



CERTIFICATION TEST REPORT

Report Number. : 11631998-E3V3

Applicant : VERIFONE, INC.
1400 WEST STANFORD RANCH ROAD SUITE 200
ROCKLIN, CA 95765, USA

Model : V240m Plus 3GBW

FCC ID : B32V240MPLUS

IC : 787C-V240MPLUS

EUT Description : MOBILE POINT OF SALE TERMINAL

Test Standard(s) : FCC 47 CFR PART 15 SUBPART C
INDUSTRY CANADA RSS - 247 ISSUE 2
INDUSTRY CANADA RSS-GEN ISSUE 4

Date Of Issue:

December 19, 2017

Prepared by:

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Revision History

| <u>Rev.</u> | <u>Issue Date</u> | <u>Revisions</u> | <u>Revised By</u> |
|-------------|-------------------|---|-------------------|
| V1 | 08/16/17 | Initial Issue | D. Corona |
| V2 | 09/07/17 | Updated Section 5.2 | D. Corona |
| V3 | 12/19/17 | Updated Section 5.2, Output Power Sections 9.1.3, 9.2.3 & 9.3.3 and Conducted Spurious Emissions 9.1.5, 9.2.5 & 9.3.5 | D. Corona |

TABLE OF CONTENTS

| | |
|---|-----------|
| 1. ATTESTATION OF TEST RESULTS | 5 |
| 2. TEST METHODOLOGY | 6 |
| 3. FACILITIES AND ACCREDITATION | 6 |
| 4. CALIBRATION AND UNCERTAINTY | 6 |
| 4.1. <i>MEASURING INSTRUMENT CALIBRATION</i> | 6 |
| 4.2. <i>SAMPLE CALCULATION</i> | 6 |
| 4.3. <i>MEASUREMENT UNCERTAINTY</i> | 7 |
| 5. EQUIPMENT UNDER TEST | 8 |
| 5.1. <i>DESCRIPTION OF EUT</i> | 8 |
| 5.2. <i>MAXIMUM OUTPUT POWER</i> | 8 |
| 5.3. <i>DESCRIPTION OF AVAILABLE ANTENNAS</i> | 8 |
| 5.4. <i>SOFTWARE AND FIRMWARE</i> | 8 |
| 5.5. <i>WORST-CASE CONFIGURATION AND MODE</i> | 9 |
| 5.6. <i>DESCRIPTION OF TEST SETUP</i> | 10 |
| 6. TEST AND MEASUREMENT EQUIPMENT | 13 |
| 7. MEASUREMENT METHODS | 14 |
| 8. SUMMARY TABLE | 15 |
| 9. ANTENNA PORT TEST RESULTS | 16 |
| 9.1. <i>11b SISO MODE IN THE 2.4GHz BAND</i> | 19 |
| 9.1.1. <i>6 dB BANDWIDTH</i> | 19 |
| 9.1.2. <i>99% BANDWIDTH</i> | 22 |
| 9.1.3. <i>OUTPUT POWER</i> | 25 |
| 9.1.4. <i>POWER SPECTRAL DENSITY</i> | 26 |
| 9.1.5. <i>CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS</i> | 29 |
| 9.2. <i>11g SISO MODE IN THE 2.4GHz BAND</i> | 33 |
| 9.2.1. <i>6 dB BANDWIDTH</i> | 33 |
| 9.2.2. <i>99% BANDWIDTH</i> | 36 |
| 9.2.3. <i>OUTPUT POWER</i> | 39 |
| 9.2.4. <i>POWER SPECTRAL DENSITY</i> | 40 |
| 9.2.5. <i>CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS</i> | 43 |
| 9.3. <i>11n HT20 SISO MODE IN THE 2.4GHz BAND</i> | 47 |
| 9.3.1. <i>6 dB BANDWIDTH</i> | 47 |
| 9.3.2. <i>99% BANDWIDTH</i> | 50 |

9.3.3. OUTPUT POWER 53
9.3.4. POWER SPECTRAL DENSITY 54
9.3.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS 57

10. RADIATED TEST RESULTS 61

10.1. LIMITS AND PROCEDURE 61
10.2. WORST-CASE BELOW 30MHz 62
10.3. WORST-CASE BELOW 1 GHz 64
10.4. TRANSMITTER ABOVE 1 GHz 66
10.4.1. 11b SISO MODE IN THE 2.4GHz BAND 66
10.4.2. 11g SISO MODE IN THE 2.4GHz BAND 76
10.4.3. 11n HT20 SISO MODE IN THE 2.4GHz BAND 86
10.5. WORST-CASE 18 to 26 GHz 96

11. AC POWER LINE CONDUCTED EMISSIONS 98

12. SETUP PHOTOS 101

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Verifone, Inc.
1400 West Stanford Ranch Road Suite 200
Rocklin, CA 95765, USA

EUT DESCRIPTION: Mobile Point of Sale Terminal

MODEL: V240m Plus 3GBW

SERIAL NUMBER: 313-855-592, 313-855-662

DATE TESTED: April 25 to 28, 2017

| APPLICABLE STANDARDS | |
|---------------------------------|--------------|
| STANDARD | TEST RESULTS |
| CFR 47 Part 15 Subpart C | Pass |
| INDUSTRY CANADA RSS-247 ISSUE 2 | Pass |
| INDUSTRY CANADA RSS-GEN Issue 4 | 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:

Prepared By:



DAN CORONIA
OPERATIONS LEADER
UL VERIFICATION SERVICES INC.

GLENN ESCANO
TEST 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, KDB 558074 D01 v04, ANSI C63.10-2013, RSS-GEN Issue 4, and RSS-247 ISSUE 2.

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 checked="" type="checkbox"/> | Chamber A (IC:2324B-1) | <input type="checkbox"/> | Chamber D (IC:22541-1) |
| <input checked="" type="checkbox"/> | Chamber B (IC:2324B-2) | <input type="checkbox"/> | Chamber E (IC:22541-2) |
| <input type="checkbox"/> | Chamber C (IC:2324B-3) | <input type="checkbox"/> | Chamber F (IC:22541-3) |
| | | <input type="checkbox"/> | Chamber G (IC:22541-4) |
| | | <input type="checkbox"/> | Chamber H (IC:22541-5) |

The above test sites and facilities are covered under FCC Test Firm Registration # 208313.

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 |
|---|-------------|
| Worst Case Conducted Disturbance, 9KHz to 0.15 MHz | 3.84 dB |
| Worst Case Conducted Disturbance, 0.15 to 30 MHz | 3.65 dB |
| Worst Case Radiated Disturbance, 9KHz to 30 MHz | 3.15 dB |
| Worst Case Radiated Disturbance, 30 to 1000 MHz | 5.36 dB |
| Worst Case Radiated Disturbance, 1000 to 18000 MHz | 4.32 dB |
| Worst Case Radiated Disturbance, 18000 to 26000 MHz | 4.45 dB |
| Worst Case Radiated Disturbance, 26000 to 40000 MHz | 5.24 dB |

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is the Mobile Point of Sale Terminal which contains an 11a/b/g/n/ac W-LAN + Bluetooth 4.1 combo module.

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 1TX | 16.15 | 41.21 |
| 2412 - 2462 | 802.11g 1TX | 13.68 | 23.33 |
| 2412 - 2462 | 802.11n HT20 1TX | 12.84 | 19.23 |

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a WiFi antenna with a maximum gain of 1.90 dBi across the frequencies in 2.4GHz band.

5.4. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was VOS2 – 30640xxx.

5.5. WORST-CASE CONFIGURATION AND MODE

Radiated bandedge, harmonics, and spurious emissions from 1 GHz to 18GHz were performed. The EUT was set to transmit at the Low/Middle/High channels.

Radiated emission below 1GHz, above 18GHz, and power line conducted emission were performed with the EUT was 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.

Worst-case data rates as provided by the client 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 |
| Laptop | Lenovo | 20B7S0A200 | PC015REW | NA |
| AC Adapter | Verifone | SC1402 | 1708200053701 | NA |
| AC Adapter | Verifone | AM11A-050A | 1650A1P | NA |

I/O CABLES (CONDUCTED TEST)

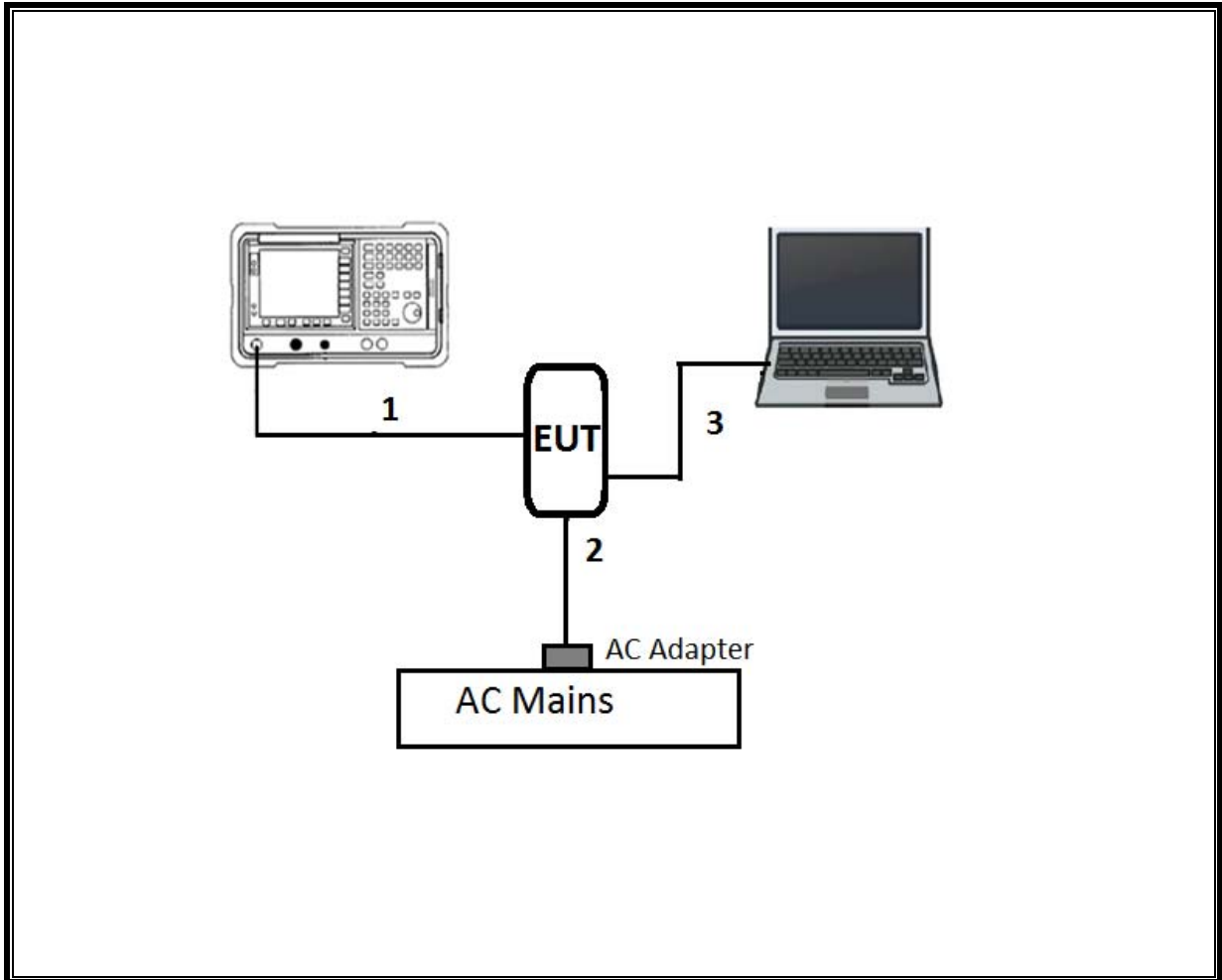
| I/O Cable List | | | | | | |
|----------------|---------|----------------------|----------------|-------------|------------------|----------------------|
| Cable No | Port | # of identical ports | Connector Type | Cable Type | Cable Length (m) | Remarks |
| 1 | Antenna | 1 | SMA | Un-Shielded | 0.1 | To spectrum Analyzer |
| 2 | DC | 1 | AC | Un-shielded | 2 | N/A |
| 3 | USB | 1 | USB | Shielded | 2 | N/A |

I/O CABLES (RADIATED AND CONDUCTED EMISSIONS)

| I/O Cable List | | | | | | |
|----------------|------|----------------------|----------------|-------------|------------------|---------|
| Cable No | Port | # of identical ports | Connector Type | Cable Type | Cable Length (m) | Remarks |
| 1 | DC | 1 | AC | Un-shielded | 2 | N/A |

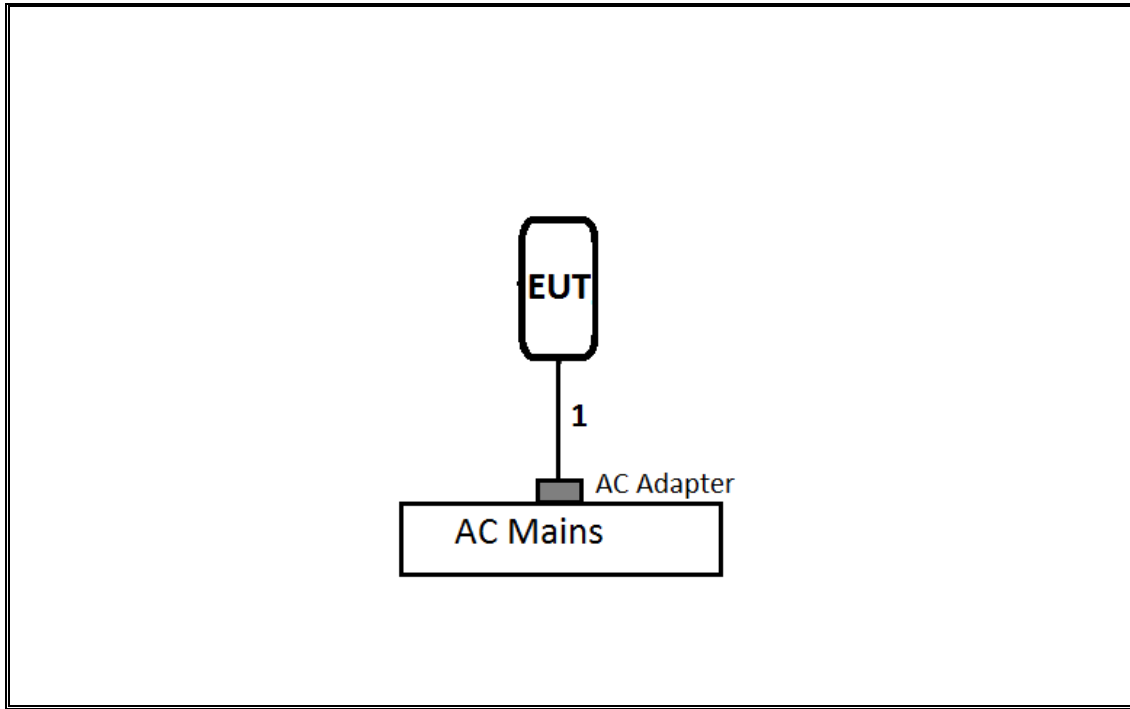
TEST SETUP

CONDUCTED TEST SETUP DIAGRAM



TEST SETUP

RADIATED AND AC LINE CONDUCTED EMISSIONS SETUP DIAGRAM



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 |
| Antenna, Broadband Hybrid, 30MHz to 2000MHz w/4dB Pad | Sunol Sciences Corp. | JB3 | T477 | 06/22/2017 |
| Antenna, Active Loop 9kHz-30MHz | ETS-Lindgren | 6502 | T1683 | 02/17/2018 |
| Antenna, Horn 1-18GHz | ETS-Lindgren | 3117 | T712 | 01/30/2018 |
| Antenna, Horn 18-26.5GHz | ARA | MWH-1826/B | T449 | 05/26/2017 |
| Power Meter, P-series single channel | Agilent (Keysight) Technologies | N1911A | T1264 | 07/08/2017 |
| Power Sensor, P – series, 50MHz to 18GHz, Wideband | Agilent (Keysight) Technologies | N1921A | T413 | 06/20/2017 |
| Amplifier, 1-26.5GHz | MITEQ | AFS42-00101800-25-S-42 | T1165 | 08/01/2017 |
| Amplifier, 1-26.5GHz | Agilent (Keysight) Technologies | 8449B | T404 | 07/05/2017 |
| Amplifier, 10kHz-1GHz | Agilent (Keysight) Technologies | 8447D | T15 | 08/26/2017 |
| Amplifier, 1-8 GHz | MITEQ | AFS42-00101800-25-S-42 | T931 | 08/26/2017 |
| Spectrum Analyzer, PSA, 3Hz to 26.5GHz | Agilent (Keysight) Technologies | E4440A | T199 | 07/22/2017 |
| Spectrum Analyzer, PXA, 3Hz to 44GHz | Agilent (Keysight) Technologies | N9030A | T907 | 01/23/2018 |
| Spectrum Analyzer, PSA, 3Hz to 26.5GHz | Agilent (Keysight) Technologies | E9030A | T905 | 01/11/2018 |
| LISN | FISCHER | FCC-LISN-50/250-25-2-01 | T1310 | 06/08/2017 |

| Test Software List | | | |
|-----------------------|--------------|--------|--------------------------|
| Description | Manufacturer | Model | Version |
| Radiated Software | UL | UL EMC | Ver 9.5, Apr 26, 2016 |
| Antenna Port Software | UL | UL RF | Ver 5.1.1, July 15, 2016 |

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

NOTE: *testing is completed before equipment calibration expiration date.

7. MEASUREMENT METHODS

On Time and Duty Cycle: KDB 558074 D01 v04, Section 6.

6 dB BW: KDB 558074 D01 v04, Section 8.1.

99% BW: ANSI C63.10-2013, Section 6.9.3.

Output Power: KDB 558074 D01 v04, Section 9.2.3.2.

Power Spectral Density: KDB 558074 D01 v04, Section 10.3.

Out-of-band emissions in non-restricted bands: KDB 558074 D01 v04, Section 11.0 (b).

Out-of-band emissions in restricted bands: KDB 558074 D01 v04, Section 12.1.

Band-edge: KDB 558074 D01 v04, Section 12.1.

AC Power Line Conducted Emissions: ANSI C63.10-2013, Section 6.2.

8. SUMMARY TABLE

| FCC Part Section | RSS Section(s) | Test Description | Test Limit | Test Condition | Test Result |
|---------------------------|-----------------|---|------------|----------------|-------------|
| 15.247 (a)(2) | RSS-247 5.2 (a) | Occupied Band width (6dB) | >500KHz | Conducted | Pass |
| 2.1051, 15.247 (d) | RSS-247 5.5 | Band Edge / Conducted Spurious Emission | -30dBc | | Pass |
| 15.247 (b) (3) | RSS-247 5.4 (d) | TX conducted output power | <30dBm | | Pass |
| 15.247 (e) | RSS-247 5.2 (b) | PSD | <8dBm | | Pass |
| 15.207 (a) | RSS-GEN 8.8 | AC Power Line conducted emissions | Section 10 | | Pass |
| 15.205, 15.209, 15.247(d) | RSS-GEN 8.9/7 | Radiated Spurious Emission | < 54dBuV/m | Radiated | Pass |

9. ANTENNA PORT TEST RESULTS

ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

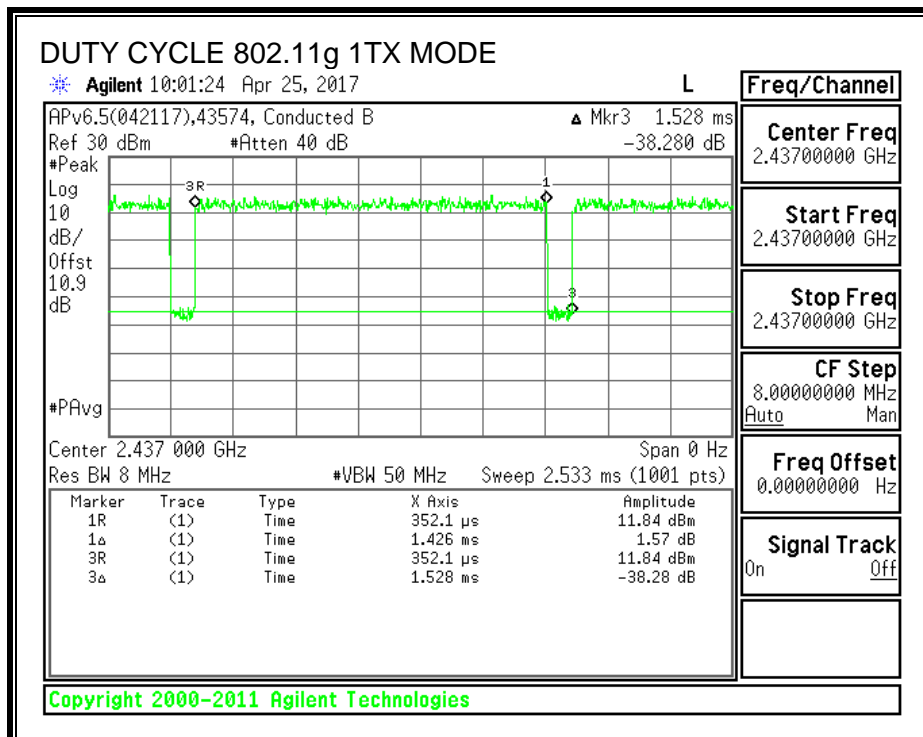
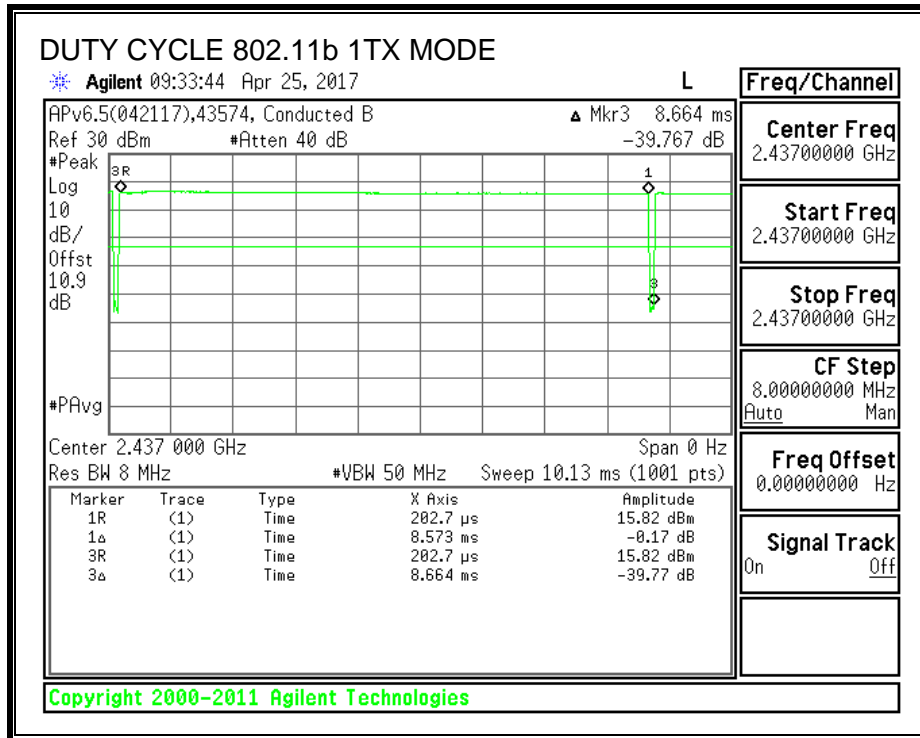
PROCEDURE

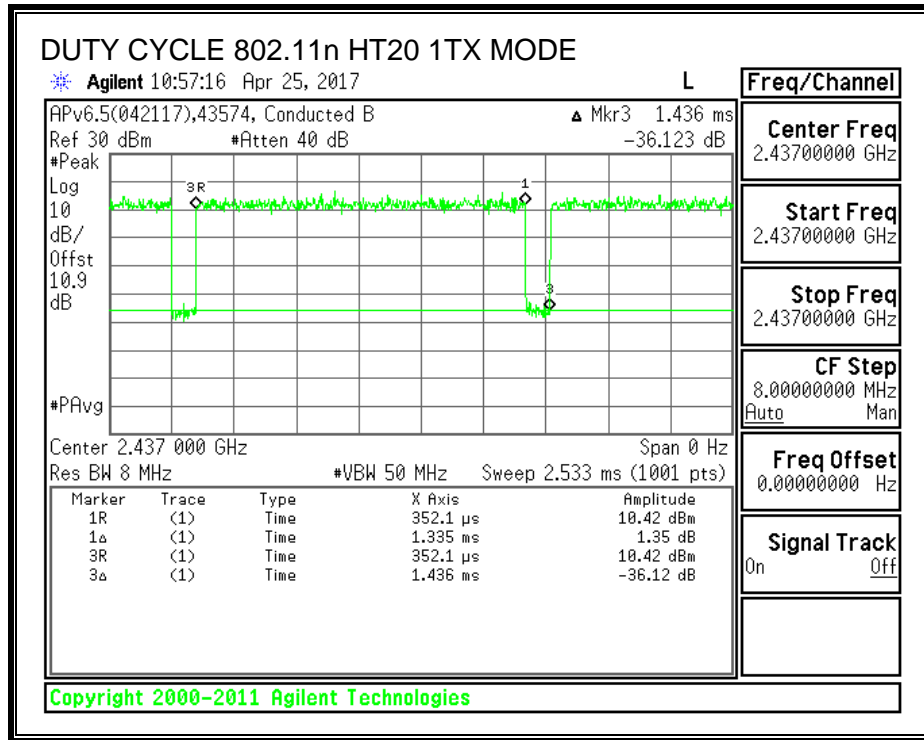
KDB 558074 Zero-Span Spectrum Analyzer Method.

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/B Minimum VBW (khz) |
|--------------|------------------|---------------|-----------------------|----------------|-----------------------------------|-----------------------|
| 11b 1TX | 8.573 | 8.664 | 0.989 | 98.949 | 0 | 0.01 |
| 11g 1TX | 1.426 | 1.528 | 0.933 | 93.324 | 0.3 | 0.701 |
| 11n HT20 1TX | 1.335 | 1.436 | 0.929 | 92.966 | 0.316 | 0.749 |

DUTY CYCLE PLOTS





9.1. 11b SISO MODE IN THE 2.4GHz BAND

9.1.1. 6 dB BANDWIDTH

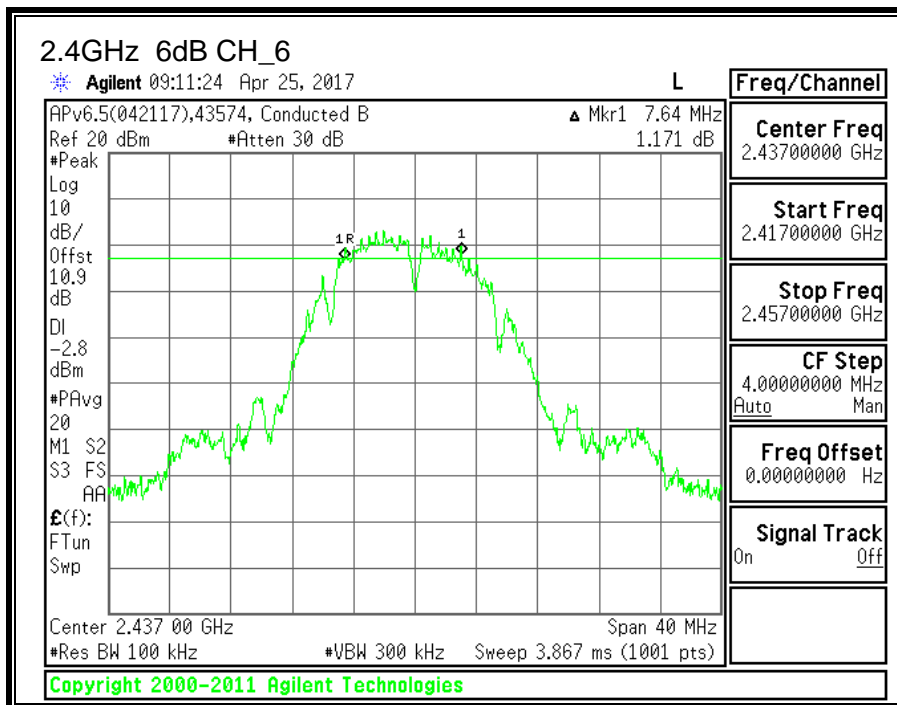
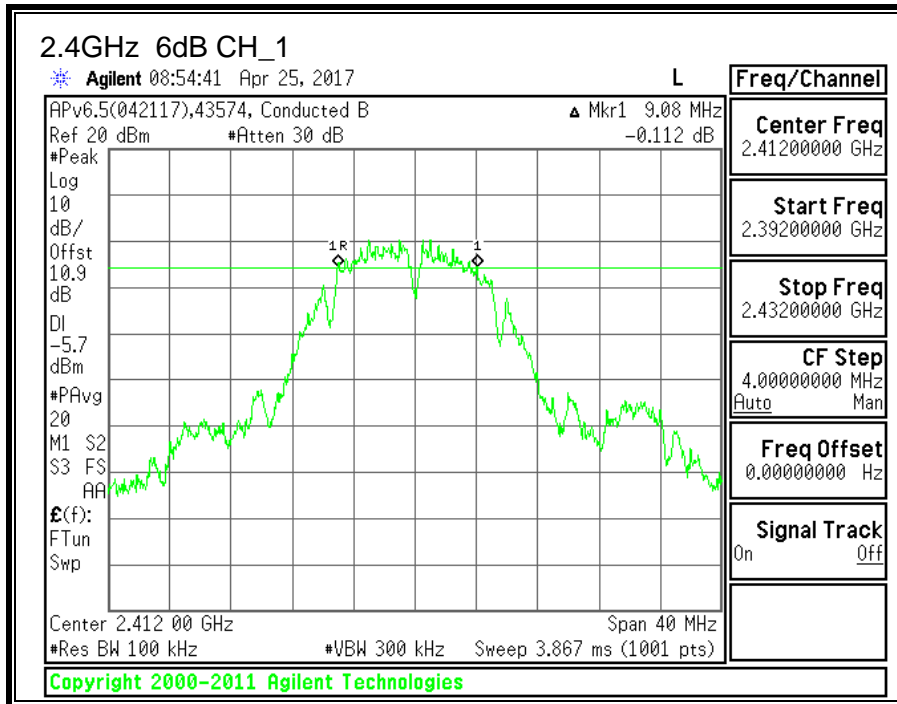
LIMITS

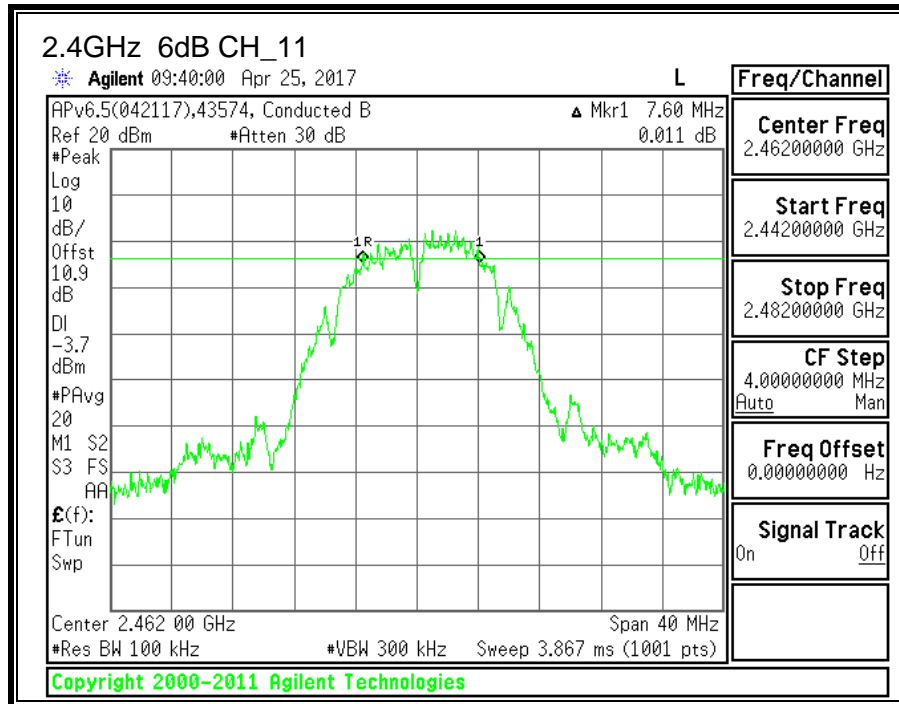
FCC §15.247 (a) (2)
IC RSS-247 (5.2) (a)

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

RESULTS

| Channel | Frequency (MHz) | 6 dB BW (MHz) | Minimum Limit (MHz) |
|----------|-----------------|---------------|---------------------|
| Low_1 | 2412 | 9.08 | 0.5 |
| Middle_6 | 2437 | 7.64 | 0.5 |
| High_11 | 2462 | 7.60 | 0.5 |





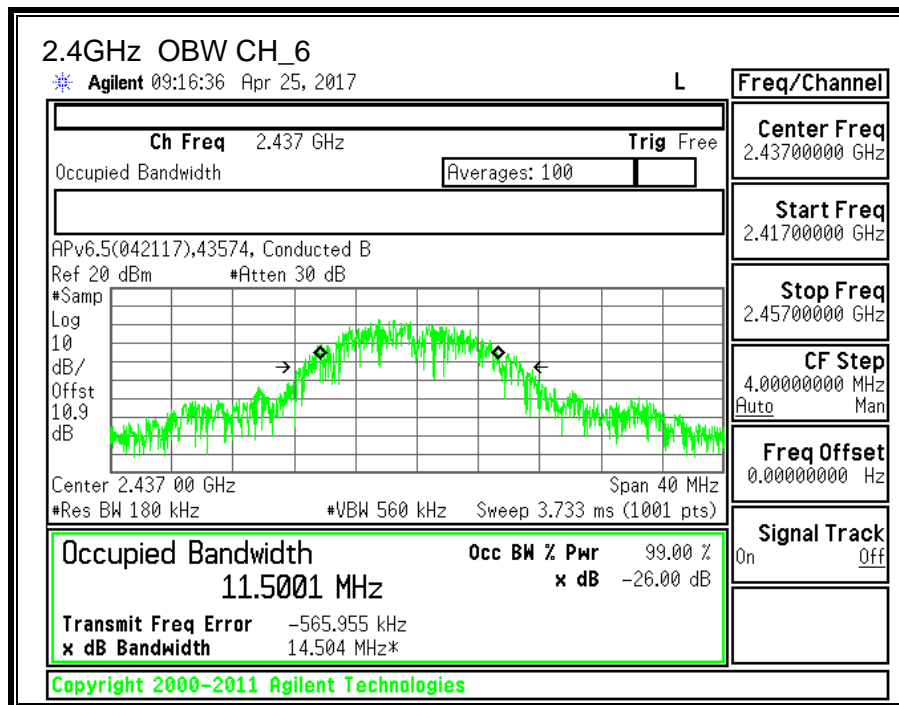
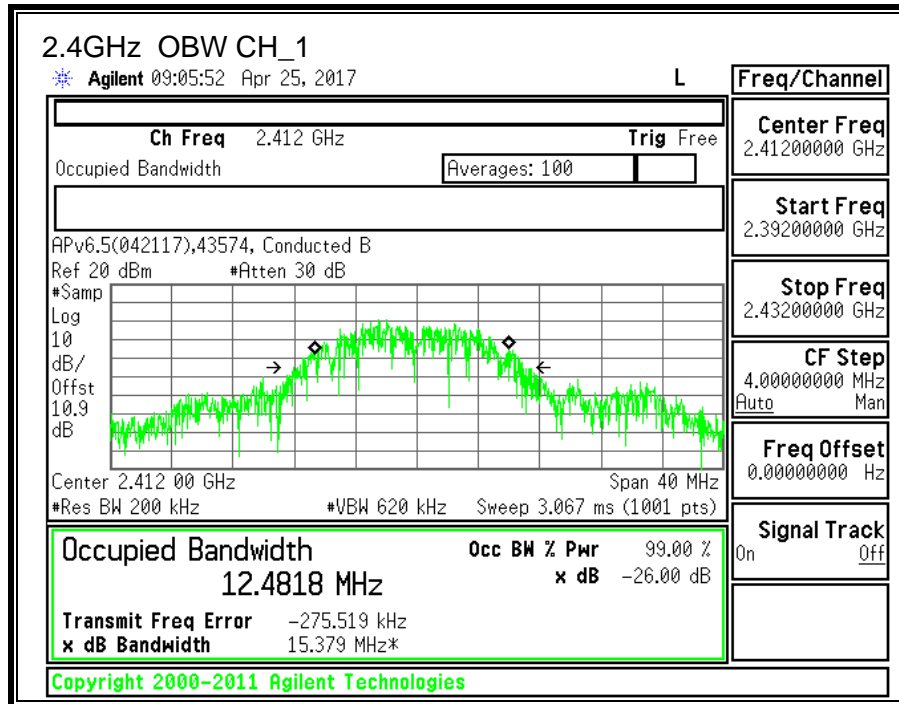
9.1.2. 99% BANDWIDTH

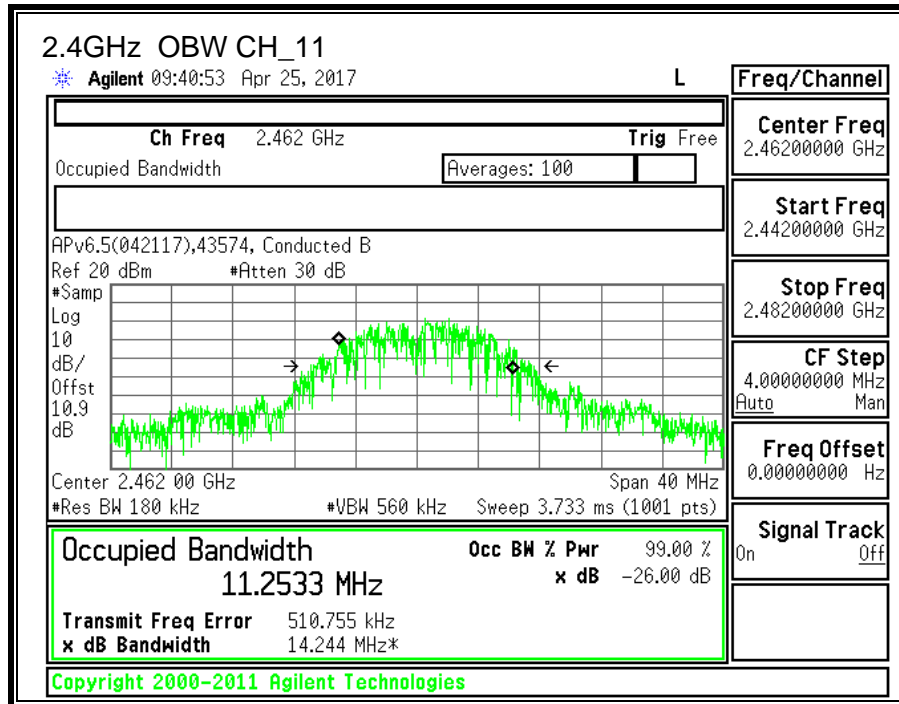
LIMITS

None; for reporting purposes only.

