FCC CFR47 PART 15 SUBPART C

CERTIFICATION TEST REPORT

FOR

GSM/WCDMA Phone + Bluetooth and WLAN 2.4GHz b/g/n

MODEL NUMBER: SM-G530BT

FCC ID: A3LSMG530BT

REPORT NUMBER: 14I18664-E4 REVISION A

ISSUE DATE: September 17, 2014

Prepared for
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	9/5/14	Initial Issue	P. Zhang
A	9/17/14	Updated KDB reference and page 49	P. Zhang

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1. ATTESTATION OF TEST RESULTS

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

EUT DESCRIPTION: **GSM/WCDMA Phone + Bluetooth and WLAN 2.4GHz b/g/n**

MODEL: **SM-G530BT**

SERIAL NUMBER: **R31F800SN4W (RADIATED), R31F800SN2M (CONDUCTED)**

DATE TESTED: **AUGUST 27 - SEPTEMBER 4, 2014**

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart C	Pass

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Verification Services Inc. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.**Note:** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released

For UL Verification Services Inc. By:

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CONSUMER TECHNOLOGY DIVISION
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UL Verification Services Inc.

Tested By:

CHARLES VERGONIO

CONSUMER TECHNOLOGY DIVISION
LAB ENGINEER
UL Verification Services Inc.

2. TEST METHODOLOGY

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

3. FACILITIES AND ACCREDITATION

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

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

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

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)

36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 26000 MHz	4.94 dB

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a GSM/WCDMA Phone + Bluetooth and WLAN 2.4GHz b/g/n.

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)
2412 - 2462	802.11b	21.67	146.89
2412 - 2462	802.11g	24.34	271.64
2412 - 2462	802.11n HT20	23.59	228.56

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of -1.86 dBi.

5.4. WORST-CASE CONFIGURATION AND MODE

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

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

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

802.11b mode: 1 Mbps

802.11g mode: 6 Mbps

802.11n HT20mode: MCS0

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
AC Adapter	Samsung	ETA0U83BWB	N/A	N/A
Earphone	Samsung	EHS61ASFWE	N/A	N/A

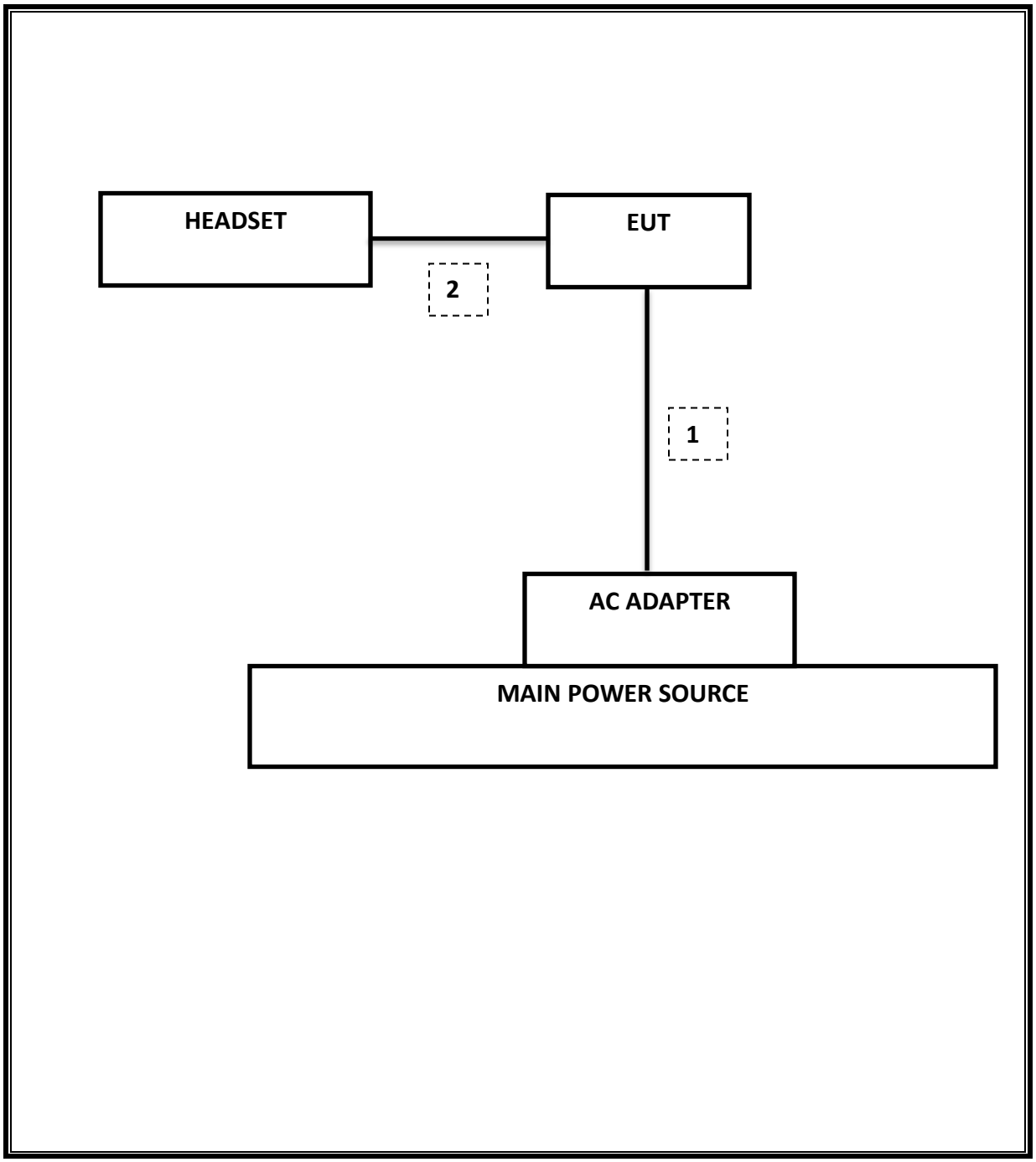
I/O CABLES

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	1m	N/A

TEST SETUP

The EUT is a stand-alone unit during the tests. Test software exercised the radio card.

SETUP DIAGRAM FOR TESTS



6. TEST AND MEASUREMENT EQUIPMENT

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

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

7. MEASUREMENT METHODS

KDB 558074 D01 DTS Meas Guidance v03r02: Measurement Procedure PKPM1 is used for power and PKPSD is used for power spectral density.

Unwanted emissions within Restricted Bands are measured using traditional radiated procedures.

Band edge emissions within Restricted Bands are measured using RMS with duty cycle factor offset method.

8. SUMMARY TABLE

FCC Part Section	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result	Worst Case
15.247 (a)(2)	RSS-210 A8.2(a)	Occupied Band width (6dB)	>500KHz	Conducted	Pass	8.08MHz
2.1051, 15.247 (d)	RSS-210 A8.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	-24.83dBm
15.247	RSS-210 A8.4	TX conducted output power	<30dBm		Pass	24.34dBm
15.247	RSS-210 A8.2	PSD	<8dBm		Pass	-2.56dBm
15.207 (a)	RSS-GEN 7.2.2	AC Power Line conducted emissions	Section 10	Radiated	Pass	34.32dBuV(AV)
15.205, 15.209	RSS-210 Clause 2.6, RSS-210 Clause 6	Radiated Spurious Emission	< 54dBuV/m		Pass	49.51dBuV/m

9. ANTENNA PORT TEST RESULTS

9.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

IC RSS-210 A8.2 (a)

The minimum 6 dB bandwidth shall be at least 500 kHz.

TEST PROCEDURE

Reference to KDB 558074 D01 DTS Meas Guidance v03r02: The transmitter output is connected to a spectrum analyzer with the RBW set to100KHz, the VBW >= 3 x RBW, peak detector and max hold.

RESULTS

9.1.1. 802.11b MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	8.10	0.5
Mid	2437	8.62	0.5
High	2462	8.08	0.5
Worst		8.08	

9.1.2. 802.11g MODE IN THE 2.4 GHz BAND

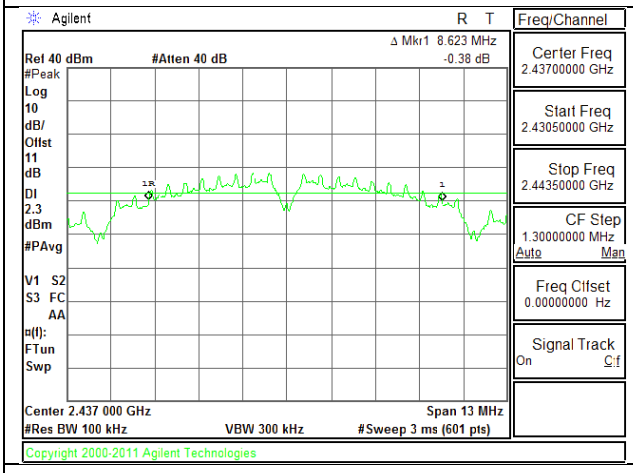
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	16.58	0.5
Mid	2437	16.54	0.5
High	2462	16.54	0.5
Worst		16.54	

9.1.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	17.75	0.5
Mid	2437	17.75	0.5
High	2462	17.75	0.5
Worst		17.75	

9.1.4. 6 dB BANDWIDTH MID CH PLOTS

11b HT20 2.4



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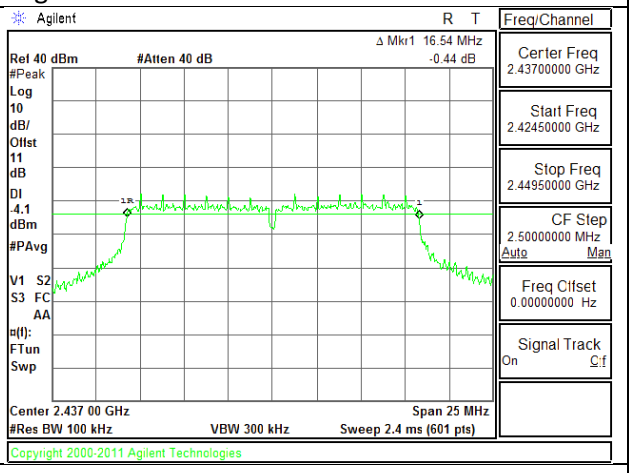

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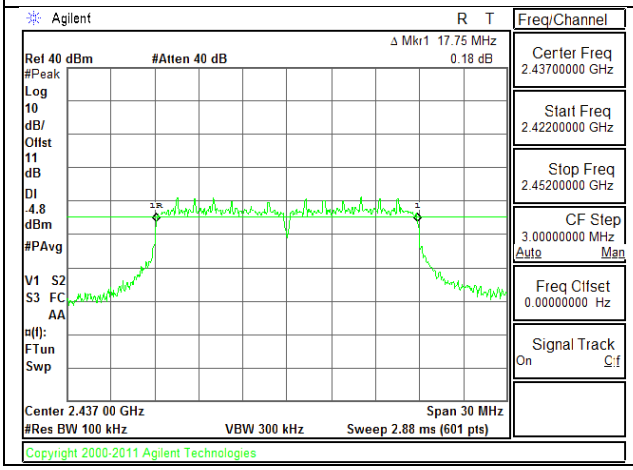


9.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

9.2.1. 802.11b MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	13.34
Mid	2437	13.66
High	2462	14.14
Worst		14.14

9.2.2. 802.11g MODE IN THE 2.4 GHz BAND

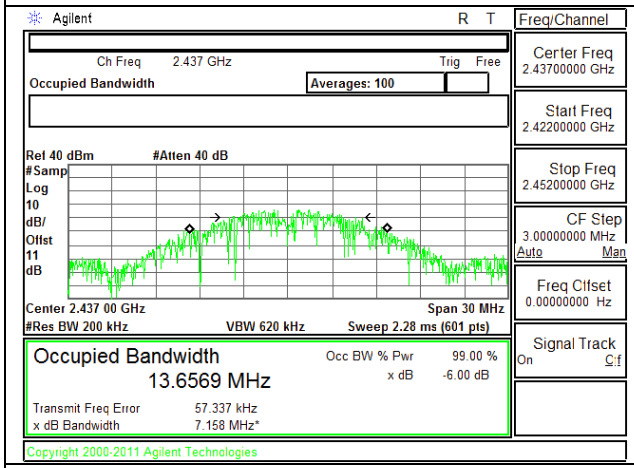
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	16.49
Mid	2437	16.66
High	2462	16.61
Worst		16.66

9.2.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	17.84
Mid	2437	17.52
High	2462	17.81
Worst		17.84

9.2.4. 99% BANDWIDTH MID CH PLOTS

11b HT20 2.4



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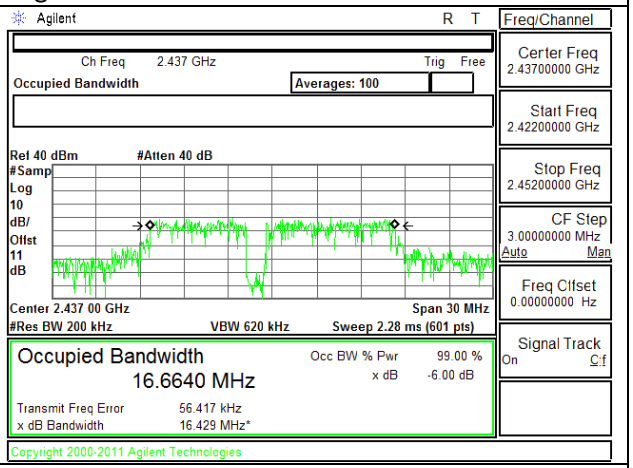

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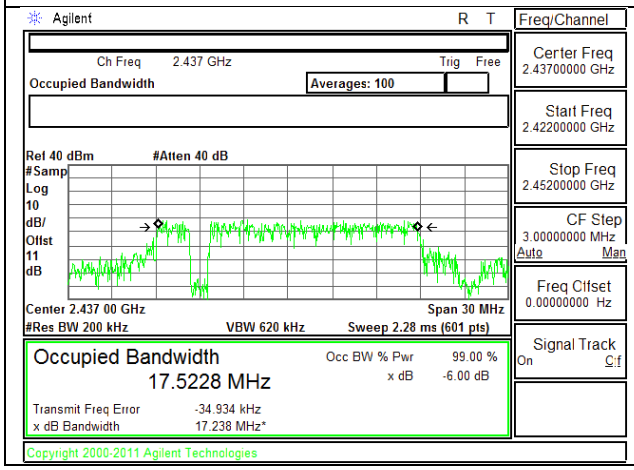


9.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 0.2 dB (including 10 dB pad and 0.2 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

9.3.1. 802.11b MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	2412	16.00
Mid	2437	16.00
High	2462	15.80
Worst		16.000

9.3.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	2412	13.10
Mid	2437	12.50
High	2462	13.10
Worst		13.100

9.3.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	2412	12.20
Mid	2437	11.60
High	2462	12.10
Worst		12.200

9.4. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

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

RESULTS

9.4.1. 802.11b MODE IN THE 2.4 GHz BAND

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	-1.86	30.00	30	36	30.00
Mid	2437	-1.86	30.00	30	36	30.00
High	2462	-1.86	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	21.66	21.66	30.00	-8.34
Mid	2437	21.67	21.67	30.00	-8.33
High	2462	21.24	21.24	30.00	-8.76
Worst			21.67		

9.4.2. 802.11g MODE IN THE 2.4 GHz BAND

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	-1.86	30.00	30	36	30.00
Mid	2437	-1.86	30.00	30	36	30.00
High	2462	-1.86	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	24.34	24.34	30.00	-5.66
Mid	2437	23.72	23.72	30.00	-6.28
High	2462	24.19	24.19	30.00	-5.81
Worst			24.34		

9.4.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	-1.86	30.00	30	36	30.00
Mid	2437	-1.86	30.00	30	36	30.00
High	2462	-1.86	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	23.59	23.59	30.00	-6.41
Mid	2437	22.91	22.91	30.00	-7.09
High	2462	23.49	23.49	30.00	-6.51
Worst			23.59		

9.5. PSD

LIMITS

FCC §15.247

IC RSS-210 A8.2

The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

RESULTS

9.5.1. 802.11b MODE IN THE 2.4 GHz BAND

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-2.56	8.0	-10.6
Mid	2437	-3.72	8.0	-11.7
High	2462	-2.95	8.0	-11.0

9.5.2. 802.11g MODE IN THE 2.4 GHz BAND

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-8.59	8.0	-16.6
Mid	2437	-9.51	8.0	-17.5
High	2462	-6.60	8.0	-14.6

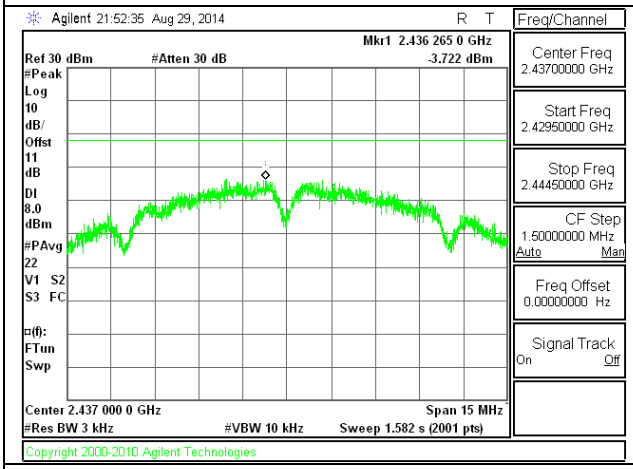
9.5.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

PSD Results

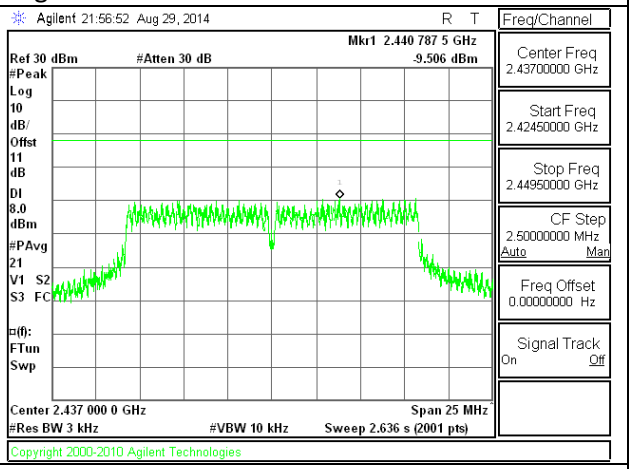
Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-8.91	8.0	-16.9
Mid	2437	-9.39	8.0	-17.4
High	2462	-9.74	8.0	-17.7

9.5.4. PSD Chain 0 MID CH PLOTS

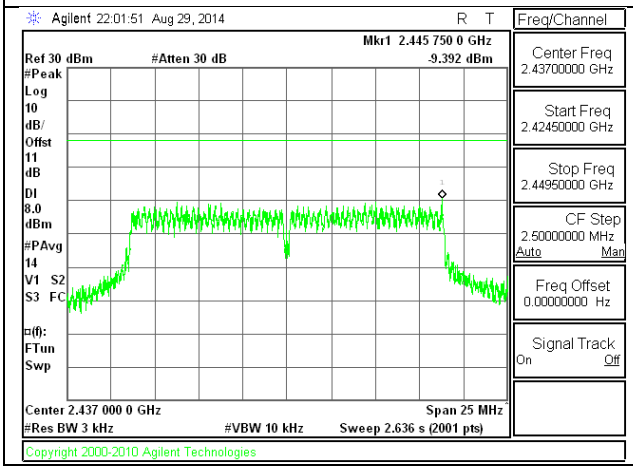
11b HT20 2.4



11g HT20 2.4



11n HT20 2.4



9.6. OUT-OF-BAND EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-210 A8.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required.

TEST PROCEDURE

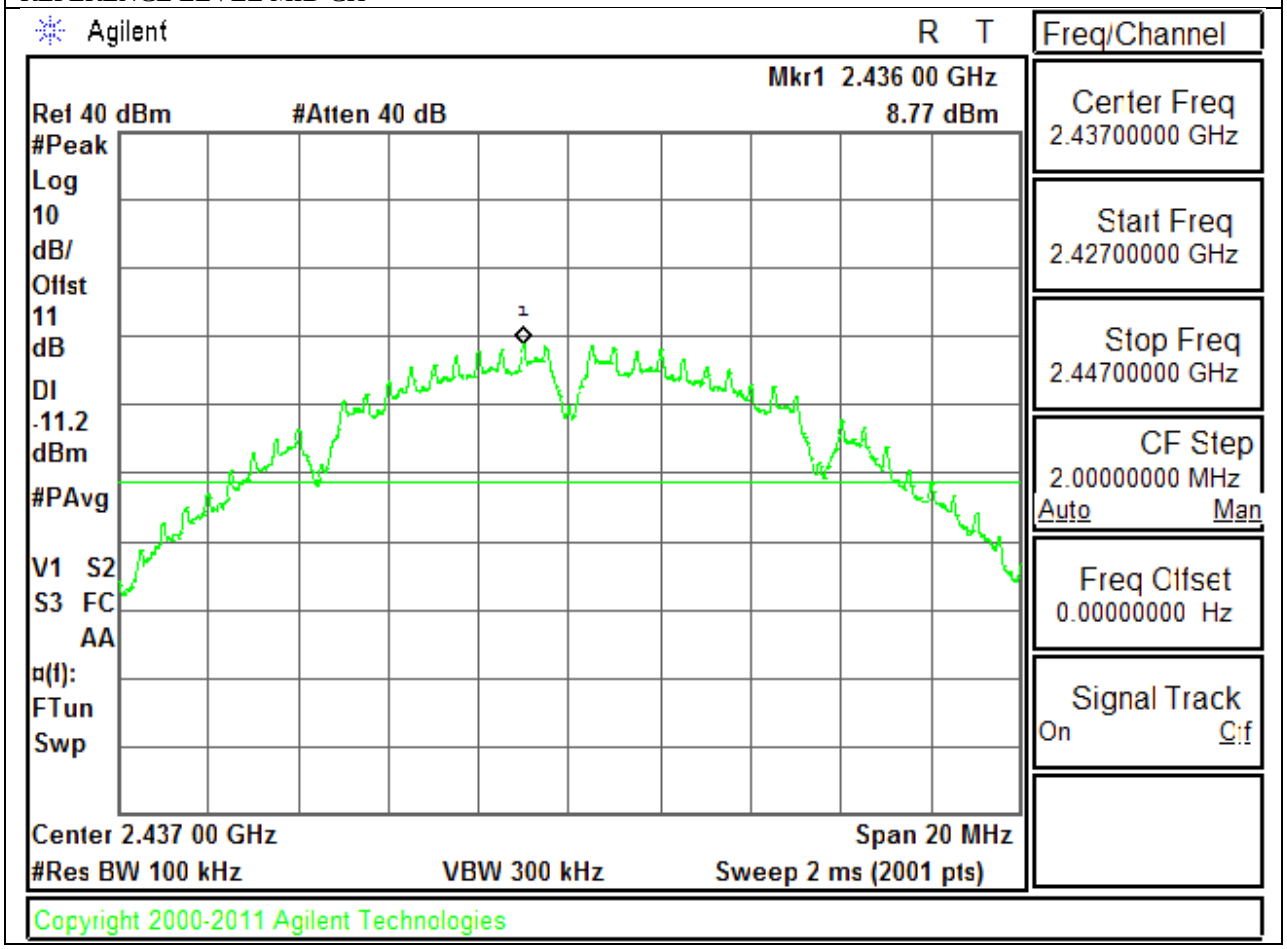
The transmitter output is connected to a spectrum analyzer with RBW = 100 kHz, VBW = 300 kHz, peak detector, and max hold. Measurements utilizing these settings are made of the in-band reference level, bandedge (where measurements to the general radiated limits will not be made) and out-of-band emissions.

