FCC CFR47 PART 15 SUBPART C

CERTIFICATION TEST REPORT

FOR

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

MODEL NUMBER: SM-T239M

FCC ID: A3LSMT239M

REPORT NUMBER: 15I20013-E4

ISSUE DATE: FEBRUARY 16, 2015

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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	2/16/15	Initial Issue	P. Zhang

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TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS 5

2. TEST METHODOLOGY 6

4. CALIBRATION AND UNCERTAINTY 7

4.1. MEASURING INSTRUMENT CALIBRATION 7

4.2. SAMPLE CALCULATION 7

4.3. MEASUREMENT UNCERTAINTY 7

5. EQUIPMENT UNDER TEST 8

5.1. DESCRIPTION OF EUT 8

5.2. MAXIMUM OUTPUT POWER 8

5.3. DESCRIPTION OF AVAILABLE ANTENNAS 8

5.4. WORST-CASE CONFIGURATION AND MODE 9

5.5. DESCRIPTION OF TEST SETUP 10

6. TEST AND MEASUREMENT EQUIPMENT 12

7. MEASUREMENT METHODS 13

8. SUMMARY TABLE 14

9. ANTENNA PORT TEST RESULTS 15

9.1. 6 dB BANDWIDTH 15

9.1.1. 802.11b MODE IN THE 2.4 GHz BAND 16
9.1.2. 802.11g MODE IN THE 2.4 GHz BAND 16
9.1.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND 16
9.1.4. 6 dB BANDWIDTH MID CH PLOTS 17

9.2. 99% BANDWIDTH 18

9.2.1. 802.11b MODE IN THE 2.4 GHz BAND 18
9.2.2. 802.11g MODE IN THE 2.4 GHz BAND 18
9.2.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND 18
9.2.4. 99% BANDWIDTH MID CH PLOTS 19

9.3. OUTPUT POWER 20

9.3.1. 802.11b MODE IN THE 2.4 GHz BAND 21
9.3.2. 802.11g MODE IN THE 2.4 GHz BAND 22
9.3.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND 23

9.4. PSD 24

9.4.1. 802.11b MODE IN THE 2.4 GHz BAND 24
9.4.2. 802.11g MODE IN THE 2.4 GHz BAND 25
9.4.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND 25

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9.4.4. PSD Chain 0 MID CH PLOTS 26

9.5. OUT-OF-BAND EMISSIONS 27
9.5.1. 802.11b MODE IN THE 2.4 GHz BAND 28
9.5.2. 802.11g MODE IN THE 2.4 GHz BAND 34
9.5.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND 40

10. RADIATED TEST RESULTS 46

10.1. LIMITS AND PROCEDURE 46

10.2. TRANSMITTER ABOVE 1 GHz 48
10.2.1. TX ABOVE 1 GHz 802.11b MODE IN THE 2.4 GHz BAND 48
10.2.2. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND 61
10.2.3. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND 74

10.3. WORST-CASE BELOW 1 GHz 87

11. AC POWER LINE CONDUCTED EMISSIONS 90

12. SETUP PHOTOS 95

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	**SAMSUNG ELECTRONICS CO., LTD.**
EUT DESCRIPTION:	**GSM/WCDMA/LTE Tablet with Bluetooth and DTS/UNII a/b/g/n**
MODEL:	**SM-T239M**
SERIAL NUMBER:	**R32G101E1FD (Conducted); R32G1025LTZ (Radiated)**
DATE TESTED:	**JANUARY 27 – FEBRUARY 2, 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.

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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	☐ 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 GSM/WCDMA/LTE Tablet with Bluetooth and DTS/UNII a/b/g/n.

The model FCC ID: A3LSMT239M shares the same enclosure and circuit board as mode FCC ID: A3LSMT239. The WLAN/Bluetooth circuitry and layout, including antenna, are almost identical between the two units. The WLAN/Bluetooth antenna and surrounding circuitry is the same between these two units.

The WWAN circuitry and layout, including antenna, are almost identical between the two units. Only Difference is addition of UMTS B4, LTE B2, B4, B17 circuit.

After confirming through preliminary radiated emissions that the performance of the A3LSMT239M WLAN/Bluetooth data remains representative of this model (FCC ID: A3LSMT239). Test data for FCC ID: A3LSMT239 is being submitted for this application.

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	12	15.85
2412 - 2462	802.11g	10.8	12.02
2412 - 2462	802.11n HT20	10.2	10.47

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of 0.54dBi.

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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	ETA0U83EWE	N/A	N/A
Earphone	SAMSUNG	N/A	N/A	N/A

I/O CABLES

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

TEST SETUP

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

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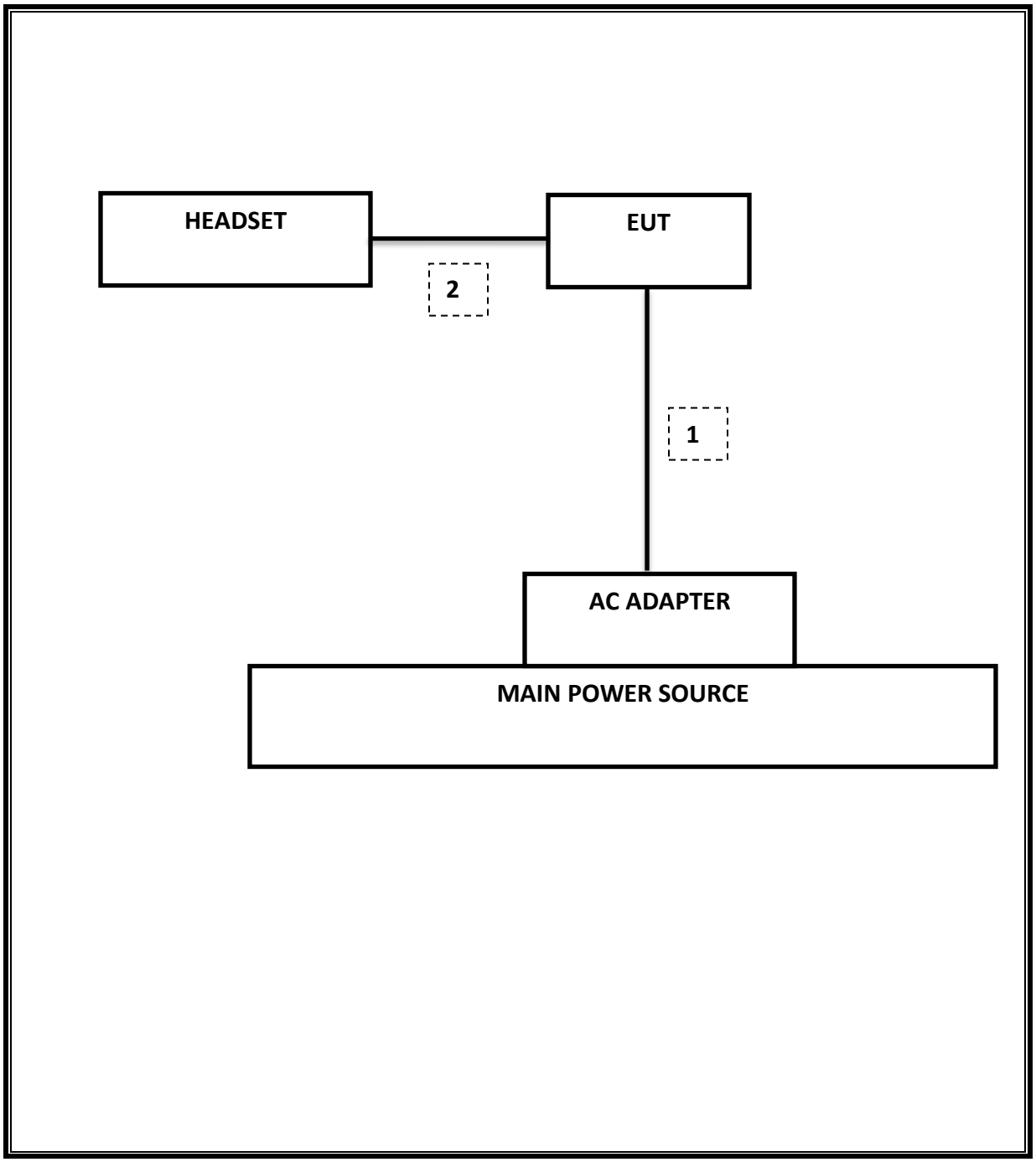
SETUP DIAGRAM FOR TESTS



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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	9.99MHz
2.1051, 15.247 (d)	RSS-210 A8.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	-33.5dBm
15.247	RSS-210 A8.4	TX conducted output power	<30dBm		Pass	12dBm
15.247	RSS-210 A8.2	PSD	<8dBm		Pass	-13.65dBm
15.207 (a)	RSS-GEN 7.2.2	AC Power Line conducted emissions	Section 10	Radiated	Pass	54.65dBuV(PK)
15.205, 15.209	RSS-210 Clause 2.6, RSS-210 Clause 6	Radiated Spurious Emission	< 54dBuV/m		Pass	51.67dBuV/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

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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)
Low	2412	9.99	0.5
Mid	2437	10.10	0.5
High	2462	10.10	0.5
Worst		9.99	

9.1.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	16.32	0.5
Mid	2437	16.38	0.5
High	2462	16.38	0.5
Worst		16.32	

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	17.07	0.5
Mid	2437	17.28	0.5
High	2462	17.55	0.5
Worst		17.07	

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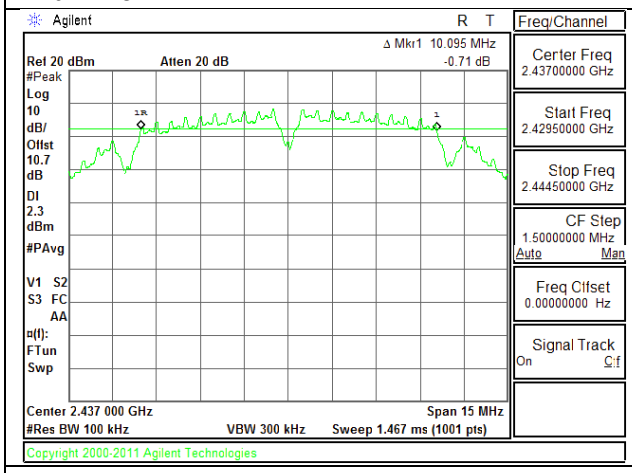
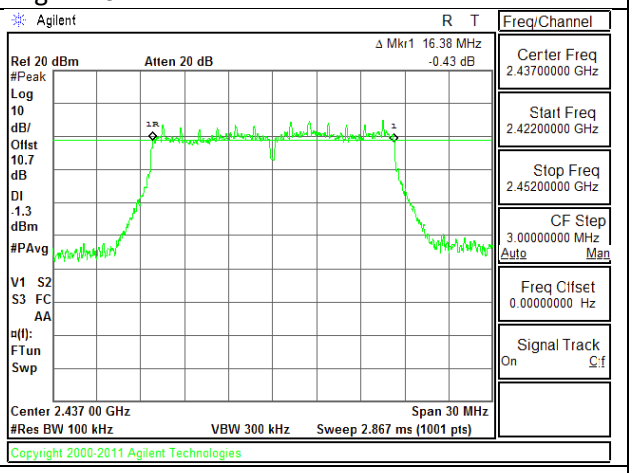
9.1.4. 6 dB BANDWIDTH MID CH PLOTS

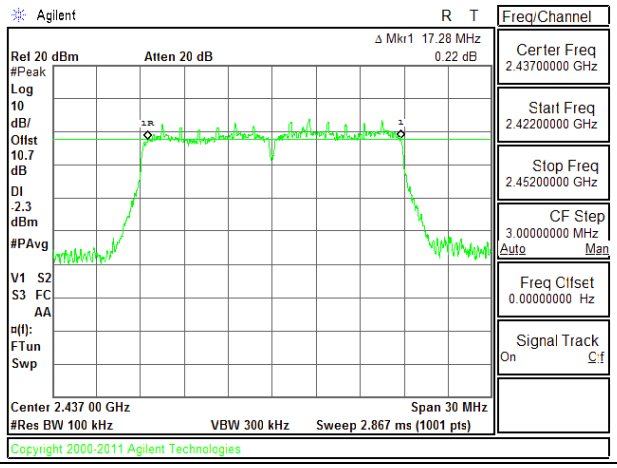
11b HT20 2.4



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	13.00
Mid	2437	13.04
High	2462	13.26
Worst		13.26

9.2.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	16.38
Mid	2437	16.43
High	2462	16.47
Worst		16.47

9.2.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	17.49
Mid	2437	17.56
High	2462	17.58
Worst		17.58

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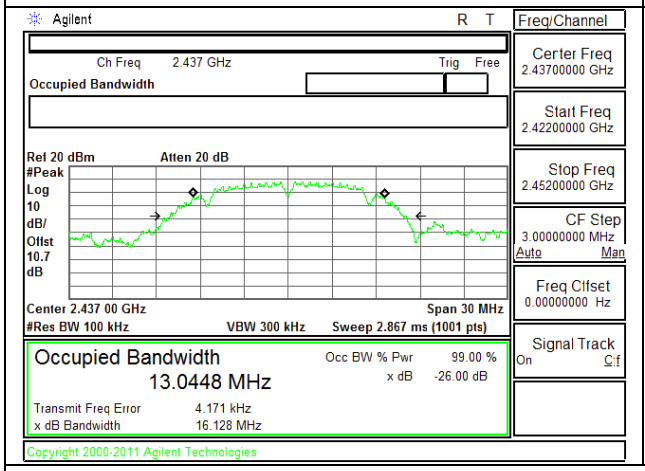
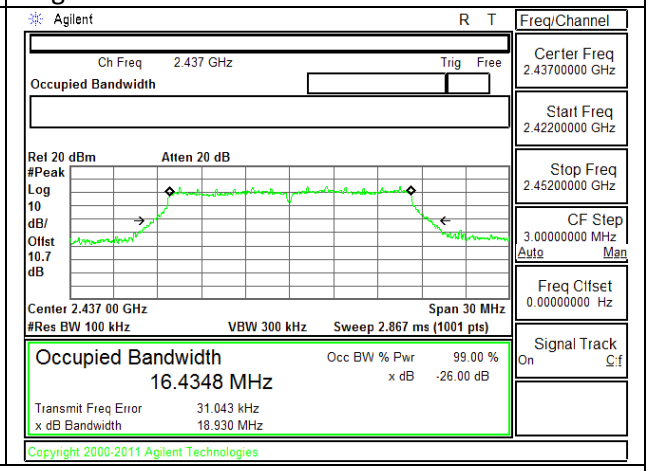
9.2.4. 99% BANDWIDTH MID CH PLOTS

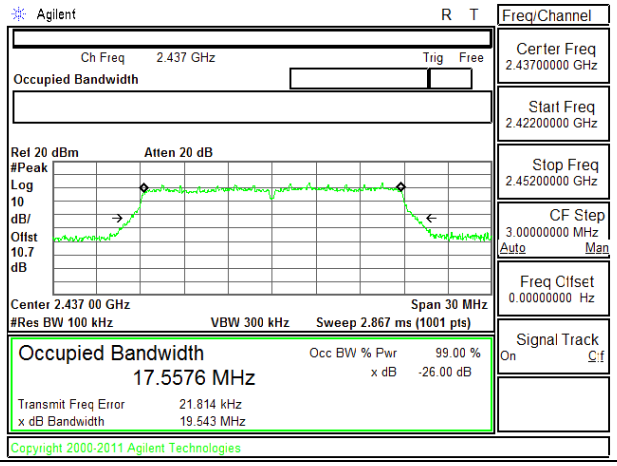
11b HT20 2.4



11g HT20 2.4



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	0.54	30.00	30	36	30.00
Mid	2437	0.54	30.00	30	36	30.00
High	2462	0.54	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	11.90	11.90	30.00	-18.10
Mid	2437	12.00	12.00	30.00	-18.00
High	2462	11.70	11.70	30.00	-18.30
Worst			12.00		

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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	0.54	30.00	30	36	30.00
Mid	2437	0.54	30.00	30	36	30.00
High	2462	0.54	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	10.80	10.80	30.00	-19.20
Mid	2437	10.70	10.70	30.00	-19.30
High	2462	10.70	10.70	30.00	-19.30
Worst			10.80		

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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	0.54	30.00	30	36	30.00
Mid	2437	0.54	30.00	30	36	30.00
High	2462	0.54	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	9.70	9.70	30.00	-20.30
Mid	2437	10.10	10.10	30.00	-19.90
High	2462	10.20	10.20	30.00	-19.80
Worst			10.20		

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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	-13.65	8.0	-21.7
Mid	2437	-14.19	8.0	-22.2
High	2462	-14.74	8.0	-22.7

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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	-18.83	8.0	-26.8
Mid	2437	-18.80	8.0	-26.8
High	2462	-19.16	8.0	-27.2

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	-19.21	8.0	-27.2
Mid	2437	-19.23	8.0	-27.2
High	2462	-20.14	8.0	-28.1

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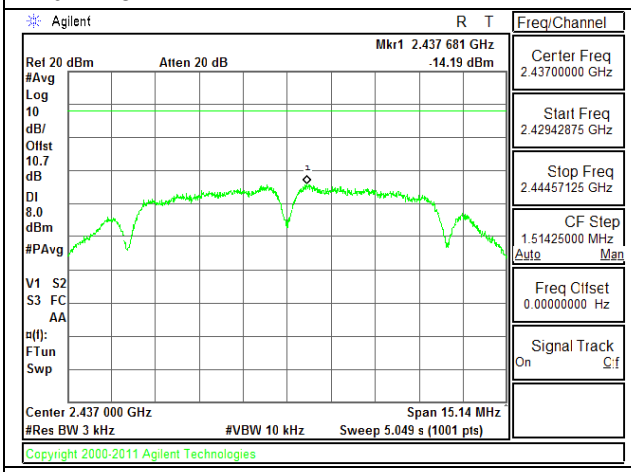
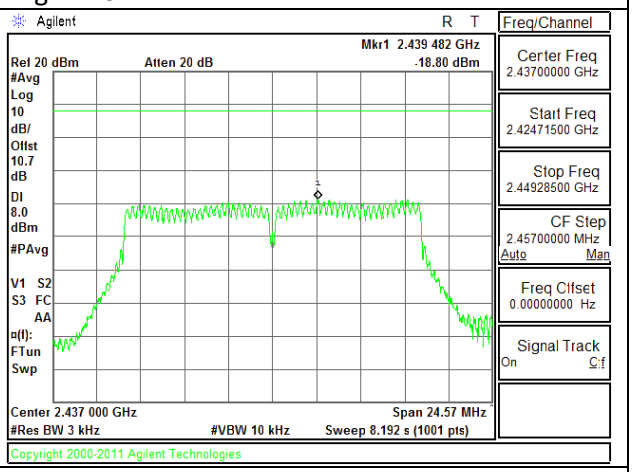
9.4.4. PSD Chain 0 MID CH PLOTS

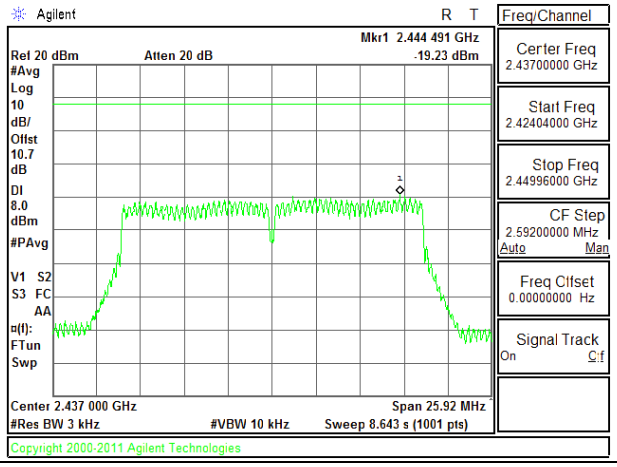
11b HT20 2.4



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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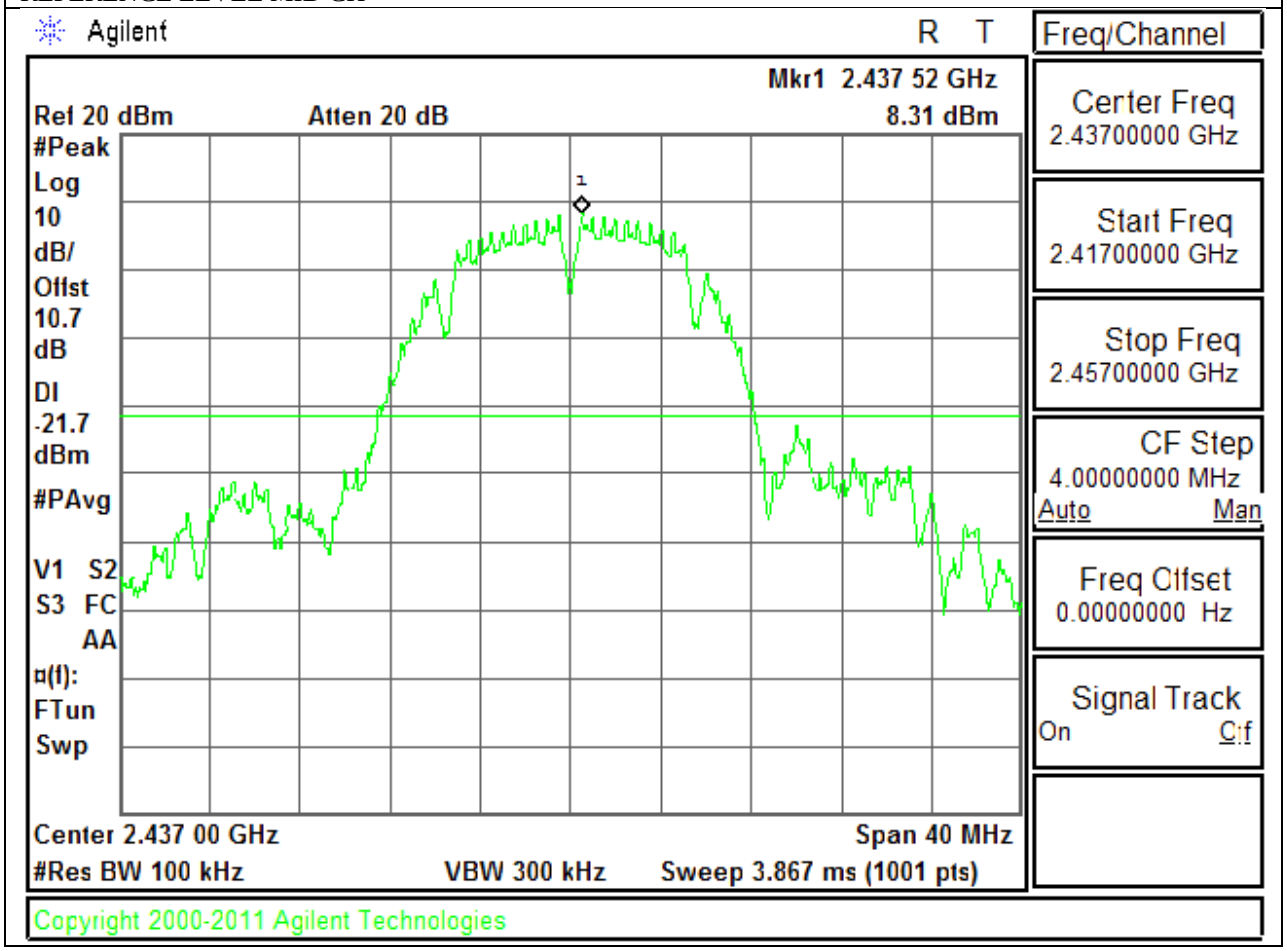
9.5.1. 802.11b MODE IN THE 2.4 GHz BAND

