FCC 47 CFR PART 15 SUBPART E
INDUSTRY CANADA RSS-210 ISSUE 8

CERTIFICATION TEST REPORT

FOR

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

MODEL NUMBER: SM-C115L

FCC ID: A3LSMC115L

REPORT NUMBER: 14U17495-5

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Prepared for
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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: **SAMSUNG ELECTRONICS CO., LTD.**

EUT DESCRIPTION: **GSM/WCDMA/LTE Phone + Bluetooth & DTS/UNII a/b/g/n + NFC**

MODEL: **SM-C115L**

SERIAL NUMBER: **FL-032-V (Conducted), FL-032-S (Radiated)**

DATE TESTED: **FEBRUARY 25 – MARCH 24, 2014**

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
INDUSTRY CANADA RSS-210 ISSUE 8 Annex 8	Pass
INDUSTRY CANADA RSS-GEN ISSUE 3	Pass

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

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

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.4-2009, RSS-GEN Issue 3, and RSS-210 Issue 8.

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:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)
36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

4.3. MEASUREMENT UNCERTAINTY

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

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

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

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a GSM/WCDMA/LTE Phone + Bluetooth & DTS/UNII a/b/g/n + NFC.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
5180-5240	802.11a	14.18	26.18
5180-5240	802.11n HT20	13.17	20.75
5190-5230	802.11n HT40	11.57	14.35
5260-5320	802.11a	14.28	26.79
5260-5320	802.11n HT20	13.31	21.43
5270-5310	802.11n HT40	12.61	18.24
5500-5700	802.11a	14.45	27.86
5500-5700	802.11n HT20	13.32	21.48
5510-5670	802.11n HT40	12.7	18.62

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of 0.55 dBi.

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5.4. WORST-CASE CONFIGURATION AND MODE

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

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

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

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

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5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

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

I/O CABLES

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

TEST SETUP

The EUT is setup as a stand-alone device.

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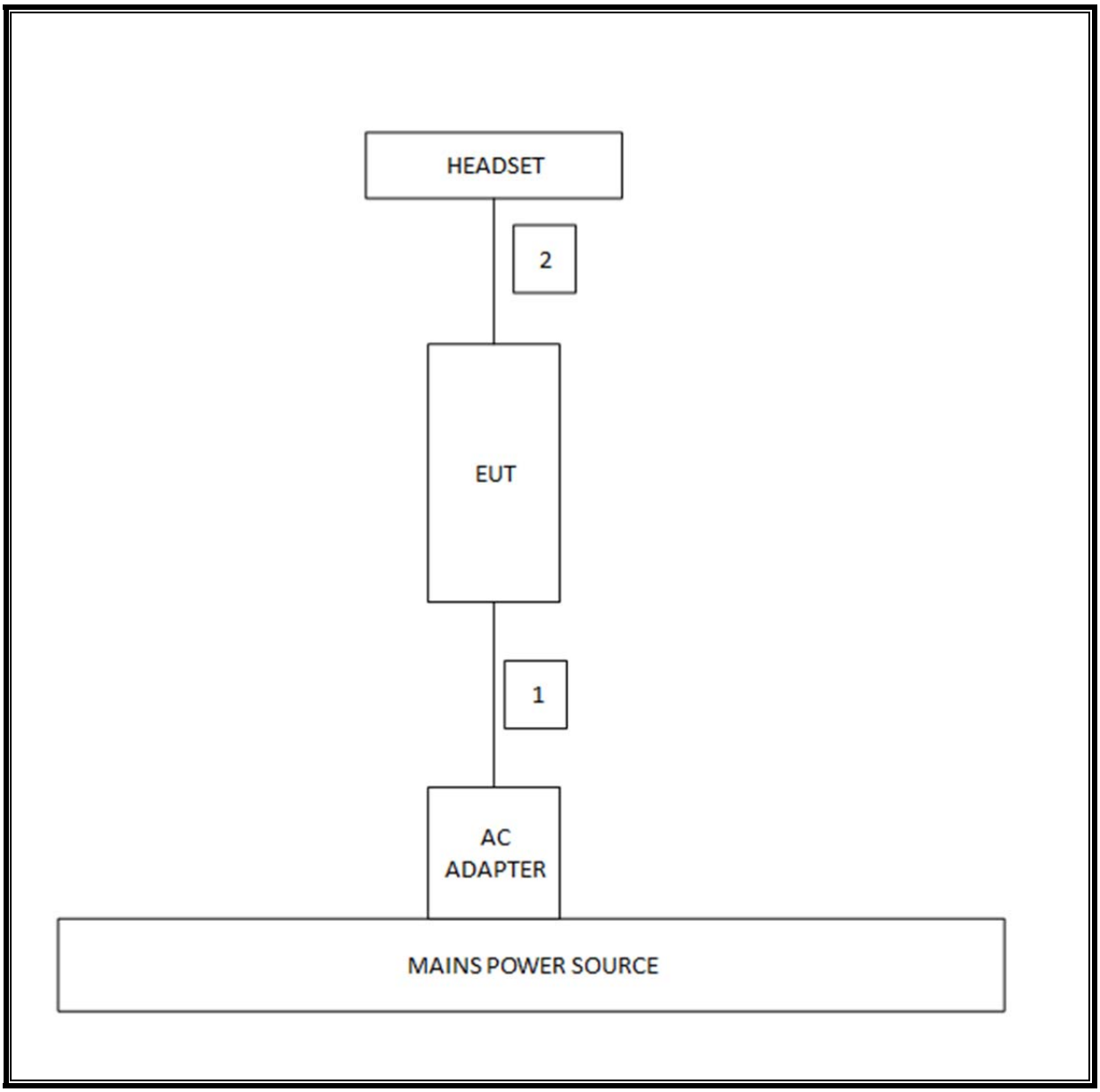
SETUP DIAGRAM FOR TESTS



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6. TEST AND MEASUREMENT EQUIPMENT

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

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

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7. SUMMARY TABLE

The model FCC ID: A3LSMC115L shares the same enclosure and circuit board as mode FCC ID: A3LSMC115. The WLAN/Bluetooth/NFC circuitry and layout, including antenna, are almost identical between the two units. The WLAN/Bluetooth antenna and surrounding circuitry is the same between these two units.

After confirming through preliminary radiated emissions that the performance of the A3LSMC115L WLAN remains representative of this model (FCC ID A3LSM C115) test data for FCC ID: A3LSM C115 is being submitted for this application.

Radiated emissions were fully re-evaluated against 15B requirements for digital devices and results indicated no significant differences between the two versions. Other differences between the two FCC IDs are in the WWAN RF Transceiver, connectivity part, components and placement. WWAN SAR and EMC has been fully retested for FCC ID: A3LSMC115L.

FCC Part Section	Test Description	Test Limit	Test Condition	Test Result	Worst Case
15.247 (a)	Occupied Band width (26dB)	N/A	Conducted	Pass	51.6 MHz
15.407 (a)(1)	TX Cond. Power 5.15-2.25	<17dBm or 4+10Log(OBW)		Pass	14.18dBm
15.407 (a)(2)	TX Cond. Power 5.25-5.35 & 5.47-5.725	<24dBm or 11+10Log(OBW)		Pass	14.28dBm
15.407 (a)(5)	PSD	<4dBm for 5.2GHz <11dBm for 5.3/5.5GHz		Pass	4.30dBm
15.407 (a)(6)	Peak Excursion Ratio	13dB		Pass	11.33dB
15.207 (a)	AC Power Line conducted emissions	Section 10	Radiated	Pass	45.28 dBuV
15.407 (b) & 15.209	Radiated Spurious Emission	< 54dBuV/m		Pass	53.65 dBuV/m
15.407 (h)(2)	Dynamic Frequency Selection	N/A	Radiated / Conducted	Pass	N/A

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8. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

LIMITS

None; for reporting purposes only.

PROCEDURE

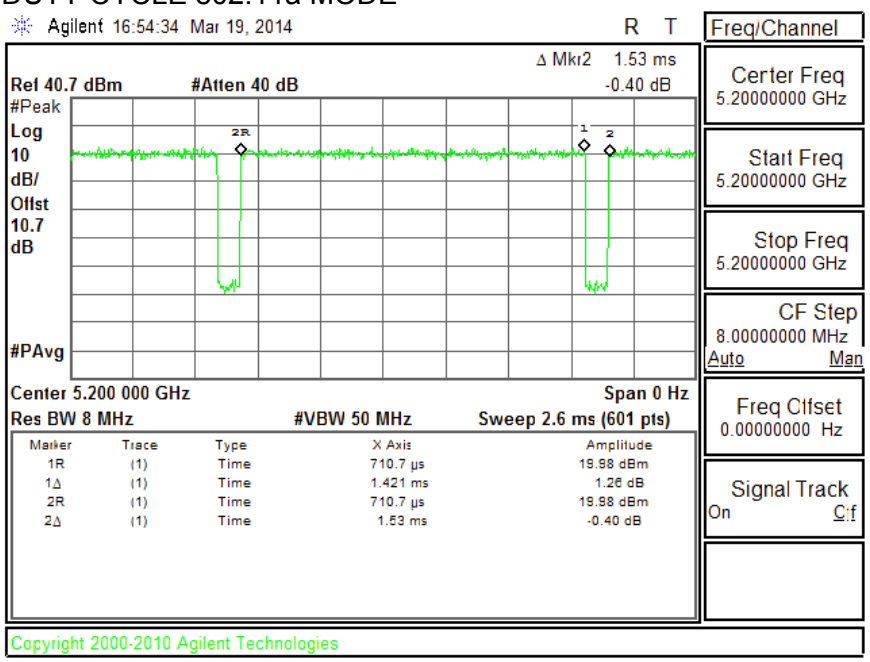
KDB 789033 Zero-Span Spectrum Analyzer Method.

8.1. ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)
802.11a	1.42	1.53	0.929	92.9%	0.32	0.704
802.11n HT20	1.34	1.44	0.926	92.6%	0.33	0.749
802.11n HT40	0.66	0.76	0.871	87.1%	0.60	1.509

8.2. DUTY CYCLE PLOTS

DUTY CYCLE 802.11a MODE



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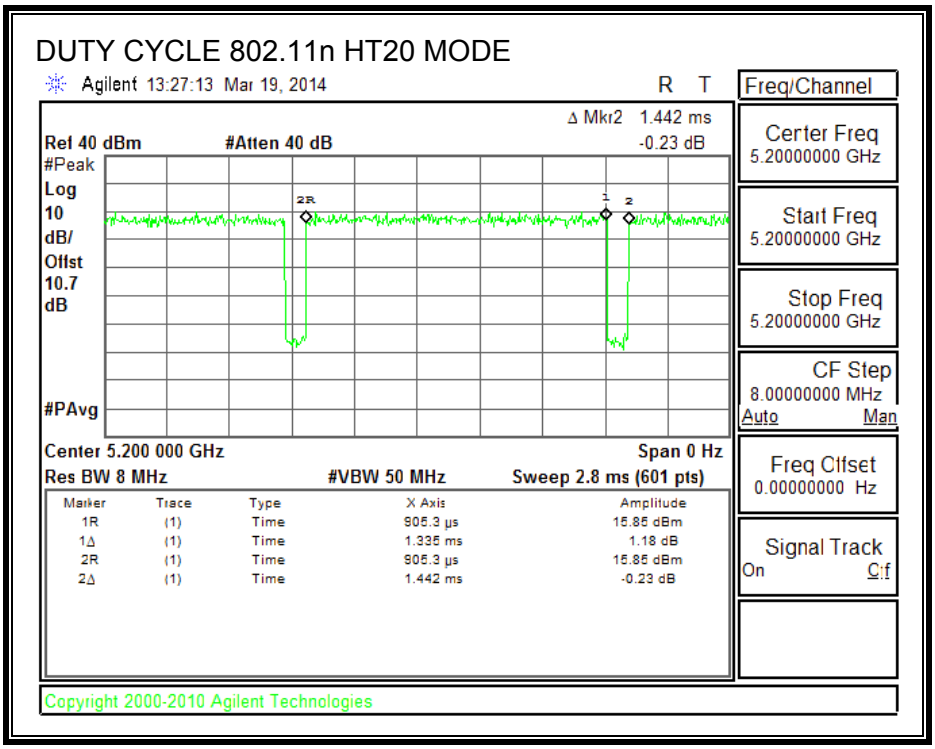
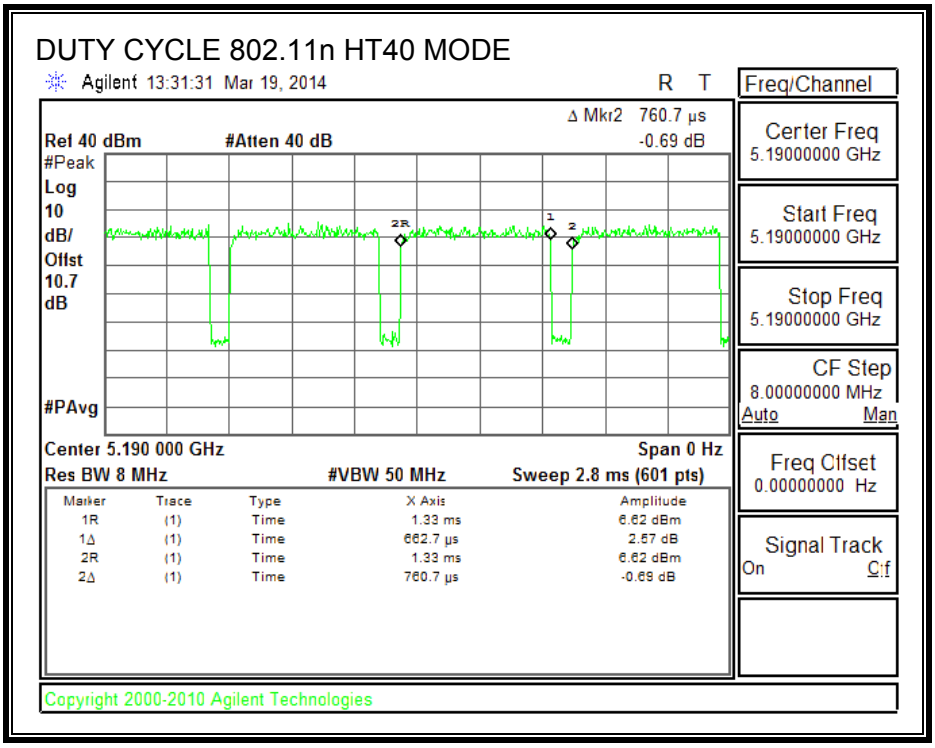
DUTY CYCLE 802.11n HT20 MODE



DUTY CYCLE 802.11n HT40 MODE



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9. MEASUREMENT METHOD

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

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

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10. ANTENNA PORT TEST RESULTS

10.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

10.1.1. 802.11a MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5180	19.90
Mid	5200	21.00
High	5240	20.65
Worst		21.00

10.1.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5180	19.40
Mid	5200	19.50
High	5240	19.45
Worst		19.50

10.1.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5190	50.10
Mid	5230	49.90
Worst		50.10

10.1.1. 802.11a MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5260	19.25
Mid	5300	19.25
High	5320	19.10
Worst		19.25

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10.1.1. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5260	19.50
Mid	5300	19.50
High	5320	19.45
Worst		19.50

10.1.2. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5270	51.1
High	5310	51.6
Worst		51.6

10.1.3. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5500	19.05
Mid	5580	19.10
High	5700	19.15
Worst		19.15

10.1.4. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5500	19.40
Mid	5580	19.35
High	5700	19.35
Worst		19.40

10.1.1. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5510	49.70
Mid	5550	49.90
High	5670	49.60
Worst		49.90

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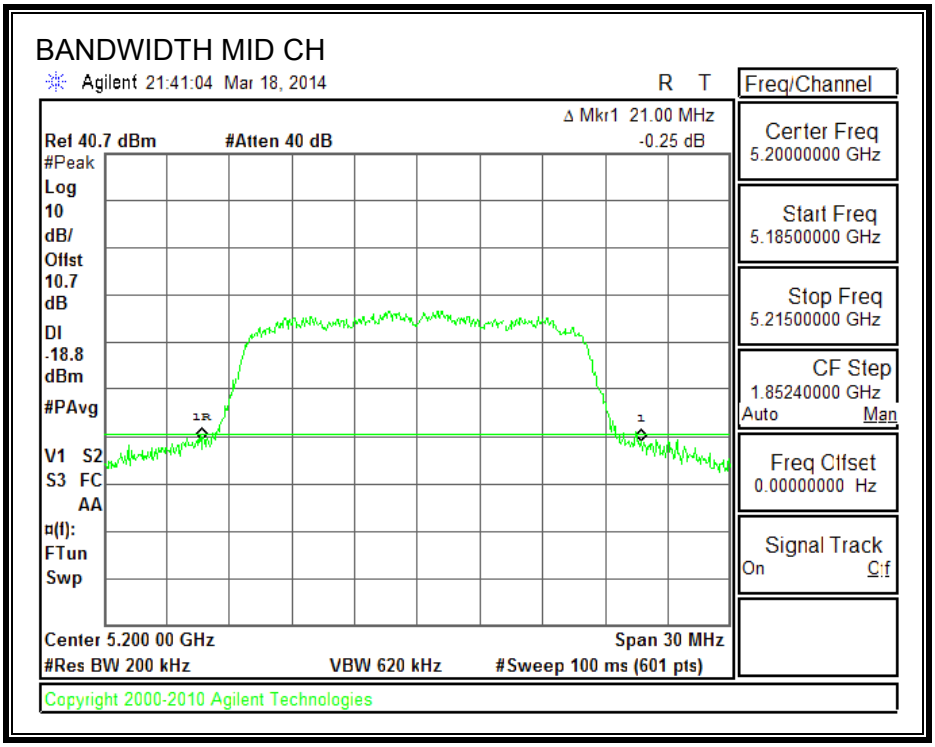
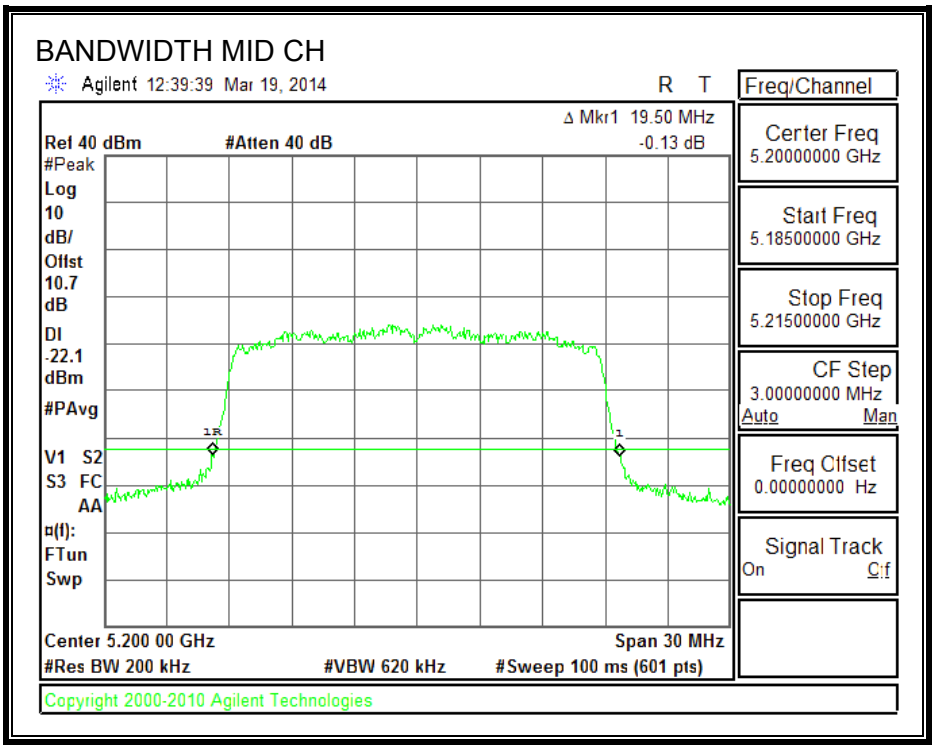
10.1.2. Plots

802.11a 5.2G 26 dB BANDWIDTH



802.11n HT20 5.2G 26 dB BANDWIDTH



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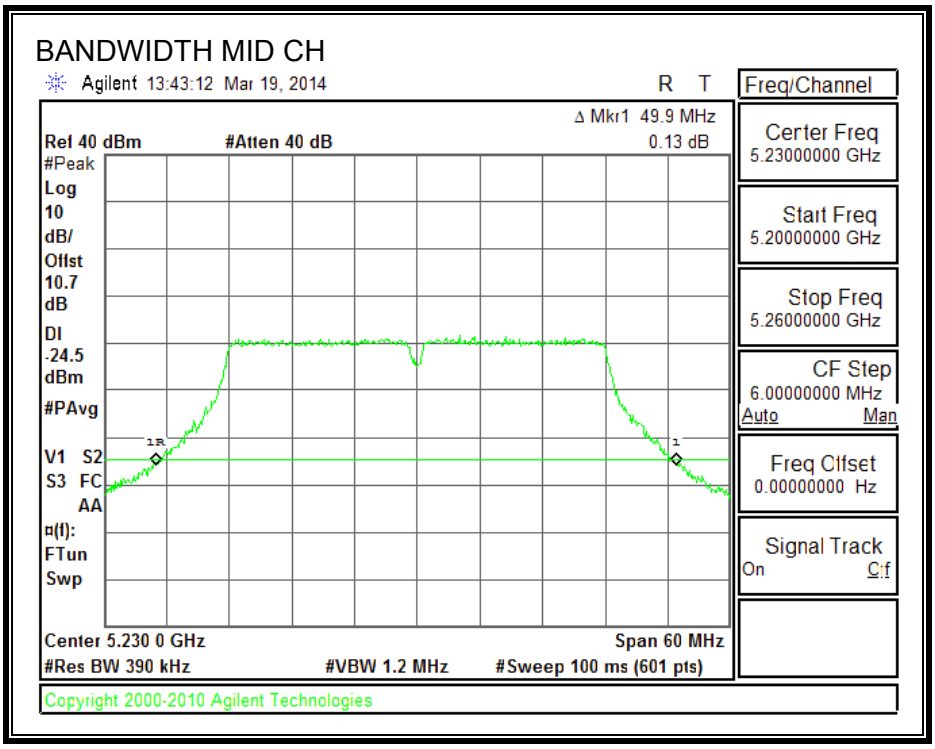
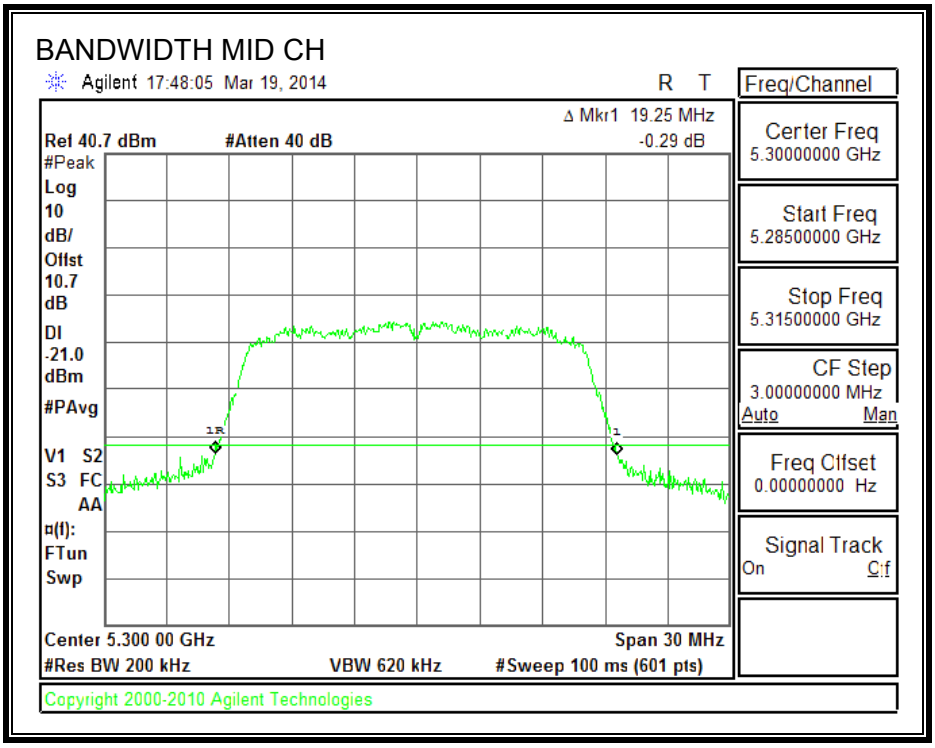
802.11n HT40 5.2G 26 dB BANDWIDTH



802.11a 5.3G 26 dB BANDWIDTH



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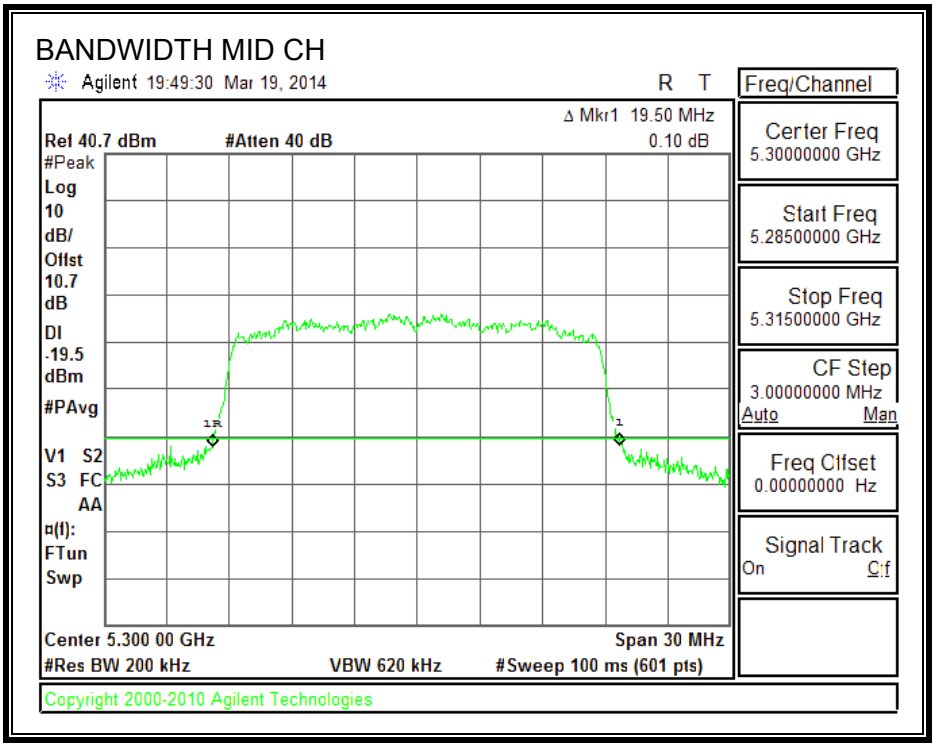
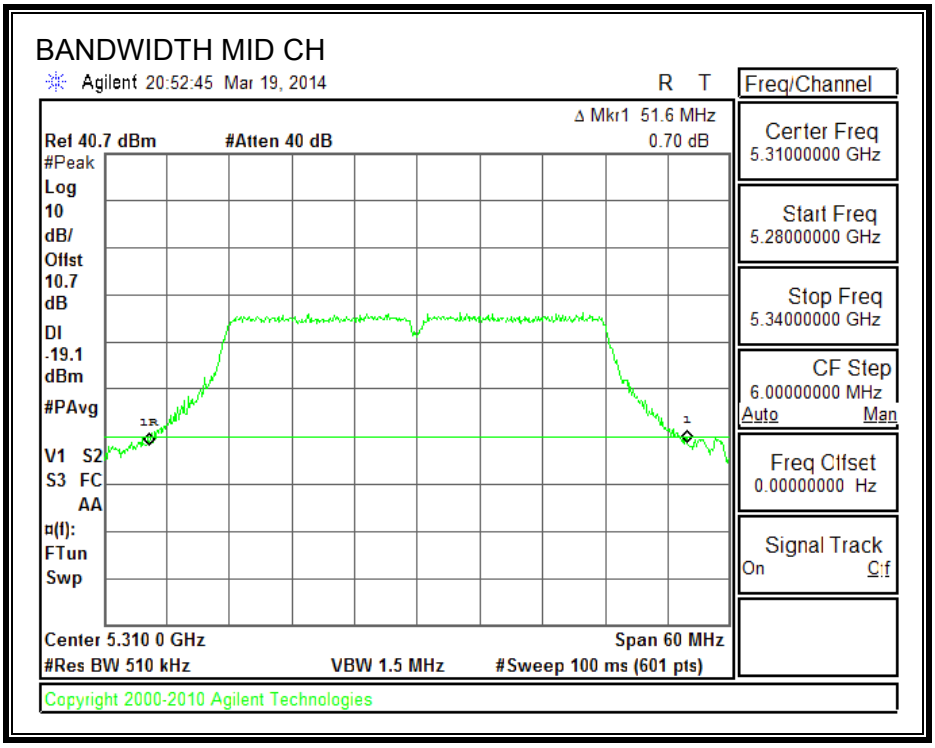
802.11n HT20 5.3G 26 dB BANDWIDTH



802.11n HT40 5.3G 26 dB BANDWIDTH



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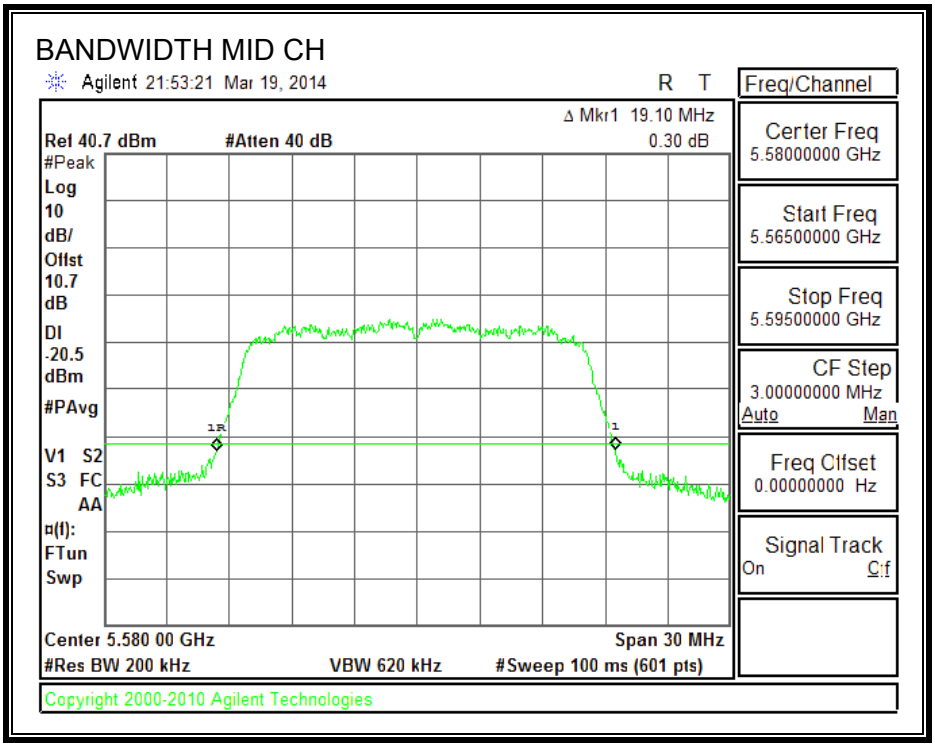
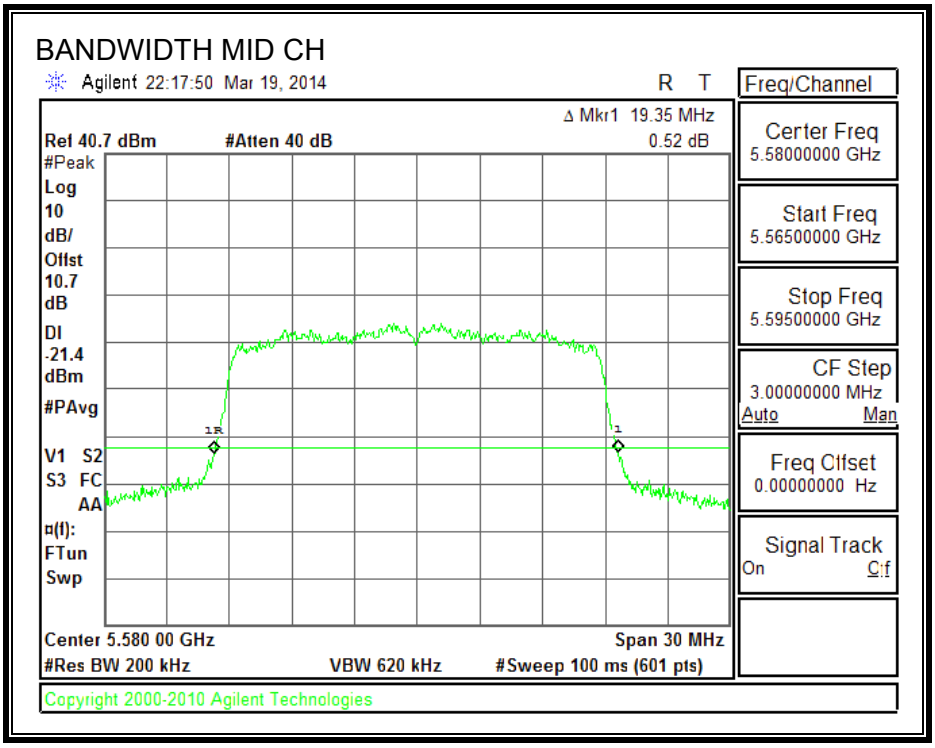
802.11a 5.5G 26 dB BANDWIDTH



802.11n HT20 5.5G 26 dB BANDWIDTH



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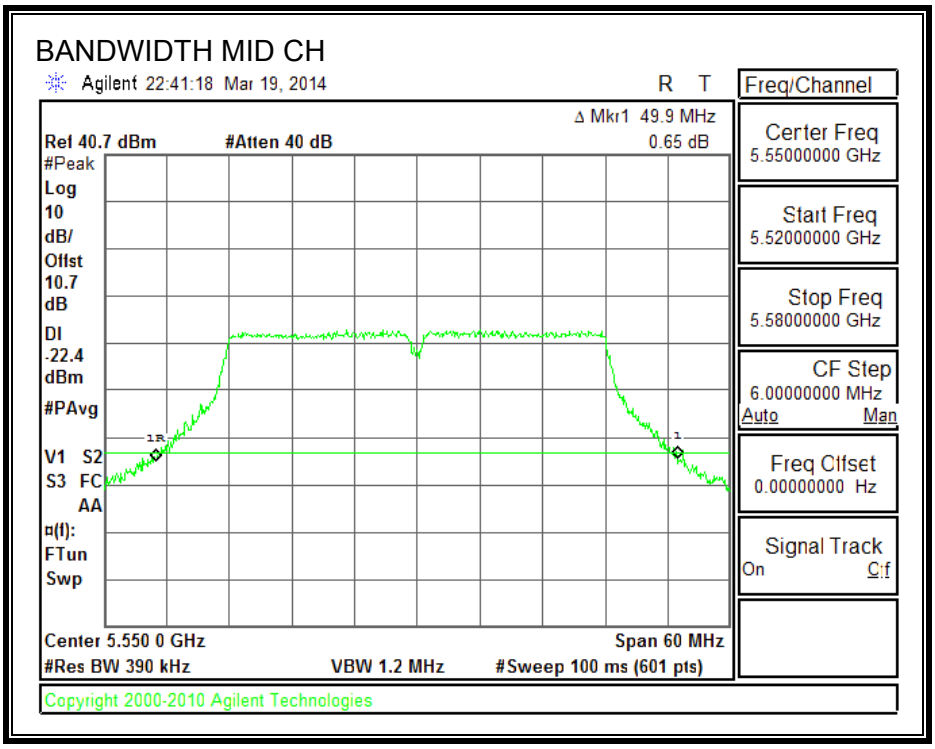
802.11n HT40 5.5G 26 dB BANDWIDTH



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10.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

10.2.1. 802.11a MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5180	16.46
Mid	5200	16.48
High	5240	16.46
Worst		16.48

10.2.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5180	17.61
Mid	5200	17.62
High	5240	17.63
Worst		17.63

10.2.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5190	36.67
Mid	5230	36.67
Worst		36.67

10.2.4. 802.11a MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5260	16.41
Mid	5300	16.40
High	5320	16.40
Worst		16.41

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10.2.5. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5260	17.63
Mid	5300	17.64
High	5320	17.63
Worst		17.64

10.2.6. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5270	36.59
High	5310	36.60
Worst		36.6

10.2.7. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5500	16.46
Mid	5580	16.47
High	5700	16.45
Worst		16.47

10.2.8. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5500	17.63
Mid	5580	17.63
High	5700	17.63
Worst		17.63

10.2.9. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5510	36.57
Mid	5550	36.60
High	5670	36.55
Worst		36.60

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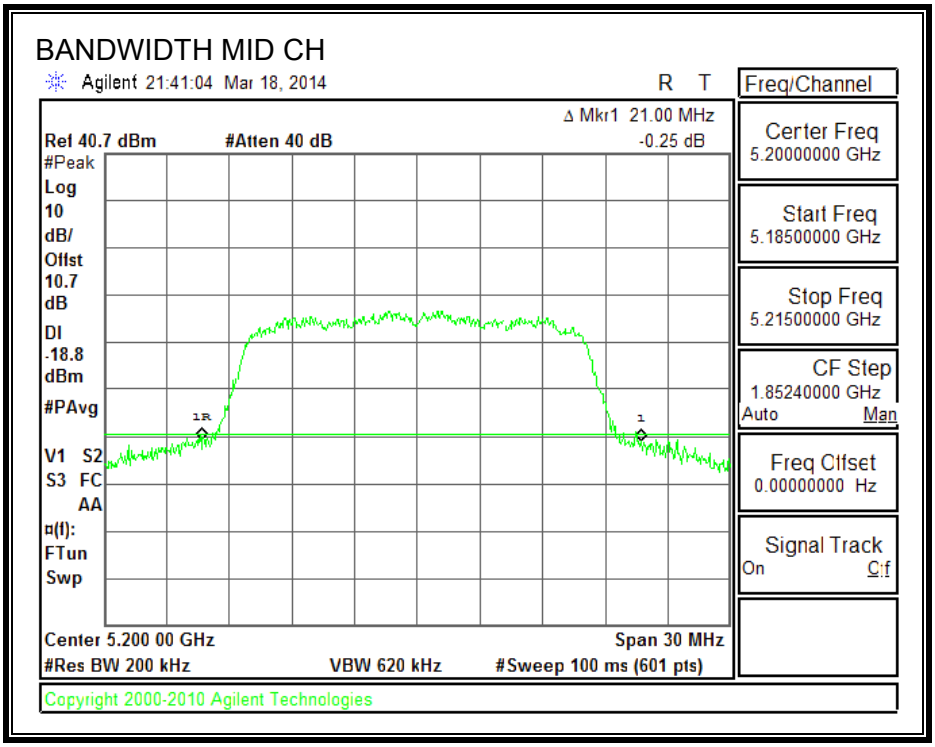
10.2.10. Plots

802.11a 5.2G 99% BANDWIDTH



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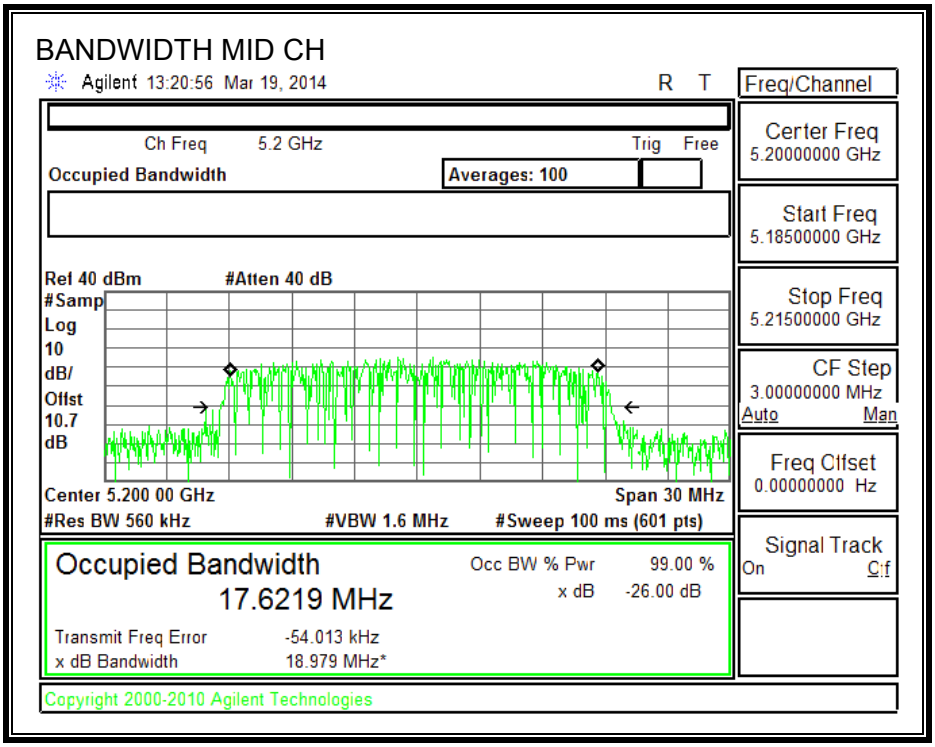

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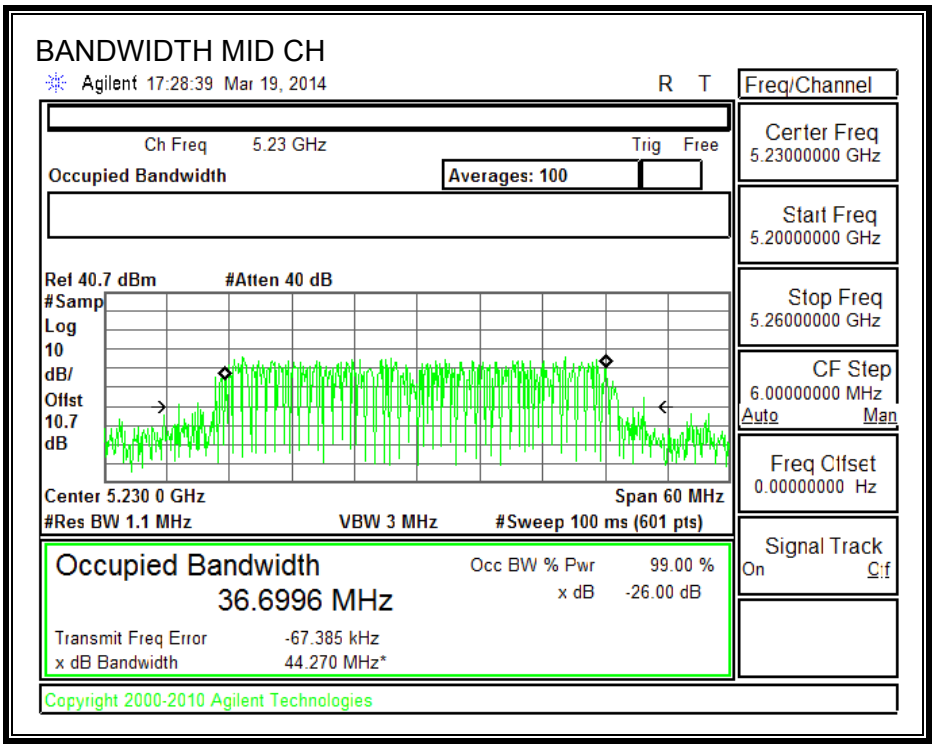
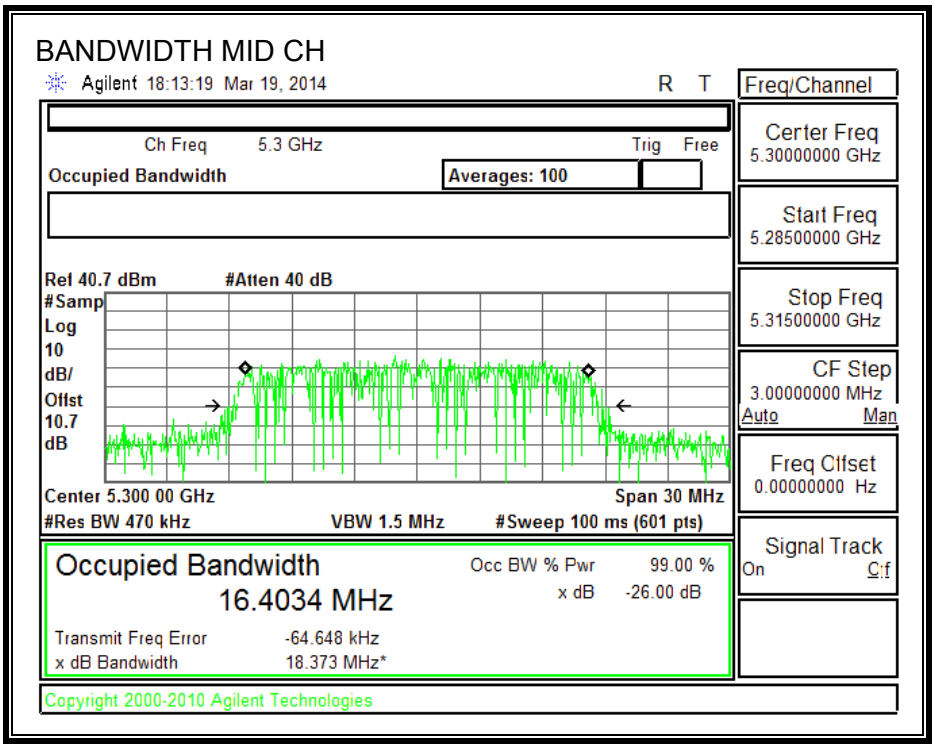
802.11n HT40 5.2G 99% BANDWIDTH



802.11a 5.3G 99% BANDWIDTH



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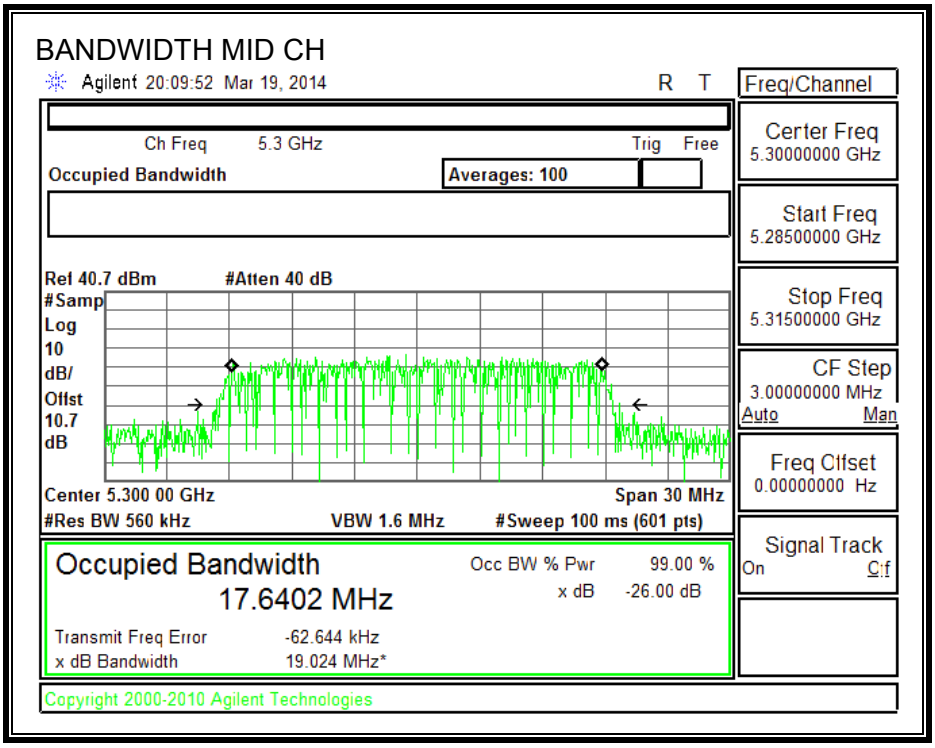
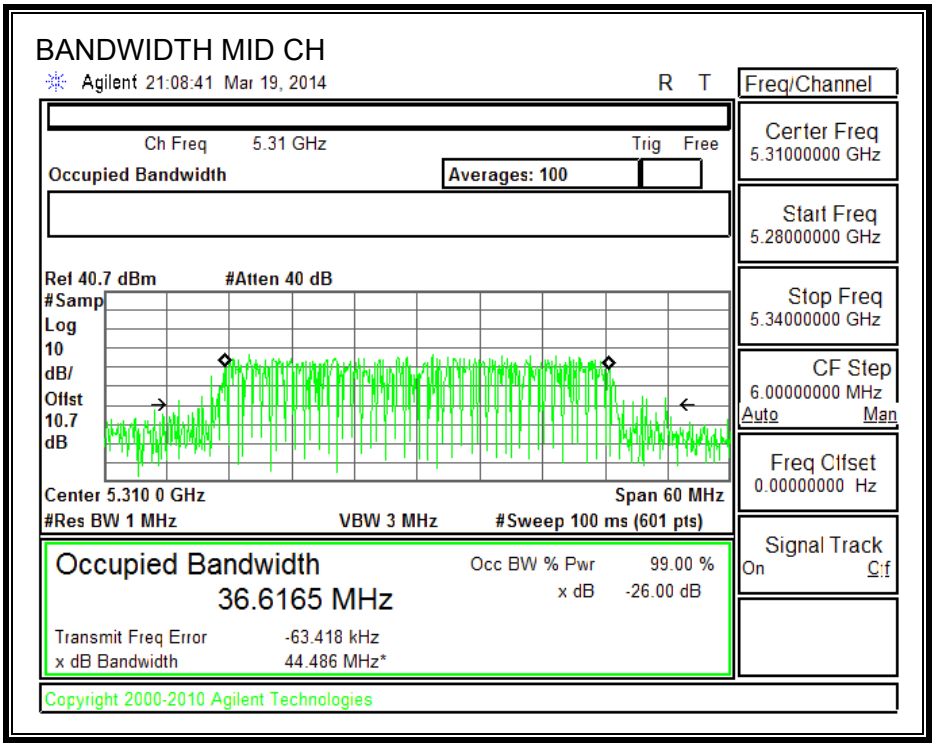
802.11n HT20 5.3G 99% BANDWIDTH



