**FCC CFR47 PART 15 SUBPART C**

**CERTIFICATION TEST REPORT**

**FOR**

**Tablet with Bluetooth, DTS/UNII a/b/g/n/ac, ANT+ and NFC**

**FCC ID: PY7TS-0040**

**REPORT NUMBER: 14U17934- E3 REVISION B**

**ISSUE DATE: SEPTEMBER 18, 2014**

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NVLAP LAB CODE 200065-0

## Revision History

| Rev. | Issue Date | Revisions | Revised By |
|---|---|---|---|
| -- | 09/05/14 | Initial issue | D. Coronia |
| A | 09/17/14 | EUT description updated | D. Coronia |
| B | 09/18/14 | EUT description updated; cover page, 5, 7 & 14 | D. Coronia |

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# 1. ATTESTATION OF TEST RESULTS

| | |
|---|---|
| **COMPANY NAME:** | SONY MOBILE COMMUNICATIONS, INC. |
| **EUT DESCRIPTION:** | Tablet with Bluetooth, DTS/UNII a/b/g/n/ac, ANT+ and NFC |
| **SERIAL NUMBER:** | CB5A20E0RY (Radiated), CB5A208FAY (Conducted) |
| **DATE TESTED:** | August 12-19, 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, RSS-GEN Issue 3, and RSS-210 Issue 8.

# 3. FACILITIES AND ACCREDITATION

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

| 47173 Benicia Street | 47266 Benicia Street |
|---|---|
| ☒ Chamber A | ☐ Chamber D |
| ☐ Chamber B | ☐ Chamber E |
| ☐ Chamber C | ☐ Chamber F |

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

# 4. CALIBRATION AND UNCERTAINTY

## 4.1. MEASURING INSTRUMENT CALIBRATION

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

## 4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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

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

## 4.3. MEASUREMENT UNCERTAINTY

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

| PARAMETER | UNCERTAINTY |
|---|---|
| Conducted Disturbance, 0.15 to 30 MHz | 3.52 dB |
| Radiated Disturbance, 30 to 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 Tablet with Bluetooth, DTS/UNII a/b/g/n/ac, ANT+ and NFC.

## 5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum total conducted output power as follows:

| Frequency Range (MHz) | Mode | Total Output Power (dBm) | Total Output Power (mW) |
|---|---|---|---|
| 2412 - 2462 | 802.11b | 16.91 | 49.09 |
| 2412 - 2462 | 802.11g | 16.31 | 42.76 |
| 2412 - 2462 | 802.11n HT20 | 16.31 | 42.76 |

## 5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes two FPCB antenna, with a maximum gain of 0.4 dBi and -1.2 dBi.

## 5.4. List of test reduction and modes covering other modes:

| 2400 - 2483.5 MHz Authorized Frequency Band (Antenna Port & Radiated Testing) | | |
|---|---|---|
| **Frequency Range (MHz)** | **Mode** | **Covered by** |
| 2412 - 2462 | 802.11b Legacy 1TX | 802.11b CDD 2TX |
| 2412 - 2462 | 802.11g Legacy 1TX/STBC 2TX | 802.11g CDD 2TX |
| 2412 - 2462 | 802.11n 1TX | 802.11n HT20 CDD 2TX |
| 2412 - 2462 | 802.11n STBC 2TX/SDM 2TX | 802.11n HT20 CDD 2TX |
| 2412 - 2462 | 802.11ac STBC 2TX/SDM 2TX/TX BF 2TX | 802.11n HT20 CDD 2TX |

## 5.5. 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 and 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

## 5.6. DESCRIPTION OF TEST SETUP

**SUPPORT EQUIPMENT**

| Support Equipment List | | | | |
|---|---|---|---|---|
| **Description** | **Manufacturer** | **Model** | **Serial Number** | **FCC ID** |
| AC Adapter | Sony | EP880 | 4W01 S08489 SEM | DoC |
| Earphone | Sony | MH410c | 14071EB60060A84 | DoC |
| MHL cable | Sony | N/A | N/A | N/A |

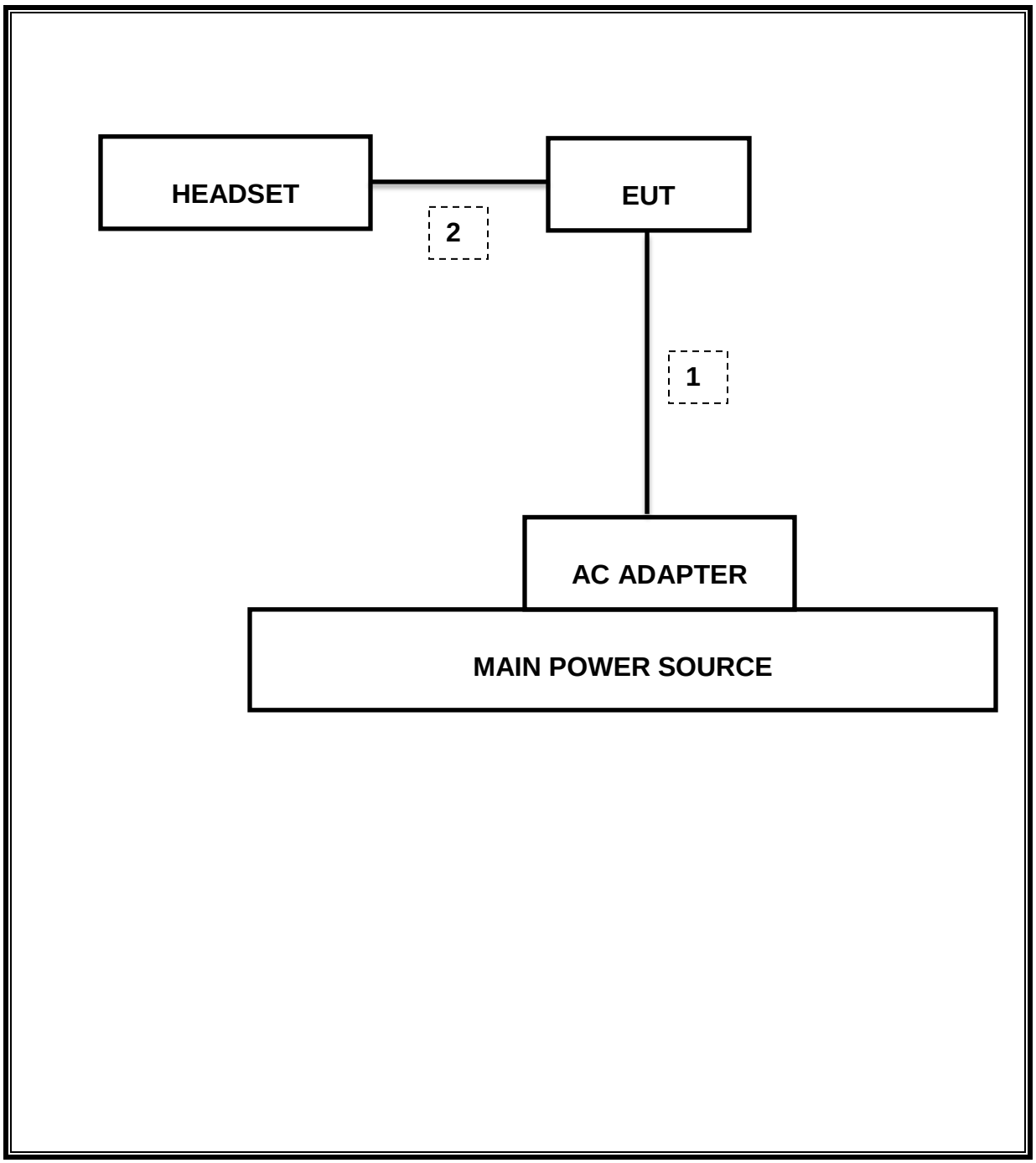
**I/O CABLES**

| 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 | 08/13/15 |
| 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 AVGPSD-3 is used for power spectral density.

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

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

# 8. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

**LIMITS**

None; for reporting purposes only.

**PROCEDURE**

KDB 789033 Zero-Span Spectrum Analyzer Method.

## 8.1. ON TIME AND DUTY CYCLE RESULTS

| Mode | ON Time B (msec) | Period (msec) | Duty Cycle x (linear) | Duty Cycle (%) | Duty Cycle Correction Factor (dB) | 1/T Minimum VBW (kHz) |
|---|---|---|---|---|---|---|
| **2400MHz Bands** | | | | | | |
| 802.11b | 3.13 | 3 | 1.000 | 100.0% | 0.00 | 0.010 |
| 802.11g | 3.13 | 3 | 0.994 | 99.4% | 0.00 | 0.010 |
| 802.11n HT20 | 1.48 | 1 | 0.987 | 98.7% | 0.00 | 0.010 |

# 9. SUMMARY TABLE

The FCC ID: PY7TS-0040 shares the same enclosure and circuit board as FCC ID: PY7TM-0050. The WLAN circuitry and layout, including antennas, are almost identical between the two units. The WLAN antennas and surrounding circuitry are the same between these two units. The main difference between the two models is that WWAN circuitry in FCC ID: PY7TM-0050 is removed for FCC ID: FCC ID: PY7TS-0040.

After confirming through preliminary radiated emissions that the performance of the FCC ID: PY7TS-0040 remains representative of FCC ID: PY7TM-0050, test data for FCC ID: PY7TM-0050 is being submitted for this application to cover WLAN features.

Radiated emissions were fully re-evaluated against FCC Part 15B requirements for digital devices and results indicated no significant differences between the two versions due to the depopulation of the WWAN circuitry.

| 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 | 8.565MHz |
| 2.1051, 15.247 (d) | RSS-210 A8.5 | Band Edge / Conducted Spurious Emission | -20dBc | | Pass | -40.36dBm |
| 15.247 | RSS-210 A8.4 | TX conducted output power | <30dBm | | Pass | 16.91dBm |
| 15.247 | RSS-210 A8.2 | PSD | <8dBm | | Pass | -13.59dBm |
| 15.207 (a) | RSS-GEN 7.2.2 | AC Power Line conducted emissions | Section 10 | Radiated | Pass | 17.72dBuV(AV) |
| 15.205, 15.209 | RSS-210 Clause 2.6, RSS-210 Clause 6 | Radiated Spurious Emission | < 54dBuV/m | | Pass | 49.44dBuV/m |

# 10. ANTENNA PORT TEST RESULTS

## 10.1. 6 dB BANDWIDTH

**LIMITS**

FCC §15.247 (a) (2)

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

**TEST PROCEDURE**

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

**RESULTS**

### 10.1.1. 802.11b MODE IN THE 2.4 GHz BAND

| Channel | Frequency (MHz) | 6 dB BW Chain 0 (MHz) | 6 dB BW Chain 1 (MHz) | Minimum Limit (MHz) |
|---|---|---|---|---|
| Low | 2412 | 8.570 | 8.600 | 0.5 |
| Mid | 2437 | 9.065 | 9.090 | 0.5 |
| High | 2462 | 8.565 | 9.080 | 0.5 |

### 10.1.2. 802.11g MODE IN THE 2.4 GHz BAND

| Channel | Frequency (MHz) | 6 dB BW Chain 0 (MHz) | 6 dB BW Chain 1 (MHz) | Minimum Limit (MHz) |
|---|---|---|---|---|
| Low | 2412 | 16.200 | 15.800 | 0.5 |
| Mid | 2437 | 16.475 | 16.500 | 0.5 |
| High | 2462 | 16.450 | 16.450 | 0.5 |

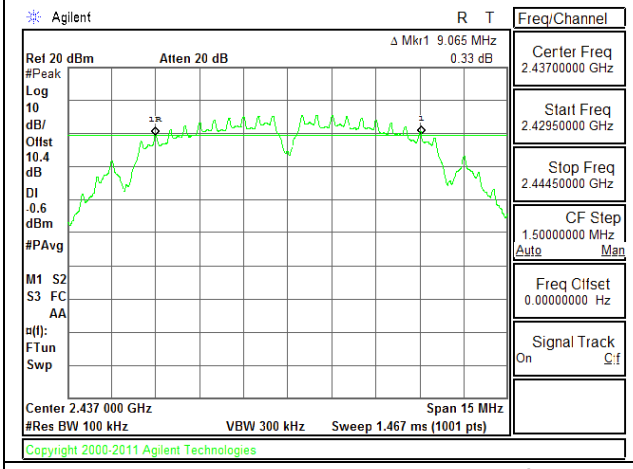
### 10.1.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

| Channel | Frequency (MHz) | 6 dB BW Chain 0 (MHz) | 6 dB BW Chain 1 (MHz) | Minimum Limit (MHz) |
|---|---|---|---|---|
| Low | 2412 | 17.125 | 17.000 | 0.5 |
| Mid | 2437 | 17.625 | 17.700 | 0.5 |
| High | 2462 | 17.675 | 17.675 | 0.5 |

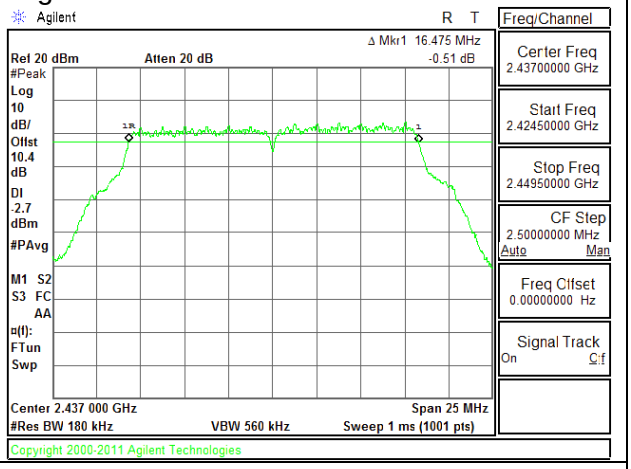
### 10.1.1. 6 dB BANDWIDTH MID CH PLOTS

**6 dB BANDWIDTH CHAIN 0**

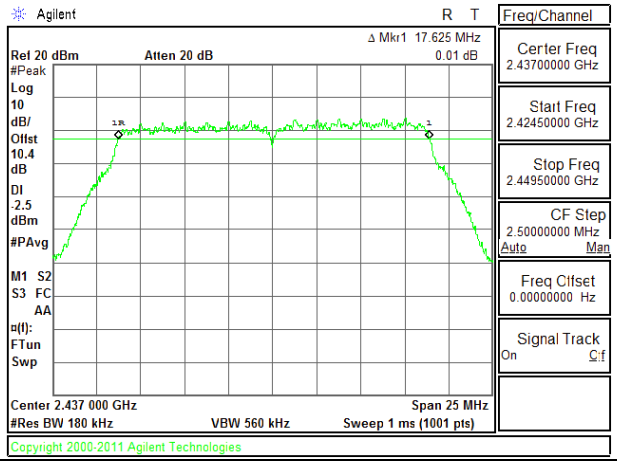
11b 6 dB BANDWIDTH MID CH




11g 6 dB BANDWIDTH MID CH

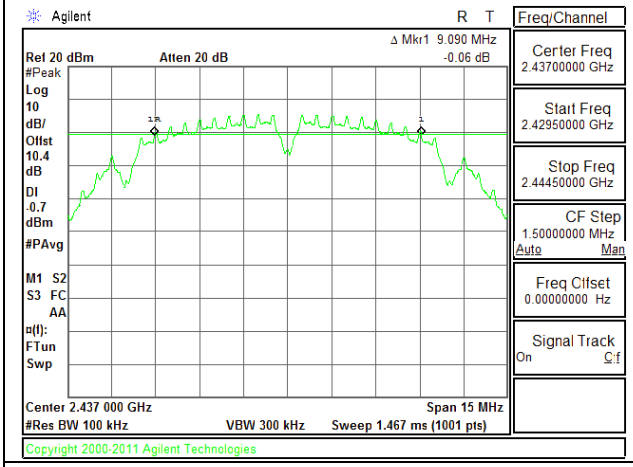



11n 6 dB BANDWIDTH MID CH

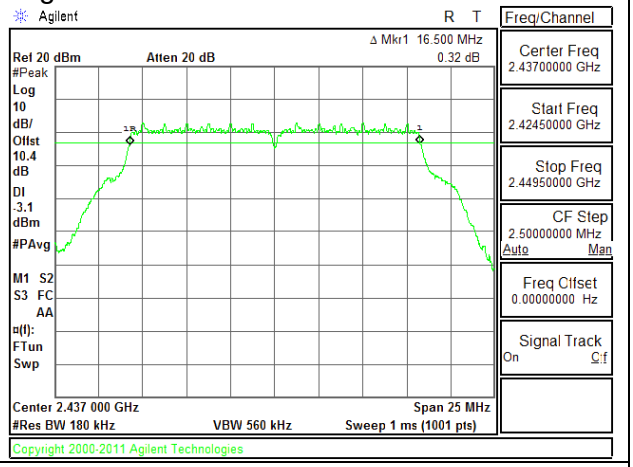


## 6 dB BANDWIDTH CHAIN 1

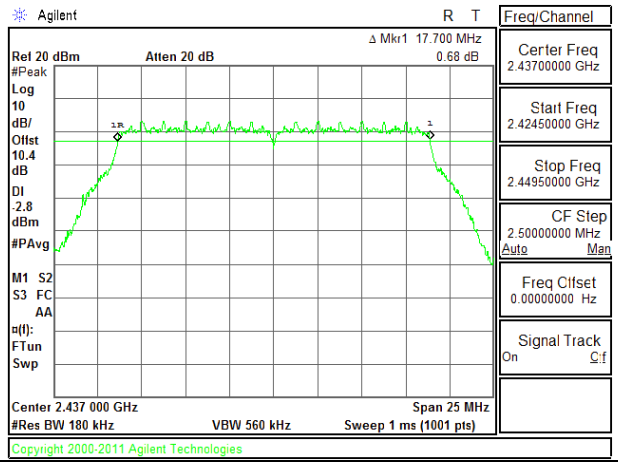
11b 6 dB BANDWIDTH MID CH




11g 6 dB BANDWIDTH MID CH




11n 6 dB BANDWIDTH MID CH



## 10.2. 99% BANDWIDTH

**LIMITS**

None; for reporting purposes only.

**RESULTS**

### 10.2.1. 802.11b MODE IN THE 2.4 GHz BAND

| Channel | Frequency (MHz) | 99% BW Chain 0 (MHz) | 99% BW Chain 1 (MHz) |
|---|---|---|---|
| Low | 2412 | 11.0400 | 11.2200 |
| Mid | 2437 | 11.2800 | 11.4900 |
| High | 2462 | 11.2500 | 11.3400 |

### 10.2.2. 802.11g MODE IN THE 2.4 GHz BAND

| Channel | Frequency (MHz) | 99% BW Chain 0 (MHz) | 99% BW Chain 1 (MHz) |
|---|---|---|---|
| Low | 2412 | 16.4100 | 16.4700 |
| Mid | 2437 | 16.5000 | 16.4900 |
| High | 2462 | 16.4900 | 16.4500 |

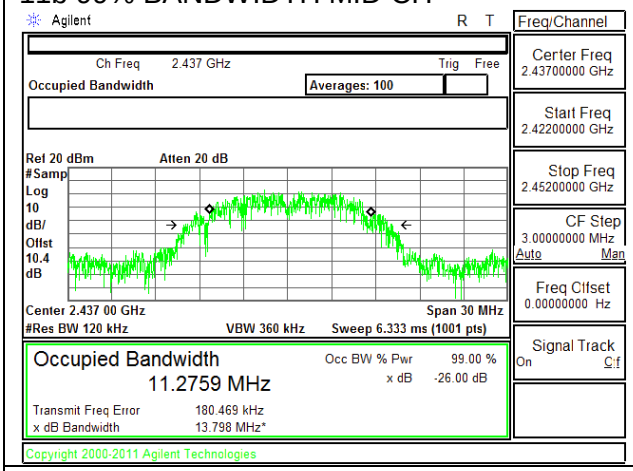
### 10.2.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

| Channel | Frequency (MHz) | 99% BW Chain 0 (MHz) | 99% BW Chain 1 (MHz) |
|---|---|---|---|
| Low | 2412 | 17.6000 | 17.6400 |
| Mid | 2437 | 17.6800 | 17.7000 |
| High | 2462 | 17.6600 | 17.6300 |

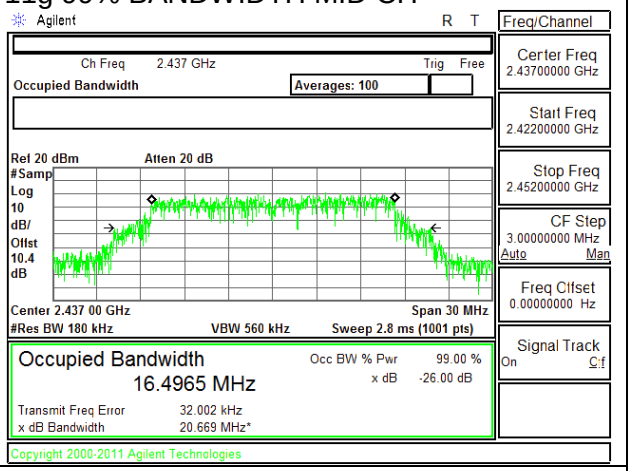
## 10.2.1. 99% BANDWIDTH MID CH PLOTS

**99% BANDWIDTH CHAIN 0**

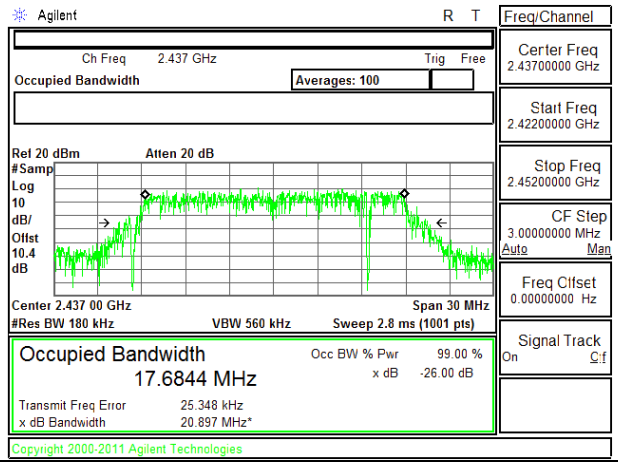
11b 99% BANDWIDTH MID CH




11g 99% BANDWIDTH MID CH

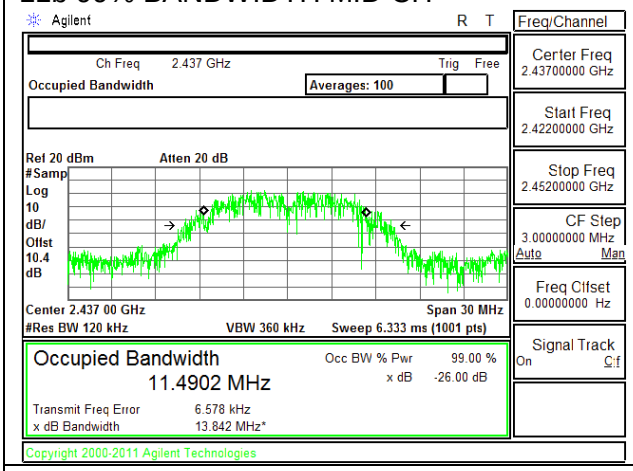



11n 99% BANDWIDTH MID CH

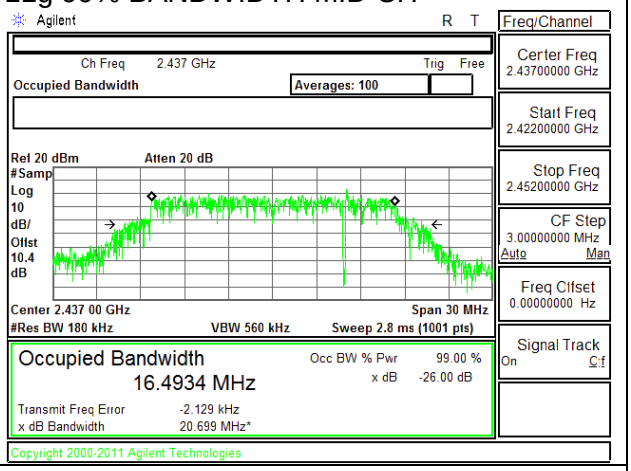


**99% BANDWIDTH CHAIN 1**

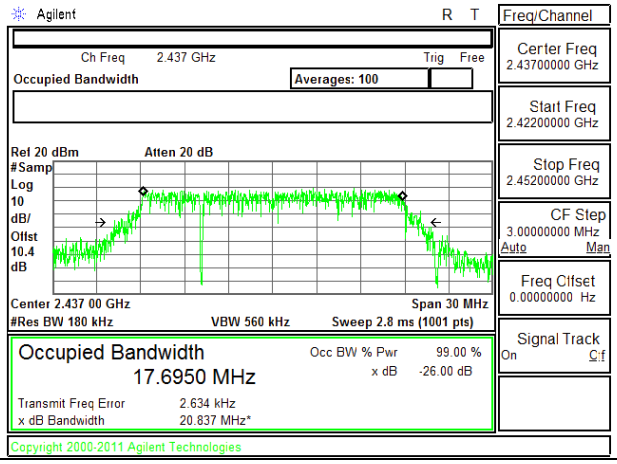
11b 99% BANDWIDTH MID CH




11g 99% BANDWIDTH MID CH




11n 99% BANDWIDTH MID CH



## 10.3. 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**

For Power: The TX chains are uncorrelated and the antenna gain is the same for each chain. The directional gain is equal to the antenna gain.

2.4GHz

| Chain 0 Antenna Gain (dBi) | Chain 1 Antenna Gain (dBi) | Uncorrelated Chains Directional Gain (dBi) |
|---|---|---|
| 0.40 | -1.20 | -0.33 |

For PSD: The TX chains are correlated and the antenna gain is unequal among the chains. The directional gain is:

2.4GHz

| Chain 0 Antenna Gain (dBi) | Chain 1 Antenna Gain (dBi) | Correlated Chains Directional Gain (dBi) |
|---|---|---|
| 0.40 | -1.20 | 2.65 |

**RESULTS**

## 10.3.1. 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 | -0.33 | 30.00 | 30 | 36 | 30.00 |
| Mid | 2437 | -0.33 | 30.00 | 30 | 36 | 30.00 |
| High | 2462 | -1.54 | 30.00 | 30 | 36 | 30.00 |

**Results**

| Channel | Frequency (MHz) | Chain 0 Meas Power (dBm) | Chain 1 Meas Power (dBm) | Total Corr'd Power (dBm) | Power Limit (dBm) | Margi (dB) |
|---|---|---|---|---|---|---|
| Low | 2412 | 13.00 | 13.30 | 16.16 | 30.00 | -13.84 |
| Mid | 2437 | 13.30 | 13.30 | 16.31 | 30.00 | -13.69 |
| High | 2462 | 14.00 | 13.80 | 16.91 | 30.00 | -13.09 |

## 10.3.2. 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 | -0.33 | 30.00 | 30 | 36 | 30.00 |
| Mid | 2437 | -0.33 | 30.00 | 30 | 36 | 30.00 |
| High | 2462 | -0.33 | 30.00 | 30 | 36 | 30.00 |

**Results**

| Channel | Frequency (MHz) | Chain 0 Meas Power (dBm) | Chain 1 Meas Power (dBm) | Total Corr'd Power (dBm) | Power Limit (dBm) | Margi (dB) |
|---|---|---|---|---|---|---|
| Low | 2412 | 12.80 | 13.00 | 15.91 | 30.00 | -14.09 |
| Mid | 2437 | 12.80 | 13.00 | 15.91 | 30.00 | -14.09 |
| High | 2462 | 13.50 | 13.10 | 16.31 | 30.00 | -13.69 |

## 10.3.3. 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 | -0.33 | 30.00 | 30 | 36 | 30.00 |
| Mid | 2437 | -0.33 | 30.00 | 30 | 36 | 30.00 |
| High | 2462 | -1.54 | 30.00 | 30 | 36 | 30.00 |

**Results**

| Channel | Frequency (MHz) | Chain 0 Meas Power (dBm) | Chain 1 Meas Power (dBm) | Total Corr'd Power (dBm) | Power Limit (dBm) | Margi (dB) |
|---|---|---|---|---|---|---|
| Low | 2412 | 12.80 | 13.00 | 15.91 | 30.00 | -14.09 |
| Mid | 2437 | 12.80 | 13.00 | 15.91 | 30.00 | -14.09 |
| High | 2462 | 13.50 | 13.10 | 16.31 | 30.00 | -13.69 |

## 10.4. PSD

**LIMITS**

FCC §15.247

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

**RESULTS**

### 10.4.1. 802.11b MODE IN THE 2.4 GHz BAND

**PSD Results**

| Channel | Frequency (MHz) | Chain 0 Meas (dBm) | Chain 1 Meas (dBm) | Total PSD (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|
| Low | 2412 | -16.07 | -17.21 | -13.59 | 8.0 | -21.6 |
| Mid | 2437 | -16.46 | -16.92 | -13.67 | 8.0 | -21.7 |
| High | 2462 | -16.76 | -16.92 | -13.83 | 8.0 | -21.8 |

### 10.4.2. 802.11g MODE IN THE 2.4 GHz BAND

**PSD Results**

| Channel | Frequency (MHz) | Chain 0 Meas (dBm) | Chain 1 Meas (dBm) | Total PSD (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|
| Low | 2412 | -18.61 | -18.85 | -15.72 | 8.0 | -23.7 |
| Mid | 2437 | -19.80 | -20.15 | -16.96 | 8.0 | -25.0 |
| High | 2462 | -20.52 | -20.50 | -17.50 | 8.0 | -25.5 |

### 10.4.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

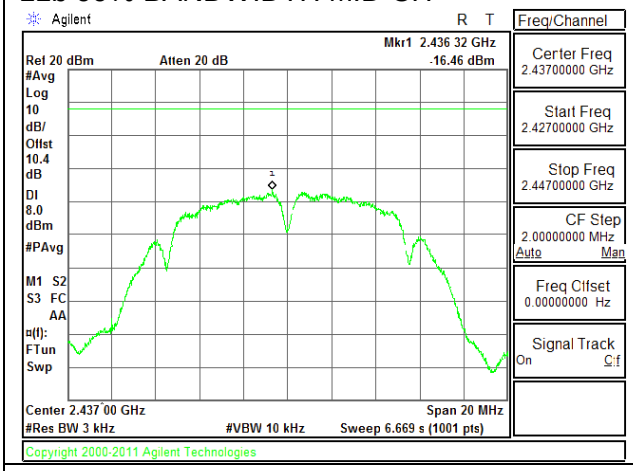
**PSD Results**

| Channel | Frequency (MHz) | Chain 0 Meas (dBm) | Chain 1 Meas (dBm) | Total PSD (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|
| Low | 2412 | -19.40 | -19.61 | -16.49 | 8.0 | -24.5 |
| Mid | 2437 | -19.59 | -20.62 | -17.06 | 8.0 | -25.1 |
| High | 2462 | -20.07 | -20.03 | -17.04 | 8.0 | -25.0 |

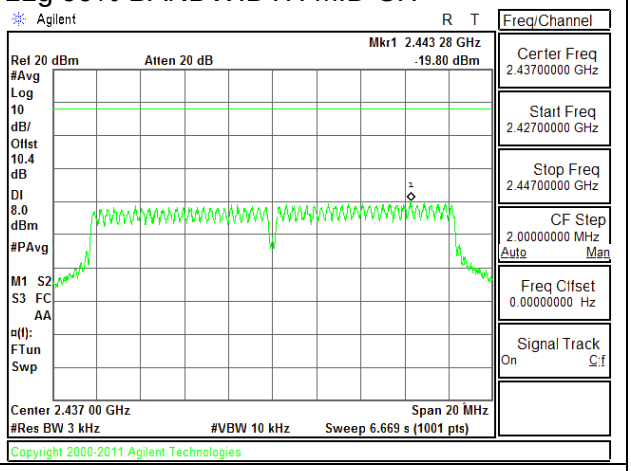
## 10.4.1. PSD MID CH PLOTS

**PSD CHAIN 0**

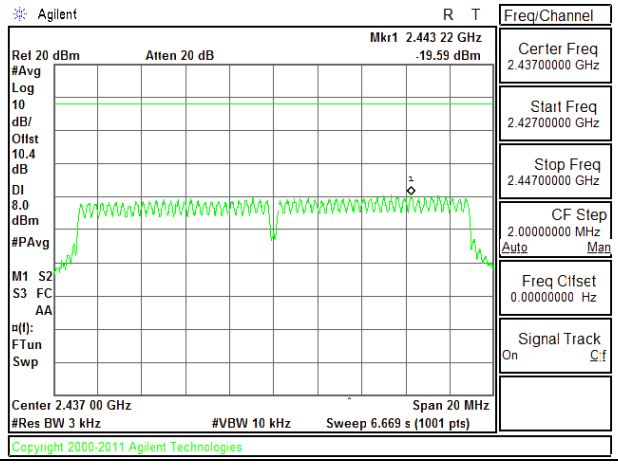
11b 99% BANDWIDTH MID CH




11g 99% BANDWIDTH MID CH

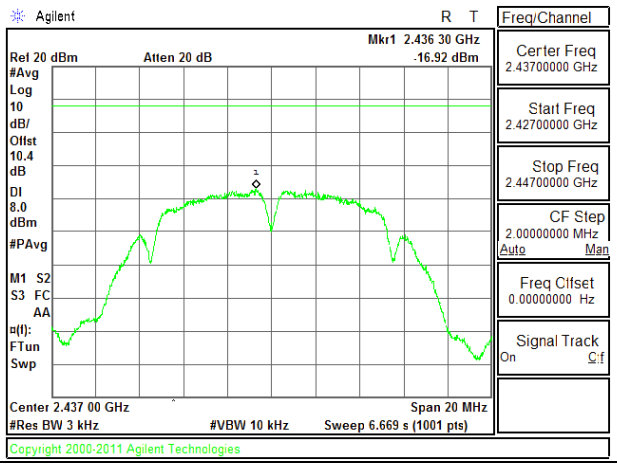



11n 99% BANDWIDTH MID CH

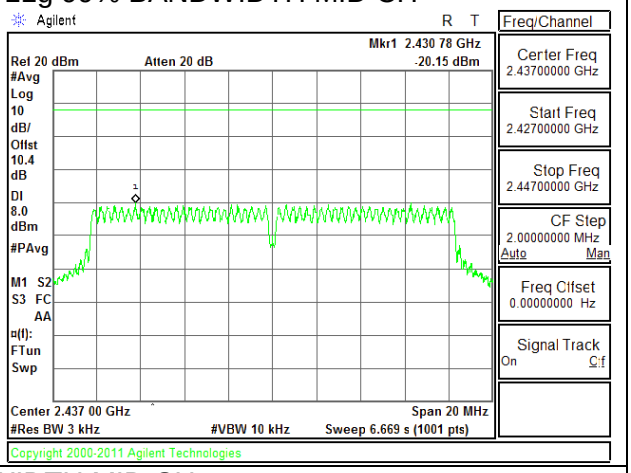


**PSD CHAIN 1**

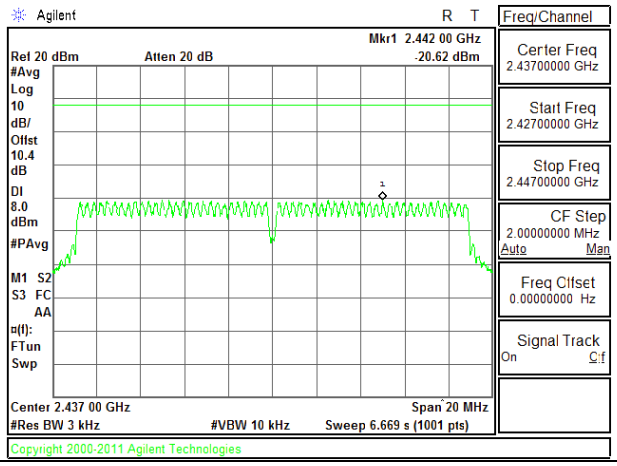
11b 99% BANDWIDTH MID CH




11g 99% BANDWIDTH MID CH




11n 99% BANDWIDTH MID CH



## 10.5. OUT-OF-BAND EMISSIONS

**LIMITS**

FCC §15.247 (d)

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

**TEST PROCEDURE**

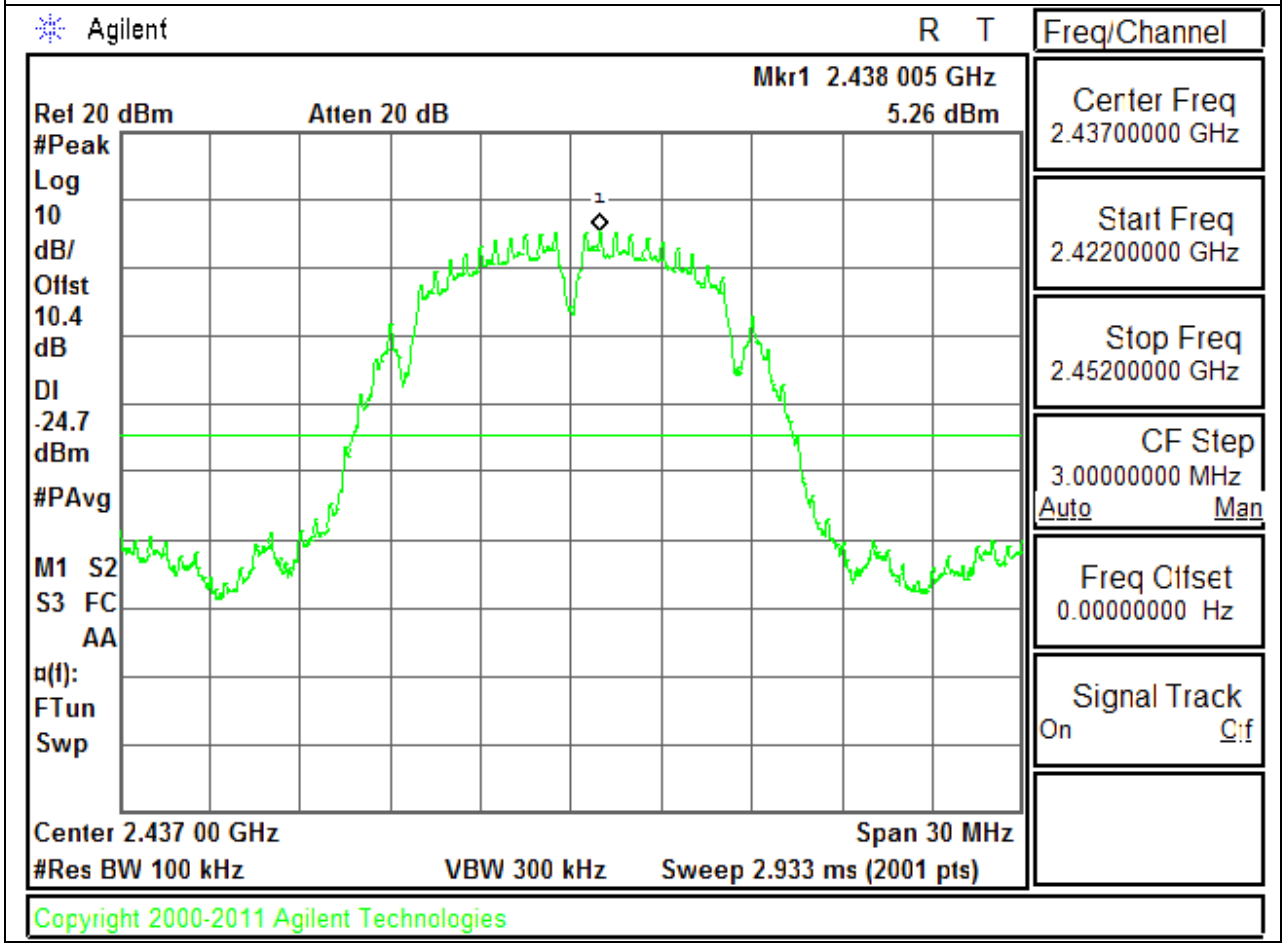
The transmitter output is connected to a spectrum analyzer with RBW = 100 kHz, VBW = 300 kHz, peak detector, and max hold. Measurements utilizing these settings are made of the in-band reference level, bandedge (where measurements to the general radiated limits will not be made) and out-of-band emissions.

