FCC CFR47 PART 15 SUBPART C

CERTIFICATION TEST REPORT

FOR

GSM Phone + Bluetooth & DTS b/g/n

MODEL NUMBER: SM-G110H

FCC ID: A3LSMG110H

REPORT NUMBER: 14I17930-4 REVISION A

ISSUE DATE: JUNE 16, 2014

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

Prepared by
UL VERIFICATION SERVICES INC.
47173 BENICIA STREET
FREMONT, CA 94538, U.S.A.
TEL: (510) 771-1000
FAX: (510) 661-0888

NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	06/05/14	Initial Issue	P. Zhang
A	6/16/14	Updated 6dB BW	P. Zhang

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS

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

EUT DESCRIPTION: **GSM Phone + Bluetooth & DTS b/g/n**

MODEL: **SM-G110H**

SERIAL NUMBER: **R31F502SPJP (radiated); R31F502SPJE (conducted)**

DATE TESTED: **May 28 – June 5, 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:

PENG ZHANG
CONSUMER TECHNOLOGY DIVISION
PROJECT LEAD
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	☐ Chamber D
☒ Chamber B	☐ Chamber E
☐ Chamber C	☐ Chamber F

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 18000 MHz	4.94 dB

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a GSM Phone + Bluetooth & DTS 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	19.94	98.63
2412 - 2462	802.11g	20.97	125.03
2412 - 2462	802.11n HT20	19.73	93.97

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of -1.26 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	ETA3U30EBE	N/A	N/A
Earphone	SAMSUNG	N/A	N/A	N/A

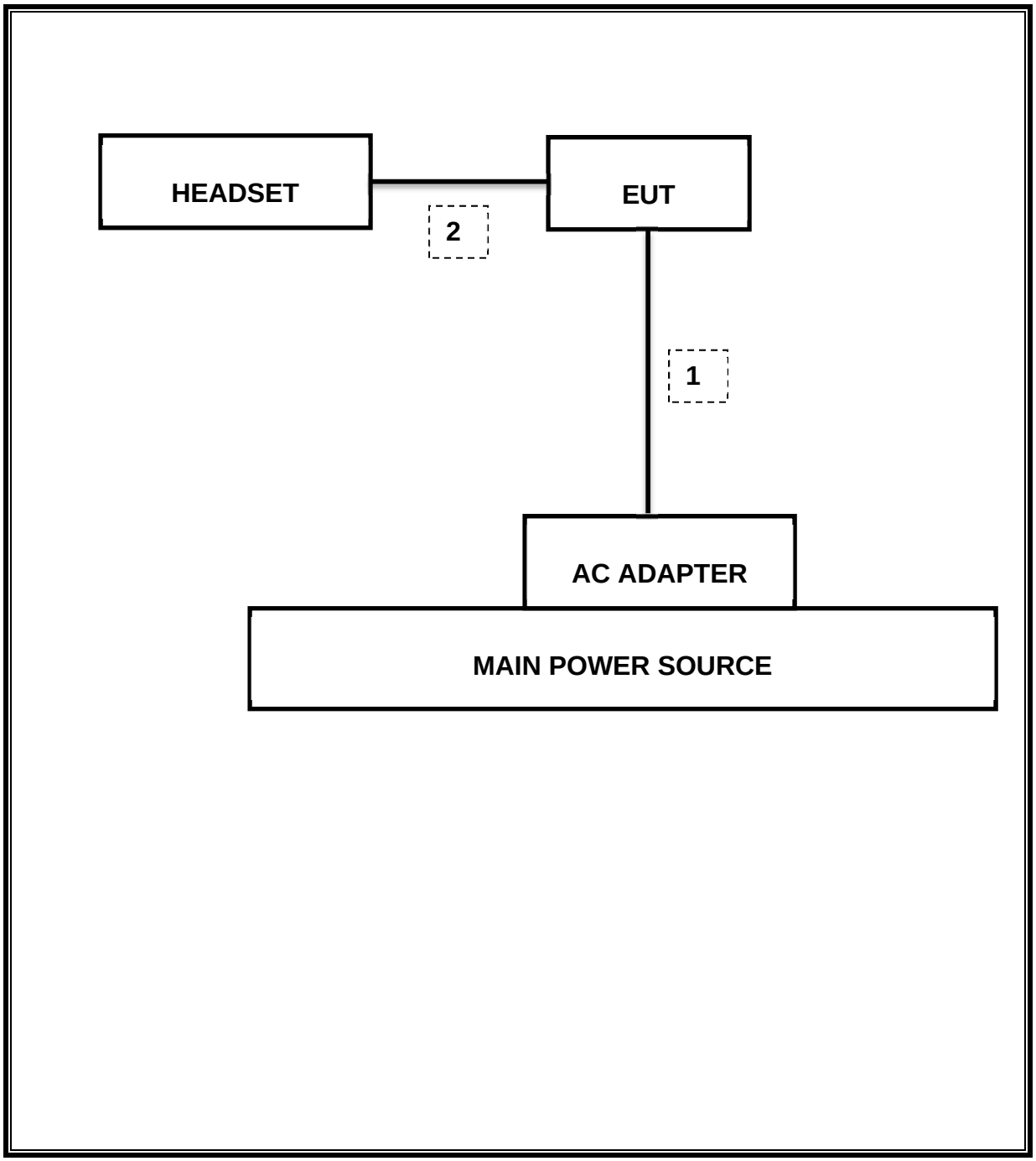
I/O CABLES

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	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	08/13/14
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	06/01/15
RF Preamplifier, 1GHz - 18GHz	Miteq	NSP4000-SP2	924343	03/23/15
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	05/23/15
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 v03r01:Measurement Procedure PK2 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	8.60MHz
2.1051, 15.247 (d)	RSS-210 A8.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	-32.97dBuV
15.247	RSS-210 A8.4	TX conducted output power	<30dBm		Pass	20.97dBm
15.247	RSS-210 A8.2	PSD	<8dBm		Pass	-4.41dBm
15.207 (a)	RSS-GEN 7.2.2	AC Power Line conducted emissions	Section 10	Radiated	Pass	38.63dBuV(AV)
15.205, 15.209	RSS-210 Clause 2.6, RSS-210 Clause 6	Radiated Spurious Emission	< 54dBuV/m		Pass	50.86dBuV/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 v03r01: 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	8.60	0.5
Mid	2437	9.58	0.5
High	2462	9.58	0.5
Worst		8.60	

9.1.2. 802.11g MODE IN THE 2.4 GHz BAND

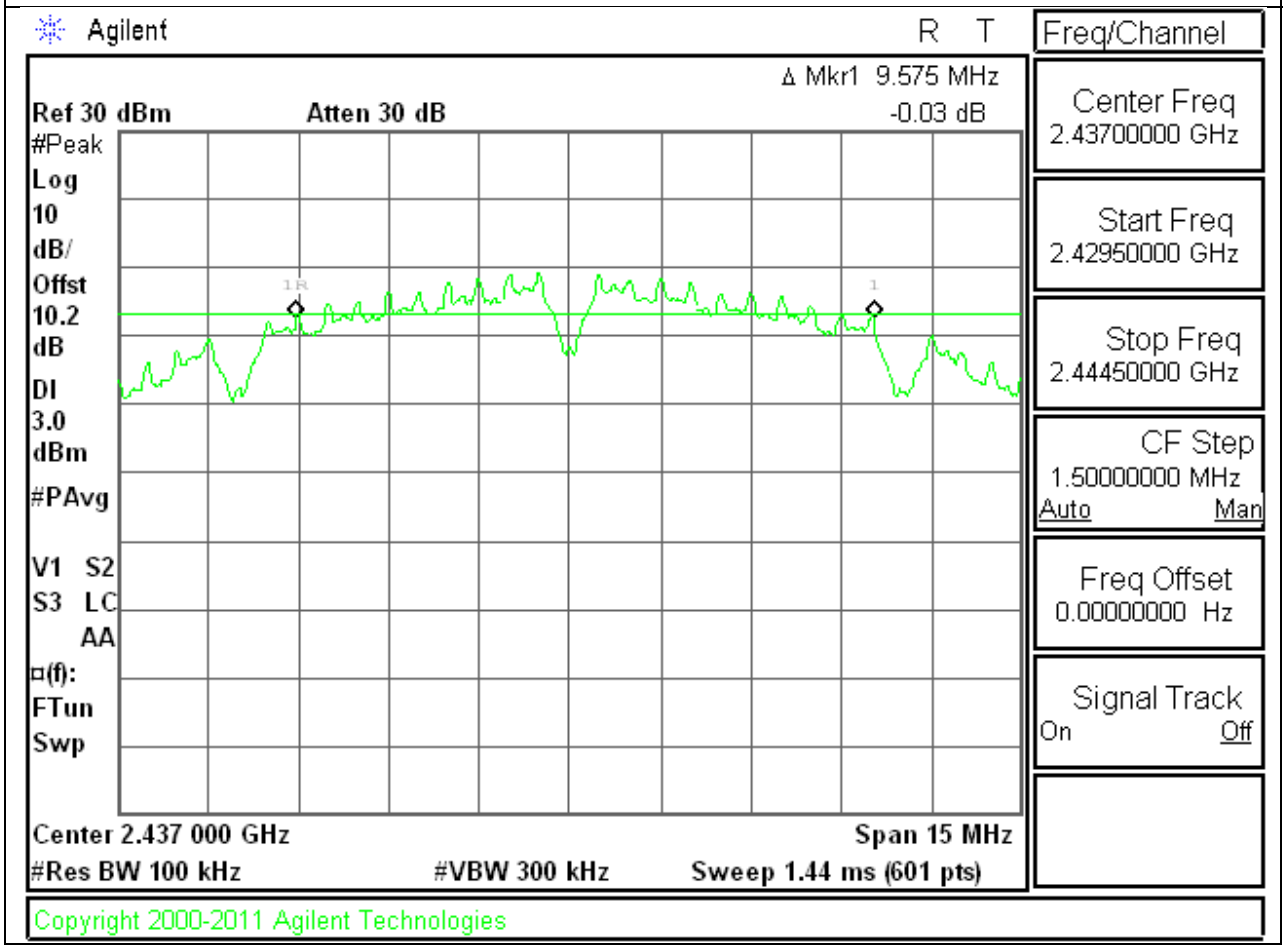
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	15.17	0.5
Mid	2437	15.17	0.5
High	2462	15.12	0.5
Worst		15.12	

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	15.12	0.5
Mid	2437	15.17	0.5
High	2462	15.17	0.5
Worst		15.12	

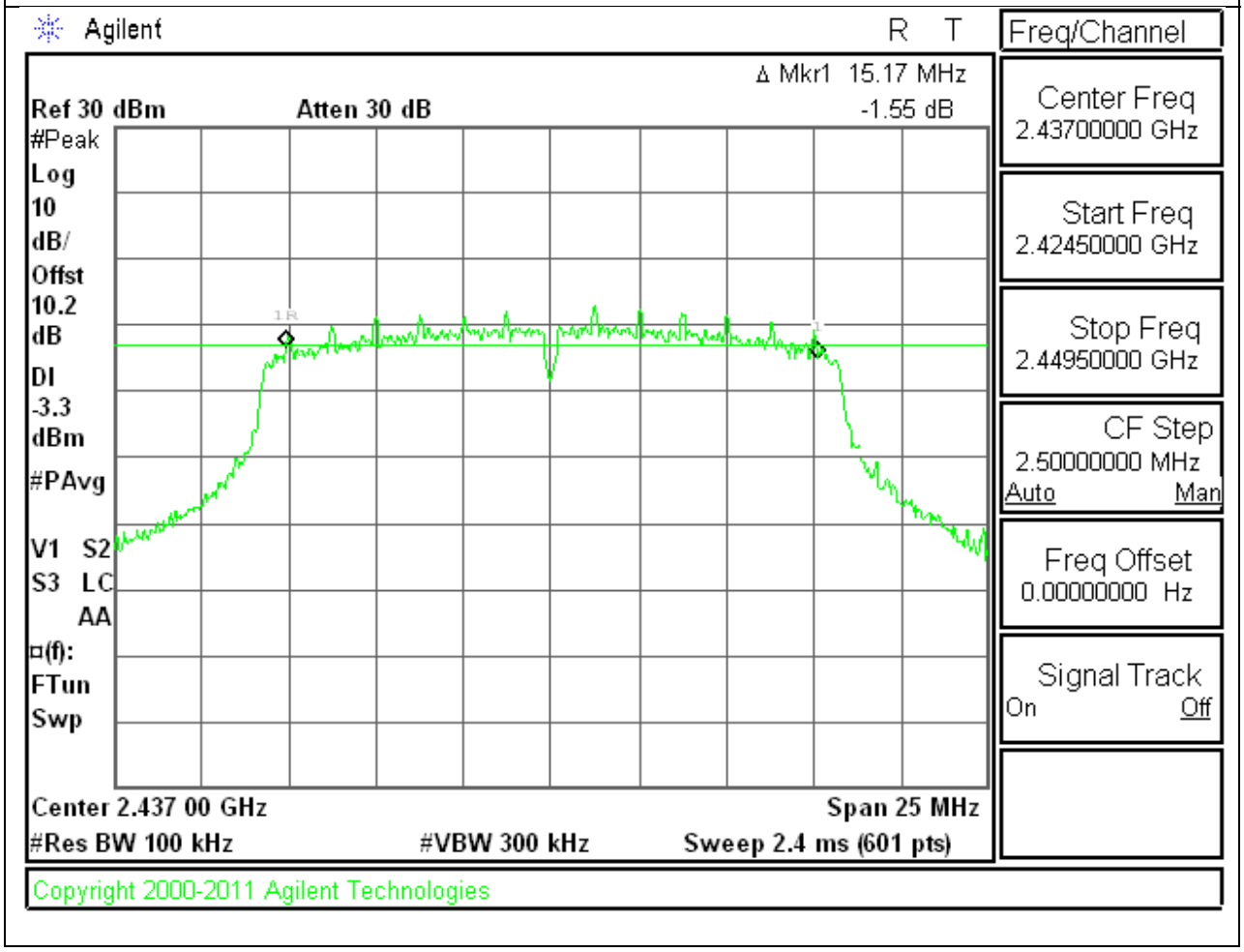
802.11b 6 dB BANDWIDTH

6 dB BANDWIDTH MID CH



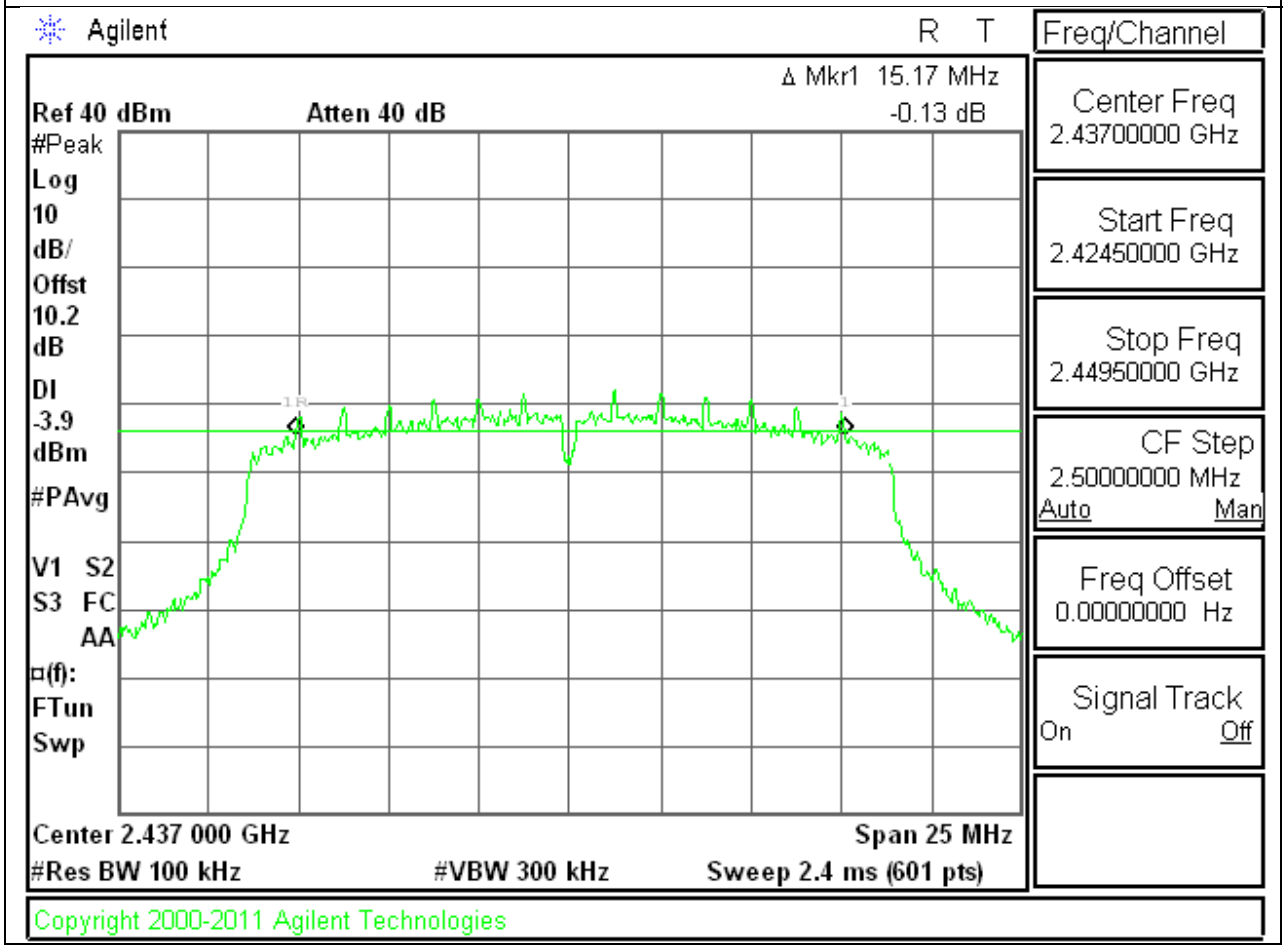
802.11g 6 dB BANDWIDTH

6 dB BANDWIDTH MID CH



802.11n 6 dB BANDWIDTH

6 dB BANDWIDTH MID CH



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	14.03
Mid	2437	13.99
High	2462	13.95
Worst		14.03

9.2.2. 802.11g MODE IN THE 2.4 GHz BAND

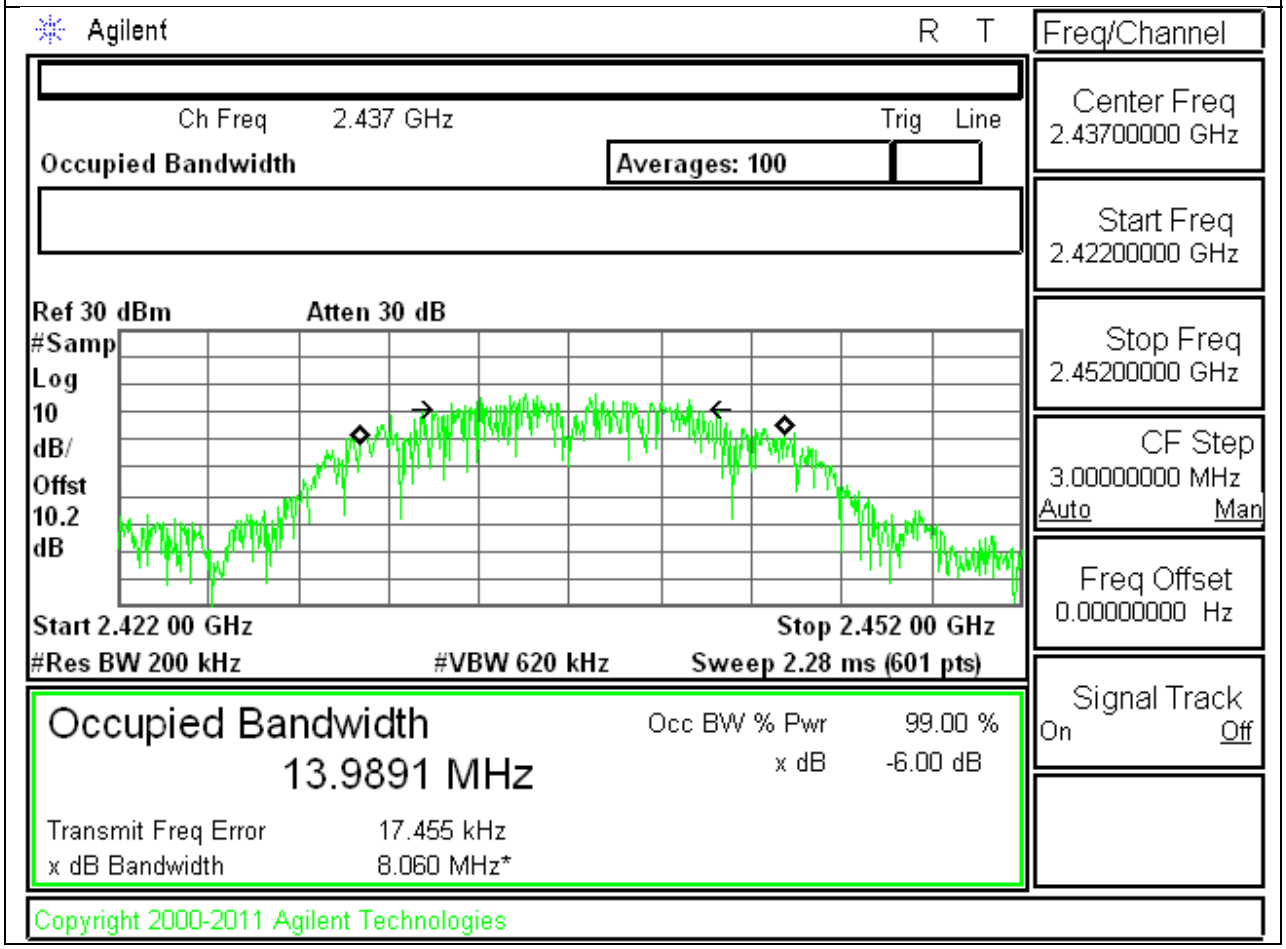
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	16.20
Mid	2437	16.18
High	2462	16.18
Worst		16.18

9.2.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	17.30
Mid	2437	17.29
High	2462	17.24
Worst		17.30

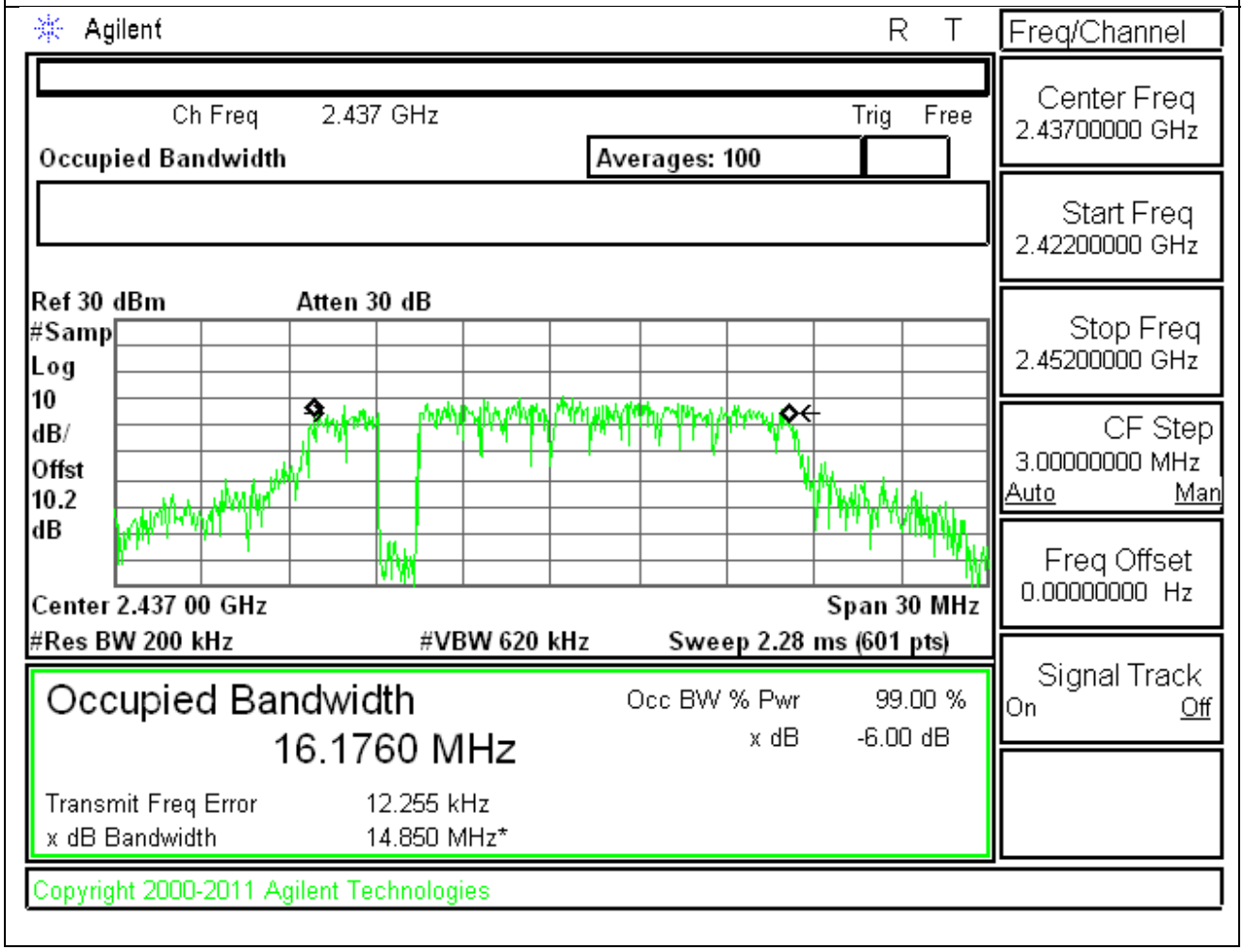
802.11b 99% BANDWIDTH

99%BANDWIDTH MID CH



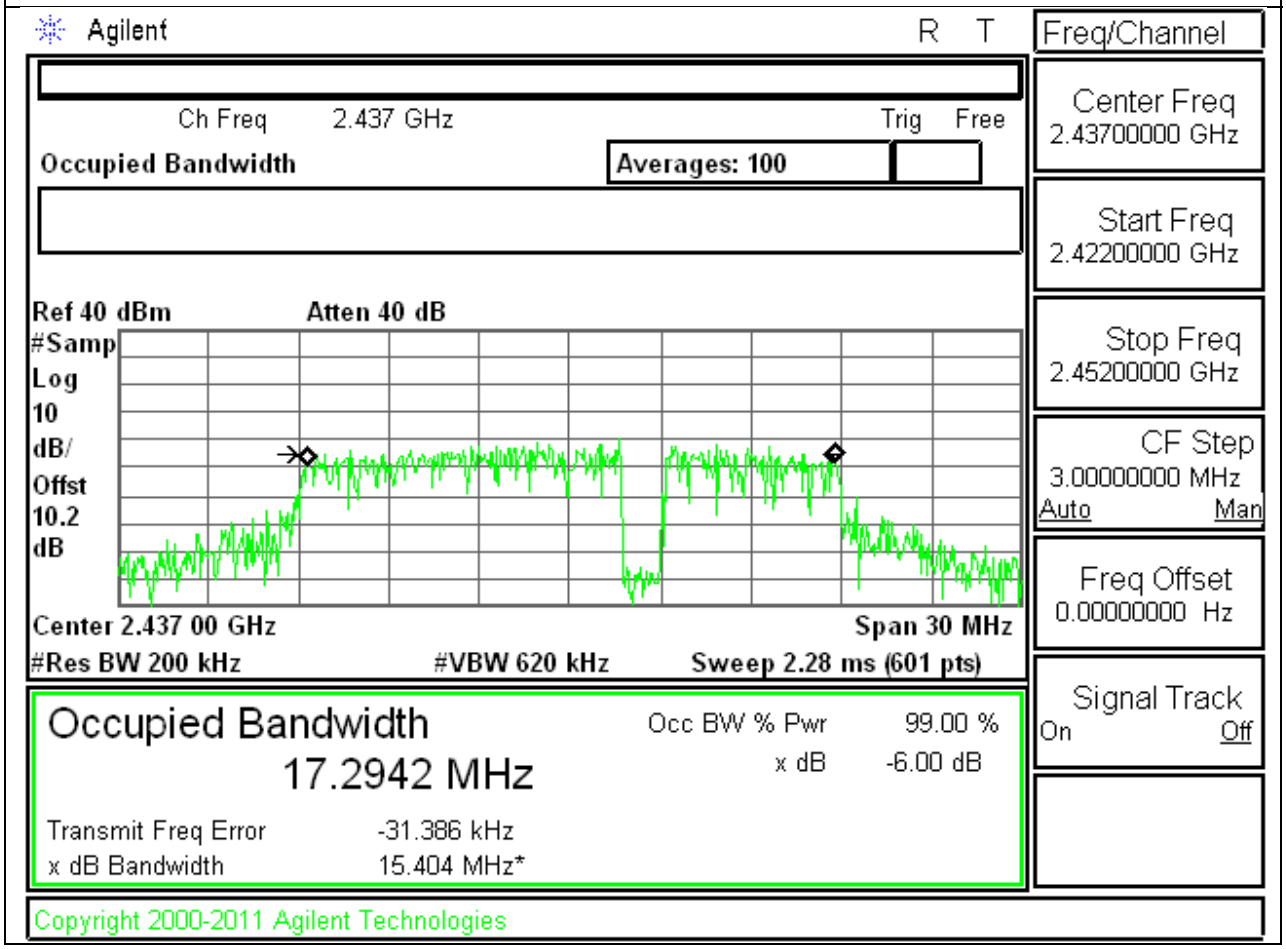
802.11g 99% BANDWIDTH

99% BANDWIDTH MID CH



802.11n 99% BANDWIDTH

99% BANDWIDTH MID CH



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 10.2 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	16.90
Mid	2437	17.20
High	2462	17.30
Worst		17.300

