FCC CFR47 PART 15 SUBPART C

CERTIFICATION TEST REPORT

FOR

GSM/WCDMA/LTE Tablet with Bluetooth, DTS/UNII a/b/g/n and ANT+

MODEL NUMBER: SM-P555

FCC ID: A3LSMP555

REPORT NUMBER: 15I19961-E4

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Prepared for

SAMSUNG ELECTRONICS CO., LTD.
129 SAMSUNG-RO, 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
--	2/23/15	Initial Issue	P. Zhang

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1. ATTESTATION OF TEST RESULTS

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

EUT DESCRIPTION: **GSM/WCDMA/LTE Tablet with Bluetooth, DTS/UNII a/b/g/n and ANT+**

MODEL NUMBER: **SM-P555**

SERIAL NUMBER: **Radiated(2049241), Conducted(2058070)**

DATE TESTED: **FEBRUARY 3 – 23, 2015**

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:

ROLLY ALEGRE
CONSUMER TECHNOLOGY DIVISION
LAB TECHNICIAN
UL Verification Services Inc.

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2. TEST METHODOLOGY

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

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 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.

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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%.

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a GSM/WCDMA/LTE Tablet with Bluetooth, DTS/UNII a/b/g/n and ANT+.

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	16.9	48.98
2412 - 2462	802.11g	12.3	16.98
2412 - 2462	802.11n HT20	13.3	21.38

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of -1.58 dBi.

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5.4. WORST-CASE CONFIGURATION AND MODE

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

The fundamental of the EUT was investigated in three orthogonal orientations X,Y,Z, it was determined that 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

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5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
AC Adapter	SAMSUNG	EP-TA12EWE	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

EUT was set in the Hidden menu mode to enable WLAN DTS communications.

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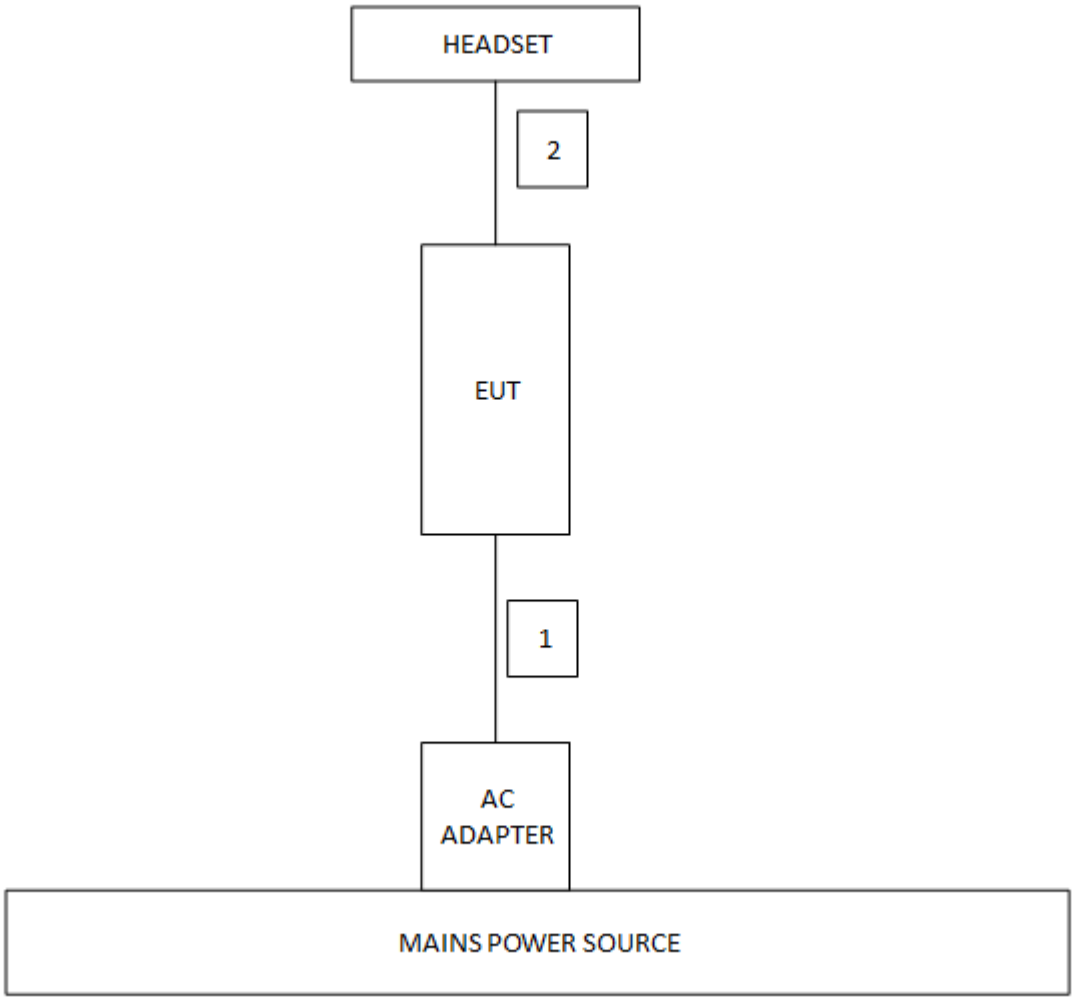
SETUP DIAGRAM FOR TESTS



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6. TEST AND MEASUREMENT EQUIPMENT

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

Test Equipment List				
Description	**Manufacturer**	**Model**	**Asset**	**Cal Due**
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01069	12/20/15
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	12/13/15
Peak / Average Power Sensor	Agilent / HP	E9327A	C00964	12/13/15
Antenna, Horn, 1-18 GHz	ETS	3117	C01022	02/21/15
Antenna, Horn,18- 26 GHz	ARA	MWH-1826/B	C00946	11/12/15
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

Test Equipment List			
Description	**Manufacturer**	**Model**	**Version**
Radiated Software	UL	UL EMC	Version 9.5, 07/22/14
Conducted Software	UL	UL EMC	Version 9.5, 05/17/14
CLT Software	UL	UL RF	Version 1.0, 02/02/15
Antenna Port Software	UL	UL RF	Version 2.1.1.1, 1/20/15

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7. MEASUREMENT METHODS

KDB 558074 D01 DTS Meas Guidance v03r02: Measurement Procedure AVGPM-G is used for power and AVGPSD-3 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.

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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	8.54MHz
2.1051, 15.247 (d)	RSS-210 A8.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	-28.30dBm
15.247	RSS-210 A8.4	TX conducted output power	<30dBm		Pass	16.9dBm
15.247	RSS-210 A8.2	PSD	<8dBm		Pass	-14.35dBm
15.207 (a)	RSS-GEN 7.2.2	AC Power Line conducted emissions	Section 10	Radiated	Pass	43.43 dBuV(PK)
15.205, 15.209	RSS-210 Clause 2.6, RSS-210 Clause 6	Radiated Spurious Emission	< 54dBuV/m		Pass	52.29dBuV/m

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9. ANTENNA PORT TEST RESULTS

9.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

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	8.54	0.5
Mid	2437	9.05	0.5
High	2462	9.03	0.5
Worst		8.54	

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9.1.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	16.36	0.5
Mid	2437	16.36	0.5
High	2462	16.43	0.5
Worst		16.36	

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	17.61	0.5
Mid	2437	17.58	0.5
High	2462	17.63	0.5
Worst		17.58	

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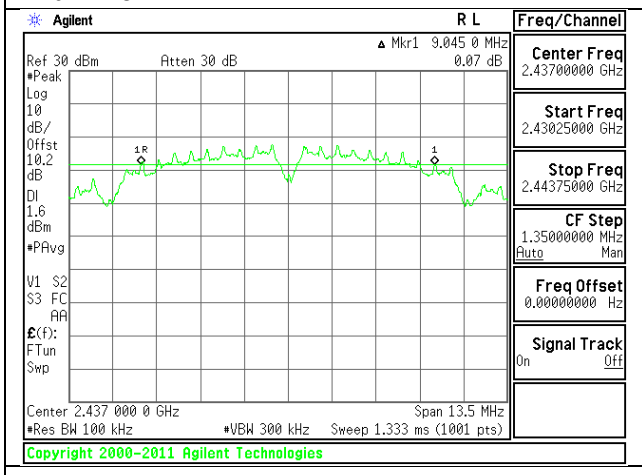
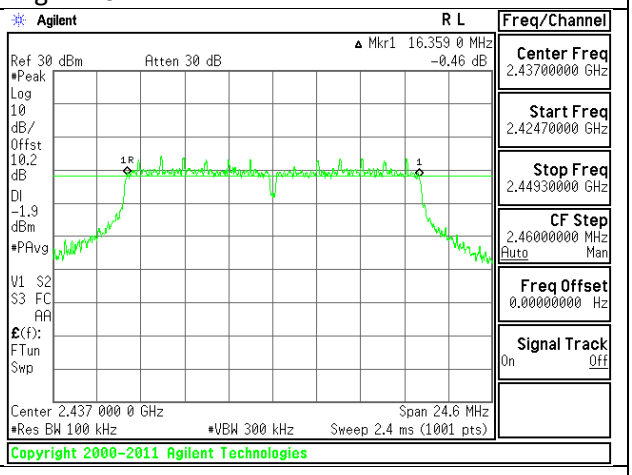
9.1.4. 6 dB BANDWIDTH MID CH PLOTS

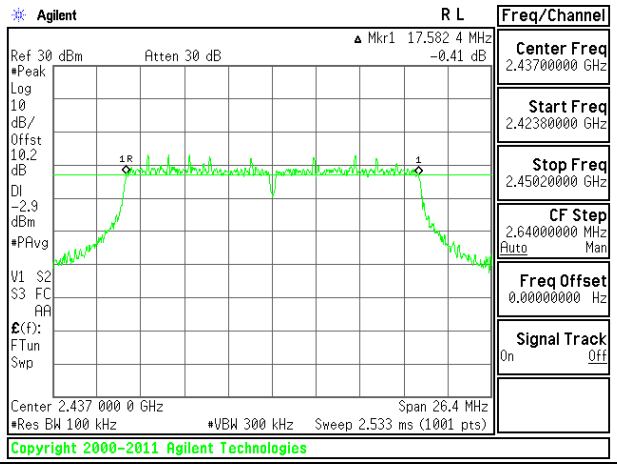
11b HT20 2.4



11g HT20 2.4



11n HT20 2.4



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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	13.52
Mid	2437	13.36
High	2462	13.70
Worst		13.70

9.2.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	17.46
Mid	2437	17.54
High	2462	17.88
Worst		17.88

9.2.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	18.36
Mid	2437	18.37
High	2462	18.60
Worst		18.60

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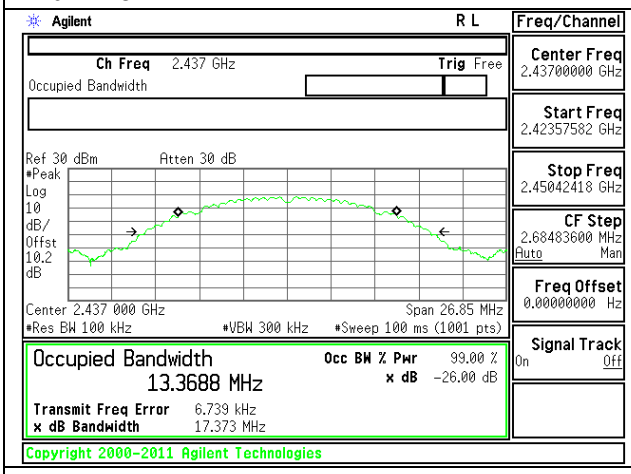
9.2.4. 99% BANDWIDTH MID CH PLOTS

11b HT20 2.4



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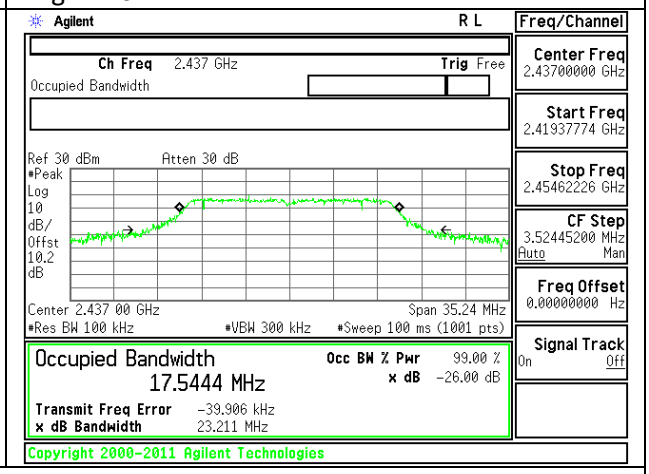
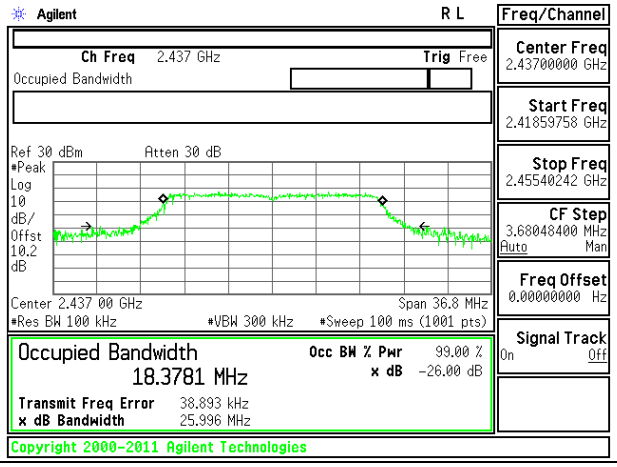


11n HT20 2.4



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9.3. OUTPUT POWER

LIMITS

FCC §15.247

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.

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

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9.3.1. 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	-1.58	30.00	30	36	30.00
Mid	2437	-1.58	30.00	30	36	30.00
High	2462	-1.58	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	16.80	16.80	30.00	-13.20
Mid	2437	16.90	16.90	30.00	-13.10
High	2462	16.80	16.80	30.00	-13.20
Worst			16.90		

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9.3.2. 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	-1.58	30.00	30	36	30.00
Mid	2437	-1.58	30.00	30	36	30.00
High	2462	-1.58	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	12.20	12.20	30.00	-17.80
Mid	2437	12.30	12.30	30.00	-17.70
High	2462	12.10	12.10	30.00	-17.90
Worst			12.30		

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9.3.3. 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	-1.58	30.00	30	36	30.00
Mid	2437	-1.58	30.00	30	36	30.00
High	2462	-1.58	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	13.20	13.20	30.00	-16.80
Mid	2437	13.30	13.30	30.00	-16.70
High	2462	13.10	13.10	30.00	-16.90
Worst			13.30		

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9.4. PSD

LIMITS

FCC §15.247

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

9.4.1. 802.11b MODE IN THE 2.4 GHz BAND

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-14.35	8.0	-22.3
Mid	2437	-15.39	8.0	-23.4
High	2462	-16.22	8.0	-24.2

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9.4.2. 802.11g MODE IN THE 2.4 GHz BAND

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-20.37	8.0	-28.4
Mid	2437	-20.08	8.0	-28.1
High	2462	-20.38	8.0	-28.4

9.4.3. 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	-21.72	8.0	-29.7
Mid	2437	-21.34	8.0	-29.3
High	2462	-21.62	8.0	-29.6

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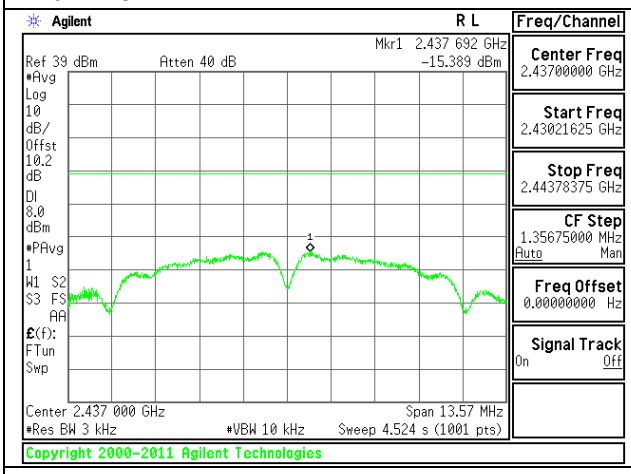
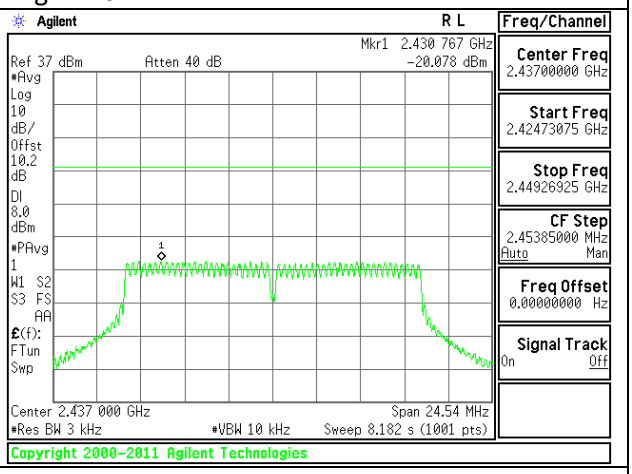
9.4.4. PSD Chain 0 MID CH PLOTS

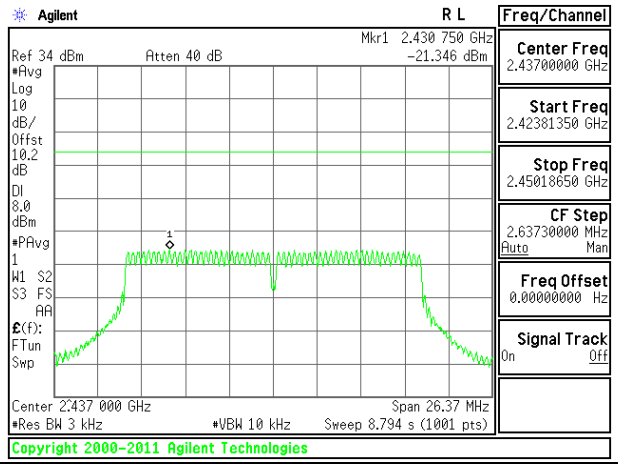
11b HT20 2.4



11g HT20 2.4



11n HT20 2.4



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9.5. OUT-OF-BAND EMISSIONS

LIMITS

FCC §15.247 (d)

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

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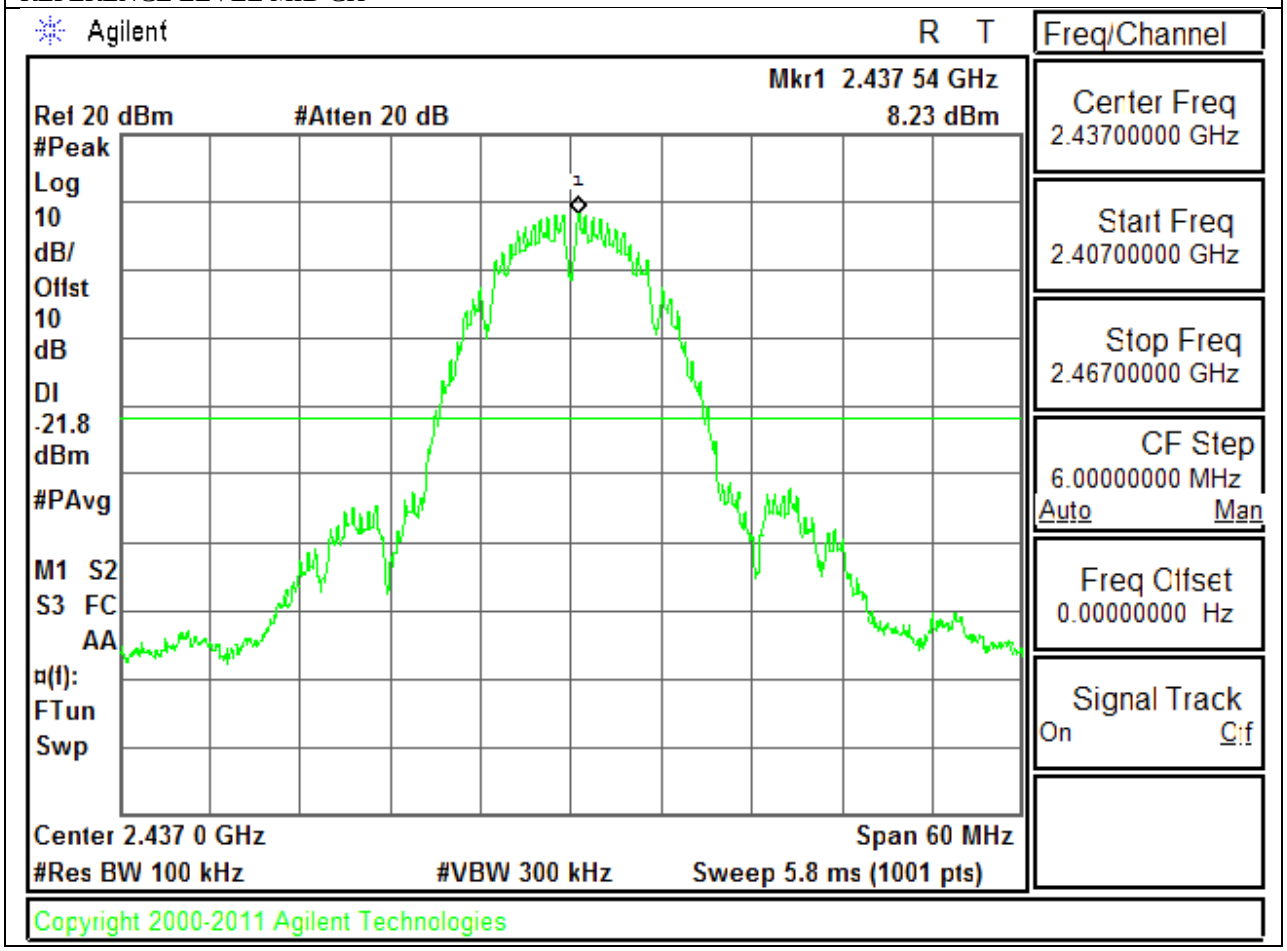
9.5.1. 802.11b MODE IN THE 2.4 GHz BAND

IN-BAND REFERENCE LEVEL

REFERENCE LEVEL MID CH



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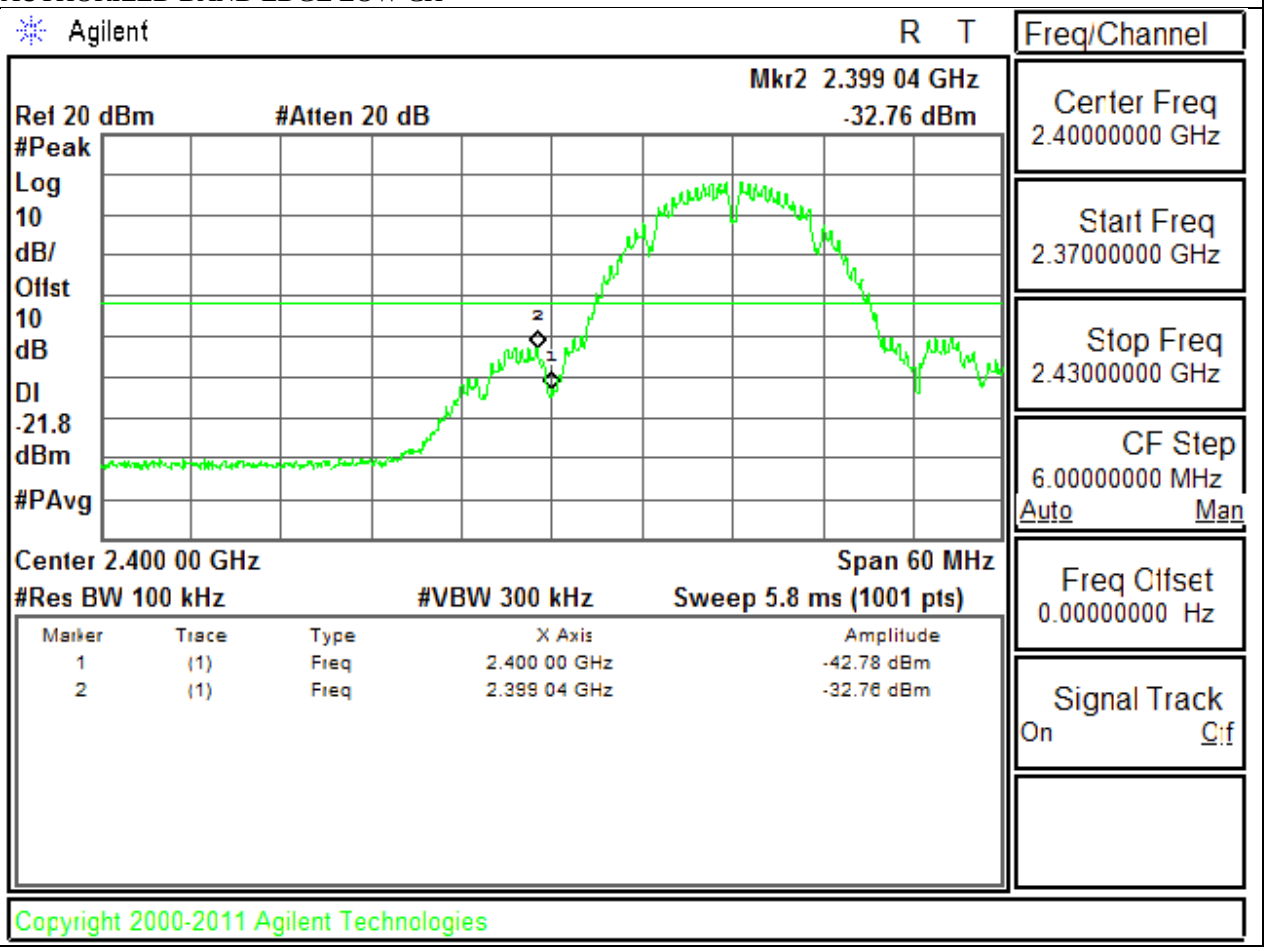
LOW CHANNEL BANDEDGE