IN-BAND REFERENCE LEVEL

REFERENCE LEVEL MID CH



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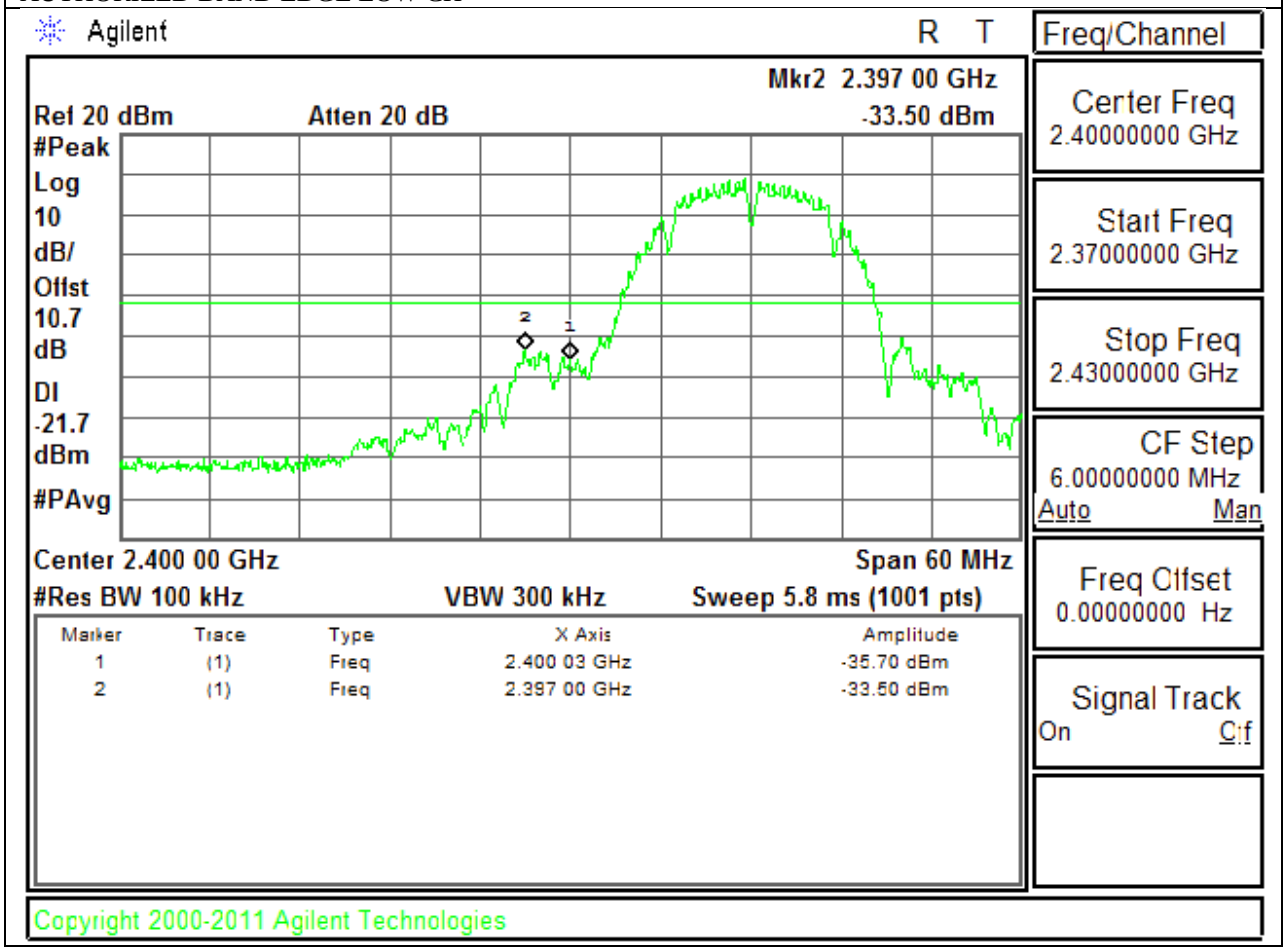
LOW CHANNEL BANDEDGE

AUTHORIZED BAND EDGE LOW CH



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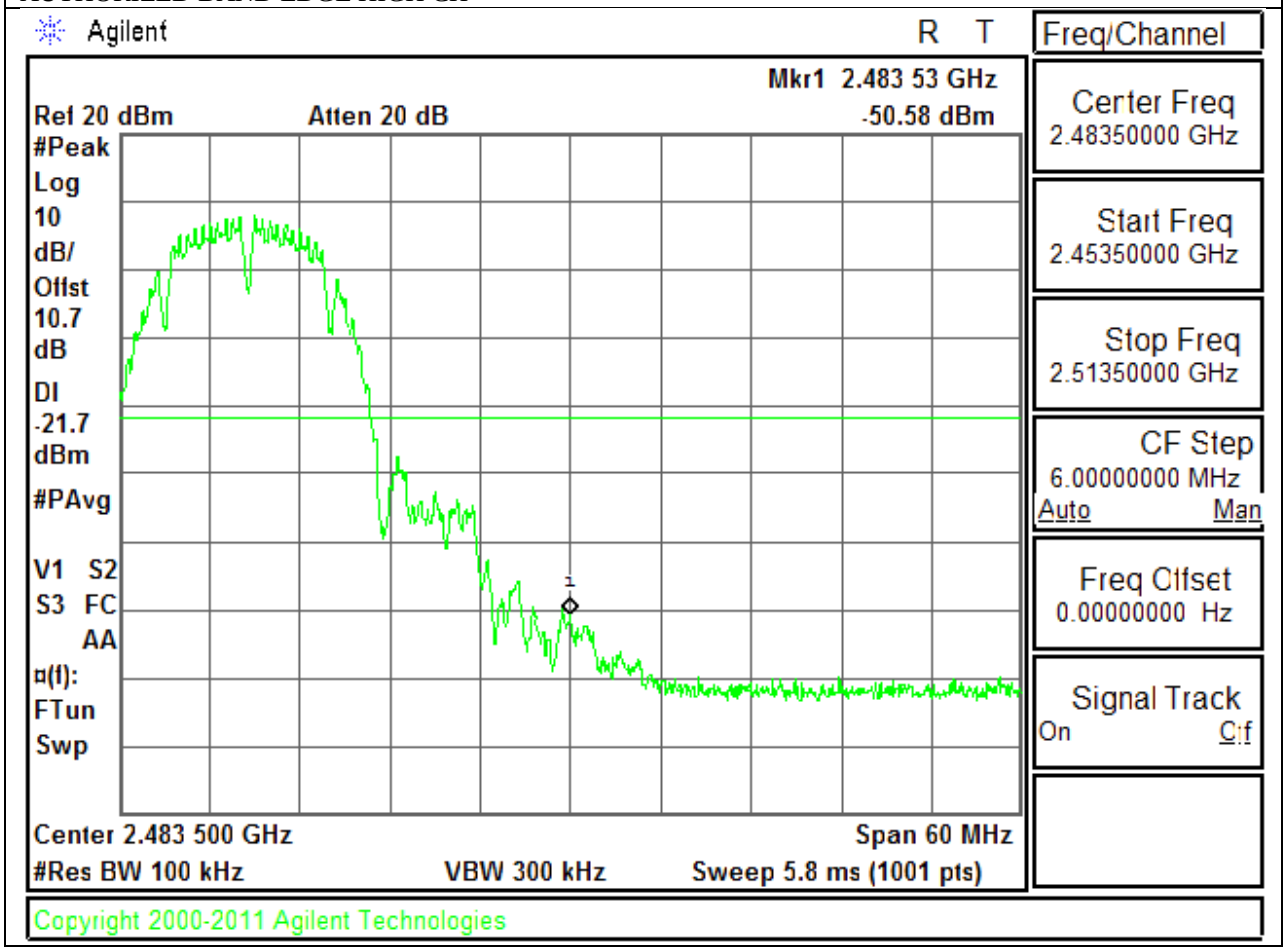
HIGH CHANNEL BANDEDGE

AUTHORIZED BAND EDGE HIGH CH



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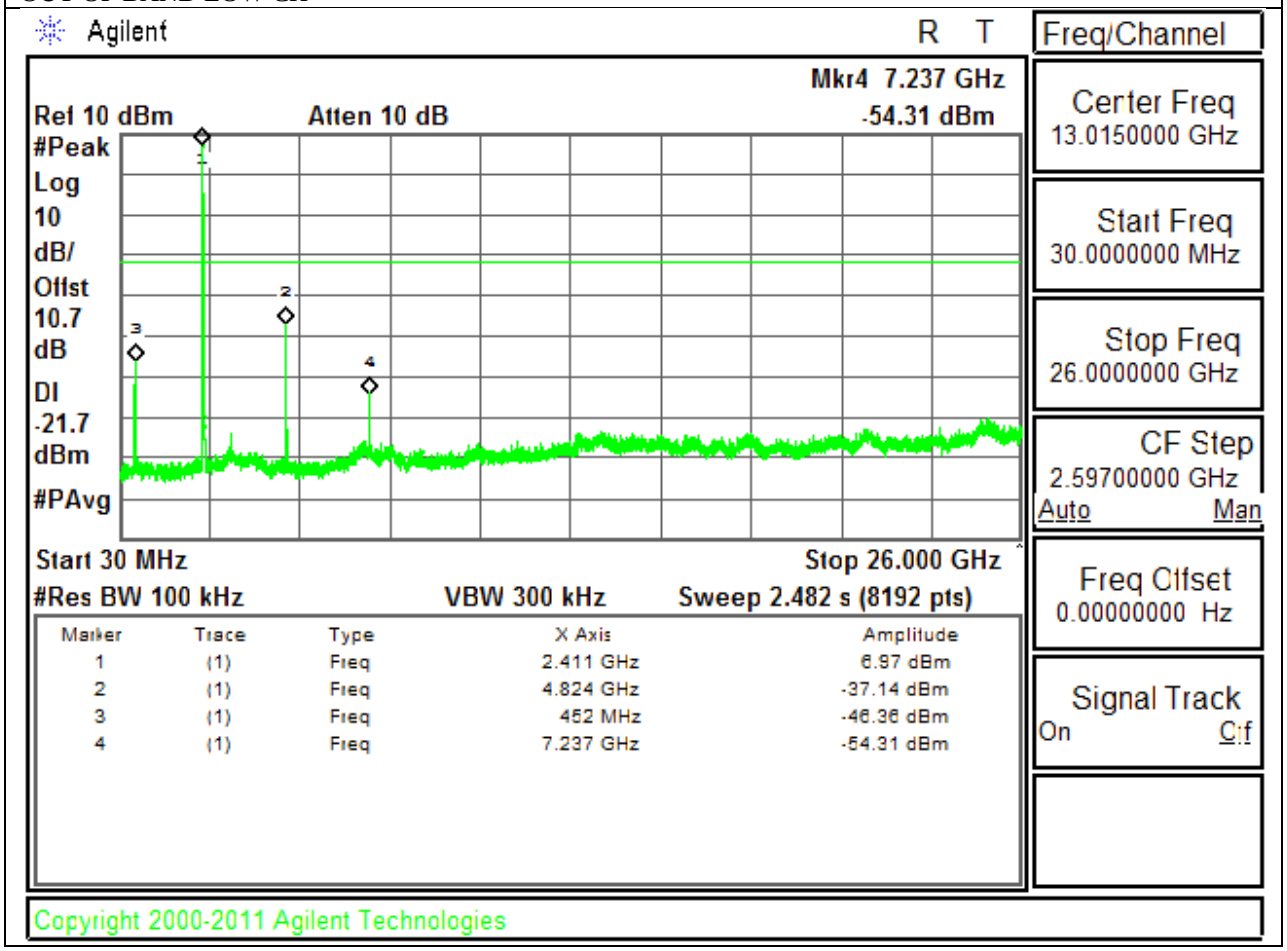
OUT-OF-BAND EMISSIONS

OUT OF BAND LOW CH



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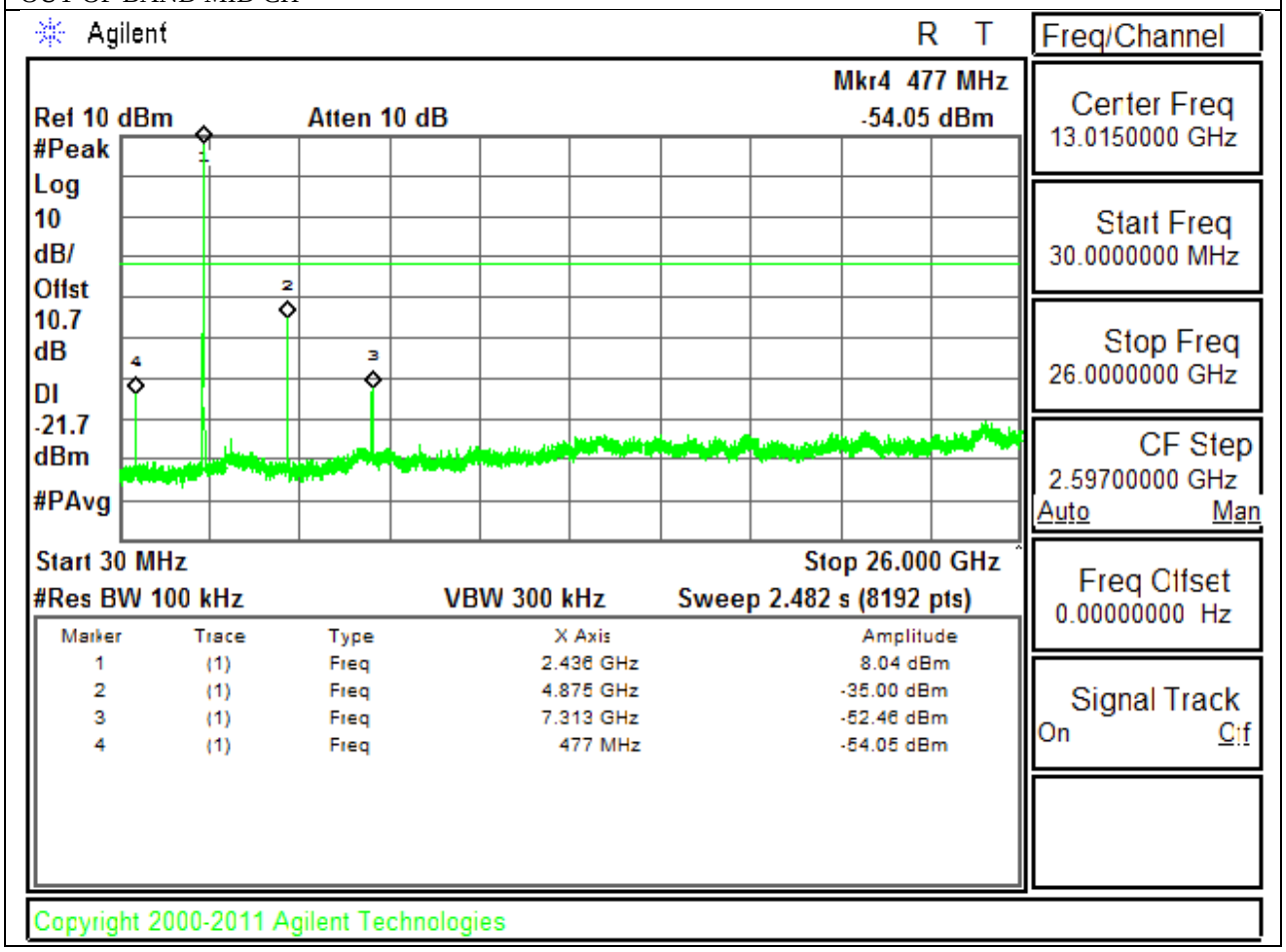
OUT OF BAND MID CH



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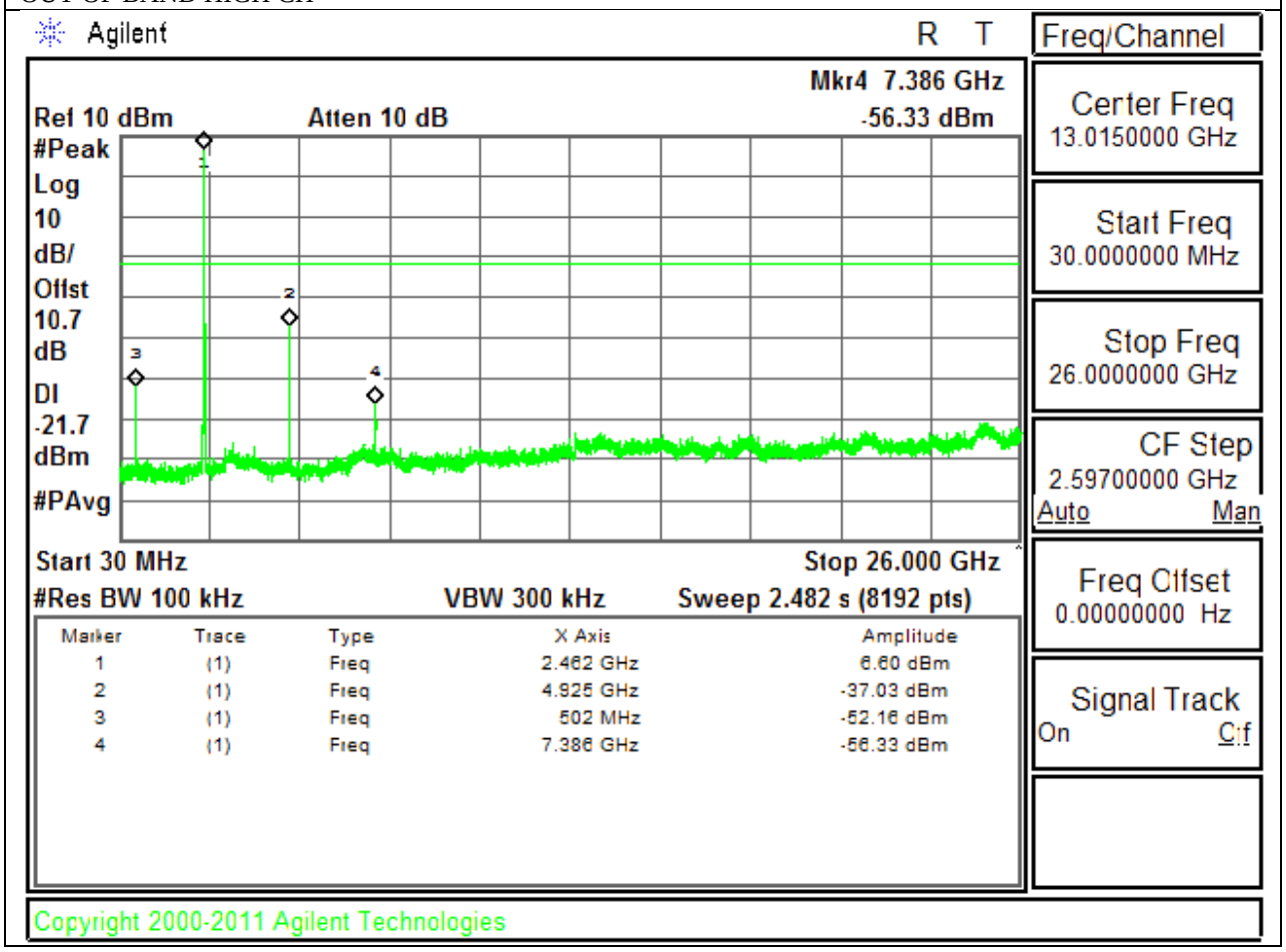
OUT OF BAND HIGH CH



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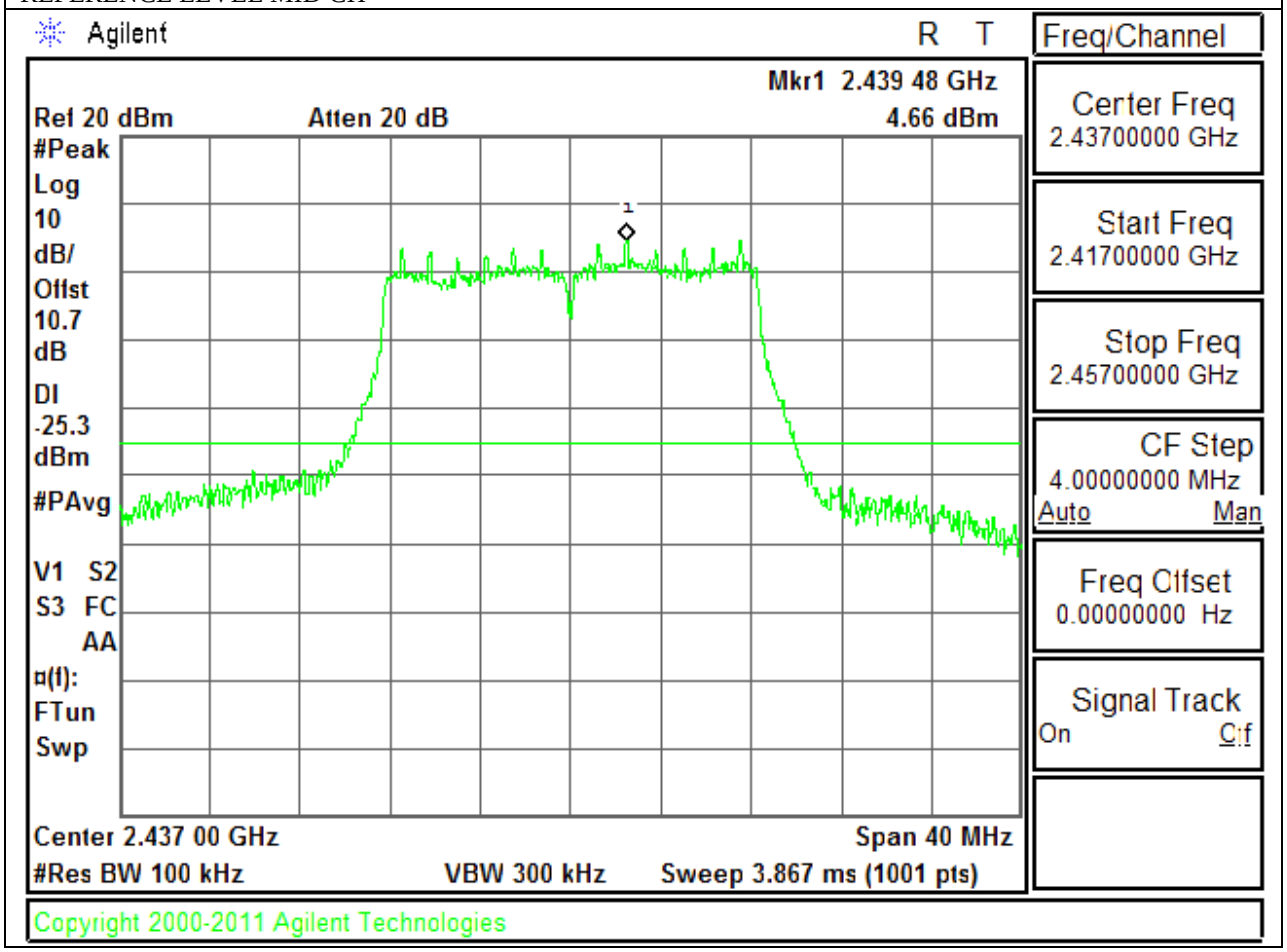
9.5.2. 802.11g MODE IN THE 2.4 GHz BAND

IN-BAND REFERENCE LEVEL

REFERENCE LEVEL MID CH



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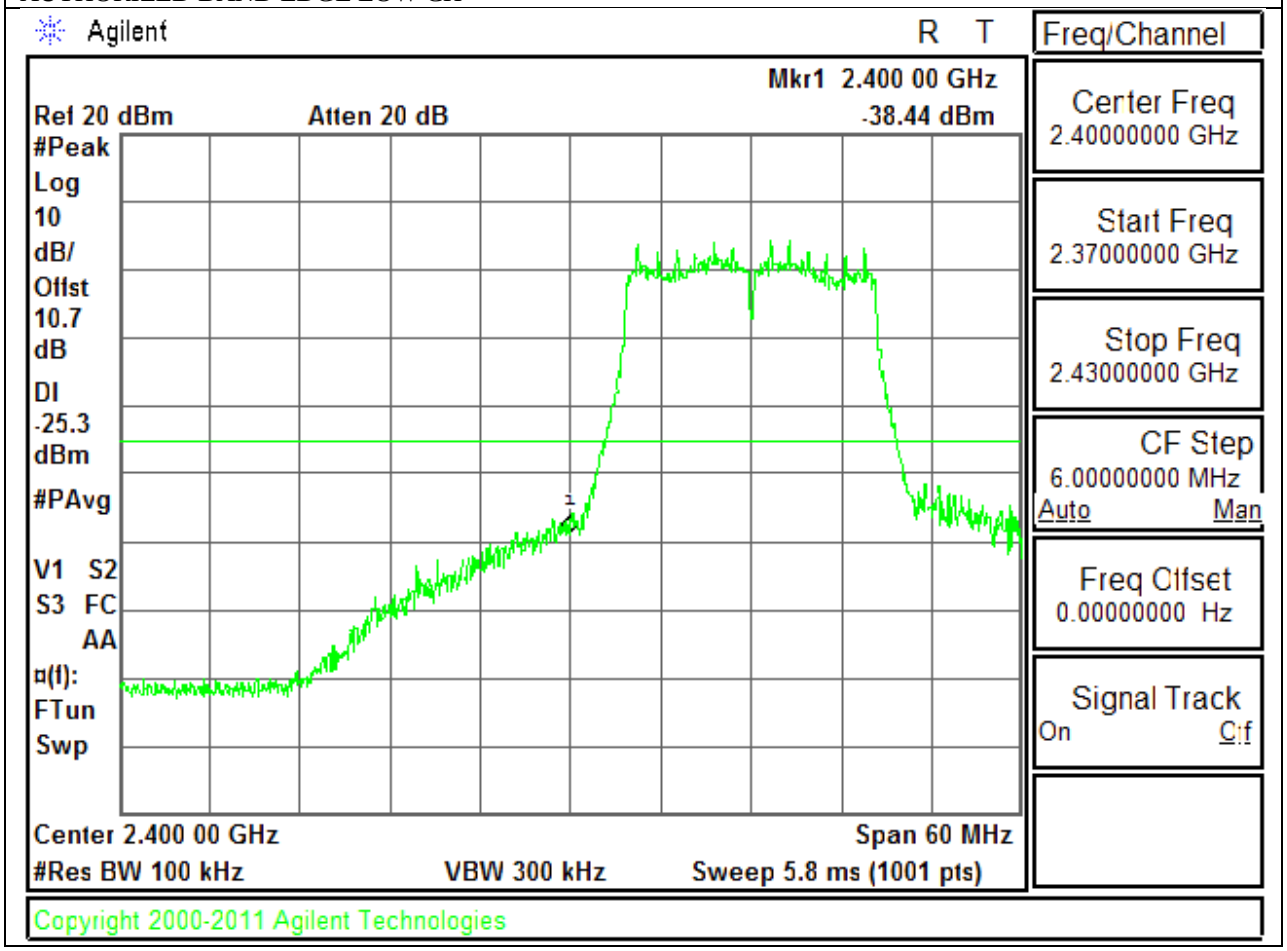
LOW CHANNEL BANDEDGE

