NORTHWEST EMC

# ZOLL Medical Corp.

**Zoll CF Card Module**

**FCC 15.407:2016**

**802.11an**

**Report # LGPD0188**

NVLAP Lab Code: 200881-0

# CERTIFICATE OF TEST

NORTHWEST EMC
2014-12-10

**Last Date of Test: April 22, 2016**
**ZOLL Medical Corp.**
**Model:Zoll CF Card Module**

## Radio Equipment Testing

### Standards

| Specification | Method |
|---|---|
| FCC 15.407:2016 | ANSI C63.10:2013 |

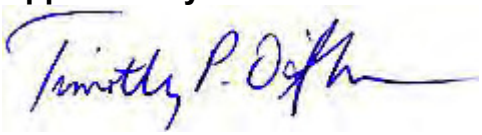
### Results

| Method Clause | Test Description | Applied | Results | Comments |
|---|---|---|---|---|
| 6.2 | Powerline Conducted Emissions | No | N/A | Not required for testing the new UNII rule changes. |
| 6.5, 6.6, 12.7 | Spurious Radiated Emissions | Yes | Pass | |
| 6.8 | Frequency Stability | Yes | Pass | |
| 12.2 | Duty Cycle | Yes | Pass | |
| 12.3.2.4 | Maximum Conducted Output Power | Yes | Pass | |
| 12.4.1 | Emission Bandwidth | No | N/A | Not tested. Applicable to the 5.2, 5.3 and 5.6 GHz bands only. |
| 12.4.2 | Occupied Bandwidth | Yes | Pass | |
| 12.4.2 | Band Edge | Yes | Pass | |
| 12.5 | Maximum Power Spectral Density | Yes | Pass | |
| KDB 789033 -H | Measurement of Emission at Elevation Angle Higher Than 30 Degrees From Horizon | No | N/A | Not required unless the EUT is a Master device used outdoors. |

### Deviations From Test Standards

None

### Approved By:



*Tim O'Shea, Operations Manager*

***Product compliance is the responsibility of the client; therefore, the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test. This report reflects only those tests from the referenced standards shown in the certificate of test. It does not include inspection or verification of labels, identification, marking or user information.***

# REVISION HISTORY

NORTHWEST EMC
REV 2014.10.14

| Revision Number | Description | Date | Page Number |
|---|---|---|---|
| 00 | None | | |

# ACCREDITATIONS AND AUTHORIZATIONS

NORTHWEST EMC
REV 2016.3.22

## United States

**FCC** - Designated by the FCC as a Telecommunications Certification Body (TCB). Certification chambers, Open Area Test Sites, and conducted measurement facilities are listed with the FCC.

**A2LA** - Accredited by A2LA to ISO / IEC 17065 as a product certifier. This allows Northwest EMC to certify transmitters to FCC and IC specifications.

**NVLAP** - Each laboratory is accredited by NVLAP to ISO 17025

## Canada

**IC** - Recognized by Industry Canada as a Certification Body (CB). Certification chambers and Open Area Test Sites are filed with IC.

## European Union

**European Commission** – Validated by the European Commission as a Notified Body under the R&TTE Directive.

## Australia/New Zealand

**ACMA** - Recognized by ACMA as a CAB for the acceptance of test data.

## Korea

**MSIP / RRA** - Recognized by KCC's RRA as a CAB for the acceptance of test data.

## Japan

**VCCI** - Associate Member of the VCCI. Conducted and radiated measurement facilities are registered.

## Taiwan

**BSMI** – Recognized by BSMI as a CAB for the acceptance of test data.

**NCC** - Recognized by NCC as a CAB for the acceptance of test data.

## Singapore

**IDA** – Recognized by IDA as a CAB for the acceptance of test data.

## Israel

**MOC** – Recognized by MOC as a CAB for the acceptance of test data.

## Hong Kong

**OFCA** – Recognized by OFCA as a CAB for the acceptance of test data.

## Vietnam

**MIC** – Recognized by MIC as a CAB for the acceptance of test data.

## SCOPE

For details on the Scopes of our Accreditations, please visit:
http://www.nwemc.com/accreditations/
http://gsi.nist.gov/global/docs/cabs/designations.html

# MEASUREMENT UNCERTAINTY

TMU.2015.07.10

## Measurement Uncertainty

When a measurement is made, the result will be different from the true or theoretically correct value. The difference is the result of tolerances in the measurement system that cannot be completely eliminated. To the extent that technology allows us, it has been our aim to minimize this error. Measurement uncertainty is a statistical expression of measurement error qualified by a probability distribution.

A measurement uncertainty estimation has been performed for each test per our internal quality document QM205.4.6. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) can be found included as part of the applicable test description page. Our measurement data meets or exceeds the measurement uncertainty requirements of the applicable specification; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for estimating measurement uncertainty are based upon ETSI TR 100 028 (or CISPR 16-4-2 as applicable), and are available upon request.