AUTHORIZED BAND EDGE LOW CH



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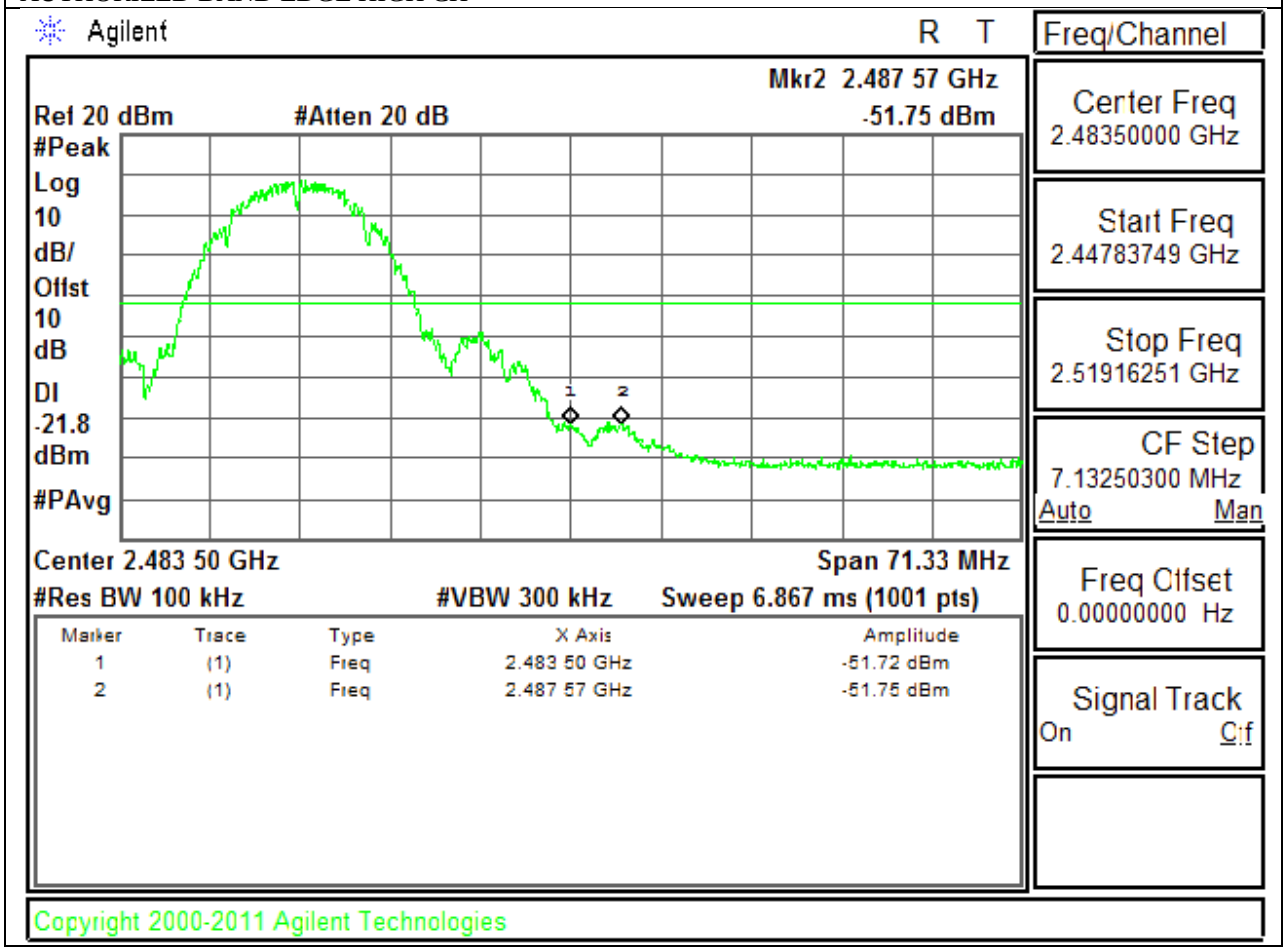
HIGH CHANNEL BANDEDGE

AUTHORIZED BAND EDGE HIGH CH



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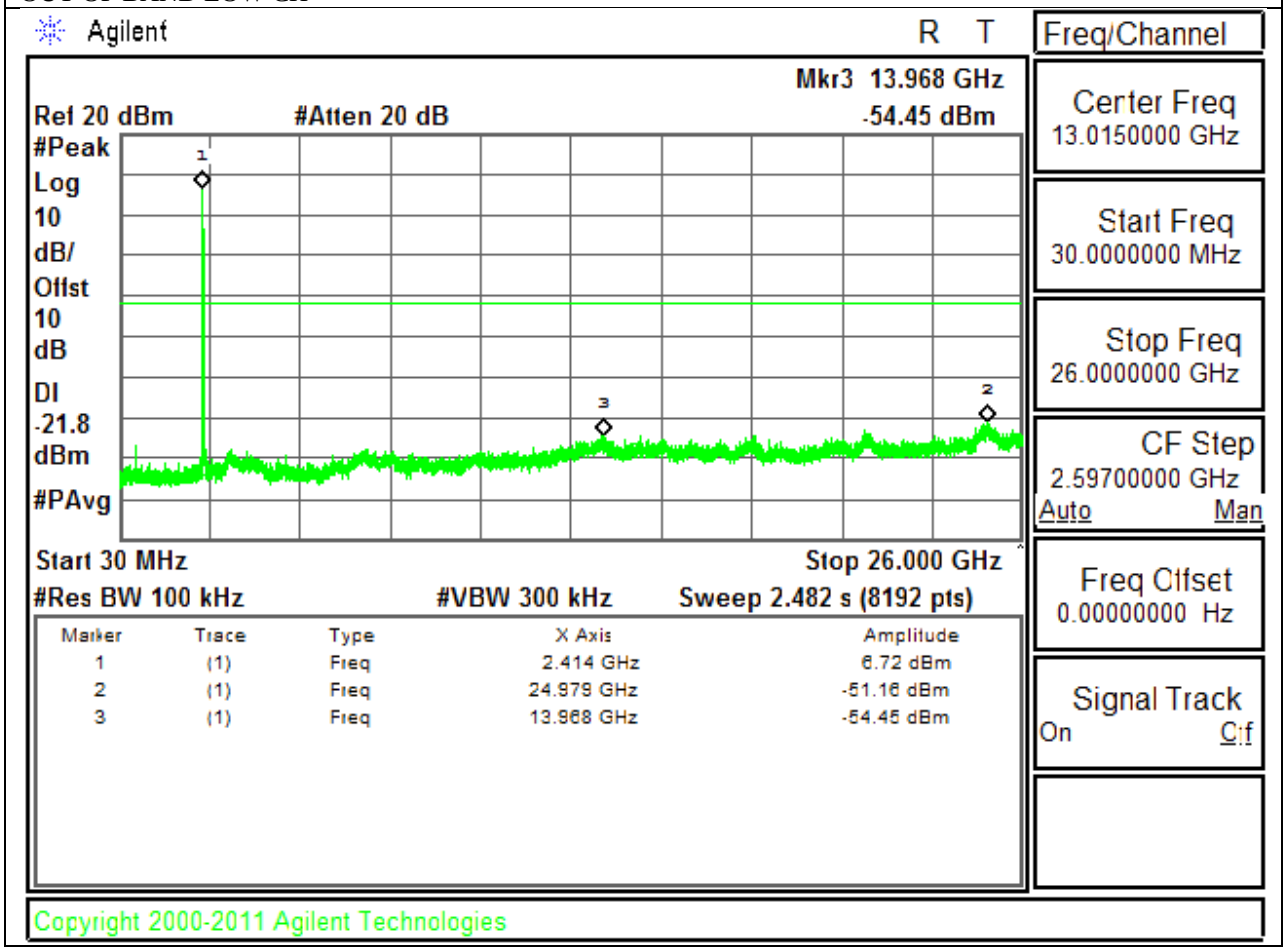
OUT-OF-BAND EMISSIONS

OUT OF BAND LOW CH



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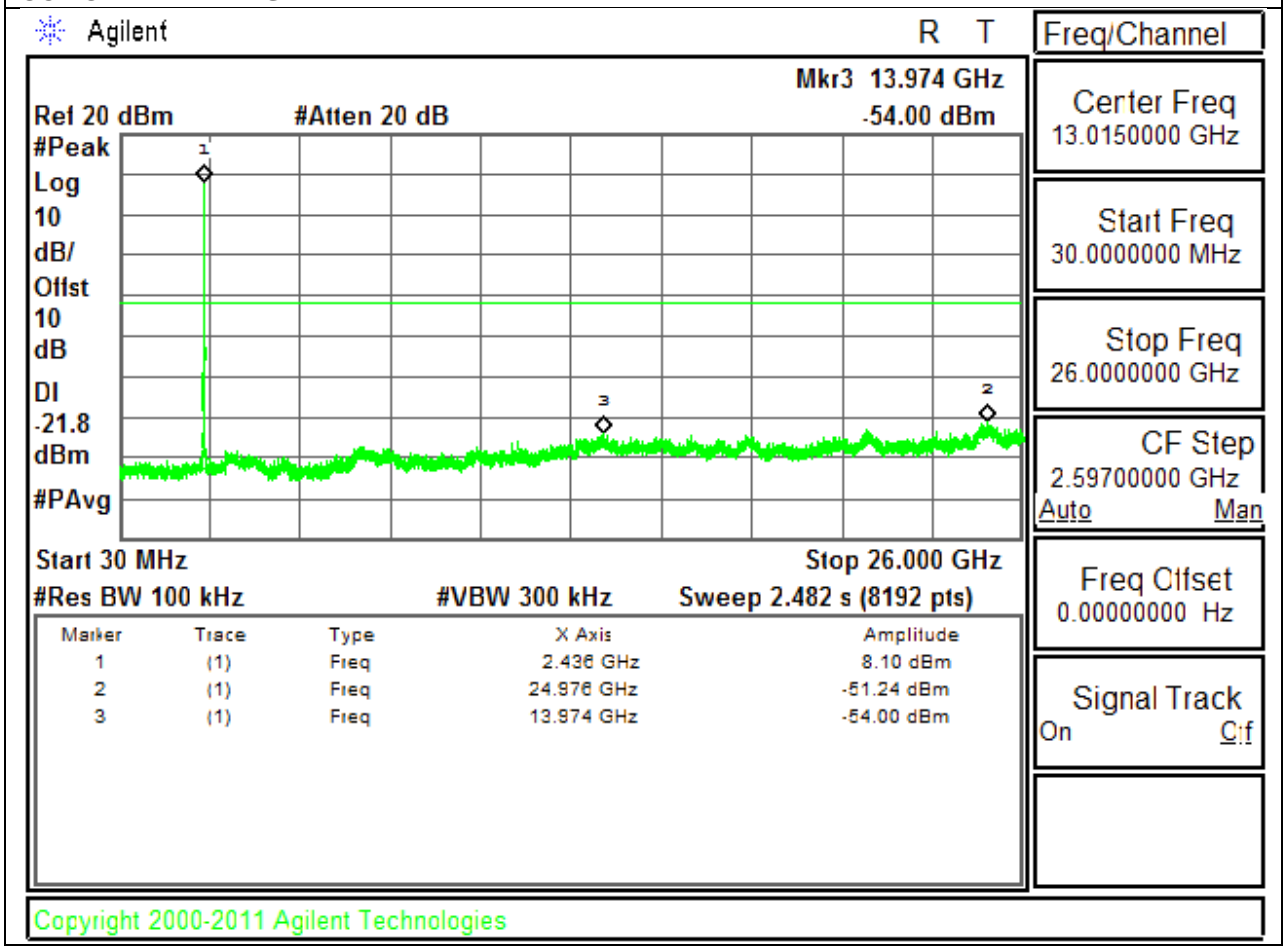
OUT OF BAND MID CH



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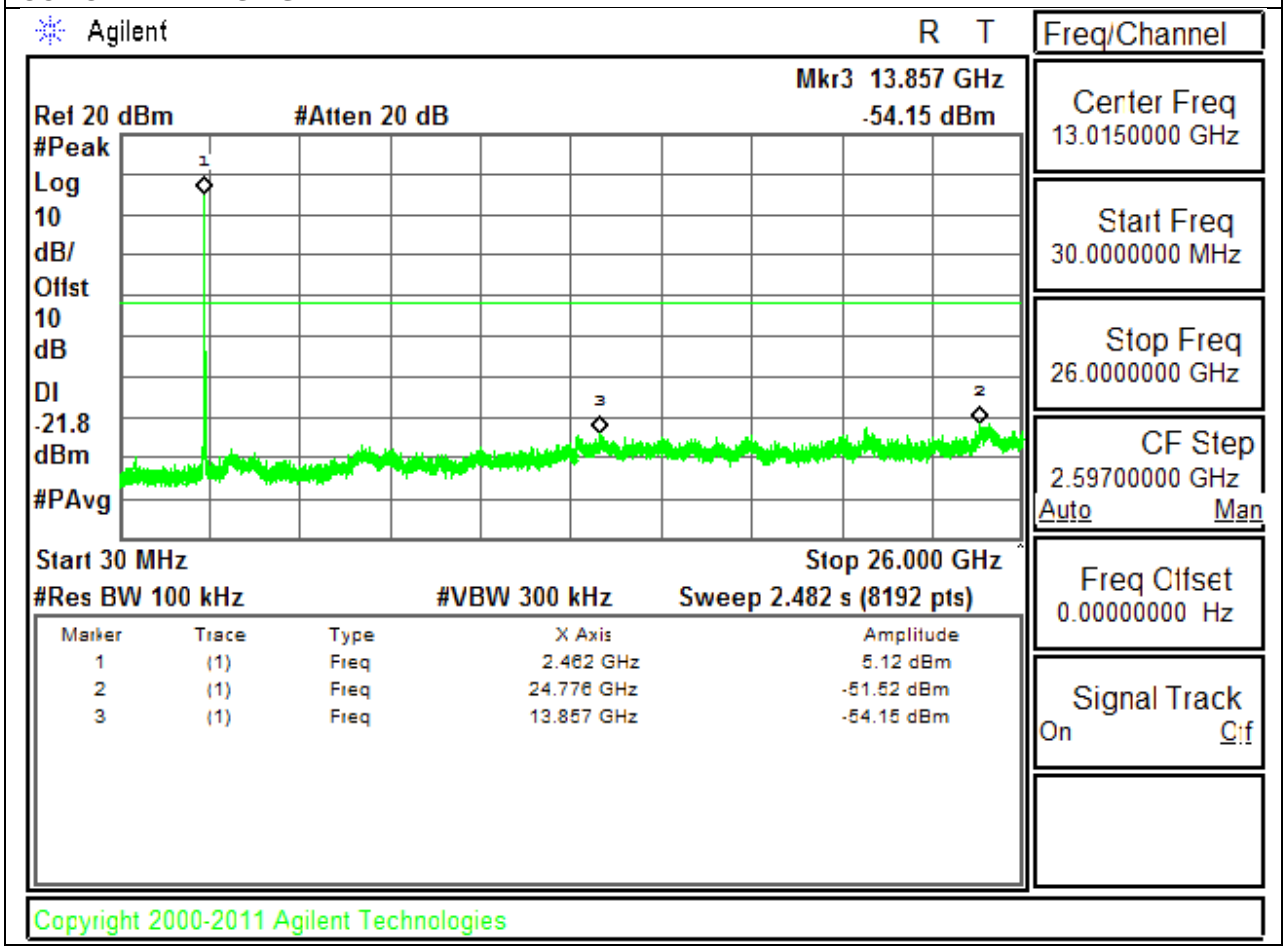
OUT OF BAND HIGH CH



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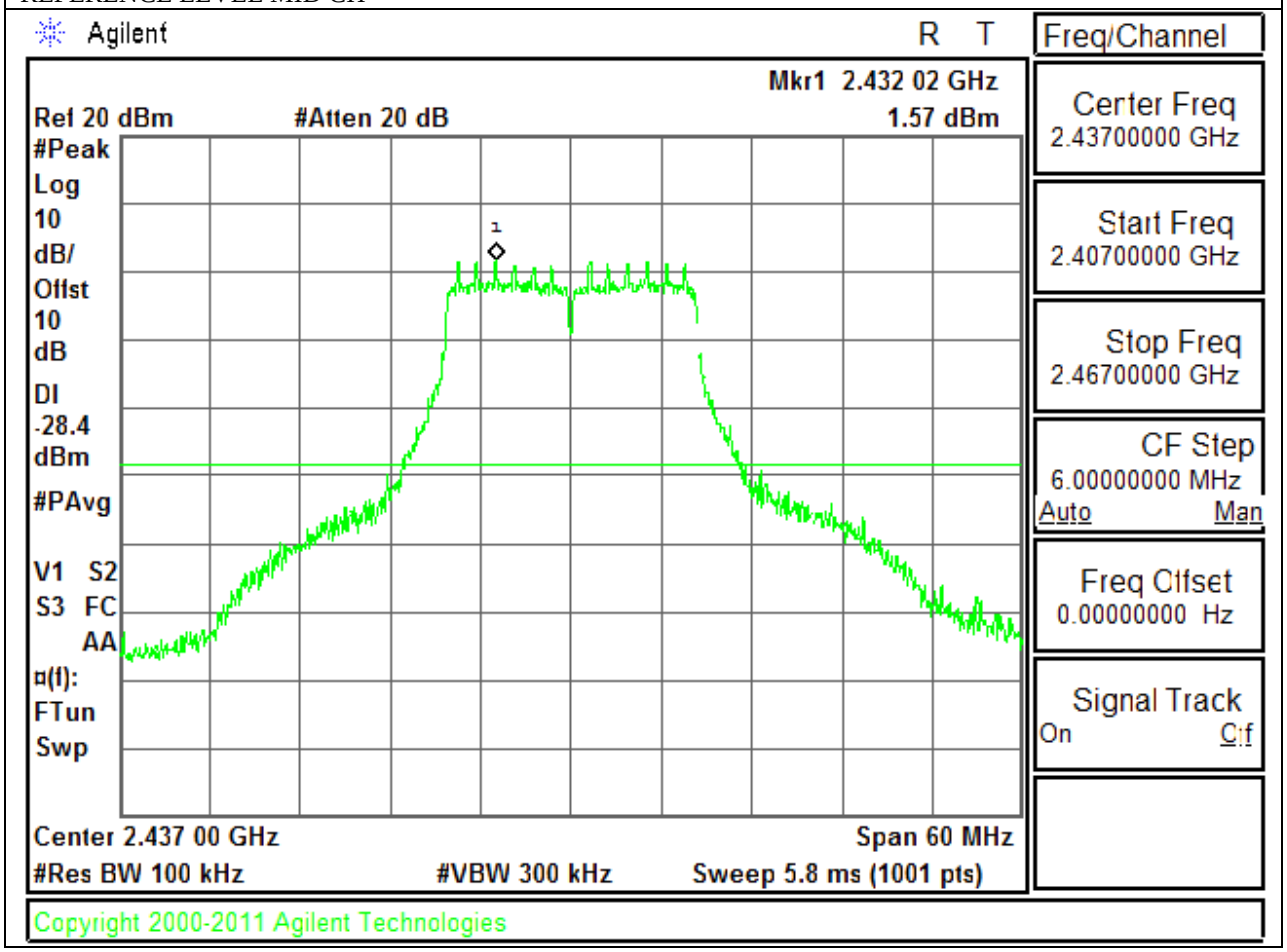
9.5.2. 802.11g MODE IN THE 2.4 GHz BAND

IN-BAND REFERENCE LEVEL

REFERENCE LEVEL MID CH



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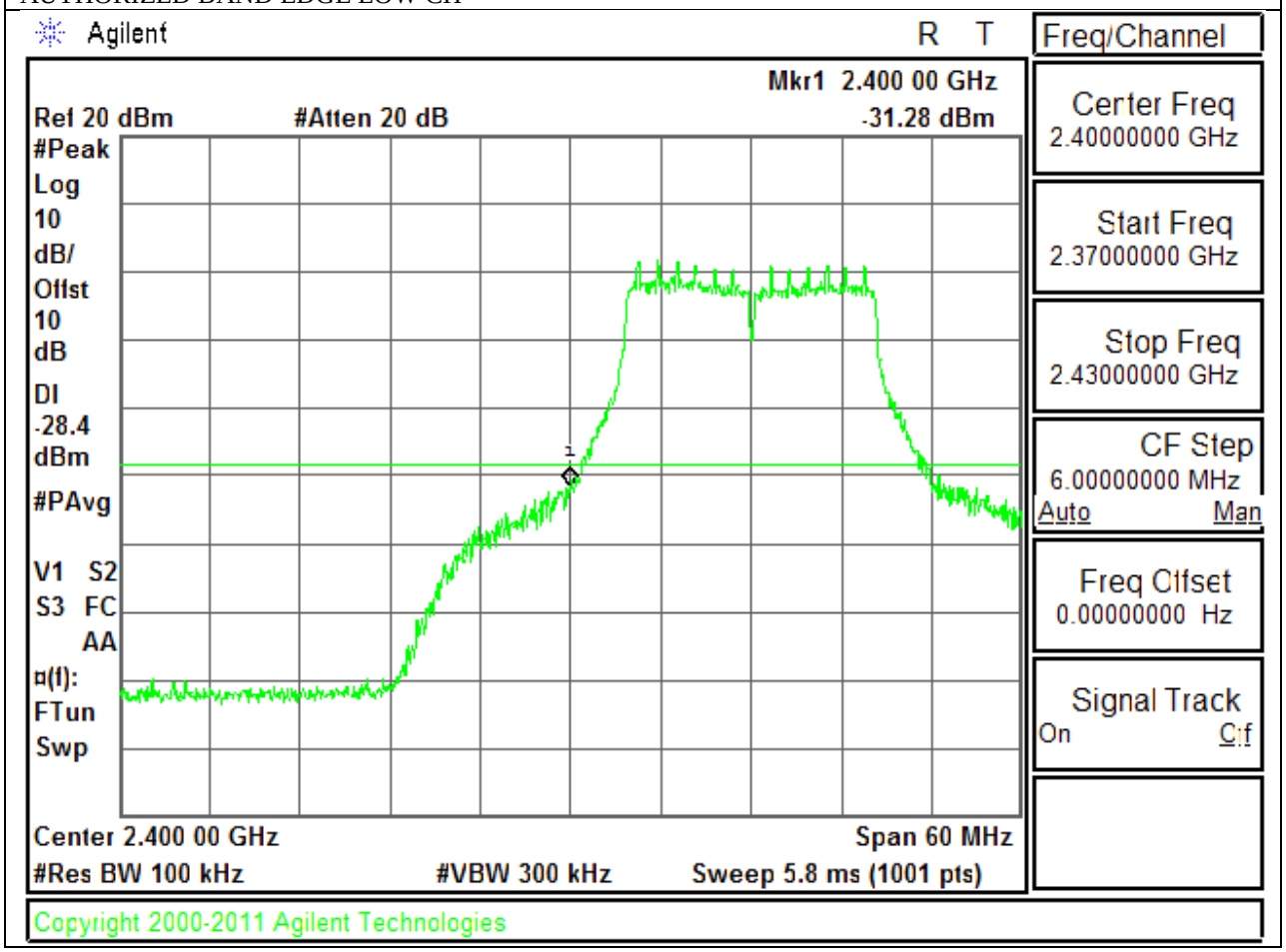
LOW CHANNEL BANDEDGE

