



FCC CFR47 PART 15 SUBPART C

CERTIFICATION TEST REPORT

FOR

GSM/WCDMA/LTE Phone + Bluetooth, DTS/UNII a/b/g/n, ANT+ and NFC

MODEL NUMBER: SM-A5000; SM-A5009

FCC ID: A3LSMA5000

REPORT NUMBER: 14I18594-E4

ISSUE DATE: AUGUST 25, 2014

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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	9/2/14	Initial Issue	P. Zhang

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SAMSUNG ELECTRONICS CO., LTD.

EUT DESCRIPTION: GSM/WCDMA/LTE Phone + Bluetooth, DTS/UNII a/b/g/n, ANT+ and NFC

MODEL: SM-A5000; SM-A5009

SERIAL NUMBER: R38F70L4XVV (Conducted); R38F70L4XTH (Radiated)

DATE TESTED: AUG 18- SEP 2, 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	47266 Benicia Street
☐ Chamber A	☐ Chamber D	☐ Chamber G
☒ Chamber B	☐ Chamber E	☒ Chamber H
☐ 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:

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

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/UNII a/b/g/n, ANT+ and NFC.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2412 - 2462	802.11b	17.2	52.48
2412 - 2462	802.11g	14.1	25.70
2412 - 2462	802.11n HT20	13.2	20.89

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of -4.08 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

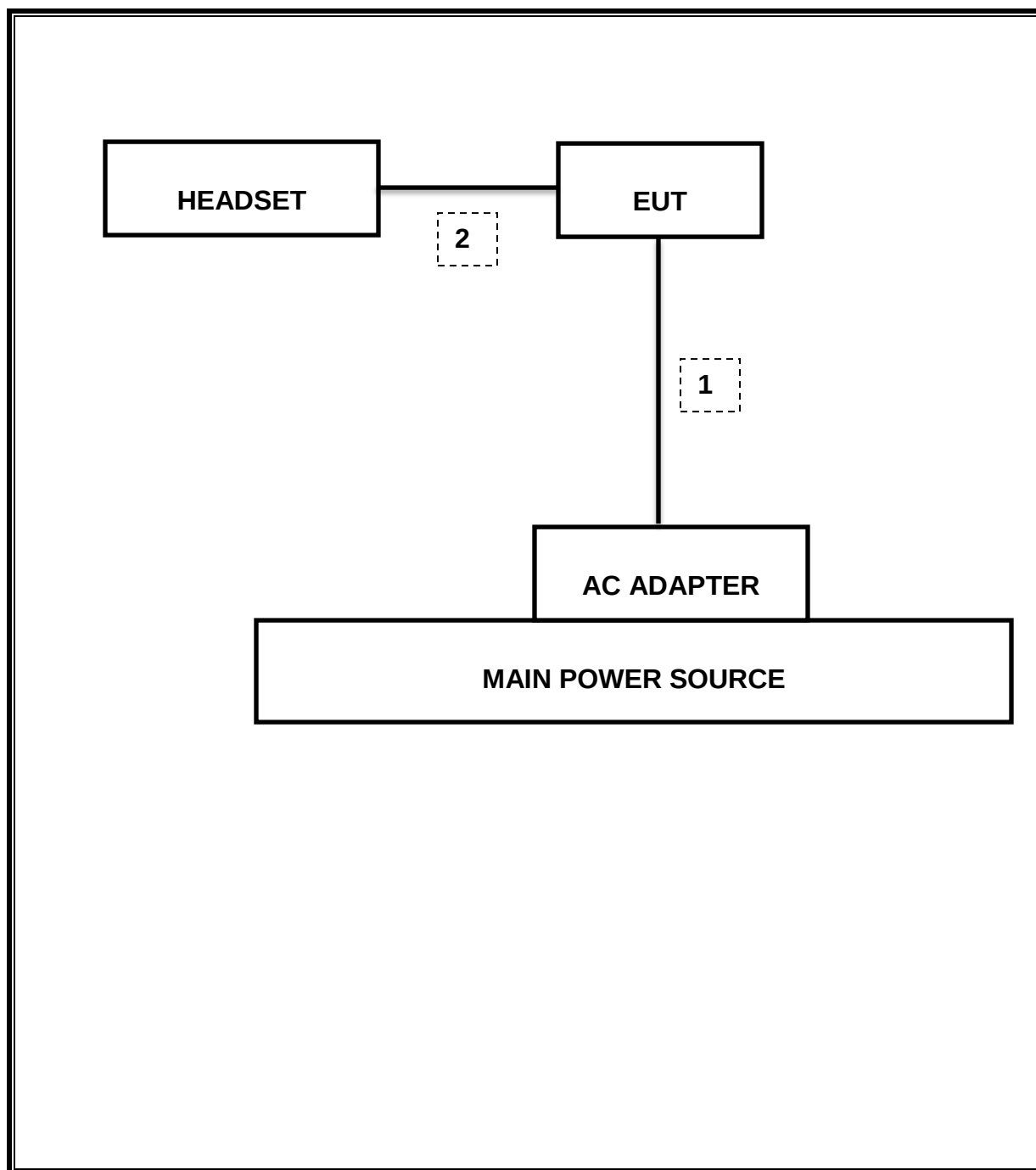
Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	SAMSUNG	EP-TA50CBC	N/A	N/A
Earphone	SAMSUNG	N/A	N/A	N/A

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.



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	08/13/15
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	08/18/15
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	06/28/15
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	T243	03/06/15
RF Preamplifier, 100KHz -> 1300MHz	HP	TBD	C00825	06/01/15
RF Preamplifier, 1GHz - 18GHz	Miteq	NSP4000-SP2	924343	03/23/15
RF Preamplifier, 1GHz - 26.5GHz	HP	8449B	F00351	06/27/15
AC Power Supply, 2,500VA 45-500Hz	Elgar-Ametek	CW2501M	F00013	CNR
RF Preamplifier, 1GHz - 40GHz	Miteq	NSP4000-SP2	C00990	08/20/15
Attenuator / Switch driver	HP	11713A	F00204	CNR
Low Pass Filter 3GHz	Micro-Tronics	LPS17541	F00219	05/23/15
High Pass Filter 5GHz	Micro-Tronics	HPS17542	F00222	05/22/15
High Pass Filter 6GHz	Micro-Tronics	HPM17543	F00224	05/22/15

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	9.07MHz
2.1051, 15.247 (d)	RSS-210 A8.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	-28.877dBm
15.247	RSS-210 A8.4	TX conducted output power	<30dBm		Pass	17.2dBm
15.247	RSS-210 A8.2	PSD	<8dBm		Pass	-14.85dBm
15.207 (a)	RSS-GEN 7.2.2	AC Power Line conducted emissions	Section 10	Radiated	Pass	31.93dBuV(AV)
15.205, 15.209	RSS-210 Clause 2.6, RSS-210 Clause 6	Radiated Spurious Emission	< 54dBuV/m		Pass	42.85dBuV/m

9. ANTENNA PORT TEST RESULTS

9.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

IC RSS-210 A8.2 (a)

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

TEST PROCEDURE

Reference to KDB 558074 D01 DTS Meas Guidance v03r02: The transmitter output is connected to a spectrum analyzer with the RBW set 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)
Low	2412	9.10	0.5
Mid	2437	9.14	0.5
High	2462	9.07	0.5
Worst		9.07	

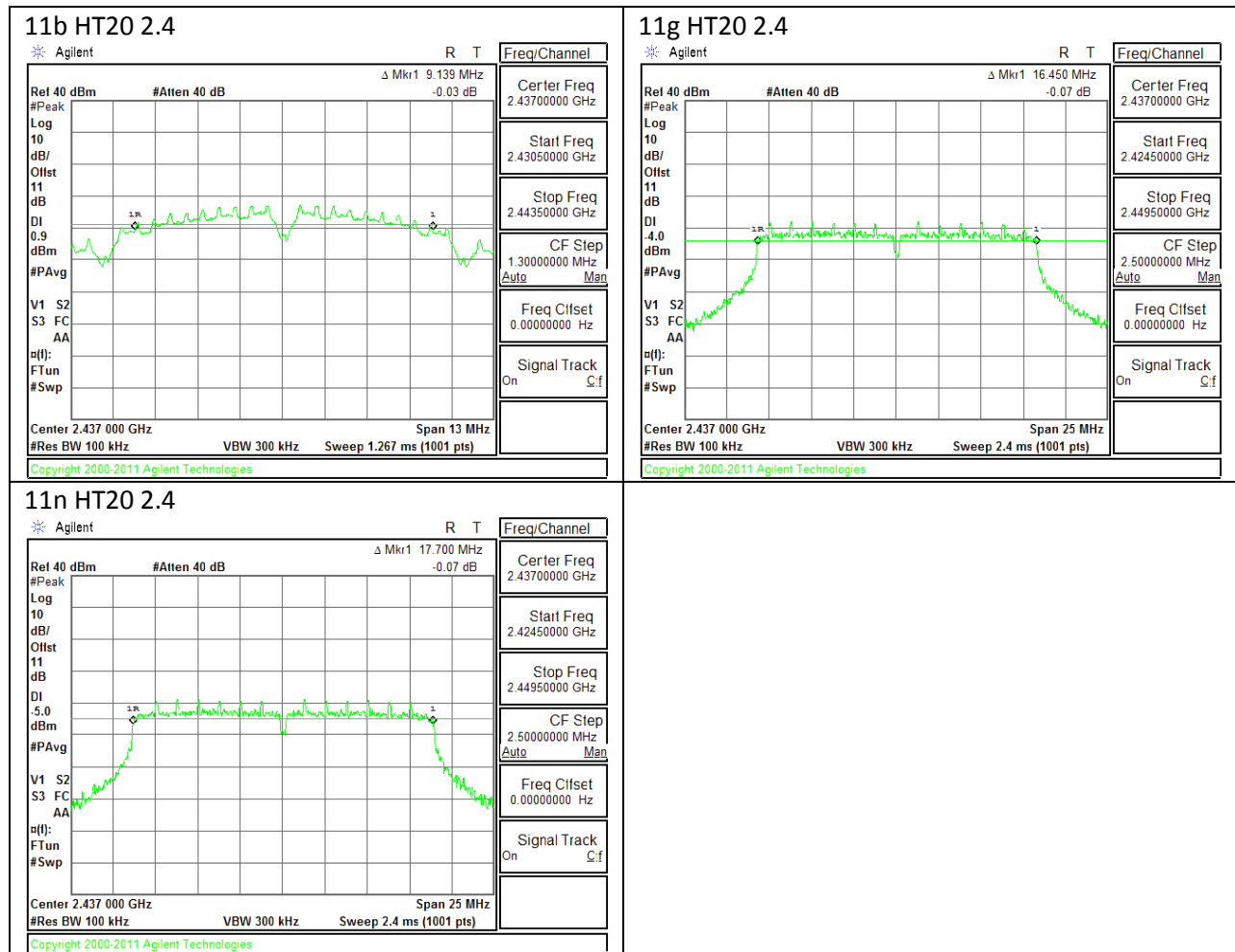
9.1.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	16.53	0.5
Mid	2437	16.45	0.5
High	2462	16.48	0.5
Worst		16.45	

9.1.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	17.70	0.5
Mid	2437	17.70	0.5
High	2462	17.70	0.5
Worst		17.70	

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	13.51
Mid	2437	13.48
High	2462	13.47
Worst		13.51

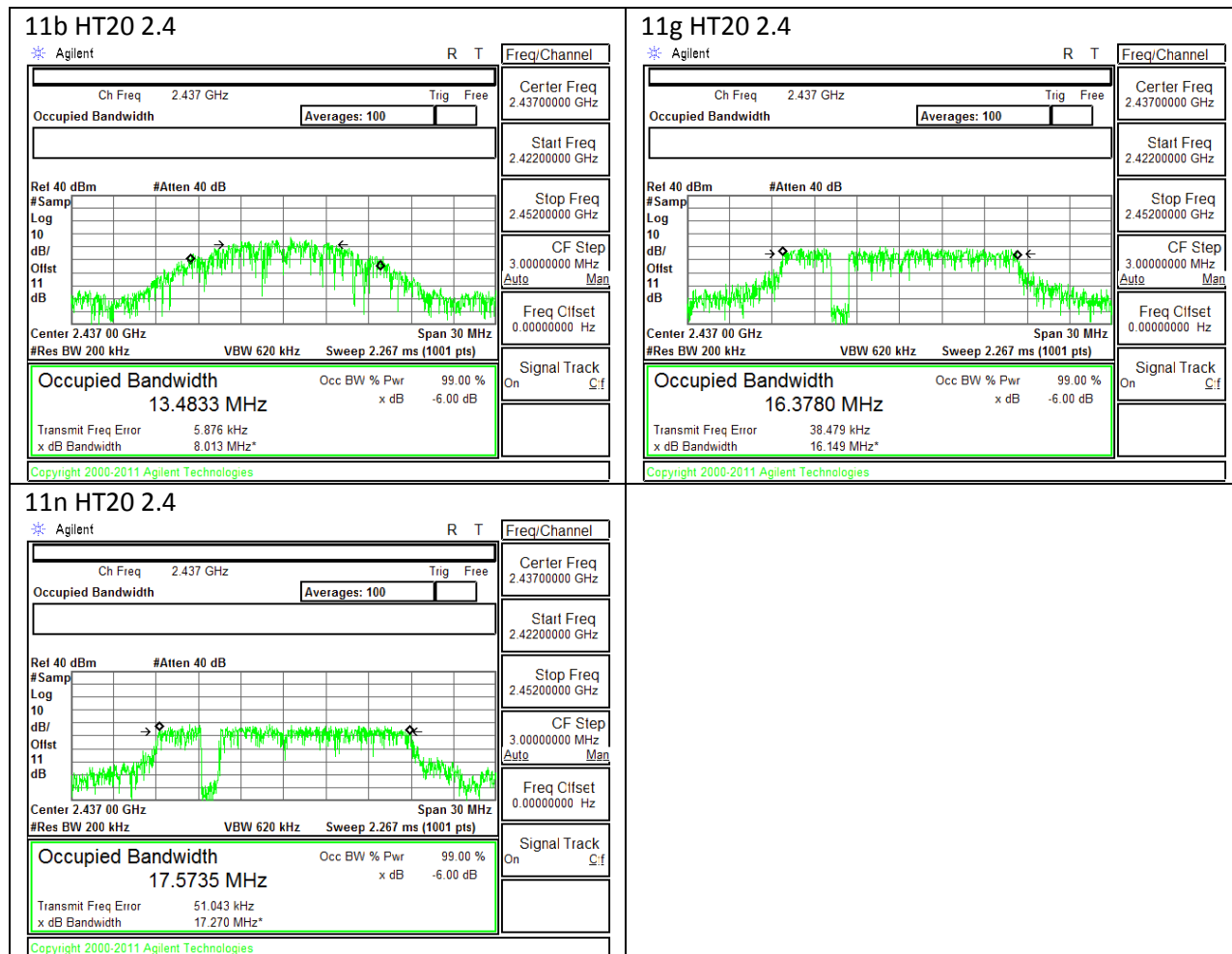
9.2.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	16.46
Mid	2437	16.38
High	2462	16.37
Worst		16.46

9.2.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	17.57
Mid	2437	17.57
High	2462	17.62
Worst		17.62

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

KDB 558074 D01 DTS Meas Guidance v03r02: Measurement Procedure AVGPM-G is used for power.

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 0.2 dB (including 10 dB pad and 0.2 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

9.3.1. 802.11b MODE IN THE 2.4 GHz BAND

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	-4.08	30.00	30	36	30.00
Mid	2437	-4.08	30.00	30	36	30.00
High	2462	-4.08	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	17.20	17.20	30.00	-12.80
Mid	2437	17.00	17.00	30.00	-13.00
High	2462	16.60	16.60	30.00	-13.40
Worst			17.20		

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)
Low	2412	-4.08	30.00	30	36	30.00
Mid	2437	-4.08	30.00	30	36	30.00
High	2462	-4.08	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	14.10	14.10	30.00	-15.90
Mid	2437	13.30	13.30	30.00	-16.70
High	2462	13.40	13.40	30.00	-16.60
Worst			14.10		

9.3.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	-4.08	30.00	30	36	30.00
Mid	2437	-4.08	30.00	30	36	30.00
High	2462	-4.08	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	13.20	13.20	30.00	-16.80
Mid	2437	12.40	12.40	30.00	-17.60
High	2462	12.30	12.30	30.00	-17.70
Worst			13.20		

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)
Low	2412	-15.39	8.0	-23.4
Mid	2437	-14.85	8.0	-22.9
High	2462	-15.70	8.0	-23.7

9.4.2. 802.11g MODE IN THE 2.4 GHz BAND

PSD Results

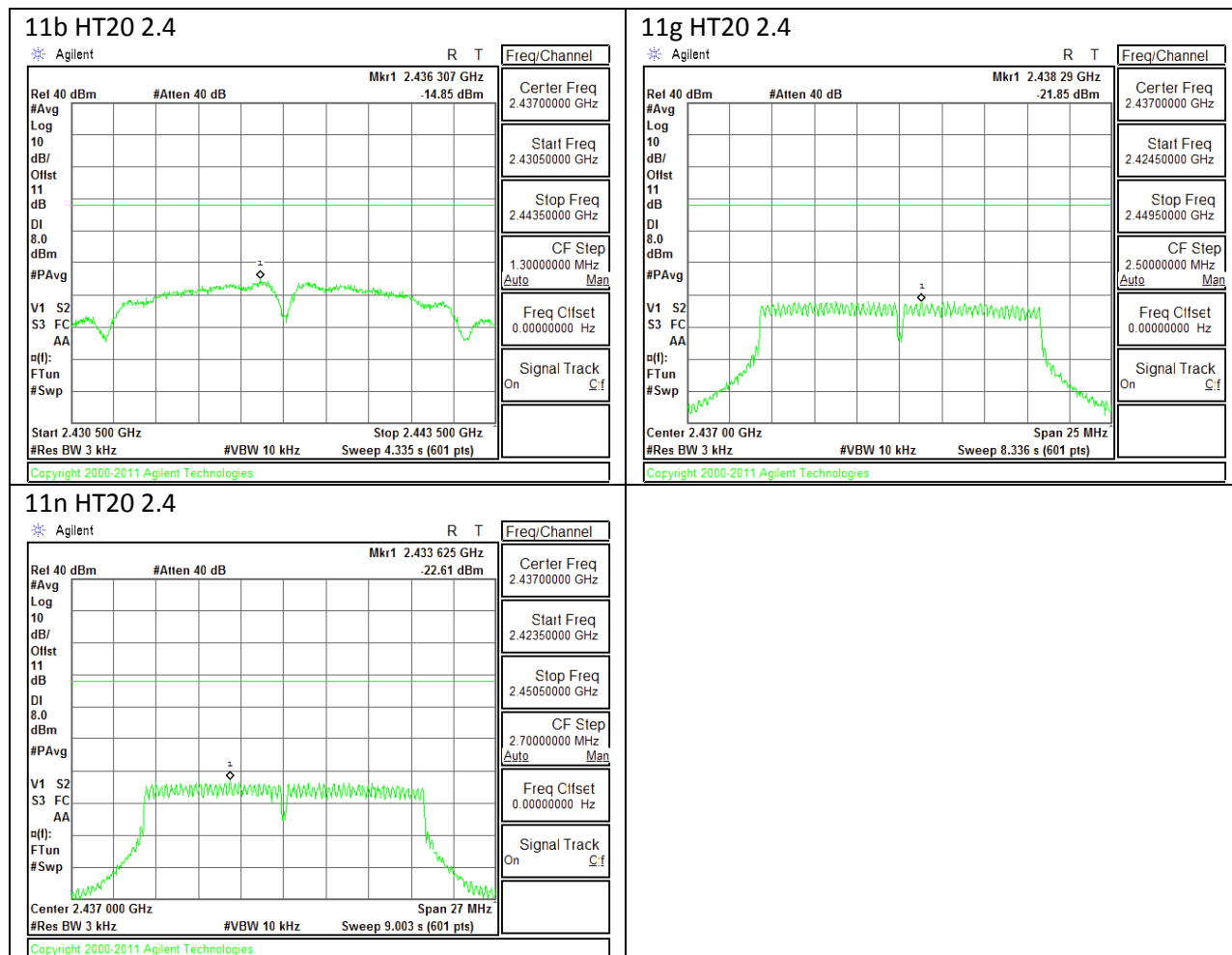
Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-21.45	8.0	-29.5
Mid	2437	-21.85	8.0	-29.9
High	2462	-20.94	8.0	-28.9

9.4.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-23.22	8.0	-31.2
Mid	2437	-22.61	8.0	-30.6
High	2462	-22.67	8.0	-30.7

9.4.4. PSD Chain 0 MID CH PLOTS



9.5. OUT-OF-BAND EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-210 A8.5

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

TEST PROCEDURE

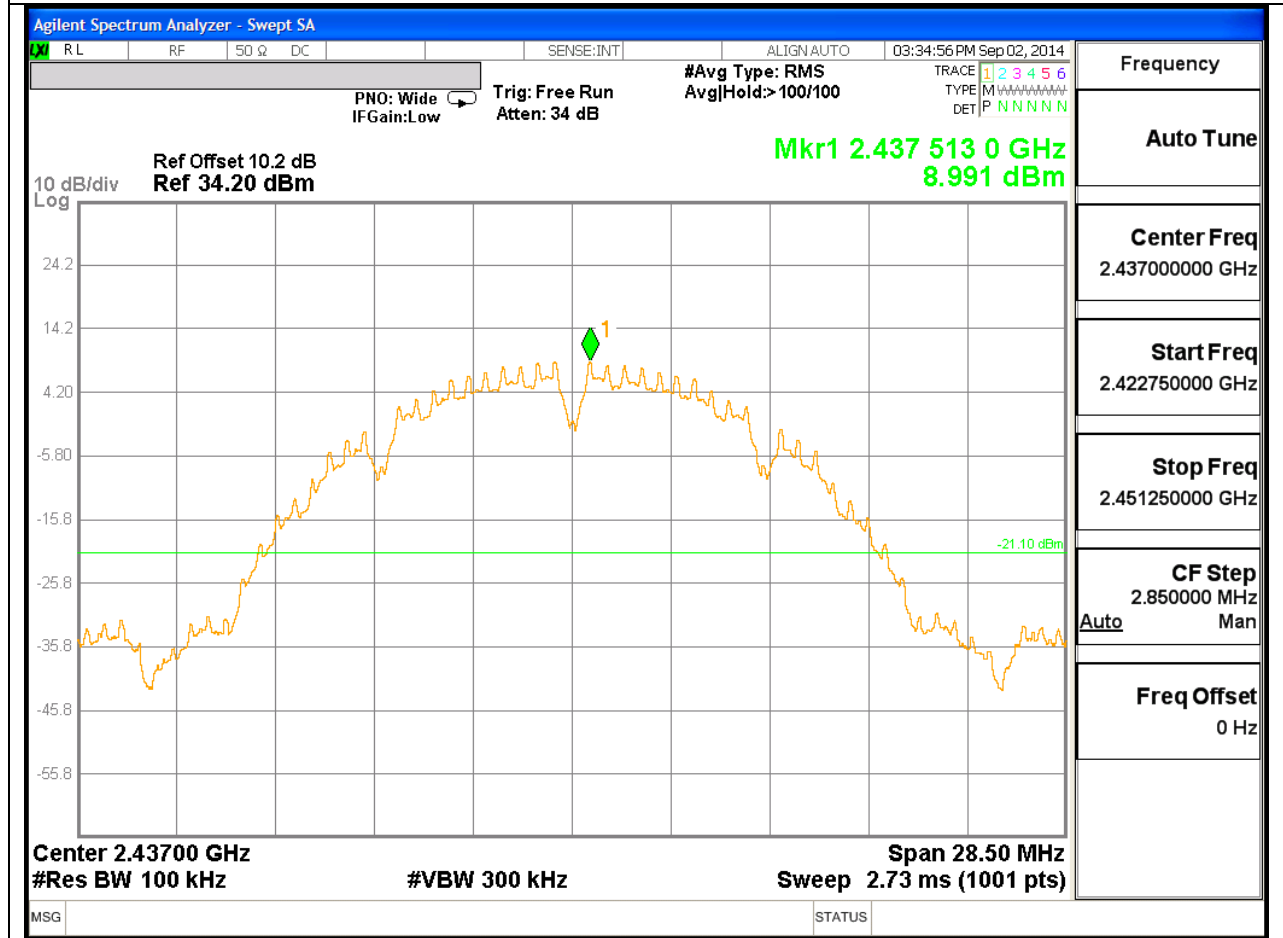
The transmitter output is connected to a spectrum analyzer with RBW = 100 kHz, VBW = 300 kHz, peak detector, and max hold. Measurements utilizing these settings are made of the in-band reference level, bandedge (where measurements to the general radiated limits will not be made) and out-of-band emissions.

