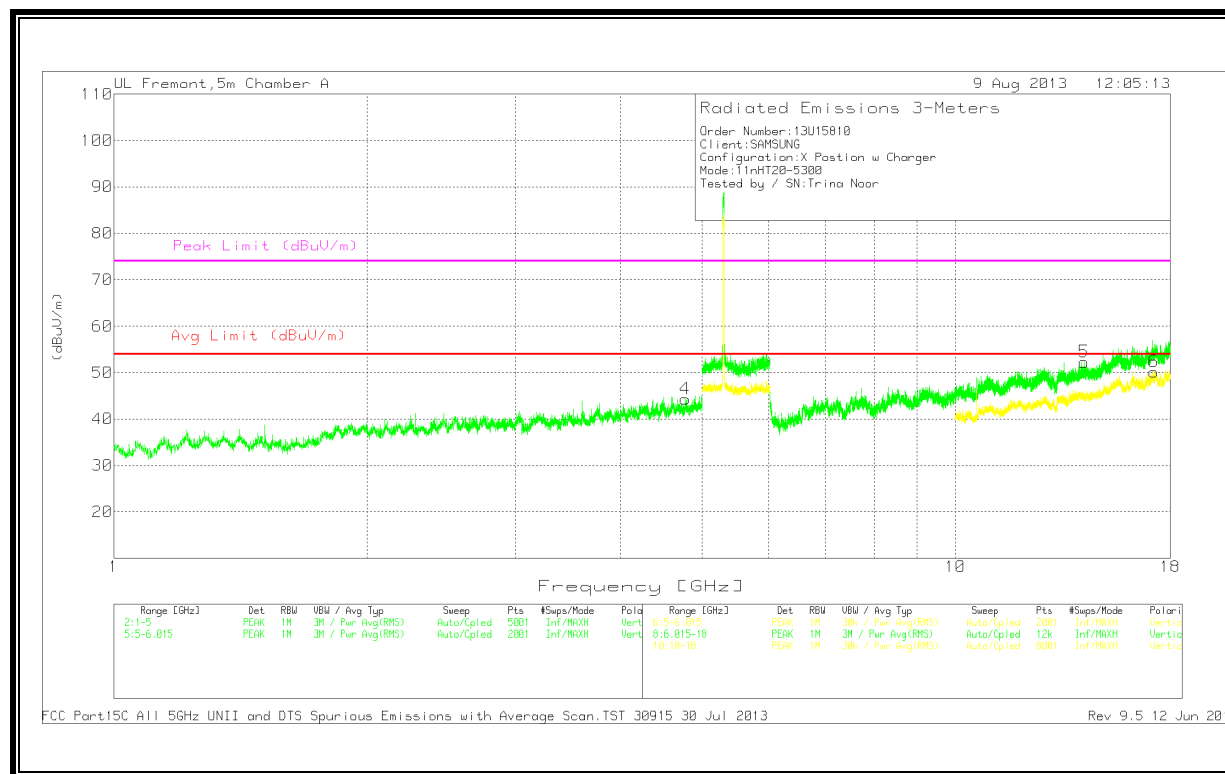
LOW CHANNEL DATA

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
4.898	36.97	PK	34	-27.1	43.87	53.97	-10.1	74	-30.13	0-360	200	H
4.7	39.14	PK	33.9	-28.3	44.74	53.97	-9.23	74	-29.26	0-360	100	V
12.718	34.52	PK	39.2	-21.8	51.92	53.97	-2.05	74	-22.08	0-360	200	H
10.919	34.01	PK	37.9	-22.5	49.41	53.97	-4.56	74	-24.59	0-360	200	V
17.508	26.68	PK	40.9	-17.6	49.98	53.97	-3.99	74	-24.02	0-360	100	H
16.223	27.98	PK	40.7	-19.3	49.38	53.97	-4.59	74	-24.62	0-360	200	V

MID CHANNEL
HORIZONTAL



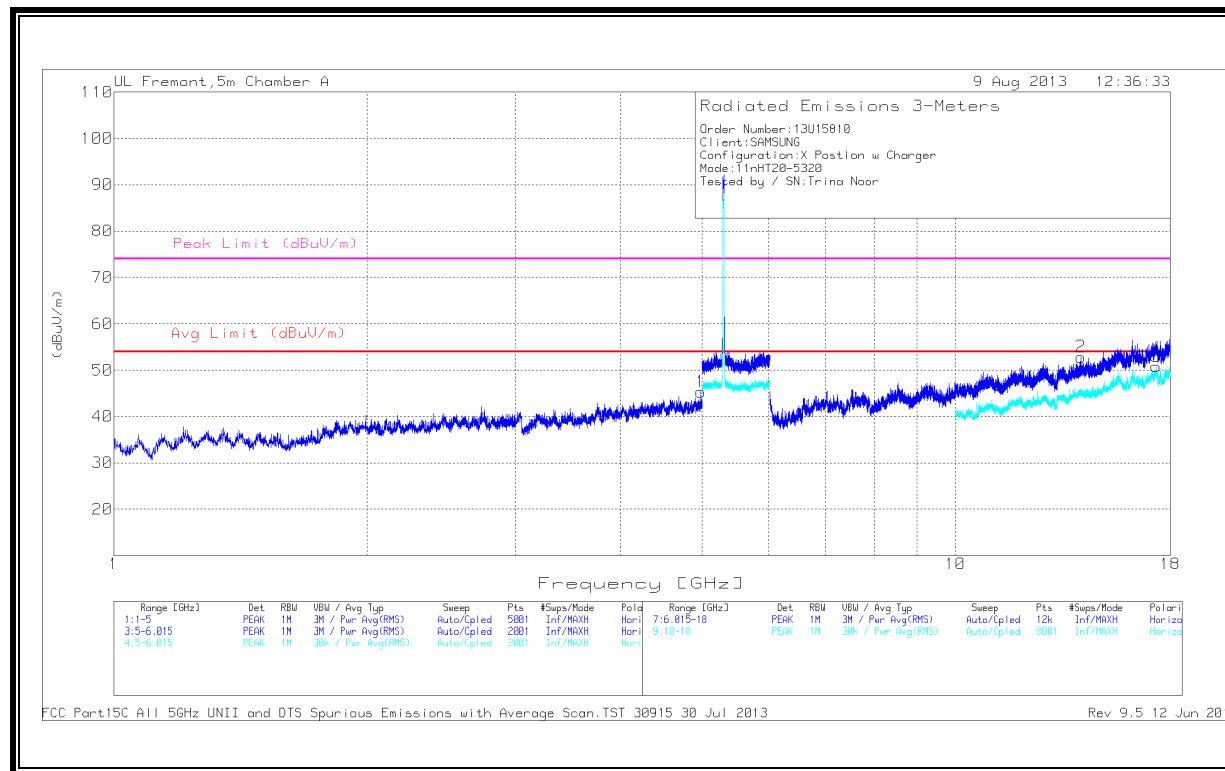
VERTICAL



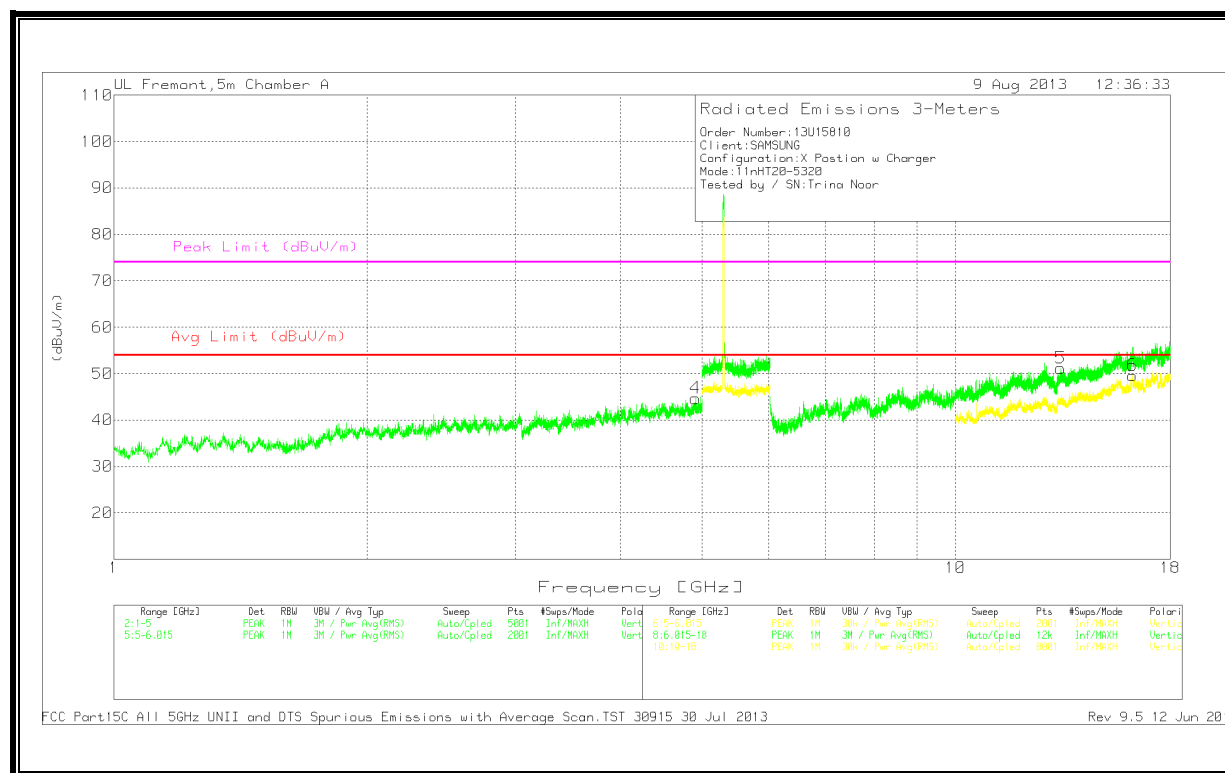
MID CHANNEL DATA

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
4.617	38.48	PK	33.9	-27.5	44.88	53.97	-9.09	74	-29.12	0-360	200	H
4.775	37.31	PK	33.9	-26.9	44.31	53.97	-9.66	74	-29.69	0-360	200	V
13.307	34.94	PK	39.2	-22.7	51.44	53.97	-2.53	74	-22.56	0-360	100	H
14.223	35.66	PK	39.4	-22.8	52.26	53.97	-1.71	74	-21.74	0-360	100	V
16.508	29.63	PK	40.7	-20.6	49.73	53.97	-4.24	74	-24.27	0-360	100	H
17.215	29.68	PK	40.9	-20.4	50.18	53.97	-3.79	74	-23.82	0-360	200	V

HIGH CHANNEL
HORIZONTAL



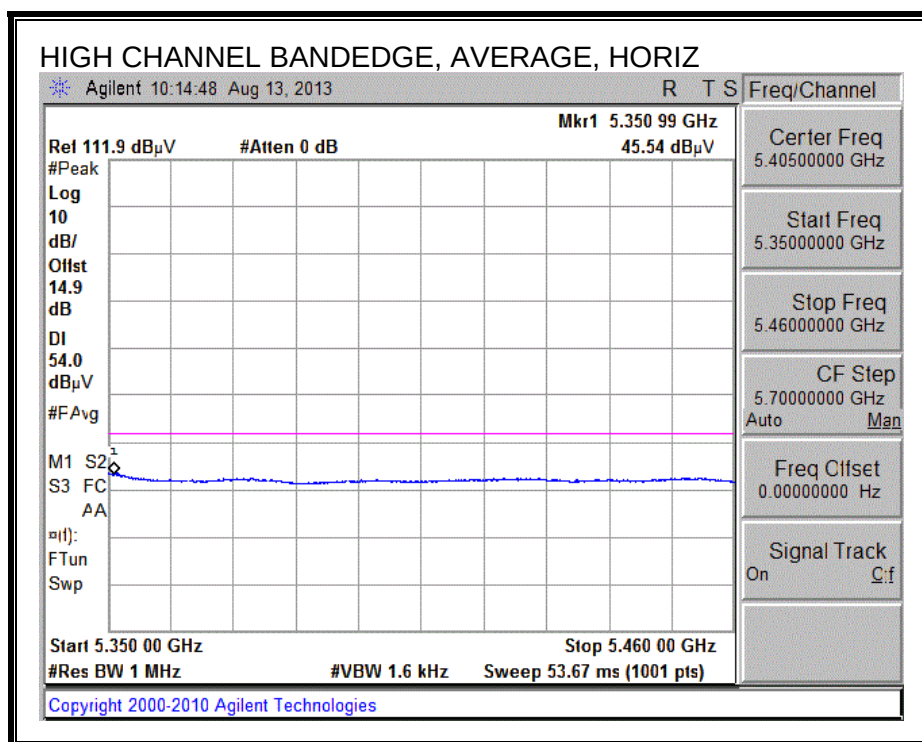
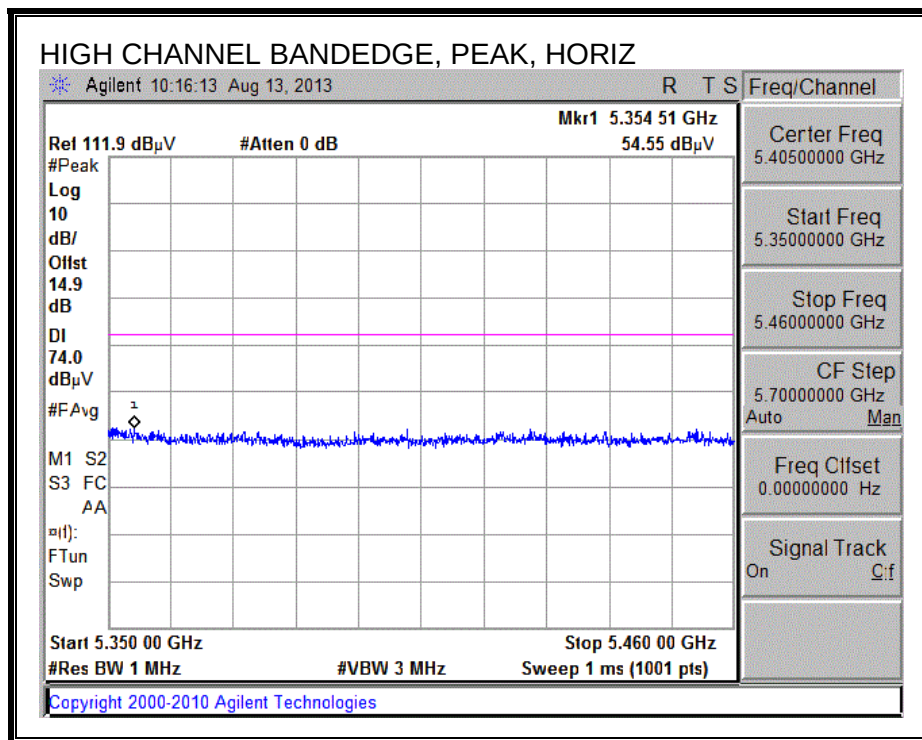
VERTICAL

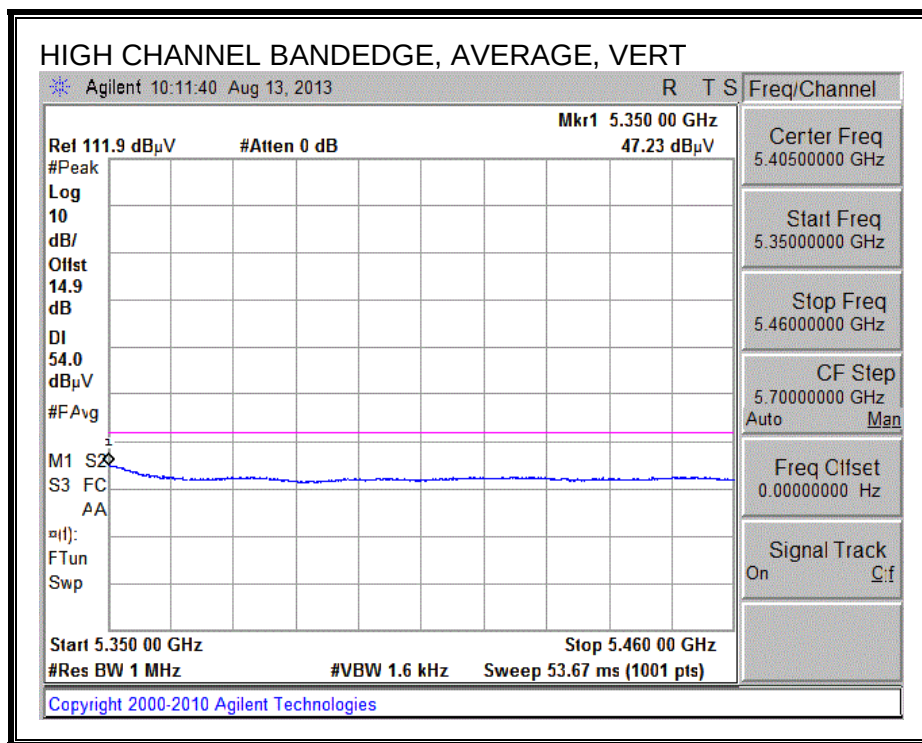
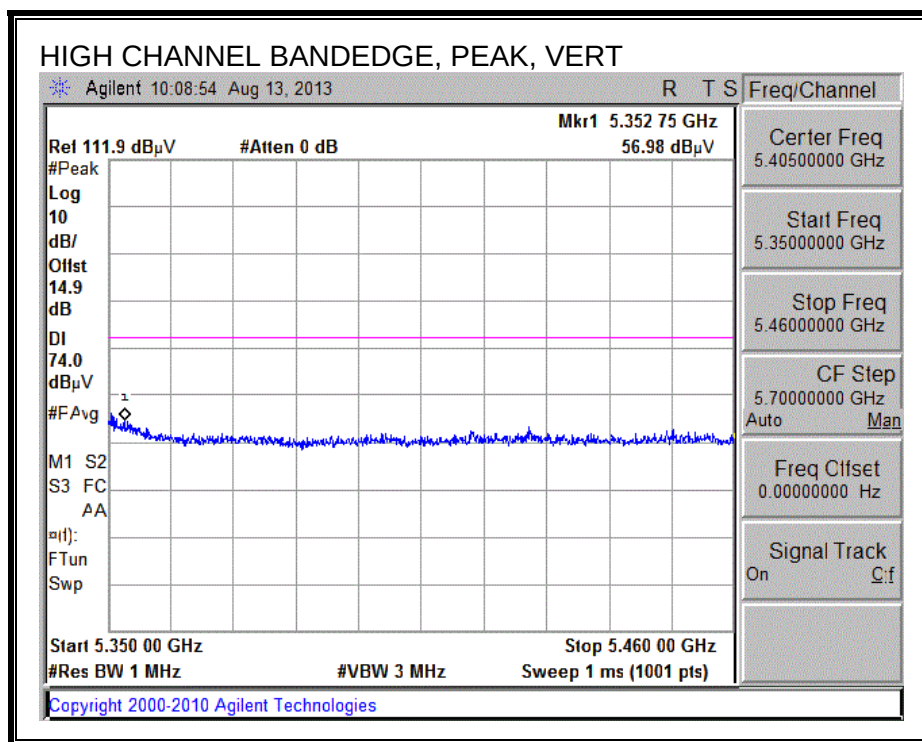


HIGH CHANNEL DATA

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
4.98	38.84	PK	33.9	-27.4	45.34	53.97	-8.63	74	-28.66	0-360	200	H
4.91	37.88	PK	34	-27.2	44.68	53.97	-9.29	74	-29.32	0-360	100	V
14.096	36.12	PK	39.2	-22.5	52.82	53.97	-1.15	74	-21.18	0-360	200	H
13.333	34.66	PK	39.2	-22.7	51.16	53.97	-2.81	74	-22.84	0-360	100	V
17.319	29.8	PK	41	-20	50.8	53.97	-3.17	74	-23.2	0-360	200	H
16.229	28.03	PK	40.7	-19.1	49.63	53.97	-4.34	74	-24.37	0-360	100	V

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

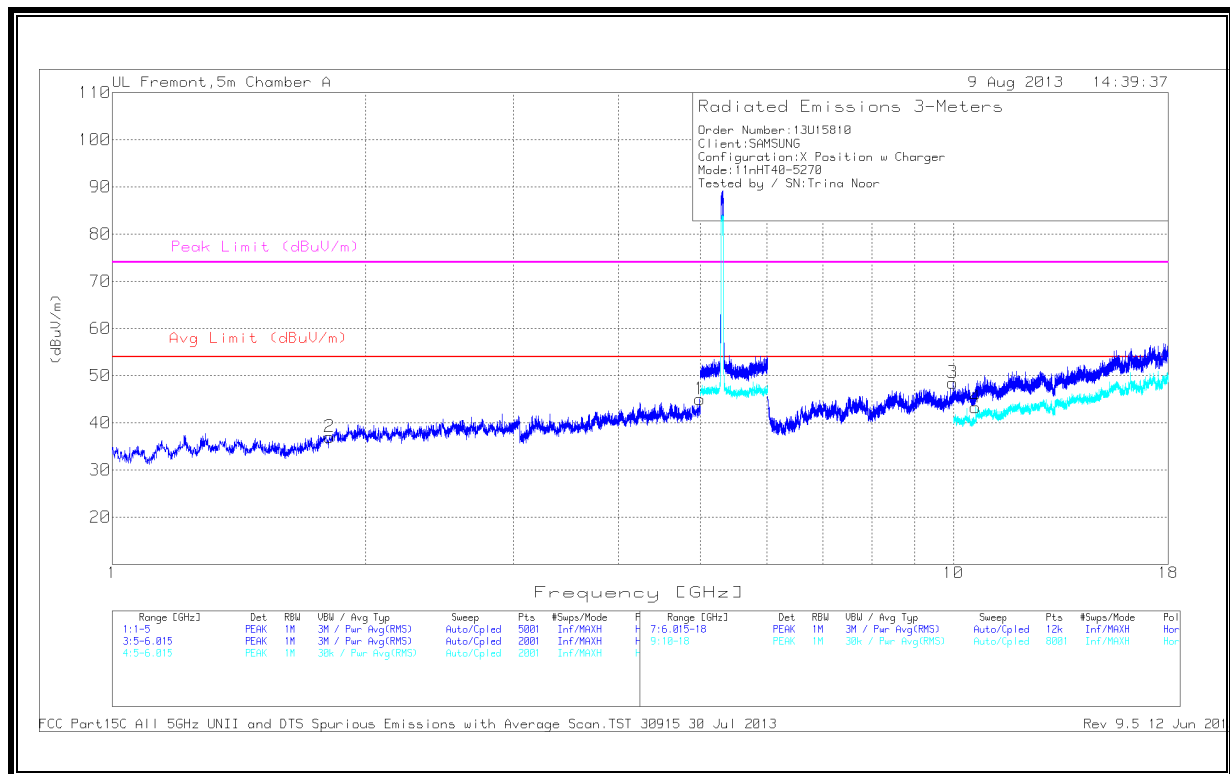




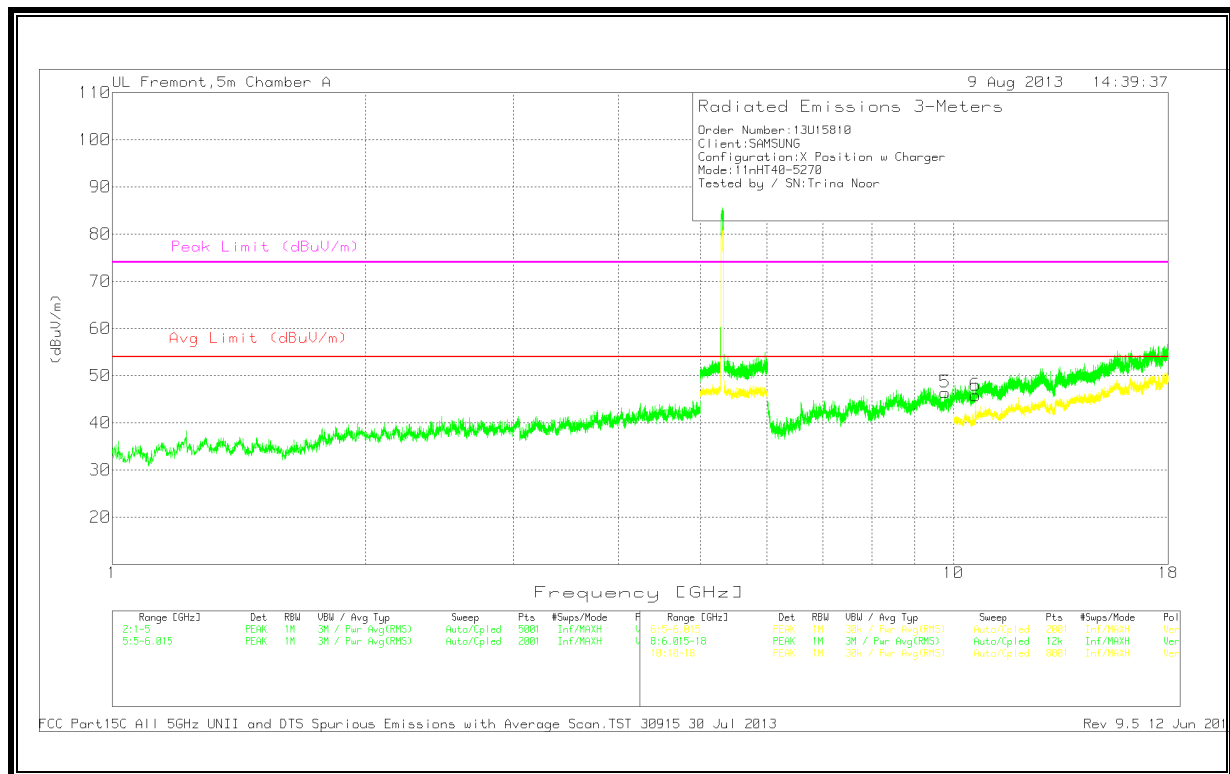
10.3.5.

