



**FCC CFR47 PART 15 SUBPART C**

**CERTIFICATION TEST REPORT**

**FOR**

**CDMA/ LTE Phone + Bluetooth, and DTS b/g/n**

**MODEL NUMBER: LG-LS660, LGLS660, LS660**

**FCC ID: ZNFLS660**

**REPORT NUMBER: 14U18147-4**

**ISSUE DATE: JUNE 29, 2014**

*Prepared for*

**LG ELECTRONICS MOBILECOMM U.S.A., INC  
1000 SYLVAN AVENUE  
ENGLEWOOD CLIFFS,  
NEW JERSEY, 07632, U.S.A.**

*Prepared by*

**UL VERIFICATION SERVICES INC.  
47173 BENICIA STREET  
FREMONT, CA 94538, U.S.A.  
TEL: (510) 771-1000  
FAX: (510) 661-0888**



**NVLAP LAB CODE 200065-0**

Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
--	06/29/14	Initial Issue	P. Zhang

## TABLE OF CONTENTS

<b>1. ATTESTATION OF TEST RESULTS .....</b>	<b>5</b>
<b>2. TEST METHODOLOGY .....</b>	<b>6</b>
<b>3. FACILITIES AND ACCREDITATION .....</b>	<b>6</b>
<b>4. CALIBRATION AND UNCERTAINTY .....</b>	<b>6</b>
4.1. <i>MEASURING INSTRUMENT CALIBRATION .....</i>	<i>6</i>
4.2. <i>SAMPLE CALCULATION .....</i>	<i>6</i>
4.3. <i>MEASUREMENT UNCERTAINTY.....</i>	<i>6</i>
<b>5. EQUIPMENT UNDER TEST .....</b>	<b>7</b>
5.1. <i>DESCRIPTION OF EUT .....</i>	<i>7</i>
5.2. <i>MAXIMUM OUTPUT POWER.....</i>	<i>7</i>
5.3. <i>DESCRIPTION OF AVAILABLE ANTENNAS .....</i>	<i>7</i>
5.4. <i>WORST-CASE CONFIGURATION AND MODE.....</i>	<i>8</i>
5.5. <i>DESCRIPTION OF TEST SETUP.....</i>	<i>9</i>
<b>6. TEST AND MEASUREMENT EQUIPMENT .....</b>	<b>11</b>
<b>7. MEASUREMENT METHODS .....</b>	<b>12</b>
<b>8. SUMMARY TABLE .....</b>	<b>13</b>
<b>9. ANTENNA PORT TEST RESULTS .....</b>	<b>14</b>
9.1. <i>6 dB BANDWIDTH.....</i>	<i>14</i>
9.1.1. <i>802.11b MODE IN THE 2.4 GHz BAND .....</i>	<i>15</i>
9.1.2. <i>802.11g MODE IN THE 2.4 GHz BAND .....</i>	<i>15</i>
9.1.3. <i>802.11n HT20 MODE IN THE 2.4 GHz BAND .....</i>	<i>15</i>
9.2. <i>99% BANDWIDTH.....</i>	<i>19</i>
9.2.1. <i>802.11b MODE IN THE 2.4 GHz BAND .....</i>	<i>19</i>
9.2.2. <i>802.11g MODE IN THE 2.4 GHz BAND .....</i>	<i>19</i>
9.2.3. <i>802.11n HT20 MODE IN THE 2.4 GHz BAND .....</i>	<i>19</i>
9.3. <i>AVERAGE POWER.....</i>	<i>23</i>
9.3.1. <i>802.11b MODE IN THE 2.4 GHz BAND .....</i>	<i>24</i>
9.3.2. <i>802.11g MODE IN THE 2.4 GHz BAND .....</i>	<i>24</i>
9.3.3. <i>802.11n HT20 MODE IN THE 2.4 GHz BAND .....</i>	<i>24</i>
9.4. <i>OUTPUT POWER.....</i>	<i>25</i>
9.4.1. <i>802.11b MODE IN THE 2.4 GHz BAND .....</i>	<i>26</i>
9.4.2. <i>802.11g MODE IN THE 2.4 GHz BAND .....</i>	<i>26</i>
9.4.3. <i>802.11n HT20 MODE IN THE 2.4 GHz BAND .....</i>	<i>27</i>
9.5. <i>PSD.....</i>	<i>28</i>
9.5.1. <i>802.11b MODE IN THE 2.4 GHz BAND .....</i>	<i>28</i>
9.5.2. <i>802.11g MODE IN THE 2.4 GHz BAND .....</i>	<i>28</i>

---

9.5.3.	802.11n HT20 MODE IN THE 2.4 GHz BAND .....	29
9.6.	<i>OUT-OF-BAND EMISSIONS</i> .....	33
9.6.1.	802.11b MODE IN THE 2.4 GHz BAND .....	34
9.6.2.	802.11g MODE IN THE 2.4 GHz BAND .....	40
9.6.3.	802.11n MODE IN THE 2.4 GHz BAND .....	46
<b>10.</b>	<b>RADIATED TEST RESULTS</b> .....	<b>52</b>
10.1.	<i>LIMITS AND PROCEDURE</i> .....	52
10.2.	<i>TRANSMITTER ABOVE 1 GHz</i> .....	53
10.2.1.	TX ABOVE 1 GHz 802.11b MODE IN THE 2.4 GHz BAND.....	53
10.2.2.	TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND.....	66
10.2.3.	TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND .....	79
10.3.	<i>WORST-CASE BELOW 1 GHz</i> .....	92
<b>11.</b>	<b>AC POWER LINE CONDUCTED EMISSIONS</b> .....	<b>101</b>
<b>12.</b>	<b>SETUP PHOTOS</b> .....	<b>111</b>

# 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** LG ELECTRONICS MOBILECOMM U.S.A., INC.  
**EUT DESCRIPTION:** CDMA/LTE Phone + Bluetooth, and DTS b/g/n.  
**MODEL:** LG-LS660, LGLS660, LS660  
**SERIAL NUMBER:** 1BYFL (Conducted), 1BYFM (Radiated)  
**DATE TESTED:** JUNE 23-29, 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.

Approved & Released  
For UL Verification Services Inc. By:



PENG ZHANG  
CONSUMER TECHNOLOGY DIVISION  
PROJECT LEAD  
UL Verification Services Inc.

Tested By:



CHARLES VERGONIO  
CONSUMER TECHNOLOGY DIVISION  
LAB ENGINEER  
UL Verification Services Inc.

## 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
<input type="checkbox"/> Chamber A	<input type="checkbox"/> Chamber D
<input checked="" type="checkbox"/> Chamber B	<input type="checkbox"/> Chamber E
<input type="checkbox"/> Chamber C	<input type="checkbox"/> 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:

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

### 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 CDMA/LTE Phone + Bluetooth, DTS b/g/n.

### 5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2412 - 2462	802.11b	19.04	80.17
2412 - 2462	802.11g	20.67	116.68
2412 - 2462	802.11n HT20	19.78	95.06

### 5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of -2.45 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	LG	STA-U34WRI	N/A	N/A
AC Adapter	LG	MCS-02WR	N/A	N/A
AC Adapter	LG	MCS-02WD	N/A	N/A
Earphone	LG	N/A	N/A	N/A

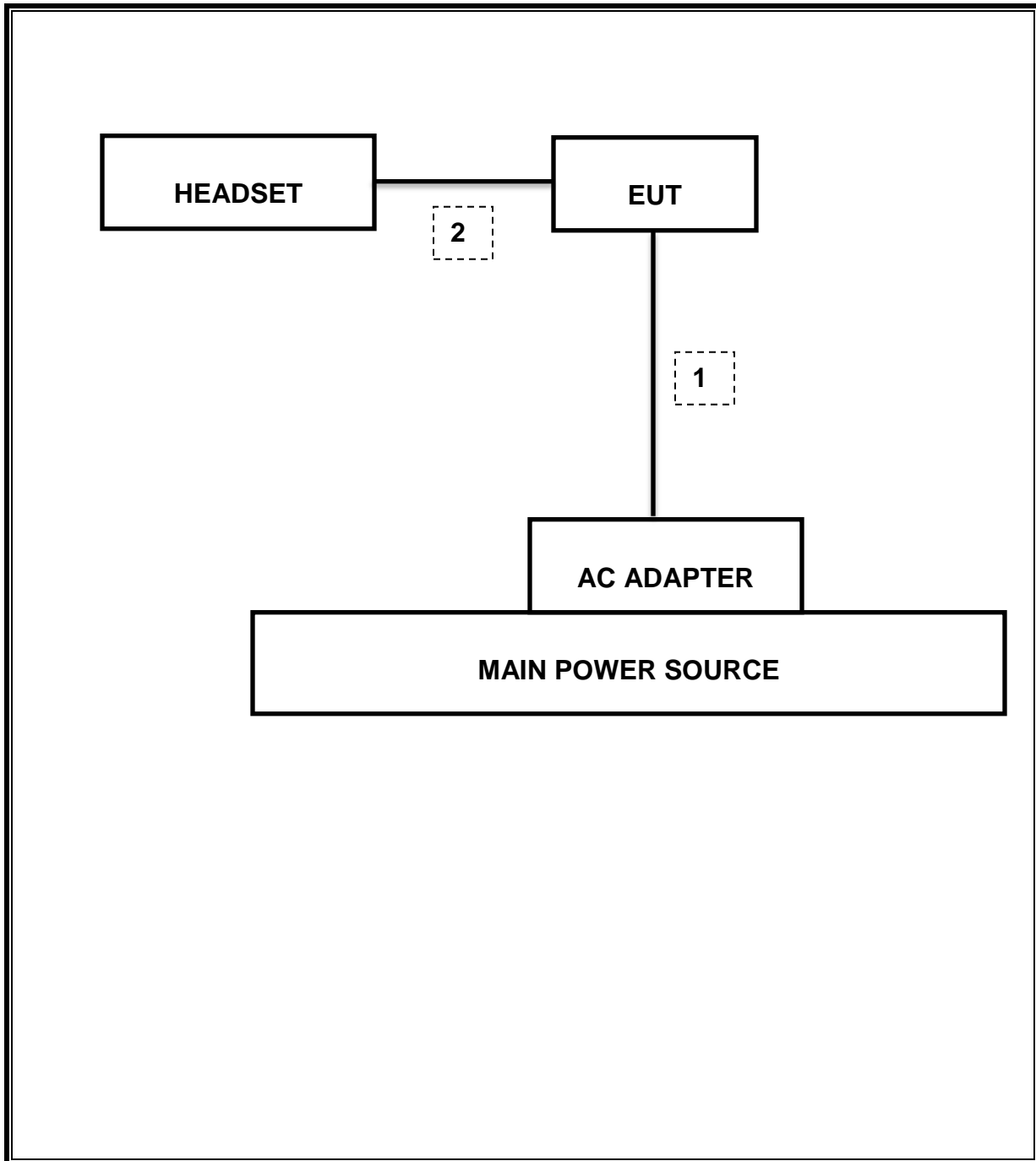
### I/O CABLES

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	12/20/14
Spectrum Analyzer, 9KHz-40GHz	HP	8564E	C00986	04/01/15
EMI Test Receiver, 9 kHz-7 GHz	R & S	ESCI 7	1000741	08/13/14
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	08/18/14
Power Meter	Agilent / HP	N1911A	C00963	12/13/14
Wide band Power Sensor	Agilent / HP	N1921A	C00964	12/13/14
Antenna, Horn, 1-18 GHz	ETS	3117	C01022	02/21/15
Antenna, Horn, 18- 26 GHz	ARA	MWH-1826/B	C00946	11/12/14
Antenna, Horn, 26-40 GHz	ARA	MWH-2640	C00891	06/28/14
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	T243	03/06/15
RF Preamp, 100KHz -> 1300MHz	HP	TBD	C00825	06/01/15
RF Preamp, 1GHz - 18GHz	Miteq	NSP4000-SP2	924343	03/23/15
RF Preamp, 1GHz - 26.5GHz	HP	8449B	F00351	06/27/14
AC Power Supply, 2,500VA 45-500Hz	Elgar-Ametek	CW2501M	F00013	CNR
RF Preamp, 1GHz - 40GHz	Miteq	NSP4000-SP2	C00990	08/20/14
Attenuator / Switch driver	HP	11713A	F00204	CNR
Low Pass Filter 3GHz	Micro-Tronics	LPS17541	F00219	05/23/15
High Pass Filter 5GHz	Micro-Tronics	HPS17542	F00222	05/22/15
High Pass Filter 6GHz	Micro-Tronics	HPM17543	F00224	05/22/15

---

## 7. MEASUREMENT METHODS

KDB 558074 D01 DTS Meas Guidance v03r02: Measurement Procedure PKPM1 is used for power and PKPSD is used for power spectral density.

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

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

## 8. SUMMARY TABLE

FCC Part Section	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result	Worst Case
15.247 (a)(2)	RSS-210 A8.2(a)	Occupied Band width (6dB)	>500KHz	Conducted	Pass	7.10MHz
2.1051, 15.247 (d)	RSS-210 A8.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	-33.46dBm
15.247	RSS-210 A8.4	TX conducted output power	<30dBm		Pass	20.67dBm
15.247	RSS-210 A8.2	PSD	<8dBm		Pass	-5.43dBm
15.207 (a)	RSS-GEN 7.2.2	AC Power Line conducted emissions	Section 10	Radiated	Pass	51.64dBuV
15.205, 15.209	RSS-210 Clause 2.6, RSS-210 Clause 6	Radiated Spurious Emission	< 54dBuV/m		Pass	48.03dBuV/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 v03r01: 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	7.10	0.5
Mid	2437	7.10	0.5
High	2462	9.08	0.5
Worst		7.10	

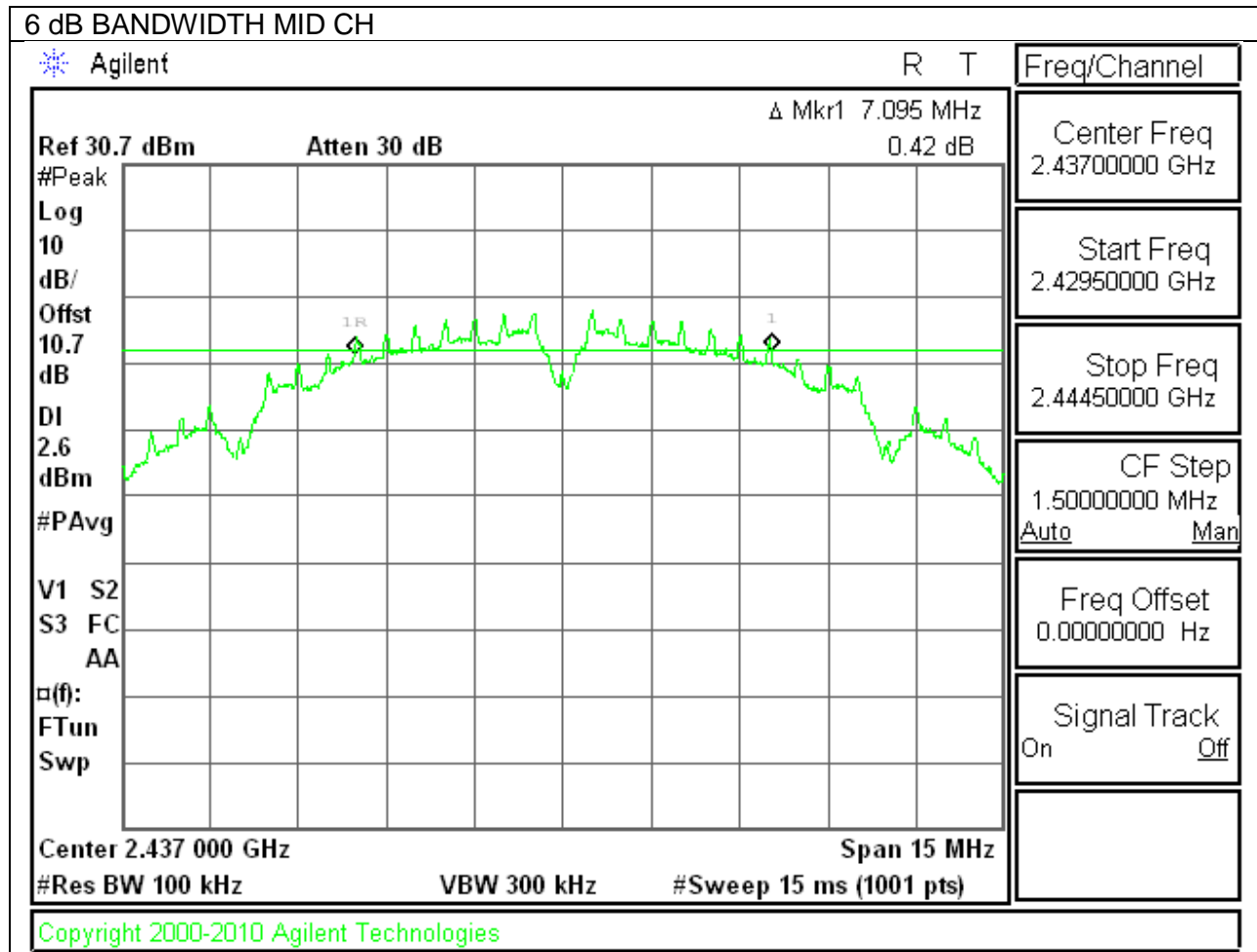
### 9.1.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	16.40	0.5
Mid	2437	16.35	0.5
High	2462	16.39	0.5
Worst		16.35	

### 9.1.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

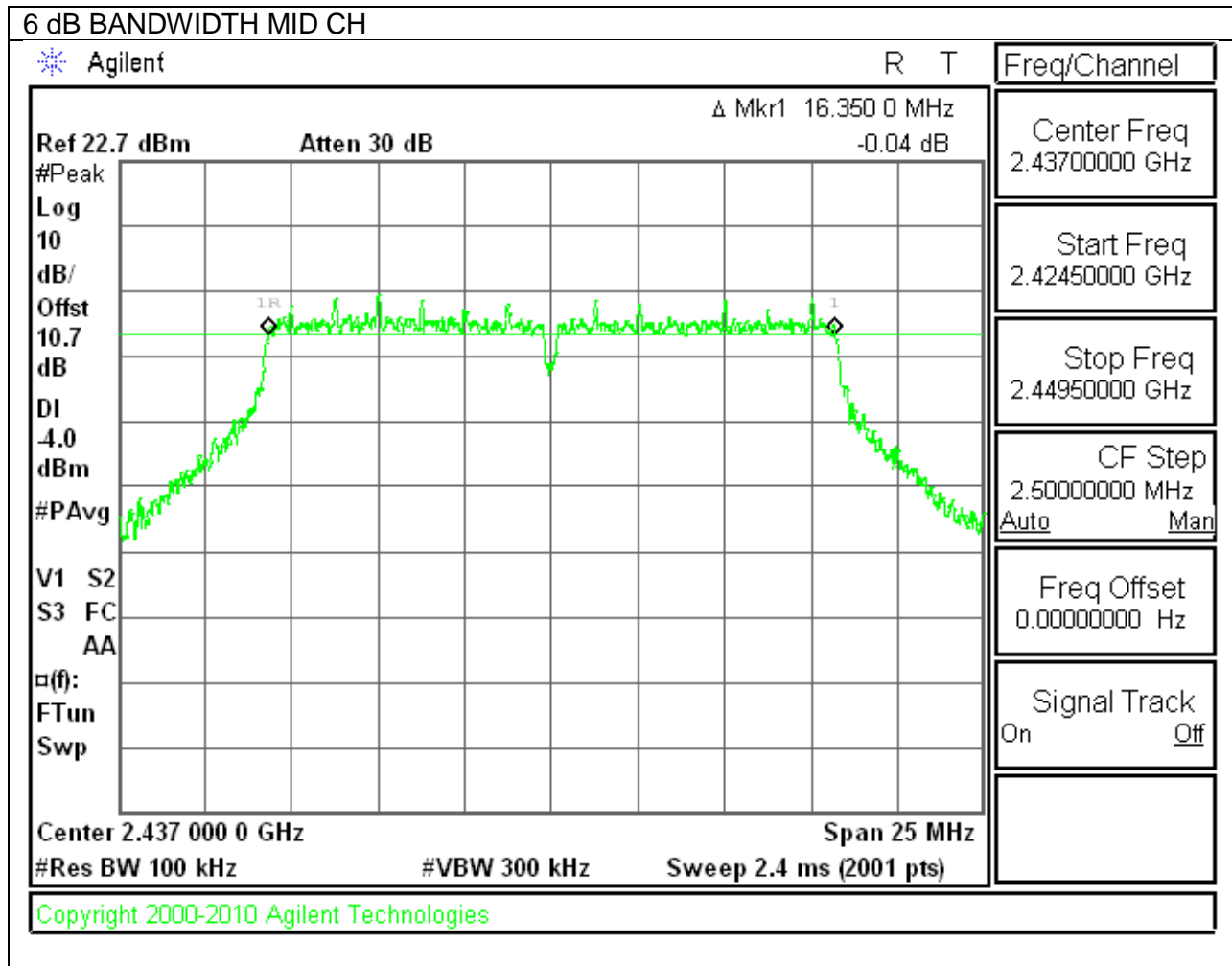
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2412	17.61	0.5
Mid	2437	17.70	0.5
High	2462	17.56	0.5
Worst		17.56	

**802.11b 6 dB BANDWIDTH**

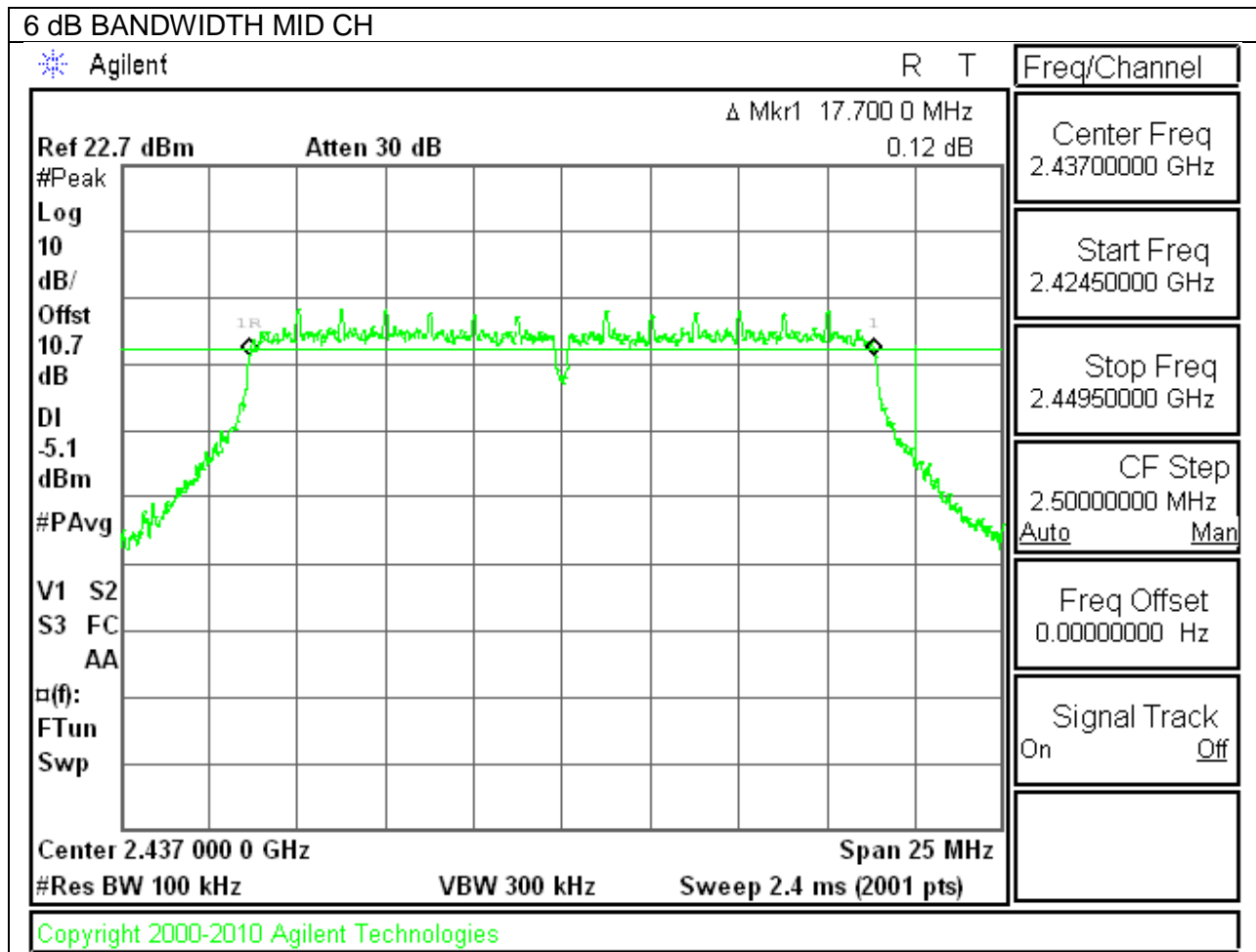




**802.11g 6 dB BANDWIDTH**



**802.11n 6 dB BANDWIDTH**



## 9.2. 99% BANDWIDTH

### LIMITS

None; for reporting purposes only.

### RESULTS

#### 9.2.1. 802.11b MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	12.44
Mid	2437	12.39
High	2462	12.53
Worst		12.53

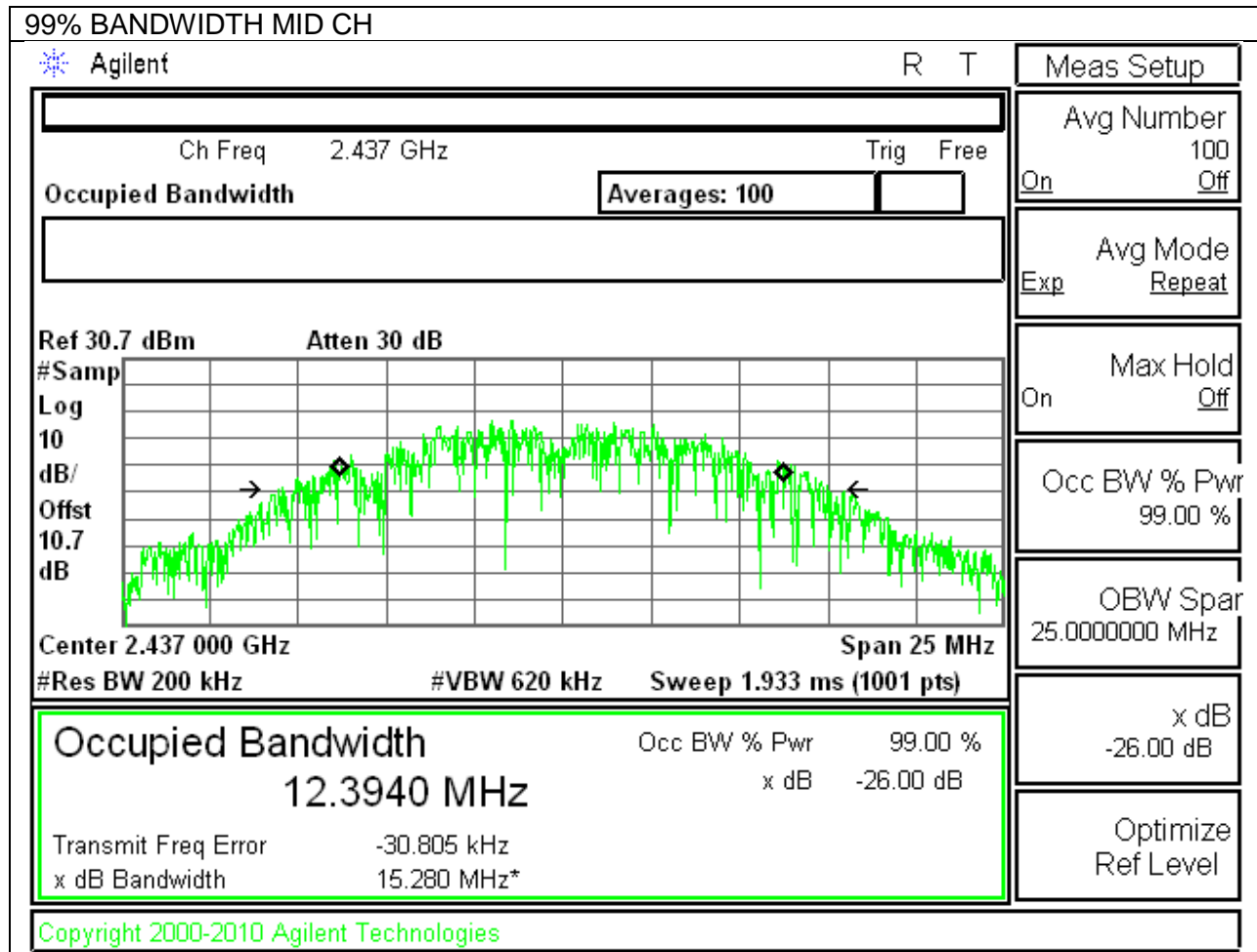
#### 9.2.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	16.41
Mid	2437	16.45
High	2462	16.45
Worst		16.45

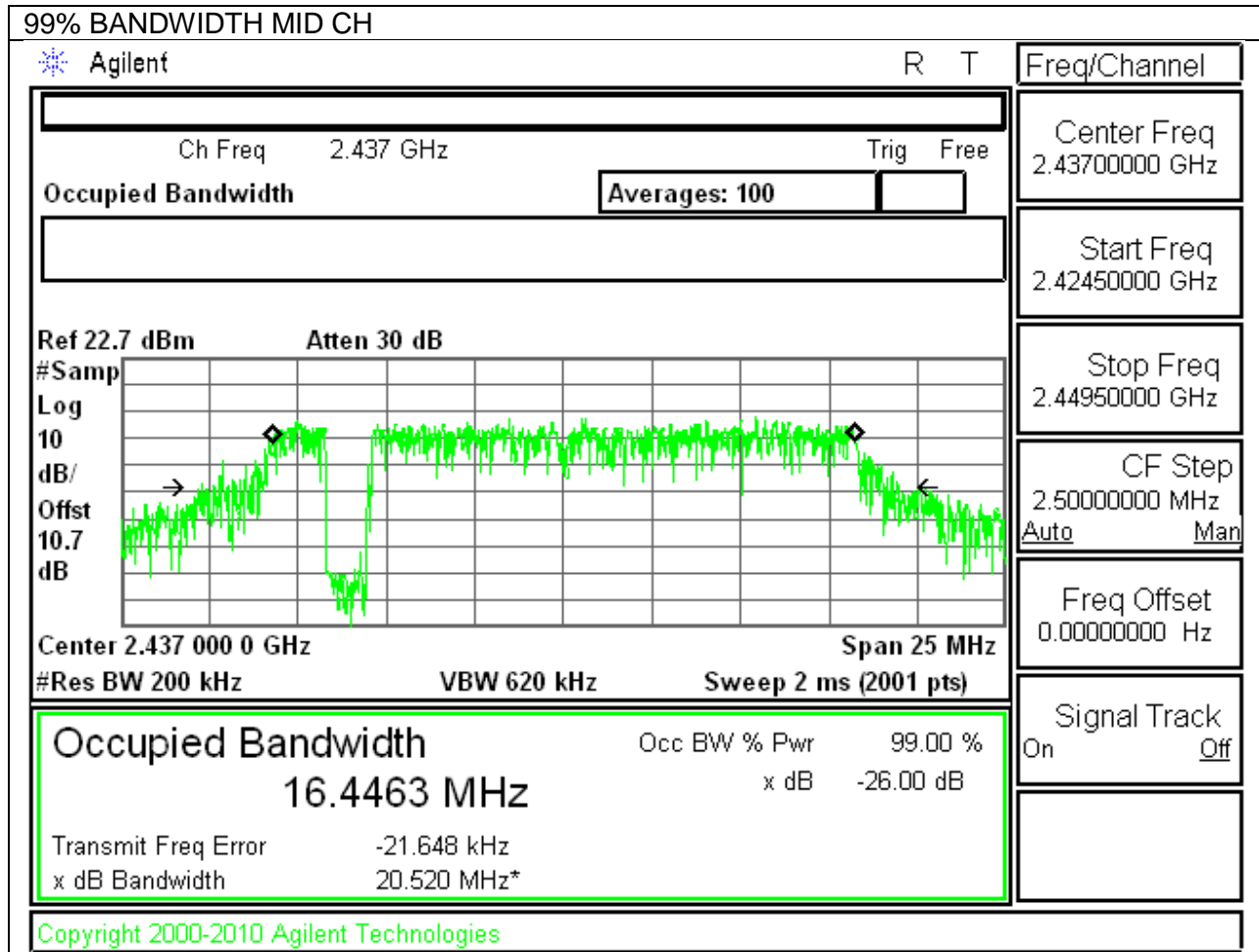
#### 9.2.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	17.61
Mid	2437	17.54
High	2462	17.66
Worst		17.66

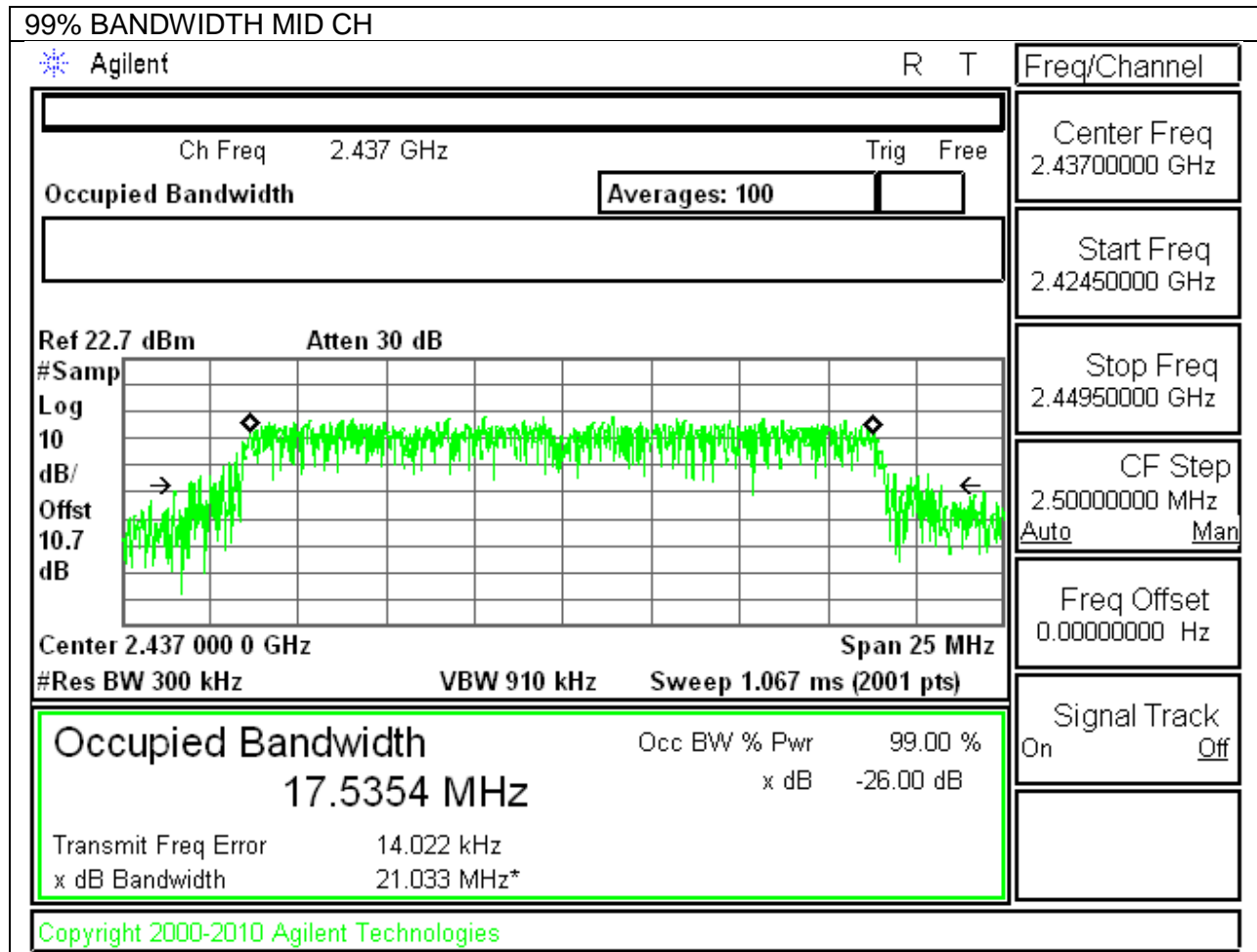
**802.11b 99% BANDWIDTH**



**802.11g 99% BANDWIDTH**



**802.11n 99% BANDWIDTH**



### **9.3. AVERAGE POWER**

#### **LIMITS**

None; for reporting purposes only.