9.3.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	2412	12.90
Mid	2437	13.00
High	2462	13.30
Worst		13.300

9.3.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	2412	11.90
Mid	2437	12.00
High	2462	12.20
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	-1.26	30.00	30	36	30.00
Mid	2437	-1.26	30.00	30	36	30.00
High	2462	-1.26	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	19.60	19.60	30.00	-10.40
Mid	2437	19.94	19.94	30.00	-10.06
High	2462	19.89	19.89	30.00	-10.11
Worst			19.94		

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	-1.26	30.00	30	36	30.00
Mid	2437	-1.26	30.00	30	36	30.00
High	2462	-1.26	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	20.91	20.91	30.00	-9.09
Mid	2437	20.82	20.82	30.00	-9.18
High	2462	20.97	20.97	30.00	-9.03
Worst			20.97		

9.4.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Limits

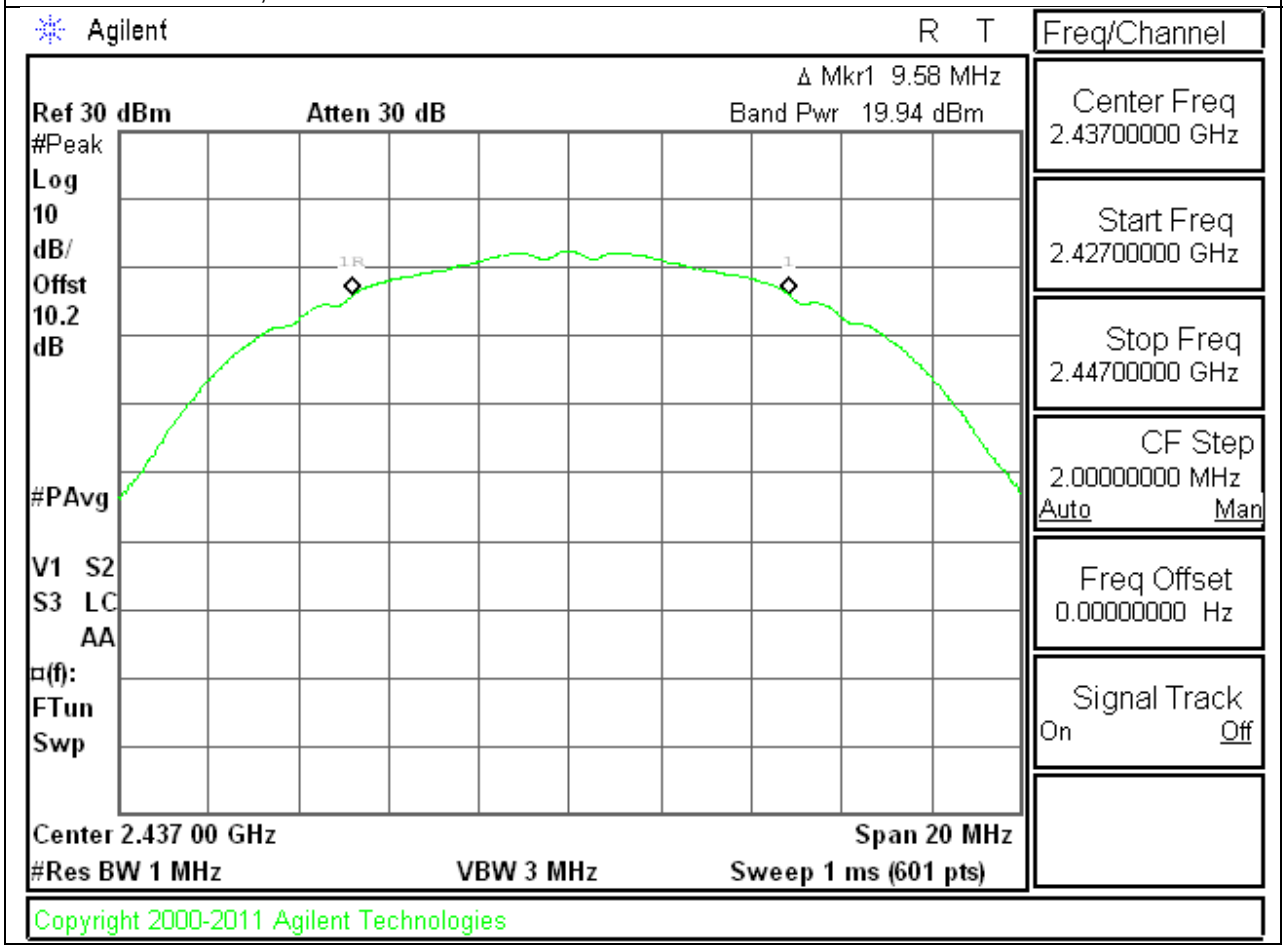
Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	-1.26	30.00	30	36	30.00
Mid	2437	-1.26	30.00	30	36	30.00
High	2462	-1.26	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	19.53	19.53	30.00	-10.47
Mid	2437	19.57	19.57	30.00	-10.43
High	2462	19.73	19.73	30.00	-10.27
Worst			19.73		

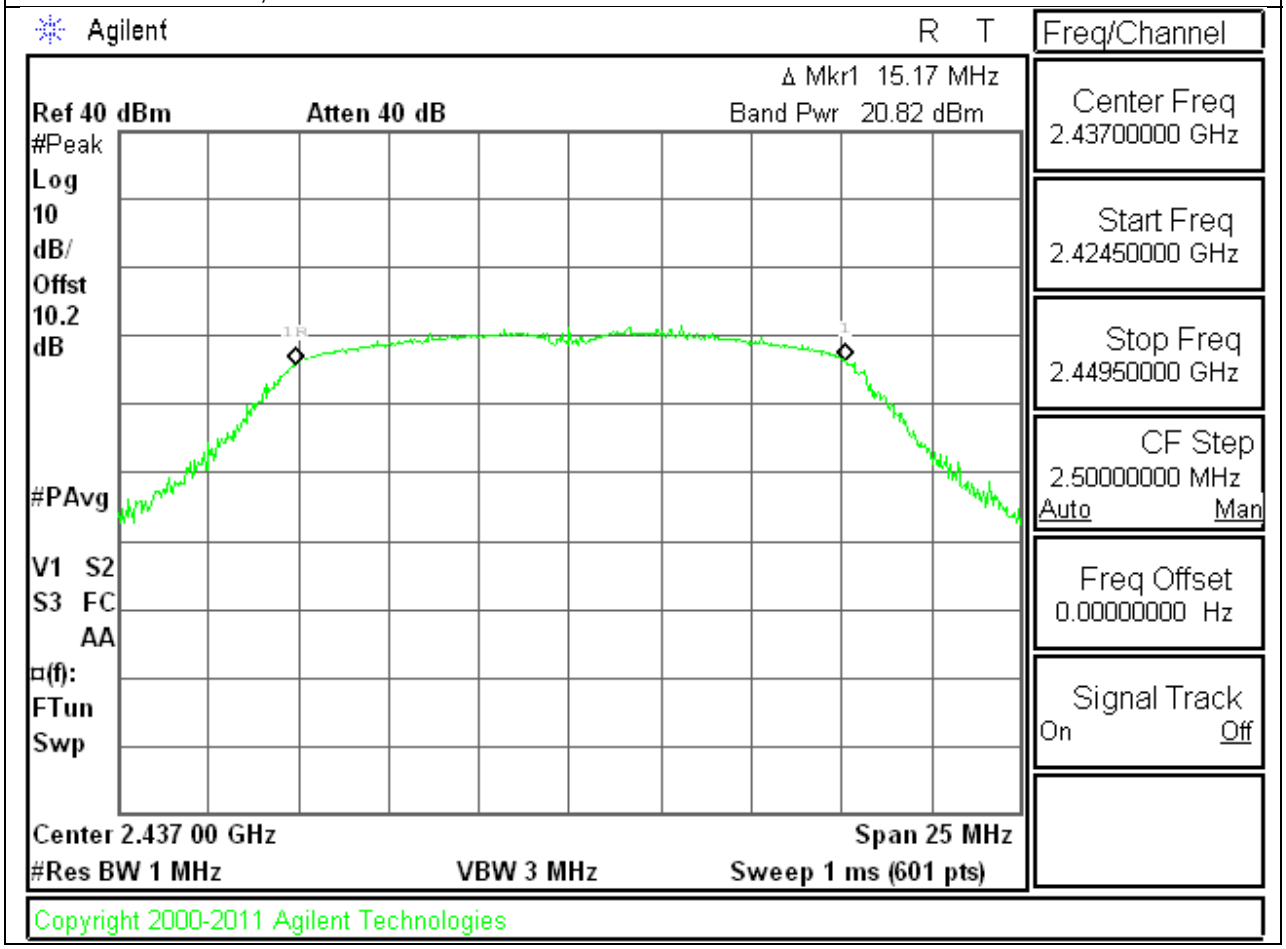
802.11b OUTPUT POWER, Chain 0

OUTPUT POWER, Chain 0 MID CH



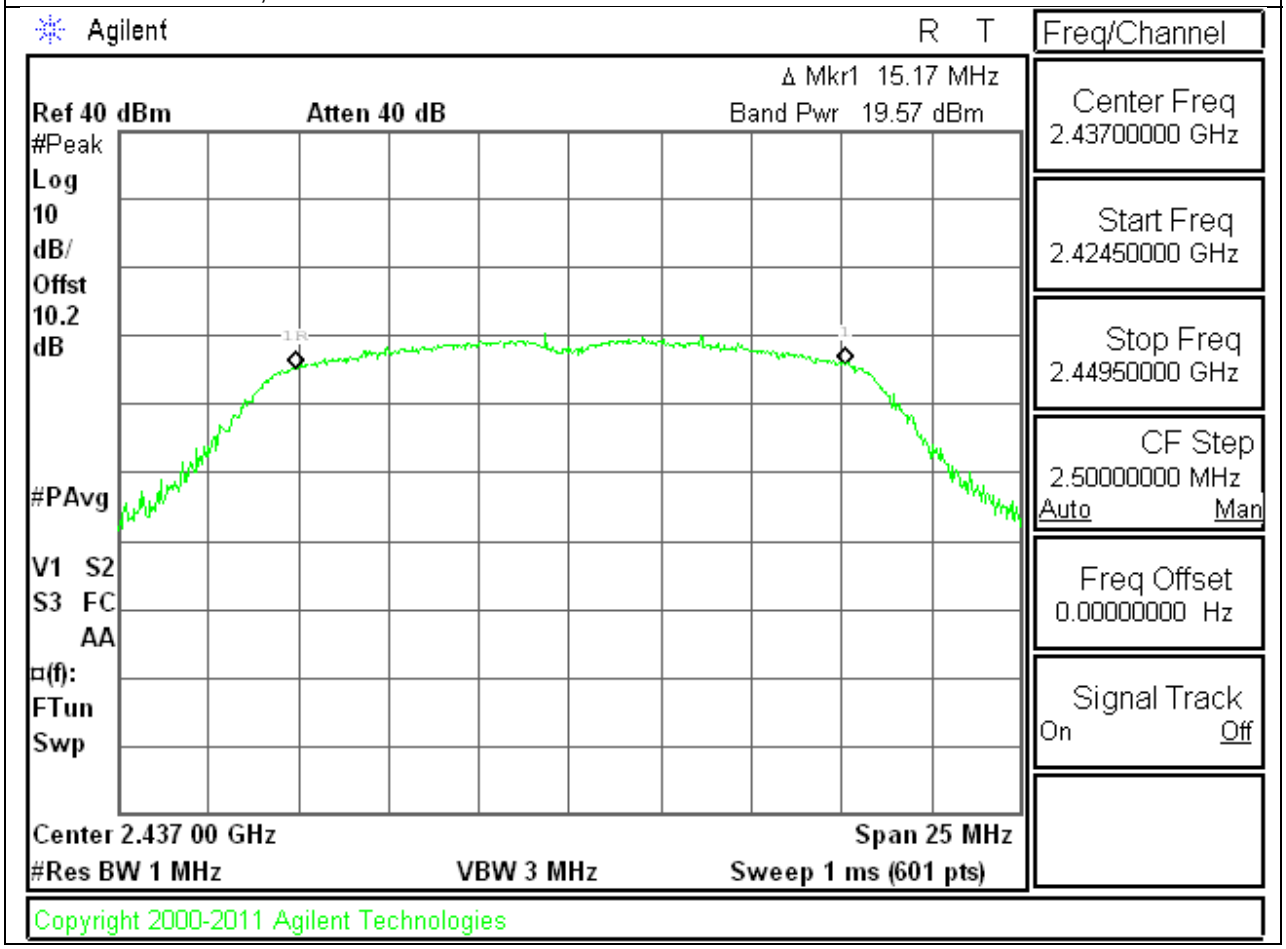
802.11g OUTPUT POWER, Chain 0

OUTPUT POWER, Chain 0 MID CH



802.11n OUTPUT POWER, Chain 0

OUTPUT POWER, Chain 0 MID CH



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	-4.41	8.0	-12.4
Mid	2437	-4.97	8.0	-13.0
High	2462	-4.61	8.0	-12.6

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	-12.00	8.0	-20.0
Mid	2437	-12.17	8.0	-20.2
High	2462	-11.00	8.0	-19.0

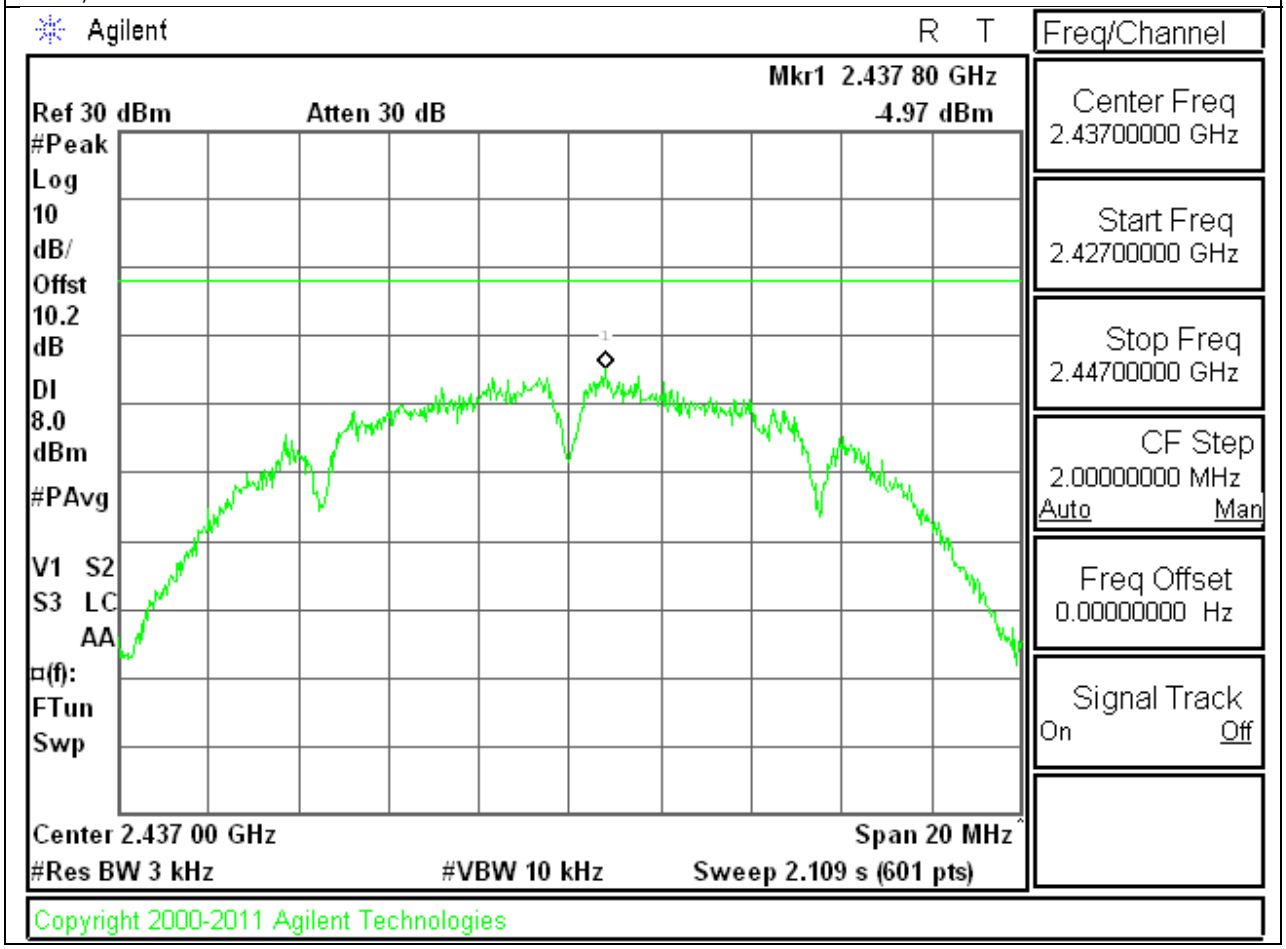
9.5.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-13.21	8.0	-21.2
Mid	2437	-12.60	8.0	-20.6
High	2462	-14.16	8.0	-22.2

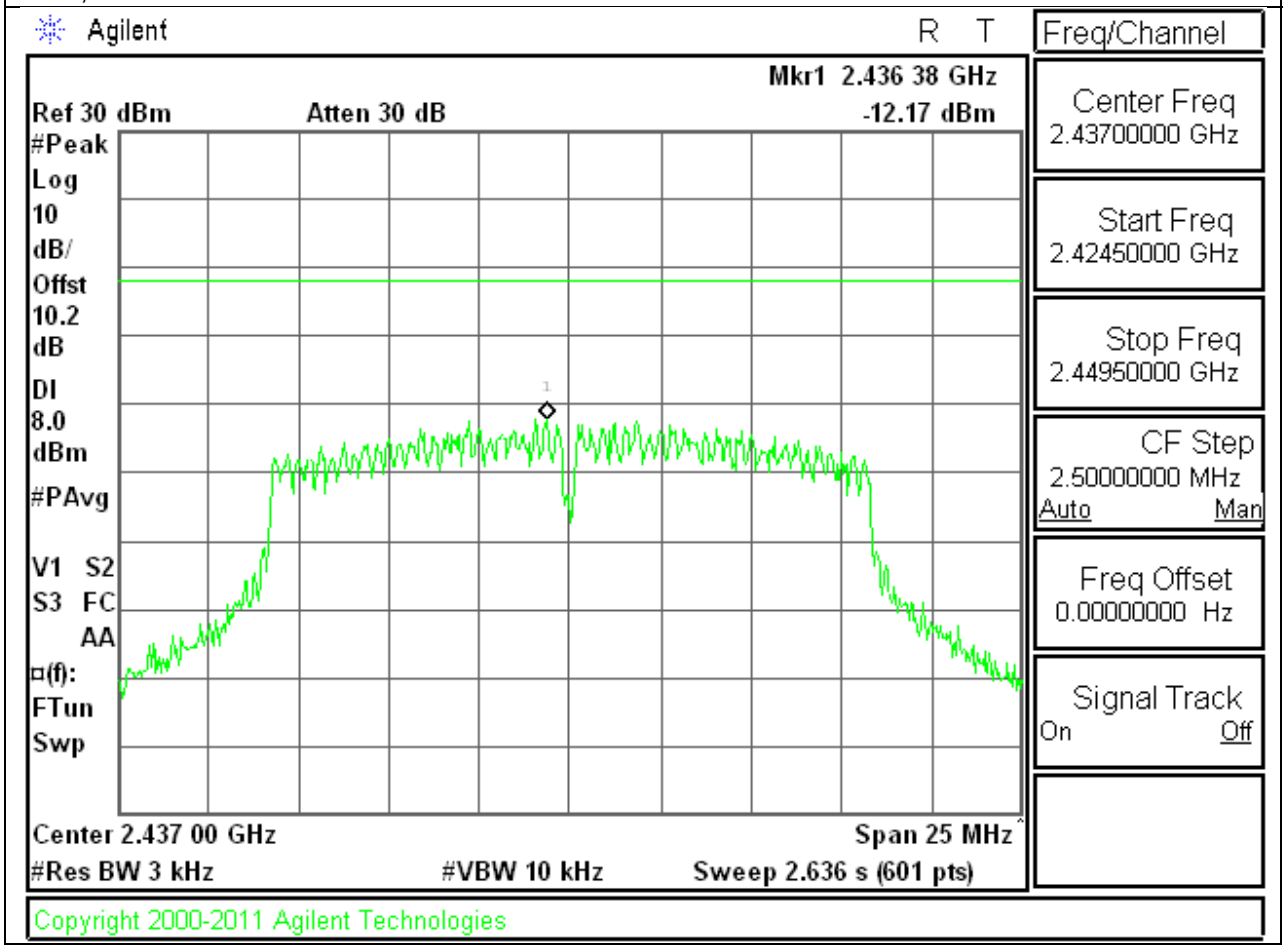
802.11b PSD, Chain 0

PSD, Chain 0 MID CH



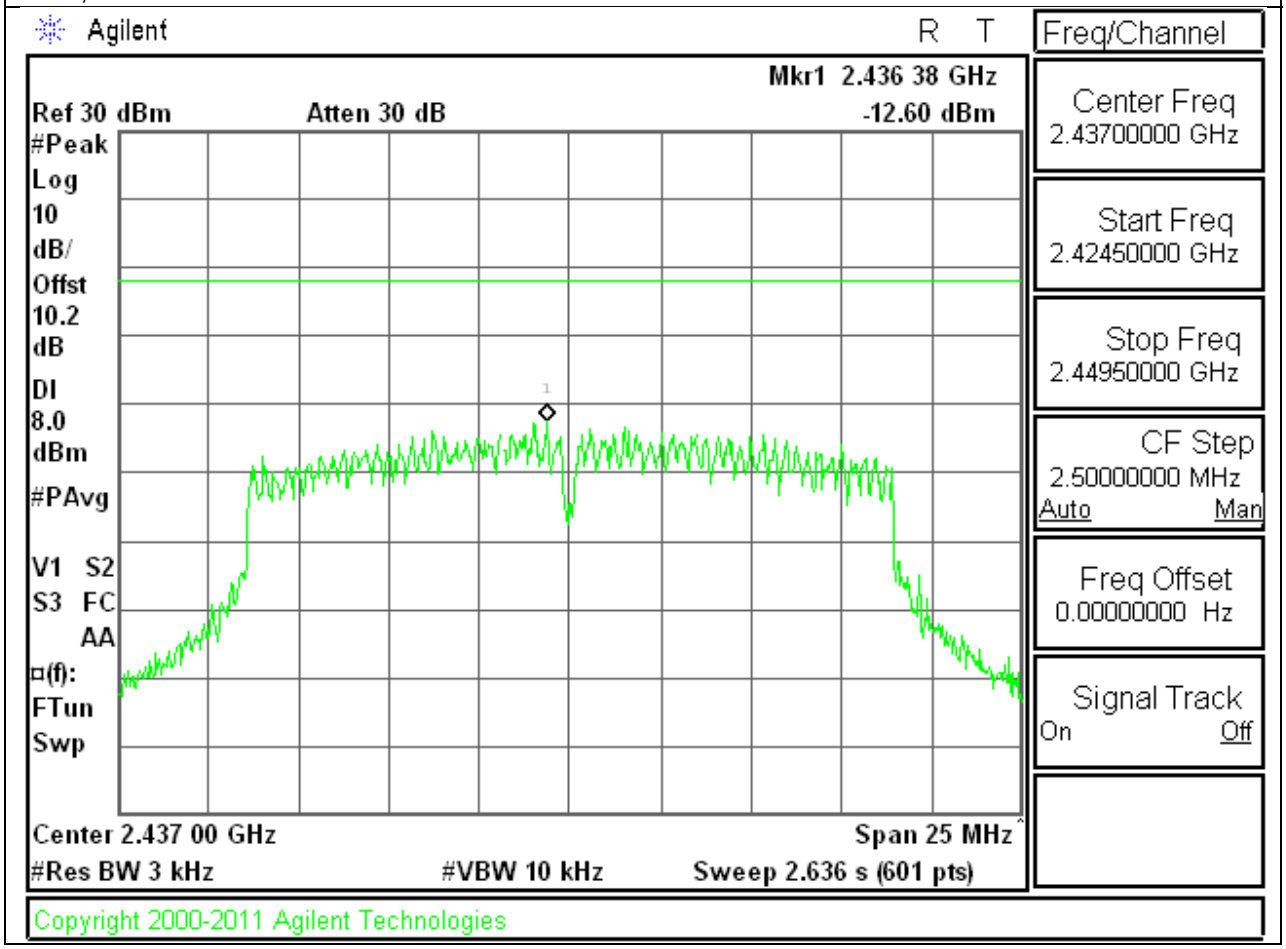
802.11g PSD, Chain 0

PSD, Chain 0 MID CH



802.11n PSD, Chain 0

PSD, Chain 0 MID CH



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

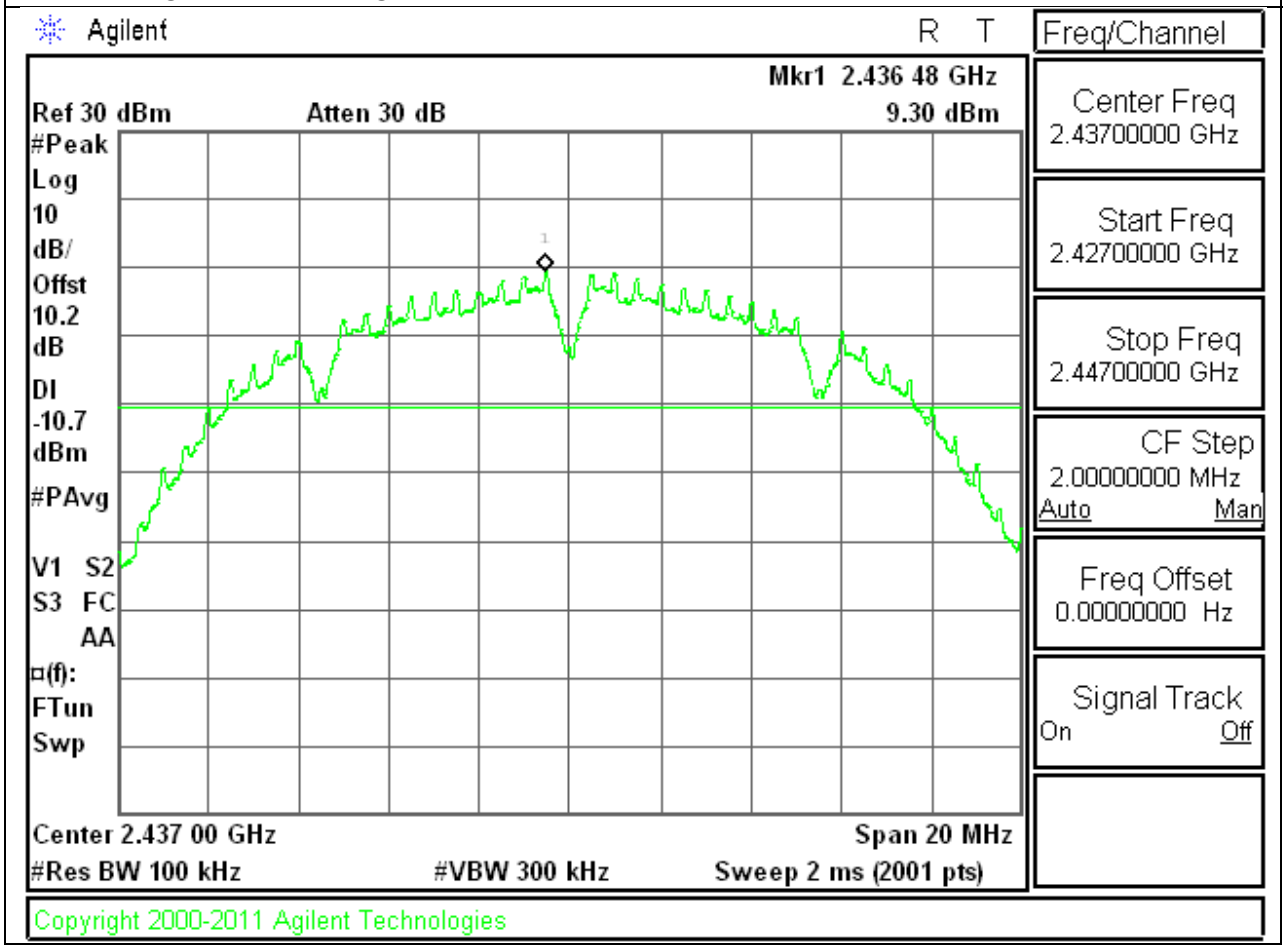
The transmitter output is connected to a spectrum analyzer with RBW = 100 kHz, VBW = 300 kHz, peak detector, and max hold. Measurements utilizing these settings are made of the in-band reference level, bandedge (where measurements to the general radiated limits will not be made) and out-of-band emissions.

