FCC CFR47 PART 15 SUBPART C

CERTIFICATION TEST REPORT

FOR

GSM/WCDMA/LTE Phone + Bluetooth, WLAN 2.4GHz b/g/n, ANT+ & NFC

MODEL NUMBER: SM-J7008

FCC ID: A3LSMJ7008

REPORT NUMBER: 15I20557 –E4 REVISION A

ISSUE DATE: May 26, 2015

Prepared for

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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	04/30/15	Initial Issue	P. Zhang
A	5/26/15	Update section 2	P. Zhang

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: **SAMSUNG ELECTRONICS CO., LTD.**
EUT DESCRIPTION: **GSM/WCDMA/LTE Phone + Bluetooth, WLAN 2.4GHz b/g/n, ANT+ & NFC**
MODEL: **SM-J7008**
SERIAL NUMBER: **R38G40610SY (RADIATED), R38G40611V7 (CONDUCTED)**
DATE TESTED: **APRIL 15 – 30, 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 C63.10-2009.

Testing for radiated emissions above 1GHz was performed with the EUT elevated at 1.5m instead of 0.8m. 1.5m is the required height in ANSI C63.10:2013 as referenced by RSS GEN issue 4. This test height has been permitted by FCC as discussed in FCC/TCB conference call in December 2014.

3. FACILITIES AND ACCREDITATION

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

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

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

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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

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

4.3. MEASUREMENT UNCERTAINTY

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

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

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a GSM/WCDMA/LTE Phone + Bluetooth, WLAN 2.4GHz b/g/n, ANT+ & NFC.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2412 - 2462	802.11b	16.3	42.66
2412 - 2462	802.11g	14.4	27.54
2412 - 2462	802.11n HT20	13.4	21.88

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of -1.84 dBi.

5.4. WORST-CASE CONFIGURATION AND MODE

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

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

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

802.11b mode: 1 Mbps

802.11g mode: 6 Mbps

802.11n HT20mode: MCS0

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

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

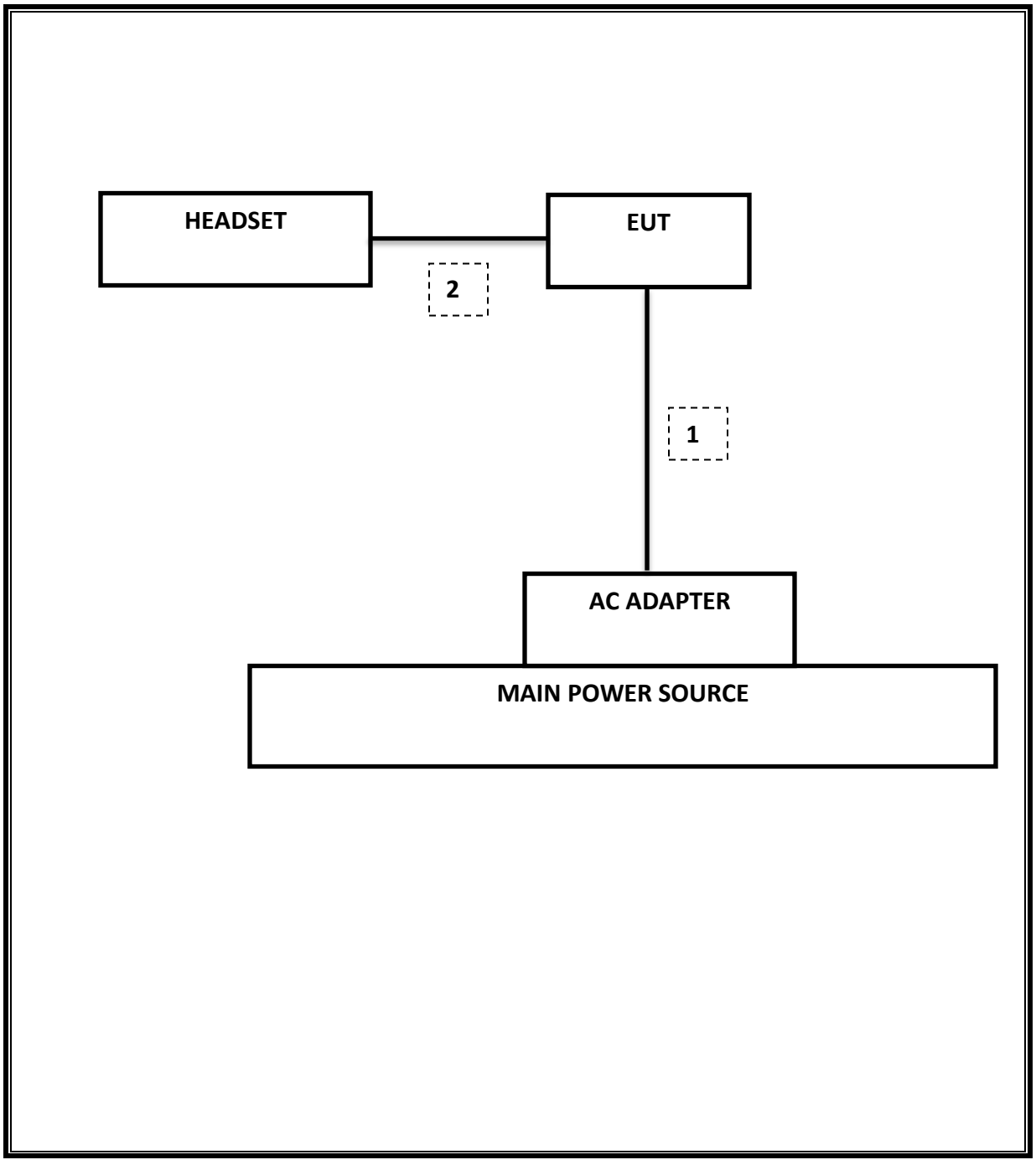
I/O CABLES

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

TEST SETUP

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

SETUP DIAGRAM FOR TESTS



6. TEST AND MEASUREMENT EQUIPMENT

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

Test Equipment List				
Description	**Manufacturer**	**Model**	**Asset**	**Cal Due**
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01069	12/20/15
Spectrum Analyzer,9KHz-40GHz	HP	8564E	C00986	04/01/16
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	03/06/16
RF Preamplifier, 100KHz -> 1300MHz	HP	TBD	C00825	06/01/15
RF Preamplifier, 1GHz - 18GHz	Miteq	NSP4000-SP2	924343	03/23/16
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 Software 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

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.

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	7.11MHz
2.1051, 15.247 (d)	RSS-210 A8.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	-27.637dBm
15.247	RSS-210 A8.4	TX conducted output power	<30dBm		Pass	16.30dBm
15.247	RSS-210 A8.2	PSD	<8dBm		Pass	-4.94dBm
15.207 (a)	RSS-GEN 7.2.2	AC Power Line conducted emissions	Section 10	Radiated	Pass	52.93dBuV(PK)
15.205, 15.209	RSS-210 Clause 2.6, RSS-210 Clause 6	Radiated Spurious Emission	< 54dBuV/m		Pass	52.46dBuV/m

9. ANTENNA PORT TEST RESULTS

9.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

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

TEST PROCEDURE

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

RESULTS

9.1.1. 802.11b MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	7.12	0.5
Mid	2437	7.57	0.5
High	2462	7.11	0.5
Worst		7.11	

9.1.2. 802.11g MODE IN THE 2.4 GHz BAND

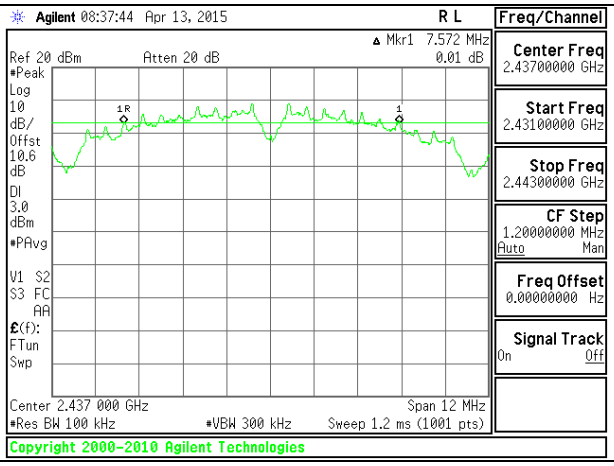
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	16.48	0.5
Mid	2437	16.35	0.5
High	2462	16.05	0.5
Worst		16.05	

9.1.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

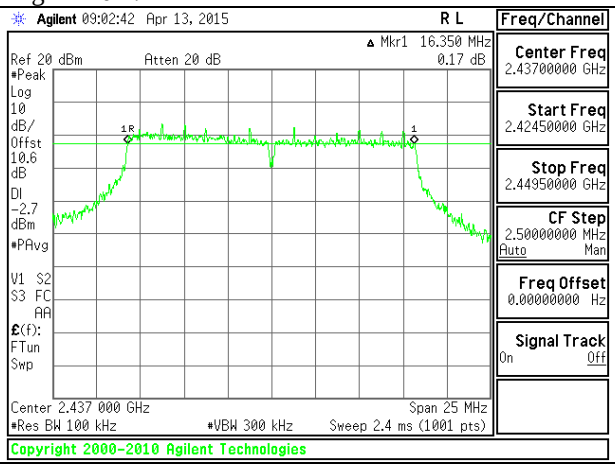
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	17.60	0.5
Mid	2437	16.95	0.5
High	2462	16.77	0.5
Worst		16.77	

9.1.4. 6 dB BANDWIDTH MID CH PLOTS

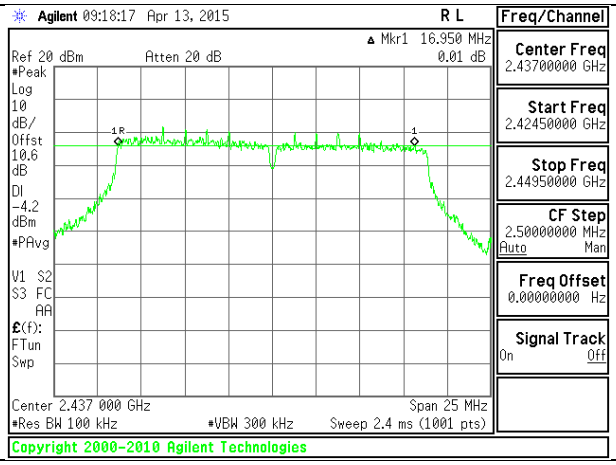
11b HT20 2.4



11g HT20 2.4



11n HT20 2.4



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	12.71
Mid	2437	12.56
High	2462	12.74
Worst		12.74

9.2.2. 802.11g MODE IN THE 2.4 GHz BAND

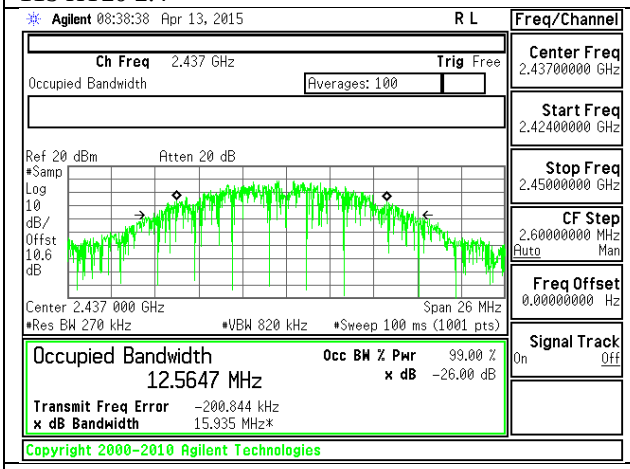
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	16.64
Mid	2437	16.61
High	2462	16.50
Worst		16.64

9.2.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

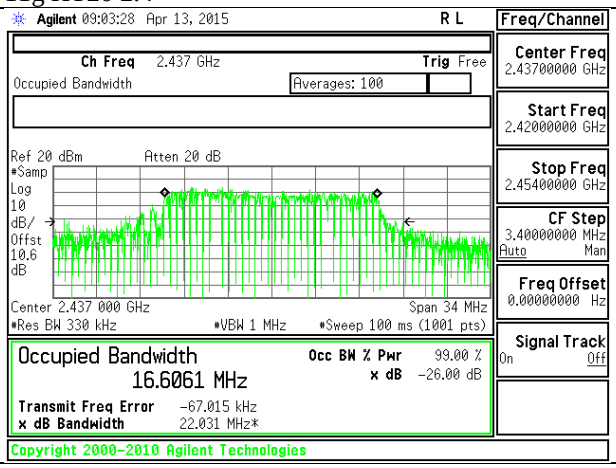
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	17.82
Mid	2437	17.78
High	2462	17.67
Worst		17.82

9.2.4. 99% BANDWIDTH MID CH PLOTS

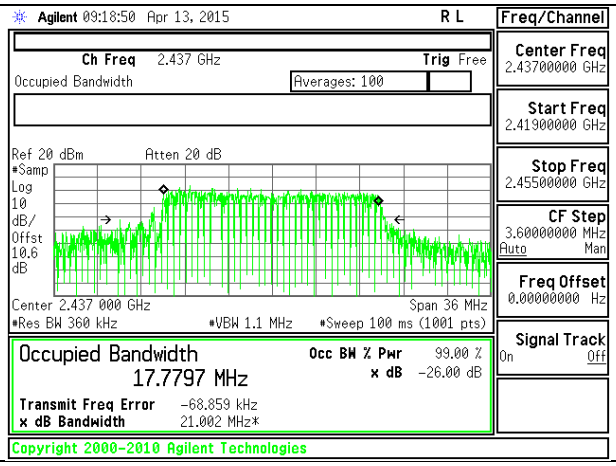
11b HT20 2.4



11g HT20 2.4



11n HT20 2.4



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.

RESULTS

9.3.1. 802.11b MODE IN THE 2.4 GHz BAND

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	-1.84	30.00	30	36	30.00
Mid	2437	-1.84	30.00	30	36	30.00
High	2462	-1.84	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	16.00	16.00	30.00	-14.00
Mid	2437	16.30	16.30	30.00	-13.70
High	2462	15.90	15.90	30.00	-14.10
Worst			16.30		

9.3.2. 802.11g MODE IN THE 2.4 GHz BAND

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	-1.84	30.00	30	36	30.00
Mid	2437	-1.84	30.00	30	36	30.00
High	2462	-1.84	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	14.20	14.20	30.00	-15.80
Mid	2437	14.43	14.43	30.00	-15.57
High	2462	14.20	14.20	30.00	-15.80
Worst			14.43		

9.3.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	-1.84	30.00	30	36	30.00
Mid	2437	-1.84	30.00	30	36	30.00
High	2462	-1.84	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	13.18	13.18	30.00	-16.82
Mid	2437	13.43	13.43	30.00	-16.57
High	2462	13.37	13.37	30.00	-16.63
Worst			13.43		

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	-5.99	8.0	-14.0
Mid	2437	-4.94	8.0	-12.9
High	2462	-5.50	8.0	-13.5

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	-10.43	8.0	-18.4
Mid	2437	-10.21	8.0	-18.2
High	2462	-10.37	8.0	-18.4

9.4.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

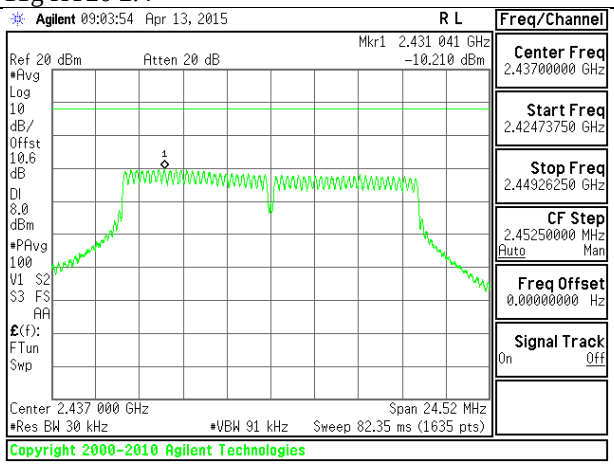
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-12.53	8.0	-20.5
Mid	2437	-12.47	8.0	-20.5
High	2462	-12.25	8.0	-20.2

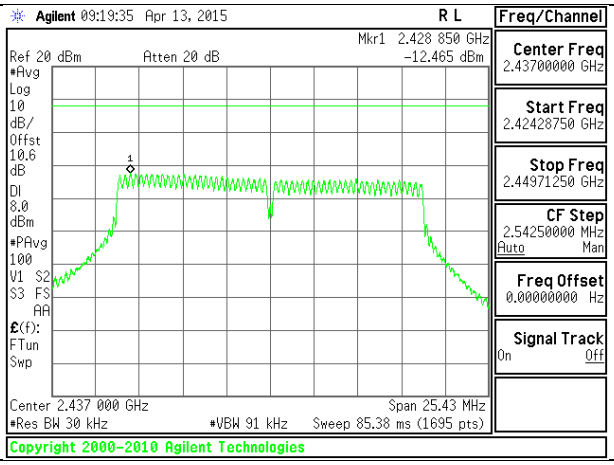
9.4.4. PSD Chain 0 MID CH PLOTS

11b HT20 2.4

11g HT20 2.4



11n HT20 2.4



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

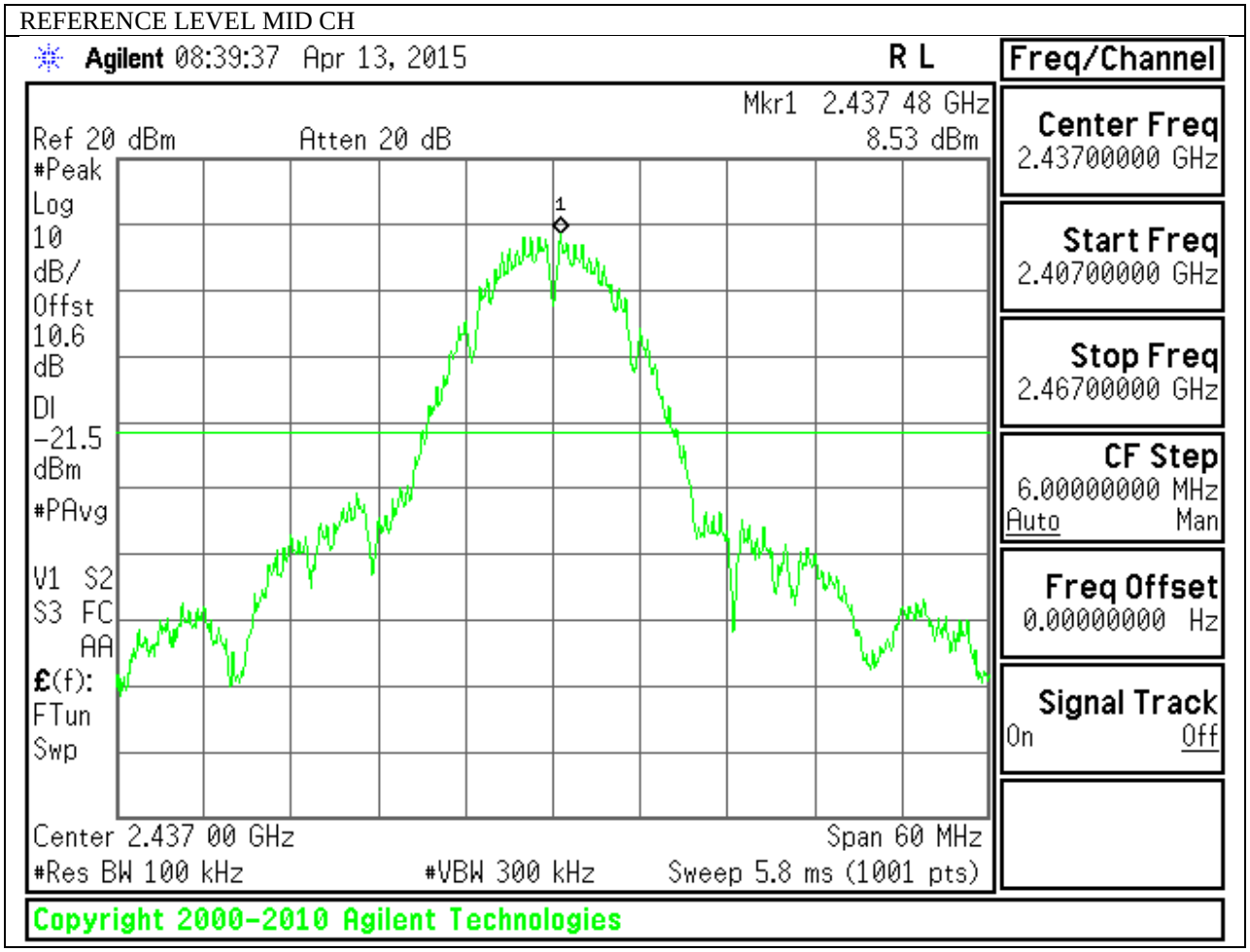
The transmitter output is connected to a spectrum analyzer with RBW = 100 kHz, VBW = 300 kHz, peak detector, and max hold. Measurements utilizing these settings are made of the in-band reference level, bandedge (where measurements to the general radiated limits will not be made) and out-of-band emissions.