AUTHORIZED BAND EDGE LOW CH



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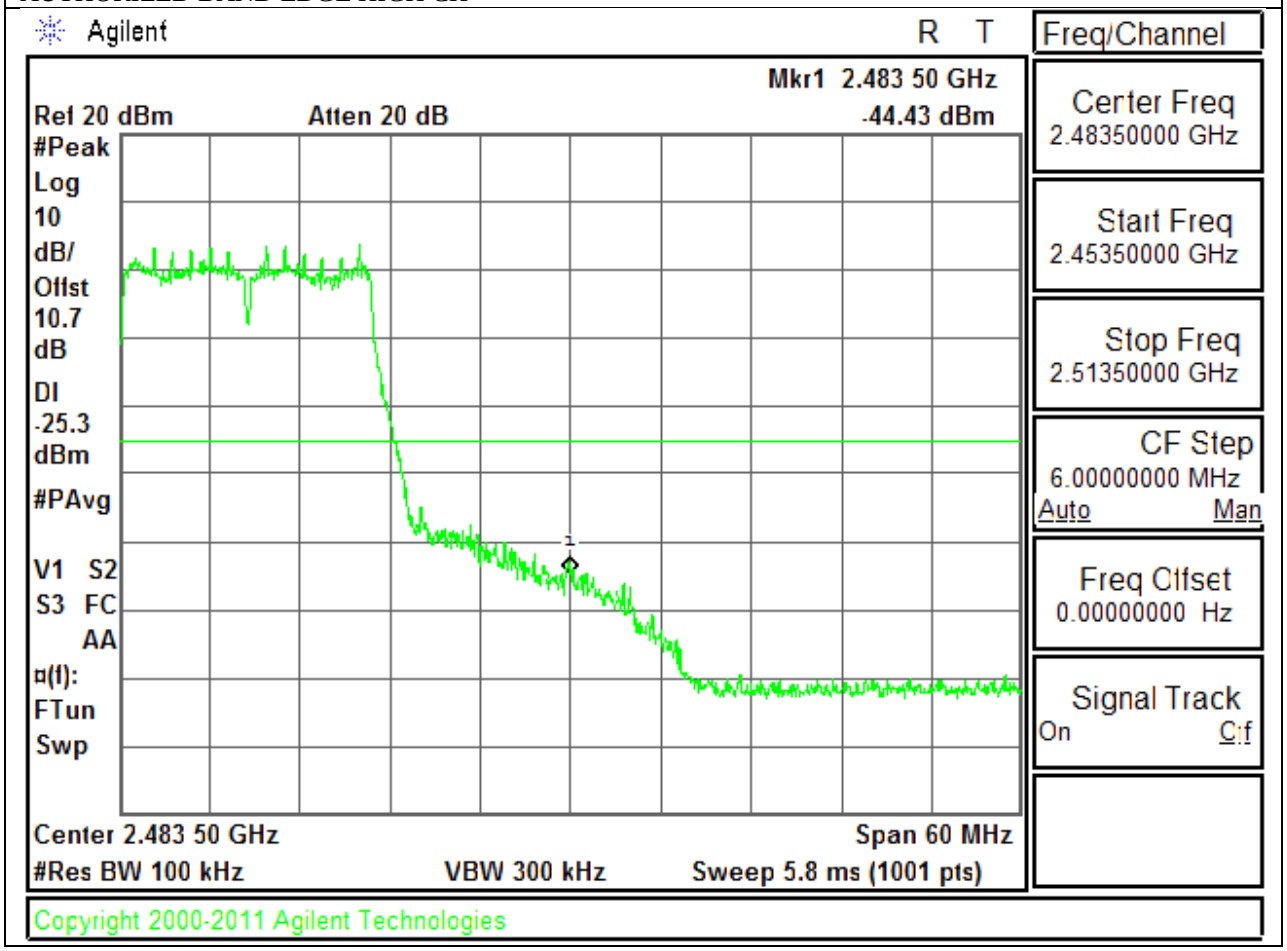
HIGH CHANNEL BANDEDGE

AUTHORIZED BAND EDGE HIGH CH



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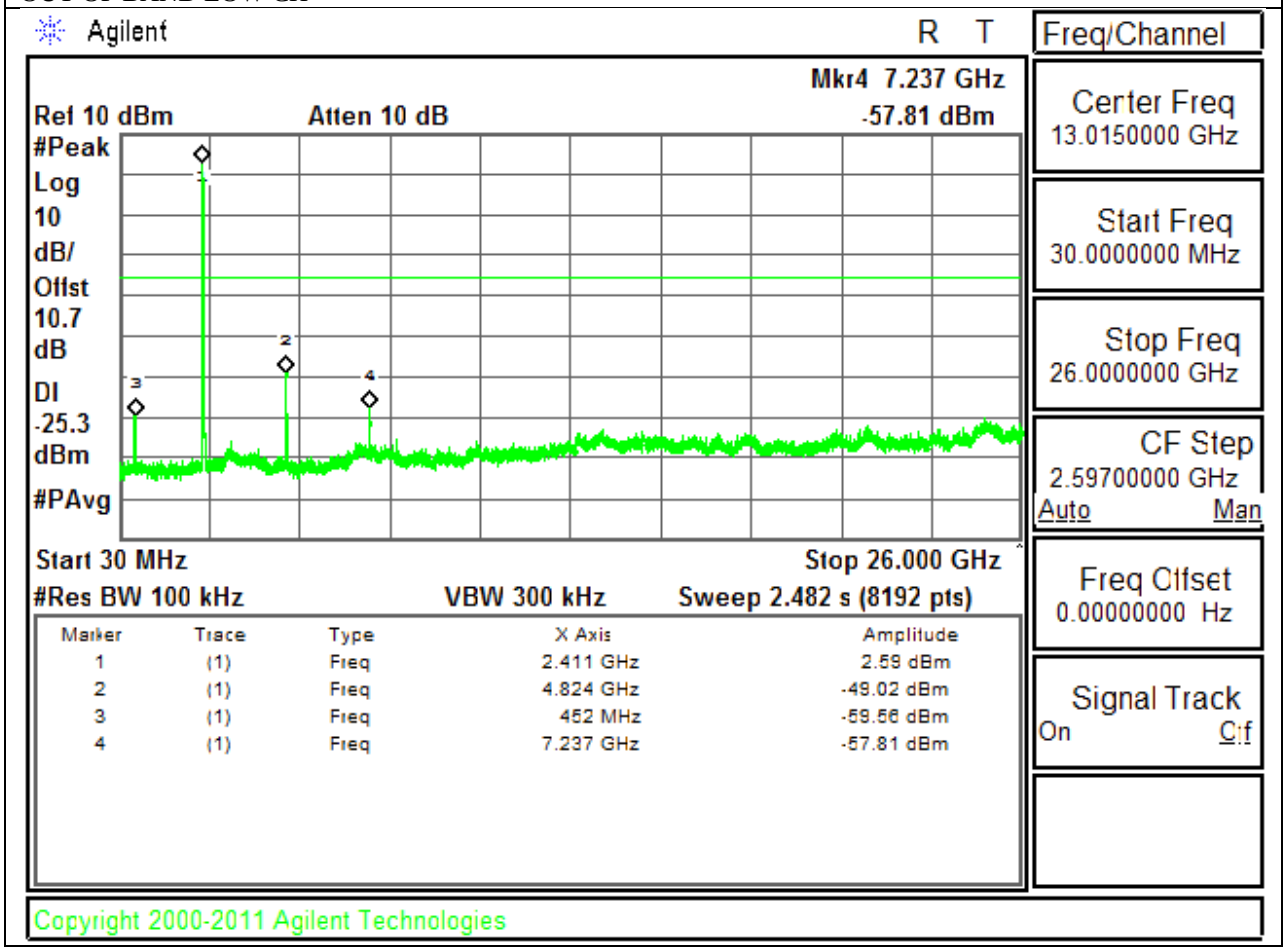
OUT-OF-BAND EMISSIONS

OUT OF BAND LOW CH



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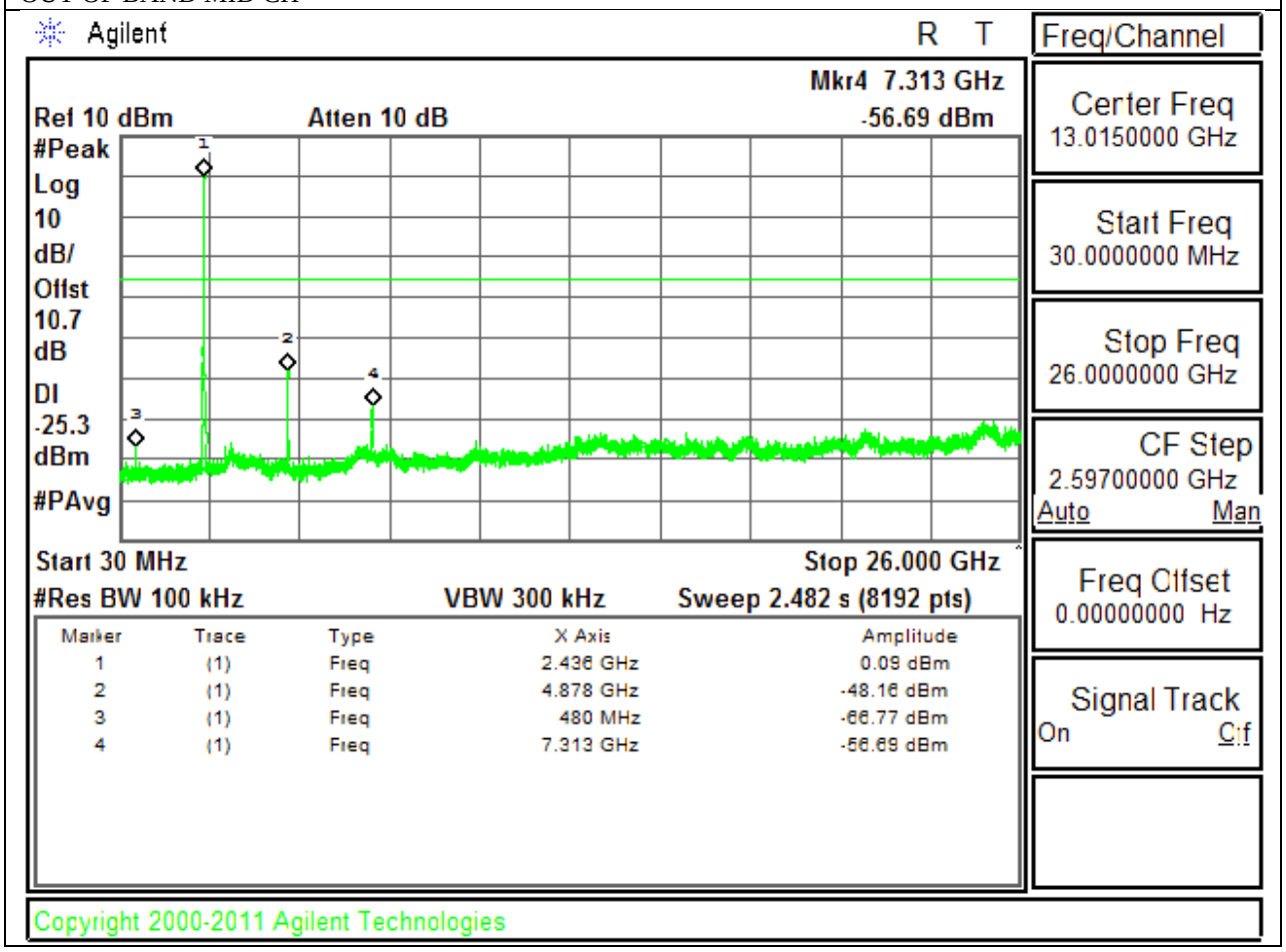
OUT OF BAND MID CH



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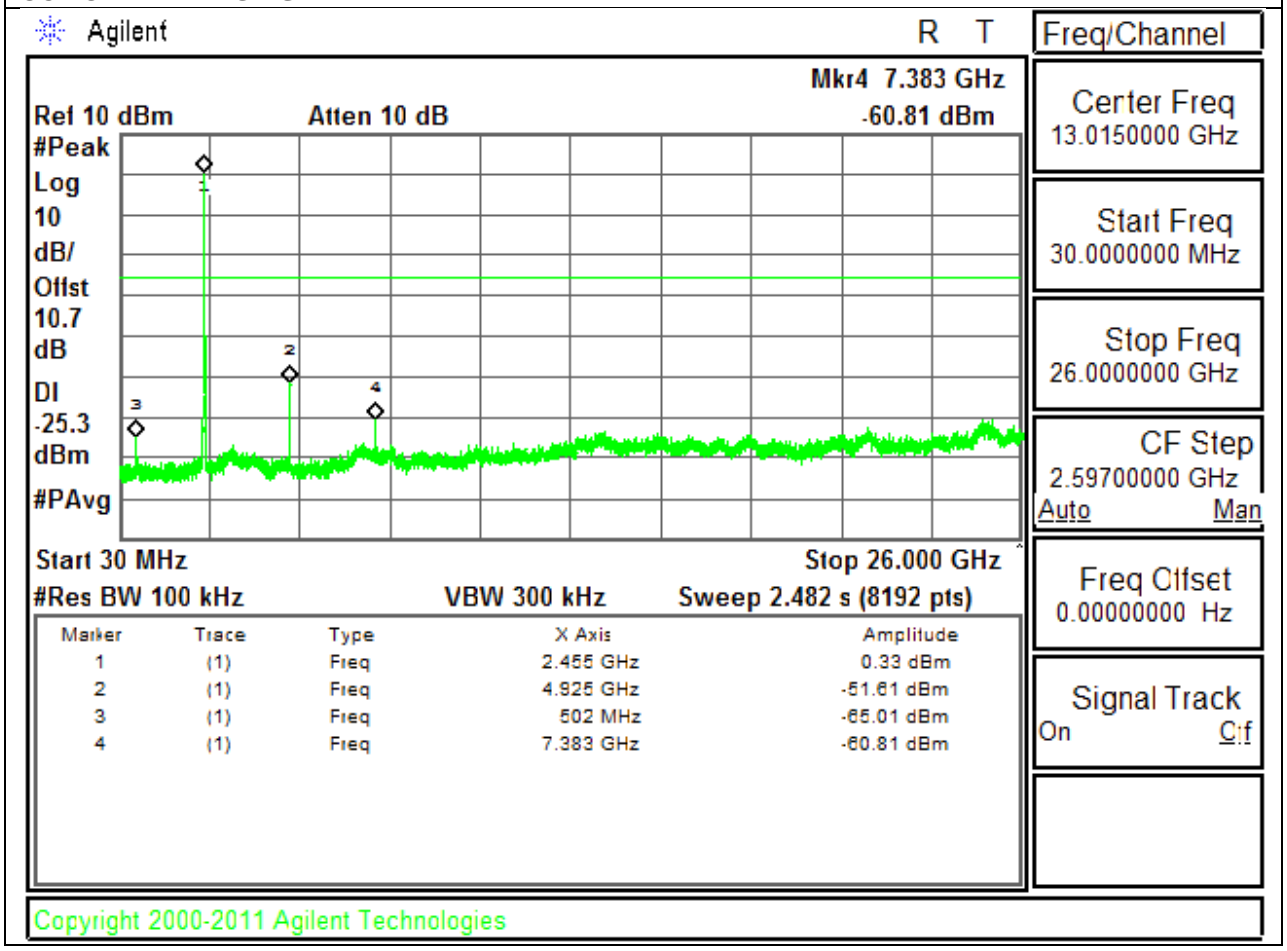
OUT OF BAND HIGH CH



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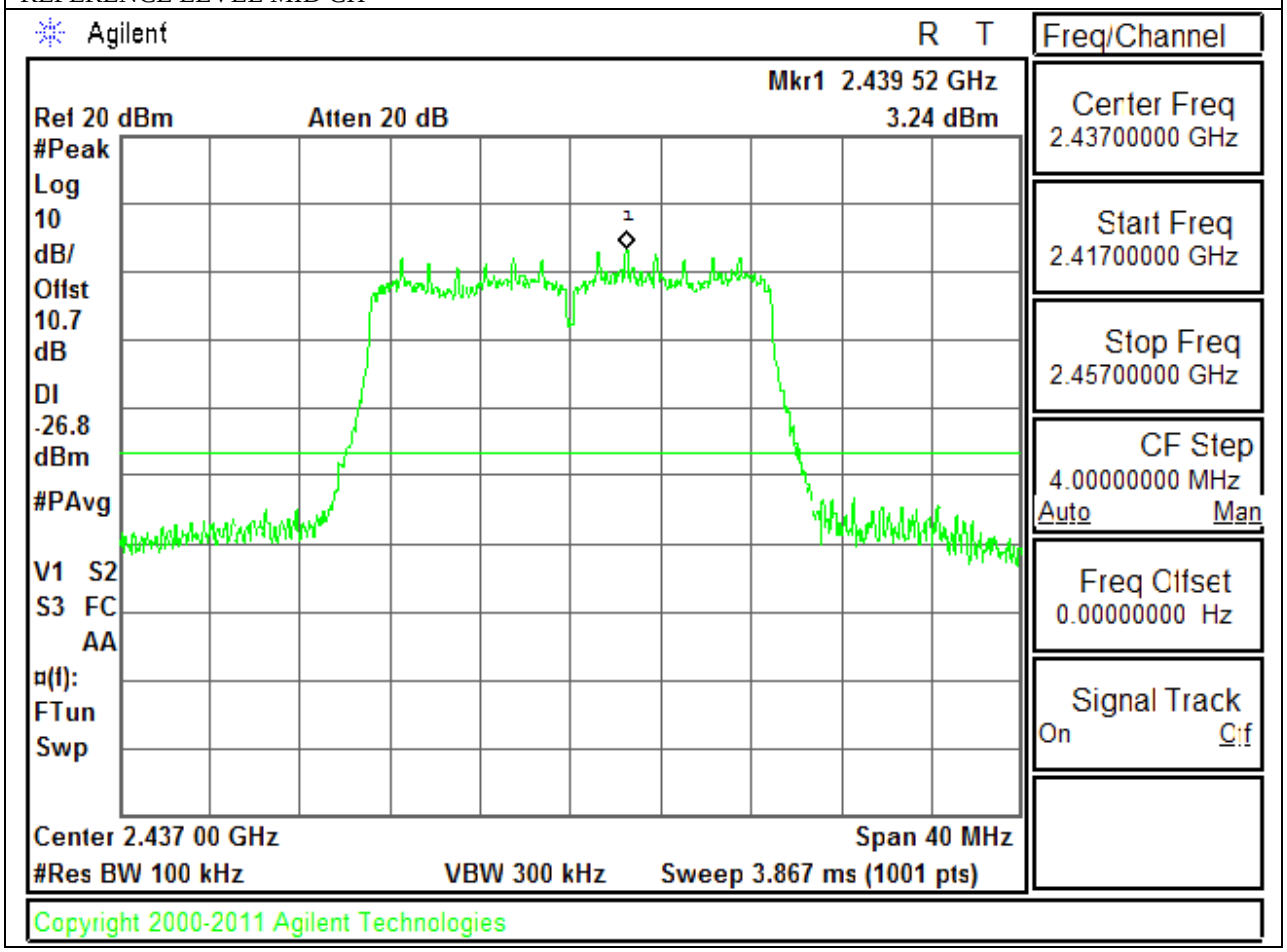
9.5.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

IN-BAND REFERENCE LEVEL

REFERENCE LEVEL MID CH



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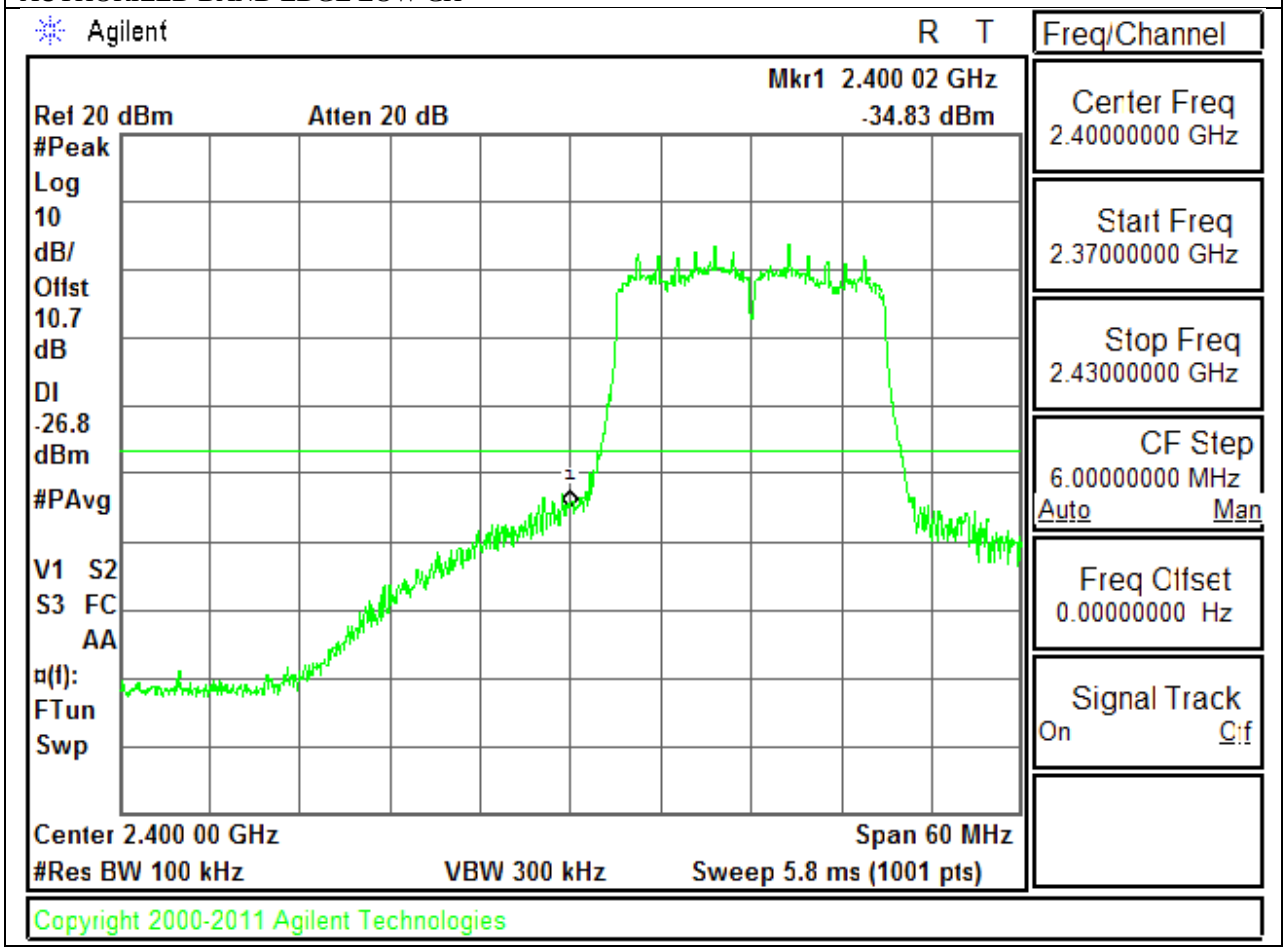
LOW CHANNEL BANDEDGE