RESULTS

9.6.1. 802.11b MODE IN THE 2.4 GHz BAND

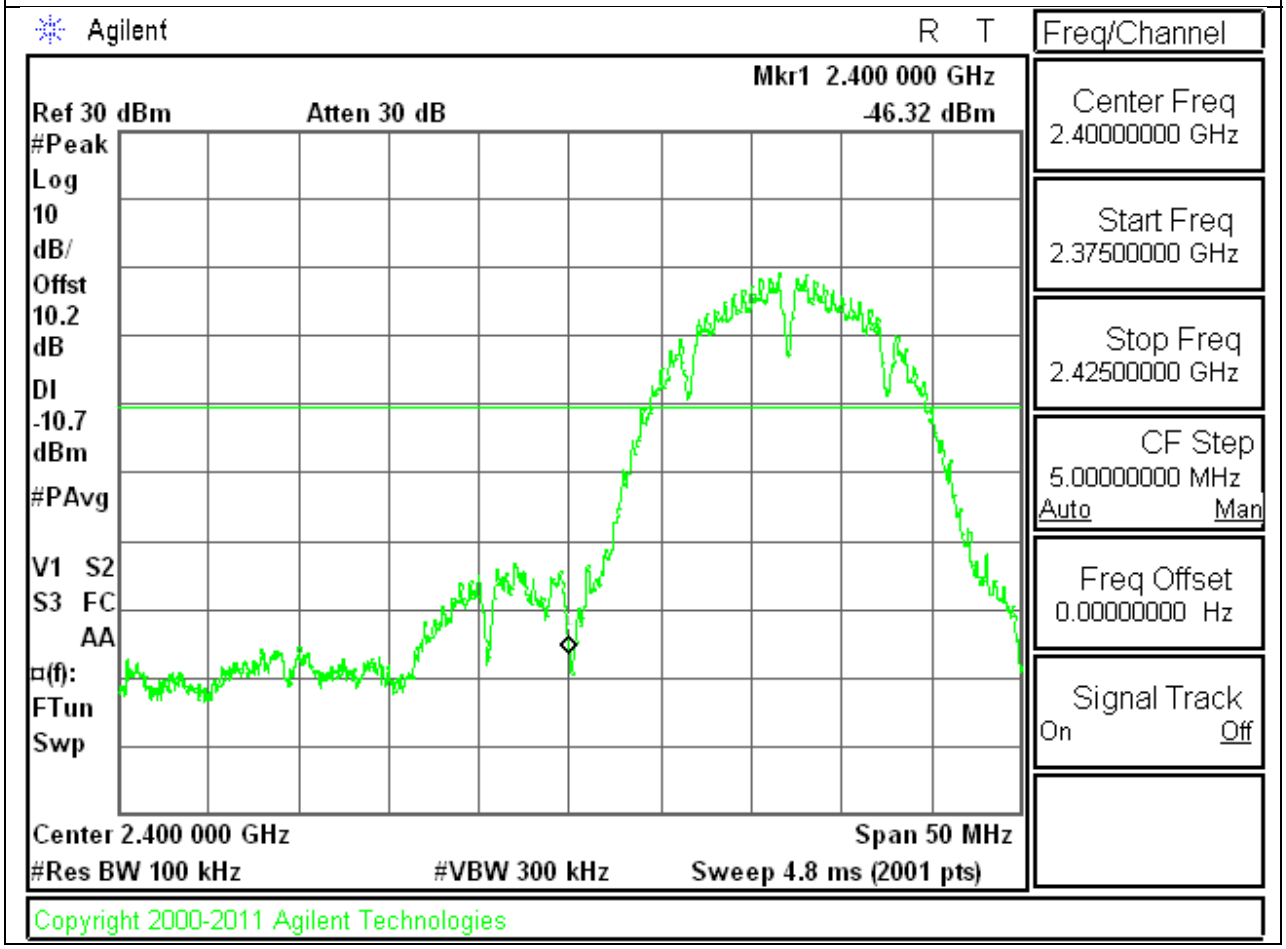
IN-BAND REFERENCE LEVEL

REFERENCE LEVEL MID CH



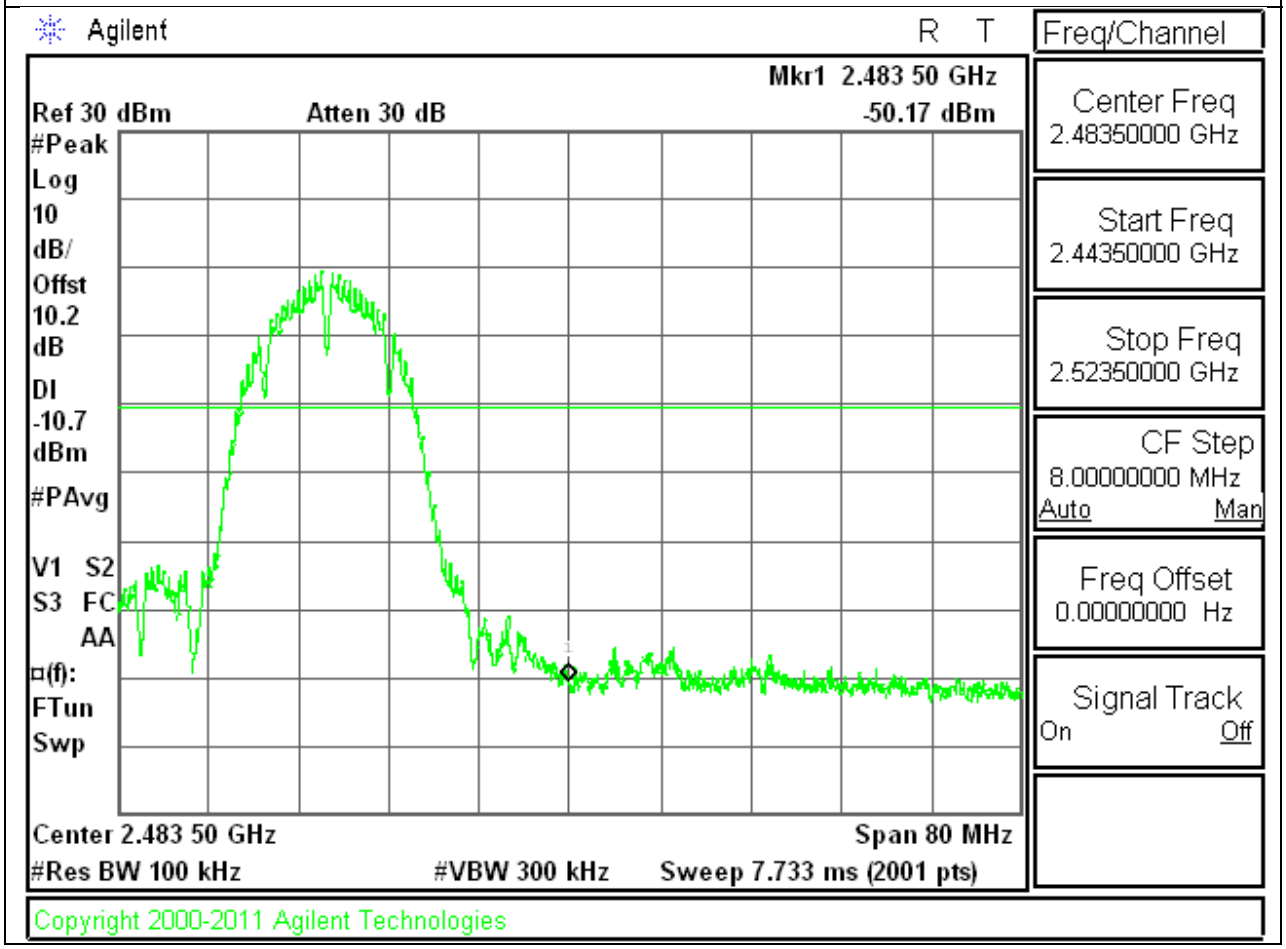
LOW CHANNEL BANDEDGE

AUTHORIZED BAND EDGE LOW CH



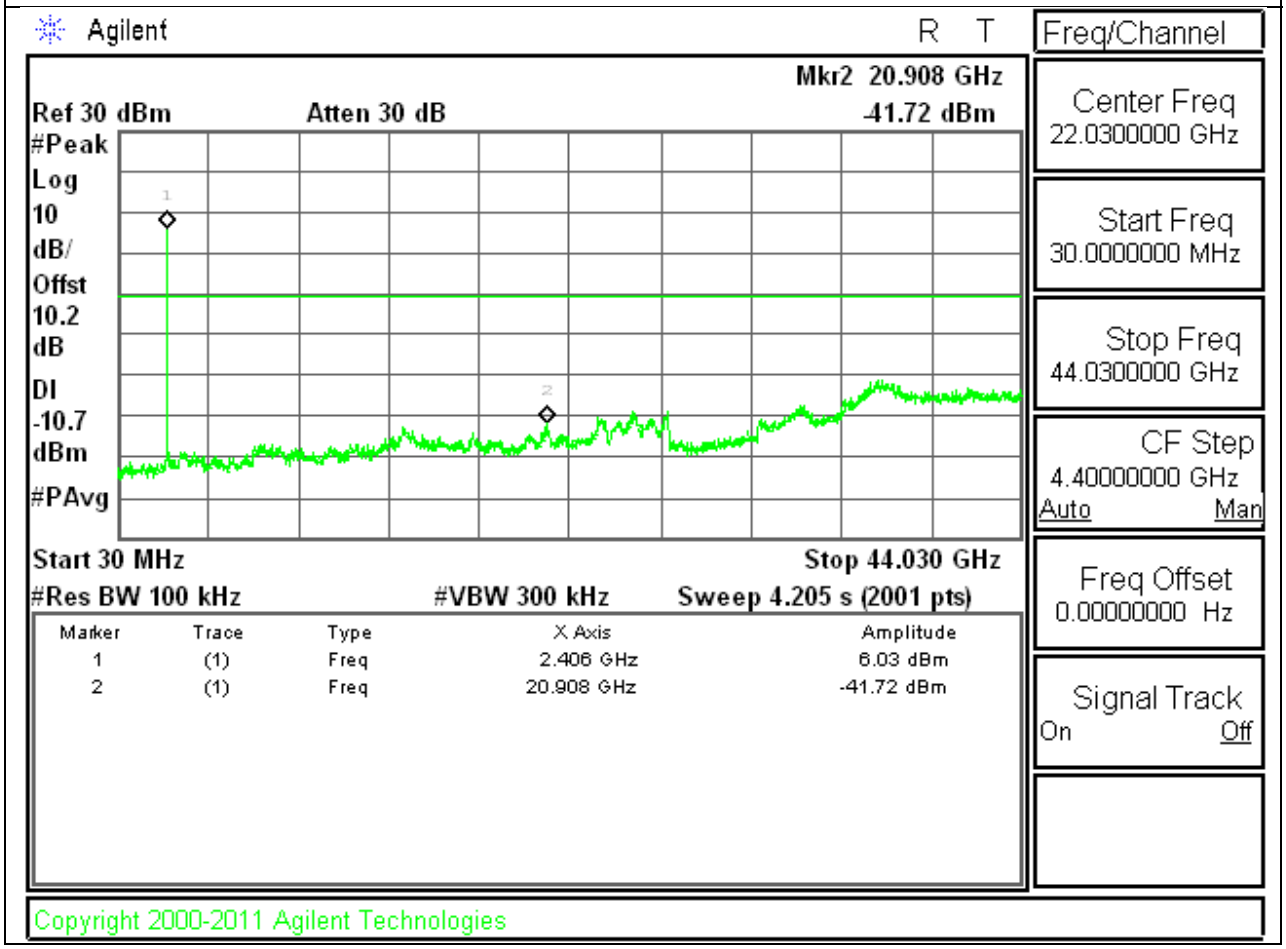
HIGH CHANNEL BANDEDGE

AUTHORIZED BAND EDGE HIGH CH

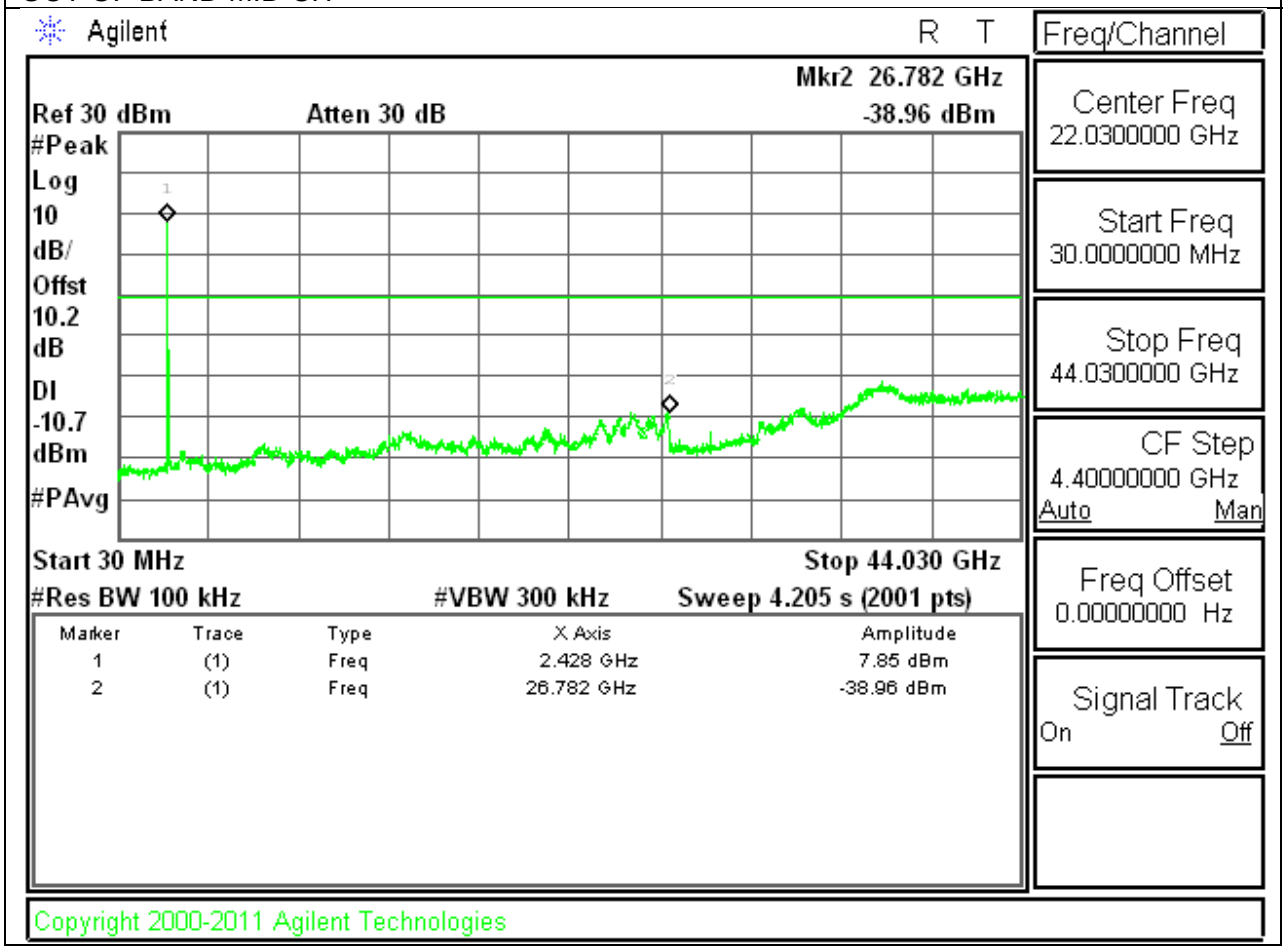


OUT-OF-BAND EMISSIONS

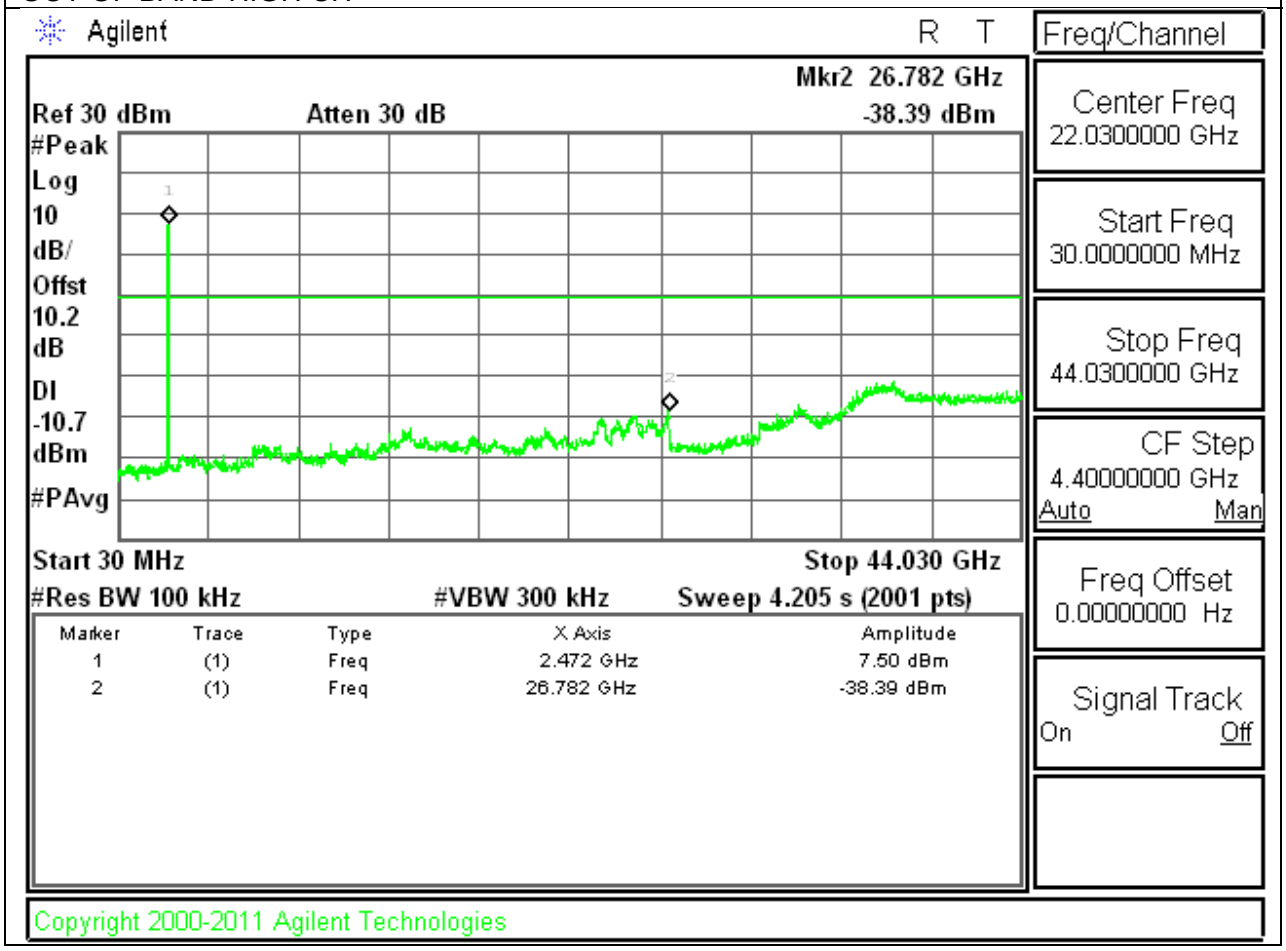
OUT OF BAND LOW CH



OUT OF BAND MID CH



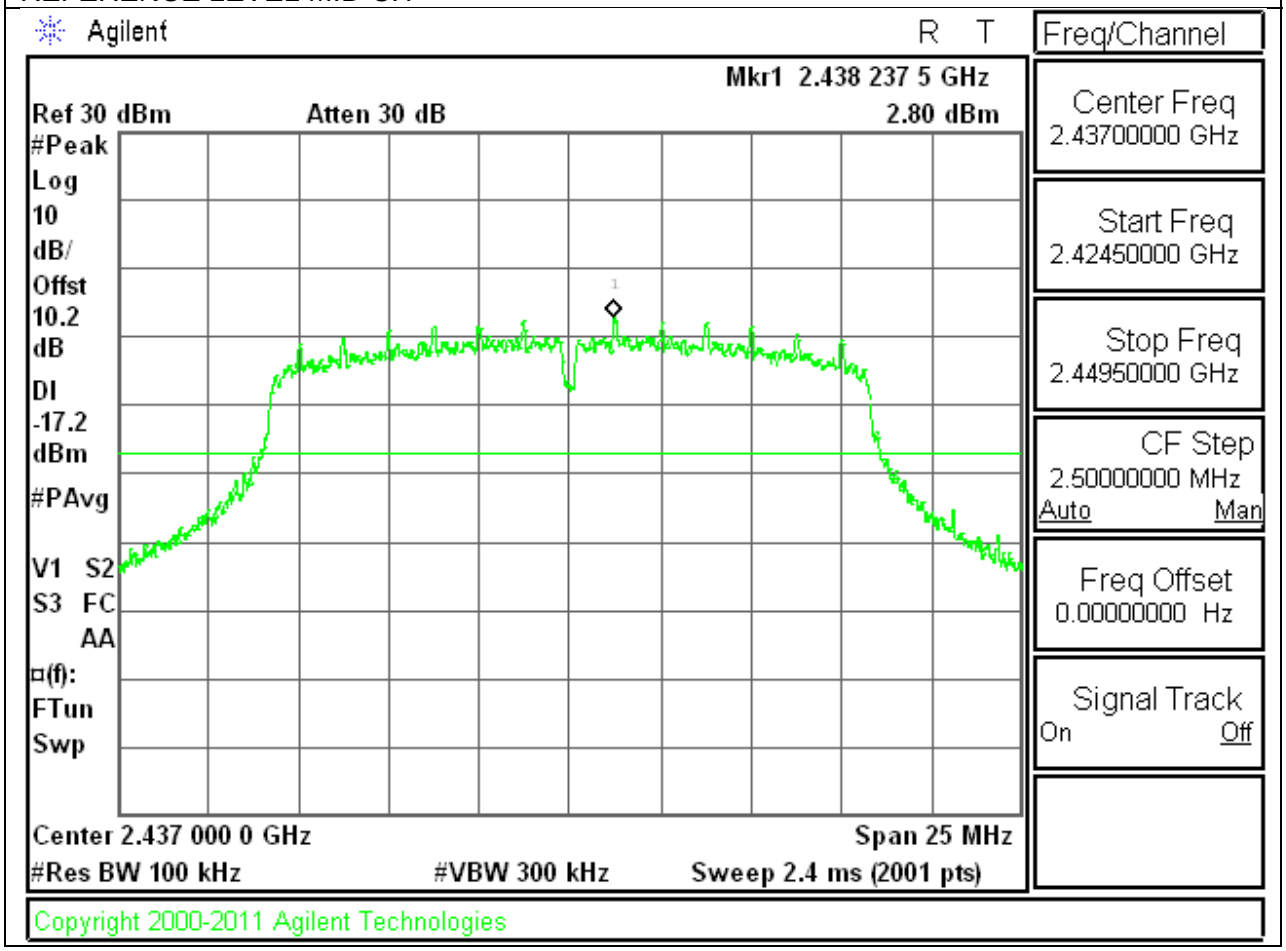
OUT OF BAND HIGH CH



9.6.2. 802.11g MODE IN THE 2.4 GHz BAND

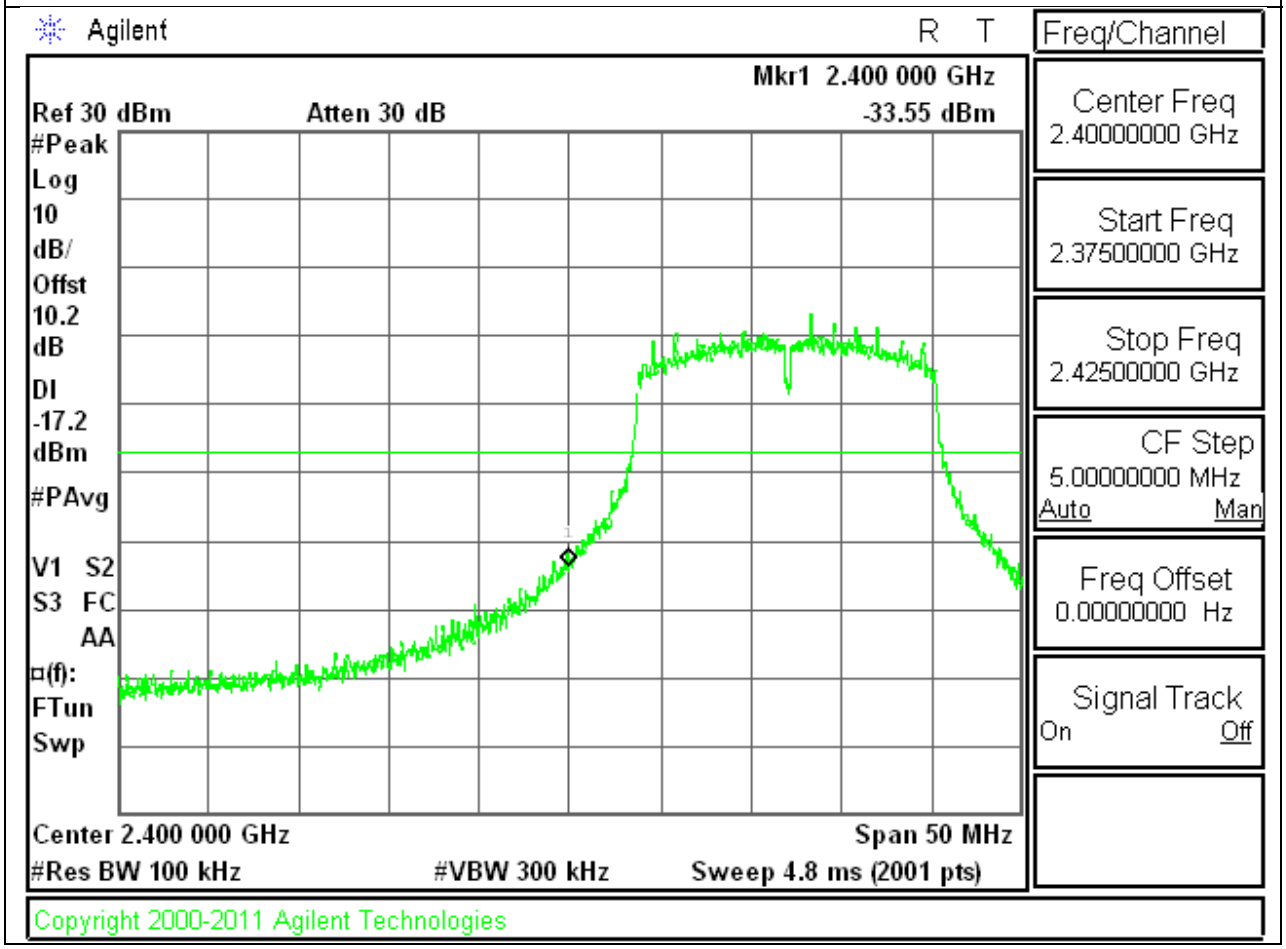
IN-BAND REFERENCE LEVEL

REFERENCE LEVEL MID CH



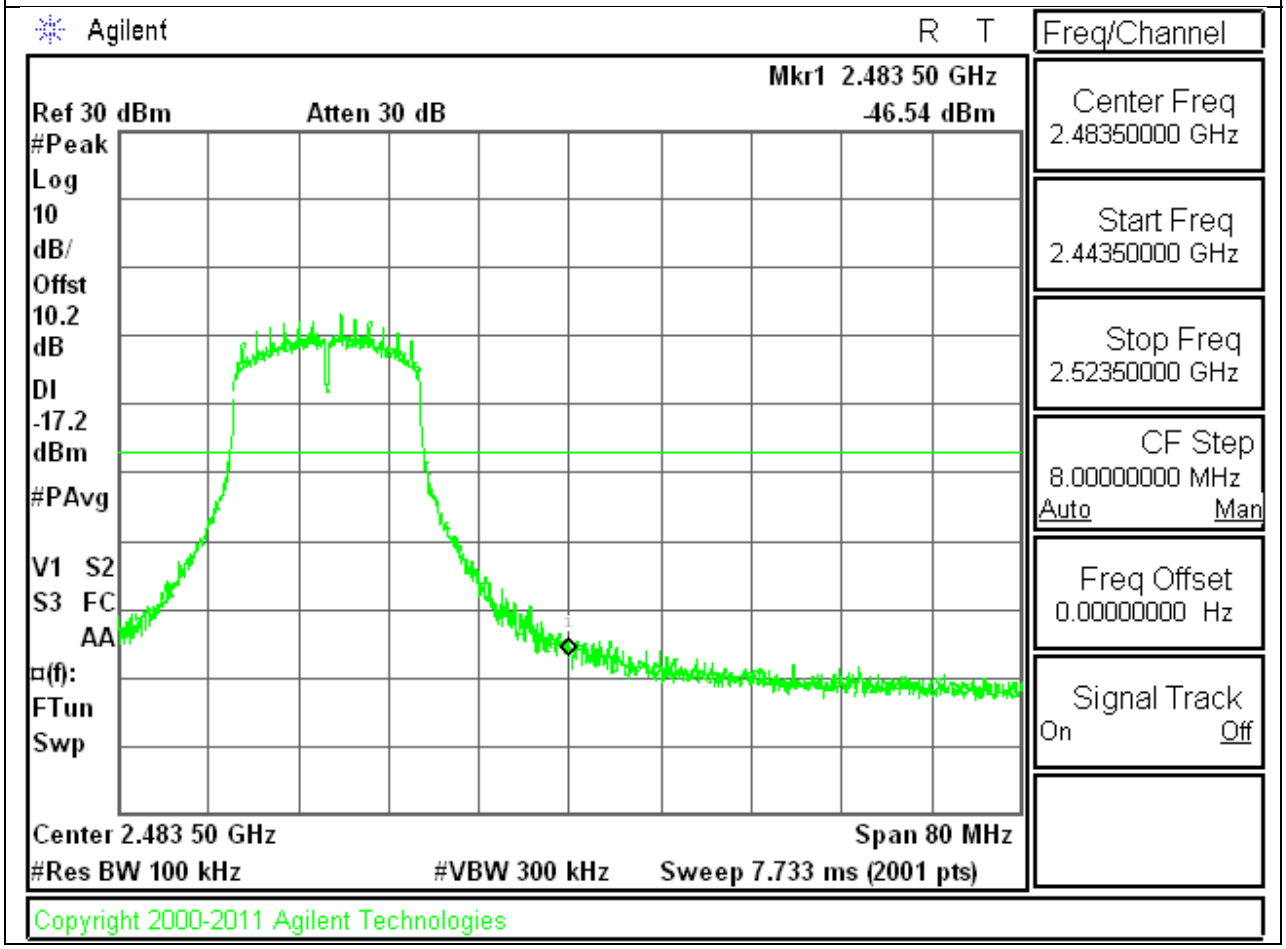
LOW CHANNEL BANDEDGE

AUTHORIZED BAND EDGE LOW CH



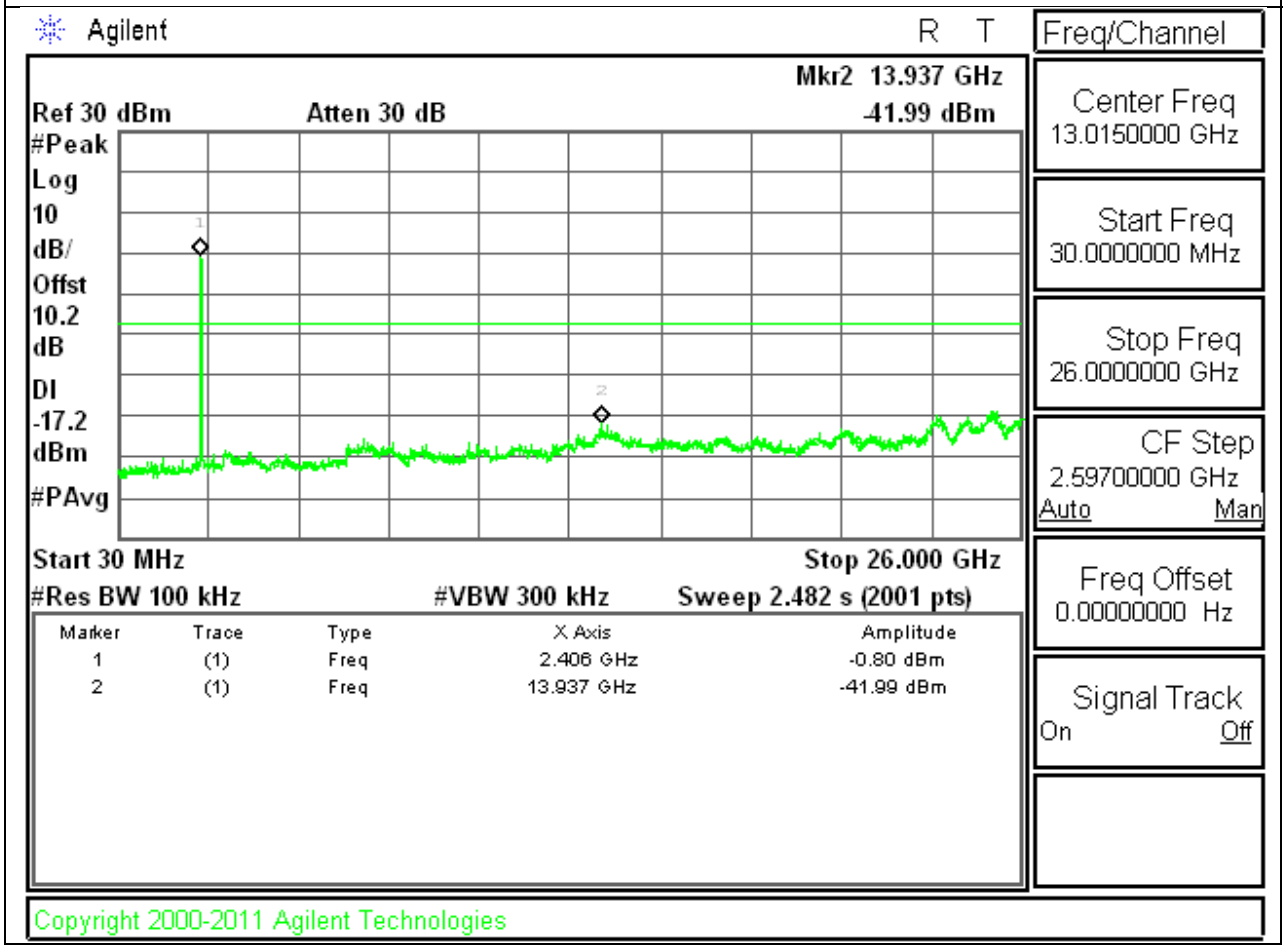
HIGH CHANNEL BANDEDGE

AUTHORIZED BAND EDGE HIGH CH

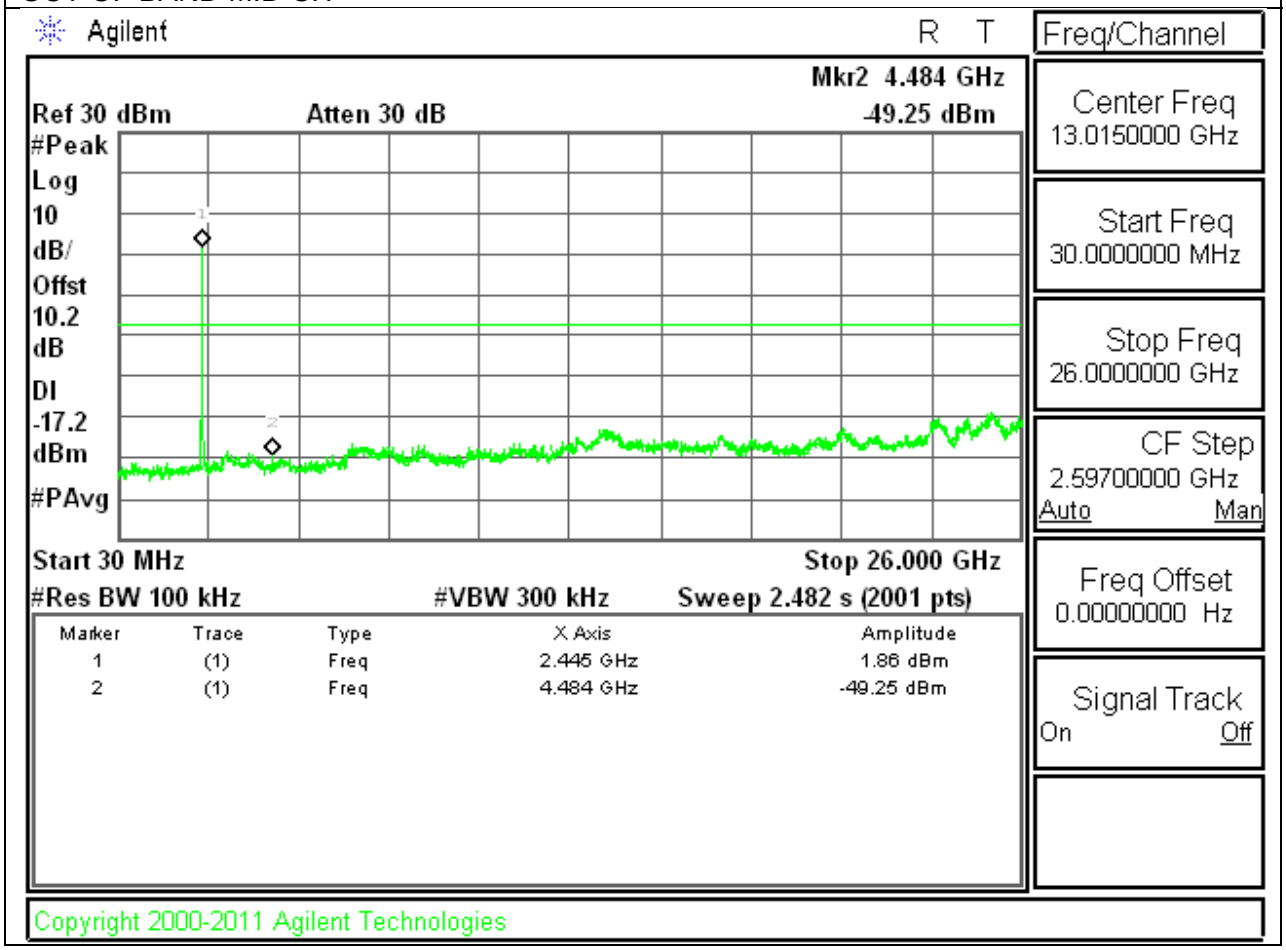


OUT-OF-BAND EMISSIONS

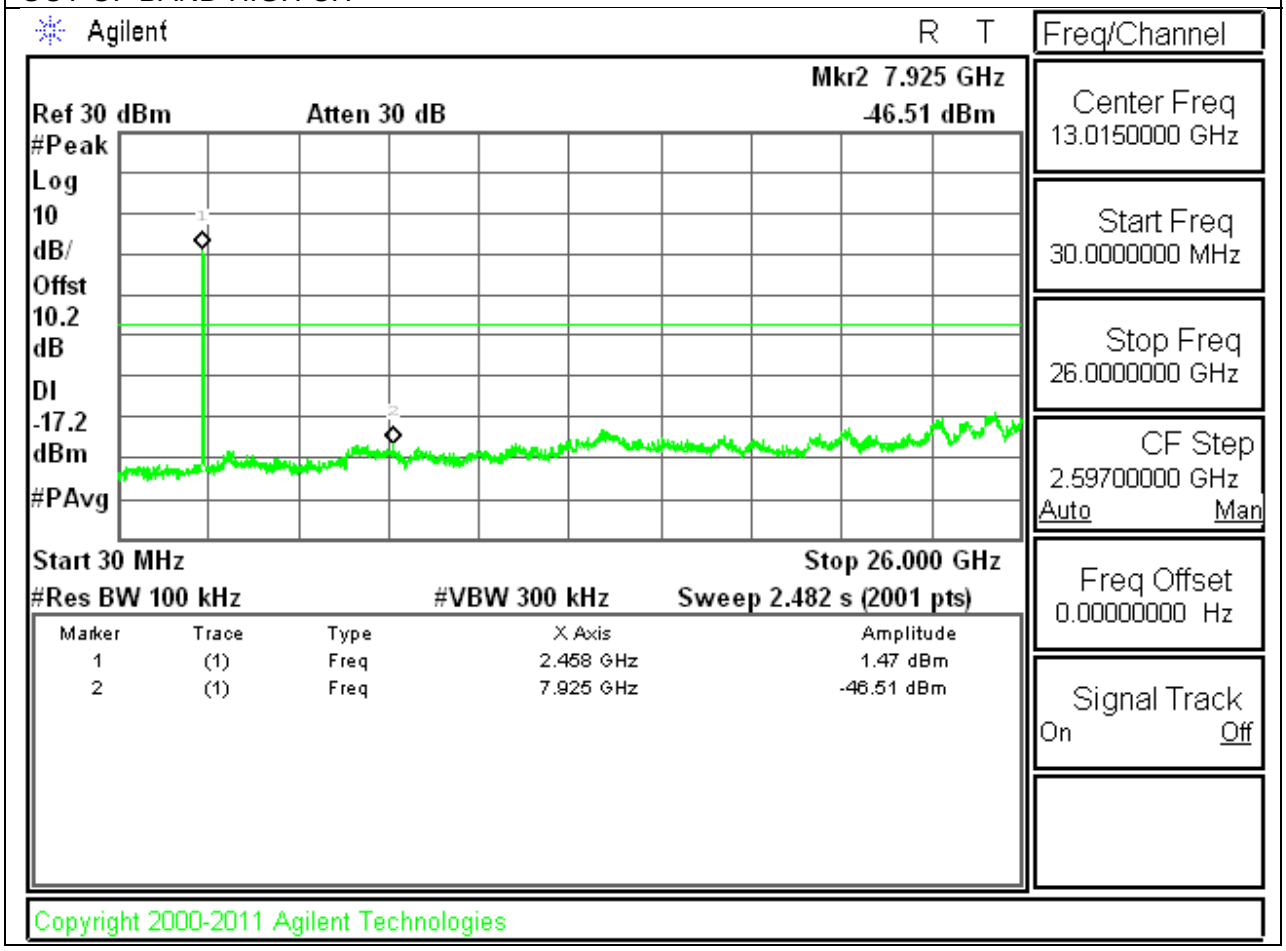
OUT OF BAND LOW CH



OUT OF BAND MID CH



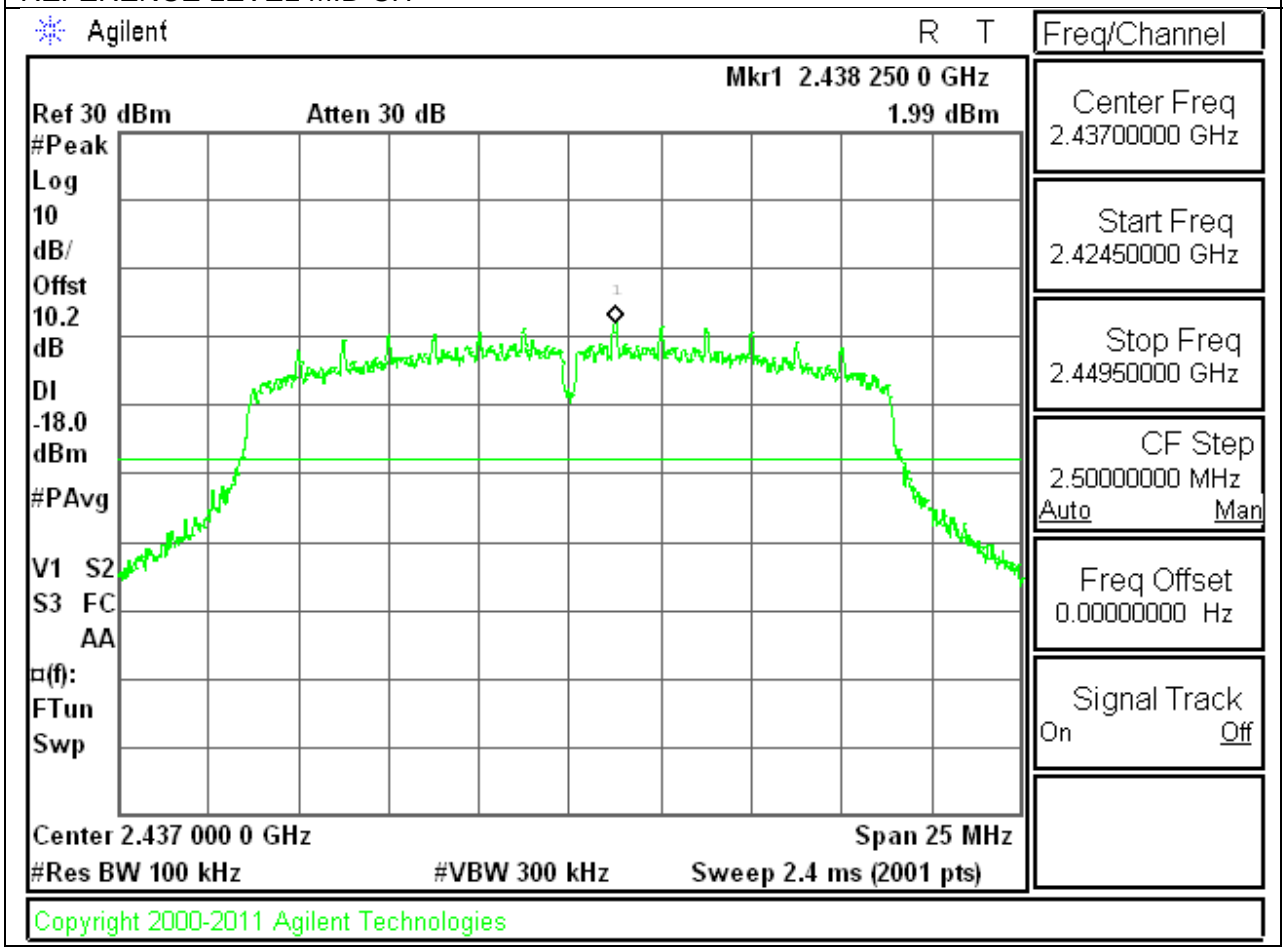
OUT OF BAND HIGH CH



9.6.3. 802.11n MODE IN THE 2.4 GHz BAND

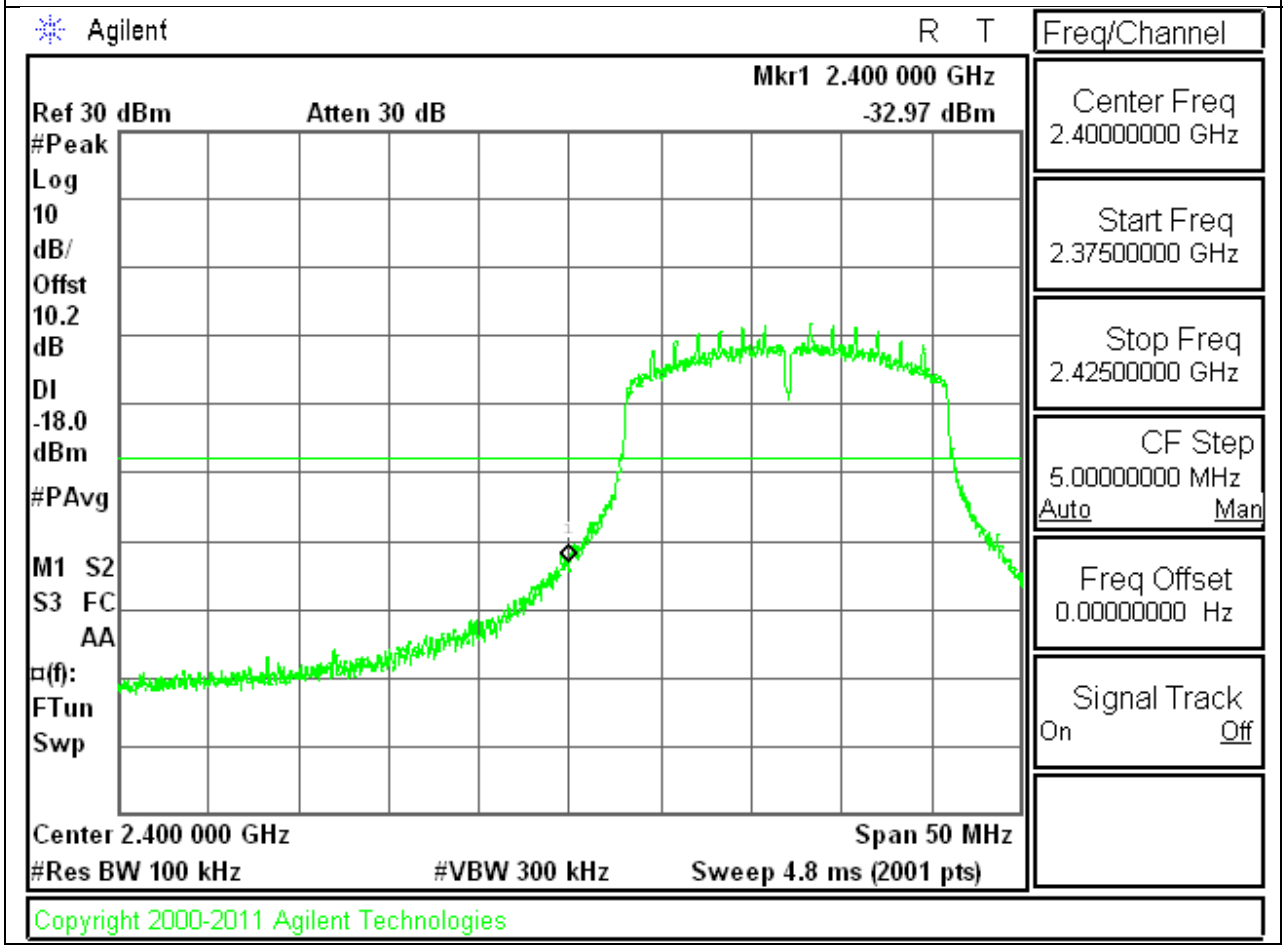
IN-BAND REFERENCE LEVEL

REFERENCE LEVEL MID CH



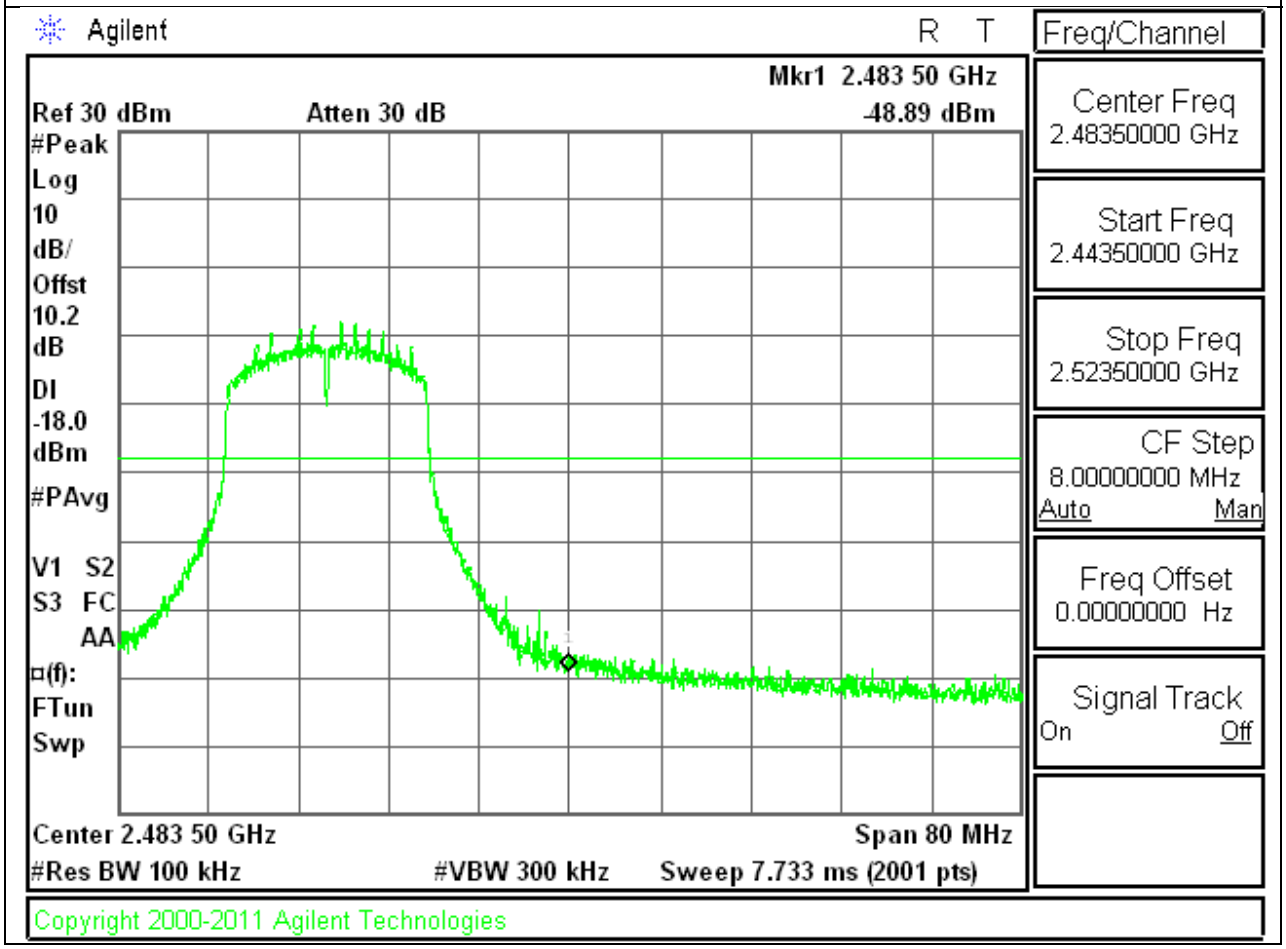
LOW CHANNEL BANDEDGE

AUTHORIZED BAND EDGE LOW CH



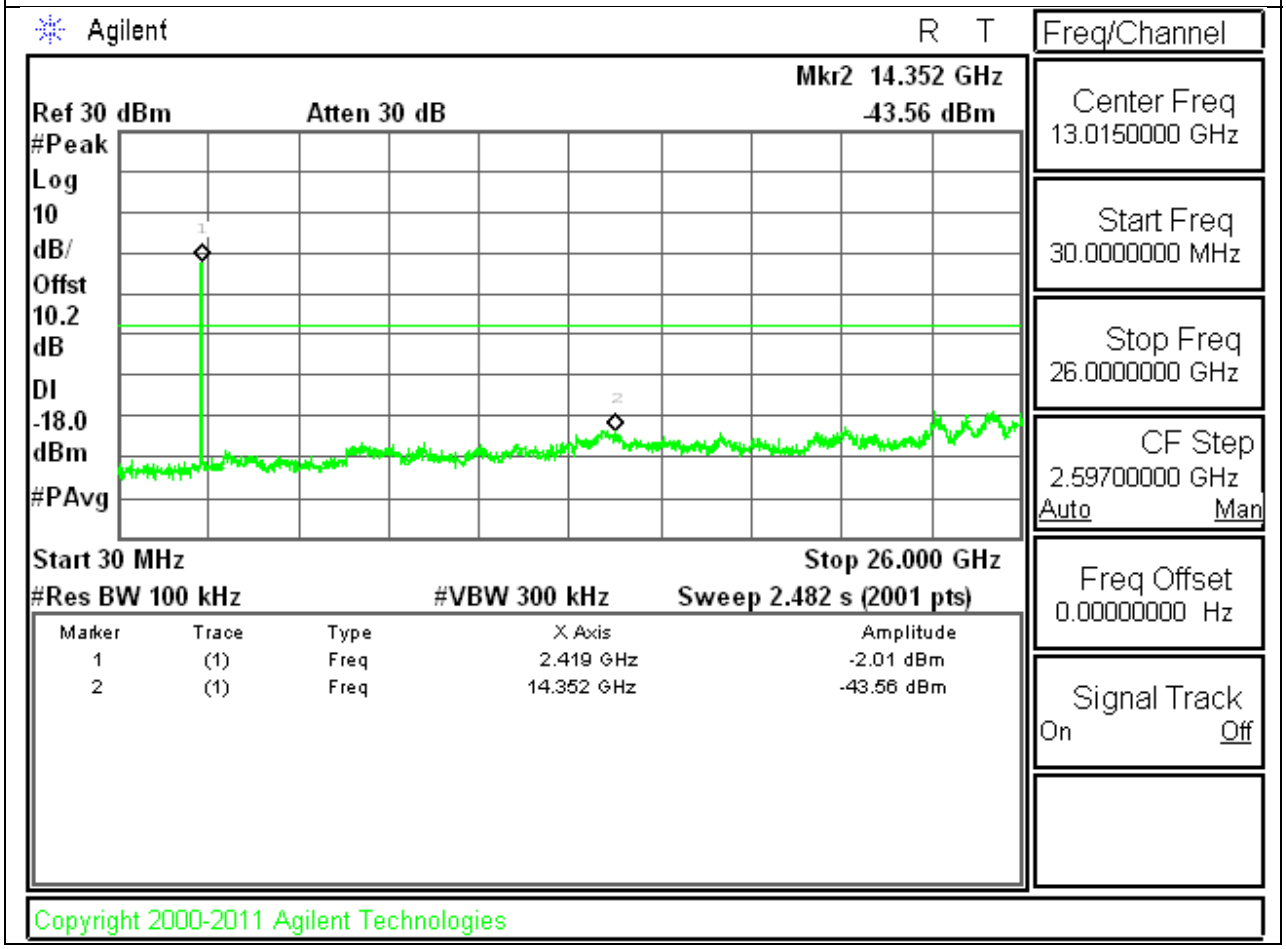
HIGH CHANNEL BANDEDGE

AUTHORIZED BAND EDGE HIGH CH

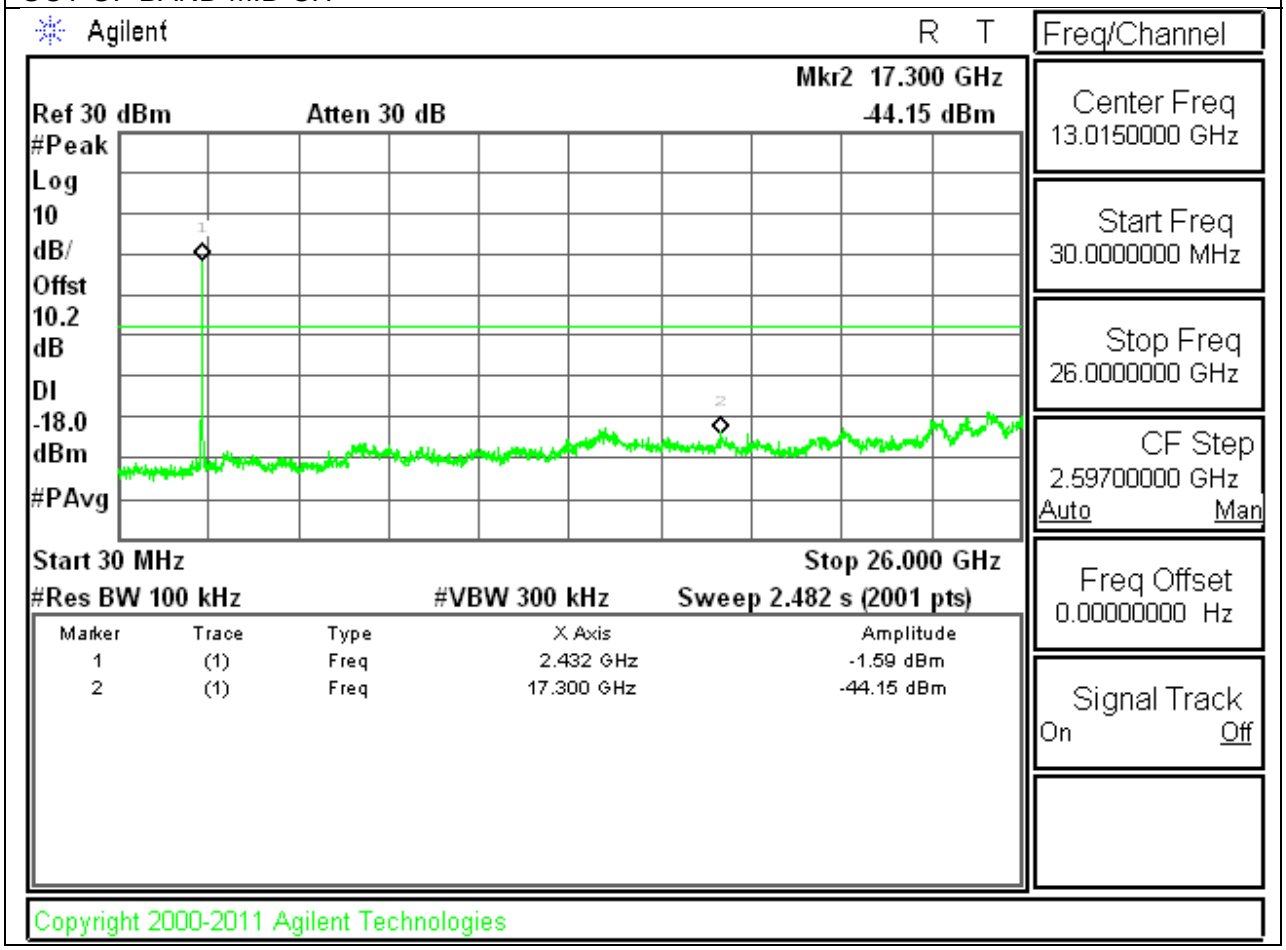


OUT-OF-BAND EMISSIONS

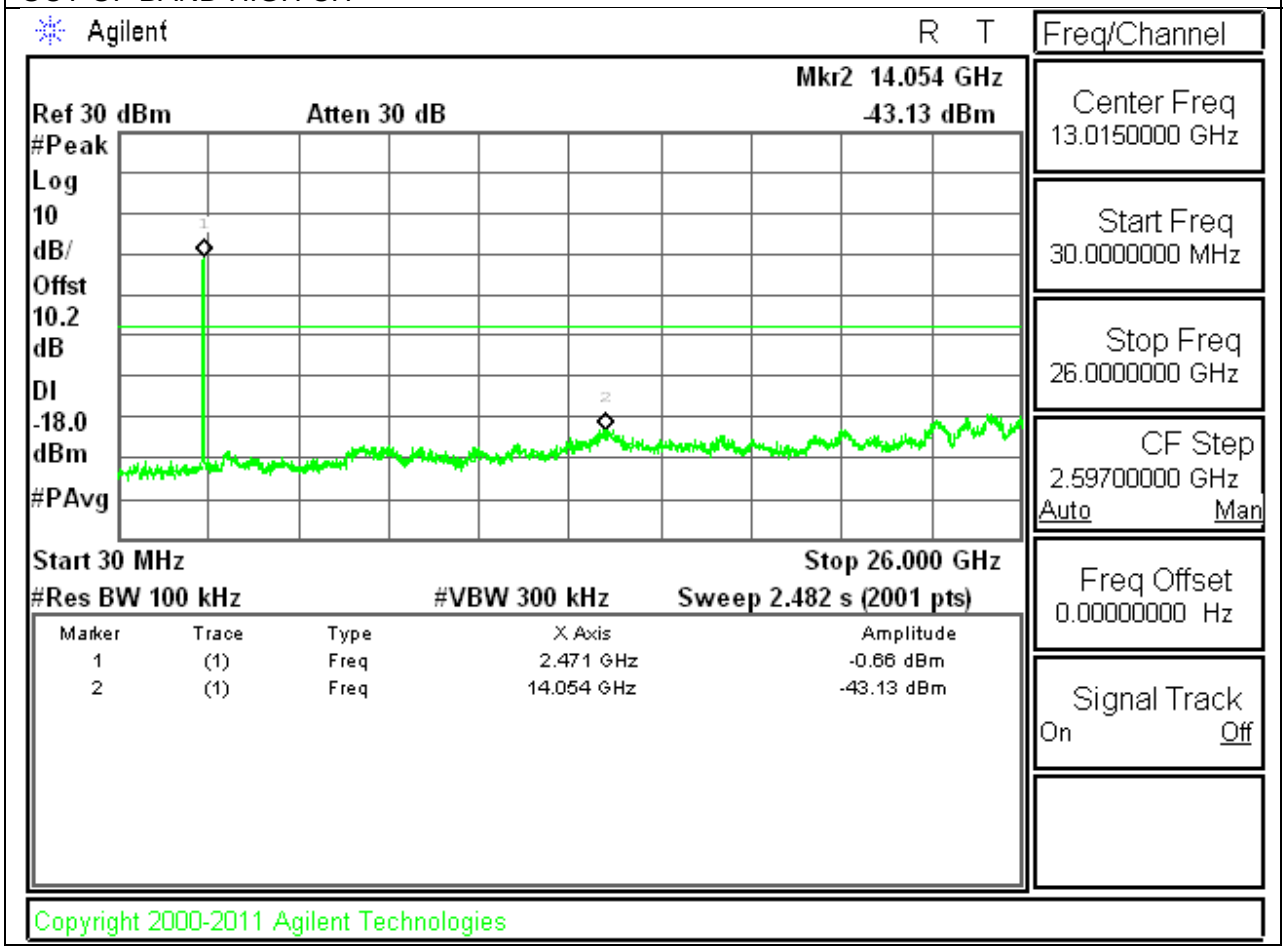
OUT OF BAND LOW CH



