



FCC CFR47 PART 15 SUBPART C

CERTIFICATION TEST REPORT

FOR

GSM/WCDMA Phone + Bluetooth & WLAN 2.4GHz b/g/n

MODEL NUMBER: SM-G130M/DS

FCC ID: A3LSMG130M

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Rev.	Date	Revisions	Revised By
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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SAMSUNG ELECTRONICS CO., LTD
EUT DESCRIPTION: GSM/WCDMA Phone + Bluetooth & WLAN 2.4GHz b/g/n
MODEL: SM-G130M/DS
SERIAL NUMBER: FL-205-A, FL-205-B, FL-205-C (Radiated), FL-205-D (Conducted)
DATE TESTED: MAY 28-JUNE 4, 2014

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	Pass

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

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

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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

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:

$$\text{Field Strength (dBuV/m)} = \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \text{Cable Loss (dB)} - \text{Preamp Gain (dB)}$$

$$36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$$

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 18000 MHz	4.94 dB

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

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

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2412 - 2462	802.11b	18.09	64.42
2412 - 2462	802.11g	21.24	133.05
2412 - 2462	802.11n HT20	19.05	80.35

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of -1.26 dBi.

5.4. WORST-CASE CONFIGURATION AND MODE

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

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

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

802.11b mode: 1 Mbps

802.11g mode: 6 Mbps

802.11n HT20mode: MCS0

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

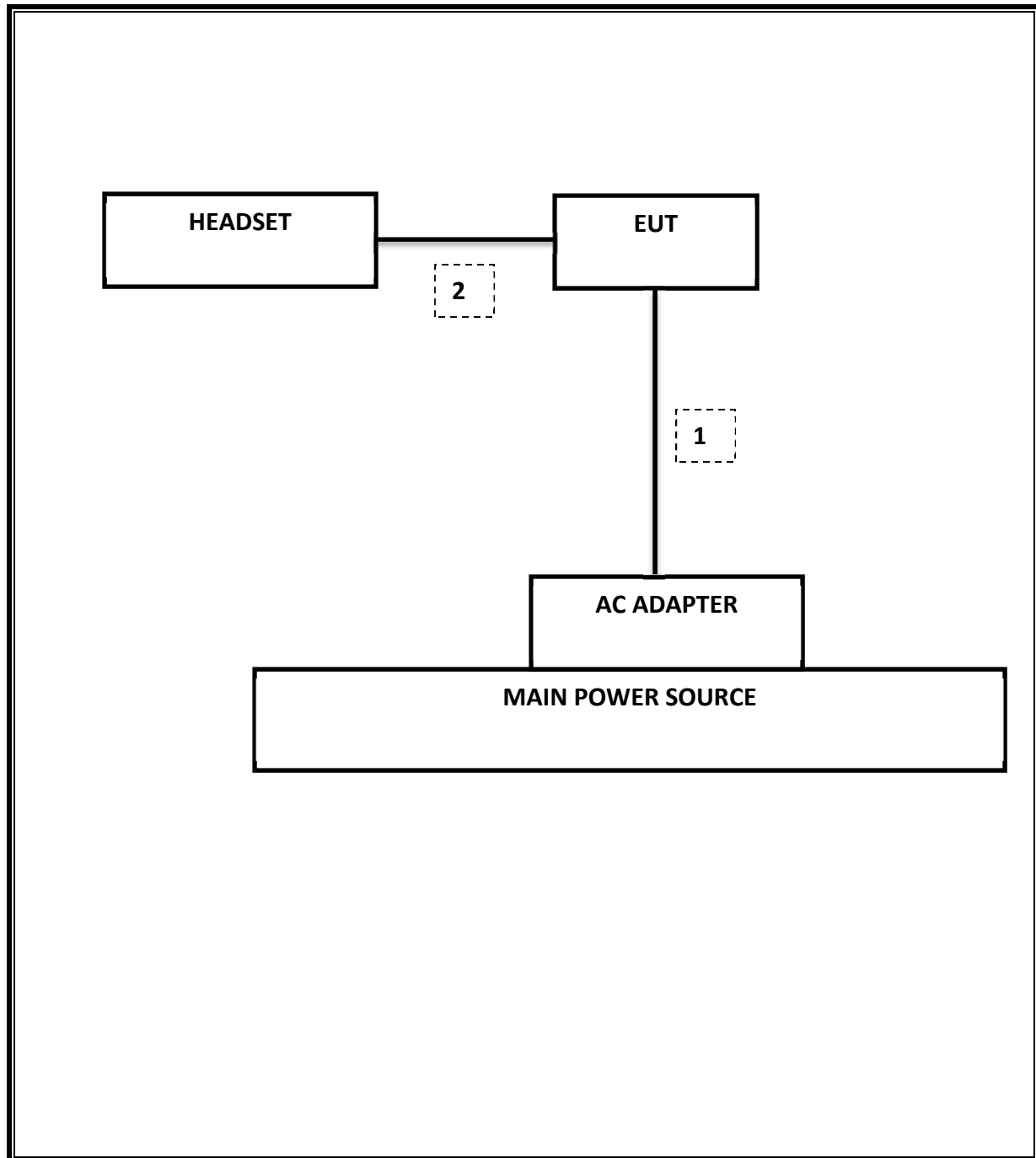
Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	Samsung	SM-G130M	N/A	N/A
Earphone	Samsung	SM-G130M	N/A	N/A

I/O CABLES

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

TEST SETUP

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

SETUP DIAGRAM FOR TESTS

6. TEST AND MEASUREMENT EQUIPMENT

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

Test Equipment List				
Description	Manufacturer	Model	Asset	Cal Due
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01069	12/20/14
Spectrum Analyzer, 9KHz-40GHz	HP	8564E	C00986	04/01/15
EMI Test Receiver, 9 kHz-7 GHz	R & S	ESCI 7	1000741	08/13/14
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	08/18/14
Peak Power Meter	Agilent / HP	E4416A	C00963	12/13/14
Peak / Average Power Sensor	Agilent / HP	E9327A	C00964	12/13/14
Antenna, Horn, 1-18 GHz	ETS	3117	C01022	02/21/15
Antenna, Horn, 18- 26 GHz	ARA	MWH-1826/B	C00946	11/12/14
Antenna, Horn, 26-40 GHz	ARA	MWH-2640	C00891	06/28/14
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	T243	03/06/15
RF Preamplifier, 100KHz -> 1300MHz	HP	TBD	C00825	06/01/14
RF Preamplifier, 1GHz - 18GHz	Miteq	NSP4000-SP2	924343	03/23/15
RF Preamplifier, 1GHz - 26.5GHz	HP	8449B	F00351	06/27/14
AC Power Supply, 2,500VA 45-500Hz	Elgar-Ametek	CW2501M	F00013	CNR
RF Preamplifier, 1GHz - 40GHz	Miteq	NSP4000-SP2	C00990	08/20/14
Attenuator / Switch driver	HP	11713A	F00204	CNR
Low Pass Filter 3GHz	Micro-Tronics	LPS17541	F00219	05/23/15
High Pass Filter 5GHz	Micro-Tronics	HPS17542	F00222	05/22/15
High Pass Filter 6GHz	Micro-Tronics	HPM17543	F00224	05/22/15

7. MEASUREMENT METHODS

KDB 558074 D01 DTS Meas Guidance v03r01:Measurement Procedure PK2 is used for power and PKPSD is used for power spectral density.

Unwanted emissions within Restricted Bands are measured using traditional radiated procedures.

Band edge emissions within Restricted Bands are measured using RMS with duty cycle factor offset method.

8. SUMMARY TABLE

FCC Part Section	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result	Worst Case
15.247 (a)(2)	RSS-210 A8.2(a)	Occupied Band width (6dB)	>500KHz	Conducted	Pass	9.04 MHz
2.1051, 15.247 (d)	RSS-210 A8.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	-33.29dBm
15.247	RSS-210 A8.4	TX conducted output power	<30dBm		Pass	21.24 dBm
15.247	RSS-210 A8.2	PSD	<8dBm		Pass	-6.37 dBm
15.207 (a)	RSS-GEN 7.2.2	AC Power Line conducted emissions	Section 10	Radiated	Pass	48.73 dBuV
15.205, 15.209	RSS-210 Clause 2.6, RSS-210 Clause 6	Radiated Spurious Emission	< 54dBuV/m		Pass	53.29dBuV

9. ANTENNA PORT TEST RESULTS

9.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

IC RSS-210 A8.2 (a)

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

TEST PROCEDURE

Reference to KDB 558074 D01 DTS Meas Guidance v03r01: The transmitter output is connected to a spectrum analyzer with the RBW set to 100 kHz, the VBW $\geq 3 \times$ 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	9.04	0.5
Mid	2437	9.08	0.5
High	2462	9.98	0.5
Worst		9.04	

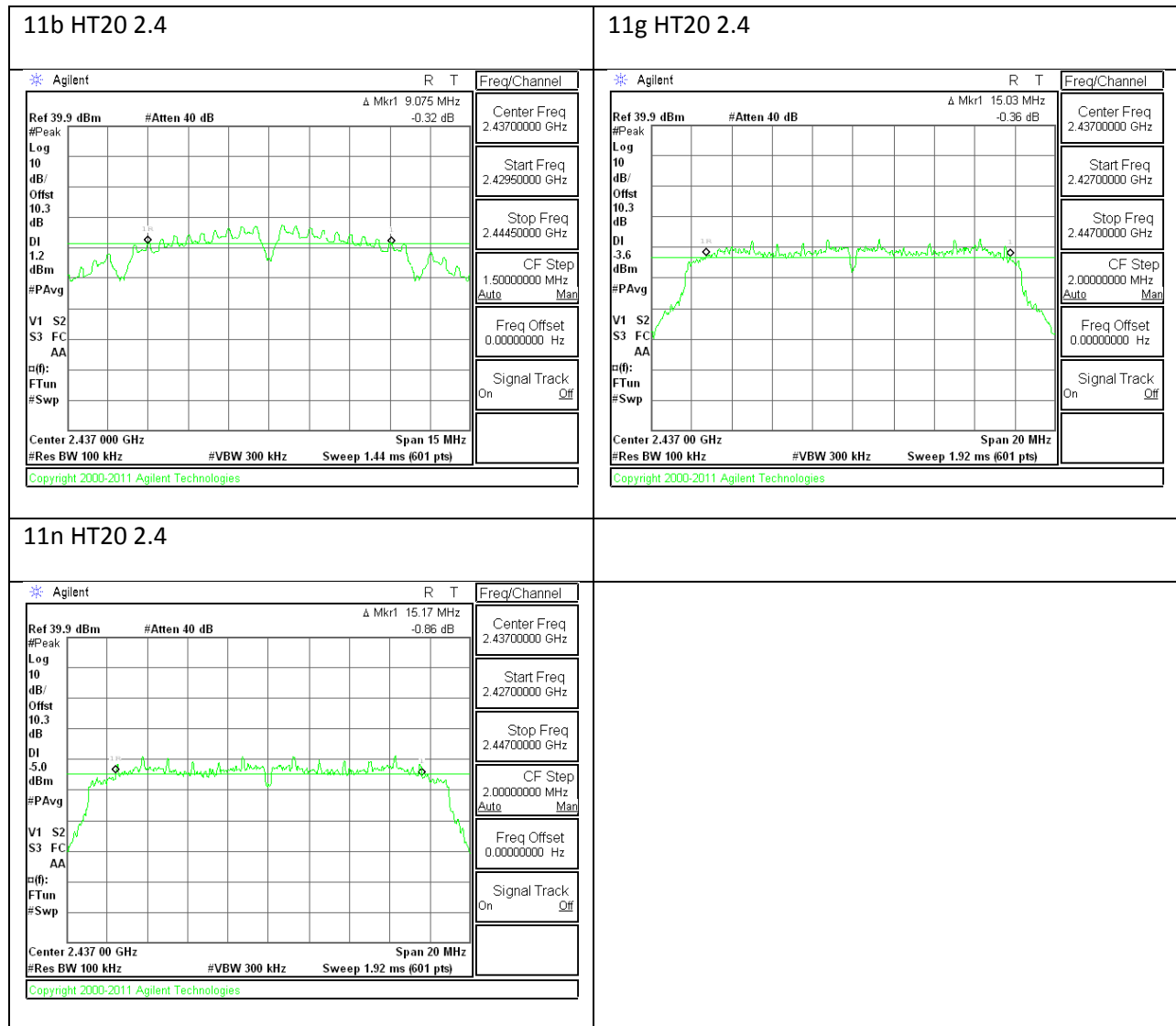
9.1.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	15.00	0.5
Mid	2437	15.03	0.5
High	2462	15.00	0.5
Worst		15.00	

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	14.96	0.5
Mid	2437	15.17	0.5
High	2462	15.00	0.5
Worst		14.96	

9.1.4. 6 dB BANDWIDTH MID CH PLOTS



9.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

9.2.1. 802.11b MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	14.09
Mid	2437	14.12
High	2462	13.95
Worst		14.12

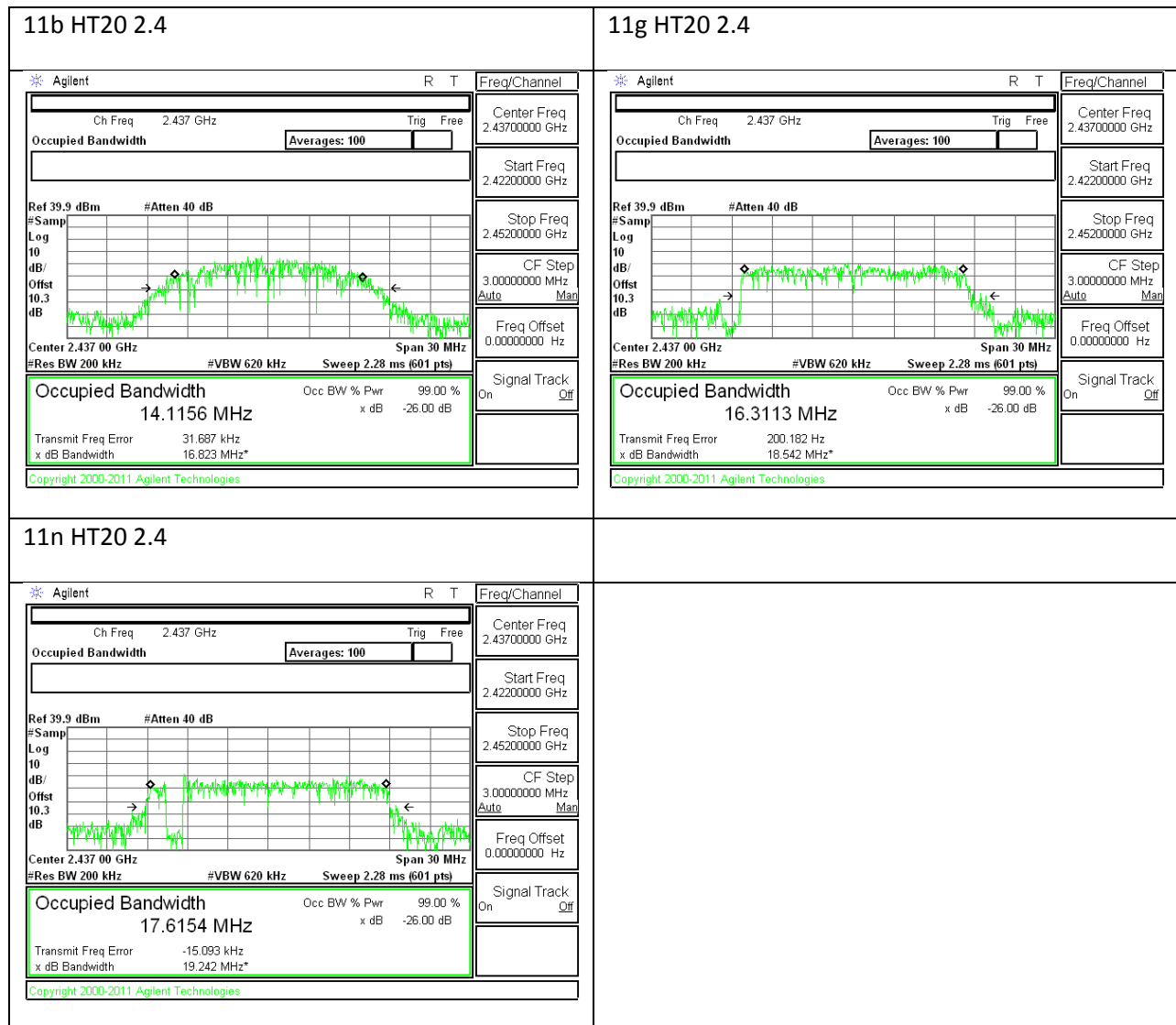
9.2.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	16.14
Mid	2437	16.31
High	2462	16.02
Worst		16.31

9.2.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	17.29
Mid	2437	17.62
High	2462	17.01
Worst		17.62

9.2.4. 99% BANDWIDTH MID CH PLOTS



9.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 0.3 dB (including 10 dB pad and 0.3 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

9.3.1. 802.11b MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	2412	15.40
Mid	2437	15.40
High	2462	15.40
Worst		15.400

9.3.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	2412	14.00
Mid	2437	14.00
High	2462	14.00
Worst		14.000

9.3.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	2412	12.00
Mid	2437	12.00
High	2462	12.00
Worst		12.000

9.4. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

RESULTS

9.4.1. 802.11b MODE IN THE 2.4 GHz BAND

Limits

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

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	17.79	17.79	30.00	-12.21
Mid	2437	18.09	18.09	30.00	-11.91
High	2462	18.03	18.03	30.00	-11.97
Worst			18.09		

9.4.2. 802.11g MODE IN THE 2.4 GHz BAND

Limits

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

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	20.91	20.91	30.00	-9.09
Mid	2437	20.77	20.77	30.00	-9.23
High	2462	21.24	21.24	30.00	-8.76
Worst			21.24		

9.4.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

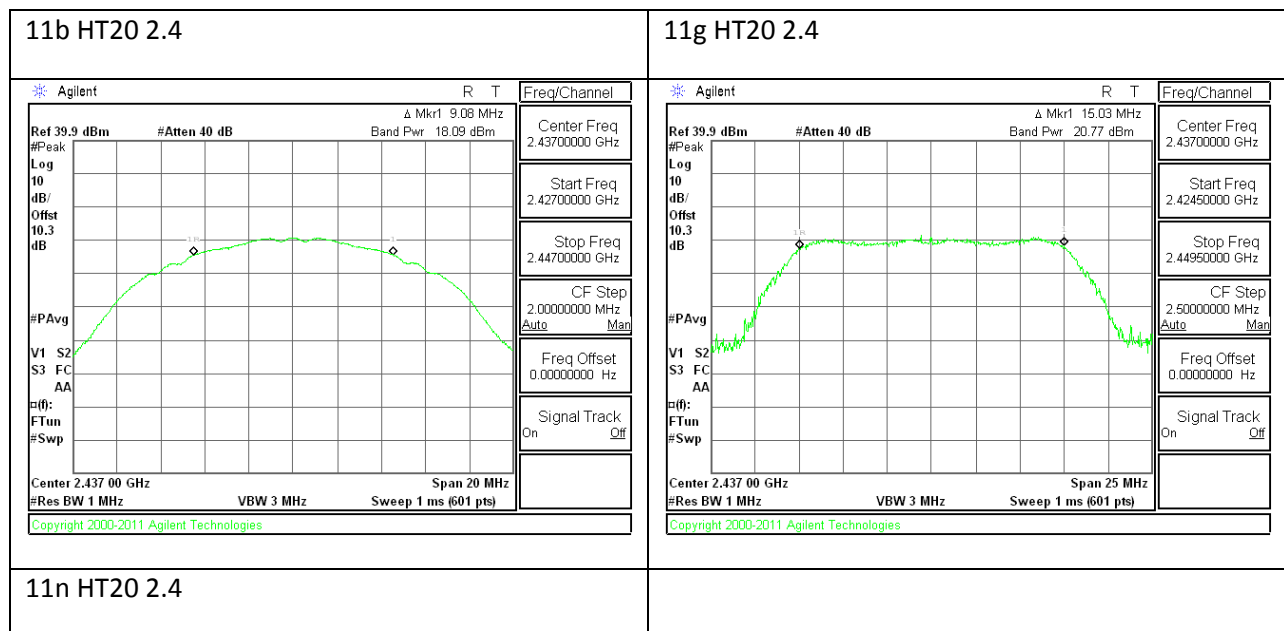
Limits

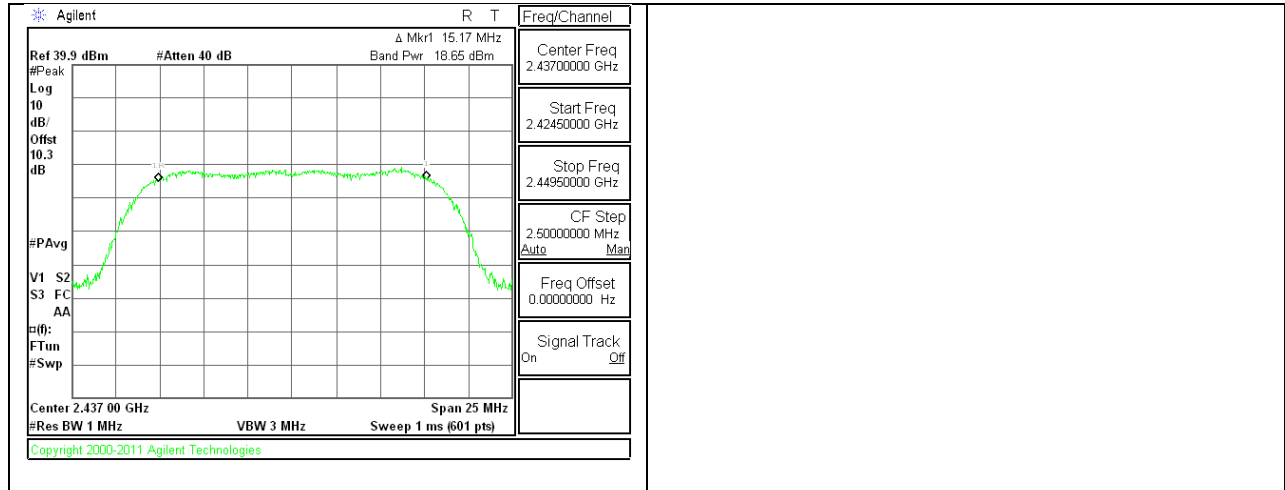
Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	-1.26	30.00	30	36	30.00
Mid	2437	-1.26	30.00	30	36	30.00
High	2462	-1.26	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	19.05	19.05	30.00	-10.95
Mid	2437	18.65	18.65	30.00	-11.35
High	2462	19.05	19.05	30.00	-10.95
Worst			19.05		

9.4.4. OUTPUT POWER CHAIN 0 MID CH PLOTS





9.5. PSD

LIMITS

FCC §15.247

IC RSS-210 A8.2

The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

RESULTS

9.5.1. 802.11b MODE IN THE 2.4 GHz BAND

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-6.37	8.0	-14.4
Mid	2437	-8.71	8.0	-16.7
High	2462	-7.29	8.0	-15.3

9.5.2. 802.11g MODE IN THE 2.4 GHz BAND

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-10.95	8.0	-19.0
Mid	2437	-11.61	8.0	-19.6
High	2462	-11.92	8.0	-19.9

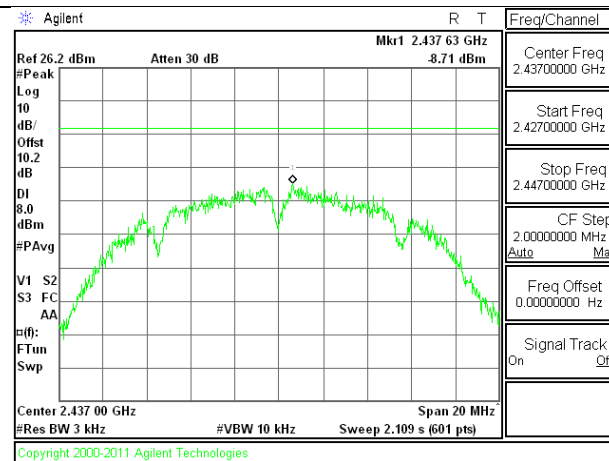
9.5.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

PSD Results

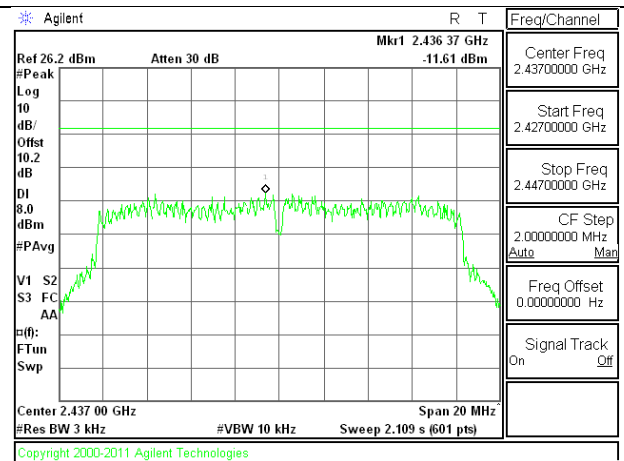
Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-13.30	8.0	-21.3
Mid	2437	-13.26	8.0	-21.3
High	2462	-13.21	8.0	-21.2

9.5.4. PSD Chain 0 MID CH PLOTS

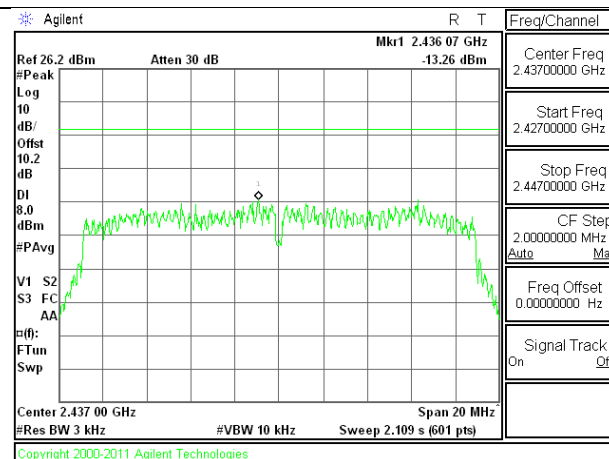
11b HT20 2.4



11g HT20 2.4



11n HT20 2.4



9.6. OUT-OF-BAND EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-210 A8.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required.

