



FCC CFR47 PART 15 SUBPART C

CERTIFICATION TEST REPORT

FOR

GSM/WCDMA/LTE PHONE + BLUETOOTH + DTS b/g/n + NFC

MODEL NUMBER: SM-G531F and SM-G531F/DD

FCC ID: A3LSMG531F

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Prepared for

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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	6/5/15	Initial Issue	P. Zhang
A	6/10/15	Updated frequency band on page 8	D. Corona
B	6/11/15	Added Another Model	AAumentado

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SAMSUNG ELECTRONICS CO., LTD.

EUT DESCRIPTION: GSM/WCDMA/LTE PHONE + BLUETOOTH + DTS b/g/n + NFC

MODEL: SM-G531F and SM-G531F/DD

SERIAL NUMBER: R38G40TQMVX (Conducted), R38G40TQM9X (Radiated)

DATE TESTED: MAY 8 – JUN 5, 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.

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:

$$\begin{aligned}\text{Field Strength (dBuV/m)} &= \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \\ &\text{Cable Loss (dB)} - \text{Preamplifier Gain (dB)} \\ 36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} &= 28.9 \text{ dBuV/m}\end{aligned}$$

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/LTE PHONE + BLUETOOTH + DTS b/g/n + 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 - 2472	802.11b	16.2	41.69
2412 - 2472	802.11g	14.2	26.30
2412 - 2472	802.11n HT20	12	15.85

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of -2.68 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

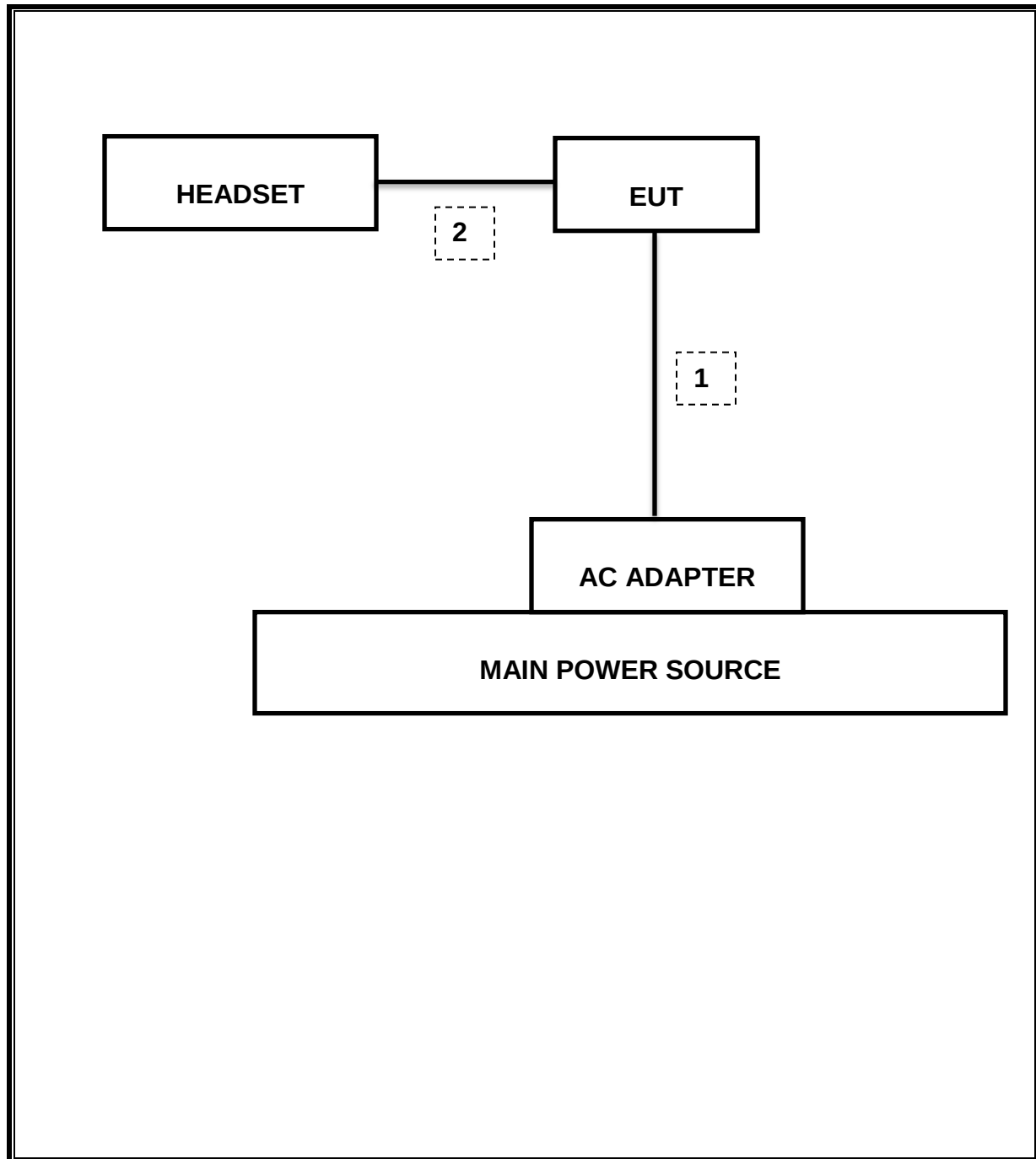
I/O CABLES

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 Preamp, 100KHz -> 1300MHz	HP	TBD	C00825	06/01/15
RF Preamp, 1GHz - 18GHz	Miteq	NSP4000-SP2	924343	03/23/16
RF Preamp, 1GHz - 26.5GHz	HP	8449B	F00351	06/27/15
AC Power Supply, 2,500VA 45-500Hz	Elgar-Ametek	CW2501M	F00013	CNR
RF Preamp, 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 AVGPS-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	10.10MHz
2.1051, 15.247 (d)	RSS-210 A8.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	-33.62dBm
15.247	RSS-210 A8.4	TX conducted output power	<30dBm		Pass	16.2dBm
15.247	RSS-210 A8.2	PSD	<8dBm		Pass	-6.09dBm
15.207 (a)	RSS-GEN 7.2.2	AC Power Line conducted emissions	Section 10	Radiated	Pass	54.69dBuV
15.205, 15.209	RSS-210 Clause 2.6, RSS-210 Clause 6	Radiated Spurious Emission	< 54dBuV/m		Pass	46.62dBuV/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 to 100KHz, 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)
1	2412	10.10	0.5
6	2437	10.10	0.5
11	2462	10.11	0.5
12	2467	10.17	0.5
13	2472	10.20	0.5
Worst		10.10	

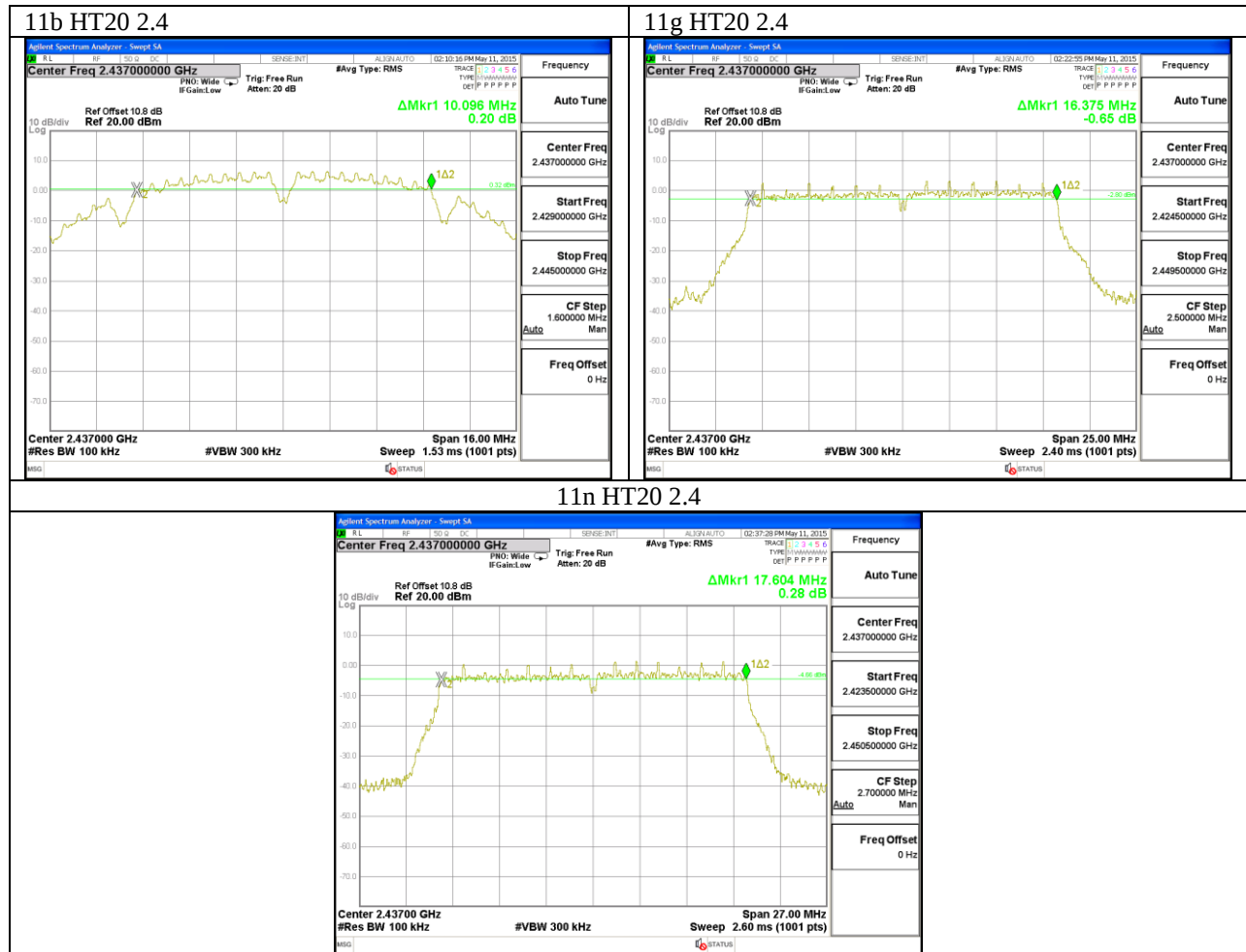
9.1.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
1	2412	16.40	0.5
6	2437	16.38	0.5
11	2462	16.35	0.5
12	2467	16.55	0.5
13	2472	17.73	0.5
Worst		16.35	

9.1.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
1	2412	17.60	0.5
6	2437	17.60	0.5
11	2462	17.60	0.5
12	2467	17.80	0.5
13	2472	16.47	0.5
Worst		16.47	

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)
1	2412	13.79
6	2437	13.50
11	2462	13.66
12	2467	13.50
13	2472	13.50
Worst		13.79

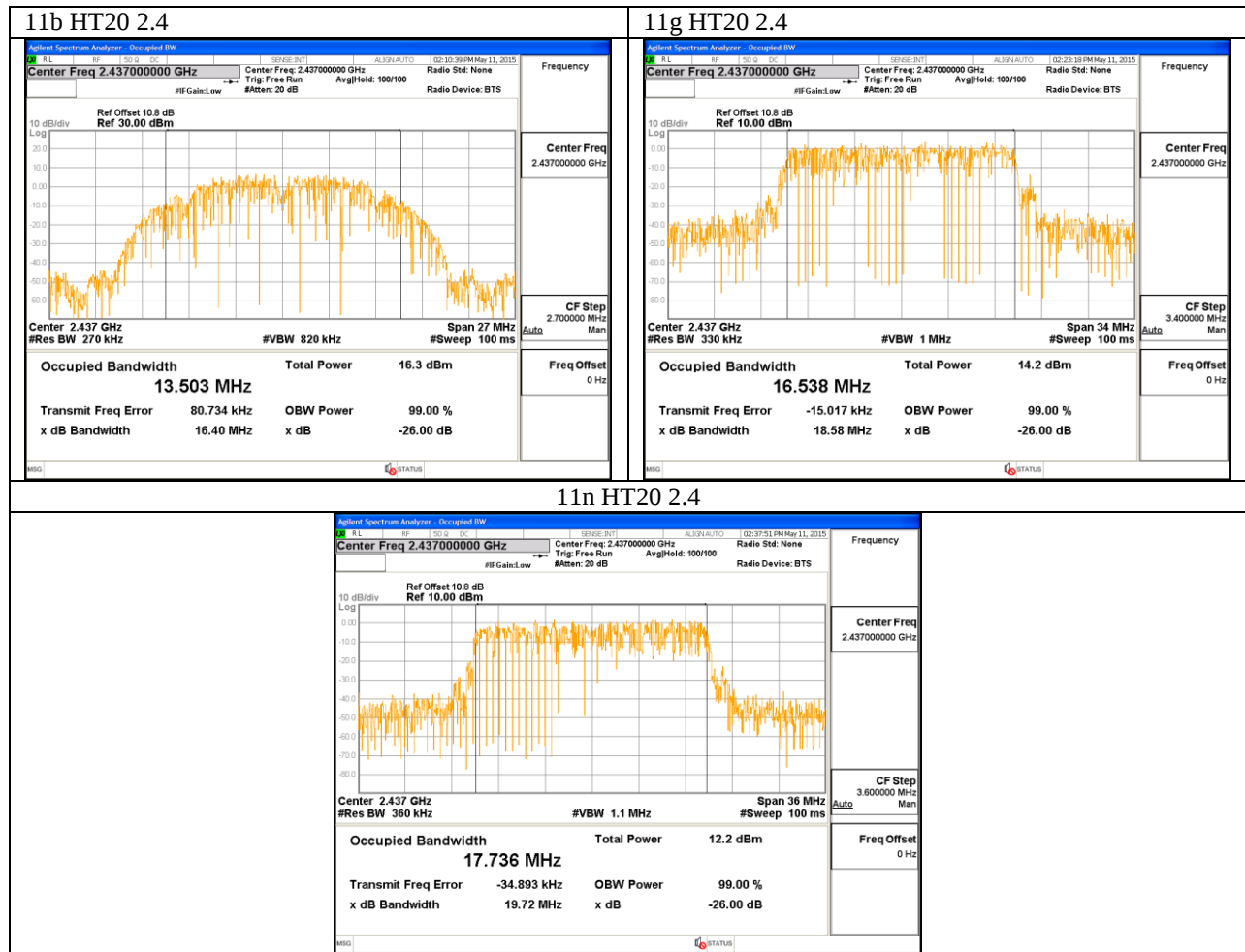
9.2.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
1	2412	16.48
6	2437	16.54
11	2462	16.56
12	2467	17.75
13	2472	17.74
Worst		17.75

9.2.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
1	2412	17.72
6	2437	17.74
11	2462	17.76
12	2467	17.65
13	2472	16.47
Worst		17.76

9.2.4. 99% BANDWIDTH MID CH PLOTS



9.3. OUTPUT POWER

LIMITS

FCC §15.247

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

DIRECTIONAL ANTENNA GAIN

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

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 1.2 dB (including 0.2 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

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
1	2412	-2.68	30.00	30	36	30.00
6	2437	-2.68	30.00	30	36	30.00
11	2462	-2.68	30.00	30	36	30.00
12	2467	-2.68	30.00	30	36	30.00
13	2472	-2.68	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
1	2412	16.00	16.00	30.00	-14.00
6	2437	16.20	16.20	30.00	-13.80
11	2462	15.60	15.60	30.00	-14.40
12	2467	0.30	0.30	30.00	-29.70
13	2472	-0.43	-0.43	30.00	-30.43
Worst			16.20		

9.3.2. 802.11g MODE IN THE 2.4 GHz BAND

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
1	2412	-2.68	30.00	30	36	30.00
6	2437	-2.68	30.00	30	36	30.00
11	2462	-2.68	30.00	30	36	30.00
12	2467	-2.68	30.00	30	36	30.00
13	2472	-2.68	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
1	2412	13.60	13.60	30.00	-16.40
6	2437	14.20	14.20	30.00	-15.80
11	2462	13.40	13.40	30.00	-16.60
12	2467	-0.26	-0.26	30.00	-30.26
13	2472	0.39	0.39	30.00	-29.61
Worst			14.20		

9.3.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
1	2412	-2.68	30.00	30	36	30.00
6	2437	-2.68	30.00	30	36	30.00
11	2462	-2.68	30.00	30	36	30.00
12	2467	-2.68	30.00	30	36	30.00
13	2472	-2.68	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
1	2412	12.00	12.00	30.00	-18.00
6	2437	11.30	11.30	30.00	-18.70
11	2462	11.50	11.50	30.00	-18.50
12	2467	-0.02	-0.02	30.00	-30.02
13	2472	0.06	0.06	30.00	-29.94
Worst			12.00		

9.4. 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

9.4.1. 802.11b MODE IN THE 2.4 GHz BAND

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
1	2412	-6.65	8.0	-14.7
6	2437	-6.09	8.0	-14.1
11	2462	-7.53	8.0	-15.5
12	2467	-33.47	8.0	-41.5
13	2472	-34.03	8.0	-42.0

9.4.2. 802.11g MODE IN THE 2.4 GHz BAND

PSD Results

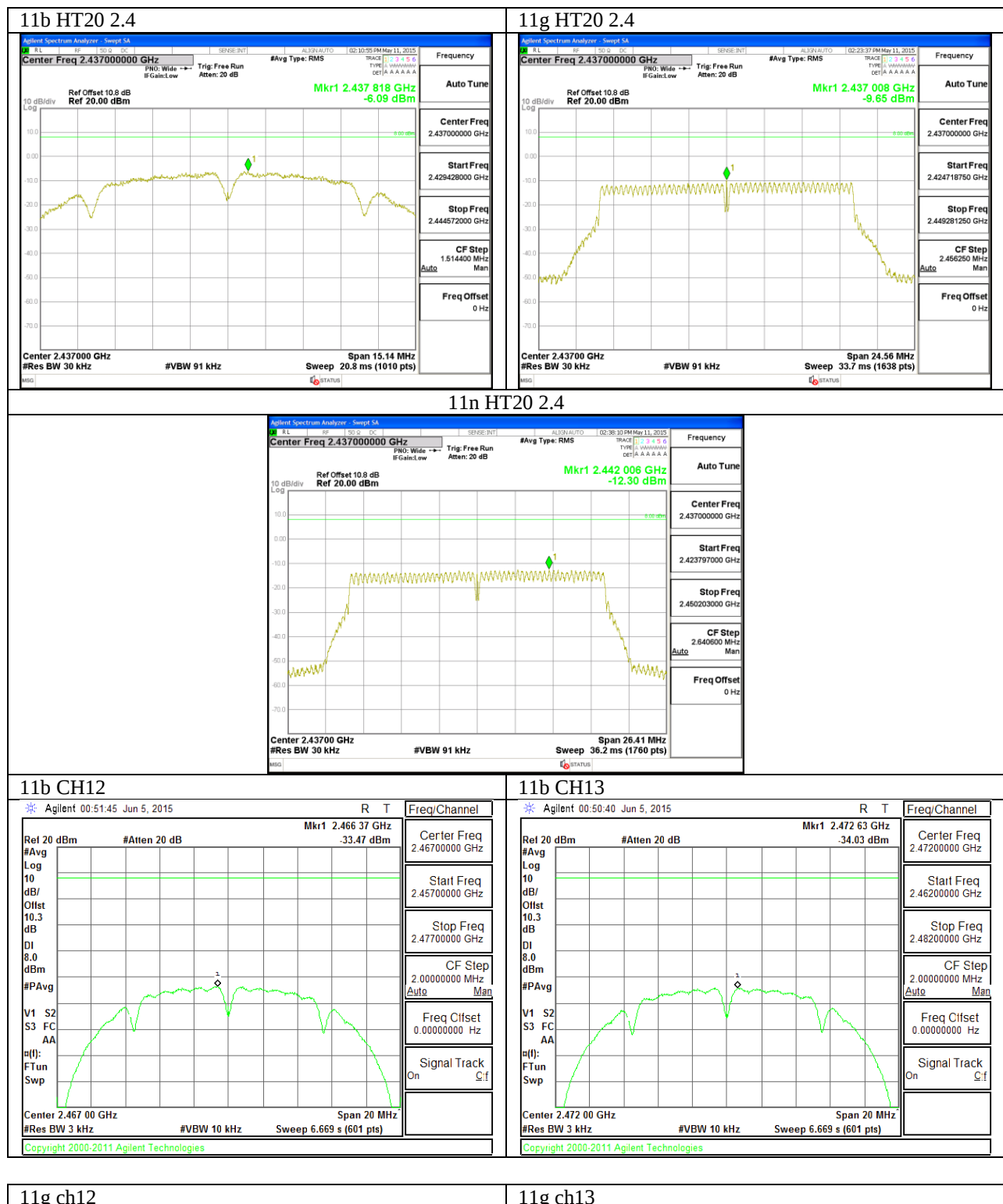
Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
1	2412	-10.18	8.0	-18.2
6	2437	-9.65	8.0	-17.7
11	2462	-10.81	8.0	-18.8
12	2467	-35.1	8.0	-43.1
13	2472	-34.51	8.0	-42.5

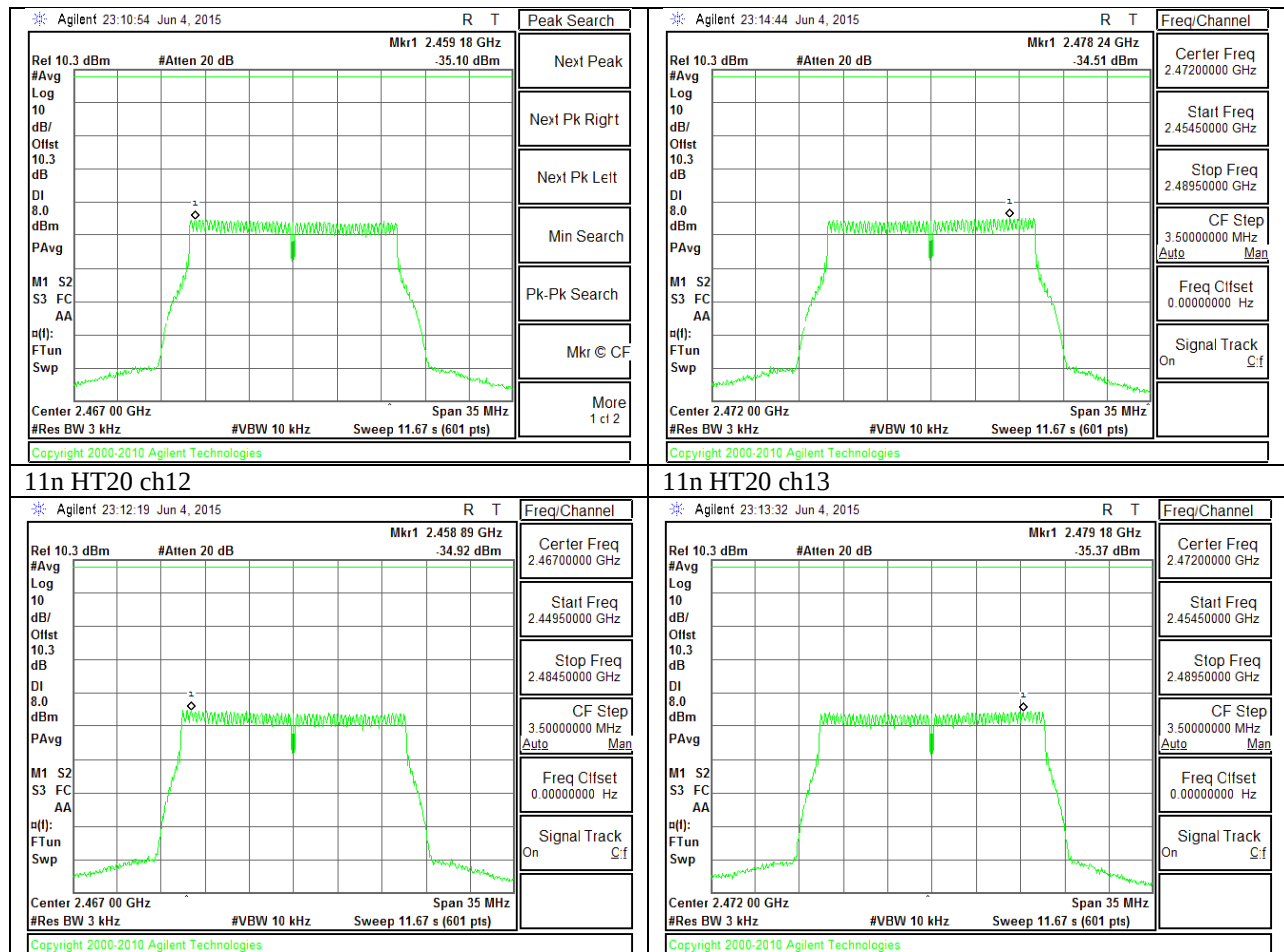
9.4.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
1	2412	-13.40	8.0	-21.4
6	2437	-12.30	8.0	-20.3
11	2462	-12.82	8.0	-20.8
12	2467	-34.92	8.0	-42.9
13	2472	-35.37	8.0	-43.4

9.4.4. PSD Chain 0 MID CH PLOTS





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.

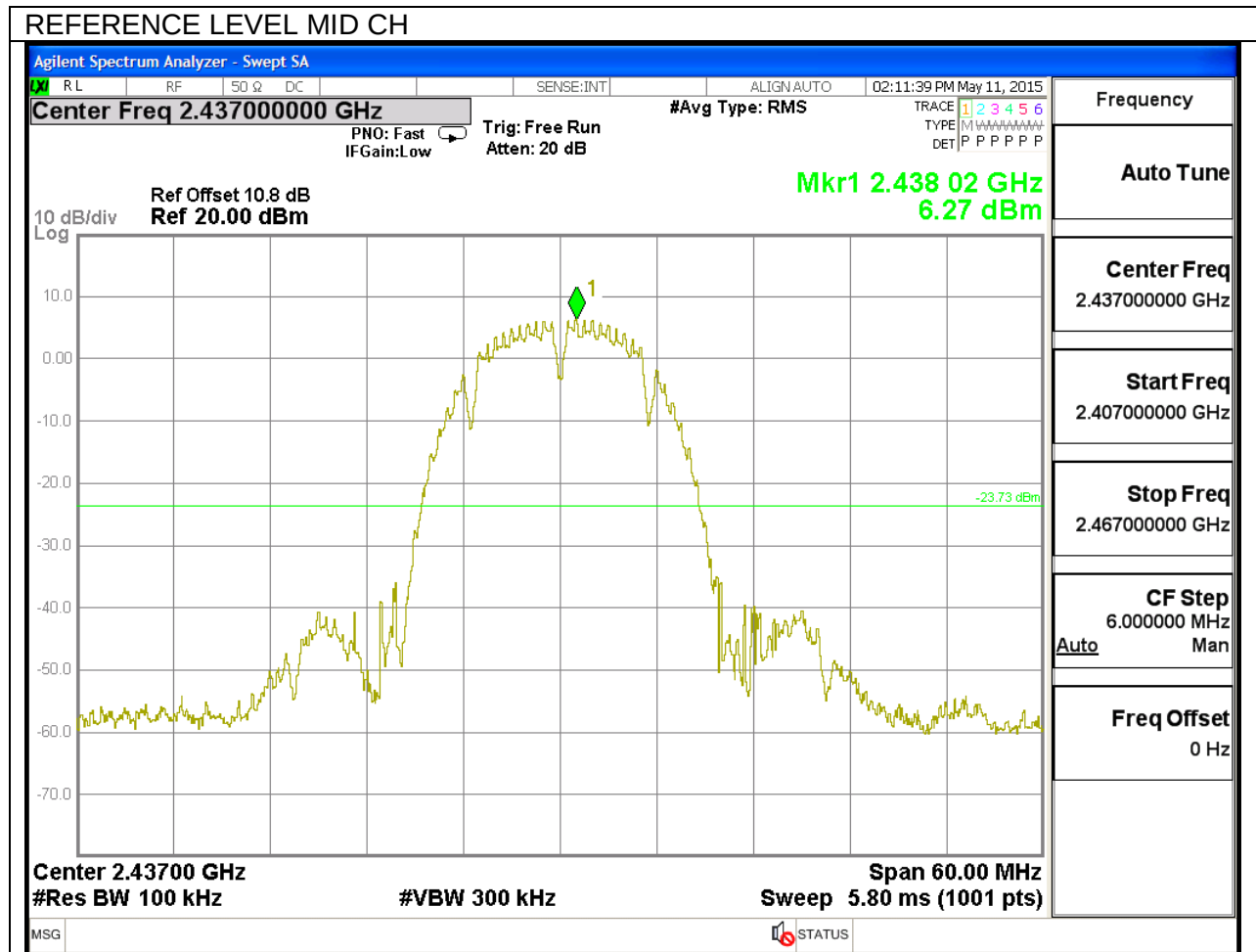
TEST PROCEDURE

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.