RESULTS

9.6.1. 802.11b MODE IN THE 2.4 GHz BAND

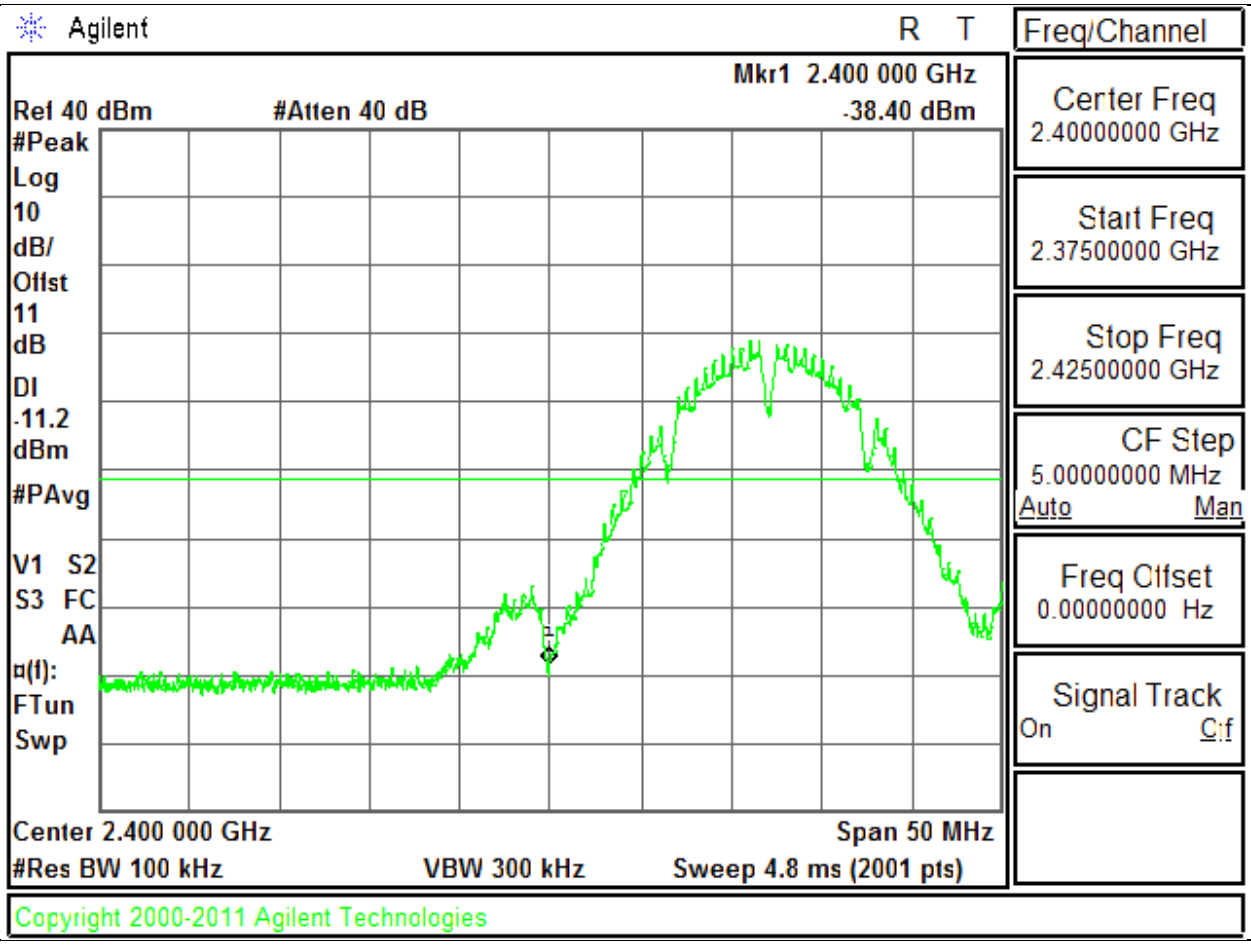
IN-BAND REFERENCE LEVEL

REFERENCE LEVEL MID CH



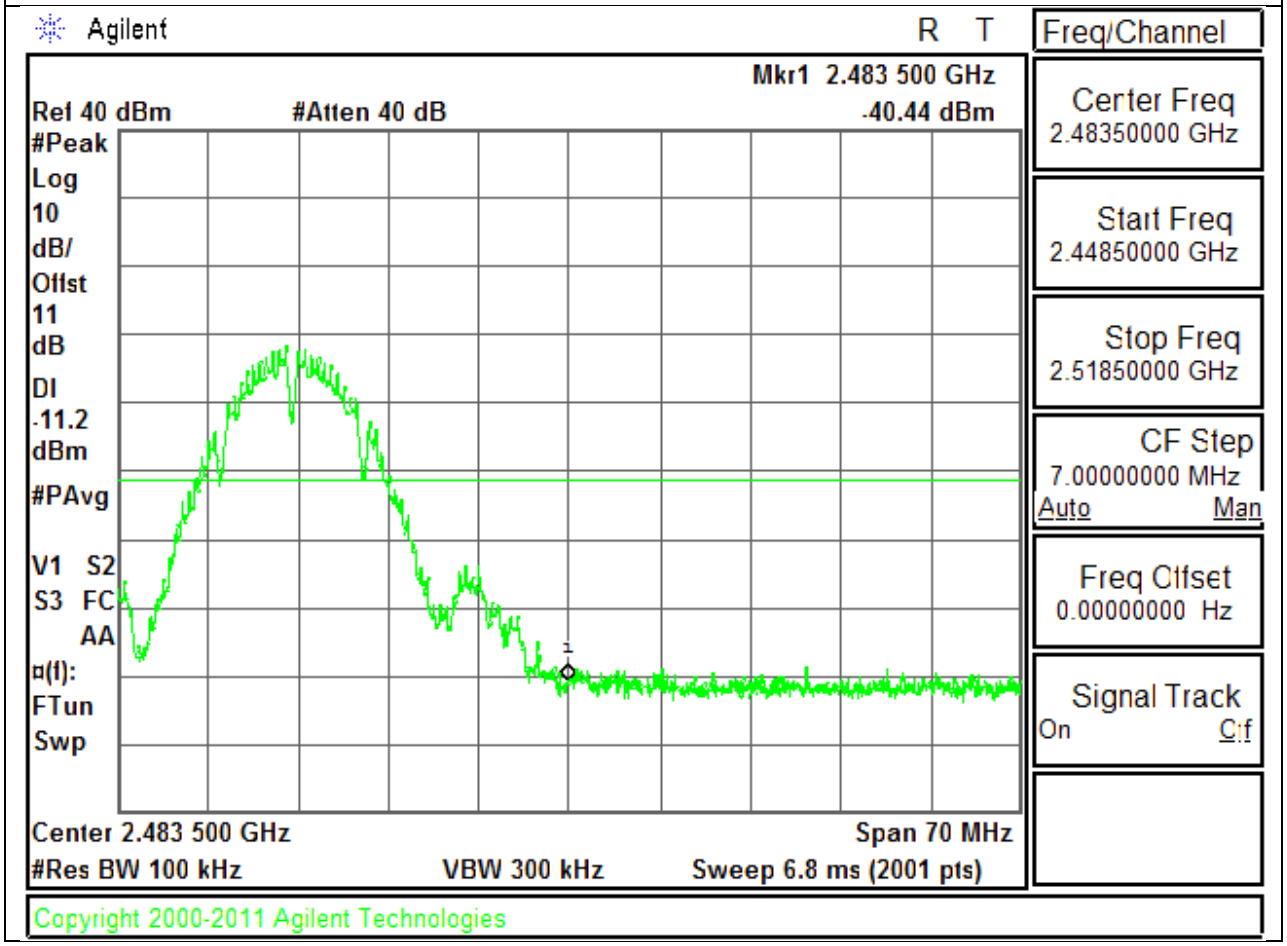
LOW CHANNEL BANDEDGE

AUTHORIZED BAND EDGE LOW CH



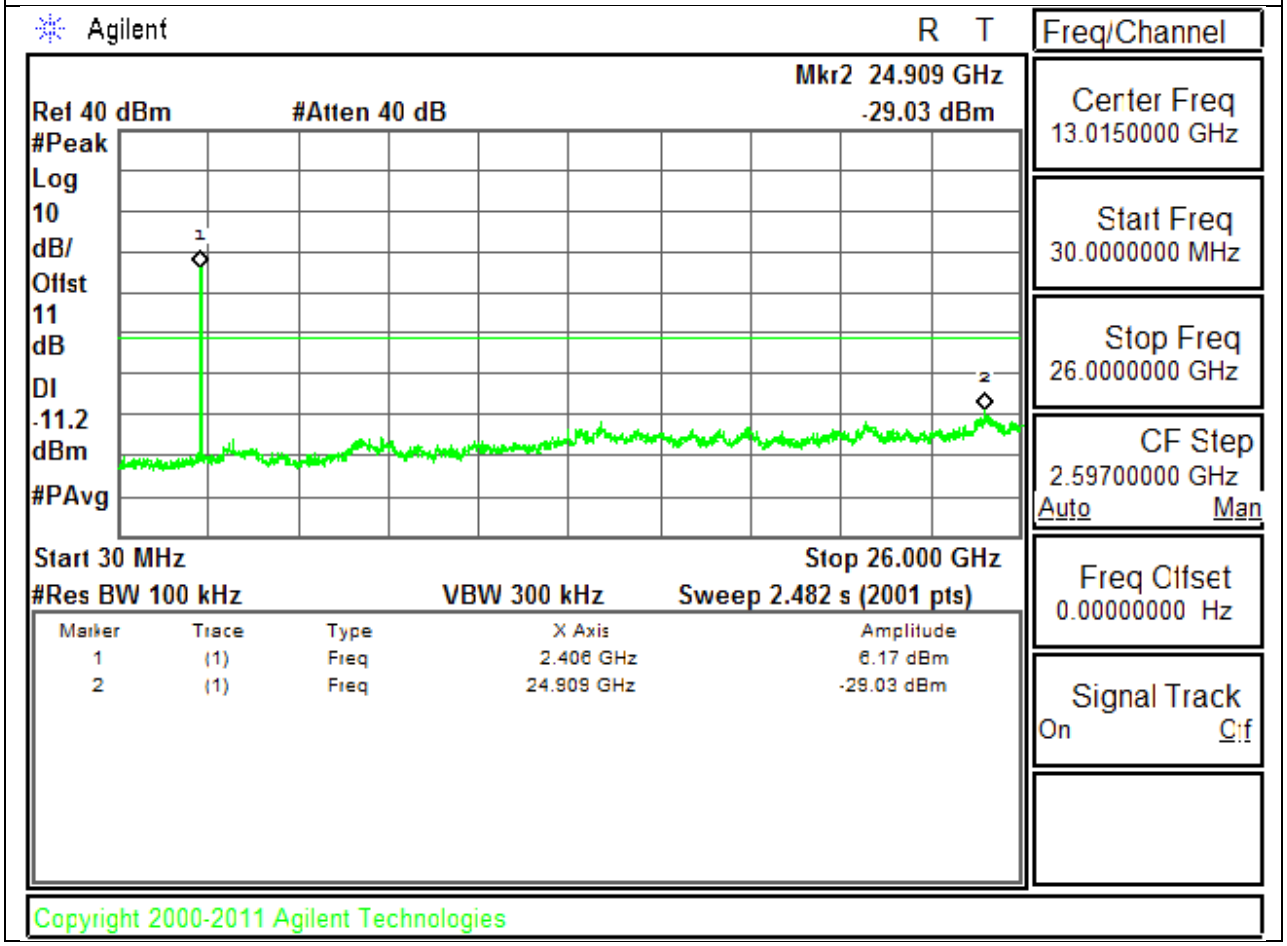
HIGH CHANNEL BANDEDGE

AUTHORIZED BAND EDGE HIGH CH

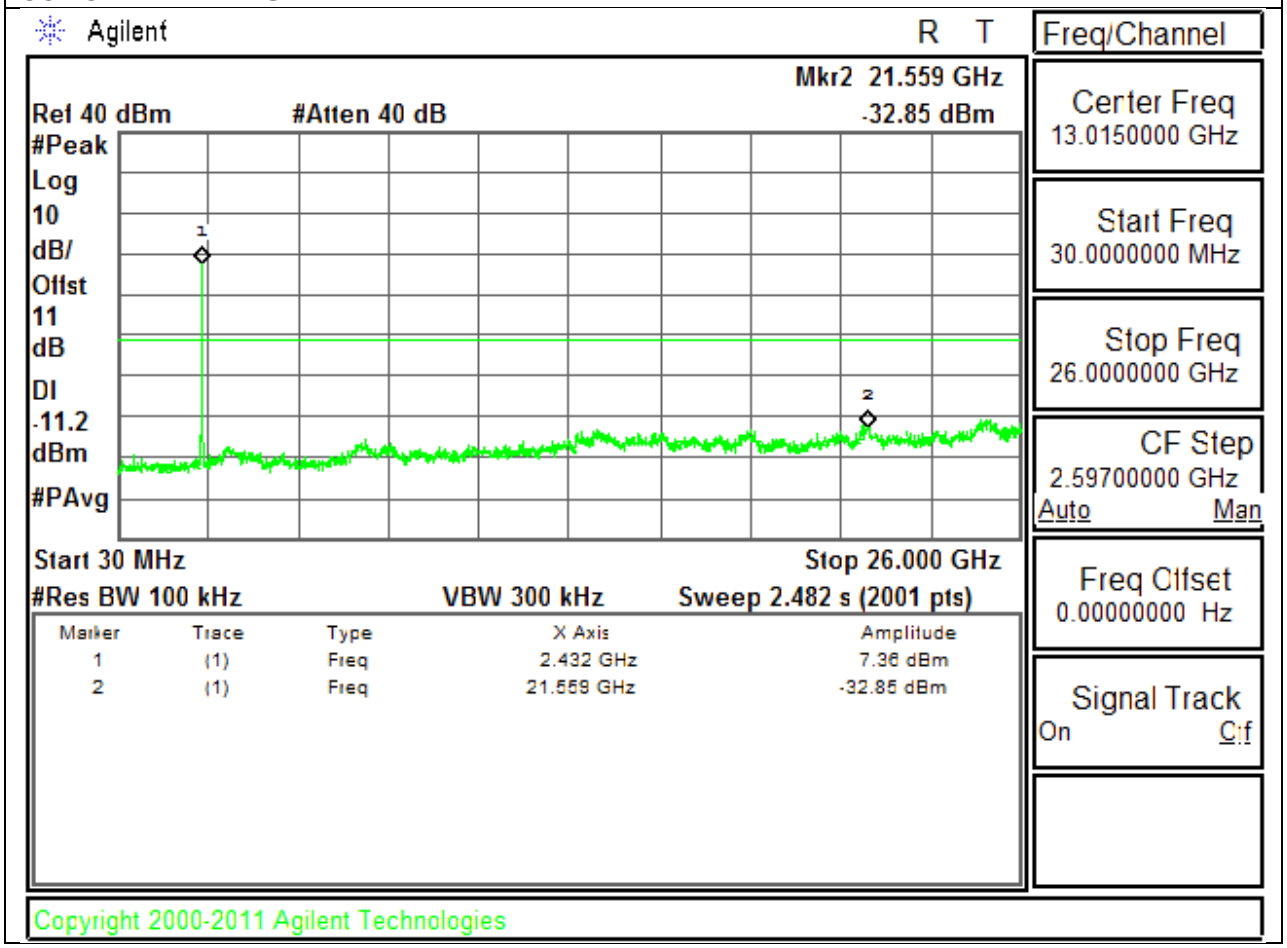


OUT-OF-BAND EMISSIONS

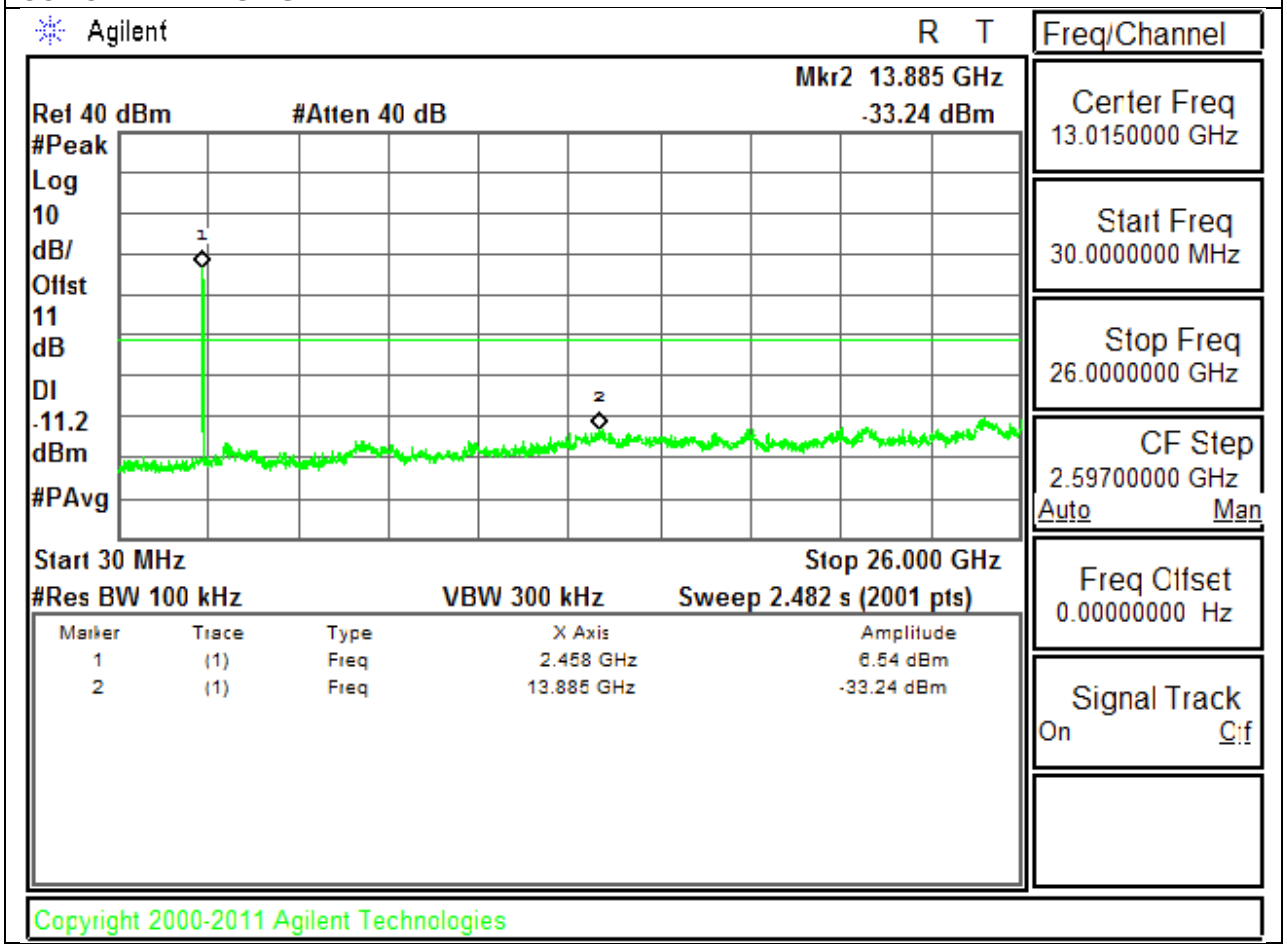
OUT OF BAND LOW CH



OUT OF BAND MID CH



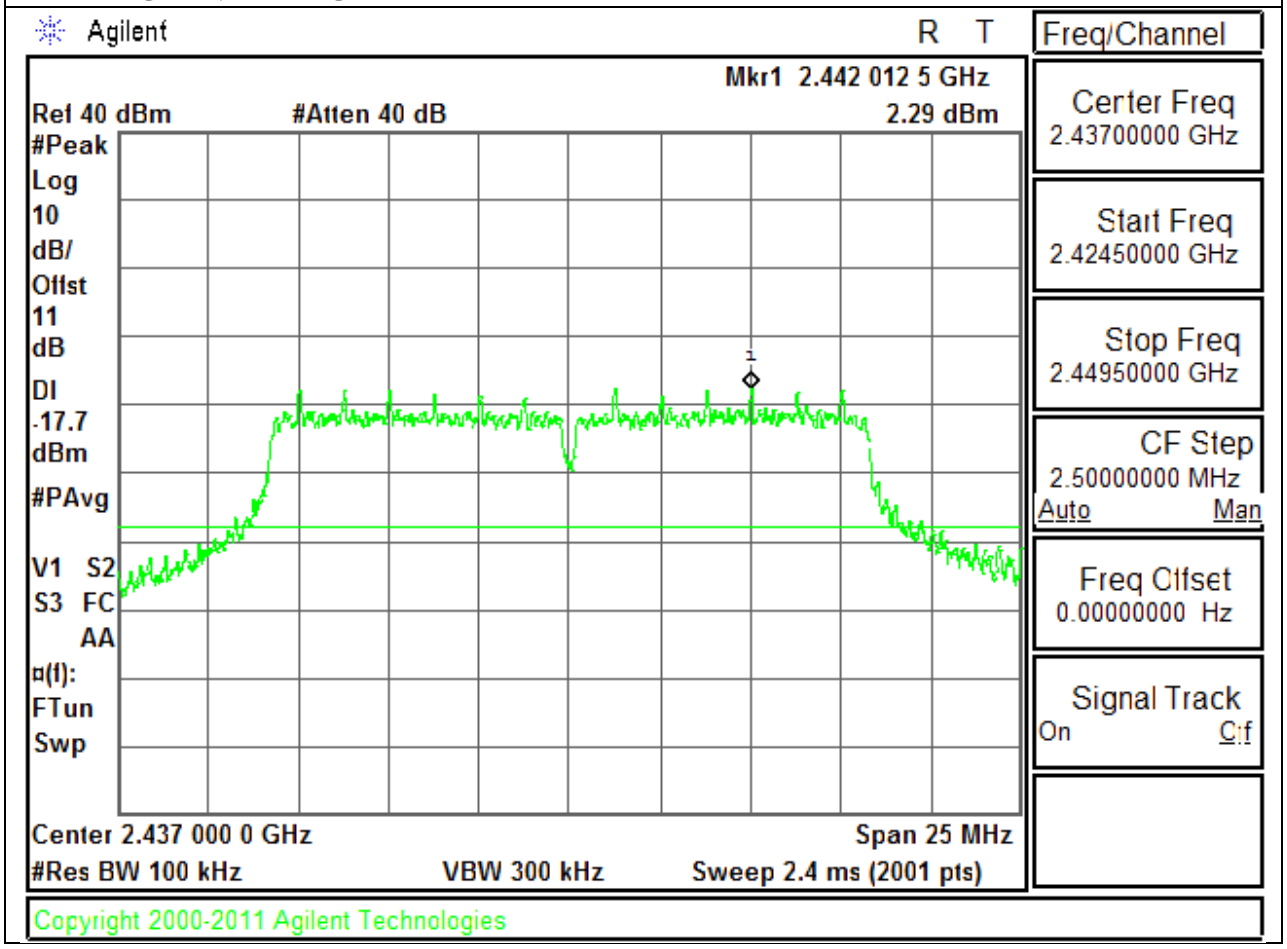
OUT OF BAND HIGH CH



9.6.2. 802.11g MODE IN THE 2.4 GHz BAND

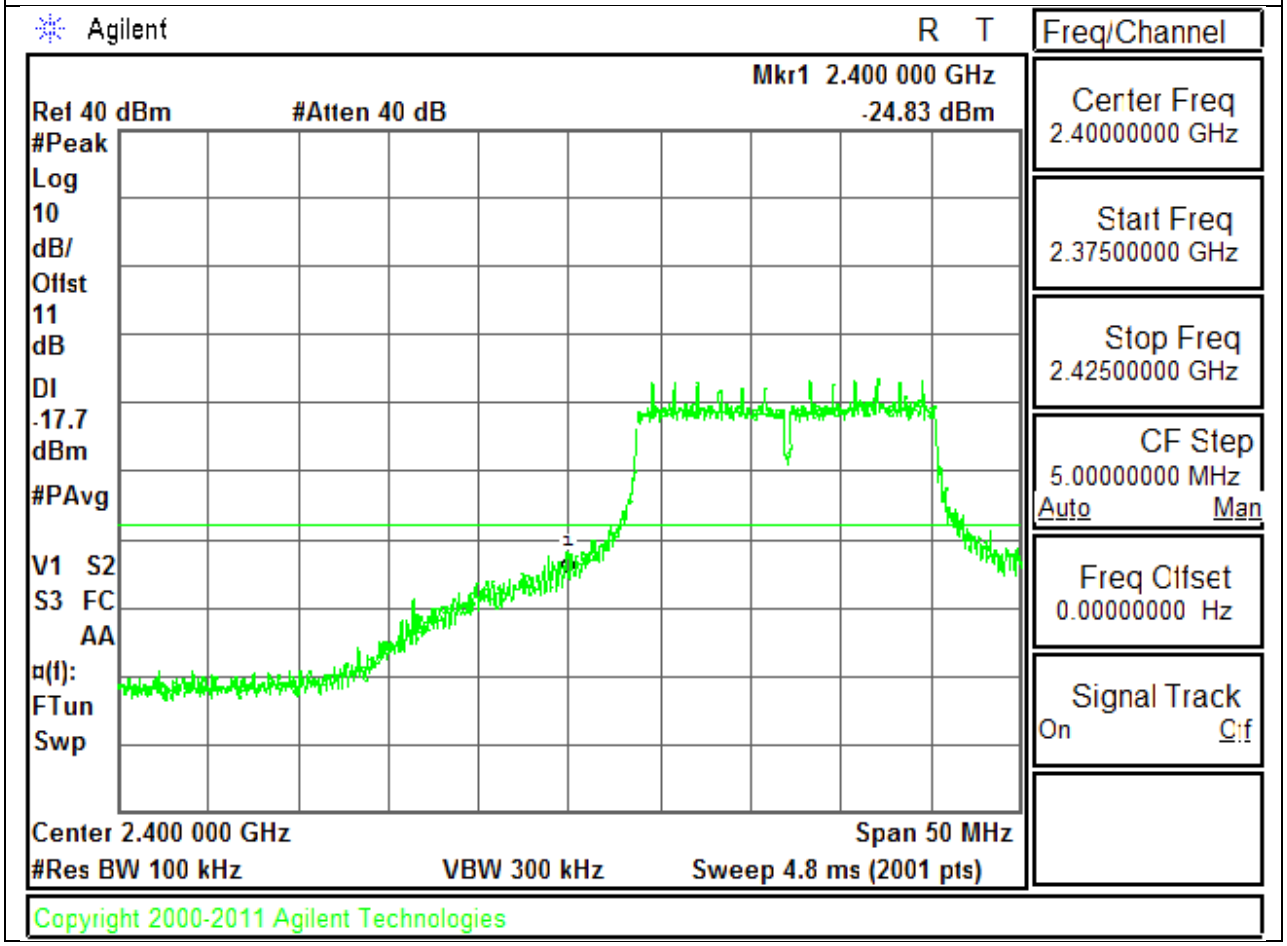
IN-BAND REFERENCE LEVEL

REFERENCE LEVEL MID CH



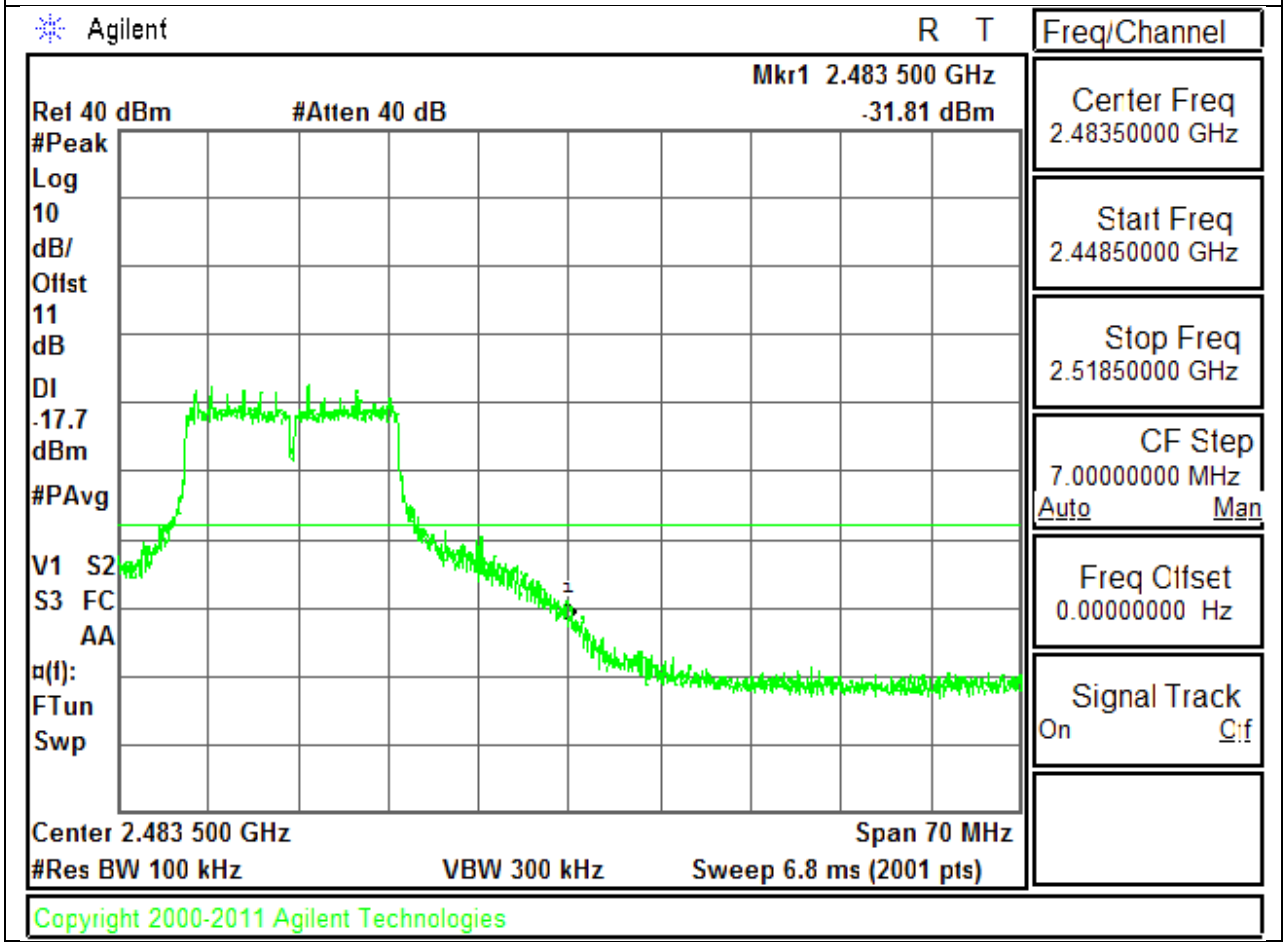
LOW CHANNEL BANDEDGE

AUTHORIZED BAND EDGE LOW CH



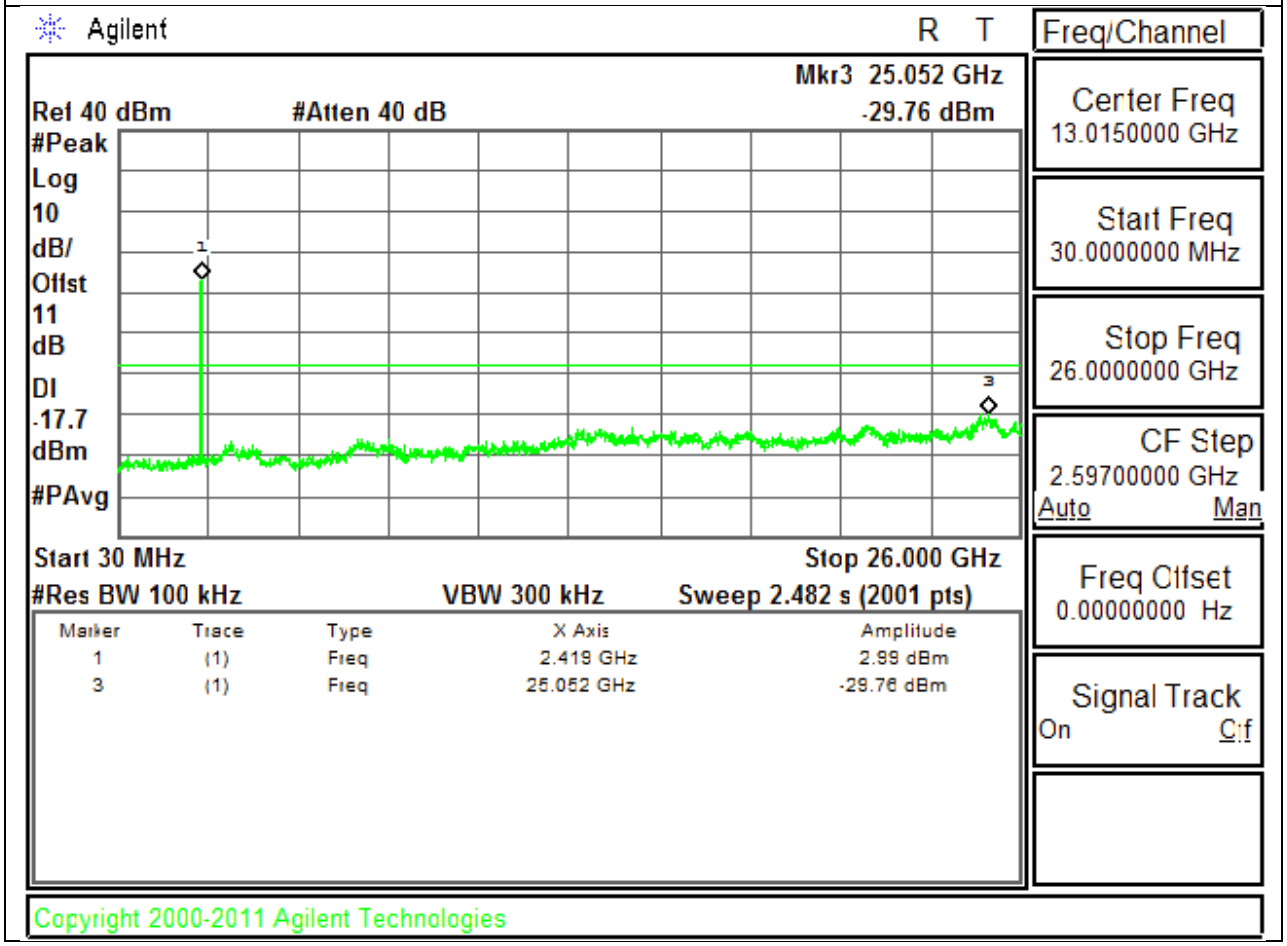
HIGH CHANNEL BANDEDGE

AUTHORIZED BAND EDGE HIGH CH

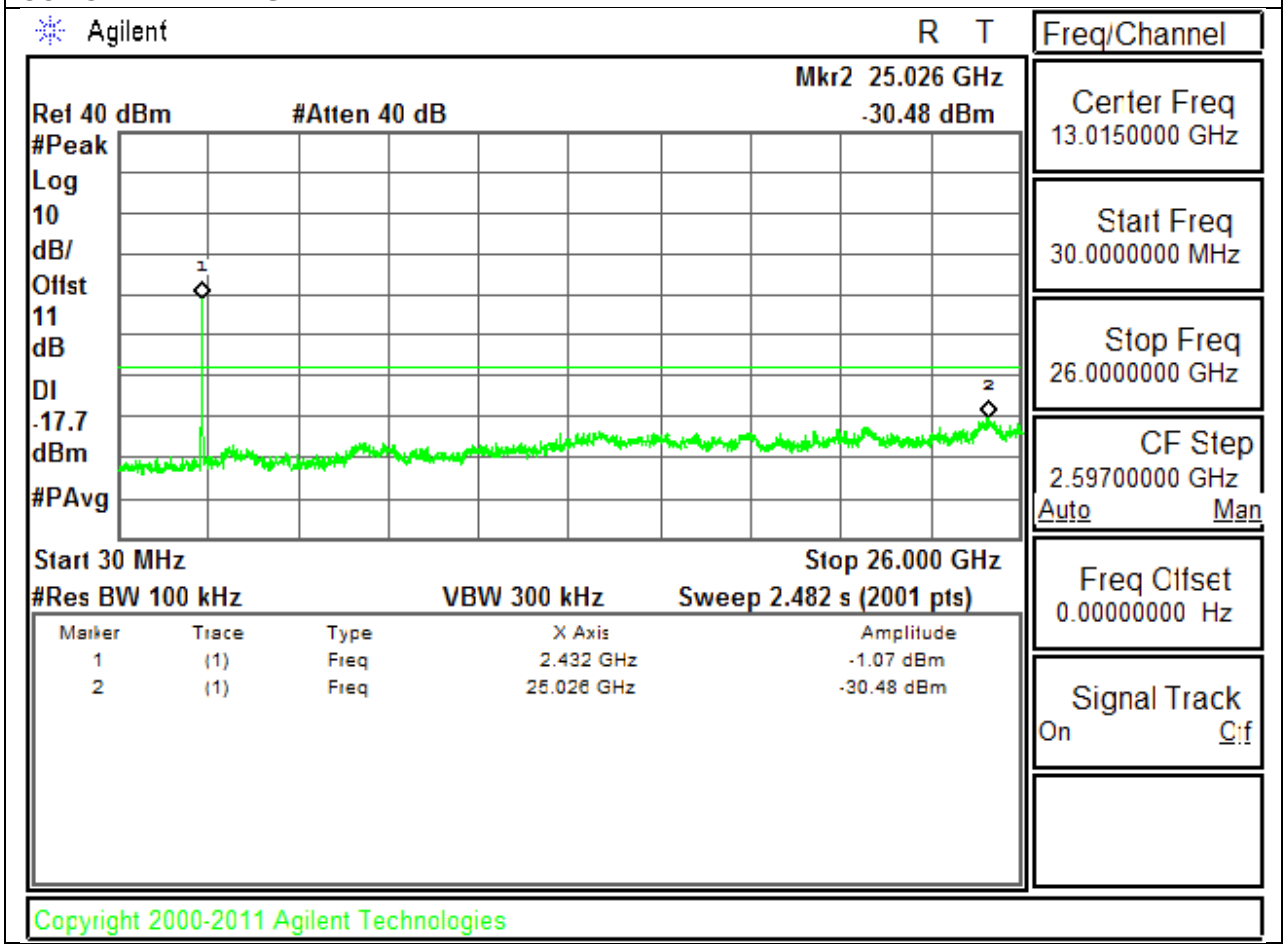


OUT-OF-BAND EMISSIONS

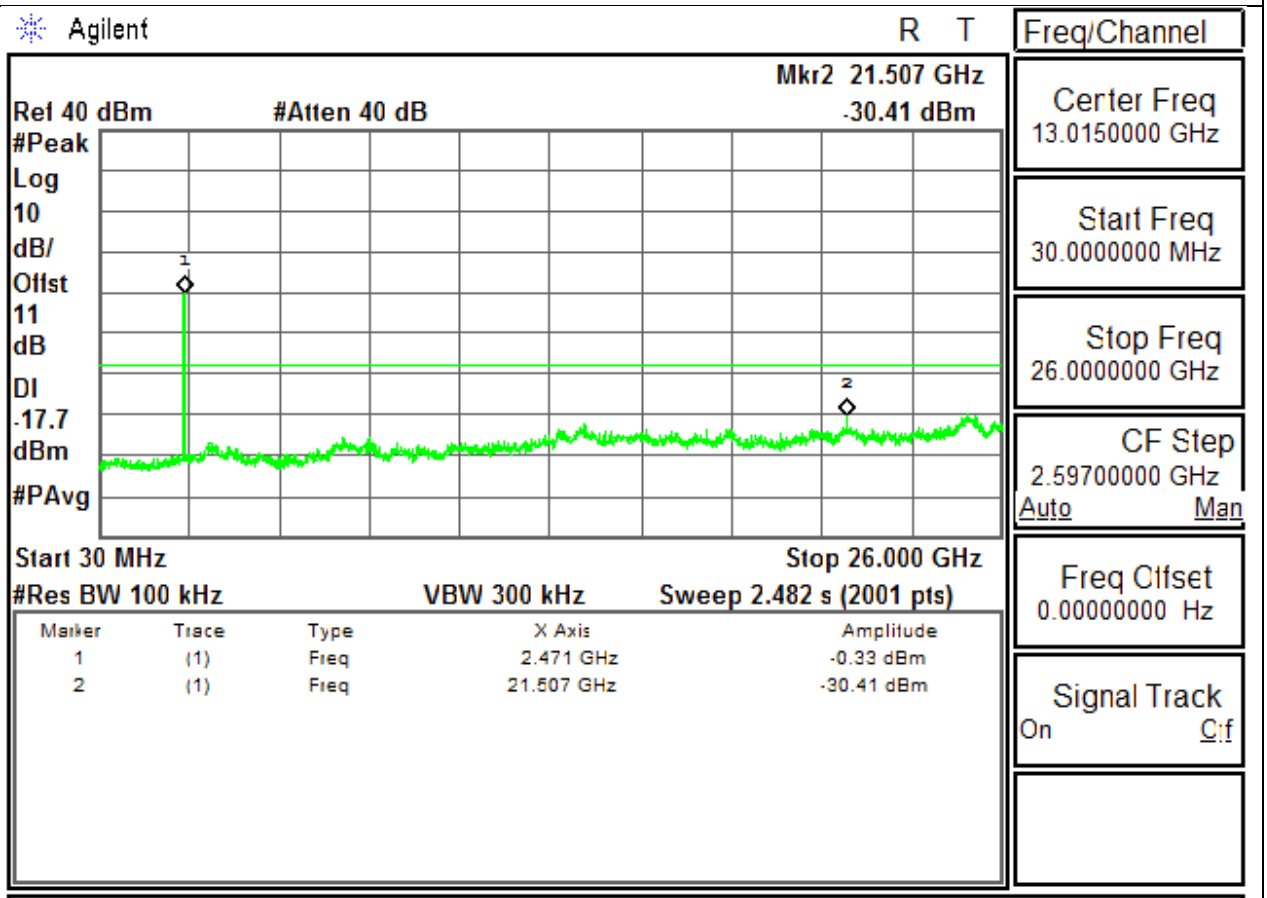
OUT OF BAND LOW CH



OUT OF BAND MID CH