#### **TEST PROCEDURE**

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 10.2 dB (including 10 dB pad and 0.2 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### **RESULTS**

### 9.3.1. 802.11b MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	2412	15.80
Mid	2437	15.90
High	2462	16.10
Worst		16.100

### 9.3.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency (MHz)	Avg Power (dBm)
Low	2412	12.20
Mid	2437	12.30
High	2462	12.50
Worst		12.500

### 9.3.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

	(MHz)	(dBm)
Low	2412	11.40
Mid	2437	11.60
High	2462	11.60
Worst		11.600



## **9.4. OUTPUT POWER**

### **LIMITS**

FCC §15.247

IC RSS-210 A8.4

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

### **DIRECTIONAL ANTENNA GAIN**

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

**RESULTS**

**9.4.1. 802.11b MODE IN THE 2.4 GHz BAND**

**Limits**

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	-2.45	30.00	30	36	30.00
Mid	2437	-2.45	30.00	30	36	30.00
High	2462	-2.45	30.00	30	36	30.00

**Results**

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	18.27	18.27	30.00	-11.73
Mid	2437	18.54	18.54	30.00	-11.46
High	2462	19.04	19.04	30.00	-10.96
Worst			19.04		

**9.4.2. 802.11g MODE IN THE 2.4 GHz BAND**

**Limits**

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	-2.45	30.00	30	36	30.00
Mid	2437	-2.45	30.00	30	36	30.00
High	2462	-2.45	30.00	30	36	30.00

**Results**

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	20.47	20.47	30.00	-9.53
Mid	2437	20.57	20.57	30.00	-9.43
High	2462	20.67	20.67	30.00	-9.33
Worst			20.67		

### 9.4.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

**Limits**

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	2412	-2.45	30.00	30	36	30.00
Mid	2437	-2.45	30.00	30	36	30.00
High	2462	-2.45	30.00	30	36	30.00

**Results**

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low	2412	19.69	19.69	30.00	-10.31
Mid	2437	19.78	19.78	30.00	-10.22
High	2462	19.64	19.64	30.00	-10.36
Worst			19.78		

## 9.5. PSD

### LIMITS

FCC §15.247

IC RSS-210 A8.2

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

### RESULTS

#### 9.5.1. 802.11b MODE IN THE 2.4 GHz BAND

##### PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-5.98	8.0	-14.0
Mid	2437	-5.98	8.0	-14.0
High	2462	-5.43	8.0	-13.4

#### 9.5.2. 802.11g MODE IN THE 2.4 GHz BAND

##### PSD Results

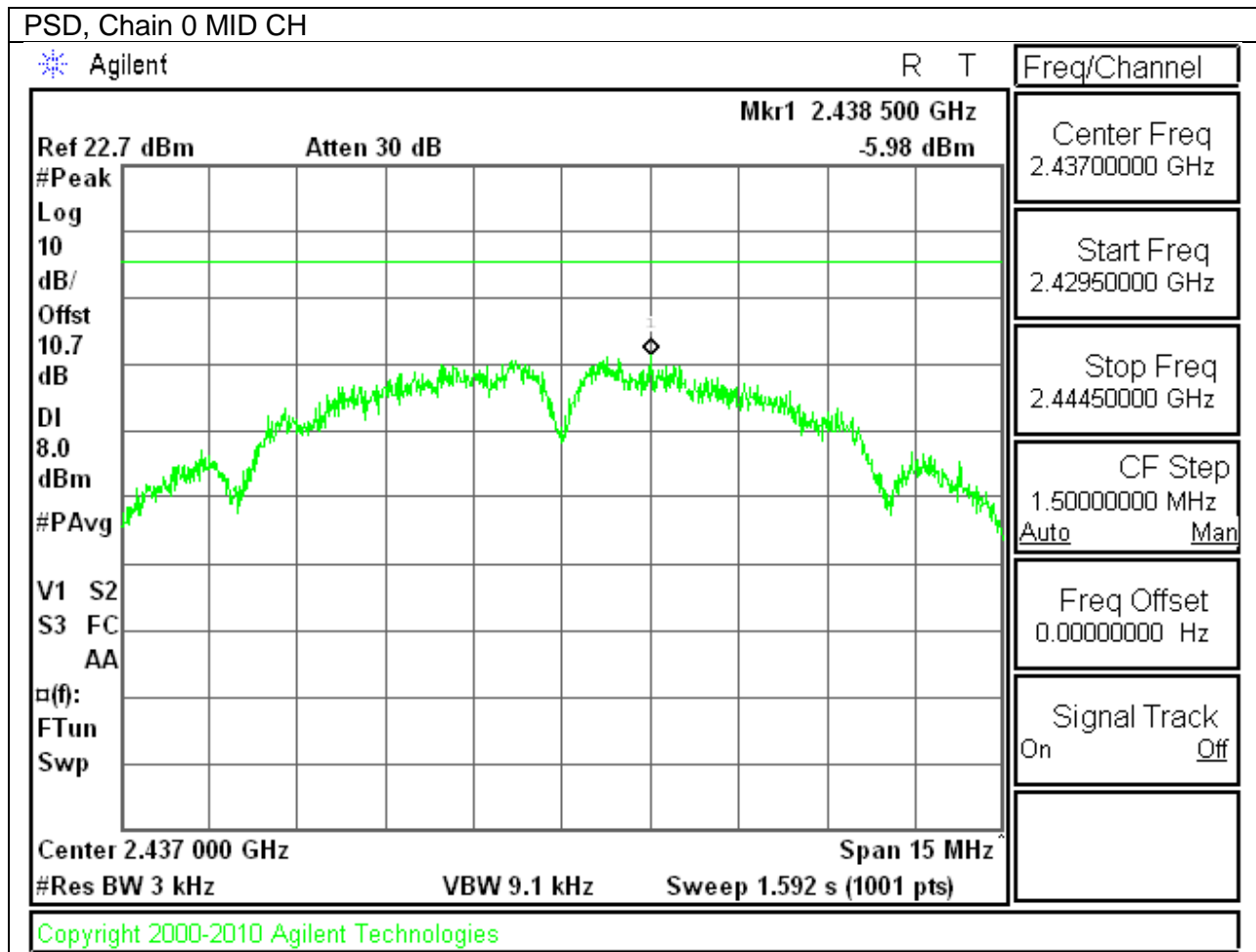
Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-12.24	8.0	-20.2
Mid	2437	-12.40	8.0	-20.4
High	2462	-11.36	8.0	-19.4

### 9.5.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

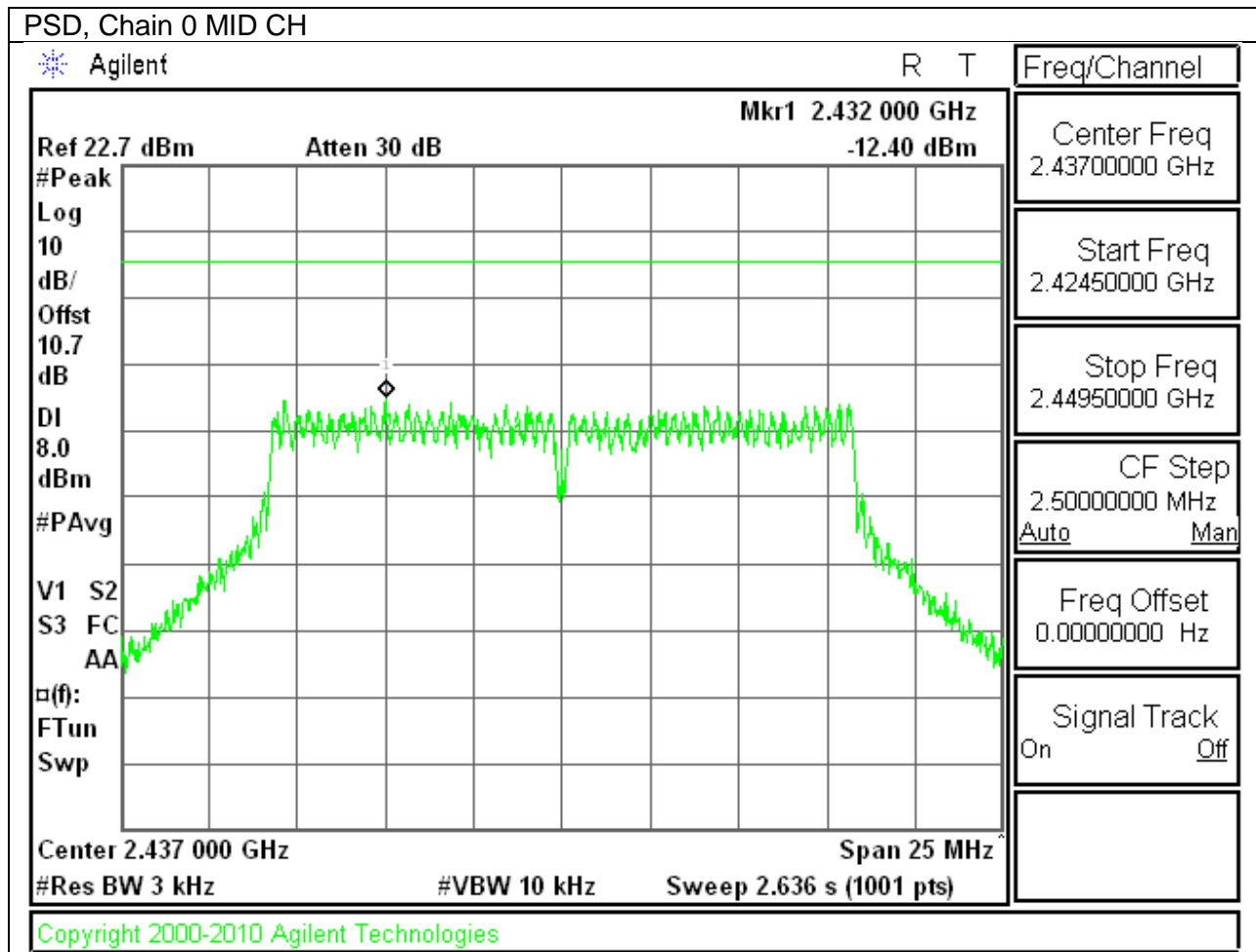
#### PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-13.94	8.0	-21.9
Mid	2437	-13.65	8.0	-21.7
High	2462	-13.20	8.0	-21.2

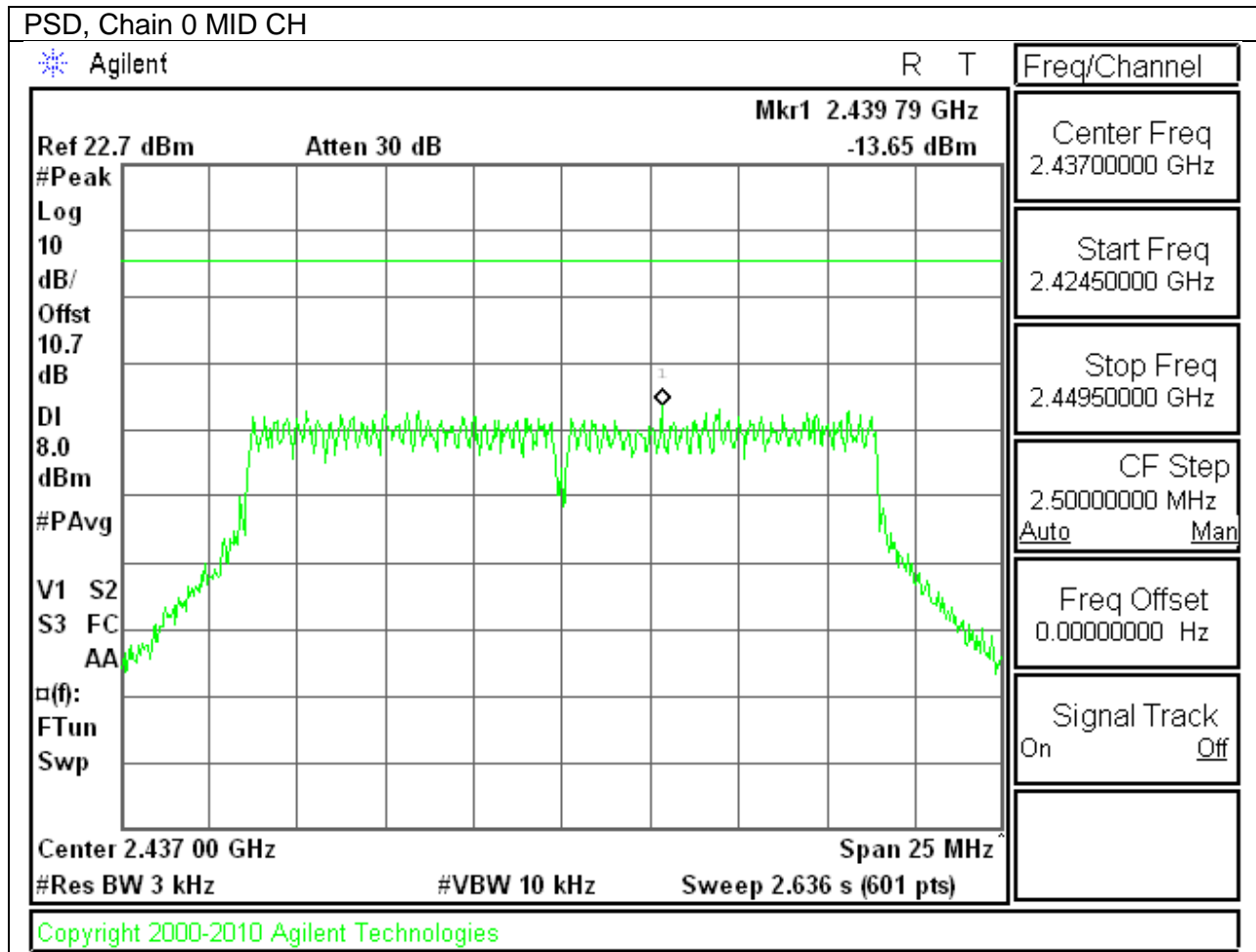
**802.11b PSD, Chain 0**



**802.11g PSD, Chain 0**



**802.11n PSD, Chain 0**





## 9.6. OUT-OF-BAND EMISSIONS

### LIMITS

FCC §15.247 (d)