RESULTS

| Channel | Frequency (MHz) | 99% Bandwidth (MHz) |
|----------|-----------------|---------------------|
| Low_1 | 2412 | 12.48 |
| Middle_6 | 2437 | 11.50 |
| High_11 | 2462 | 11.25 |





9.1.3. OUTPUT POWER

LIMITS

FCC §15.247
 IC RSS-247 (5.4) (d)

For systems using digital modulation in the 2400–2483.5 MHz band: 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

| | | | |
|------------|-------|--------------|---------|
| ID: | 45250 | Date: | 4/26/17 |
|------------|-------|--------------|---------|

Limits

| Channel | Frequency (MHz) | Directional Gain (dBi) | FCC Power Limit (dBm) | IC Power Limit (dBm) | IC EIRP Limit (dBm) | Max Power (dBm) |
|---------|--------------------|------------------------------|--------------------------------|-------------------------------|------------------------------|-----------------------|
| Low | 2412 | 1.90 | 30.00 | 30 | 36 | 30.00 |
| Mid | 2437 | 1.90 | 30.00 | 30 | 36 | 30.00 |
| High | 2462 | 1.90 | 30.00 | 30 | 36 | 30.00 |

Results

| Channel | Frequency (MHz) | Meas Power (dBm) | Total Corr'd Power (dBm) | Power Limit (dBm) | Margin (dB) |
|---------|--------------------|------------------------|-----------------------------------|-------------------------|----------------|
| Low | 2412 | 15.82 | 15.82 | 30.00 | -14.18 |
| Mid | 2437 | 16.05 | 16.05 | 30.00 | -13.95 |
| High | 2462 | 16.15 | 16.15 | 30.00 | -13.85 |

9.1.4. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247
 IC RSS-247 (5.2) (b)

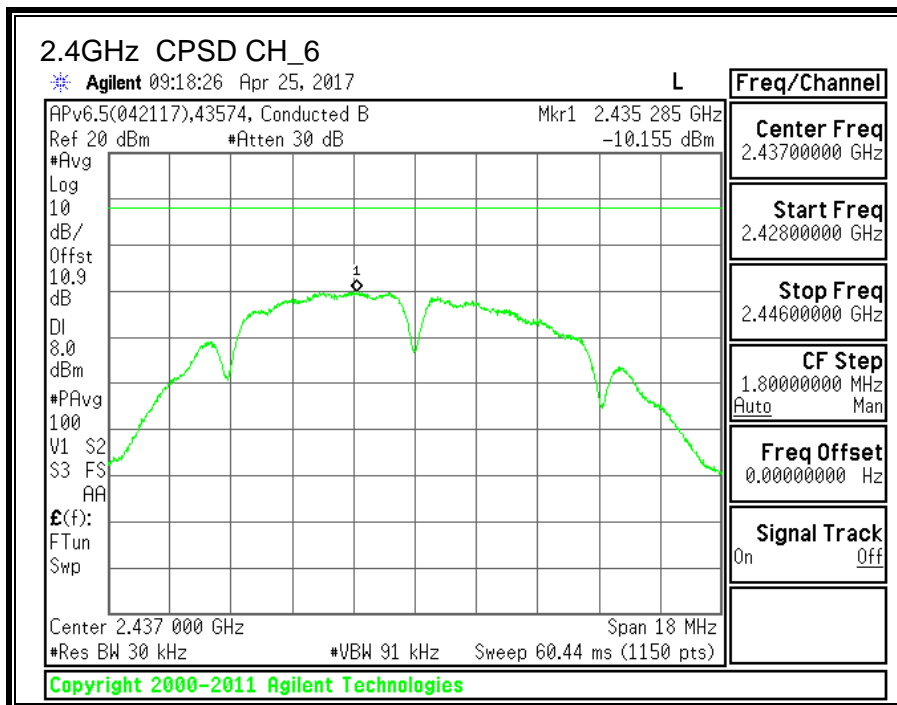
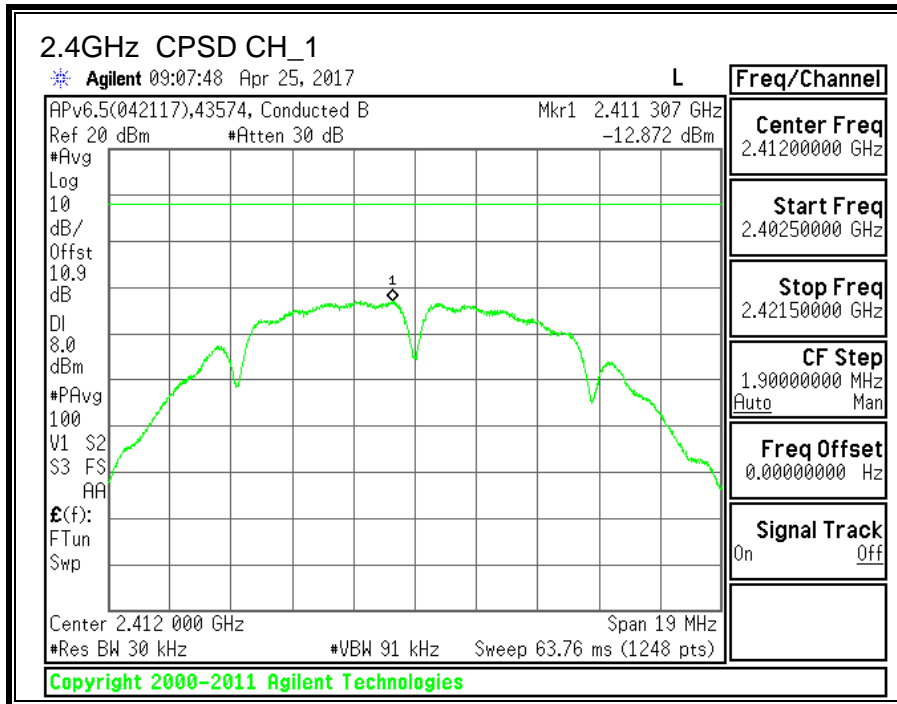
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 KHz band during any time interval of continuous transmissions.

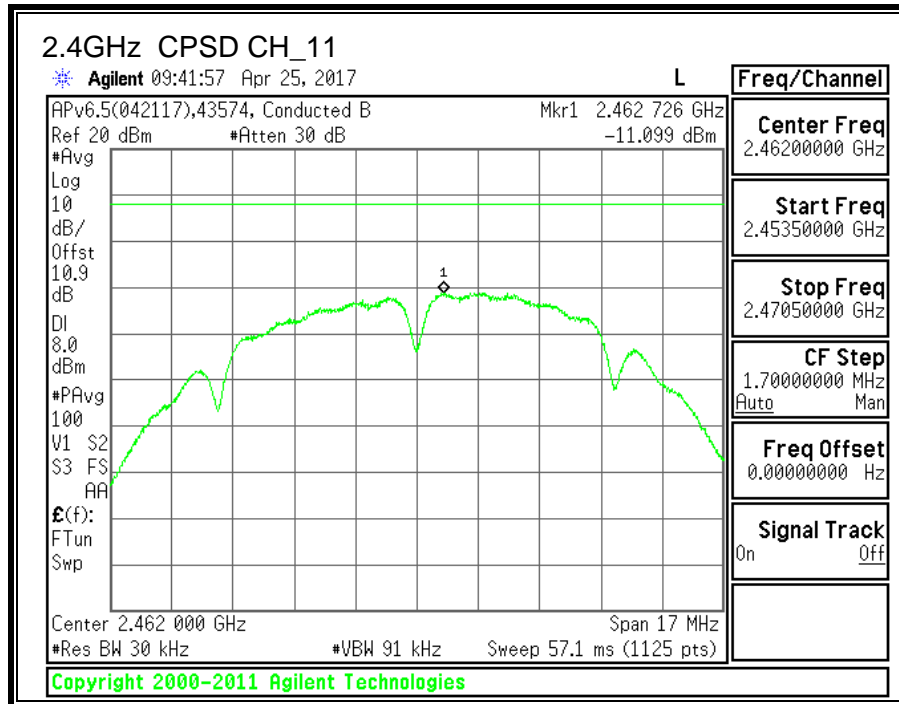
RESULTS

| | | |
|---------------------------|------|---|
| Duty Cycle CF (dB) | 0.00 | Included in Calculations of Corr'd PSD |
|---------------------------|------|---|

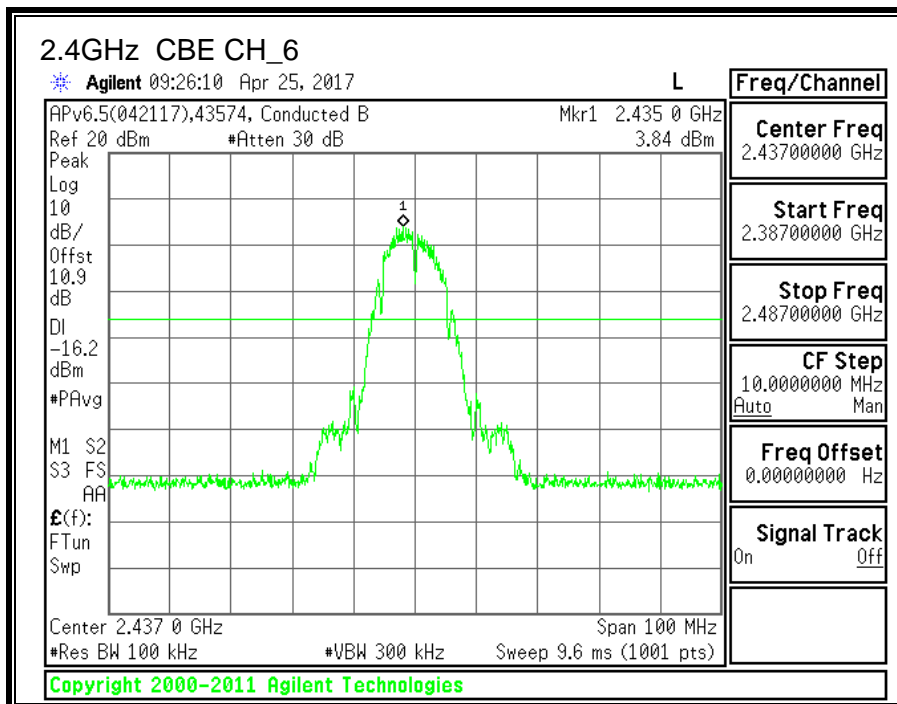
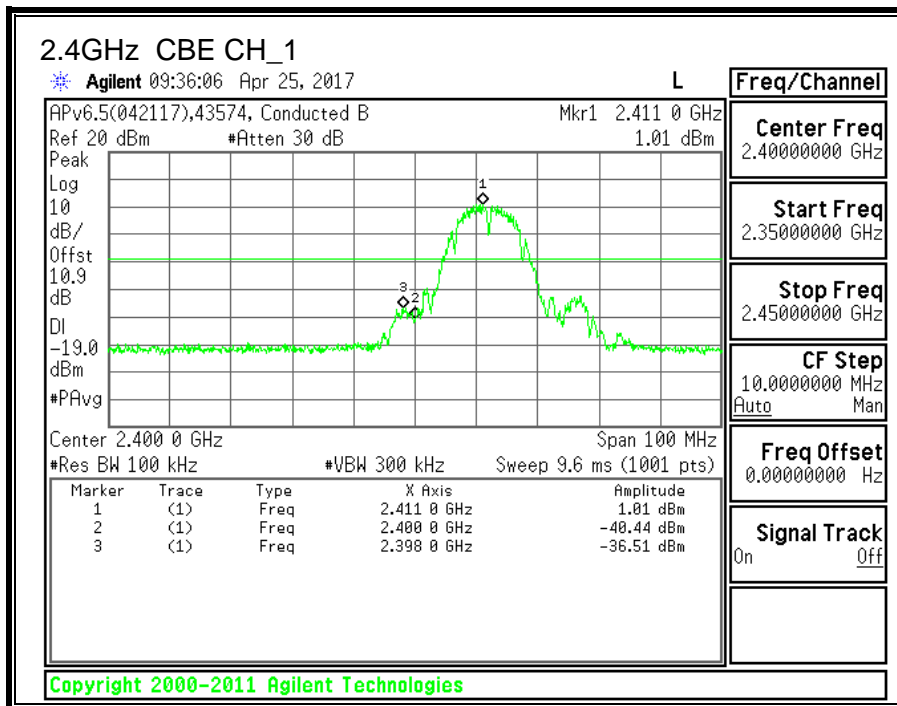
PSD Results

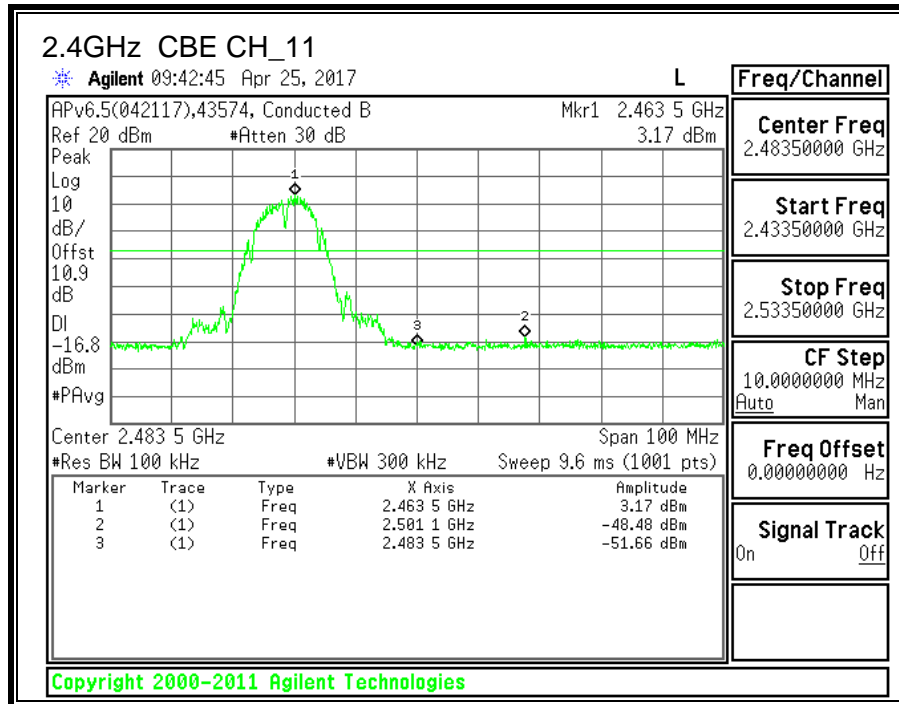
| Channel | Frequency (MHz) | Meas (dBm) | Total Corr'd PSD (dBm) | Limit (dBm) | Margin (dB) |
|----------------|----------------------------|-----------------------|---|------------------------|------------------------|
| Low | 2412 | -12.87 | -12.87 | 8.0 | -20.9 |
| Mid | 2437 | -10.16 | -10.16 | 8.0 | -18.2 |
| High | 2462 | -11.10 | -11.10 | 8.0 | -19.1 |

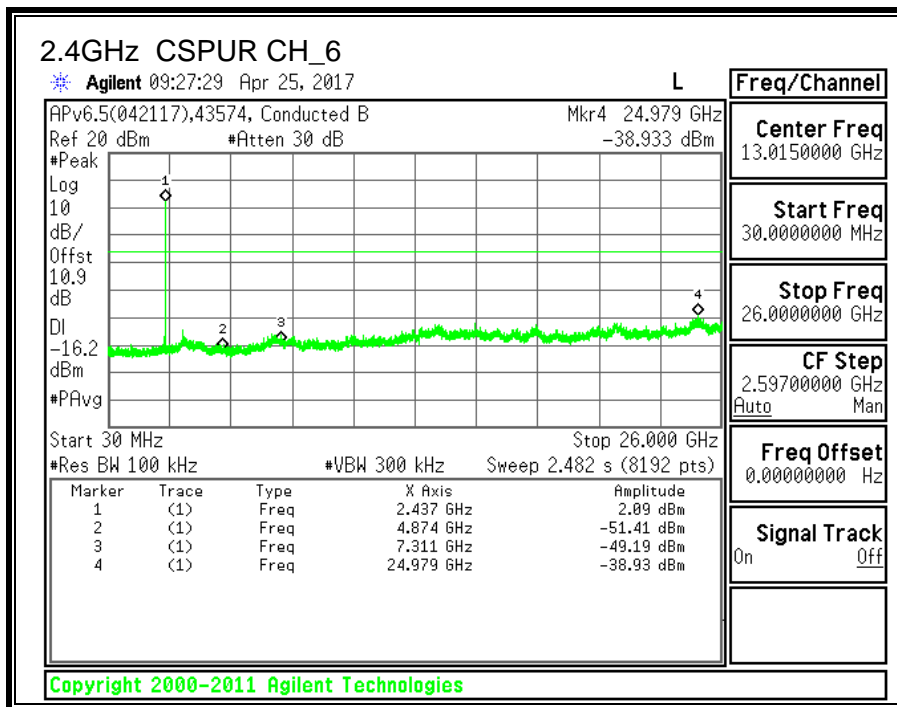
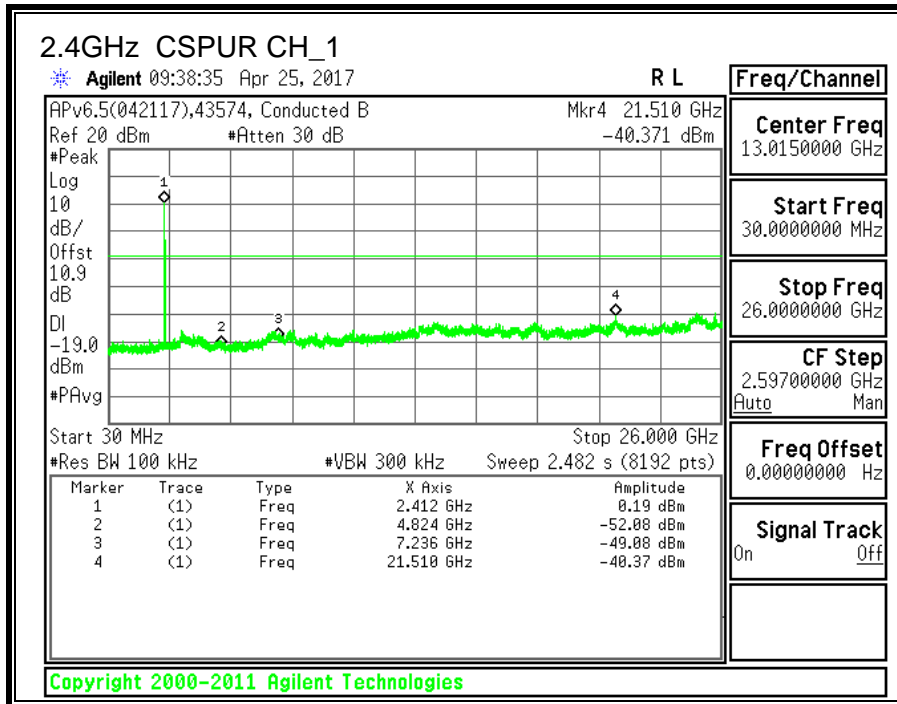


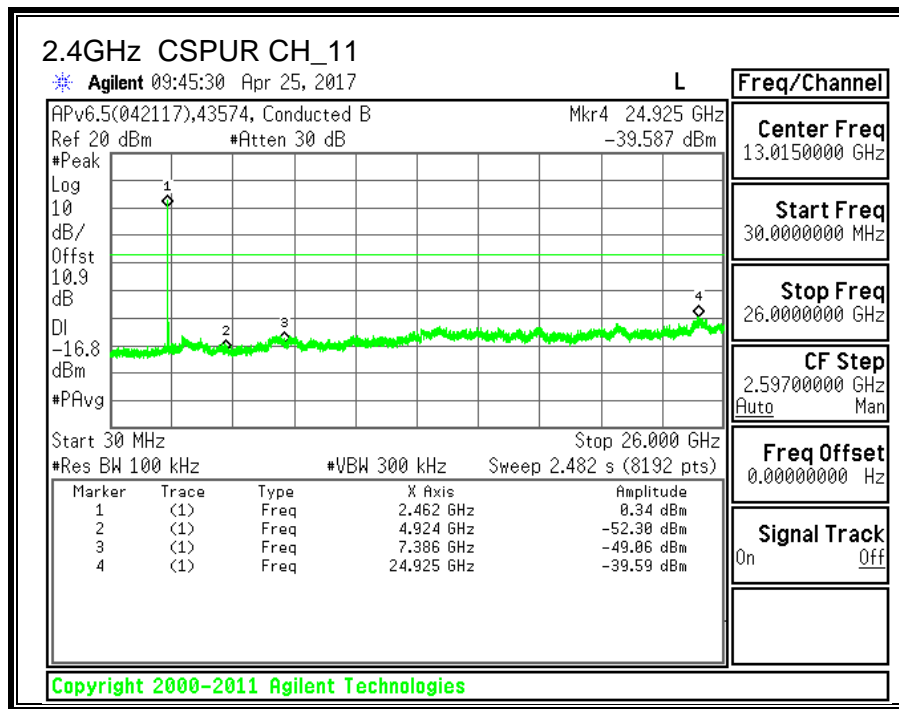


9.1.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS









NOTE: The device complies with -30dBc limit over the tested frequency range. See below table.

| 802.11b mode CBE data (dBm) | -20dBc limit (dBm) | -30dBc limit (dBm) |
|--------------------------------|-----------------------|-----------------------|
| Channel 1 | Ch1: -19.0 | Ch1: -28.99 |
| -53.08 | | |
| -49.08 | | |
| -40.37 | | |
| Channel 6 | Ch6: -16.2 | Ch6: -26.16 |
| -51.41 | | |
| -49.19 | | |
| -38.93 | | |
| Channel 11 | Ch11: -16.8 | Ch11: -26.83 |
| -52.30 | | |
| -49.06 | | |
| -35.59 | | |

9.2. 11g SISO MODE IN THE 2.4GHz BAND

9.2.1. 6 dB BANDWIDTH

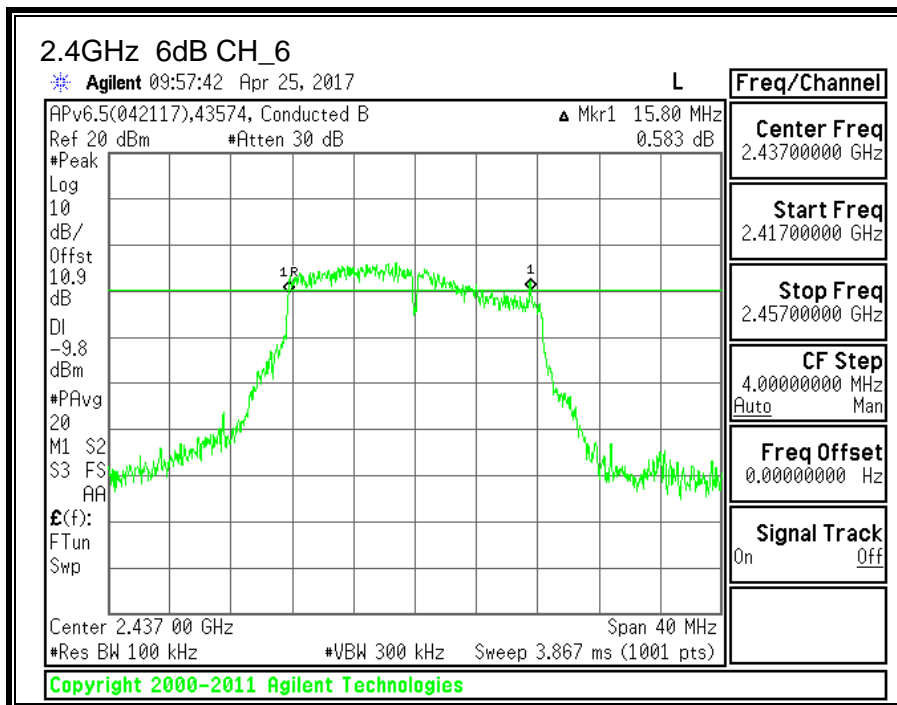
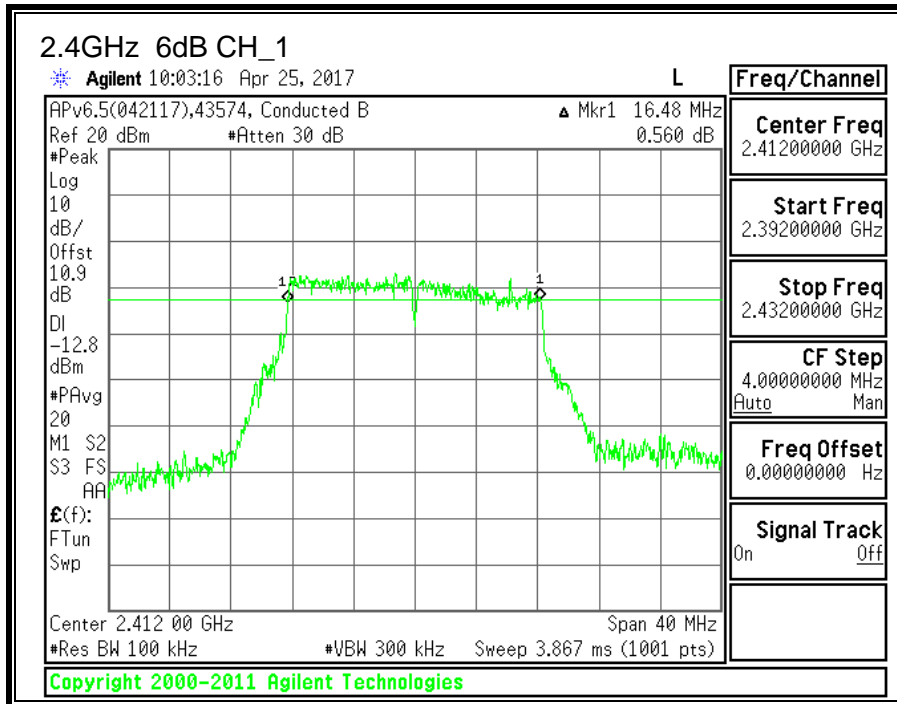
LIMITS

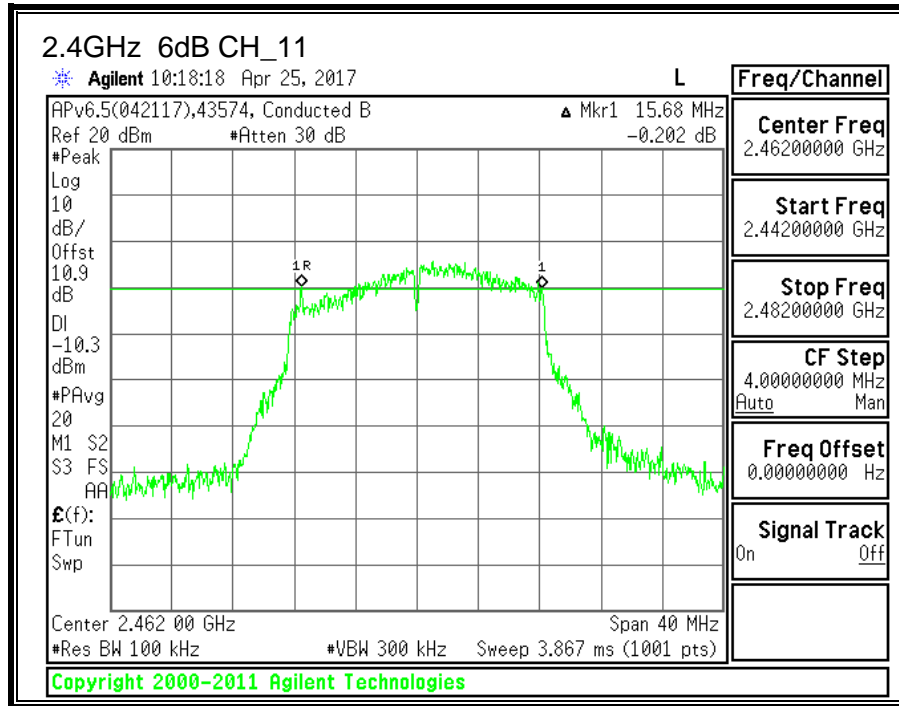
FCC §15.247 (a) (2)
IC RSS-247 (5.2) (a)

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

RESULTS

| Channel | Frequency | 6 dB BW (MHz) | Minimum Limit (MHz) |
|----------|-----------|---------------|---------------------|
| Low_1 | 2412 | 16.48 | 0.5 |
| Middle_6 | 2437 | 15.80 | 0.5 |
| High_11 | 2462 | 15.68 | 0.5 |





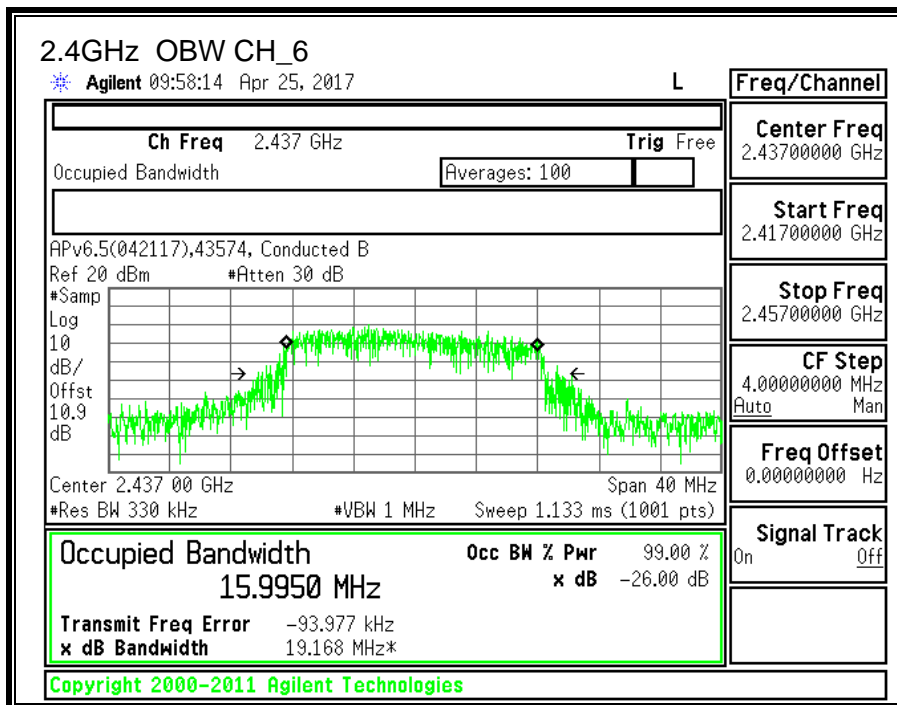
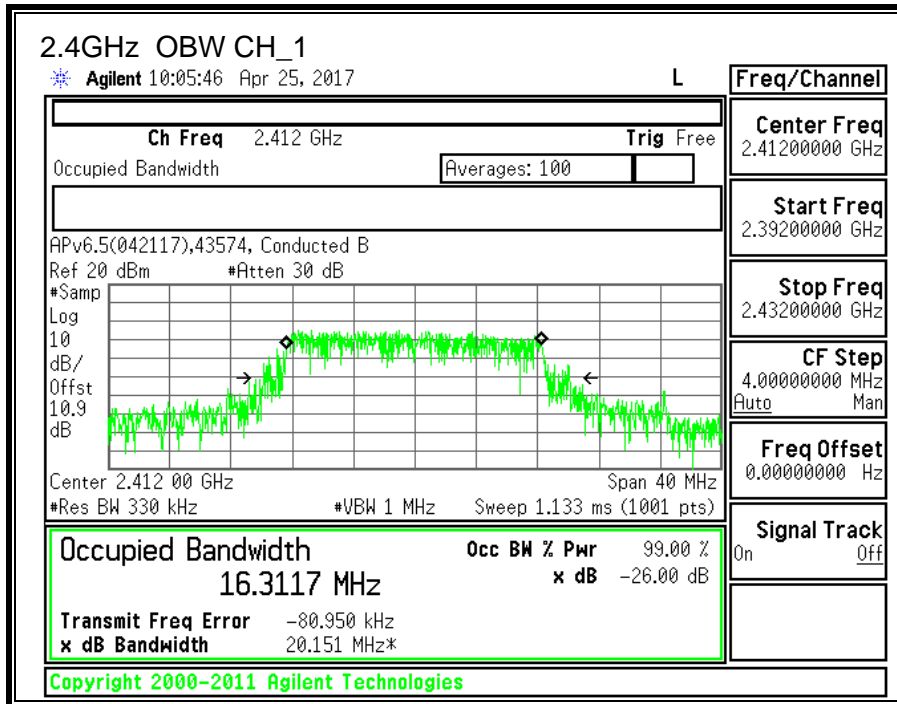
9.2.2. 99% BANDWIDTH

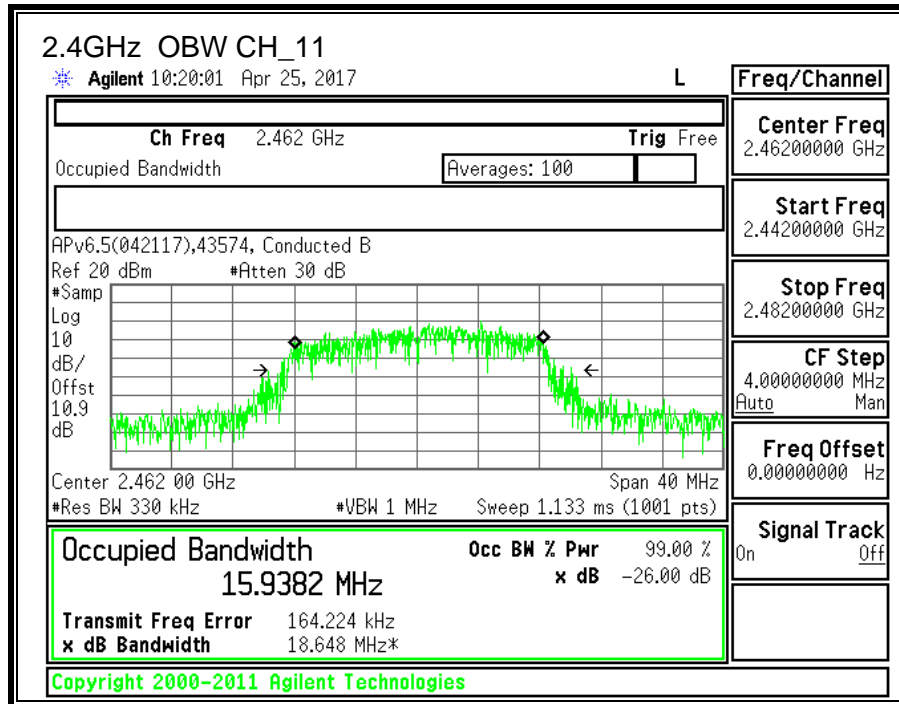
LIMITS

None; for reporting purposes only.