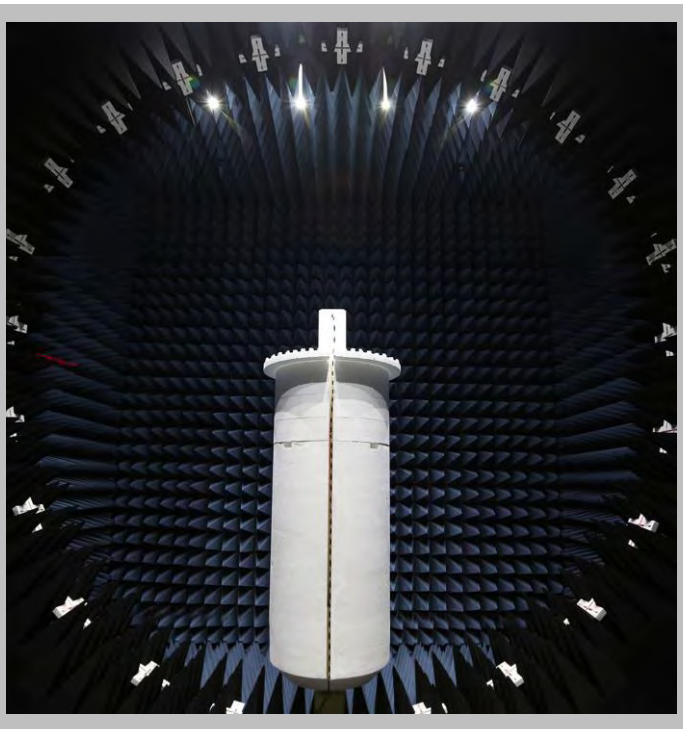
The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

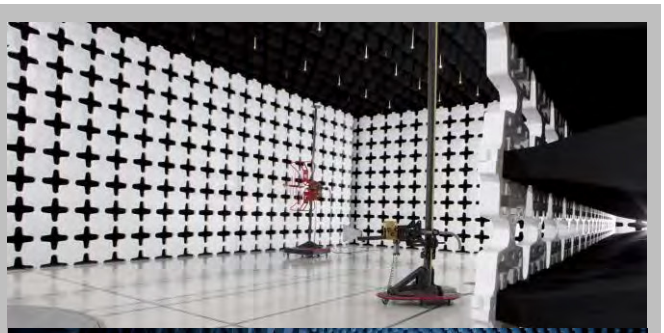
| Test | + MU | - MU |
|---|---|---|
| Frequency Accuracy (Hz) | 0.0007% | -0.0007% |
| Amplitude Accuracy (dB) | 1.2 dB | -1.2 dB |
| Conducted Power (dB) | 0.3 dB | -0.3 dB |
| Radiated Power via Substitution (dB) | 0.7 dB | -0.7 dB |
| Temperature (degrees C) | 0.7°C | -0.7°C |
| Humidity (% RH) | 2.5% RH | -2.5% RH |
| Voltage (AC) | 1.0% | -1.0% |
| Voltage (DC) | 0.7% | -0.7% |
| Field Strength (dB) | 5.2 dB | -5.2 dB |
| AC Powerline Conducted Emissions (dB) | 2.4 dB | -2.4 dB |

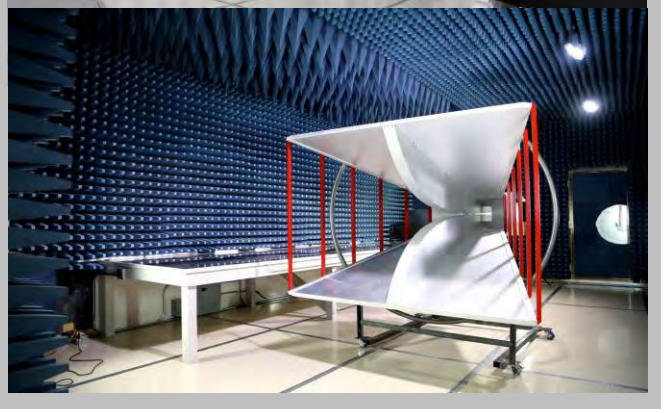
# FACILITIES

NORTHWEST EMC
REV 2015.2.19

| California | Minnesota | New York | Oregon | Texas | Washington |
|---|---|---|---|---|---|
| Labs OC01-13<br>41 Tesla<br>Irvine, CA 92618<br>(949) 861-8918 | Labs MN01-08, MN10<br>9349 W Broadway Ave.<br>Brooklyn Park, MN 55445<br>(612)-638-5136 | Labs NY01-04<br>4939 Jordan Rd.<br>Elbridge, NY 13060<br>(315) 554-8214 | Labs EV01-12<br>22975 NW Evergreen Pkwy<br>Hillsboro, OR 97124<br>(503) 844-4066 | Labs TX01-09<br>3801 E Plano Pkwy<br>Plano, TX 75074<br>(469) 304-5255 | Labs NC01-05<br>19201 120th Ave NE<br>Bothell, WA 98011<br>(425)984-6600 |
| **NVLAP** | | | | | |
| NVLAP Lab Code: 200676-0 | NVLAP Lab Code: 200881-0 | NVLAP Lab Code: 200761-0 | NVLAP Lab Code: 200630-0 | NVLAP Lab Code:201049-0 | NVLAP Lab Code: 200629-0 |
| **Industry Canada** | | | | | |
| 2834B-1, 2834B-3 | 2834E-1 | N/A | 2834D-1, 2834D-*2* | 2834G-1 | 2834F-1 |
| **BSMI** | | | | | |
| SL2-IN-E-1154R | SL2-IN-E-1152R | N/A | SL2-IN-E-1017 | SL2-IN-E-1158R | SL2-IN-E-1153R |
| **VCCI** | | | | | |
| A-0029 | A-0109 | N/A | A-0108 | A-0201 | A-0110 |
| **Recognized Phase I CAB for ACMA, BSMI, IDA, KCC/RRA, MIC, MOC, NCC, OFCA** | | | | | |
| US0158 | US0175 | N/A | US0017 | US0191 | US0157 |