IC RSS-210 A8.5

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

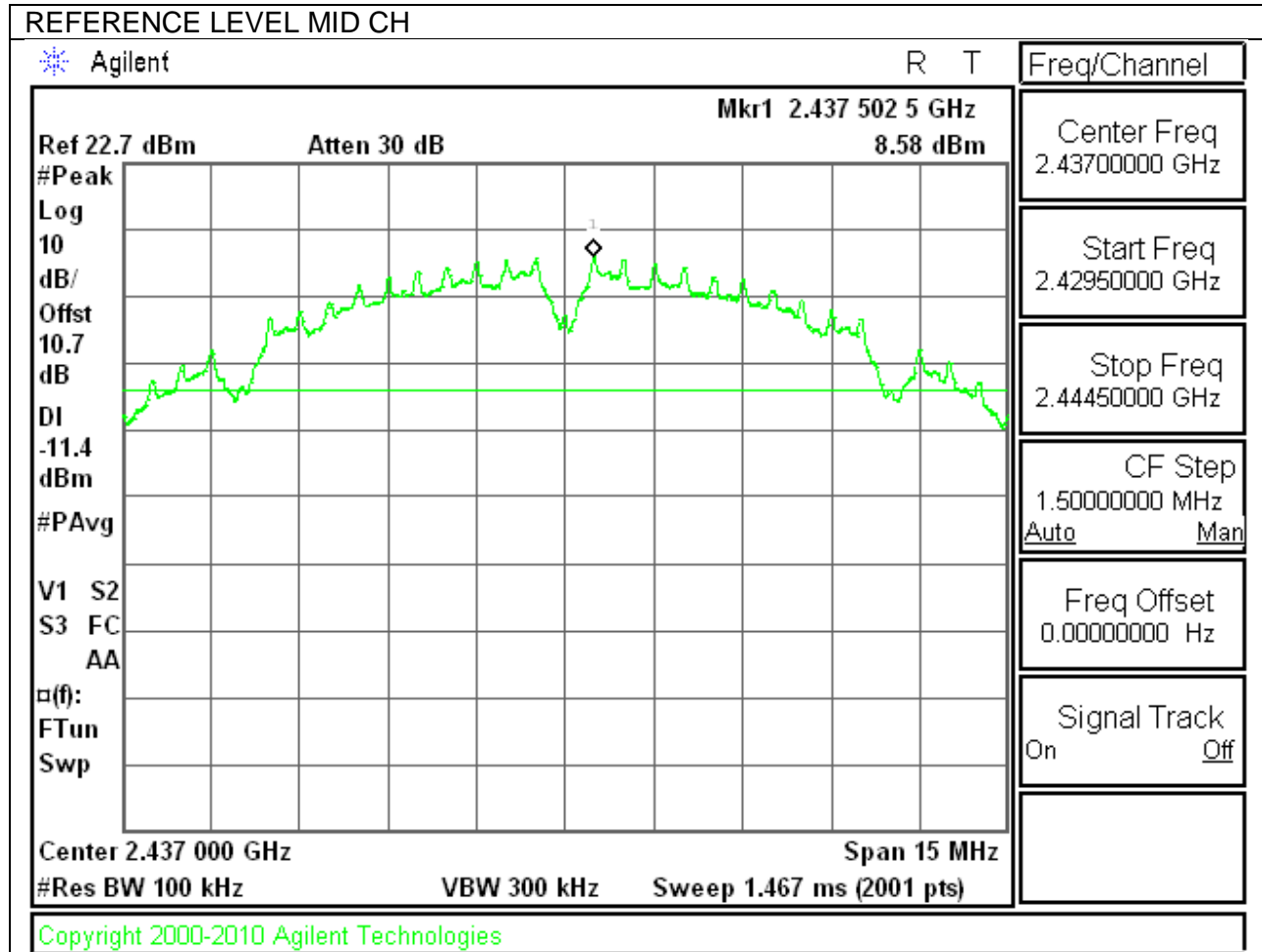
### TEST PROCEDURE

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

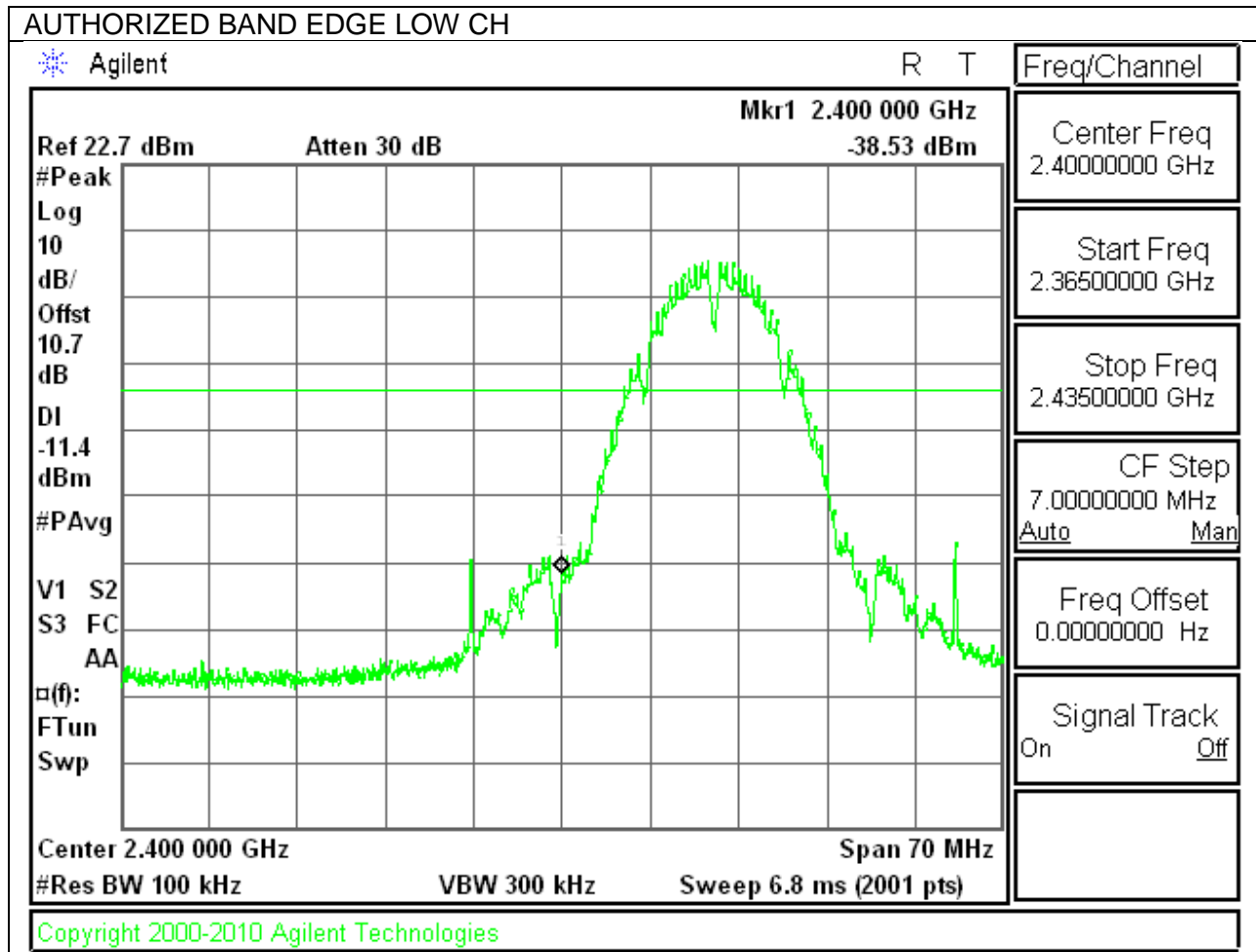
**RESULTS**

**9.6.1. 802.11b MODE IN THE 2.4 GHz BAND**

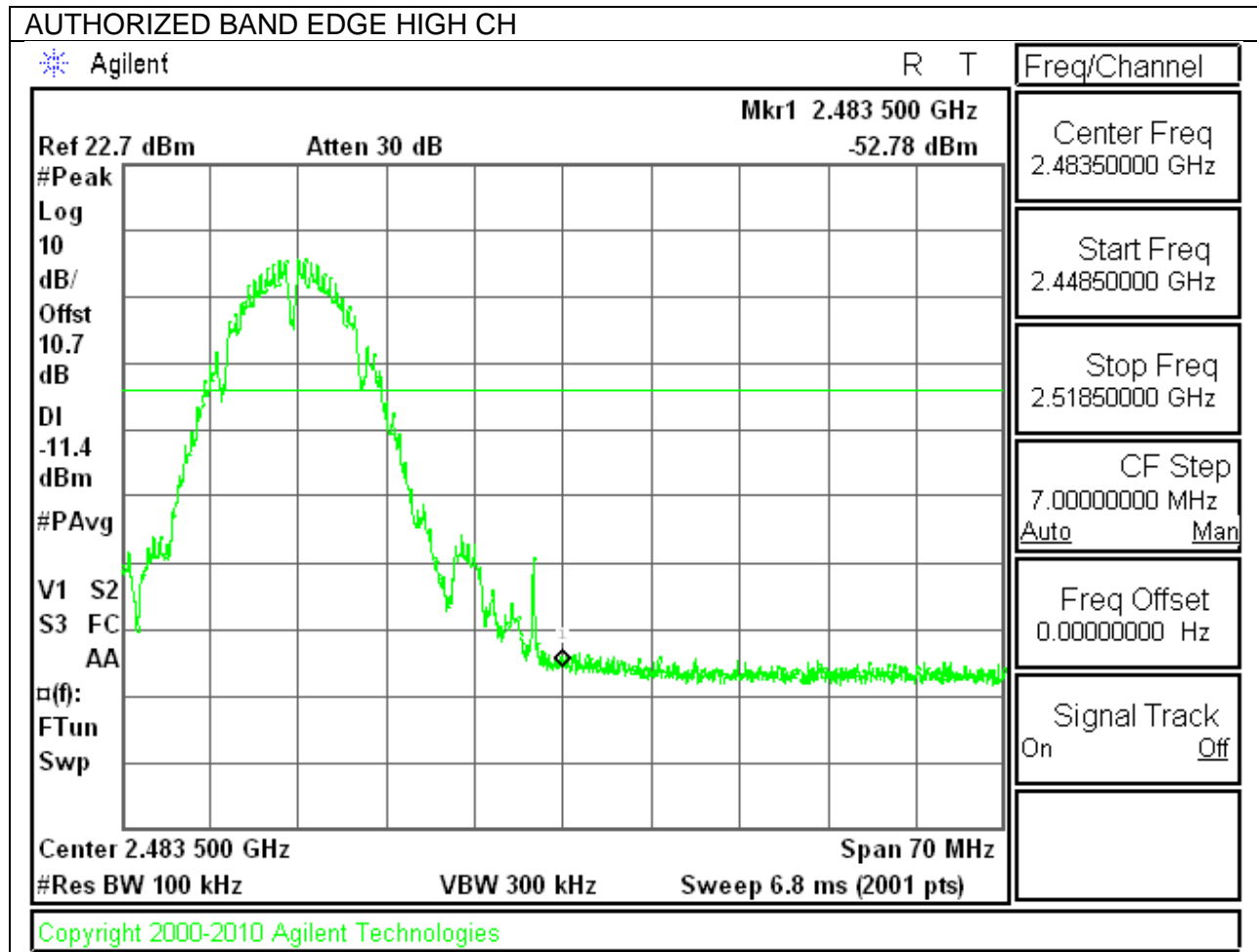
**IN-BAND REFERENCE LEVEL**



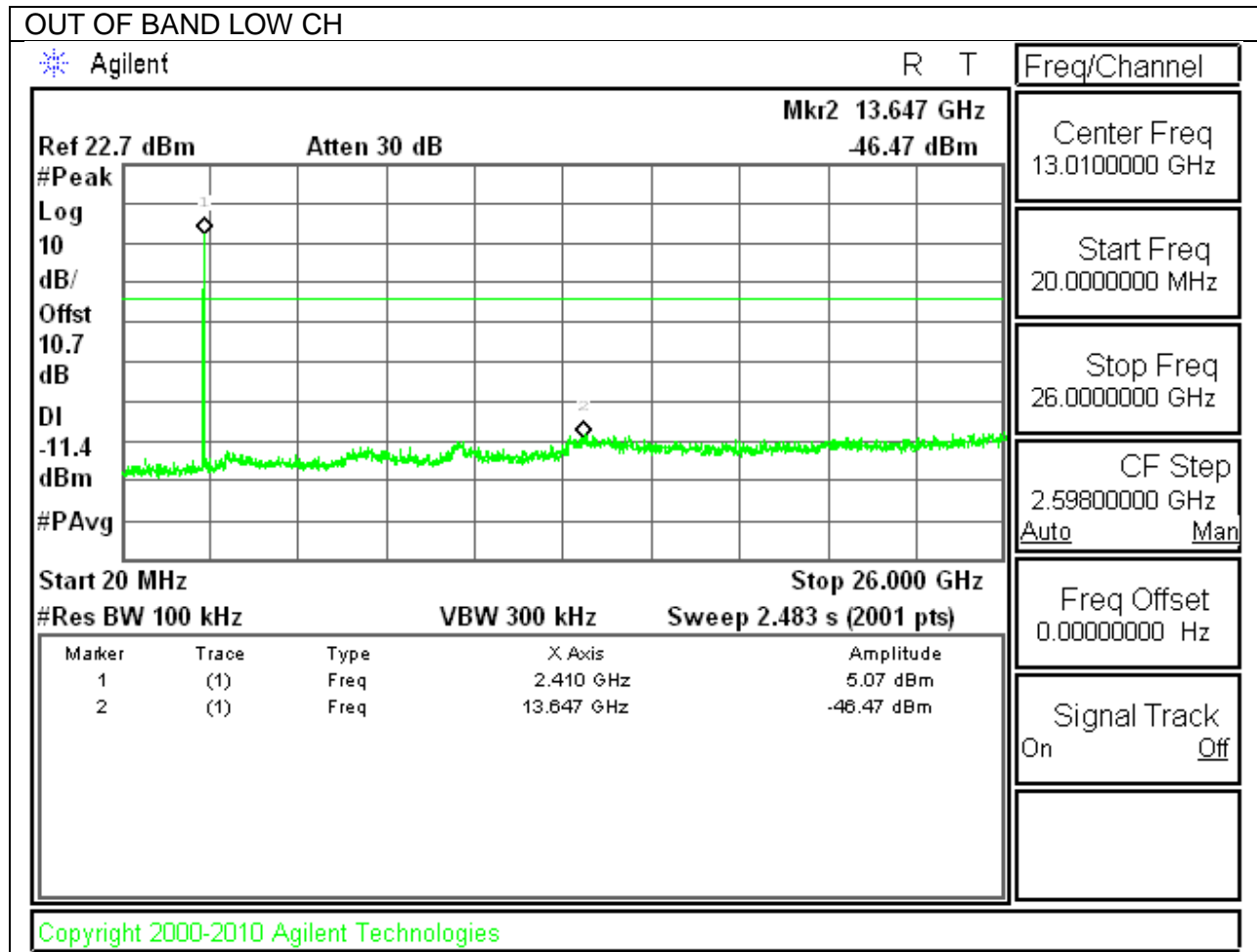
**LOW CHANNEL BANDEDGE**

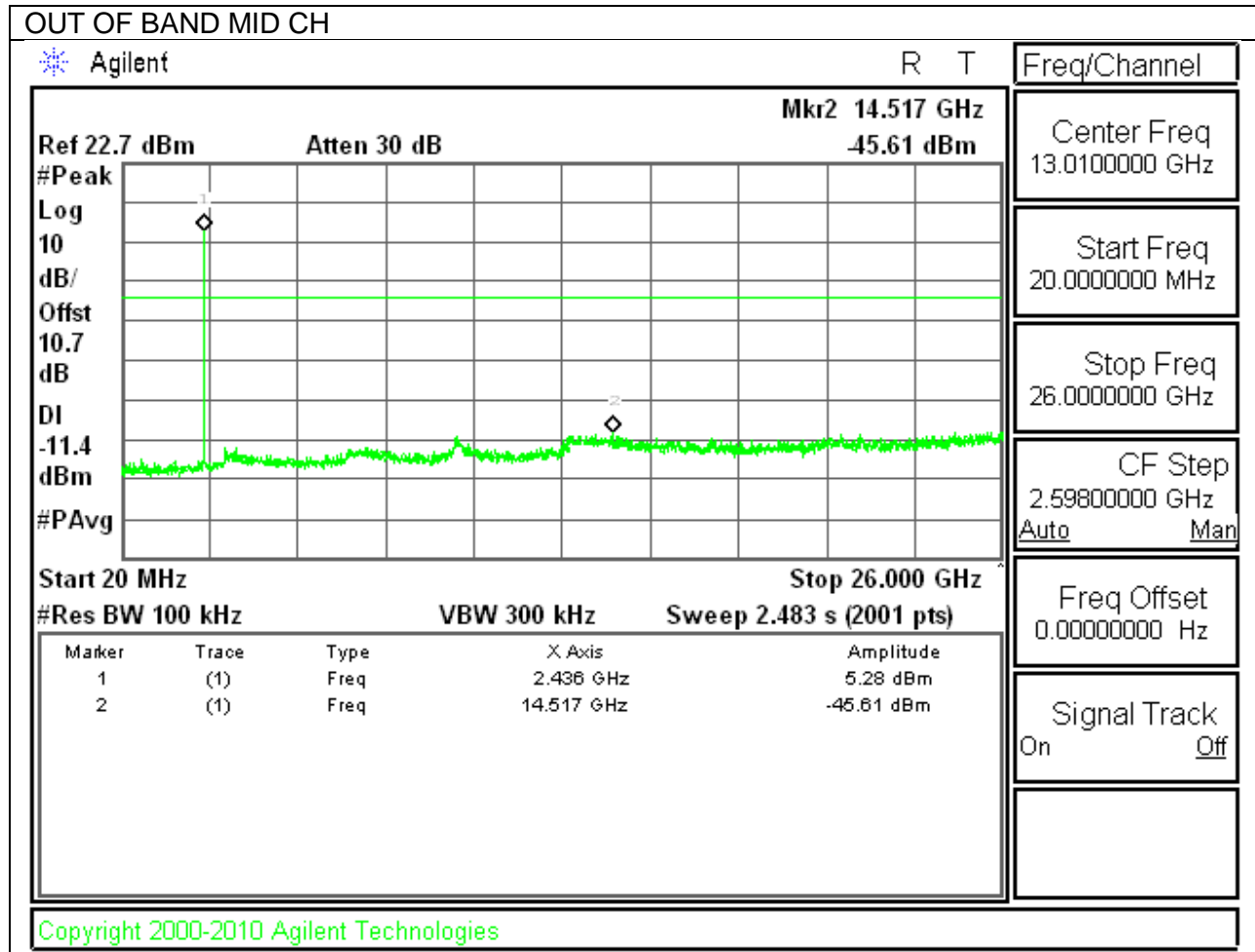


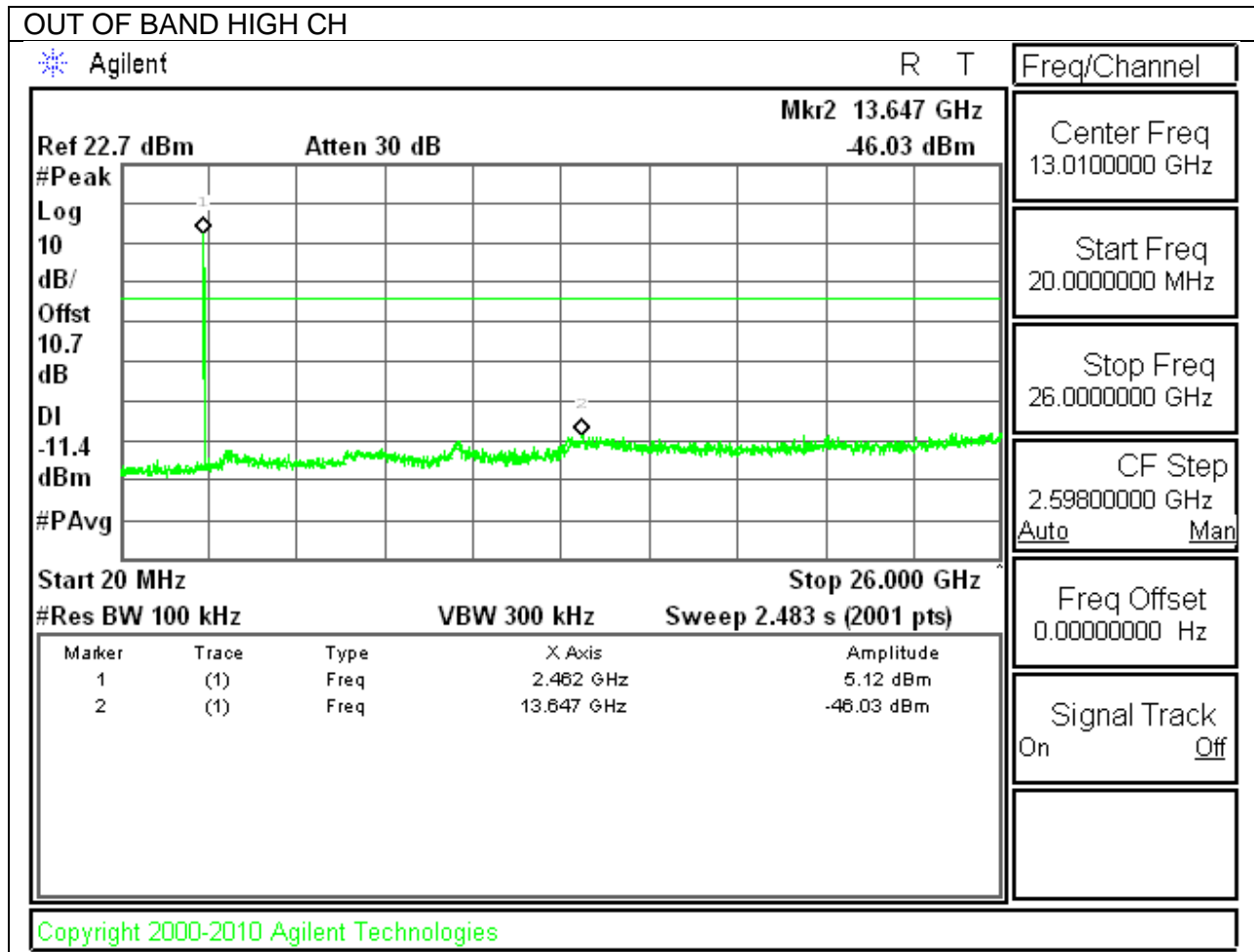
**HIGH CHANNEL BANDEDGE**



**OUT-OF-BAND EMISSIONS**

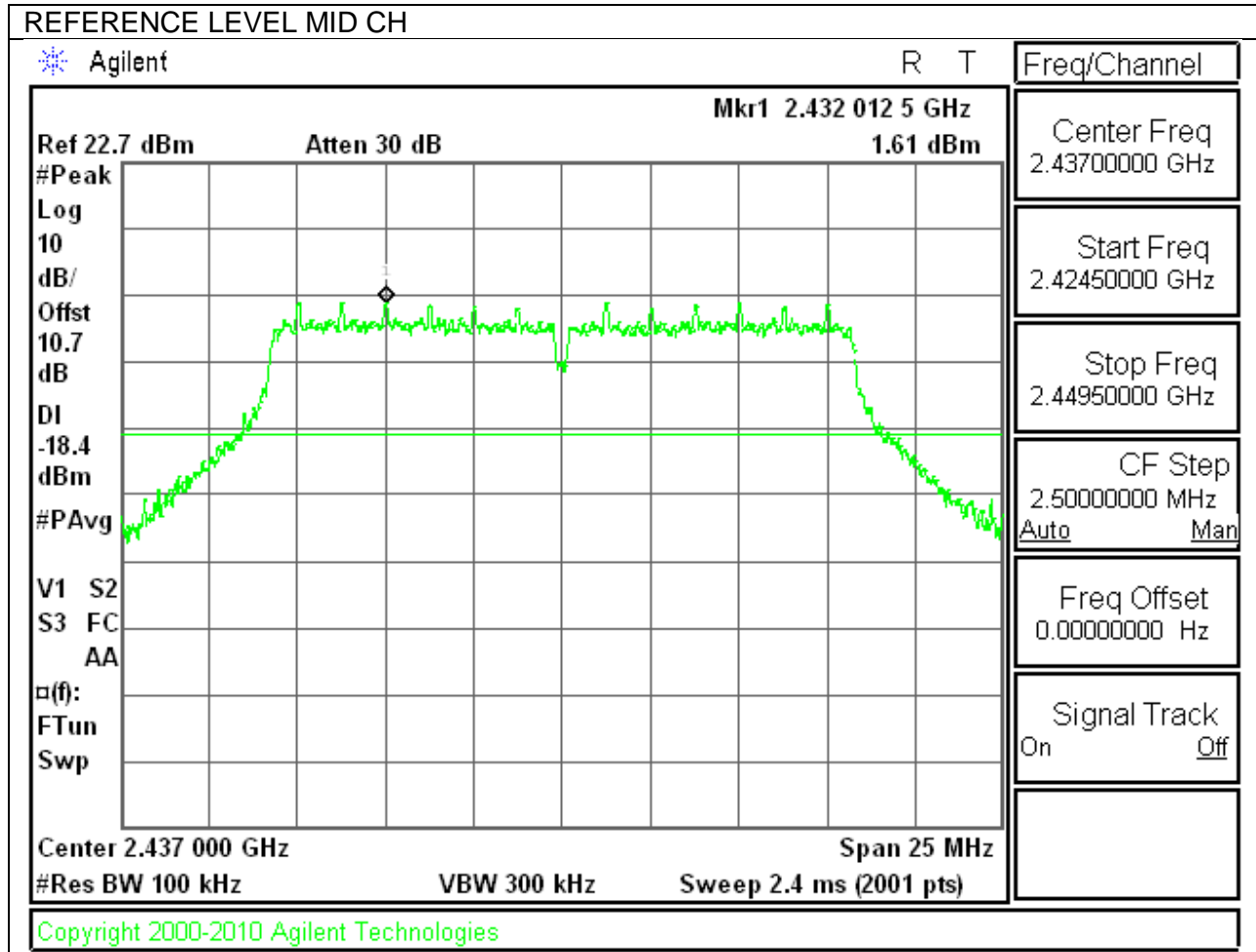






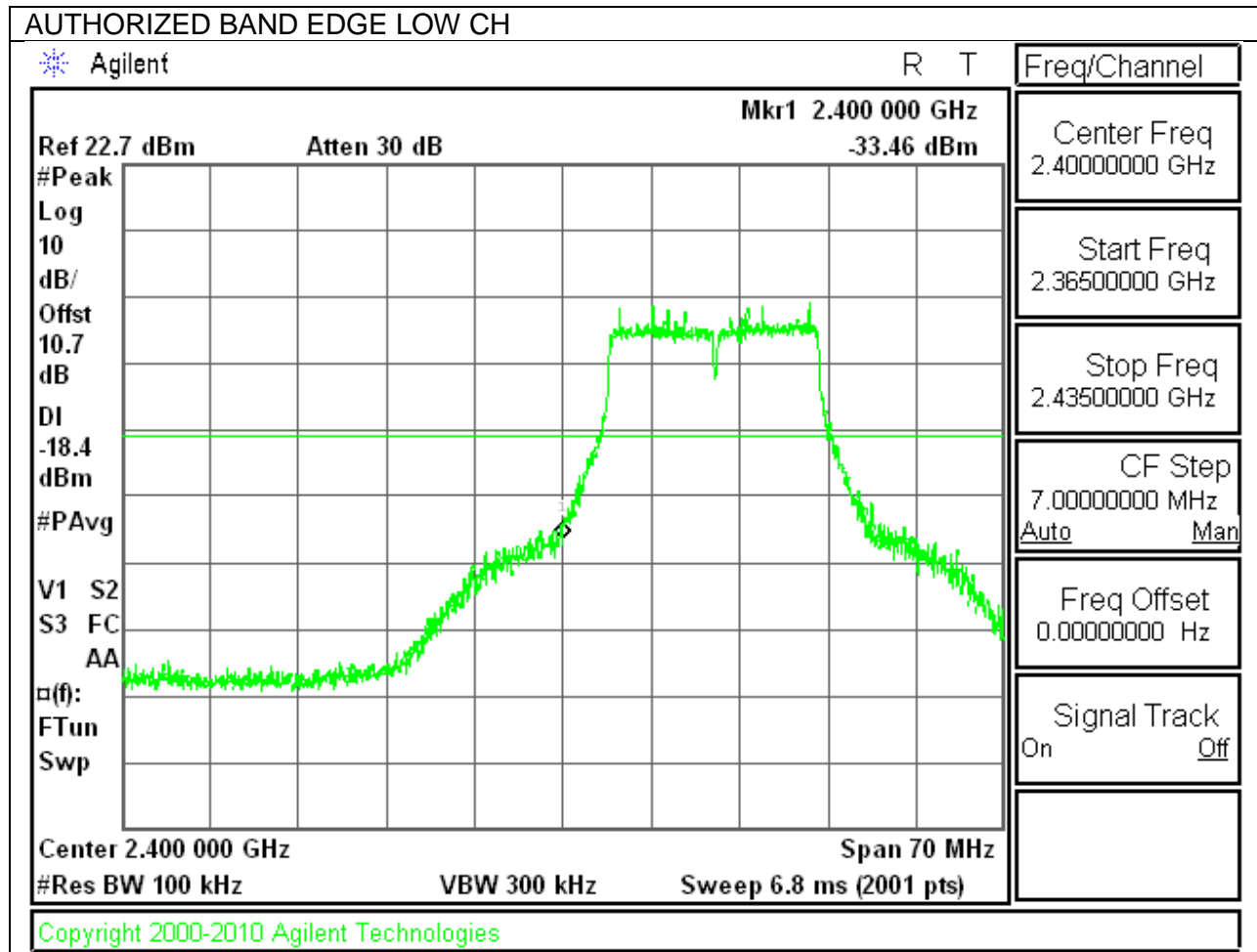
### 9.6.2. 802.11g MODE IN THE 2.4 GHz BAND