RESULTS

9.5.1. 802.11b MODE IN THE 2.4 GHz BAND

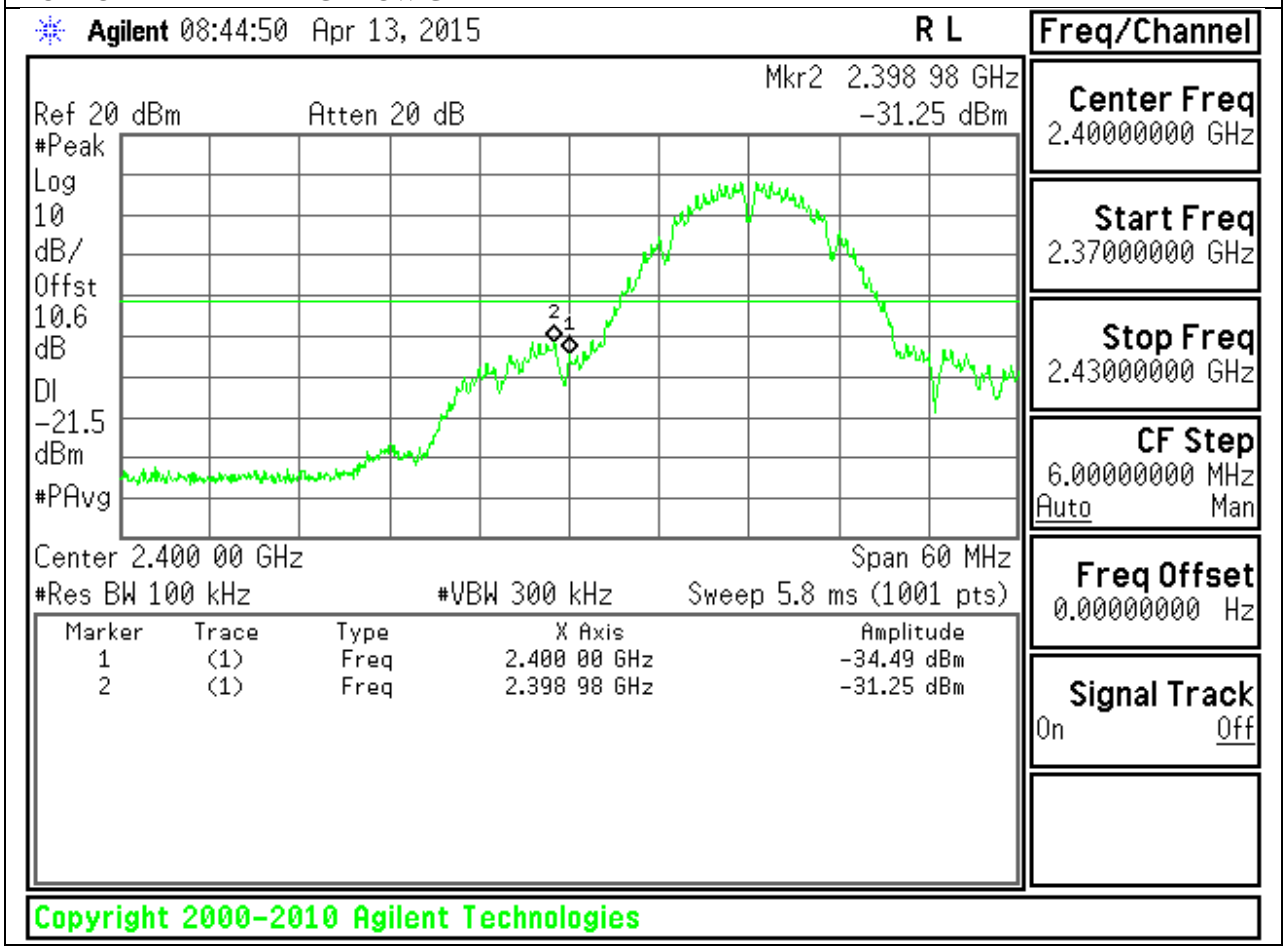
IN-BAND REFERENCE LEVEL

REFERENCE LEVEL MID CH



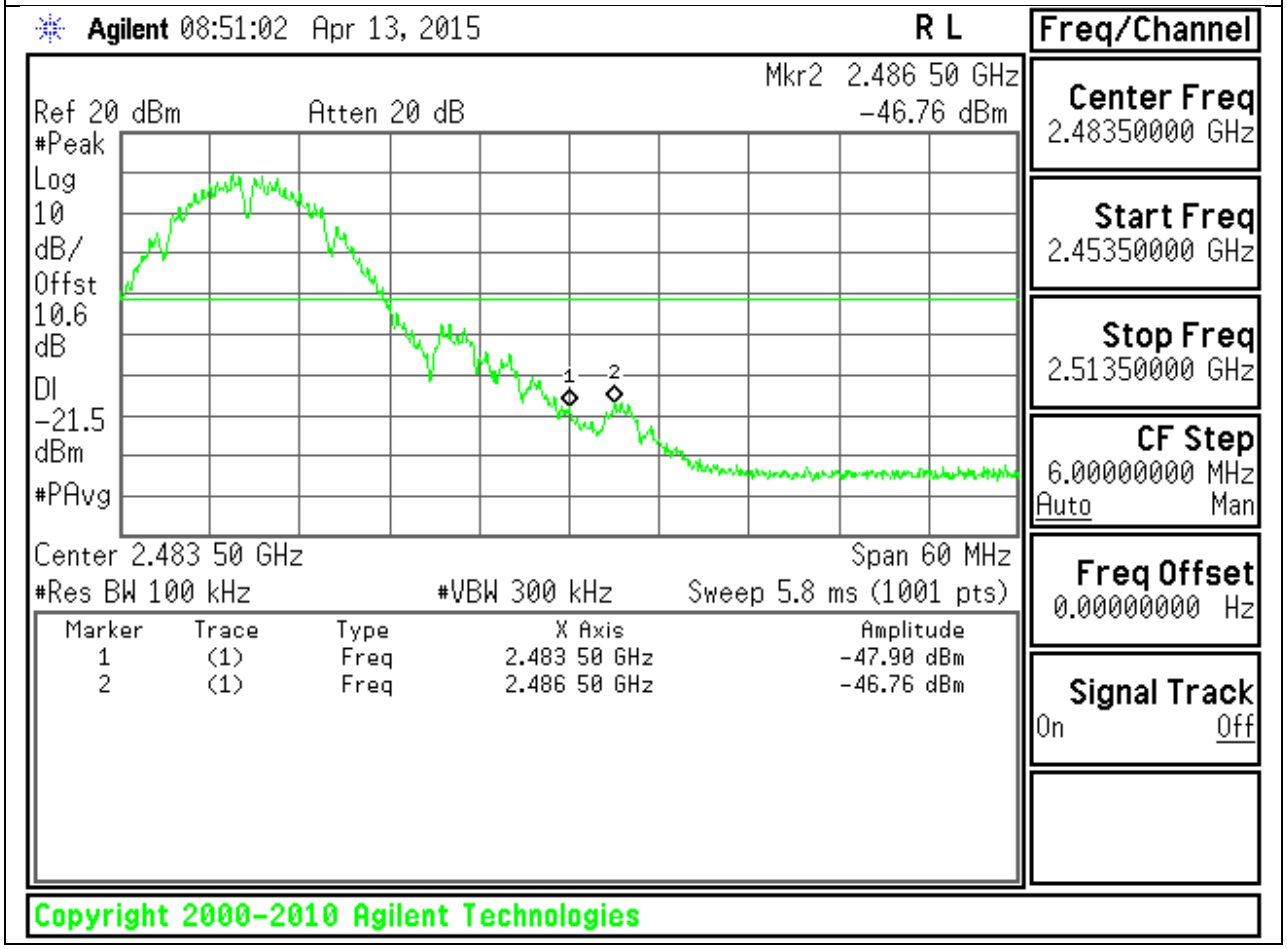
LOW CHANNEL BANDEDGE

AUTHORIZED BAND EDGE LOW CH



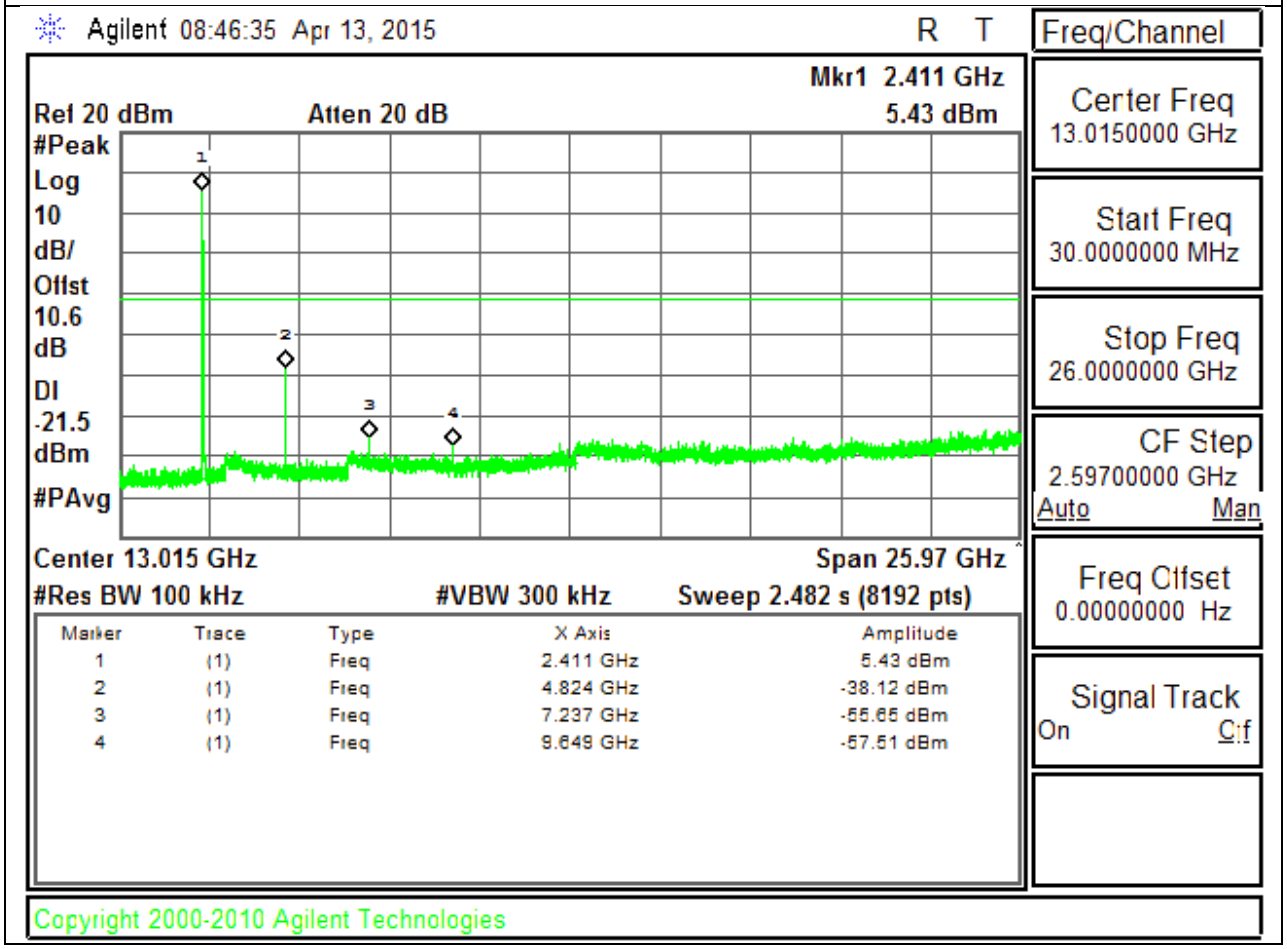
HIGH CHANNEL BANDEDGE

AUTHORIZED BAND EDGE HIGH CH

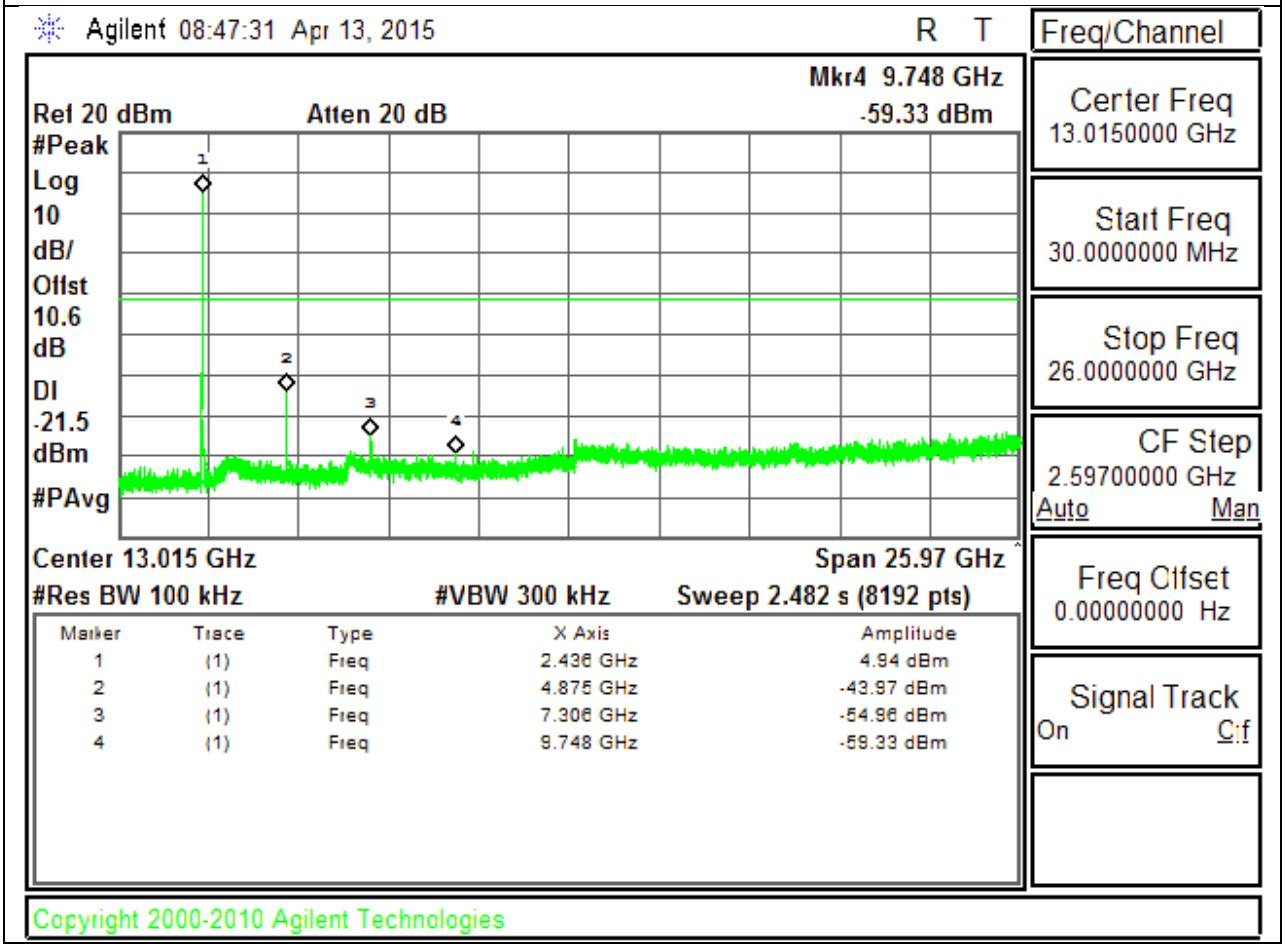


OUT-OF-BAND EMISSIONS

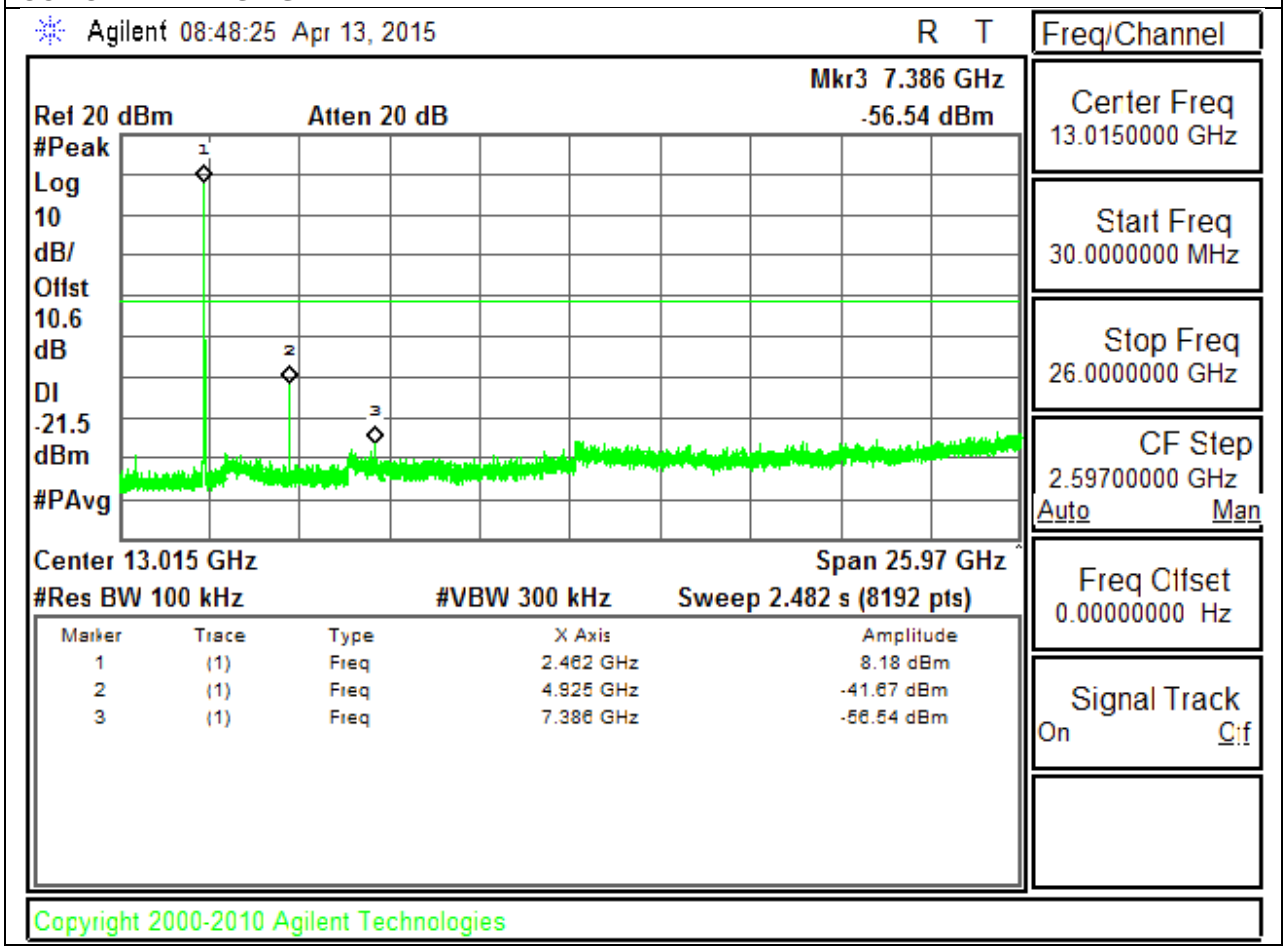
OUT OF BAND LOW CH



OUT OF BAND MID CH



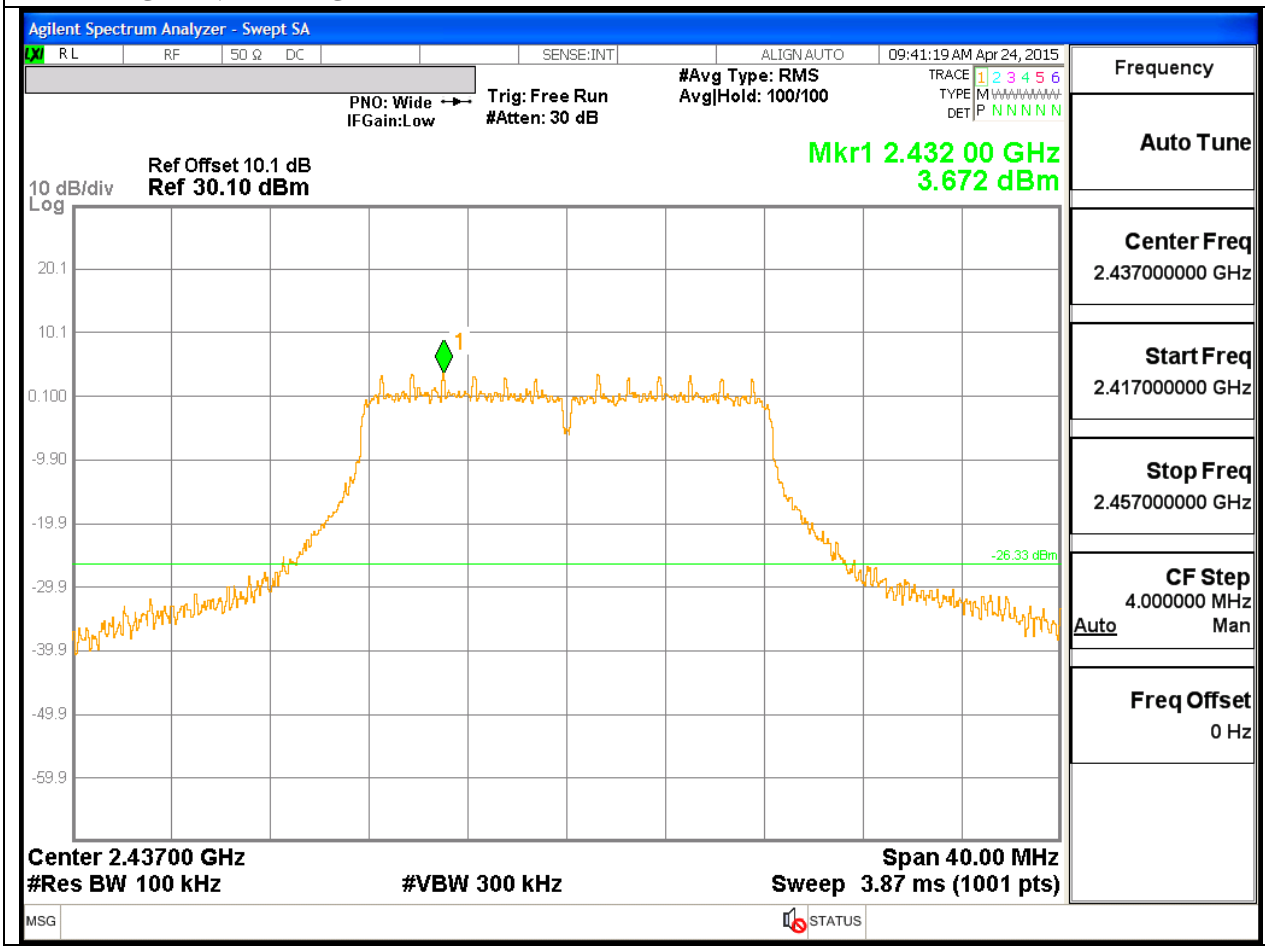
OUT OF BAND HIGH CH



9.5.2. 802.11g MODE IN THE 2.4 GHz BAND

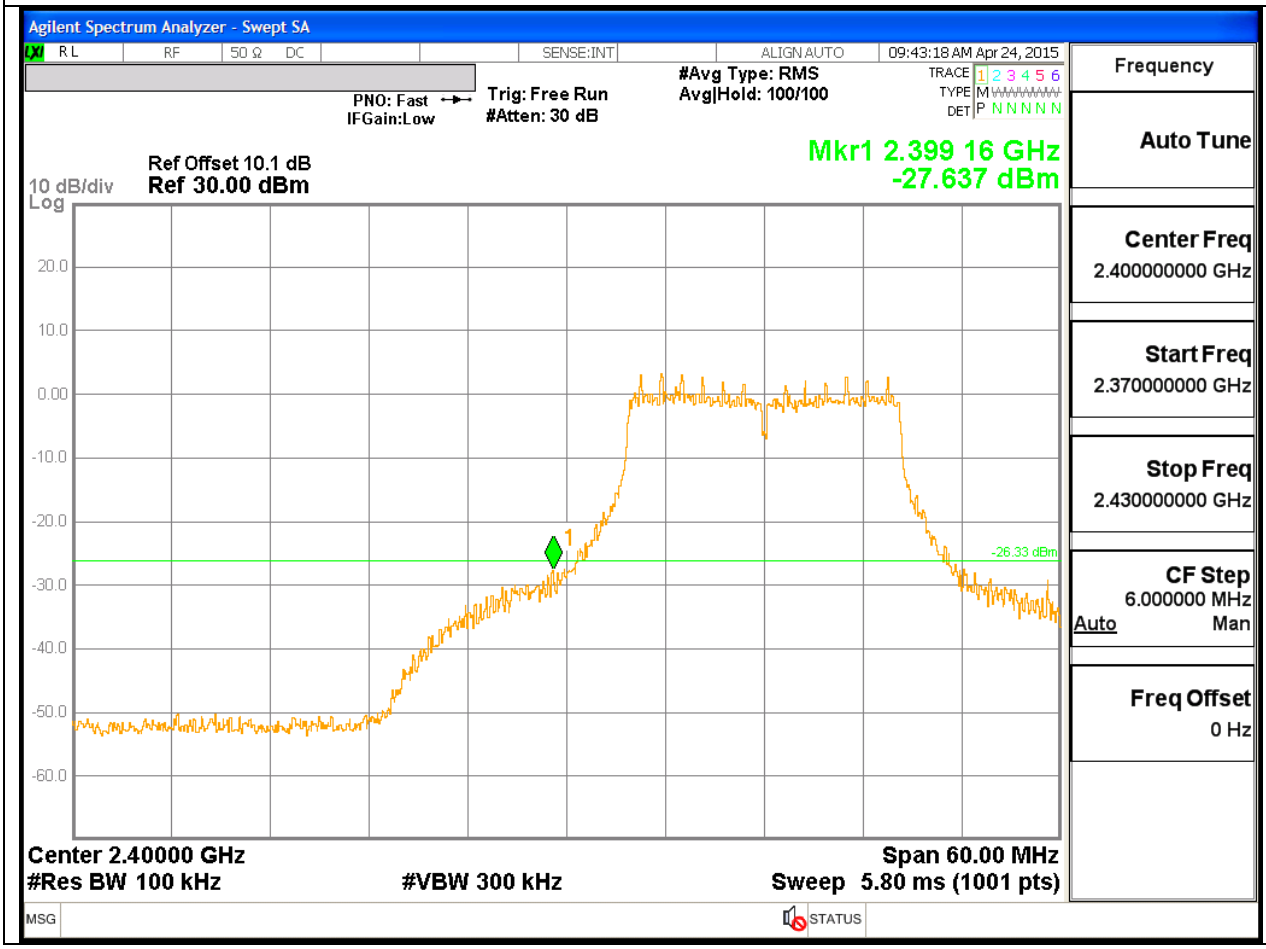
IN-BAND REFERENCE LEVEL

REFERENCE LEVEL MID CH



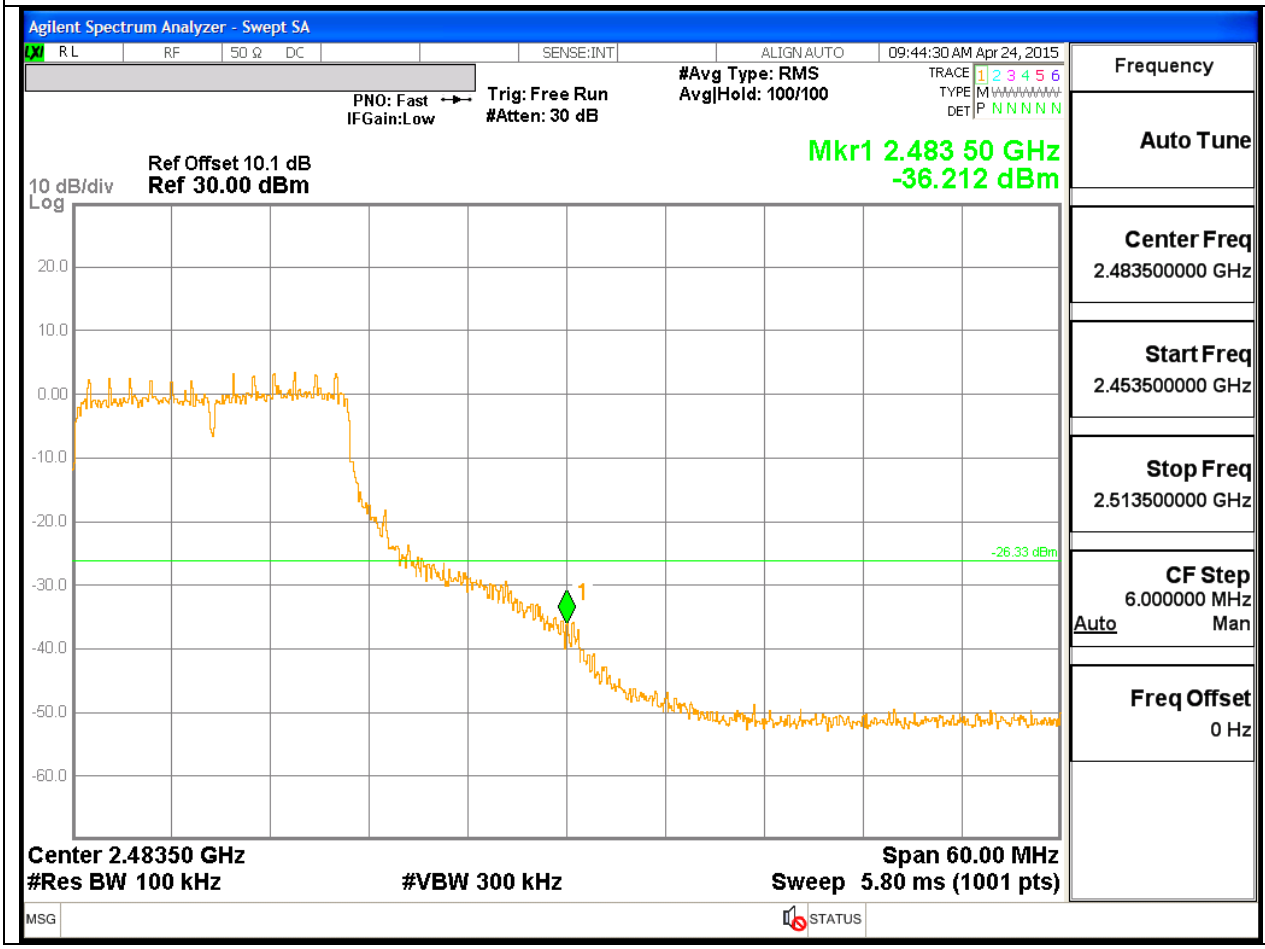
LOW CHANNEL BANDEDGE

AUTHORIZED BAND EDGE LOW CH



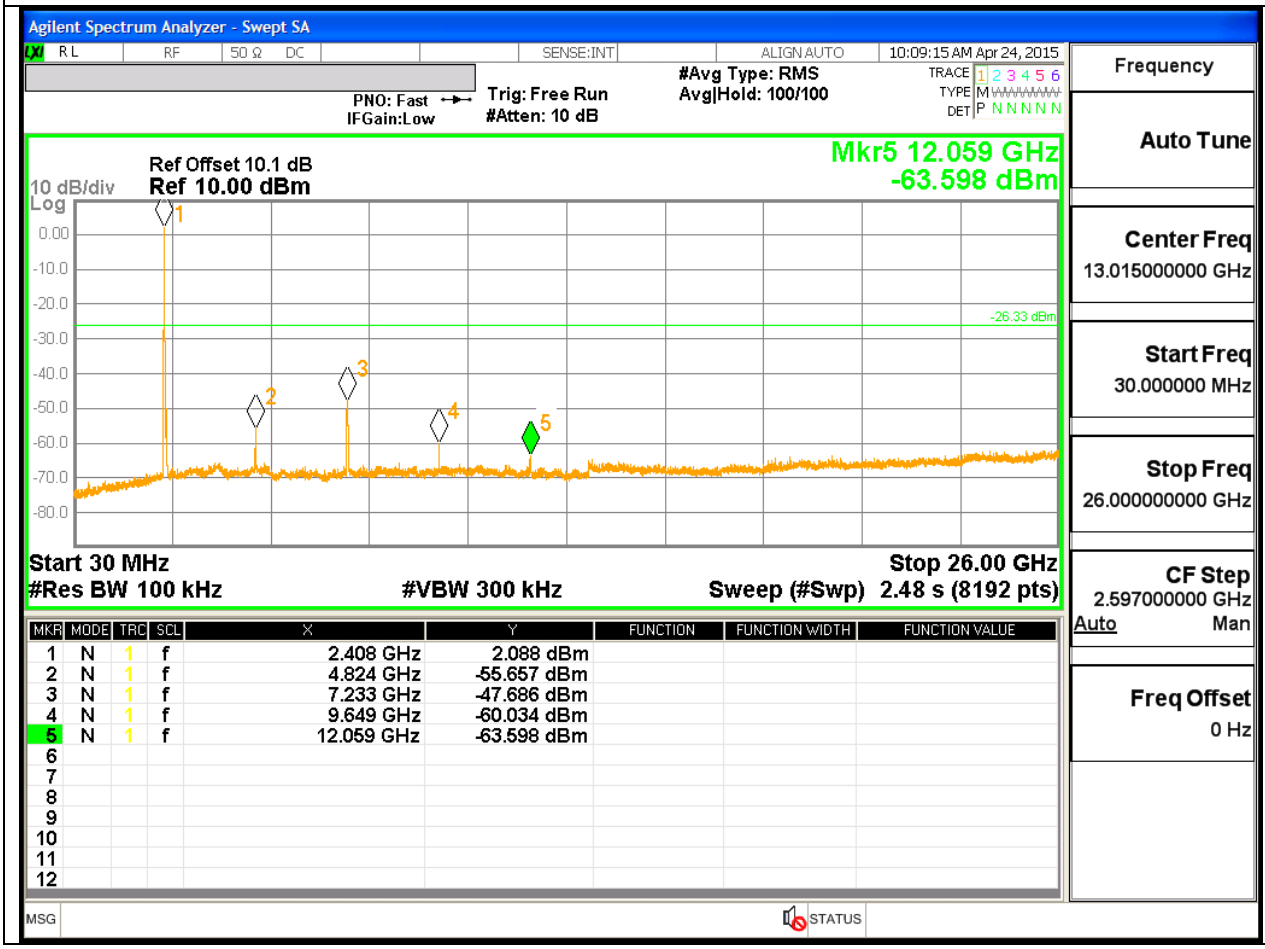
HIGH CHANNEL BANDEDGE

AUTHORIZED BAND EDGE HIGH CH

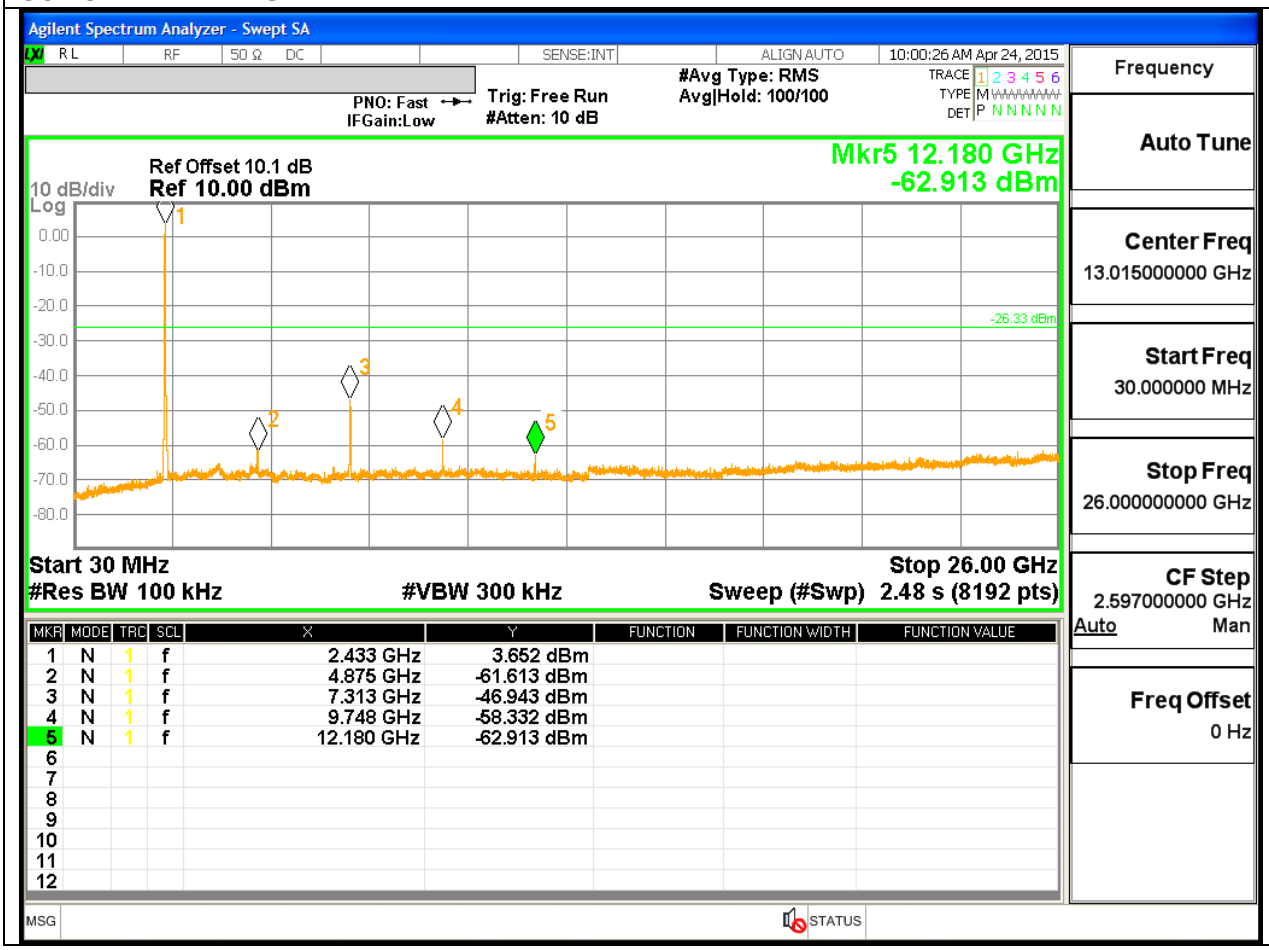


OUT-OF-BAND EMISSIONS

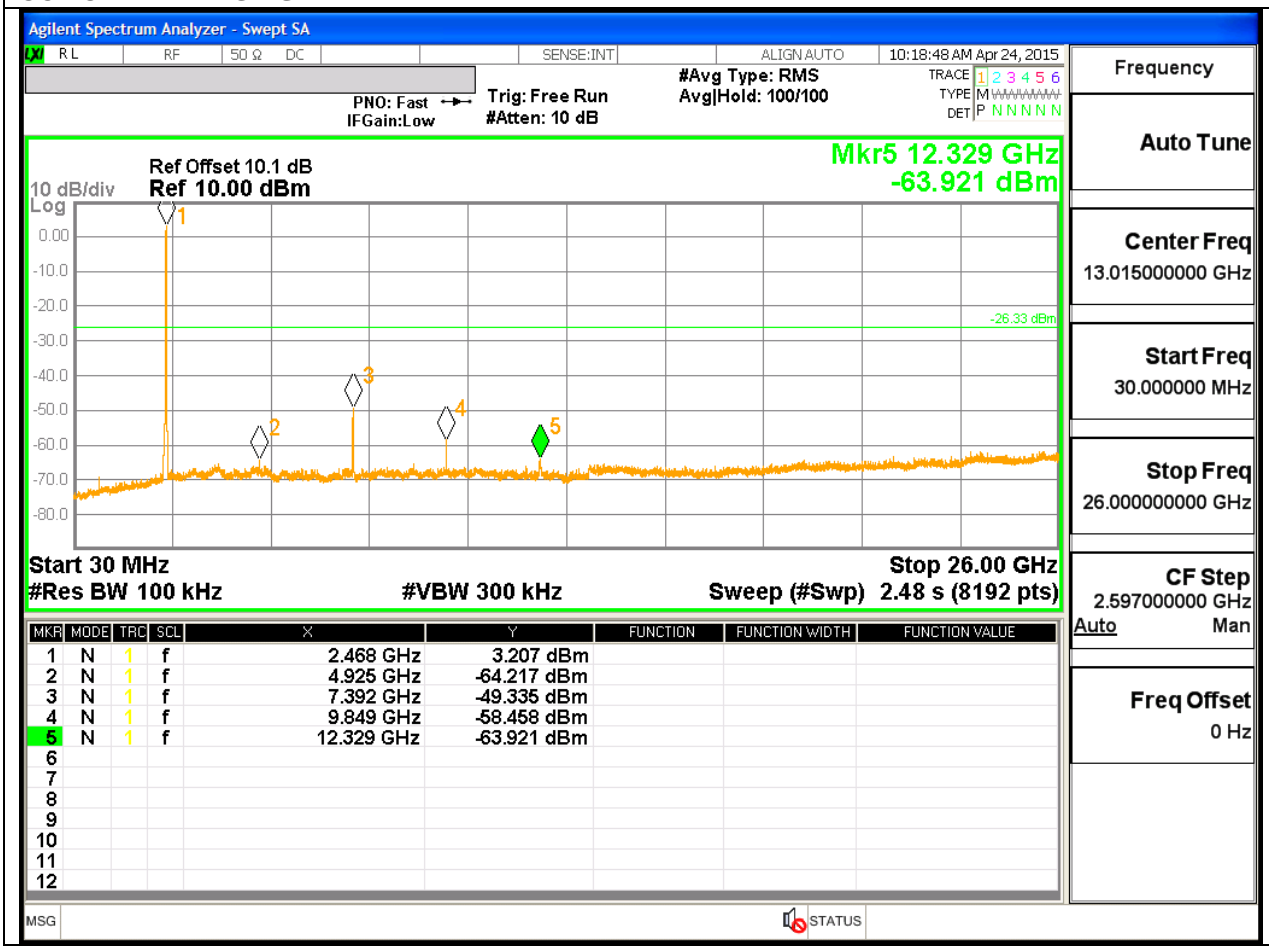
OUT OF BAND LOW CH



OUT OF BAND MID CH



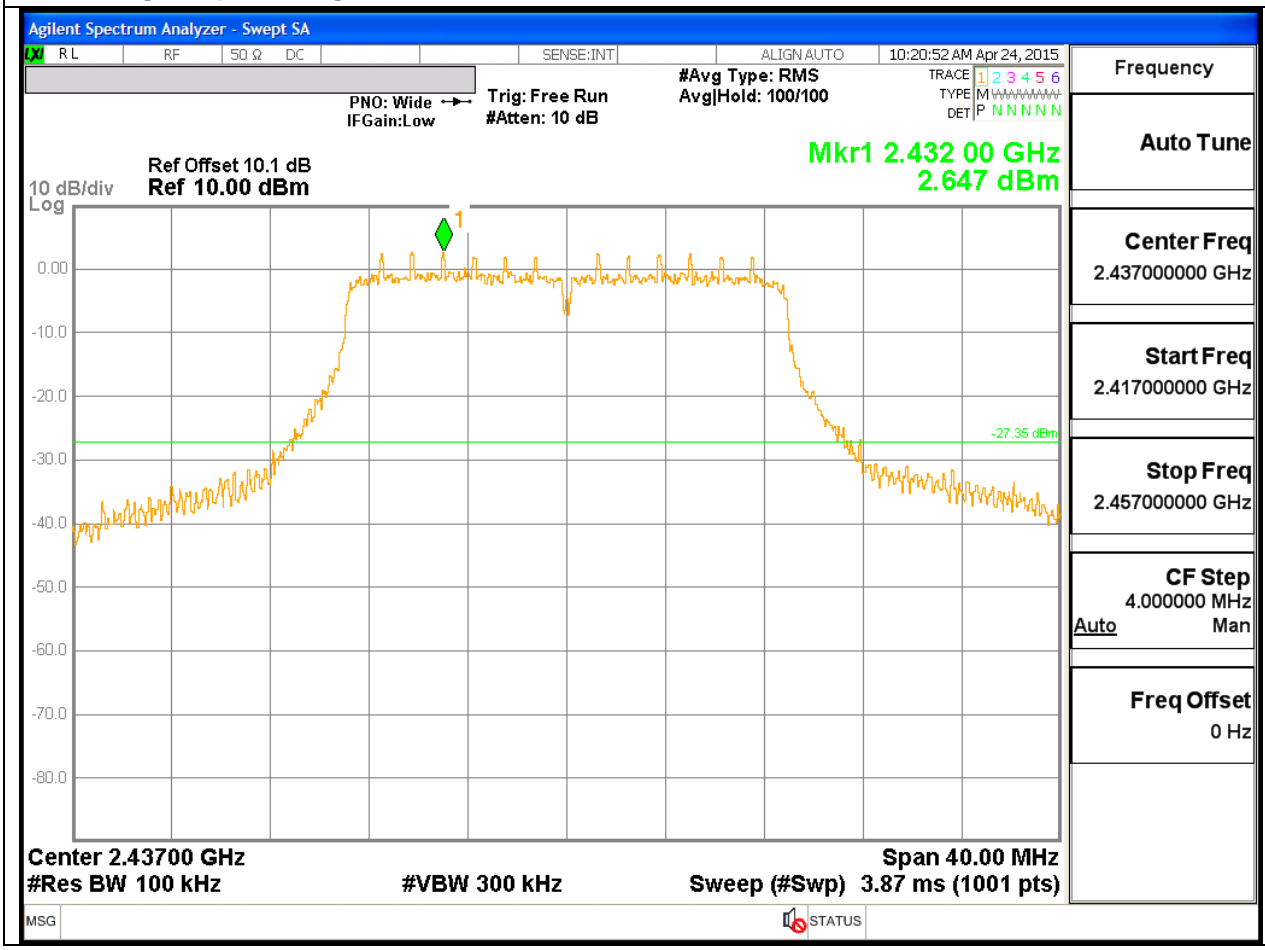
OUT OF BAND HIGH CH



9.5.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

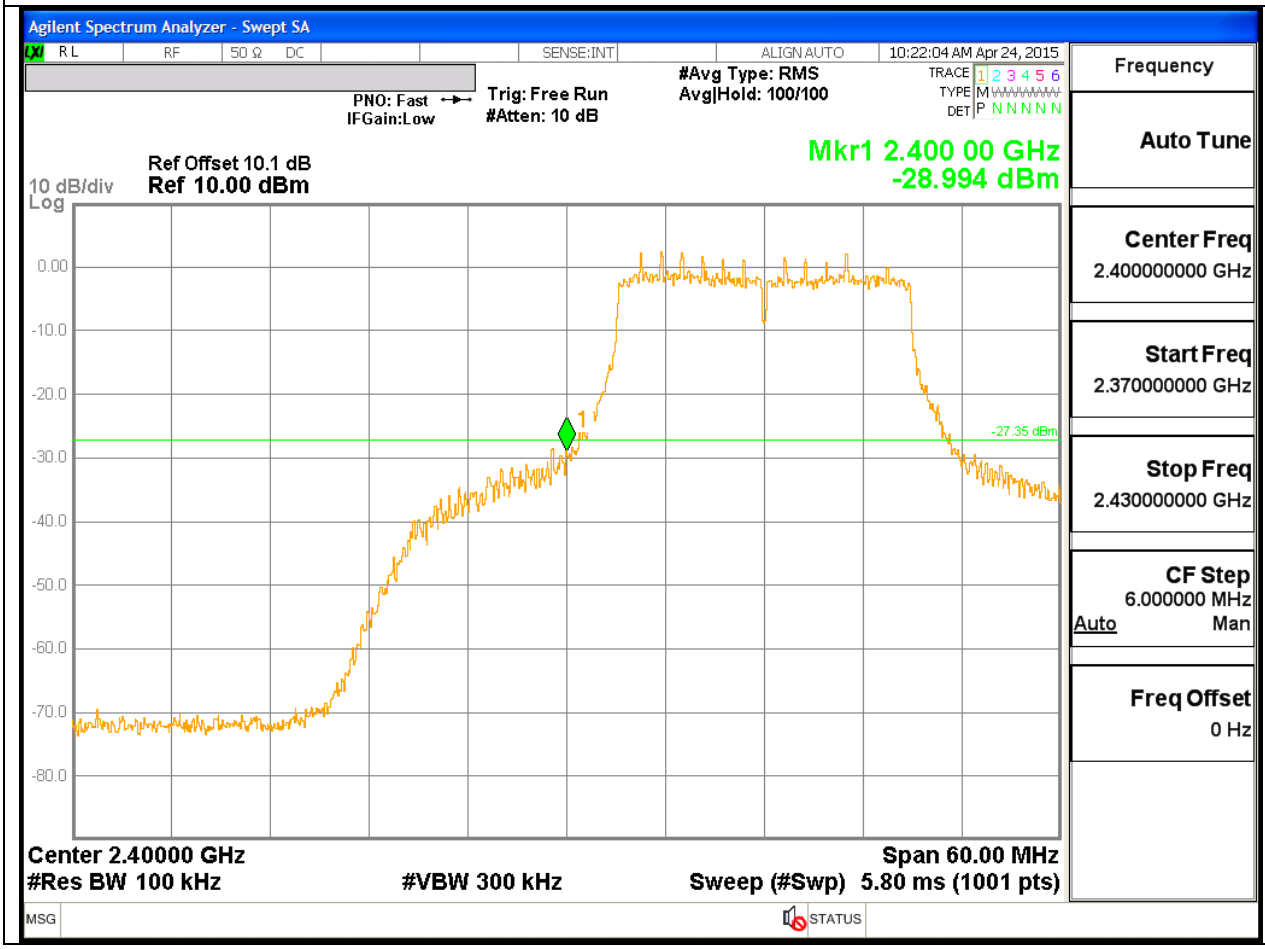
IN-BAND REFERENCE LEVEL

REFERENCE LEVEL MID CH



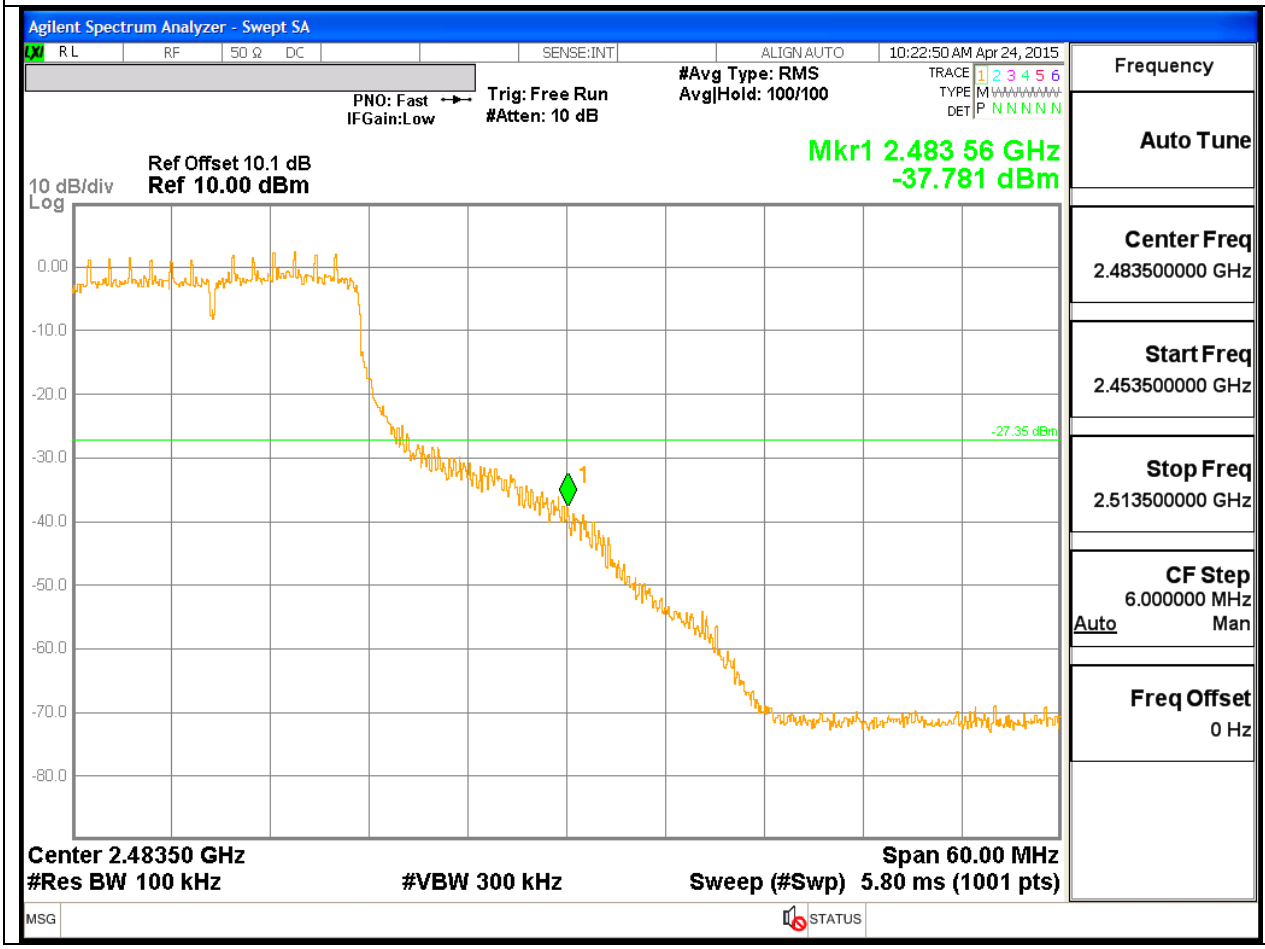
LOW CHANNEL BANDEDGE

AUTHORIZED BAND EDGE LOW CH