AUTHORIZED BAND EDGE LOW CH



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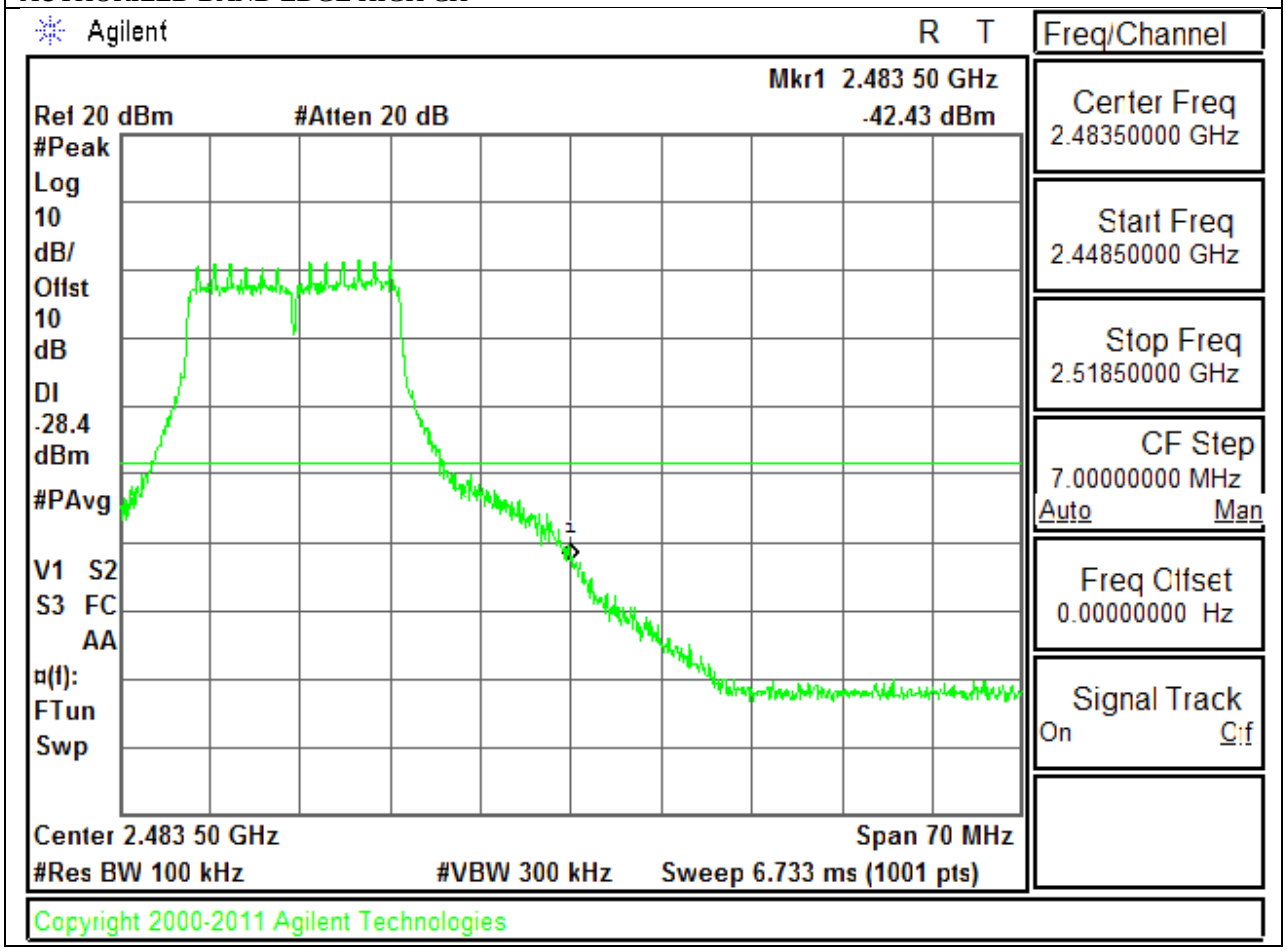
HIGH CHANNEL BANDEDGE

AUTHORIZED BAND EDGE HIGH CH



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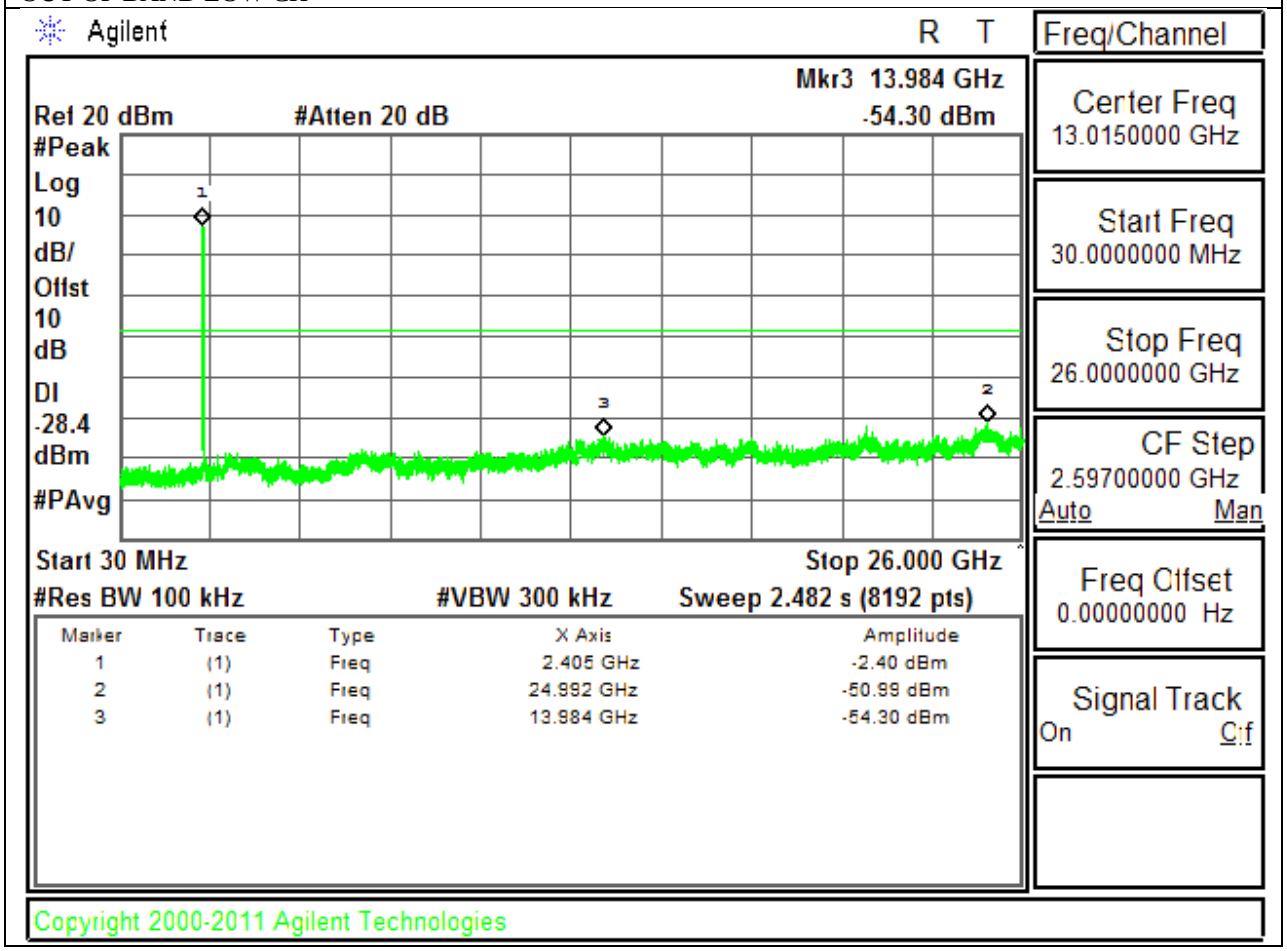
OUT-OF-BAND EMISSIONS

OUT OF BAND LOW CH



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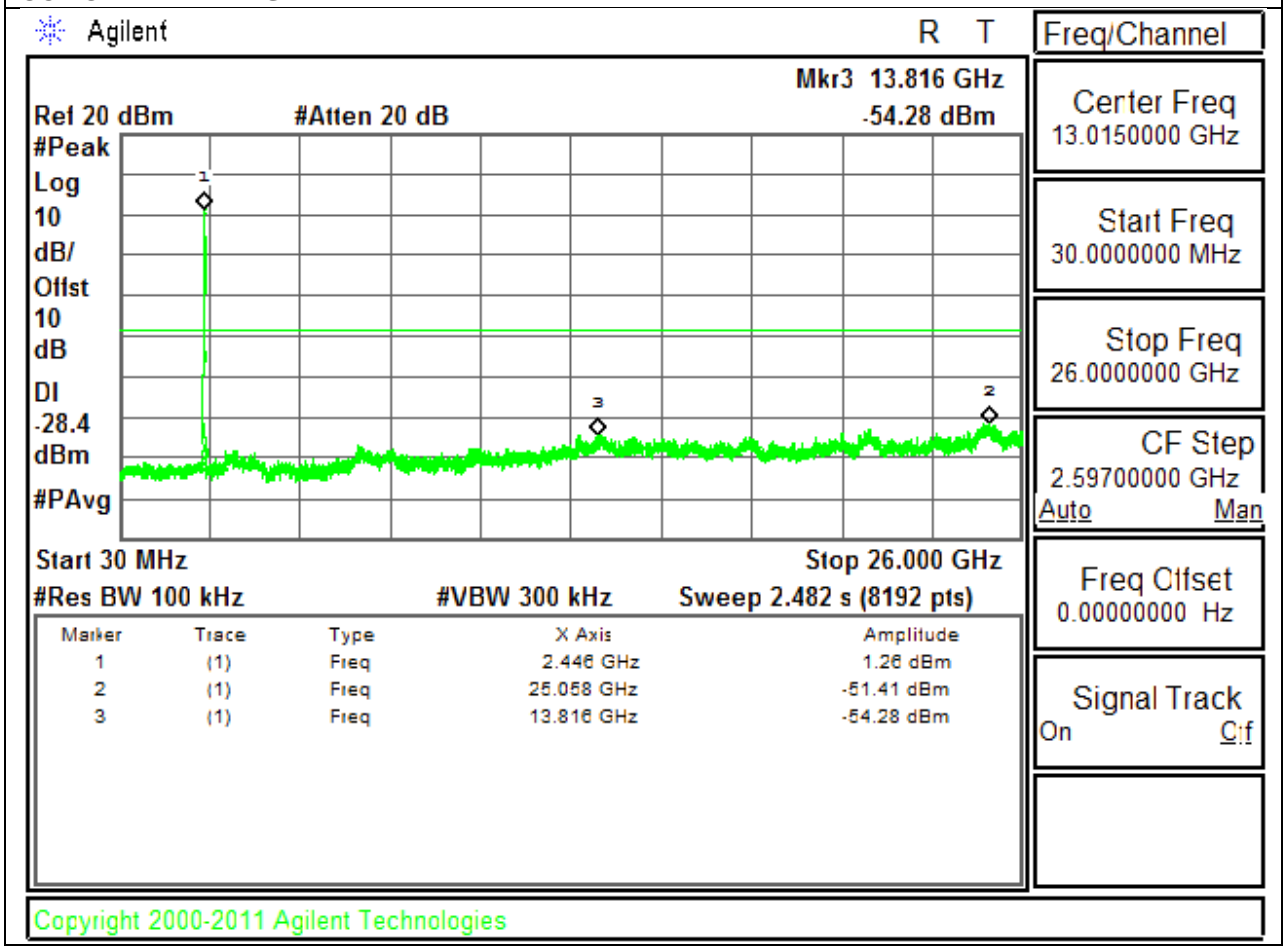
OUT OF BAND MID CH



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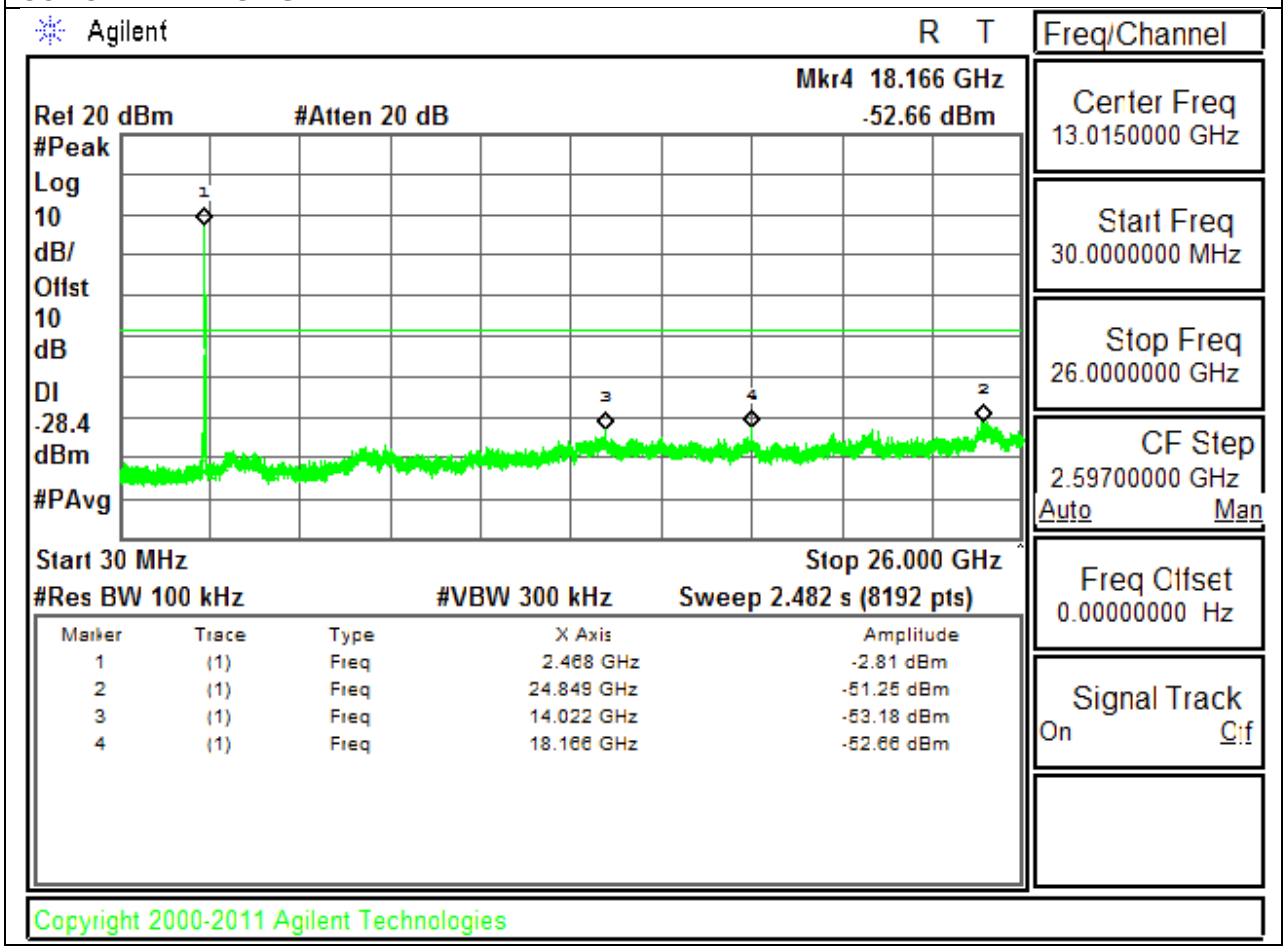
OUT OF BAND HIGH CH



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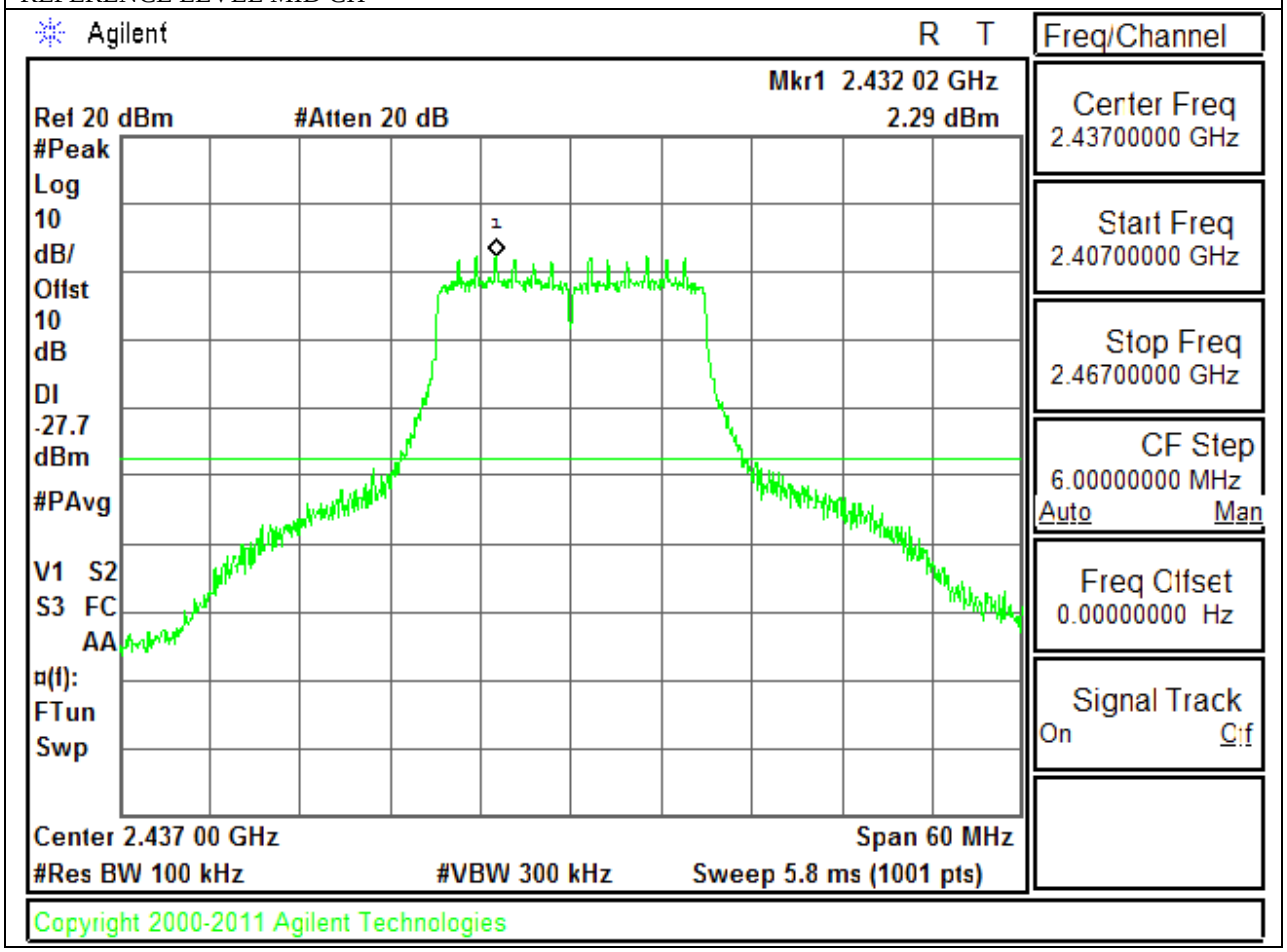
9.5.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

IN-BAND REFERENCE LEVEL

REFERENCE LEVEL MID CH



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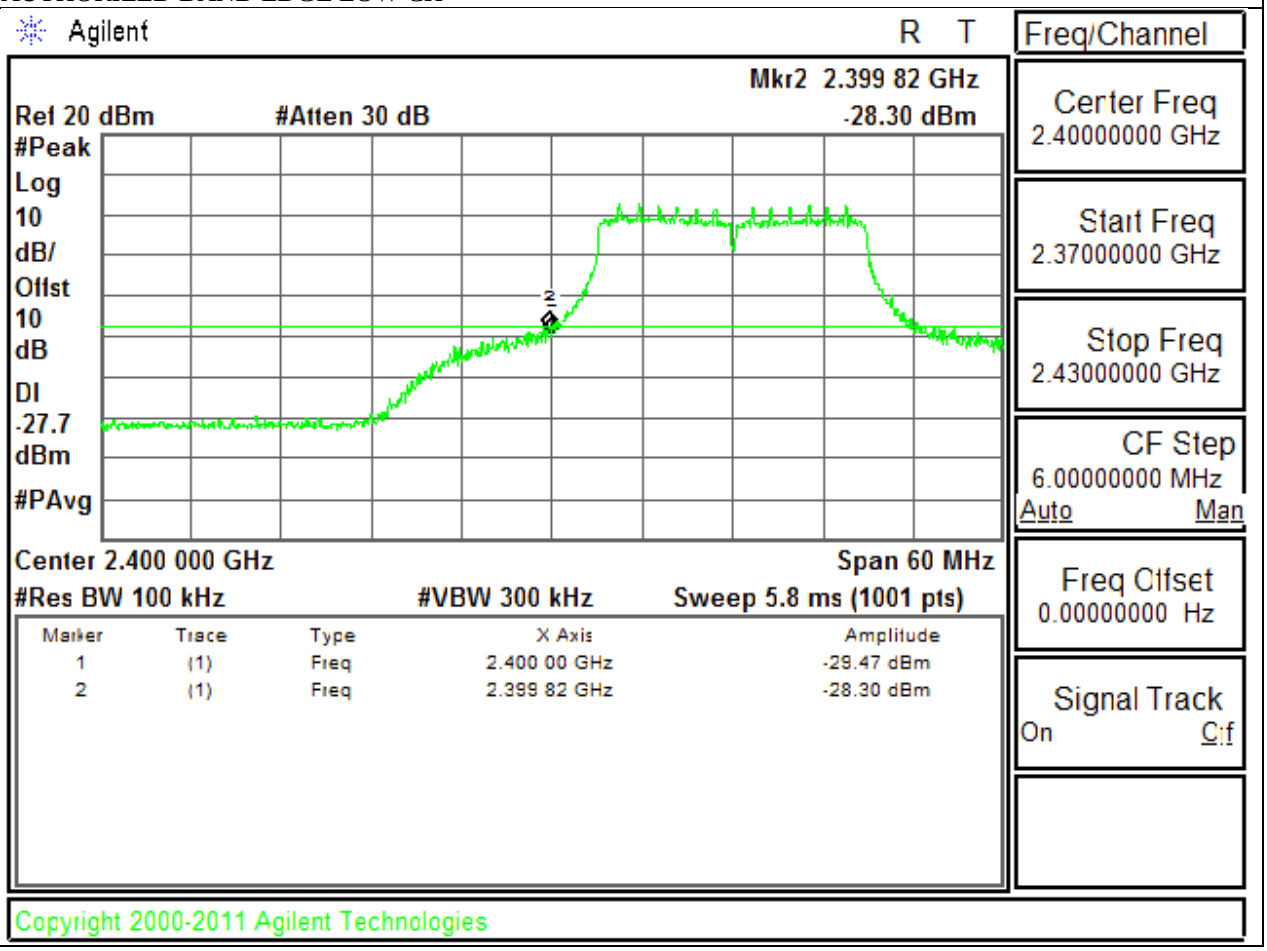
LOW CHANNEL BANDEDGE

AUTHORIZED BAND EDGE LOW CH



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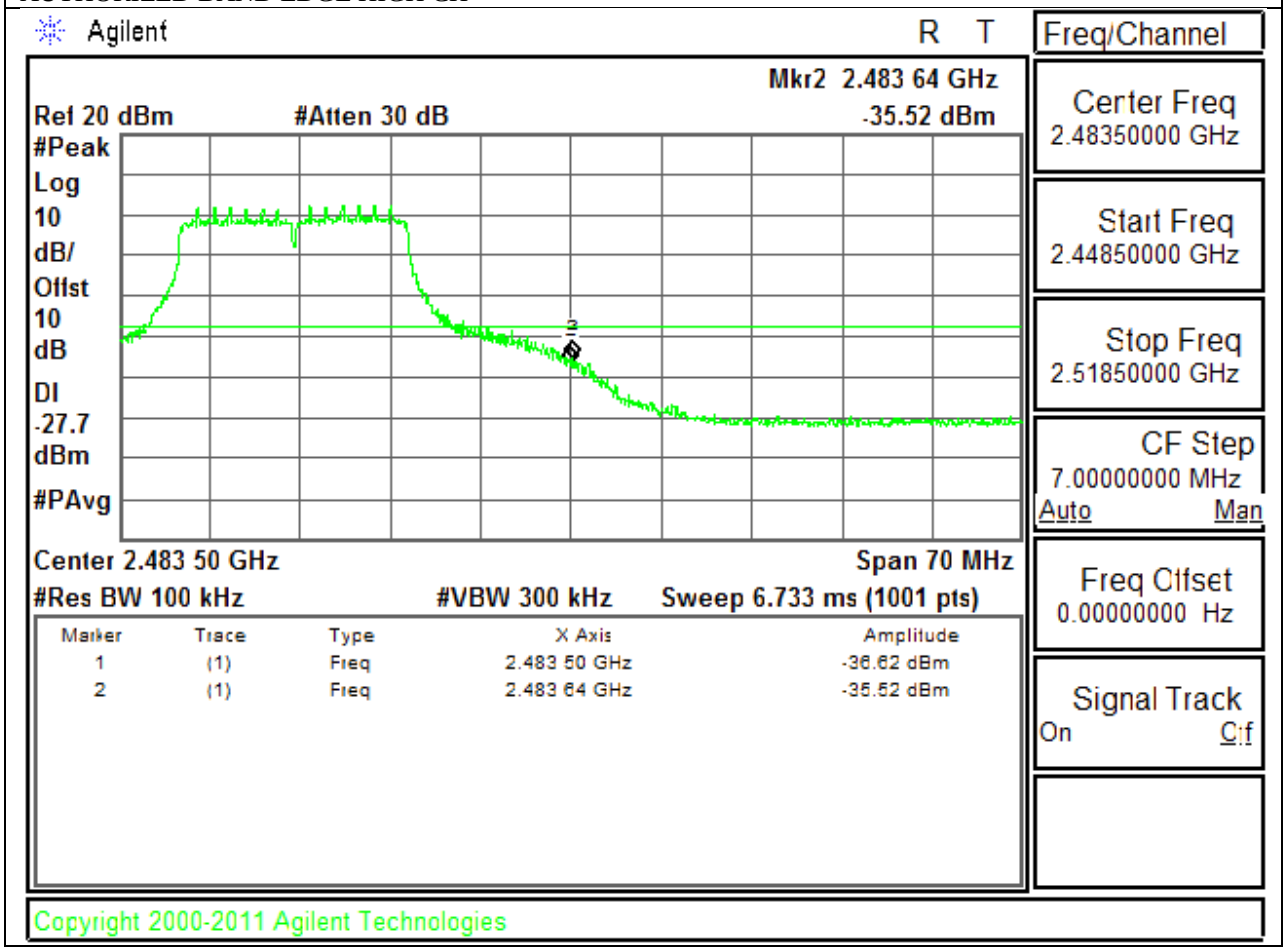
HIGH CHANNEL BANDEDGE