RESULTS

| Channel | Frequency (MHz) | 99% Bandwidth (MHz) |
|----------|-----------------|---------------------|
| Low_1 | 2412 | 16.312 |
| Middle_6 | 2437 | 15.995 |
| High_11 | 2462 | 15.938 |





9.2.3. OUTPUT POWER

LIMITS

FCC §15.247
 IC RSS-247 (5.4) (d)

For systems using digital modulation in the 2400–2483.5 MHz band: 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

| | | | |
|------------|-------|--------------|---------|
| ID: | 45250 | Date: | 4/26/17 |
|------------|-------|--------------|---------|

Limits

| Channel | Frequency (MHz) | Directional Gain (dBi) | FCC Power Limit (dBm) | IC Power Limit (dBm) | IC EIRP Limit (dBm) | Max Power (dBm) |
|---------|--------------------|------------------------------|--------------------------------|-------------------------------|------------------------------|-----------------------|
| Low | 2412 | 1.90 | 30.00 | 30 | 36 | 30.00 |
| Mid | 2437 | 1.90 | 30.00 | 30 | 36 | 30.00 |
| High | 2462 | 1.90 | 30.00 | 30 | 36 | 30.00 |

Results

| Channel | Frequency (MHz) | Meas Power (dBm) | Total Corr'd Power (dBm) | Power Limit (dBm) | Margin (dB) |
|---------|--------------------|------------------------|-----------------------------------|-------------------------|----------------|
| Low | 2412 | 12.70 | 12.70 | 30.00 | -17.30 |
| Mid | 2437 | 13.17 | 13.17 | 30.00 | -16.83 |
| High | 2462 | 13.68 | 13.68 | 30.00 | -16.32 |

9.2.4. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247
 IC RSS-247 (5.2) (b)

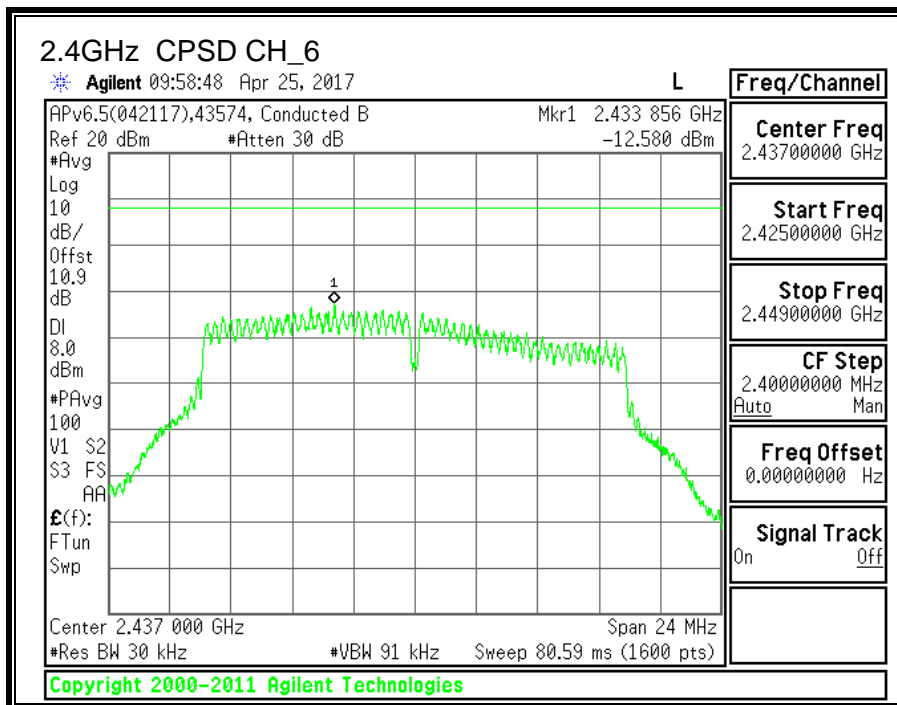
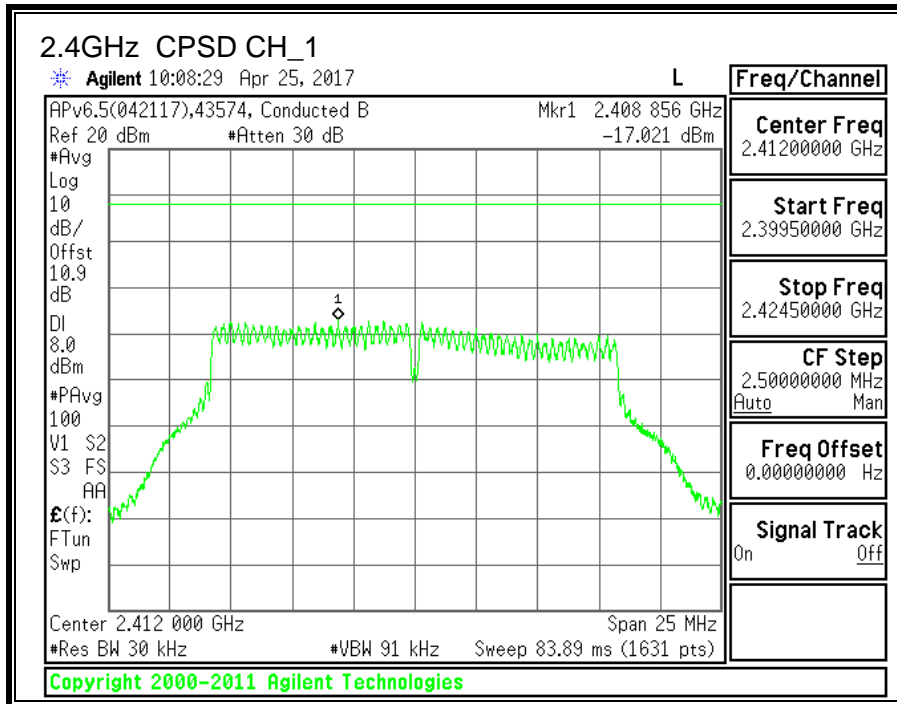
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 KHz band during any time interval of continuous transmissions.

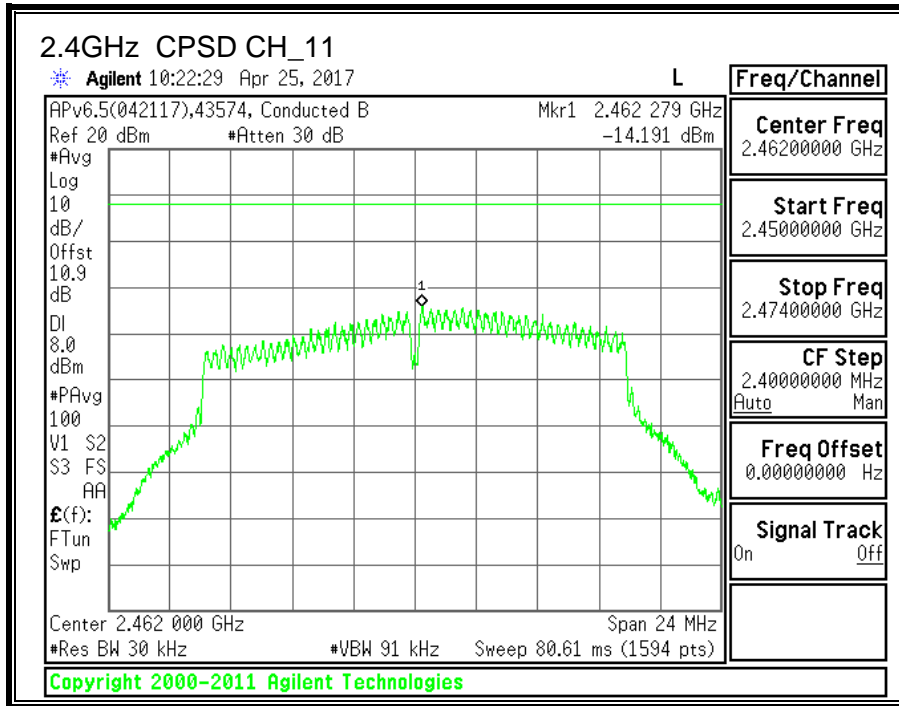
RESULTS

| | | |
|---------------------------|------|---|
| Duty Cycle CF (dB) | 0.30 | Included in Calculations of Corr'd PSD |
|---------------------------|------|---|

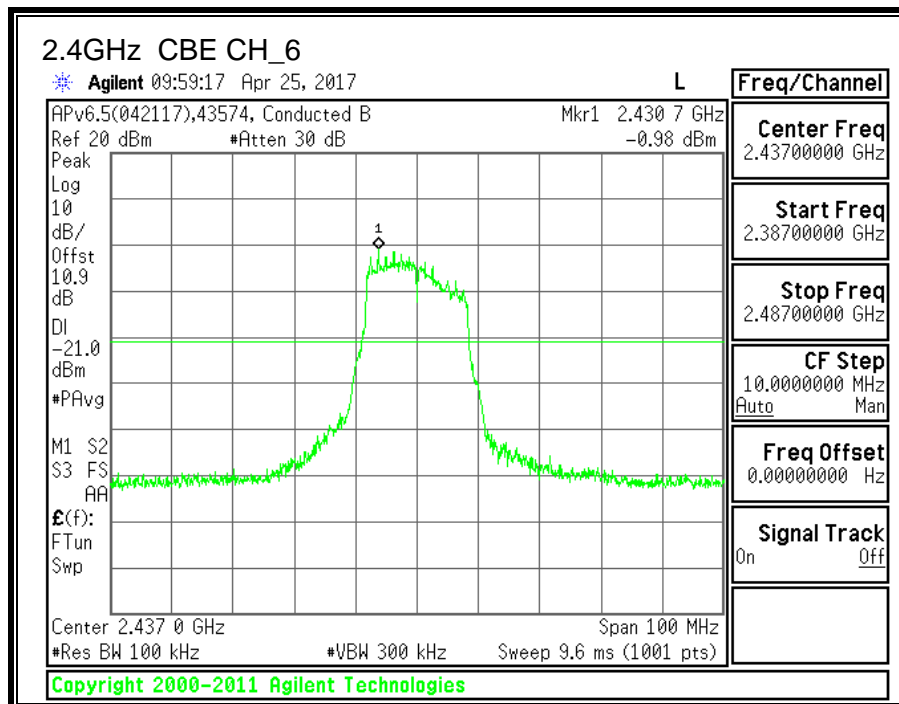
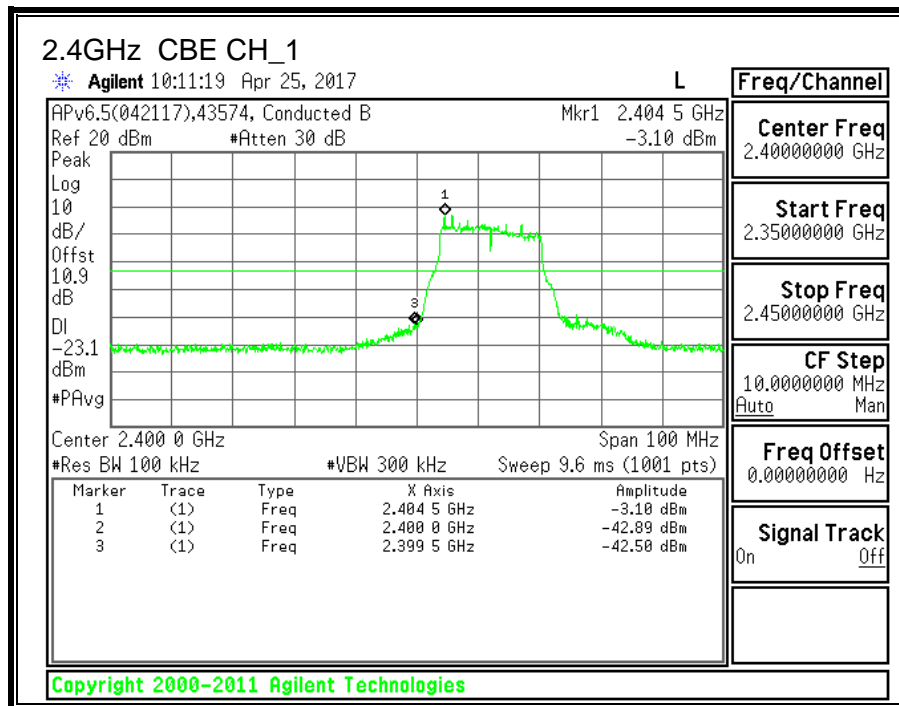
PSD Results

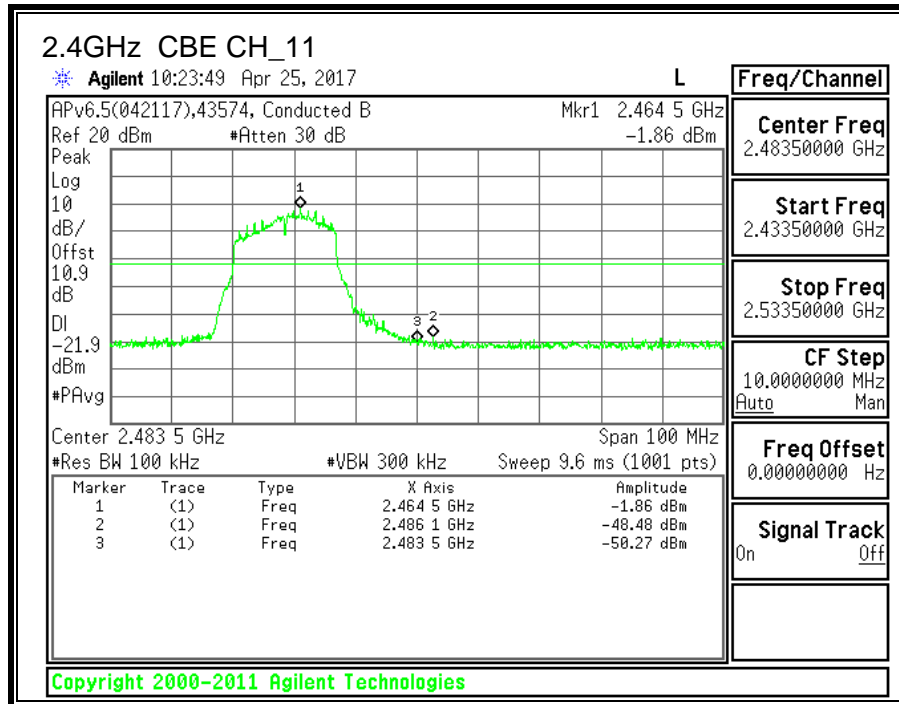
| Channel | Frequency (MHz) | Meas (dBm) | Total Corr'd PSD (dBm) | Limit (dBm) | Margin (dB) |
|----------------|----------------------------|-----------------------|---|------------------------|------------------------|
| Low | 2412 | -17.02 | -16.72 | 8.0 | -24.7 |
| Mid | 2437 | -12.58 | -12.28 | 8.0 | -20.3 |
| High | 2462 | -14.19 | -13.89 | 8.0 | -21.9 |

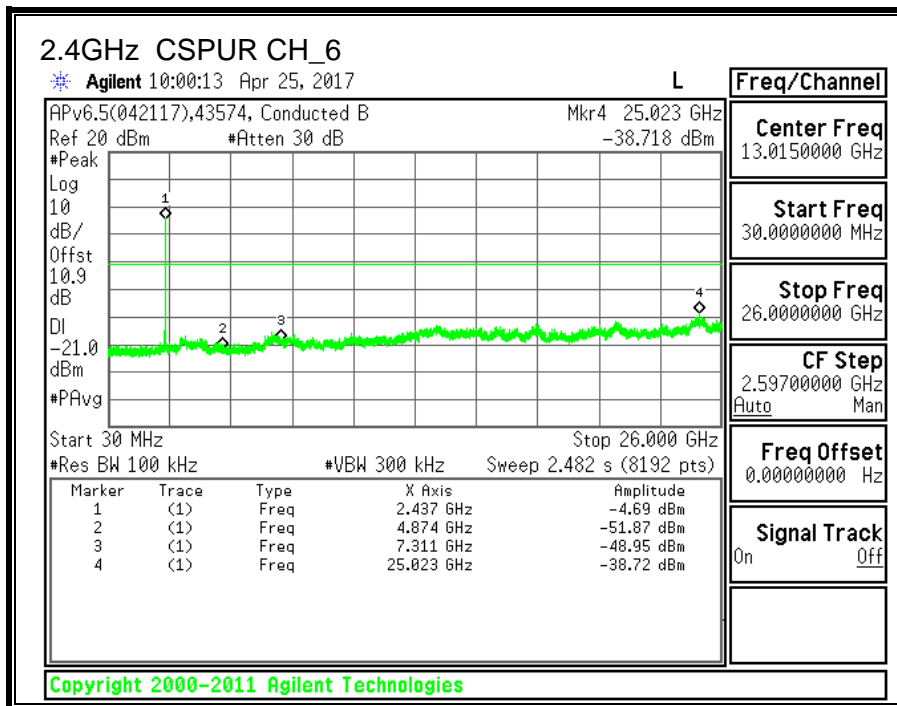
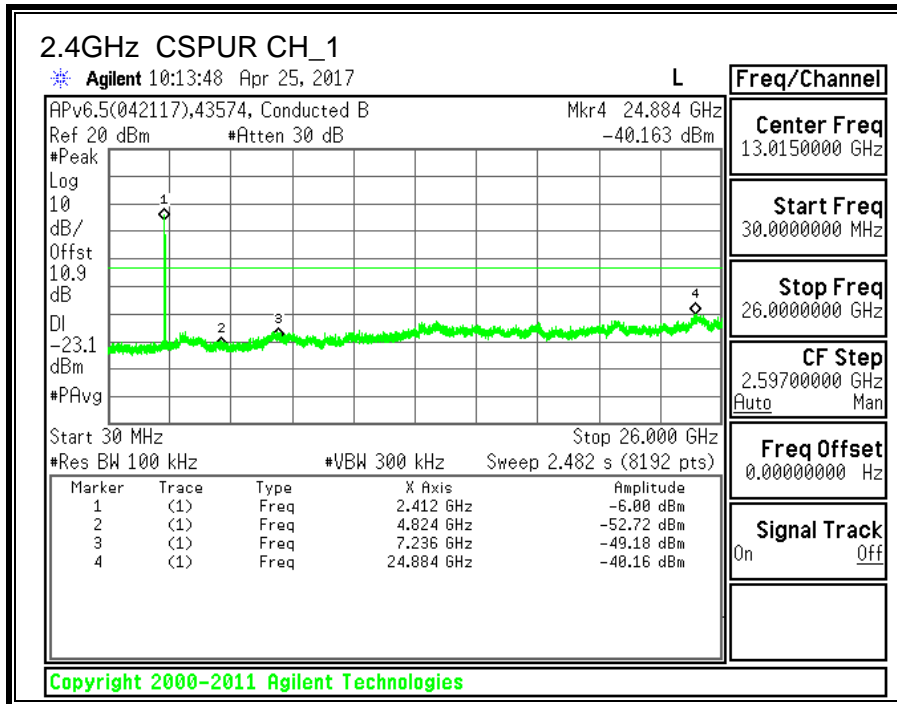


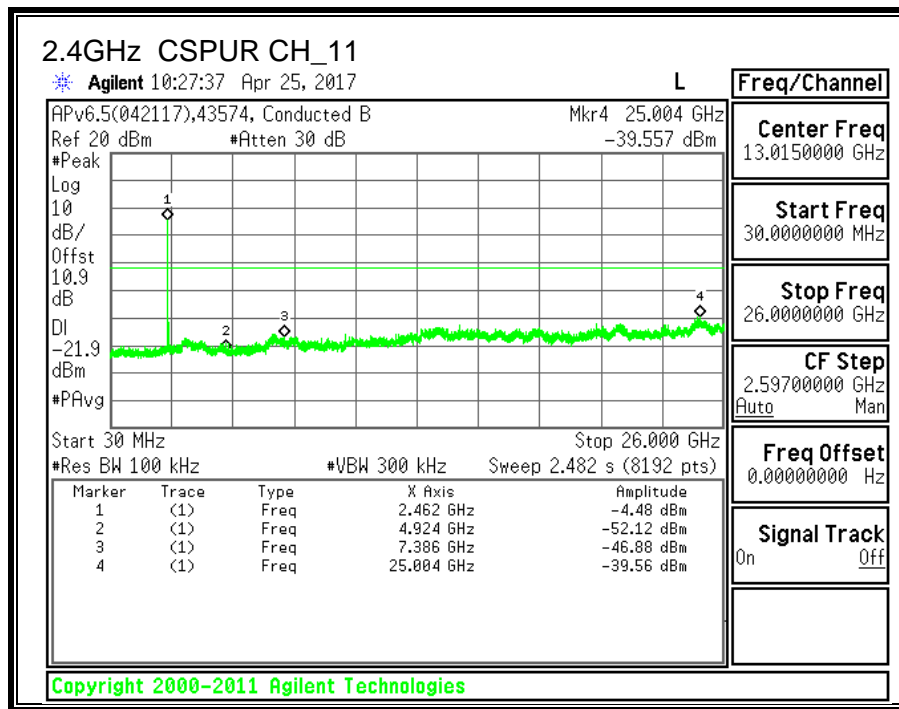


9.2.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS









NOTE: The device complies with -30dBc limit over the tested frequency range. See below table.

| 802.11g mode CBE data (dBm) | -20dBc limit (dBm) | -30dBc limit (dBm) |
|--------------------------------|-----------------------|-----------------------|
| Channel 1 | Ch1: -23.1 | Ch1: -33.10 |
| -52.72 | | |
| -49.18 | | |
| -40.16 | Ch6: -21.0 | Ch6: -30.98 |
| Channel 6 | | |
| -51.87 | | |
| -48.95 | Ch11: -21.9 | Ch11: -31.86 |
| -38.72 | | |
| Channel 11 | | |
| -52.12 | | |
| -46.88 | | |
| -39.56 | | |

9.3. 11n HT20 SISO MODE IN THE 2.4GHz BAND

9.3.1. 6 dB BANDWIDTH

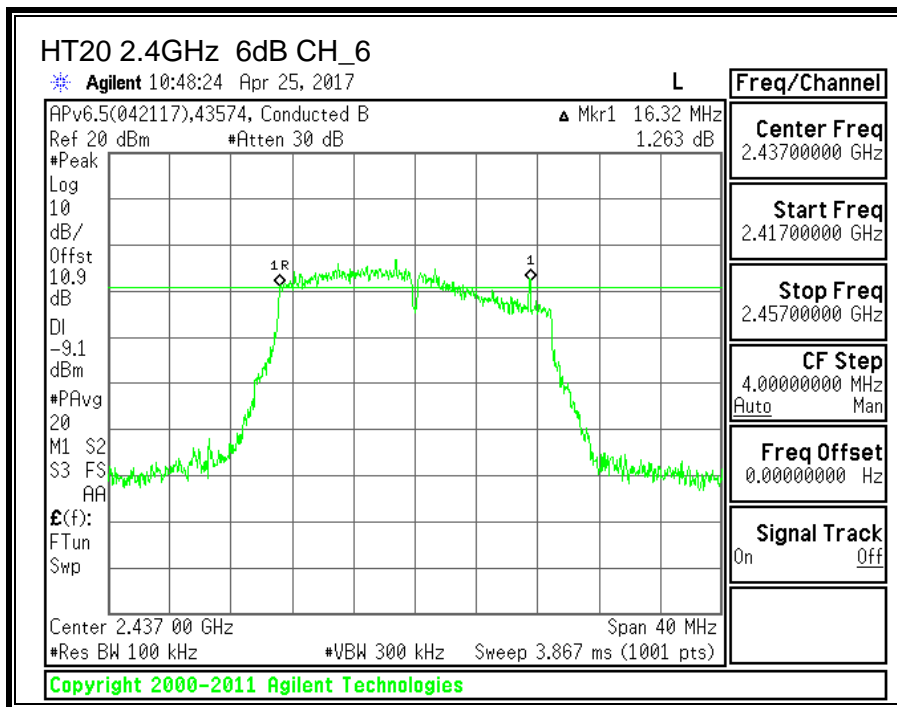
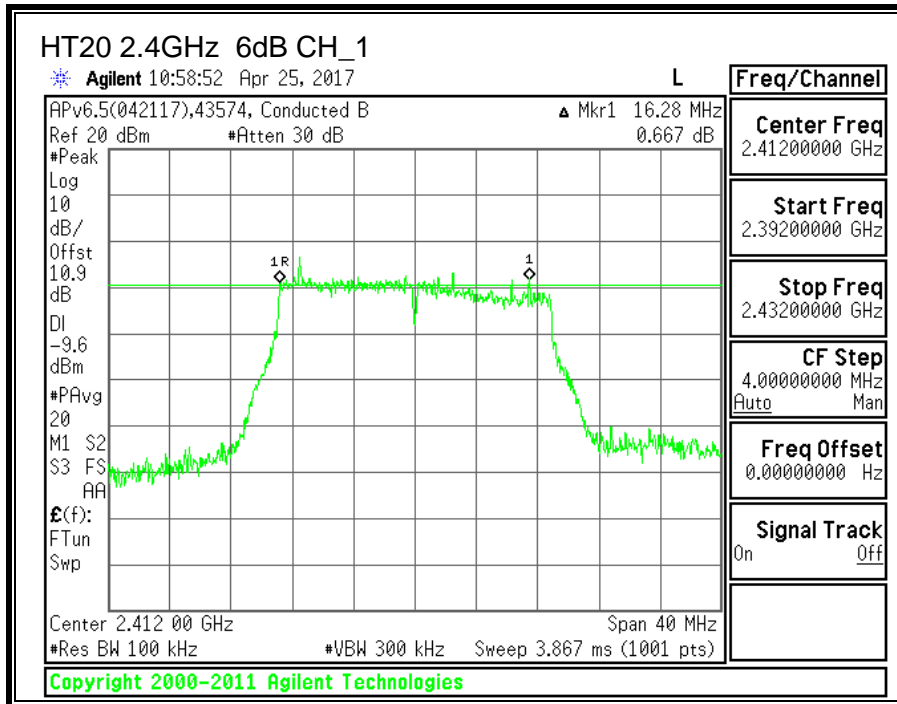
LIMITS

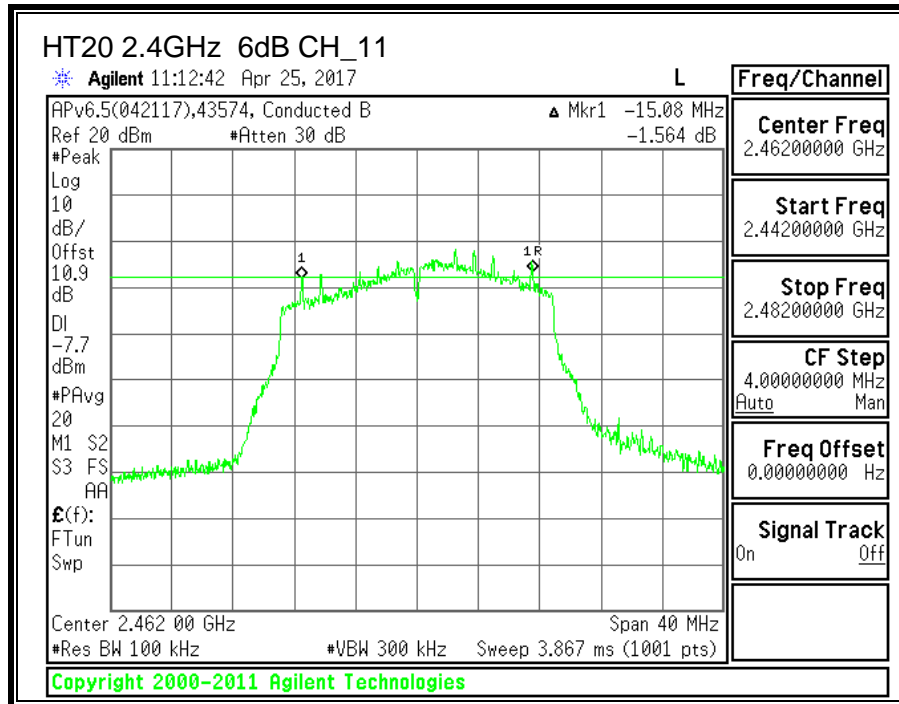
FCC §15.247 (a) (2)
IC RSS-247 (5.2) (a)

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

RESULTS

| Channel | Frequency | 6 dB BW (MHz) | Minimum Limit (MHz) |
|----------|-----------|---------------|---------------------|
| Low_1 | 2412 | 16.28 | 0.5 |
| Middle_6 | 2437 | 16.32 | 0.5 |
| High_11 | 2462 | 15.08 | 0.5 |





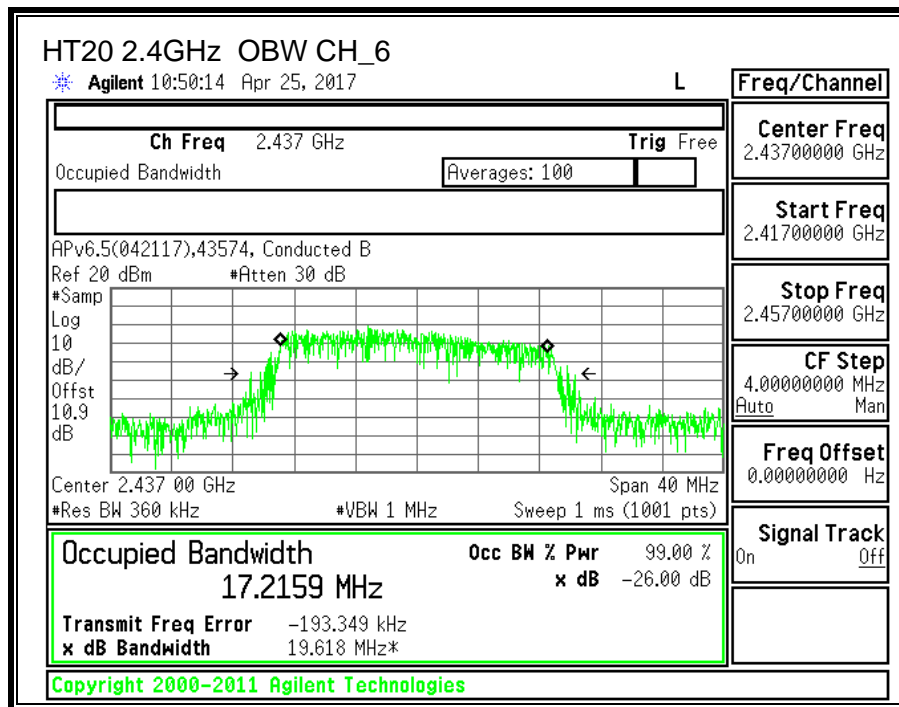
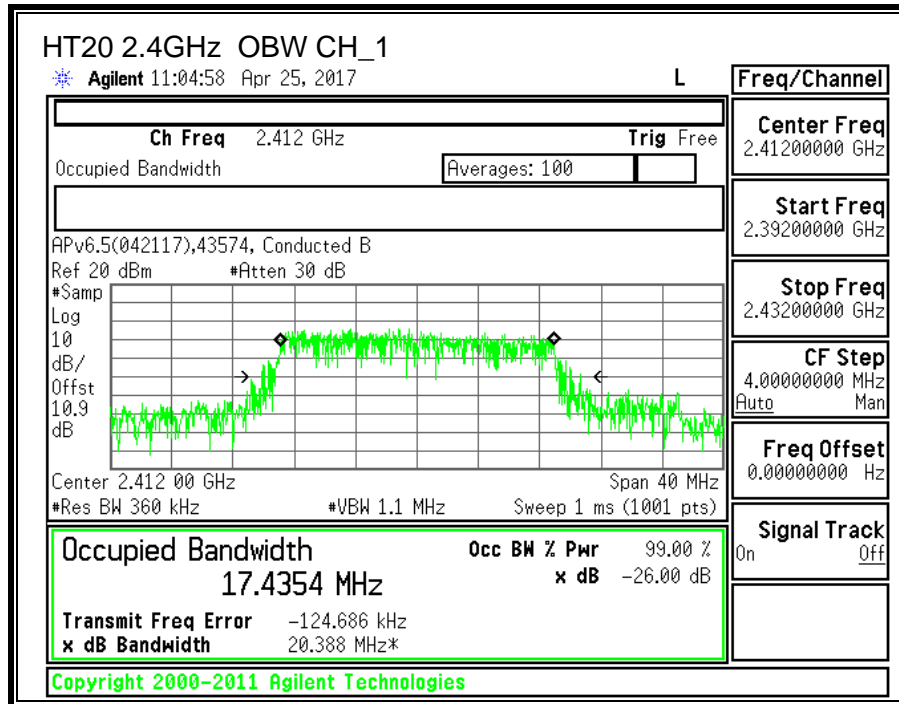
9.3.2. 99% BANDWIDTH

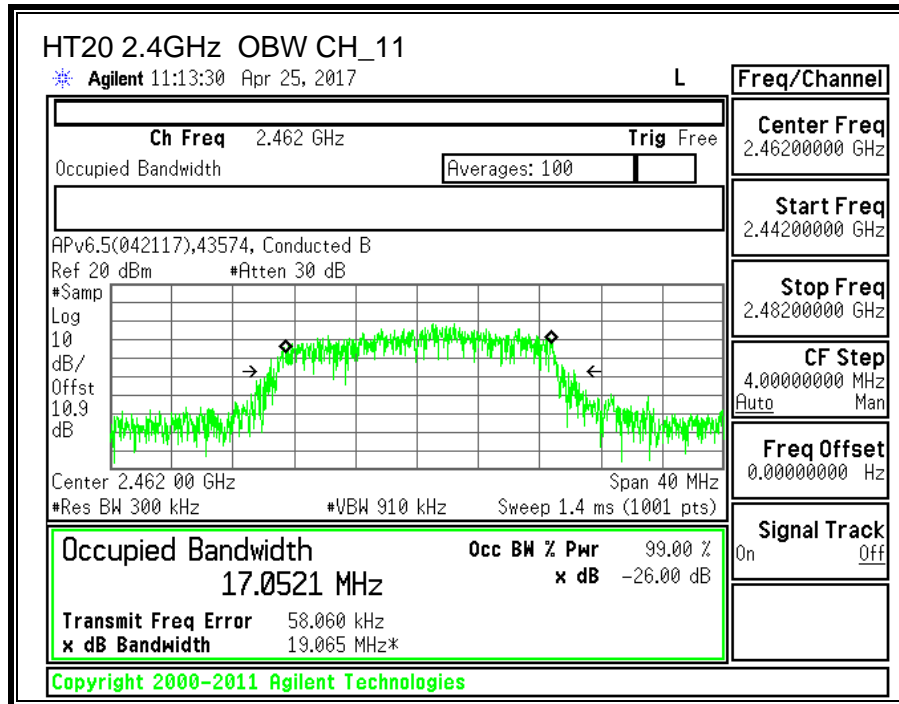
LIMITS

None; for reporting purposes only.