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 = 0.3dB; N mode = 0.32dB.

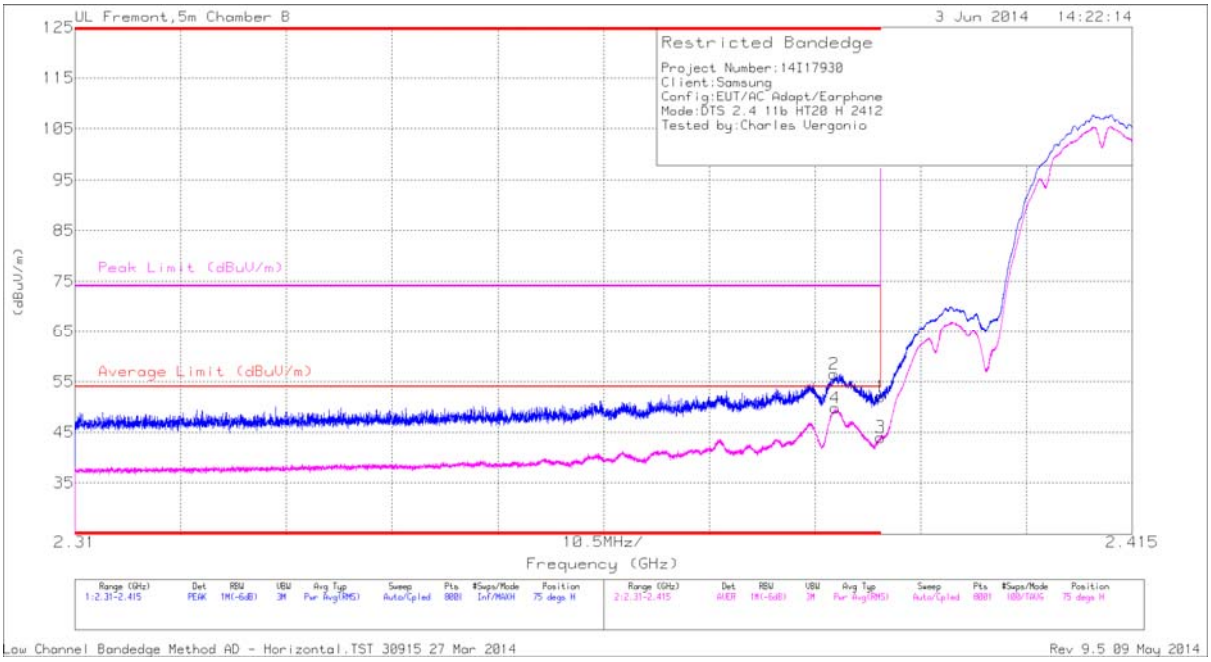
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

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

10.2. 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



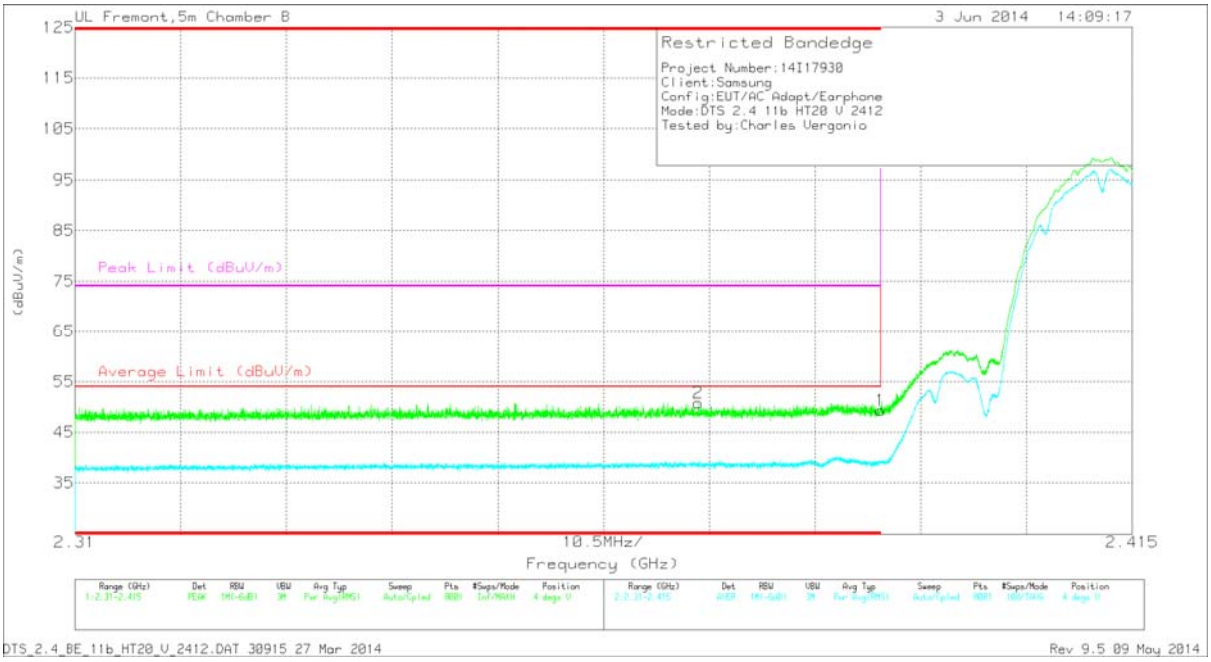
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	42.7	PK	32.1	-22.8	52	-	-	74	-22	75	279	H
2	* 2.385	47.31	PK	32.1	-22.9	56.51	-	-	74	-17.49	75	279	H
3	* 2.39	34.72	RMS	32.1	-22.8	44.02	54	-9.98	-	-	75	279	H
4	* 2.385	40.6	RMS	32.1	-22.9	49.8	54	-4.2	-	-	75	279	H

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

PK - Peak detector

RMS - RMS detection

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
1	* 2.39	40	PK	32.1	-22.8	49.3	-	-	74	-24.7	4	213	V
2	* 2.372	41.55	PK	32	-22.8	50.75	-	-	74	-23.25	4	213	V
3	* 2.39	29.93	RMS	32.1	-22.8	39.23	54	-14.77	-	-	4	213	V
4	* 2.386	31.06	RMS	32.1	-22.9	40.26	54	-13.74	-	-	4	213	V

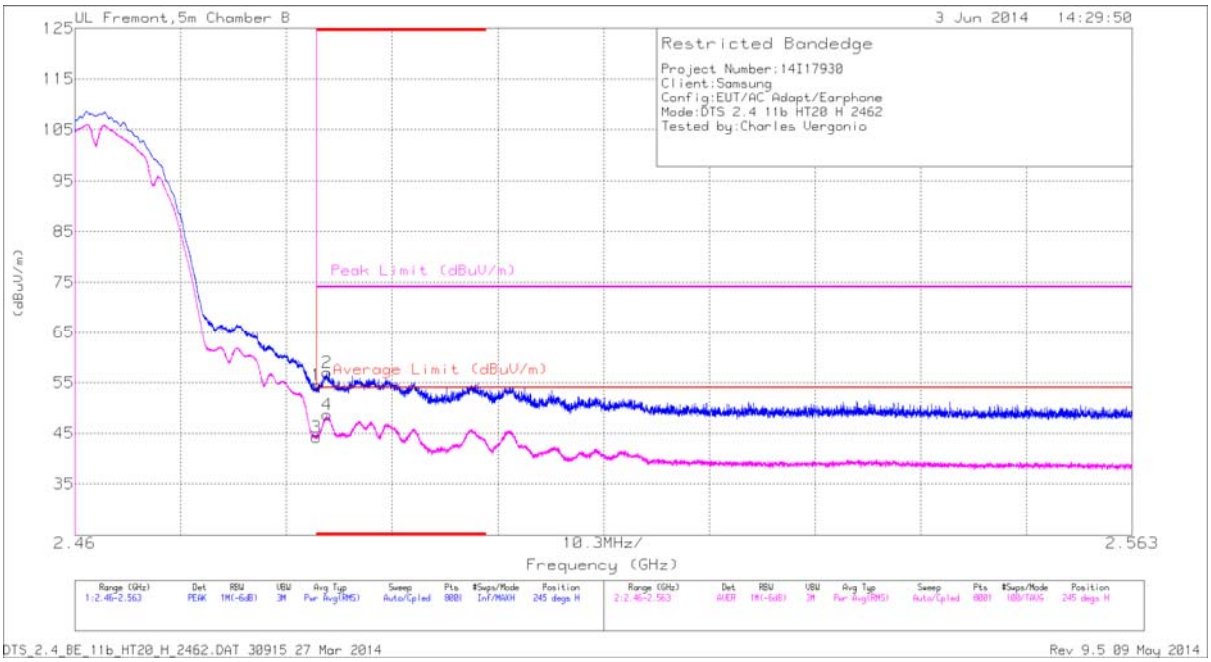
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL



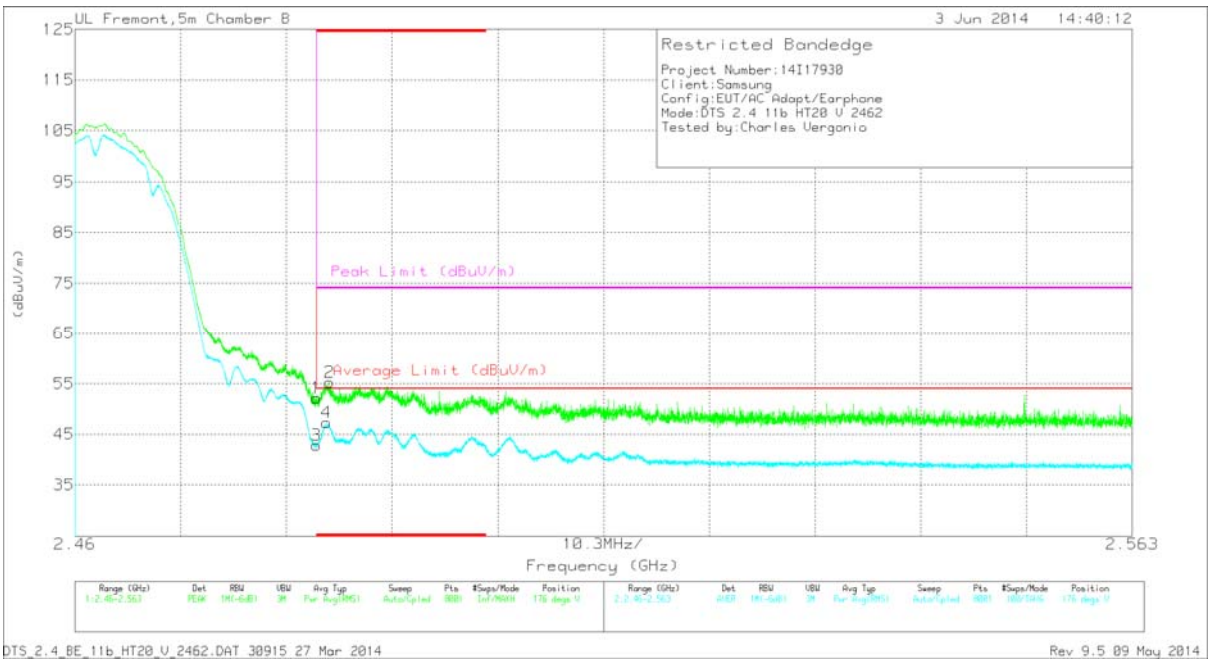
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	44.78	PK	32.4	-22.7	54.48	-	-	74	-19.52	245	225	H
3	* 2.484	34.46	RMS	32.4	-22.7	44.16	54	-9.84	-	-	245	225	H
2	* 2.485	47.34	PK	32.4	-22.7	57.04	-	-	74	-16.96	245	225	H
4	* 2.485	38.99	RMS	32.4	-22.7	48.69	54	-5.31	-	-	245	225	H

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

PK - Peak detector

RMS - RMS detection

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