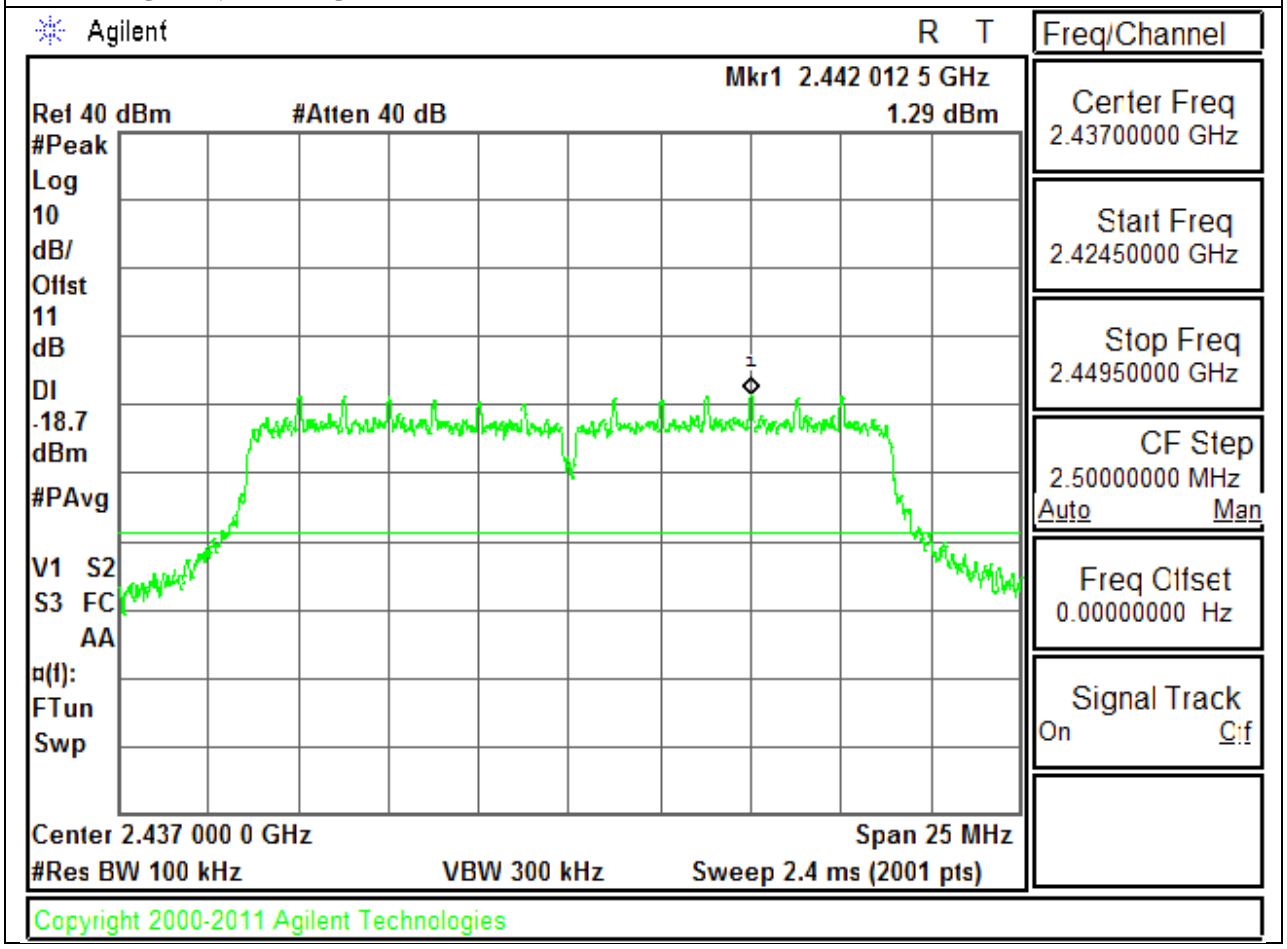
OUT OF BAND HIGH CH



9.6.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

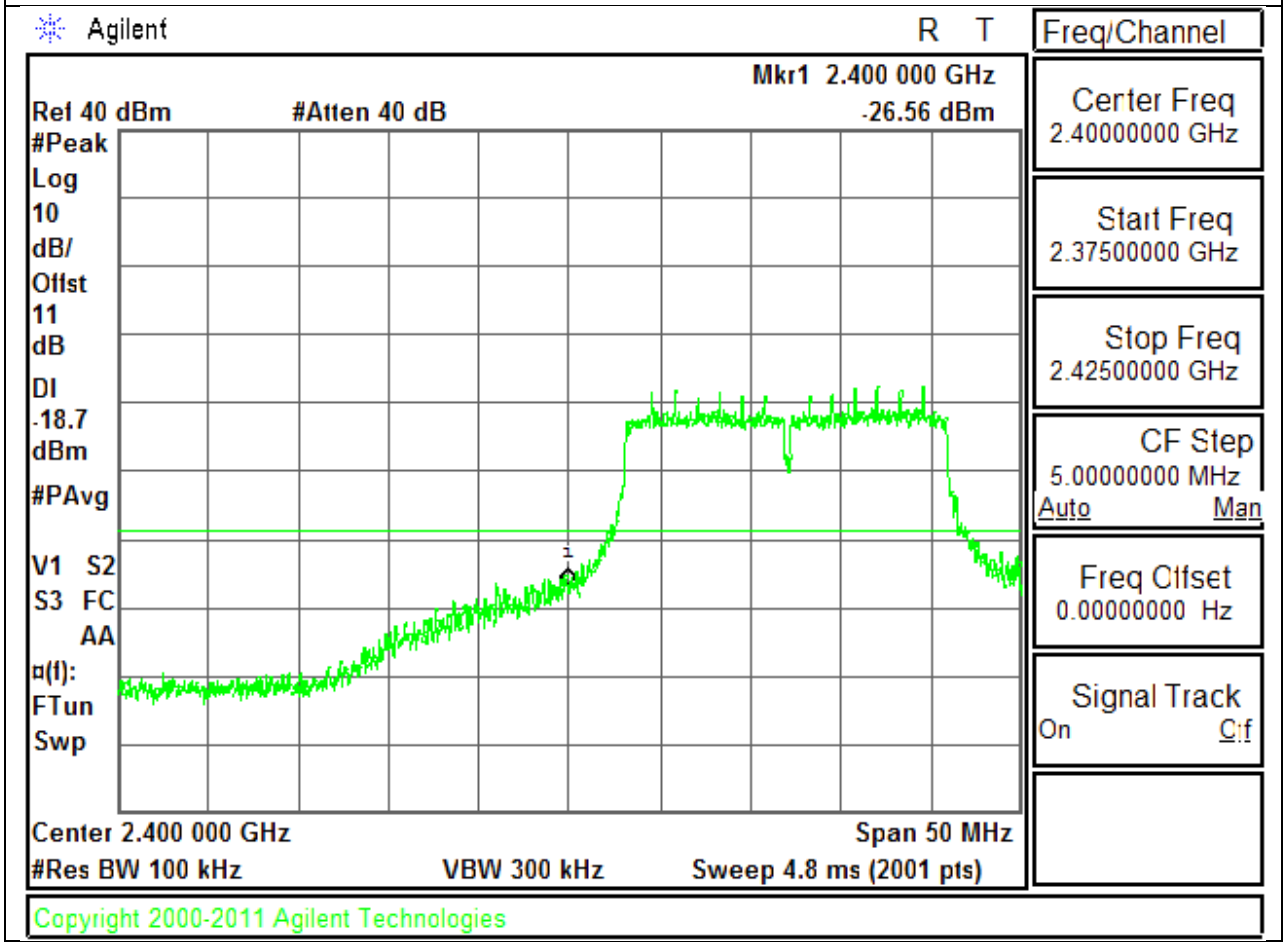
IN-BAND REFERENCE LEVEL

REFERENCE LEVEL MID CH



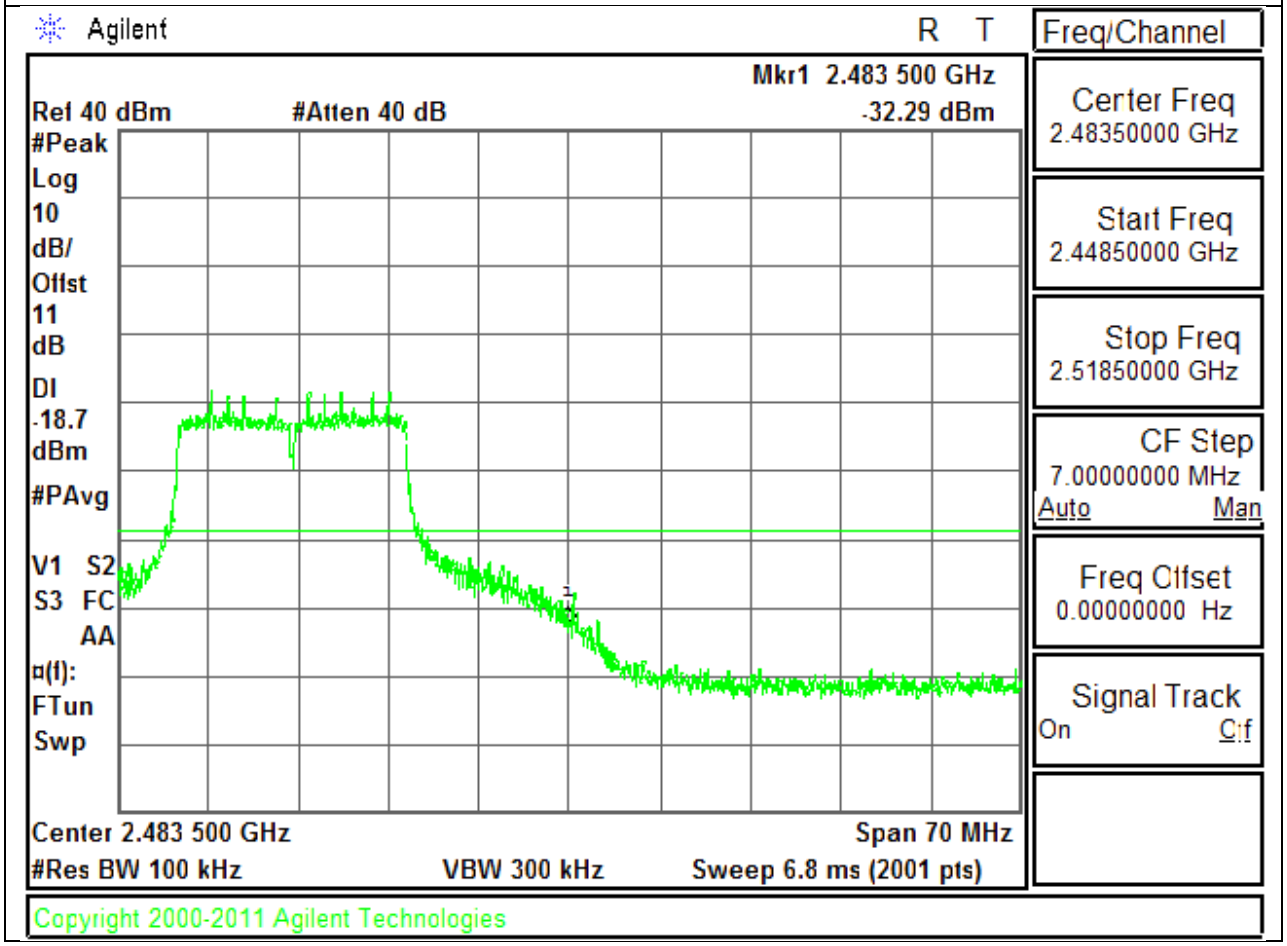
LOW CHANNEL BANDEDGE

AUTHORIZED BAND EDGE LOW CH



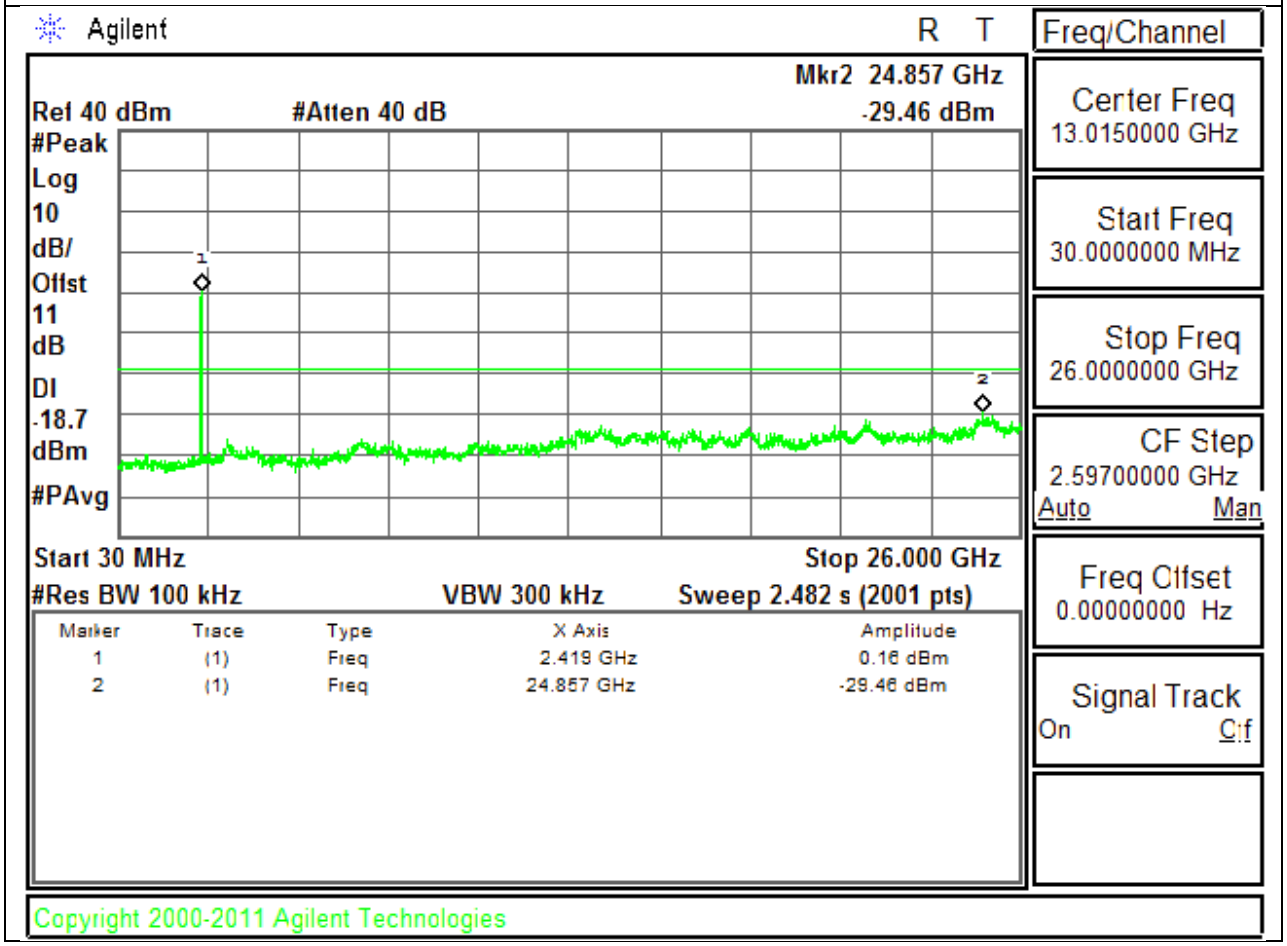
HIGH CHANNEL BANDEDGE

AUTHORIZED BAND EDGE HIGH CH

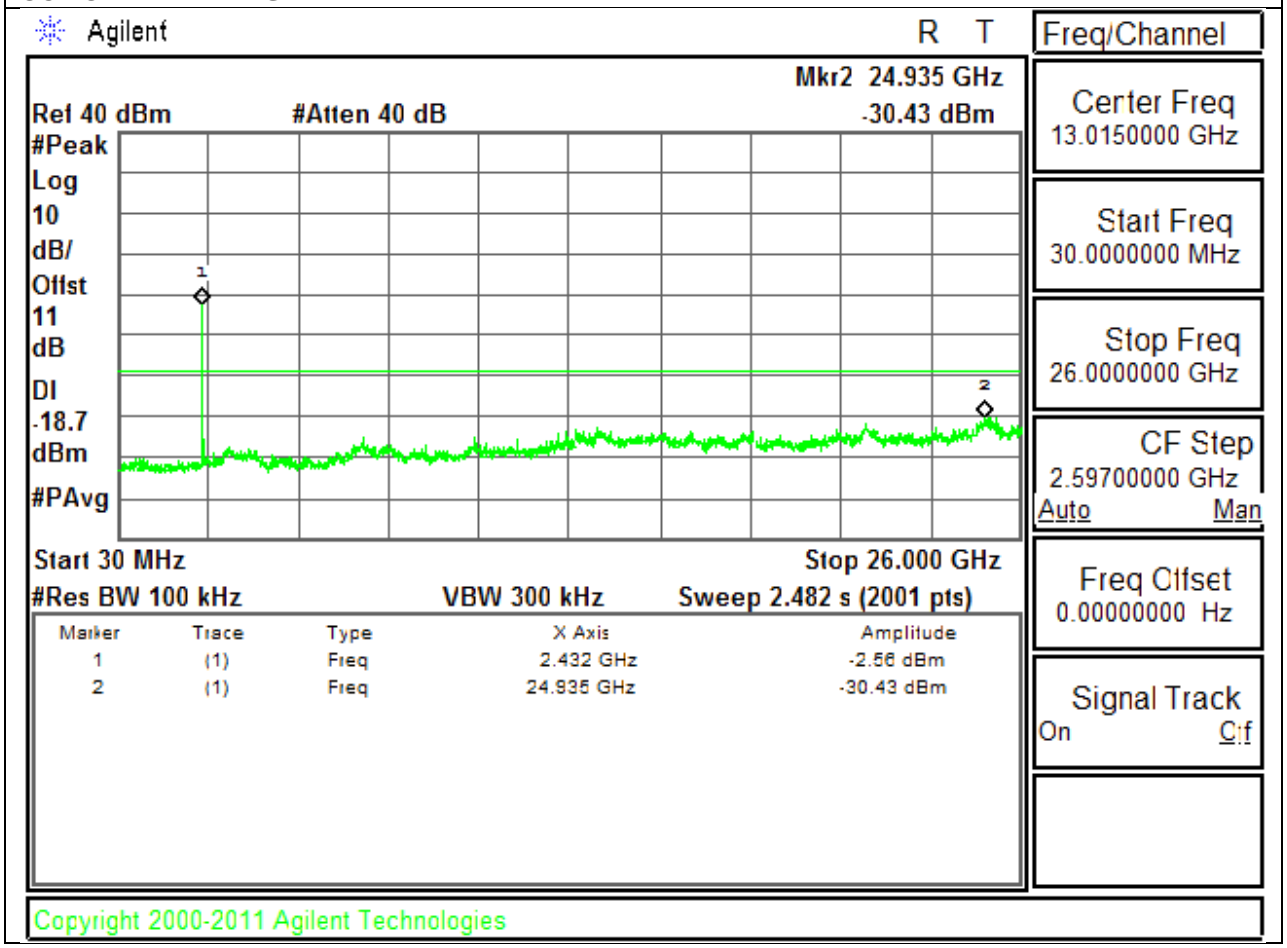


OUT-OF-BAND EMISSIONS

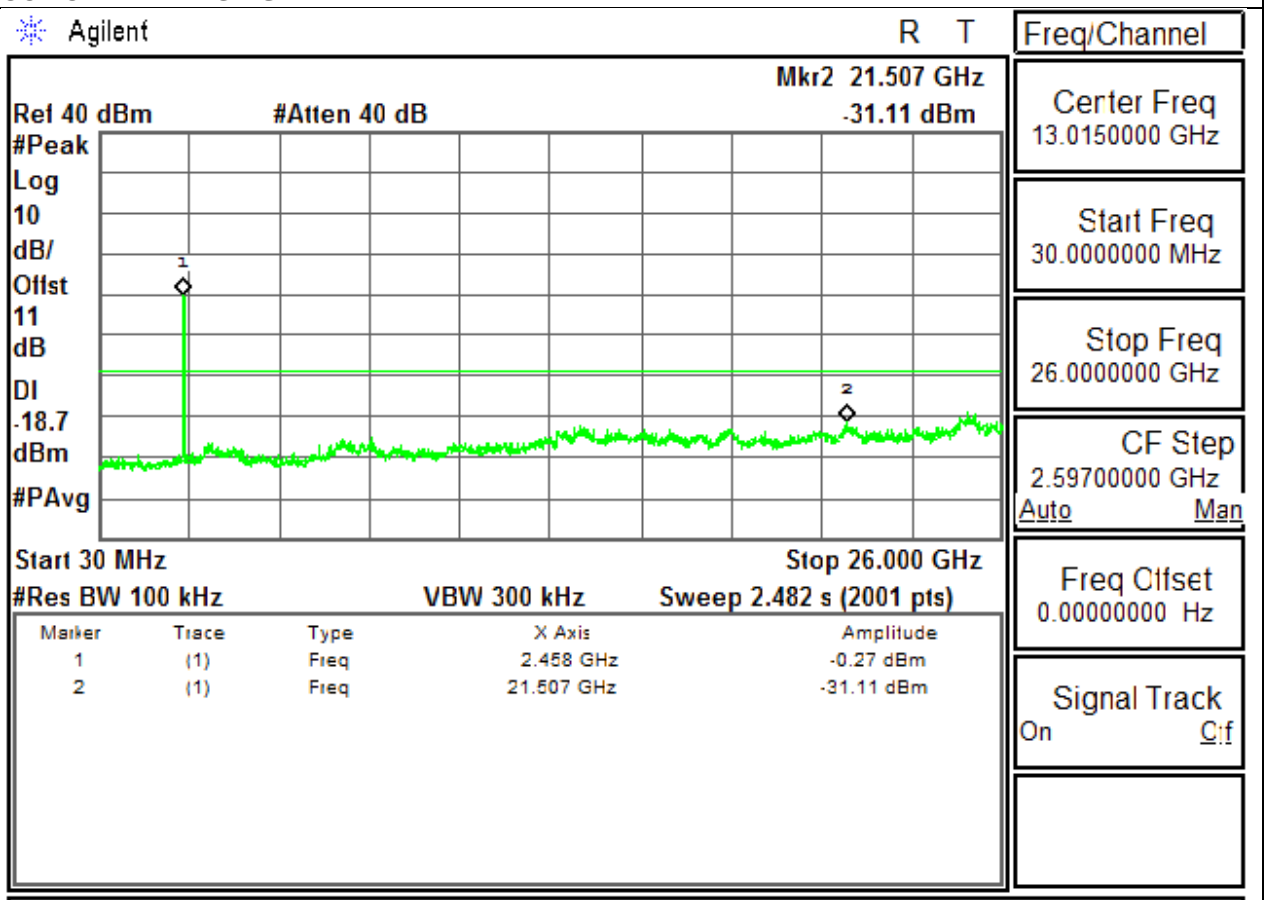
OUT OF BAND LOW CH



OUT OF BAND MID CH



OUT OF BAND HIGH CH



10. RADIATED TEST RESULTS

10.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-210 Clause 2.6 (Transmitter)

IC RSS-GEN Clause 6 (Receiver)

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.

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 for average measurements. Duty cycle factor= 10log (1/x) For this sample B mode = 0dB (duty cycle >98%); G mode = 0.32dB; N mode = 0.36dB.

The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