**RESULTS**

## 10.5.1. 802.11b MODE IN THE 2.4 GHz BAND CHAIN 0

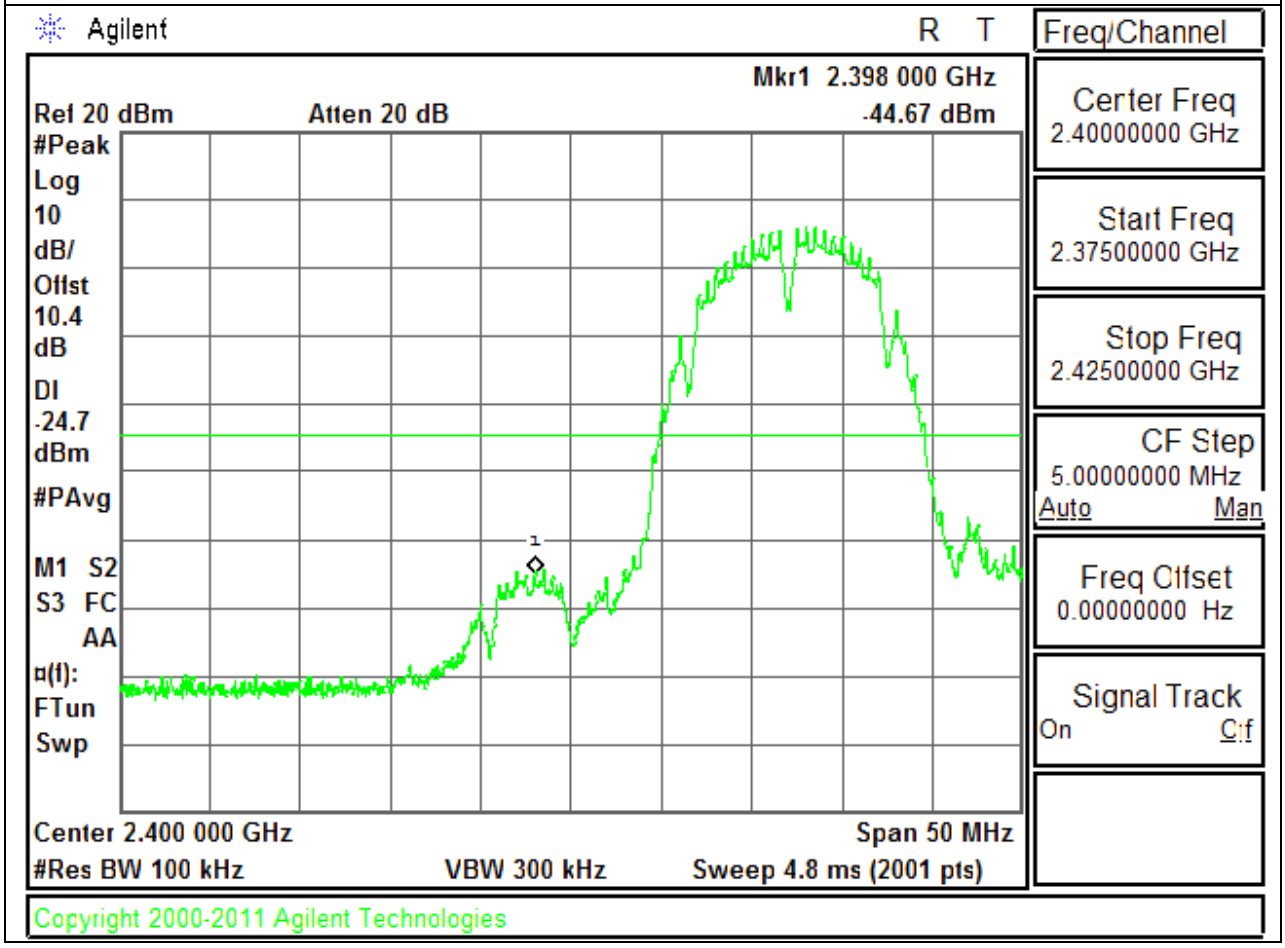
**IN-BAND REFERENCE LEVEL**

REFERENCE LEVEL MID CH



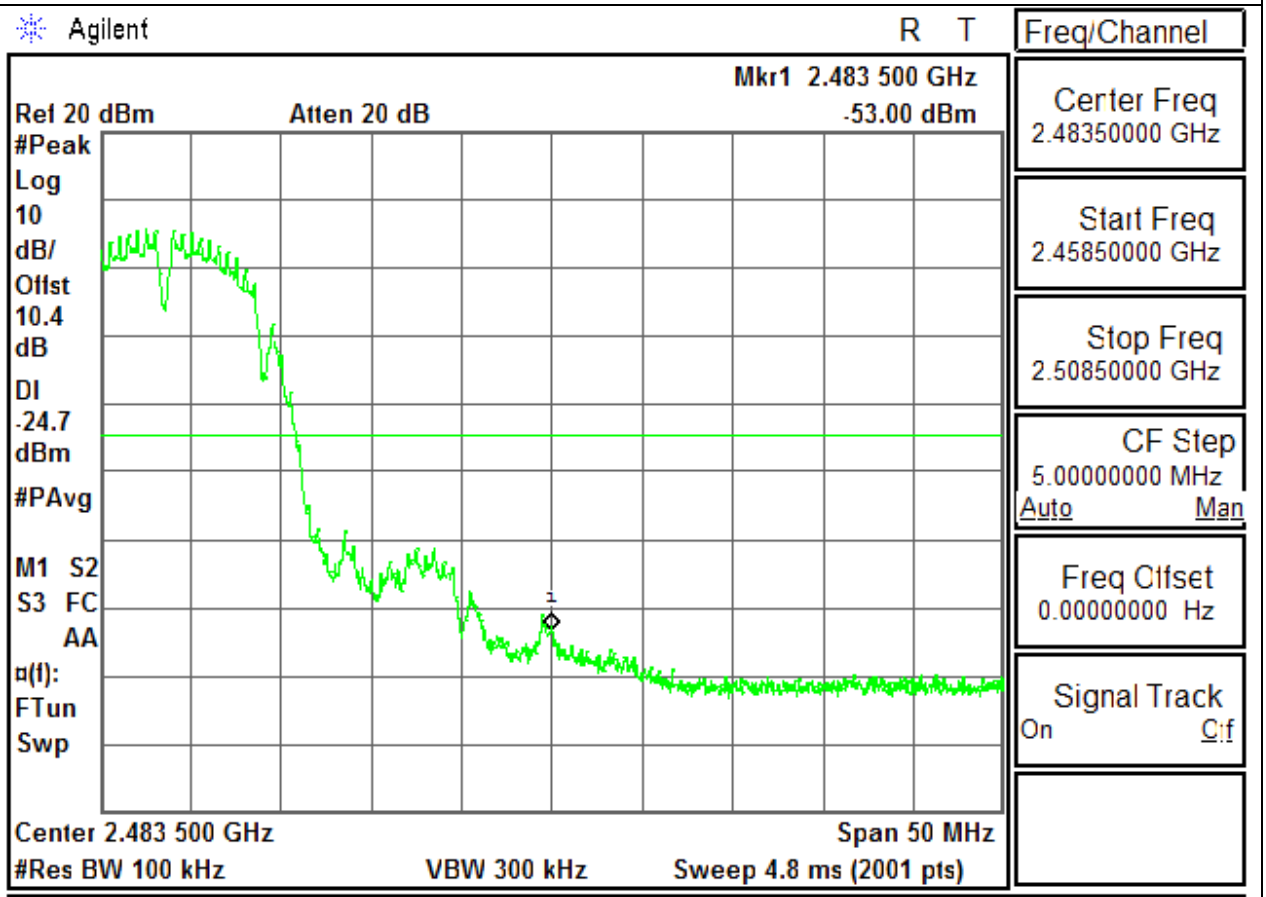
**LOW CHANNEL BANDEDGE**

AUTHORIZED BAND EDGE LOW CH



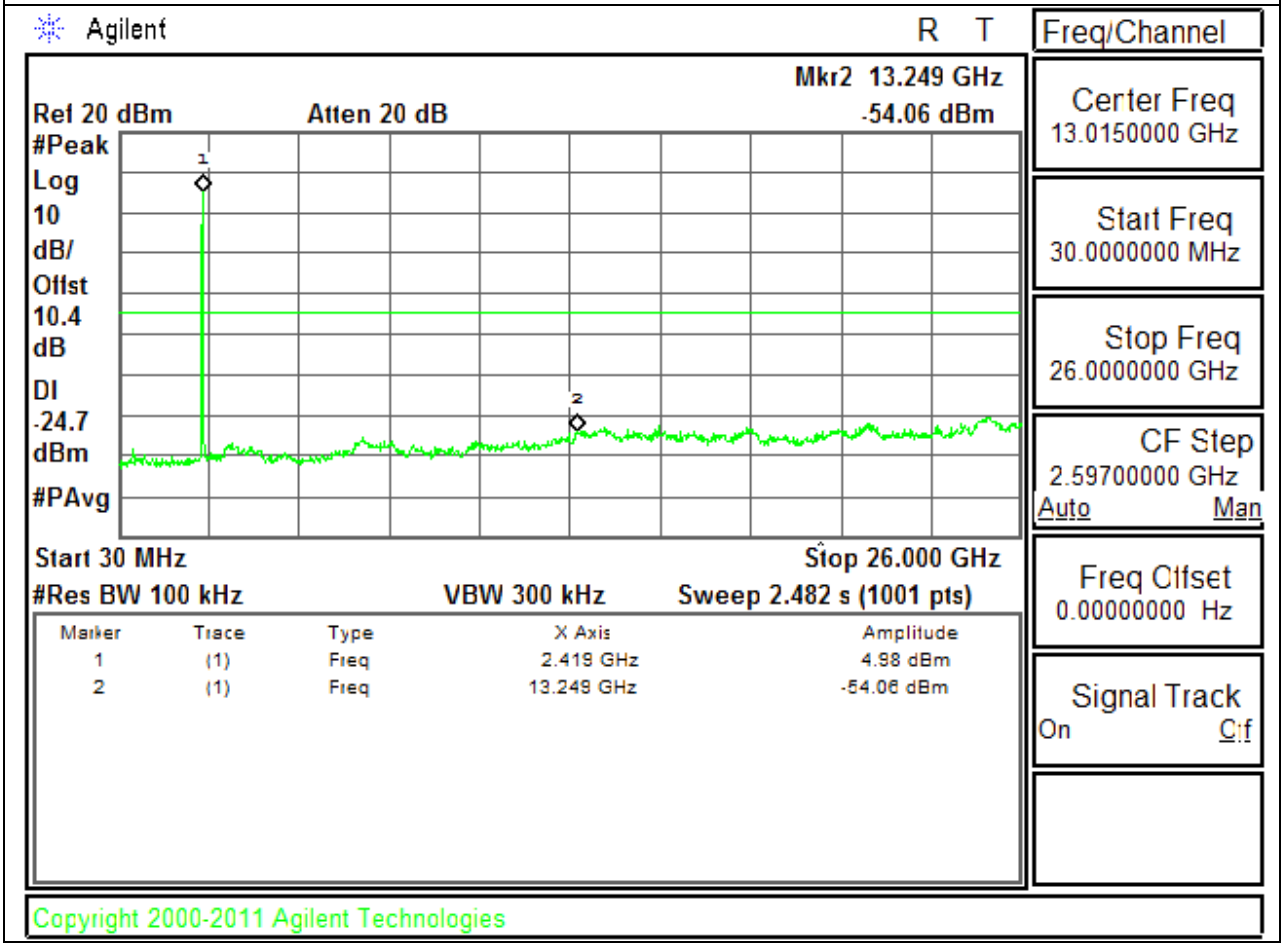
**HIGH CHANNEL BANDEDGE**

AUTHORIZED BAND EDGE HIGH CH

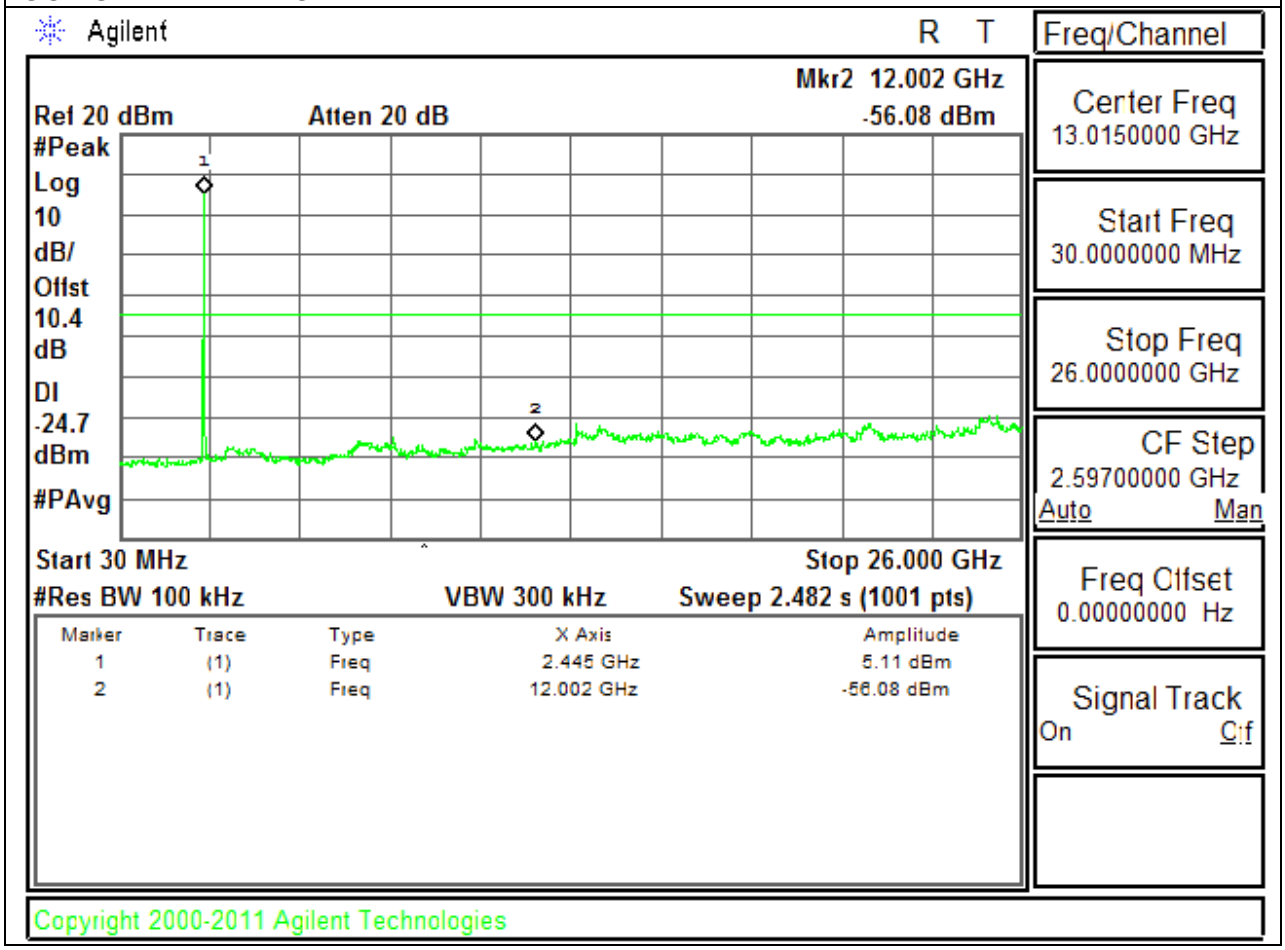


**OUT-OF-BAND EMISSIONS**

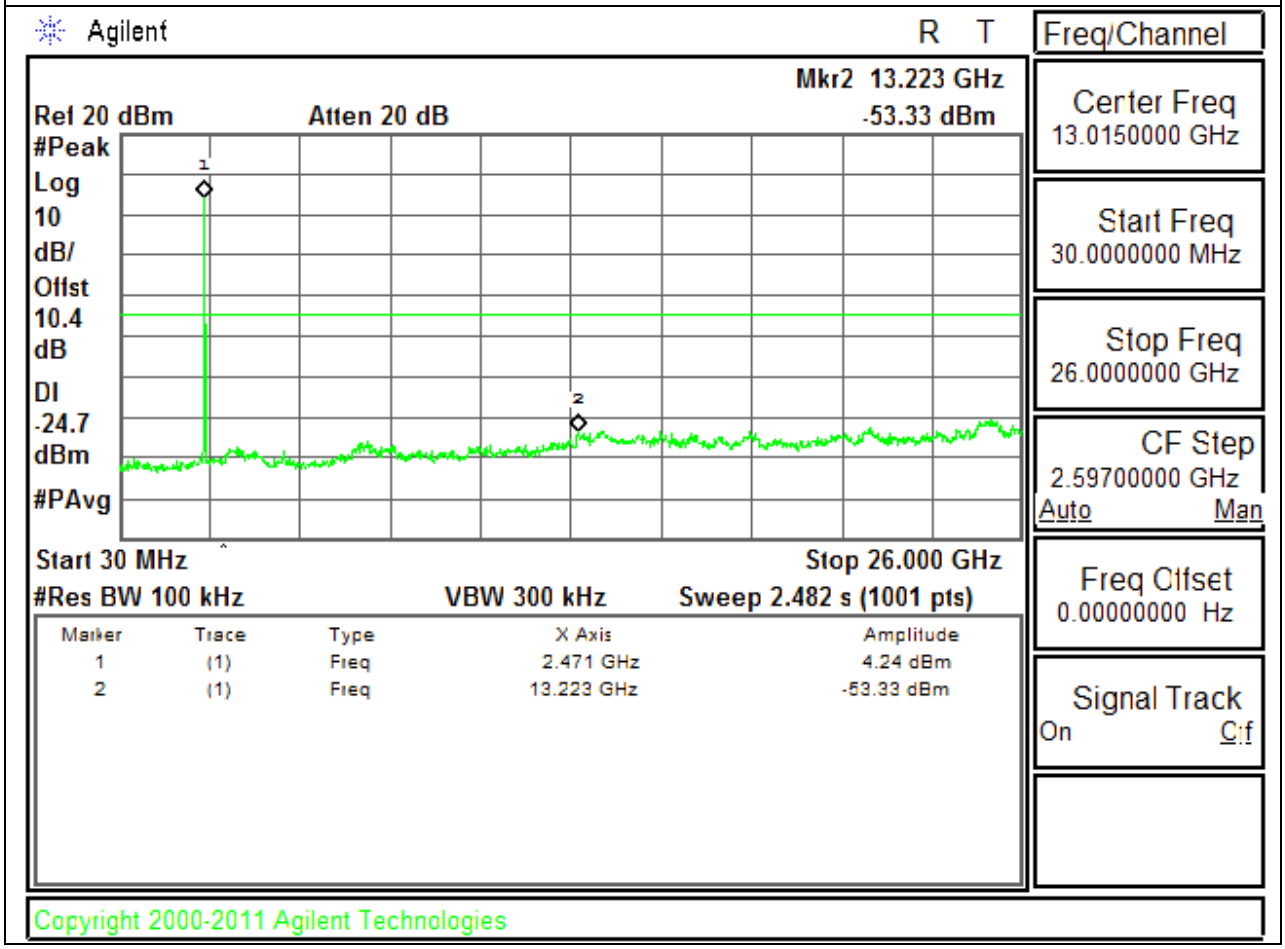
OUT OF BAND LOW CH



OUT OF BAND MID CH



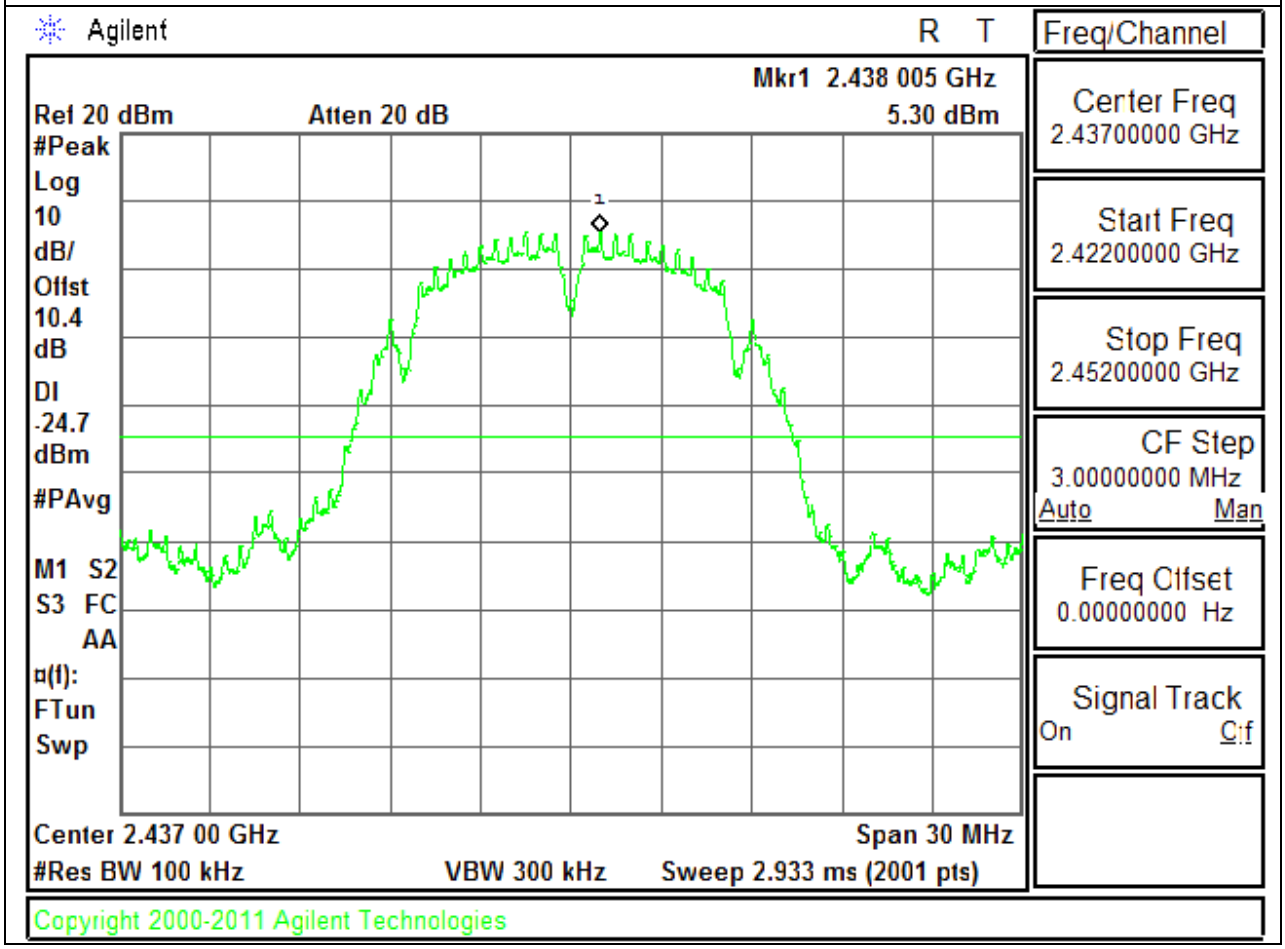
OUT OF BAND HIGH CH



## 10.5.2. 802.11b MODE IN THE 2.4 GHz BAND CHAIN 1

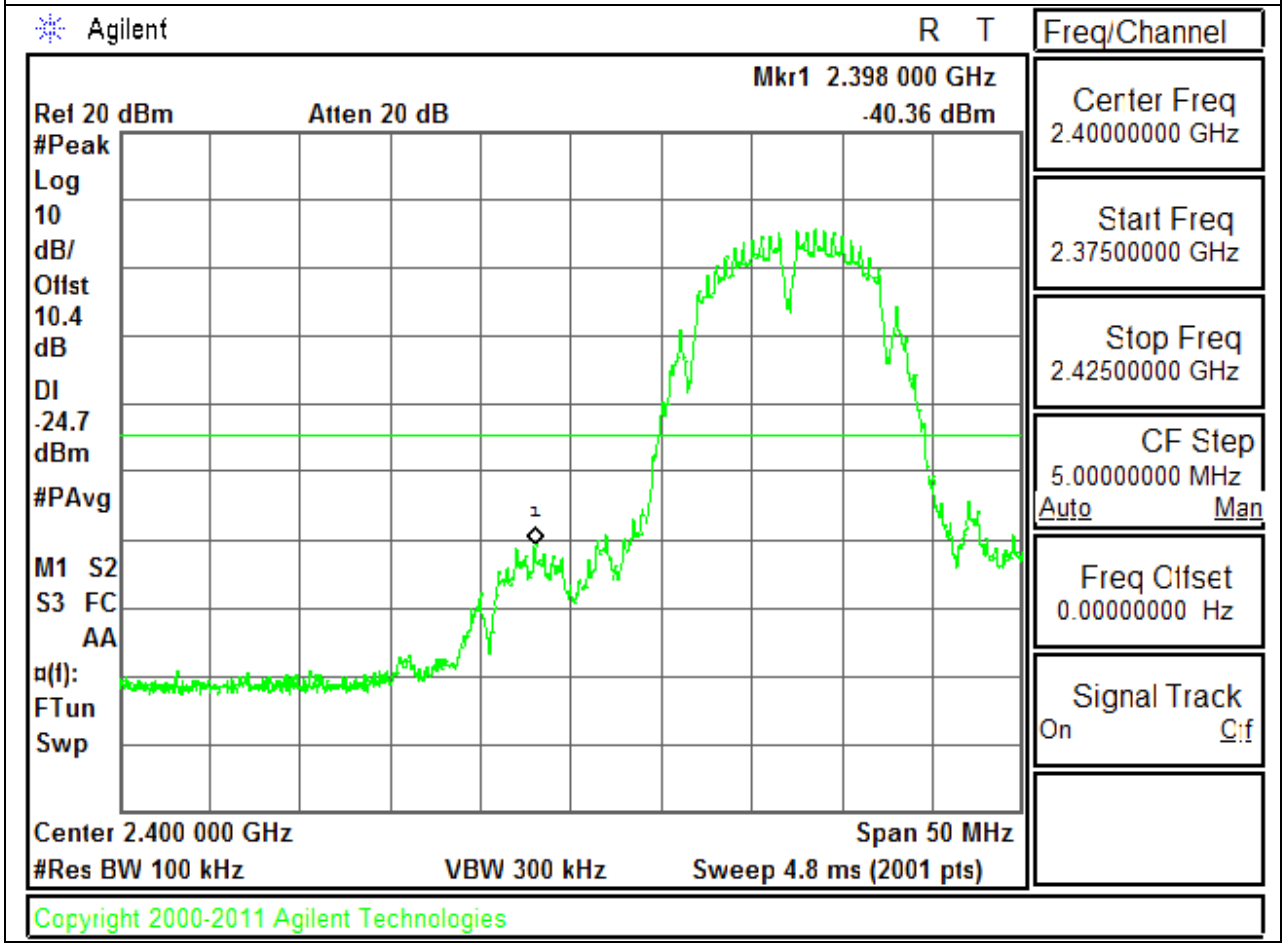
**IN-BAND REFERENCE LEVEL**

REFERENCE LEVEL MID CH



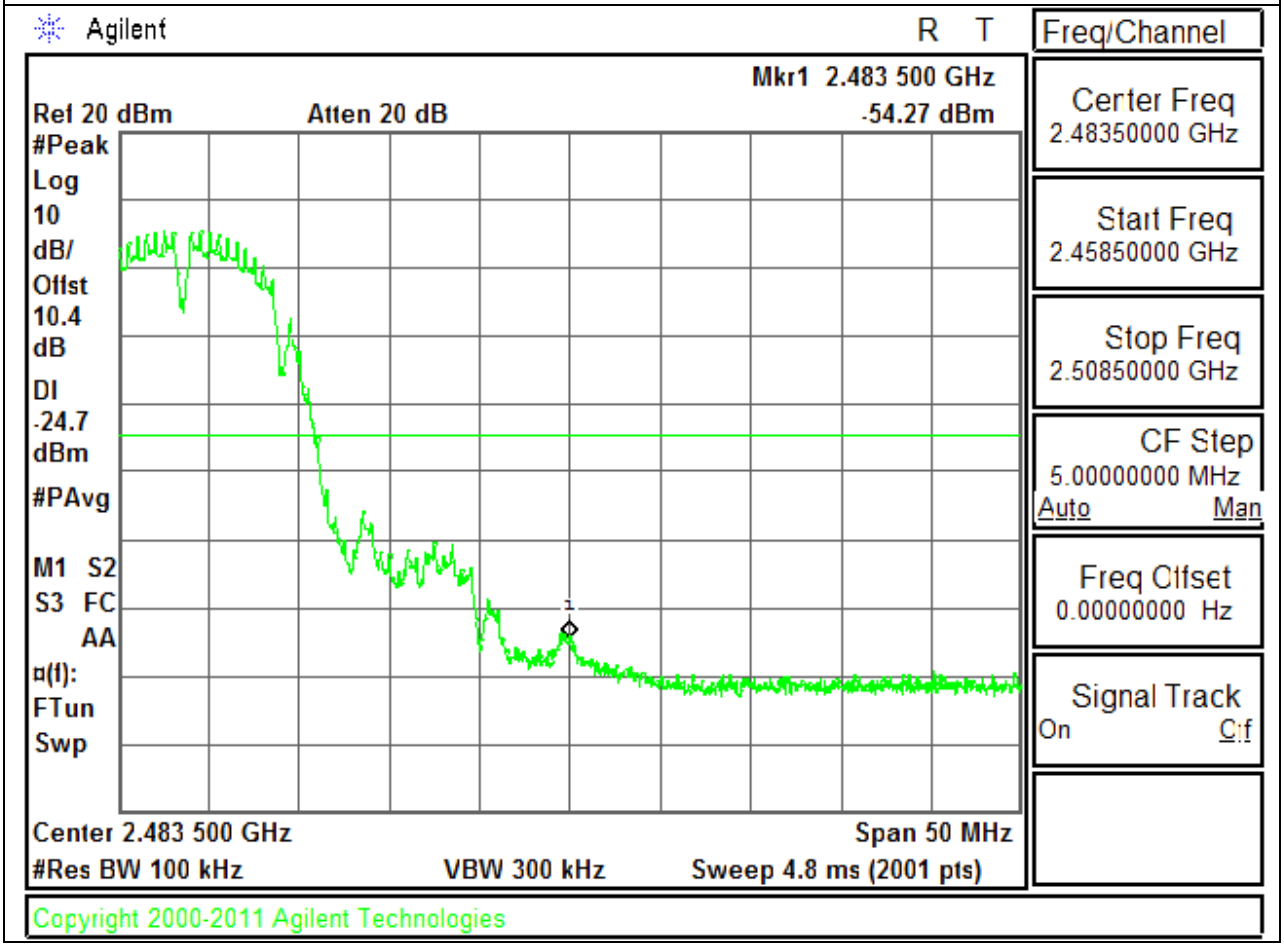
**LOW CHANNEL BANDEDGE**

AUTHORIZED BAND EDGE LOW CH



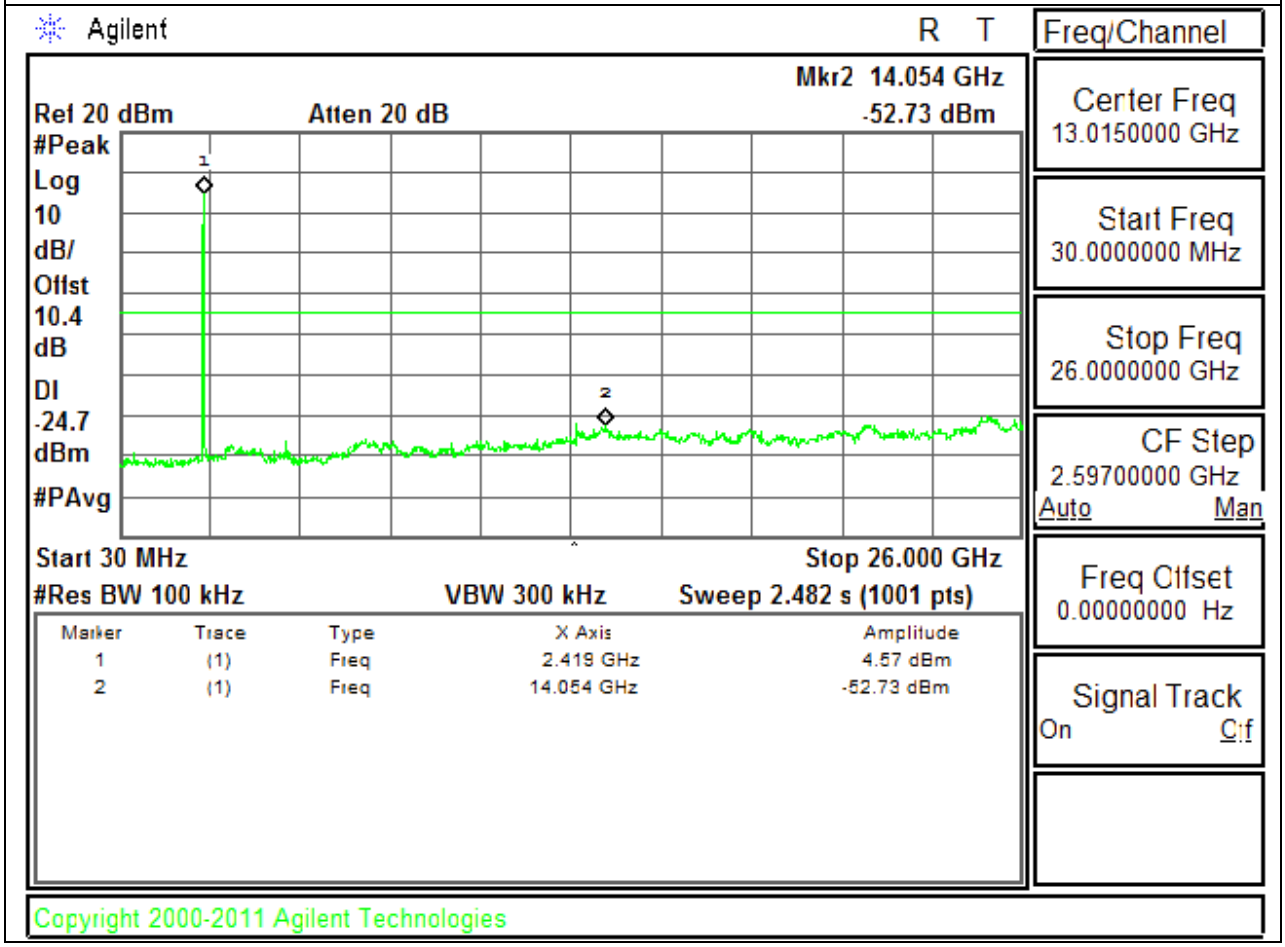
**HIGH CHANNEL BANDEDGE**

AUTHORIZED BAND EDGE HIGH CH

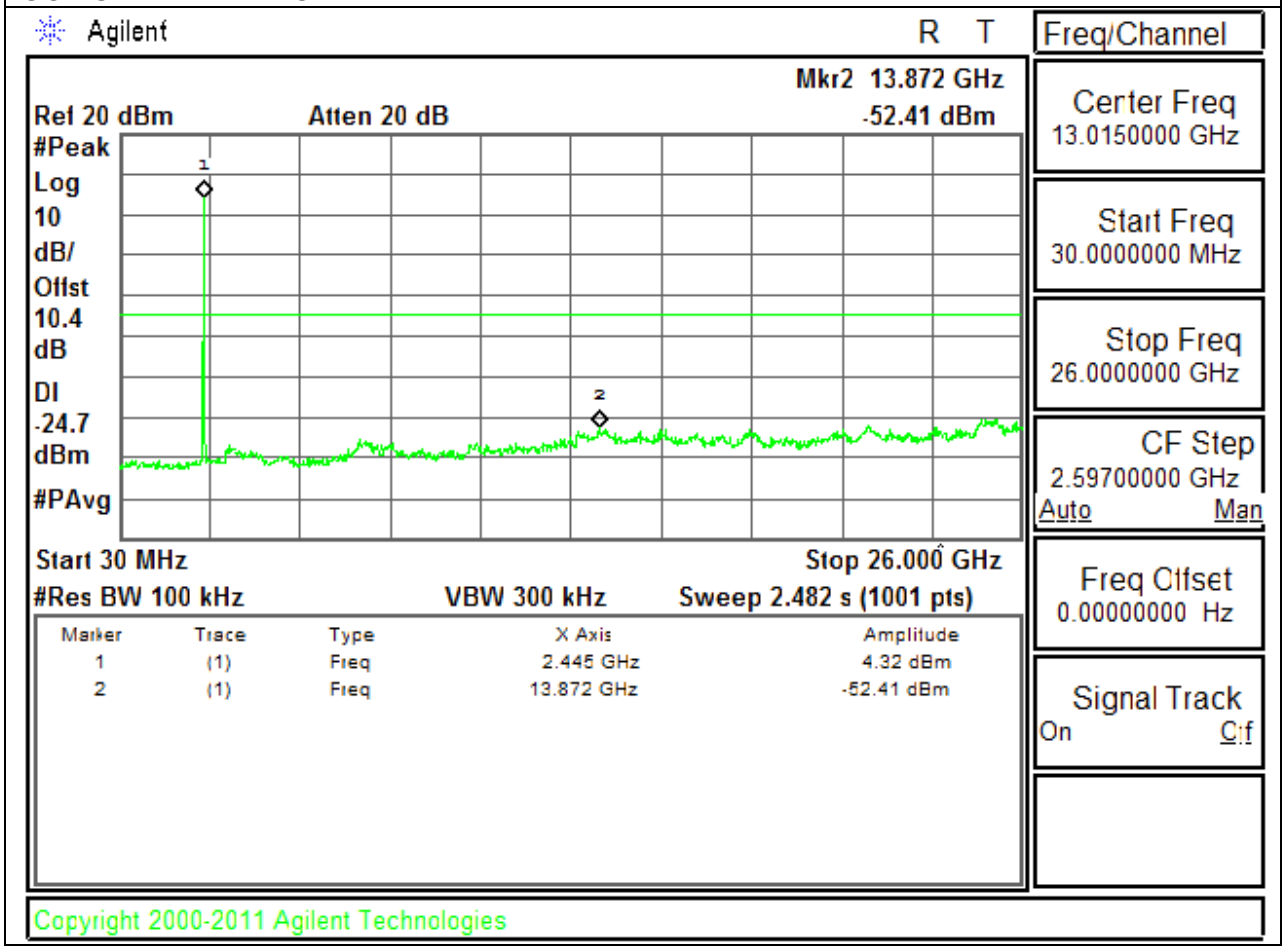


**OUT-OF-BAND EMISSIONS**

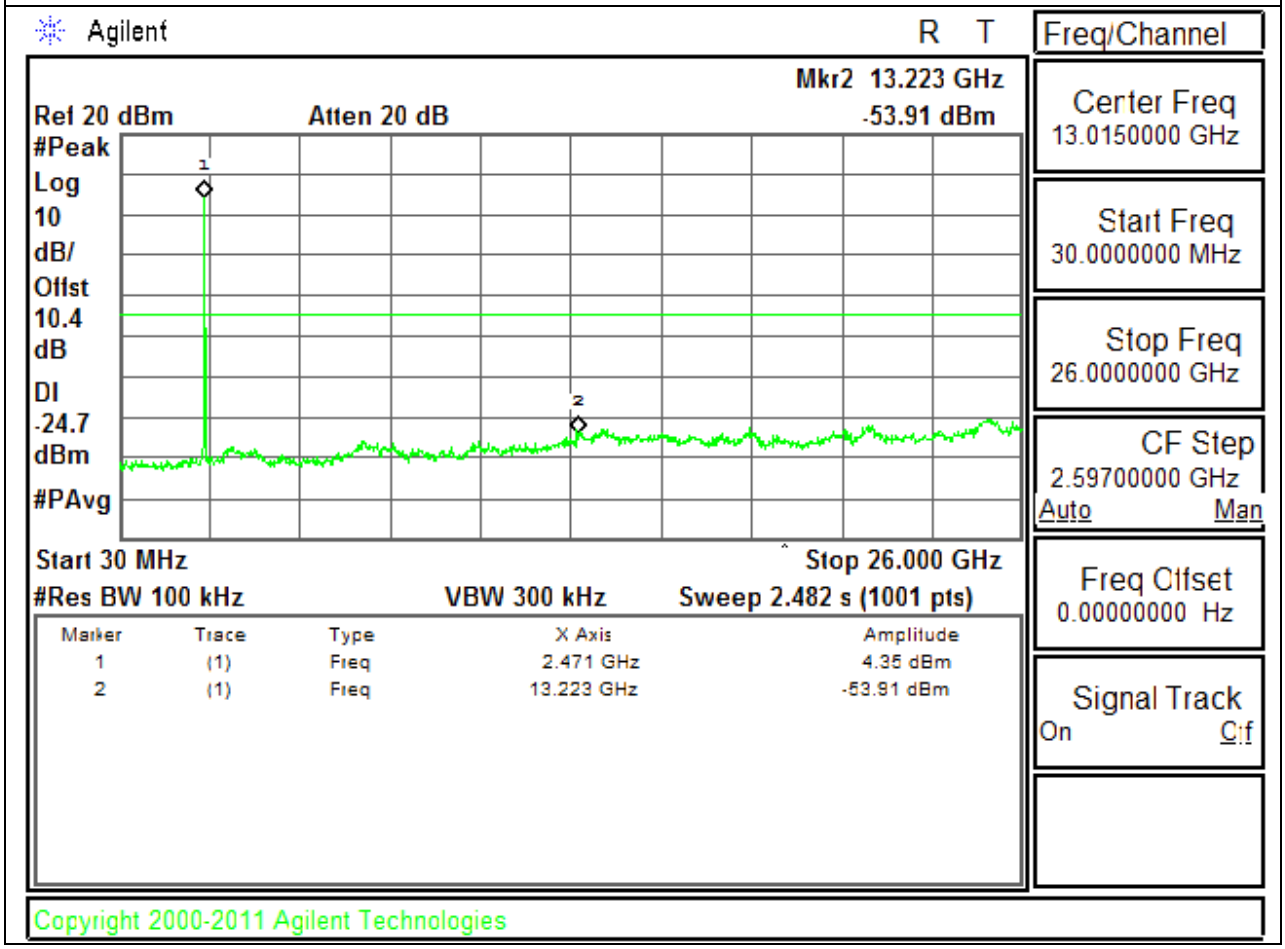
OUT OF BAND LOW CH



OUT OF BAND MID CH



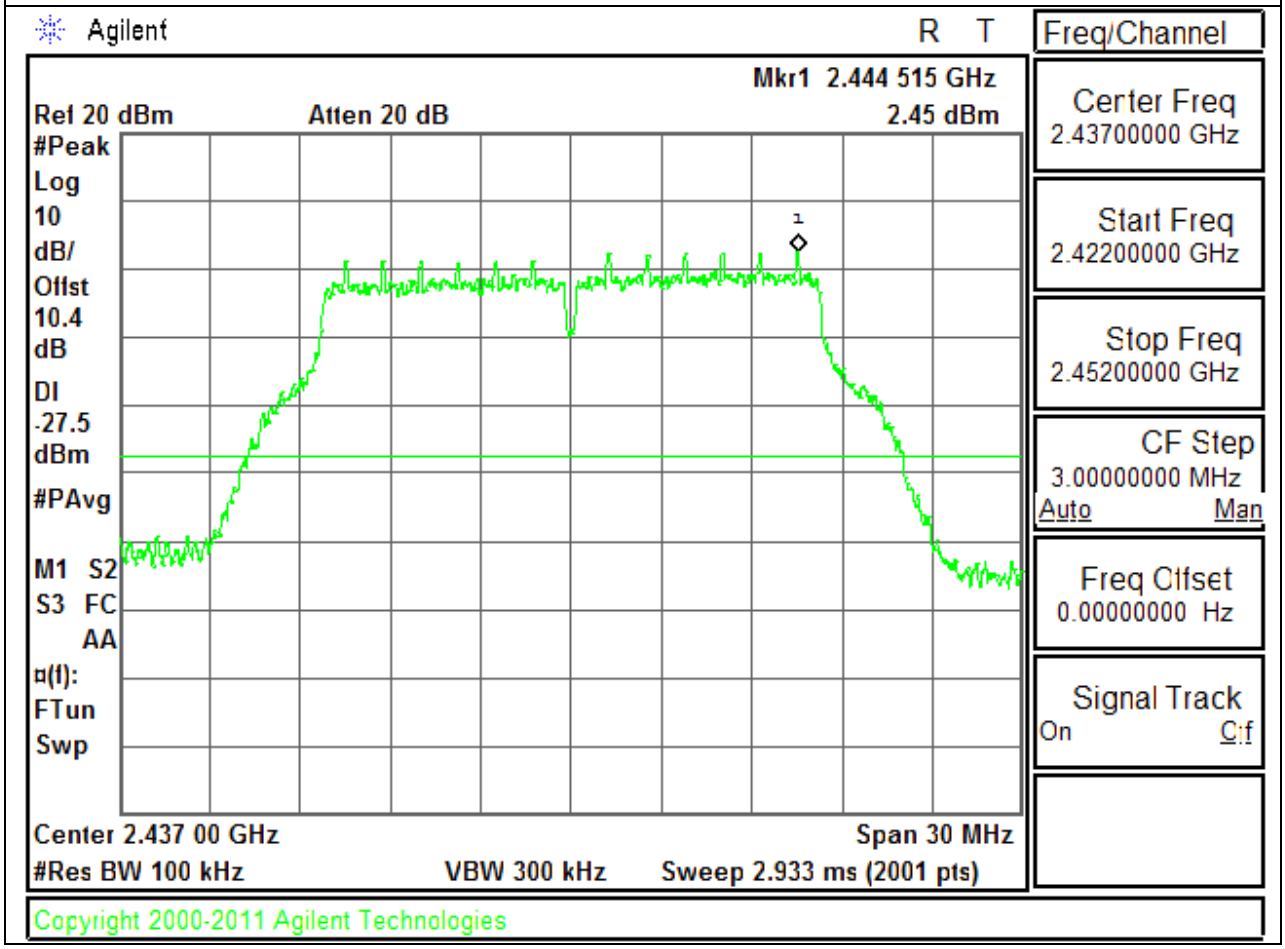
OUT OF BAND HIGH CH



### 10.5.3. 802.11g MODE IN THE 2.4 GHz BAND CHAIN 0

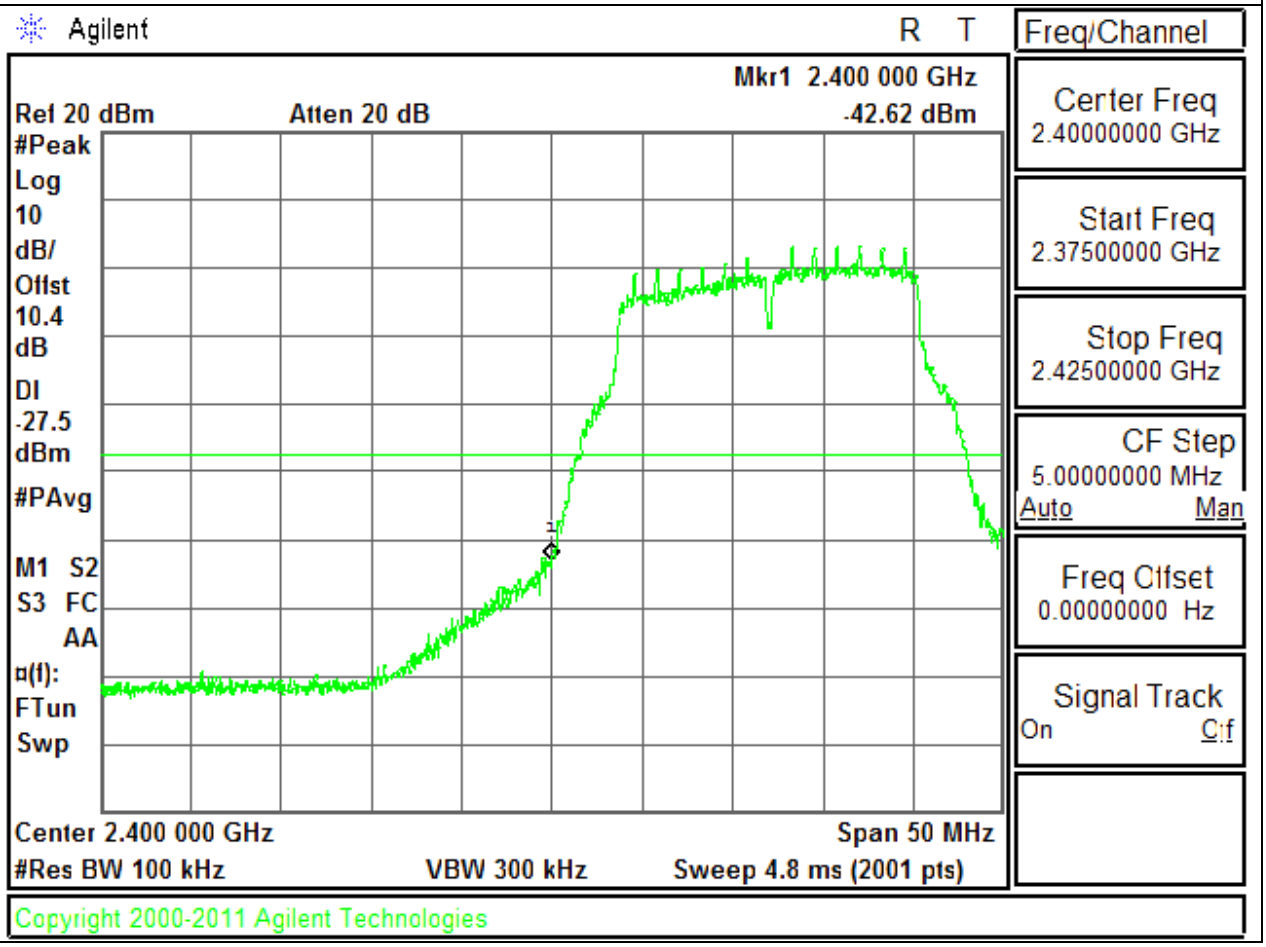
**IN-BAND REFERENCE LEVEL**

REFERENCE LEVEL MID CH



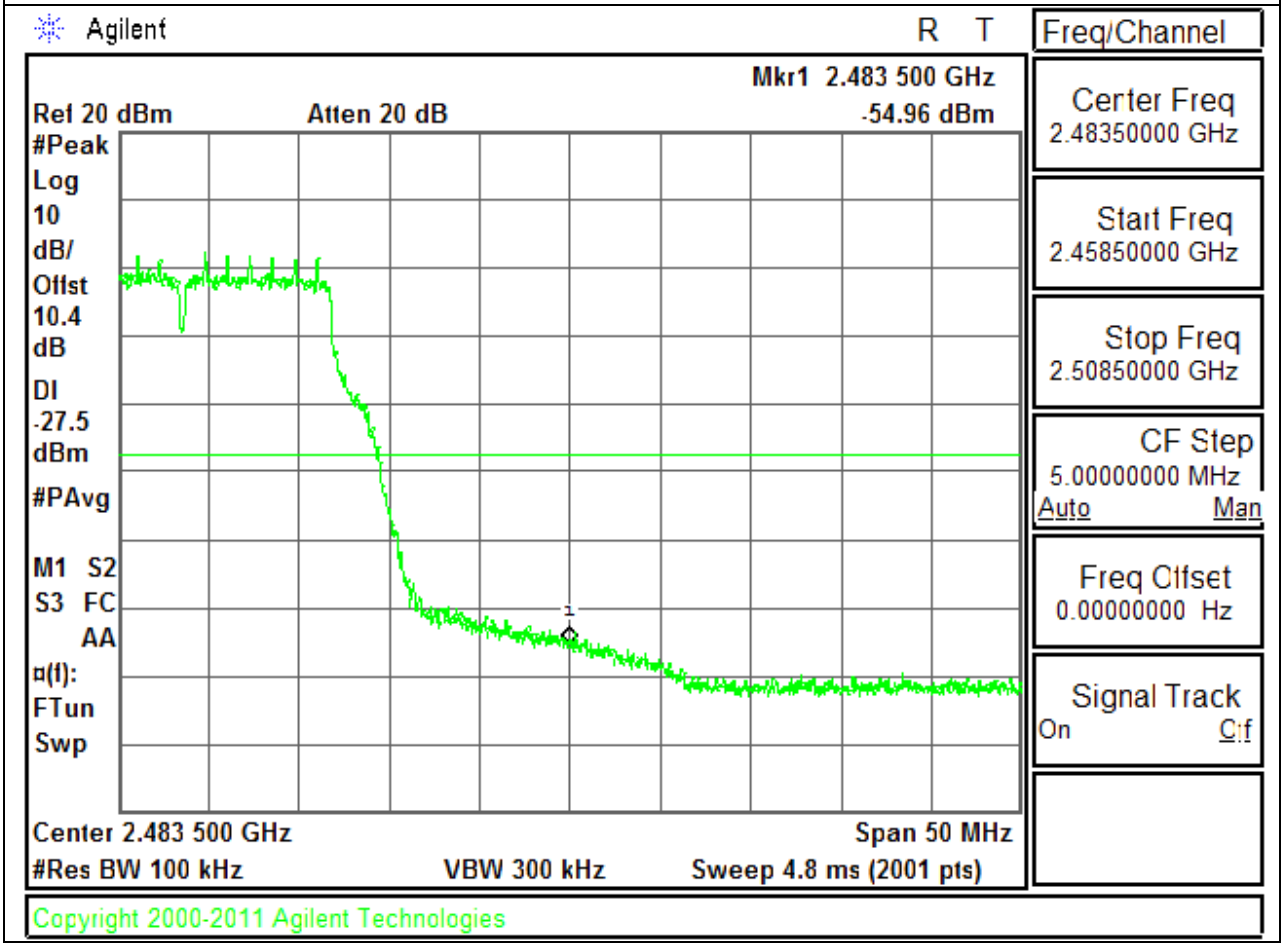