HARMONICS AND SPURIOUS EMISSIONS

**LOW CHANNEL
HORIZONTAL**



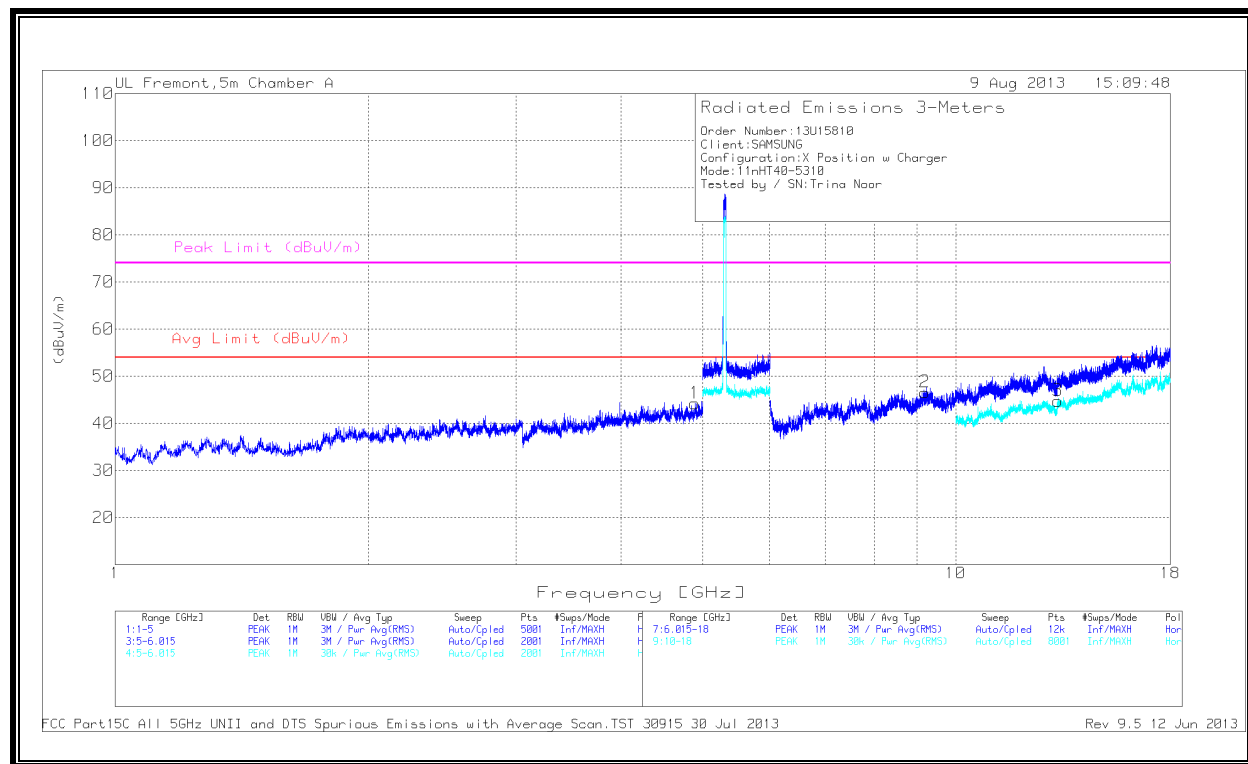
VERTICAL



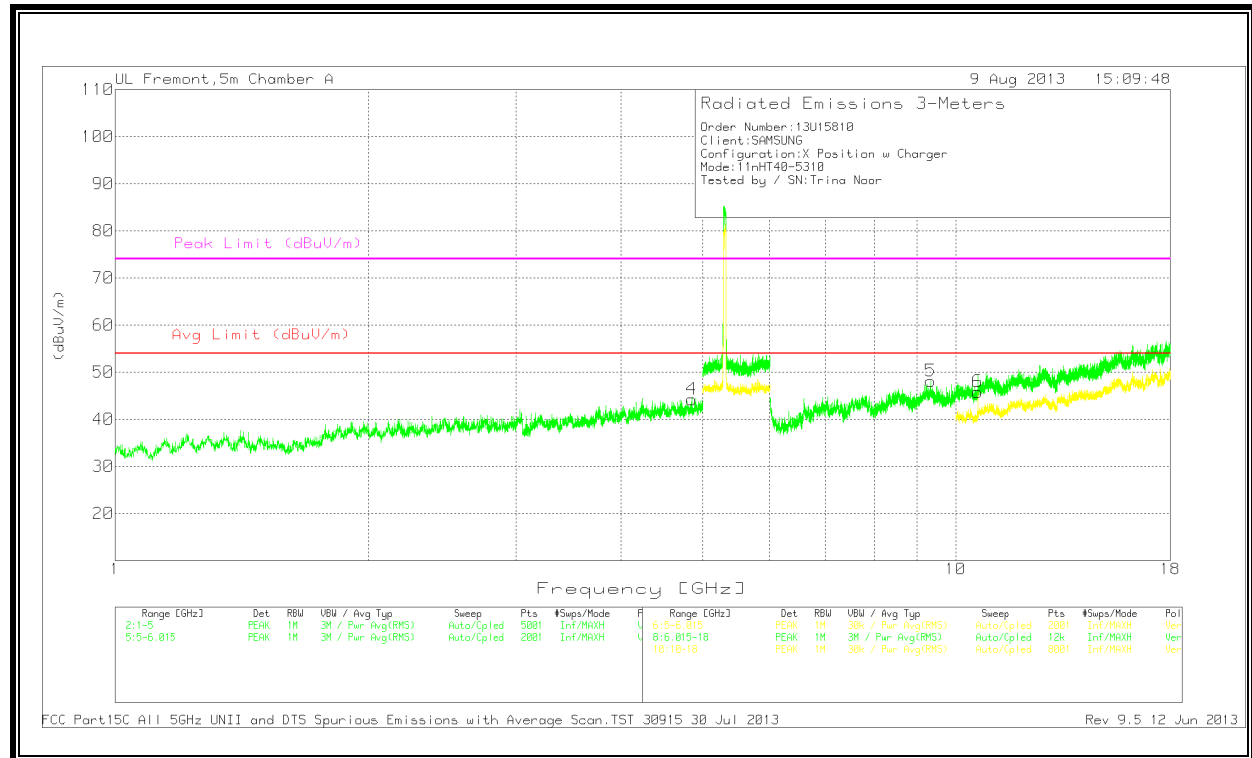
LOW CHANNEL DATA

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
4.994	38.08	PK	33.9	-27	44.98	53.97	-8.99	74	-29.02	0-360	200	H
1.814	39.6	PK	30.7	-33.3	37	53.97	-16.97	74	-37	0-360	200	H
9.986	34.67	PK	37.2	-23.4	48.47	53.97	-5.5	74	-25.53	0-360	200	H
9.781	32.81	PK	36.9	-23.3	46.41	53.97	-7.56	74	-27.59	0-360	100	V
10.62	27.86	PK	37.8	-22.4	43.26	53.97	-10.71	74	-30.74	0-360	100	H
10.62	30.39	PK	37.8	-22.4	45.79	53.97	-8.18	74	-28.21	0-360	100	V

HIGH CHANNEL
HORIZONTAL



VERTICAL

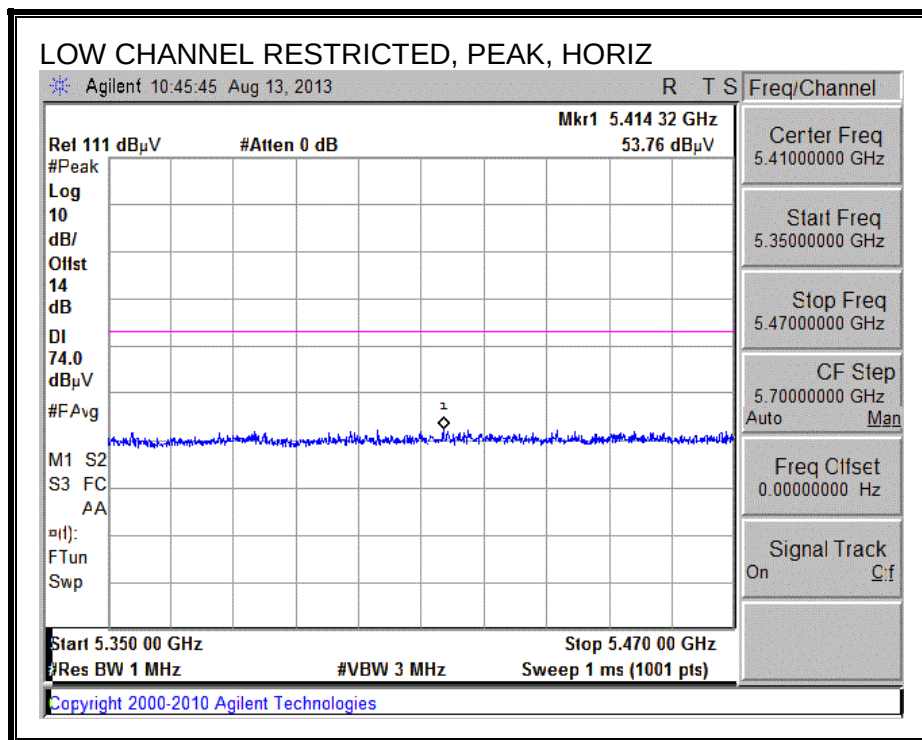


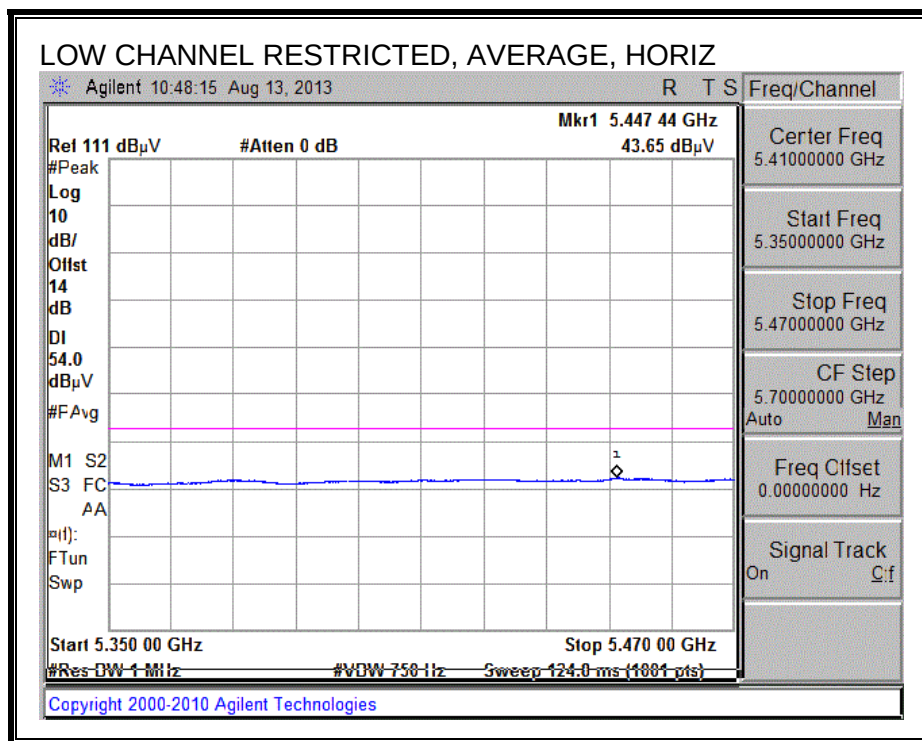
HIGH CHANNEL DATA

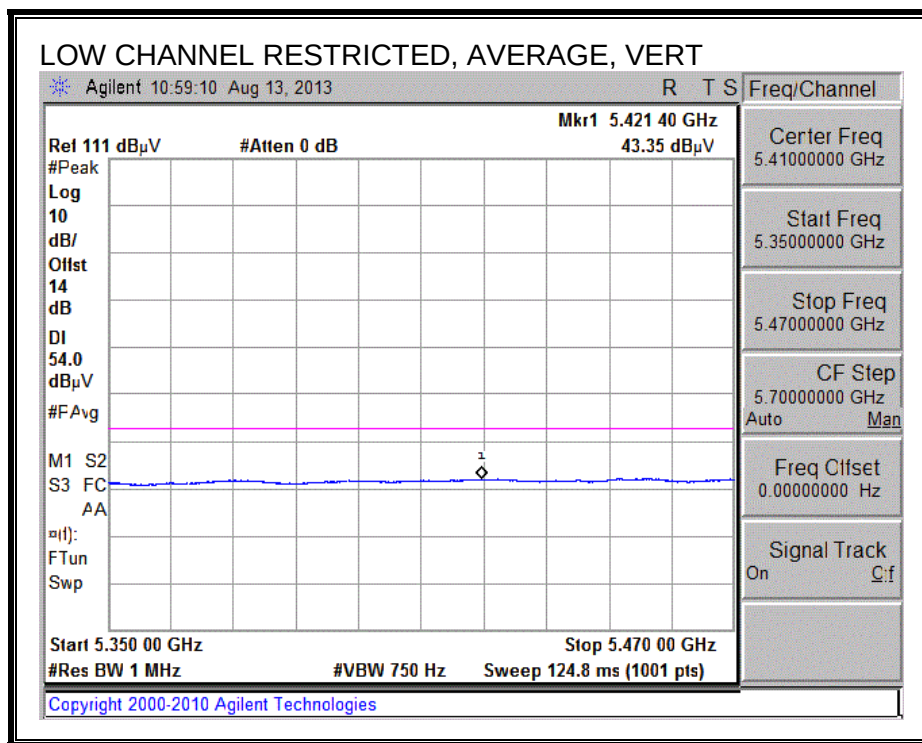
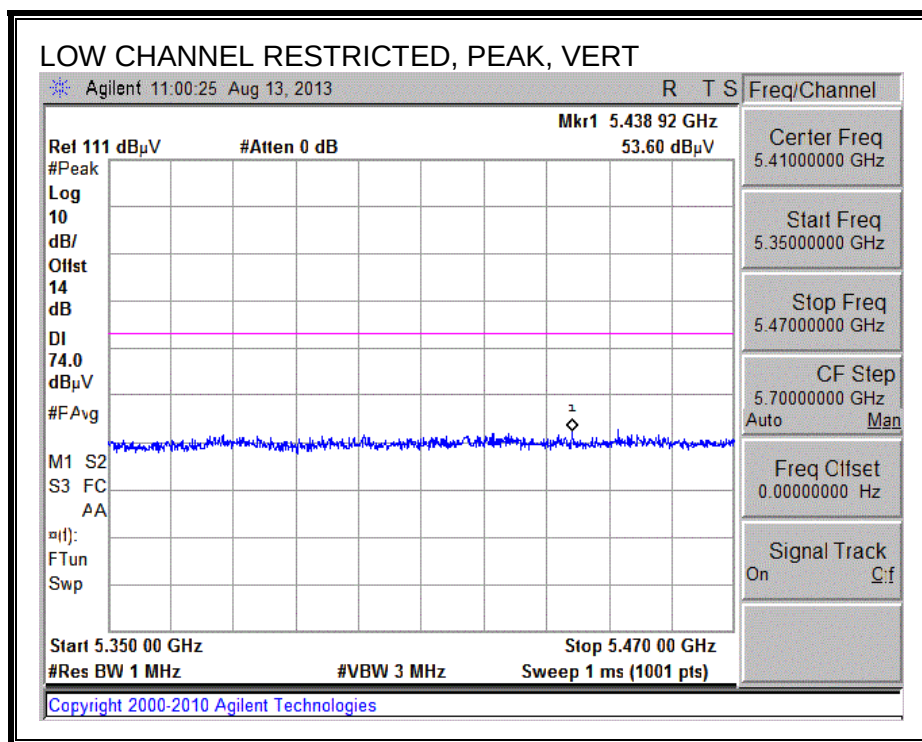
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4.895	37.28	PK	34	-27.1	44.18	53.97	-9.79	74	-29.82	0-360	200	H
4.854	37.83	PK	34	-27.6	44.23	53.97	-9.74	74	-29.77	0-360	200	V
9.188	35.04	PK	36.1	-24.6	46.54	53.97	-7.43	74	-27.46	0-360	200	H
9.338	36.5	PK	36.3	-24.7	48.1	53.97	-5.87	74	-25.9	0-360	200	V
13.223	28.44	PK	39.1	-22.8	44.74	53.97	-9.23	74	-29.26	0-360	200	H
10.62	30.37	PK	37.8	-22.4	45.77	53.97	-8.2	74	-28.23	0-360	100	V

10.4. 5.5GHz

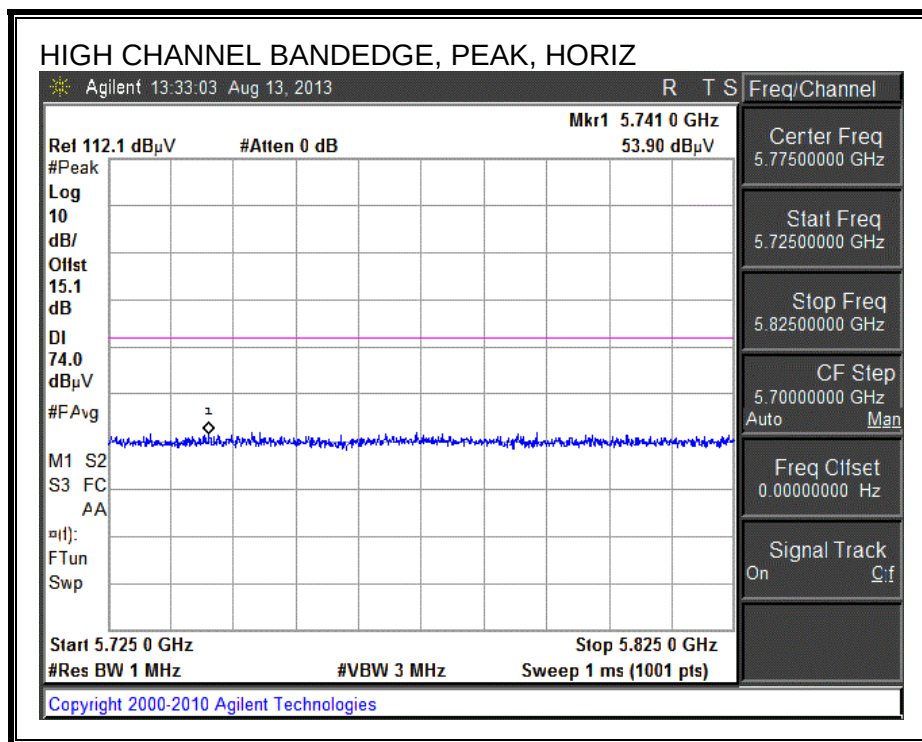
10.4.1. TX ABOVE 1 GHz 802.11a MODE IN THE 5.5 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

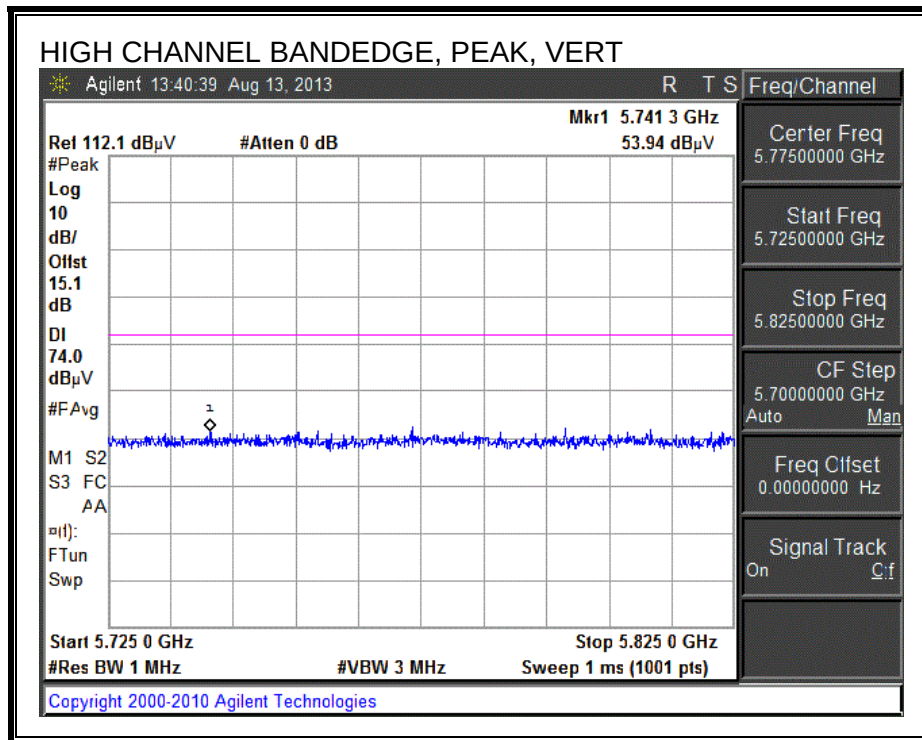
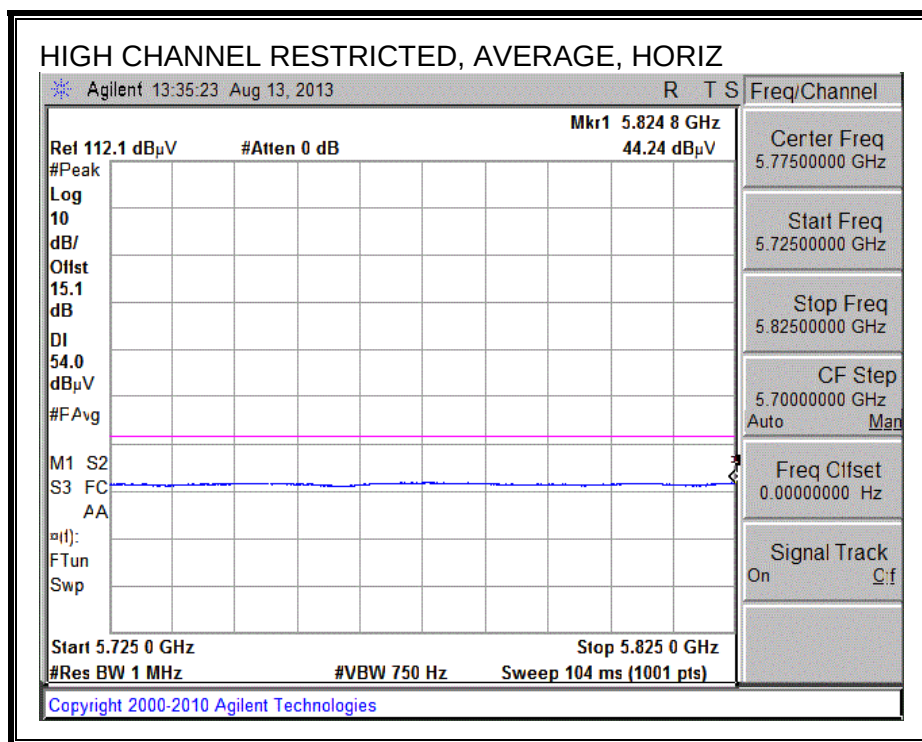


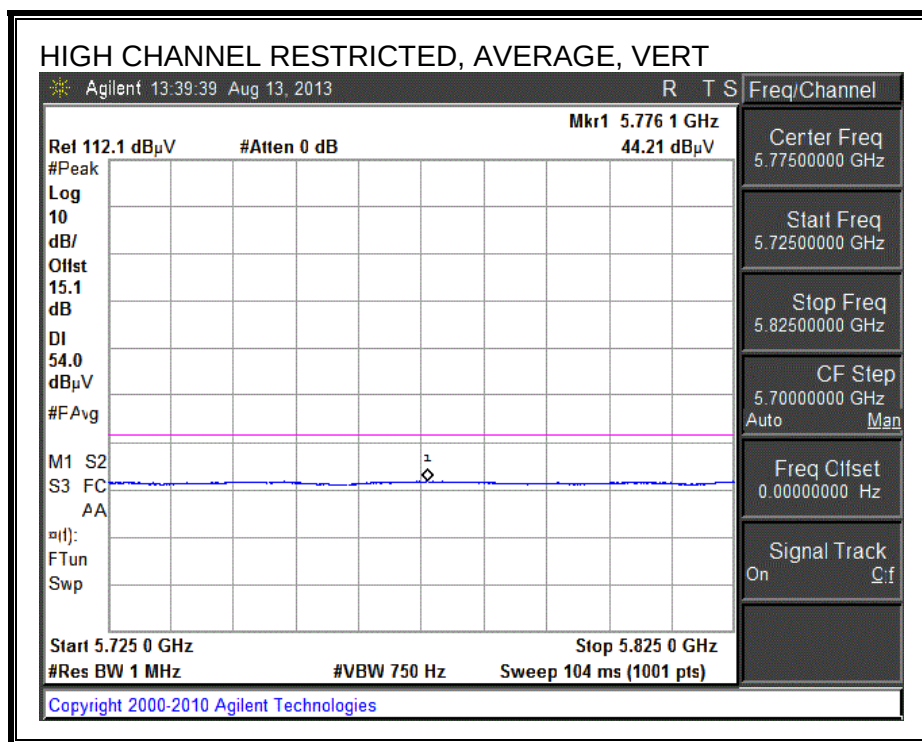




AUTHORIZED BANDEDGE (HIGH CHANNEL)