RESULTS

9.5.1. 802.11b MODE IN THE 2.4 GHz BAND

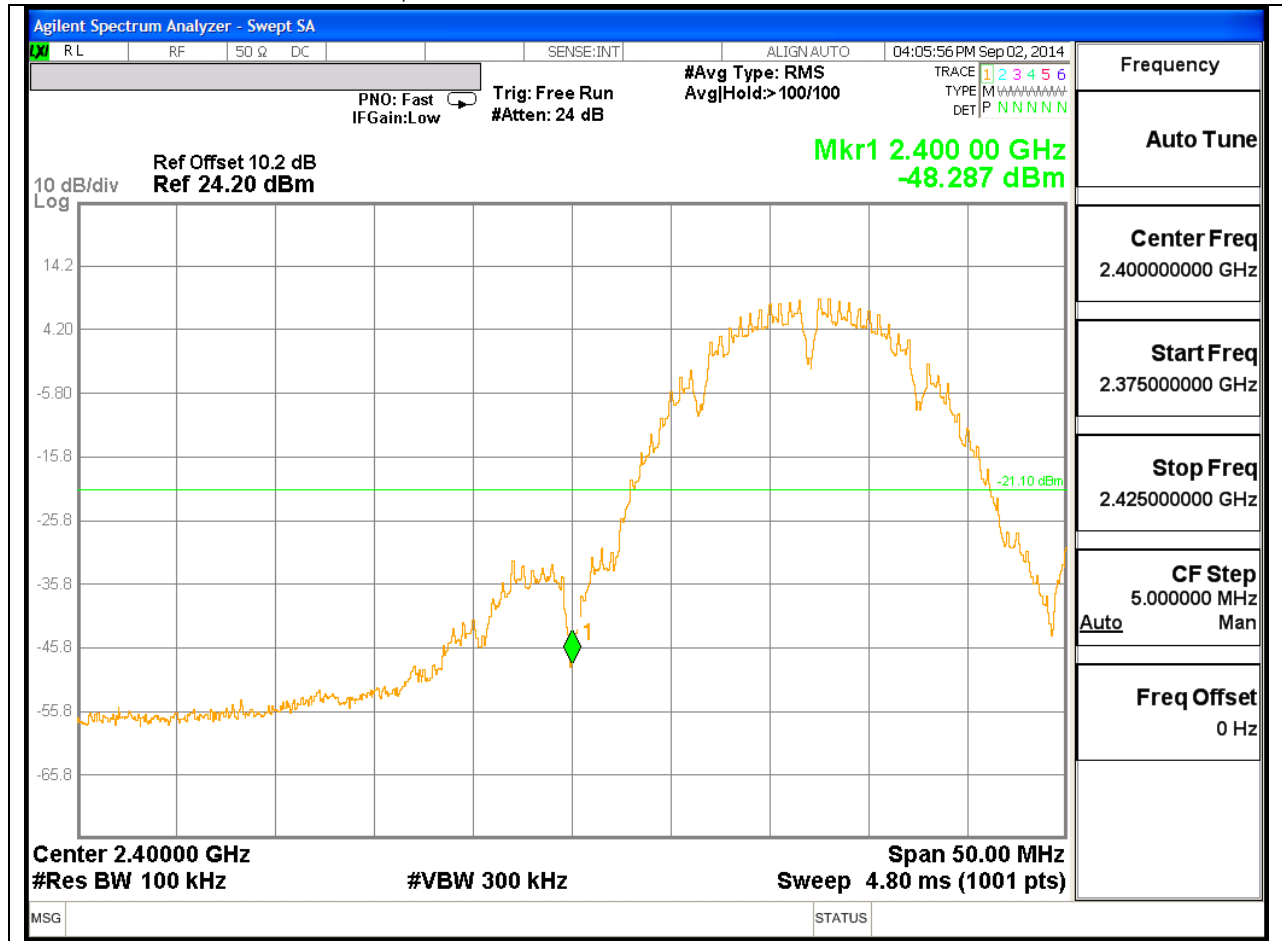
IN-BAND REFERENCE LEVEL

REFERENCE LEVEL MID CH



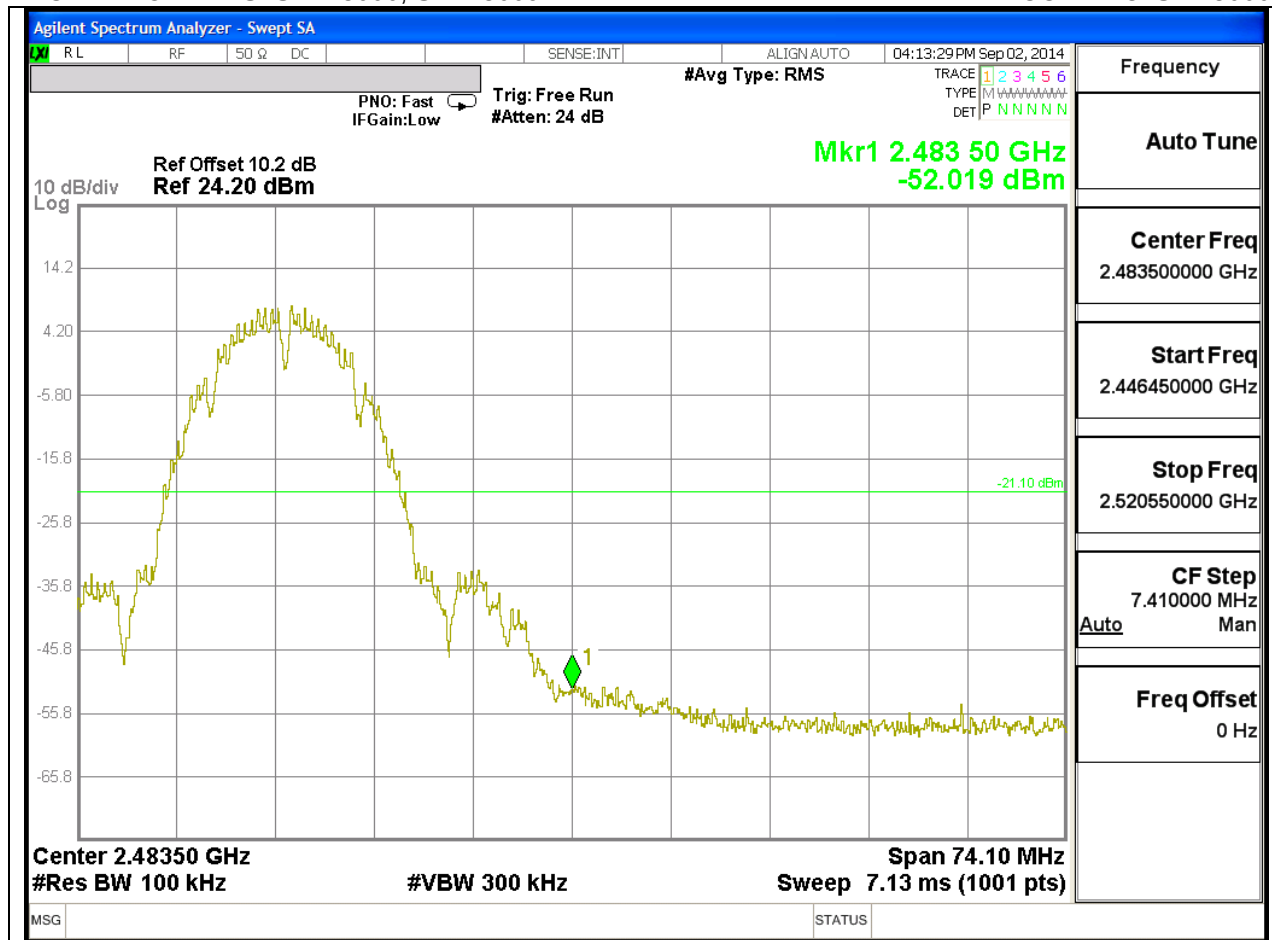
LOW CHANNEL BANDEDGE

AUTHORIZED BAND EDGE LOW CH



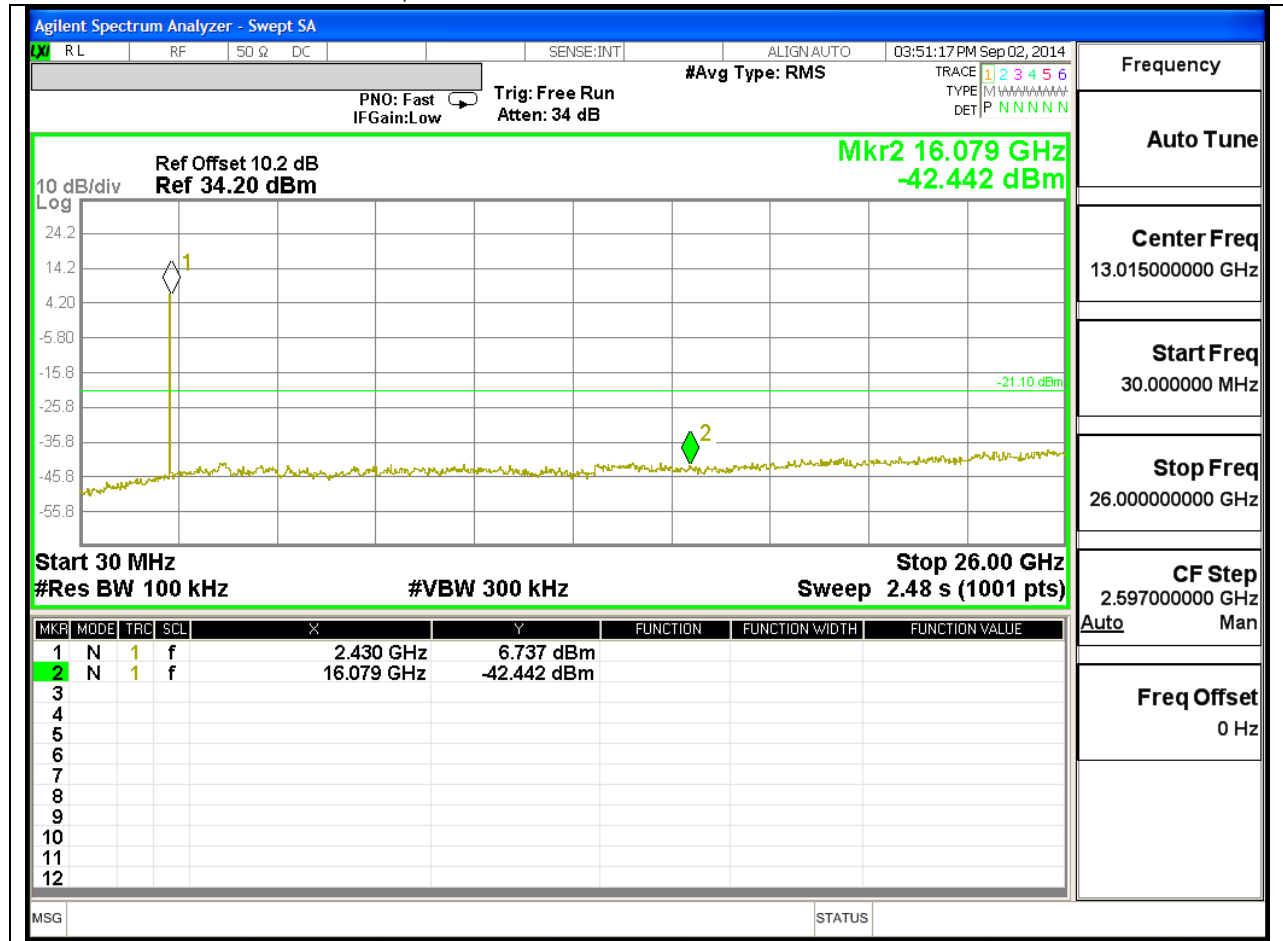
HIGH CHANNEL BANDEDGE

AUTHORIZED BAND EDGE HIGH CH

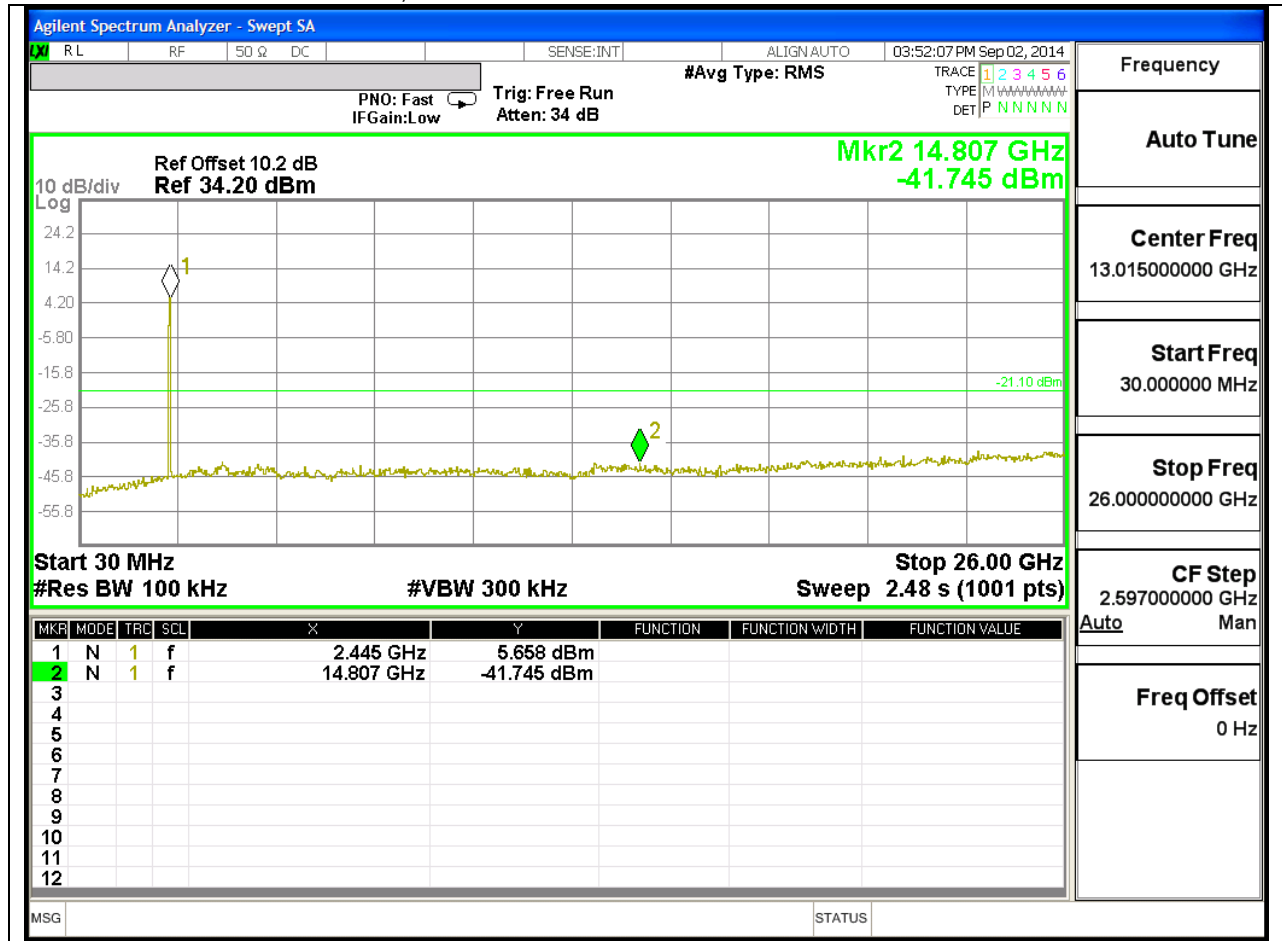


OUT-OF-BAND EMISSIONS

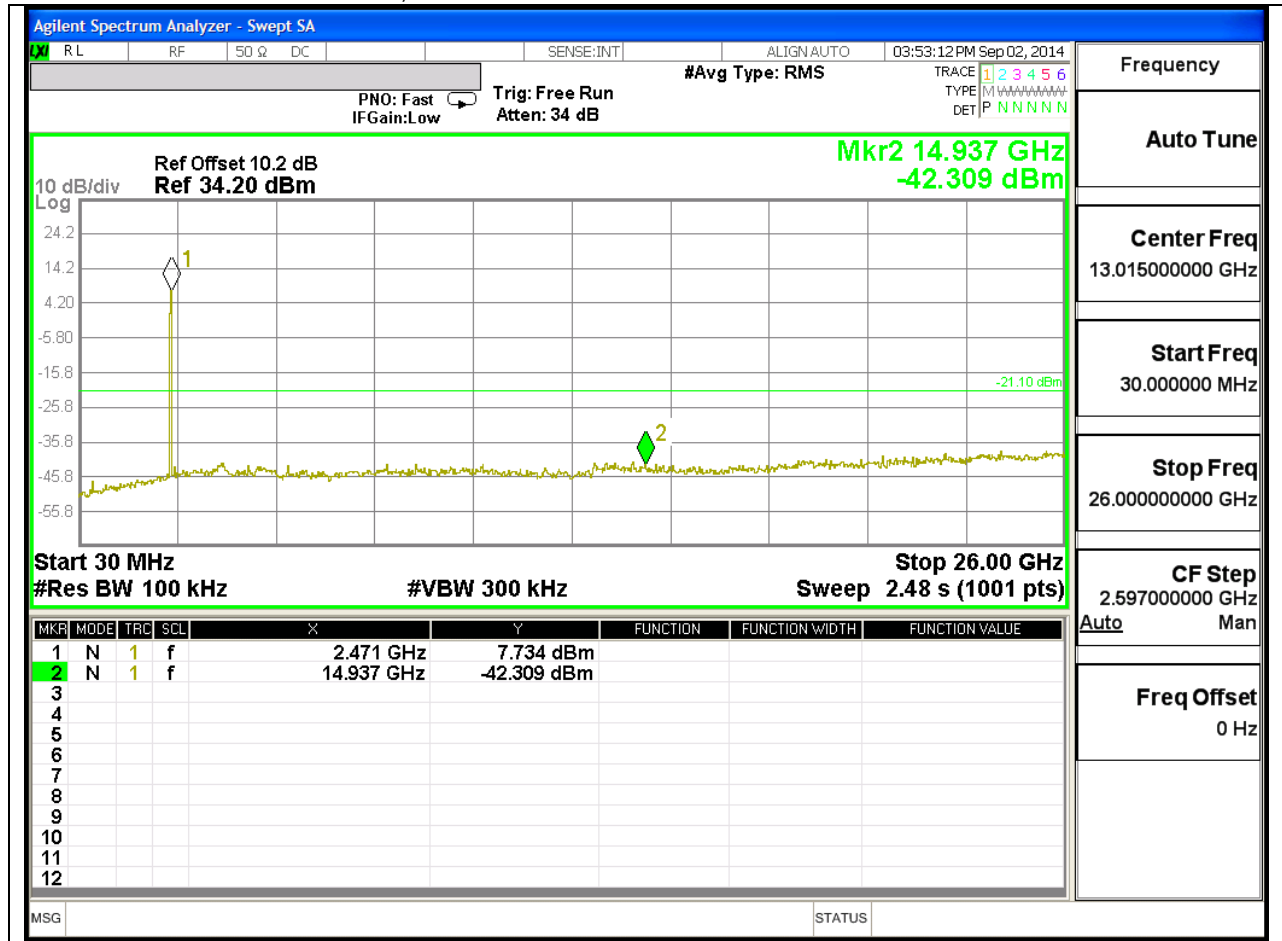
OUT OF BAND LOW CH



OUT OF BAND MID CH

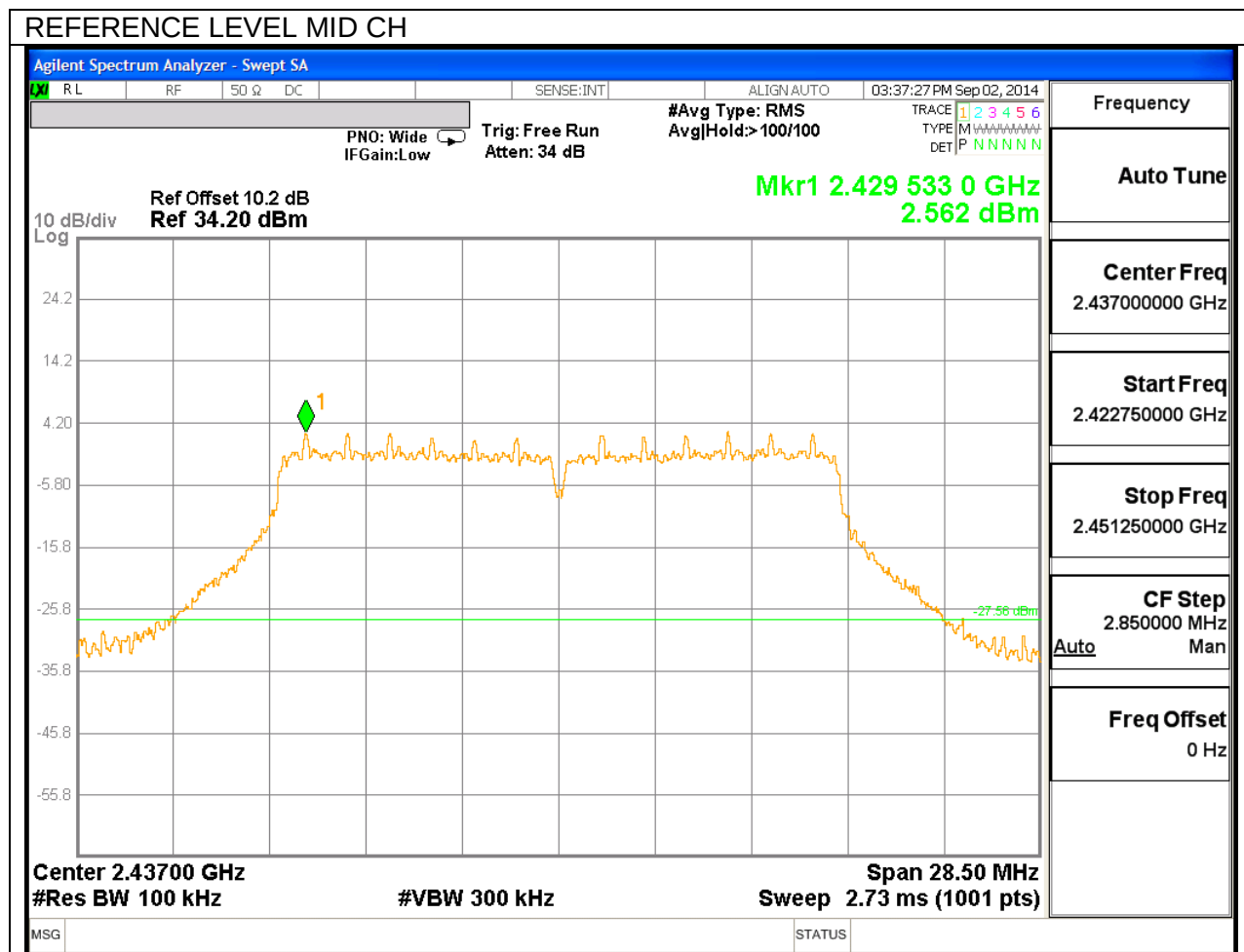


OUT OF BAND HIGH CH

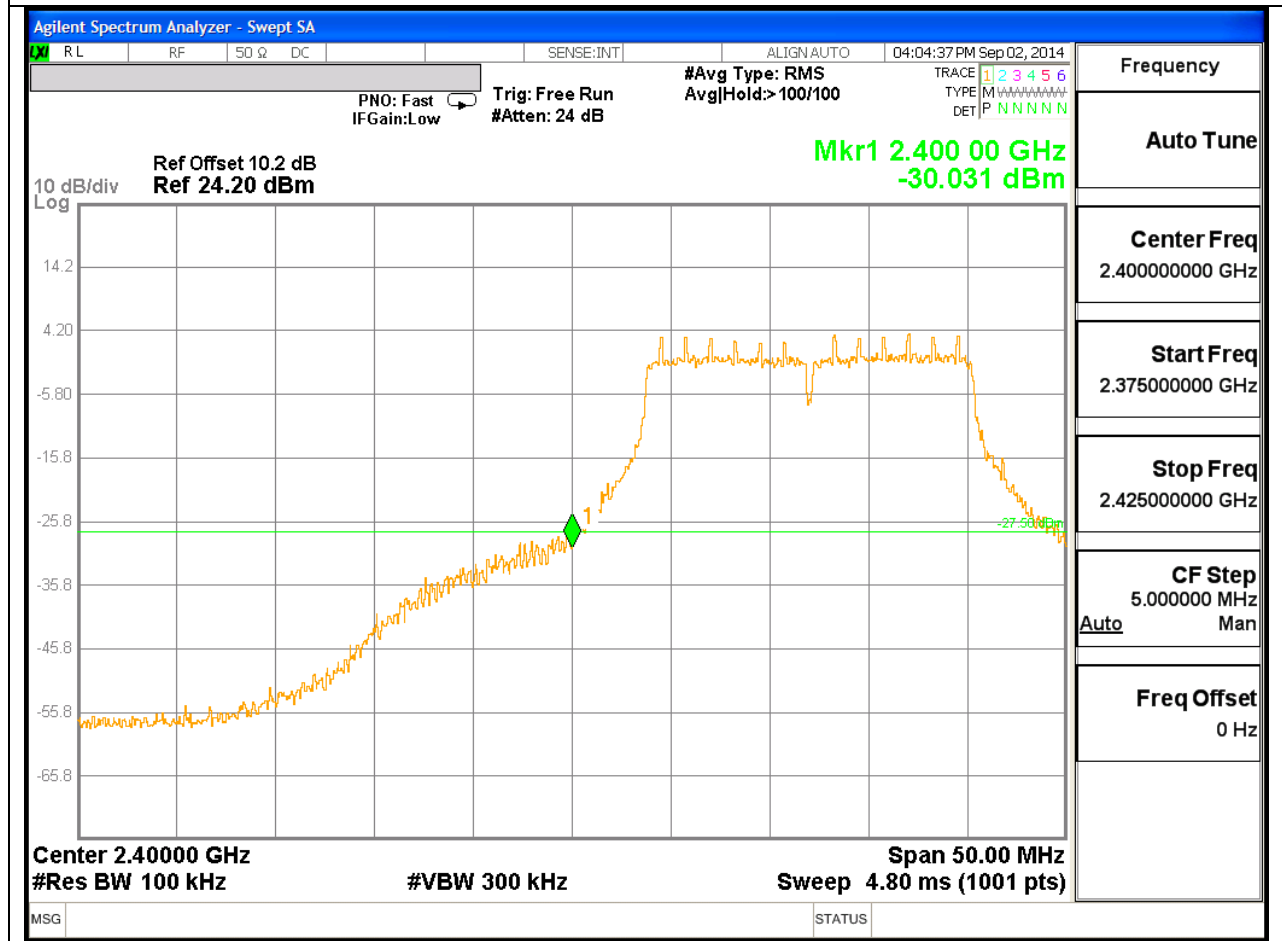


9.5.2. 802.11g MODE IN THE 2.4 GHz BAND

IN-BAND REFERENCE LEVEL

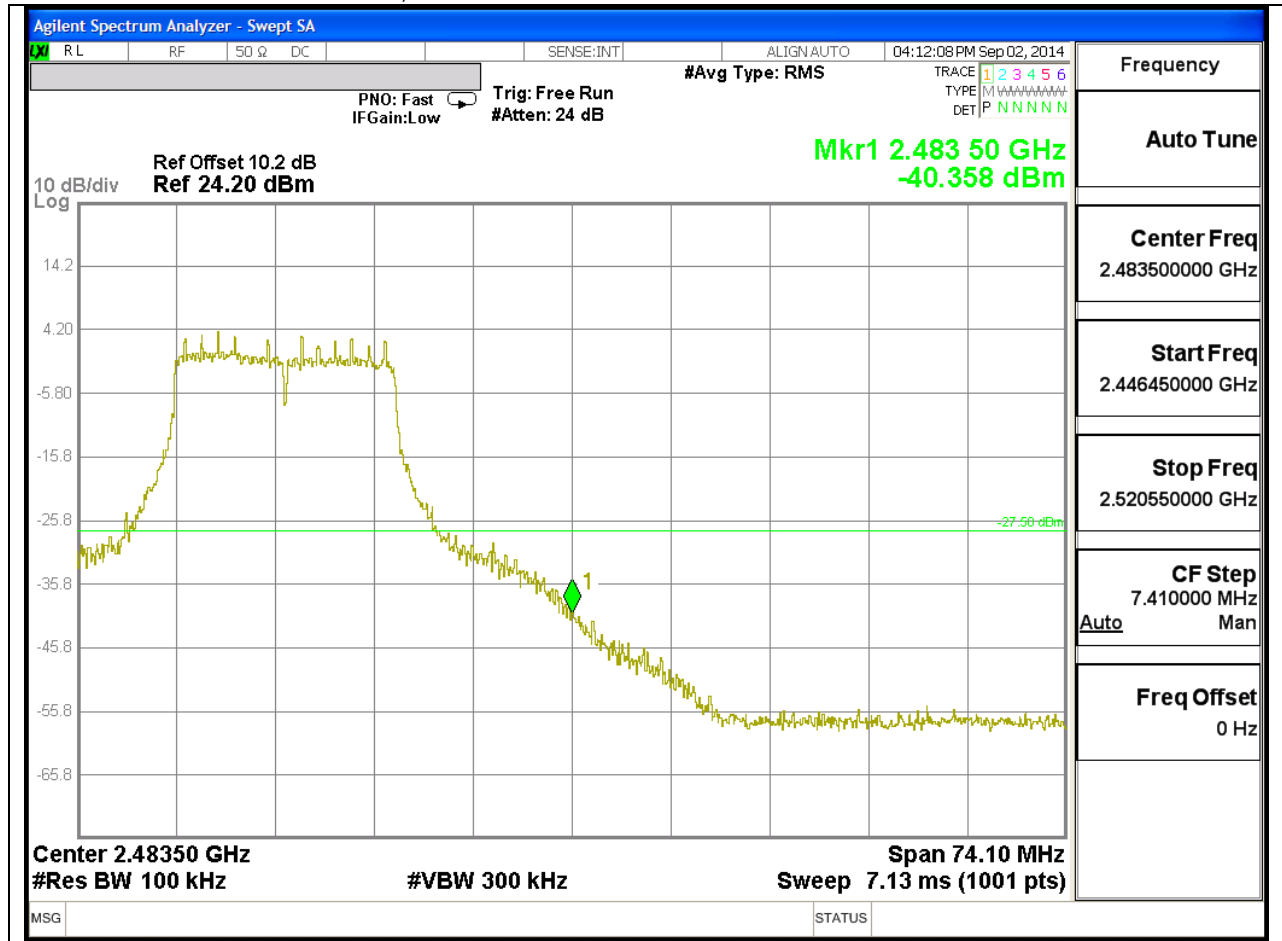


AUTHORIZED BAND EDGE LOW CH



HIGH CHANNEL BANDEDGE

AUTHORIZED BAND EDGE HIGH CH



OUT OF BAND LOW CH



OUT OF BAND MID CH

Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω DC SENSE:INT ALIGN AUTO 03:55:56 PM Sep 02, 2014

#Avg Type: RMS

Trace 1 2 3 4 5 6
Type M W W W W W W W
Det P N N N N N N

PNO: Fast IF Gain: Low Trig: Free Run #Atten: 24 dB

Ref Offset 10.2 dB
Ref 24.20 dBm

Mkr2 15.300 GHz
-51.989 dBm

10 dB/div
Log

Start 30 MHz
#Res BW 100 kHz

Stop 26.00 GHz
Sweep 2.48 s (1001 pts)

#VBW 300 kHz