**LOW CHANNEL BANDEDGE**

AUTHORIZED BAND EDGE LOW CH



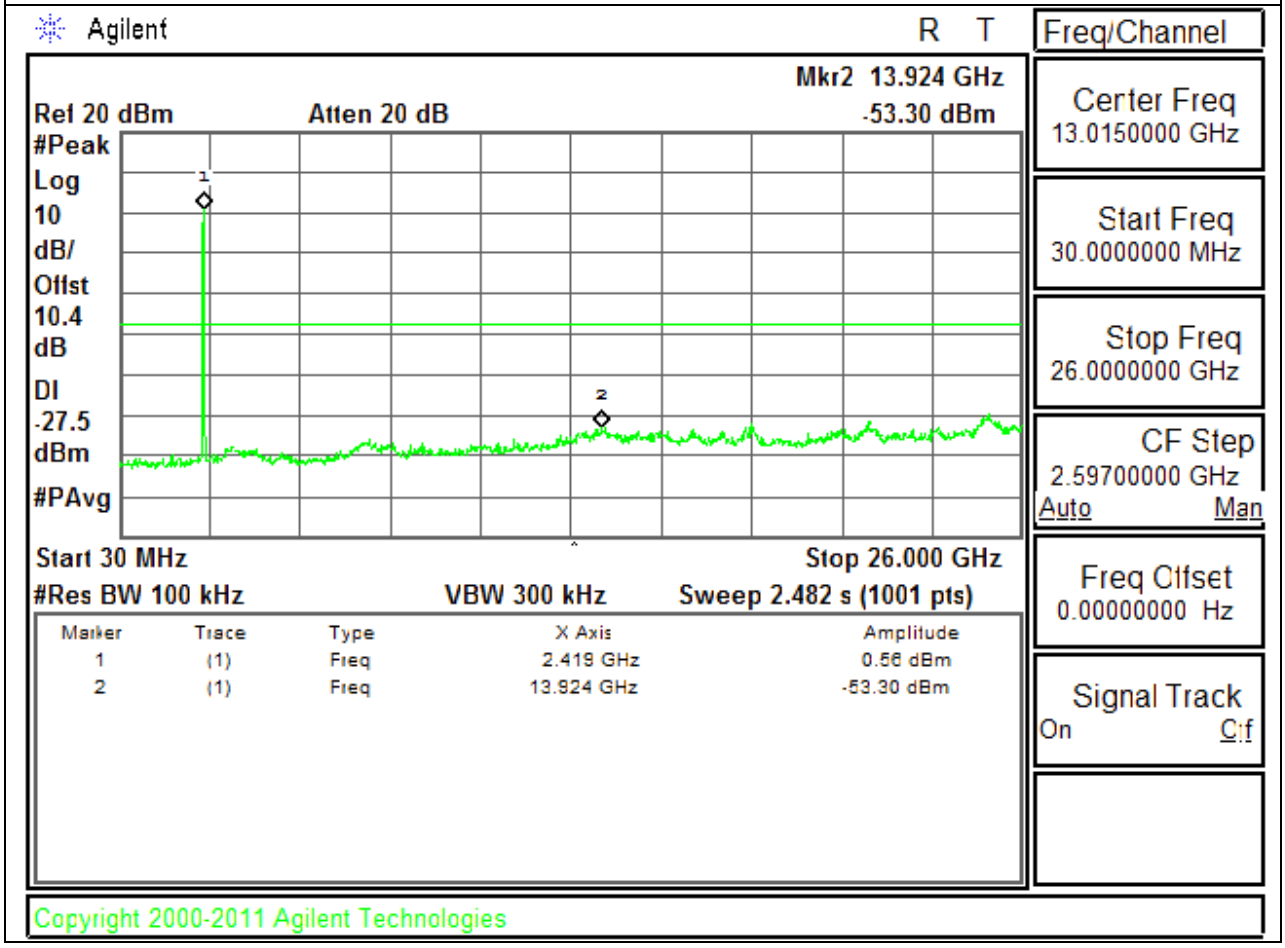
**HIGH CHANNEL BANDEDGE**

AUTHORIZED BAND EDGE HIGH CH

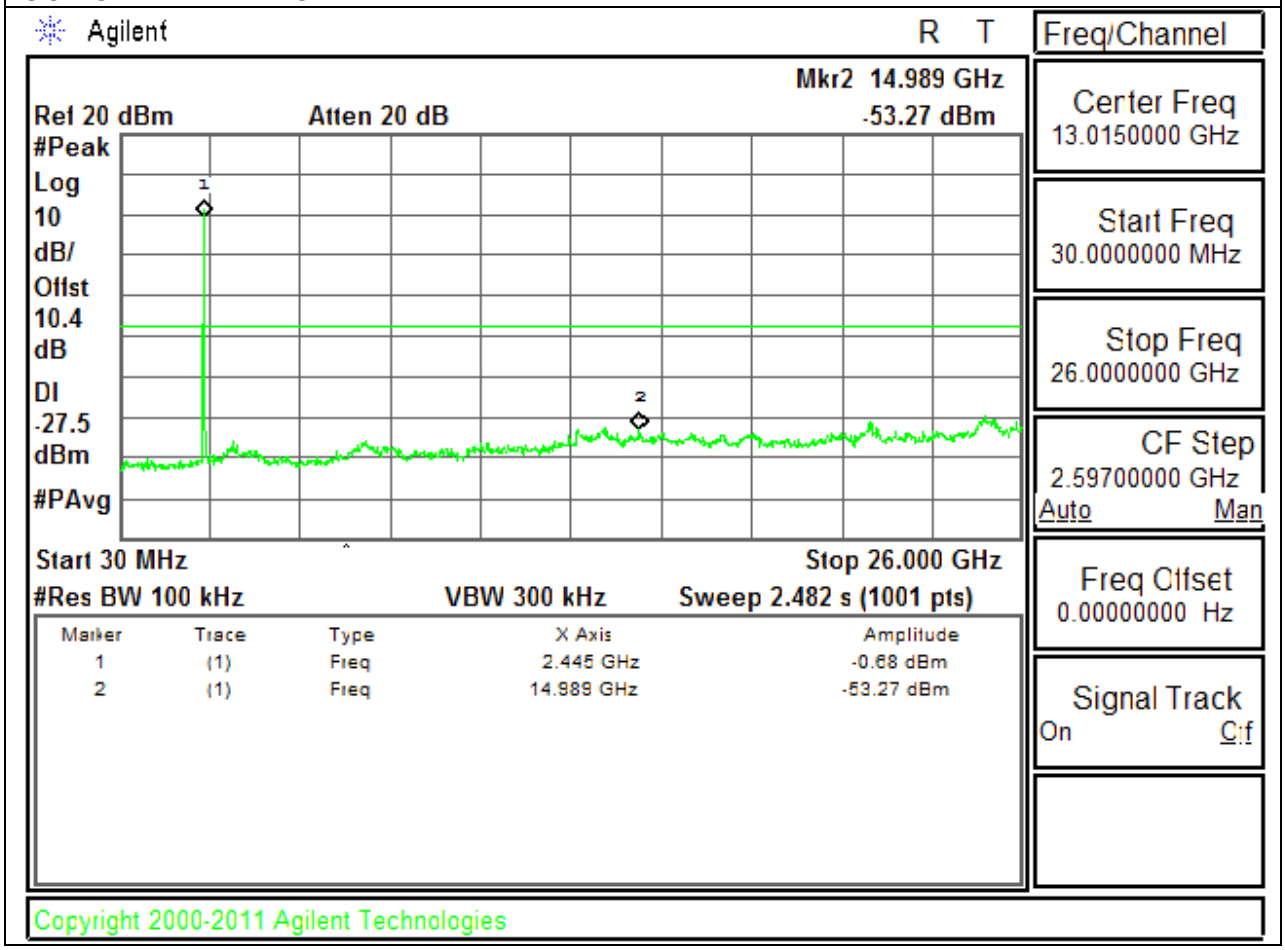


**OUT-OF-BAND EMISSIONS**

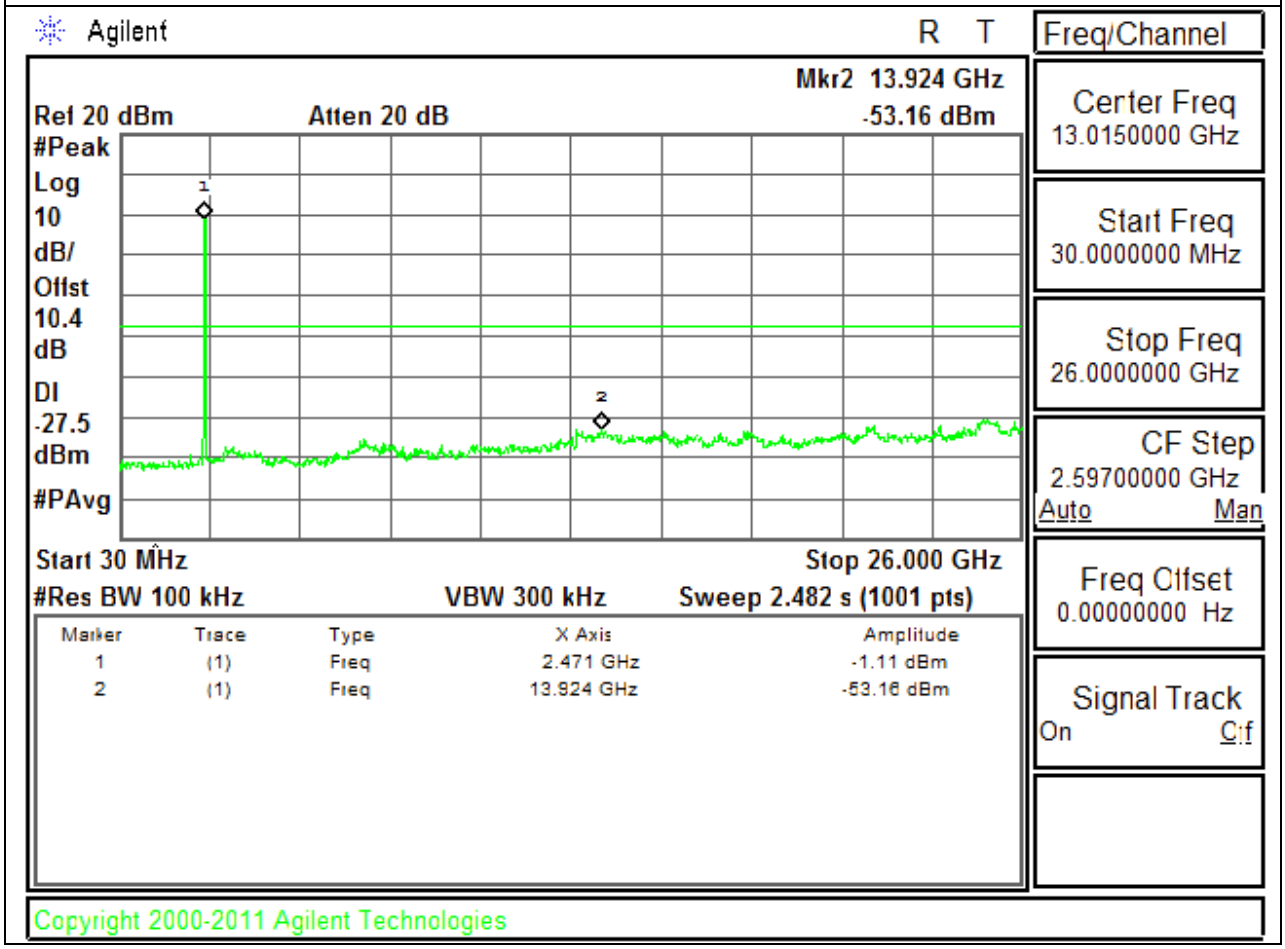
OUT OF BAND LOW CH



OUT OF BAND MID CH



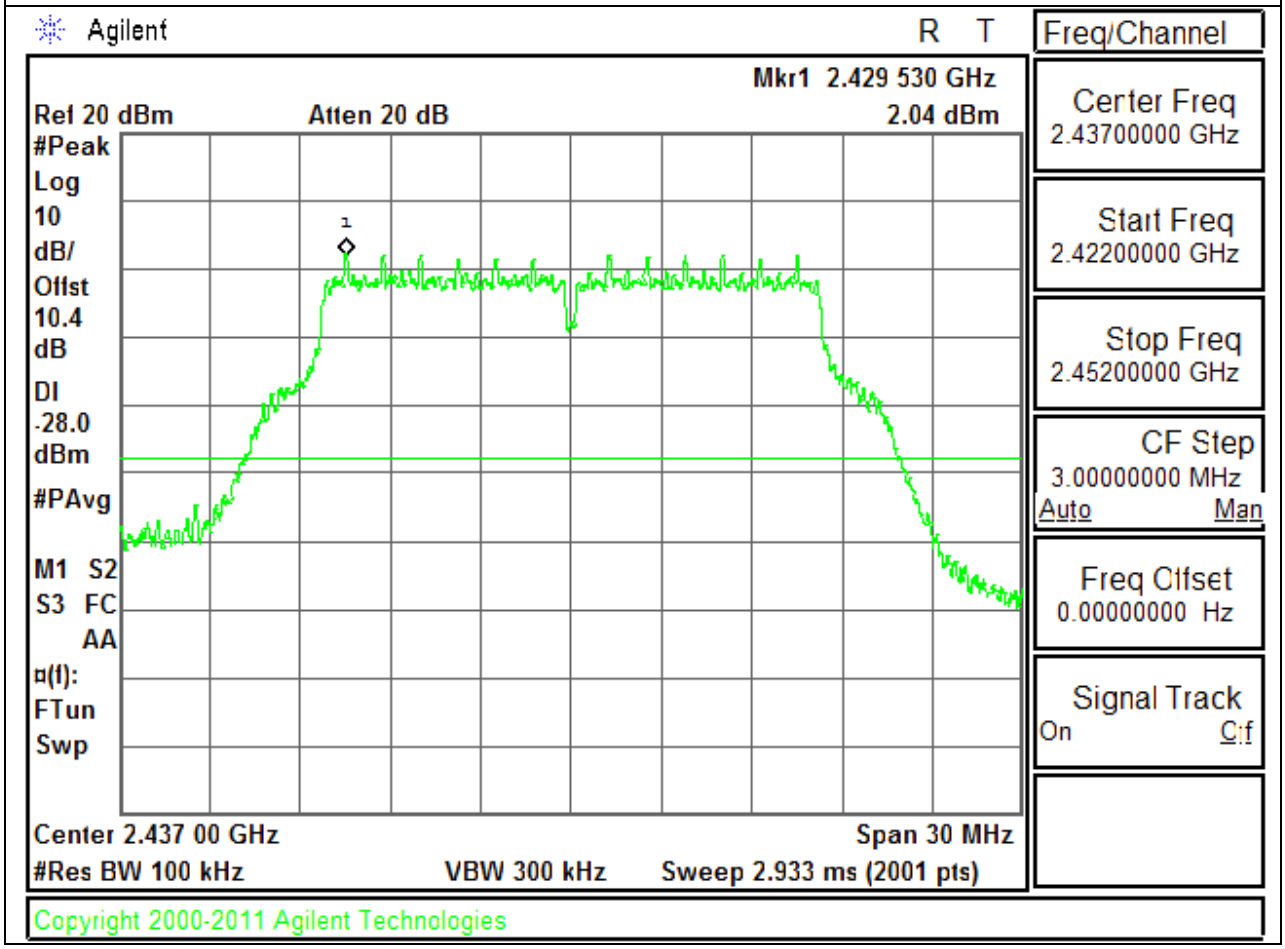
OUT OF BAND HIGH CH



## 10.5.4. 802.11g MODE IN THE 2.4 GHz BAND CHAIN 1

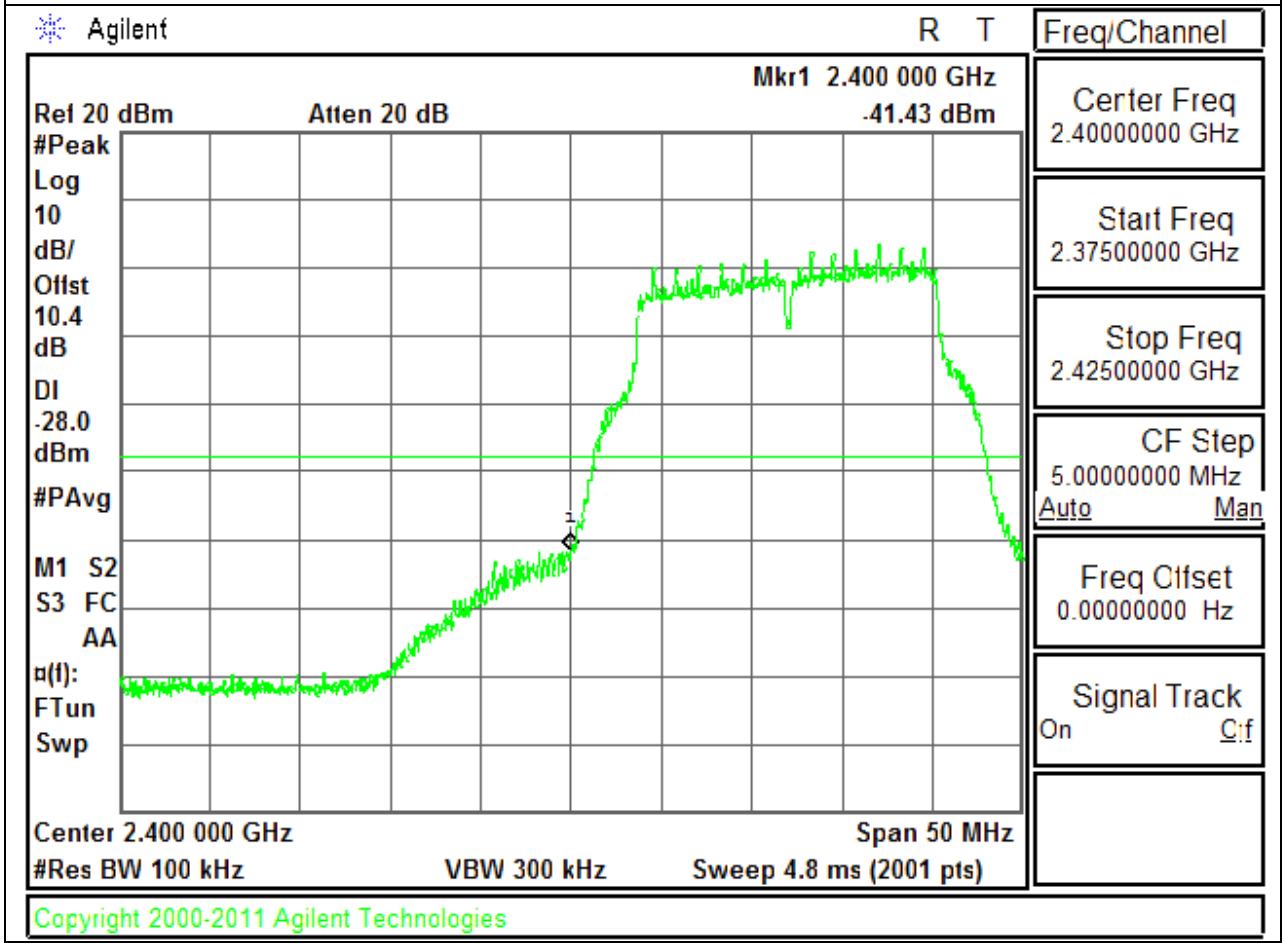
**IN-BAND REFERENCE LEVEL**

REFERENCE LEVEL MID CH



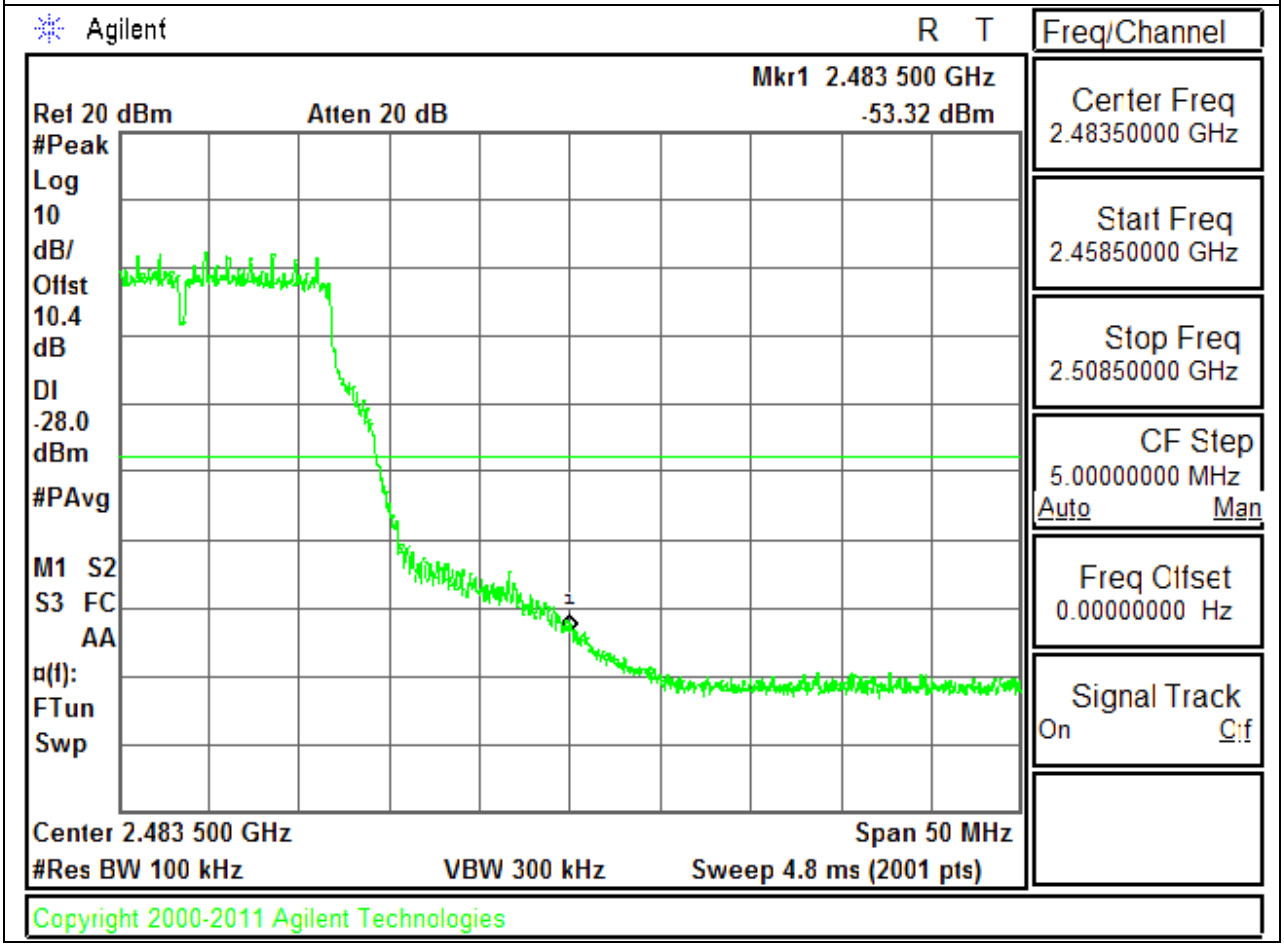
**LOW CHANNEL BANDEDGE**

AUTHORIZED BAND EDGE LOW CH



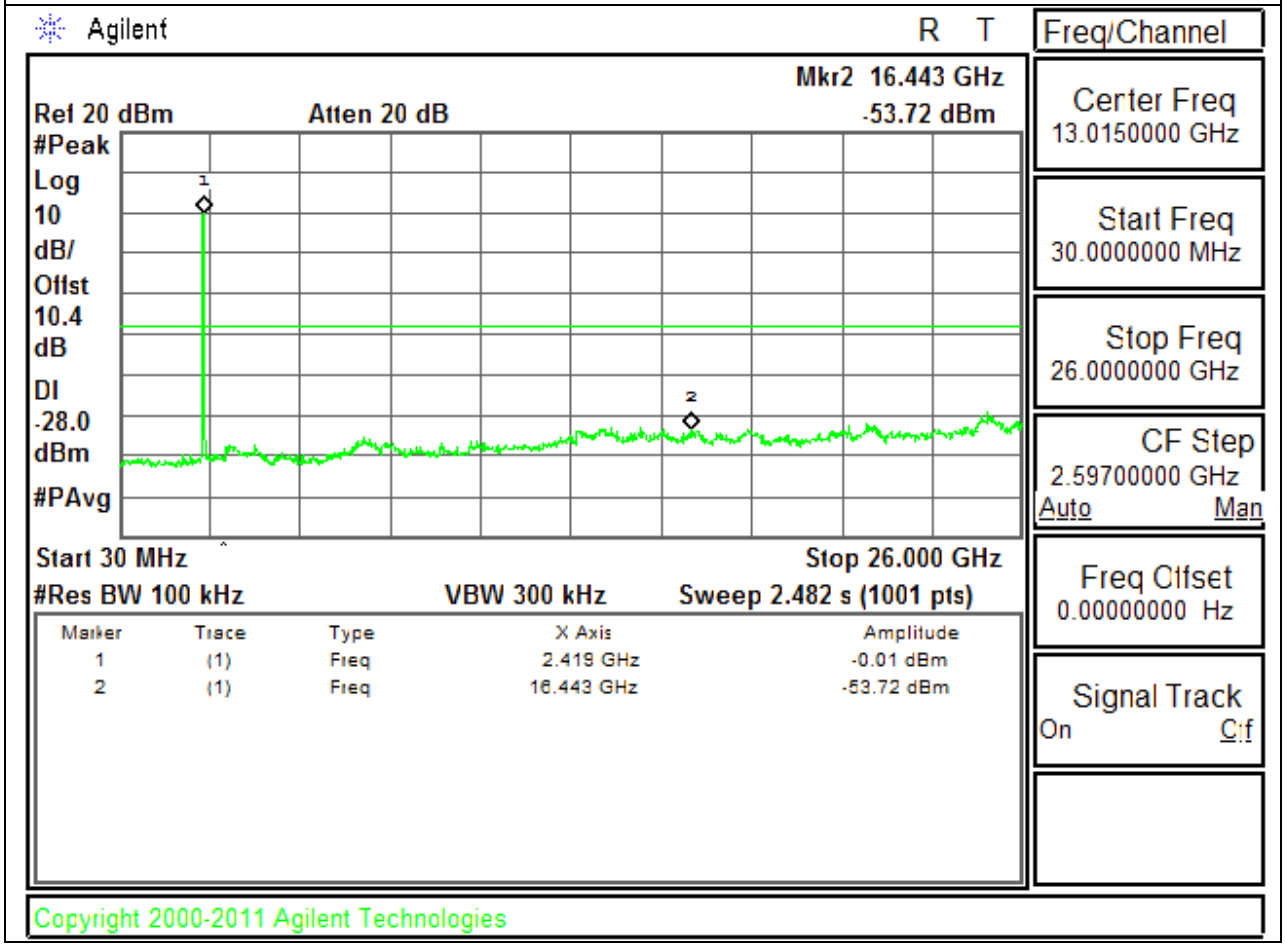
**HIGH CHANNEL BANDEDGE**

AUTHORIZED BAND EDGE HIGH CH

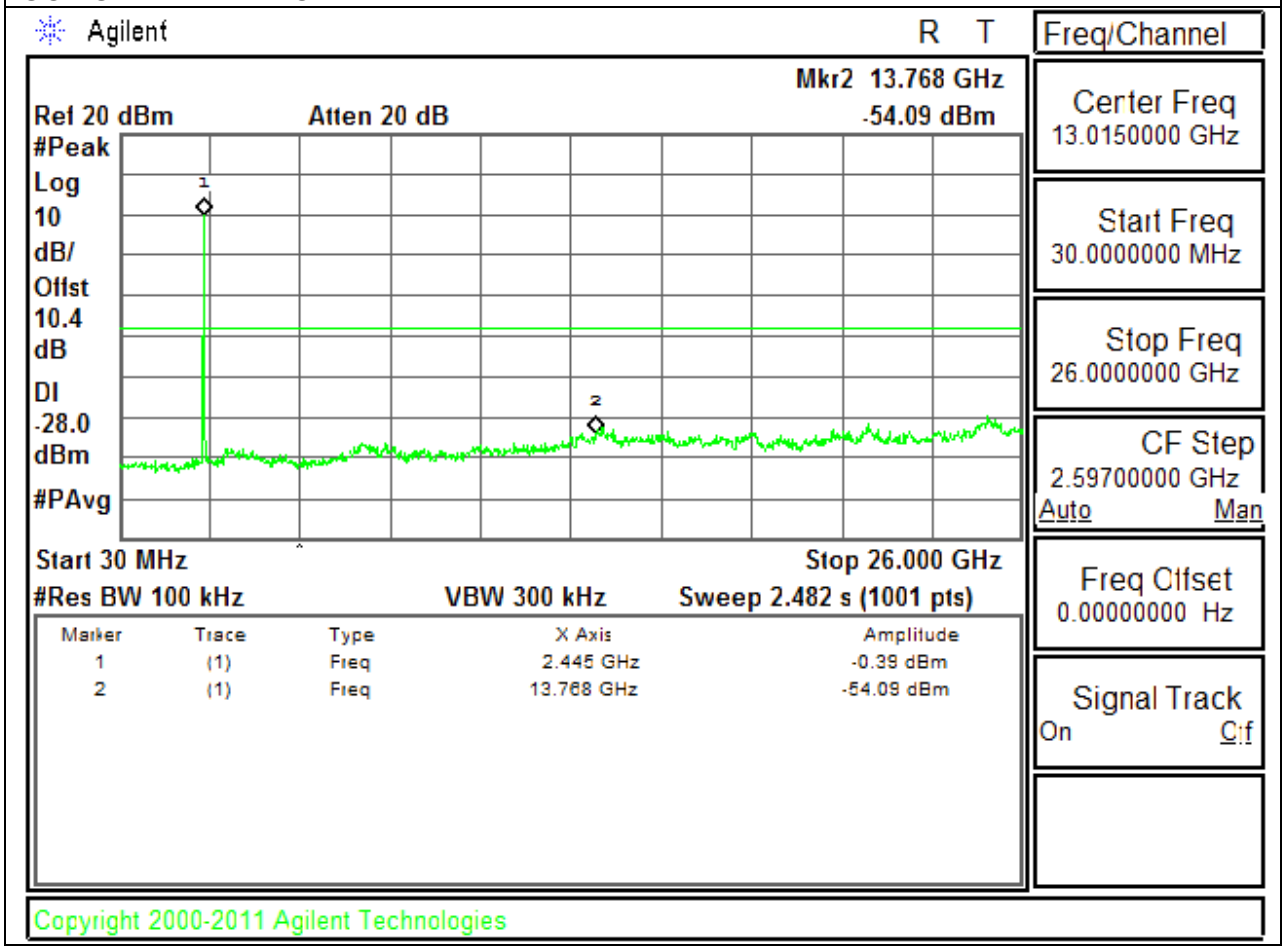


**OUT-OF-BAND EMISSIONS**

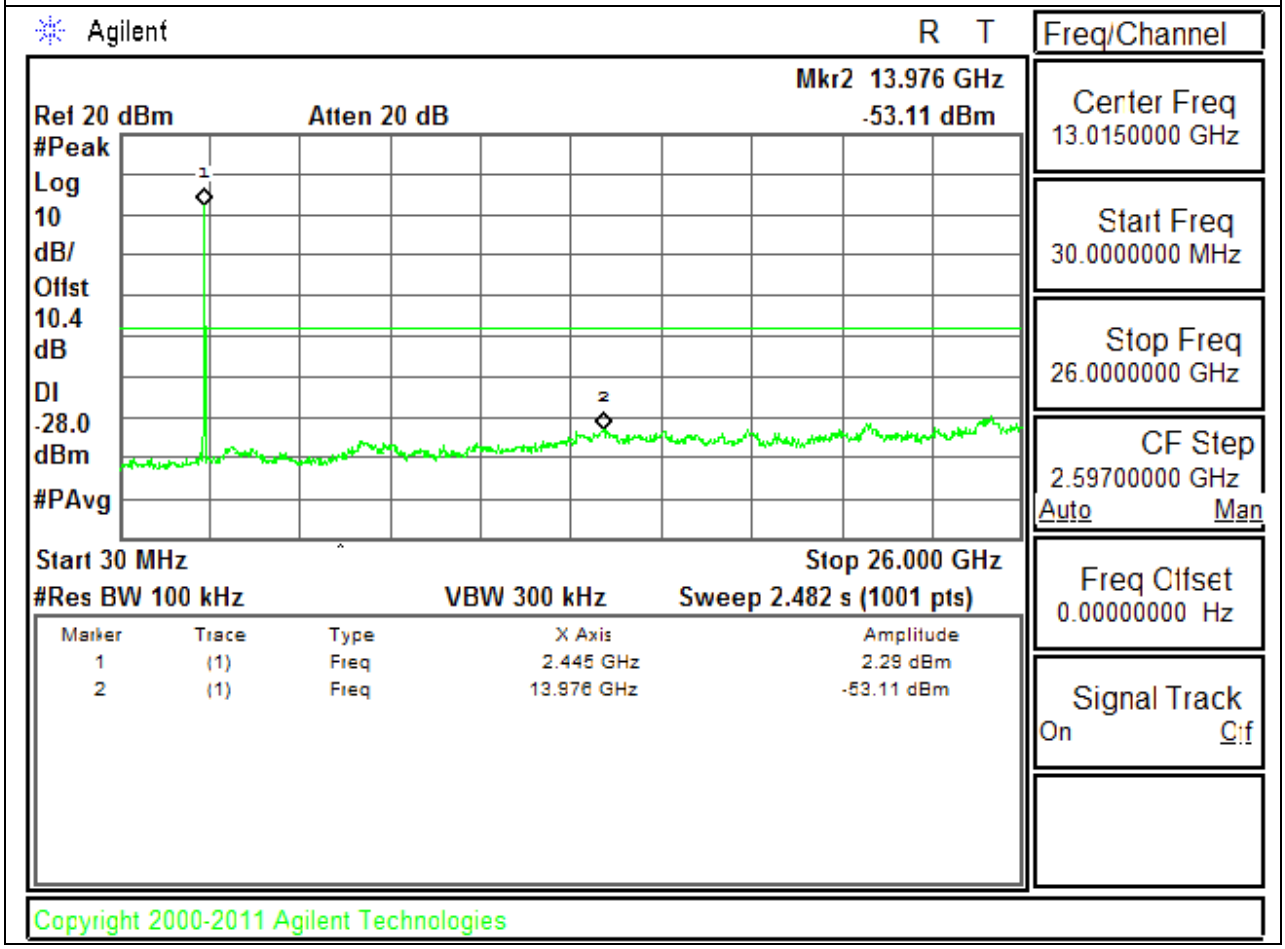
OUT OF BAND LOW CH



OUT OF BAND MID CH



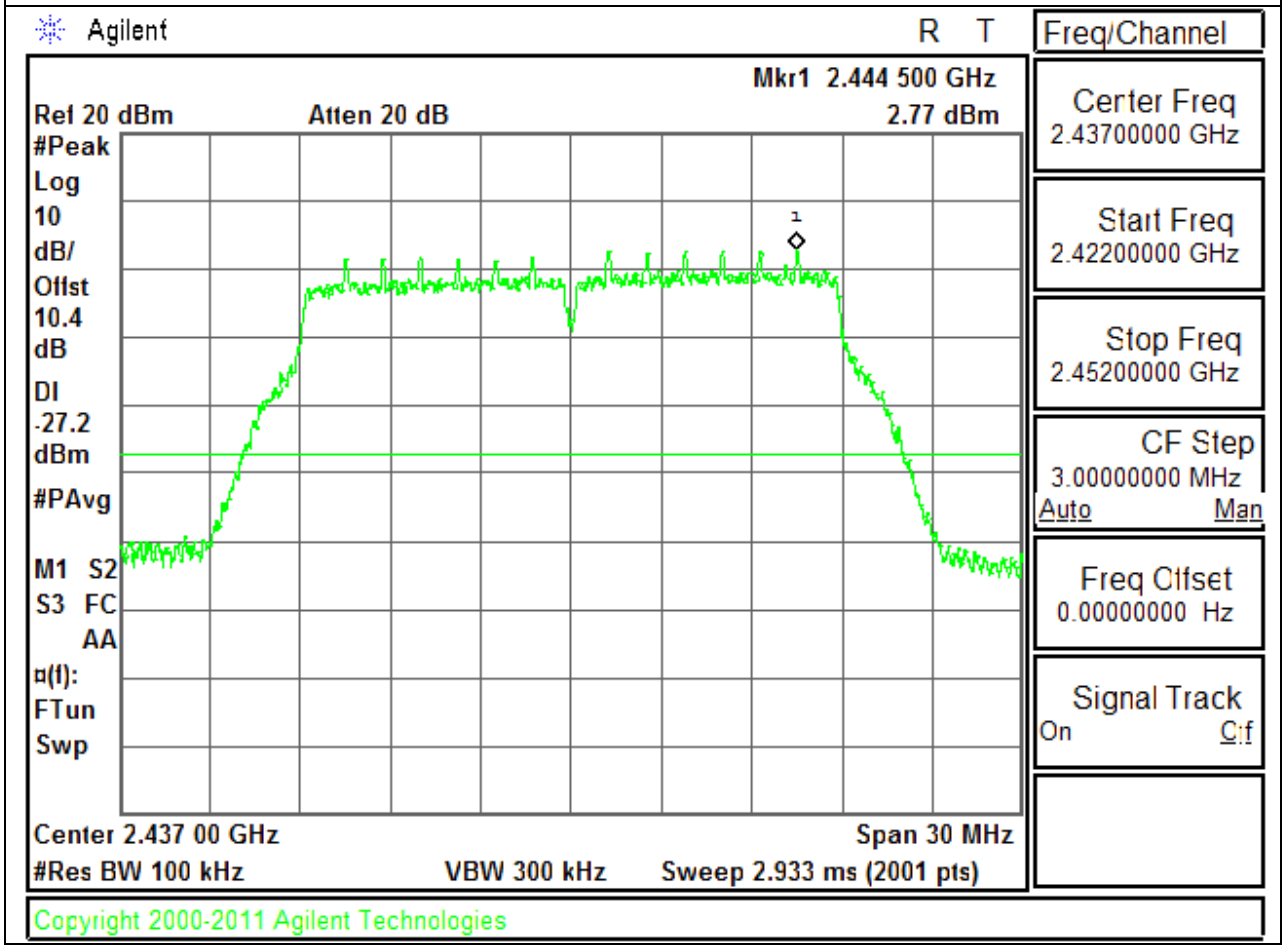
OUT OF BAND HIGH CH



## 10.5.5. 802.11n MODE IN THE 2.4 GHz BAND CHAIN 0

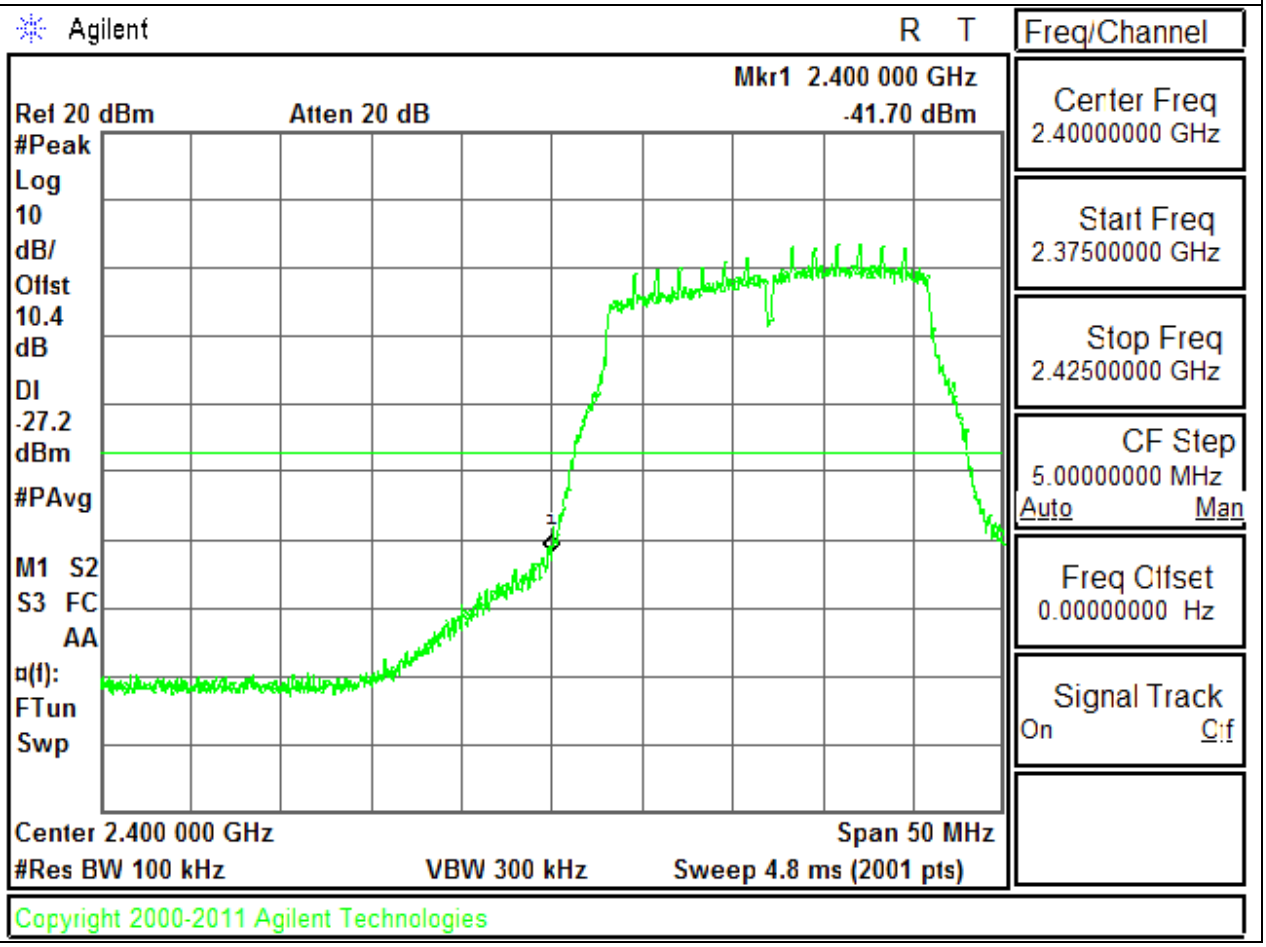
**IN-BAND REFERENCE LEVEL**

REFERENCE LEVEL MID CH



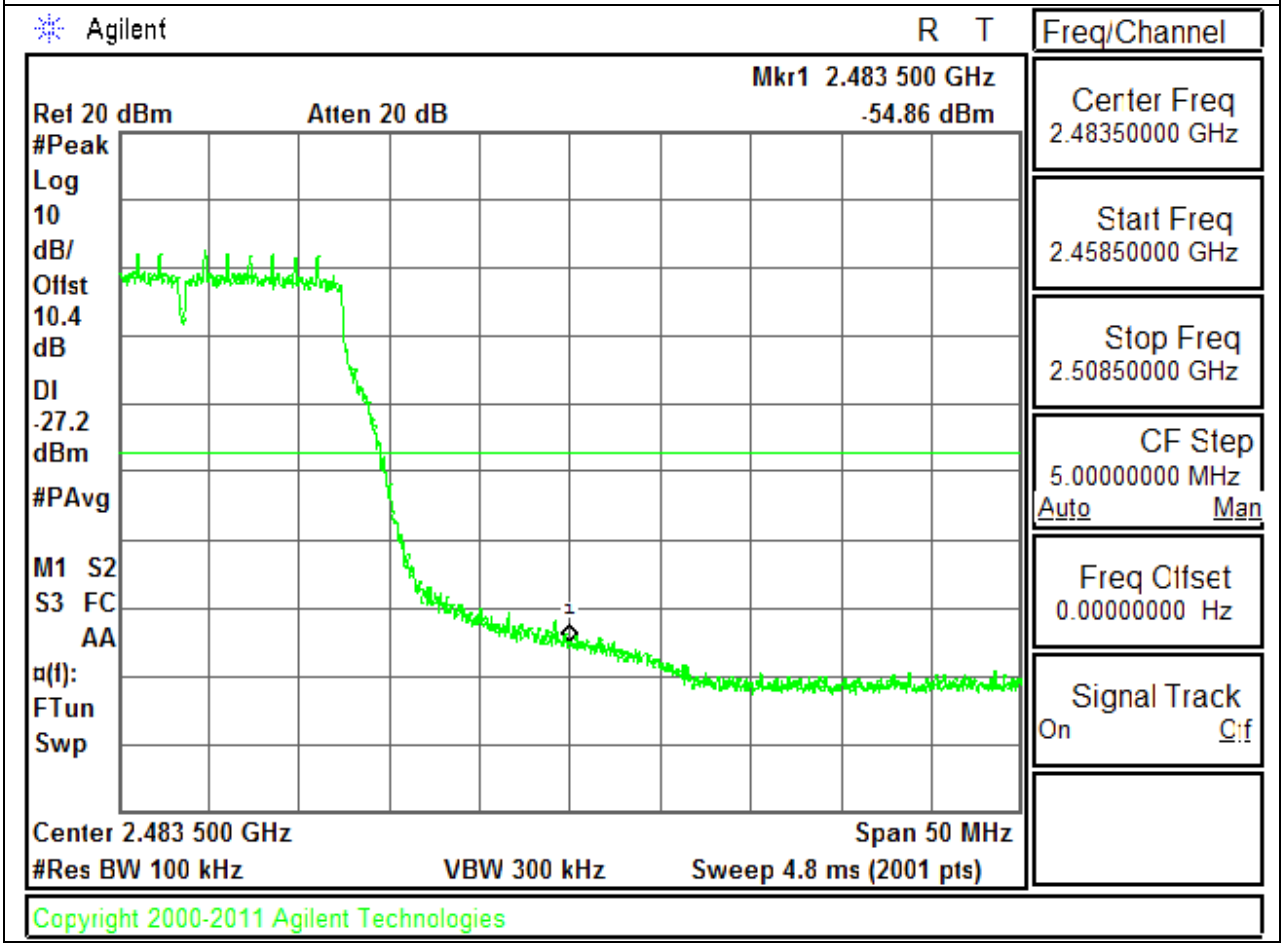
**LOW CHANNEL BANDEDGE**

AUTHORIZED BAND EDGE LOW CH



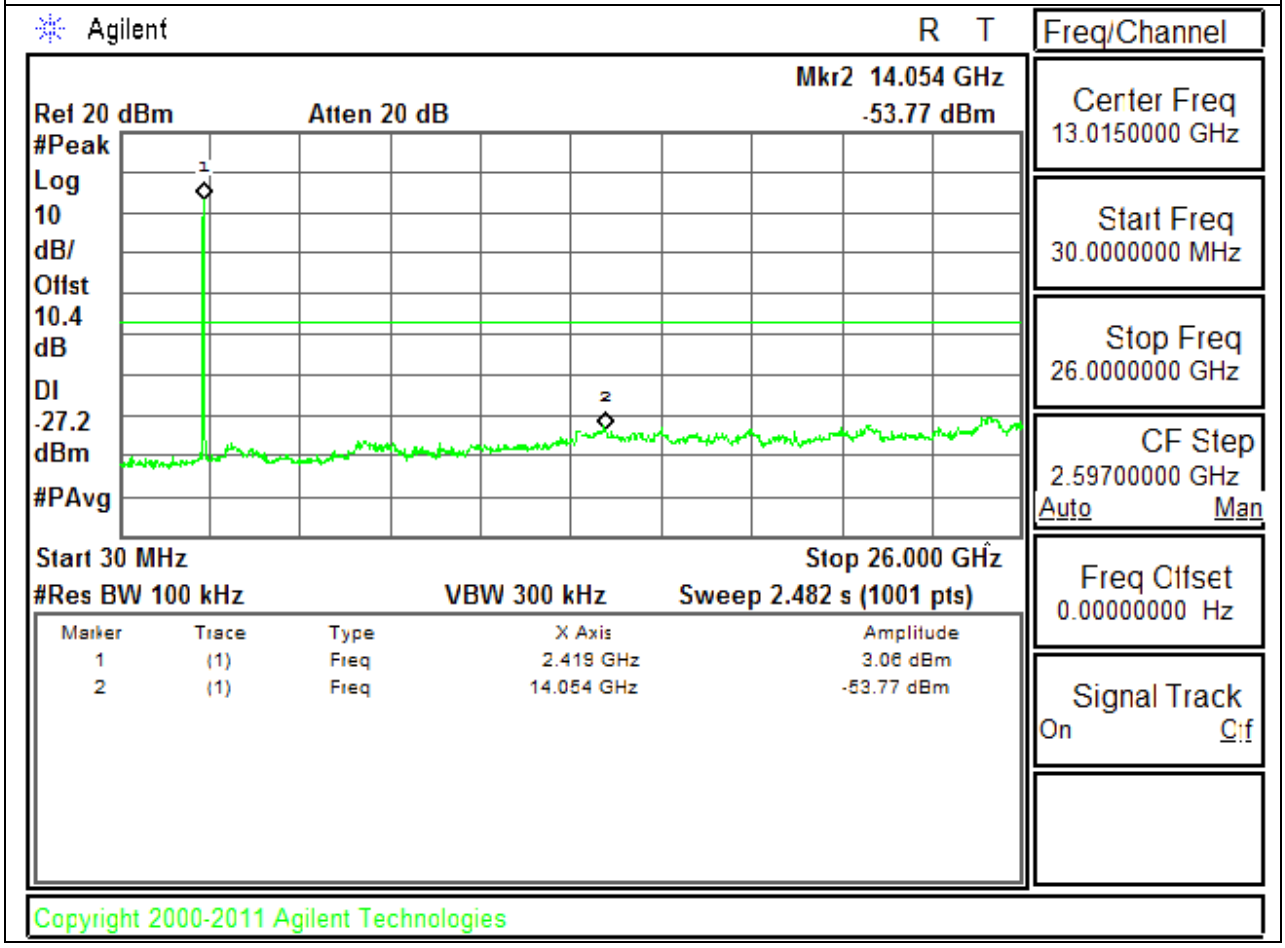
**HIGH CHANNEL BANDEDGE**

AUTHORIZED BAND EDGE HIGH CH

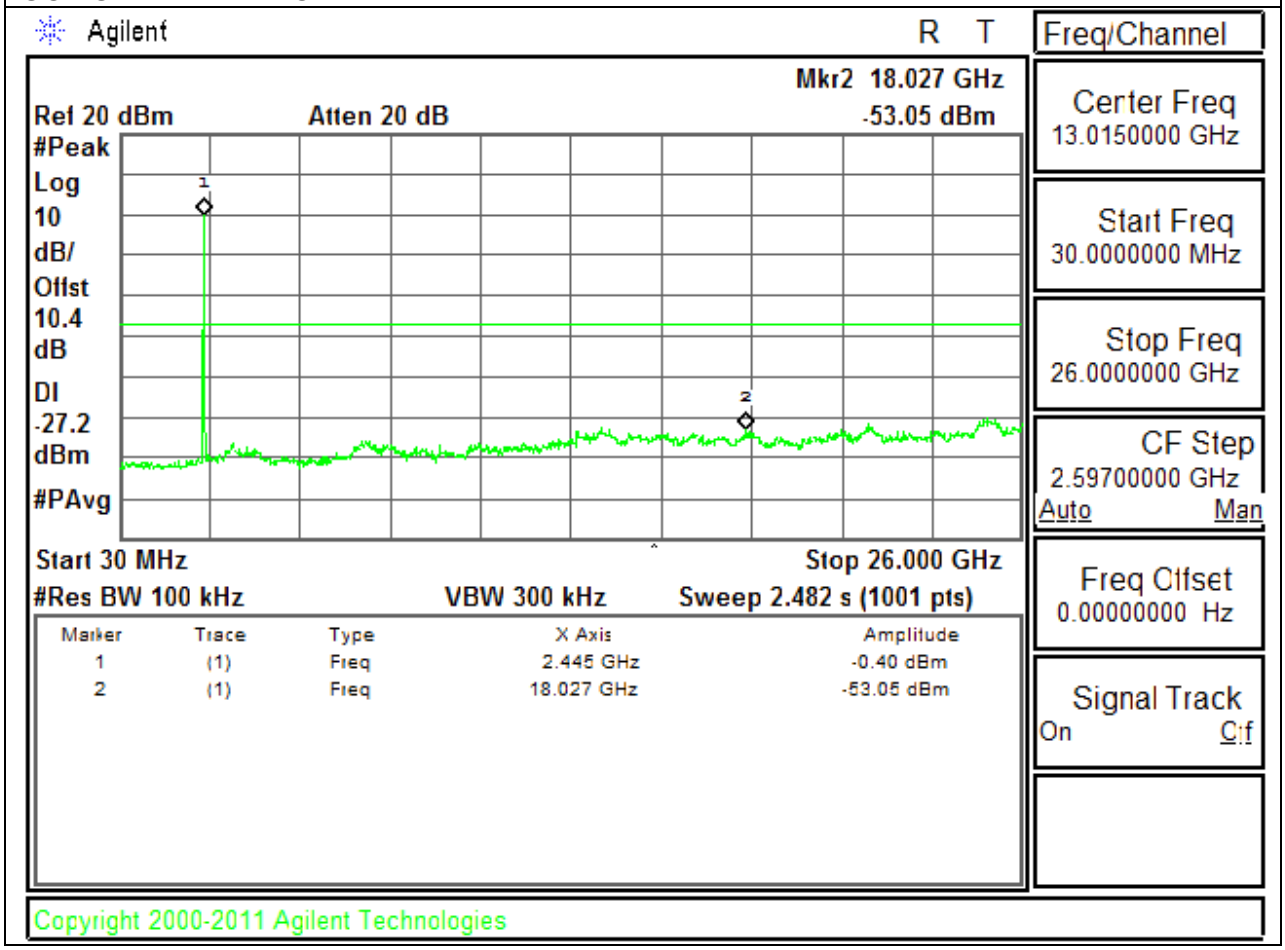