AUTHORIZED BAND EDGE LOW CH



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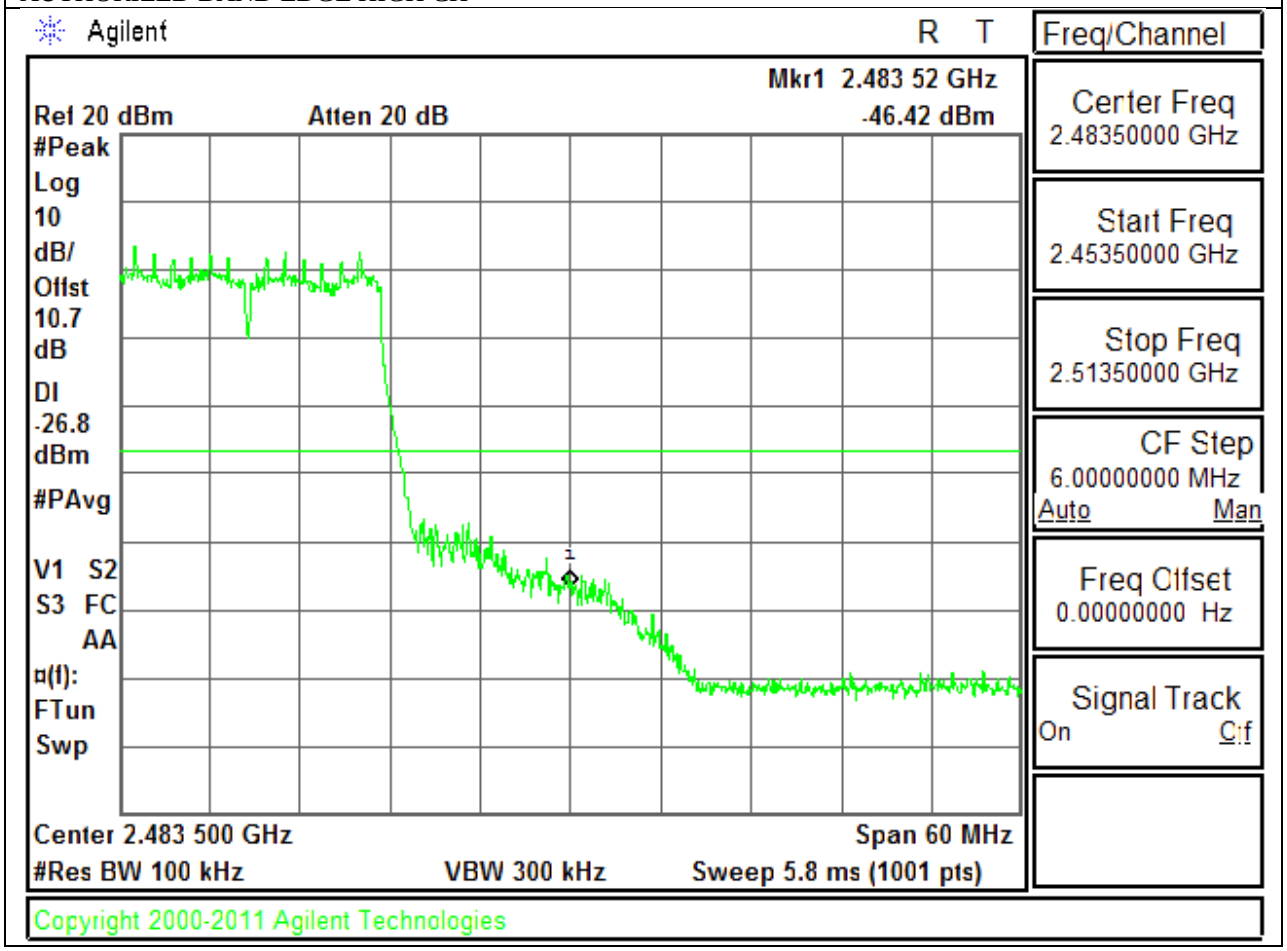
HIGH CHANNEL BANDEDGE

AUTHORIZED BAND EDGE HIGH CH



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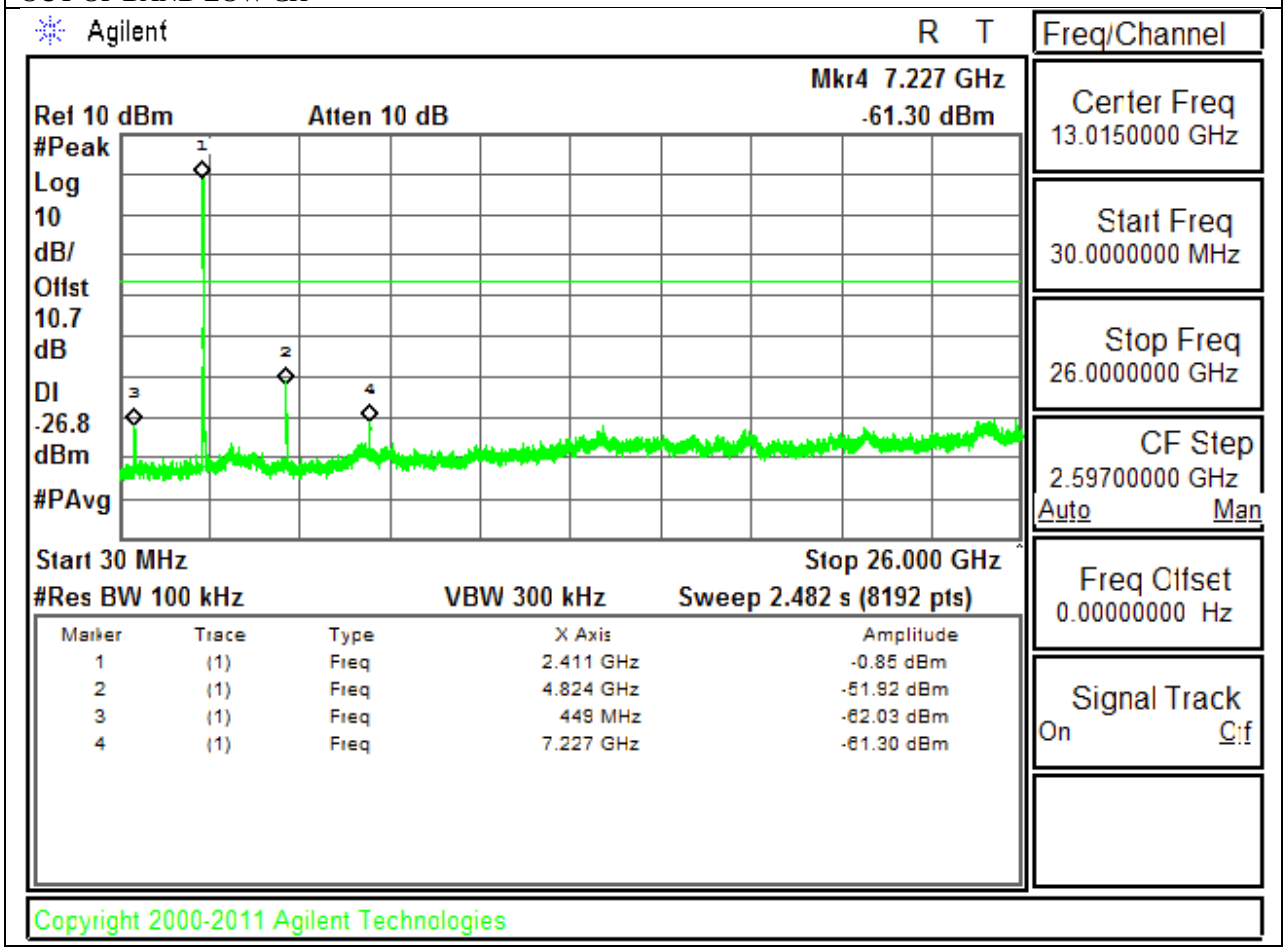
OUT-OF-BAND EMISSIONS

OUT OF BAND LOW CH



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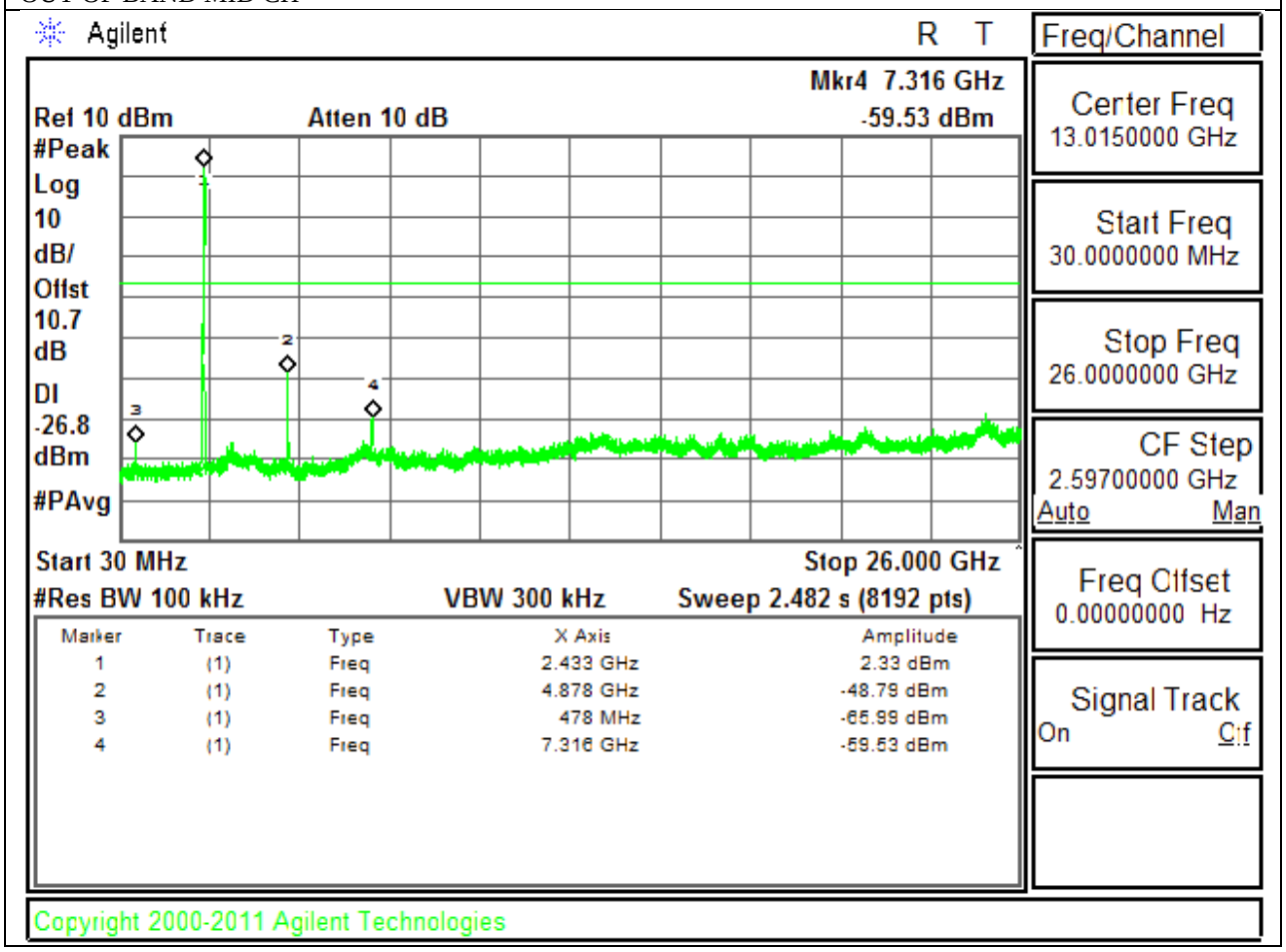
OUT OF BAND MID CH



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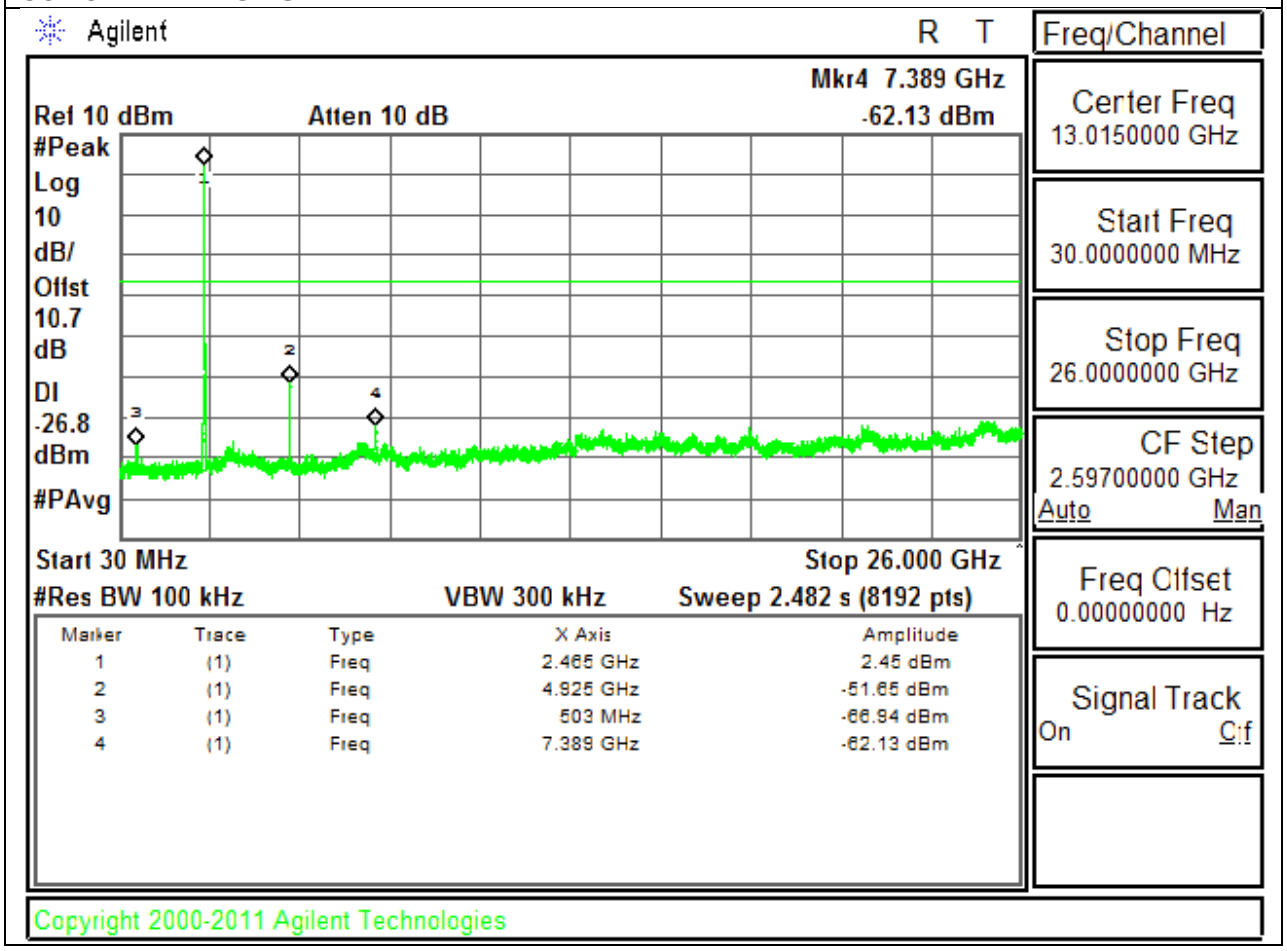
OUT OF BAND HIGH CH



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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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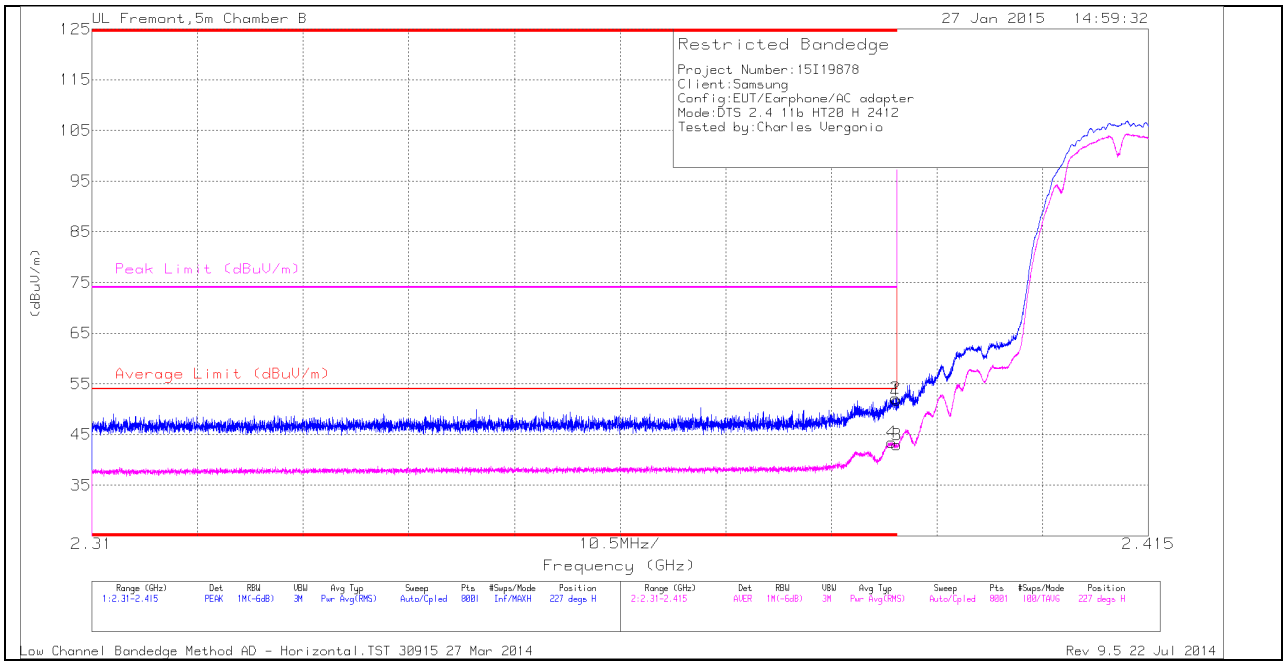
10.2. TRANSMITTER ABOVE 1 GHz

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 T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	42.23	PK	32.1	-22.6	51.73	-	-	74	-22.27	227	99	H
2	* 2.39	42.71	PK	32.1	-22.6	52.21	-	-	74	-21.79	227	99	H
3	* 2.39	33.42	RMS	32.1	-22.6	42.92	54	-11.08	-	-	227	99	H
4	* 2.39	33.97	RMS	32.1	-22.6	43.47	54	-10.53	-	-	227	99	H

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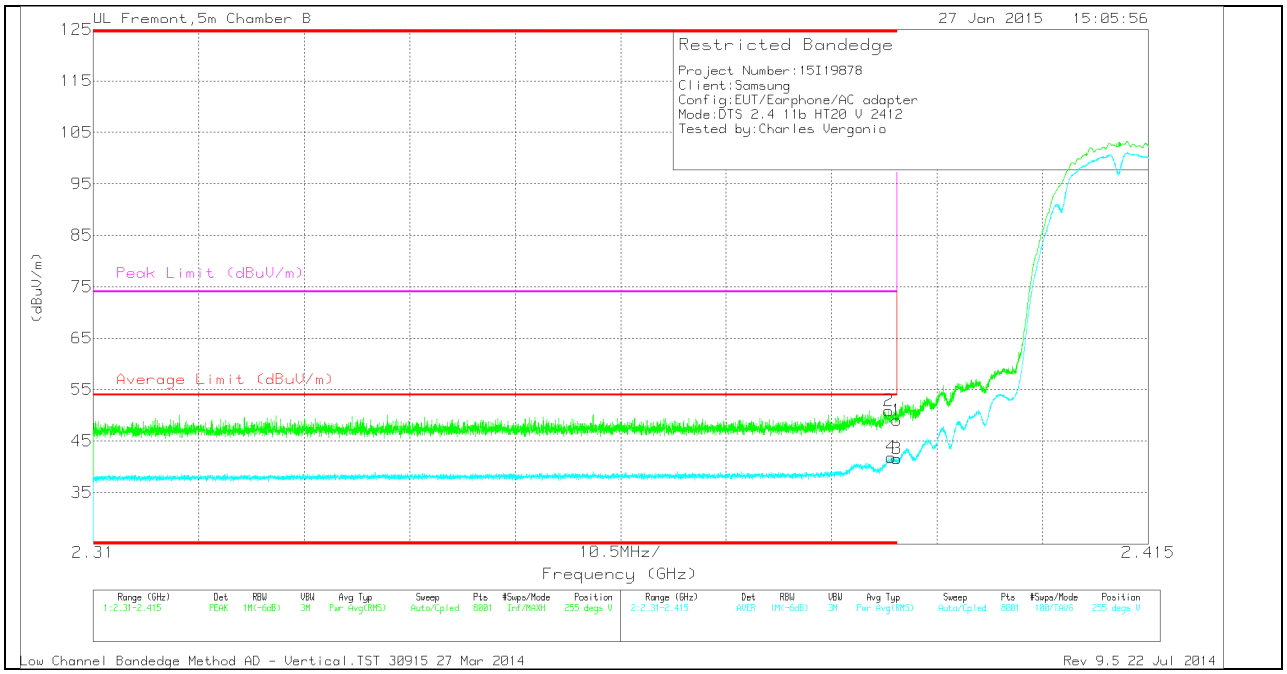
VERTICAL PEAK AND AVERAGE PLOT



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	* 2.39	39.54	PK	32.1	-22.6	49.04	-	-	74	-24.96	255	111	V
2	* 2.389	41.43	PK	32.1	-22.6	50.93	-	-	74	-23.07	255	111	V
3	* 2.39	32.09	RMS	32.1	-22.6	41.59	54	-12.41	-	-	255	111	V
4	* 2.389	32.38	RMS	32.1	-22.6	41.88	54	-12.12	-	-	255	111	V

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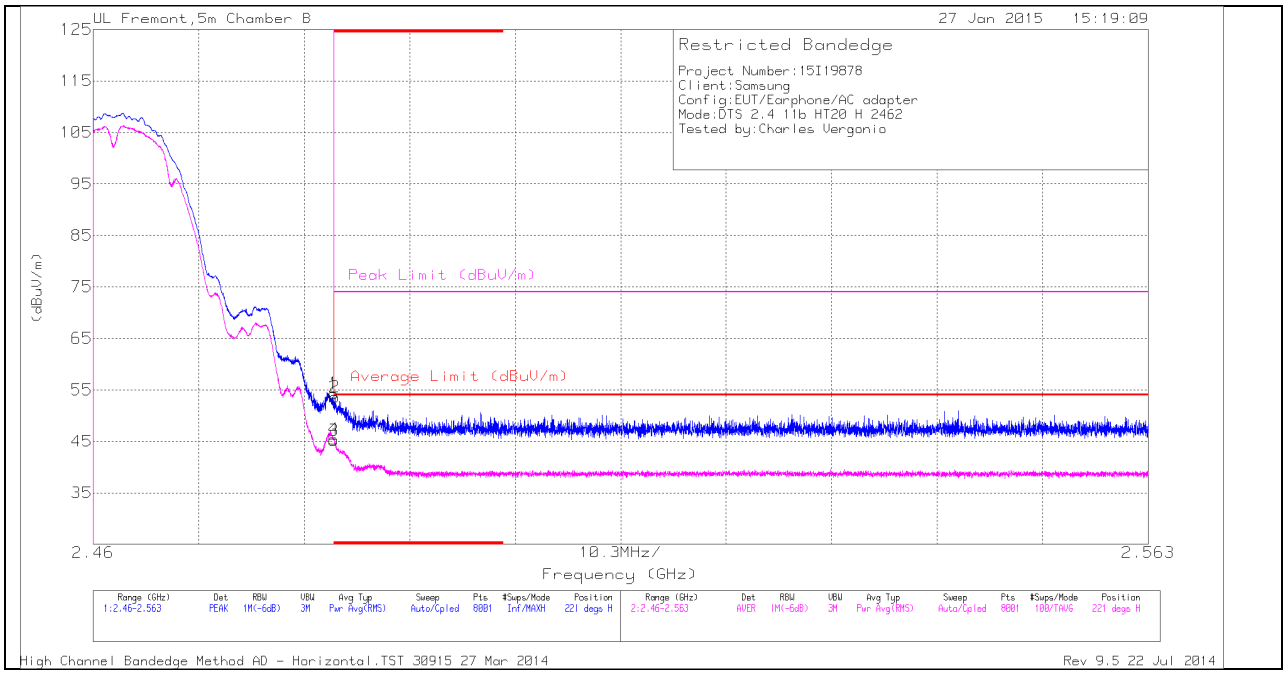
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	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	44.28	PK	32.4	-22.4	54.28	-	-	74	-19.72	221	102	H
2	* 2.484	43.63	PK	32.4	-22.4	53.63	-	-	74	-20.37	221	102	H
3	* 2.484	35.2	RMS	32.4	-22.4	45.2	54	-8.8	-	-	221	102	H
4	* 2.484	35.44	RMS	32.4	-22.4	45.44	54	-8.56	-	-	221	102	H