1	* 2.484	42.46	PK	32.4	-22.7	52.16	-	-	74	-21.84	176	342	V
3	* 2.484	33.13	RMS	32.4	-22.7	42.83	54	-11.17	-	-	176	342	V
4	* 2.484	37.56	RMS	32.4	-22.7	47.26	54	-6.74	-	-	176	342	V
2	* 2.485	45.51	PK	32.4	-22.7	55.21	-	-	74	-18.79	176	342	V

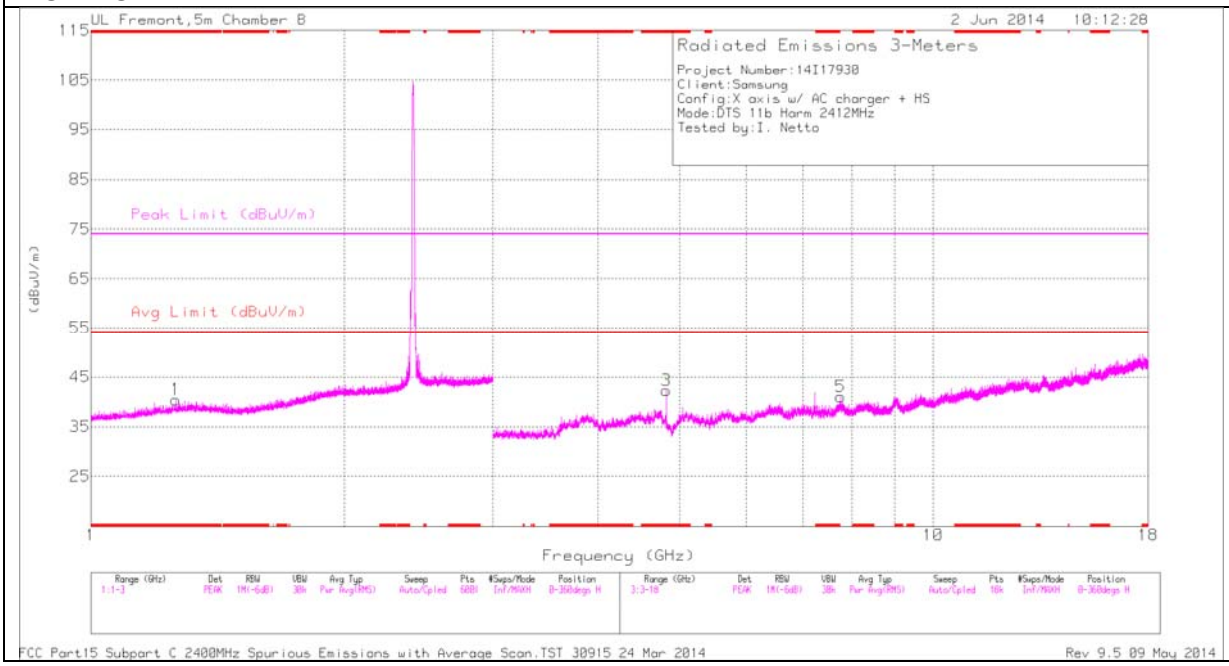
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

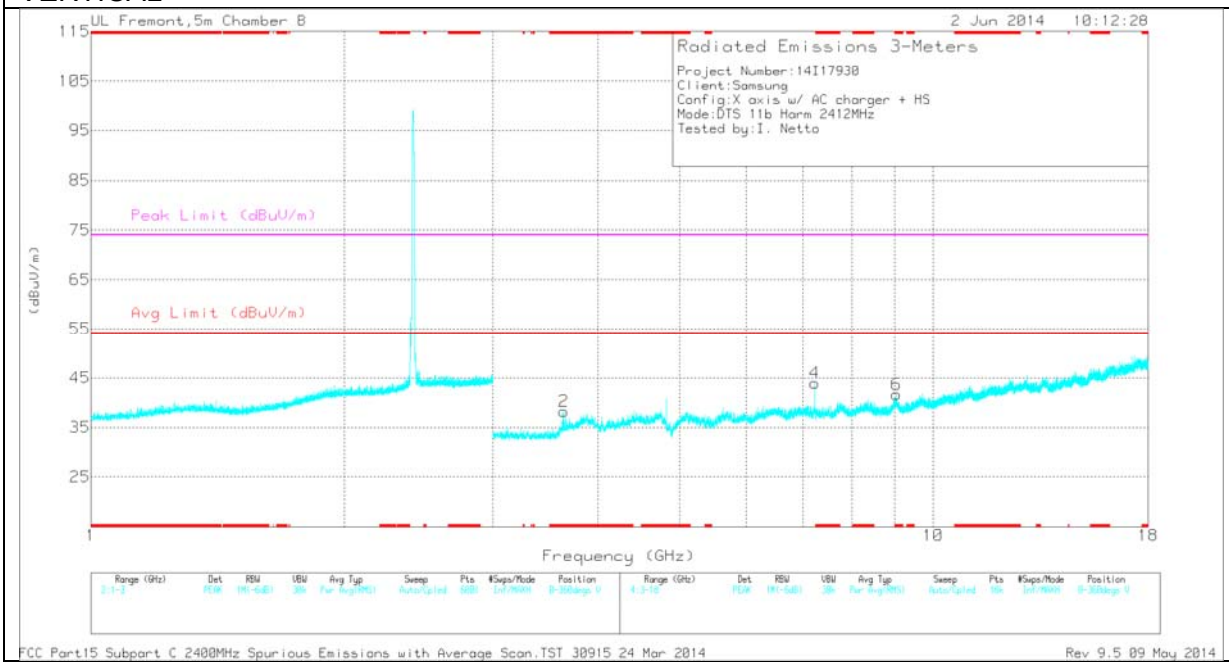
HARMONICS AND SPURIOUS EMISSIONS

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

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.262	36.46	PK	28.6	-24.6	0	40.46	-	-	74	-33.54	0-360	101	H
3	* 4.824	37.94	PK	34.2	-29.8	0	42.34	-	-	74	-31.66	0-360	201	H
2	* 3.64	36.13	PK	33.2	-31.1	0	38.23	-	-	74	-35.77	0-360	101	V
6	* 9.048	29.08	PK	36.2	-23.6	0	41.68	-	-	74	-32.32	0-360	201	V
4	7.236	35.67	PK	35.6	-27.3	0	43.97	-	-	-	-	0-360	101	V
5	7.76	31.02	PK	35.7	-25.7	0	41.02	-	-	-	-	0-360	201	H

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

PK - Peak detector

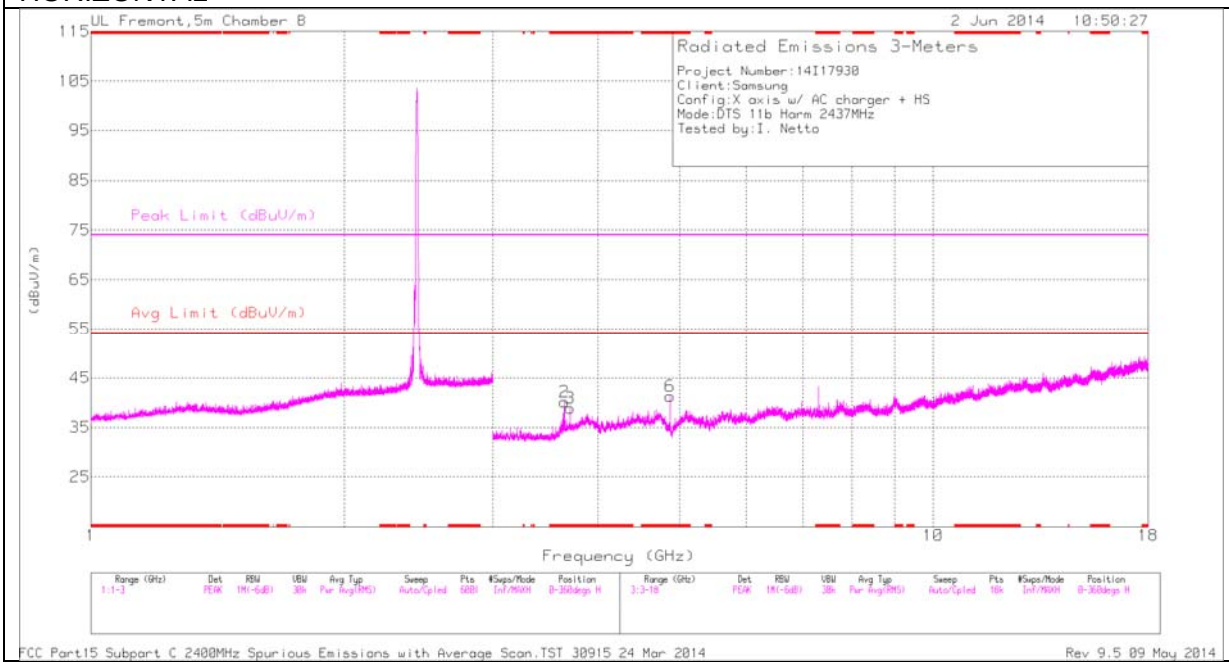
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.263	43.55	PK2	28.6	-24.6	0	47.55	-	-	74	-26.45	32	102	H
* 4.824	43.33	PK2	34.2	-29.8	0	47.73	-	-	74	-26.27	51	176	H
* 4.824	37.22	MAv1	34.2	-29.8	0	41.72	54	-12.28	-	-	51	176	H
* 3.641	40.84	PK2	33.2	-31.1	0	42.94	-	-	74	-31.06	32	102	V
* 9.049	36.27	PK2	36.2	-23.6	0	48.87	-	-	74	-25.13	32	202	V
7.236	46.08	PK2	35.6	-27.3	0	54.38	-	-	-	-	32	245	V
7.236	38.34	MAv1	35.6	-27.3	0	46.74	-	-	-	-	32	245	V
7.759	37.85	PK2	35.7	-25.7	0	47.85	-	-	-	-	32	202	H