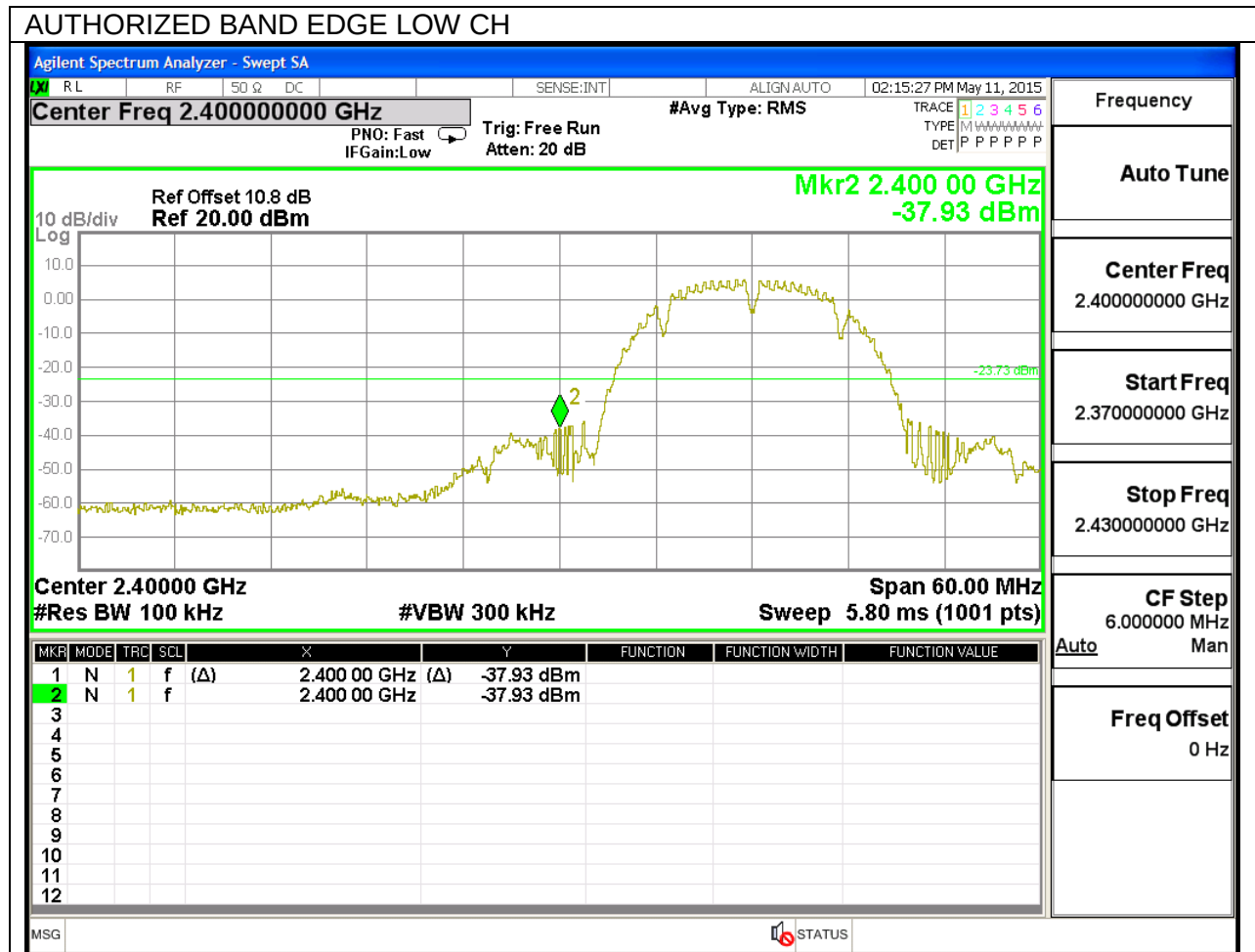
RESULTS

9.5.1. 802.11b MODE IN THE 2.4 GHz BAND

IN-BAND REFERENCE LEVEL



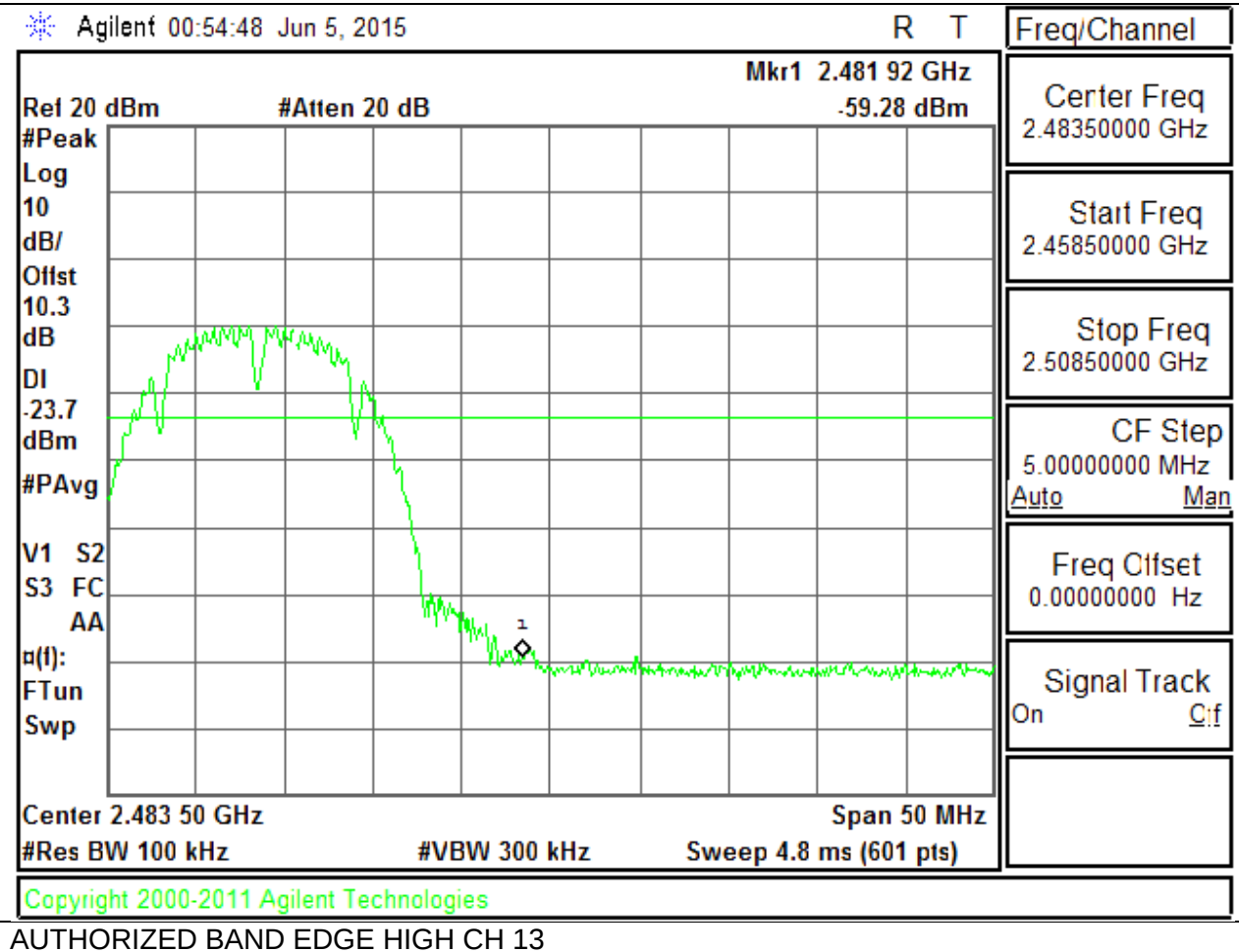
LOW CHANNEL BANDEDGE

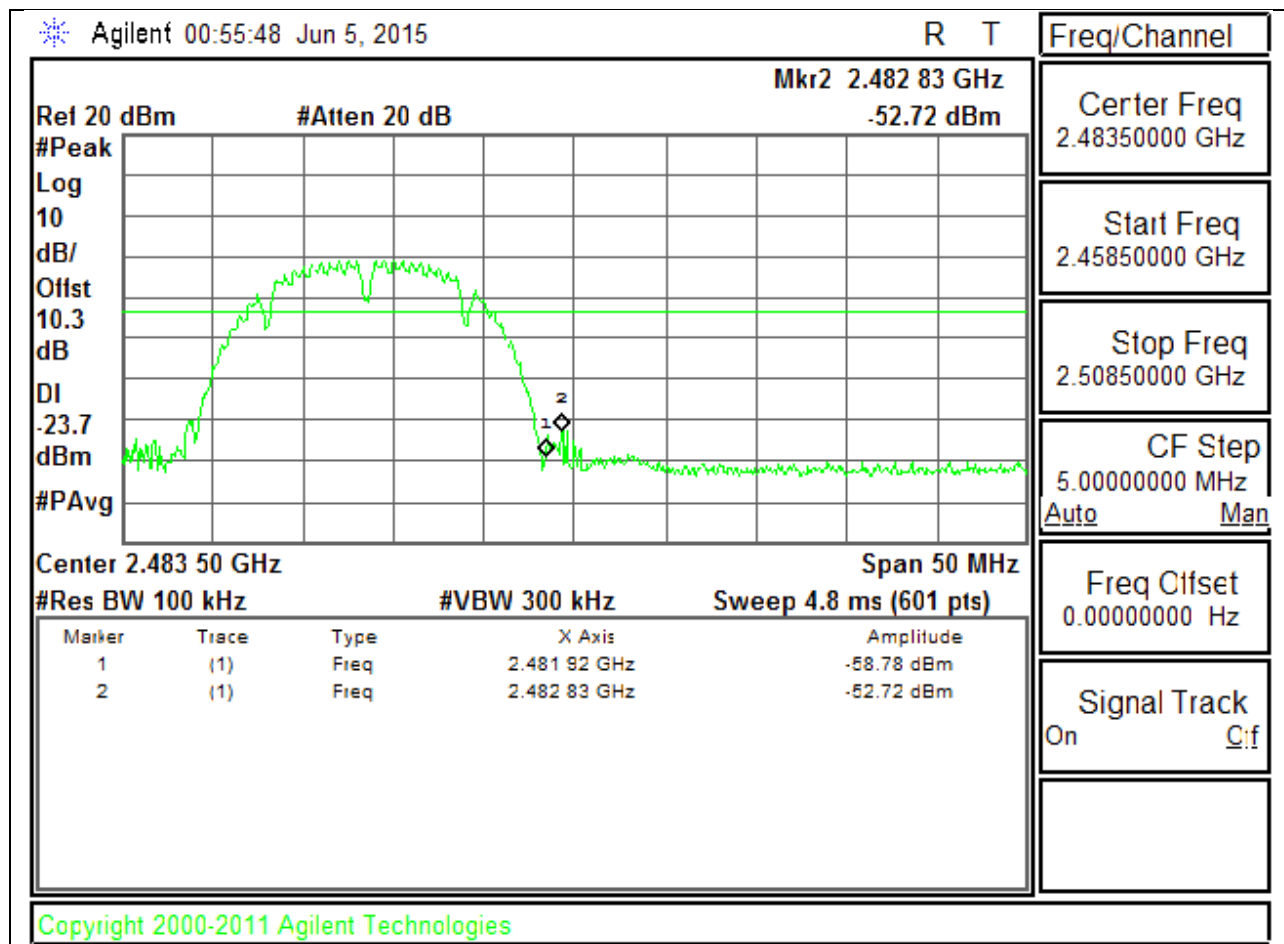


HIGH CHANNEL BANDEDGE

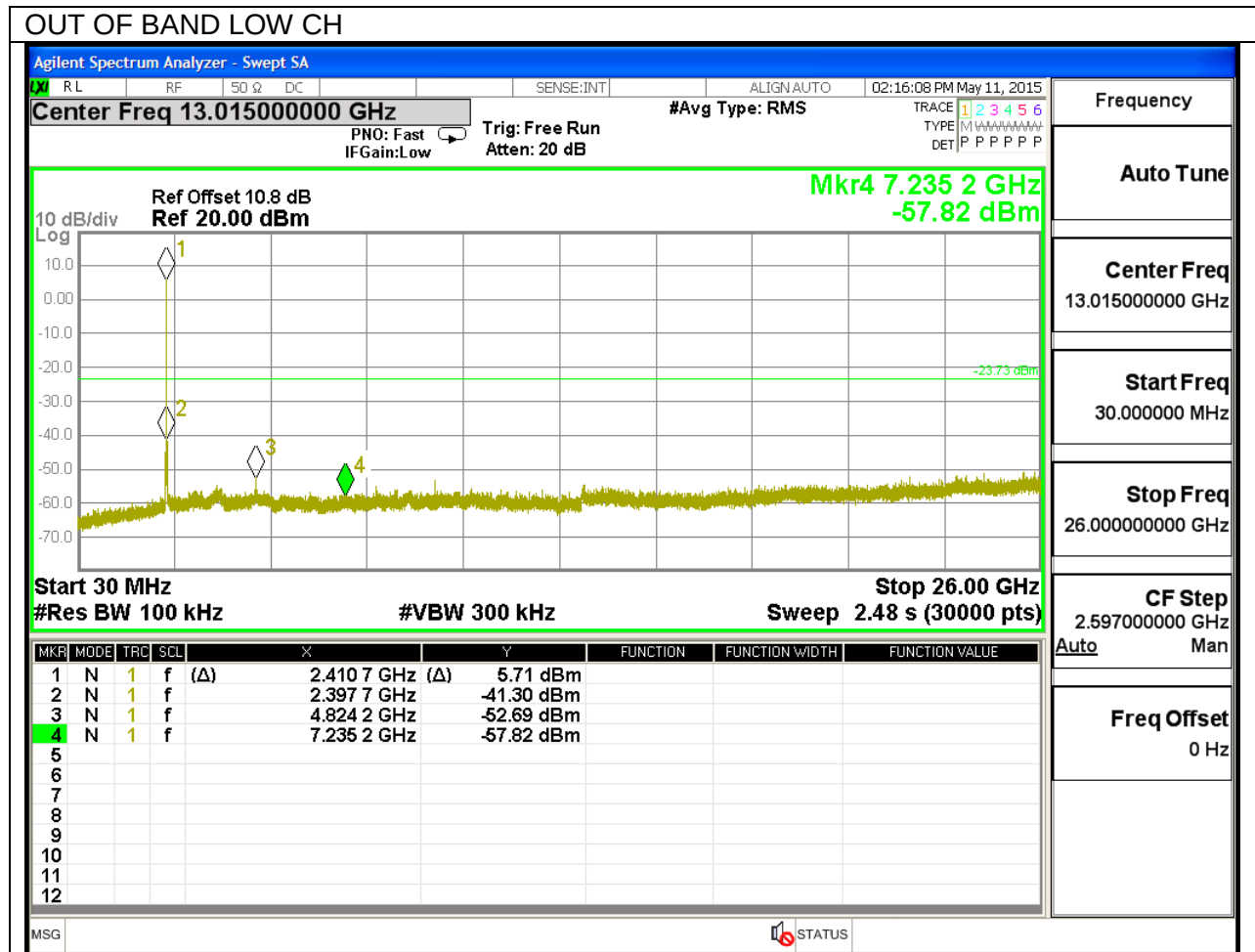


AUTHORIZED BAND EDGE HIGH CH 12

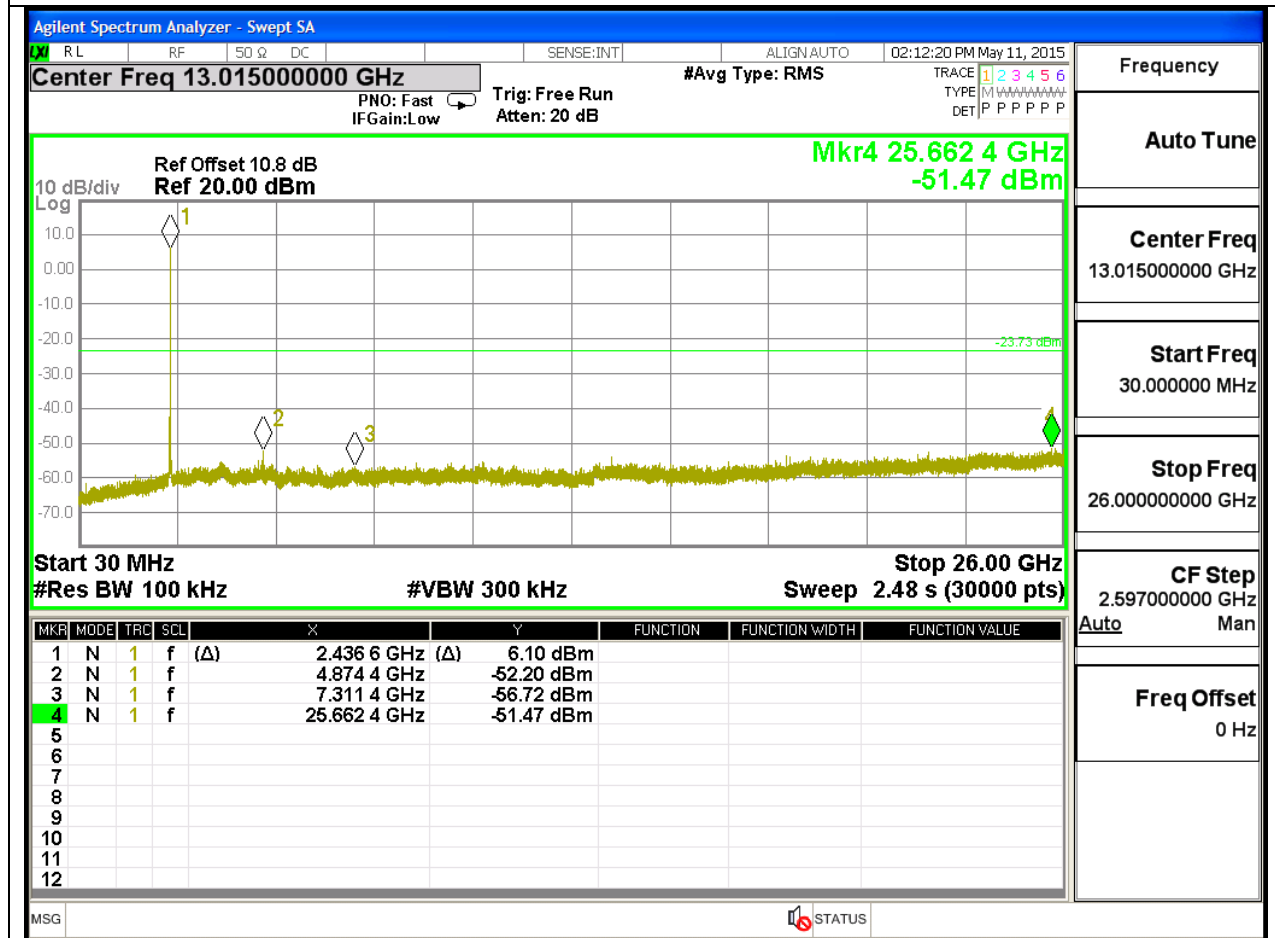




OUT-OF-BAND EMISSIONS



OUT OF BAND MID CH



Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω DC SENSE:INT ALIGN:AUTO 02:19:46 PM May 11, 2015

Center Freq 13.01500000 GHz #Avg Type: RMS

PNO: Fast IFGain:Low Trig: Free Run Atten: 20 dB

TRACE 1 2 3 4 5 6
TYPE M W W W W W W W
DET P P P P P P

Ref Offset 10.8 dB
Ref 20.00 dBm

Mkr4 25.998 3 GHz
-51.99 dBm

10 dB/div
Log

Start 30 MHz
#Res BW 100 kHz

Stop 26.00 GHz
Sweep 2.48 s (30000 pts)

#VBW 300 kHz

MKR	MODE	TRC	SCL		X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	(Δ)	2.461 7 GHz	Δ) 5.20 dBm			
2	N	1	f		4.923 8 GHz	-53.13 dBm			
3	N	1	f		7.386 7 GHz	-57.88 dBm			
4	N	1	f		25.998 3 GHz	-51.99 dBm			
5									
6									
7									
8									
9									
10									
11									
12									

MSG STATUS

Frequency

Auto Tune

Center Freq
13.01500000 GHz

Start Freq
30.000000 MHz

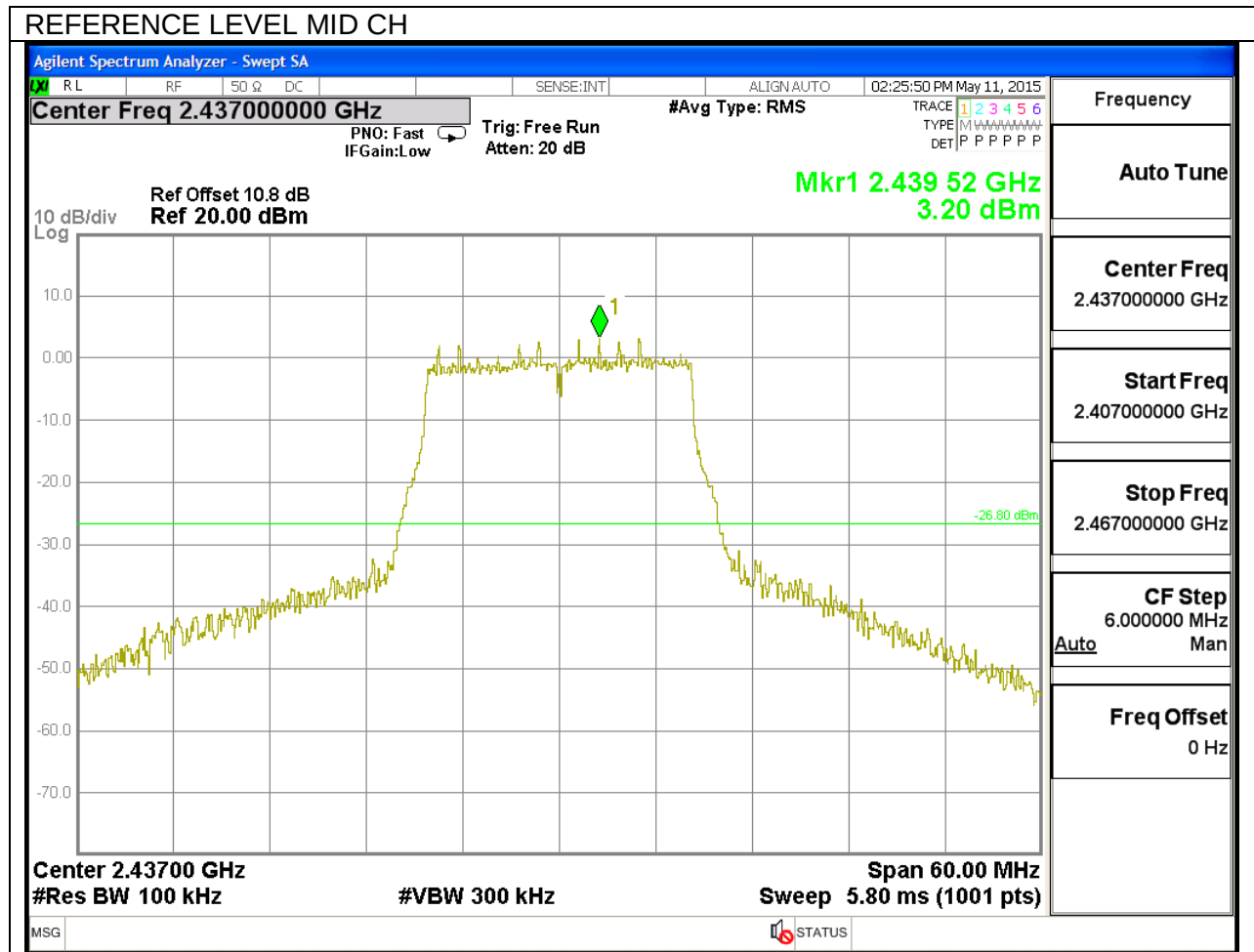
Stop Freq
26.00000000 GHz

CF Step
2.59700000 GHz
Man

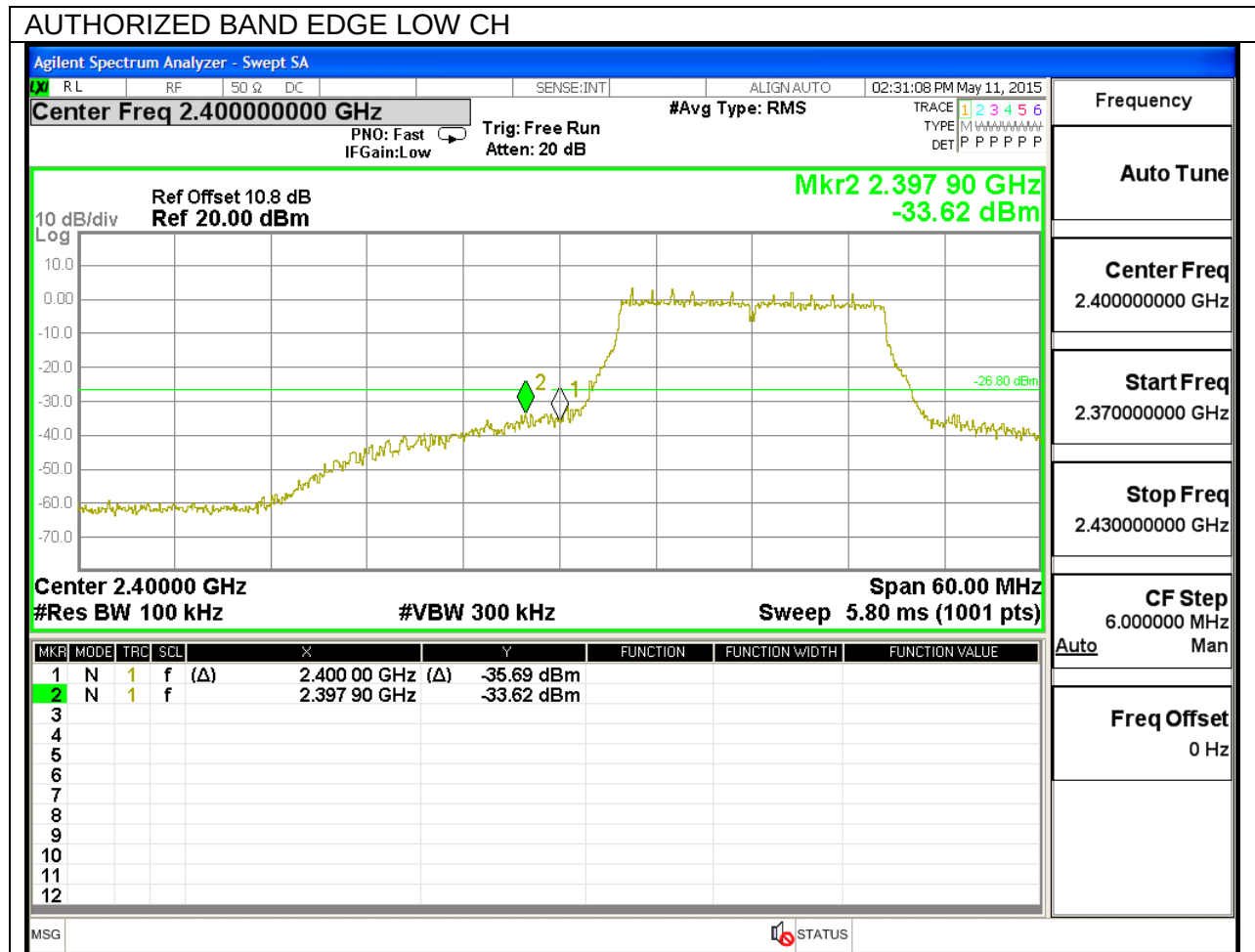
Freq Offset
0 Hz

9.5.2. 802.11g MODE IN THE 2.4 GHz BAND

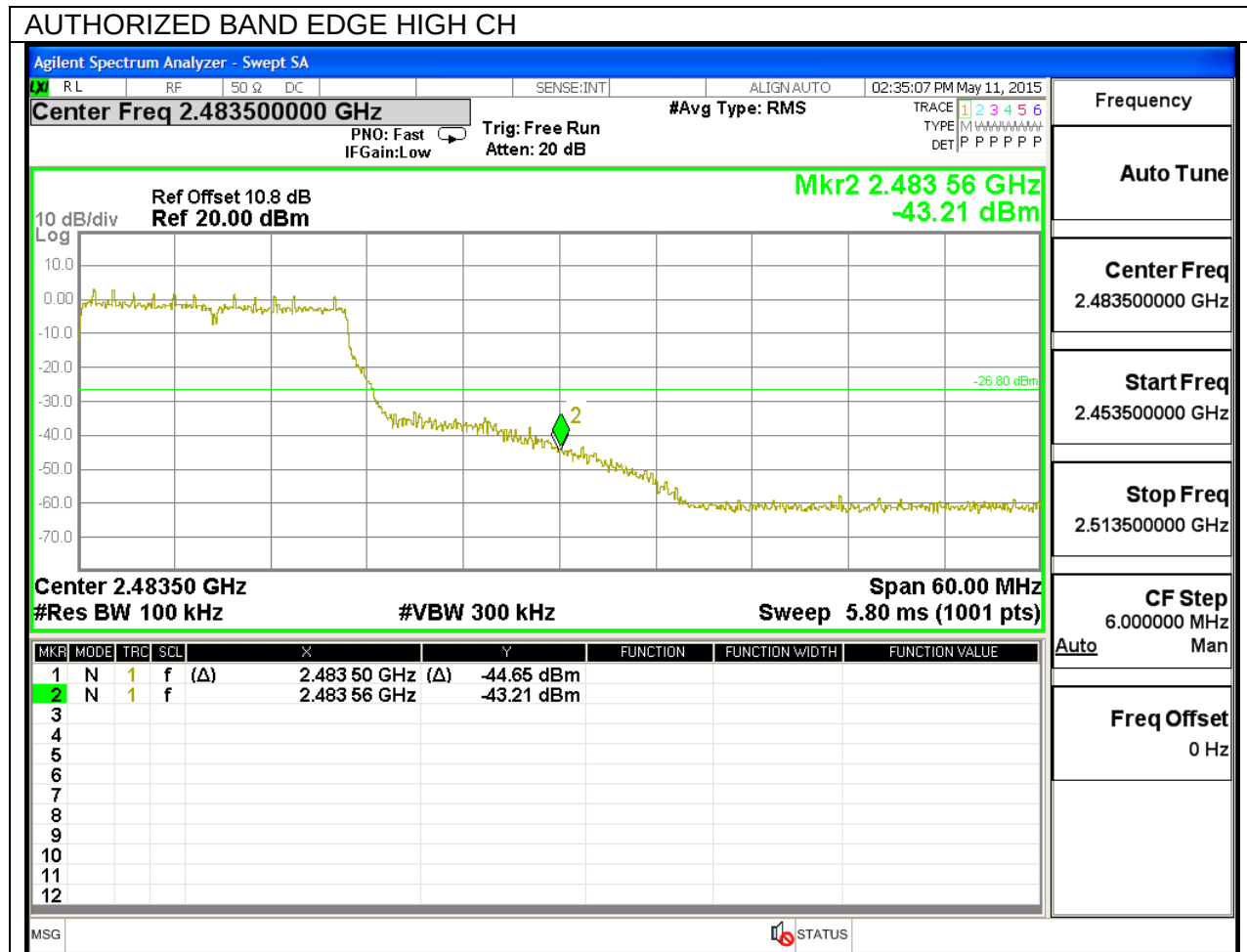
IN-BAND REFERENCE LEVEL



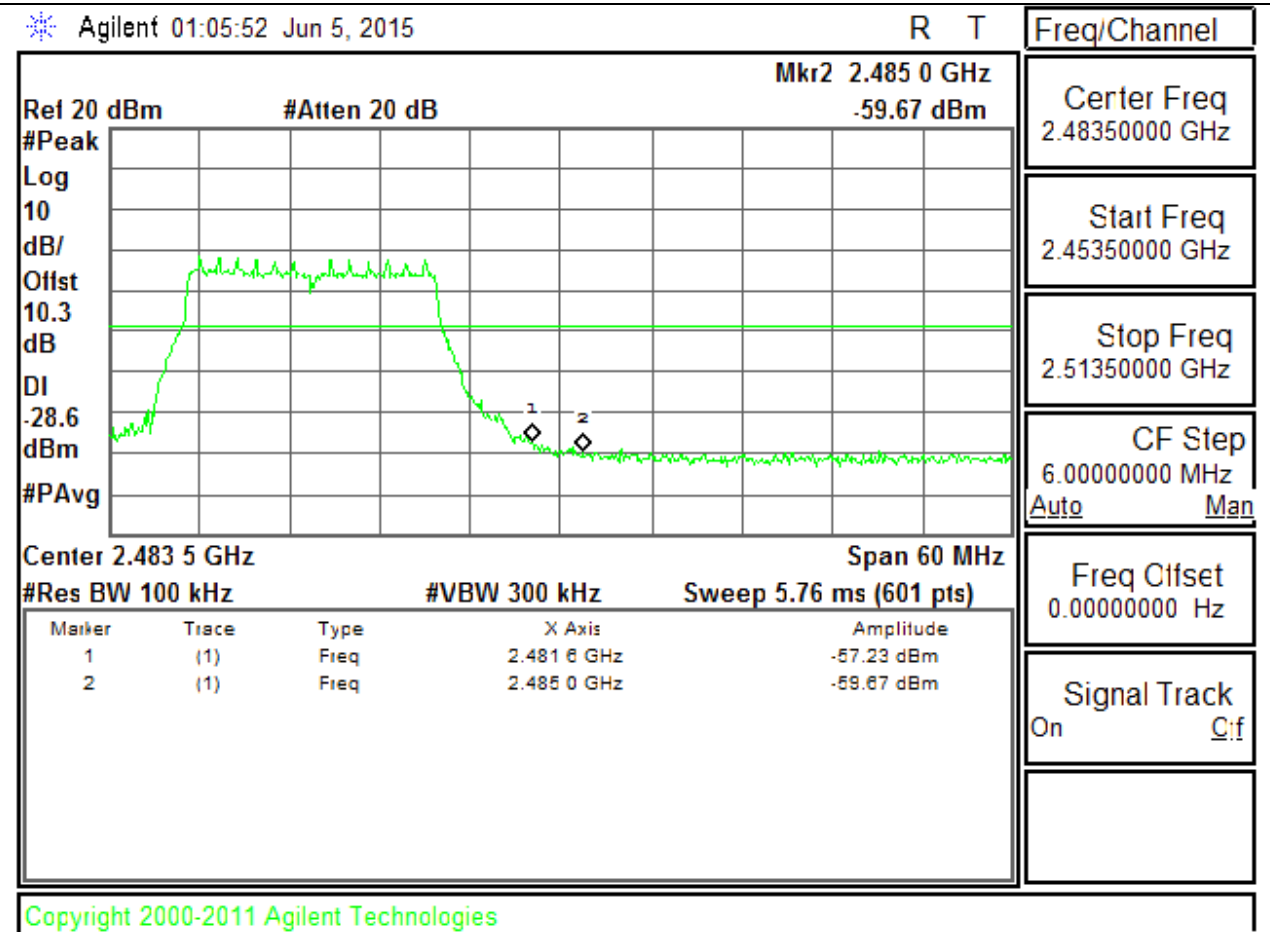
LOW CHANNEL BANDEDGE



HIGH CHANNEL BANDEDGE



AUTHORIZED BAND EDGE HIGH CH12

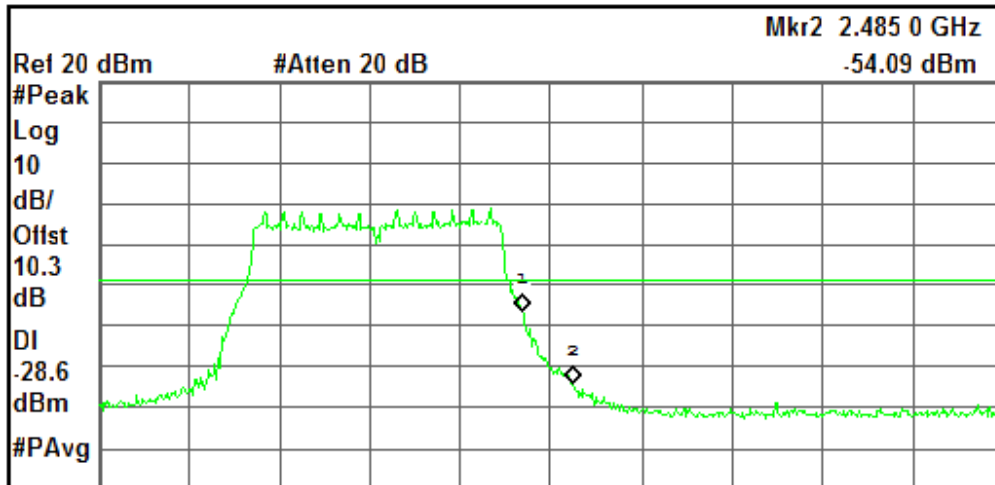


AUTHORIZED BAND EDGE HIGH CH13

Agilent 01:04:47 Jun 5, 2015

R T

Freq/Channel



Center Freq
2.48350000 GHz

Start Freq
2.45350000 GHz

Stop Freq
2.51350000 GHz

CF Step
6.00000000 MHz
Auto Man

Center 2.483 5 GHz Span 60 MHz
#Res BW 100 kHz #VBW 300 kHz Sweep 5.76 ms (601 pts)

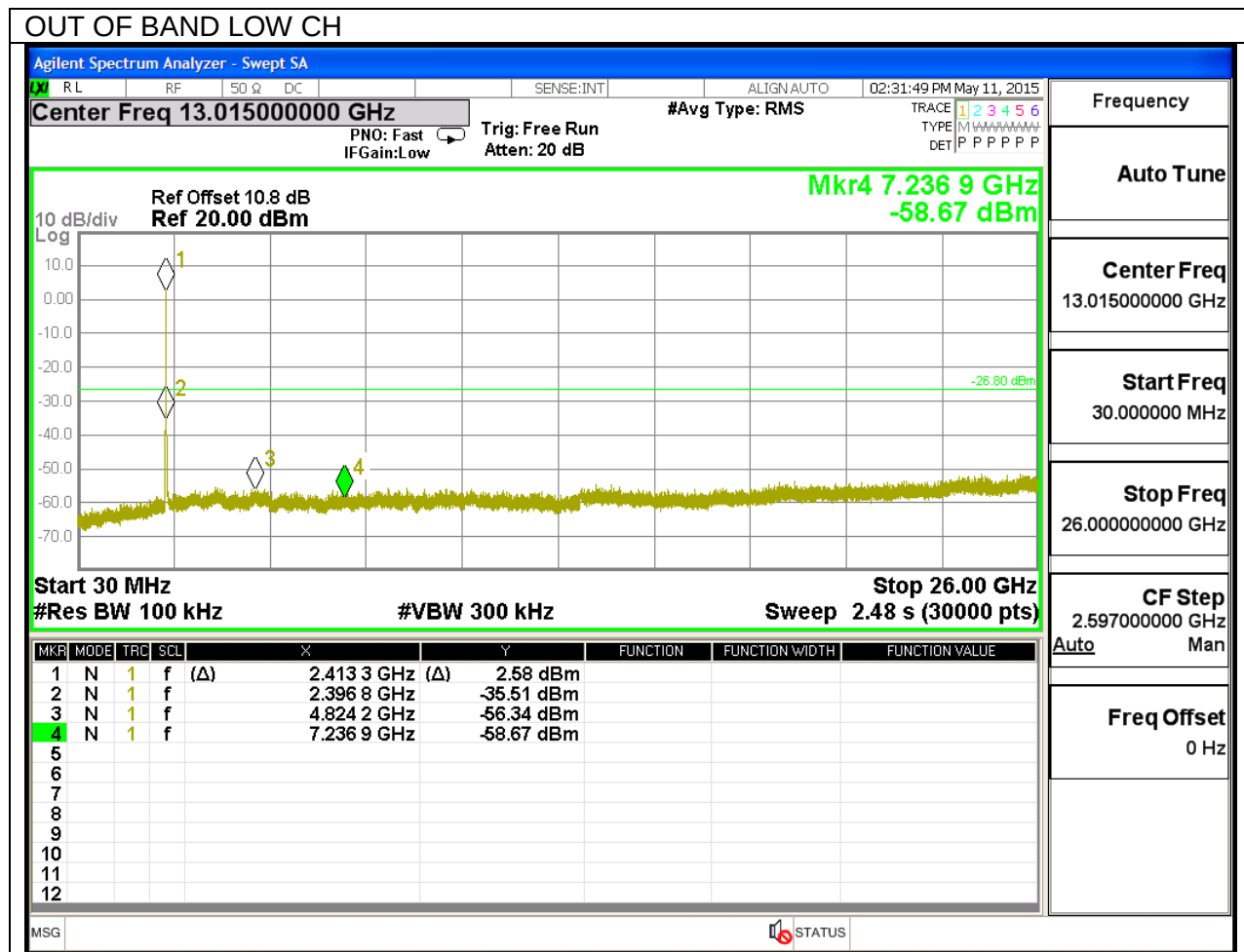
Freq Offset
0.00000000 Hz

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.481 6 GHz	-36.41 dBm
2	(1)	Freq	2.485 0 GHz	-54.09 dBm