RESULTS

| Channel | Frequency (MHz) | 99% Bandwidth (MHz) |
|----------|-----------------|---------------------|
| Low_1 | 2412 | 17.435 |
| Middle_6 | 2437 | 17.216 |
| High_11 | 2462 | 17.052 |





9.3.3. OUTPUT POWER

LIMITS

FCC §15.247
 IC RSS-247 (5.4) (d)

For systems using digital modulation in the 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

| | | | |
|------------|-------|--------------|---------|
| ID: | 45250 | Date: | 4/26/17 |
|------------|-------|--------------|---------|

Limits

| Channel | Frequency (MHz) | Directional Gain (dBi) | FCC Power Limit (dBm) | IC Power Limit (dBm) | IC EIRP Limit (dBm) | Max Power (dBm) |
|---------|--------------------|------------------------------|--------------------------------|-------------------------------|------------------------------|-----------------------|
| Low | 2412 | 1.90 | 30.00 | 30 | 36 | 30.00 |
| Mid | 2437 | 1.90 | 30.00 | 30 | 36 | 30.00 |
| High | 2462 | 1.90 | 30.00 | 30 | 36 | 30.00 |

Results

| Channel | Frequency (MHz) | Meas Power (dBm) | Total Corr'd Power (dBm) | Power Limit (dBm) | Margin (dB) |
|---------|--------------------|------------------------|-----------------------------------|-------------------------|----------------|
| Low | 2412 | 12.40 | 12.40 | 30.00 | -17.60 |
| Mid | 2437 | 12.84 | 12.84 | 30.00 | -17.16 |
| High | 2462 | 12.80 | 12.80 | 30.00 | -17.20 |

9.3.4. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247
 IC RSS-247 (5.2) (b)

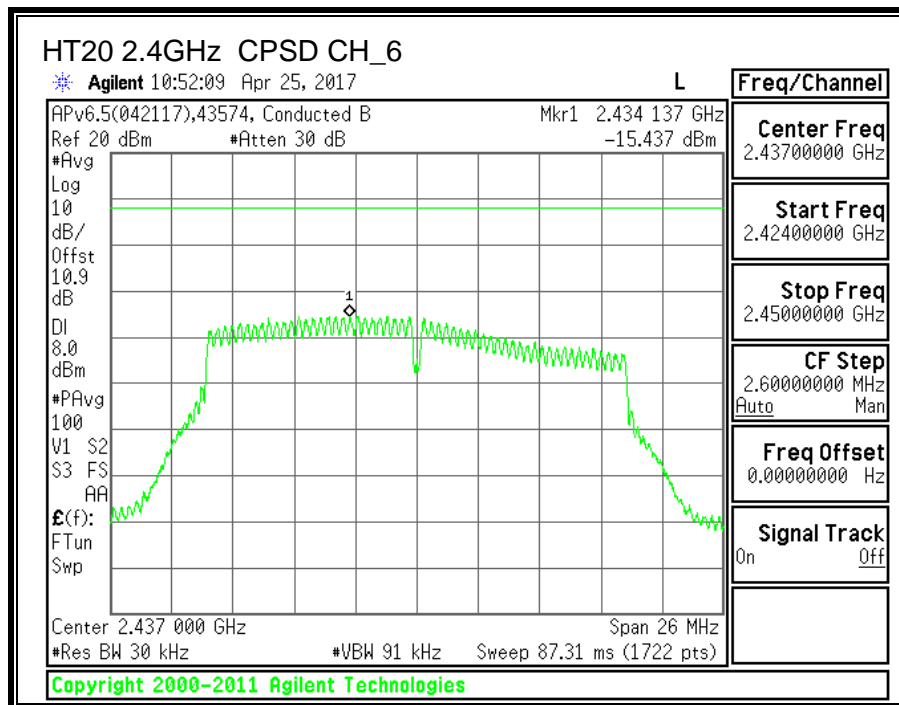
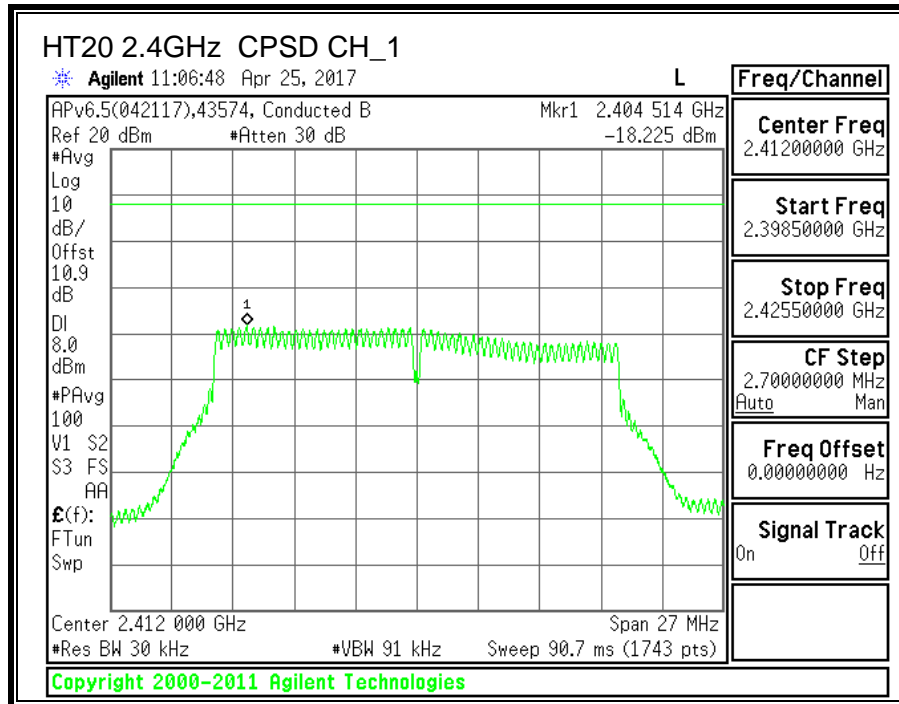
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 KHz band during any time interval of continuous transmissions.

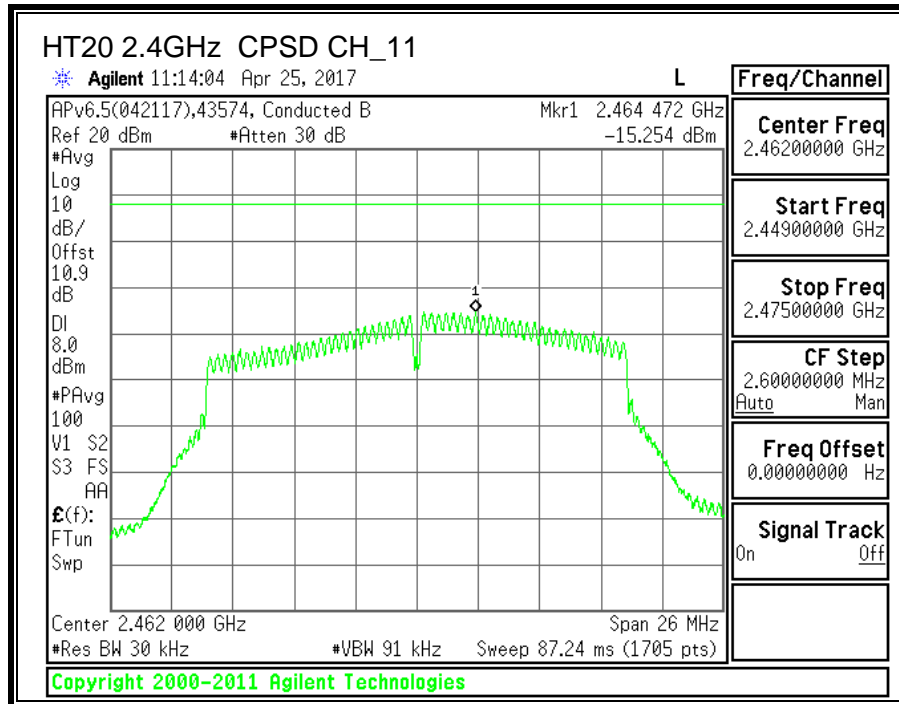
RESULTS

| | | |
|---------------------------|------|---|
| Duty Cycle CF (dB) | 0.32 | Included in Calculations of Corr'd PSD |
|---------------------------|------|---|

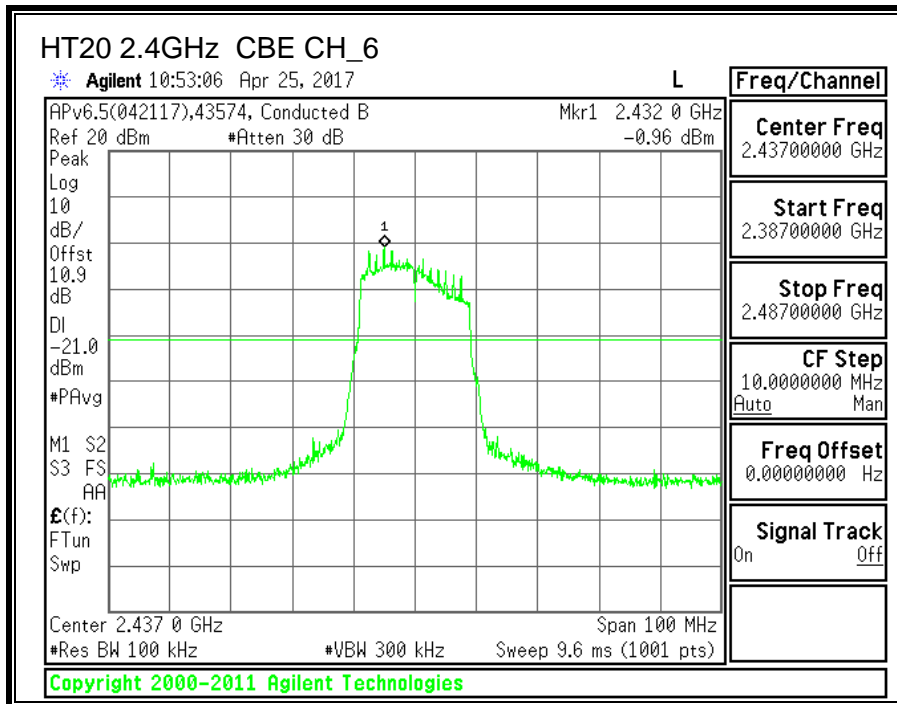
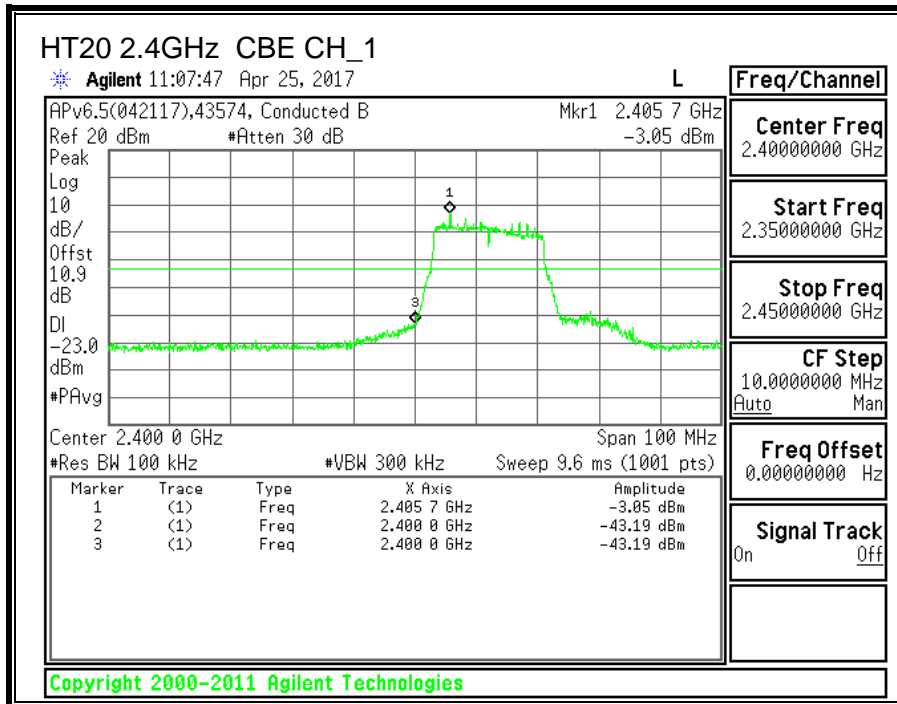
PSD Results

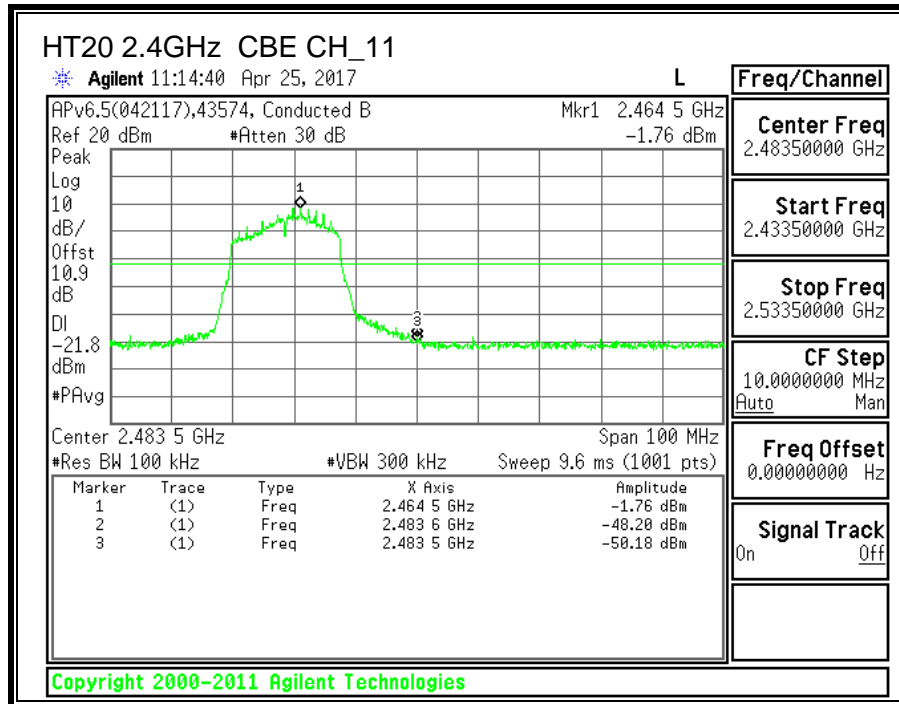
| Channel | Frequency (MHz) | Meas (dBm) | Total Corr'd PSD (dBm) | Limit (dBm) | Margin (dB) |
|----------------|----------------------------|-----------------------|---|------------------------|------------------------|
| Low | 2412 | -18.23 | -17.91 | 8.0 | -25.9 |
| Mid | 2437 | -15.44 | -15.12 | 8.0 | -23.1 |
| High | 2462 | -15.25 | -14.93 | 8.0 | -22.9 |

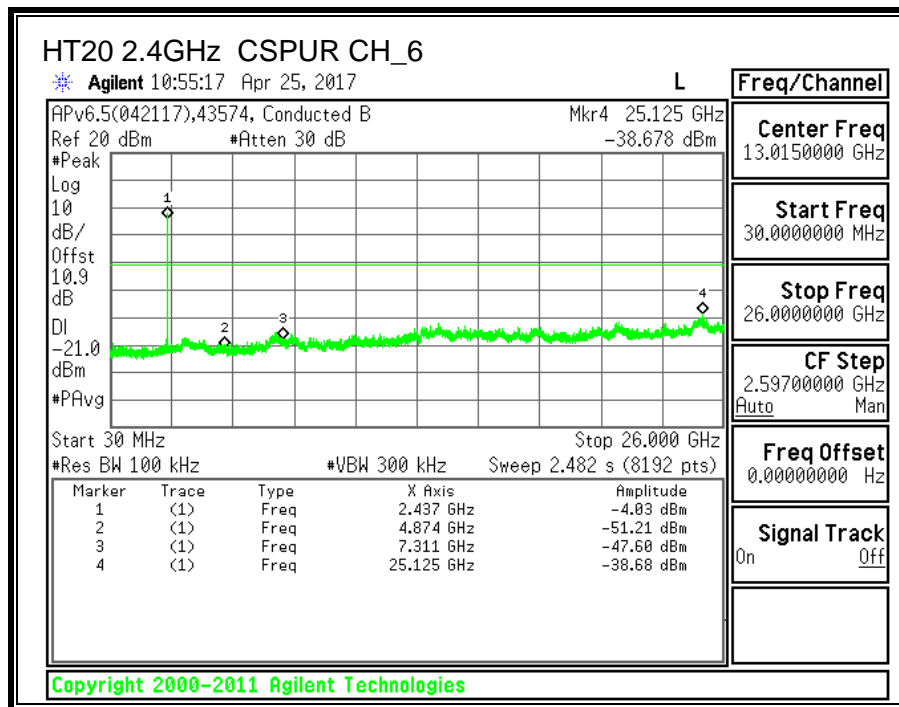
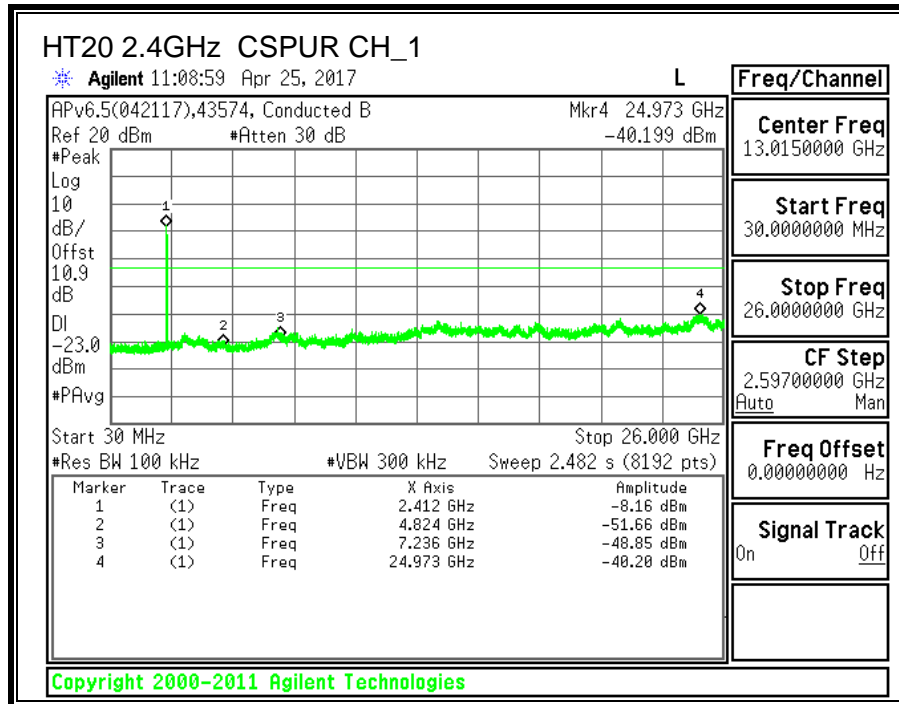


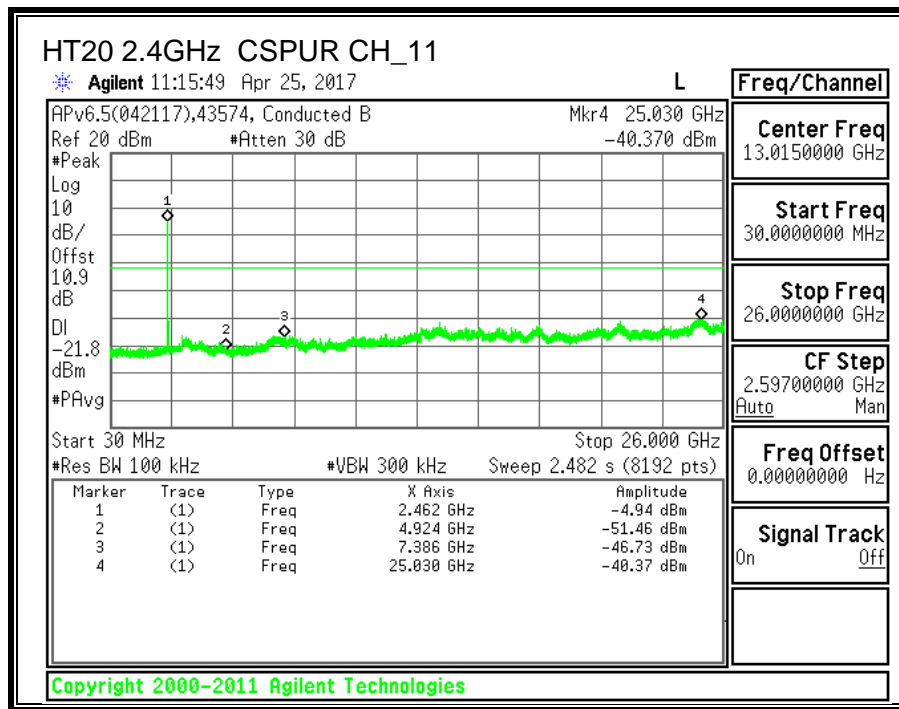


9.3.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS









NOTE: The device complies with -30dBc limit over the tested frequency range. See below table.

| 802.11 HT20 mode CBE data (dBm) | -20dBc limit (dBm) | -30dBc limit (dBm) |
|------------------------------------|-----------------------|-----------------------|
| Channel 1 | Ch1: -23.0 | Ch1: -33.05 |
| -51.66 | | |
| -48.85 | | |
| -40.20 | Ch6: -21.0 | Ch6: -30.96 |
| Channel 6 | | |
| -51.21 | | |
| -47.60 | Ch11: -21.8 | Ch11: -31.76 |
| -38.68 | | |
| Channel 11 | | |
| -51.46 | | |
| -46.73 | | |
| -40.37 | | |

10. RADIATED TEST RESULTS

10.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209
IC RSS-GEN, Section 8.9 and 8.10.

| Frequency Range (MHz) | Field Strength Limit (uV/m) at 3 m | Field Strength Limit (dBuV/m) at 3 m |
|-----------------------|------------------------------------|--------------------------------------|
| 0.009-0.490 | 2400/F(kHz) @ 300 m | 2400/F(kHz) @ 300m |
| 0.490-1.705 | 24000/F(kHz) @ 30 m | 24000/F(kHz) @ 30m |
| 1.705 - 30 | 30 @ 30m | 30 @ 30m |
| 30 - 88 | 100 | 40 |
| 88 - 216 | 150 | 43.5 |
| 216 - 960 | 200 | 46 |
| Above 960 | 500 | 54 |

NOTE: KDB 414788 D01 OATS and Chamber Correlation Justification

- Based on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.
- OATs and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for measurement below 1GHz; 1.5 m above the ground plane for measurement above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 120 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements for the 30-1000 MHz range, 9 kHz for peak detection measurements or 9 kHz for quasi-peak detection measurements for the 0.15-30 MHz range and 200 Hz for peak detection measurements or 200 Hz for quasi-peak detection measurements for the 9 to 150 kHz range. Peak detection is used unless otherwise noted as quasi-peak.

For pre-scans above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 KHz for peak measurements.

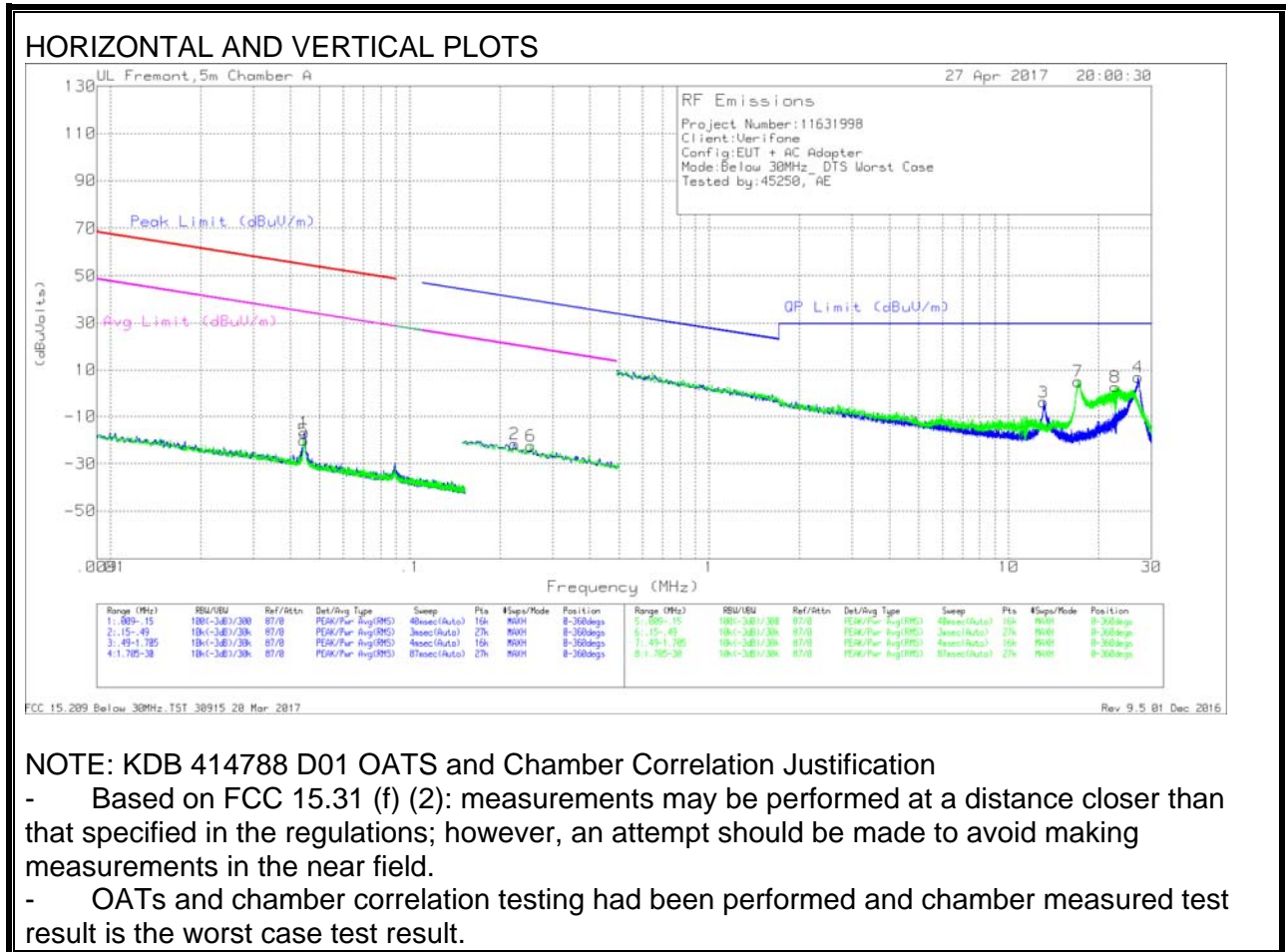
For final measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and as applicable for average measurements.

The spectrum from 1 GHz to 18 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band. Below 1GHz and above 18GHz emissions, the channel with the highest output power was tested.

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. WORST-CASE BELOW 30MHz

SPURIOUS EMISSIONS BELOW 30 MHz (WORST-CASE CONFIGURATION)



NOTE: KDB 414788 D01 OATS and Chamber Correlation Justification

- Based on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.
- OATs and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

Trace Markers

| Marker | Frequency | Meter | Det | Loop Antenna (dB/m) | Cbl (dB) | Dist Corr 300m | Corrected | Peak | Margin | Avg | Margin | QP | Margin | QP | Margin | Peak | Margin | Avg | Margin | Azimuth |
|--------|-----------|----------------|-----|---------------------|----------|----------------|--------------------|----------------|--------|----------------|--------|----------------|--------|----------------|--------|----------------|--------|----------------|--------|----------------|
| | (MHz) | Reading (dBuV) | | | | | Reading (dBuVolts) | Limit (dBuV/m) | (dB) | Limit (dBuV/m) | (dB) | Limit (dBuV/m) | (dB) | Limit (dBuV/m) | (dB) | Limit (dBuV/m) | (dB) | Limit (dBuV/m) | (dB) | Limit (dBuV/m) |
| 5 | 0.04432 | 46.82 | Pk | 12.9 | 0.1 | -80 | -20.18 | 54.65 | -74.83 | 34.65 | -54.83 | - | - | - | - | - | - | - | - | 0-360 |
| 1 | 0.04433 | 50.18 | Pk | 12.9 | 0.1 | -80 | -16.82 | 54.65 | -71.47 | 34.65 | -51.47 | - | - | - | - | - | - | - | - | 0-360 |
| 2 | 0.22333 | 46.73 | Pk | 11.5 | 0.1 | -80 | -21.67 | - | - | - | - | - | - | - | - | 40.64 | -62.31 | 20.64 | -42.31 | 0-360 |
| 6 | 0.25371 | 45.95 | Pk | 11.5 | 0.1 | -80 | -22.45 | - | - | - | - | - | - | - | - | 39.53 | -61.98 | 19.53 | -41.98 | 0-360 |

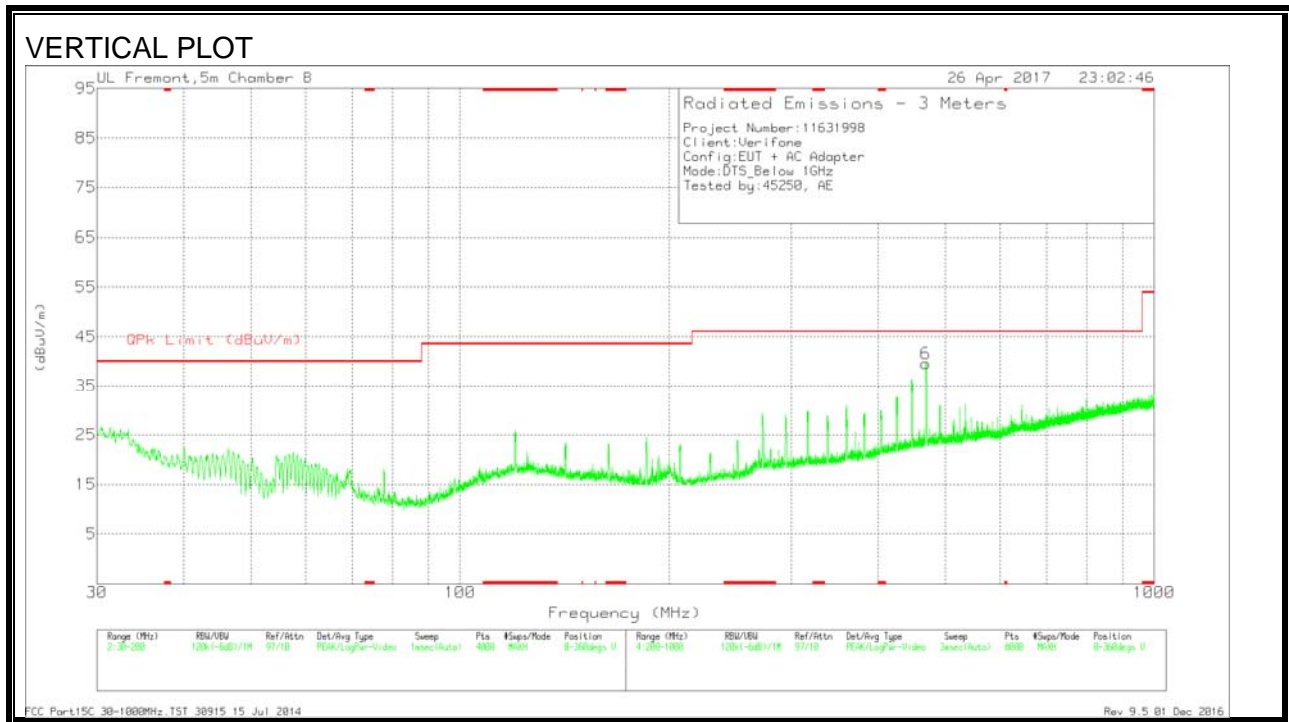
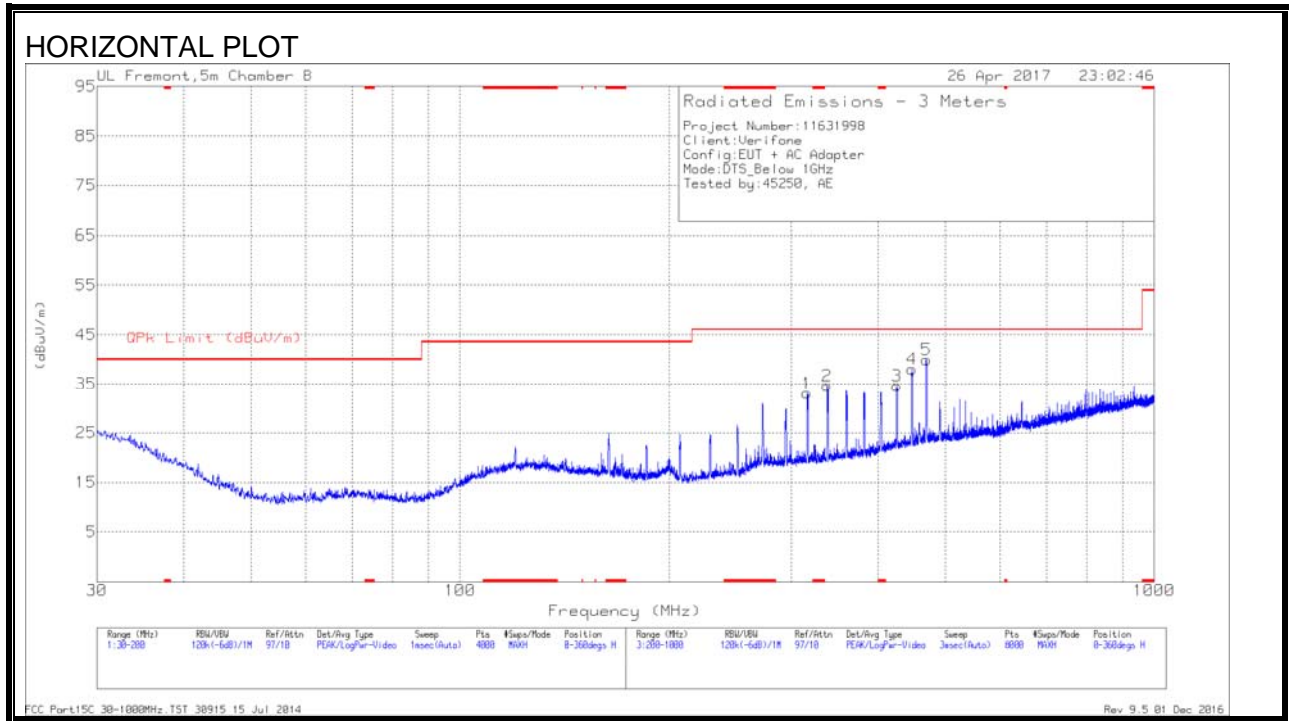
Pk - Peak detector

| Marker | Frequency | Meter | Det | Loop Antenna (dB/m) | Cbl (dB) | Dist Corr 30m | Corrected | Peak | Margin | Avg | Margin | QP | Margin | QP | Margin | Peak | Margin | Avg | Margin | Azimuth |
|--------|-----------|----------------|-----|---------------------|----------|---------------|--------------------|----------------|--------|----------------|--------|----------------|--------|----------------|--------|----------------|--------|----------------|--------|----------------|
| | (MHz) | Reading (dBuV) | | | | | Reading (dBuVolts) | Limit (dBuV/m) | (dB) | Limit (dBuV/m) | (dB) | Limit (dBuV/m) | (dB) | Limit (dBuV/m) | (dB) | Limit (dBuV/m) | (dB) | Limit (dBuV/m) | (dB) | Limit (dBuV/m) |
| 3 | 13.102 | 25.01 | Pk | 10.4 | 0.6 | -40 | -3.99 | - | - | - | - | - | - | 29.5 | -33.49 | - | - | - | - | 0-360 |
| 7 | 17.04824 | 34.66 | Pk | 10 | 0.6 | -40 | 5.26 | - | - | - | - | - | - | 29.5 | -24.24 | - | - | - | - | 0-360 |
| 8 | 22.71216 | 32.72 | Pk | 9.3 | 0.7 | -40 | 2.72 | - | - | - | - | - | - | 29.5 | -26.78 | - | - | - | - | 0-360 |
| 4 | 27.14258 | 37.61 | Pk | 8.5 | 0.8 | -40 | 6.91 | - | - | - | - | - | - | 29.5 | -22.59 | - | - | - | - | 0-360 |