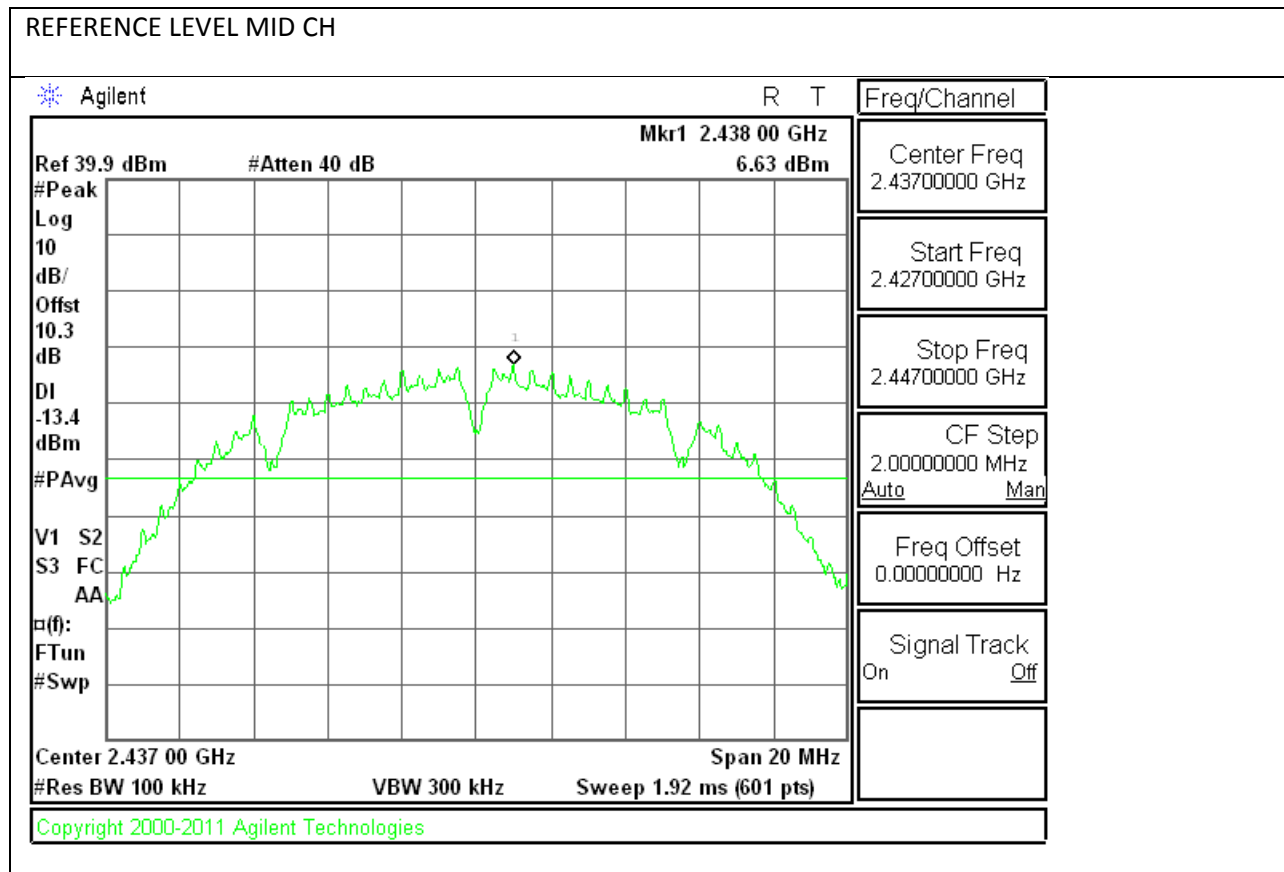
TEST PROCEDURE

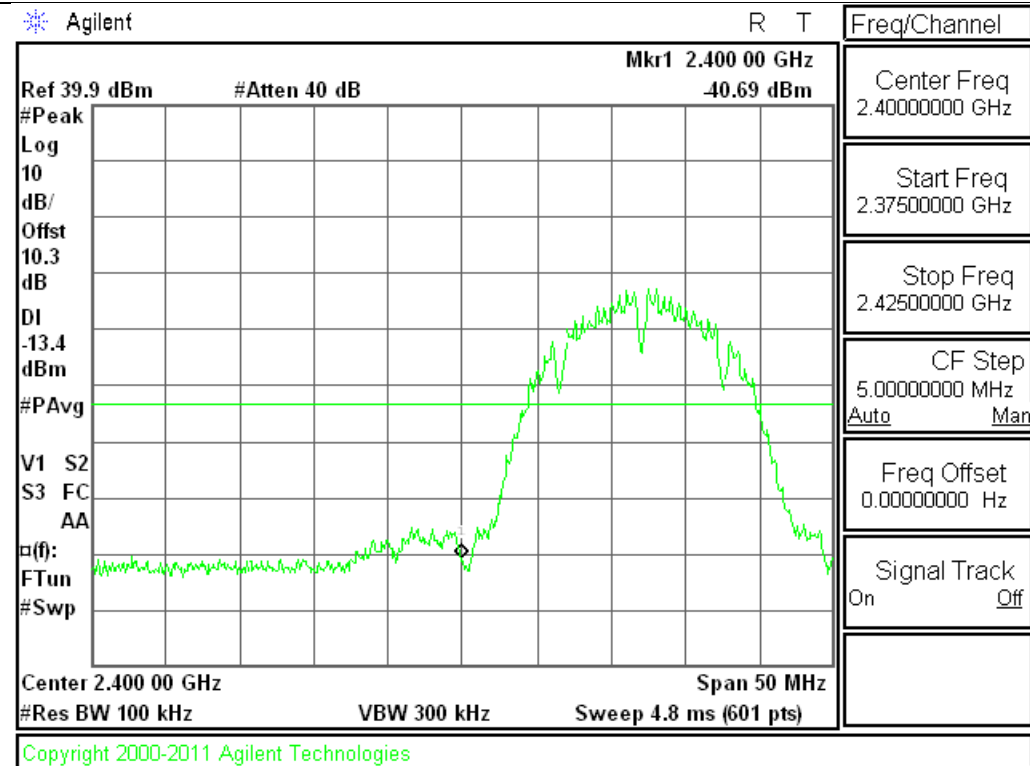
The transmitter output is connected to a spectrum analyzer with RBW = 100 kHz, VBW = 300 kHz, peak detector, and max hold. Measurements utilizing these settings are made of the in-band reference level, bandedge (where measurements to the general radiated limits will not be made) and out-of-band emissions.

