FCC CFR47 PART 15 SUBPART C
INDUSTRY CANADA RSS-210 ISSUE 8

CERTIFICATION TEST REPORT

FOR

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

MODEL NUMBER: SM-T550

FCC ID: A3LSMT550
IC ID: 649E-SMT550

REPORT NUMBER: 15I19879-E3 REVISION B

ISSUE DATE: MAR 6, 2015

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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	2/3/15	Initial Issue	P. Zhang
A	3/2/15	Updated page 89	P. Zhang
B	3/6/15	Updated equipment list and sample list	P. Zhang

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: **SAMSUNG ELECTRONICS CO., LTD.**
EUT DESCRIPTION: **Tablet with Bluetooth, DTS/UNII a/b/g/n and ANT+.**
MODEL: **SM-T550**
SERIAL NUMBER: **R32G1032KDZ (Conducted CH1~CH13); R32G1032KGK (Radiated CH1~CH13)**
DATE TESTED: **JAN 22 – MAR 2, 2015**

APPLICABLE STANDARDS

STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	Pass
INDUSTRY CANADA RSS-210 ISSUE 8	Pass
INDUSTRY CANADA RSS-GEN ISSUE 4	Pass

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

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

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2. TEST METHODOLOGY

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

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
	☒ Chamber G

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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 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	17.2	52.48
2467	802.11b	4.3	2.69
2472	802.11b	2.98	1.99
2412 - 2462	802.11g	14.4	27.54
2467	802.11g	4.1	2.57
2472	802.11g	1.1	1.29
2412 - 2462	802.11n HT20	13.5	22.39
2467	802.11n HT20	4.1	2.57
2472	802.11n HT20	1	1.26

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of -1.6 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	80cm	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.

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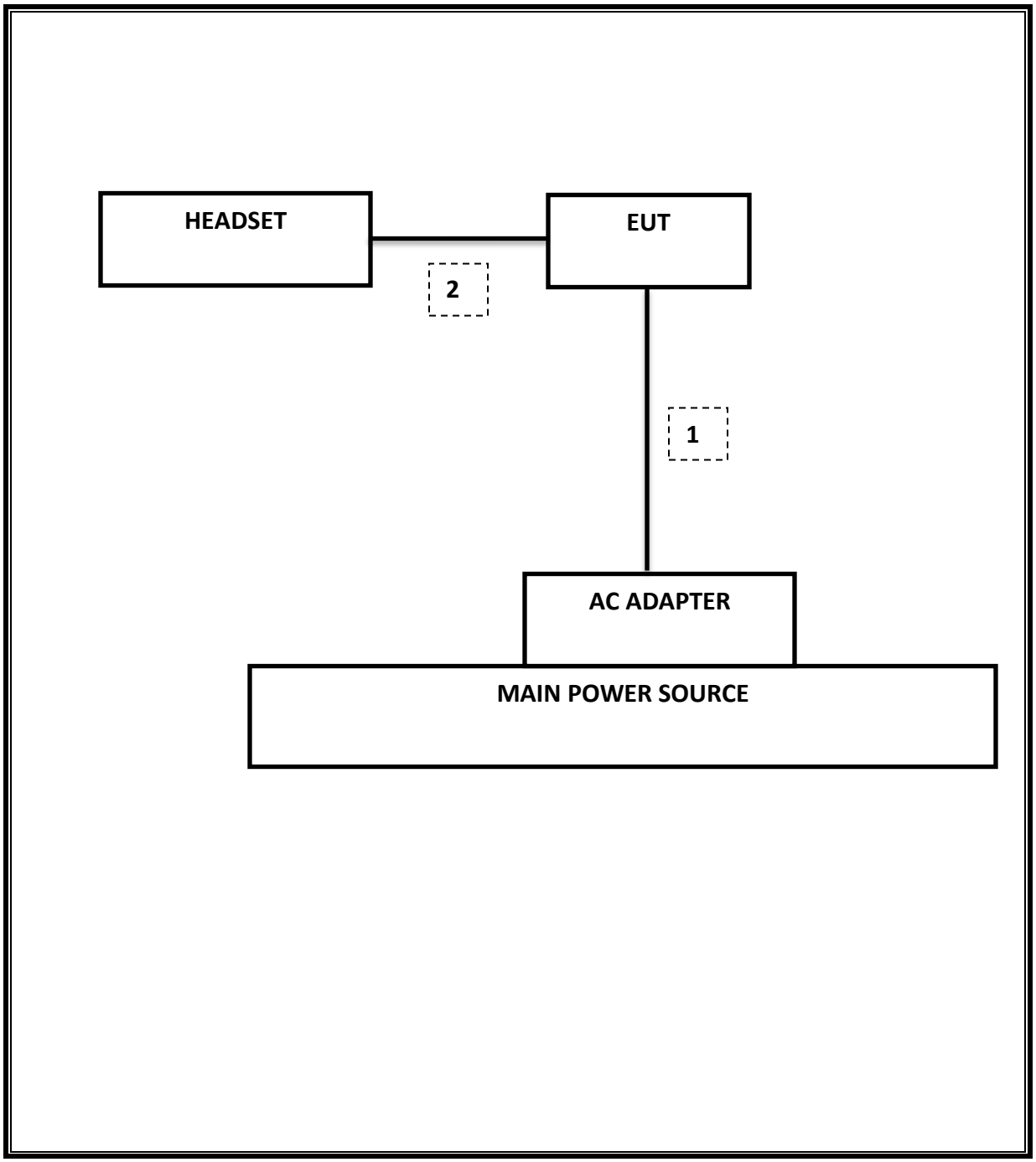
SETUP DIAGRAM FOR TESTS



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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	02/21/16
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

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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	8.13MHz
2.1051, 15.247 (d)	RSS-210 A8.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	-28.87dBm
15.247	RSS-210 A8.4	TX conducted output power	<30dBm		Pass	17.2dBm
15.247	RSS-210 A8.2	PSD	<8dBm		Pass	-12.17dBm
15.207 (a)	RSS-GEN 7.2.2	AC Power Line conducted emissions	Section 10	Radiated	Pass	45.0dBuV(PK)
15.205, 15.209	RSS-210 Clause 2.6, RSS-210 Clause 6	Radiated Spurious Emission	< 54dBuV/m		Pass	53.19dBuV/m

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9. ANTENNA PORT TEST RESULTS

9.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

IC RSS-210 A8.2 (a)

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

TEST PROCEDURE

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

RESULTS

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9.1.1. 802.11b MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
1	2412	9.07	0.5
6	2437	9.55	0.5
11	2462	9.05	0.5
12	2467	9.10	0.5
13	2472	8.13	0.5
Worst		8.13	

9.1.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
1	2412	16.34	0.5
6	2437	16.40	0.5
11	2462	16.44	0.5
12	2467	16.53	0.5
13	2472	16.50	0.5
Worst		16.34	

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9.1.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
1	2412	17.60	0.5
6	2437	17.62	0.5
11	2462	17.58	0.5
12	2467	17.70	0.5
13	2472	17.73	0.5
Worst		17.58	

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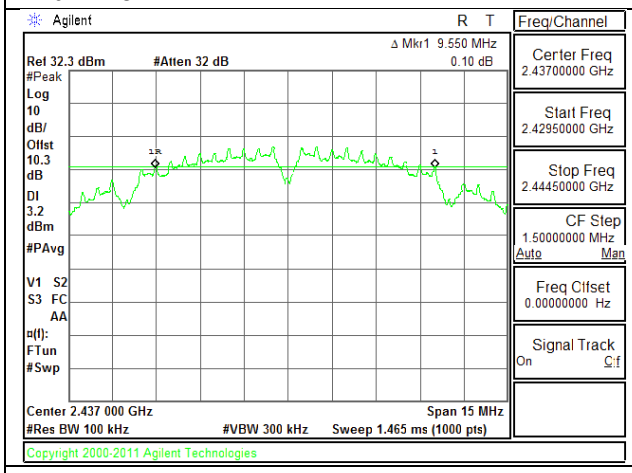
9.1.4. 6 dB BANDWIDTH MID CH PLOTS

11b HT20 2.4



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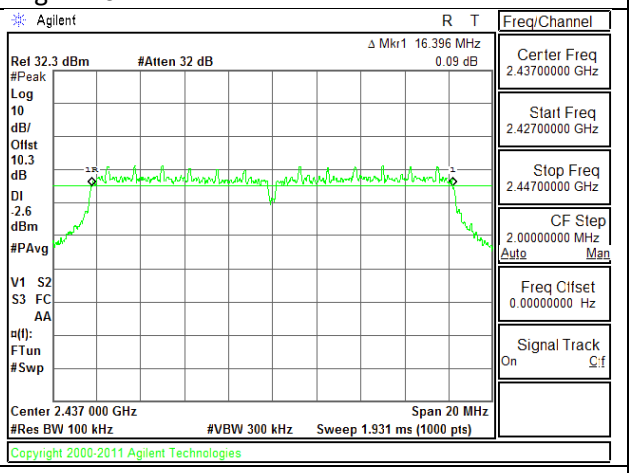
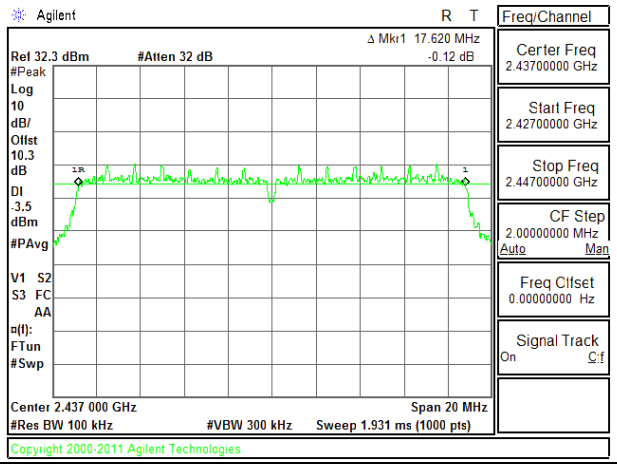


11n HT20 2.4



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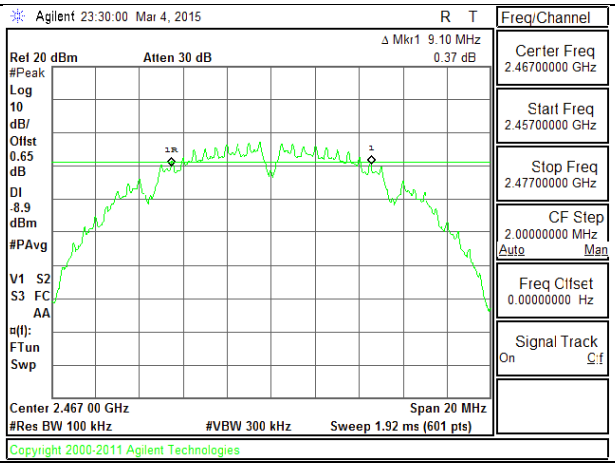
11b HT20 2.4 Ch. 12



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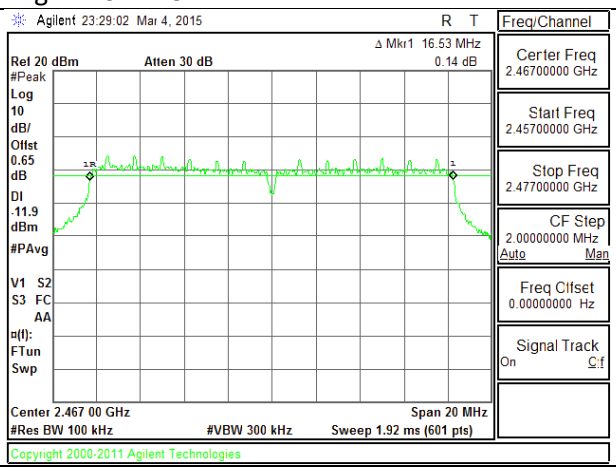

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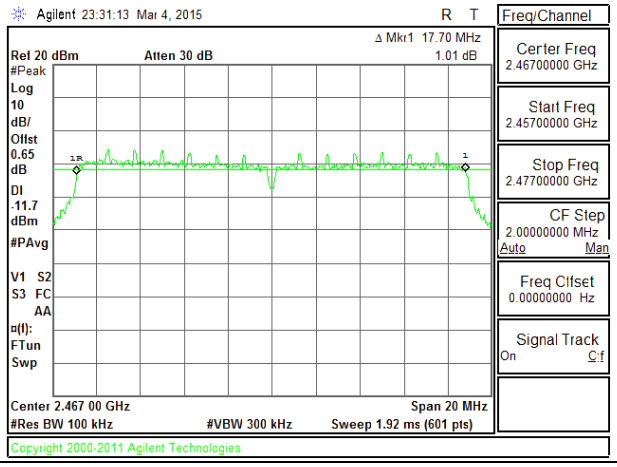

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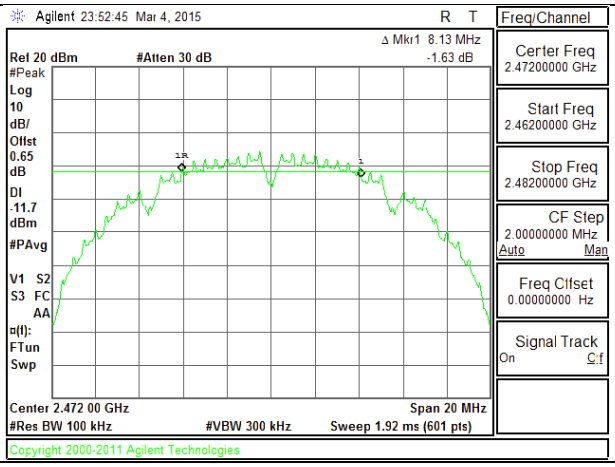
11b HT20 2.4 Ch. 13



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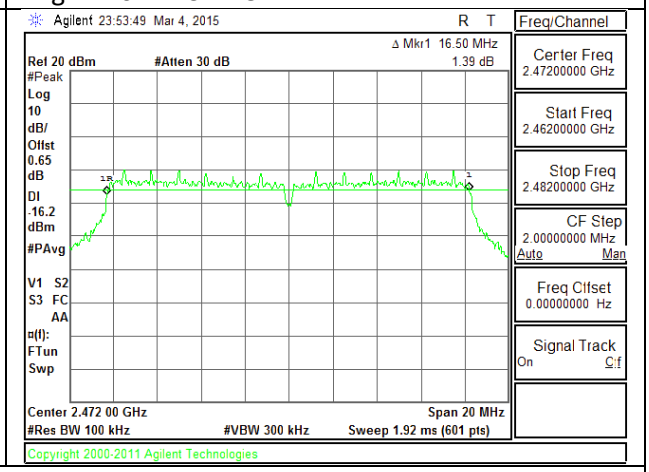

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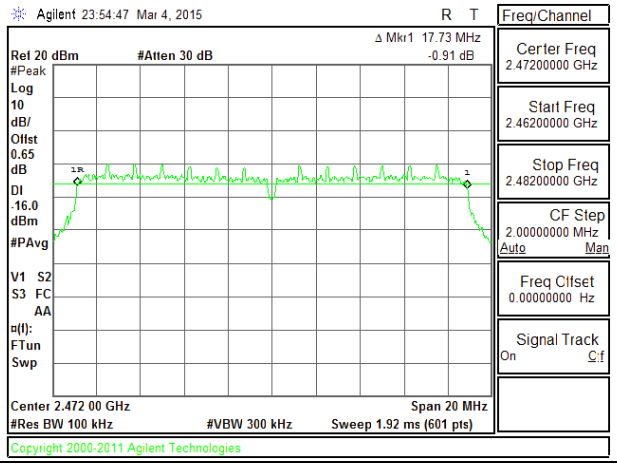

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9.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

9.2.1. 802.11b MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
1	2412	13.60
6	2437	13.32
11	2462	13.69
12	2467	13.20
13	2472	13.13
Worst		13.69

9.2.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
1	2412	16.51
6	2437	16.46
11	2462	16.35
12	2467	16.42
13	2472	16.45
Worst		16.51

9.2.3. 802.

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9.2.4. 11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
1	2412	17.64
6	2437	17.41
11	2462	17.57
12	2467	17.71
13	2472	17.64
Worst		17.64

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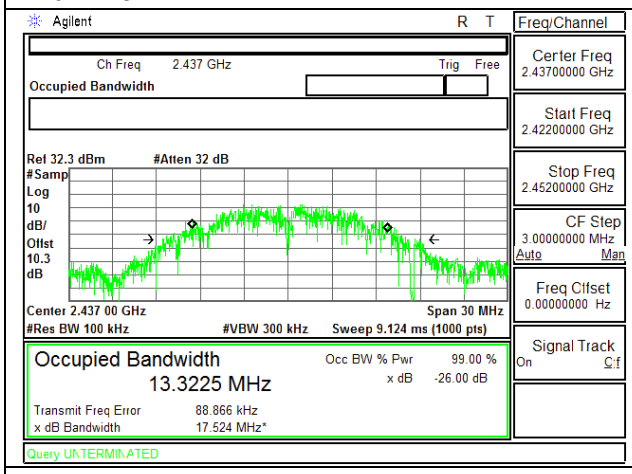
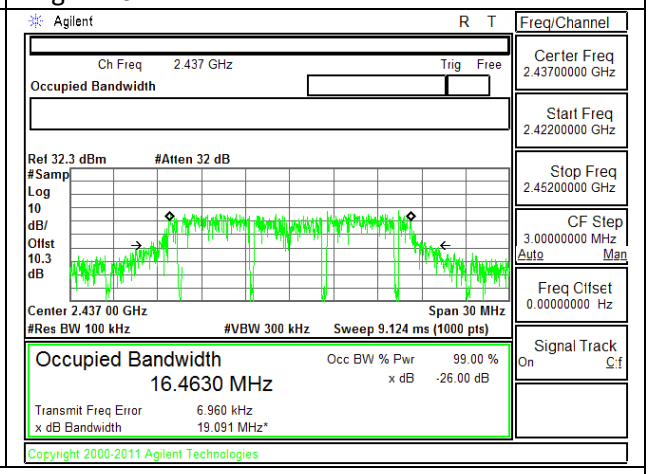
9.2.5. 99% BANDWIDTH MID CH PLOTS

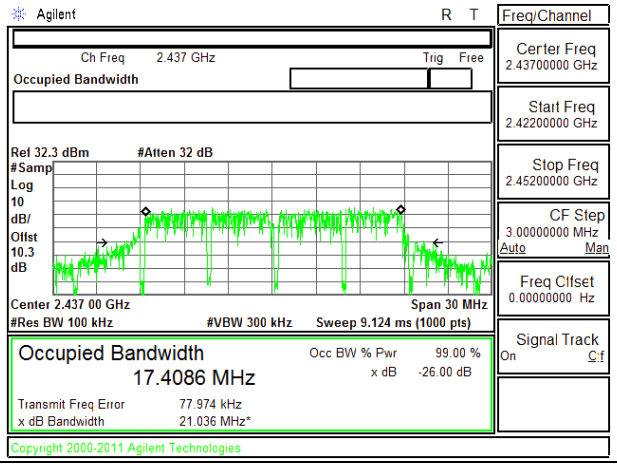
11b HT20 2.4



11g HT20 2.4



11n HT20 2.4



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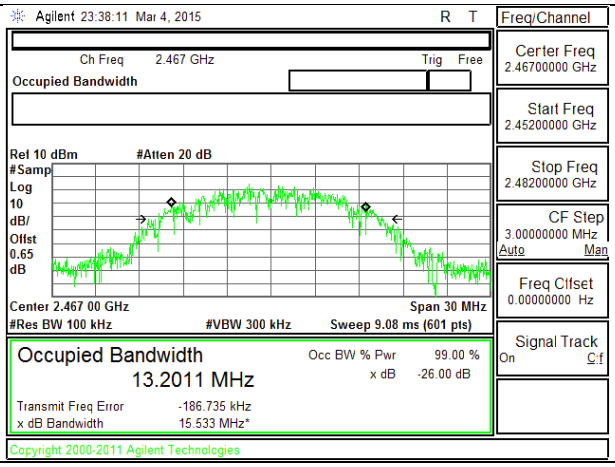
11b HT20 2.4 Ch. 12



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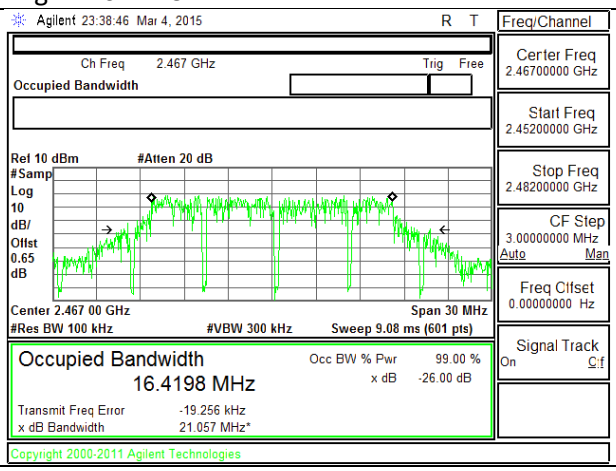
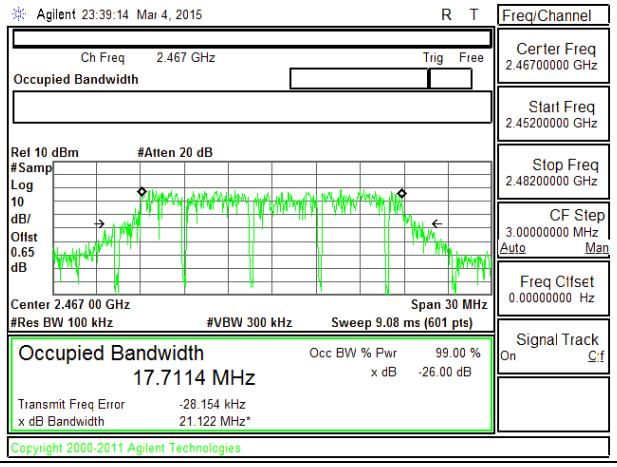


11n HT20 2.4 Ch.12



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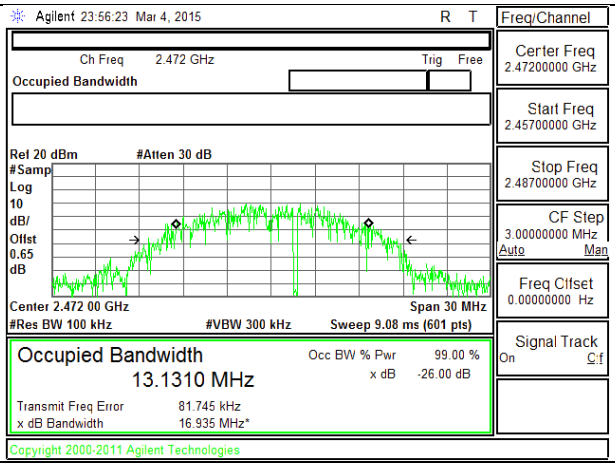
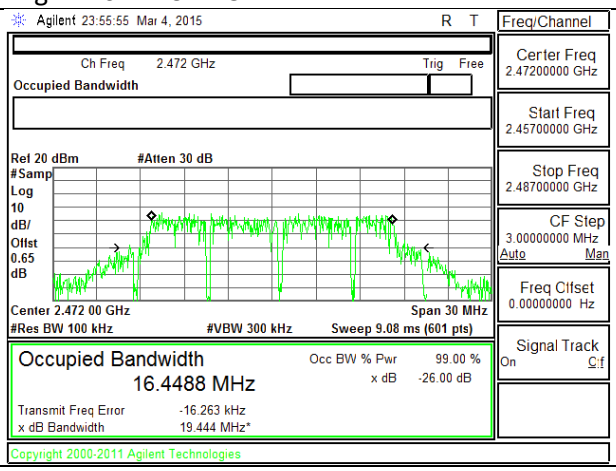
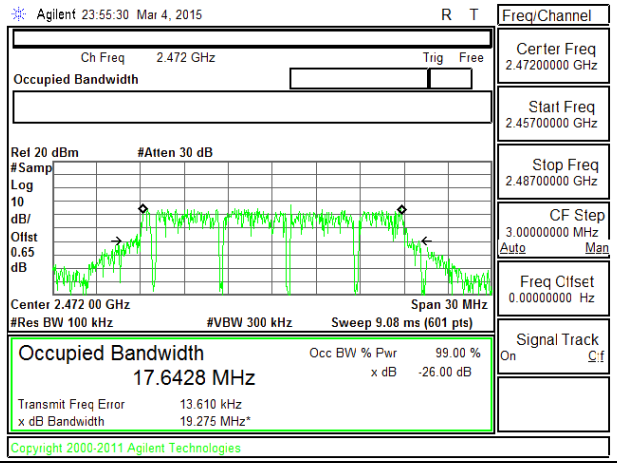
11b HT20 2.4 Ch. 13



11g HT20 2.4 Ch. 13



11n HT20 2.4 Ch.13



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9.3. 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.

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)
1	2412	-1.60	30.00	30	36	30.00
6	2437	-1.60	30.00	30	36	30.00
11	2462	-1.60	30.00	30	36	30.00
12	2467	-1.60	30.00	30	36	30.00
13	2472	-1.60	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)
1	2412	17.00	17.00	30.00	-13.00
6	2437	17.20	17.20	30.00	-12.80
11	2462	17.00	17.00	30.00	-13.00
12	2467	4.30	4.30	30.00	-25.70
13	2472	2.98	2.98	30.00	-27.02
Worst			17.20		

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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)
1	2412	-1.60	30.00	30	36	30.00
6	2437	-1.60	30.00	30	36	30.00
11	2462	-1.60	30.00	30	36	30.00
12	2467	-1.60	30.00	30	36	30.00
13	2472	-1.60	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)
1	2412	14.40	14.40	30.00	-15.60
6	2437	14.40	14.40	30.00	-15.60
11	2462	14.20	14.20	30.00	-15.80
12	2467	4.10	4.10	30.00	-25.90
13	2472	1.10	1.10	30.00	-28.90
Worst			14.40		

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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)
1	2412	-1.60	30.00	30	36	30.00
6	2437	-1.60	30.00	30	36	30.00
11	2462	-1.60	30.00	30	36	30.00
12	2467	-1.60	30.00	30	36	30.00
13	2472	-1.60	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)
1	2412	13.50	13.50	30.00	-16.50
6	2437	13.50	13.50	30.00	-16.50
11	2462	13.20	13.20	30.00	-16.80
12	2467	4.10	4.10	30.00	-25.90
13	2472	1.00	1.00	30.00	-29.00
Worst			13.50		

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9.4. PSD

LIMITS

FCC §15.247

IC RSS-210 A8.2 (b)

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)
1	2412	-13.63	8.0	-21.6
6	2437	-12.17	8.0	-20.2
11	2462	-12.53	8.0	-20.5
12	2467	-25.7	8.0	-33.7
13	2472	-29.19	8.0	-37.2

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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)
1	2412	-19.45	8.0	-27.5
6	2437	-19.11	8.0	-27.1
11	2462	-19.50	8.0	-27.5
12	2467	-28.95	8.0	-37.0
13	2472	-33.49	8.0	-41.5

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)
1	2412	-21.02	8.0	-29.0
6	2437	-20.74	8.0	-28.7
11	2462	-20.41	8.0	-28.4
12	2467	-29.25	8.0	-37.3
13	2472	-34.01	8.0	-42.0

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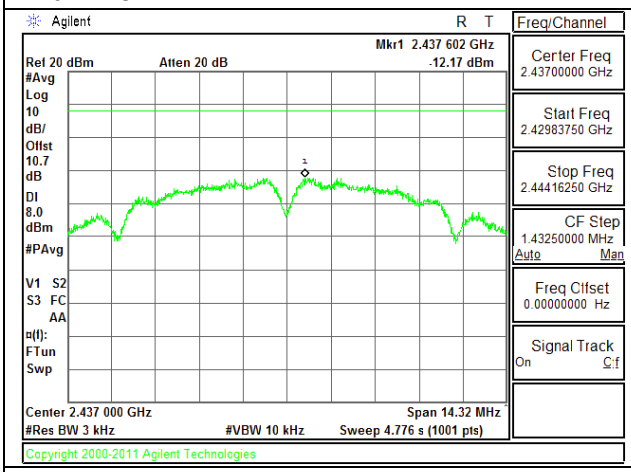
9.4.4. PSD Chain 0 MID CH PLOTS

11b HT20 2.4



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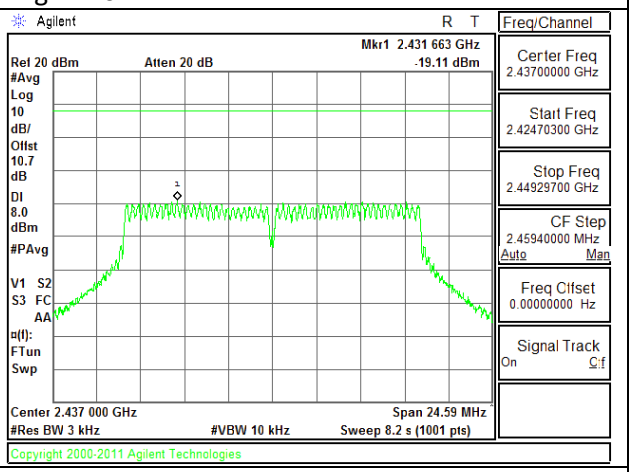

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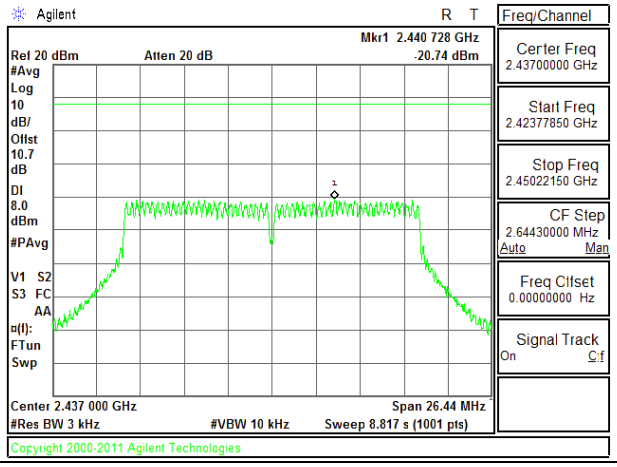

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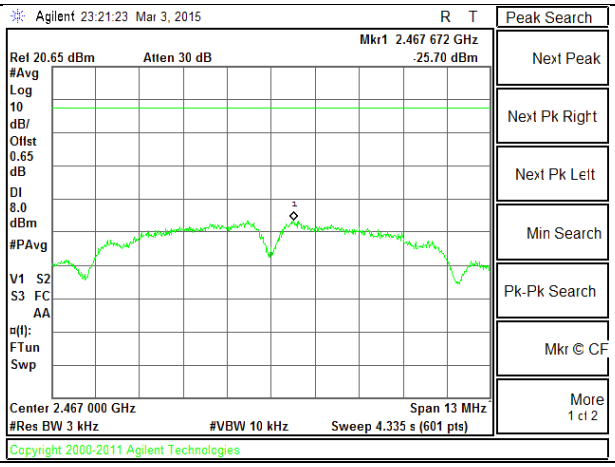
11b HT20 2.4 Ch. 12



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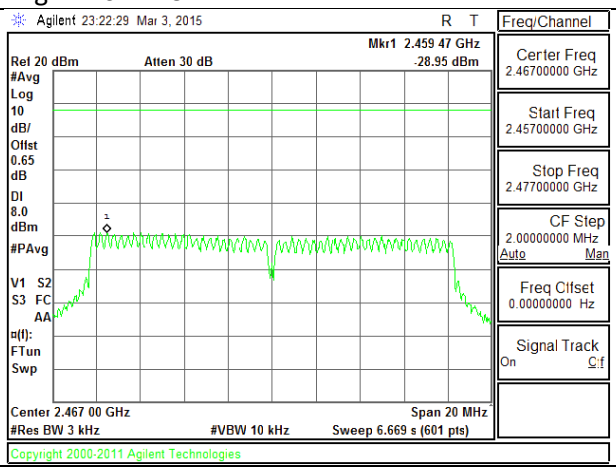

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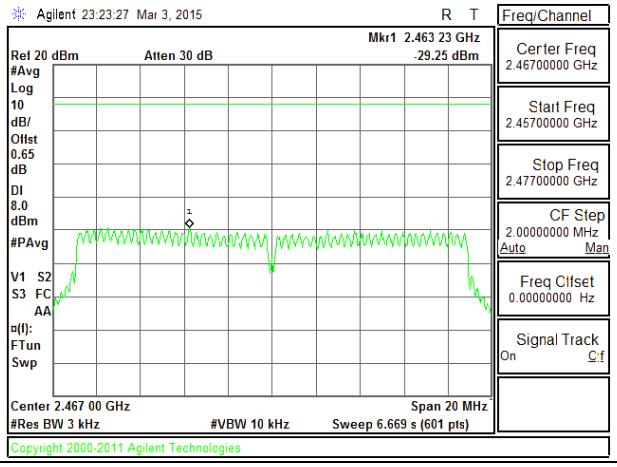

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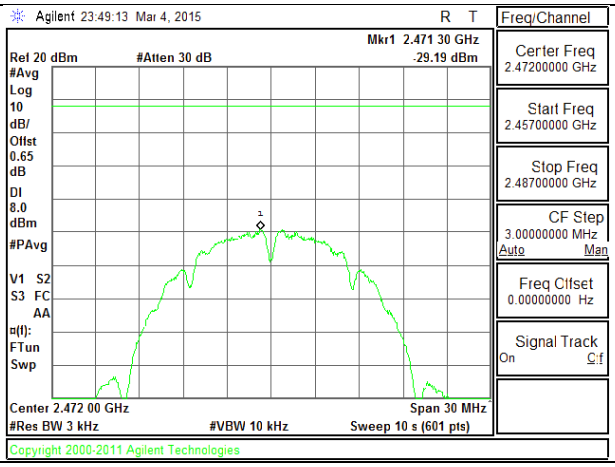
11b HT20 2.4 Ch. 13



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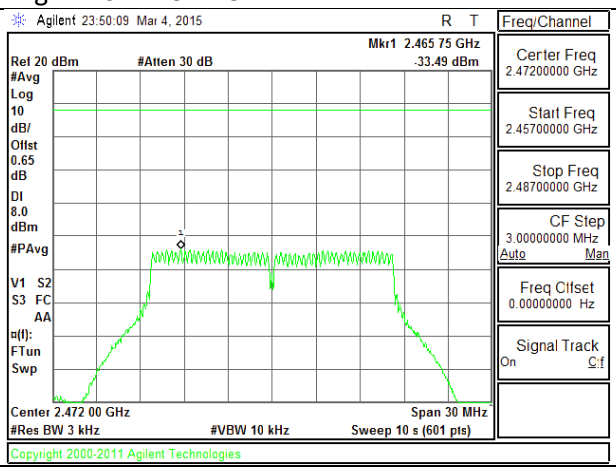

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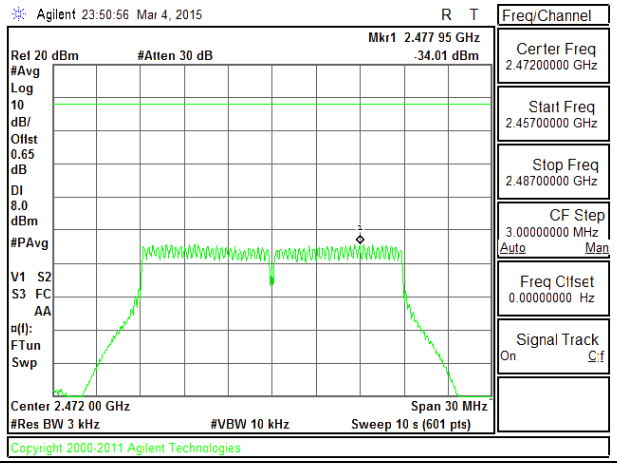