802.11n HT40 5.3G 99% BANDWIDTH



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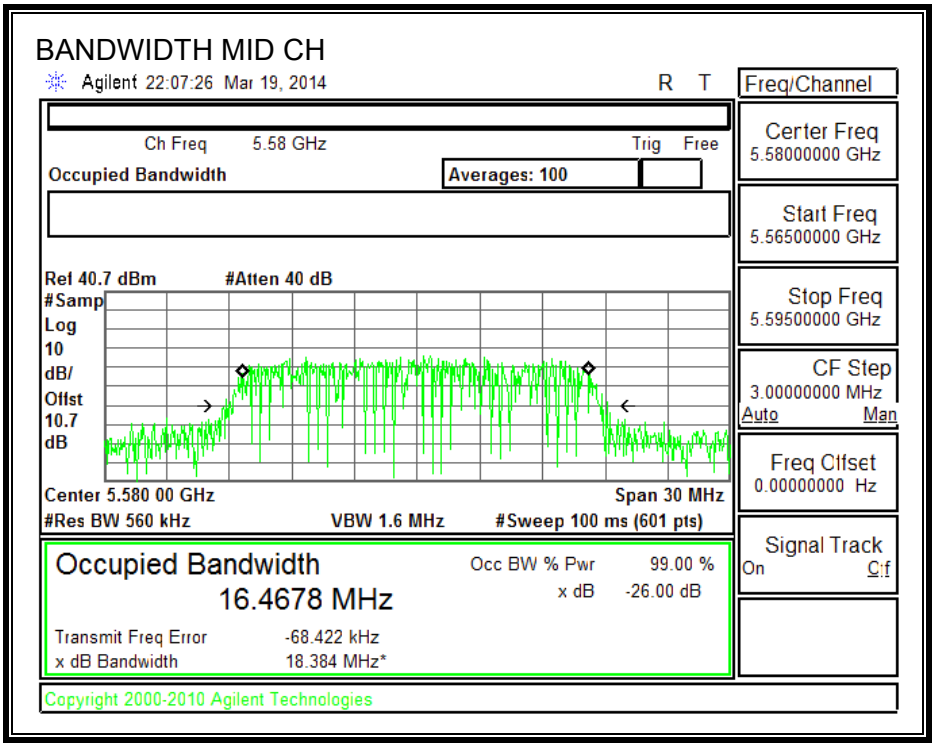
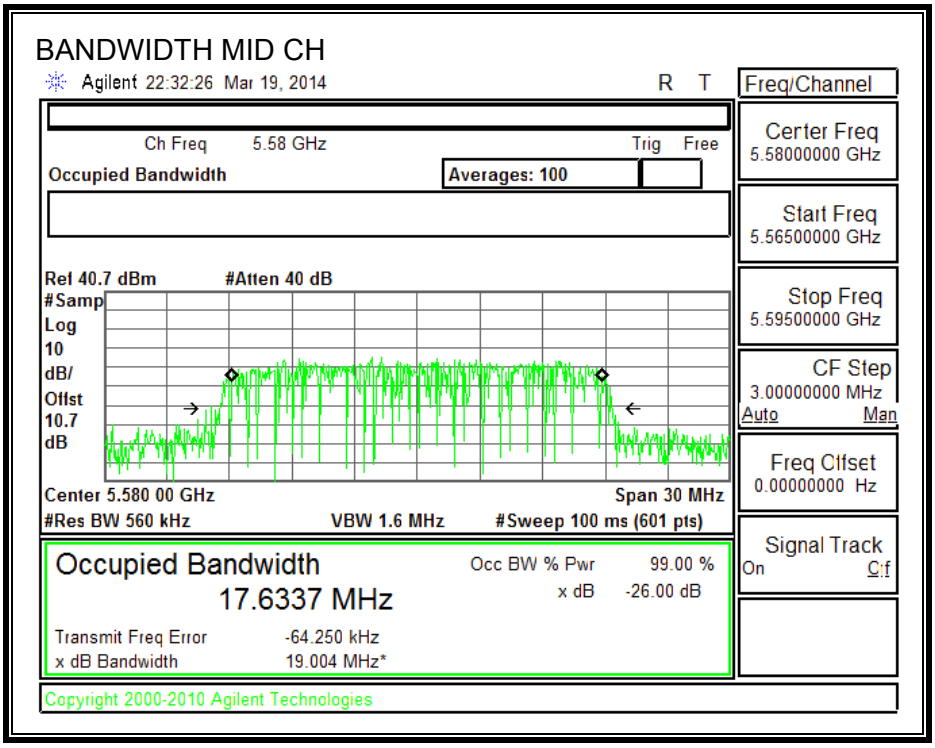
802.11a 5.5G 99% BANDWIDTH



802.11n HT20 5.5G 99% BANDWIDTH



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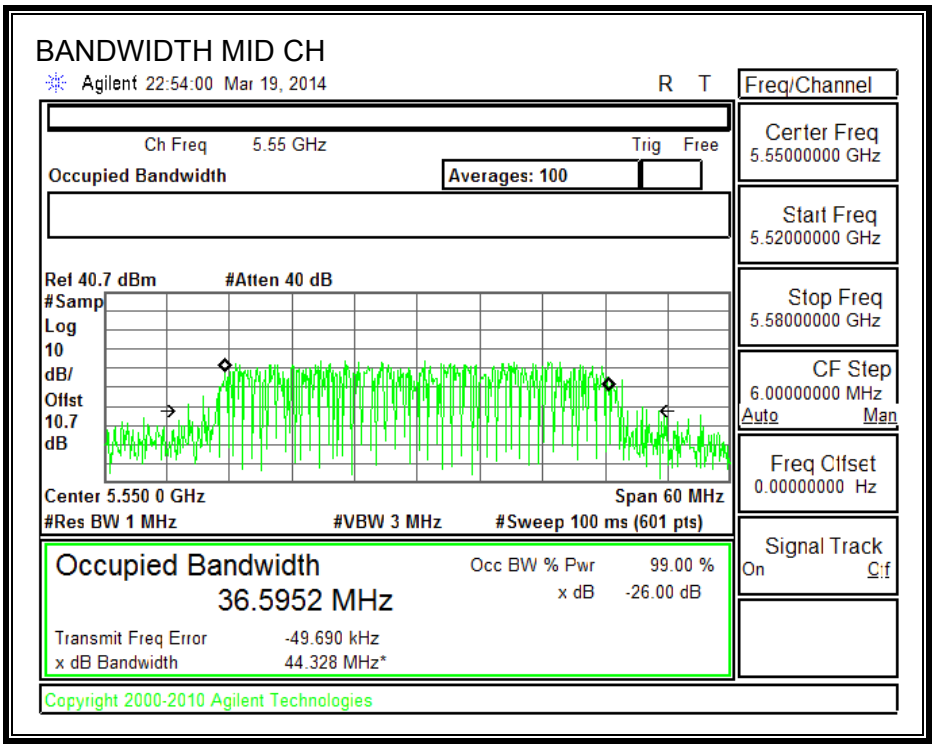
802.11n HT40 5.5G 99% BANDWIDTH



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10.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

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

RESULTS

10.3.1. 802.11a MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5180	13.50
Mid	5200	13.50
High	5240	13.40
Worst		13.50

10.3.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

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

10.3.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5190	11.000
Mid	5230	11.000
Worst		11.000

10.3.4. 802.11a MODE IN THE 5.3 GHz BAND

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Channel	Frequency (MHz)	Avg Power (dBm)
Low	5260	13.00
Mid	5300	13.10
High	5320	13.50
Worst		13.50

10.3.5. 802.11n HT20 MODE IN THE 5.3 GHz BAND

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

10.3.6. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5270	11.2
High	5310	11.3
Worst		11.3

10.3.7. 802.11a MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5500	12.800
Mid	5580	13.500
High	5700	13.400
Worst		13.500

10.3.8. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5500	11.850
Mid	5580	11.810
High	5700	11.910
Worst		11.910

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10.3.9. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	5510	11.3
Mid	5550	11.3
High	5670	11.2
Worst		11.3

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10.4. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (1)

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

IC RSS-210 A9.2 (1)

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

DIRECTIONAL ANTENNA GAIN

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

Test Methodology

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RESULTS

10.4.1. 802.11a MODE IN THE 5.2 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5180	19.900	16.460	0.55
Mid	5200	21.000	16.480	0.55
High	5240	20.650	16.460	0.55

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	16.99	22.16	21.61	16.99	4.00	10.00	4.00
Mid	5200	17.00	22.17	21.62	17.00	4.00	10.00	4.00
High	5240	17.00	22.16	21.61	17.00	4.00	10.00	4.00

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	13.857	14.18	16.99	-2.81
Mid	5200	13.760	14.08	17.00	-2.92
High	5240	13.739	14.06	17.00	-2.94

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5180	3.660	3.98	4.00	-0.02
Mid	5200	3.500	3.82	4.00	-0.18
High	5240	3.520	3.84	4.00	-0.16

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10.4.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5180	19.400	17.610	0.55
Mid	5200	19.500	17.620	0.55
High	5240	19.450	17.630	0.55

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	16.88	22.46	21.91	16.88	4.00	10.00	4.00
Mid	5200	16.90	22.46	21.91	16.90	4.00	10.00	4.00
High	5240	16.89	22.46	21.91	16.89	4.00	10.00	4.00

Duty Cycle CF (dB)	0.33	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	12.842	13.17	16.88	-3.71
Mid	5200	12.720	13.05	16.90	-3.85
High	5240	12.593	12.92	16.89	-3.97

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5180	2.480	2.81	4.00	-1.19
Mid	5200	2.480	2.81	4.00	-1.19
High	5240	2.470	2.80	4.00	-1.20

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10.4.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5190	50.1	36.670	0.55
Mid	5230	49.9	36.670	0.55

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	22.45	17.00	4.00	10.00	4.00
Mid	5230	17.00	23.00	22.45	17.00	4.00	10.00	4.00
Duty Cycle CF (dB)		0.60	Included in Calculations of Corr'd Power & PPSD					

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5190	10.972	11.57	17.00	-5.43
Mid	5230	10.886	11.49	17.00	-5.51

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5190	-3.560	-2.96	4.00	-6.96
Mid	5230	-3.740	-3.14	4.00	-7.14

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10.4.4. 802.11a MODE IN THE 5.3 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5260	19.25	16.410	0.55
Mid	5300	19.25	16.400	0.55
High	5320	19.10	16.400	0.55

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	23.84	23.15	29.15	23.15	11.00	11.00	11.00
Mid	5300	23.84	23.15	29.15	23.15	11.00	11.00	11.00
High	5320	23.81	23.15	29.15	23.15	11.00	11.00	11.00

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	13.934	14.25	23.15	-8.90
Mid	5300	13.960	14.28	23.15	-8.87
High	5320	13.897	14.22	23.15	-8.93

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5260	3.640	3.96	11.00	-7.04
Mid	5300	3.980	4.30	11.00	-6.70
High	5320	3.740	4.06	11.00	-6.94

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10.4.5. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5260	19.50	17.630	0.55
Mid	5300	19.50	17.640	0.55
High	5320	19.45	17.630	0.55

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	23.90	23.46	29.46	23.46	11.00	11.00	11.00
Mid	5300	23.90	23.46	29.46	23.46	11.00	11.00	11.00
High	5320	23.89	23.46	29.46	23.46	11.00	11.00	11.00

Duty Cycle CF (dB)	0.33	Included in Calculations of Corr'd Power & PPSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	12.963	13.29	23.46	-10.17
Mid	5300	12.975	13.31	23.46	-10.16
High	5320	12.946	13.28	23.46	-10.19

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5260	2.630	2.96	11.00	-8.04
Mid	5300	2.800	3.13	11.00	-7.87
High	5320	2.510	2.84	11.00	-8.16

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10.4.6. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5270	51.1	36.6	0.55
High	5310	51.6	36.6	0.55

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5270	24.00	24.00	30.00	24.00	11.00	11.00	11.00
High	5310	24.00	24.00	30.00	24.00	11.00	11.00	11.00

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5270	12.01	12.61	24.00	-11.39
High	5310	12.00	12.60	24.00	-11.40

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5270	-2.62	-2.02	11.00	-13.02
High	5310	-2.75	-2.15	11.00	-13.15

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10.4.7. 802.11a MODE IN THE 5.5 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5500	19.05	16.46	0.55
Mid	5580	19.10	16.47	0.55
High	5700	19.15	16.45	0.55

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	23.80	23.16	29.16	23.16	11.00	11.00	11.00
Mid	5580	23.81	23.17	29.17	23.17	11.00	11.00	11.00
High	5700	23.82	23.16	29.16	23.16	11.00	11.00	11.00

Duty Cycle CF (dB)	0.32	**Included in Calculations of Corr'd Power & PPSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	14.094	14.41	23.16	-8.75
Mid	5580	13.984	14.30	23.17	-8.86
High	5700	14.128	14.45	23.16	-8.71

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5500	4.060	4.38	11.00	-6.62
Mid	5580	4.010	4.33	11.00	-6.67
High	5700	3.930	4.25	11.00	-6.75

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10.4.8. 802.11n HT20 MODE IN THE 5.5 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5500	19.40	17.63	0.55
Mid	5580	19.35	17.63	0.55
High	5700	19.35	17.63	0.55

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	23.88	23.46	29.46	23.46	11.00	11.00	11.00
Mid	5580	23.87	23.46	29.46	23.46	11.00	11.00	11.00
High	5700	23.87	23.46	29.46	23.46	11.00	11.00	11.00

Duty Cycle CF (dB)	0.33	**Included in Calculations of Corr'd Power & PPSD**

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	12.842	13.17	23.46	-10.29
Mid	5580	12.780	13.11	23.46	-10.35
High	5700	12.990	13.32	23.46	-10.14

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5500	1.900	2.23	11.00	-8.77
Mid	5580	2.370	2.70	11.00	-8.30
High	5700	2.520	2.85	11.00	-8.15

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10.4.9. 802.11n HT40 MODE IN THE 5.5 GHz BAND

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5510	49.7	36.57	0.55
Mid	5550	49.9	36.60	0.55
High	5670	49.6	36.55	0.55

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

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	11.867	12.47	24.00	-11.53
Mid	5550	11.926	12.53	24.00	-11.47
High	5670	12.098	12.70	24.00	-11.30

PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5510	-2.590	-1.99	11.00	-12.99
Mid	5550	-2.680	-2.08	11.00	-13.08
High	5670	-2.460	-1.86	11.00	-12.86

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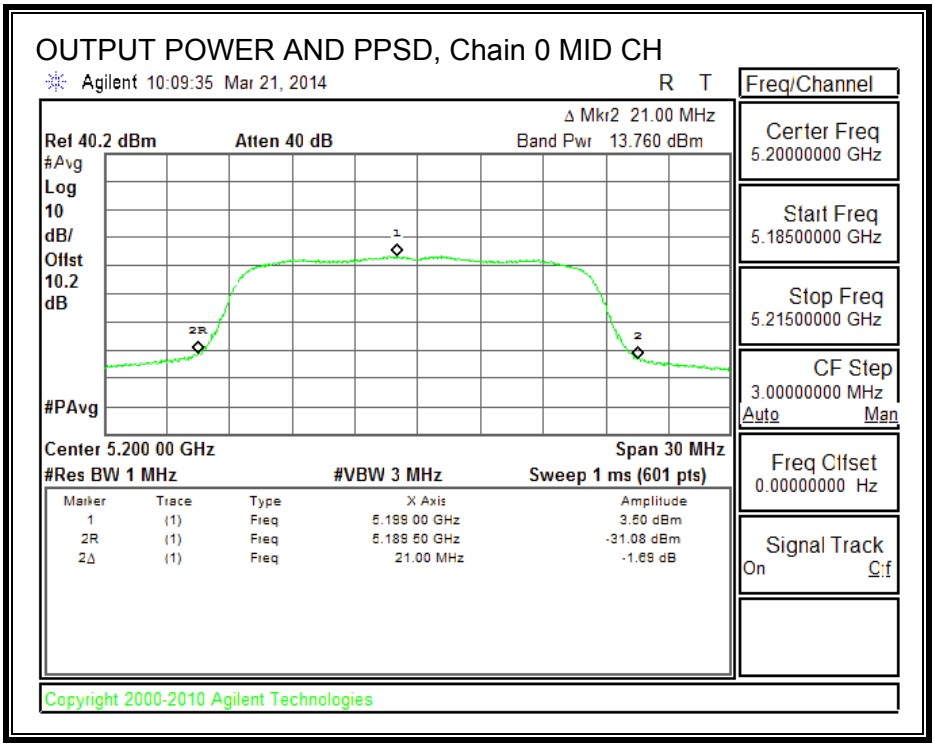
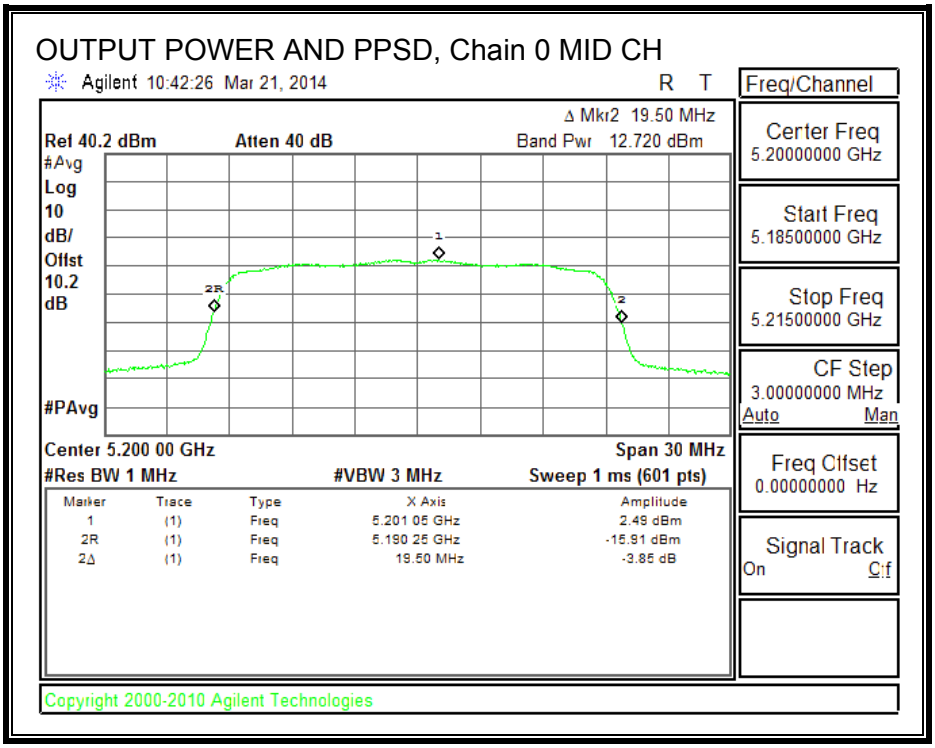
10.4.10. Plots

802.11a 5.2G OUTPUT POWER AND PPSD, Chain 0



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



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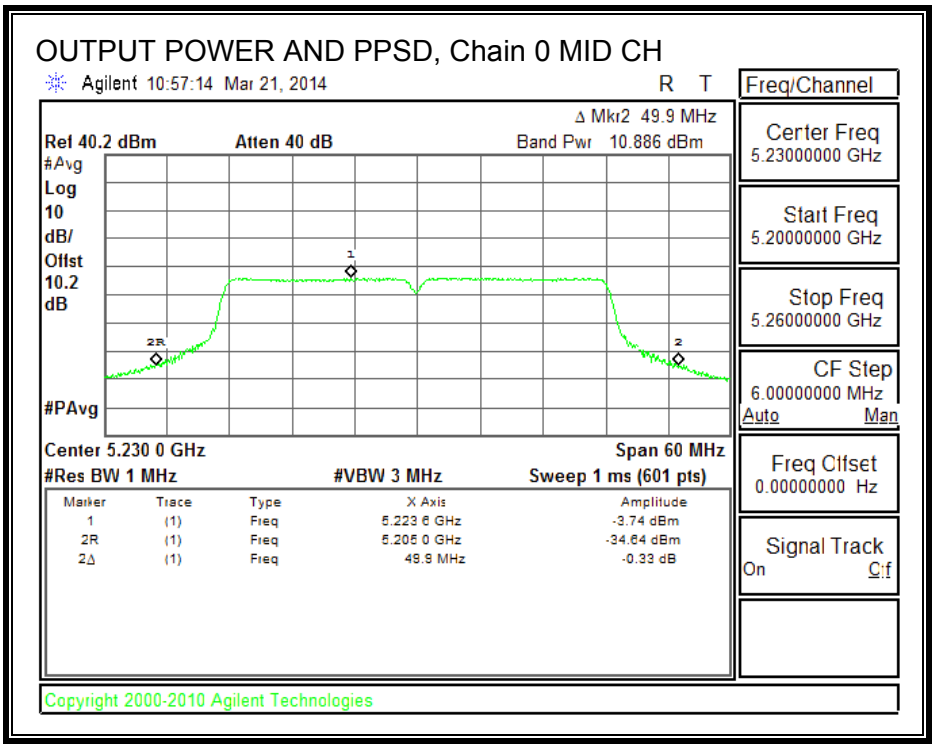
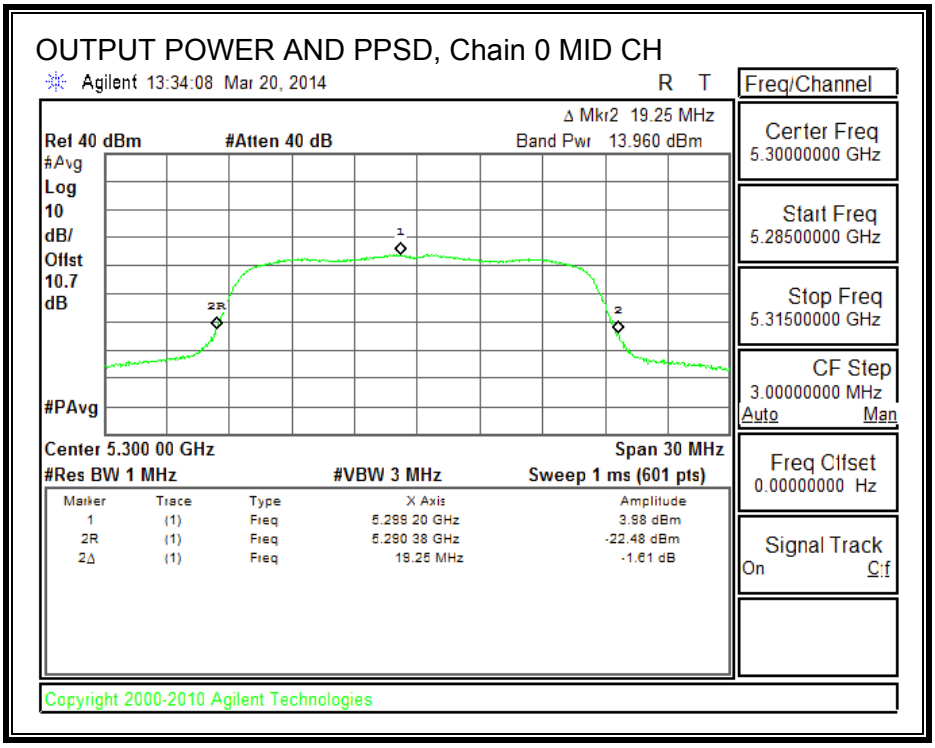
802.11n HT40 5.2G OUTPUT POWER AND PPSD, Chain 0



802.11a 5.3G OUTPUT POWER AND PPSD, Chain 0



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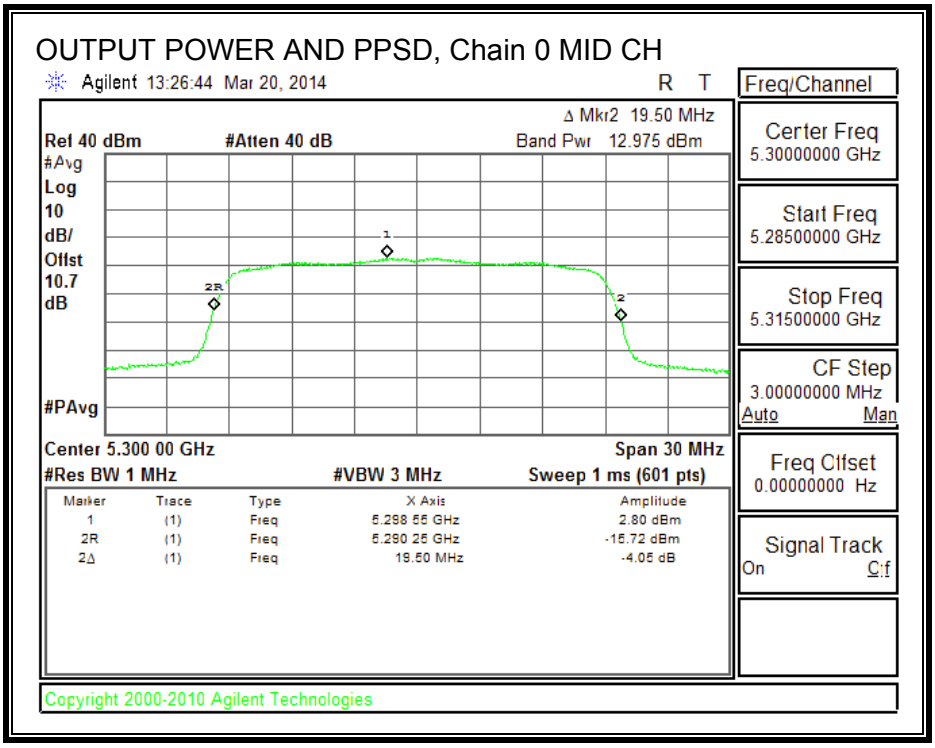
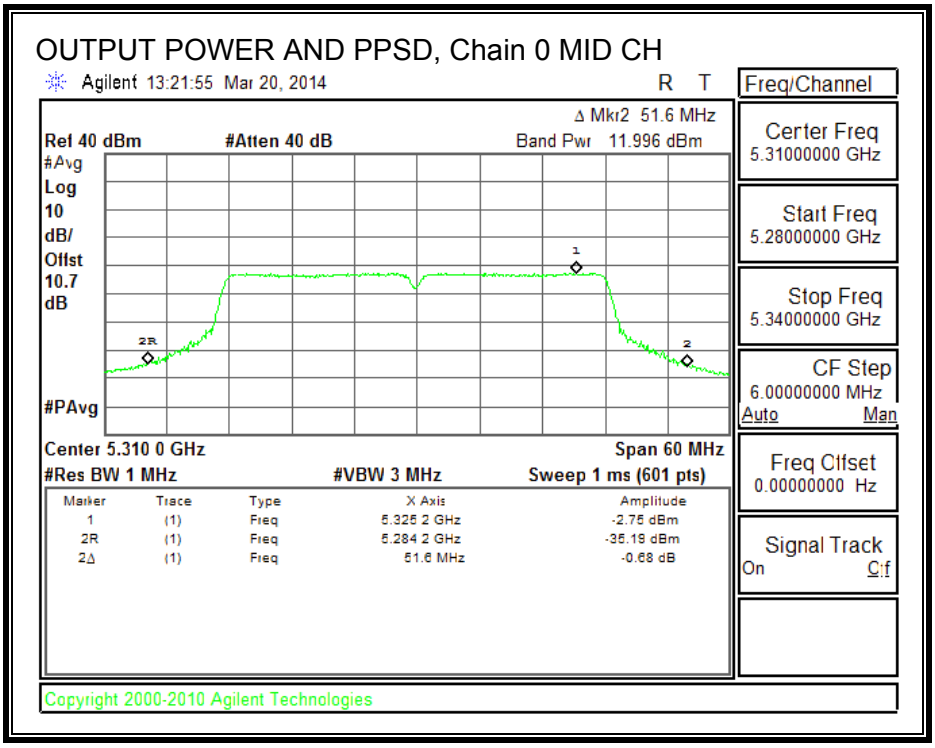
802.11n HT20 5.3G OUTPUT POWER AND PPSD, Chain 0



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



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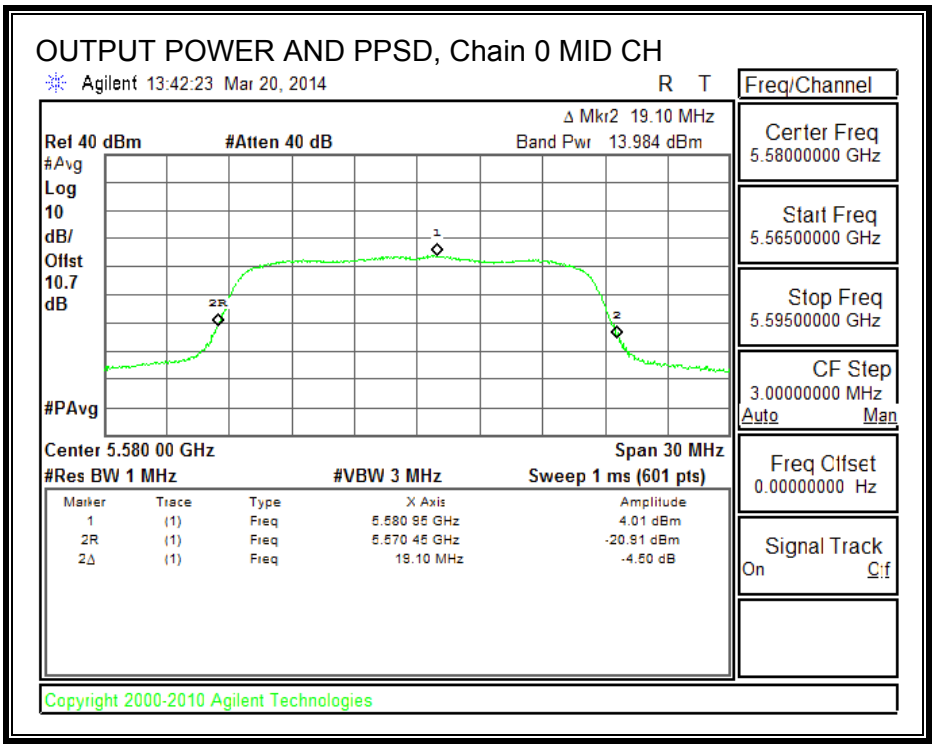
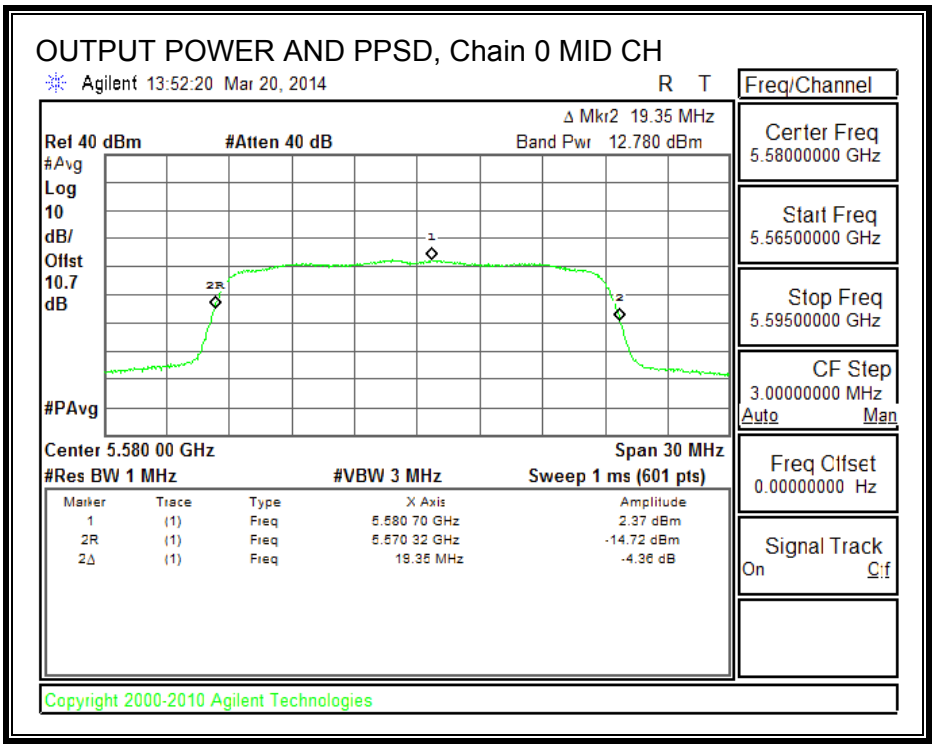
802.11a 5.5G OUTPUT POWER AND PPSD, Chain 0



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



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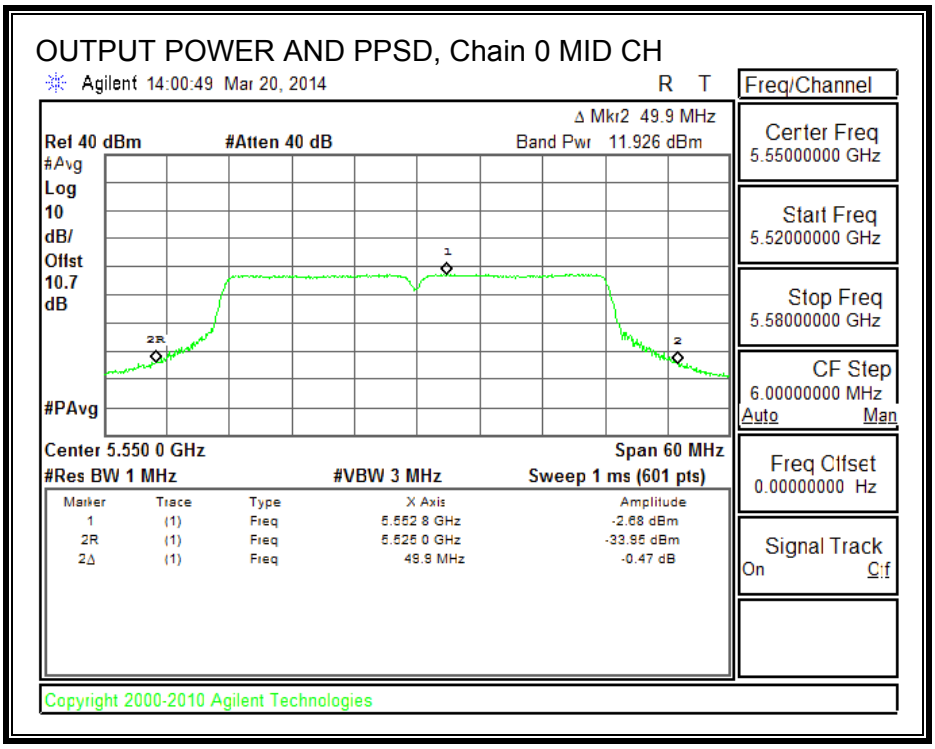
802.11n HT40 5.5G OUTPUT POWER AND PPSD, Chain 0



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10.5. PEAK EXCURSION

LIMITS

FCC §15.407 (a) (6)

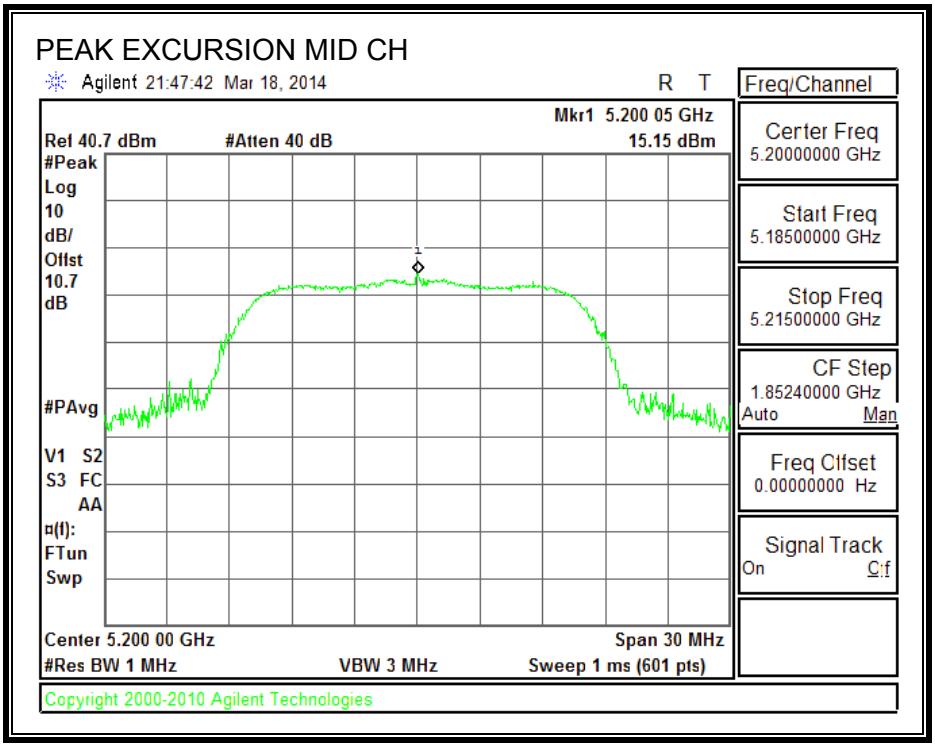
The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

RESULTS

10.5.1. 802.11a MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5200	15.150	3.50	0.32	11.33	13	-1.67

PEAK EXCURSION



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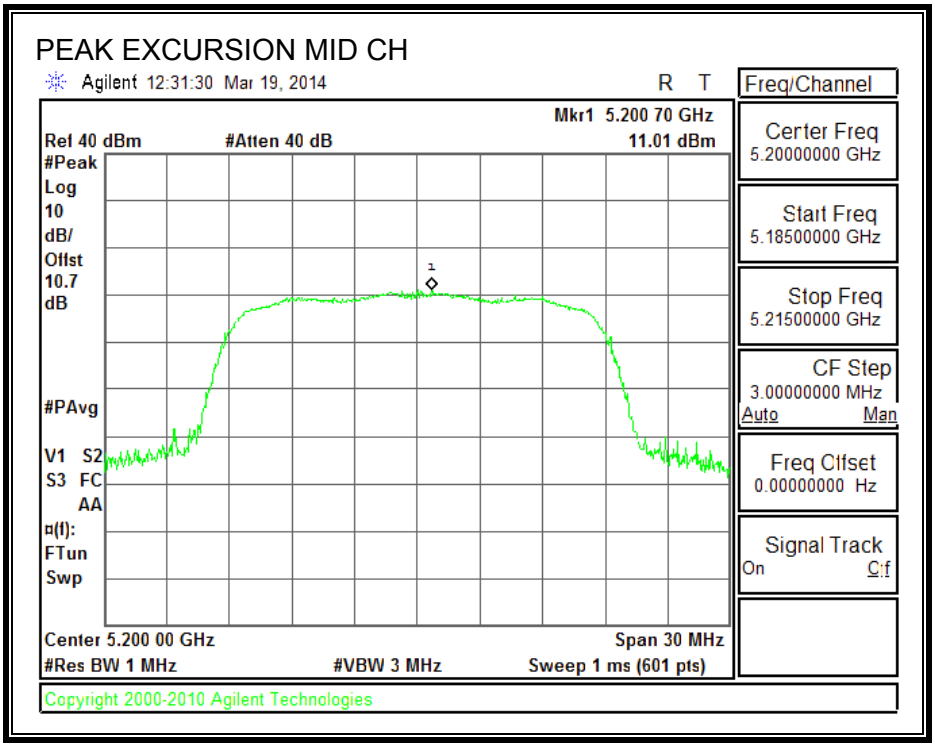
10.5.1. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5200	11.010	2.49	0.33	8.19	13	-4.81

PEAK EXCURSION



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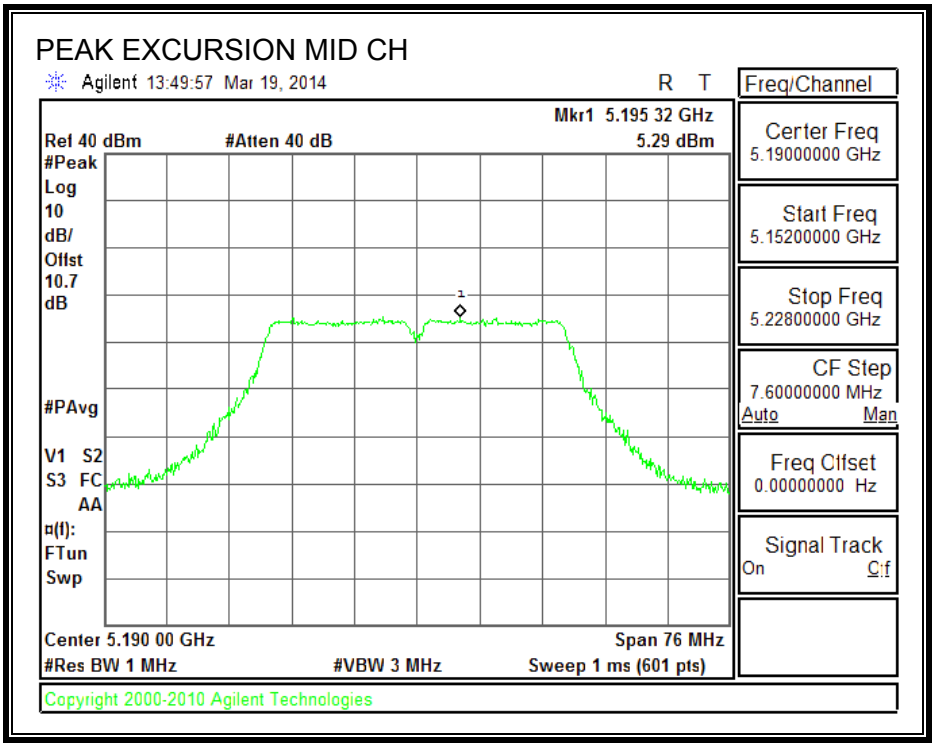
10.5.1. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5230	5.290	-3.74	0.60	8.43	13	-4.57

PEAK EXCURSION



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11. TRANSMITTER ABOVE 1 GHz

LIMITS

FCC §15.205 and §15.209

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

TEST PROCEDURE

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

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

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

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

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

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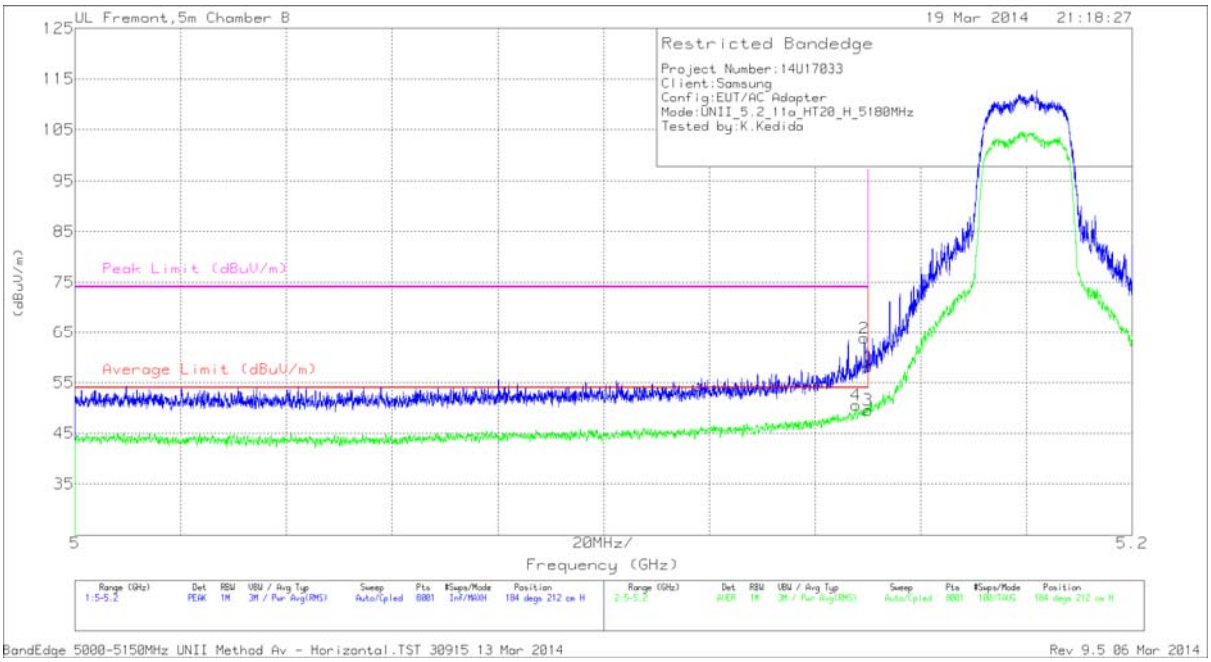
11.1. 5.2 GHz

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

Horizontal



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	44.04	PK	34.3	-20.2	0	58.14	-	-	74	-15.86	184	212	H
2	* 5.149	49.67	PK	34.3	-20.2	0	63.77	-	-	74	-10.23	184	212	H
3	* 5.15	35.17	RMS	34.3	-20.2	.3	49.57	54	-4.43	-	-	184	212	H
4	* 5.148	36.11	RMS	34.3	-20.2	.3	50.51	54	-3.49	-	-	184	212	H

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

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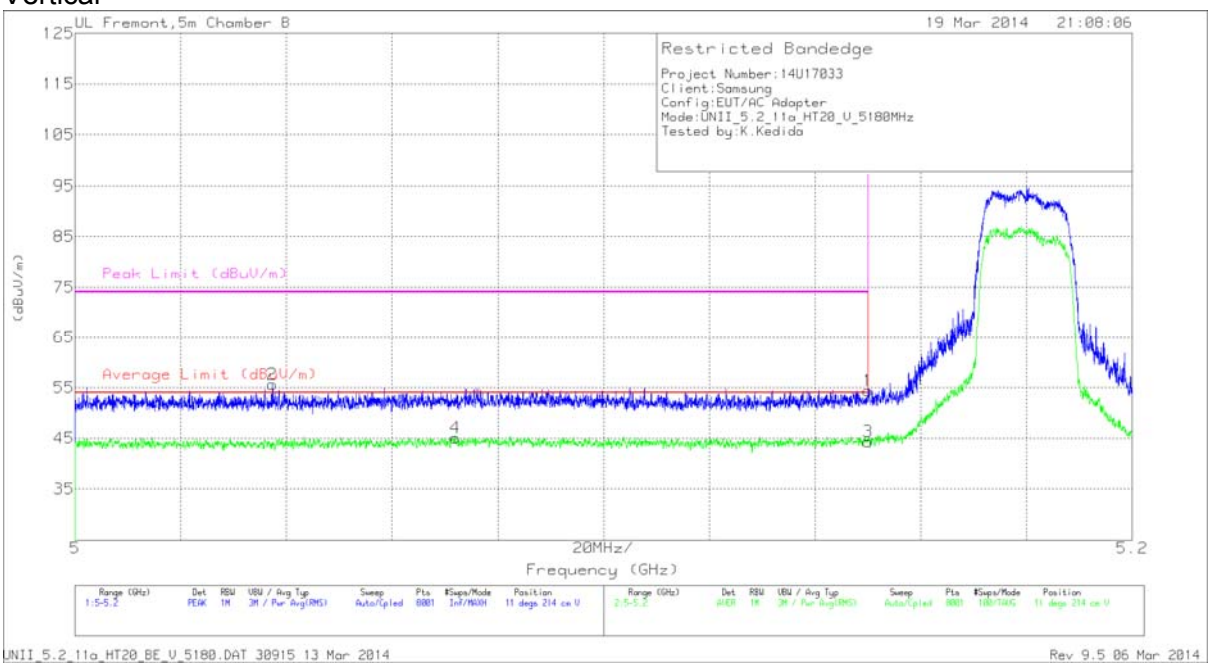
Vertical



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	40.24	PK	34.3	-20.2	0	54.34	-	-	74	-19.66	11	214	V
2	* 5.037	41.65	PK	34.2	-20.2	0	55.65	-	-	74	-18.35	11	214	V
3	* 5.15	30.18	RMS	34.3	-20.2	.3	44.58	54	-9.42	-	-	11	214	V
4	* 5.072	30.98	RMS	34.2	-20.1	.3	45.38	54	-8.62	-	-	11	214	V