AUTHORIZED BAND EDGE HIGH CH



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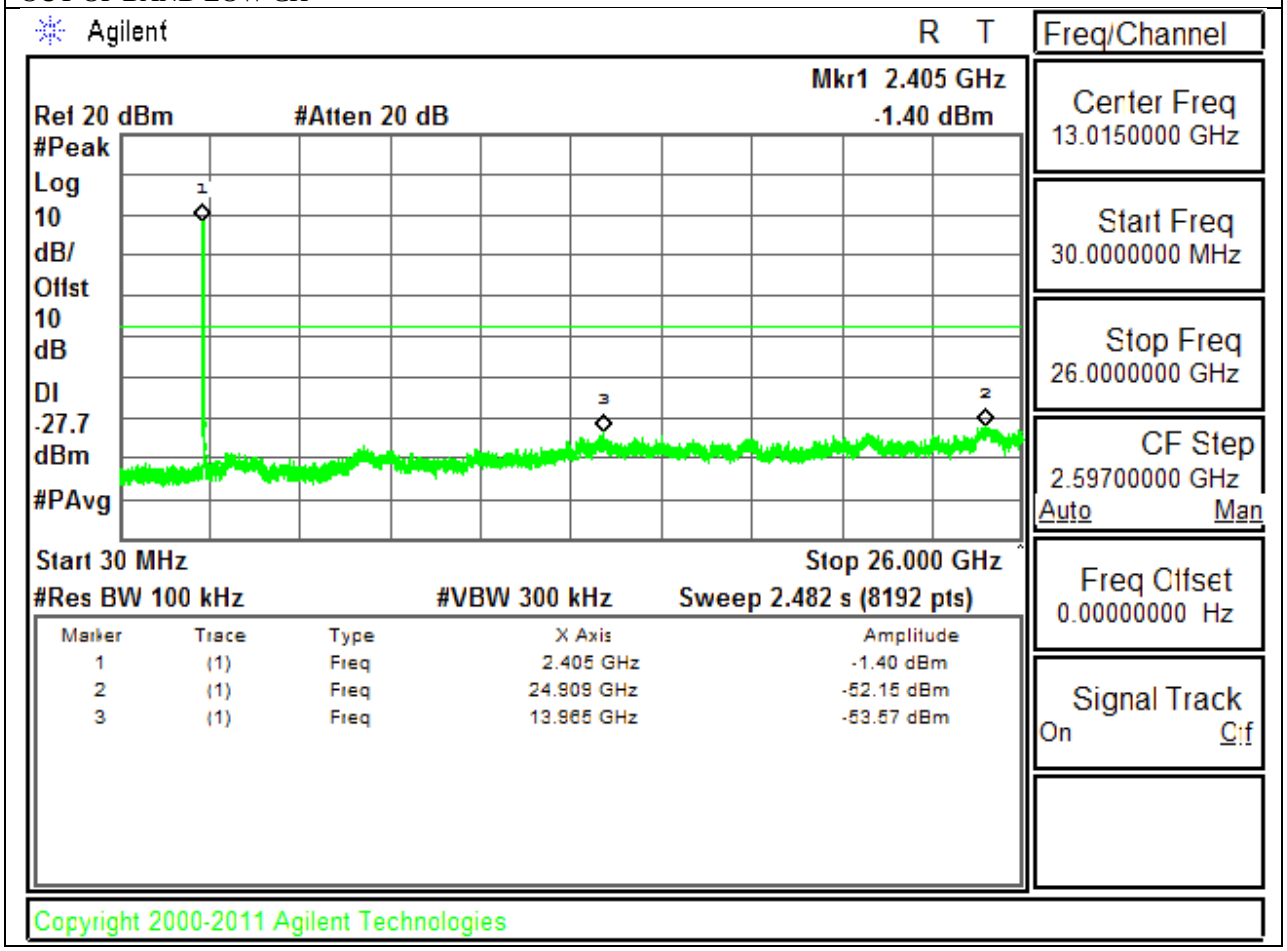
OUT-OF-BAND EMISSIONS

OUT OF BAND LOW CH



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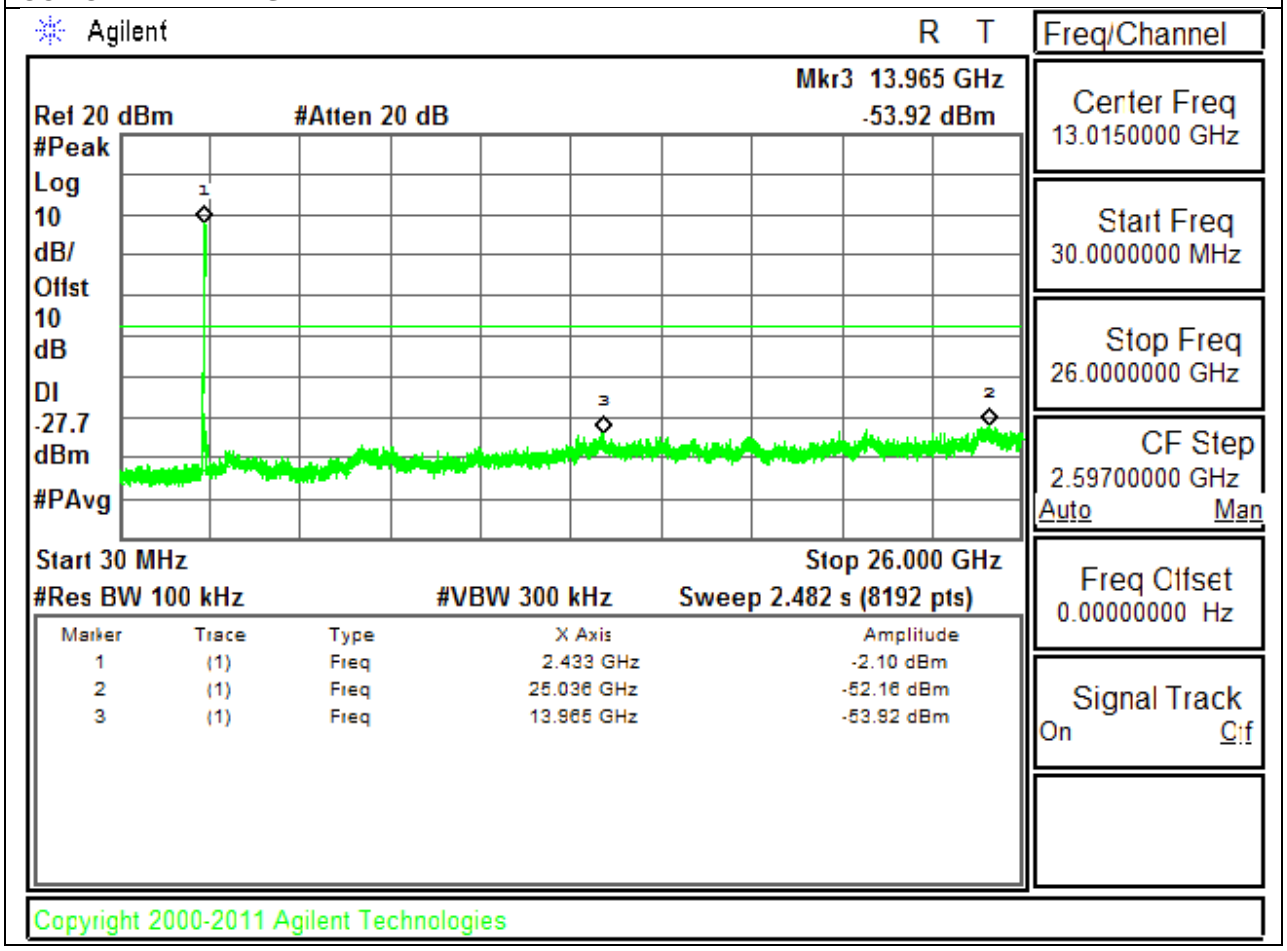
OUT OF BAND MID CH



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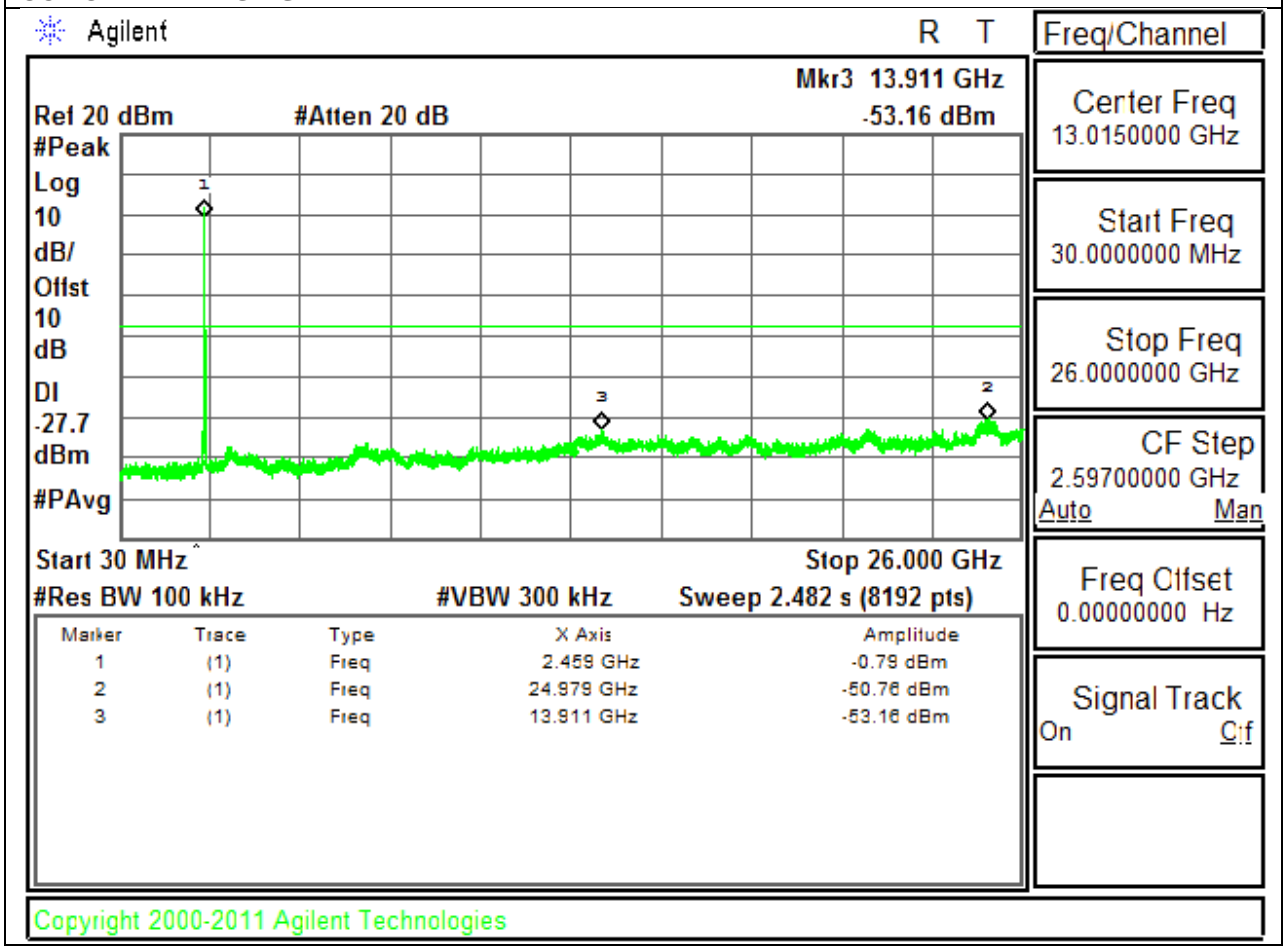
OUT OF BAND HIGH CH



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10. RADIATED TEST RESULTS

10.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

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

TEST PROCEDURE

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

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

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.

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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.

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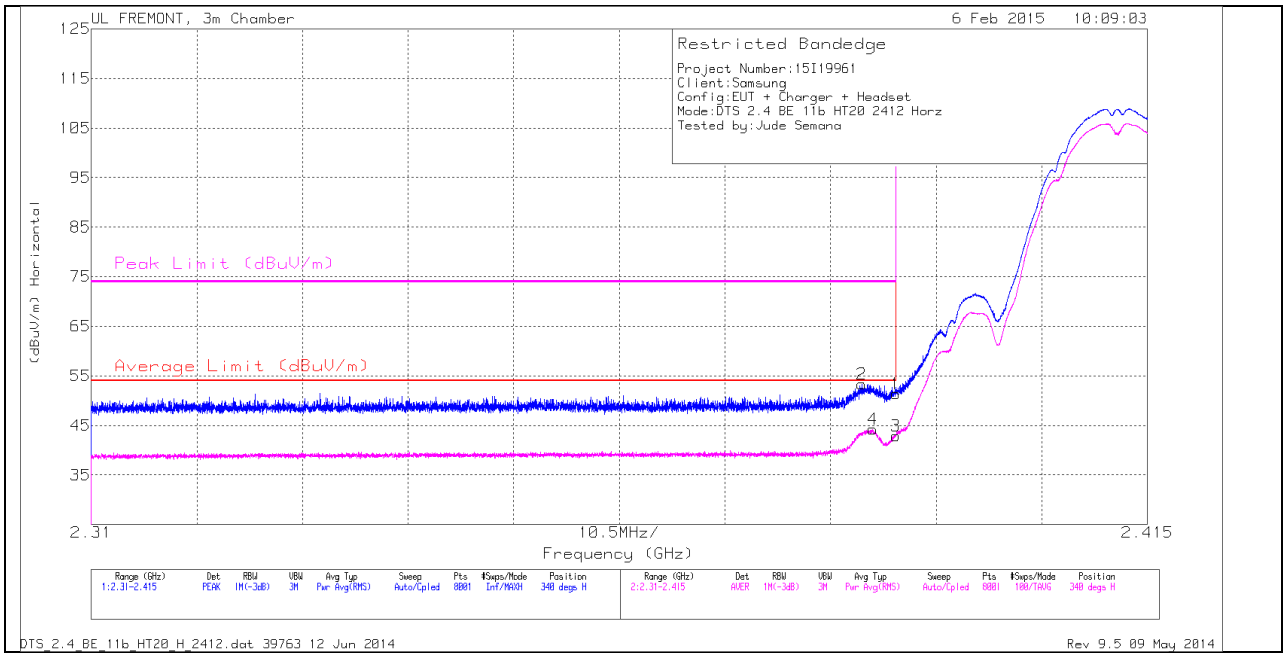
10.2. TRANSMITTER ABOVE 1 GHz

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 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
2	2.387	44.44	PK	32	-23.1	0	53.34	-	-	74	-20.66	340	246	H
4	2.388	35.26	RMS	32	-23.1	0	44.16	54	-9.84	-	-	340	246	H
1	2.39	42.47	PK	32	-23.1	0	51.37	-	-	74	-22.63	340	246	H
3	2.39	33.96	RMS	32	-23.1	0	42.86	54	-11.14	-	-	340	246	H

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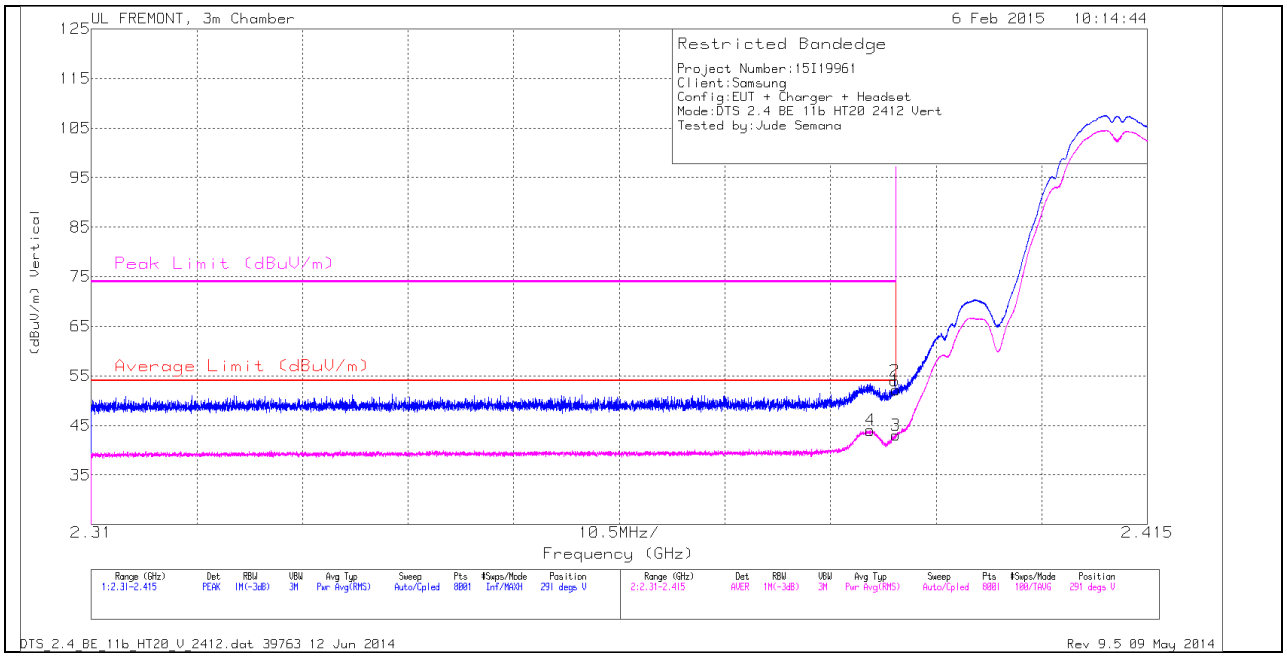
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL 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
4	2.387	35.09	RMS	32	-23.1	0	43.99	54	-10.01	-	-	291	247	V
1	2.39	43.29	PK	32	-23.1	0	52.19	-	-	74	-21.81	291	247	V
2	2.39	45.1	PK	32	-23.1	0	54	-	-	74	-20	291	247	V
3	2.39	34.11	RMS	32	-23.1	0	43.01	54	-10.99	-	-	291	247	V

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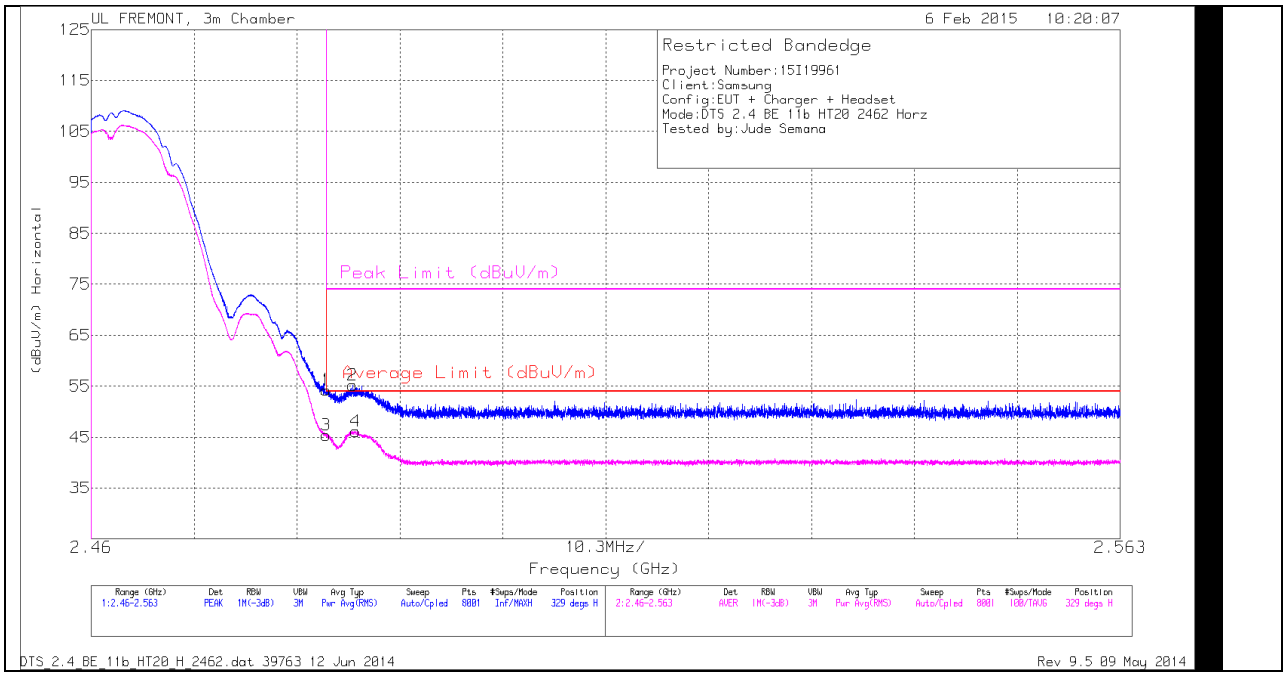
AUTHORIZED BANDEDGE (HIGH CHANNEL)

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	44.72	PK	32.3	-22.8	0	54.22	-	-	74	-19.78	329	238	H
3	2.484	35.84	RMS	32.3	-22.8	0	45.34	54	-8.66	-	-	329	238	H
2	2.486	45.66	PK	32.3	-22.8	0	55.16	-	-	74	-18.84	329	238	H
4	2.486	36.59	RMS	32.3	-22.8	0	46.09	54	-7.91	-	-	329	238	H

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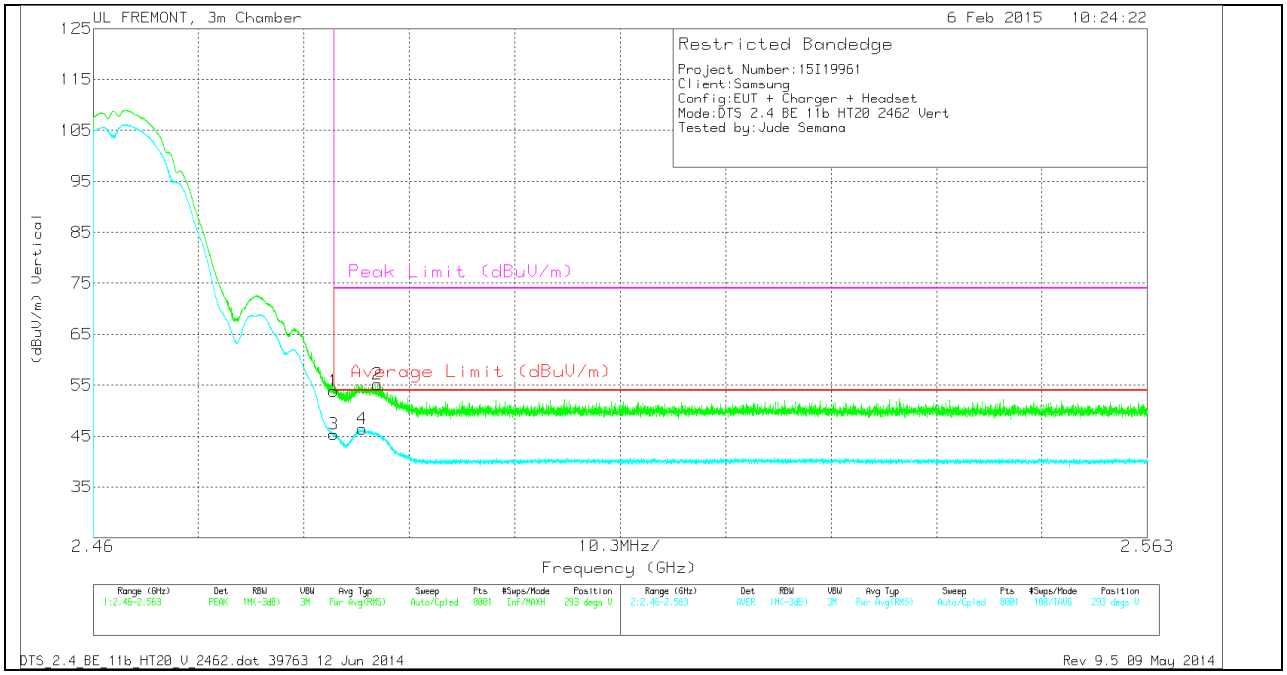
VERTICAL PEAK AND AVERAGE PLOT