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.445 GHz	-1.243 dBm			
2	N	1	f	15.300 GHz	-51.989 dBm			
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								

MSG STATUS

Frequency

Auto Tune

Center Freq
13.015000000 GHz

Start Freq
30.000000 MHz

Stop Freq
26.000000000 GHz

CF Step
2.597000000 GHz
Man

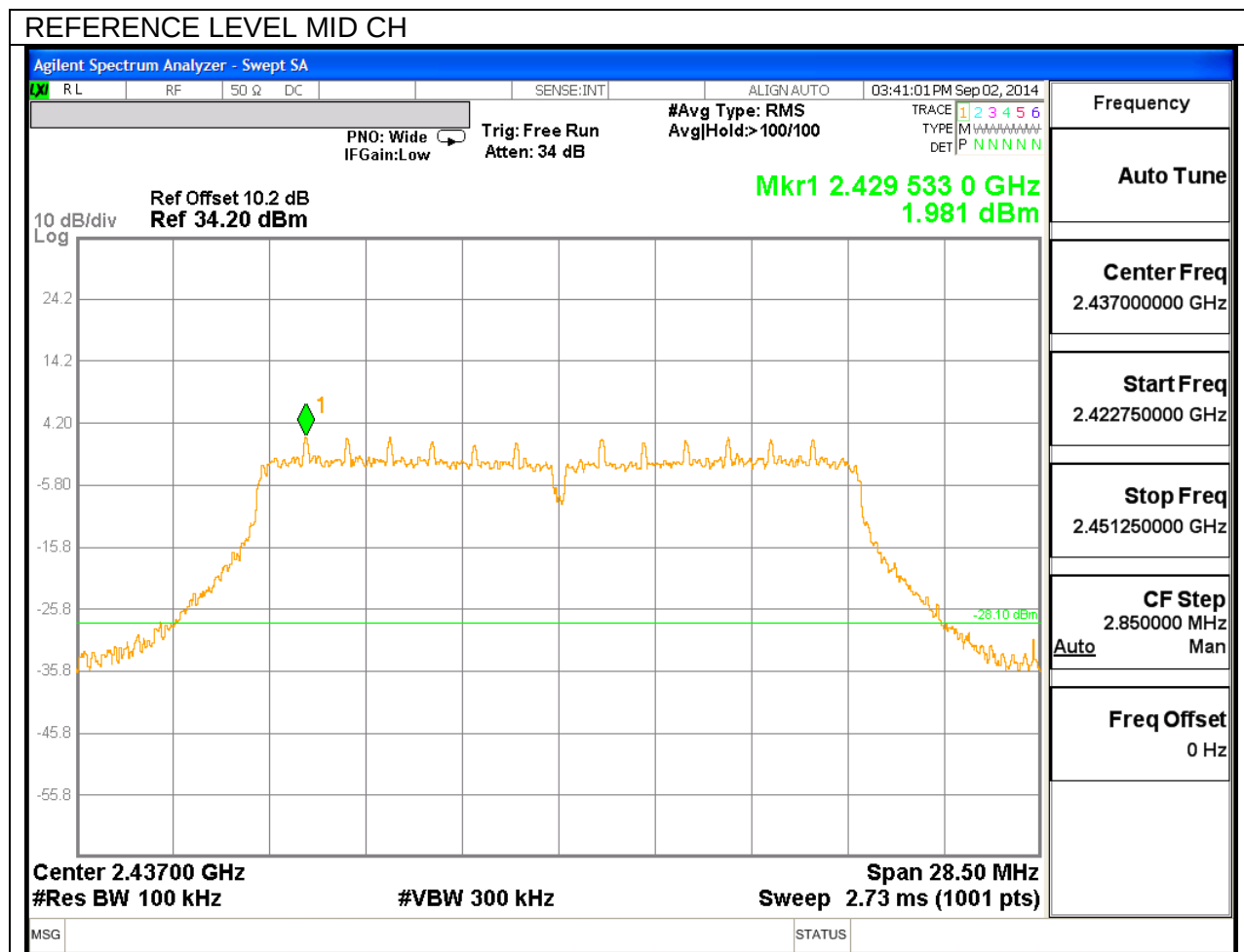
Auto

Freq Offset
0 Hz

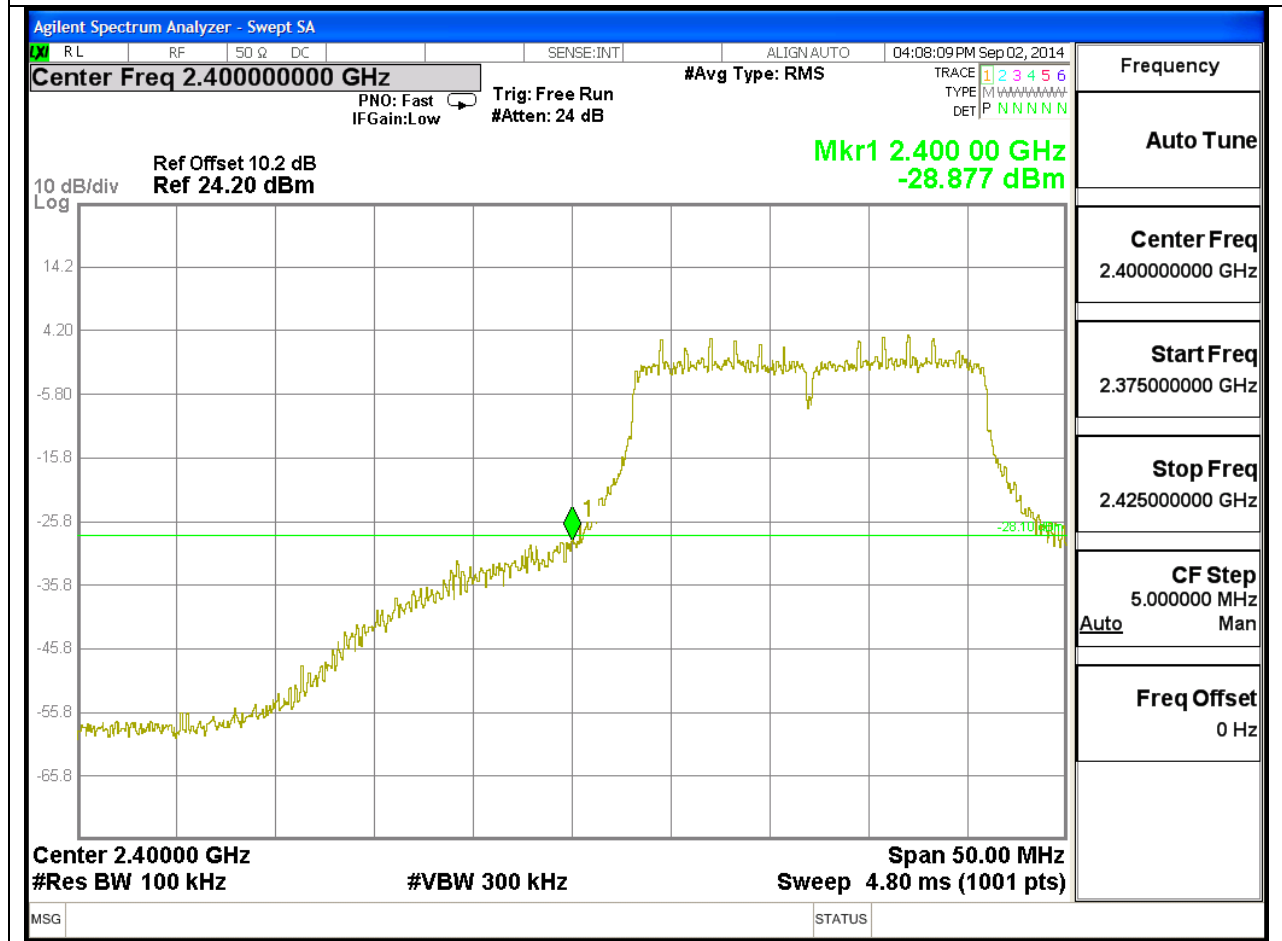
[illegible]

9.5.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

IN-BAND REFERENCE LEVEL

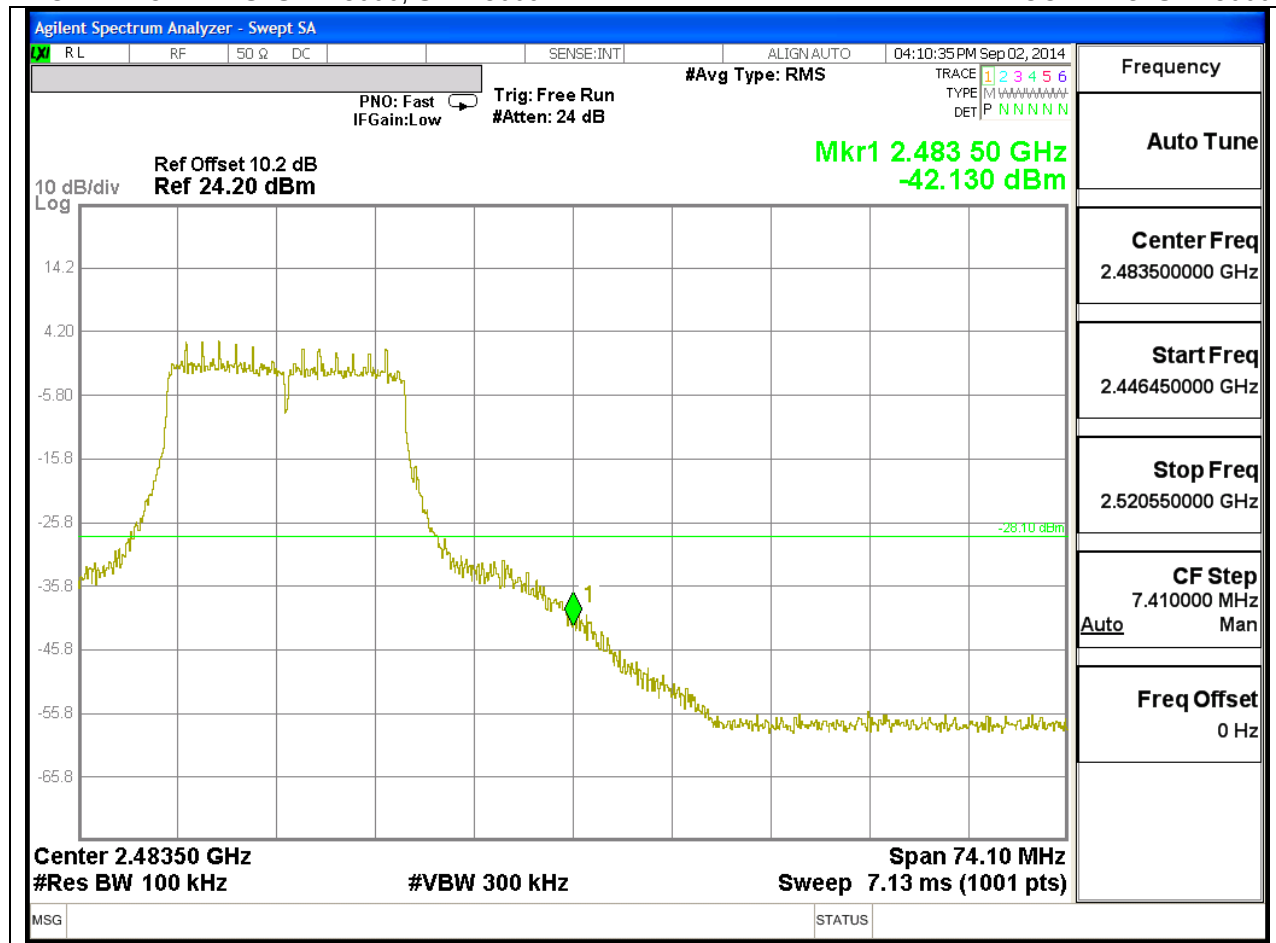


AUTHORIZED BAND EDGE LOW CH



HIGH CHANNEL BANDEDGE

AUTHORIZED BAND EDGE HIGH CH



Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω DC SENSE:INT ALIGN: AUTO 03:58:06 PM Sep 02, 2014

#Avg Type: RMS

Trace 1 2 3 4 5 6
Type M N N N N N
Det P N N N N N

PNO: Fast IFGain:Low Trig: Free Run #Atten: 24 dB

Ref Offset 10.2 dB
Ref 24.20 dBm

Mkr2 17.144 GHz
-53.279 dBm

10 dB/div
Log

Start 30 MHz
#Res BW 100 kHz

#VBW 300 kHz

Stop 26.00 GHz
Sweep 2.48 s (1001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.419 GHz	-2.193 dBm			
2	N	1	f	17.144 GHz	-53.279 dBm			
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								