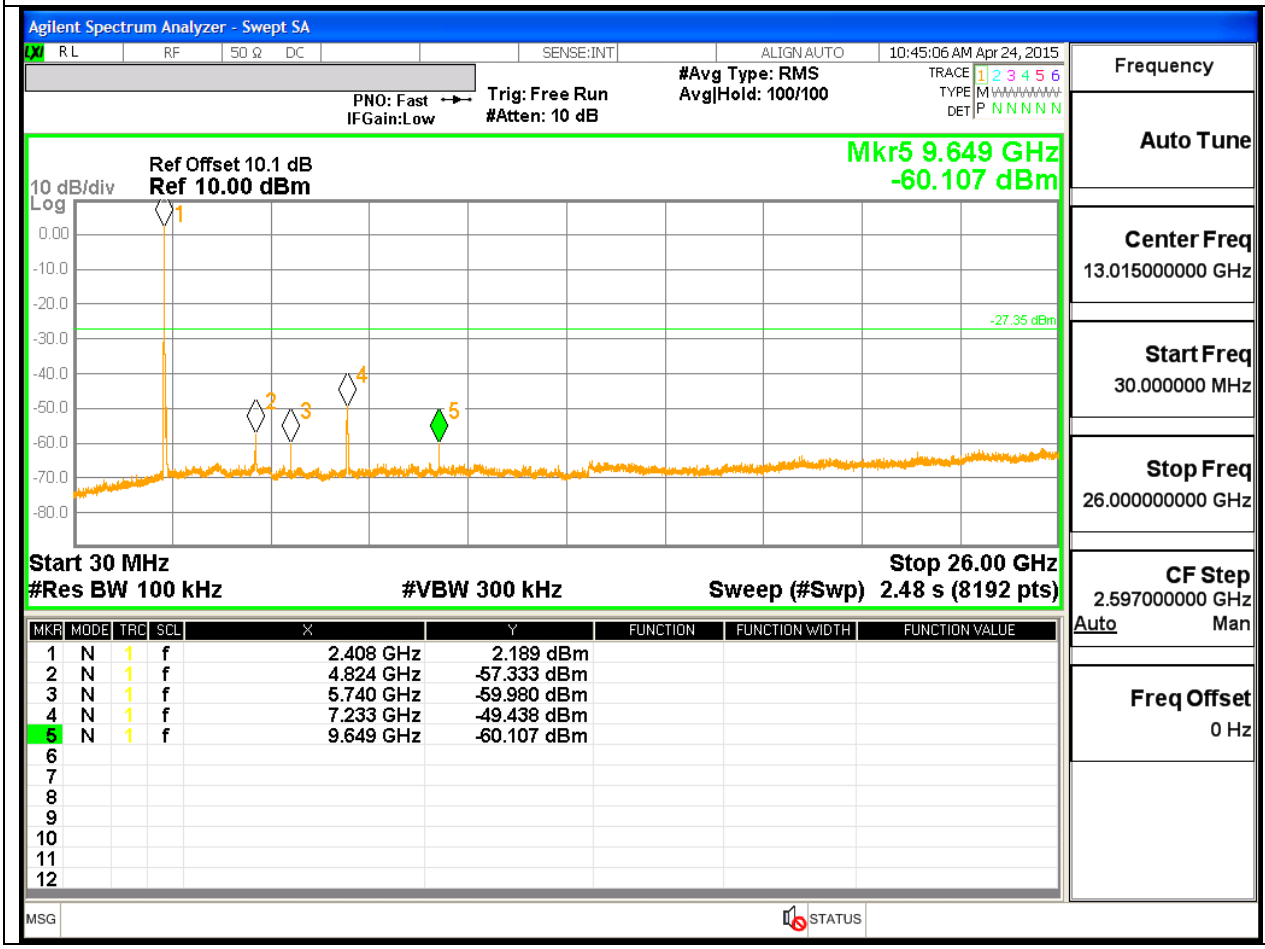
HIGH CHANNEL BANDEDGE

AUTHORIZED BAND EDGE HIGH CH

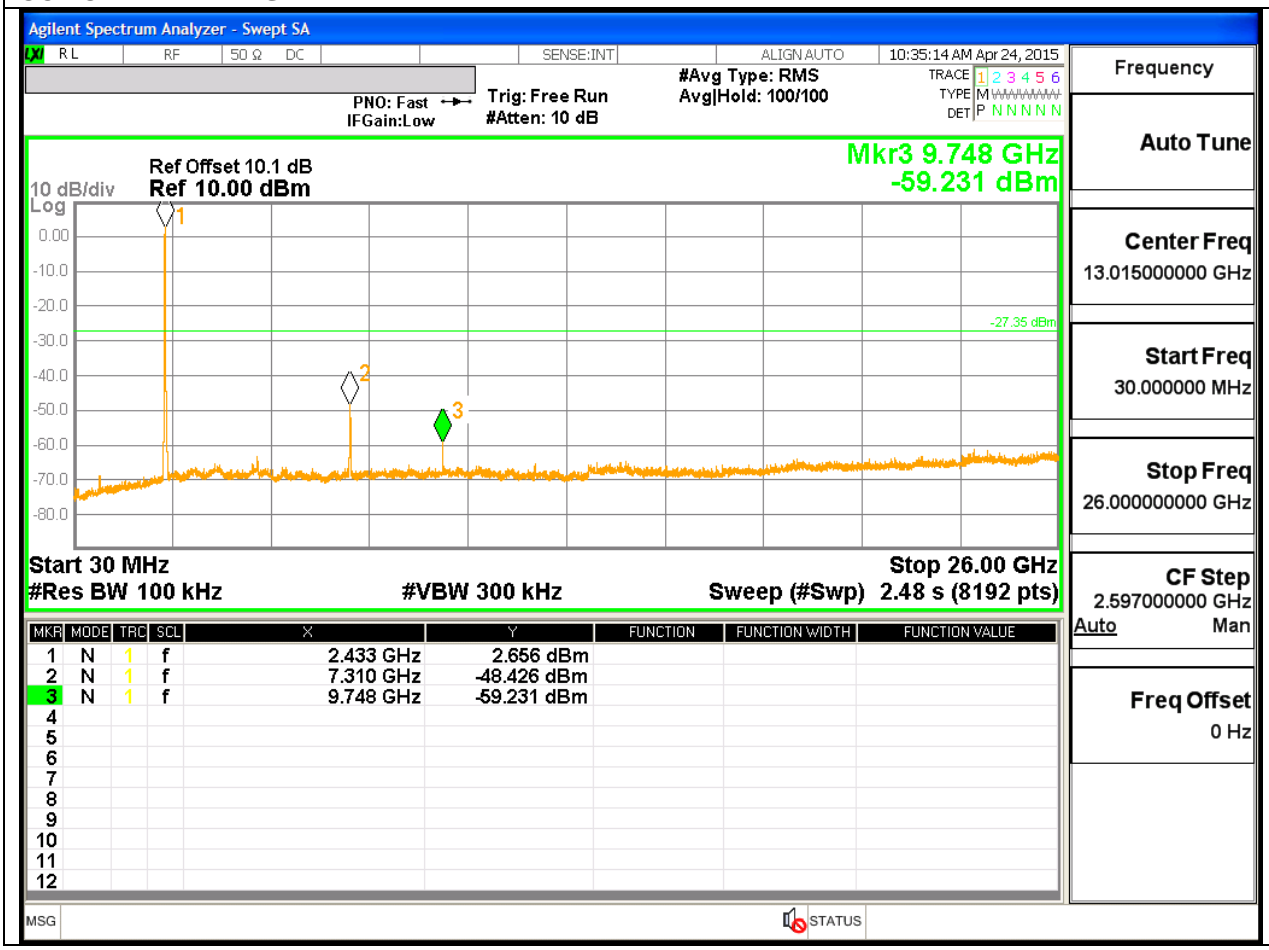


OUT-OF-BAND EMISSIONS

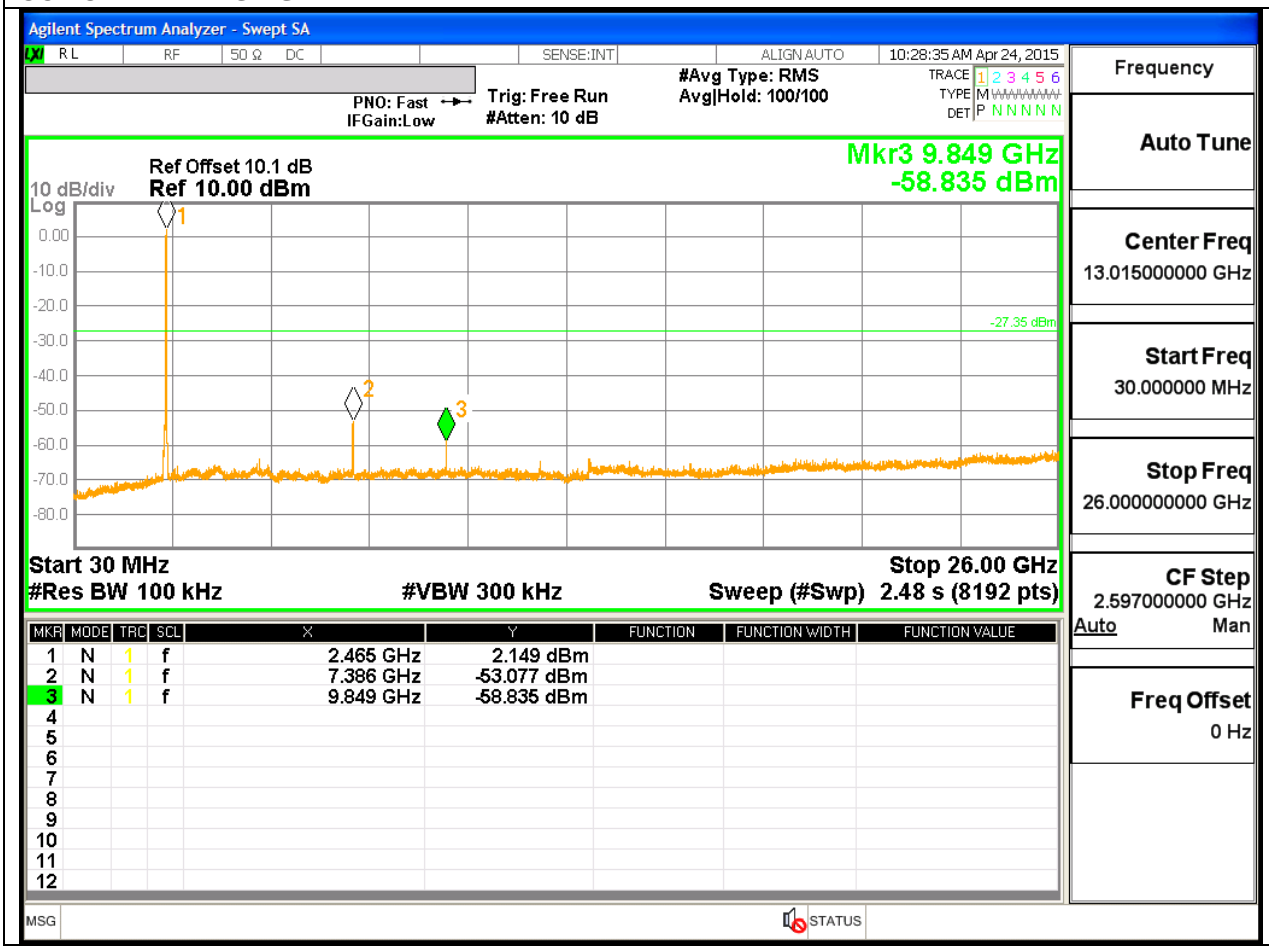
OUT OF BAND LOW CH



OUT OF BAND MID CH



OUT OF BAND HIGH CH



10. RADIATED TEST RESULTS

10.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

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 150 cm above the ground plane for above 1GHz and 80cm for below 1GHz. The antenna to EUT distance is 3 meters.

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

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and add duty cycle factor for average measurements. Duty cycle factor= 10log (1/x) For this sample B mode = 0dB (duty cycle >98%); G mode = 0.3dB; N mode = 0.32dB.

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

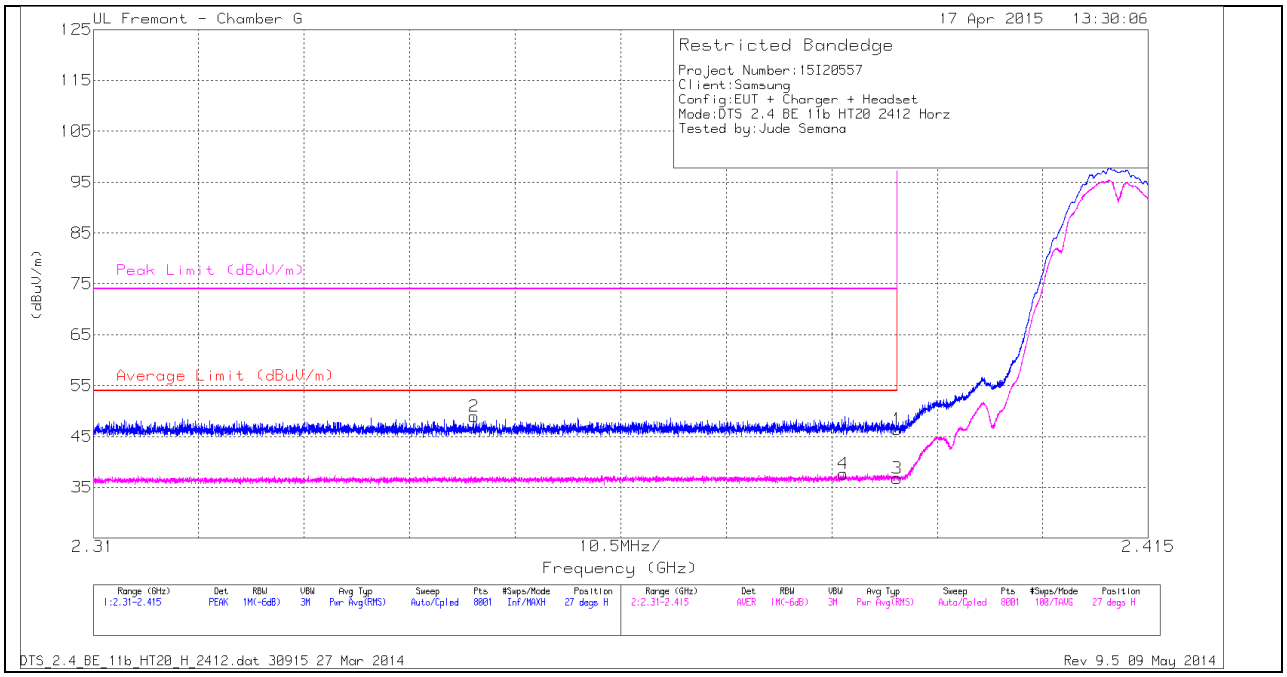
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

10.2. TRANSMITTER ABOVE 1 GHz

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

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

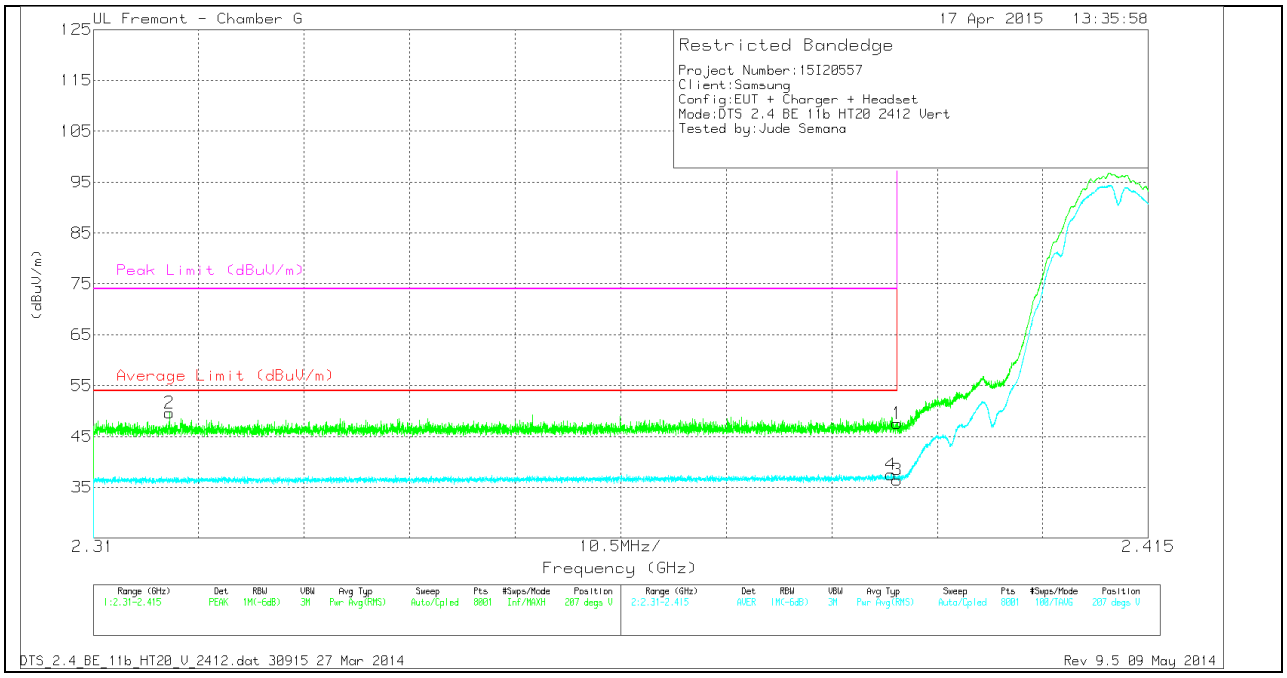
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	39.19	PK	32.1	-24.9	0	46.39	-	-	74	-27.61	27	227	H
2	* 2.348	41.94	PK	32	-25	0	48.94	-	-	74	-25.06	27	227	H
3	* 2.39	29.54	RMS	32.1	-24.9	0	36.74	54	-17.26	-	-	27	227	H