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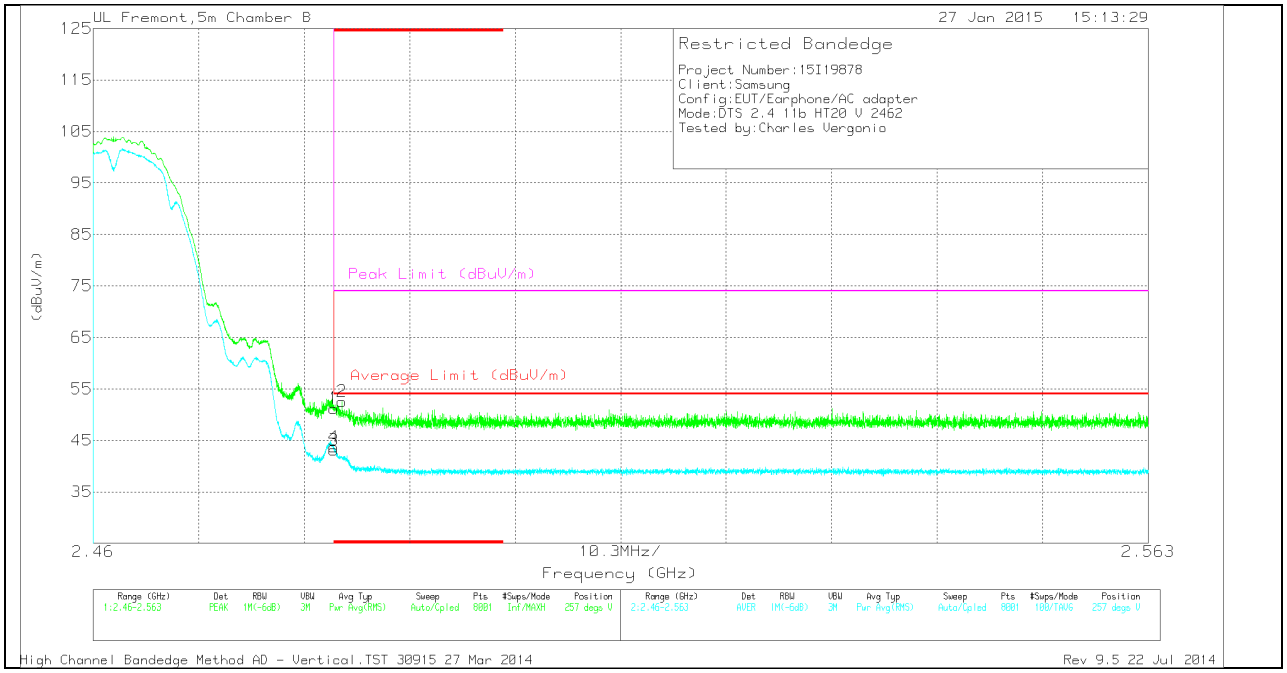
VERTICAL PEAK AND AVERAGE PLOT



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	41.21	PK	32.4	-22.4	51.21	-	-	74	-22.79	257	114	V
2	* 2.484	42.54	PK	32.4	-22.4	52.54	-	-	74	-21.46	257	114	V
3	* 2.484	33.13	RMS	32.4	-22.4	43.13	54	-10.87	-	-	257	114	V
4	* 2.484	33.74	RMS	32.4	-22.4	43.74	54	-10.26	-	-	257	114	V

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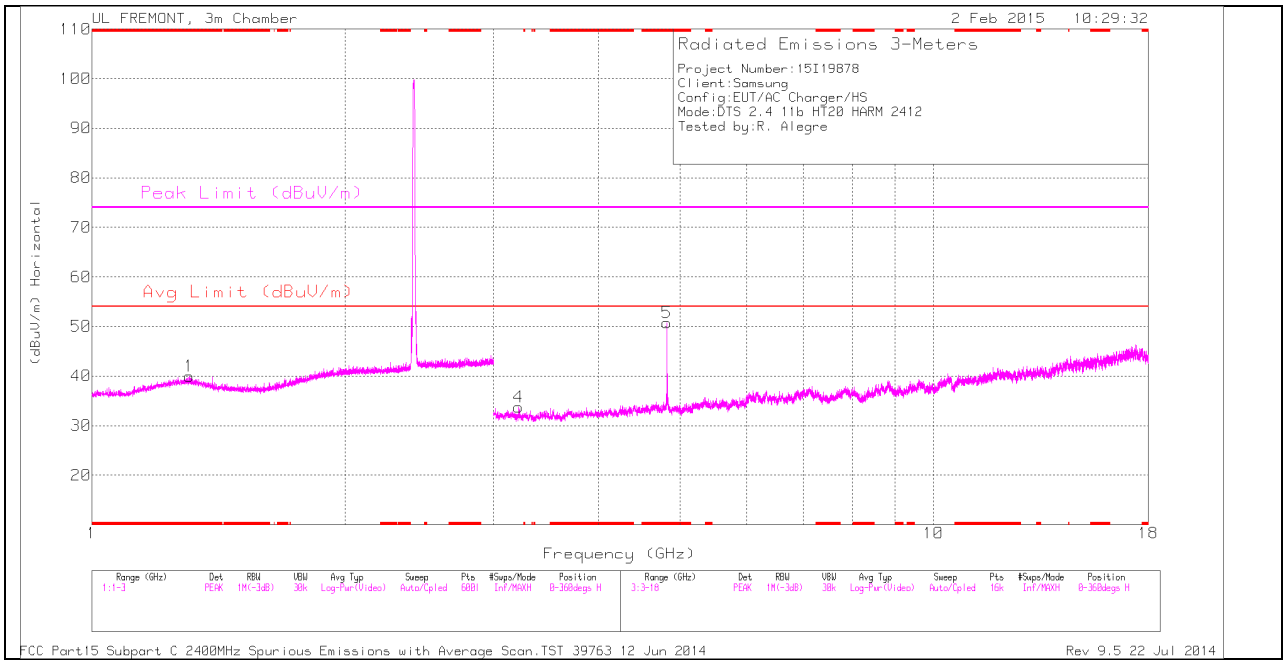
HARMONICS AND SPURIOUS EMISSIONS

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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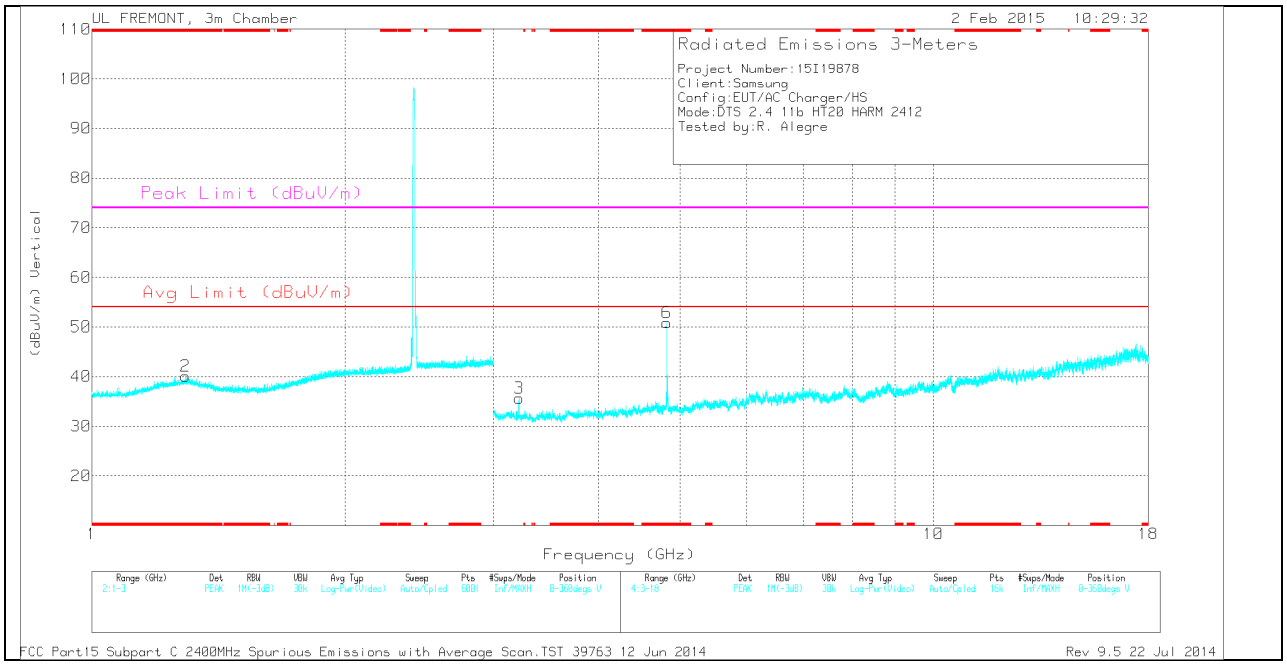
LOW CHANNEL VERTICAL



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	* 1.305	33.95	PK	29.8	-23.8	0	39.95	-	-	74	-34.05	0-360	100	H
2	* 1.291	34.08	PK	29.8	-23.8	0	40.08	-	-	74	-33.92	0-360	200	V
5	* 4.824	46.98	PK	34	-30.2	0	50.78	-	-	74	-23.22	0-360	100	H
6	* 4.824	47.05	PK	34	-30.2	0	50.85	-	-	74	-23.15	0-360	200	V
4	3.216	32.59	PK	32.6	-31.4	0	33.79	-	-	-	-	0-360	100	H
3	3.217	34.5	PK	32.6	-31.4	0	35.7	-	-	-	-	0-360	100	V

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 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	50.78	PK2	34	-30.3	0	54.48	-	-	74	-19.52	94	218	V
* 4.824	47.97	MAv1	34	-30.3	0	51.67	54	-2.33	-	-	94	218	V

* - 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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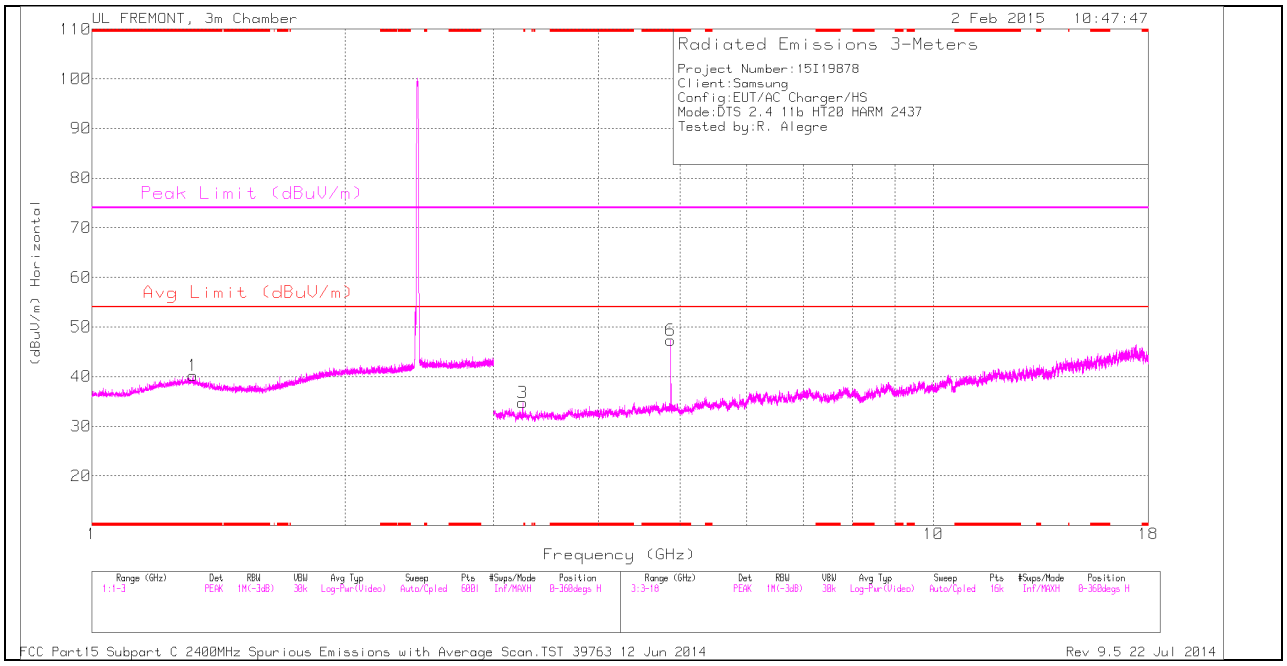
MID CHANNEL HORIZONTAL



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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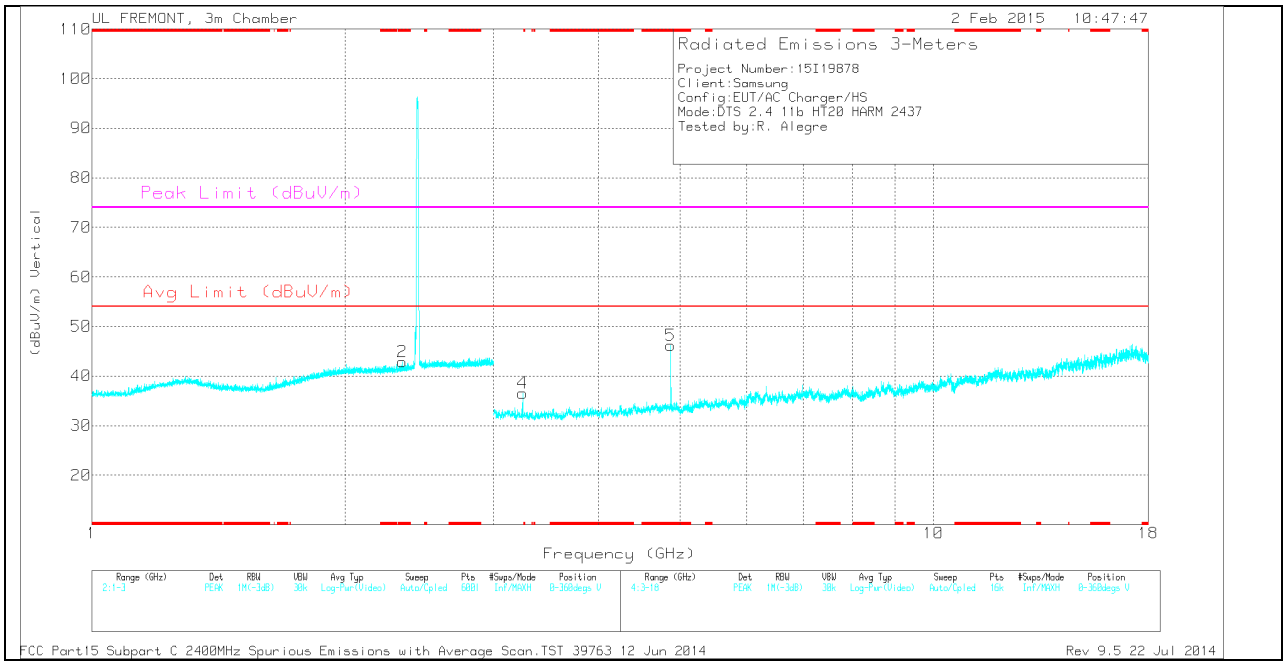
MID CHANNEL VERTICAL



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 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	* 1.319	34.35	PK	29.7	-23.8	0	40.25	-	-	74	-33.75	0-360	100	H
2	* 2.336	34.17	PK	31.8	-23.1	0	42.87	-	-	74	-31.13	0-360	100	V
6	* 4.874	43.39	PK	34	-30.1	0	47.29	-	-	74	-26.71	0-360	100	H
5	* 4.874	42.33	PK	34	-30.1	0	46.23	-	-	74	-27.77	0-360	200	V
3	3.249	33.8	PK	32.6	-31.6	0	34.8	-	-	-	-	0-360	100	H
4	3.249	35.6	PK	32.6	-31.6	0	36.6	-	-	-	-	0-360	100	V

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 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	47.88	PK2	34	-30.1	0	51.78	-	-	74	-22.22	218	135	H
* 4.874	44.37	MAv1	34	-30.1	0	48.27	54	-5.73	-	-	218	135	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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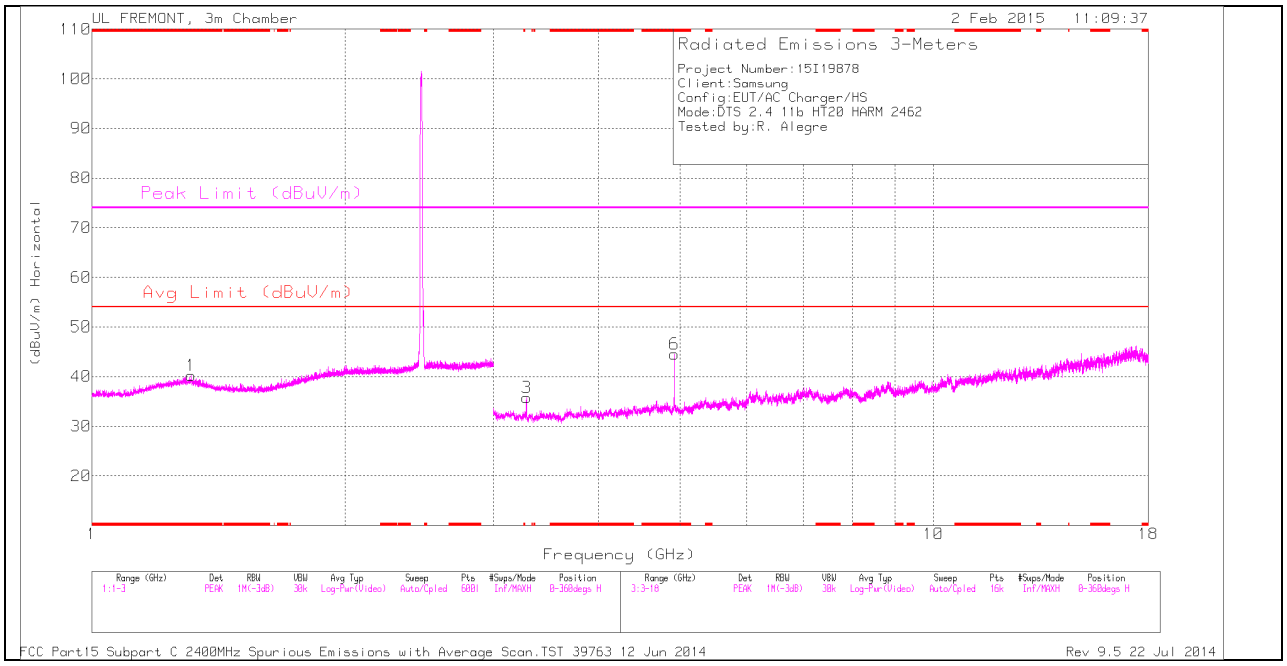
HIGH CHANNEL HORIZONTAL



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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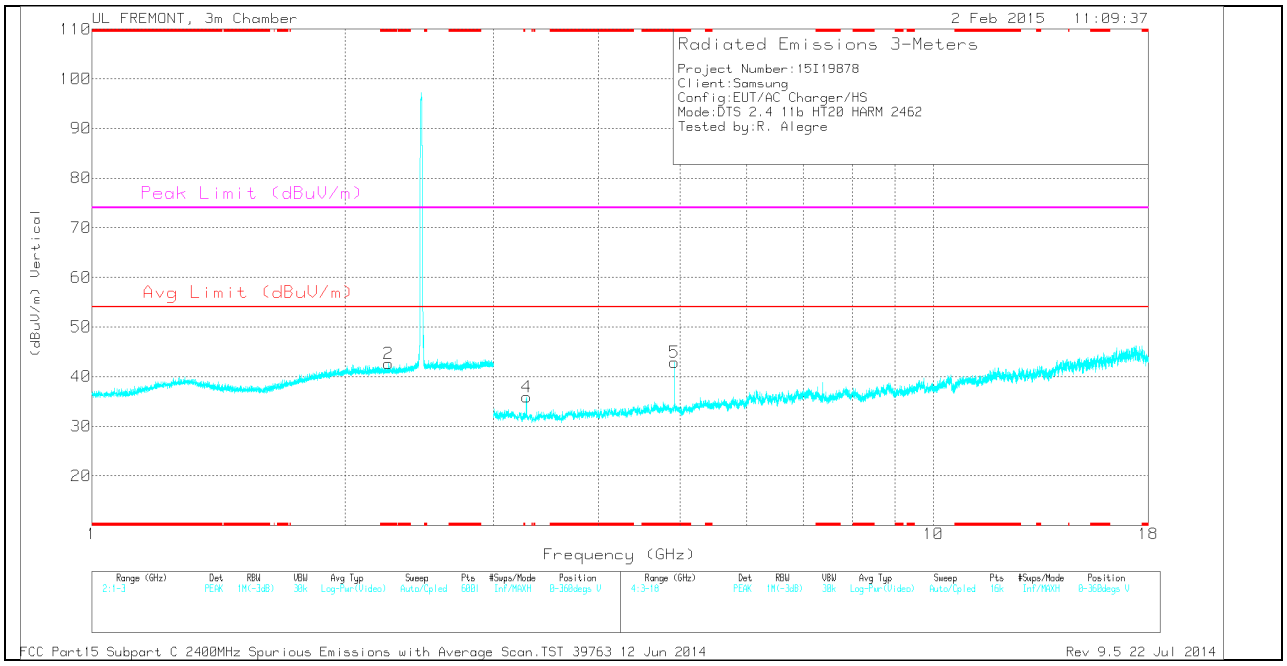
HIGH CHANNEL VERTICAL



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 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	* 1.312	34.34	PK	29.7	-23.8	0	40.24	-	-	74	-33.76	0-360	100	H
2	* 2.25	34.13	PK	31.5	-23	0	42.63	-	-	74	-31.37	0-360	200	V
6	* 4.924	40.89	PK	34	-30.4	0	44.49	-	-	74	-29.51	0-360	100	H
5	* 4.924	39.24	PK	34	-30.4	0	42.84	-	-	74	-31.16	0-360	200	V
3	3.283	34.85	PK	32.6	-31.7	0	35.75	-	-	-	-	0-360	100	H
4	3.283	35.03	PK	32.6	-31.7	0	35.93	-	-	-	-	0-360	100	V

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 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	47.55	PK2	34	-30.4	0	51.15	-	-	74	-22.85	218	117	H
* 4.924	42.9	MAv1	34	-30.4	0	46.5	54	-7.5	-	-	218	117	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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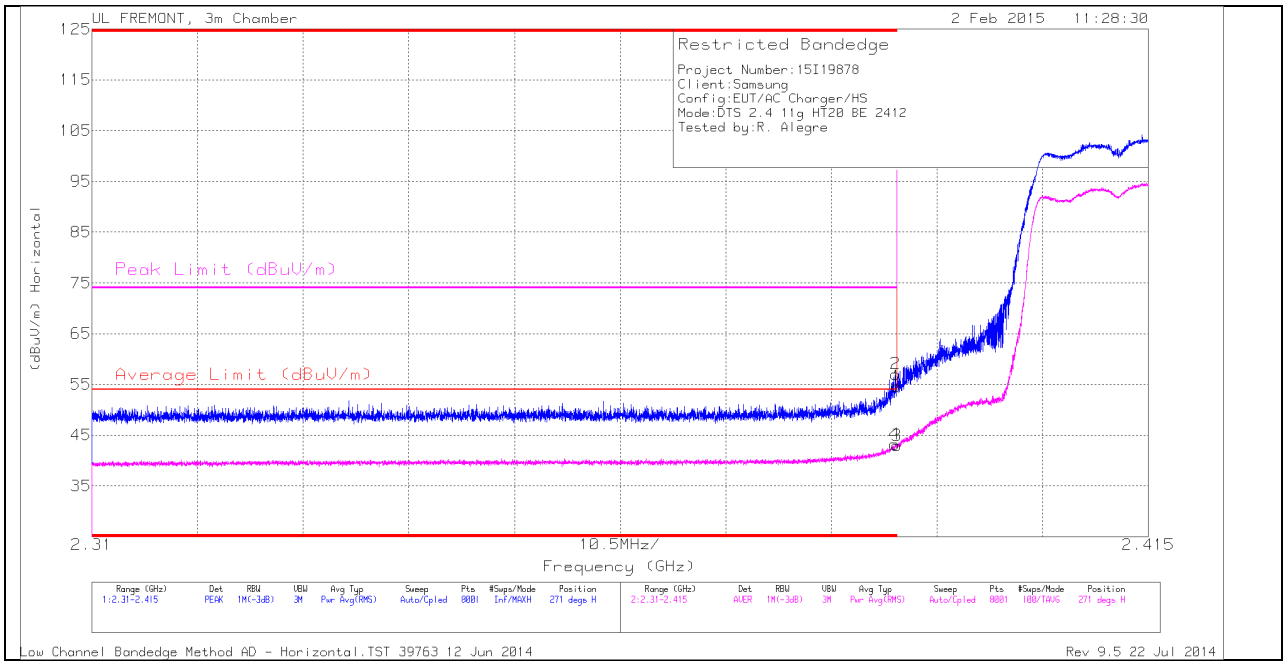
10.2.2. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	45.77	PK	32	-23.1	0	54.67	-	-	74	-19.33	271	229	H
2	* 2.39	48.16	PK	32	-23.1	0	57.06	-	-	74	-16.94	271	229	H
3	* 2.39	33.73	RMS	32	-23.1	.3	42.93	54	-11.07	-	-	271	229	H
4	* 2.39	34.06	RMS	32	-23.1	.3	43.26	54	-10.74	-	-	271	229	H