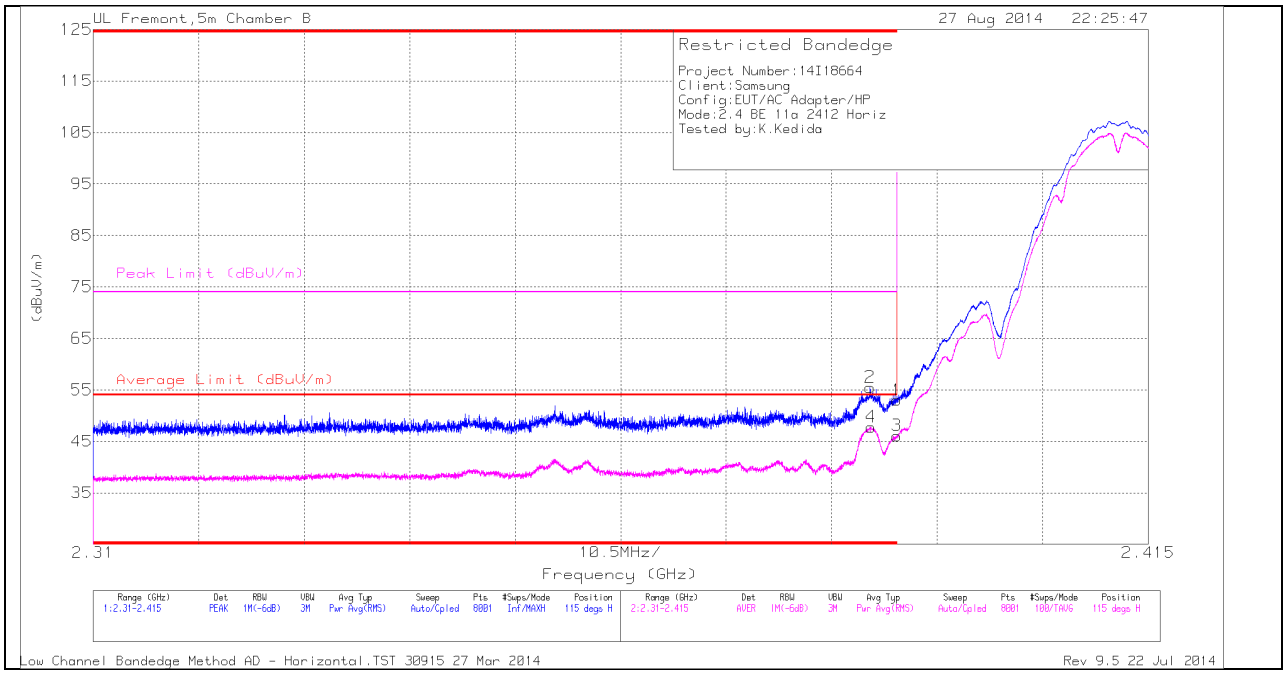
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

10.2. TRANSMITTER ABOVE 1 GHz

10.2.1. TX ABOVE 1 GHz 802.11b MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

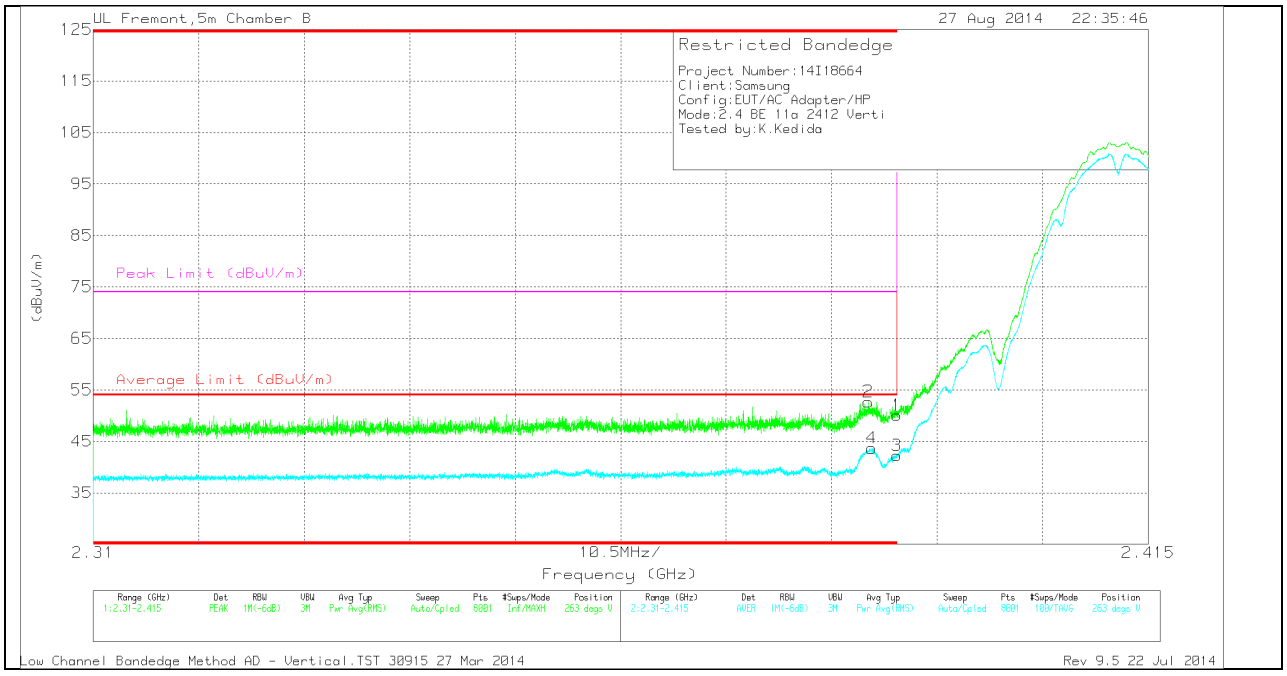
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Flt r/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	* 2.39	43.59	PK	32.1	-22.7	0	52.99	-	-	74	-21.01	115	190	H
2	* 2.387	46.09	PK	32.1	-22.7	0	55.49	-	-	74	-18.51	115	190	H
3	* 2.39	36.71	RMS	32.1	-22.7	0	46.11	54	-7.89	-	-	115	190	H
4	* 2.387	38.4	RMS	32.1	-22.7	0	47.8	54	-6.2	-	-	115	190	H

VERTICAL PEAK AND AVERAGE PLOT

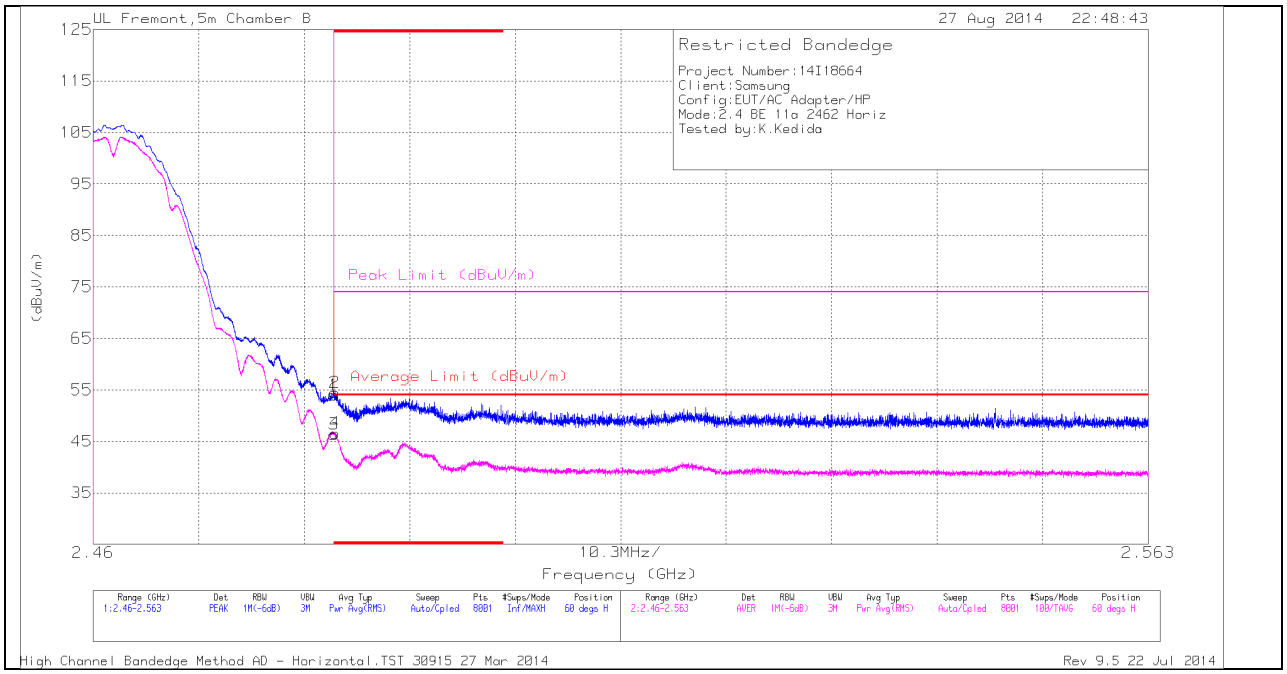


VERTICAL DATA

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	* 2.39	40.67	PK	32.1	-22.7	50.07	-	-	74	-23.93	263	192	V
2	* 2.387	43.29	PK	32.1	-22.7	52.69	-	-	74	-21.31	263	192	V
3	* 2.39	32.87	RMS	32.1	-22.7	42.27	54	-11.73	-	-	263	192	V
4	* 2.387	34.28	RMS	32.1	-22.7	43.68	54	-10.32	-	-	263	192	V

AUTHORIZED BANDEDGE (HIGH CHANNEL)