#### IN-BAND REFERENCE LEVEL

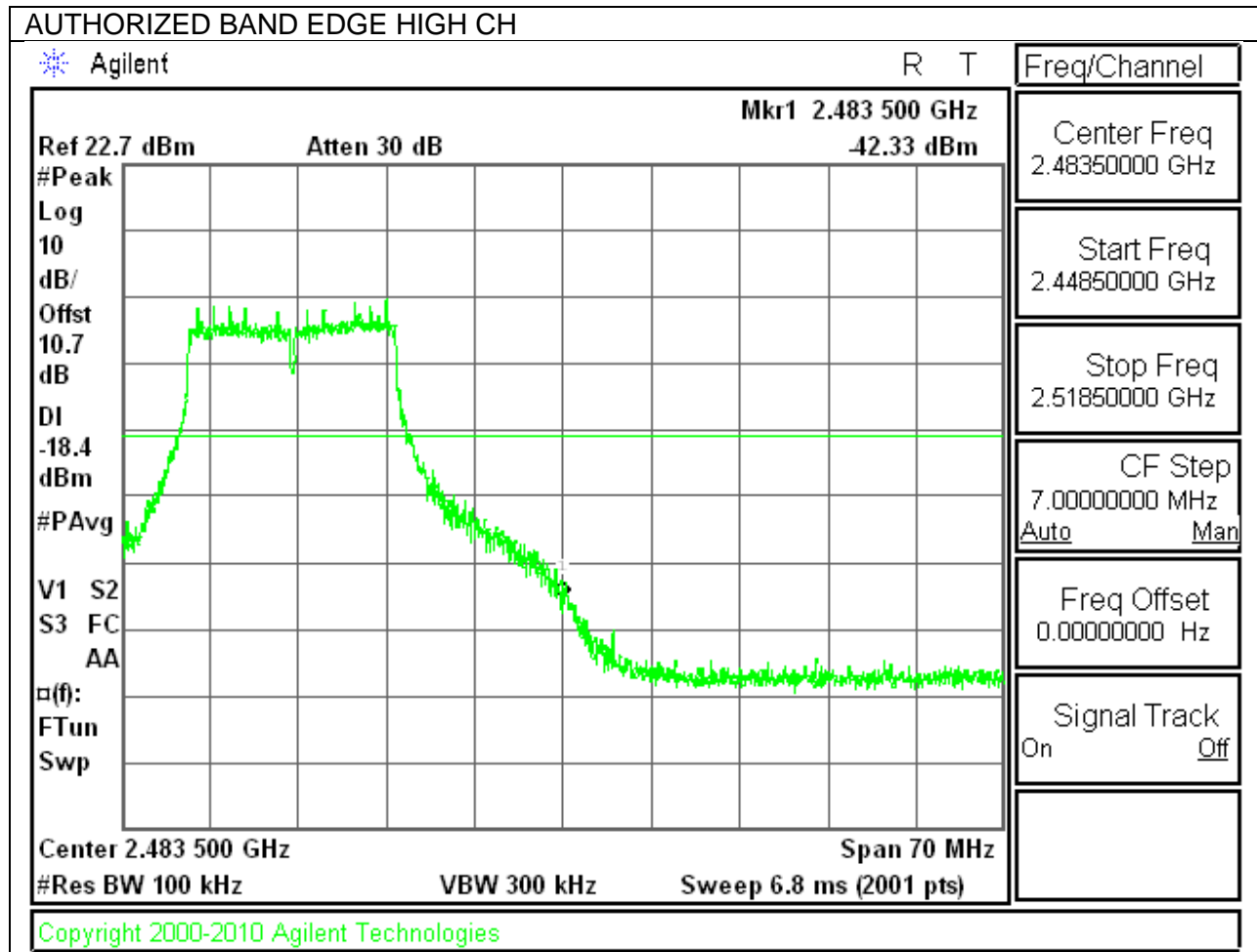




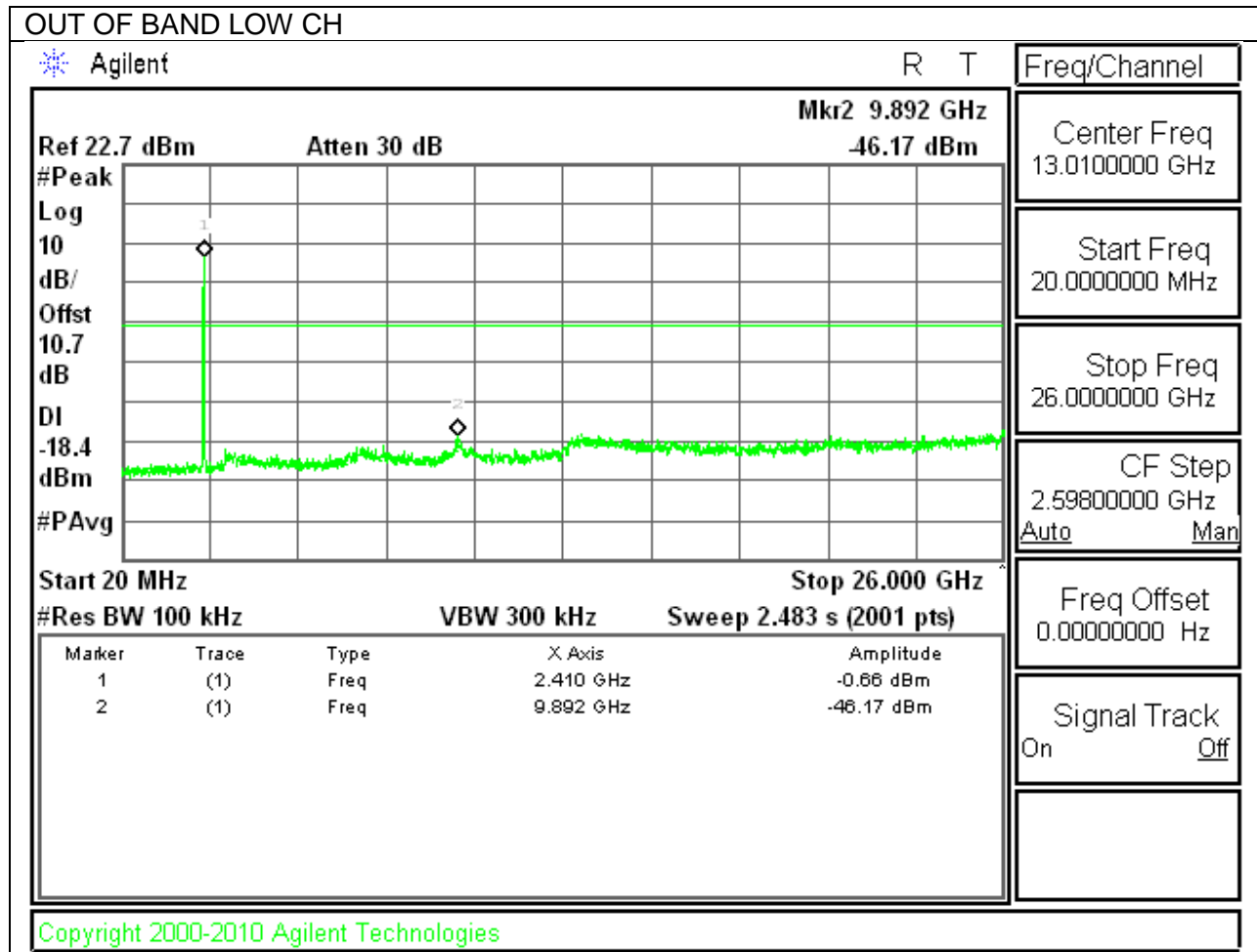
**LOW CHANNEL BANDEDGE**

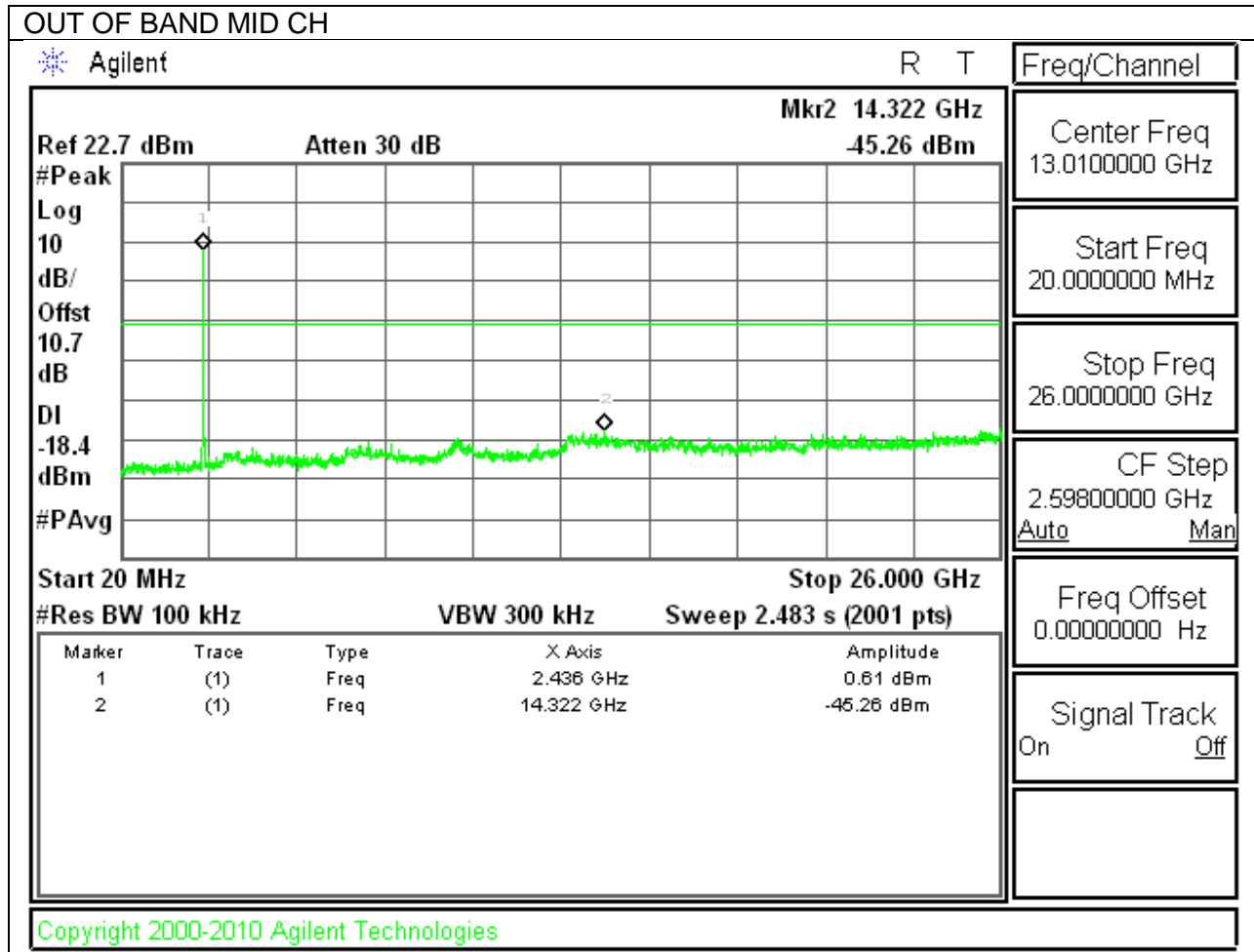


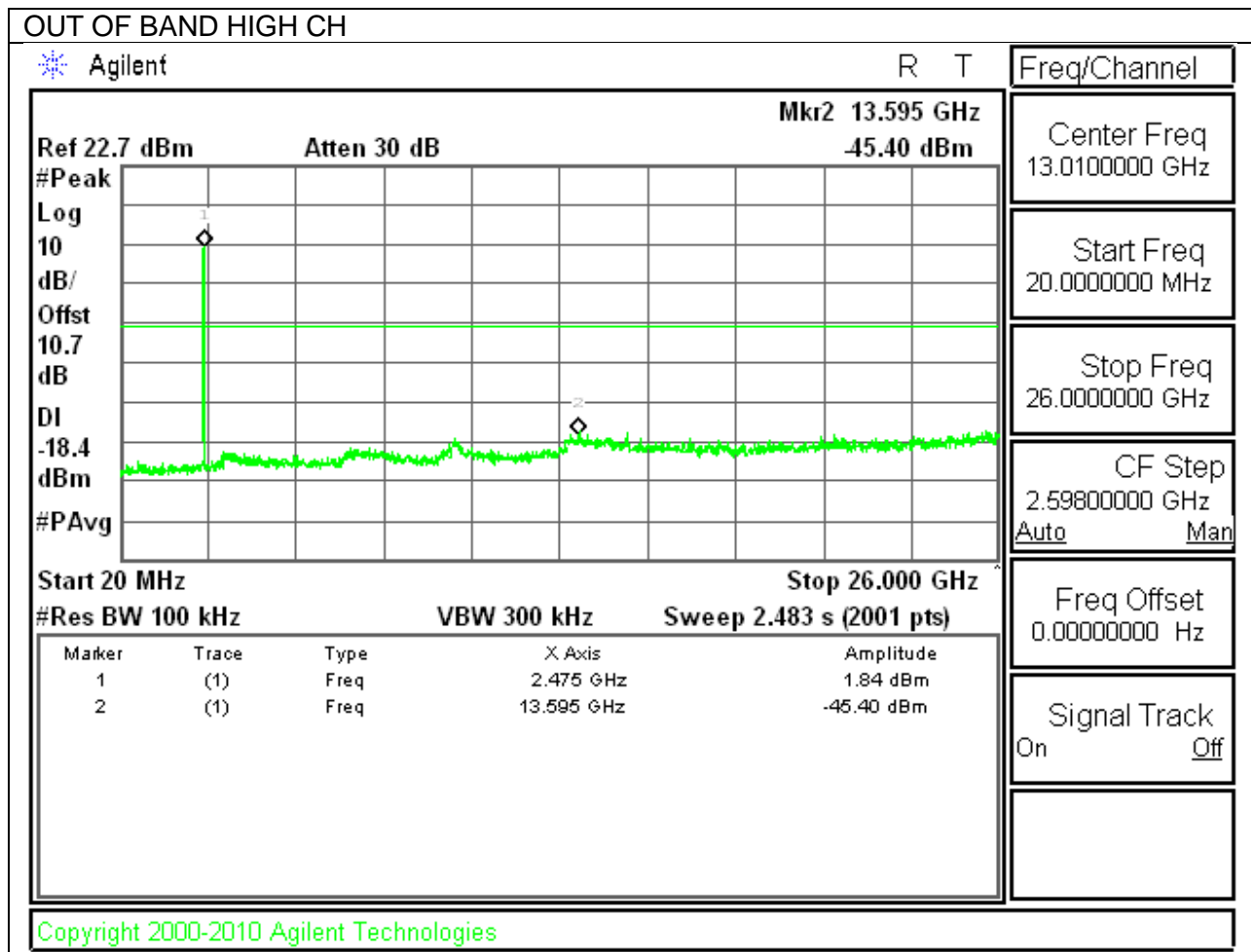
**HIGH CHANNEL BANDEDGE**



**OUT-OF-BAND EMISSIONS**

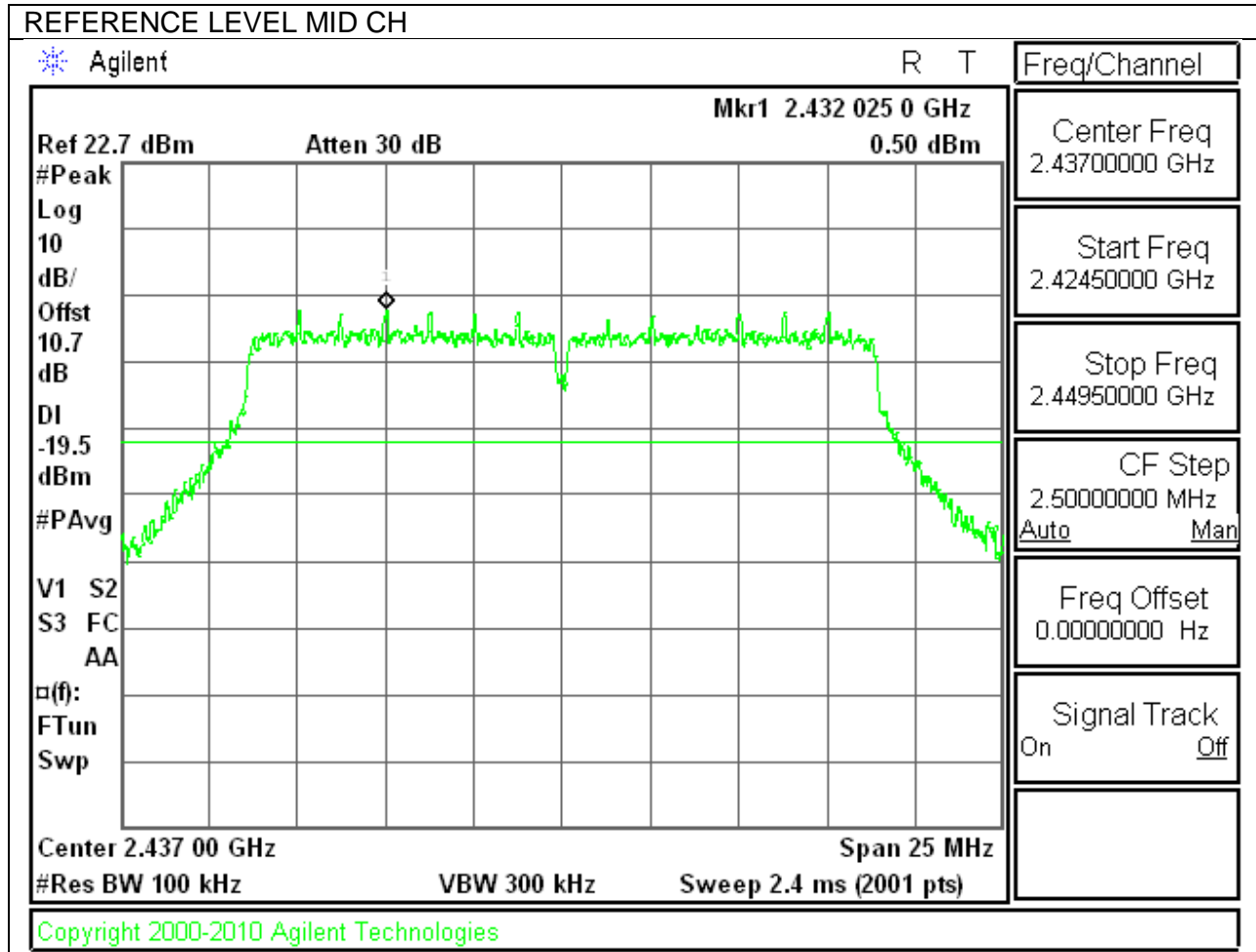




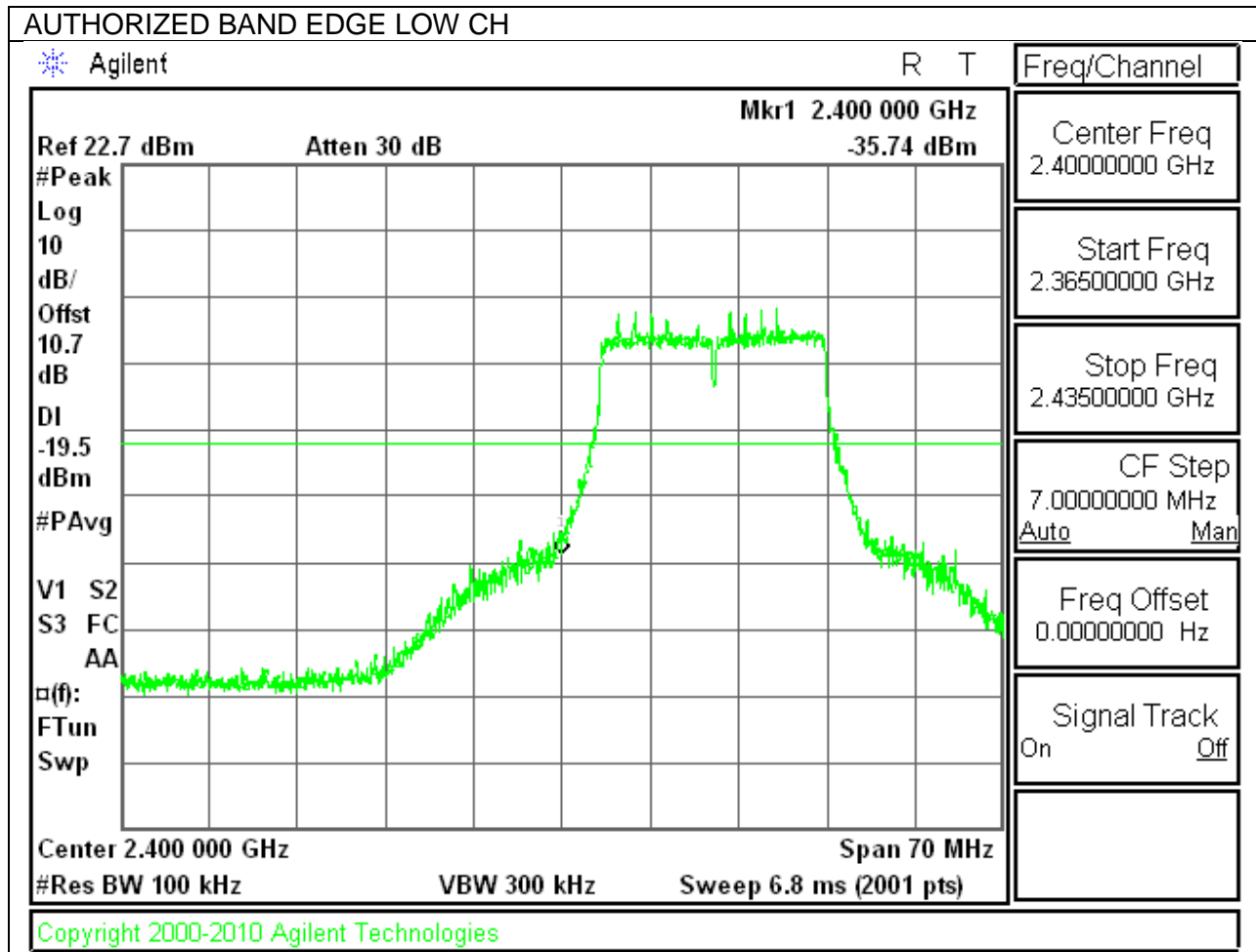


### 9.6.3. 802.11n MODE IN THE 2.4 GHz BAND

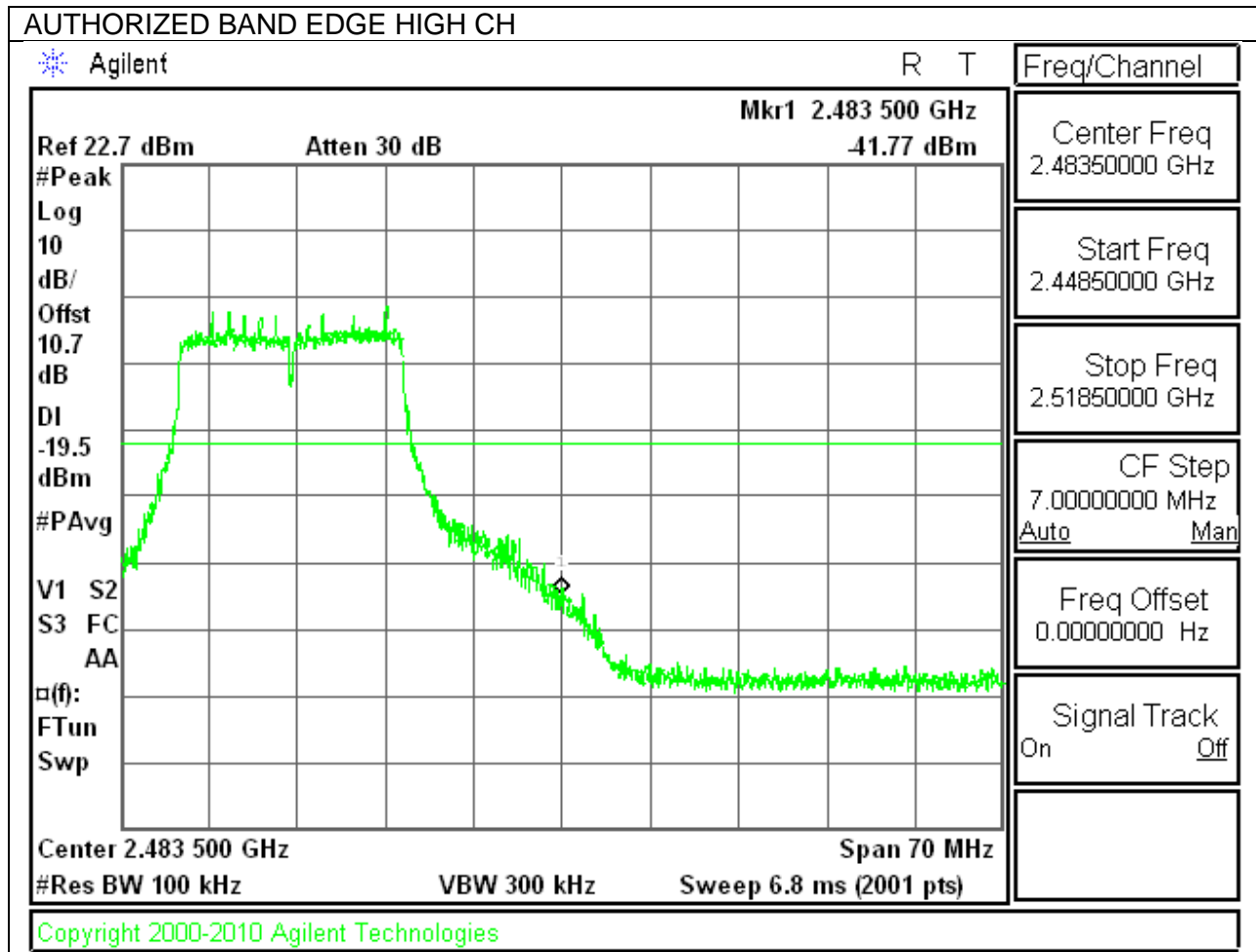
#### IN-BAND REFERENCE LEVEL



**LOW CHANNEL BANDEDGE**

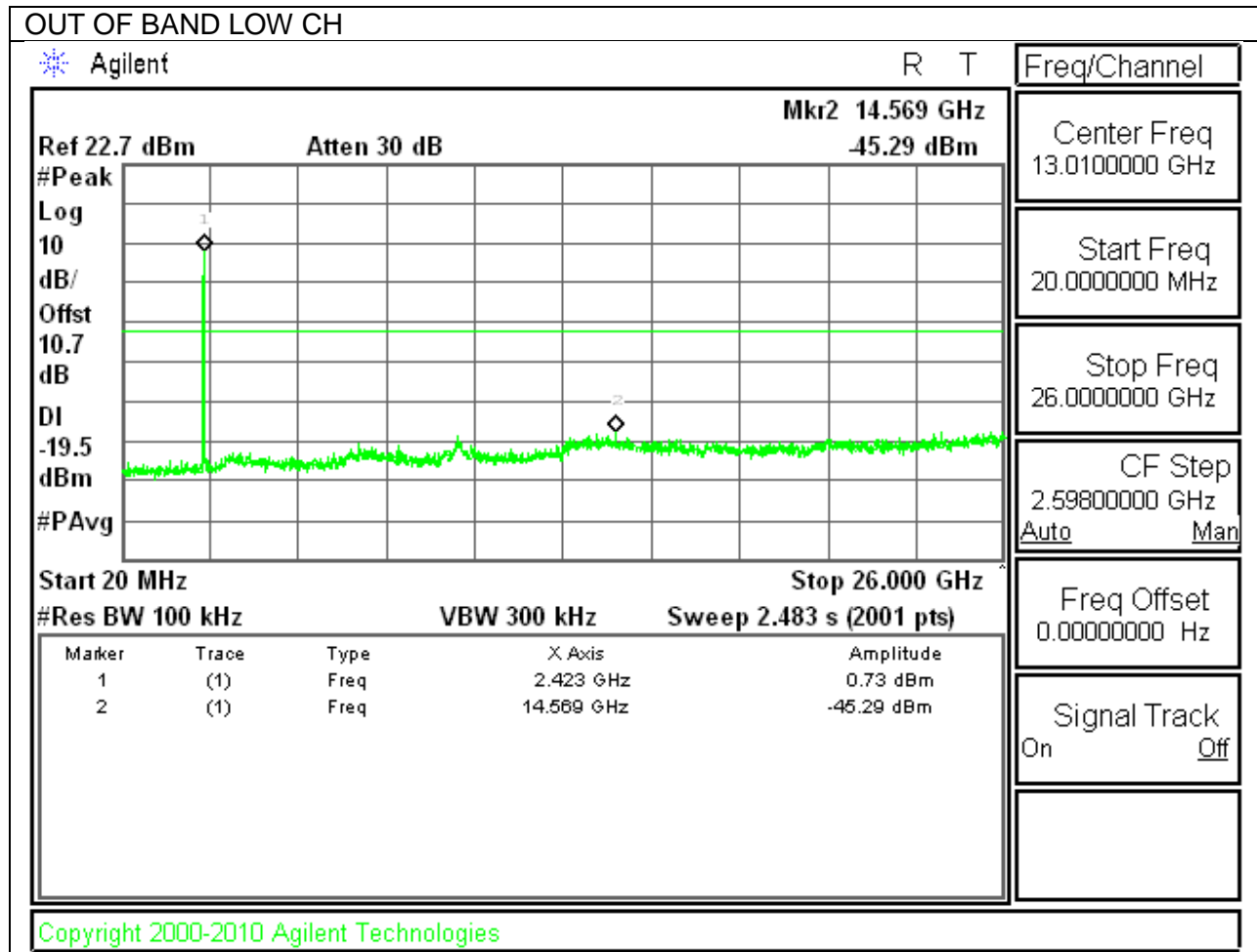


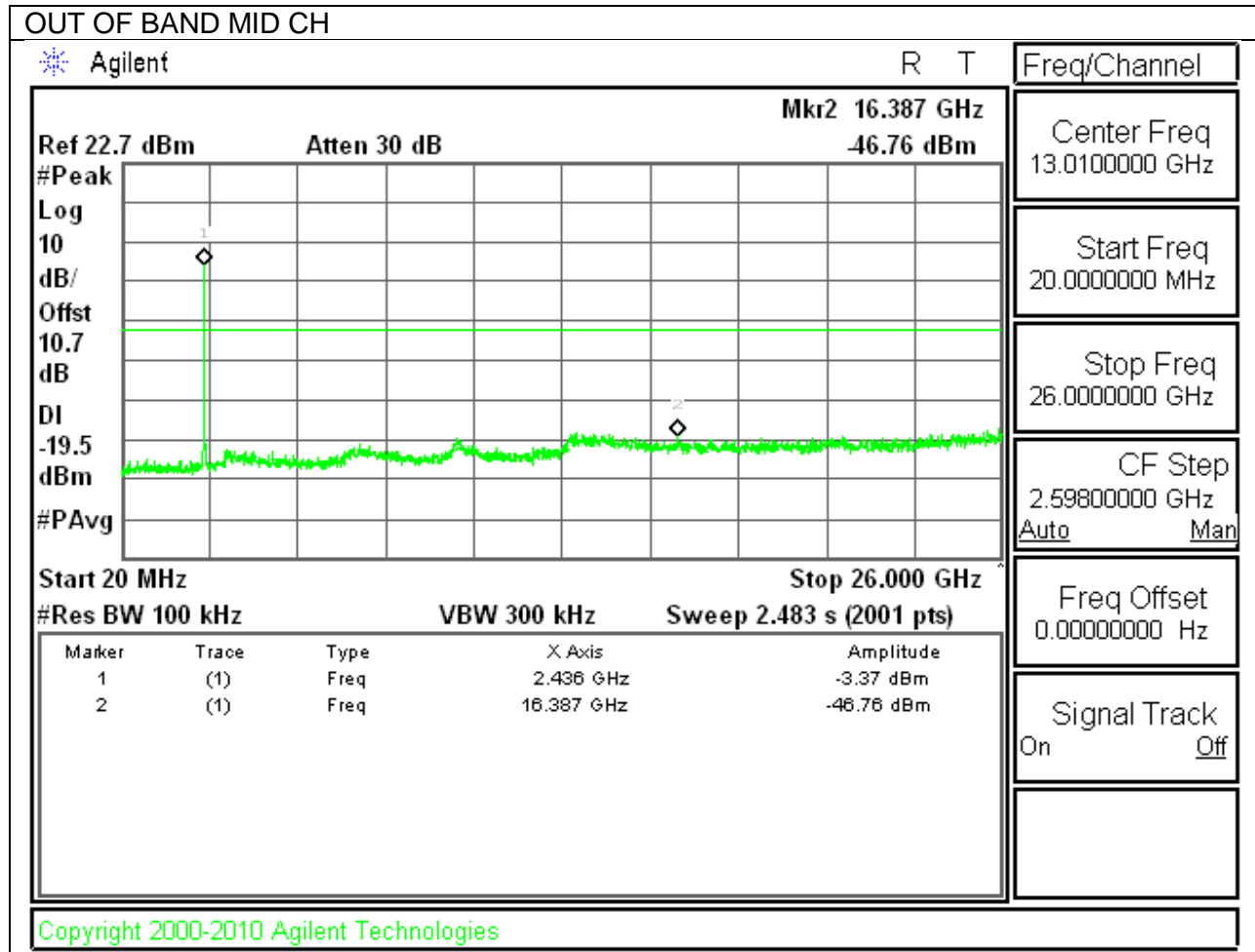
**HIGH CHANNEL BANDEDGE**

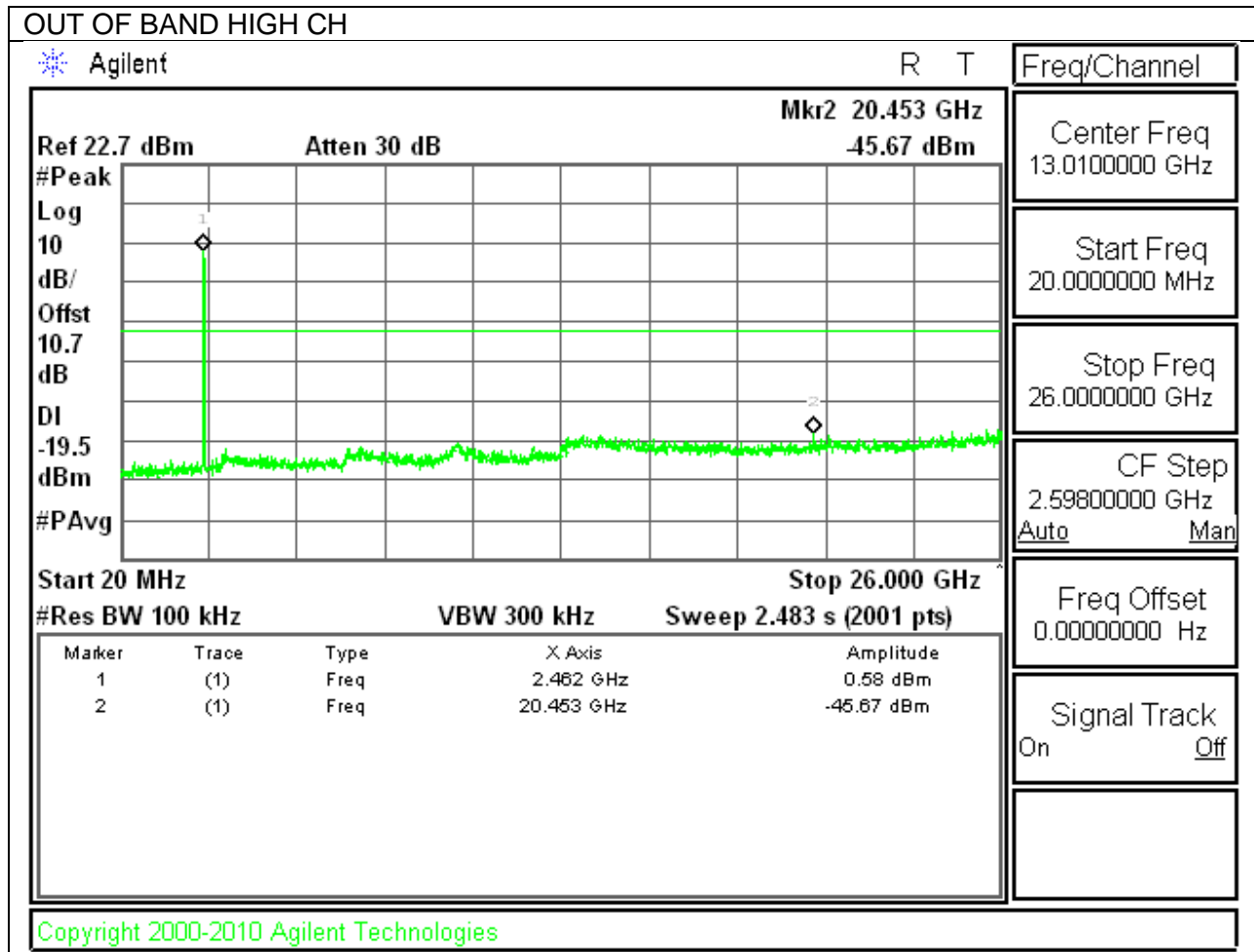




**OUT-OF-BAND EMISSIONS**







## 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.

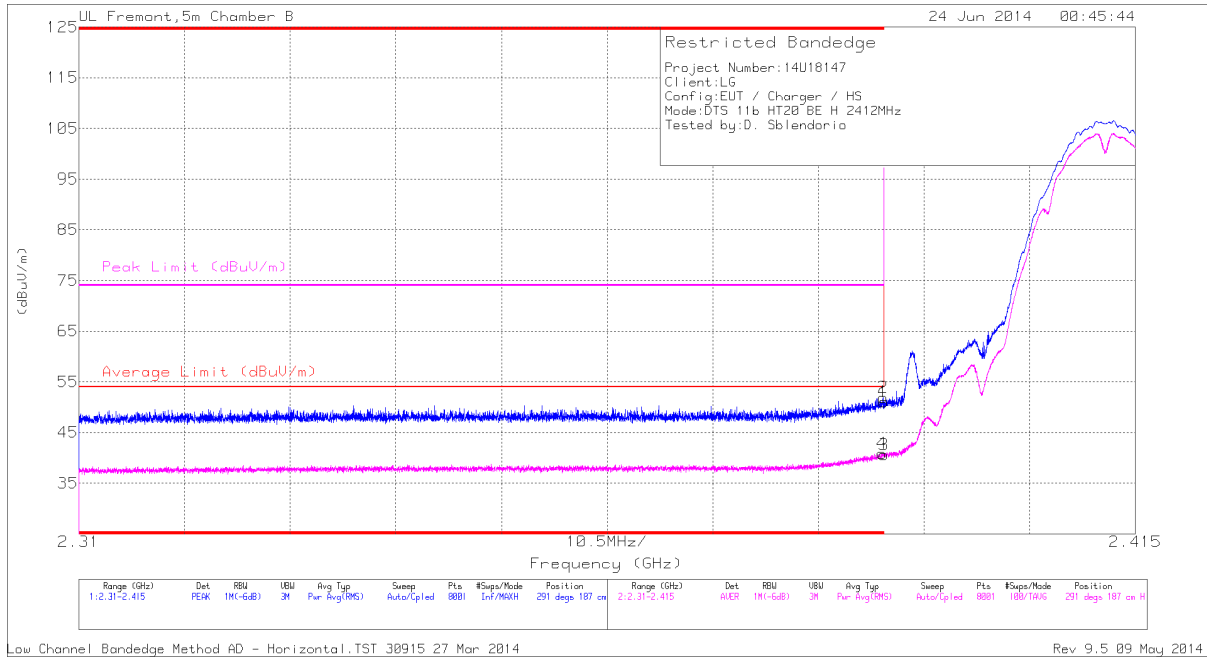
For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and add duty cycle factor for average measurements. Duty cycle factor=  $10\log(1/x)$  For this sample B mode = 0dB (duty cycle >98%); G mode = 0.2dB; N mode = 0.32dB.

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

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

## 10.2. TRANSMITTER ABOVE 1 GHz

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



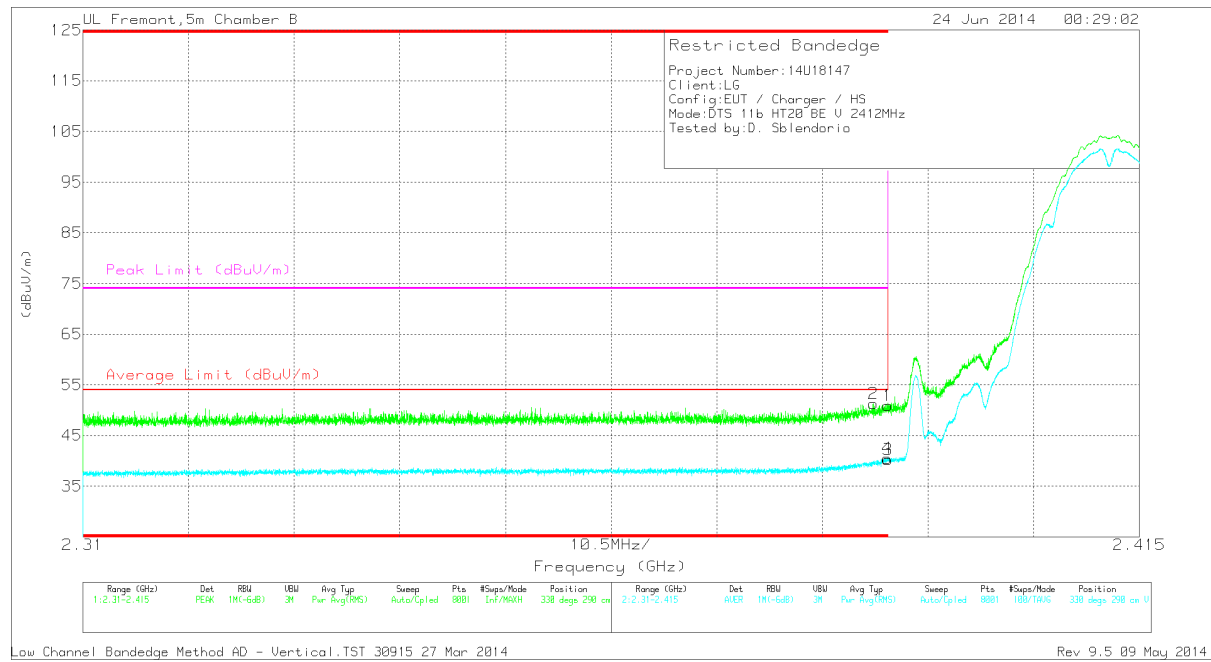
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	41.71	PK	32.1	-22.8	51.01	-	-	74	-22.99	291	187	H
2	* 2.39	42.62	PK	32.1	-22.8	51.92	-	-	74	-22.08	291	187	H
3	* 2.39	31.27	RMS	32.1	-22.8	40.57	54	-13.43	-	-	291	187	H
4	* 2.39	31.61	RMS	32.1	-22.8	40.91	54	-13.09	-	-	291	187	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Ftr/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	41.66	PK	32.1	-22.8	50.96	-	-	74	-23.04	330	290	V
2	* 2.389	41.95	PK	32.1	-22.8	51.25	-	-	74	-22.75	330	290	V
3	* 2.39	30.94	RMS	32.1	-22.8	40.24	54	-13.76	-	-	330	290	V
4	* 2.39	31.21	RMS	32.1	-22.8	40.51	54	-13.49	-	-	330	290	V

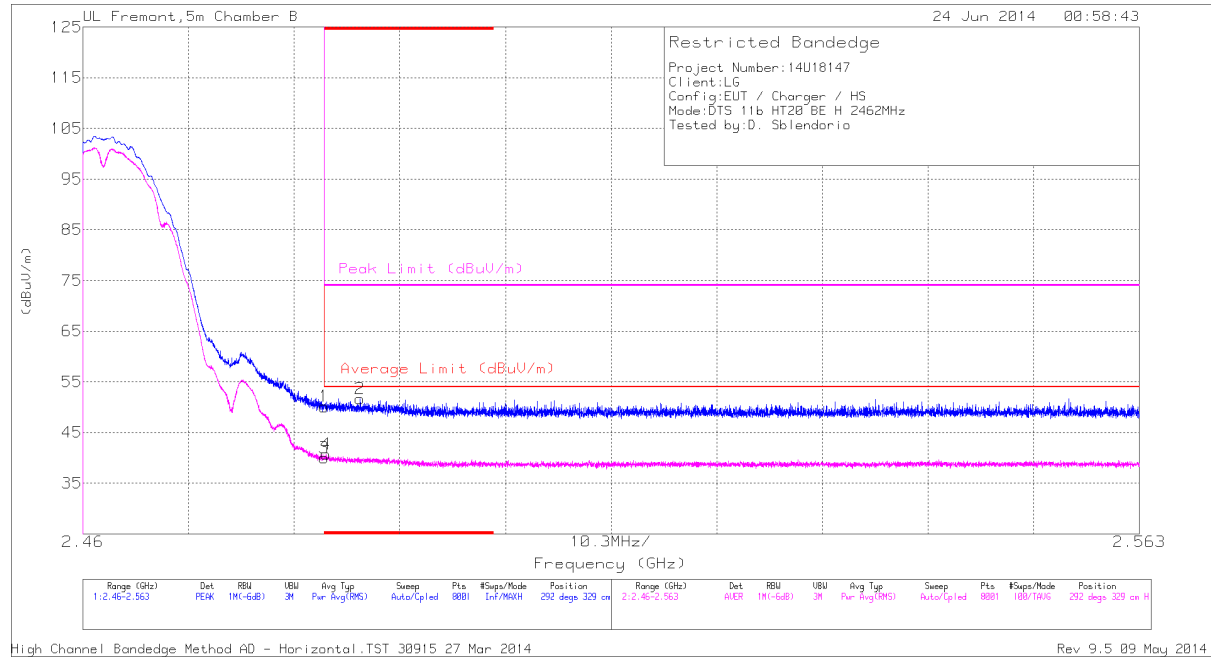
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

**AUTHORIZED BANDEDGE (HIGH CHANNEL)**

**HORIZONTAL**



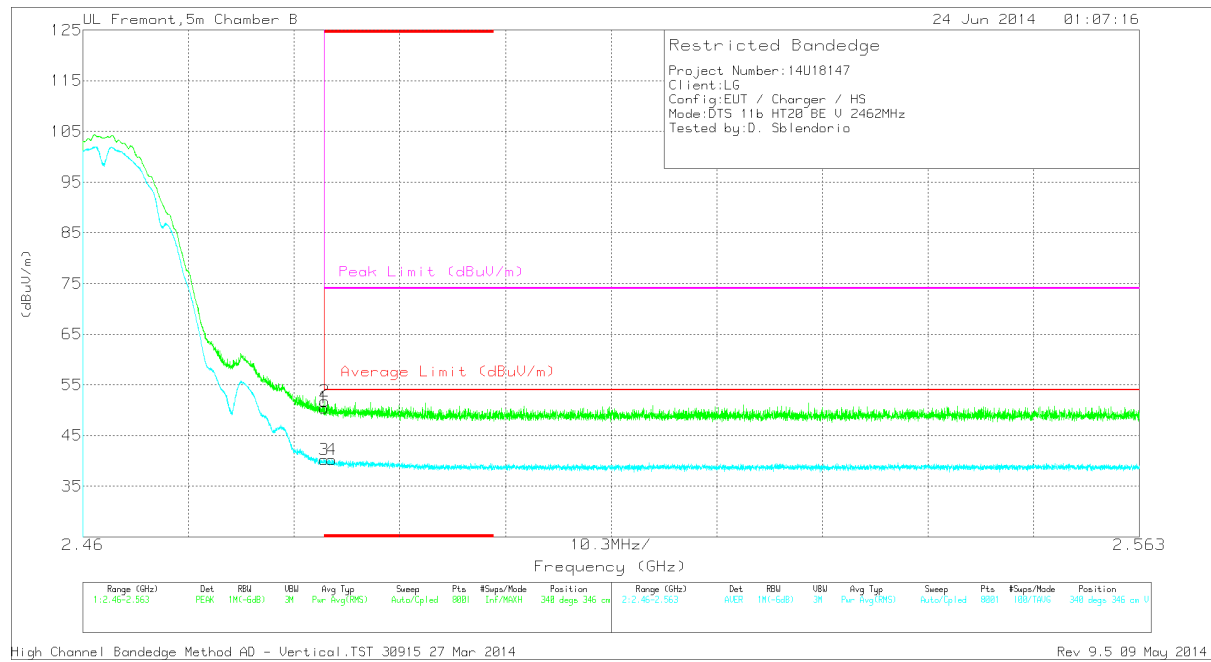
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	40.41	PK	32.4	-22.7	50.11	-	-	74	-23.89	292	329	H
2	* 2.487	41.98	PK	32.4	-22.7	51.68	-	-	74	-22.32	292	329	H
3	* 2.484	30.26	RMS	32.4	-22.7	39.96	54	-14.04	-	-	292	329	H
4	* 2.484	31.05	RMS	32.4	-22.7	40.75	54	-13.25	-	-	292	329	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Ftr/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	40.76	PK	32.4	-22.7	50.46	-	-	74	-23.54	340	346	V
2	* 2.484	42.08	PK	32.4	-22.7	51.78	-	-	74	-22.22	340	346	V
3	* 2.484	30.48	RMS	32.4	-22.7	40.18	54	-13.82	-	-	340	346	V
4	* 2.484	30.55	RMS	32.4	-22.7	40.25	54	-13.75	-	-	340	346	V

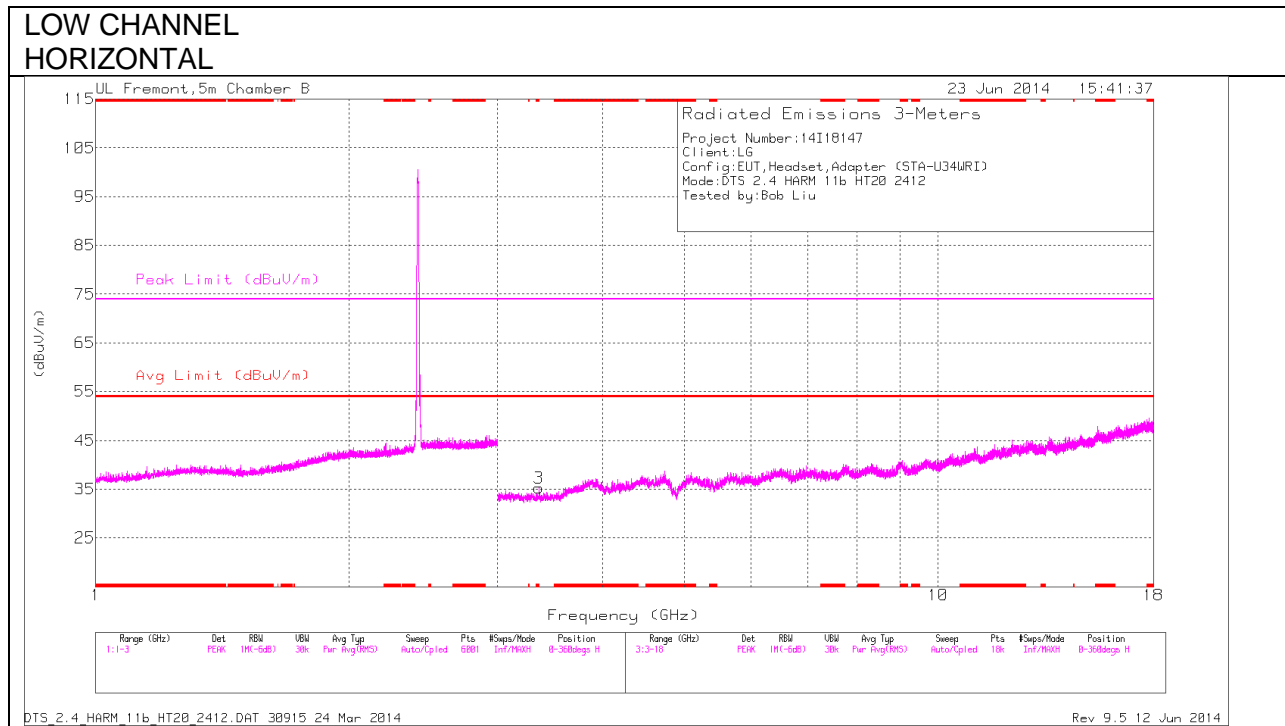
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