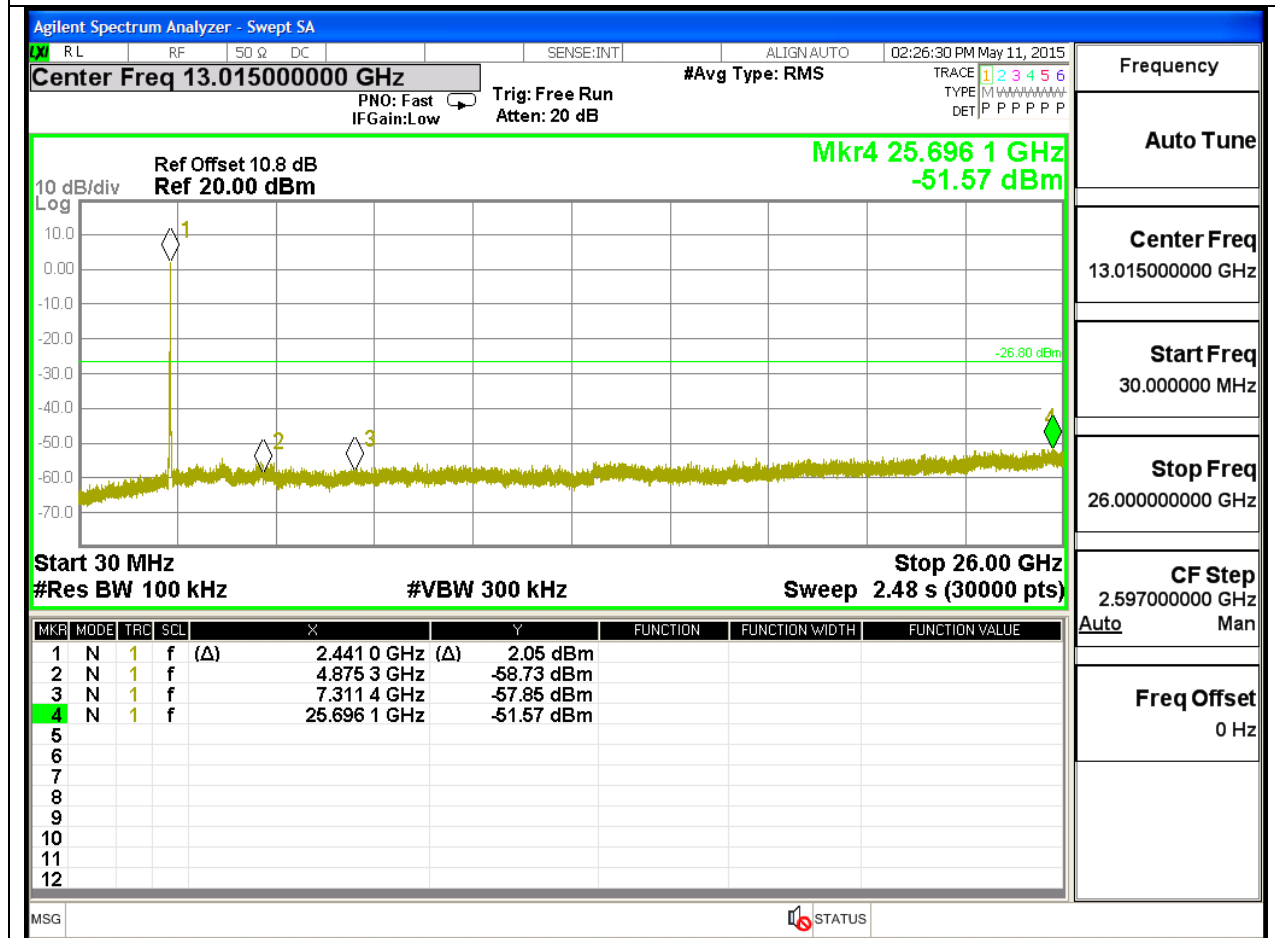
Signal Track
On Clf

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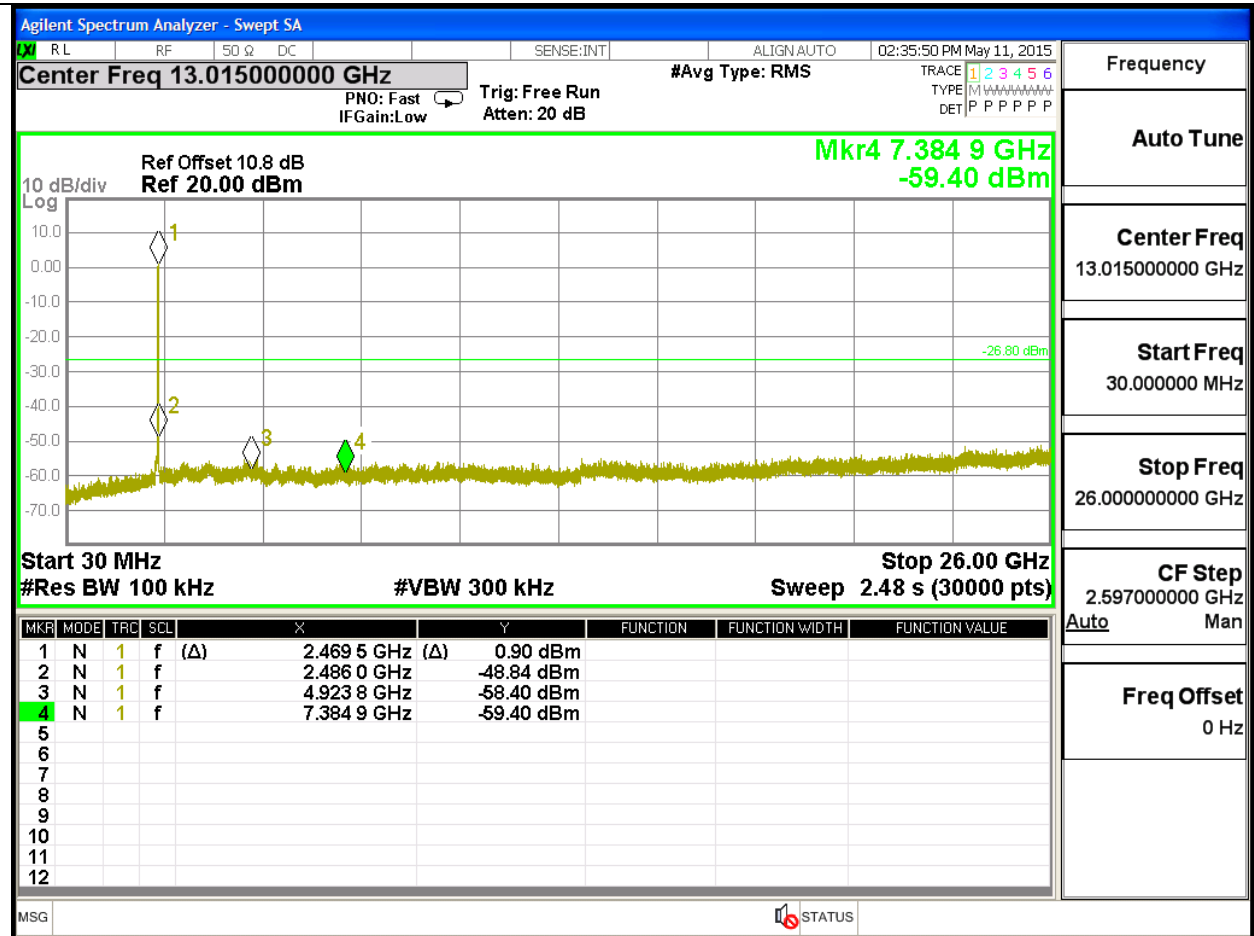
OUT-OF-BAND EMISSIONS



OUT OF BAND MID CH

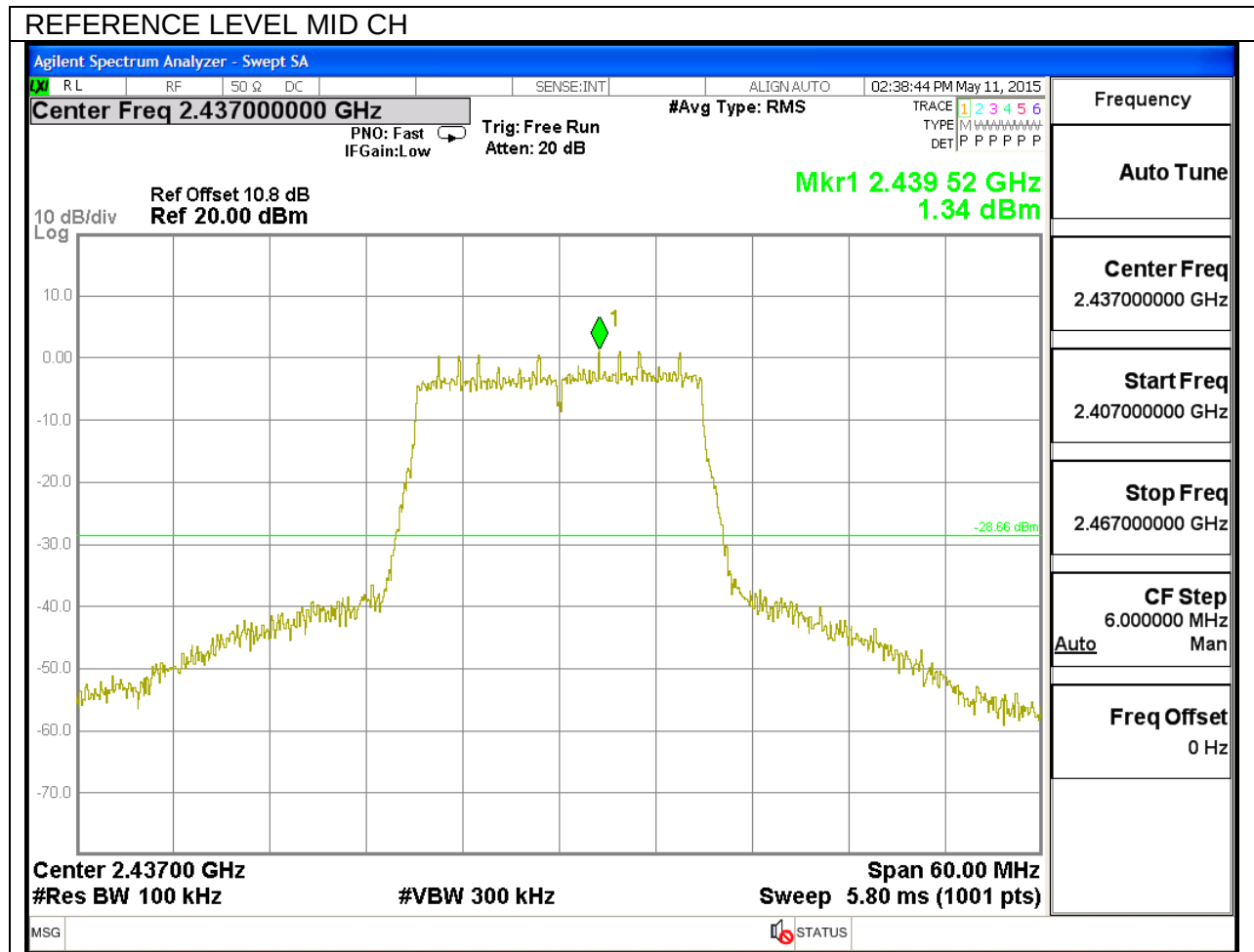


OUT OF BAND HIGH CH

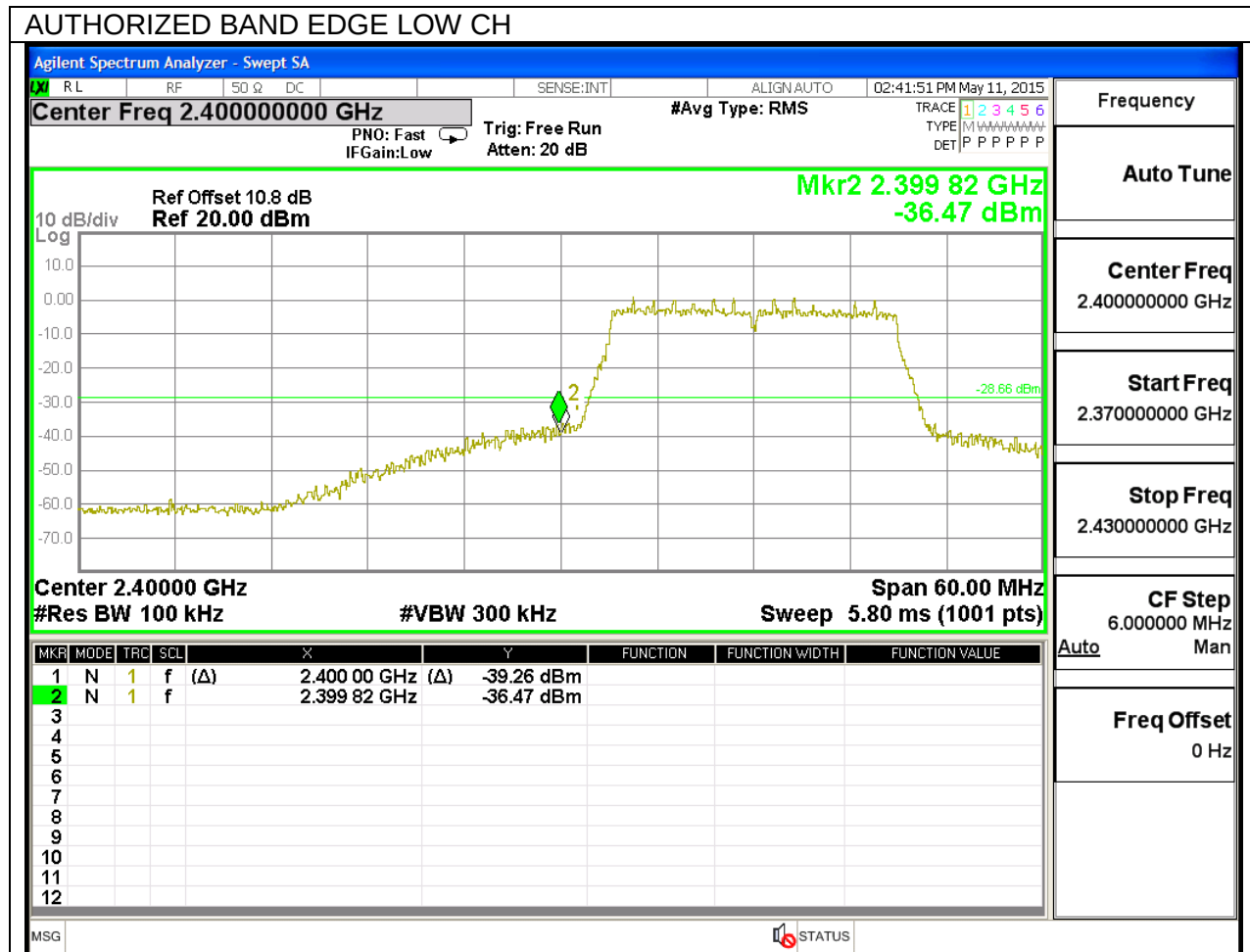


9.5.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

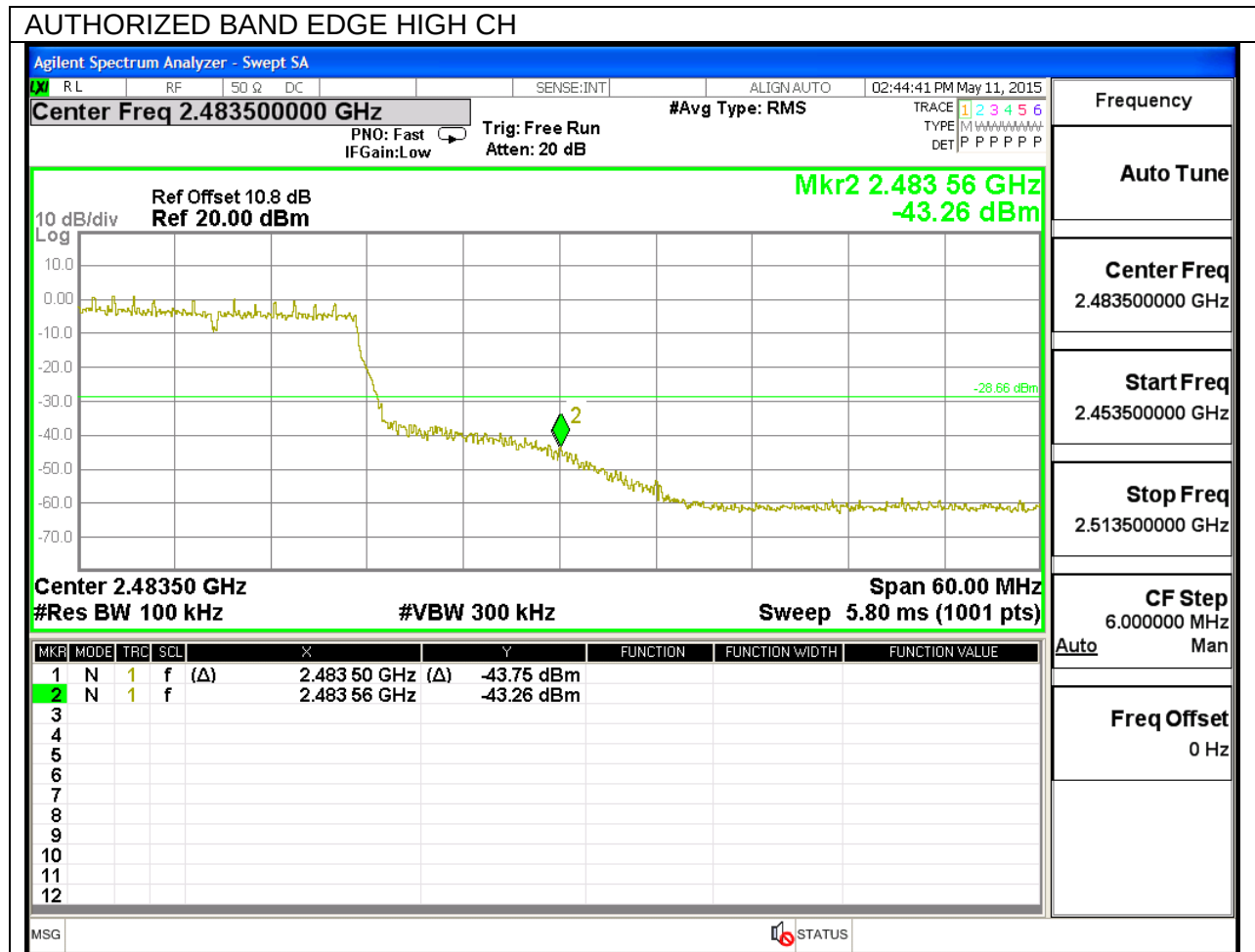
IN-BAND REFERENCE LEVEL



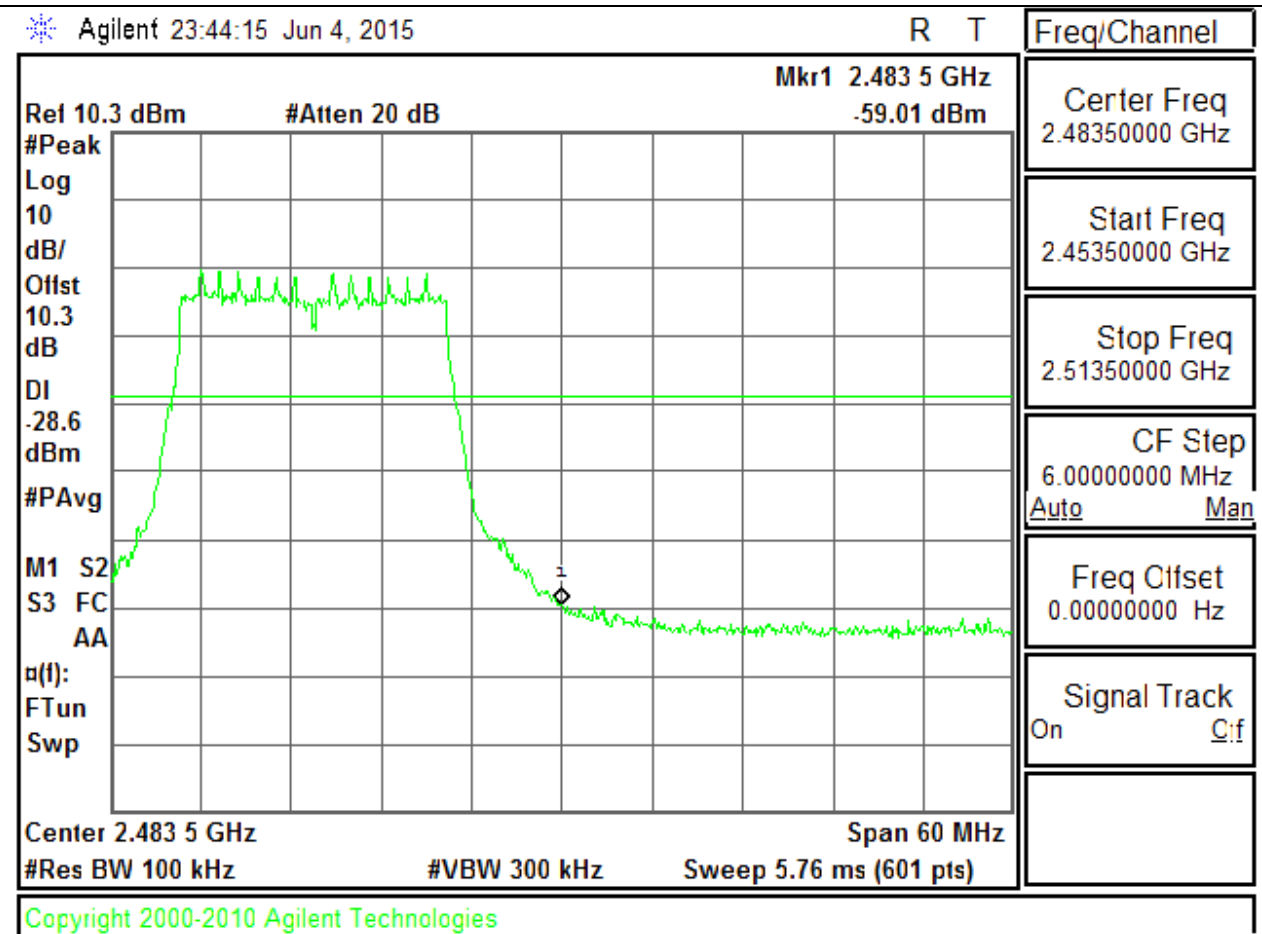
LOW CHANNEL BANDEDGE



HIGH CHANNEL BANDEDGE



AUTHORIZED BAND EDGE HIGH CH12

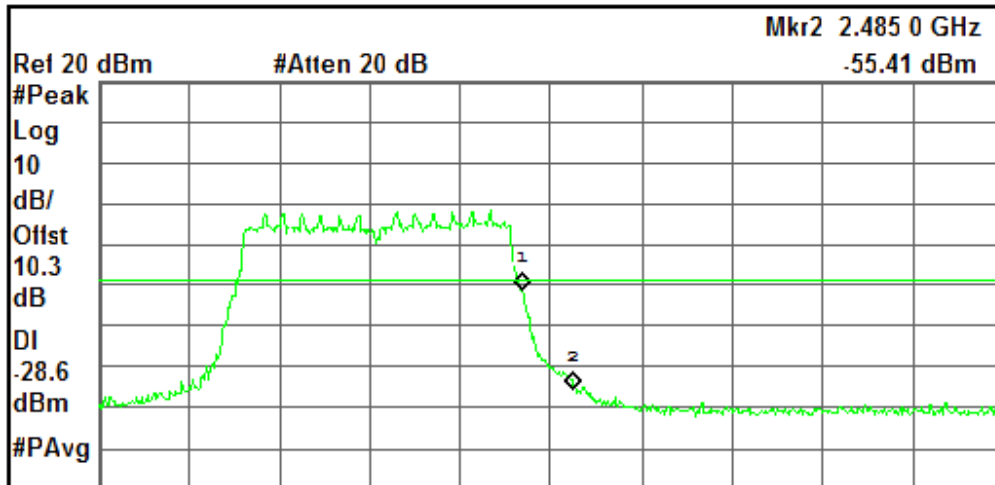


AUTHORIZED BAND EDGE HIGH CH13

Agilent 01:03:09 Jun 5, 2015

R T

Freq/Channel



Center Freq
2.48350000 GHz

Start Freq
2.45350000 GHz

Stop Freq
2.51350000 GHz

CF Step
6.00000000 MHz
Auto Man

Center 2.483 5 GHz Span 60 MHz
#Res BW 100 kHz #VBW 300 kHz Sweep 5.76 ms (601 pts)

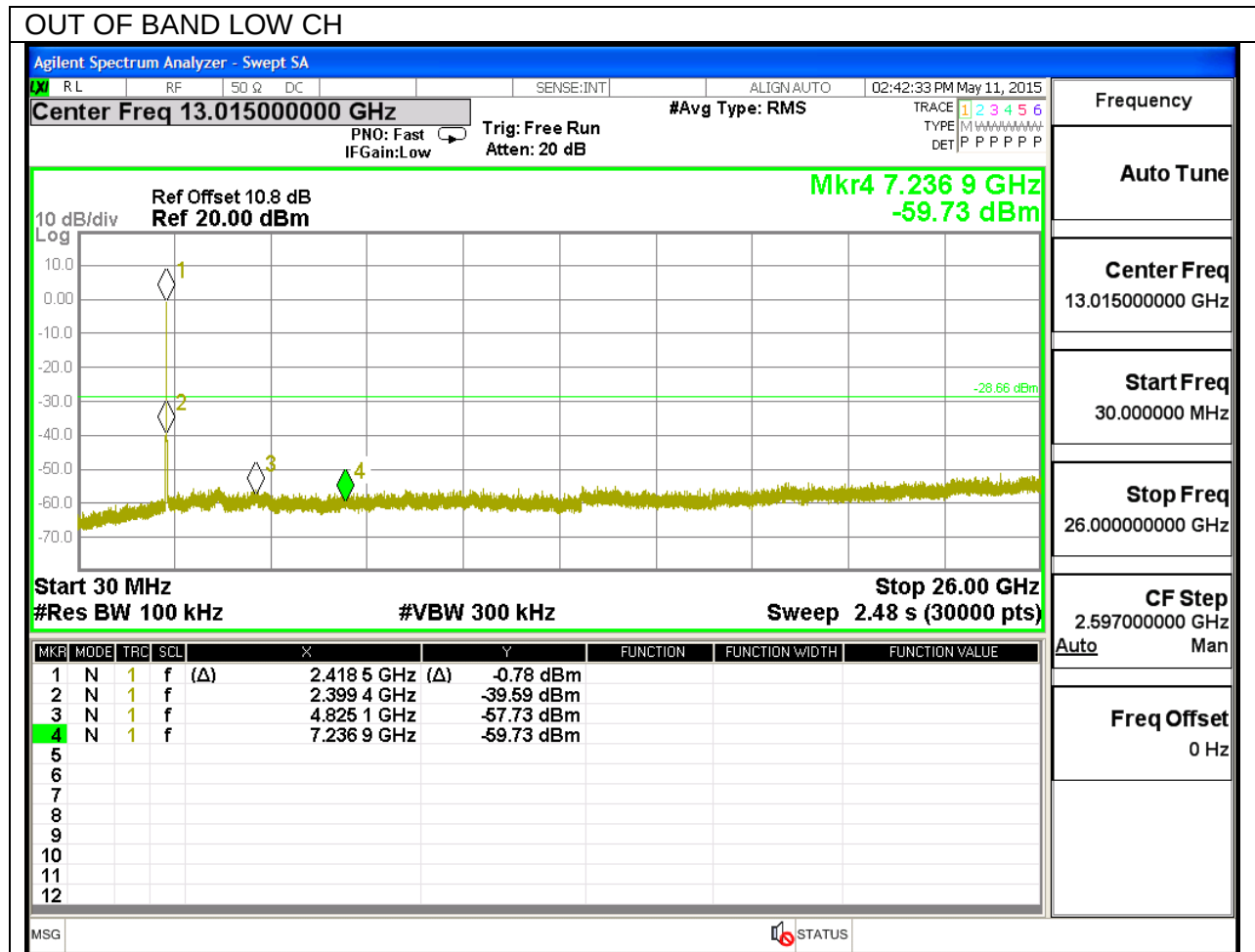
Freq Offset
0.00000000 Hz

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.481 6 GHz	-31.29 dBm
2	(1)	Freq	2.485 0 GHz	-55.41 dBm

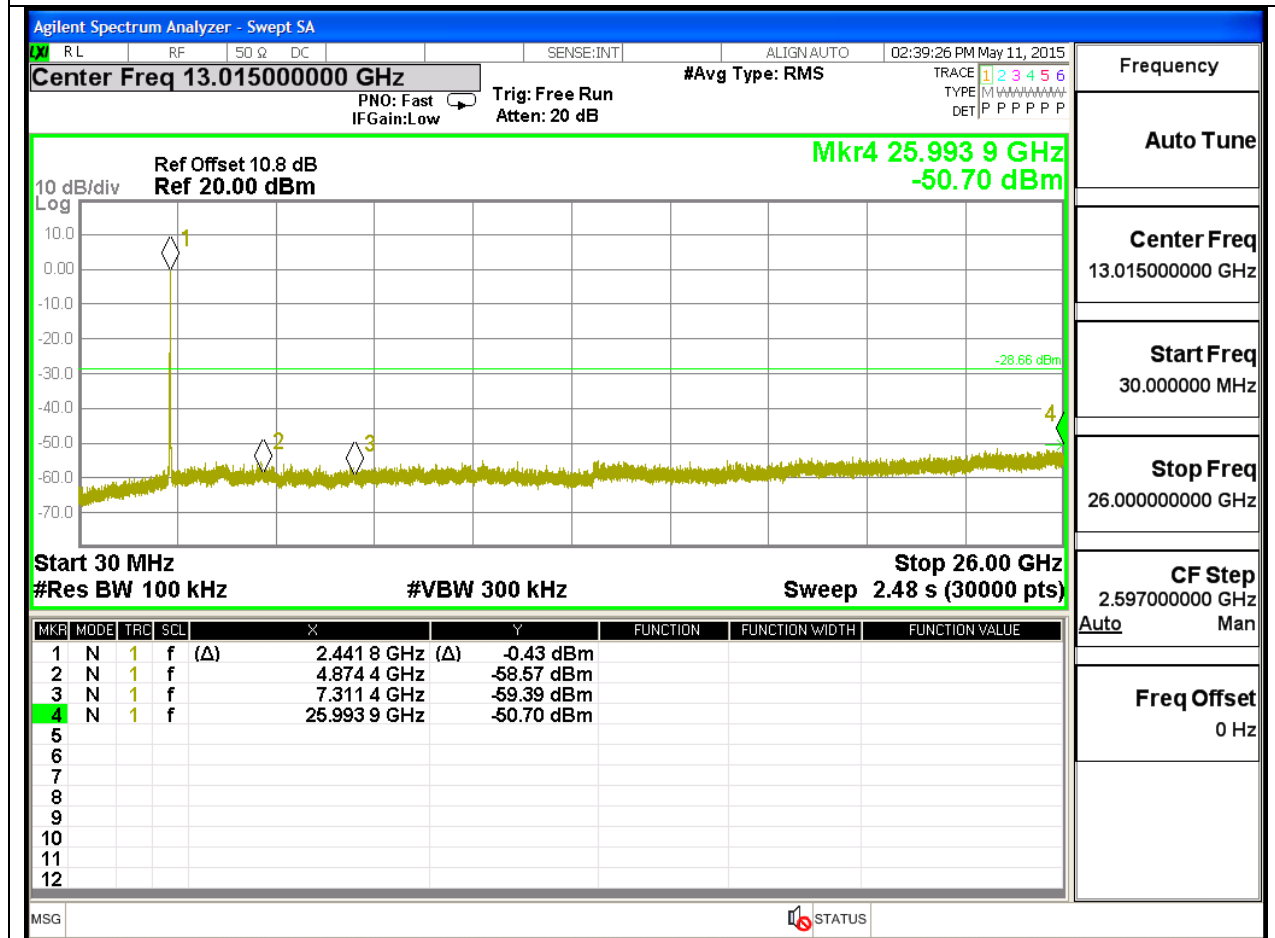
Signal Track
On Clf

Copyright 2000-2011 Agilent Technologies

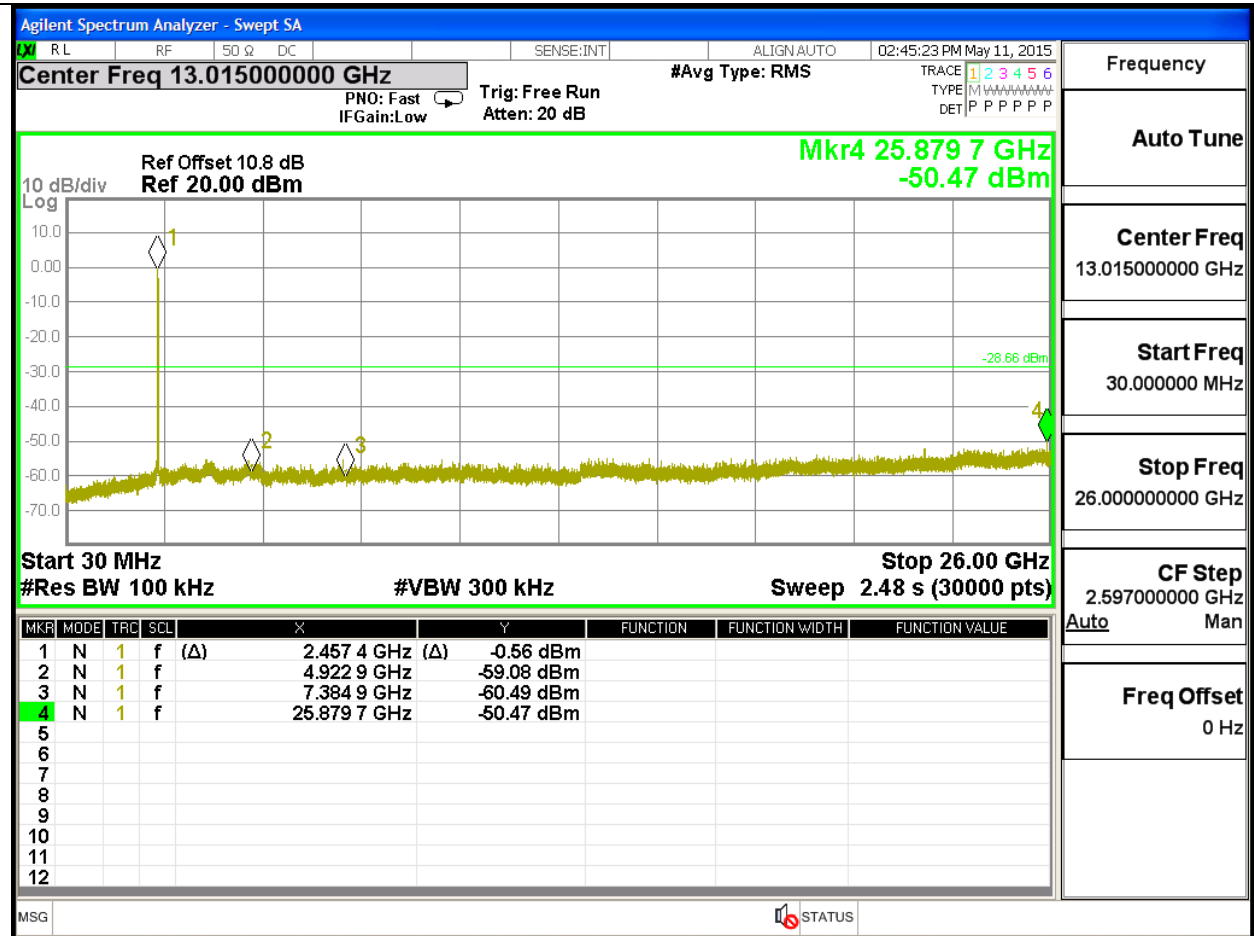
OUT-OF-BAND EMISSIONS



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 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 = 0.19dB; N mode = 0.2dB.

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.