MSG STATUS

Frequency

Auto Tune

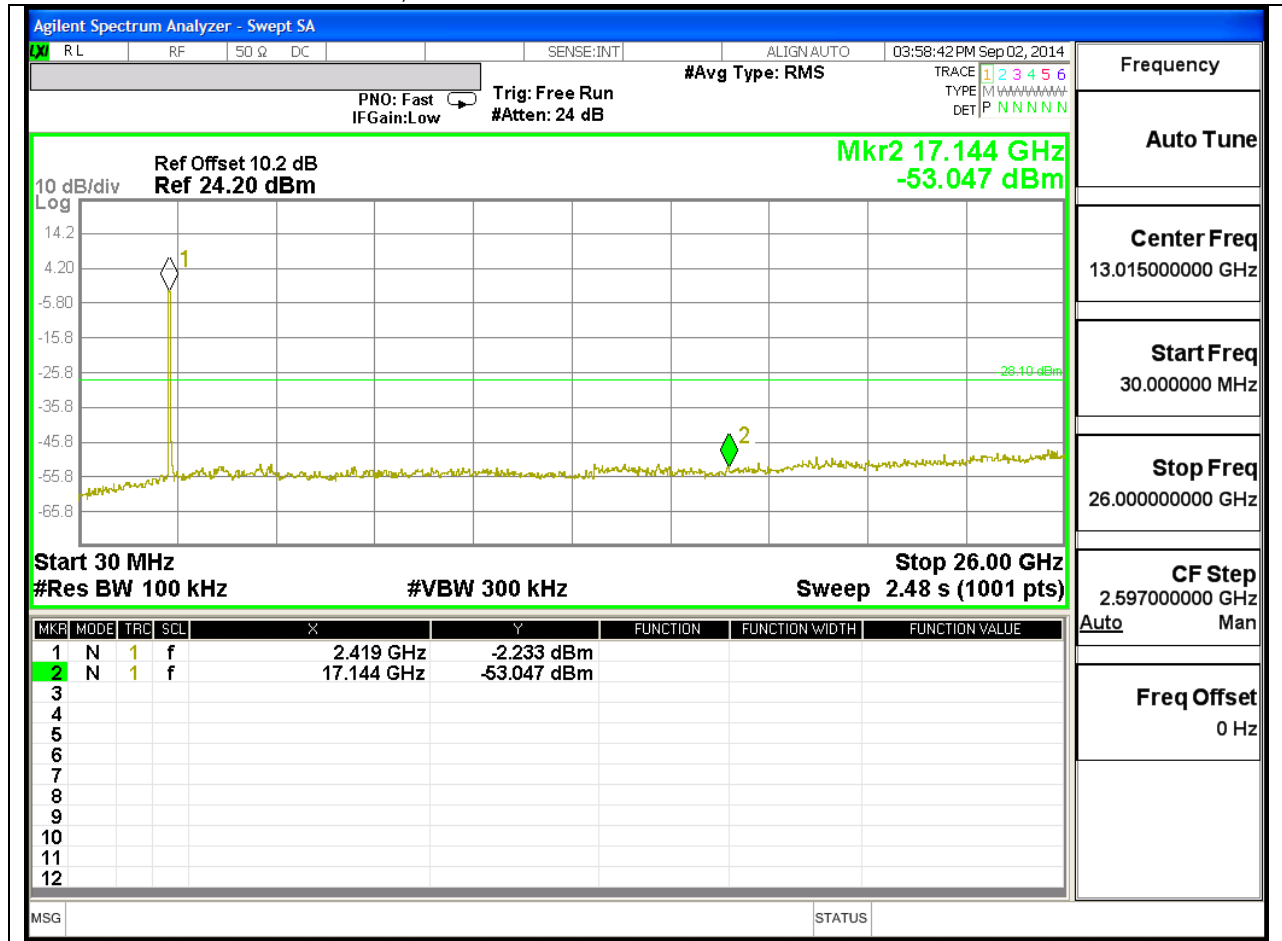
Center Freq
13.015000000 GHz

Start Freq
30.000000 MHz

Stop Freq
26.000000000 GHz

CF Step
2.597000000 GHz
Man

Freq Offset
0 Hz



Agilent Spectrum Analyzer - Swept SA

R/L RF 50 Ω DC SENSE:INT ALIGN:AUTO 03:59:17 PM Sep 02, 2014

#Avg Type: RMS PNO: Fast IFGain:Low Trig: Free Run #Atten: 24 dB TRACE 1 2 3 4 5 6 TYPE M N P DET P N N N N N

Ref Offset 10.2 dB
Ref 24.20 dBm

Mkr2 17.352 GHz
-52.712 dBm

Start 30 MHz Stop 26.00 GHz
#Res BW 100 kHz #VBW 300 kHz Sweep 2.48 s (1001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.445 GHz	-1.463 dBm			
2	N	1	f	17.352 GHz	-52.712 dBm			
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								

MSG STATUS

Frequency

Auto Tune

Center Freq
13.015000000 GHz

Start Freq
30.000000 MHz

Stop Freq
26.000000000 GHz

CF Step
2.597000000 GHz Man

Freq Offset
0 Hz

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 (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 = 0.34dB; N mode = 0.38dB.

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.

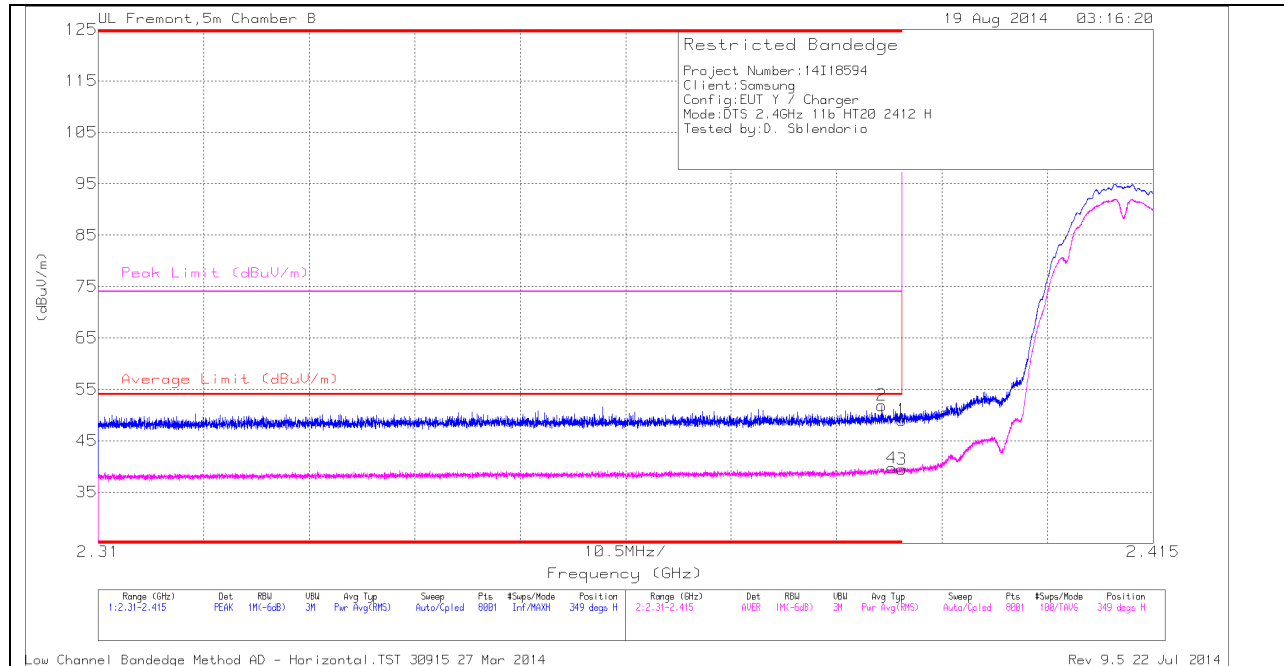
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

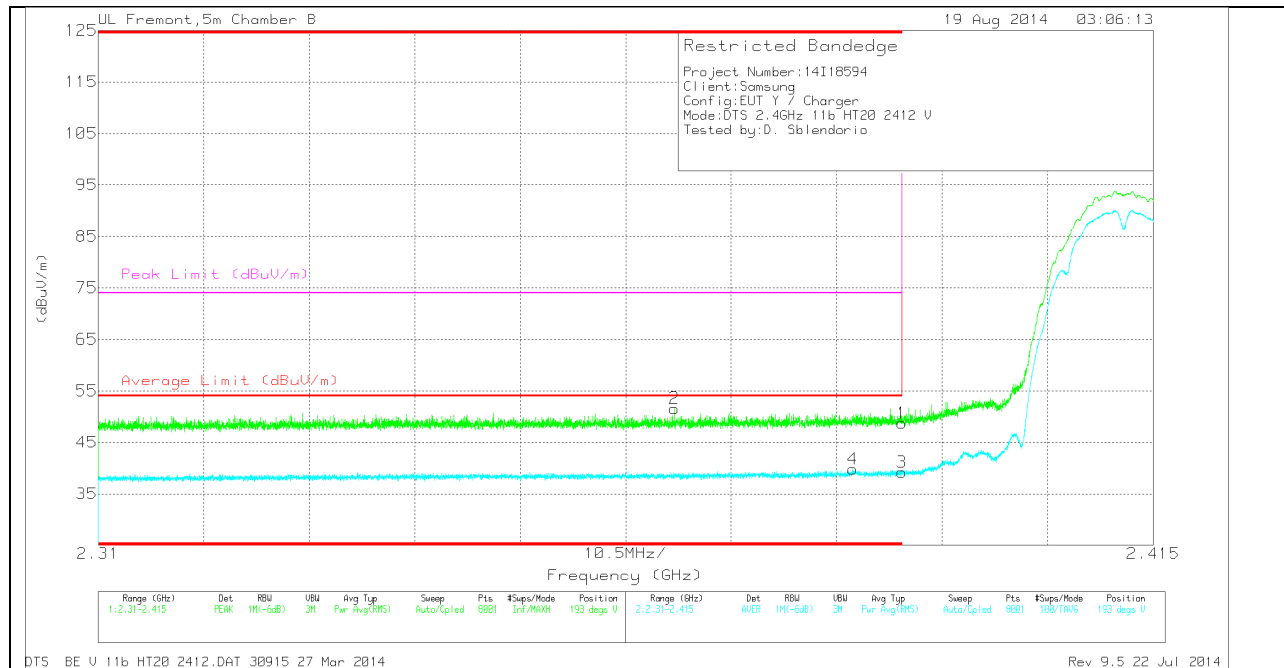
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	39.35	PK	32.1	-22.4	49.05	-	-	74	-24.95	349	303	H
2	* 2.388	42.16	PK	32.1	-22.4	51.86	-	-	74	-22.14	349	303	H
3	* 2.39	29.76	RMS	32.1	-22.4	39.46	54	-14.54	-	-	349	303	H
4	* 2.389	30	RMS	32.1	-22.4	39.7	54	-14.3	-	-	349	303	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

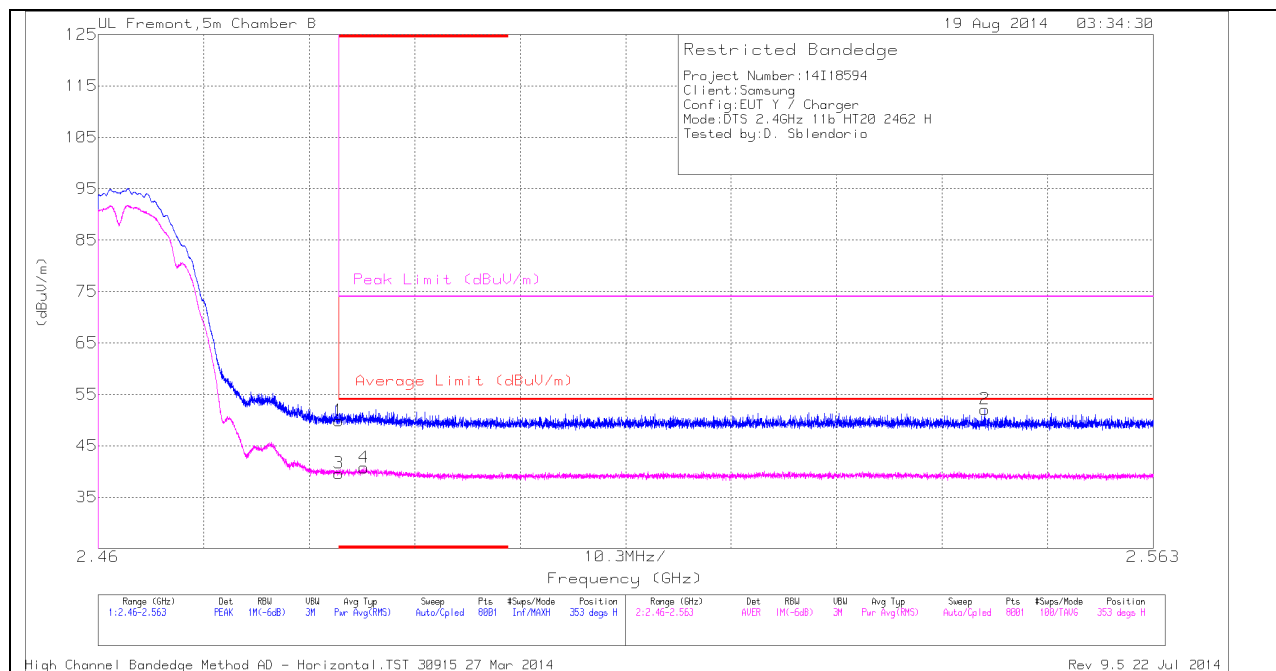
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	39.04	PK	32.1	-22.4	48.74	-	-	74	-25.26	193	238	V
2	* 2.367	41.97	PK	32	-22.4	51.57	-	-	74	-22.43	193	238	V
3	* 2.39	29.5	RMS	32.1	-22.4	39.2	54	-14.8	-	-	193	238	V
4	* 2.385	30	RMS	32.1	-22.3	39.8	54	-14.2	-	-	193	238	V

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

PK - Peak detector

RMS - RMS detection

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

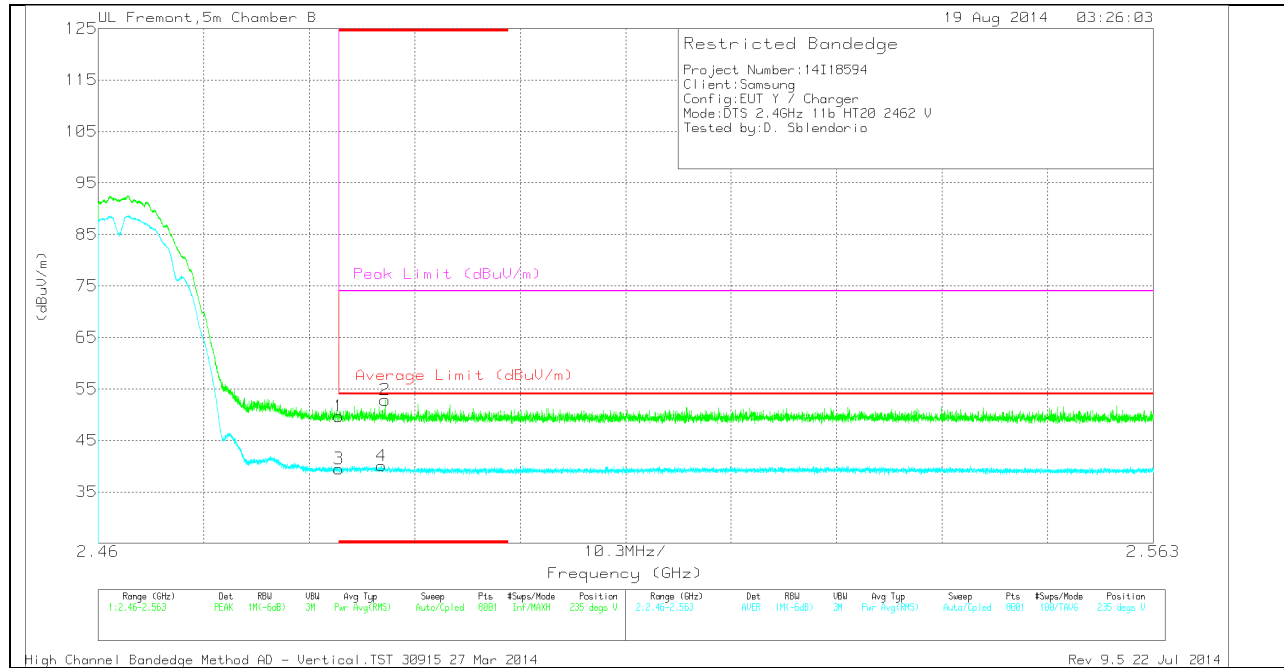
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	39.89	PK	32.4	-22.4	49.89	-	-	74	-24.11	353	294	H
3	* 2.484	29.64	RMS	32.4	-22.4	39.64	54	-14.36	-	-	353	294	H
4	* 2.486	30.65	RMS	32.4	-22.3	40.75	54	-13.25	-	-	353	294	H
2	2.547	41.79	PK	32.5	-22.2	52.09	-	-	74	-21.91	353	294	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/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	39.68	PK	32.4	-22.4	49.68	-	-	74	-24.32	235	239	V
2	* 2.488	42.75	PK	32.4	-22.3	52.85	-	-	74	-21.15	235	239	V
3	* 2.484	29.5	RMS	32.4	-22.4	39.5	54	-14.5	-	-	235	239	V
4	* 2.488	29.94	RMS	32.4	-22.3	40.04	54	-13.96	-	-	235	239	V

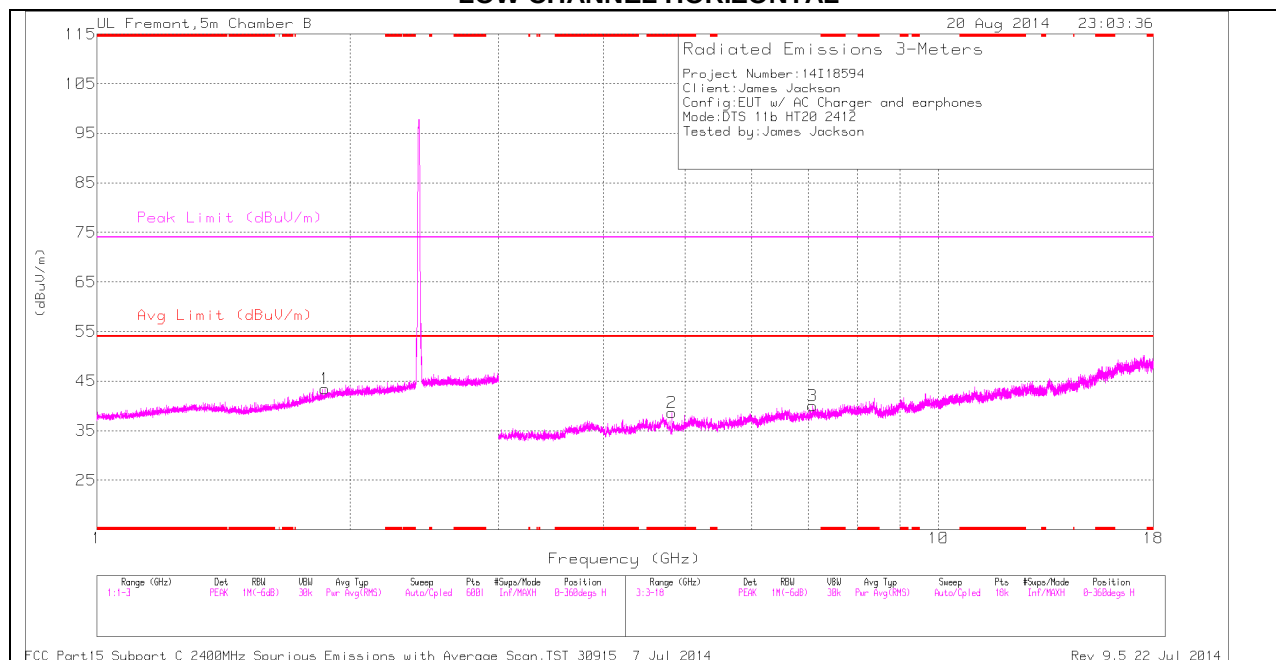
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

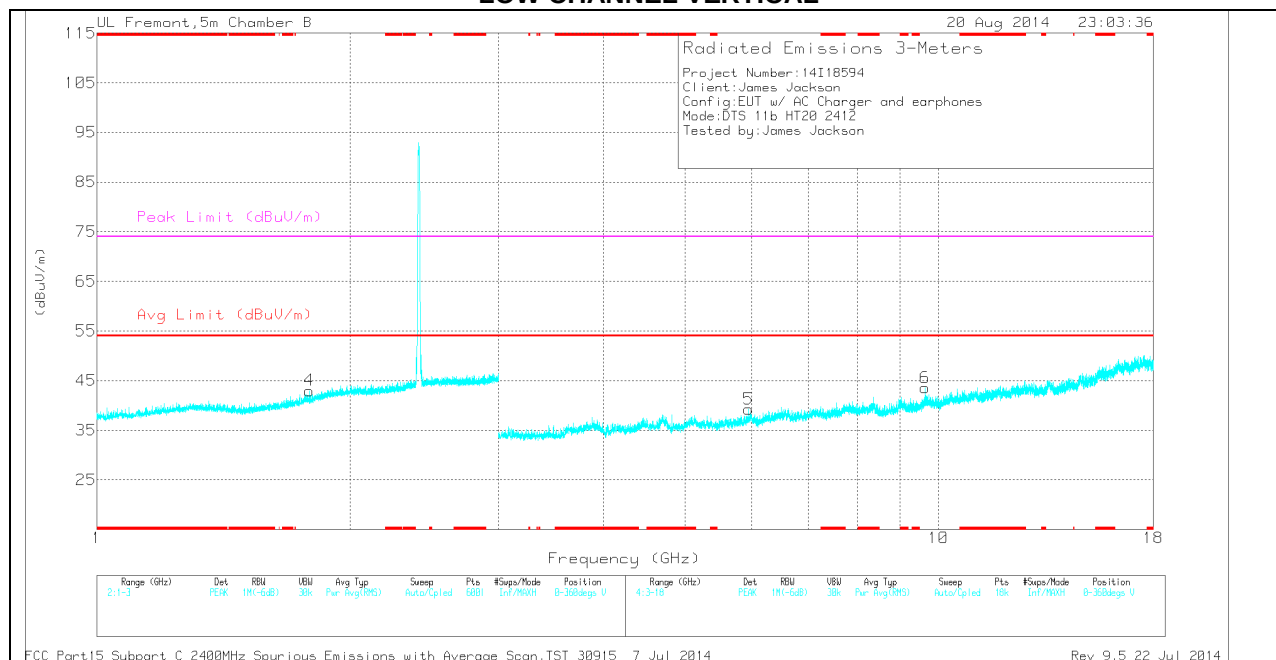
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



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

LOW CHANNEL VERTICAL



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

LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (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
2	* 4.824	33.79	PK	34.2	-29.4	0	38.59	-	-	74	-35.41	0-360	199	H
4	1.788	36.3	PK	30	-23.3	0	43	-	-	-	-	0-360	199	V
1	1.866	35.99	PK	30.8	-23.3	0	43.49	-	-	-	-	0-360	101	H
5	5.949	32.2	PK	35.1	-28	0	39.3	-	-	-	-	0-360	199	V
3	7.085	31.41	PK	35.6	-27	0	40.01	-	-	-	-	0-360	199	H
6	9.648	30.19	PK	36.8	-23.4	0	43.59	-	-	-	-	0-360	199	V