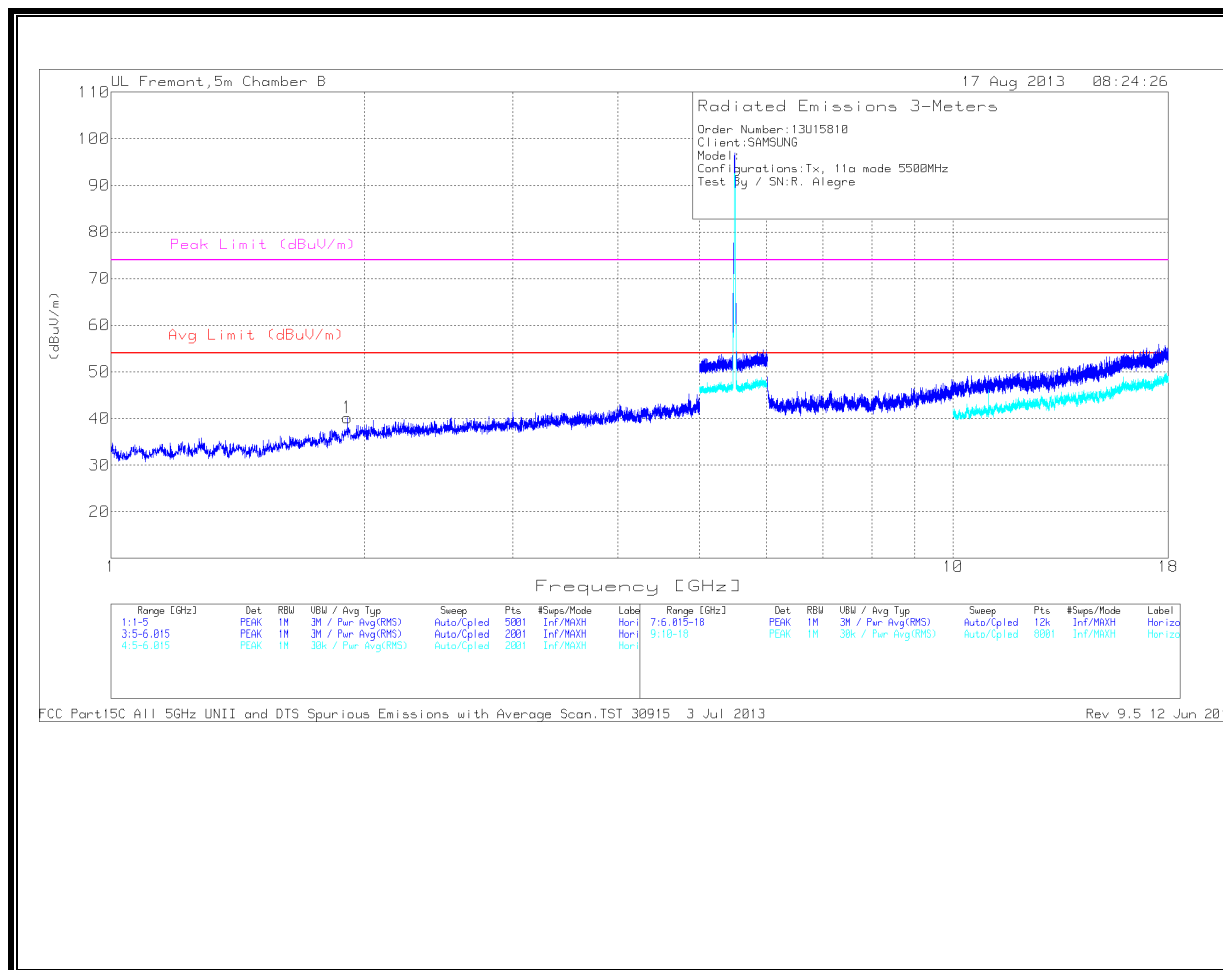




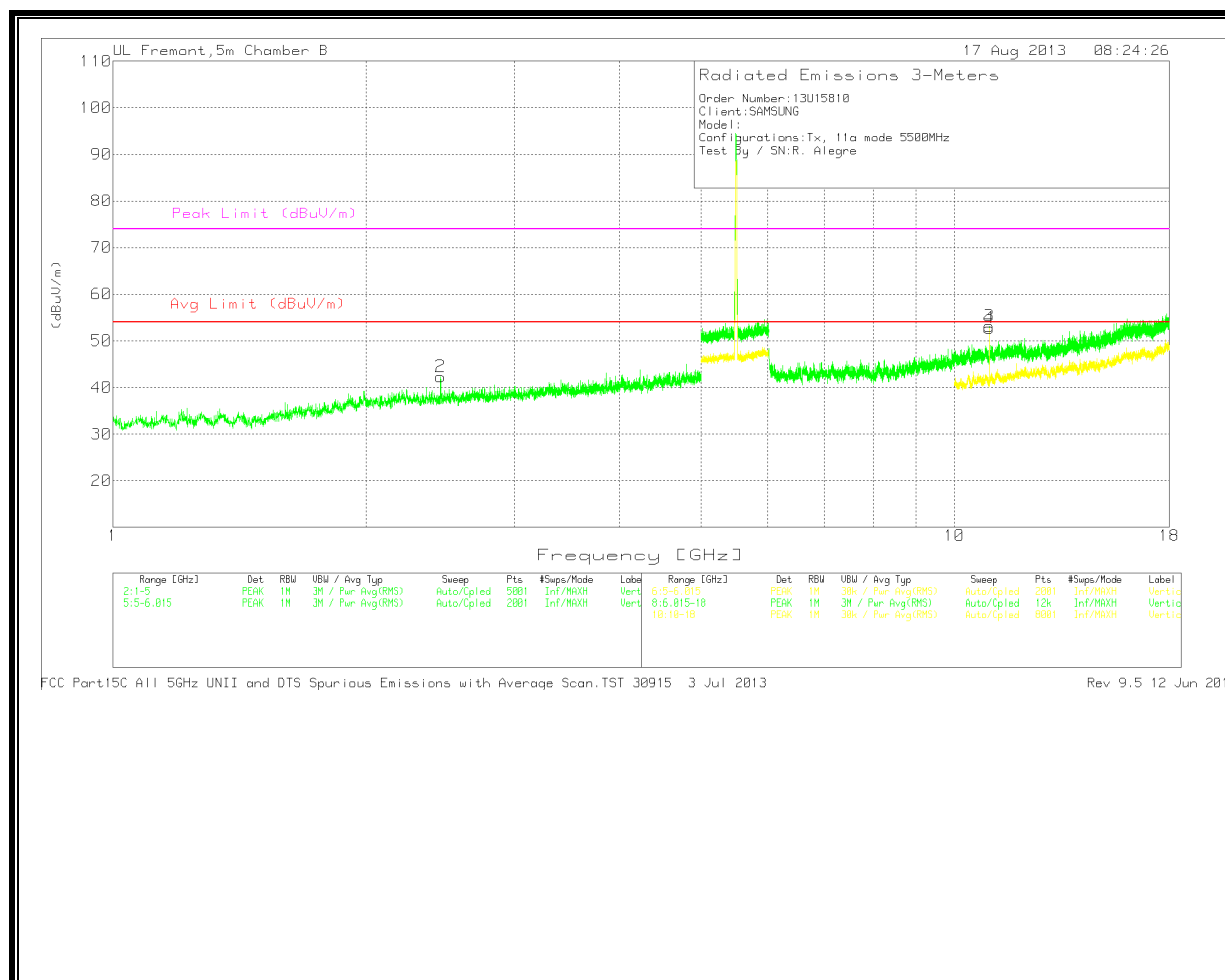
10.4.1.

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



VERTICAL



LOW CHANNEL DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
1.908	42.24	PK	31.2	-33.3	40.14	53.97	-13.83	74	-33.86	0-360	200	H
2.45	43.01	PK	32.4	-33.1	42.31	53.97	-11.66	74	-31.69	0-360	100	V
10.999	38.25	PK	38.3	-23.4	53.15	53.97	-.82	74	-20.85	0-360	100	V
11	37.83	PK	38.3	-23.4	52.73	53.97	-1.24	74	-21.27	0-360	100	V

PK - Peak detector

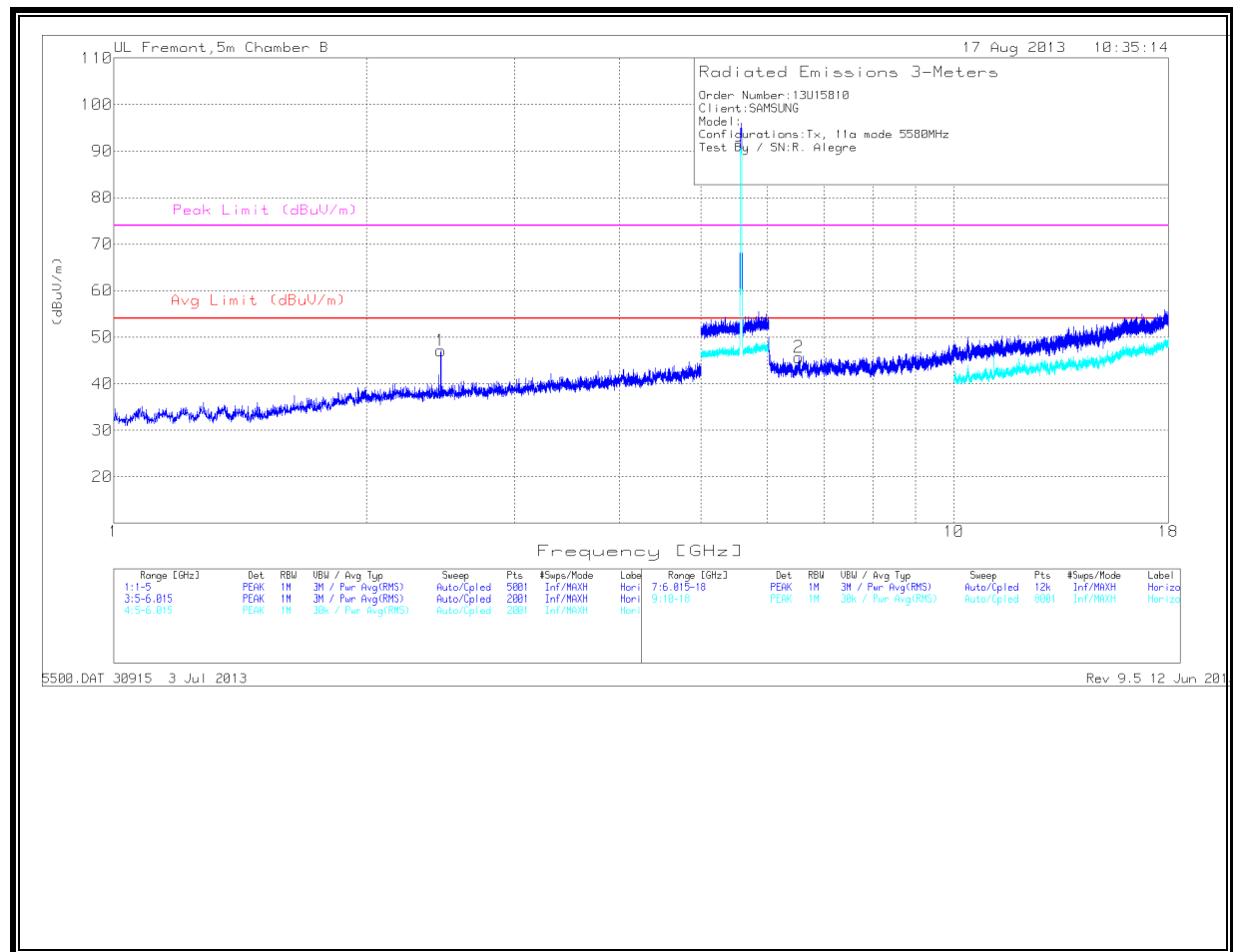
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	36.29	AD1	38.3	-23.4	51.19	53.97	-2.78	74	-22.81	197	110	V

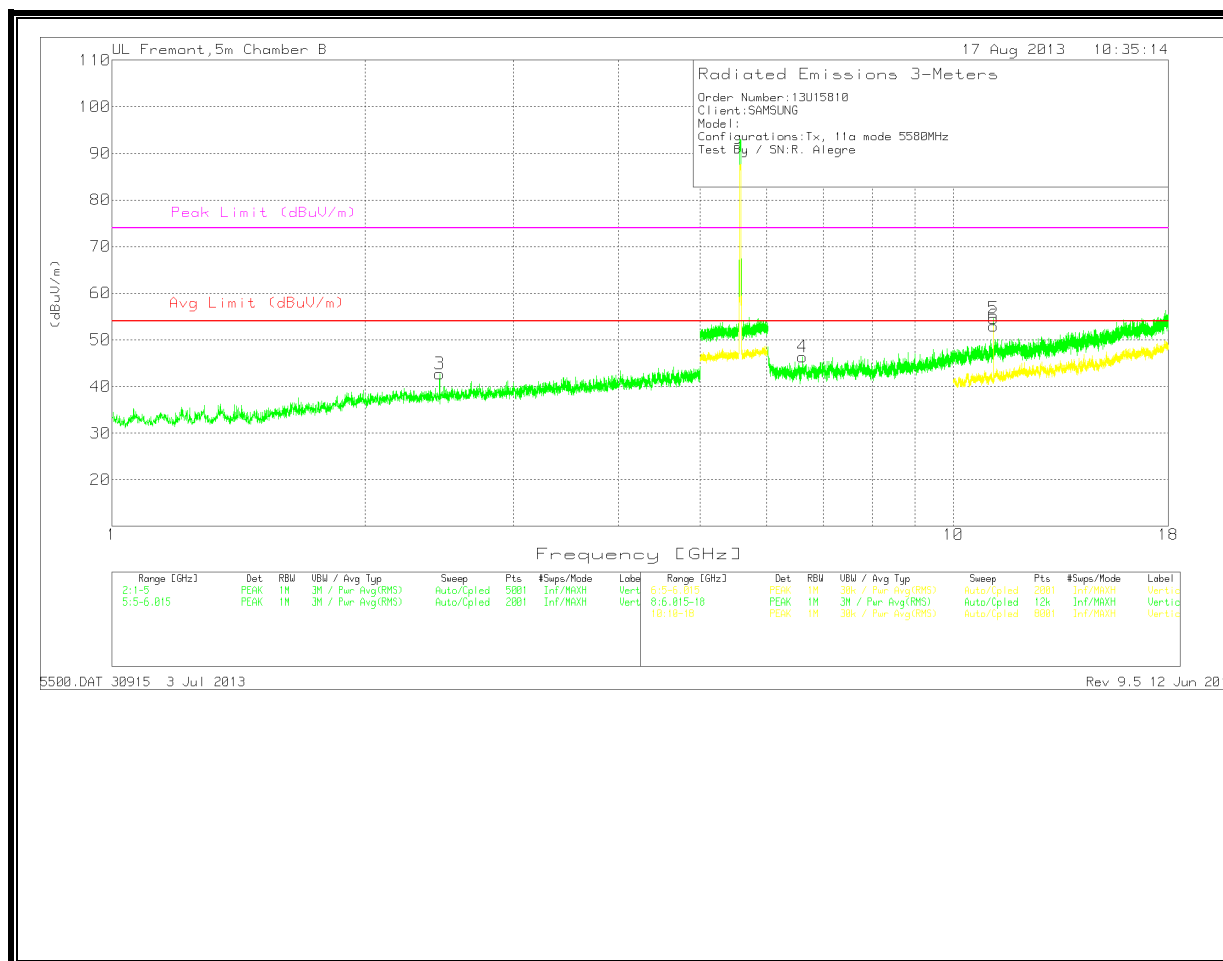
AD1 - KDB 789033 v01r02 Method: AD Primary Power Average

FCC Part15C All 5GHz UNII and DTS Spurious Emissions with Average Scan.TST 30915 3 Jul 2013 Rev 9.5
12 Jun 2013

MID CHANNEL
HORIZONTAL



VERTICAL



MID CHANNEL DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
2.451	47.79	PK	32.4	-33.1	47.09	53.97	-6.88	74	-26.91	0-360	200	H
2.451	43.39	PK	32.4	-33.1	42.69	53.97	-11.28	74	-31.31	0-360	100	V
6.538	37.61	PK	35.9	-27.9	45.61	53.97	-8.36	74	-28.39	0-360	200	H
6.613	38.33	PK	35.9	-27.9	46.33	53.97	-7.64	74	-27.67	0-360	200	V
11.159	39.53	PK	38.4	-23.3	54.63	53.97	.66	74	-19.37	0-360	100	V
11.16	37.87	PK	38.4	-23.3	52.97	53.97	-1	74	-21.03	0-360	100	V

PK - Peak detector

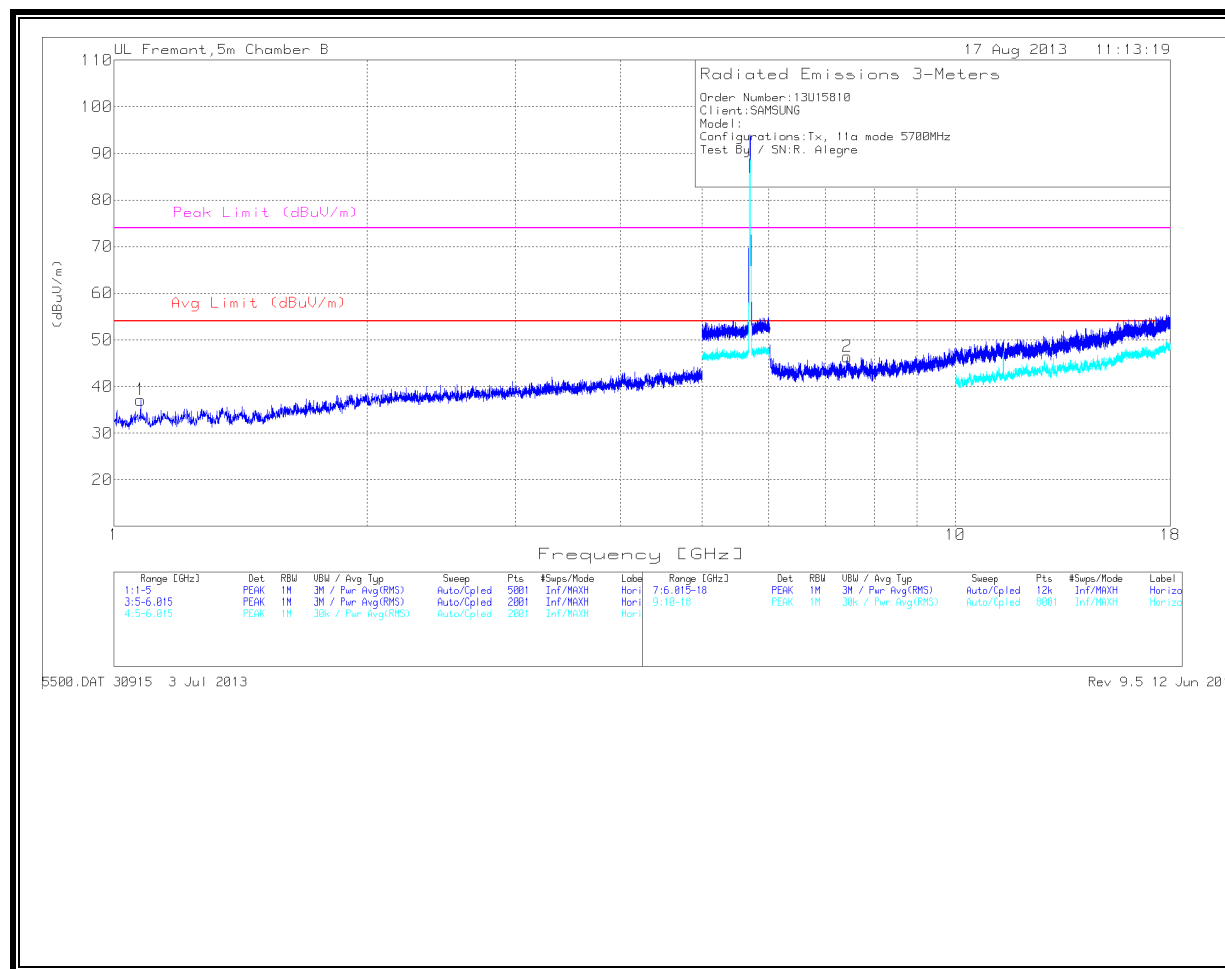
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
11.16	27.1	AD1	38.4	-23.3	42.2	53.97	-11.77	74	-31.8	306	205	V

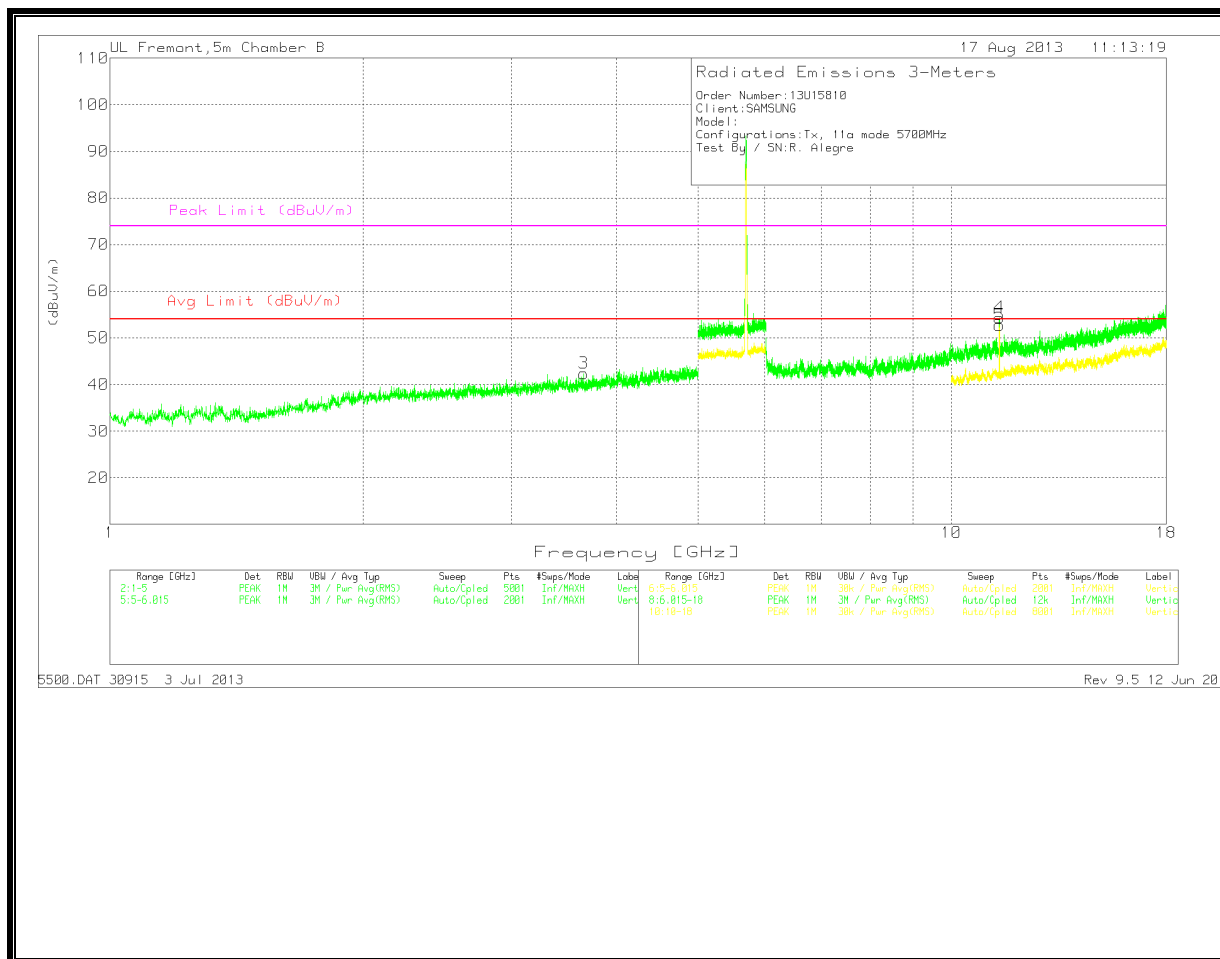
AD1 - KDB 789033 v01r02 Method: AD Primary Power Average

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HIGH CHANNEL
HORIZONTAL



VERTICAL



HIGH CHANNEL DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
1.076	44.52	PK	27.8	-35.2	37.12	53.97	-16.85	74	-36.88	0-360	200	H
3.658	40.36	PK	33.6	-31.6	42.36	53.97	-11.61	74	-31.64	0-360	100	V
7.44	37.11	PK	36	-26.7	46.41	53.97	-7.56	74	-27.59	0-360	100	H
11.4	38.88	PK	38.6	-23.2	54.28	53.97	.31	74	-19.72	0-360	100	V
11.4	37.36	PK	38.6	-23.2	52.76	53.97	-1.21	74	-21.24	0-360	100	V