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9.5. OUT-OF-BAND EMISSIONS

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

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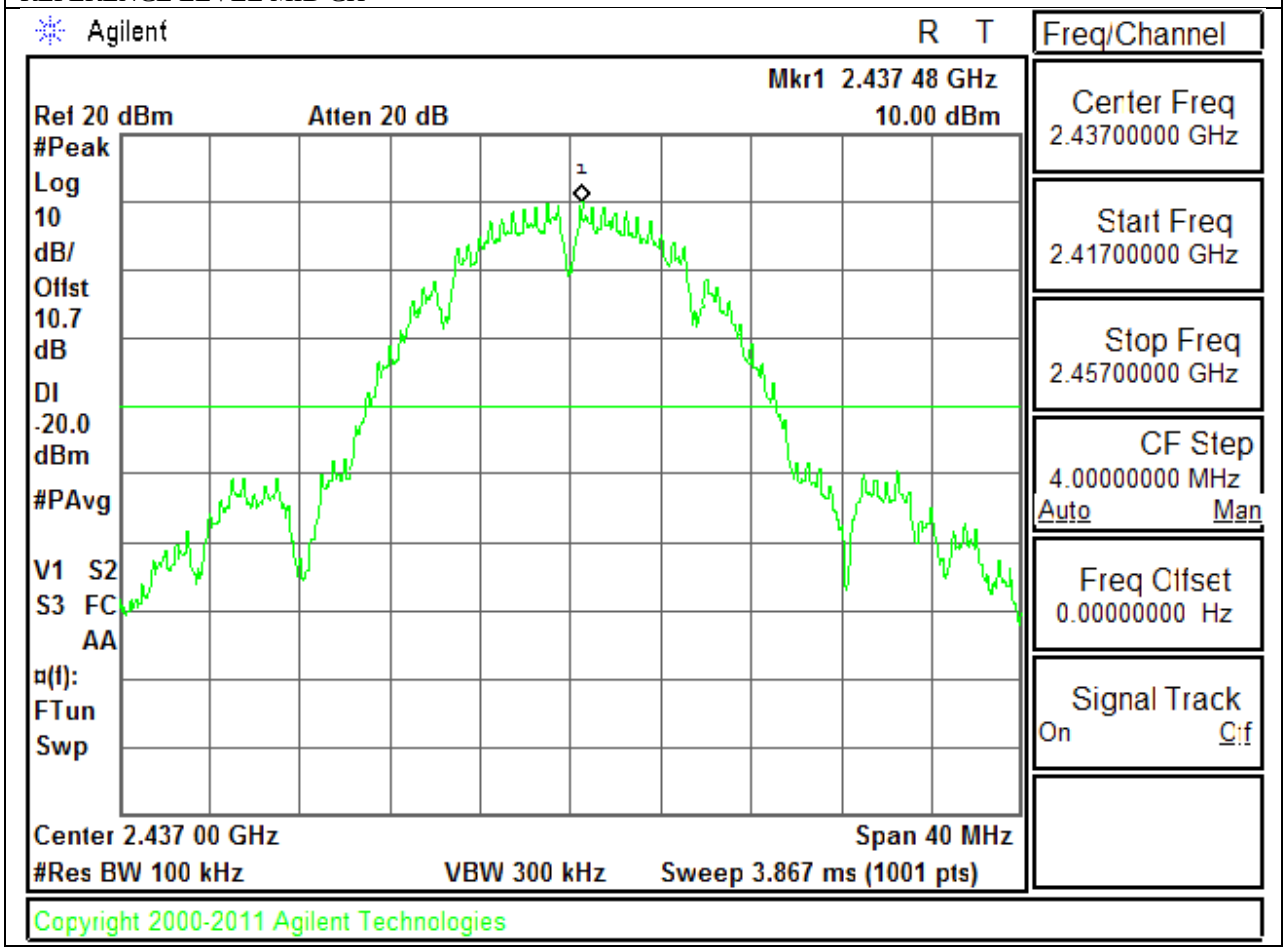
9.5.1. 802.11b MODE IN THE 2.4 GHz BAND

IN-BAND REFERENCE LEVEL

REFERENCE LEVEL MID CH



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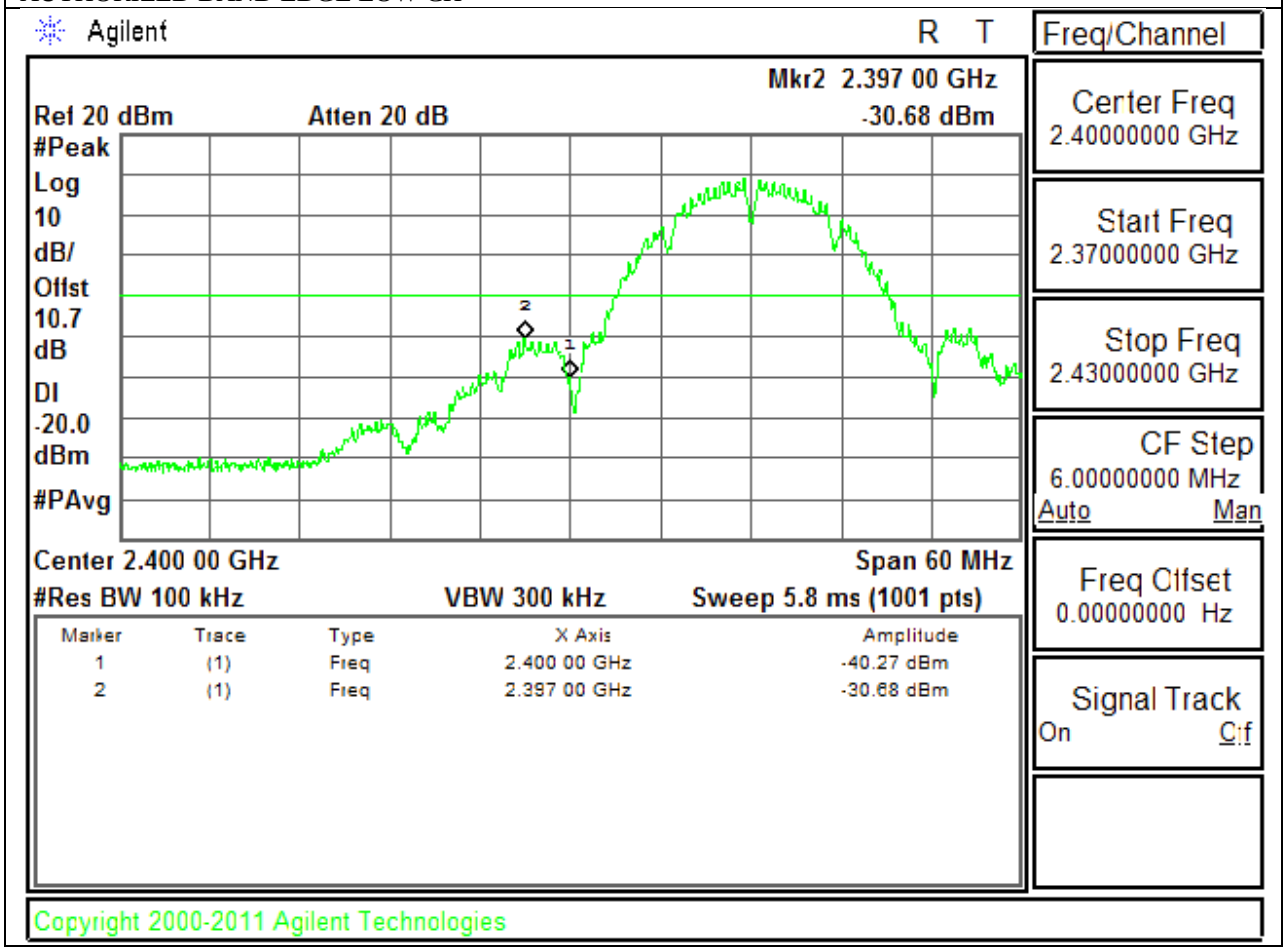
LOW CHANNEL BANDEDGE

AUTHORIZED BAND EDGE LOW CH



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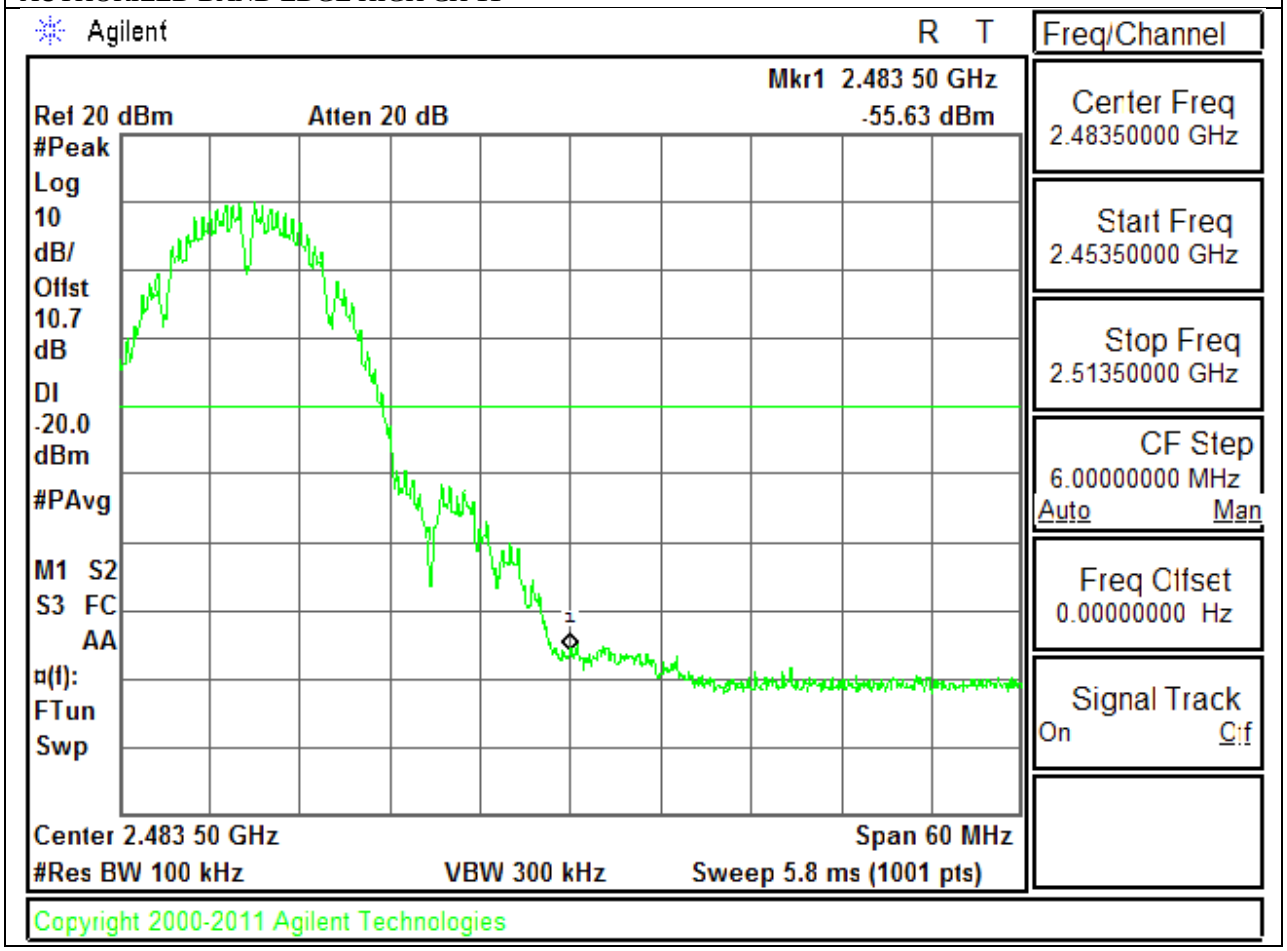
HIGH CHANNEL BANDEDGE

AUTHORIZED BAND EDGE HIGH CH 11



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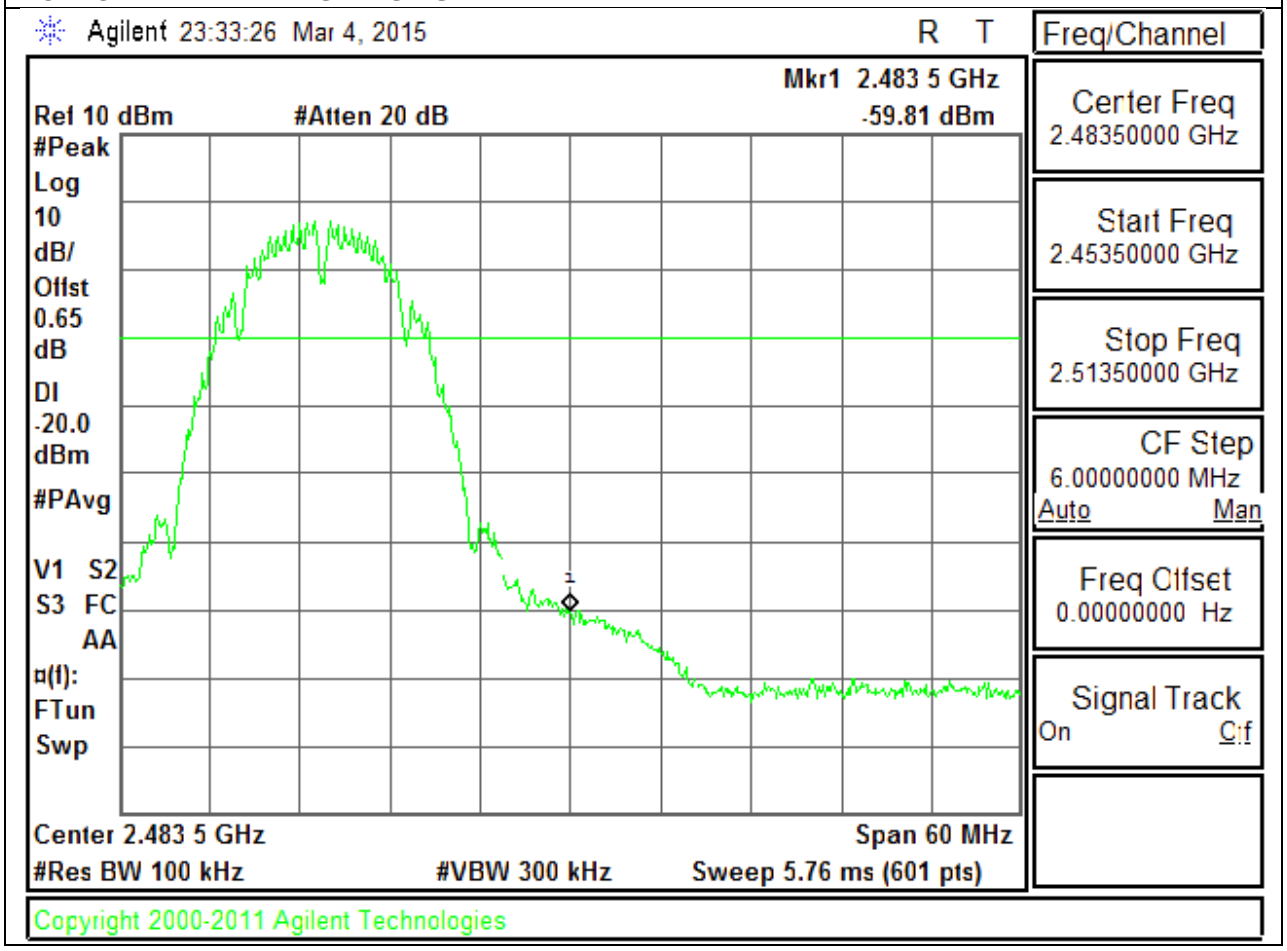
AUTHORIZED BAND EDGE HIGH CH 12



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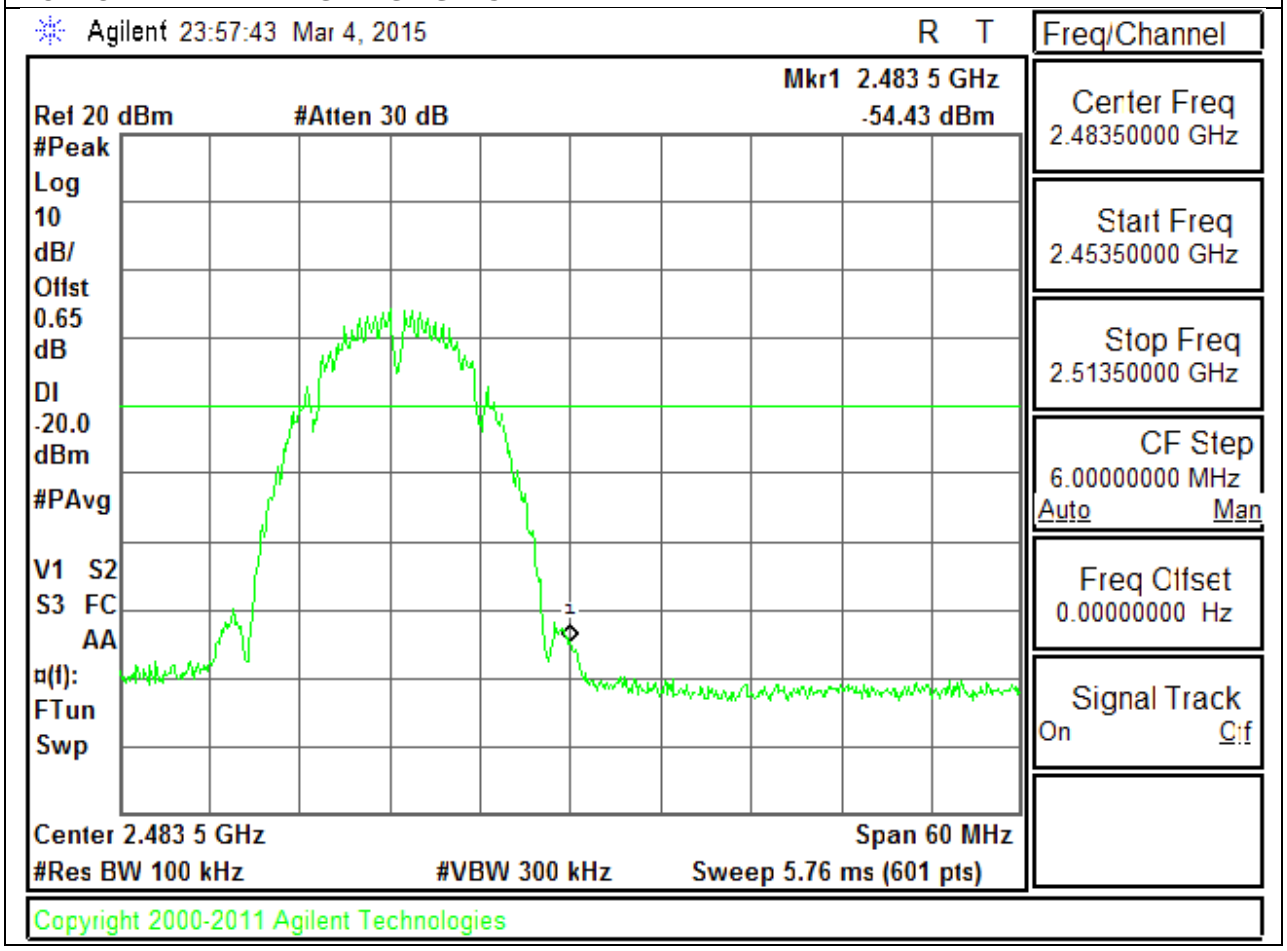
AUTHORIZED BAND EDGE HIGH CH 13



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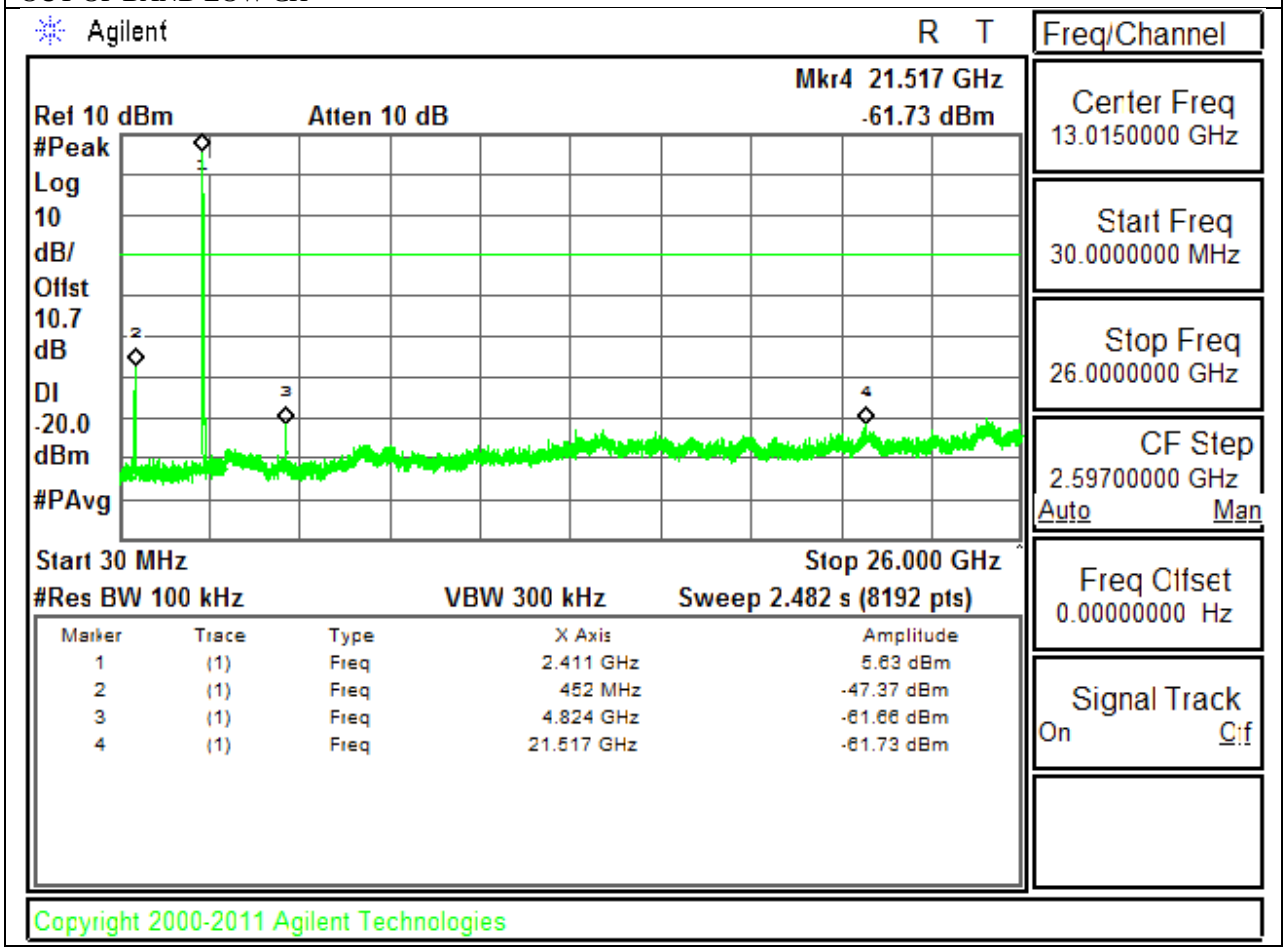
OUT-OF-BAND EMISSIONS

OUT OF BAND LOW CH



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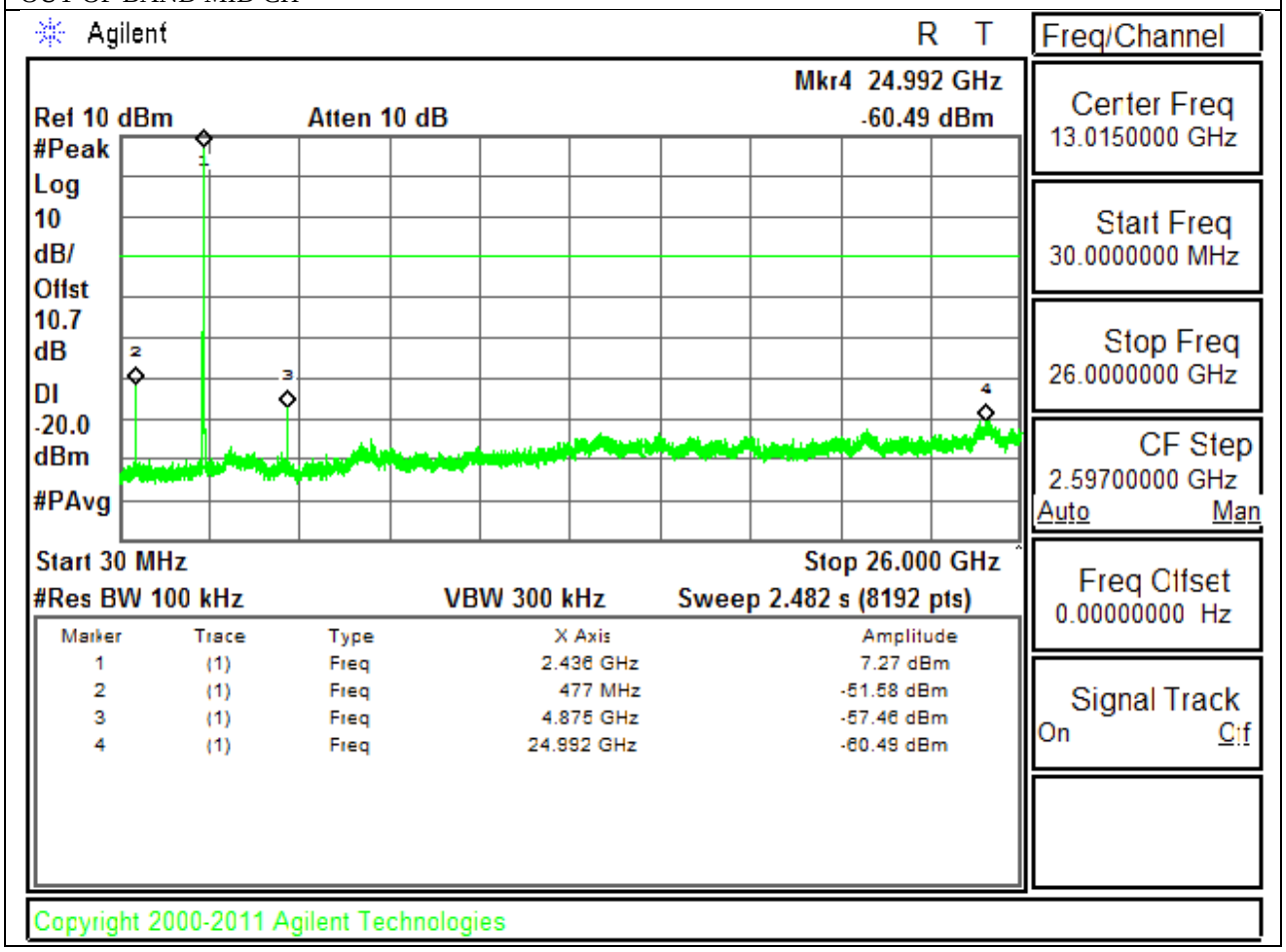
OUT OF BAND MID CH



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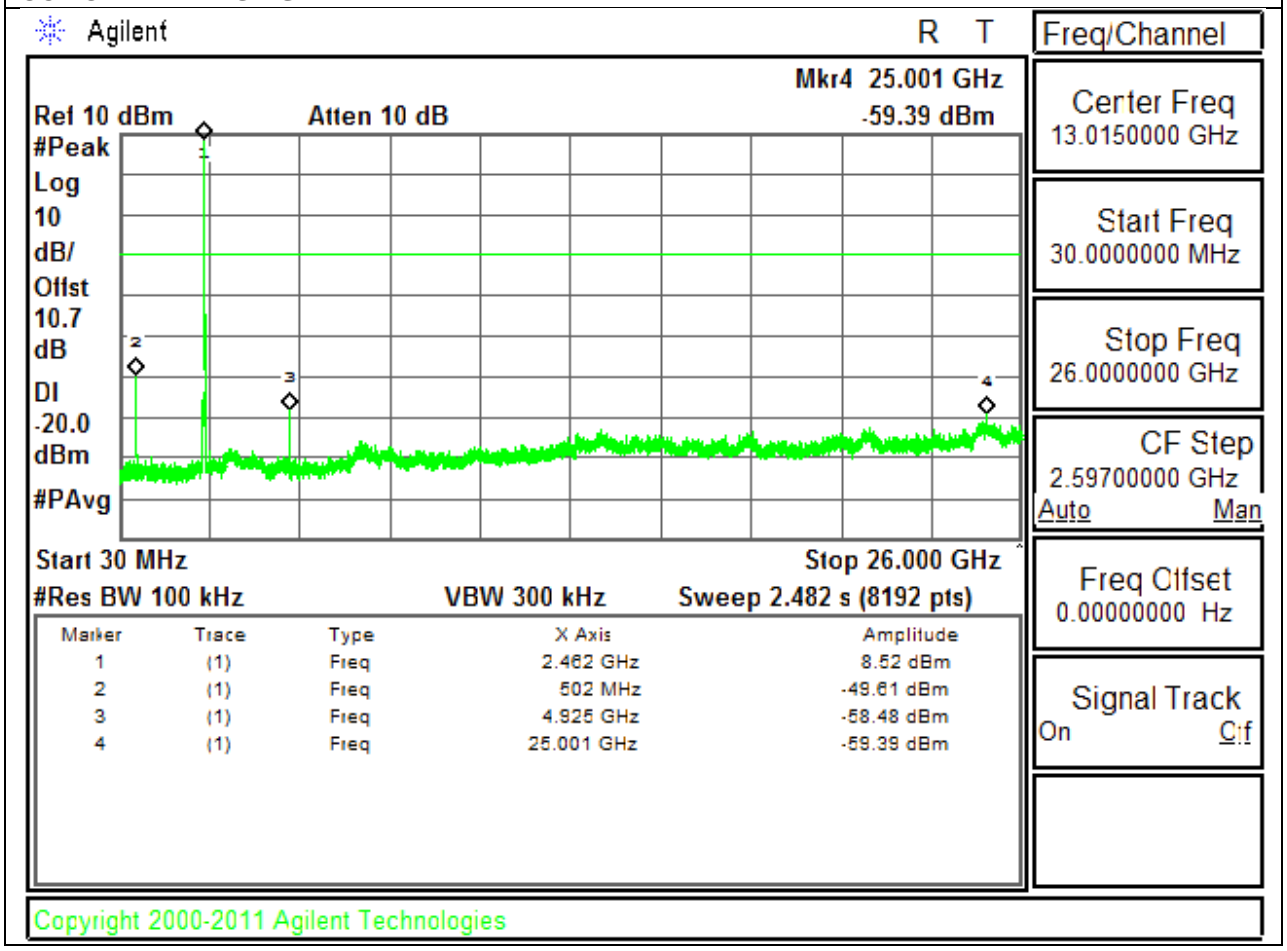
OUT OF BAND HIGH CH 11



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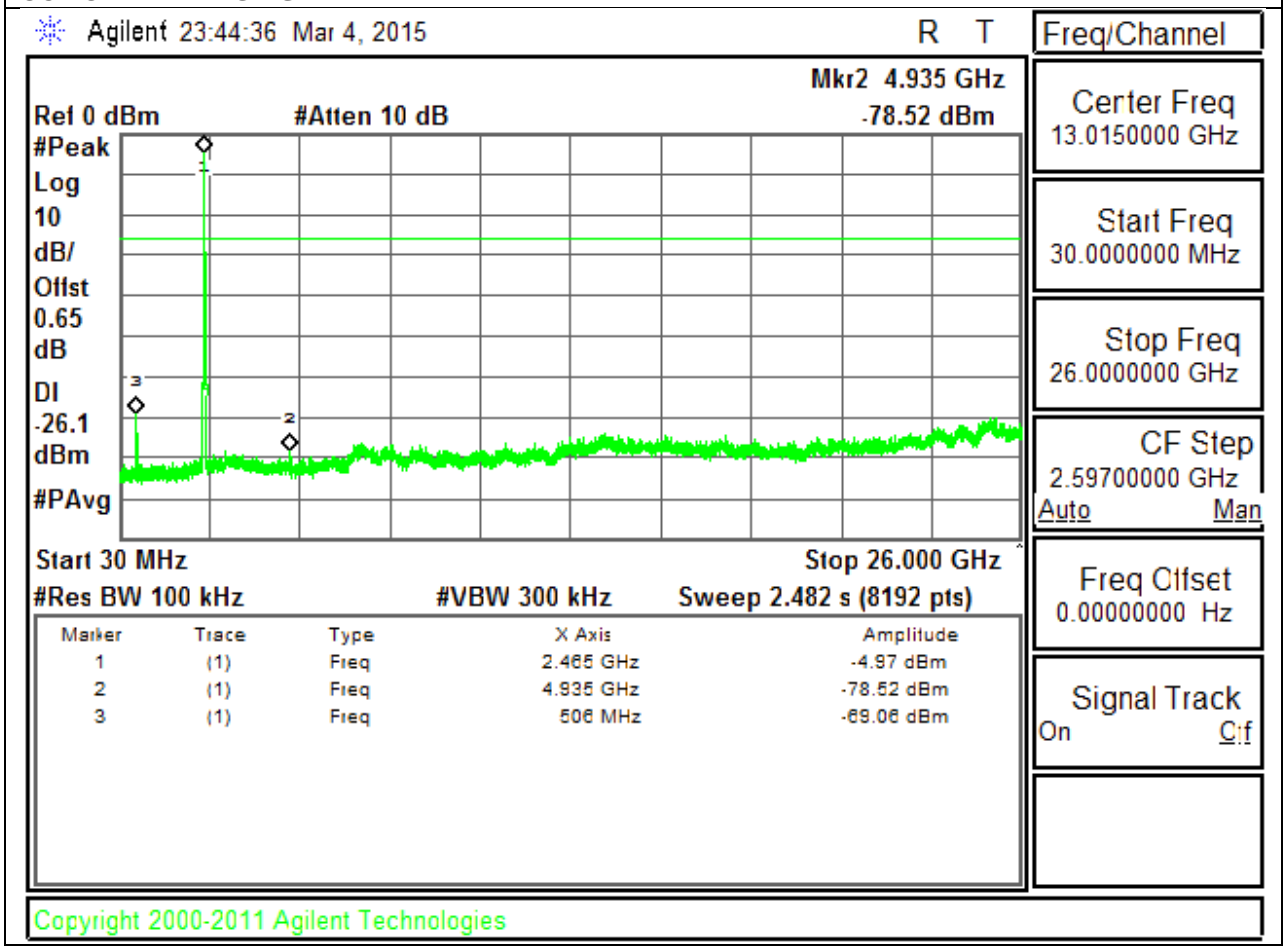
OUT OF BAND HIGH CH 12



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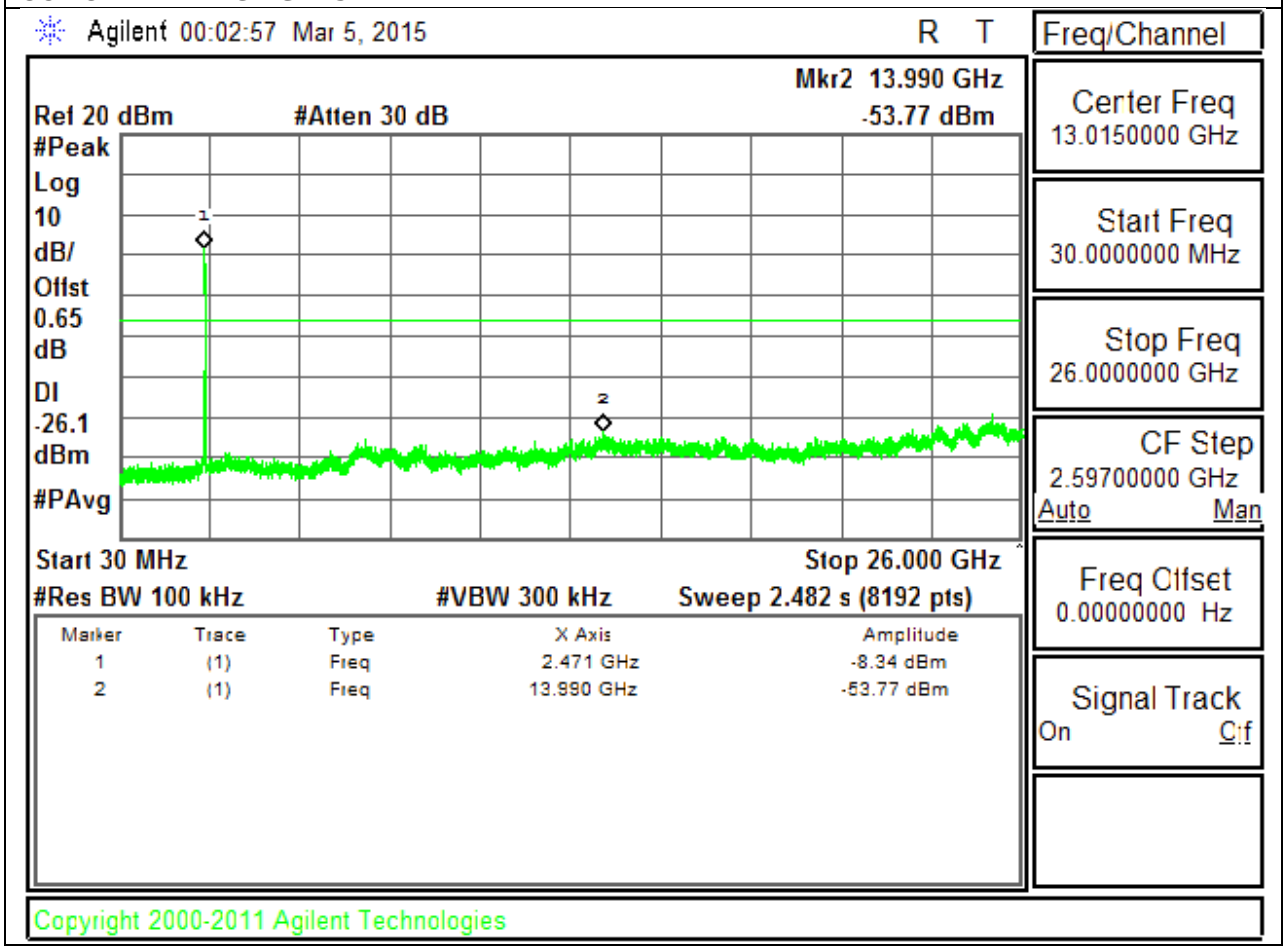
OUT OF BAND HIGH CH 13