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

PK - Peak detector

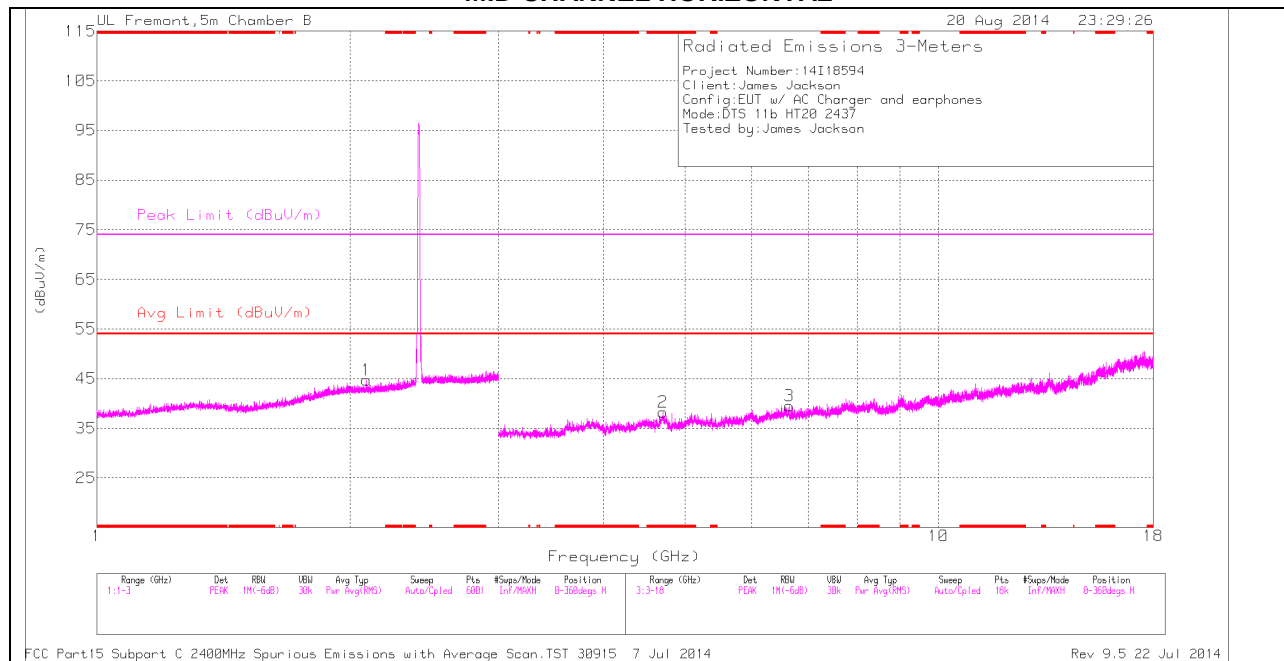
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/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
* 4.824	33.1	MAv1	34.2	-29.4	0	37.9	54	-16.1	-	-	336	248	H

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

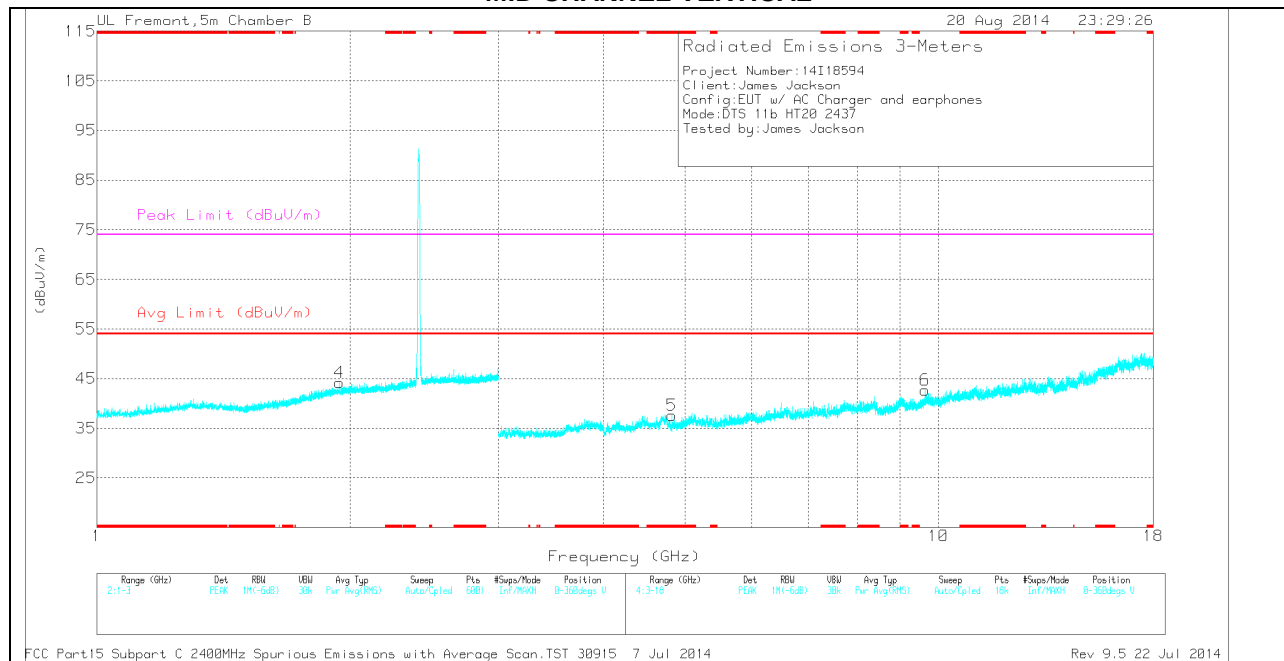
MAv1 - KDB558074 Option 1 Maximum RMS Average

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 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
2	* 4.708	32.91	PK	34.2	-28.9	0	38.21	-	-	74	-35.79	0-360	101	H
5	* 4.824	32.81	PK	34.2	-29.4	0	37.61	-	-	74	-36.39	0-360	199	V
4	1.942	36.24	PK	31.2	-23.2	0	44.24	-	-	-	-	0-360	199	V
1	2.092	36.26	PK	31.3	-22.9	0	44.66	-	-	-	-	0-360	199	H
3	6.646	31.77	PK	35.7	-28	0	39.47	-	-	-	-	0-360	199	H
6	9.648	29.33	PK	36.8	-23.4	0	42.73	-	-	-	-	0-360	199	V

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

PK - Peak detector

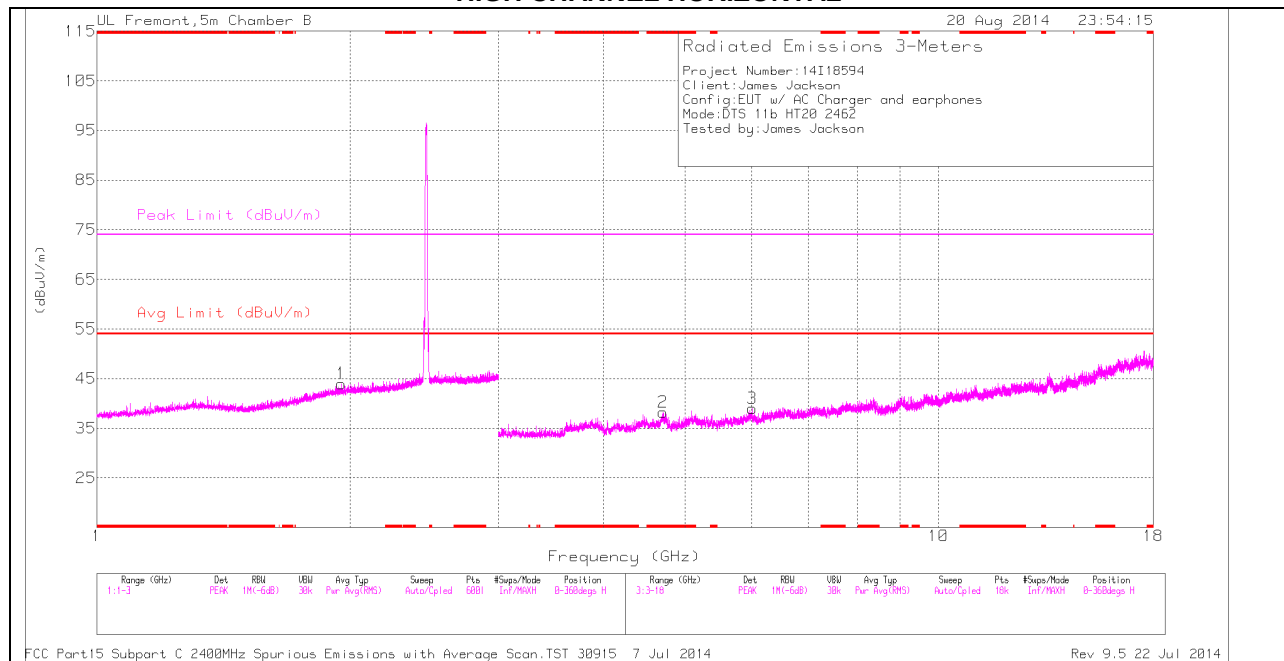
Radiated Emissions

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
* 4.824	27.21	MAv1	34.2	-29.4	0	32.01	54	-21.99	-	-	18	379	H

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

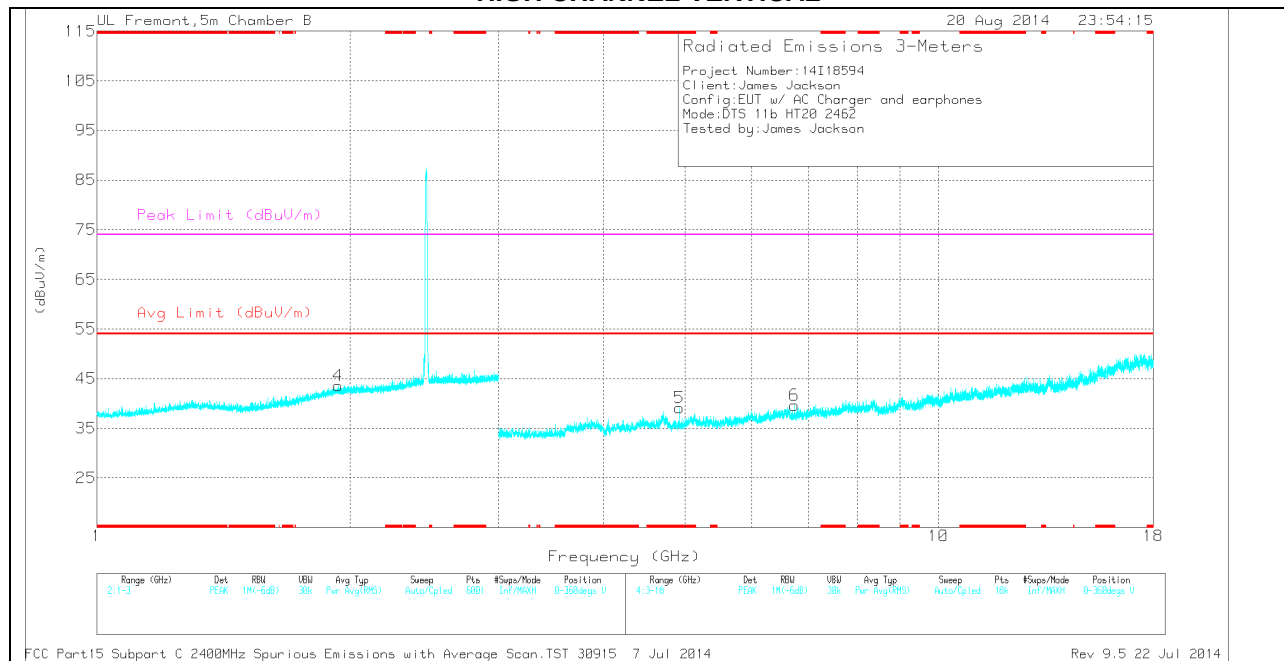
MAv1 - KDB558074 Option 1 Maximum RMS Average

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 T345 (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
2	* 4.707	33.05	PK	34.2	-29	0	38.25	-	-	74	-35.75	0-360	101	H
5	* 4.924	35.46	PK	34.2	-30.5	0	39.16	-	-	74	-34.84	0-360	199	V
4	1.934	35.56	PK	31.2	-23.2	0	43.56	-	-	-	-	0-360	200	V
1	1.951	36.01	PK	31.2	-23.2	0	44.01	-	-	-	-	0-360	200	H
3	6.004	32.28	PK	35.3	-28.6	0	38.98	-	-	-	-	0-360	199	H
6	6.746	32.09	PK	35.7	-28.2	0	39.59	-	-	-	-	0-360	199	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/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
* 4.924	33.9	MAv1	34.2	-30.5	0	37.6	54	-16.4	-	-	309	105	V

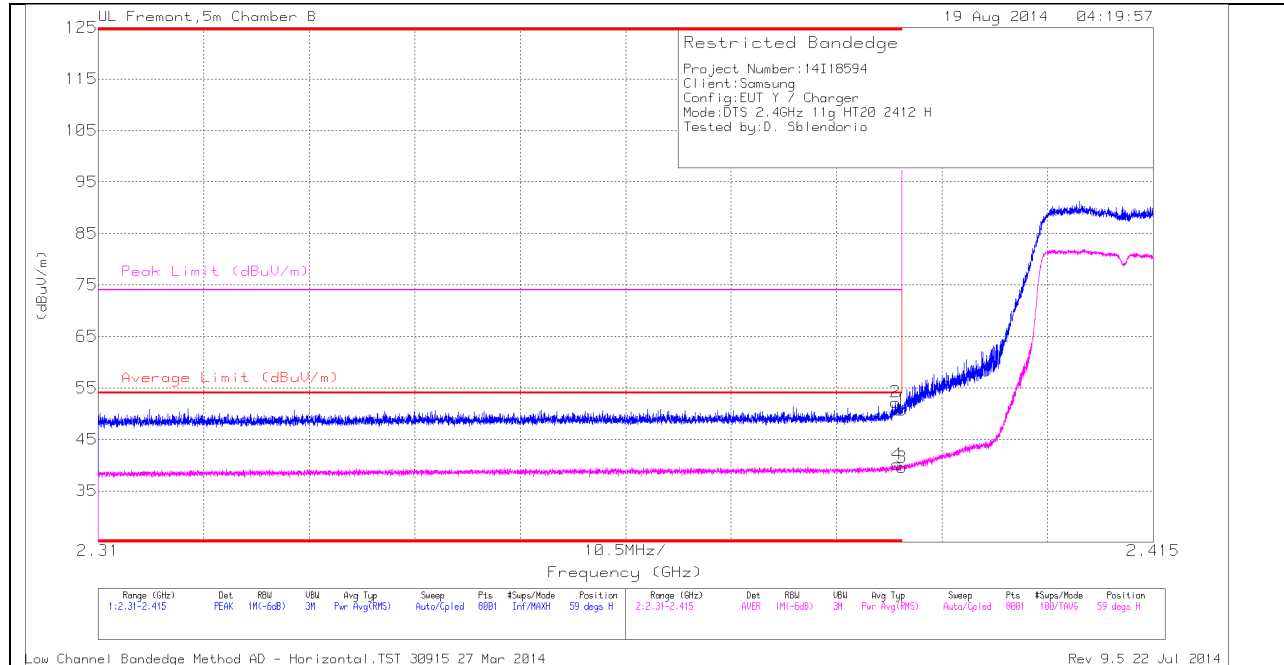
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

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

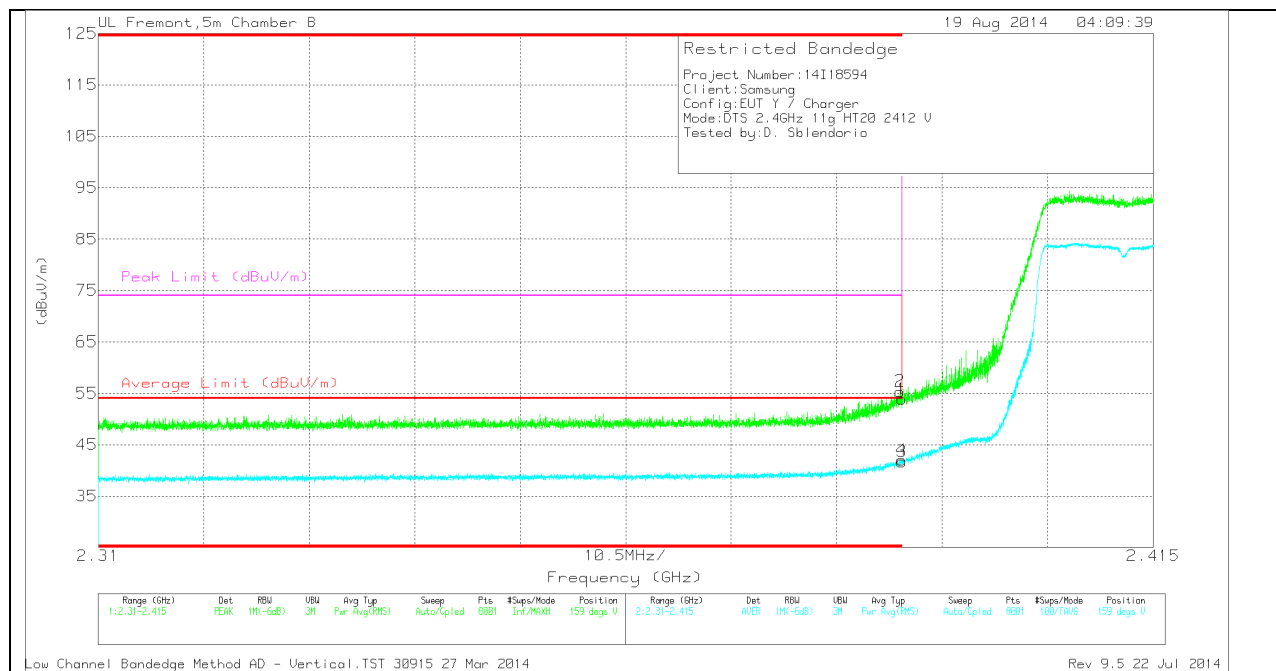
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.389	42.52	PK	32.1	-22.4	0	52.22	-	-	74	-21.78	59	288	H
1	* 2.39	40.97	PK	32.1	-22.4	0	50.67	-	-	74	-23.33	59	288	H
3	* 2.39	29.52	RMS	32.1	-22.4	.34	39.56	54	-14.44	-	-	59	288	H
4	* 2.39	30.1	RMS	32.1	-22.4	.34	40.14	54	-13.86	-	-	59	288	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

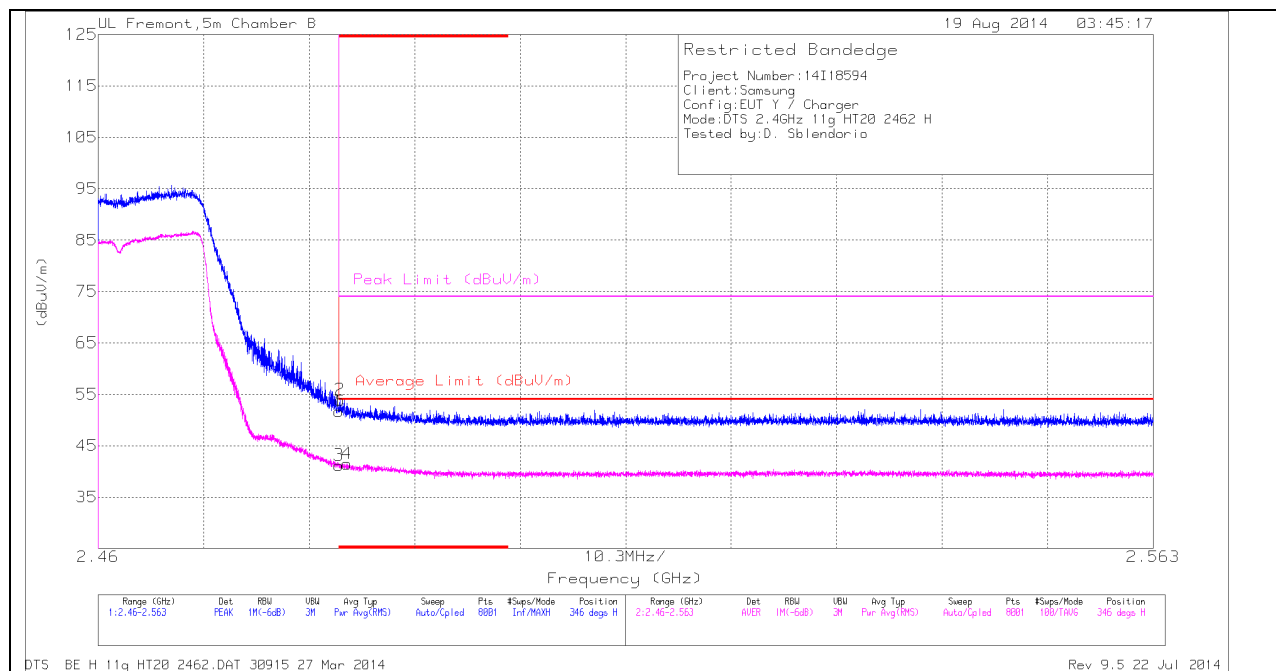
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	44.17	PK	32.1	-22.4	0	53.87	-	-	74	-20.13	159	279	V
2	* 2.39	45.68	PK	32.1	-22.4	0	55.38	-	-	74	-18.62	159	279	V
3	* 2.39	31.68	RMS	32.1	-22.4	.34	41.72	54	-12.28	-	-	159	279	V
4	* 2.39	31.96	RMS	32.1	-22.4	.34	42	54	-12	-	-	159	279	V