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

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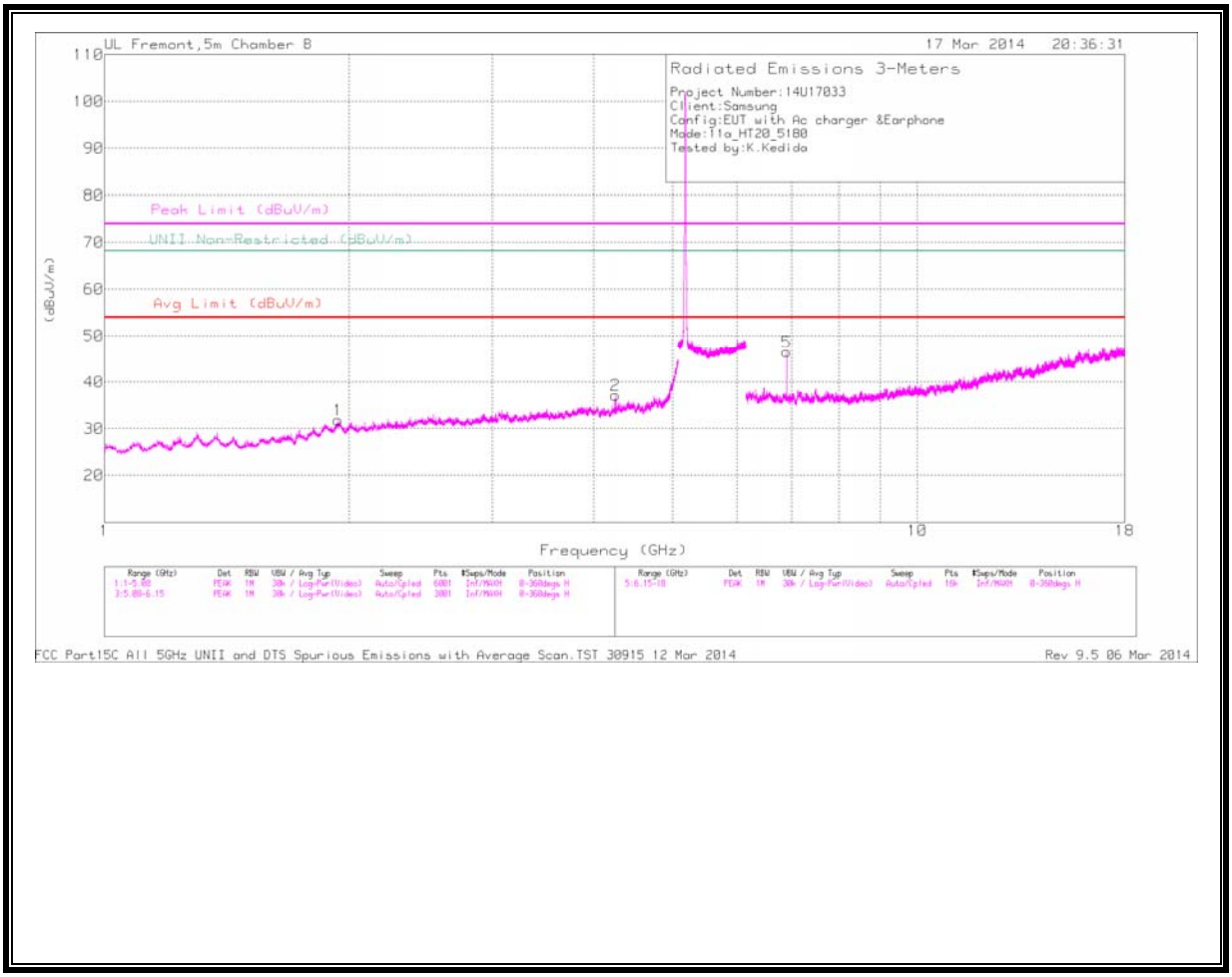
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL
HORIZONTAL



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

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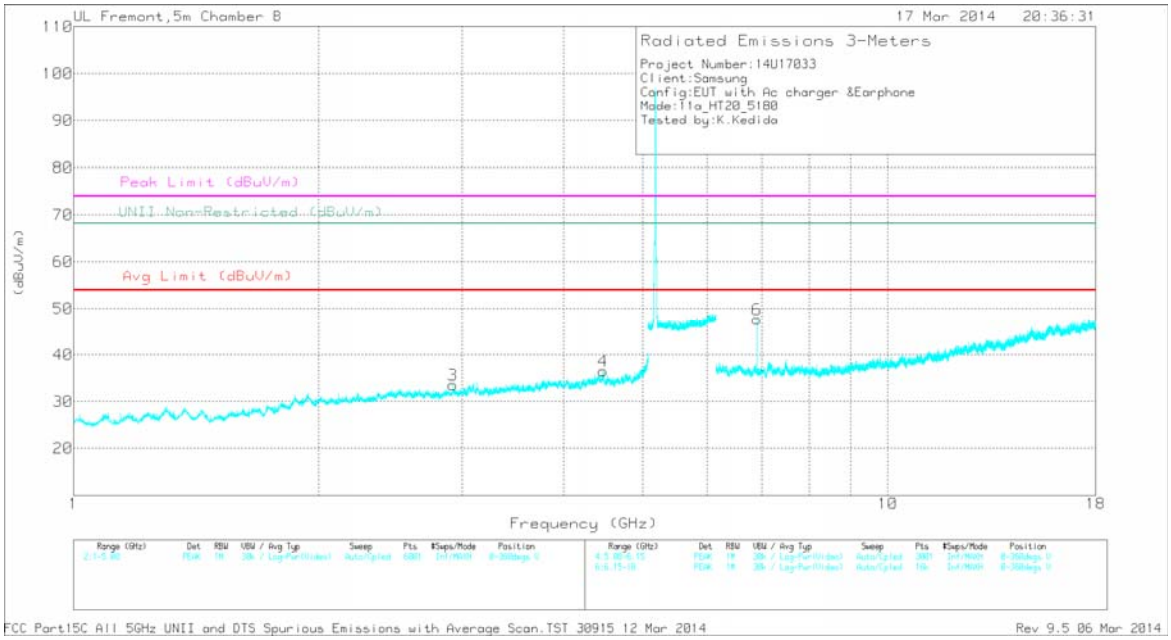
VERTICAL



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

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LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 4.252	33.7	PK	33.6	-30.1	37.2	54	-16.8	74	-36.8	-	-	0-360	202	H
1	1.938	33.16	PK	31.2	-32.5	31.86	-	-	-	-	68.2	-36.34	0-360	99	H
3	2.925	32.57	PK	32.7	-31.7	33.57	-	-	-	-	68.2	-34.63	0-360	202	V
4	4.468	32.12	PK	33.9	-29.5	36.52	-	-	-	-	68.2	-31.68	0-360	202	V
5	6.907	39.09	PK	35.6	-28.2	46.49	-	-	-	-	68.2	-21.71	0-360	99	H
6	6.907	40.36	PK	35.6	-28.2	47.76	-	-	-	-	68.2	-20.44	0-360	202	V

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

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.254	39.93	PK1	33.6	-30.1	43.43	54	-10.57	74	-30.57	-	-	57	235	H
1.933	42.46	PK1	31.2	-32.6	41.06	-	-	-	-	68.2	-27.14	57	235	H
2.924	41.48	PK1	32.7	-31.8	42.38	-	-	-	-	68.2	-25.82	57	235	V
4.468	39.17	PK1	33.9	-29.5	43.57	-	-	-	-	68.2	-24.63	57	235	V
6.907	45.03	PK1	35.6	-28.2	52.43	-	-	-	-	68.2	-15.77	47	244	H
6.907	40.77	AD1	35.6	-28.2	48.17	-	-	-	-	68.2	-20.03	47	244	H
6.907	44.34	PK1	35.6	-28.2	51.74	-	-	-	-	68.2	-16.46	57	235	V
6.907	40.08	AD1	35.6	-28.2	47.48	-	-	-	-	68.2	-20.72	57	235	V

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

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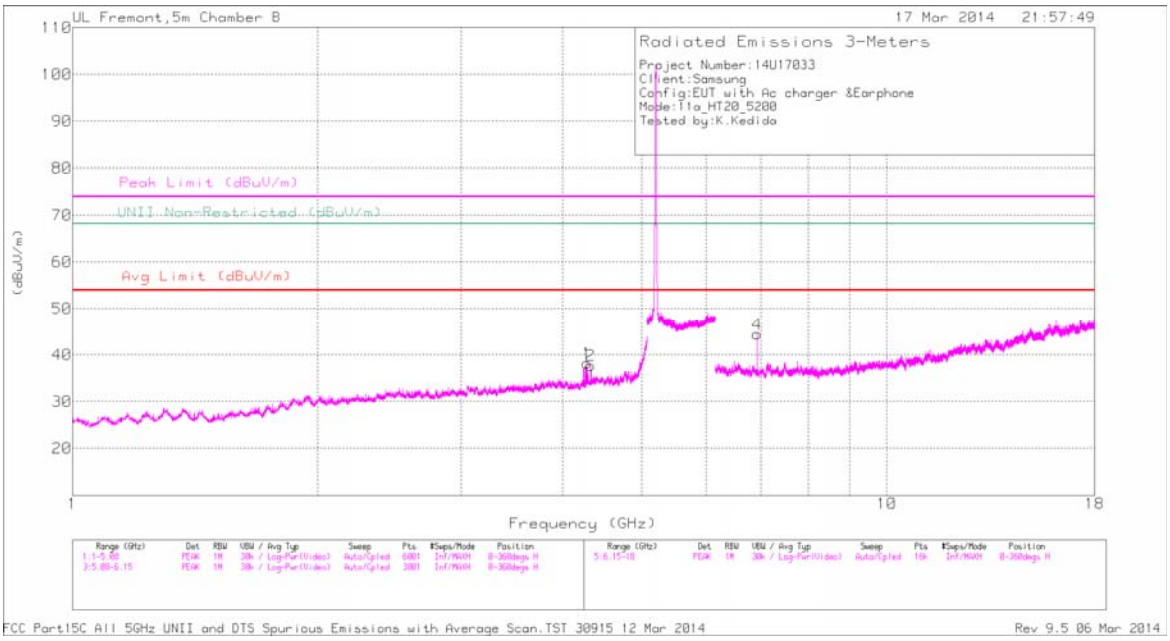
MID CHANNEL
HORIZONTAL



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

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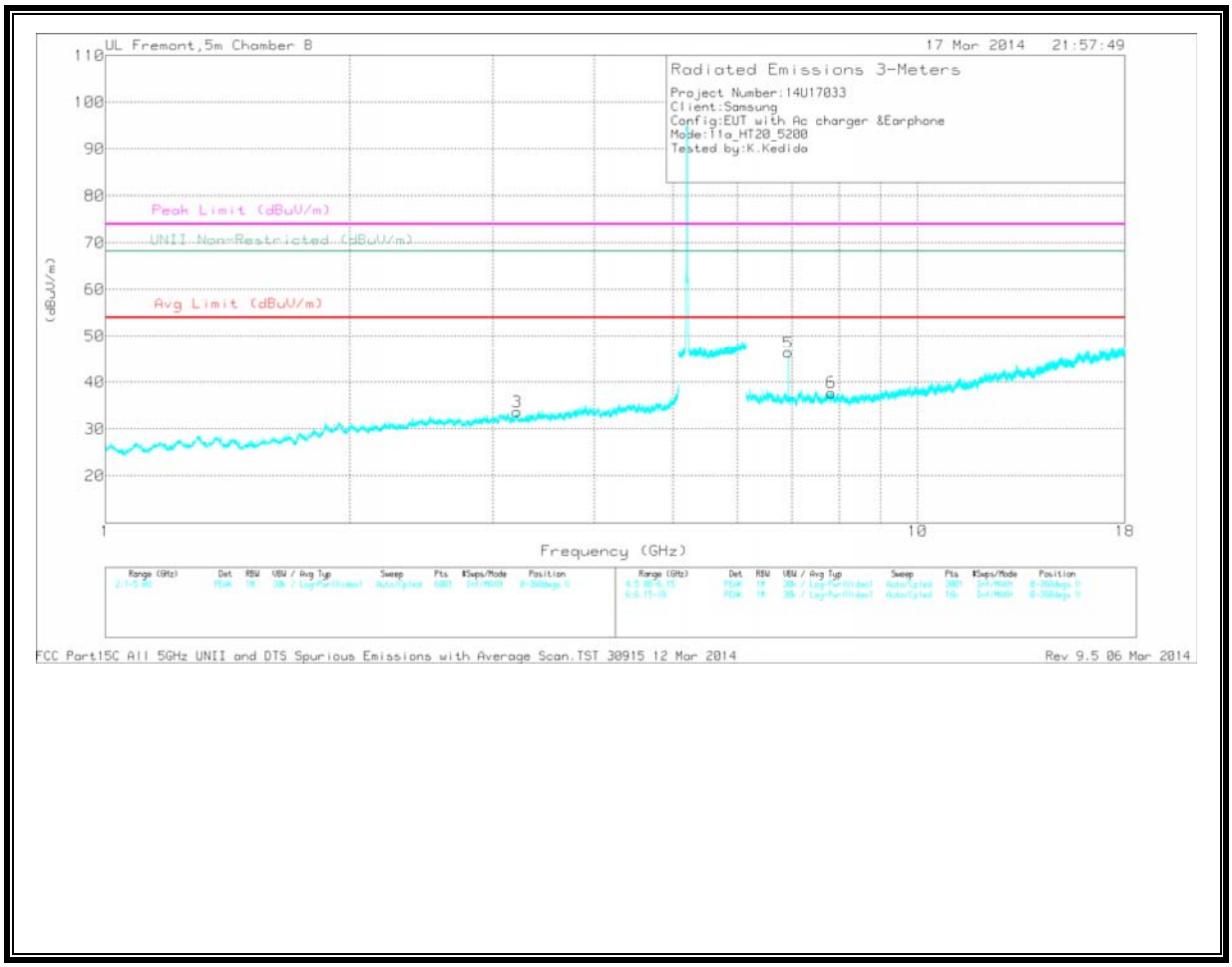
VERTICAL



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

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MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.284	34.65	PK	33.7	-30.1	38.25	54	-15.75	74	-35.75	-	-	0-360	201	H
2	* 4.329	34.47	PK	33.7	-30.4	37.77	54	-16.23	74	-36.23	-	-	0-360	201	H
3	3.211	32.53	PK	32.8	-31.7	33.63	-	-	-	-	68.2	-34.57	0-360	202	V
4	6.933	36.26	PK	35.6	-27.4	44.46	-	-	-	-	68.2	-23.74	0-360	99	H
5	6.934	38.17	PK	35.6	-27.4	46.37	-	-	-	-	68.2	-21.83	0-360	202	V
6	7.832	28.88	PK	35.7	-26.8	37.78	-	-	-	-	68.2	-30.42	0-360	99	V

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

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.285	41.01	PK1	33.7	-30.1	44.61	54	-9.39	74	-29.39	-	-	288	282	H
* 4.282	30.06	AD1	33.7	-30.1	33.66	54	-20.34	-	-	-	-	288	282	H
* 4.329	40.57	PK1	33.7	-30.3	43.97	54	-10.03	74	-30.03	-	-	295	294	H
* 4.328	30.09	AD1	33.7	-30.3	33.49	54	-20.51	-	-	-	-	295	294	H
3.208	40.25	PK1	32.8	-31.7	41.35	-	-	-	-	68.2	-26.85	295	294	V
6.933	37.96	AD1	35.6	-27.4	46.16	-	-	-	-	68.2	-22.04	52	260	H
6.933	42.72	PK1	35.6	-27.4	50.92	-	-	-	-	68.2	-17.28	58	233	V
6.933	37.72	AD1	35.6	-27.4	45.92	-	-	-	-	68.2	-22.28	58	233	V
6.934	42.1	PK1	35.6	-27.4	50.3	-	-	-	-	68.2	-17.9	52	260	H
7.83	37.02	PK1	35.7	-26.8	45.92	-	-	-	-	68.2	-22.28	58	233	V

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

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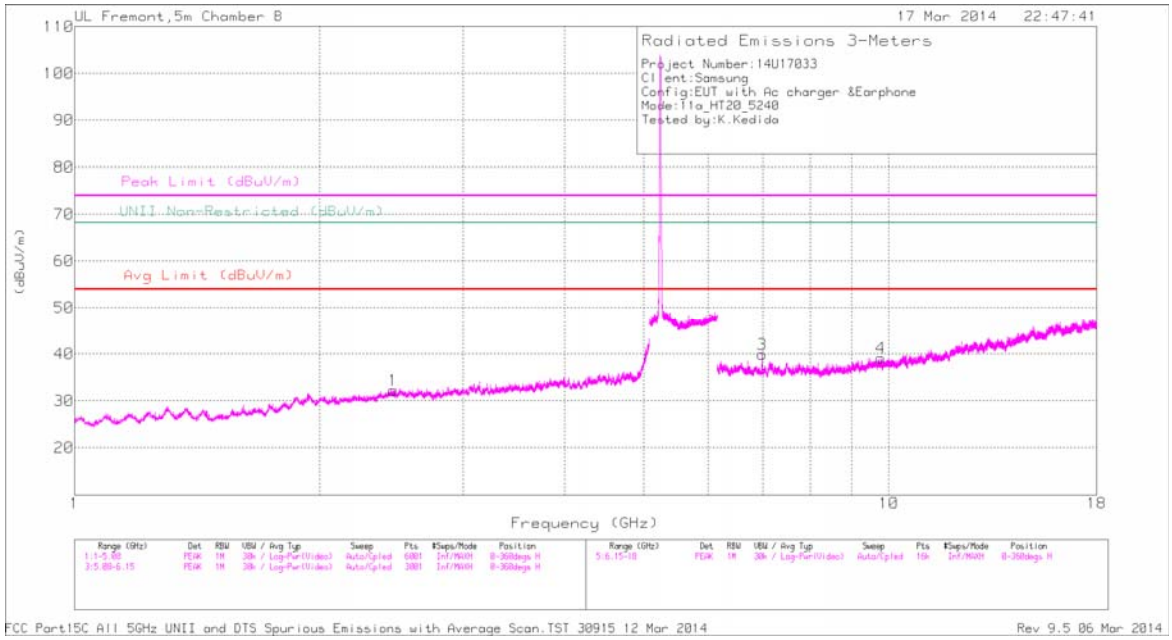
HIGH CHANNEL
HORIZONTAL



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

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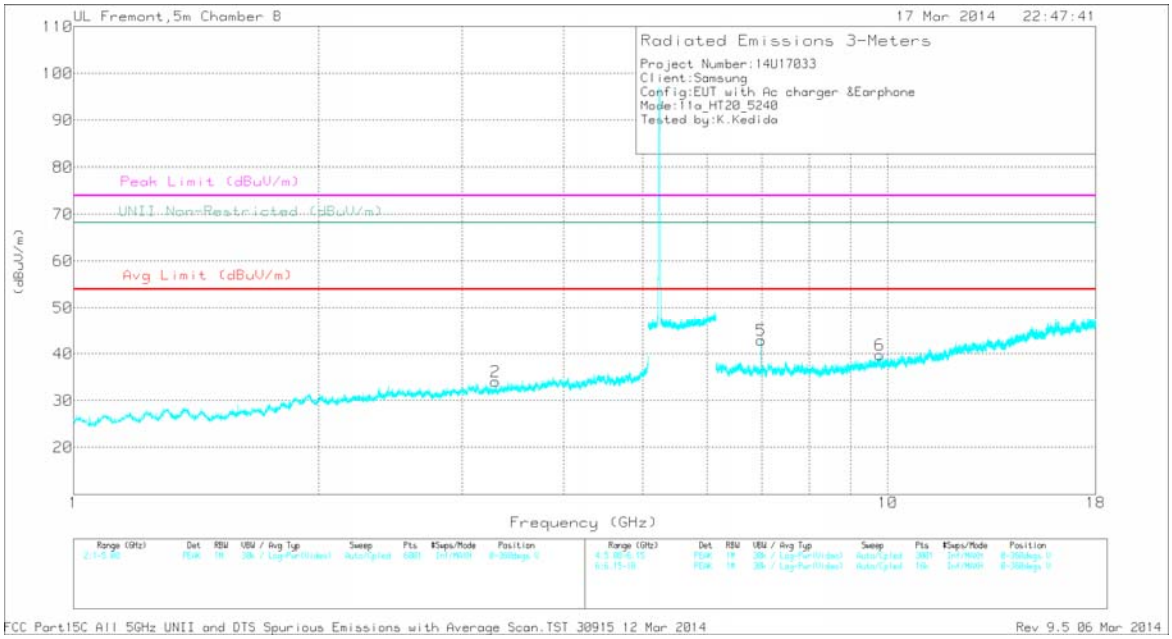
VERTICAL



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

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HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.463	32.19	PK	32.3	-32.2	32.29	-	-	-	-	68.2	-35.91	0-360	99	H
2	3.298	33.02	PK	32.8	-31.7	34.12	-	-	-	-	68.2	-34.08	0-360	202	V
3	6.987	31.76	PK	35.6	-27.4	39.96	-	-	-	-	68.2	-28.24	0-360	99	H
5	6.987	34.76	PK	35.6	-27.4	42.96	-	-	-	-	68.2	-25.24	0-360	202	V
4	9.782	25.66	PK	36.9	-23.4	39.16	-	-	-	-	68.2	-29.04	0-360	99	H
6	9.782	26.28	PK	36.9	-23.4	39.78	-	-	-	-	68.2	-28.42	0-360	99	V

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.463	40.51	PK1	32.3	-32.2	40.61	-	-	-	-	68.2	-27.59	1	100	H
3.297	40.45	PK1	32.8	-31.6	41.65	-	-	-	-	68.2	-26.55	1	100	V
6.987	38.63	PK1	35.6	-27.4	46.83	-	-	-	-	68.2	-21.37	95	269	H
6.987	31.26	AD1	35.6	-27.4	39.46	-	-	-	-	68.2	-28.74	95	269	H
6.987	40.85	PK1	35.6	-27.4	49.05	-	-	-	-	68.2	-19.15	40	266	V
6.987	35.2	AD1	35.6	-27.4	43.4	-	-	-	-	68.2	-24.8	40	266	V
9.78	34.16	PK1	36.9	-23.4	47.66	-	-	-	-	68.2	-20.54	40	266	V
9.783	34.26	PK1	36.9	-23.4	47.76	-	-	-	-	68.2	-20.44	95	269	H

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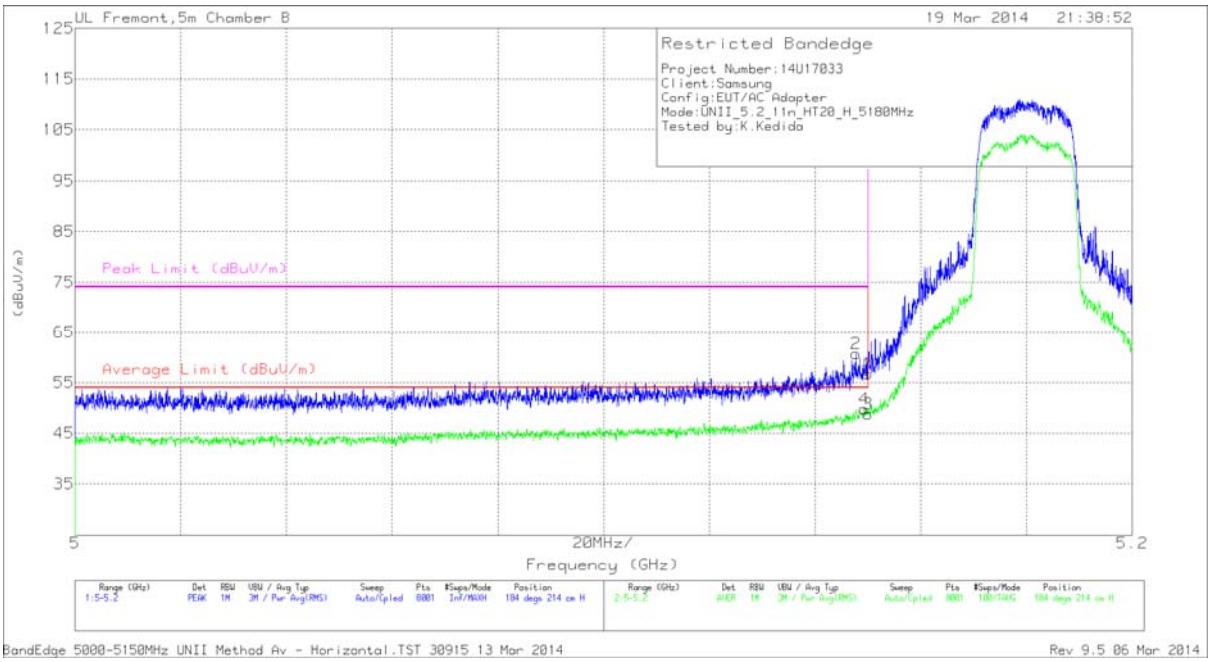
11.1.2. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.2 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

Horizontal



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	42.64	PK	34.3	-20.2	0	56.74	-	-	74	-17.26	184	214	H
2	* 5.148	46.64	PK	34.3	-20.2	0	60.74	-	-	74	-13.26	184	214	H
3	* 5.15	34.37	RMS	34.3	-20.2	.3	48.77	54	-5.23	-	-	184	214	H
4	* 5.149	35.44	RMS	34.3	-20.2	.3	49.84	54	-4.16	-	-	184	214	H

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

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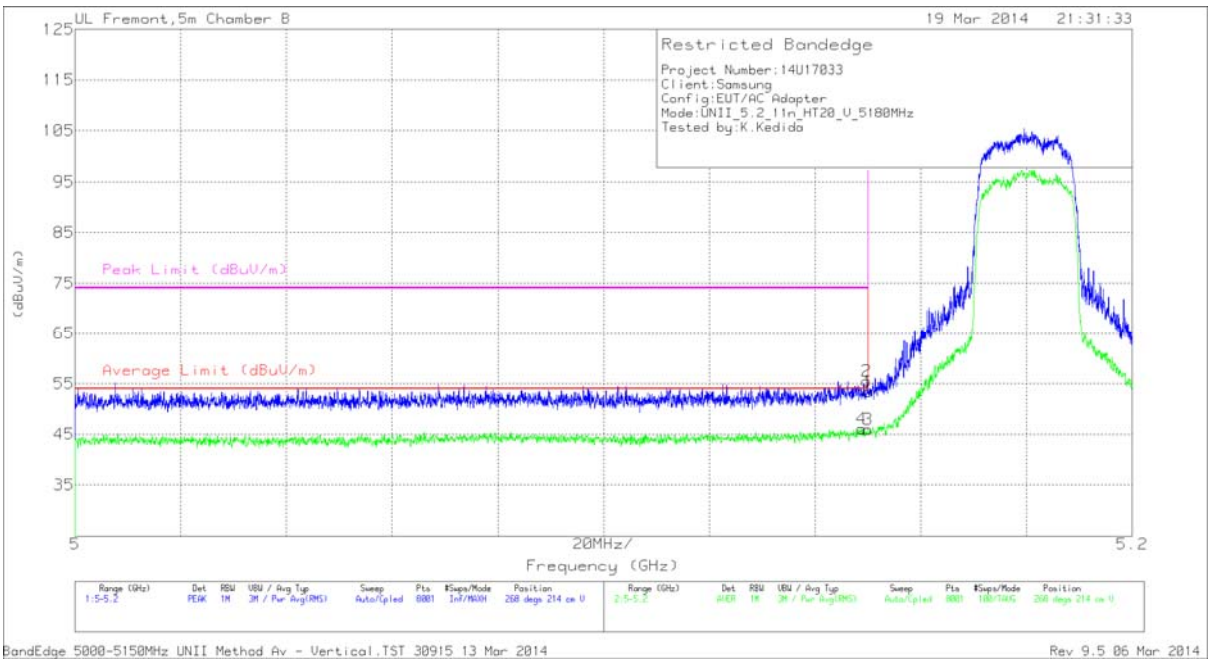
Vertical



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	39.3	PK	34.3	-20.2	0	53.4	-	-	74	-20.6	268	214	V
2	* 5.15	41.4	PK	34.3	-20.2	0	55.5	-	-	74	-18.5	268	214	V
3	* 5.15	31.55	RMS	34.3	-20.2	.3	45.95	54	-8.05	-	-	268	214	V
4	* 5.149	31.71	RMS	34.3	-20.2	.3	46.11	54	-7.89	-	-	268	214	V

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

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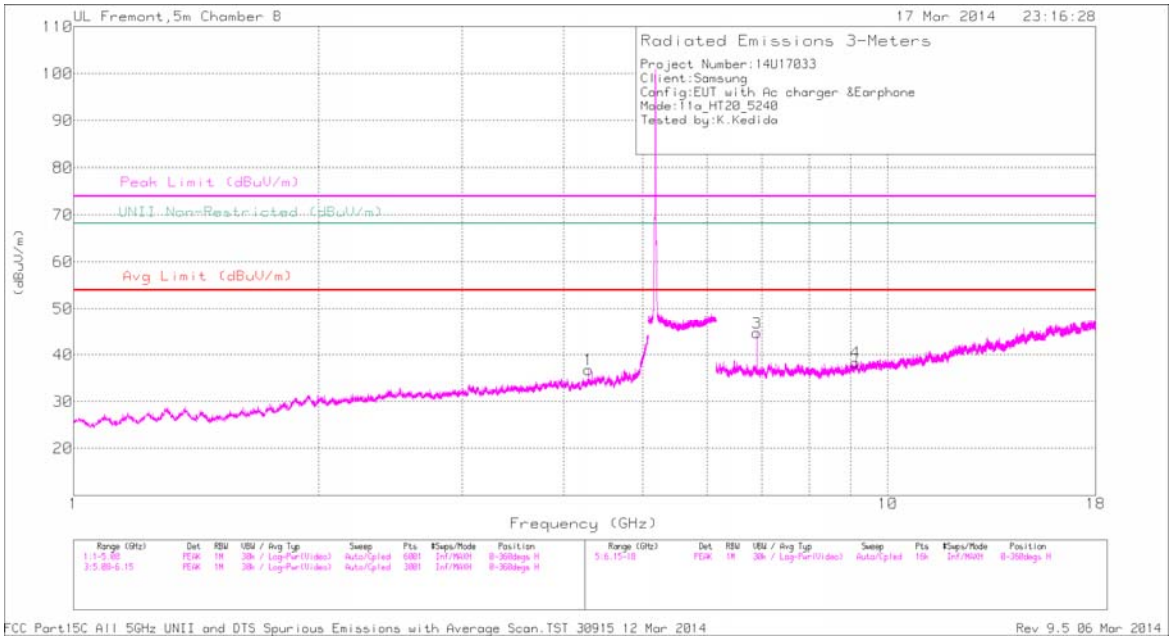
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL
HORIZONTAL



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

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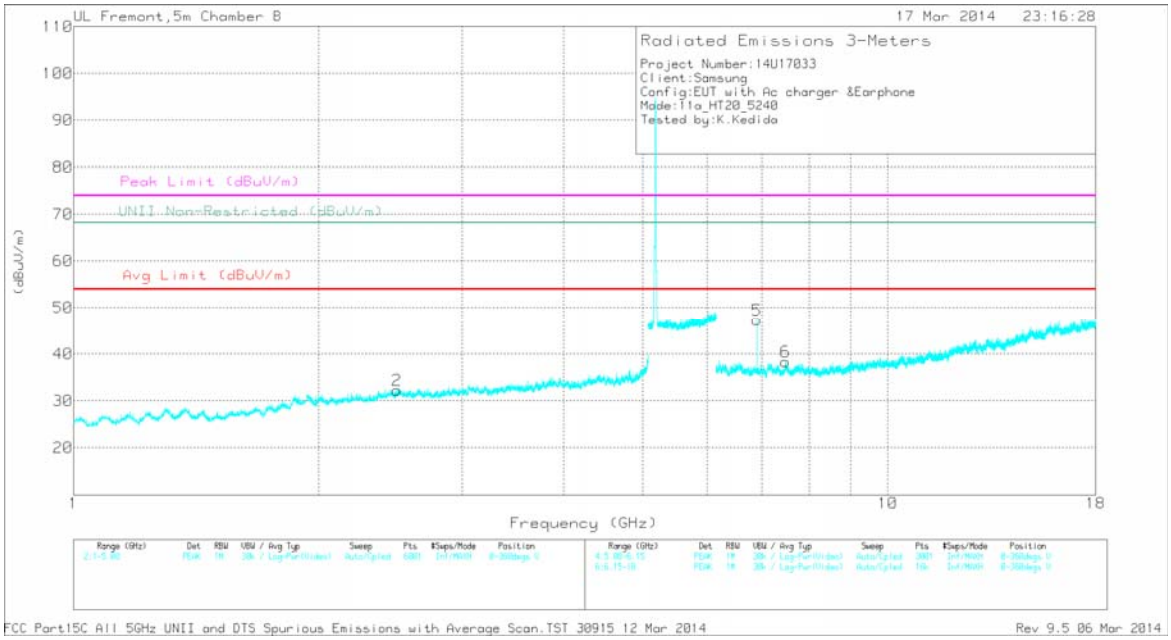
VERTICAL



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

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LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.289	33.16	PK	33.7	-30.1	36.76	54	-17.24	74	-37.24	-	-	0-360	99	H
2	* 2.494	32.2	PK	32.4	-32.3	32.3	54	-21.7	74	-41.7	-	-	0-360	202	V
4	* 9.126	27.09	PK	36.3	-25	38.39	54	-15.61	74	-35.61	-	-	0-360	202	H
6	* 7.488	28.52	PK	35.6	-25.8	38.32	54	-15.68	74	-35.68	-	-	0-360	99	V
3	6.907	37.3	PK	35.6	-28.2	44.7	-	-	-	-	68.2	-23.5	0-360	99	H
5	6.907	39.96	PK	35.6	-28.2	47.36	-	-	-	-	68.2	-20.84	0-360	202	V

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

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.286	40.33	PK1	33.7	-30.1	43.93	54	-10.07	74	-30.07	-	-	2	100	H
* 2.494	40.65	PK1	32.4	-32.3	40.75	54	-13.25	74	-33.25	-	-	2	100	V
* 9.127	35.45	PK1	36.3	-25	46.75	54	-7.25	74	-27.25	-	-	49	263	H
* 7.49	36.95	PK1	35.6	-25.7	46.85	54	-7.15	74	-27.15	-	-	57	268	V
6.907	44.64	PK1	35.6	-28.2	52.04	-	-	-	-	68.2	-16.16	49	263	H
6.907	40.79	AD1	35.6	-28.2	48.19	-	-	-	-	68.2	-20.01	49	263	H
6.907	43.71	PK1	35.6	-28.2	51.11	-	-	-	-	68.2	-17.09	57	268	V
6.907	39.01	AD1	35.6	-28.2	46.41	-	-	-	-	68.2	-21.79	57	268	V

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

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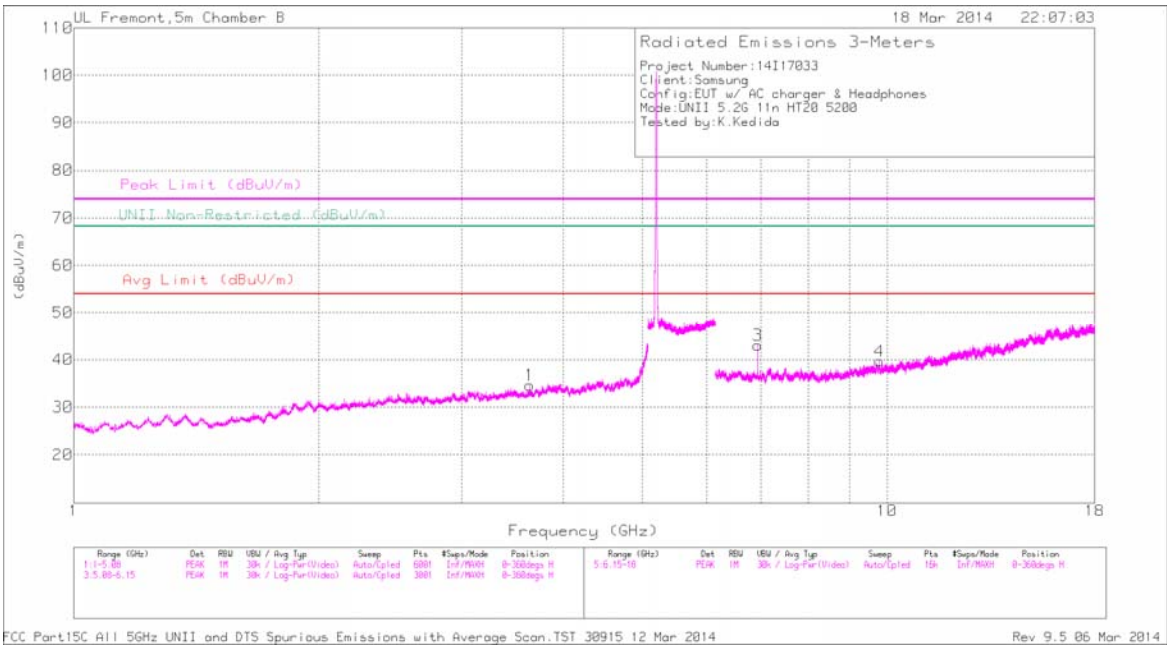
MID CHANNEL
HORIZONTAL



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

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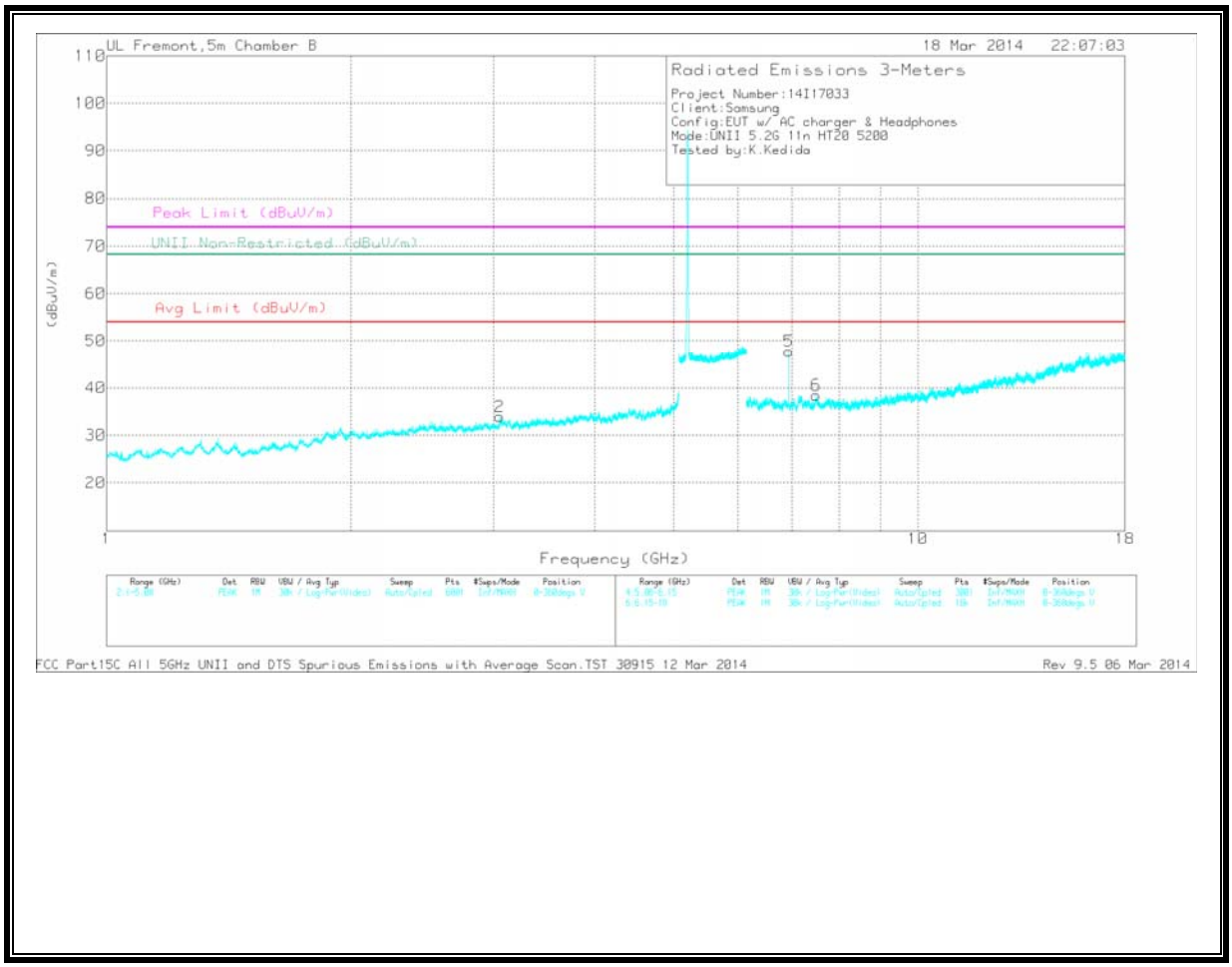
VERTICAL



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

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MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.638	32.64	PK	33.2	-31.2	34.64	54	-19.36	74	-39.36	-	-	0-360	99	H
6	* 7.492	28.58	PK	35.6	-25.7	38.48	54	-15.52	74	-35.52	-	-	0-360	99	V
2	3.053	33.46	PK	32.8	-32.3	33.96	-	-	-	-	68.2	-34.24	0-360	99	V
3	6.934	34.86	PK	35.6	-27.4	43.06	-	-	-	-	68.2	-25.14	0-360	99	H
5	6.934	39.61	PK	35.6	-27.4	47.81	-	-	-	-	68.2	-20.39	0-360	202	V
4	9.782	26.21	PK	36.9	-23.4	39.71	-	-	-	-	68.2	-28.49	0-360	202	H

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

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.636	40.66	PK1	33.2	-31.2	42.66	54	-11.34	74	-31.34	-	-	359	100	H
* 7.49	37.29	PK1	35.6	-25.7	47.19	54	-6.81	74	-26.81	-	-	48	267	V
3.052	41.8	PK1	32.8	-32.3	42.3	-	-	-	-	68.2	-25.9	359	100	V
6.933	40.47	PK1	35.6	-27.4	48.67	-	-	-	-	68.2	-19.53	327	268	H
6.933	34.96	AD1	35.6	-27.4	43.16	-	-	-	-	-	-	327	268	H
6.933	43.38	PK1	35.6	-27.4	51.58	-	-	-	-	68.2	-16.62	48	267	V
6.933	39.15	AD1	35.6	-27.4	47.35	-	-	-	-	-	-	48	267	V
9.78	35.43	PK1	36.9	-23.4	48.93	-	-	-	-	68.2	-19.27	327	268	H

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

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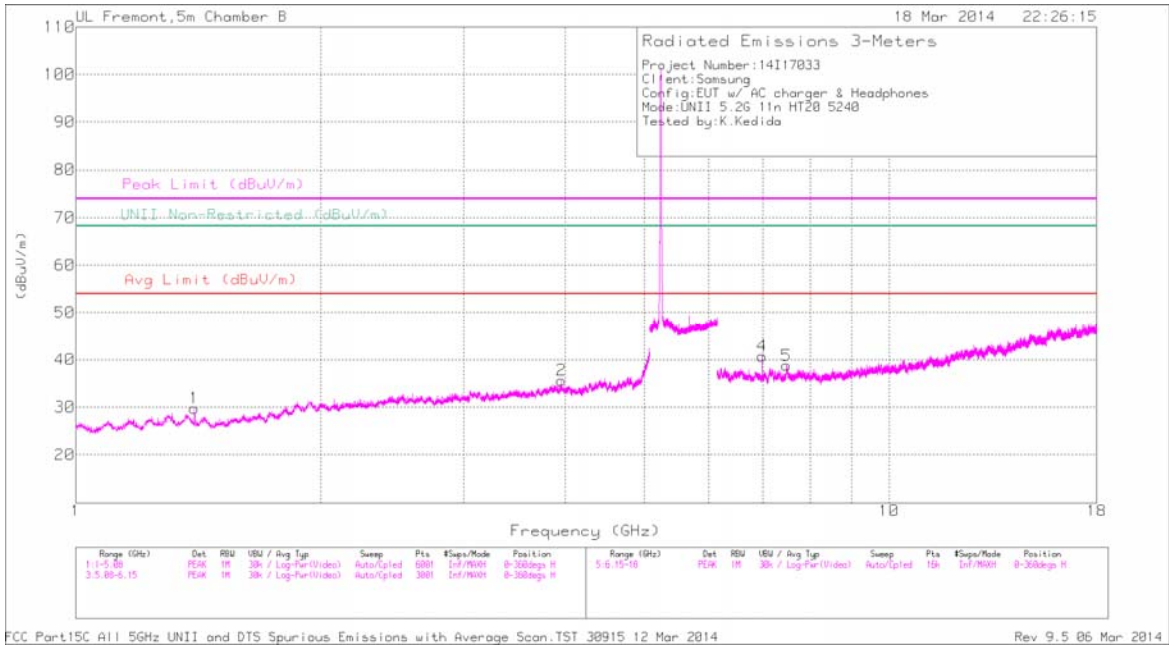
HIGH CHANNEL
HORIZONTAL



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

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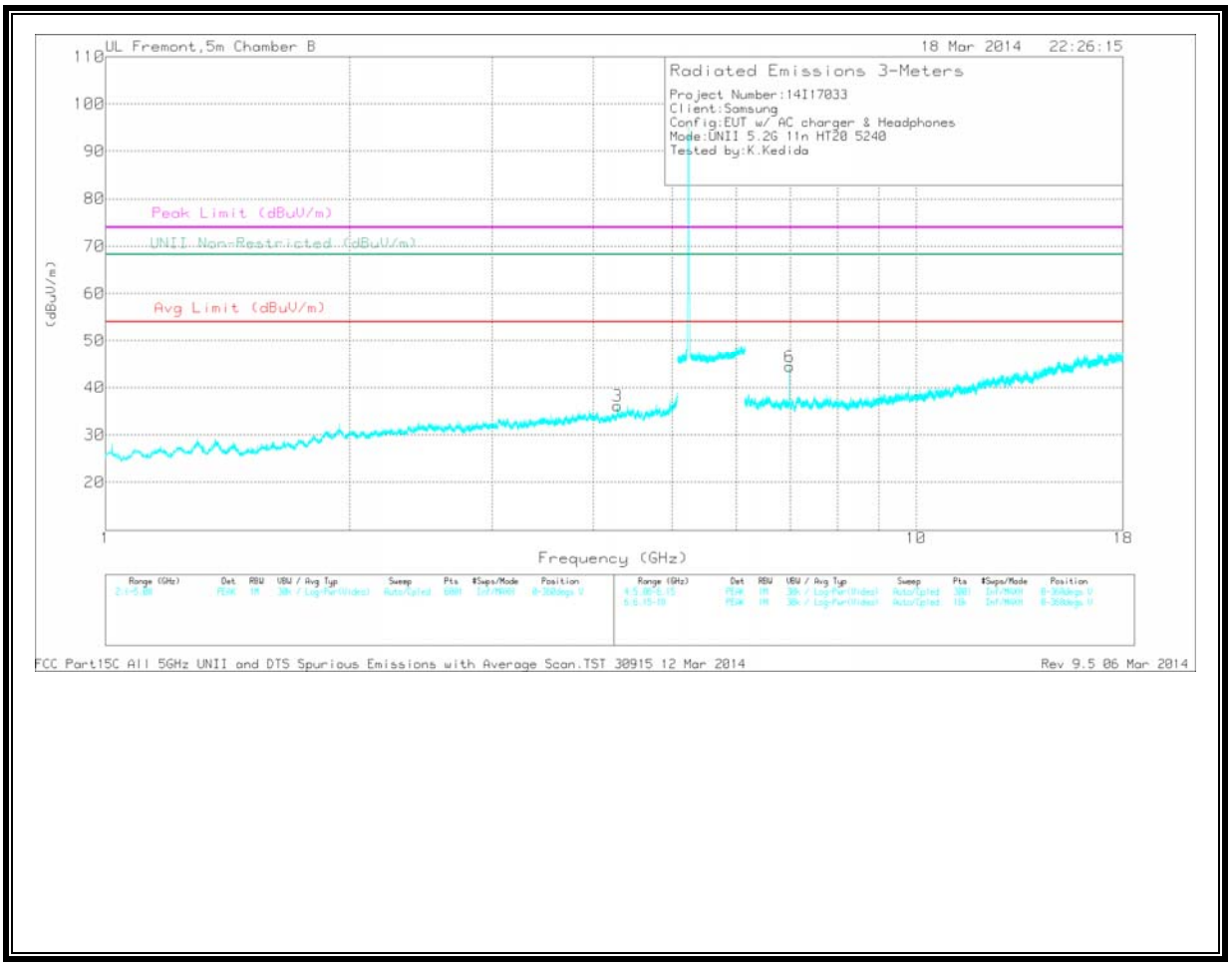
VERTICAL



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

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HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.4	35.2	PK	28.5	-33.9	29.8	54	-24.2	74	-44.2	-	-	0-360	99	H
2	* 3.957	31.98	PK	33.7	-30	35.68	54	-18.32	74	-38.32	-	-	0-360	201	H
3	* 4.286	32.55	PK	33.7	-30.1	36.15	54	-17.85	74	-37.85	-	-	0-360	202	V
5	* 7.483	29.18	PK	35.6	-26	38.78	54	-15.22	74	-35.22	-	-	0-360	202	H
4	6.987	32.59	PK	35.6	-27.4	40.79	-	-	-	-	68.2	-27.41	0-360	202	H
6	6.987	36.26	PK	35.6	-27.4	44.46	-	-	-	-	68.2	-23.74	0-360	202	V