**OUT-OF-BAND EMISSIONS**

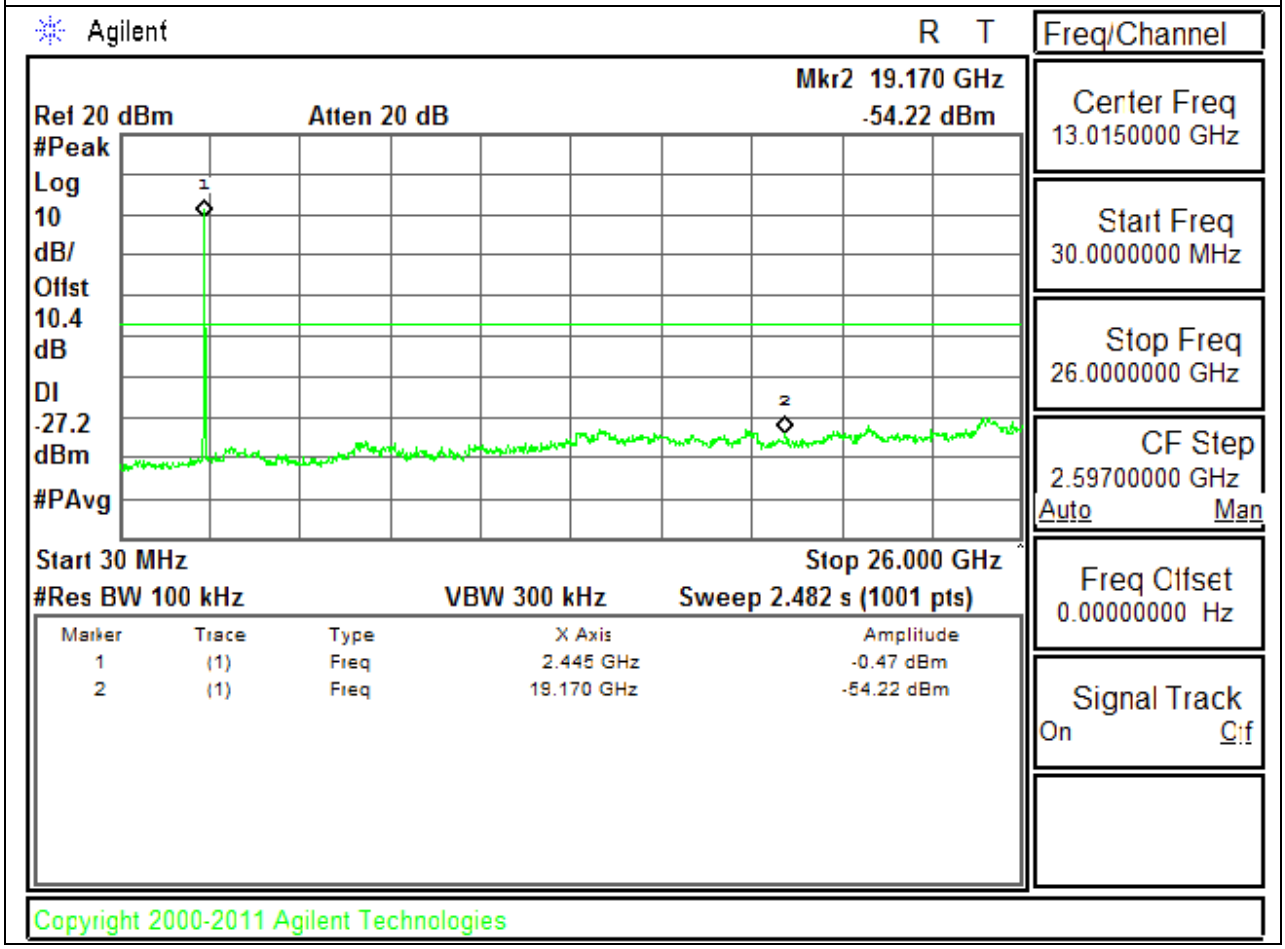
OUT OF BAND LOW CH



OUT OF BAND MID CH



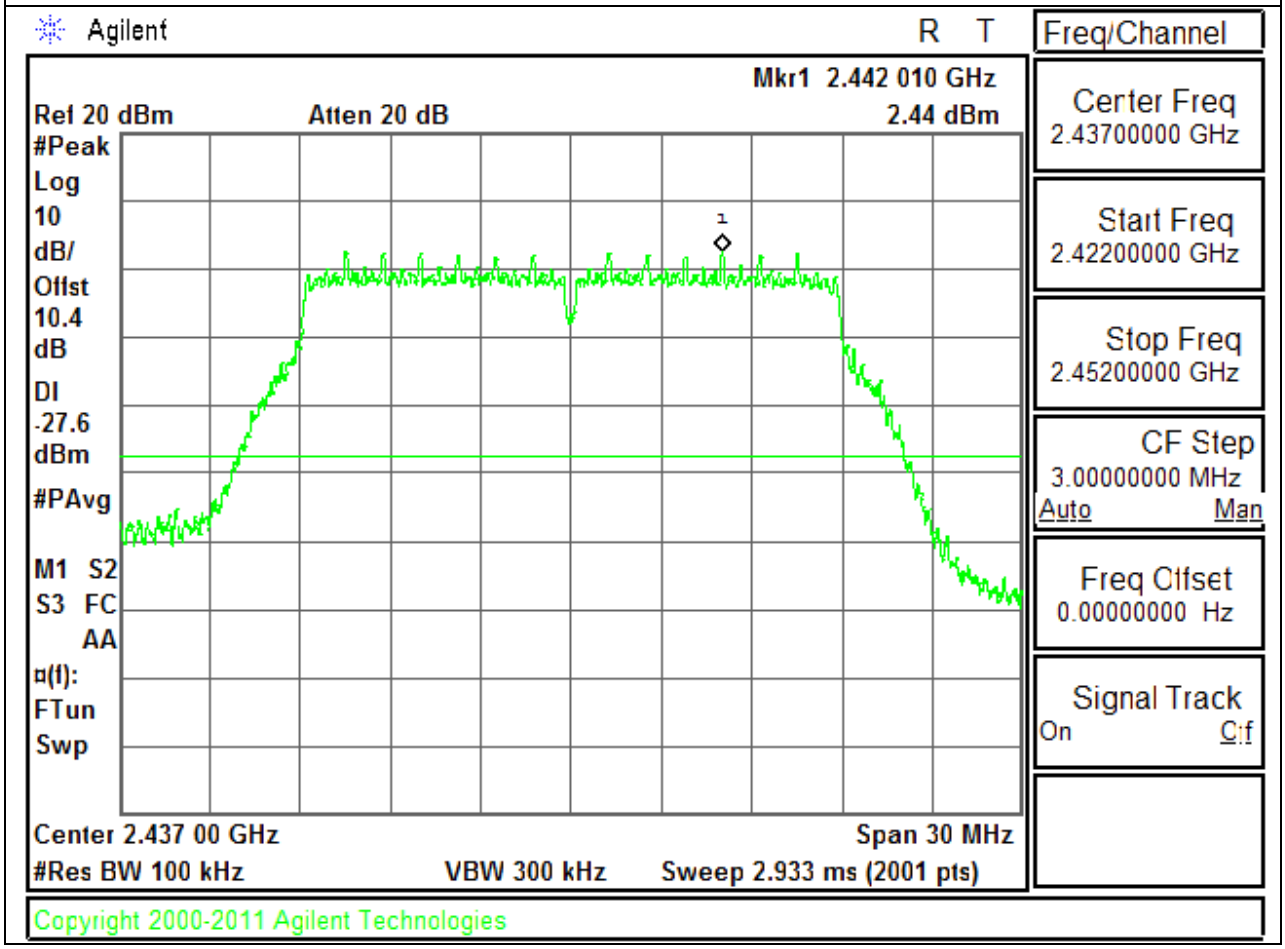
OUT OF BAND HIGH CH



## 10.5.6. 802.11n MODE IN THE 2.4 GHz BAND CHAIN 1

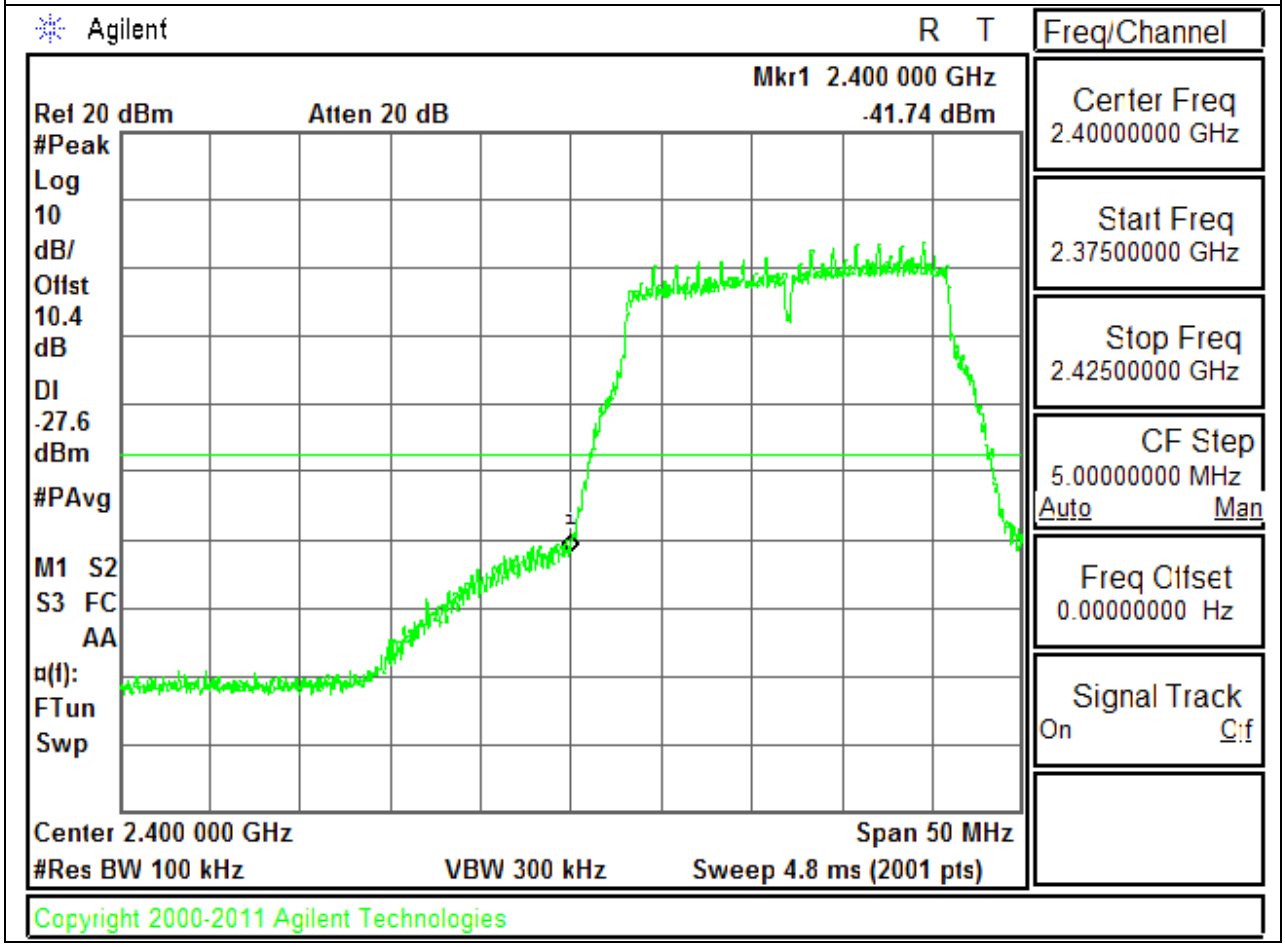
**IN-BAND REFERENCE LEVEL**

REFERENCE LEVEL MID CH



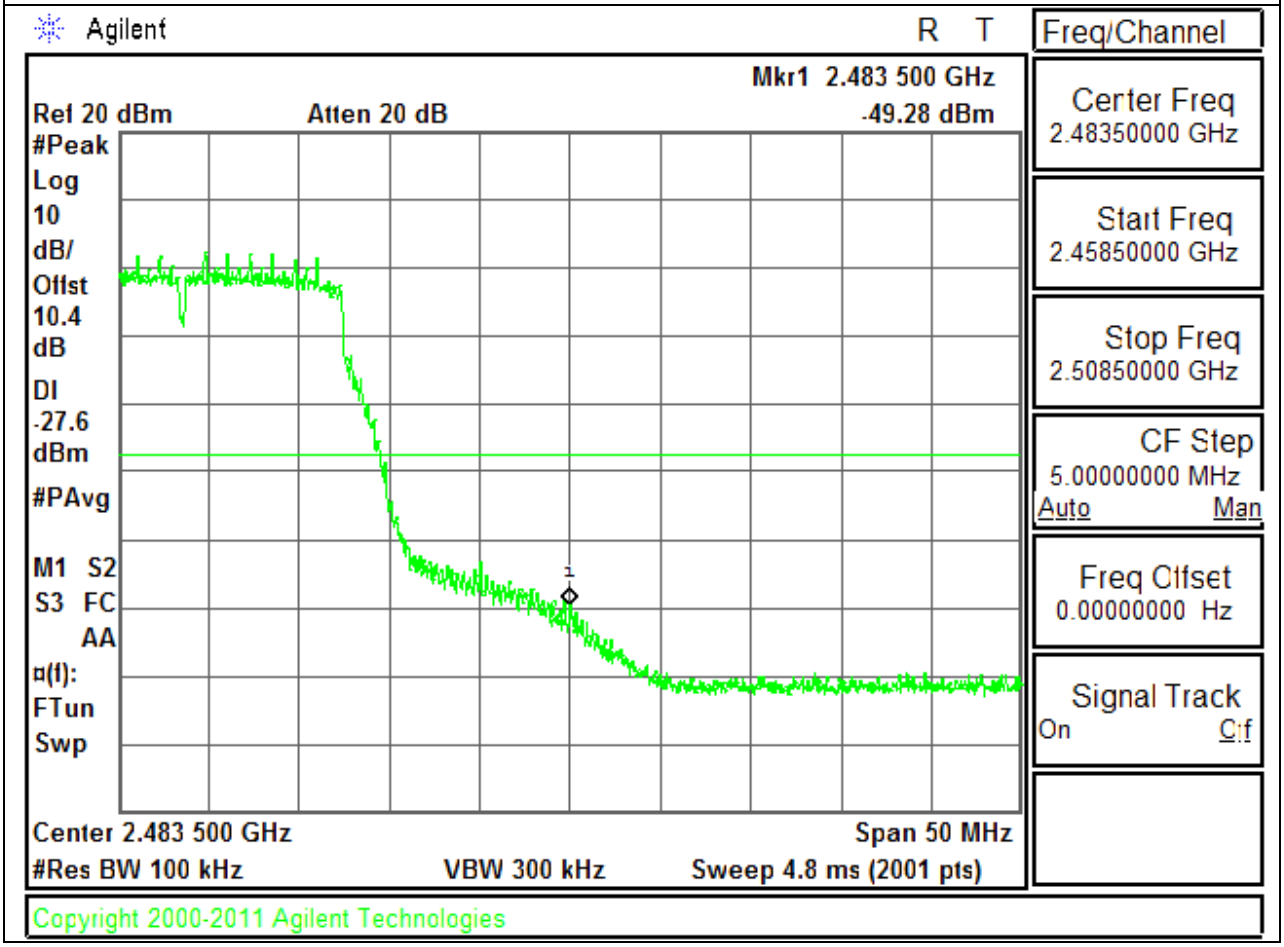
**LOW CHANNEL BANDEDGE**

AUTHORIZED BAND EDGE LOW CH



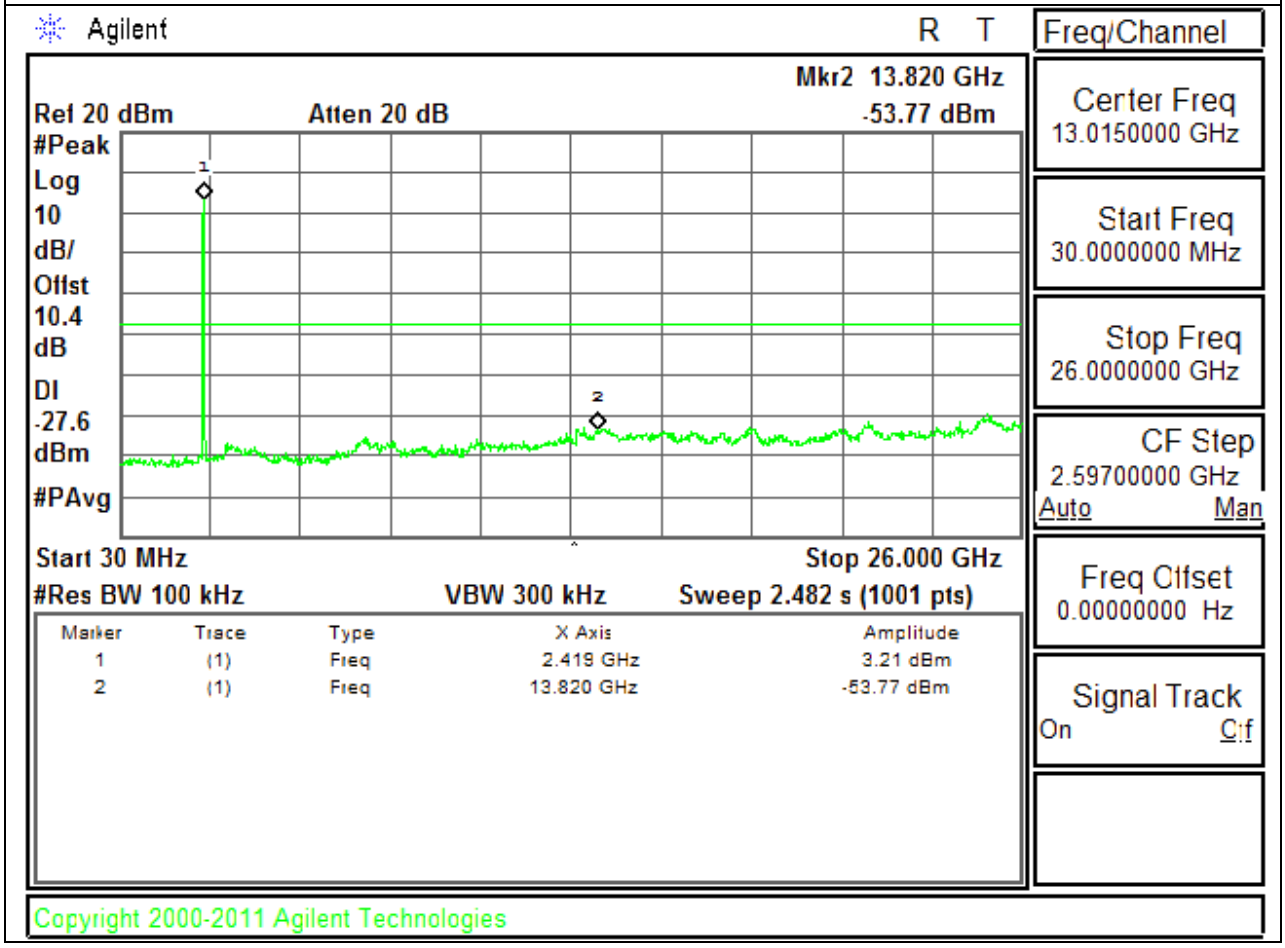
**HIGH CHANNEL BANDEDGE**

AUTHORIZED BAND EDGE HIGH CH

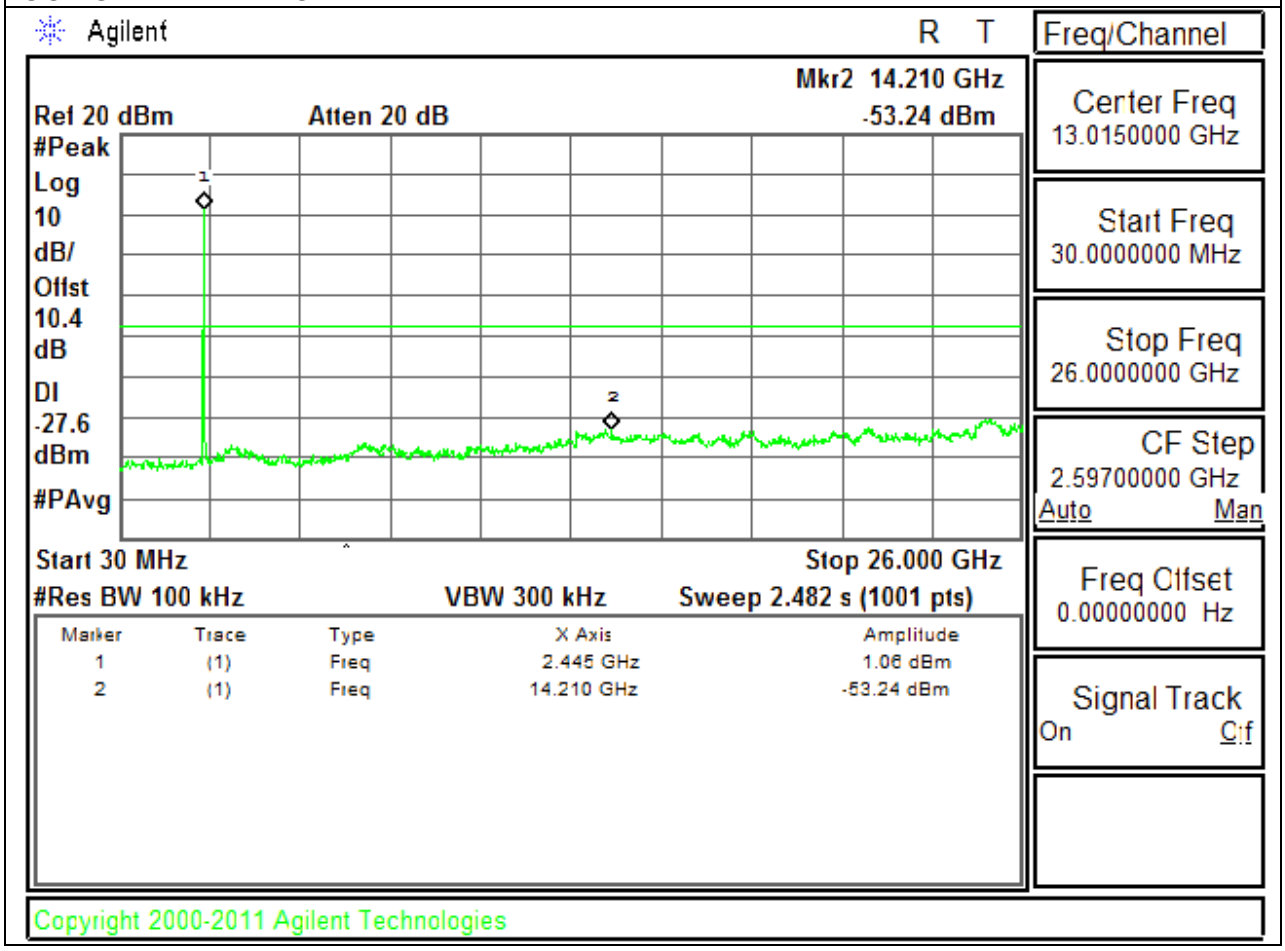


**OUT-OF-BAND EMISSIONS**

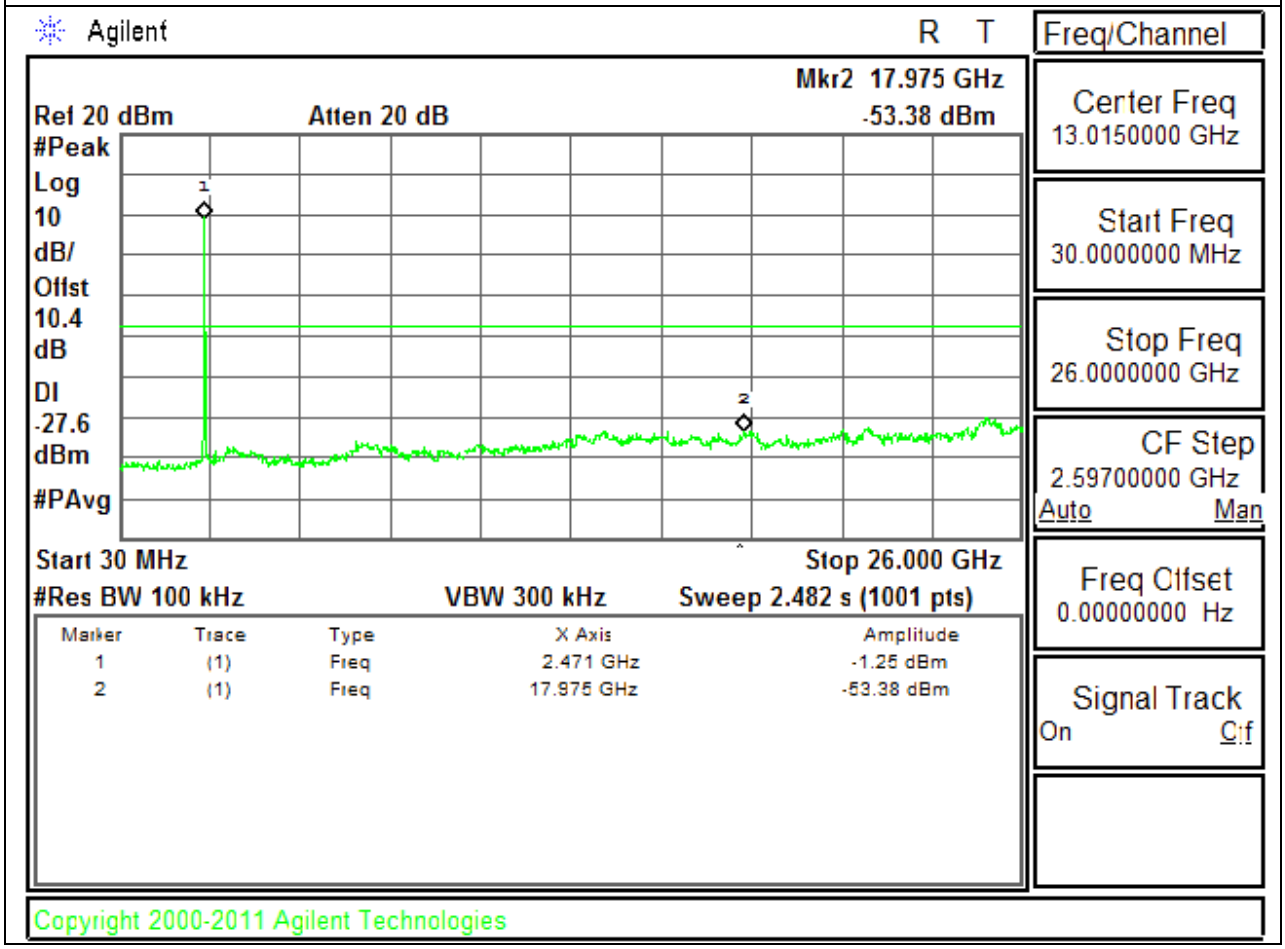
OUT OF BAND LOW CH



OUT OF BAND MID CH



OUT OF BAND HIGH CH



# 11. RADIATED TEST RESULTS

## 11.1. LIMITS AND PROCEDURE

**LIMITS**

FCC §15.205 and §15.209

| Frequency Range (MHz) | Field Strength Limit (uV/m) at 3 m | Field Strength Limit (dBuV/m) at 3 m |
|---|---|---|
| 30 - 88 | 100 | 40 |
| 88 - 216 | 150 | 43.5 |
| 216 - 960 | 200 | 46 |
| Above 960 | 500 | 54 |

**TEST PROCEDURE**

The EUT is placed on a non-conducting table 80 cm above the ground plane. The antenna to EUT distance is 3 meters.

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

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

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.

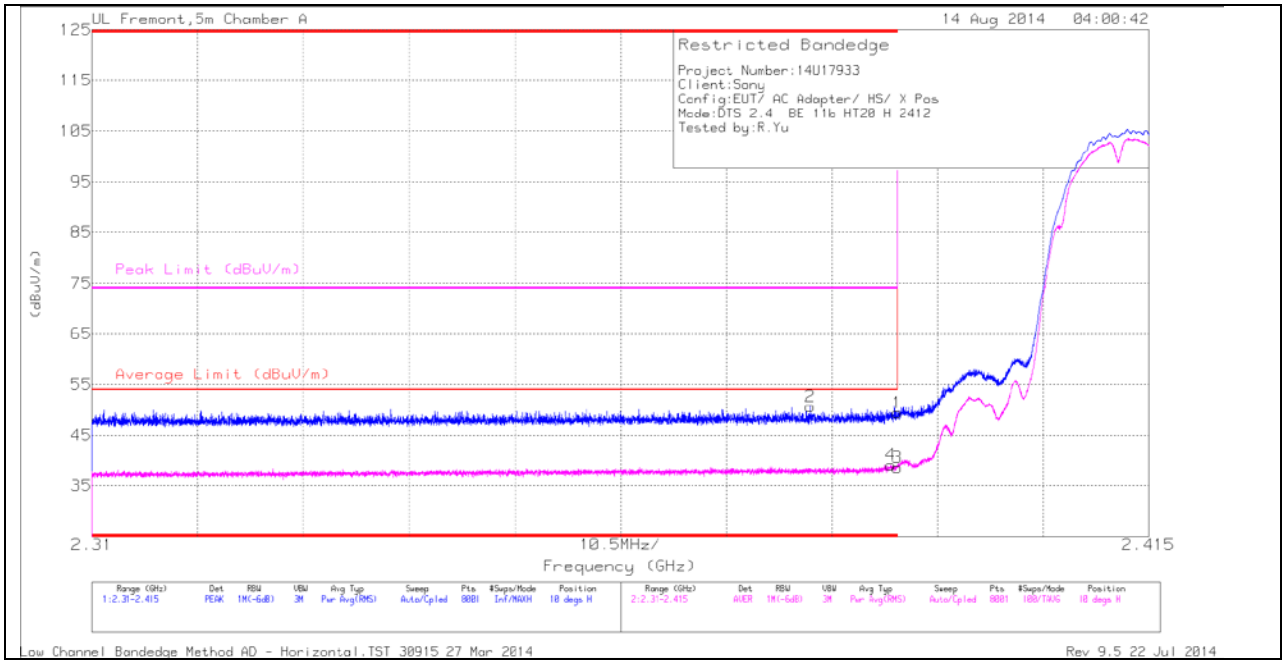