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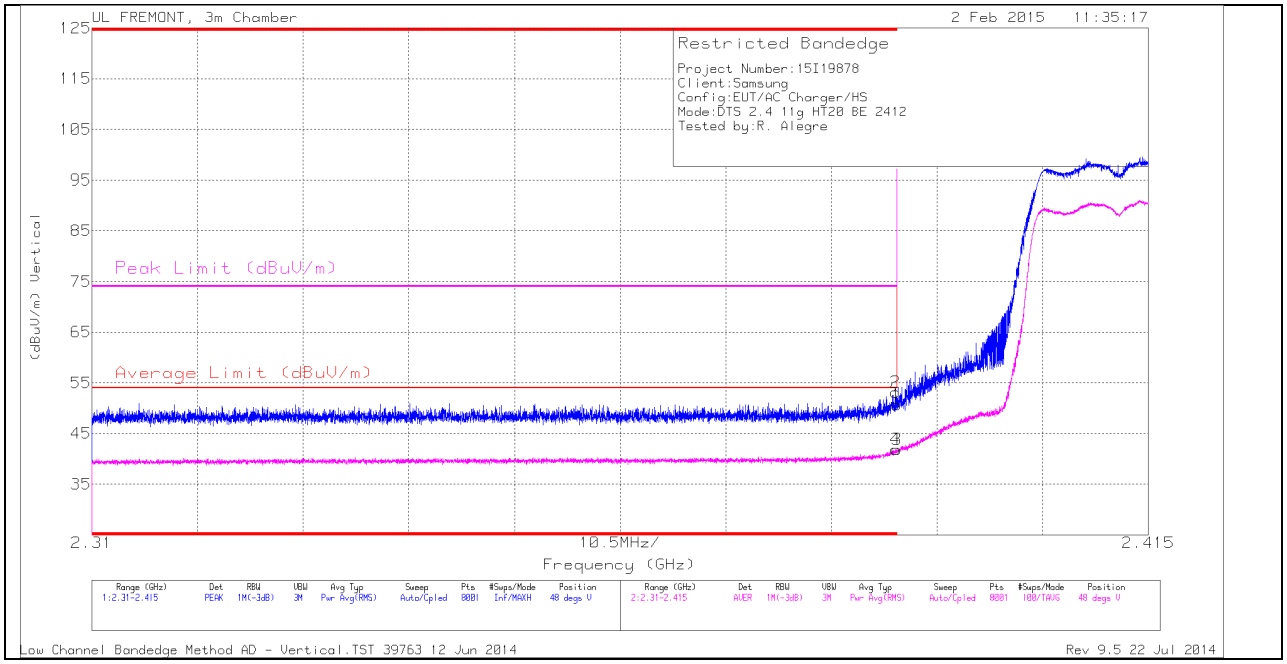
VERTICAL PEAK AND AVERAGE PLOT



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	* 2.39	41.81	PK	32	-23.1	0	50.71	-	-	74	-23.29	48	343	V
2	* 2.39	44.22	PK	32	-23.1	0	53.12	-	-	74	-20.88	48	343	V
3	* 2.39	32.64	RMS	32	-23.1	.3	41.84	54	-12.16	-	-	48	343	V
4	* 2.39	32.66	RMS	32	-23.1	.3	41.86	54	-12.14	-	-	48	343	V

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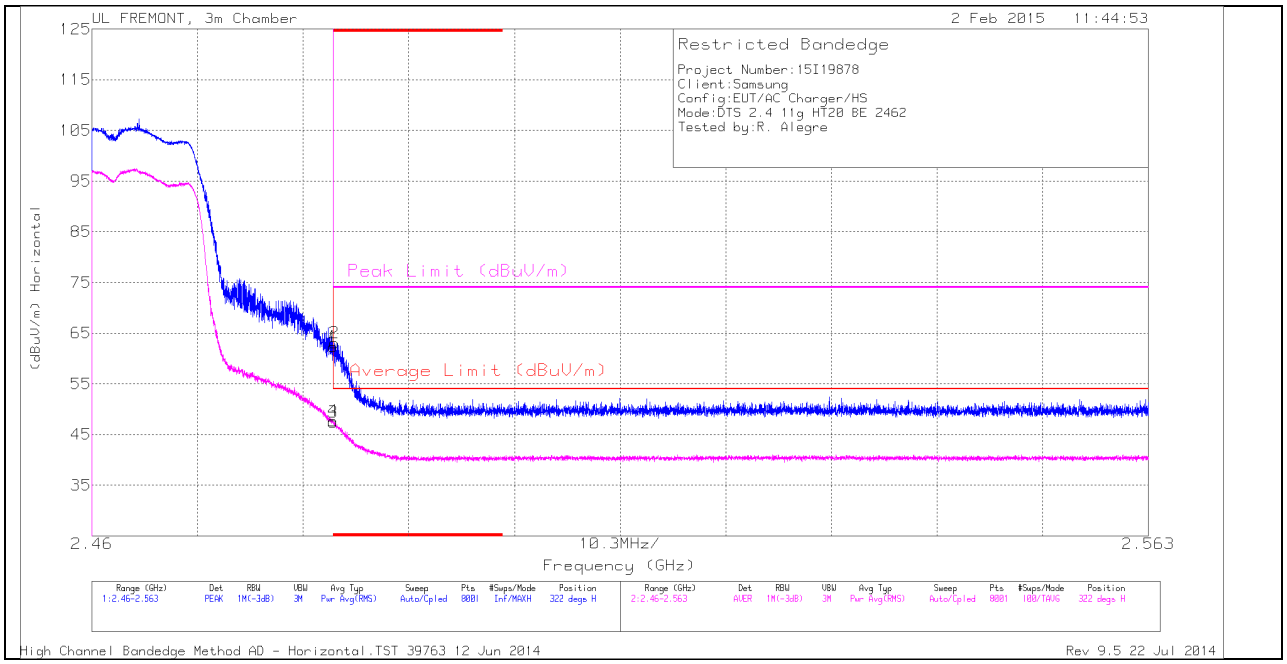
AUTHORIZED BANDEDGE (HIGH CHANNEL)

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	52.8	PK	32.3	-22.8	0	62.3	-	-	74	-11.7	322	325	H
2	* 2.484	53.6	PK	32.3	-22.8	0	63.1	-	-	74	-10.9	322	325	H
3	* 2.484	37.63	RMS	32.3	-22.8	.3	47.43	54	-6.57	-	-	322	325	H
4	* 2.484	37.91	RMS	32.3	-22.8	.3	47.71	54	-6.29	-	-	322	325	H

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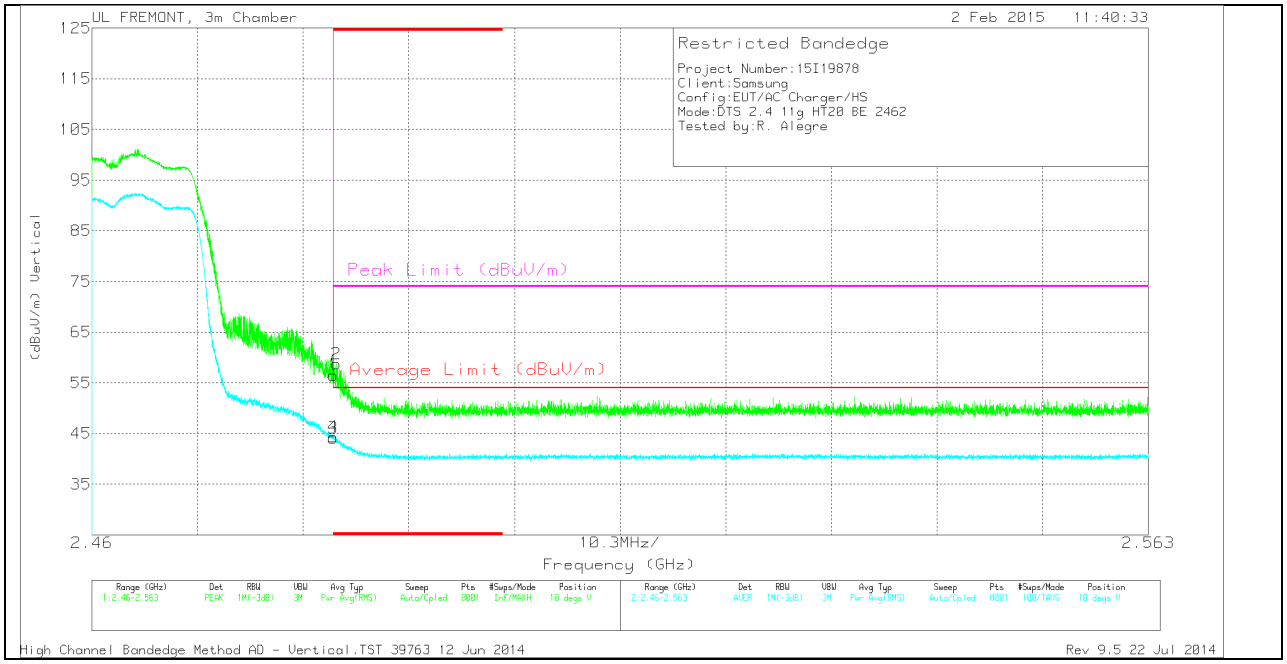
VERTICAL PEAK AND AVERAGE PLOT



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	47.01	PK	32.3	-22.8	0	56.51	-	-	74	-17.49	10	322	V
2	* 2.484	49.26	PK	32.3	-22.8	0	58.76	-	-	74	-15.24	10	322	V
3	* 2.484	34.31	RMS	32.3	-22.8	.3	44.11	54	-9.89	-	-	10	322	V
4	* 2.484	34.58	RMS	32.3	-22.8	.3	44.38	54	-9.62	-	-	10	322	V

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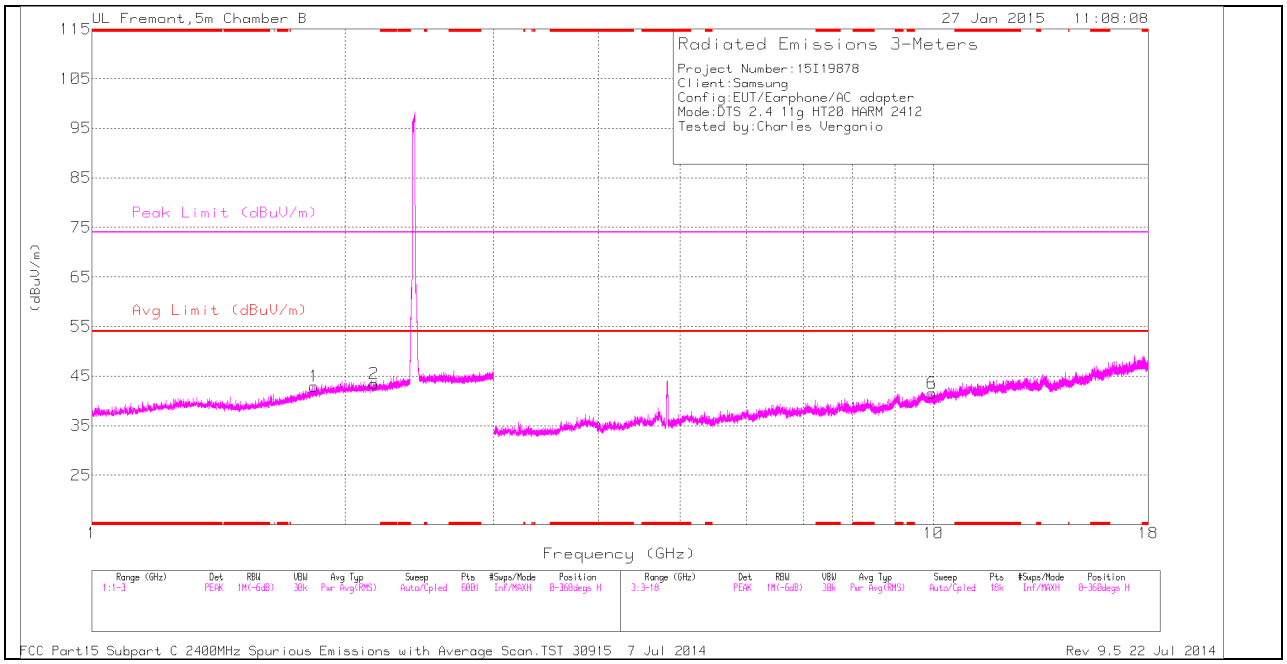
HARMONICS AND SPURIOUS EMISSIONS

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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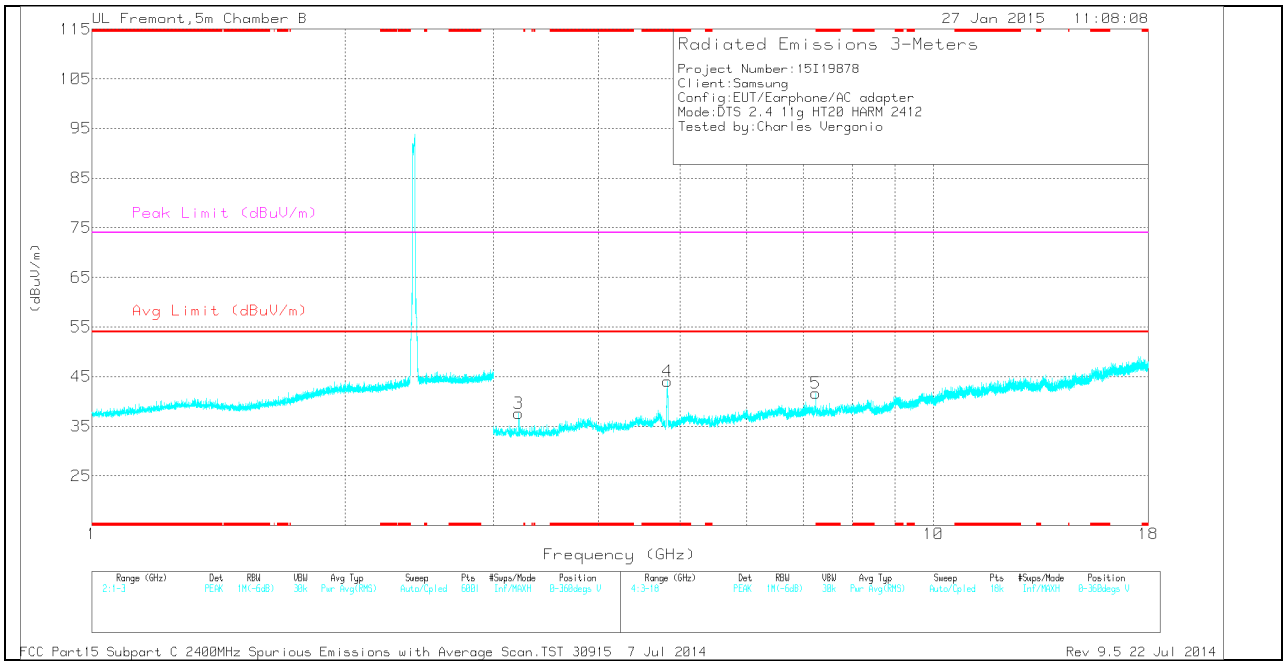
LOW CHANNEL VERTICAL



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)	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	* 4.827	39.6	PK	34.2	-29.7	0	44.1	-	-	74	-29.9	0-360	200	V
1	1.837	35.78	PK	30.5	-23.3	0	42.98	-	-	-	-	0-360	101	H
2	2.164	35.17	PK	31.3	-23	0	43.47	-	-	-	-	0-360	101	H
3	3.216	35.75	PK	32.8	-31	0	37.55	-	-	-	-	0-360	200	V
5	7.242	33.84	PK	35.6	-27.8	0	41.64	-	-	-	-	0-360	200	V
6	9.96	28.09	PK	37	-23.6	0	41.49	-	-	-	-	0-360	200	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
* 4.828	52.27	PK2	34.2	-29.7	0	56.77	-	-	74	-17.23	358	311	V
* 4.825	38.54	MAv1	34.2	-29.7	0.3	43.04	54	-10.96	-	-	358	311	V

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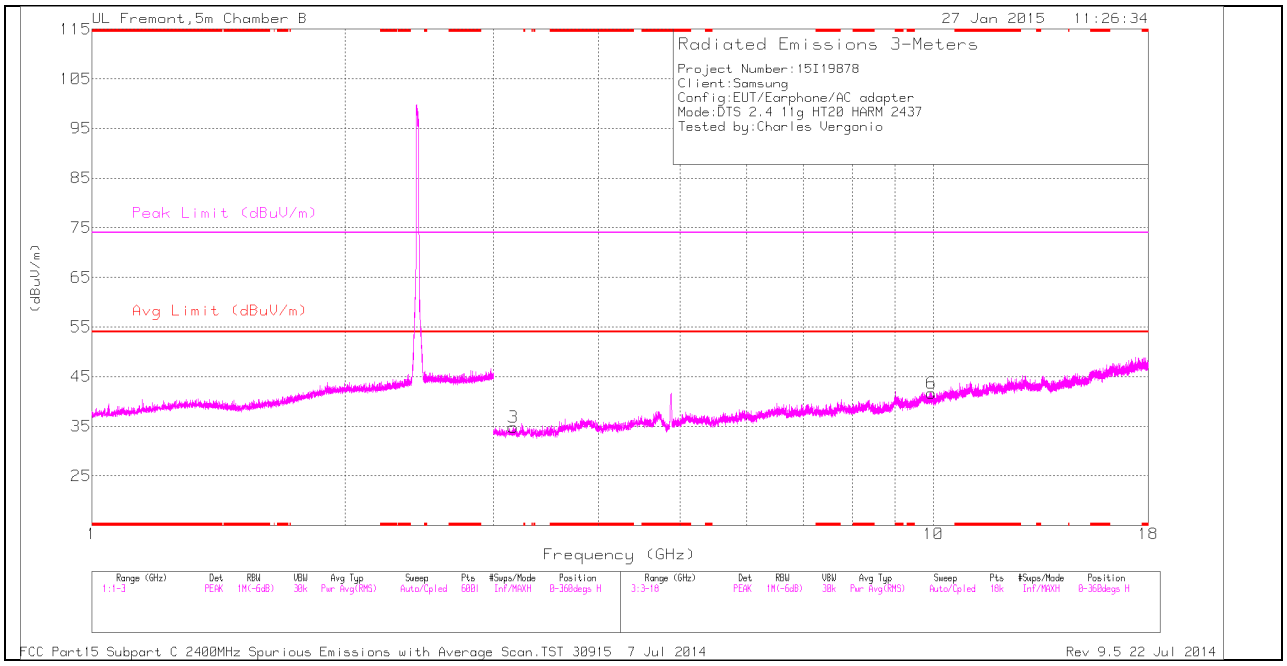
MID CHANNEL HORIZONTAL



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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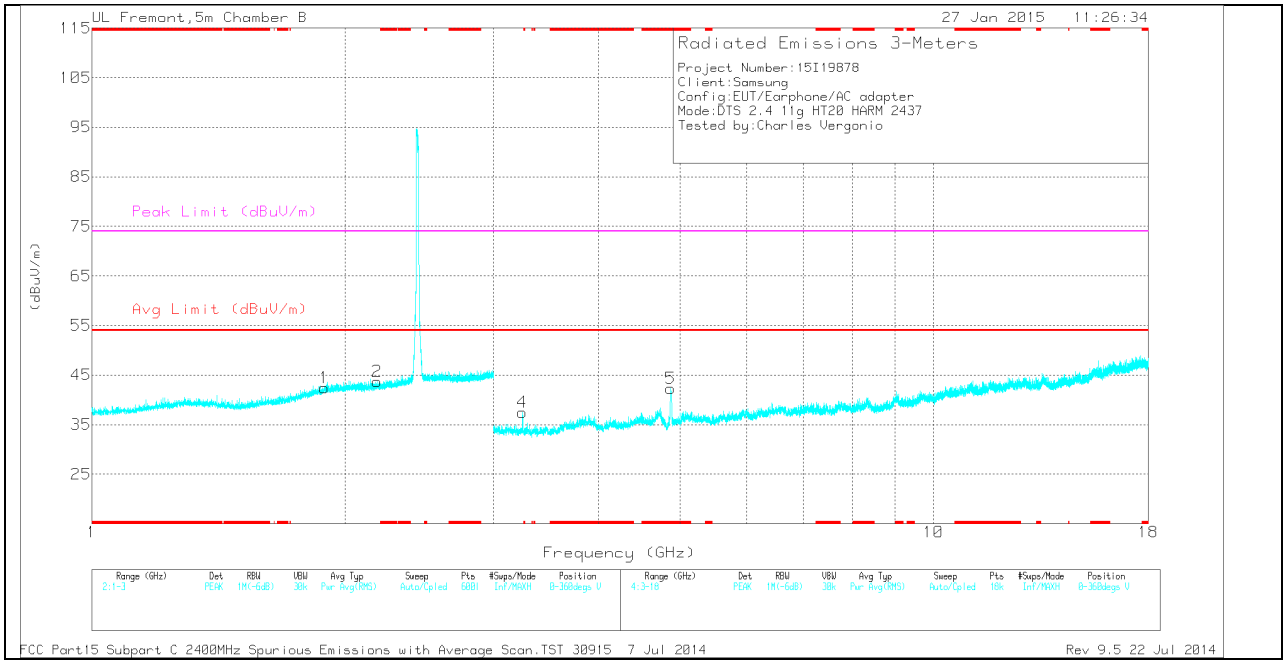
MID CHANNEL VERTICAL



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 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
5	* 4.872	38.51	PK	34.2	-30.4	0	42.31	-	-	74	-31.69	0-360	200	V
1	1.887	34.7	PK	31	-23.3	0	42.4	-	-	-	-	0-360	101	V
2	2.183	35.44	PK	31.3	-23	0	43.74	-	-	-	-	0-360	101	V
3	3.167	32.76	PK	32.8	-30.8	0	34.76	-	-	-	-	0-360	101	H
4	3.249	35.58	PK	32.8	-30.9	0	37.48	-	-	-	-	0-360	200	V
6	9.937	28.3	PK	37	-23.6	0	41.7	-	-	-	-	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
* 4.873	48.63	PK2	34.2	-30.4	0	52.43	-	-	74	-21.57	32	250	V
* 4.873	36.8	MAv1	34.2	-30.4	0.3	40.6	54	-13.4	-	-	32	250	V

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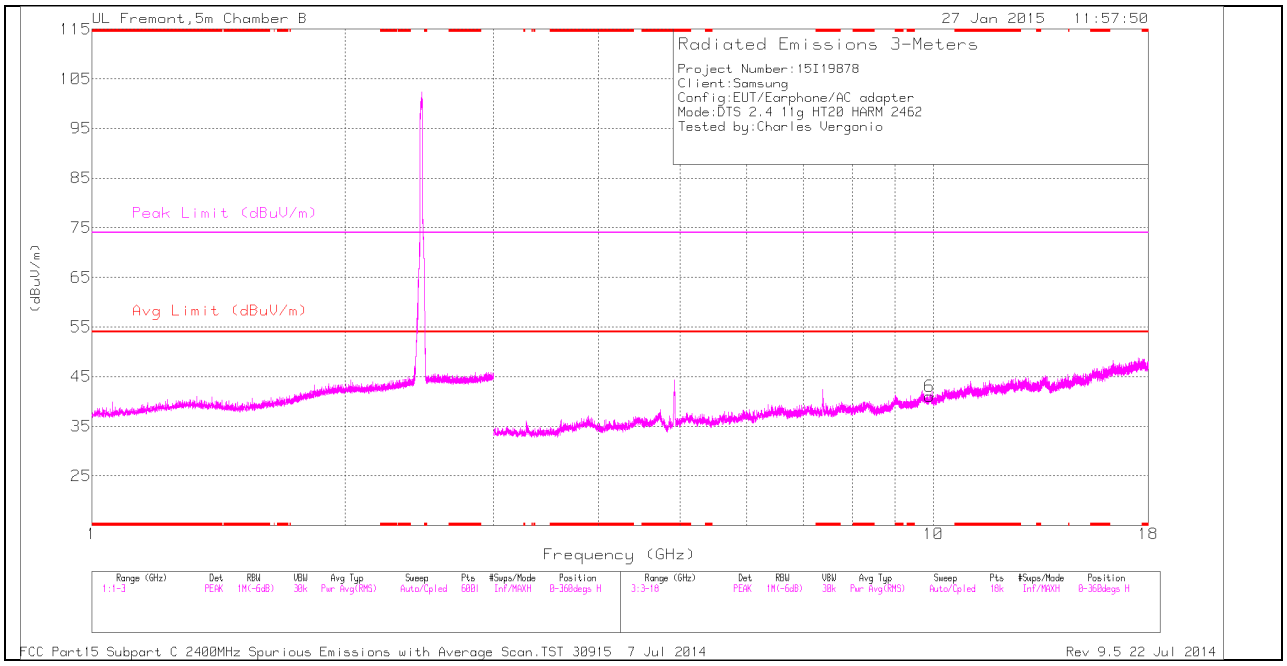
HIGH CHANNEL HORIZONTAL