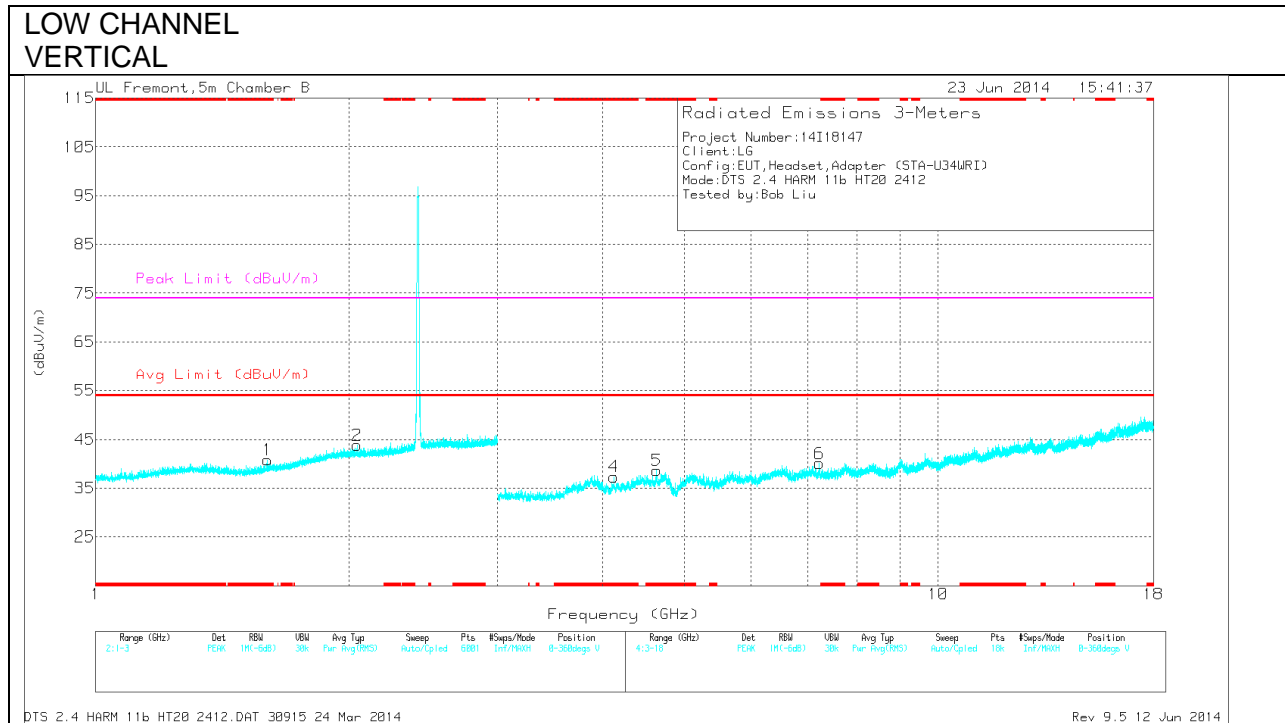
RMS - RMS detection



### 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.



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

LOW CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.6	36.19	PK	28.5	-23.9	0	40.79	-	-	74	-33.21	0-360	99	V
3	* 3.357	33.96	PK	32.8	-31.5	0	35.26	-	-	74	-38.74	0-360	99	H
4	* 4.122	33.73	PK	33.6	-30	0	37.33	-	-	74	-36.67	0-360	200	V
5	* 4.632	35.26	PK	34.2	-30.8	0	38.66	-	-	74	-35.34	0-360	99	V
2	2.043	35.92	PK	31.3	-23.4	0	43.82	-	-	-	-	0-360	203	V
6	7.224	31.39	PK	35.5	-26.8	0	40.09	-	-	-	-	0-360	200	V

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

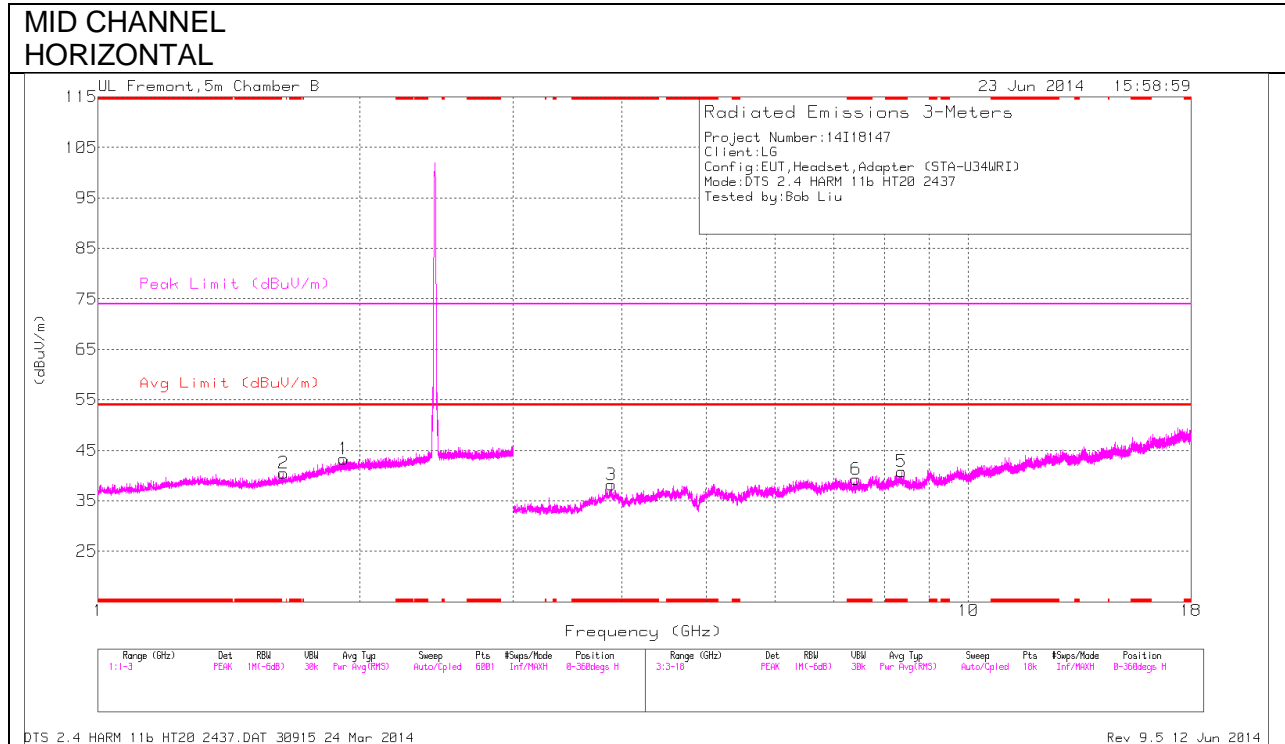
PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr /Pad (dB)	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
* 1.598	43.87	PK2	28.5	-23.9	0	48.47	-	-	74	-25.53	360	101	V
* 3.357	41.41	PK2	32.8	-31.5	0	42.71	-	-	74	-31.29	360	100	H
* 4.121	40.41	PK2	33.6	-30	0	44.01	-	-	74	-29.99	360	204	V
* 4.633	41.27	PK2	34.2	-30.8	0	44.67	-	-	74	-29.33	360	100	V
2.041	42.47	PK2	31.3	-23.4	0	50.37	-	-	-	-	360	203	V
7.222	38.12	PK2	35.5	-26.8	0	46.82	-	-	-	-	360	204	V

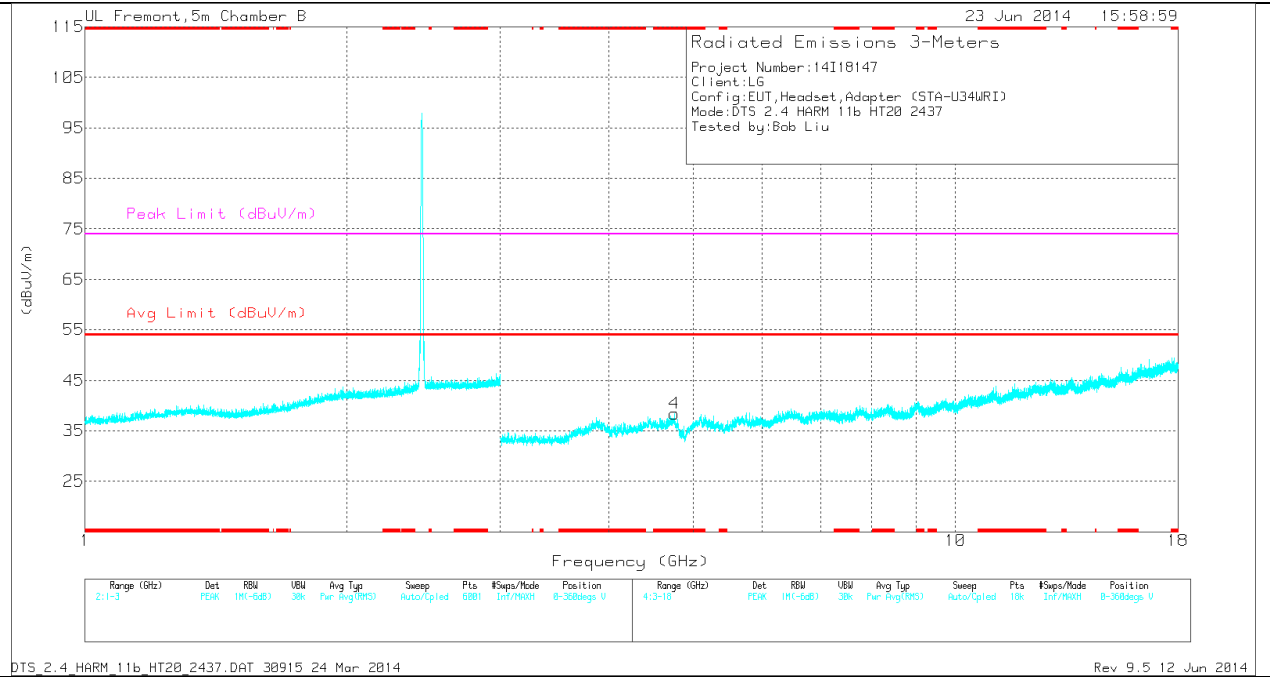
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak



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

MID CHANNEL  
 VERTICAL



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

MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 3.888	34.57	PK	33.8	-30.2	0	38.17	-	-	74	-35.83	0-360	99	H
5	* 8.381	30.06	PK	35.7	-25	0	40.76	-	-	74	-33.24	0-360	99	H
6	* 7.428	30.31	PK	35.6	-26.6	0	39.31	-	-	74	-34.69	0-360	201	H
4	* 4.754	33.49	PK	34.2	-29.3	0	38.39	-	-	74	-35.61	0-360	99	V
2	1.633	35.68	PK	28.7	-23.9	0	40.48	-	-	-	-	0-360	99	H
1	1.915	35.67	PK	31.1	-23.5	0	43.27	-	-	-	-	0-360	99	H

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

PK - Peak detector

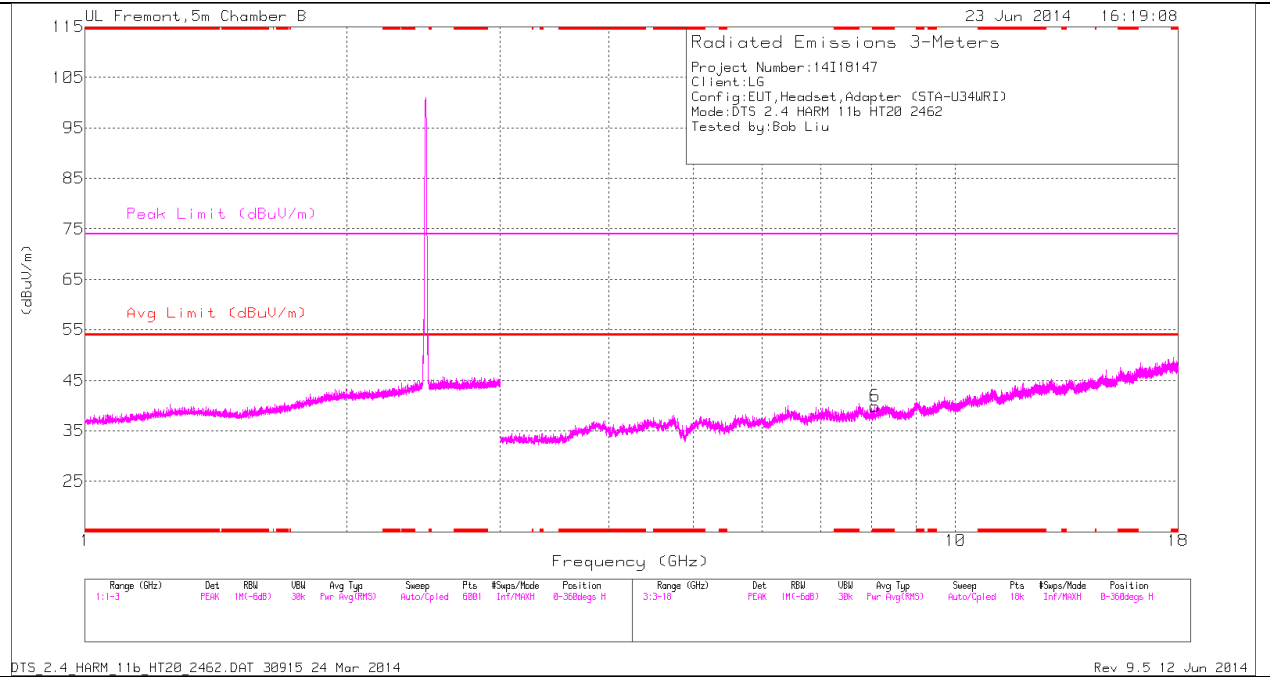
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.888	40.99	PK2	33.8	-30.2	0	44.59	-	-	74	-29.41	359	100	H
* 8.38	37.01	PK2	35.7	-25	0	47.71	-	-	74	-26.29	359	100	H
* 7.428	37.74	PK2	35.6	-26.6	0	46.74	-	-	74	-27.26	359	204	H
* 4.753	40.09	PK2	34.2	-29.3	0	44.99	-	-	74	-29.01	359	100	V
1.634	43.18	PK2	28.7	-23.9	0	47.98	-	-	-	-	359	100	H
1.913	43.54	PK2	31.1	-23.5	0	51.14	-	-	-	-	359	100	H

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

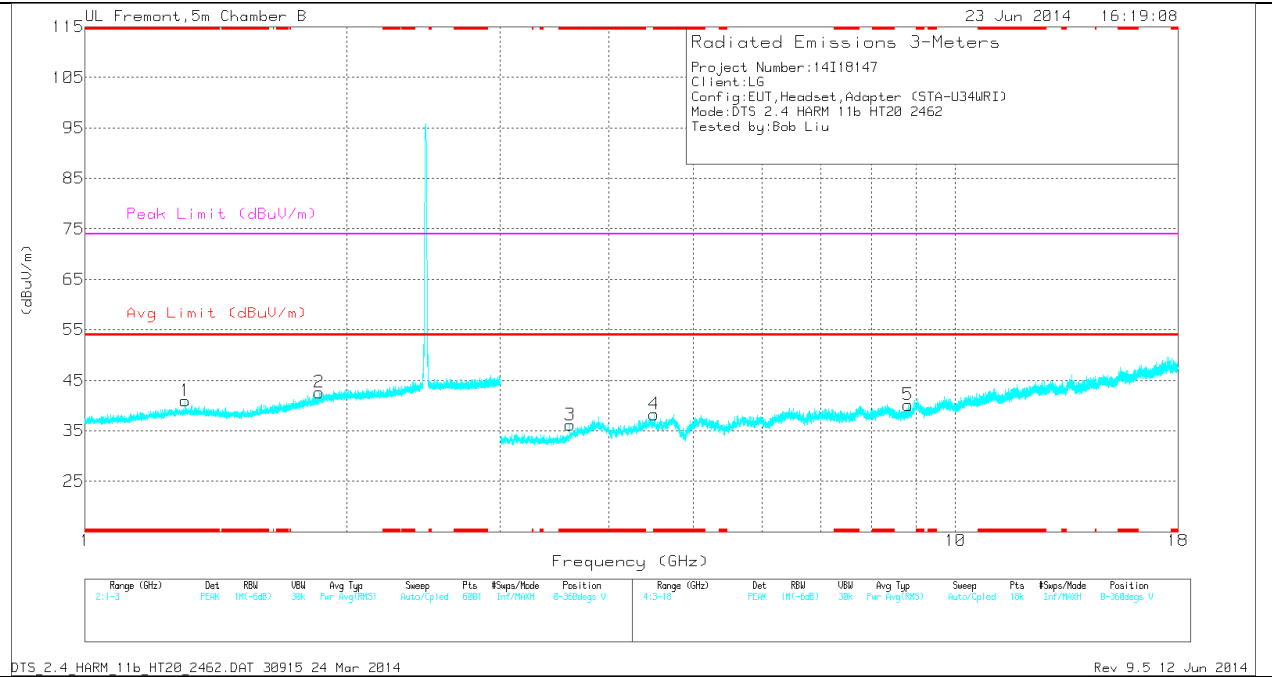
PK2 - KDB558074 Method: Maximum Peak

**HIGH CHANNEL  
 HORIZONTAL**



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

**HIGH CHANNEL  
 VERTICAL**



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



HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.303	36.66	PK	28.8	-24.5	0	40.96	-	-	74	-33.04	0-360	99	V
6	* 8.08	30.44	PK	35.7	-26.3	0	39.84	-	-	74	-34.16	0-360	200	H
3	* 3.606	34.08	PK	33.1	-31	0	36.18	-	-	74	-37.82	0-360	200	V
4	* 4.507	33.75	PK	34	-29.5	0	38.25	-	-	74	-35.75	0-360	99	V
2	1.857	35.6	PK	30.7	-23.7	0	42.6	-	-	-	-	0-360	200	V
5	8.826	29.71	PK	36	-25.6	0	40.11	-	-	-	-	0-360	200	V

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

PK - Peak detector

Radiated Emissions

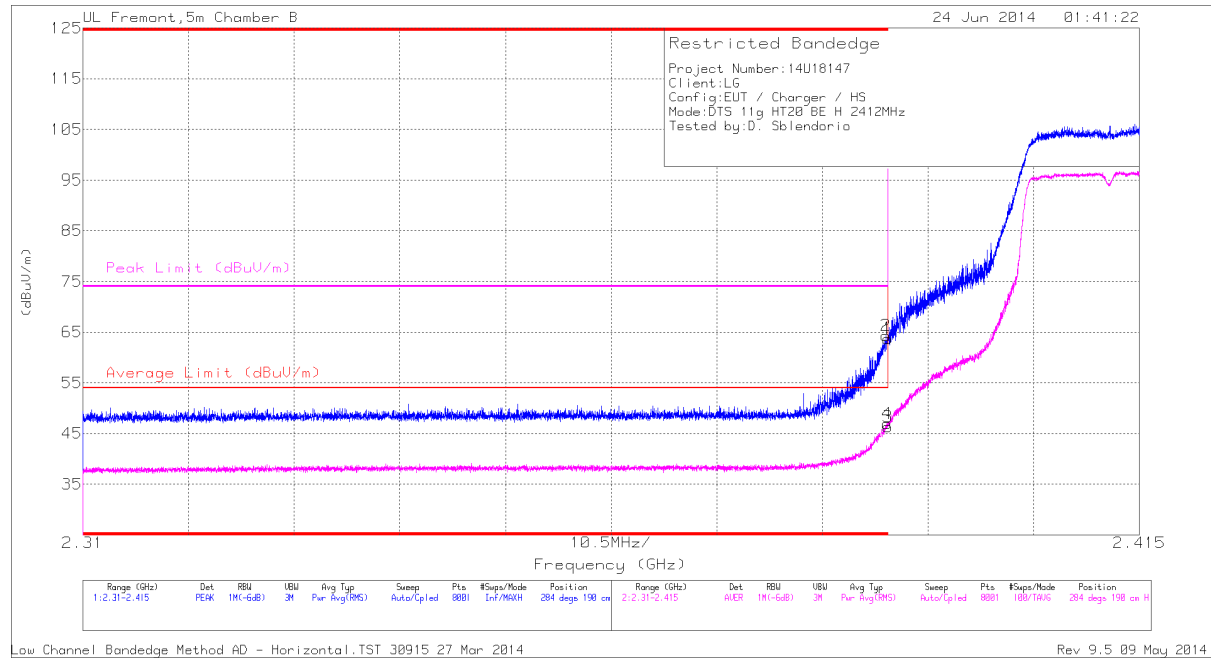
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.304	43.29	PK2	28.8	-24.5	0	47.59	-	-	74	-26.41	359	100	V
* 8.08	37.07	PK2	35.7	-26.3	0	46.47	-	-	74	-27.53	359	200	H
* 3.604	41.49	PK2	33.1	-31	0	43.59	-	-	74	-30.41	359	200	V
* 4.507	40.84	PK2	34	-29.5	0	45.34	-	-	74	-28.66	359	100	V
1.857	42.73	PK2	30.7	-23.7	0	49.73	-	-	-	-	359	200	V
8.824	36.75	PK2	36	-25.6	0	47.15	-	-	-	-	359	200	V

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

PK2 - KDB558074 Method: Maximum Peak

## 10.2.2. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

### HORIZONTAL



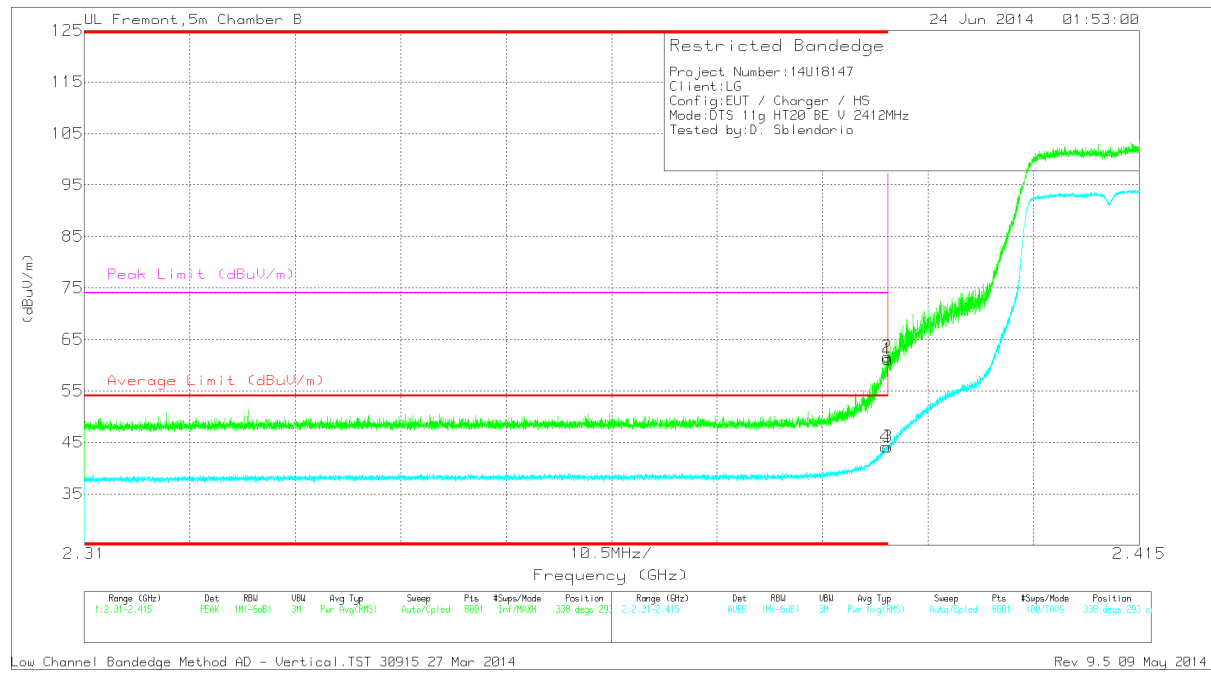
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	54.46	PK	32.1	-22.8	0	63.76	-	-	74	-10.24	284	190	H
2	* 2.39	54.97	PK	32.1	-22.8	0	64.27	-	-	74	-9.73	284	190	H
3	* 2.39	36.85	RMS	32.1	-22.8	.2	46.35	54	-7.65	-	-	284	190	H
4	* 2.39	37.44	RMS	32.1	-22.8	.2	46.94	54	-7.06	-	-	284	190	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL



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	51.86	PK	32.1	-22.8	0	61.16	-	-	74	-12.84	338	293	V
2	* 2.39	52.29	PK	32.1	-22.8	0	61.59	-	-	74	-12.41	338	293	V
3	* 2.39	34.65	RMS	32.1	-22.8	.2	44.15	54	-9.85	-	-	338	293	V
4	* 2.39	34.62	RMS	32.1	-22.8	.2	44.12	54	-9.88	-	-	338	293	V

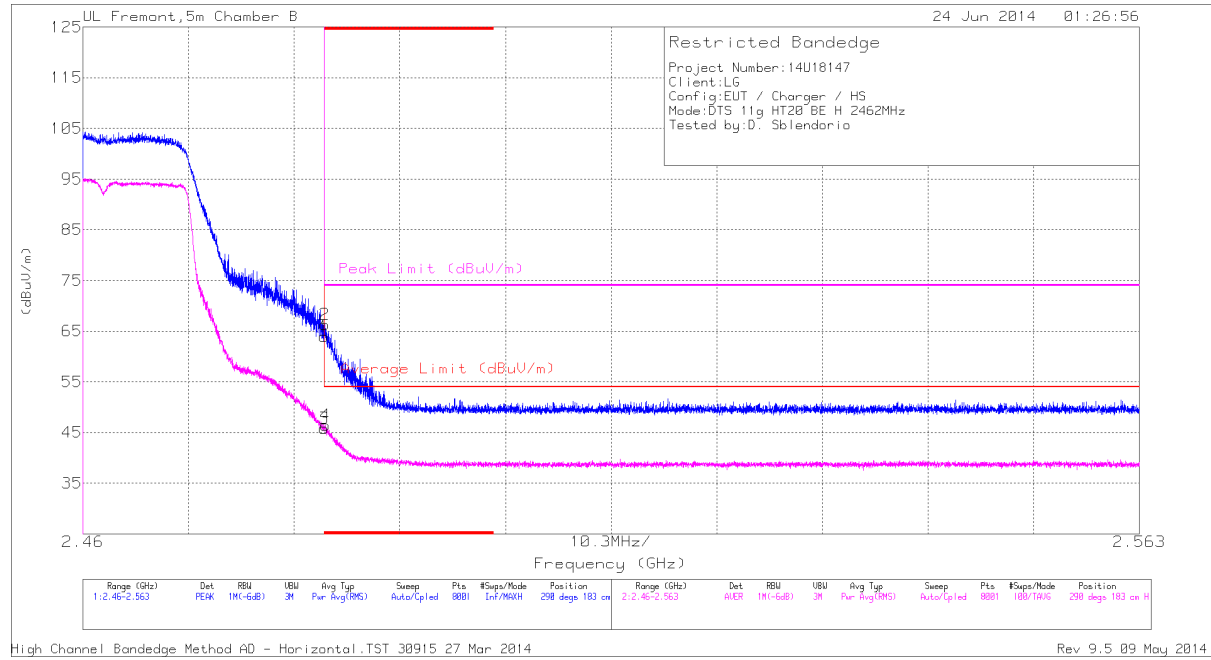
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

### AUTHORIZED BANDEGE (HIGH CHANNEL)

#### HORIZONTAL



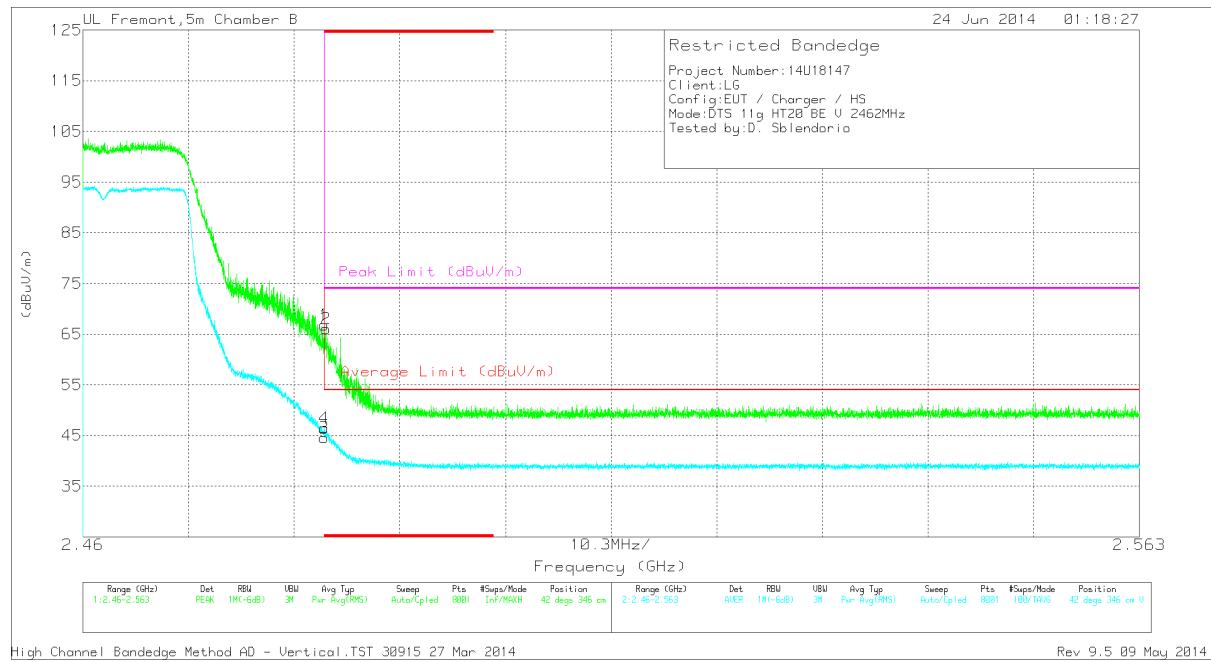
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fitr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	54.27	PK	32.4	-22.7	0	63.97	-	-	74	-10.03	290	183	H
2	* 2.484	56.59	PK	32.4	-22.7	0	66.29	-	-	74	-7.71	290	183	H
3	* 2.484	36.09	RMS	32.4	-22.7	-2	45.99	54	-8.01	-	-	290	183	H
4	* 2.484	36.69	RMS	32.4	-22.7	-2	46.59	54	-7.41	-	-	290	183	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL



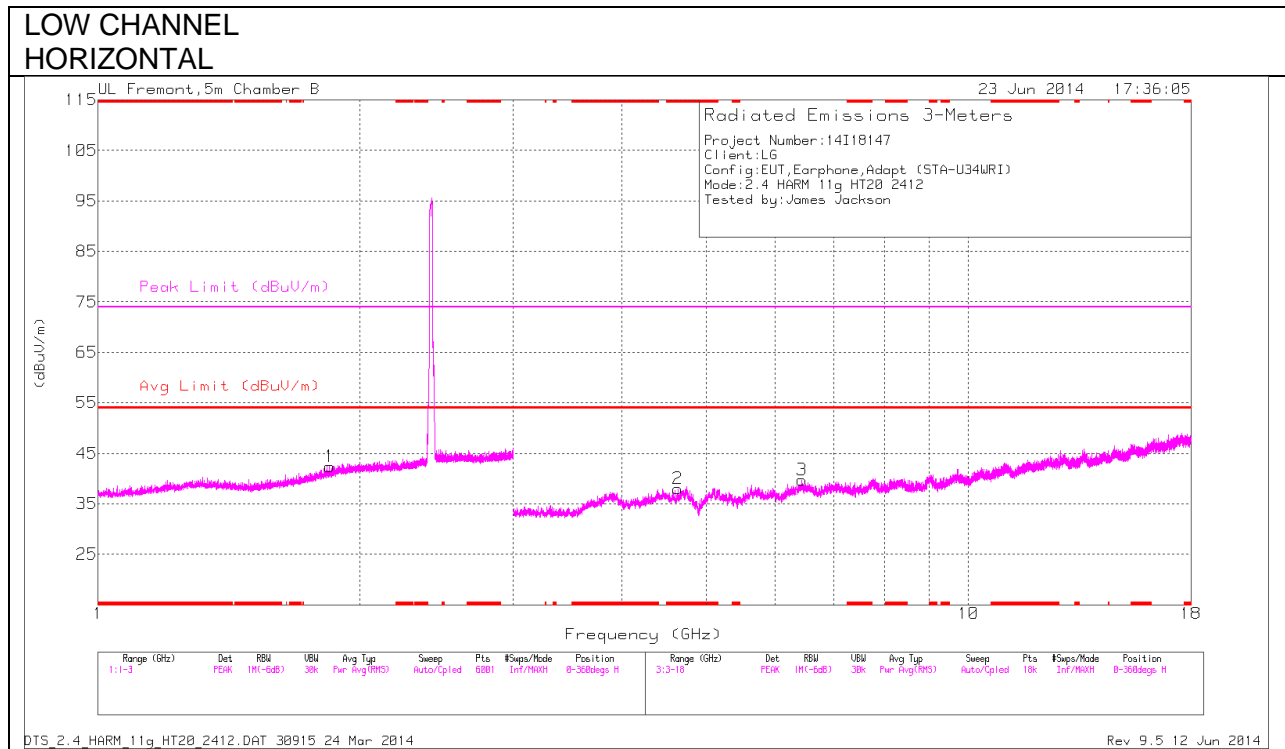
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fitter/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	57.09	PK	32.4	-22.7	0	66.79	-	-	74	-7.21	42	346	V
2	* 2.484	56.35	PK	32.4	-22.7	0	66.05	-	-	74	-7.95	42	346	V
3	* 2.484	34.66	RMS	32.4	-22.7	.2	44.56	54	-9.44	-	-	42	346	V
4	* 2.484	36.51	RMS	32.4	-22.7	.2	46.41	54	-7.59	-	-	42	346	V