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

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.4	41.93	PK1	28.5	-33.9	36.53	54	-17.47	74	-37.47	-	-	1	100	H
* 3.957	40.09	PK1	33.7	-30	43.79	54	-10.21	74	-30.21	-	-	1	100	H
* 4.286	40.53	PK1	33.7	-30.1	44.13	54	-9.87	74	-29.87	-	-	1	100	V
* 7.484	37.14	PK1	35.6	-25.9	46.84	54	-7.16	74	-27.16	-	-	46	275	H
6.987	40.96	PK1	35.6	-27.4	49.16	-	-	-	-	68.2	-19.04	46	275	H
6.987	35	AD1	35.6	-27.4	43.2	-	-	-	-	-	-	46	275	H
6.987	41.63	PK1	35.6	-27.4	49.83	-	-	-	-	68.2	-18.37	44	264	V
6.987	36.64	AD1	35.6	-27.4	44.84	-	-	-	-	-	-	44	264	V

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

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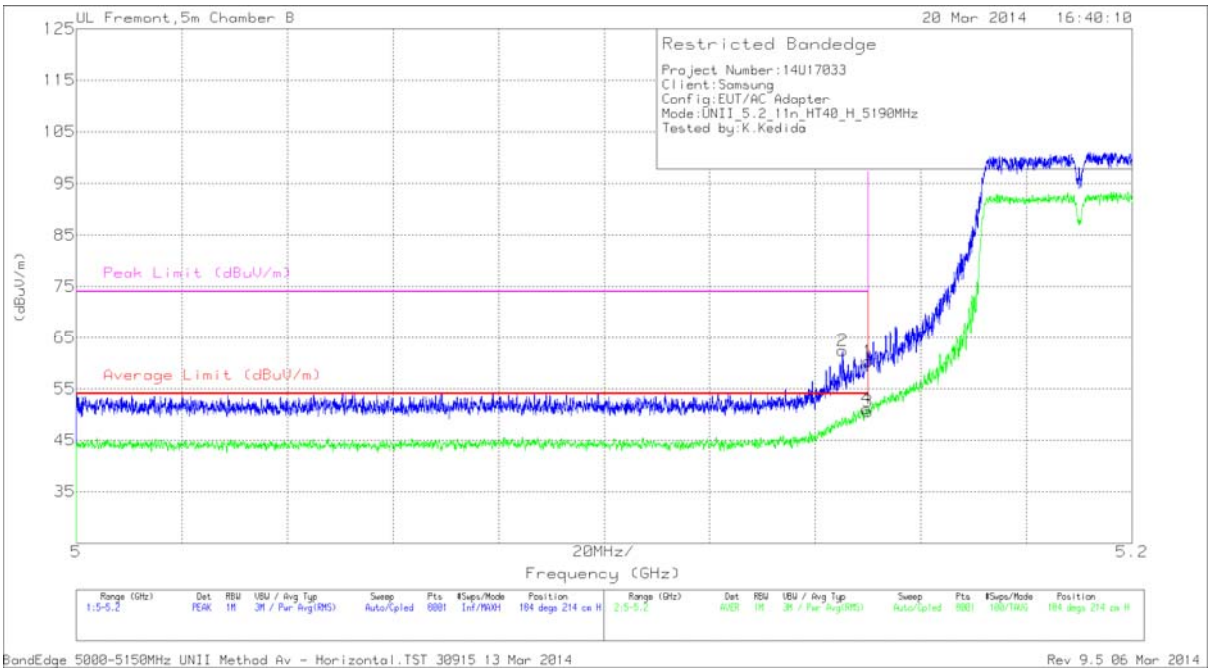
11.1.3. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

Horizontal



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	46.2	PK	34.3	-20.2	0	60.3	-	-	74	-13.7	184	214	H
2	* 5.145	48.36	PK	34.3	-20.2	0	62.46	-	-	74	-11.54	184	214	H
3	* 5.15	35.86	RMS	34.3	-20.2	.6	50.56	54	-3.44	-	-	184	214	H
4	* 5.15	36.41	RMS	34.3	-20.2	.6	51.11	54	-2.89	-	-	184	214	H

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

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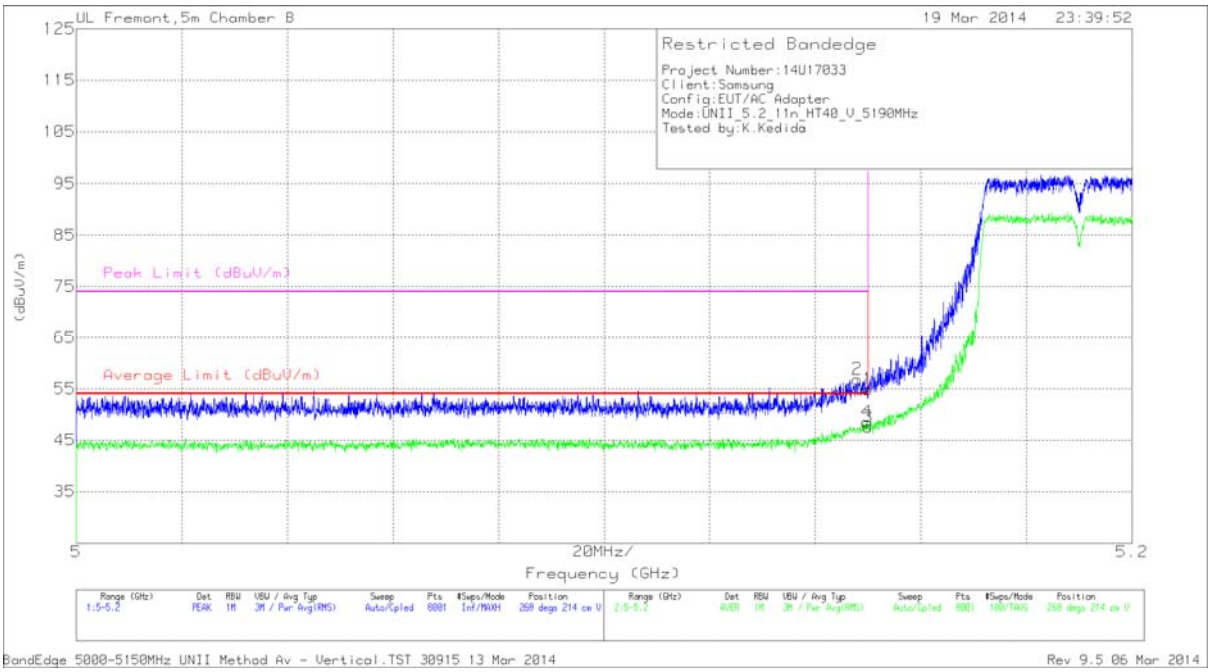
Vertical



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	40.77	PK	34.3	-20.2	0	54.87	-	-	74	-19.13	268	214	V
2	* 5.148	42.75	PK	34.3	-20.2	0	56.85	-	-	74	-17.15	268	214	V
3	* 5.15	32.9	RMS	34.3	-20.2	.6	47.6	54	-6.4	-	-	268	214	V
4	* 5.15	33.84	RMS	34.3	-20.2	.6	48.54	54	-5.46	-	-	268	214	V

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

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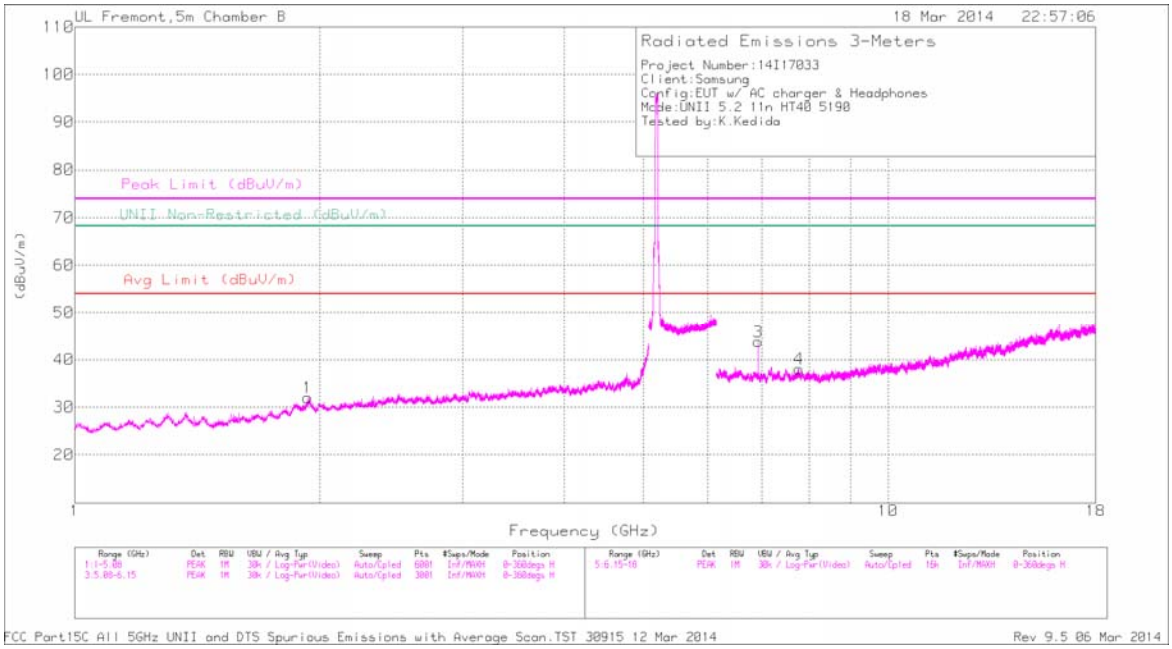
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL
HORIZONTAL



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

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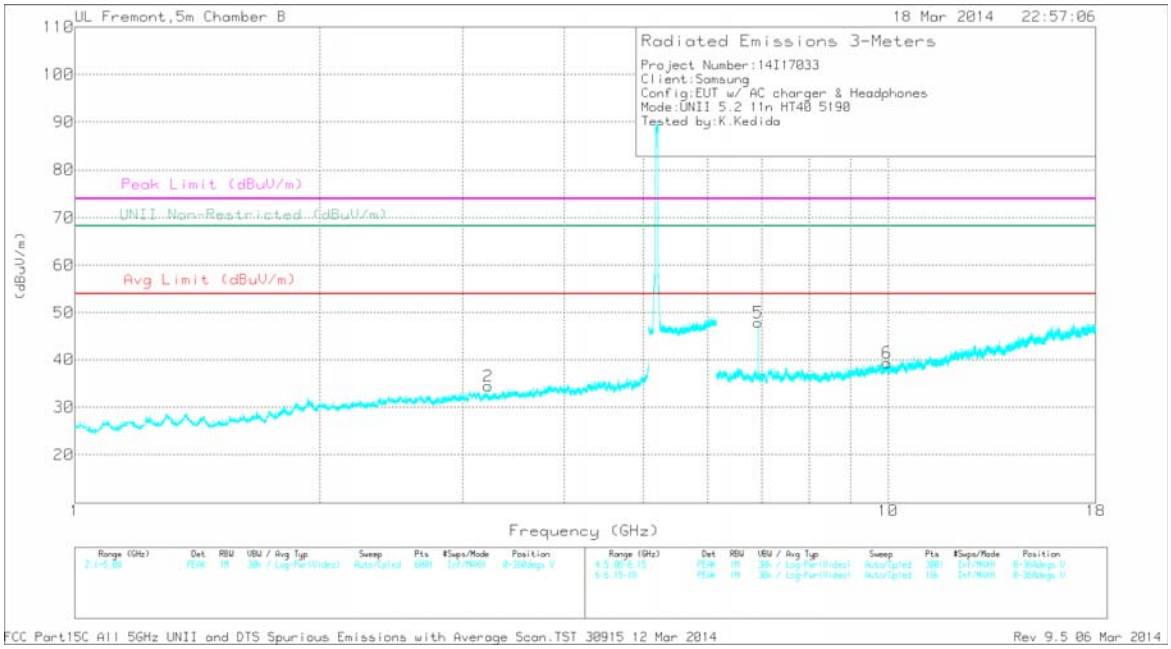
VERTICAL



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

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LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.934	33.4	PK	31.2	-32.6	32	-	-	-	-	68.2	-36.2	0-360	202	H
2	3.225	33.57	PK	32.8	-31.9	34.47	-	-	-	-	68.2	-33.73	0-360	99	V
3	6.92	36	PK	35.6	-27.8	43.8	-	-	-	-	68.2	-24.4	0-360	99	H
5	6.92	40.13	PK	35.6	-27.8	47.93	-	-	-	-	68.2	-20.27	0-360	202	V
4	7.766	28.97	PK	35.7	-26.6	38.07	-	-	-	-	68.2	-30.13	0-360	202	H
6	9.977	26.75	PK	37	-24.4	39.35	-	-	-	-	68.2	-28.85	0-360	99	V

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.933	41.77	PK1	31.2	-32.6	40.37	-	-	-	-	68.2	-27.83	2	100	H
3.225	40.13	PK1	32.8	-31.9	41.03	-	-	-	-	68.2	-27.17	2	100	V
6.92	43.12	PK1	35.6	-27.8	50.92	-	-	-	-	68.2	-17.28	97	256	H
6.92	38.3	AD1	35.6	-27.8	46.1	-	-	-	-	-	-	97	256	H
6.92	44.39	PK1	35.6	-27.8	52.19	-	-	-	-	68.2	-16.01	56	249	V
6.92	40.58	AD1	35.6	-27.8	48.38	-	-	-	-	-	-	56	249	V
7.765	37.23	PK1	35.7	-26.6	46.33	-	-	-	-	68.2	-21.87	97	256	H
9.976	35.72	PK1	37	-24.4	48.32	-	-	-	-	68.2	-19.88	56	249	V

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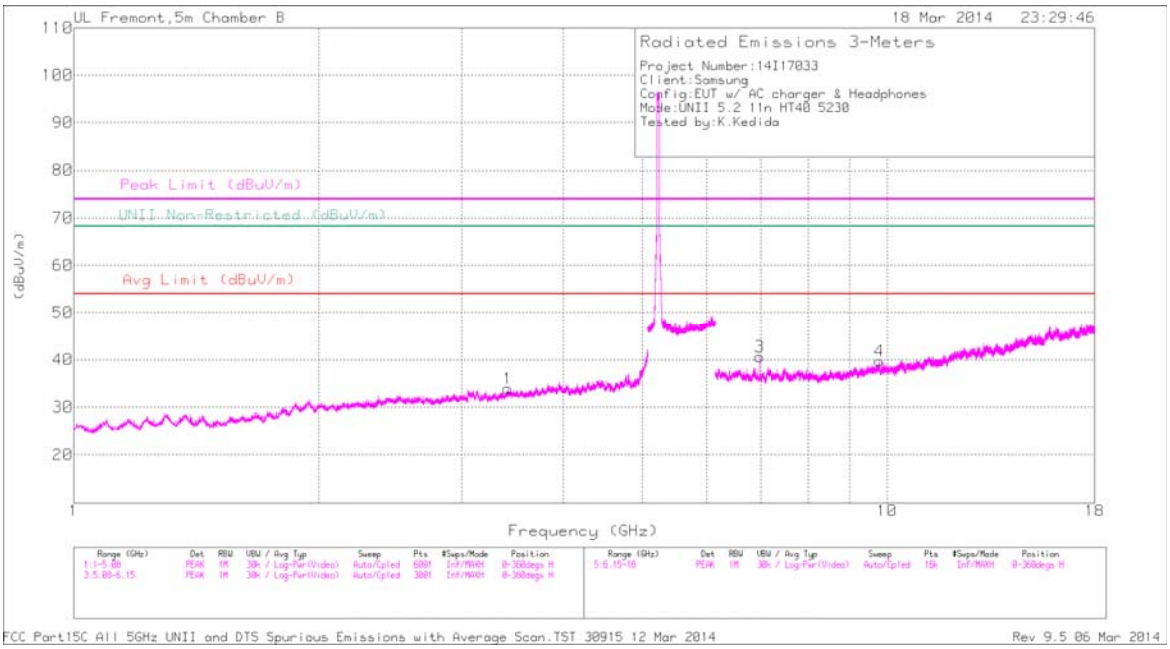
MID CHANNEL
HORIZONTAL



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

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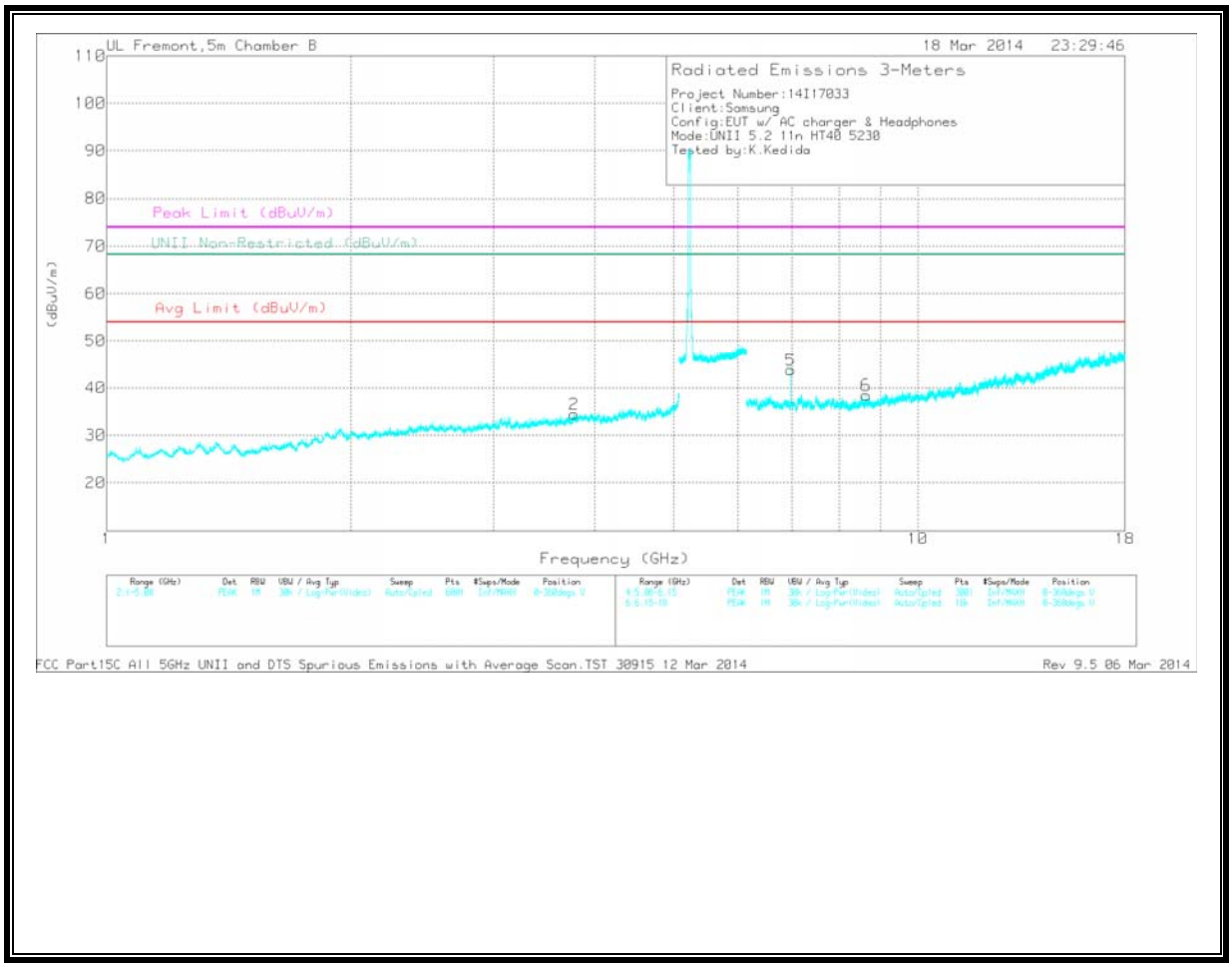
VERTICAL



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

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MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 3.769	32.17	PK	33.5	-31.2	34.47	54	-19.53	74	-39.53	-	-	0-360	202	V
1	3.418	32.26	PK	32.8	-31.1	33.96	-	-	-	-	68.2	-34.24	0-360	202	H
3	6.974	32.35	PK	35.6	-27.3	40.65	-	-	-	-	68.2	-27.55	0-360	99	H
5	6.974	35.49	PK	35.6	-27.3	43.79	-	-	-	-	68.2	-24.41	0-360	202	V
6	8.636	29.15	PK	35.8	-26.5	38.45	-	-	-	-	68.2	-29.75	0-360	202	V
4	9.781	26.24	PK	36.9	-23.4	39.74	-	-	-	-	68.2	-28.46	0-360	202	H

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

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.768	40.12	PK1	33.5	-31.2	42.42	54	-11.58	74	-31.58	-	-	1	100	V
3.417	40.36	PK1	32.8	-31.1	42.06	-	-	-	-	68.2	-26.14	1	100	H
6.973	39.79	PK1	35.6	-27.3	48.09	-	-	-	-	68.2	-20.11	94	271	H
6.973	33.65	AD1	35.6	-27.3	41.95	-	-	-	-	-	-	94	271	H
6.973	41.05	PK1	35.6	-27.3	49.35	-	-	-	-	68.2	-18.85	58	246	V
6.973	35.65	AD1	35.6	-27.3	43.95	-	-	-	-	-	-	58	246	V
8.637	35.69	PK1	35.8	-26.5	44.99	-	-	-	-	68.2	-23.21	58	246	V
9.782	35.43	PK1	36.9	-23.4	48.93	-	-	-	-	68.2	-19.27	94	271	H

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

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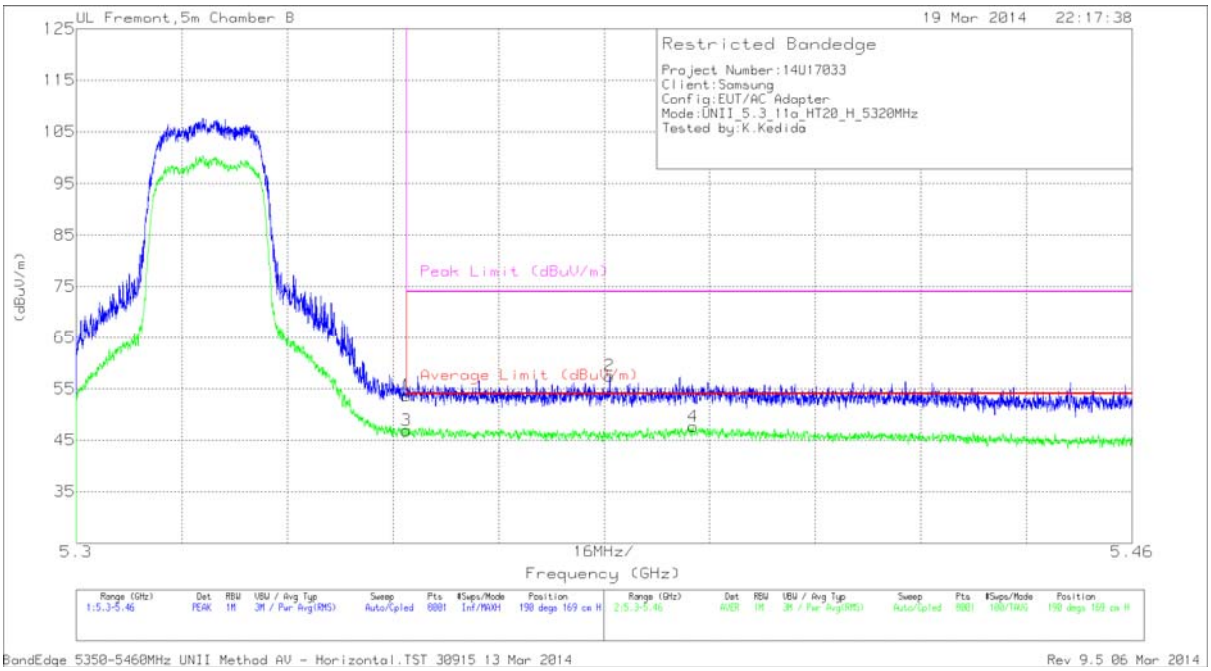
11.2. 5.3 GHz

11.2.1. TX ABOVE 1 GHz 802.11a MODE IN THE 5.3 GHz BAND

AUTHORIZED BANDEDGE (HIGH CHANNEL)

Horizontal



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	39.09	PK	34.5	-19.9	0	53.69	-	-	74	-20.31	190	169	H
2	* 5.381	42.69	PK	34.5	-19.7	0	57.49	-	-	74	-16.51	190	169	H
3	* 5.35	31.95	RMS	34.5	-19.9	.3	46.85	54	-7.15	-	-	190	169	H
4	* 5.393	32.64	RMS	34.5	-19.8	.3	47.64	54	-6.36	-	-	190	169	H

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

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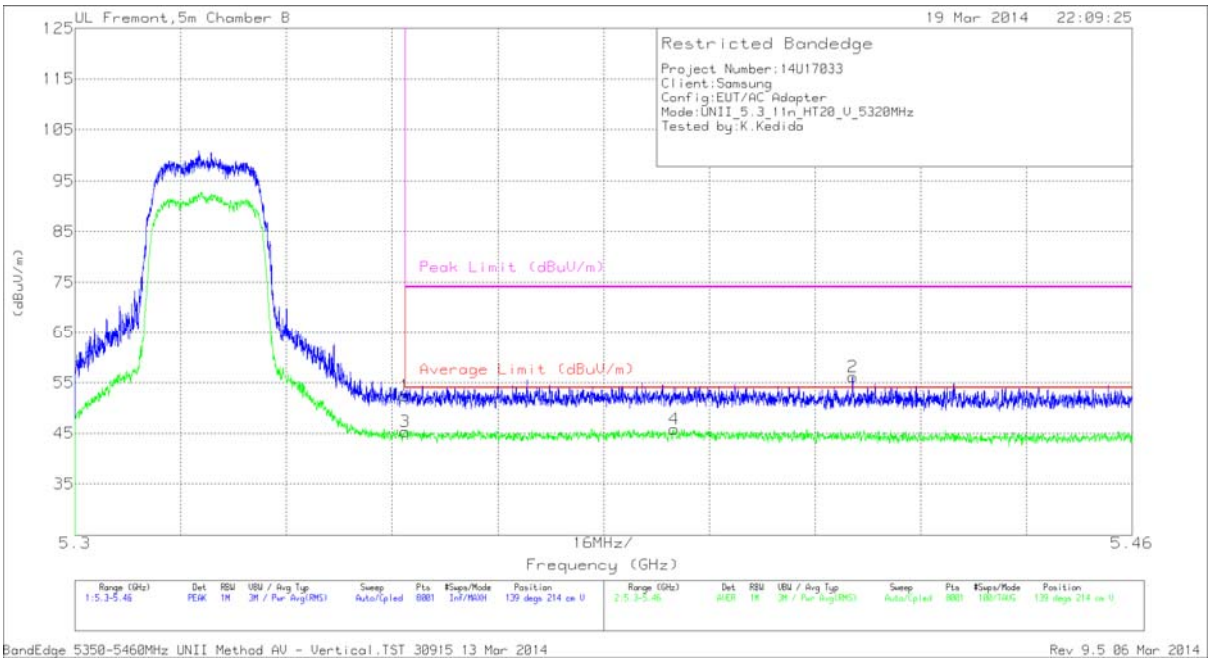
Vertical



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	37.83	PK	34.5	-19.9	0	52.43	-	-	74	-21.57	139	214	V
2	* 5.418	41.63	PK	34.5	-20	0	56.13	-	-	74	-17.87	139	214	V
3	* 5.35	30.28	RMS	34.5	-19.9	.3	45.28	54	-8.72	-	-	139	214	V
4	* 5.391	30.64	RMS	34.5	-19.7	.3	45.84	54	-8.16	-	-	139	214	V

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

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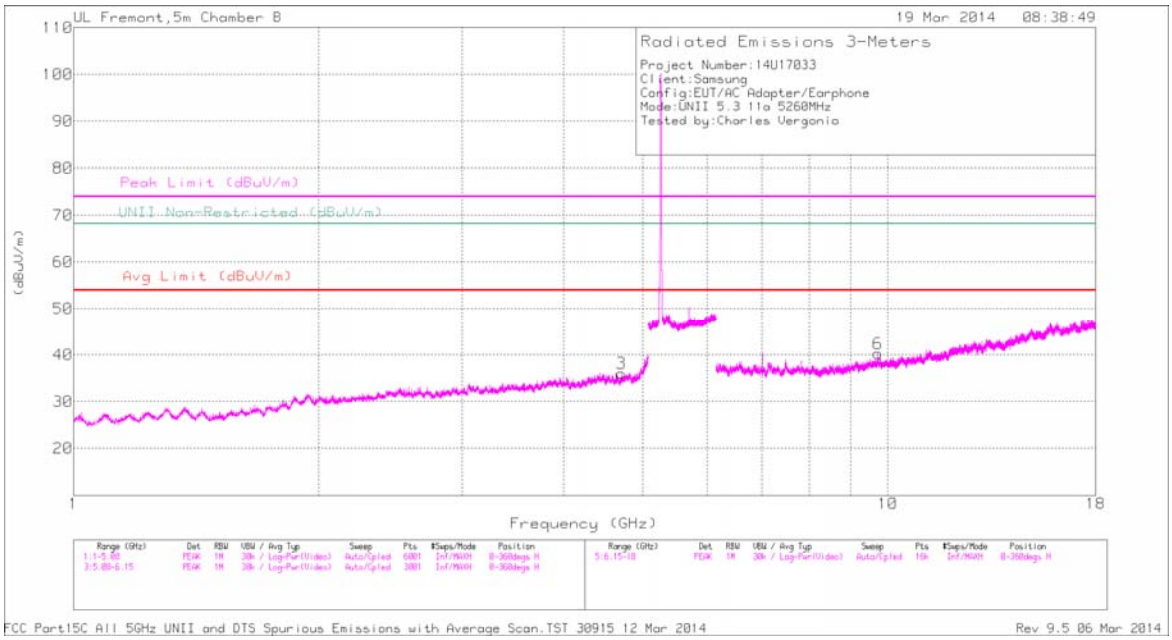
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL
HORIZONTAL



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

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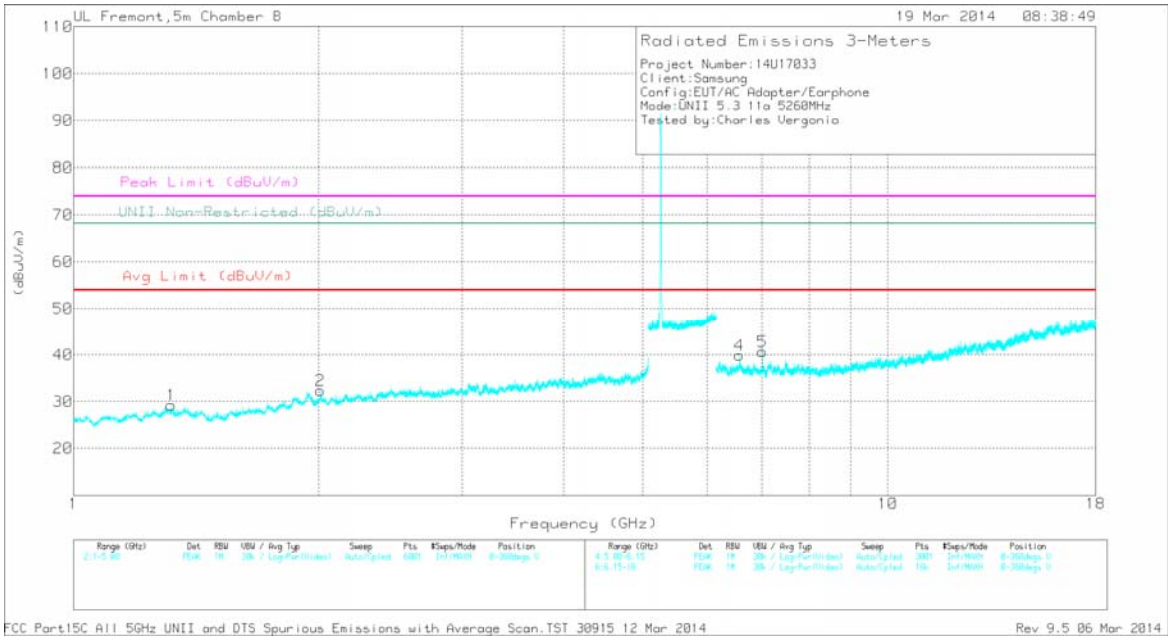
VERTICAL



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

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LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 4.707	31.79	PK	34.2	-29.9	36.09	54	-17.91	74	-37.91	-	-	0-360	99	H
1	* 1.318	34.7	PK	28.8	-34.2	29.3	54	-24.7	74	-44.7	-	-	0-360	99	V
2	2.01	34.35	PK	31.3	-33.3	32.35	-	-	-	-	68.2	-35.85	0-360	202	V
4	6.575	31.48	PK	35.7	-27.3	39.88	-	-	-	-	68.2	-28.32	0-360	202	V
5	7.014	32.72	PK	35.6	-27.6	40.72	-	-	-	-	68.2	-27.48	0-360	99	V
6	9.727	27.06	PK	36.9	-23.7	40.26	-	-	-	-	68.2	-27.94	0-360	99	H

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

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.707	40.46	PK1	34.2	-29.9	44.76	54	-9.24	74	-29.24	-	-	1	100	H
* 1.316	42.58	PK1	28.8	-34.1	37.28	54	-16.72	74	-36.72	-	-	1	100	V
2.009	42.52	PK1	31.3	-33.3	40.52	-	-	-	-	68.2	-27.68	1	100	V
6.574	38.19	PK1	35.7	-27.2	46.69	-	-	-	-	68.2	-21.51	1	100	V
7.012	37.94	PK1	35.6	-27.6	45.94	-	-	-	-	68.2	-22.26	1	100	V
9.727	34.34	PK1	36.9	-23.7	47.54	-	-	-	-	68.2	-20.66	1	100	H

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

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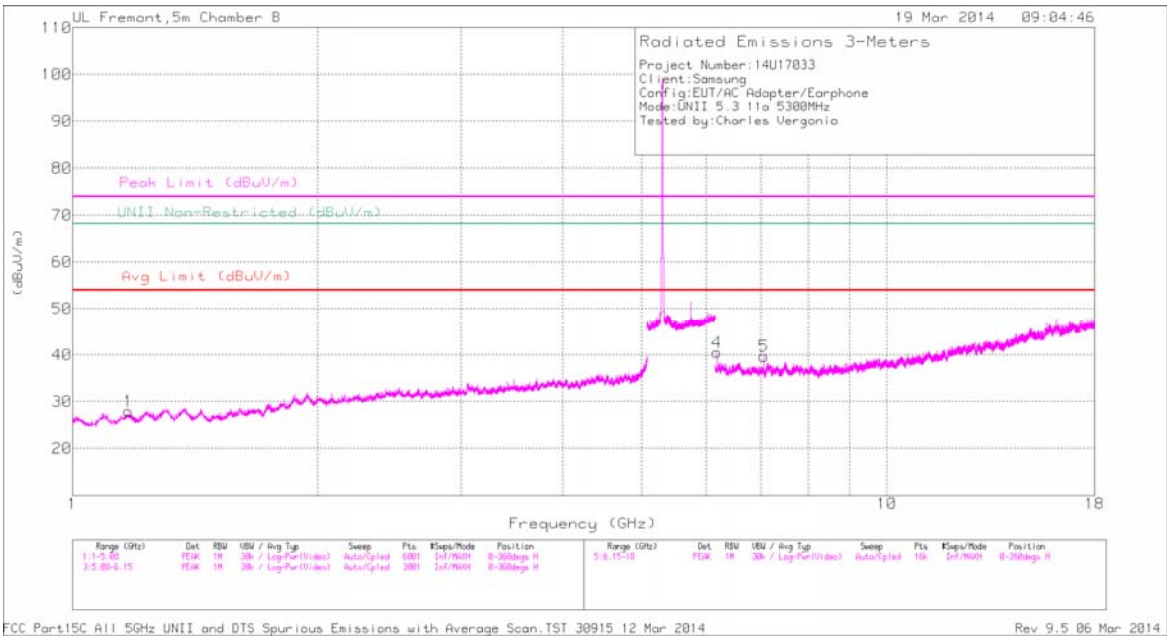
MID CHANNEL
HORIZONTAL



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

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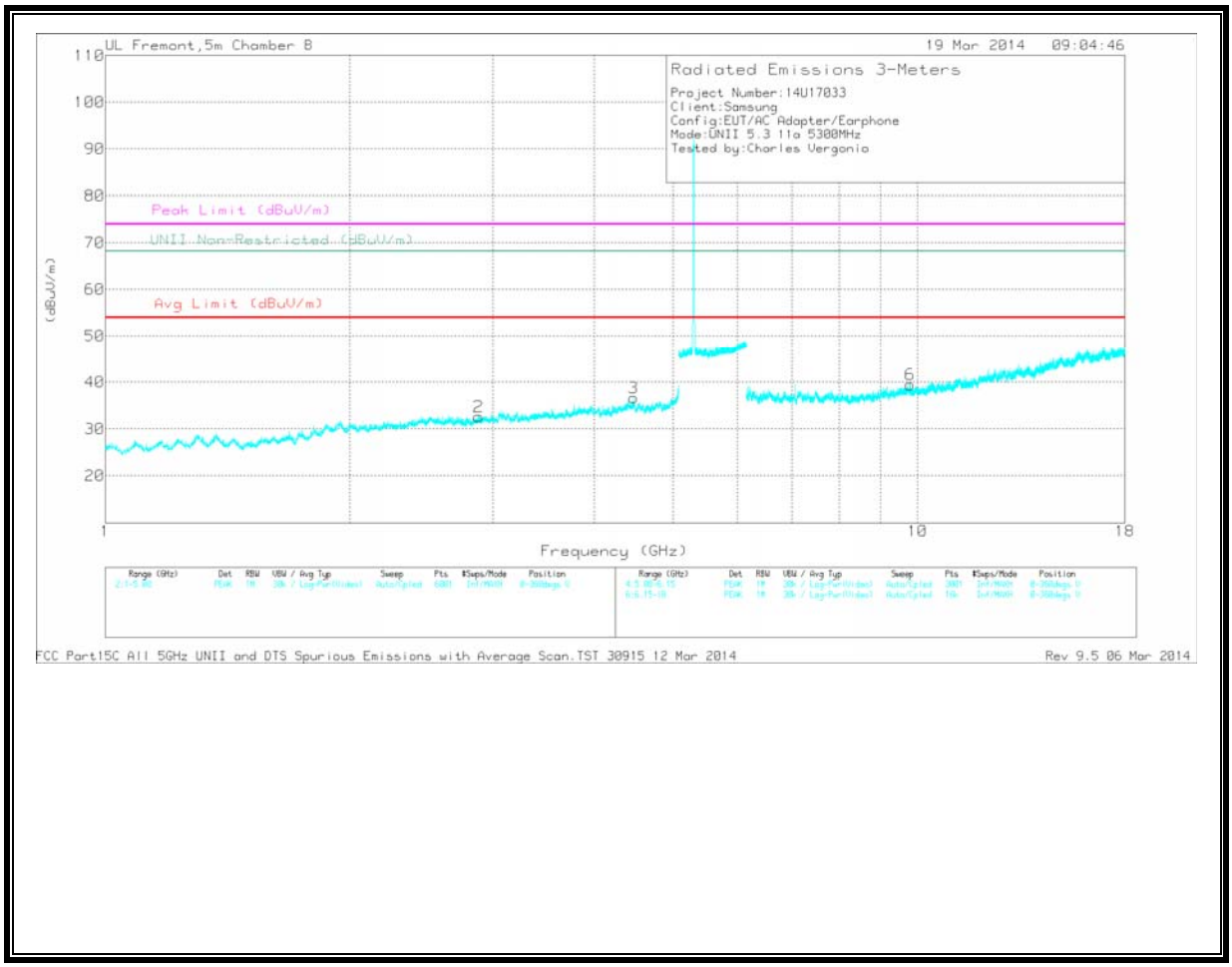
VERTICAL



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

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MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.171	34.63	PK	28	-34.7	27.93	54	-26.07	74	-46.07	-	-	0-360	201	H
2	* 2.881	32.04	PK	32.6	-32	32.64	54	-21.36	74	-41.36	-	-	0-360	99	V
3	4.467	32.23	PK	33.9	-29.5	36.63	-	-	-	-	68.2	-31.57	0-360	99	V
4	6.183	33.25	PK	35.4	-28.1	40.55	-	-	-	-	68.2	-27.65	0-360	99	H
5	7.067	32.73	PK	35.6	-28.6	39.73	-	-	-	-	68.2	-28.47	0-360	202	H
6	9.787	25.97	PK	36.9	-23.4	39.47	-	-	-	-	68.2	-28.73	0-360	202	V

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

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.17	43.13	PK1	27.9	-34.7	36.33	54	-17.67	74	-37.67	-	-	1	100	H
* 2.881	41.16	PK1	32.6	-32	41.76	54	-12.24	74	-32.24	-	-	1	100	V
4.469	39.17	PK1	33.9	-29.5	43.57	-	-	-	-	68.2	-24.63	1	100	V
6.184	38.08	PK1	35.4	-28.1	45.38	-	-	-	-	68.2	-22.82	1	100	H
7.065	38.34	PK1	35.6	-28.5	45.44	-	-	-	-	68.2	-22.76	1	100	H
9.785	34.55	PK1	36.9	-23.4	48.05	-	-	-	-	68.2	-20.15	1	100	V

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

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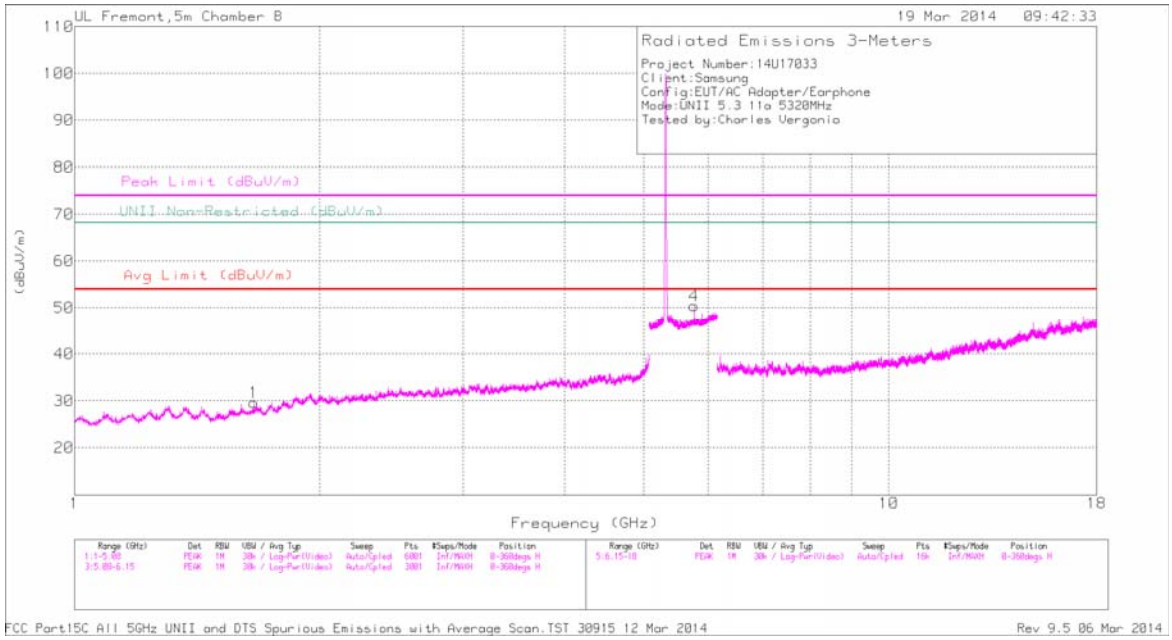
HIGH CHANNEL
HORIZONTAL



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

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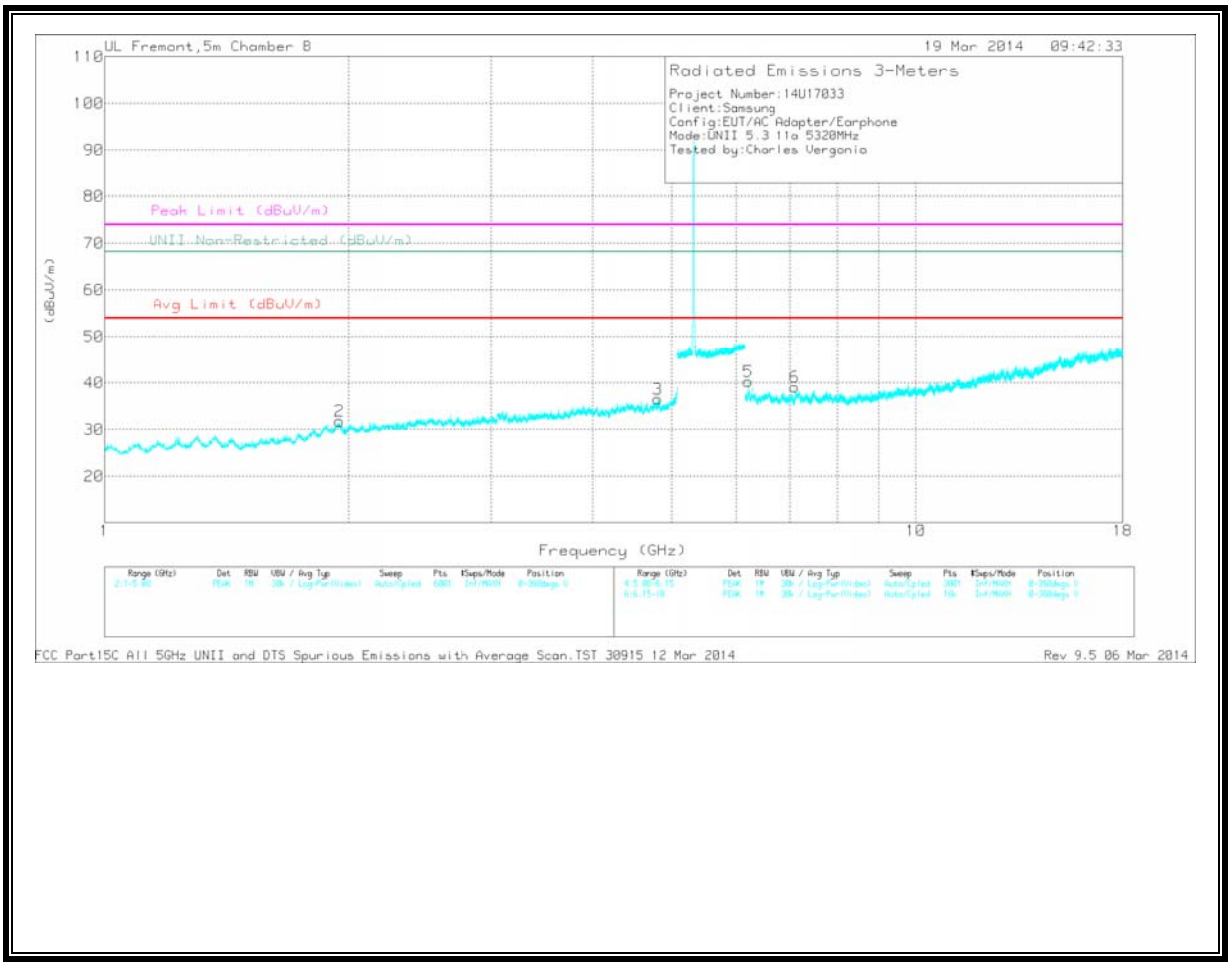
VERTICAL



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

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HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.661	34	PK	28.8	-33.1	29.7	54	-24.3	74	-44.3	-	-	0-360	99	H
3	* 4.803	31.5	PK	34.2	-29.2	36.5	54	-17.5	74	-37.5	-	-	0-360	202	V
2	1.949	33.11	PK	31.2	-32.5	31.81	-	-	-	-	68.2	-36.39	0-360	99	V
4	5.763	35.28	PK	34.6	-19.5	50.38	-	-	-	-	68.2	-17.82	0-360	202	H
5	6.206	32.48	PK	35.4	-27.6	40.28	-	-	-	-	68.2	-27.92	0-360	202	V
6	7.093	32.22	PK	35.6	-28.7	39.12	-	-	-	-	68.2	-29.08	0-360	99	V

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

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.663	41.24	PK1	28.8	-33.1	36.94	54	-17.06	74	-37.06	-	-	1	202	H
* 4.803	39.41	PK1	34.2	-29.2	44.41	54	-9.59	74	-29.59	-	-	1	202	V
1.948	42.03	PK1	31.2	-32.5	40.73	-	-	-	-	68.2	-27.47	1	202	V
5.763	41.67	PK1	34.6	-19.5	56.77	-	-	-	-	68.2	-11.43	152	237	H
5.763	35.01	AD1	34.6	-19.5	50.11	-	-	-	-	-	-	152	237	H
6.208	38.81	PK1	35.4	-27.6	46.61	-	-	-	-	68.2	-21.59	1	202	V
7.094	38.96	PK1	35.6	-28.7	45.86	-	-	-	-	68.2	-22.34	1	202	V