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

PK - Peak detector

RMS - RMS detection

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

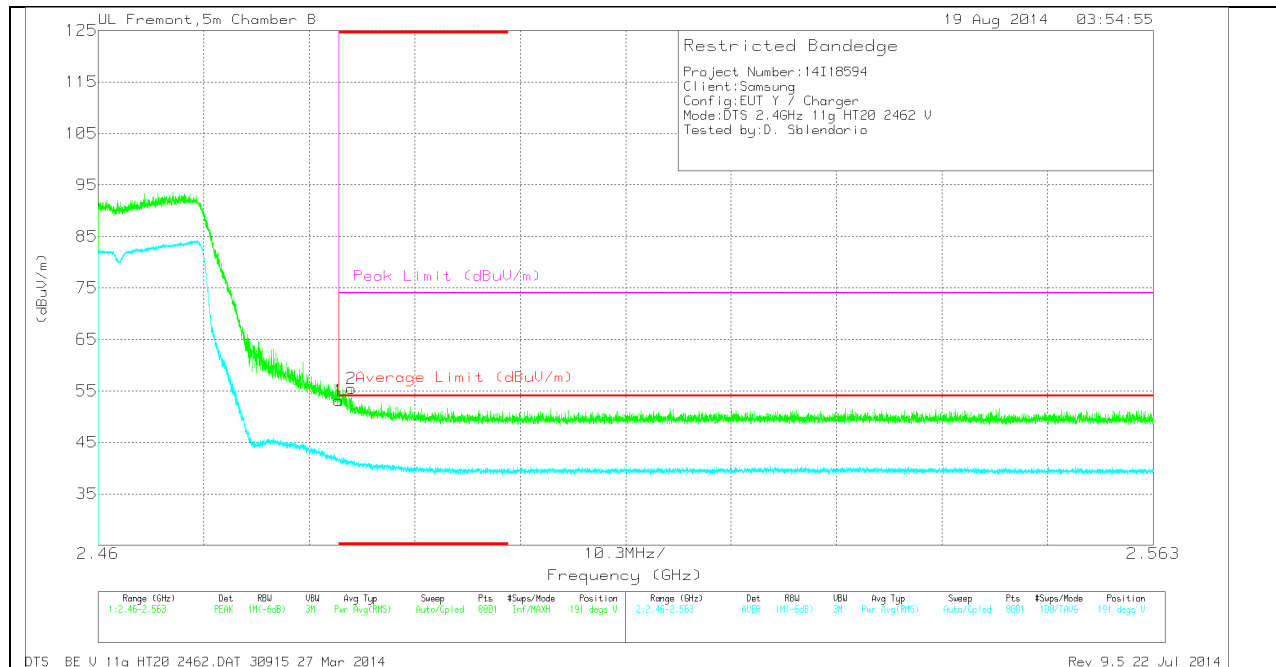
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cb/Filter/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	41.65	PK	32.4	-22.4	0	51.65	-	-	74	-22.35	346	288	H
2	* 2.484	43.91	PK	32.4	-22.4	0	53.91	-	-	74	-20.09	346	288	H
3	* 2.484	30.87	RMS	32.4	-22.4	.34	41.21	54	-12.79	-	-	346	288	H
4	* 2.484	31.05	RMS	32.4	-22.3	.34	41.49	54	-12.51	-	-	346	288	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/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	43.11	PK	32.4	-22.4	0	53.11	-	-	74	-20.89	191	284	V
2	* 2.485	45.33	PK	32.4	-22.3	0	55.43	-	-	74	-18.57	191	284	V
3	* 2.484	31.29	RMS	32.4	-22.4	.34	41.63	54	-12.37	-	-	191	284	V
4	* 2.484	31.68	RMS	32.4	-22.3	.34	42.12	54	-11.88	-	-	191	284	V

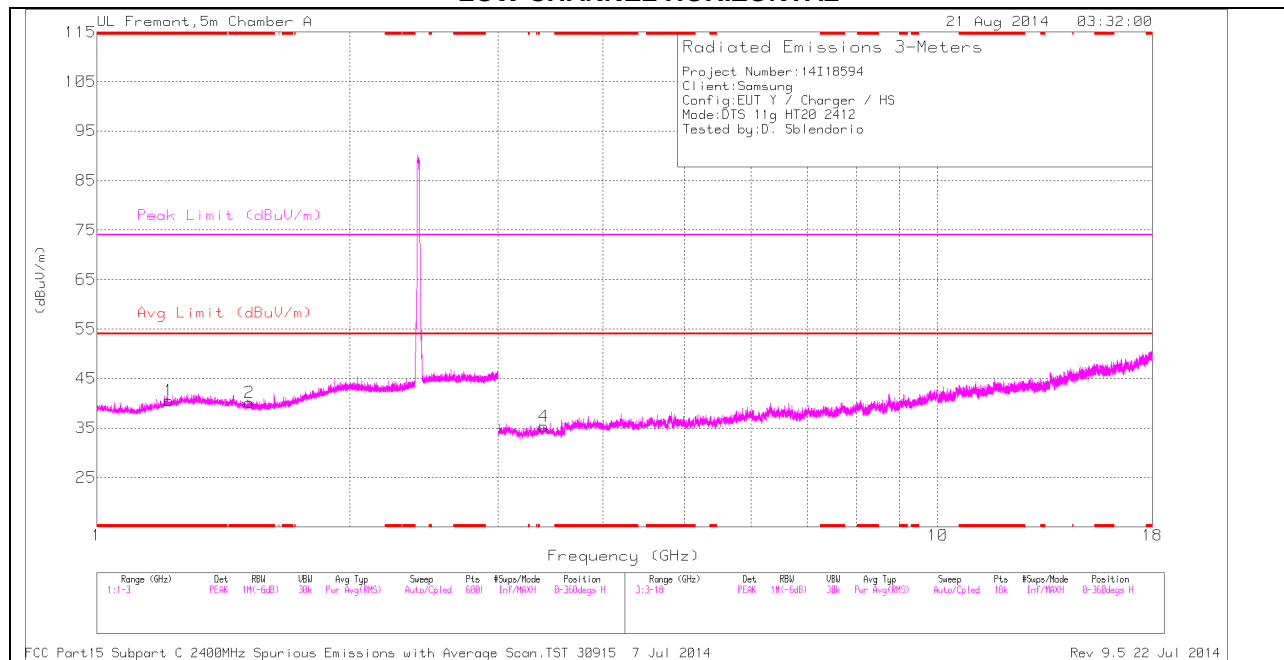
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

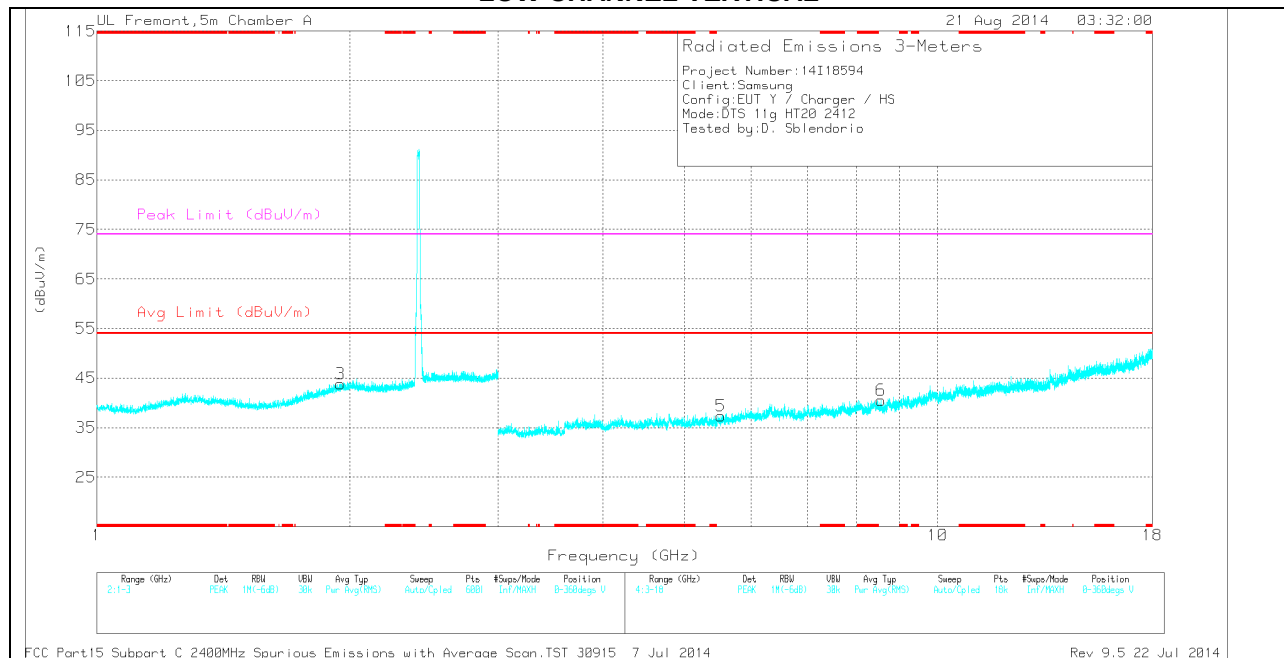
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



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

LOW CHANNEL VERTICAL



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

LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 1.219	36.11	PK	29.5	-25.1	0	40.51	-	-	74	-33.49	0-360	100	H
2	* 1.519	35.98	PK	28.7	-24.5	0	40.18	-	-	74	-33.82	0-360	100	H
3	1.949	35.68	PK	31.9	-23.7	0	43.88	-	-	-	-	0-360	201	V
4	3.401	32.08	PK	33	-29.8	0	35.28	-	-	-	-	0-360	201	H
5	5.524	31.49	PK	34.4	-28.5	0	37.39	-	-	-	-	0-360	201	V
6	8.56	29.47	PK	35.7	-24.7	0	40.47	-	-	-	-	0-360	100	V

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

PK - Peak detector

Radiated Emissions

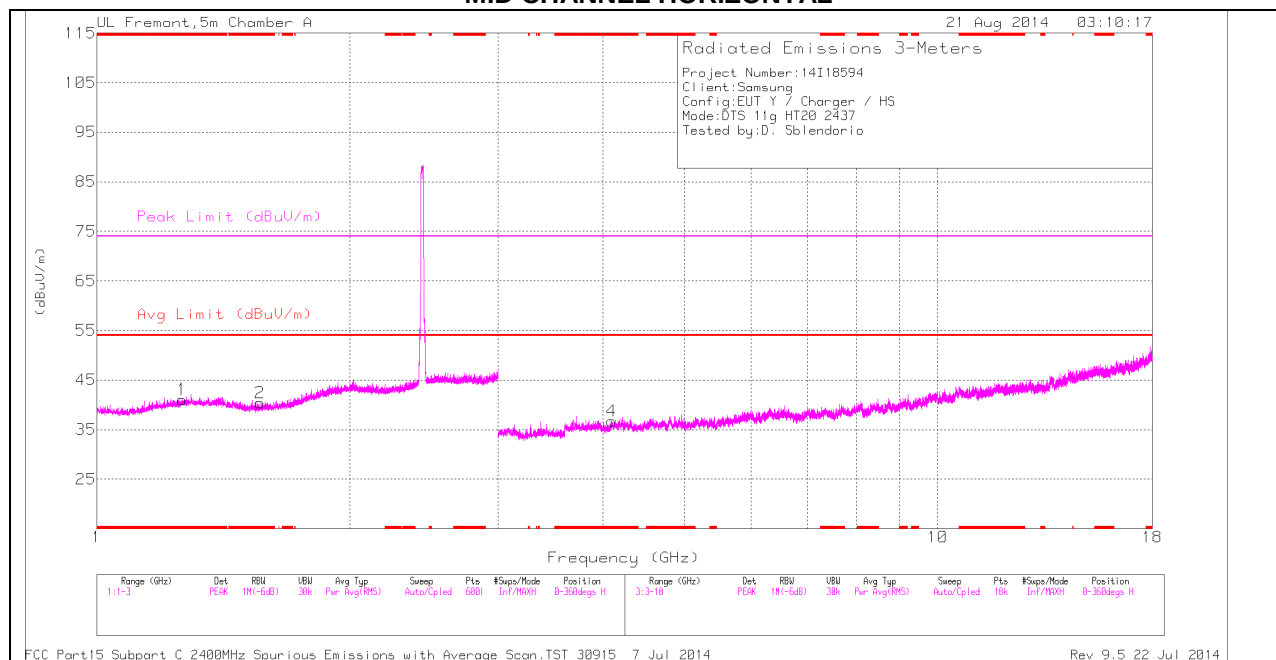
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Filtr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.22	44.11	PK2	29.5	-25.1	0	48.51	-	-	74	-25.49	359	100	H
* 1.22	32.91	MAV1	29.5	-25.1	0.34	37.65	54	-16.35	-	-	359	100	H

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

PK2 - KDB558074 Method: Maximum Peak

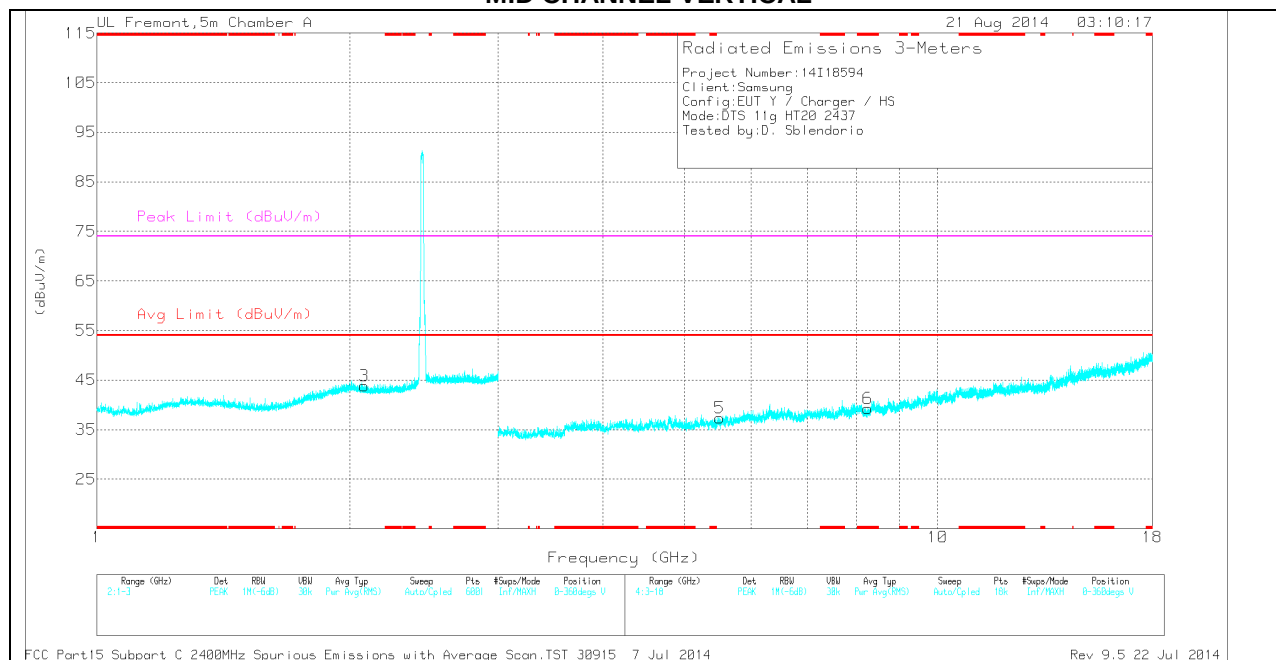
MAV1 - KDB558074 Option 1 Maximum RMS Average

MID CHANNEL HORIZONTAL



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

MID CHANNEL VERTICAL



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

MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 1.263	36.19	PK	29.9	-25	0	41.09	-	-	74	-32.91	0-360	201	H
2	* 1.564	36.04	PK	28.8	-24.4	0	40.44	-	-	74	-33.56	0-360	100	H
4	* 4.094	32.65	PK	33.9	-29.8	0	36.75	-	-	74	-37.25	0-360	202	H
6	* 8.258	29.1	PK	35.6	-25.5	0	39.2	-	-	74	-34.8	0-360	100	V
3	2.081	35.52	PK	31.8	-23.5	0	43.82	-	-	-	-	0-360	100	V
5	5.504	31.37	PK	34.4	-28.4	0	37.37	-	-	-	-	0-360	100	V

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

PK - Peak detector

Radiated Emissions

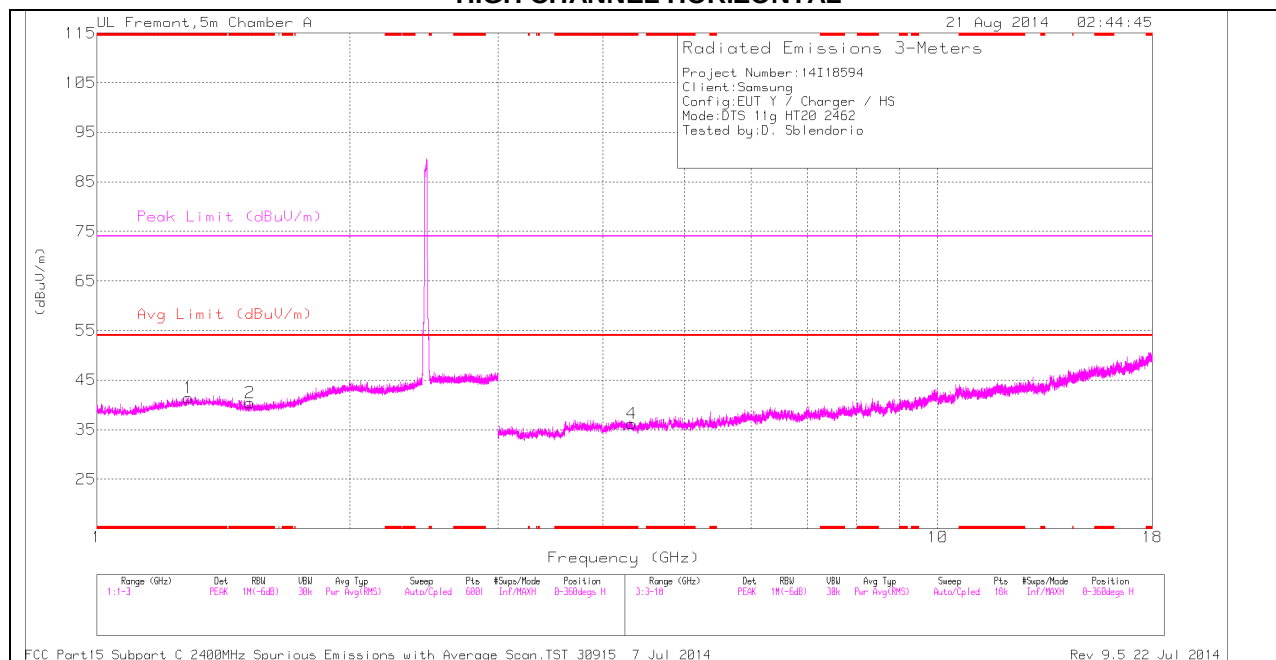
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Filtr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.264	44.32	PK2	29.9	-25	0	49.22	-	-	74	-24.78	360	202	H
* 1.264	33	MAV1	29.9	-25	0.34	38.24	54	-15.76	-	-	360	202	H

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

PK2 - KDB558074 Method: Maximum Peak

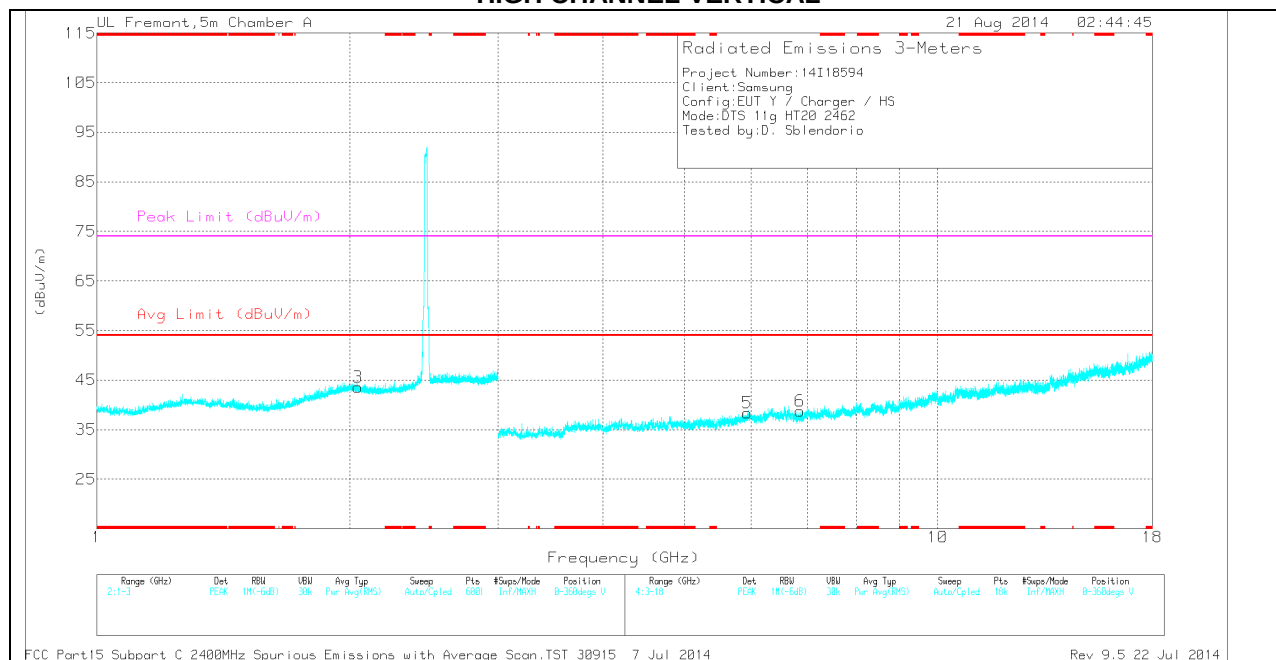
MAV1 - KDB558074 Option 1 Maximum RMS Average

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
1	* 1.285	36.35	PK	30.1	-25	0	41.45	-	-	74	-32.55	0-360	201	H
2	* 1.522	36.22	PK	28.7	-24.5	0	40.42	-	-	74	-33.58	0-360	100	H
4	* 4.326	31.66	PK	34	-29.5	0	36.16	-	-	74	-37.84	0-360	201	H
3	2.043	35.14	PK	31.9	-23.5	0	43.54	-	-	-	-	0-360	100	V
5	5.932	30.45	PK	35.1	-27.2	0	38.35	-	-	-	-	0-360	100	V
6	6.855	30.7	PK	35.3	-27.2	0	38.8	-	-	-	-	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 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
* 1.286	44.26	PK2	30.1	-25	0	49.36	-	-	74	-24.64	359	202	H
* 1.286	32.68	MAV1	30.1	-25	0.34	38.12	54	-15.88	-	-	359	202	H