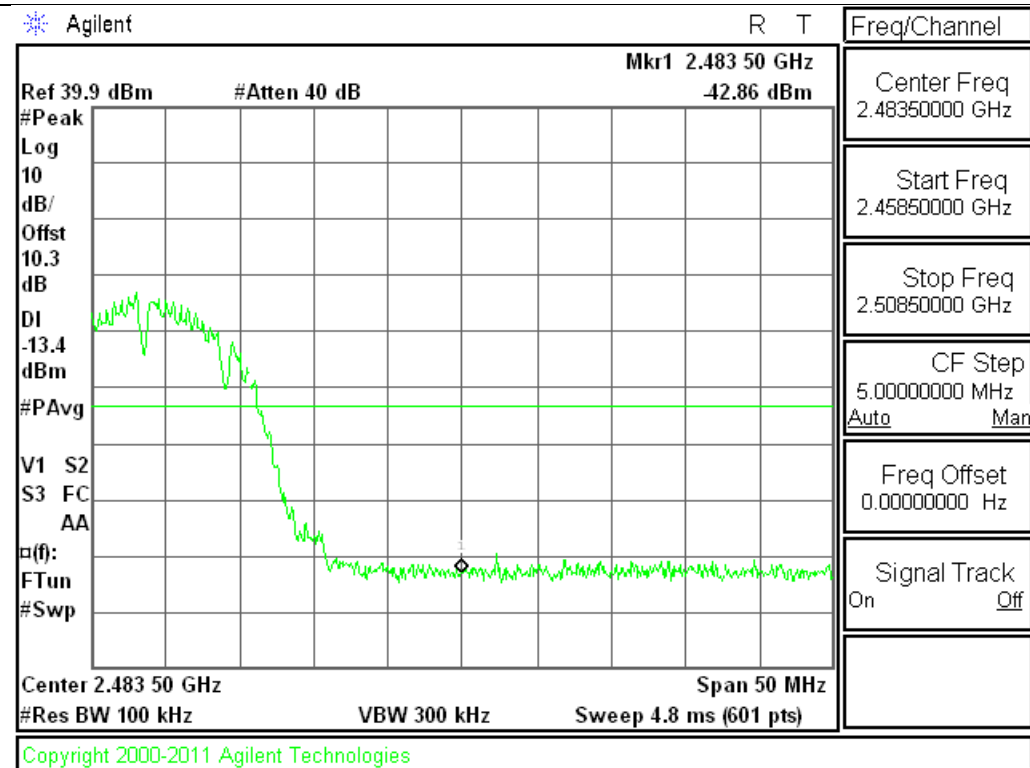
RESULTS

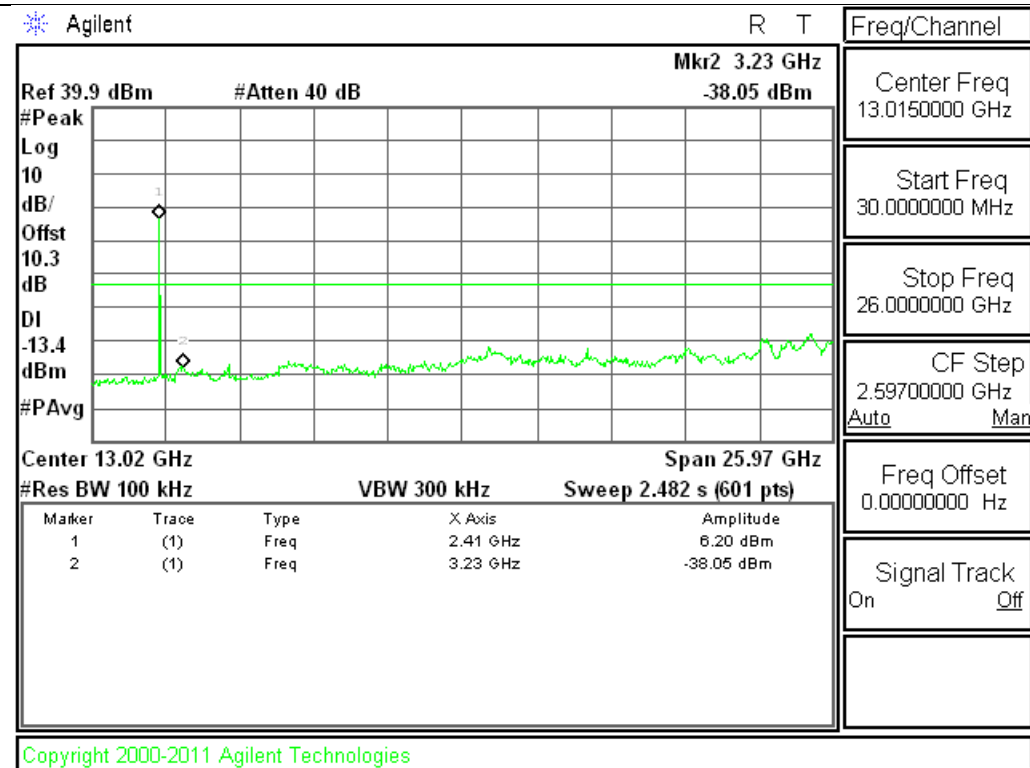
9.6.1. 802.11b MODE IN THE 2.4 GHz BAND

IN-BAND REFERENCE LEVEL

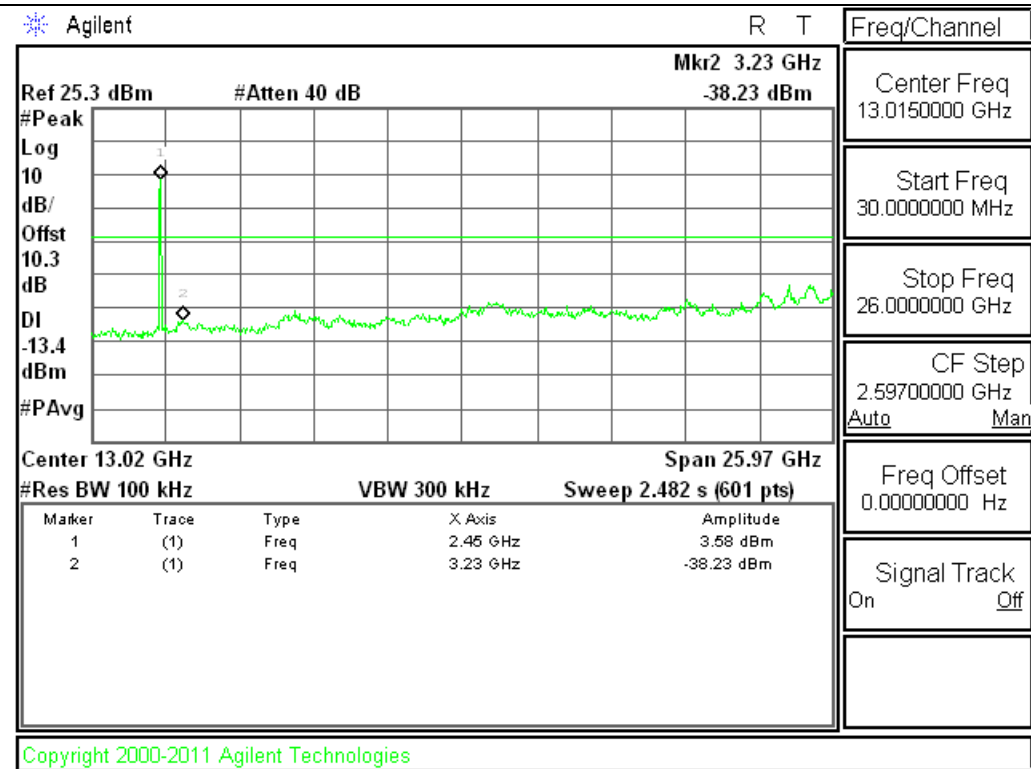


LOW CHANNEL BANDEDGE**AUTHORIZED BAND EDGE LOW CH**

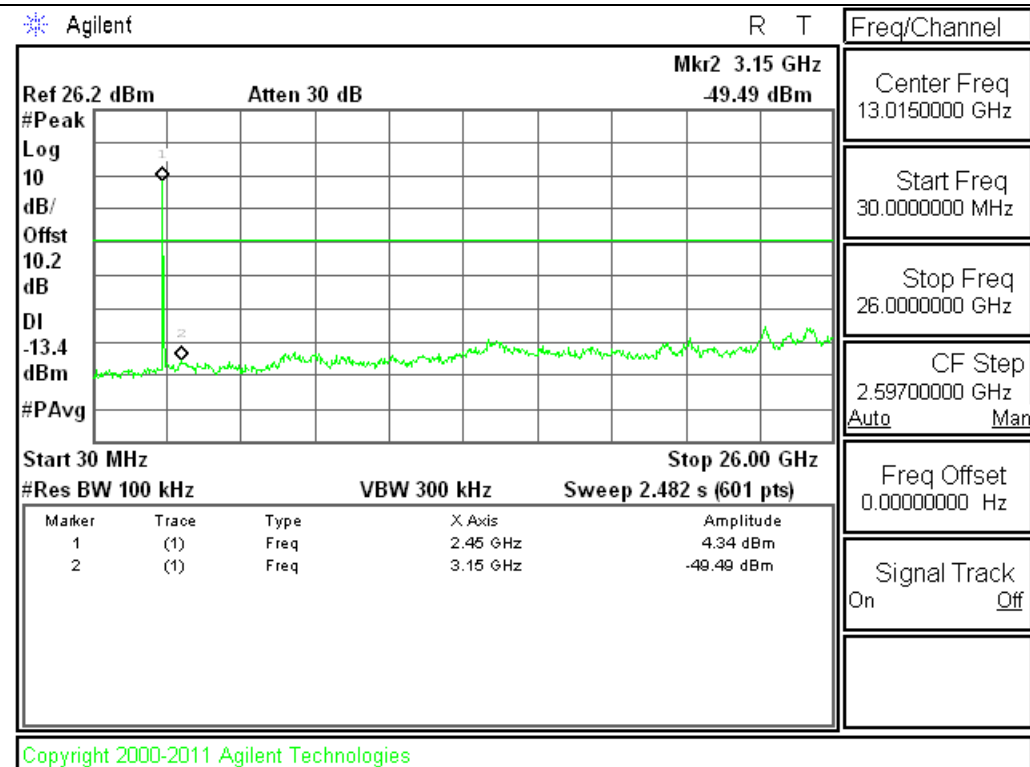
HIGH CHANNEL BANDEDGE**AUTHORIZED BAND EDGE HIGH CH**

OUT-OF-BAND EMISSIONS**OUT OF BAND LOW CH**

OUT OF BAND MID CH

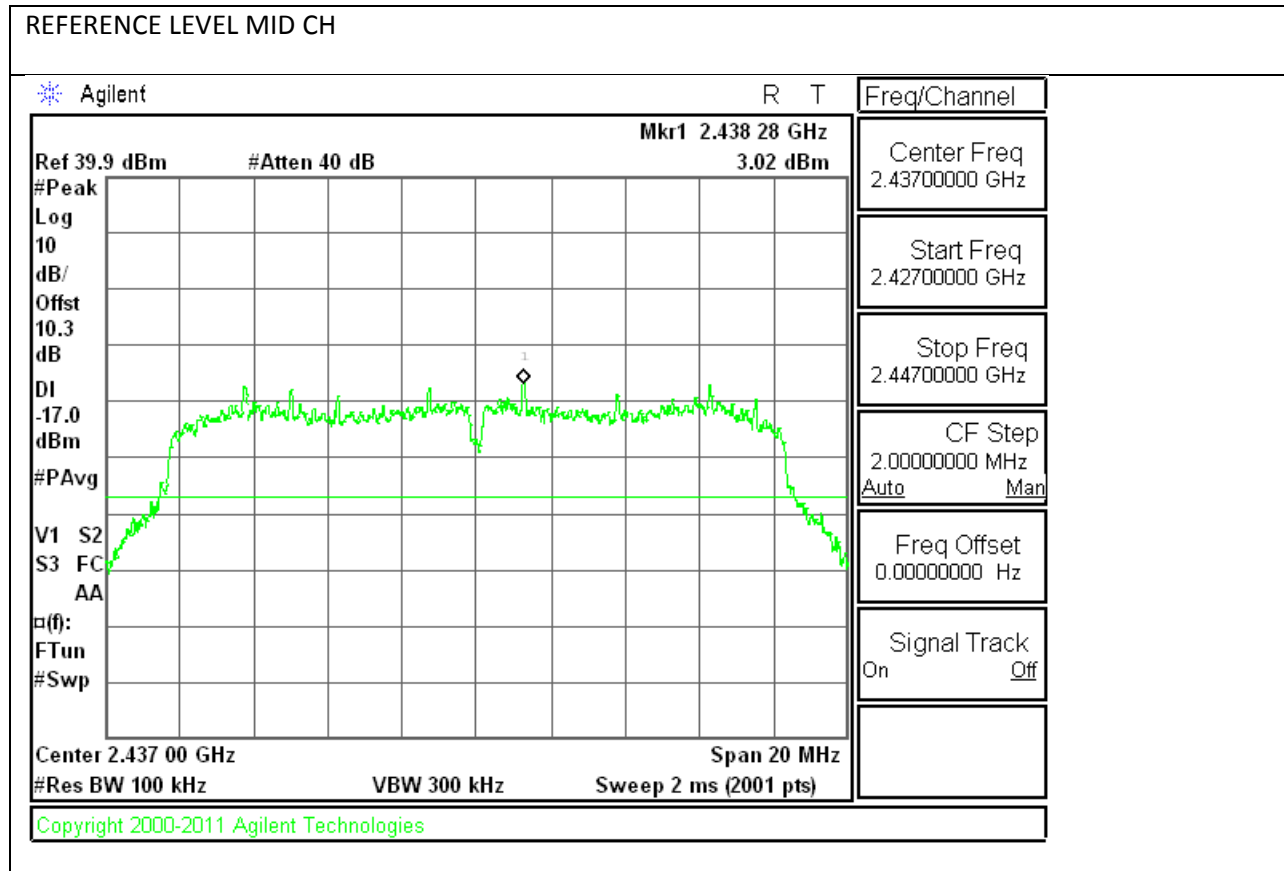


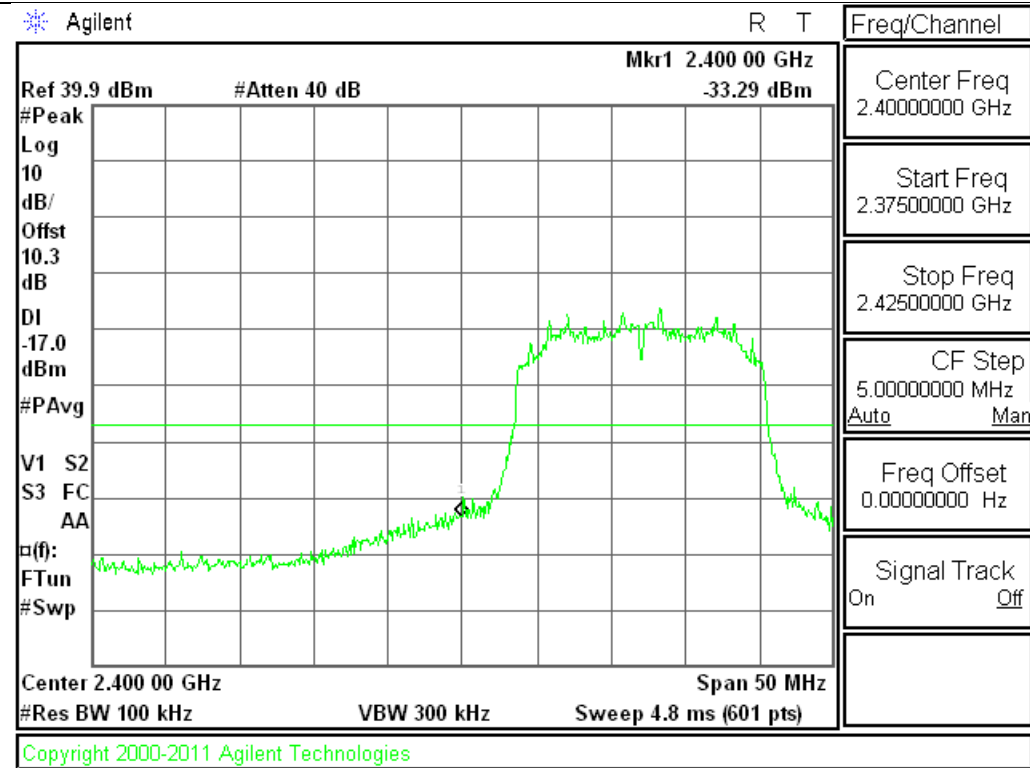
OUT OF BAND HIGH CH

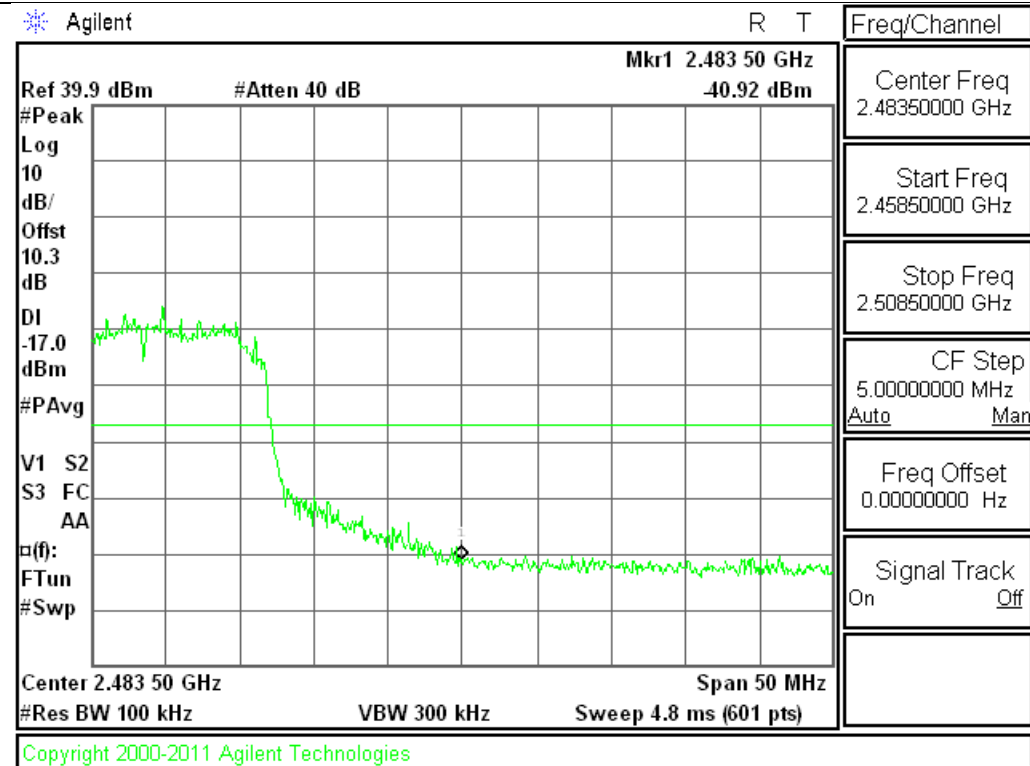


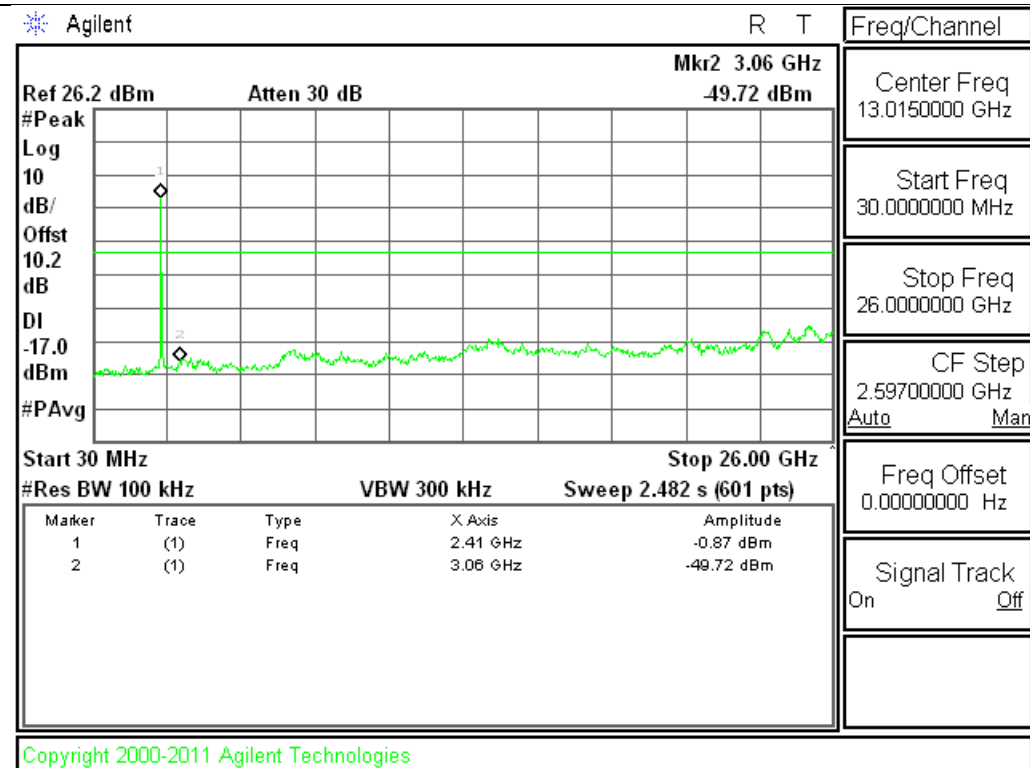
9.6.2. 802.11g MODE IN THE 2.4 GHz BAND

IN-BAND REFERENCE LEVEL

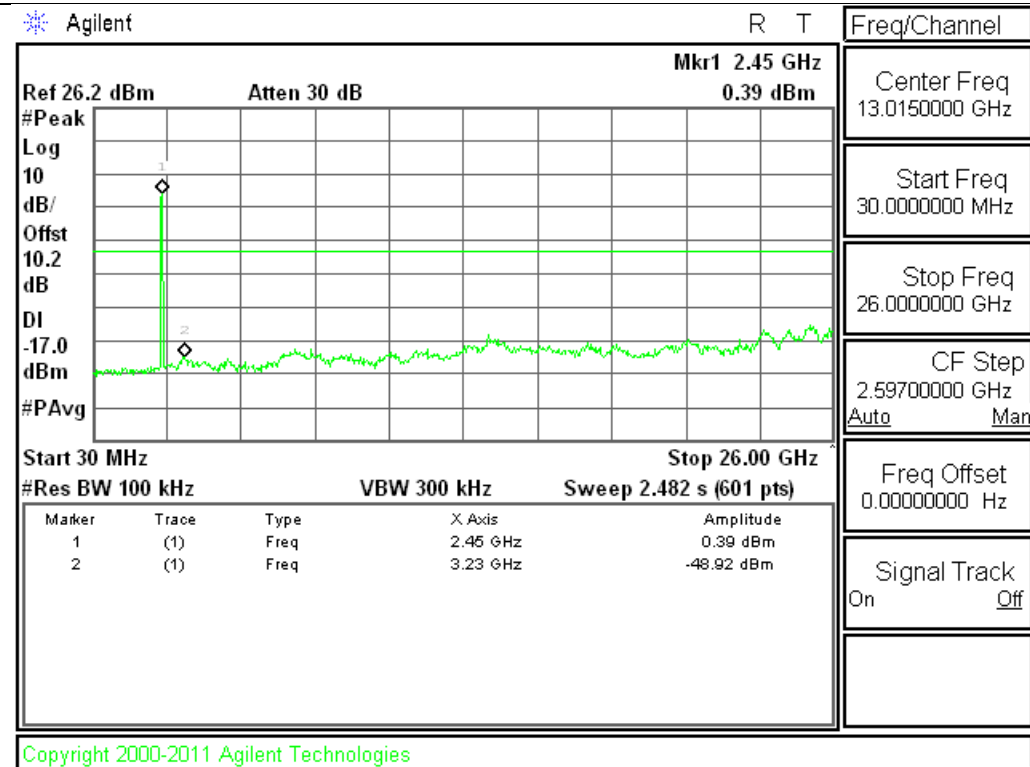


LOW CHANNEL BANDEDGE**AUTHORIZED BAND EDGE LOW CH**

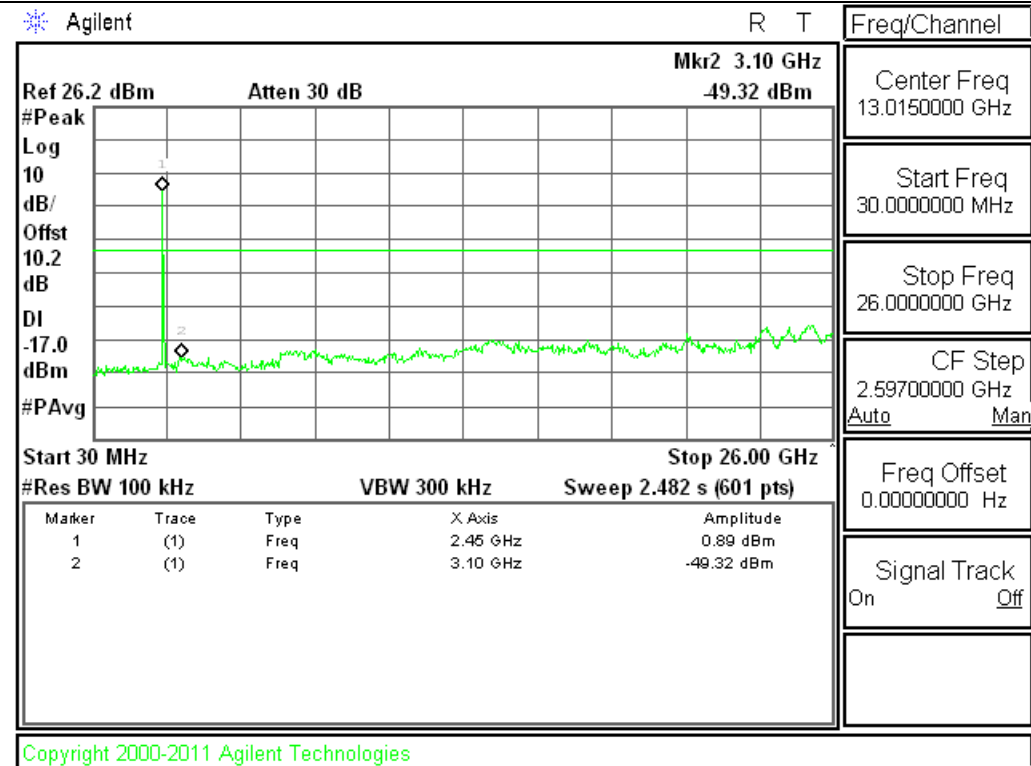
HIGH CHANNEL BANDEDGE**AUTHORIZED BAND EDGE HIGH CH**

OUT-OF-BAND EMISSIONS**OUT OF BAND LOW CH**

OUT OF BAND MID CH

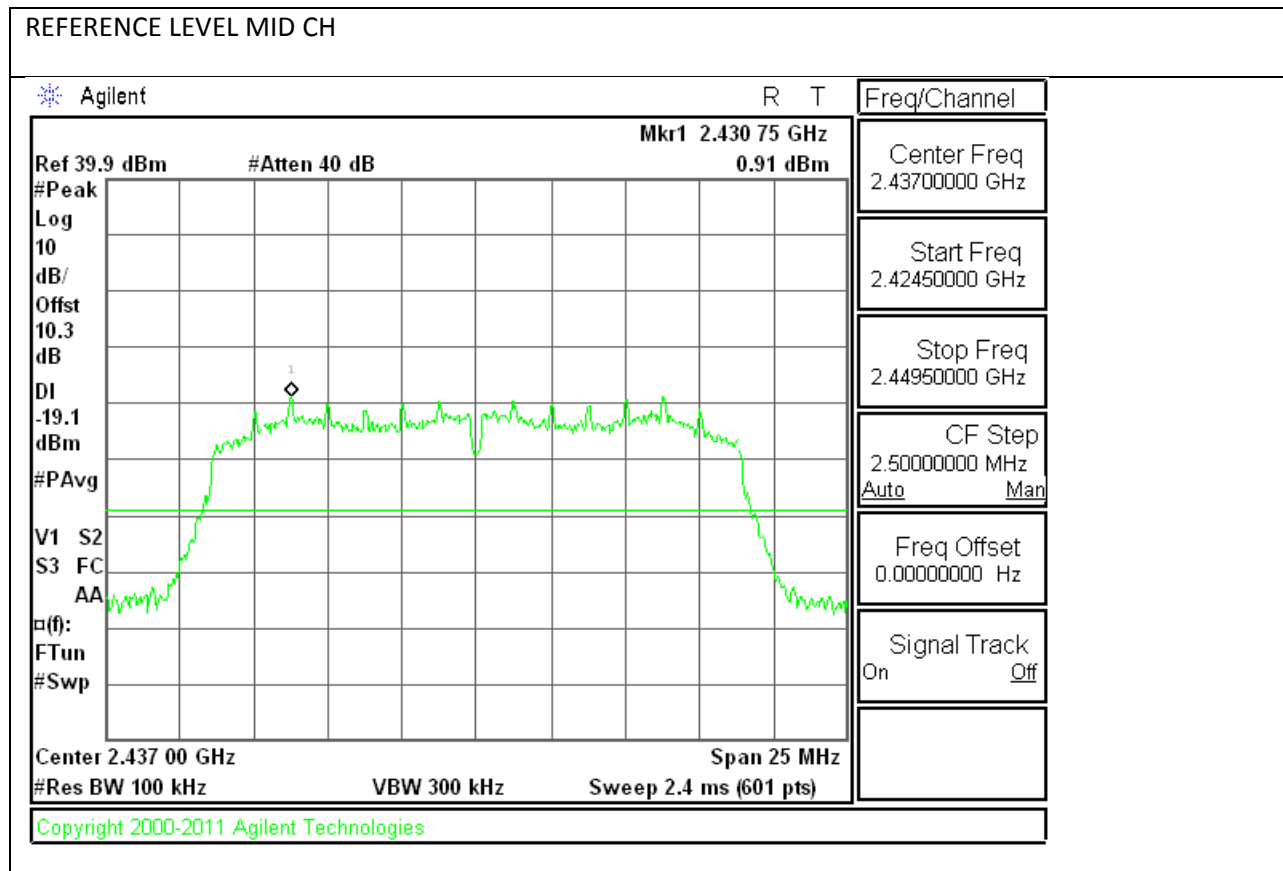


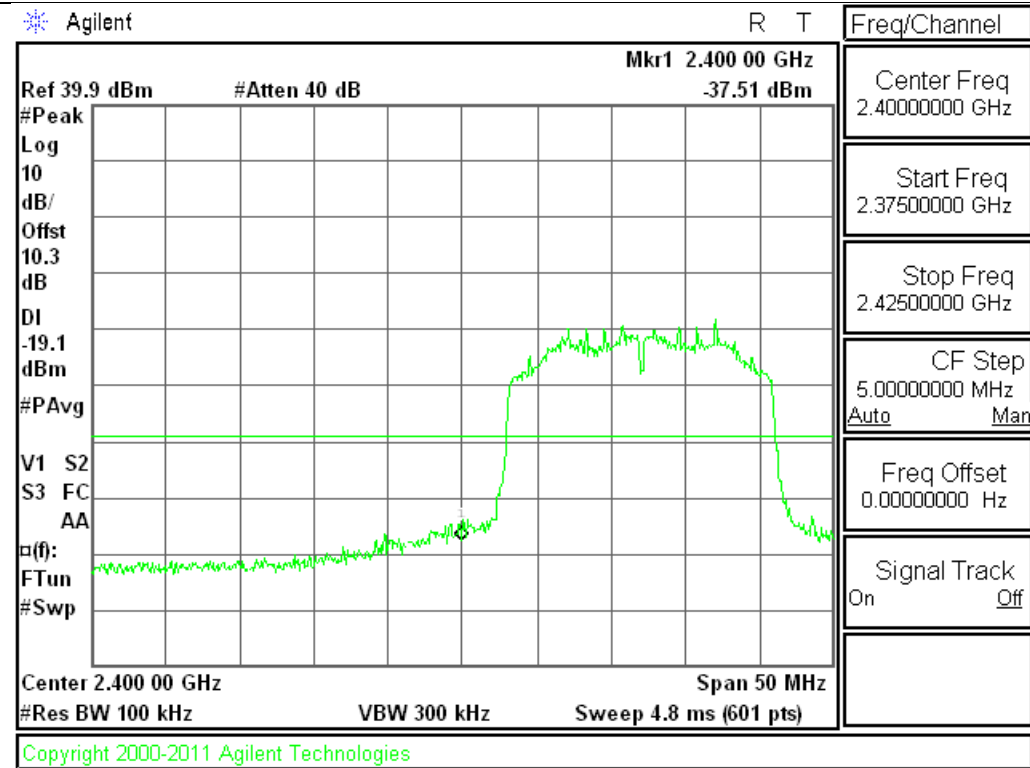
OUT OF BAND HIGH CH

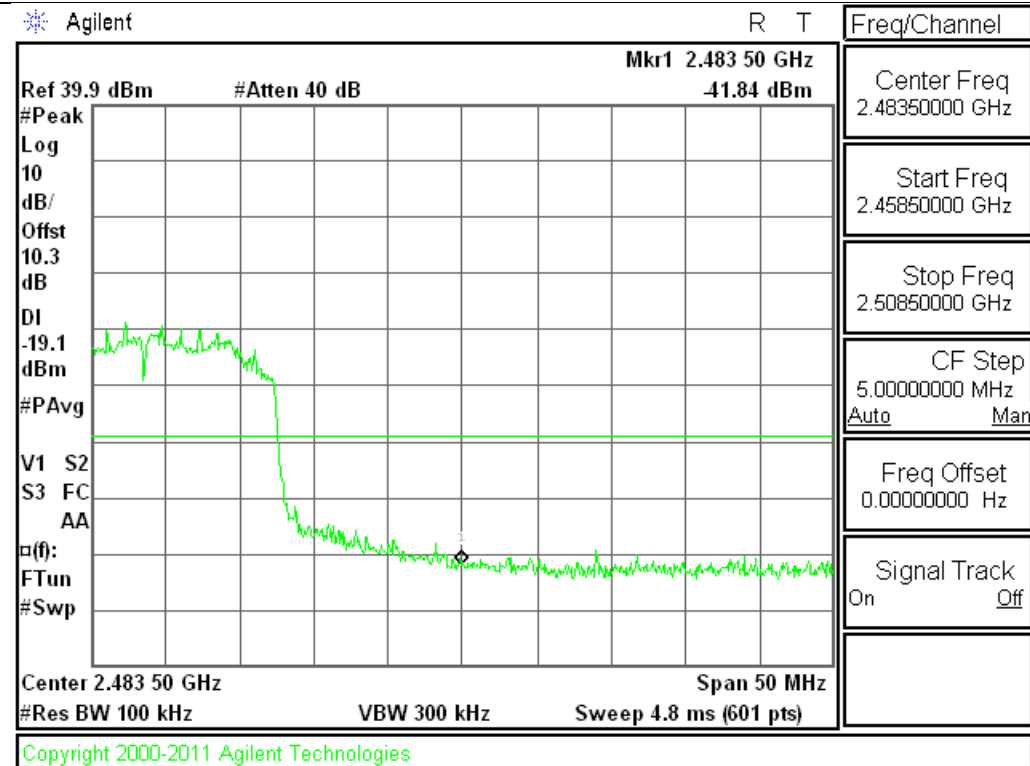


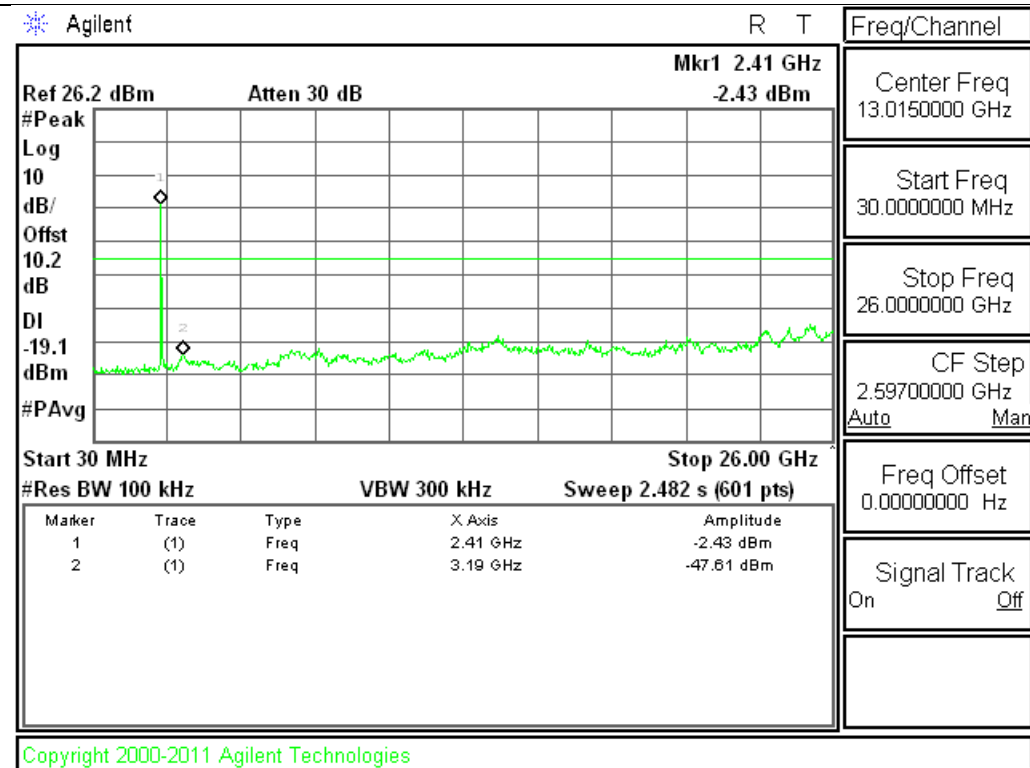
9.6.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

IN-BAND REFERENCE LEVEL

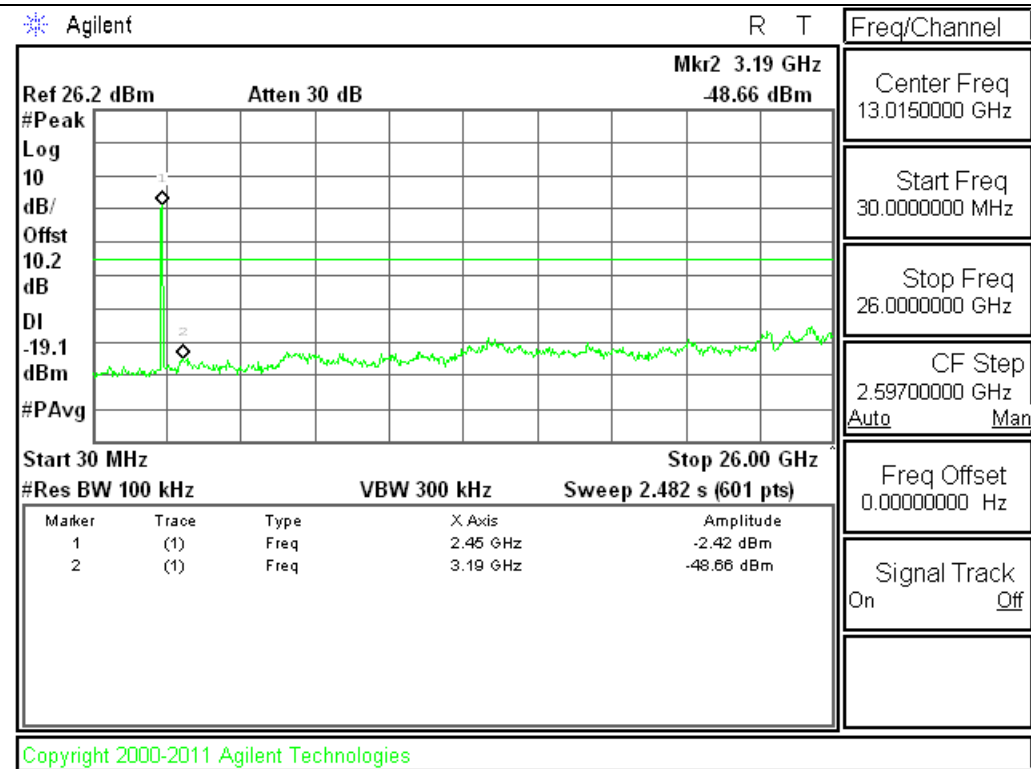


LOW CHANNEL BANDEDGE**AUTHORIZED BAND EDGE LOW CH**

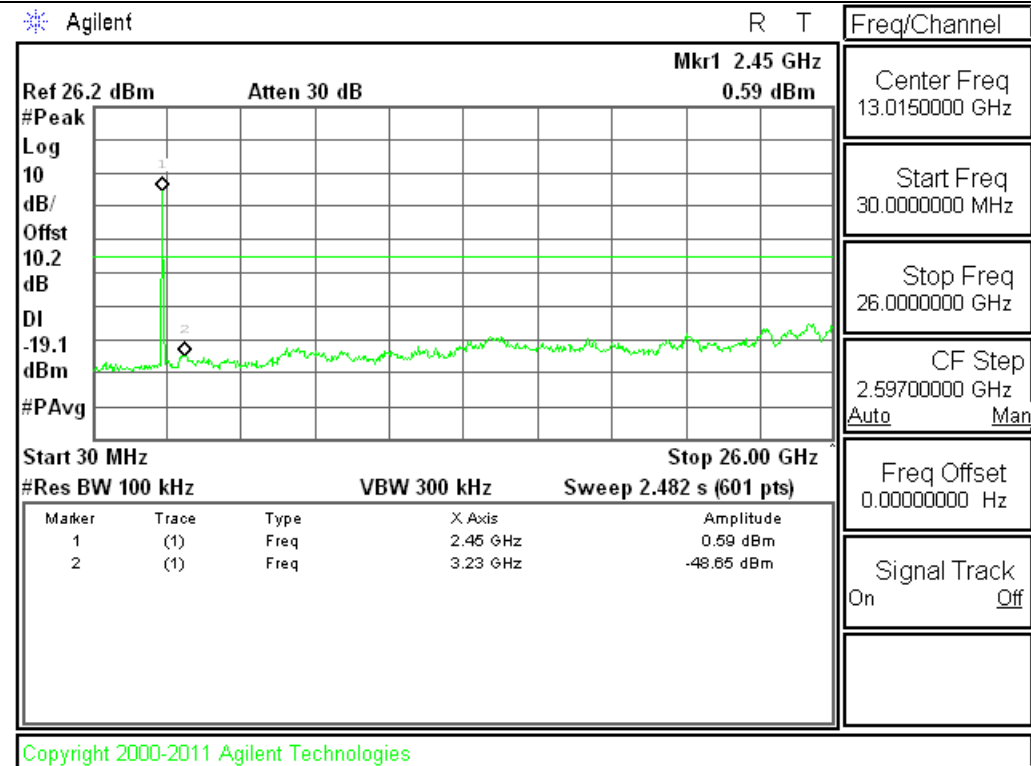
HIGH CHANNEL BANDEDGE**AUTHORIZED BAND EDGE HIGH CH**

OUT-OF-BAND EMISSIONS**OUT OF BAND LOW CH**

OUT OF BAND MID CH



OUT OF BAND HIGH CH



10. RADIATED TEST RESULTS

10.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-210 Clause 2.6 (Transmitter)

IC RSS-GEN Clause 6 (Receiver)

Frequency Range (MHz)	Field Strength Limit ($\mu\text{V/m}$) at 3 m	Field Strength Limit (dB $\mu\text{V/m}$) 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 = $10\log(1/x)$ For this sample B mode = 0dB (duty cycle >98%); G mode = 0.3dB; N mode = 0.4dB.