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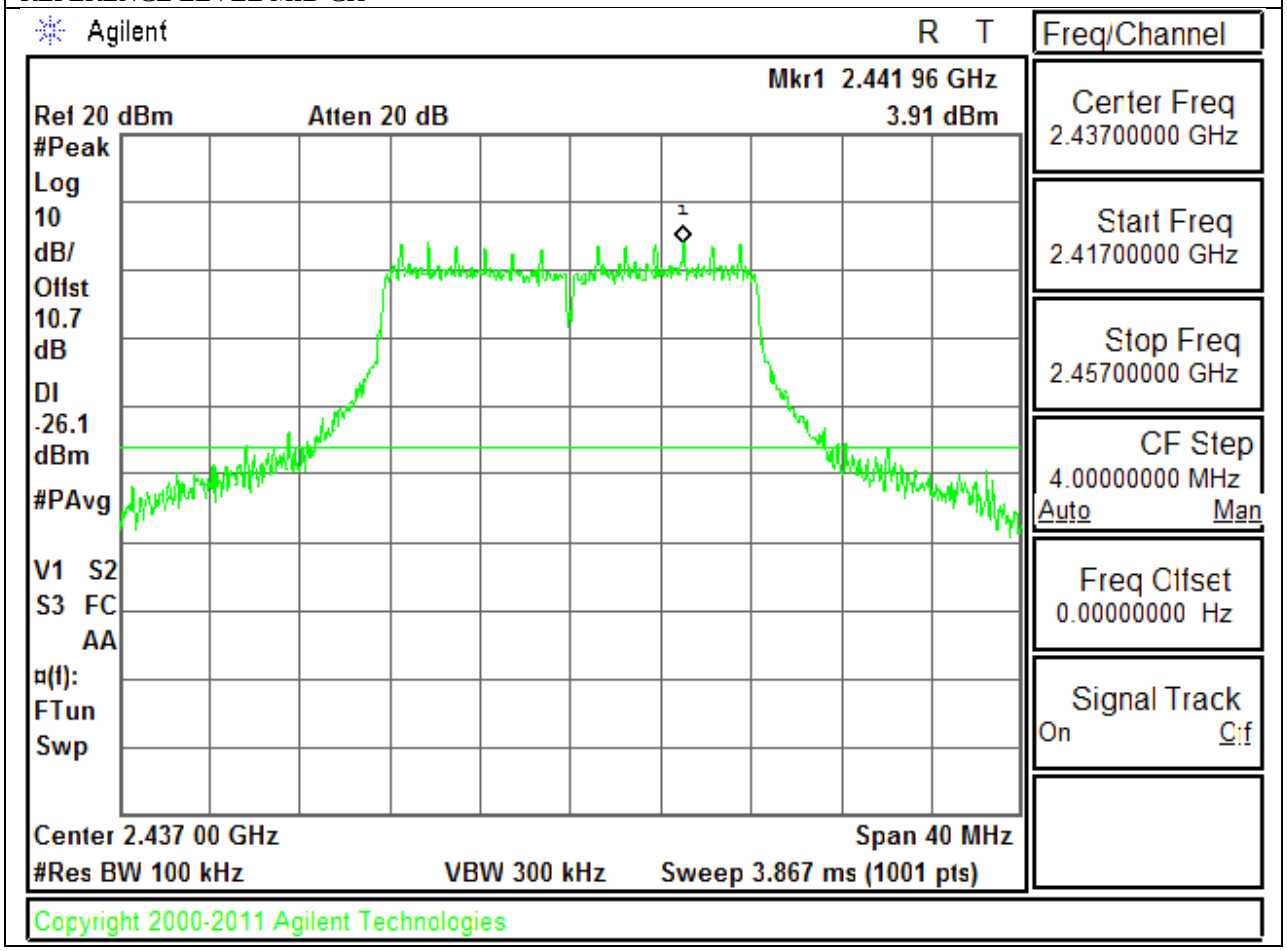
9.5.2. 802.11g MODE IN THE 2.4 GHz BAND

IN-BAND REFERENCE LEVEL

REFERENCE LEVEL MID CH



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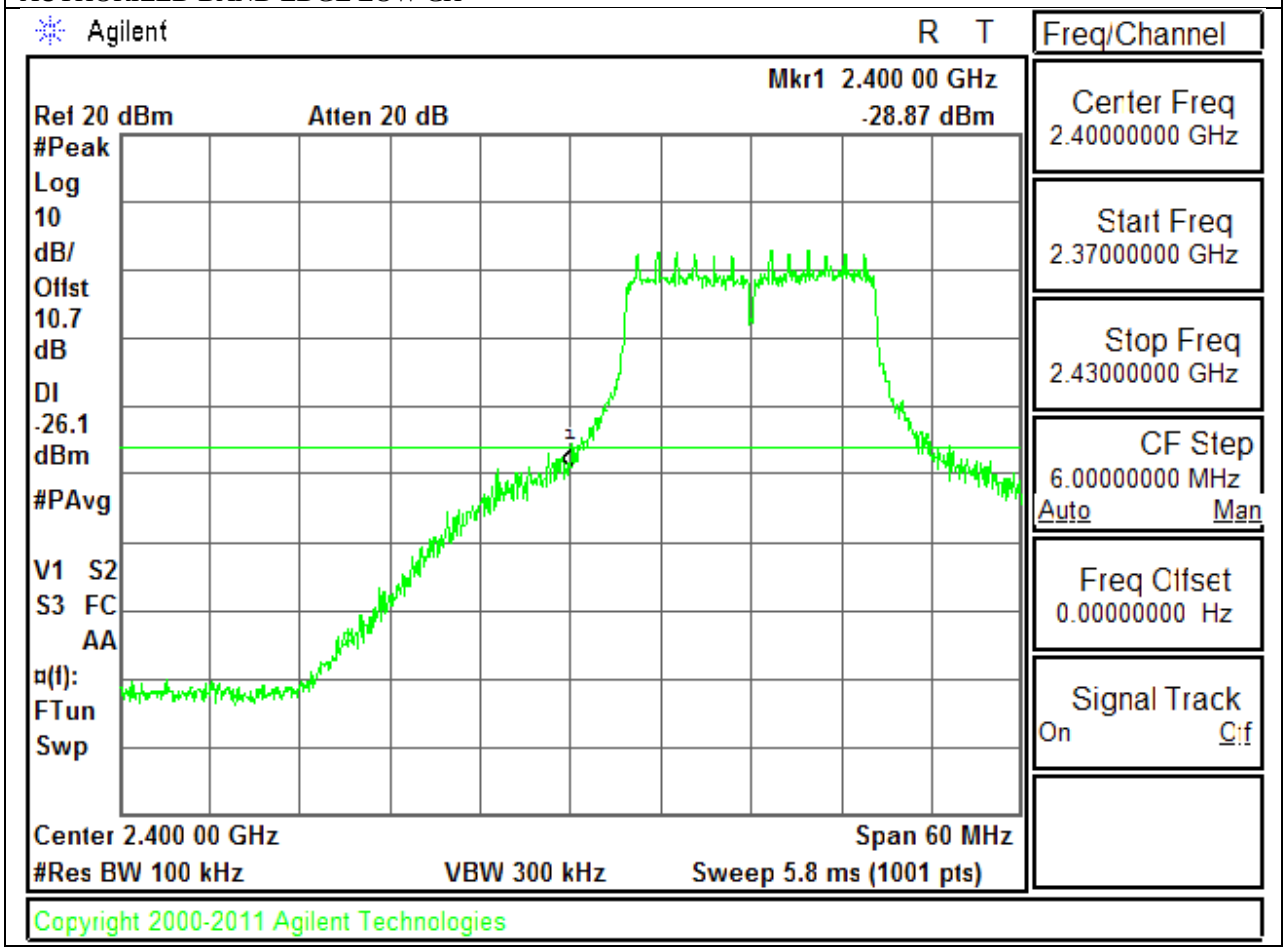
LOW CHANNEL BANDEDGE

AUTHORIZED BAND EDGE LOW CH



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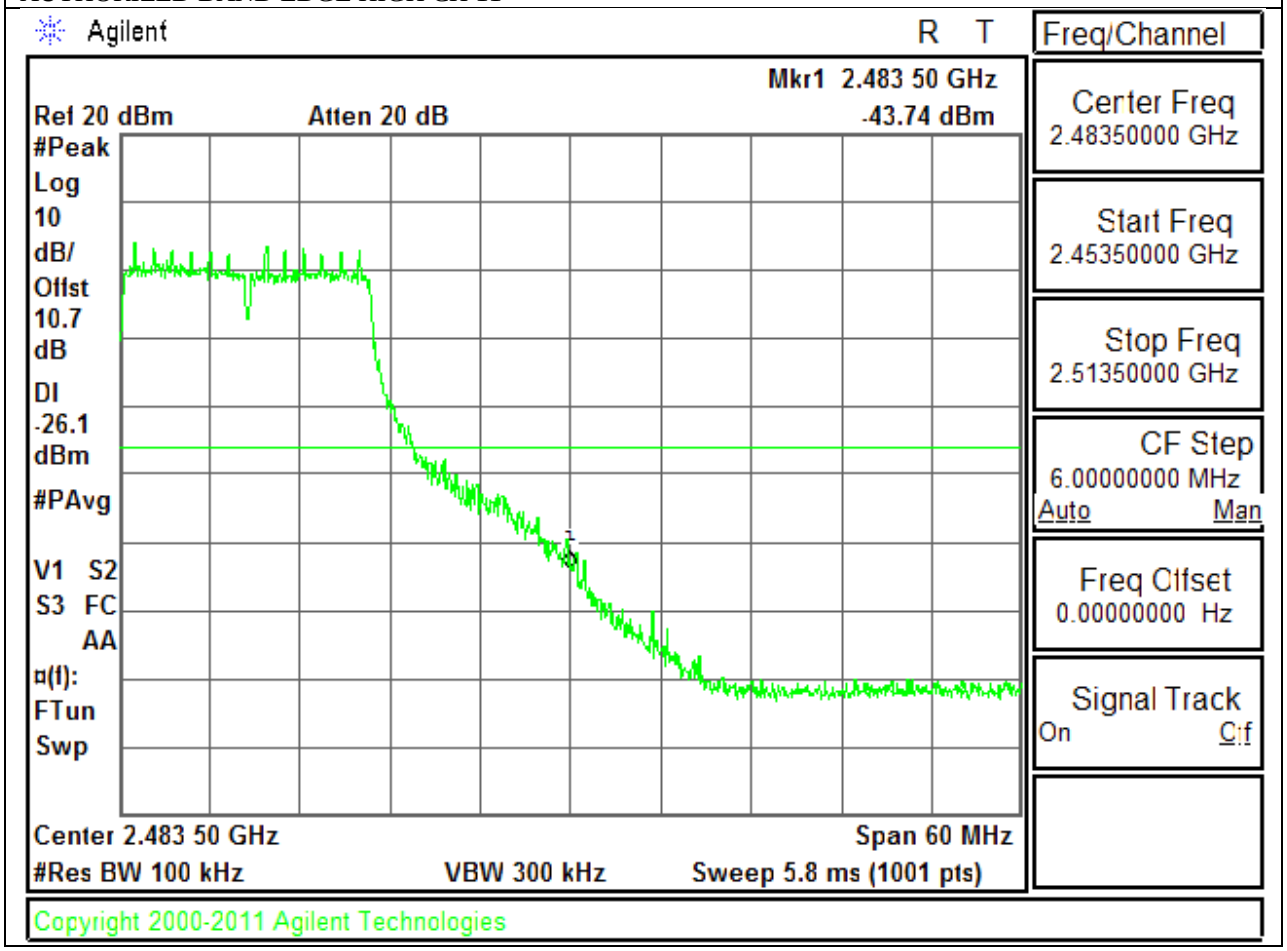
HIGH CHANNEL BANDEDGE

AUTHORIZED BAND EDGE HIGH CH 11



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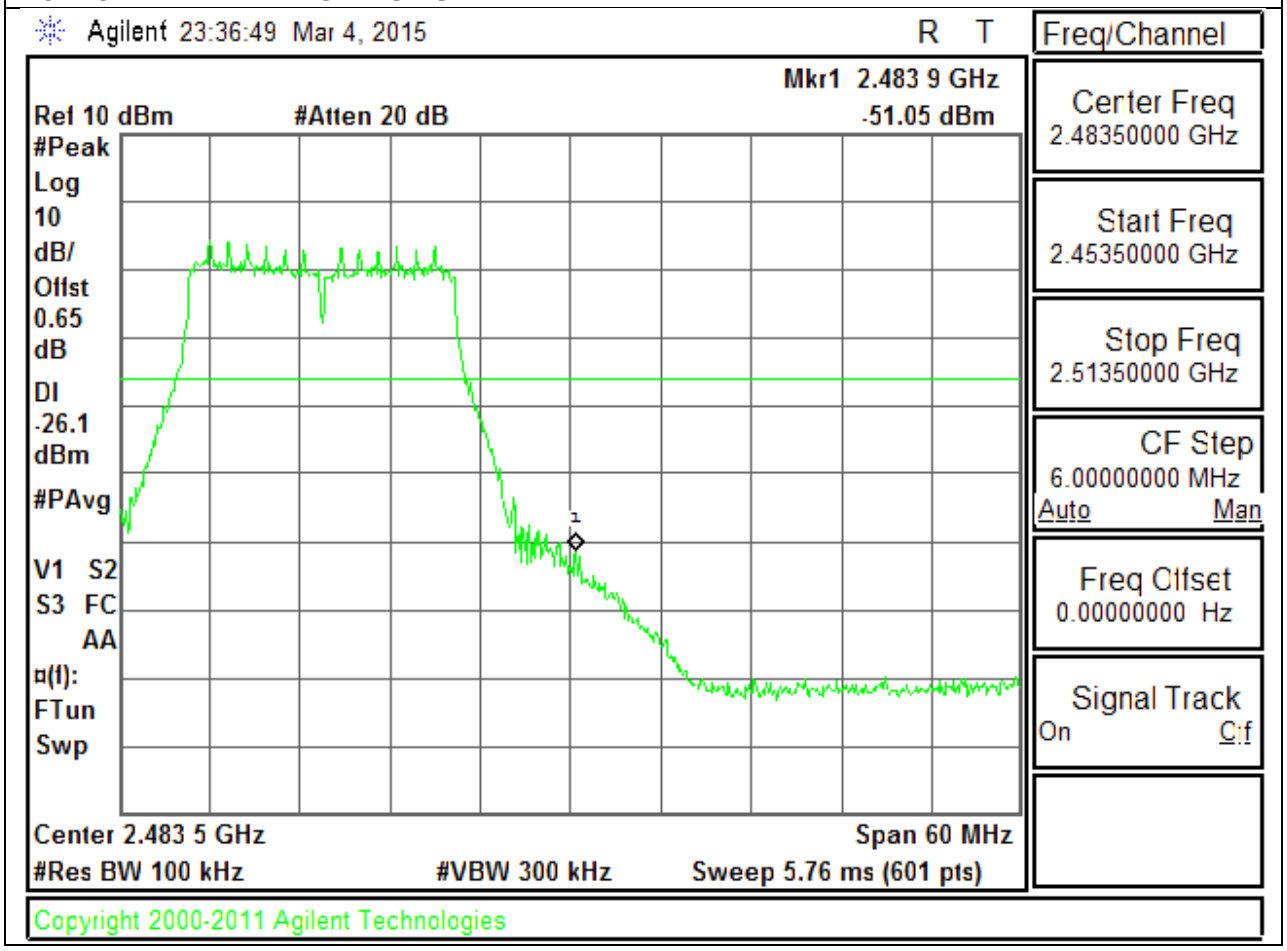
AUTHORIZED BAND EDGE HIGH CH 12



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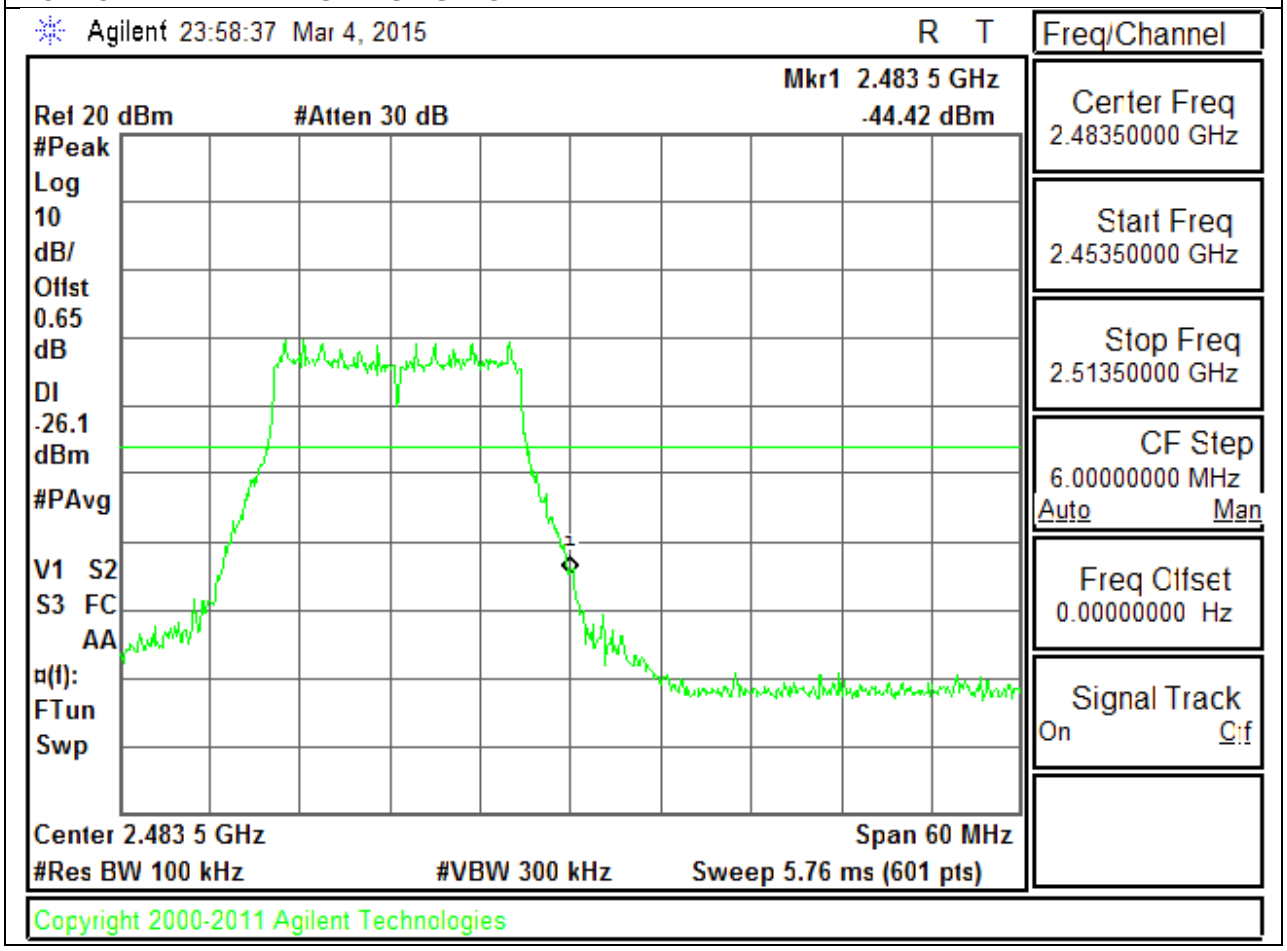
AUTHORIZED BAND EDGE HIGH CH 13



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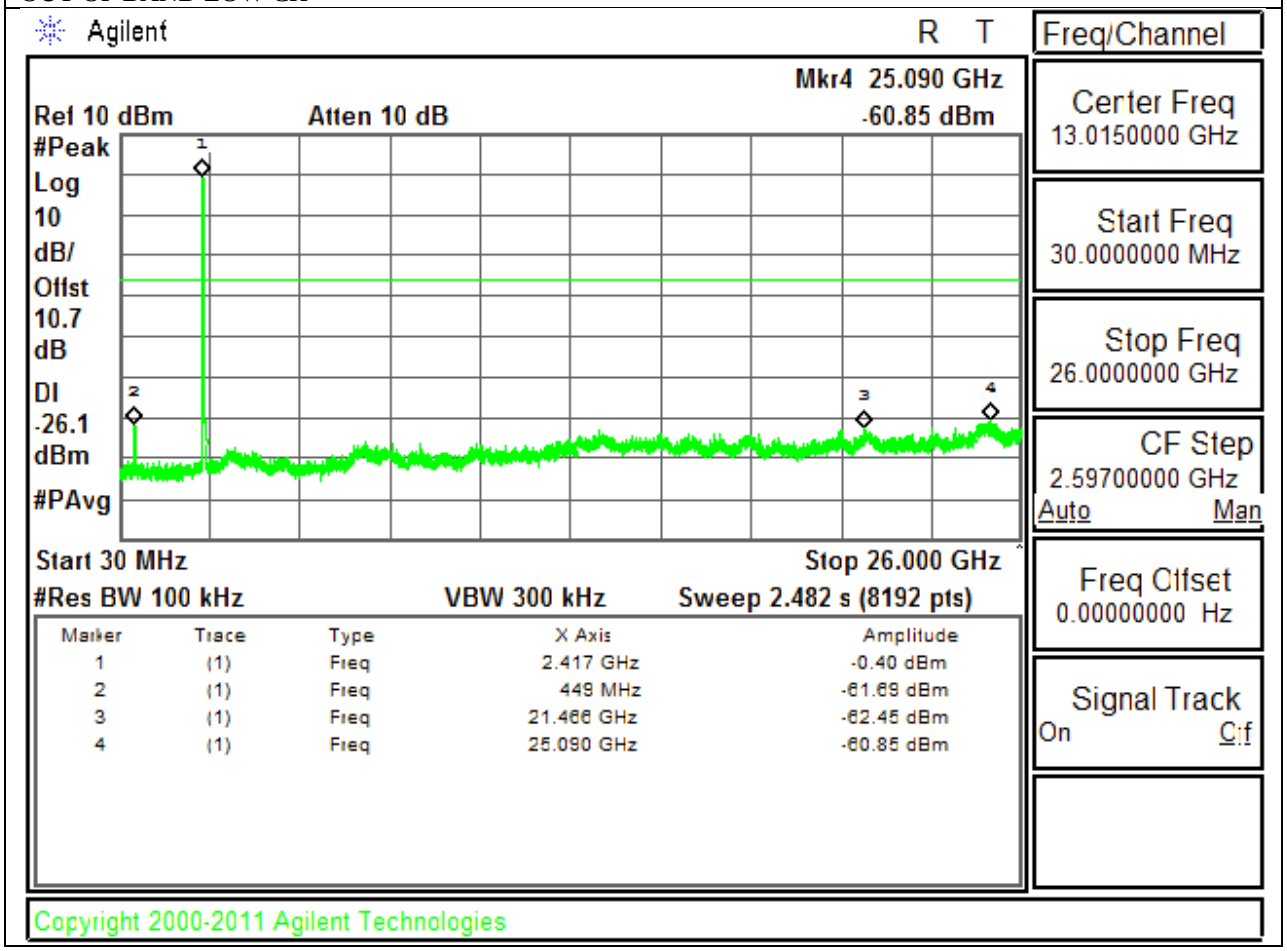
OUT-OF-BAND EMISSIONS

OUT OF BAND LOW CH



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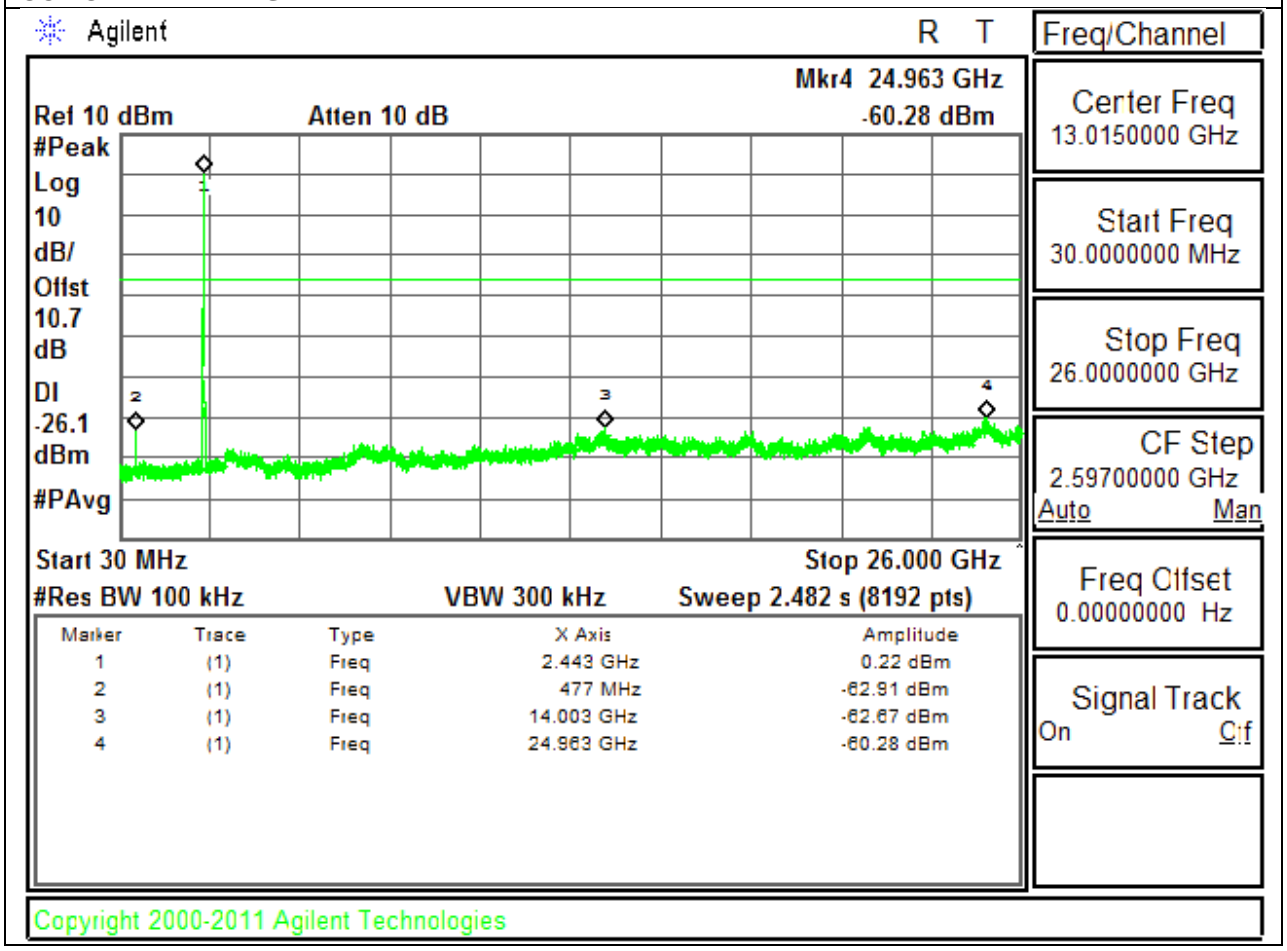
OUT OF BAND MID CH



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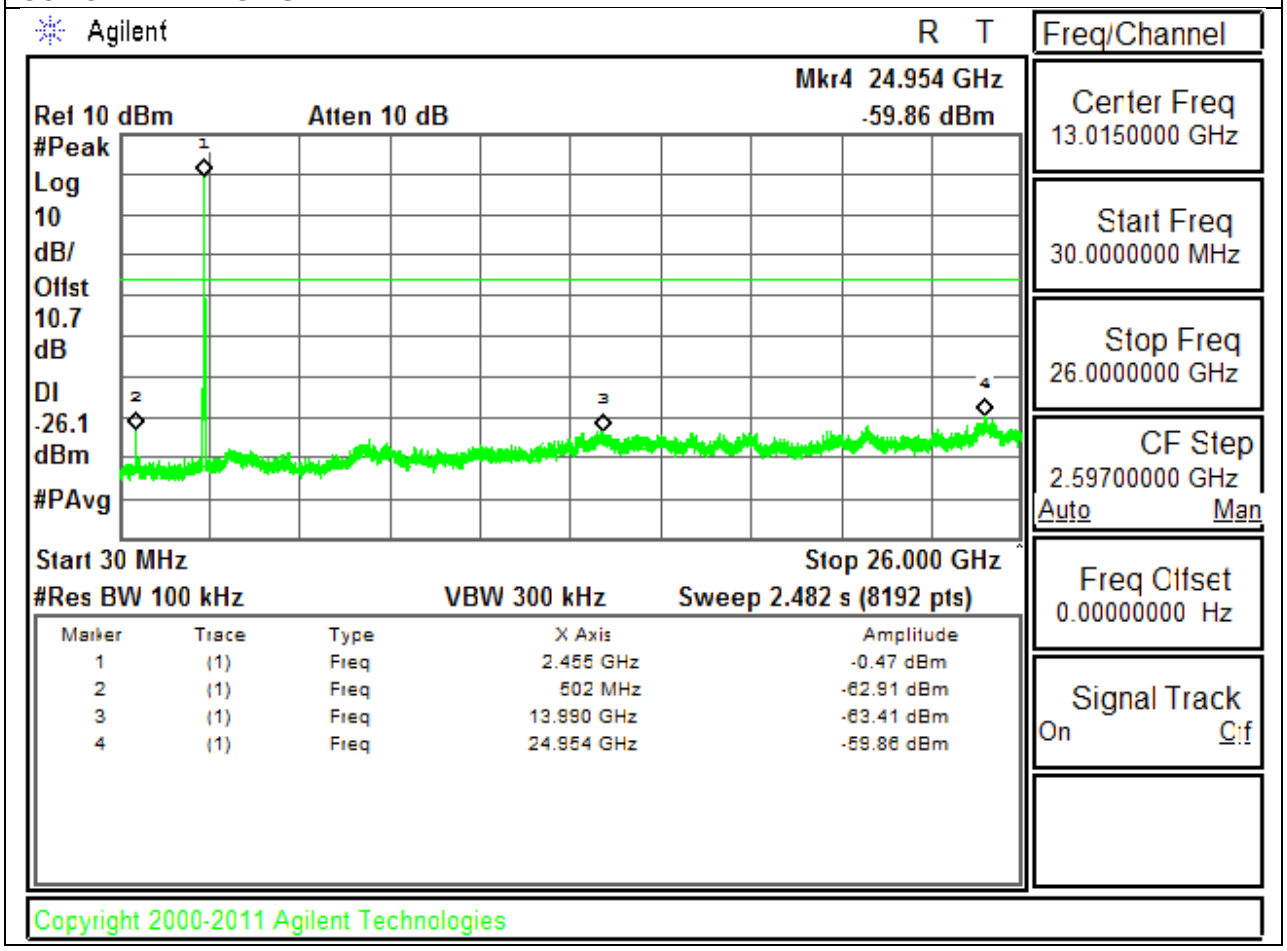
OUT OF BAND HIGH CH 11



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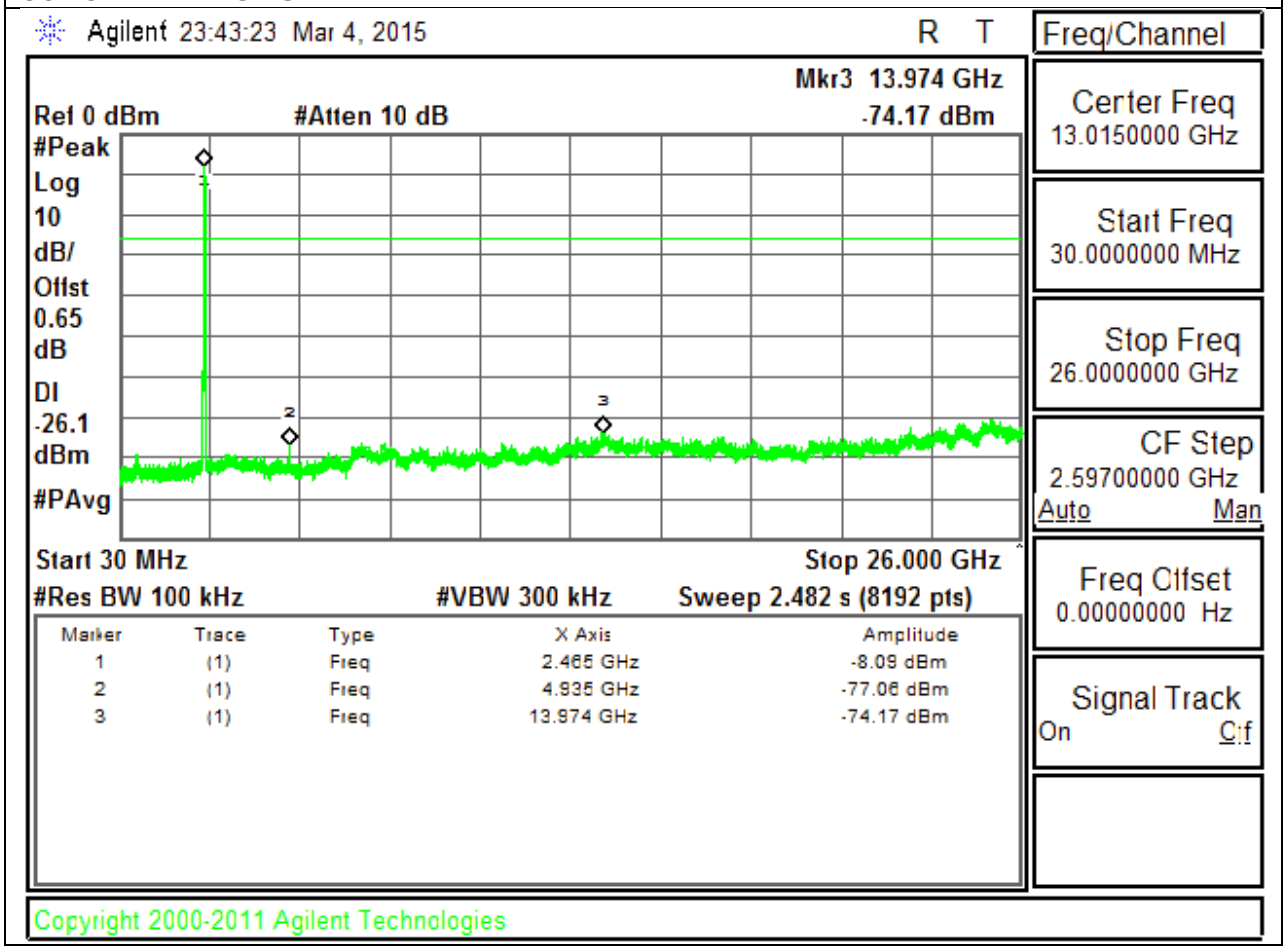
OUT OF BAND HIGH CH 12



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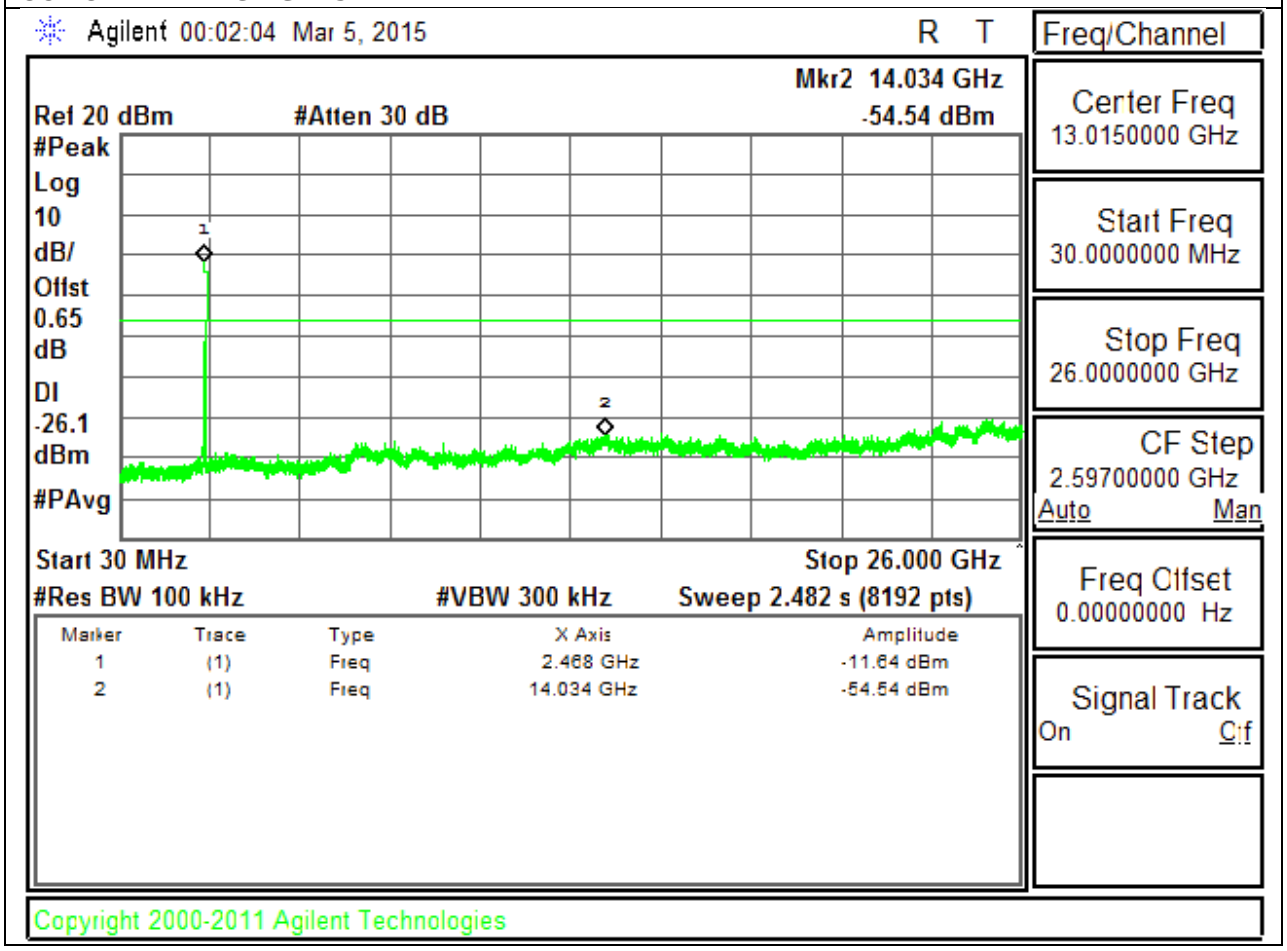
OUT OF BAND HIGH CH 13