# PRODUCT DESCRIPTION

NORTHWEST EMC
2014-12-10

## Client and Equipment Under Test (EUT) Information

| | |
|---|---|
| **Company Name:** | ZOLL Medical Corp. |
| **Address:** | 269 Mill Road |
| **City, State, Zip:** | Chelmsford, MA 01824 |
| **Test Requested By:** | Adam Ford |
| **Model:** | ZOLL CF Card Module |
| **First Date of Test:** | April 07, 2016 |
| **Last Date of Test:** | April 22, 2016 |
| **Receipt Date of Samples:** | April 06, 2016 |
| **Equipment Design Stage:** | Production |
| **Equipment Condition:** | No Damage |

## Information Provided by the Party Requesting the Test

| **Functional Description of the EUT:** |
|---|
| 802.11abgn CF wireless card containing 1x1 SISO radio module operating in 20 MHz channel bandwidth |

| **Testing Objective:** |
|---|
| To demonstrate compliance of the 802.11an radio under the new UNII rule part changes for FCC 15.407 for operation in the 5.8 GHz bands. |

# CONFIGURATIONS

NORTHWEST EMC 2014-12-10

## Configuration LGPD0188- 1

| Software/Firmware Running during test | |
|---|---|
| **Description** | **Version** |
| TeraTerm | Unknown |

| EUT | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Wireless Module | ZOLL Medical Corp. | 1021711 | 2012M01206 |

| Peripherals in test setup boundary | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| AC Adapter | Sceptre | AD2405A/PS2D-5038APL6A | None |
| CF Extender | ZOLL Medical Corp. | CFExtend | Unknown |
| Test Laptop | Lenevo | Thinkpad T400 | A3-L9568-08/09 |
| AC Adapter (Laptop) | Dell | DA180PM111 | CN-074X5J-48661-15V-0WZ1-A00 |

| Cables | | | | | |
|---|---|---|---|---|---|
| **Cable Type** | **Shield** | **Length (m)** | **Ferrite** | **Connection 1** | **Connection 2** |
| AC Cable (CF Extender) | No | 1m | No | AC Adapter | AC Mains |
| AC Cable | No | 2.5m | No | AC Adapter (Laptop) | AC Mains |
| DC Cable (CF Extender) | No | 1m | No | AC Adapter | Banana to Mini Grabber |
| DC Cable (Laptop) | No | 1m | No | Test Laptop | AC Adapter (Laptop) |
| Serial Cable | Yes | 1.8m | No | CF Extender | CF Extender |
| Serial USB Adapter | Unknown | .5m | No | CF Extender | Serial USB Adapter |
| w.fl - SMA Cable | Unknown | .1m | No | Test Laptop | Serial Cable |
| Banana to Mini Grabber | No | 1m | No | DC Cable (CF Extender) | CF Extender |

# MODIFICATIONS

NORTHWEST EMC
2014-12-10

## Equipment Modifications

| Item | Date | Test | Modification | Note | Disposition of EUT |
|---|---|---|---|---|---|
| 1 | 4/7/2016 | Spurious Radiated Emissions | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 2 | 4/8/2016 | Occupied Bandwidth | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 3 | 4/8/2016 | Duty Cycle | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 4 | 4/8/2016 | Maximum Power Spectral Density | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 5 | 4/8/2016 | Maximum Conducted Output Power | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 6 | 4/21/2016 | Band Edge | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 7 | 4/22/2016 | Frequency Stability | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | Scheduled testing was completed. |