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

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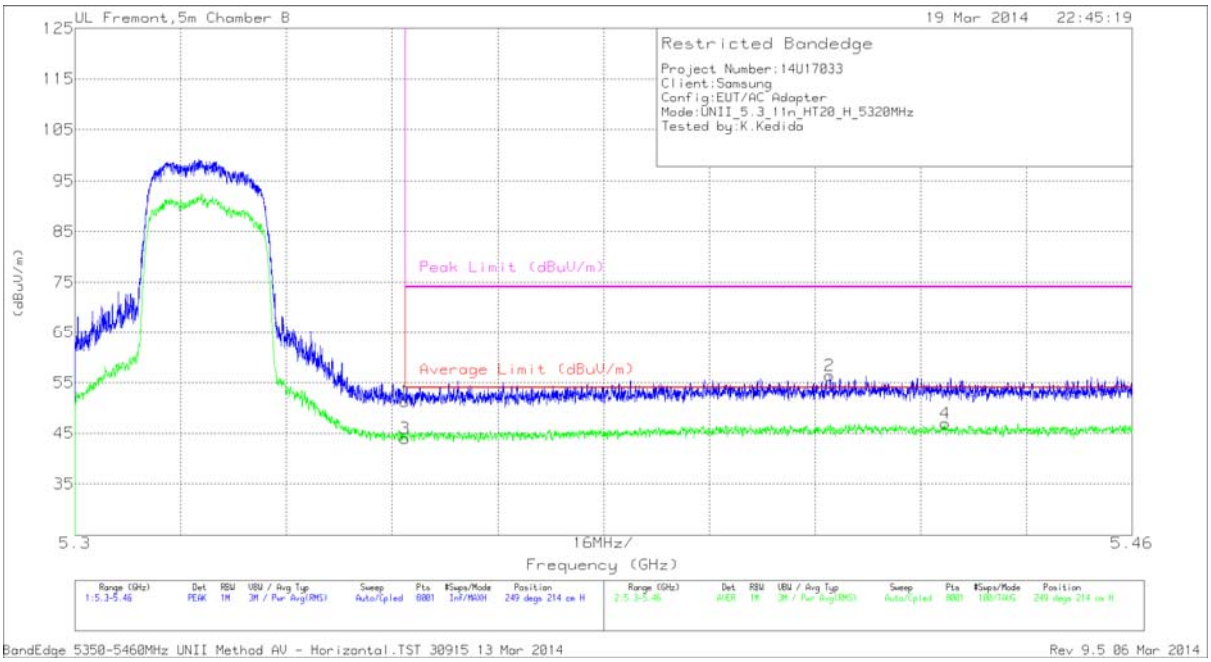
11.2.2. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.3 GHz BAND AUTHORIZED BANDEDGE (HIGH CHANNEL)

Horizontal



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	36.69	PK	34.5	-19.9	0	51.29	-	-	74	-22.71	249	214	H
2	* 5.414	41.83	PK	34.5	-20	0	56.33	-	-	74	-17.67	249	214	H
3	* 5.35	29.01	RMS	34.5	-19.9	.3	43.91	54	-10.09	-	-	249	214	H
4	* 5.432	32.09	RMS	34.5	-20	.3	46.89	54	-7.11	-	-	249	214	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
PK - Peak detector
RMS - RMS detection

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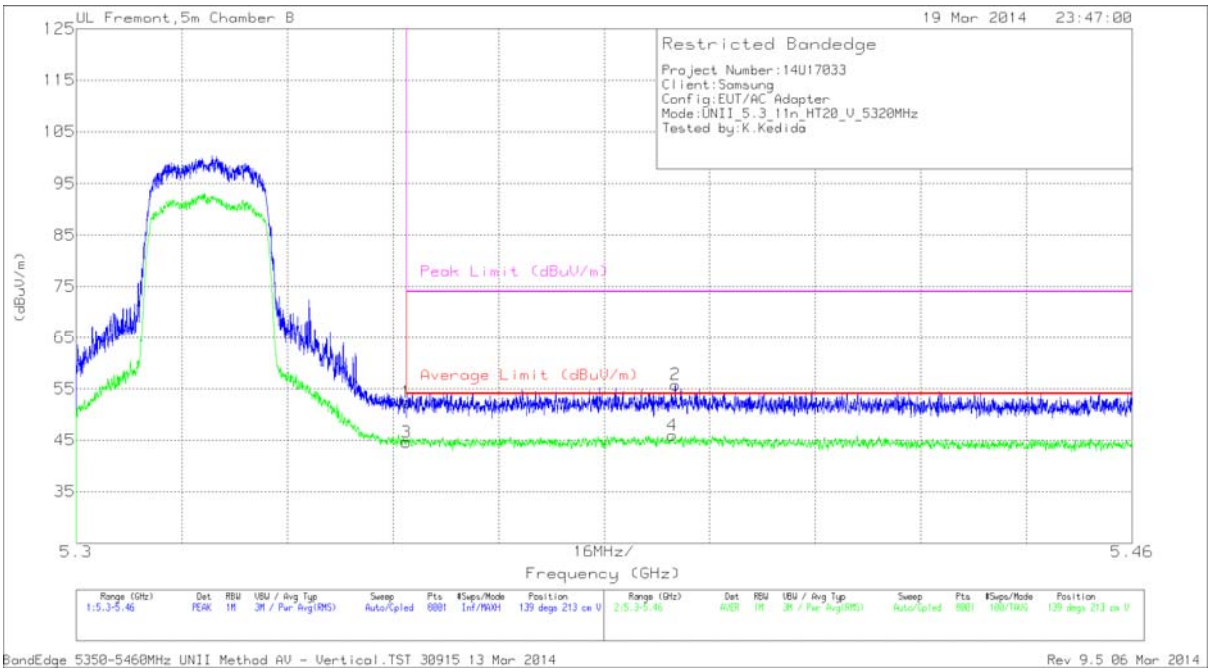
Vertical



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	37.73	PK	34.5	-19.9	0	52.33	-	-	74	-21.67	139	213	V
2	* 5.391	40.96	PK	34.5	-19.7	0	55.76	-	-	74	-18.24	139	213	V
3	* 5.35	29.69	RMS	34.5	-19.9	.3	44.59	54	-9.41	-	-	139	213	V
4	* 5.39	30.84	RMS	34.5	-19.7	.3	45.94	54	-8.06	-	-	139	213	V

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

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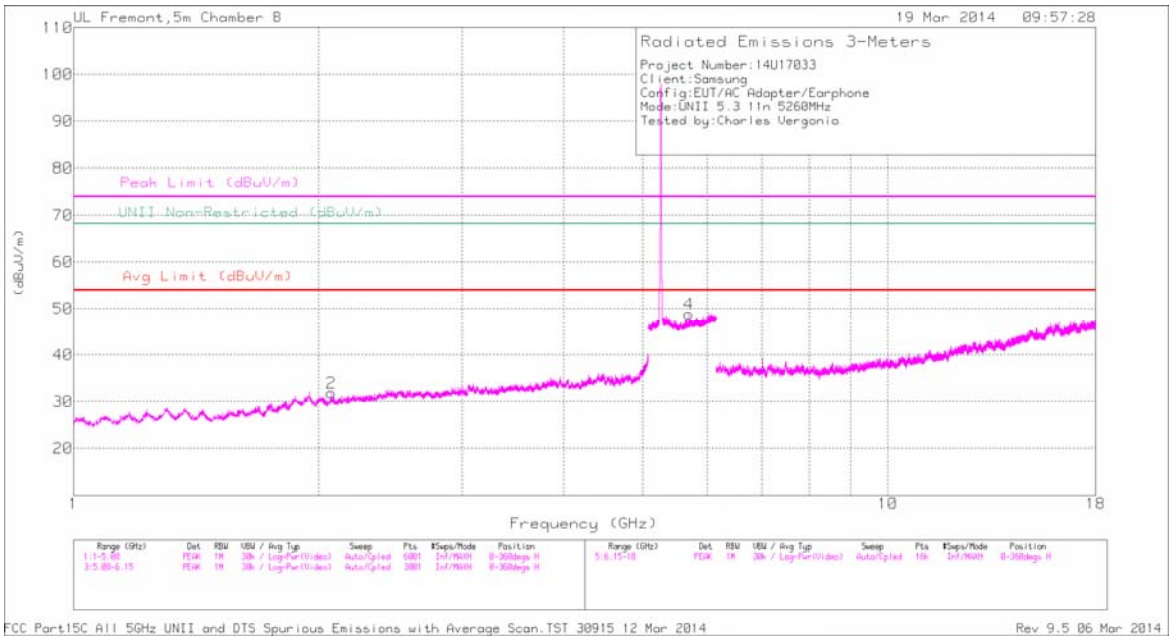
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL
HORIZONTAL



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

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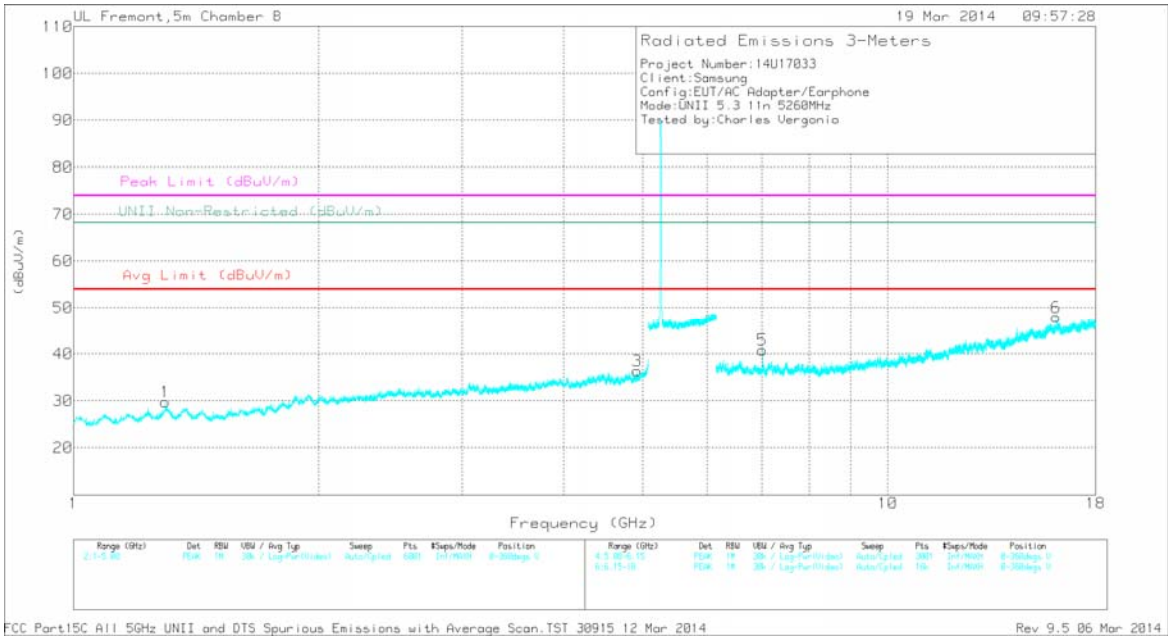
VERTICAL



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

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LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.296	35.27	PK	28.8	-34.3	29.77	54	-24.23	74	-44.23	-	-	0-360	99	V
3	* 4.921	31.92	PK	34.2	-29.7	36.42	54	-17.58	74	-37.58	-	-	0-360	99	V
6	* 16.088	27.21	PK	41	-20.2	48.01	54	-5.99	74	-25.99	-	-	0-360	202	V
2	2.073	34.12	PK	31.3	-33.6	31.82	-	-	-	-	68.2	-36.38	0-360	202	H
4	5.698	34.23	PK	34.5	-19.8	48.93	-	-	-	-	68.2	-19.27	0-360	202	H
5	7.014	32.89	PK	35.6	-27.6	40.89	-	-	-	-	68.2	-27.31	0-360	99	V

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

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.297	43.42	PK1	28.8	-34.3	37.92	54	-16.08	74	-36.08	-	-	1	100	V
* 4.919	39.51	PK1	34.2	-29.7	44.01	54	-9.99	74	-29.99	-	-	1	100	V
* 16.087	33.78	PK1	41	-20.2	54.58			74	-19.42	-	-	1	100	V
* 16.09	24.79	AD1	41	-20.2	45.59	54	-8.41	-	-	-	-	1	100	V
2.075	41.74	PK1	31.3	-33.6	39.44	-	-	-	-	68.2	-28.76	1	100	H
5.701	40.83	PK1	34.5	-19.8	55.53	-	-	-	-	68.2	-12.67	1	100	H
7.013	37.7	PK1	35.6	-27.6	45.7	-	-	-	-	68.2	-22.5	1	100	V

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

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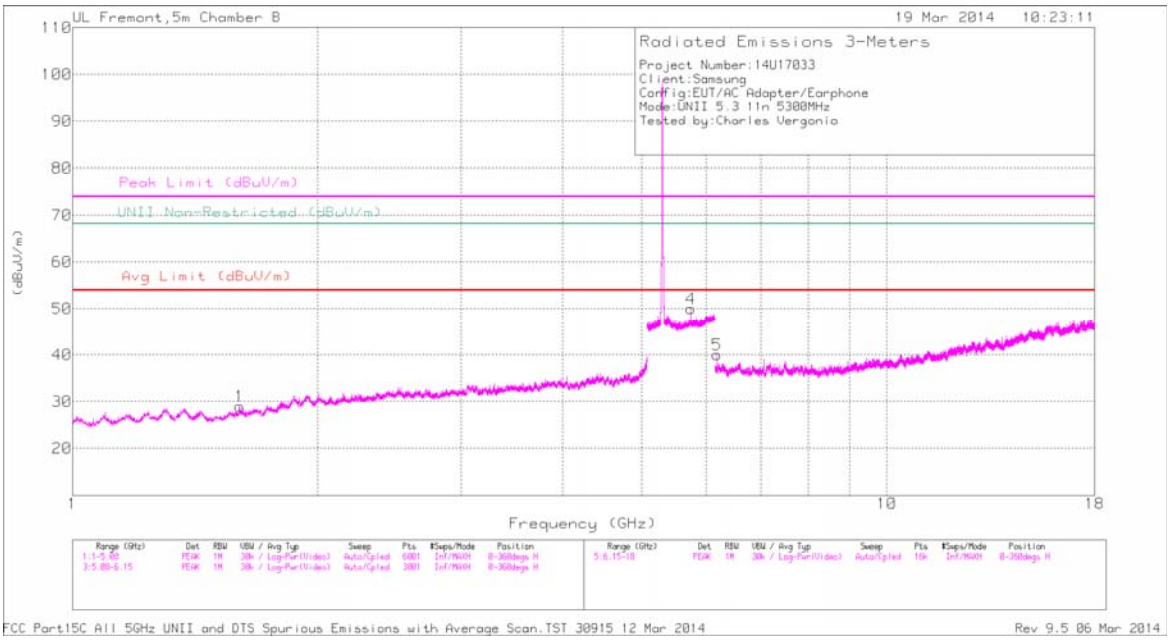
MID CHANNEL
HORIZONTAL



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

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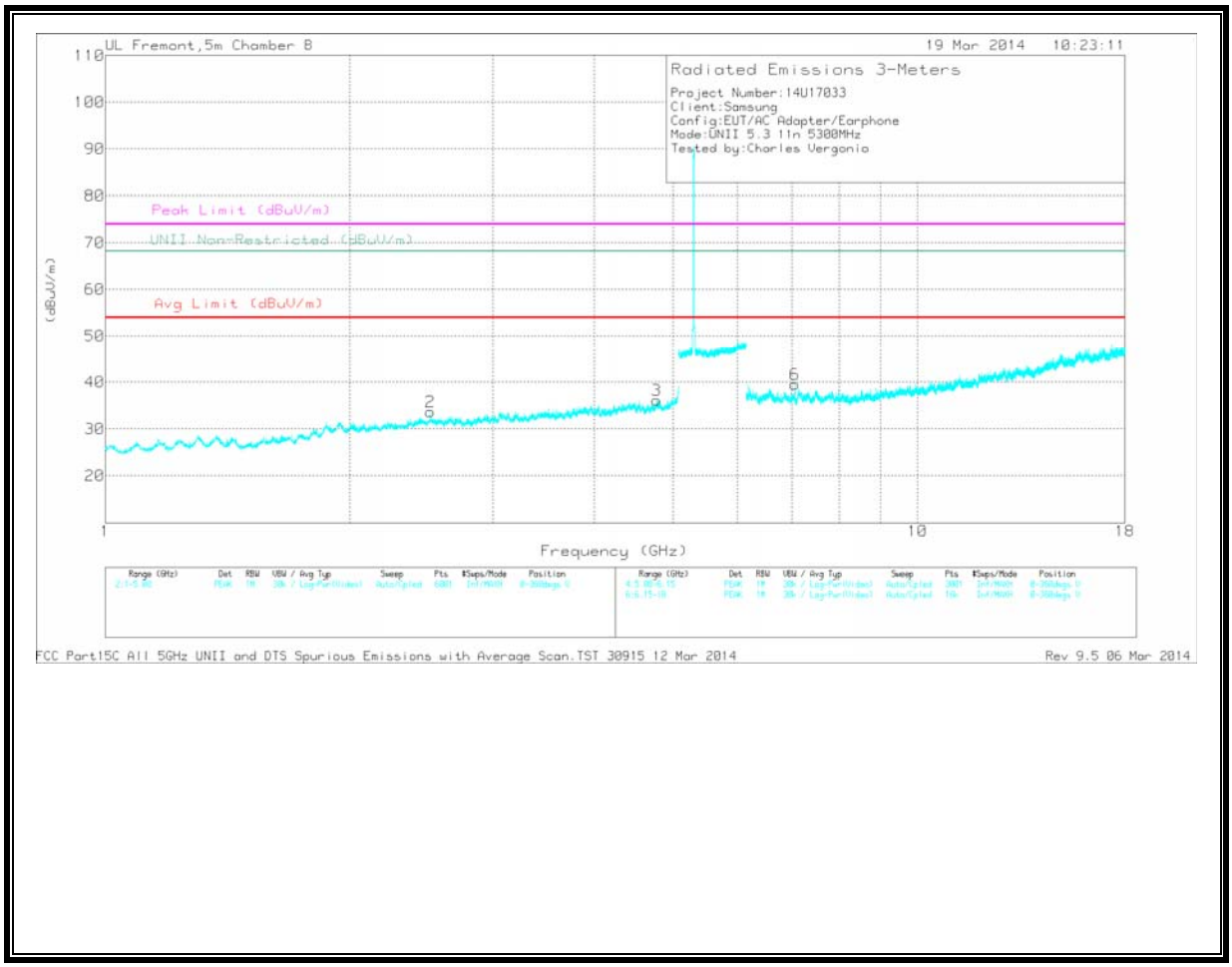
VERTICAL



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

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MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.603	33.53	PK	28.5	-33	29.03	54	-24.97	74	-44.97	-	-	0-360	202	H
3	* 4.773	31.11	PK	34.2	-29.1	36.21	54	-17.79	74	-37.79	-	-	0-360	202	V
2	2.512	33.57	PK	32.5	-32.4	33.67	-	-	-	-	68.2	-34.53	0-360	99	V
4	5.742	34.91	PK	34.6	-19.5	50.01	-	-	-	-	68.2	-18.19	0-360	202	H
5	6.183	32.8	PK	35.4	-28.1	40.1	-	-	-	-	68.2	-28.1	0-360	99	H
6	7.066	32.39	PK	35.6	-28.5	39.49	-	-	-	-	68.2	-28.71	0-360	99	V

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

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.601	41.67	PK1	28.5	-33.1	37.07	54	-16.93	74	-36.93	-	-	1	100	H
* 4.774	40.13	PK1	34.2	-29.1	45.23	54	-8.77	74	-28.77	-	-	1	100	V
2.514	41.51	PK1	32.5	-32.4	41.61	-	-	-	-	68.2	-26.59	1	100	V
5.742	41.31	PK1	34.6	-19.5	56.41	-	-	-	-	68.2	-11.79	1	100	H
6.186	38.26	PK1	35.4	-28	45.66	-	-	-	-	68.2	-22.54	1	100	H
7.064	38.56	PK1	35.6	-28.5	45.66	-	-	-	-	68.2	-22.54	1	100	V

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

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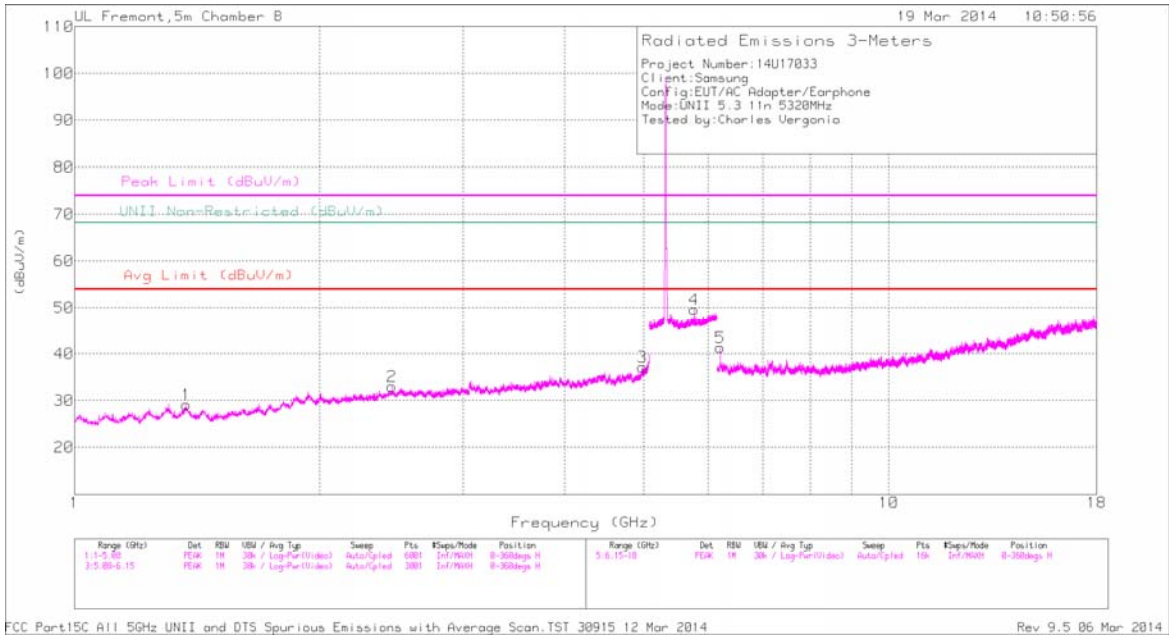
HIGH CHANNEL
HORIZONTAL



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

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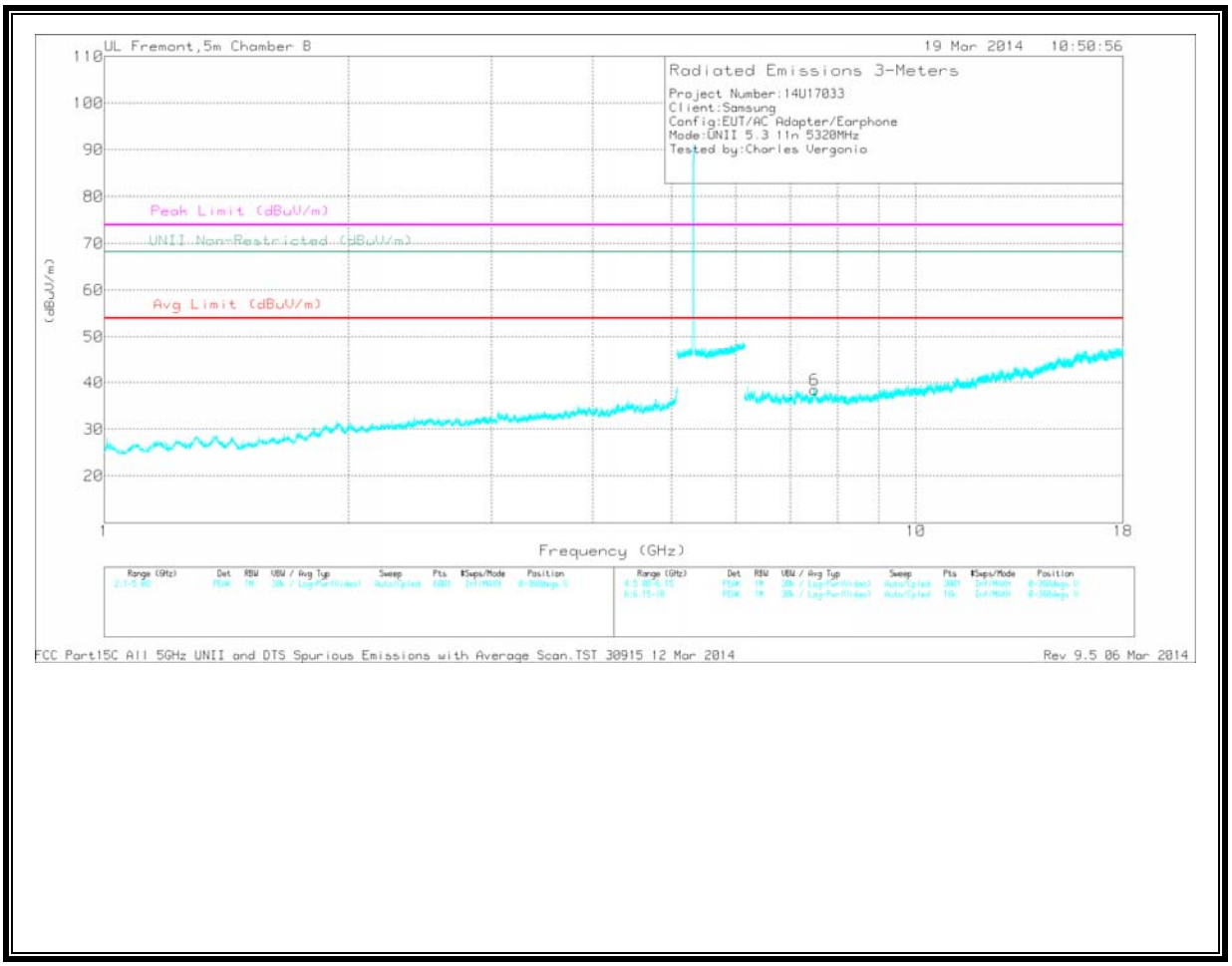
VERTICAL



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

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HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.371	34.36	PK	28.6	-33.8	29.16	54	-24.84	74	-44.84	-	-	0-360	99	H
3	* 4.979	31.35	PK	34.2	-28.4	37.15	54	-16.85	74	-36.85	-	-	0-360	202	H
6	* 7.494	28.63	PK	35.6	-25.7	38.53	54	-15.47	74	-35.47	-	-	0-360	99	V
2	2.454	32.82	PK	32.3	-32.1	33.02	-	-	-	-	68.2	-35.18	0-360	99	H
4	5.763	34.57	PK	34.6	-19.5	49.67	-	-	-	-	68.2	-18.53	0-360	202	H
5	6.207	33.58	PK	35.4	-27.6	41.38	-	-	-	-	68.2	-26.82	0-360	99	H

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

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.373	42.86	PK1	28.6	-33.8	37.66	54	-16.34	74	-36.34	-	-	1	100	H
* 4.982	39.61	PK1	34.2	-28.3	45.51	54	-8.49	74	-28.49	-	-	1	100	H
* 7.495	37.92	PK1	35.6	-25.8	47.72	54	-6.28	74	-26.28	-	-	1	100	V
2.454	41.69	PK1	32.3	-32.1	41.89	-	-	-	-	68.2	-26.31	1	100	H
5.766	40.9	PK1	34.6	-19.6	55.9	-	-	-	-	68.2	-12.3	1	100	H
6.207	41.29	PK1	35.4	-27.6	49.09	-	-	-	-	68.2	-19.11	173	248	H
6.207	34.25	AD1	35.4	-27.6	42.05	-	-	-	-	-	-	173	248	H

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

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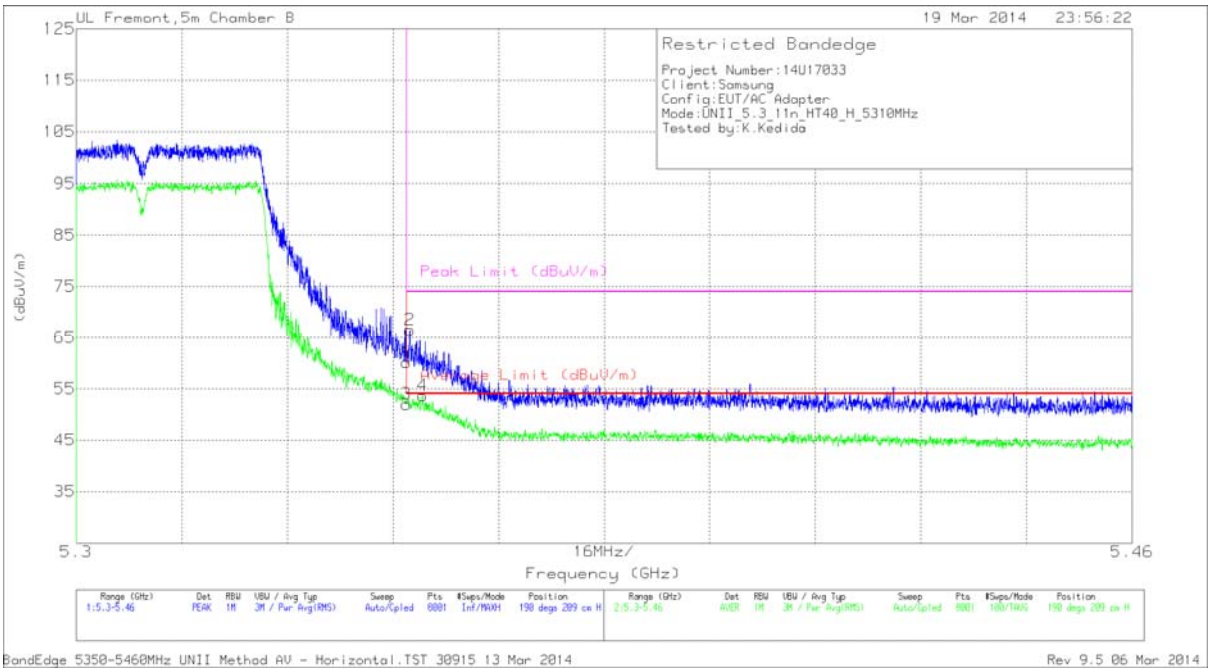
11.2.3. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.3 GHz BAND AUTHORIZED BANDEDGE (HIGH CHANNEL)

Horizontal



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	45.57	PK	34.5	-19.9	0	60.17	-	-	74	-13.83	190	209	H
2	* 5.351	51.92	PK	34.5	-19.9	0	66.52	-	-	74	-7.48	190	209	H
3	* 5.35	36.79	RMS	34.5	-19.9	.6	51.99	54	-2.01	-	-	190	209	H
4	* 5.352	38.45	RMS	34.5	-19.9	.6	53.65	54	-.35	-	-	190	209	H

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

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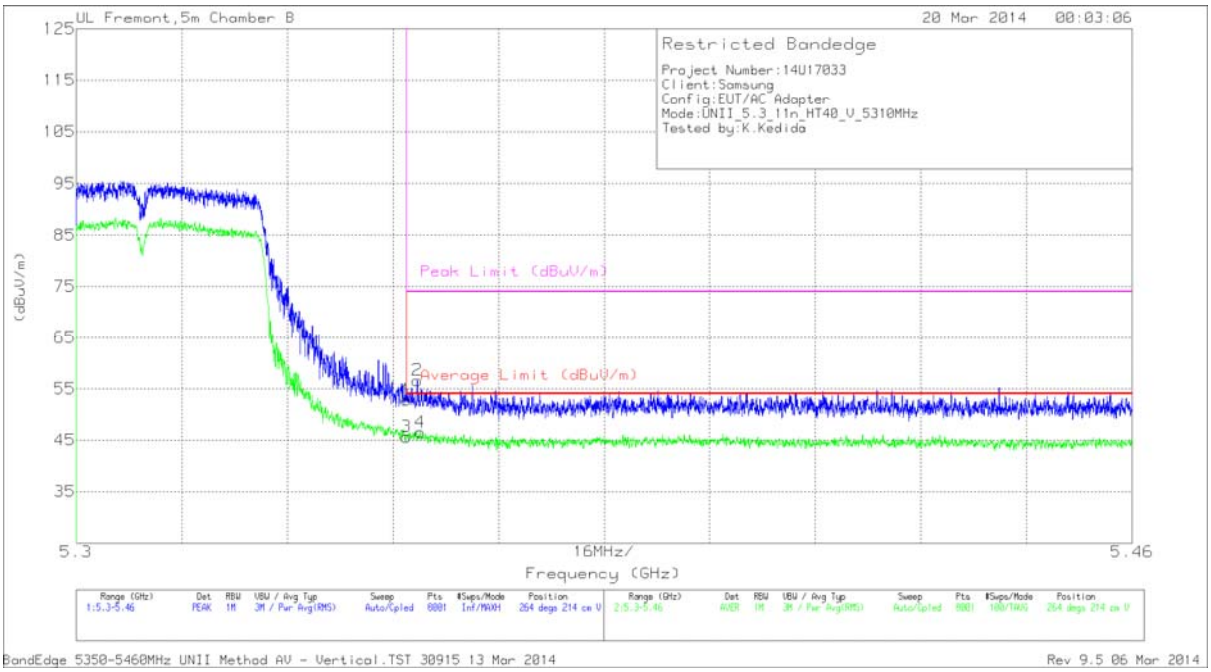
Vertical



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	38.23	PK	34.5	-19.9	0	52.83	-	-	74	-21.17	264	214	V
2	* 5.352	42.02	PK	34.5	-19.9	0	56.62	-	-	74	-17.38	264	214	V
3	* 5.35	30.43	RMS	34.5	-19.9	.6	45.63	54	-8.37	-	-	264	214	V
4	* 5.352	31.33	RMS	34.5	-19.9	.6	46.53	54	-7.47	-	-	264	214	V

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

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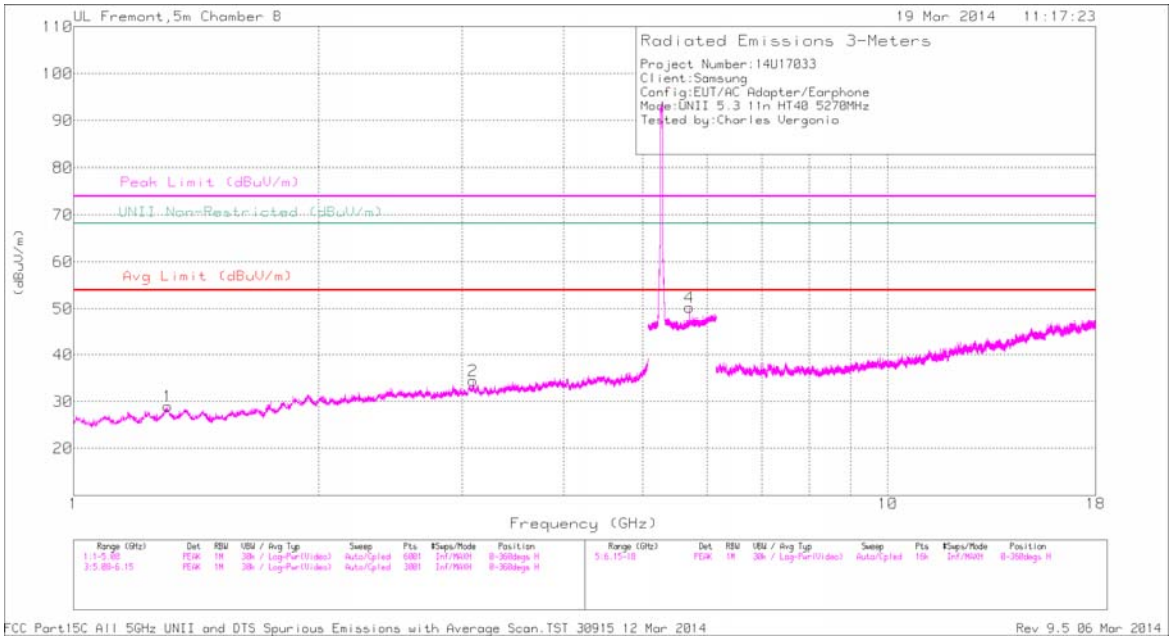
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL
HORIZONTAL



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

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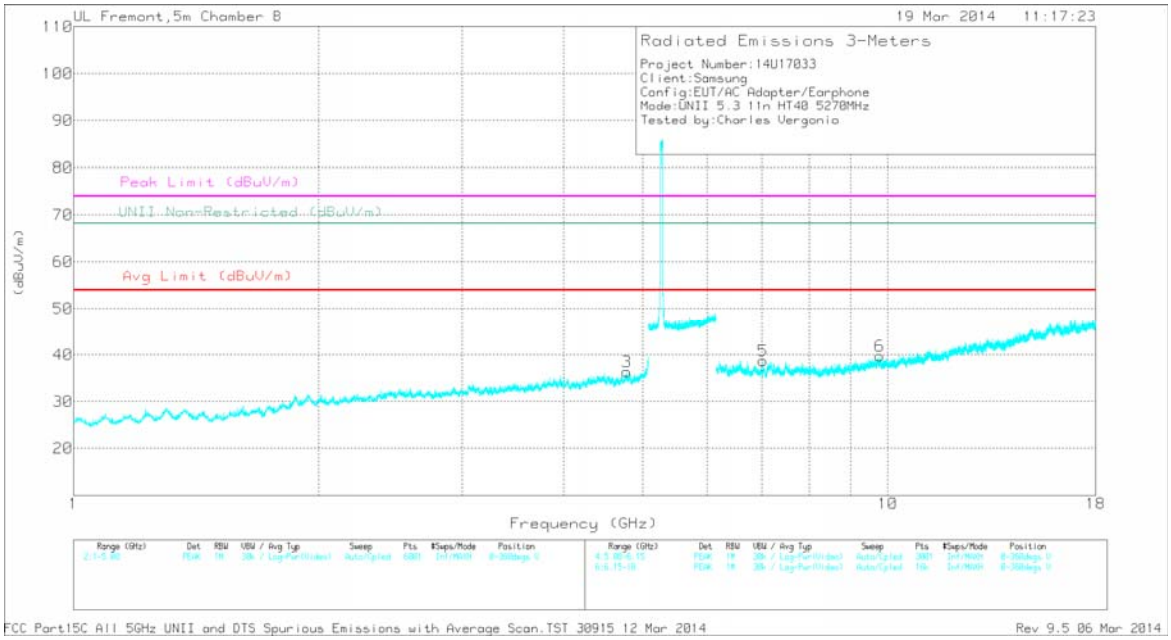
VERTICAL



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

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LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.305	34.43	PK	28.8	-34.2	29.03	54	-24.97	74	-44.97	-	-	0-360	99	H
3	* 4.777	31.19	PK	34.2	-29	36.39	54	-17.61	74	-37.61	-	-	0-360	99	V
2	3.094	33.46	PK	32.9	-31.9	34.46	-	-	-	-	68.2	-33.74	0-360	201	H
4	5.709	35.62	PK	34.5	-19.8	50.32	-	-	-	-	68.2	-17.88	0-360	202	H
5	7.027	30.6	PK	35.6	-27.4	38.8	-	-	-	-	68.2	-29.4	0-360	99	V
6	9.777	26.24	PK	36.9	-23.4	39.74	-	-	-	-	68.2	-28.46	0-360	202	V

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

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.304	43.01	PK1	28.8	-34.2	37.61	54	-16.39	74	-36.39	-	-	1	100	H
* 4.777	39.2	PK1	34.2	-29.1	44.3	54	-9.7	74	-29.7	-	-	1	100	V
3.096	40.79	PK1	32.9	-32	41.69	-	-	-	-	68.2	-26.51	1	100	H
5.708	40.73	PK1	34.5	-19.8	55.43	-	-	-	-	68.2	-12.77	1	100	H
7.027	38.34	PK1	35.6	-27.4	46.54	-	-	-	-	68.2	-21.66	1	100	V
9.775	36.23	PK1	36.9	-23.5	49.63	-	-	-	-	68.2	-18.57	1	100	V

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

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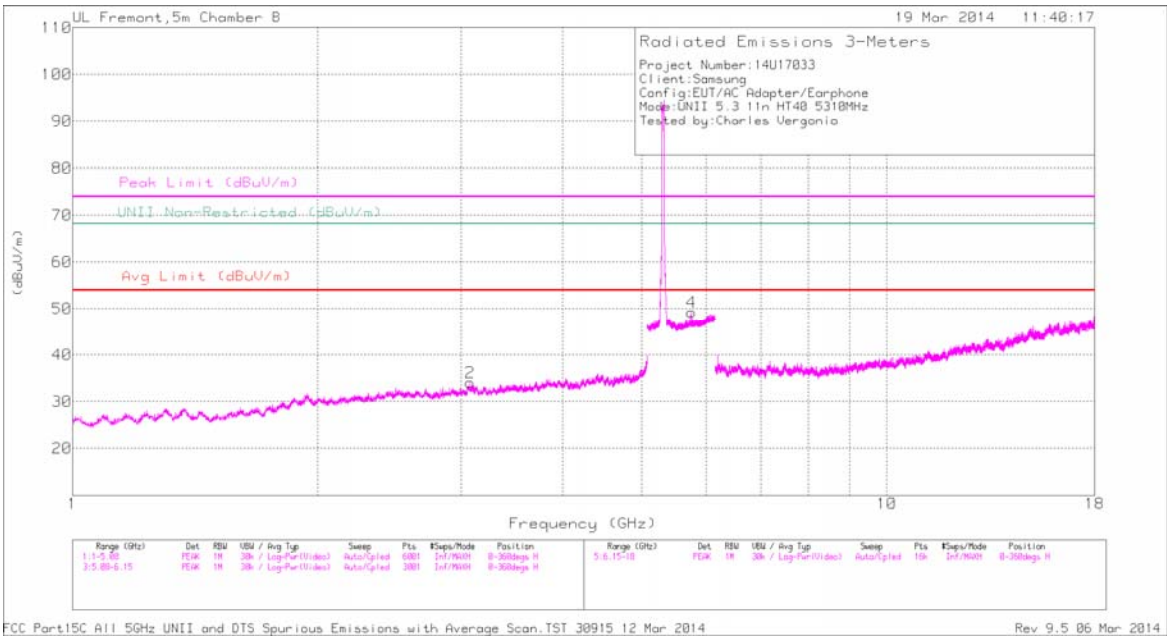
MID CHANNEL
HORIZONTAL



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

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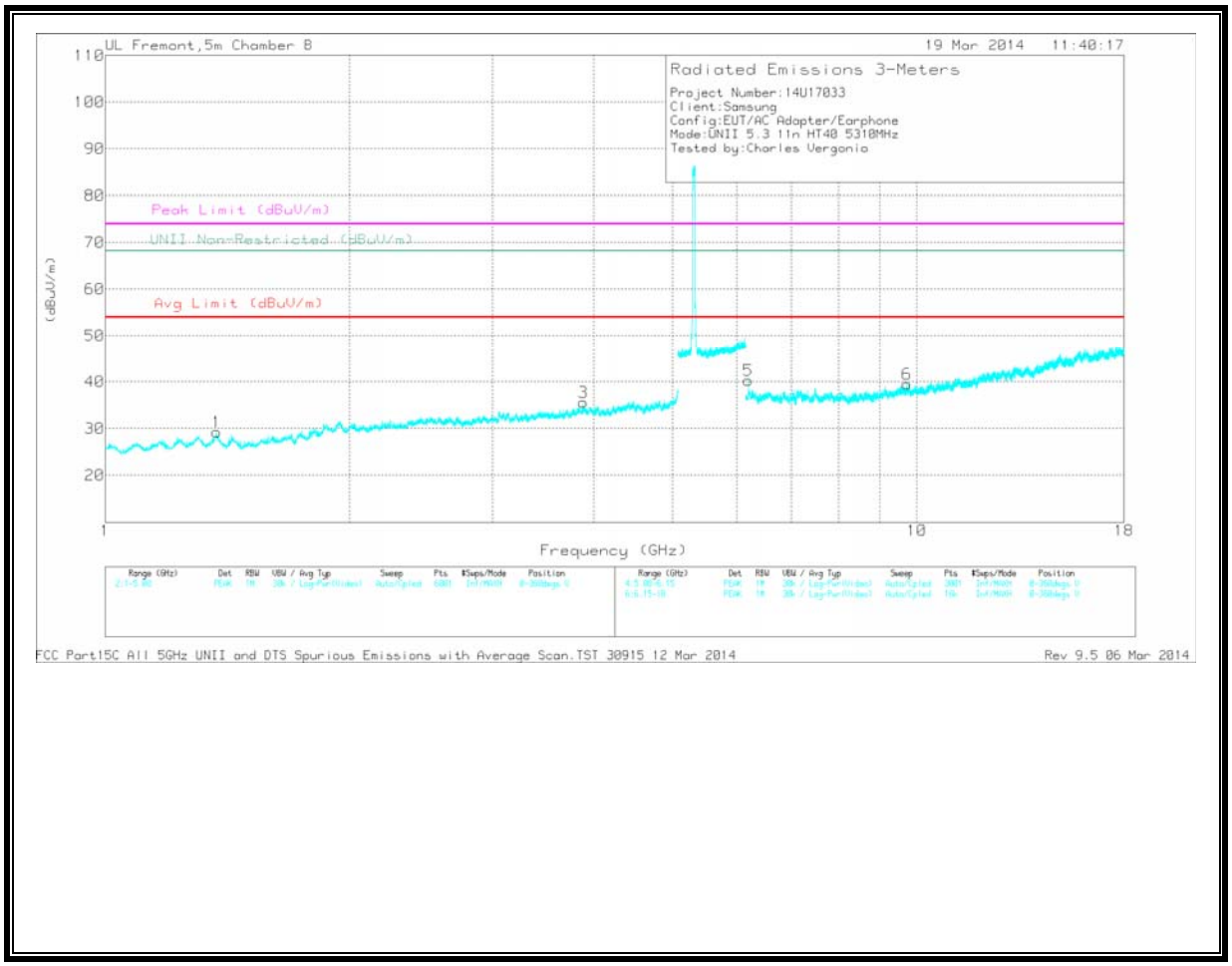
VERTICAL



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

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MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.372	34.46	PK	28.6	-33.8	29.26	54	-24.74	74	-44.74	-	-	0-360	202	V
3	* 3.879	33.58	PK	33.8	-31.7	35.68	54	-18.32	74	-38.32	-	-	0-360	202	V
2	3.079	33.16	PK	32.9	-32	34.06	-	-	-	-	68.2	-34.14	0-360	202	H
4	5.753	34.16	PK	34.6	-19.5	49.26	-	-	-	-	68.2	-18.94	0-360	202	H
5	6.195	32.74	PK	35.4	-27.8	40.34	-	-	-	-	68.2	-27.86	0-360	202	V
6	9.728	26.41	PK	36.9	-23.8	39.51	-	-	-	-	68.2	-28.69	0-360	202	V

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

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.371	43.45	PK1	28.6	-33.8	38.25	54	-15.75	74	-35.75	-	-	1	100	V
* 3.881	40.51	PK1	33.8	-31.7	42.61	54	-11.39	74	-31.39	-	-	1	100	V
3.08	40.84	PK1	32.9	-32	41.74	-	-	-	-	68.2	-26.46	1	100	H
5.753	40.5	PK1	34.6	-19.5	55.6	-	-	-	-	68.2	-12.6	1	100	H
6.195	38.4	PK1	35.4	-27.8	46	-	-	-	-	68.2	-22.2	1	100	V
9.726	33.92	PK1	36.9	-23.7	47.12	-	-	-	-	68.2	-21.08	1	100	V

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

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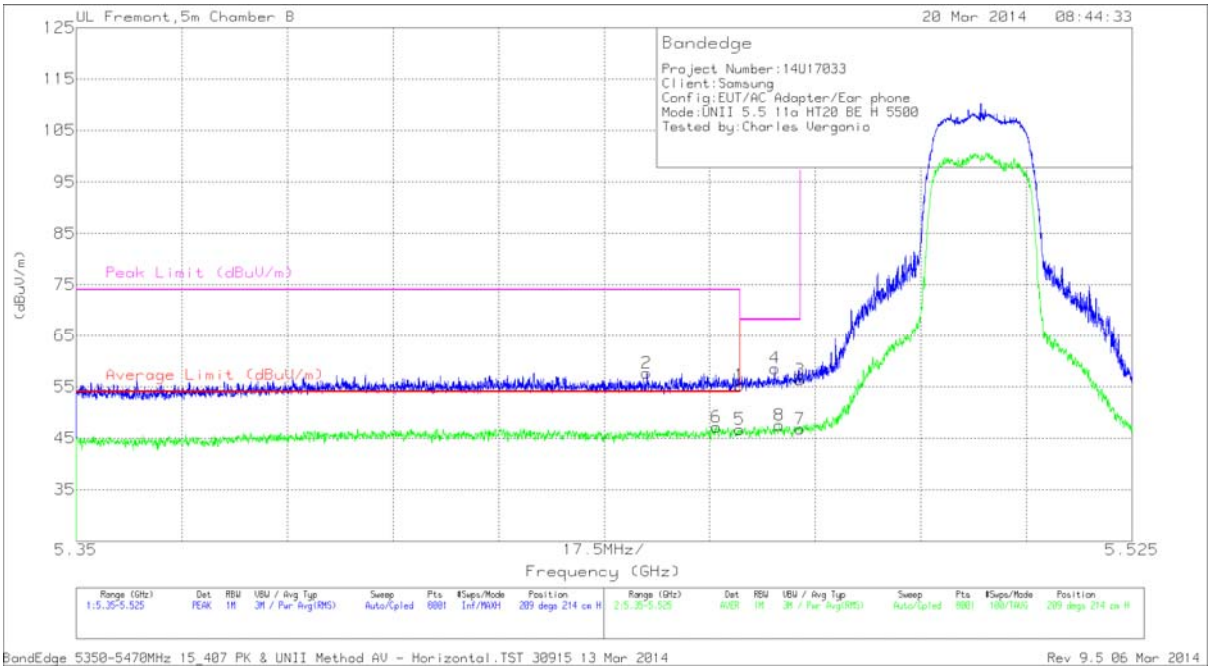
11.3. 5.5-5.6 GHz