4	* 2.385	30.45	RMS	32.1	-24.9	0	37.65	54	-16.35	-	-	27	227	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

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	40.36	PK	32.1	-24.9	0	47.56	-	-	74	-26.44	207	233	V
2	* 2.318	42.72	PK	31.9	-25	0	49.62	-	-	74	-24.38	207	233	V
3	* 2.39	29.23	RMS	32.1	-24.9	0	36.43	54	-17.57	-	-	207	233	V
4	* 2.389	30.33	RMS	32.1	-24.9	0	37.53	54	-16.47	-	-	207	233	V

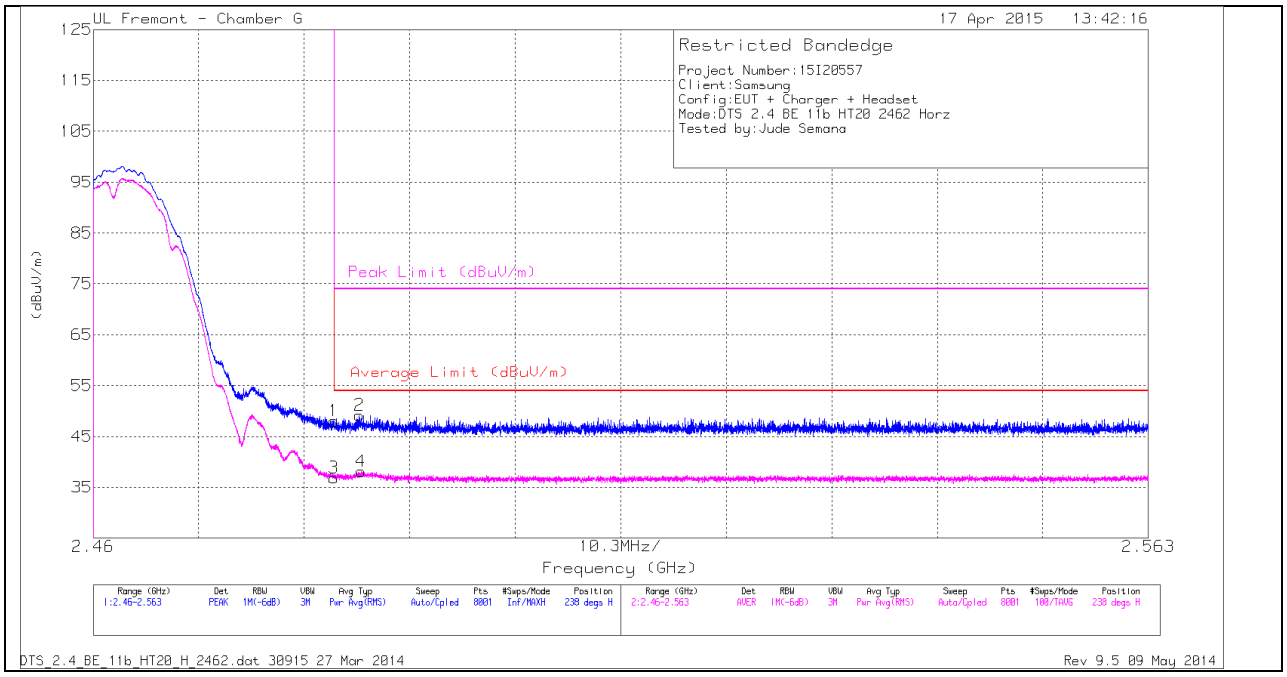
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

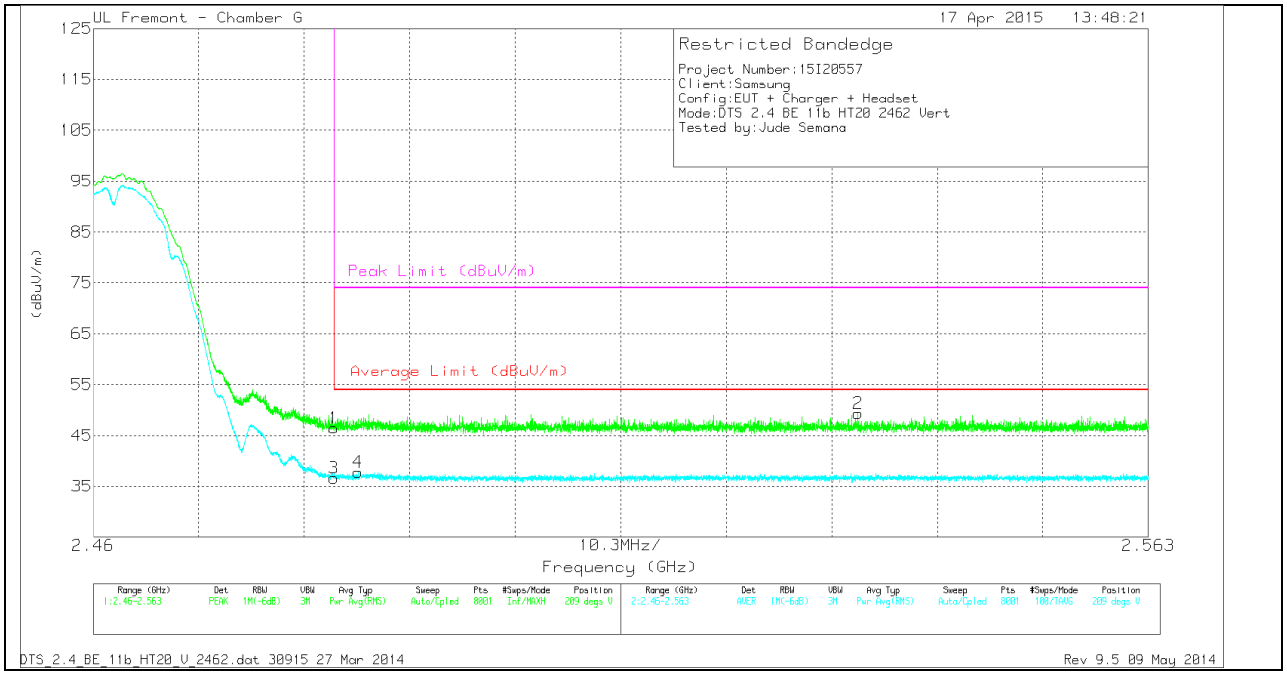
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	40.89	PK	32.1	-24.9	0	48.09	-	-	74	-25.91	238	224	H
2	* 2.486	41.96	PK	32.1	-24.9	0	49.16	-	-	74	-24.84	238	224	H
3	* 2.484	29.64	RMS	32.1	-24.9	0	36.84	54	-17.16	-	-	238	224	H
4	* 2.486	30.94	RMS	32.1	-24.9	0	38.14	54	-15.86	-	-	238	224	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL 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)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	39.27	PK	32.1	-24.9	0	46.47	-	-	74	-27.53	209	226	V
3	* 2.484	29.39	RMS	32.1	-24.9	0	36.59	54	-17.41	-	-	209	226	V
4	* 2.486	30.56	RMS	32.1	-24.9	0	37.76	54	-16.24	-	-	209	226	V
2	2.535	42.03	PK	32.2	-24.9	0	49.33	-	-	74	-24.67	209	226	V

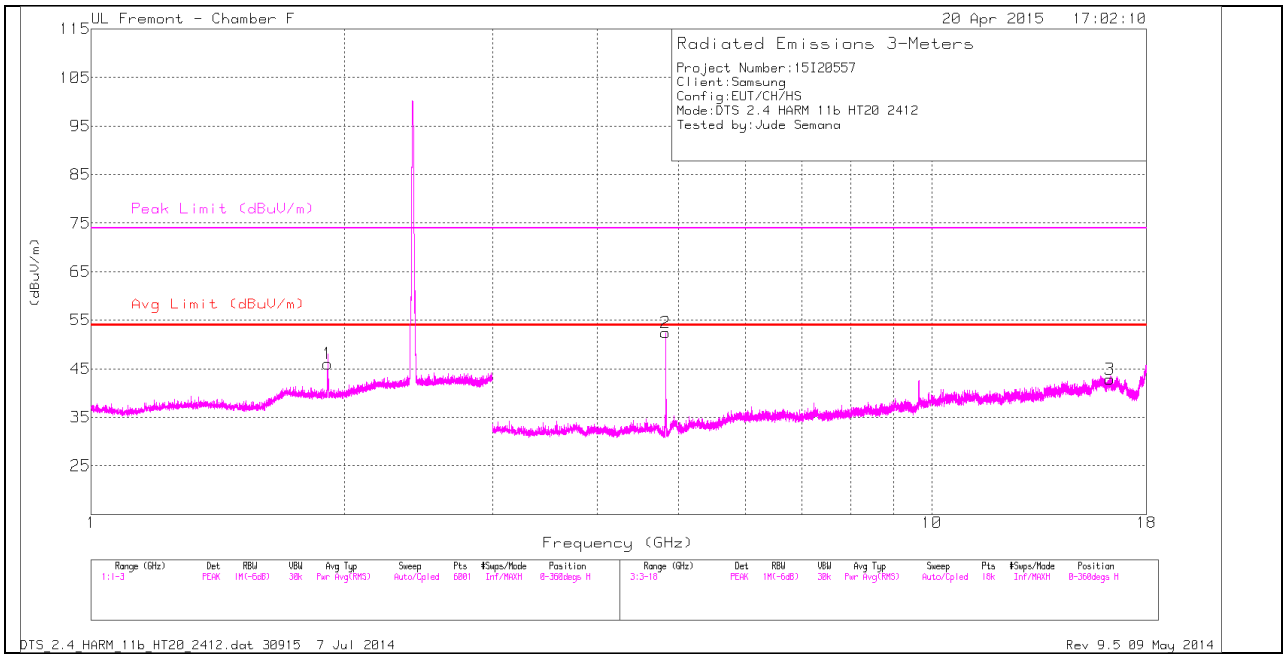
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