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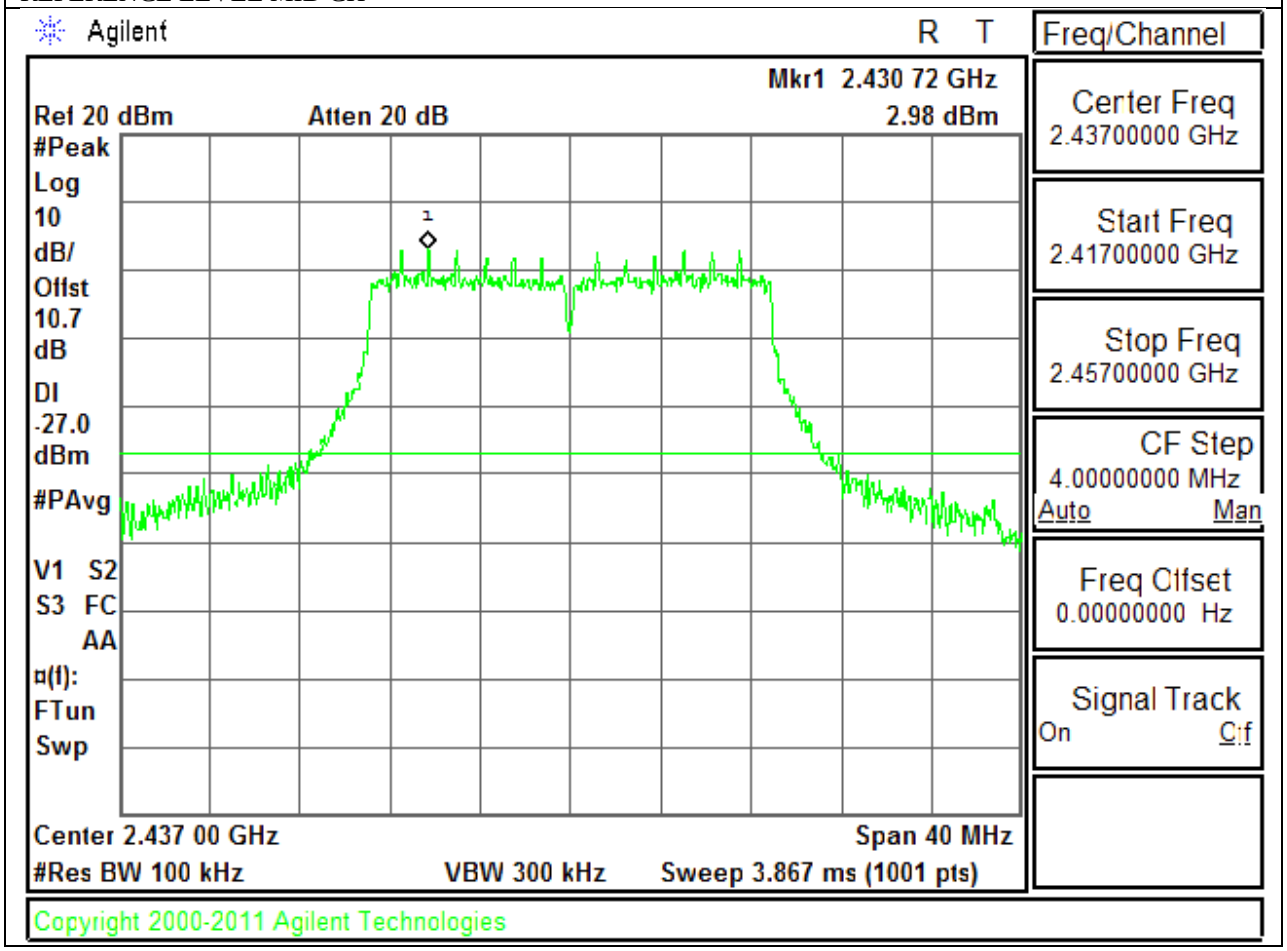
9.5.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

IN-BAND REFERENCE LEVEL

REFERENCE LEVEL MID CH



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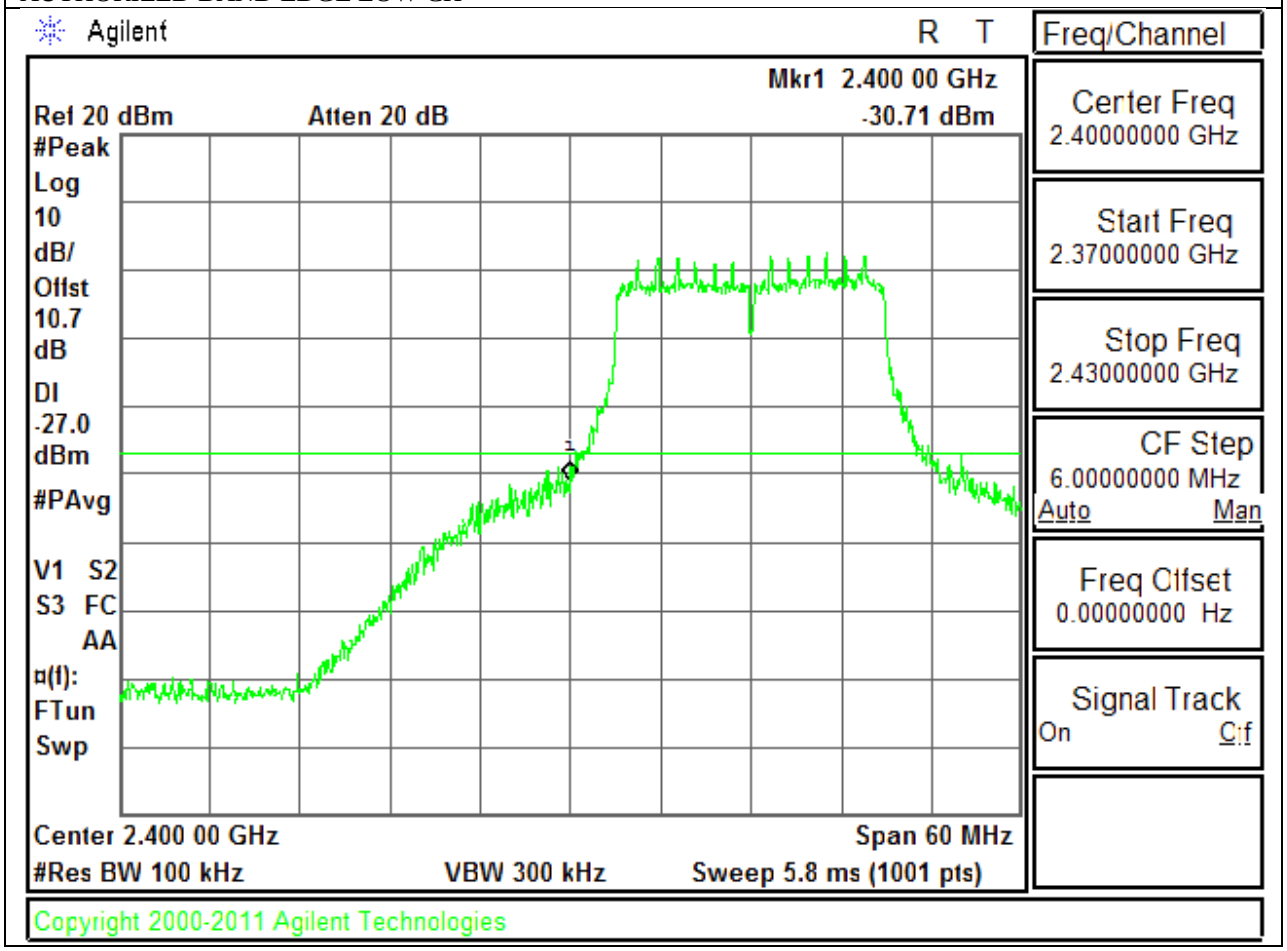
LOW CHANNEL BANDEDGE

AUTHORIZED BAND EDGE LOW CH



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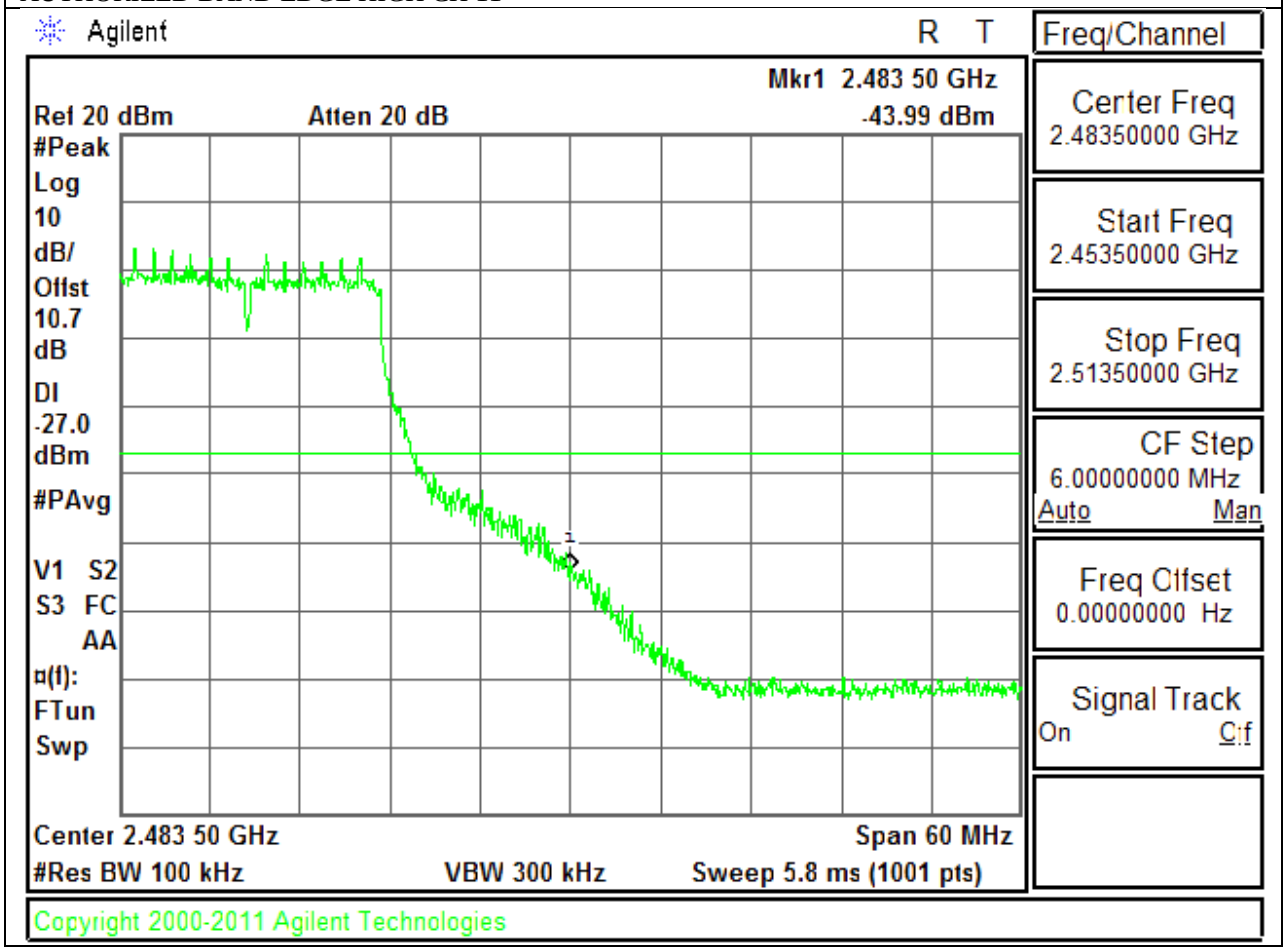
HIGH CHANNEL BANDEDGE

AUTHORIZED BAND EDGE HIGH CH 11



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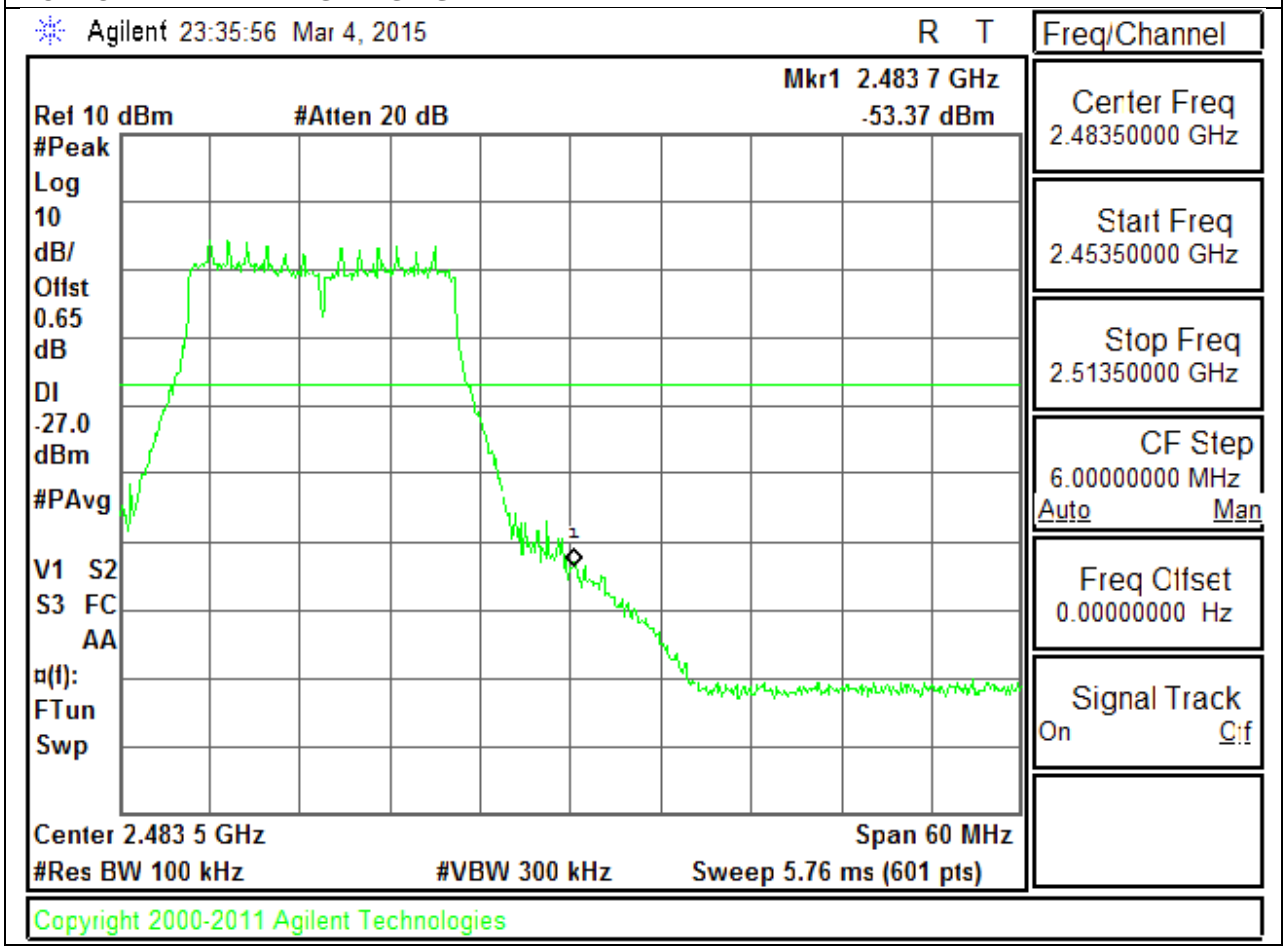
AUTHORIZED BAND EDGE HIGH CH 12



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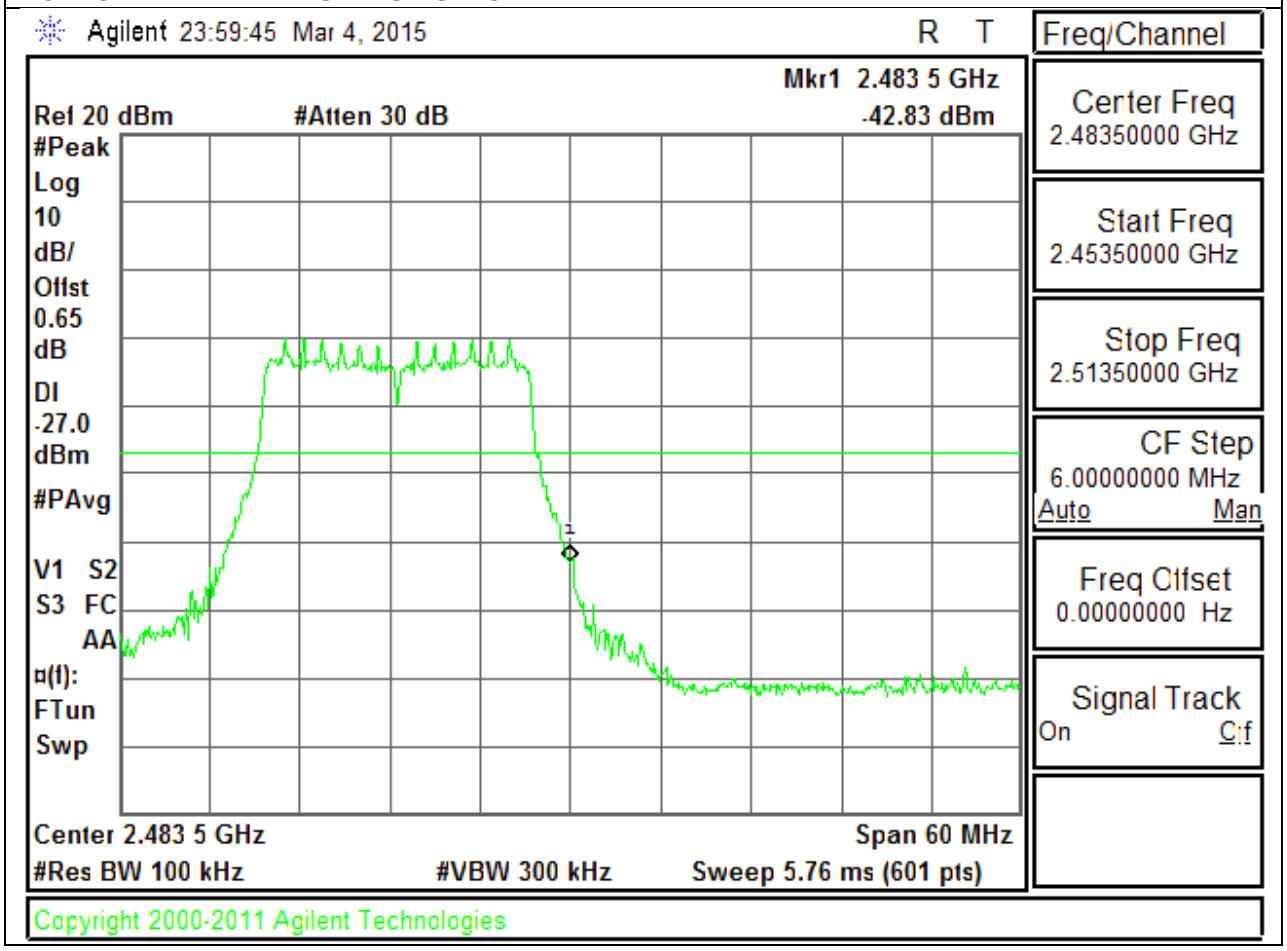
AUTHORIZED BAND EDGE HIGH CH 13



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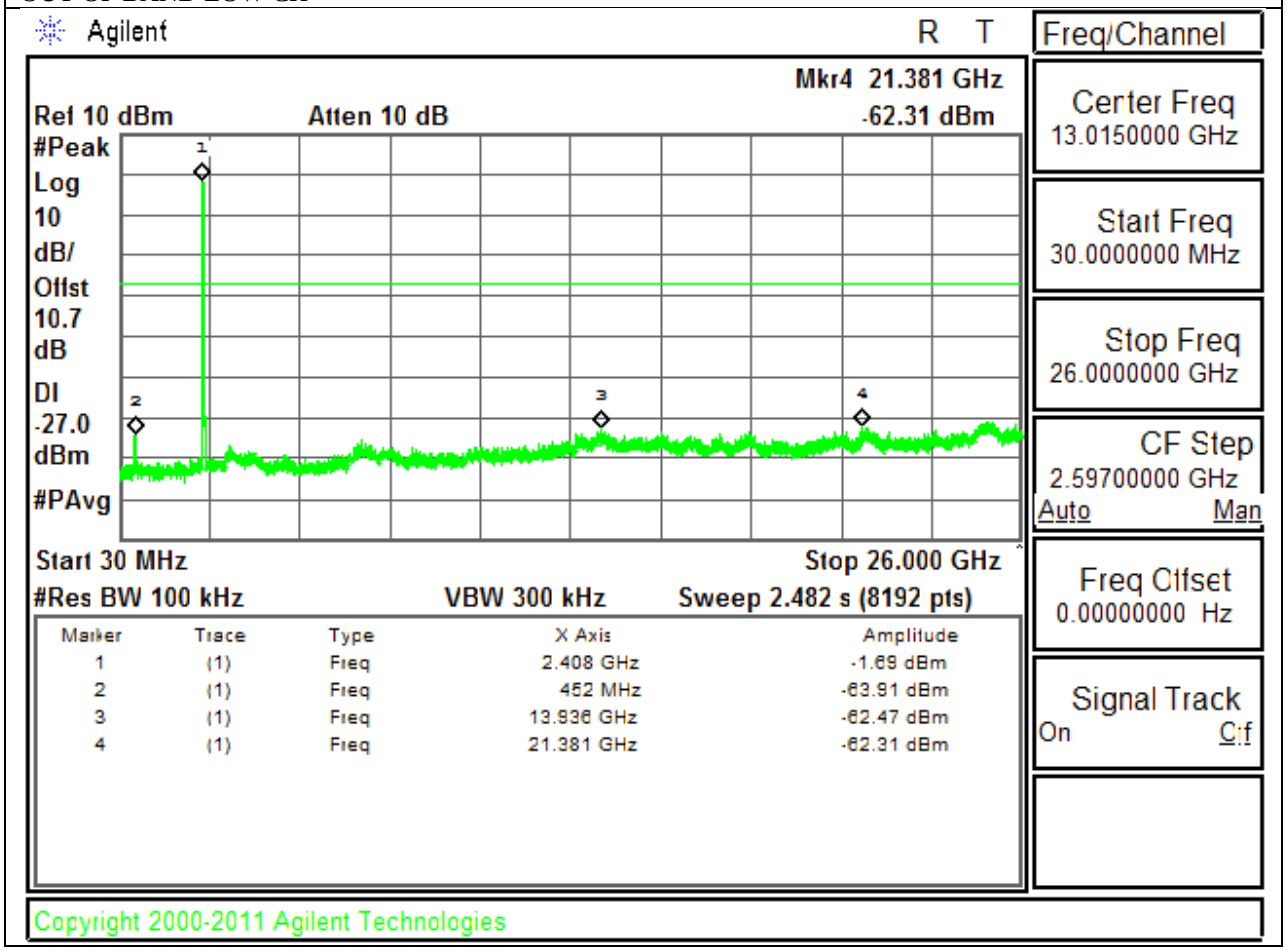
OUT-OF-BAND EMISSIONS

OUT OF BAND LOW CH



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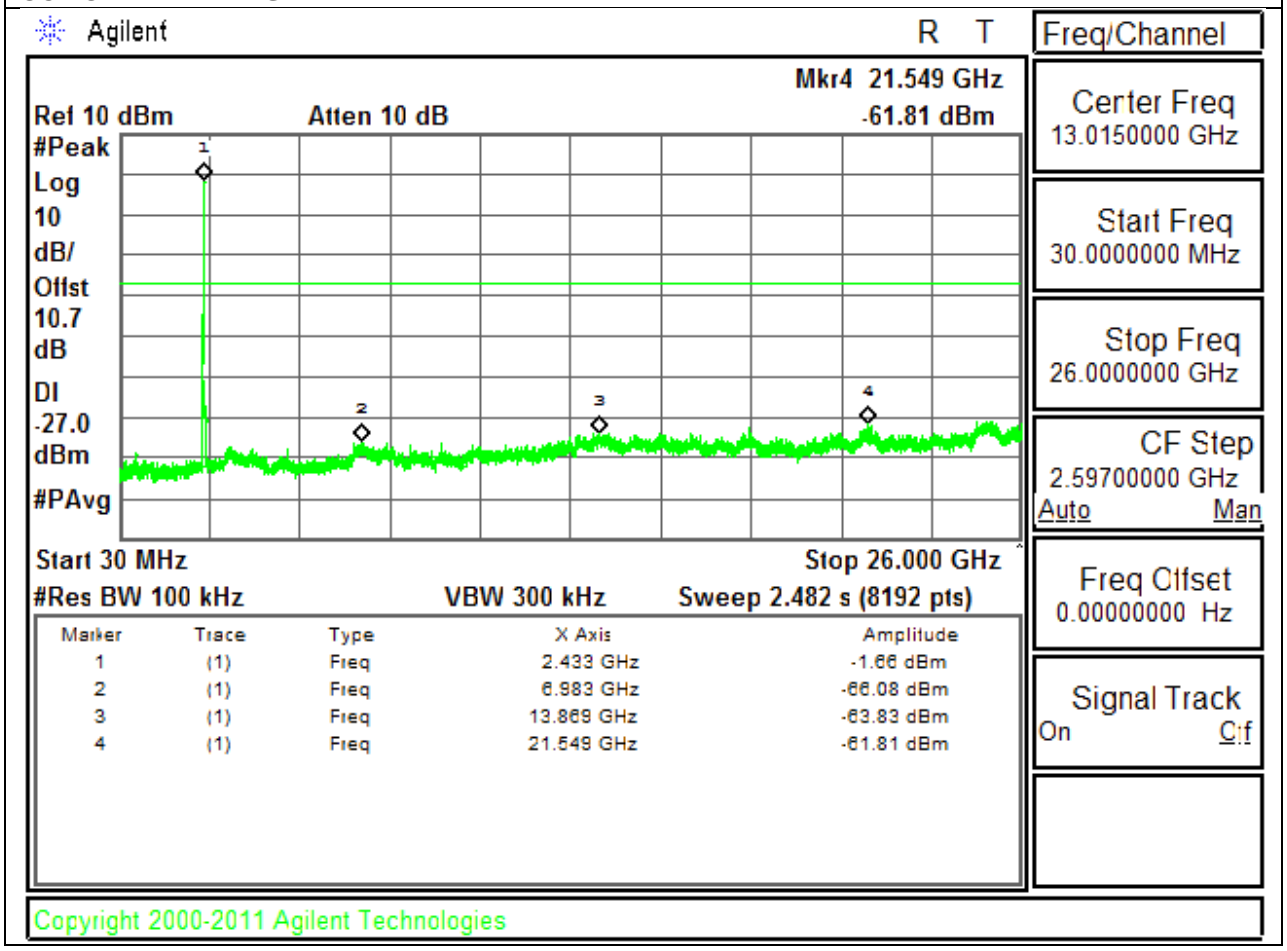
OUT OF BAND MID CH



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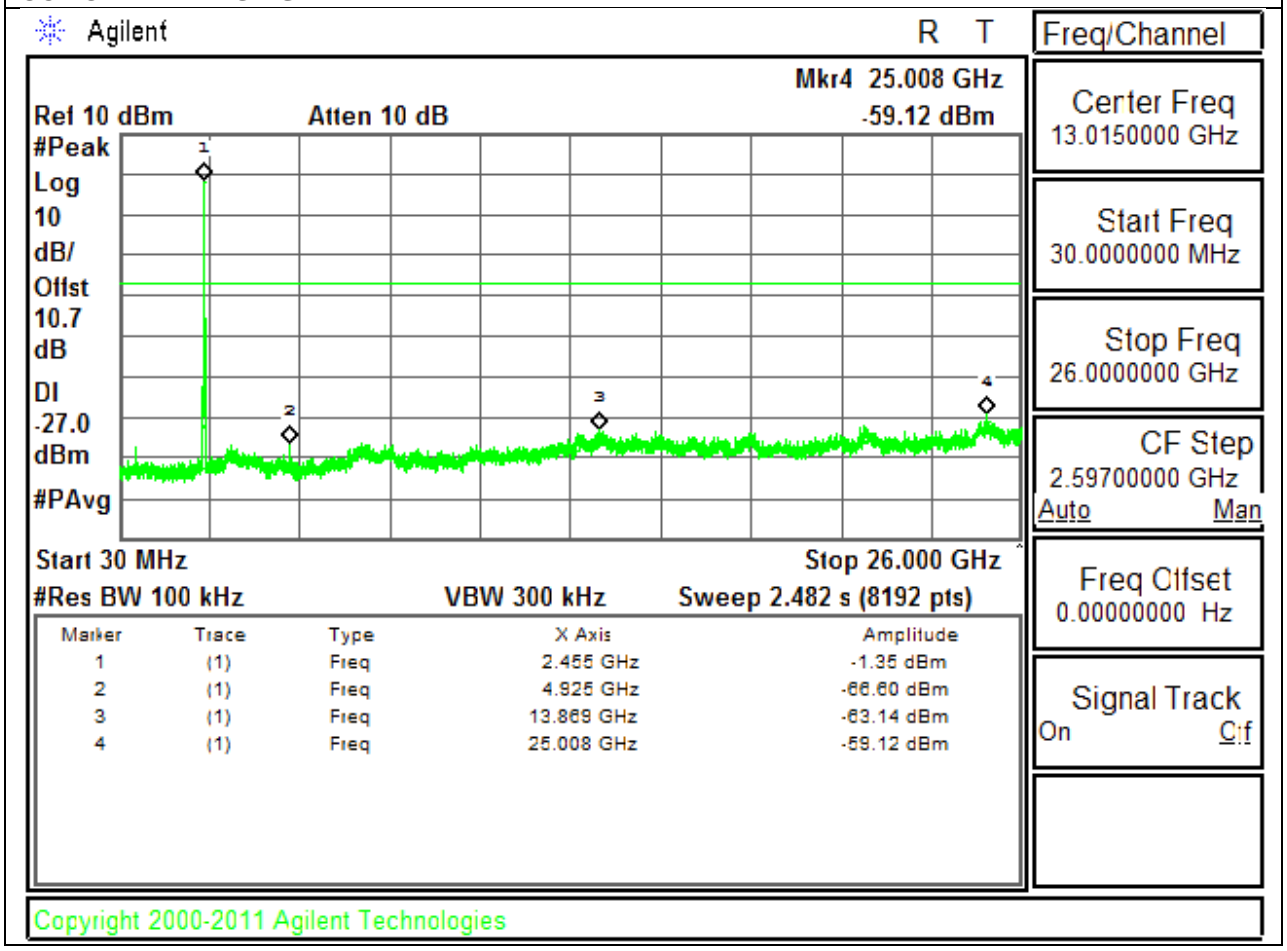
OUT OF BAND HIGH CH 11



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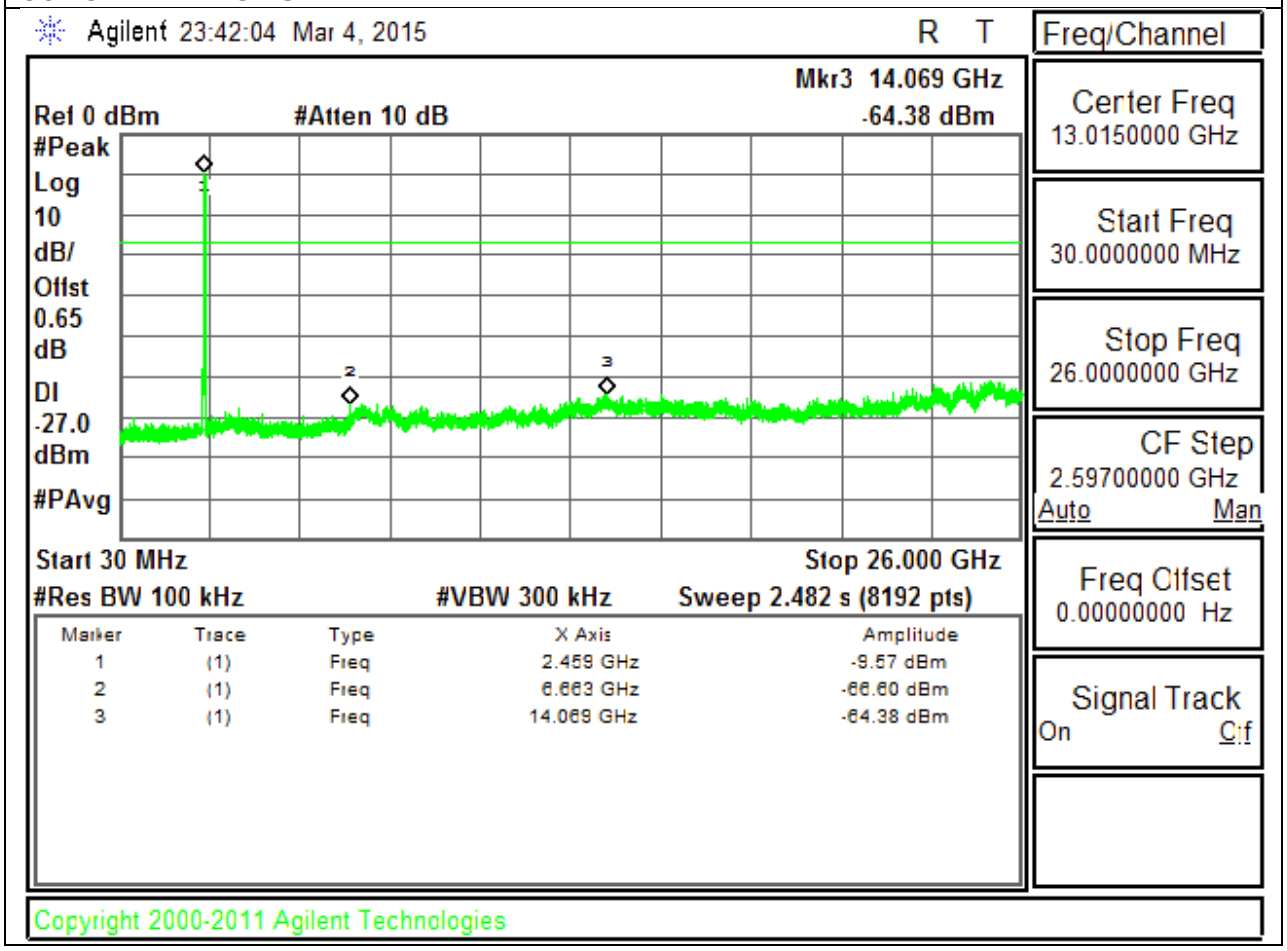
OUT OF BAND HIGH CH 12



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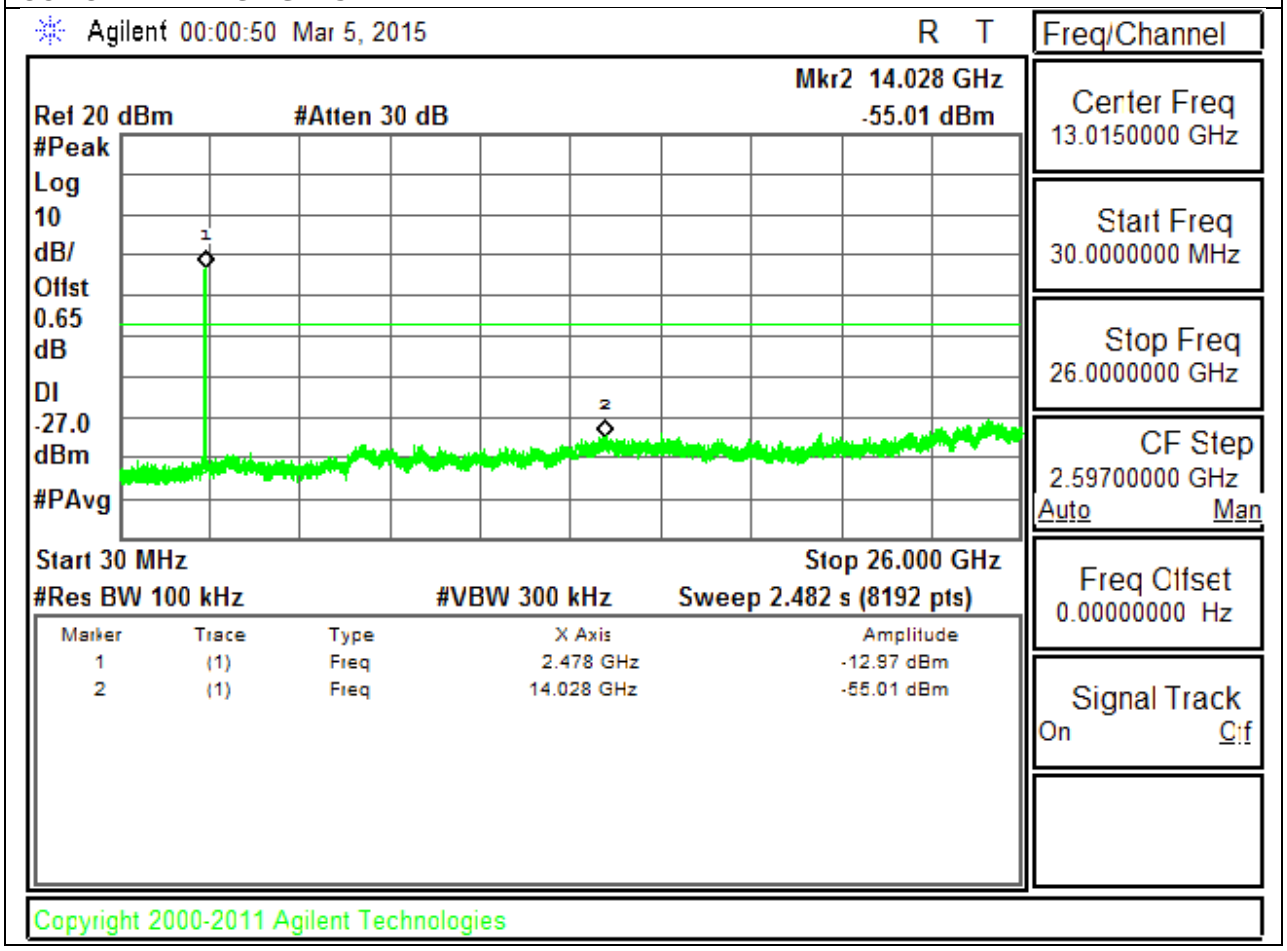
OUT OF BAND HIGH CH 13



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10. RADIATED TEST RESULTS

10.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-GEN Clause 8.9 (Transmitter)

IC RSS-GEN Clause 7 (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.