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

PK - Peak detector

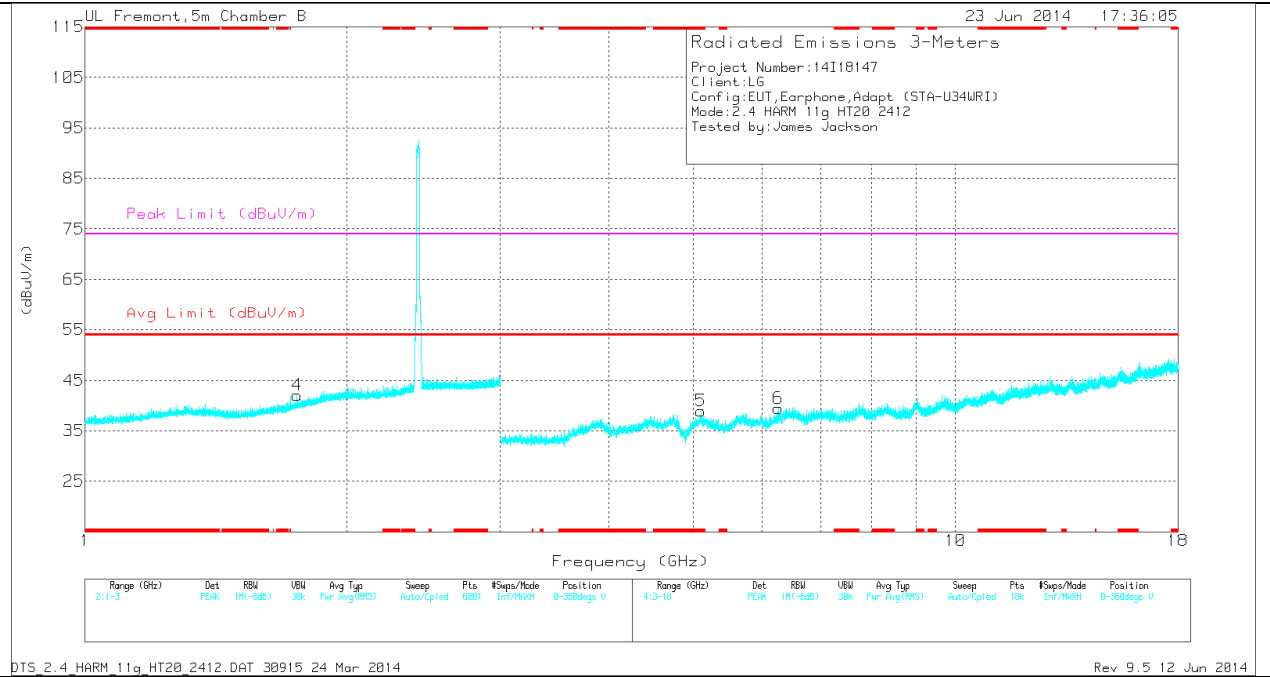
RMS - RMS detection

### 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

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	* 4.634	34.6	PK	34.2	-30.8	0	38	-	-	74	-36	0-360	201	H
5	* 5.101	33.34	PK	34.2	-28.6	0	38.94	-	-	74	-35.06	0-360	203	V
4	1.752	36.01	PK	29.6	-23.6	0	42.01	-	-	-	-	0-360	99	V
1	1.845	35.5	PK	30.6	-23.7	0	42.4	-	-	-	-	0-360	99	H
6	6.254	32.33	PK	35.5	-28.4	0	39.43	-	-	-	-	0-360	203	V
3	6.436	33.22	PK	35.6	-29.1	0	39.72	-	-	-	-	0-360	201	H

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

PK - Peak detector

Radiated Emissions

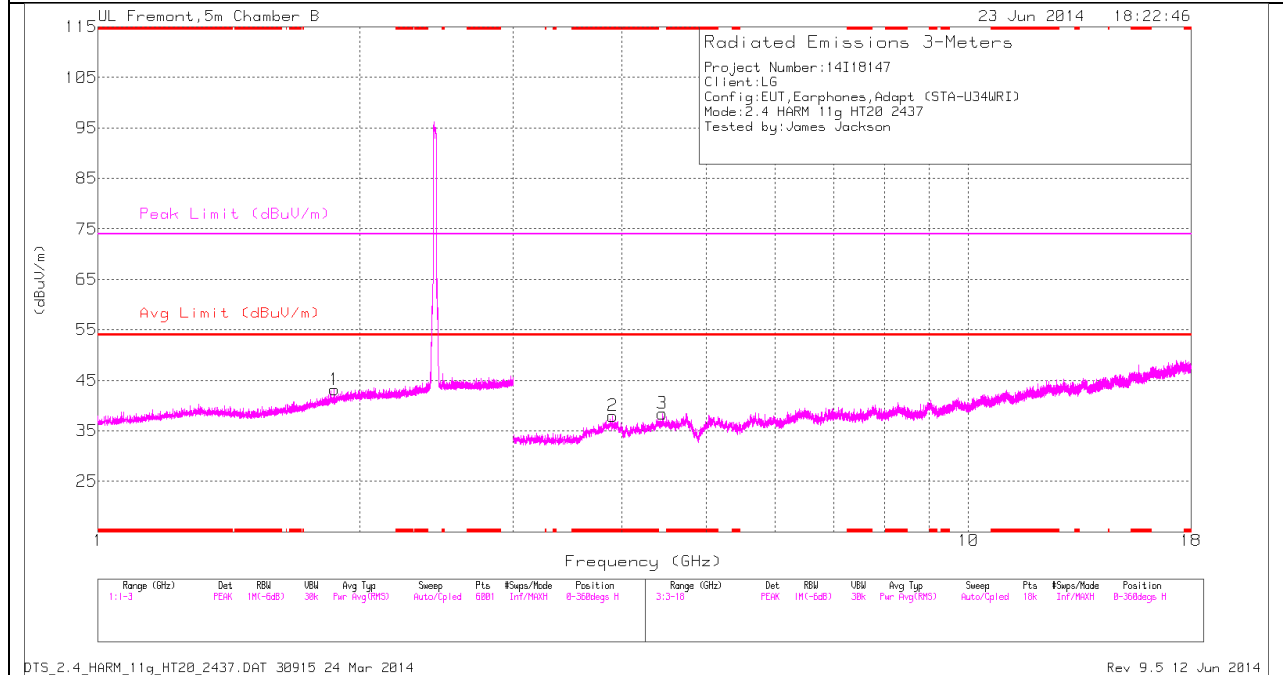
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.634	41.52	PK2	34.2	-30.8	0	44.92	-	-	74	-29.08	359	203	H
* 8.08	37.07	PK2	35.7	-26.3	0	46.47	-	-	74	-27.53	359	200	H
* 5.101	40.35	PK2	34.3	-28.6	0	46.05	-	-	74	-27.95	359	203	V
* 3.604	41.49	PK2	33.1	-31	0	43.59	-	-	74	-30.41	359	200	V
* 4.507	40.84	PK2	34	-29.5	0	45.34	-	-	74	-28.66	359	100	V
8.824	36.75	PK2	36	-25.6	0	47.15	-	-	-	-	359	200	V

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

PK2 - KDB558074 Method: Maximum Peak

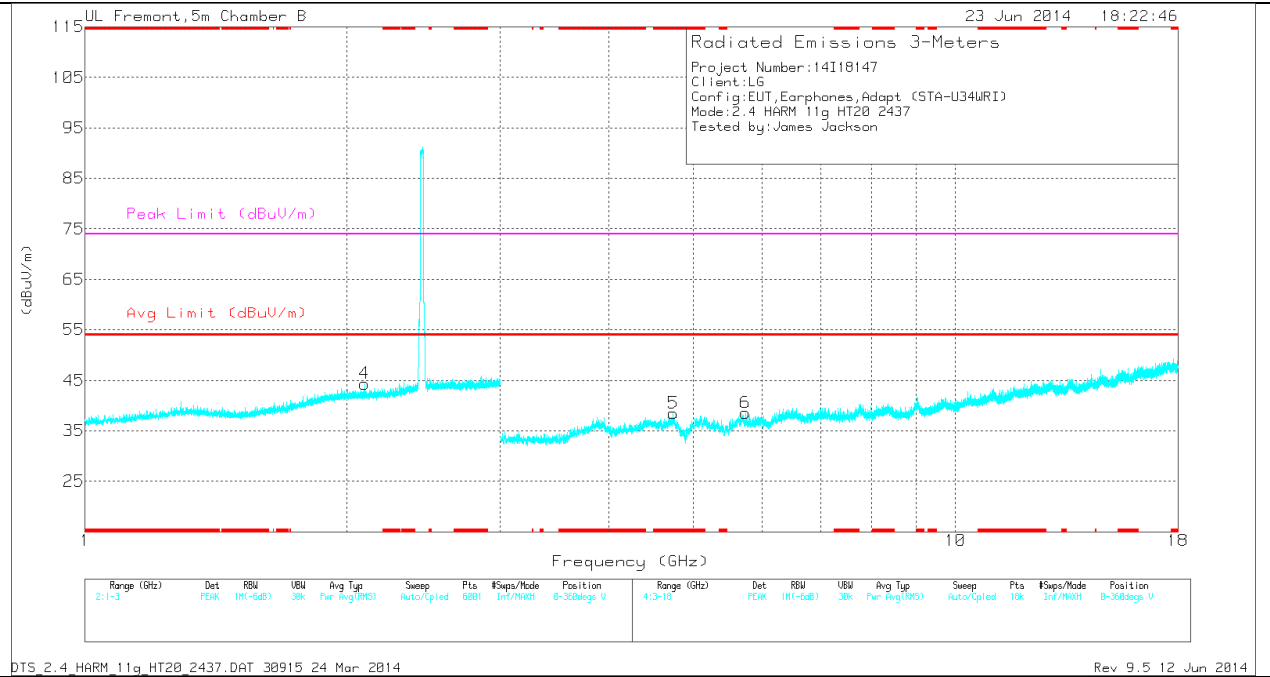


MID CHANNEL  
 HORIZONTAL



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

MID CHANNEL  
 VERTICAL



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

MID CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AFT345 (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	* 3.9	34.45	PK	33.8	-30.3	0	37.95	-	-	74	-36.05	0-360	99	H
5	* 4.737	33.65	PK	34.2	-29.4	0	38.45	-	-	74	-35.55	0-360	200	V
1	1.868	35.97	PK	30.8	-23.6	0	43.17	-	-	-	-	0-360	99	H
4	2.095	36.41	PK	31.2	-23.3	0	44.31	-	-	-	-	0-360	200	V
3	4.451	33.72	PK	33.9	-29.2	0	38.42	-	-	-	-	0-360	99	H
6	5.737	33.34	PK	34.6	-29.4	0	38.54	-	-	-	-	0-360	200	V

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

PK - Peak detector

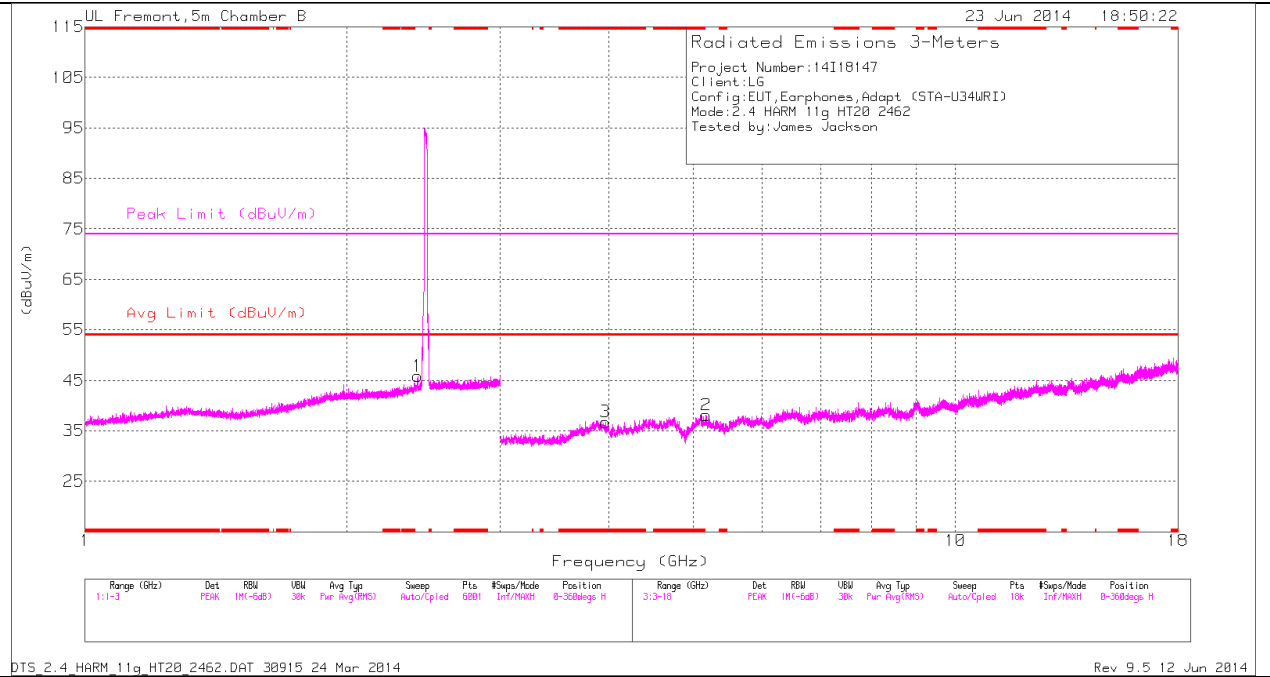
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.899	40.52	PK2	33.8	-30.3	0	44.02	-	-	74	-29.98	359	101	H
* 8.08	37.07	PK2	35.7	-26.3	0	46.47	-	-	74	-27.53	359	200	H
* 4.738	41.1	PK2	34.2	-29.4	0	45.9	-	-	74	-28.1	359	201	V
* 3.604	41.49	PK2	33.1	-31	0	43.59	-	-	74	-30.41	359	200	V
* 4.507	40.84	PK2	34	-29.5	0	45.34	-	-	74	-28.66	359	100	V
8.824	36.75	PK2	36	-25.6	0	47.15	-	-	-	-	359	200	V

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

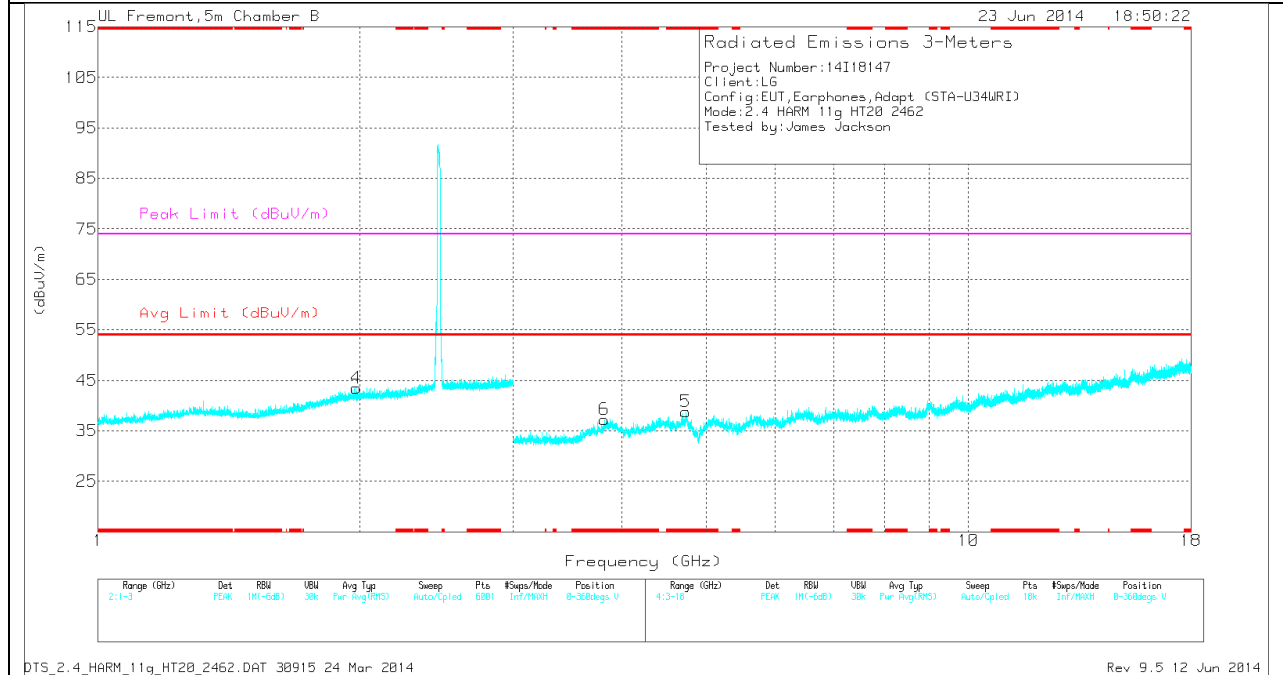
PK2 - KDB558074 Method: Maximum Peak

**HIGH CHANNEL  
 HORIZONTAL**



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

**HIGH CHANNEL  
 VERTICAL**



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

HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 3.961	33.81	PK	33.7	-30.8	0	36.71	-	-	74	-37.29	0-360	99	H
5	* 4.736	33.94	PK	34.2	-29.4	0	38.74	-	-	74	-35.26	0-360	200	V
6	* 3.816	34.12	PK	33.7	-30.6	0	37.22	-	-	74	-36.78	0-360	99	V
4	1.979	35.46	PK	31.3	-23.3	0	43.46	-	-	-	-	0-360	201	V
1	2.41	36.44	PK	32.2	-22.8	0	45.84	-	-	-	-	0-360	201	H
2	5.167	33.88	PK	34.3	-30.1	0	38.08	-	-	-	-	0-360	201	H

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

PK - Peak detector

Radiated Emissions

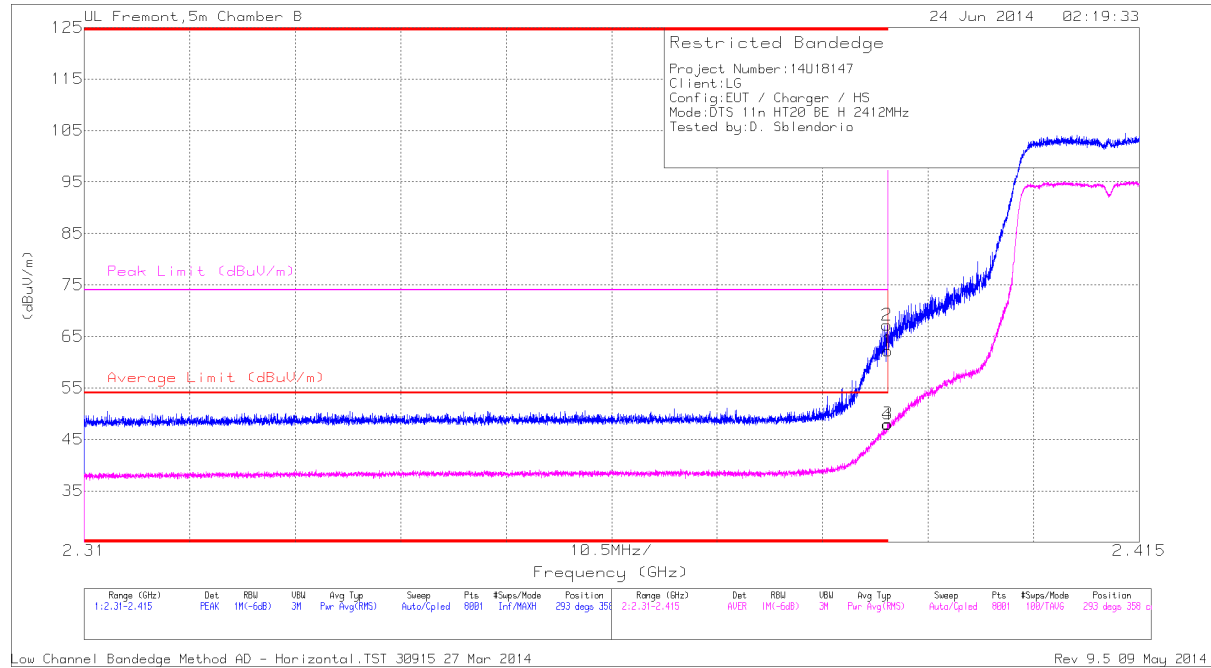
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.959	41.83	PK2	33.7	-30.8	0	44.73	-	-	74	-29.27	359	101	H
* 8.08	37.07	PK2	35.7	-26.3	0	46.47	-	-	74	-27.53	359	200	H
* 4.734	40.66	PK2	34.2	-29.4	0	45.46	-	-	74	-28.54	359	202	V
* 3.604	41.49	PK2	33.1	-31	0	43.59	-	-	74	-30.41	359	200	V
* 4.507	40.84	PK2	34	-29.5	0	45.34	-	-	74	-28.66	359	100	V
8.824	36.75	PK2	36	-25.6	0	47.15	-	-	-	-	359	200	V

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

PK2 - KDB558074 Method: Maximum Peak

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

**HORIZONTAL**



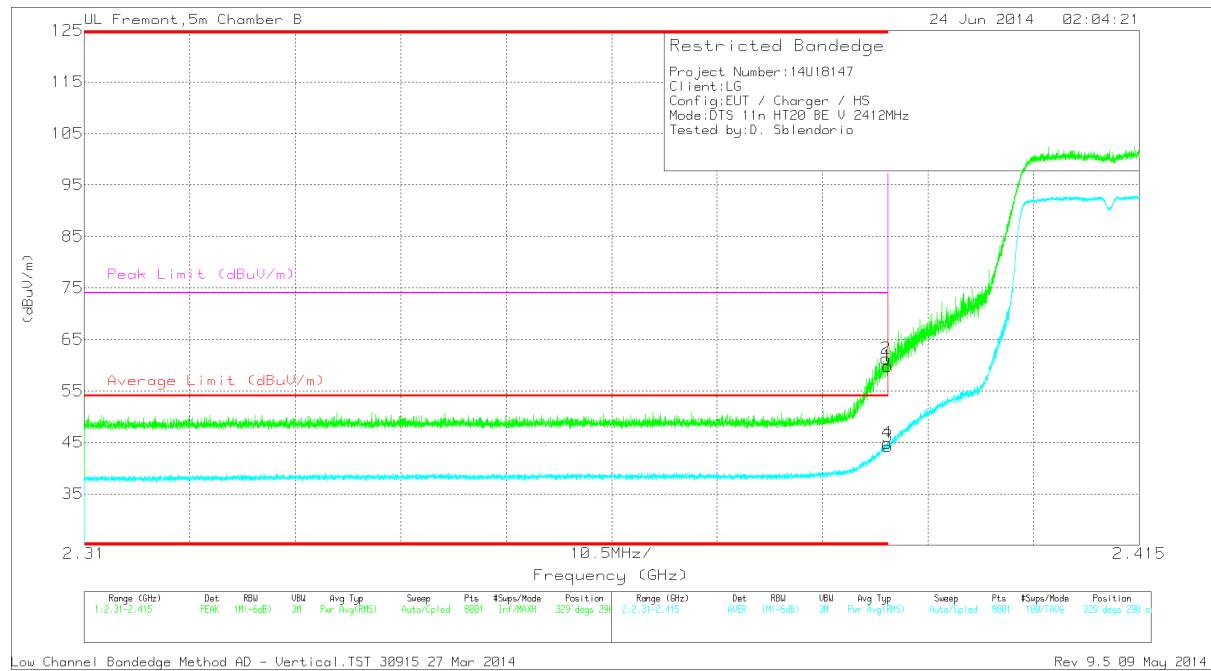
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cb/Filter/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	52.9	PK	32.1	-22.8	0	62.2	-	-	74	-11.8	293	358	H
2	* 2.39	57.9	PK	32.1	-22.8	0	67.2	-	-	74	-6.8	293	358	H
3	* 2.39	38.43	RMS	32.1	-22.8	.3	48.03	54	-5.97	-	-	293	358	H
4	* 2.39	38.27	RMS	32.1	-22.8	.3	47.87	54	-6.13	-	-	293	358	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL



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	* 2.39	50.52	PK	32.1	-22.8	0	59.82	-	-	74	-14.18	329	290	V
2	* 2.39	51.98	PK	32.1	-22.8	0	61.28	-	-	74	-12.72	329	290	V
3	* 2.39	34.64	RMS	32.1	-22.8	.3	44.24	54	-9.76	-	-	329	290	V
4	* 2.39	35.31	RMS	32.1	-22.8	.3	44.91	54	-9.09	-	-	329	290	V

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

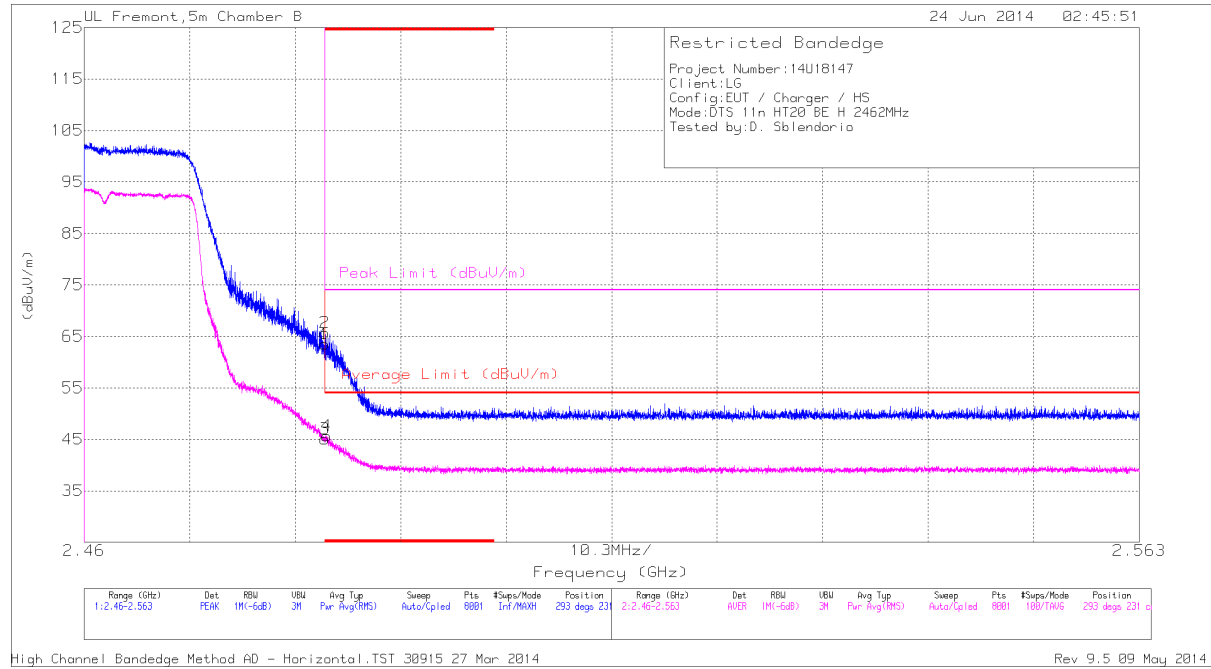
PK - Peak detector

RMS - RMS detection



### AUTHORIZED BANDEGE (HIGH CHANNEL)

#### HORIZONTAL



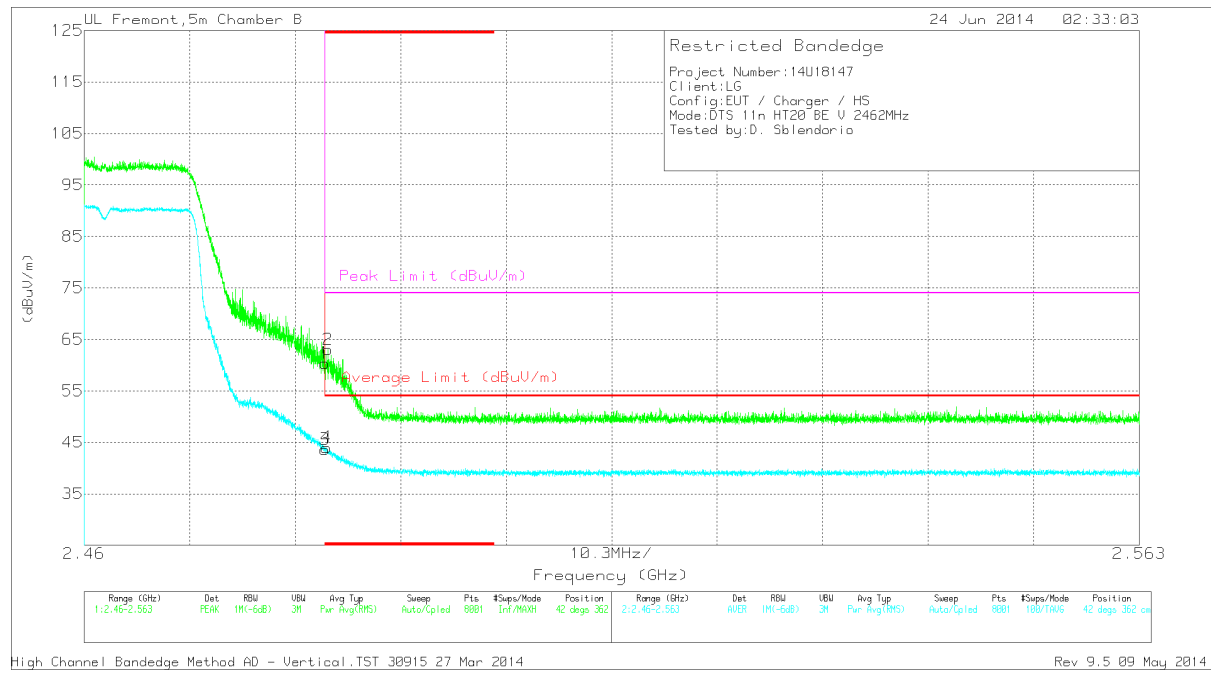
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	53.8	PK	32.4	-22.7	0	63.5	-	-	74	-10.5	293	231	H
2	* 2.484	55.97	PK	32.4	-22.7	0	65.67	-	-	74	-8.33	293	231	H
3	* 2.484	35.06	RMS	32.4	-22.7	.3	45.06	54	-8.94	-	-	293	231	H
4	* 2.484	35.67	RMS	32.4	-22.7	.3	45.67	54	-8.33	-	-	293	231	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL



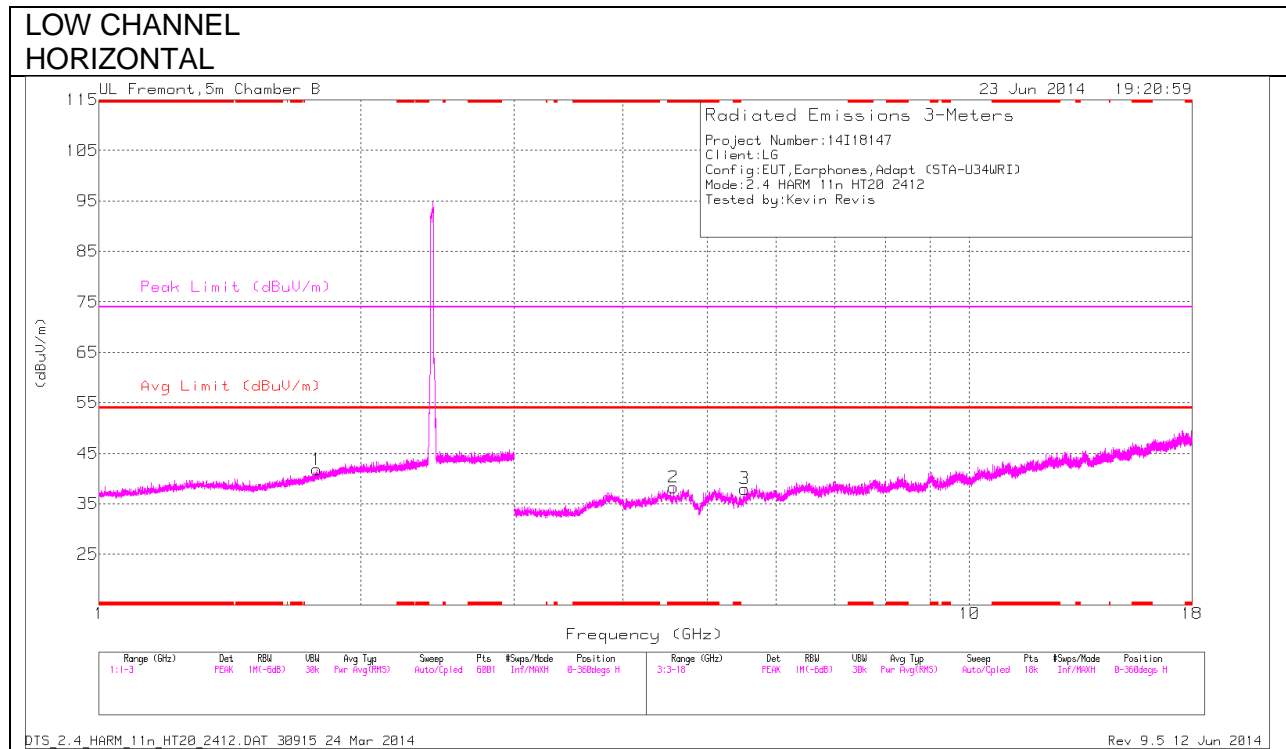
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cb/Filter/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	50.67	PK	32.4	-22.7	0	60.37	-	-	74	-13.63	42	362	V
2	* 2.484	53.32	PK	32.4	-22.7	0	63.02	-	-	74	-10.98	42	362	V
3	* 2.484	33.64	RMS	32.4	-22.7	.3	43.64	54	-10.36	-	-	42	362	V
4	* 2.484	34	RMS	32.4	-22.7	.3	44	54	-10	-	-	42	362	V

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

PK - Peak detector

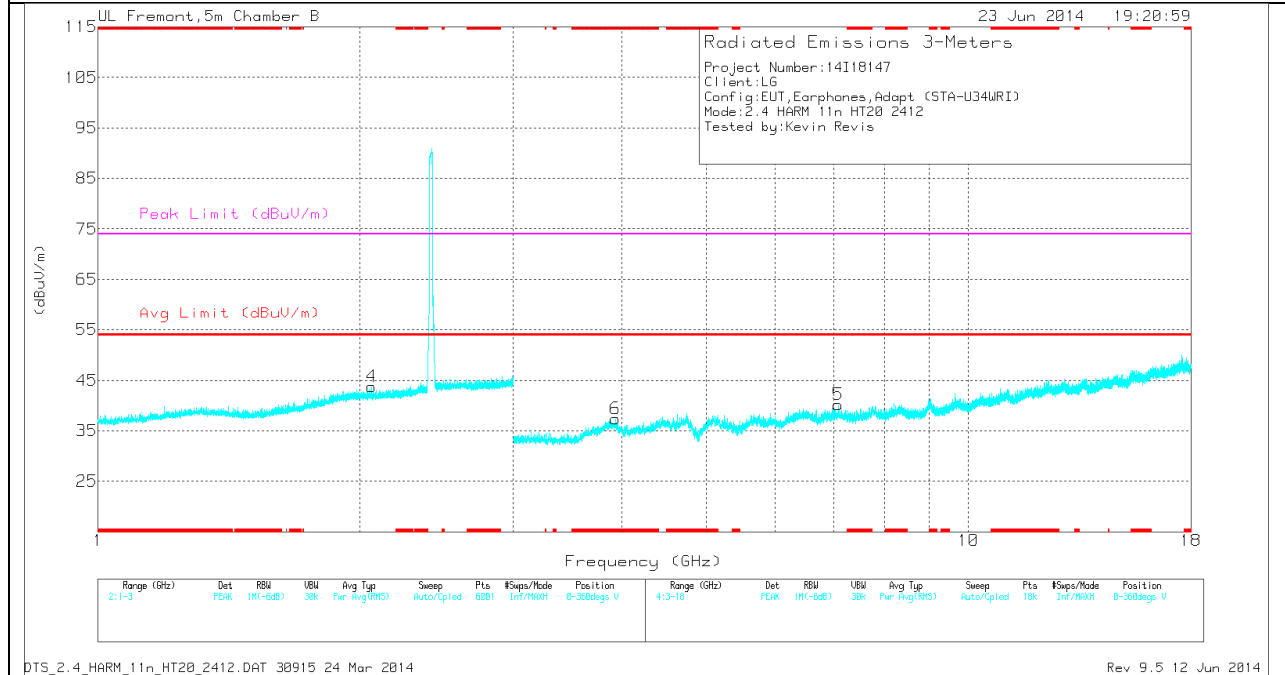
RMS - RMS detection

### 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

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	* 4.567	34.73	PK	34.1	-30.6	0	38.23	-	-	74	-35.77	0-360	99	H
6	* 3.93	34.15	PK	33.7	-30.5	0	37.35	-	-	74	-36.65	0-360	99	V
1	1.778	35.5	PK	29.9	-23.6	0	41.8	-	-	-	-	0-360	99	H
4	2.062	35.83	PK	31.3	-23.4	0	43.73	-	-	-	-	0-360	201	V
3	5.519	33.35	PK	34.5	-29.9	0	37.95	-	-	-	-	0-360	99	H
5	7.085	31.77	PK	35.6	-27.2	0	40.17	-	-	-	-	0-360	200	V

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

PK - Peak detector

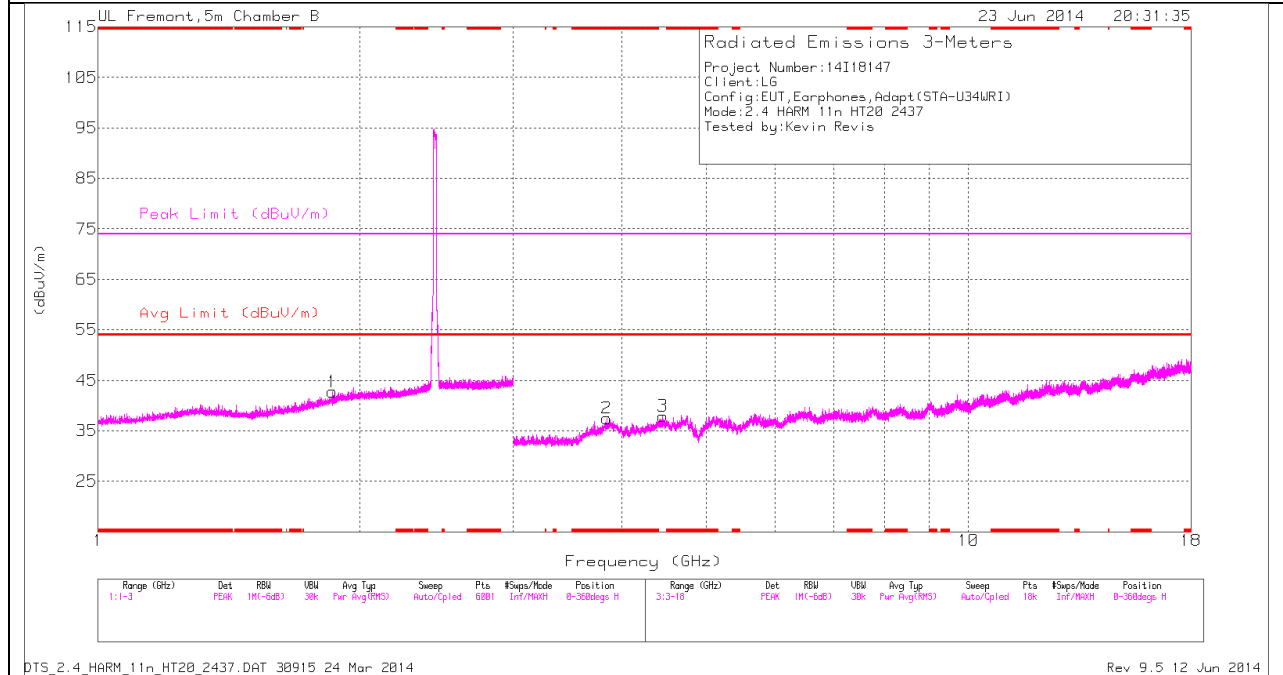
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	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
* 4.568	41.49	PK2	34.1	-30.6	0	44.99	-	-	74	-29.01	360	101	H
* 8.08	37.07	PK2	35.7	-26.3	0	46.47	-	-	74	-27.53	359	200	H
* 3.932	41.13	PK2	33.7	-30.5	0	44.33	-	-	74	-29.67	360	101	V
* 3.604	41.49	PK2	33.1	-31	0	43.59	-	-	74	-30.41	359	200	V
* 4.507	40.84	PK2	34	-29.5	0	45.34	-	-	74	-28.66	359	100	V
8.824	36.75	PK2	36	-25.6	0	47.15	-	-	-	-	359	200	V

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

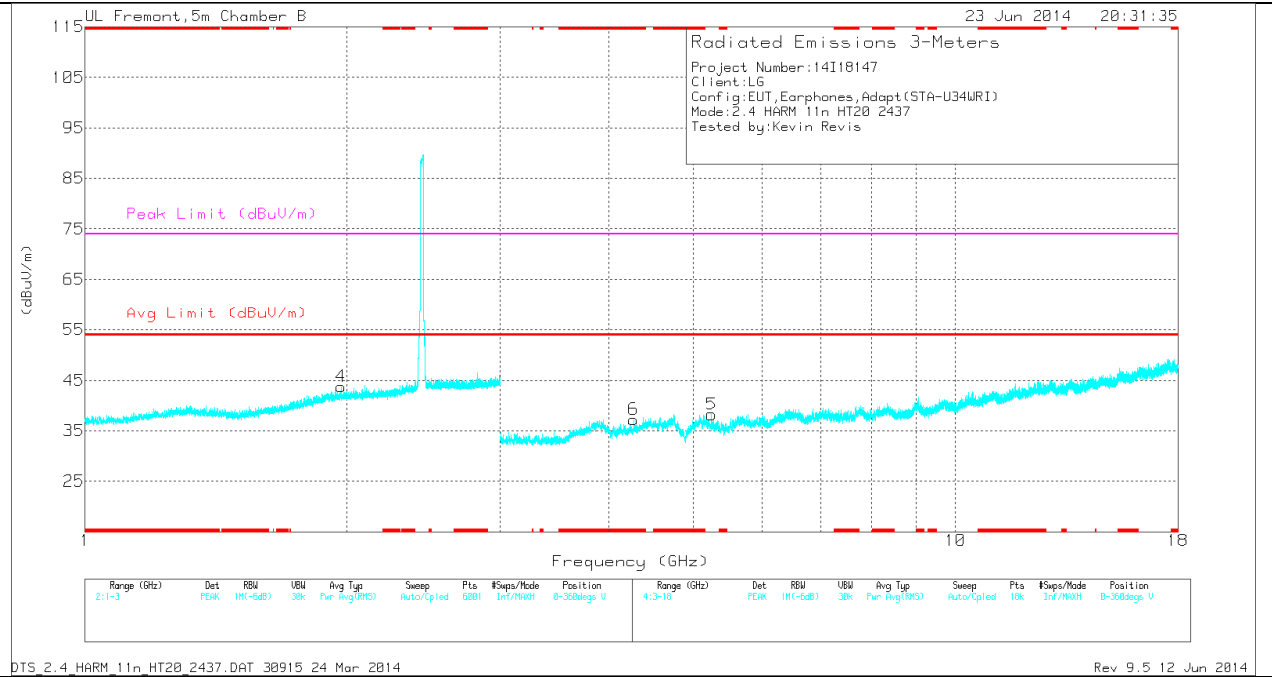
PK2 - KDB558074 Method: Maximum Peak

MID CHANNEL  
 HORIZONTAL



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

MID CHANNEL  
 VERTICAL



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

MID CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AFT345 (dB/m)	Amp/Cb/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	* 3.842	34.06	PK	33.7	-30.3	0	37.46	-	-	74	-36.54	0-360	203	H
6	* 4.267	34.23	PK	33.6	-30.6	0	37.23	-	-	74	-36.77	0-360	200	V
1	1.859	35.73	PK	30.7	-23.7	0	42.73	-	-	-	-	0-360	201	H
4	1.969	35.81	PK	31.3	-23.4	0	43.71	-	-	-	-	0-360	202	V
3	4.452	33.2	PK	33.9	-29.2	0	37.9	-	-	-	-	0-360	203	H
5	5.244	34.14	PK	34.4	-30.3	0	38.24	-	-	-	-	0-360	200	V

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

PK - Peak detector

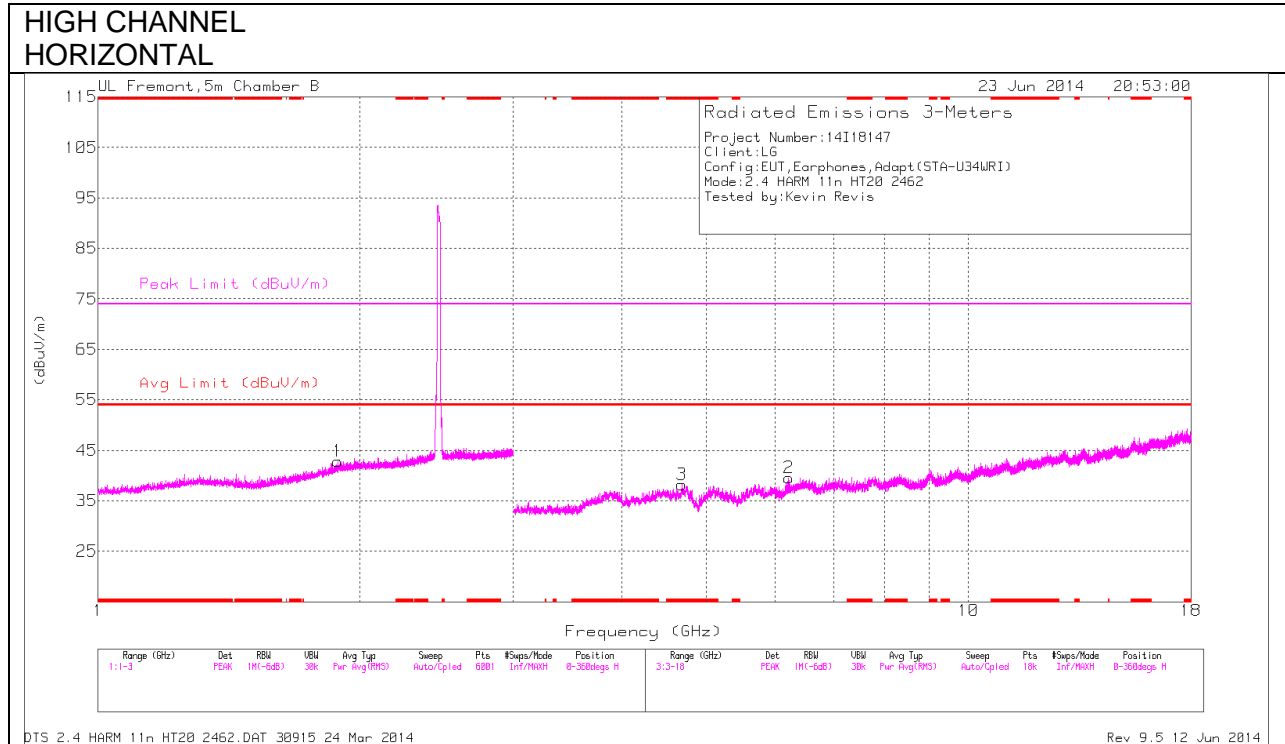
Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cb/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.842	40.95	PK2	33.7	-30.3	0	44.35	-	-	74	-29.65	359	203	H
* 8.08	37.07	PK2	35.7	-26.3	0	46.47	-	-	74	-27.53	359	200	H
* 4.268	40.7	PK2	33.6	-30.7	0	43.6	-	-	74	-30.4	359	201	V
* 3.604	41.49	PK2	33.1	-31	0	43.59	-	-	74	-30.41	359	200	V
* 4.507	40.84	PK2	34	-29.5	0	45.34	-	-	74	-28.66	359	100	V
8.824	36.75	PK2	36	-25.6	0	47.15	-	-	-	-	359	200	V

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

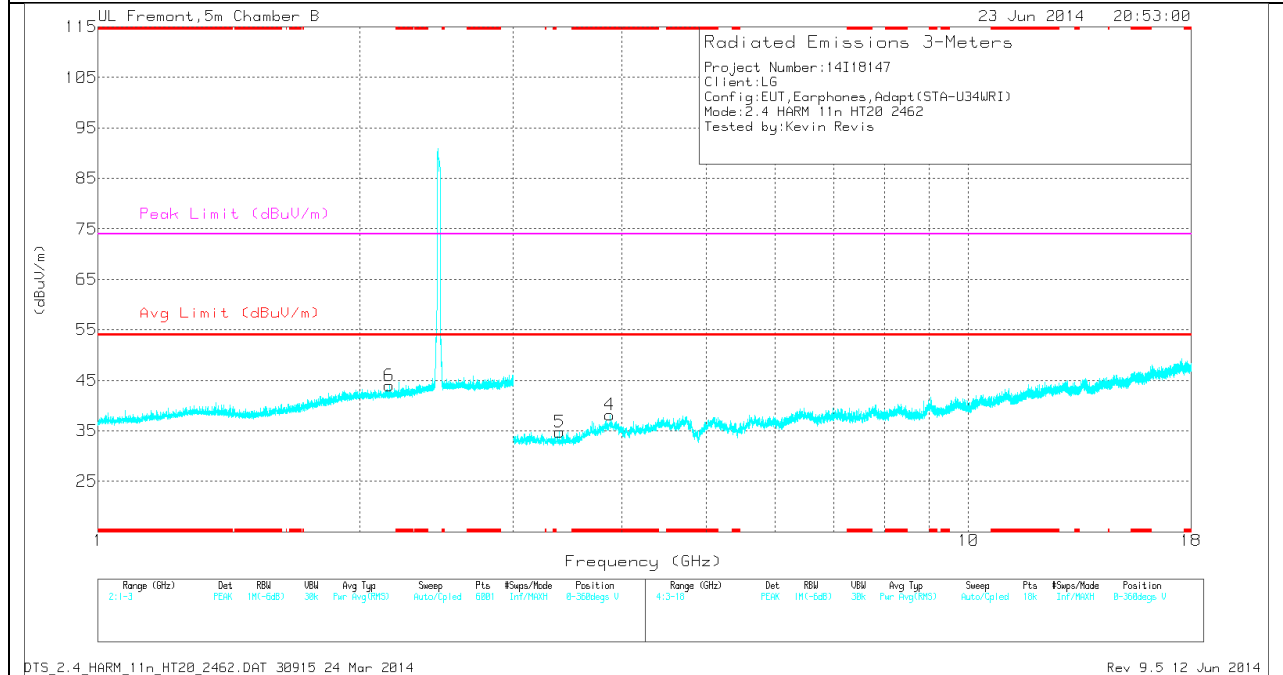
PK2 - KDB558074 Method: Maximum Peak





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

**HIGH CHANNEL  
 VERTICAL**



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

HIGH CHANNEL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AFT345 (dB/m)	Amp/Cb/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 4.684	34.02	PK	34.2	-30	0	38.22	-	-	74	-35.78	0-360	99	H
4	* 3.872	34.63	PK	33.8	-30.3	0	38.13	-	-	74	-35.87	0-360	200	V
1	1.886	35.42	PK	30.9	-23.5	0	42.82	-	-	-	-	0-360	201	H
6	2.16	35.82	PK	31.3	-23.2	0	43.92	-	-	-	-	0-360	200	V
5	3.389	33.27	PK	32.8	-31.3	0	34.77	-	-	-	-	0-360	99	V
2	6.215	32.63	PK	35.4	-28.5	0	39.53	-	-	-	-	0-360	200	H

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cb/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
* 4.683	41.52	PK2	34.2	-30	0	45.72	-	-	74	-28.28	359	101	H
* 8.08	37.07	PK2	35.7	-26.3	0	46.47	-	-	74	-27.53	359	200	H
* 3.871	41.5	PK2	33.8	-30.3	0	45	-	-	74	-29	359	202	V
* 3.604	41.49	PK2	33.1	-31	0	43.59	-	-	74	-30.41	359	200	V
* 4.507	40.84	PK2	34	-29.5	0	45.34	-	-	74	-28.66	359	100	V
8.824	36.75	PK2	36	-25.6	0	47.15	-	-	-	-	359	200	V

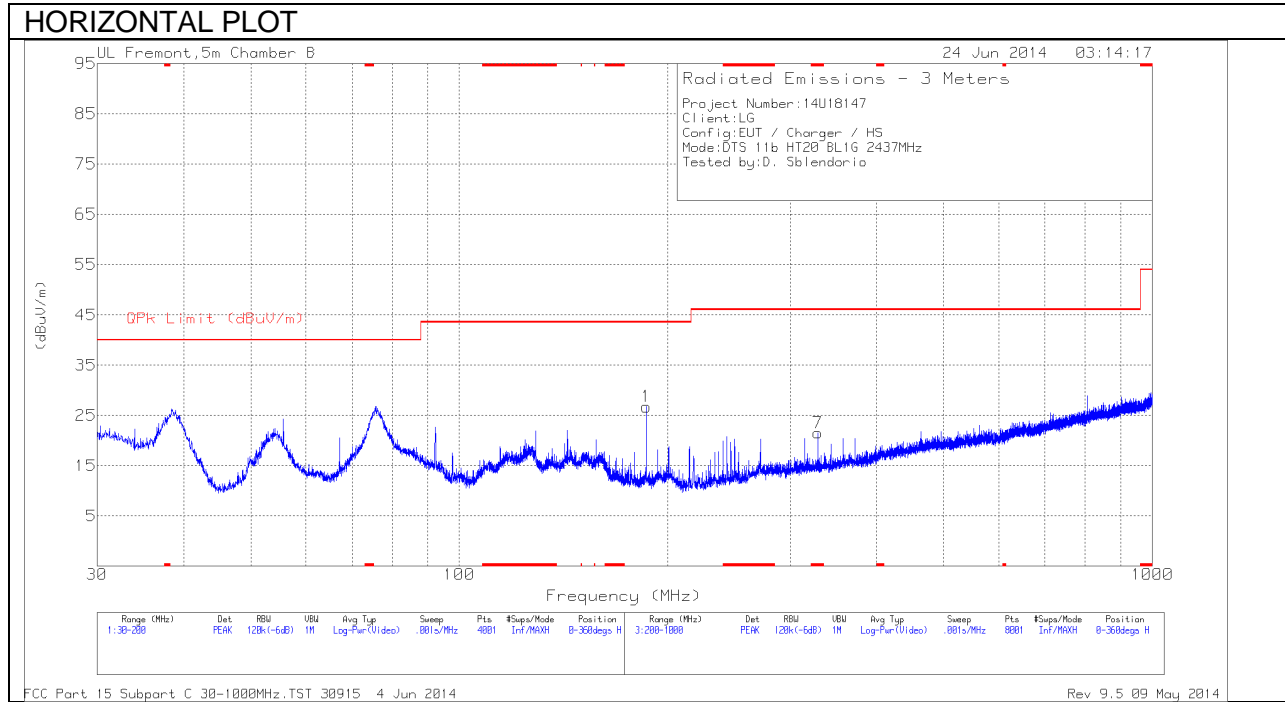
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

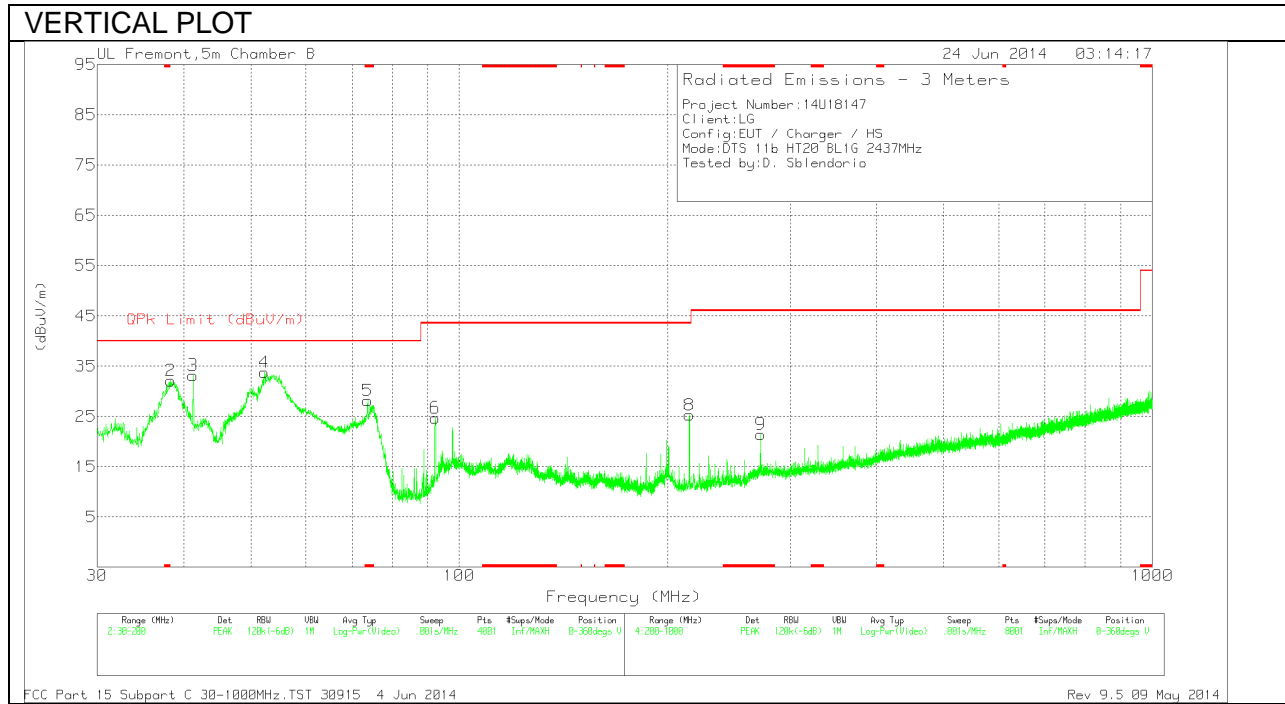
### 10.3. WORST-CASE BELOW 1 GHz

#### STA-U34WDI

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



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



**Below 1G Data**

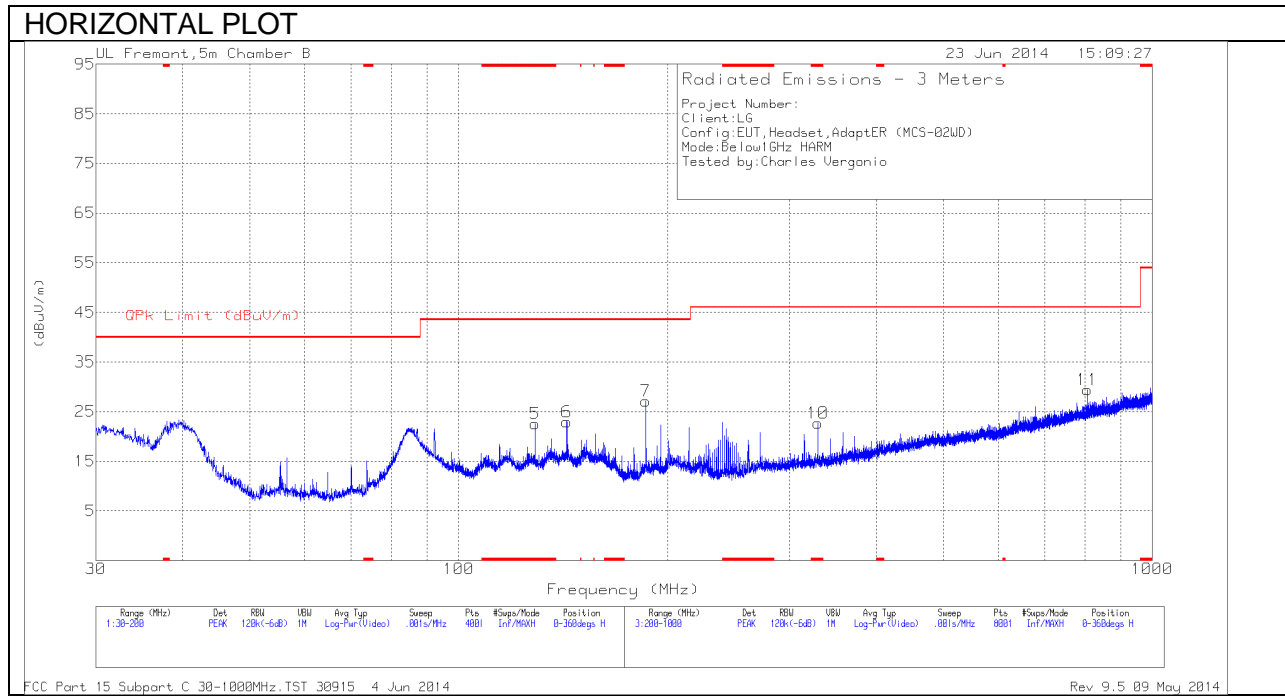
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T243 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	* 73.7325	48.34	PK	8.1	-28.3	28.14	40	-11.86	0-360	101	V
7	* 329.3	33.3	PK	14	-25.8	21.5	46.02	-24.52	0-360	200	H
9	* 272.1	34.33	PK	13.3	-26.2	21.43	46.02	-24.59	0-360	101	V
2	38.2875	45.61	PK	15.2	-28.7	32.11	40	-7.89	0-360	101	V
3	41.2625	48.76	PK	13	-28.6	33.16	40	-6.84	0-360	101	V
4	52.3125	54.88	PK	7.4	-28.5	33.78	40	-6.22	0-360	101	V
6	92.305	44.59	PK	8.2	-28.1	24.69	43.52	-18.83	0-360	101	V
1	186.145	42.84	PK	10.9	-27	26.74	43.52	-16.78	0-360	100	H
8	214.8	41.48	PK	10.6	-26.8	25.28	43.52	-18.24	0-360	200	V