# SPURIOUS RADIATED EMISSIONS

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

**CHANNELS OF OPERATION**

Channel 149, 5745 MHz
Channel 157, 5785 MHz
Channel 165, 5825 MHz

**MODULATION OF OPERATION**

6 Mbps
36 Mbps
54 Mbps
MCS0
MCS7

**POWER SETTINGS INVESTIGATED**

5 VDC

**CONFIGURATIONS INVESTIGATED**

LGPD0188 - 1

**FREQUENCY RANGE INVESTIGATED**

| Start Frequency | 30 MHz | Stop Frequency | 40000 MHz |
|---|---|---|---|

**SAMPLE CALCULATIONS**

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

**TEST EQUIPMENT**

| Description | Manufacturer | Model | ID | Last Cal. | Interval |
|---|---|---|---|---|---|
| Generator - Signal | Agilent | N5183A | TIK | 10/17/2014 | 36 mo |
| Power Sensor | Agilent | N8481A | SQN | 8/17/2015 | 12 mo |
| Meter - Power | Agilent | N1913A | SQL | 8/17/2015 | 12 mo |
| Antenna - Double Ridge | ETS Lindgren | 3115 | AIB | 8/12/2014 | 24 mo |
| Cable | Northwest EMC | TTBJ141-KMKM-72 | MNQ | 9/18/2015 | 12 mo |
| Amplifier - Pre-Amplifier | Miteq | JSW45-26004000-40-5P | AVN | 9/18/2015 | 12 mo |
| Antenna - Standard Gain | ETS Lindgren | 3160-10 | AIC | NCR | 0 mo |
| Amplifier - Pre-Amplifier | Miteq | JSD4-18002600-26-8P | APU | 9/18/2015 | 12 mo |
| Cable | Northwest EMC | 18-26GHz Standard Gain Horn Cable | MNP | 9/18/2015 | 12 mo |
| Antenna - Standard Gain | ETS Lindgren | 3160-09 | AHG | NCR | 0 mo |
| Amplifier - Pre-Amplifier | Miteq | AMF-6F-12001800-30-10P | AVW | 3/1/2016 | 12 mo |
| Antenna - Standard Gain | ETS Lindgren | 3160-08 | AIQ | NCR | 0 mo |
| Amplifier - Pre-Amplifier | Miteq | AMF-6F-08001200-30-10P | AVV | 3/1/2016 | 12 mo |
| Antenna - Standard Gain | ETS Lindgren | 3160-07 | AXP | NCR | 0 mo |
| Amplifier - Pre-Amplifier | Miteq | AMF-3D-00100800-32-13P | AVT | 3/1/2016 | 12 mo |
| Cable | ESM Cable Corp. | Double Ridge Guide Horn Cables | MNI | 12/7/2015 | 12 mo |
| Antenna - Double Ridge | ETS Lindgren | 3115 | AJA | 6/3/2014 | 24 mo |
| Amplifier - Pre-Amplifier | Miteq | AMF-6F-12001800-30-10P | AVD | 3/11/2016 | 12 mo |
| Cable | ESM Cable Corp. | Bilog Cables | MNH | 12/7/2015 | 12 mo |
| Antenna - Biconilog | Teseq | CBL 6141B | AYD | 1/6/2016 | 24 mo |
| Analyzer - Spectrum Analyzer | Agilent | N9010A | AFI | 1/27/2016 | 12 mo |

**MEASUREMENT BANDWIDTHS**

| Frequency Range (MHz) | Peak Data (kHz) | Quasi-Peak Data (kHz) | Average Data (kHz) |
|---|---|---|---|
| 0.01 - 0.15 | 1.0 | 0.2 | 0.2 |
| 0.15 - 30.0 | 10.0 | 9.0 | 9.0 |
| 30.0 - 1000 | 100.0 | 120.0 | 120.0 |
| Above 1000 | 1000.0 | N/A | 1000.0 |

**TEST DESCRIPTION**

The highest gain antenna of each type to be used with the EUT were tested. The EUT was configured for the lowest, a middle, and the highest transmit frequency in each operational band. For each configuration, the spectrum was scanned throughout the specified range. Measurements were made to satisfy the three requirements of 47 CFR 15.407: Field strength under 1GHz, Restricted Bands of 47 CFR 15.205, and EIRP of 47 CFR 15.407.

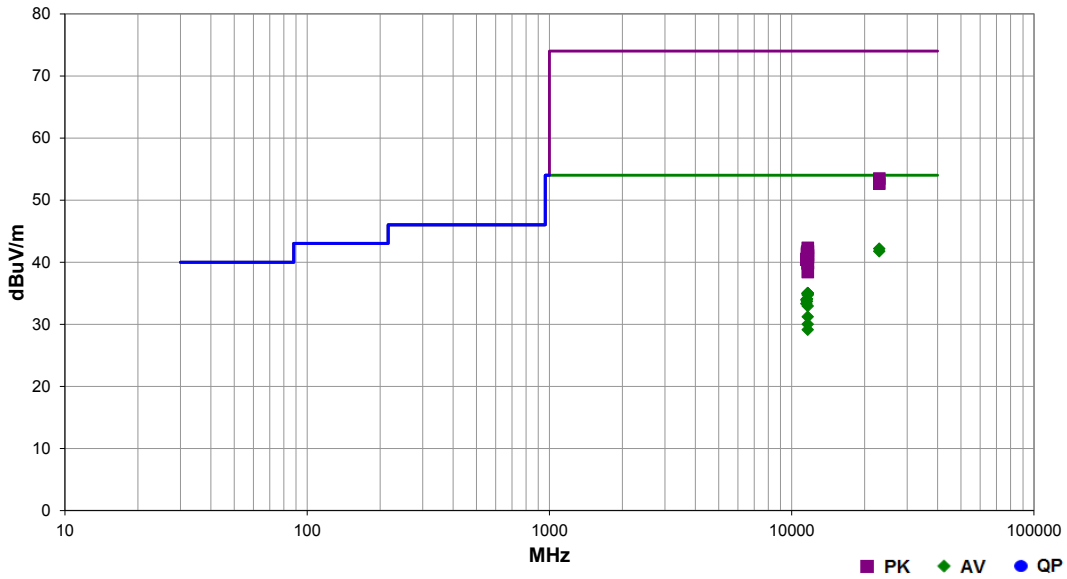
While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis, and adjusting the measurement antenna height and polarization (per ANSI C63.10:2009). A preamp and high pass filter (and notch filter) were used for this test in order to provide sufficient measurement sensitivity.