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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.

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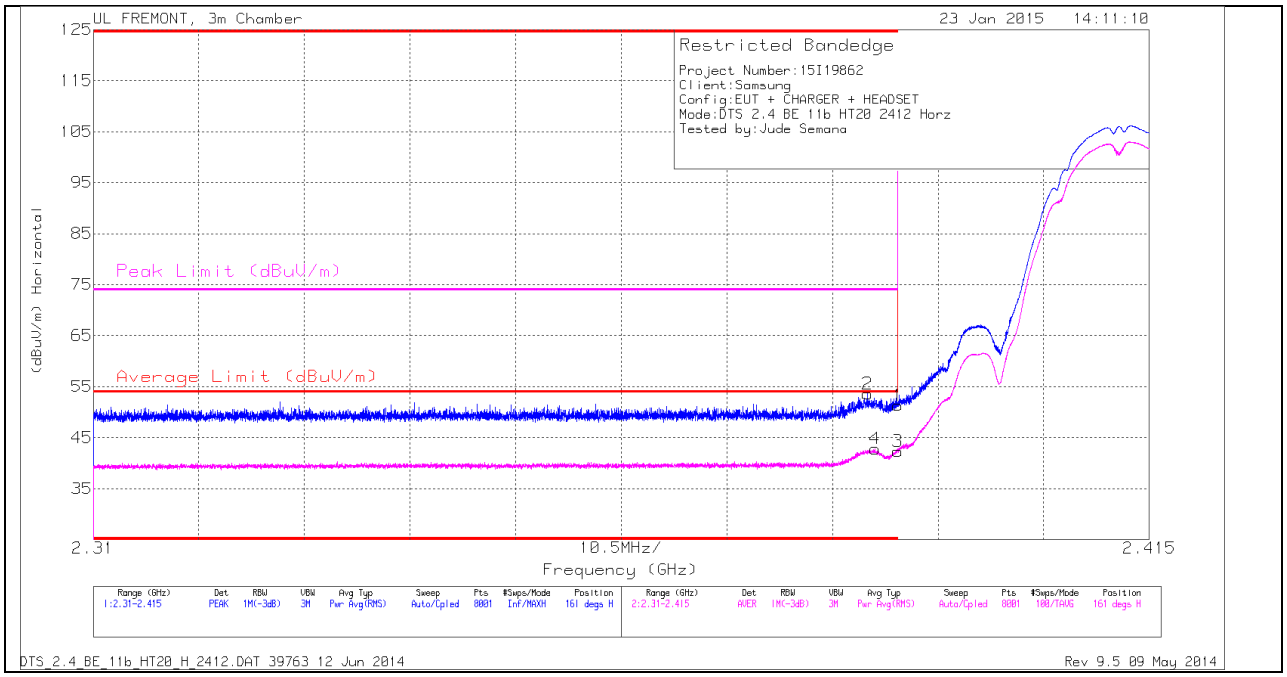
10.2. TRANSMITTER ABOVE 1 GHz

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 T711 (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	* 2.387	44.58	PK	32.1	-23.1	0	53.58	-	-	74	-20.42	161	396	H
4	* 2.388	33.78	RMS	32.1	-23.1	0	42.88	54	-11.12	-	-	161	396	H
1	* 2.39	42.33	PK	32.1	-23.1	0	51.33	-	-	74	-22.67	161	396	H
3	* 2.39	33.26	RMS	32.1	-23.1	0	42.36	54	-11.64	-	-	161	396	H

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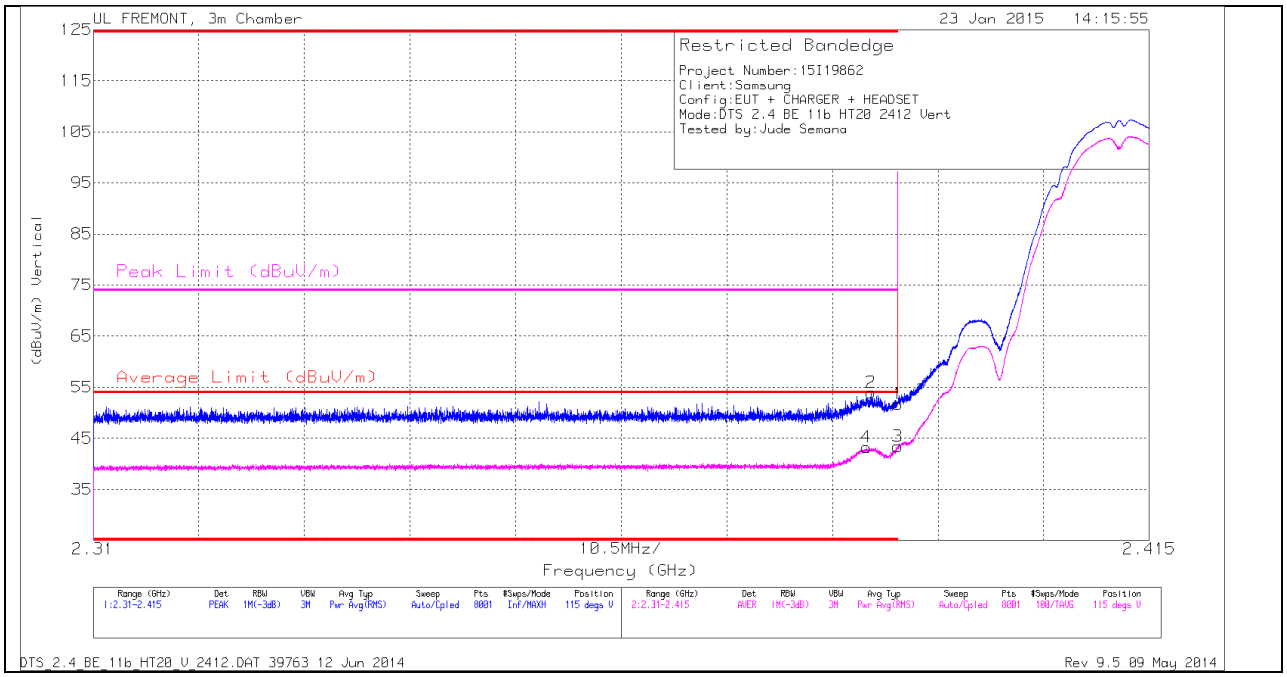
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (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	44.97	PK	32.1	-23.1	0	53.97	-	-	74	-20.03	115	334	V
4	* 2.387	34.19	RMS	32.1	-23.1	0	43.29	54	-10.71	-	-	115	334	V
1	* 2.39	42.74	PK	32.1	-23.1	0	51.74	-	-	74	-22.26	115	334	V
3	* 2.39	34.34	RMS	32.1	-23.1	0	43.44	54	-10.56	-	-	115	334	V

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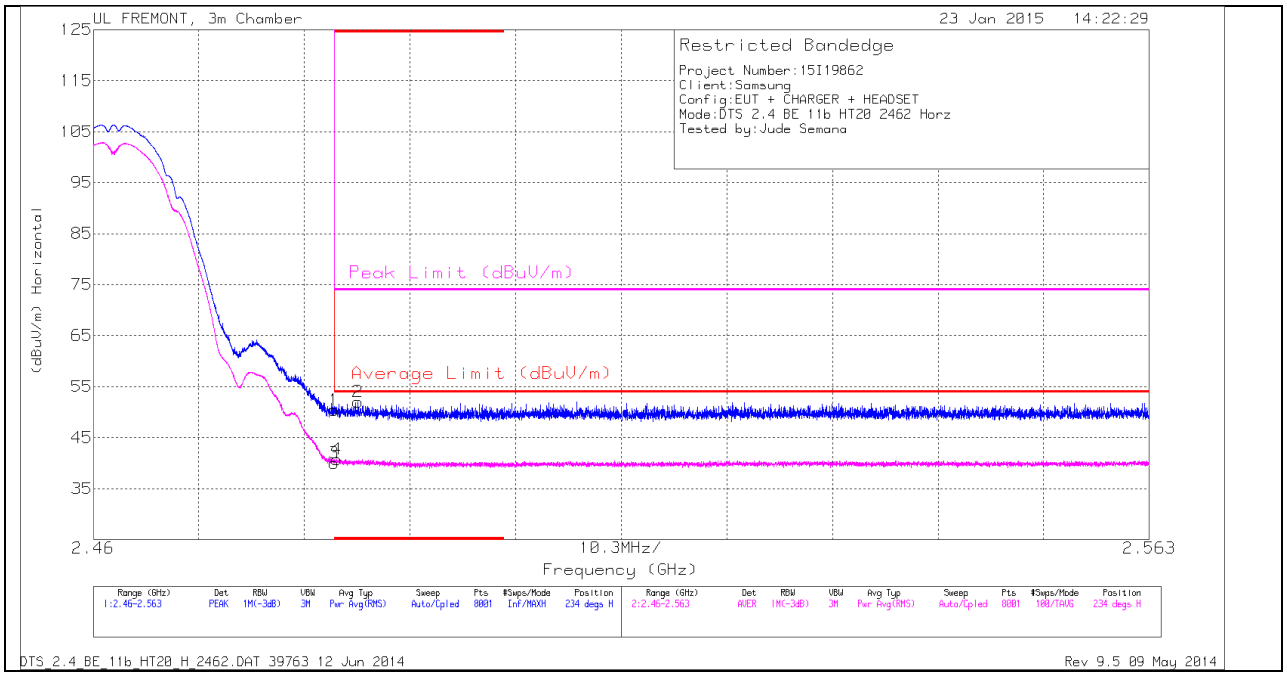
AUTHORIZED BANDEDGE (HIGH CHANNEL 11)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (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	41.07	PK	32.1	-22.8	0	50.37	-	-	74	-23.63	234	337	H
3	* 2.484	30.65	RMS	32.1	-22.8	0	40.05	54	-13.95	-	-	234	337	H
4	* 2.484	31.42	RMS	32.1	-22.8	0	40.82	54	-13.18	-	-	234	337	H
2	* 2.486	42.7	PK	32.1	-22.8	0	52	-	-	74	-22	234	337	H

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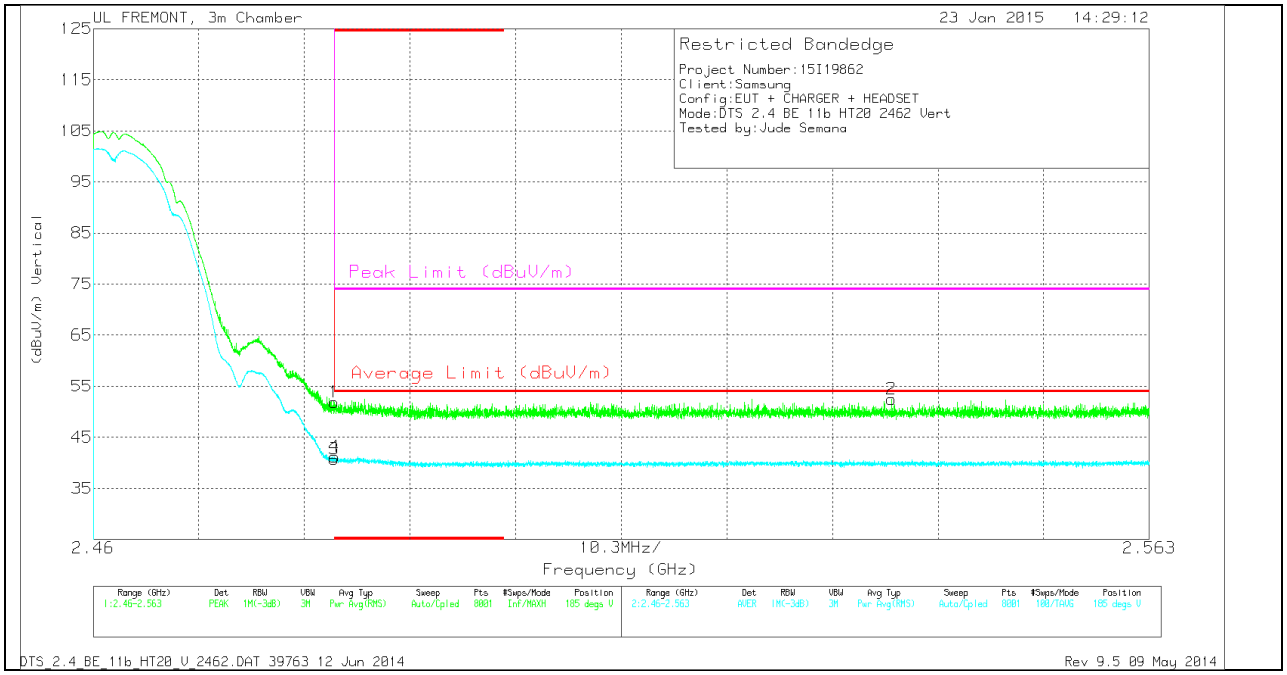
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (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	42.6	PK	32.1	-22.8	0	51.9	-	-	74	-22.1	185	322	V
3	* 2.484	31.36	RMS	32.1	-22.8	0	40.76	54	-13.24	-	-	185	322	V
4	* 2.484	31.84	RMS	32.1	-22.8	0	41.24	54	-12.76	-	-	185	322	V
2	2.538	43	PK	32.2	-22.7	0	52.5	-	-	74	-21.5	185	322	V

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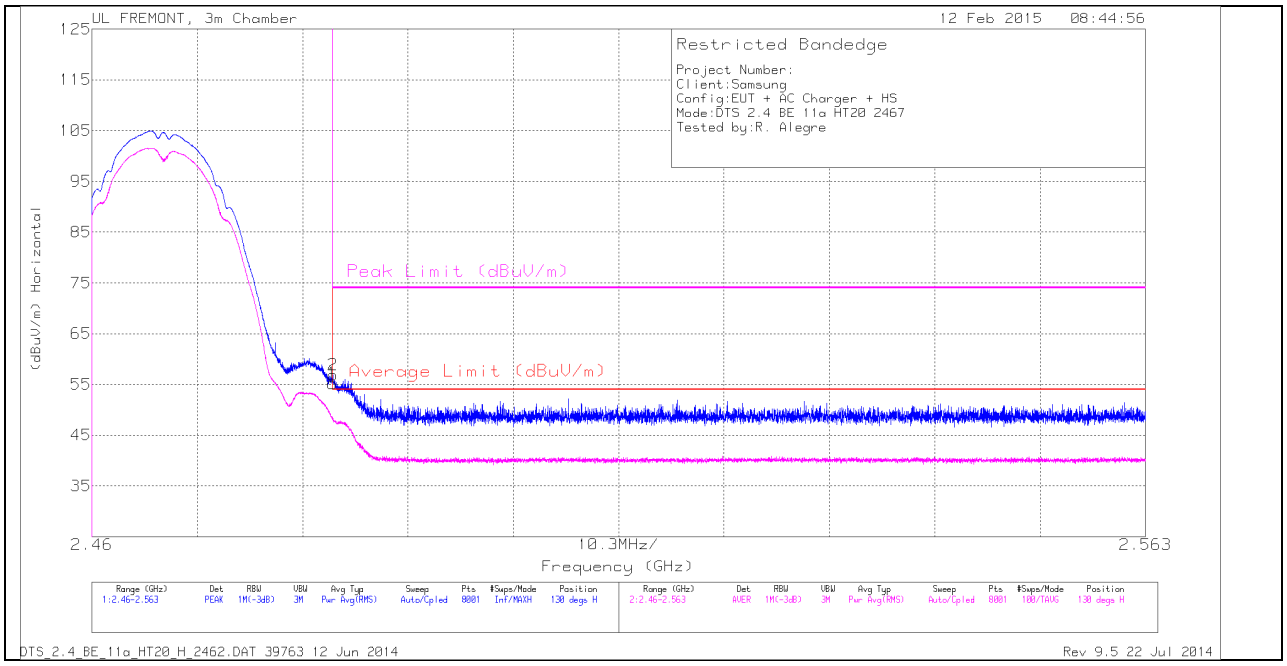
AUTHORIZED BANDEDGE (HIGH CHANNEL 12)



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	45.7	PK	32.3	-22.8	0	55.2	-	-	74	-18.8	130	100	H
2	2.484	47.36	PK	32.3	-22.8	0	56.86	-	-	74	-17.14	130	100	H
3	2.484	38.84	RMS	32.3	-22.8	0	48.34	54	-5.66	-	-	130	100	H
4	2.484	38.8	RMS	32.3	-22.8	0	48.3	54	-5.7	-	-	130	100	H

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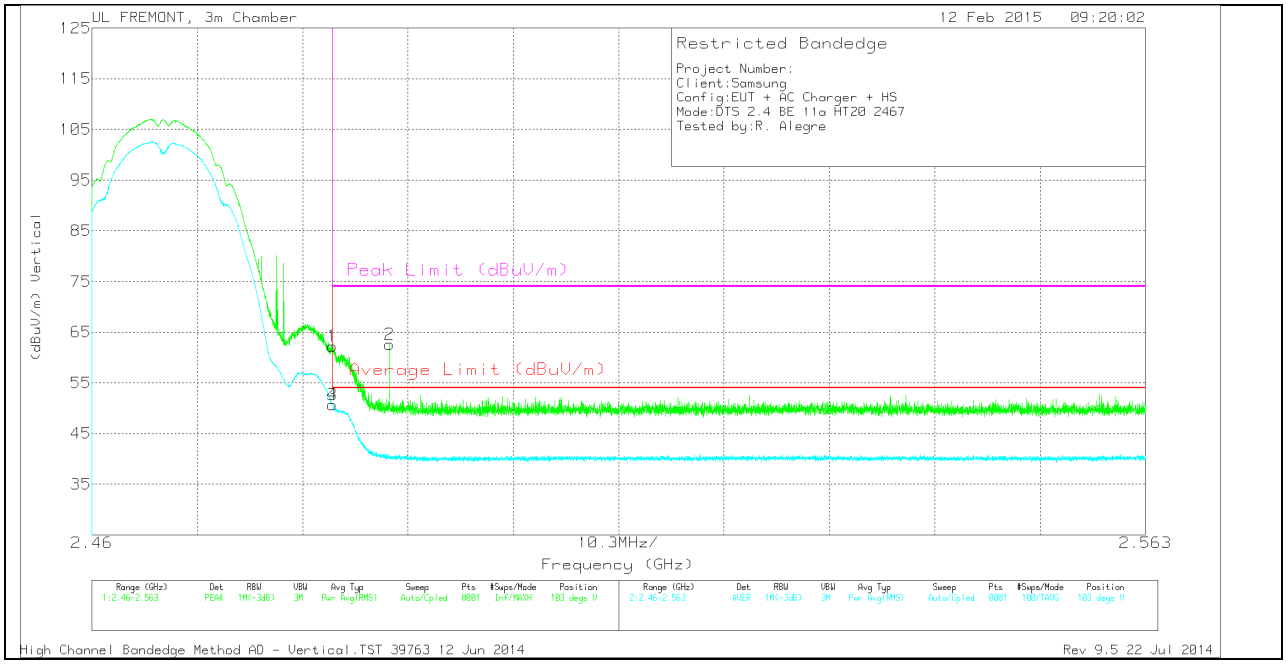
VERTICAL PEAK AND AVERAGE PLOT



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
1	2.484	52.75	PK	32.3	-22.8	0	62.25	-	-	74	-11.75	103	354	V
3	2.484	41.18	RMS	32.3	-22.8	0	50.68	54	-3.32	-	-	103	354	V
4	2.484	41.21	RMS	32.3	-22.8	0	50.71	54	-3.29	-	-	103	354	V
2	2.489	53.06	PK	32.3	-22.8	0	62.56	-	-	74	-11.44	103	354	V

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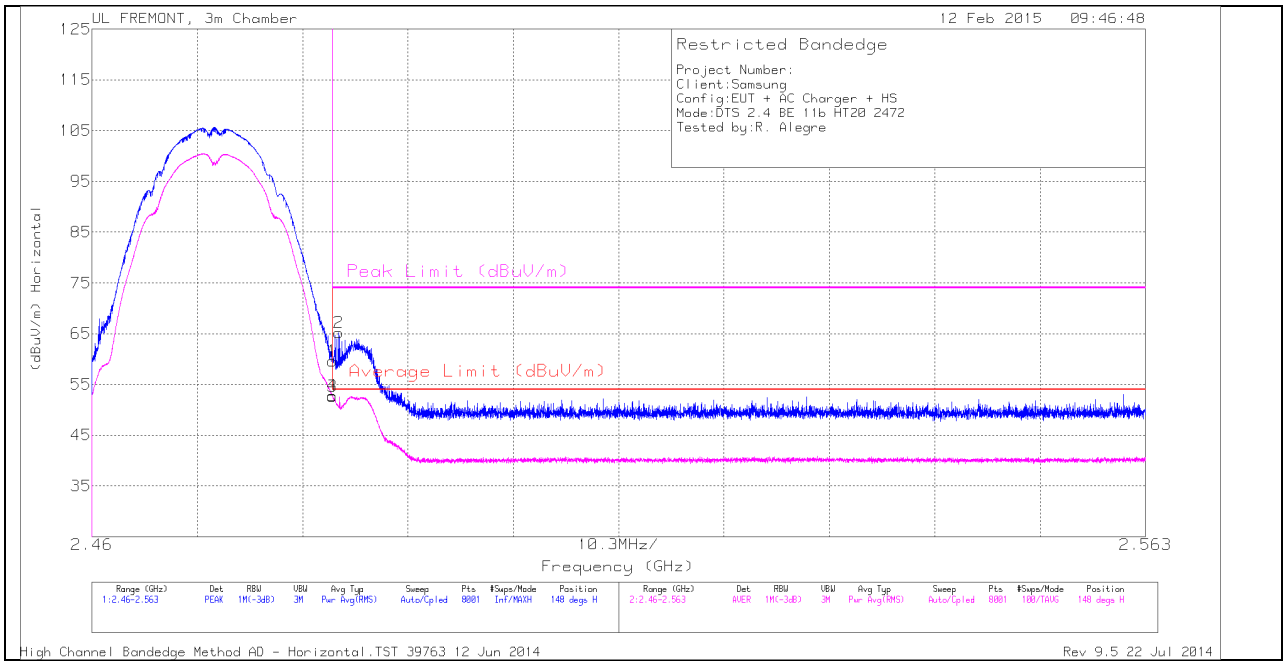
AUTHORIZED BANDEDGE (HIGH CHANNEL 13)



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	50.07	PK	32.3	-22.8	0	59.57	-	-	74	-14.43	148	237	H
2	2.484	55.71	PK	32.3	-22.8	0	65.21	-	-	74	-8.79	148	237	H
3	2.484	43.14	RMS	32.3	-22.8	0	52.64	54	-1.36	-	-	148	237	H
4	2.484	43.24	RMS	32.3	-22.8	0	52.74	54	-1.26	-	-	148	237	H

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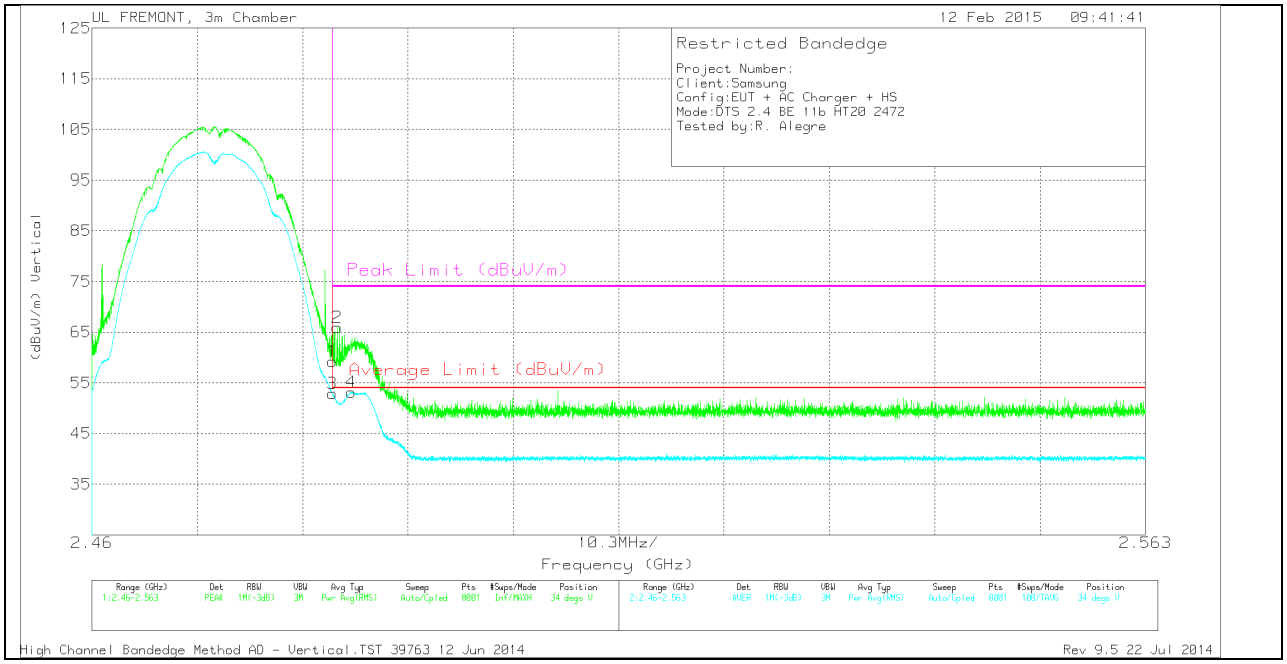
VERTICAL PEAK AND AVERAGE PLOT



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
1	2.484	49.71	PK	32.3	-22.8	0	59.21	-	-	74	-14.79	34	287	V
2	2.484	56.46	PK	32.3	-22.8	0	65.96	-	-	74	-8.04	34	287	V
3	2.484	43.36	RMS	32.3	-22.8	0	52.86	54	-1.14	-	-	34	287	V
4	2.485	43.69	RMS	32.3	-22.8	0	53.19	54	-.81	-	-	34	287	V

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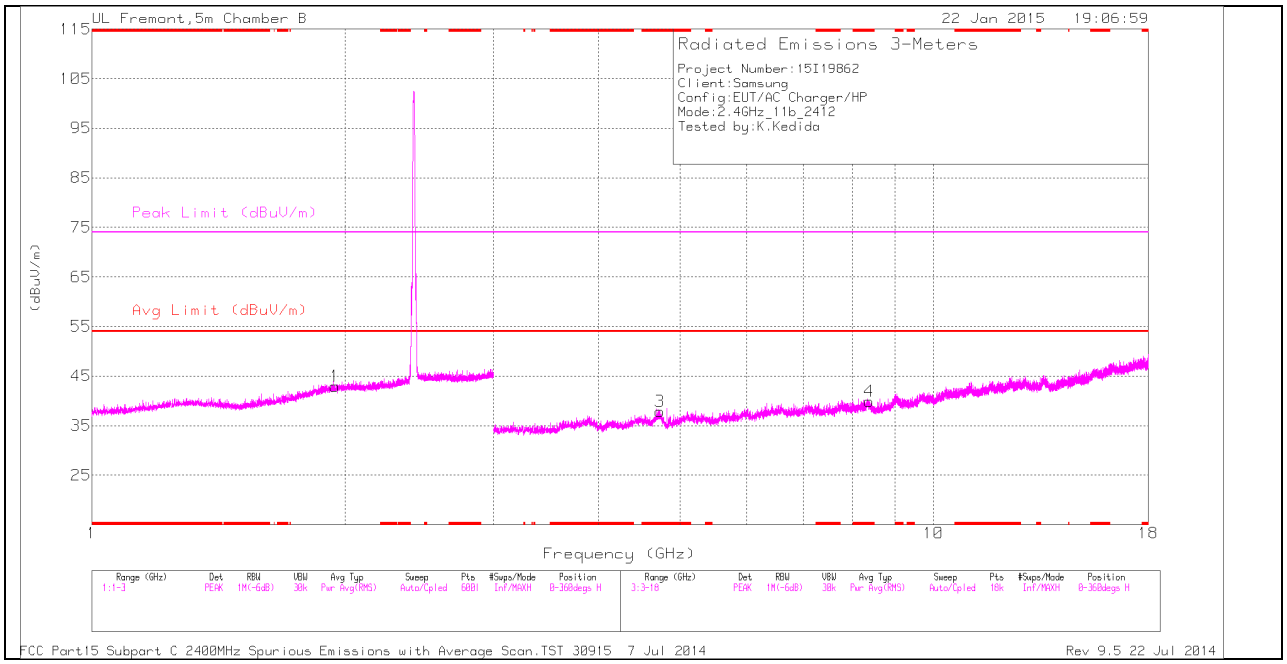
HARMONICS AND SPURIOUS EMISSIONS

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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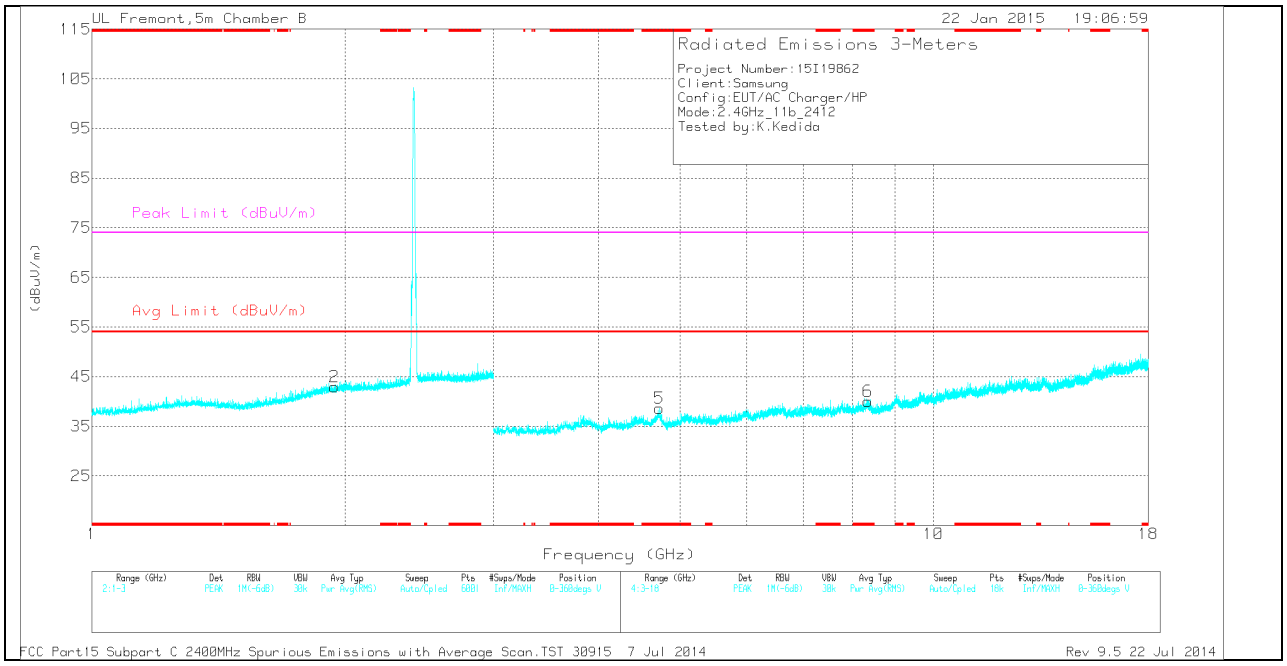
LOW CHANNEL VERTICAL



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 T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 4.733	32.74	PK	34.2	-29.1	37.84	-	-	74	-36.16	0-360	101	H
4	* 8.391	29.31	PK	35.8	-25.2	39.91	-	-	74	-34.09	0-360	101	H
5	* 4.724	33.55	PK	34.2	-29.1	38.65	-	-	74	-35.35	0-360	199	V
6	* 8.352	29.36	PK	35.7	-25	40.06	-	-	74	-33.94	0-360	101	V
2	1.943	34.97	PK	31.2	-23.2	42.97	-	-	-	-	0-360	199	V
1	1.944	34.95	PK	31.2	-23.2	42.95	-	-	-	-	0-360	199	H

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.732	40.66	PK2	34.2	-29.1	45.76	-	-	74	-28.24	359	102	H
* 4.732	29.9	MAv1	34.2	-29.1	35	54	-19	-	-	359	102	H

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

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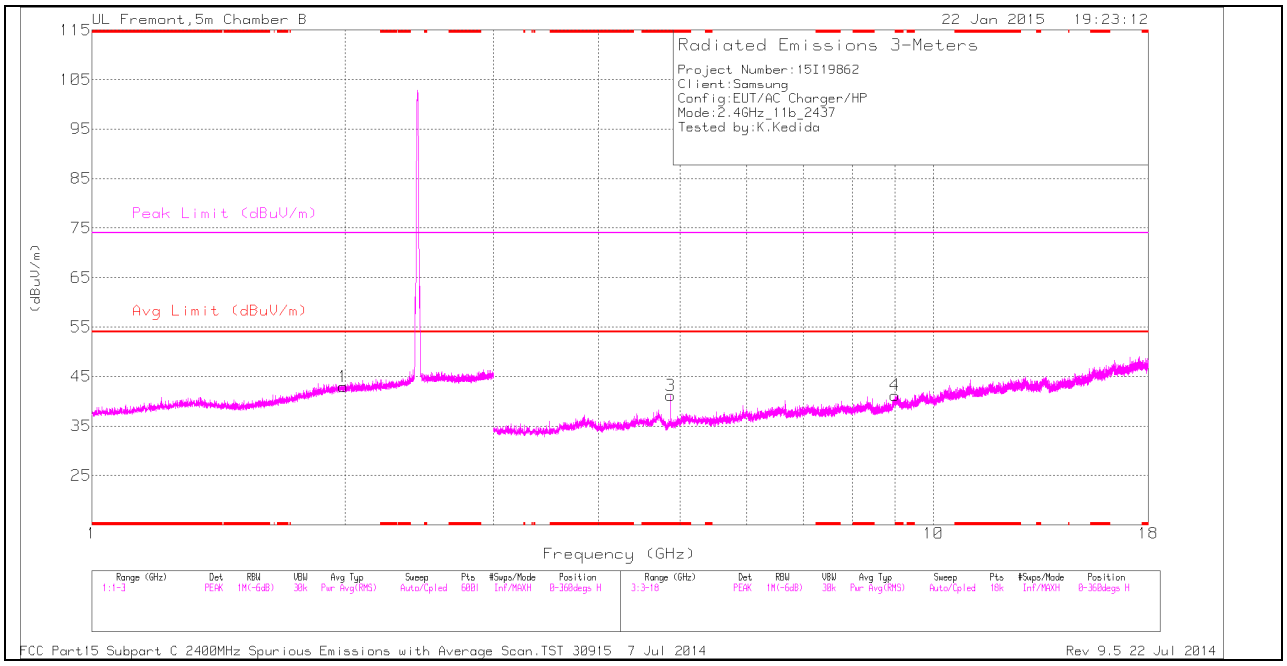
MID CHANNEL HORIZONTAL



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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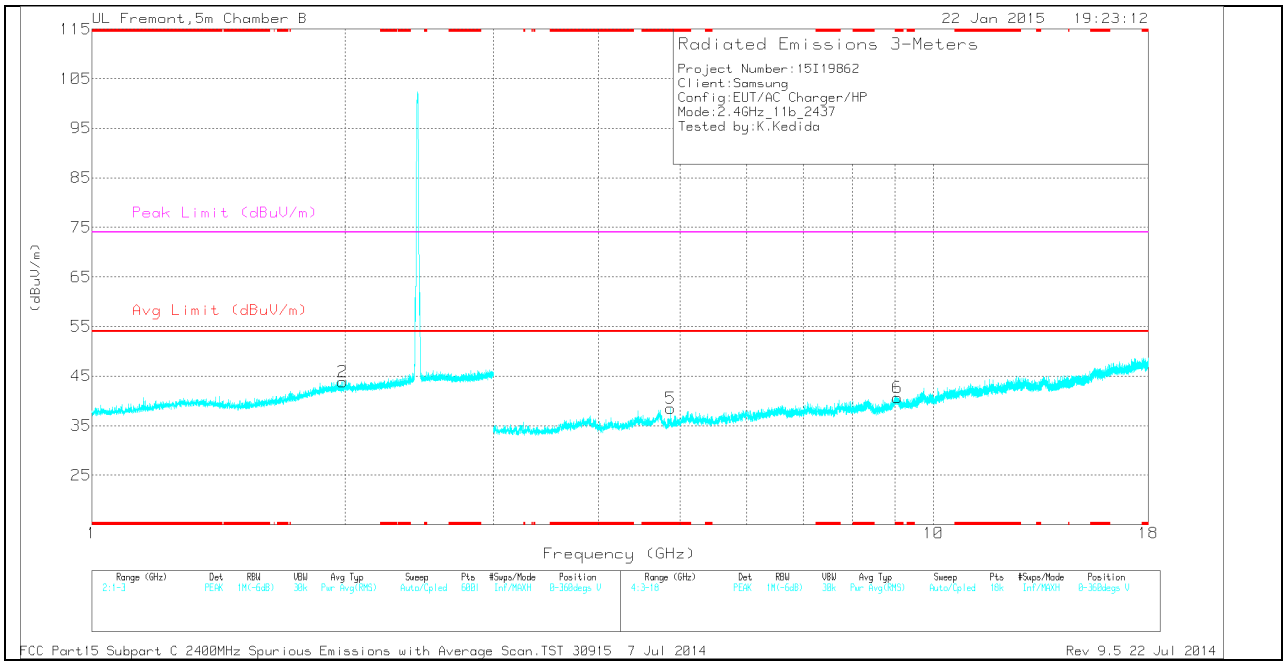
MID CHANNEL VERTICAL