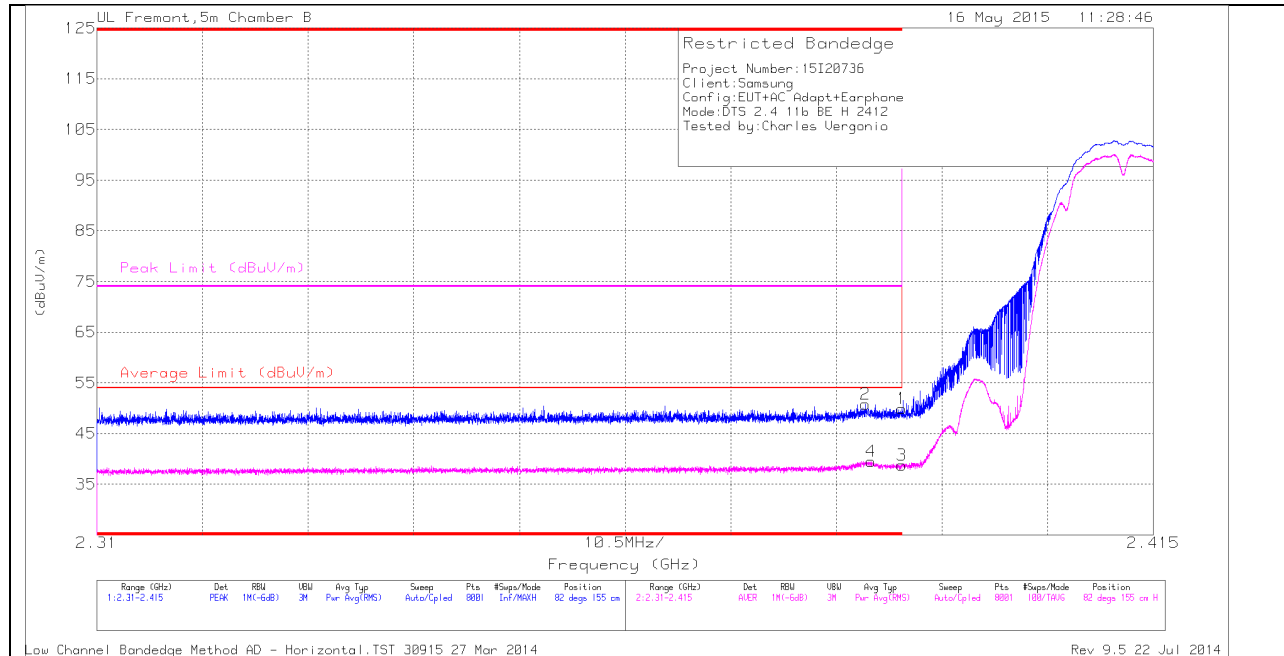
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

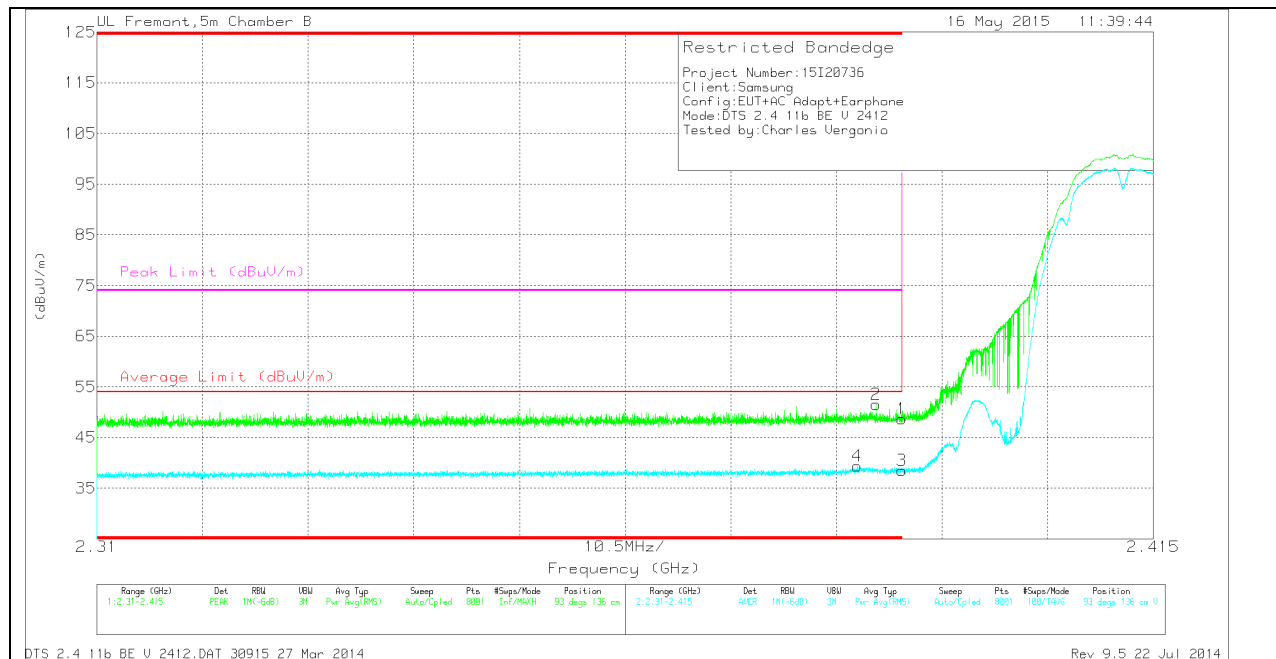
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	40.57	PK	32	-22.6	49.97	-	-	74	-24.03	82	155	H
2	* 2.386	41.41	PK	32	-22.6	50.81	-	-	74	-23.19	82	155	H
3	* 2.39	29.4	RMS	32	-22.6	38.8	54	-15.2	-	-	82	155	H
4	* 2.387	30.07	RMS	32	-22.6	39.47	54	-14.53	-	-	82	155	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Filt/Pad (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	30	RMS	32	-22.6	39.4	54	-14.6	-	-	93	136	V
2	* 2.387	42.08	PK	32	-22.6	51.48	-	-	74	-22.52	93	136	V
1	* 2.39	39.26	PK	32	-22.6	48.66	-	-	74	-25.34	93	136	V
3	* 2.39	29.15	RMS	32	-22.6	38.55	54	-15.45	-	-	93	136	V

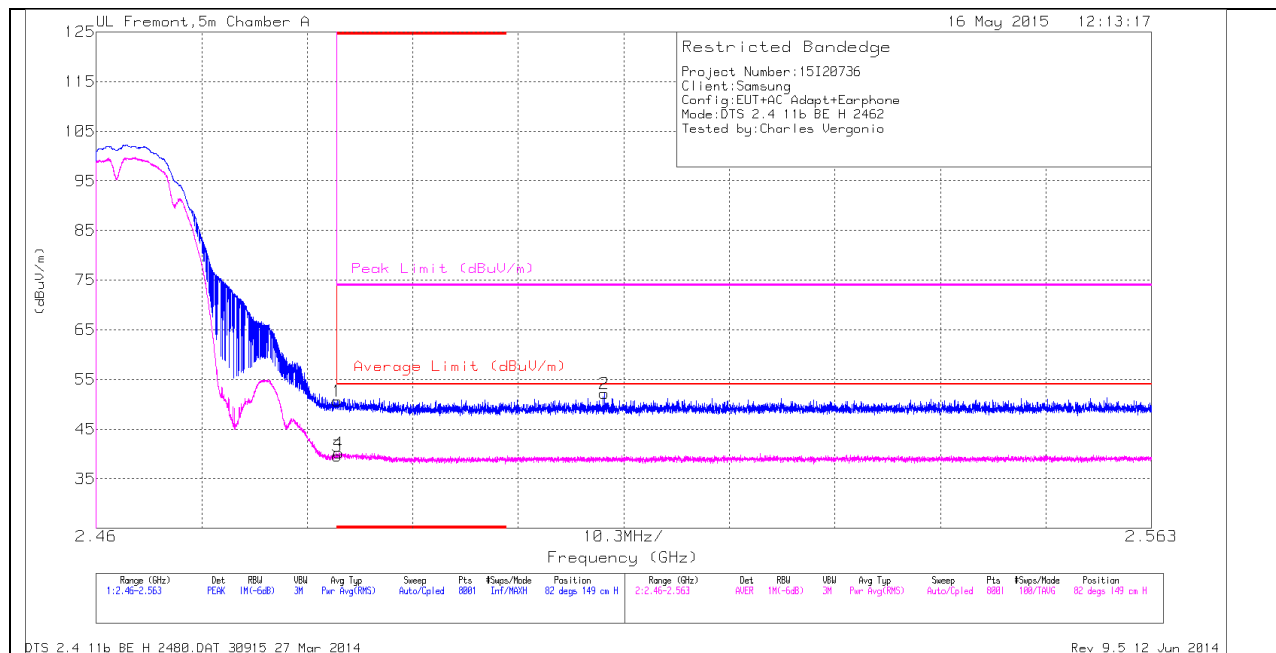
* - indicates frequency in CFR 47, Part 15 and Industry Canada RSS-Restricted Band.

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

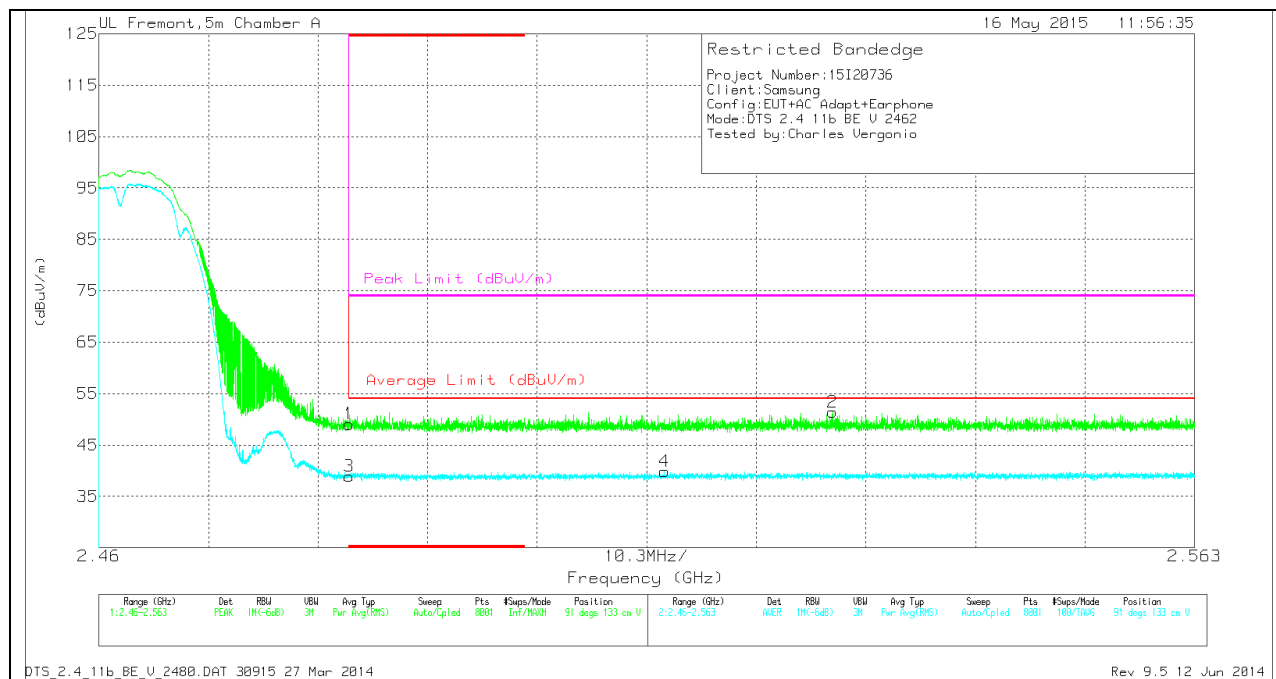
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	40.57	PK	32.5	-22.4	50.67	-	-	74	-23.33	82	149	H
3	* 2.484	29.48	RMS	32.5	-22.4	39.58	54	-14.42	-	-	82	149	H
4	* 2.484	30.1	RMS	32.5	-22.4	40.2	54	-13.8	-	-	82	149	H
2	2.51	41.95	PK	32.6	-22.4	52.15	-	-	74	-21.85	82	149	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/FI tr/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	38.93	PK	32.5	-22.4	49.03	-	-	74	-24.97	91	133	V
3	* 2.484	28.78	RMS	32.5	-22.4	38.88	54	-15.12	-	-	91	133	V
4	2.513	29.65	RMS	32.6	-22.4	39.85	54	-14.15	-	-	91	133	V
2	2.529	41.1	PK	32.6	-22.3	51.4	-	-	74	-22.6	91	133	V

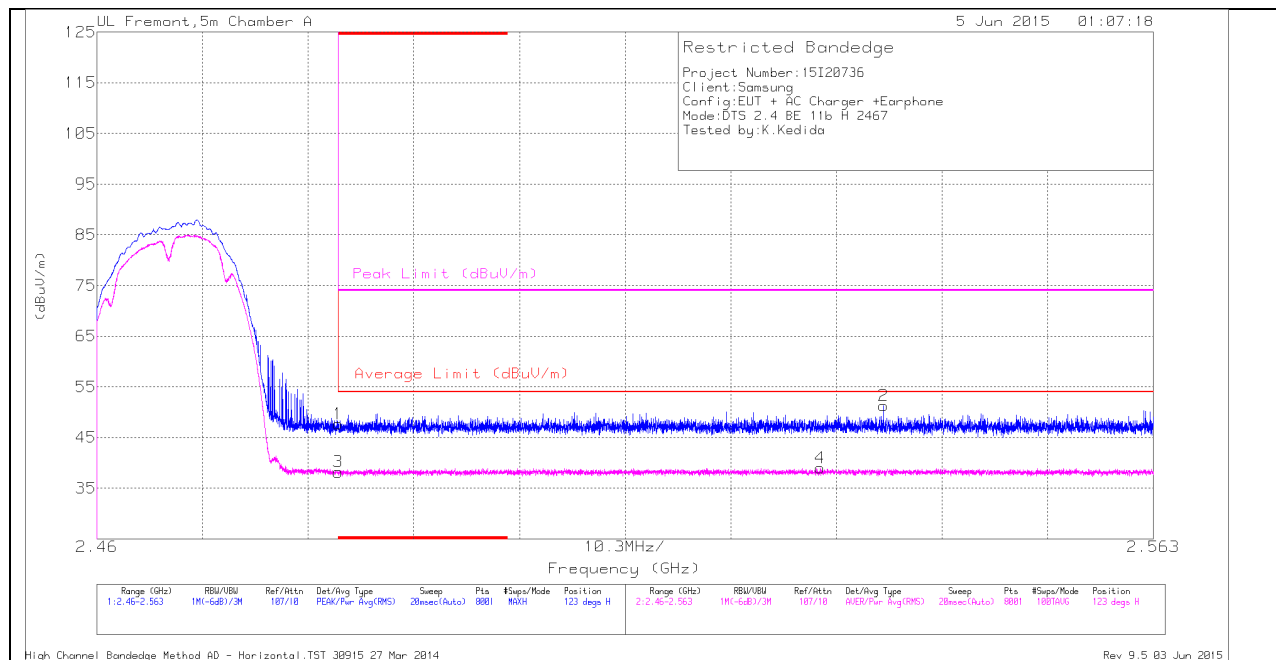
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (CHANNEL12)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

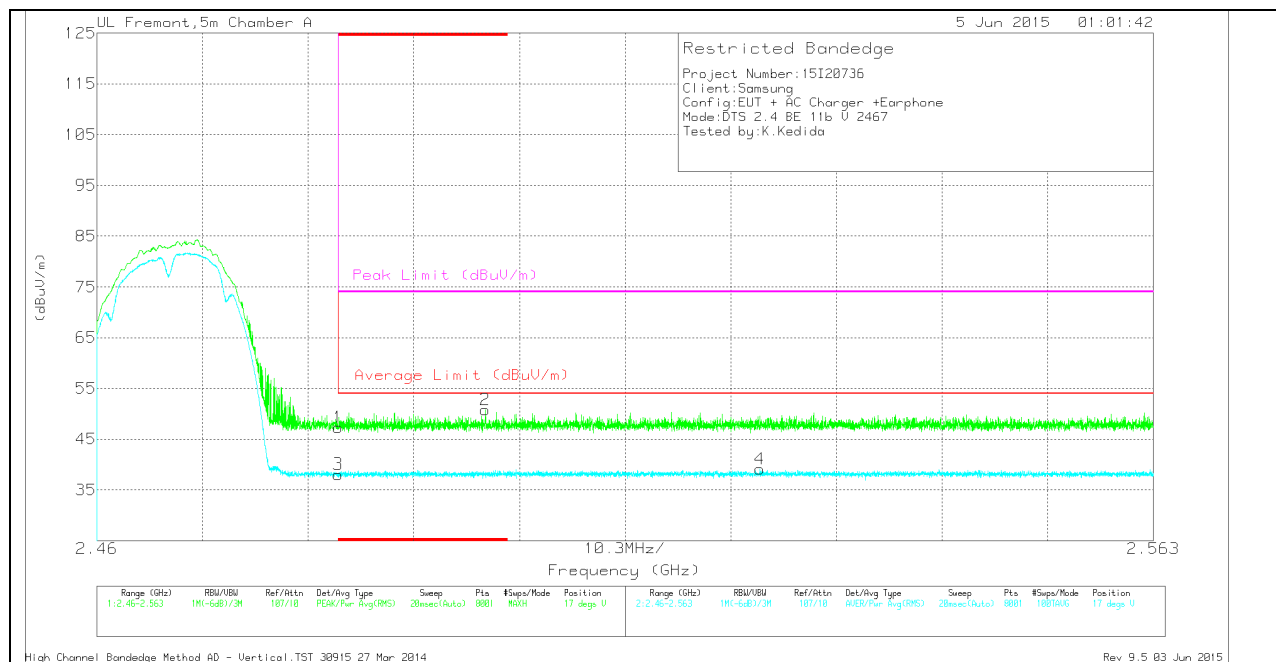
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	40.35	Pk	32.1	-24.8	47.65	-	-	74	-26.35	123	190	H
3	* 2.484	30.89	RMS	32.1	-24.8	38.19	54	-15.81	-	-	123	190	H
4	2.531	31.54	RMS	32.1	-24.7	38.94	54	-15.06	-	-	123	190	H
2	2.537	43.92	Pk	32.1	-24.7	51.32	-	-	74	-22.68	123	190	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 T136 (dB/m)	Amp/Cb/ Filt/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	40.05	Pk	32.1	-24.8	47.35	-	-	74	-26.65	17	208	V
2	* 2.498	43.36	Pk	32.1	-24.7	50.76	-	-	74	-23.24	17	208	V
3	* 2.484	30.76	RMS	32.1	-24.8	38.06	54	-15.94	-	-	17	208	V
4	2.525	31.67	RMS	32.1	-24.7	39.07	54	-14.93	-	-	17	208	V

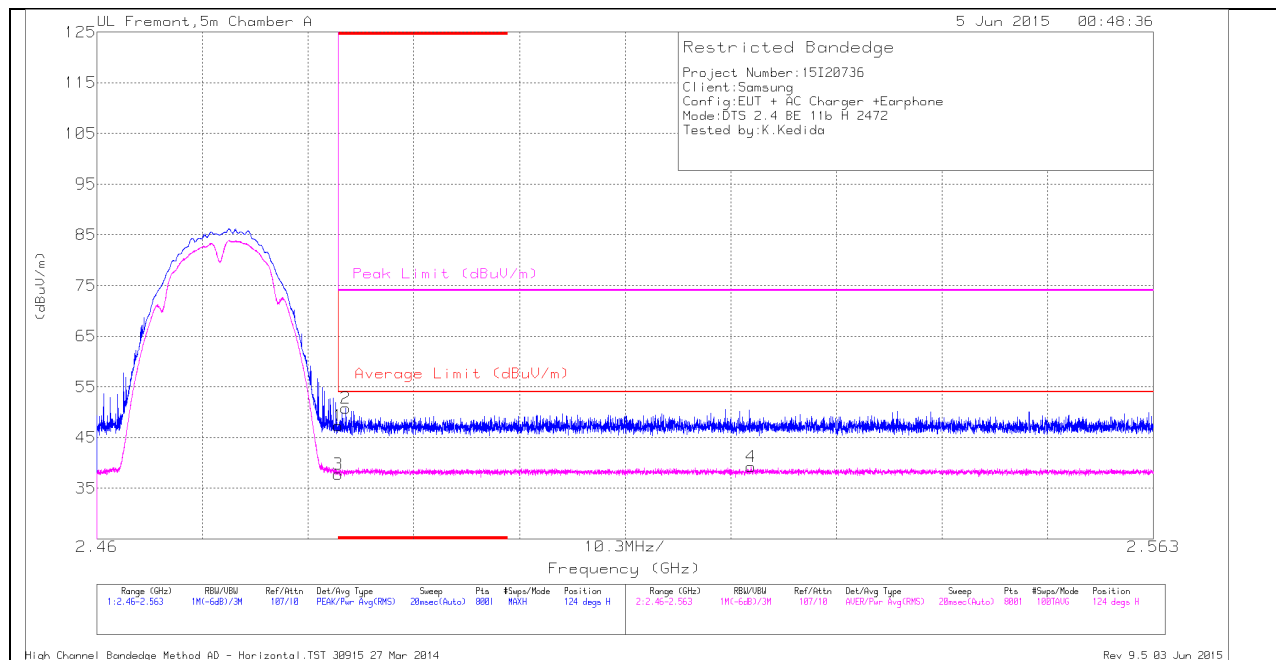
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (CHANNEL13)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

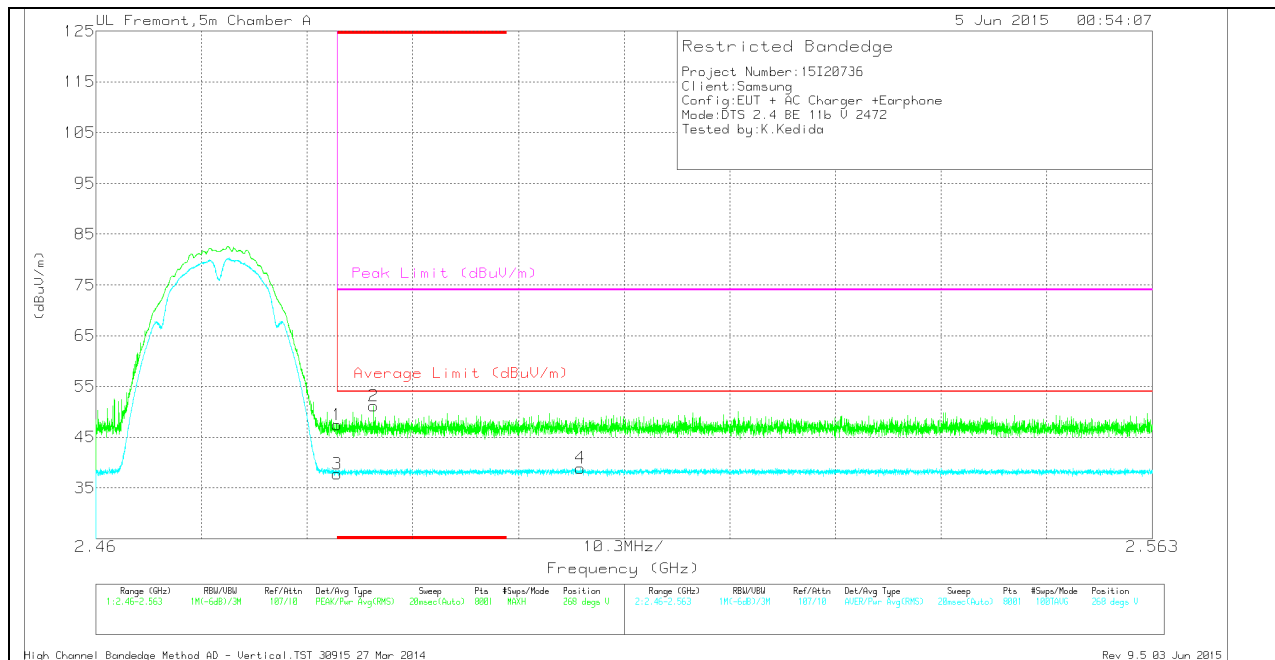
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	40.03	Pk	32.1	-24.8	47.33	-	-	74	-26.67	124	191	H
2	* 2.484	43.52	Pk	32.1	-24.8	50.82	-	-	74	-23.18	124	191	H
3	* 2.484	30.48	RMS	32.1	-24.8	37.78	54	-16.22	-	-	124	191	H
4	2.524	31.85	RMS	32.1	-24.7	39.25	54	-14.75	-	-	124	191	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

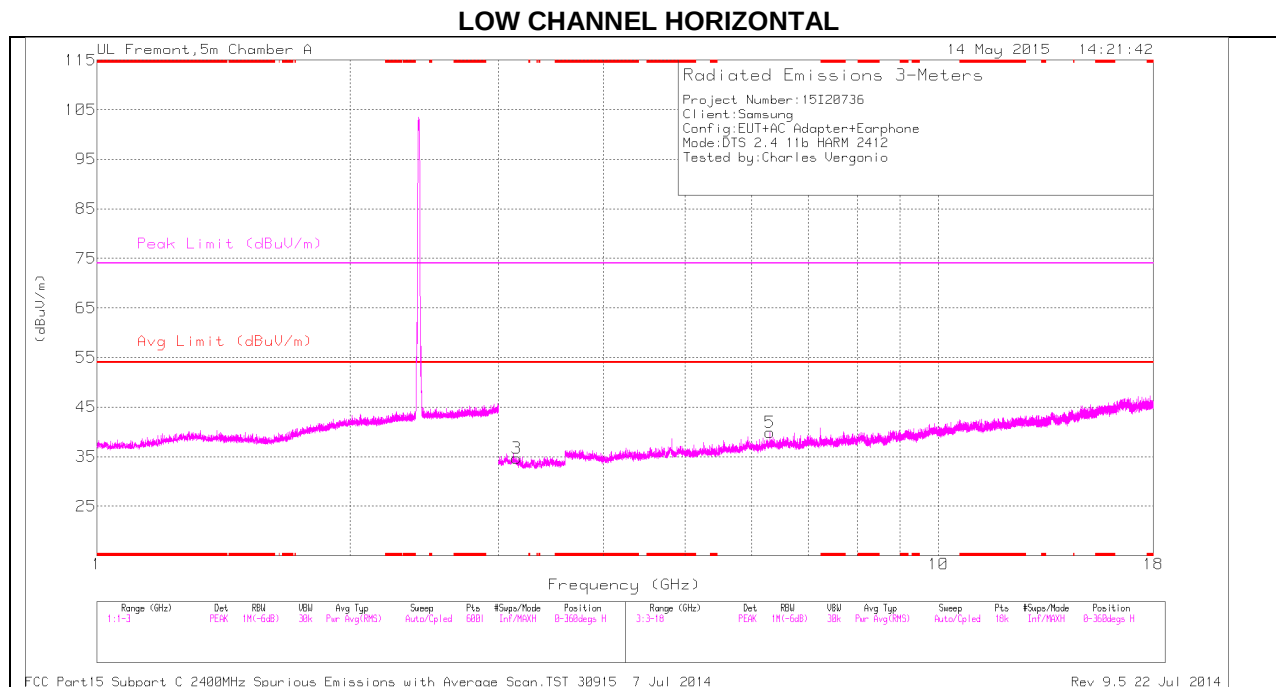
Marker	Frequen cy (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Correct d Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	40.16	Pk	32.1	-24.8	47.46	-	-	74	-26.54	268	195	V
2	* 2.487	43.89	Pk	32.1	-24.8	51.19	-	-	74	-22.81	268	195	V
3	* 2.484	30.45	RMS	32.1	-24.8	37.75	54	-16.25	-	-	268	195	V
4	2.507	31.53	RMS	32.1	-24.7	38.93	54	-15.07	-	-	268	195	V

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

Pk - Peak detector

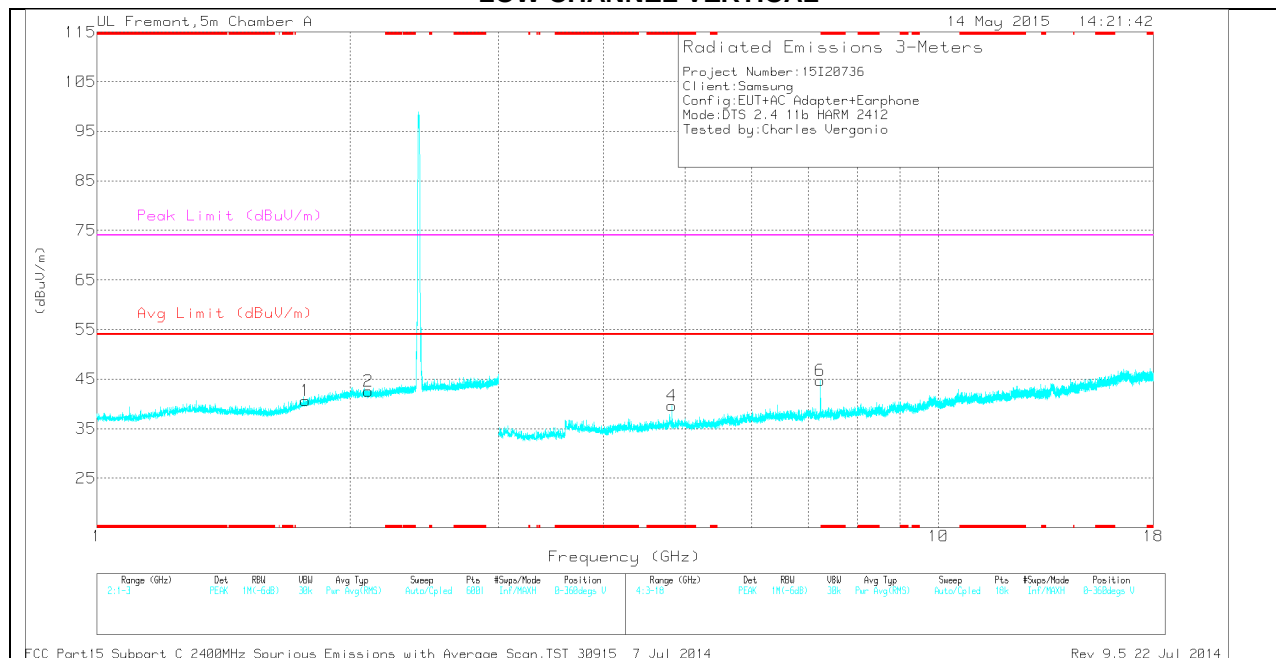
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS



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 T136 (dB/m)	Amp/Cbl/F ltr/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	* 4.824	36.5	PK	33.9	-30.8	39.6	-	-	74	-34.4	0-360	201	V
1	1.77	36.59	PK	29.6	-25.5	40.69	-	-	-	-	0-360	100	V
2	2.1	36.41	PK	31.4	-25.3	42.51	-	-	-	-	0-360	201	V
3	3.152	34.18	PK	32.8	-32.3	34.68	-	-	-	-	0-360	100	H
5	6.306	32.57	PK	35.6	-28.3	39.87	-	-	-	-	0-360	201	H
6	7.239	36.36	PK	35.5	-27.2	44.66	-	-	-	-	0-360	201	V

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

PK - Peak detector

Radiated Emissions

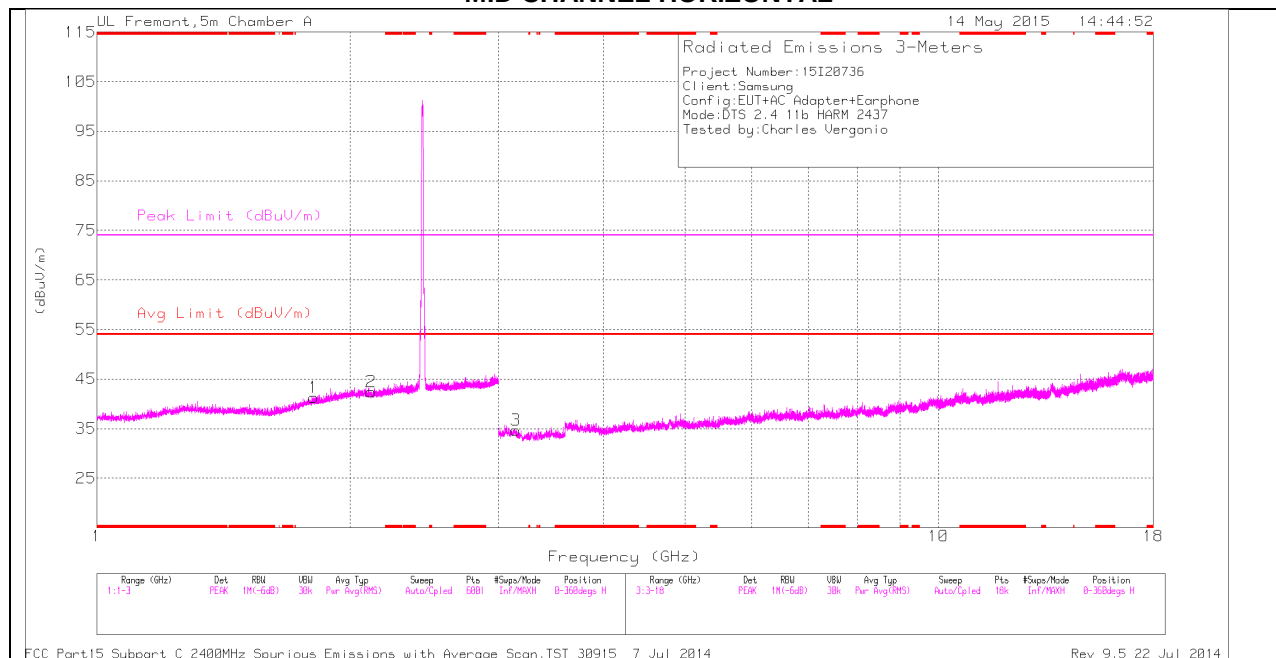
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.824	45.3	PK2	33.9	-30.8	48.4	-	-	74	-25.6	108	252	V
* 4.824	37.64	MAV1	33.9	-30.8	40.74	54	-13.26	-	-	108	252	V
7.237	42.24	PK2	35.5	-27.2	50.54	-	-	-	-	279	200	V
7.237	34.52	MAV1	35.5	-27.2	42.82	-	-	-	-	279	200	V

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

PK2 - KDB558074 Method: Maximum Peak

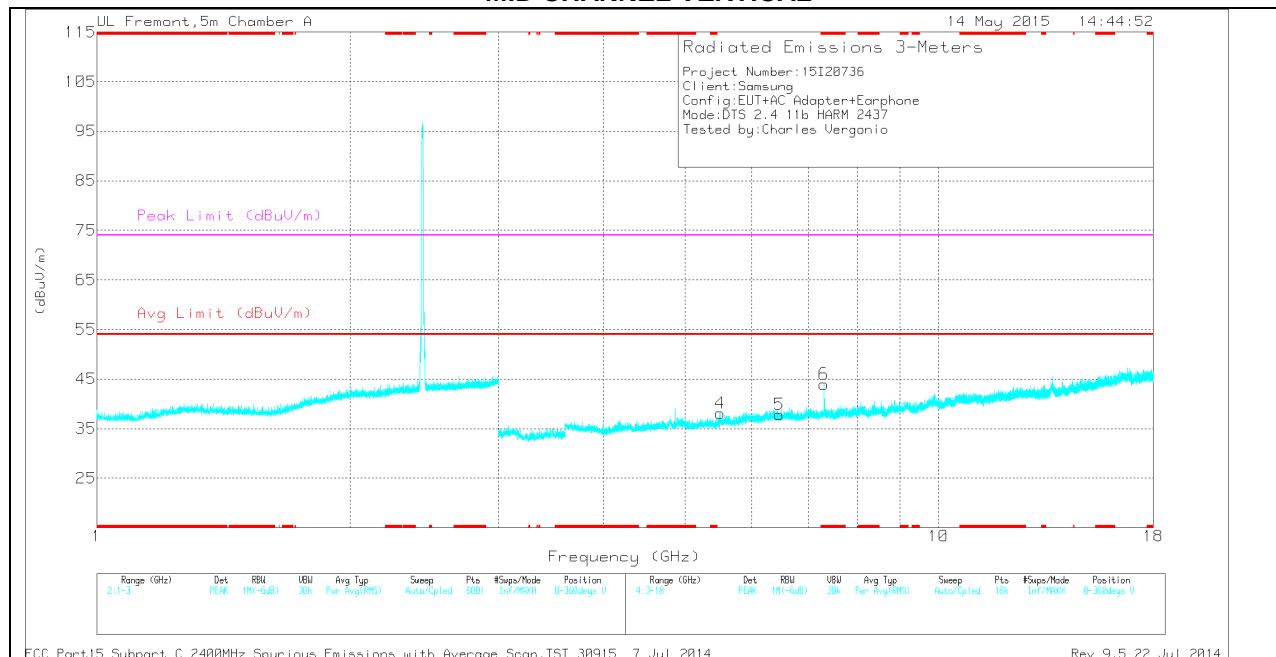
MAV1 - KDB558074 Option 1 Maximum RMS Average

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 T136 (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
6	* 7.308	35.21	PK	35.5	-26.7	44.01	-	-	74	-29.99	0-360	201	V
1	1.808	36.74	PK	30	-25.4	41.34	-	-	-	-	0-360	201	H
2	2.118	36.35	PK	31.4	-25.3	42.45	-	-	-	-	0-360	100	H
3	3.148	34.2	PK	32.8	-32.3	34.7	-	-	-	-	0-360	201	H
4	5.504	33.65	PK	34.4	-29.9	38.15	-	-	-	-	0-360	100	V
5	6.465	31.18	PK	35.5	-28.8	37.88	-	-	-	-	0-360	201	V

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

PK - Peak detector

Radiated Emissions

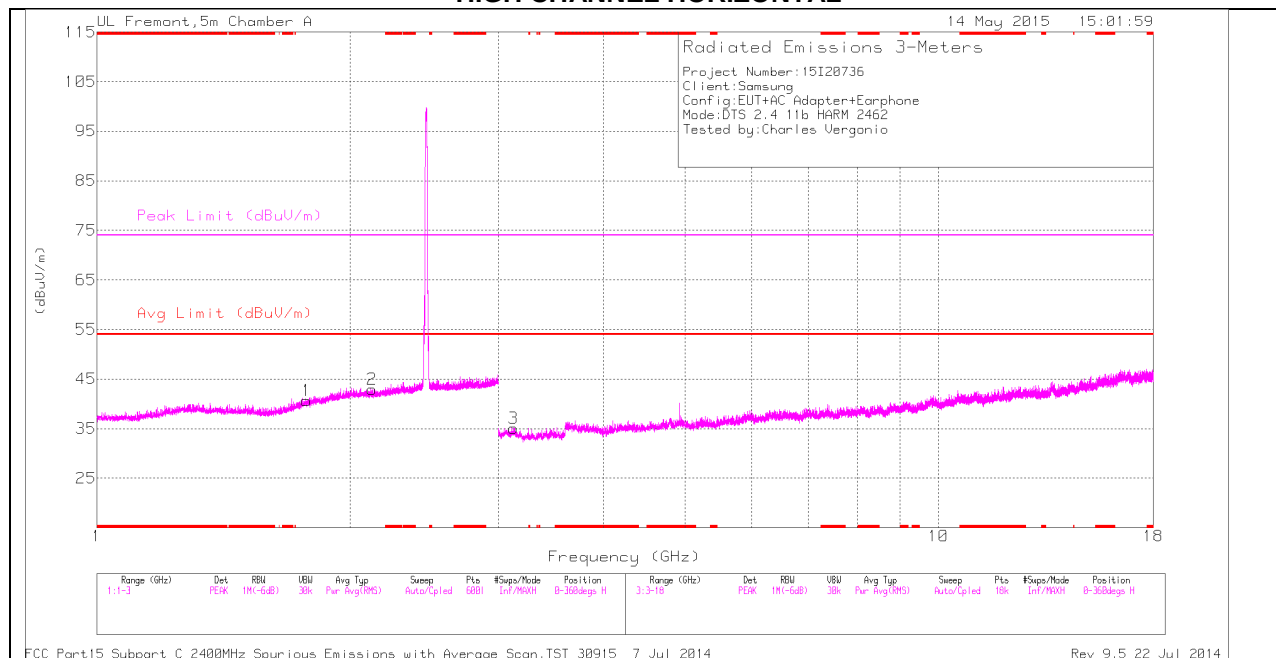
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 7.31	42.28	PK2	35.5	-26.7	51.08	-	-	74	-22.92	266	229	V
* 7.309	34.79	MAV1	35.5	-26.7	43.59	54	-10.41	-	-	266	229	V