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

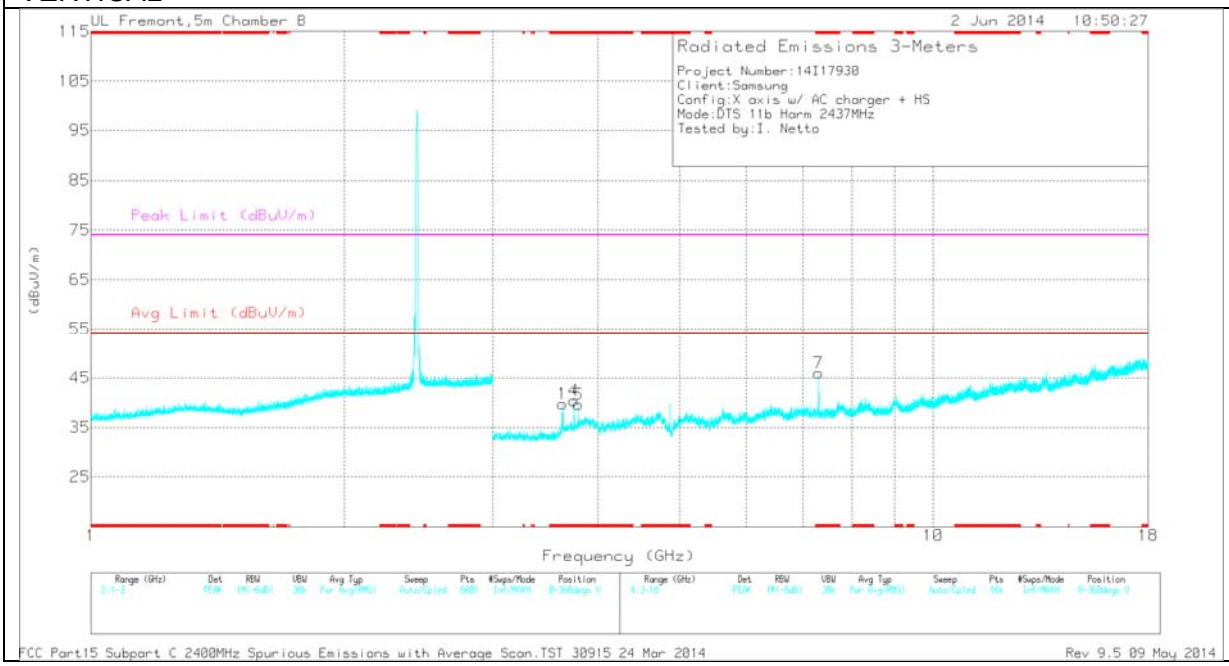
PK2 - KDB558074 Method: Maximum Peak

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

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 3.651	38.1	PK	33.2	-31.1	0	40.2	-	-	74	-33.8	0-360	201	H
3	* 3.705	36.92	PK	33.3	-31.4	0	38.82	-	-	74	-35.18	0-360	201	H
6	* 4.874	37.63	PK	34.2	-30.5	0	41.33	-	-	74	-32.67	0-360	201	H
1	* 3.632	37.51	PK	33.2	-31	0	39.71	-	-	74	-34.29	0-360	201	V
4	* 3.744	38.29	PK	33.5	-31.4	0	40.39	-	-	74	-33.61	0-360	201	V
5	* 3.787	36.88	PK	33.6	-30.9	0	39.58	-	-	74	-34.42	0-360	101	V
7	* 7.311	38.54	PK	35.6	-28.1	0	46.04	-	-	74	-27.96	0-360	101	V

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

PK - Peak detector

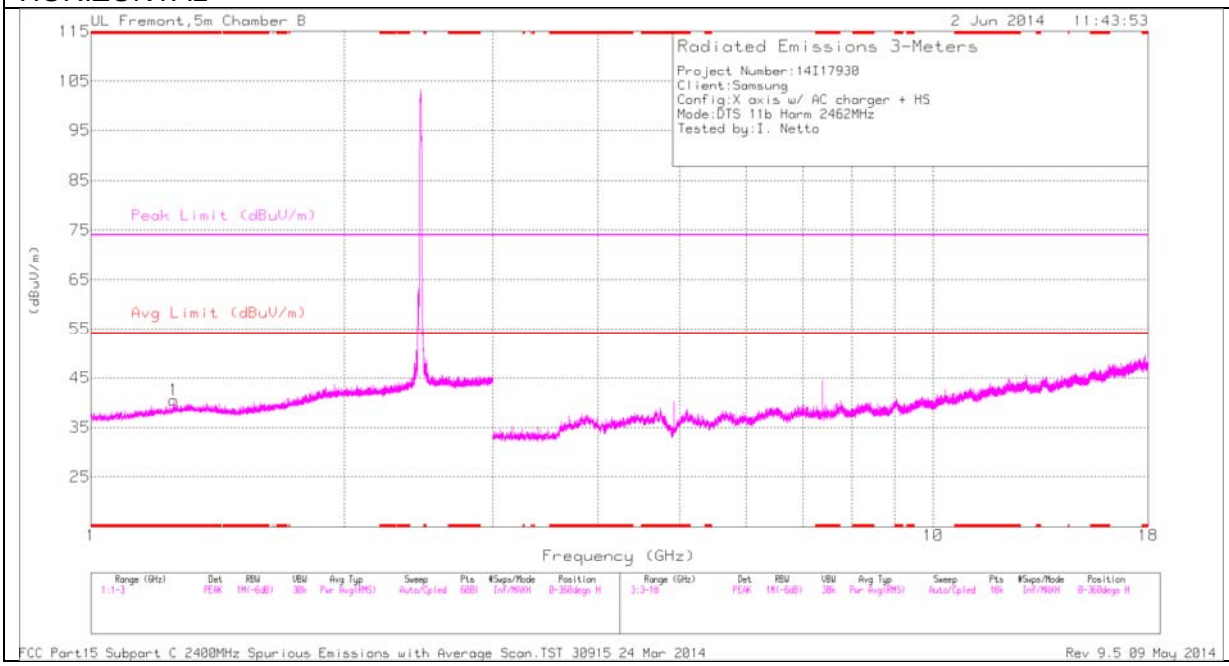
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.65	41.04	PK2	33.2	-31.1	0	43.14	-	-	74	-30.86	5	255	H
* 3.65	29.86	MAv1	33.2	-31.1	0	32.06	54	-21.94	-	-	5	255	H
* 3.705	41.87	PK2	33.3	-31.4	0	43.77	-	-	74	-30.23	250	397	H
* 3.705	30.47	MAv1	33.3	-31.4	0	32.47	54	-21.53	-	-	250	397	H
* 4.874	44.93	PK2	34.2	-30.5	0	48.63	-	-	74	-25.37	47	193	H
* 4.874	38.79	MAv1	34.2	-30.5	0	42.59	54	-11.41	-	-	47	193	H
* 3.633	42.57	PK2	33.2	-31	0	44.77	-	-	74	-29.23	39	253	V
* 3.634	29.9	MAv1	33.2	-31	0	32.2	54	-21.8	-	-	39	253	V
* 3.744	41.61	PK2	33.5	-31.4	0	43.71	-	-	74	-30.29	138	327	V
* 3.746	30.36	MAv1	33.5	-31.4	0	32.56	54	-21.44	-	-	138	327	V
* 3.786	41.46	PK2	33.6	-30.9	0	44.16	-	-	74	-29.84	28	224	V
* 3.787	30.01	MAv1	33.6	-30.9	0	32.81	54	-21.19	-	-	28	224	V
* 7.311	48.45	PK2	35.6	-28.1	0	55.95	-	-	74	-18.05	32	207	V
* 7.31	40.66	MAv1	35.6	-28.1	0	48.26	54	-5.74	-	-	32	207	V

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

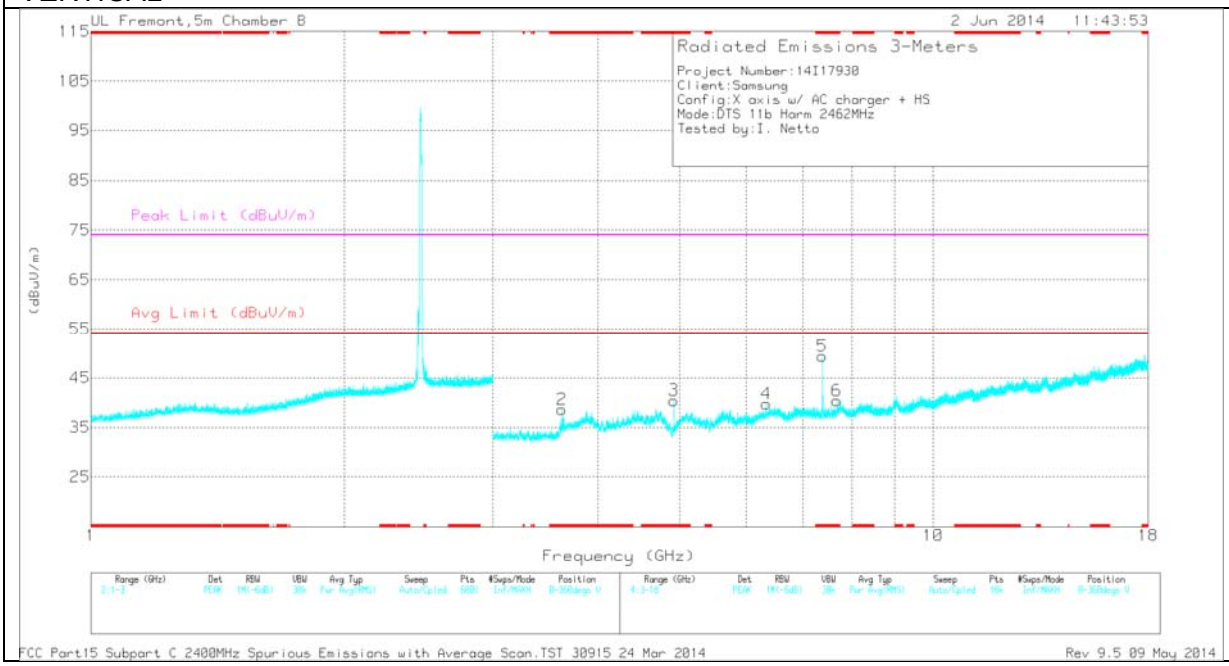
PK2 - KDB558074 Method: Maximum Peak

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

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.255	36.45	PK	28.6	-24.5	0	40.55	-	-	74	-33.45	0-360	101	H
2	* 3.624	36.29	PK	33.2	-30.9	0	38.59	-	-	74	-35.41	0-360	200	V
3	* 4.924	37.06	PK	34.2	-30.8	0	40.46	-	-	74	-33.54	0-360	200	V
5	* 7.386	41.16	PK	35.6	-27.4	0	49.36	-	-	74	-24.64	0-360	200	V
6	* 7.686	31.41	PK	35.7	-26.7	0	40.41	-	-	74	-33.59	0-360	200	V
4	6.338	32.77	PK	35.5	-28.5	0	39.77	-	-	-	-	0-360	200	V

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

PK - Peak detector

Radiated Emissions

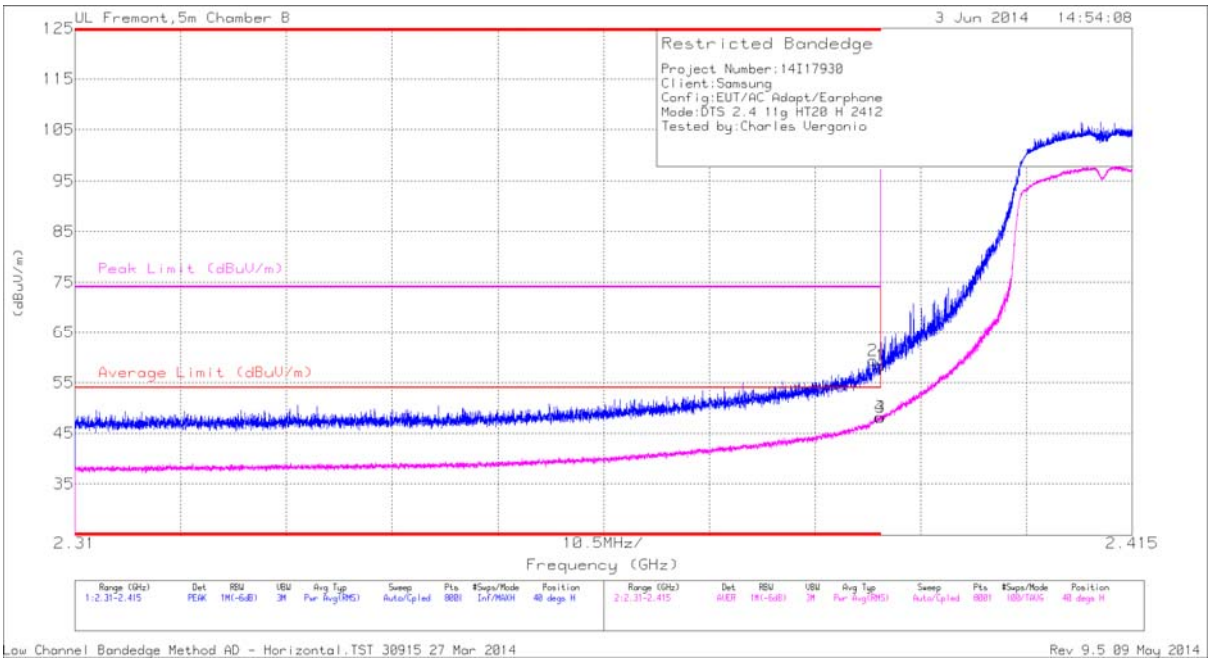
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.256	43.83	PK2	28.6	-24.5	0	47.93	-	-	74	-26.07	42	102	H
* 7.386	48.99	PK2	35.6	-27.4	0	57.19	-	-	74	-16.81	42	236	V
* 7.385	42.56	MAv1	35.6	-27.4	0	50.86	54	-3.14	-	-	42	236	V
* 3.624	42.28	PK2	33.2	-31	0	44.48	-	-	74	-29.52	42	201	V
* 4.924	41.32	PK2	34.2	-30.8	0	44.72	-	-	74	-29.28	42	201	V
* 7.687	38.26	PK2	35.7	-26.7	0	47.26	-	-	74	-26.74	42	201	V
6.337	39.31	PK2	35.5	-28.5	0	46.31	-	-	-	-	42	201	V

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

PK2 - KDB558074 Method: Maximum Peak

10.2.2. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL



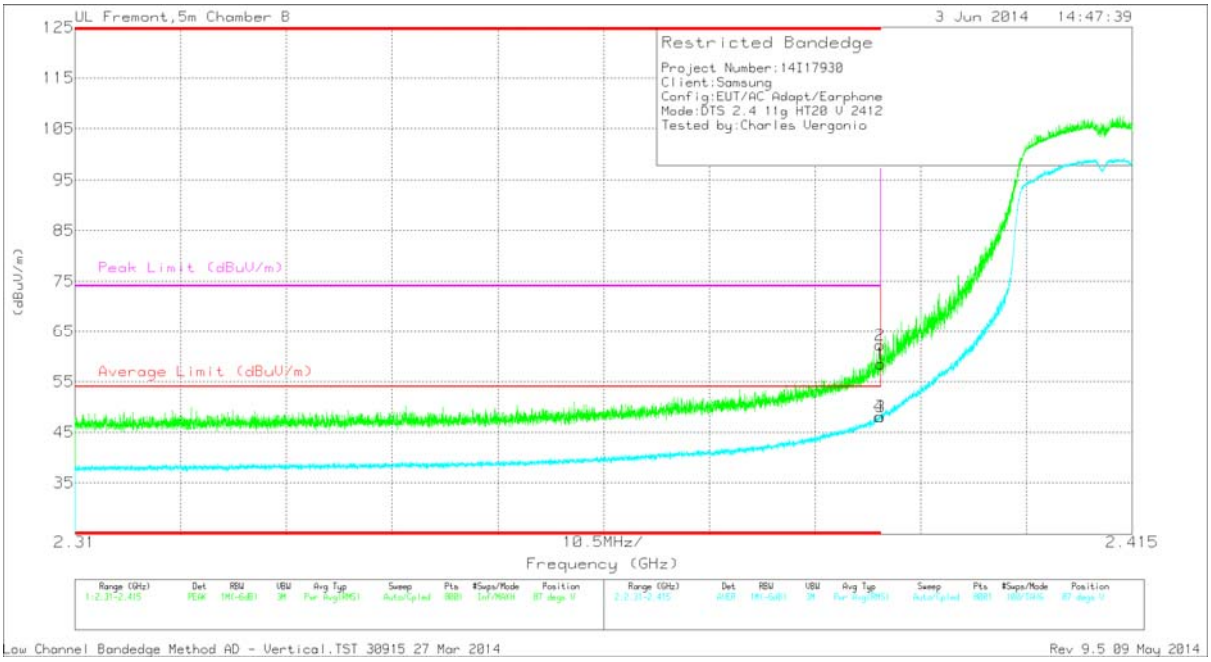
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	49.07	PK	32.1	-22.8	0	58.37	-	-	74	-15.63	40	281	H
2	* 2.389	50	PK	32.1	-22.8	0	59.3	-	-	74	-14.7	40	281	H
3	* 2.39	38.55	RMS	32.1	-22.8	.3	48.15	54	-5.85	-	-	40	281	H
4	* 2.39	38.61	RMS	32.1	-22.8	.3	48.21	54	-5.79	-	-	40	281	H

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

PK - Peak detector

RMS - RMS detection

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	* 2.39	49.23	PK	32.1	-22.8	0	58.53	-	-	74	-15.47	87	338	V
2	* 2.39	52.88	PK	32.1	-22.8	0	62.18	-	-	74	-11.82	87	338	V
3	* 2.39	38.42	RMS	32.1	-22.8	.3	48.02	54	-5.98	-	-	87	338	V
4	* 2.39	38.48	RMS	32.1	-22.8	.3	48.08	54	-5.92	-	-	87	338	V

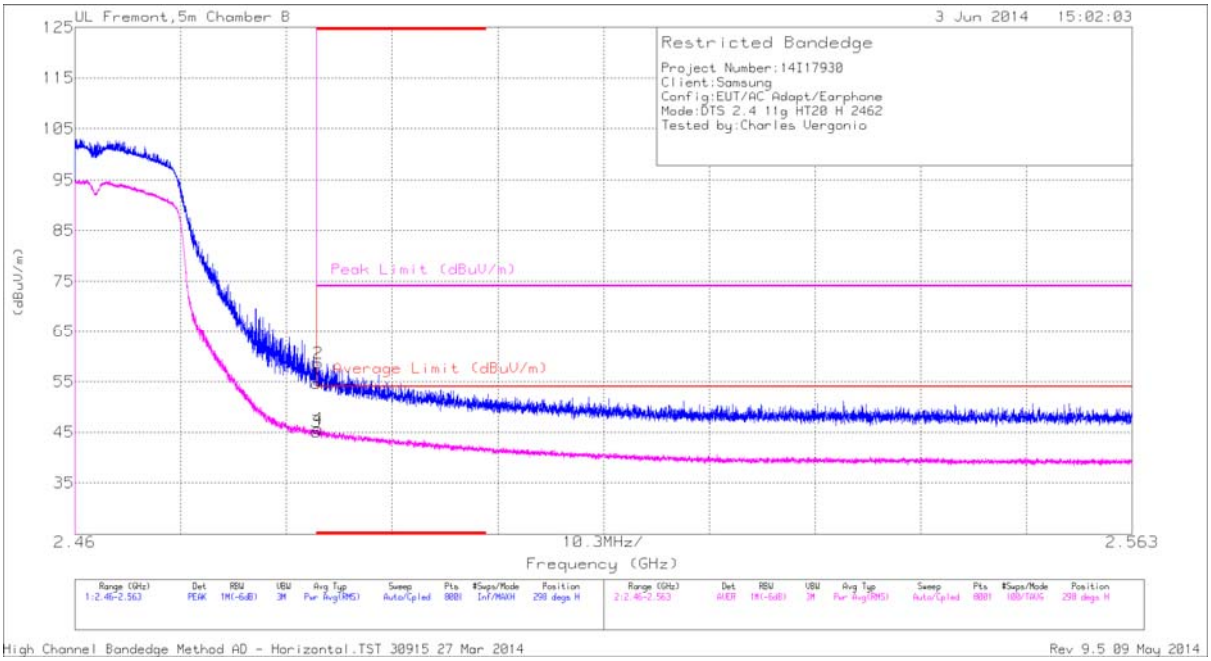
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL



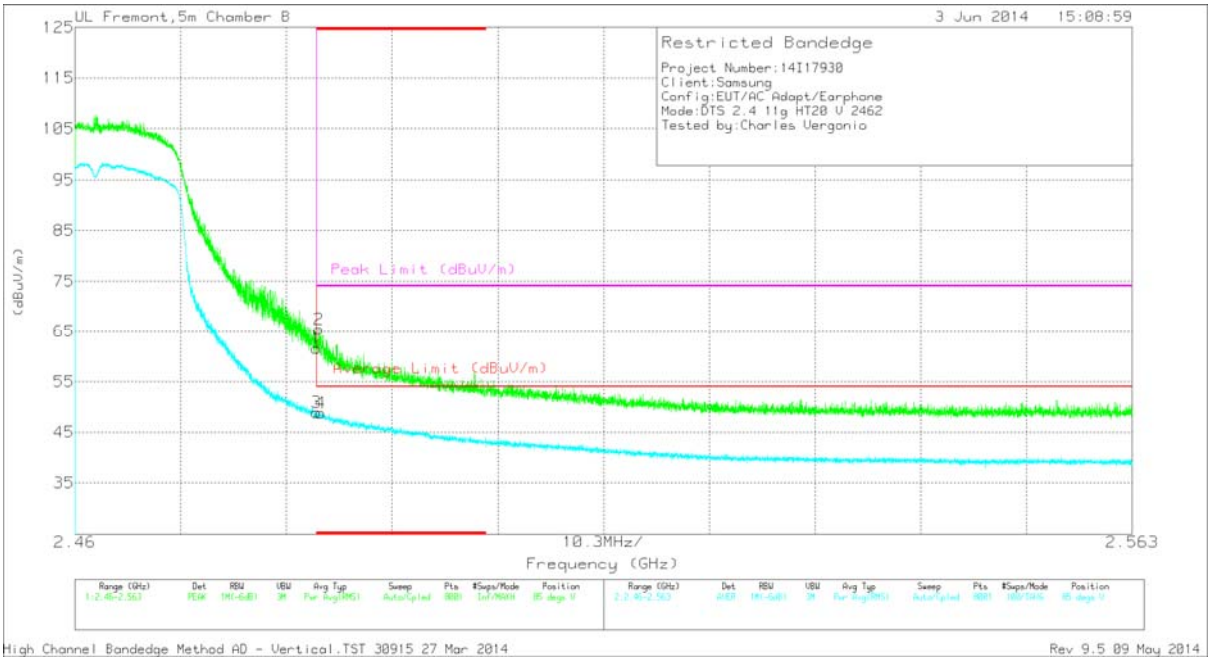
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	44.98	PK	32.4	-22.7	0	54.68	-	-	74	-19.32	298	329	H
2	* 2.484	48.96	PK	32.4	-22.7	0	58.66	-	-	74	-15.34	298	329	H
3	* 2.484	35.05	RMS	32.4	-22.7	.3	45.05	54	-8.95	-	-	298	329	H
4	* 2.484	35.75	RMS	32.4	-22.7	.3	45.75	54	-8.25	-	-	298	329	H

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

PK - Peak detector

RMS - RMS detection

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	* 2.484	51.94	PK	32.4	-22.7	0	61.64	-	-	74	-12.36	85	327	V
2	* 2.484	55.7	PK	32.4	-22.7	0	65.4	-	-	74	-8.6	85	327	V
3	* 2.484	38.89	RMS	32.4	-22.7	.3	48.89	54	-5.11	-	-	85	327	V
4	* 2.484	38.78	RMS	32.4	-22.7	.3	48.78	54	-5.22	-	-	85	327	V

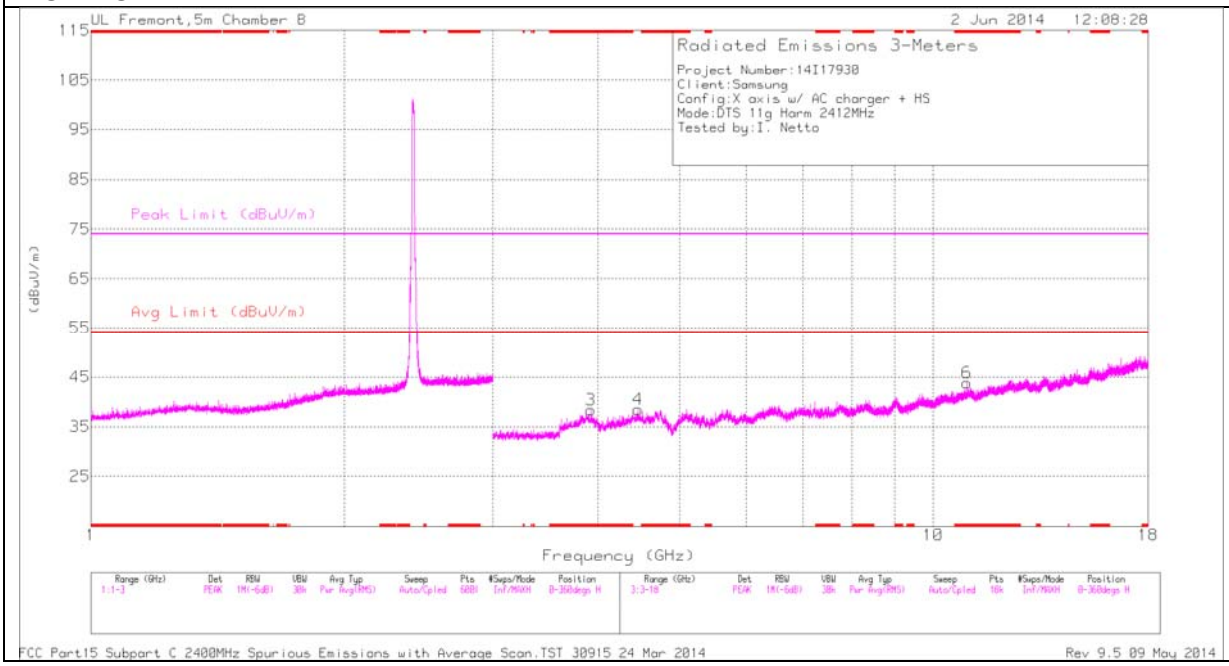
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

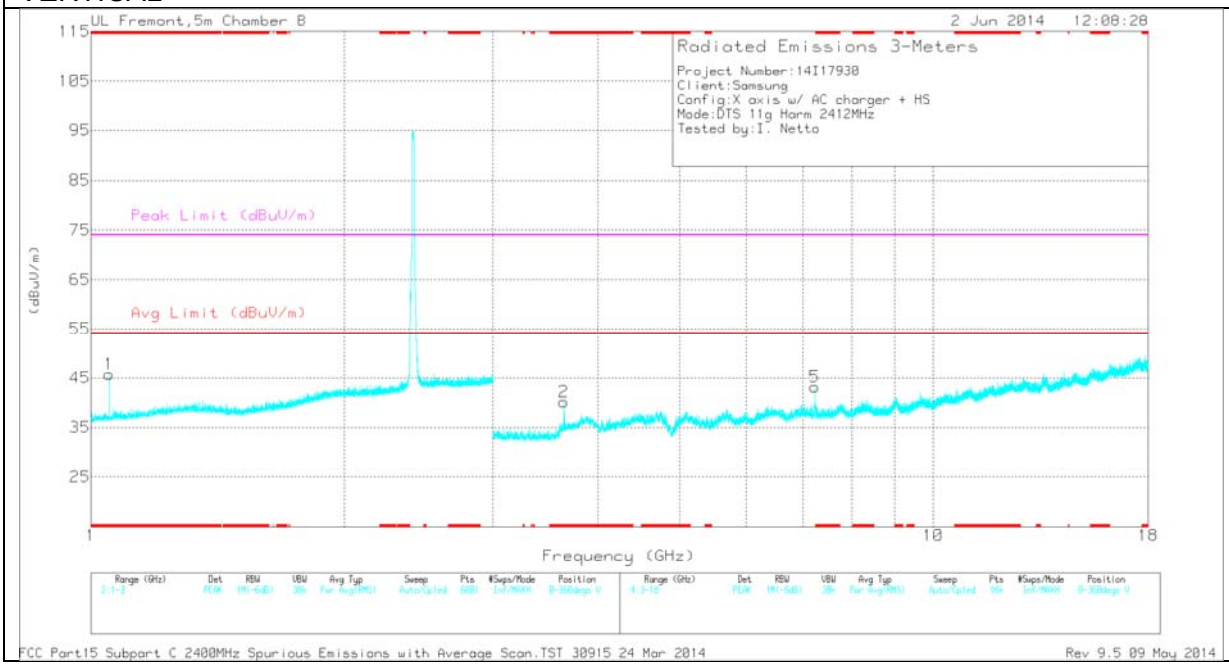
HARMONICS AND SPURIOUS EMISSIONS

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

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.051	43.35	PK	27.2	-24.8	0	45.75	-	-	74	-28.25	0-360	100	V
3	* 3.924	35.07	PK	33.7	-30.4	0	38.37	-	-	74	-35.63	0-360	101	H
6	* 10.965	28.68	PK	37.8	-22.6	0	43.88	-	-	74	-30.12	0-360	201	H
2	* 3.645	38.08	PK	33.2	-31.1	0	40.18	-	-	74	-33.82	0-360	200	V
4	4.464	33.57	PK	33.9	-29	0	38.47	-	-	-	-	0-360	201	H
5	7.236	34.9	PK	35.6	-27.3	0	43.2	-	-	-	-	0-360	101	V