# SPURIOUS RADIATED EMISSIONS

| | | | | | |
|---|---|---|---|---|---|
| **Work Order:** | LGPD0188 | **Date:** | 04/06/16 | | |
| **Project:** | None | **Temperature:** | 22.6 °C | | |
| **Job Site:** | MN05 | **Humidity:** | 25.4% RH | | |
| **Serial Number:** | 2012M01206 | **Barometric Pres.:** | 1007 mbar | **Tested by:** | Jared Ison |
| **EUT:** | Zoll CF Card Module | | | | |
| **Configuration:** | 1 | | | | |
| **Customer:** | ZOLL Medical Corp. | | | | |
| **Attendees:** | Adam Ford | | | | |
| **EUT Power:** | 5 VDC | | | | |
| **Operating Mode:** | Transmit. | | | | |
| **Deviations:** | None | | | | |
| **Comments:** | 5 VDC supplied via AC adapter using 110VAC/60Hz. | | | | |

| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.407:2016 | ANSI C63.10:2013 |

| **Run #** | 9 | **Test Distance (m)** | 3 | **Antenna Height(s)** | 1 to 4(m) | **Results** | Pass |
|---|---|---|---|---|---|---|---|



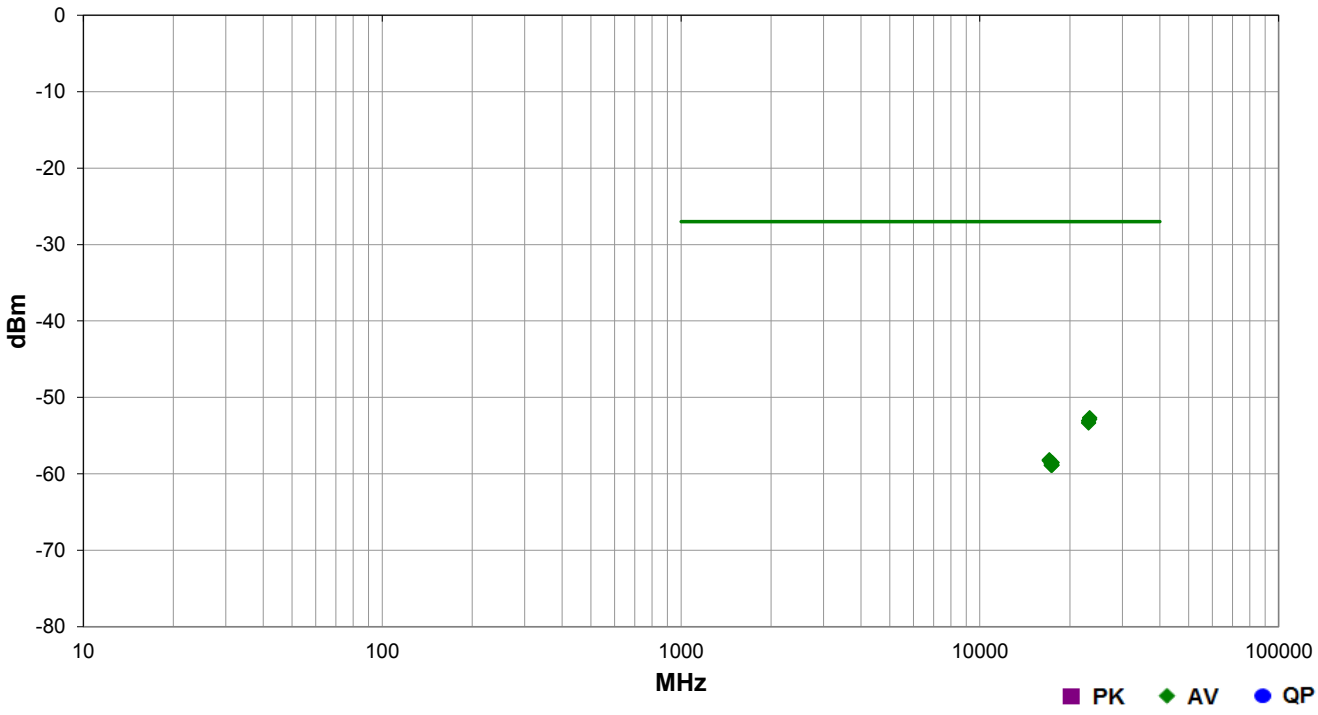

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Antenna Height (meters) | Azimuth (degrees) | Test Distance (meters) | External Attenuation (dB) | Polarity/ Transducer Type | Detector | Distance Adjustment (dB) | Adjusted (dBuV/m) | Spec. Limit (dBuV/m) | Compared to Spec. (dB) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 22980.080 | 28.2 | 14.0 | 1.7 | 121.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 42.2 | 54.0 | -11.8 | Ch. 149: 5745 MHz 6 Mbps, EUT On Side |
| 22979.730 | 27.8 | 14.0 | 1.7 | 166.1 | 3.0 | 0.0 | Vert | AV | 0.0 | 41.8 | 54.0 | -12.2 | Ch. 149: 5745 MHz 6 Mbps, EUT Vertical |
| 11649.980 | 37.3 | -2.3 | 2.0 | 105.1 | 3.0 | 0.0 | Horz | AV | 0.0 | 35.0 | 54.0 | -19.0 | Ch. 165: 5825 MHz 54 Mbps, EUT On Side |
| 11650.030 | 37.3 | -2.3 | 2.0 | 105.1 | 3.0 | 0.0 | Horz | AV | 0.0 | 35.0 | 54.0 | -19.0 | Ch. 165: 5825 MHz MCS7, EUT On Side |
| 11649.960 | 37.2 | -2.3 | 2.0 | 105.1 | 3.0 | 0.0 | Horz | AV | 0.0 | 34.9 | 54.0 | -19.1 | Ch. 165: 5825 MHz MCS0, EUT On Side |
| 11649.990 | 37.2 | -2.3 | 2.0 | 101.1 | 3.0 | 0.0 | Horz | AV | 0.0 | 34.9 | 54.0 | -19.1 | Ch. 165: 5825 MHz 6 Mbps, EUT On Side |
| 11650.040 | 37.2 | -2.3 | 2.0 | 105.1 | 3.0 | 0.0 | Horz | AV | 0.0 | 34.9 | 54.0 | -19.1 | Ch. 165: 5825 MHz 36 Mbps, EUT On Side |
| 11649.990 | 37.0 | -2.3 | 1.6 | 88.1 | 3.0 | 0.0 | Vert | AV | 0.0 | 34.7 | 54.0 | -19.3 | Ch. 165: 5825 MHz 6 Mbps, EUT Vert |
| 11569.950 | 36.4 | -2.3 | 2.0 | 99.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 34.1 | 54.0 | -19.9 | Ch. 157: 5785 MHz 6 Mbps, EUT On Side |
| 11490.020 | 37.2 | -3.3 | 1.7 | 105.1 | 3.0 | 0.0 | Horz | AV | 0.0 | 33.9 | 54.0 | -20.1 | Ch. 149: 5745 MHz 6 Mbps, EUT On Side |
| 11569.990 | 36.0 | -2.3 | 1.7 | 82.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 33.7 | 54.0 | -20.3 | Ch. 157: 5785 MHz 6 Mbps, EUT Vert |