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

PK2 - KDB558074 Method: Maximum Peak

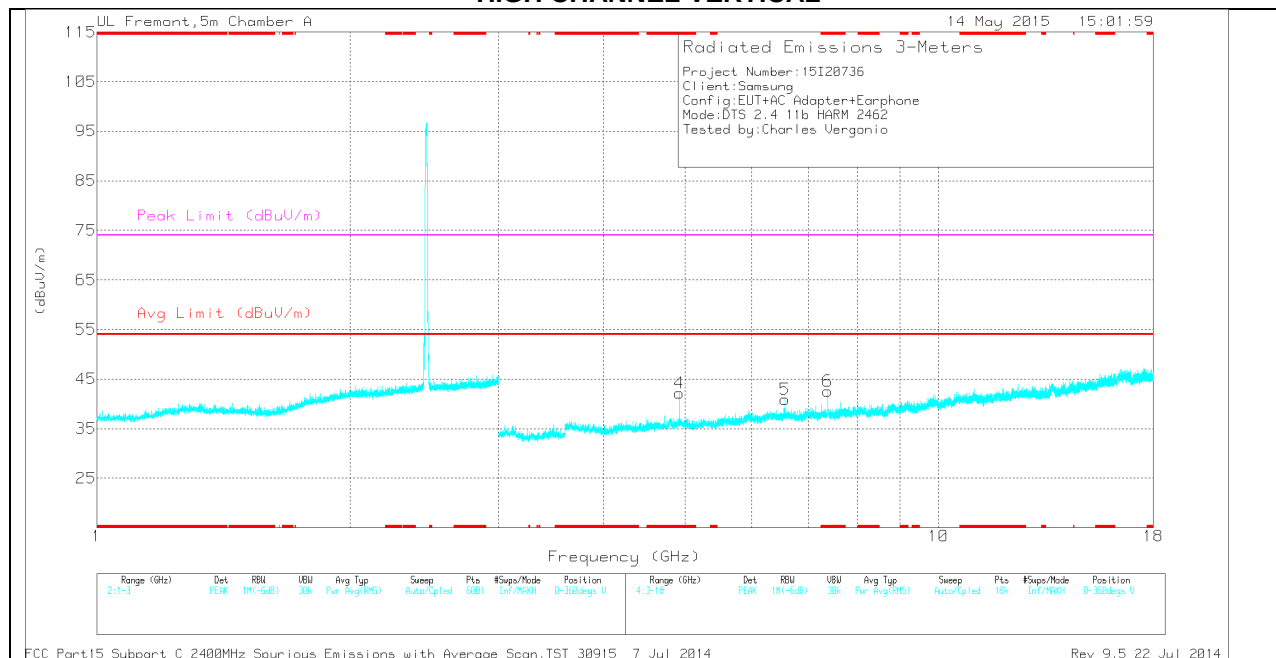
MAV1 - KDB558074 Option 1 Maximum RMS Average

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 T136 (dB/m)	Amp/Cbl/F ltr/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	* 4.924	37.86	PK	33.9	-29.6	42.16	-	-	74	-31.84	0-360	201	V
6	* 7.383	32.9	PK	35.5	-25.9	42.5	-	-	74	-31.5	0-360	201	V
1	1.774	36.55	PK	29.6	-25.5	40.65	-	-	-	-	0-360	100	H
2	2.124	36.85	PK	31.4	-25.3	42.95	-	-	-	-	0-360	100	H
3	3.127	34.08	PK	32.9	-31.9	35.08	-	-	-	-	0-360	201	H
5	6.565	33.05	PK	35.6	-27.8	40.85	-	-	-	-	0-360	201	V

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

PK - Peak detector

Radiated Emissions

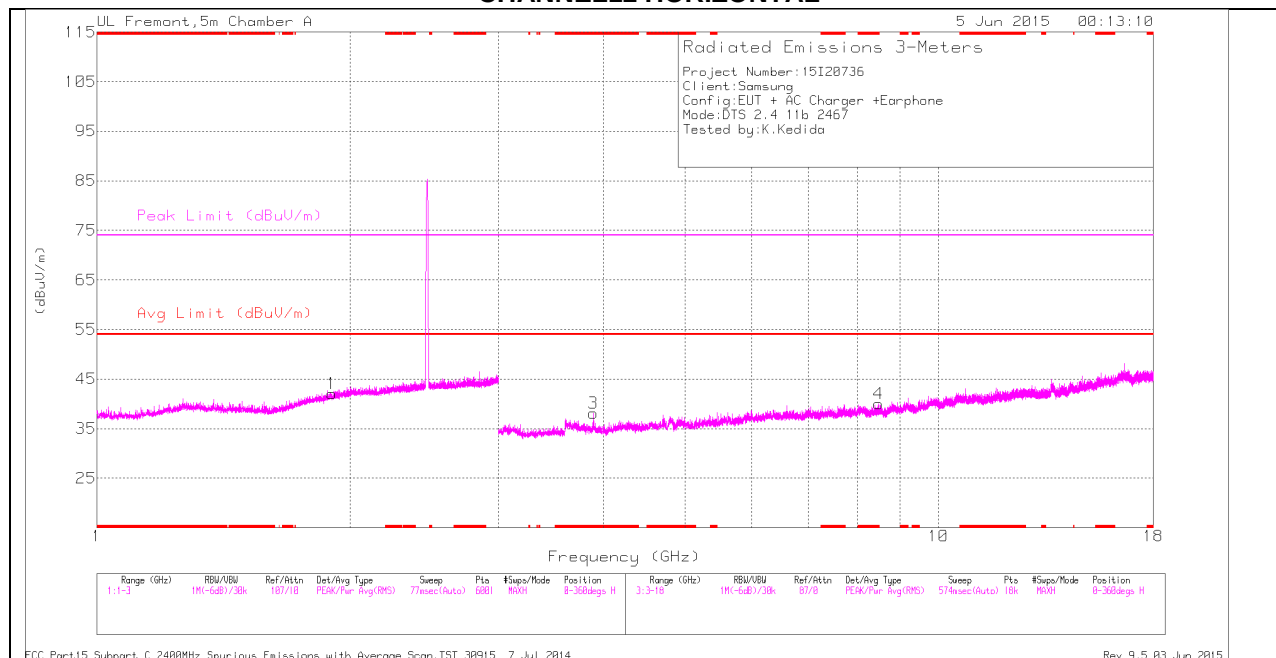
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.924	43.02	PK2	33.9	-29.6	47.32	-	-	74	-26.68	6	200	V
* 4.924	34.67	MAV1	33.9	-29.6	38.97	54	-15.03	-	-	6	200	V
* 7.385	41.23	PK2	35.5	-25.9	50.83	-	-	74	-23.17	259	242	V
* 7.384	33.54	MAV1	35.5	-25.9	43.14	54	-10.86	-	-	259	242	V

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

PK2 - KDB558074 Method: Maximum Peak

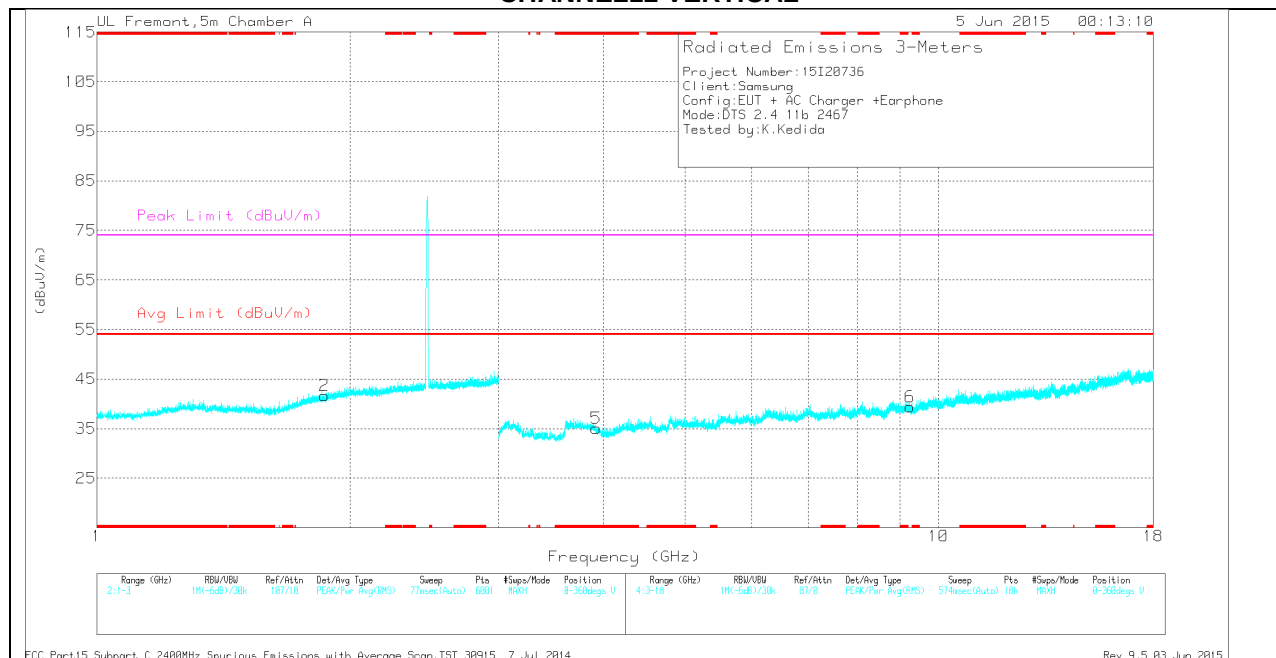
MAV1 - KDB558074 Option 1 Maximum RMS Average

CHANNEL12 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.

CHANNEL12 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.

CHANNEL12 DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filt/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	* 3.887	36.94	Pk	33.5	-32.3	38.14	-	-	74	-35.86	0-360	201	H
4	* 8.49	29.29	Pk	35.7	-25	39.99	-	-	74	-34.01	0-360	100	H
5	* 3.919	33.62	Pk	33.5	-32.1	35.02	-	-	74	-38.98	0-360	100	V
2	1.863	36.61	Pk	30.5	-25.5	41.61	-	-	74	-32.39	0-360	200	V
1	1.902	36.69	Pk	30.8	-25.5	41.99	-	-	74	-32.01	0-360	201	H
6	9.25	27.35	Pk	36.4	-24.4	39.35	-	-	74	-34.65	0-360	100	V

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

Pk - Peak detector

Radiated Emissions

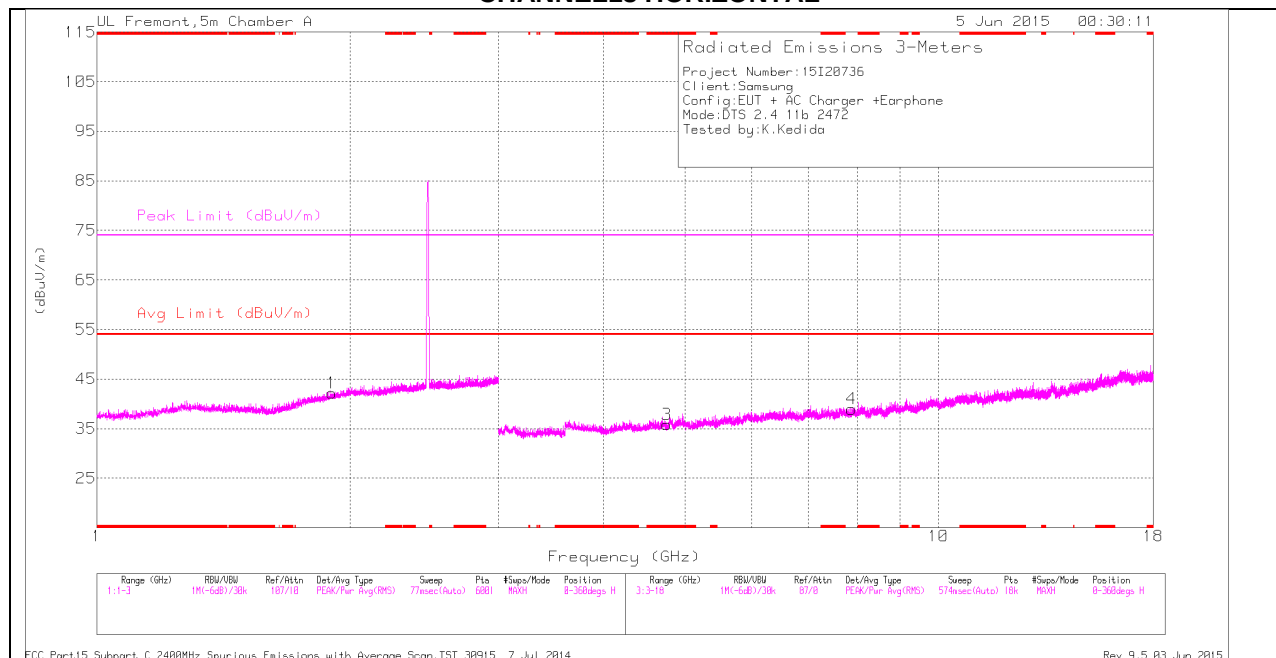
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.886	43.34	PK2	33.5	-32.3	44.54	-	-	74	-29.46	1	202	H
* 3.887	31.87	MAv1	33.5	-32.3	33.07	54	-20.93	-	-	1	202	H

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

PK2 - KDB558074 Method: Maximum Peak

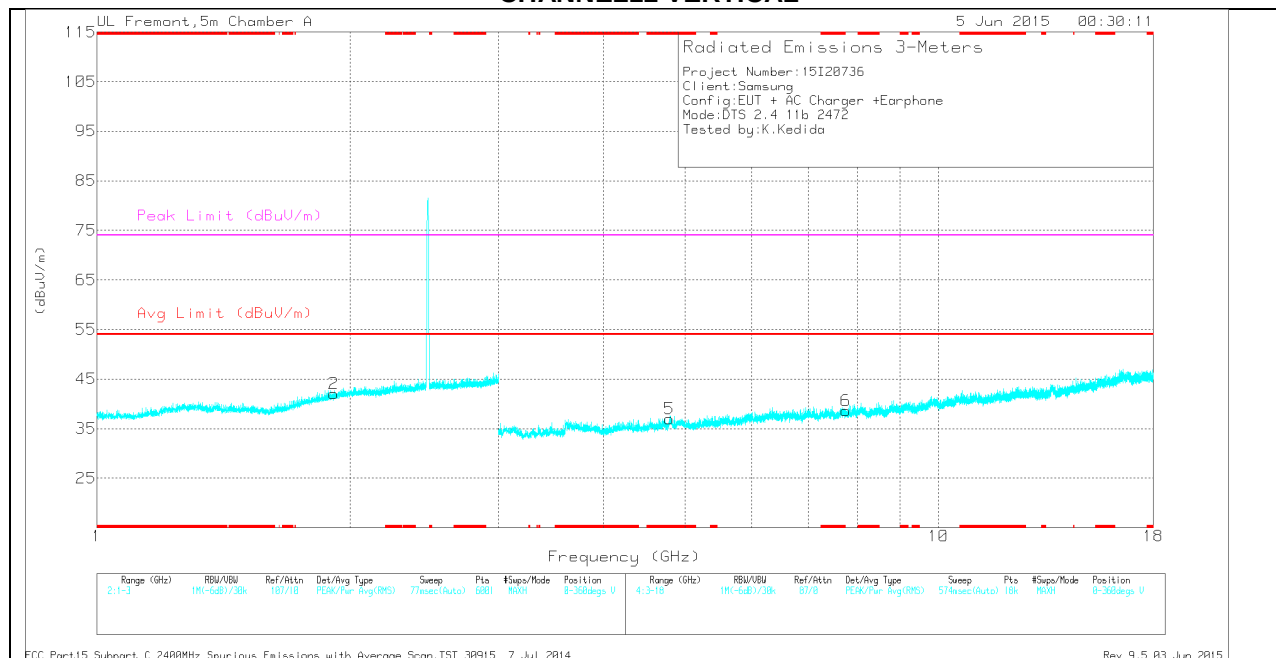
MAv1 - KDB558074 Option 1 Maximum RMS Average

CHANNEL13 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.

CHANNEL12 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.

CHANNEL13 DATA

Trace Markers

Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 4.752	33.42	Pk	34.1	-31.7	35.82	-	-	74	-38.18	0-360	201	H
5	* 4.789	34.35	Pk	34	-31.4	36.95	-	-	74	-37.05	0-360	200	V
1	1.902	36.91	Pk	30.8	-25.5	42.21	-	-	74	-31.79	0-360	201	H
2	1.91	36.79	Pk	30.8	-25.5	42.09	-	-	74	-31.91	0-360	200	V
6	7.765	28.93	Pk	35.7	-26	38.63	-	-	74	-35.37	0-360	100	V
4	7.888	29.84	Pk	35.7	-26.6	38.94	-	-	74	-35.06	0-360	100	H

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

Pk - Peak detector

Radiated Emissions

Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.75	42.34	PK2	34.1	-31.7	44.74	-	-	74	-29.26	1	202	H
* 4.751	30.81	MAv1	34.1	-31.7	33.21	54	-20.79	-	-	1	202	H

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

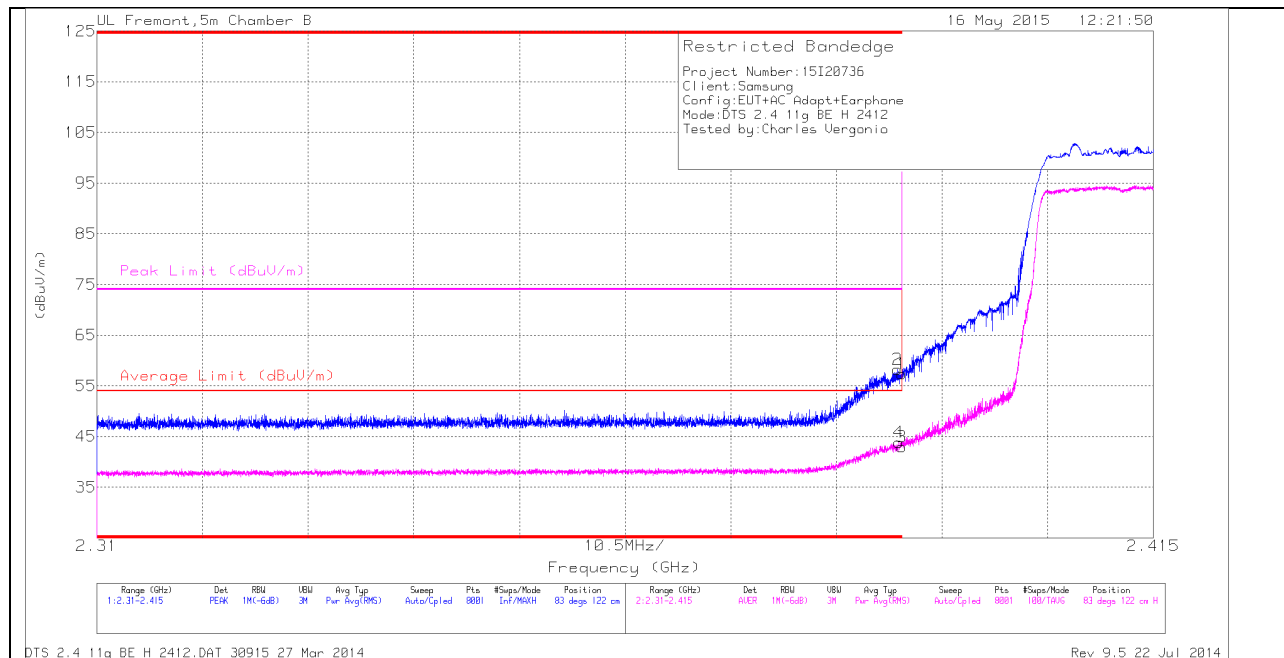
PK2 - KDB558074 Method: Maximum Peak

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

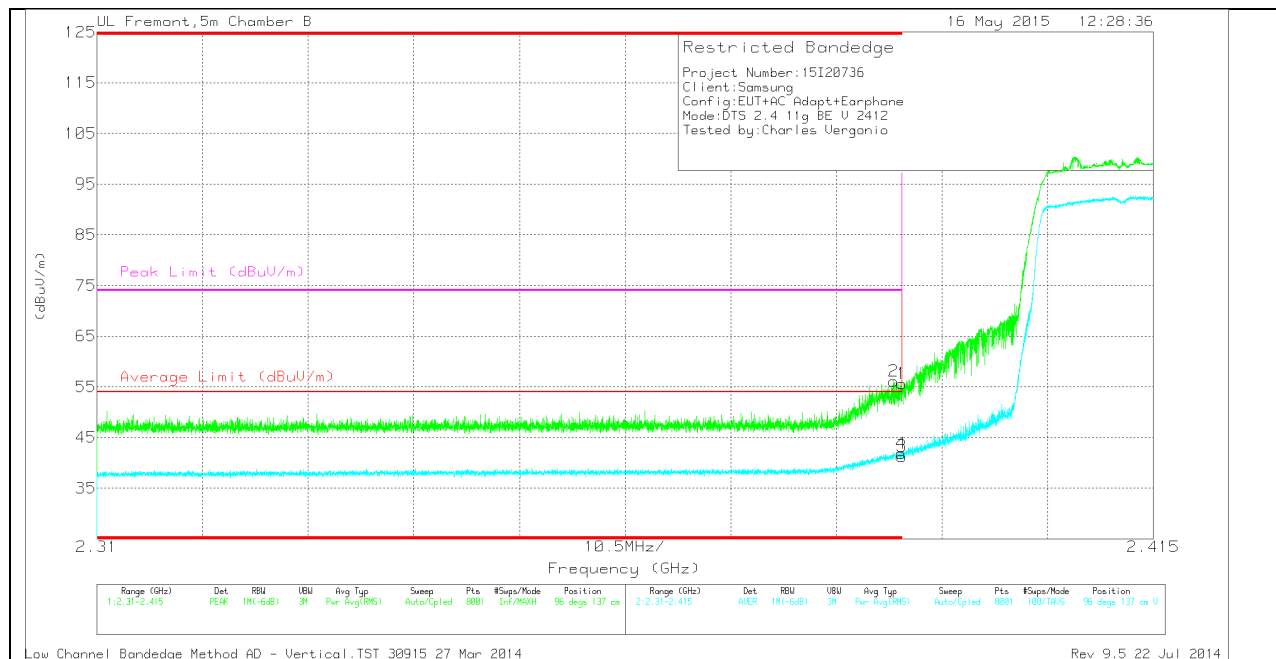
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filt r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	48.02	PK	32	-22.6	0	57.42	-	-	74	-16.58	83	122	H
2	* 2.39	48.86	PK	32	-22.6	0	58.26	-	-	74	-15.74	83	122	H
3	* 2.39	33.54	RMS	32	-22.6	.19	43.13	54	-10.87	-	-	83	122	H
4	* 2.39	34.42	RMS	32	-22.6	.19	44.01	54	-9.99	-	-	83	122	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	46.24	PK	32	-22.6	0	55.64	-	-	74	-18.36	96	137	V
2	* 2.389	46.7	PK	32	-22.6	0	56.1	-	-	74	-17.9	96	137	V
3	* 2.39	31.89	RMS	32	-22.6	.19	41.48	54	-12.52	-	-	96	137	V
4	* 2.39	32.43	RMS	32	-22.6	.19	42.02	54	-11.98	-	-	96	137	V

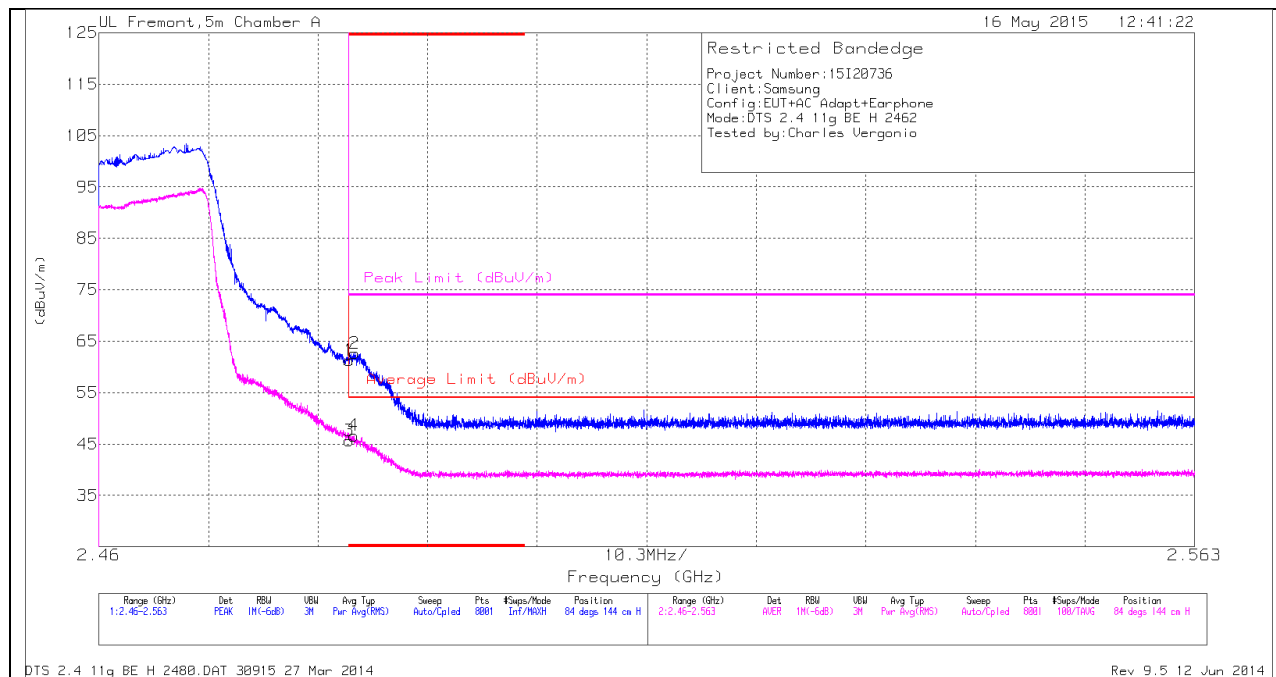
* - indicates frequency in CFR 47, Part 15 and Industry Canada RSS-Restricted Band.

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

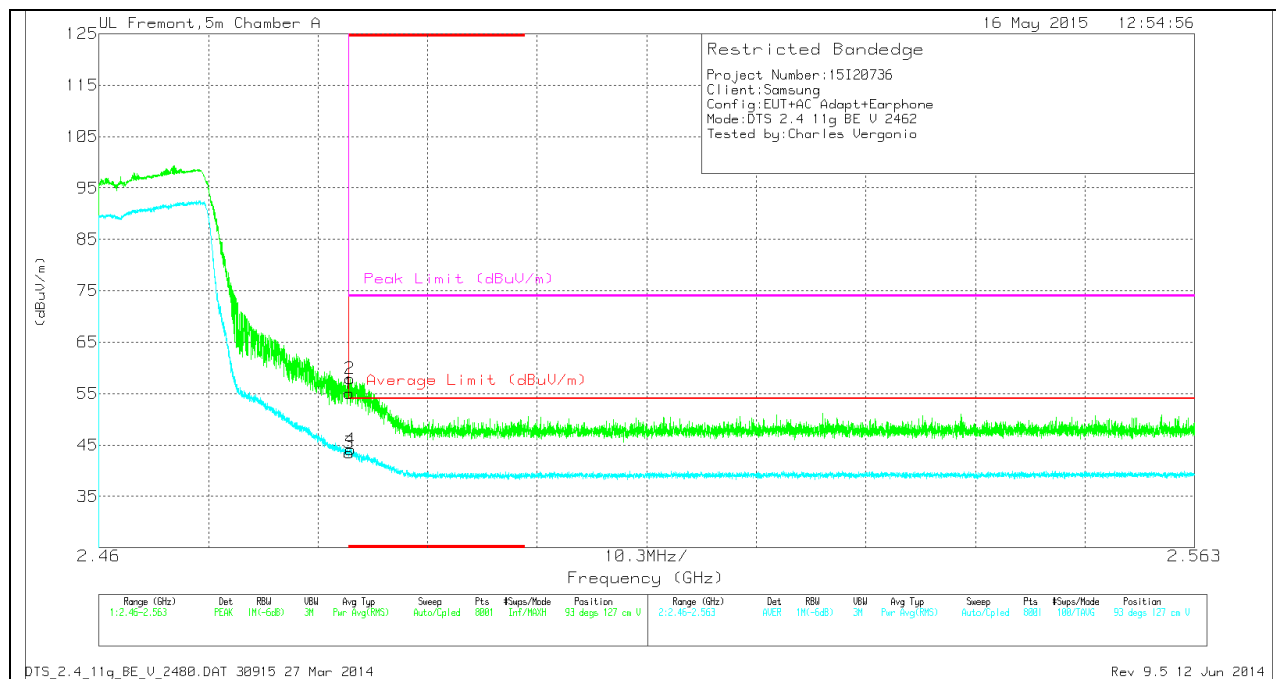
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fitr/ Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	51.15	PK	32.5	-22.4	0	61.25	-	-	74	-12.75	84	144	H
2	* 2.484	52.55	PK	32.5	-22.4	0	62.65	-	-	74	-11.35	84	144	H
3	* 2.484	35.36	RMS	32.5	-22.4	.19	45.65	54	-8.35	-	-	84	144	H
4	* 2.484	36.33	RMS	32.5	-22.4	.19	46.62	54	-7.38	-	-	84	144	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fitr/ 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	44.98	PK	32.5	-22.4	0	55.08	-	-	74	-18.92	93	127	V
2	* 2.484	47.77	PK	32.5	-22.4	0	57.87	-	-	74	-16.13	93	127	V
3	* 2.484	33.34	RMS	32.5	-22.4	.19	43.63	54	-10.37	-	-	93	127	V
4	* 2.484	34.02	RMS	32.5	-22.4	.19	44.31	54	-9.69	-	-	93	127	V

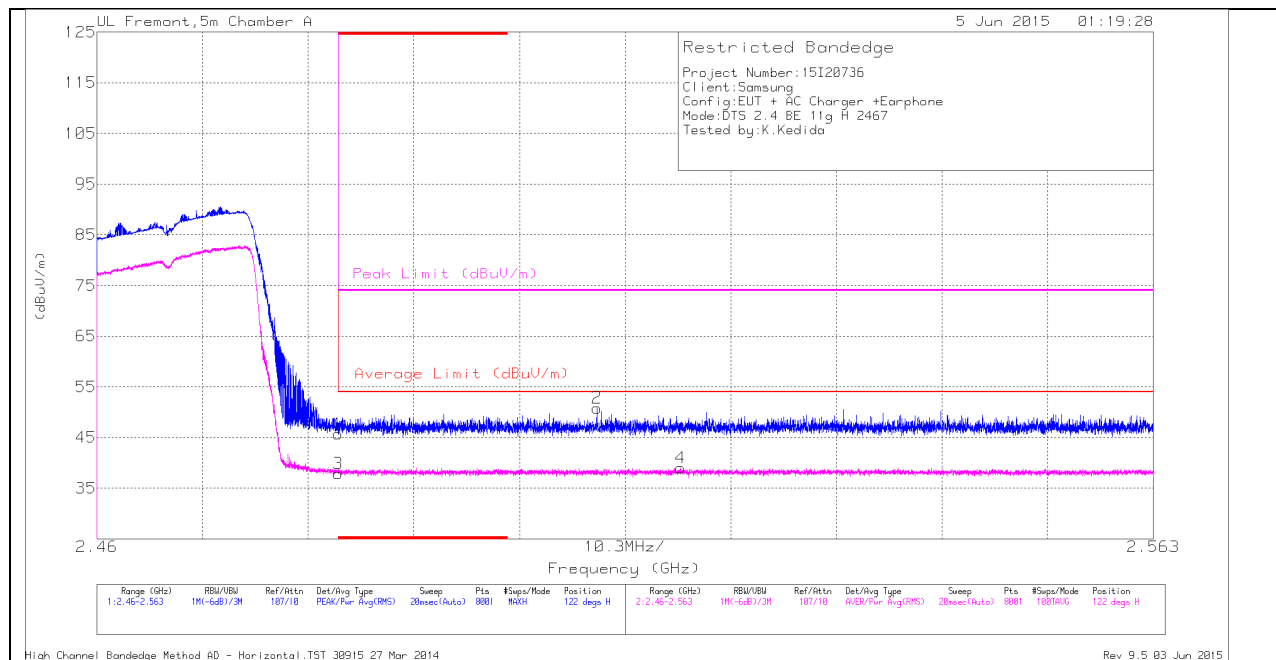
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (CHANNEL12)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

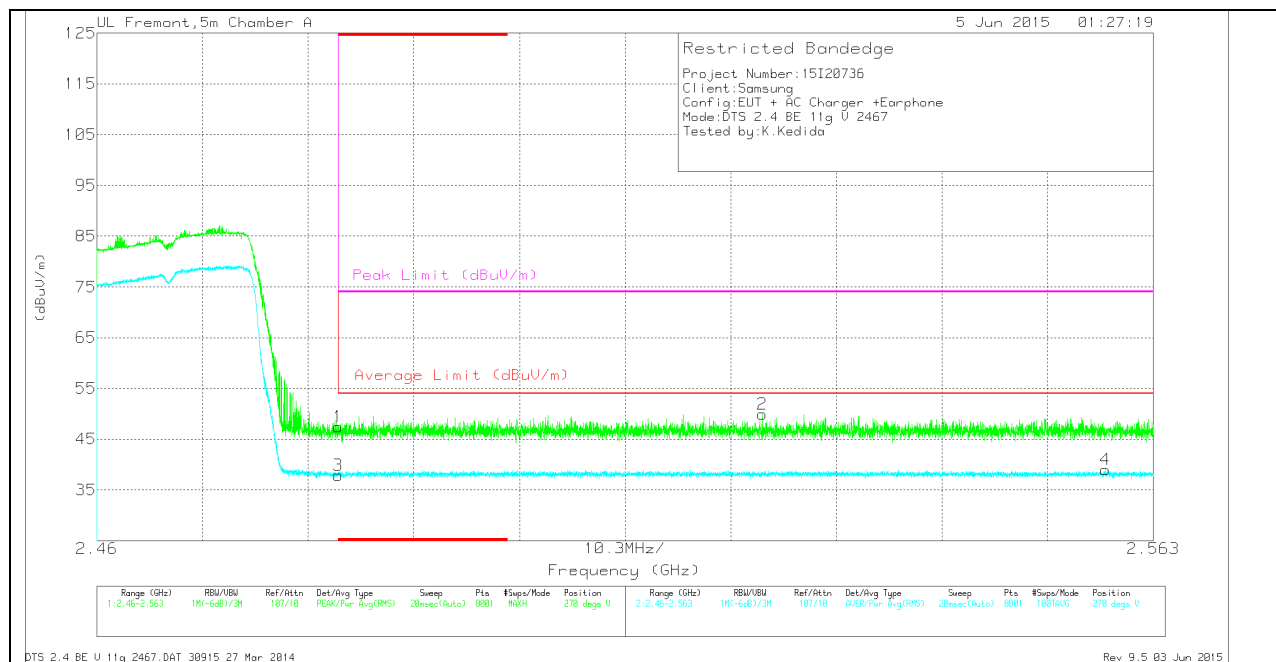
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/FI tr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	38.43	Pk	32.1	-24.8	0	45.73	-	-	74	-28.27	122	193	H
3	* 2.484	30.62	RMS	32.1	-24.8	0	37.92	54	-16.08	-	-	122	193	H
2	2.509	43.45	Pk	32.1	-24.7	.19	50.85	-	-	74	-23.15	122	193	H
4	2.517	31.62	RMS	32.1	-24.7	.19	39.02	54	-14.98	-	-	122	193	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	Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/FI tr/Pad (dB)	DC Corr (dB)	Correcte d Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	40.15	Pk	32.1	-24.8	0	47.45	-	-	74	-26.55	270	241	V
3	* 2.484	30.61	RMS	32.1	-24.8	0	37.91	54	-16.09	-	-	270	241	V
2	2.525	42.53	Pk	32.1	-24.7	.19	49.93	-	-	74	-24.07	270	241	V
4	2.558	31.52	RMS	32.2	-24.7	.19	39.02	54	-14.98	-	-	270	241	V