Pk - Peak detector

10.3. WORST-CASE BELOW 1 GHz

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



Trace Markers

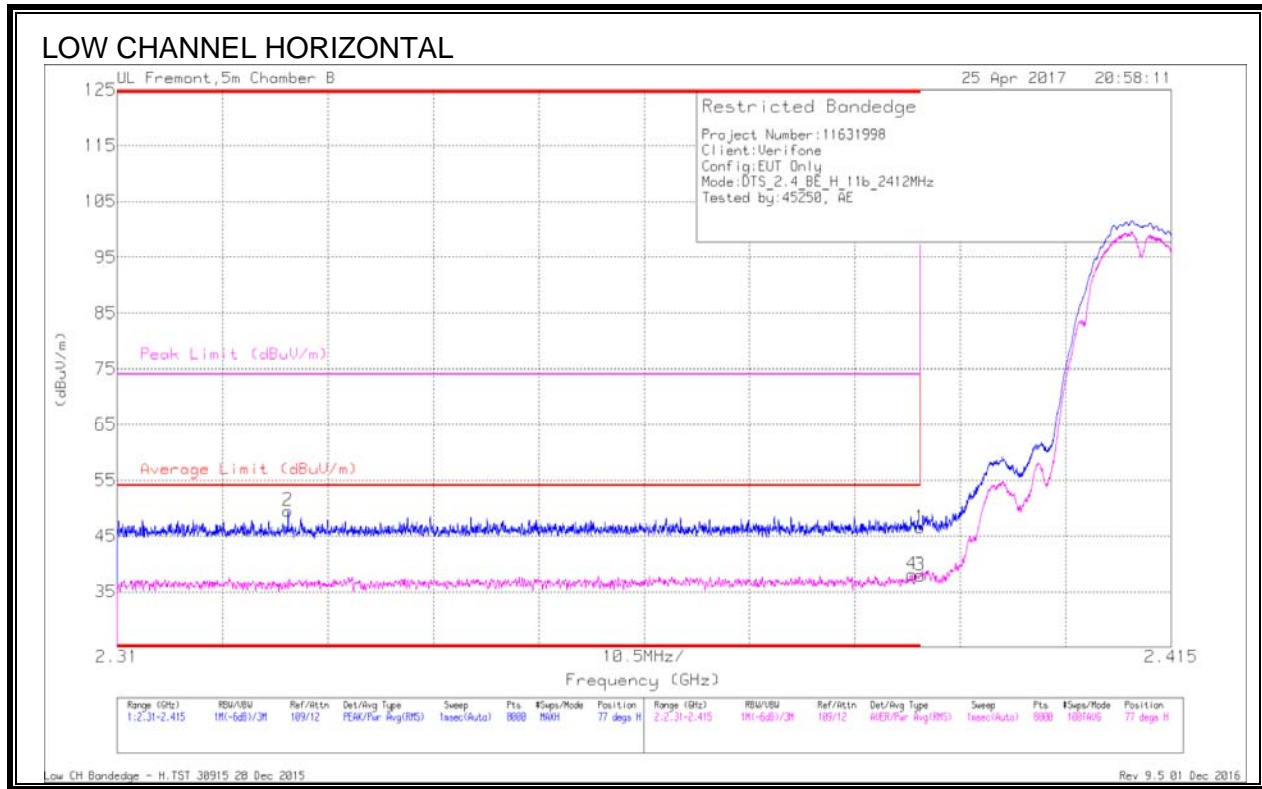
| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | AF T477 (dB/m) | Amp/Cbl (dB) | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|----------------|--------------|----------------------------|--------------------|-------------|----------------|-------------|----------|
| 1 | 316.3151 | 41.09 | Pk | 17.8 | -25.8 | 33.09 | 46.02 | -12.93 | 0-360 | 100 | H |
| 2 | 338.118 | 42.45 | Pk | 18 | -25.8 | 34.65 | 46.02 | -11.37 | 0-360 | 100 | H |
| 3 | 425.6293 | 40.16 | Pk | 20.4 | -25.9 | 34.66 | 46.02 | -11.36 | 0-360 | 200 | H |
| 4 | 447.9322 | 43.39 | Pk | 20.7 | -26.1 | 37.99 | 46.02 | -8.03 | 0-360 | 100 | H |
| 6 | 469.035 | 44.18 | Pk | 21.3 | -25.9 | 39.58 | 46.02 | -6.44 | 0-360 | 100 | V |
| 5 | 469.435 | 44.56 | Pk | 21.3 | -25.9 | 39.96 | 46.02 | -6.06 | 0-360 | 200 | H |

Pk - Peak detector

10.4. TRANSMITTER ABOVE 1 GHz

10.4.1. 11b SISO MODE IN THE 2.4GHz BAND

BANDEDGE (LOW CHANNEL, CH 1)

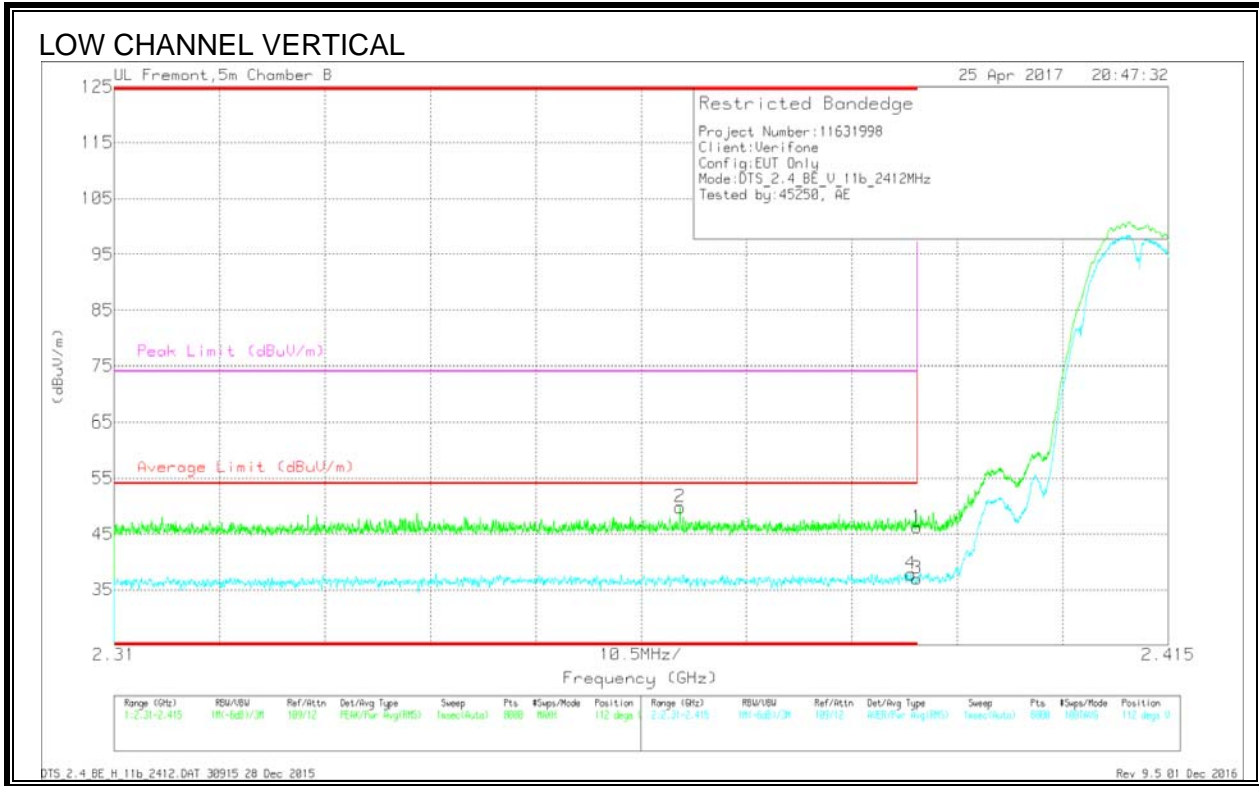


| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF T346 (dB/m) | Amp/Cb/Ftr/Psd (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Altitude (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|----------------|---------------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|-----------------|-------------|----------|
| 2 | * 2.327 | 39.1 | Pk | 31.8 | -21.4 | 0 | 49.5 | - | - | 74 | -24.5 | 77 | 154 | H |
| 4 | * 2.389 | 27.49 | RMS | 31.9 | -21.3 | 0 | 38.09 | 54 | -15.91 | - | - | 77 | 154 | H |
| 1 | * 2.39 | 35.82 | Pk | 32 | -21.3 | 0 | 46.52 | - | - | 74 | -27.48 | 77 | 154 | H |
| 3 | * 2.39 | 27.25 | RMS | 32 | -21.3 | 0 | 37.95 | 54 | -16.05 | - | - | 77 | 154 | H |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection



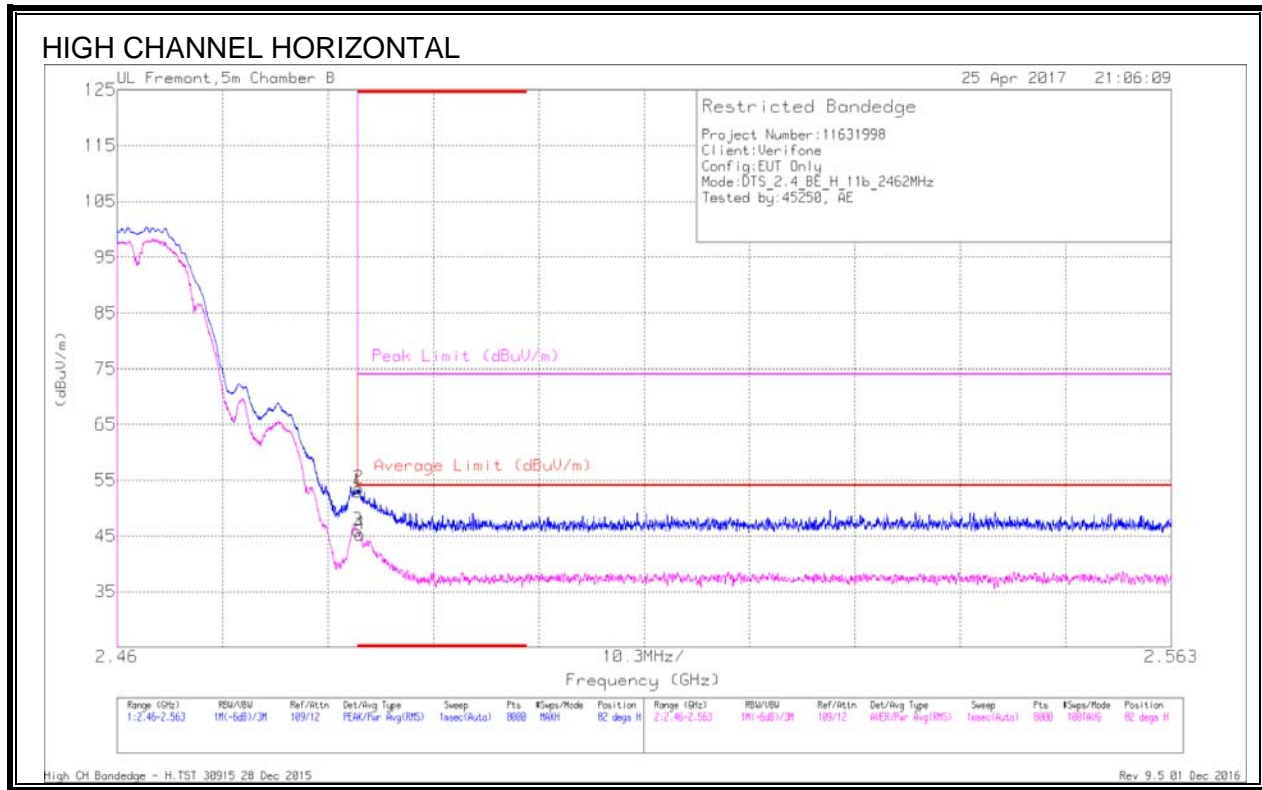
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | Af T346 (dB/m) | Amp/Chl/Filt/Pad (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|----------------|-----------------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * 2.39 | 35.46 | PK | 32 | -21.3 | 0 | 46.16 | - | - | 74 | -27.84 | 112 | 104 | V |
| 2 | * 2.366 | 39.09 | PK | 31.9 | -21.2 | 0 | 49.79 | - | - | 74 | -24.21 | 112 | 104 | V |
| 3 | * 2.39 | 26.32 | RMS | 32 | -21.3 | 0 | 37.02 | 54 | -16.98 | - | - | 112 | 104 | V |
| 4 | * 2.389 | 27.12 | RMS | 32 | -21.3 | 0 | 37.82 | 54 | -16.18 | - | - | 112 | 104 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK - Peak detector

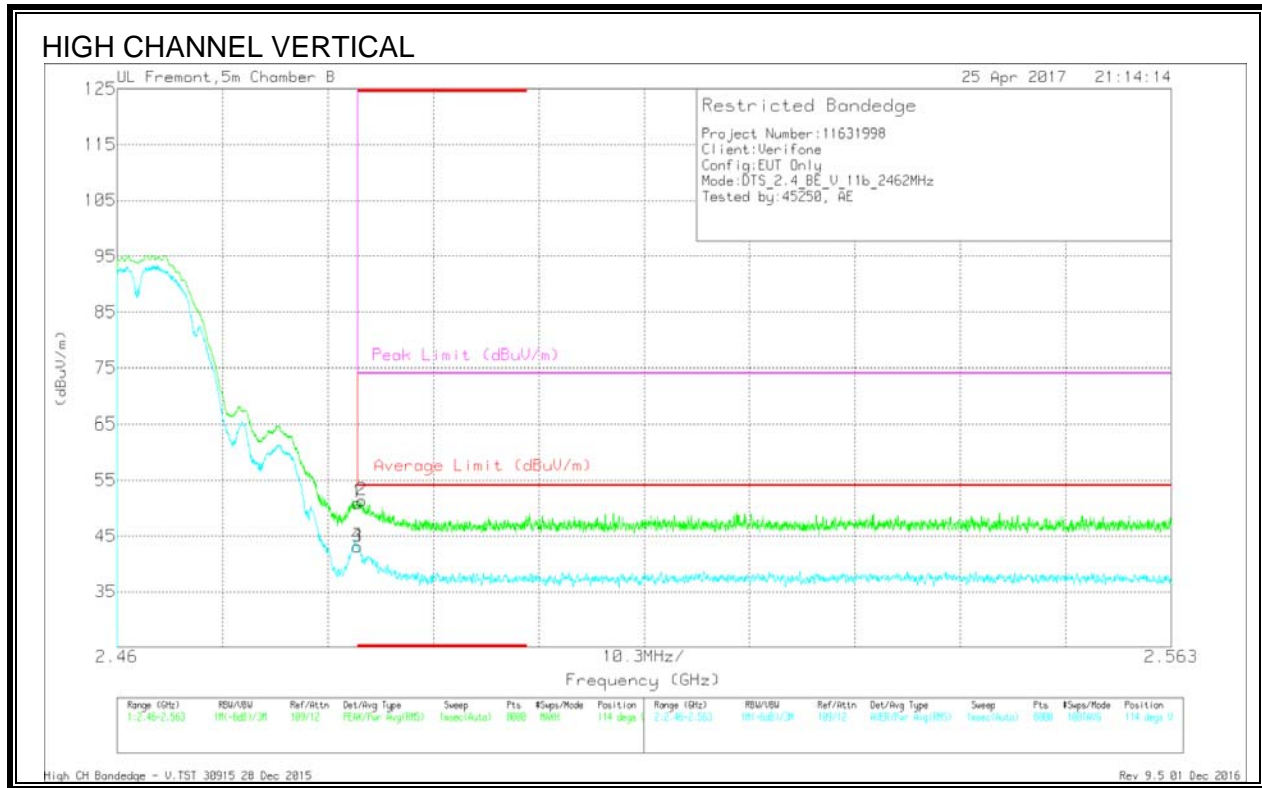
RMS - RMS detection

BANDEDGE (HIGH CHANNEL, CH 11)



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF T346 (dB/m) | Amp/Cb/Ftr/Pad (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Asimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|----------------|---------------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * 2.484 | 42.03 | PK | 32.1 | -21.2 | 0 | 52.93 | - | - | 74 | -21.07 | 82 | 119 | H |
| 2 | * 2.484 | 42.65 | PK | 32.1 | -21.2 | 0 | 53.55 | - | - | 74 | -20.45 | 82 | 119 | H |
| 3 | * 2.484 | 35.05 | RMS | 32.1 | -21.2 | 0 | 45.95 | 54 | -8.05 | - | - | 82 | 119 | H |
| 4 | * 2.484 | 34.37 | RMS | 32.1 | -21.2 | 0 | 45.27 | 54 | -8.73 | - | - | 82 | 119 | H |

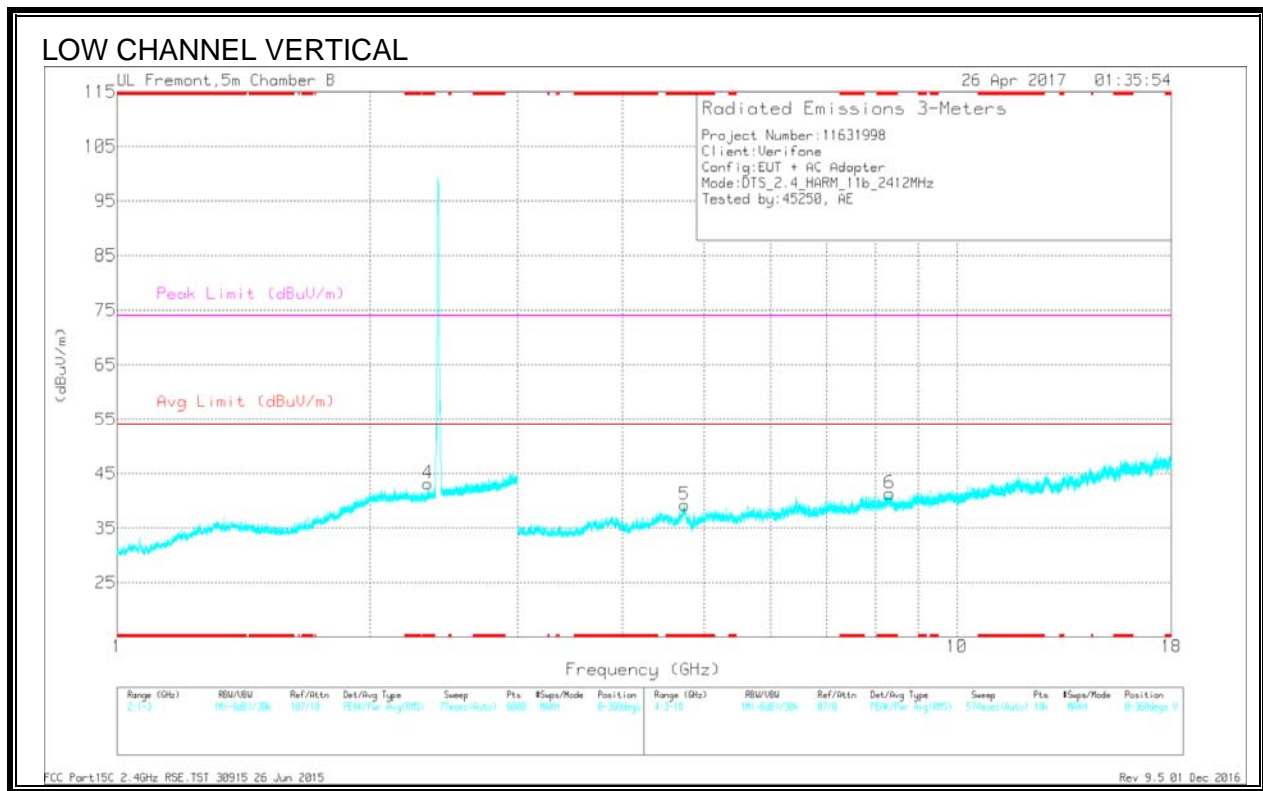
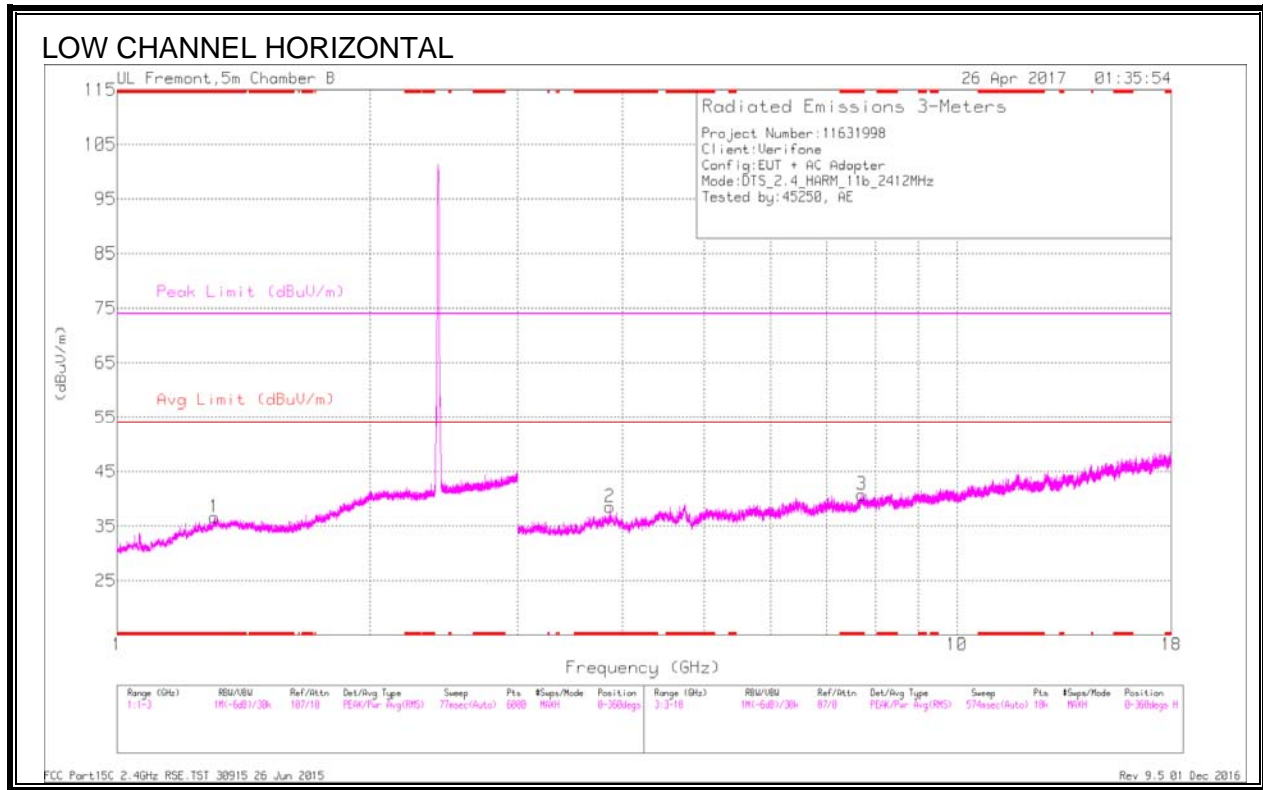
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 RMS - RMS detection



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF T346 (dB/m) | Amp/Cb/Ftr/Pad (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|----------------|---------------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * 2.484 | 40.06 | Pk | 32.1 | -21.2 | 0 | 50.96 | - | - | 74 | -23.04 | 114 | 144 | V |
| 2 | * 2.484 | 40.46 | Pk | 32.1 | -21.2 | 0 | 51.36 | - | - | 74 | -22.64 | 114 | 144 | V |
| 3 | * 2.484 | 32.22 | RMS | 32.1 | -21.2 | 0 | 43.12 | 54 | -10.88 | - | - | 114 | 144 | V |
| 4 | * 2.484 | 32.26 | RMS | 32.1 | -21.2 | 0 | 43.16 | 54 | -10.84 | - | - | 114 | 144 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS LOW CHANNEL, CH 1)

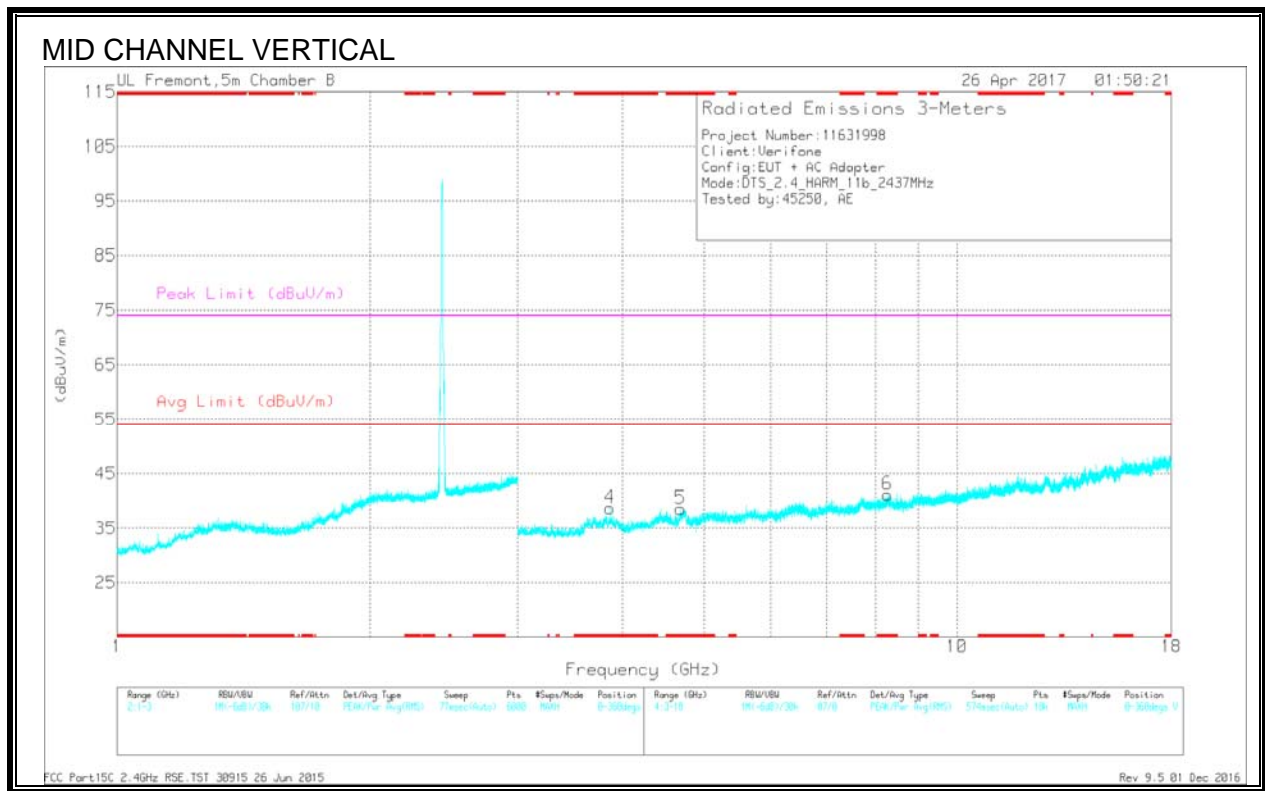
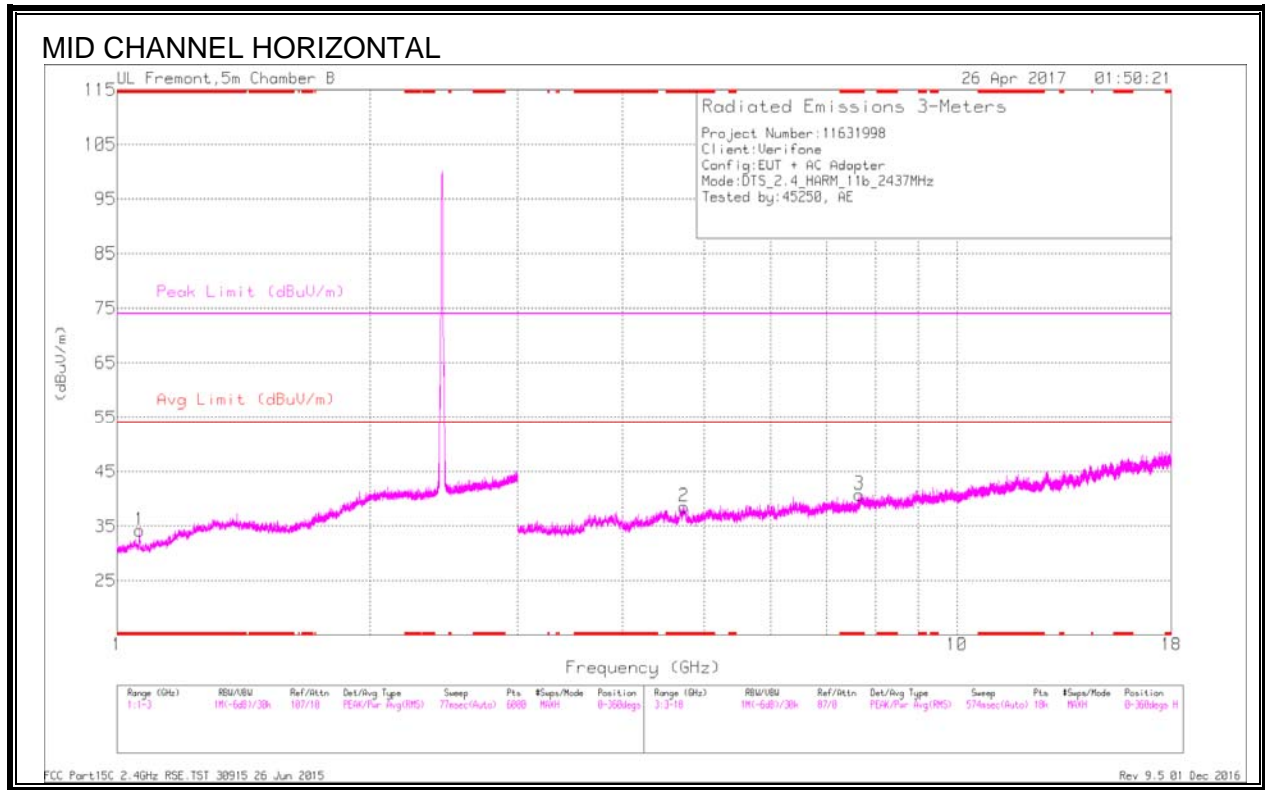


Radiated Emissions

| Frequency (GHz) | Meter Reading (dBuV) | Det | AF T346 (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 |
|-----------------|----------------------|------|----------------|------------------------|--------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| * 1.308 | 35.16 | PK2 | 28.9 | -22 | 0 | 42.06 | - | - | 74 | -31.94 | 50 | 199 | H |
| * 1.308 | 23.91 | MAv1 | 28.9 | -22 | 0 | 30.81 | 54 | -23.19 | - | - | 50 | 199 | H |
| * 2.345 | 36.45 | PK2 | 31.8 | -21.3 | 0 | 46.95 | - | - | 74 | -27.05 | 88 | 231 | V |
| * 2.342 | 25.13 | MAv1 | 31.8 | -21.4 | 0 | 35.53 | 54 | -18.47 | - | - | 88 | 231 | V |
| * 3.867 | 39.82 | PK2 | 33.7 | -29.6 | 0 | 43.92 | - | - | 74 | -30.08 | 184 | 317 | H |
| * 3.865 | 28.61 | MAv1 | 33.7 | -29.7 | 0 | 32.61 | 54 | -21.39 | - | - | 184 | 317 | H |
| * 7.706 | 36.02 | PK2 | 36.5 | -25.9 | 0 | 46.62 | - | - | 74 | -27.38 | 247 | 274 | H |
| * 7.703 | 25.22 | MAv1 | 36.5 | -25.9 | 0 | 35.82 | 54 | -18.18 | - | - | 247 | 274 | H |
| * 4.743 | 39.61 | PK2 | 34.4 | -28.6 | 0 | 45.41 | - | - | 74 | -28.59 | 317 | 177 | V |
| * 4.745 | 28.65 | MAv1 | 34.4 | -28.6 | 0 | 34.45 | 54 | -19.55 | - | - | 317 | 177 | V |
| * 8.319 | 36.84 | PK2 | 36.5 | -25.8 | 0 | 47.54 | - | - | 74 | -26.46 | 360 | 197 | V |
| * 8.316 | 24.68 | MAv1 | 36.5 | -25.8 | 0 | 35.38 | 54 | -18.62 | - | - | 360 | 197 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 PK2 - KDB558074 Method: Maximum Peak
 MAv1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS MID CHANNEL, CH 6)