PK - Peak detector

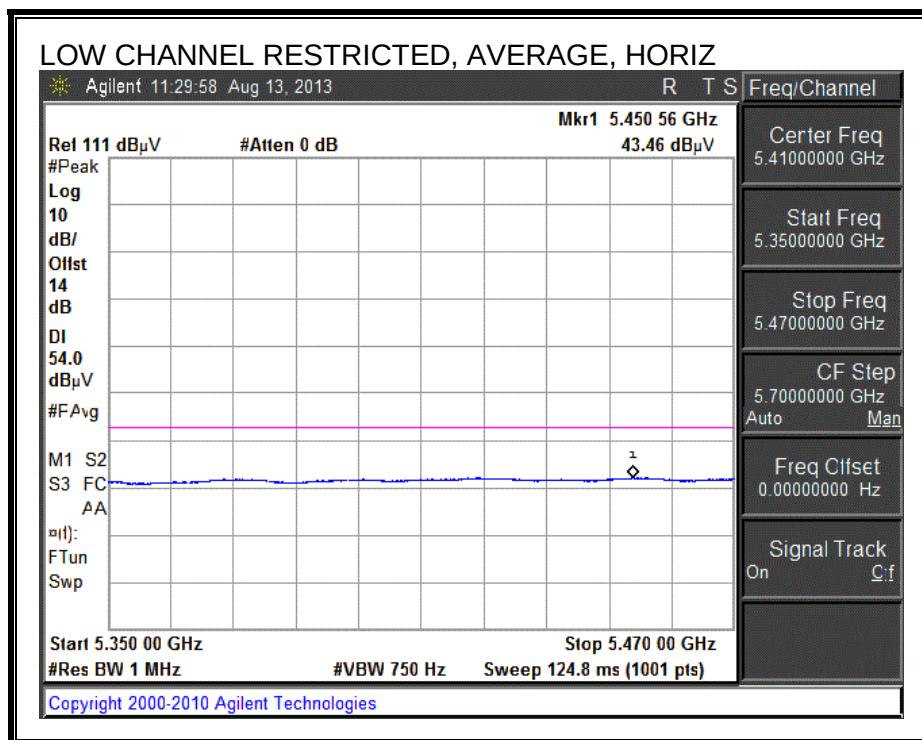
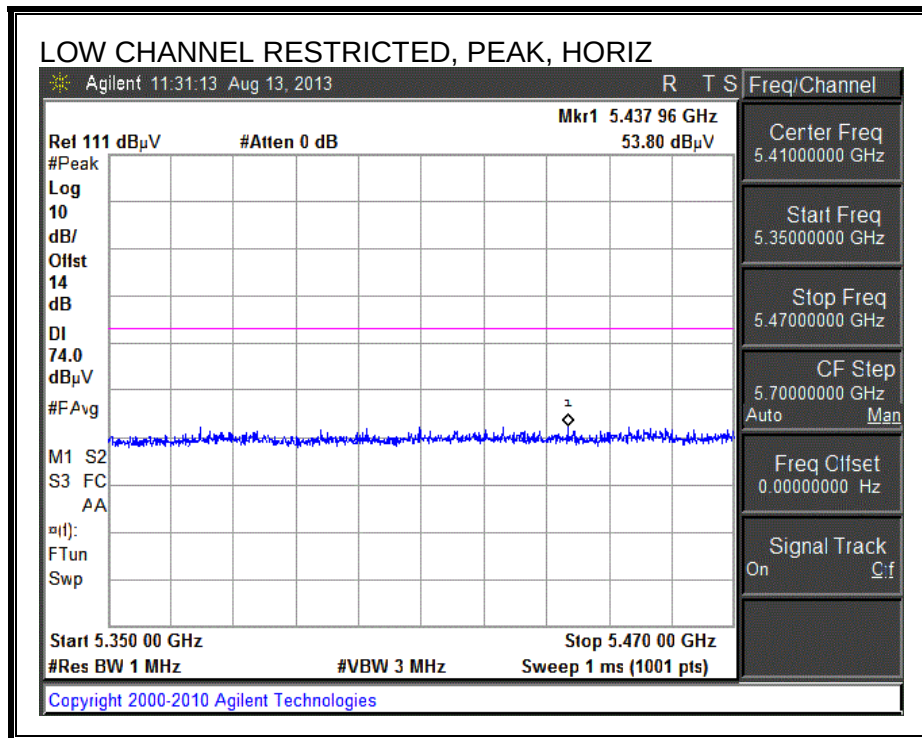
Radiated Emissions

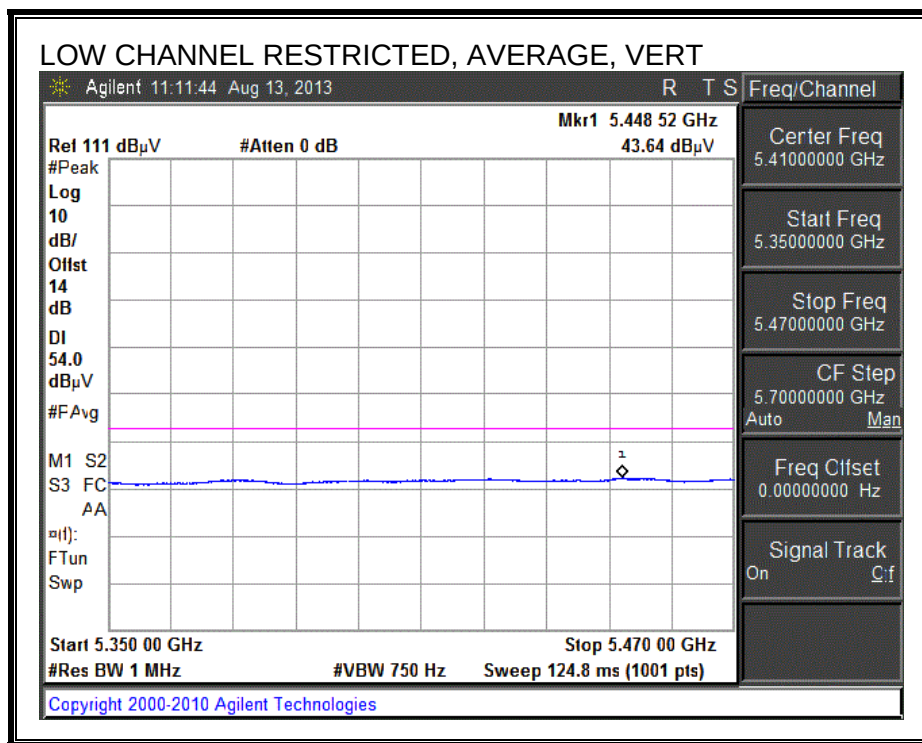
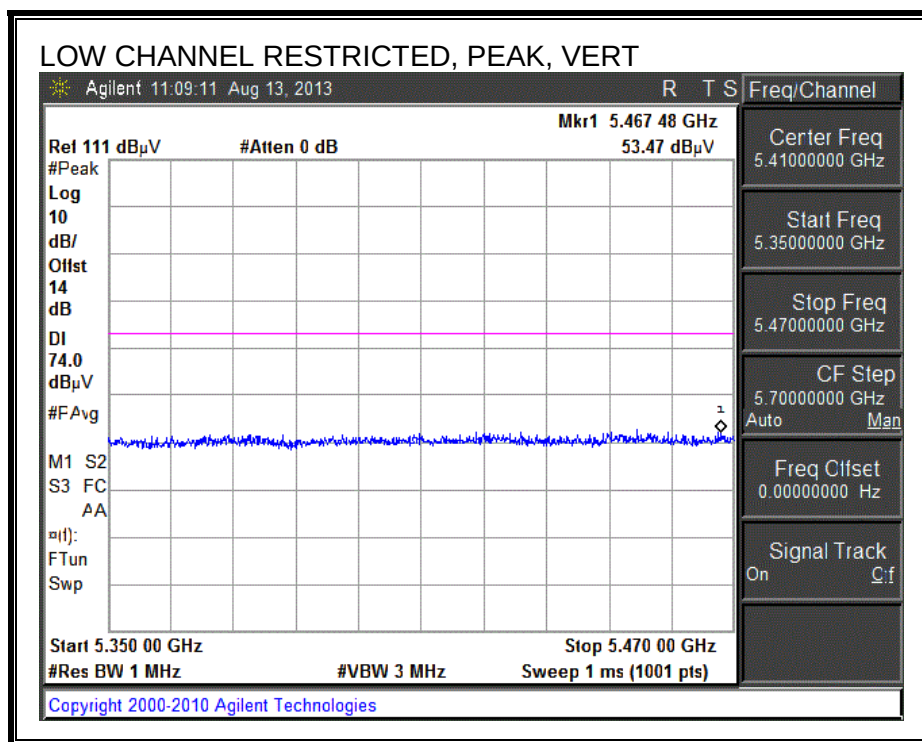
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
11.4	36.3	AD1	38.6	-23.2	51.7	53.97	-2.27	74	-22.3	53	101	V

AD1 - KDB 789033 v01r02 Method: AD Primary Power Average

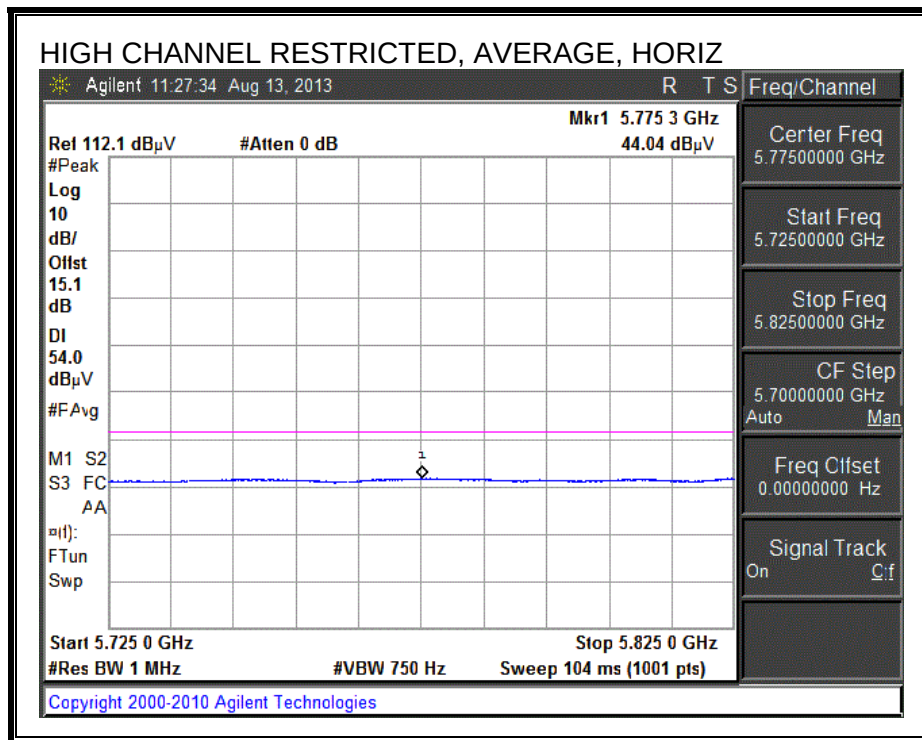
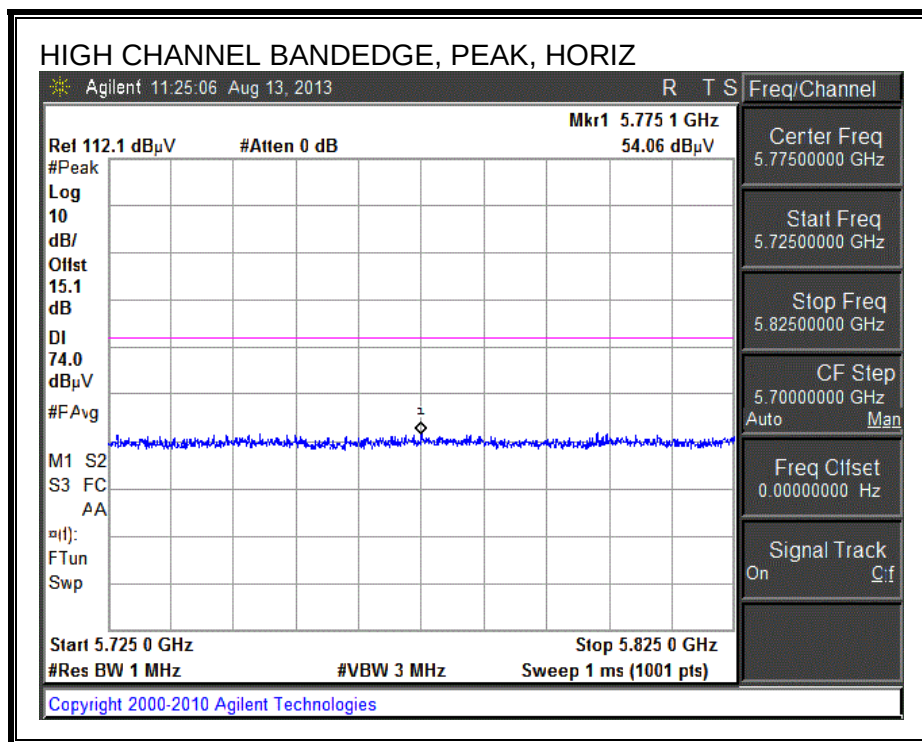
5500.DAT 30915 3 Jul 2013 Rev 9.5 12 Jun 2013

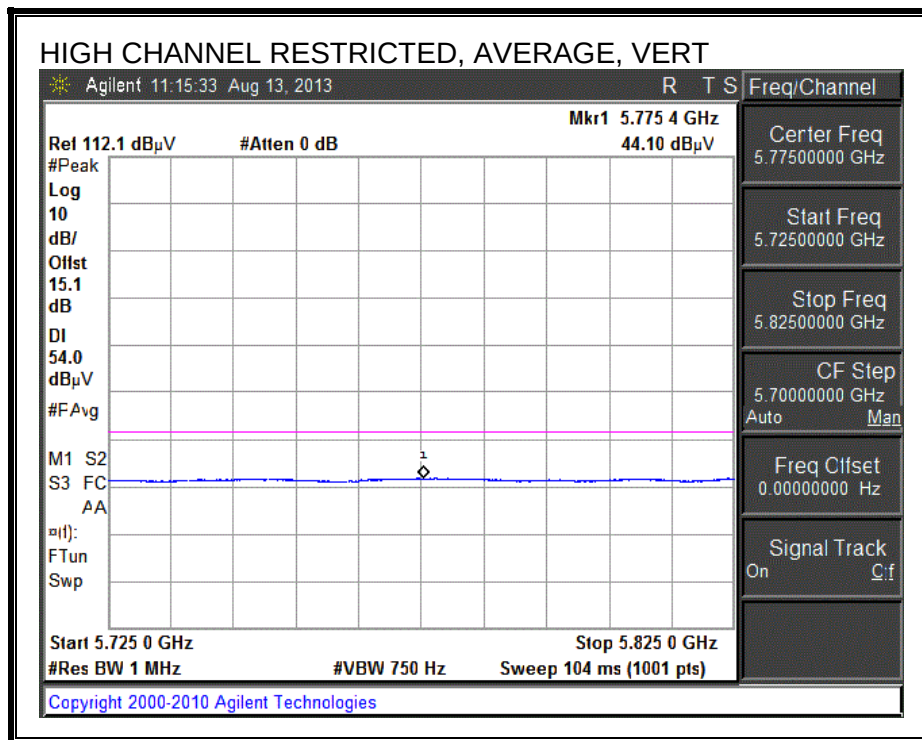
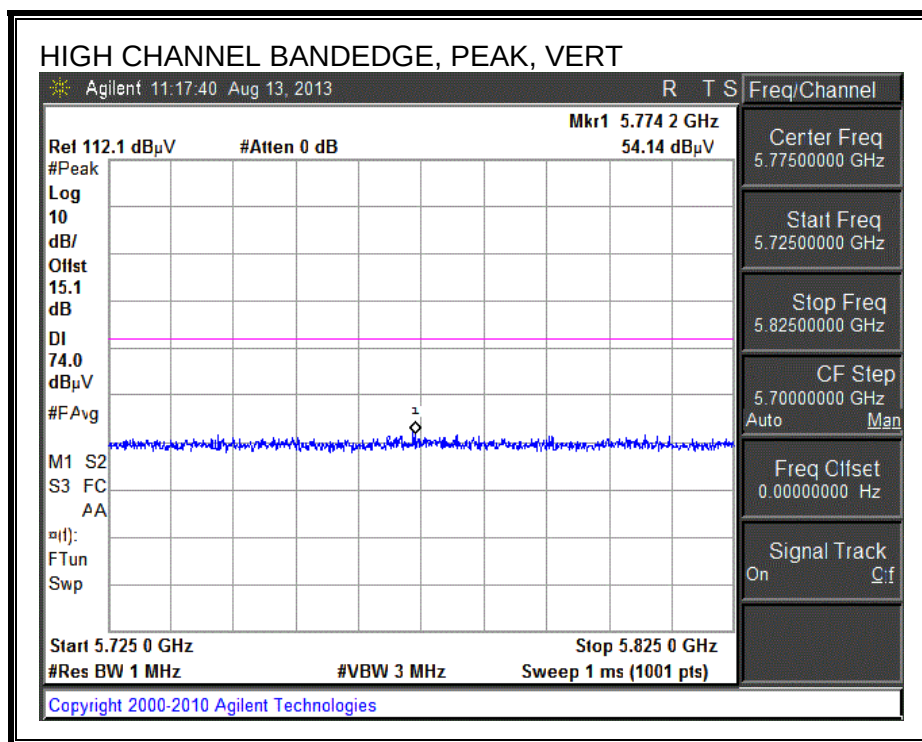
10.4.2. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.5 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)





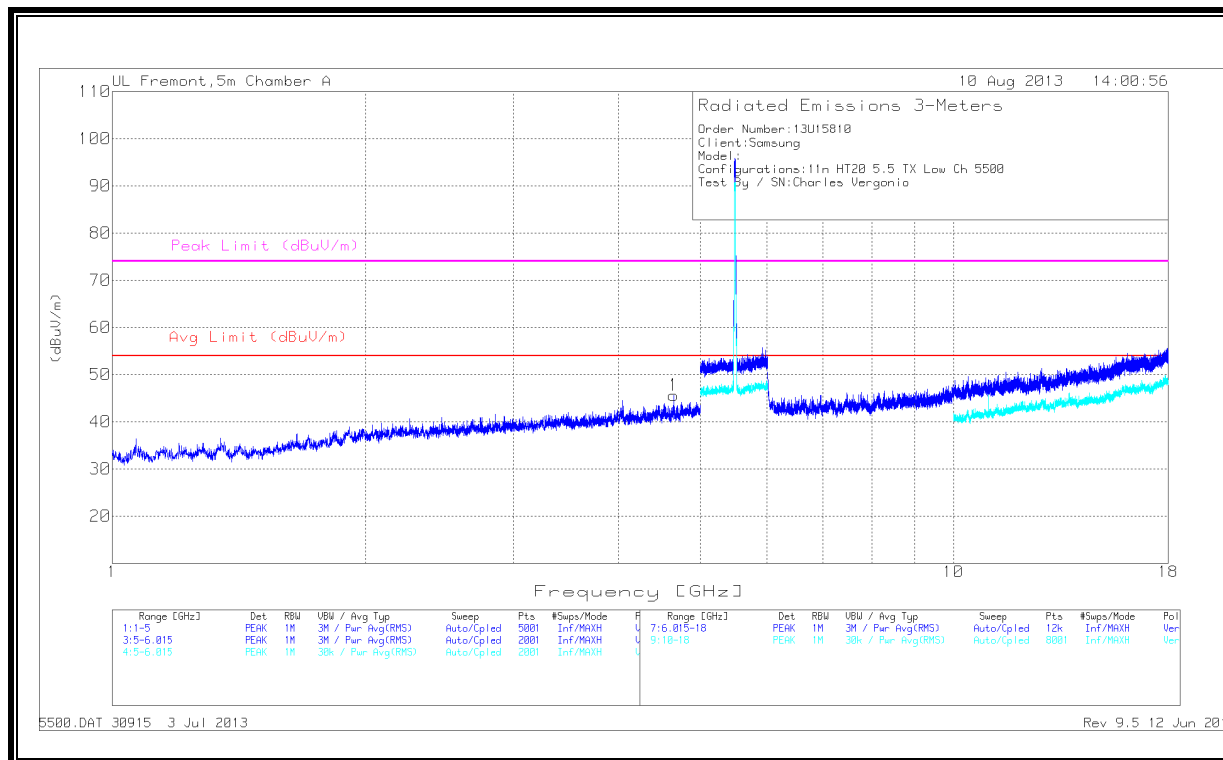
AUTHORIZED BANDEDGE (HIGH CHANNEL)



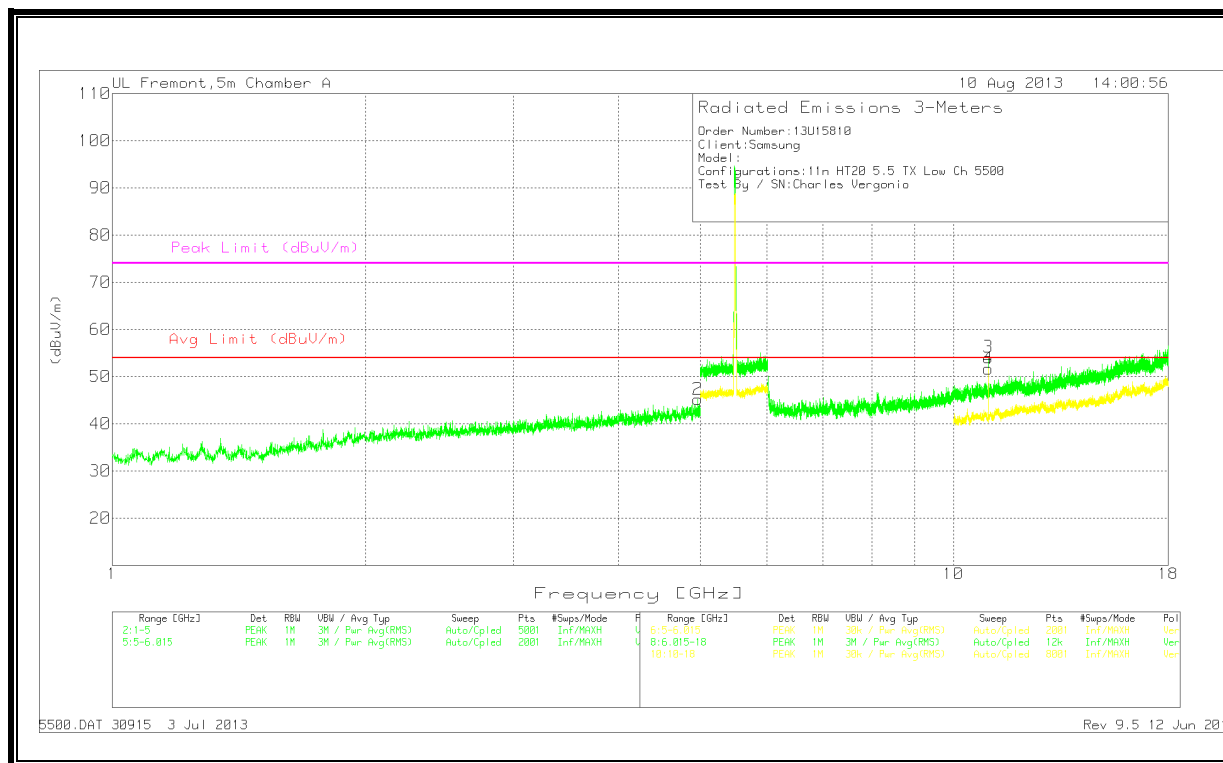


10.4.3. HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



VERTICAL



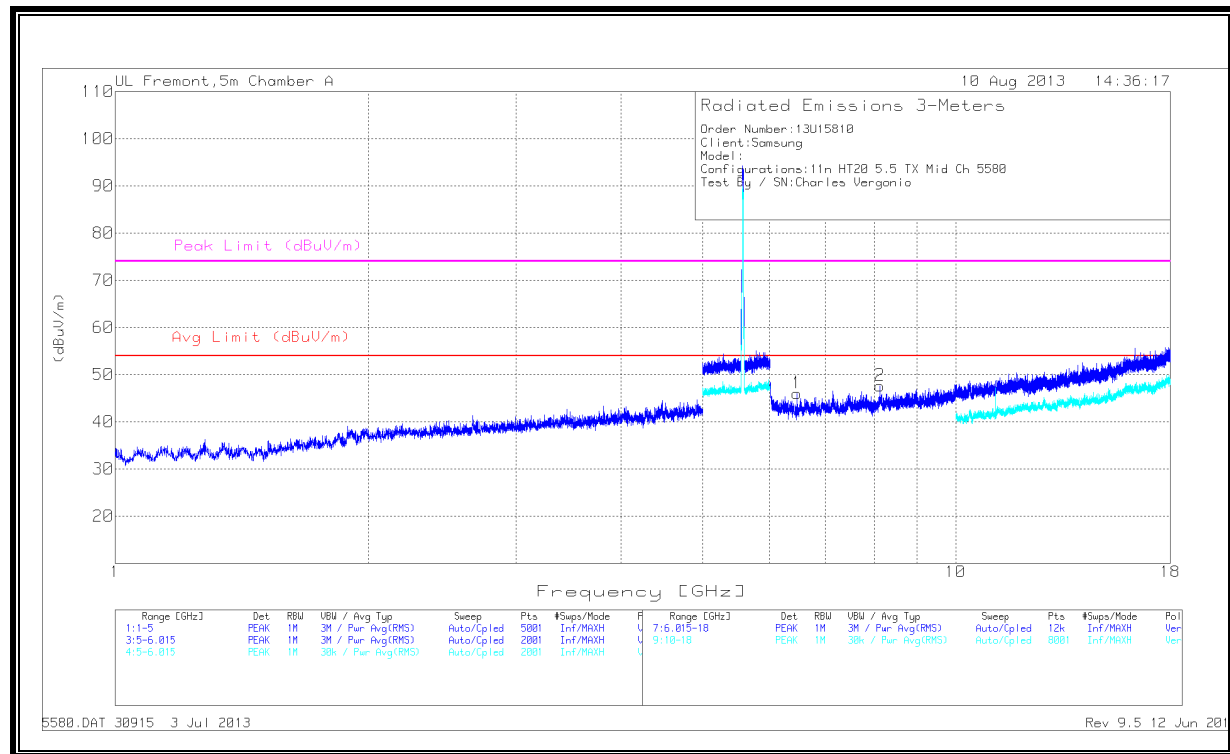
LOW CHANNEL DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
4.65	40.58	PK	34.6	-29.6	45.58	53.97	-8.39	74	-28.42	0-360	200	H
4.966	39.37	PK	34.6	-28.8	45.17	53.97	-8.8	74	-28.83	0-360	200	V
10.999	39.12	PK	38.3	-23.4	54.02	53.97	.05	74	-19.98	0-360	100	V
11	36.76	PK	38.3	-23.4	51.66	53.97	-2.31	74	-22.34	0-360	100	V