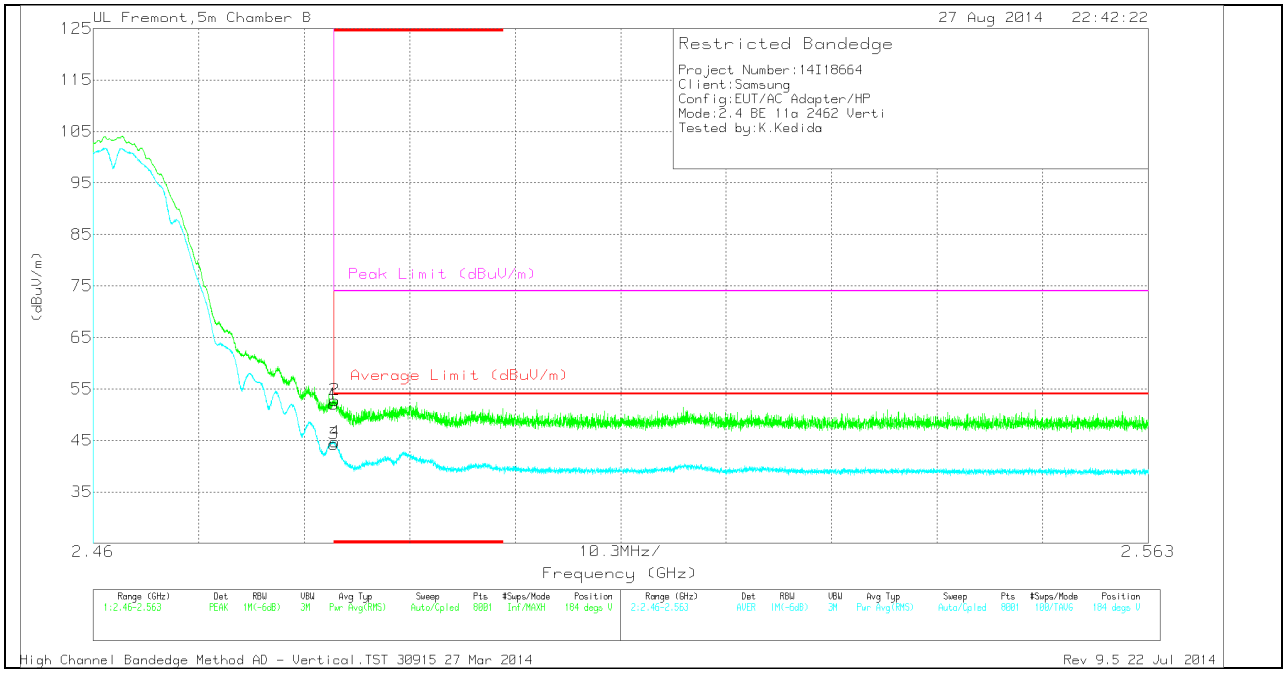
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	44.17	PK	32.4	-22.6	0	53.97	-	-	74	-20.03	60	277	H
2	* 2.484	44.68	PK	32.4	-22.6	0	54.48	-	-	74	-19.52	60	277	H
3	* 2.484	36.56	RMS	32.4	-22.6	0	46.36	54	-7.64	-	-	60	277	H
4	* 2.484	36.78	RMS	32.4	-22.6	0	46.58	54	-7.42	-	-	60	277	H

VERTICAL PEAK AND AVERAGE PLOT

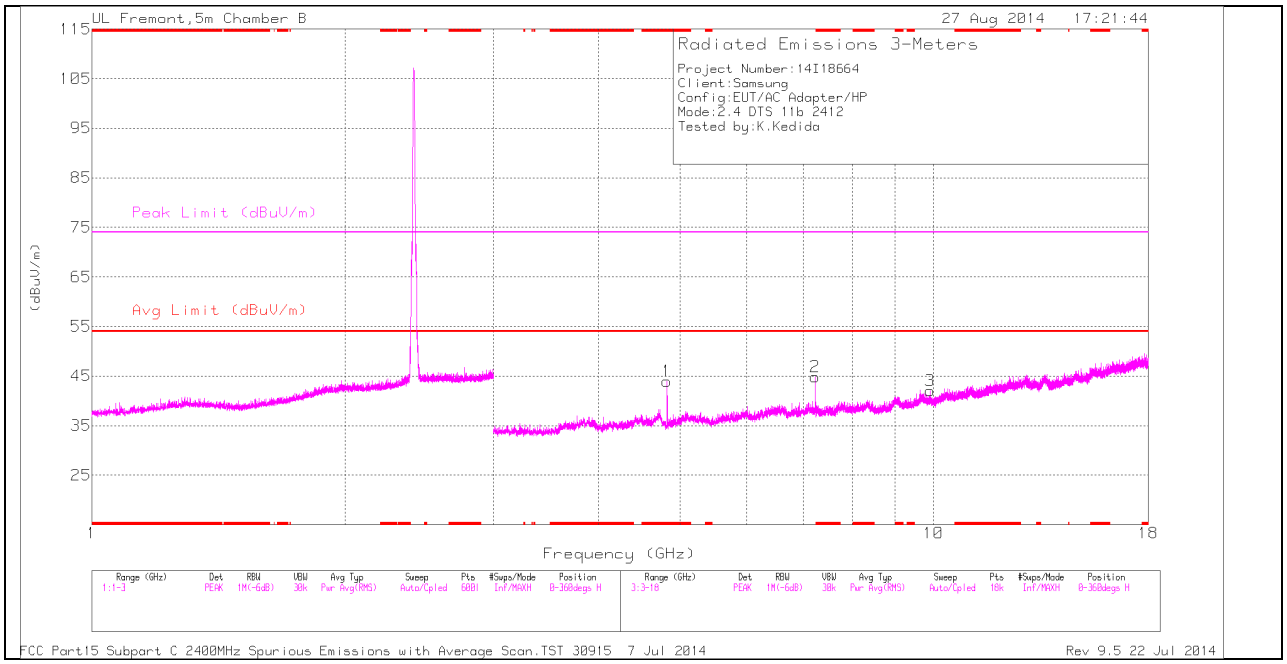


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	42.24	PK	32.4	-22.6	0	52.04	-	-	74	-21.96	184	284	V
2	* 2.484	43.03	PK	32.4	-22.6	0	52.83	-	-	74	-21.17	184	284	V
3	* 2.484	34.49	RMS	32.4	-22.6	0	44.29	54	-9.71	-	-	184	284	V
4	* 2.484	34.88	RMS	32.4	-22.6	0	44.68	54	-9.32	-	-	184	284	V

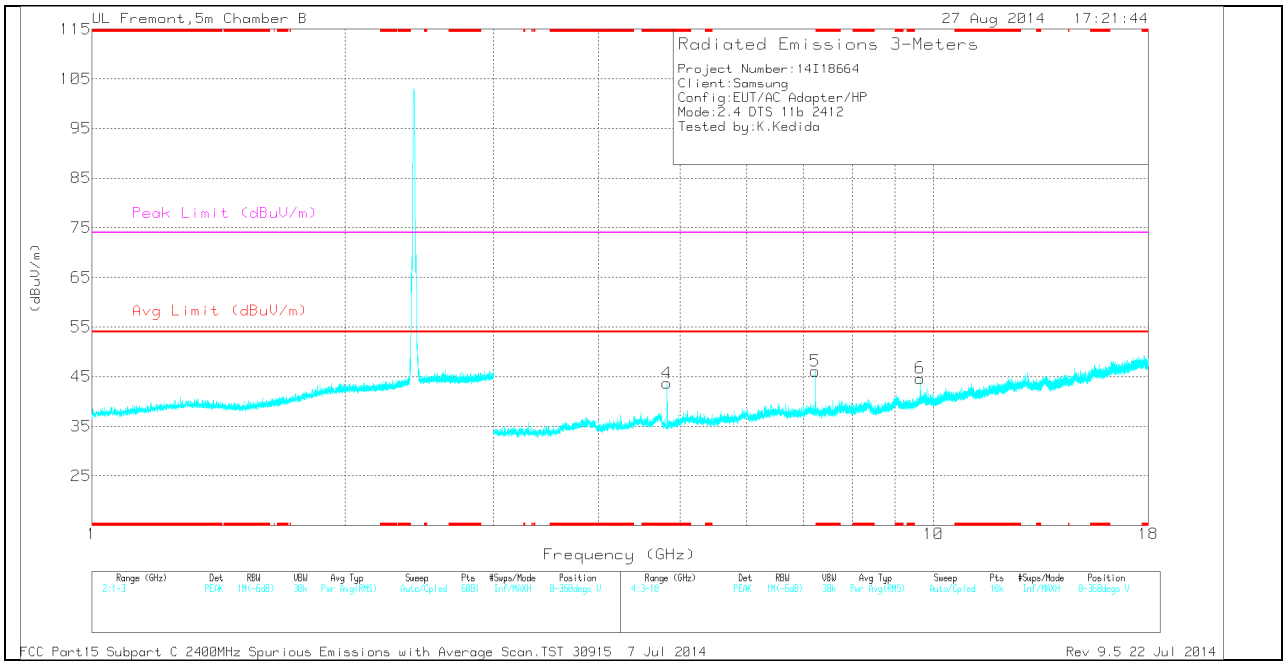
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.824	39.77	PK	34.2	-30	43.97	-	-	74	-30.03	0-360	101	H
4	* 4.824	39.55	PK	34.2	-30	43.75	-	-	74	-30.25	0-360	199	V
2	7.236	37.11	PK	35.6	-27.9	44.81	-	-	-	-	0-360	101	H
5	7.236	38.37	PK	35.6	-27.9	46.07	-	-	-	-	0-360	101	V
6	9.648	32.05	PK	36.8	-24.2	44.65	-	-	-	-	0-360	101	V
3	9.914	29.1	PK	37	-24.1	42	-	-	-	-	0-360	101	H

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)	Azimuth (Degs)	Height (cm)	Polarity
* 4.824	45.82	PK2	34.2	-30	50.02	-	-	74	-23.98	86	193	H
* 4.824	40.15	MAv1	34.2	-30	44.35	54	-9.65	-	-	86	193	H
* 4.824	45.71	PK2	34.2	-30	49.91	-	-	74	-24.09	139	272	V
* 4.824	40.5	MAv1	34.2	-30	44.7	54	-9.3	-	-	139	272	V
7.237	47.01	PK2	35.6	-27.9	54.71	-	-	-	-	306	345	V
7.237	41.35	MAv1	35.6	-27.9	49.05	-	-	-	-	306	345	V

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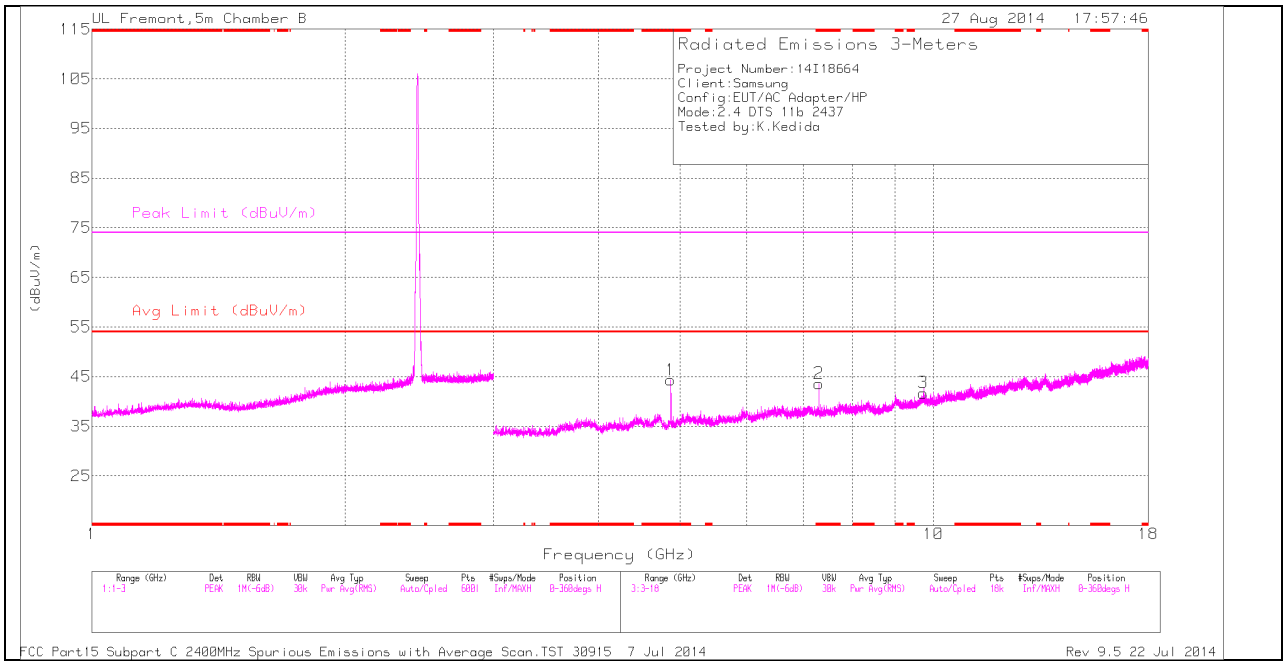
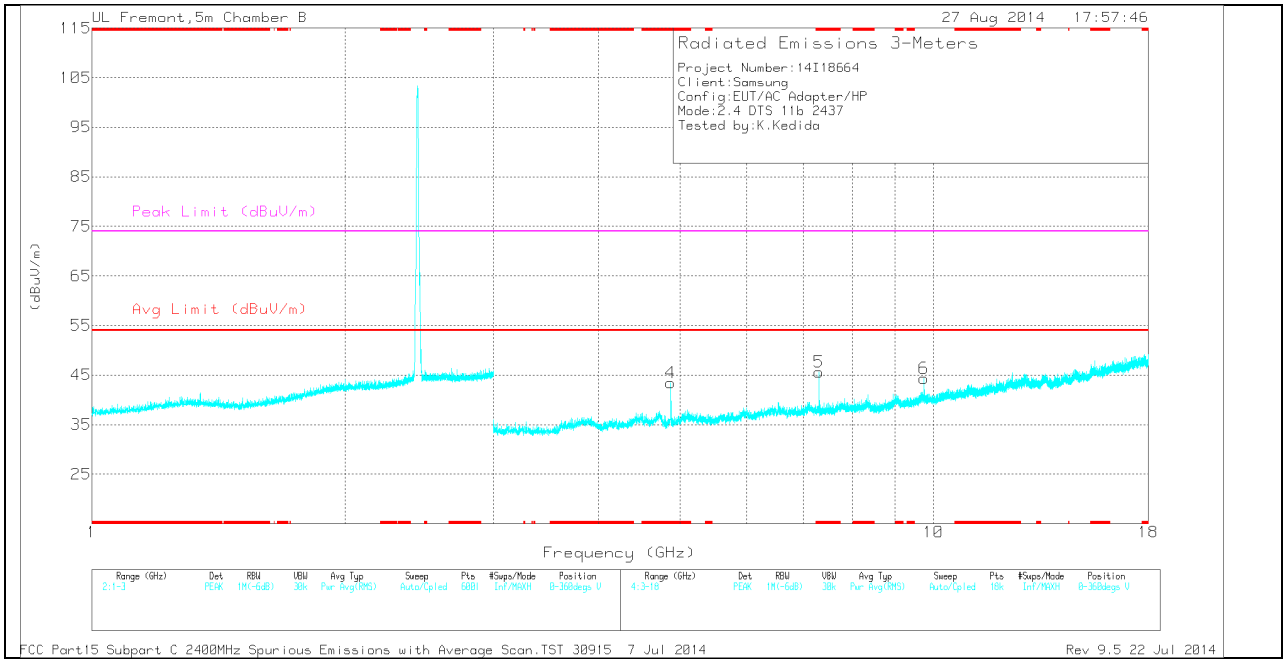
MID CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.874	40.74	PK	34.2	-30.6	44.34	-	-	74	-29.66	0-360	101	H
2	* 7.31	36.43	PK	35.6	-28.4	43.63	-	-	74	-30.37	0-360	199	H
4	* 4.874	39.89	PK	34.2	-30.6	43.49	-	-	74	-30.51	0-360	199	V
5	* 7.311	38.4	PK	35.6	-28.4	45.6	-	-	74	-28.4	0-360	199	V
3	9.718	29.03	PK	36.9	-24.2	41.73	-	-	-	-	0-360	199	H
6	9.748	31.68	PK	36.9	-24.2	44.38	-	-	-	-	0-360	101	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)	Azimuth (Degs)	Height (cm)	Polarity
* 4.874	45.94	PK2	34.2	-30.6	49.54	-	-	74	-24.46	83	113	H
* 4.874	40.25	MAv1	34.2	-30.6	43.85	54	-10.15	-	-	83	113	H
* 7.311	43.96	PK2	35.6	-28.4	51.16	-	-	74	-22.84	229	265	H
* 7.312	37.22	MAv1	35.6	-28.4	44.42	54	-9.58	-	-	229	265	H
* 7.311	46.37	PK2	35.6	-28.4	53.57	-	-	74	-20.43	300	235	V
* 7.31	40.03	MAv1	35.6	-28.4	47.23	54	-6.77	-	-	300	235	V

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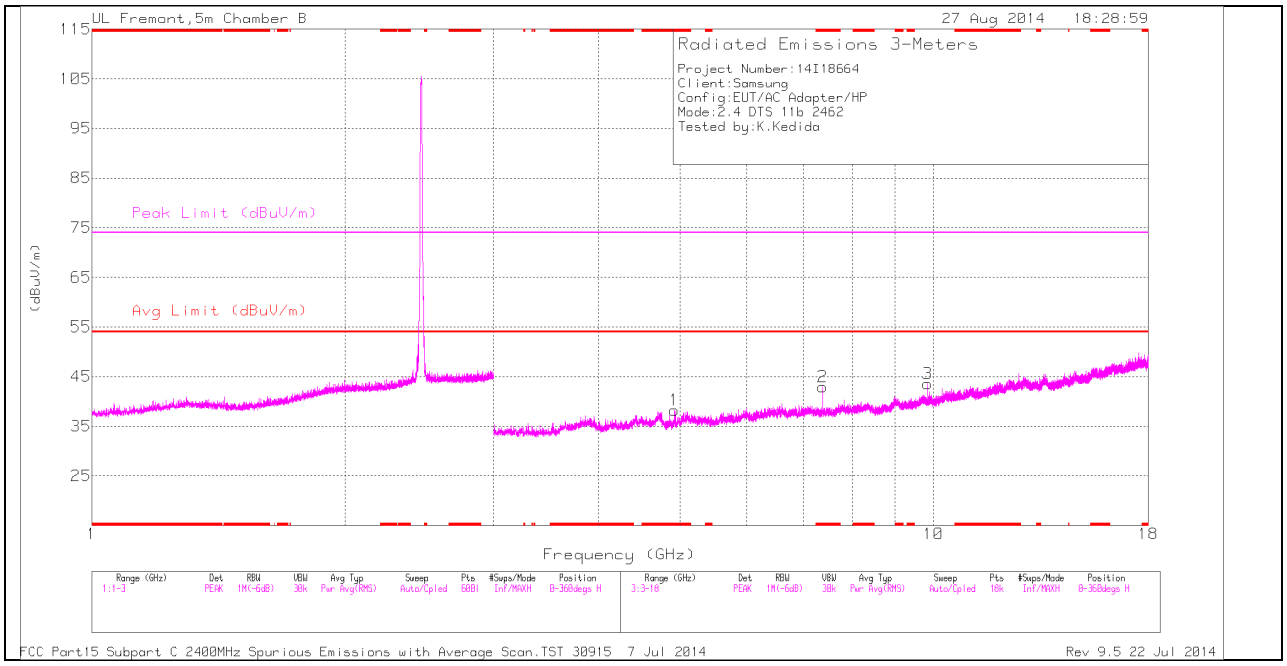
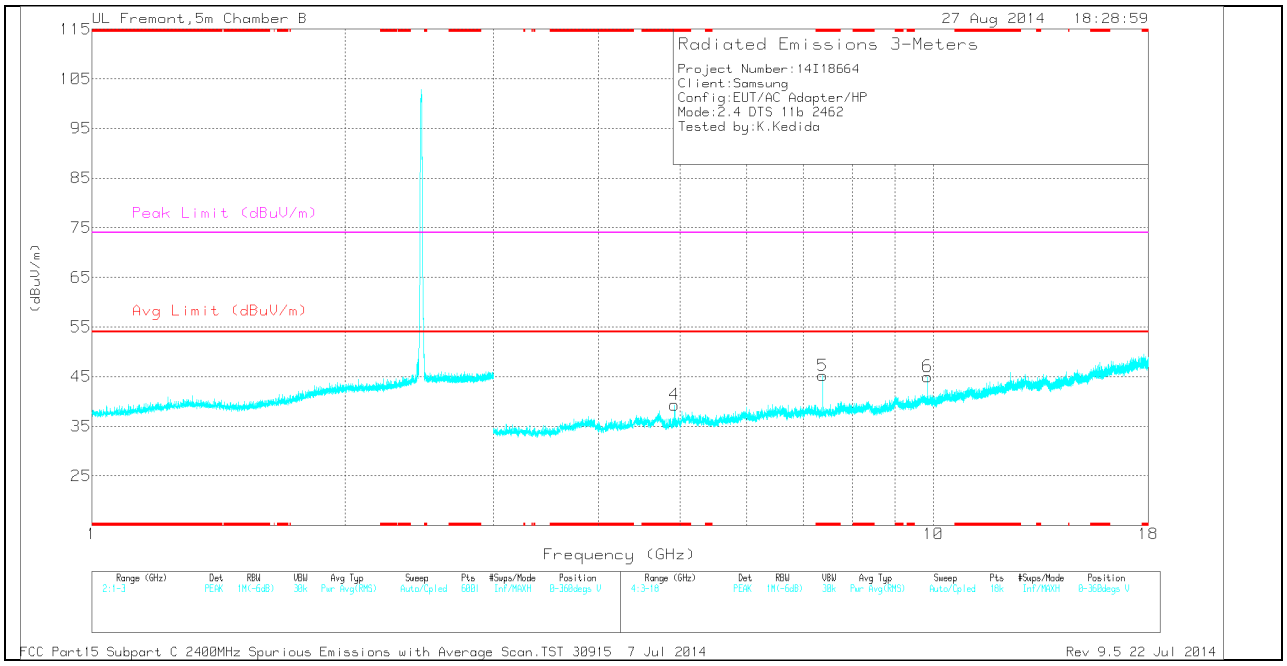
HIGH CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.924	34.96	PK	34.2	-30.9	38.26	-	-	74	-35.74	0-360	101	H
2	* 7.386	35.17	PK	35.6	-27.8	42.97	-	-	74	-31.03	0-360	101	H
4	* 4.924	36.02	PK	34.2	-30.9	39.32	-	-	74	-34.68	0-360	200	V
5	* 7.385	37.42	PK	35.6	-27.8	45.22	-	-	74	-28.78	0-360	101	V
3	9.848	31.12	PK	37	-24.5	43.62	-	-	-	-	0-360	200	H
6	9.848	32.53	PK	37	-24.5	45.03	-	-	-	-	0-360	101	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)	Azimuth (Degs)	Height (cm)	Polarity
* 7.386	45.08	PK2	35.6	-27.8	52.88	-	-	74	-21.12	305	265	V
* 7.385	38.09	MAv1	35.6	-27.8	45.89	54	-8.11	-	-	305	265	V

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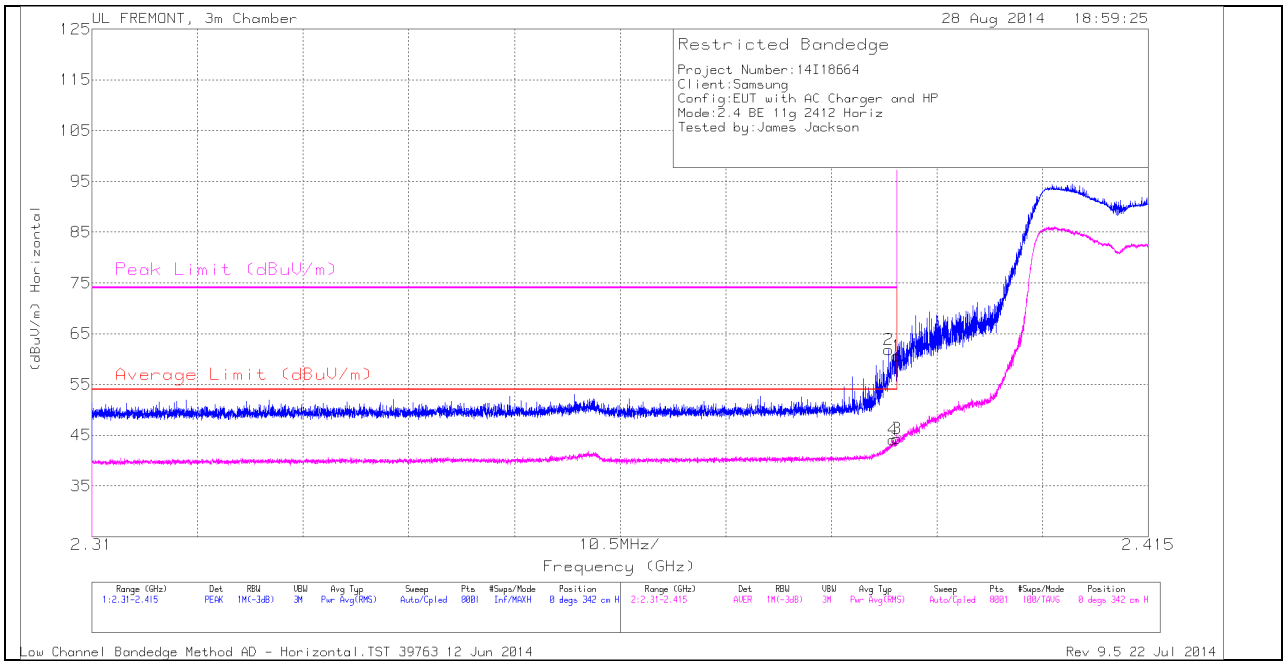
10.2.2. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