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

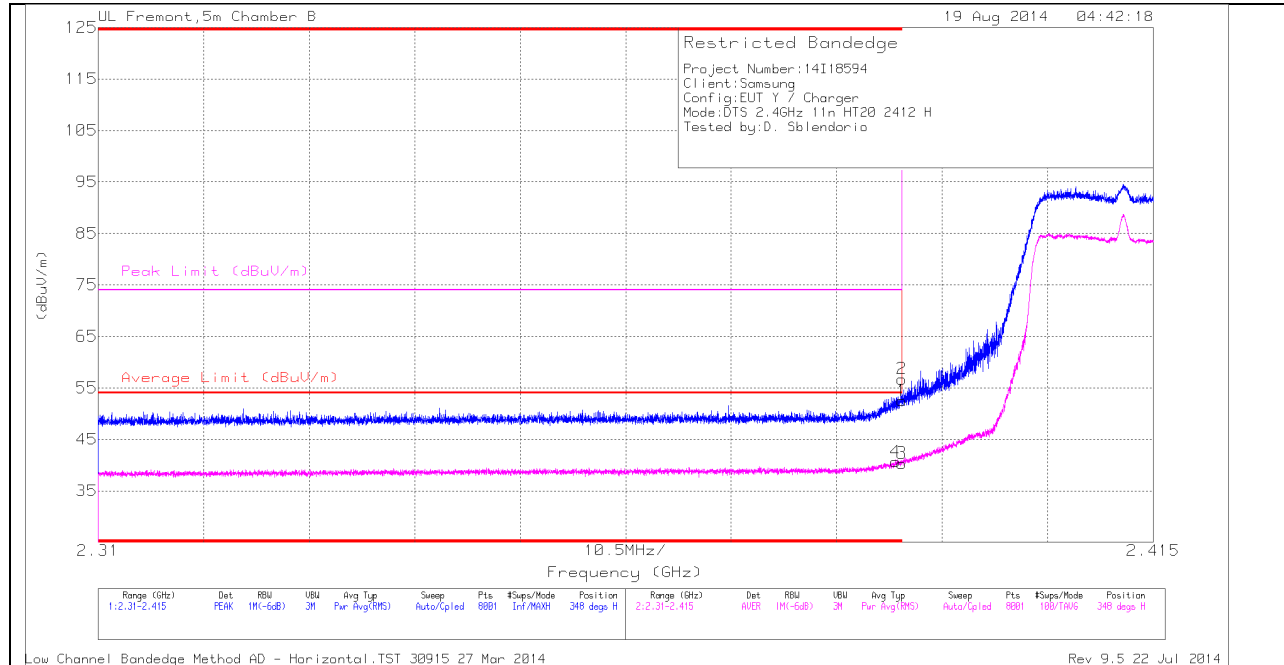
PK2 - KDB558074 Method: Maximum Peak

MAV1 - KDB558074 Option 1 Maximum RMS Average

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

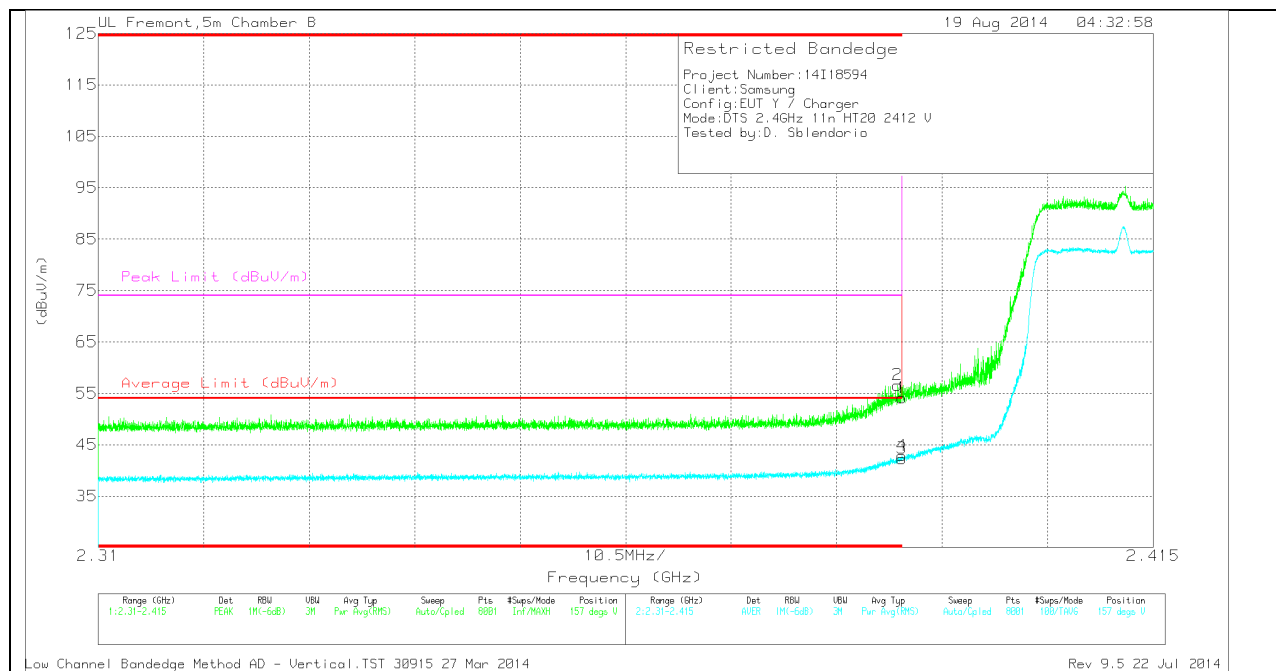
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 2.389	30.95	RMS	32.1	-22.4	.38	41.03	54	-12.97	-	-	348	302	H
1	* 2.39	42.82	PK	32.1	-22.4	0	52.52	-	-	74	-21.48	348	302	H
2	* 2.39	47.04	PK	32.1	-22.4	0	56.74	-	-	74	-17.26	348	302	H
3	* 2.39	30.64	RMS	32.1	-22.4	.38	40.72	54	-13.28	-	-	348	302	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

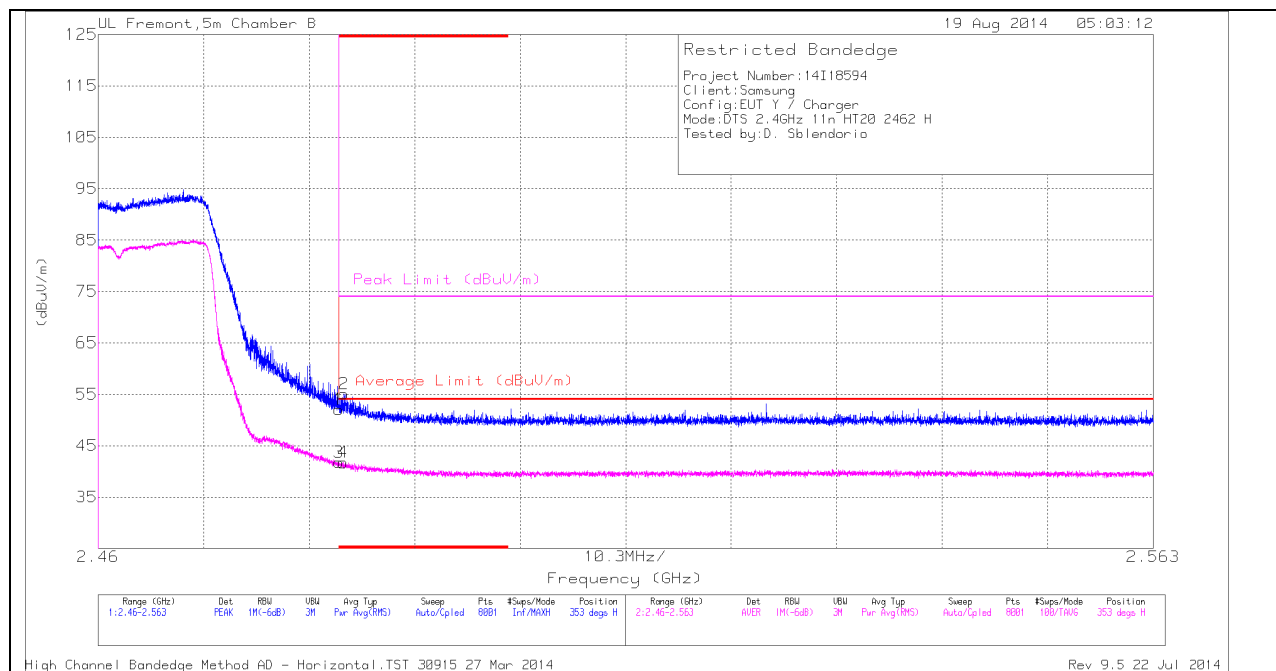
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	44.4	PK	32.1	-22.4	0	54.1	-	-	74	-19.9	157	284	V
2	* 2.39	46.91	PK	32.1	-22.4	0	56.61	-	-	74	-17.39	157	284	V
3	* 2.39	32.24	RMS	32.1	-22.4	.38	42.32	54	-11.68	-	-	157	284	V
4	* 2.39	32.77	RMS	32.1	-22.4	.38	42.85	54	-11.15	-	-	157	284	V

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

PK - Peak detector

RMS - RMS detection

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

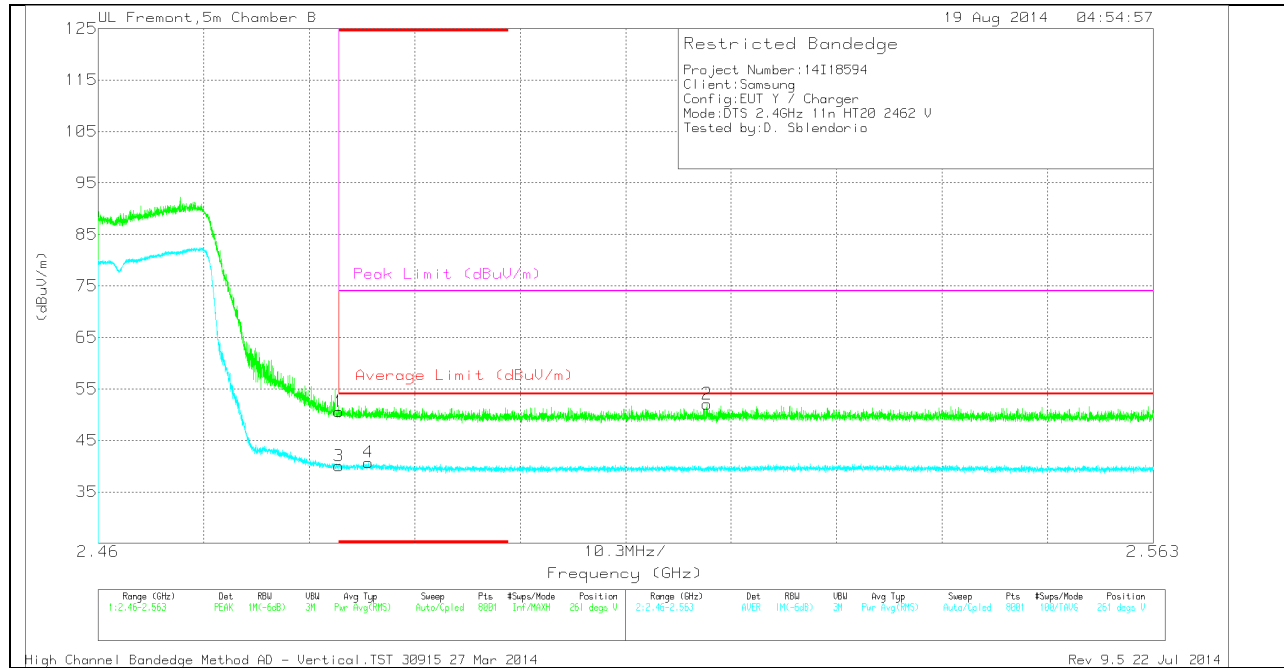
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fitter/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	42.06	PK	32.4	-22.4	0	52.06	-	-	74	-21.94	353	293	H
2	* 2.484	44.99	PK	32.4	-22.3	0	55.09	-	-	74	-18.91	353	293	H
3	* 2.484	31.38	RMS	32.4	-22.4	.38	41.76	54	-12.24	-	-	353	293	H
4	* 2.484	31.25	RMS	32.4	-22.3	.38	41.73	54	-12.27	-	-	353	293	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/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	40.59	PK	32.4	-22.4	0	50.59	-	-	74	-23.41	261	237	V
3	* 2.484	29.67	RMS	32.4	-22.4	.38	40.05	54	-13.95	-	-	261	237	V
4	* 2.486	30.25	RMS	32.4	-22.3	.38	40.73	54	-13.27	-	-	261	237	V
2	2.519	41.85	PK	32.5	-22.3	0	52.05	-	-	74	-21.95	261	237	V

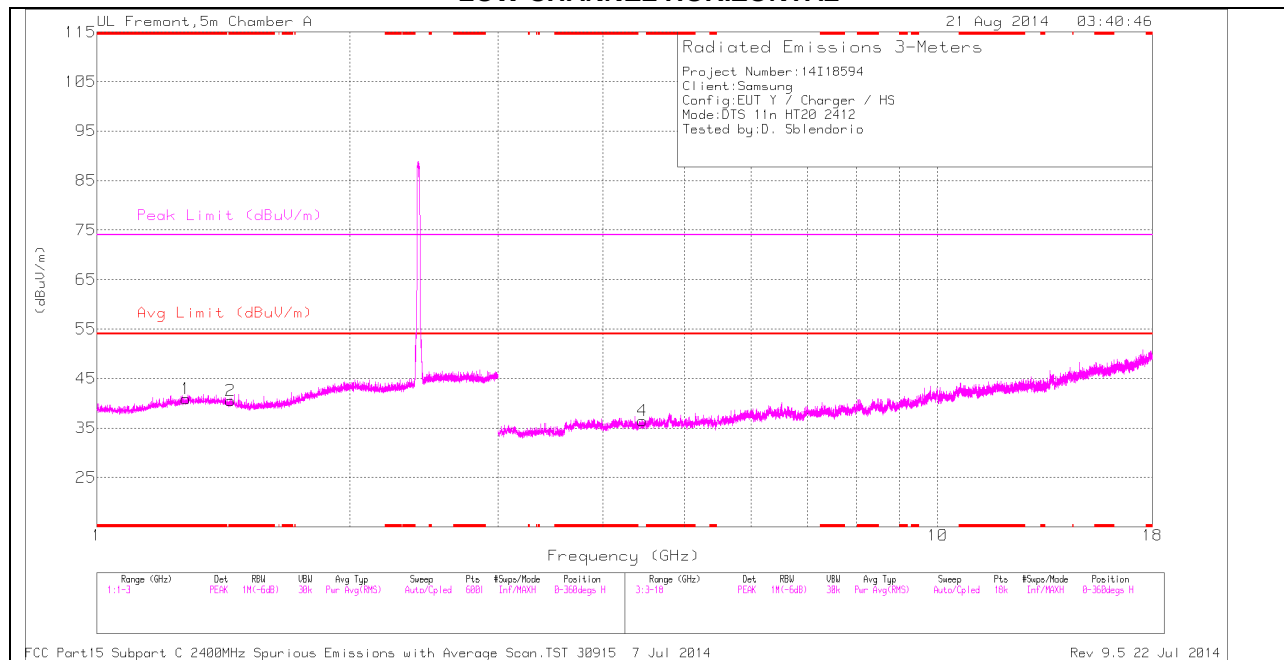
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

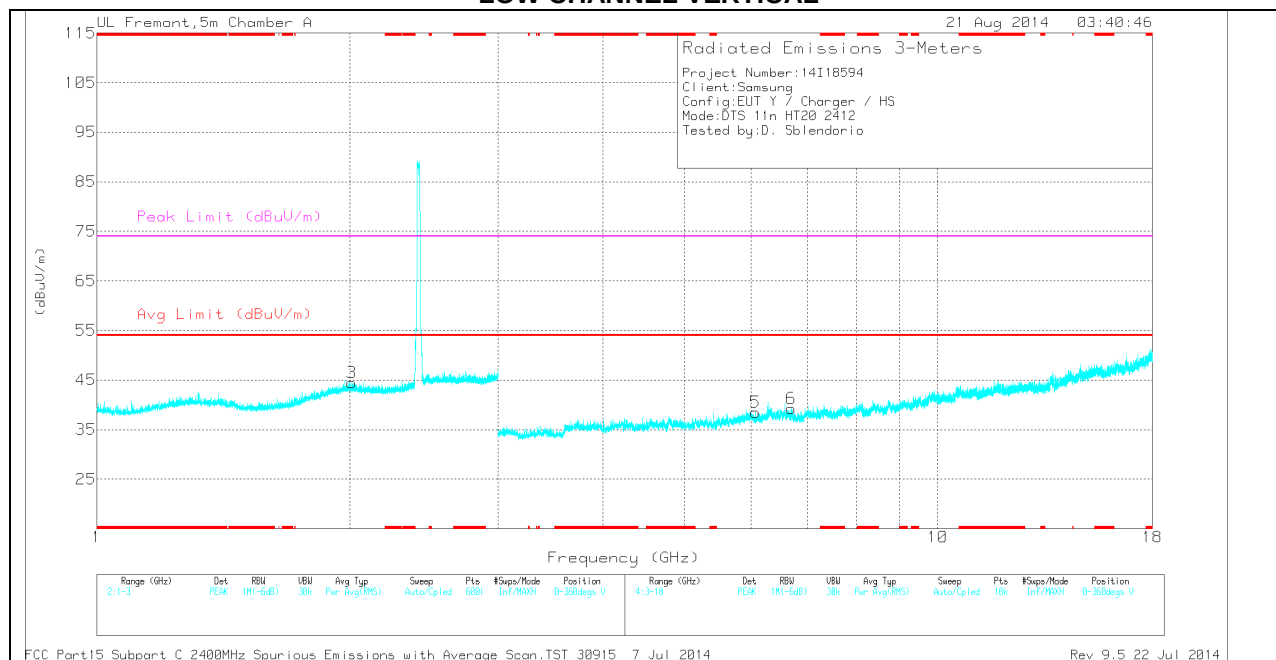
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



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

LOW CHANNEL VERTICAL



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

LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	* 1.277	35.89	PK	30	-25	0	40.89	-	-	74	-33.11	0-360	100	H
2	* 1.441	35.85	PK	29.4	-24.7	0	40.55	-	-	74	-33.45	0-360	100	H
3	2.011	36.01	PK	32	-23.6	0	44.41	-	-	-	-	0-360	201	V
4	4.455	32.6	PK	33.9	-30	0	36.5	-	-	-	-	0-360	201	H
5	6.069	31.52	PK	35.4	-28.4	0	38.52	-	-	-	-	0-360	201	V
6	6.699	30.34	PK	35.4	-26.5	0	39.24	-	-	-	-	0-360	201	V

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

PK - Peak detector

Radiated Emissions

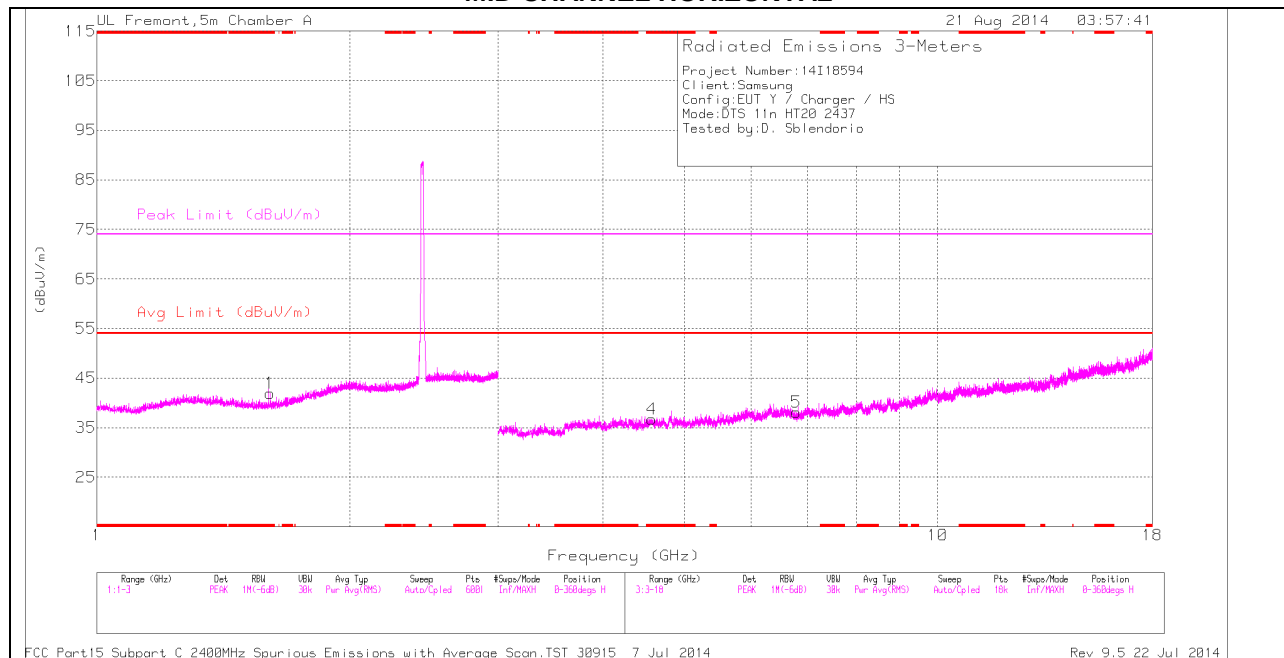
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Filtr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.277	43.83	PK2	30	-25	0	48.83	-	-	74	-25.17	360	100	H
* 1.276	32.9	MAV1	30	-25	0.38	38.28	54	-15.72	-	-	360	100	H

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

PK2 - KDB558074 Method: Maximum Peak

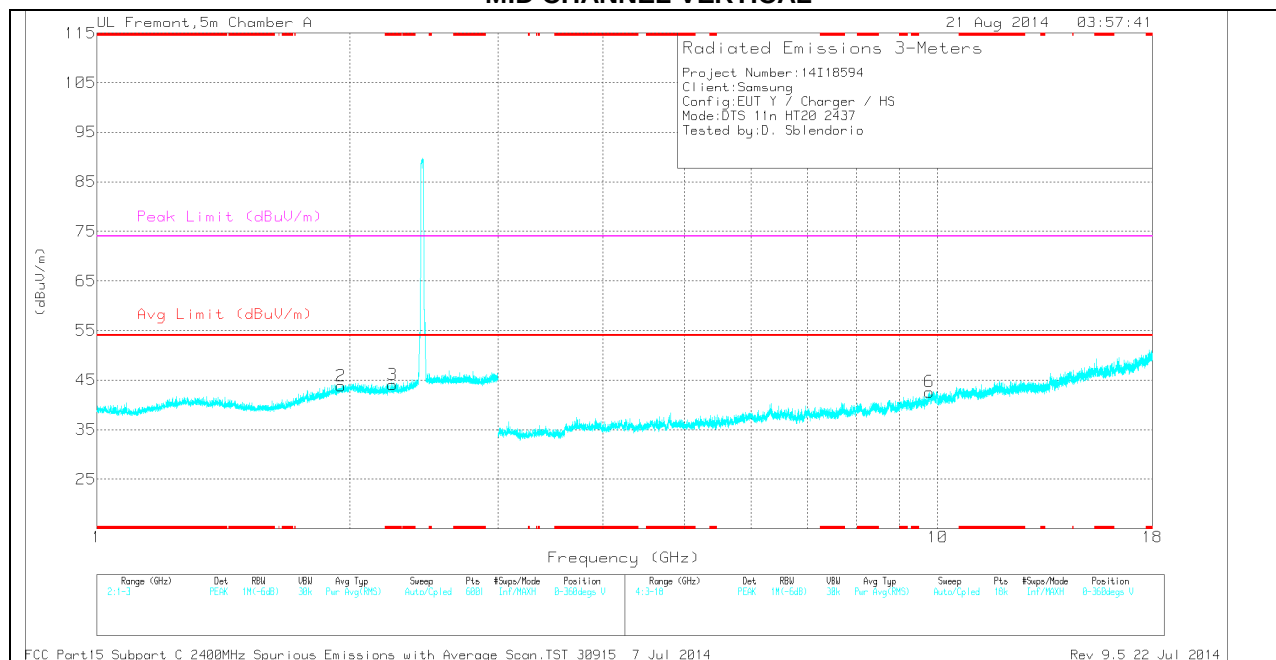
MAV1 - KDB558074 Option 1 Maximum RMS Average

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)	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	* 1.607	37.47	PK	28.8	-24.4	0	41.87	-	-	74	-32.13	0-360	201	H
3	* 2.249	35.73	PK	31.4	-23	0	44.13	-	-	74	-29.87	0-360	201	V
4	* 4.568	31.76	PK	33.9	-28.9	0	36.76	-	-	74	-37.24	0-360	201	H
2	1.952	35.66	PK	31.9	-23.7	0	43.86	-	-	-	-	0-360	201	V
5	6.793	29.96	PK	35.3	-27.2	0	38.06	-	-	-	-	0-360	100	H
6	9.776	27.82	PK	36.9	-22.1	0	42.62	-	-	-	-	0-360	201	V