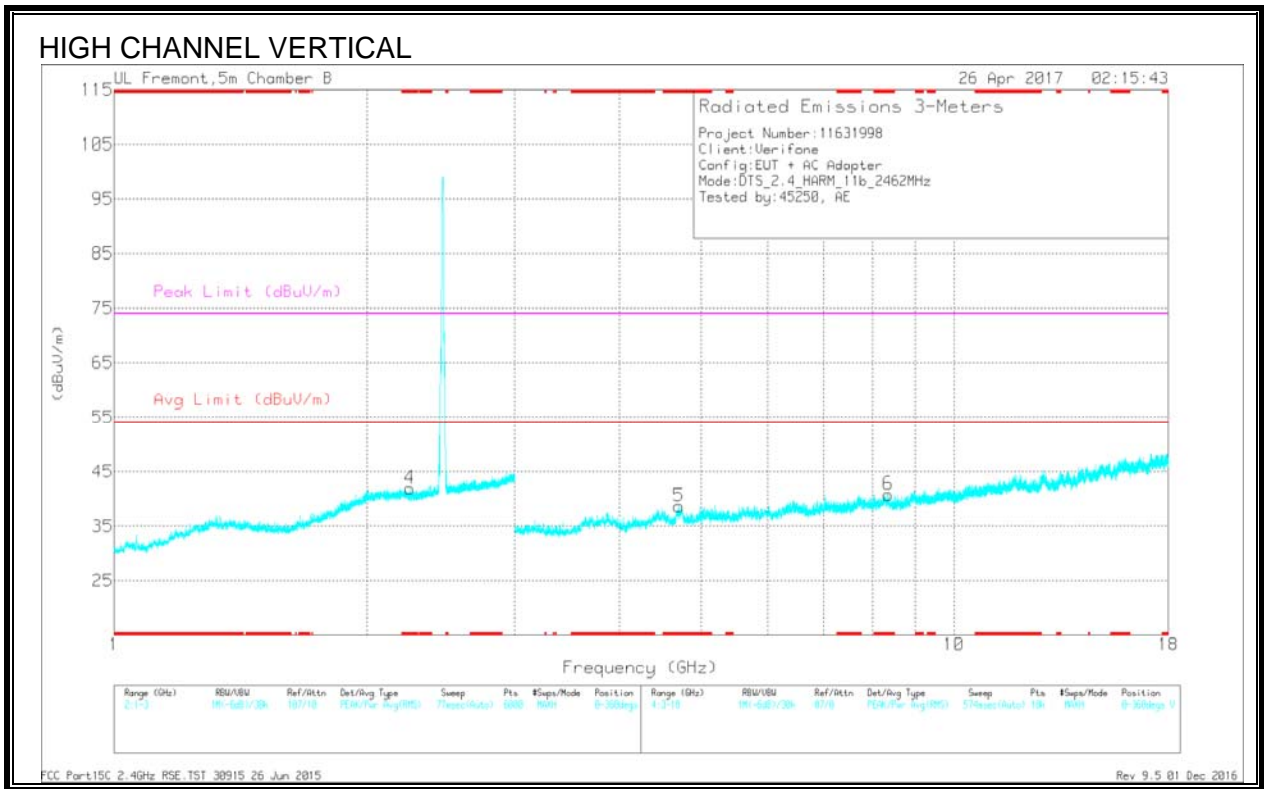
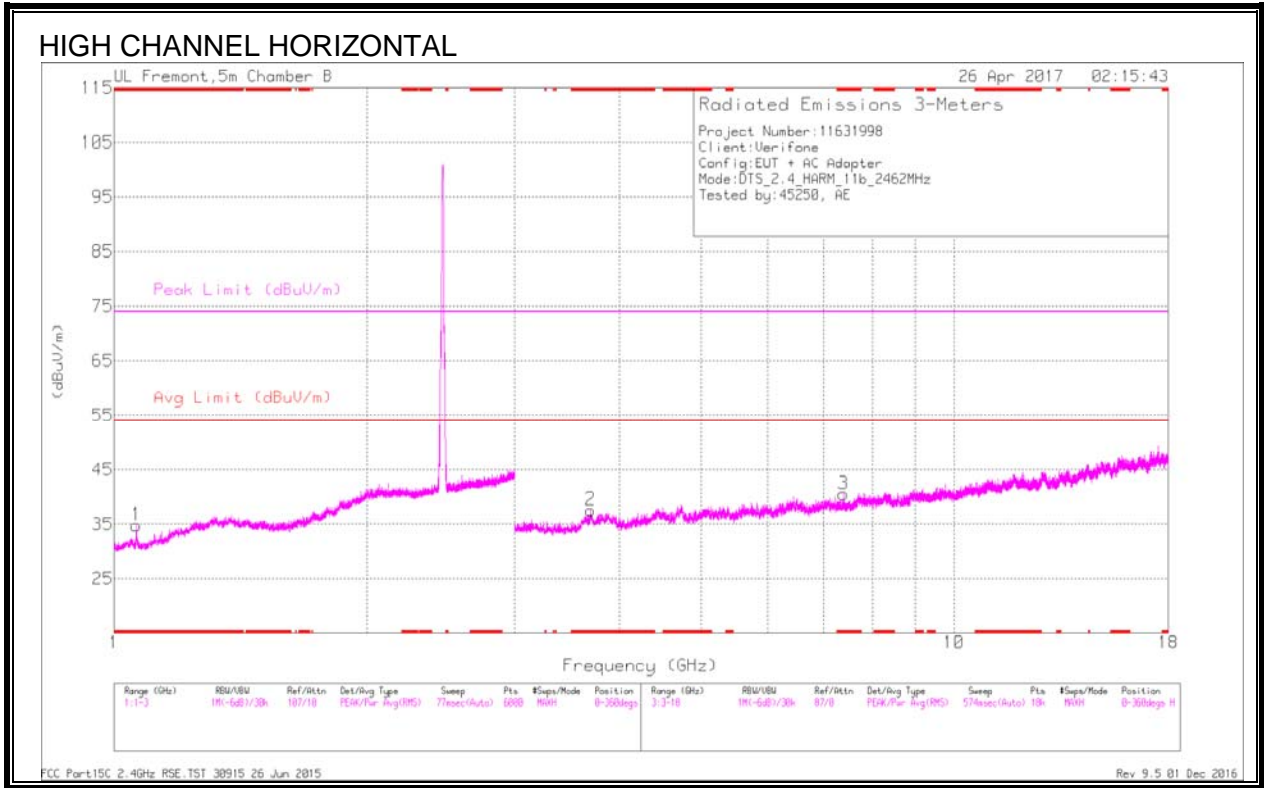


Radiated Emissions

| Frequency (GHz) | Meter Reading (dBuV) | Det | AF T346 (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 |
|-----------------|----------------------|------|----------------|------------------------|--------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| * 1.065 | 35.61 | PK2 | 26.4 | -22.9 | 0 | 39.11 | - | - | 74 | -34.89 | 319 | 148 | H |
| * 1.063 | 23.67 | MAV1 | 26.4 | -23 | 0 | 27.07 | 54 | -26.93 | - | - | 319 | 148 | H |
| * 4.734 | 40.12 | PK2 | 34.4 | -28.6 | 0 | 45.92 | - | - | 74 | -28.08 | 211 | 193 | H |
| * 4.733 | 28.48 | MAV1 | 34.4 | -28.6 | 0 | 34.28 | 54 | -19.72 | - | - | 211 | 193 | H |
| * 7.653 | 36.33 | PK2 | 36.4 | -26.7 | 0 | 46.03 | - | - | 74 | -27.97 | 158 | 197 | H |
| * 7.653 | 25.38 | MAV1 | 36.4 | -26.7 | 0 | 35.08 | 54 | -18.92 | - | - | 158 | 197 | H |
| * 3.863 | 39.86 | PK2 | 33.7 | -29.7 | 0 | 43.86 | - | - | 74 | -30.14 | 81 | 132 | V |
| * 3.861 | 28.64 | MAV1 | 33.7 | -29.8 | 0 | 32.54 | 54 | -21.46 | - | - | 81 | 132 | V |
| * 4.689 | 40.31 | PK2 | 34.4 | -29.8 | 0 | 44.91 | - | - | 74 | -29.09 | 201 | 309 | V |
| * 4.687 | 28.89 | MAV1 | 34.4 | -29.8 | 0 | 33.49 | 54 | -20.51 | - | - | 201 | 309 | V |
| * 8.269 | 36.12 | PK2 | 36.5 | -25.6 | 0 | 47.02 | - | - | 74 | -26.98 | 36 | 110 | V |
| * 8.268 | 25.38 | MAV1 | 36.5 | -25.7 | 0 | 36.18 | 54 | -17.82 | - | - | 36 | 110 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 PK2 - KDB558074 Method: Maximum Peak
 MAV1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS HIGH CHANNEL, CH 11)



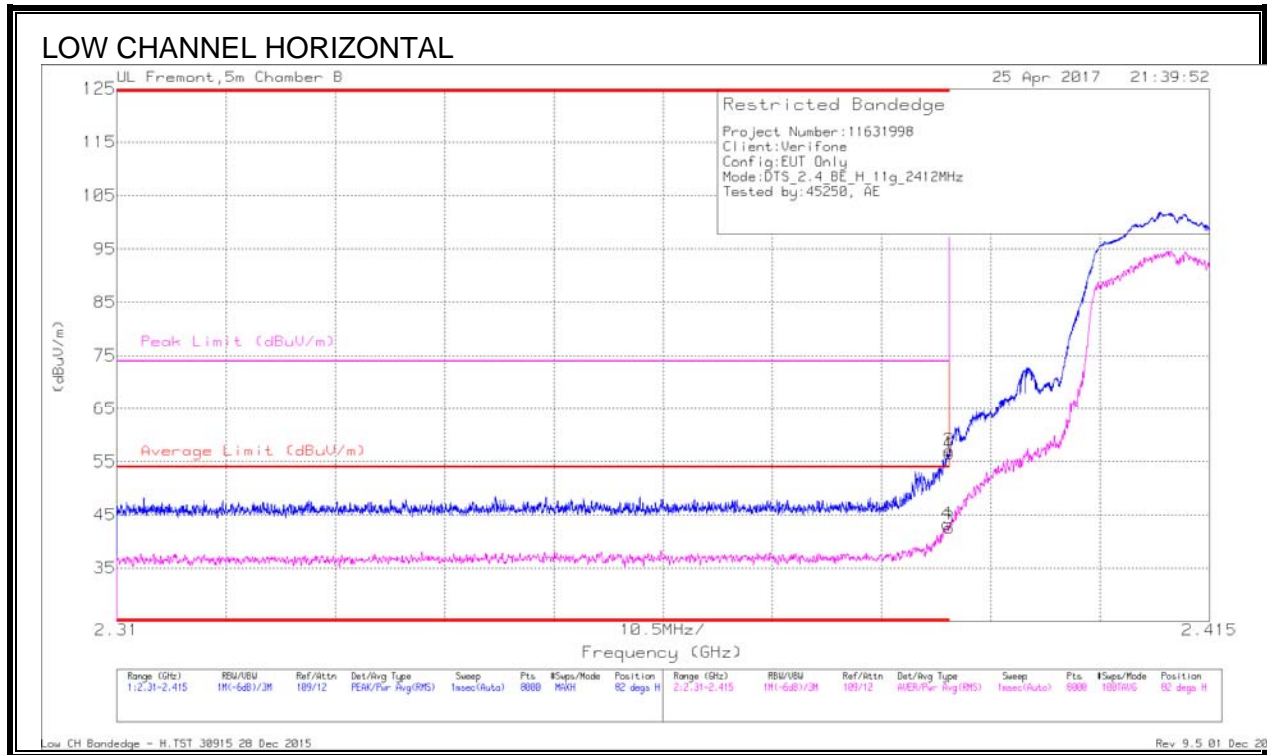
Radiated Emissions

| Frequency (GHz) | Meter Reading (dBuV) | Det | AF T346 (dB/m) | Amp/Cbl/Fitr/Pad (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|------|----------------|-----------------------|--------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| * 1.064 | 35.47 | PK2 | 26.4 | -22.9 | 0 | 38.97 | - | - | 74 | -35.03 | 120 | 170 | H |
| * 1.064 | 24.25 | MAv1 | 26.4 | -22.9 | 0 | 27.75 | 54 | -26.25 | - | - | 120 | 170 | H |
| * 2.249 | 36.46 | PK2 | 31.9 | -21.2 | 0 | 47.16 | - | - | 74 | -26.84 | 172 | 202 | V |
| * 2.251 | 24.81 | MAv1 | 31.9 | -21.2 | 0 | 35.51 | 54 | -18.49 | - | - | 172 | 202 | V |
| * 3.694 | 40.64 | PK2 | 33.5 | -30.6 | 0 | 43.54 | - | - | 74 | -30.46 | 68 | 179 | H |
| * 3.692 | 29 | MAv1 | 33.5 | -30.6 | 0 | 31.9 | 54 | -22.1 | - | - | 68 | 179 | H |
| * 7.386 | 36.46 | PK2 | 36 | -26.9 | 0 | 45.56 | - | - | 74 | -28.44 | 225 | 253 | H |
| * 7.386 | 26.19 | MAv1 | 36 | -26.9 | 0 | 35.29 | 54 | -18.71 | - | - | 225 | 253 | H |
| * 4.706 | 39.46 | PK2 | 34.4 | -29.4 | 0 | 44.46 | - | - | 74 | -29.54 | 203 | 206 | V |
| * 4.705 | 28.11 | MAv1 | 34.4 | -29.5 | 0 | 33.01 | 54 | -20.99 | - | - | 203 | 206 | V |
| * 8.345 | 35.91 | PK2 | 36.5 | -25.1 | 0 | 47.31 | - | - | 74 | -26.69 | 5 | 104 | V |
| * 8.347 | 24.71 | MAv1 | 36.5 | -25.1 | 0 | 36.11 | 54 | -17.89 | - | - | 5 | 104 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 PK2 - KDB558074 Method: Maximum Peak
 MAv1 - KDB558074 Option 1 Maximum RMS Average

10.4.2. 11g SISO MODE IN THE 2.4GHz BAND

BANDEDGE (LOW CHANNEL, CH 1)

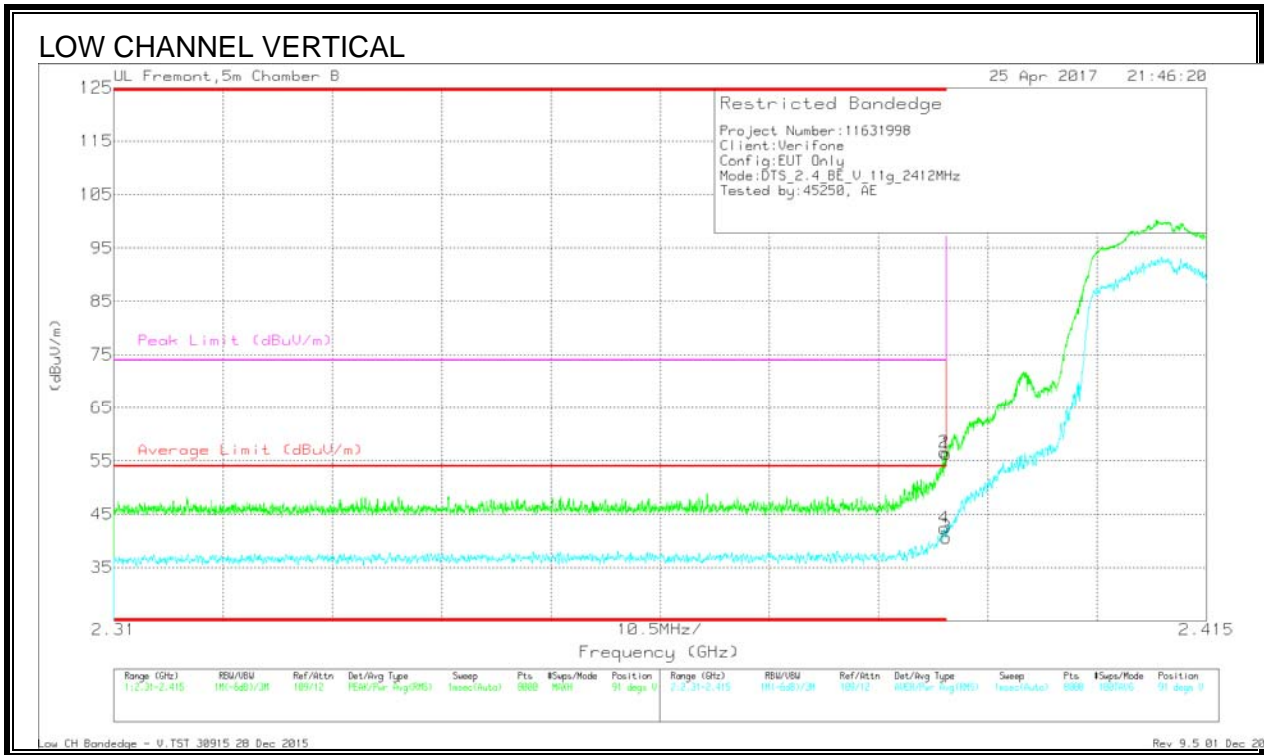


| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | Af T346 (dB/m) | Amp/Ch/Ftr/Pad (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|----------------|---------------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * 2.39 | 45.82 | Pk | 32 | -21.3 | 0 | 56.52 | - | - | 74 | -17.48 | 82 | 112 | H |
| 2 | * 2.39 | 46.4 | Pk | 32 | -21.3 | 0 | 57.1 | - | - | 74 | -16.9 | 82 | 112 | H |
| 3 | * 2.39 | 31.55 | RMS | 32 | -21.3 | .3 | 42.55 | 54 | -11.45 | - | - | 82 | 112 | H |
| 4 | * 2.39 | 32.29 | RMS | 32 | -21.3 | .3 | 43.29 | 54 | -10.71 | - | - | 82 | 112 | H |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection



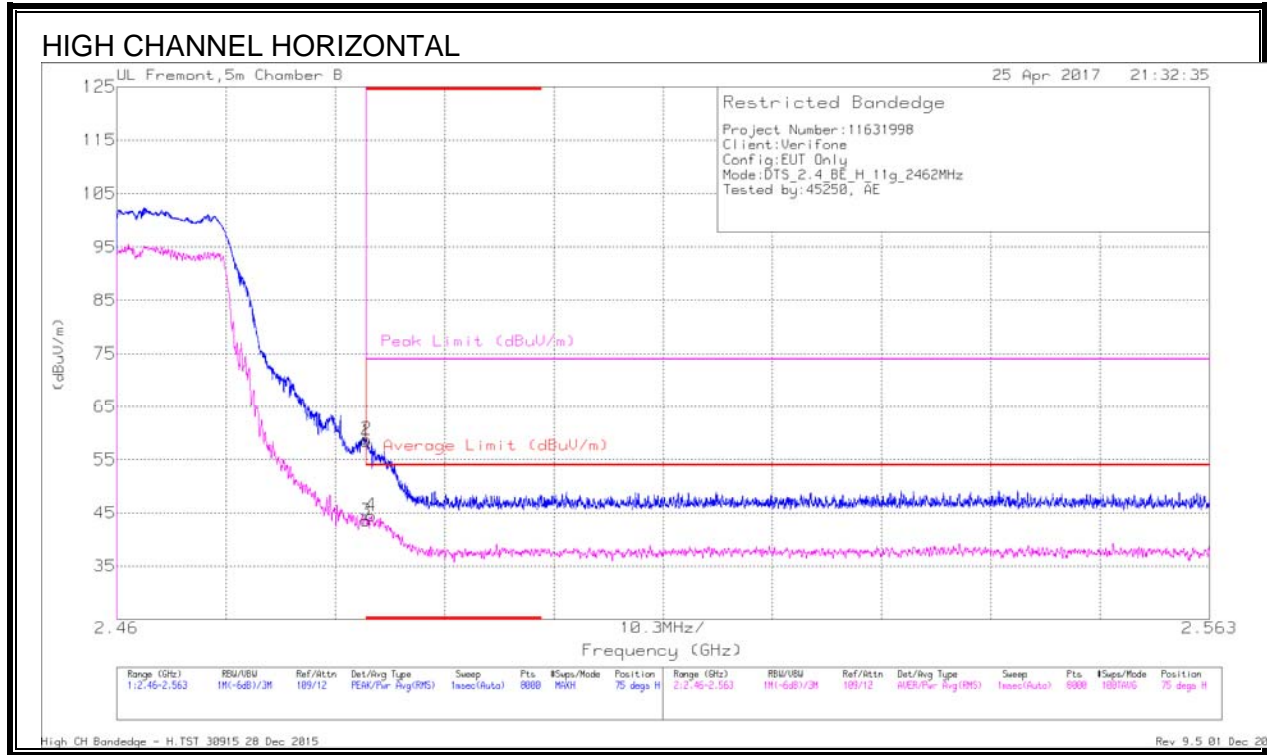
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF T346 (dB/m) | Amp/Ch/Filt/Pad (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Asimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|----------------|----------------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * 2.39 | 45.57 | Pk | 32 | -21.3 | 0 | 56.27 | - | - | 74 | -17.73 | 91 | 109 | V |
| 2 | * 2.39 | 45.83 | Pk | 32 | -21.3 | 0 | 56.53 | - | - | 74 | -17.47 | 91 | 109 | V |
| 3 | * 2.39 | 29.48 | RMS | 32 | -21.3 | .3 | 40.48 | 54 | -13.52 | - | - | 91 | 109 | V |
| 4 | * 2.39 | 31.19 | RMS | 32 | -21.3 | .3 | 42.19 | 54 | -11.81 | - | - | 91 | 109 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection

BANDEDGE (HIGH CHANNEL, CH 11)

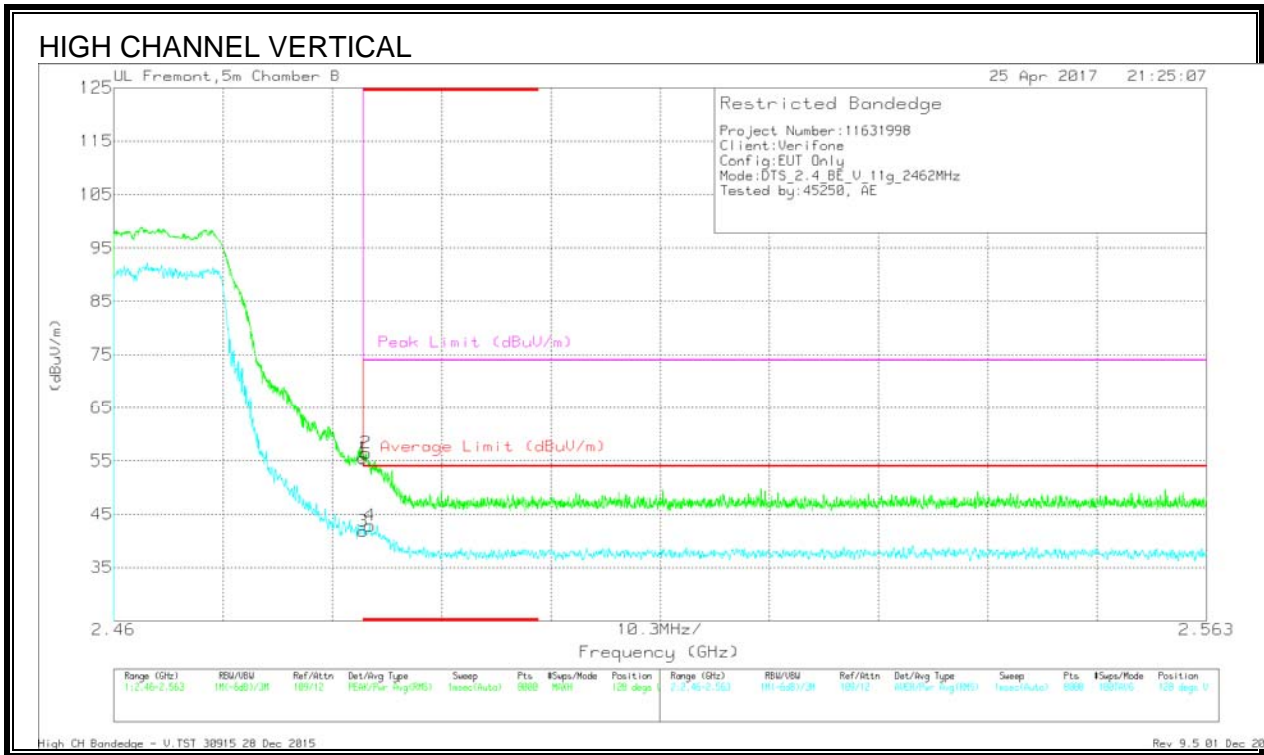


| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF T346 (dB/m) | Amp/Cb/Ftr/Pad (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|----------------|---------------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * 2.484 | 47.53 | PK | 32.1 | -21.2 | 0 | 58.43 | - | - | 74 | -15.57 | 75 | 249 | H |
| 2 | * 2.484 | 47.89 | PK | 32.1 | -21.2 | 0 | 58.79 | - | - | 74 | -15.21 | 75 | 249 | H |
| 3 | * 2.484 | 32.34 | RMS | 32.1 | -21.2 | .3 | 43.54 | 54 | -10.46 | - | - | 75 | 249 | H |
| 4 | * 2.484 | 33.29 | RMS | 32.1 | -21.2 | .3 | 44.49 | 54 | -9.51 | - | - | 75 | 249 | H |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK - Peak detector

RMS - RMS detection



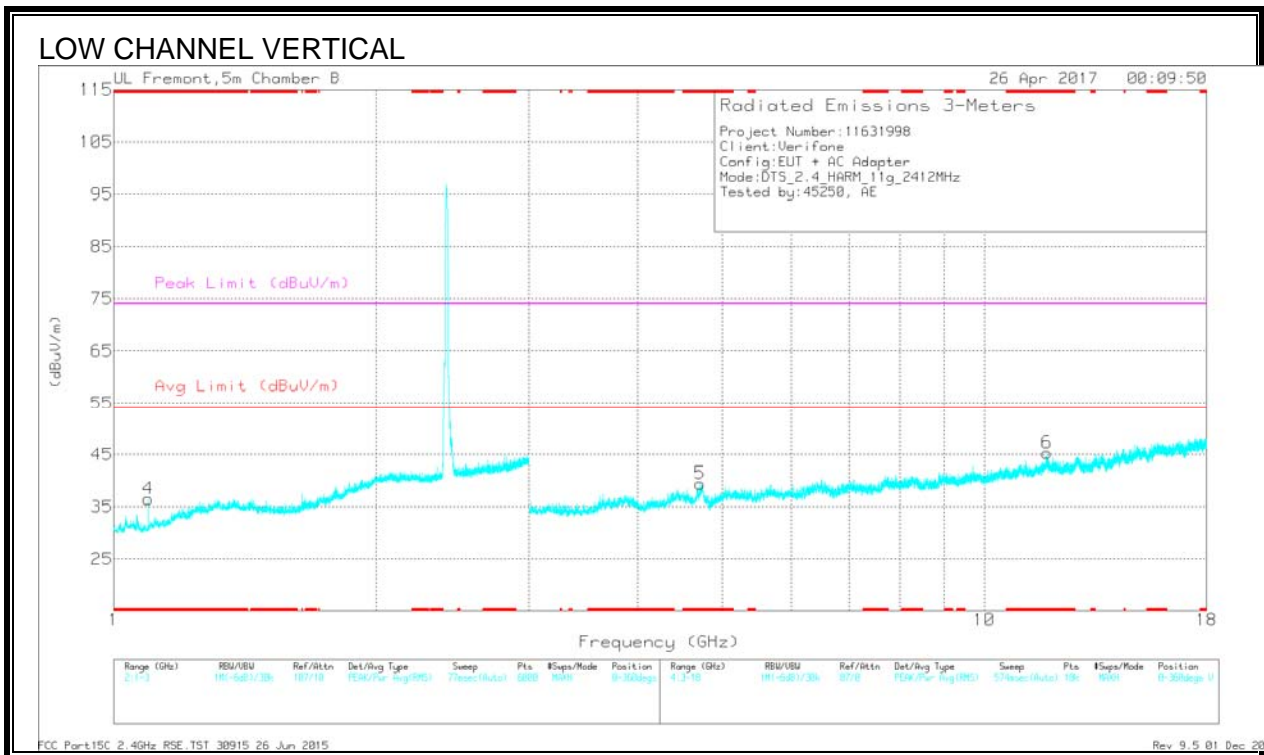
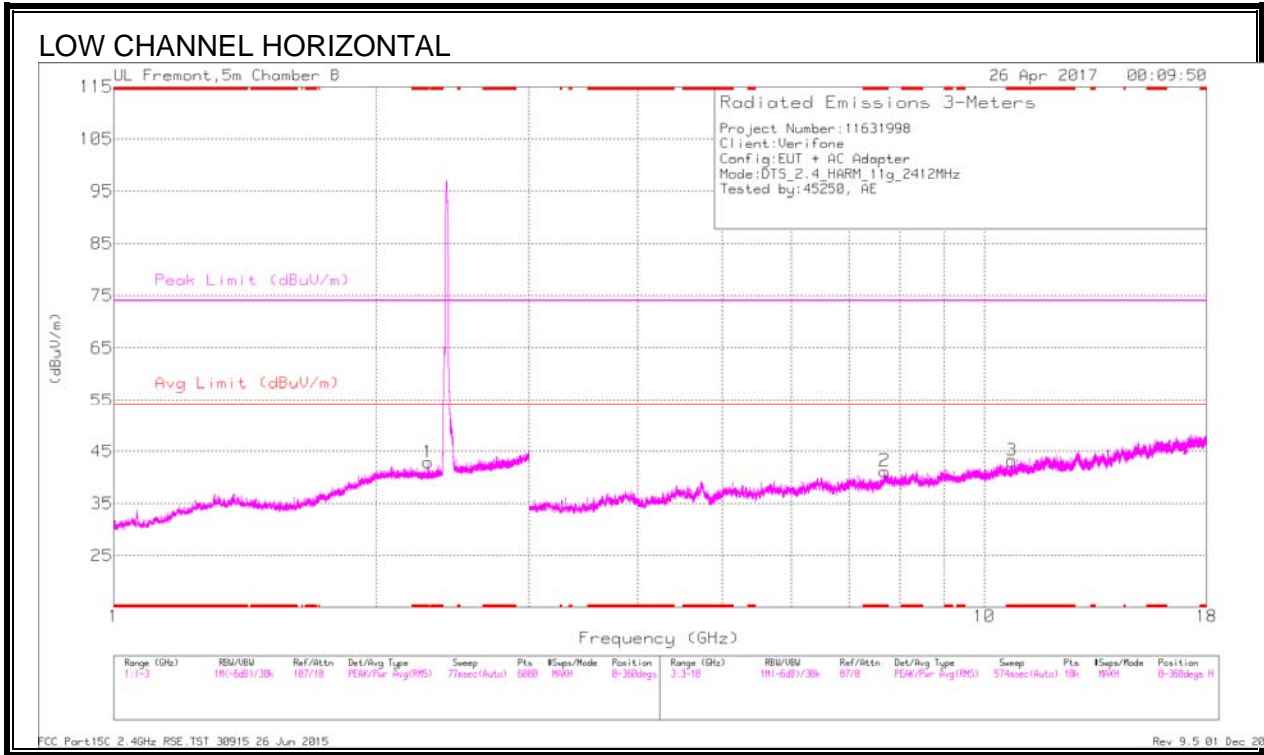
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF T346 (dB/m) | Amp/Ch/Filt/Pad (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Asimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|----------------|----------------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * 2.484 | 44.57 | Pk | 32.1 | -21.2 | 0 | 55.47 | - | - | 74 | -18.53 | 128 | 150 | V |
| 2 | * 2.484 | 45.49 | Pk | 32.1 | -21.2 | 0 | 56.39 | - | - | 74 | -17.61 | 128 | 150 | V |
| 3 | * 2.484 | 30.54 | RMS | 32.1 | -21.2 | .3 | 41.74 | 54 | -12.26 | - | - | 128 | 150 | V |
| 4 | * 2.484 | 31.63 | RMS | 32.1 | -21.2 | .3 | 42.83 | 54 | -11.17 | - | - | 128 | 150 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS LOW CHANNEL, CH 1)



Radiated Emissions

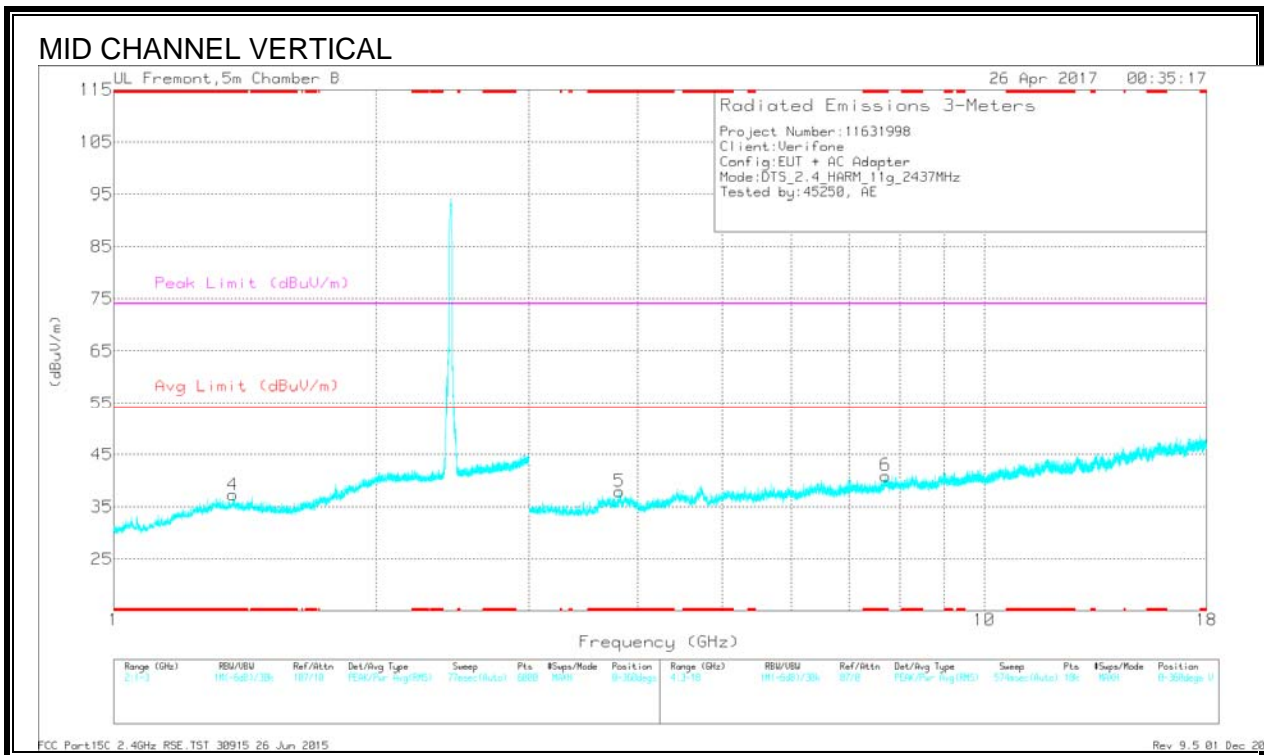
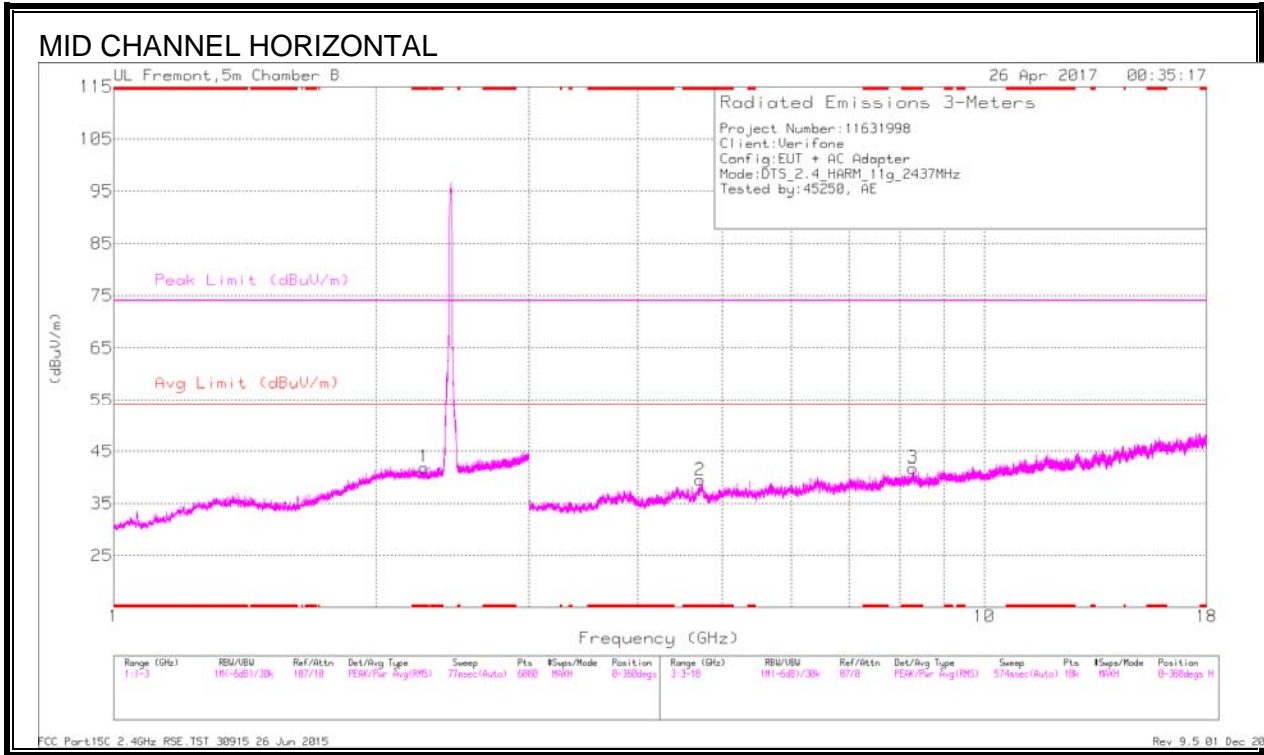
| Frequency (GHz) | Meter Reading (dBuV) | Det | AF T346 (dB/m) | Amp/Cbl/Filtr/Pad (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|------|----------------|------------------------|--------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| * 2.298 | 36.47 | PK2 | 31.7 | -21.1 | 0 | 47.07 | - | - | 74 | -26.93 | 272 | 219 | H |
| * 2.295 | 24.79 | MAv1 | 31.7 | -21.2 | .3 | 35.59 | 54 | -18.41 | - | - | 272 | 219 | H |
| * 1.095 | 34.76 | PK2 | 26.3 | -23.2 | 0 | 37.86 | - | - | 74 | -36.14 | 240 | 282 | V |
| * 1.098 | 23.4 | MAv1 | 26.3 | -23 | .3 | 27 | 54 | -27 | - | - | 240 | 282 | V |
| * 7.683 | 36.51 | PK2 | 36.5 | -25.8 | 0 | 47.21 | - | - | 74 | -26.79 | 78 | 110 | H |
| * 7.682 | 25.3 | MAv1 | 36.5 | -25.9 | .3 | 36.2 | 54 | -17.8 | - | - | 78 | 110 | H |
| * 10.754 | 33.67 | PK2 | 38.1 | -23.6 | 0 | 48.17 | - | - | 74 | -25.83 | 148 | 159 | H |
| * 10.756 | 22.8 | MAv1 | 38.1 | -23.6 | .3 | 37.6 | 54 | -16.4 | - | - | 148 | 159 | H |
| * 4.718 | 39.47 | PK2 | 34.4 | -29 | 0 | 44.87 | - | - | 74 | -29.13 | 99 | 124 | V |
| * 4.717 | 28.23 | MAv1 | 34.4 | -29.1 | .3 | 33.83 | 54 | -20.17 | - | - | 99 | 124 | V |
| * 11.807 | 32.37 | PK2 | 39.5 | -22.1 | 0 | 49.77 | - | - | 74 | -24.23 | 41 | 113 | V |
| * 11.807 | 21.87 | MAv1 | 39.5 | -22.1 | .3 | 39.57 | 54 | -14.43 | - | - | 41 | 113 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS MID CHANNEL, CH 6)