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

## 11.2. TRANSMITTER ABOVE 1 GHz

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

### RESTRICTED BANDEDGE (LOW CHANNEL)

#### HORIZONTAL PEAK AND AVERAGE PLOT




#### HORIZONTAL DATA

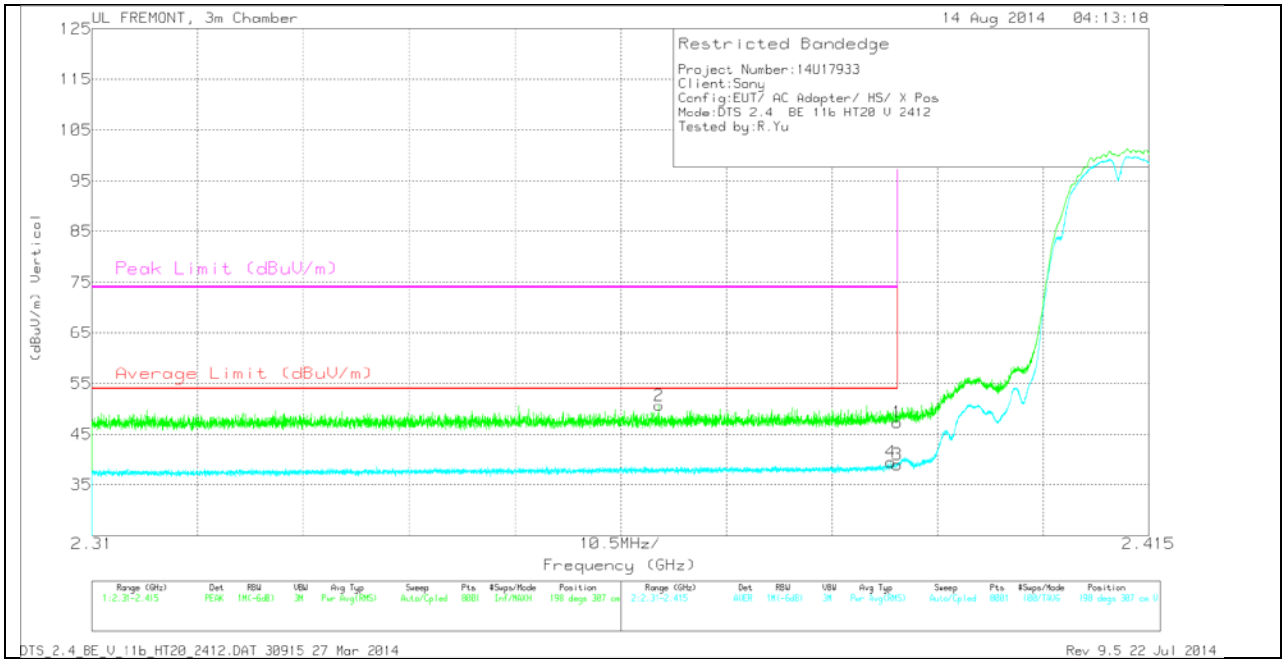
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF T136 (dB/m) | Amp/Cbl/ Fltr/Pad (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 2.39 | 40.24 | PK | 32.2 | -23 | 49.44 | - | - | 74 | -24.56 | 10 | 288 | H |
| 2 | * 2.381 | 41.5 | PK | 32.2 | -23 | 50.7 | - | - | 74 | -23.3 | 10 | 288 | H |
| 3 | * 2.39 | 29.44 | RMS | 32.2 | -23 | 38.64 | 54 | -15.36 | - | - | 10 | 288 | H |
| 4 | * 2.389 | 29.9 | RMS | 32.2 | -23 | 39.1 | 54 | -14.9 | - | - | 10 | 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

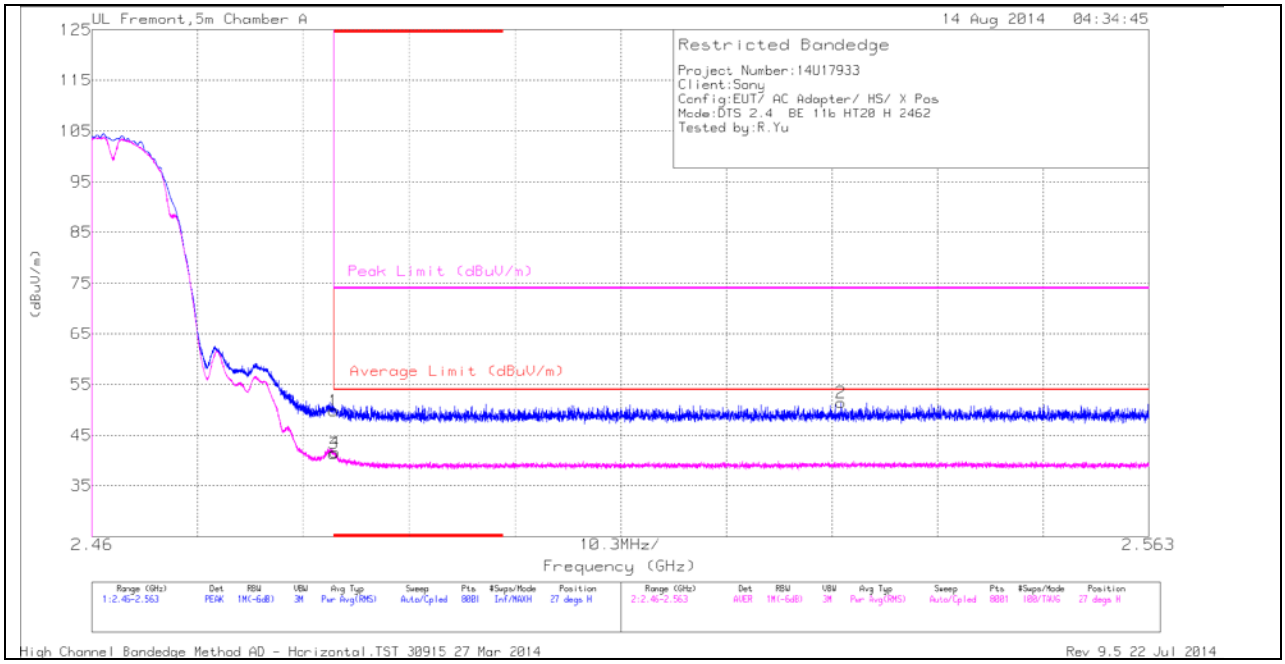
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF T136 (dB/m) | Amp/Cbl/ Fltr/Pad (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 2.366 | 41.57 | PK | 32 | -22.9 | 50.67 | - | - | 74 | -23.33 | 198 | 307 | V |
| 4 | 2.389 | 30.29 | RMS | 32.2 | -23 | 39.49 | 54 | -14.51 | - | - | 198 | 307 | V |
| 1 | 2.39 | 38.07 | PK | 32.2 | -23 | 47.27 | - | - | 74 | -26.73 | 198 | 307 | V |
| 3 | 2.39 | 29.85 | RMS | 32.2 | -23 | 39.05 | 54 | -14.95 | - | - | 198 | 307 | V |