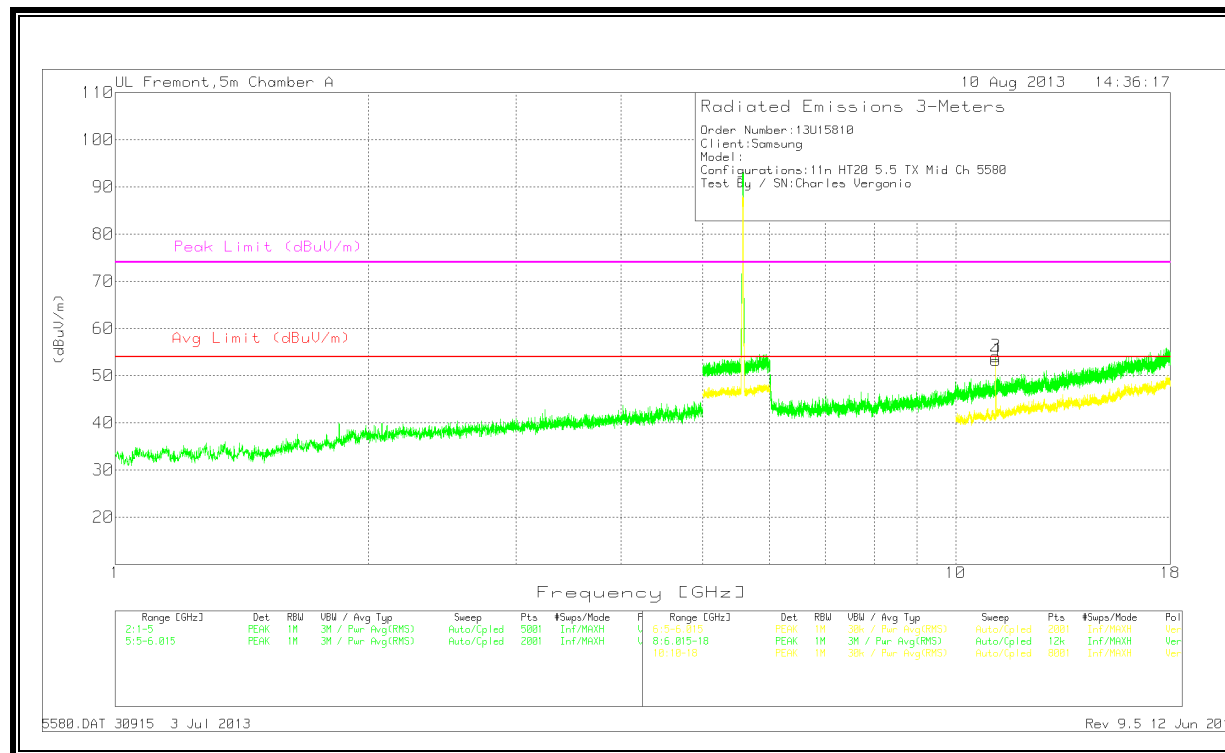
PK - Peak detector Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	35.87	AD1	38.3	-23.4	50.77	53.97	-3.2	74	-23.23	200	114	V
11	35.85	VB1	38.3	-23.4	50.75	53.97	-3.22	74	-23.25	200	114	V

MID CHANNEL
HORIZONTAL



VERTICAL



MID CHANNEL DATA

Trace Markers

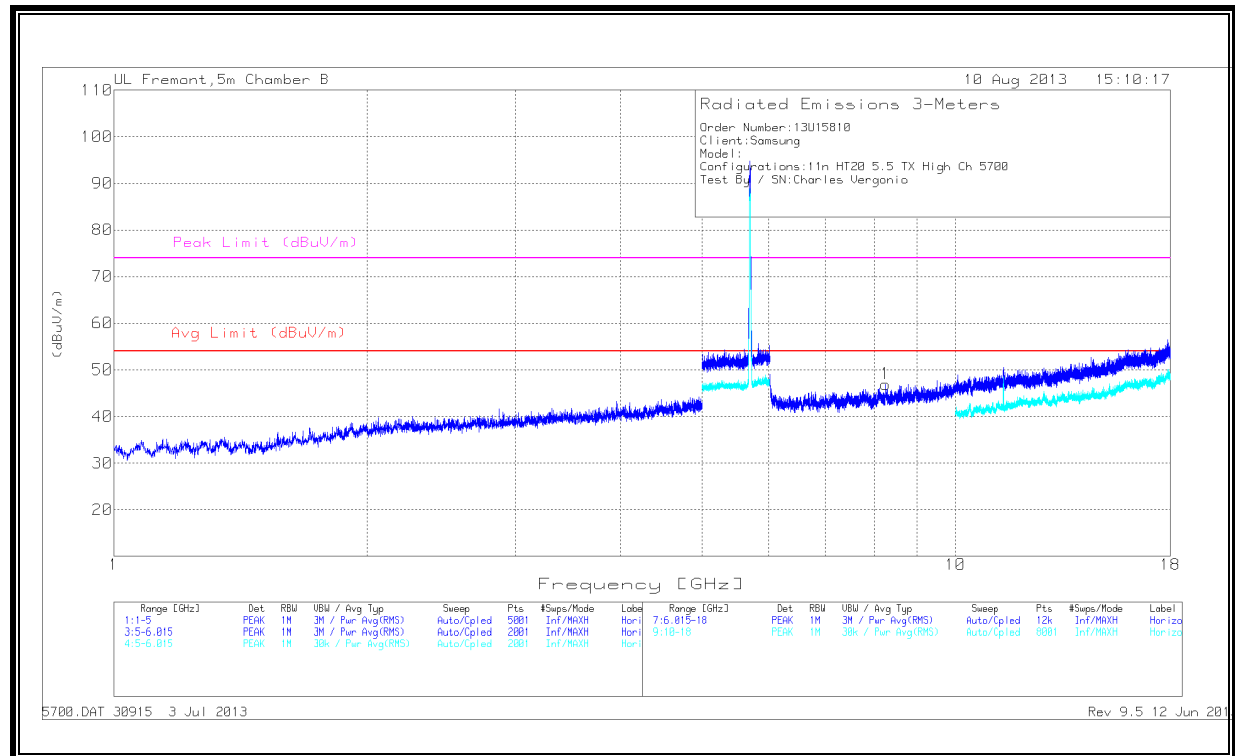
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6.473	39.1	PK	35.9	-29	46	53.97	-7.97	74	-28	0-360	100	H
8.128	37.91	PK	36.1	-26.4	47.61	53.97	-6.36	74	-26.39	0-360	100	H
11.159	38.97	PK	38.4	-23.3	54.07	53.97	.1	74	-19.93	0-360	100	V
11.16	38.12	PK	38.4	-23.3	53.22	53.97	-.75	74	-20.78	0-360	100	V

PK - Peak detector

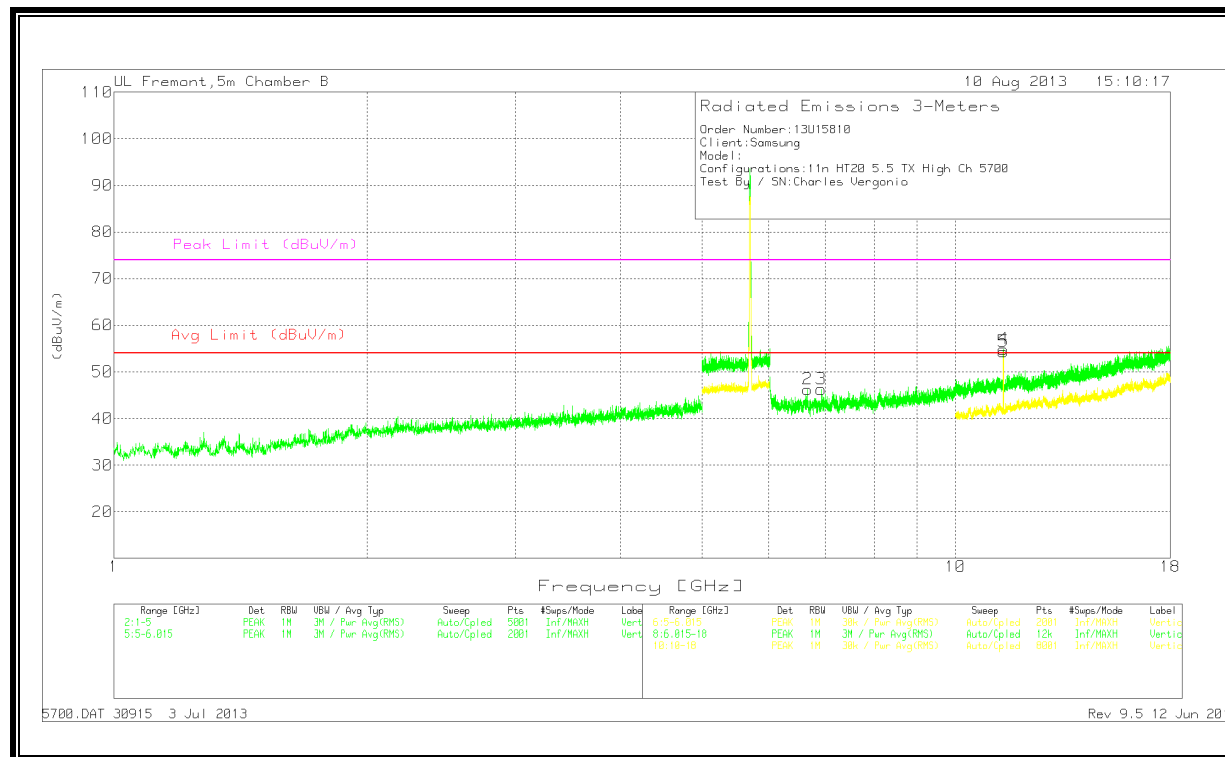
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
11.16	38.14	AD1	38.4	-23.3	53.24	53.97	-.73	74	-20.76	41	123	V

HIGH CHANNEL
HORIZONTAL



VERTICAL



HIGH CHANNEL DATA

Trace Markers

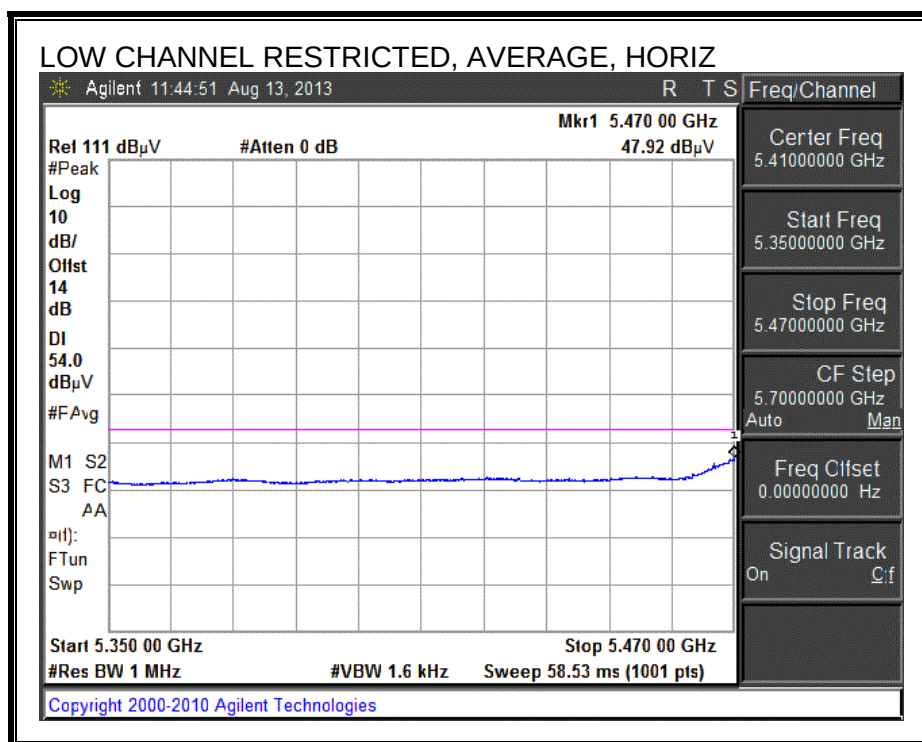
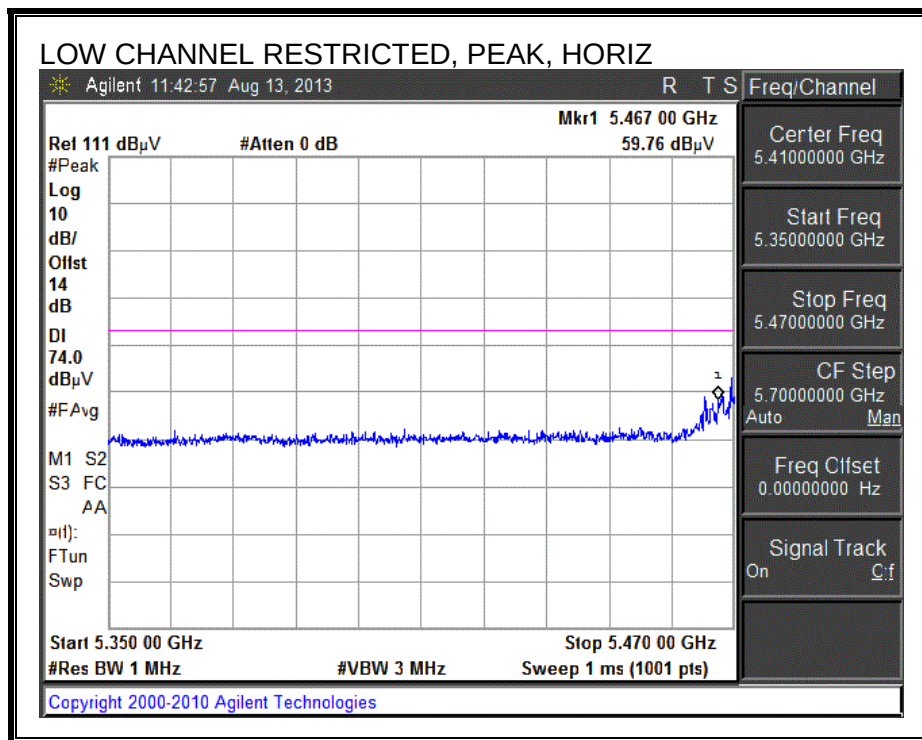
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
8.262	37.14	PK	36.1	-26.3	46.94	53.97	-7.03	74	-27.06	0-360	100	H
6.672	39.56	PK	35.8	-29.1	46.26	53.97	-7.71	74	-27.74	0-360	100	V
6.926	38.77	PK	35.9	-28.4	46.27	53.97	-7.7	74	-27.73	0-360	200	V
11.4	39.48	PK	38.6	-23.2	54.88	53.97	.91	74	-19.12	0-360	100	V
11.4	38.9	PK	38.6	-23.2	54.3	53.97	.33	74	-19.7	0-360	100	V

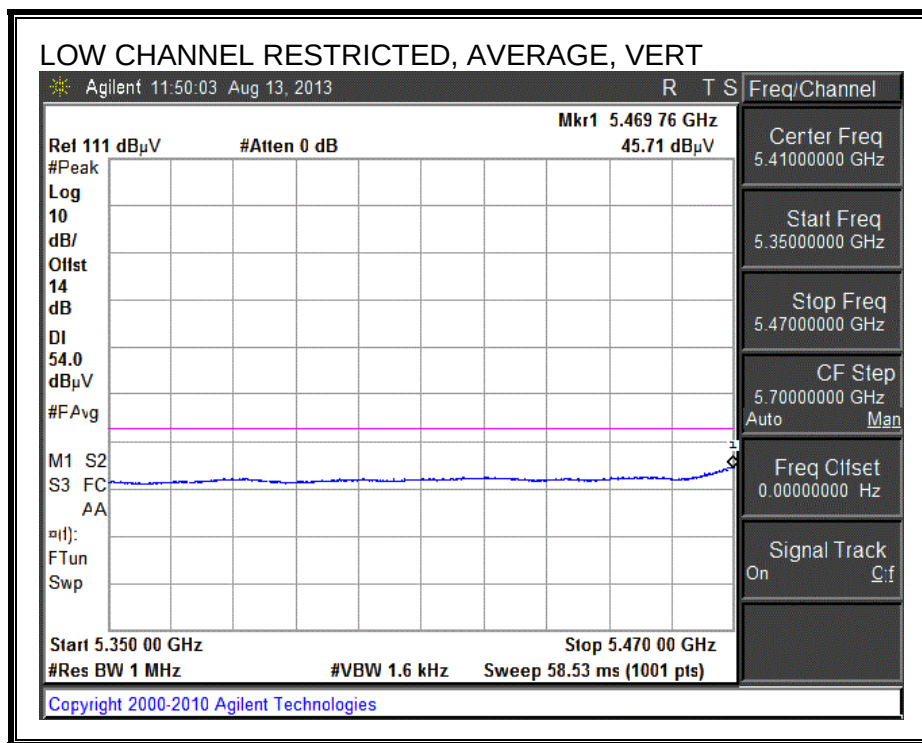
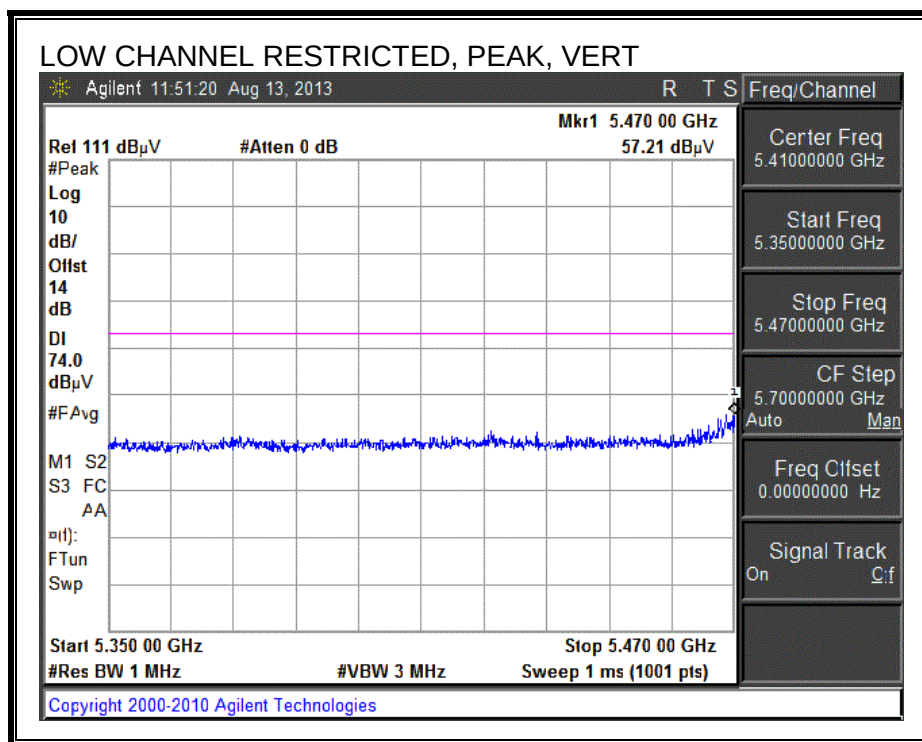
PK - Peak detector

Radiated Emissions

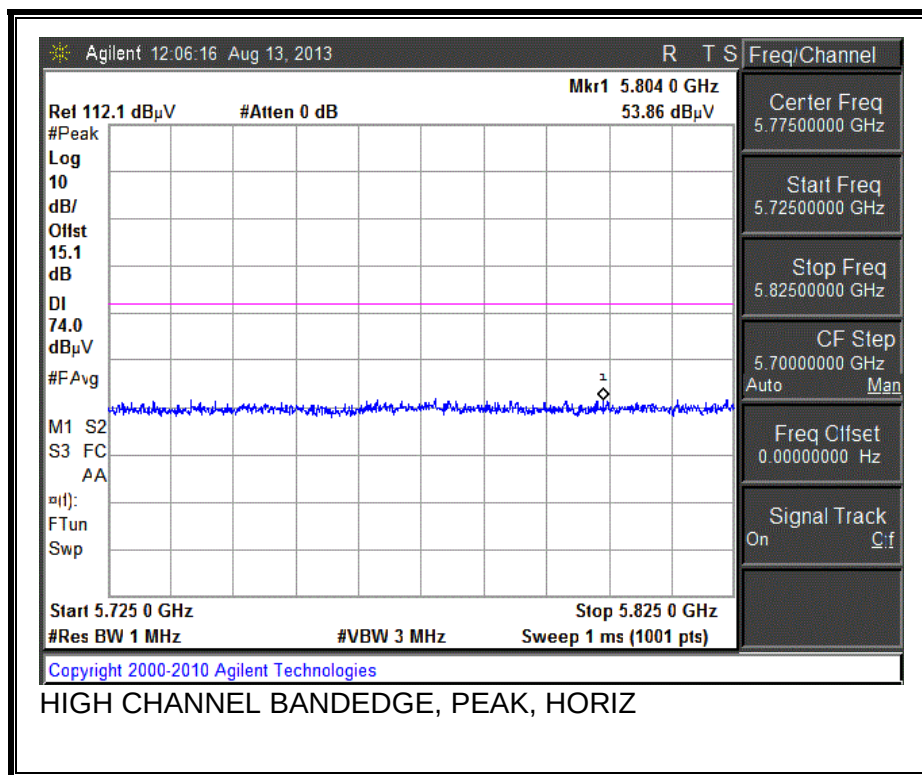
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
11.4	34.41	AD1	38.6	-23.2	49.81	53.97	-4.16	74	-24.19	190	103	V
11.4	34.56	VB1	38.6	-23.2	49.96	53.97	-4.01	74	-24.04	190	103	V

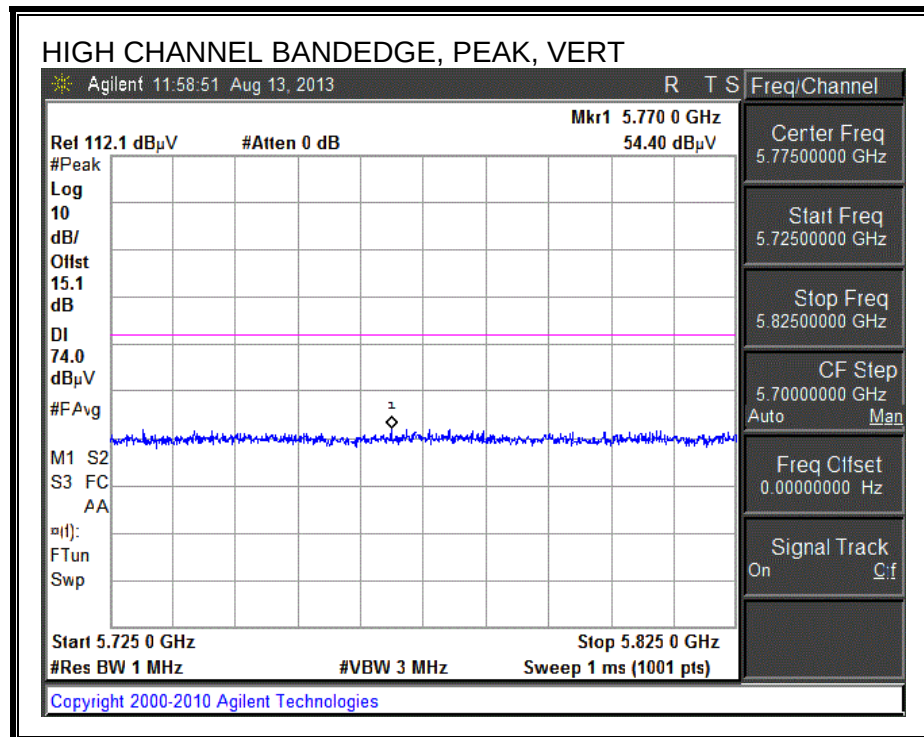
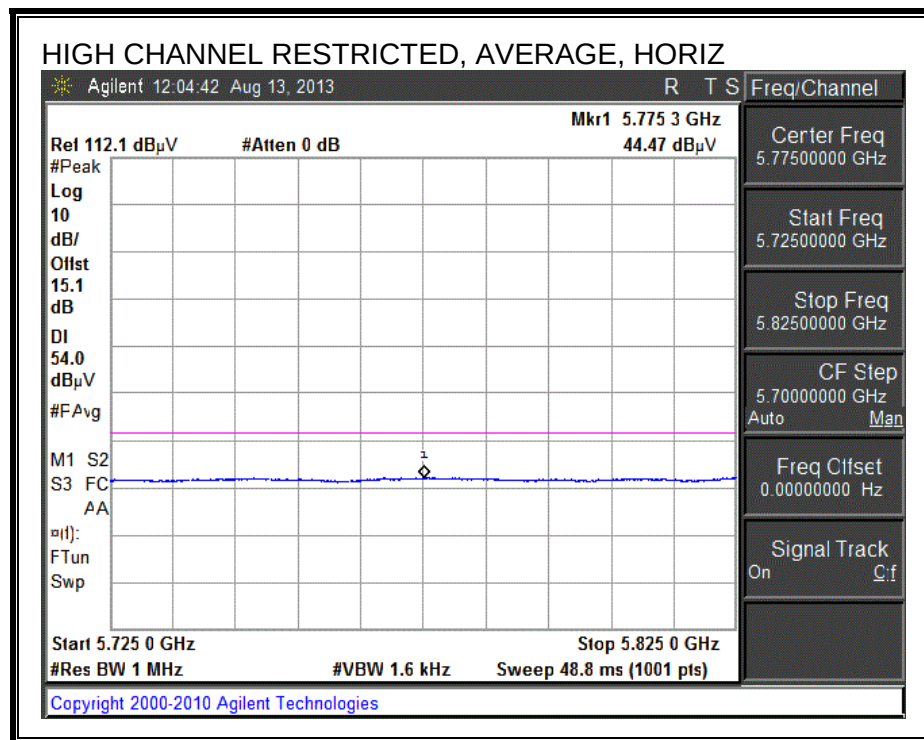
10.4.4. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.5 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