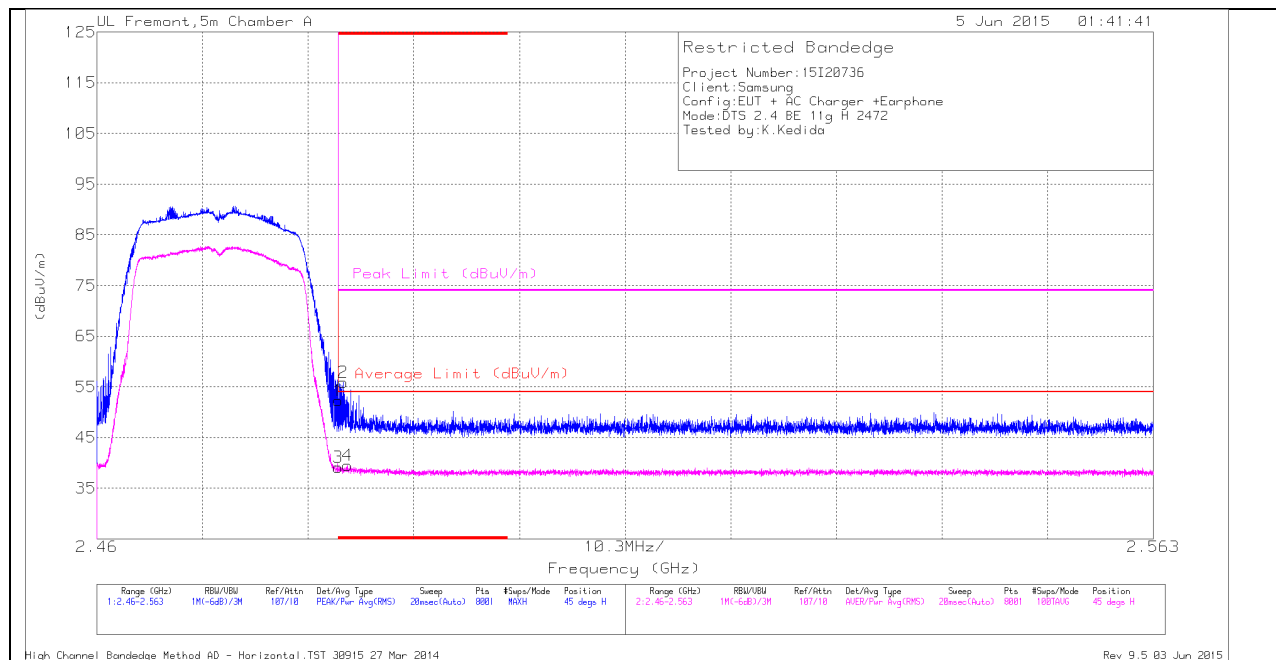
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (CHANNEL13)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

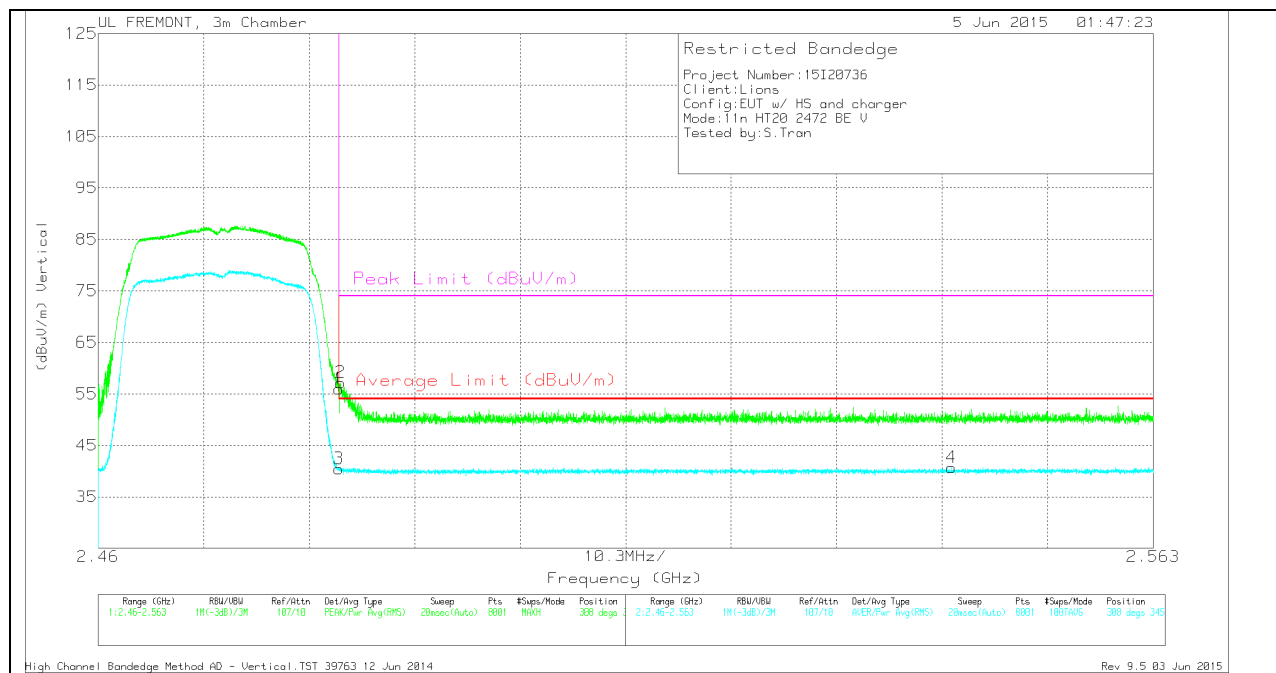
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/FI tr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	44.98	Pk	32.1	-24.8	0	52.28	-	-	74	-21.72	45	295	H
2	* 2.484	48.54	Pk	32.1	-24.8	0	55.84	-	-	74	-18.16	45	295	H
3	* 2.484	31.81	RMS	32.1	-24.8	.19	39.11	54	-14.89	-	-	45	295	H
4	* 2.484	32.22	RMS	32.1	-24.8	.19	39.52	54	-14.48	-	-	45	295	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

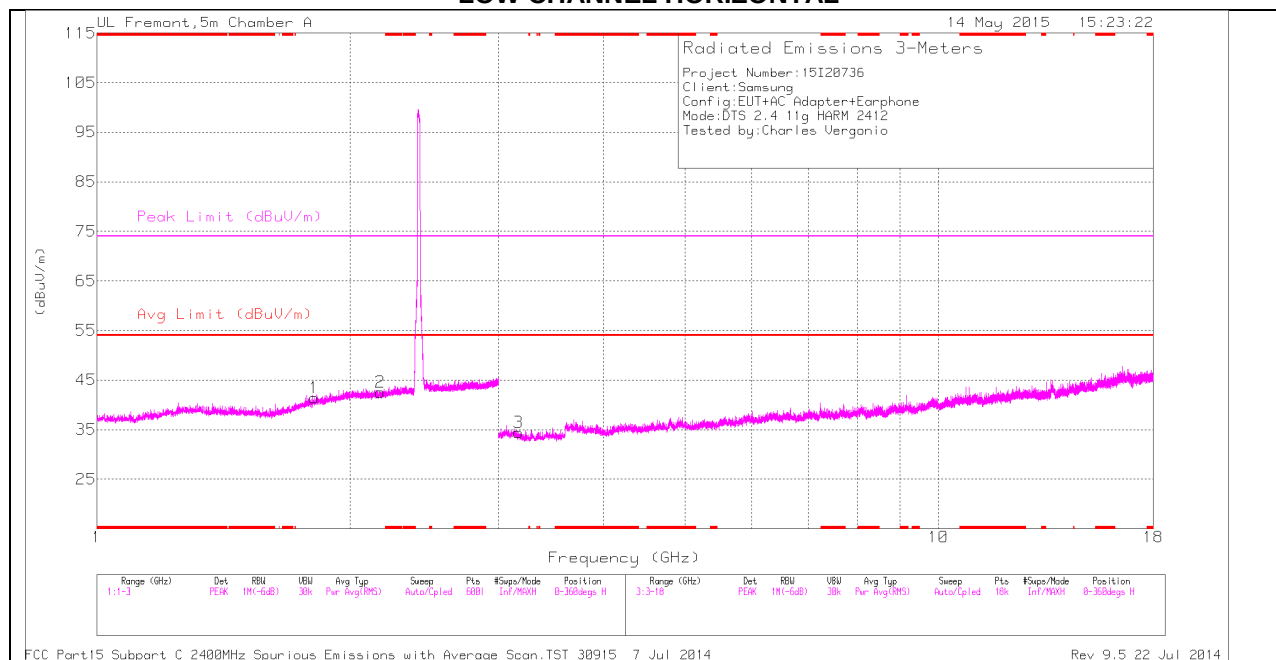
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/FI tr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.484	45.8	Pk	32.3	-22.1	0	56	-	-	74	-18	308	345	V
2	2.484	47.02	Pk	32.3	-22.1	0	57.22	-	-	74	-16.78	308	345	V
3	2.484	30.08	RMS	32.3	-22.1	.2	40.48	54	-13.52	-	-	308	345	V
4	2.543	30	RMS	32.4	-21.9	.2	40.7	54	-13.3	-	-	308	345	V

Pk - Peak detector

RMS - RMS detection

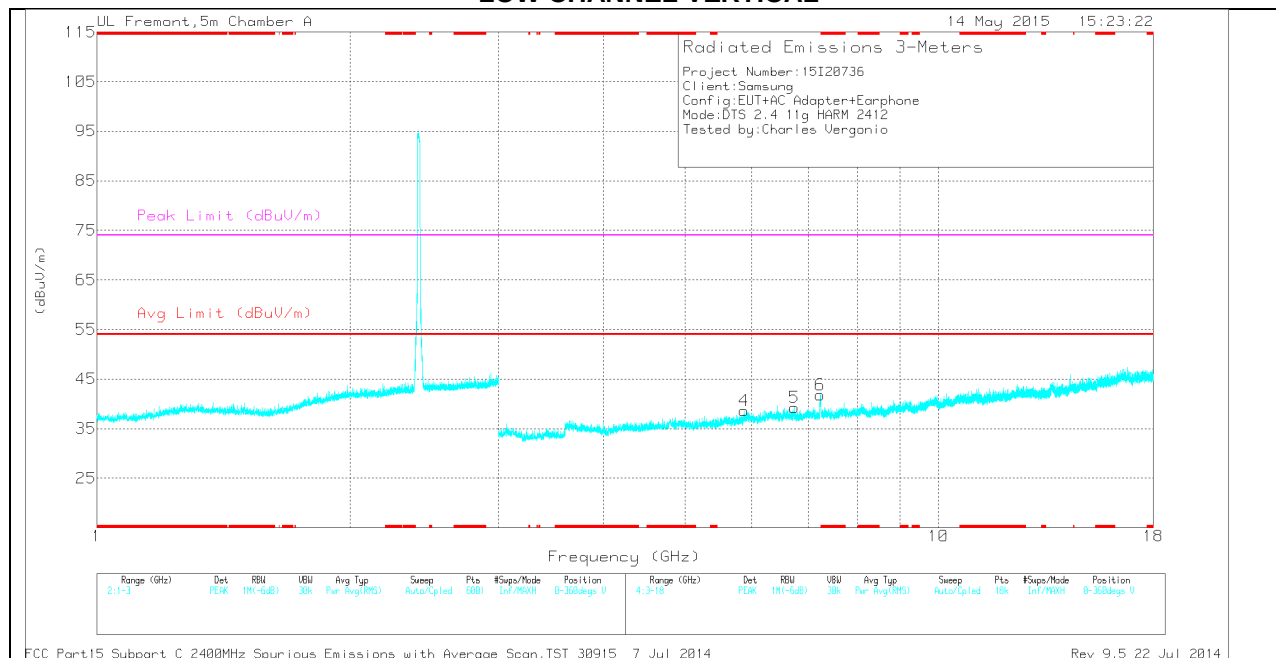
HARMONICS AND SPURIOUS EMISSIONS

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 T136 (dB/m)	Amp/Cb/Ftr /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	1.813	36.69	PK	30.1	-25.4	0	41.39	-	-	-	-	0-360	100	H
2	2.171	36.41	PK	31.3	-25.2	0	42.51	-	-	-	-	0-360	100	H
3	3.17	34.32	PK	32.8	-32.7	0	34.42	-	-	-	-	0-360	201	H
4	5.88	32.74	PK	35.1	-29.2	0	38.64	-	-	-	-	0-360	201	V
5	6.737	31.14	PK	35.6	-27.5	0	39.24	-	-	-	-	0-360	100	V
6	7.239	33.54	PK	35.5	-27.2	0	41.84	-	-	-	-	0-360	201	V

PK - Peak detector

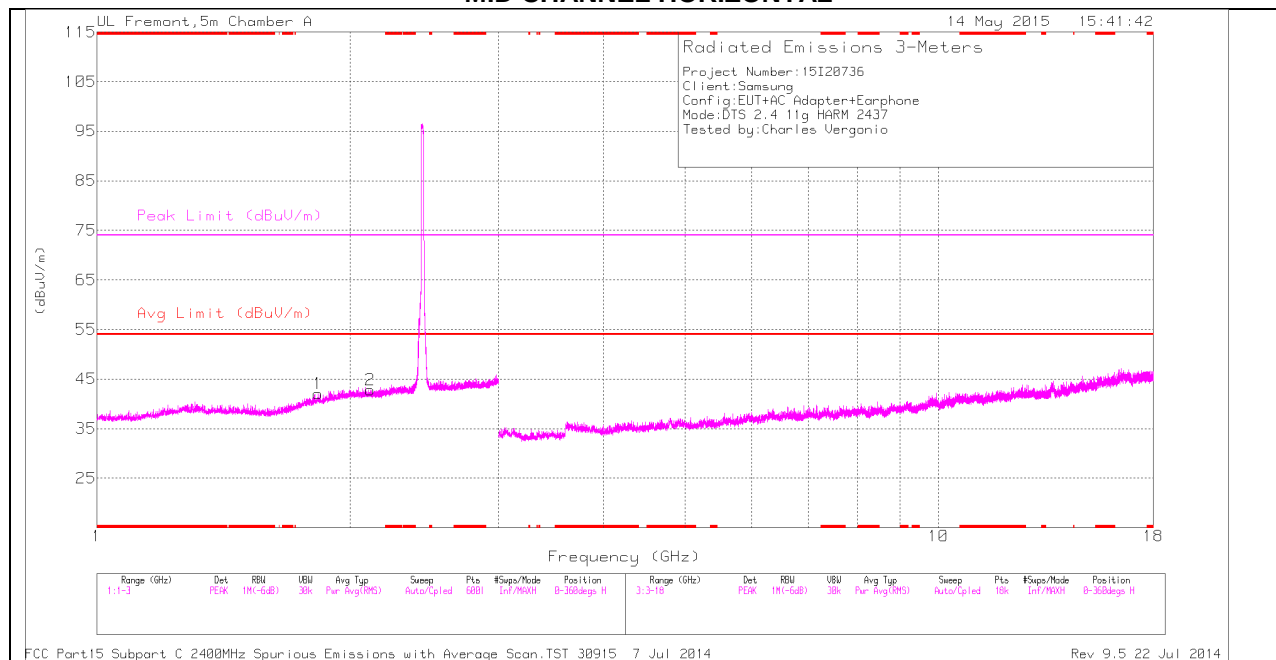
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cb/Ftr /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
7.237	47.78	PK2	35.5	-27.2	0	56.08	-	-	-	-	270	233	V
7.238	32.22	MAV1	35.5	-27.2	.19	40.71	-	-	-	-	270	233	V

PK2 - KDB558074 Method: Maximum Peak

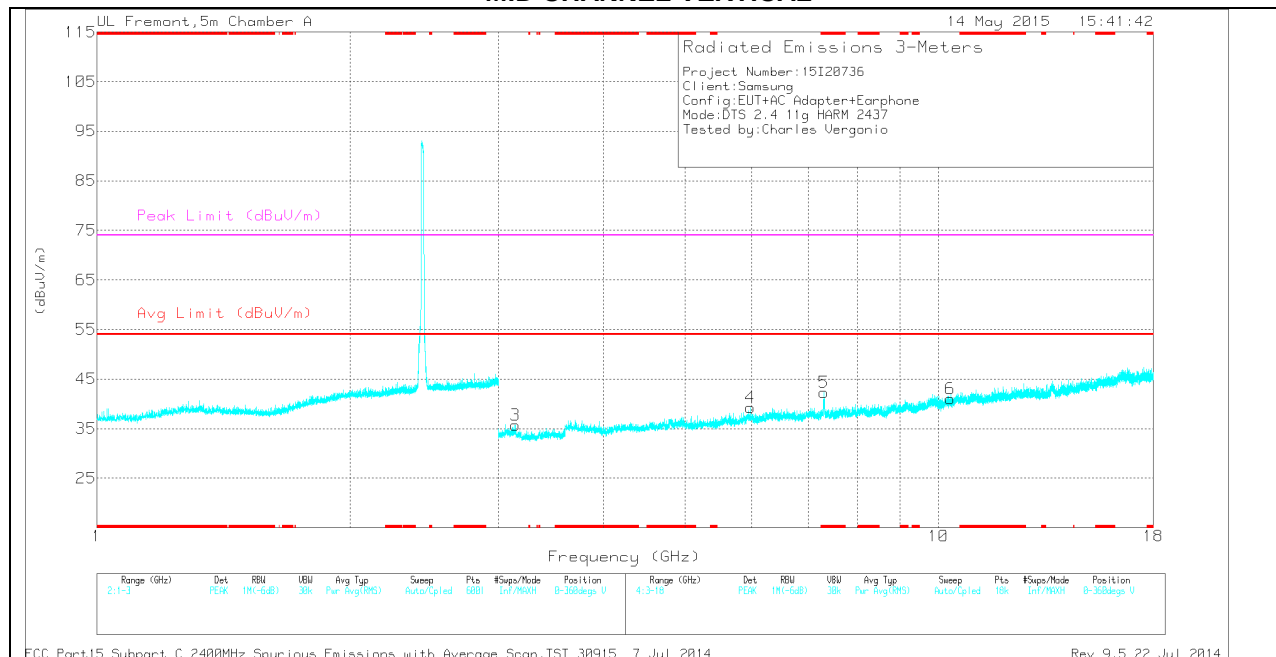
MAV1 - KDB558074 Option 1 Maximum RMS Average

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 T136 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	* 7.307	33.51	PK	35.5	-26.7	0	42.31	-	-	74	-31.69	0-360	201	V
1	1.832	37.38	PK	30.2	-25.5	0	42.08	-	-	-	-	0-360	201	H
2	2.111	36.66	PK	31.4	-25.3	0	42.76	-	-	-	-	0-360	201	H
3	3.14	35.01	PK	32.8	-32.1	0	35.71	-	-	-	-	0-360	100	V
4	5.977	32.71	PK	35.3	-28.8	0	39.21	-	-	-	-	0-360	201	V
6	10.329	27.41	PK	37.3	-23.7	0	41.01	-	-	-	-	0-360	100	V

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

PK - Peak detector

Radiated Emissions

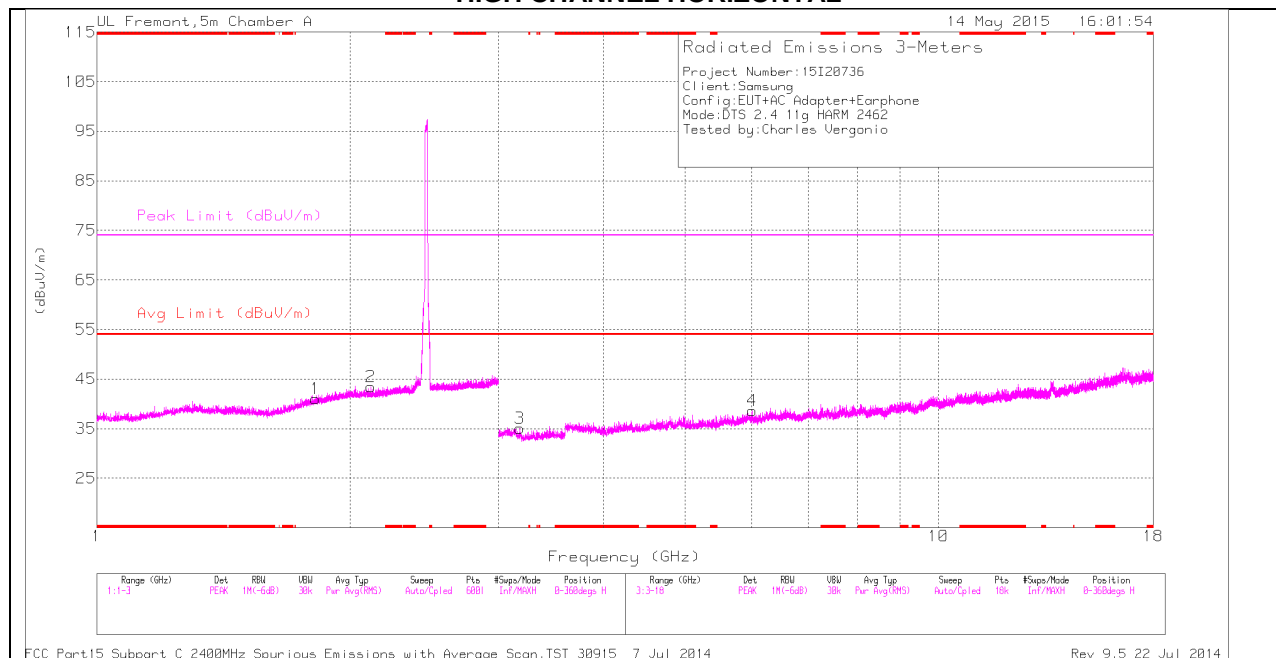
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Ftr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 7.307	46.1	PK2	35.5	-26.7	0	54.9	-	-	74	-19.1	266	246	V
* 7.309	30.88	MAV1	35.5	-26.7	.19	39.87	54	-14.13	-	-	266	246	V

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

PK2 - KDB558074 Method: Maximum Peak

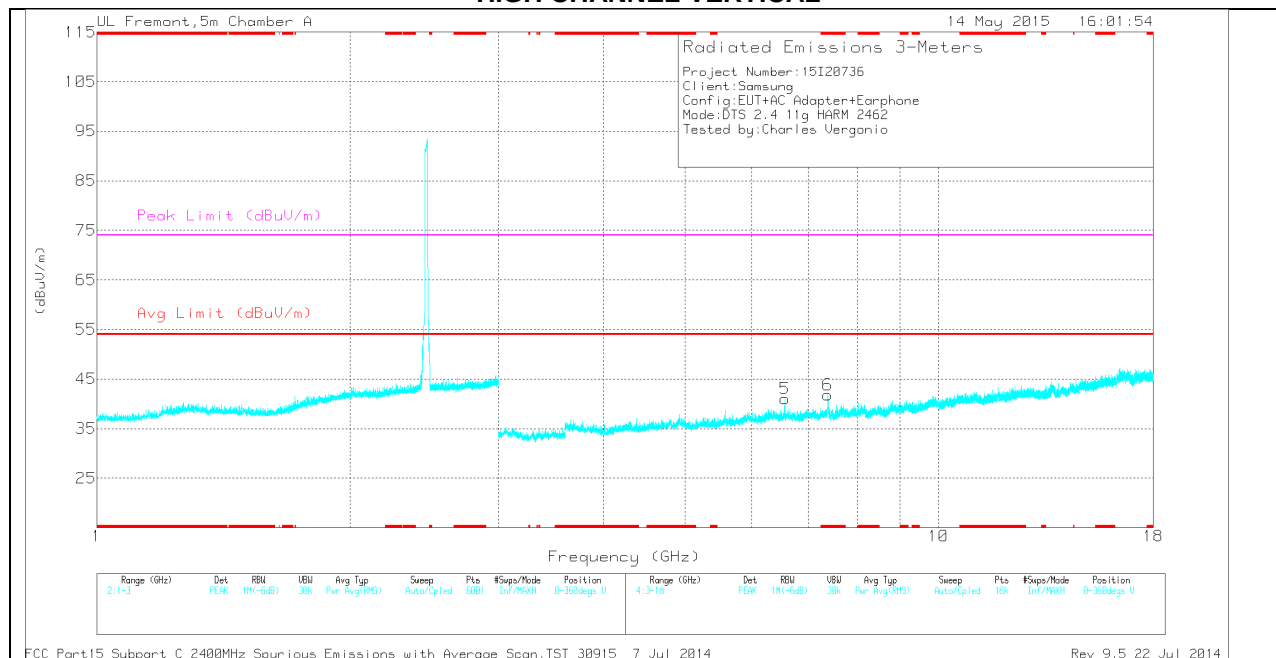
MAV1 - KDB558074 Option 1 Maximum RMS Average

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 T136 (dB/m)	Amp/Cbl/Fitr /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
6	* 7.382	32.21	PK	35.5	-25.9	0	41.81	-	-	74	-32.19	0-360	201	V
1	1.818	36.46	PK	30.1	-25.5	0	41.06	-	-	-	-	0-360	201	H
2	2.117	37.29	PK	31.4	-25.3	0	43.39	-	-	-	-	0-360	100	H
3	3.18	35.21	PK	32.7	-32.8	0	35.11	-	-	-	-	0-360	100	H
4	6.005	32.19	PK	35.4	-29	0	38.59	-	-	-	-	0-360	100	H
5	6.565	33.23	PK	35.6	-27.8	0	41.03	-	-	-	-	0-360	201	V

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

PK - Peak detector

Radiated Emissions

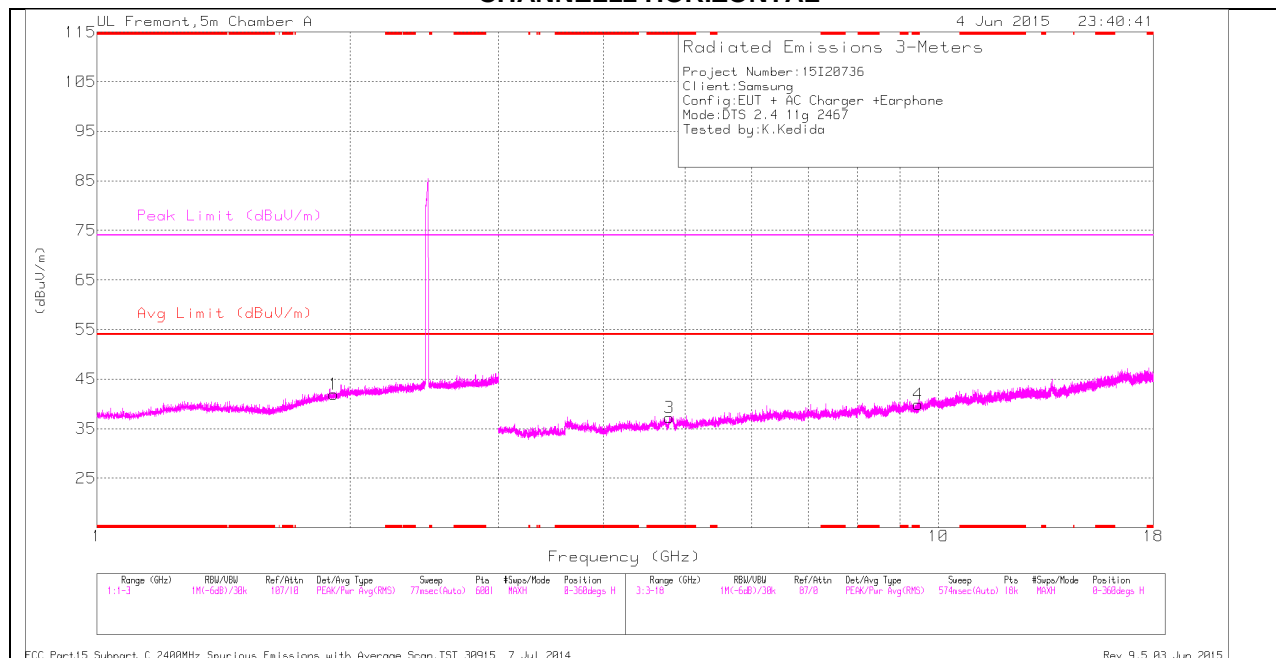
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fitr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 7.383	43.29	PK2	35.5	-25.9	0	52.89	-	-	74	-21.11	257	244	V
* 7.384	29.33	MAV1	35.5	-25.9	.19	39.12	54	-14.88	-	-	257	244	V

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

PK2 - KDB558074 Method: Maximum Peak

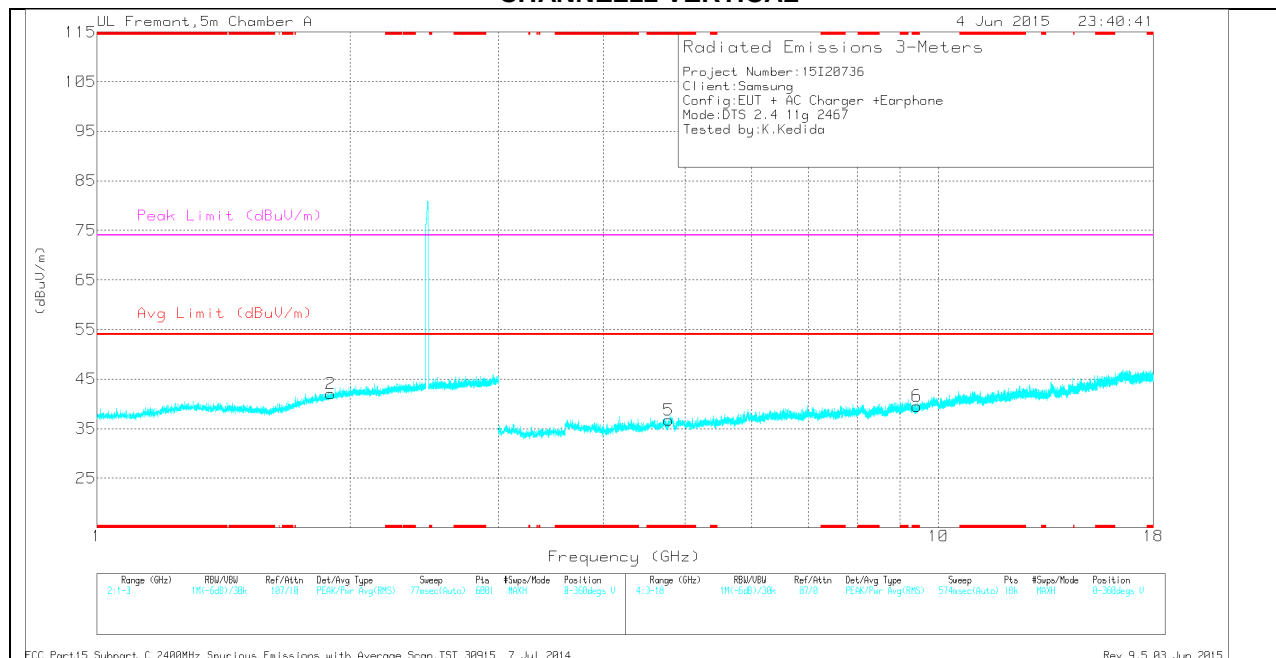
MAV1 - KDB558074 Option 1 Maximum RMS Average

CHANNEL12 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.

CHANNEL12 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.

CHANNEL12 DATA

Trace Markers

Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 4.785	34.58	Pk	34	-31.4	37.18	-	-	74	-36.82	0-360	201	H
4	* 9.456	28.14	Pk	36.5	-24.7	39.94	-	-	74	-34.06	0-360	100	H
5	* 4.782	34.06	Pk	34	-31.4	36.66	-	-	74	-37.34	0-360	200	V
6	* 9.43	27.97	Pk	36.5	-24.9	39.57	-	-	74	-34.43	0-360	100	V
2	1.894	36.8	Pk	30.8	-25.5	42.1	-	-	74	-31.9	0-360	200	V
1	1.912	36.55	Pk	30.9	-25.5	41.95	-	-	74	-32.05	0-360	100	H

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

Pk - Peak detector

Radiated Emissions

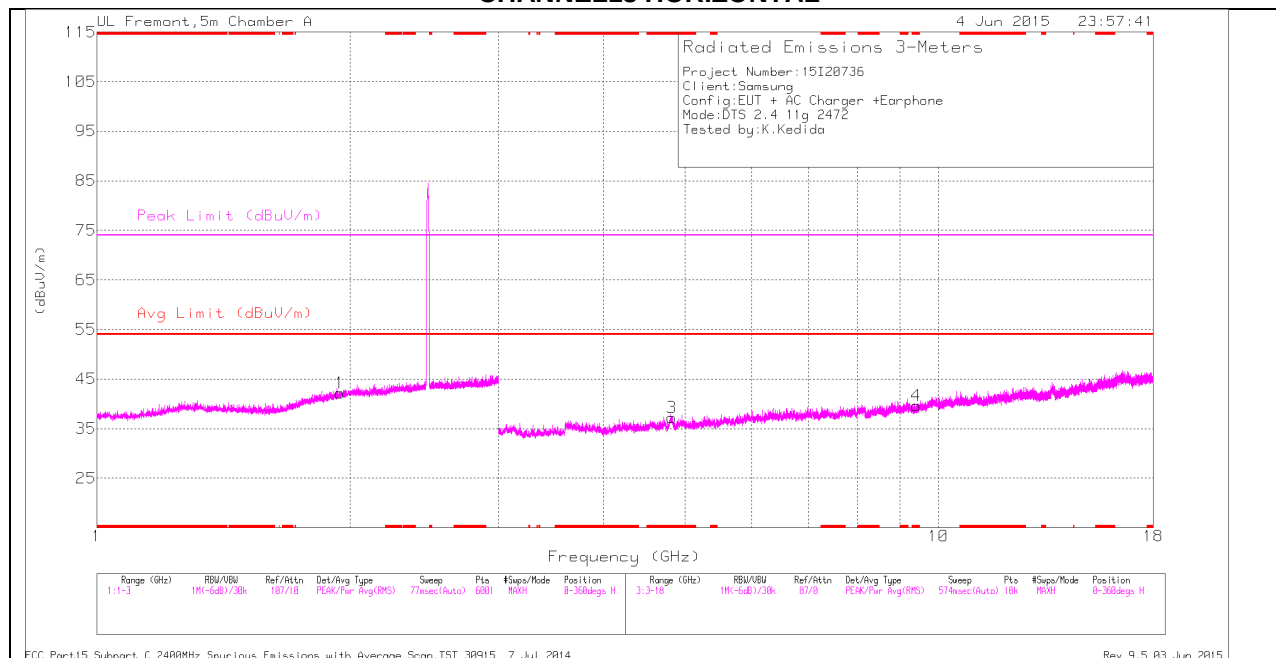
Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.787	42.05	PK2	34	-31.4	44.65	-	-	74	-29.35	359	202	H
* 4.787	31.06	MAv1	34	-31.4	33.66	54	-20.34	-	-	359	202	H

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

PK2 - KDB558074 Method: Maximum Peak

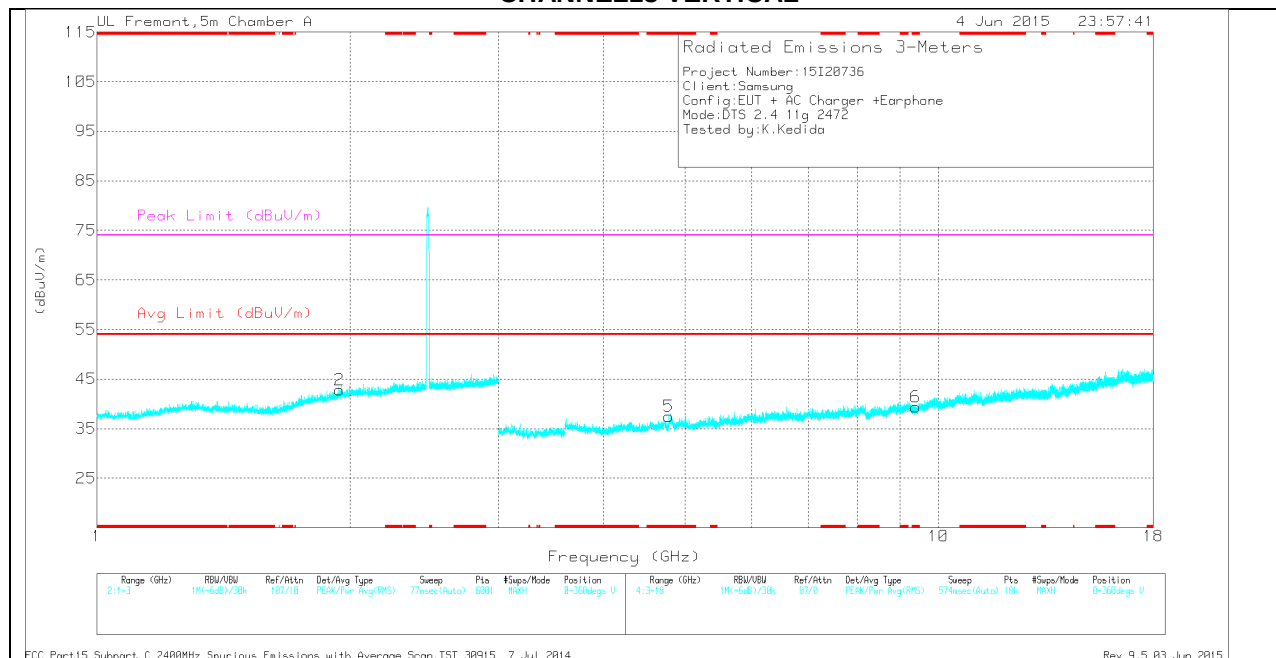
MAv1 - KDB558074 Option 1 Maximum RMS Average

CHANNEL13 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.