PK - Peak detector

RMS - RMS detection

# AUTHORIZED BANDEDGE (HIGH CHANNEL)

## HORIZONTAL PEAK AND AVERAGE PLOT




## HORIZONTAL DATA

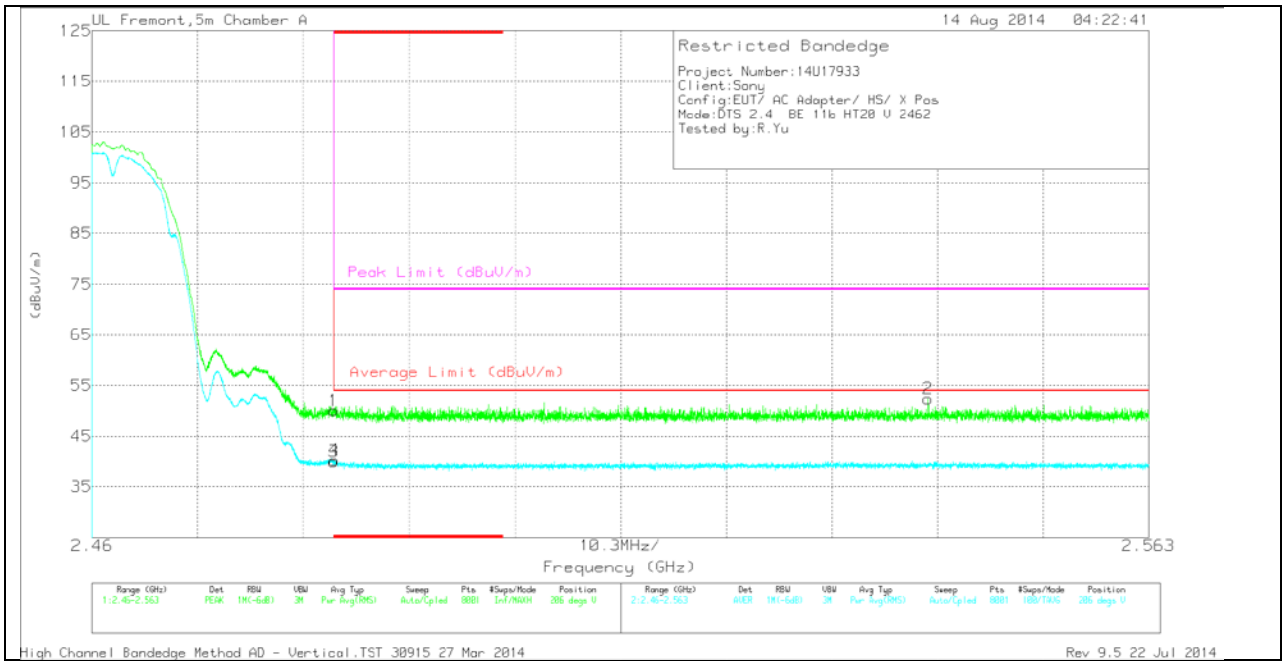
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF T136 (dB/m) | Amp/Cbl/ Fltr/Pad (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 2.484 | 39.76 | PK | 32.7 | -22.7 | 49.76 | - | - | 74 | -24.24 | 27 | 235 | H |
| 3 | * 2.484 | 31.34 | RMS | 32.7 | -22.7 | 41.34 | 54 | -12.66 | - | - | 27 | 235 | H |
| 4 | * 2.484 | 31.57 | RMS | 32.7 | -22.7 | 41.57 | 54 | -12.43 | - | - | 27 | 235 | H |
| 2 | 2.533 | 41.02 | PK | 32.9 | -22.5 | 51.42 | - | - | 74 | -22.58 | 27 | 235 | 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 T136 (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 | 40.02 | PK | 32.7 | -22.7 | 50.02 | - | - | 74 | -23.98 | 206 | 296 | V |
| 3 | * 2.484 | 29.98 | RMS | 32.7 | -22.7 | 39.98 | 54 | -14.02 | - | - | 206 | 296 | V |
| 4 | * 2.484 | 30.18 | RMS | 32.7 | -22.7 | 40.18 | 54 | -13.82 | - | - | 206 | 296 | V |
| 2 | 2.542 | 41.97 | PK | 32.9 | -22.5 | 52.37 | - | - | 74 | -21.63 | 206 | 296 | V |

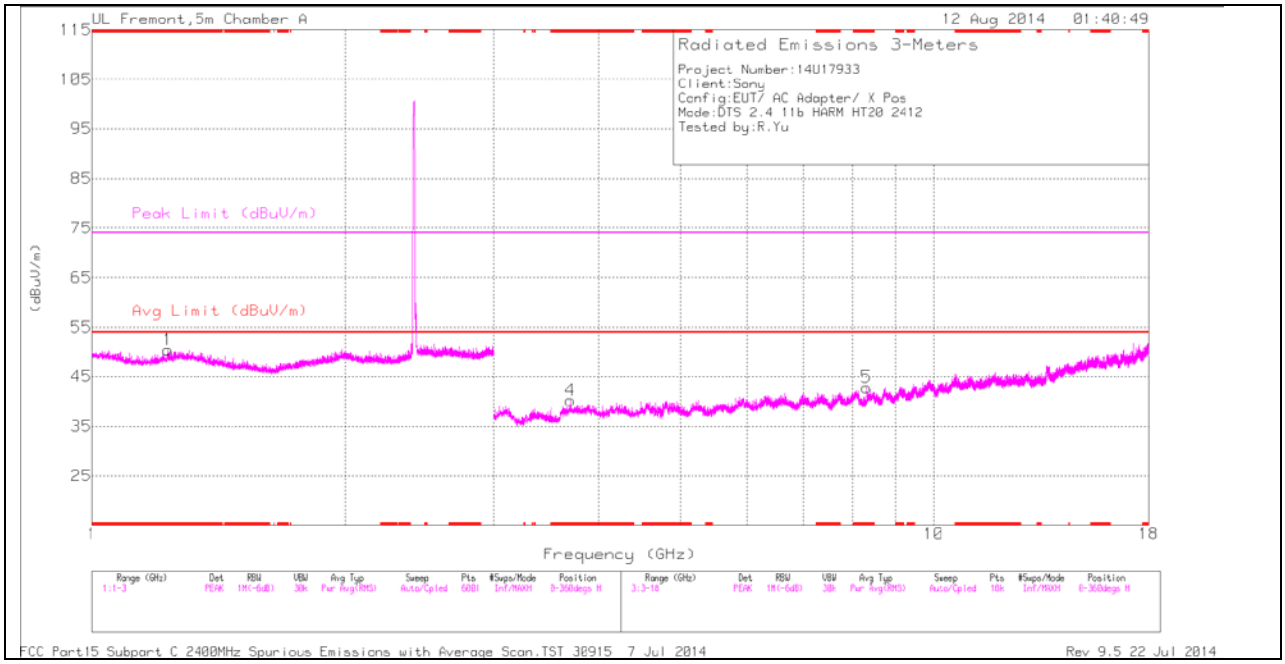
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

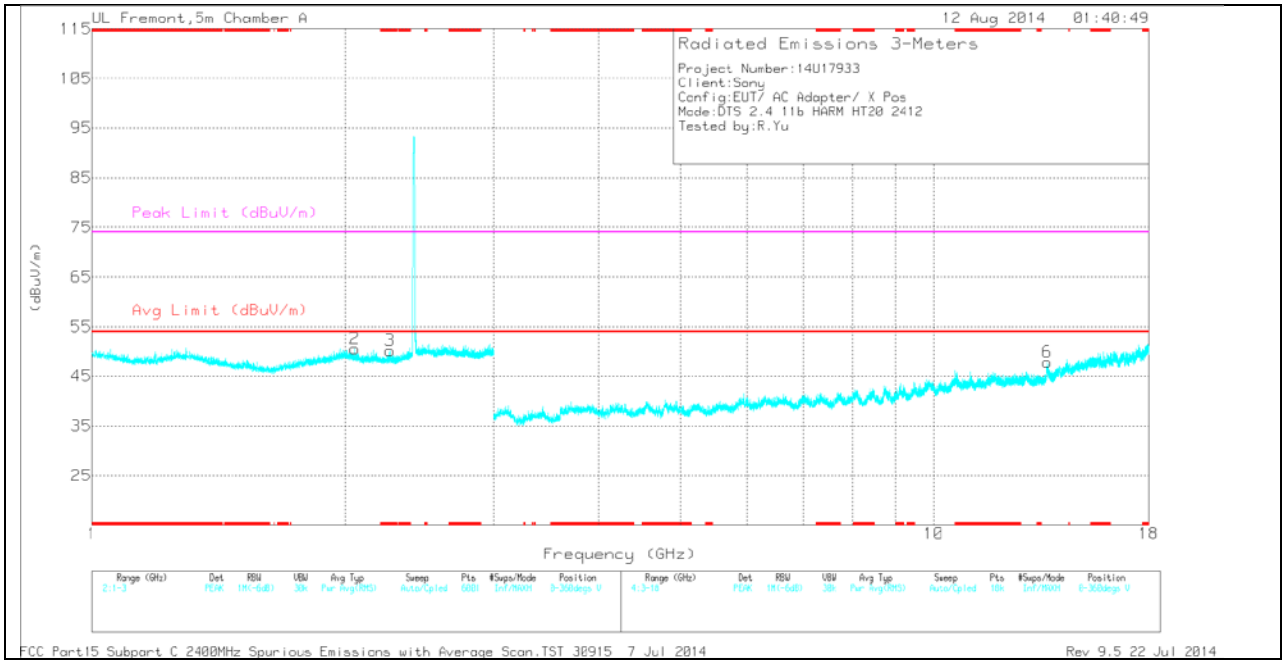
## HARMONICS AND SPURIOUS EMISSIONS

### 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/Fltr/Pad (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 1.232 | 37.67 | PK | 29.6 | -16.8 | 50.47 | - | - | 74 | -23.53 | 0-360 | 201 | H |
| 3 | * 2.26 | 35.76 | PK | 31.4 | -17 | 50.16 | - | - | 74 | -23.84 | 0-360 | 201 | V |
| 4 | * 3.7 | 32.6 | PK | 33.4 | -25.7 | 40.3 | - | - | 74 | -33.7 | 0-360 | 201 | H |
| 5 | * 8.319 | 29.67 | PK | 35.6 | -22.4 | 42.87 | - | - | 74 | -31.13 | 0-360 | 201 | H |
| 2 | 2.053 | 36.13 | PK | 31.9 | -17.5 | 50.53 | - | - | - | - | 0-360 | 100 | V |
| 6 | 13.64 | 27.03 | PK | 38.8 | -17.9 | 47.93 | - | - | - | - | 0-360 | 201 | V |

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

PK - Peak detector

## Radiated Emissions

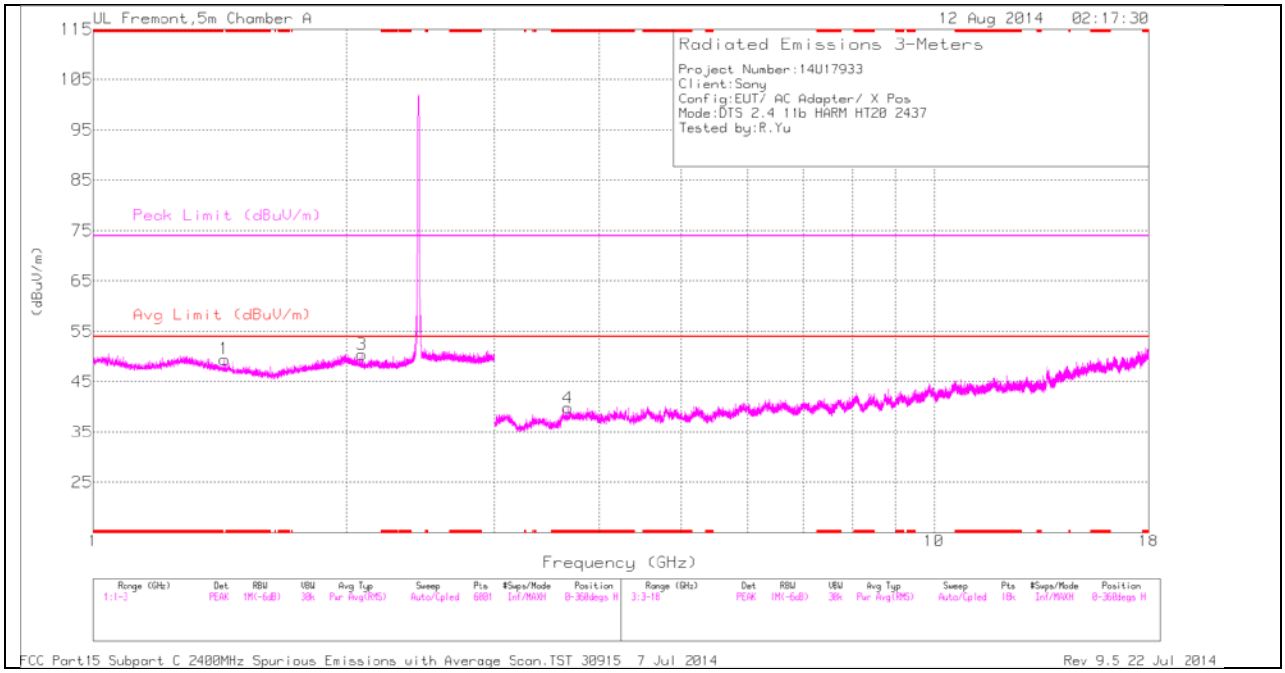
| Frequency (GHz) | Meter Reading (dBuV) | Det | AF T136 (dB/m) | Amp/Cbl/Fltr/Pad (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| * 1.233 | 44.45 | PK2 | 29.6 | -16.9 | 57.15 | - | - | 74 | -16.85 | 1 | 202 | H |
| * 1.232 | 33.19 | MAv1 | 29.6 | -16.8 | 45.99 | 54 | -8.01 | - | - | 1 | 202 | H |

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

PK2 - KDB558074 Method: Maximum Peak

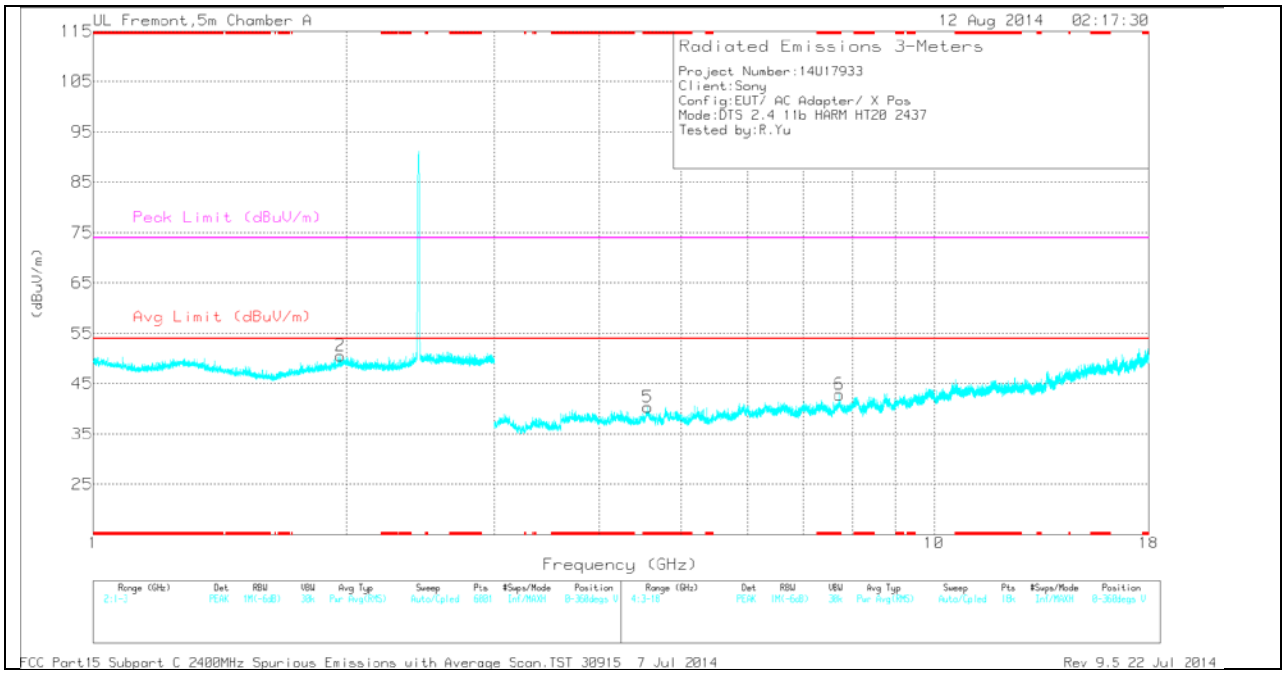
MAv1 - KDB558074 Option 1 Maximum RMS Average

**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/Fltr/Pad (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | * 3.667 | 32.75 | PK | 33.3 | -26.3 | 39.75 | - | - | 74 | -34.25 | 0-360 | 100 | H |
| 5 | * 4.562 | 30.94 | PK | 33.9 | -24.5 | 40.34 | - | - | 74 | -33.66 | 0-360 | 201 | V |
| 6 | * 7.714 | 28.56 | PK | 35.4 | -21.1 | 42.86 | - | - | 74 | -31.14 | 0-360 | 201 | V |
| 1 | 1.432 | 37.26 | PK | 29.5 | -17.3 | 49.46 | - | - | - | - | 0-360 | 100 | H |
| 2 | 1.967 | 36.05 | PK | 31.9 | -17.4 | 50.55 | - | - | - | - | 0-360 | 100 | V |
| 3 | 2.087 | 36.3 | PK | 31.8 | -17.7 | 50.4 | - | - | - | - | 0-360 | 201 | H |

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

PK - Peak detector

## Radiated Emissions

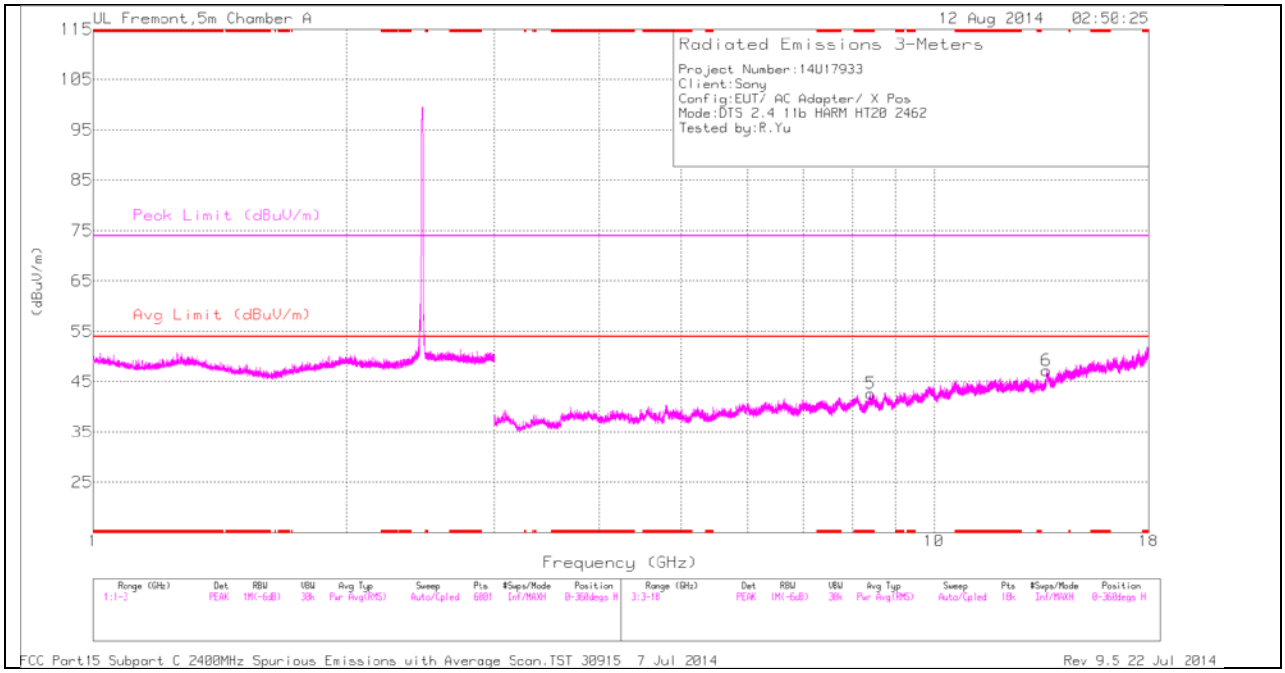
| Frequency (GHz) | Meter Reading (dBuV) | Det | AF T136 (dB/m) | Amp/Cbl/Fltr/Pad (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| * 4.563 | 38.28 | PK2 | 33.9 | -24.5 | 47.68 | - | - | 74 | -26.32 | 1 | 202 | V |
| * 4.564 | 27.47 | MAv1 | 33.9 | -24.5 | 36.87 | 54 | -17.13 | - | - | 1 | 202 | V |

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

PK2 - KDB558074 Method: Maximum Peak

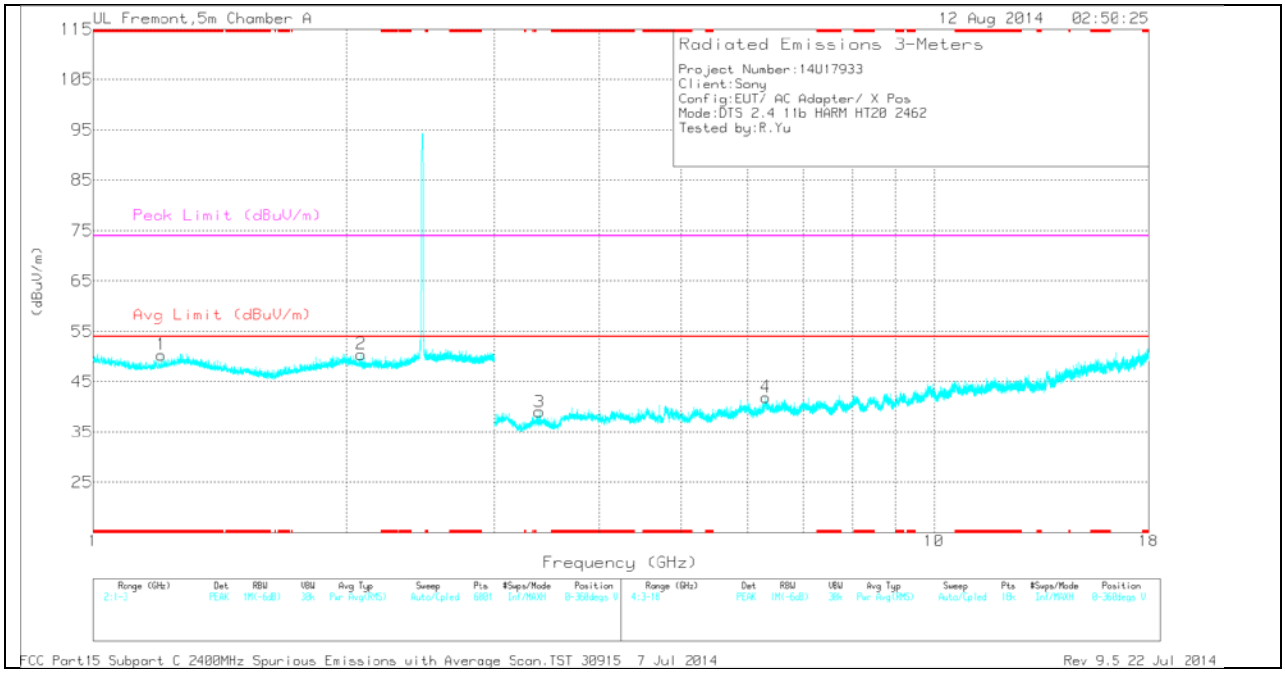
MAv1 - KDB558074 Option 1 Maximum RMS Average

**HIGH CHANNEL HORIZONTAL**




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

**HIGH CHANNEL VERTICAL**




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

## HIGH CHANNEL DATA

*TRACE MARKERS*

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF T136 (dB/m) | Amp/Cbl/Fltr/Pad (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 1.205 | 38.03 | PK | 29.3 | -17 | 50.33 | - | - | 74 | -23.67 | 0-360 | 201 | V |
| 5 | * 8.415 | 27.73 | PK | 35.7 | -20.8 | 42.63 | - | - | 74 | -31.37 | 0-360 | 201 | H |
| 2 | 2.084 | 36.26 | PK | 31.8 | -17.6 | 50.46 | - | - | - | - | 0-360 | 100 | V |
| 3 | 3.392 | 32.04 | PK | 33 | -26 | 39.04 | - | - | - | - | 0-360 | 201 | V |
| 4 | 6.31 | 29.13 | PK | 35.5 | -22.7 | 41.93 | - | - | - | - | 0-360 | 201 | V |
| 6 | 13.608 | 26.53 | PK | 38.8 | -18.1 | 47.23 | - | - | - | - | 0-360 | 100 | H |

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

PK - Peak detector

## Radiated Emissions

| Frequency (GHz) | Meter Reading (dBuV) | Det | AF T136 (dB/m) | Amp/Cbl/Fltr/Pad (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| * 1.204 | 44.28 | PK2 | 29.3 | -17 | 56.58 | - | - | 74 | -17.42 | 1 | 202 | V |
| * 1.204 | 33.19 | MAv1 | 29.3 | -17 | 45.49 | 54 | -8.51 | - | - | 1 | 202 | V |

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

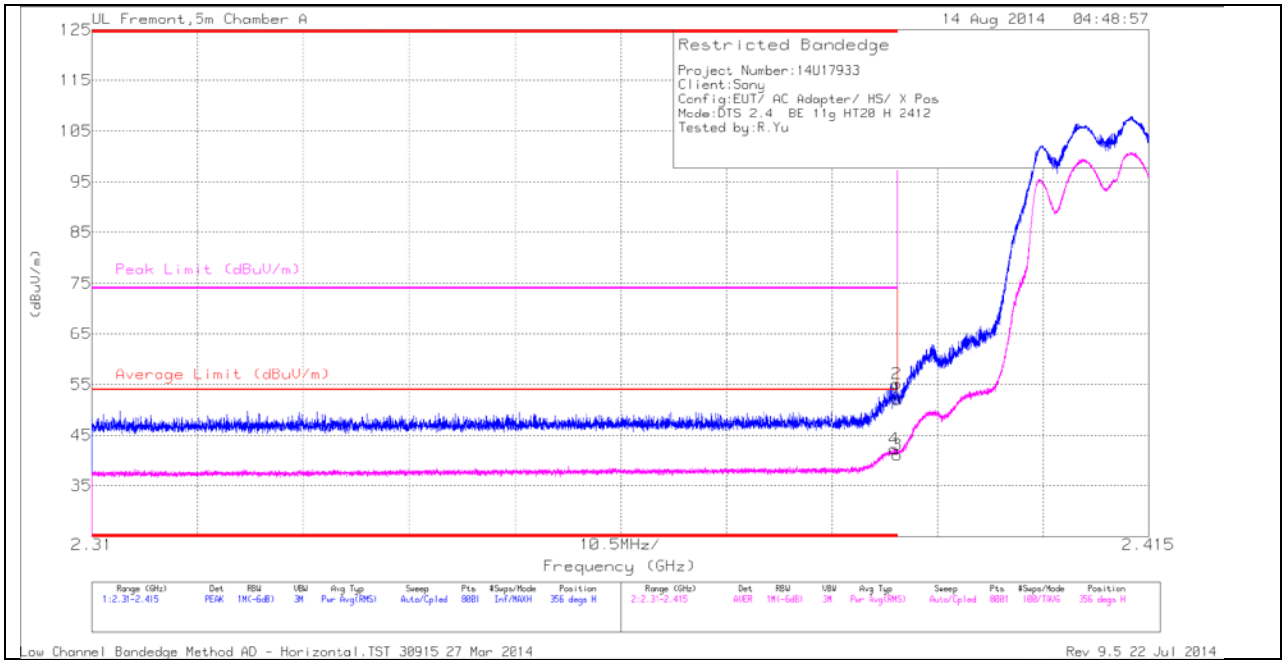
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

## 11.2.2. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND

## RESTRICTED BANDEDGE (LOW CHANNEL)

### HORIZONTAL PEAK AND AVERAGE PLOT




### HORIZONTAL DATA

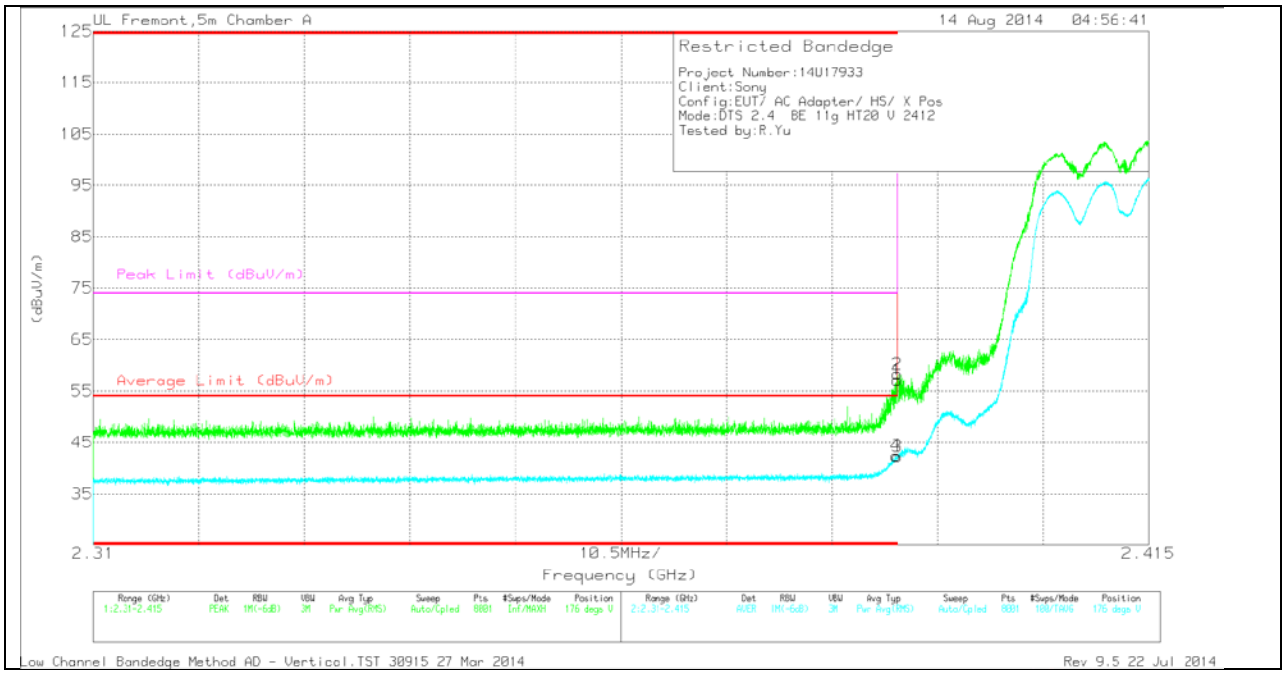
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF T136 (dB/m) | Amp/Cbl/Fltr/Pad (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 2.39 | 42.95 | PK | 32.2 | -23 | 52.15 | - | - | 74 | -21.85 | 356 | 237 | H |
| 2 | * 2.39 | 45.97 | PK | 32.2 | -23 | 55.17 | - | - | 74 | -18.83 | 356 | 237 | H |
| 3 | * 2.39 | 31.85 | RMS | 32.2 | -23 | 41.09 | 54 | -12.91 | - | - | 356 | 237 | H |
| 4 | * 2.39 | 33.04 | RMS | 32.2 | -23 | 42.28 | 54 | -11.72 | - | - | 356 | 237 | 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 T136 (dB/m) | Amp/Cbl/Flt r/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 | 47.92 | PK | 32.2 | -23 | 57.12 | - | - | 74 | -16.88 | 176 | 240 | V |
| 2 | * 2.39 | 49.05 | PK | 32.2 | -23 | 58.25 | - | - | 74 | -15.75 | 176 | 240 | V |
| 3 | * 2.39 | 32.99 | RMS | 32.2 | -23 | 42.23 | 54 | -11.77 | - | - | 176 | 240 | V |
| 4 | * 2.39 | 33.15 | RMS | 32.2 | -23 | 42.39 | 54 | -11.61 | - | - | 176 | 240 | V |

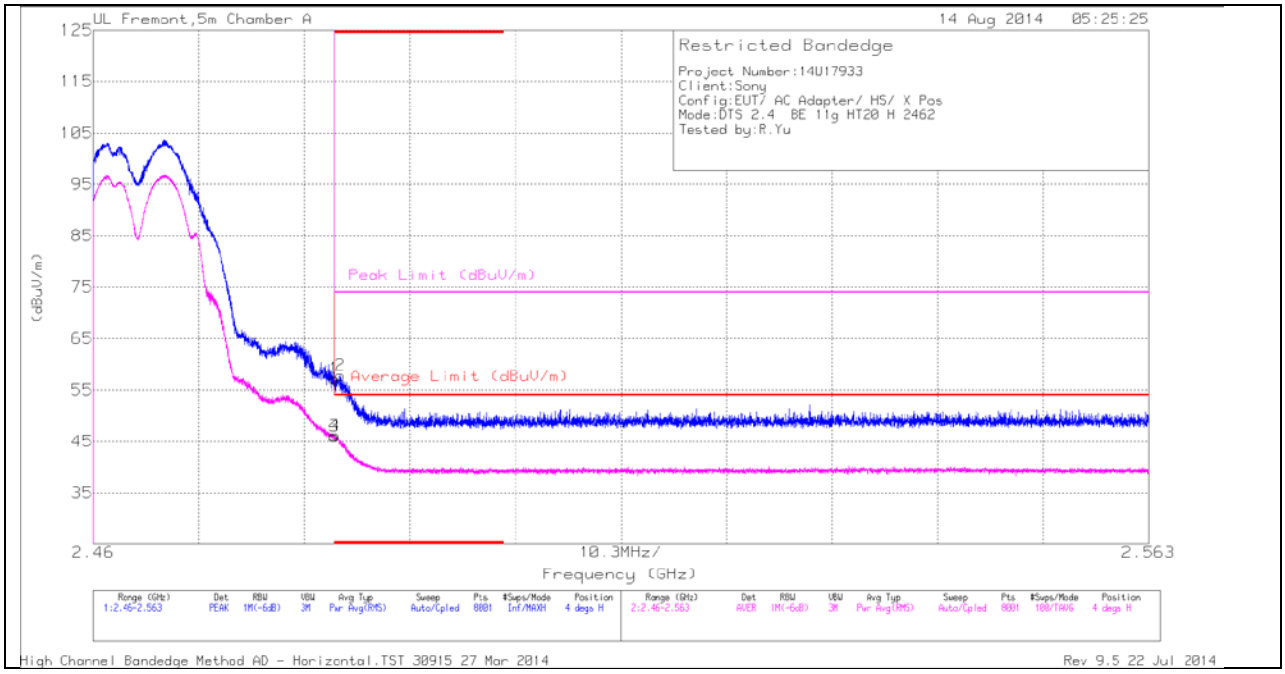
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

# AUTHORIZED BANDEDGE (HIGH CHANNEL)

## HORIZONTAL PEAK AND AVERAGE PLOT




## HORIZONTAL DATA

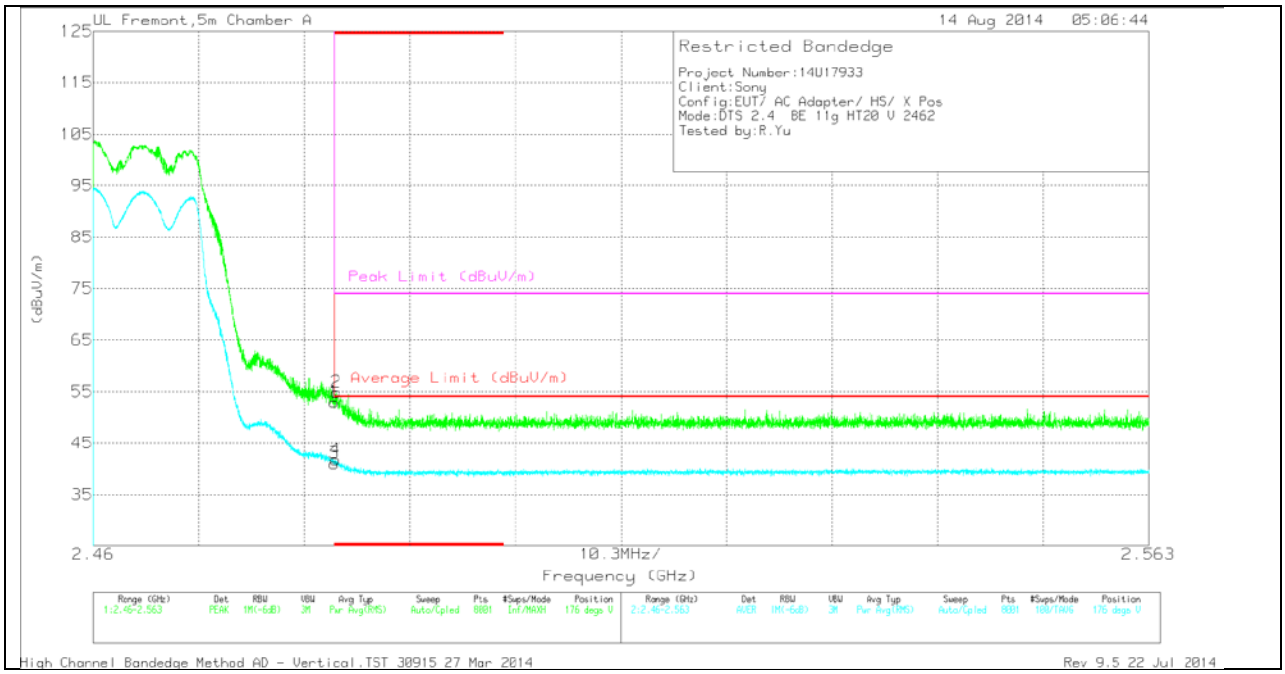
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF T136 (dB/m) | Amp/Cbl/Flt r/Pad (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 2.484 | 47.23 | PK | 32.7 | -22.7 | 57.23 | - | - | 74 | -16.77 | 4 | 117 | H |
| 2 | * 2.484 | 47.84 | PK | 32.7 | -22.7 | 57.84 | - | - | 74 | -16.16 | 4 | 117 | H |
| 3 | * 2.484 | 35.95 | RMS | 32.7 | -22.7 | 45.99 | 54 | -8.01 | - | - | 4 | 117 | H |
| 4 | * 2.484 | 36.1 | RMS | 32.7 | -22.7 | 46.14 | 54 | -7.86 | - | - | 4 | 117 | 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 T136 (dB/m) | Amp/Cbl/Flt r/Pad (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 2.484 | 42.95 | PK | 32.7 | -22.7 | 52.95 | - | - | 74 | -21.05 | 176 | 287 | V |
| 2 | * 2.484 | 44.86 | PK | 32.7 | -22.7 | 54.86 | - | - | 74 | -19.14 | 176 | 287 | V |
| 3 | * 2.484 | 31.06 | RMS | 32.7 | -22.7 | 41.1 | 54 | -12.9 | - | - | 176 | 287 | V |
| 4 | * 2.484 | 31.7 | RMS | 32.7 | -22.7 | 41.74 | 54 | -12.26 | - | - | 176 | 287 | V |