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	44.32	PK	32.3	-22.8	0	53.82	-	-	74	-20.18	293	235	V
3	2.484	35.79	RMS	32.3	-22.8	0	45.29	54	-8.71	-	-	293	235	V
4	2.486	36.86	RMS	32.3	-22.8	0	46.36	54	-7.64	-	-	293	235	V
2	2.488	45.66	PK	32.3	-22.8	0	55.16	-	-	74	-18.84	293	235	V

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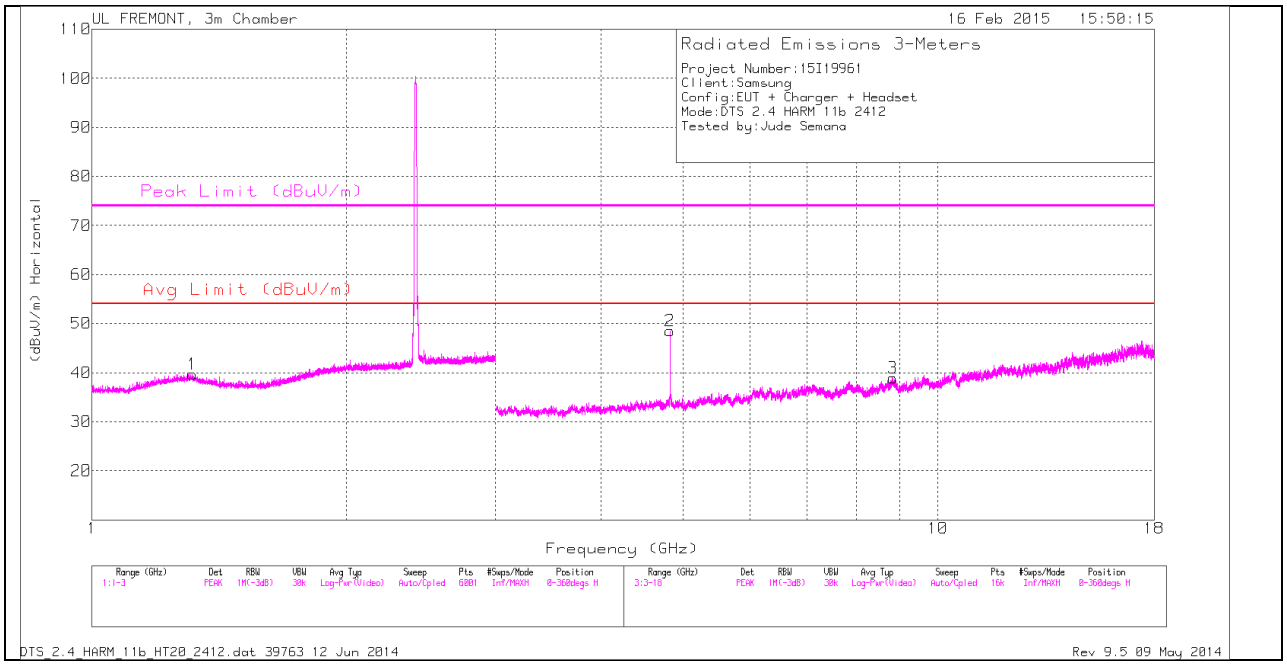
HARMONICS AND SPURIOUS EMISSIONS

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.

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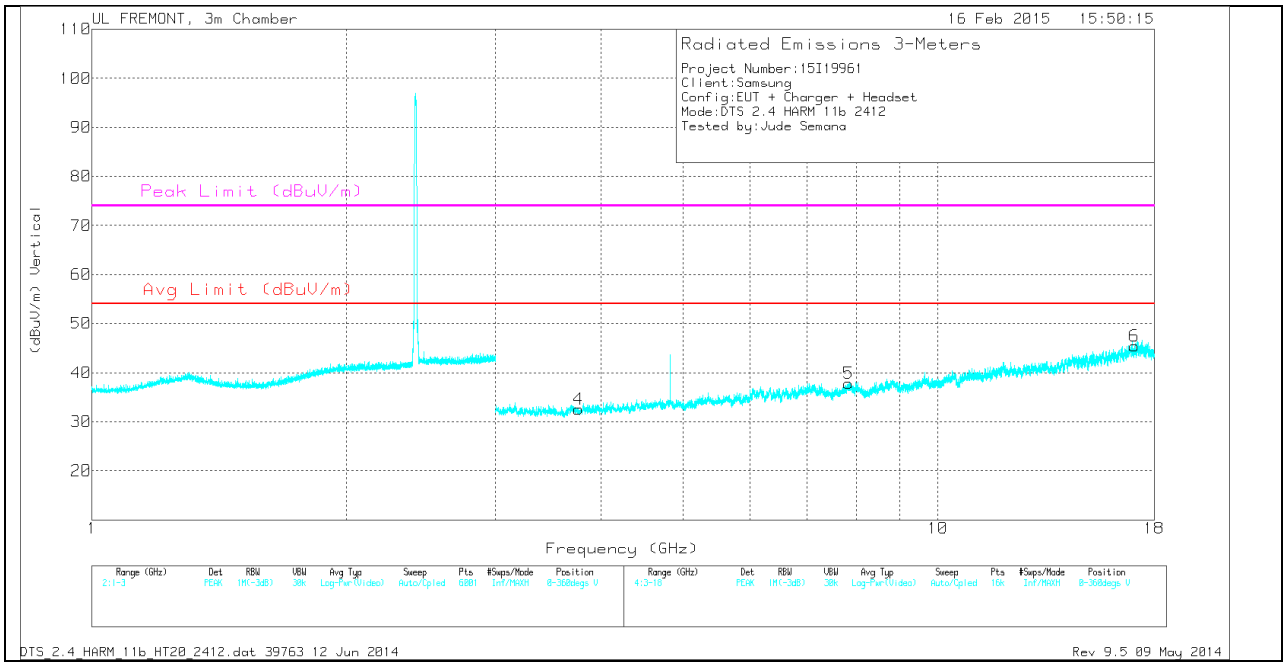
LOW CHANNEL VERTICAL



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

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LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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	1.314	33.76	PK	29.7	-23.8	0	39.66	-	-	74	-34.34	0-360	200	H
4	3.757	30.75	PK	33.1	-31.3	0	32.55	-	-	74	-41.45	0-360	100	V
2	4.824	44.73	PK	34	-30.2	0	48.53	-	-	74	-25.47	0-360	200	H
5	7.838	29.52	PK	35.8	-27.5	0	37.82	-	-	-	-	0-360	100	V
3	8.846	29.51	PK	35.9	-26.5	0	38.91	-	-	-	-	0-360	100	H
6	17.075	28.41	PK	41.4	-24.4	0	45.41	-	-	-	-	0-360	200	V

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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
4.824	50.94	PK2	34	-30.3	0	54.64	-	-	74	-19.36	77	313	H
4.824	48.01	MAv1	34	-30.3	0	51.71	54	-2.29	-	-	77	313	H

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

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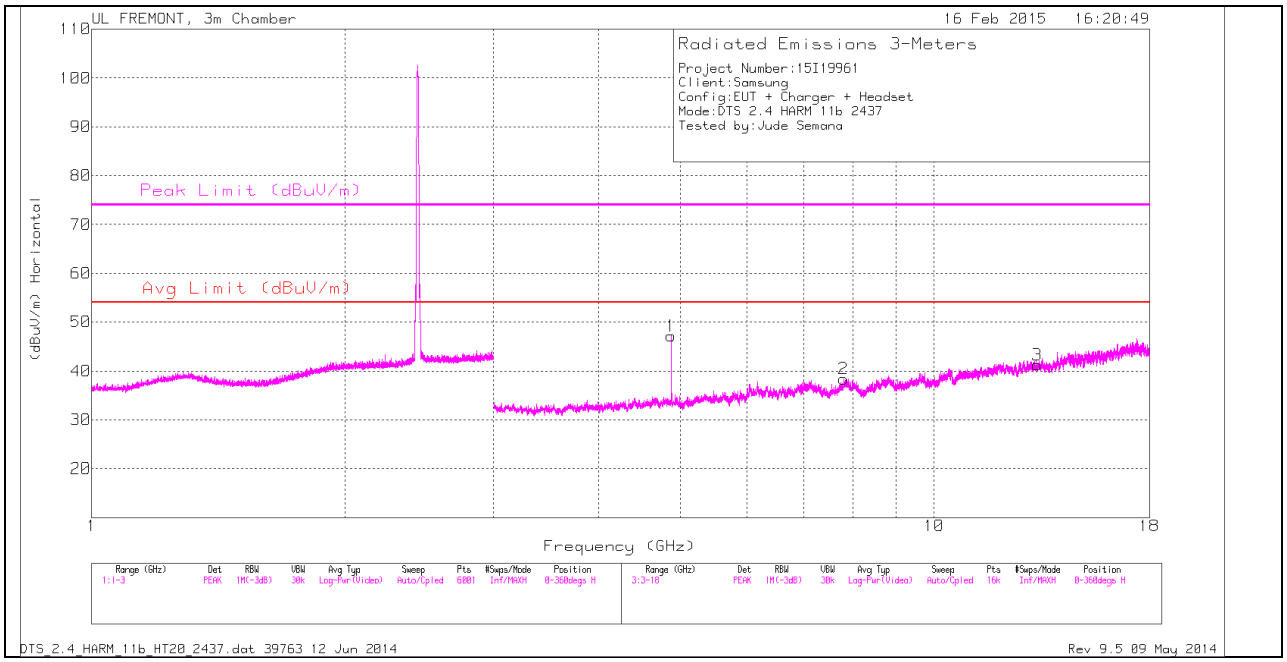
MID CHANNEL HORIZONTAL



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

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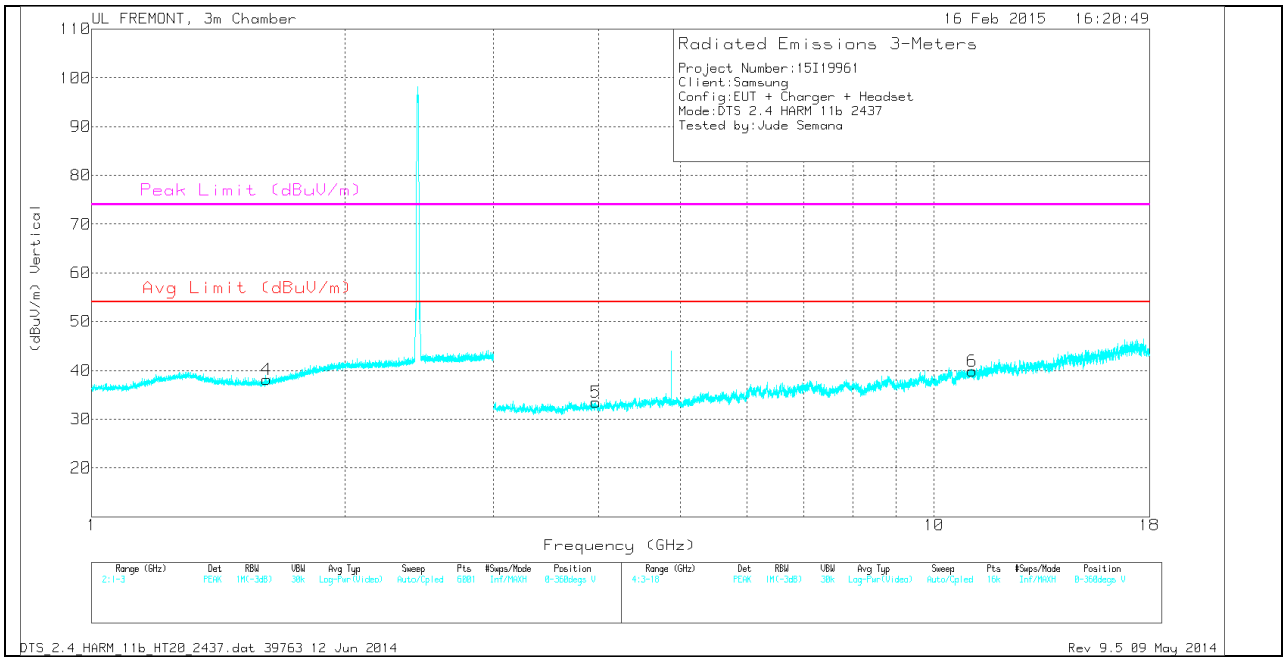
MID CHANNEL VERTICAL



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

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MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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
4	1.612	33.49	PK	28.1	-23.4	0	38.19	-	-	74	-35.81	0-360	100	V
5	3.965	31.25	PK	33.2	-31	0	33.45	-	-	74	-40.55	0-360	100	V
1	4.874	43.27	PK	34	-30.1	0	47.17	-	-	74	-26.83	0-360	200	H
2	7.804	30.57	PK	35.8	-28	0	38.37	-	-	-	-	0-360	100	H
6	11.098	27.78	PK	37.8	-25.7	0	39.88	-	-	74	-34.12	0-360	200	V
3	13.245	29.41	PK	39	-27.2	0	41.21	-	-	-	-	0-360	100	H

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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
4.874	48.43	PK2	34	-30.1	0	52.33	-	-	74	-21.67	84	222	H
4.874	44.98	MAv1	34	-30.1	0	48.98	54	-5.02	-	-	84	222	H

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

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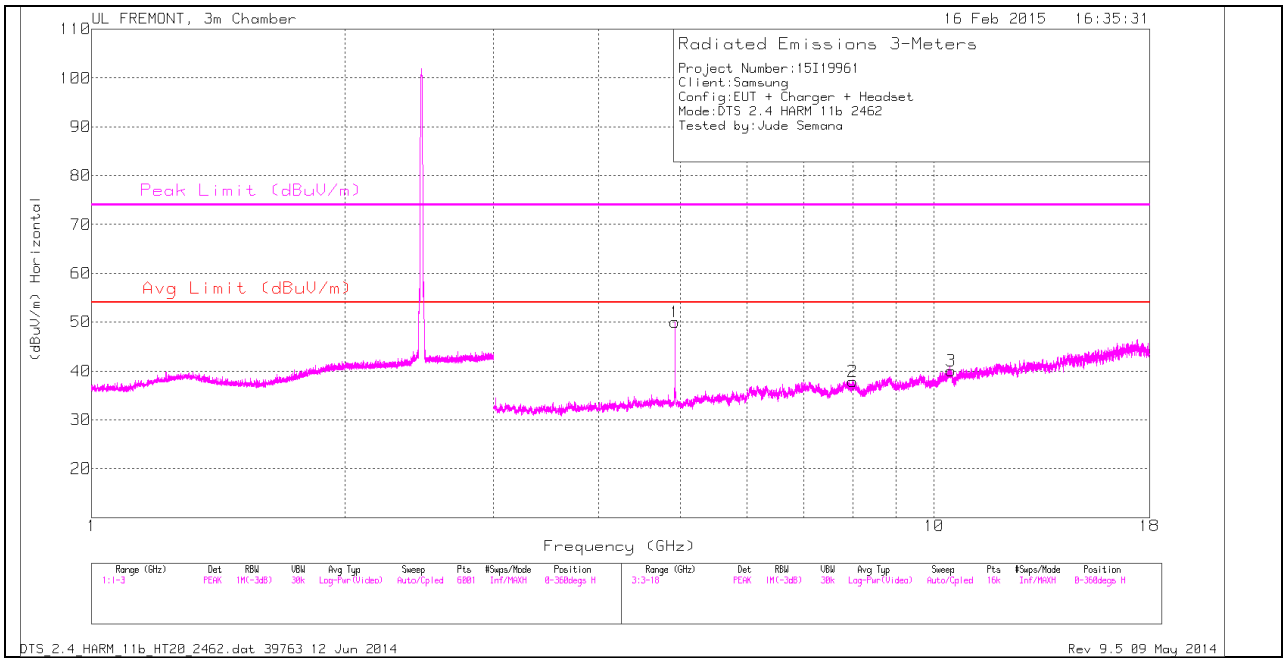
HIGH CHANNEL HORIZONTAL



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

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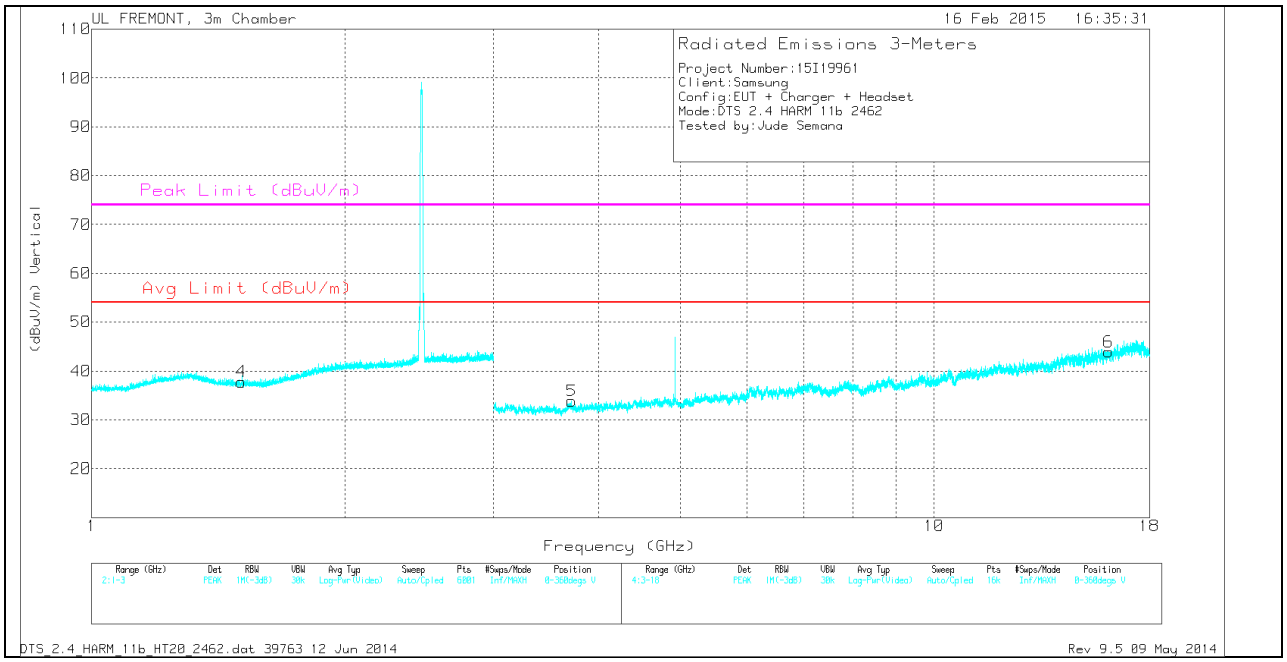
HIGH CHANNEL VERTICAL



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

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HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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
4	1.505	33.17	PK	28.1	-23.5	0	37.77	-	-	74	-36.23	0-360	100	V
5	3.712	31.75	PK	33	-30.9	0	33.85	-	-	74	-40.15	0-360	200	V
1	4.924	46.42	PK	34	-30.4	0	50.02	-	-	74	-23.98	0-360	200	H
2	8.007	30.56	PK	35.8	-28.5	0	37.86	-	-	-	-	0-360	200	H
3	10.468	27.65	PK	37.4	-25	0	40.05	-	-	-	-	0-360	100	H
6	16.094	29.1	PK	40.3	-25.5	0	43.9	-	-	74	-30.1	0-360	100	V

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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
4.924	51.52	PK2	34	-30.4	0	55.12	-	-	74	-18.88	59	301	H
4.924	48.69	MAv1	34	-30.4	0	52.29	54	-1.71	-	-	59	301	H

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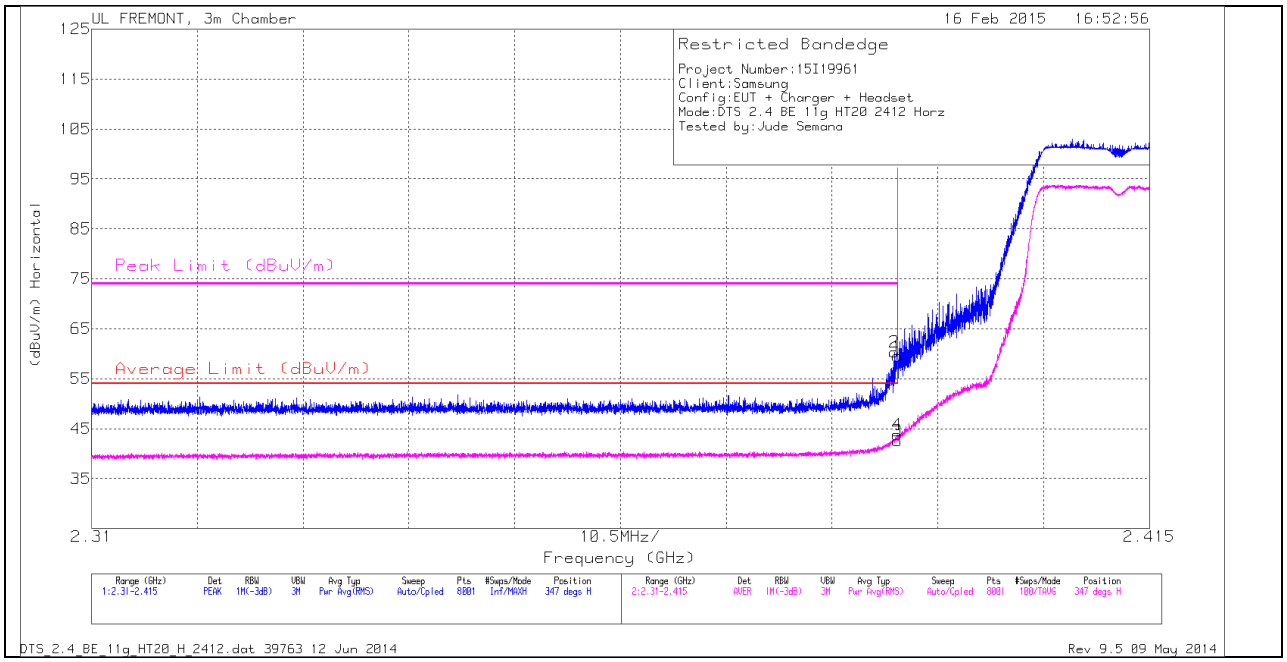
10.2.2. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/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	50.61	PK	32	-23.1	0	59.51	-	-	74	-14.49	347	158	H
2	2.39	51.44	PK	32	-23.1	0	60.34	-	-	74	-13.66	347	158	H
3	2.39	33.35	RMS	32	-23.1	.3	42.55	54	-11.45	-	-	347	158	H
4	2.39	34.53	RMS	32	-23.1	.3	43.73	54	-10.27	-	-	347	158	H

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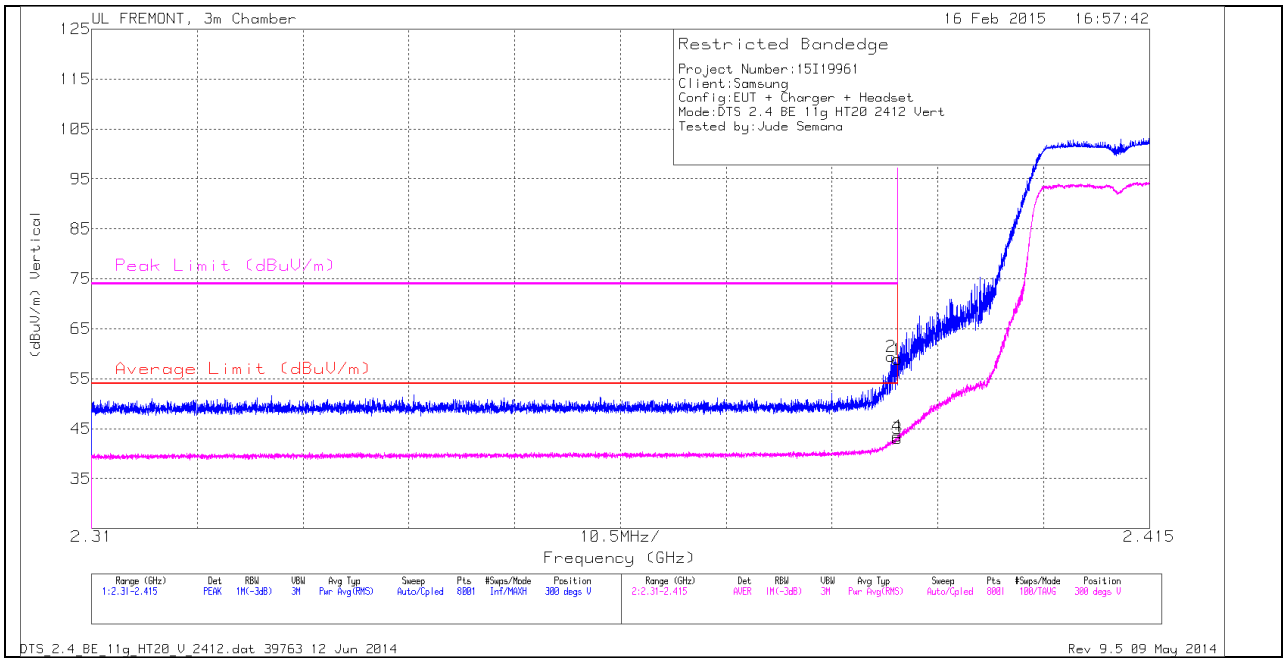
VERTICAL PEAK AND AVERAGE PLOT