CHANNEL13 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.

CHANNEL13 DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 4.819	34.24	Pk	33.9	-30.9	37.24	-	-	74	-36.76	0-360	201	H
4	* 9.414	28.37	Pk	36.4	-25.1	39.67	-	-	74	-34.33	0-360	201	H
5	* 4.783	34.83	Pk	34	-31.4	37.43	-	-	74	-36.57	0-360	100	V
6	* 9.398	28.18	Pk	36.4	-25.2	39.38	-	-	74	-34.62	0-360	100	V
2	1.942	37.27	Pk	30.9	-25.4	42.77	-	-	74	-31.23	0-360	200	V
1	1.945	36.55	Pk	31	-25.4	42.15	-	-	74	-31.85	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 T136 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.82	42.6	PK2	33.9	-30.9	45.6	-	-	74	-28.4	1	202	H
* 4.819	31.07	MAv1	33.9	-30.9	34.07	54	-19.93	-	-	1	202	H

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

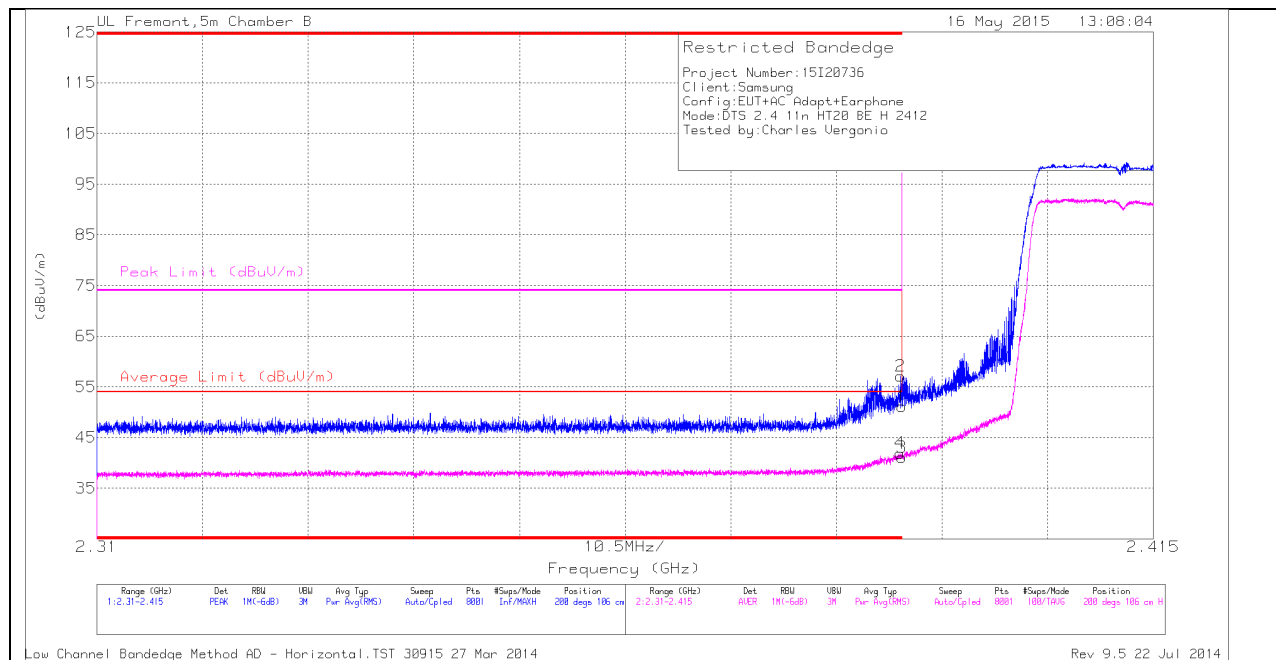
PK2 - KDB558074 Method: Maximum Peak

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

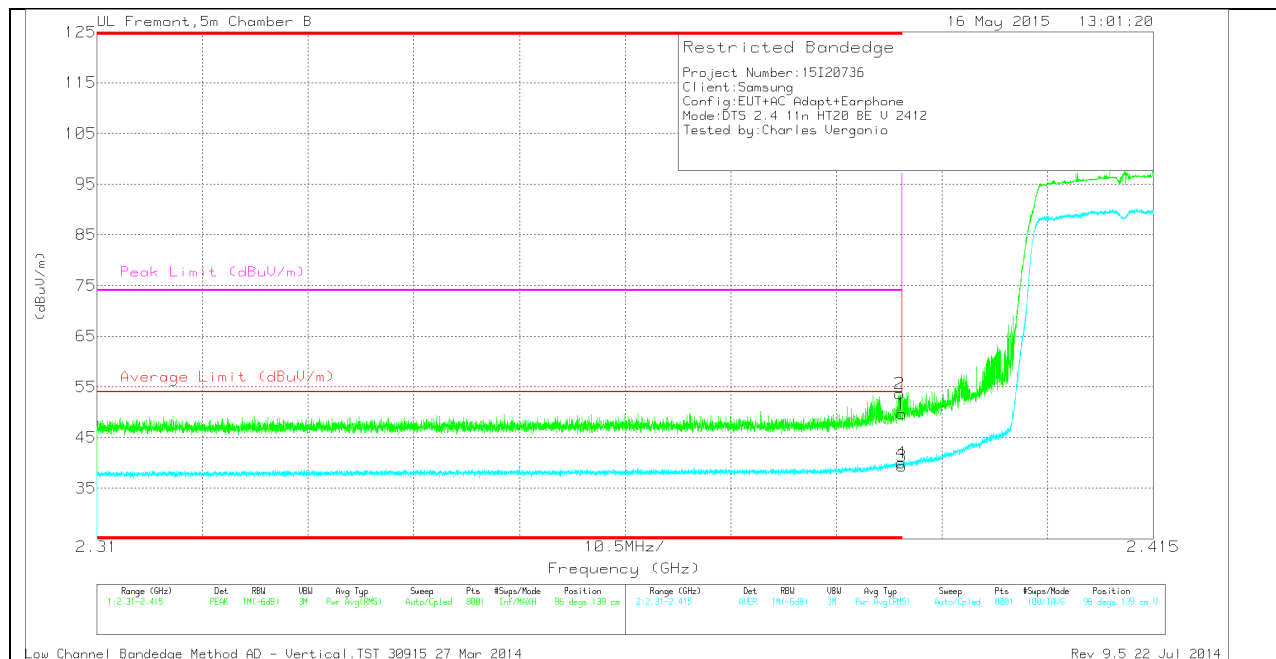
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cb/Filter/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	41.76	PK	32	-22.6	0	51.16	-	-	74	-22.84	200	106	H
2	* 2.39	47.71	PK	32	-22.6	0	57.11	-	-	74	-16.89	200	106	H
3	* 2.39	31.5	RMS	32	-22.6	.2	41.1	54	-12.9	-	-	200	106	H
4	* 2.39	32.31	RMS	32	-22.6	.2	41.91	54	-12.09	-	-	200	106	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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	40.28	PK	32	-22.6	0	49.68	-	-	74	-24.32	96	139	V
2	* 2.39	44.25	PK	32	-22.6	0	53.65	-	-	74	-20.35	96	139	V
3	* 2.39	29.96	RMS	32	-22.6	.2	39.56	54	-14.44	-	-	96	139	V
4	* 2.39	30.56	RMS	32	-22.6	.2	40.16	54	-13.84	-	-	96	139	V

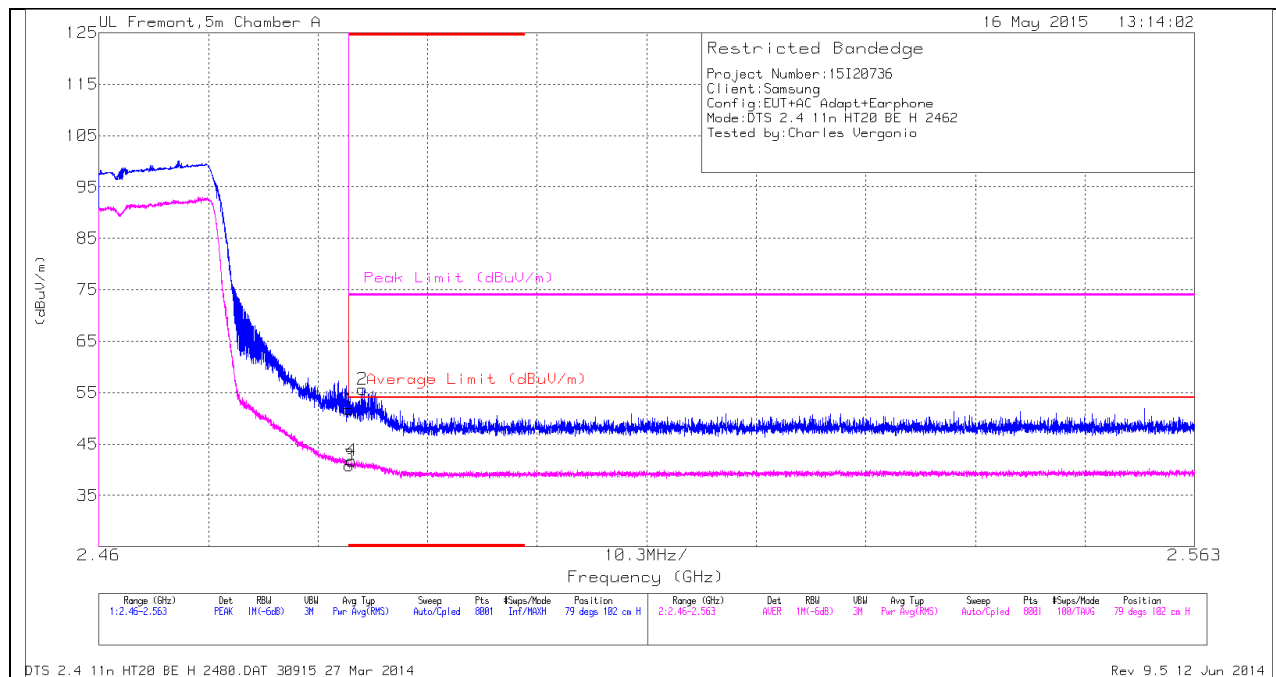
* - indicates frequency in CFR 47, Part 15 and Industry Canada RSS-Restricted Band.

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

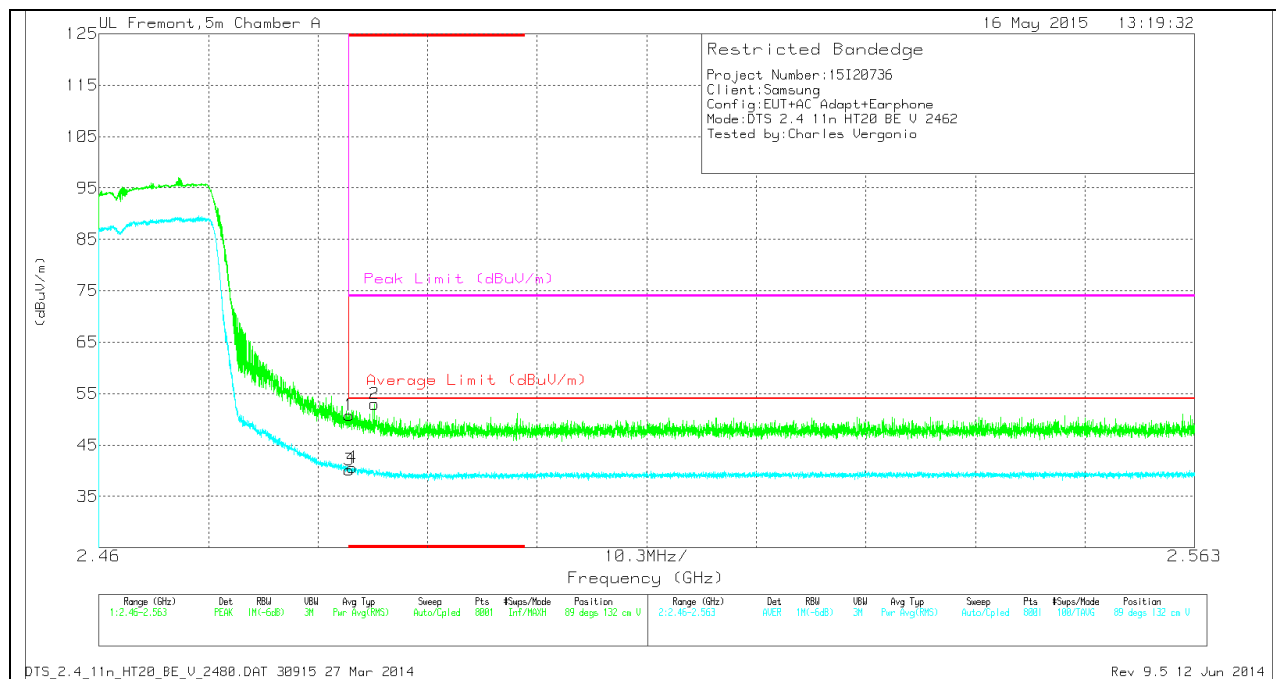
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/ Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	41.62	PK	32.5	-22.4	0	51.72	-	-	74	-22.28	79	102	H
3	* 2.484	30.48	RMS	32.5	-22.4	.2	40.78	54	-13.22	-	-	79	102	H
4	* 2.484	31.46	RMS	32.5	-22.4	.2	41.76	54	-12.24	-	-	79	102	H
2	* 2.485	45.57	PK	32.5	-22.4	0	55.67	-	-	74	-18.33	79	102	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T34S (dB/m)	Amp/Cbl/Filtr/ 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	40.65	PK	32.5	-22.4	0	50.75	-	-	74	-23.25	89	132	V
3	* 2.484	29.82	RMS	32.5	-22.4	.2	40.12	54	-13.88	-	-	89	132	V
4	* 2.484	30.3	RMS	32.5	-22.4	.2	40.6	54	-13.4	-	-	89	132	V
2	* 2.486	42.87	PK	32.5	-22.4	0	52.97	-	-	74	-21.03	89	132	V

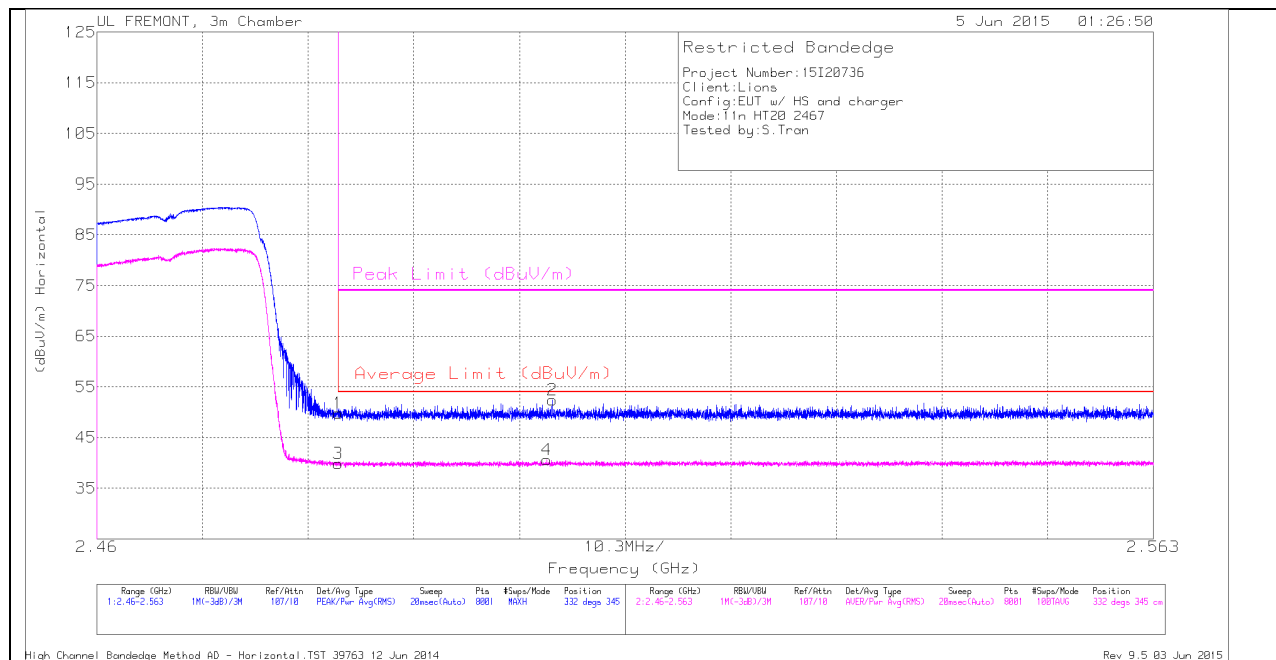
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL12)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

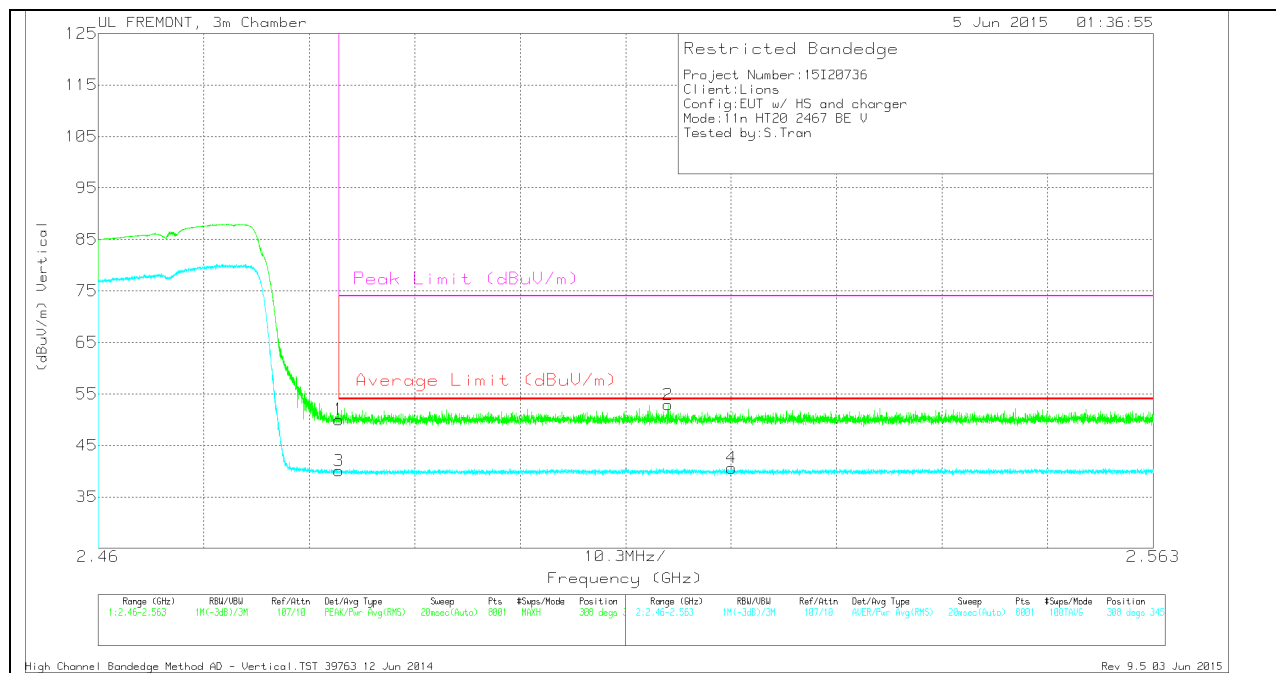
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dBm)	Amp/Cbl/FI tr/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	39.59	Pk	32.3	-22.1	0	49.79	-	-	74	-24.21	332	345	H
3	2.484	29.41	RMS	32.3	-22.1	.2	39.81	54	-14.19	-	-	332	345	H
2	2.504	42.23	Pk	32.3	-22.1	0	52.43	-	-	74	-21.57	332	345	H
4	2.504	30.2	RMS	32.3	-22.1	.2	40.6	54	-13.4	-	-	332	345	H

Pk - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

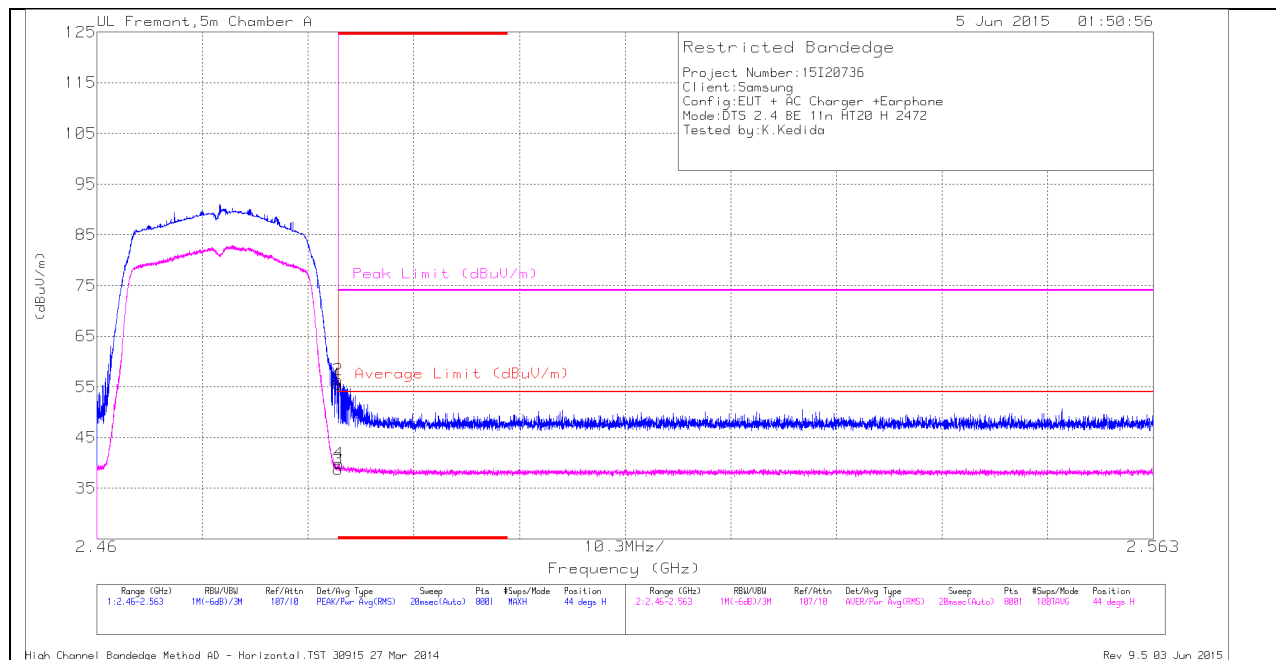
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/FI tr/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	39.79	PK	32.3	-22.1	0	49.99	-	-	74	-24.01	308	345	V
3	2.484	29.67	RMS	32.3	-22.1	.2	40.07	54	-13.93	-	-	308	345	V
2	2.516	42.66	PK	32.3	-22.1	0	52.86	-	-	74	-21.14	308	345	V
4	2.522	30.13	RMS	32.4	-22.1	.2	40.63	54	-13.37	-	-	308	345	V

PK - Peak detector
RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL13)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

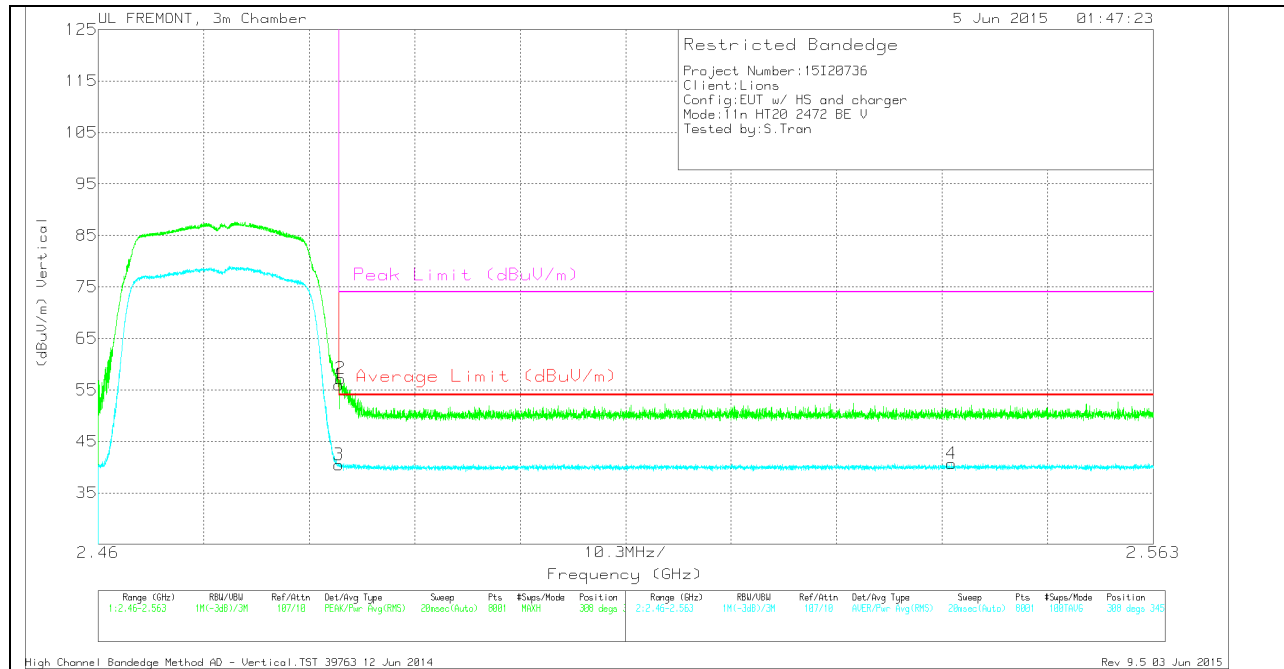
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/FI tr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	48.25	Pk	32.1	-24.8	0	55.55	-	-	74	-18.45	44	359	H
2	* 2.484	49.04	Pk	32.1	-24.8	0	56.34	-	-	74	-17.66	44	359	H
3	* 2.484	31.42	RMS	32.1	-24.8	.2	38.72	54	-15.28	-	-	44	359	H
4	* 2.484	32.55	RMS	32.1	-24.8	.2	39.85	54	-14.15	-	-	44	359	H

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

Pk - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

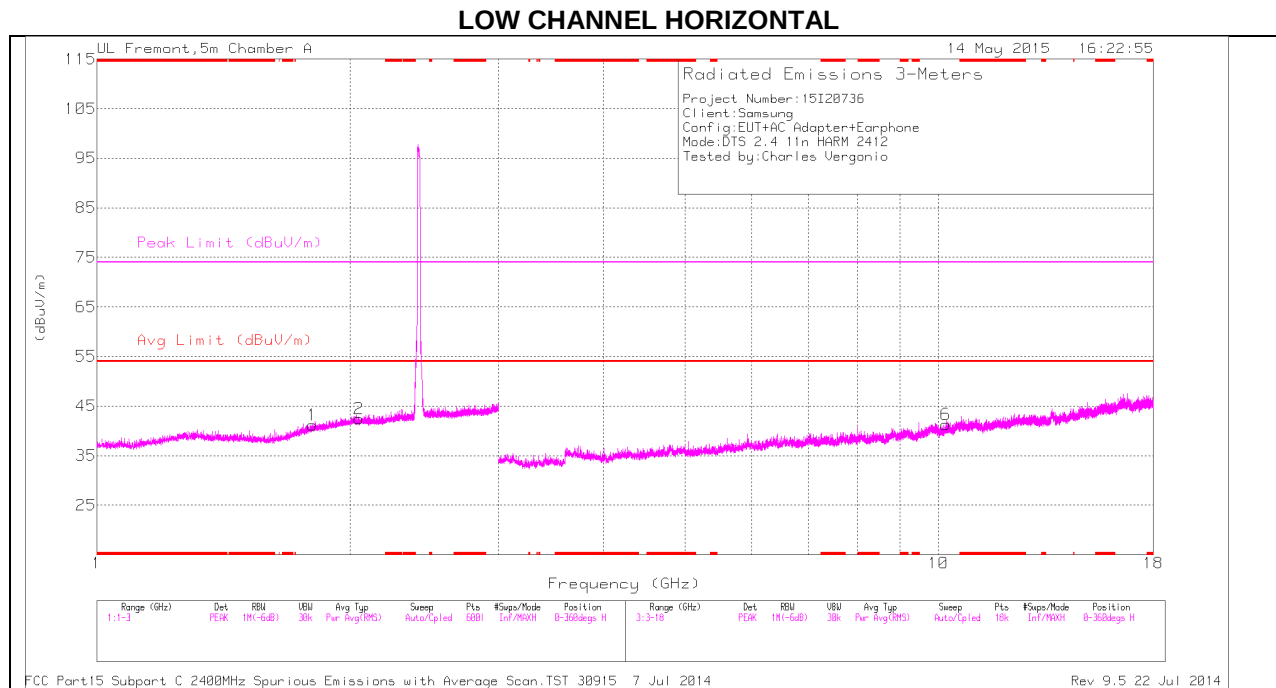
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/FI tr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.484	45.8	Pk	32.3	-22.1	0	56	-	-	74	-18	308	345	V
2	2.484	47.02	Pk	32.3	-22.1	0	57.22	-	-	74	-16.78	308	345	V
3	2.484	30.08	RMS	32.3	-22.1	.2	40.48	54	-13.52	-	-	308	345	V
4	2.543	30	RMS	32.4	-21.9	.2	40.7	54	-13.3	-	-	308	345	V

Pk - Peak detector

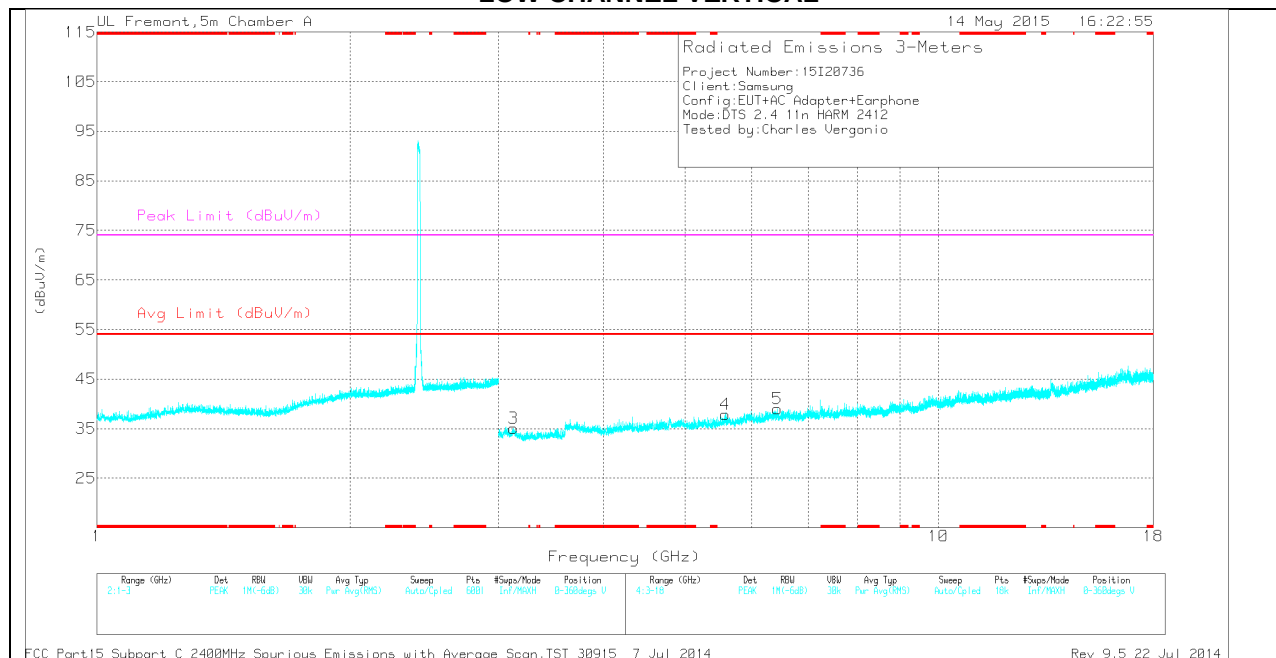
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS



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.

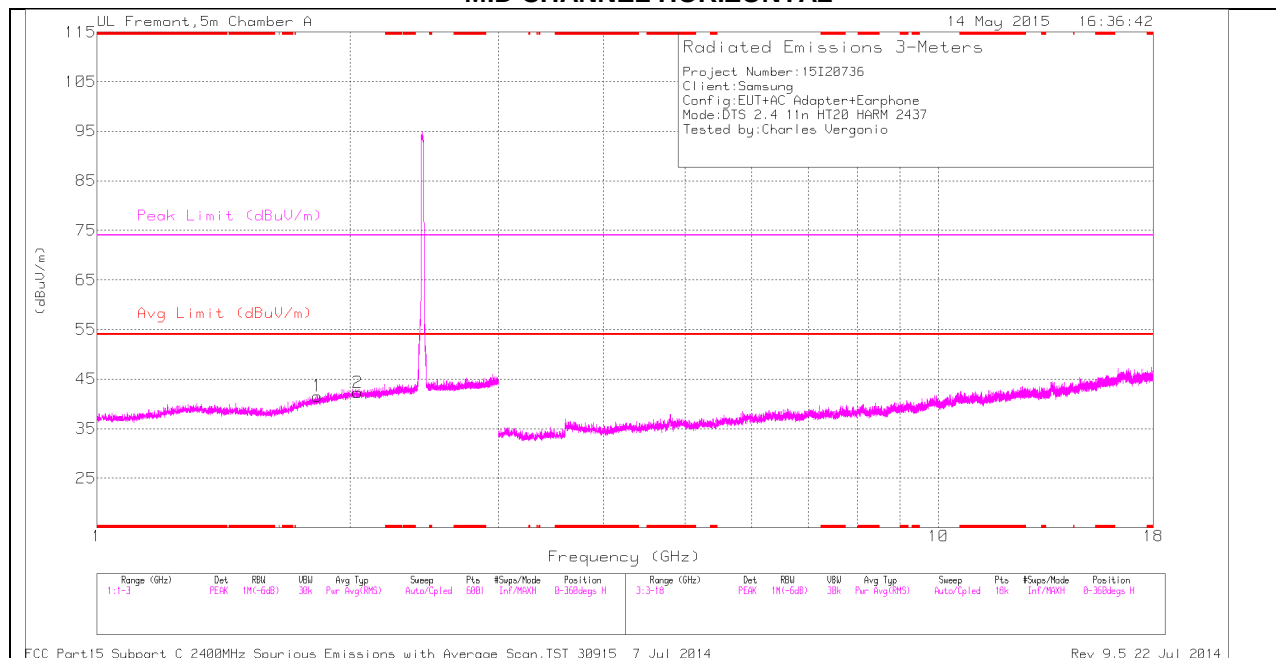
LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cb/Ftr /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	1.804	36.71	PK	30	-25.5	0	41.21	-	-	-	-	0-360	100	H
2	2.049	36.47	PK	31.3	-25.3	0	42.47	-	-	-	-	0-360	100	H
3	3.127	34.02	PK	32.9	-31.9	0	35.02	-	-	-	-	0-360	100	V
4	5.577	32.5	PK	34.5	-29.2	0	37.8	-	-	-	-	0-360	100	V
5	6.431	32.17	PK	35.5	-28.7	0	38.97	-	-	-	-	0-360	100	V
6	10.198	27.87	PK	37.2	-23.8	0	41.27	-	-	-	-	0-360	100	H

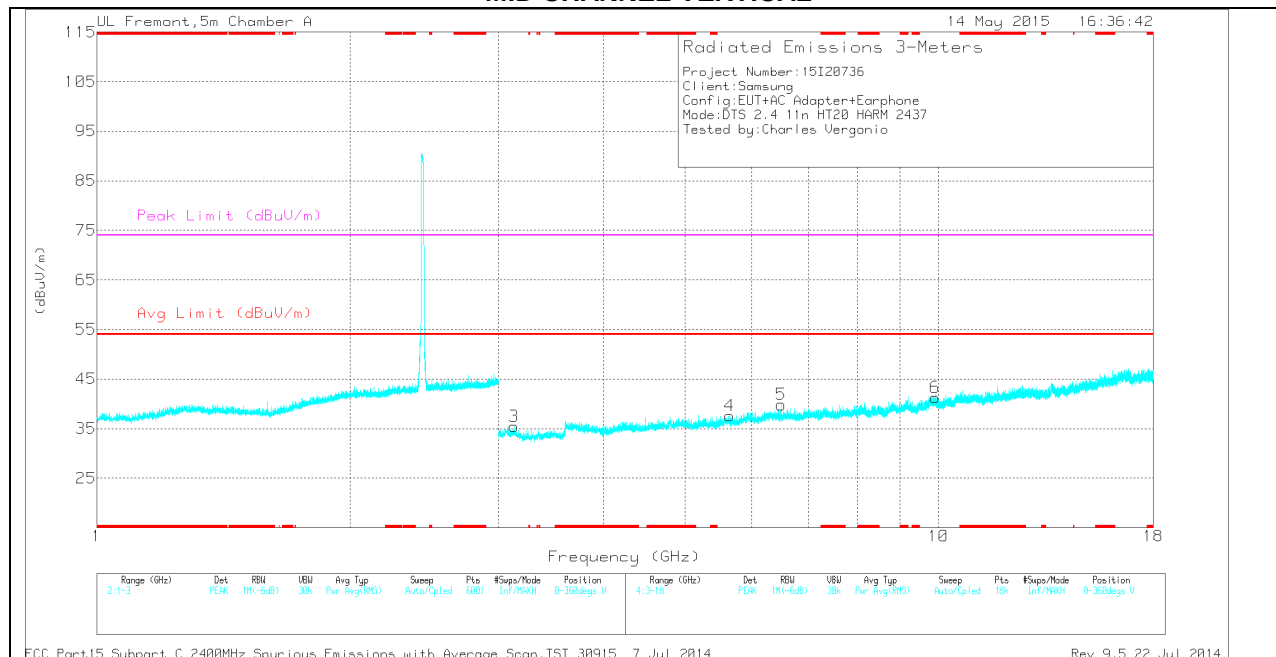
PK - Peak detector

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.