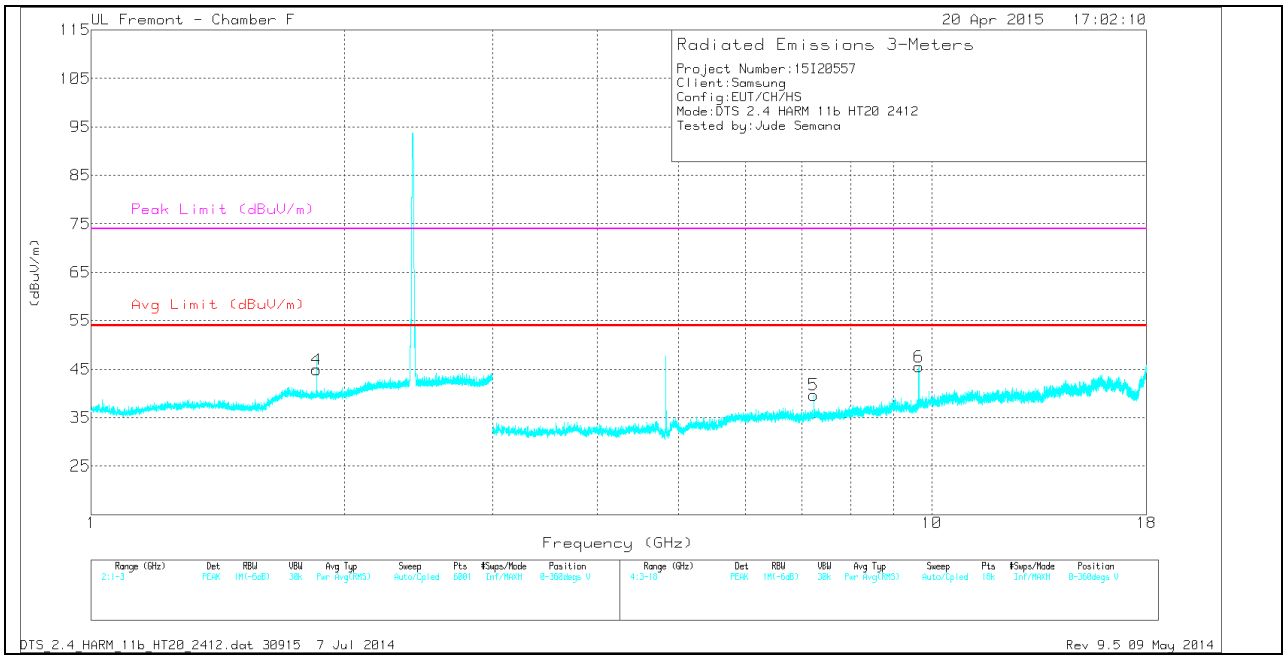
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



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

LOW CHANNEL VERTICAL



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

LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF 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	1.911	41.22	PK	30.2	-25.4	0	46.02	-	-	-	-	0-360	201	H
4	1.854	40.12	PK	30.3	-25.5	0	44.92	-	-	-	-	0-360	201	V
2	* 4.824	51.51	PK	33.9	-33	0	52.41	-	-	74	-21.59	0-360	101	H
3	16.271	28.38	PK	41.7	-27.2	0	42.88	-	-	-	-	0-360	101	H
5	7.235	34.95	PK	35.6	-30.9	0	39.65	-	-	-	-	0-360	201	V
6	9.648	36.29	PK	37.1	-27.9	0	45.49	-	-	-	-	0-360	201	V

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

PK - Peak detector

Radiated Emissions

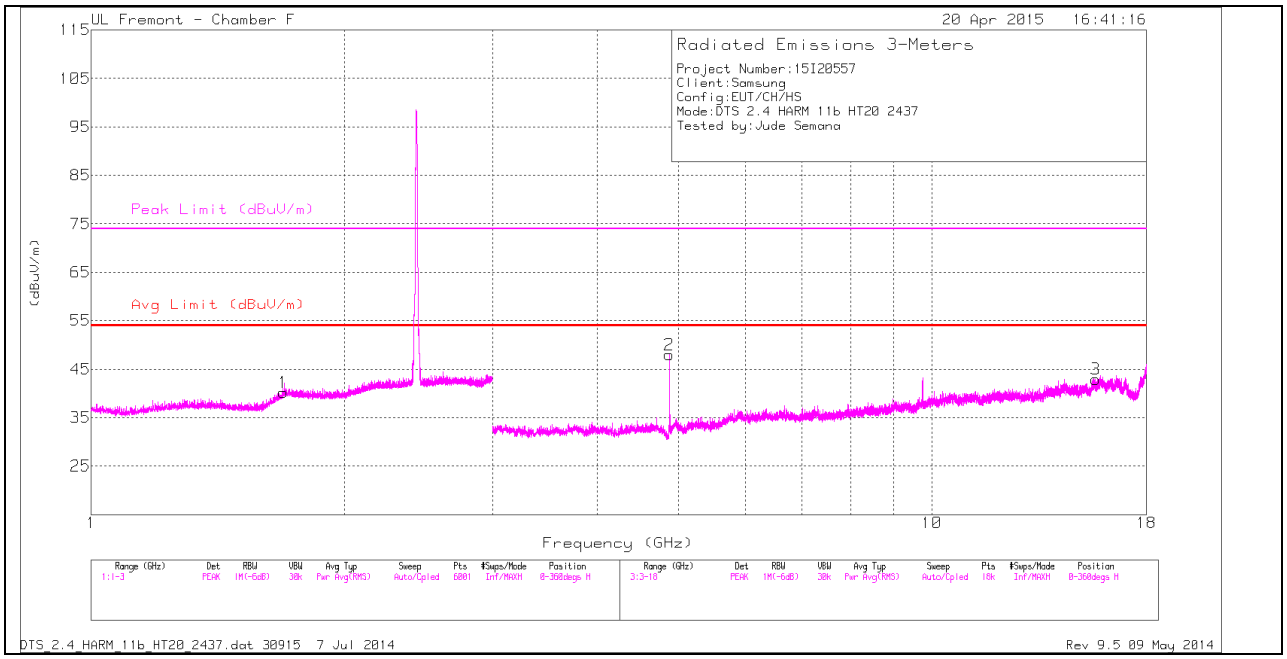
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.824	53.78	PK2	33.9	-33	0	54.68	-	-	74	-19.32	91	102	H
* 4.824	51.46	MAv1	33.9	-33	.1	52.46	54	-1.54	-	-	91	102	H
7.234	37.73	PK2	35.6	-30.9	0	42.43	-	-	-	-	128	109	V
7.235	26.08	MAv1	35.6	-30.9	.1	30.88	-	-	-	-	128	109	V
9.648	37.9	PK2	37.1	-28	0	47	-	-	-	-	68	165	V
9.648	32.06	MAv1	37.1	-27.9	.1	41.36	-	-	-	-	68	165	V

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

PK2 - KDB558074 Method: Maximum Peak

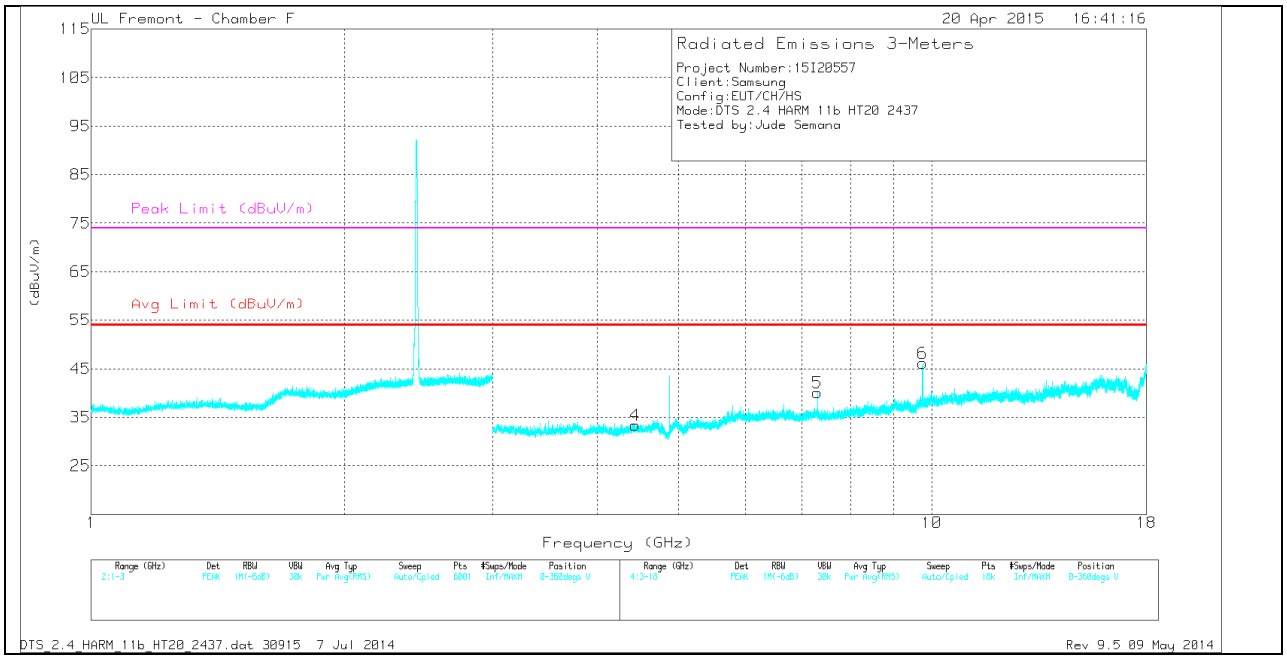
MAv1 - KDB558074 Option 1 Maximum RMS Average

MID CHANNEL HORIZONTAL



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

MID CHANNEL VERTICAL



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

MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.693	35.12	PK	30.5	-25.4	40.22	-	-	74	-33.78	0-360	101	H
2	* 4.874	47.19	PK	33.9	-33.1	47.99	-	-	74	-26.01	0-360	100	H
3	* 15.656	29.32	PK	41.3	-27.7	42.92	-	-	74	-31.08	0-360	201	H
4	4.436	33.07	PK	33.6	-33.3	33.37	-	-	-	-	0-360	201	V
5	* 7.309	35.48	PK	35.6	-31	40.08	-	-	74	-33.92	0-360	201	V
6	9.748	36.75	PK	37.2	-27.8	46.15	-	-	-	-	0-360	101	V

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

PK - Peak detector

Radiated Emissions

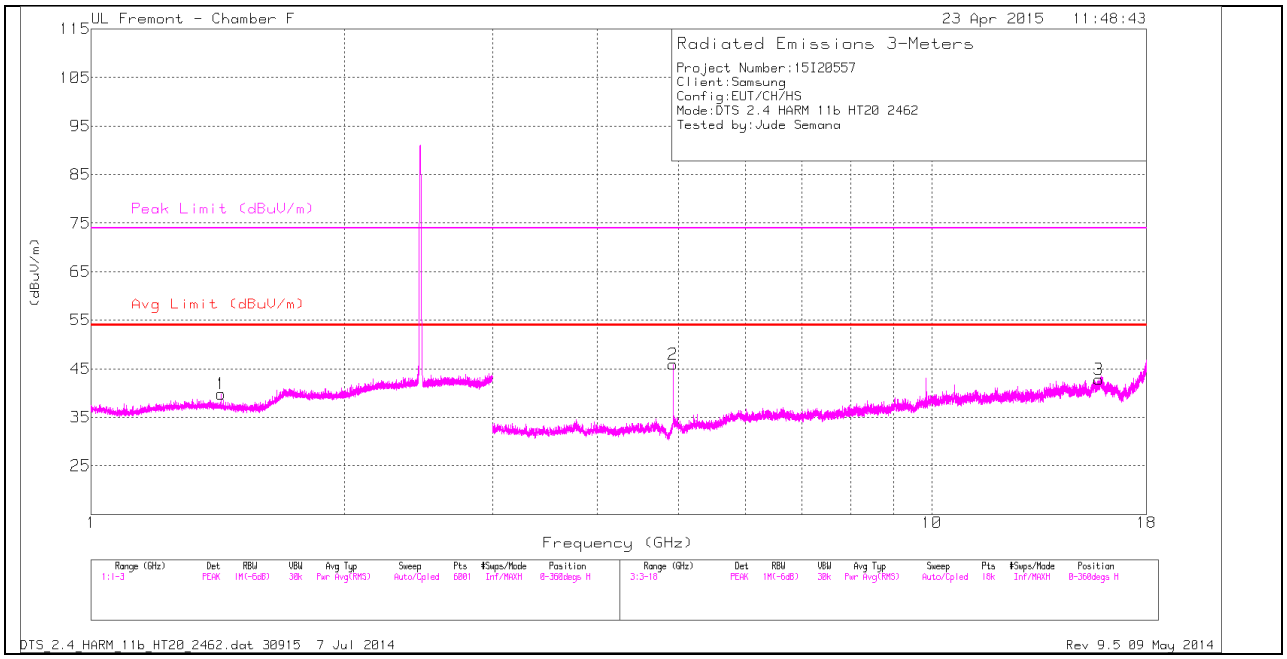
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.874	49.7	PK2	33.9	-33.1	50.5	-	-	74	-23.5	90	261	H
* 4.874	47.27	MAv1	33.9	-33.1	48.07	54	-5.93	-	-	90	261	H
* 7.309	38.58	PK2	35.6	-31	43.18	-	-	74	-30.82	148	104	V
* 7.31	27.71	MAv1	35.6	-31	32.31	54	-21.69	-	-	148	104	V
9.748	39.37	PK2	37.2	-27.8	48.77	-	-	-	-	194	276	V
9.748	33.16	MAv1	37.2	-27.8	42.56	-	-	-	-	194	276	V

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

PK2 - KDB558074 Method: Maximum Peak

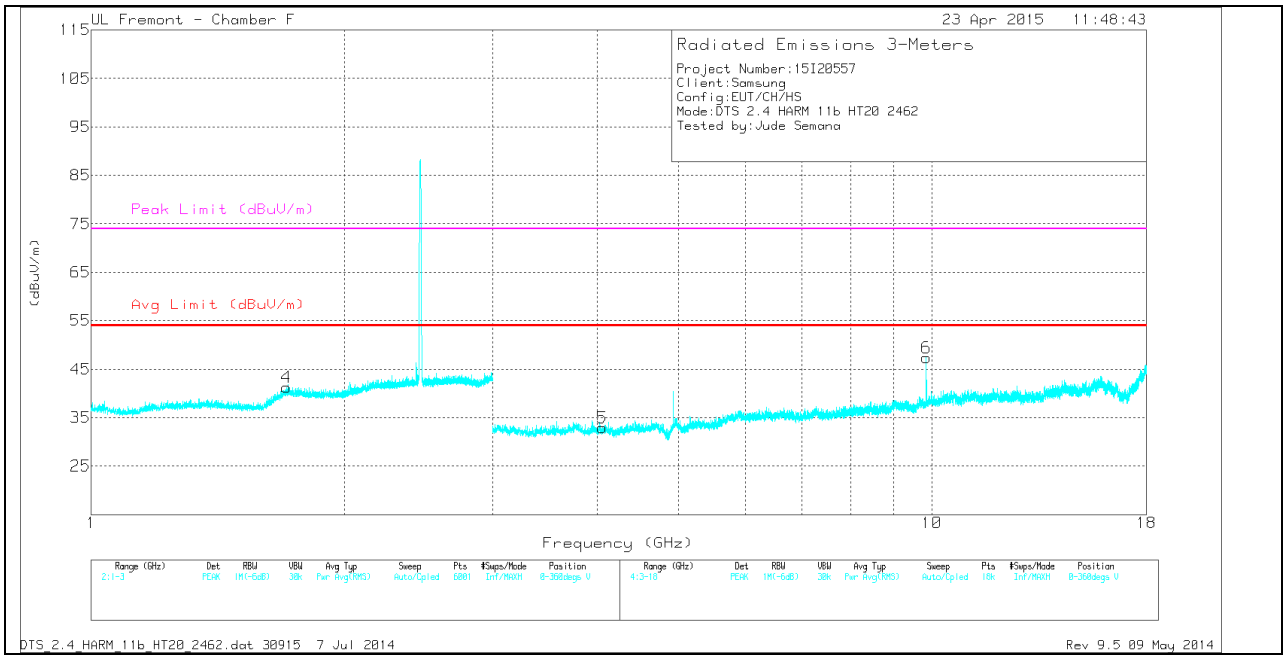
MAv1 - KDB558074 Option 1 Maximum RMS Average

HIGH CHANNEL HORIZONTAL



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

HIGH CHANNEL VERTICAL



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

HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF 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	1.428	37.3	PK	28.2	-25.7	0	39.8	-	-	-	-	0-360	201	H
4	* 1.707	35.97	PK	30.7	-25.4	0	41.27	-	-	74	-32.73	0-360	201	V
2	* 4.924	45.11	PK	33.9	-33.1	0	45.91	-	-	74	-28.09	0-360	101	H
3	* 15.803	28.49	PK	41.7	-27.4	0	42.79	-	-	74	-31.21	0-360	101	H
5	* 4.052	32.54	PK	33.2	-32.8	0	32.94	-	-	74	-41.06	0-360	201	V
6	9.848	38.77	PK	37.4	-28.8	0	47.37	-	-	-	-	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 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
* 4.924	49.75	PK2	33.9	-33.1	0	50.55	-	-	74	-23.45	87	286	H
* 4.924	45.86	MAv1	33.9	-33.1	.1	46.76	54	-7.24	-	-	87	286	H
9.848	39.96	PK2	37.4	-28.8	0	48.56	-	-	-	-	183	273	V
9.848	35.63	MAv1	37.4	-28.8	.1	44.33	-	-	-	-	183	273	V

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

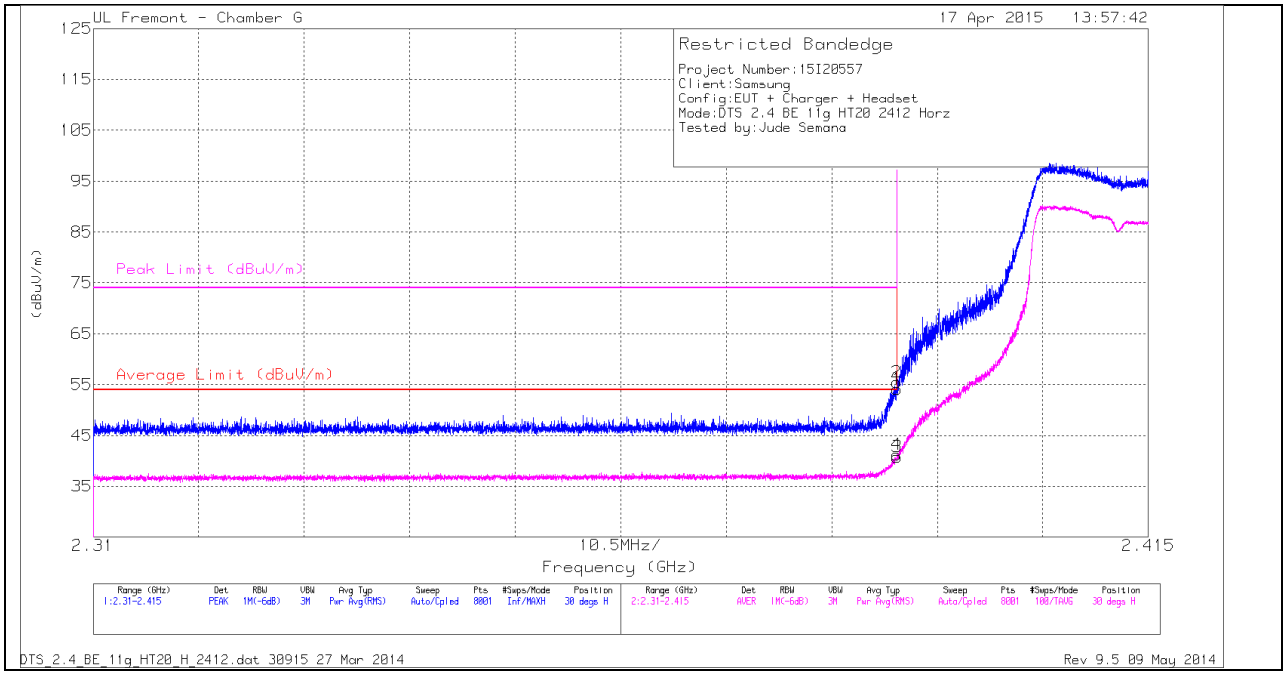
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

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

Trace Markers

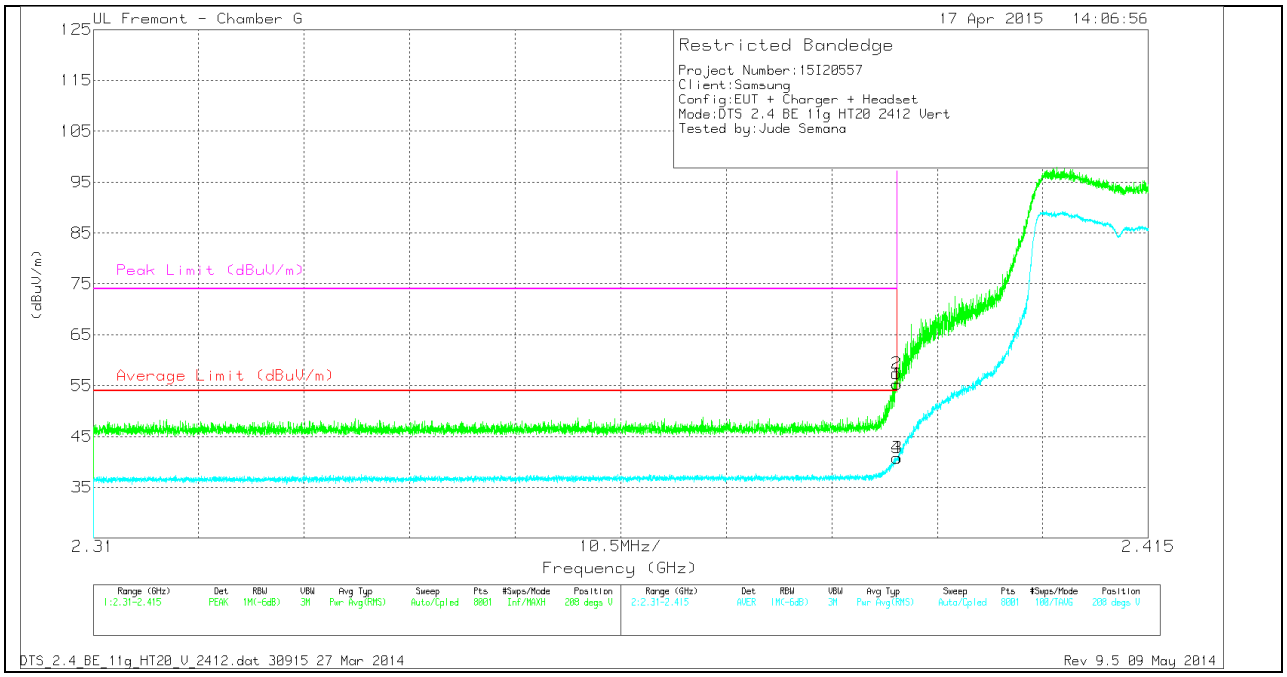
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	46.97	PK	32.1	-24.9	0	54.17	-	-	74	-19.83	30	224	H
2	* 2.39	48.29	PK	32.1	-24.9	0	55.49	-	-	74	-18.51	30	224	H
3	* 2.39	33.31	RMS	32.1	-24.9	.3	40.81	54	-13.19	-	-	30	224	H
4	* 2.39	33.73	RMS	32.1	-24.9	.3	41.23	54	-12.77	-	-	30	224	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL 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)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	48.07	PK	32.1	-24.9	0	55.27	-	-	74	-18.73	208	230	V
2	* 2.39	50.21	PK	32.1	-24.9	0	57.41	-	-	74	-16.59	208	230	V
3	* 2.39	33.3	RMS	32.1	-24.9	.3	40.8	54	-13.2	-	-	208	230	V
4	* 2.39	33.28	RMS	32.1	-24.9	.3	40.78	54	-13.22	-	-	208	230	V