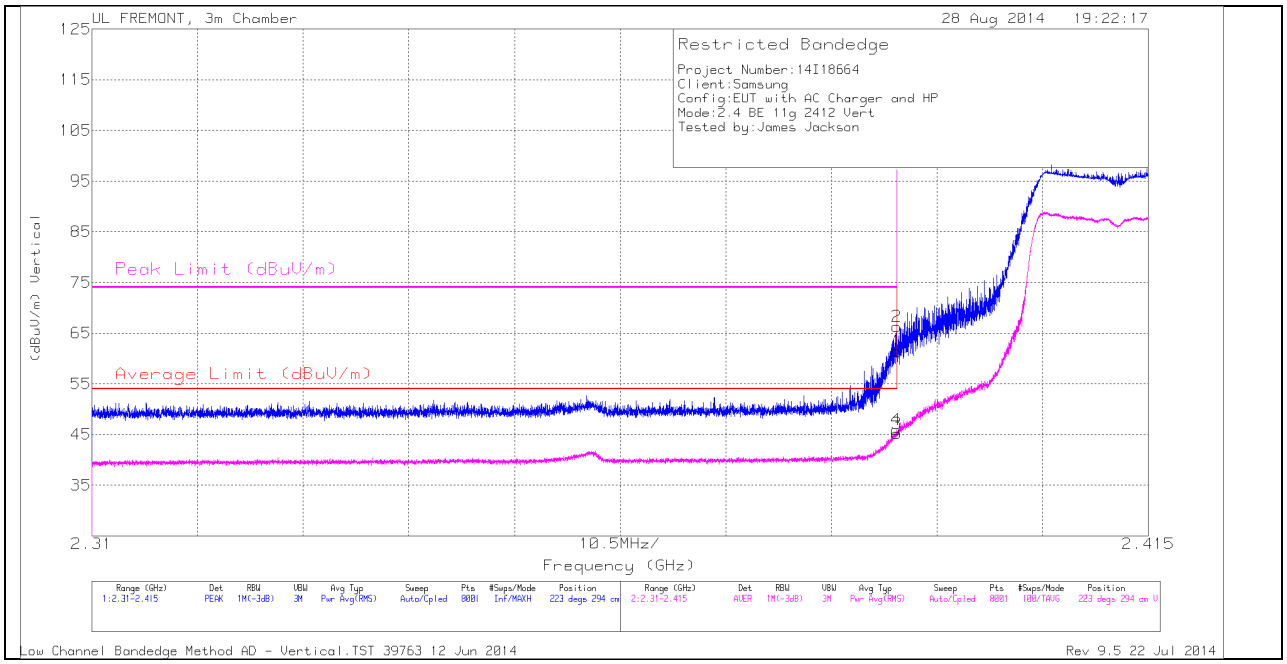
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	2.389	52.8	PK	32.1	-23.1	0	61.8	-	-	74	-12.2	0	342	H
1	2.39	51.61	PK	32.1	-23.1	0	60.61	-	-	74	-13.39	0	342	H
3	2.39	34.98	RMS	32.1	-23.1	.32	44.3	54	-9.7	-	-	0	342	H
4	2.39	34.71	RMS	32.1	-23.1	.32	44.03	54	-9.97	-	-	0	342	H

VERTICAL PEAK AND AVERAGE PLOT

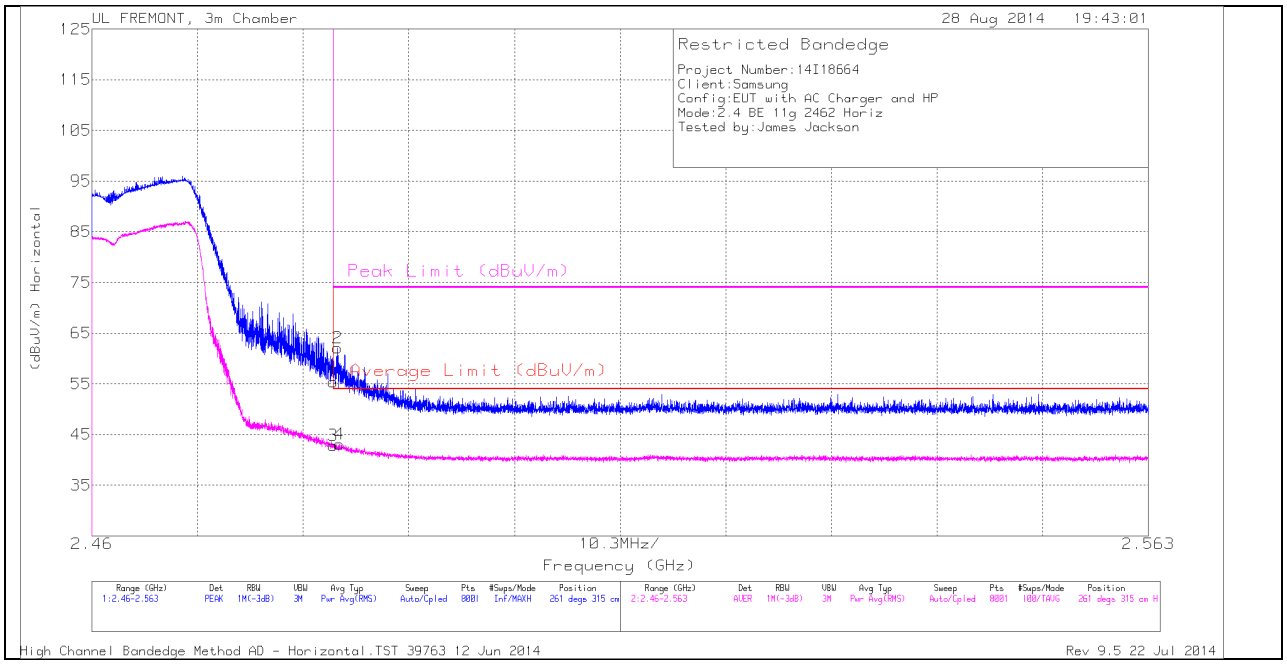


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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	2.39	52.5	PK	32.1	-23.1	0	61.5	-	-	74	-12.5	223	294	V
2	2.39	57.26	PK	32.1	-23.1	0	66.26	-	-	74	-7.74	223	294	V
3	2.39	36.21	RMS	32.1	-23.1	.32	45.53	54	-8.47	-	-	223	294	V
4	2.39	36.96	RMS	32.1	-23.1	.32	46.28	54	-7.72	-	-	223	294	V

AUTHORIZED BANDEDGE (HIGH CHANNEL)

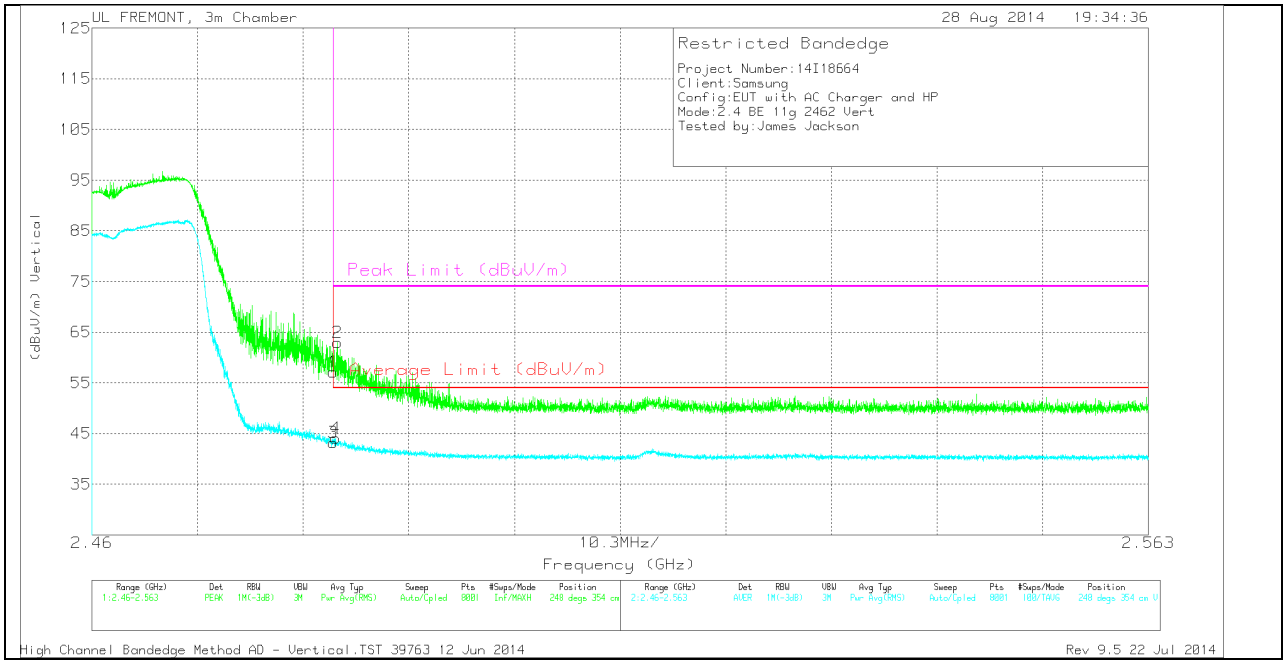
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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	2.484	45.85	PK	32.3	-22.8	0	55.35	-	-	74	-18.65	261	315	H
2	2.484	52.57	PK	32.3	-22.8	0	62.07	-	-	74	-11.93	261	315	H
3	2.484	33.37	RMS	32.3	-22.8	.32	43.19	54	-10.81	-	-	261	315	H
4	2.484	33.64	RMS	32.3	-22.8	.32	43.46	54	-10.54	-	-	261	315	H

VERTICAL PEAK AND AVERAGE PLOT

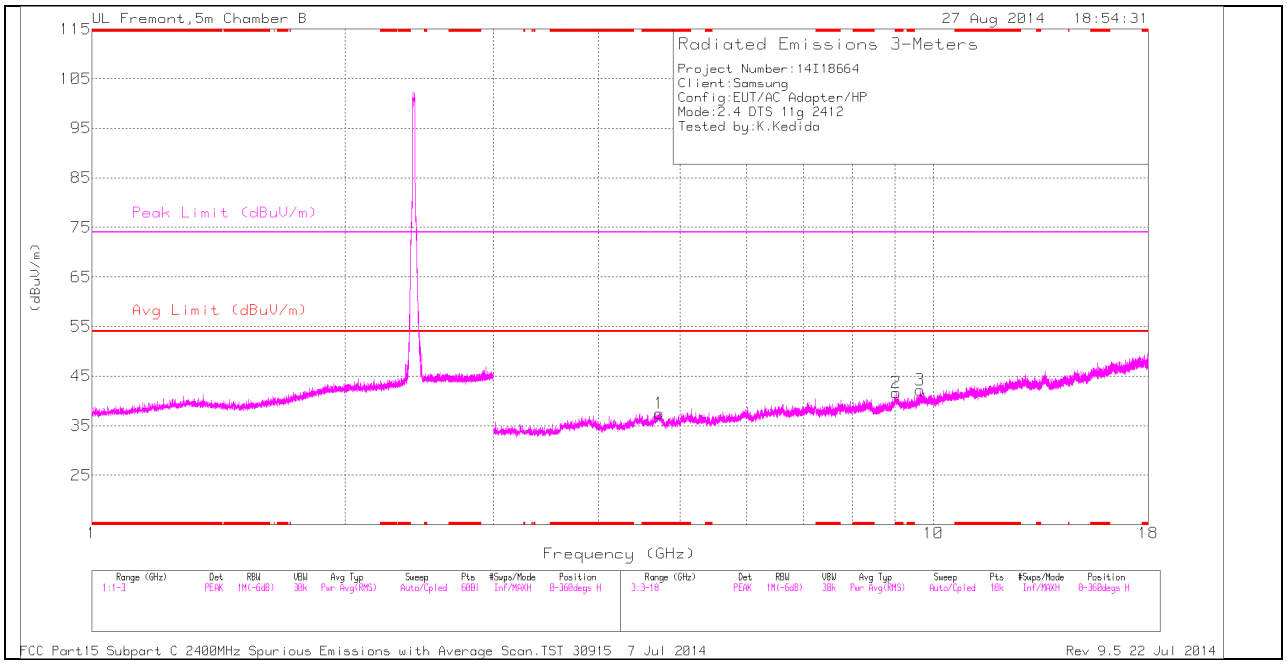


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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	2.484	47.61	PK	32.3	-22.8	0	57.11	-	-	74	-16.89	248	354	V
2	2.484	53.47	PK	32.3	-22.8	0	62.97	-	-	74	-11.03	248	354	V
3	2.484	33.66	RMS	32.3	-22.8	.32	43.48	54	-10.52	-	-	248	354	V
4	2.484	34.57	RMS	32.3	-22.8	.32	44.39	54	-9.61	-	-	248	354	V

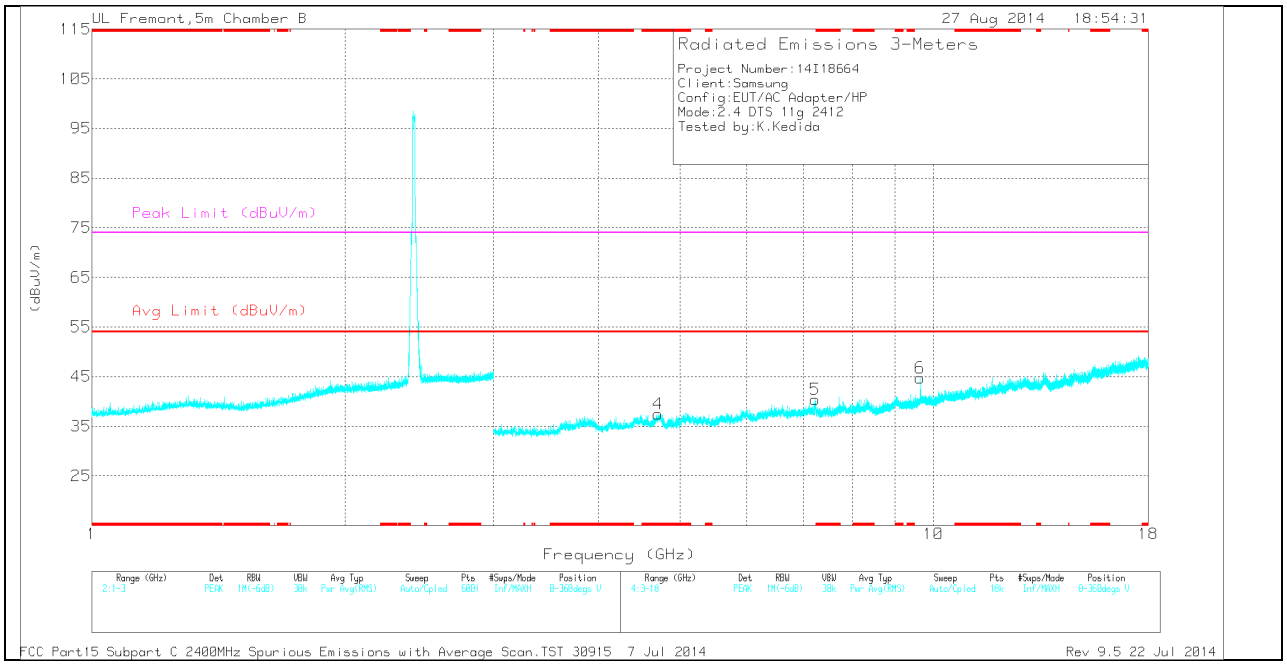
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.726	32.61	PK	34.2	-29.3	37.51	-	-	74	-36.49	0-360	199	H
2	* 9.025	29.94	PK	36.2	-24.5	41.64	-	-	74	-32.36	0-360	101	H
4	* 4.71	32.89	PK	34.2	-29.6	37.49	-	-	74	-36.51	0-360	101	V
5	7.233	32.63	PK	35.5	-27.7	40.43	-	-	-	-	0-360	101	V
3	9.648	29.58	PK	36.8	-24.2	42.18	-	-	-	-	0-360	199	H
6	9.648	32.07	PK	36.8	-24.2	44.67	-	-	-	-	0-360	199	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)	Azimuth (Degs)	Height (cm)	Polarity
* 9.027	36.96	PK2	36.2	-24.6	48.56	-	-	74	-25.44	359	101	H
9.648	36.18	PK2	36.8	-24.2	48.78	-	-	-	-	359	199	V

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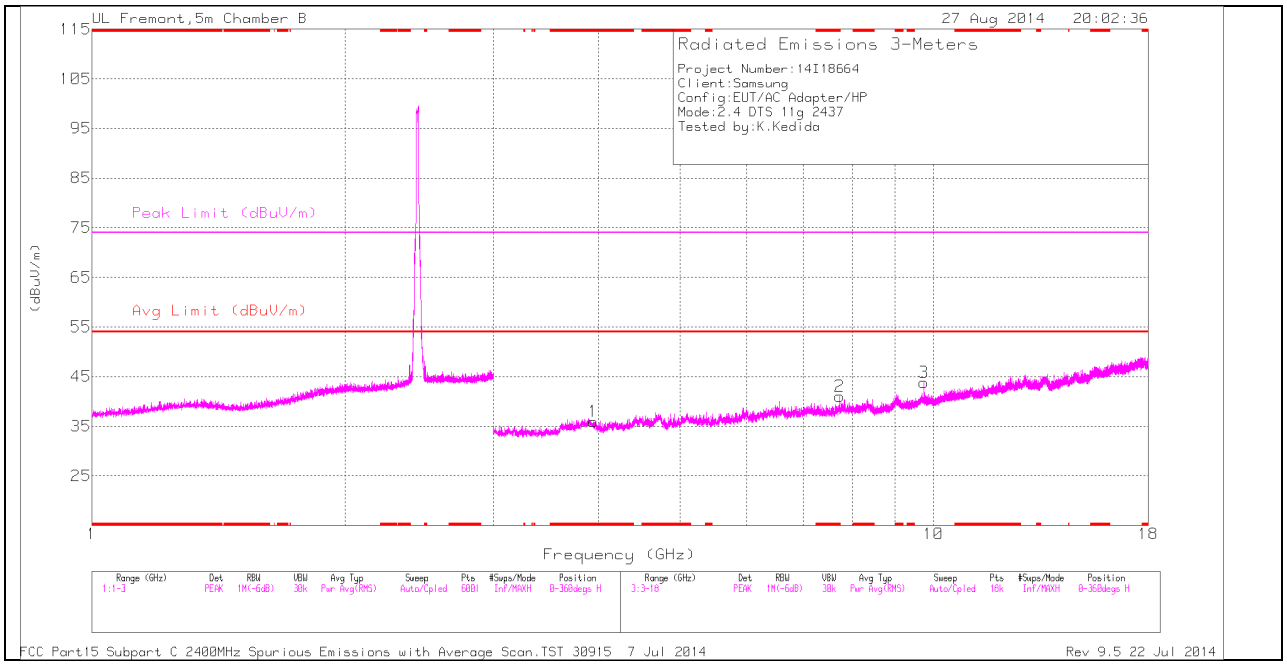
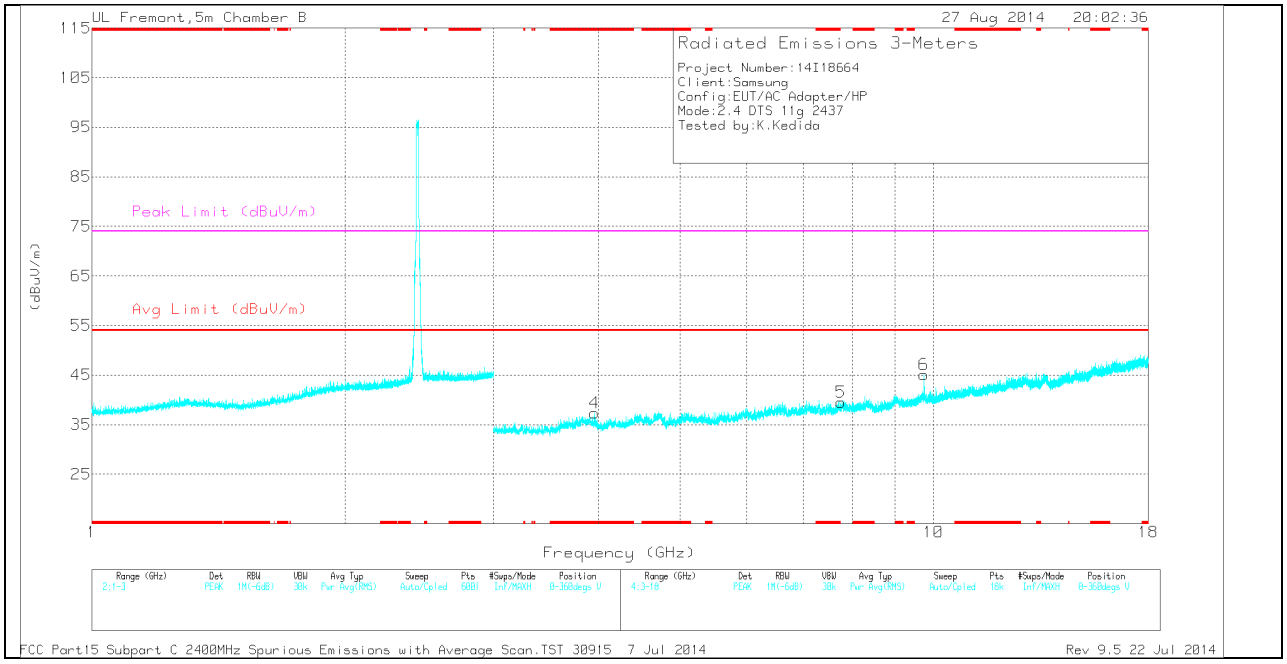
MID CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.946	32.89	PK	33.7	-30.6	35.99	-	-	74	-38.01	0-360	101	H
2	* 7.731	32.01	PK	35.7	-26.7	41.01	-	-	74	-32.99	0-360	101	H
4	* 3.959	34.48	PK	33.7	-30.8	37.38	-	-	74	-36.62	0-360	101	V
5	7.756	30.36	PK	35.7	-26.6	39.46	-	-	-	-	0-360	199	V
3	9.748	31.09	PK	36.9	-24.2	43.79	-	-	-	-	0-360	199	H
6	9.748	32.39	PK	36.9	-24.2	45.09	-	-	-	-	0-360	101	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)	Azimuth (Degs)	Height (cm)	Polarity
* 7.731	37.89	PK2	35.7	-26.7	46.89	-	-	74	-27.11	360	101	H
* 3.958	41.29	PK2	33.7	-30.8	44.19	-	-	74	-29.81	360	101	V