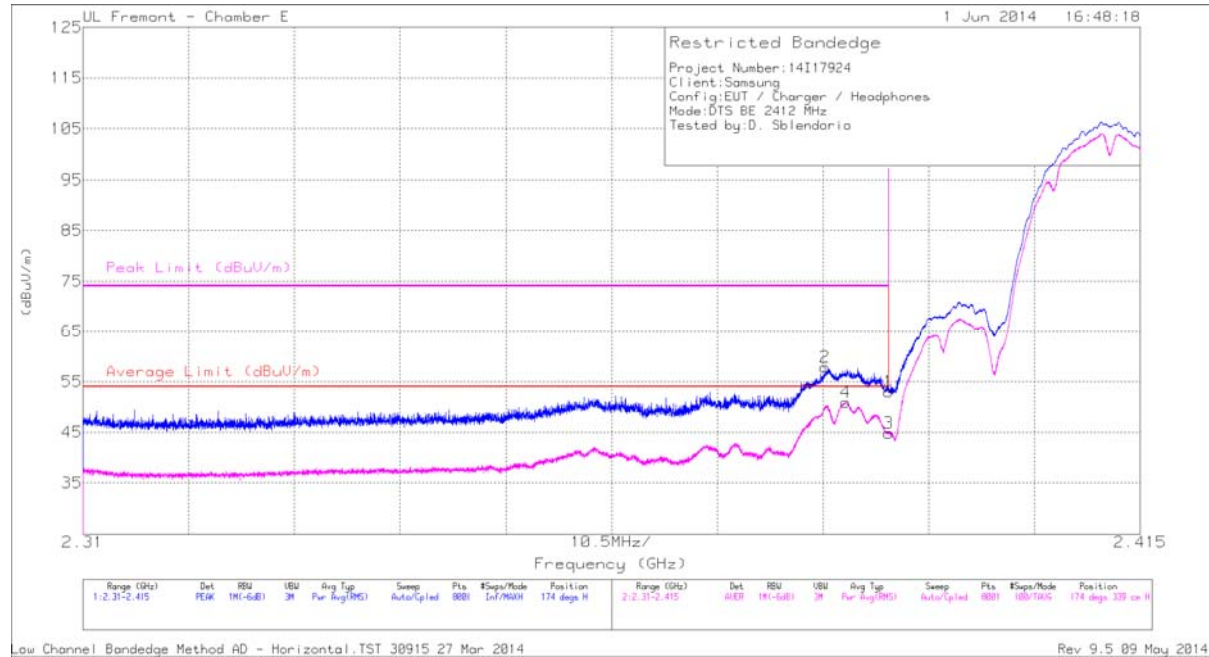
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

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)

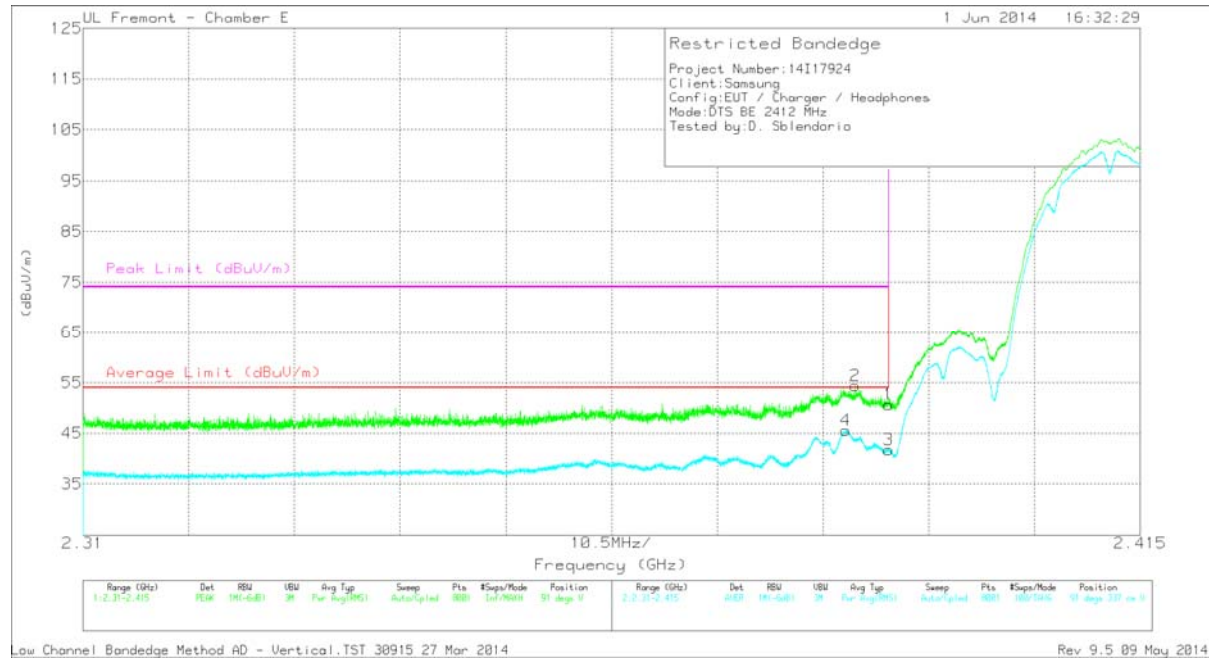


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.384	50.54	PK	31.9	-24.6	57.84	-	-	74	-16.16	174	339	H
4	* 2.386	43.62	RMS	32	-24.7	50.92	54	-3.08	-	-	174	339	H
1	* 2.39	45.69	PK	32	-24.7	52.99	-	-	74	-21.01	174	339	H
3	* 2.39	37.51	RMS	32	-24.7	44.81	54	-9.19	-	-	174	339	H

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

PK - Peak detector

RMS - RMS detection



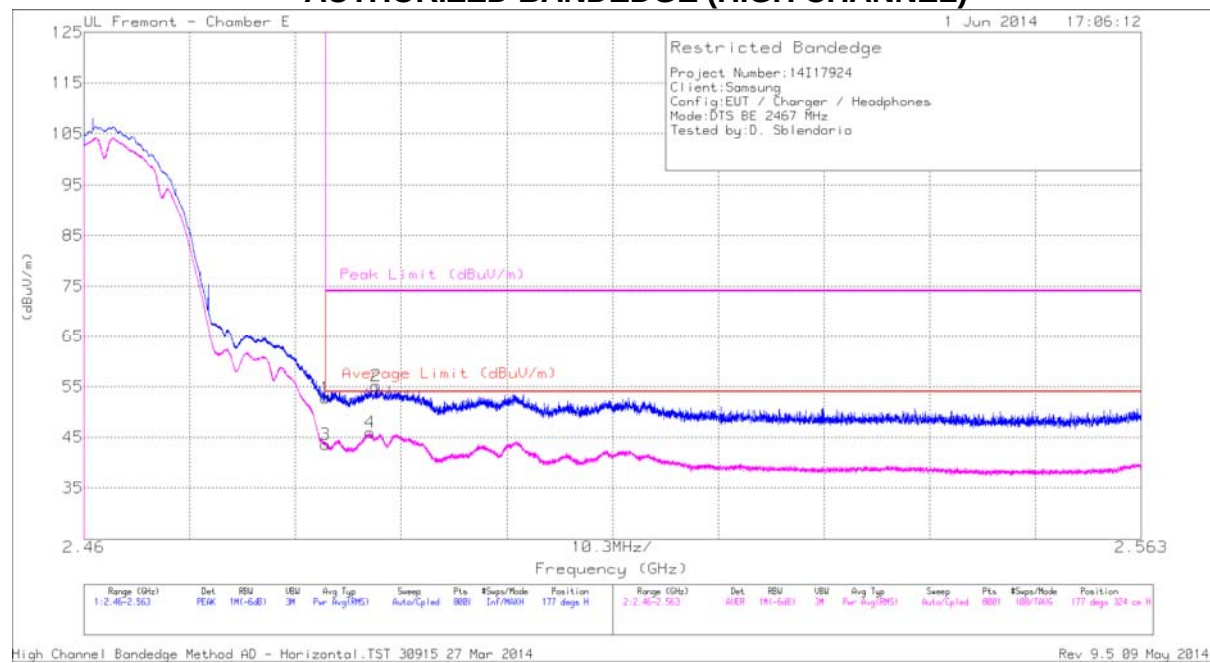
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cb/Filter/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 2.386	38.32	RMS	32	-24.7	0	45.62	54	-8.38	-	-	91	337	V
2	* 2.387	47.11	PK	32	-24.7	0	54.41	-	-	74	-19.59	91	337	V
1	* 2.39	43.34	PK	32	-24.7	0	50.64	-	-	74	-23.36	91	337	V
3	* 2.39	34.42	RMS	32	-24.7	0	41.72	54	-12.28	-	-	91	337	V

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

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL)



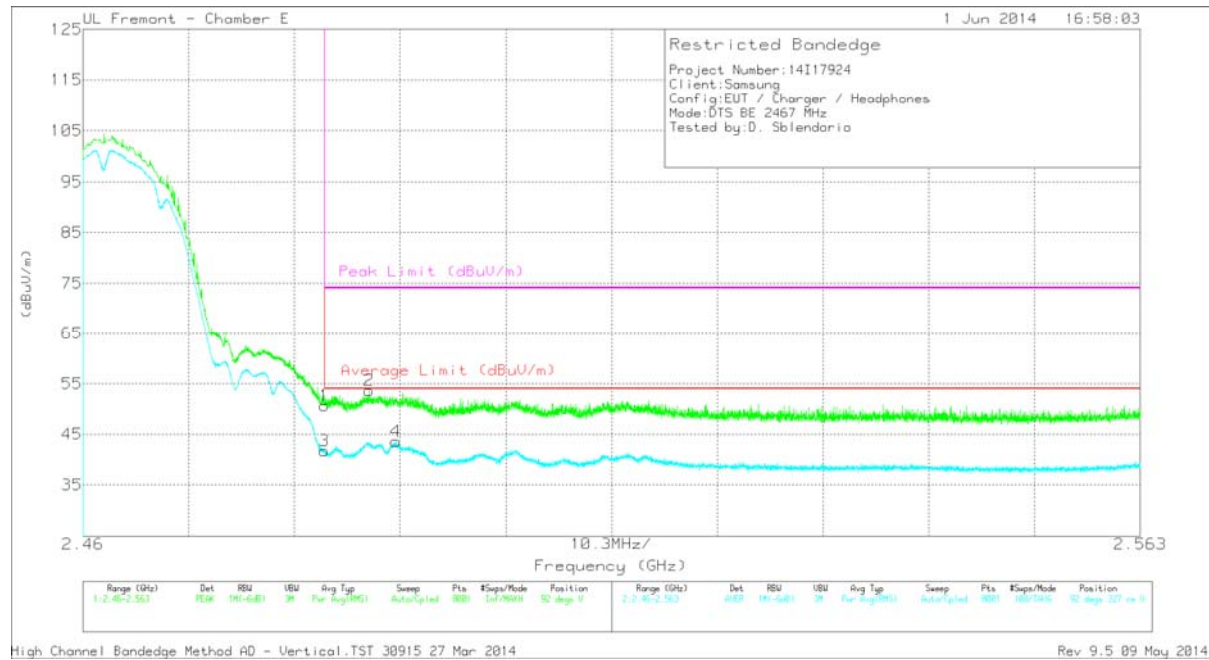
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (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	44.79	PK	32.3	-24.3	52.79	-	-	74	-21.21	177	324	H
2	* 2.488	47.1	PK	32.3	-24.3	55.1	-	-	74	-18.9	177	324	H
3	* 2.484	35.64	RMS	32.3	-24.3	43.64	54	-10.36	-	-	177	324	H
4	* 2.488	37.89	RMS	32.3	-24.3	45.89	54	-8.11	-	-	177	324	H

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

PK - Peak detector

RMS - RMS detection



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	42.61	PK	32.3	-24.3	50.61	-	-	74	-23.39	92	327	V
2	* 2.488	45.63	PK	32.3	-24.3	53.63	-	-	74	-20.37	92	327	V
3	* 2.484	33.73	RMS	32.3	-24.3	41.73	54	-12.27	-	-	92	327	V
4	* 2.49	35.54	RMS	32.3	-24.3	43.54	54	-10.46	-	-	92	327	V

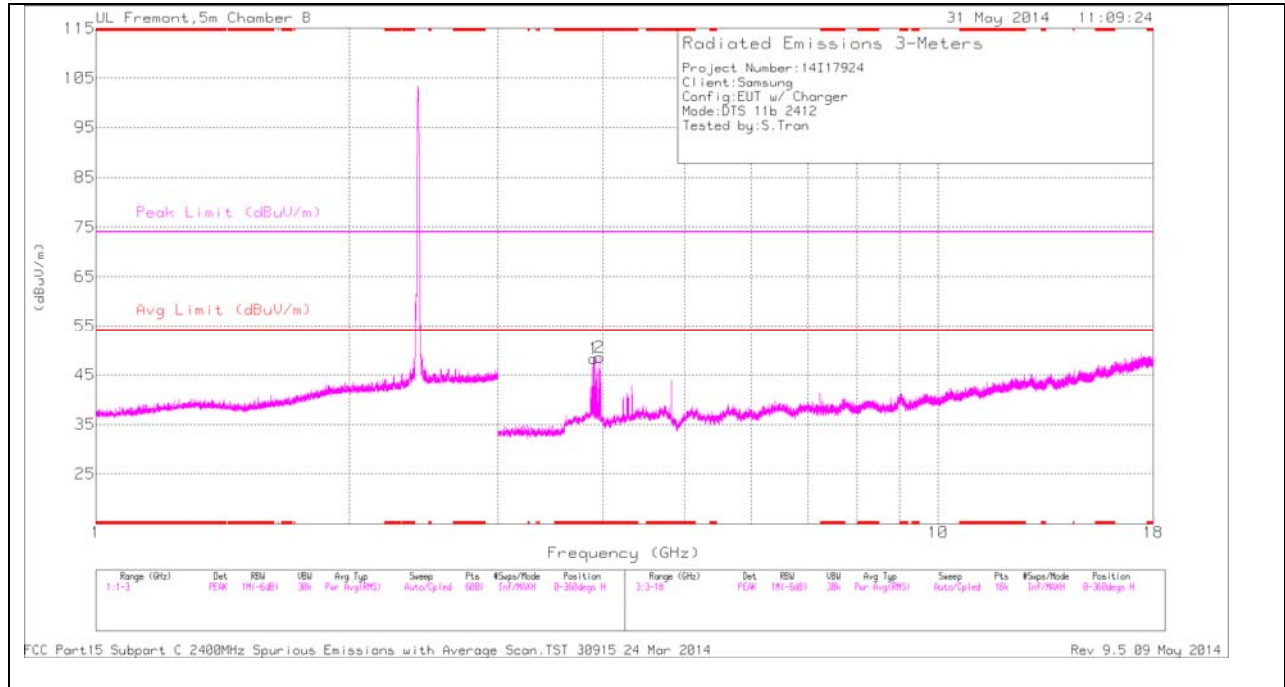
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

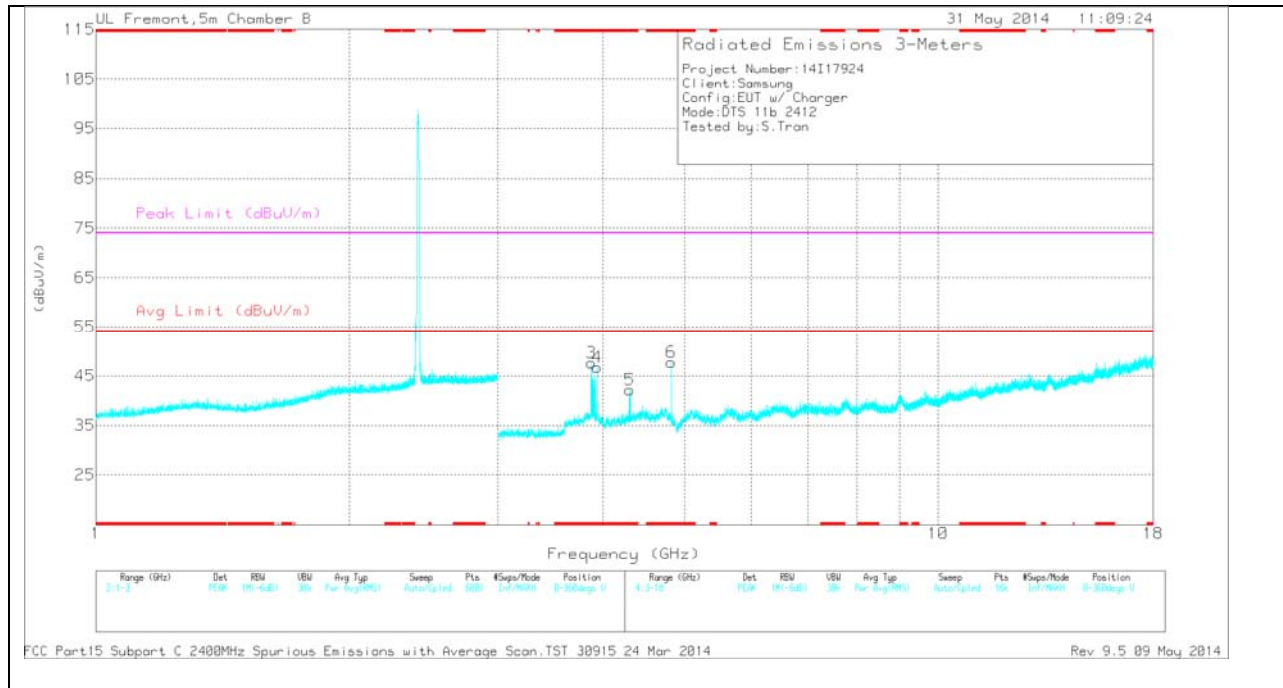
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



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

LOW CHANNEL VERTICAL



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

LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/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	* 3.899	44.71	PK	33.8	-30.3	48.21	-	-	74	-25.79	0-360	201	H
2	* 3.965	45.69	PK	33.7	-30.9	48.49	-	-	74	-25.51	0-360	101	H
3	* 3.873	44.11	PK	33.8	-30.3	47.61	-	-	74	-26.39	0-360	201	V
4	* 3.936	43.52	PK	33.7	-30.5	46.72	-	-	74	-27.28	0-360	201	V
5	* 4.303	39.71	PK	33.7	-31.2	42.21	-	-	74	-31.79	0-360	101	V
6	* 4.824	43.41	PK	34.2	-29.8	47.81	-	-	74	-26.19	0-360	201	V

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

PK - Peak detector

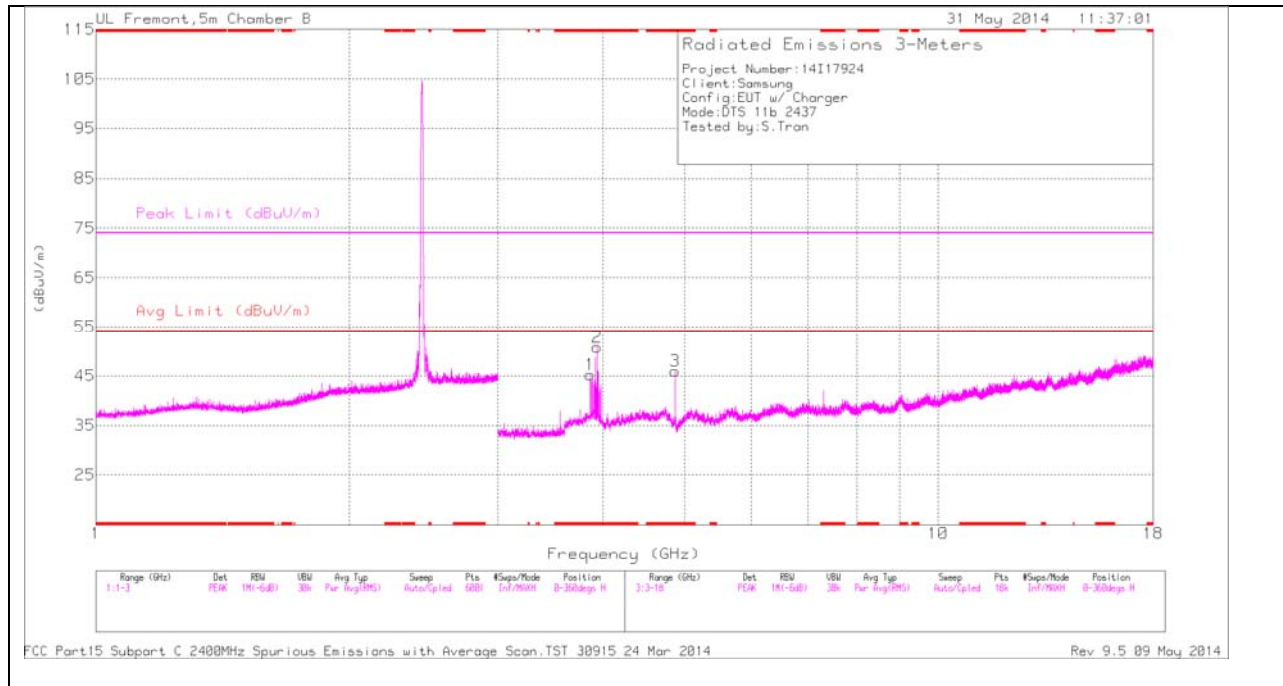
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.901	45.01	PK2	33.8	-30.3	48.51	-	-	74	-25.49	1	203	H
* 3.898	30.91	MAV1	33.8	-30.3	34.41	54	-19.59	-	-	1	203	H
* 3.967	31.09	MAV1	33.7	-30.9	33.89	54	-20.11	-	-	1	101	H
* 3.875	31.56	MAV1	33.8	-30.3	35.06	54	-18.94	-	-	1	202	V
* 4.824	31.03	MAV1	34.2	-29.8	35.43	54	-18.57	-	-	1	202	V
* 4.303	31.2	MAV1	33.7	-31.2	33.7	54	-20.3	-	-	1	102	V