| 22978.430 | 39.5 | 14.0 | 1.7 | 166.1 | 3.0 | 0.0 | Vert | PK | 0.0 | 53.5 | 74.0 | -20.5 | Ch. 149: 5745 MHz 6 Mbps, EUT Vertical |
| 11489.950 | 36.6 | -3.3 | 1.7 | 87.1 | 3.0 | 0.0 | Vert | AV | 0.0 | 33.3 | 54.0 | -20.7 | Ch. 149: 5745 MHz 6 Mbps, EUT Vert |
| 11650.020 | 35.2 | -2.3 | 1.8 | 55.1 | 3.0 | 0.0 | Vert | AV | 0.0 | 32.9 | 54.0 | -21.1 | Ch. 165: 5825 MHz 6 Mbps, EUT On Side |
| 22978.080 | 38.7 | 14.0 | 1.7 | 121.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 52.7 | 74.0 | -21.3 | Ch. 149: 5745 MHz 6 Mbps, EUT On Side |
| 11649.950 | 33.5 | -2.3 | 1.0 | 62.1 | 3.0 | 0.0 | Vert | AV | 0.0 | 31.2 | 54.0 | -22.8 | Ch. 165: 5825 MHz 6 Mbps, EUT Horz |
| 11649.940 | 32.3 | -2.3 | 2.4 | 43.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 30.0 | 54.0 | -24.0 | Ch. 165: 5825 MHz 6 Mbps, EUT Horz |
| 11649.960 | 31.4 | -2.3 | 1.0 | 158.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 29.1 | 54.0 | -24.9 | Ch. 165: 5825 MHz 6 Mbps, EUT Vert |
| 11649.940 | 44.6 | -2.3 | 2.0 | 105.1 | 3.0 | 0.0 | Horz | PK | 0.0 | 42.3 | 74.0 | -31.7 | Ch. 165: 5825 MHz MCS7, EUT On Side |
| 11649.930 | 44.1 | -2.3 | 2.0 | 105.1 | 3.0 | 0.0 | Horz | PK | 0.0 | 41.8 | 74.0 | -32.2 | Ch. 165: 5825 MHz 54 Mbps, EUT On Side |
| 11649.990 | 44.0 | -2.3 | 2.0 | 105.1 | 3.0 | 0.0 | Horz | PK | 0.0 | 41.7 | 74.0 | -32.3 | Ch. 165: 5825 MHz 36 Mbps, EUT On Side |
| 11570.030 | 43.9 | -2.3 | 2.0 | 99.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 41.6 | 74.0 | -32.4 | Ch. 157: 5785 MHz 6 Mbps, EUT On Side |
| 11570.030 | 43.6 | -2.3 | 1.7 | 82.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 41.3 | 74.0 | -32.7 | Ch. 157: 5785 MHz 6 Mbps, EUT Vert |
| 11650.220 | 43.5 | -2.3 | 2.0 | 105.1 | 3.0 | 0.0 | Horz | PK | 0.0 | 41.2 | 74.0 | -32.8 | Ch. 165: 5825 MHz MCS0, EUT On Side |
| 11649.920 | 43.4 | -2.3 | 1.6 | 88.1 | 3.0 | 0.0 | Vert | PK | 0.0 | 41.1 | 74.0 | -32.9 | Ch. 165: 5825 MHz 6 Mbps, EUT Vert |
| 11650.010 | 43.3 | -2.3 | 2.0 | 101.1 | 3.0 | 0.0 | Horz | PK | 0.0 | 41.0 | 74.0 | -33.0 | Ch. 165: 5825 MHz 6 Mbps, EUT On Side |
| 11649.970 | 43.0 | -2.3 | 2.4 | 43.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 40.7 | 74.0 | -33.3 | Ch. 165: 5825 MHz 6 Mbps, EUT Horz |
| 11489.710 | 43.8 | -3.3 | 1.7 | 87.1 | 3.0 | 0.0 | Vert | PK | 0.0 | 40.5 | 74.0 | -33.5 | Ch. 149: 5745 MHz 6 Mbps, EUT Vert |
| 11490.160 | 43.7 | -3.3 | 1.7 | 105.1 | 3.0 | 0.0 | Horz | PK | 0.0 | 40.4 | 74.0 | -33.6 | Ch. 149: 5745 MHz 6 Mbps, EUT On Side |
| 11649.820 | 42.1 | -2.3 | 1.0 | 62.1 | 3.0 | 0.0 | Vert | PK | 0.0 | 39.8 | 74.0 | -34.2 | Ch. 165: 5825 MHz 6 Mbps, EUT Horz |
| 11650.060 | 42.1 | -2.3 | 1.8 | 55.1 | 3.0 | 0.0 | Vert | PK | 0.0 | 39.8 | 74.0 | -34.2 | Ch. 165: 5825 MHz 6 Mbps, EUT On Side |
| 11650.050 | 40.7 | -2.3 | 1.0 | 158.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 38.4 | 74.0 | -35.6 | Ch. 165: 5825 MHz 6 Mbps, EUT Vert |