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
2	2.389	50.54	PK	32	-23.1	0	59.44	-	-	74	-14.56	300	309	V
1	2.39	49.99	PK	32	-23.1	0	58.89	-	-	74	-15.11	300	309	V
3	2.39	33.78	RMS	32	-23.1	.3	42.98	54	-11.02	-	-	300	309	V
4	2.39	34.29	RMS	32	-23.1	.3	43.49	54	-10.51	-	-	300	309	V

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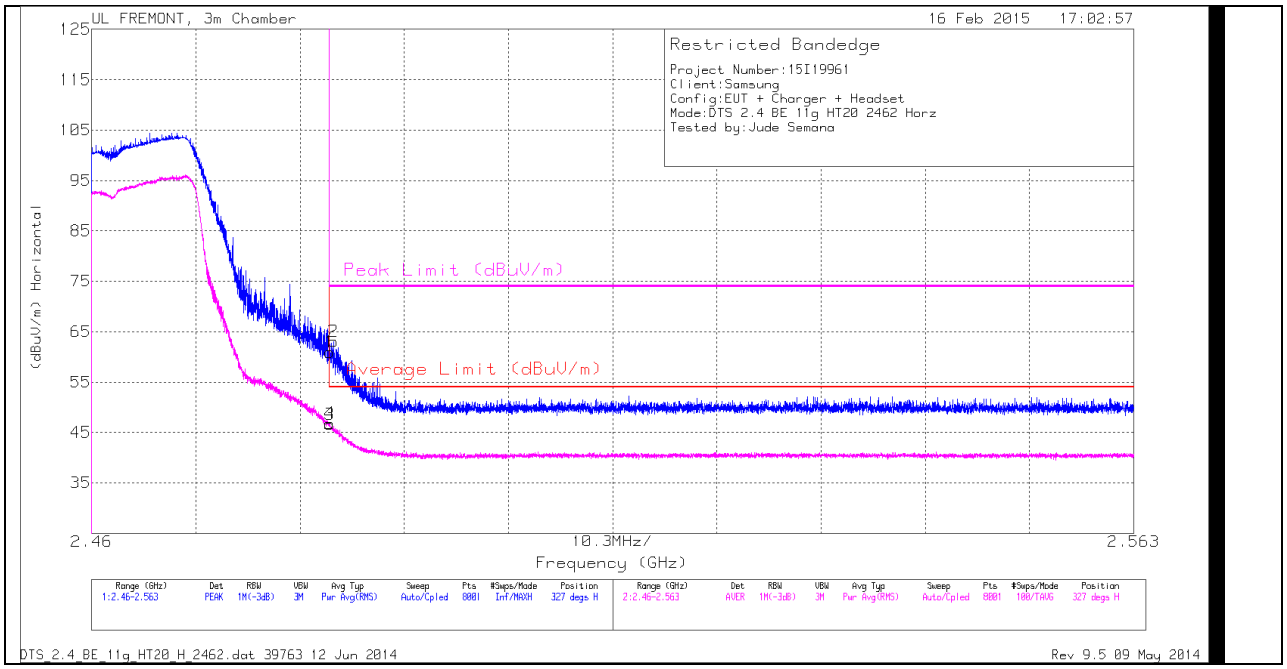
AUTHORIZED BANDEDGE (HIGH CHANNEL)

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	51.46	PK	32.3	-22.8	0	60.96	-	-	74	-13.04	327	108	H
2	2.484	53.59	PK	32.3	-22.8	0	63.09	-	-	74	-10.91	327	108	H
3	2.484	36.8	RMS	32.3	-22.8	.3	46.6	54	-7.4	-	-	327	108	H
4	2.484	36.99	RMS	32.3	-22.8	.3	46.79	54	-7.21	-	-	327	108	H

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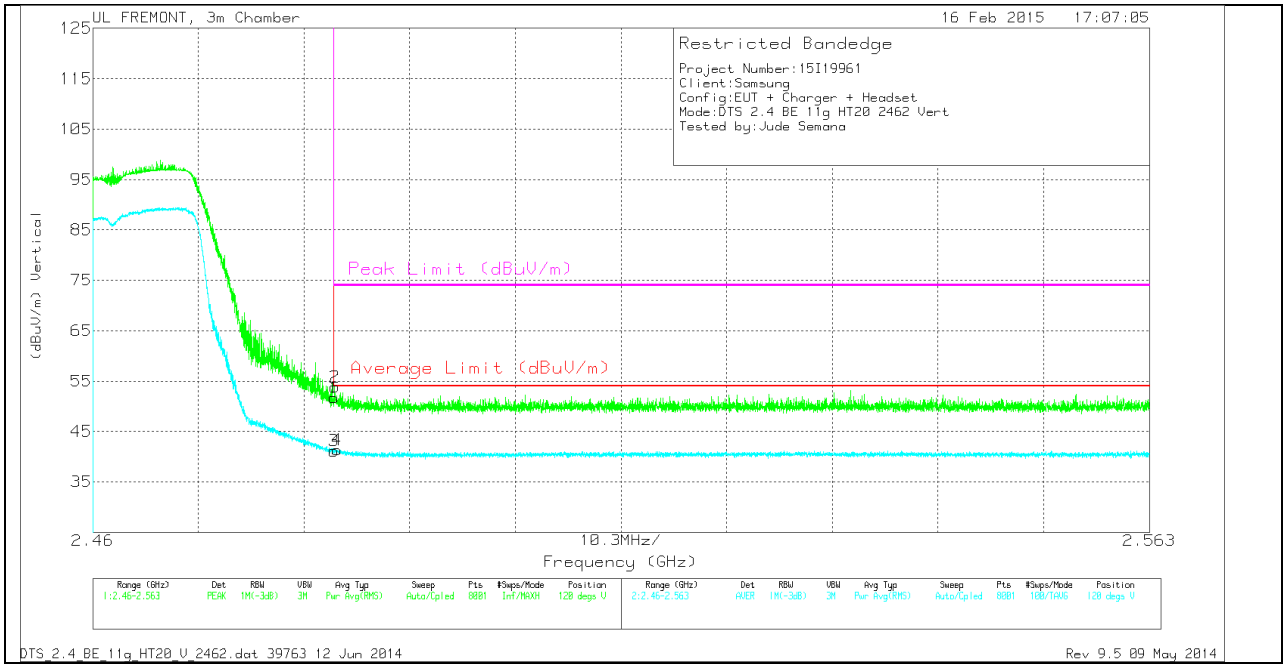
VERTICAL PEAK AND AVERAGE PLOT



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	42.19	PK	32.3	-22.8	0	51.69	-	-	74	-22.31	120	292	V
2	2.484	44.34	PK	32.3	-22.8	0	53.84	-	-	74	-20.16	120	292	V
3	2.484	31.36	RMS	32.3	-22.8	.3	41.16	54	-12.84	-	-	120	292	V
4	2.484	31.55	RMS	32.3	-22.8	.3	41.35	54	-12.65	-	-	120	292	V

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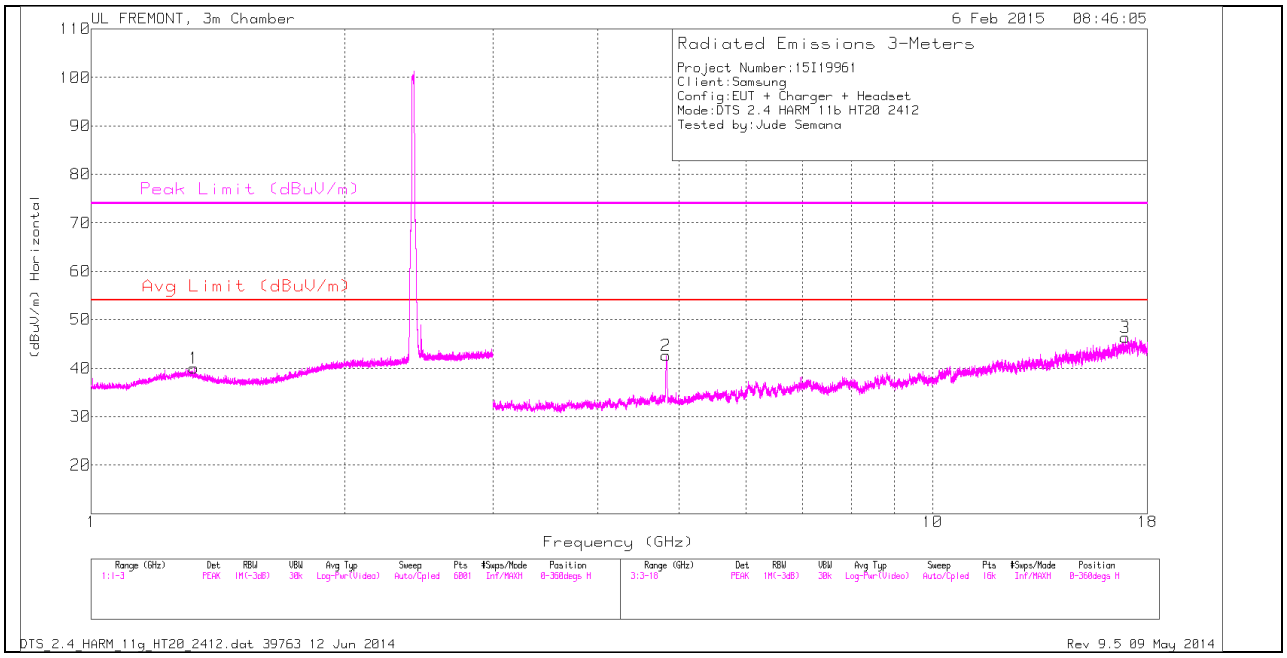
HARMONICS AND SPURIOUS EMISSIONS

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.

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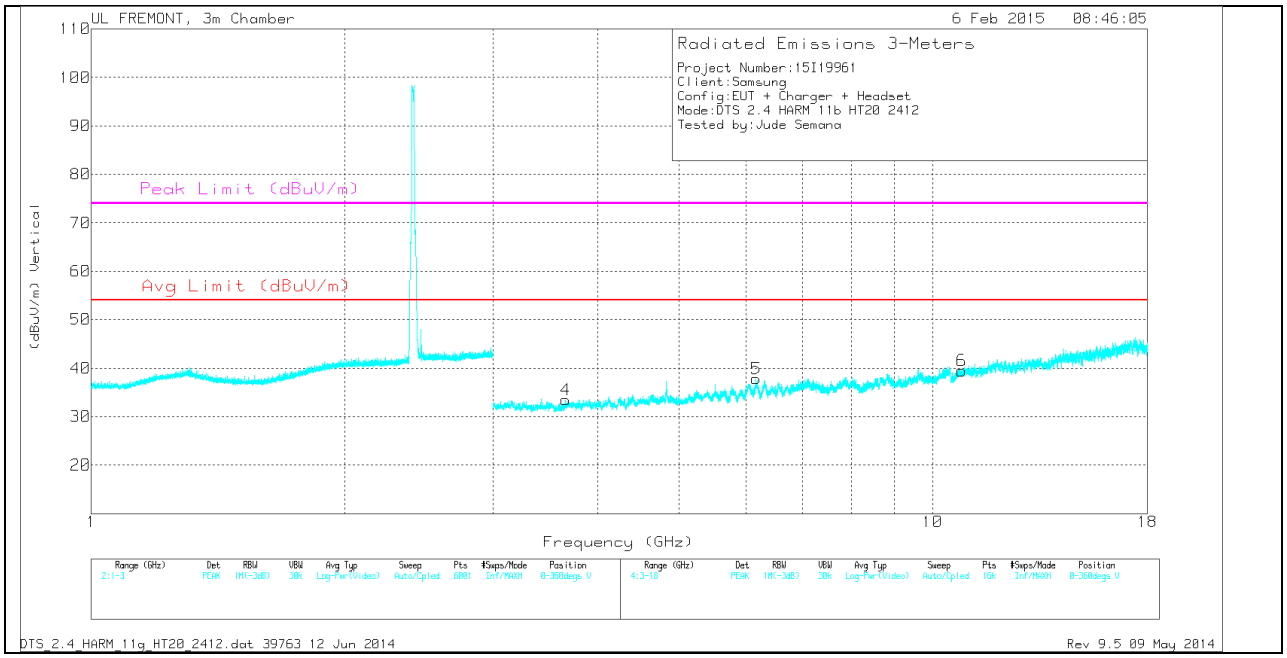
LOW CHANNEL VERTICAL



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LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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	1.325	34.23	PK	29.6	-23.8	0	40.03	-	-	74	-33.97	0-360	100	H
4	3.663	31.43	PK	32.9	-30.9	0	33.43	-	-	74	-40.57	0-360	100	V
2	4.823	38.92	PK	34	-30.3	0	42.62	-	-	74	-31.38	0-360	200	H
5	6.166	32.33	PK	35.3	-29.8	0	37.83	-	-	-	-	0-360	100	V
6	10.823	27.08	PK	37.9	-25.5	0	39.48	-	-	74	-34.52	0-360	200	V
3	16.95	28.23	PK	41.3	-23.2	0	46.33	-	-	-	-	0-360	200	H

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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
4.823	37.53	MAv1	34	-30.3	.3	41.53	54	-12.47	-	-	83	297	H
4.824	49.96	PK2	34	-30.3	0	53.66	-	-	74	-20.34	83	297	H

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

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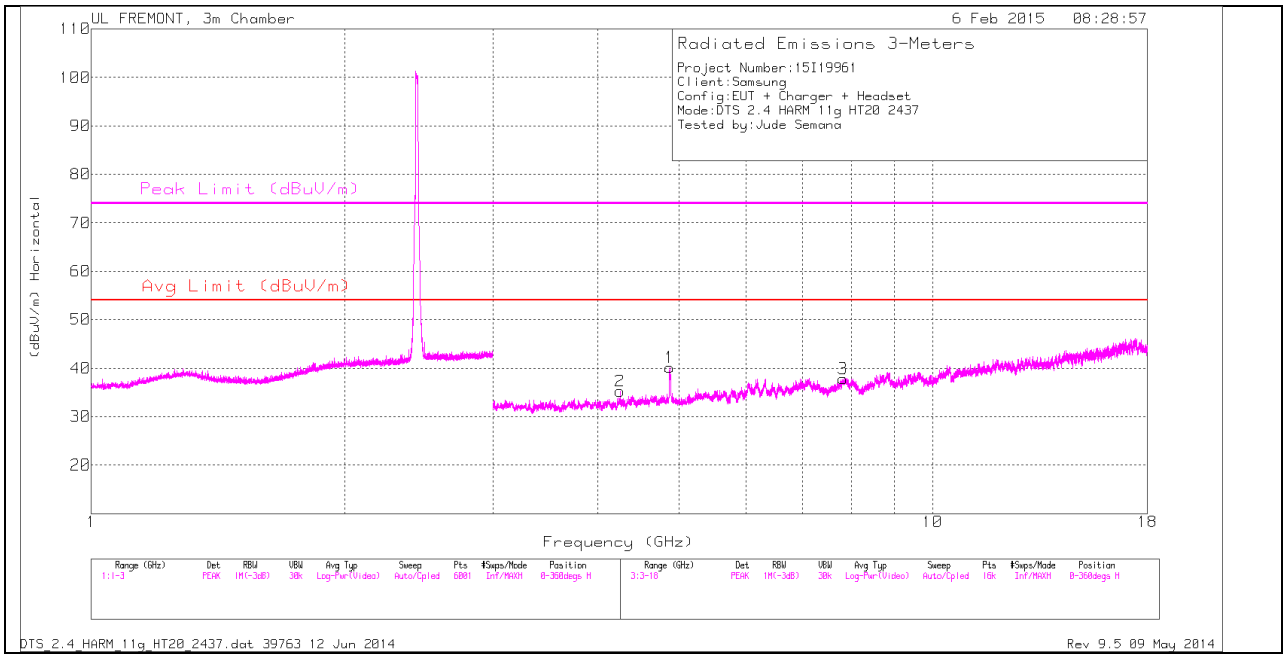
MID CHANNEL HORIZONTAL



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

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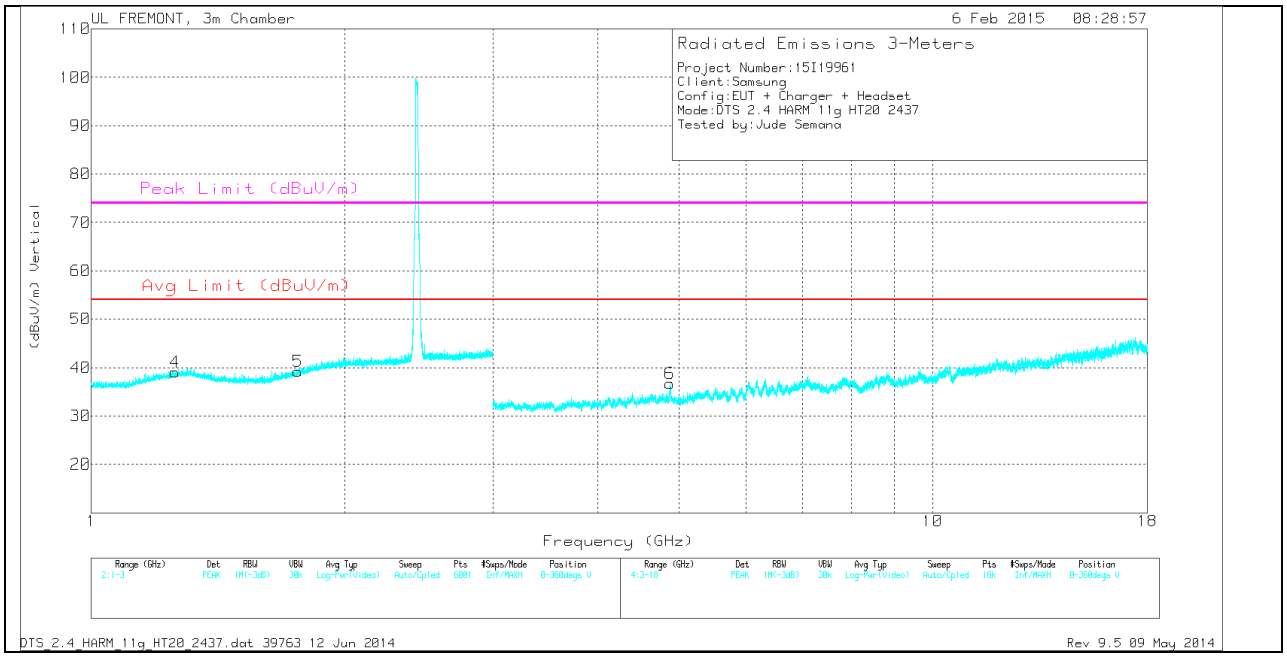
MID CHANNEL VERTICAL



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

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MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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
4	1.257	33.32	PK	29.5	-23.8	0	39.02	-	-	74	-34.98	0-360	200	V
5	1.759	32.89	PK	29.7	-23.4	0	39.19	-	-	-	-	0-360	100	V
2	4.251	33.16	PK	33.4	-31.3	0	35.26	-	-	74	-38.74	0-360	200	H
1	4.868	36.32	PK	34	-30.2	0	40.12	-	-	74	-33.88	0-360	200	H
6	4.873	32.83	PK	34	-30.1	0	36.73	-	-	74	-37.27	0-360	200	V
3	7.825	29.8	PK	35.8	-27.8	0	37.8	-	-	-	-	0-360	100	H

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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
4.87	47.52	PK2	34	-30.1	0	51.42	-	-	74	-22.58	35	243	H
4.87	34.8	MAv1	34	-30.1	.3	39	54	-15	-	-	35	243	H

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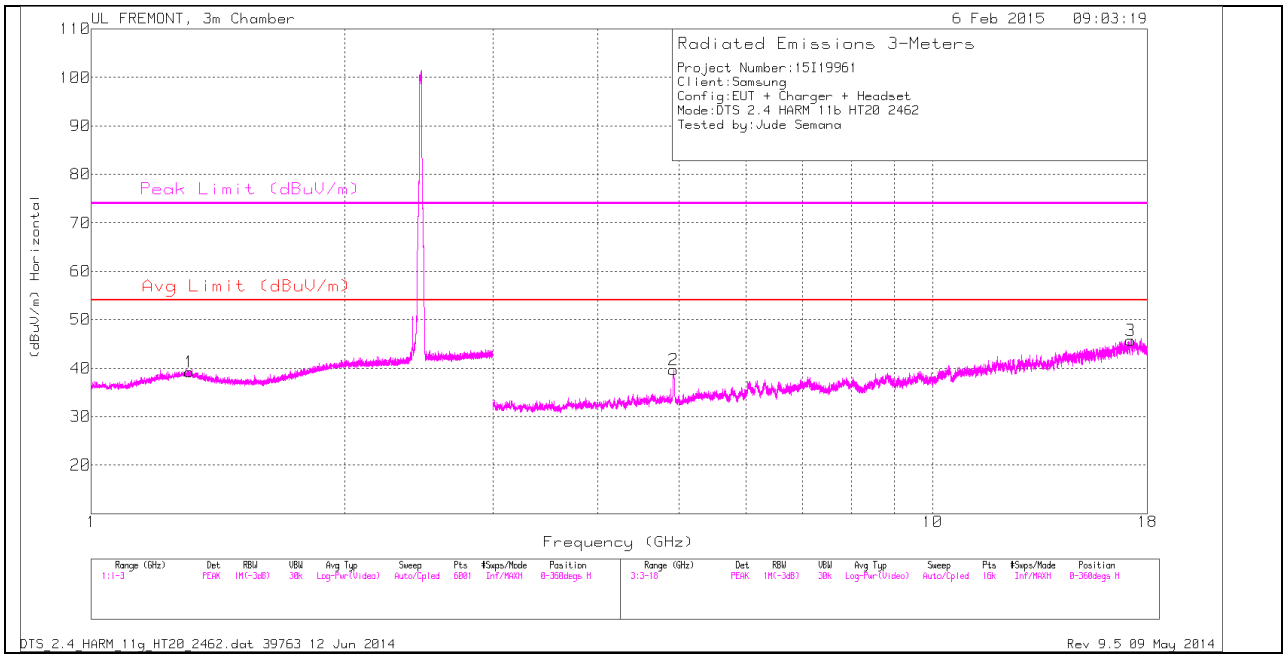
HIGH CHANNEL HORIZONTAL



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

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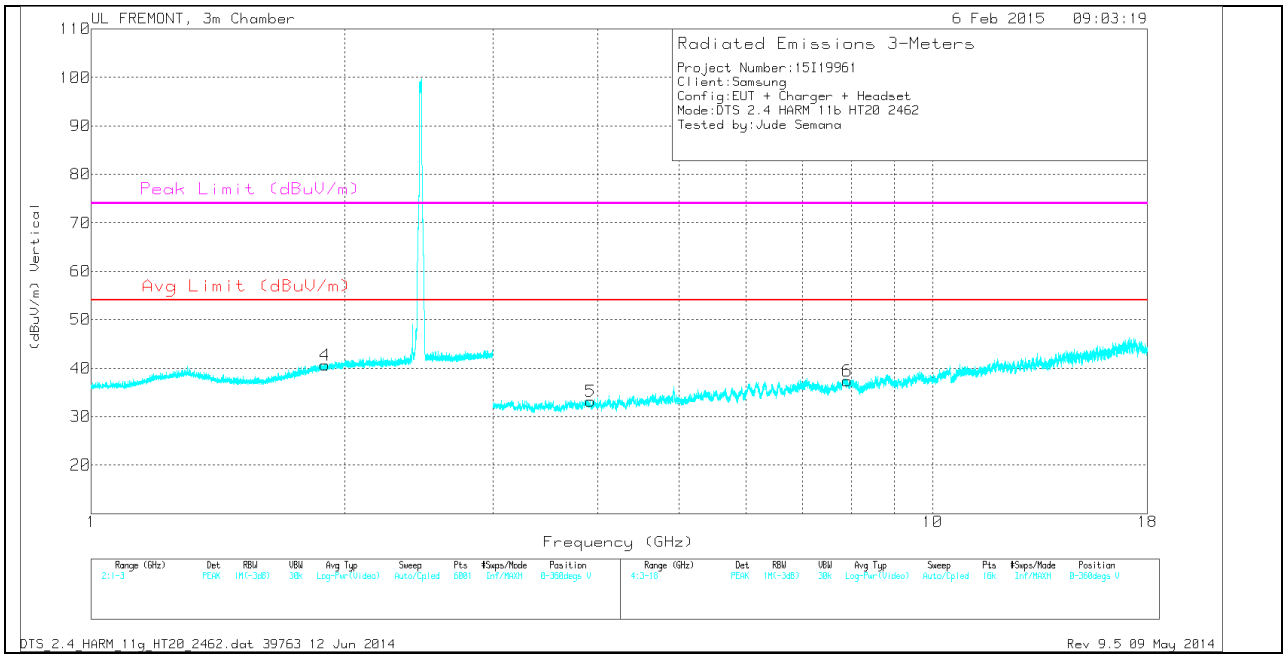
HIGH CHANNEL VERTICAL