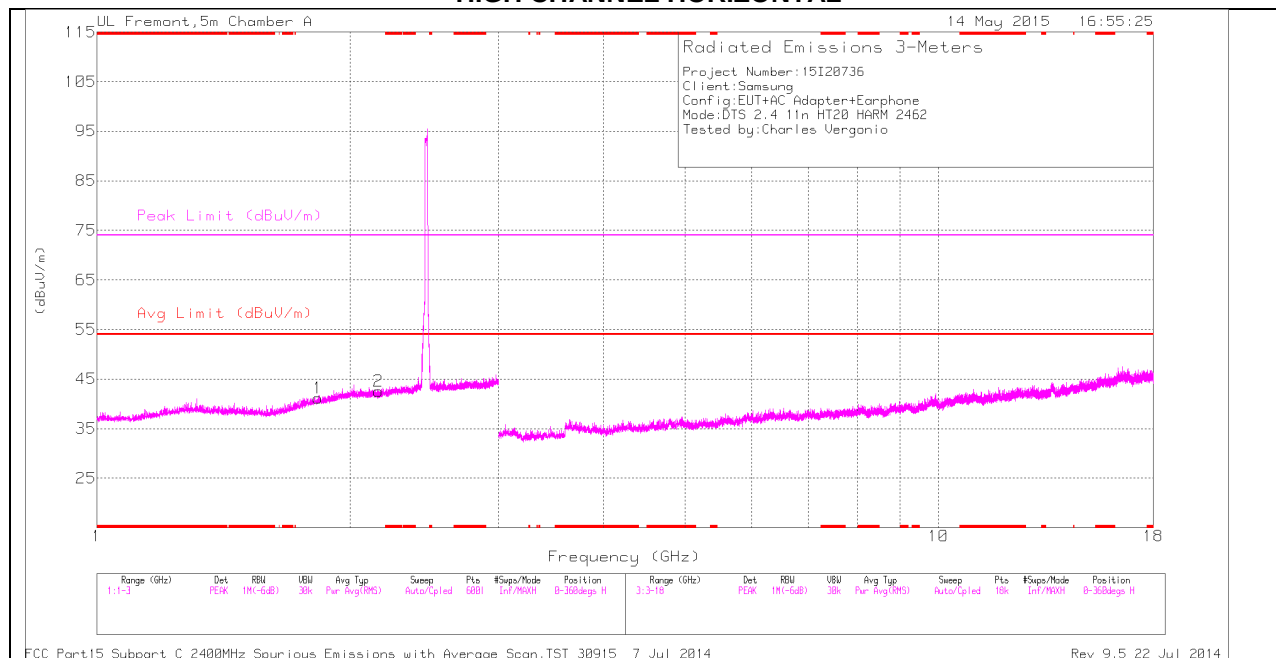
MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cb/Fitr /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	1.829	36.9	PK	30.2	-25.5	0	41.6	-	-	-	-	0-360	201	H
2	2.039	36.39	PK	31.2	-25.3	0	42.29	-	-	-	-	0-360	100	H
3	3.132	34.52	PK	32.9	-32	0	35.42	-	-	-	-	0-360	201	V
4	5.647	32.42	PK	34.6	-29.4	0	37.62	-	-	-	-	0-360	100	V
5	6.498	33.03	PK	35.5	-28.7	0	39.83	-	-	-	-	0-360	201	V
6	9.912	27.78	PK	37	-23.5	0	41.28	-	-	-	-	0-360	100	V

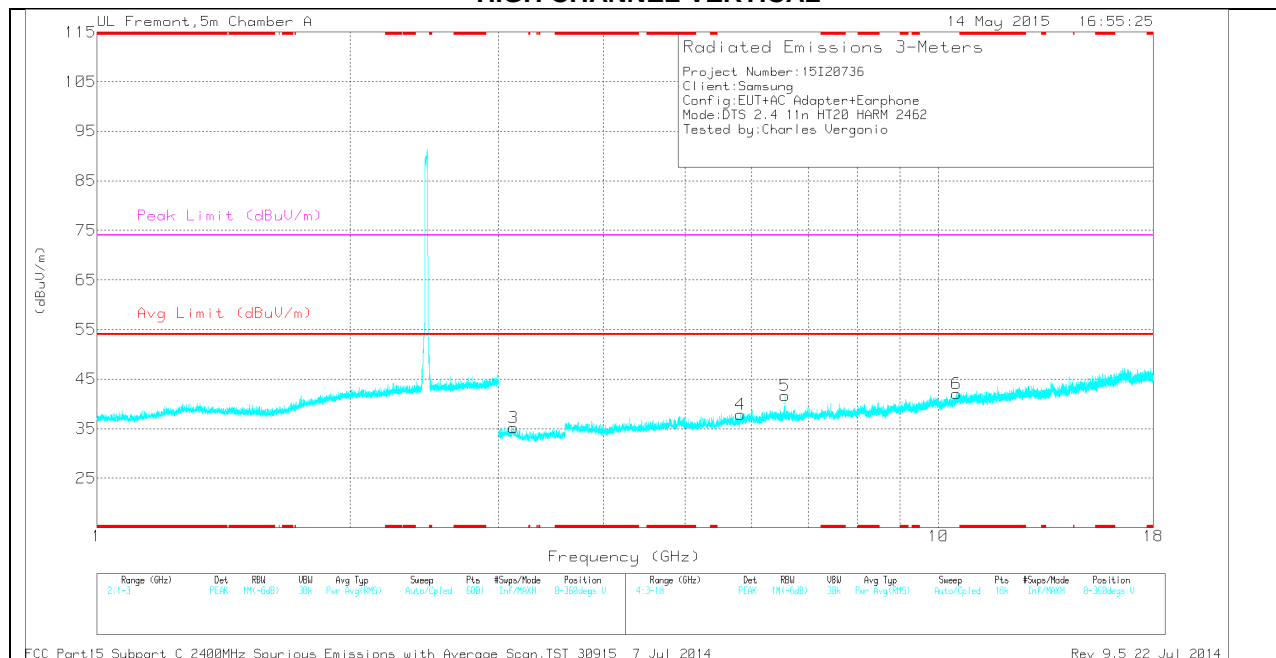
PK - Peak detector

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 T136 (dB/m)	Amp/Cb/Ftr /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	1.831	36.41	PK	30.2	-25.5	0	41.11	-	-	-	-	0-360	100	H
2	2.162	36.41	PK	31.3	-25.2	0	42.51	-	-	-	-	0-360	100	H
3	3.127	34.16	PK	32.9	-31.9	0	35.16	-	-	-	-	0-360	201	V
4	5.819	32.8	PK	35	-30	0	37.8	-	-	-	-	0-360	201	V
5	6.565	33.84	PK	35.6	-27.8	0	41.64	-	-	-	-	0-360	201	V
6	10.501	27.66	PK	37.5	-23.1	0	42.06	-	-	-	-	0-360	201	V

PK - Peak detector

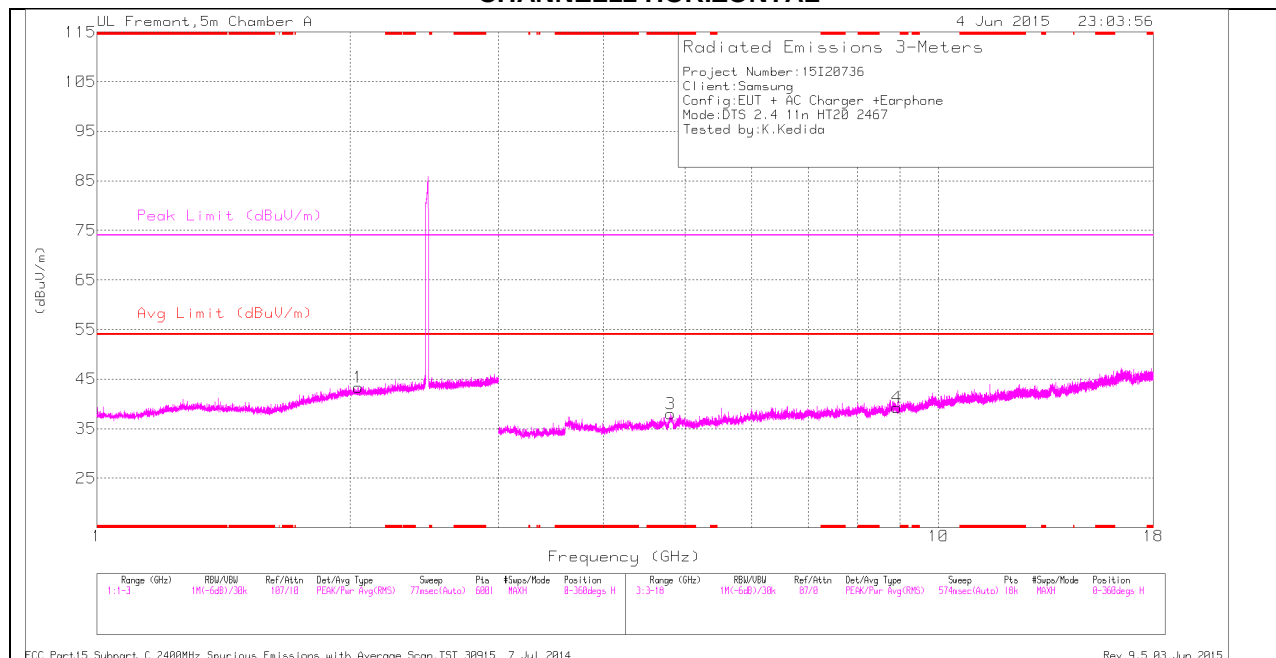
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cb/Ftr /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
6.565	41.11	PK2	35.6	-27.8	0	48.91	-	-	-	-	290	256	V
6.565	33.16	MAV1	35.6	-27.8	.2	41.16	-	-	-	-	290	256	V

PK2 - KDB558074 Method: Maximum Peak

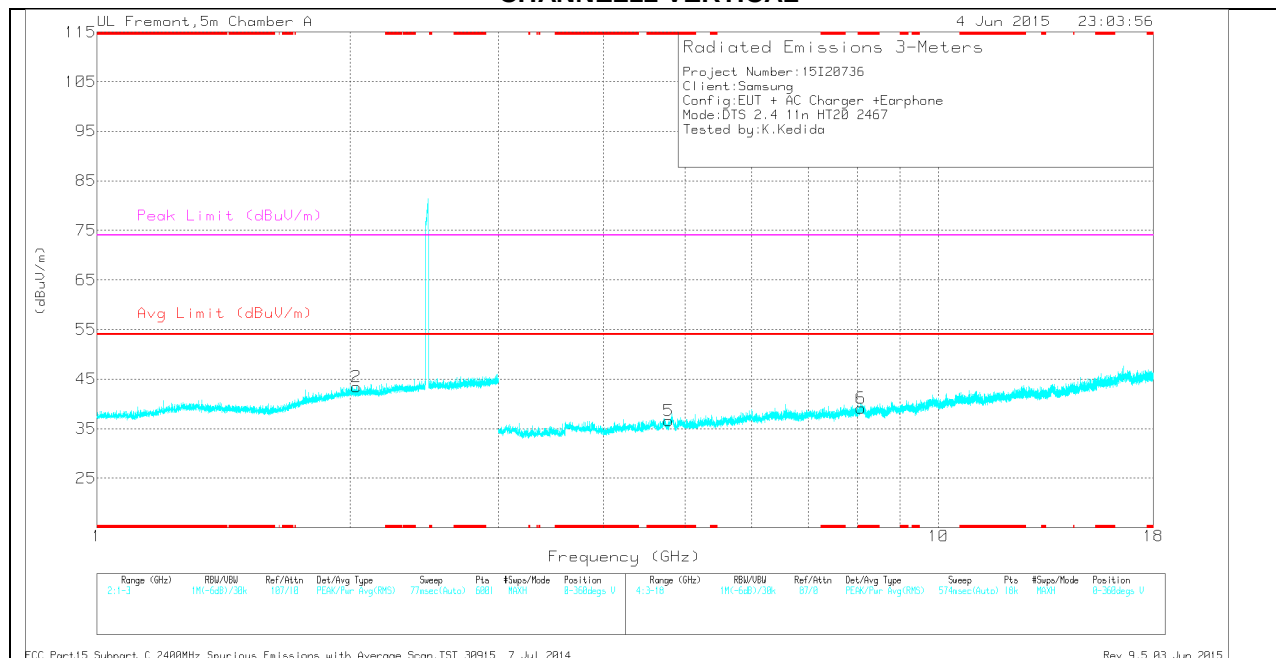
MAV1 - KDB558074 Option 1 Maximum RMS Average

CHANNEL12 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.

CHANNEL12 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.

CHANNEL12 DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 4.806	35.05	Pk	34	-31.1	37.95	-	-	74	-36.05	0-360	201	H
5	* 4.783	34.02	Pk	34	-31.4	36.62	-	-	74	-37.38	0-360	100	V
6	* 8.092	28.07	Pk	35.7	-24.6	39.17	-	-	74	-34.83	0-360	100	V
2	2.035	37.5	Pk	31.2	-25.3	43.4	-	-	74	-30.6	0-360	200	V
1	2.046	37.34	Pk	31.3	-25.3	43.34	-	-	74	-30.66	0-360	100	H
4	8.924	28.6	Pk	36.1	-25.4	39.3	-	-	74	-34.7	0-360	201	H

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

Pk - Peak detector

Radiated Emissions

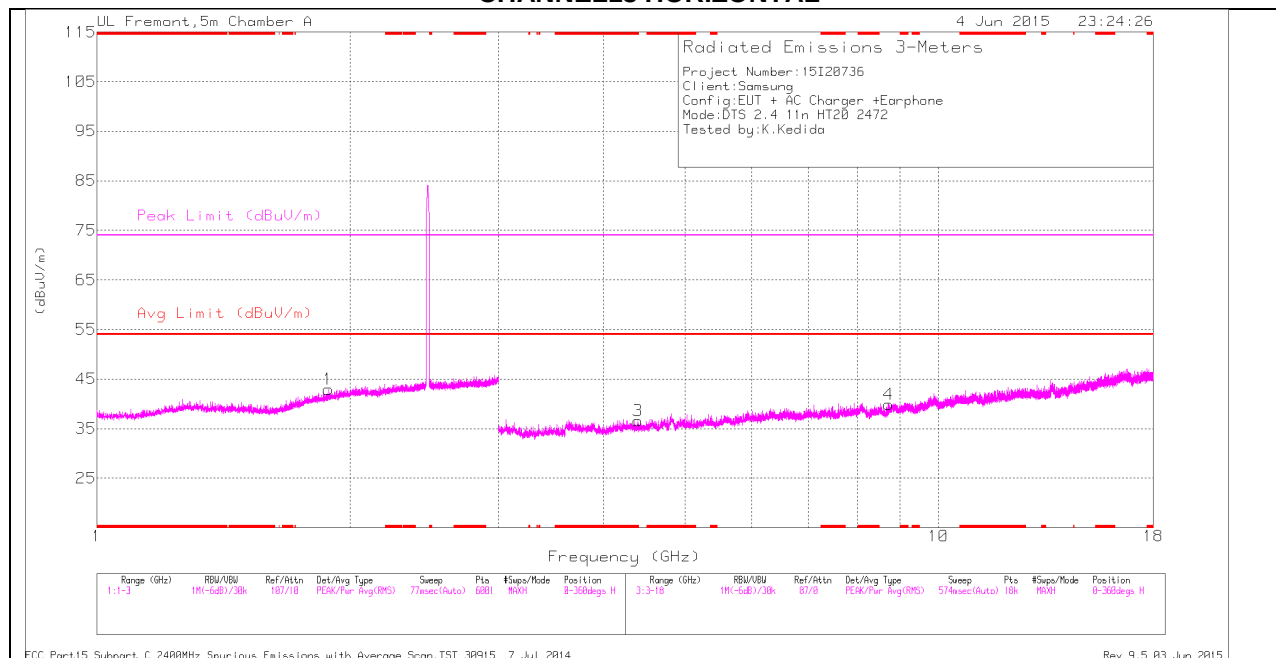
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.805	41.96	PK2	34	-31.1	44.86	-	-	74	-29.14	360	202	H
* 4.806	31.1	MAv1	34	-31.1	34	54	-20	-	-	360	202	H

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

PK2 - KDB558074 Method: Maximum Peak

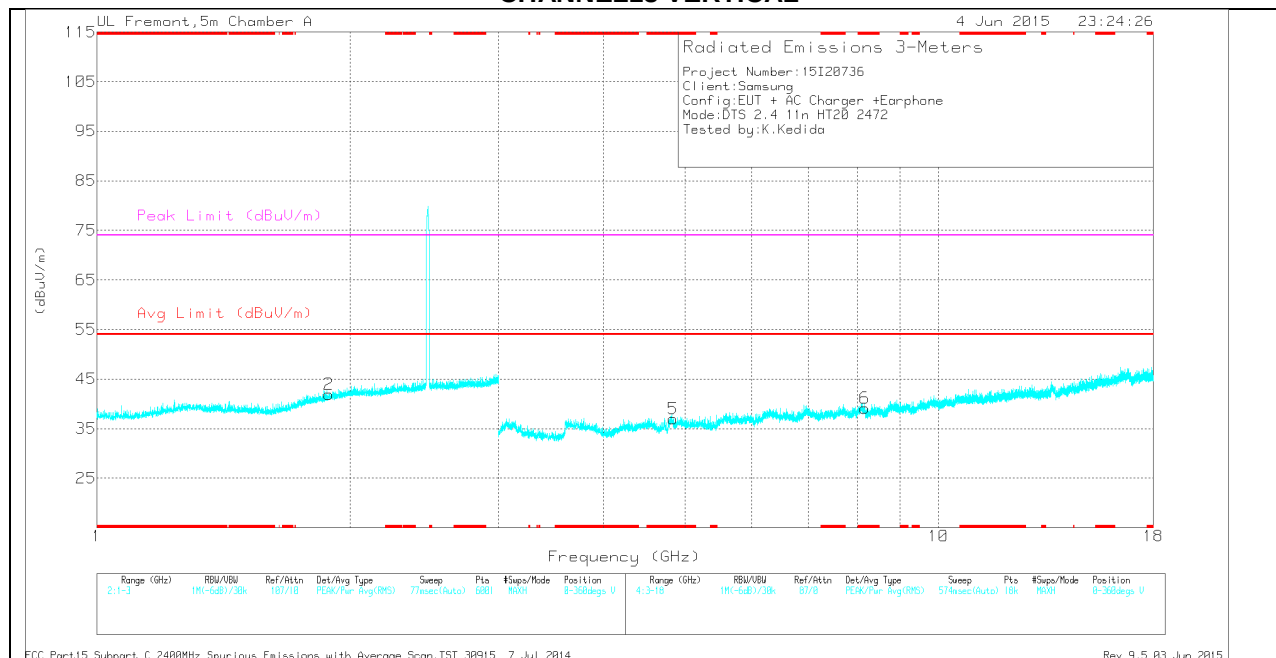
MAv1 - KDB558074 Option 1 Maximum RMS Average

CHANNEL13 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.

CHANNEL13 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.

CHANNEL12 DATA

Trace Markers

Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 4.397	34.98	Pk	33.7	-32.1	36.58	-	-	74	-37.42	0-360	100	H
5	* 4.836	33.64	Pk	33.9	-30.6	36.94	-	-	74	-37.06	0-360	200	V
6	* 8.173	28.09	Pk	35.7	-24.7	39.09	-	-	74	-34.91	0-360	200	V
1	1.884	37.72	Pk	30.7	-25.5	42.92	-	-	74	-31.08	0-360	201	H
2	1.885	36.76	Pk	30.7	-25.5	41.96	-	-	74	-32.04	0-360	200	V
4	8.726	29.3	Pk	35.9	-25.3	39.9	-	-	74	-34.1	0-360	100	H

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

Pk - Peak detector

Radiated Emissions

Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.399	42.51	PK2	33.7	-32.1	44.11	-	-	74	-29.89	360	100	H
* 4.396	31.15	MAv1	33.7	-32.1	32.75	54	-21.25	-	-	360	100	H

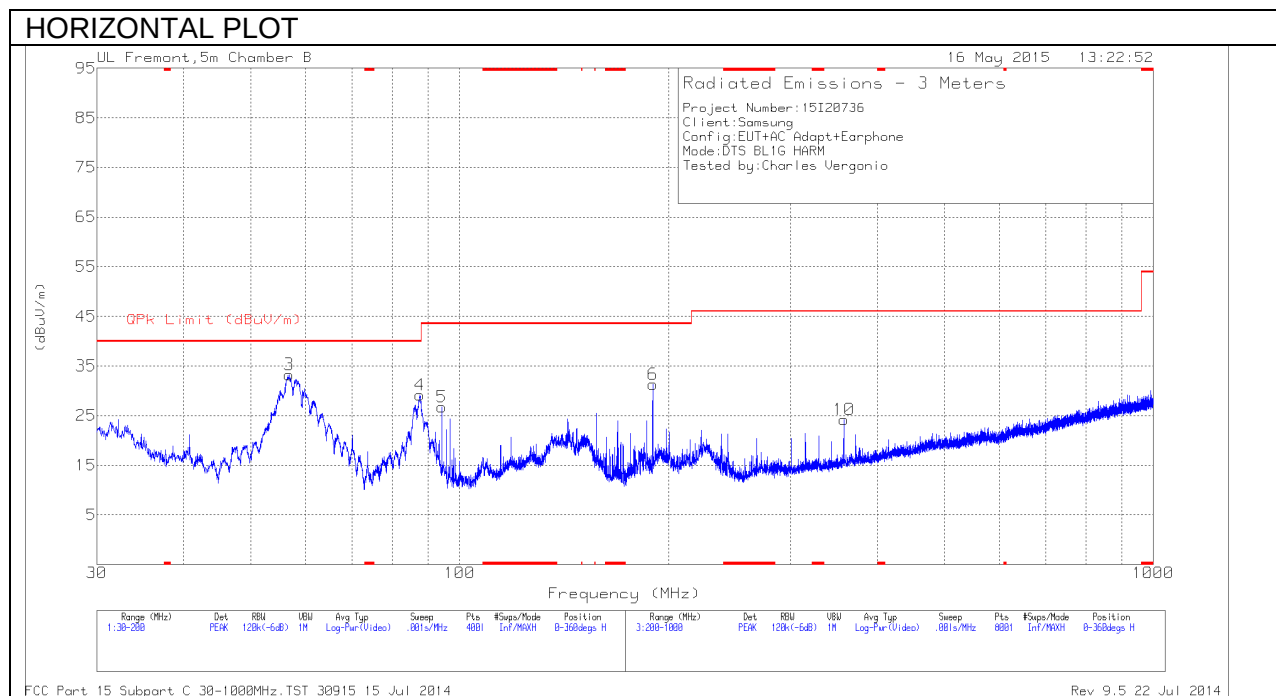
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

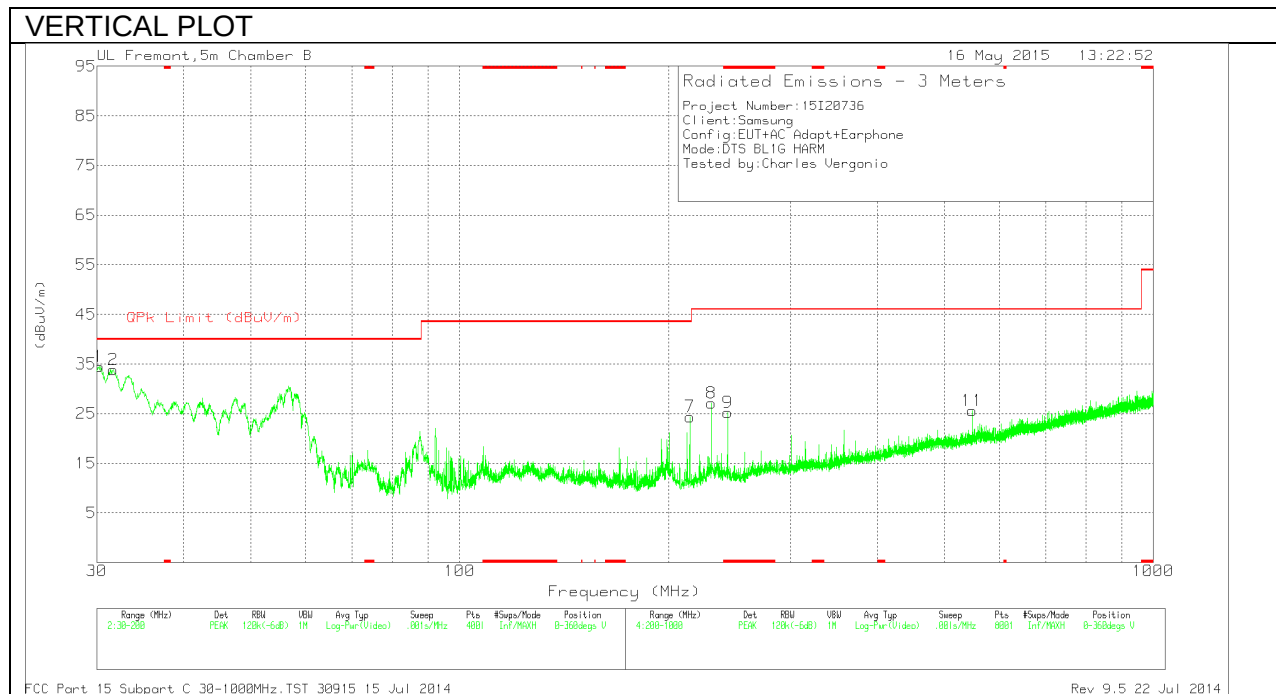
MAv1 - KDB558074 Option 1 Maximum RMS Average

10.3. WORST-CASE BELOW 1 GHz

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



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



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
9	* 243.4	40.1	PK	11.6	-26.5	25.2	46.02	-20.82	0-360	300	V
1	30.2125	42.81	PK	20.6	-28.9	34.51	40	-5.49	0-360	101	V
2	31.6575	43.11	PK	19.7	-28.9	33.91	40	-6.09	0-360	101	V
3	56.775	54.48	PK	7.3	-28.5	33.28	40	-6.72	0-360	400	H
4	87.5875	49.86	PK	7.5	-28.2	29.16	40	-10.84	0-360	200	H
5	94.26	46.28	PK	8.6	-28.1	26.78	43.52	-16.74	0-360	200	H
6	189.8425	47.06	PK	11.4	-27.1	31.36	43.52	-12.16	0-360	100	H
7	214.8	40.59	PK	10.6	-26.8	24.39	43.52	-19.13	0-360	200	V
8	230.7	42.59	PK	11.1	-26.6	27.09	46.02	-18.93	0-360	300	V
10	357.9	35.26	PK	14.8	-25.9	24.16	46.02	-21.86	0-360	200	H
11	548.4	32.69	PK	18.5	-25.6	25.59	46.02	-20.43	0-360	200	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 C63.4 2009.

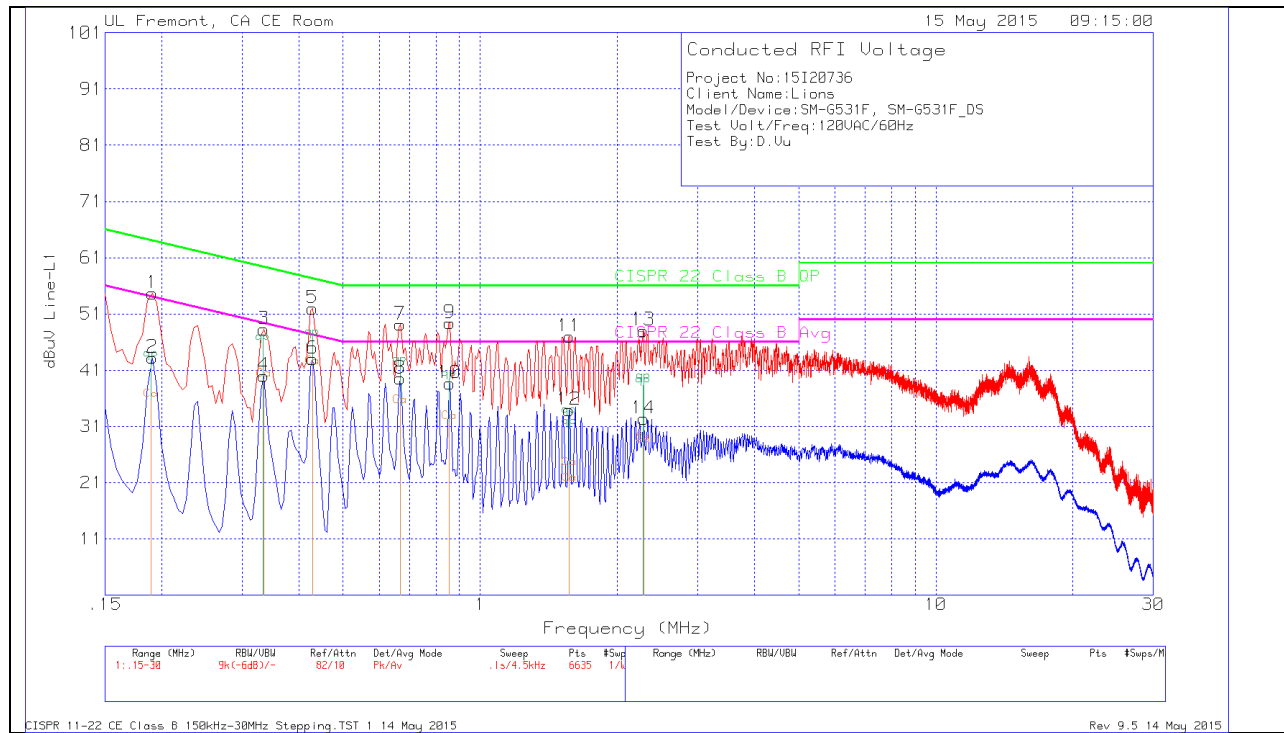
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

6 WORST EMISSIONS

LINE 1 PLOT

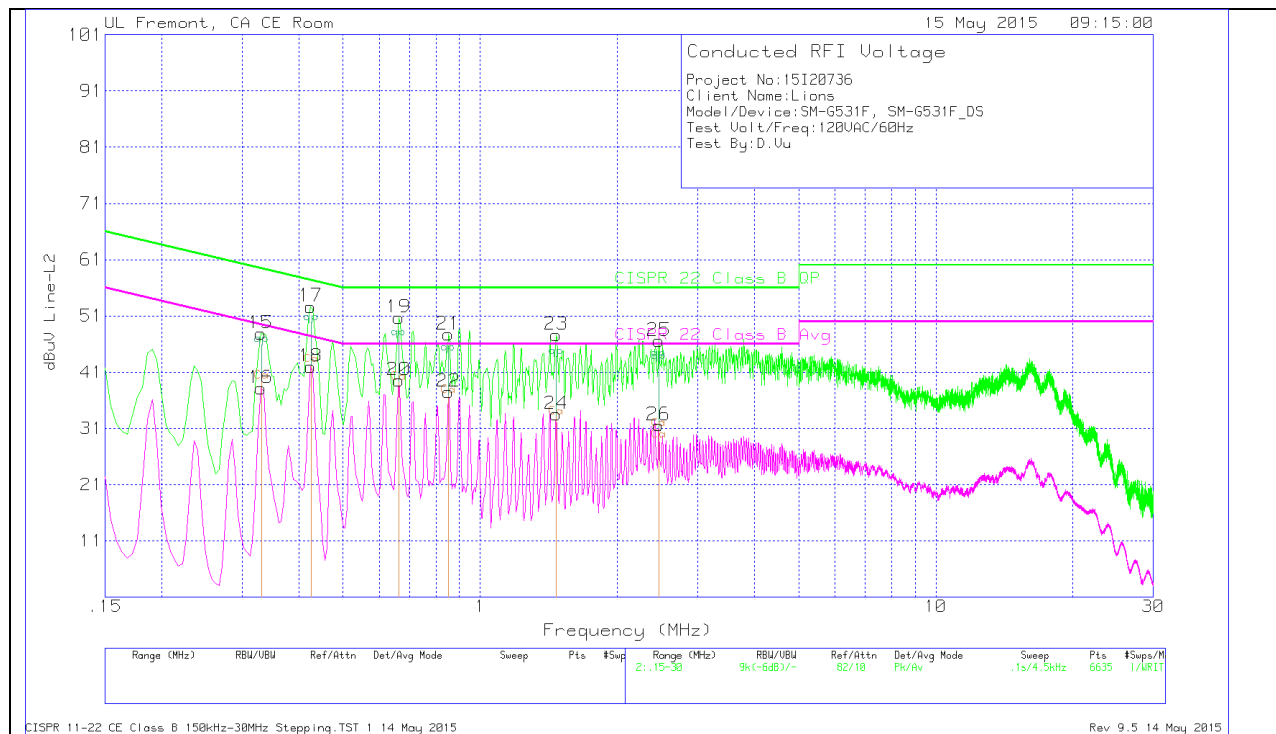


LINE 1 RESULTS

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	.1905	53.69	Pk	1	0	54.69	64.01	-9.32		
2	.1905	42.2	Av	1	0	43.2	-	-	54.01	-10.81
3	.3345	47.79	Pk	.5	0	48.29	59.34	-11.05		
4	.3345	39.5	Av	.5	0	40	-	-	49.34	-9.34
5	.429	51.6	Pk	.4	0	52	57.27	-5.27		
6	.429	42.62	Av	.4	0	43.02	-	-	47.27	-4.25
7	.6675	48.81	Pk	.3	0	49.11	56	-6.89		
8	.6675	39.22	Av	.3	0	39.52	-	-	46	-6.48
9	.8565	49.06	Pk	.3	0	49.36	56	-6.64		
10	.8565	38.37	Av	.3	0	38.67	-	-	46	-7.33
11	1.56975	46.7	Pk	.2	.1	47	56	-9		
12	1.5675	33.62	Av	.2	.1	33.92	-	-	46	-12.08
13	2.28075	47.74	Pk	.2	.1	48.04	56	-7.96		
14	2.283	32.06	Av	.2	.1	32.36	-	-	46	-13.64

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)
15	.33	47.37	Pk	.5	0	47.87	59.45	-11.58		
16	.33	37.65	Av	.5	0	38.15	-	-	49.45	-11.3
17	.4245	52.25	Pk	.4	0	52.65	57.36	-4.71		
18	.4245	41.59	Av	.4	0	41.99	-	-	47.36	-5.37
19	.663	50.4	Pk	.3	0	50.7	56	-5.3		
20	.663	39.27	Av	.3	0	39.57	-	-	46	-6.43
21	.852	47.41	Pk	.3	0	47.71	56	-8.29		
22	.852	37.2	Av	.3	0	37.5	-	-	46	-8.5
23	1.4685	47.35	Pk	.2	.1	47.65	56	-8.35		
24	1.4685	33.21	Av	.2	.1	33.51	-	-	46	-12.49
25	2.4675	46.26	Pk	.2	.1	46.56	56	-9.44		
26	2.463	31.26	Av	.2	.1	31.56	-	-	46	-14.44