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 T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 4.874	37.41	PK	34.2	-30.4	41.21	-	-	74	-32.79	0-360	199	H
5	* 4.874	34.64	PK	34.2	-30.4	38.44	-	-	74	-35.56	0-360	199	V
6	* 9.059	28.48	PK	36.3	-24.1	40.68	-	-	74	-33.32	0-360	101	V
2	1.986	35.71	PK	31.3	-23.2	43.81	-	-	-	-	0-360	101	V
1	1.988	34.78	PK	31.3	-23.2	42.88	-	-	-	-	0-360	199	H
4	8.996	29.32	PK	36.2	-24.3	41.22	-	-	-	-	0-360	101	H

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.874	44.43	PK2	34.2	-30.4	48.23	-	-	74	-25.77	251	320	H
* 4.874	38.16	MAv1	34.2	-30.4	41.96	54	-12.04	-	-	251	318	H

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

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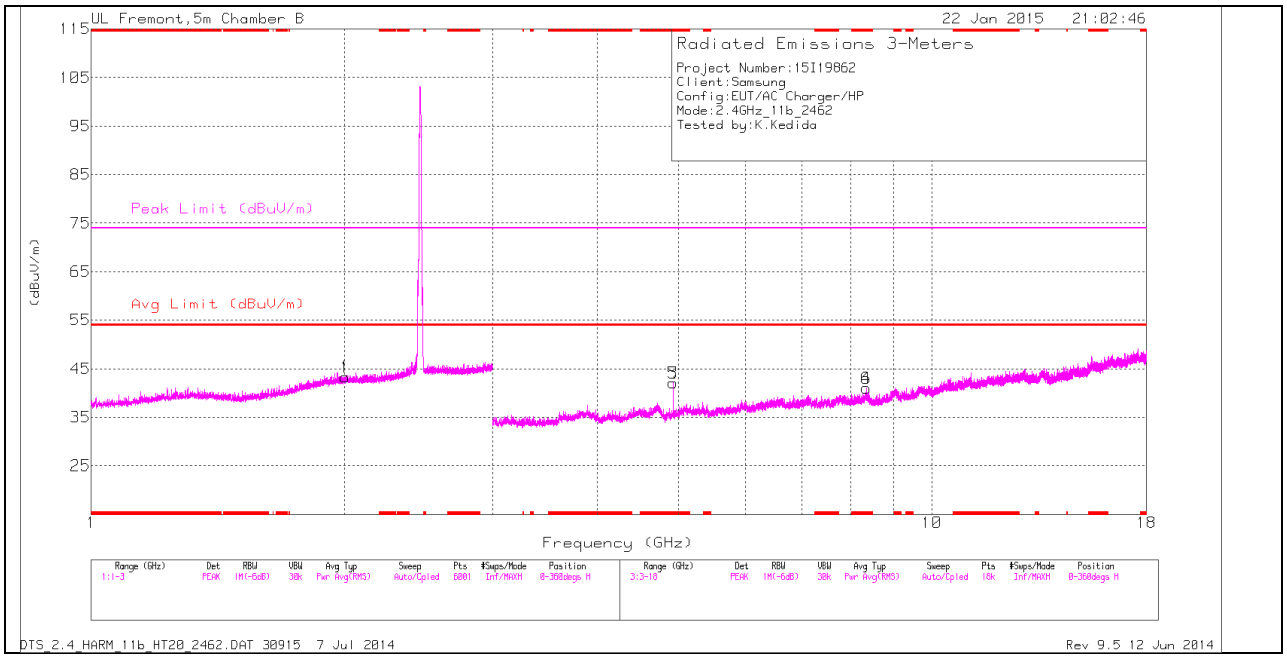
HIGH CHANNEL HORIZONTAL



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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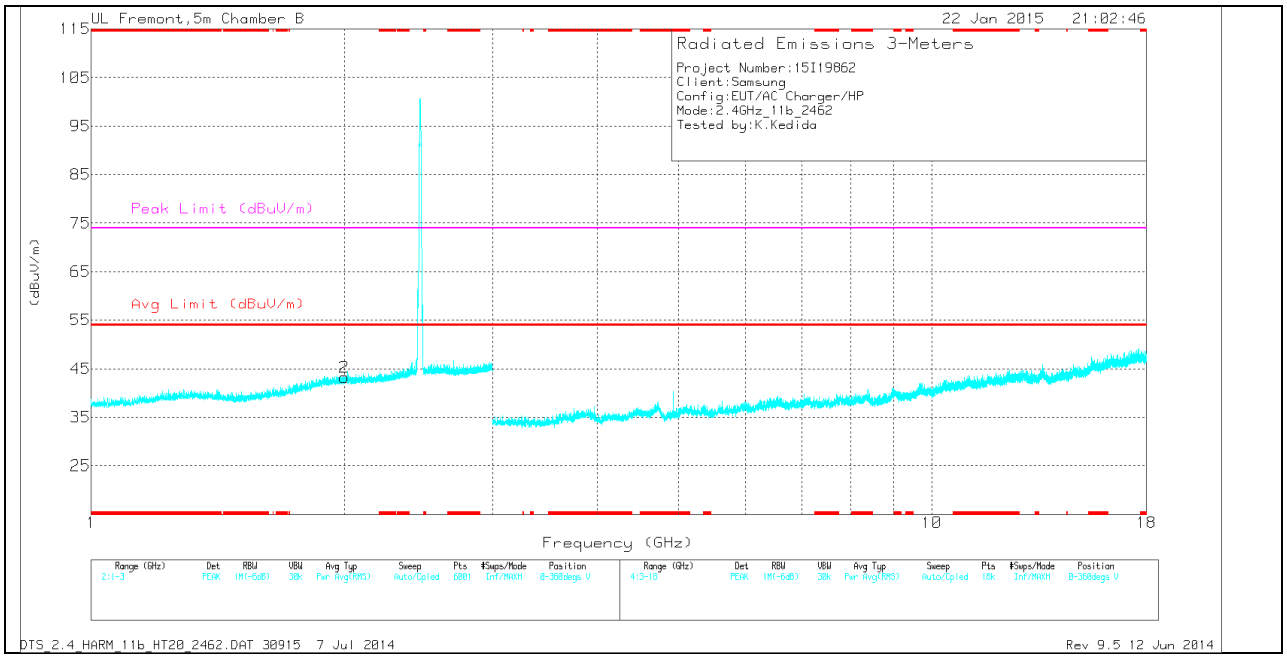
HIGH CHANNEL VERTICAL



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 T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 4.924	38.4	PK	34.2	-30.5	42.1	-	-	74	-31.9	0-360	199	H
4	* 8.354	30.32	PK	35.7	-25	41.02	-	-	74	-32.98	0-360	101	H
5	* 4.924	38.4	PK	34.2	-30.5	42.1	-	-	74	-31.9	0-360	199	H
6	* 8.354	30.32	PK	35.7	-25	41.02	-	-	74	-32.98	0-360	101	H
2	2.001	35.01	PK	31.4	-23.2	43.21	-	-	-	-	0-360	199	V
1	2.005	35.16	PK	31.3	-23.2	43.26	-	-	-	-	0-360	199	H

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.924	43.94	PK2	34.2	-30.5	47.64	-	-	74	-26.36	128	175	H

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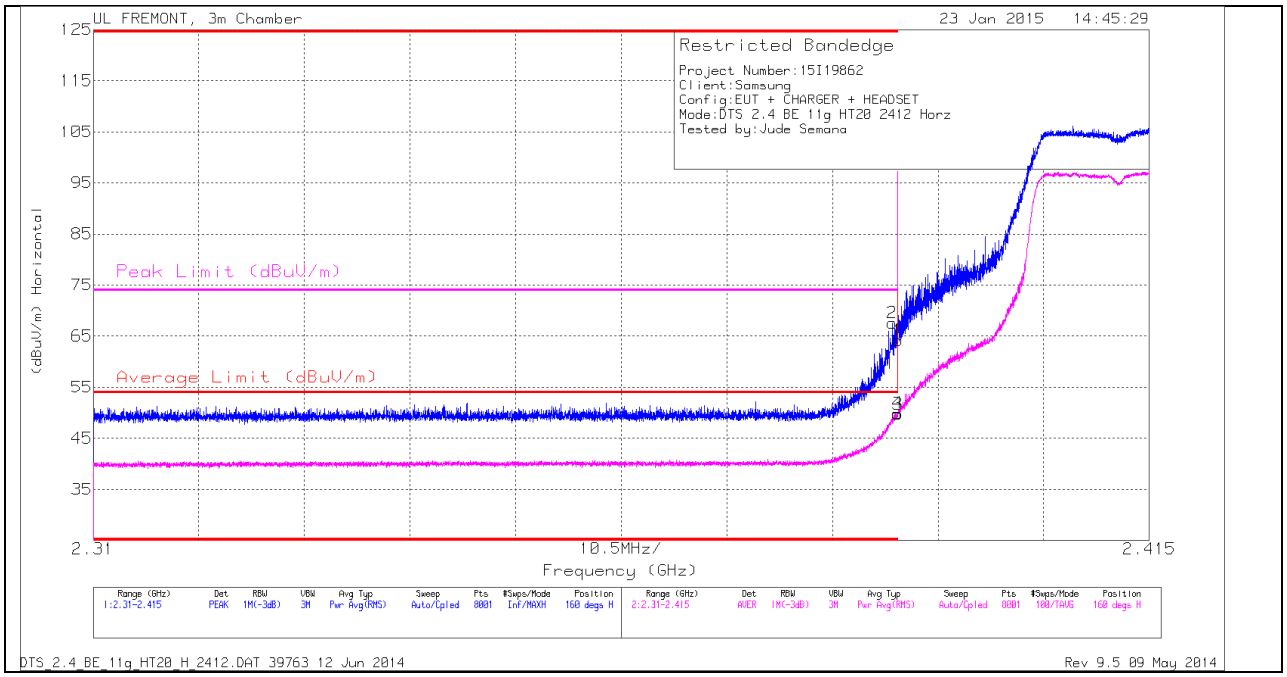
10.2.2. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (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	58.59	PK	32.1	-23.1	0	67.59	-	-	74	-6.41	160	395	H
1	* 2.39	55.17	PK	32.1	-23.1	0	64.17	-	-	74	-9.83	160	395	H
3	* 2.39	40.14	RMS	32.1	-23.1	.3	49.44	54	-4.56	-	-	160	395	H
4	* 2.39	40.31	RMS	32.1	-23.1	.3	49.61	54	-4.39	-	-	160	395	H

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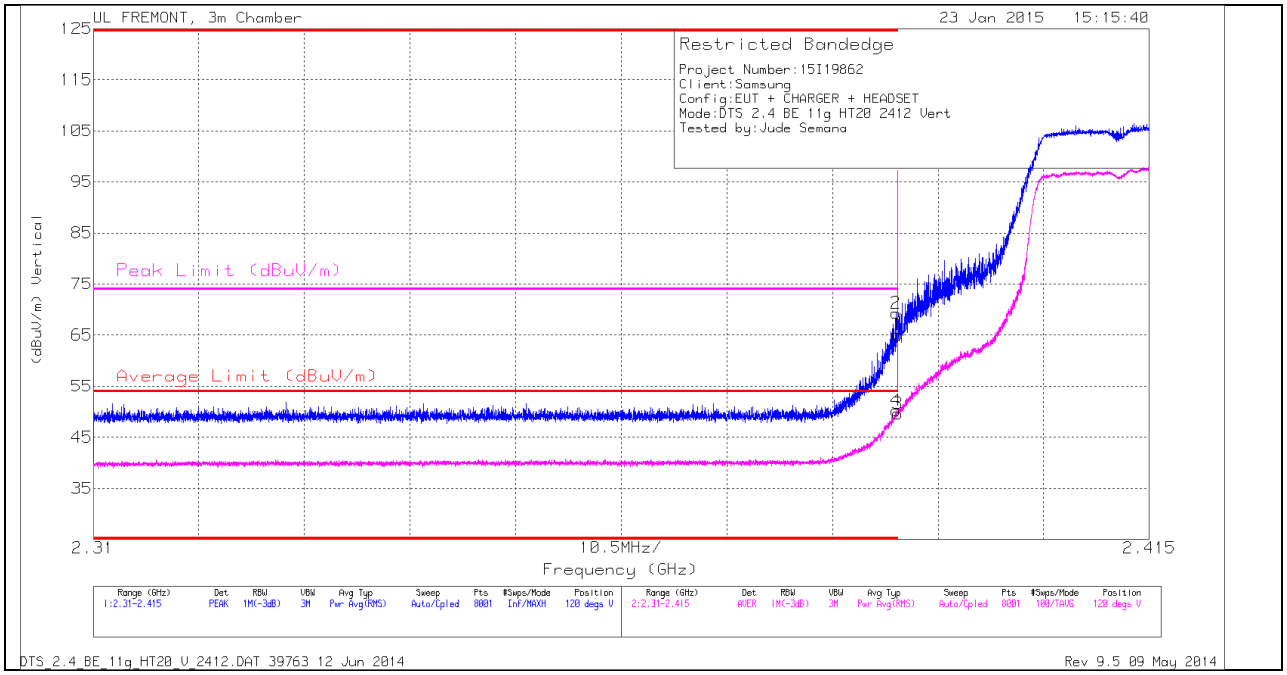
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (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	56.04	PK	32.1	-23.1	0	65.04	-	-	74	-8.96	120	333	V
2	* 2.39	60.31	PK	32.1	-23.1	0	69.31	-	-	74	-4.69	120	333	V
3	* 2.39	40.05	RMS	32.1	-23.1	.3	49.35	54	-4.65	-	-	120	333	V
4	* 2.39	40.66	RMS	32.1	-23.1	.3	49.96	54	-4.04	-	-	120	333	V

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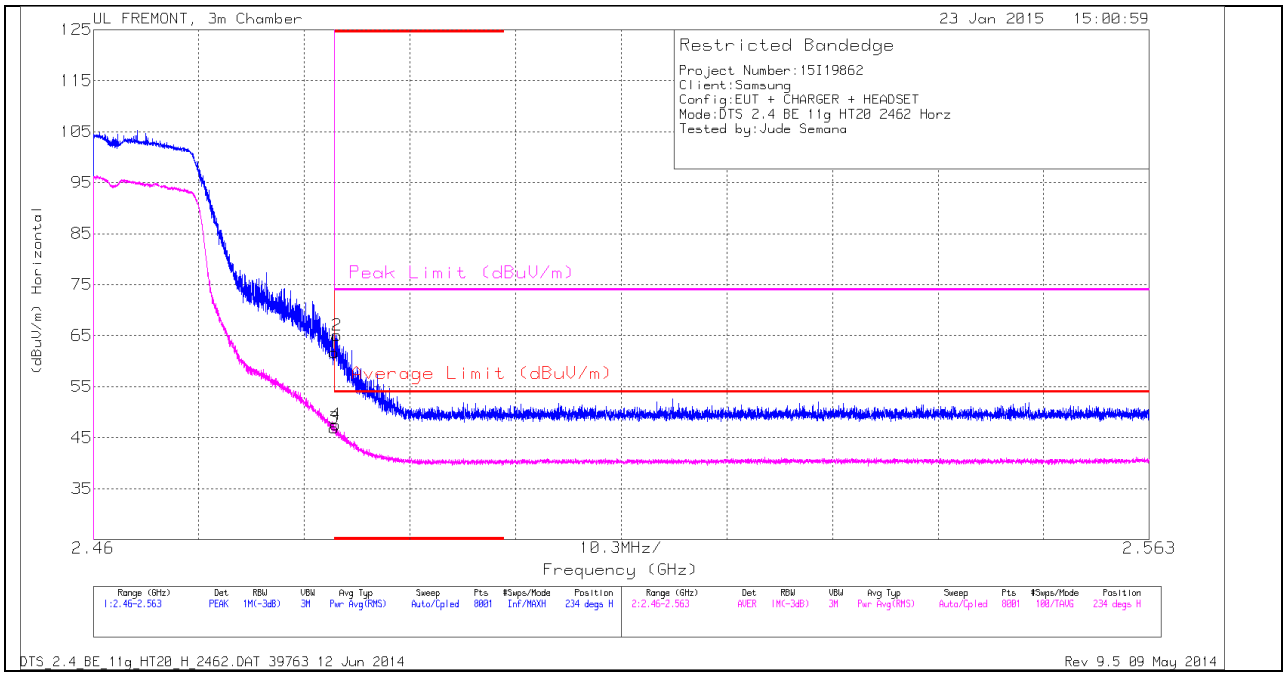
AUTHORIZED BANDEDGE (HIGH CHANNEL 11)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (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	52.4	PK	32.1	-22.8	0	61.7	-	-	74	-12.3	234	334	H
2	* 2.484	55.76	PK	32.1	-22.8	0	65.06	-	-	74	-8.94	234	334	H
3	* 2.484	37.01	RMS	32.1	-22.8	.3	46.61	54	-7.39	-	-	234	334	H
4	* 2.484	37.67	RMS	32.1	-22.8	.3	47.27	54	-6.73	-	-	234	334	H

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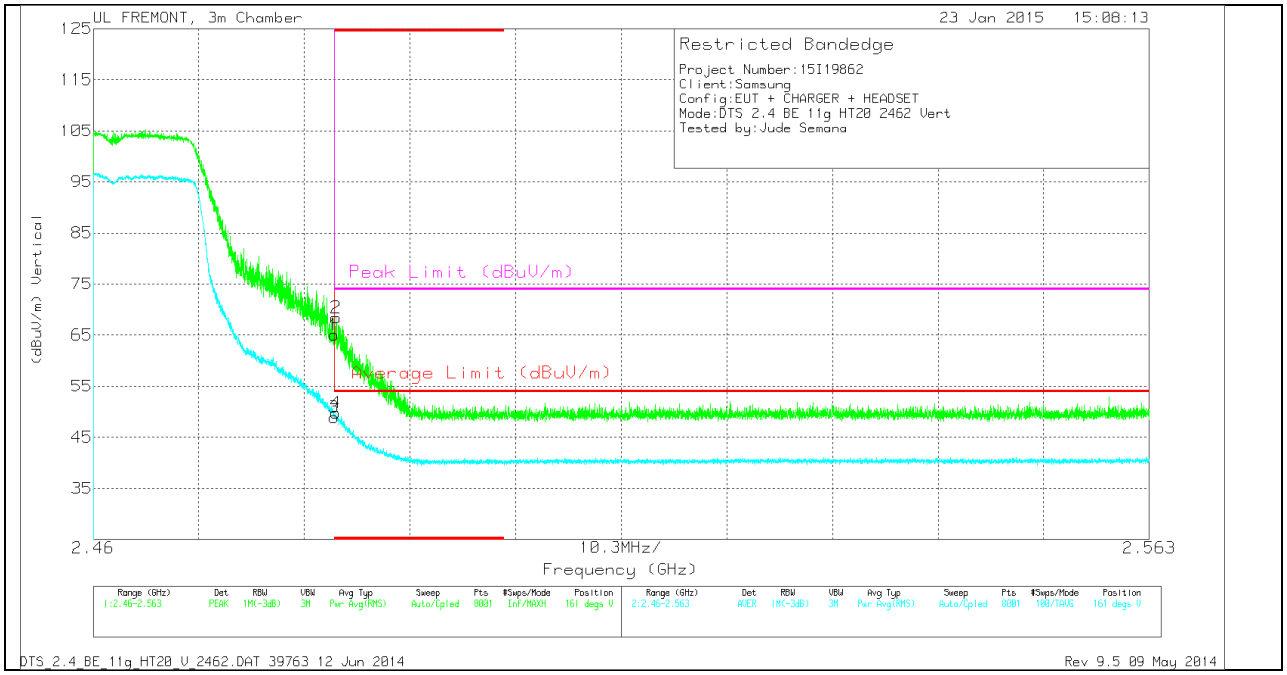
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (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	56.04	PK	32.1	-23.1	0	65.04	-	-	74	-8.96	120	333	V
2	* 2.39	60.31	PK	32.1	-23.1	0	69.31	-	-	74	-4.69	120	333	V
3	* 2.39	40.05	RMS	32.1	-23.1	.3	49.35	54	-4.65	-	-	120	333	V
4	* 2.39	40.66	RMS	32.1	-23.1	.3	49.96	54	-4.04	-	-	120	333	V

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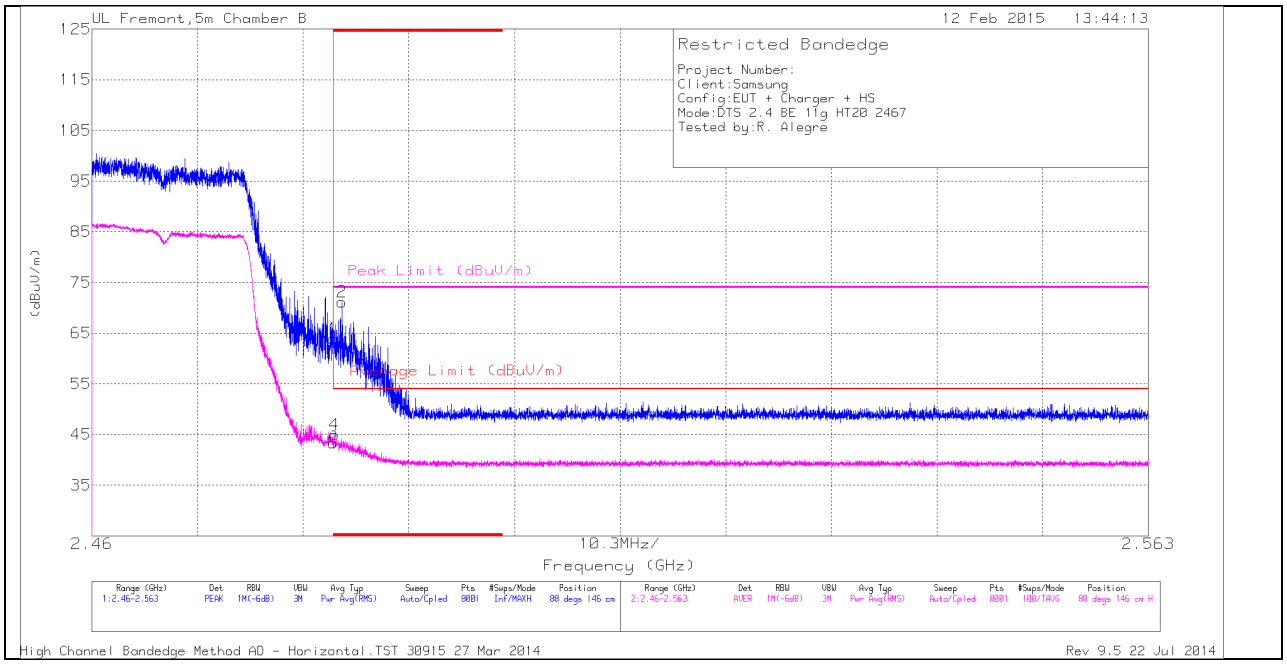
AUTHORIZED BANDEDGE (HIGH CHANNEL 12)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	53.96	PK	32.4	-22.4	0	63.96	-	-	74	-10.04	88	146	H
2	* 2.484	61.11	PK	32.4	-22.4	0	71.11	-	-	74	-2.89	88	146	H
3	* 2.484	33.1	RMS	32.4	-22.4	.3	43.4	54	-10.6	-	-	88	146	H
4	* 2.484	34.6	RMS	32.4	-22.4	.3	44.9	54	-9.1	-	-	88	146	H

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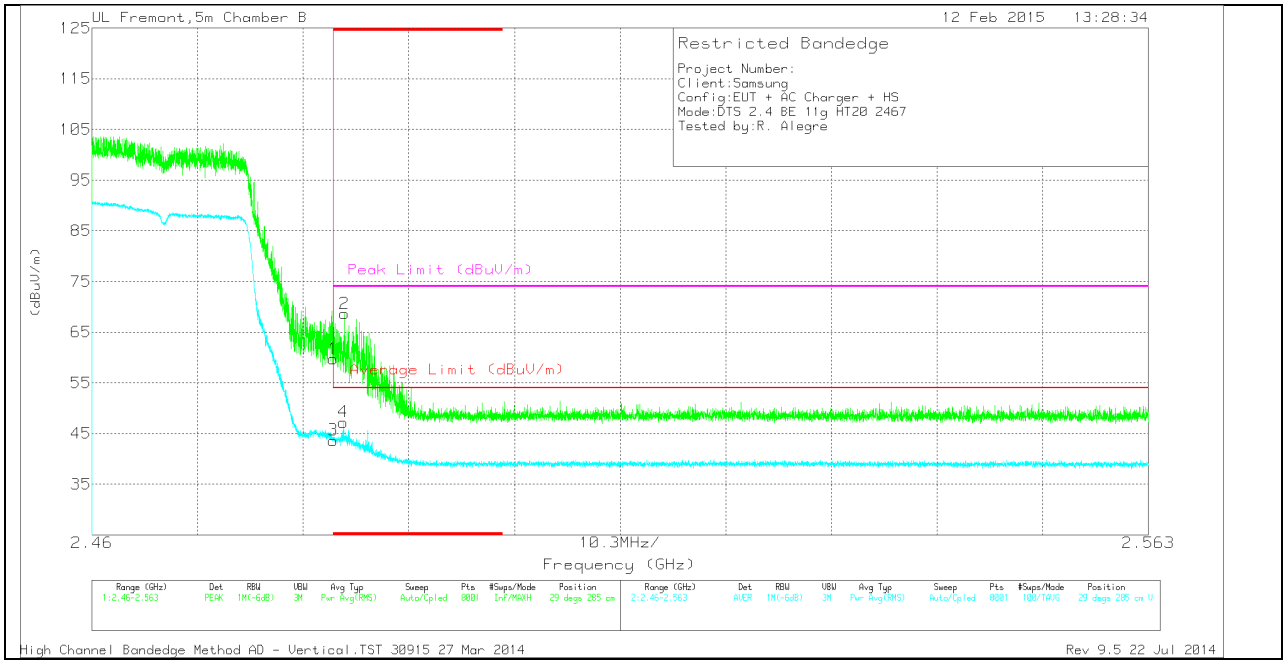
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	49.7	PK	32.4	-22.4	59.7	-	-	74	-14.3	29	285	V
2	* 2.485	58.72	PK	32.4	-22.4	68.72	-	-	74	-5.28	29	285	V
3	* 2.484	33.65	RMS	32.4	-22.4	43.65	54	-10.35	-	-	29	285	V
4	* 2.484	37.25	RMS	32.4	-22.4	47.25	54	-6.75	-	-	29	285	V

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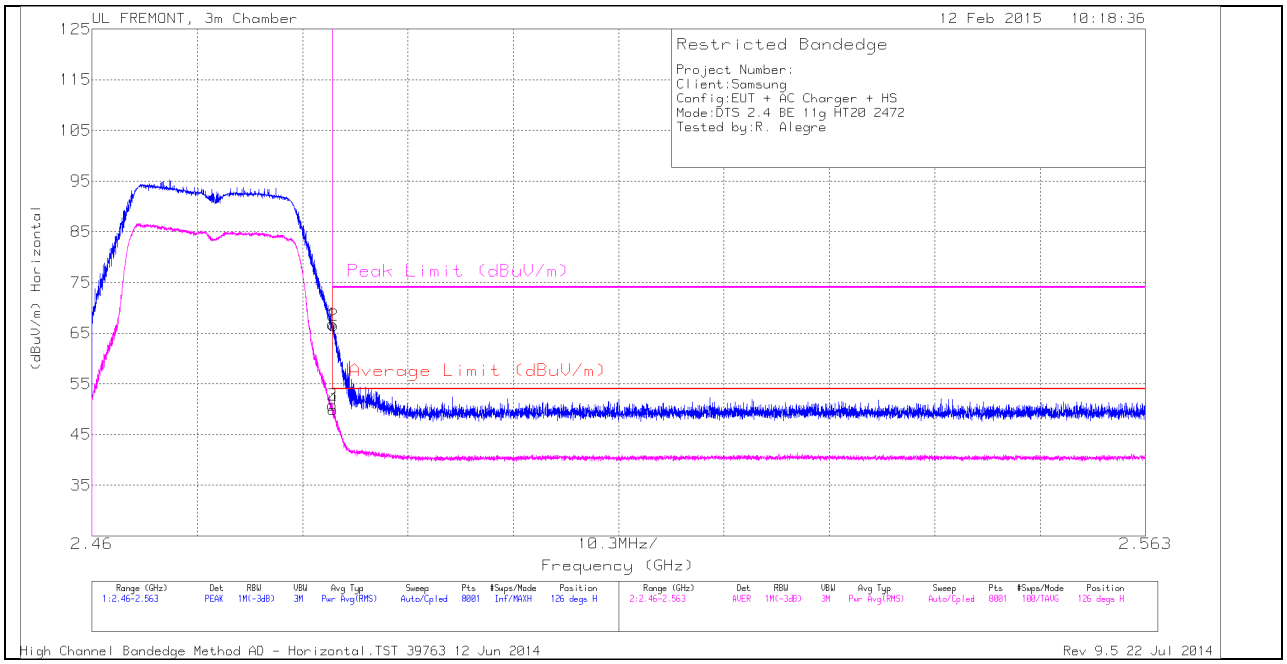
AUTHORIZED BANDEDGE (HIGH CHANNEL 13)

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	57.31	PK	32.3	-22.8	0	66.81	-	-	74	-7.19	126	248	H
2	2.484	57.08	PK	32.3	-22.8	0	66.58	-	-	74	-7.42	126	248	H
3	2.484	41.04	RMS	32.3	-22.8	.3	50.84	54	-3.16	-	-	126	248	H
4	2.484	40.18	RMS	32.3	-22.8	.3	49.98	54	-4.02	-	-	126	248	H

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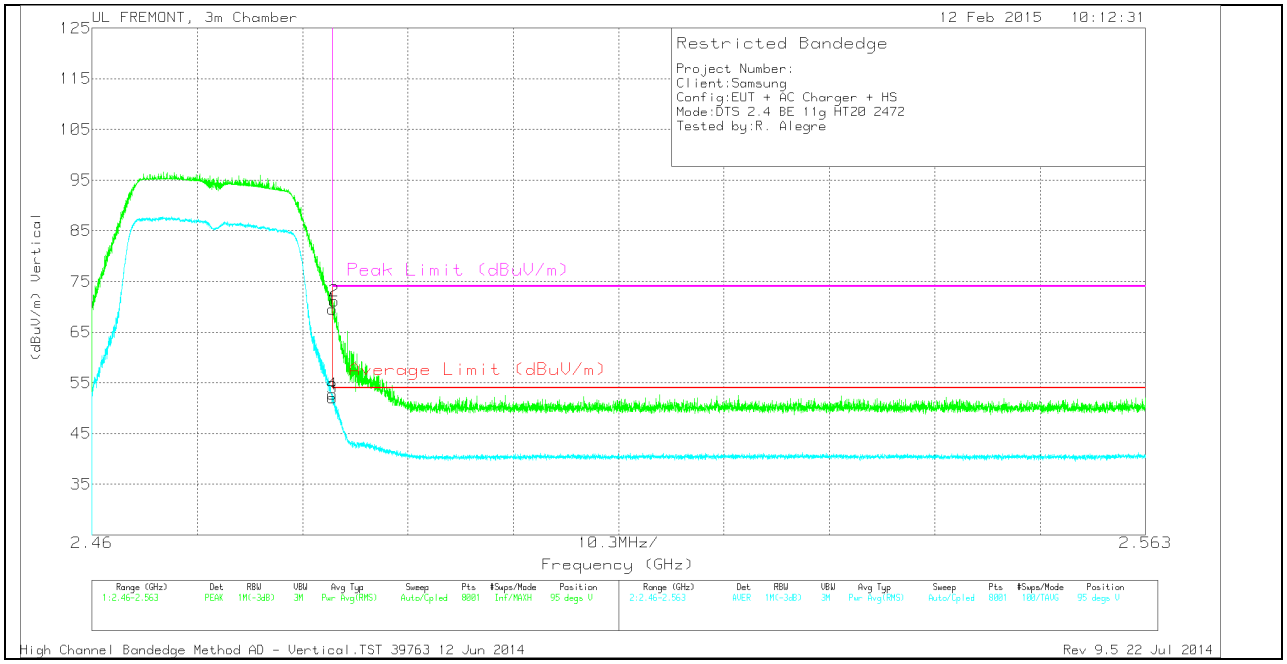
VERTICAL PEAK AND AVERAGE PLOT



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
1	2.484	60.06	PK	32.3	-22.8	0	69.56	-	-	74	-4.44	95	248	V
2	2.484	61.67	PK	32.3	-22.8	0	71.17	-	-	74	-2.83	95	248	V
3	2.484	42.18	RMS	32.3	-22.8	.3	51.98	54	-2.02	-	-	95	248	V
4	2.484	42.96	RMS	32.3	-22.8	.3	52.76	54	-1.24	-	-	95	248	V

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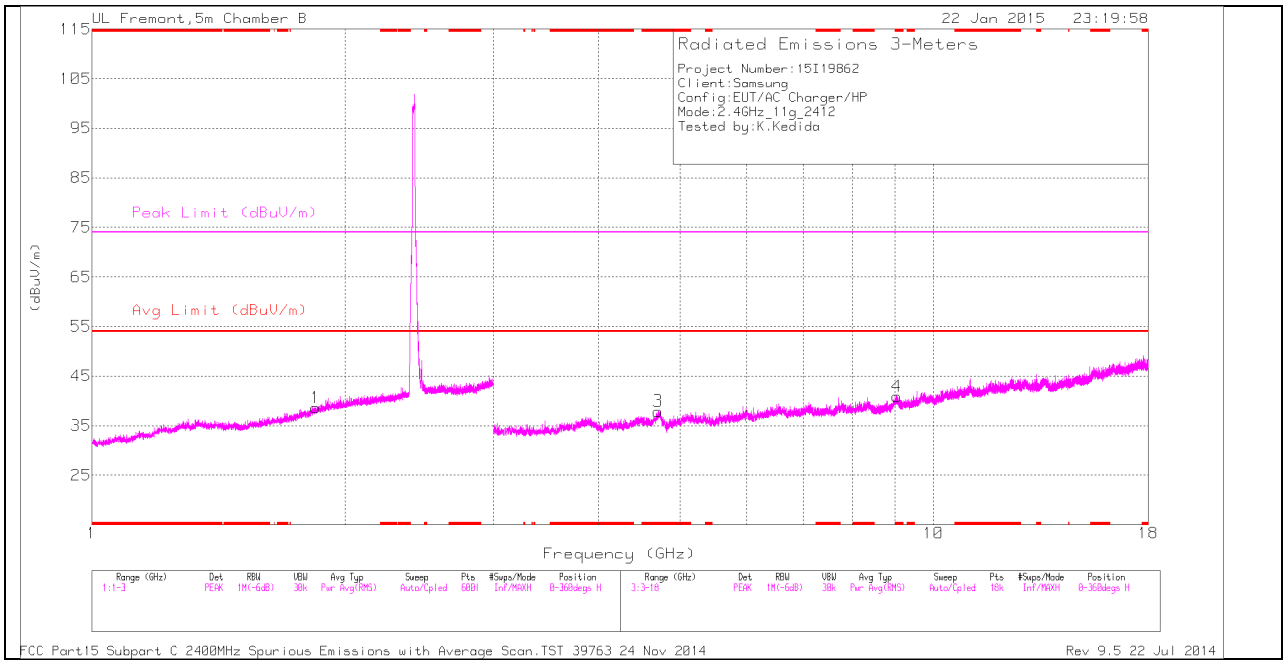
HARMONICS AND SPURIOUS EMISSIONS

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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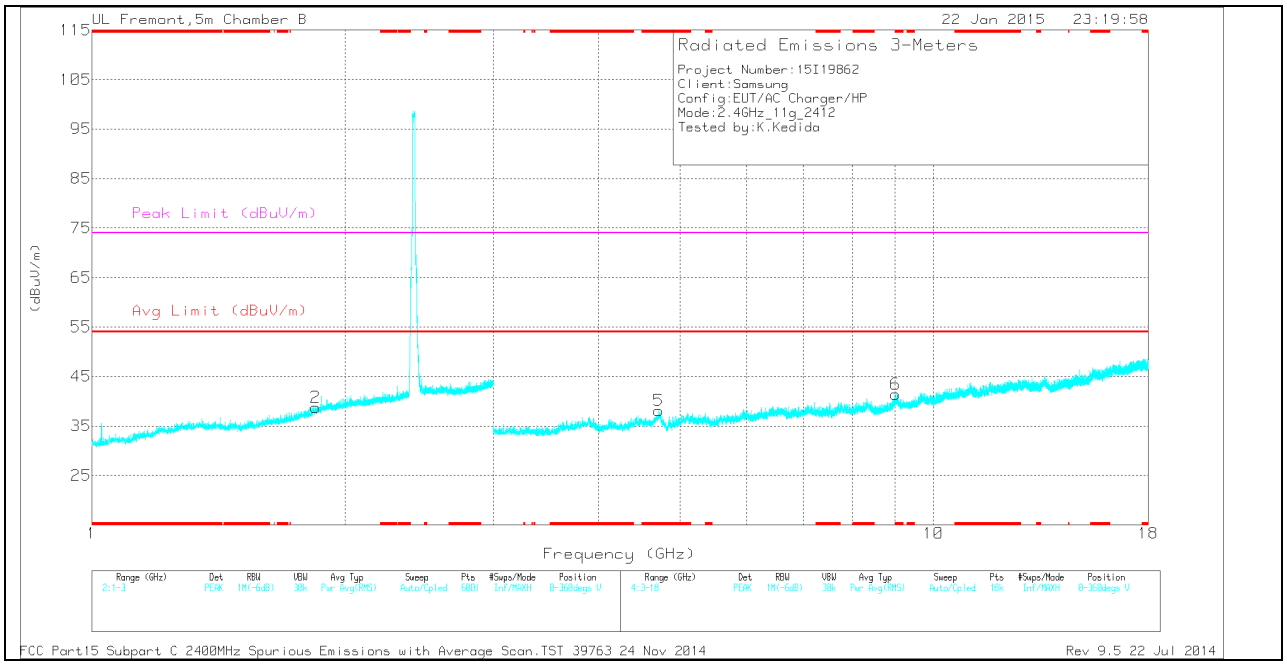
LOW CHANNEL VERTICAL