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

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HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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	1.308	33.18	PK	29.8	-23.8	0	39.18	-	-	74	-34.82	0-360	100	H
4	1.897	32.83	PK	31.1	-23.3	0	40.63	-	-	-	-	0-360	100	V
5	3.919	31.22	PK	33.2	-31.2	0	33.22	-	-	74	-40.78	0-360	200	V
2	4.925	36.04	PK	34	-30.4	0	39.64	-	-	74	-34.36	0-360	100	H
6	7.915	29.3	PK	35.8	-27.7	0	37.4	-	-	-	-	0-360	200	V
3	17.195	27.6	PK	41.3	-23.2	0	45.7	-	-	-	-	0-360	200	H

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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
4.923	48.78	PK2	34	-30.4	0	52.38	-	-	74	-21.62	60	262	H
4.923	36.43	MAv1	34	-30.4	.3	40.33	54	-13.67	-	-	60	262	H

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

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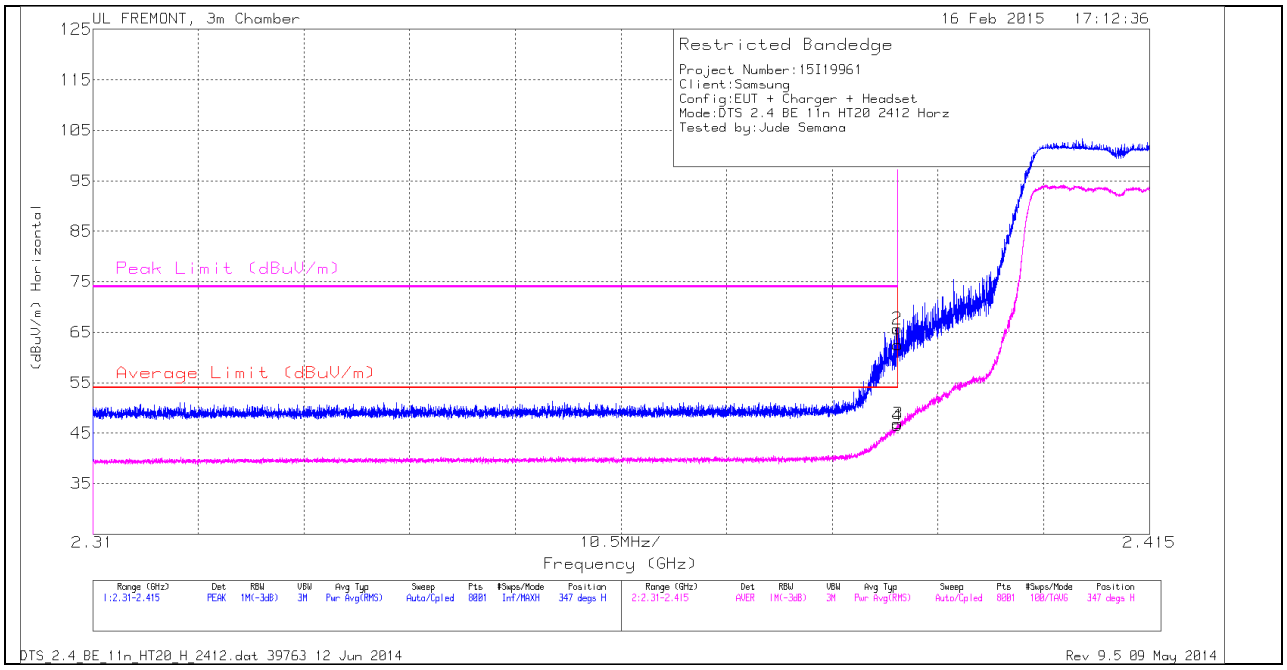
10.2.3. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/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	53.59	PK	32	-23.1	0	62.49	-	-	74	-11.51	347	159	H
2	2.39	56.78	PK	32	-23.1	0	65.68	-	-	74	-8.32	347	159	H
3	2.39	37.7	RMS	32	-23.1	.3	46.9	54	-7.1	-	-	347	159	H
4	2.39	37.3	RMS	32	-23.1	.3	46.5	54	-7.5	-	-	347	159	H

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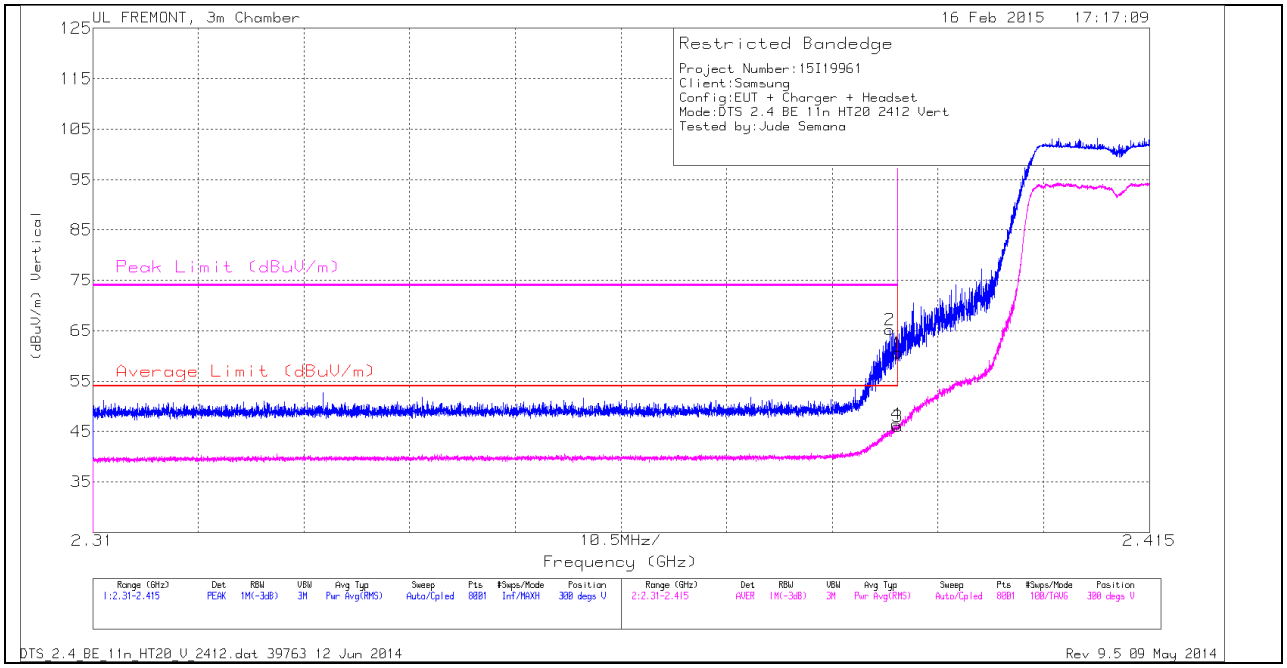
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL 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	56.3	PK	32	-23.1	0	65.2	-	-	74	-8.8	300	376	V
1	2.39	51.72	PK	32	-23.1	0	60.62	-	-	74	-13.38	300	376	V
3	2.39	36.76	RMS	32	-23.1	.3	45.96	54	-8.04	-	-	300	376	V
4	2.39	37.21	RMS	32	-23.1	.3	46.41	54	-7.59	-	-	300	376	V

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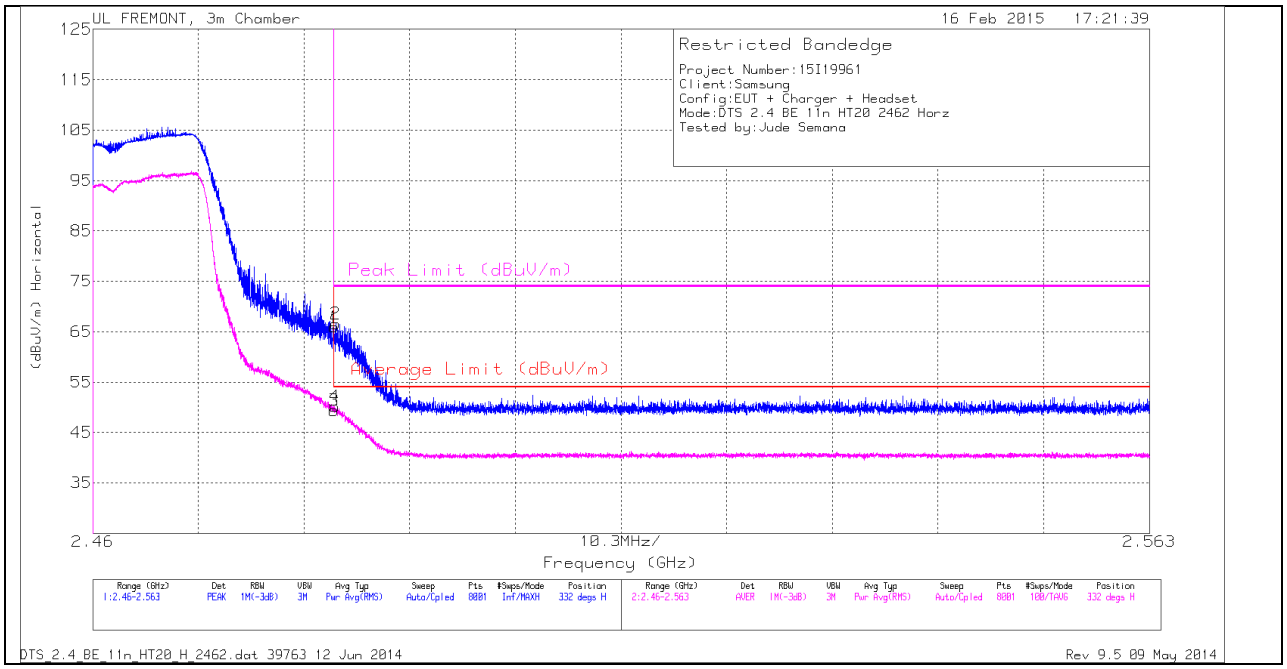
AUTHORIZED BANDEDGE (HIGH CHANNEL)

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	56.47	PK	32.3	-22.8	0	65.97	-	-	74	-8.03	332	107	H
2	2.484	57.09	PK	32.3	-22.8	0	66.59	-	-	74	-7.41	332	107	H
3	2.484	39.54	RMS	32.3	-22.8	.3	49.34	54	-4.66	-	-	332	107	H
4	2.484	40.35	RMS	32.3	-22.8	.3	50.15	54	-3.85	-	-	332	107	H

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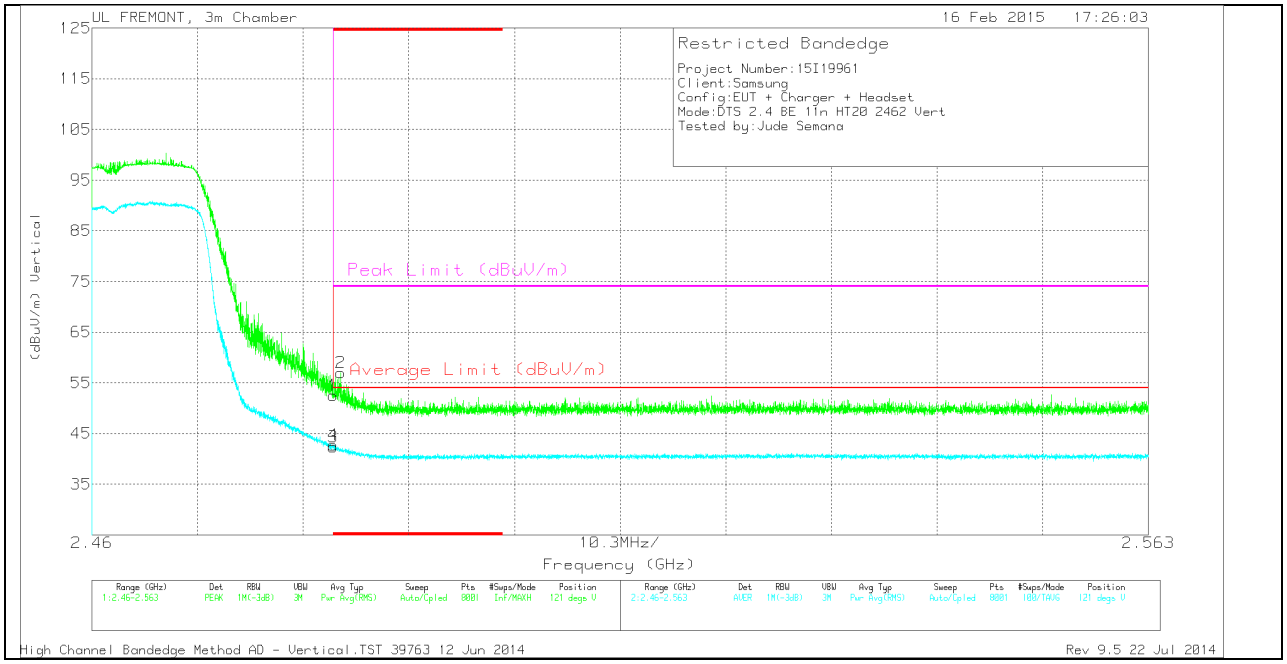
VERTICAL PEAK AND AVERAGE PLOT



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	43.05	PK	32.3	-22.8	0	52.55	-	-	74	-21.45	121	289	V
2	* 2.484	47.5	PK	32.3	-22.8	0	57	-	-	74	-17	121	289	V
3	* 2.484	32.53	RMS	32.3	-22.8	.34	42.37	54	-11.63	-	-	121	289	V
4	* 2.484	32.85	RMS	32.3	-22.8	.34	42.69	54	-11.31	-	-	121	289	V

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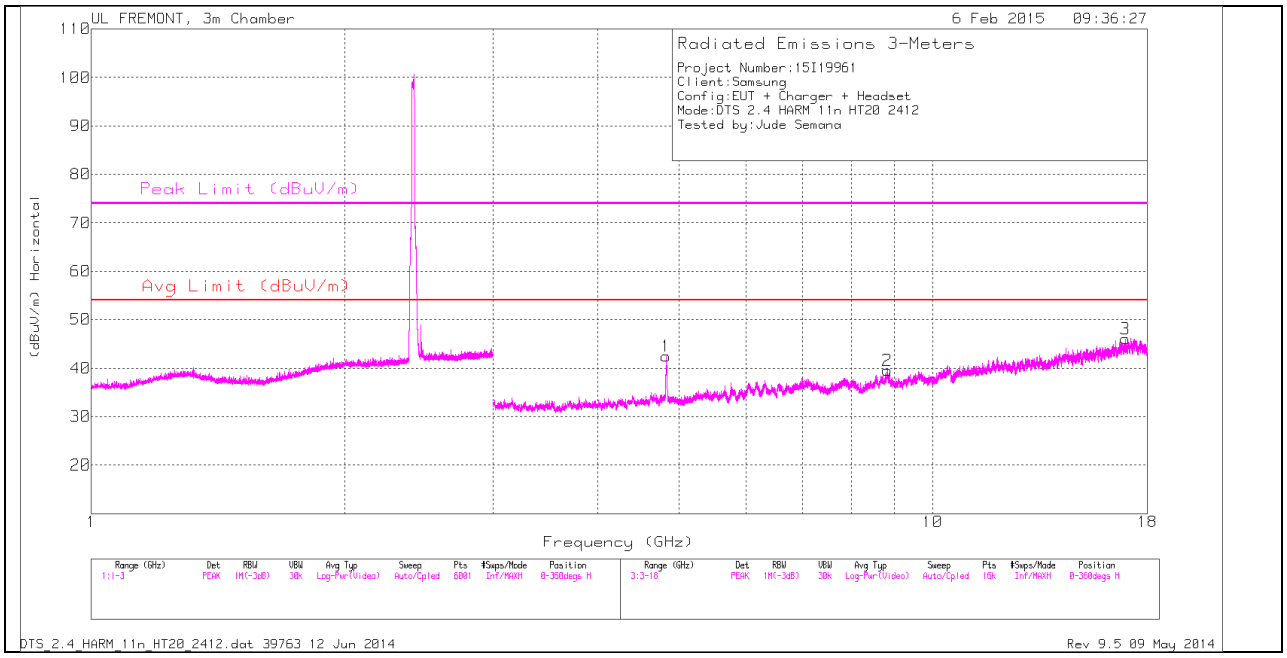
HARMONICS AND SPURIOUS EMISSIONS

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.

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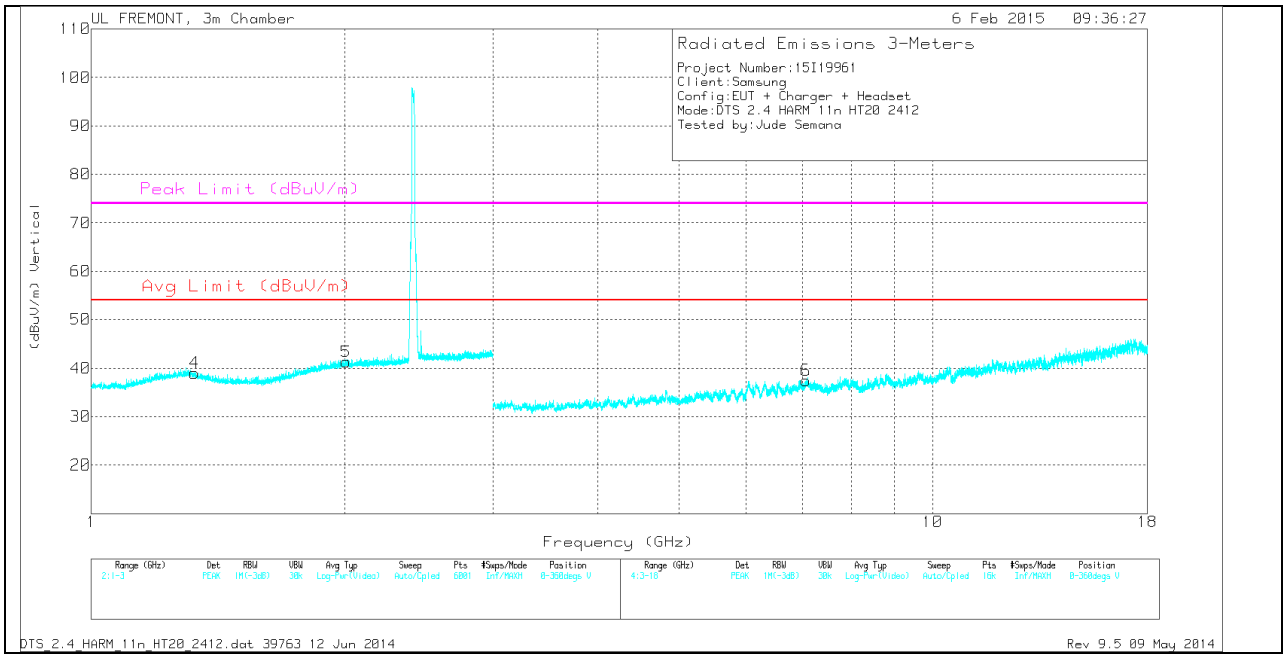
LOW CHANNEL VERTICAL



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

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LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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
4	1.326	33.2	PK	29.6	-23.8	0	39	-	-	74	-35	0-360	200	V
5	2.009	33.01	PK	31.5	-23.2	0	41.31	-	-	-	-	0-360	200	V
1	4.824	38.67	PK	34	-30.2	0	42.47	-	-	74	-31.53	0-360	200	H
6	7.07	30.05	PK	35.6	-28.2	0	37.45	-	-	-	-	0-360	100	V
2	8.837	30.28	PK	35.9	-26.6	0	39.58	-	-	-	-	0-360	100	H
3	16.948	27.82	PK	41.3	-23.1	0	46.02	-	-	-	-	0-360	200	H

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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
4.822	48.96	PK2	34	-30.3	0	52.66	-	-	74	-21.34	84	270	H
4.823	36.23	MAv1	34	-30.3	.3	40.23	54	-13.77	-	-	84	270	H

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

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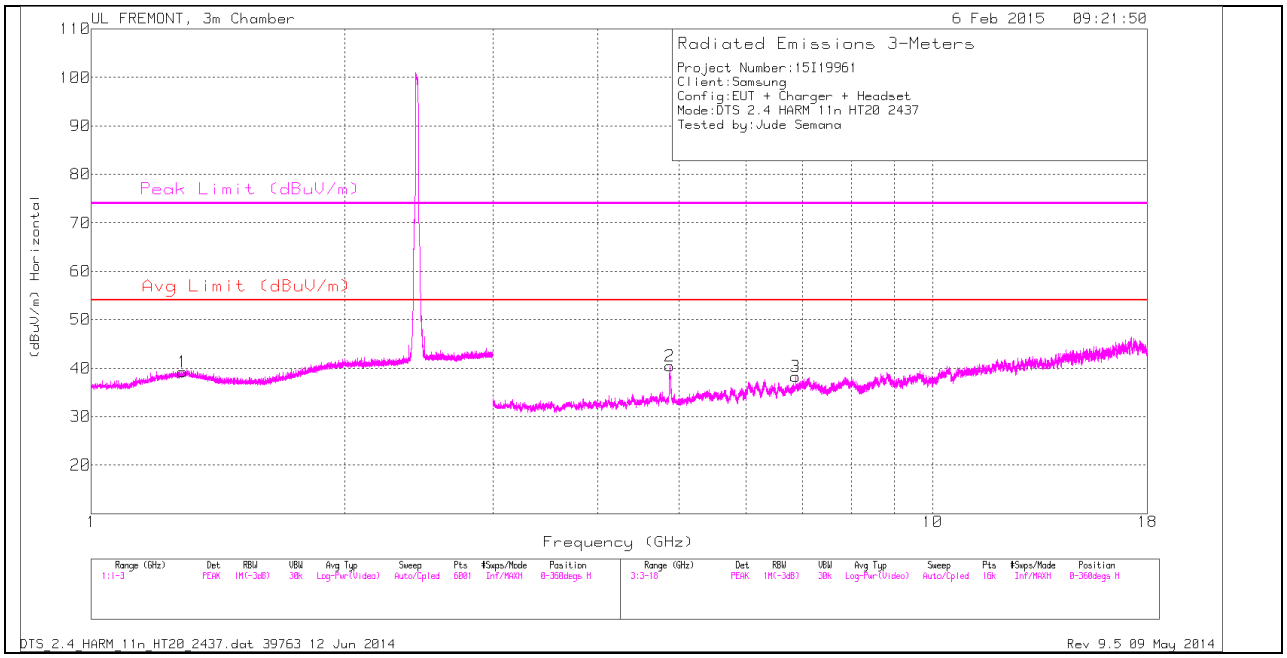
MID CHANNEL HORIZONTAL