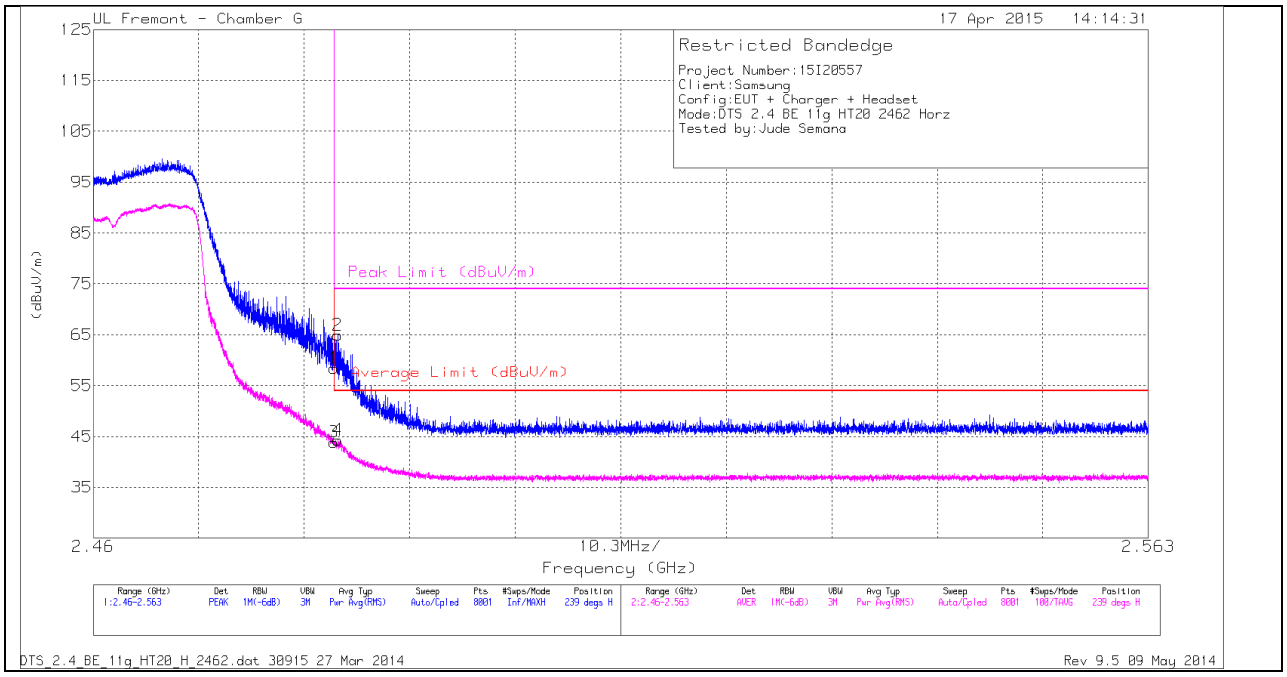
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

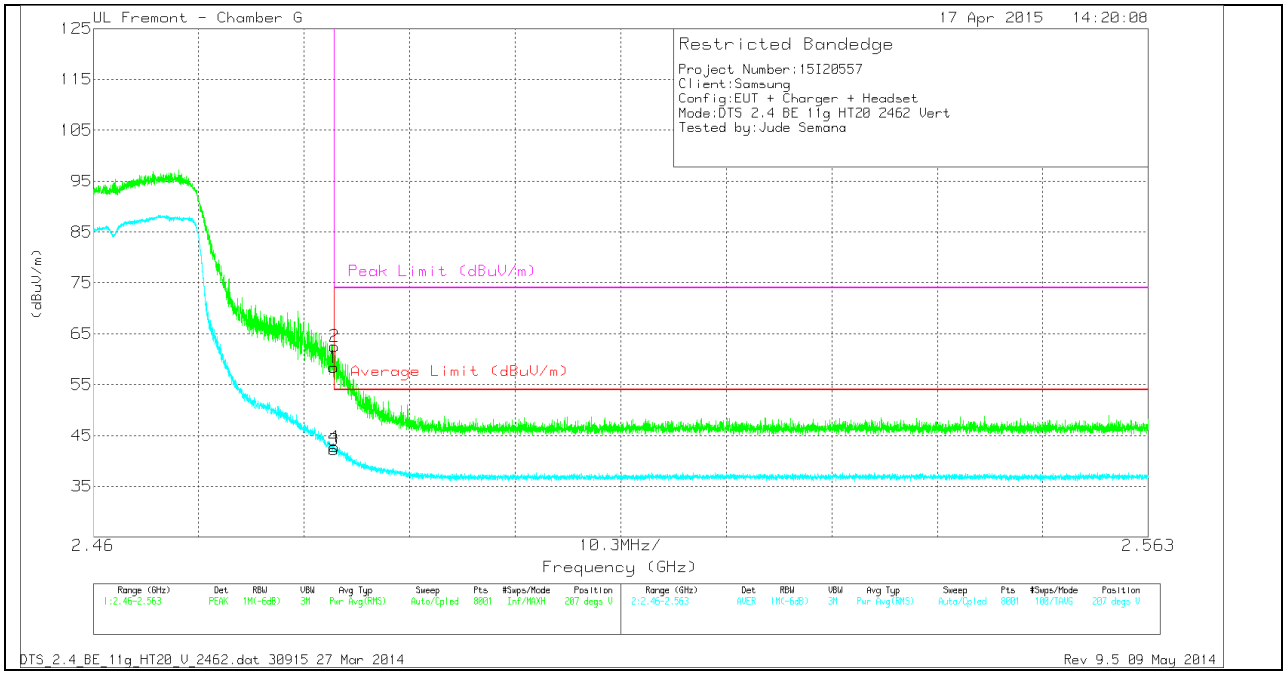
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	51.19	PK	32.1	-24.9	0	58.39	-	-	74	-15.61	239	228	H
2	* 2.484	57.71	PK	32.1	-24.9	0	64.91	-	-	74	-9.09	239	228	H
3	* 2.484	36.36	RMS	32.1	-24.9	.3	43.86	54	-10.14	-	-	239	228	H
4	* 2.484	36.78	RMS	32.1	-24.9	.3	44.28	54	-9.72	-	-	239	228	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL 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)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	51.18	PK	32.1	-24.9	0	58.38	-	-	74	-15.62	207	224	V
2	* 2.484	55.32	PK	32.1	-24.9	0	62.52	-	-	74	-11.48	207	224	V
3	* 2.484	34.67	RMS	32.1	-24.9	.3	42.17	54	-11.83	-	-	207	224	V
4	* 2.484	35.25	RMS	32.1	-24.9	.3	42.75	54	-11.25	-	-	207	224	V

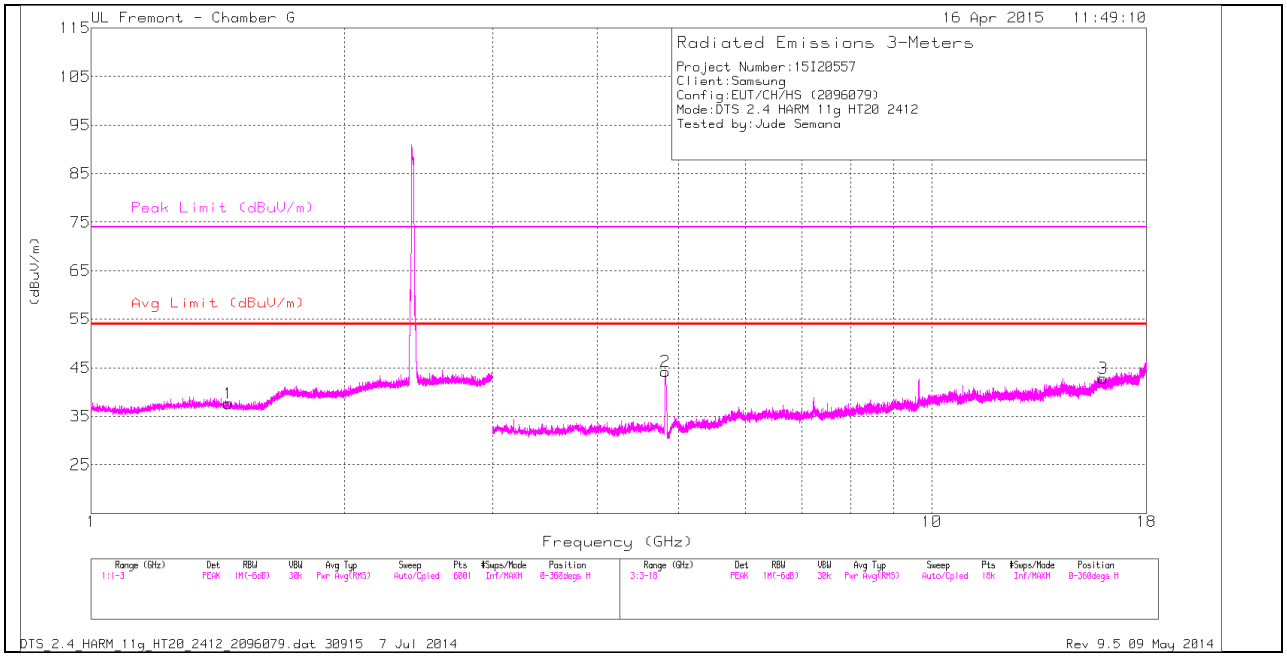
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

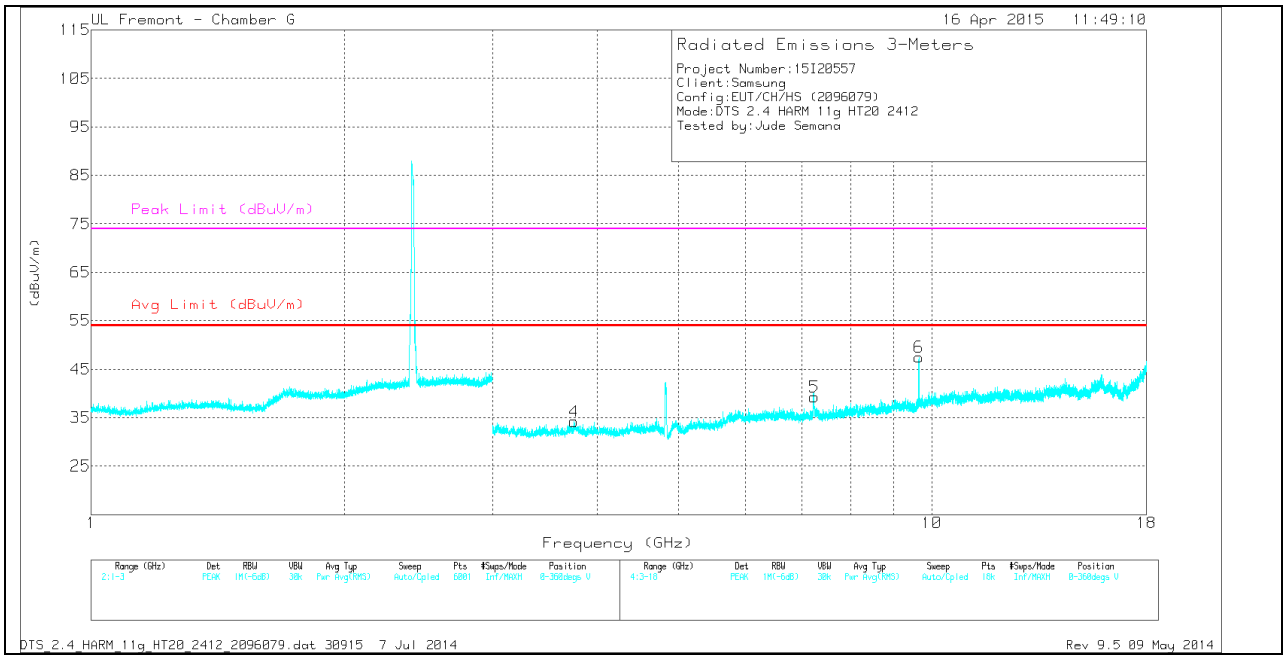
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



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

LOW CHANNEL VERTICAL



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

LOW CHANNEL DATA

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	* 1.456	35.21	PK	28	-25.6	0	37.61	-	-	74	-36.39	0-360	201	H
2	* 4.821	43.32	PK	33.9	-33	0	44.22	-	-	74	-29.78	0-360	101	H
3	* 15.985	28	PK	42	-27.2	0	42.8	-	-	74	-31.2	0-360	101	H
4	* 3.752	33.69	PK	32.9	-32.4	0	34.19	-	-	74	-39.81	0-360	101	V
5	7.242	34.7	PK	35.6	-31	0	39.3	-	-	-	-	0-360	101	V
6	9.648	38.25	PK	37.1	-27.9	0	47.45	-	-	-	-	0-360	101	V

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

PK - Peak detector

Radiated Emissions

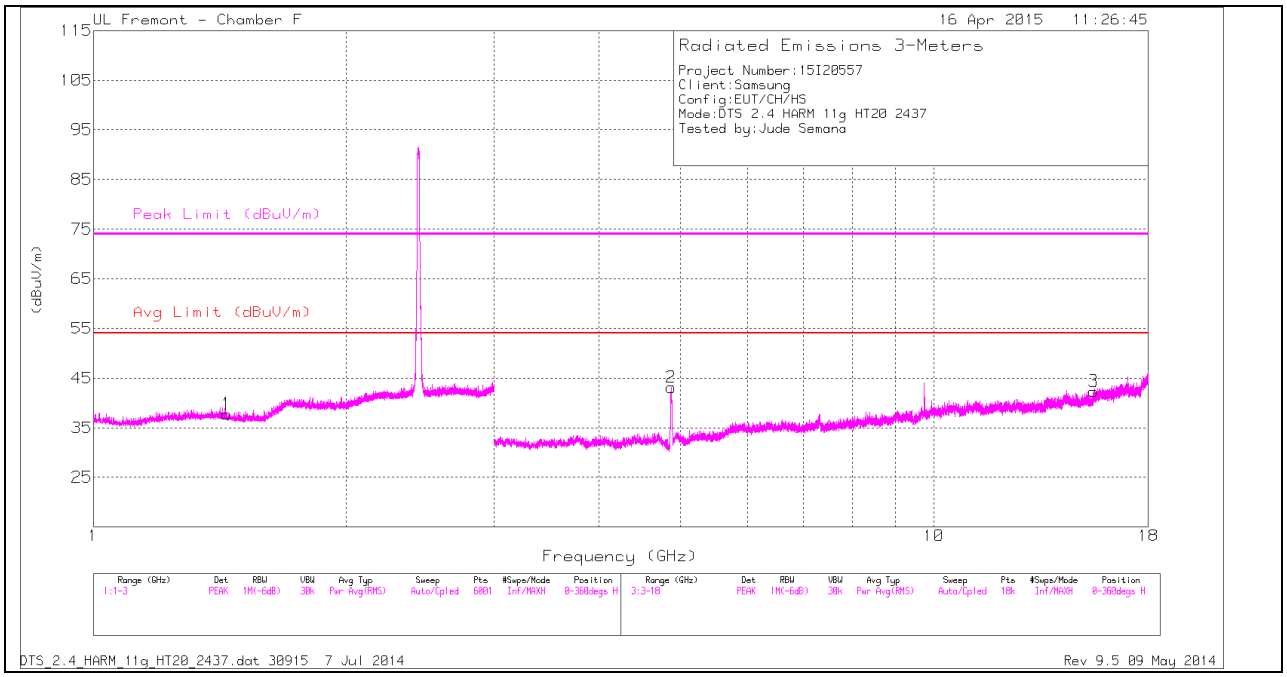
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.82	58.08	PK2	33.9	-33	0	58.98	-	-	74	-15.02	31	324	H
* 4.823	43.4	MAv1	33.9	-33	.3	44.6	54	-9.4	-	-	31	324	H
9.648	37.62	PK2	37.1	-28	0	46.72	-	-	-	-	63	147	V
9.648	31.83	MAv1	37.1	-27.9	.3	41.33	-	-	-	-	63	147	V
7.24	37.46	PK2	35.6	-31	0	42.06	-	-	-	-	324	256	V
7.242	25.82	MAv1	35.6	-31	.3	30.72	-	-	-	-	324	256	V

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

PK2 - KDB558074 Method: Maximum Peak

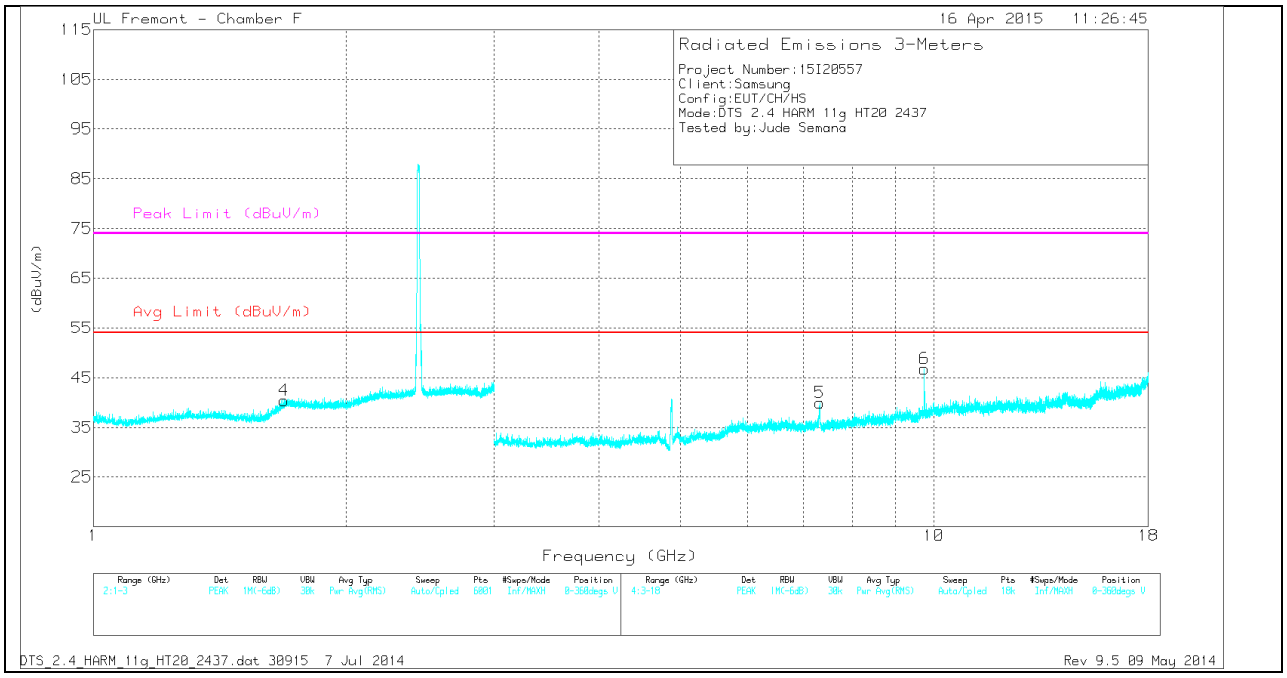
MAv1 - KDB558074 Option 1 Maximum RMS Average

MID CHANNEL HORIZONTAL



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

MID CHANNEL VERTICAL



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

MID CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF 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	* 1.441	35.36	PK	28.1	-25.7	0	37.76	-	-	74	-36.24	0-360	201	H
4	* 1.687	35.53	PK	30.3	-25.4	0	40.43	-	-	74	-33.57	0-360	101	V
2	* 4.873	42.35	PK	33.9	-33.1	0	43.15	-	-	74	-30.85	0-360	101	H
3	* 15.498	29.43	PK	41	-28.1	0	42.33	-	-	74	-31.67	0-360	201	H
5	* 7.32	35.43	PK	35.6	-31.1	0	39.93	-	-	74	-34.07	0-360	201	V
6	9.748	37.41	PK	37.2	-27.8	0	46.81	-	-	-	-	0-360	101	V

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

PK - Peak detector

Radiated Emissions

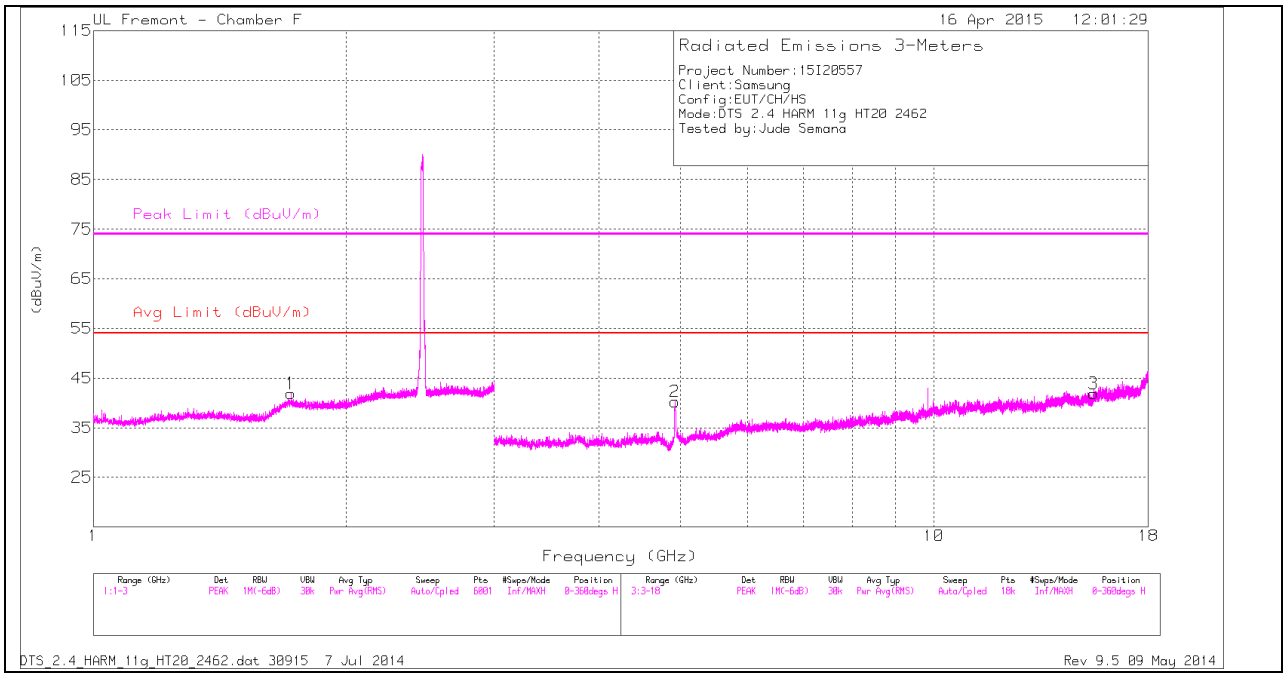
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.874	47.63	PK2	33.9	-33.1	0	48.43	-	-	74	-25.57	50	319	H
* 4.873	40.1	MAv1	33.9	-33.1	.3	41.2	54	-12.8	-	-	50	319	H
* 7.321	37.27	PK2	35.6	-31.1	0	41.77	-	-	74	-32.23	42	374	V
* 7.321	25.75	MAv1	35.6	-31.1	.3	30.55	54	-23.45	-	-	42	374	V
9.748	39.63	PK2	37.2	-27.8	0	49.03	-	-	-	-	185	292	V
9.748	34.96	MAv1	37.2	-27.8	.3	44.66	-	-	-	-	185	292	V

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

PK2 - KDB558074 Method: Maximum Peak

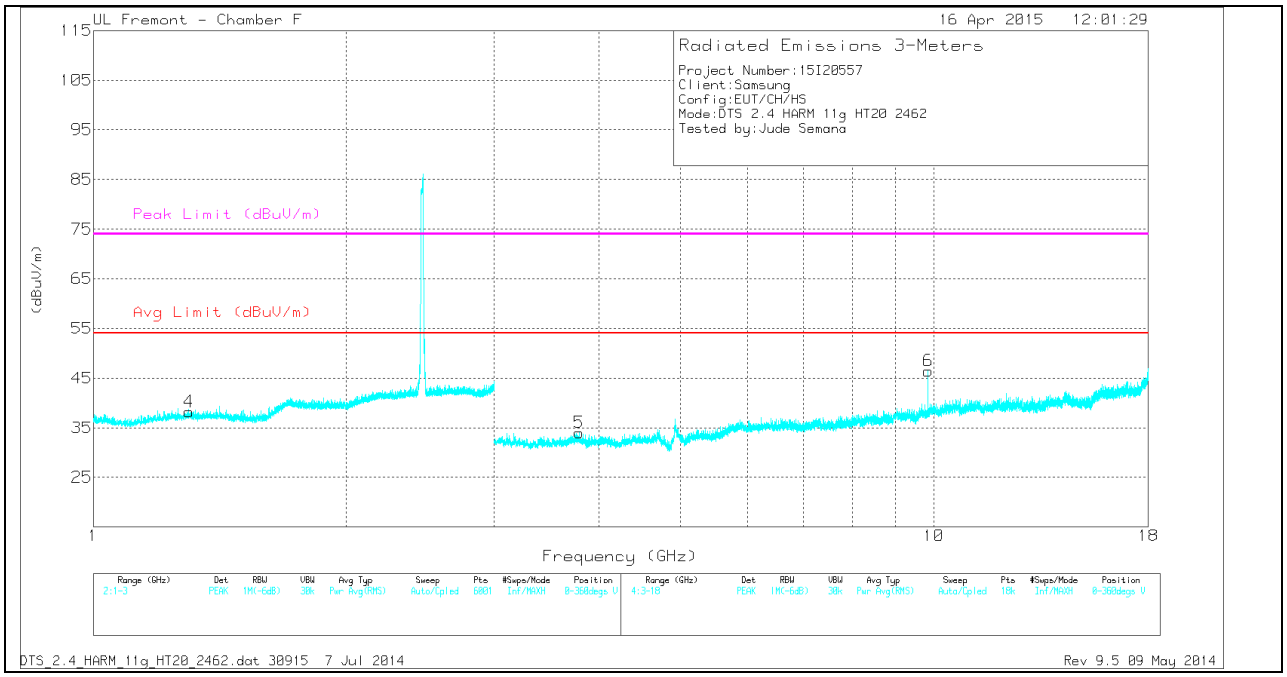
MAv1 - KDB558074 Option 1 Maximum RMS Average

HIGH CHANNEL HORIZONTAL



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

HIGH CHANNEL VERTICAL



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

HIGH CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF 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	* 1.719	36.68	PK	30.6	-25.4	0	41.88	-	-	74	-32.12	0-360	101	H
4	* 1.3	35.81	PK	28.4	-26	0	38.21	-	-	74	-35.79	0-360	201	V
2	* 4.922	39.47	PK	33.9	-33.1	0	40.27	-	-	74	-33.73	0-360	201	H
3	* 15.495	28.98	PK	41	-28.1	0	41.88	-	-	74	-32.12	0-360	101	H
5	* 3.787	34	PK	32.9	-32.9	0	34	-	-	74	-40	0-360	201	V
6	9.847	37.95	PK	37.3	-28.8	0	46.45	-	-	-	-	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 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
* 4.923	45.21	PK2	33.9	-33.1	0	46.01	-	-	74	-27.99	21	315	H
* 4.923	38.16	MAv1	33.9	-33.1	.3	39.26	54	-14.74	-	-	21	315	H
9.848	40.07	PK2	37.4	-28.8	0	48.67	-	-	-	-	185	285	V
9.848	35.49	MAv1	37.4	-28.8	.3	44.39	-	-	-	-	185	285	V