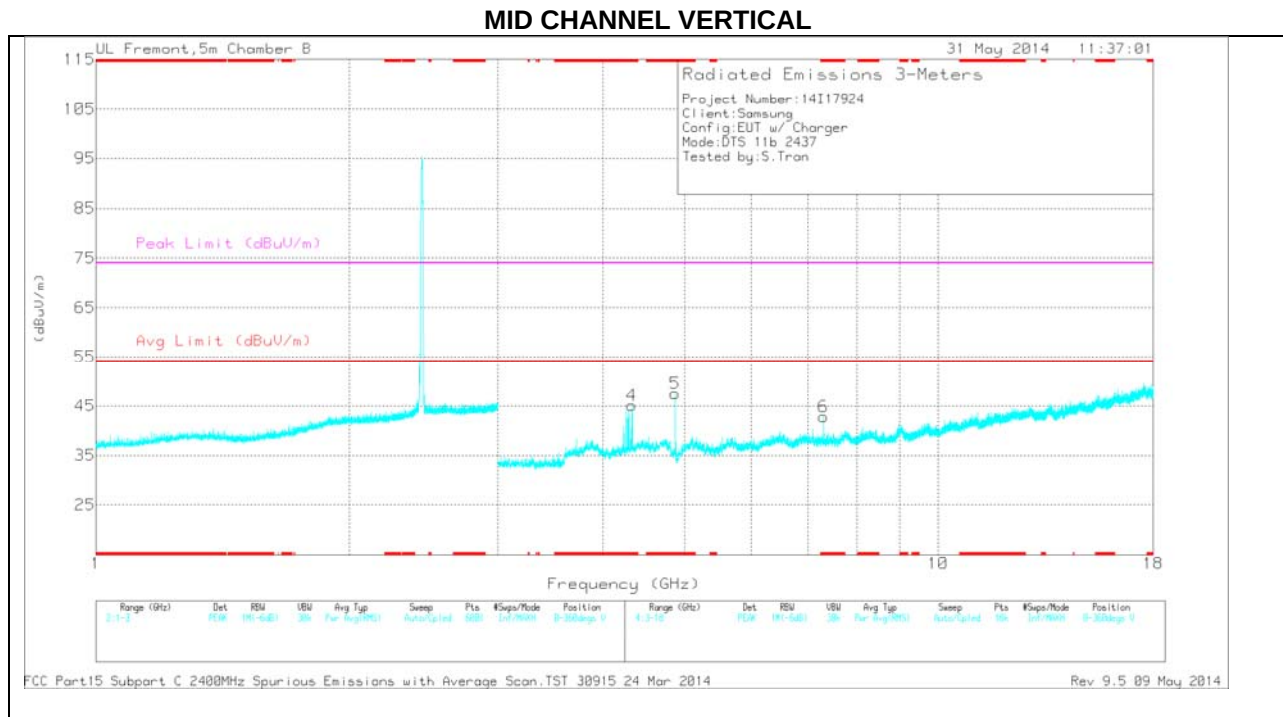
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MID CHANNEL HORIZONTAL



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



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

MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/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	* 3.865	41.91	PK	33.7	-30.4	45.21	-	-	74	-28.79	0-360	100	H
2	* 3.935	47.55	PK	33.7	-30.5	50.75	-	-	74	-23.25	0-360	200	H
3	* 4.874	42.3	PK	34.2	-30.5	46	-	-	74	-28	0-360	200	H
4	* 4.33	42.58	PK	33.7	-31.2	45.08	-	-	74	-28.92	0-360	201	V
5	* 4.874	43.84	PK	34.2	-30.5	47.54	-	-	74	-26.46	0-360	201	V
6	* 7.311	35.33	PK	35.6	-28.1	42.83	-	-	74	-31.17	0-360	201	V

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

PK - Peak detector

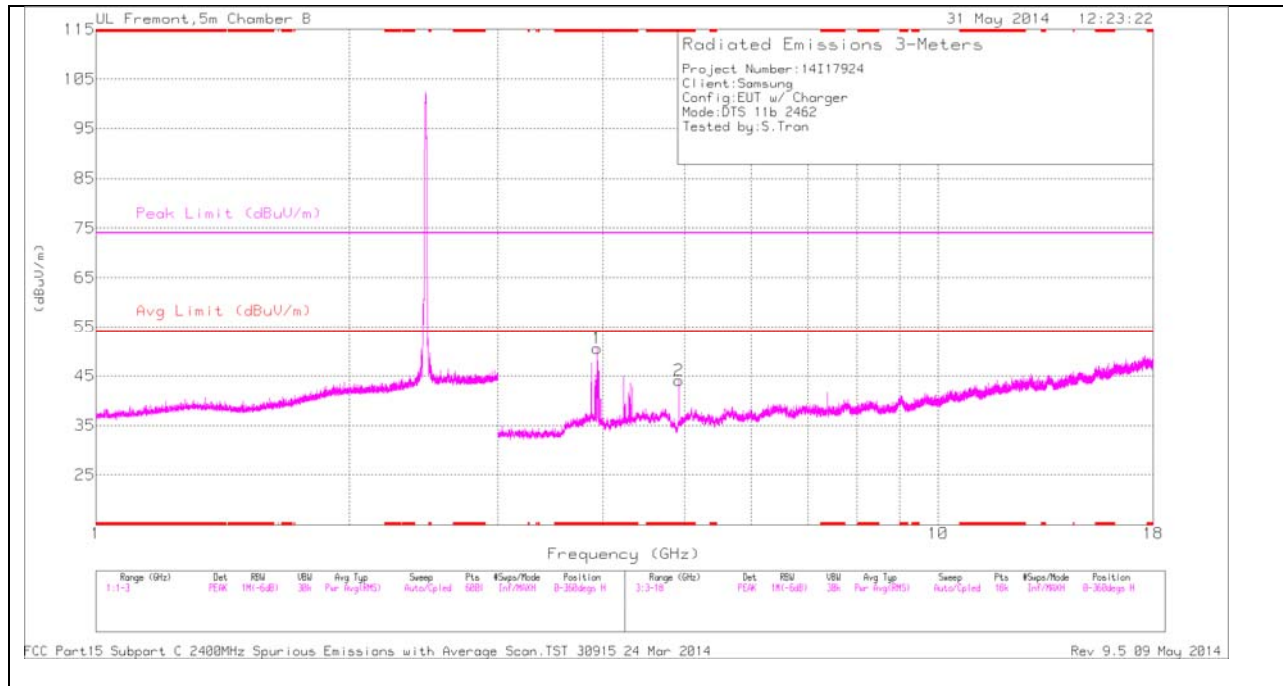
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.864	42.96	PK2	33.7	-30.4	46.26	-	-	74	-27.74	1	101	H
* 3.866	31.06	MAV1	33.7	-30.4	34.36	54	-19.64	-	-	1	101	H
* 3.936	42.38	PK2	33.7	-30.5	45.58	-	-	74	-28.42	1	201	H
* 3.935	31.23	MAV1	33.7	-30.5	34.43	54	-19.57	-	-	1	201	H
* 4.875	40.87	PK2	34.2	-30.5	44.57	-	-	74	-29.43	1	201	H
* 4.874	31.47	MAV1	34.2	-30.5	35.17	54	-18.83	-	-	1	201	H
* 4.331	42.15	PK2	33.7	-31.2	44.65	-	-	74	-29.35	1	201	V
* 4.331	32.06	MAV1	33.7	-31.2	34.56	54	-19.44	-	-	1	201	V
* 4.874	48.14	PK2	34.2	-30.5	51.84	-	-	74	-22.16	56	272	V
* 4.874	44.2	MAV1	34.2	-30.5	47.9	54	-6.1	-	-	56	272	V
* 7.311	43.72	PK2	35.6	-28.1	51.22	-	-	74	-22.78	56	202	V
* 7.312	35.65	MAV1	35.6	-28.1	43.15	54	-10.85	-	-	56	202	V

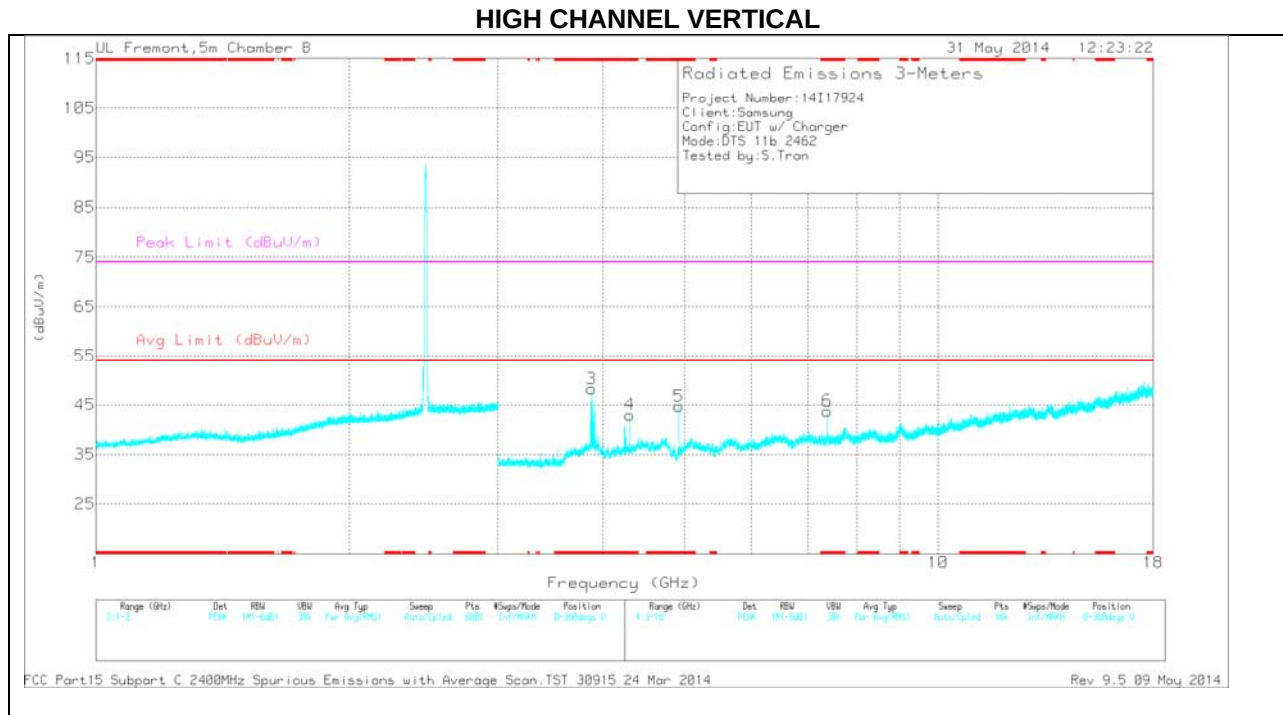
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

HIGH CHANNEL HORIZONTAL



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



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

HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/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	* 3.939	47.33	PK	33.7	-30.5	50.53	-	-	74	-23.47	0-360	201	H
2	* 4.924	40.62	PK	34.2	-30.8	44.02	-	-	74	-29.98	0-360	201	H
3	* 3.874	44.72	PK	33.8	-30.3	48.22	-	-	74	-25.78	0-360	200	V
4	* 4.303	40.5	PK	33.7	-31.2	43	-	-	74	-31	0-360	101	V
5	* 4.924	41.31	PK	34.2	-30.8	44.71	-	-	74	-29.29	0-360	101	V
6	* 7.386	35.56	PK	35.6	-27.4	43.76	-	-	74	-30.24	0-360	200	V

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

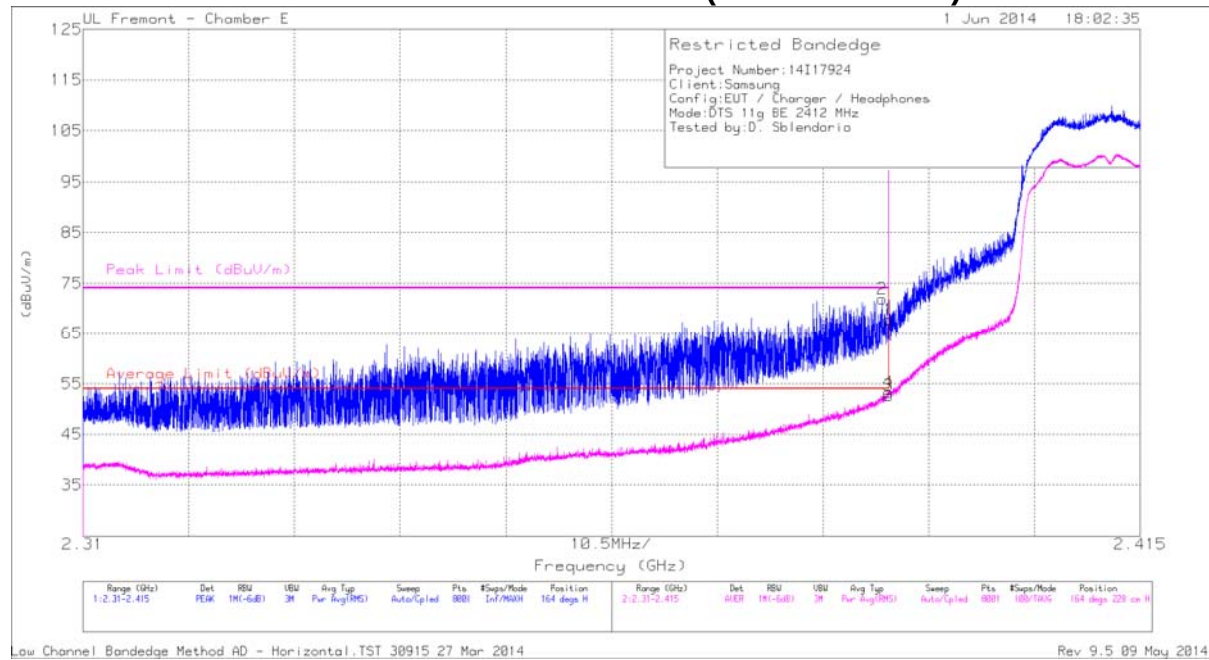
PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.941	41.64	PK2	33.7	-30.5	44.84	-	-	74	-29.16	1	203	H
* 3.941	31.01	MAV1	33.7	-30.5	34.21	54	-19.79	-	-	1	203	H
* 4.924	47.75	PK2	34.2	-30.8	51.15	-	-	74	-22.85	93	250	H
* 4.924	42.91	MAV1	34.2	-30.8	46.31	54	-7.69	-	-	93	250	H
* 3.876	42.39	PK2	33.8	-30.3	45.89	-	-	74	-28.11	93	201	V
* 3.873	31.65	MAV1	33.8	-30.3	35.15	54	-18.85	-	-	93	201	V
* 4.304	41.27	PK2	33.7	-31.2	43.77	-	-	74	-30.23	93	102	V
* 4.302	30.74	MAV1	33.7	-31.2	33.24	54	-20.76	-	-	93	102	V
* 4.924	46.62	PK2	34.2	-30.8	50.02	-	-	74	-23.98	329	102	V
* 4.924	41.6	MAV1	34.2	-30.8	45	54	-9	-	-	329	102	V
* 7.386	41.51	PK2	35.6	-27.4	49.71	-	-	74	-24.29	329	201	V
* 7.386	31.8	MAV1	35.6	-27.4	40	54	-14	-	-	329	201	V

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

PK2 - KDB558074 Method: Maximum Peak

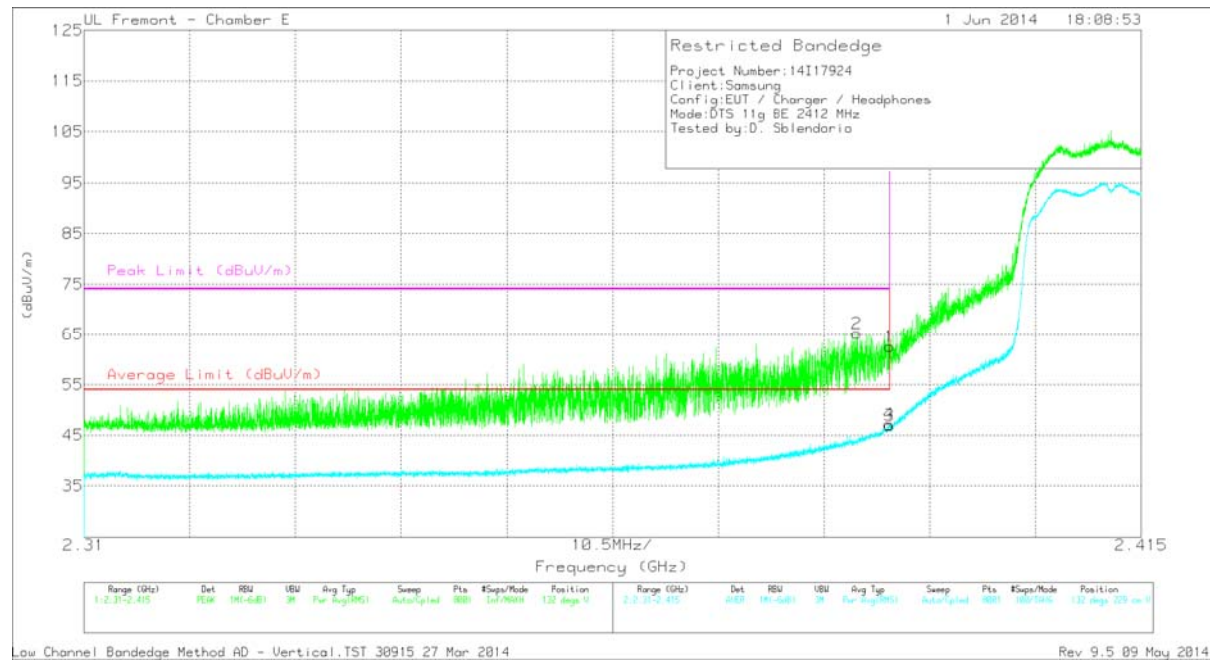
10.2.1. TX ABOVE 1 GHz 802.11b MODE IN THE 2.4 GHz BAND**RESTRICTED BANDEDGE (LOW CHANNEL)**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AFT346 (dB/m)	Amp/Cbl/Filt 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	60.49	PK	32	-24.7	0	67.79	-	-	74	-6.21	164	228	H
2	* 2.389	64.65	PK	32	-24.7	0	71.95	-	-	74	-2.05	164	228	H
3	* 2.39	45.08	RMS	32	-24.7	.3	52.68	54	-1.32	-	-	164	228	H
4	* 2.39	45.69	RMS	32	-24.7	.3	53.29	54	-.71	-	-	164	228	H

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

PK - Peak detector

RMS - RMS detection

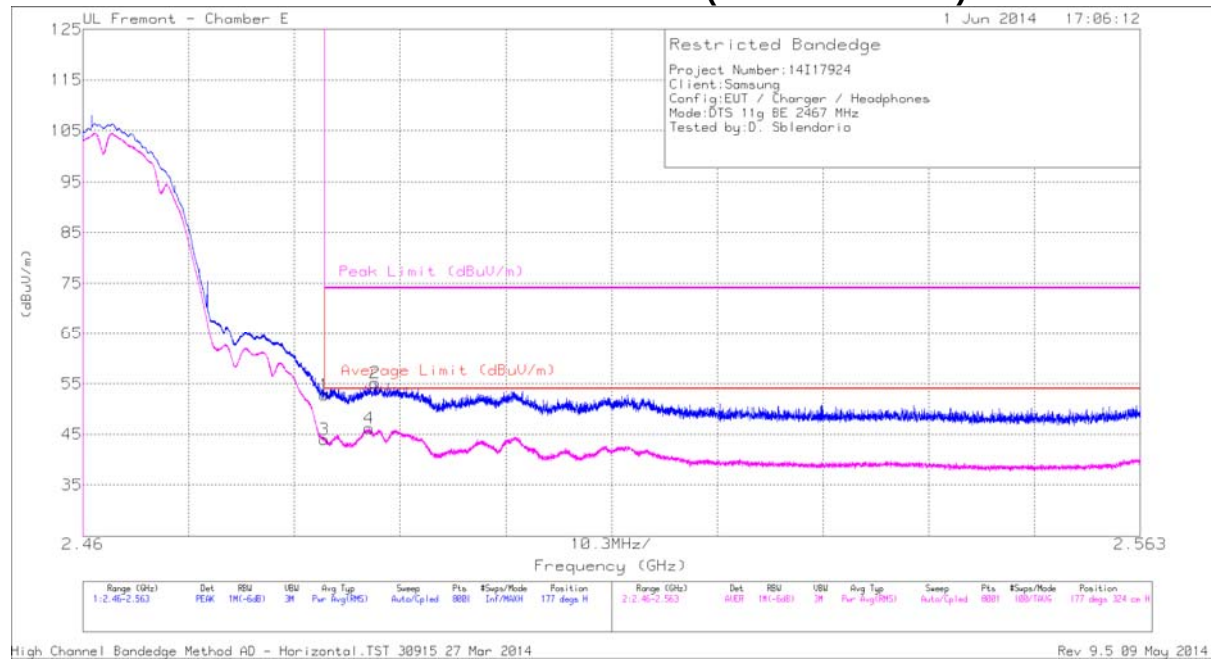


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF 1346 (dB/m)	Amp/Ch/Flt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	55.33	PK	32	-24.7	0	62.63	-	-	74	-11.37	132	229	V
2	* 2.387	57.92	PK	32	-24.7	0	65.22	-	-	74	-8.78	132	229	V
3	* 2.39	39.31	RMS	32	-24.7	.3	46.91	54	-7.09	-	-	132	229	V
4	* 2.39	39.53	RMS	32	-24.7	.3	47.13	54	-6.87	-	-	132	229	V

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

PK - Peak detector

RMS - RMS detection

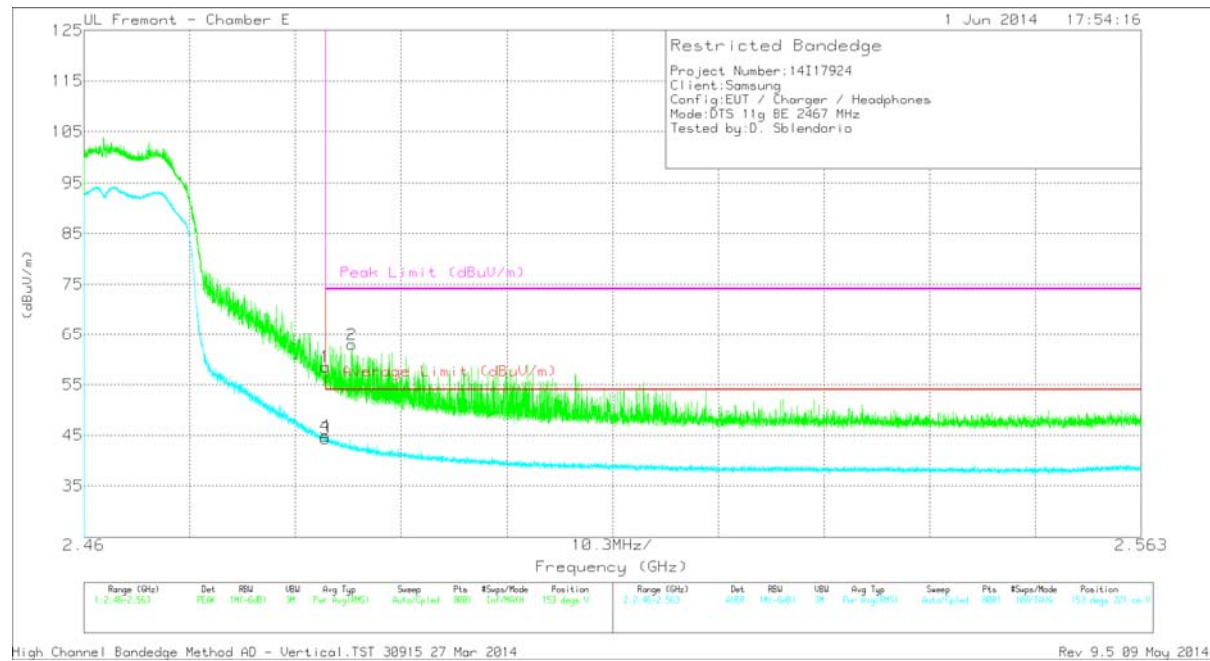
AUTHORIZED BANDEDGE (HIGH CHANNEL)**Trace Markers**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AFT346 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	44.79	PK	32.3	-24.3	0	52.79	-	-	74	-21.21	177	324	H
2	* 2.488	47.1	PK	32.3	-24.3	0	55.1	-	-	74	-18.9	177	324	H
3	* 2.484	35.66	RMS	32.3	-24.3	.3	43.96	54	-10.04	-	-	177	324	H
4	* 2.488	37.91	RMS	32.3	-24.3	.3	46.21	54	-7.79	-	-	177	324	H