11.3.1. TX ABOVE 1 GHz 802.11a MODE IN THE 5.5 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

Horizontal



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.46	40.74	PK	34.5	-20	55.24	-	-	74	-18.76	209	214	H
2	* 5.445	43.26	PK	34.5	-20.1	57.66	-	-	74	-16.34	209	214	H
5	* 5.46	32.19	RMS	34.5	-20	46.69	54	-7.31	-	-	209	214	H
6	* 5.456	32.64	RMS	34.5	-20	47.14	54	-6.86	-	-	209	214	H
4	5.466	44.07	PK	34.5	-20	58.57	-	-	68.2	-9.63	209	214	H
8	5.467	32.99	RMS	34.5	-20	47.49	-	-	-	-	209	214	H
3	5.47	41.71	PK	34.5	-19.9	56.31	-	-	68.2	-11.89	209	214	H
7	5.47	32.18	RMS	34.5	-19.9	46.78	-	-	-	-	209	214	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
PK - Peak detector
RMS - RMS detection

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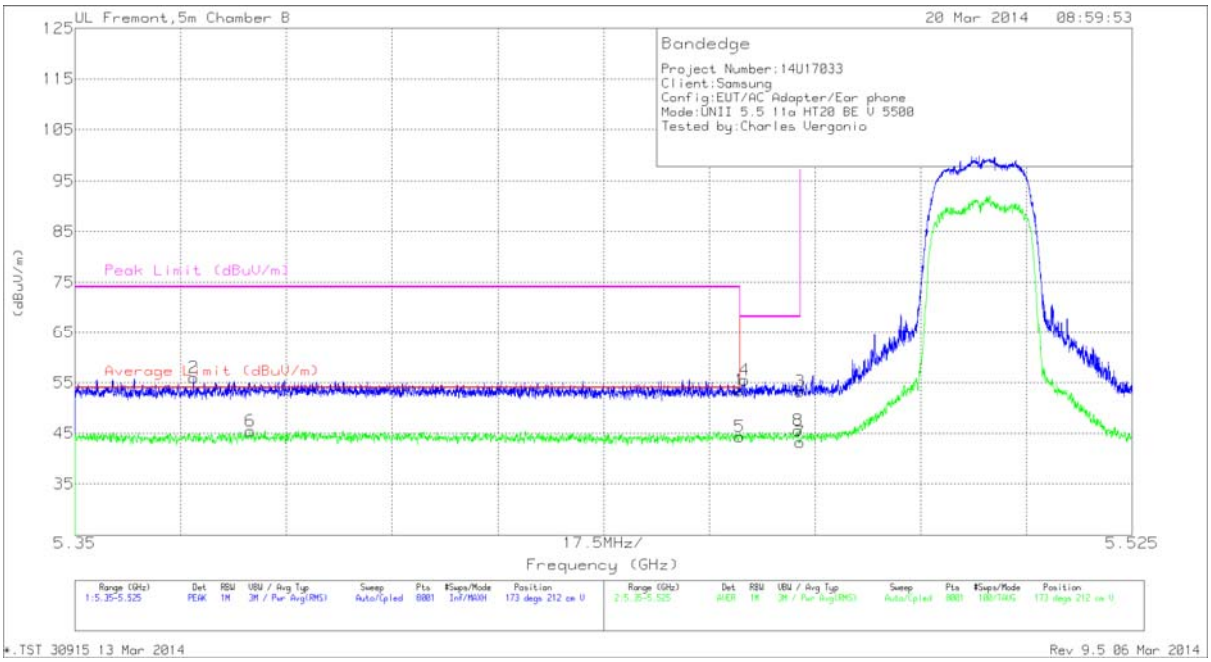
Vertical



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 5.37	41.43	PK	34.5	-19.9	56.03	-	-	74	-17.97	173	212	V
6	* 5.379	30.8	RMS	34.5	-19.8	45.5	54	-8.5	-	-	173	212	V
1	* 5.46	38.98	PK	34.5	-20	53.48	-	-	74	-20.52	173	212	V
5	* 5.46	29.83	RMS	34.5	-20	44.33	54	-9.67	-	-	173	212	V
4	5.461	40.98	PK	34.5	-20	55.48	-	-	68.2	-12.72	173	212	V
3	5.47	38.65	PK	34.5	-19.9	53.25	-	-	68.2	-14.95	173	212	V
7	5.47	28.66	RMS	34.5	-19.9	43.26	-	-	-	-	173	212	V
8	5.47	30.94	RMS	34.5	-19.9	45.54	-	-	-	-	173	212	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
PK - Peak detector
RMS - RMS detection

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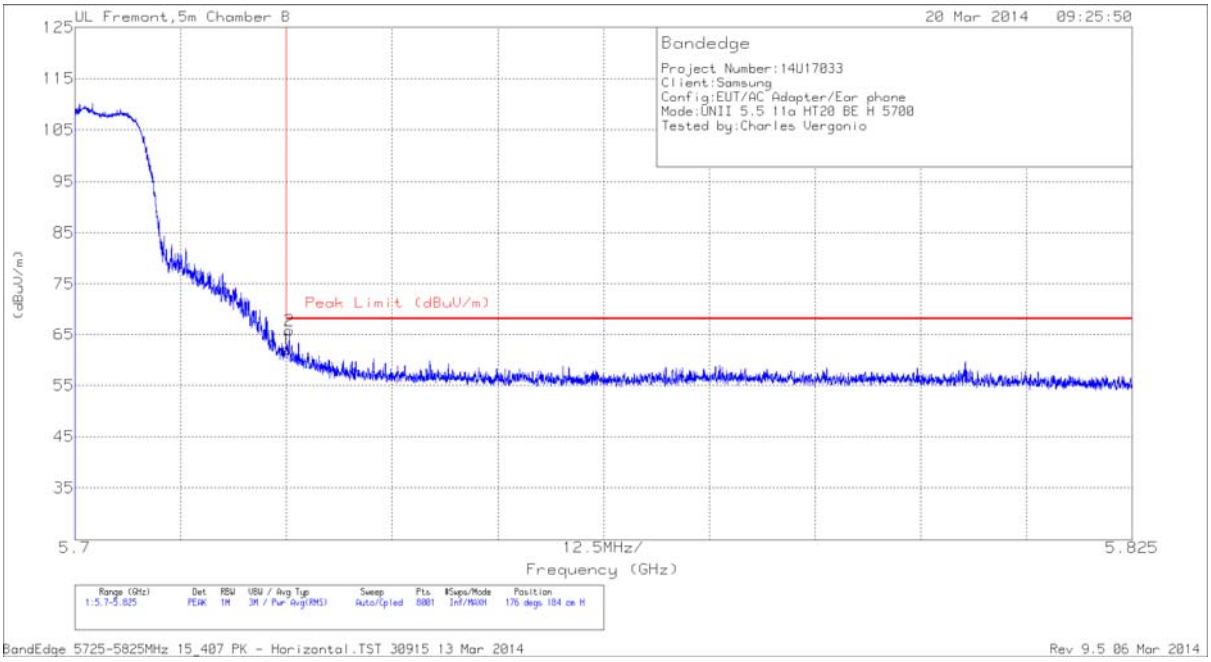
AUTHORIZED BANDEDGE (HIGH CHANNEL)

Horizontal



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	47.07	PK	34.6	-19.6	62.07	68.2	-6.13	176	184	H
2	5.725	50.86	PK	34.6	-19.6	65.86	68.2	-2.34	176	184	H

PK - Peak detector

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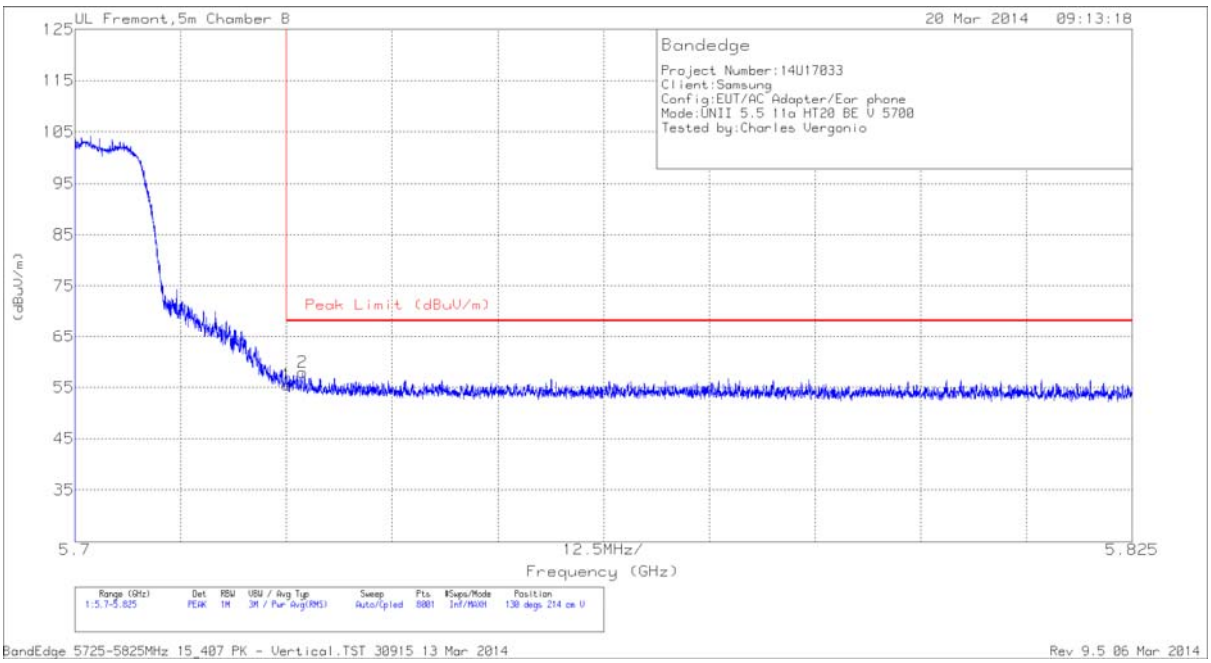
Vertical



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	40.51	PK	34.6	-19.6	55.51	68.2	-12.69	130	214	V
2	5.727	42.97	PK	34.6	-19.6	57.97	68.2	-10.23	130	214	V

PK - Peak detector

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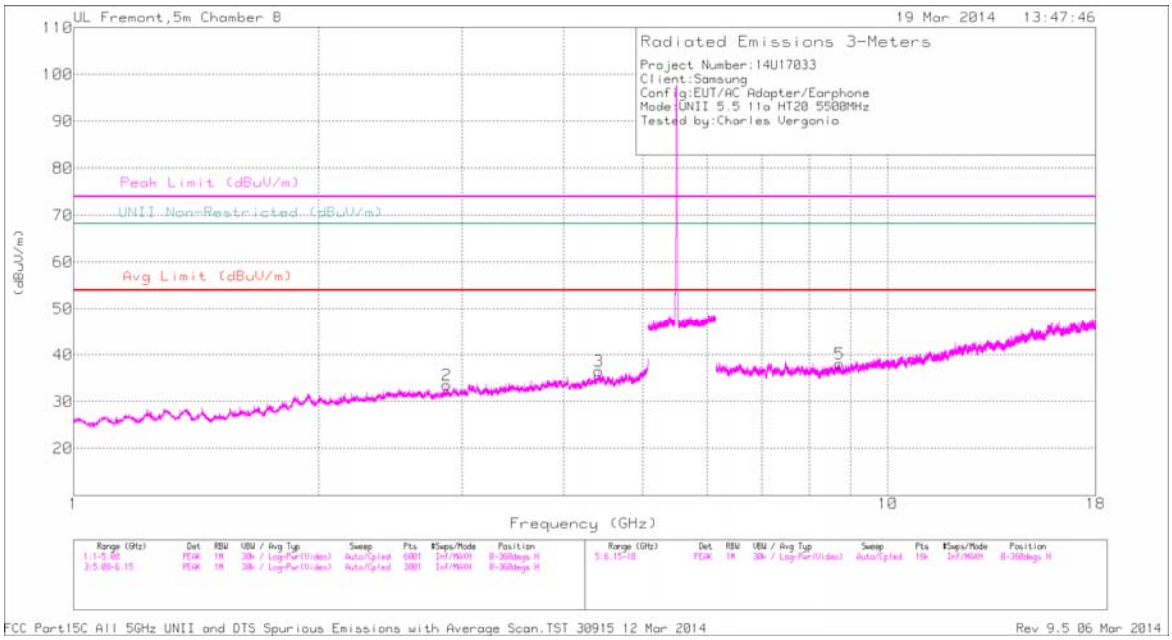
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL
HORIZONTAL



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

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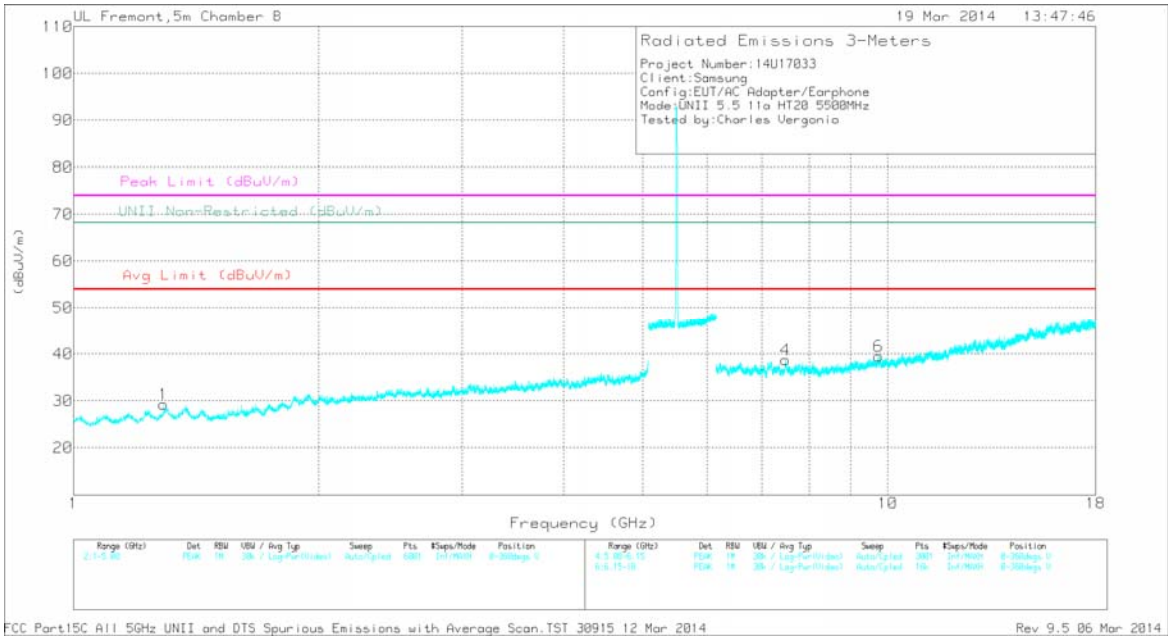
VERTICAL



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

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LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.873	33.13	PK	32.5	-32.1	33.53	54	-20.47	74	-40.47	-	-	0-360	202	H
1	* 1.29	34.76	PK	28.8	-34.3	29.26	54	-24.74	74	-44.74	-	-	0-360	202	V
4	* 7.493	28.84	PK	35.6	-25.7	38.74	54	-15.26	74	-35.26	-	-	0-360	99	V
3	4.414	32.79	PK	33.8	-30	36.59	-	-	-	-	68.2	-31.61	0-360	202	H
5	8.732	28.05	PK	35.9	-25.8	38.15	-	-	-	-	68.2	-30.05	0-360	99	H
6	9.737	26.5	PK	36.9	-23.9	39.5	-	-	-	-	68.2	-28.7	0-360	99	V

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

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 2.875	40.51	PK1	32.6	-32.1	41.01	54	-12.99	74	-32.99	-	-	1	100	H
* 1.289	42.78	PK1	28.8	-34.3	37.28	54	-16.72	74	-36.72	-	-	1	100	V
* 7.495	36.66	PK1	35.6	-25.7	46.56	54	-7.44	74	-27.44	-	-	1	100	V
4.415	39.82	PK1	33.8	-30	43.62	-	-	-	-	68.2	-24.58	1	100	H
8.732	35.65	PK1	35.9	-25.8	45.75	-	-	-	-	68.2	-22.45	1	100	H
9.737	34.41	PK1	36.9	-23.9	47.41	-	-	-	-	68.2	-20.79	1	100	V

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

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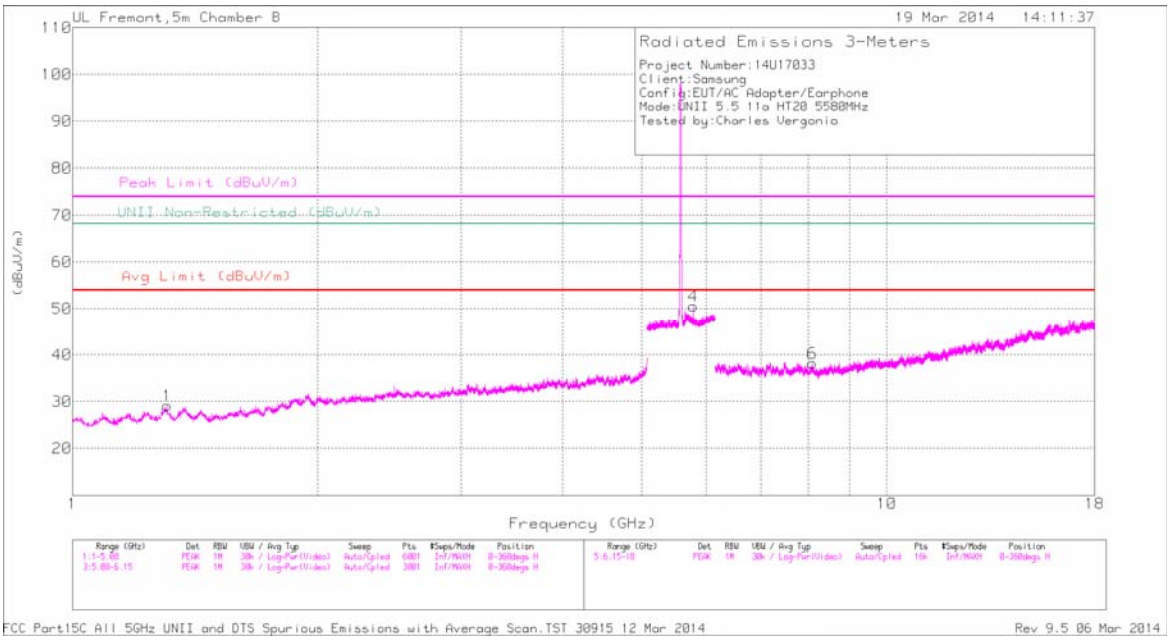
MID CHANNEL
HORIZONTAL



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

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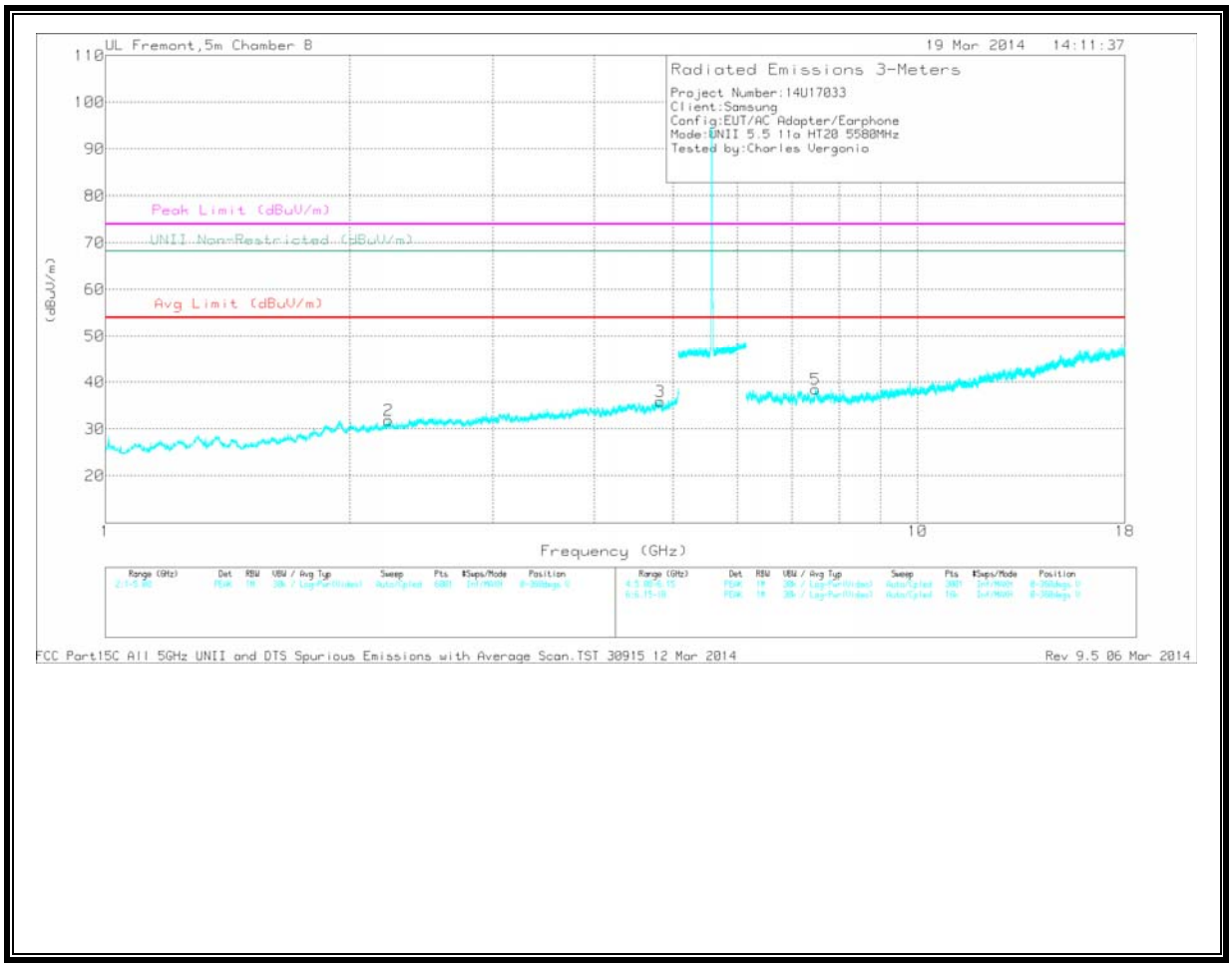
VERTICAL



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

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MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.307	34.45	PK	28.8	-34.1	29.15	54	-24.85	74	-44.85	-	-	0-360	201	H
2	* 2.233	32.81	PK	31.4	-32.3	31.91	54	-22.09	74	-42.09	-	-	0-360	99	V
3	* 4.82	31.33	PK	34.2	-29.6	35.93	54	-18.07	74	-38.07	-	-	0-360	202	V
6	* 8.103	29.15	PK	35.7	-26.6	38.25	54	-15.75	74	-35.75	-	-	0-360	201	H
5	* 7.483	28.95	PK	35.6	-26	38.55	54	-15.45	74	-35.45	-	-	0-360	99	V
4	5.787	35.56	PK	34.7	-19.7	50.56	-	-	-	-	68.2	-17.64	0-360	202	H

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

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.307	43.15	PK1	28.8	-34.1	37.85	54	-16.15	74	-36.15	-	-	1	100	H
* 2.231	41.54	PK1	31.4	-32.3	40.64	54	-13.36	74	-33.36	-	-	1	100	V
* 4.817	40.05	PK1	34.2	-29.5	44.75	54	-9.25	74	-29.25	-	-	1	100	V
* 8.105	36.23	PK1	35.7	-26.7	45.23	54	-8.77	74	-28.77	-	-	1	100	H
* 7.482	36.49	PK1	35.6	-26	46.09	54	-7.91	74	-27.91	-	-	1	100	V
5.786	40.97	PK1	34.7	-19.7	55.97	-	-	-	-	68.2	-12.23	1	100	H

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

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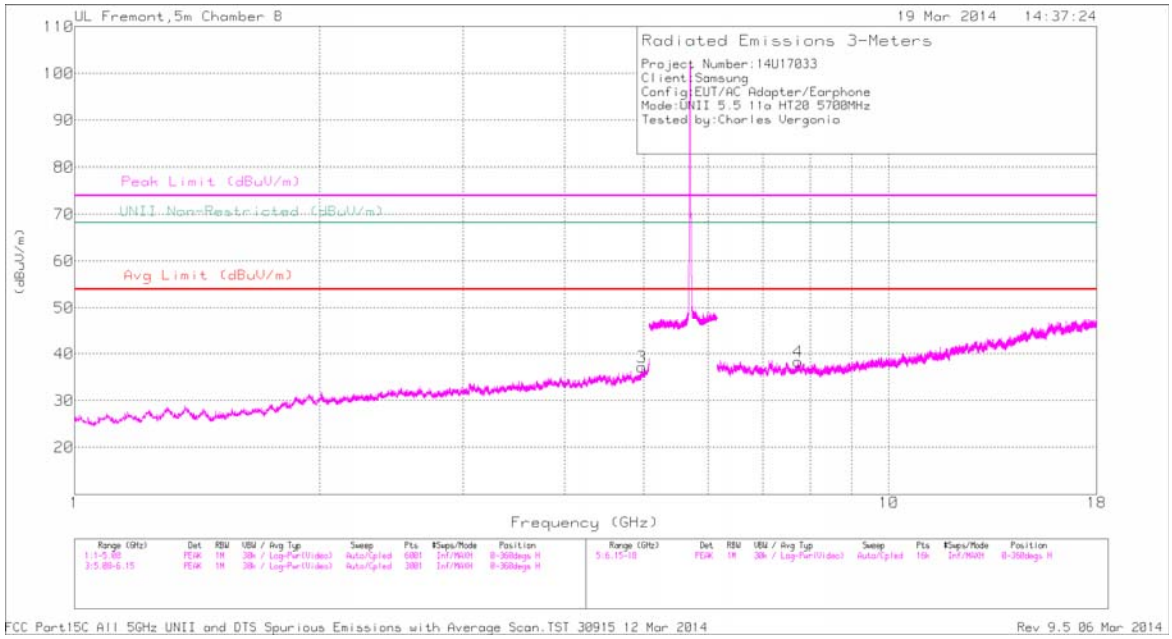
HIGH CHANNEL
HORIZONTAL



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

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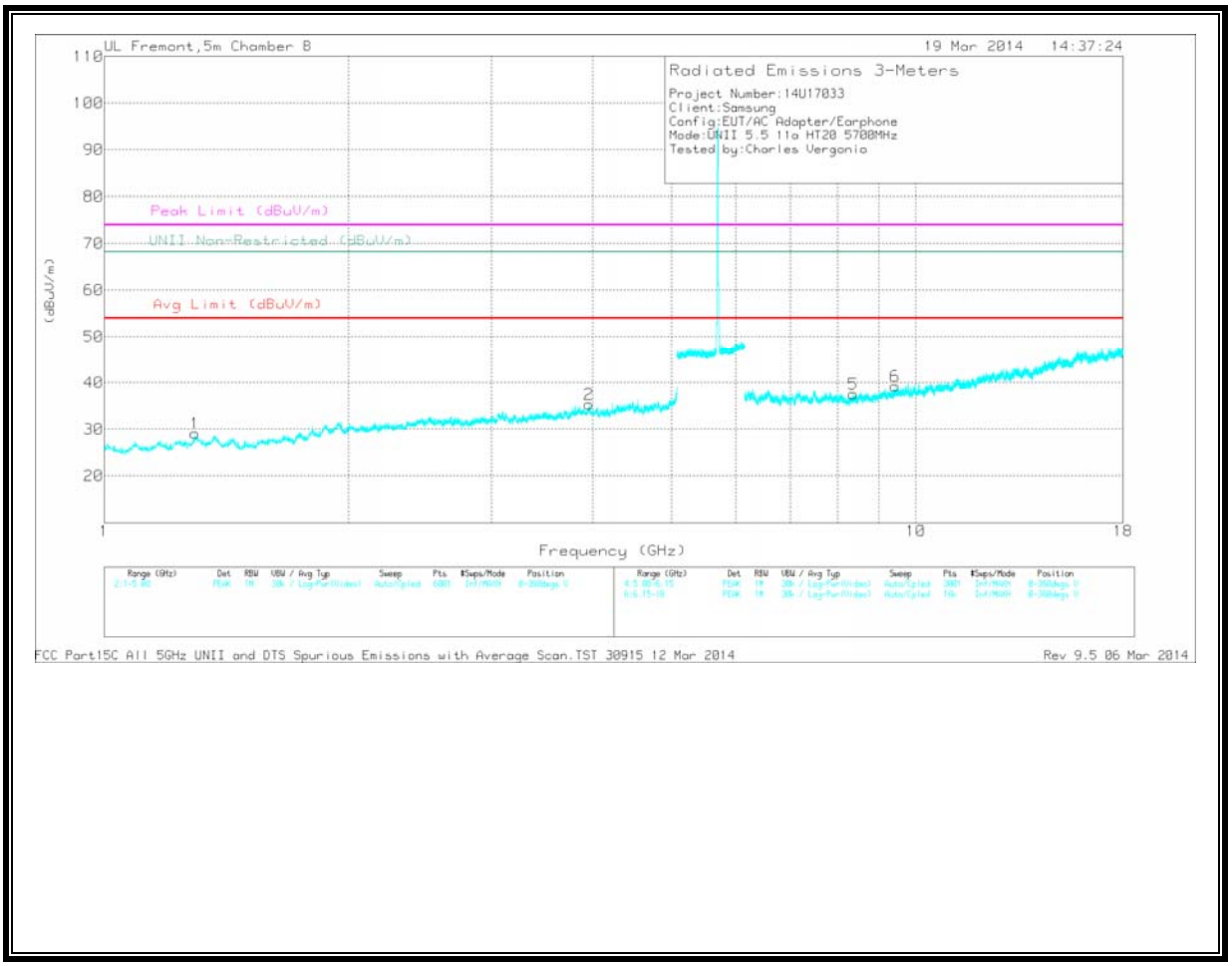
VERTICAL



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

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HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 4.972	31.46	PK	34.2	-28.5	37.16	54	-16.84	74	-36.84	-	-	0-360	202	H
1	* 1.294	34.61	PK	28.8	-34.3	29.11	54	-24.89	74	-44.89	-	-	0-360	99	V
2	* 3.956	31.66	PK	33.7	-30	35.36	54	-18.64	74	-38.64	-	-	0-360	202	V
4	* 7.736	29.65	PK	35.7	-27	38.35	54	-15.65	74	-35.65	-	-	0-360	201	H
5	* 8.366	28.18	PK	35.7	-26.3	37.58	54	-16.42	74	-36.42	-	-	0-360	99	V
6	* 9.429	27.34	PK	36.5	-24.6	39.24	54	-14.76	74	-34.76	-	-	0-360	202	V

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

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.97	39.25	PK1	34.2	-28.5	44.95	54	-9.05	74	-29.05	-	-	1	100	H
* 1.295	42.59	PK1	28.8	-34.3	37.09	54	-16.91	74	-36.91	-	-	1	100	V
* 3.958	40.21	PK1	33.7	-30	43.91	54	-10.09	74	-30.09	-	-	1	100	V
* 7.736	36.92	PK1	35.7	-27	45.62	54	-8.38	74	-28.38	-	-	1	100	H
* 8.366	35.93	PK1	35.7	-26.3	45.33	54	-8.67	74	-28.67	-	-	1	100	H
* 9.428	34.81	PK1	36.5	-24.7	46.61	54	-7.39	74	-27.39	-	-	1	100	H

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

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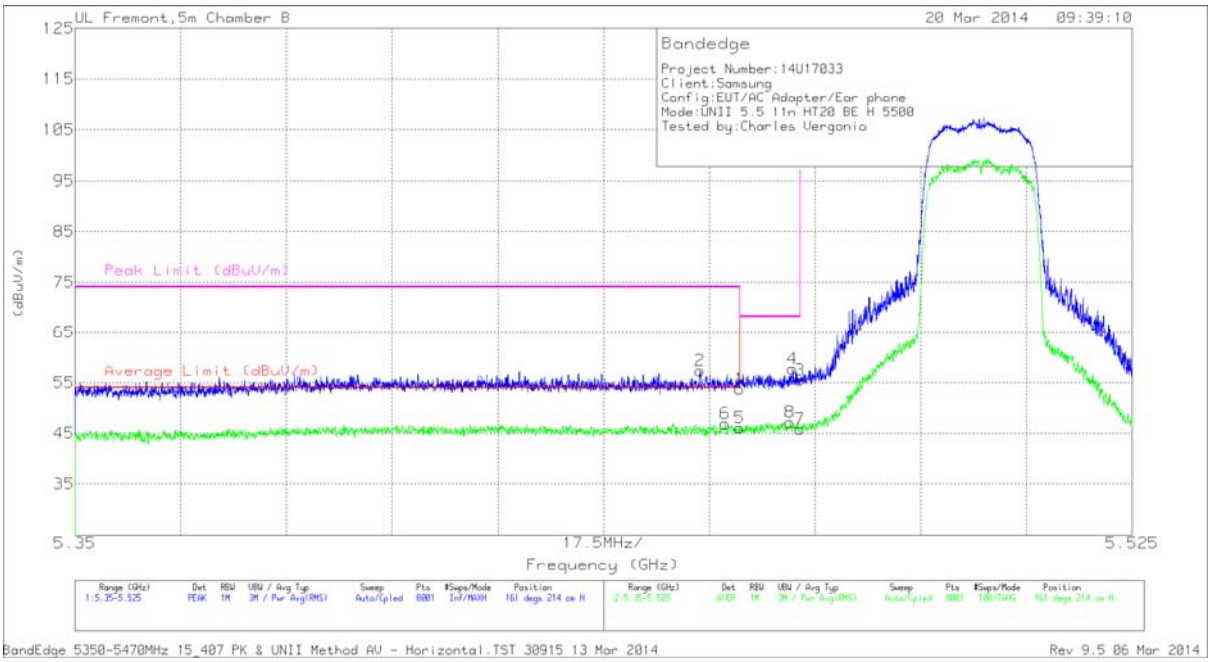
11.3.2. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.5 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

Horizontal



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.46	39.31	PK	34.5	-20	0	53.81	-	-	74	-20.19	161	214	H
2	* 5.454	43.02	PK	34.5	-20.1	0	57.42	-	-	74	-16.58	161	214	H
5	* 5.46	31.26	RMS	34.5	-20	.3	46.06	54	-7.94	-	-	161	214	H
6	* 5.458	32.08	RMS	34.5	-20	.3	46.88	54	-7.12	-	-	161	214	H
8	5.468	32.39	RMS	34.5	-20	.3	47.19	-	-	-	-	161	214	H
4	5.469	43.2	PK	34.5	-20	0	57.7	-	-	68.2	-10.5	161	214	H
3	5.47	40.92	PK	34.5	-19.9	0	55.52	-	-	68.2	-12.68	161	214	H
7	5.47	30.91	RMS	34.5	-19.9	.3	45.81	-	-	-	-	161	214	H

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

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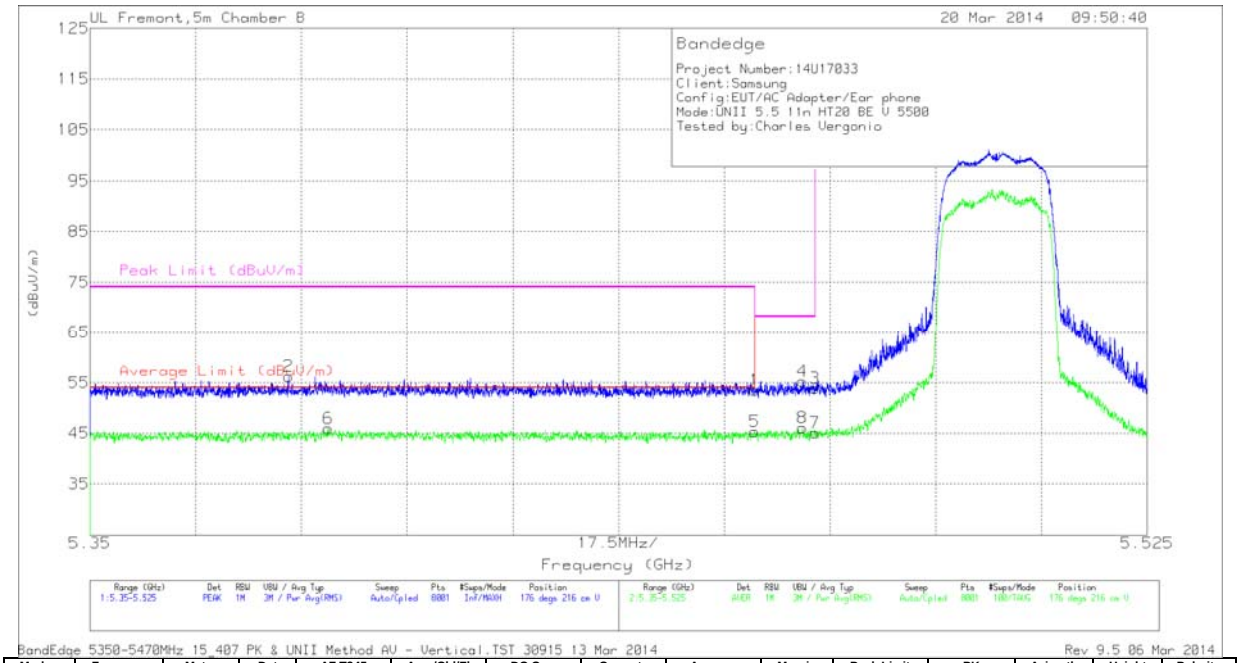
Vertical



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.46	39.07	PK	34.5	-20	0	53.57	-	-	74	-20.43	176	216	V
2	* 5.383	41.5	PK	34.5	-19.7	0	56.3	-	-	74	-17.7	176	216	V
5	* 5.46	30.58	RMS	34.5	-20	.3	45.38	54	-8.62	-	-	176	216	V
6	* 5.389	30.84	RMS	34.5	-19.7	.3	45.94	54	-8.06	-	-	176	216	V
4	5.468	40.81	PK	34.5	-20	0	55.31	-	-	68.2	-12.89	176	216	V
8	5.468	31.22	RMS	34.5	-20	.3	46.02	-	-	-	-	176	216	V
3	5.47	39.24	PK	34.5	-19.9	0	53.84	-	-	68.2	-14.36	176	216	V
7	5.47	30.16	RMS	34.5	-19.9	.3	45.06	-	-	-	-	176	216	V

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

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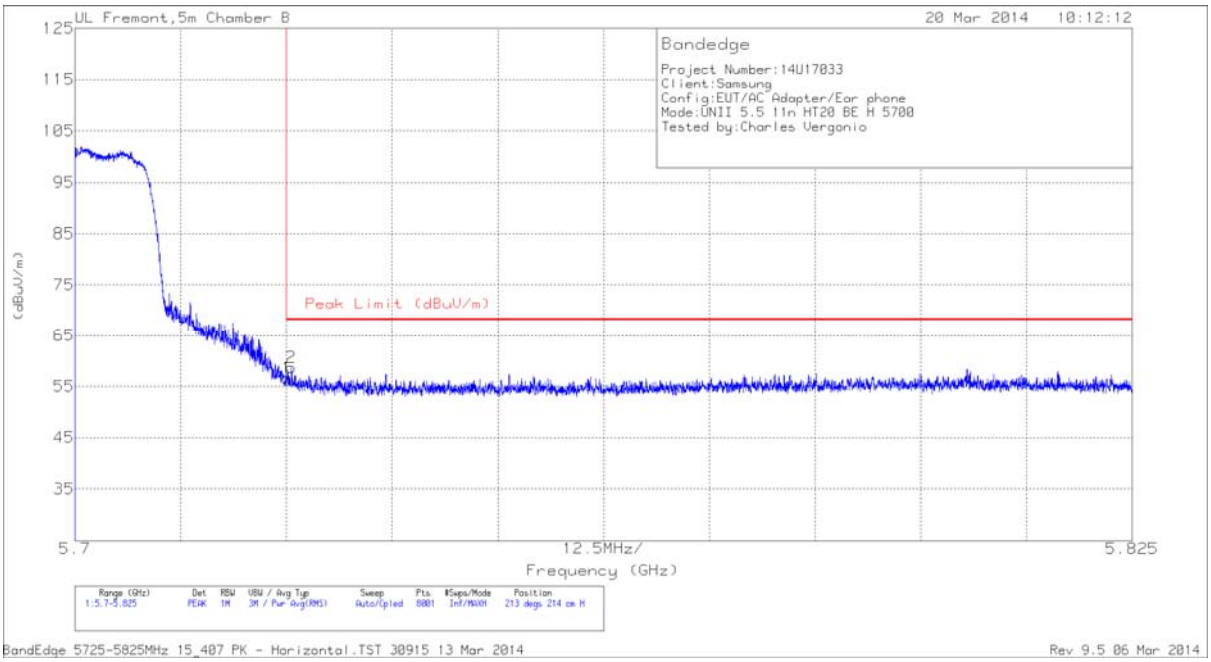
AUTHORIZED BANDEDGE (HIGH CHANNEL)

Horizontal



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	41.67	PK	34.6	-19.6	56.67	68.2	-11.53	213	214	H
2	5.726	43.72	PK	34.6	-19.6	58.72	68.2	-9.48	213	214	H

PK - Peak detector

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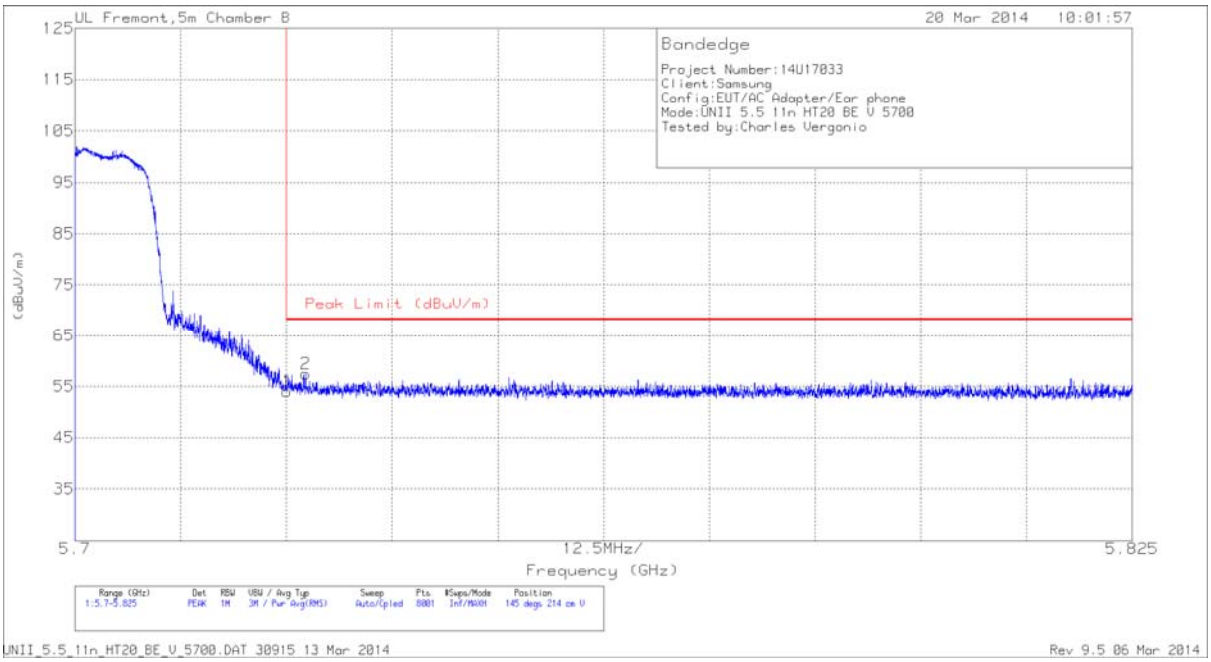
Vertical



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	39.03	PK	34.6	-19.6	0	54.03	68.2	-14.17	145	214	V
2	5.727	42.5	PK	34.6	-19.6	0	57.5	68.2	-10.7	145	214	V

PK - Peak detector

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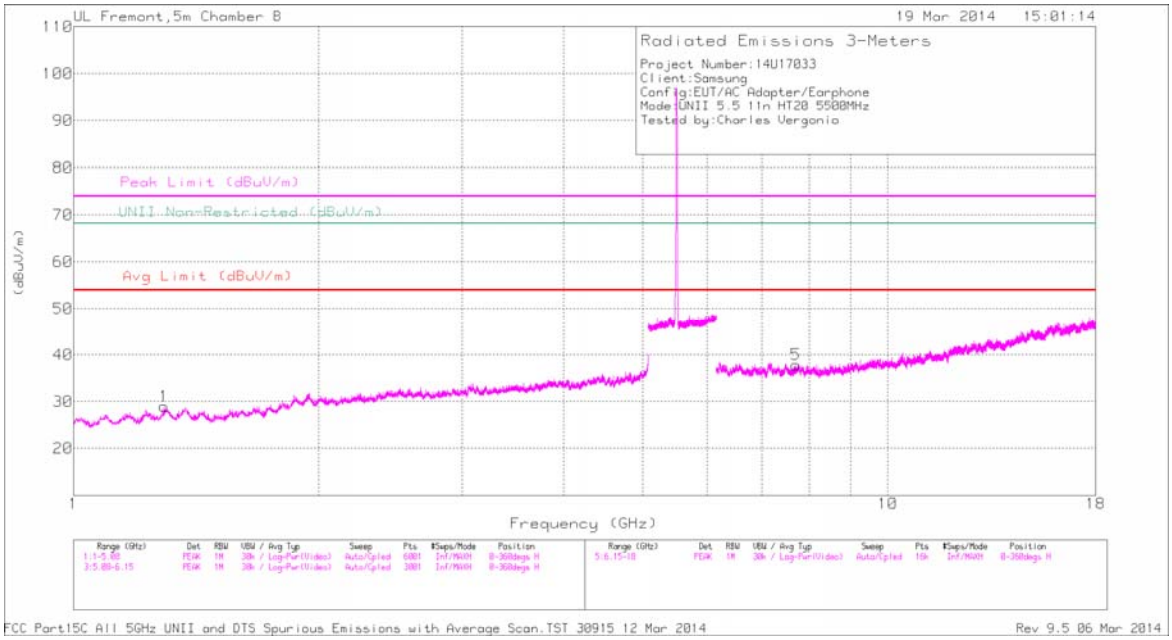
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL
HORIZONTAL



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

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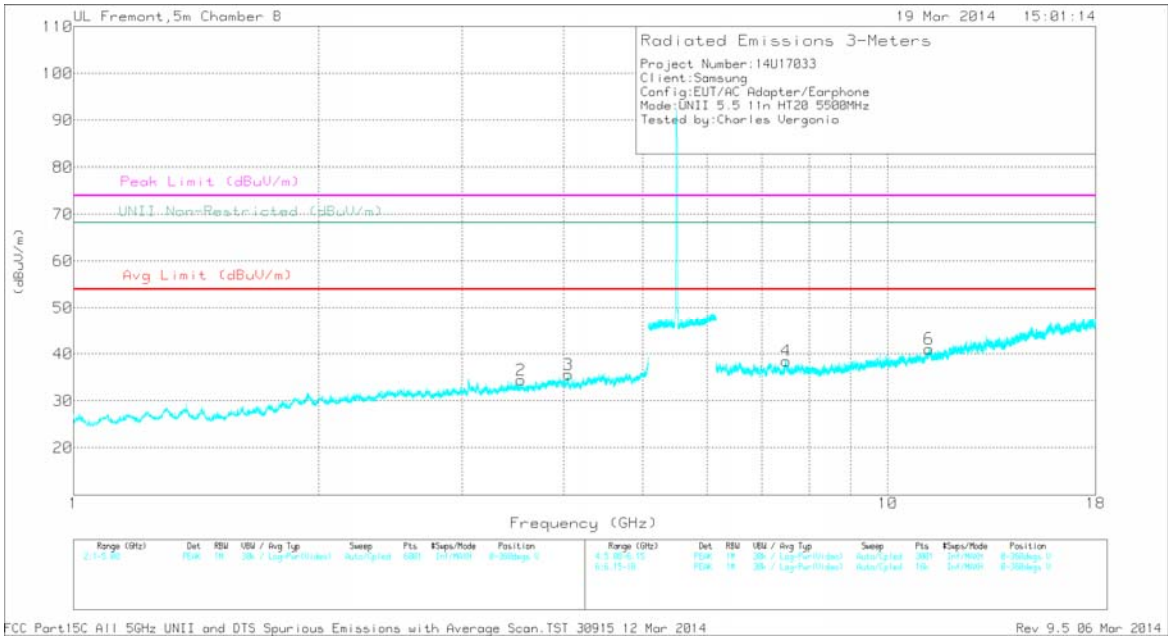
VERTICAL



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

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LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.292	34.5	PK	28.8	-34.3	29	54	-25	74	-45	-	-	0-360	202	H
2	* 3.546	33.37	PK	33	-31.9	34.47	54	-19.53	74	-39.53	-	-	0-360	202	V
3	* 4.05	31.95	PK	33.6	-29.9	35.65	54	-18.35	74	-38.35	-	-	0-360	99	V
5	* 7.71	29.81	PK	35.7	-27.6	37.91	54	-16.09	74	-36.09	-	-	0-360	99	H
4	* 7.496	28.76	PK	35.6	-25.8	38.56	54	-15.44	74	-35.44	-	-	0-360	202	V
6	* 11.226	25.65	PK	37.9	-22.4	41.15	54	-12.85	74	-32.85	-	-	0-360	99	V