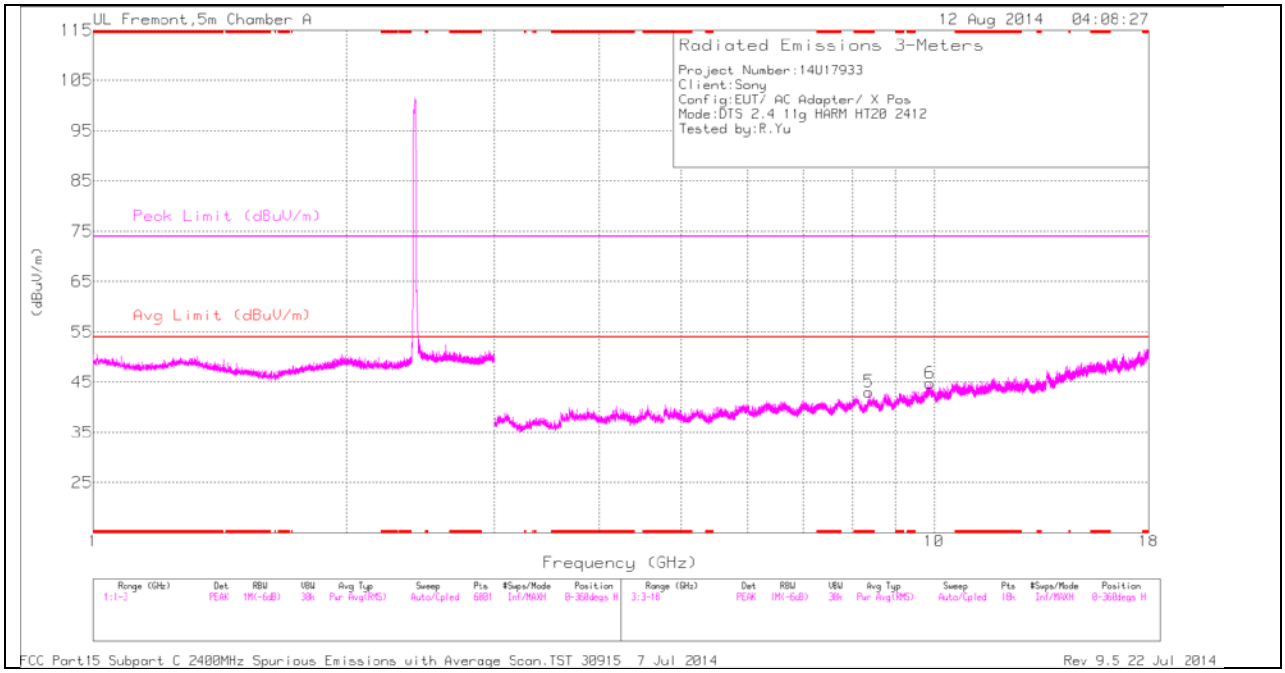
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

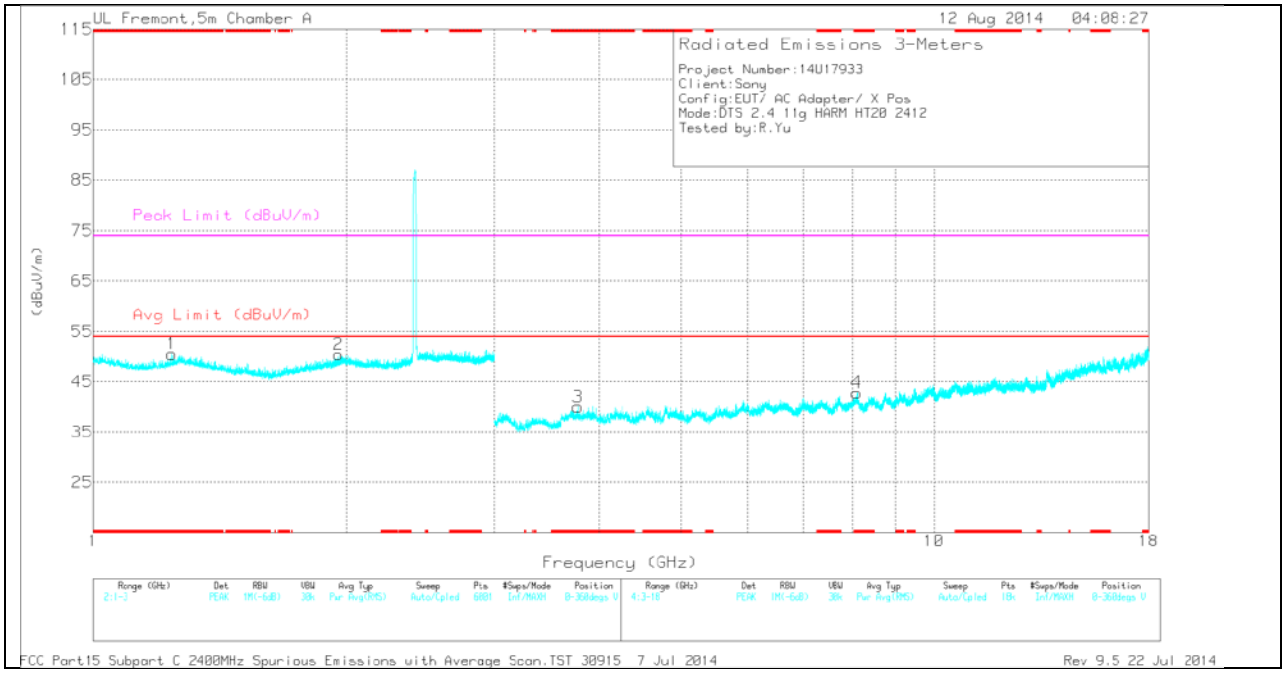
## HARMONICS AND SPURIOUS EMISSIONS

### 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/Fltr /Pad (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 1.241 | 37.47 | PK | 29.7 | -16.7 | 0 | 50.47 | - | - | 74 | -23.53 | 0-360 | 100 | V |
| 5 | * 8.364 | 28.36 | PK | 35.7 | -21 | 0 | 43.06 | - | - | 74 | -30.94 | 0-360 | 100 | H |
| 3 | * 3.768 | 32.38 | PK | 33.6 | -26 | 0 | 39.98 | - | - | 74 | -34.02 | 0-360 | 201 | V |
| 4 | * 8.091 | 27.7 | PK | 35.5 | -20.4 | 0 | 42.8 | - | - | 74 | -31.2 | 0-360 | 201 | V |
| 2 | 1.957 | 35.88 | PK | 31.9 | -17.4 | 0 | 50.38 | - | - | - | - | 0-360 | 100 | V |
| 6 | 9.886 | 26.7 | PK | 37 | -18.9 | 0 | 44.8 | - | - | - | - | 0-360 | 100 | H |

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

PK - Peak detector

## Radiated Emissions

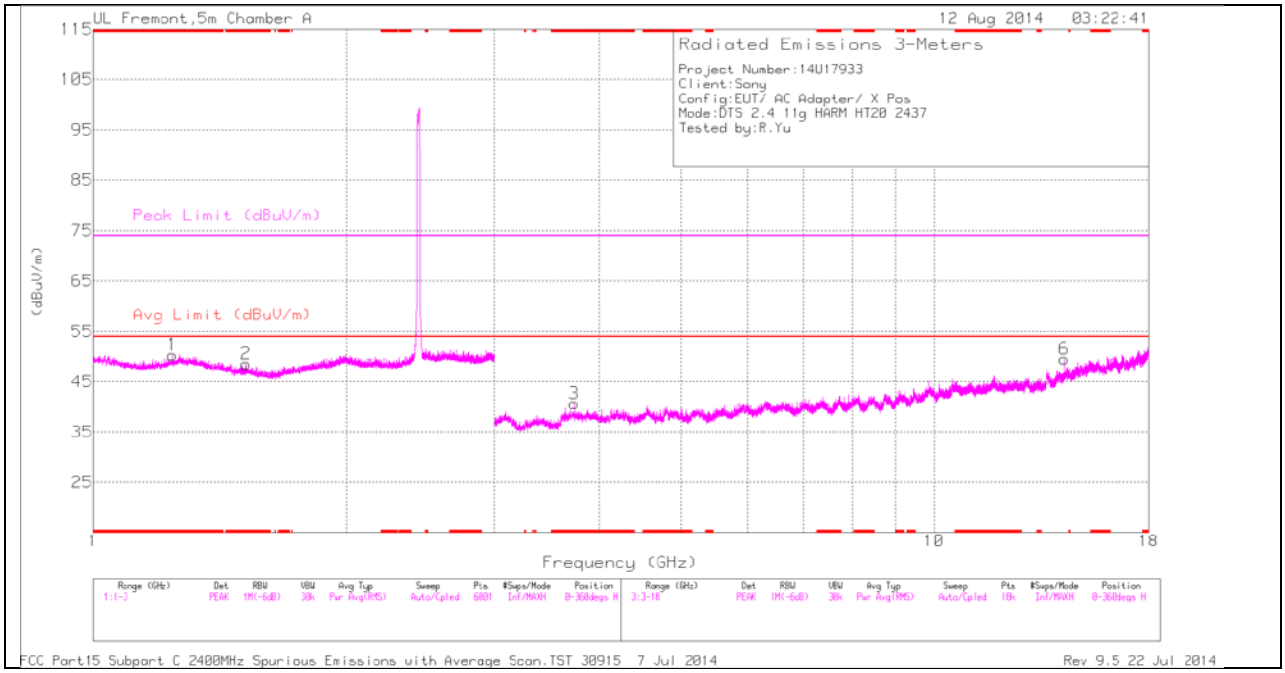
| Frequency (GHz) | Meter Reading (dBuV) | Det | AF T136 (dB/m) | Amp/Cbl/ Fltr/Pad (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| * 8.363 | 35.56 | PK2 | 35.7 | -21 | 0 | 50.26 | - | - | 74 | -23.74 | 1 | 100 | H |
| * 8.364 | 24.07 | MAv1 | 35.7 | -21 | 0 | 38.77 | 54 | -15.23 | - | - | 1 | 100 | H |

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

PK2 - KDB558074 Method: Maximum Peak

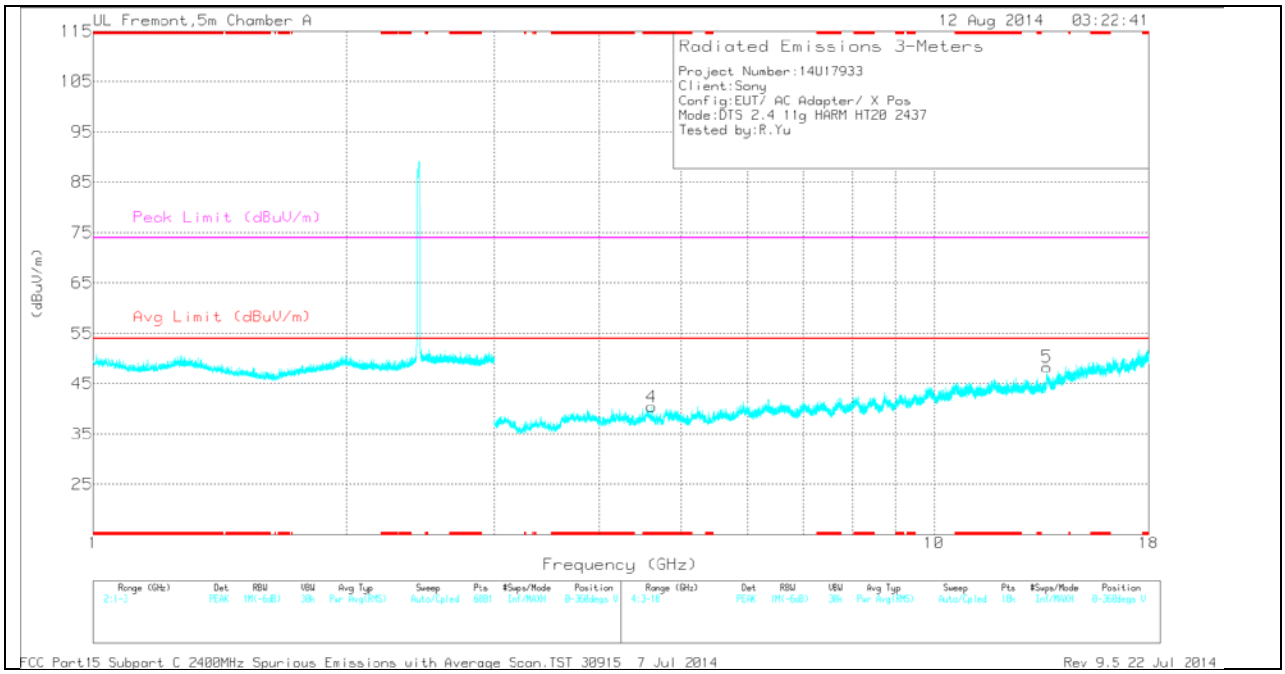
MAv1 - KDB558074 Option 1 Maximum RMS Average

**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/Fltr /Pad (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 1.243 | 37.41 | PK | 29.7 | -16.8 | 0 | 50.31 | - | - | 74 | -23.69 | 0-360 | 201 | H |
| 2 | * 1.52 | 36.67 | PK | 28.7 | -16.8 | 0 | 48.57 | - | - | 74 | -25.43 | 0-360 | 100 | H |
| 3 | * 3.734 | 33.27 | PK | 33.5 | -26.1 | 0 | 40.67 | - | - | 74 | -33.33 | 0-360 | 201 | H |
| 4 | * 4.612 | 31.39 | PK | 34 | -25 | 0 | 40.39 | - | - | 74 | -33.61 | 0-360 | 100 | V |
| 5 | 13.63 | 27.41 | PK | 38.8 | -17.9 | 0 | 48.31 | - | - | - | - | 0-360 | 201 | V |
| 6 | 14.298 | 28.33 | PK | 39.6 | -18.4 | 0 | 49.53 | - | - | - | - | 0-360 | 201 | H |

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

PK - Peak detector

## Radiated Emissions

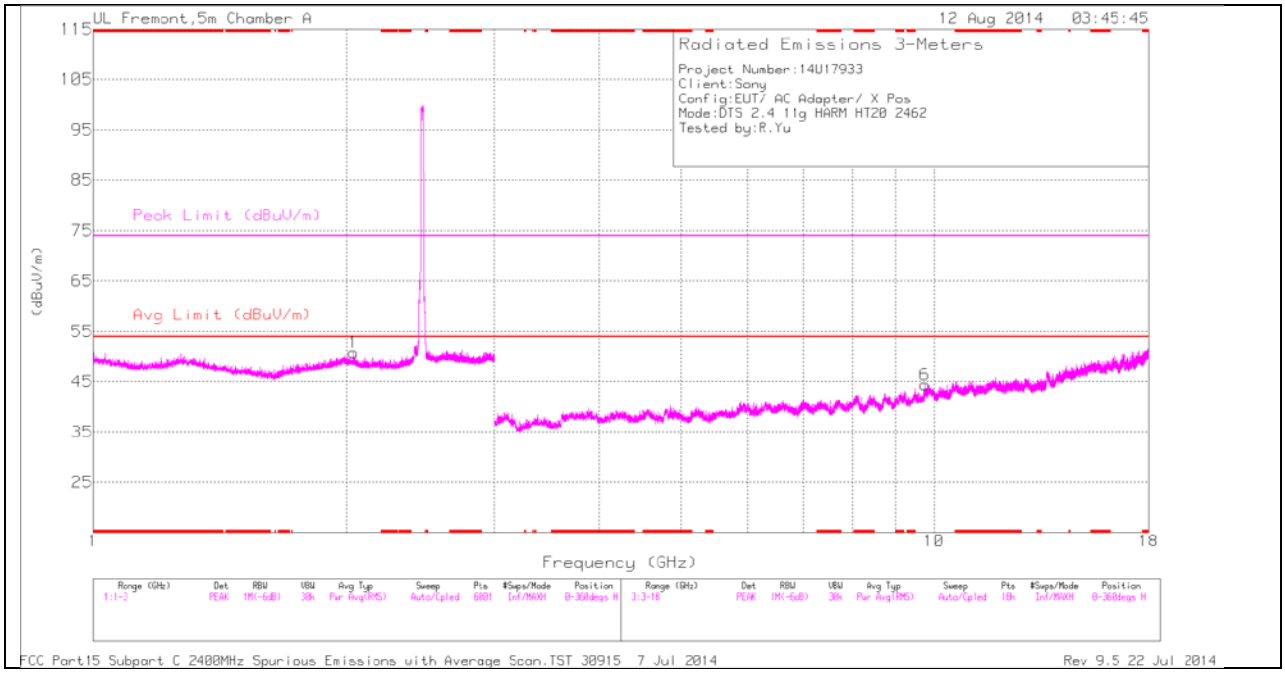
| Frequency (GHz) | Meter Reading (dBuV) | Det | AF T136 (dB/m) | Amp/Cbl/ Fltr/Pad (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14.299 | 33.51 | PK2 | 39.6 | -18.5 | 0 | 54.61 | - | - | - | - | 1 | 202 | H |
| 14.299 | 22.8 | MAv1 | 39.6 | -18.5 | 0 | 43.9 | - | - | - | - | 1 | 202 | H |

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

PK2 - KDB558074 Method: Maximum Peak

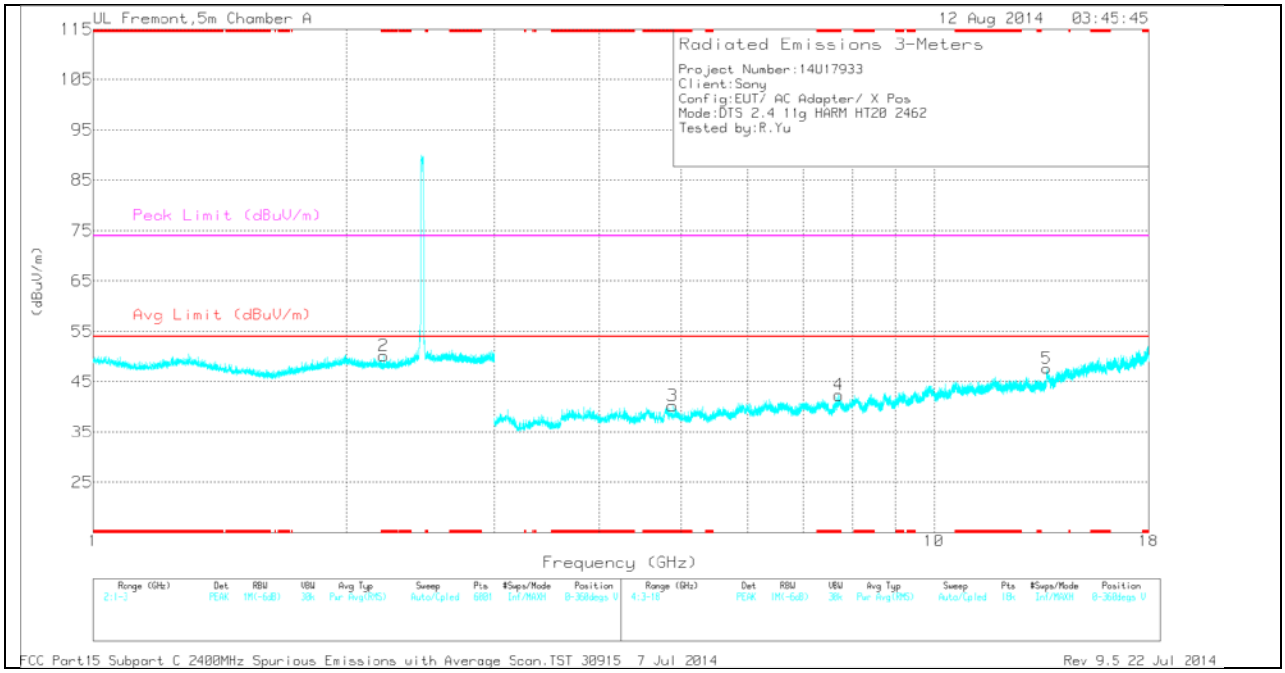
MAv1 - KDB558074 Option 1 Maximum RMS Average

**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/Fltr /Pad (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | * 2.216 | 36.02 | PK | 31.3 | -17.2 | 0 | 50.12 | - | - | 74 | -23.88 | 0-360 | 201 | V |
| 3 | * 4.887 | 30.52 | PK | 34 | -24.3 | 0 | 40.22 | - | - | 74 | -33.78 | 0-360 | 201 | V |
| 4 | * 7.7 | 28.06 | PK | 35.4 | -21.1 | 0 | 42.36 | - | - | 74 | -31.64 | 0-360 | 100 | V |
| 1 | 2.039 | 36.14 | PK | 32 | -17.4 | 0 | 50.74 | - | - | - | - | 0-360 | 201 | H |
| 6 | 9.755 | 27.87 | PK | 36.9 | -20.4 | 0 | 44.37 | - | - | - | - | 0-360 | 100 | H |
| 5 | 13.613 | 26.86 | PK | 38.8 | -18 | 0 | 47.66 | - | - | - | - | 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/ Fltr/Pad (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13.611 | 22.88 | MAv1 | 38.8 | -18.1 | 0 | 43.58 | - | - | - | - | 1 | 202 | V |
| 13.612 | 34.6 | PK2 | 38.8 | -18 | 0 | 55.4 | - | - | - | - | 1 | 202 | V |

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

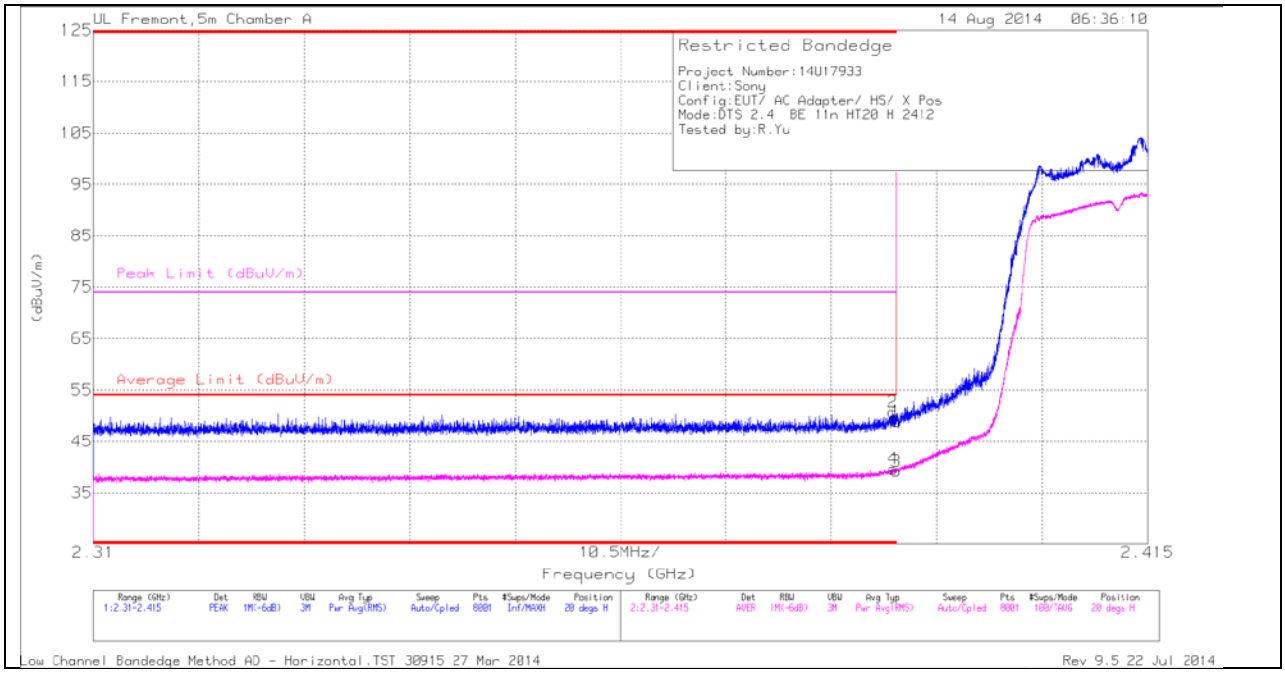
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

## 11.2.3. 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

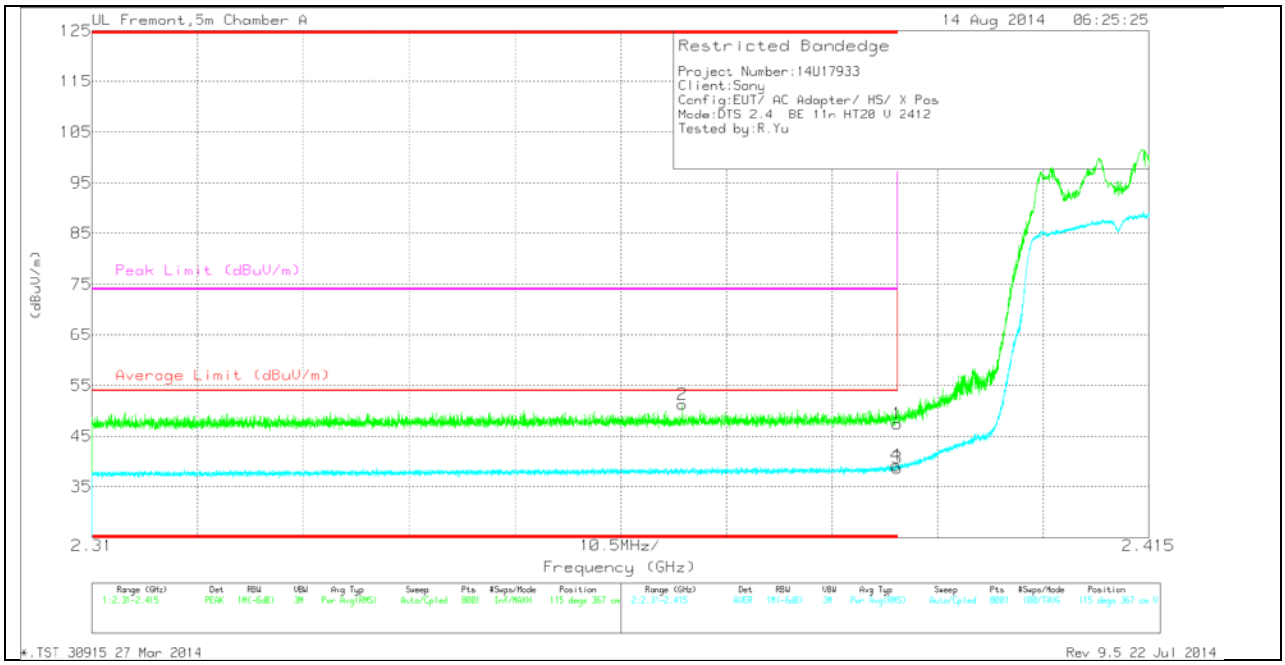
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF T136 (dB/m) | Amp/Cbl/Fltr/Pad (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 2.39 | 39.66 | PK | 32.2 | -23 | 48.86 | - | - | 74 | -25.14 | 20 | 250 | H |
| 2 | * 2.39 | 41.51 | PK | 32.2 | -23 | 50.71 | - | - | 74 | -23.29 | 20 | 250 | H |
| 3 | * 2.39 | 29.95 | RMS | 32.2 | -23 | 39.21 | 54 | -14.79 | - | - | 20 | 250 | H |
| 4 | * 2.39 | 30.4 | RMS | 32.2 | -23 | 39.66 | 54 | -14.34 | - | - | 20 | 250 | 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 T136 (dB/m) | Amp/Cbl/Flt r/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 | 38.27 | PK | 32.2 | -23 | 47.47 | - | - | 74 | -26.53 | 115 | 367 | V |
| 2 | * 2.369 | 42.11 | PK | 32.1 | -22.9 | 51.31 | - | - | 74 | -22.69 | 115 | 367 | V |
| 3 | * 2.39 | 29.54 | RMS | 32.2 | -23 | 38.8 | 54 | -15.2 | - | - | 115 | 367 | V |
| 4 | * 2.39 | 29.97 | RMS | 32.2 | -23 | 39.23 | 54 | -14.77 | - | - | 115 | 367 | V |

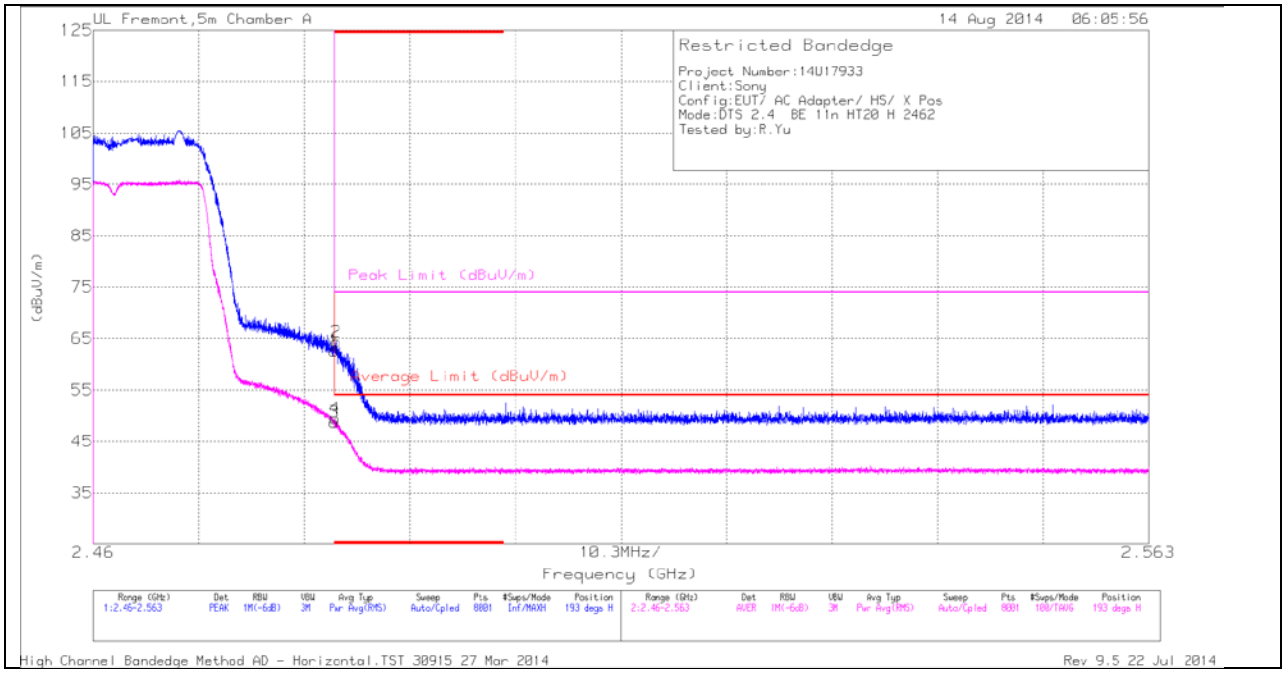
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

# AUTHORIZED BANDEDGE (HIGH CHANNEL)

## HORIZONTAL PEAK AND AVERAGE PLOT




## HORIZONTAL DATA

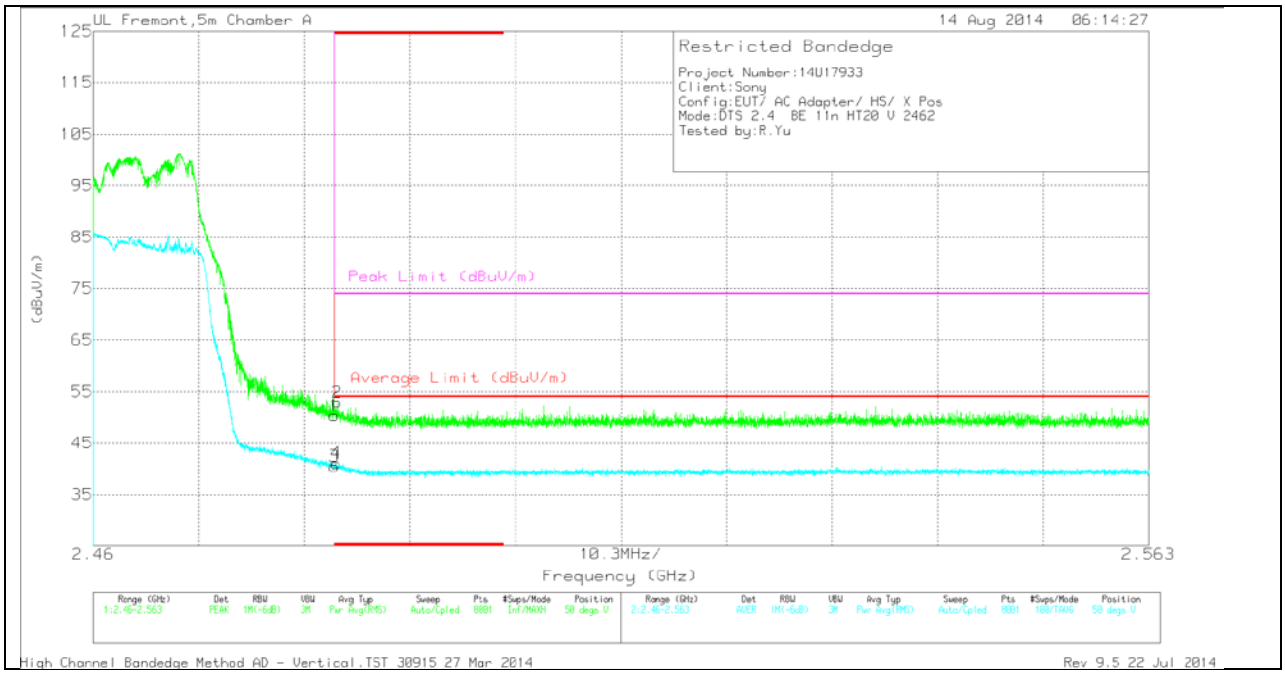
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF T136 (dB/m) | Amp/Cbl/Flt r/Pad (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 2.484 | 52.61 | PK | 32.7 | -22.7 | 62.61 | - | - | 74 | -11.39 | 193 | 103 | H |
| 2 | * 2.484 | 54.38 | PK | 32.7 | -22.7 | 64.38 | - | - | 74 | -9.62 | 193 | 103 | H |
| 3 | * 2.484 | 38.69 | RMS | 32.7 | -22.7 | 48.75 | 54 | -5.25 | - | - | 193 | 103 | H |
| 4 | * 2.484 | 39.38 | RMS | 32.7 | -22.7 | 49.44 | 54 | -4.56 | - | - | 193 | 103 | 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 T136 (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 | 40.3 | PK | 32.7 | -22.7 | 50.3 | - | - | 74 | -23.7 | 50 | 346 | V |
| 2 | * 2.484 | 42.88 | PK | 32.7 | -22.7 | 52.88 | - | - | 74 | -21.12 | 50 | 346 | V |
| 3 | * 2.484 | 30.47 | RMS | 32.7 | -22.7 | 40.47 | 54 | -13.53 | - | - | 50 | 346 | V |
| 4 | * 2.484 | 31.06 | RMS | 32.7 | -22.7 | 41.06 | 54 | -12.94 | - | - | 50 | 346 | V |

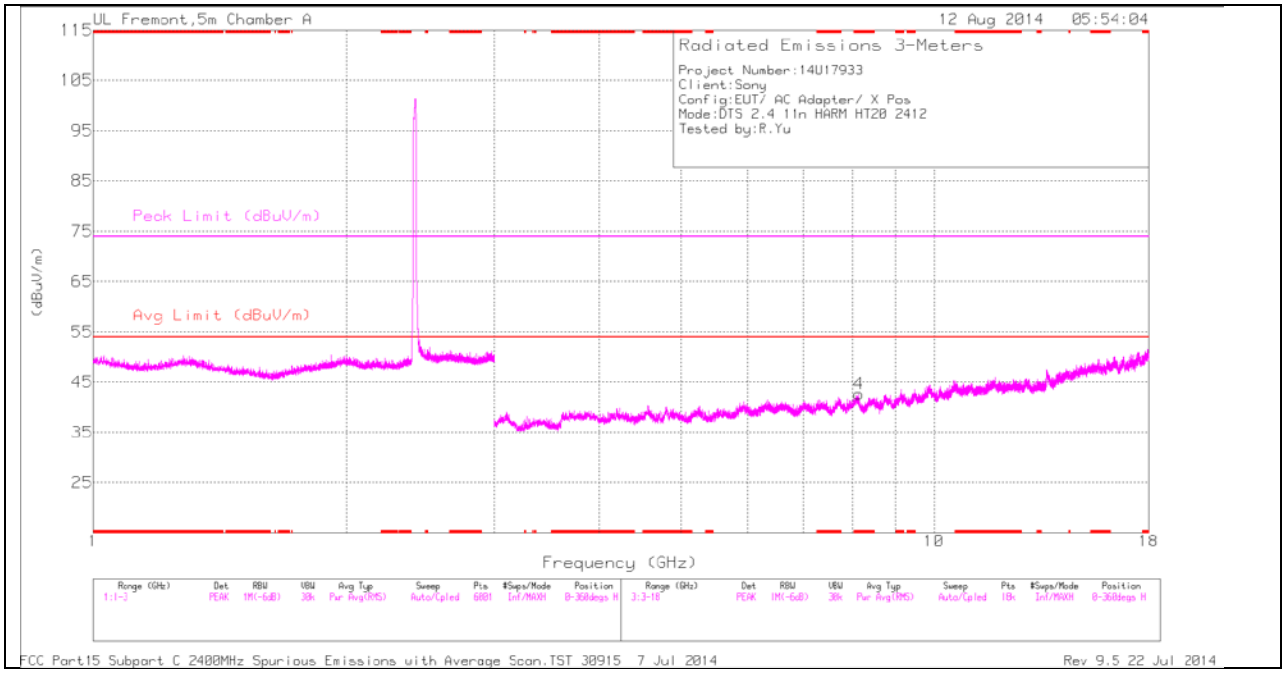
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