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

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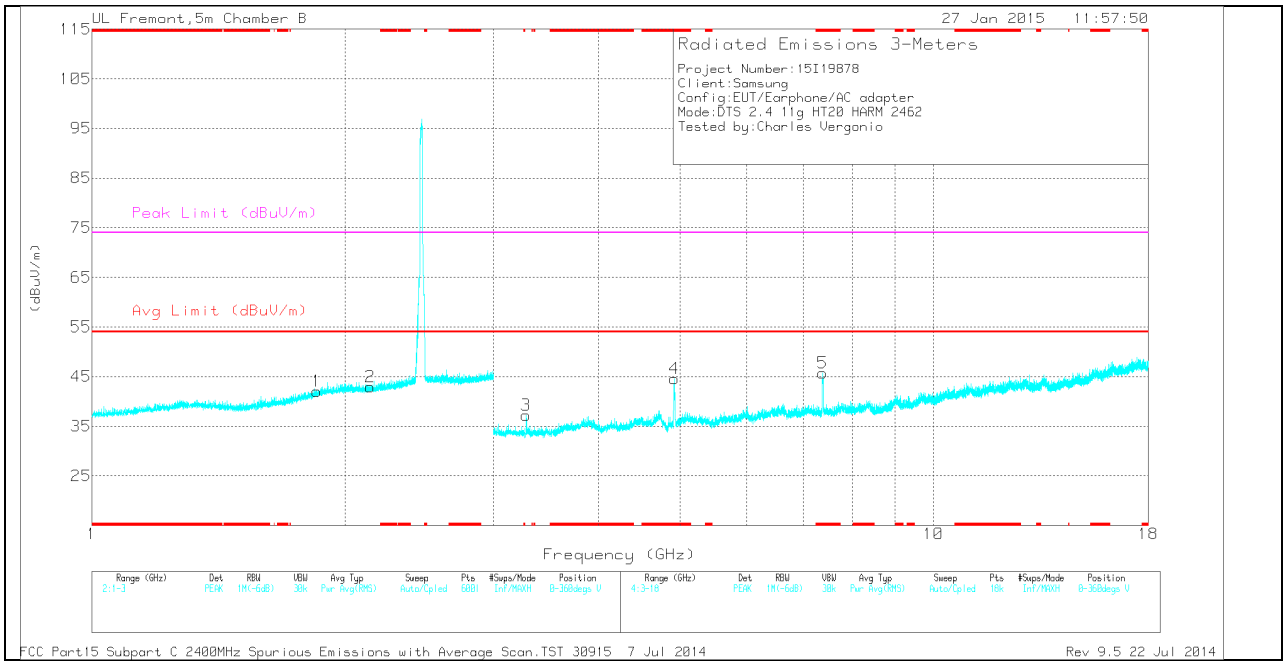
HIGH CHANNEL VERTICAL



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)	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	* 4.922	40.87	PK	34.2	-30.5	0	44.57	-	-	74	-29.43	0-360	199	V
5	* 7.389	37.7	PK	35.6	-27.6	0	45.7	-	-	74	-28.3	0-360	199	V
1	1.85	34.78	PK	30.6	-23.3	0	42.08	-	-	-	-	0-360	101	V
2	2.143	34.6	PK	31.3	-23	0	42.9	-	-	-	-	0-360	200	V
3	3.282	35.33	PK	32.8	-30.9	0	37.23	-	-	-	-	0-360	199	V
6	9.889	27.98	PK	37	-23.9	0	41.08	-	-	-	-	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
* 4.924	50.65	PK2	34.2	-30.5	0	54.35	-	-	74	-19.65	32	345	V
* 4.92	38.03	MAv1	34.2	-30.5	0.3	41.73	54	-12.27	-	-	32	345	V
* 7.389	51.42	PK2	35.6	-27.6	0	59.42	-	-	74	-14.58	9	227	V
* 7.387	36.37	MAv1	35.6	-27.6	0.3	44.37	54	-9.63	-	-	9	227	V

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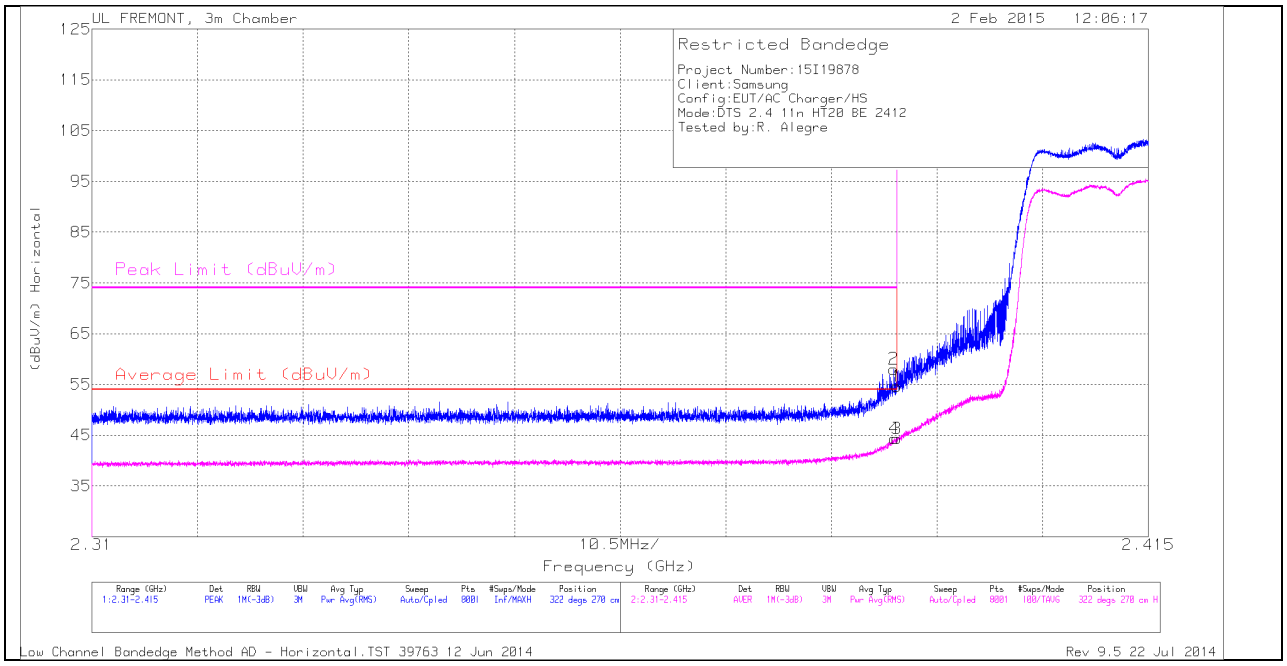
10.2.3. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.39	45.78	PK	32	-23.1	0	54.68	-	-	74	-19.32	322	270	H
2	2.39	49.15	PK	32	-23.1	0	58.05	-	-	74	-15.95	322	270	H
3	2.39	35.13	RMS	32	-23.1	.3	44.33	54	-9.67	-	-	322	270	H
4	2.39	35.18	RMS	32	-23.1	.3	44.38	54	-9.62	-	-	322	270	H

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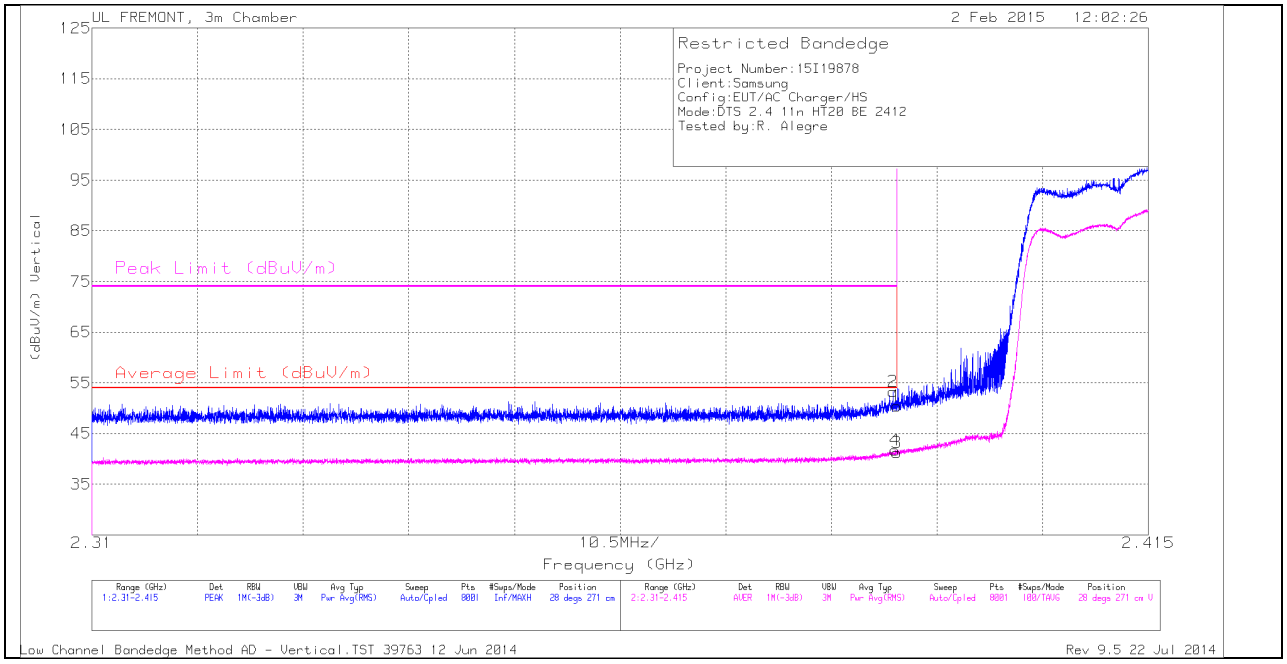
VERTICAL PEAK AND AVERAGE PLOT



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	2.39	41.49	PK	32	-23.1	0	50.39	-	-	74	-23.61	28	271	V
2	2.39	44.35	PK	32	-23.1	0	53.25	-	-	74	-20.75	28	271	V
3	2.39	32.07	RMS	32	-23.1	.3	41.27	54	-12.73	-	-	28	271	V
4	2.39	32.53	RMS	32	-23.1	.3	41.73	54	-12.27	-	-	28	271	V

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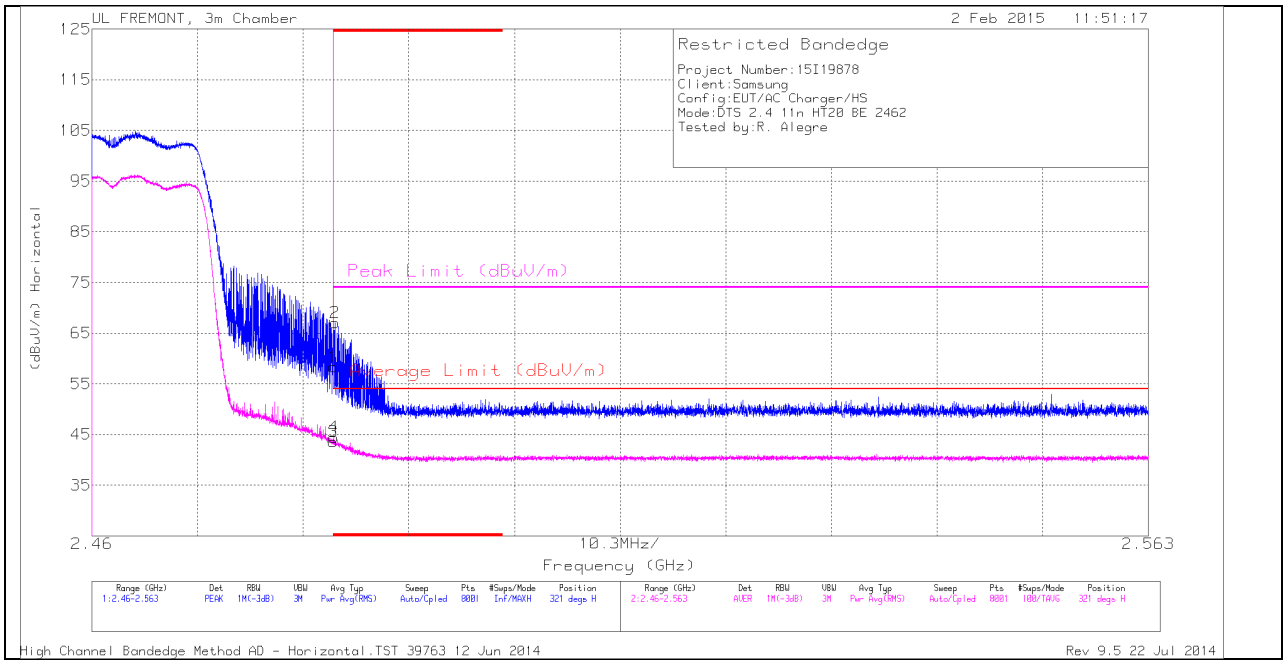
AUTHORIZED BANDEDGE (HIGH CHANNEL)

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	48.85	PK	32.3	-22.8	0	58.35	-	-	74	-15.65	321	263	H
2	* 2.484	57.54	PK	32.3	-22.8	0	67.04	-	-	74	-6.96	321	263	H
3	* 2.484	33.79	RMS	32.3	-22.8	.3	43.59	54	-10.41	-	-	321	263	H
4	* 2.484	34.64	RMS	32.3	-22.8	.3	44.44	54	-9.56	-	-	321	263	H

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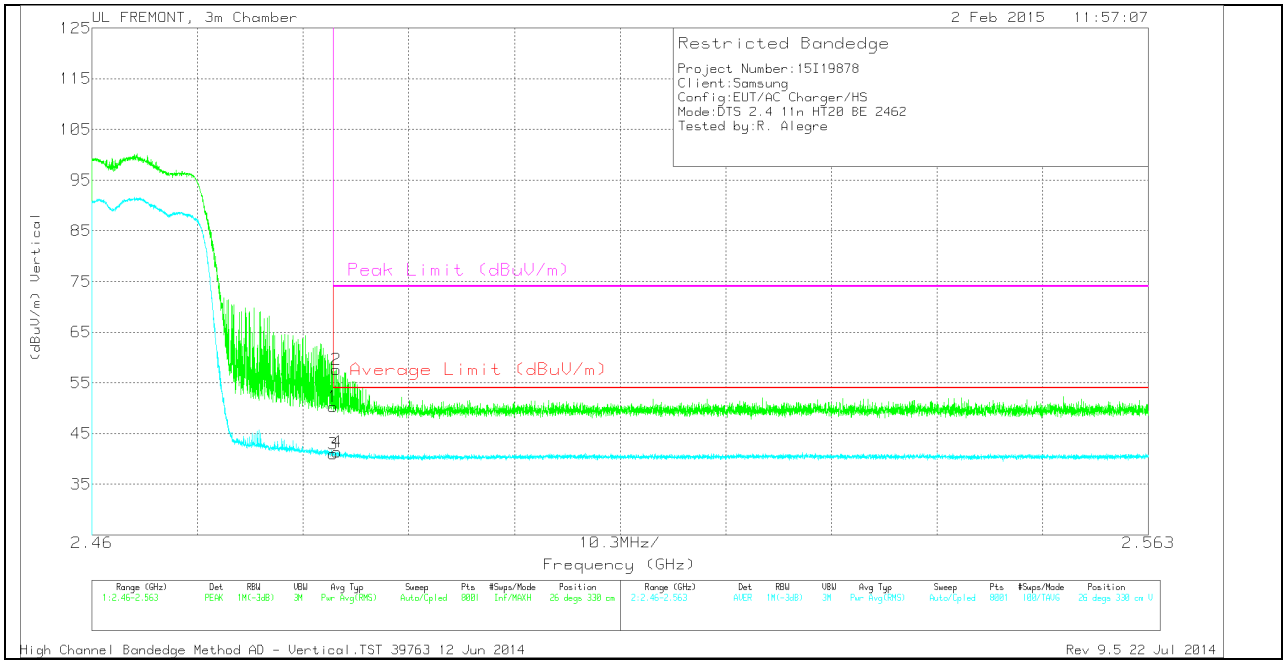
VERTICAL PEAK AND AVERAGE PLOT



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	40.79	PK	32.3	-22.8	0	50.29	-	-	74	-23.71	26	330	V
2	2.484	48.14	PK	32.3	-22.8	0	57.64	-	-	74	-16.36	26	330	V
3	2.484	31.23	RMS	32.3	-22.8	.3	41.03	54	-12.97	-	-	26	330	V
4	2.484	31.6	RMS	32.3	-22.8	.3	41.4	54	-12.6	-	-	26	330	V

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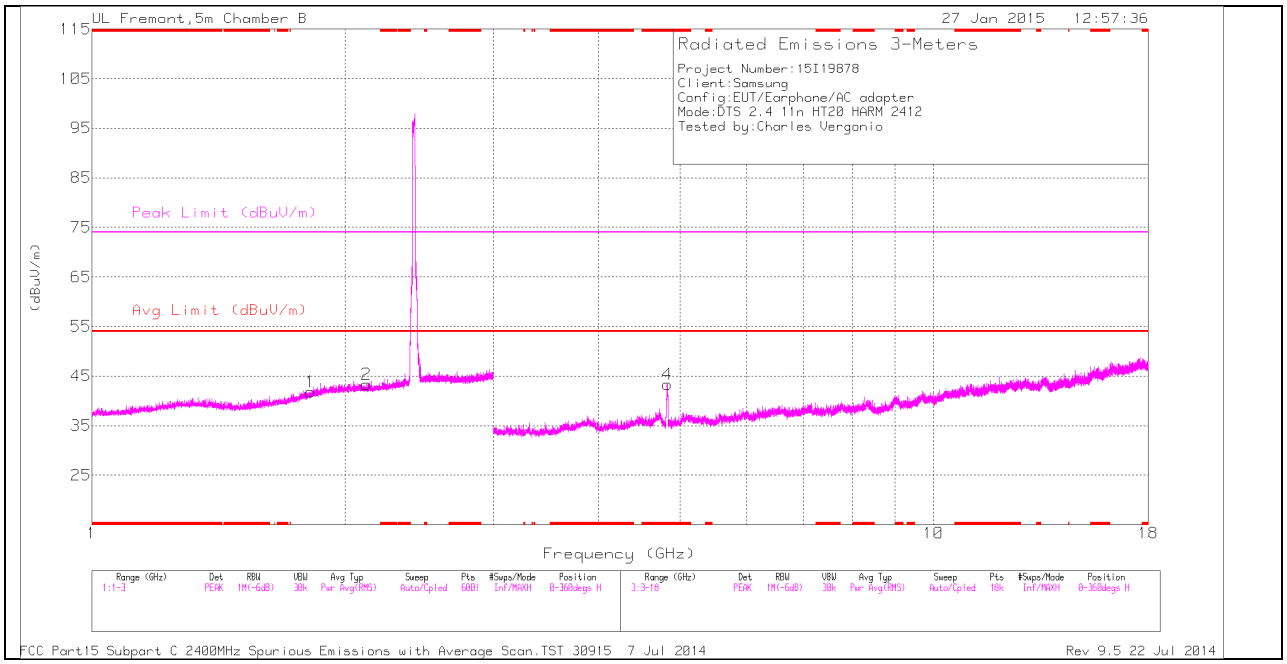
HARMONICS AND SPURIOUS EMISSIONS

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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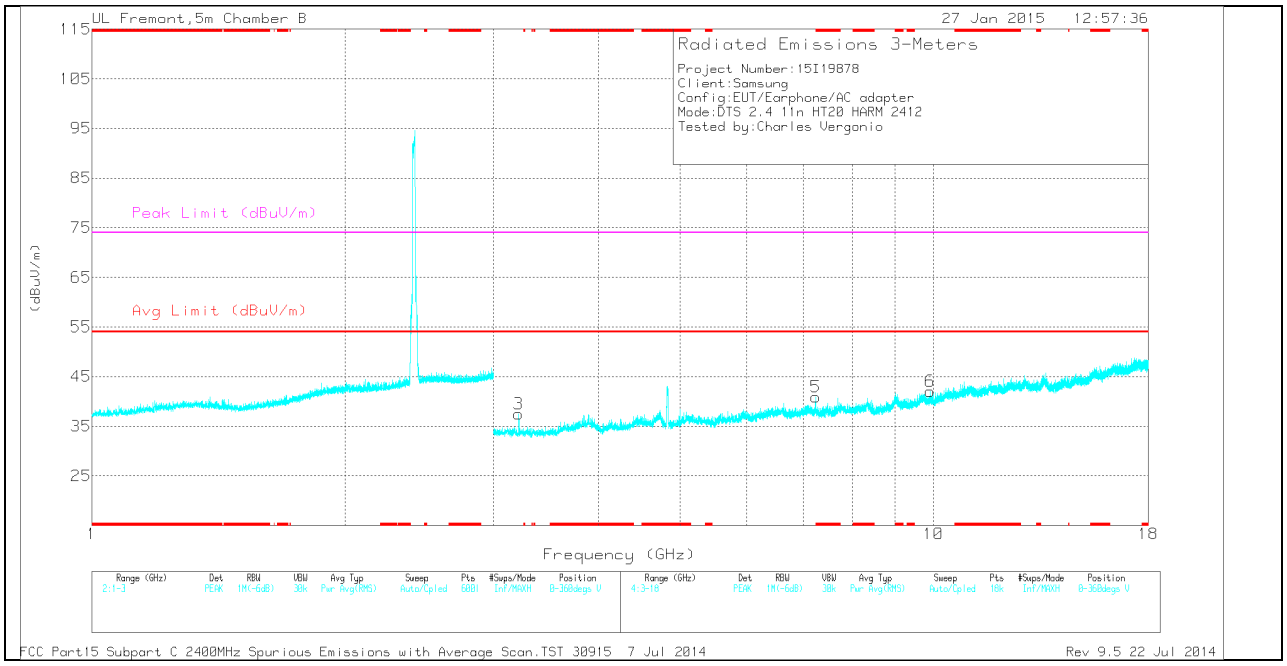
LOW CHANNEL VERTICAL



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)	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	* 4.829	38.96	PK	34.2	-29.8	0	43.36	-	-	74	-30.64	0-360	101	H
1	1.819	34.79	PK	30.3	-23.3	0	41.79	-	-	-	-	0-360	101	H
2	2.12	35.01	PK	31.3	-23	0	43.31	-	-	-	-	0-360	101	H
3	3.216	35.65	PK	32.8	-31	0	37.45	-	-	-	-	0-360	101	V
5	7.247	33.15	PK	35.6	-27.9	0	40.85	-	-	-	-	0-360	200	V
6	9.91	28.59	PK	37	-23.6	0	41.99	-	-	-	-	0-360	200	V

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.83	51.41	PK2	34.2	-29.8	0	55.81	-	-	74	-18.19	162	175	H
* 4.828	36.59	MAv1	34.2	-29.7	0.3	41.39	54	-12.61	-	-	162	175	H

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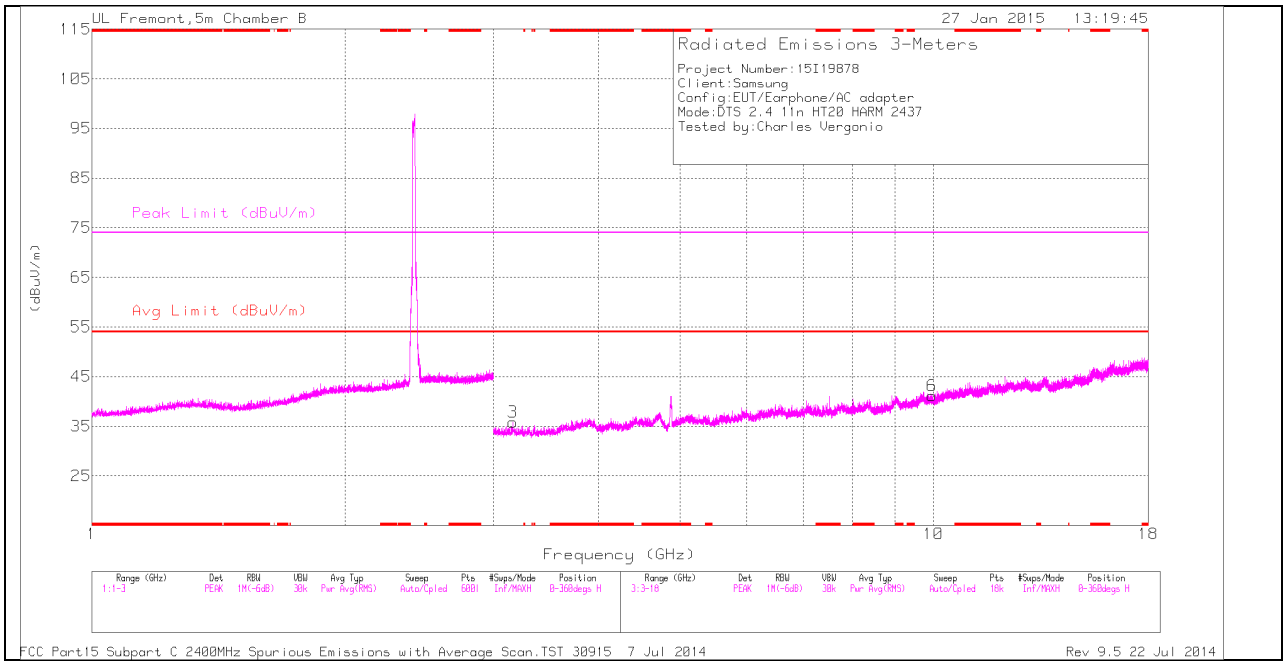
MID CHANNEL HORIZONTAL