Radiated Emissions

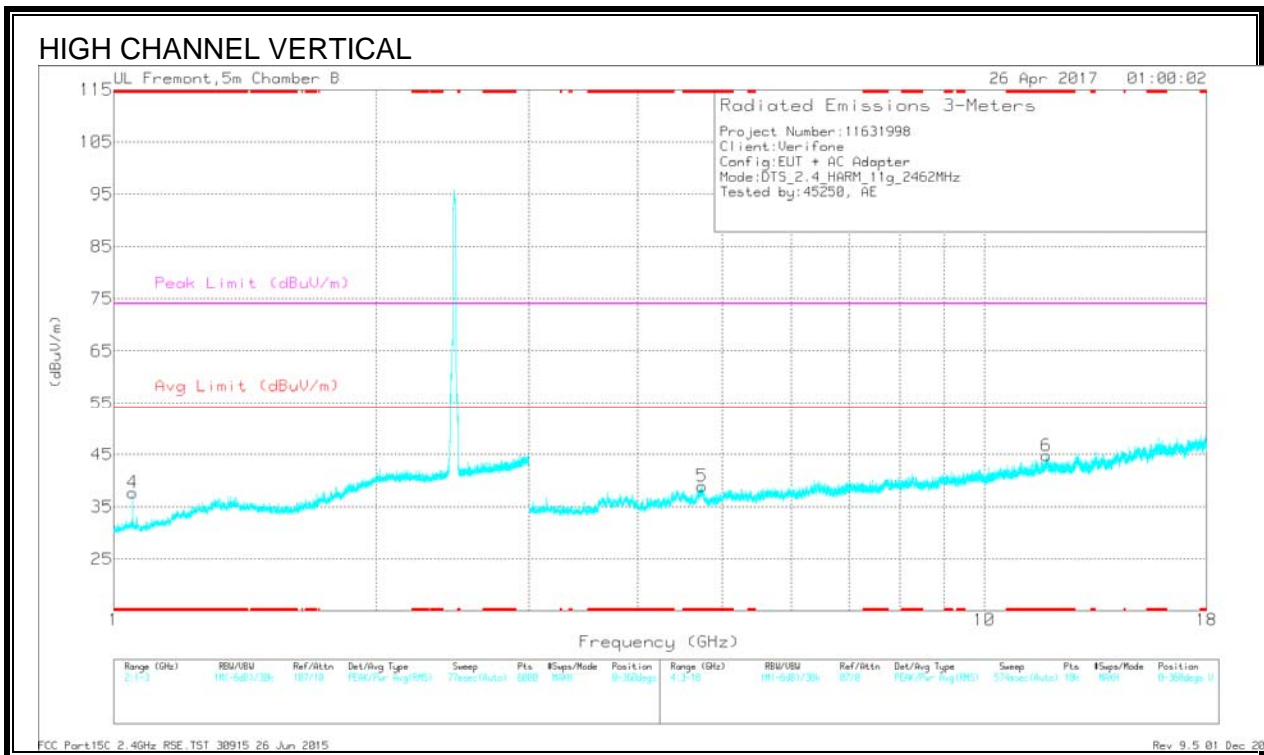
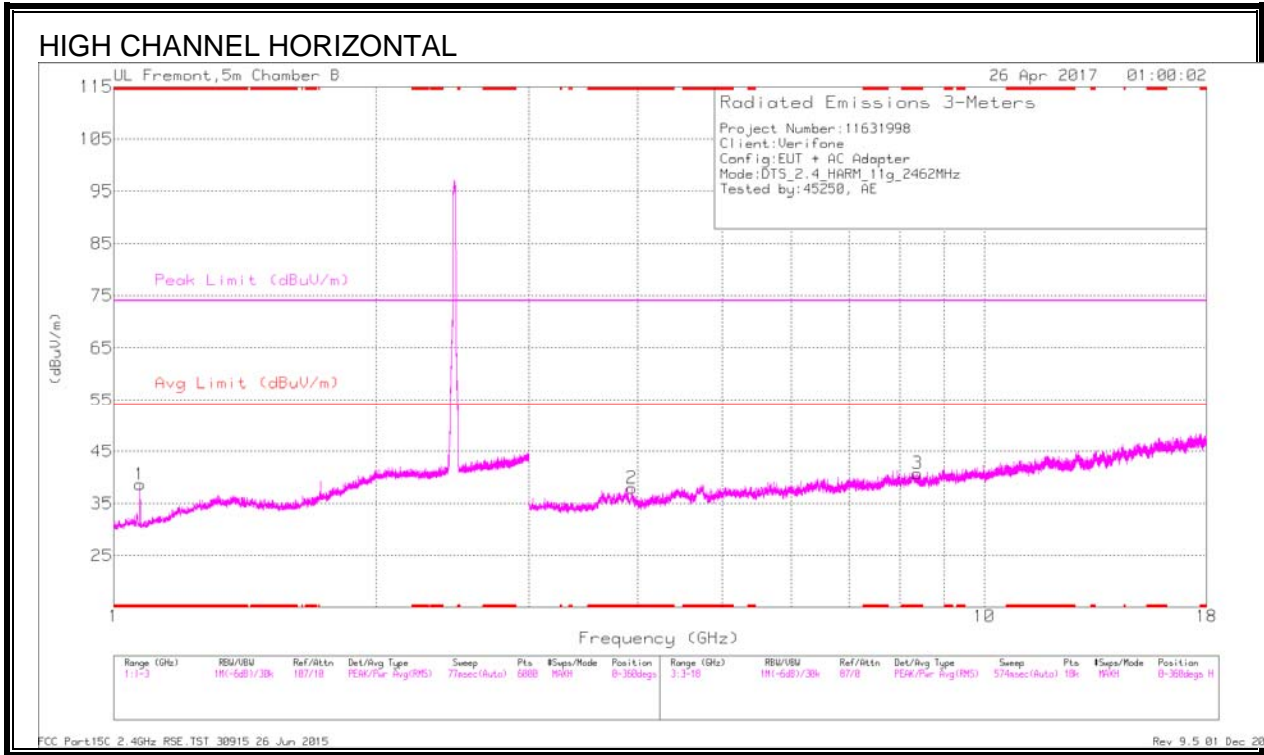
| Frequency (GHz) | Meter Reading (dBuV) | Det | AF T346 (dB/m) | Amp/Cbl/Filtr/Pad (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|------|----------------|------------------------|--------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| * 2.273 | 35.93 | PK2 | 31.8 | -21.2 | 0 | 46.53 | - | - | 74 | -27.47 | 50 | 175 | H |
| * 2.272 | 24.64 | MAV1 | 31.8 | -21.2 | .3 | 35.54 | 54 | -18.46 | - | - | 50 | 175 | H |
| * 1.369 | 36.4 | PK2 | 28.8 | -21.7 | 0 | 43.5 | - | - | 74 | -30.5 | 105 | 218 | V |
| * 1.371 | 23.81 | MAV1 | 28.8 | -21.6 | -.3 | 31.31 | 54 | -22.69 | - | - | 105 | 218 | V |
| * 4.718 | 39.15 | PK2 | 34.4 | -29 | 0 | 44.55 | - | - | 74 | -29.45 | 230 | 202 | H |
| * 4.718 | 28.26 | MAV1 | 34.4 | -29 | .3 | 33.96 | 54 | -20.04 | - | - | 230 | 202 | H |
| * 8.277 | 36.11 | PK2 | 36.5 | -25.4 | 0 | 47.21 | - | - | 74 | -26.79 | 171 | 187 | H |
| * 8.28 | 25.13 | MAV1 | 36.5 | -25.3 | .3 | 36.63 | 54 | -17.37 | - | - | 171 | 187 | H |
| * 3.81 | 39.83 | PK2 | 33.7 | -30.2 | 0 | 43.33 | - | - | 74 | -30.67 | 123 | 199 | V |
| * 3.809 | 28.93 | MAV1 | 33.7 | -30.2 | .3 | 32.73 | 54 | -21.27 | - | - | 123 | 199 | V |
| * 7.699 | 35.91 | PK2 | 36.5 | -25.8 | 0 | 46.61 | - | - | 74 | -27.39 | 326 | 153 | V |
| * 7.701 | 24.91 | MAV1 | 36.5 | -25.9 | -.3 | 35.81 | 54 | -18.19 | - | - | 326 | 153 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAV1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS HIGH CHANNEL, CH 11)



Radiated Emissions

| Frequency (GHz) | Meter Reading (dBuV) | Det | AF T346 (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 |
|-----------------|----------------------|------|----------------|------------------------|--------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| * 1.072 | 35.17 | PK2 | 26.4 | -23 | 0 | 38.57 | - | - | 74 | -35.43 | 345 | 119 | H |
| * 1.071 | 23.17 | MAv1 | 26.4 | -23 | .3 | 26.87 | 54 | -27.13 | - | - | 345 | 119 | H |
| * 1.052 | 35.41 | PK2 | 26.4 | -23 | 0 | 38.81 | - | - | 74 | -35.19 | 309 | 168 | V |
| * 1.05 | 23.75 | MAv1 | 26.4 | -23 | .3 | 27.45 | 54 | -26.55 | - | - | 309 | 168 | V |
| * 3.935 | 39.47 | PK2 | 33.7 | -29.9 | 0 | 43.27 | - | - | 74 | -30.73 | 236 | 199 | H |
| * 3.936 | 28.59 | MAv1 | 33.7 | -29.9 | .3 | 32.69 | 54 | -21.31 | - | - | 236 | 199 | H |
| * 8.376 | 35.74 | PK2 | 36.5 | -26 | 0 | 46.24 | - | - | 74 | -27.76 | 142 | 180 | H |
| * 8.377 | 25.03 | MAv1 | 36.5 | -26 | .3 | 35.83 | 54 | -18.17 | - | - | 142 | 180 | H |
| * 4.74 | 39.82 | PK2 | 34.4 | -28.6 | 0 | 45.62 | - | - | 74 | -28.38 | 99 | 321 | V |
| * 4.742 | 28.61 | MAv1 | 34.4 | -28.6 | .3 | 34.71 | 54 | -19.29 | - | - | 99 | 321 | V |
| * 11.777 | 33.22 | PK2 | 39.4 | -22.5 | 0 | 50.12 | - | - | 74 | -23.88 | 46 | 118 | V |
| * 11.776 | 22.28 | MAv1 | 39.4 | -22.5 | .3 | 39.48 | 54 | -14.52 | - | - | 46 | 118 | V |

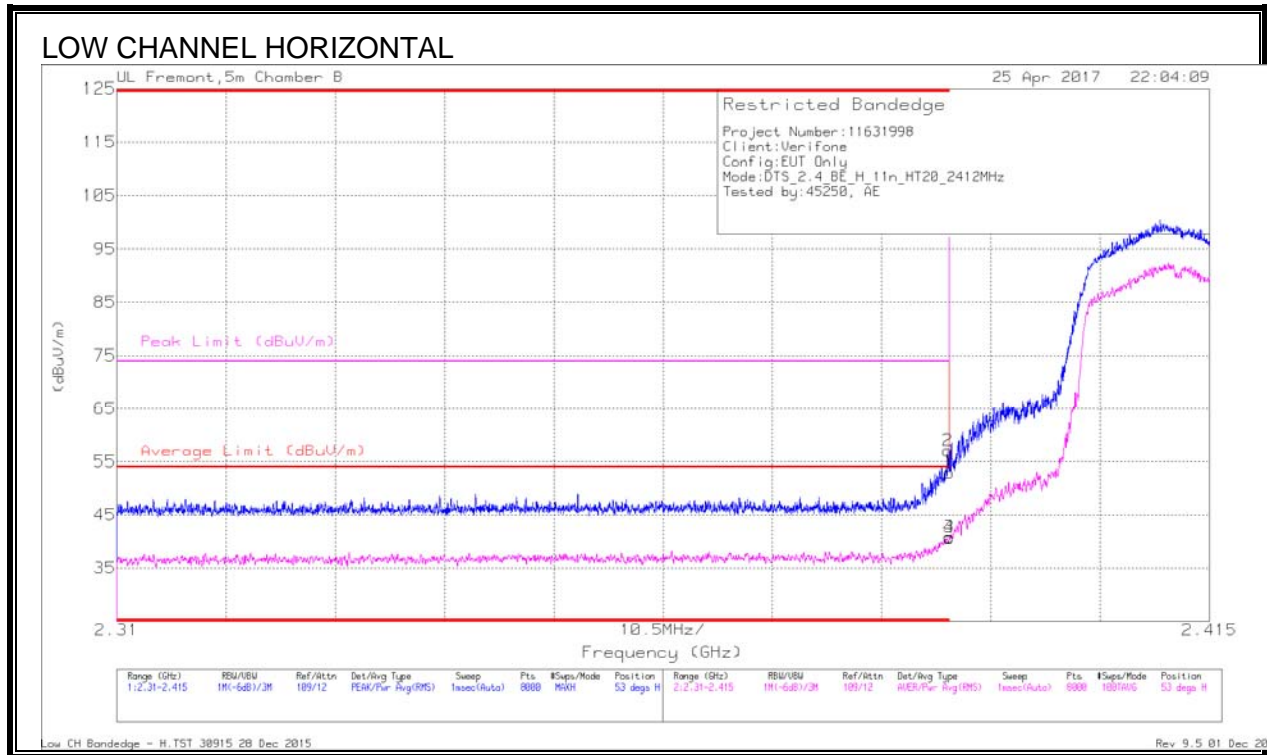
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

10.4.3. 11n HT20 SISO MODE IN THE 2.4GHz BAND

BANDEDGE (LOW CHANNEL, CH 1)

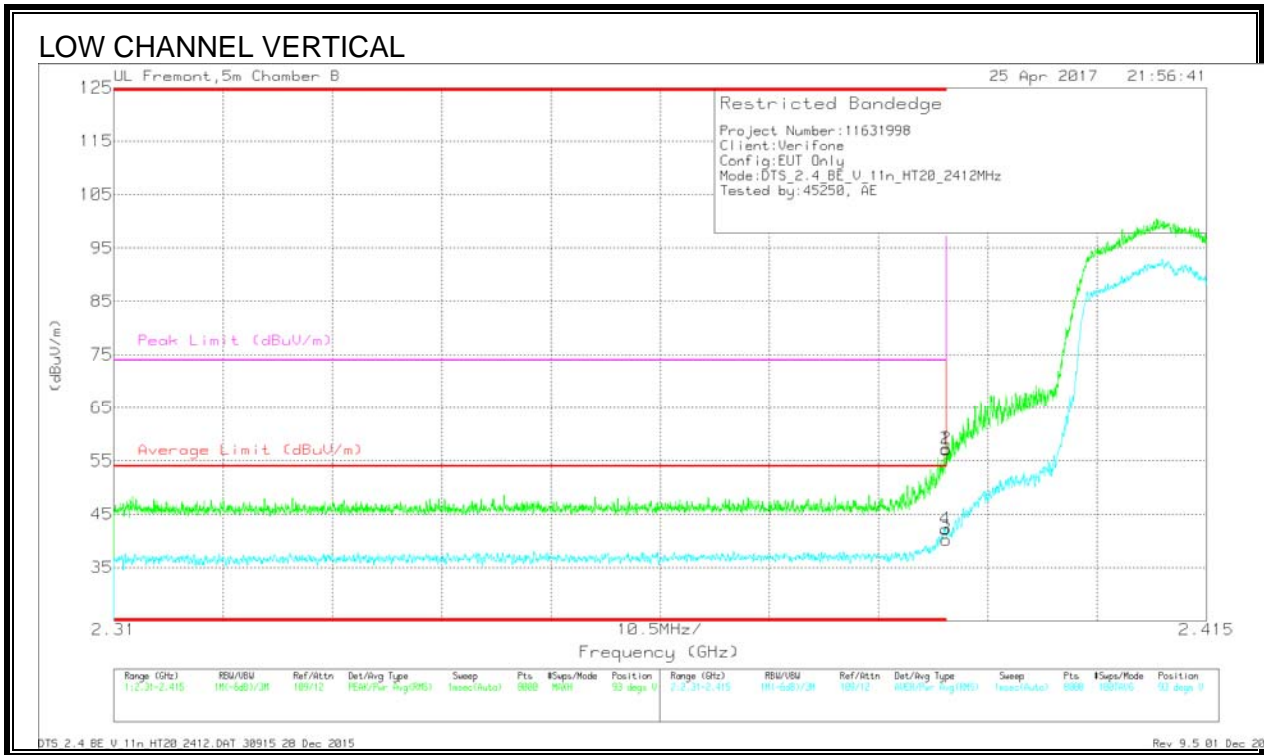


| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | Af T346 (dB/m) | Amp/Ch/Ftr/Pad (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|----------------|---------------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * 2.39 | 42.27 | Pk | 32 | -21.3 | 0 | 52.97 | - | - | 74 | -21.03 | 53 | 142 | H |
| 2 | * 2.39 | 46.34 | Pk | 32 | -21.3 | 0 | 57.04 | - | - | 74 | -16.96 | 53 | 142 | H |
| 3 | * 2.39 | 29.75 | RMS | 32 | -21.3 | .32 | 40.77 | 54 | -13.23 | - | - | 53 | 142 | H |
| 4 | * 2.39 | 29.67 | RMS | 32 | -21.3 | .32 | 40.69 | 54 | -13.31 | - | - | 53 | 142 | H |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection



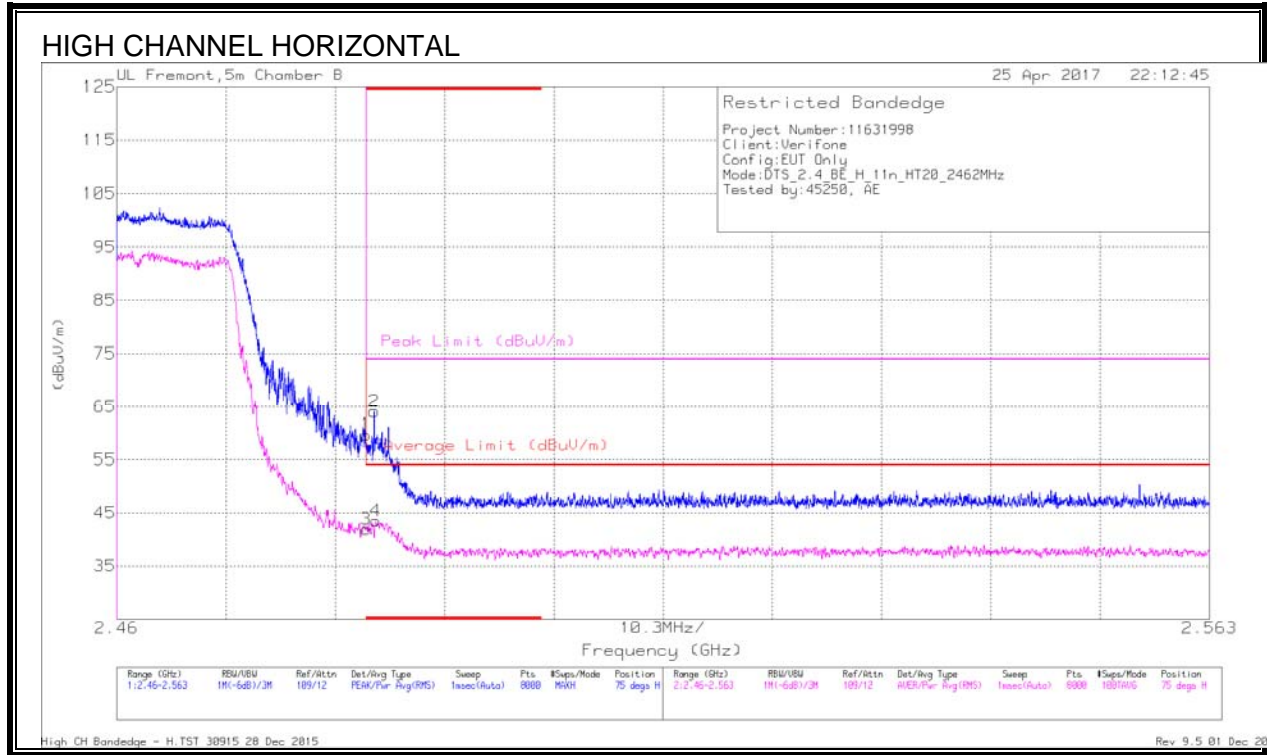
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF T346 (dB/m) | Amp/Ch/Filt/Pad (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Asimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|----------------|----------------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * 2.39 | 46.39 | Pk | 32 | -21.3 | 0 | 57.09 | - | - | 74 | -16.91 | 93 | 110 | V |
| 2 | * 2.39 | 46.54 | Pk | 32 | -21.3 | 0 | 57.24 | - | - | 74 | -16.76 | 93 | 110 | V |
| 3 | * 2.39 | 29.54 | RMS | 32 | -21.3 | .32 | 40.56 | 54 | -13.44 | - | - | 93 | 110 | V |
| 4 | * 2.39 | 31.48 | RMS | 32 | -21.3 | .32 | 42.5 | 54 | -11.5 | - | - | 93 | 110 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection

BANDEDGE (HIGH CHANNEL, CH 11)

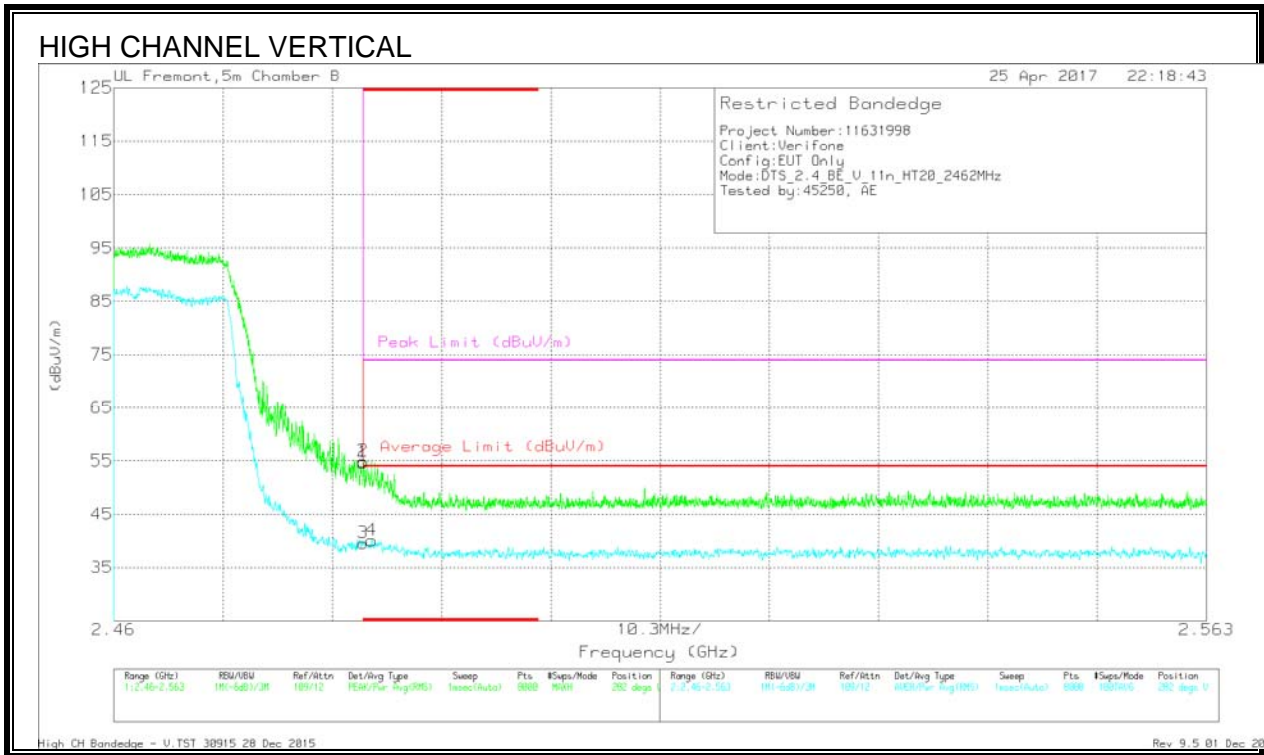


| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF T346 (dB/m) | Amp/Cb/Ftr/Pad (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|----------------|---------------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * 2.484 | 48.77 | PK | 32.1 | -21.2 | 0 | 59.67 | - | - | 74 | -14.33 | 75 | 265 | H |
| 2 | * 2.484 | 53.18 | PK | 32.1 | -21.2 | 0 | 64.08 | - | - | 74 | -9.92 | 75 | 265 | H |
| 3 | * 2.484 | 30.67 | RMS | 32.1 | -21.2 | .32 | 41.89 | 54 | -12.11 | - | - | 75 | 265 | H |
| 4 | * 2.484 | 32.25 | RMS | 32.1 | -21.2 | .32 | 43.47 | 54 | -10.53 | - | - | 75 | 265 | H |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK - Peak detector

RMS - RMS detection



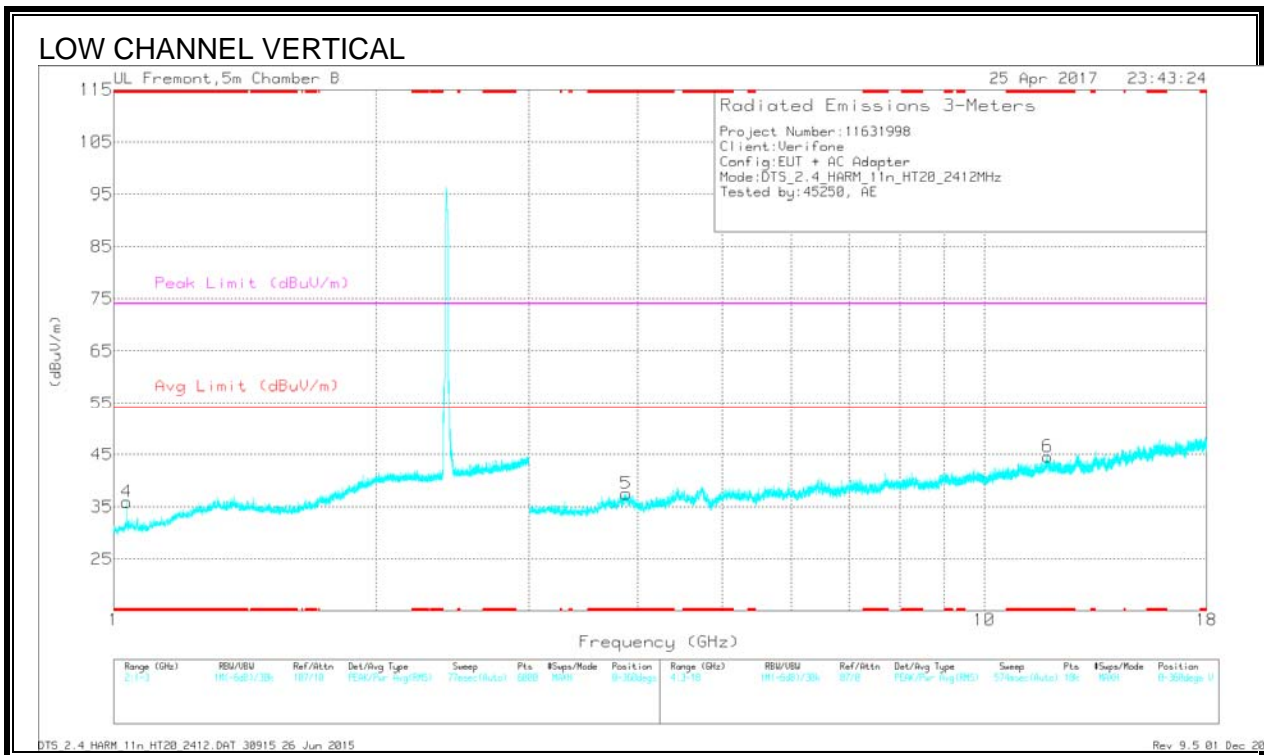
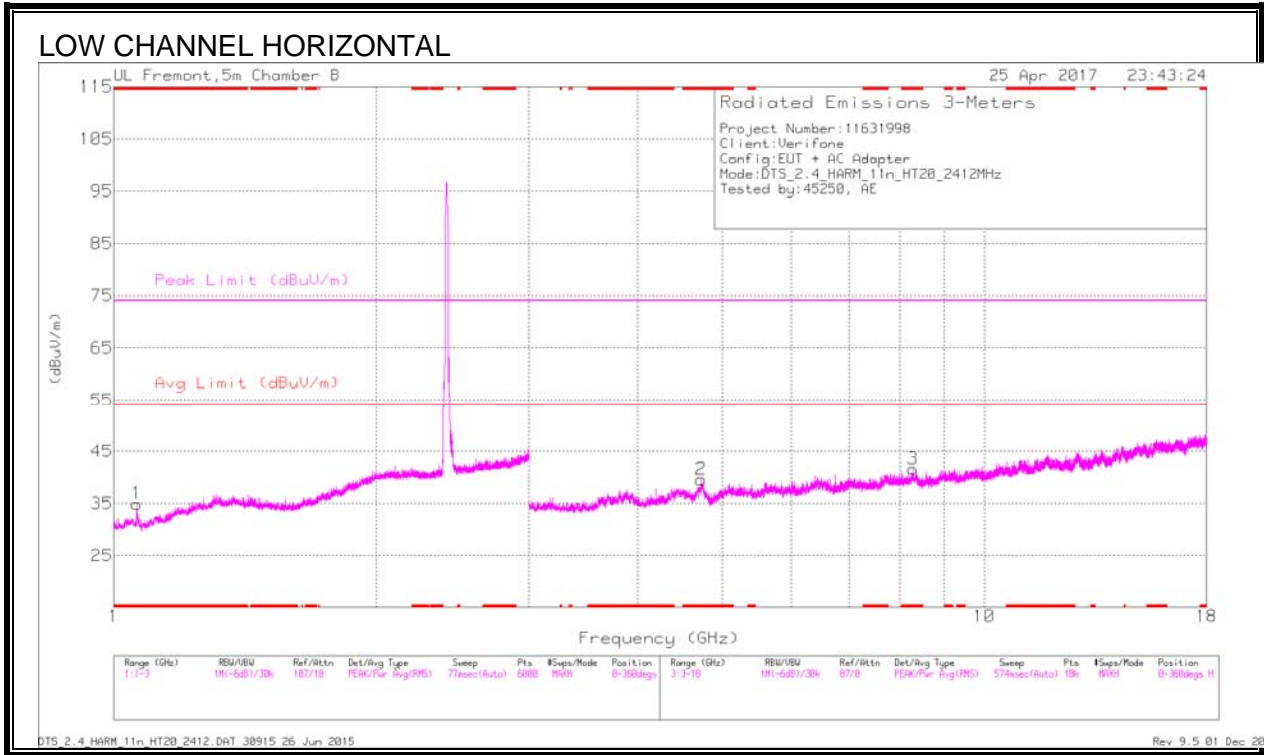
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | Af T346 (dB/m) | Amp/Ch/Filt/Pad (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Asimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|----------------|----------------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * 2.484 | 43.77 | Pk | 32.1 | -21.2 | 0 | 54.67 | - | - | 74 | -19.33 | 282 | 268 | V |
| 2 | * 2.484 | 43.98 | Pk | 32.1 | -21.2 | 0 | 54.88 | - | - | 74 | -19.12 | 282 | 268 | V |
| 3 | * 2.484 | 28.35 | RMS | 32.1 | -21.2 | .32 | 39.57 | 54 | -14.43 | - | - | 282 | 268 | V |
| 4 | * 2.484 | 28.81 | RMS | 32.1 | -21.2 | .32 | 40.03 | 54 | -13.97 | - | - | 282 | 268 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS LOW CHANNEL, CH 1)