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 T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 4.708	32.92	PK	34.2	-29.2	37.92	-	-	74	-36.08	0-360	199	H
4	* 9.041	28.56	PK	36.2	-23.9	40.86	-	-	74	-33.14	0-360	101	H
5	* 4.718	33.03	PK	34.2	-29.1	38.13	-	-	74	-35.87	0-360	199	V
6	* 9.021	29.29	PK	36.2	-24.1	41.39	-	-	74	-32.61	0-360	101	V
2	1.844	29.12	PK	30.6	-21	38.72	-	-	-	-	0-360	101	V
1	1.845	29.07	PK	30.6	-21	38.67	-	-	-	-	0-360	101	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
* 4.712	40.72	PK2	34.2	-29.2	0	45.72	-	-	74	-28.28	1	198	H
* 4.708	29.76	MAv1	34.2	-29.2	0.3	35.06	54	-18.94	-	-	1	198	H

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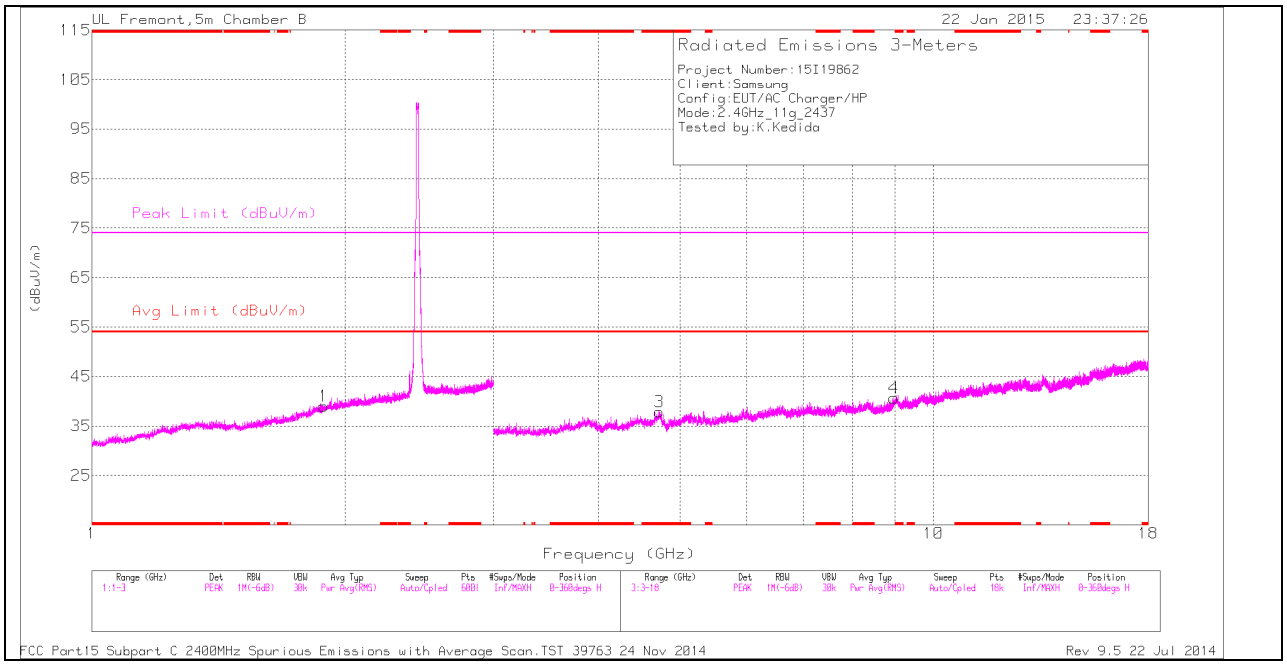
MID CHANNEL HORIZONTAL



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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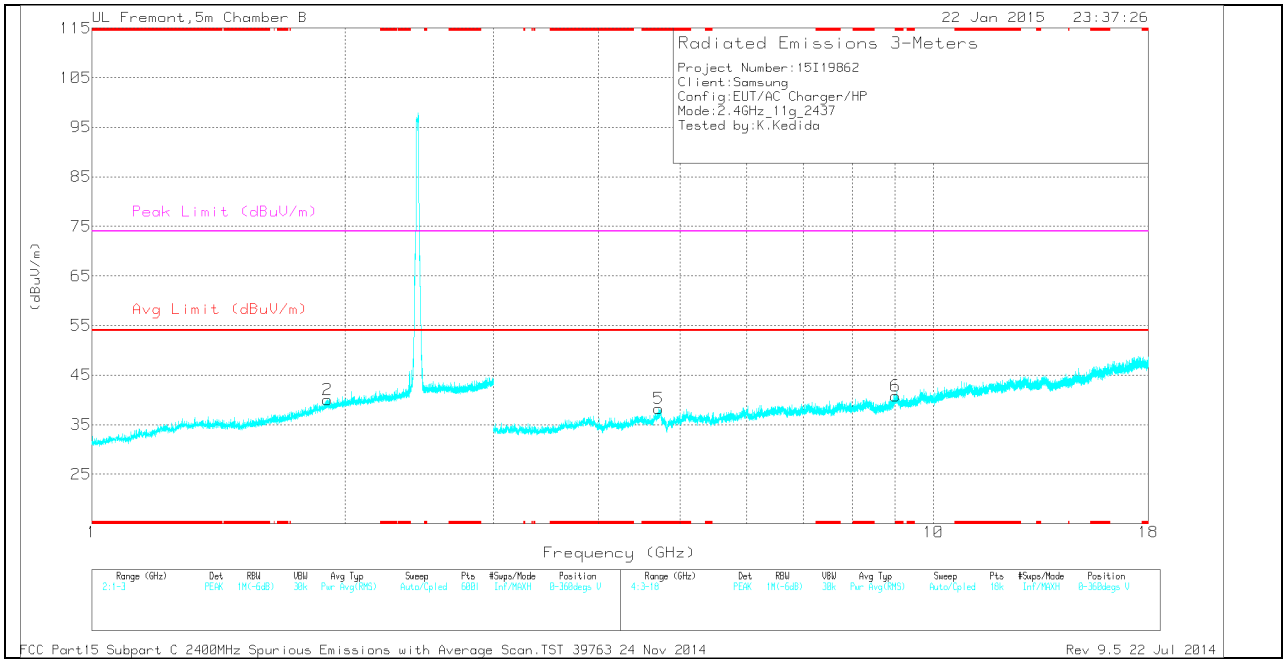
MID CHANNEL VERTICAL



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 T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 4.725	32.72	PK	34.2	-29.1	37.82	-	-	74	-36.18	0-360	101	H
5	* 4.713	33.24	PK	34.2	-29.2	38.24	-	-	74	-35.76	0-360	199	V
6	* 9.012	28.67	PK	36.2	-24.1	40.77	-	-	74	-33.23	0-360	199	V
1	1.886	29.18	PK	30.9	-21.1	38.98	-	-	-	-	0-360	199	H
2	1.904	29.99	PK	31.1	-21.1	39.99	-	-	-	-	0-360	101	V
4	8.976	28.9	PK	36.2	-24.5	40.6	-	-	-	-	0-360	101	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
* 4.725	40.94	PK2	34.2	-29.1	0	46.04	-	-	74	-27.96	1	100	H
* 4.727	29.95	MAv1	34.2	-29.1	0.3	35.35	54	-18.65	-	-	1	100	H

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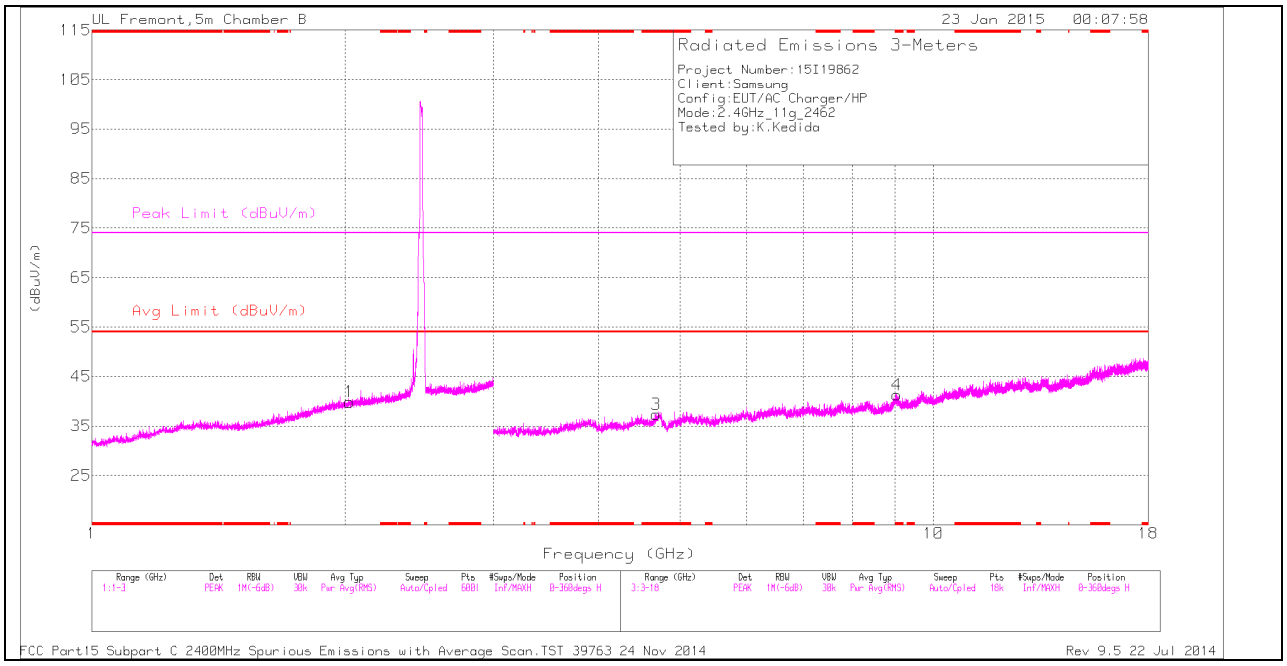
HIGH CHANNEL HORIZONTAL



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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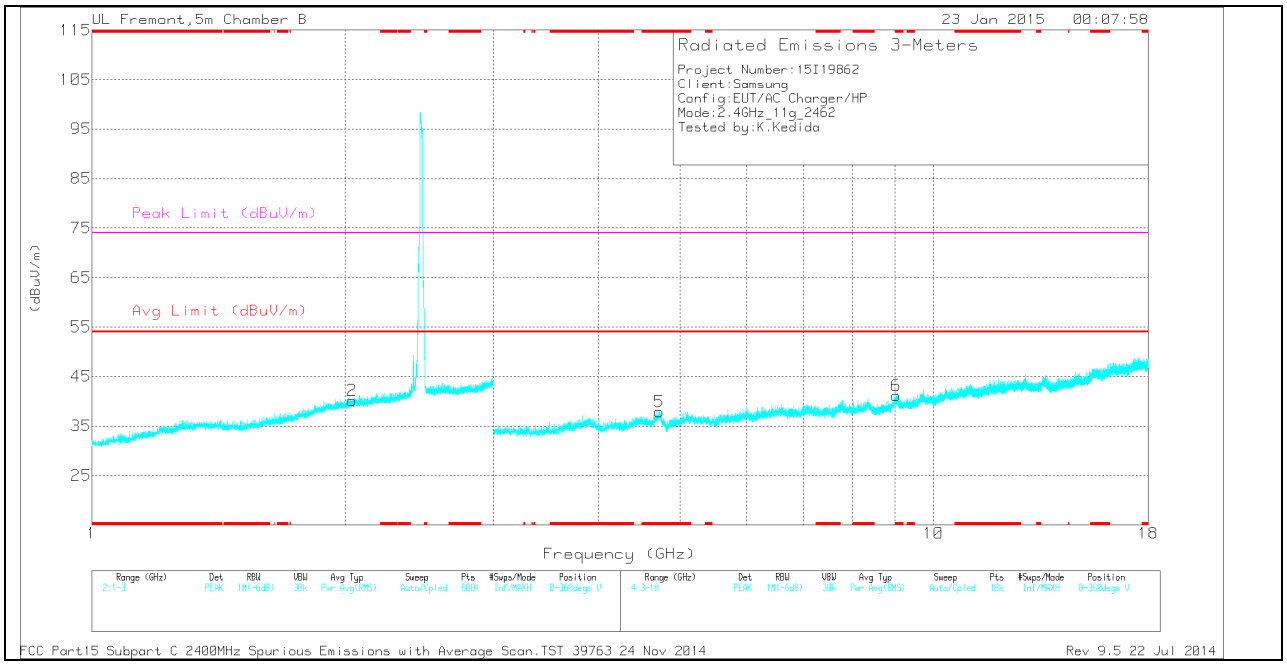
HIGH CHANNEL VERTICAL



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 T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 4.683	32.99	PK	34.2	-29.8	37.39	-	-	74	-36.61	0-360	101	H
4	* 9.041	28.98	PK	36.2	-23.9	41.28	-	-	74	-32.72	0-360	199	H
5	* 4.722	32.81	PK	34.2	-29.1	37.91	-	-	74	-36.09	0-360	101	V
6	* 9.034	28.99	PK	36.2	-24	41.19	-	-	74	-32.81	0-360	101	V
1	2.023	29.63	PK	31.3	-21.1	39.83	-	-	-	-	0-360	199	H
2	2.036	29.91	PK	31.3	-21.1	40.11	-	-	-	-	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
* 4.685	40.66	PK2	34.2	-29.8	0	45.06	-	-	74	-28.94	1	101	H
* 4.681	30.04	MAv1	34.2	-29.8	0.3	34.74	54	-19.26	-	-	1	101	H

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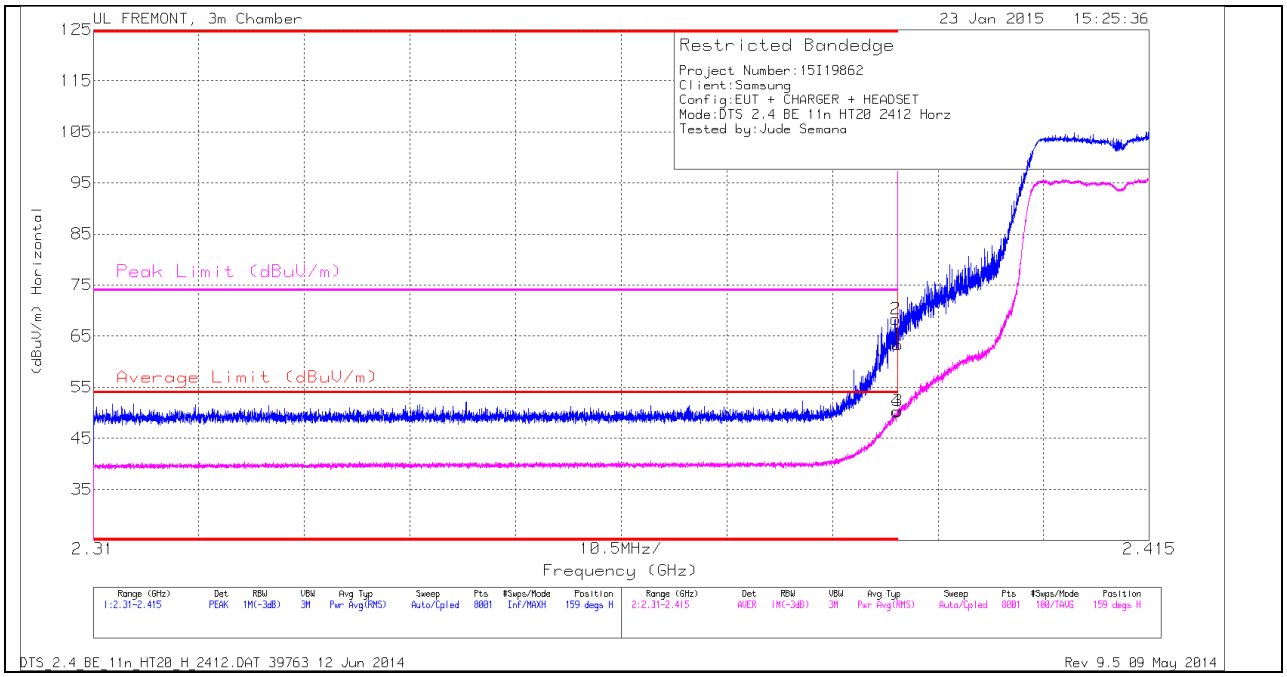
10.2.3. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	54.34	PK	32.1	-23.1	0	63.34	-	-	74	-10.66	159	395	H
2	* 2.39	59.36	PK	32.1	-23.1	0	68.36	-	-	74	-5.64	159	395	H
3	* 2.39	41.03	RMS	32.1	-23.1	.32	50.33	54	-3.67	-	-	159	395	H
4	* 2.39	40.96	RMS	32.1	-23.1	.32	50.26	54	-3.74	-	-	159	395	H

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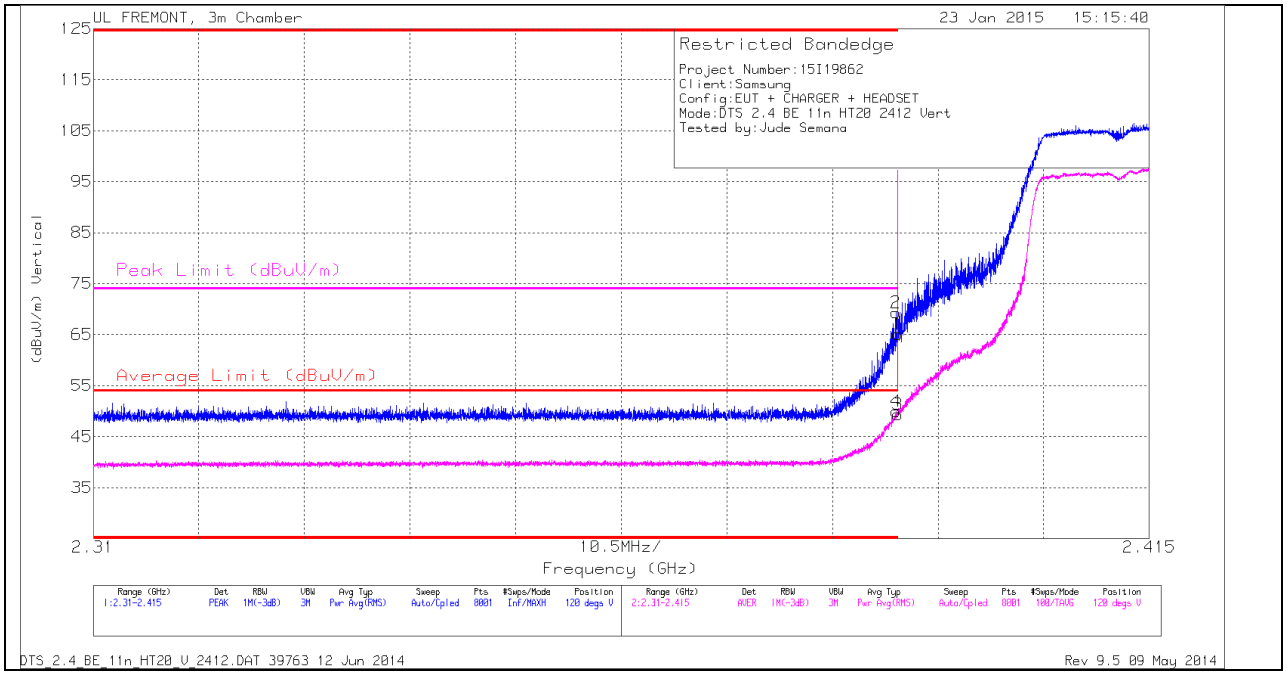
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (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	56.04	PK	32.1	-23.1	0	65.04	-	-	74	-8.96	120	333	V
2	* 2.39	60.31	PK	32.1	-23.1	0	69.31	-	-	74	-4.69	120	333	V
3	* 2.39	40.07	RMS	32.1	-23.1	.32	49.37	54	-4.63	-	-	120	333	V
4	* 2.39	40.68	RMS	32.1	-23.1	.32	49.98	54	-4.02	-	-	120	333	V

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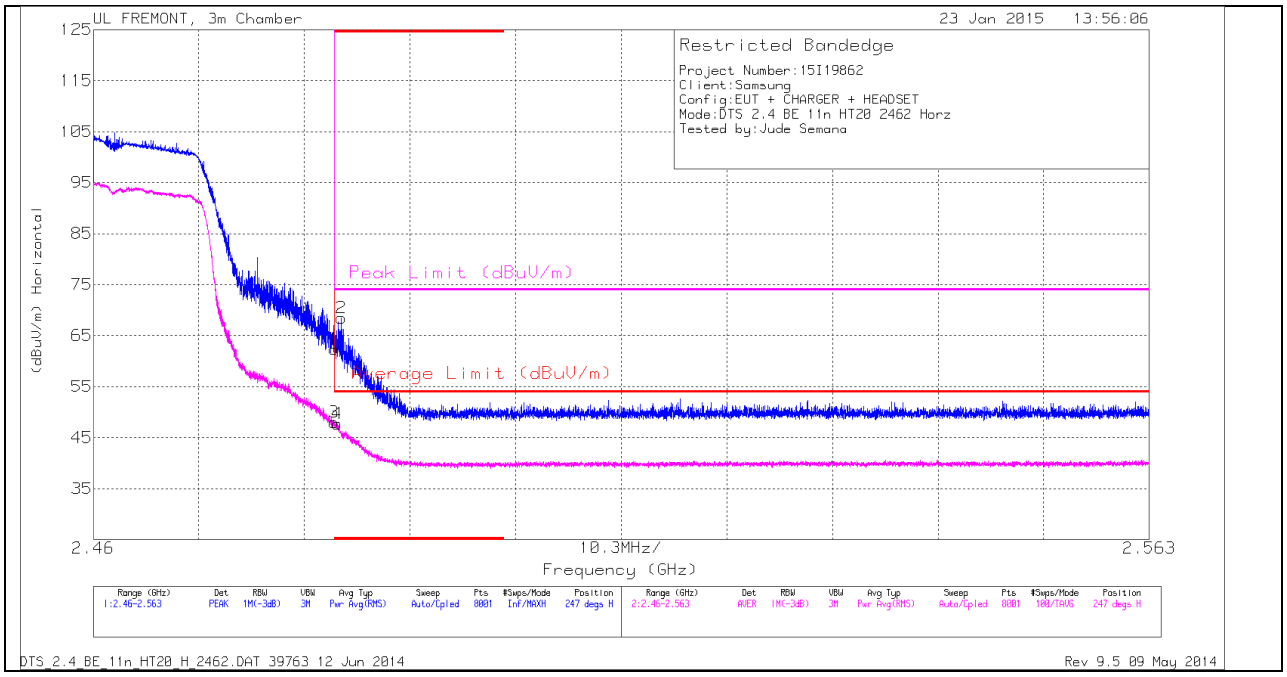
AUTHORIZED BANDEDGE (HIGH CHANNEL 11)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (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	53.05	PK	32.1	-22.8	0	62.35	-	-	74	-11.65	247	170	H
2	* 2.484	59.15	PK	32.1	-22.8	0	68.45	-	-	74	-5.55	247	170	H
3	* 2.484	38.71	RMS	32.1	-22.8	0.32	48.31	54	-5.69	-	-	247	170	H
4	* 2.484	38.42	RMS	32.1	-22.8	0.32	48.02	54	-5.98	-	-	247	170	H

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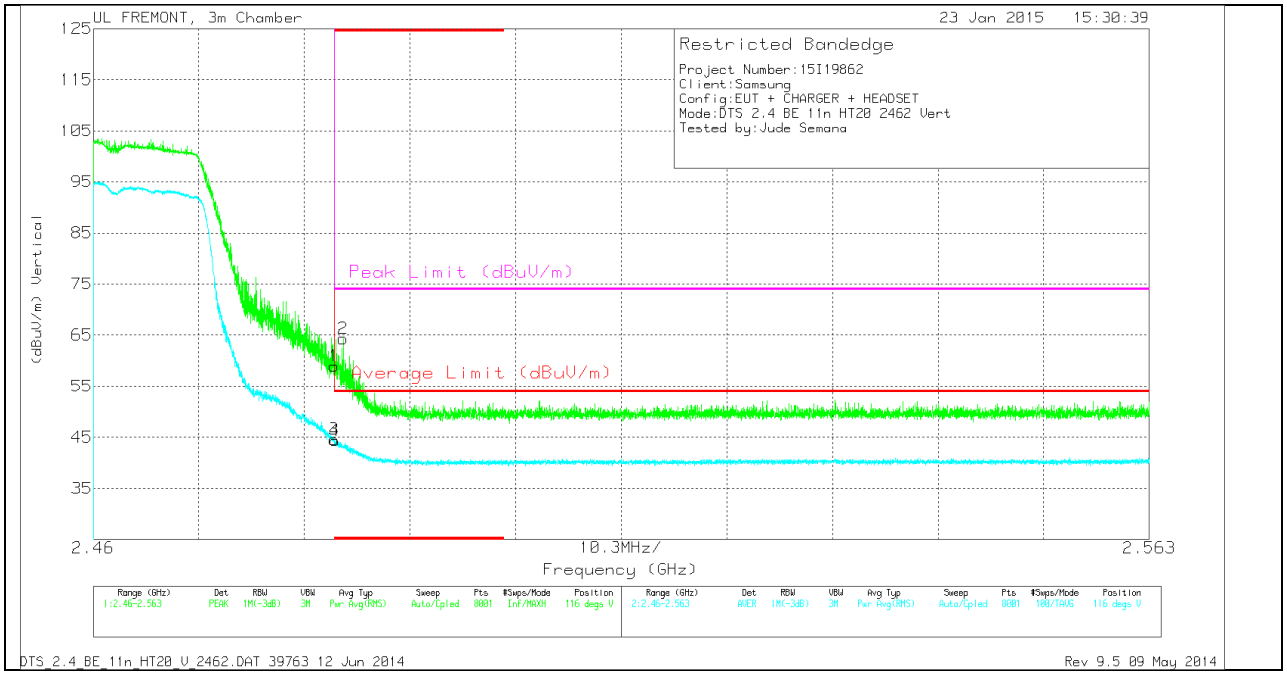
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (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	49.65	PK	32.1	-22.8	0	58.95	-	-	74	-15.05	116	391	V
2	* 2.484	55.02	PK	32.1	-22.8	0	64.32	-	-	74	-9.68	116	391	V
3	* 2.484	34.97	RMS	32.1	-22.8	.32	44.57	54	-9.43	-	-	116	391	V
4	* 2.484	34.74	RMS	32.1	-22.8	.32	44.34	54	-9.66	-	-	116	391	V

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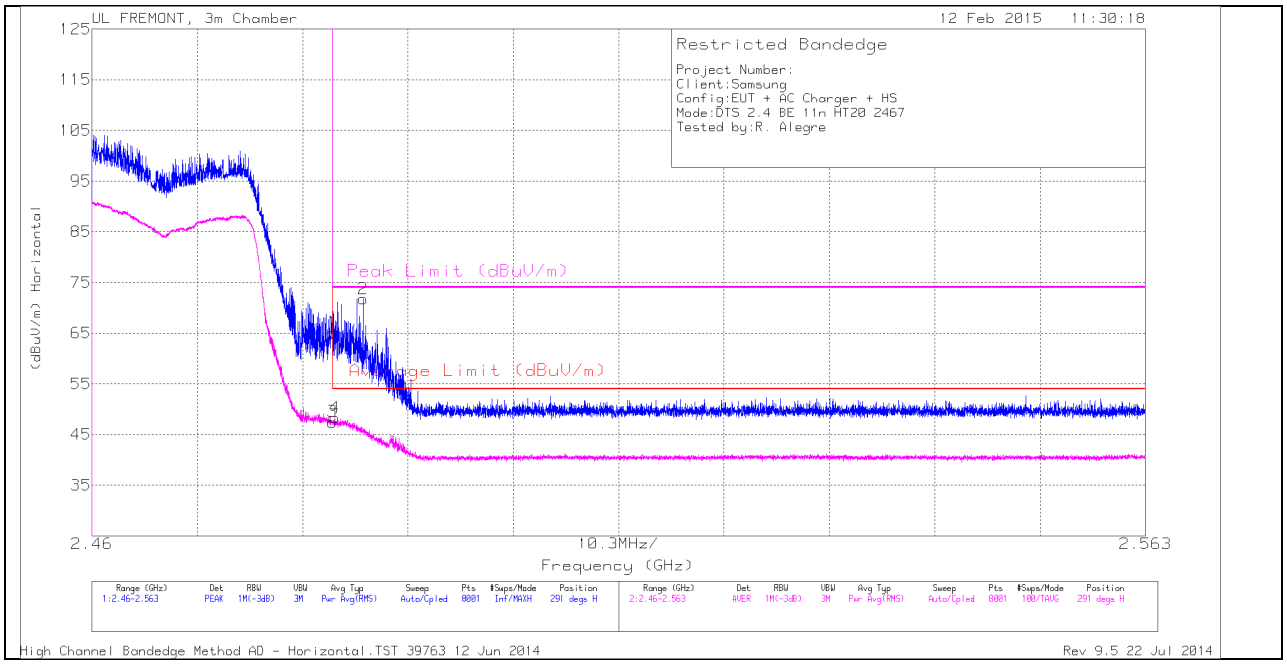
AUTHORIZED BANDEDGE (HIGH CHANNEL 12)

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	55.56	PK	32.3	-22.8	0	65.06	-	-	74	-8.94	291	180	H
3	2.484	37.68	RMS	32.3	-22.8	.32	47.5	54	-6.5	-	-	291	180	H
4	2.484	38.49	RMS	32.3	-22.8	.32	48.31	54	-5.69	-	-	291	180	H
2	2.486	62.25	PK	32.3	-22.8	0	71.75	-	-	74	-2.25	291	180	H

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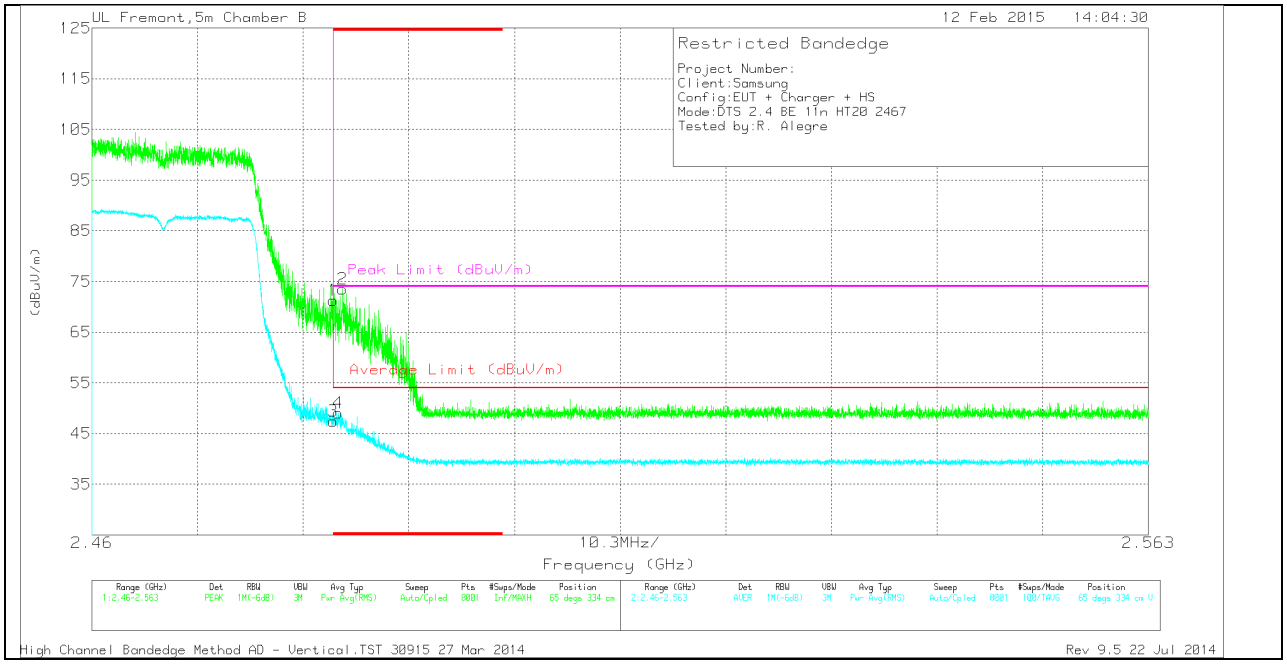
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	61.27	PK	32.4	-22.4	0	71.27	-	-	74	-2.73	65	334	V
2	* 2.484	62.53	PK	32.4	-22.4	0	72.53	-	-	74	-1.47	65	334	V
3	* 2.484	37.13	RMS	32.4	-22.4	.32	47.45	54	-6.55	-	-	65	334	V
4	* 2.484	38.76	RMS	32.4	-22.4	.32	49.08	54	-4.92	-	-	65	334	V

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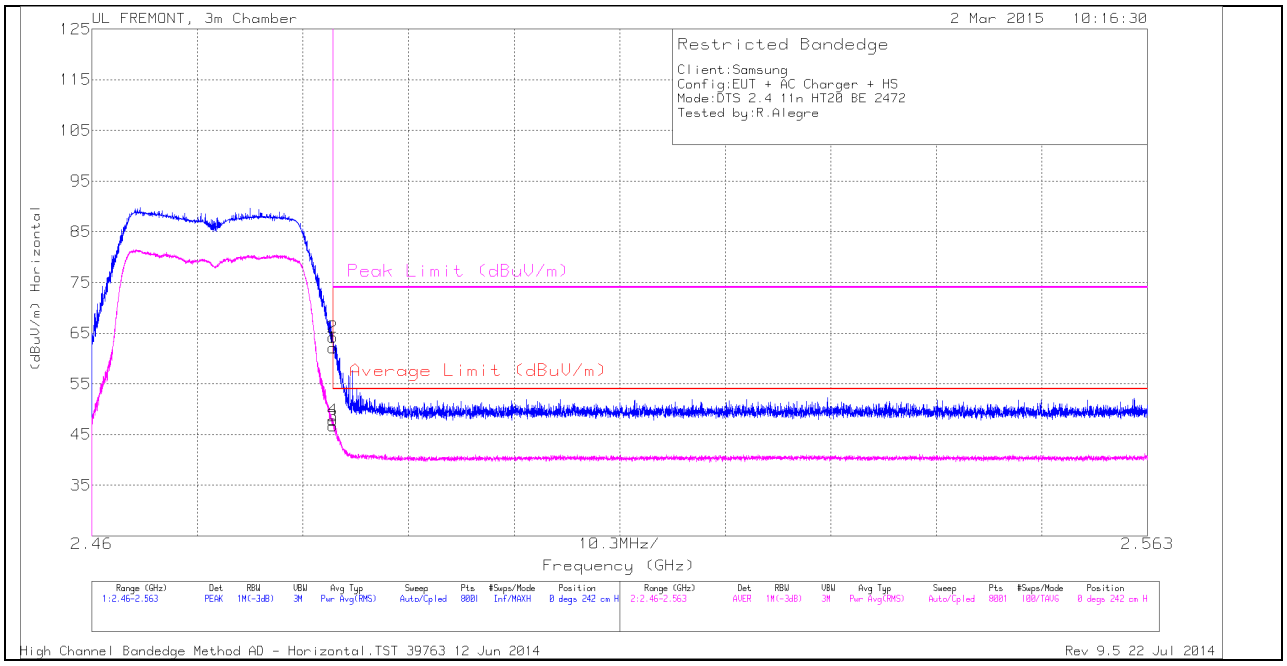
AUTHORIZED BANDEDGE (HIGH CHANNEL 13)

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	52.63	PK	32.3	-22.8	0	62.13	-	-	74	-11.87	0	242	H
2	2.484	54.66	PK	32.3	-22.8	0	64.16	-	-	74	-9.84	0	242	H
3	2.484	36.92	RMS	32.3	-22.8	.3	46.72	54	-7.28	-	-	0	242	H
4	2.484	38.02	RMS	32.3	-22.8	.3	47.82	54	-6.18	-	-	0	242	H