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

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.29	43.4	PK1	28.8	-34.3	37.9	54	-16.1	74	-36.1	-	-	1	100	H
* 3.544	40.86	PK1	32.9	-31.9	41.86	54	-12.14	74	-32.14	-	-	1	100	V
* 4.049	38.75	PK1	33.6	-29.8	42.55	54	-11.45	74	-31.45	-	-	1	100	V
* 7.708	37.55	PK1	35.7	-27.6	45.65	54	-8.35	74	-28.35	-	-	1	100	H
* 7.498	36.44	PK1	35.6	-25.8	46.24	54	-7.76	74	-27.76	-	-	1	100	V
* 11.226	33.32	PK1	37.9	-22.4	48.82	54	-5.18	74	-25.18	-	-	1	100	V

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

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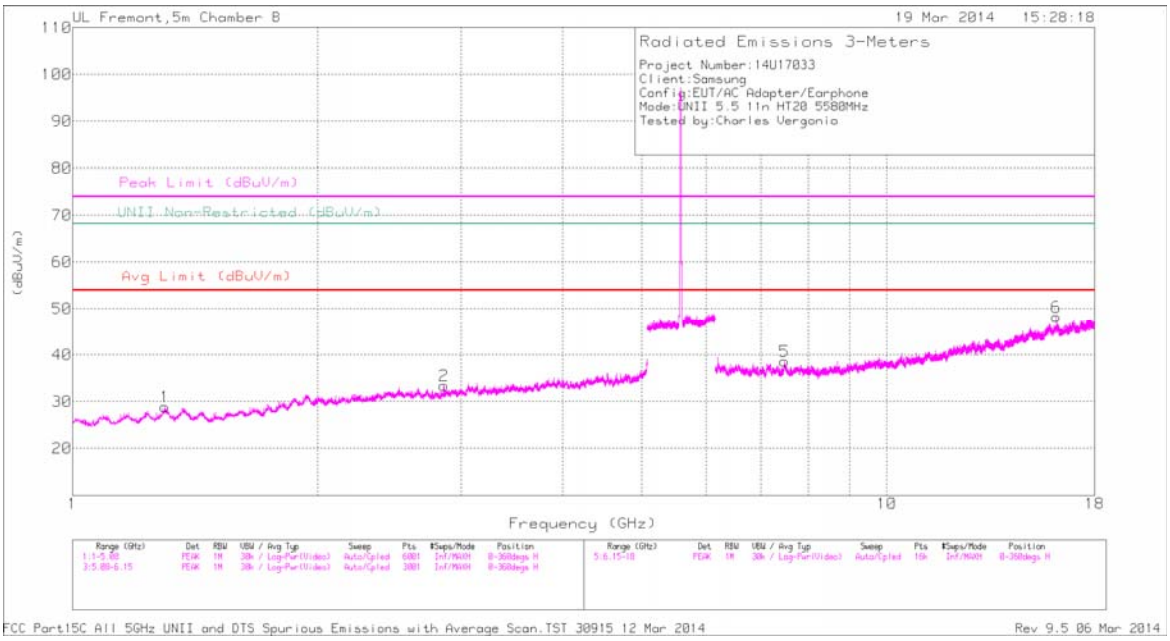
MID CHANNEL
HORIZONTAL



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

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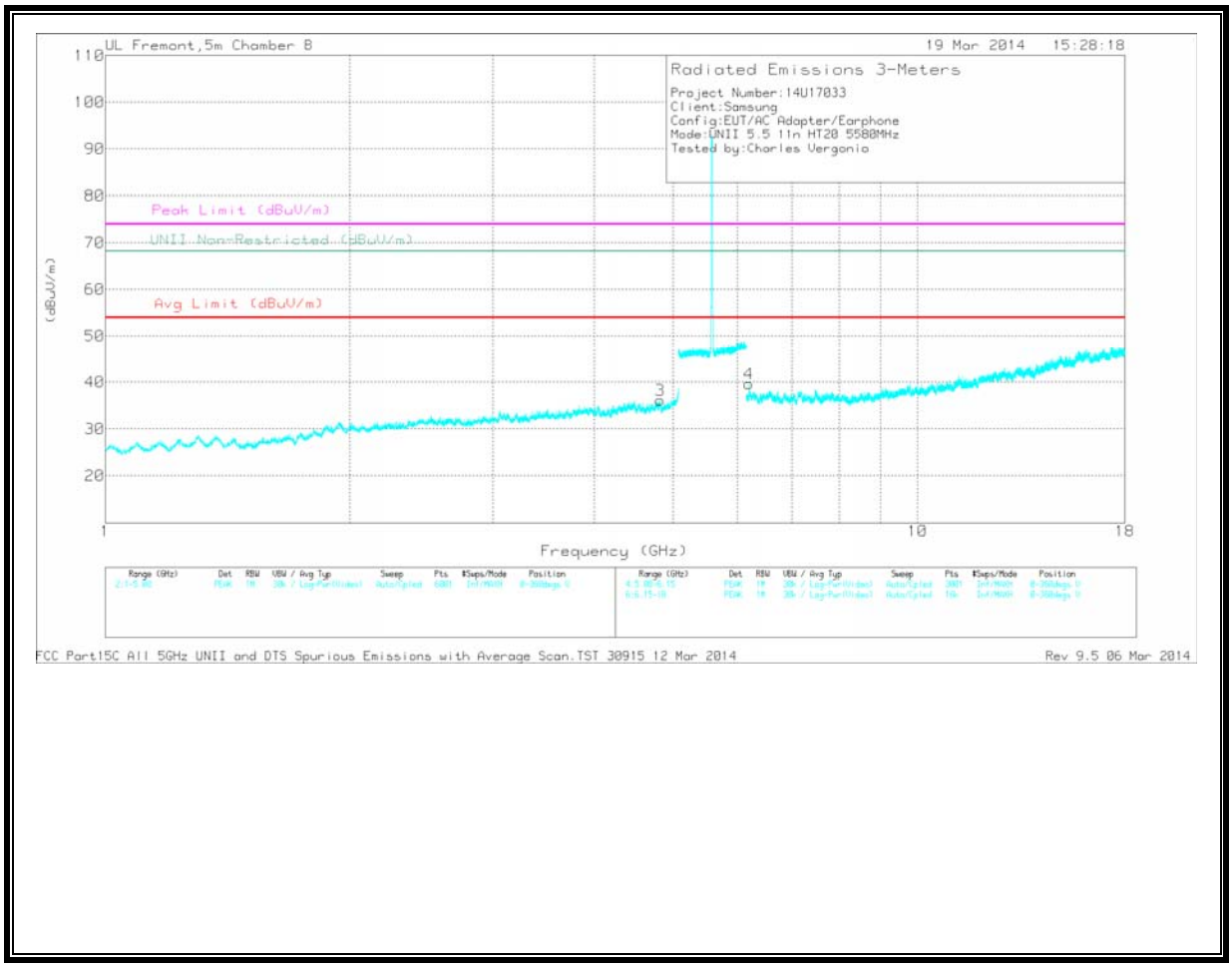
VERTICAL



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

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MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.298	34.29	PK	28.8	-34.2	28.89	54	-25.11	74	-45.11	-	-	0-360	202	H
2	* 2.856	33.3	PK	32.5	-32.4	33.4	54	-20.6	74	-40.6	-	-	0-360	202	H
3	* 4.818	31.43	PK	34.2	-29.5	36.13	54	-17.87	74	-37.87	-	-	0-360	99	V
5	* 7.489	28.83	PK	35.6	-25.8	38.63	54	-15.37	74	-35.37	-	-	0-360	202	H
6	* 16.151	26.85	PK	41	-19.6	48.25	54	-5.75	74	-25.75	-	-	0-360	99	H
4	6.2	32	PK	35.4	-27.7	39.7	-	-	-	-	68.2	-28.5	0-360	202	V

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

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.297	43.37	PK1	28.8	-34.3	37.87	54	-16.13	74	-36.13	-	-	1	100	H
* 2.855	41.41	PK1	32.5	-32.4	41.51	54	-12.49	74	-32.49	-	-	1	100	H
* 4.82	40.5	PK1	34.2	-29.6	45.1	54	-8.9	74	-28.9	-	-	1	100	V
* 7.487	37.46	PK1	35.6	-25.8	47.26	54	-6.74	74	-26.74	-	-	1	100	H
* 16.15	34.57	PK1	41	-19.6	55.97			74	-18.03	-	-	1	100	H
* 16.15	24.31	AD1	41	-19.6	45.71	54	-8.29	-	-	-	-	1	100	H
6.203	38.42	PK1	35.4	-27.7	46.12	-	-	-	-	68.2	-22.08	1	100	V

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

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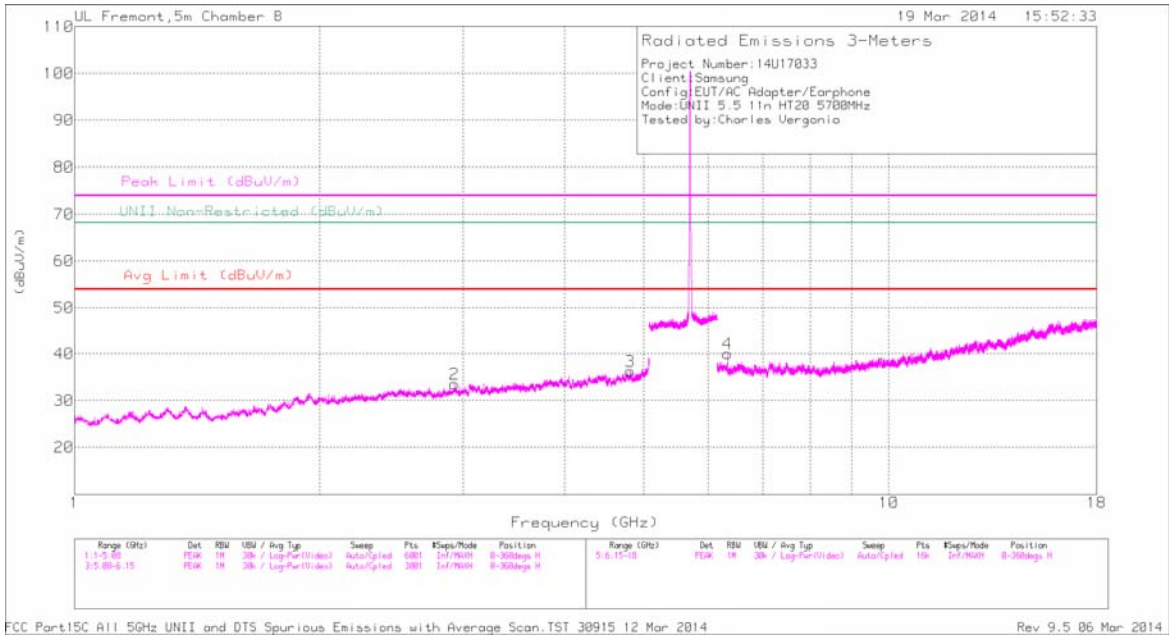
HIGH CHANNEL
HORIZONTAL



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

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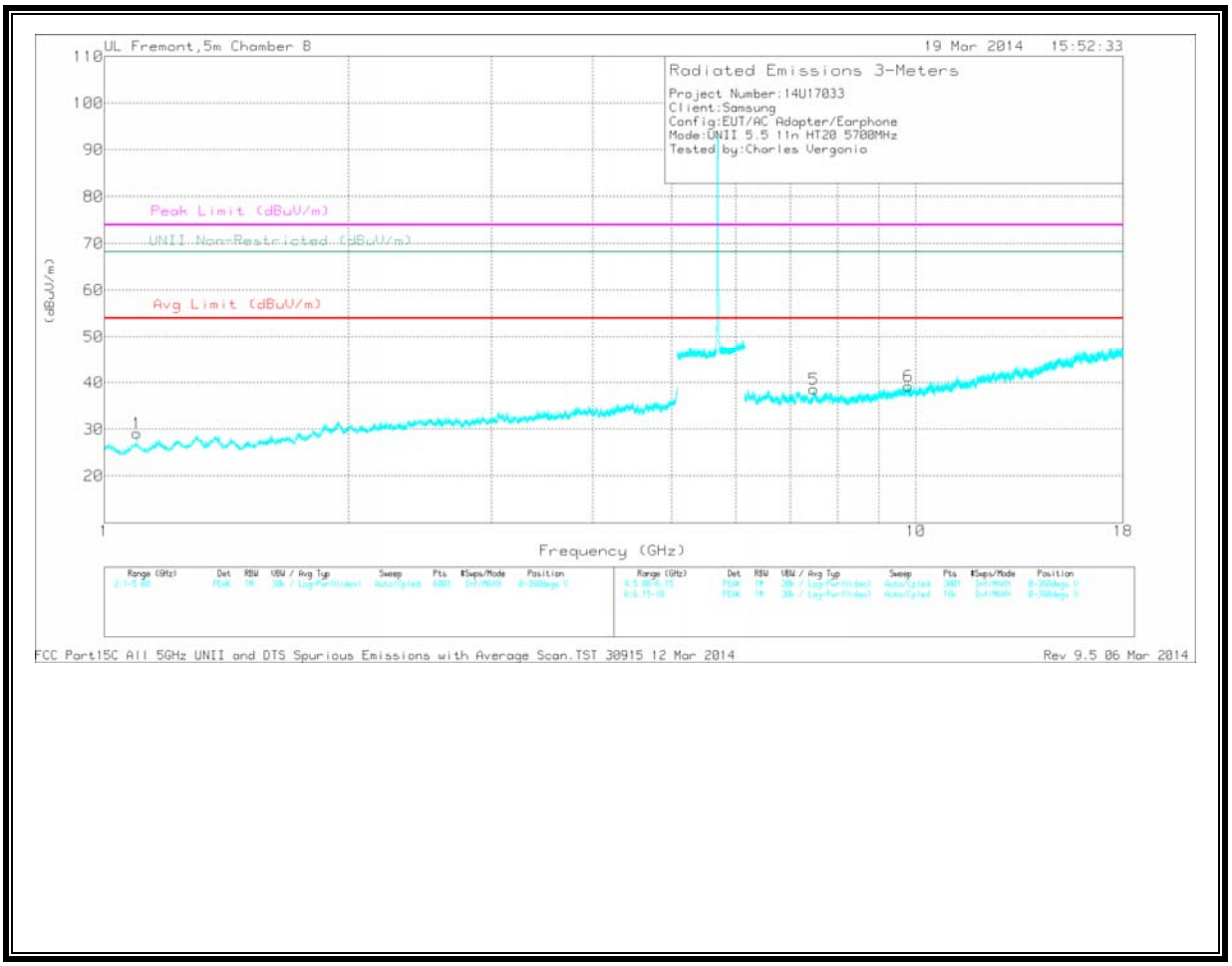
VERTICAL



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

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HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 4.815	31.43	PK	34.2	-29.4	36.23	54	-17.77	74	-37.77	-	-	0-360	202	H
1	* 1.097	36.09	PK	27.4	-34.4	29.09	54	-24.91	74	-44.91	-	-	0-360	99	V
5	* 7.485	28.9	PK	35.6	-25.9	38.6	54	-15.4	74	-35.4	-	-	0-360	99	V
2	2.929	32.61	PK	32.7	-31.7	33.61	-	-	-	-	68.2	-34.59	0-360	202	H
4	6.334	32.21	PK	35.5	-27.7	40.01	-	-	-	-	68.2	-28.19	0-360	202	H
6	9.785	25.8	PK	36.9	-23.4	39.3	-	-	-	-	68.2	-28.9	0-360	99	V

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

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.818	40.13	PK1	34.2	-29.5	44.83	54	-9.17	74	-29.17	-	-	1	100	H
* 1.095	42.5	PK1	27.4	-34.4	35.5	54	-18.5	74	-38.5	-	-	1	100	V
* 7.484	37.67	PK1	35.6	-25.9	47.37	54	-6.63	74	-26.63	-	-	1	100	V
2.93	40.87	PK1	32.7	-31.7	41.87	-	-	-	-	68.2	-26.33	1	100	H
6.334	38.28	PK1	35.5	-27.8	45.98	-	-	-	-	68.2	-22.22	1	100	H
9.785	34.19	PK1	36.9	-23.4	47.69	-	-	-	-	68.2	-20.51	1	100	V

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

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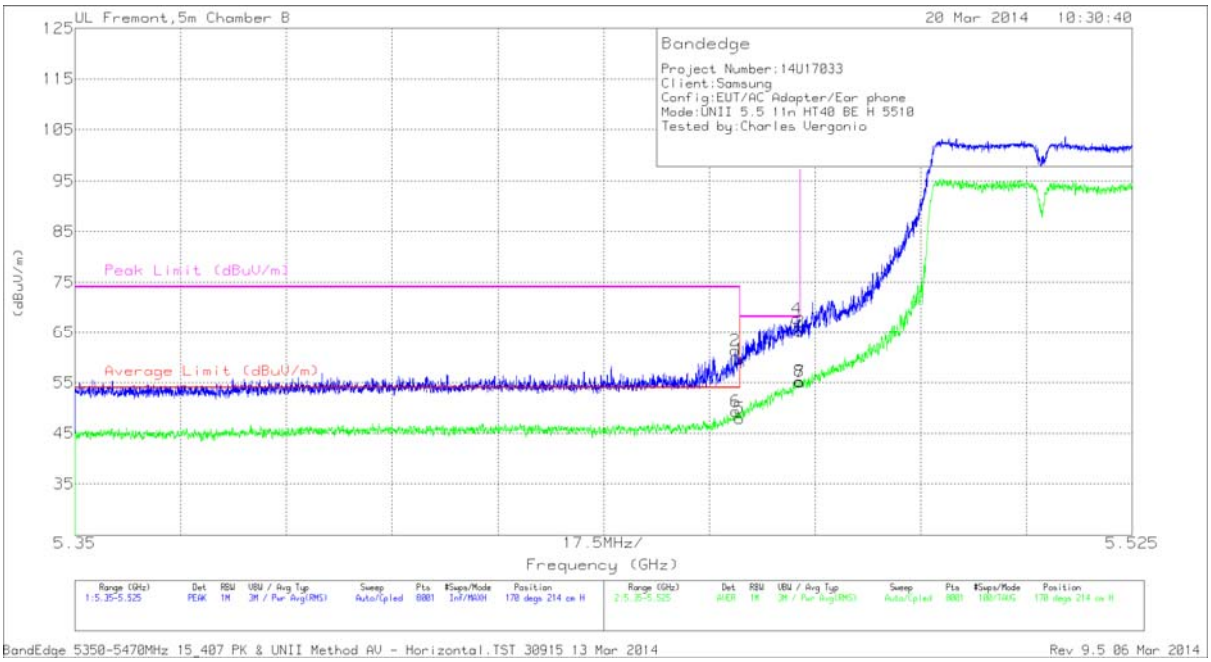
11.3.4. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.5 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

Horizontal



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.46	45.09	PK	34.5	-20	0	59.59	-	-	74	-14.41	170	214	H
2	* 5.459	46.81	PK	34.5	-20	0	61.31	-	-	74	-12.69	170	214	H
5	* 5.46	32.78	RMS	34.5	-20	.7	47.98	54	-6.02	-	-	170	214	H
6	* 5.459	34.09	RMS	34.5	-20	.7	49.29	54	-4.71	-	-	170	214	H
3	5.47	50.63	PK	34.5	-19.9	0	65.23	-	-	68.2	-2.97	170	214	H
4	5.47	53.29	PK	34.5	-20	0	67.79	-	-	68.2	-.41	170	214	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band
PK - Peak detector
RMS - RMS detection

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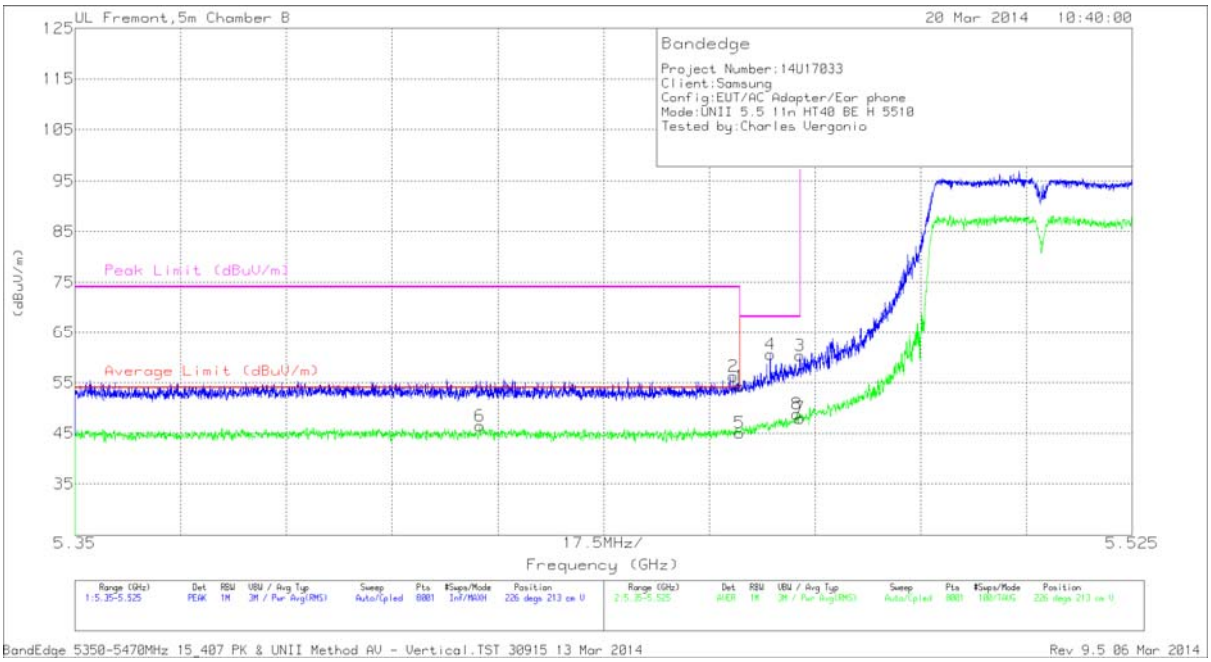
Vertical



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.46	39.73	PK	34.5	-20	0	54.23	-	-	74	-19.77	226	213	V
2	* 5.459	41.7	PK	34.5	-20	0	56.2	-	-	74	-17.8	226	213	V
5	* 5.46	29.83	RMS	34.5	-20	.7	45.03	54	-8.97	-	-	226	213	V
6	* 5.417	31.23	RMS	34.5	-20	.7	46.43	54	-7.57	-	-	226	213	V
4	5.465	46.05	PK	34.5	-20	0	60.55	-	-	68.2	-7.65	226	213	V
3	5.47	45.76	PK	34.5	-19.9	0	60.36	-	-	68.2	-7.84	226	213	V
7	5.47	32.69	RMS	34.5	-19.9	.7	47.99	-	-	-	-	226	213	V
8	5.47	33.55	RMS	34.5	-20	.7	48.75	-	-	-	-	226	213	V

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

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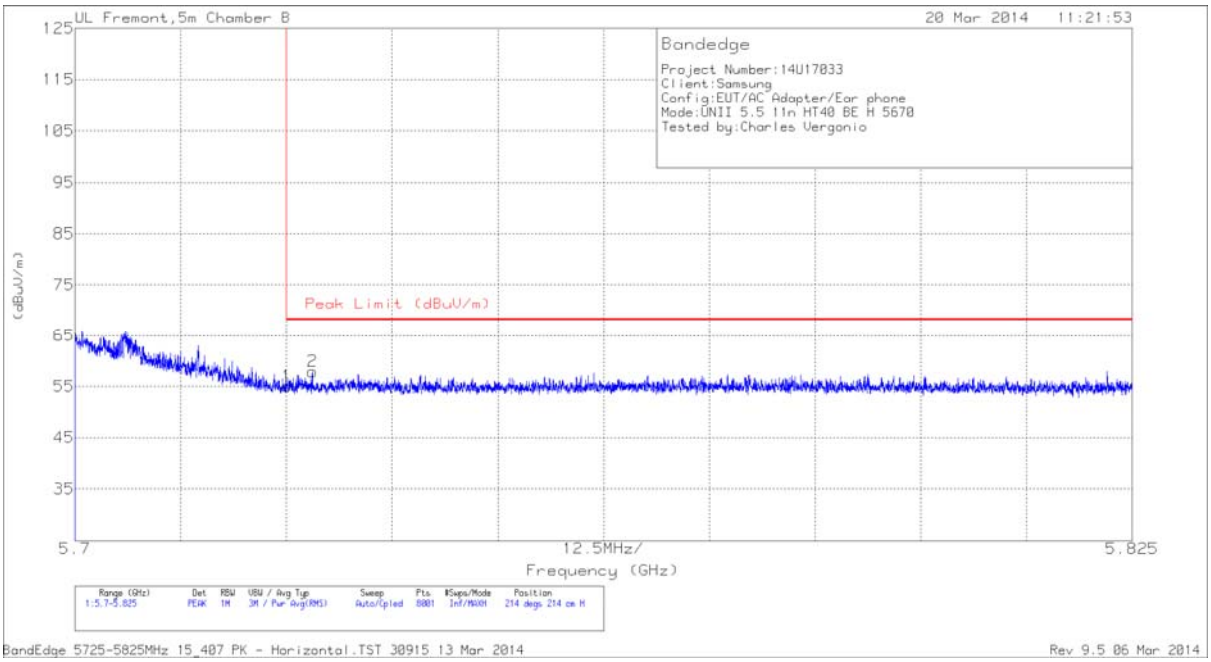
AUTHORIZED BANDEDGE (HIGH CHANNEL)

Horizontal



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	39.98	PK	34.6	-19.6	54.98	68.2	-13.22	214	214	H
2	5.728	42.92	PK	34.6	-19.6	57.92	68.2	-10.28	214	214	H

PK - Peak detector

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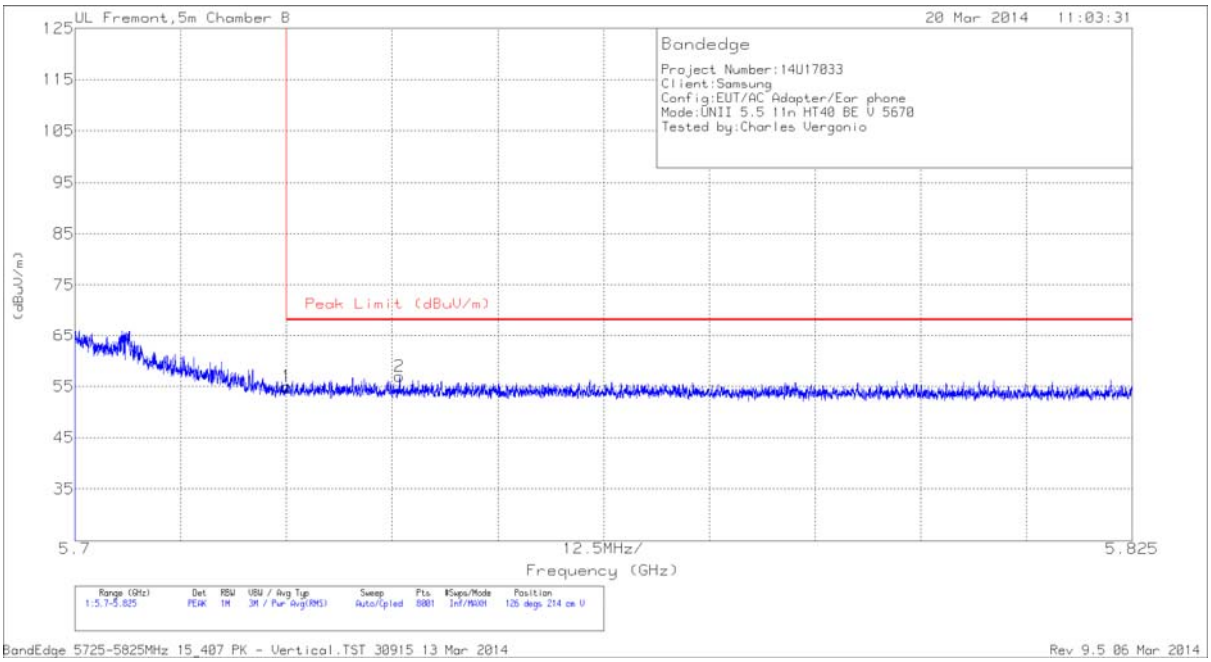
Vertical



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	39.99	PK	34.6	-19.6	54.99	68.2	-13.21	126	214	V
2	5.738	41.85	PK	34.6	-19.5	56.95	68.2	-11.25	126	214	V

PK - Peak detector

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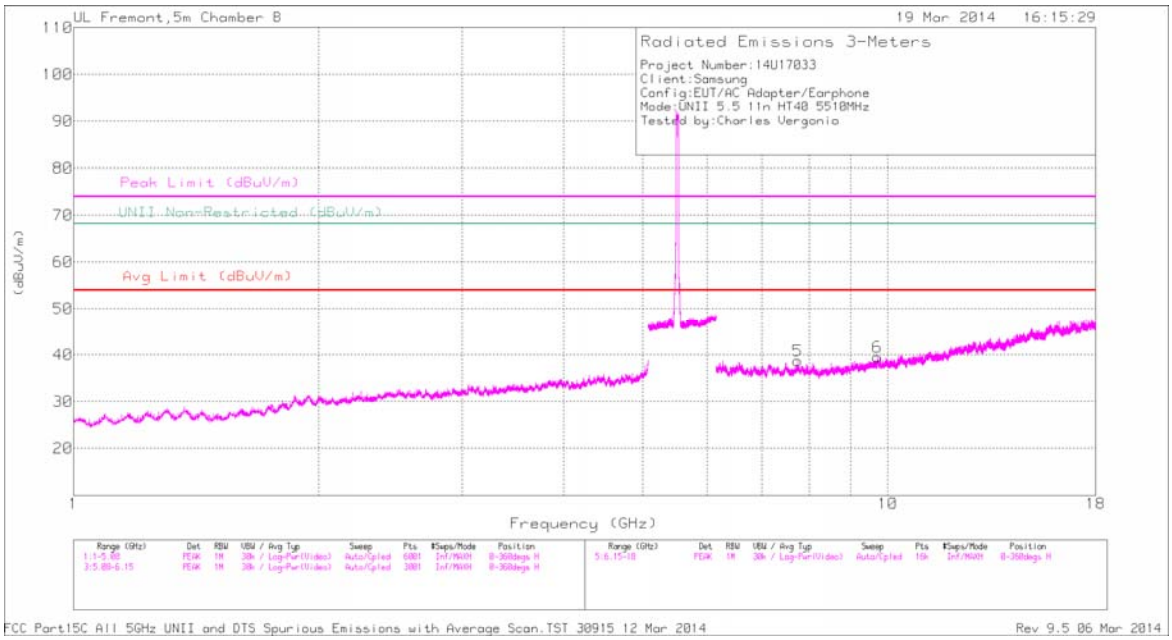
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL
HORIZONTAL



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

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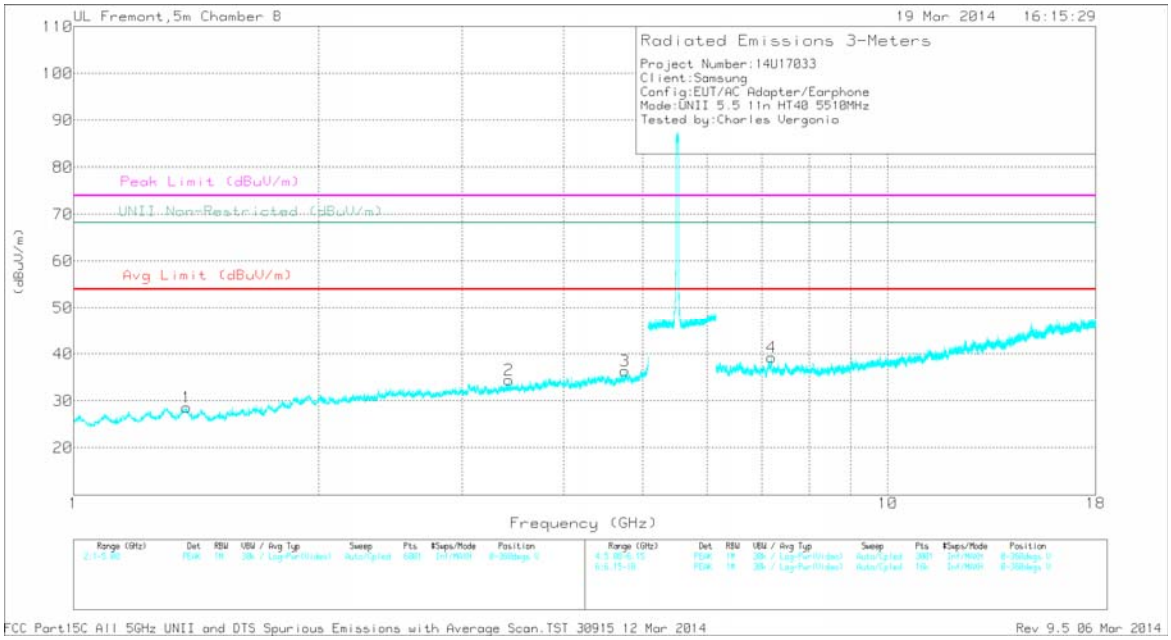
VERTICAL



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

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LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.377	33.77	PK	28.6	-33.8	28.57	54	-25.43	74	-45.43	-	-	0-360	99	V
3	* 4.755	32.03	PK	34.2	-29.8	36.43	54	-17.57	74	-37.57	-	-	0-360	99	V
5	* 7.749	29.75	PK	35.7	-26.7	38.75	54	-15.25	74	-35.25	-	-	0-360	99	H
2	3.423	32.8	PK	32.8	-31.1	34.5	-	-	-	-	68.2	-33.7	0-360	202	V
4	7.195	30.34	PK	35.5	-26.6	39.24	-	-	-	-	68.2	-28.96	0-360	99	V
6	9.703	26.5	PK	36.9	-23.9	39.5	-	-	-	-	68.2	-28.7	0-360	99	H

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

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.375	42.42	PK1	28.6	-33.8	37.22	54	-16.78	74	-36.78	-	-	1	100	H
* 4.754	39.66	PK1	34.2	-29.8	44.06	54	-9.94	74	-29.94	-	-	1	100	H
3.421	40.31	PK1	32.8	-31.1	42.01	-	-	-	-	68.2	-26.19	1	100	H
7.197	37.32	PK1	35.5	-26.6	46.22	-	-	-	-	68.2	-21.98	1	100	V
7.75	37.73	PK1	35.7	-26.7	46.73	-	-	-	-	68.2	-21.47	1	100	H
9.703	33.33	PK1	36.9	-23.8	46.43	-	-	-	-	68.2	-21.77	1	100	H

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

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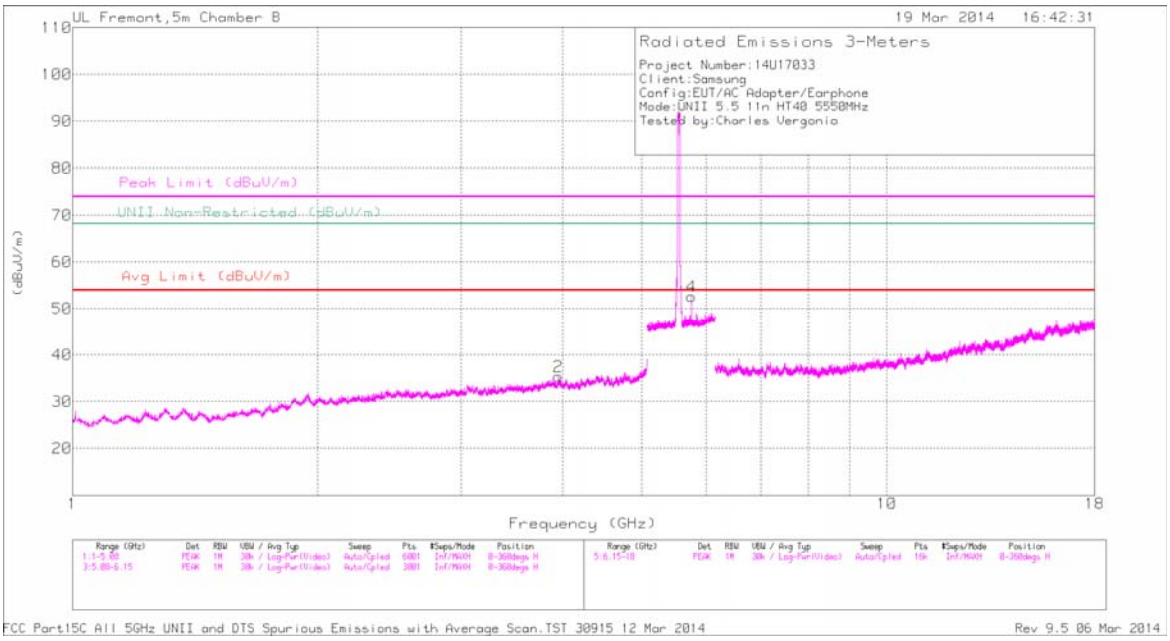
MID CHANNEL
HORIZONTAL



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

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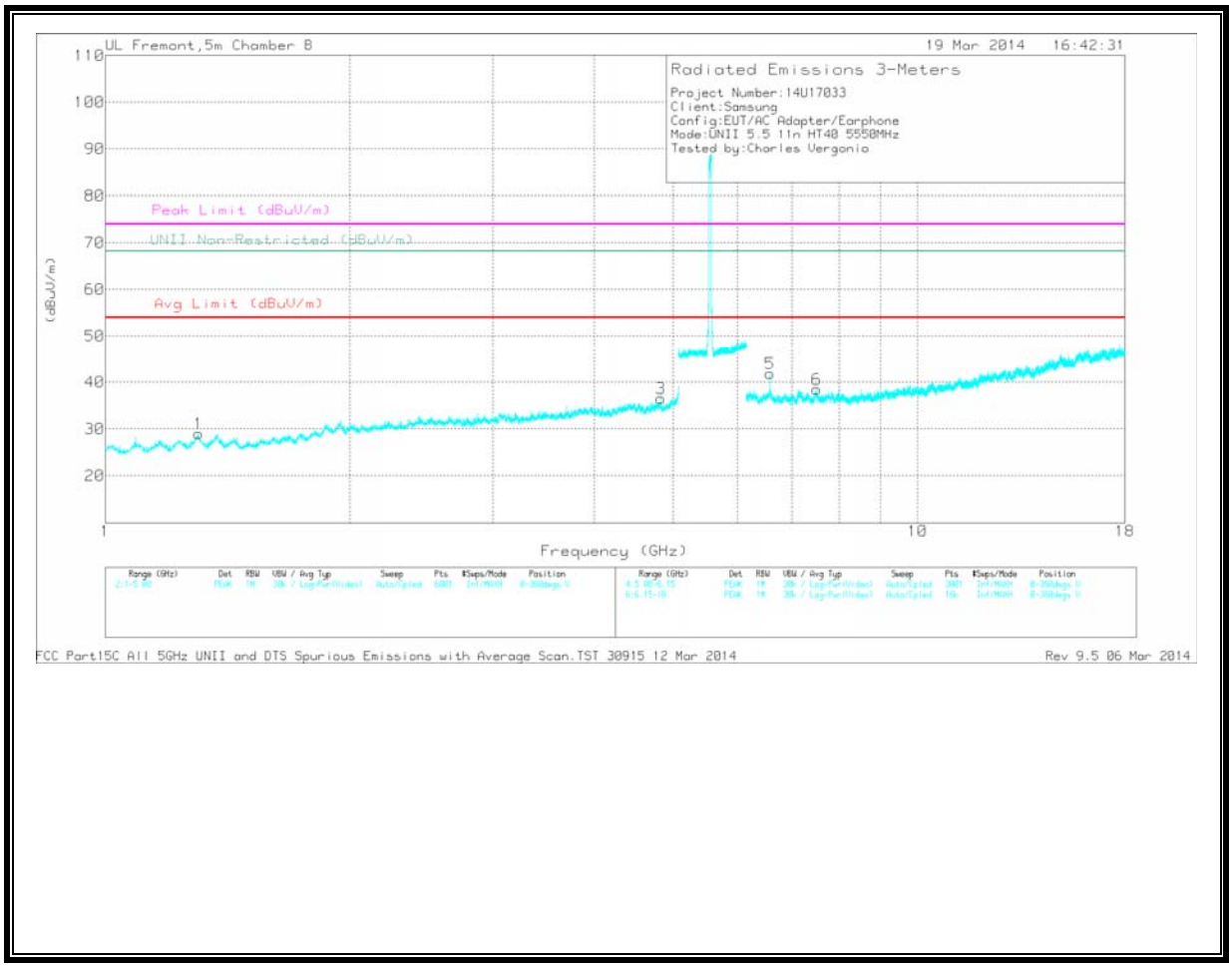
VERTICAL



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

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MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 3.951	31.72	PK	33.7	-30.1	35.32	54	-18.68	74	-38.68	-	-	0-360	99	H
1	* 1.302	34.34	PK	28.9	-34.2	29.04	54	-24.96	74	-44.96	-	-	0-360	202	V
3	* 4.826	32.25	PK	34.2	-29.9	36.55	54	-17.45	74	-37.45	-	-	0-360	99	V
6	* 7.516	29.24	PK	35.6	-26.3	38.54	54	-15.46	74	-35.46	-	-	0-360	202	V
4	5.756	37.59	PK	34.6	-19.5	52.69	-	-	-	-	68.2	-15.51	0-360	202	H
5	6.577	33.42	PK	35.7	-27.3	41.82	-	-	-	-	68.2	-26.38	0-360	202	V

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

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.949	40.08	PK1	33.7	-30.2	43.58	54	-10.42	74	-30.42	-	-	1	100	H
* 1.299	42.66	PK1	28.9	-34.2	37.36	54	-16.64	74	-36.64	-	-	1	100	V
* 4.827	40.57	PK1	34.2	-29.9	44.87	54	-9.13	74	-29.13	-	-	1	100	V
* 7.514	37.33	PK1	35.6	-26.3	46.63	54	-7.37	74	-27.37	-	-	1	100	V
5.757	40.62	PK1	34.6	-19.5	55.72	-	-	-	-	68.2	-12.48	1	100	H
6.579	37.95	PK1	35.7	-27.4	46.25	-	-	-	-	68.2	-21.95	1	100	V

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

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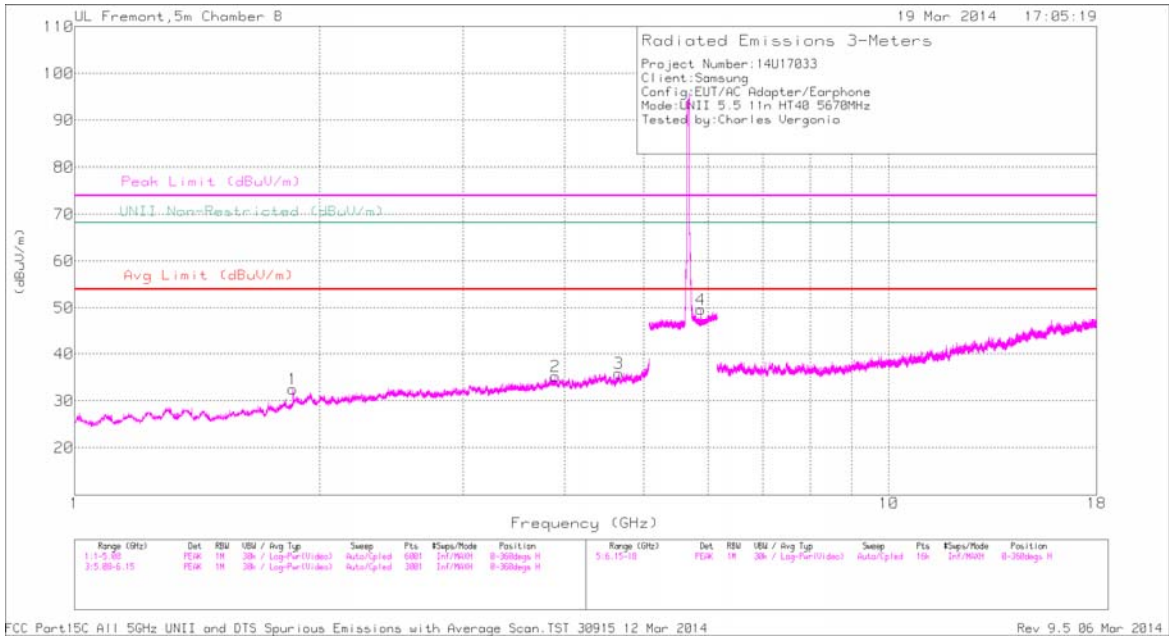
HIGH CHANNEL
HORIZONTAL



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

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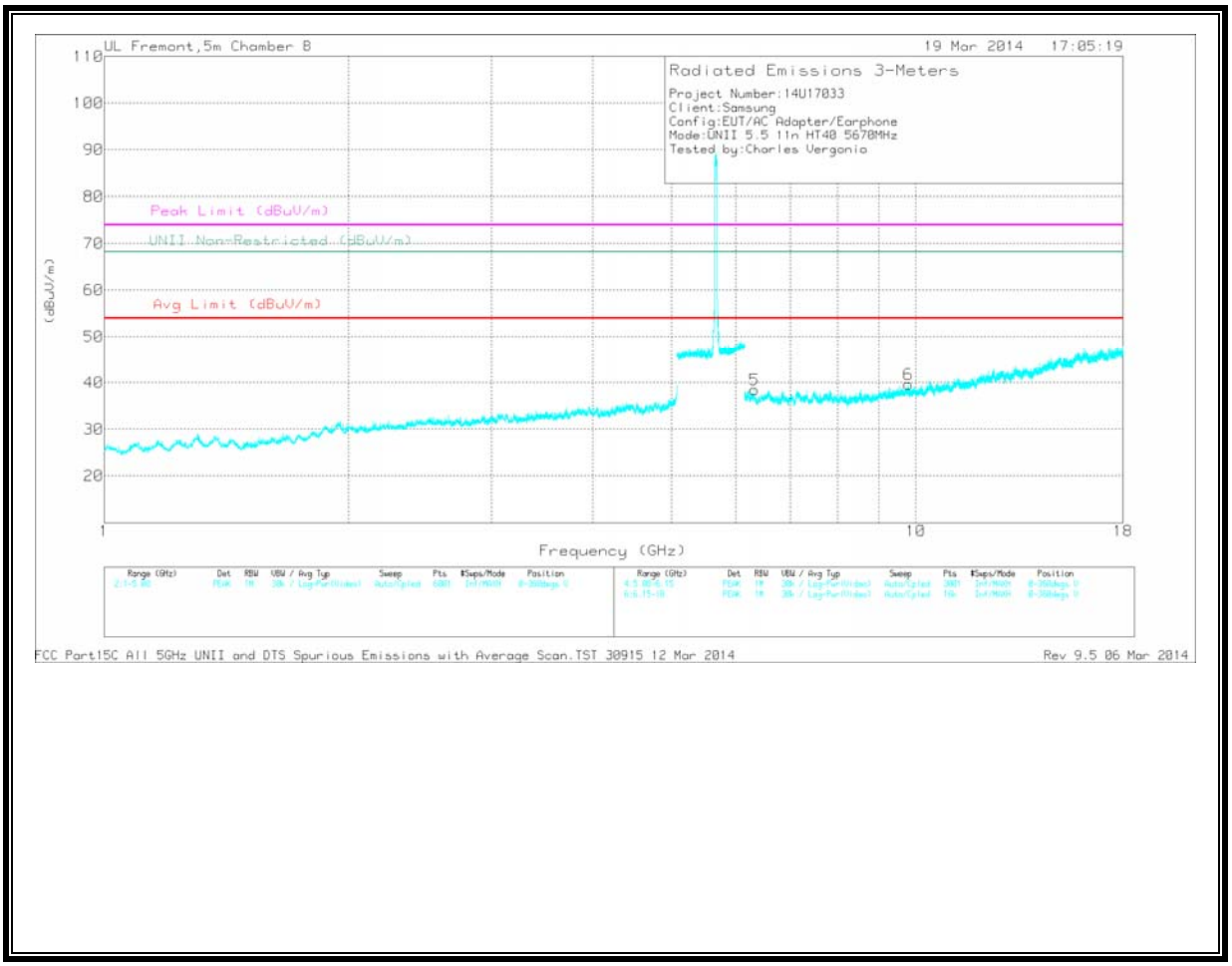
VERTICAL



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

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HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 3.894	33.05	PK	33.8	-31.6	35.25	54	-18.75	74	-38.75	-	-	0-360	202	H
3	* 4.658	31.01	PK	34.2	-29.3	35.91	54	-18.09	74	-38.09	-	-	0-360	202	H
1	1.855	35.07	PK	30.7	-33.3	32.47	-	-	-	-	68.2	-35.73	0-360	202	H
4	5.88	34.44	PK	34.9	-19.7	49.64	-	-	-	-	68.2	-18.56	0-360	99	H
5	6.328	30.7	PK	35.5	-27.7	38.5	-	-	-	-	68.2	-29.7	0-360	99	V
6	9.788	26.12	PK	36.9	-23.4	39.62	-	-	-	-	68.2	-28.58	0-360	99	V

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

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.893	40.85	PK1	33.8	-31.6	43.05	54	-10.95	74	-30.95	-	-	1	100	H
* 4.656	39.33	PK1	34.2	-29.4	44.13	54	-9.87	74	-29.87	-	-	1	100	H
1.856	42.3	PK1	30.7	-33.3	39.7	-	-	-	-	68.2	-28.5	1	100	H
5.88	39.87	PK1	34.9	-19.7	55.07	-	-	-	-	68.2	-13.13	1	100	H
6.329	38.37	PK1	35.5	-27.7	46.17	-	-	-	-	68.2	-22.03	1	100	V
9.788	34.5	PK1	36.9	-23.4	48	-	-	-	-	68.2	-20.2	1	100	V