Radiated Emissions

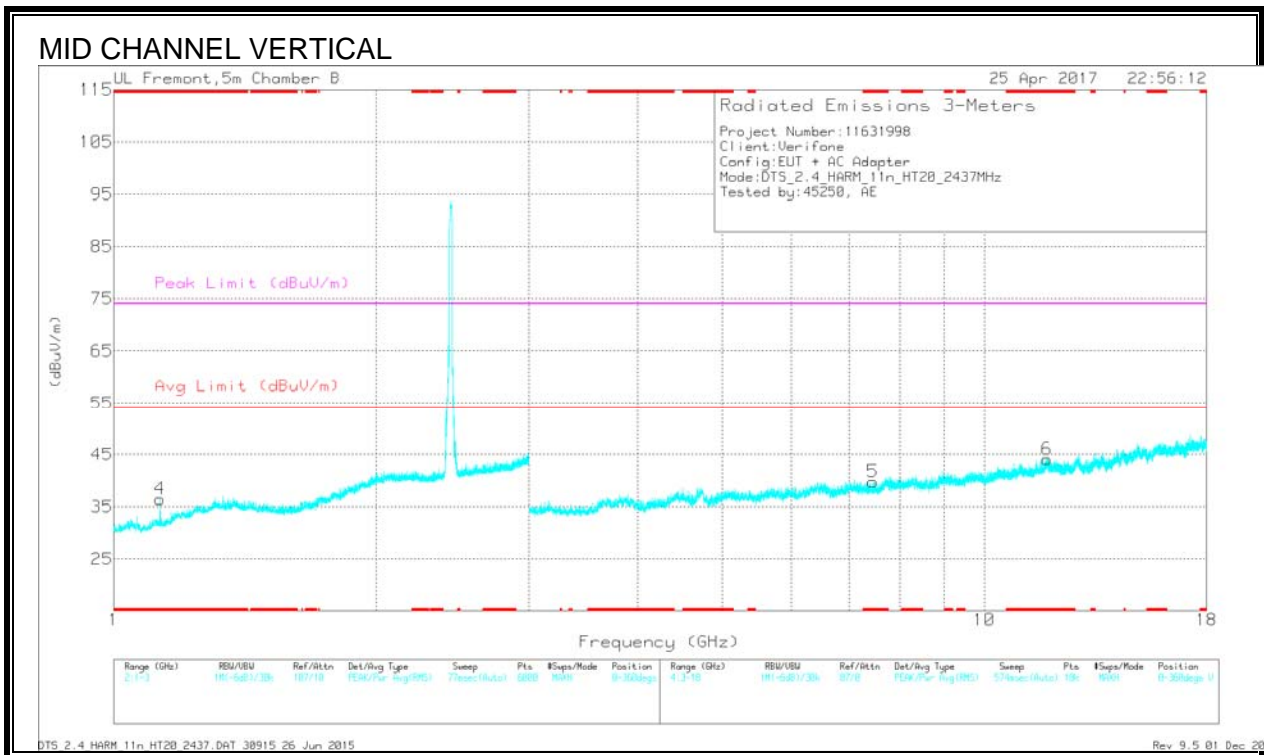
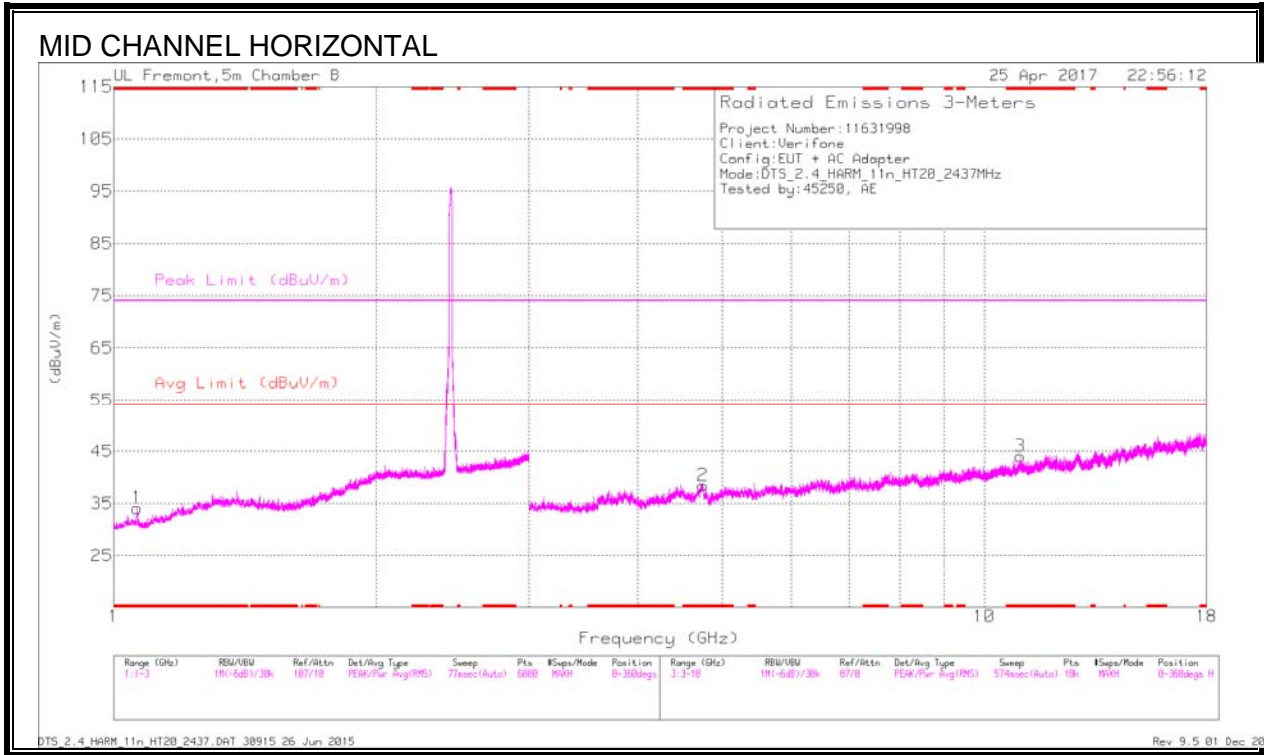
| Frequency (GHz) | Meter Reading (dBuV) | Det | AF T346 (dB/m) | Amp/Cbl/Filtr/Pad (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|------|----------------|------------------------|--------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| * 1.063 | 35.7 | PK2 | 26.4 | -23 | 0 | 39.1 | - | - | 74 | -34.9 | 65 | 135 | H |
| * 1.063 | 25.59 | MAV1 | 26.4 | -23 | .32 | 29.31 | 54 | -24.69 | - | - | 65 | 135 | H |
| * 1.034 | 35.19 | PK2 | 26.4 | -23.4 | 0 | 38.19 | - | - | 74 | -35.81 | 178 | 227 | V |
| * 1.035 | 23.95 | MAV1 | 26.4 | -23.4 | .32 | 27.27 | 54 | -26.73 | - | - | 178 | 227 | V |
| * 4.728 | 39.34 | PK2 | 34.4 | -28.8 | 0 | 44.94 | - | - | 74 | -29.06 | 244 | 194 | H |
| * 4.729 | 28.56 | MAV1 | 34.4 | -28.8 | .32 | 34.48 | 54 | -19.52 | - | - | 244 | 194 | H |
| * 8.277 | 36.41 | PK2 | 36.5 | -25.4 | 0 | 47.51 | - | - | 74 | -26.49 | 173 | 307 | H |
| * 8.279 | 25.46 | MAV1 | 36.5 | -25.4 | .32 | 36.88 | 54 | -17.12 | - | - | 173 | 307 | H |
| * 3.881 | 39.92 | PK2 | 33.7 | -29.3 | 0 | 44.32 | - | - | 74 | -29.68 | 298 | 252 | V |
| * 3.879 | 28.8 | MAV1 | 33.7 | -29.3 | .32 | 33.52 | 54 | -20.48 | - | - | 298 | 252 | V |
| * 11.82 | 33.22 | PK2 | 39.4 | -22.2 | 0 | 50.42 | - | - | 74 | -23.58 | 359 | 118 | V |
| * 11.819 | 22.28 | MAV1 | 39.4 | -22.1 | .32 | 39.9 | 54 | -14.1 | - | - | 359 | 118 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAV1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS MID CHANNEL, CH 6)



Radiated Emissions

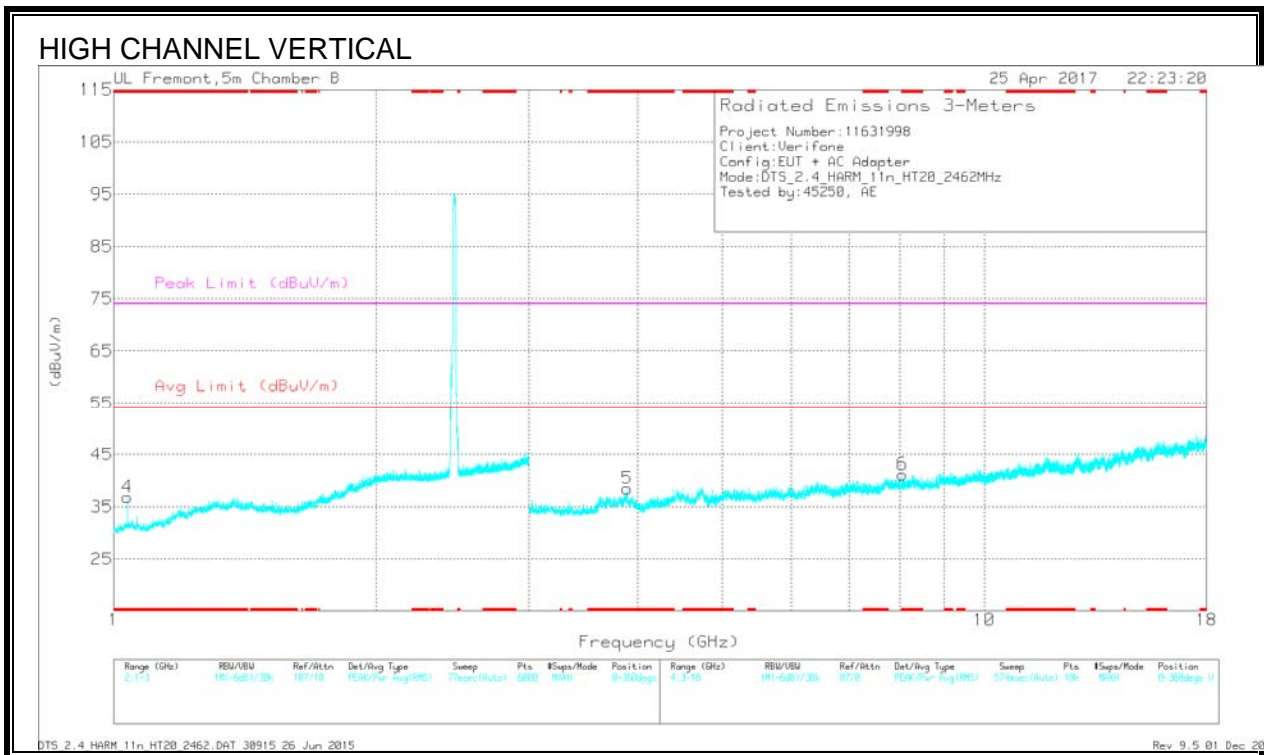
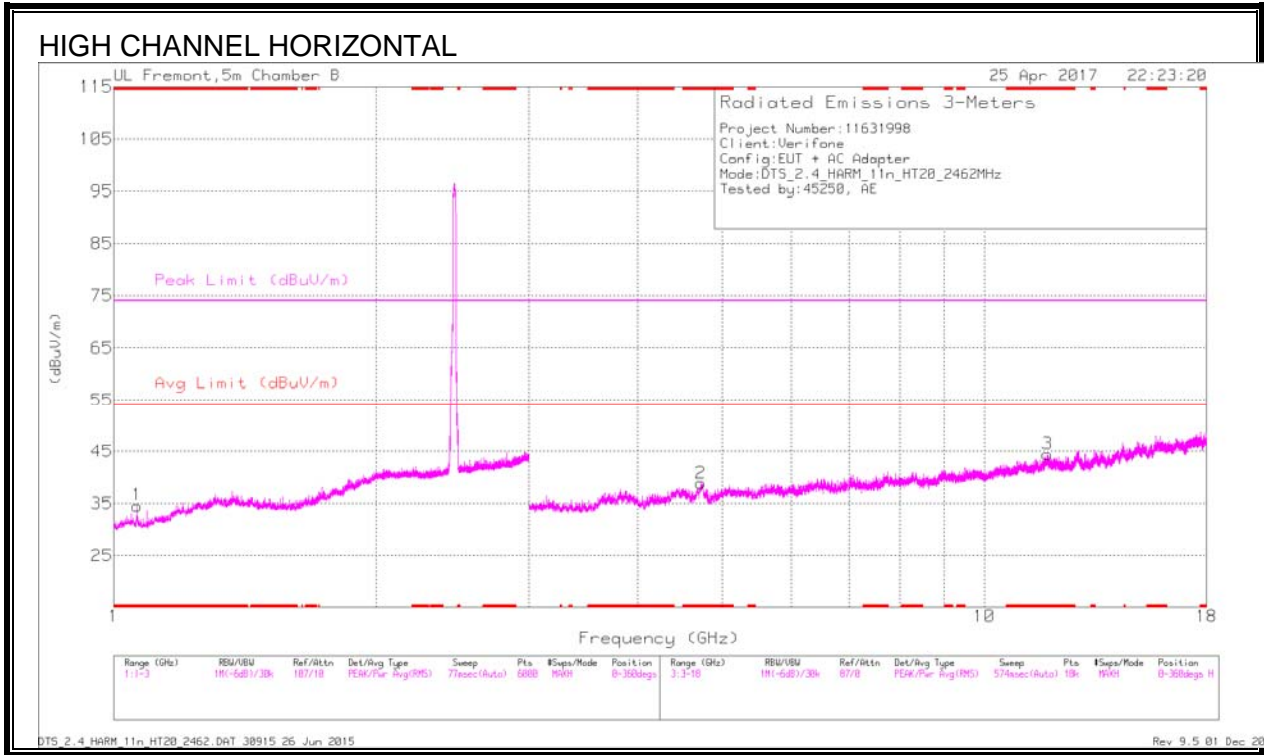
| Frequency (GHz) | Meter Reading (dBuV) | Det | AF T346 (dB/m) | Amp/Cbl/Fitr/Pad (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|------|----------------|-----------------------|--------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| * 1.064 | 36.13 | PK2 | 26.4 | -22.9 | 0 | 39.63 | - | - | 74 | -34.37 | 42 | 135 | H |
| * 1.064 | 26.17 | MAV1 | 26.4 | -22.9 | .32 | 29.99 | 54 | -24.01 | - | - | 42 | 135 | H |
| * 1.13 | 34.5 | PK2 | 26.8 | -22.8 | 0 | 38.5 | - | - | 74 | -35.5 | 115 | 160 | V |
| * 1.132 | 23.37 | MAV1 | 26.8 | -22.6 | .32 | 27.89 | 54 | -26.11 | - | - | 115 | 160 | V |
| * 4.753 | 39.08 | PK2 | 34.4 | -28.5 | 0 | 44.98 | - | - | 74 | -29.02 | 215 | 199 | H |
| * 4.752 | 28.58 | MAV1 | 34.4 | -28.5 | .32 | 34.8 | 54 | -19.2 | - | - | 215 | 199 | H |
| * 10.997 | 33.61 | PK2 | 38.5 | -22.8 | 0 | 49.31 | - | - | 74 | -24.69 | 310 | 154 | H |
| * 10.994 | 22.52 | MAV1 | 38.5 | -22.8 | .32 | 38.54 | 54 | -15.46 | - | - | 310 | 154 | H |
| * 7.447 | 36.24 | PK2 | 36.1 | -26.8 | 0 | 45.54 | - | - | 74 | -28.46 | 249 | 247 | V |
| * 7.45 | 25.59 | MAV1 | 36.1 | -26.7 | .32 | 35.31 | 54 | -18.69 | - | - | 249 | 247 | V |
| * 11.808 | 33.23 | PK2 | 39.5 | -22.1 | 0 | 50.63 | - | - | 74 | -23.37 | 61 | 161 | V |
| * 11.808 | 21.99 | MAV1 | 39.5 | -22.1 | .32 | 39.71 | 54 | -14.29 | - | - | 61 | 161 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAV1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS HIGH CHANNEL, CH 11)



Radiated Emissions

| Frequency (GHz) | Meter Reading (dBuV) | Det | AF T346 (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 |
|-----------------|----------------------|------|----------------|------------------------|--------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| * 1.065 | 35.95 | PK2 | 26.4 | -22.9 | 0 | 39.45 | - | - | 74 | -34.55 | 30 | 369 | H |
| * 1.064 | 25.44 | MAV1 | 26.4 | -22.9 | .32 | 29.26 | 54 | -24.74 | - | - | 30 | 369 | H |
| * 1.038 | 35.3 | PK2 | 26.4 | -23.4 | 0 | 38.3 | - | - | 74 | -35.7 | 106 | 386 | V |
| * 1.038 | 23.46 | MAV1 | 26.4 | -23.4 | .32 | 26.78 | 54 | -27.22 | - | - | 106 | 386 | V |
| * 4.73 | 39.56 | PK2 | 34.4 | -28.8 | 0 | 45.16 | - | - | 74 | -28.84 | 174 | 286 | H |
| * 4.73 | 28.57 | MAV1 | 34.4 | -28.8 | .32 | 34.49 | 54 | -19.51 | - | - | 174 | 286 | H |
| * 11.816 | 32.49 | PK2 | 39.5 | -22.1 | 0 | 49.89 | - | - | 74 | -24.11 | 261 | 224 | H |
| * 11.817 | 22.2 | MAV1 | 39.5 | -22.1 | .32 | 39.92 | 54 | -14.08 | - | - | 261 | 224 | H |
| * 3.89 | 38.92 | PK2 | 33.7 | -29.5 | 0 | 43.12 | - | - | 74 | -30.88 | 96 | 127 | V |
| * 3.889 | 28.17 | MAV1 | 33.7 | -29.4 | .32 | 32.79 | 54 | -21.21 | - | - | 96 | 127 | V |
| * 8.058 | 36.39 | PK2 | 36.5 | -26.2 | 0 | 46.69 | - | - | 74 | -27.31 | 27 | 150 | V |
| * 8.057 | 24.99 | MAV1 | 36.5 | -26.2 | .32 | 35.61 | 54 | -18.39 | - | - | 27 | 150 | V |

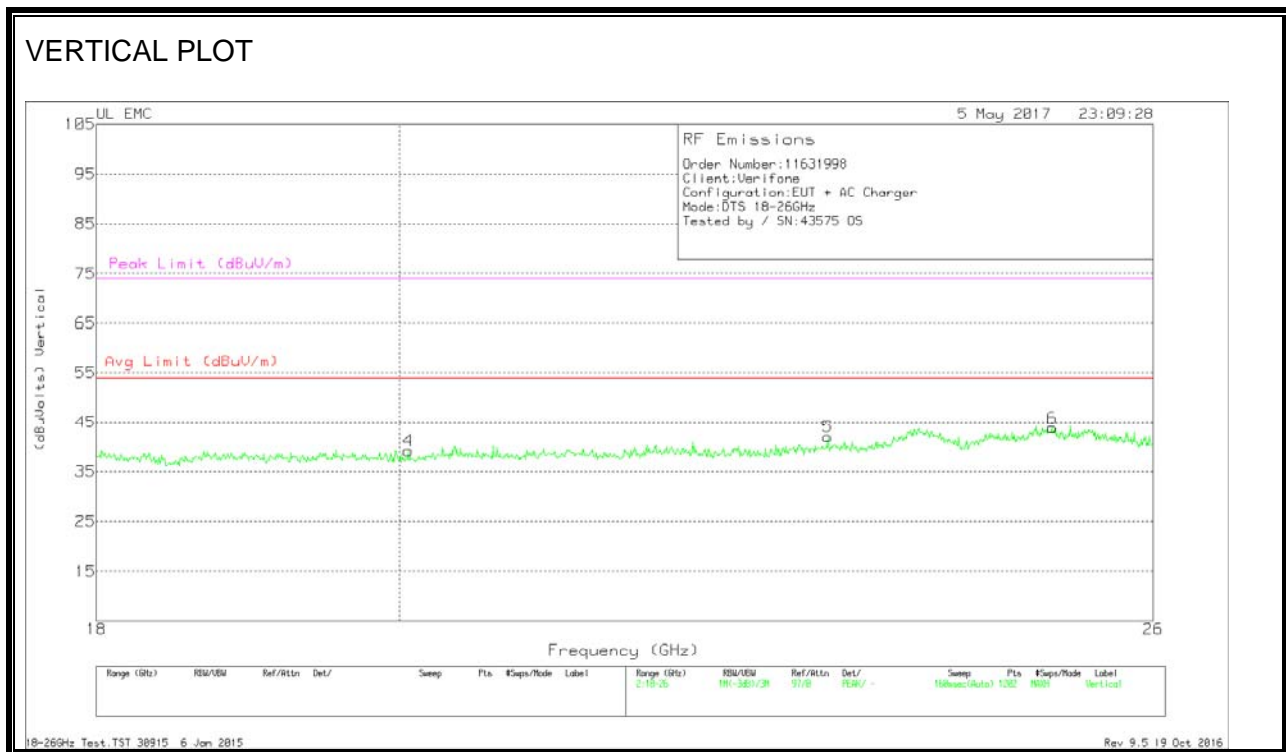
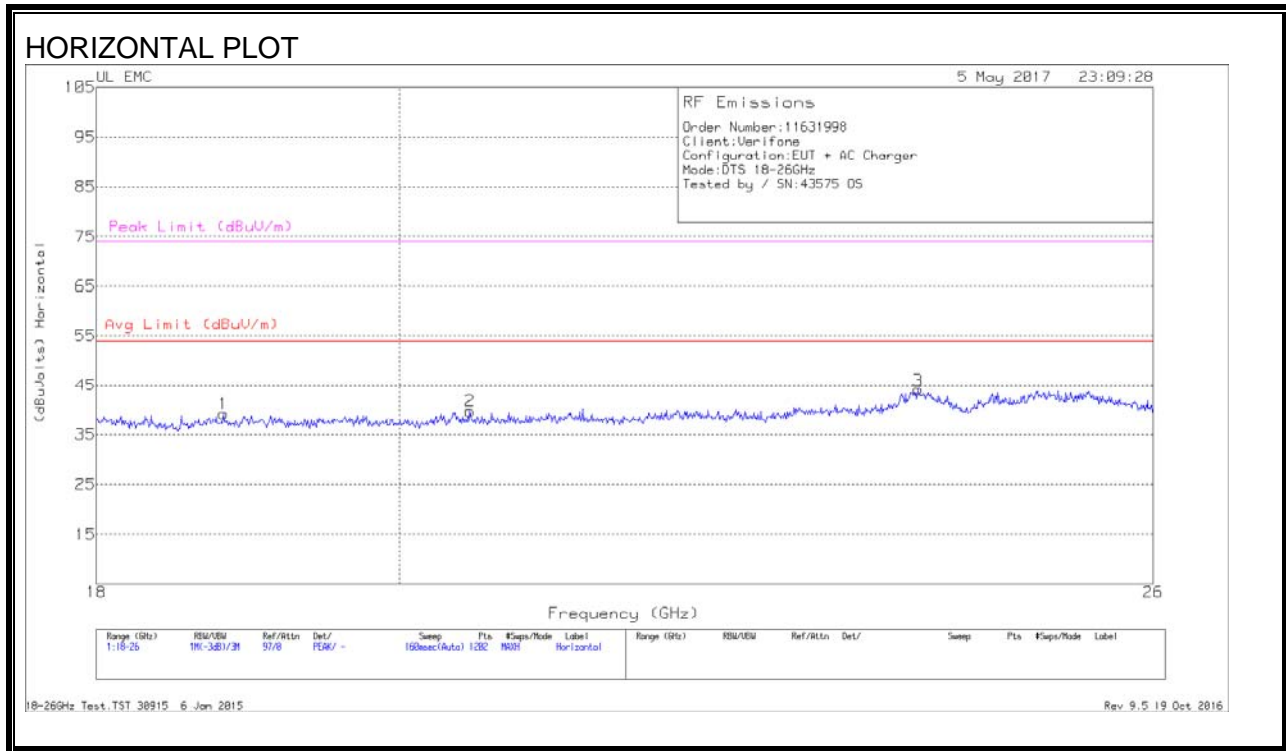
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAV1 - KDB558074 Option 1 Maximum RMS Average

10.5. WORST-CASE 18 to 26 GHz

SPURIOUS EMISSIONS 18 TO 26 GHz (WORST-CASE CONFIGURATION, HORIZONTAL & VERTICAL)



Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF T449 (dB/m) | Amp/Cbl (dB) | Dist Corr (dB) | Corrected Reading (dBuVolts) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) |
|--------|-----------------|----------------------|-----|----------------|--------------|----------------|------------------------------|--------------------|-------------|---------------------|----------------|
| 1 | 18.813 | 41.17 | Pk | 32.4 | -24.9 | -9.5 | 39.16 | 54 | -14.83 | 74 | -34.83 |
| 2 | 20.498 | 41.37 | Pk | 32.9 | -25.1 | -9.5 | 39.66 | 54 | -14.33 | 74 | -34.33 |
| 3 | 23.955 | 43.8 | Pk | 34 | -24.3 | -9.5 | 44 | 54 | -10 | 74 | -30 |
| 4 | 20.065 | 40.97 | Pk | 32.7 | -25 | -9.5 | 39.16 | 54 | -14.83 | 74 | -34.83 |
| 5 | 23.216 | 43 | Pk | 33.5 | -25 | -9.5 | 42 | 54 | -12 | 74 | -32 |
| 6 | 25.101 | 43.43 | Pk | 34.3 | -24.4 | -9.5 | 43.83 | 54 | -10.16 | 74 | -30.16 |

Pk - Peak detector

11. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)
RSS-Gen 8.8

| Frequency of Emission (MHz) | Conducted Limit (dBµV) | |
|-----------------------------|------------------------|------------|
| | 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.

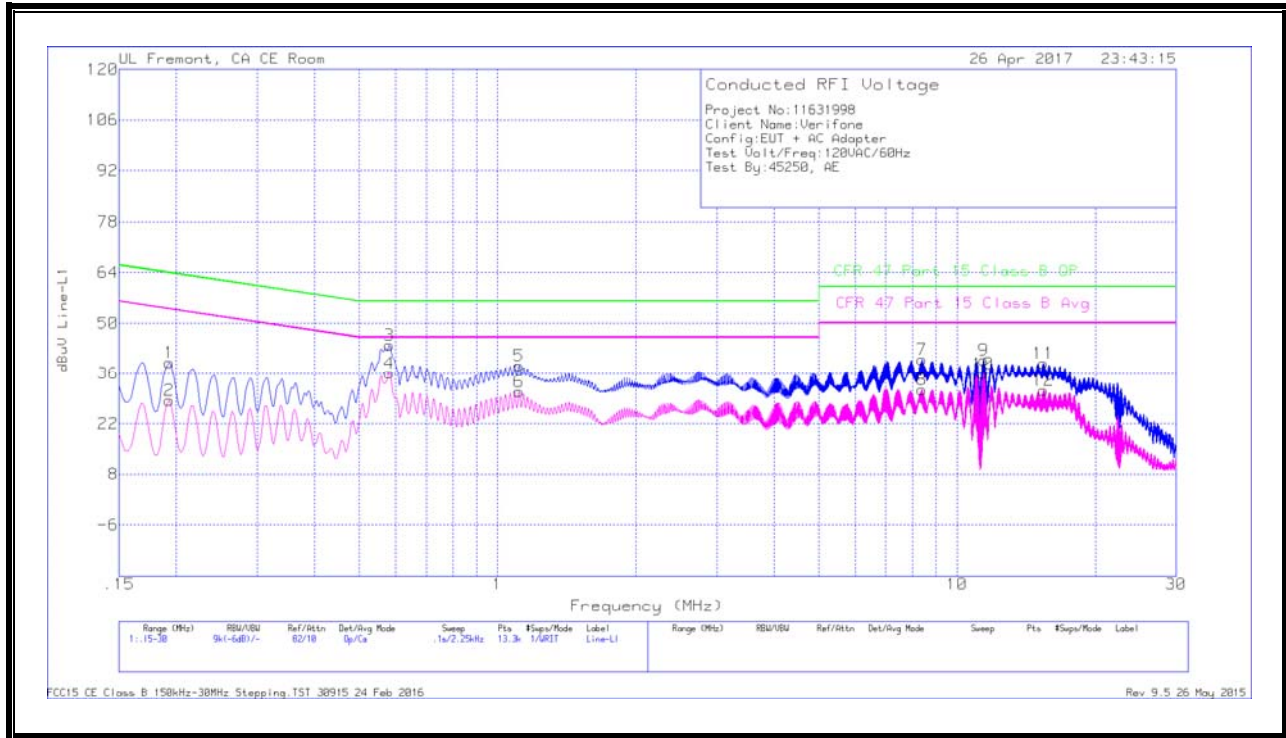
TEST PROCEDURE

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 C63.10.

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.

LINE 1 RESULTS

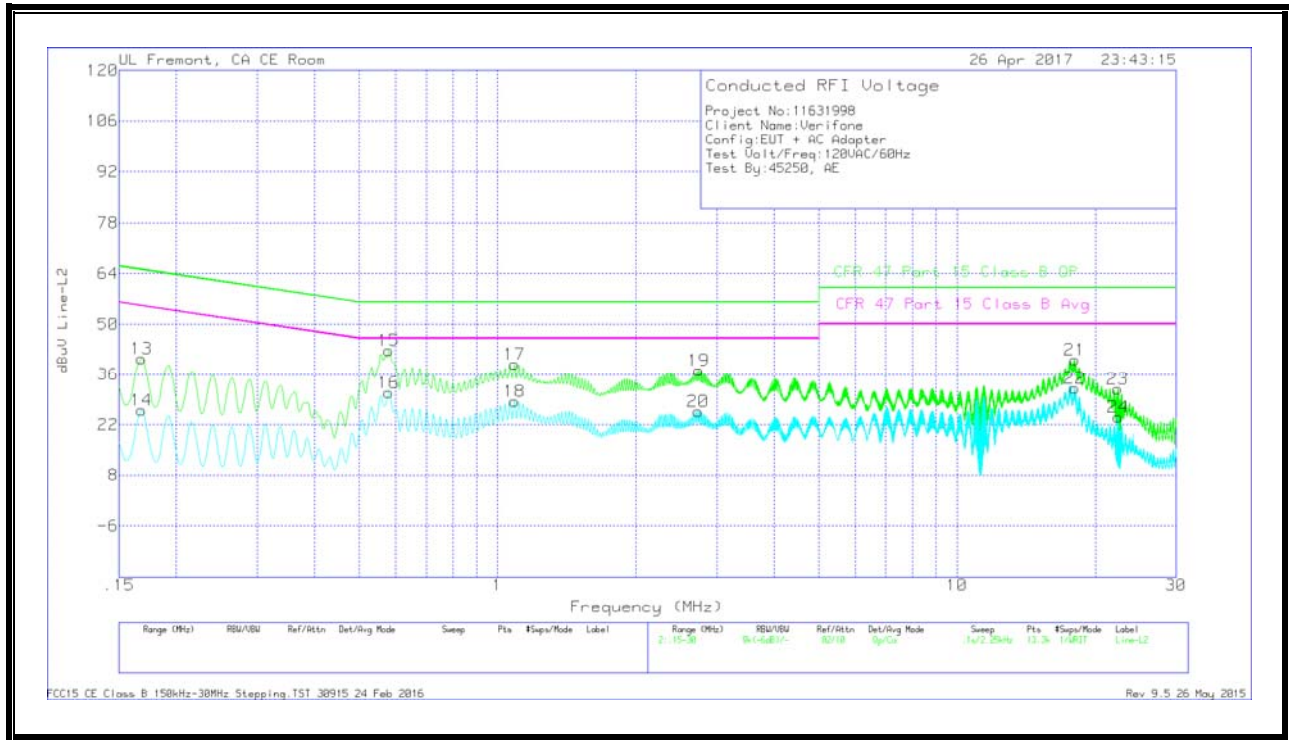


WORST EMISSIONS

| Range 1: Line-L1 .15 - 30MHz | | | | | | | | | | | |
|------------------------------|-----------------|----------------------|-----|---------|-----------------|--------------|------------------------|---------------------------|----------------|----------------------------|-----------------------|
| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | LISN L1 | LC Cables C1&C3 | Limiter (dB) | Corrected Reading dBuV | CFR 47 Part 15 Class B QP | QP Margin (dB) | CFR 47 Part 15 Class B Avg | Av(CISPR) Margin (dB) |
| 1 | .19275 | 28.77 | Qp | 0 | .1 | 10.1 | 38.97 | 63.92 | -24.95 | - | - |
| 2 | .19275 | 18.25 | Ca | 0 | .1 | 10.1 | 28.45 | - | - | 53.92 | -25.47 |
| 3 | .582 | 33.74 | Qp | 0 | .1 | 10.1 | 43.94 | 56 | -12.06 | - | - |
| 4 | .582 | 25.97 | Ca | 0 | .1 | 10.1 | 36.17 | - | - | 46 | -9.83 |
| 5 | 1.113 | 28.03 | Qp | 0 | .1 | 10.1 | 38.23 | 56 | -17.77 | - | - |
| 6 | 1.113 | 20.71 | Ca | 0 | .1 | 10.1 | 30.91 | - | - | 46 | -15.09 |
| 7 | 8.40525 | 29.45 | Qp | 0 | .2 | 10.2 | 39.85 | 60 | -20.15 | - | - |
| 8 | 8.38275 | 21.08 | Ca | 0 | .2 | 10.2 | 31.48 | - | - | 50 | -18.52 |
| 9 | 11.43375 | 29.32 | Qp | 0 | .2 | 10.2 | 39.72 | 60 | -20.28 | - | - |
| 10 | 11.409 | 25.48 | Ca | 0 | .2 | 10.2 | 35.88 | - | - | 50 | -14.12 |
| 11 | 15.432 | 28.43 | Qp | 0 | .2 | 10.2 | 38.83 | 60 | -21.17 | - | - |
| 12 | 15.432 | 20.88 | Ca | 0 | .2 | 10.2 | 31.28 | - | - | 50 | -18.72 |

Qp - Quasi-Peak detector
 Ca - CISPR average detection

LINE 2 RESULTS



WORST EMISSIONS

| Range 2: Line-L2 .15 - 30MHz | | | | | | | | | | | |
|------------------------------|-----------------|----------------------|-----|---------|-----------------|--------------|------------------------|---------------------------|----------------|----------------------------|-----------------------|
| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | LISN L2 | LC Cables C2&C3 | Limiter (dB) | Corrected Reading dBuV | CFR 47 Part 15 Class B QP | QP Margin (dB) | CFR 47 Part 15 Class B Avg | Av(CISPR) Margin (dB) |
| 13 | .168 | 30.28 | Qp | 0 | 0 | 10.1 | 40.38 | 65.06 | -24.68 | - | - |
| 14 | .168 | 15.89 | Ca | 0 | 0 | 10.1 | 25.99 | - | - | 55.06 | -29.07 |
| 15 | .57975 | 32.52 | Qp | 0 | .1 | 10.1 | 42.72 | 56 | -13.28 | - | - |
| 16 | .57975 | 20.69 | Ca | 0 | .1 | 10.1 | 30.89 | - | - | 46 | -15.11 |
| 17 | 1.08825 | 28.62 | Qp | 0 | .1 | 10.1 | 38.82 | 56 | -17.18 | - | - |
| 18 | 1.08825 | 18.31 | Ca | 0 | .1 | 10.1 | 28.51 | - | - | 46 | -17.49 |
| 19 | 2.7375 | 26.86 | Qp | 0 | .1 | 10.1 | 37.06 | 56 | -18.94 | - | - |
| 20 | 2.73525 | 15.51 | Ca | 0 | .1 | 10.1 | 25.71 | - | - | 46 | -20.29 |
| 21 | 18.02625 | 29.56 | Qp | 0 | .3 | 10.3 | 40.16 | 60 | -19.84 | - | - |
| 22 | 18.051 | 21.5 | Ca | 0 | .3 | 10.3 | 32.1 | - | - | 50 | -17.9 |
| 23 | 22.389 | 21.25 | Qp | 0 | .3 | 10.4 | 31.95 | 60 | -28.05 | - | - |
| 24 | 22.4115 | 13.44 | Ca | 0 | .3 | 10.4 | 24.14 | - | - | 50 | -25.86 |

Qp - Quasi-Peak detector
 Ca - CISPR average detection