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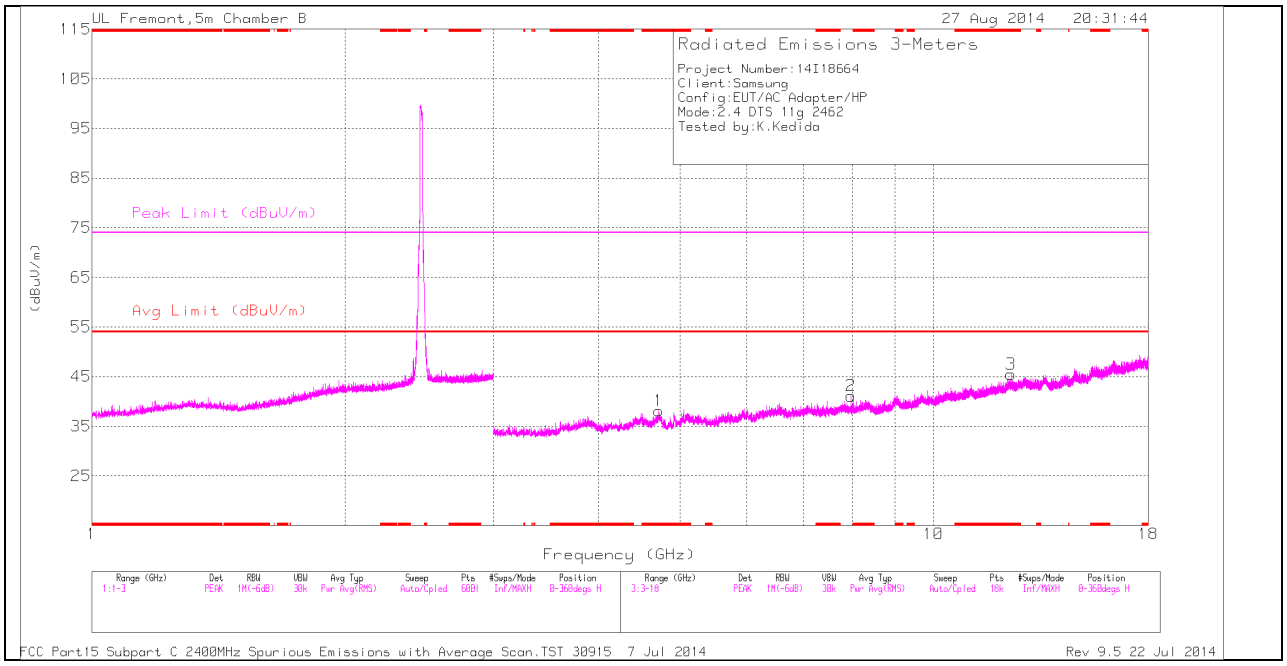
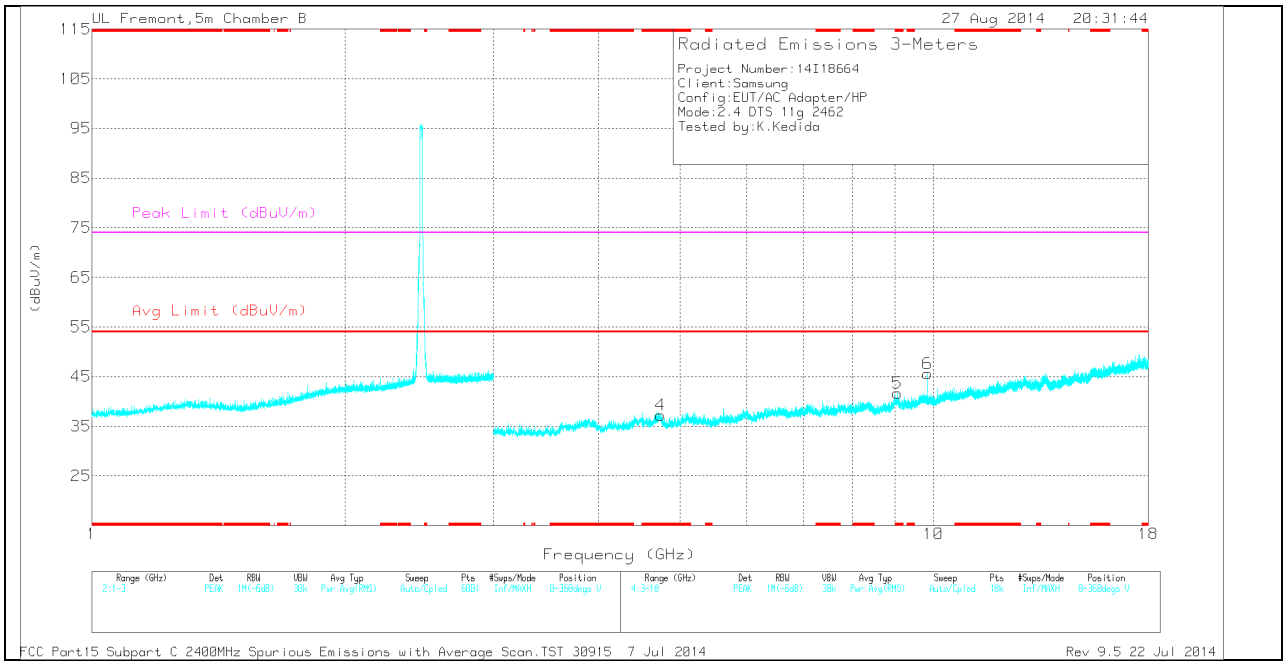
HIGH CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.715	33.36	PK	34.2	-29.5	38.06	-	-	74	-35.94	0-360	101	H
3	* 12.359	28.53	PK	39	-22	45.53	-	-	74	-28.47	0-360	200	H
4	* 4.742	32.25	PK	34.2	-29.2	37.25	-	-	74	-36.75	0-360	200	V
5	* 9.063	29.82	PK	36.3	-24.4	41.72	-	-	74	-32.28	0-360	101	V
2	7.982	32.3	PK	35.7	-26.9	41.1	-	-	-	-	0-360	101	H
6	9.848	33.08	PK	37	-24.5	45.58	-	-	-	-	0-360	200	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)	Azimuth (Degs)	Height (cm)	Polarity
* 4.717	41.1	PK2	34.2	-29.4	45.9	-	-	74	-28.1	360	101	H
* 9.064	36.81	PK2	36.3	-24.4	48.71	-	-	74	-25.29	360	101	V
9.848	37.92	PK2	37	-24.5	50.42	-	-	-	-	360	200	V

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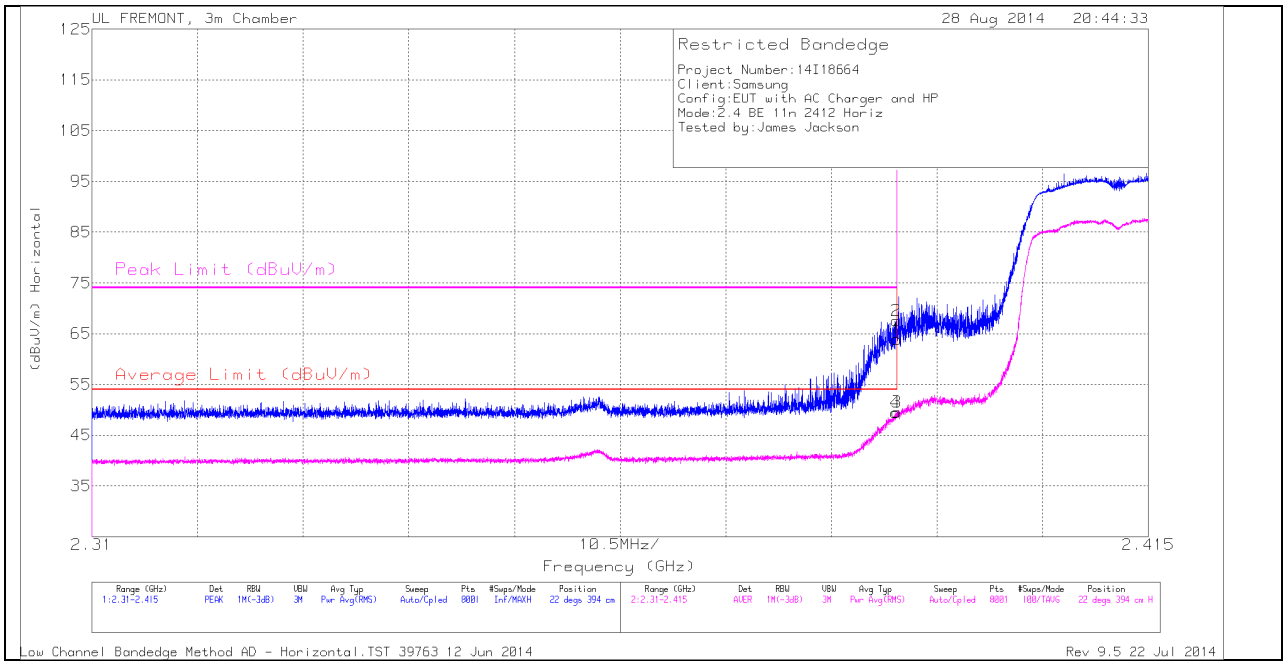
10.2.3. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

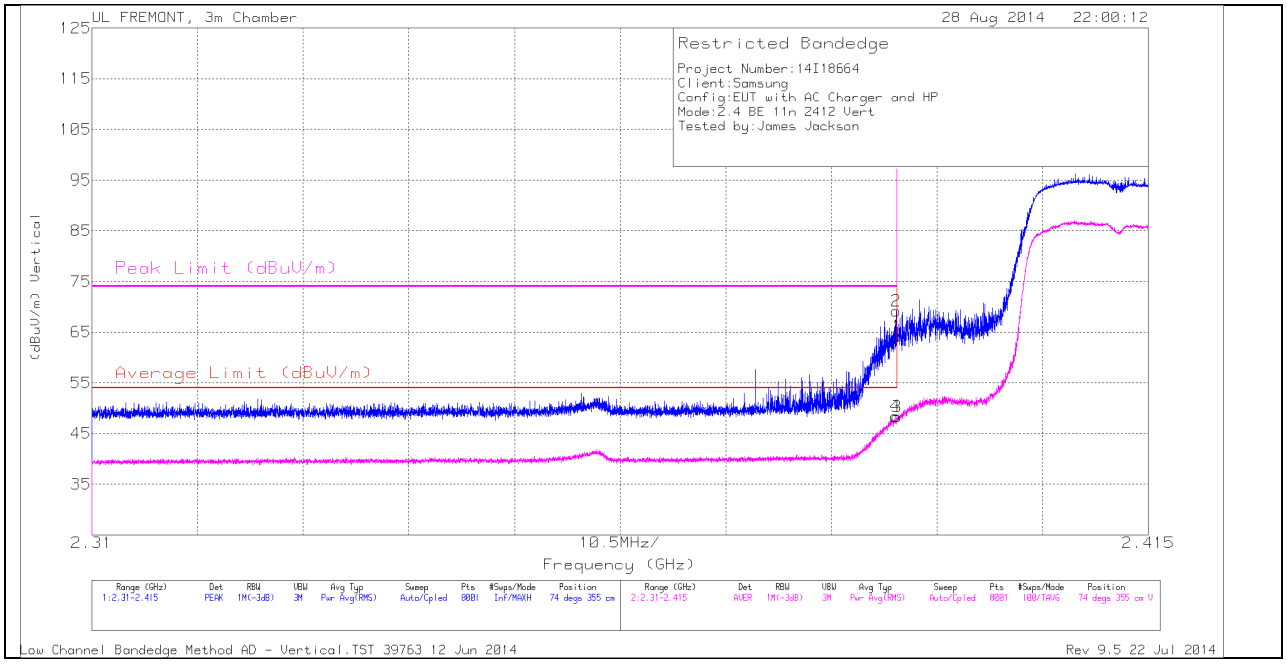
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Flt r/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	2.39	54.89	PK	32.1	-23.1	0	63.89	-	-	74	-10.11	22	394	H
2	2.39	58.6	PK	32.1	-23.1	0	67.6	-	-	74	-6.4	22	394	H
3	2.39	40.15	RMS	32.1	-23.1	.36	49.51	54	-4.49	-	-	22	394	H
4	2.39	40.08	RMS	32.1	-23.1	.36	49.44	54	-4.56	-	-	22	394	H

VERTICAL PEAK AND AVERAGE PLOT

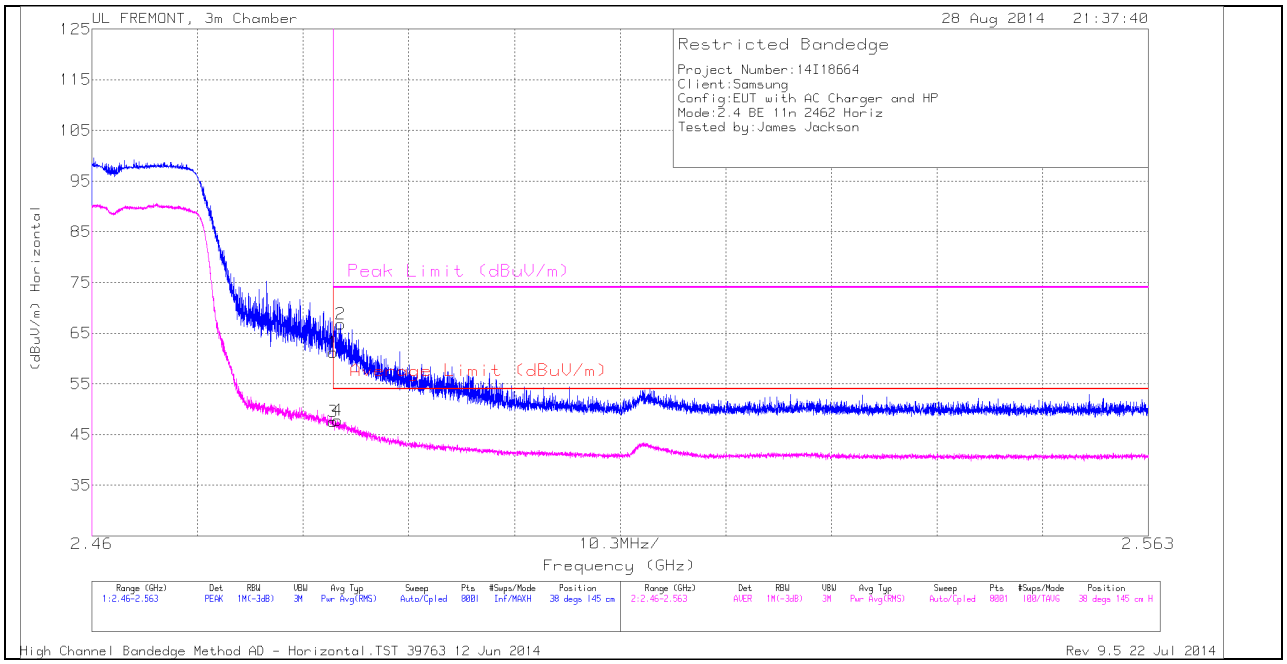


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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	2.39	55.15	PK	32.1	-23.1	0	64.15	-	-	74	-9.85	74	355	V
2	2.39	60.17	PK	32.1	-23.1	0	69.17	-	-	74	-4.83	74	355	V
3	2.39	39.22	RMS	32.1	-23.1	.36	48.58	54	-5.42	-	-	74	355	V
4	2.39	39.35	RMS	32.1	-23.1	.36	48.71	54	-5.29	-	-	74	355	V

AUTHORIZED BANDEDGE (HIGH CHANNEL)

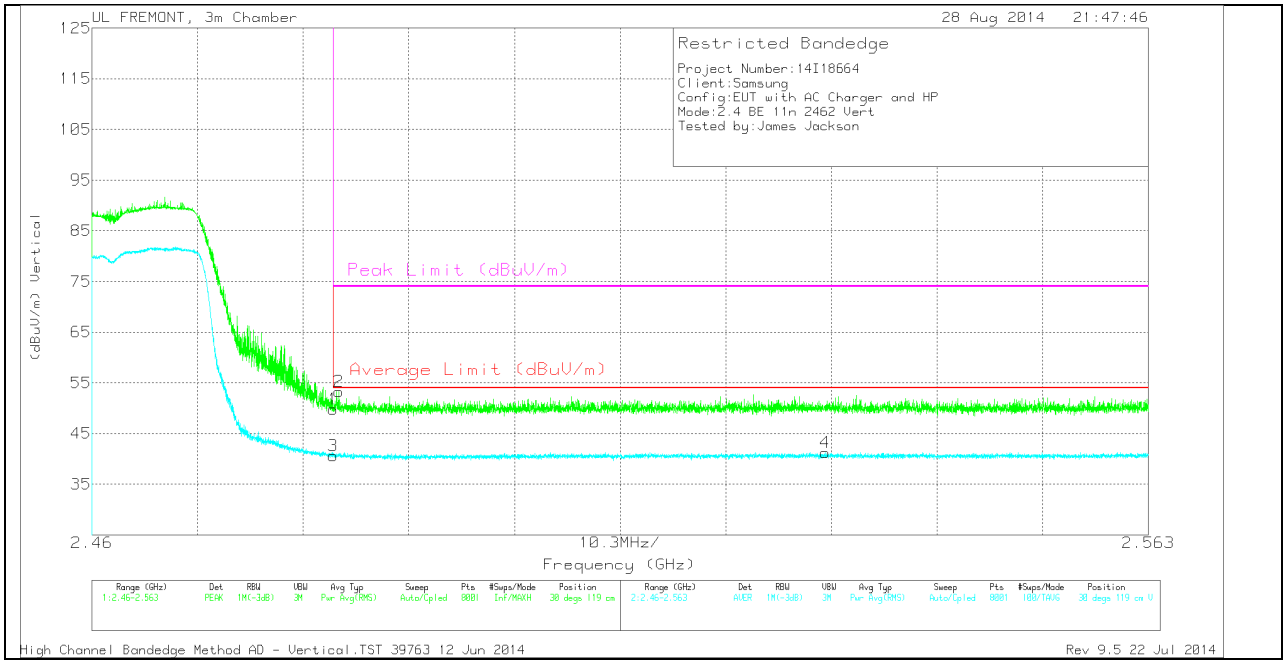
HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Flt r/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	2.484	51.73	PK	32.3	-22.8	0	61.23	-	-	74	-12.77	38	145	H
2	2.484	57.34	PK	32.3	-22.8	0	66.84	-	-	74	-7.16	38	145	H
3	2.484	37.74	RMS	32.3	-22.8	.36	47.6	54	-6.4	-	-	38	145	H
4	2.484	37.95	RMS	32.3	-22.8	.36	47.81	54	-6.19	-	-	38	145	H

VERTICAL PEAK AND AVERAGE PLOT

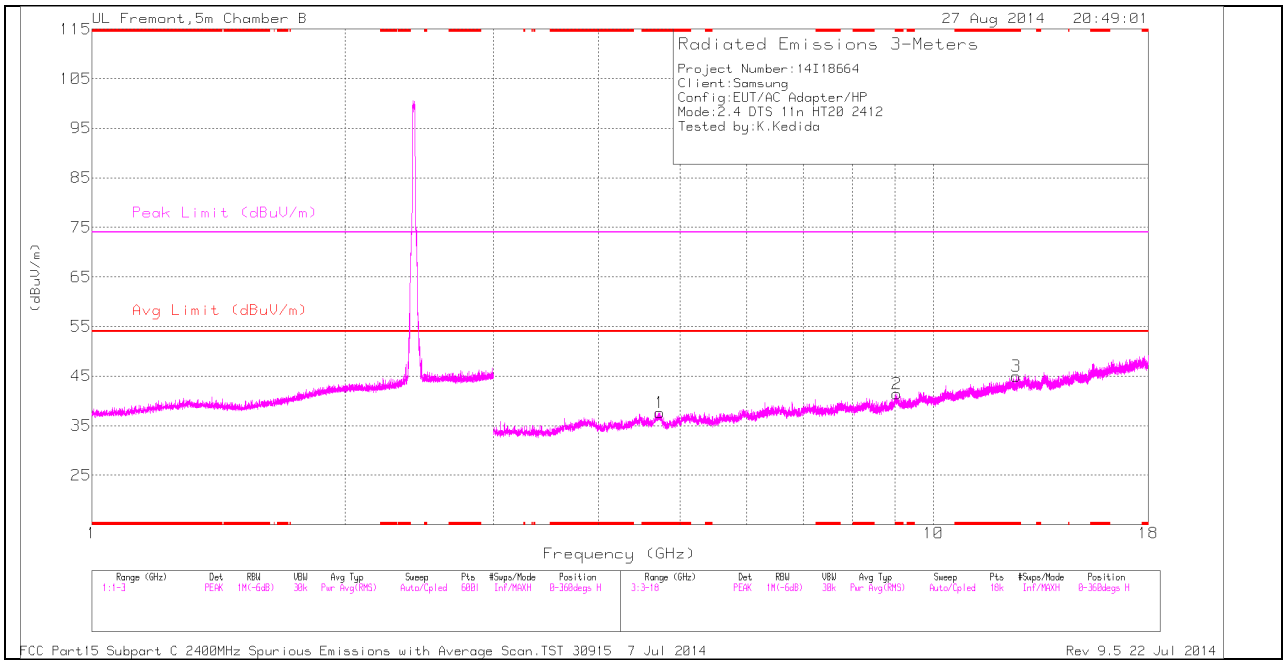


VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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	2.484	40.32	PK	32.3	-22.8	0	49.82	-	-	74	-24.18	30	119	V
2	2.484	43.79	PK	32.3	-22.8	0	53.29	-	-	74	-20.71	30	119	V
3	2.484	30.8	RMS	32.3	-22.8	.36	40.66	54	-13.34	-	-	30	119	V
4	2.531	31.22	RMS	32.4	-22.7	.36	41.28	54	-12.72	-	-	30	119	V

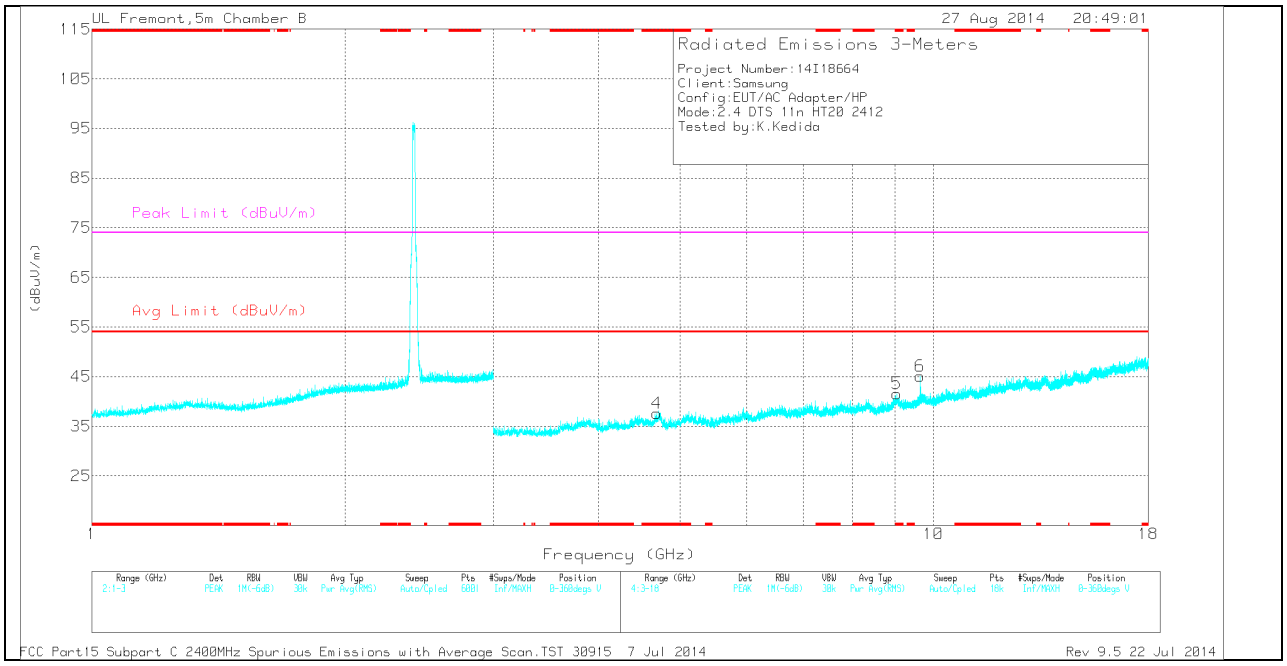
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.728	32.65	PK	34.2	-29.3	37.55	-	-	74	-36.45	0-360	200	H
2	* 9.047	29.59	PK	36.2	-24.4	41.39	-	-	74	-32.61	0-360	101	H
3	* 12.548	28.14	PK	39.1	-22.3	44.94	-	-	74	-29.06	0-360	200	H
4	* 4.691	33.5	PK	34.2	-30.1	37.6	-	-	74	-36.4	0-360	101	V
5	* 9.045	29.8	PK	36.2	-24.4	41.6	-	-	74	-32.4	0-360	200	V
6	9.648	32.51	PK	36.8	-24.2	45.11	-	-	-	-	0-360	101	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)	Azimuth (Degs)	Height (cm)	Polarity
* 4.726	41.49	PK2	34.2	-29.3	46.39	-	-	74	-27.61	359	200	H
* 9.047	37.53	PK2	36.2	-24.4	49.33	-	-	74	-24.67	359	102	H
9.648	36.33	PK2	36.8	-24.2	48.93	-	-	-	-	359	102	V