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

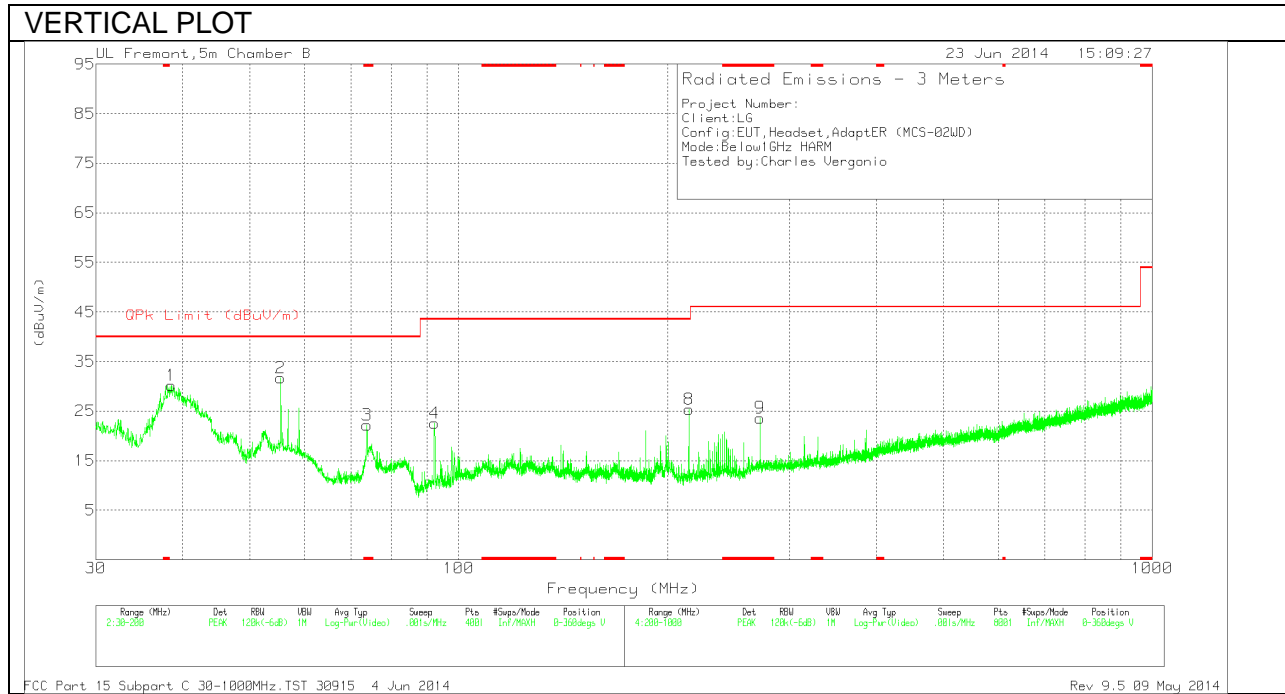
PK - Peak detector

**MCS-02WD**

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



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





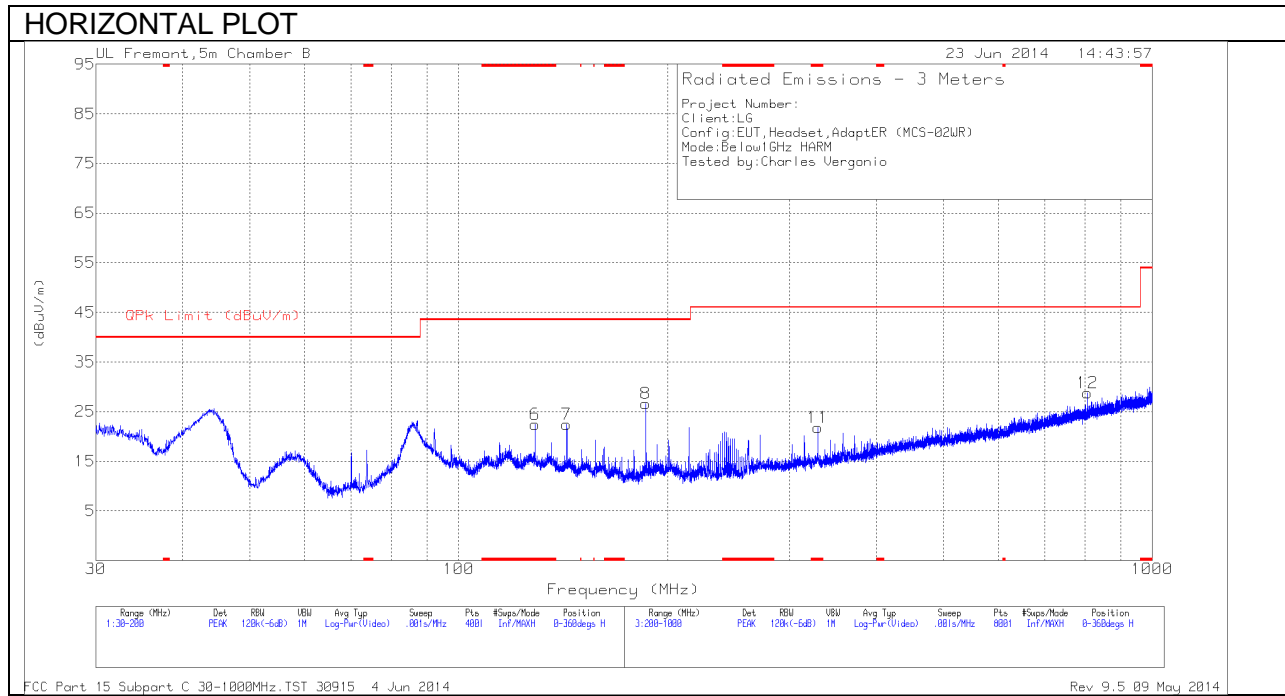
**Below 1G Data**

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
5	* 128.8975	36.28	PK	14	-27.7	22.58	43.52	-20.94	0-360	200	H
3	* 73.775	42.39	PK	8.1	-28.3	22.19	40	-17.81	0-360	101	V
10	* 329.3	34.48	PK	14	-25.8	22.68	46.02	-23.34	0-360	200	H
9	* 272	36.53	PK	13.3	-26.2	23.63	46.02	-22.39	0-360	200	V
1	38.5425	43.89	PK	15	-28.7	30.19	40	-9.81	0-360	101	V
2	55.415	53.02	PK	7.2	-28.5	31.72	40	-8.28	0-360	101	V
4	92.39	42.45	PK	8.2	-28.1	22.55	43.52	-20.97	0-360	101	V
6	143.22	37.75	PK	12.7	-27.5	22.95	43.52	-20.57	0-360	200	H
7	186.145	43.18	PK	10.9	-27	27.08	43.52	-16.44	0-360	101	H
8	214.8	41.52	PK	10.6	-26.8	25.32	43.52	-18.2	0-360	200	V
11	806.1	31.94	PK	21.2	-23.7	29.44	46.02	-16.58	0-360	101	H

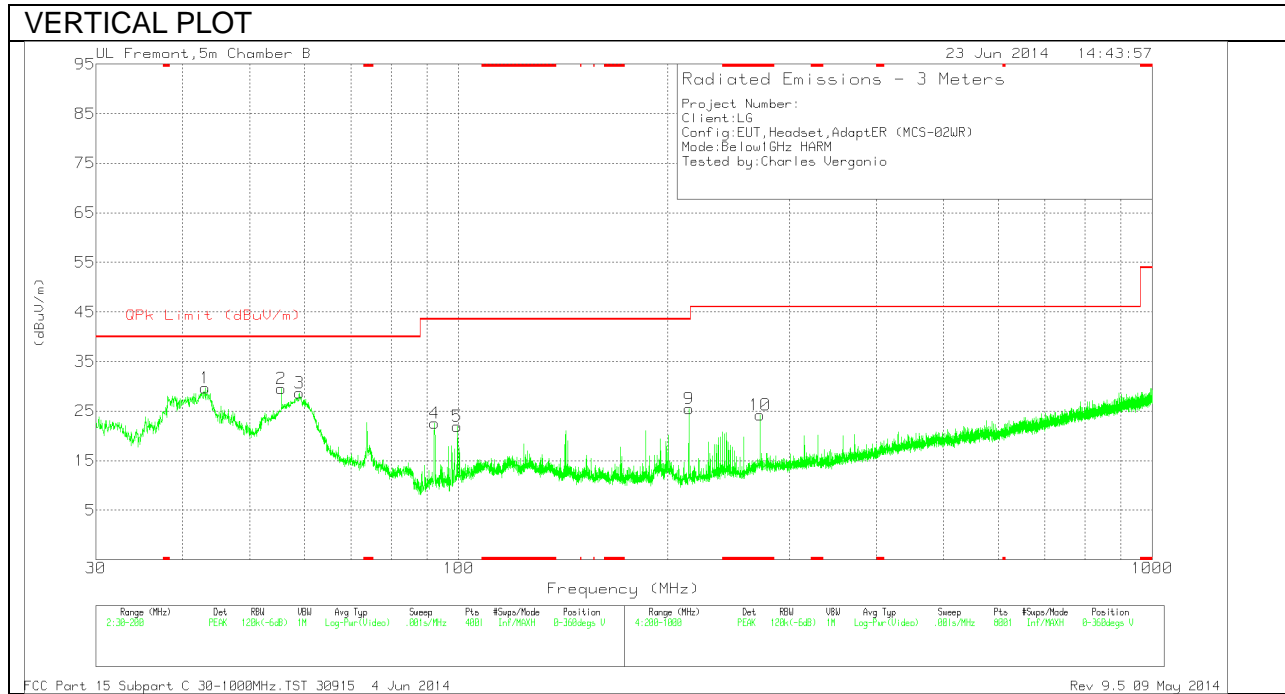
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band  
 PK - Peak detector

**MCS-02WR**

**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
6	* 128.855	36.1	PK	14	-27.7	22.4	43.52	-21.12	0-360	200	H
10	* 272	37.05	PK	13.3	-26.2	24.15	46.02	-21.87	0-360	200	V
11	* 329.3	33.65	PK	14	-25.8	21.85	46.02	-24.17	0-360	200	H
7	143.1775	37.23	PK	12.7	-27.5	22.43	43.52	-21.09	0-360	200	H
8	186.145	42.68	PK	10.9	-27	26.58	43.52	-16.94	0-360	100	H
9	214.8	41.69	PK	10.6	-26.8	25.49	43.52	-18.03	0-360	200	V
1	43.09	46.69	PK	11.6	-28.6	29.69	40	-10.31	0-360	101	V
2	55.5	50.79	PK	7.2	-28.5	29.49	40	-10.51	0-360	101	V
3	58.9	49.72	PK	7.3	-28.4	28.62	40	-11.38	0-360	101	V
12	806.1	31.32	PK	21.2	-23.7	28.82	46.02	-17.2	0-360	101	H
4	92.305	42.47	PK	8.2	-28.1	22.57	43.52	-20.95	0-360	101	V
5	99.4875	40.04	PK	10	-28.1	21.94	43.52	-21.58	0-360	101	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.

**RESULTS**

**6 WORST EMISSIONS WITH CHARGER STA-U34WDI**

Line-L1 .15 - 30MHz										
Trace Markers										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1 (dB)	LC Cables 1&3 (dB)	Corrected Reading dBuV	CISPR 22 Class B QP	Margin to Limit (dB)	CISPR 22 Class B Avg	Margin to Limit (dB)
1	.15	44.33	PK	1.4	0	45.73	66	-20.27	-	-
2	.15	21.73	Av	1.4	0	23.13	-	-	56	-32.87
3	.15	44.33	PK	1.4	0	45.73	66	-20.27	-	-
4	.177	41.5	PK	1.1	0	42.6	64.6	-22	-	-
5	.177	14.7	Av	1.1	0	15.8	-	-	54.6	-38.8
6	.3885	38	PK	.4	0	38.4	58.1	-19.7	-	-
7	.3885	26.56	Av	.4	0	26.96	-	-	48.1	-21.14
8	1.0455	37.3	PK	.2	0	37.5	56	-18.5	-	-
9	1.0455	19.73	Av	.2	0	19.93	-	-	46	-26.07
10	5.991	45.25	PK	.2	.1	45.55	60	-14.45	-	-
11	5.991	29.5	Av	.2	.1	29.8	-	-	50	-20.2
12	13.83	33.59	PK	.2	.2	33.99	60	-26.01	-	-
13	13.83	16.11	Av	.2	.2	16.51	-	-	50	-33.49

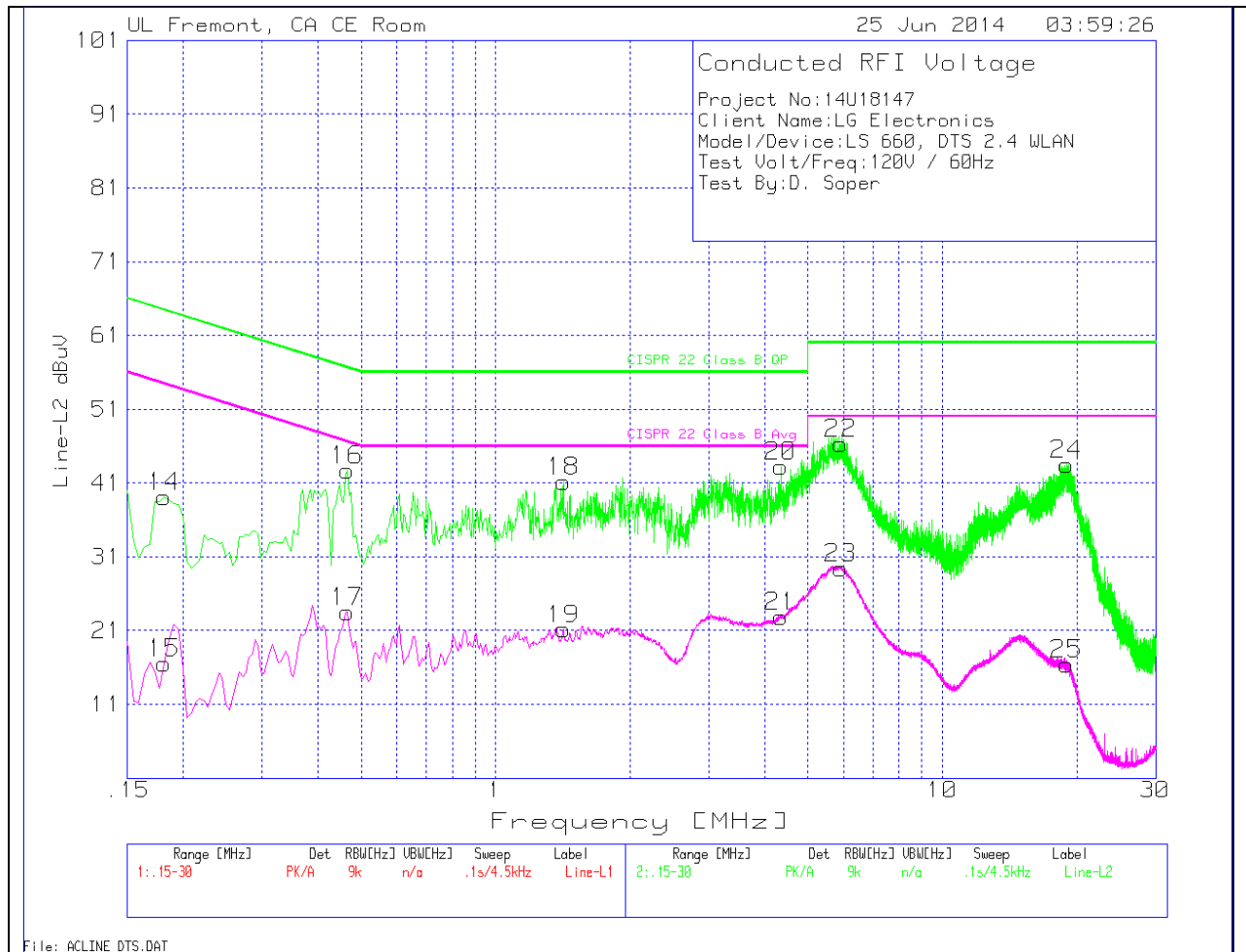
Line-L2 .15 - 30MHz										
Trace Markers										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2 (dB)	LC Cables 2&3 (dB)	Corrected Reading dBuV	CISPR 22 Class B QP	Margin to Limit (dB)	CISPR 22 Class B Avg	Margin to Limit (dB)
14	.1815	37.86	PK	1.2	0	39.06	64.4	-25.34	-	-
15	.1815	15.31	Av	1.2	0	16.51	-	-	54.4	-37.89
16	.465	42.33	PK	.4	0	42.73	56.6	-13.87	-	-
17	.465	23.14	Av	.4	0	23.54	-	-	46.6	-23.06
18	1.419	40.86	PK	.2	.1	41.16	56	-14.84	-	-
19	1.419	20.83	Av	.2	.1	21.13	-	-	46	-24.87
20	4.344	42.93	PK	.2	.1	43.23	56	-12.77	-	-
21	4.344	22.58	Av	.2	.1	22.88	-	-	46	-23.12
22	5.919	46.07	PK	.2	.1	46.37	60	-13.63	-	-
23	5.919	29.11	Av	.2	.1	29.41	-	-	50	-20.59
24	18.987	43.01	PK	.3	.2	43.51	60	-16.49	-	-
25	18.987	15.93	Av	.3	.2	16.43	-	-	50	-33.57

PK - Peak detector  
 Av - average detection

**LINE 1 RESULTS**



**LINE 2 RESULTS**





**6 WORST EMISSIONS WITH CHARGER MCS-02WD**

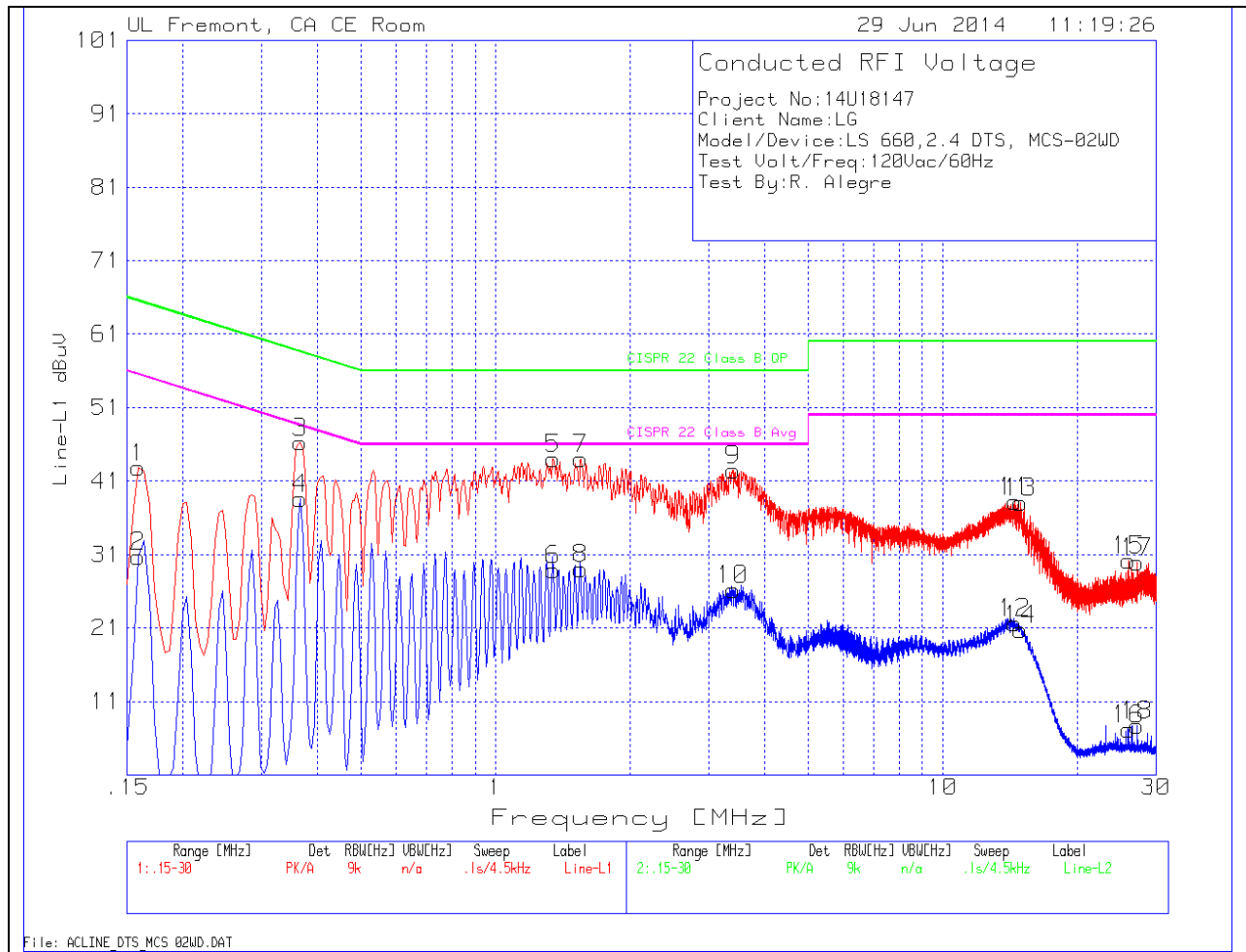
Line-L1 .15 - 30MHz										
Trace Markers										
Marker	Frequency (MHz)	Meter Reading (dBUV)	Det	T24 IL L1 (dB)	LC Cables 1&3 (dB)	Corrected Reading dBUV	CISPR 22 Class B QP	Margin to Limit (dB)	CISPR 22 Class B Avg	Margin to Limit (dB)
1	.159	41.5	PK	1.3	0	42.8	65.5	-22.7	-	-
2	.159	29.39	Av	1.3	0	30.69	-	-	55.5	-24.81
3	.366	45.77	PK	.5	0	46.27	58.6	-12.33	-	-
4	.366	38.12	Av	.5	0	38.62	-	-	48.6	-9.98
5	1.347	43.74	PK	.2	.1	44.04	56	-11.96	-	-
6	1.347	28.64	Av	.2	.1	28.94	-	-	46	-17.06
7	1.5495	43.67	PK	.2	.1	43.97	56	-12.03	-	-
8	1.5495	28.72	Av	.2	.1	29.02	-	-	46	-16.98
9	3.3945	42.17	PK	.2	.1	42.47	56	-13.53	-	-
10	3.3945	25.93	Av	.2	.1	26.23	-	-	46	-19.77
11	14.4735	37.78	PK	.2	.2	38.18	60	-21.82	-	-
12	14.4735	21.3	Av	.2	.2	21.7	-	-	50	-28.3
13	14.9235	37.72	PK	.2	.2	38.12	60	-21.88	-	-
14	14.9235	20.41	Av	.2	.2	20.81	-	-	50	-29.19
15	26.0025	29.6	PK	.3	.3	30.2	60	-29.8	-	-
16	26.0025	6.58	Av	.3	.3	7.18	-	-	50	-42.82
17	27.1635	29.35	PK	.3	.3	29.95	60	-30.05	-	-
18	27.1635	7.17	Av	.3	.3	7.77	-	-	50	-42.23

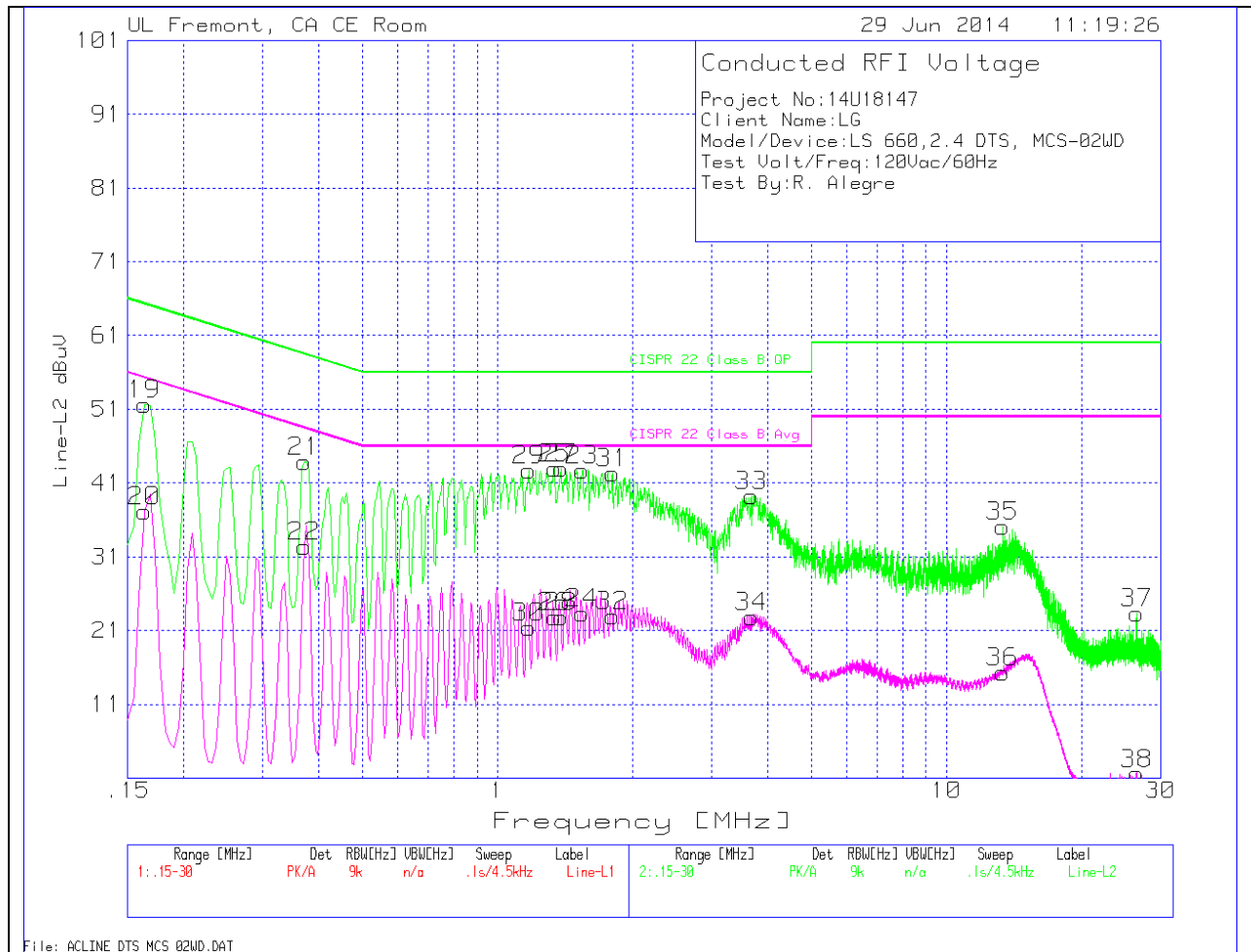
Line-L2 .15 - 30MHz										
Trace Markers										
Marker	Frequency (MHz)	Meter Reading (dBUV)	Det	T24 IL L2 (dB)	LC Cables 2&3 (dB)	Corrected Reading dBUV	CISPR 22 Class B QP	Margin to Limit (dB)	CISPR 22 Class B Avg	Margin to Limit (dB)
19	.1635	50.34	PK	1.3	0	51.64	65.3	-13.66	-	-
20	.1635	35.82	Av	1.3	0	37.12	-	-	55.3	-18.18
21	.3705	43.37	PK	.5	0	43.87	58.5	-14.63	-	-
22	.3705	31.92	Av	.5	0	32.42	-	-	48.5	-16.08
29	1.176	42.45	PK	.3	0	42.75	56	-13.25	-	-
30	1.176	21.07	Av	.3	0	21.37	-	-	46	-24.63
25	1.338	42.68	PK	.2	.1	42.98	56	-13.02	-	-
26	1.338	22.52	Av	.2	.1	22.82	-	-	46	-23.18
27	1.383	42.73	PK	.2	.1	43.03	56	-12.97	-	-
28	1.383	22.57	Av	.2	.1	22.87	-	-	46	-23.13
23	1.545	42.43	PK	.2	.1	42.73	56	-13.27	-	-
24	1.545	23.01	Av	.2	.1	23.31	-	-	46	-22.69
31	1.8015	41.99	PK	.2	.1	42.29	56	-13.71	-	-
32	1.8015	22.62	Av	.2	.1	22.92	-	-	46	-23.08
33	3.6735	38.95	PK	.2	.1	39.25	56	-16.75	-	-
34	3.6735	22.48	Av	.2	.1	22.78	-	-	46	-23.22
35	13.3395	34.55	PK	.3	.2	35.05	60	-24.95	-	-
36	13.3395	14.84	Av	.3	.2	15.34	-	-	50	-34.66
37	26.6145	22.75	PK	.3	.3	23.35	60	-36.65	-	-
38	26.6145	.98	Av	.3	.3	1.58	-	-	50	-48.42

PK - Peak detector  
 Av - average detection

**LINE 1 RESULTS**



**LINE 2 RESULTS**



**6 WORST EMISSIONS WITH CHARGER MCS-02WR**

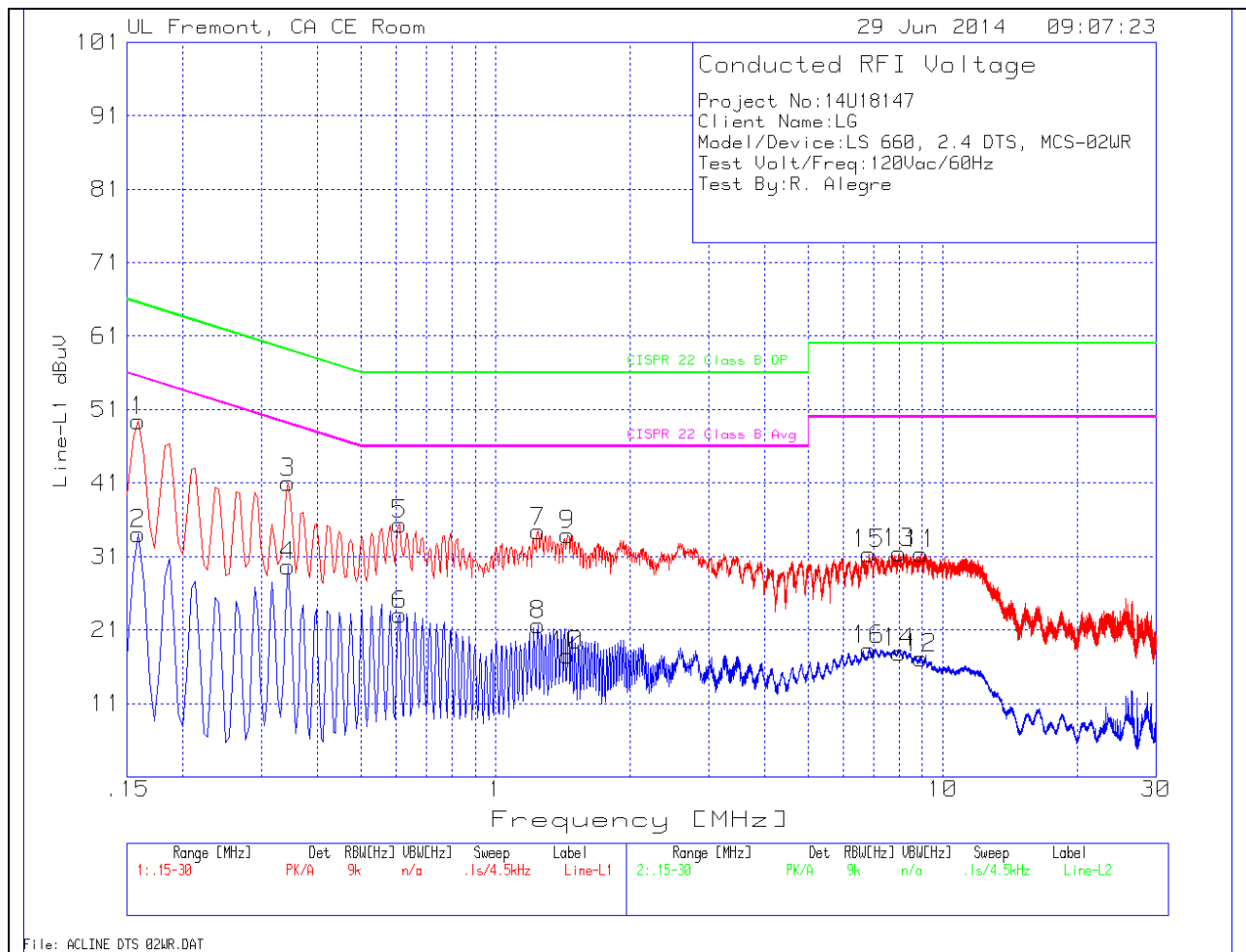
Line-L1 .15 - 30MHz										
Trace Markers										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1 (dB)	LC Cables 1&3 (dB)	Corrected Reading dBuV	CISPR 22 Class B QP	Margin to Limit (dB)	CISPR 22 Class B Avg	Margin to Limit (dB)
1	.159	48.16	PK	1.3	0	49.46	65.5	-16.04	-	-
2	.159	32.81	Av	1.3	0	34.11	-	-	55.5	-21.39
3	.3435	40.51	PK	.5	0	41.01	59.1	-18.09	-	-
4	.3435	29.13	Av	.5	0	29.63	-	-	49.1	-19.47
5	.609	35.04	PK	.3	0	35.34	56	-20.66	-	-
6	.609	22.73	Av	.3	0	23.03	-	-	46	-22.97
7	1.2435	34.19	PK	.2	0	34.39	56	-21.61	-	-
8	1.2435	21.48	Av	.2	0	21.68	-	-	46	-24.32
9	1.446	33.67	PK	.2	.1	33.97	56	-22.03	-	-
10	1.446	17.22	Av	.2	.1	17.52	-	-	46	-28.48
15	6.828	31.01	PK	.2	.1	31.31	60	-28.69	-	-
16	6.828	18	Av	.2	.1	18.3	-	-	50	-31.7
13	7.998	31.21	PK	.2	.1	31.51	60	-28.49	-	-
14	7.998	17.58	Av	.2	.1	17.88	-	-	50	-32.12
11	8.94525	31.01	PK	.2	.1	31.31	60	-28.69	-	-
12	8.94525	16.81	Av	.2	.1	17.11	-	-	50	-32.89

Line-L2 .15 - 30MHz										
Trace Markers										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2 (dB)	LC Cables 2&3 (dB)	Corrected Reading dBuV	CISPR 22 Class B QP	Margin to Limit (dB)	CISPR 22 Class B Avg	Margin to Limit (dB)
17	.159	43.63	PK	1.4	0	45.03	65.5	-20.47	-	-
18	.159	29.68	Av	1.4	0	31.08	-	-	55.5	-24.42
19	.339	40.21	PK	.5	0	40.71	59.2	-18.49	-	-
20	.339	30.63	Av	.5	0	31.13	-	-	49.2	-18.07
25	.5775	35.55	PK	.3	0	35.85	56	-20.15	-	-
26	.5775	26.38	Av	.3	0	26.68	-	-	46	-19.32
21	.6045	35.6	PK	.3	0	35.9	56	-20.1	-	-
22	.6045	26.04	Av	.3	0	26.34	-	-	46	-19.66
23	.654	35.29	PK	.3	0	35.59	56	-20.41	-	-
24	.654	23.69	Av	.3	0	23.99	-	-	46	-22.01
27	1.32	34.93	PK	.2	.1	35.23	56	-20.77	-	-
28	1.32	22.25	Av	.2	.1	22.55	-	-	46	-23.45
29	2.013	35.8	PK	.2	.1	36.1	56	-19.9	-	-
30	2.013	17.79	Av	.2	.1	18.09	-	-	46	-27.91
31	6.927	28.49	PK	.2	.1	28.79	60	-31.21	-	-
32	6.927	13.25	Av	.2	.1	13.55	-	-	50	-36.45
33	8.0025	28.97	PK	.2	.1	29.27	60	-30.73	-	-
34	8.0025	14.13	Av	.2	.1	14.43	-	-	50	-35.57
35	8.6865	28.39	PK	.2	.1	28.69	60	-31.31	-	-
36	8.6865	14.07	Av	.2	.1	14.37	-	-	50	-35.63
37	29.1165	29.01	PK	.3	.3	29.61	60	-30.39	-	-
38	29.1165	9.49	Av	.3	.3	10.09	-	-	50	-39.91

PK - Peak detector  
 Av - average detection

**LINE 1 RESULTS**



**LINE 2 RESULTS**