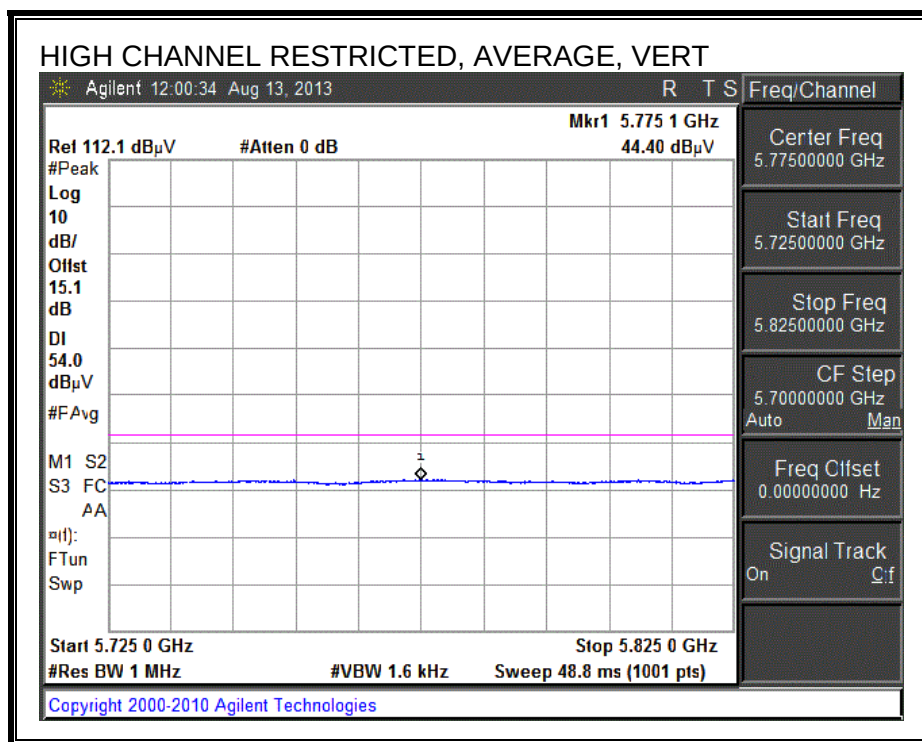




AUTHORIZED BANDEDGE (HIGH CHANNEL)

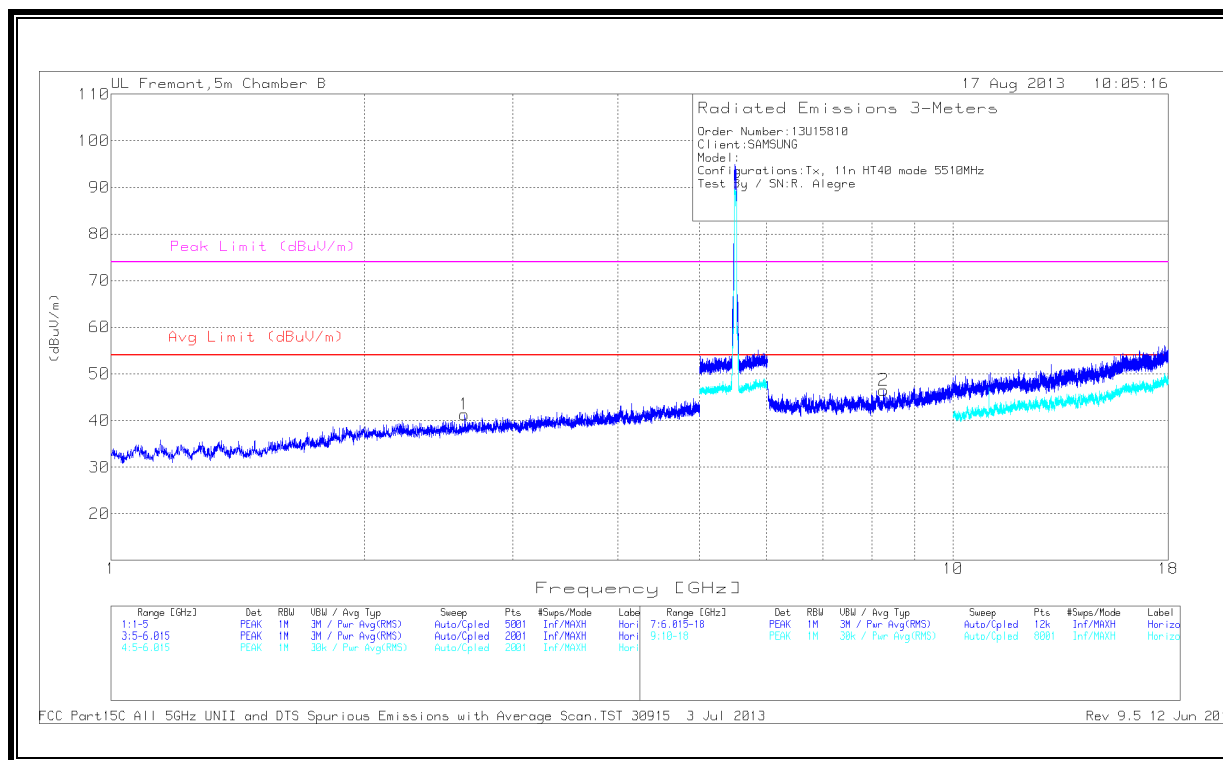




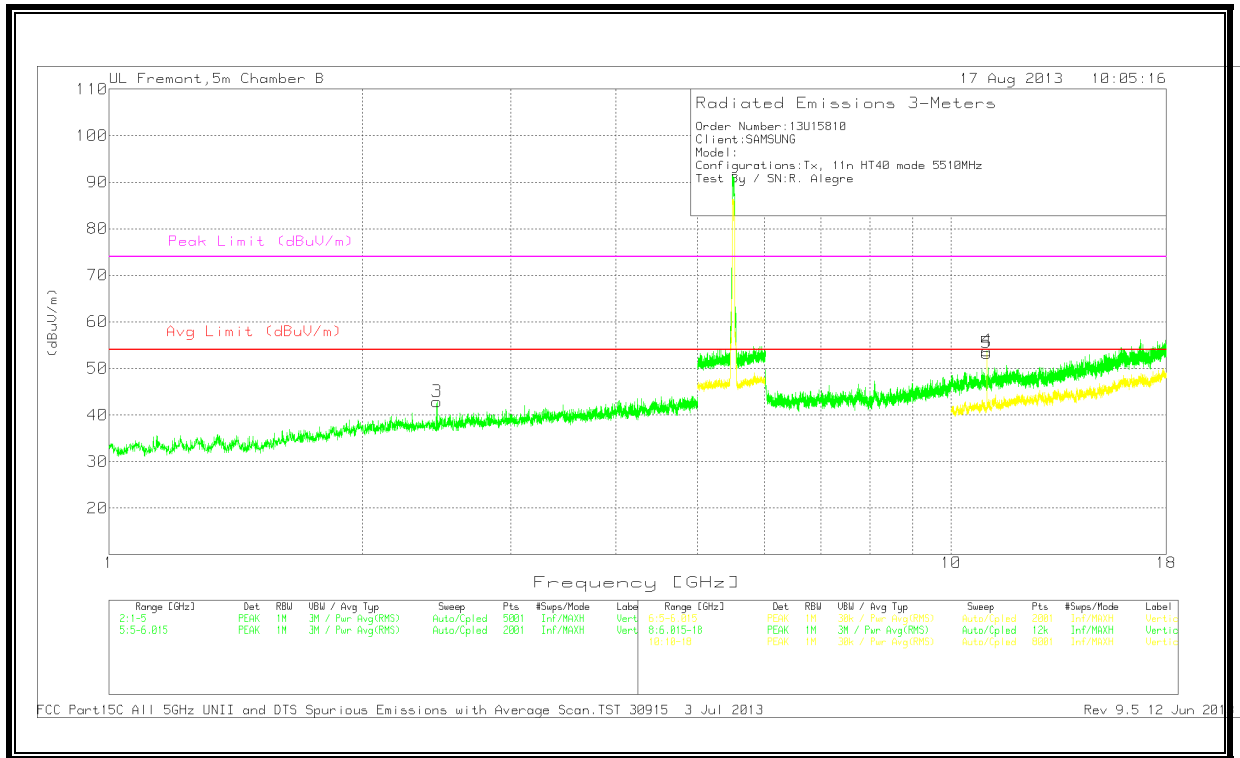


HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



VERTICAL



LOW CHANNEL DATA

Trace Markers

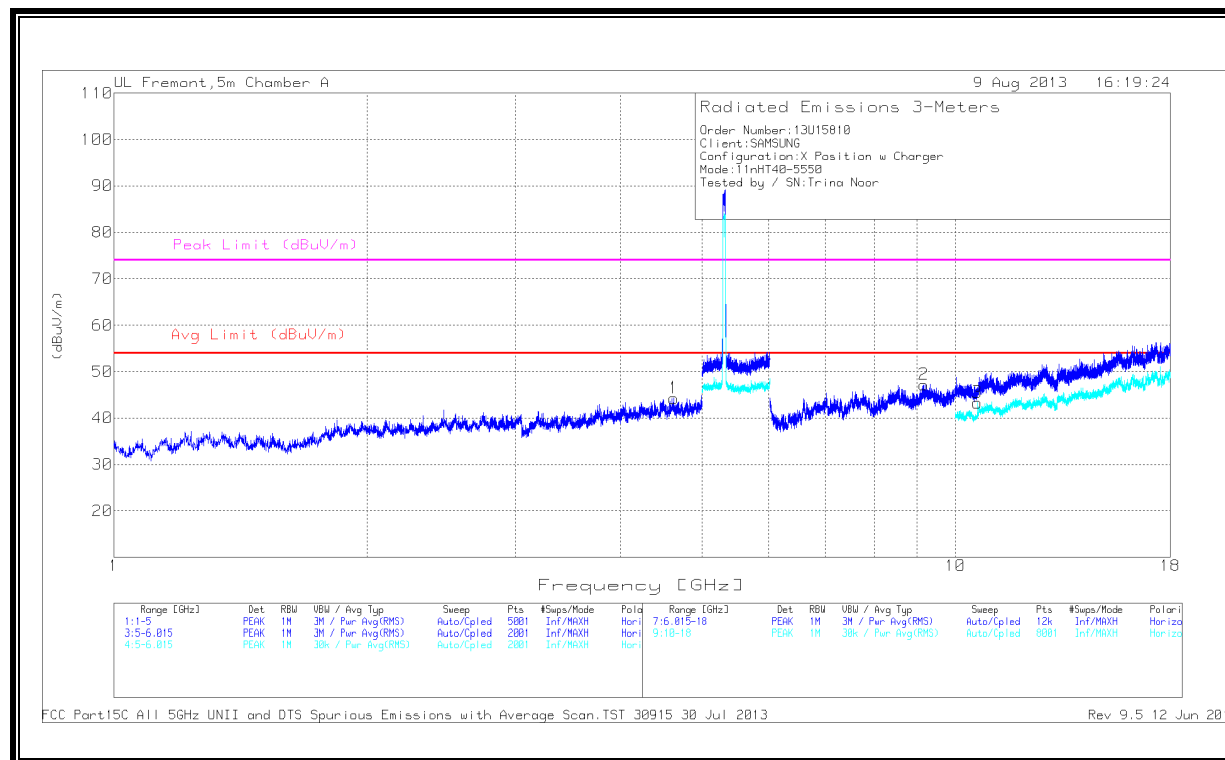
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.628	41.48	PK	32.7	-32.9	41.28	53.97	-12.69	74	-32.72	0-360	200	H
2.451	43.56	PK	32.4	-33.1	42.86	53.97	-11.11	74	-31.14	0-360	100	V
8.265	36.76	PK	36.1	-26.4	46.46	53.97	-7.51	74	-27.54	0-360	200	H
11.019	38.74	PK	38.3	-23.3	53.74	53.97	-.23	74	-20.26	0-360	100	V
11.02	38.3	PK	38.3	-23.3	53.3	53.97	-.67	74	-20.7	0-360	100	V
2.628	41.48	PK	32.7	-32.9	41.28	53.97	-12.69	74	-32.72	0-360	200	H

PK - Peak detector Radiated Emissions

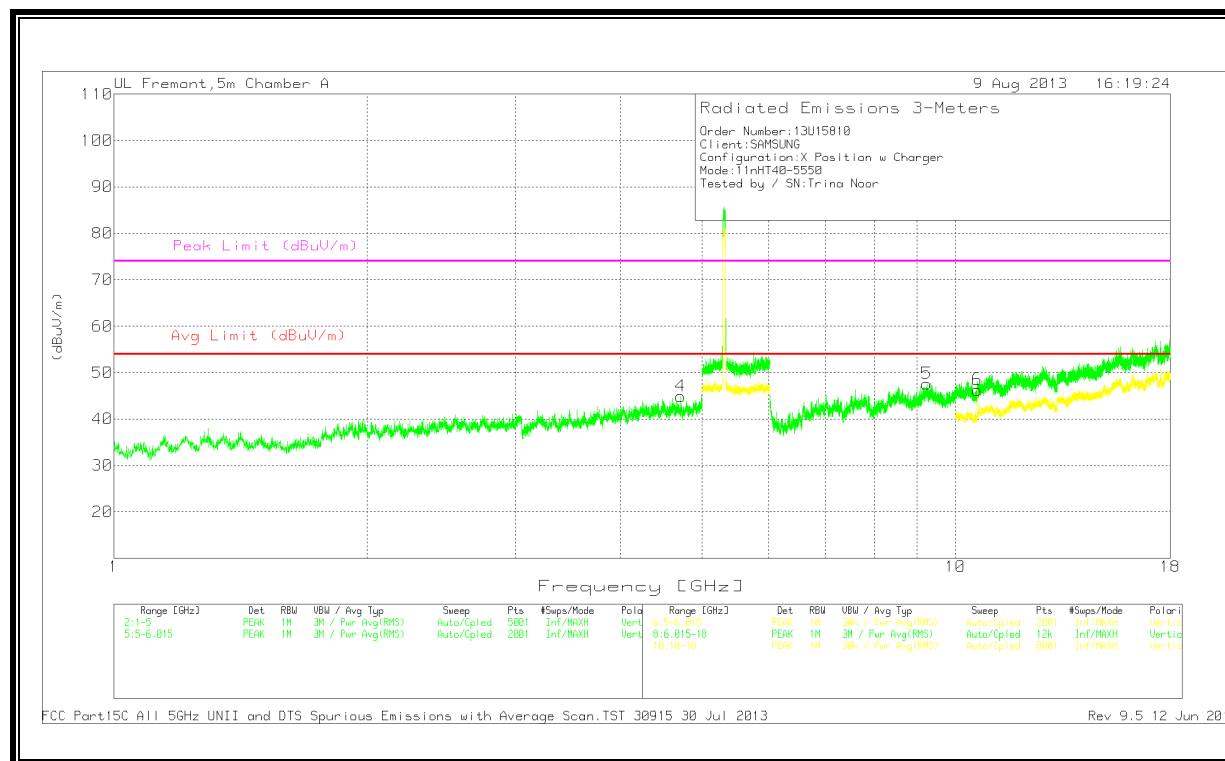
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
11.02	37.22	AD1	38.3	-23.3	52.22	53.97	-1.75	74	-21.78	203	102	V

AD1 - KDB 789033 v01r02 Method: AD Primary Power Average

MID CHANNEL
HORIZONTAL



VERTICAL



MID CHANNEL DATA Trace Markers

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
2.322	41.58	PK	31.7	-32.8	40.48	53.97	-13.49	74	-33.52	0-360	200	H
2.745	40.41	PK	32.7	-31.8	41.31	53.97	-12.66	74	-32.69	0-360	200	V
6.814	36.31	PK	35.4	-25.8	45.91	53.97	-8.06	74	-28.09	0-360	100	H
6.814	35.67	PK	35.4	-25.8	45.27	53.97	-8.7	74	-28.73	0-360	200	V
11.099	39.06	PK	37.8	-22.1	54.76	53.97	.79	74	-19.24	0-360	100	V
11.1	37.73	PK	37.8	-22.1	53.43	53.97	-.54	74	-20.57	0-360	100	V

PK - Peak detector

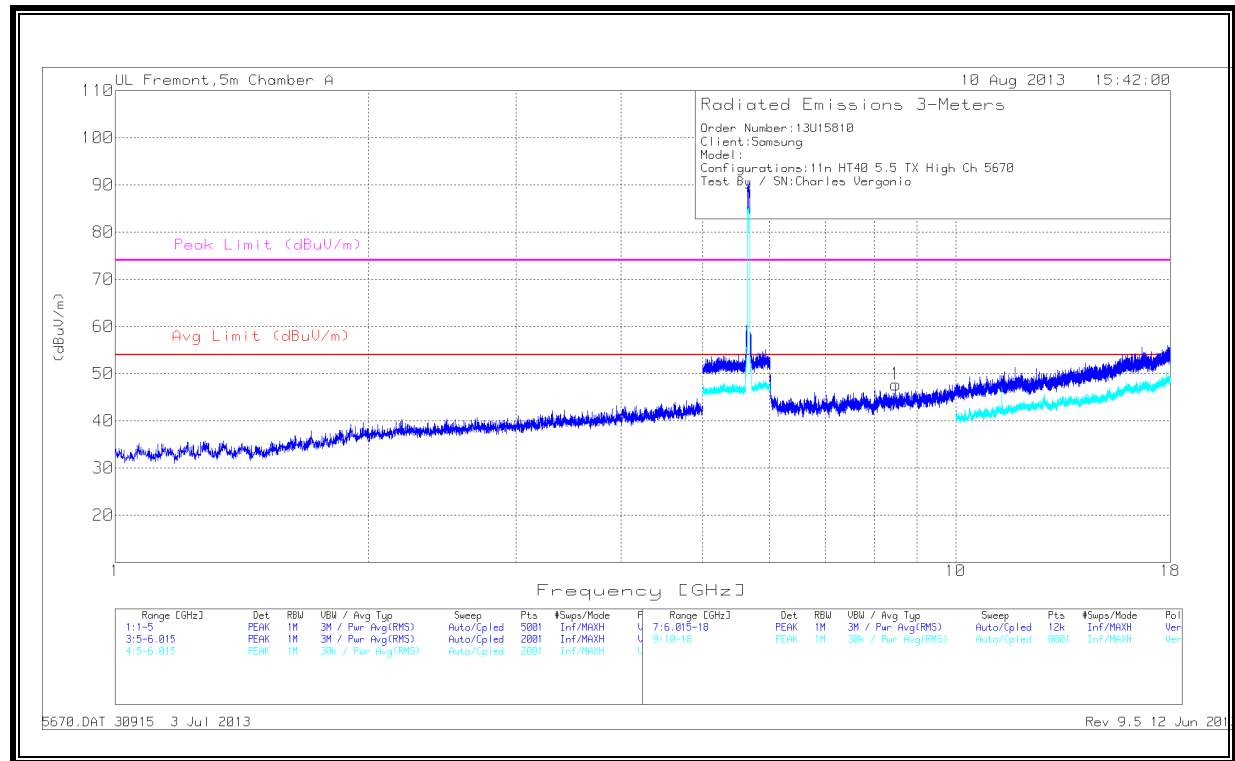
Radiated Emissions

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
11.1	34.78	AD1	37.8	-22.1	50.48	53.97	-3.49	74	-23.52	218	108	V
11.1	34.95	VB1	37.8	-22.1	50.65	53.97	-3.32	74	-23.35	218	108	V

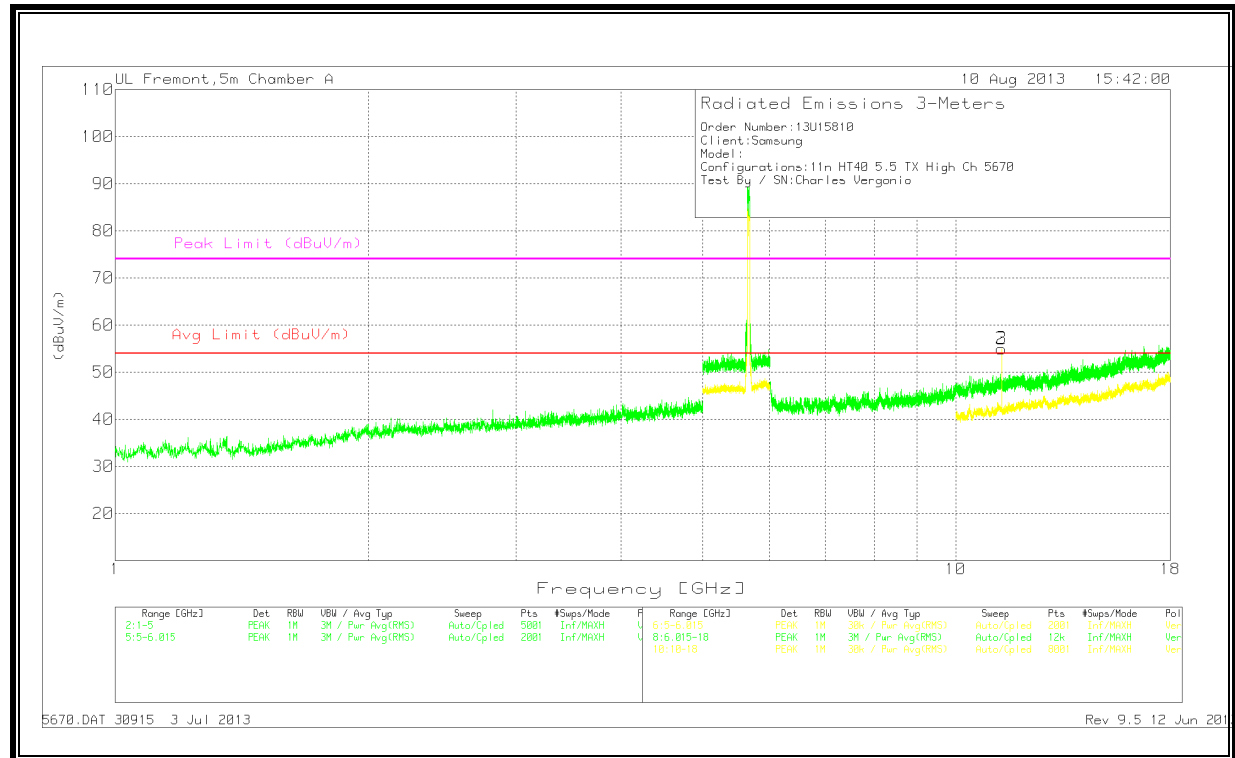
AD1 - KDB 789033 v01r02 Method: AD Primary Power Average

VB1 - KDB 789033 v01r02 Method: VB Alternative Reduced Video

HIGH CHANNEL
HORIZONTAL



VERTICAL



HIGH CHANNEL DATA

Trace Markers

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
2.322	41.58	PK	31.7	-32.8	40.48	53.97	-13.49	74	-33.52	0-360	200	H
2.745	40.41	PK	32.7	-31.8	41.31	53.97	-12.66	74	-32.69	0-360	200	V
6.814	36.31	PK	35.4	-25.8	45.91	53.97	-8.06	74	-28.09	0-360	100	H
6.814	35.67	PK	35.4	-25.8	45.27	53.97	-8.7	74	-28.73	0-360	200	V
11.099	39.06	PK	37.8	-22.1	54.76	53.97	.79	74	-19.24	0-360	100	V
11.1	37.73	PK	37.8	-22.1	53.43	53.97	-.54	74	-20.57	0-360	100	V

PK - Peak detector

Radiated Emissions

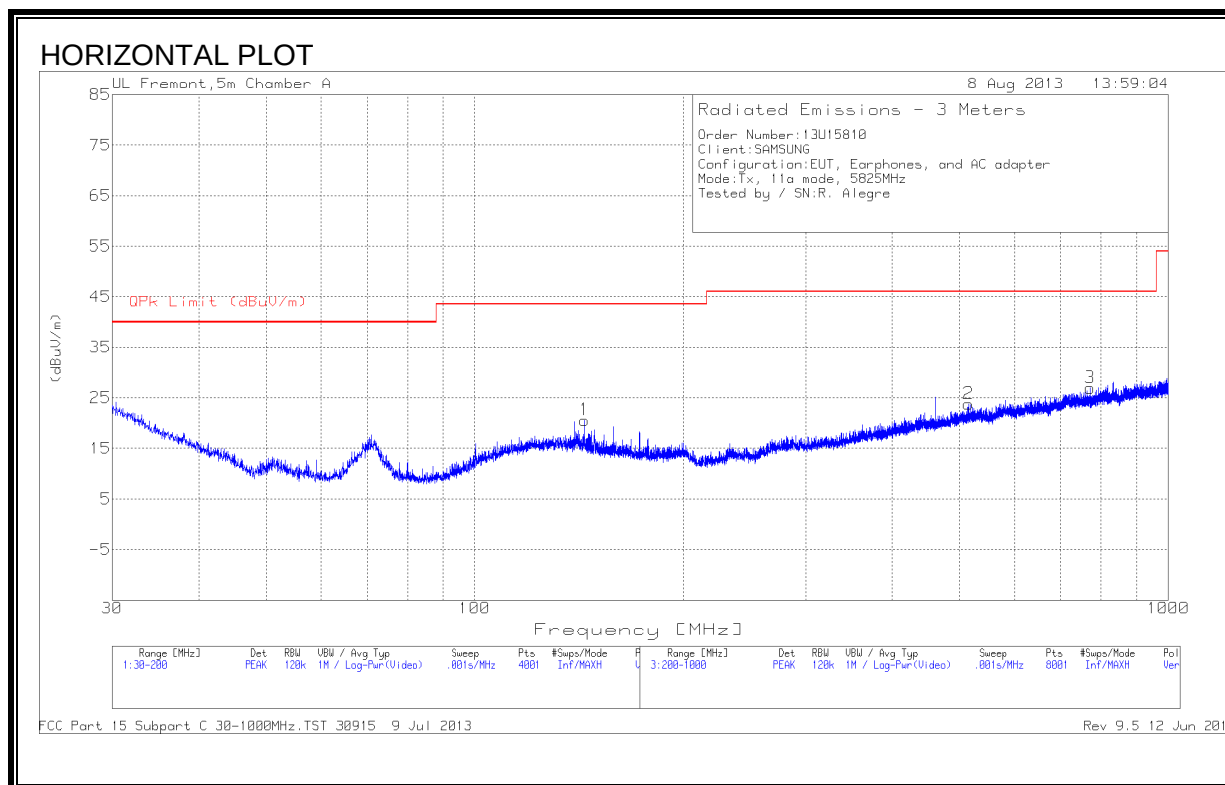
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
11.1	34.78	AD1	37.8	-22.1	50.48	53.97	-3.49	74	-23.52	218	108	V
11.1	34.95	VB1	37.8	-22.1	50.65	53.97	-3.32	74	-23.35	218	108	V