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

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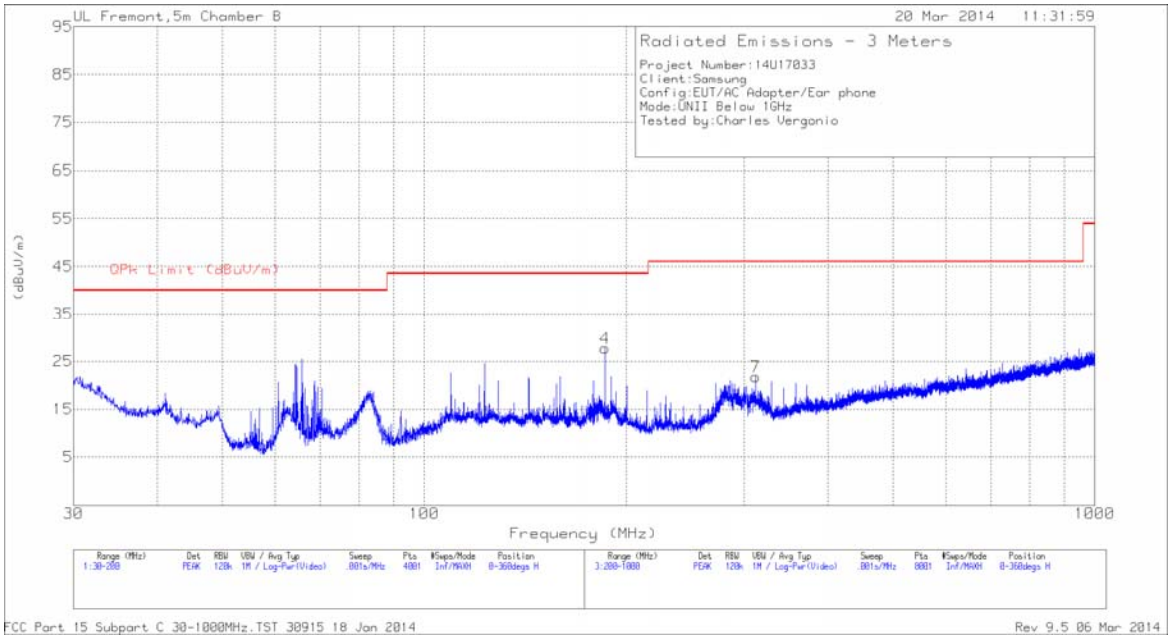
12. WORST-CASE BELOW 1 GHz (in the 5.3 GHz Band)

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

HORIZONTAL PLOT



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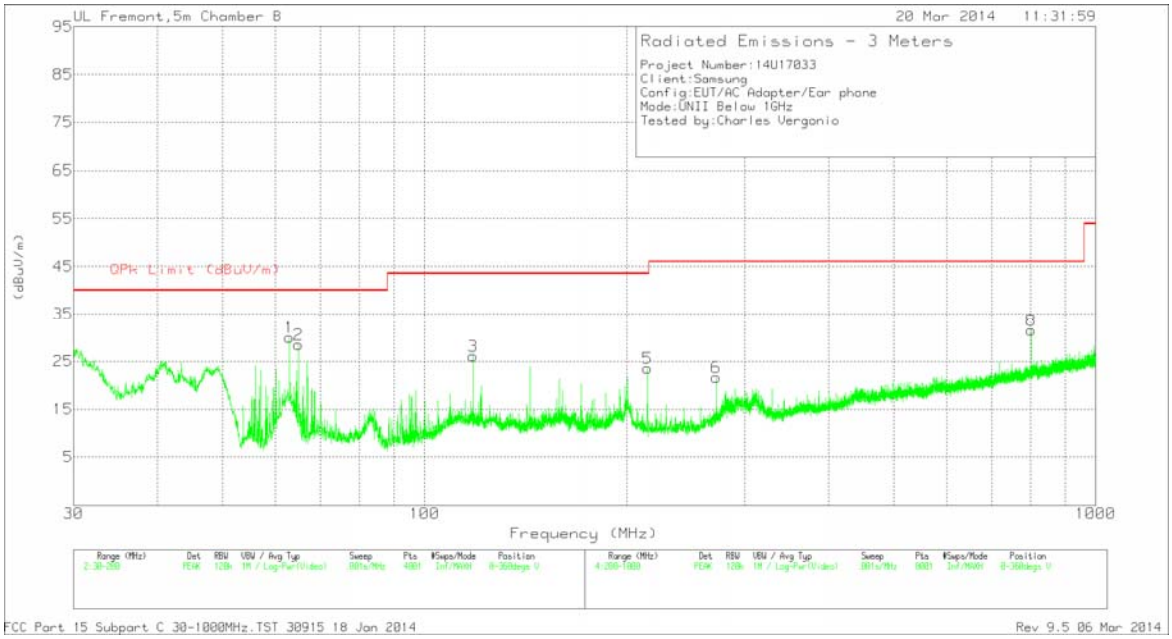
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, VERTICAL)

VERTICAL PLOT



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Worst Case Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T477 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 118.06	40.44	PK	13.6	-27.9	26.14	-	-	0-360	101	V
6	* 272	34.98	PK	13	-26.3	21.68	-	-	0-360	101	V
1	62.895	50.89	PK	7.6	-28.5	29.99	-	-	0-360	101	V
2	64.8925	49.2	PK	7.8	-28.5	28.5	-	-	0-360	101	V
4	186.145	43.51	PK	11.3	-27.1	27.71	-	-	0-360	101	H
5	214.8	40.02	PK	10.4	-26.8	23.62	-	-	0-360	200	V
7	312	34.32	PK	13.5	-26	21.82	-	-	0-360	101	H
8	801.4	34.25	PK	21.2	-23.9	31.55	-	-	0-360	101	V

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

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13. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

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

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6 WORST EMISSIONS

Line-L1 .15 - 30MHz

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1 (dB)	LC Cables 1&3 (dB)	Corrected Reading dB(uVolts)	CFR 47 Part 15 Class B QP	Margin to Limit (dB)	CFR 47 Part 15 Class B Avg	Margin to Limit (dB)
1	.249	41.16	PK	.7	0	41.86	61.8	-19.94	-	-
2	.249	23.98	Av	.7	0	24.68	-	-	51.8	-27.12
3	.564	44.98	PK	.3	0	45.28	56	-10.72	-	-
4	.564	30.36	Av	.3	0	30.66	-	-	46	-15.34
5	1.428	41.79	PK	.2	.1	42.09	56	-13.91	-	-
6	1.428	21.84	Av	.2	.1	22.14	-	-	46	-23.86
7	2.121	42.27	PK	.2	.1	42.57	56	-13.43	-	-
8	2.121	22.02	Av	.2	.1	22.32	-	-	46	-23.68
9	10.1085	44.74	PK	.2	.2	45.14	60	-14.86	-	-
10	10.1085	29.09	Av	.2	.2	29.49	-	-	50	-20.51

Line-L2 .15 - 30MHz

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2 (dB)	LC Cables 2&3 (dB)	Corrected Reading dB(uVolts)	CFR 47 Part 15 Class B QP	Margin to Limit (dB)	CFR 47 Part 15 Class B Avg	Margin to Limit (dB)
11	.249	43.8	PK	.7	0	44.5	61.8	-17.3	-	-
12	.249	20.58	Av	.7	0	21.28	-	-	51.8	-30.52
13	.5595	38.28	PK	.3	0	38.58	56	-17.42	-	-
14	.5595	24.06	Av	.3	0	24.36	-	-	46	-21.64
15	1.437	35.86	PK	.2	.1	36.16	56	-19.84	-	-
16	1.437	20.49	Av	.2	.1	20.79	-	-	46	-25.21
17	2.1705	35.67	PK	.2	.1	35.97	56	-20.03	-	-
18	2.1705	17.84	Av	.2	.1	18.14	-	-	46	-27.86
19	10.5765	43.97	PK	.2	.2	44.37	60	-15.63	-	-
20	10.5765	26.99	Av	.2	.2	27.39	-	-	50	-22.61

PK - Peak detector
Av - average detection

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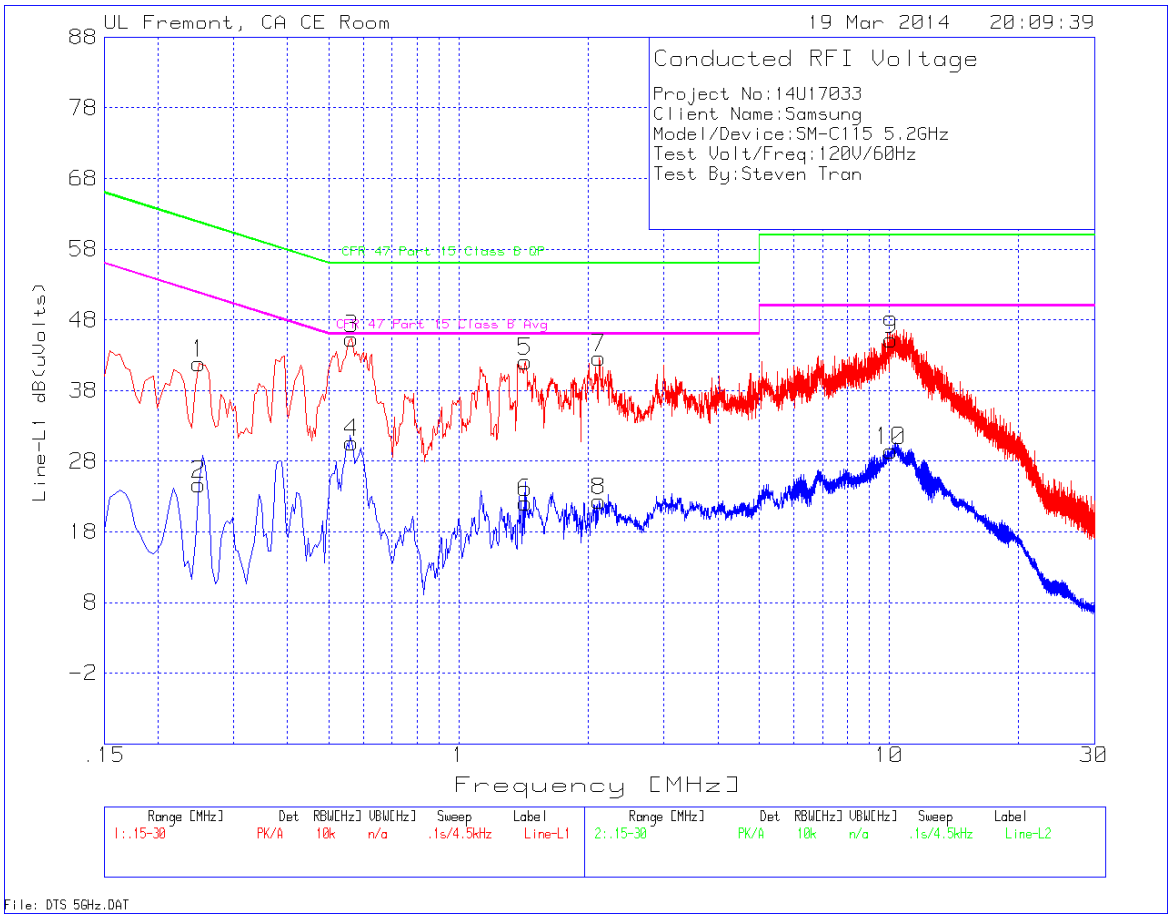
LINE 1 RESULTS



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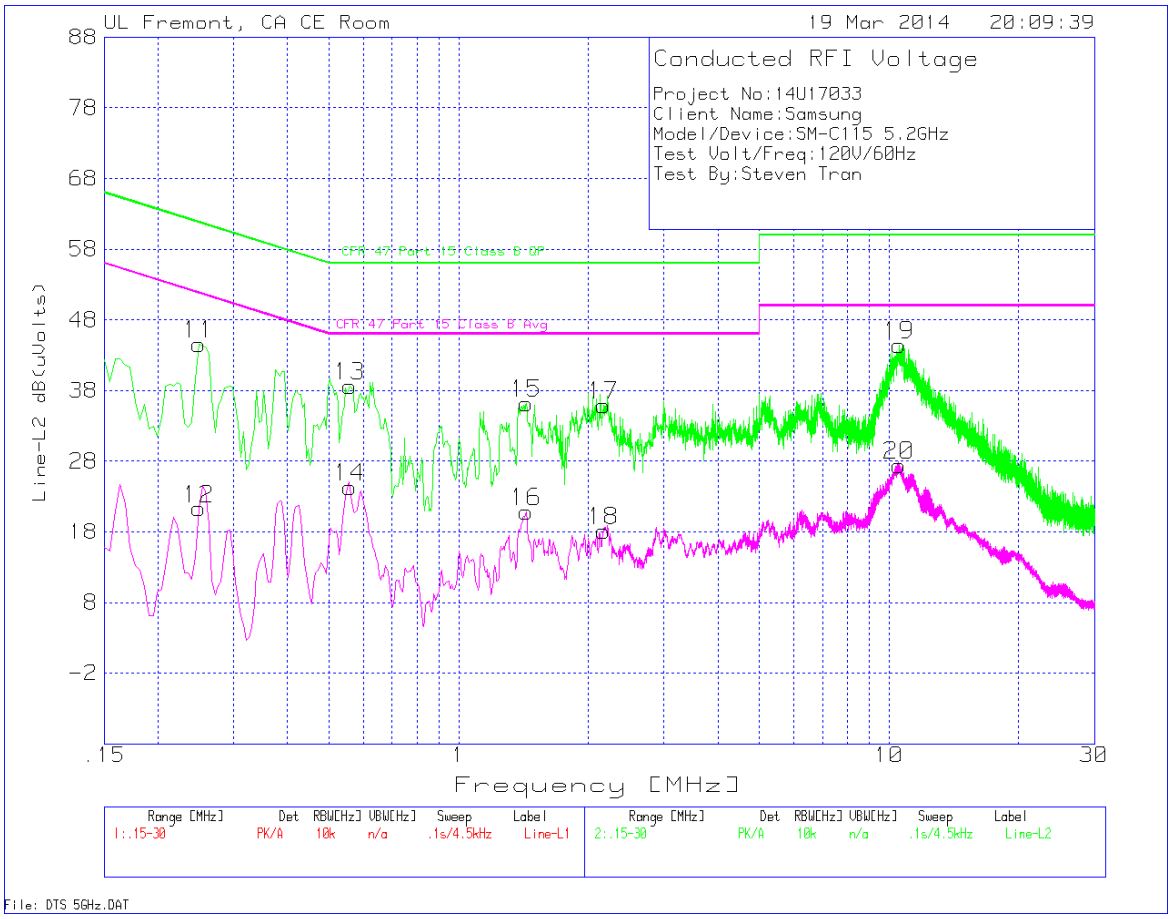
LINE 2 RESULTS



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14. DYNAMIC FREQUENCY SELECTION

14.1. OVERVIEW

14.1.1. LIMITS

INDUSTRY CANADA

IC RSS-210 is closely harmonized with FCC Part 15 DFS rules. The deviations are as follows:

RSS-210 Issue 7 A9.4 (b) (ii) **Channel Availability Check Time:** …

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

FCC

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

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Table 1: Applicability of DFS requirements prior to use of a channel

Requirement	Operational Mode		
	Master	Client (without radar detection)	Client (with radar detection)
Non-Occupancy Period	Yes	Not required	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Not required	Not required
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.	

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Table 4: DFS Response requirement values

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

Table 5 – Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (Microseconds)	PRI (Microseconds)	Pulses	Minimum Percentage of Successful Detection	Minimum Trials
1	1	1428	18	60%	30
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120

Table 6 – Long Pulse Radar Test Signal

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

Table 7 – Frequency Hopping Radar Test Signal

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

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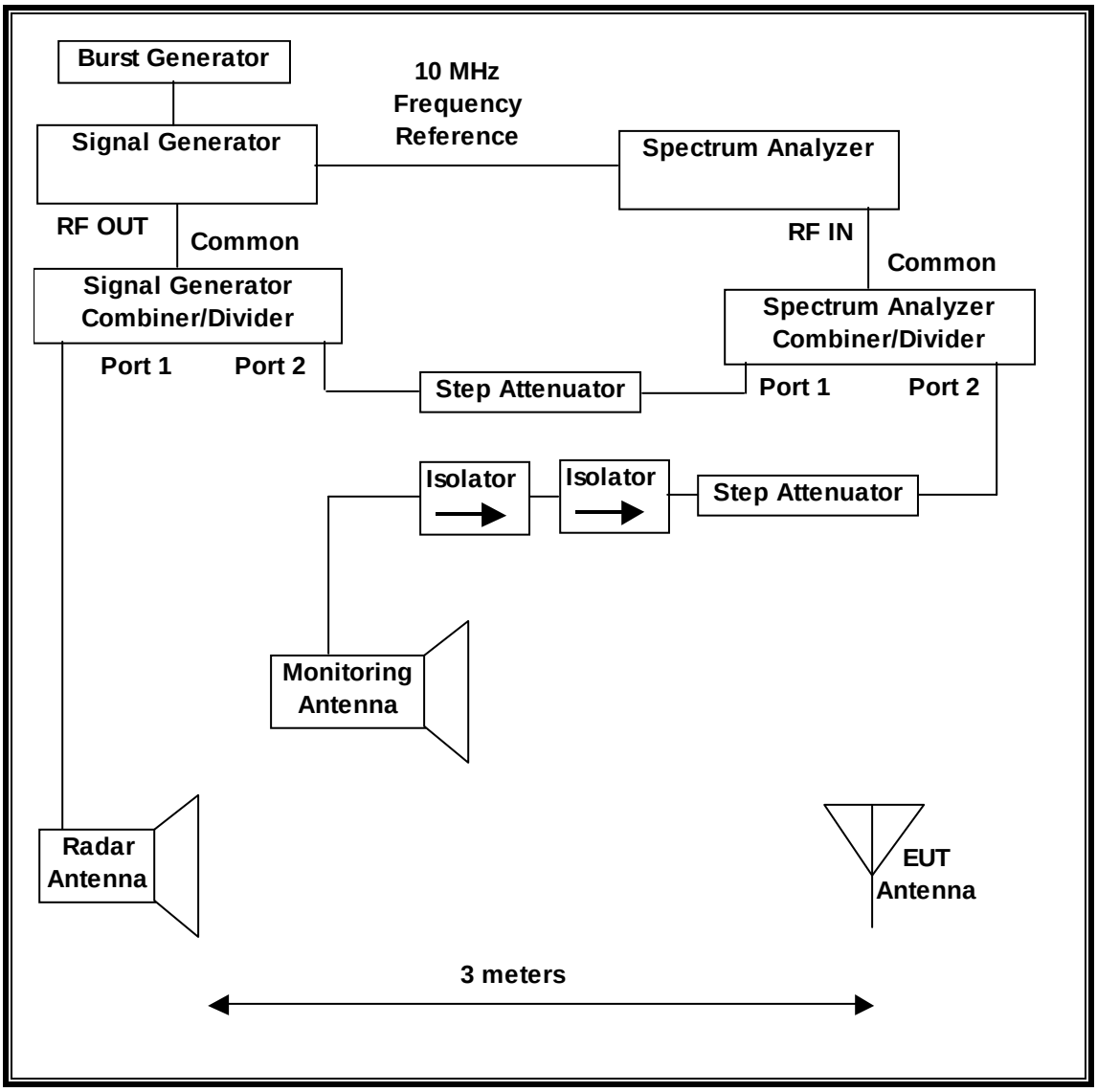
14.1.2. TEST AND MEASUREMENT SYSTEM

RADIATED METHOD SYSTEM BLOCK DIAGRAM



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SYSTEM OVERVIEW

The short pulse and long pulse signal generating system utilizes the NTIA software. The Vector Signal Generator has been validated by the NTIA. The hopping signal generating system utilizes the CCS simulated hopping method and system, which has been validated by the DoD, FCC and NTIA. The software selects waveform parameters from within the bounds of the signal type on a random basis using uniform distribution.

The short pulse types 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.

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ADJUSTMENT OF DISPLAYED TRAFFIC LEVEL

A link is established between the Master and Slave and the distance between the units is adjusted as needed to provide a suitable received level at the Master and Slave devices. The video test file is streamed to generate WLAN traffic. The monitoring antenna is adjusted so that the WLAN traffic level, as displayed on the spectrum analyzer, is at lower amplitude than the radar detection threshold.

TEST AND MEASUREMENT EQUIPMENT

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

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

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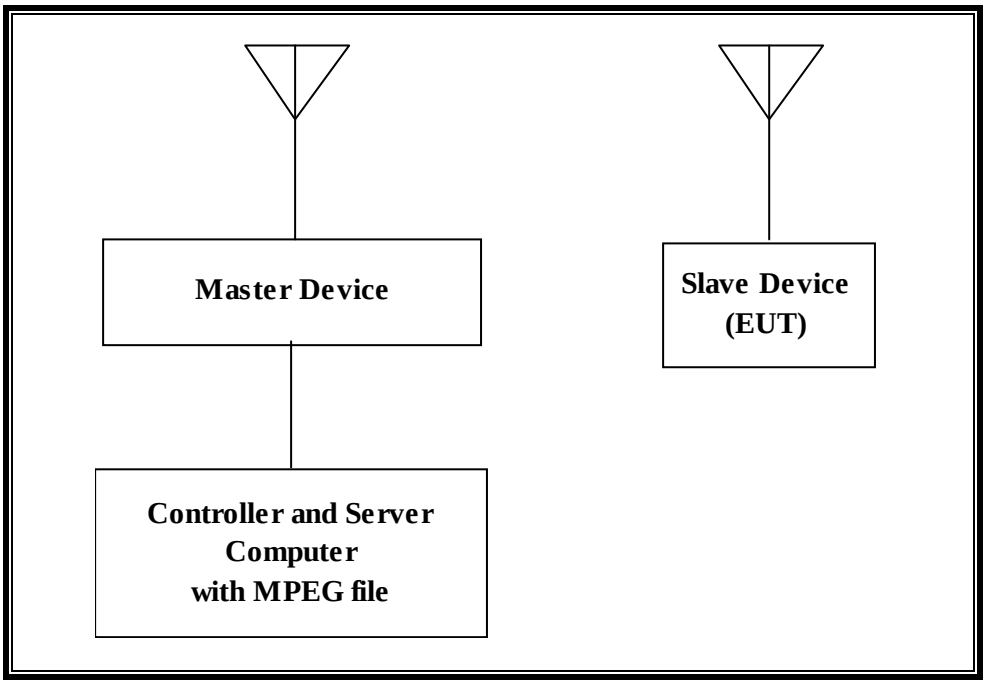
14.1.3. SETUP OF EUT

RADIATED METHOD EUT TEST SETUP



SUPPORT EQUIPMENT

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

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
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

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14.1.4. DESCRIPTION OF EUT

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

The EUT is a Slave Device without Radar Detection.

The highest power level within these bands is 14.28 dBm EIRP in the 5250-5350 MHz band and 14.45 dBm EIRP in the 5470-5725 MHz band.

The only antenna assembly utilized with the EUT has a gain of 0.55 dBi.

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

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

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

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

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

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

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

UNIFORM CHANNEL SPREADING

This requirement is not applicable to Slave radio devices.

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

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

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

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

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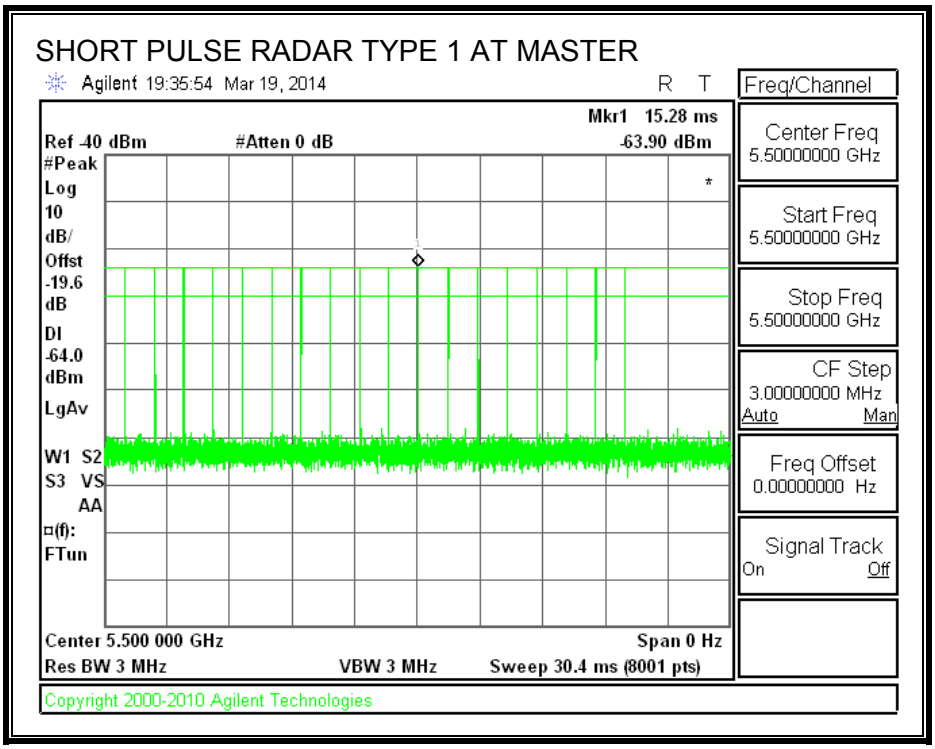
14.2. RESULTS FOR 20 MHz BANDWIDTH

14.2.1. TEST CHANNEL

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

14.2.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM



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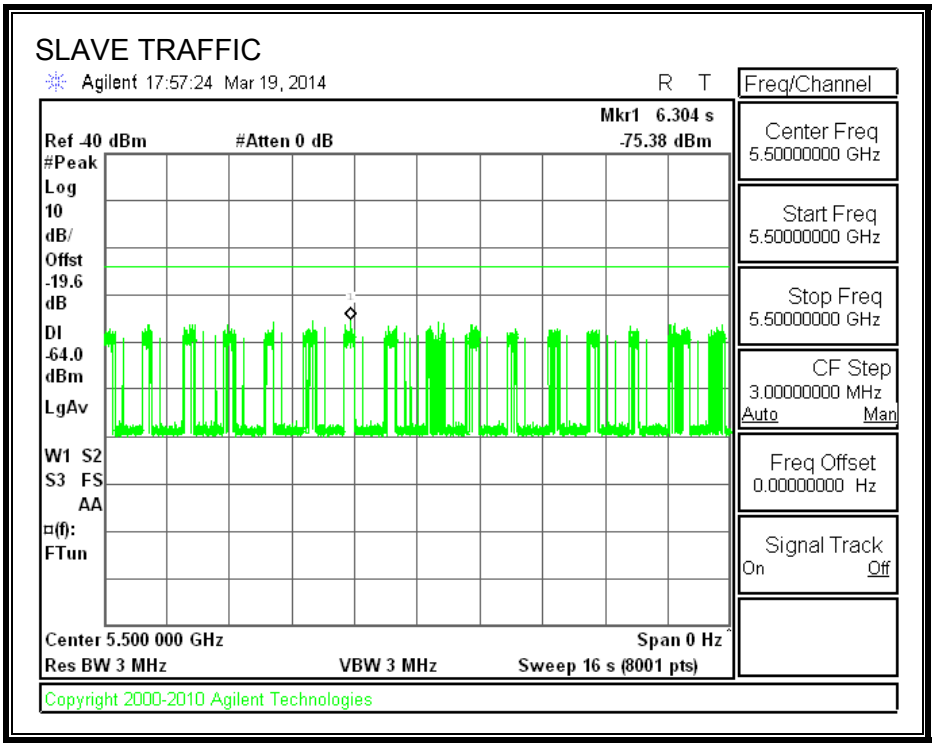
TRAFFIC



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14.2.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

14.2.4. MOVE AND CLOSING TIME

REPORTING NOTES

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

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

The aggregate channel closing transmission time is calculated as follows:

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

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

RESULTS

Channel Move Time (sec)	Limit (sec)
0.000	10

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

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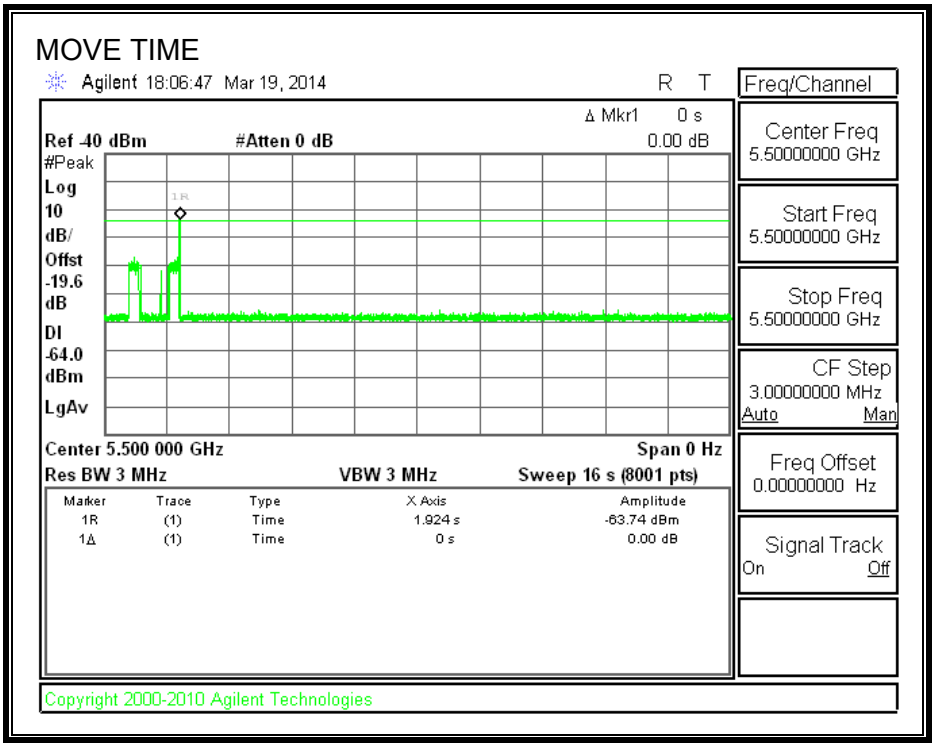
MOVE TIME



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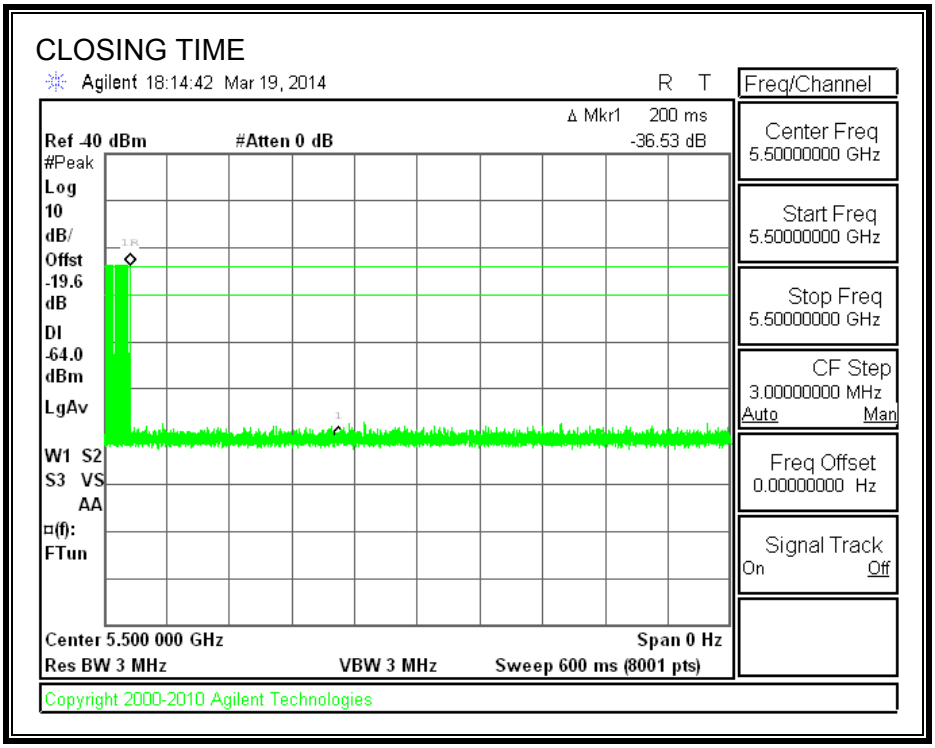
CHANNEL CLOSING TIME



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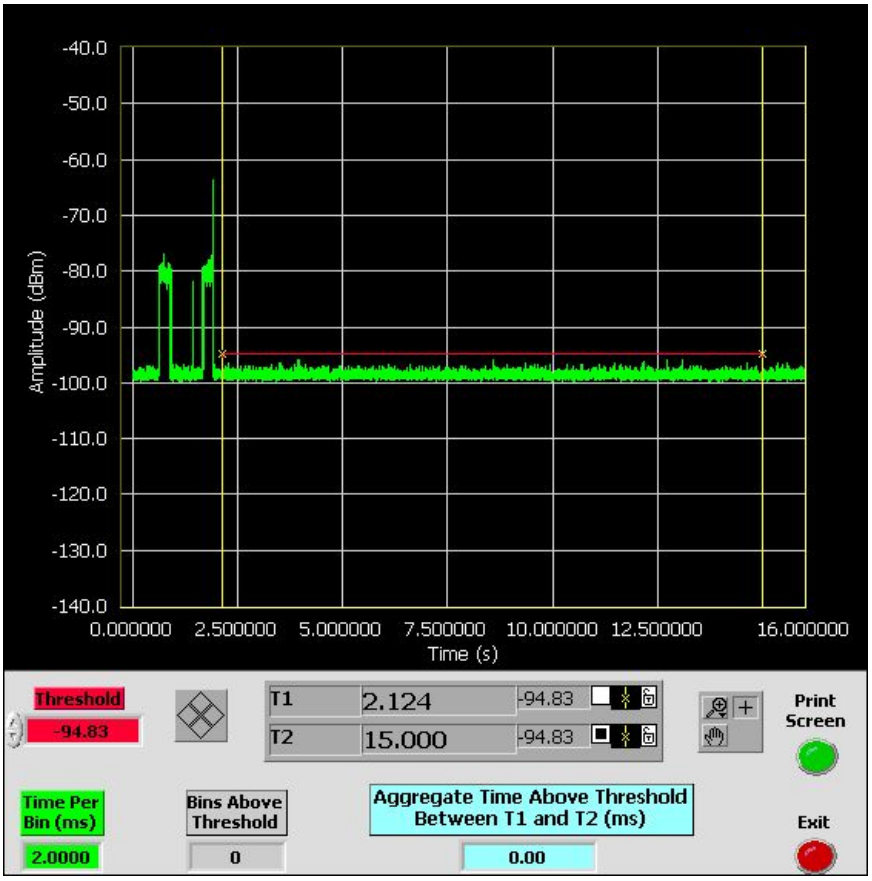
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.

AGGREGATE CLOSING TIME



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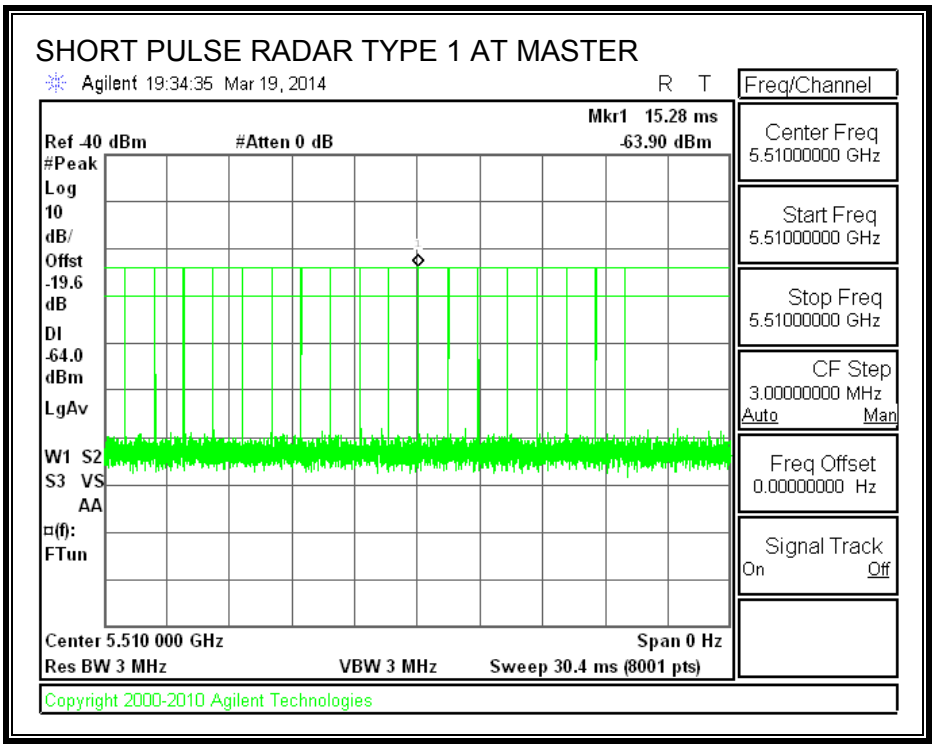
14.3. RESULTS FOR 40 MHz BANDWIDTH

14.3.1. TEST CHANNEL

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

14.3.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM



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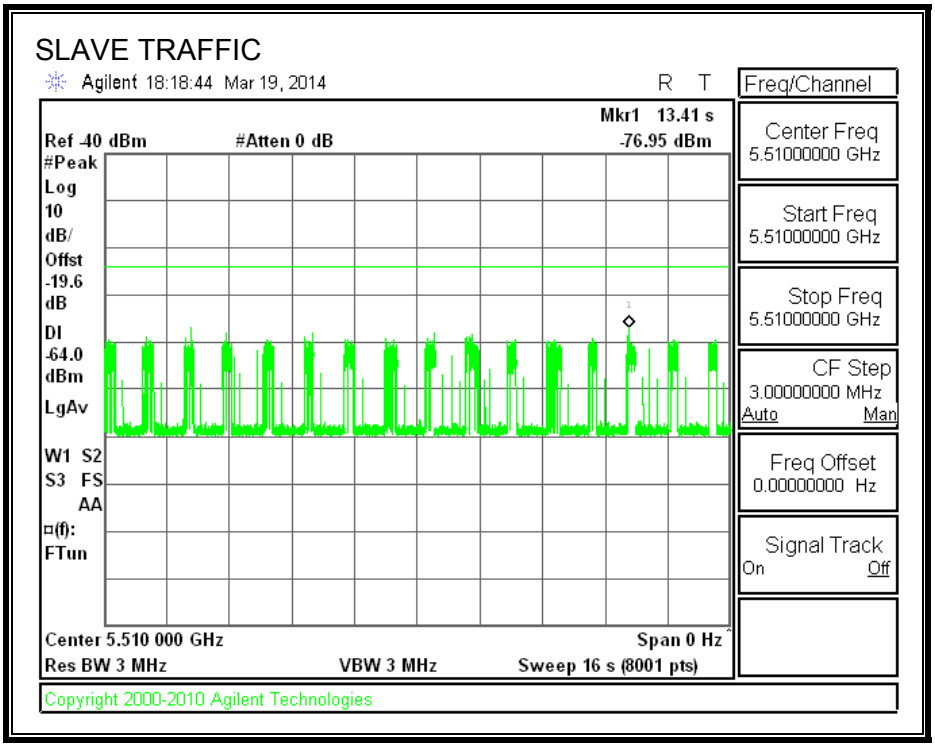
TRAFFIC



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14.3.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

14.3.4. MOVE AND CLOSING TIME

REPORTING NOTES

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

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

The aggregate channel closing transmission time is calculated as follows:

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

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

RESULTS

Channel Move Time (sec)	Limit (sec)
0.000	10

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

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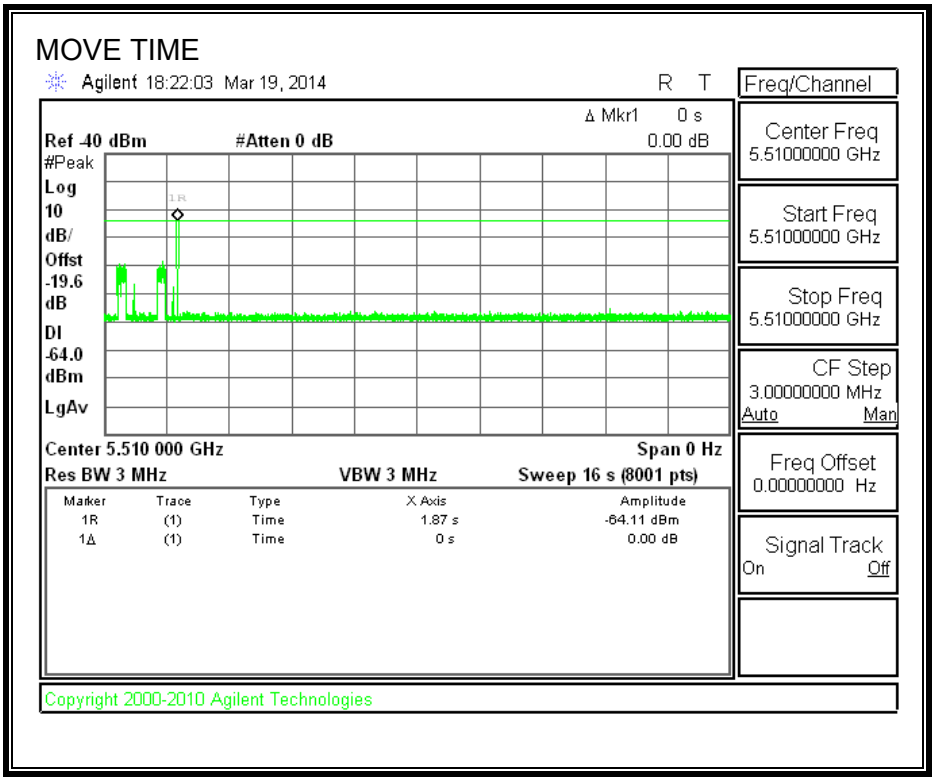
MOVE TIME



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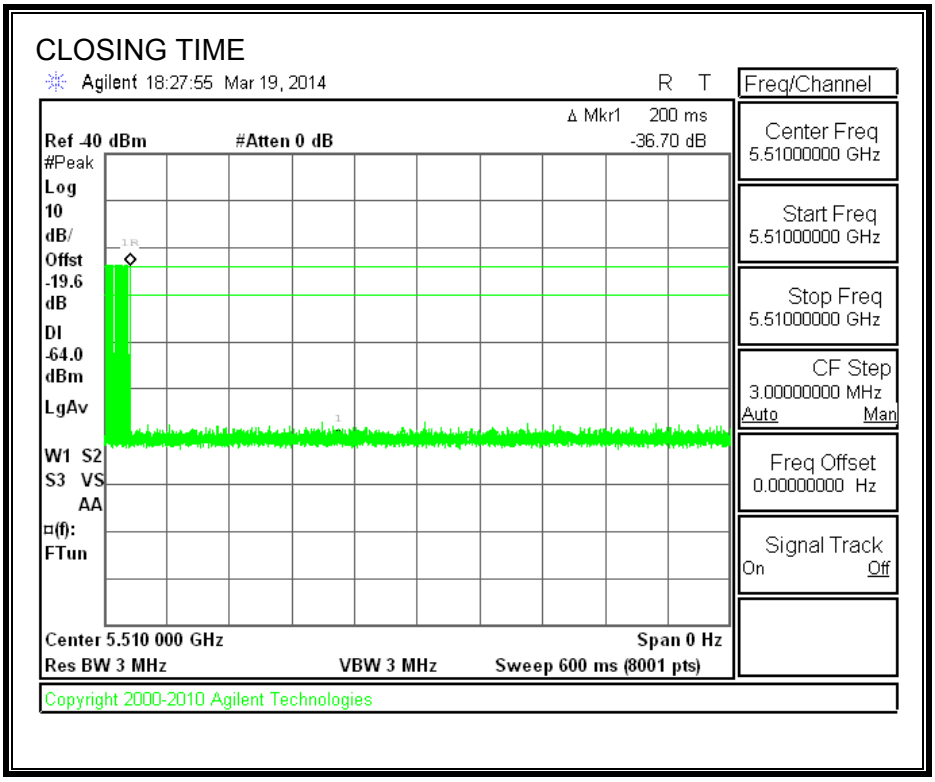
CHANNEL CLOSING TIME



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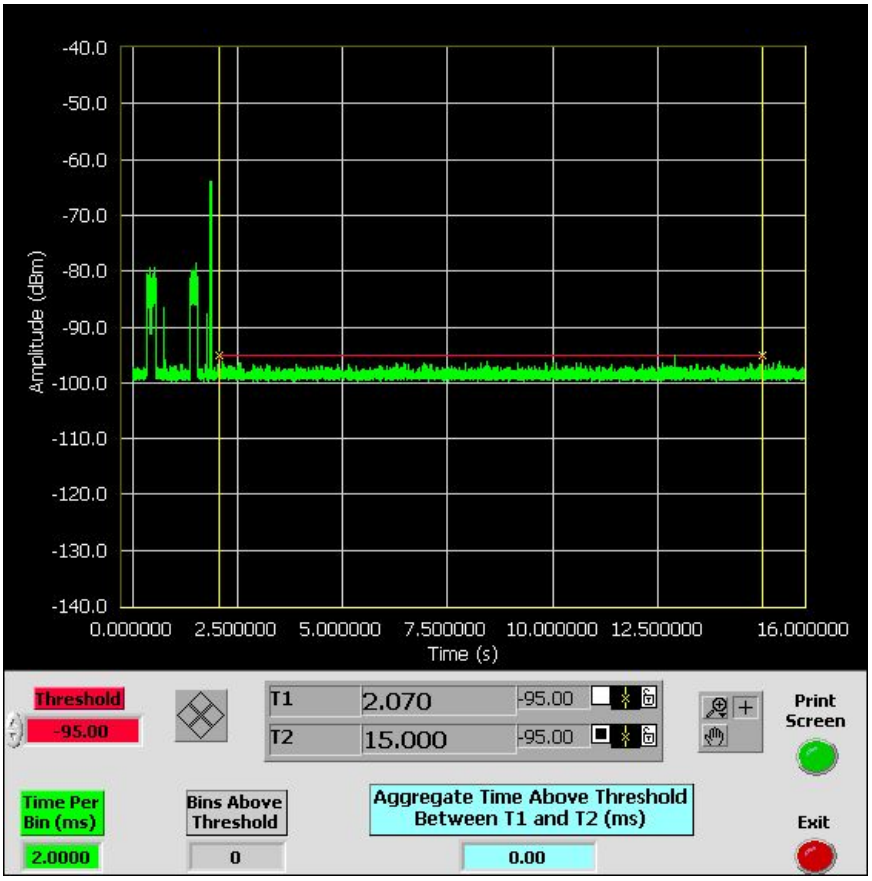
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.

AGGREGATE CLOSING TIME



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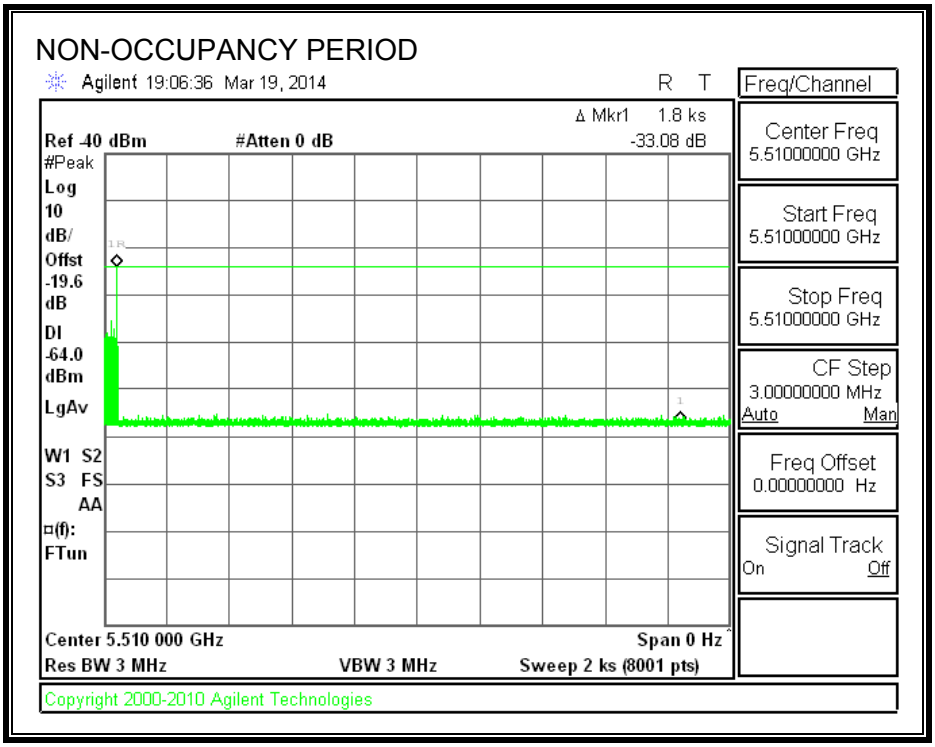
14.3.5. NON-OCCUPANCY PERIOD

RESULTS

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



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