# SPURIOUS RADIATED EMISSIONS

| | | | | | |
|---|---|---|---|---|---|
| **Work Order:** | LGPD0188 | **Date:** | 04/06/16 | | |
| **Project:** | None | **Temperature:** | 22.6 °C | | |
| **Job Site:** | MN05 | **Humidity:** | 25.4% RH | | |
| **Serial Number:** | 2012M01206 | **Barometric Pres.:** | 1007 mbar | **Tested by:** | Jared Ison |
| **EUT:** | Zoll CF Card Module | | | | |
| **Configuration:** | 1 | | | | |
| **Customer:** | ZOLL Medical Corp. | | | | |
| **Attendees:** | Adam Ford | | | | |
| **EUT Power:** | 5 VDC | | | | |
| **Operating Mode:** | Transmit. | | | | |
| **Deviations:** | None | | | | |
| **Comments:** | 5 VDC supplied via AC adapter using 110VAC/60Hz. | | | | |

| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.407:2016 | ANSI C63.10:2013 |

| **Run #** | 10 | **Test Distance (m)** | 3 | **Antenna Height(s)** | 1 to 4(m) | **Results** | Pass |
|---|---|---|---|---|---|---|---|



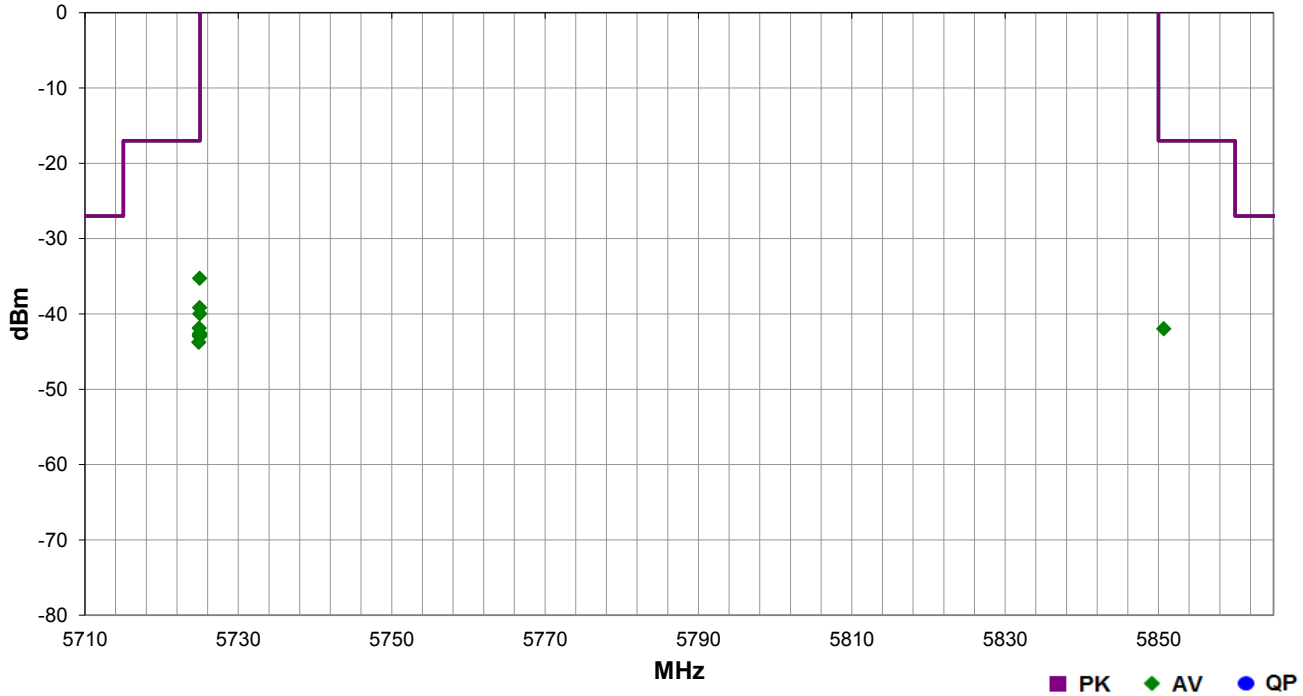

| | Freq (MHz) | Antenna Height (meters) | Azimuth (degrees) | Polarity/ Transducer Type | Detector | EIRP (Watts) | EIRP (dBm) | Spec. Limit (dBm) | Compared to Spec. (dB) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| | 23299.910 | 1.7 | 218.0 | Horz | AV | 5.40E-09 | -52.7 | -27.0 | -25.7 | Ch. 165: 5825 MHz 6 Mbps, EUT On Side |
| | 23300.110 | 1.7 | 193.0 | Vert | AV | 5.16E-09 | -52.9 | -27.0 | -25.9 | Ch. 165: 5825 MHz 6 Mbps, EUT Vertical |
| | 23140.170 | 1.7 | 165.0 | Horz | AV | 4.93E-09 | -53.1 | -27.0 | -26.1 | Ch. 157: 5825 MHz 6 Mbps, EUT On Side |
| | 23140.460 | 1.7 | 79.0 | Vert | AV | 4.61E-09 | -53.4 | -27.0 | -26.4 | Ch. 157: 5825 MHz 6 Mbps, EUT Vertical |
| | 17098.900 | 3.2 | 109.1 | Horz | AV | 1.52E-09 | -58.2 | -27.0 | -31.2 | Ch. 149: 5745 MHz 6 Mbps, EUT On Side |
| | 17098.540 | 3.2 | 126.0 | Vert | AV | 1.48E-09 | -58.3 | -27.0 | -31.3 | Ch. 149: 5745 MHz 6 Mbps, EUT Vert |
| | 17474.920 | 1.4 | 38.0 | Vert | AV | 1.39E-09 | -58.6 | -27.0 | -31.6 | Ch. 165: 5825 MHz 6 Mbps, EUT Vert |
| | 17353.560 | 1.7 | 59.1 | Vert | AV | 1.36E-09 | -58.7 | -27.0 | -31.7 | Ch. 157: 5785 MHz 6 Mbps, EUT Vert |
| | 17475.620 | 1.0 | 9.0 | Horz | AV | 1.30E-09 | -58.9 | -27.0 | -31.9 | Ch. 165: 5825 MHz 6 Mbps, EUT On Side |