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

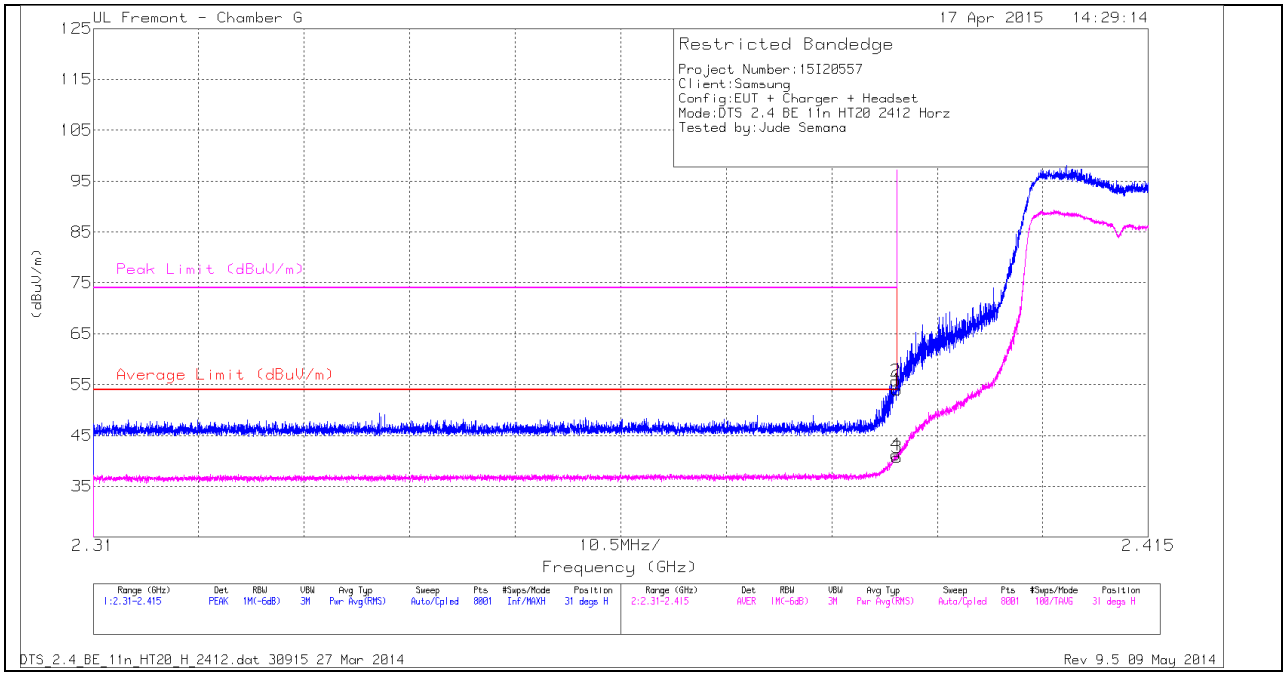
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

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

Trace Markers

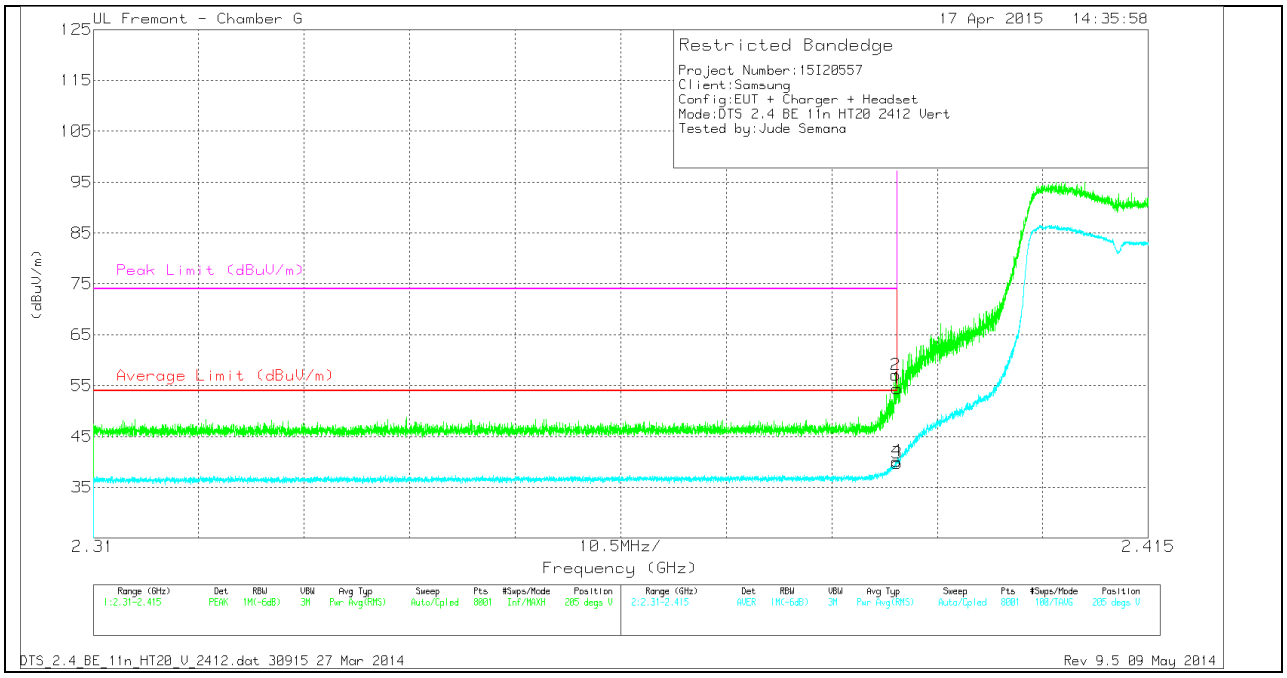
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	46.73	PK	32.1	-24.9	0	53.93	-	-	74	-20.07	31	226	H
2	* 2.39	48.52	PK	32.1	-24.9	0	55.72	-	-	74	-18.28	31	226	H
3	* 2.39	33.14	RMS	32.1	-24.9	.3	40.64	54	-13.36	-	-	31	226	H
4	* 2.39	33.64	RMS	32.1	-24.9	.3	41.14	54	-12.86	-	-	31	226	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL 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)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	47.2	PK	32.1	-24.9	0	54.4	-	-	74	-19.6	205	227	V
2	* 2.39	49.88	PK	32.1	-24.9	0	57.08	-	-	74	-16.92	205	227	V
3	* 2.39	32.22	RMS	32.1	-24.9	.3	39.72	54	-14.28	-	-	205	227	V
4	* 2.39	32.62	RMS	32.1	-24.9	.3	40.12	54	-13.88	-	-	205	227	V

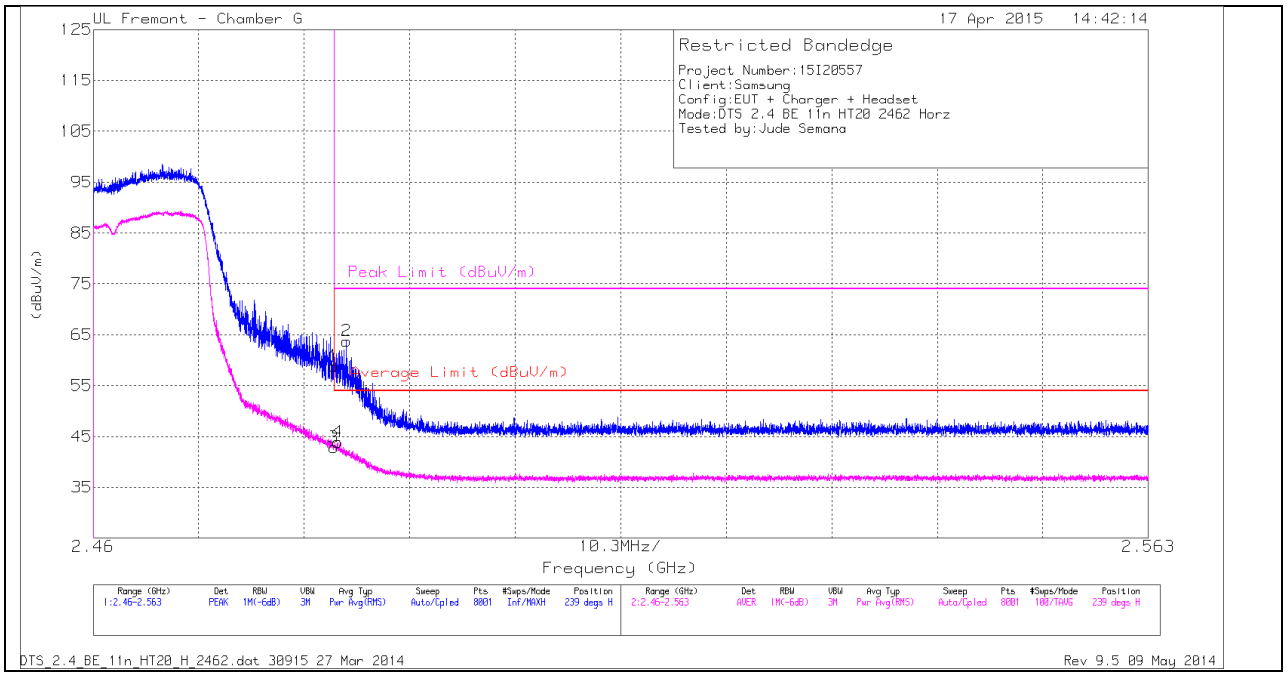
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

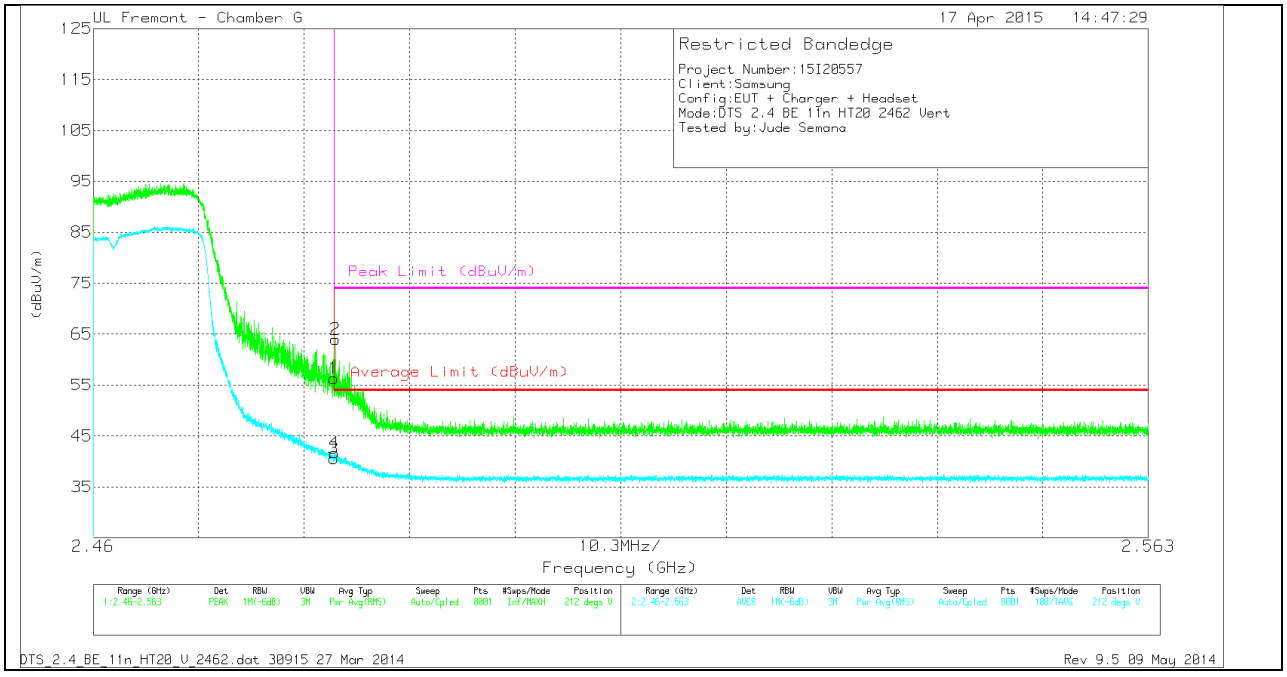
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	51.63	PK	32.1	-24.9	0	58.83	-	-	74	-15.17	239	227	H
3	* 2.484	35.32	RMS	32.1	-24.9	.3	42.82	54	-11.18	-	-	239	227	H
4	* 2.484	36.37	RMS	32.1	-24.9	.3	43.87	54	-10.13	-	-	239	227	H
2	* 2.485	56.55	PK	32.1	-24.9	0	63.75	-	-	74	-10.25	239	227	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL 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)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	49.12	PK	32.1	-24.9	0	56.32	-	-	74	-17.68	212	228	V
2	* 2.484	56.78	PK	32.1	-24.9	0	63.98	-	-	74	-10.02	212	228	V
3	* 2.484	33.07	RMS	32.1	-24.9	.3	40.57	54	-13.43	-	-	212	228	V
4	* 2.484	34.19	RMS	32.1	-24.9	.3	41.69	54	-12.31	-	-	212	228	V

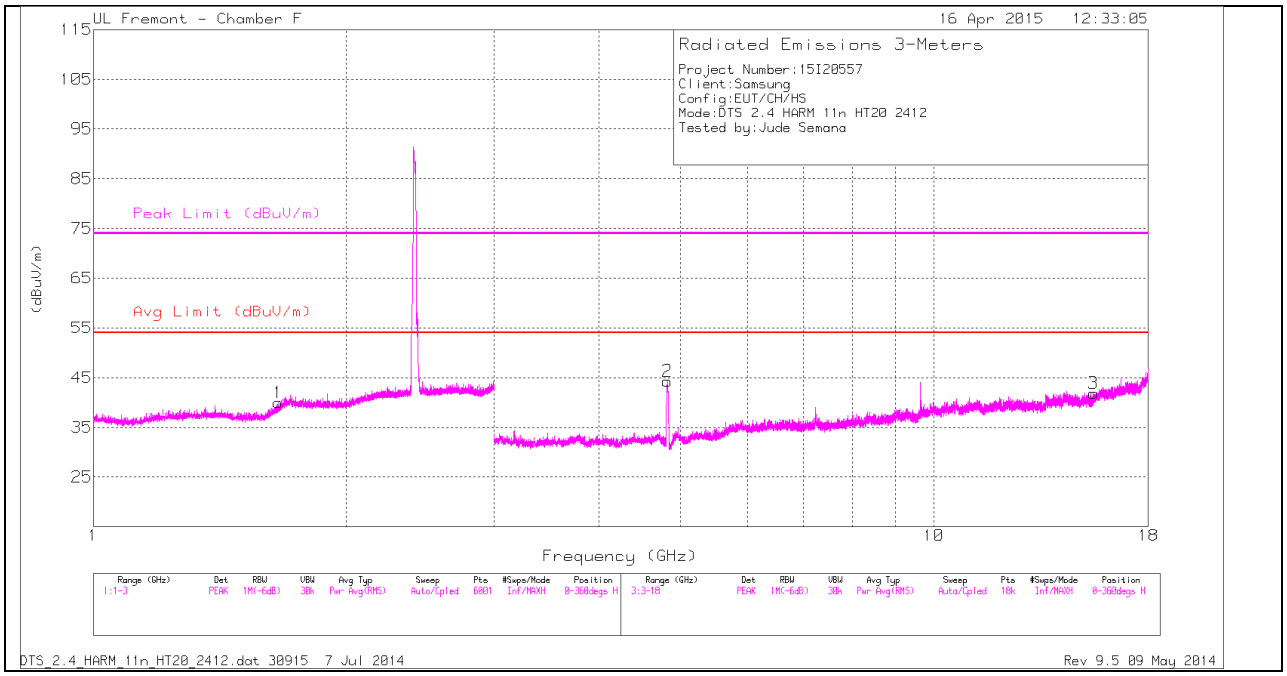
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

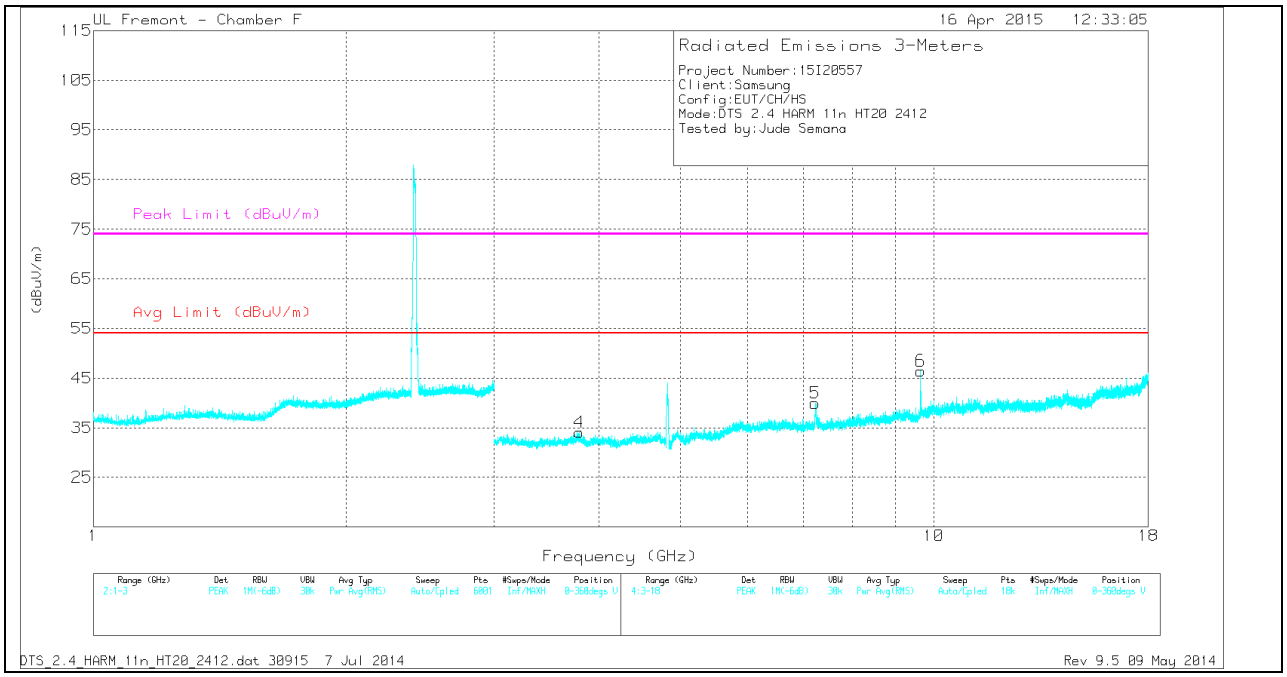
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



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

LOW CHANNEL VERTICAL



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

LOW CHANNEL DATA

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	* 1.661	35.91	PK	29.5	-25.4	0	40.01	-	-	74	-33.99	0-360	201	H
2	* 4.823	43.38	PK	33.9	-33	0	44.28	-	-	74	-29.72	0-360	101	H
3	* 15.482	28.95	PK	40.9	-28	0	41.85	-	-	74	-32.15	0-360	201	H
4	* 3.787	34.08	PK	32.9	-32.9	0	34.08	-	-	74	-39.92	0-360	201	V
5	7.226	35.46	PK	35.6	-31.1	0	39.96	-	-	-	-	0-360	201	V
6	9.648	37.23	PK	37.1	-27.9	0	46.43	-	-	-	-	0-360	101	V

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

PK - Peak detector

Radiated Emissions

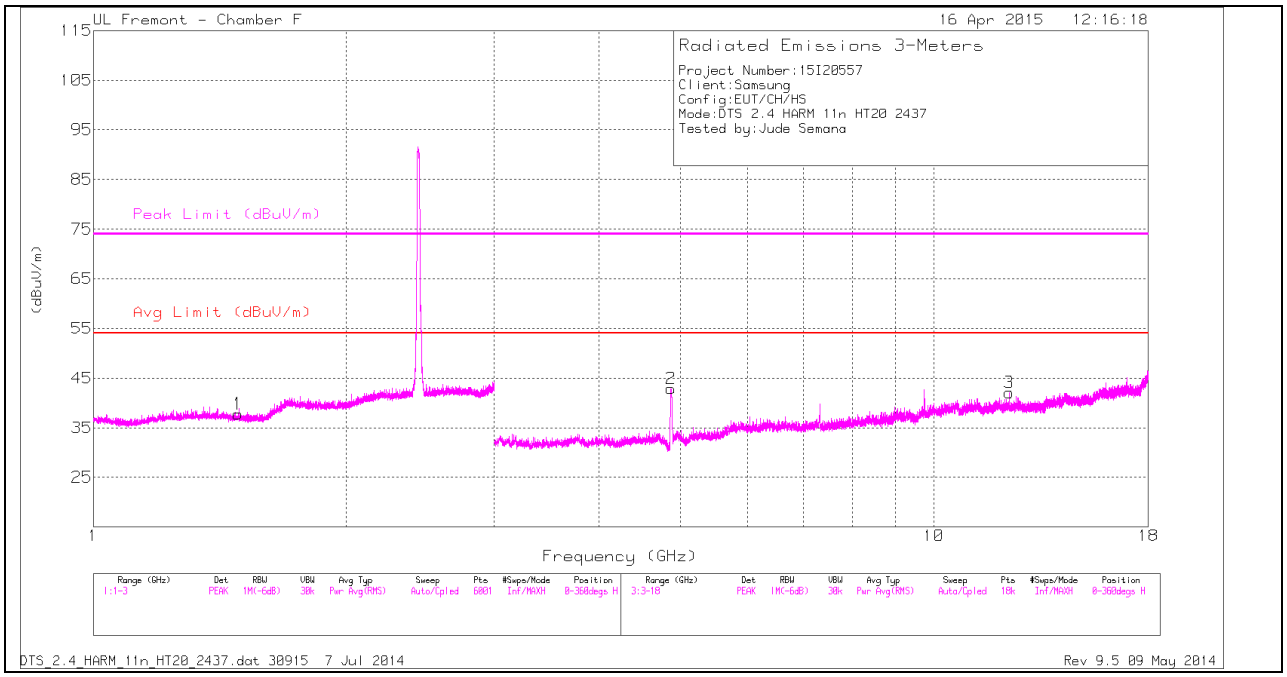
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.823	49.92	PK2	33.9	-33	0	50.82	-	-	74	-23.18	33	367	H
* 4.823	42.71	MAv1	33.9	-33	.3	43.91	54	-10.09	-	-	33	367	H
7.226	37.23	PK2	35.6	-31.1	0	41.73	-	-	-	-	125	274	V
7.227	25.79	MAv1	35.6	-31	.3	30.69	-	-	-	-	125	274	V
9.648	37.95	PK2	37.1	-28	0	47.05	-	-	-	-	61	143	V
9.648	31.79	MAv1	37.1	-28	.3	41.19	-	-	-	-	61	143	V

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

PK2 - KDB558074 Method: Maximum Peak

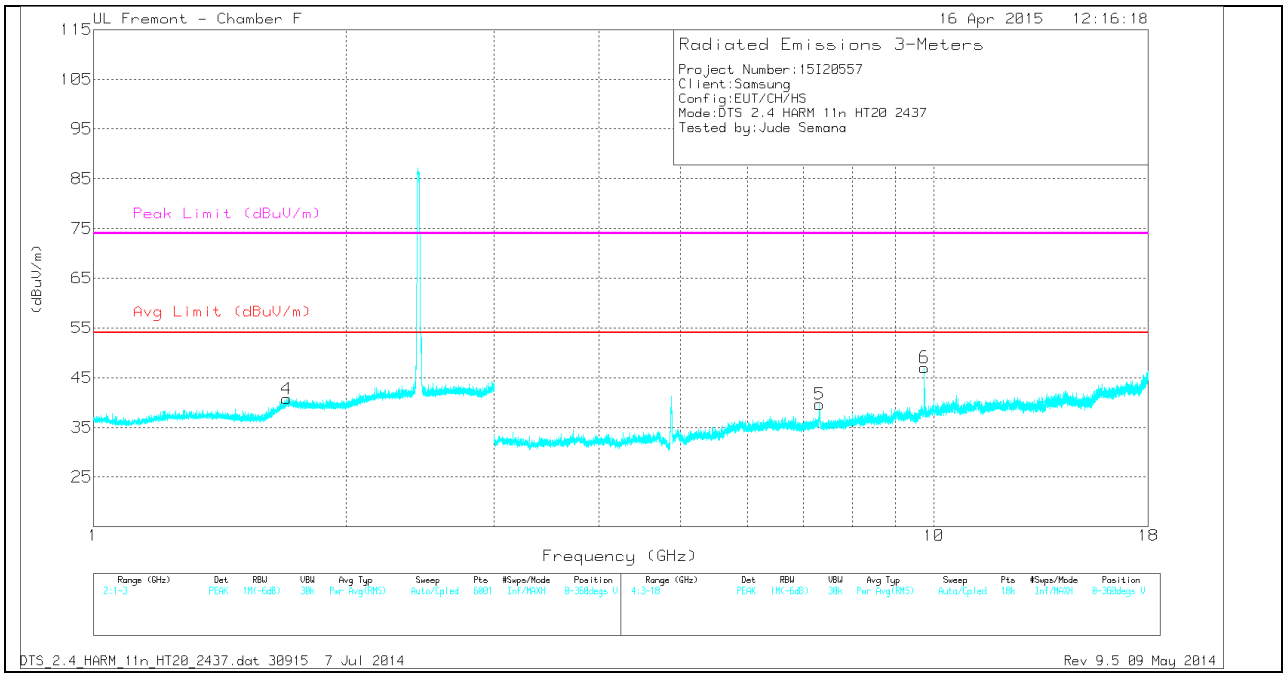
MAv1 - KDB558074 Option 1 Maximum RMS Average