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

PK - Peak detector

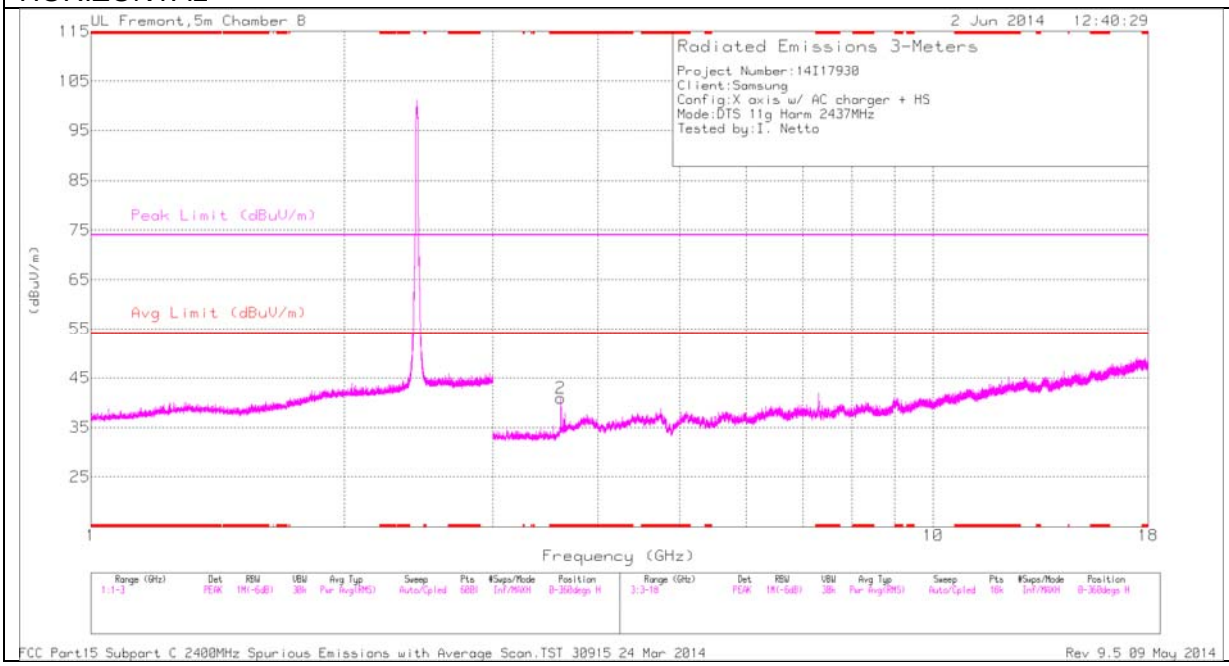
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.051	43.2	PK2	27.2	-24.8	0	45.6	-	-	74	-28.4	203	146	V
* 1.052	31.69	MAv1	27.2	-24.8	.3	34.29	54	-19.71	-	-	203	146	V
* 3.923	41.85	PK2	33.7	-30.4	0	45.15	-	-	74	-28.85	22	102	H
* 10.964	35	PK2	37.8	-22.7	0	50.1	-	-	74	-23.9	22	203	H
* 3.643	41.69	PK2	33.2	-31.1	0	43.79	-	-	74	-30.21	244	172	V
* 3.645	30.18	MAv1	33.2	-31.1	.3	32.48	54	-21.52	-	-	244	172	V
4.463	40.65	PK2	33.9	-29	0	45.55	-	-	-	-	22	203	H
7.236	43.42	PK2	35.6	-27.3	0	51.72	-	-	-	-	22	354	V
7.236	34.76	MAv1	35.6	-27.3	.3	43.26	-	-	-	-	22	354	V

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

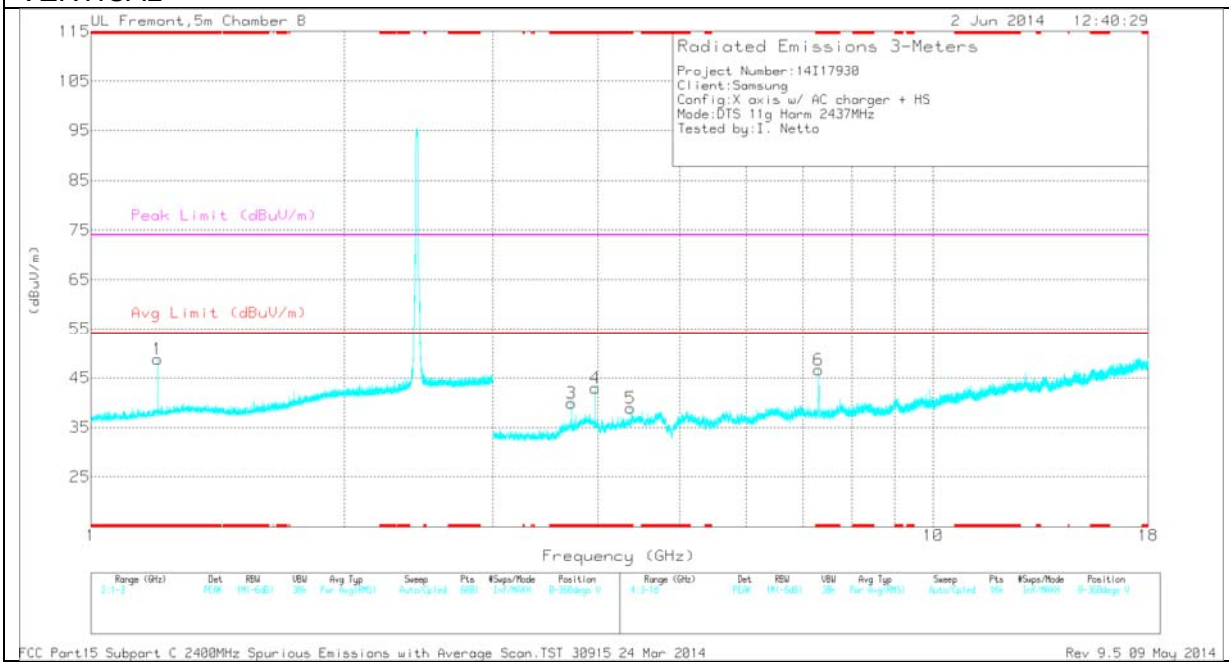
PK2 - KDB558074 Method: Maximum Peak

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)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.2	45.23	PK	28.2	-24.6	0	48.83	-	-	74	-25.17	0-360	200	V
2	* 3.613	38.75	PK	33.1	-31	0	40.85	-	-	74	-33.15	0-360	201	H
3	* 3.718	37.91	PK	33.4	-31.4	0	39.91	-	-	74	-34.09	0-360	101	V
4	* 3.972	40.1	PK	33.6	-30.8	0	42.9	-	-	74	-31.1	0-360	101	V
5	* 4.372	35.62	PK	33.8	-30.6	0	38.82	-	-	74	-35.18	0-360	101	V
6	* 7.311	39.07	PK	35.6	-28.1	0	46.57	-	-	74	-27.43	0-360	101	V

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

PK - Peak detector

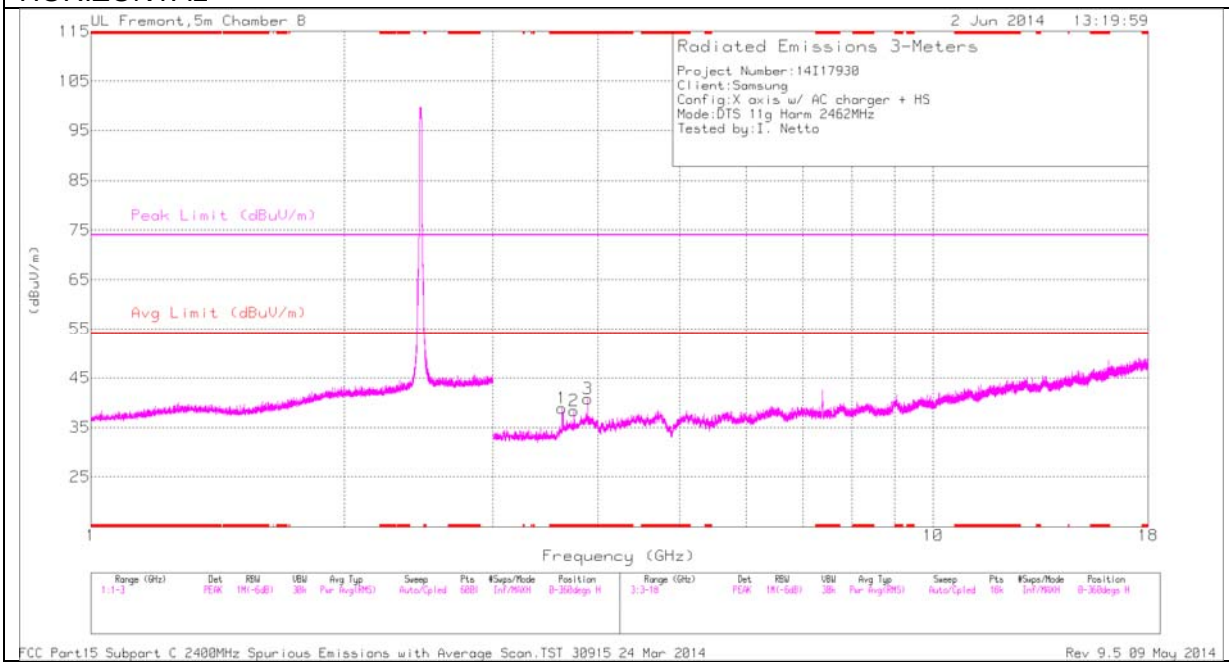
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.202	43.4	PK2	28.2	-24.6	0	47	-	-	74	-27	222	161	V
* 1.2	31.81	MAv1	28.2	-24.6	.3	35.61	54	-18.39	-	-	222	161	V
* 3.615	40.93	PK2	33.2	-31	0	43.13	-	-	74	-30.87	334	208	H
* 3.613	29.79	MAv1	33.1	-31	.3	32.09	54	-21.91	-	-	334	208	H
* 3.72	42.05	PK2	33.4	-31.3	0	44.15	-	-	74	-29.85	251	164	V
* 3.718	30.24	MAv1	33.4	-31.4	.3	32.44	54	-21.56	-	-	251	164	V
* 3.973	40.9	PK2	33.6	-30.8	0	43.7	-	-	74	-30.3	187	123	V
* 3.973	29.71	MAv1	33.6	-30.8	.3	32.71	54	-21.29	-	-	187	123	V
* 4.374	41.24	PK2	33.8	-30.5	0	44.54	-	-	74	-29.46	25	102	V

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

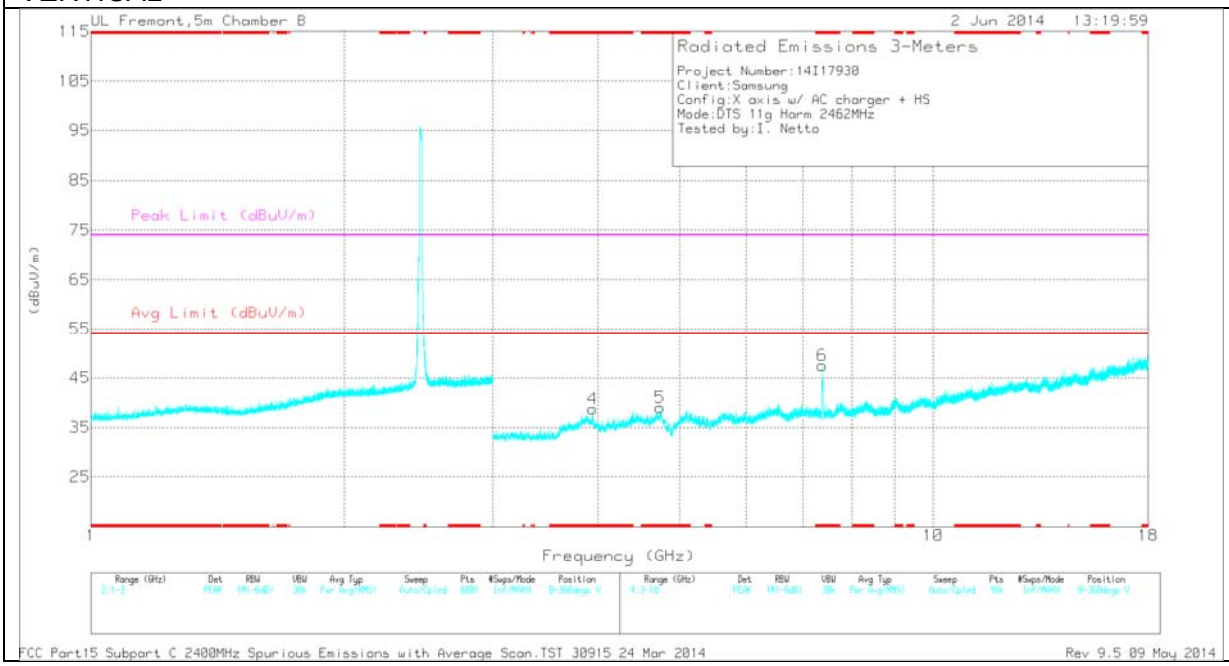
PK2 - KDB558074 Method: Maximum Peak

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

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.623	36.66	PK	33.2	-31	0	38.86	-	-	74	-35.14	0-360	201	H
2	* 3.744	36.22	PK	33.5	-31.4	0	38.32	-	-	74	-35.68	0-360	201	H
3	* 3.888	37.2	PK	33.8	-30.2	0	40.8	-	-	74	-33.2	0-360	100	H
4	* 3.94	35.5	PK	33.7	-30.5	0	38.7	-	-	74	-35.3	0-360	201	V
5	* 4.742	34.24	PK	34.2	-29.4	0	39.04	-	-	74	-34.96	0-360	201	V
6	* 7.386	39.32	PK	35.6	-27.4	0	47.52	-	-	74	-26.48	0-360	201	V

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

PK - Peak detector

Radiated Emissions

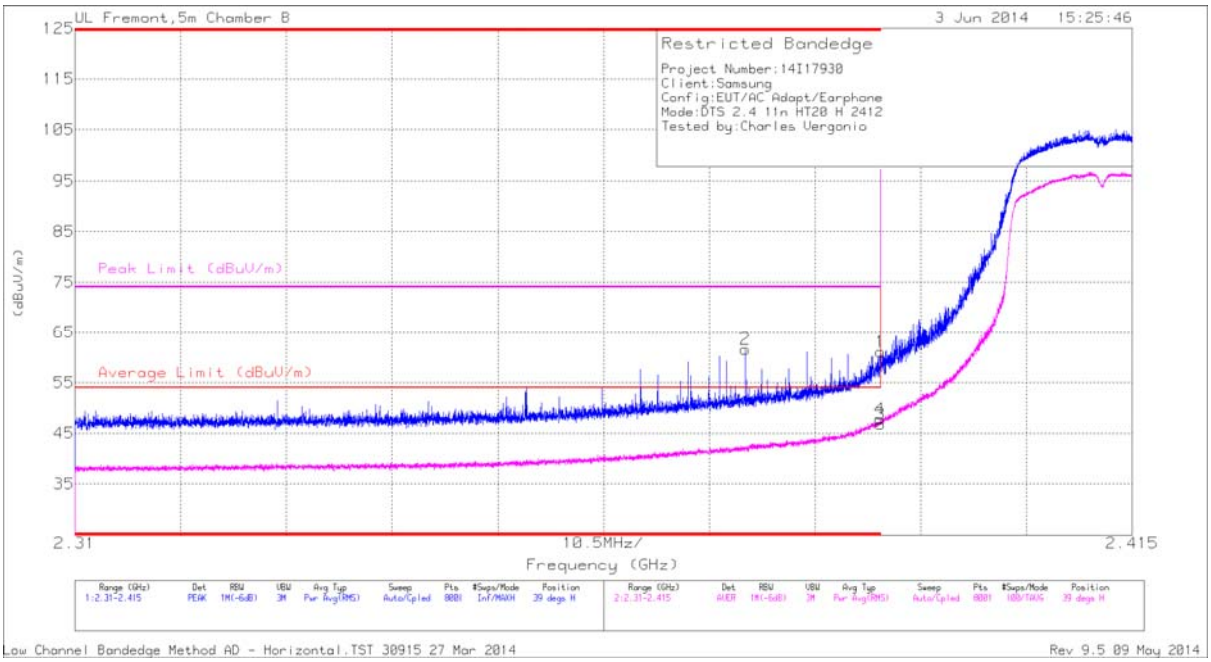
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.622	41.04	PK2	33.2	-31	0	43.24	-	-	74	-30.76	37	202	H
* 3.745	41.94	PK2	33.5	-31.4	0	44.04	-	-	74	-29.96	37	202	H
* 3.887	41.07	PK2	33.8	-30.2	0	44.67	-	-	74	-29.33	37	101	H
* 7.386	48.56	PK2	35.6	-27.4	0	56.76	-	-	74	-17.24	37	271	V
* 7.386	37.51	MAv1	35.6	-27.4	.3	45.91	54	-8.09	-	-	37	271	V
* 3.938	41.26	PK2	33.7	-30.5	0	44.46	-	-	74	-29.54	37	202	V
* 4.741	41.86	PK2	34.2	-29.4	0	46.66	-	-	74	-27.34	37	202	V

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

PK2 - KDB558074 Method: Maximum Peak

10.2.3. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL



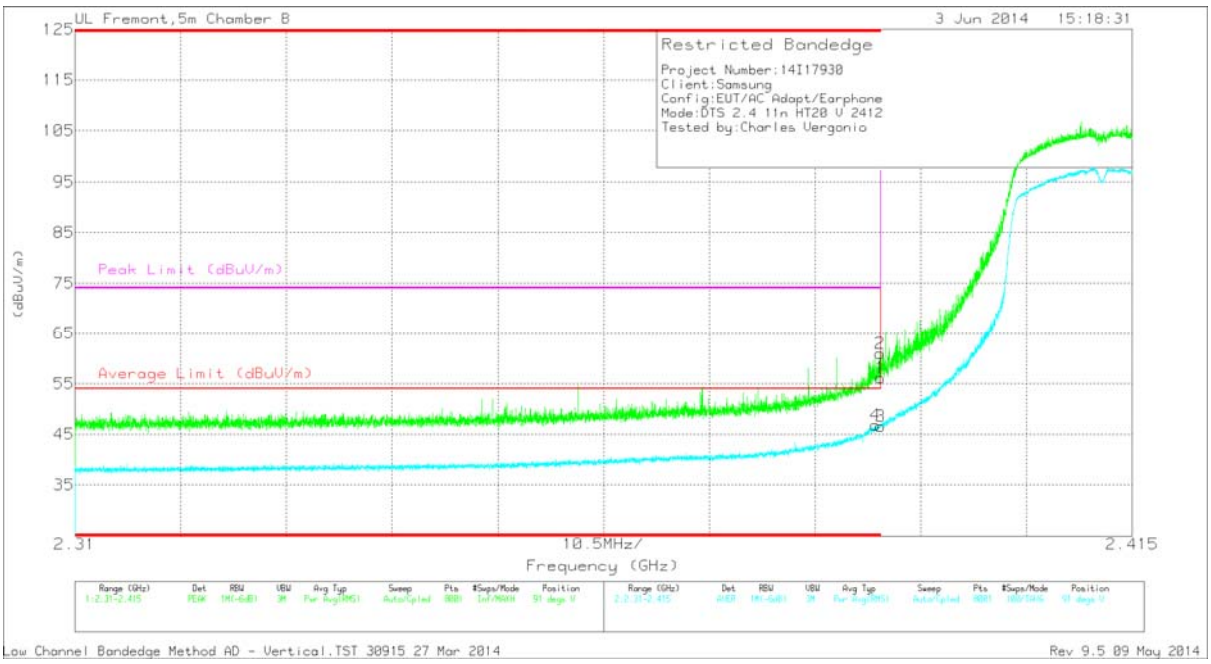
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.377	52.55	PK	32	-22.9	0	61.65	-	-	74	-12.35	39	281	H
1	* 2.39	51.76	PK	32.1	-22.8	0	61.06	-	-	74	-12.94	39	281	H
3	* 2.39	37.12	RMS	32.1	-22.8	.4	46.82	54	-7.18	-	-	39	281	H
4	* 2.39	38.09	RMS	32.1	-22.8	.4	47.79	54	-6.21	-	-	39	281	H

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

PK - Peak detector

RMS - RMS detection

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	* 2.39	46.83	PK	32.1	-22.8	0	56.13	-	-	74	-17.87	91	338	V
2	* 2.39	51.68	PK	32.1	-22.8	0	60.98	-	-	74	-13.02	91	338	V
3	* 2.39	36.85	RMS	32.1	-22.8	.4	46.55	54	-7.45	-	-	91	338	V
4	* 2.39	37.16	RMS	32.1	-22.8	.4	46.86	54	-7.14	-	-	91	338	V

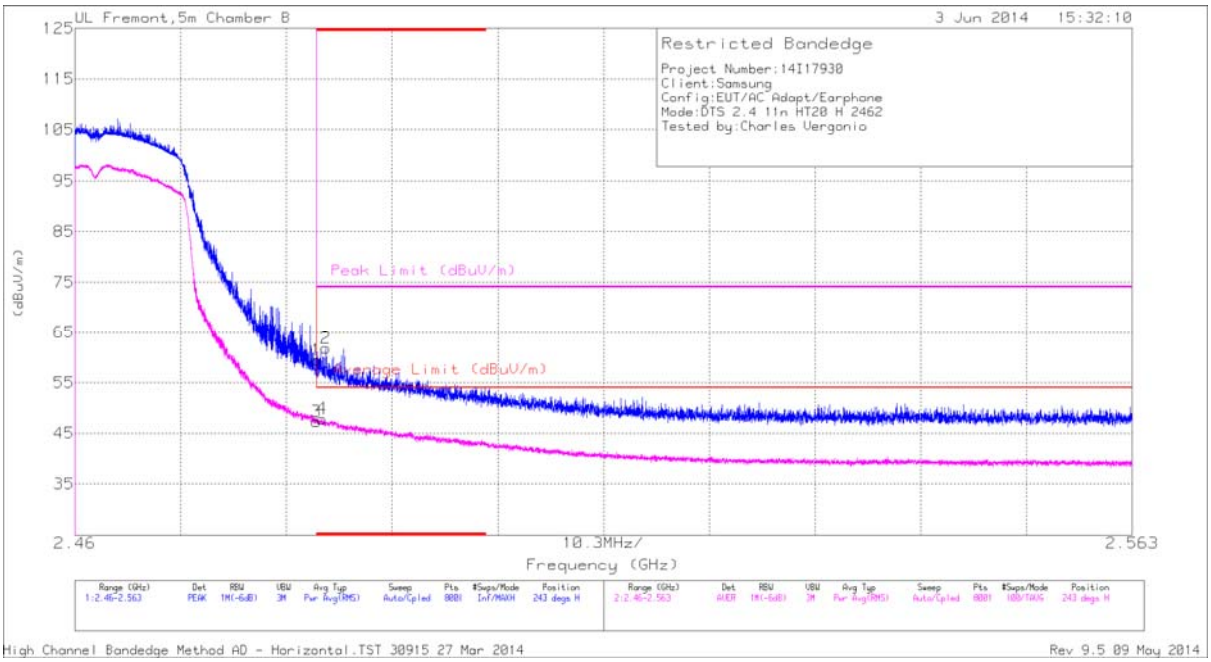
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL



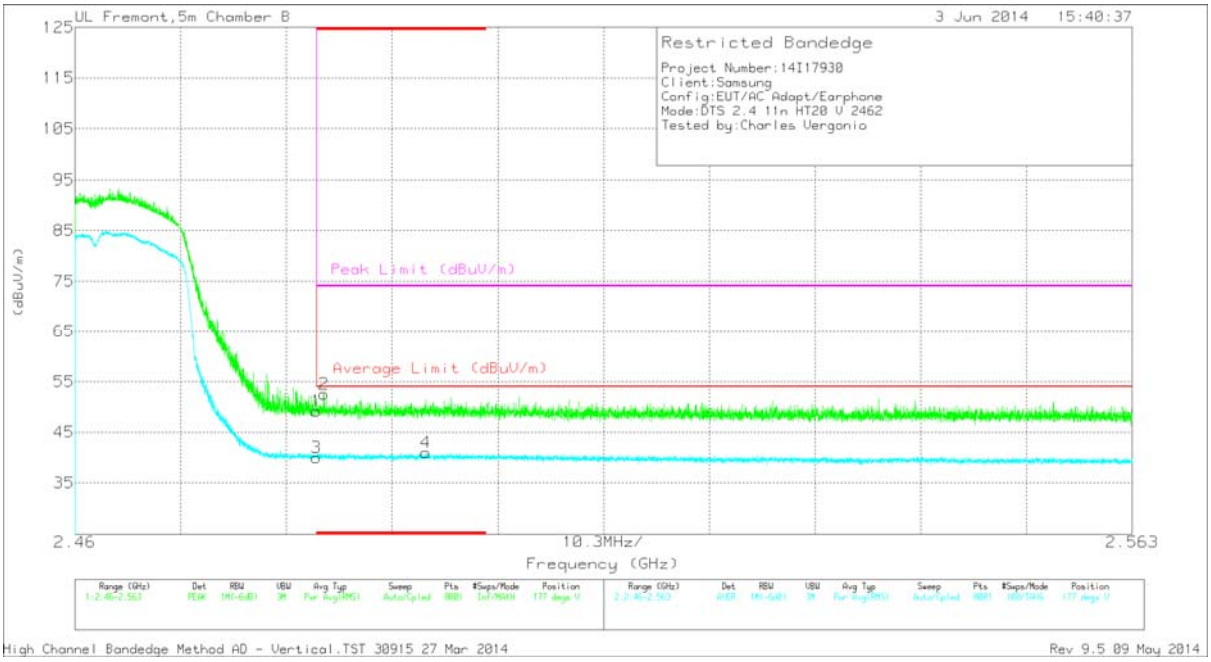
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	49.79	PK	32.4	-22.7	0	59.49	-	-	74	-14.51	243	226	H
2	* 2.484	52.16	PK	32.4	-22.7	0	61.86	-	-	74	-12.14	243	226	H
3	* 2.484	37.22	RMS	32.4	-22.7	.4	47.32	54	-6.68	-	-	243	226	H
4	* 2.484	37.77	RMS	32.4	-22.7	.4	47.87	54	-6.13	-	-	243	226	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL



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	* 2.484	39.45	PK	32.4	-22.7	0	49.15	-	-	74	-24.85	177	385	V
2	* 2.484	42.77	PK	32.4	-22.7	0	52.47	-	-	74	-21.53	177	385	V
3	* 2.484	29.94	RMS	32.4	-22.7	.4	40.04	54	-13.96	-	-	177	385	V
4	* 2.494	30.87	RMS	32.4	-22.7	.4	40.97	54	-13.03	-	-	177	385	V

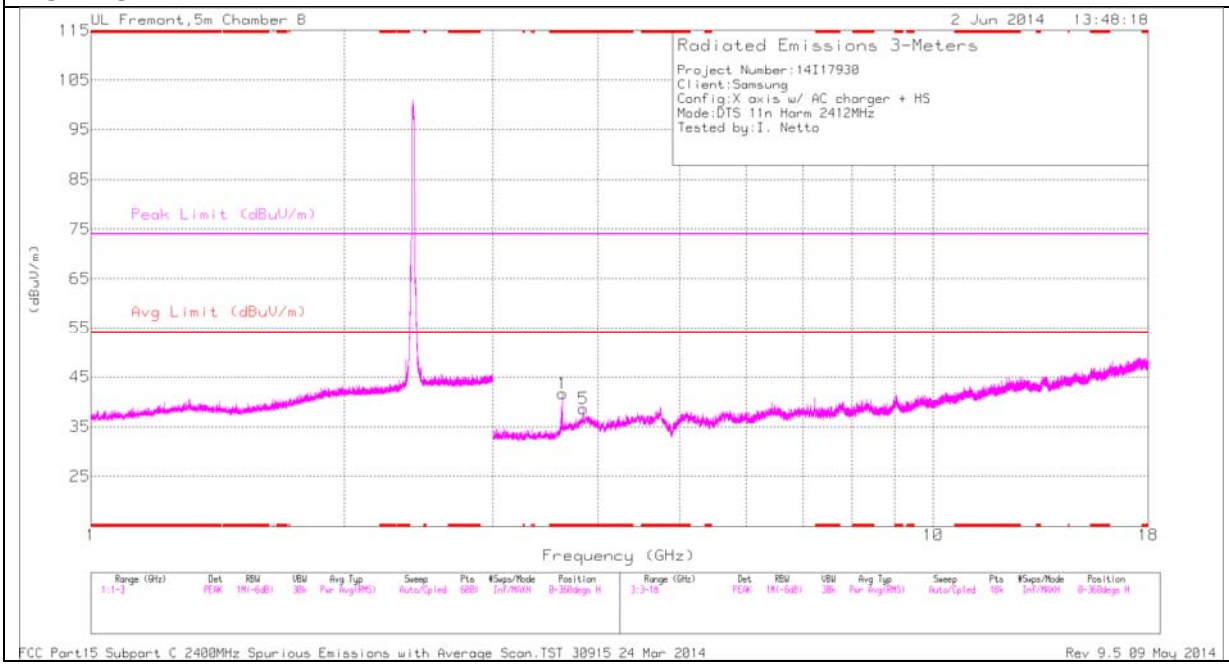
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