AD1 - KDB 789033 v01r02 Method: AD Primary Power Average

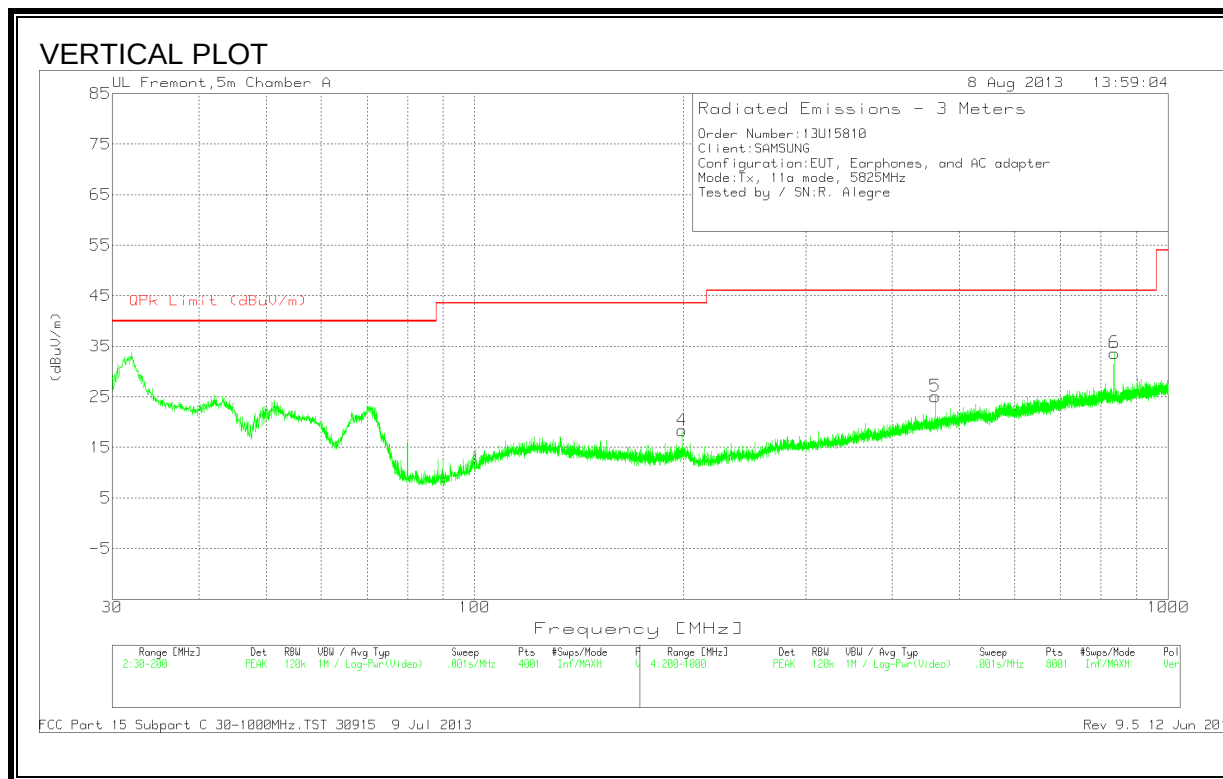
VB1 - KDB 789033 v01r02 Method: VB Alternative Reduced Video

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

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



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



Worst Case Data

Frequency (MHz)	Meter Reading (dBuV)	Det	AF T477 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
144.0275	34.67	PK	12.5	-26.6	20.57	43.52	-22.95	0-360	200	H
199.065	32.15	PK	12.3	-26.1	18.35	43.52	-25.17	0-360	100	V
515.2	29.98	PK	17.9	-24.1	23.78	46.02	-22.24	0-360	200	H
771.8	29.34	PK	20.4	-22.8	26.94	46.02	-19.08	0-360	100	H
461.5	33.1	PK	16.7	-24.7	25.1	46.02	-20.92	0-360	200	V
836.6	35.01	PK	21.4	-22.8	33.61	46.02	-12.41	0-360	200	V

12. AC POWER LINE CONDUCTED EMISSIONS

12.1. 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.

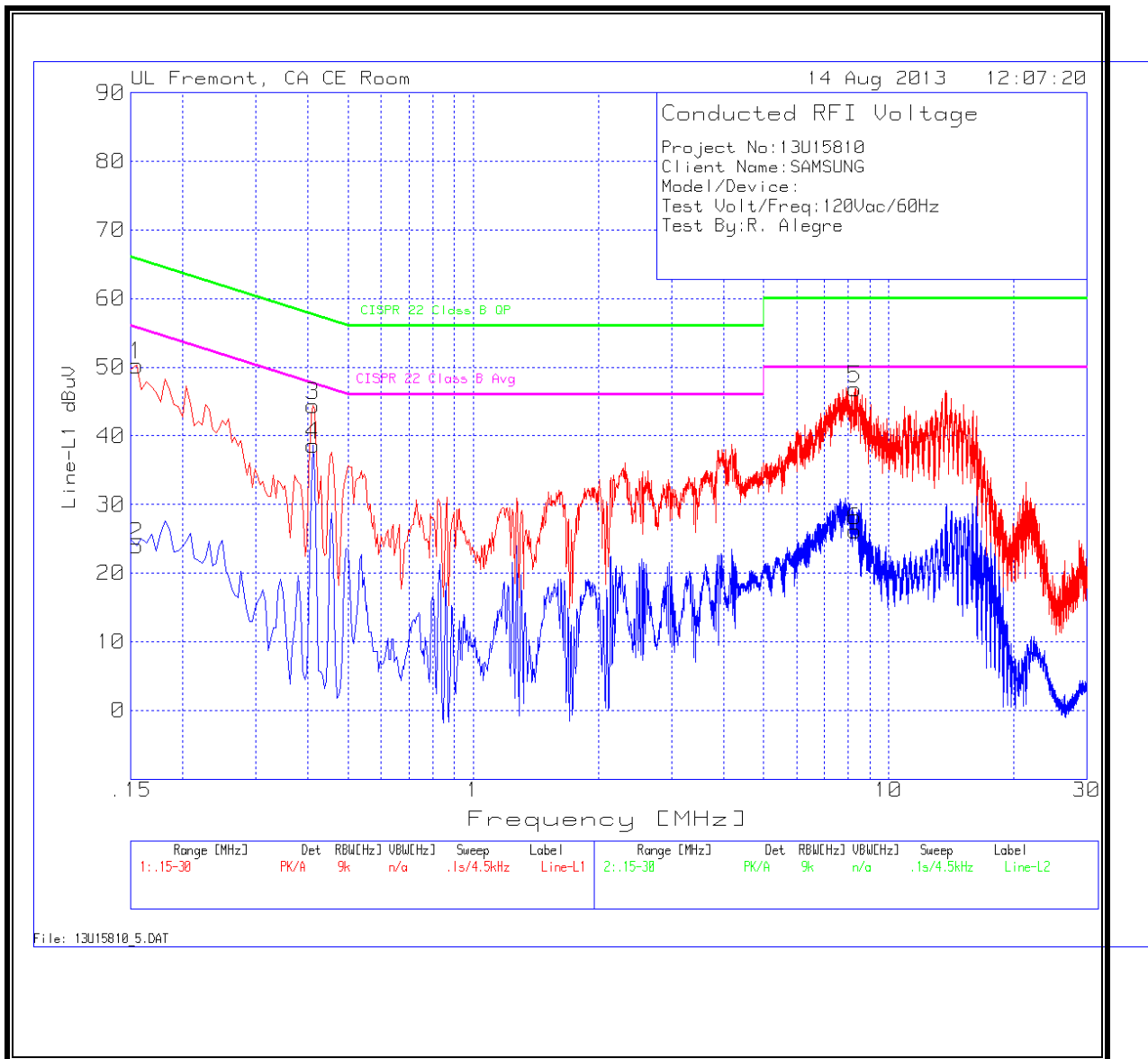
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

12.2. 6 WORST EMISSIONS

LINE 1 RESULTS

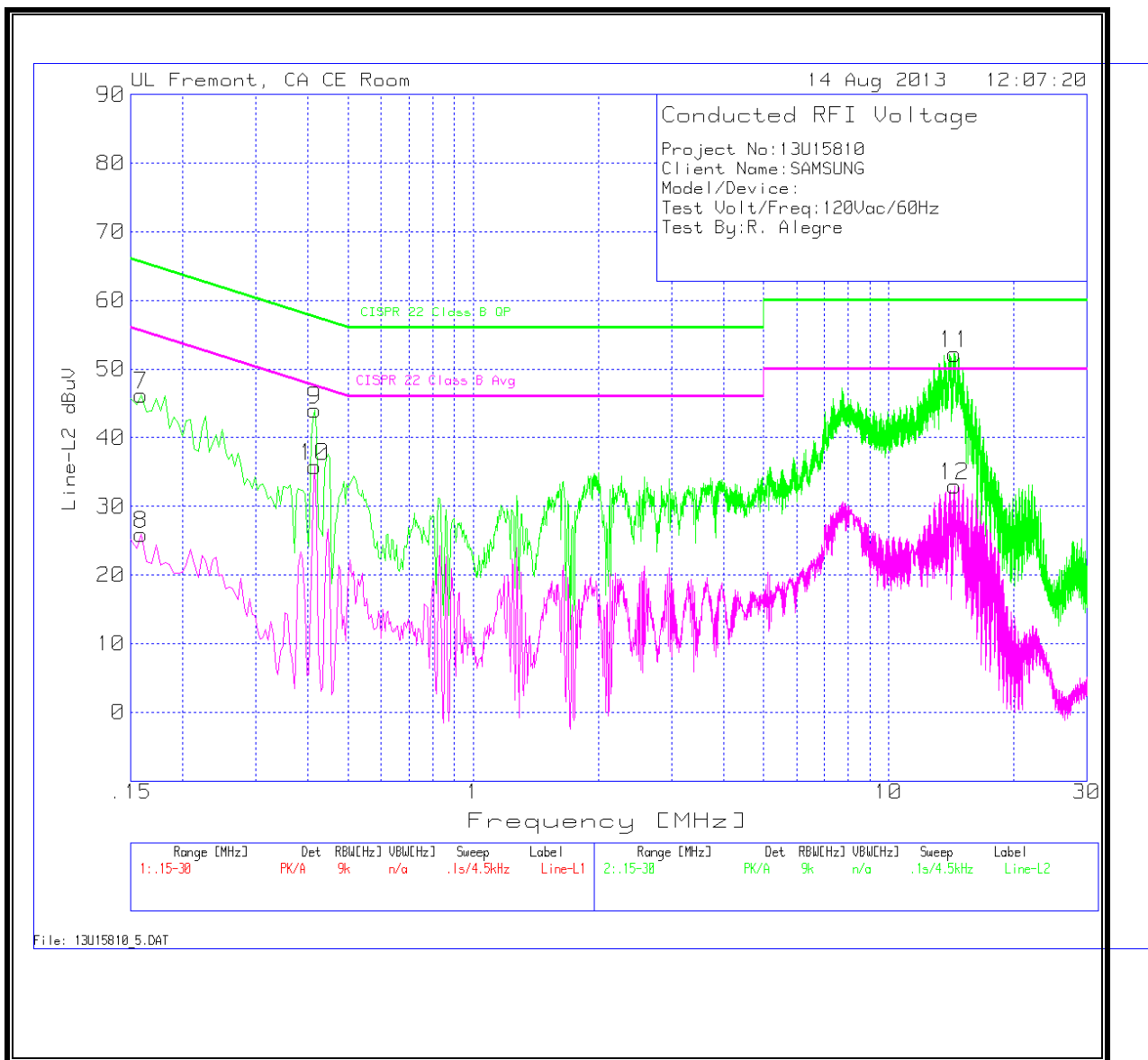


Line-L1 .15 - 30MHz

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1 (dB)	LC Cables 1&3 (dB)	Corrected Reading dBuV	CISPR 22 Class B QP	Margin to Limit (dB)	CISPR 22 Class B Avg	Margin to Limit (dB)
1	.1545	50.16	PK	.1	0	50.26	65.8	-15.54	-	-
2	.1545	23.91	Av	.1	0	24.01	-	-	55.8	-31.79
3	.411	44.27	PK	.1	0	44.37	57.6	-13.23	-	-
4	.411	38.57	Av	.1	0	38.67	-	-	47.6	-8.93
5	8.3175	46.65	PK	.1	.1	46.85	60	-13.15	-	-
6	8.3175	25.96	Av	.1	.1	26.16	-	-	50	-23.84

LINE 2 RESULTS



Line-L2 .15 - 30MHz

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2 (dB)	LC Cables 2&3 (dB)	Corrected Reading dBuV	CISPR 22 Class B QP	Margin to Limit (dB)	CISPR 22 Class B Avg	Margin to Limit (dB)
7	.159	46.09	PK	.1	0	46.19	65.5	-19.31	-	-
8	.159	25.86	Av	.1	0	25.96	-	-	55.5	-29.54
9	.4155	43.92	PK	.1	0	44.02	57.5	-13.48	-	-
10	.4155	35.7	Av	.1	0	35.8	-	-	47.5	-11.7
11	14.3925	51.79	PK	.2	.2	52.19	60	-7.81	-	-
12	14.3925	32.58	Av	.2	.2	32.98	-	-	50	-17.02

13. DYNAMIC FREQUENCY SELECTION

13.1. OVERVIEW

13.1.1. 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.

RSS-210 Issue 7 A9.4 (b) (iv) **Channel closing time:** the maximum channel closing time is 260 ms.

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

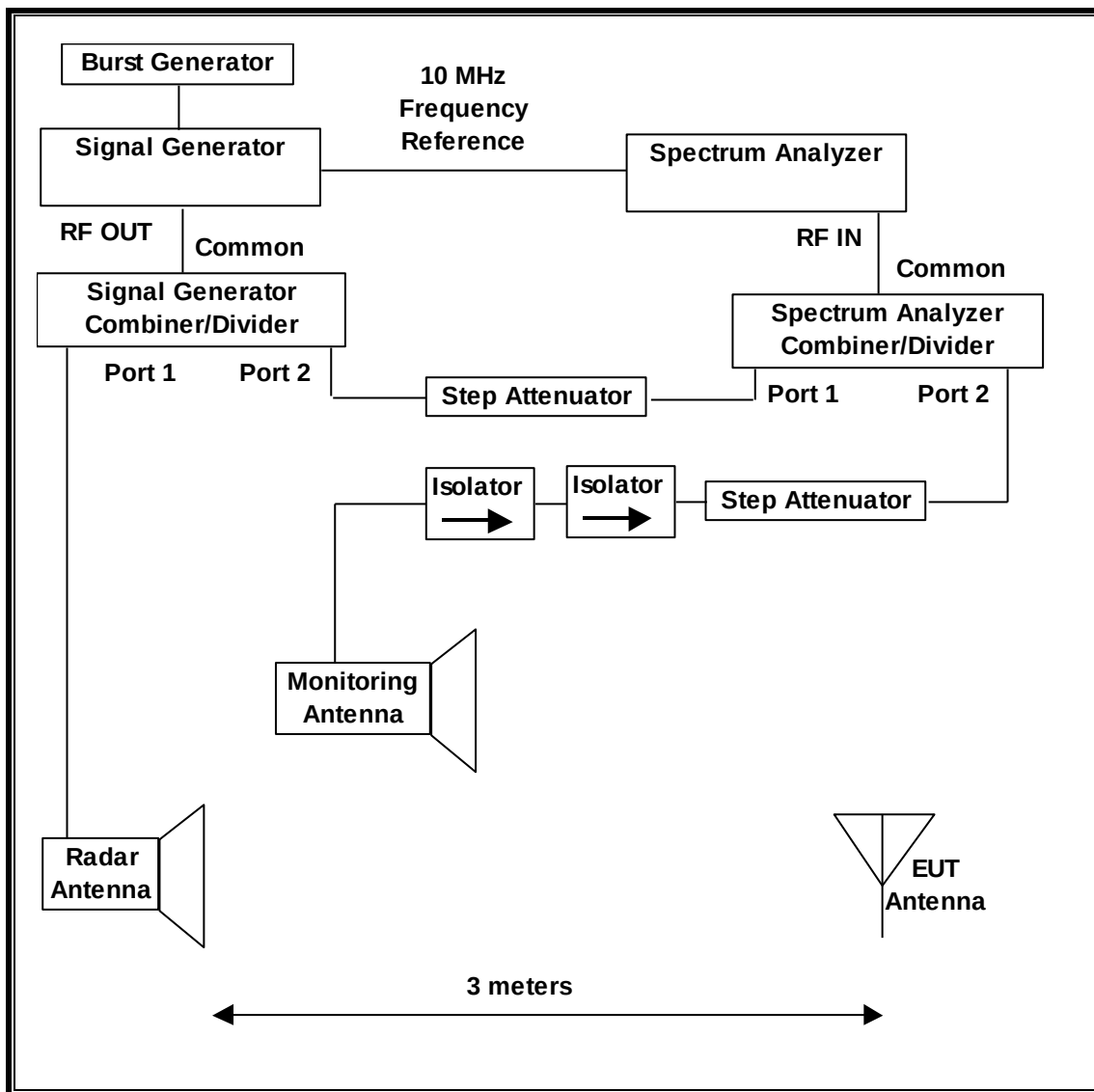
Radar Waveform	Bursts	Pulses per Burst	Pulse Width (μsec)	Chirp Width (MHz)	PRI (μsec)	Minimum Percentage of Successful Detection	Minimum Trials
5	8-20	1-3	50-100	5-20	1000-2000	80%	30

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

13.1.2. 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.

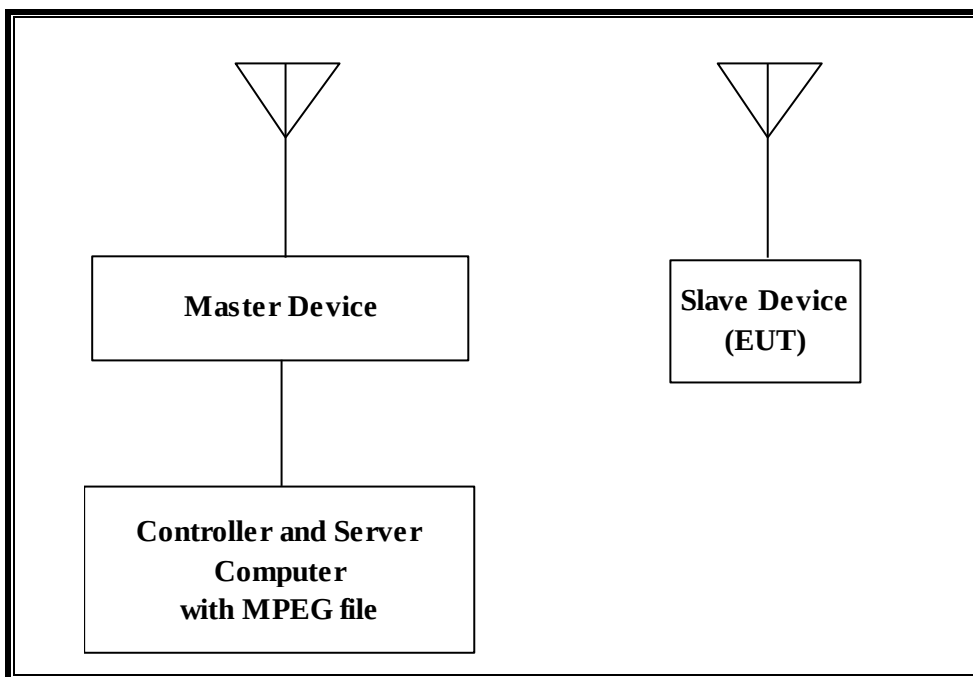
TEST AND MEASUREMENT EQUIPMENT

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

TEST EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	Cal Due
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01178	08/18/14
Vector Signal Generator, 20GHz	Agilent / HP	E8267C	C01066	11/20/13

13.1.3. 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

13.1.4. DESCRIPTION OF EUT

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

The EUT is a Slave Device without Radar Detection.

The highest power level is and 8.3 dBm EIRP in the 5470-5725 MHz band.

The only antenna assembly utilized with the EUT has a gain of -3 dBi.

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

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

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

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

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

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

The software installed in the access point is E370K revision 000.

UNIFORM CHANNEL SPREADING

This requirement is not applicable to Slave radio devices.

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

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

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

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

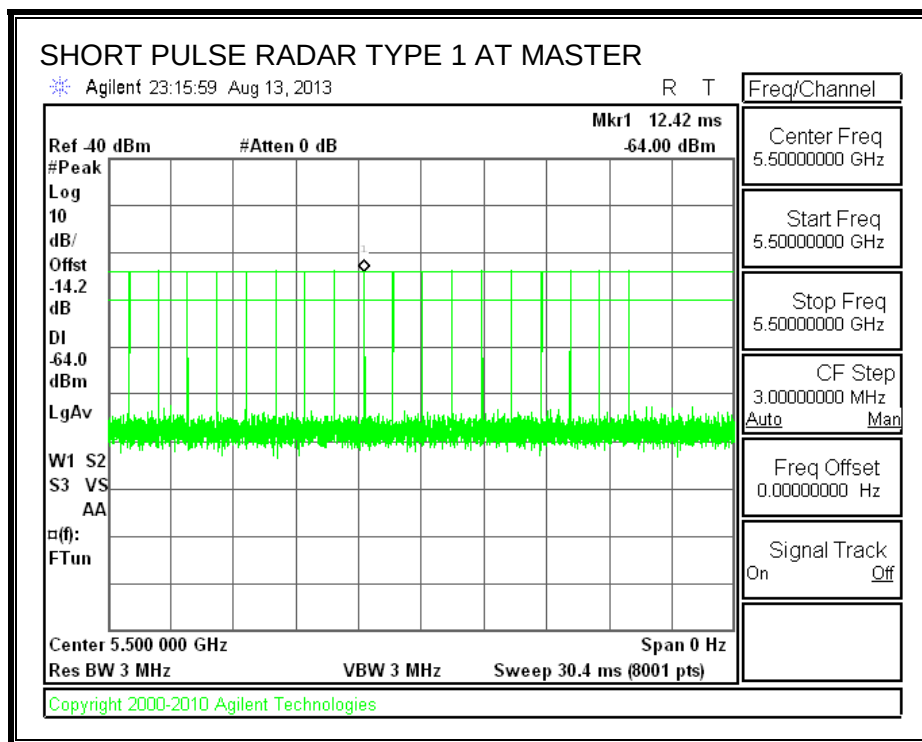
13.2. CLIENT-TO-CLIENT COMMUNICATIONS MODE RESULTS FOR 20 MHz BANDWIDTH

13.2.1. TEST CHANNEL

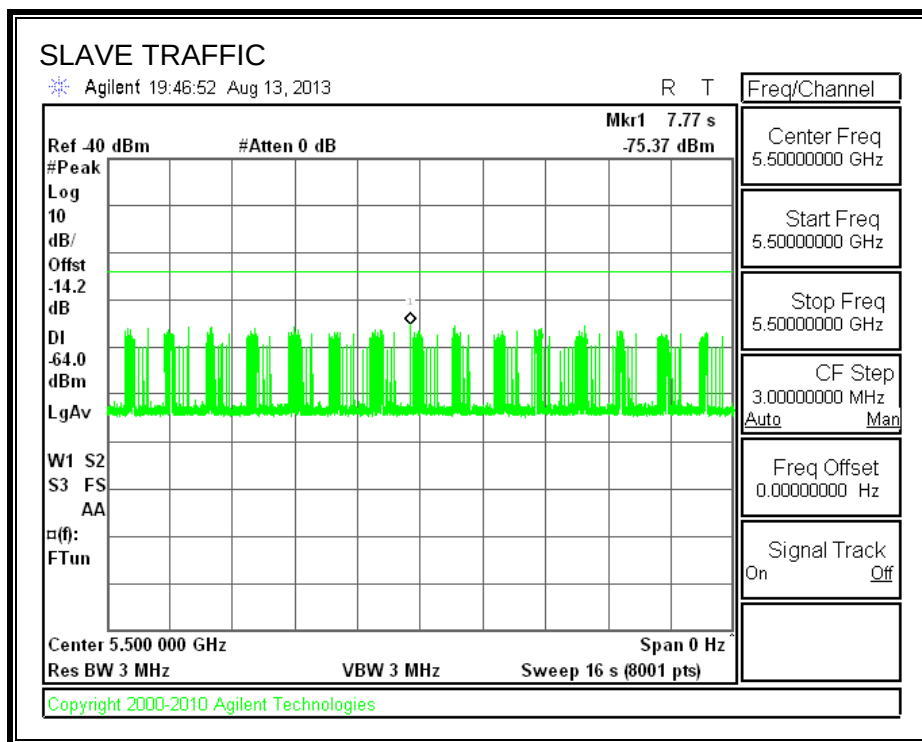
All tests were performed at a channel center frequency of 5500 MHz.