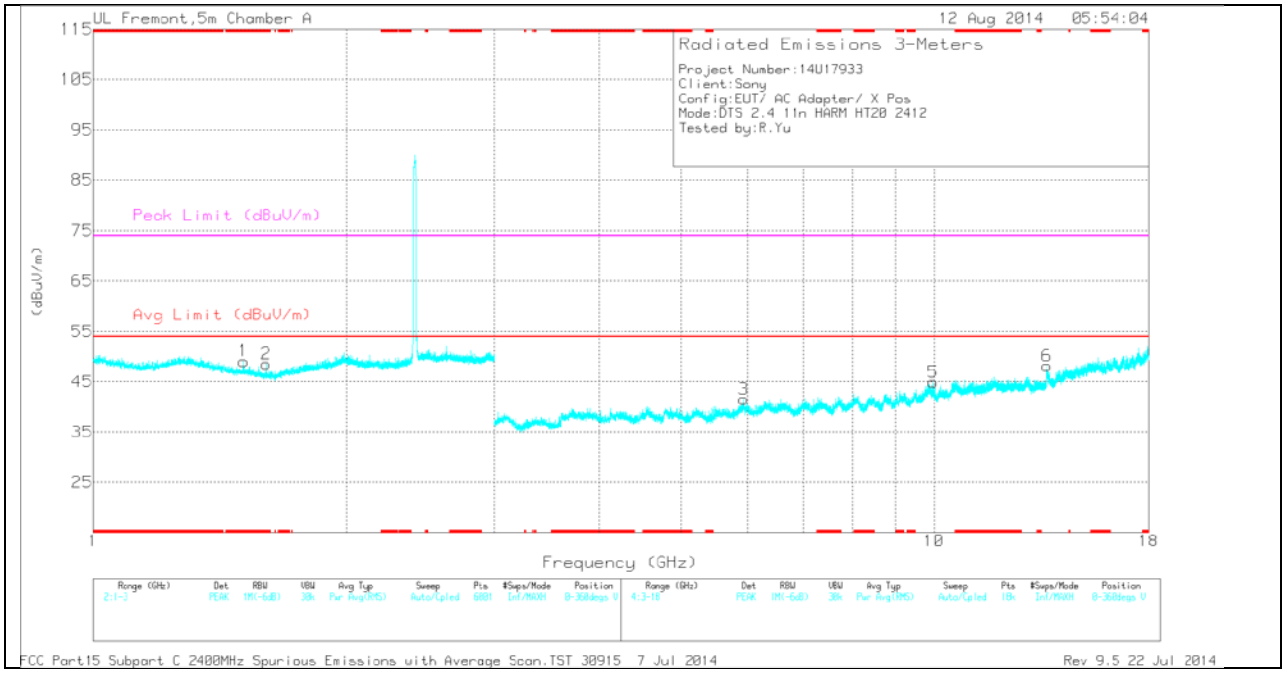
## HARMONICS AND SPURIOUS EMISSIONS

### 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/Fltr /Pad (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 1.51 | 37.29 | PK | 28.7 | -16.9 | 0 | 49.09 | - | - | 74 | -24.91 | 0-360 | 201 | V |
| 2 | * 1.606 | 37.24 | PK | 28.8 | -17.5 | 0 | 48.54 | - | - | 74 | -25.46 | 0-360 | 100 | V |
| 4 | * 8.137 | 28.62 | PK | 35.5 | -21.5 | 0 | 42.62 | - | - | 74 | -31.38 | 0-360 | 100 | H |
| 3 | 5.942 | 29.31 | PK | 35.1 | -22.9 | 0 | 41.51 | - | - | - | - | 0-360 | 100 | V |
| 5 | 9.979 | 27.08 | PK | 37.1 | -19.3 | 0 | 44.88 | - | - | - | - | 0-360 | 100 | V |
| 6 | 13.629 | 27.23 | PK | 38.8 | -17.9 | 0 | 48.13 | - | - | - | - | 0-360 | 100 | V |

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

PK - Peak detector

## Radiated Emissions

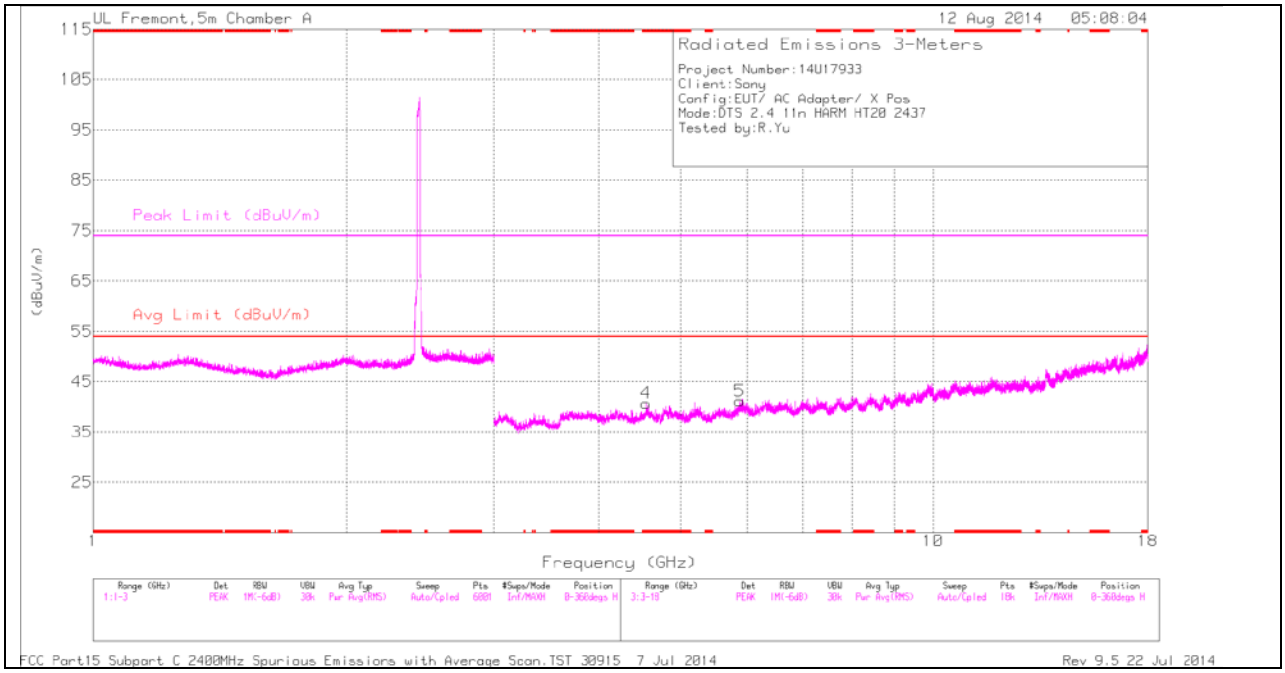
| Frequency (GHz) | Meter Reading (dBuV) | Det | AF T136 (dB/m) | Amp/Cbl/ Fltr/Pad (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13.628 | 23.04 | MAv1 | 38.8 | -17.9 | 0 | 43.94 | - | - | - | - | 1 | 100 | V |
| 13.63 | 33.8 | PK2 | 38.8 | -17.9 | 0 | 54.7 | - | - | - | - | 1 | 100 | V |

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

PK2 - KDB558074 Method: Maximum Peak

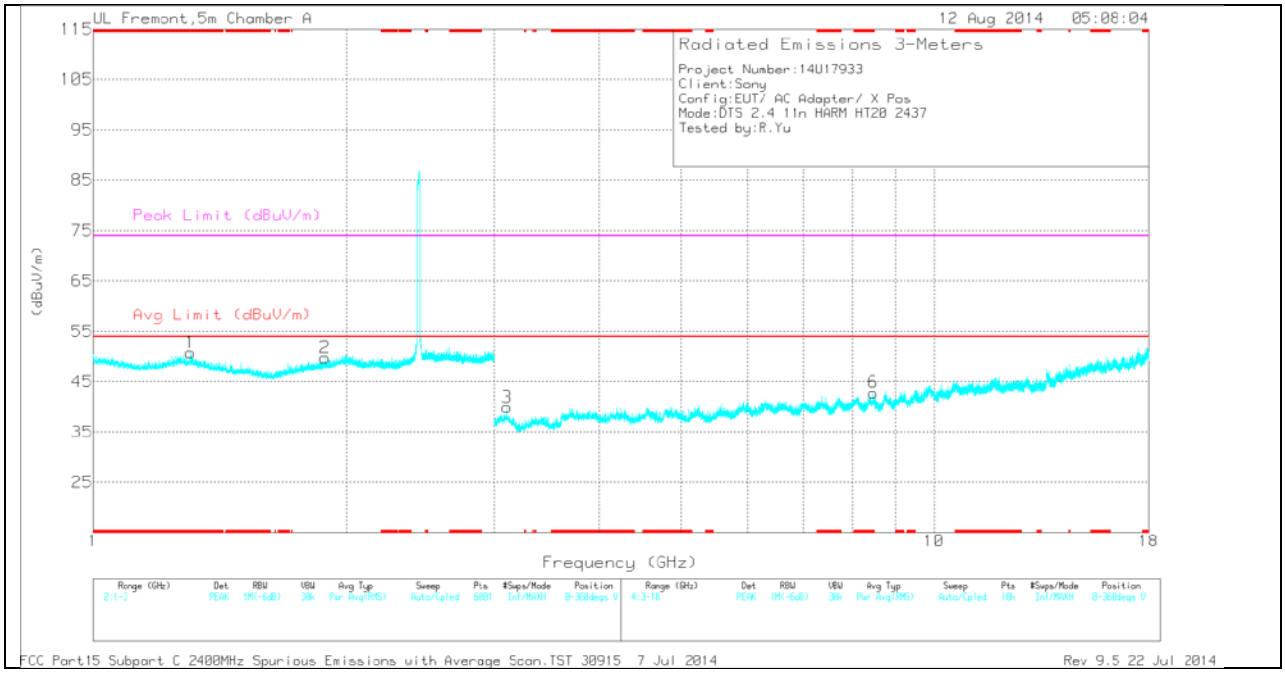
MAv1 - KDB558074 Option 1 Maximum RMS Average

**MID CHANNEL HORIZONTAL**




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

**MID CHANNEL VERTICAL**




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

## MID CHANNEL DATA

*TRACE MARKERS*

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF T136 (dB/m) | Amp/Cbl/Fltr /Pad (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 1.305 | 37.51 | PK | 30.2 | -16.9 | 0 | 50.81 | - | - | 74 | -23.19 | 0-360 | 100 | V |
| 4 | * 4.552 | 31.41 | PK | 33.9 | -24.6 | 0 | 40.71 | - | - | 74 | -33.29 | 0-360 | 201 | H |
| 6 | * 8.466 | 28.04 | PK | 35.7 | -20.9 | 0 | 42.84 | - | - | 74 | -31.16 | 0-360 | 201 | V |
| 2 | 1.886 | 35.75 | PK | 31.5 | -17.5 | 0 | 49.75 | - | - | - | - | 0-360 | 100 | V |
| 3 | 3.102 | 32.42 | PK | 32.8 | -25.3 | 0 | 39.92 | - | - | - | - | 0-360 | 100 | V |
| 5 | 5.883 | 29.35 | PK | 35 | -23.2 | 0 | 41.15 | - | - | - | - | 0-360 | 201 | H |

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

PK - Peak detector

## Radiated Emissions

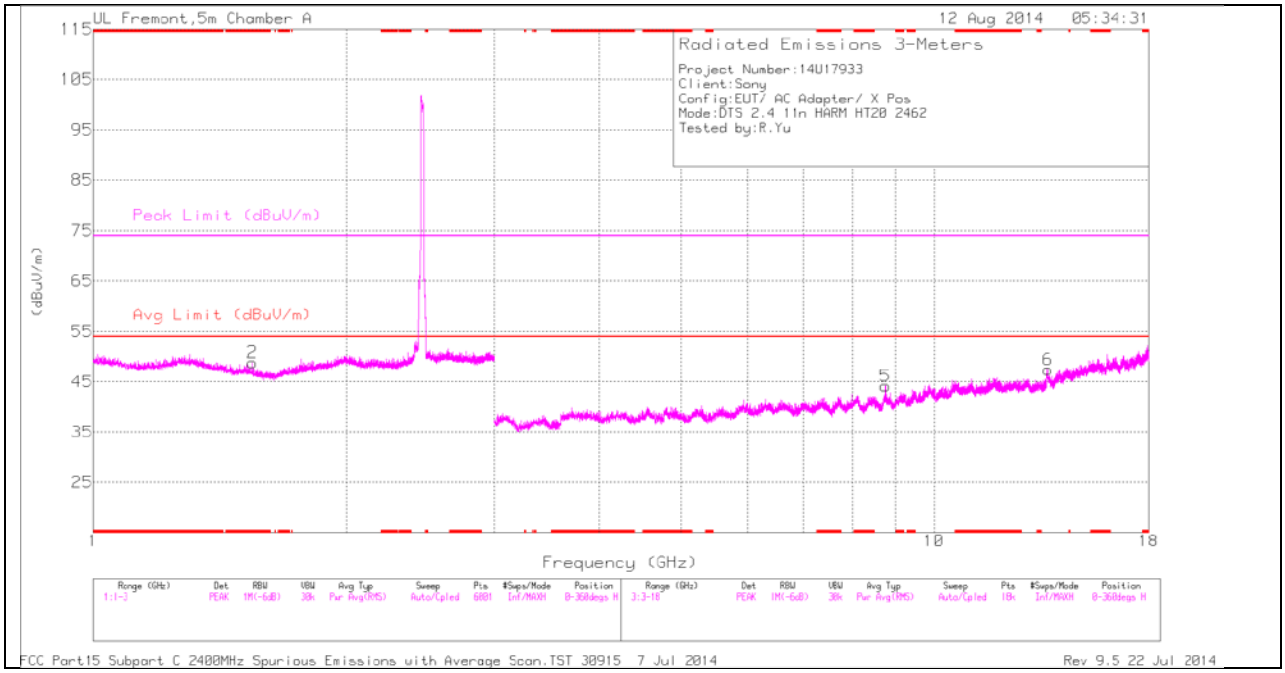
| Frequency (GHz) | Meter Reading (dBuV) | Det | AF T136 (dB/m) | Amp/Cbl/ Fltr/Pad (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| * 4.551 | 38.42 | PK2 | 33.9 | -24.6 | 0 | 47.72 | - | - | 74 | -26.28 | 1 | 202 | H |
| * 4.552 | 27.33 | MAv1 | 33.9 | -24.6 | 0 | 36.63 | 54 | -17.37 | - | - | 1 | 202 | H |

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

PK2 - KDB558074 Method: Maximum Peak

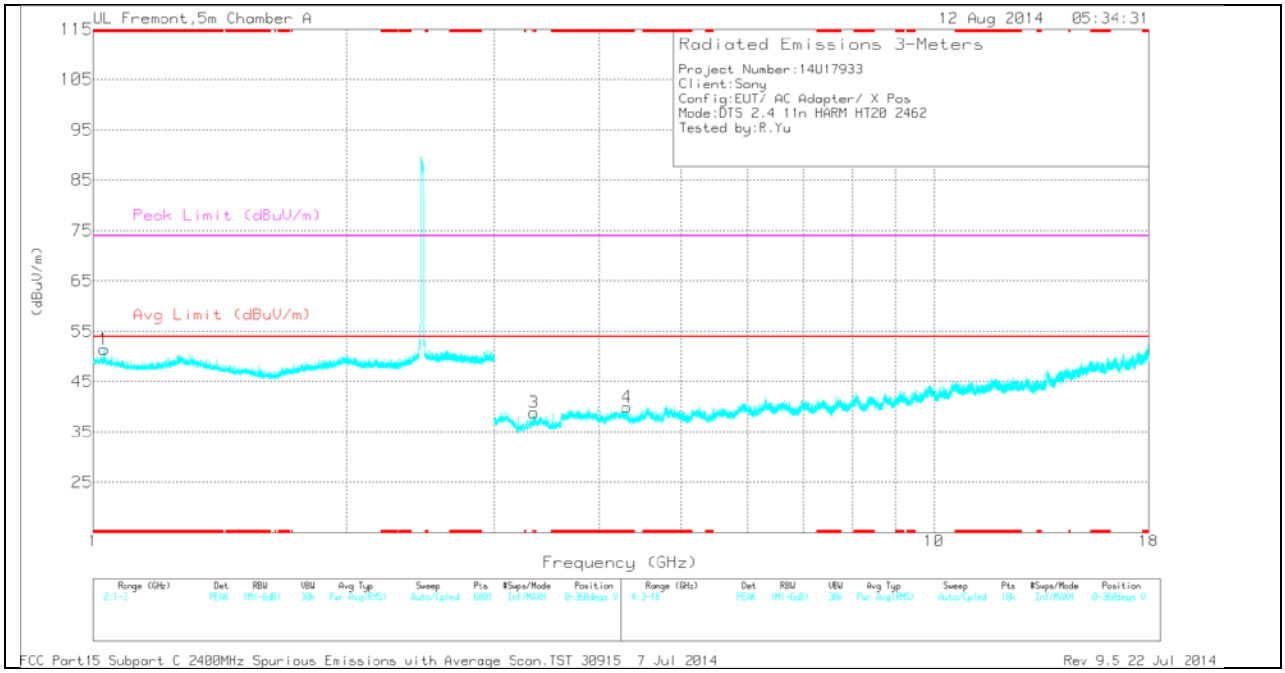
MAv1 - KDB558074 Option 1 Maximum RMS Average

**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/Fltr /Pad (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | * 1.546 | 37.1 | PK | 28.7 | -17 | 0 | 48.8 | - | - | 74 | -25.2 | 0-360 | 201 | H |
| 1 | * 1.031 | 38.74 | PK | 28.6 | -15.9 | 0 | 51.44 | - | - | 74 | -22.56 | 0-360 | 100 | V |
| 4 | * 4.311 | 31.42 | PK | 34 | -25.5 | 0 | 39.92 | - | - | 74 | -34.08 | 0-360 | 100 | V |
| 3 | 3.343 | 31.75 | PK | 33 | -25.9 | 0 | 38.85 | - | - | - | - | 0-360 | 100 | V |
| 5 | 8.756 | 28.32 | PK | 35.8 | -20 | 0 | 44.12 | - | - | - | - | 0-360 | 100 | H |
| 6 | 13.668 | 27.21 | PK | 38.8 | -18.6 | 0 | 47.41 | - | - | - | - | 0-360 | 100 | H |

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

PK - Peak detector

## Radiated Emissions

| Frequency (GHz) | Meter Reading (dBuV) | Det | AF T136 (dB/m) | Amp/Cbl/ Fltr/Pad (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| * 1.029 | 44.95 | PK2 | 28.6 | -16 | 0 | 57.55 | - | - | 74 | -16.45 | 1 | 100 | V |
| * 1.029 | 33.81 | MAv1 | 28.6 | -16 | 0 | 46.41 | 54 | -7.59 | - | - | 1 | 100 | V |

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

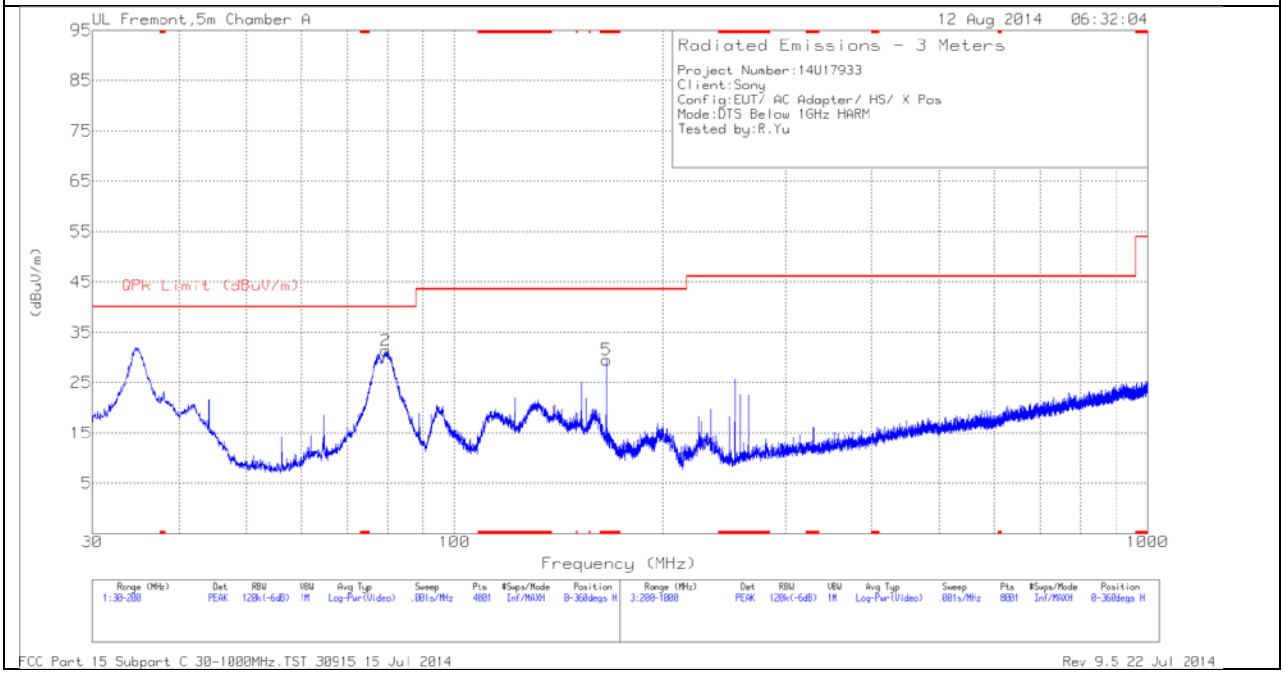
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

## 11.3. WORST-CASE BELOW 1 GHz

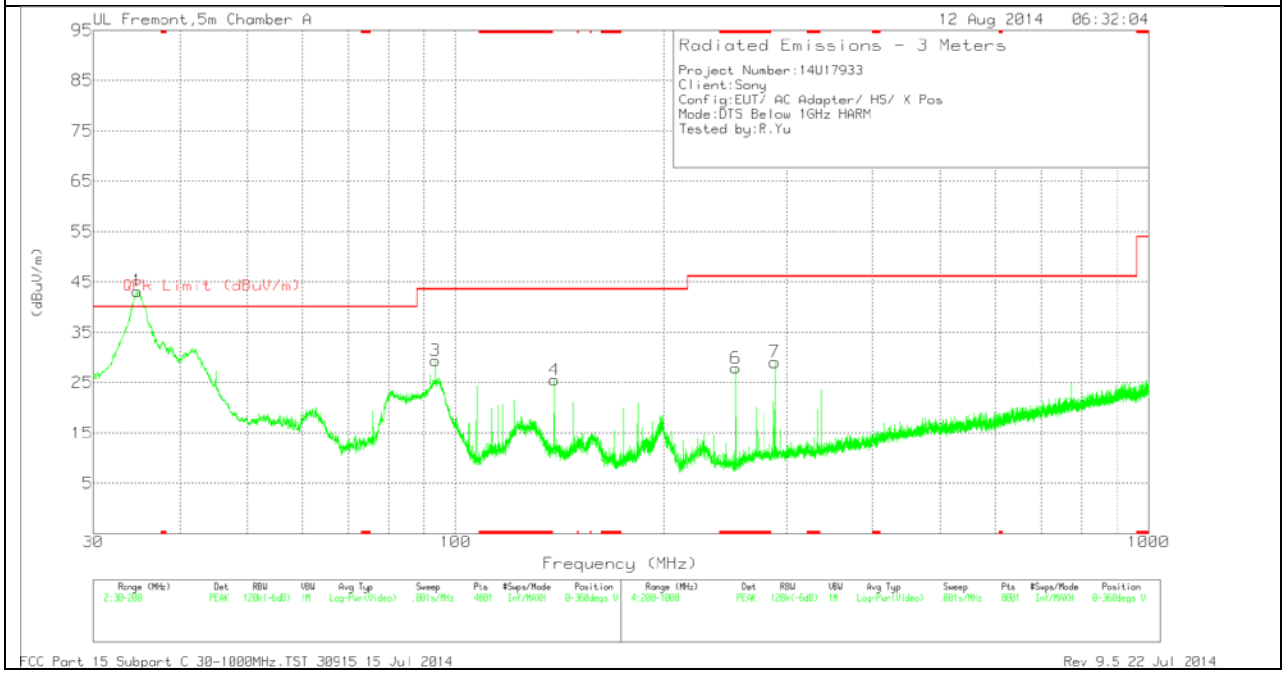
**SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)**

HORIZONTAL PLOT



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

VERTICAL PLOT



**Below 1G Data**

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | AF T130 (dB/m) | Amp/Cbl (dB/m) | DC Corr (dB) | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | * 165.6175 | 47.51 | PK | 12 | -30 | 0 | 29.51 | 43.52 | -14.01 | 0-360 | 300 | H |
| 6 | * 253.8 | 45.98 | PK | 11.5 | -29.6 | 0 | 27.88 | 46.02 | -18.14 | 0-360 | 101 | V |
| 1 | 34.76 | 55.99 | PK | 18.2 | -31 | 0 | 43.19 | 40 | 3.19 | 0-360 | 101 | V |
| 2 | 79.555 | 54.46 | PK | 7.6 | -30.7 | 0 | 31.36 | 40 | -8.64 | 0-360 | 200 | H |
| 3 | 93.4525 | 51.41 | PK | 8.4 | -30.4 | 0 | 29.41 | 43.52 | -14.11 | 0-360 | 101 | V |
| 4 | 138.8425 | 42.4 | PK | 13.3 | -30.2 | 0 | 25.5 | 43.52 | -18.02 | 0-360 | 101 | V |
| 7 | 288.9 | 45.11 | PK | 13.3 | -29.3 | 0 | 29.11 | 46.02 | -16.91 | 0-360 | 101 | V |

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

PK - Peak detector

## Radiated Emissions

| Frequency (MHz) | Meter Reading (dBuV) | Det | AF T130 (dB/m) | Amp/Cbl (dB/m) | DC Corr (dB) | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 34.76 | 23.91 | QP | 18.1 | -31 | 0 | 11.01 | 40 | -28.99 | 1 | 101 | V |

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

QP - Quasi-Peak detector

# 12. 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.

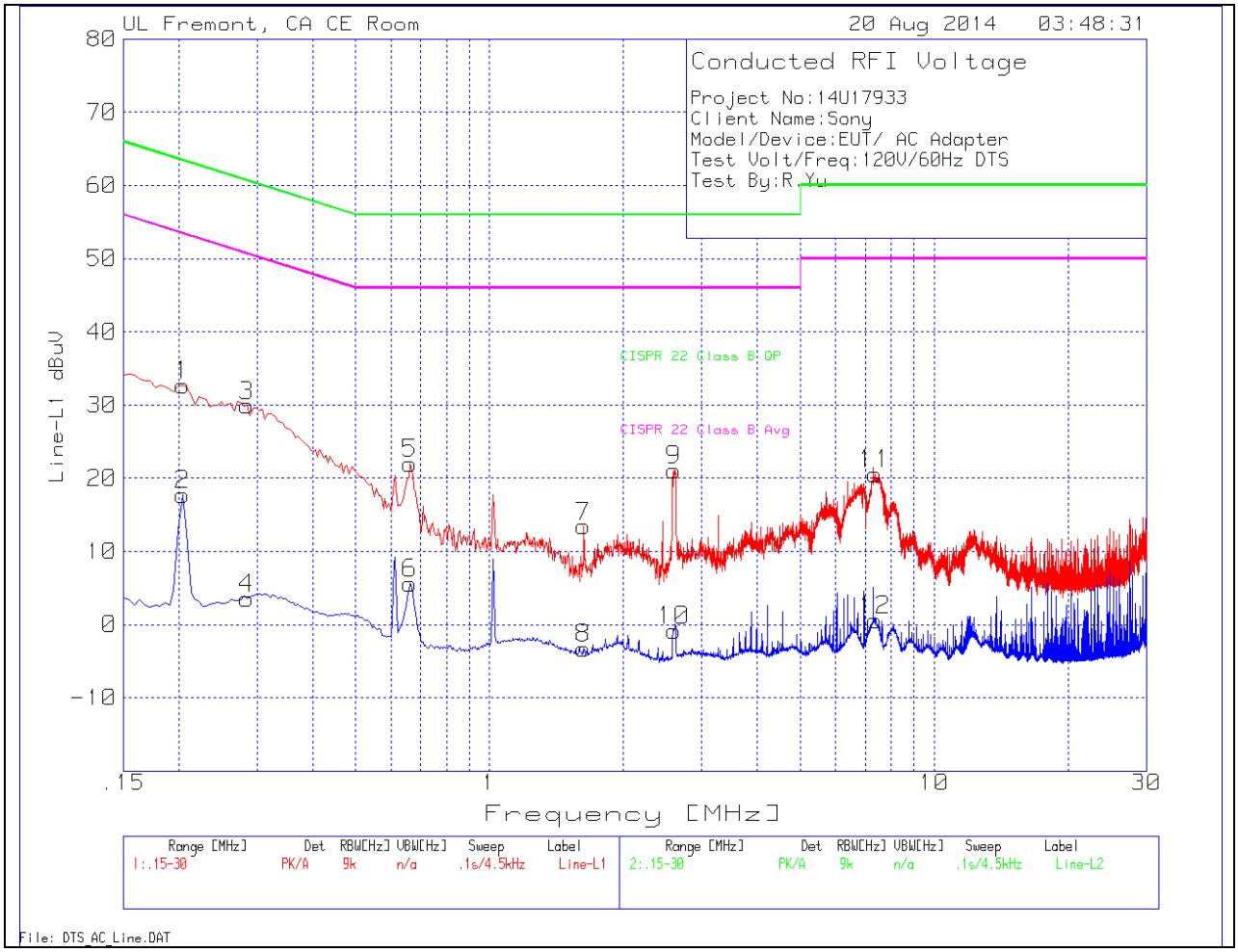
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

**RESULTS**

**6 WORST EMISSIONS**

## LINE 1 PLOT

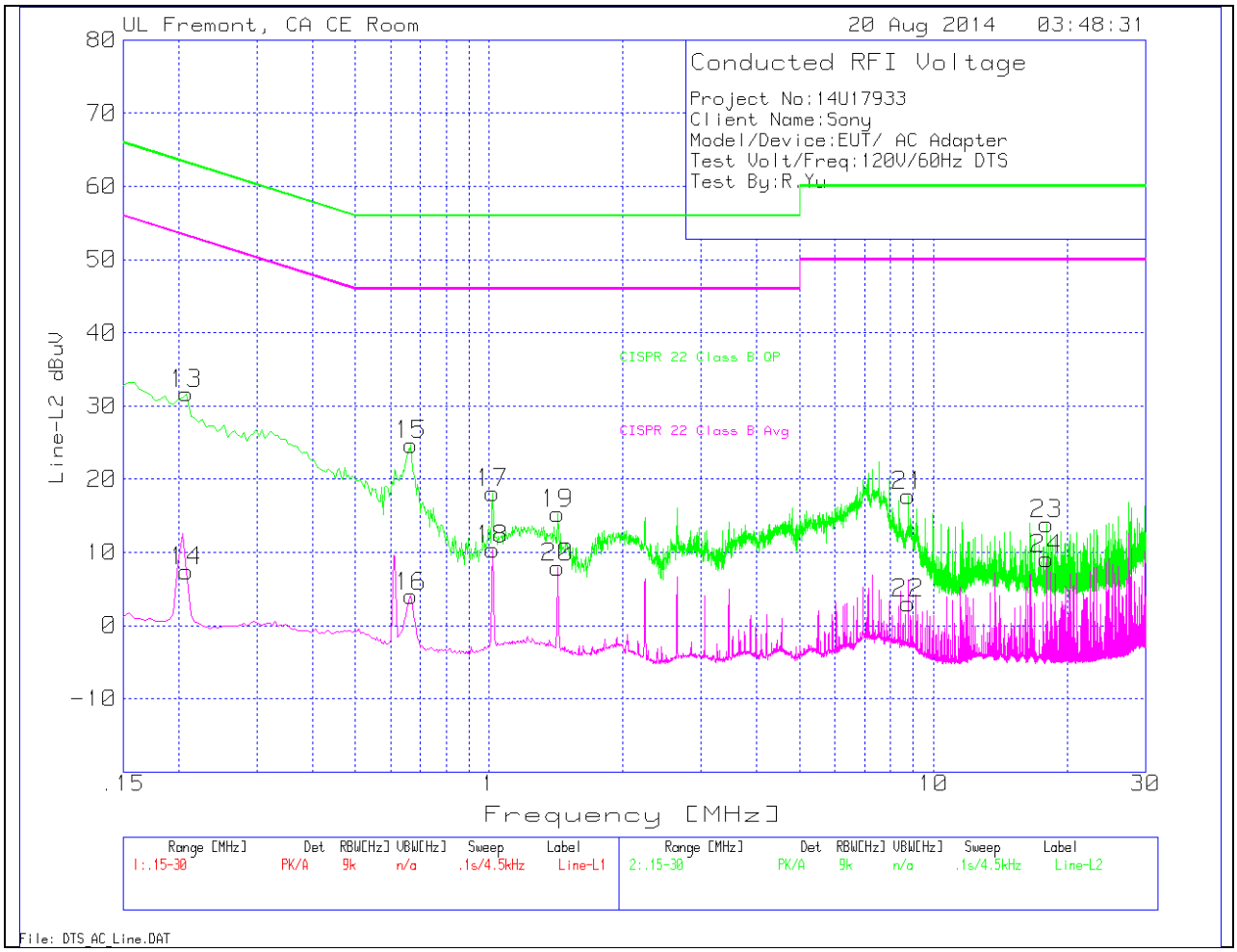



## LINE 1 RESULTS

### 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 | .204 | 31.75 | PK | .9 | 0 | 32.65 | 63.4 | -30.75 | - | - |
| 2 | .204 | 16.82 | Av | .9 | 0 | 17.72 | - | - | 53.4 | -35.68 |
| 3 | .285 | 29.31 | PK | .6 | 0 | 29.91 | 60.7 | -30.79 | - | - |
| 4 | .285 | 2.95 | Av | .6 | 0 | 3.55 | - | - | 50.7 | -47.15 |
| 5 | .663 | 21.68 | PK | .3 | 0 | 21.98 | 56 | -34.02 | - | - |
| 6 | .663 | 5.32 | Av | .3 | 0 | 5.62 | - | - | 46 | -40.38 |
| 7 | 1.6305 | 13.11 | PK | .2 | .1 | 13.41 | 56 | -42.59 | - | - |
| 8 | 1.6305 | -3.54 | Av | .2 | .1 | -3.24 | - | - | 46 | -49.24 |
| 9 | 2.598 | 20.76 | PK | .2 | .1 | 21.06 | 56 | -34.94 | - | - |
| 10 | 2.598 | -1.17 | Av | .2 | .1 | -.87 | - | - | 46 | -46.87 |
| 11 | 7.35 | 20.32 | PK | .2 | .1 | 20.62 | 60 | -39.38 | - | - |
| 12 | 7.35 | .26 | Av | .2 | .1 | .56 | - | - | 50 | -49.44 |

## 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 | .2085 | 30.71 | PK | 1 | 0 | 31.71 | 63.3 | -31.59 | - | - |
| 14 | .2085 | 6.4 | Av | 1 | 0 | 7.4 | - | - | 53.3 | -45.9 |
| 15 | .6675 | 24.35 | PK | .3 | 0 | 24.65 | 56 | -31.35 | - | - |
| 16 | .6675 | 3.7 | Av | .3 | 0 | 4 | - | - | 46 | -42 |
| 17 | 1.0185 | 17.86 | PK | .3 | 0 | 18.16 | 56 | -37.84 | - | - |
| 18 | 1.0185 | 10.11 | Av | .3 | 0 | 10.41 | - | - | 46 | -35.59 |
| 19 | 1.428 | 15.02 | PK | .2 | .1 | 15.32 | 56 | -40.68 | - | - |
| 20 | 1.428 | 7.6 | Av | .2 | .1 | 7.9 | - | - | 46 | -38.1 |
| 21 | 8.7585 | 17.48 | PK | .2 | .1 | 17.78 | 60 | -42.22 | - | - |
| 22 | 8.7585 | 2.79 | Av | .2 | .1 | 3.09 | - | - | 50 | -46.91 |
| 23 | 17.979 | 13.34 | PK | .3 | .2 | 13.84 | 60 | -46.16 | - | - |
| 24 | 17.979 | 8.58 | Av | .3 | .2 | 9.08 | - | - | 50 | -40.92 |