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

PK - Peak detector

RMS - RMS detection



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (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	50.45	PK	32.3	-24.3	58.45	-	-	74	-15.55	153	221	V
2	* 2.486	55	PK	32.3	-24.3	63	-	-	74	-11	153	221	V
3	* 2.484	36.32	RMS	32.3	-24.3	44.32	54	-9.68	-	-	153	221	V
4	* 2.484	36.78	RMS	32.3	-24.3	44.78	54	-9.22	-	-	153	221	V

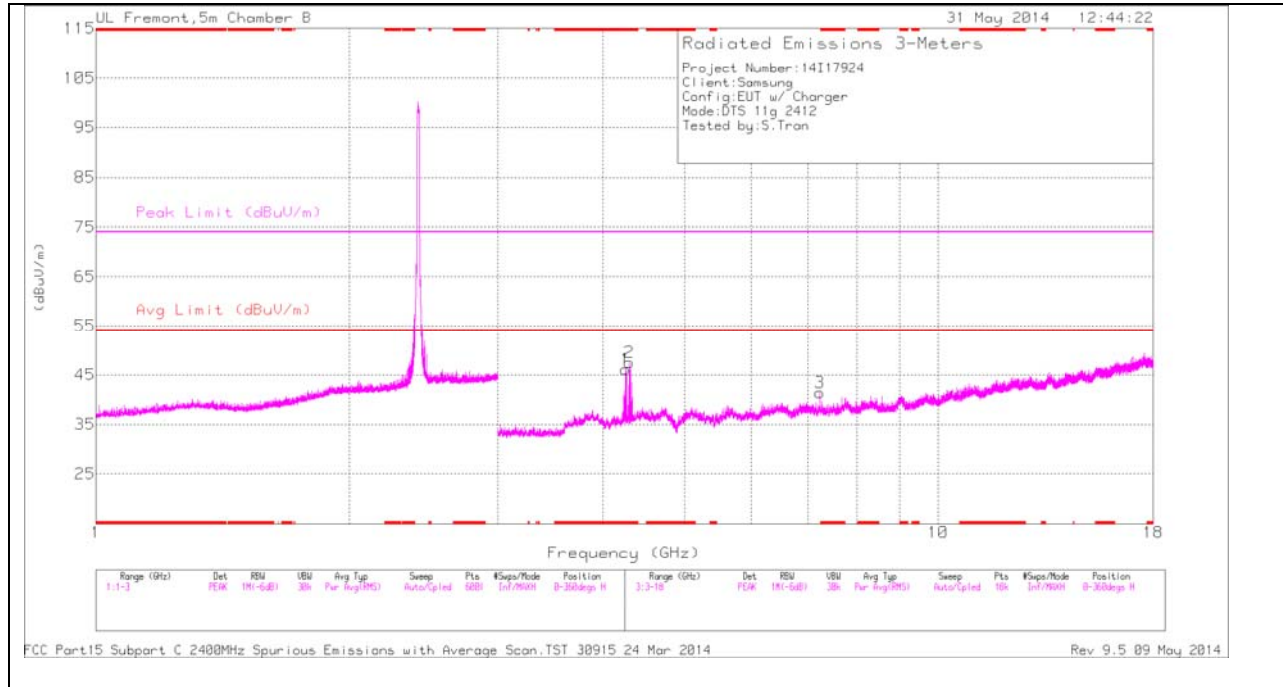
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

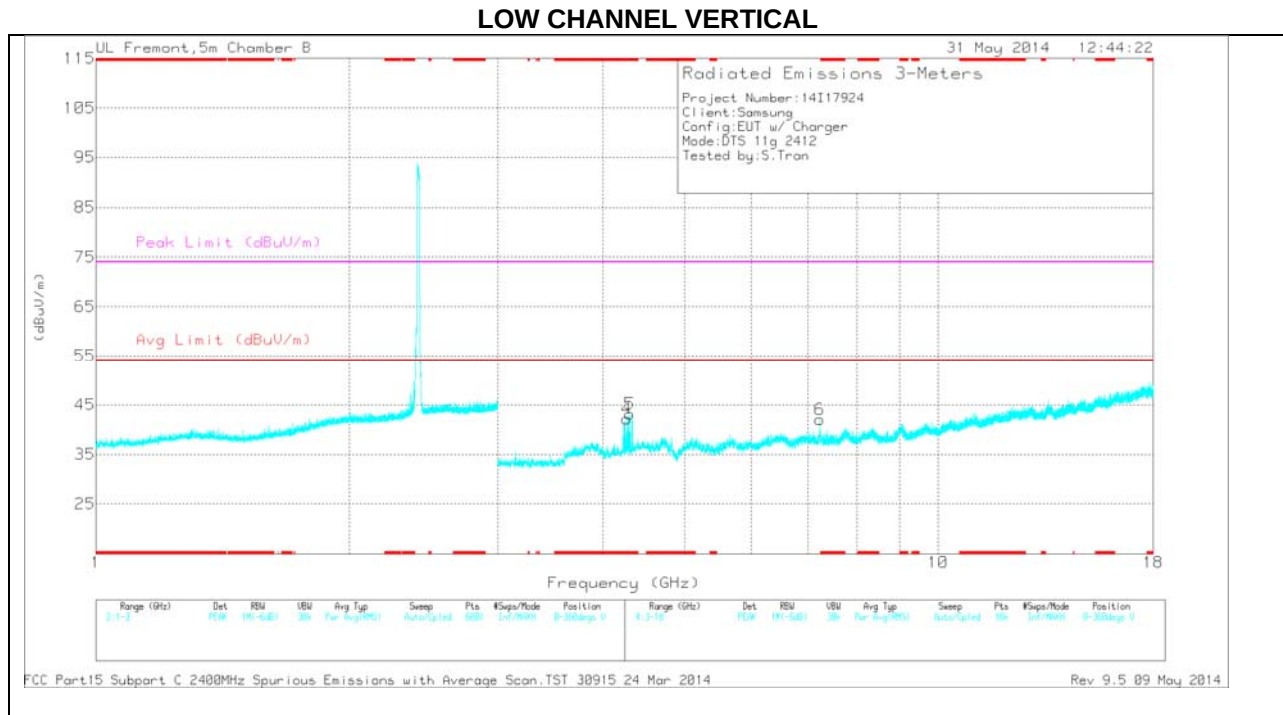
RMS - RMS detection

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.



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

LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr /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	* 4.254	42.93	PK	33.6	-30.4	0	46.13	-	-	74	-27.87	0-360	100	H
2	* 4.295	44.9	PK	33.7	-31.1	0	47.5	-	-	74	-26.5	0-360	201	H
4	* 4.265	39.15	PK	33.6	-30.6	0	42.15	-	-	74	-31.85	0-360	100	V
5	* 4.307	40.67	PK	33.7	-31.2	0	43.17	-	-	74	-30.83	0-360	201	V
3	7.236	33.1	PK	35.6	-27.3	0	41.4	-	-	-	-	0-360	201	H
6	7.236	33.7	PK	35.6	-27.3	0	42	-	-	-	-	0-360	201	V

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

PK - Peak detector

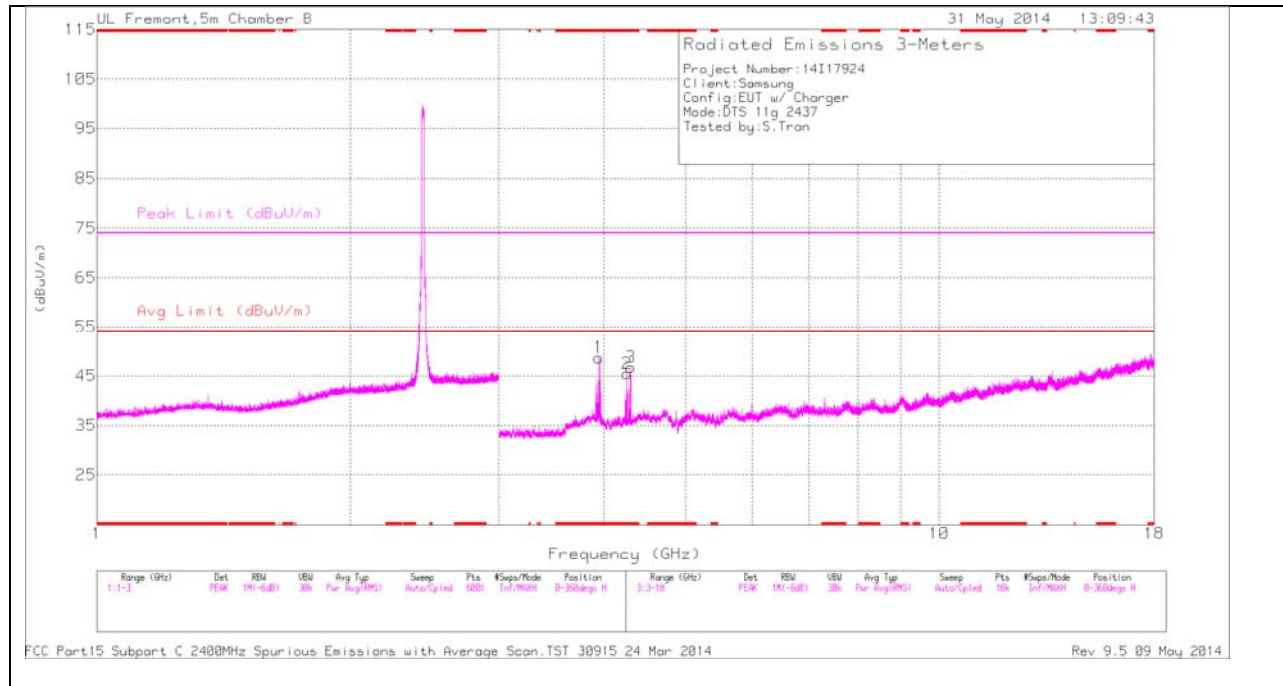
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr /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
* 4.253	40.74	PK2	33.6	-30.4	0	43.94	-	-	74	-30.06	360	100	H
* 4.254	30.42	MAV1	33.6	-30.4	.3	33.92	54	-20.08	-	-	360	100	H
* 4.297	41.82	PK2	33.7	-31.1	0	44.42	-	-	74	-29.58	360	203	H
* 4.294	30.96	MAV1	33.7	-31.1	.3	33.86	54	-20.14	-	-	360	203	H
* 4.264	41.35	PK2	33.6	-30.6	0	44.35	-	-	74	-29.65	15	101	V
* 4.265	29.93	MAV1	33.6	-30.6	.3	33.23	54	-20.77	-	-	15	101	V

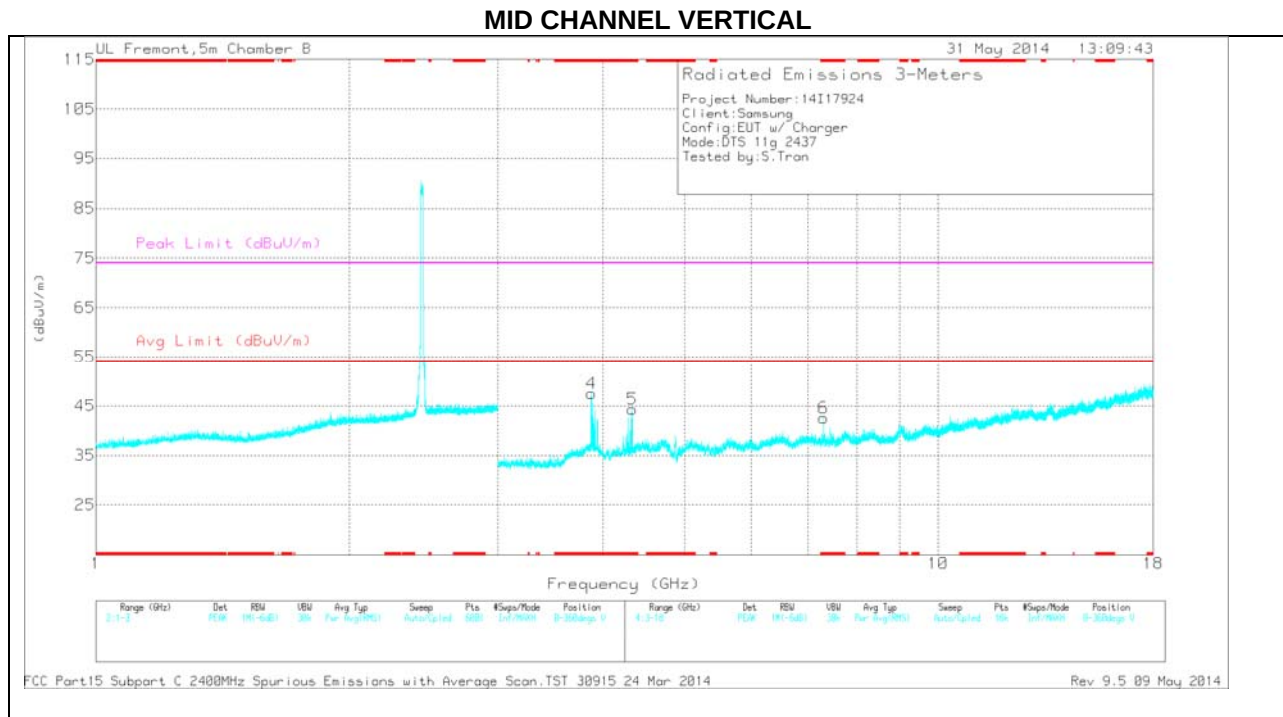
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MID CHANNEL HORIZONTAL



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



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

MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.946	45.61	PK	33.7	-30.6	0	48.71	-	-	74	-25.29	0-360	101	H
2	* 4.257	42.28	PK	33.6	-30.4	0	45.48	-	-	74	-28.52	0-360	200	H
3	* 4.305	44.19	PK	33.7	-31.2	0	46.69	-	-	74	-27.31	0-360	200	H
4	* 3.874	44	PK	33.8	-30.3	0	47.5	-	-	74	-26.5	0-360	201	V
5	* 4.332	41.88	PK	33.7	-31.2	0	44.38	-	-	74	-29.62	0-360	100	V
6	* 7.311	35.04	PK	35.6	-28.1	0	42.54	-	-	74	-31.46	0-360	201	V

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

PK - Peak detector

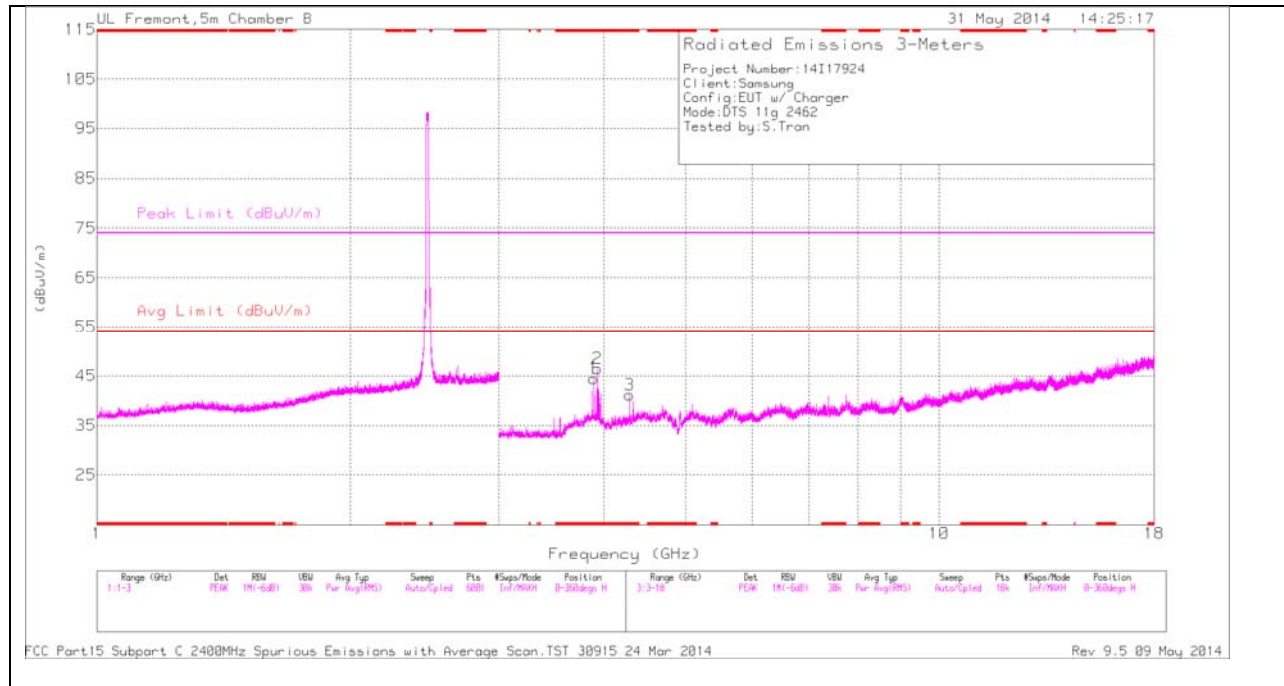
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.948	42.06	PK2	33.7	-30.6	0	45.16	-	-	74	-28.84	1	100	H
* 3.944	30.7	MAV1	33.7	-30.6	.3	34.1	54	-19.9	-	-	1	100	H
* 3.944	27.84	Avg	33.7	-30.6	0	30.94	54	-23.06	-	-	1	201	H
* 4.257	25.24	Avg	33.6	-30.4	0	28.44	54	-25.56	-	-	1	201	H
* 3.875	41.83	PK2	33.8	-30.3	0	45.33	-	-	74	-28.67	43	201	V
* 3.874	30.62	MAV1	33.8	-30.3	.3	34.42	54	-19.58	-	-	43	201	V
* 4.333	42.53	PK2	33.7	-31.2	0	45.03	-	-	74	-28.97	43	101	V
* 4.331	31.48	MAV1	33.7	-31.2	.3	34.28	54	-19.72	-	-	43	101	V
* 4.331	25.65	Avg	33.7	-31.2	0	28.15	54	-25.85	-	-	43	202	V

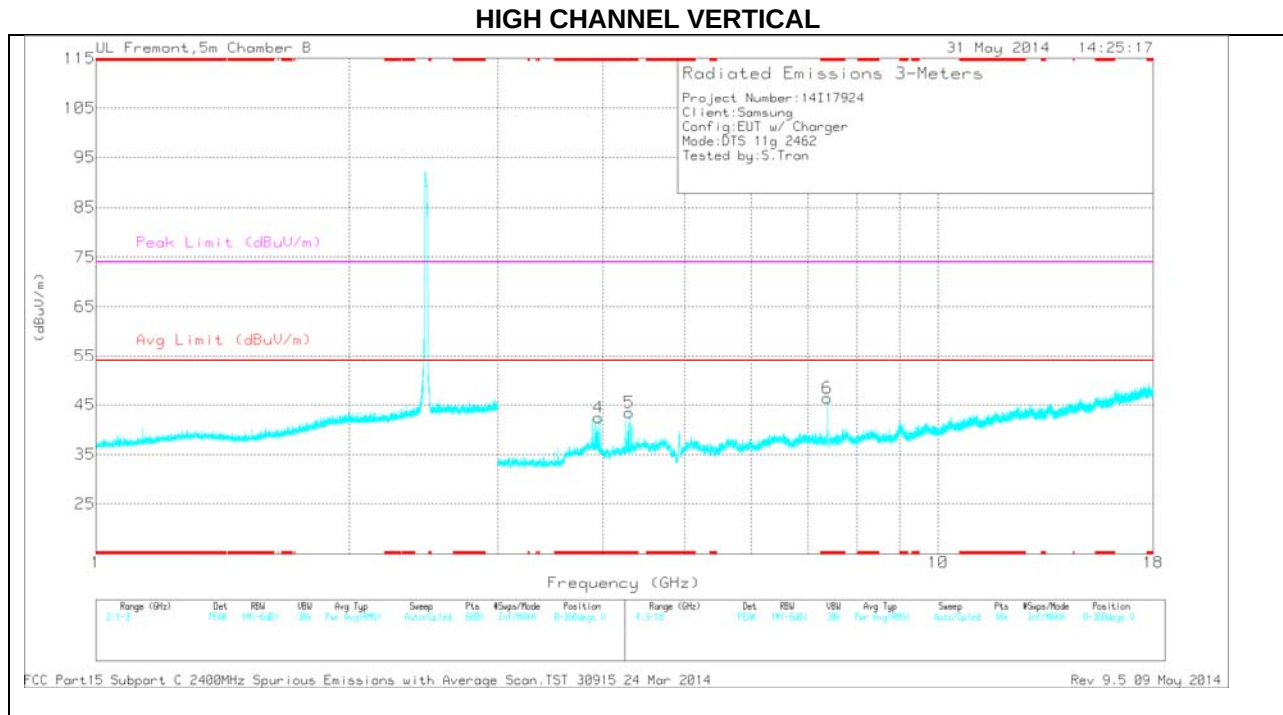
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

HIGH CHANNEL HORIZONTAL



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



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

HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.887	40.92	PK	33.8	-30.2	0	44.52	-	-	74	-29.48	0-360	201	H
2	* 3.932	43.24	PK	33.7	-30.5	0	46.44	-	-	74	-27.56	0-360	201	H
3	* 4.291	38.5	PK	33.7	-31	0	41.2	-	-	74	-32.8	0-360	100	H
4	* 3.948	39.38	PK	33.7	-30.6	0	42.48	-	-	74	-31.52	0-360	100	V
5	* 4.297	40.83	PK	33.7	-31.1	0	43.43	-	-	74	-30.57	0-360	201	V
6	* 7.386	38.18	PK	35.6	-27.4	0	46.38	-	-	74	-27.62	0-360	201	V