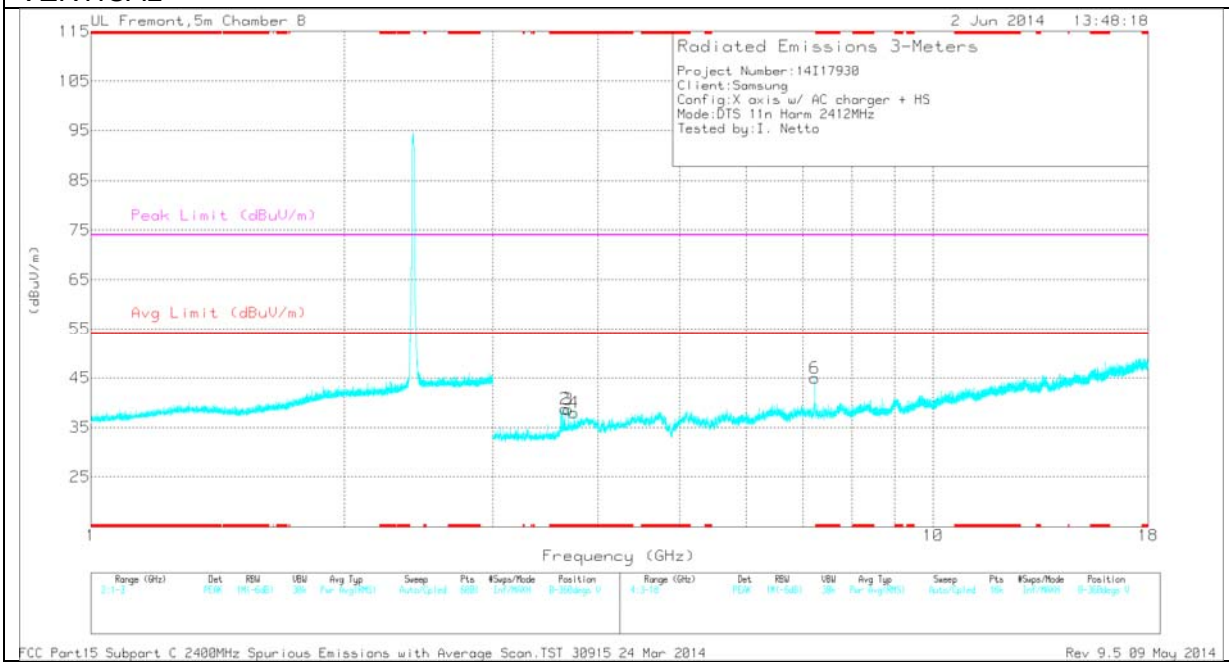
HARMONICS AND SPURIOUS EMISSIONS

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

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.627	39.5	PK	33.2	-31	0	41.7	-	-	74	-32.3	0-360	201	H
5	* 3.84	35.19	PK	33.7	-30.3	0	38.59	-	-	74	-35.41	0-360	201	H
2	* 3.654	36.61	PK	33.2	-31.1	0	38.71	-	-	74	-35.29	0-360	101	V
3	* 3.689	36.55	PK	33.3	-31.2	0	38.65	-	-	74	-35.35	0-360	201	V
4	* 3.744	35.93	PK	33.5	-31.4	0	38.03	-	-	74	-35.97	0-360	201	V
6	7.236	36.63	PK	35.6	-27.3	0	44.93	-	-	-	-	0-360	101	V

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

PK - Peak detector

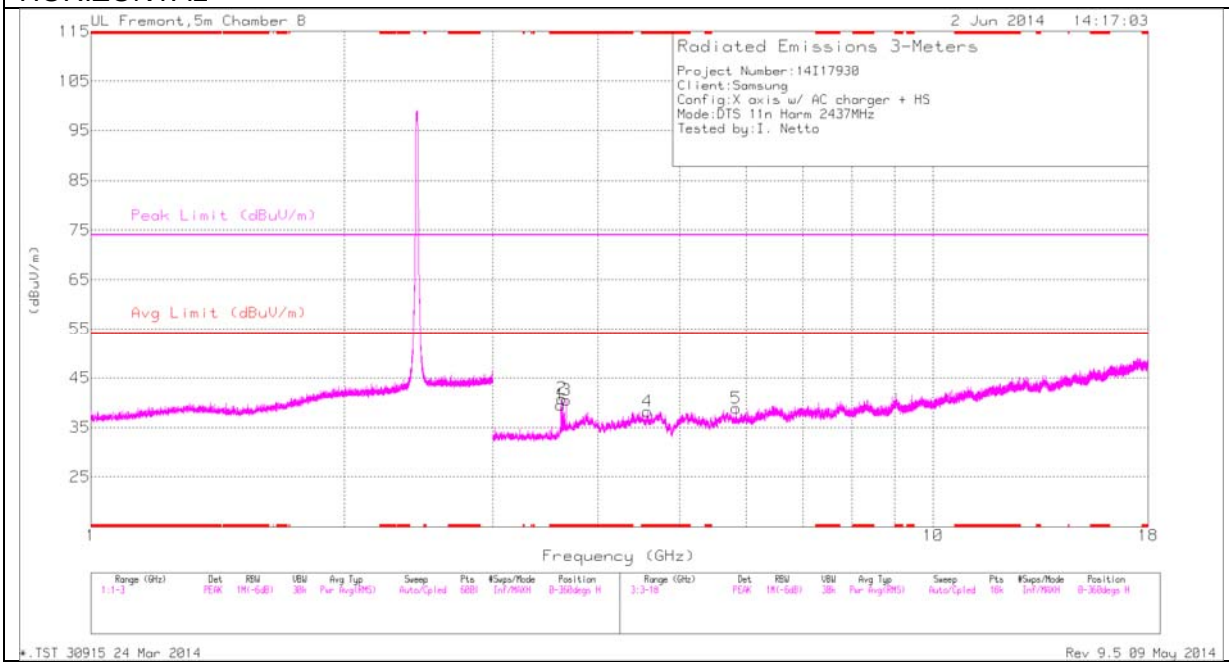
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.627	41.15	PK2	33.2	-31	0	43.35	-	-	74	-30.65	53	358	H
* 3.627	29.88	MAv1	33.2	-31	.3	32.28	54	-21.72	-	-	53	358	H
* 3.84	41.25	PK2	33.7	-30.3	0	44.65	-	-	74	-29.35	53	202	H
* 3.654	40.96	PK2	33.2	-31.1	0	43.06	-	-	74	-30.94	53	102	V
* 3.69	41.88	PK2	33.3	-31.3	0	43.88	-	-	74	-30.12	53	202	V
* 3.743	41.62	PK2	33.5	-31.5	0	43.62	-	-	74	-30.38	53	202	V
7.237	42.98	PK2	35.6	-27.3	0	51.28	-	-	-	-	53	102	V

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

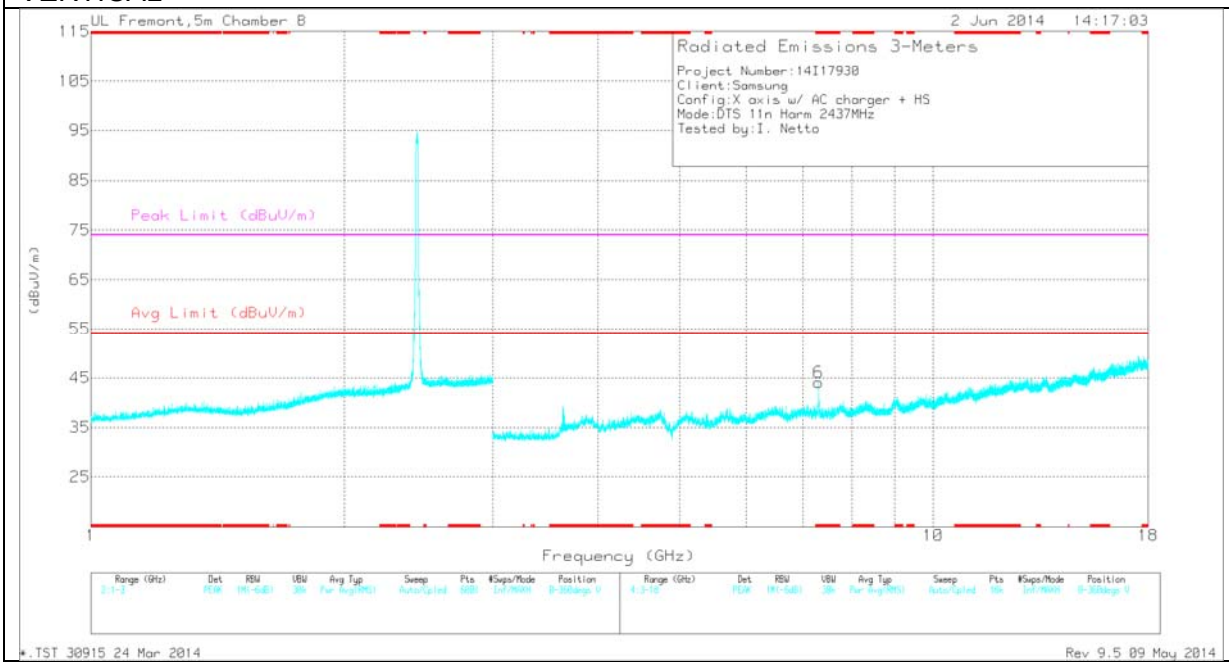
PK2 - KDB558074 Method: Maximum Peak

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

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.613	37.46	PK	33.1	-31	0	39.56	-	-	74	-34.44	0-360	201	H
2	* 3.626	38.64	PK	33.2	-31	0	40.84	-	-	74	-33.16	0-360	201	H
3	* 3.667	38.46	PK	33.3	-31.2	0	40.56	-	-	74	-33.44	0-360	100	H
4	* 4.578	34.98	PK	34.1	-30.8	0	38.28	-	-	74	-35.72	0-360	100	H
6	* 7.311	36.52	PK	35.6	-28.1	0	44.02	-	-	74	-29.98	0-360	100	V
5	5.838	33.67	PK	34.8	-29.6	0	38.87	-	-	-	-	0-360	100	H

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

PK - Peak detector

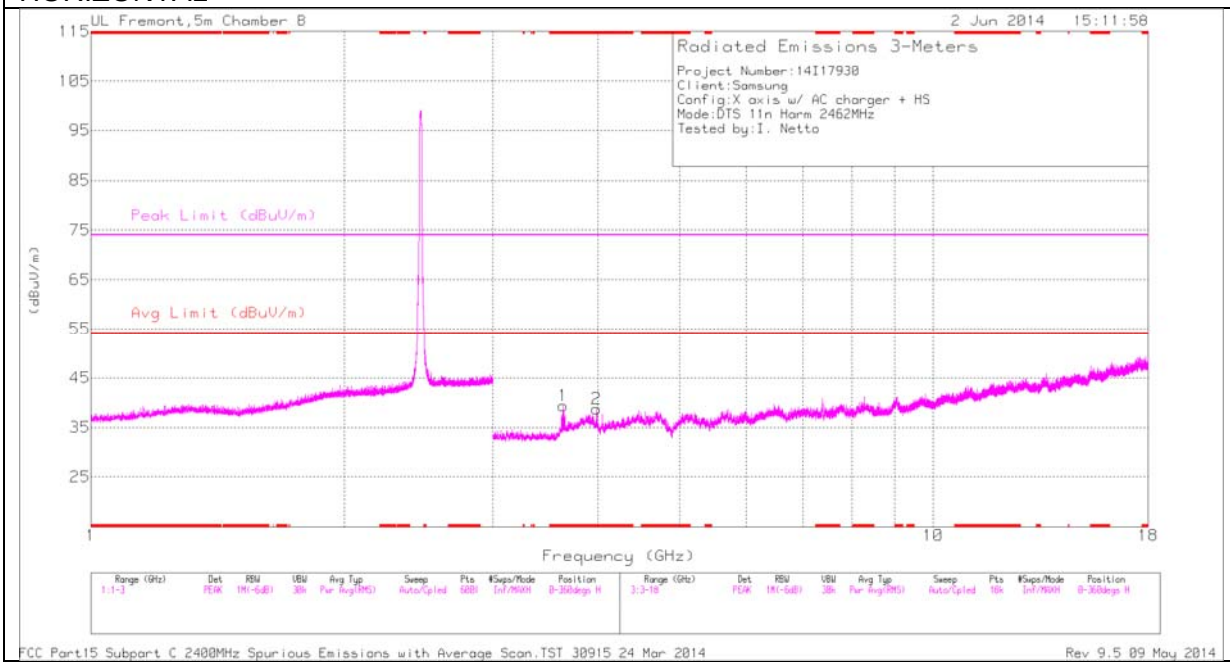
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.612	41.13	PK2	33.1	-31	0	43.23	-	-	74	-30.77	46	265	H
* 3.615	29.85	MAv1	33.2	-31	.3	32.25	54	-21.75	-	-	46	265	H
* 3.624	41.08	PK2	33.2	-30.9	0	43.38	-	-	74	-30.62	205	300	H
* 3.626	29.77	MAv1	33.2	-31	.3	32.17	54	-21.83	-	-	205	300	H
* 3.665	42.04	PK2	33.3	-31.2	0	44.14	-	-	74	-29.86	211	396	H
* 3.669	30.04	MAv1	33.3	-31.2	.3	32.34	54	-21.66	-	-	211	396	H
* 4.58	42.8	PK2	34.1	-30.8	0	46.1	-	-	74	-27.9	211	101	H
* 7.311	49	PK2	35.6	-28.1	0	56.5	-	-	74	-17.5	35	240	V
* 7.311	37.91	MAv1	35.6	-28.1	.3	45.61	54	-8.39	-	-	35	240	V
5.839	40.21	PK2	34.8	-29.6	0	45.41	-	-	-	-	211	101	H

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

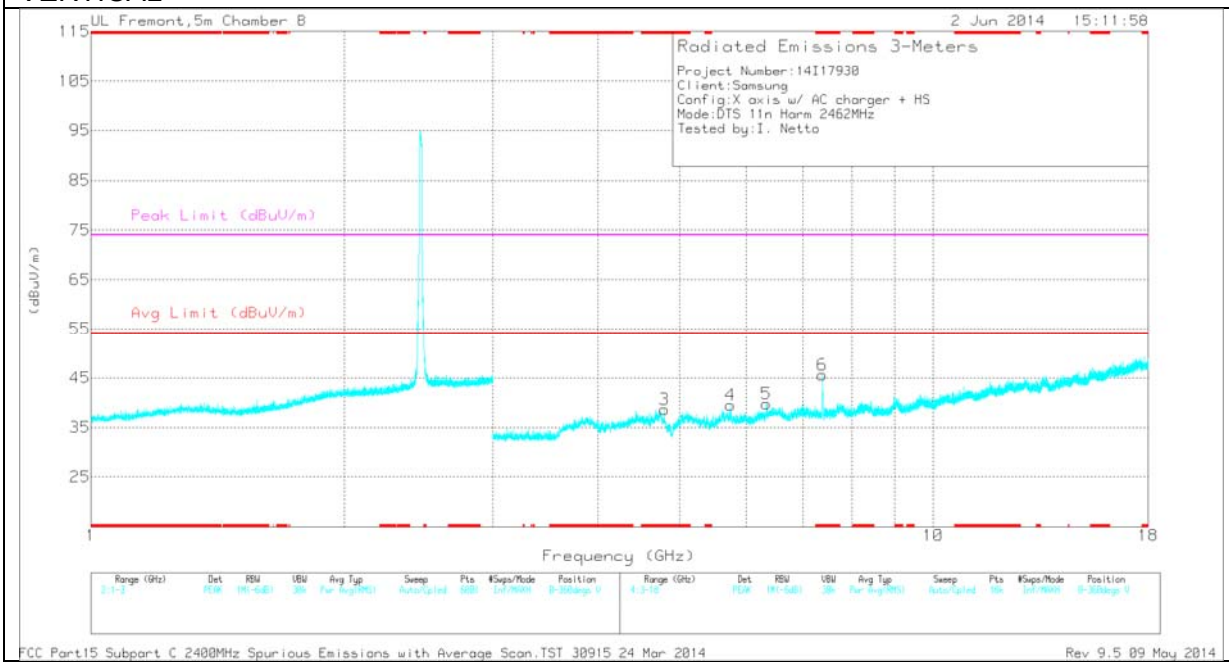
PK2 - KDB558074 Method: Maximum Peak

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

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.636	37.28	PK	33.2	-31.1	0	39.38	-	-	74	-34.62	0-360	201	H
2	* 3.987	36.28	PK	33.6	-31.1	0	38.78	-	-	74	-35.22	0-360	100	H
3	* 4.798	33.83	PK	34.2	-29.4	0	38.63	-	-	74	-35.37	0-360	201	V
6	* 7.386	37.38	PK	35.6	-27.4	0	45.58	-	-	74	-28.42	0-360	201	V
4	5.747	34.36	PK	34.6	-29.5	0	39.46	-	-	-	-	0-360	201	V
5	6.342	32.81	PK	35.5	-28.6	0	39.71	-	-	-	-	0-360	100	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)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.635	41.4	PK2	33.2	-31.1	0	43.5	-	-	74	-30.5	32	202	H
* 3.987	41.39	PK2	33.6	-31.1	0	43.89	-	-	74	-30.11	32	100	H
* 7.386	47.64	PK2	35.6	-27.4	0	55.84	-	-	74	-18.16	32	218	V
* 7.386	37.06	MAv1	35.6	-27.4	.3	45.46	54	-8.54	-	-	32	218	V
* 4.798	39.1	PK2	34.2	-29.4	0	43.9	-	-	74	-30.1	32	202	V
5.747	41.12	PK2	34.6	-29.5	0	46.22	-	-	-	-	32	202	V
6.341	39.26	PK2	35.5	-28.6	0	46.16	-	-	-	-	32	101	V

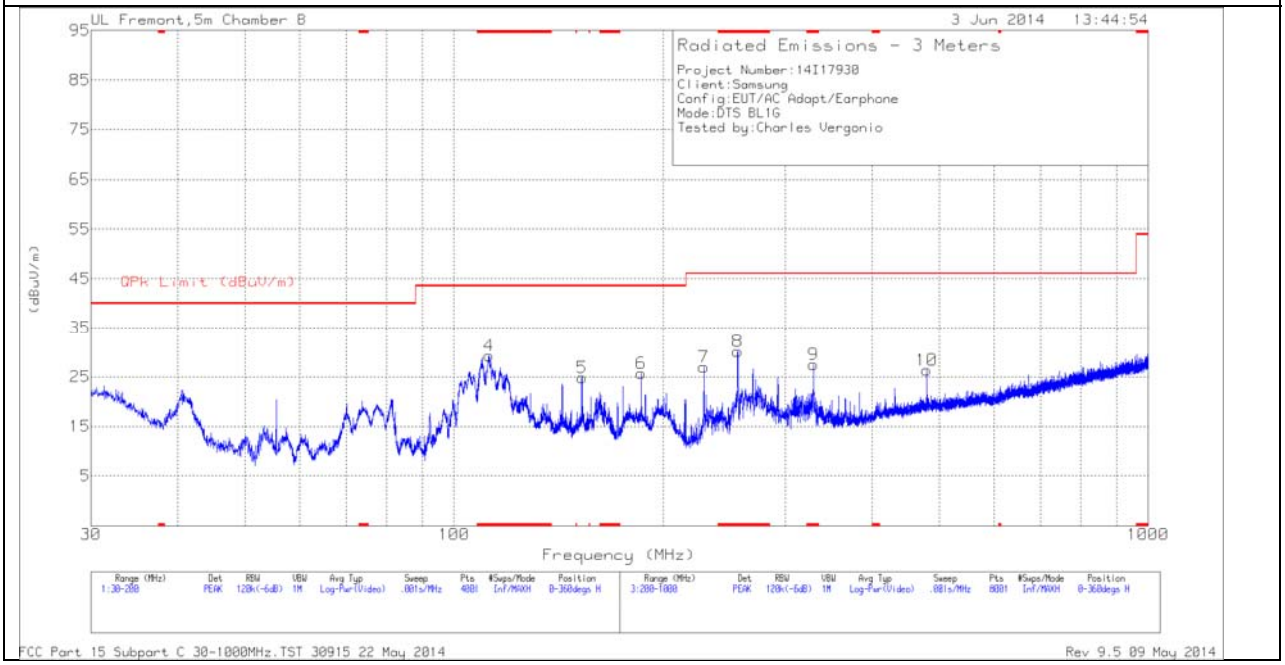
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

10.3. WORST-CASE BELOW 1 GHz

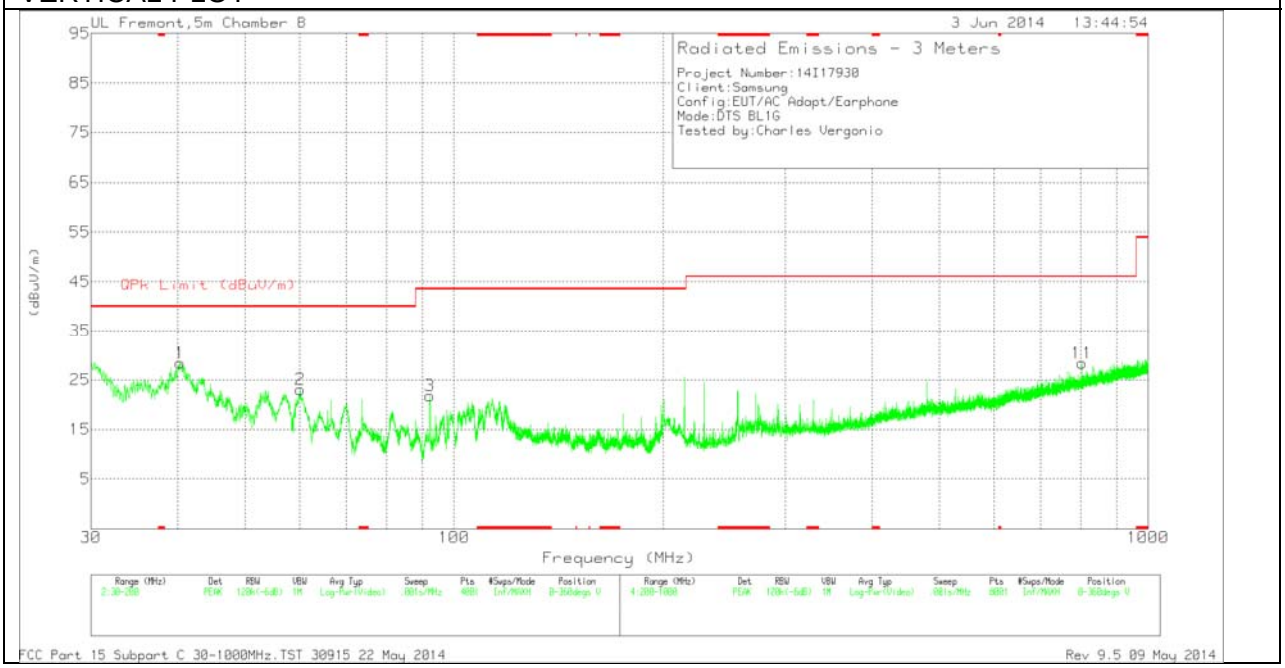
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)

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
4	* 112.2375	44.16	PK	13	-27.9	29.26	43.52	-14.26	0-360	300	H
8	* 256.3	44.78	PK	11.7	-26.3	30.18	46.02	-15.84	0-360	100	H
9	* 329.3	39.25	PK	14	-25.8	27.45	46.02	-18.57	0-360	100	H
1	40.37	43.5	PK	13.6	-28.7	28.4	40	-11.6	0-360	100	V
2	60.1325	44.05	PK	7.4	-28.4	23.05	40	-16.95	0-360	100	V
3	92.305	41.74	PK	8.2	-28.1	21.84	43.52	-21.68	0-360	100	V
5	152.825	39.99	PK	12.3	-27.4	24.89	43.52	-18.63	0-360	200	H
6	186.145	41.81	PK	10.9	-27	25.71	43.52	-17.81	0-360	100	H
7	229	42.57	PK	11	-26.6	26.97	46.02	-19.05	0-360	300	H
10	480	34.62	PK	17.6	-25.9	26.32	46.02	-19.7	0-360	200	H
11	803.4	30.88	PK	21.2	-23.7	28.38	46.02	-17.64	0-360	300	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-L1 .15 - 30MHz

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1 (dB)	LC Cables 1&3 (dB)	Corrected Reading dBuV	CISPR 22 Class B QP	Margin to Limit (dB)	CISPR 22 Class B Avg	Margin to Limit (dB)
1	.1995	41.51	PK	.9	0	42.41	63.6	-21.19	-	-
2	.1995	26.17	Av	.9	0	27.07	-	-	53.6	-26.53
3	1.59	53.26	PK	.2	.1	53.56	56	-2.44	-	-
4	1.59	38.33	Av	.2	.1	38.63	-	-	46	-7.37
5	5.091	49.98	PK	.2	.1	50.28	60	-9.72	-	-
6	5.091	35.67	Av	.2	.1	35.97	-	-	50	-14.03

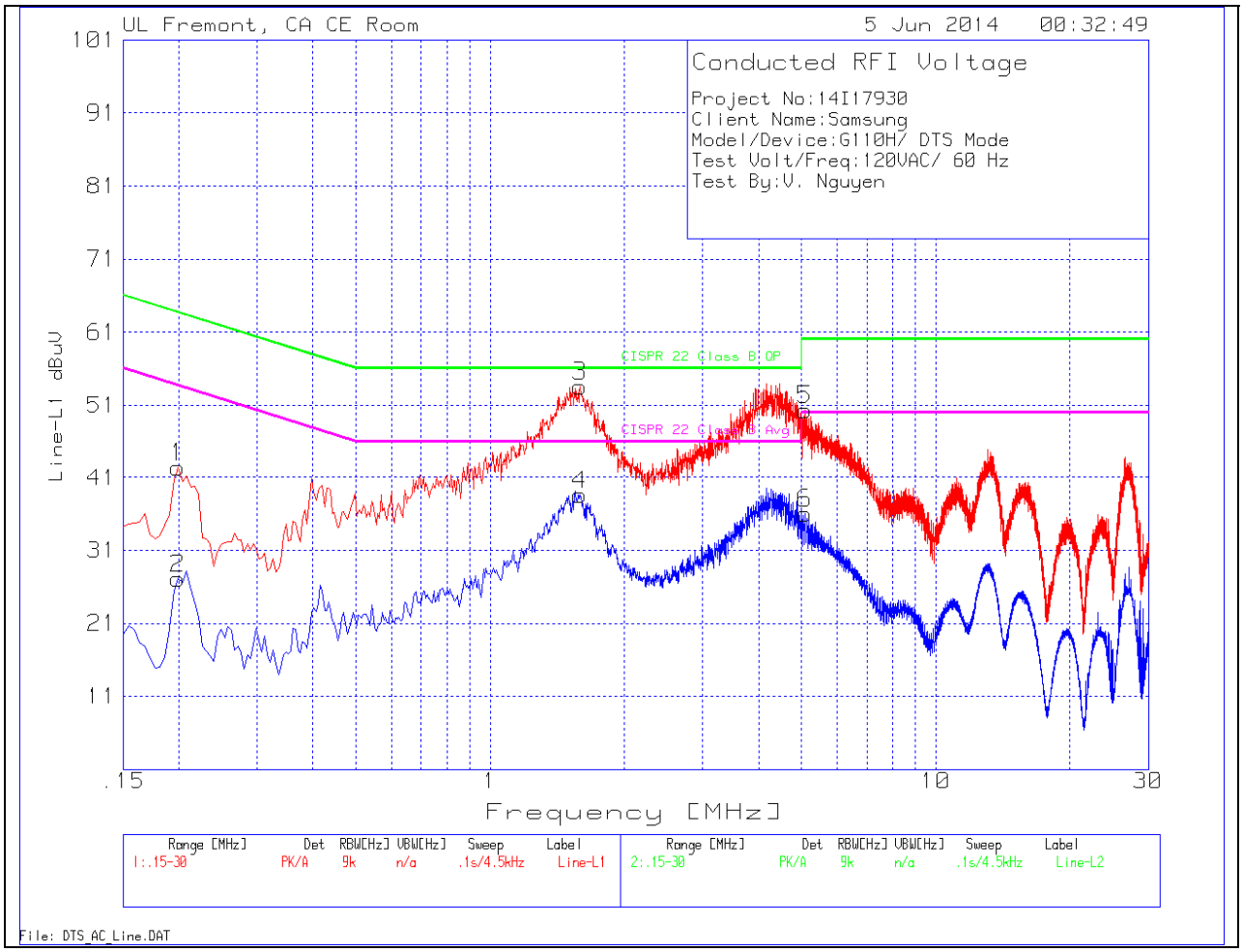
Line-L2 .15 - 30MHz

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2 (dB)	LC Cables 2&3 (dB)	Corrected Reading dBuV	CISPR 22 Class B QP	Margin to Limit (dB)	CISPR 22 Class B Avg	Margin to Limit (dB)
7	.1995	42.2	PK	1	0	43.2	63.6	-20.4	-	-
8	.1995	24.86	Av	1	0	25.86	-	-	53.6	-27.74
9	4.047	53.38	PK	.2	.1	53.68	56	-2.32	-	-
10	4.047	34.02	Av	.2	.1	34.32	-	-	46	-11.68
11	5.091	49.45	PK	.2	.1	49.75	60	-10.25	-	-
12	5.091	30.77	Av	.2	.1	31.07	-	-	50	-18.93

PK - Peak detector

LINE 1 RESULTS



LINE 2 RESULTS