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

PK - Peak detector

Radiated Emissions

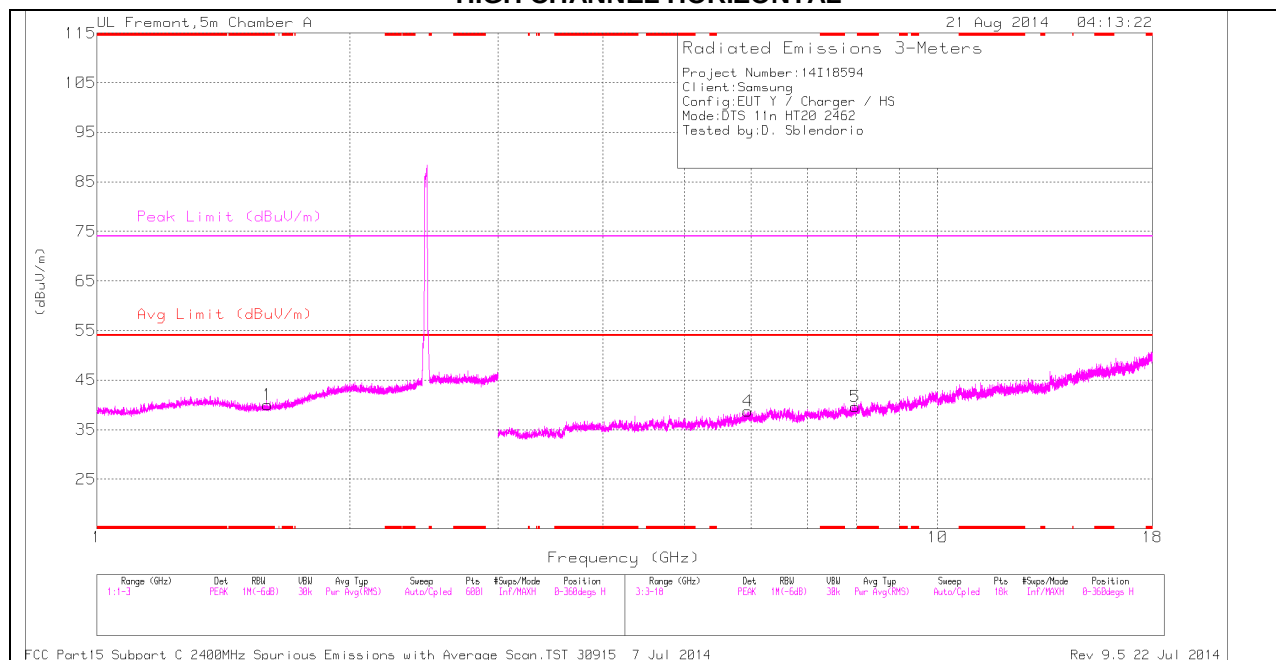
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Filtr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.607	43.35	PK2	28.8	-24.4	0	47.75	-	-	74	-26.25	359	202	H
* 1.608	32.17	MAV1	28.8	-24.4	0.38	36.95	54	-17.05	-	-	359	202	H

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

PK2 - KDB558074 Method: Maximum Peak

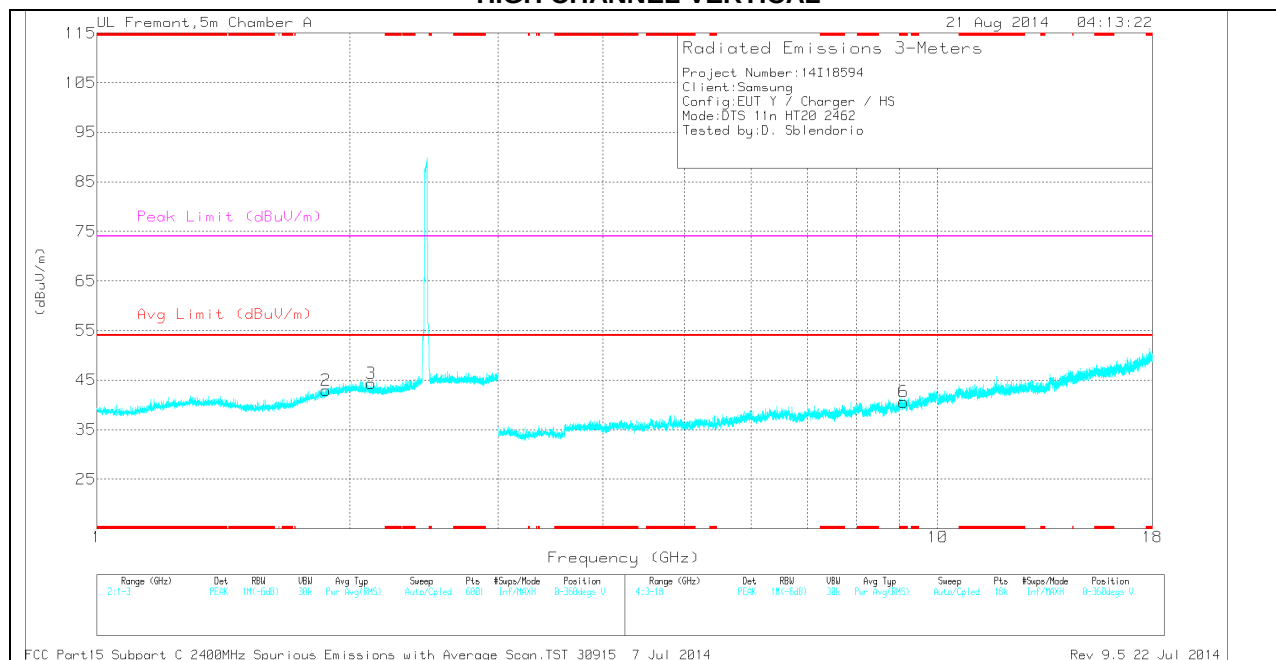
MAV1 - KDB558074 Option 1 Maximum RMS Average

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/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	* 1.596	35.66	PK	28.8	-24.4	0	40.06	-	-	74	-33.94	0-360	201	H
6	* 9.101	27.59	PK	36	-23	0	40.59	-	-	74	-33.41	0-360	201	V
2	1.874	35.37	PK	31.4	-23.8	0	42.97	-	-	-	-	0-360	100	V
3	2.121	36.03	PK	31.7	-23.4	0	44.33	-	-	-	-	0-360	100	V
4	5.947	30.6	PK	35.1	-27	0	38.7	-	-	-	-	0-360	100	H
5	7.981	29.39	PK	35.5	-25.2	0	39.69	-	-	-	-	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/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
* 1.595	44	PK2	28.8	-24.5	0	48.3	-	-	74	-25.7	359	202	H
* 1.595	32.1	MAV1	28.8	-24.5	0.38	36.78	54	-17.22	-	-	359	202	H

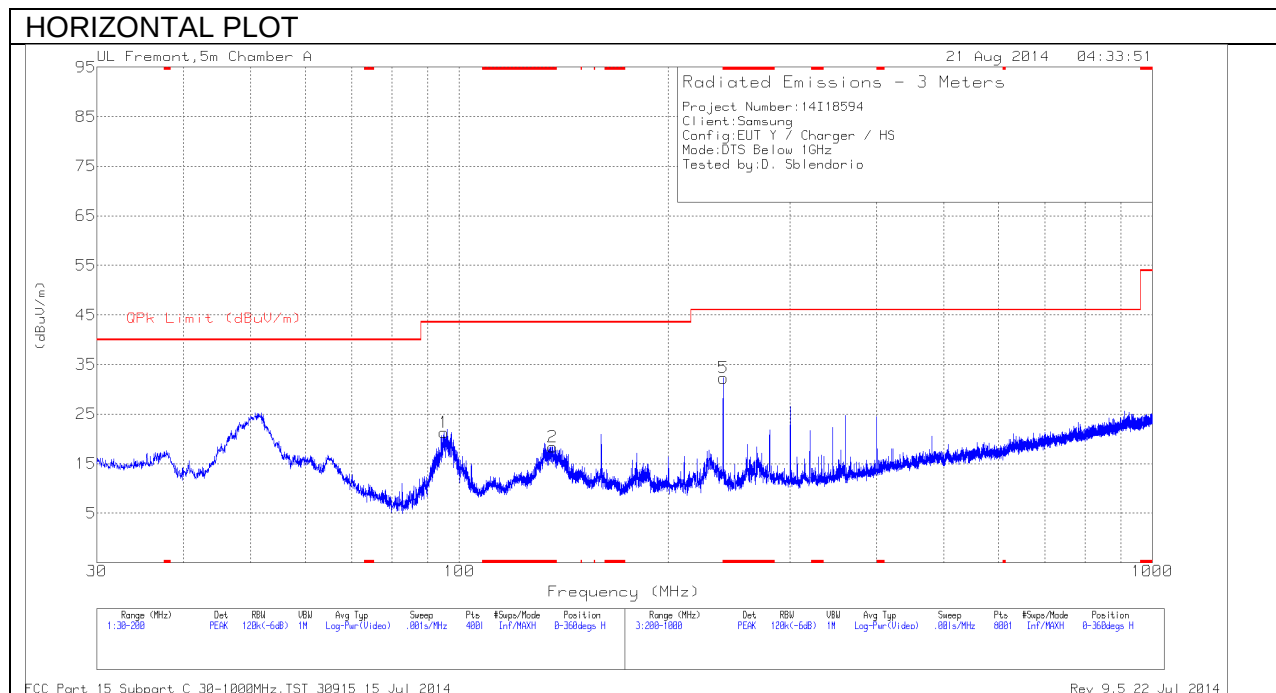
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

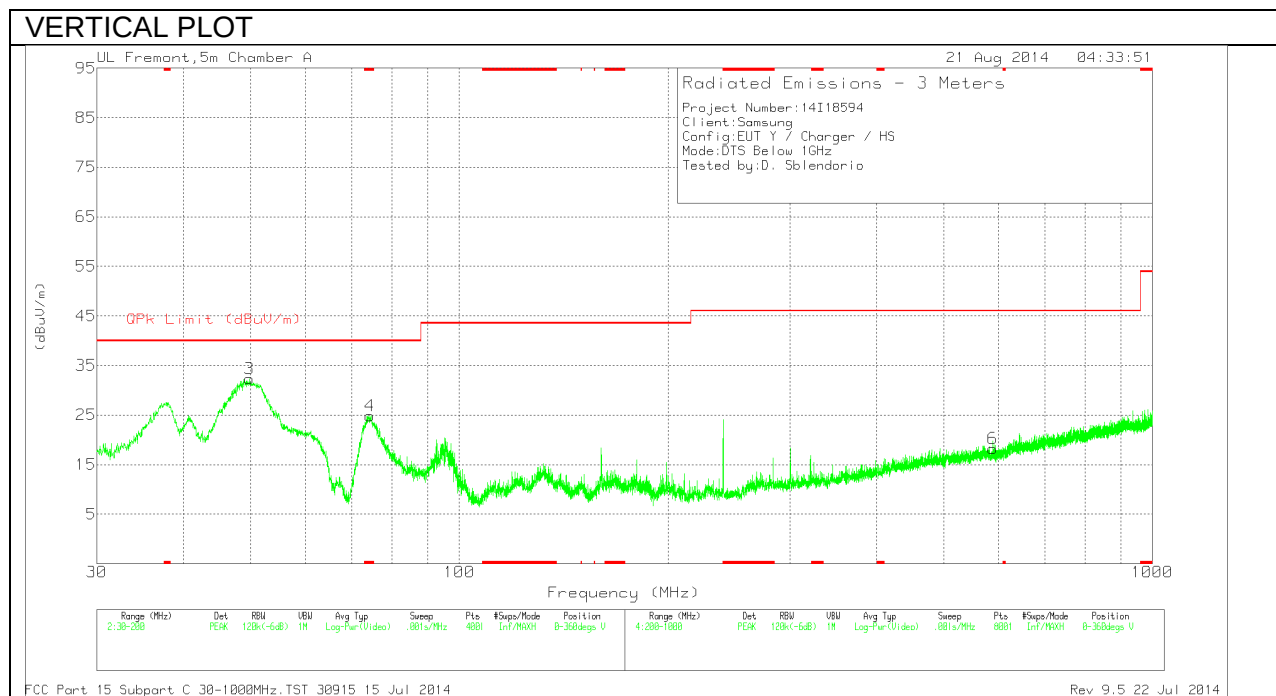
MAV1 - KDB558074 Option 1 Maximum RMS Average

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)



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T130 (dB/m)	Amp/Cbl (dB/m)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 136.42	35.01	PK	13.6	-30.3	18.31	43.52	-25.21	0-360	200	H
4	* 74.37	47.6	PK	8.1	-30.9	24.8	40	-15.2	0-360	101	V
5	* 240.3	50.27	PK	11.6	-29.6	32.27	46.02	-13.75	0-360	101	H
3	49.805	55.12	PK	8.1	-30.9	32.32	40	-7.68	0-360	101	V
1	95.11	43.06	PK	8.8	-30.6	21.26	43.52	-22.26	0-360	200	H
6	588.2	28.32	PK	18.4	-28.5	18.22	46.02	-27.8	0-360	200	V

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

PK - 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

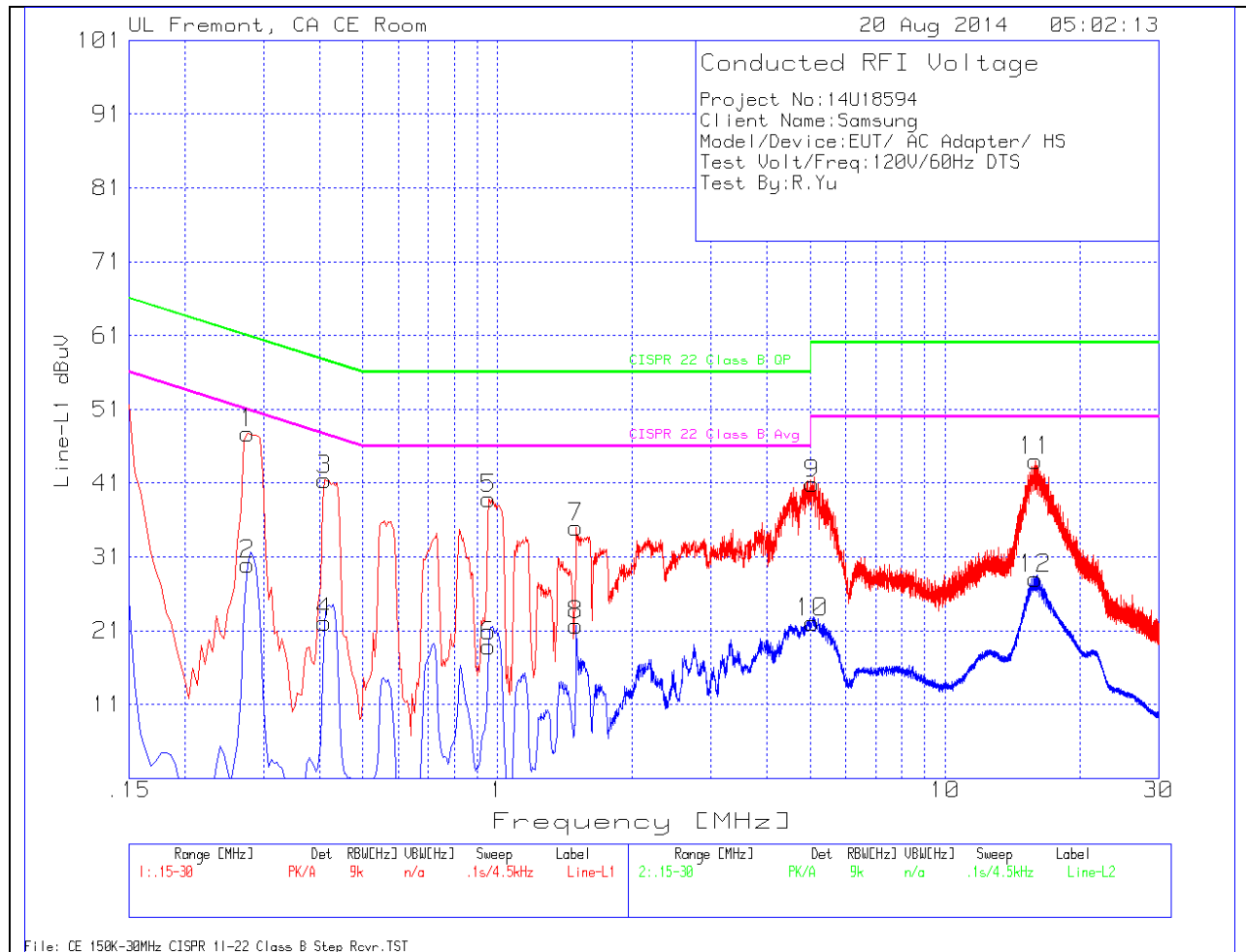
The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.4 2009.

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.

6 WORST EMISSIONS

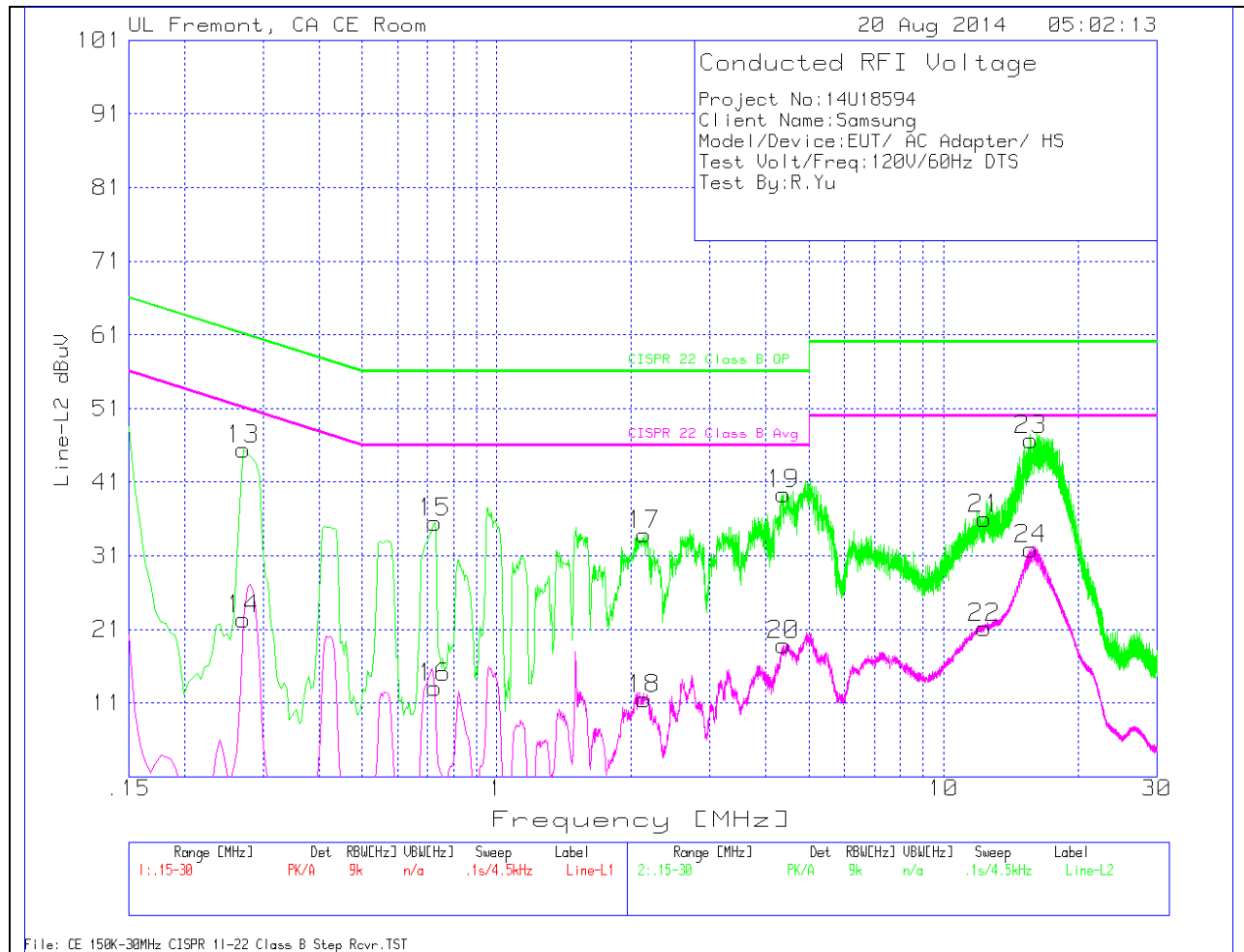
LINE 1 PLOT



LINE 1 RESULTS

Trace Markers										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1 (dB)	LC Cables 1&3 (dB)	Corrected Reading dBuV	CISPR 22 Class B QP	Margin to Limit (dB)	CISPR 22 Class B Avg	Margin to Limit (dB)
1	.276	47.1	PK	.6	0	47.7	60.9	-13.2	-	-
2	.276	29.36	Av	.6	0	29.96	-	-	50.9	-20.94
3	.411	41.07	PK	.4	0	41.47	57.6	-16.13	-	-
4	.411	21.69	Av	.4	0	22.09	-	-	47.6	-25.51
5	.9555	38.47	PK	.3	.1	38.87	56	-17.13	-	-
6	.9555	18.49	Av	.3	.1	18.89	-	-	46	-27.11
7	1.5	34.66	PK	.2	.1	34.96	56	-21.04	-	-
8	1.5	21.4	Av	.2	.1	21.7	-	-	46	-24.3
9	5.0505	40.56	PK	.2	.1	40.86	60	-19.14	-	-
10	5.0505	21.83	Av	.2	.1	22.13	-	-	50	-27.87
11	15.8865	43.51	PK	.3	.2	44.01	60	-15.99	-	-
12	15.8865	27.58	Av	.3	.2	28.08	-	-	50	-21.92

LINE 2 PLOT



LINE 2 RESULTS

Trace Markers										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2 (dB)	LC Cables 2&3 (dB)	Corrected Reading dBuV	CISPR 22 Class B QP	Margin to Limit (dB)	CISPR 22 Class B Avg	Margin to Limit (dB)
13	.2715	44.69	PK	.7	0	45.39	61.1	-15.71	-	-
14	.2715	21.71	Av	.7	0	22.41	-	-	51.1	-28.69
15	.726	35.19	PK	.3	0	35.49	56	-20.51	-	-
16	.726	12.8	Av	.3	0	13.1	-	-	46	-32.9
17	2.139	33.59	PK	.2	.1	33.89	56	-22.11	-	-
18	2.139	11.22	Av	.2	.1	11.52	-	-	46	-34.48
19	4.3755	39.09	PK	.2	.1	39.39	56	-16.61	-	-
20	4.3755	18.54	Av	.2	.1	18.84	-	-	46	-27.16
21	12.3315	35.58	PK	.2	.2	35.98	60	-24.02	-	-
22	12.3315	20.78	Av	.2	.2	21.18	-	-	50	-28.82
23	15.6795	46.18	PK	.3	.2	46.68	60	-13.32	-	-
24	15.6795	31.43	Av	.3	.2	31.93	-	-	50	-18.07