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

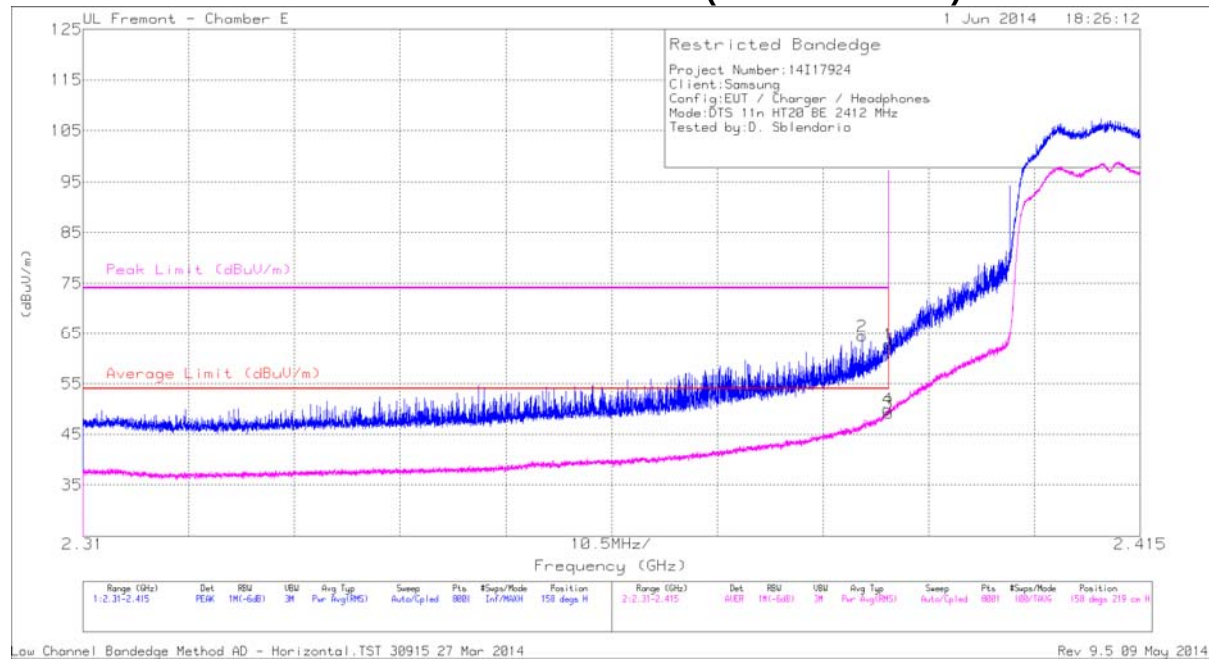
PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.888	42.67	PK2	33.8	-30.2	0	46.27	-	-	74	-27.73	359	203	H
* 3.886	30.8	MAV1	33.8	-30.2	.3	34.7	54	-19.3	-	-	359	203	H
* 3.933	42.24	PK2	33.7	-30.5	0	45.44	-	-	74	-28.56	359	203	H
* 3.933	30.89	MAV1	33.7	-30.5	.3	34.39	54	-19.61	-	-	359	203	H
* 3.933	28.35	Avg	33.7	-30.5	0	31.55	54	-22.45	-	-	359	101	H
* 4.291	26.26	Avg	33.7	-31	0	28.96	54	-25.04	-	-	359	101	V
* 3.948	28.04	Avg	33.7	-30.6	0	31.14	54	-22.86	-	-	359	202	V
* 7.385	41.02	PK2	35.6	-27.4	0	49.22	-	-	74	-24.78	359	202	V
* 7.386	31.73	MAV1	35.6	-27.4	.3	40.23	54	-13.77	-	-	359	202	V

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

PK2 - KDB558074 Method: Maximum Peak

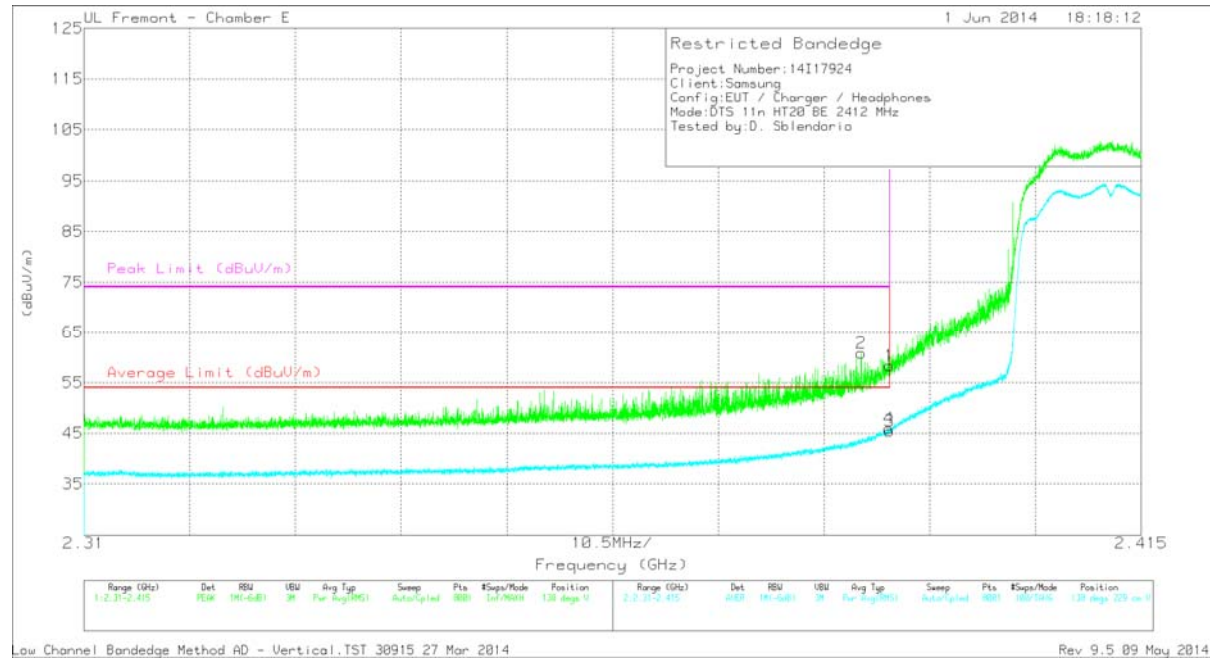
10.2.1. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND**RESTRICTED BANDEDGE (LOW CHANNEL)**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AFT346 (dB/m)	Amp/Cbl/Filt 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	55.52	PK	32	-24.7	0	62.82	-	-	74	-11.18	158	219	H
2	* 2.387	57.09	PK	32	-24.7	0	64.39	-	-	74	-9.61	158	219	H
3	* 2.39	41.55	RMS	32	-24.7	.3	49.15	54	-4.85	-	-	158	219	H
4	* 2.39	42.35	RMS	32	-24.7	.3	49.95	54	-4.05	-	-	158	219	H

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

PK - Peak detector

RMS - RMS detection

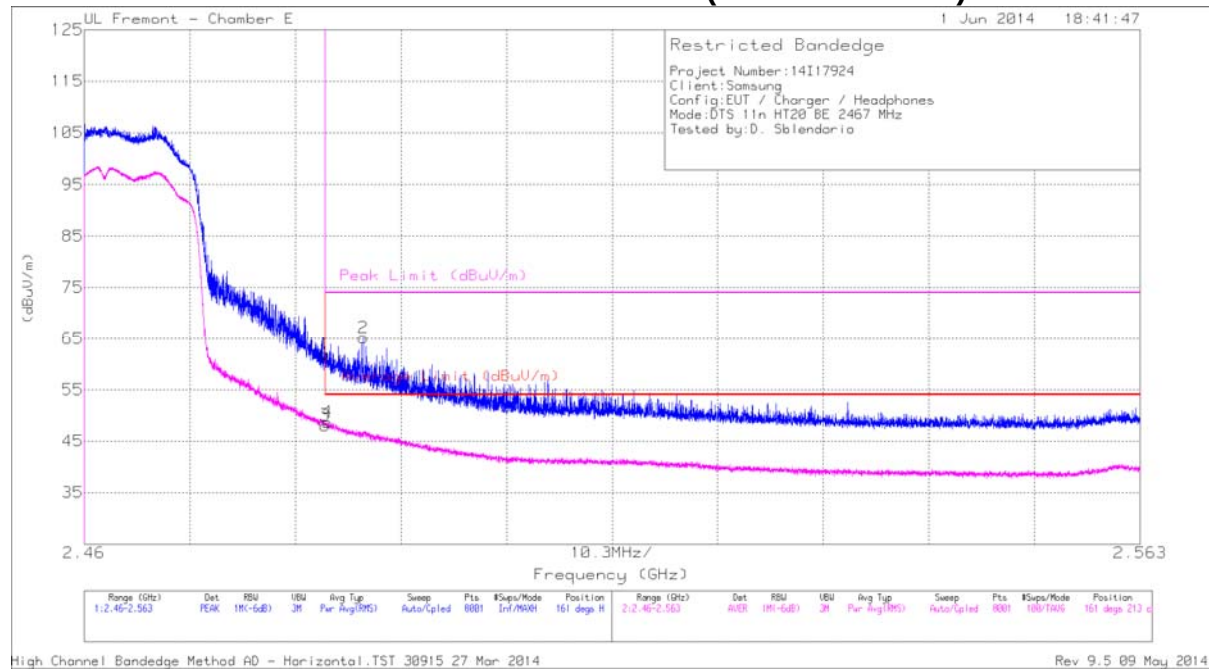


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/Filt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	51.09	PK	32	-24.7	0	58.39	-	-	74	-15.61	138	229	V
2	* 2.387	53.57	PK	32	-24.7	0	60.87	-	-	74	-13.13	138	229	V
3	* 2.39	37.89	RMS	32	-24.7	.3	45.49	54	-8.51	-	-	138	229	V
4	* 2.39	38.34	RMS	32	-24.7	.3	45.94	54	-8.06	-	-	138	229	V

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

PK - Peak detector

RMS - RMS detection

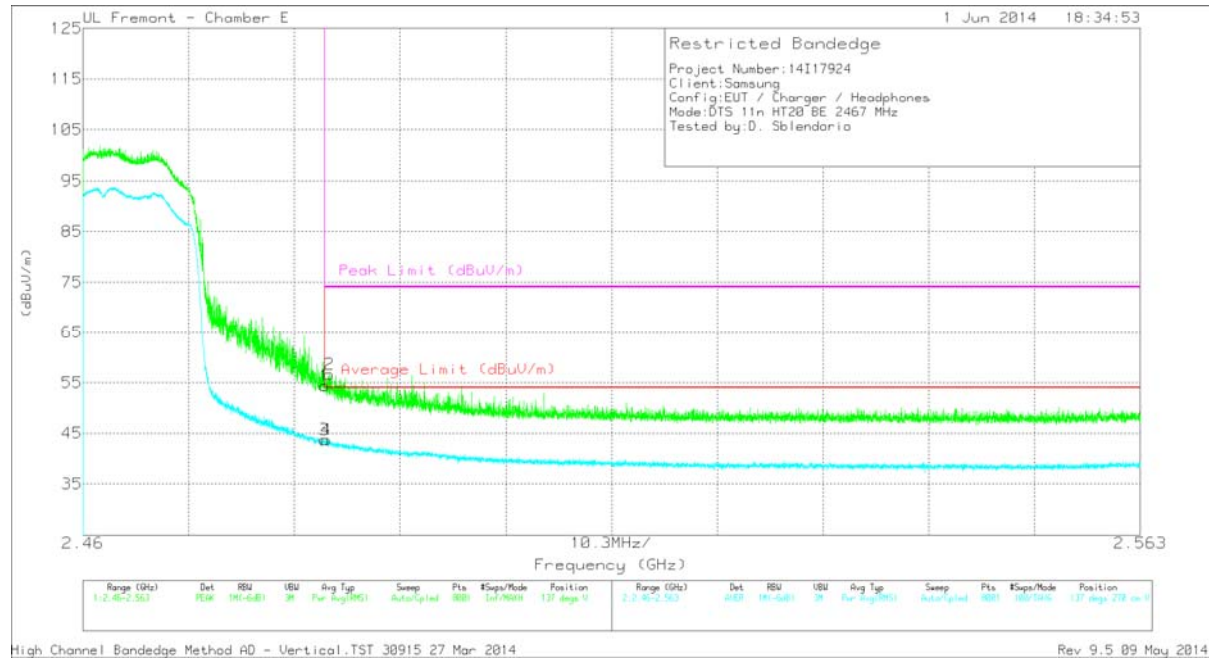
AUTHORIZED BANDEDGE (HIGH CHANNEL)**Trace Markers**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	53.92	PK	32.3	-24.3	0	61.92	-	-	74	-12.08	161	213	H
2	* 2.487	57.19	PK	32.3	-24.3	0	65.19	-	-	74	-8.81	161	213	H
3	* 2.484	39.75	RMS	32.3	-24.3	.3	48.05	54	-5.95	-	-	161	213	H
4	* 2.484	40.36	RMS	32.3	-24.3	.3	48.66	54	-5.34	-	-	161	213	H

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

PK - Peak detector

RMS - RMS detection



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AFT346 (dB/m)	Amp/Cbl/Fit 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	46.43	PK	32.3	-24.3	0	54.43	-	-	74	-19.57	137	270	V
2	* 2.484	48.64	PK	32.3	-24.3	0	56.64	-	-	74	-17.36	137	270	V
3	* 2.484	35.41	RMS	32.3	-24.3	.3	43.71	54	-10.29	-	-	137	270	V
4	* 2.484	35.41	RMS	32.3	-24.3	.3	43.71	54	-10.29	-	-	137	270	V

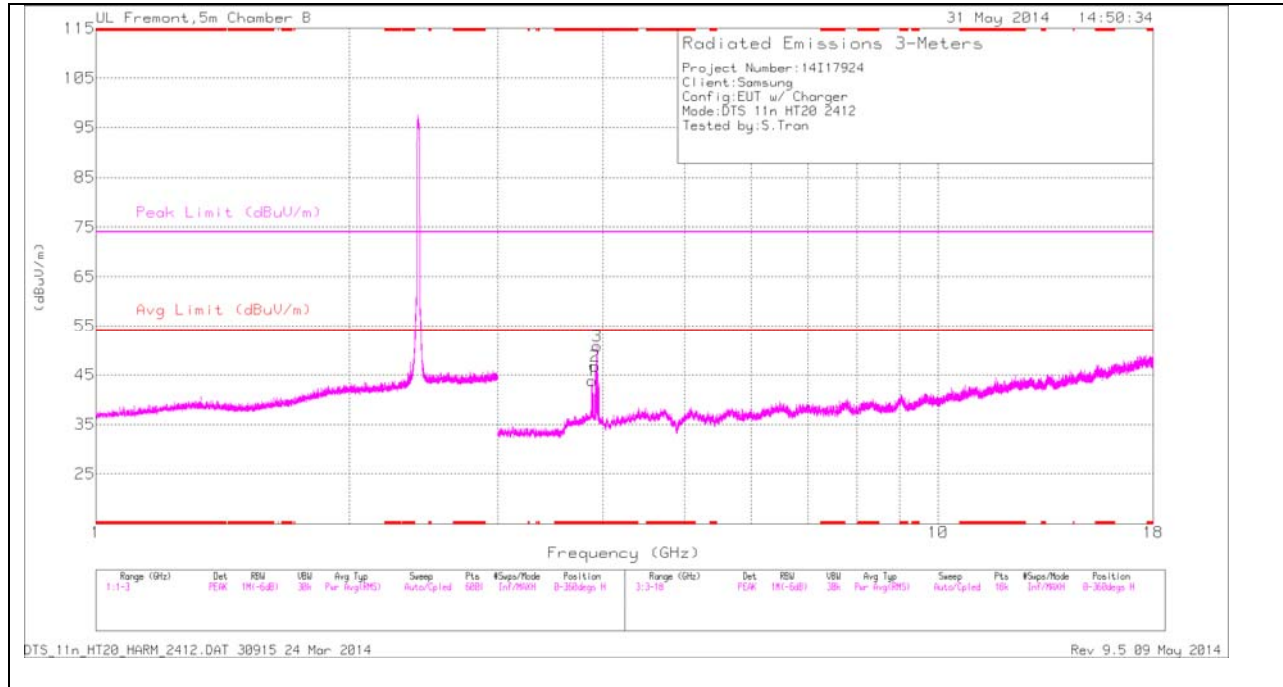
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

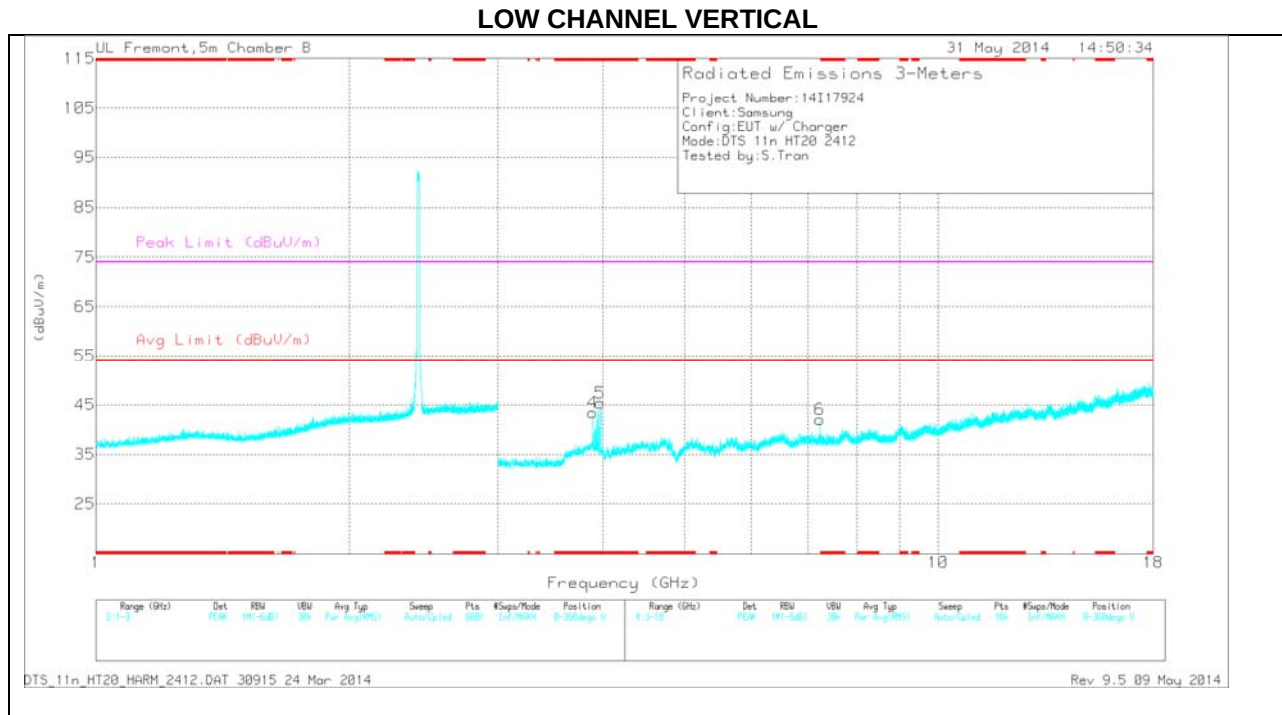
RMS - RMS detection

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.



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

LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.879	40.32	PK	33.8	-30.3	0	43.82	-	-	74	-30.18	0-360	201	H
2	* 3.913	43.39	PK	33.8	-30.4	0	46.79	-	-	74	-27.21	0-360	201	H
3	* 3.935	47.61	PK	33.7	-30.5	0	50.81	-	-	74	-23.19	0-360	201	H
4	* 3.891	39.8	PK	33.8	-30.2	0	43.4	-	-	74	-30.6	0-360	101	V
5	* 3.972	42.6	PK	33.6	-30.8	0	45.4	-	-	74	-28.6	0-360	101	V
6	7.236	33.74	PK	35.6	-27.3	0	42.04	-	-	-	-	0-360	201	V

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

PK - Peak detector

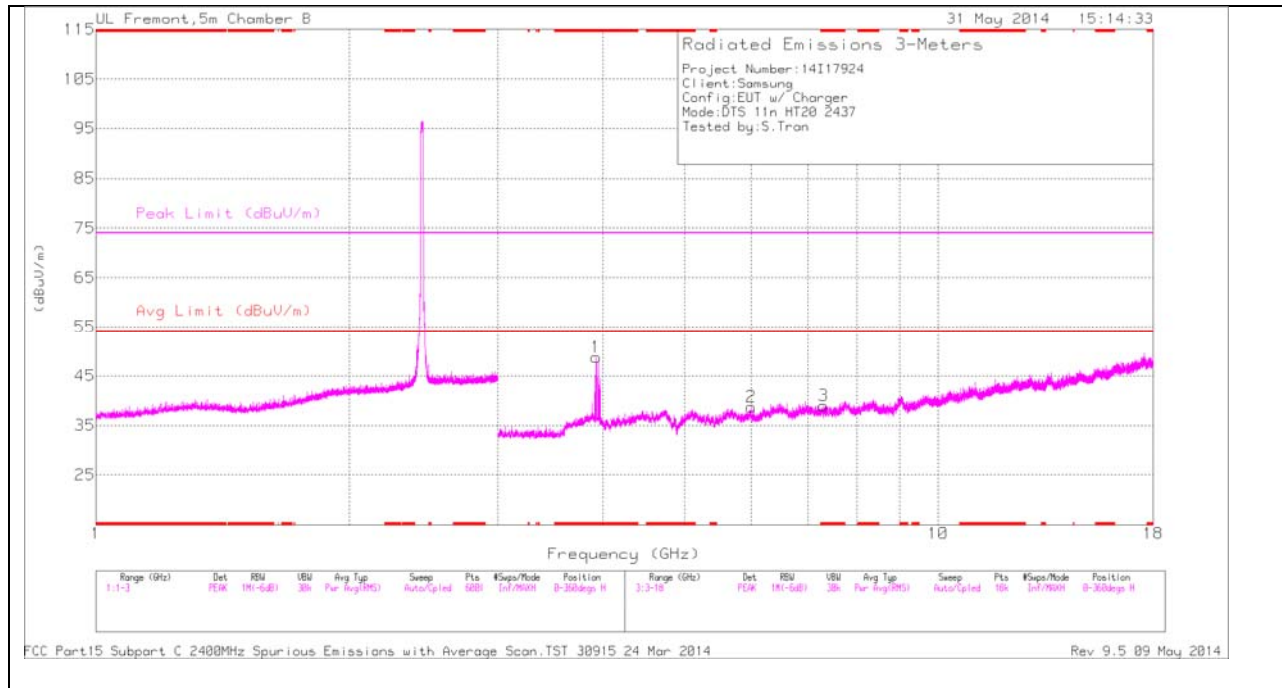
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.878	41.91	PK2	33.8	-30.3	0	45.41	-	-	74	-28.59	359	202	H
* 3.879	31.23	MAV1	33.8	-30.3	.4	35.13	54	-18.87	-	-	359	202	H
* 3.913	41.53	PK2	33.8	-30.4	0	44.93	-	-	74	-29.07	359	202	H
* 3.915	30.44	MAV1	33.8	-30.4	.4	34.24	54	-19.76	-	-	359	202	H
* 3.935	41.93	PK2	33.7	-30.5	0	45.13	-	-	74	-28.87	188	169	H
* 3.935	30.47	MAV1	33.7	-30.5	.4	34.07	54	-19.93	-	-	188	169	H
* 3.974	41.23	PK2	33.6	-30.8	0	44.03	-	-	74	-29.97	188	101	V
* 3.974	30.78	MAV1	33.6	-30.8	.4	33.98	54	-20.02	-	-	188	101	V

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

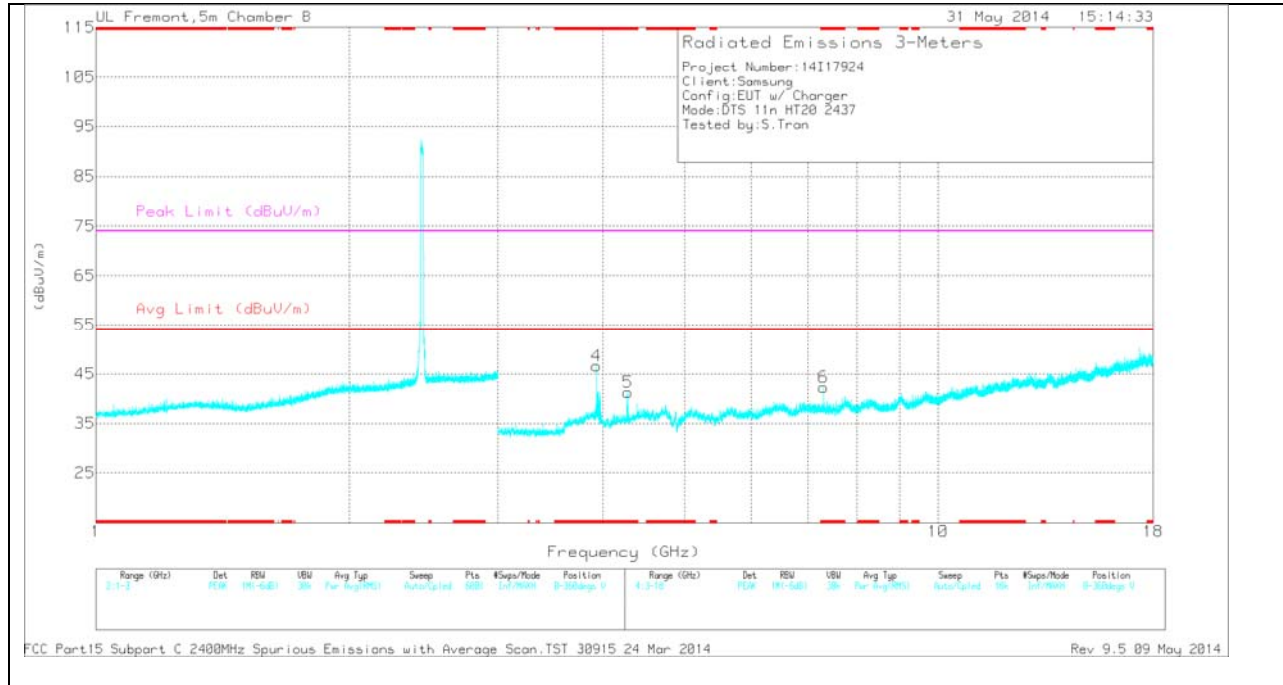
PK2 - KDB558074 Method: Maximum Peak

MID CHANNEL HORIZONTAL



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

MID CHANNEL VERTICAL



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

MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.926	45.42	PK	33.7	-30.4	0	48.72	-	-	74	-25.28	0-360	201	H
3	* 7.311	31.51	PK	35.6	-28.1	0	39.01	-	-	74	-34.99	0-360	201	H
4	* 3.932	43.45	PK	33.7	-30.5	0	46.65	-	-	74	-27.35	0-360	101	V
5	* 4.28	38.42	PK	33.7	-30.8	0	41.32	-	-	74	-32.68	0-360	101	V
6	* 7.311	34.78	PK	35.6	-28.1	0	42.28	-	-	74	-31.72	0-360	201	V
2	5.998	32.15	PK	35.2	-28.6	0	38.75	-	-	-	-	0-360	100	H