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

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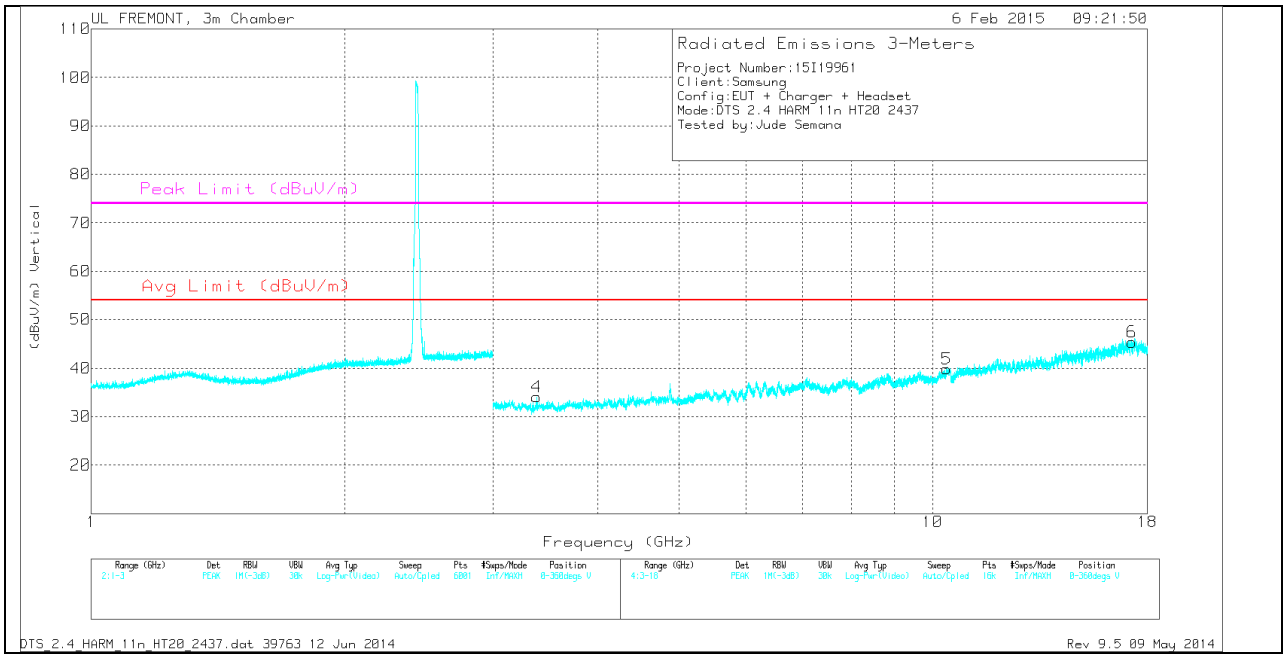
MID CHANNEL VERTICAL



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

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MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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	1.284	33.35	PK	29.7	-23.8	0	39.25	-	-	74	-34.75	0-360	100	H
4	3.383	33.17	PK	32.6	-31.7	0	34.07	-	-	-	-	0-360	200	V
2	4.873	36.52	PK	34	-30.1	0	40.42	-	-	74	-33.58	0-360	200	H
3	6.874	31.28	PK	35.6	-28.6	0	38.28	-	-	-	-	0-360	100	H
5	10.389	28.35	PK	37.2	-25.7	0	39.85	-	-	-	-	0-360	100	V
6	17.257	27.48	PK	41.4	-23.5	0	45.38	-	-	-	-	0-360	100	V

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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
4.872	47.59	PK2	34	-30.1	0	51.49	-	-	74	-22.51	33	300	H
4.872	35.49	MAv1	34	-30.1	.3	39.69	54	-14.31	-	-	33	300	H

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

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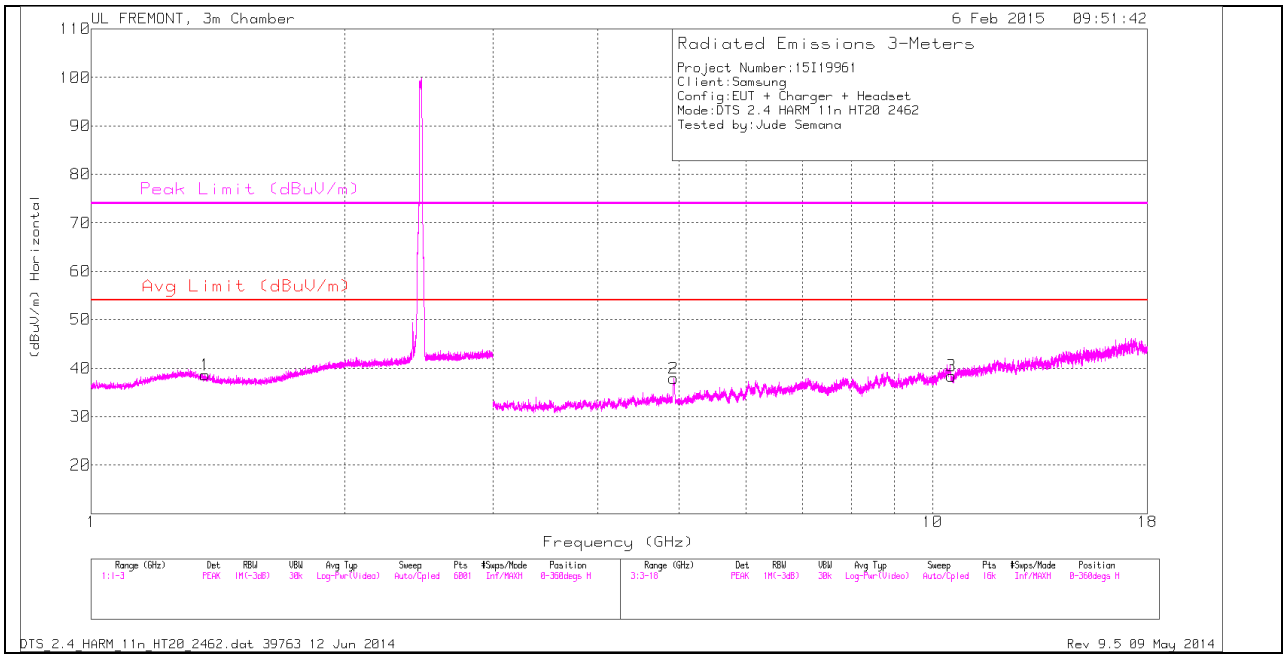
HIGH CHANNEL HORIZONTAL



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

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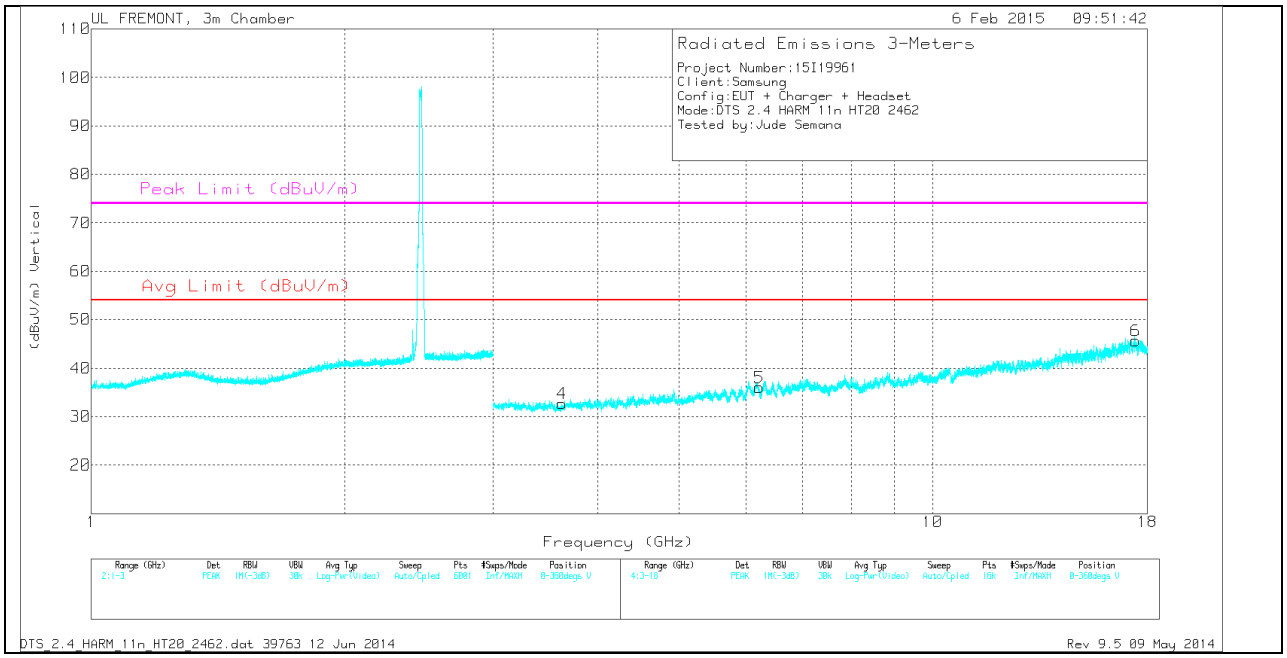
HIGH CHANNEL VERTICAL



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

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HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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	1.365	33.31	PK	29.1	-23.8	0	38.61	-	-	74	-35.39	0-360	200	H
4	3.625	31.25	PK	32.9	-31.5	0	32.65	-	-	74	-41.35	0-360	200	V
2	4.925	34.3	PK	34	-30.4	0	37.9	-	-	74	-36.1	0-360	200	H
5	6.218	31.02	PK	35.3	-30.3	0	36.02	-	-	-	-	0-360	200	V
3	10.53	26.29	PK	37.5	-25.4	0	38.39	-	-	-	-	0-360	200	H
6	17.422	26.36	PK	41.4	-22.1	0	45.66	-	-	-	-	0-360	100	V

PK - Peak detector

RADIATED EMISSIONS

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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
4.925	35.04	MAv1	34	-30.4	.3	38.94	54	-15.06	-	-	38	291	H
4.926	47.72	PK2	34	-30.5	0	51.22	-	-	74	-22.78	38	291	H

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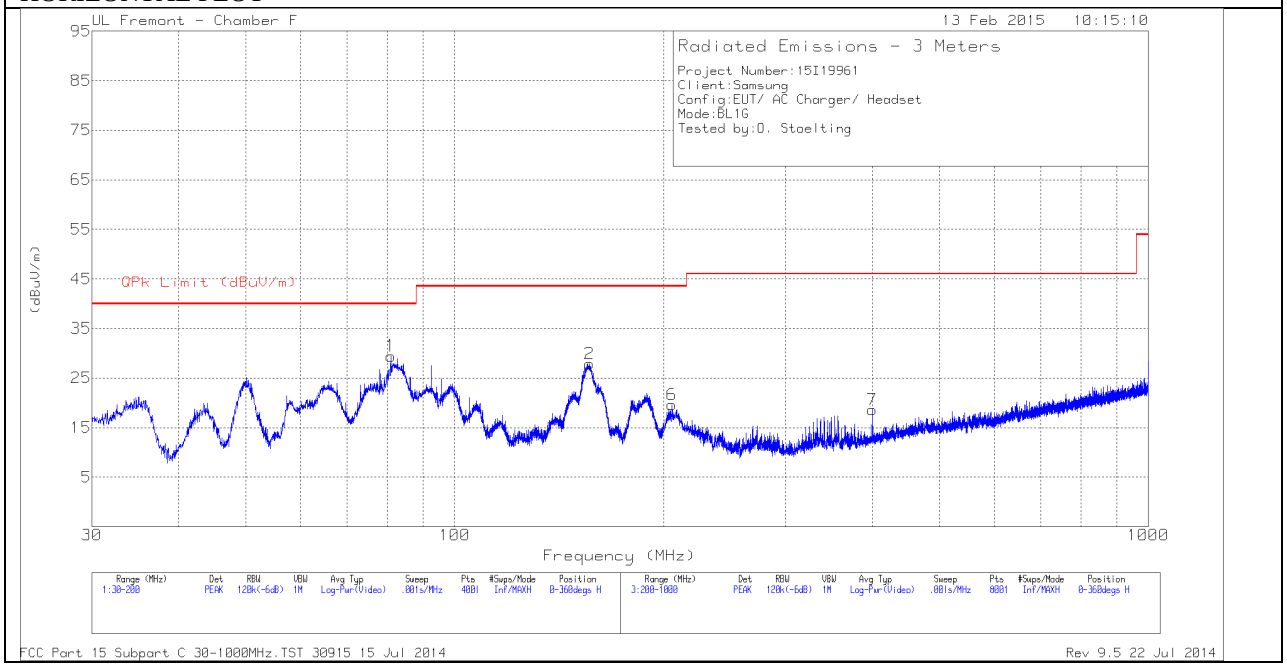
10.3. WORST-CASE BELOW 1 GHz

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

HORIZONTAL PLOT



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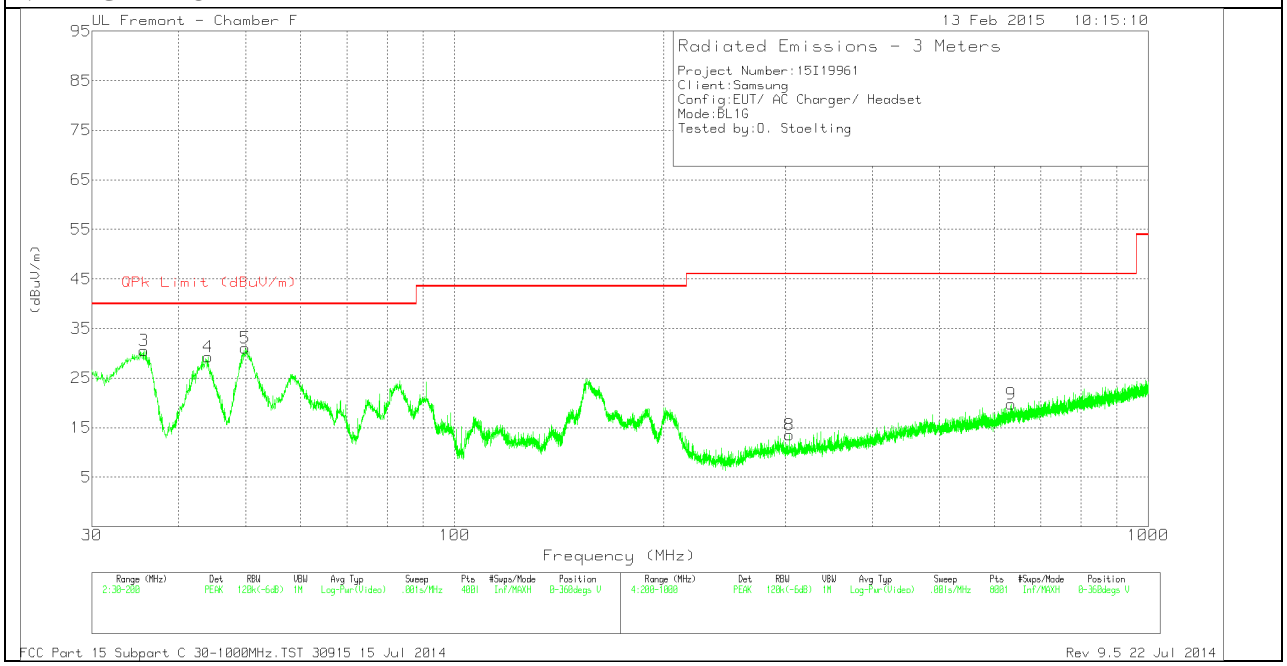
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, VERTICAL)

VERTICAL PLOT



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Below 1G Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T477 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	80.8725	53.57	PK	7.6	-31.7	29.47	40	-10.53	0-360	401	H
2	156.395	46.8	PK	12.4	-31.3	27.9	43.52	-15.62	0-360	201	H
3	35.6525	45.45	PK	17.1	-32	30.55	40	-9.45	0-360	100	V
4	44.1525	50.33	PK	10.8	-31.9	29.23	40	-10.77	0-360	100	V
5	49.89	54.98	PK	7.9	-31.8	31.08	40	-8.92	0-360	100	V
6	205.7	39.76	PK	10.9	-31	19.66	43.52	-23.86	0-360	100	H
7	* 400	33.51	PK	15.5	-30.4	18.61	46.02	-27.41	0-360	100	H
8	303.8	30.64	PK	13.5	-30.6	13.54	46.02	-32.48	0-360	100	V
9	634.7	29.95	PK	19.7	-29.9	19.75	46.02	-26.27	0-360	100	V

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11. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

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.

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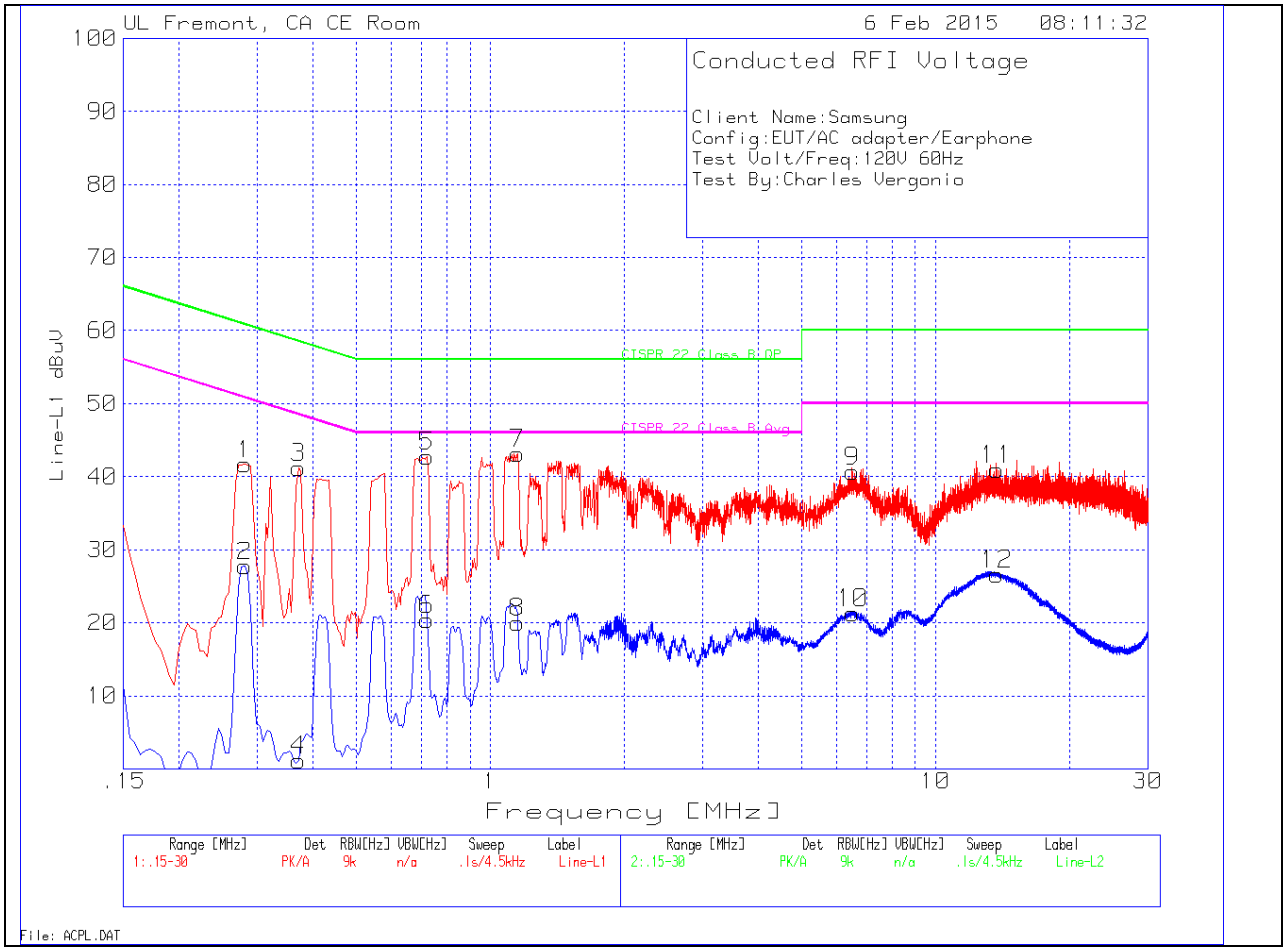
RESULTS

6 WORST EMISSIONS

LINE 1 PLOT



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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	.2805	41.06	PK	.6	0	41.66	60.8	-19.14	-	-
2	.2805	27.12	Av	.6	0	27.72	-	-	50.8	-23.08
3	.3705	40.8	PK	.4	0	41.2	58.5	-17.3	-	-
4	.3705	.76	Av	.4	0	1.16	-	-	48.5	-47.34
5	.7215	42.51	PK	.3	0	42.81	56	-13.19	-	-
6	.7215	20.08	Av	.3	0	20.38	-	-	46	-25.62
7	1.1535	42.98	PK	.2	0	43.18	56	-12.82	-	-
8	1.1535	19.8	Av	.2	0	20	-	-	46	-26
9	6.5265	40.39	PK	.2	.1	40.69	60	-19.31	-	-
10	6.5265	21.02	Av	.2	.1	21.32	-	-	50	-28.68
11	13.749	40.53	PK	.2	.2	40.93	60	-19.07	-	-
12	13.749	26.22	Av	.2	.2	26.62	-	-	50	-23.38

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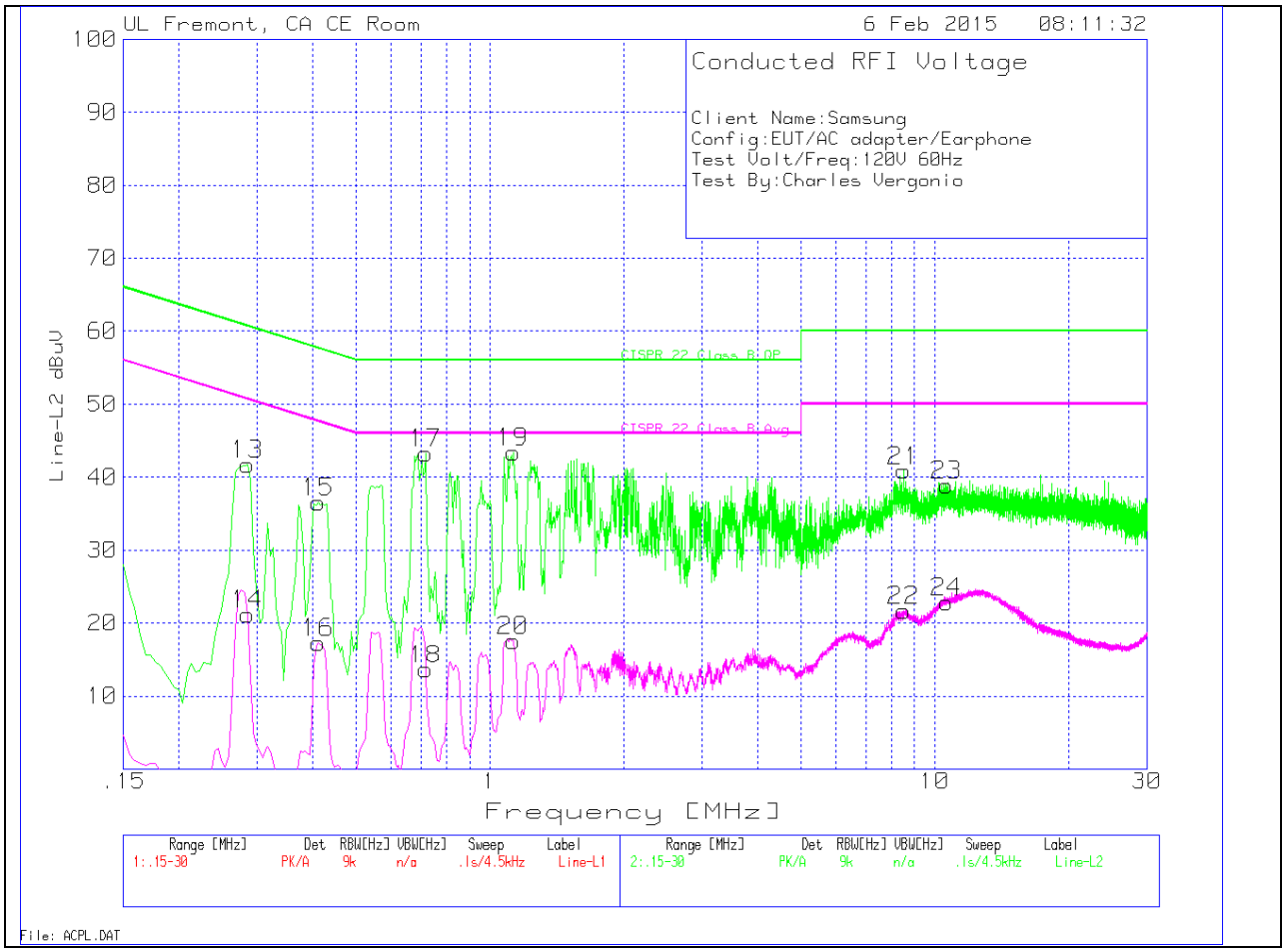
LINE 2 PLOT



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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)
13	.285	41.08	PK	.6	0	41.68	60.7	-19.02	-	-
14	.285	20.6	Av	.6	0	21.2	-	-	50.7	-29.5
15	.411	36.21	PK	.4	0	36.61	57.6	-20.99	-	-
16	.411	16.9	Av	.4	0	17.3	-	-	47.6	-30.3
17	.717	42.99	PK	.3	0	43.29	56	-12.71	-	-
18	.717	13.33	Av	.3	0	13.63	-	-	46	-32.37
19	1.1265	43.03	PK	.3	.1	43.43	56	-12.57	-	-
20	1.1265	17.15	Av	.3	.1	17.55	-	-	46	-28.45
21	8.511	40.58	PK	.2	.1	40.88	60	-19.12	-	-
22	8.511	21.39	Av	.2	.1	21.69	-	-	50	-28.31
23	10.635	38.45	PK	.2	.2	38.85	60	-21.15	-	-
24	10.635	22.49	Av	.2	.2	22.89	-	-	50	-27.11

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