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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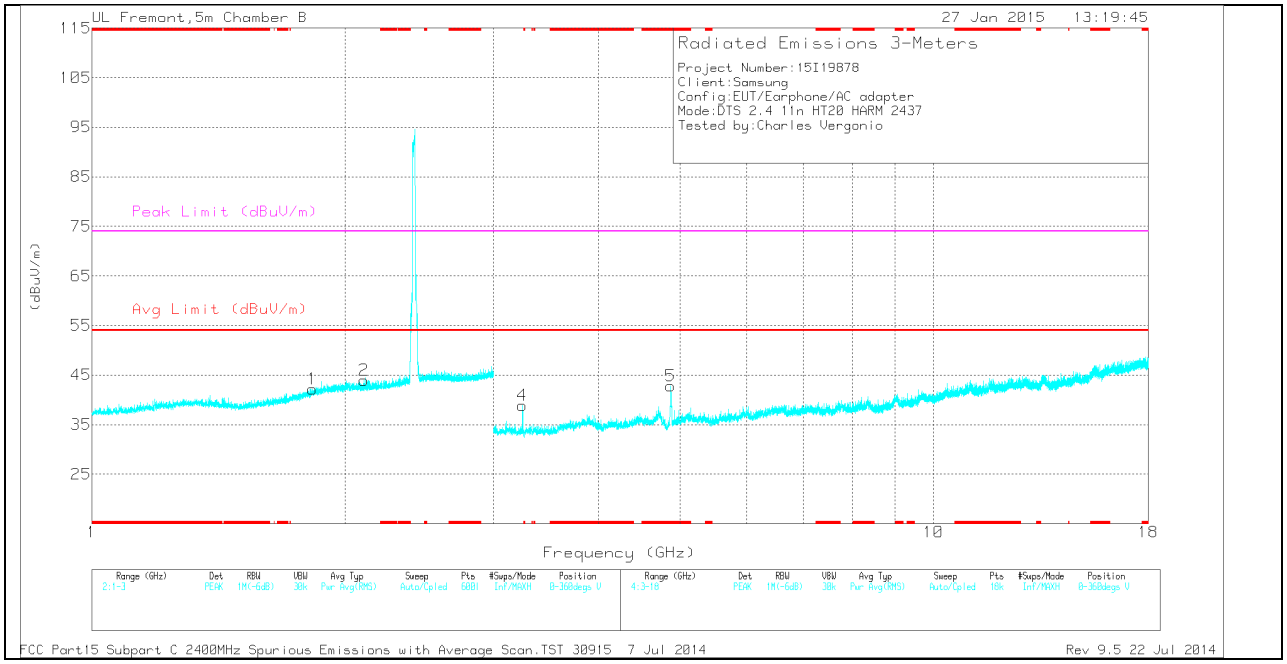
MID CHANNEL VERTICAL



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)	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
5	* 4.874	39.02	PK	34.2	-30.4	0	42.82	-	-	74	-31.18	0-360	200	V
1	1.829	35.04	PK	30.4	-23.3	0	42.14	-	-	-	-	0-360	101	V
2	2.104	35.72	PK	31.2	-23	0	43.92	-	-	-	-	0-360	200	V
3	3.162	33.95	PK	32.8	-30.9	0	35.85	-	-	-	-	0-360	101	H
4	3.249	36.99	PK	32.8	-30.9	0	38.89	-	-	-	-	0-360	200	V
6	9.967	27.64	PK	37	-23.5	0	41.14	-	-	-	-	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
* 4.873	48.99	PK2	34.2	-30.4	0	52.79	-	-	74	-21.21	22	280	V
* 4.874	36.58	MAv1	34.2	-30.4	0.3	40.68	54	-13.32	-	-	22	280	V

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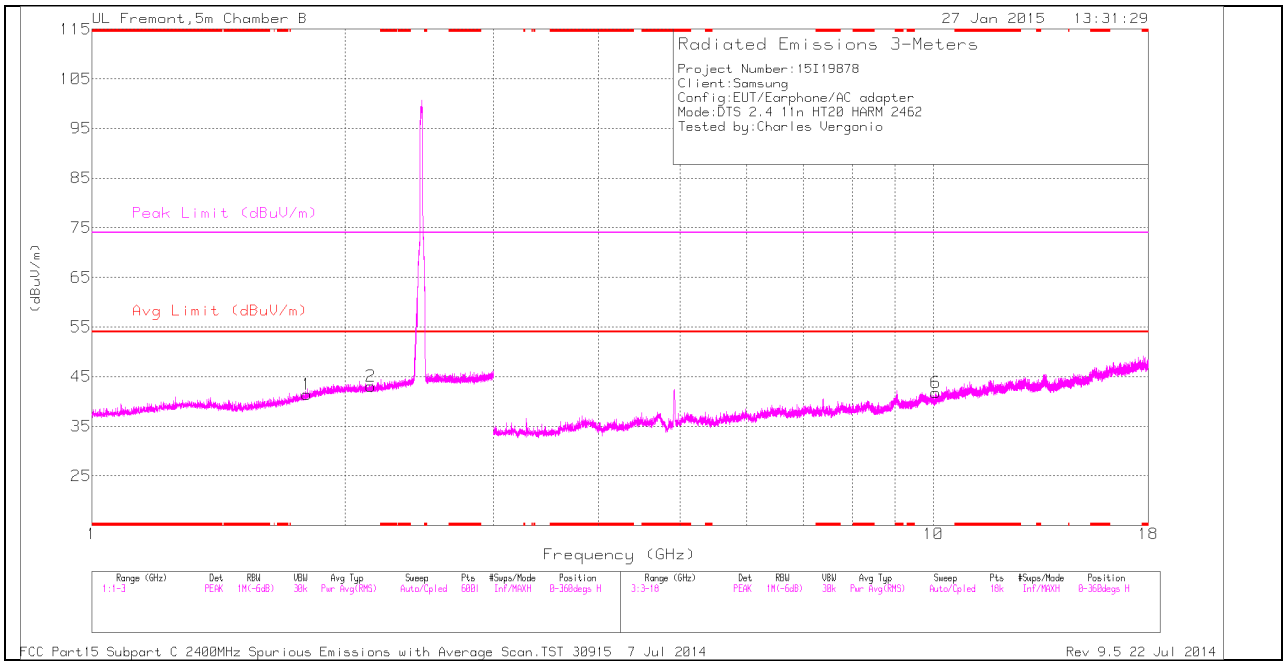
HIGH CHANNEL HORIZONTAL



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

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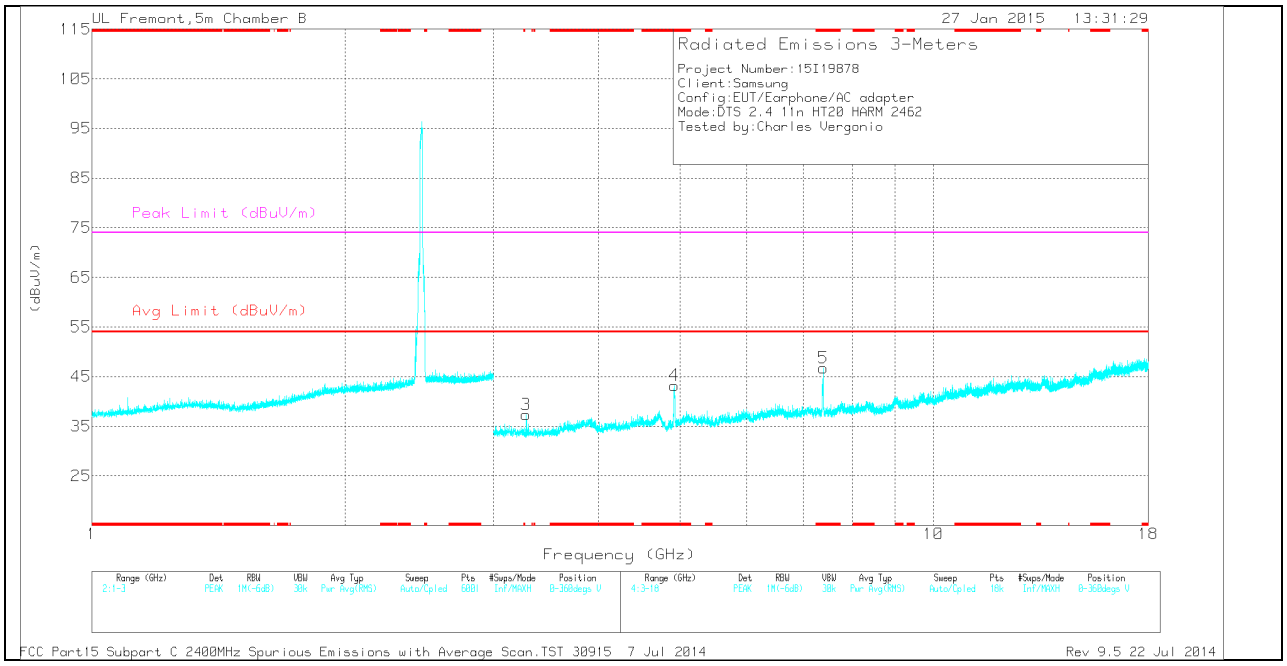
HIGH CHANNEL VERTICAL



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)	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	* 4.925	39.55	PK	34.2	-30.5	0	43.25	-	-	74	-30.75	0-360	199	V
5	* 7.396	38.54	PK	35.6	-27.4	0	46.74	-	-	74	-27.26	0-360	199	V
1	1.799	34.54	PK	30.2	-23.3	0	41.44	-	-	-	-	0-360	200	H
2	2.144	34.82	PK	31.3	-23	0	43.12	-	-	-	-	0-360	200	H
3	3.282	35.41	PK	32.8	-30.9	0	37.31	-	-	-	-	0-360	199	V
6	10.06	28.27	PK	37.1	-23.6	0	41.77	-	-	-	-	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)	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	48.45	PK2	34.2	-30.5	0	52.15	-	-	74	-21.85	25	345	V
* 4.923	36.22	MAv1	34.2	-30.5	0.3	40.22	54	-13.78	-	-	25	345	V
* 7.396	48.45	PK2	35.6	-27.4	0	56.65	-	-	74	-17.35	33	200	V
* 7.395	30.26	MAv1	35.6	-27.4	0.3	38.76	54	-15.24	-	-	33	200	V

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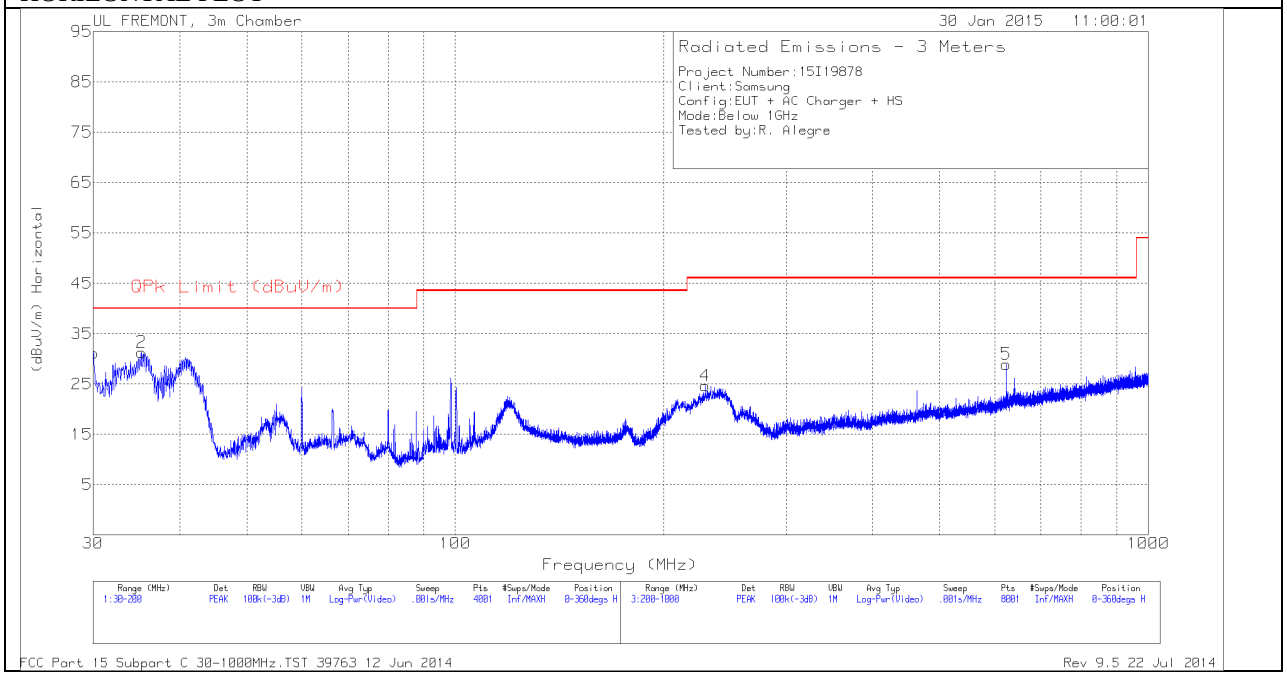
10.3. WORST-CASE BELOW 1 GHz

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

HORIZONTAL PLOT



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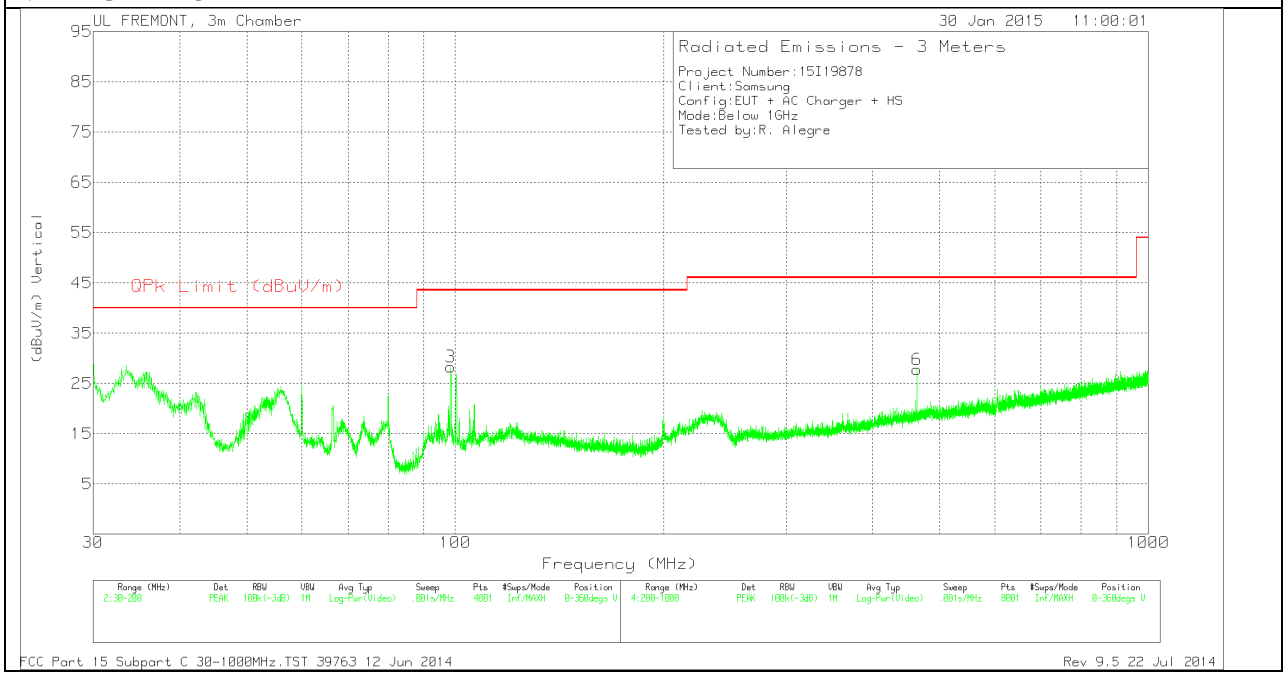
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, VERTICAL)

VERTICAL PLOT



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Below 1G Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T185 (dB/m)	Amp/Cbl (dB/m)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	30.0425	37.7	PK	21	-27.5	31.2	40	-8.8	0-360	300	H
2	35.2275	41.69	PK	17.1	-27.5	31.29	40	-8.71	0-360	400	H
3	98.4675	45.59	PK	9.5	-26.8	28.29	43.52	-15.23	0-360	100	V
4	229.4	39.05	PK	11.1	-25.5	24.65	46.02	-21.37	0-360	100	H
6	463.7	36.47	PK	17.1	-25.8	27.77	46.02	-18.25	0-360	100	V
5	624	35.34	PK	19.2	-25.6	28.94	46.02	-17.08	0-360	300	H

PK - Peak detector

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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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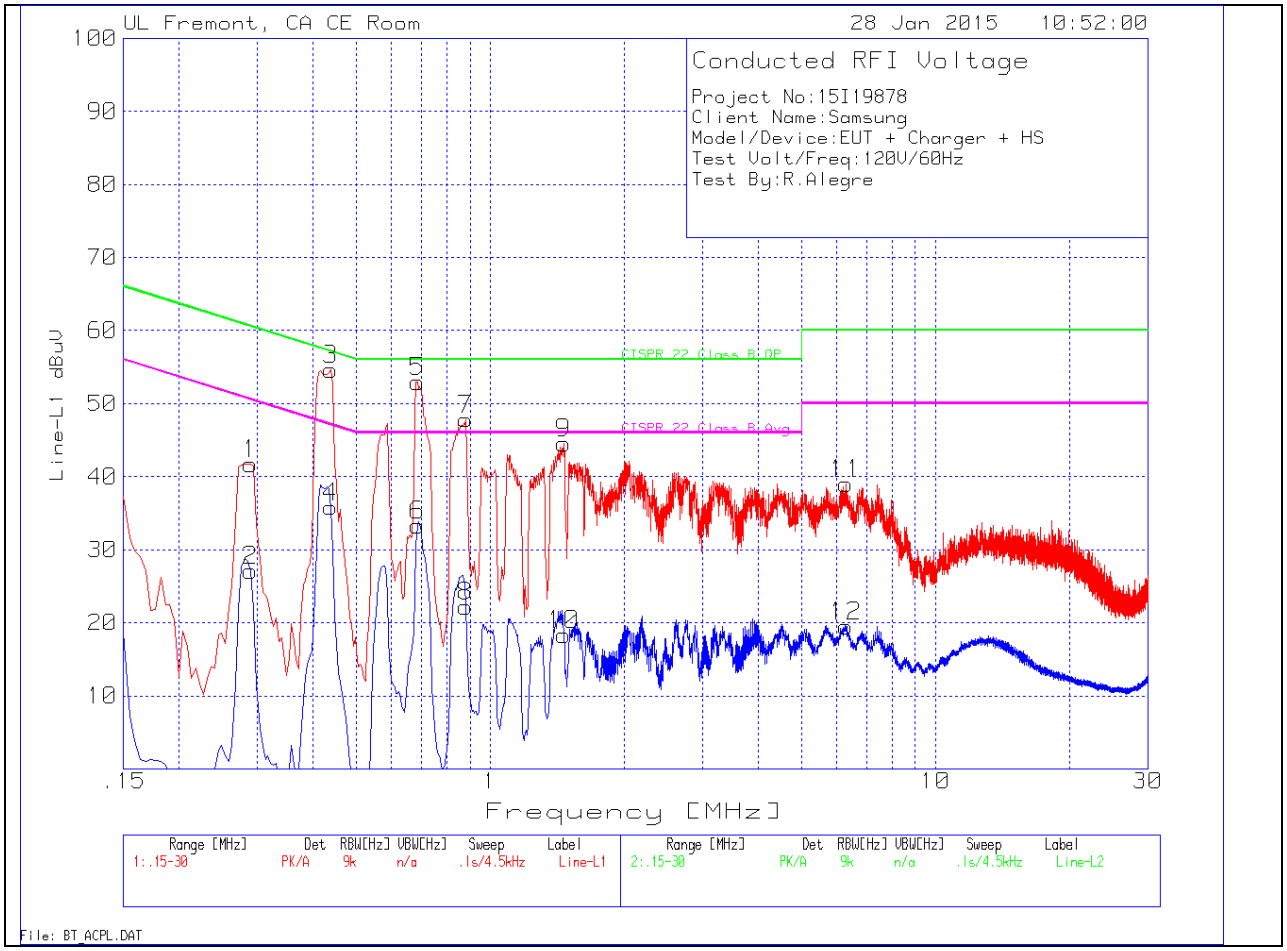
RESULTS

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	.2895	41.13	PK	.6	0	41.73	60.5	-18.77	-	-
2	.2895	26.56	Av	.6	0	27.16	-	-	50.5	-23.34
3	.438	54.25	PK	.4	0	54.65	57.1	-2.45	-	-
4	.438	35.44	Av	.4	0	35.84	-	-	47.1	-11.26
5	.6855	52.65	PK	.3	0	52.95	56	-3.05	-	-
6	.6855	33.05	Av	.3	0	33.35	-	-	46	-12.65
7	.879	47.55	PK	.3	0	47.85	56	-8.15	-	-
8	.879	21.95	Av	.3	0	22.25	-	-	46	-23.75
9	1.464	44.31	PK	.2	.1	44.61	56	-11.39	-	-
10	1.464	18.07	Av	.2	.1	18.37	-	-	46	-27.63
11	6.288	38.7	PK	.2	.1	39	60	-21	-	-
12	6.288	19.24	Av	.2	.1	19.54	-	-	50	-30.46

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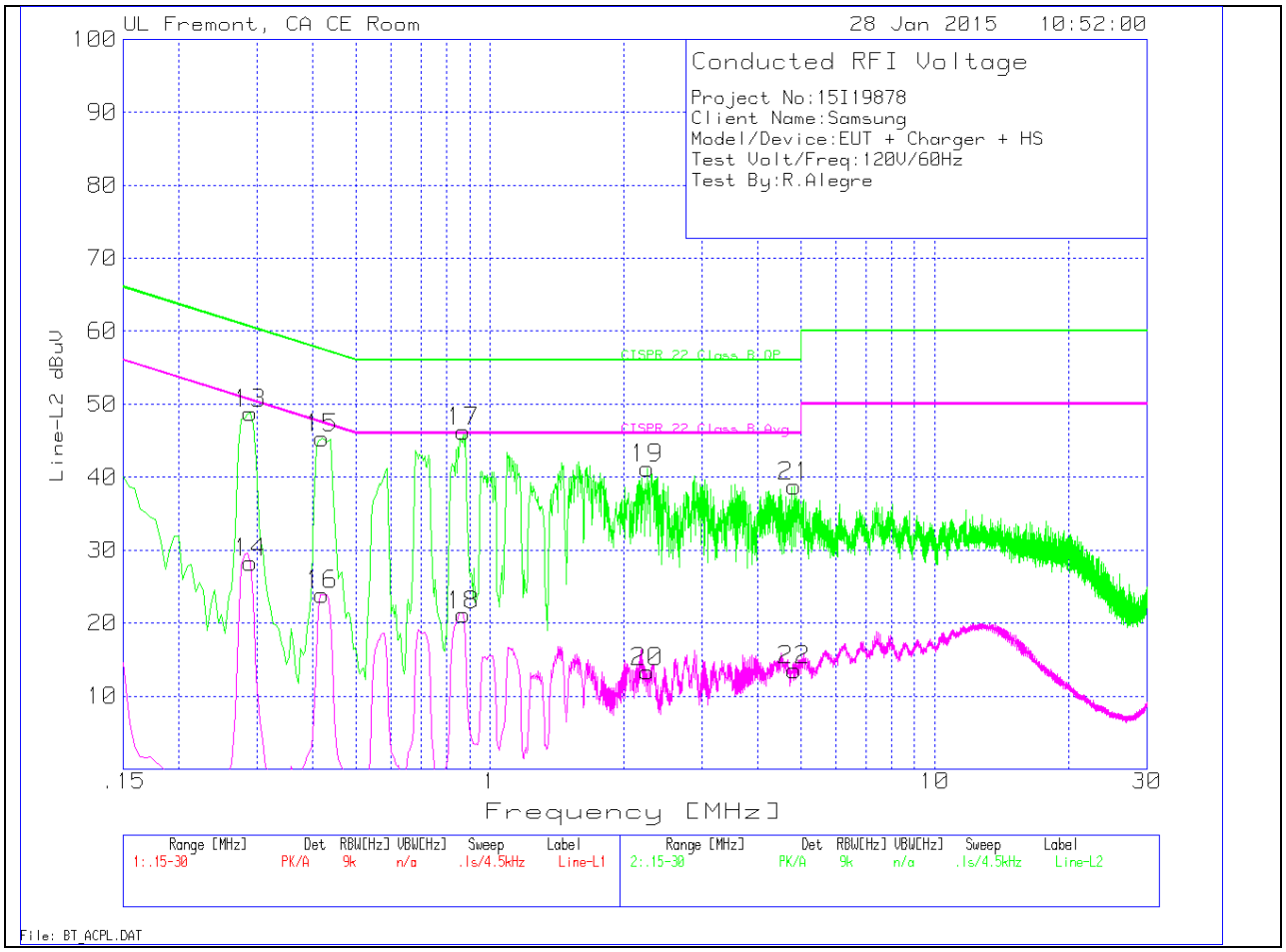
LINE 2 PLOT



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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	48.16	PK	.6	0	48.76	60.5	-11.74	-	-
14	.2895	27.66	Av	.6	0	28.26	-	-	50.5	-22.24
15	.42	44.99	PK	.4	0	45.39	57.4	-12.01	-	-
16	.42	23.5	Av	.4	0	23.9	-	-	47.4	-23.5
17	.87	45.92	PK	.3	0	46.22	56	-9.78	-	-
18	.87	20.82	Av	.3	0	21.12	-	-	46	-24.88
19	2.2605	40.93	PK	.2	.1	41.23	56	-14.77	-	-
20	2.2605	13.06	Av	.2	.1	13.36	-	-	46	-32.64
21	4.83	38.49	PK	.2	.1	38.79	56	-17.21	-	-
22	4.83	13.23	Av	.2	.1	13.53	-	-	46	-32.47

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