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

PK - Peak detector

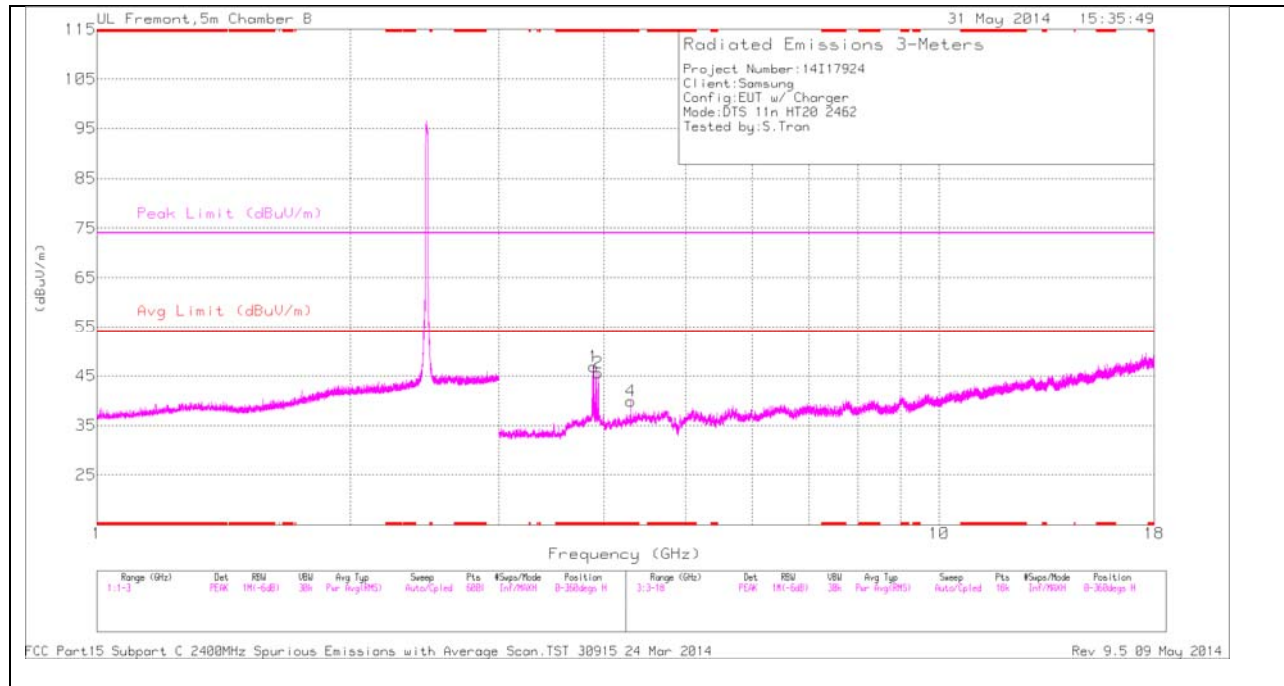
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.928	41.9	PK2	33.7	-30.4	0	45.2	-	-	74	-28.8	360	202	H
* 3.928	30.67	MAV1	33.7	-30.4	.4	34.37	54	-19.63	-	-	360	202	H
* 7.312	39.16	PK2	35.6	-28.1	0	46.66	-	-	74	-27.34	360	202	H
* 7.314	28.43	MAV1	35.6	-28.1	.4	36.33	54	-17.67	-	-	360	202	H
* 3.94	41.68	PK2	33.7	-30.5	0	44.88	-	-	74	-29.12	360	101	V
* 3.928	31.72	MAV1	33.7	-30.4	.4	35.42	54	-18.58	-	-	360	101	V

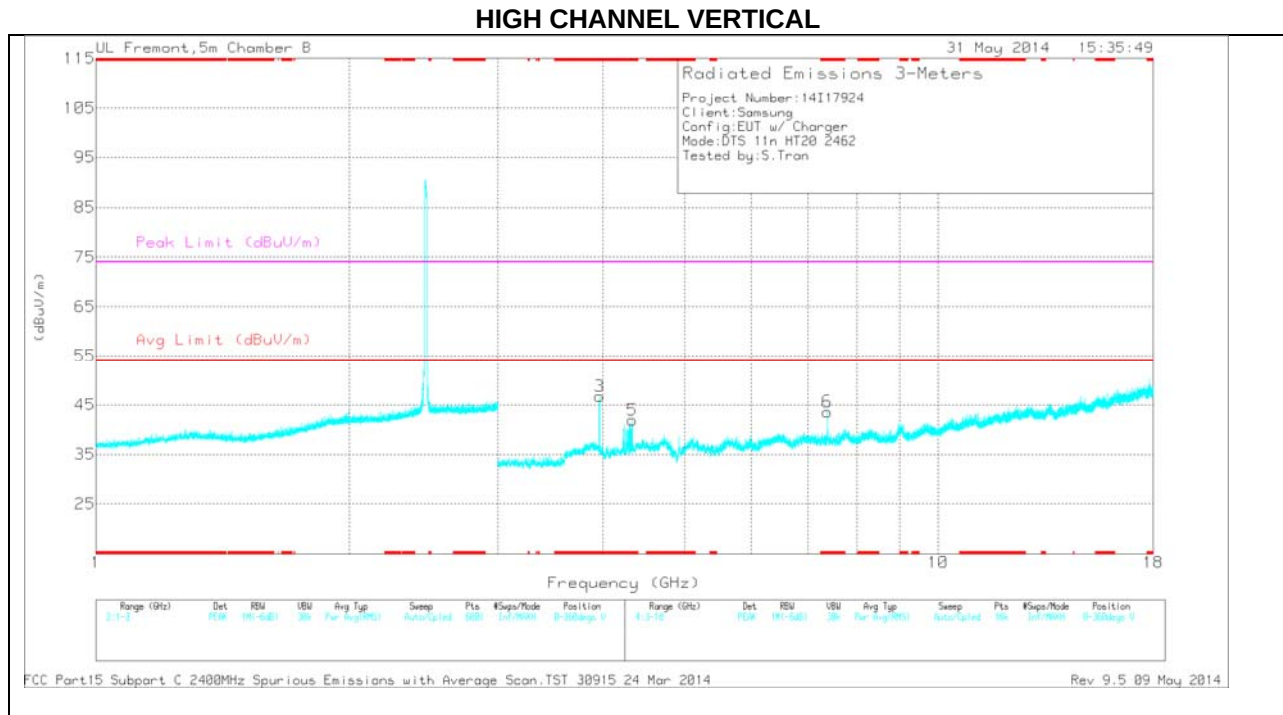
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

HIGH CHANNEL HORIZONTAL



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



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

HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.891	43.28	PK	33.8	-30.2	0	46.88	-	-	74	-27.12	0-360	200	H
2	* 3.934	42.4	PK	33.7	-30.5	0	45.6	-	-	74	-28.4	0-360	200	H
4	* 4.302	37.43	PK	33.7	-31.2	0	39.93	-	-	74	-34.07	0-360	101	H
3	* 3.962	43.96	PK	33.7	-30.9	0	46.76	-	-	74	-27.24	0-360	201	V
5	* 4.334	39.52	PK	33.7	-31.3	0	41.92	-	-	74	-32.08	0-360	201	V
6	* 7.386	35.43	PK	35.6	-27.4	0	43.63	-	-	74	-30.37	0-360	201	V

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.892	45.22	PK2	33.8	-30.2	0	48.82	-	-	74	-25.18	359	201	H
* 3.891	30.91	MAV1	33.8	-30.2	.4	34.91	54	-19.09	-	-	359	201	H
* 4.333	42.66	PK2	33.7	-31.2	0	45.16	-	-	74	-28.84	359	201	V
* 4.334	31.47	MAV1	33.7	-31.2	.4	34.37	54	-19.63	-	-	359	201	V

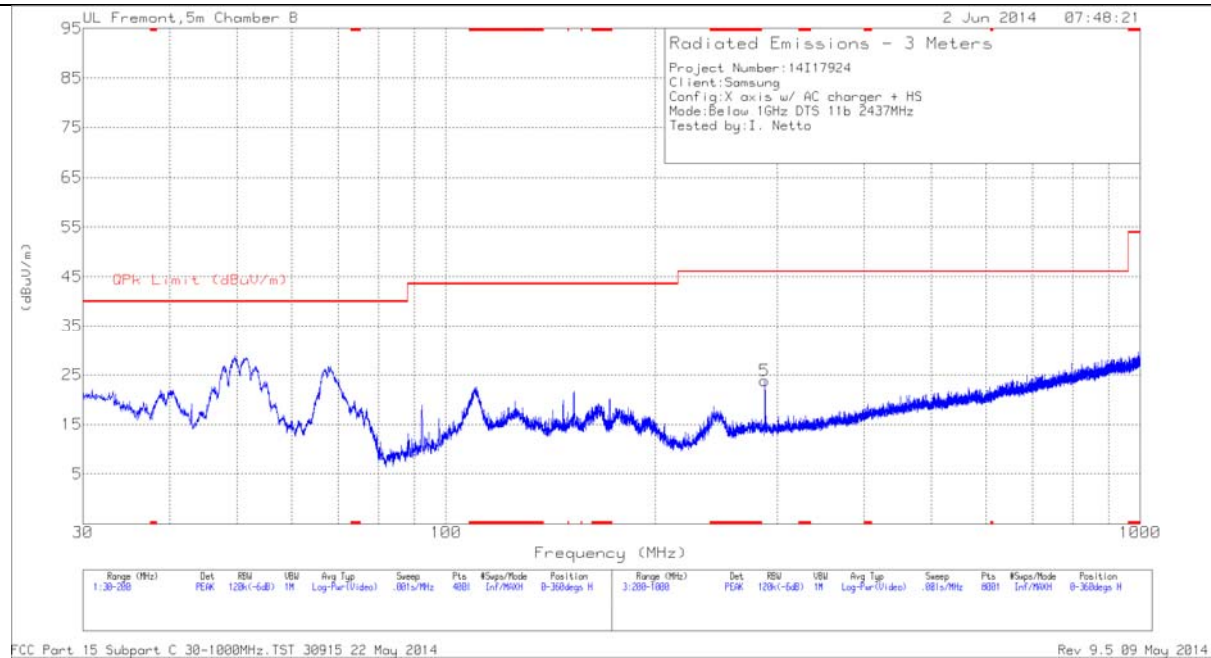
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

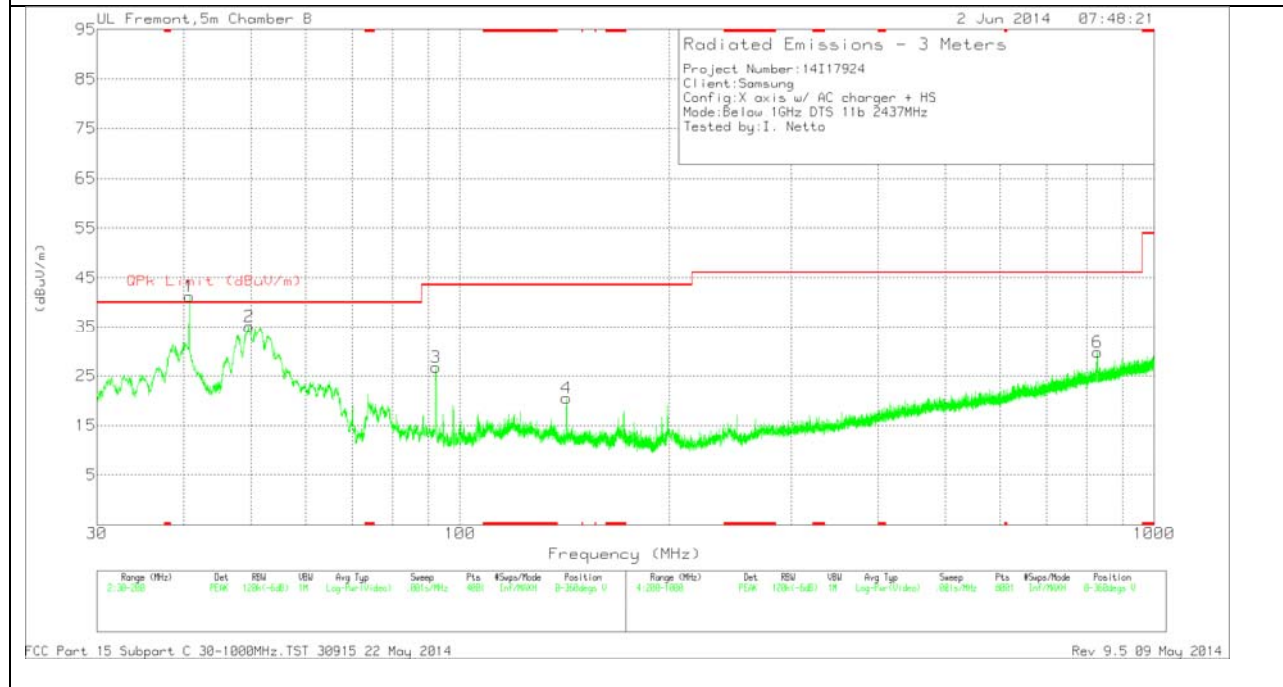
PK2 - KDB558074 Method: Maximum Peak

10.3. WORST-CASE BELOW 1 GHz

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

HORIZONTAL PLOT



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

Below 1G Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T243 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	40.7525	56.44	PK	13.4	-28.6	41.24	40		0-360	100	V
2	49.6775	55.56	PK	8.1	-28.6	35.06	40	-4.94	0-360	100	V
3	92.3475	46.6	PK	8.2	-28.1	26.7	43.52	-16.82	0-360	100	V
4	142.3275	35.21	PK	12.8	-27.5	20.51	43.52	-23.01	0-360	100	V
5	288	36.57	PK	13.3	-26	23.87	46.02	-22.15	0-360	400	H
6	828.7	31.88	PK	21.6	-23.7	29.78	46.02	-16.24	0-360	200	V

PK - Peak detector

Radiated Emissions

Frequency (MHz)	Meter Reading (dBuV)	Det	AF T243 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
40.7525	42.03	QP	13.6	-28.7	26.93	40	-13.07	360	110	V

QP - Quasi-Peak detector

11. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 7.2.2

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

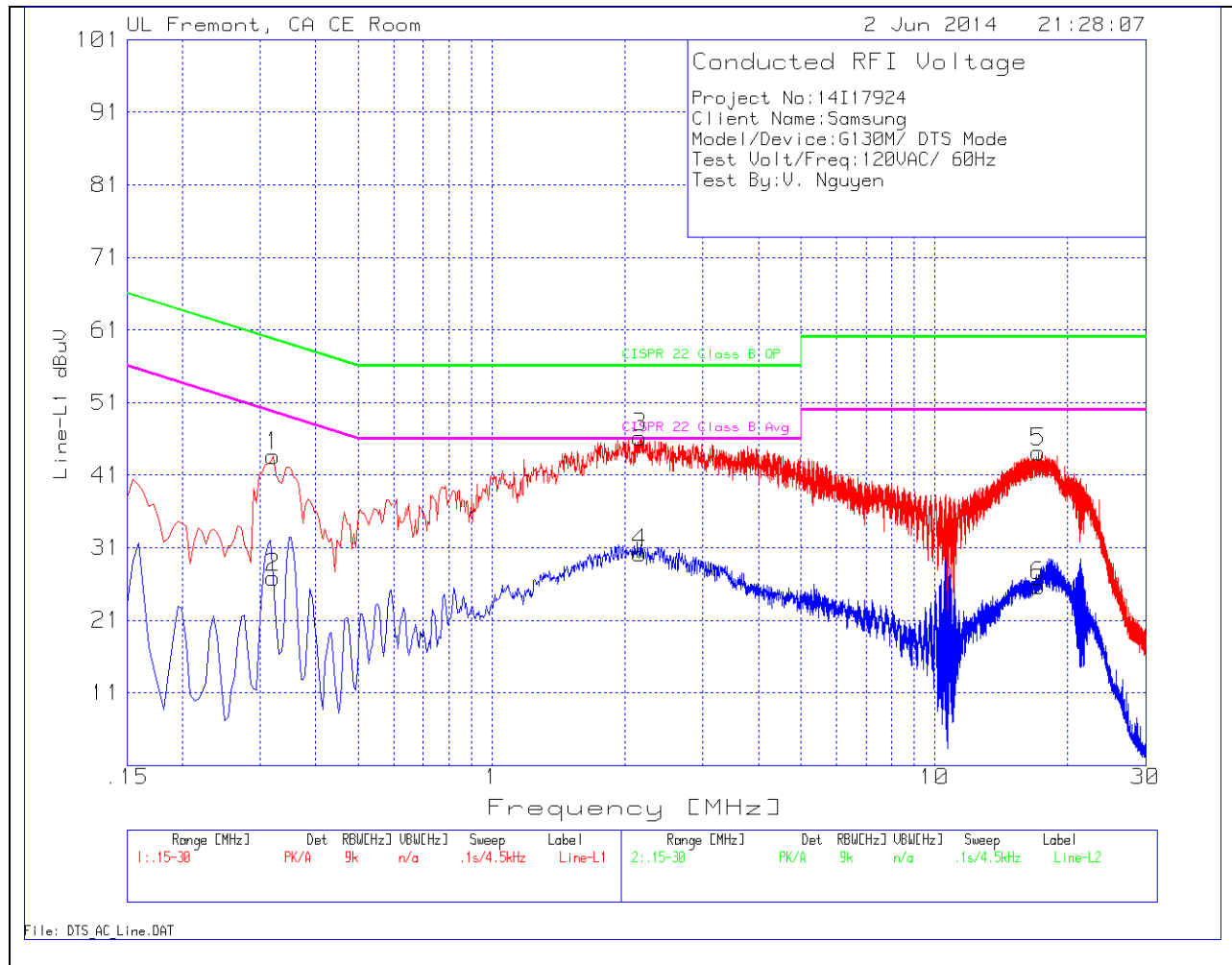
* Decreases with the logarithm of the frequency.

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.4 2009.

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

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

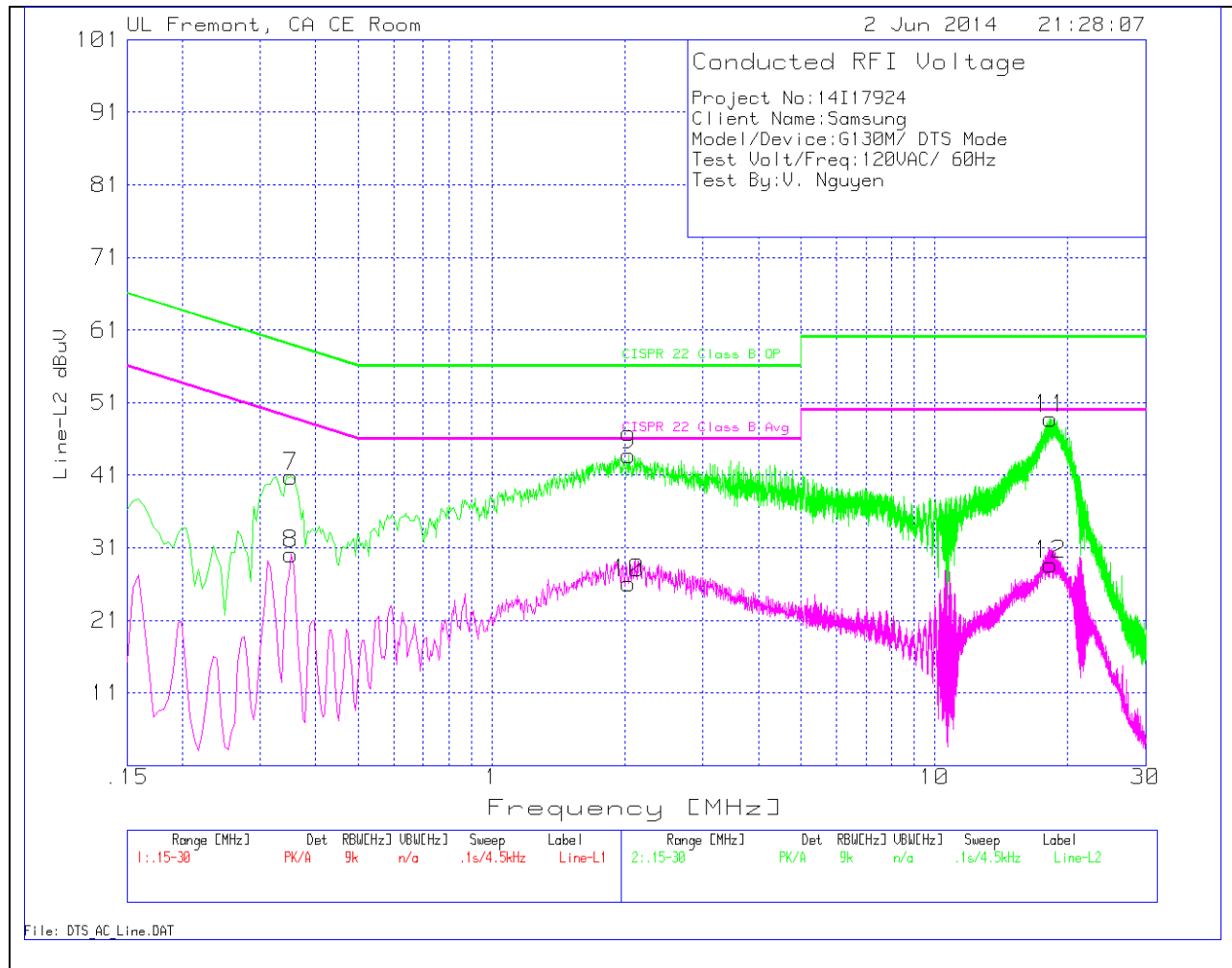
RESULTS**LINE 1 PLOT****LINE 1 RESULTS**

Line-L1 .15 - 30MHz

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1 (dB)	LC Cables 1&3 (dB)	Corrected Reading dBuV	CISPR 22 Class B QP	Margin to Limit (dB)	CISPR 22 Class B Avg	Margin to Limit (dB)
1	.321	43.07	PK	.5	0	43.57	59.7	-16.13	-	-
2	.321	26.33	Av	.5	0	26.83	-	-	49.7	-22.87
3	2.157	45.9	PK	.2	.1	46.2	56	-9.8	-	-
4	2.157	29.95	Av	.2	.1	30.25	-	-	46	-15.75
5	17.16	43.68	PK	.3	.2	44.18	60	-15.82	-	-
6	17.16	25.17	Av	.3	.2	25.67	-	-	50	-24.33

LINE 2 PLOT



LINE 2 RESULTS

Line-L2 .15 - 30MHz

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2 (dB)	LC Cables 2&3 (dB)	Corrected Reading dBuV	CISPR 22 Class B QP	Margin to Limit (dB)	CISPR 22 Class B Avg	Margin to Limit (dB)
7	.3525	40.32	PK	.5	0	40.82	58.9	-18.08	-	-
8	.3525	29.6	Av	.5	0	30.1	-	-	48.9	-18.8
9	2.04	43.47	PK	.2	.1	43.77	56	-12.23	-	-
10	2.04	25.77	Av	.2	.1	26.07	-	-	46	-19.93
11	18.321	48.23	PK	.3	.2	48.73	60	-11.27	-	-
12	18.321	28.23	Av	.3	.2	28.73	-	-	50	-21.27