MID CHANNEL HORIZONTAL



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

MID CHANNEL VERTICAL



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

MID CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF 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	* 1.487	35.58	PK	27.8	-25.6	0	37.78	-	-	74	-36.22	0-360	101	H
4	* 1.699	35.47	PK	30.7	-25.4	0	40.77	-	-	74	-33.23	0-360	101	V
2	* 4.868	42.09	PK	33.9	-33.1	0	42.89	-	-	74	-31.11	0-360	101	H
3	* 12.299	30.17	PK	38.5	-26.6	0	42.07	-	-	74	-31.93	0-360	201	H
5	* 7.312	35.18	PK	35.6	-31.1	0	39.68	-	-	74	-34.32	0-360	201	V
6	9.748	37.61	PK	37.2	-27.8	0	47.01	-	-	-	-	0-360	101	V

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

PK - Peak detector

Radiated Emissions

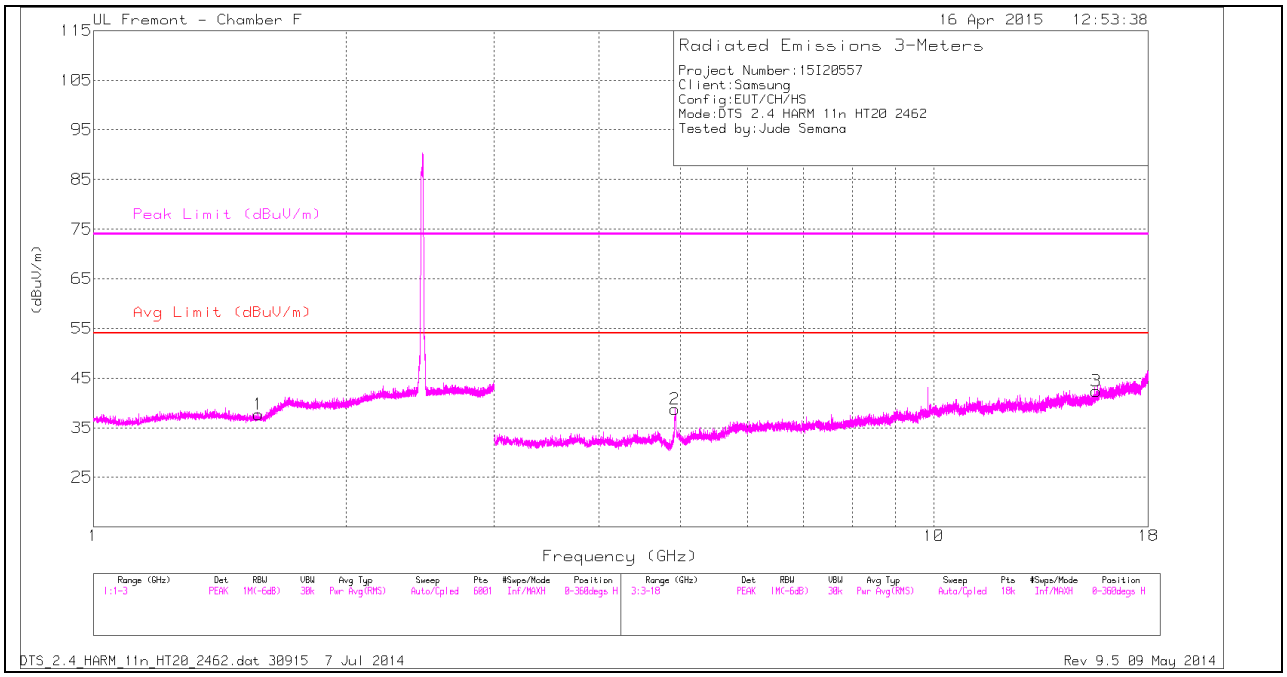
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.868	47.68	PK2	33.9	-33.1	0	48.48	-	-	74	-25.52	29	261	H
* 4.868	40.38	MAv1	33.9	-33.1	.3	41.48	54	-12.52	-	-	29	261	H
* 7.312	37.34	PK2	35.6	-31.1	0	41.84	-	-	74	-32.16	64	120	V
* 7.312	26.03	MAv1	35.6	-31.1	.3	30.83	54	-23.17	-	-	64	120	V
9.748	39.32	PK2	37.2	-27.8	0	48.72	-	-	-	-	194	272	V
9.748	34.67	MAv1	37.2	-27.8	.3	44.37	-	-	-	-	194	272	V

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

PK2 - KDB558074 Method: Maximum Peak

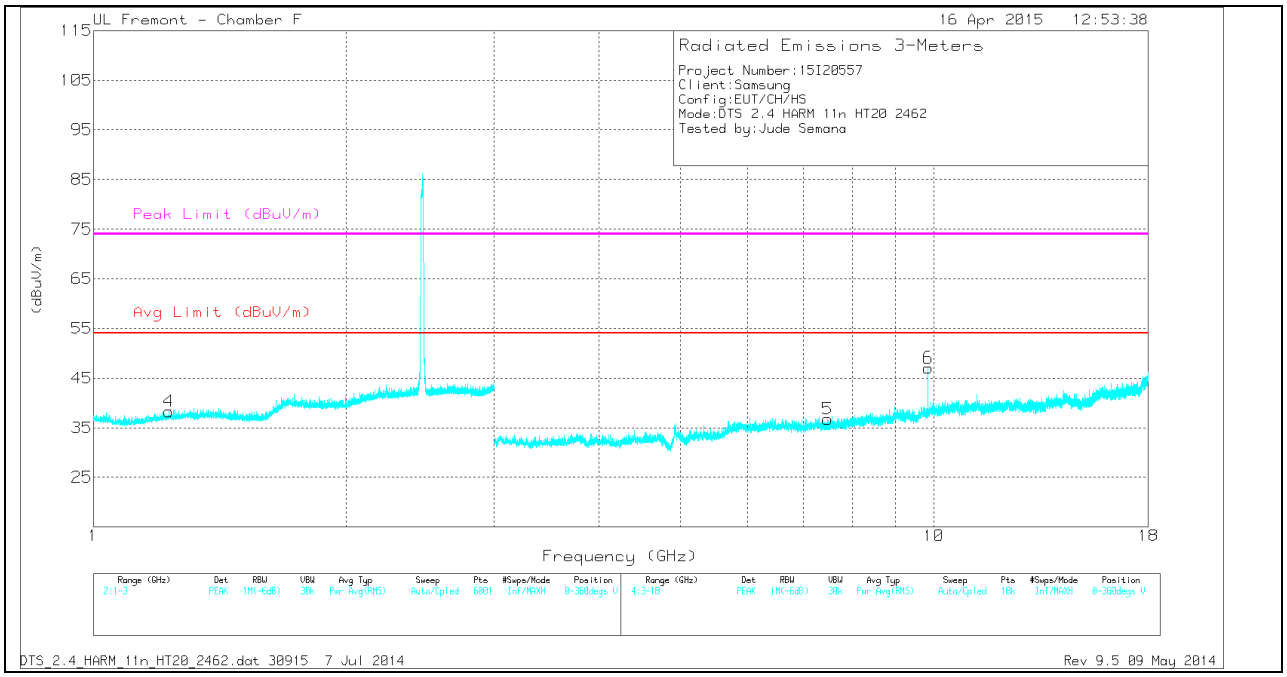
MAv1 - KDB558074 Option 1 Maximum RMS Average

HIGH CHANNEL HORIZONTAL



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

HIGH CHANNEL VERTICAL



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

HIGH CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF 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	* 1.573	35.49	PK	27.7	-25.5	0	37.69	-	-	74	-36.31	0-360	201	H
4	* 1.231	36.21	PK	28.1	-26	0	38.31	-	-	74	-35.69	0-360	201	V
2	* 4.921	37.95	PK	33.9	-33.1	0	38.75	-	-	74	-35.25	0-360	101	H
3	* 15.603	28.97	PK	41.1	-27.7	0	42.37	-	-	74	-31.63	0-360	201	H
5	* 7.477	32.15	PK	35.5	-30.9	0	36.75	-	-	74	-37.25	0-360	101	V
6	9.848	38.44	PK	37.4	-28.8	0	47.04	-	-	-	-	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 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
* 4.921	41.97	PK2	33.9	-33.1	0	42.77	-	-	74	-31.23	15	281	H
* 4.921	34.89	MAv1	33.9	-33.1	.3	35.99	54	-18.01	-	-	15	281	H
9.848	38.94	PK2	37.4	-28.8	0	47.54	-	-	-	-	183	273	V
9.848	34.61	MAv1	37.4	-28.8	.3	43.51	-	-	-	-	183	273	V

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

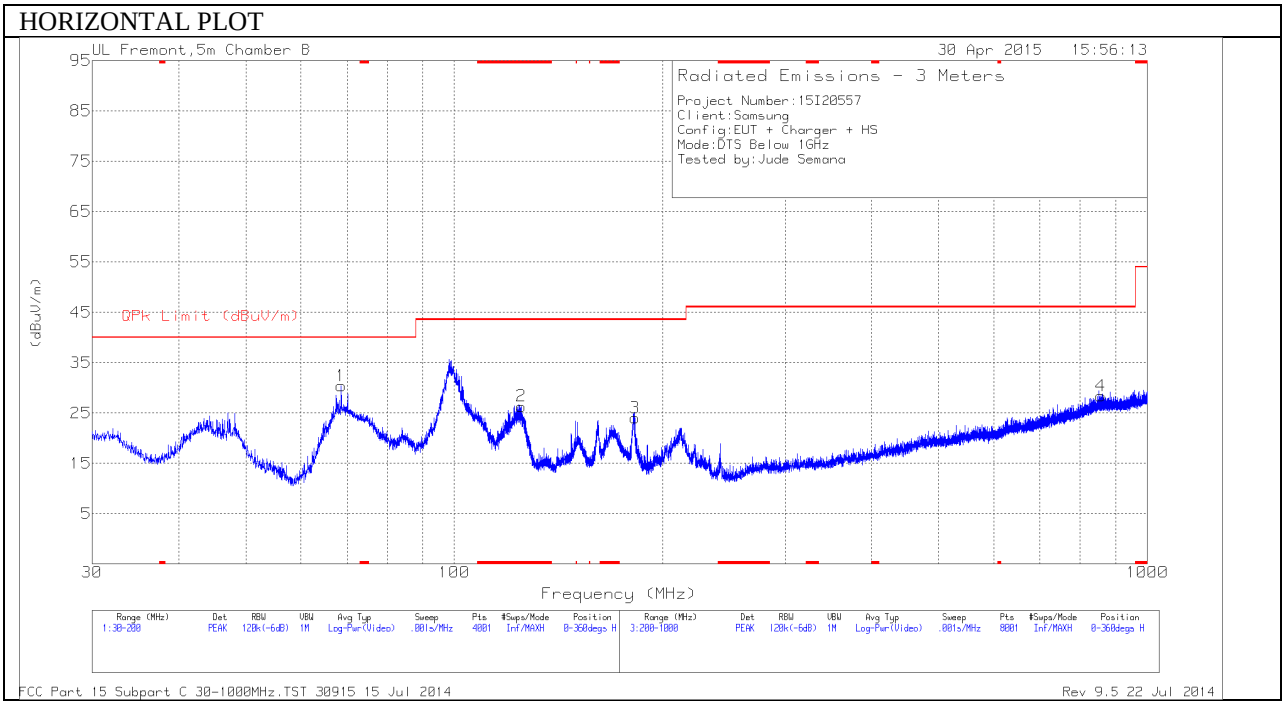
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

10.3. WORST-CASE BELOW 1 GHz

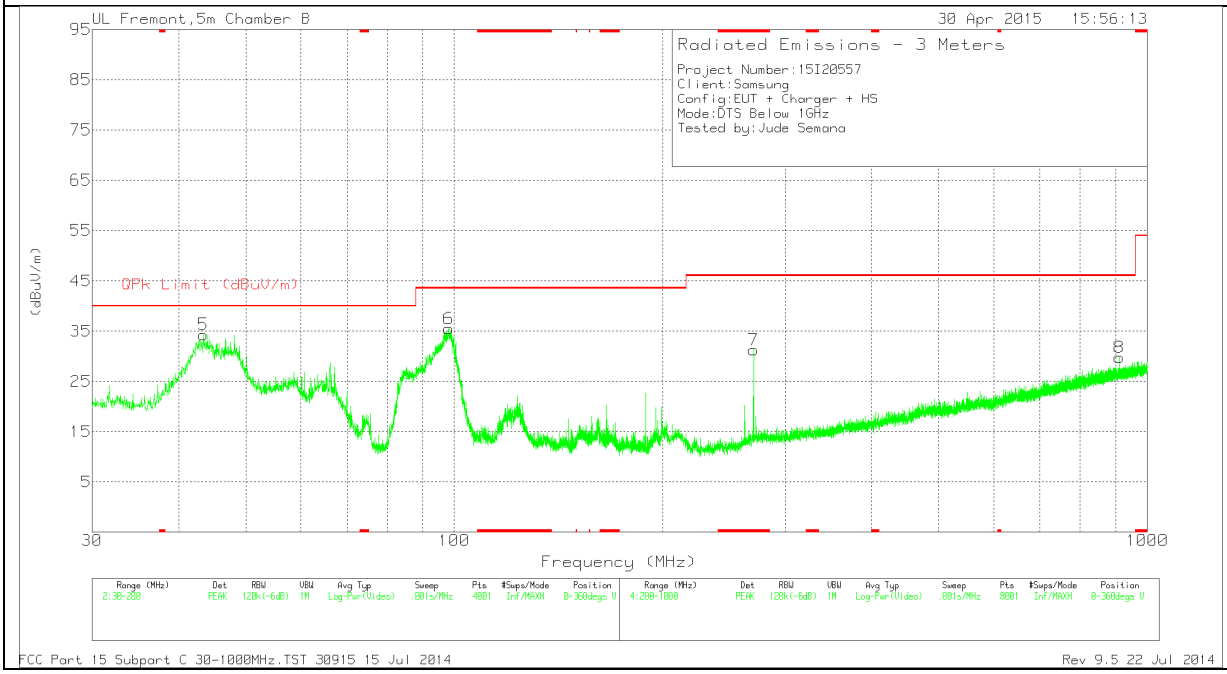
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)

HORIZONTAL PLOT



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

VERTICAL PLOT



Below 1G Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T243 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 124.9875	39.93	PK	14.2	-27.8	26.33	43.52	-17.19	0-360	200	H
7	* 270.3	44.25	PK	13.3	-26.3	31.25	46.02	-14.77	0-360	200	V
5	43.43	51.39	PK	11.6	-28.7	34.29	40	-5.71	0-360	101	V
1	68.675	50.77	PK	8	-28.4	30.37	40	-9.63	0-360	300	H
6	98.17	53.92	PK	9.7	-28.1	35.52	43.52	-8	0-360	101	V
3	182.1925	40.04	PK	11.2	-27.2	24.04	43.52	-19.48	0-360	200	H
4	857.4	29.79	PK	21.9	-23.3	28.39	46.02	-17.63	0-360	101	H
8	911.1	30.06	PK	22.5	-22.8	29.76	46.02	-16.26	0-360	101	V

* - indicates frequency in CFR 47, Part 15 and Industry Canada RSS-Restricted Band.

PK - Peak detector

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 C63.10.

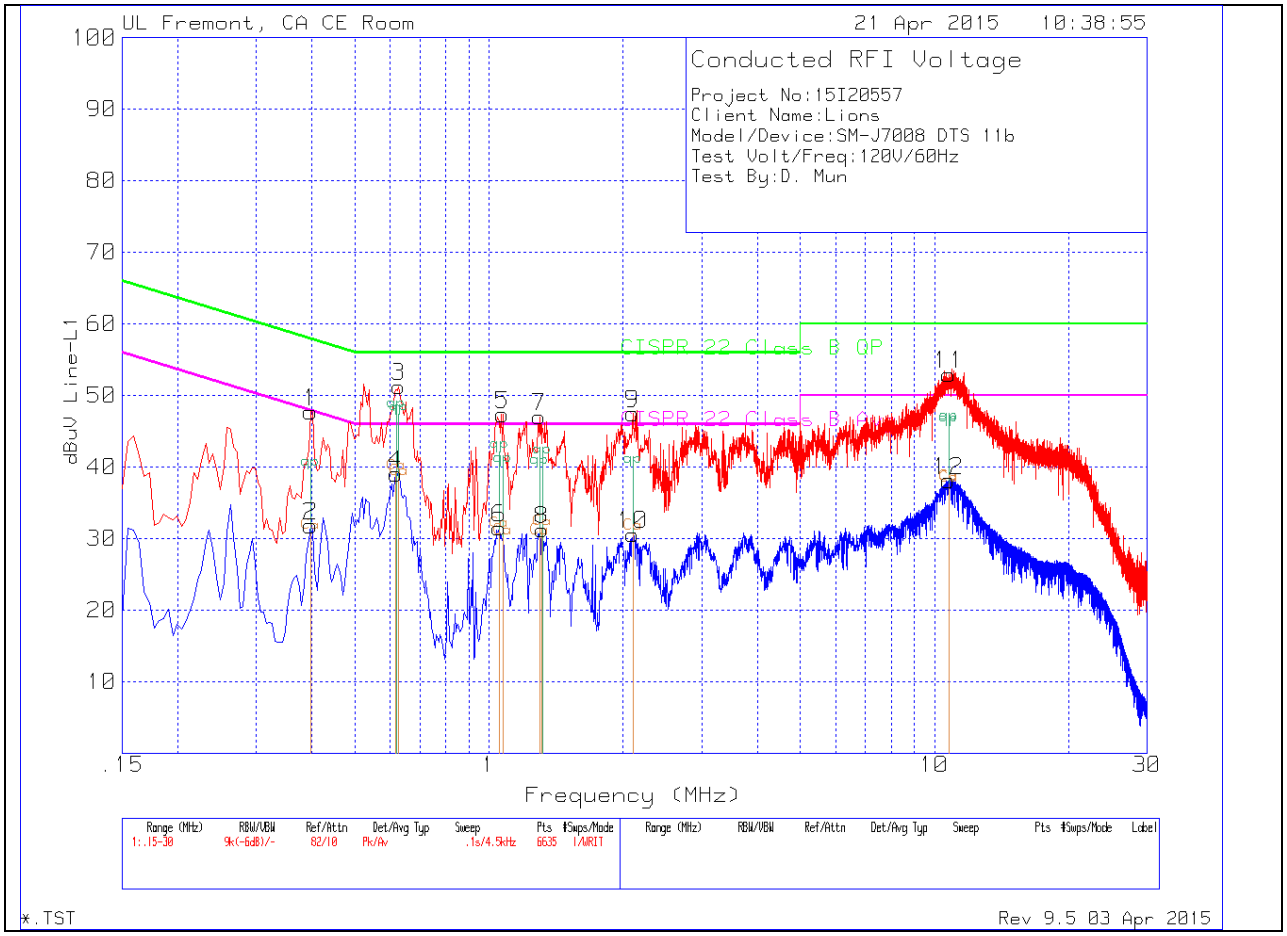
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

6 WORST EMISSIONS

LINE 1 PLOT



LINE 1 RESULTS

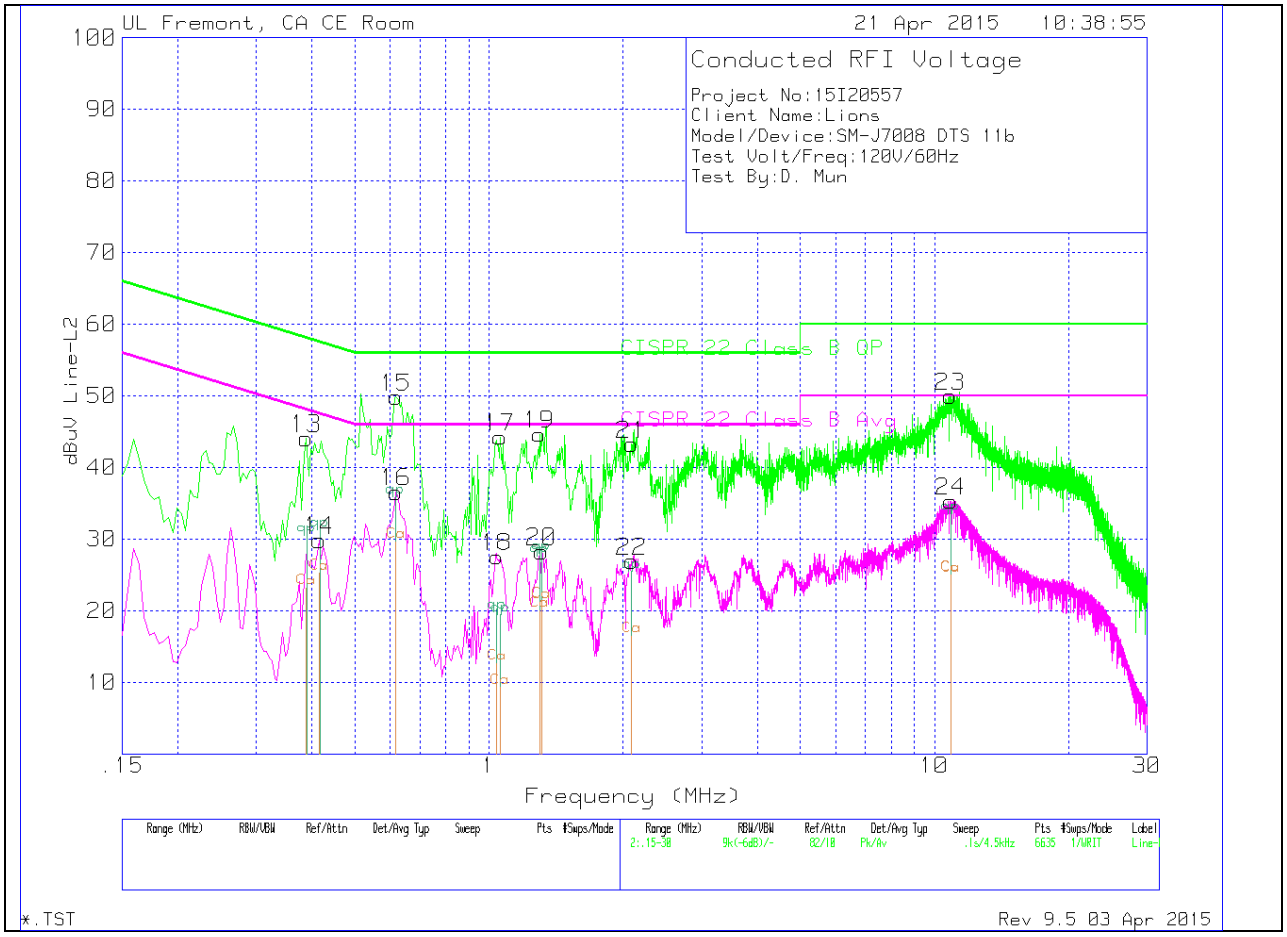
Range 1: Line-L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1	LC Cables 1&3	Corrected Reading dBuV	CISPR 22 Class B QP	Margin (dB)	CISPR 22 Class B Avg	Margin (dB)
1	.3975	47.32	Pk	.4	0	47.72	57.91	-10.19		
2	.3975	31.43	Av	.4	0	31.83	57.91	-26.08	47.91	-16.08
3	.627	50.97	Pk	.3	0	51.27	56	-4.73		
4	.618	38.77	Av	.3	0	39.07	56	-16.93	46	-6.93
5	1.0725	47.16	Pk	.2	0	47.36	56	-8.64		
6	1.0545	31.3	Av	.2	0	31.5	56	-24.5	46	-14.5
7	1.2975	46.75	Pk	.2	.1	47.05	56	-8.95		
8	1.3155	30.95	Av	.2	.1	31.25	56	-24.75	46	-14.75
9	2.103	47.19	Pk	.2	.1	47.49	56	-8.51		
10	2.103	30.29	Av	.2	.1	30.59	56	-25.41	46	-15.41
11	10.779	52.53	Pk	.2	.2	52.93	60	-7.07		
12	10.7655	37.73	Av	.2	.2	38.13	60	-21.87	50	-11.87

Pk - Peak detector

Av - Average detection

LINE 2 PLOT



LINE 2 RESULTS

Range 2: Line-L2 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2	LC Cables 2&3	Corrected Reading dBuV	CISPR 22 Class B QP	Margin (dB)	CISPR 22 Class B Avg	Margin (dB)
13	.3885	43.68	Pk	.4	0	44.08	58.1	-14.02		
14	.4155	29.46	Av	.4	0	29.86	57.54	-27.68	47.54	-17.68
15	.618	49.54	Pk	.3	0	49.84	56	-6.16		
16	.618	36.3	Av	.3	0	36.6	56	-19.4	46	-9.4
17	1.059	43.94	Pk	.3	0	44.24	56	-11.76		
18	1.041	27.27	Av	.3	0	27.57	56	-28.43	46	-18.43
19	1.2975	44.34	Pk	.2	.1	44.64	56	-11.36		
20	1.311	27.98	Av	.2	.1	28.28	56	-27.72	46	-17.72
21	2.0895	42.96	Pk	.2	.1	43.26	56	-12.74		
22	2.0895	26.63	Av	.2	.1	26.93	56	-29.07	46	-19.07
23	10.8645	49.58	Pk	.2	.2	49.98	60	-10.02		
24	10.887	34.92	Av	.2	.2	35.32	60	-24.68	50	-14.68

Pk - Peak detector

Av - Average detection