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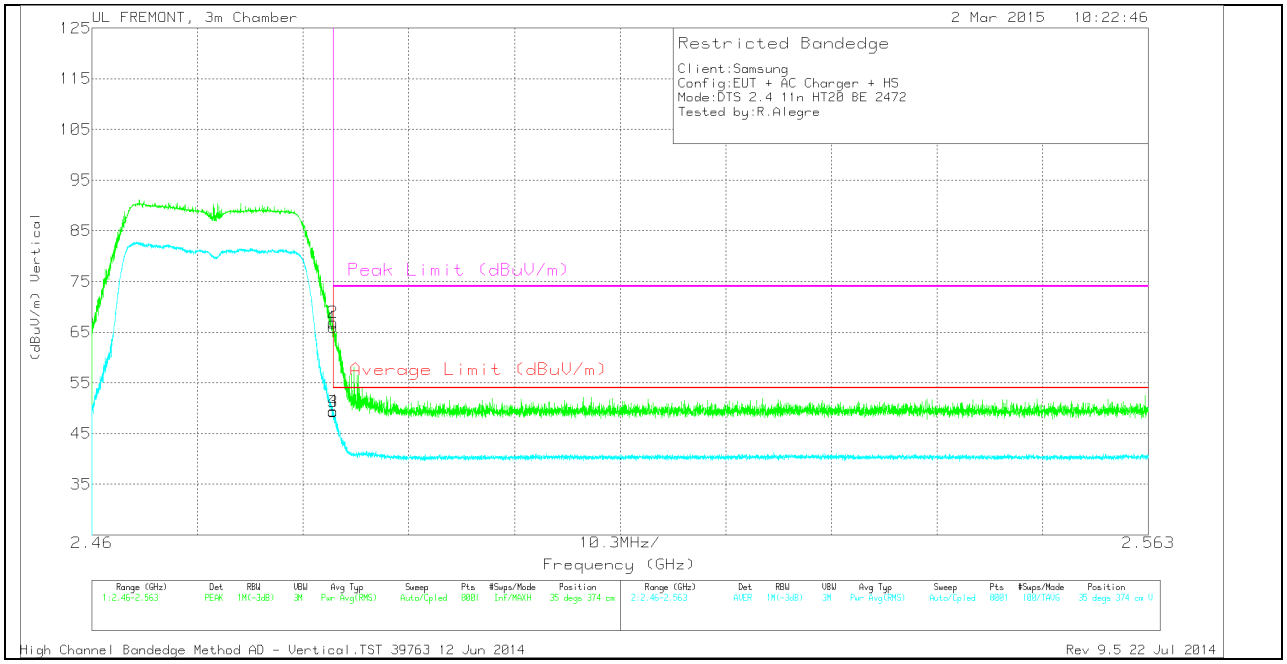
VERTICAL PEAK AND AVERAGE PLOT



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
1	2.484	56.38	PK	32.3	-22.8	0	65.88	-	-	74	-8.12	35	374	V
2	2.484	57.37	PK	32.3	-22.8	0	66.87	-	-	74	-7.13	35	374	V
3	2.484	39.47	RMS	32.3	-22.8	.3	49.27	54	-4.73	-	-	35	374	V
4	2.484	39.62	RMS	32.3	-22.8	.3	49.42	54	-4.58	-	-	35	374	V

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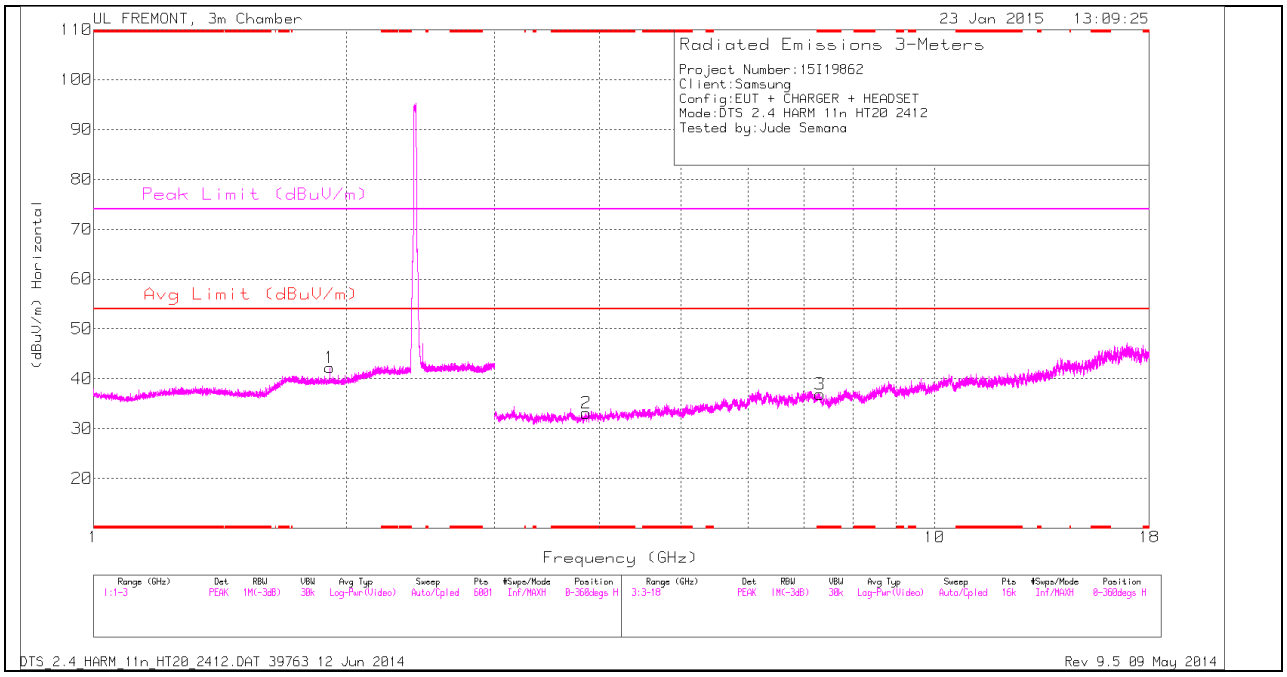
HARMONICS AND SPURIOUS EMISSIONS

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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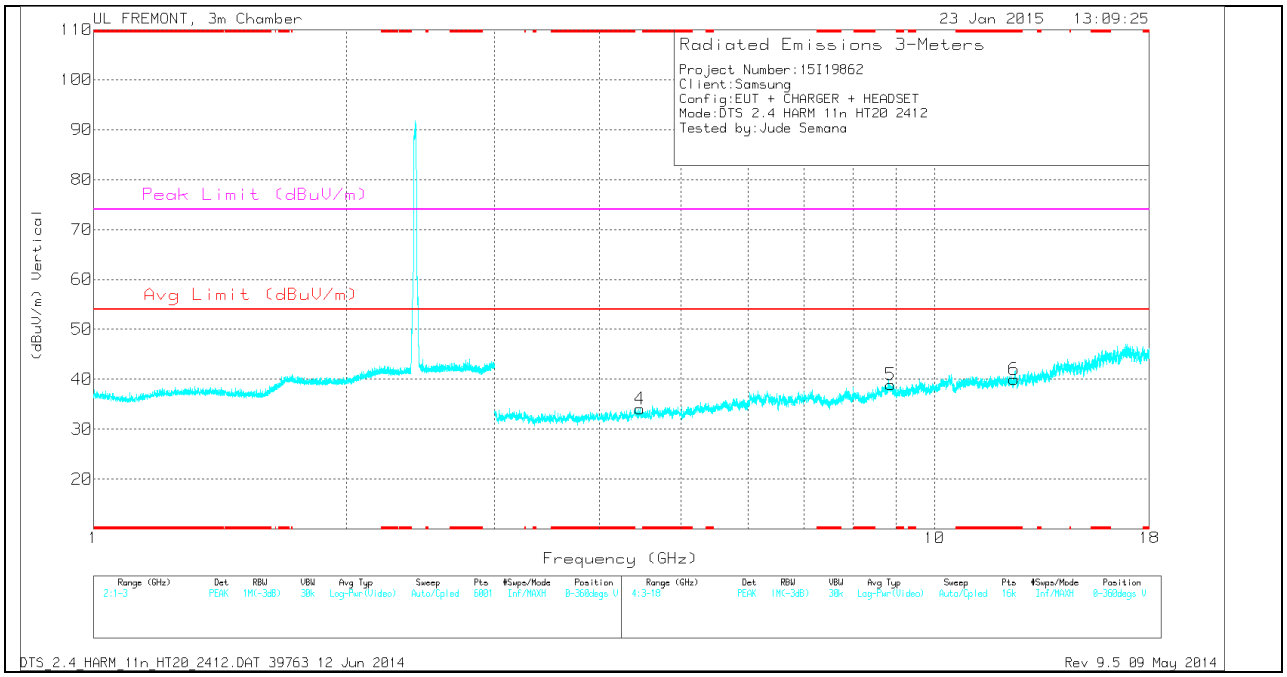
LOW CHANNEL VERTICAL



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 T711 (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	* 3.853	31.02	PK	33	-30.9	0	33.12	-	-	74	-40.88	0-360	200	H
3	* 7.31	29.86	PK	35.6	-28.6	0	36.86	-	-	74	-37.14	0-360	200	H
6	* 12.431	28.11	PK	38.7	-26.8	0	40.01	-	-	74	-33.99	0-360	100	V
1	1.911	35.24	PK	30.2	-23.2	0	42.24	-	-	-	-	0-360	200	H
4	4.466	31.59	PK	33.6	-31.1	0	34.09	-	-	-	-	0-360	100	V
5	8.873	28.93	PK	36.6	-26.6	0	38.93	-	-	-	-	0-360	200	V

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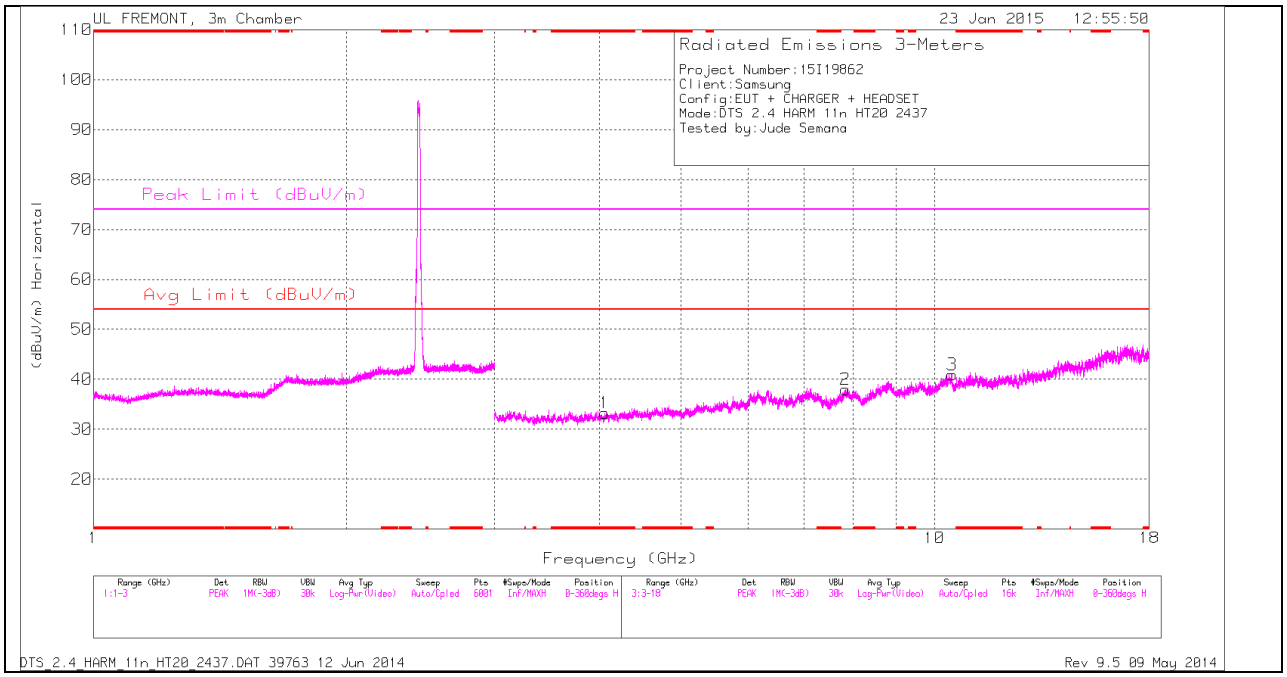
MID CHANNEL HORIZONTAL



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

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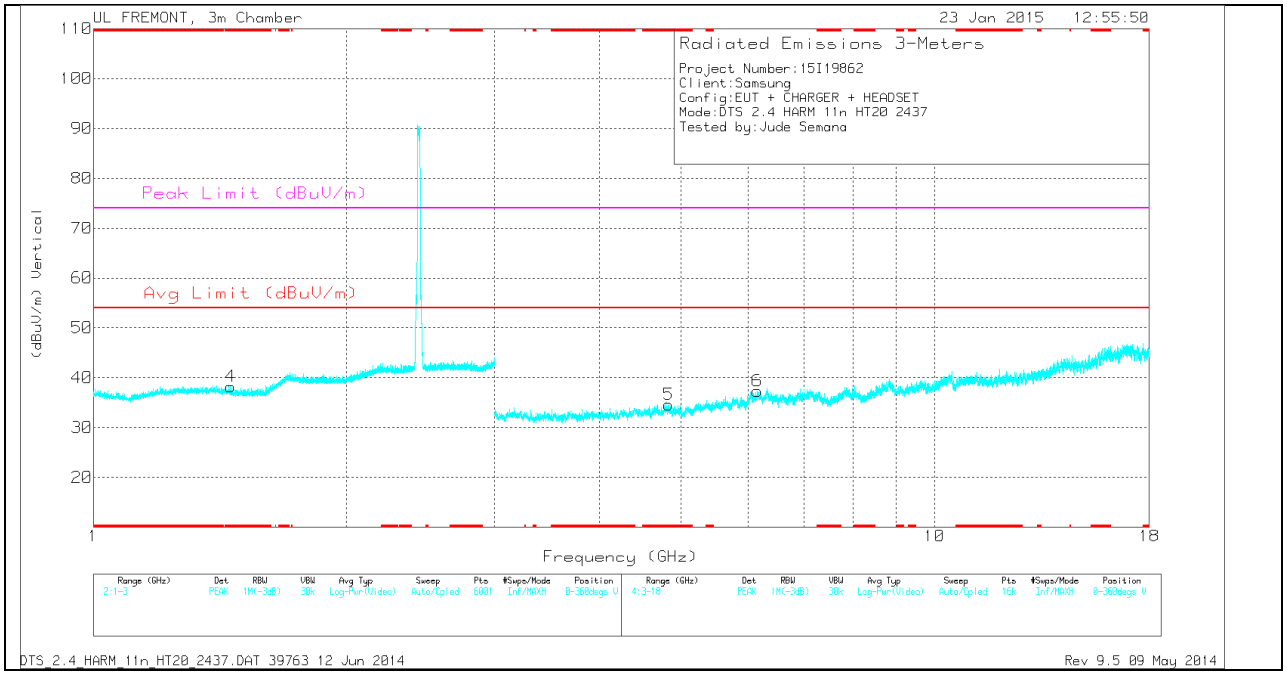
MID CHANNEL VERTICAL



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 T711 (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	* 1.456	33.81	PK	28	-23.6	0	38.21	-	-	74	-35.79	0-360	200	V
1	* 4.055	31.23	PK	33.2	-31.2	0	33.23	-	-	74	-40.77	0-360	200	H
5	* 4.831	30.65	PK	33.9	-29.9	0	34.65	-	-	74	-39.35	0-360	100	V
3	10.495	28.43	PK	38.1	-25.6	0	40.93	-	-	-	-	0-360	100	H
6	6.158	31.17	PK	35.9	-29.7	0	37.37	-	-	-	-	0-360	200	V
2	7.835	29.68	PK	35.8	-27.5	0	37.98	-	-	-	-	0-360	100	H

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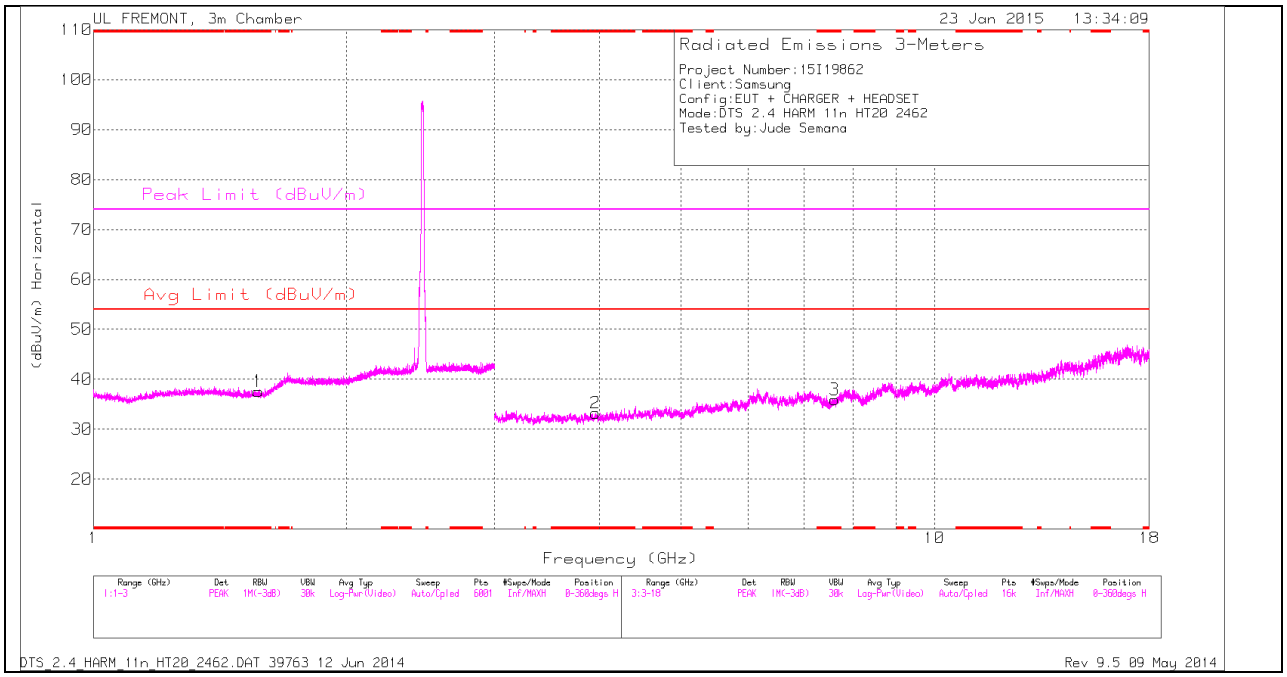
HIGH CHANNEL HORIZONTAL



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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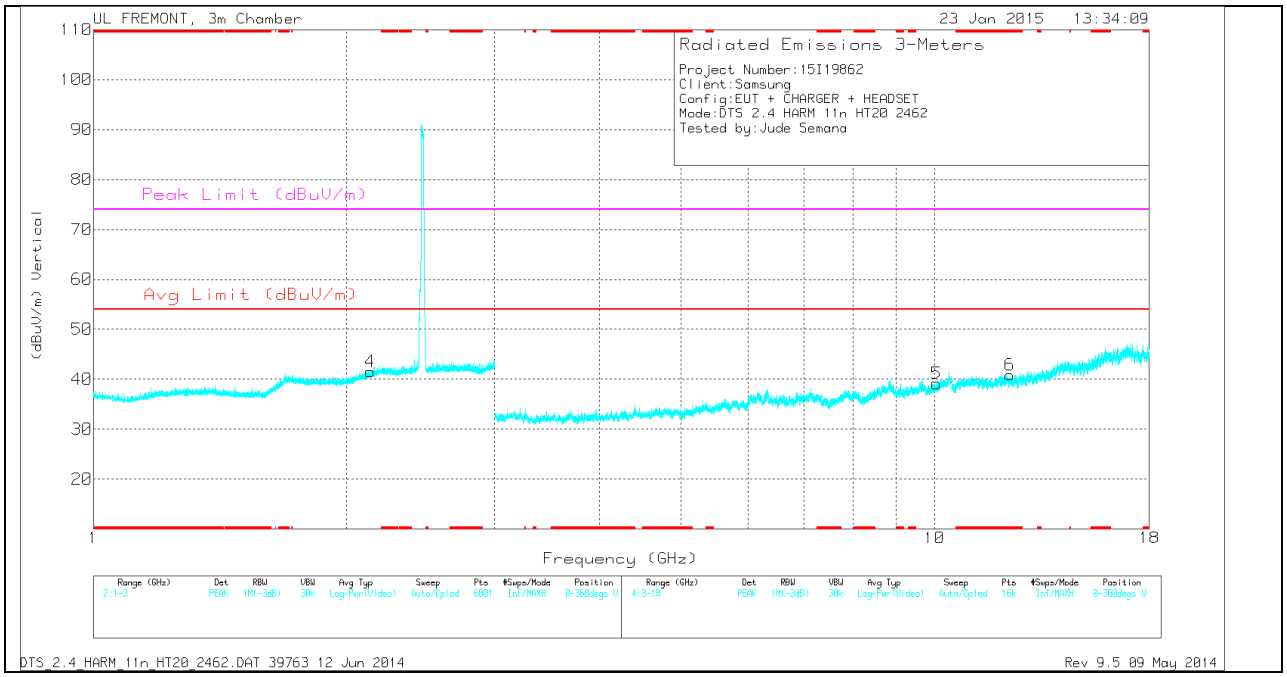
HIGH CHANNEL VERTICAL



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 T711 (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	* 1.571	33.28	PK	27.7	-23.4	0	37.58	-	-	74	-36.42	0-360	200	H
6	* 12.29	28.59	PK	38.5	-26.2	0	40.89	-	-	74	-33.11	0-360	100	V
2	* 3.954	30.92	PK	33.2	-30.9	0	33.22	-	-	74	-40.78	0-360	100	H
3	* 7.611	28.32	PK	35.6	-28	0	35.92	-	-	74	-38.08	0-360	100	H
5	10.053	27.26	PK	37.8	-25.9	0	39.16	-	-	-	-	0-360	200	V
4	2.135	33.02	PK	31.5	-23	0	41.52	-	-	-	-	0-360	200	V

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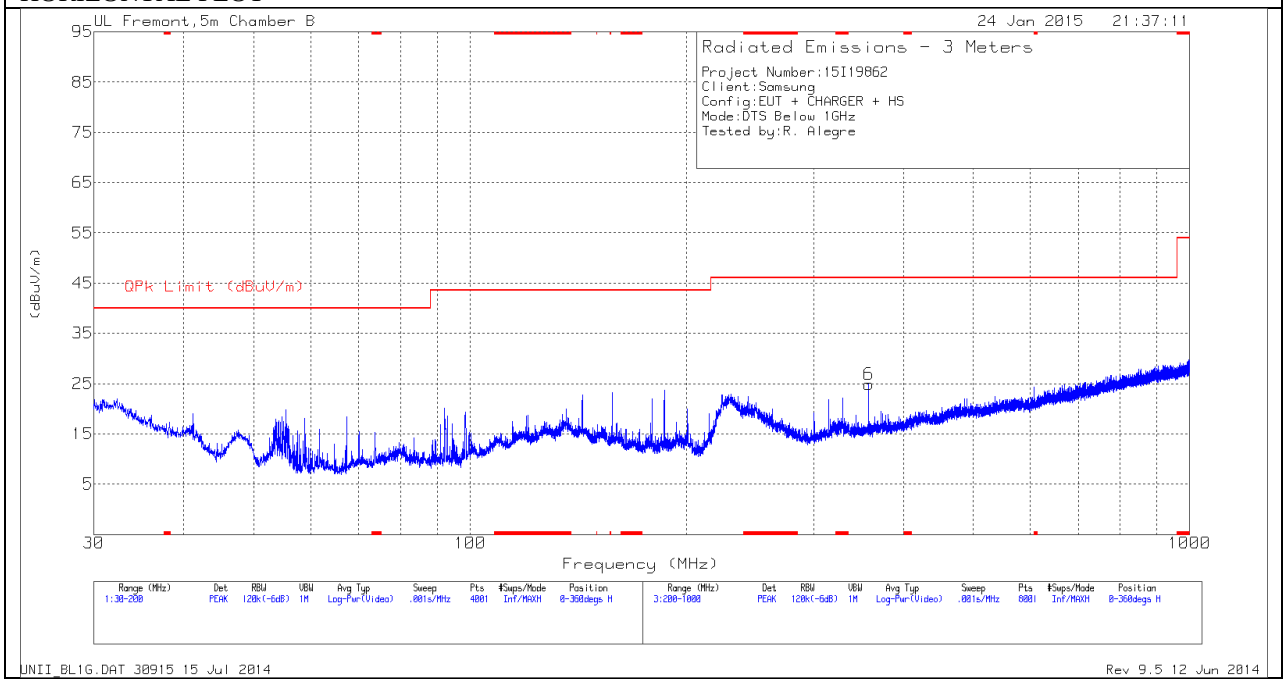
10.3. WORST-CASE BELOW 1 GHz

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

HORIZONTAL PLOT



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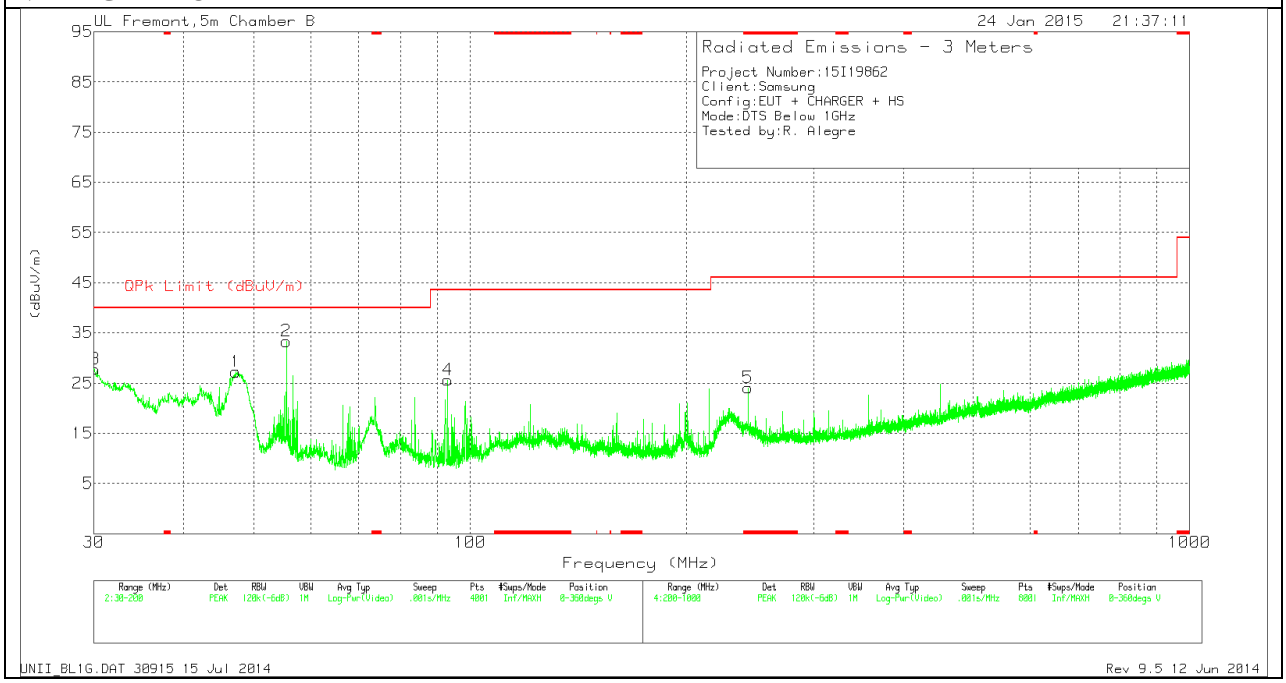
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, VERTICAL)

VERTICAL PLOT



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Below 1G Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T243 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	* 243.4	38.97	PK	11.6	-26.5	24.07	46.02	-21.95	0-360	101	V
3	30.085	35.99	PK	20.7	-28.9	27.79	40	-12.21	0-360	101	V
1	47.255	46.54	PK	9.4	-28.7	27.24	40	-12.76	0-360	101	V
2	55.5425	54.63	PK	7.3	-28.6	33.33	40	-6.67	0-360	101	V
4	93.07	45.28	PK	8.4	-28.1	25.58	43.52	-17.94	0-360	101	V
6	357.95	35.97	PK	14.8	-25.9	24.87	46.02	-21.15	0-360	300	H

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

PK - Peak detector

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11. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 8.8

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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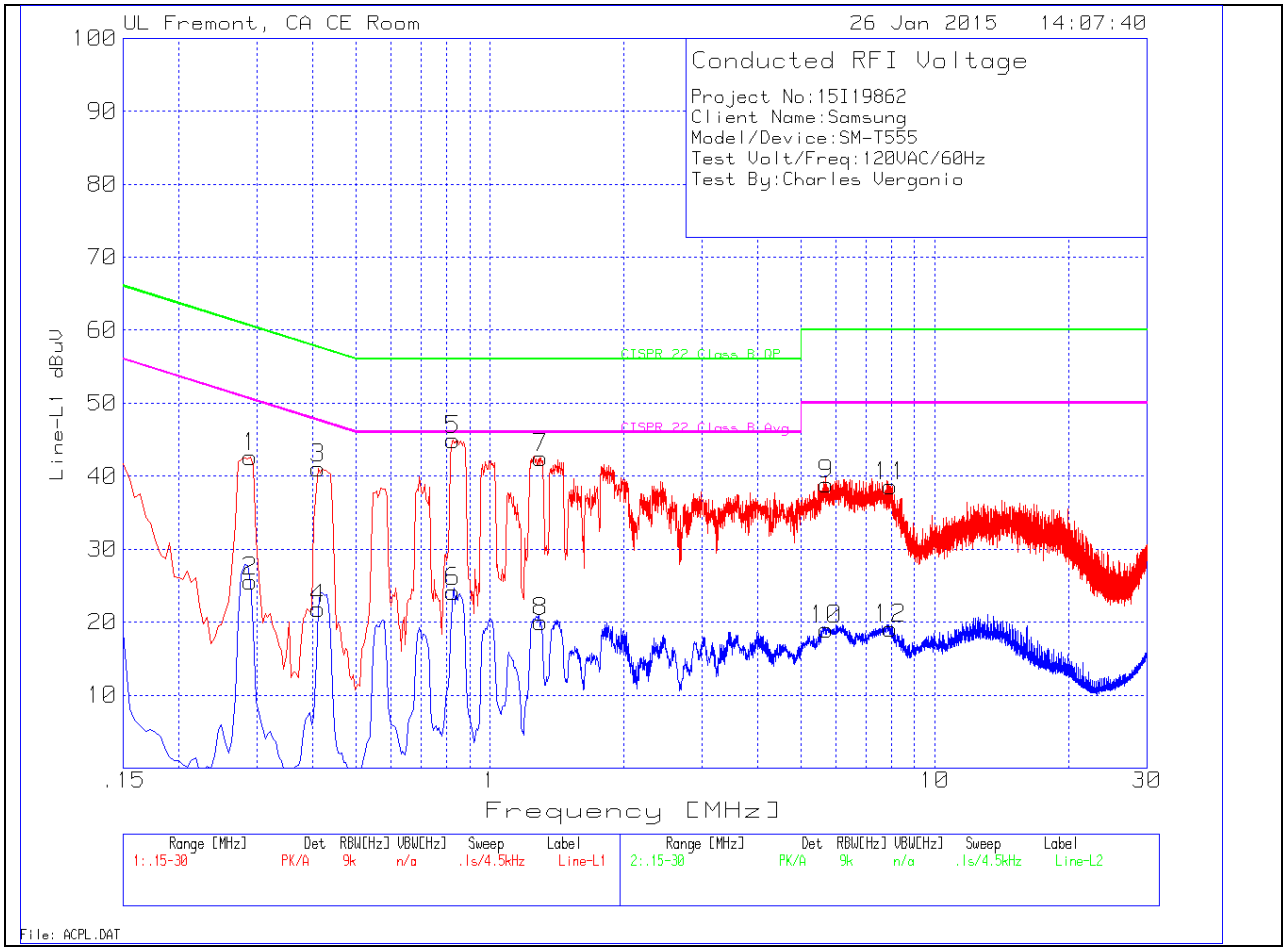
RESULTS

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	.2895	42	PK	.6	0	42.6	60.5	-17.9	-	-
2	.2895	25	Av	.6	0	25.6	-	-	50.5	-24.9
3	.411	40.7	PK	.4	0	41.1	57.6	-16.5	-	-
4	.411	21.42	Av	.4	0	21.82	-	-	47.6	-25.78
5	.825	44.7	PK	.3	0	45	56	-11	-	-
6	.825	23.85	Av	.3	0	24.15	-	-	46	-21.85
7	1.302	42.16	PK	.2	.1	42.46	56	-13.54	-	-
8	1.302	19.68	Av	.2	.1	19.98	-	-	46	-26.02
9	5.7075	38.58	PK	.2	.1	38.88	60	-21.12	-	-
10	5.7075	18.74	Av	.2	.1	19.04	-	-	50	-30.96
11	7.9485	38.36	PK	.2	.1	38.66	60	-21.34	-	-
12	7.9485	18.86	Av	.2	.1	19.16	-	-	50	-30.84

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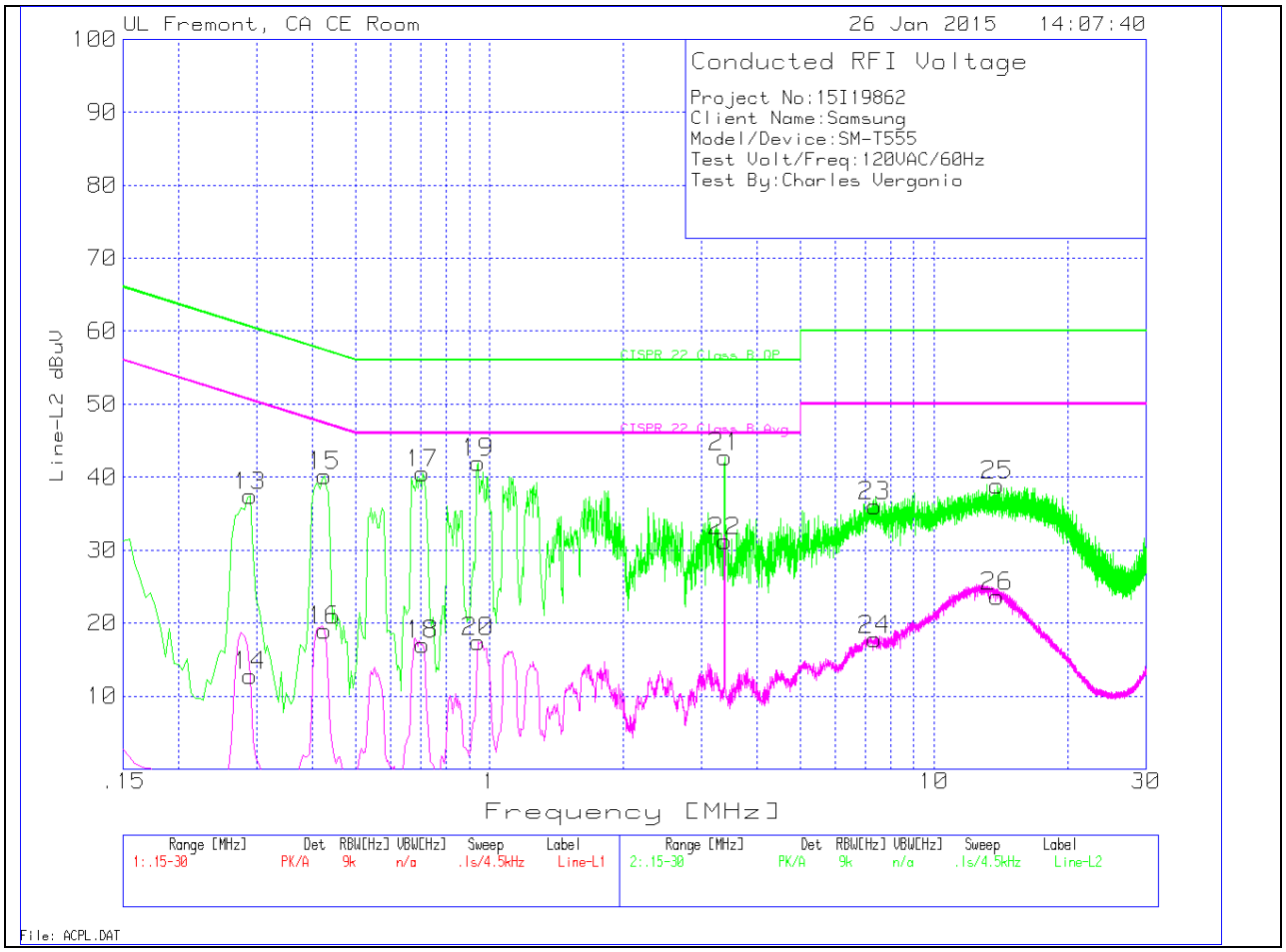
LINE 2 PLOT



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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	.2895	36.8	PK	.6	0	37.4	60.5	-23.1	-	-
14	.2895	12.22	Av	.6	0	12.82	-	-	50.5	-37.68
15	.4245	39.81	PK	.4	0	40.21	57.4	-17.19	-	-
16	.4245	18.59	Av	.4	0	18.99	-	-	47.4	-28.41
17	.708	40.2	PK	.3	0	40.5	56	-15.5	-	-
18	.708	16.76	Av	.3	0	17.06	-	-	46	-28.94
19	.942	41.69	PK	.3	0	41.99	56	-14.01	-	-
20	.942	17.12	Av	.3	0	17.42	-	-	46	-28.58
21	3.381	42.48	PK	.2	.1	42.78	56	-13.22	-	-
22	3.381	30.9	Av	.2	.1	31.2	-	-	46	-14.8
23	7.3545	35.77	PK	.2	.1	36.07	60	-23.93	-	-
24	7.3545	17.46	Av	.2	.1	17.76	-	-	50	-32.24
25	13.8885	38.46	PK	.2	.2	38.86	60	-21.14	-	-
26	13.8885	23.27	Av	.2	.2	23.67	-	-	50	-26.33

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