13.2.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM



TRAFFIC



OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

13.2.3. 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 FCC aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

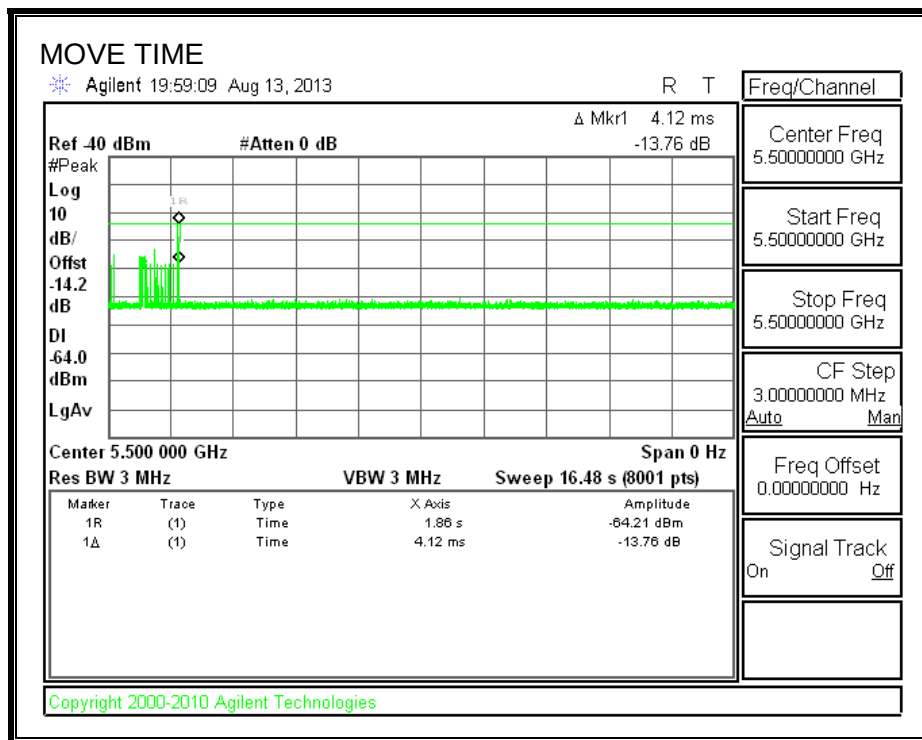
The observation period over which the IC aggregate time is calculated begins at (Reference Marker) and ends no earlier than (Reference Marker + 10 sec).

RESULTS

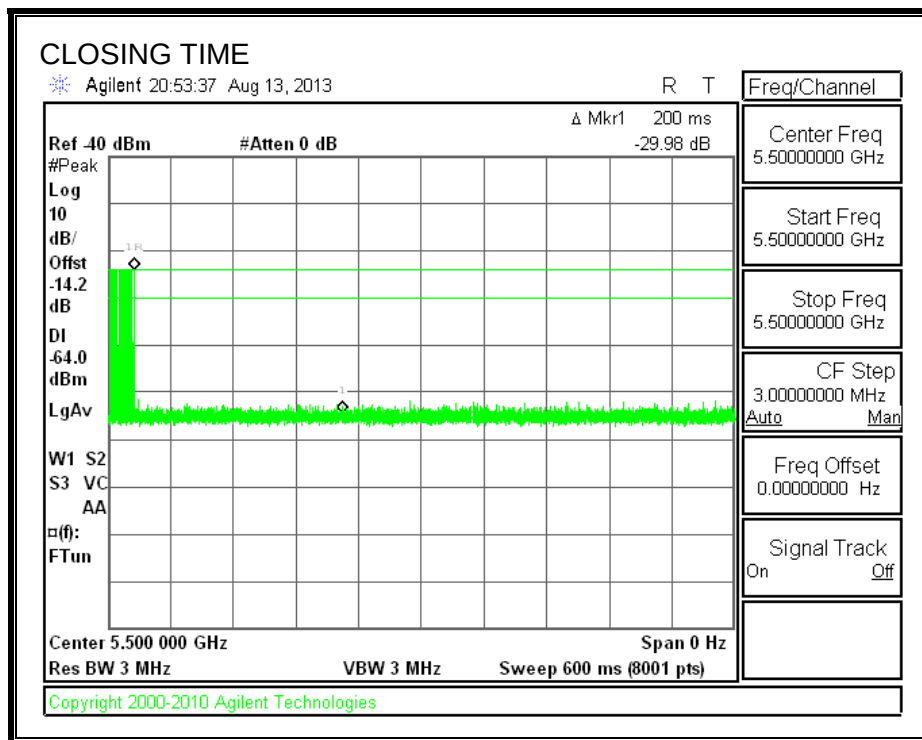
Agency	Channel Move Time (sec)	Limit (sec)
FCC / IC	0.004	10

Agency	Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
FCC	0.0	60
IC	4.12	260

MOVE TIME

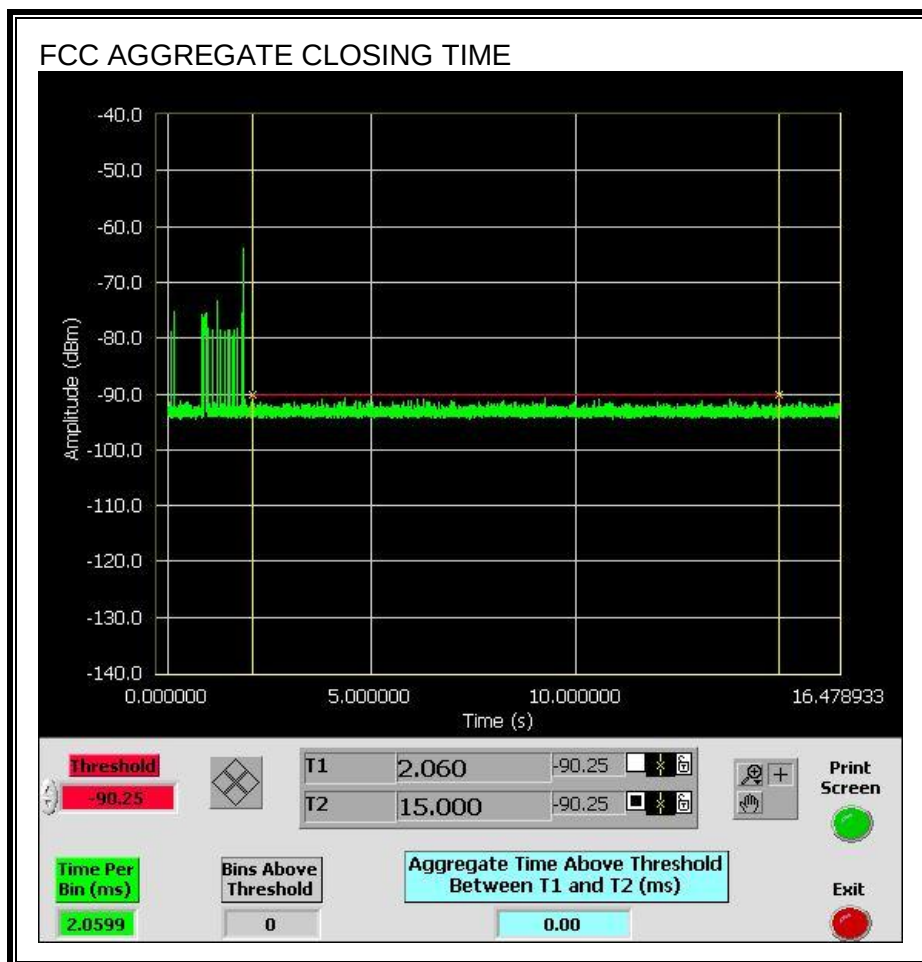


CHANNEL CLOSING TIME

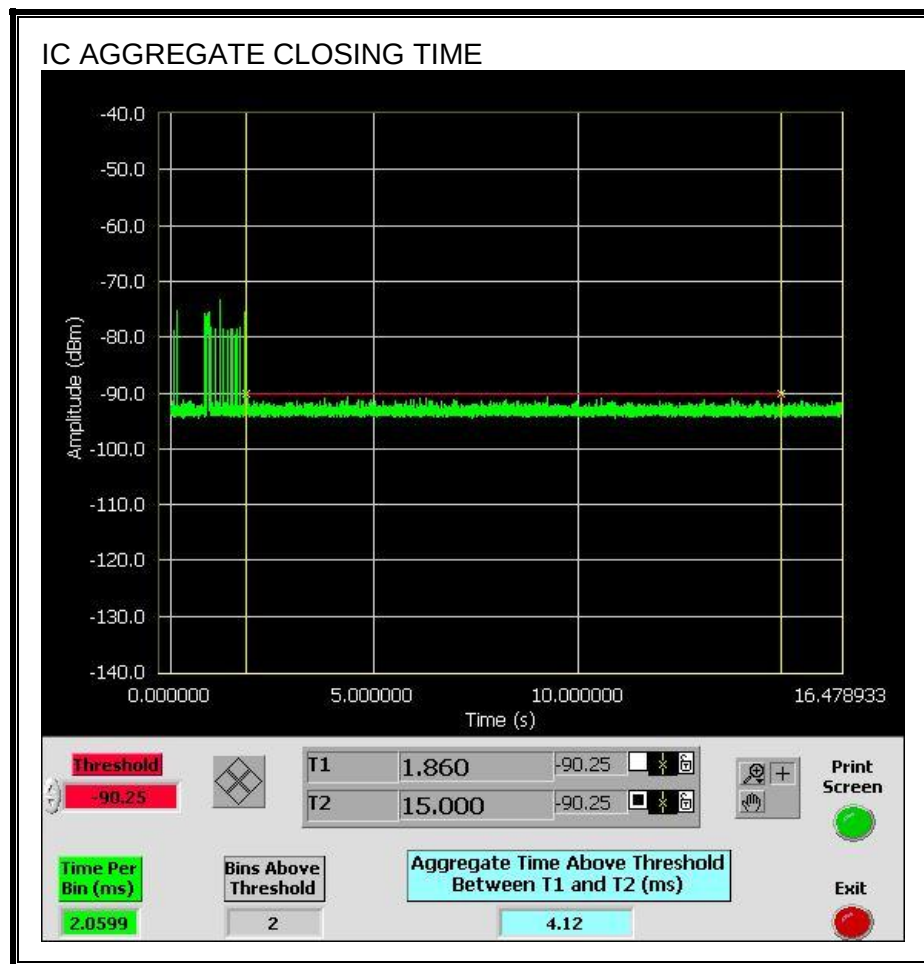


AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the FCC aggregate monitoring period.



Only intermittent transmissions are observed during the IC aggregate monitoring period.



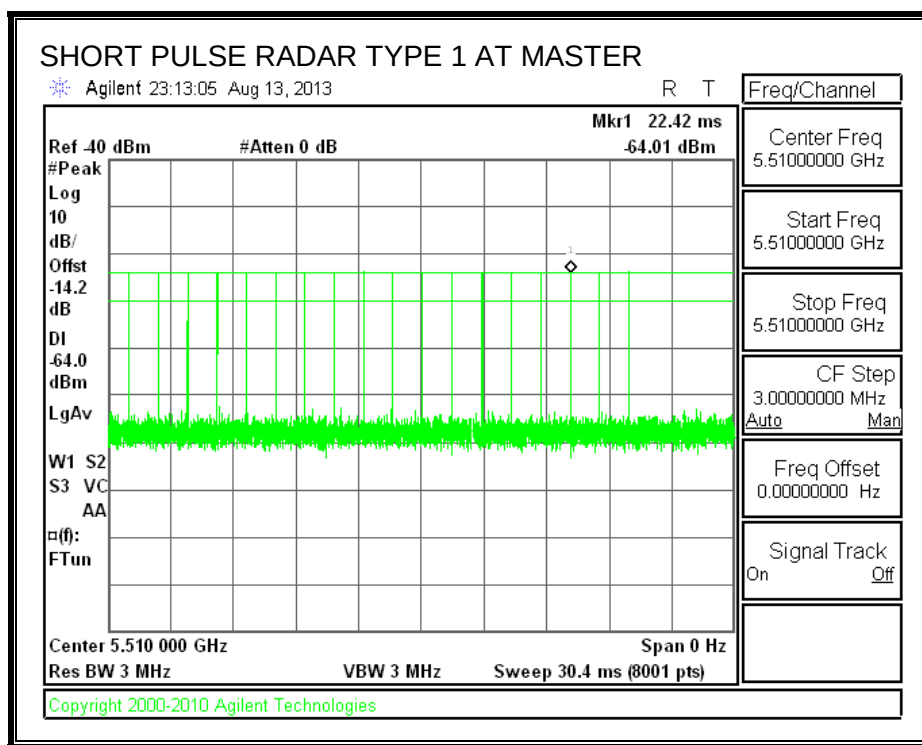
13.3. CLIENT-TO-CLIENT COMMUNICATIONS MODE RESULTS FOR 40 MHz BANDWIDTH

13.3.1. TEST CHANNEL

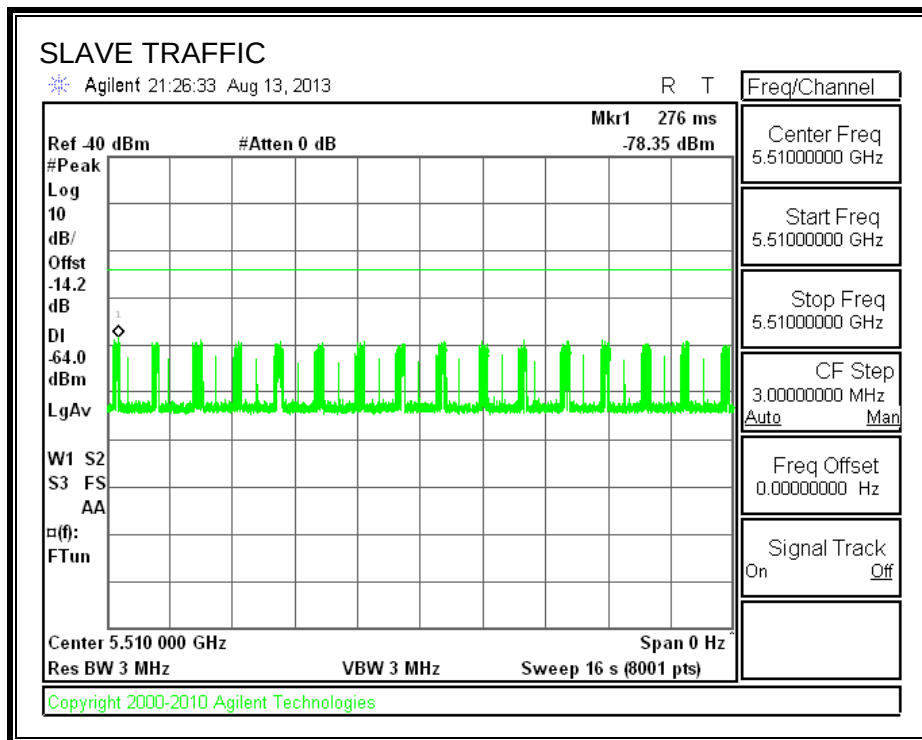
All tests were performed at a channel center frequency of 5510 MHz.

13.3.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM



TRAFFIC



OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

13.3.3. 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 FCC aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

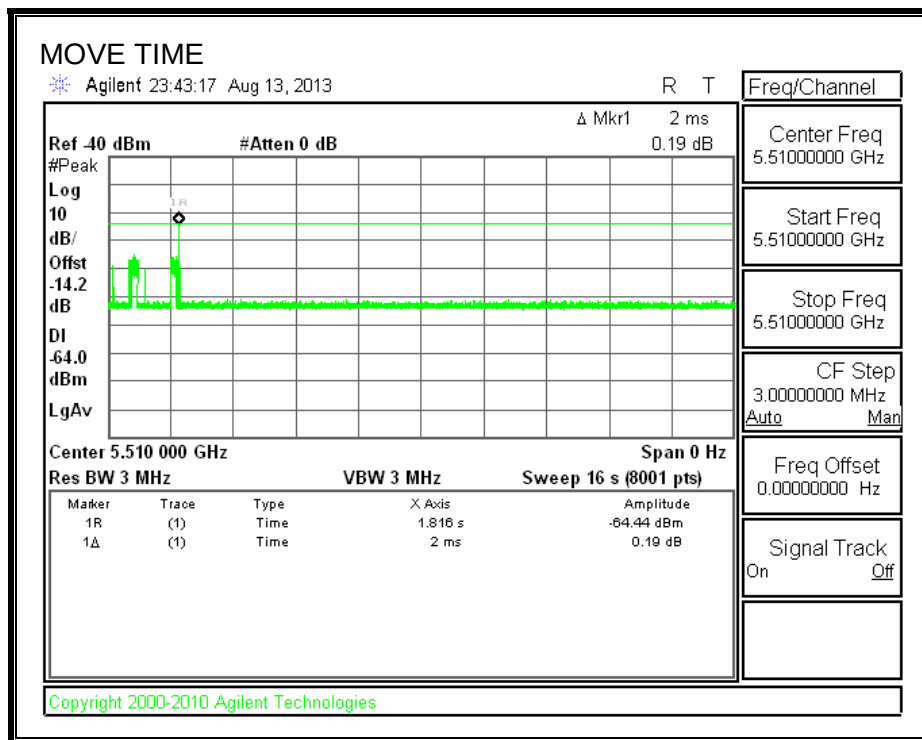
The observation period over which the IC aggregate time is calculated begins at (Reference Marker) and ends no earlier than (Reference Marker + 10 sec).

RESULTS

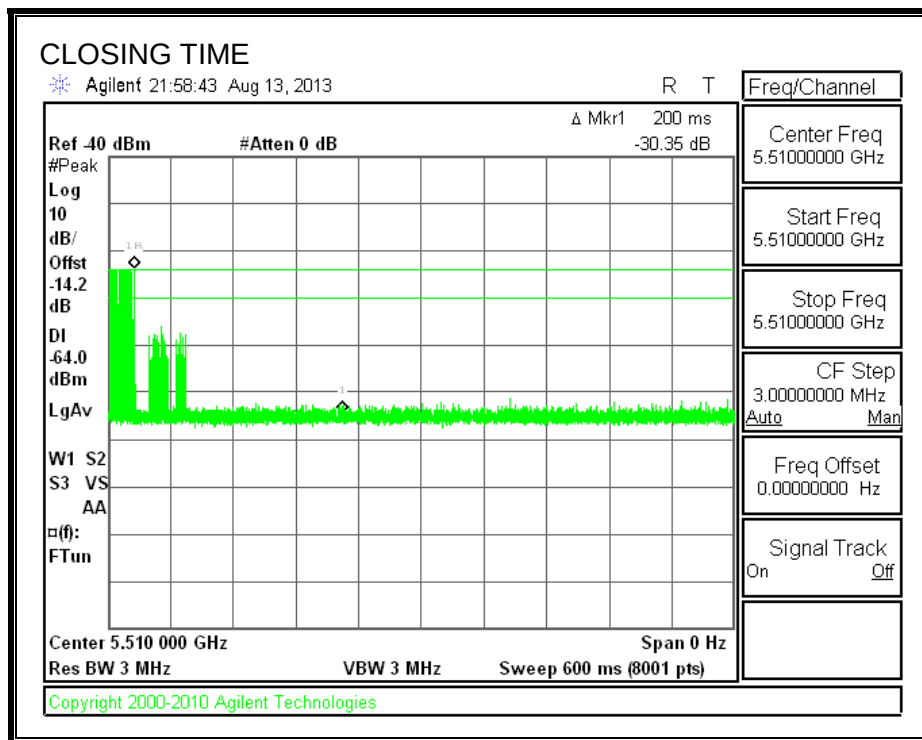
Agency	Channel Move Time (sec)	Limit (sec)
FCC / IC	0.002	10

Agency	Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
FCC	0.0	60
IC	2.0	260

MOVE TIME

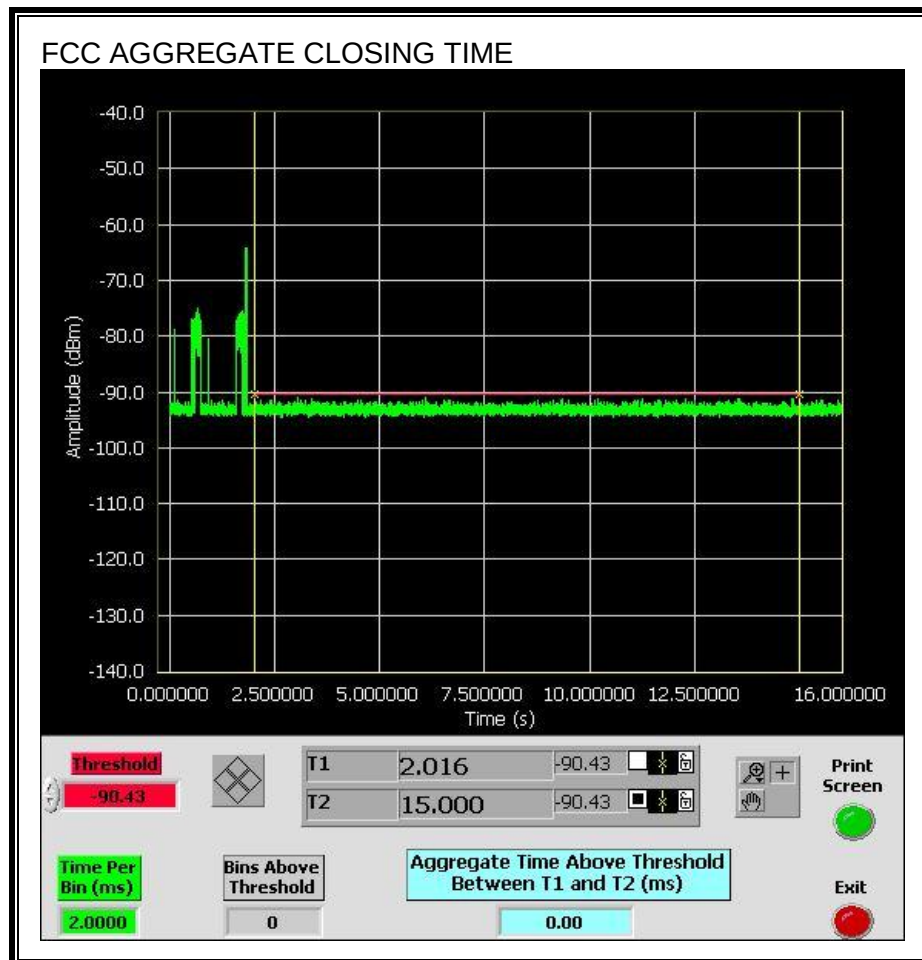


CHANNEL CLOSING TIME

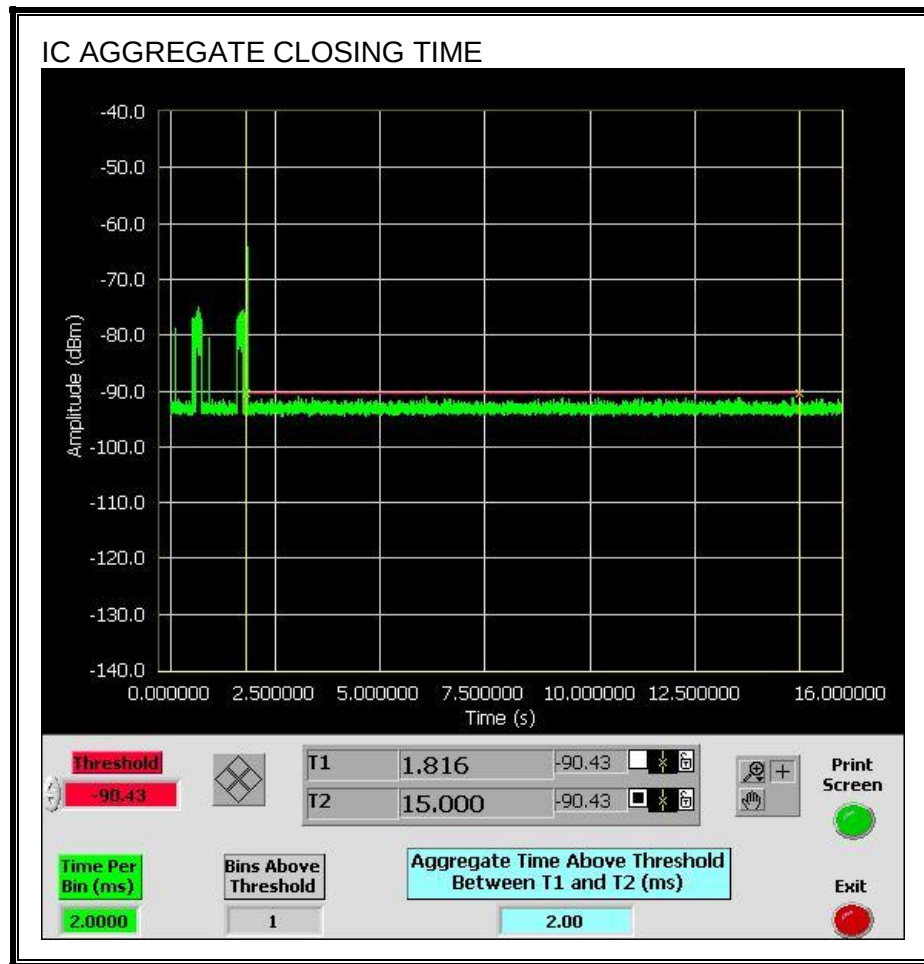


AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the FCC aggregate monitoring period.



Only intermittent transmissions are observed during the IC aggregate monitoring period.



13.3.4. NON-OCCUPANCY PERIOD

RESULTS

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