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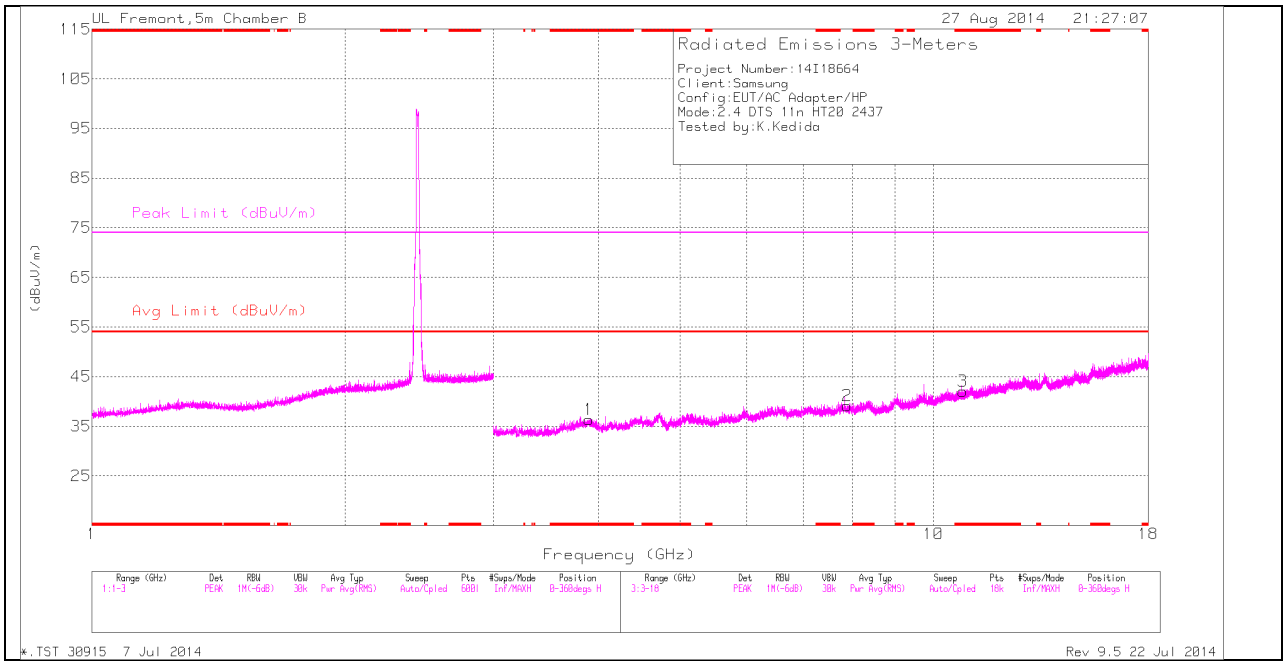
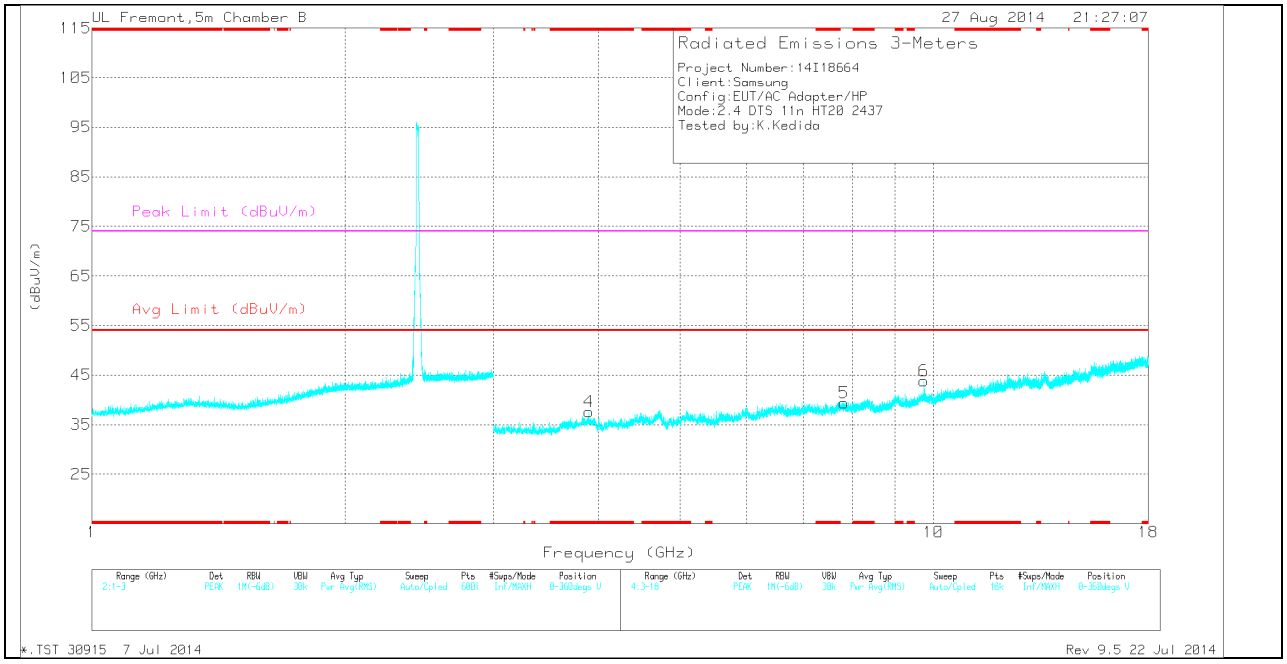
MID CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.896	32.89	PK	33.8	-30.3	36.39	-	-	74	-37.61	0-360	101	H
3	* 10.833	27.61	PK	37.8	-23.4	42.01	-	-	74	-31.99	0-360	101	H
4	* 3.892	34.16	PK	33.8	-30.3	37.66	-	-	74	-36.34	0-360	101	V
5	7.831	30.06	PK	35.7	-26.4	39.36	-	-	-	-	0-360	200	V
2	7.9	30.74	PK	35.7	-27.3	39.14	-	-	-	-	0-360	200	H
6	9.748	31.16	PK	36.9	-24.2	43.86	-	-	-	-	0-360	101	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)	Azimuth (Degs)	Height (cm)	Polarity
* 3.895	41.07	PK2	33.8	-30.3	44.57	-	-	74	-29.43	359	100	H
* 10.835	35.33	PK2	37.8	-23.4	49.73	-	-	74	-24.27	359	100	H
9.748	37.41	PK2	36.9	-24.3	50.01	-	-	-	-	359	101	V

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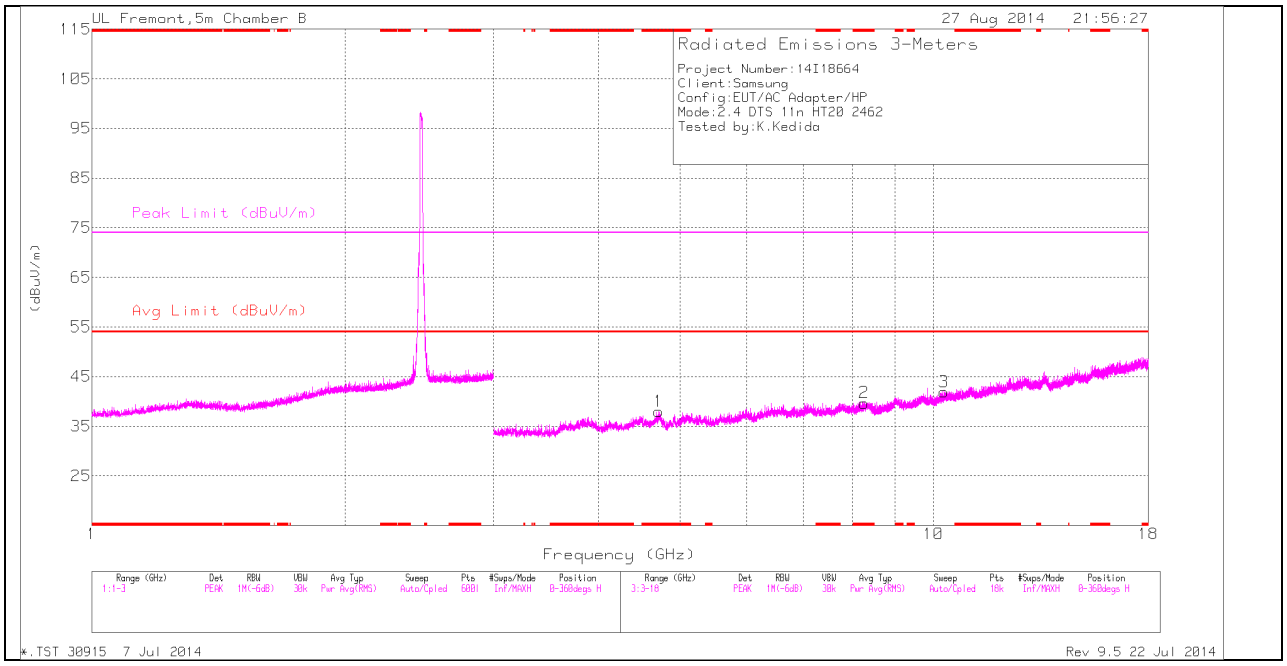
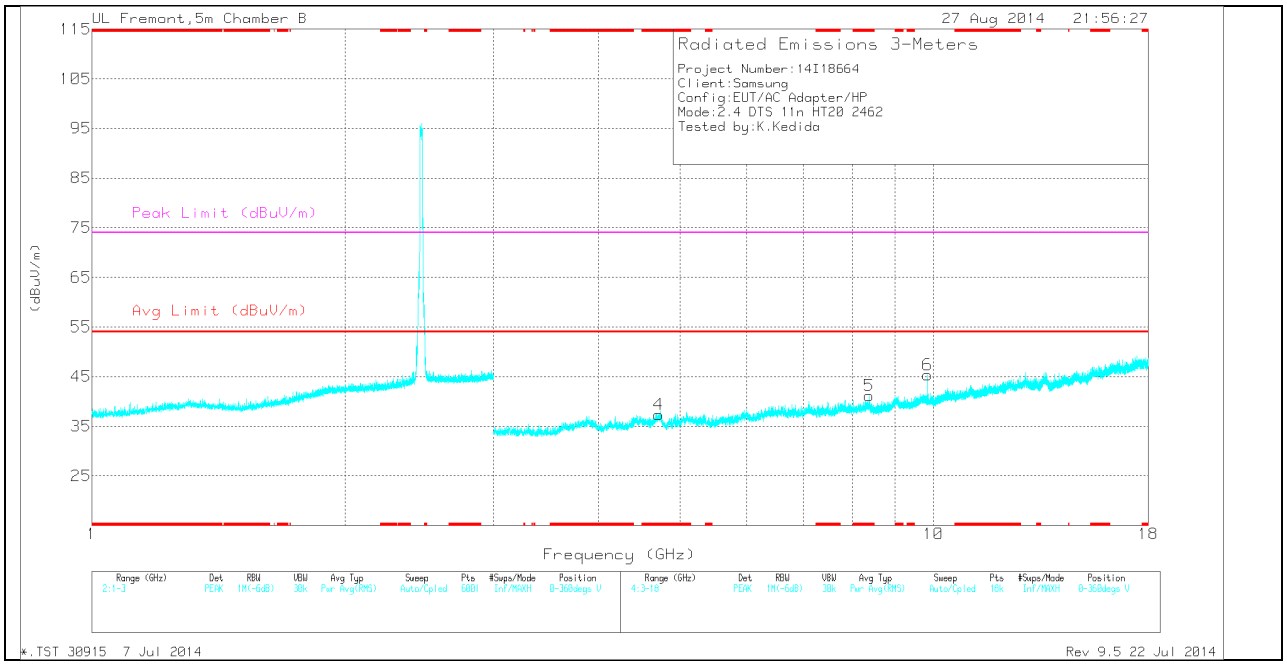
HIGH CHANNEL HORIZONTAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.716	33.33	PK	34.2	-29.5	38.03	-	-	74	-35.97	0-360	199	H
2	* 8.267	30.6	PK	35.7	-26.6	39.7	-	-	74	-34.3	0-360	101	H
4	* 4.715	32.68	PK	34.2	-29.5	37.38	-	-	74	-36.62	0-360	101	V
5	* 8.382	30.8	PK	35.7	-25.3	41.2	-	-	74	-32.8	0-360	199	V
6	9.848	32.86	PK	37	-24.5	45.36	-	-	-	-	0-360	199	V
3	10.288	28.38	PK	37.2	-23.7	41.88	-	-	-	-	0-360	199	H

PK - Peak detector

RADIATED EMISSIONS

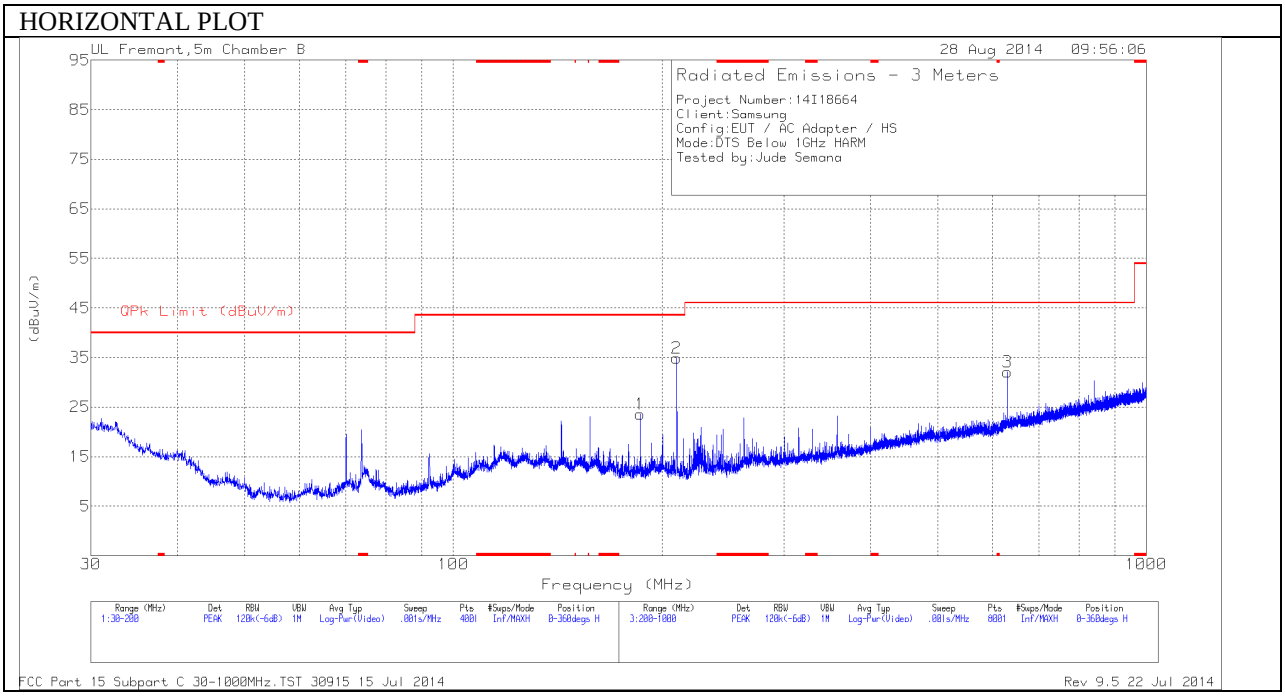
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.717	40.87	PK2	34.2	-29.4	45.67	-	-	74	-28.33	360	198	H
* 8.266	38.85	PK2	35.7	-26.6	47.95	-	-	74	-26.05	360	102	H
9.848	36.93	PK2	37	-24.5	49.43	-	-	-	-	360	199	V

FCC Part15 Subpart C T186 2400MHz Spurious Emissions.TST 12746Rev 9.5 12 Jun 2013

10.3. WORST-CASE BELOW 1 GHz

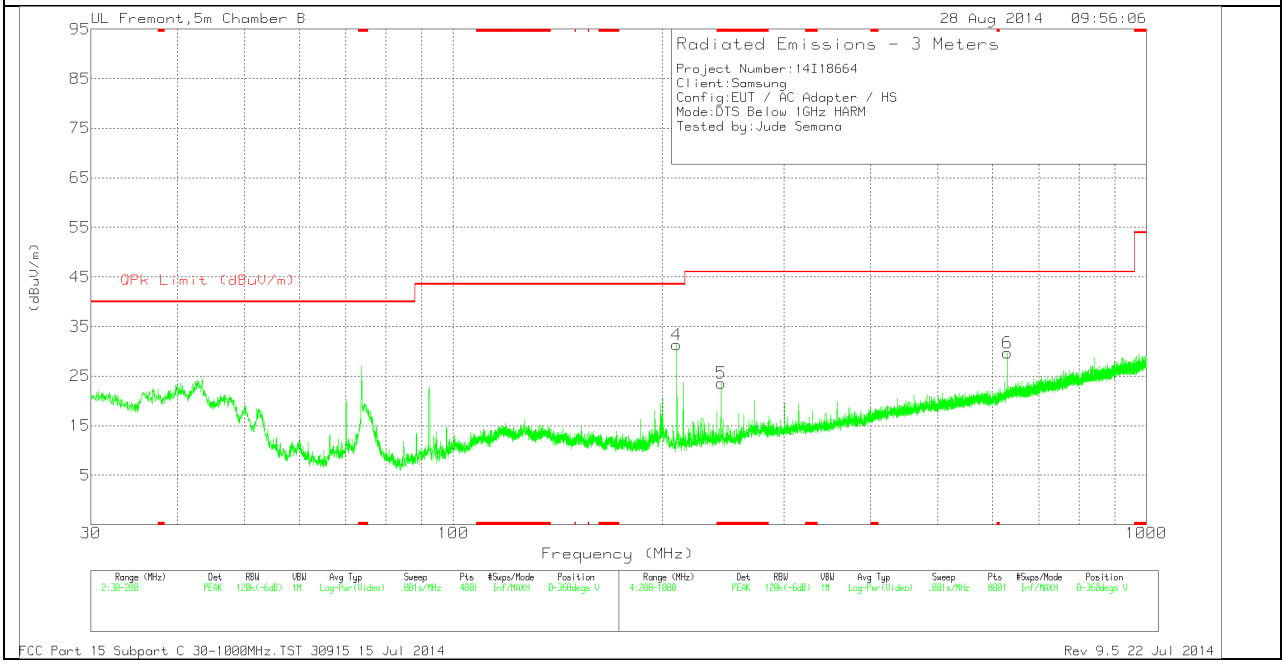
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)

HORIZONTAL PLOT



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

VERTICAL PLOT



Below 1G Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T243 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	* 243.4	38.29	PK	11.7	-26.4	23.59	46.02	-22.43	0-360	300	V
1	186.145	39.67	PK	10.9	-27	23.57	43.52	-19.95	0-360	100	H
2	210.1	51.31	PK	10.3	-26.8	34.81	43.52	-8.71	0-360	200	H
4	210.1	47.81	PK	10.3	-26.8	31.31	43.52	-12.21	0-360	101	V
3	630.3	37.79	PK	19.5	-25.2	32.09	46.02	-13.93	0-360	101	H
6	630.3	35.36	PK	19.5	-25.2	29.66	46.02	-16.36	0-360	101	V

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

PK - Peak detector

11. 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 2009.

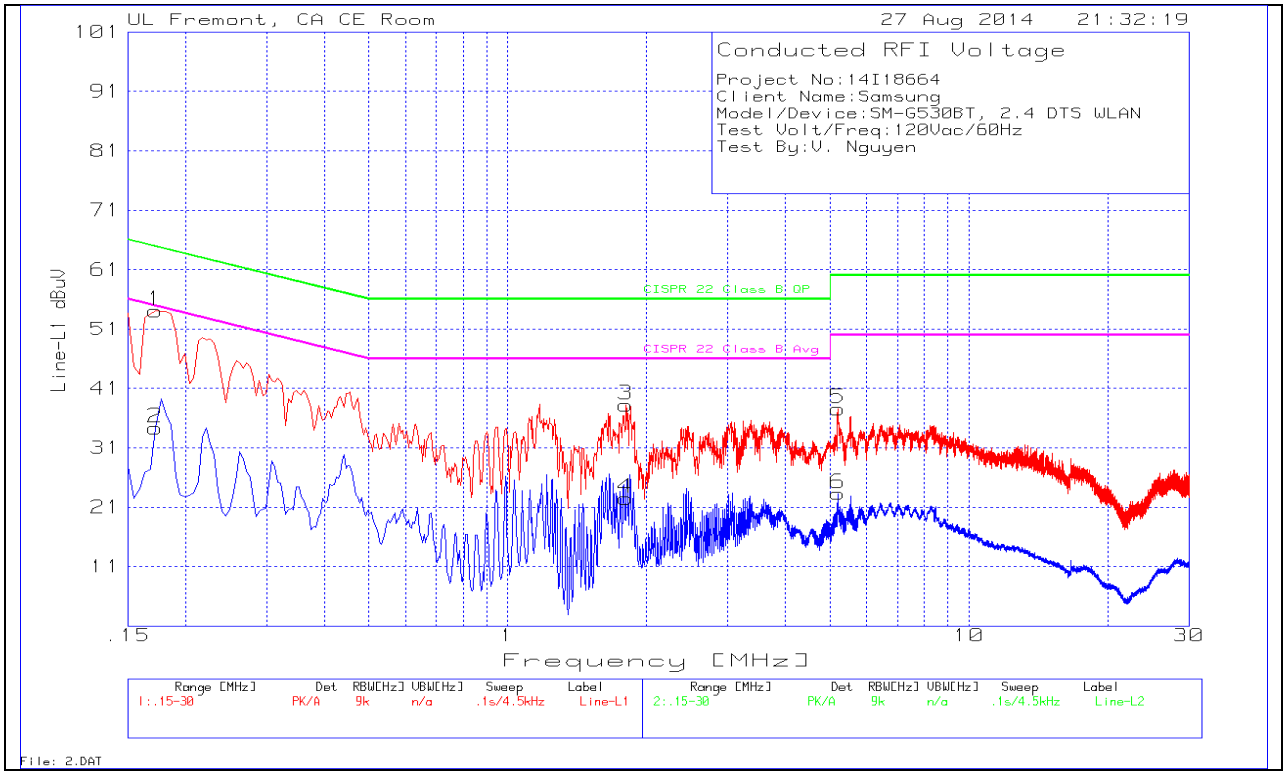
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

6 WORST EMISSIONS

LINE 1 PLOT



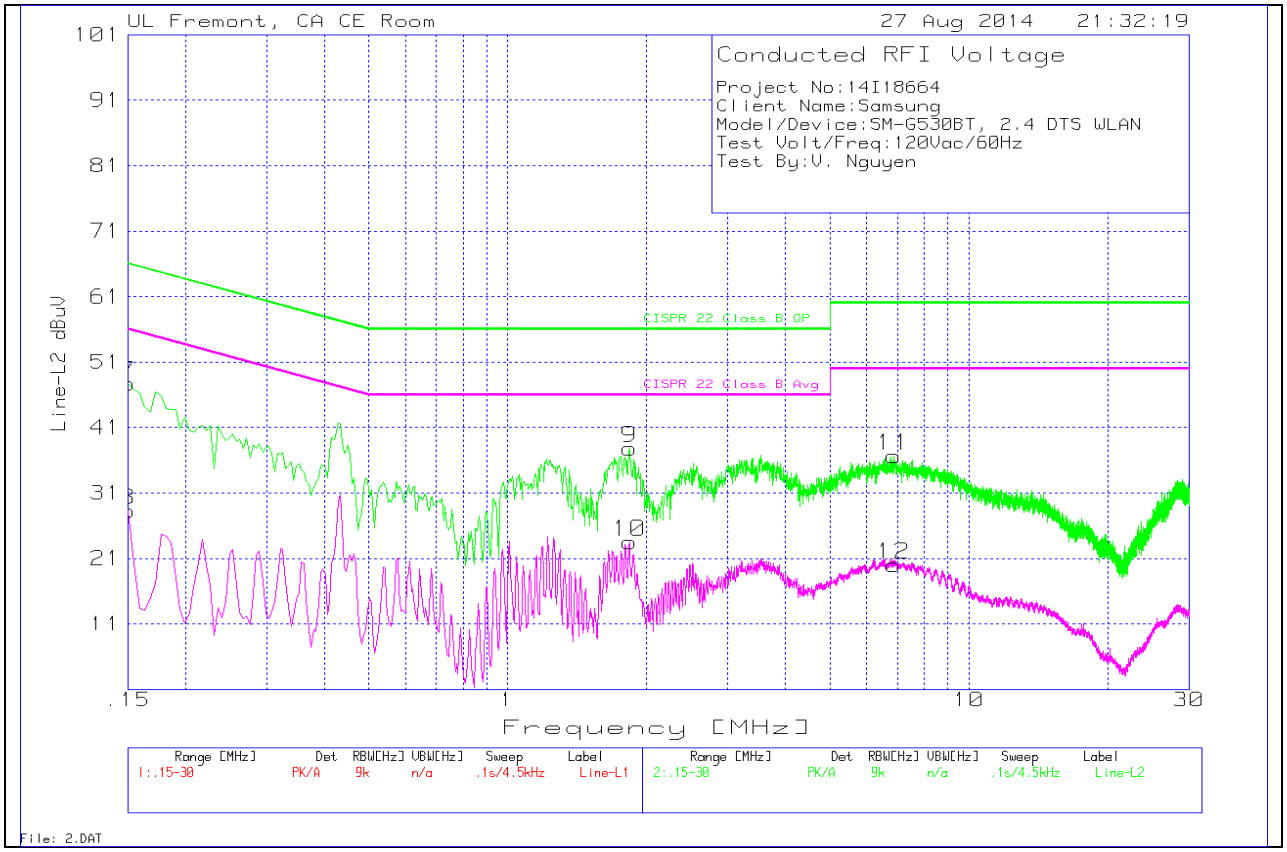
LINE 1 RESULTS

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1 (dB)	LC Cables 1&3 (dB)	Corrected Reading dBuV	CISPR 22 Class B QP	Margin to Limit (dB)	CISPR 22 Class B Avg	Margin to Limit (dB)
1	.1725	52.83	PK	1.2	0	54.03	64.8	-10.77	-	-
2	.1725	33.12	Av	1.2	0	34.32	-	-	54.8	-20.48
3	1.806	37.87	PK	.2	.1	38.17	56	-17.83	-	-
4	1.806	22.24	Av	.2	.1	22.54	-	-	46	-23.46
5	5.199	37.22	PK	.2	.1	37.52	60	-22.48	-	-

6	5.199	23.02	Av	.2	.1	23.32	-	-	50	-26.68

LINE 2 PLOT



LINE 2 RESULTS

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2 (dB)	LC Cables 2&3 (dB)	Corrected Reading dBuV	CISPR 22 Class B QP	Margin to Limit (dB)	CISPR 22 Class B Avg	Margin to Limit (dB)
7	.15	46.26	PK	1.5	0	47.76	66	-18.24	-	-
8	.15	26.74	Av	1.5	0	28.24	-	-	56	-27.76
9	1.8375	37.47	PK	.2	.1	37.77	56	-18.23	-	-

10	1.8375	23.21	Av	.2	.1	23.51	-	-	46	-22.49
11	6.8595	36.35	PK	.2	.1	36.65	60	-23.35	-	-
12	6.8595	19.77	Av	.2	.1	20.07	-	-	50	-29.93