| | 17355.210 | 1.0 | 55.1 | Horz | AV | 1.28E-09 | -58.9 | -27.0 | -31.9 | Ch. 157: 5785 MHz 6 Mbps, EUT On Side |

# SPURIOUS RADIATED EMISSIONS

| | | | | | |
|---|---|---|---|---|---|
| **Work Order:** | LGPD0188 | **Date:** | 04/07/16 | | |
| **Project:** | None | **Temperature:** | 22.7 °C | | |
| **Job Site:** | MN05 | **Humidity:** | 24.4% RH | | |
| **Serial Number:** | 2012M01206 | **Barometric Pres.:** | 1012 mbar | **Tested by:** | Jared Ison |
| **EUT:** | Zoll CF Card Module | | | | |
| **Configuration:** | 1 | | | | |
| **Customer:** | ZOLL Medical Corp. | | | | |
| **Attendees:** | Adam Ford | | | | |
| **EUT Power:** | 5 VDC | | | | |
| **Operating Mode:** | Transmit. | | | | |
| **Deviations:** | None | | | | |
| **Comments:** | 5 VDC supplied via AC adapter using 110VAC/60Hz. | | | | |

| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.407:2016 | ANSI C63.10:2013 |

| **Run #** | 14 | **Test Distance (m)** | 1 | **Antenna Height(s)** | 1 to 4(m) | **Results** | Pass |
|---|---|---|---|---|---|---|---|




| | Freq (MHz) | Antenna Height (meters) | Azimuth (degrees) | Polarity/ Transducer Type | Detector | EIRP (Watts) | EIRP (dBm) | Spec. Limit (dBm) | Compared to Spec. (dB) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| | 5724.970 | 1.6 | 270.0 | Horz | AV | 2.96E-07 | -35.3 | -17.0 | -18.3 | Ch. 149: 5745 MHz MCS0, EUT On Side |
| | 5724.973 | 1.6 | 272.9 | Horz | AV | 1.21E-07 | -39.2 | -17.0 | -22.2 | Ch. 149: 5745 MHz 36 Mbps, EUT On Side |
| | 5725.000 | 1.6 | 272.9 | Horz | AV | 1.00E-07 | -40.0 | -17.0 | -23.0 | Ch. 149: 5745 MHz 6 Mbps, EUT On Side |
| | 5724.910 | 1.6 | 326.9 | Vert | AV | 6.48E-08 | -41.9 | -17.0 | -24.9 | Ch. 149: 5745 MHz 6 Mbps, EUT On Side |
| | 5850.683 | 1.6 | 268.0 | Horz | AV | 6.32E-08 | -42.0 | -17.0 | -25.0 | Ch. 165: 5825 MHz 6 Mbps, EUT On Side |
| | 5724.983 | 1.6 | 340.0 | Horz | AV | 5.52E-08 | -42.6 | -17.0 | -25.6 | Ch. 149: 5745 MHz 6 Mbps, EUT Vert |
| | 5724.960 | 1.6 | 97.0 | Horz | AV | 5.39E-08 | -42.7 | -17.0 | -25.7 | Ch. 149: 5745 MHz 6 Mbps, EUT Horz |
| | 5724.973 | 1.6 | 270.0 | Horz | AV | 5.15E-08 | -42.9 | -17.0 | -25.9 | Ch. 149: 5745 MHz 54 Mbps, EUT On Side |
| | 5724.940 | 1.6 | 159.1 | Vert | AV | 5.15E-08 | -42.9 | -17.0 | -25.9 | Ch. 149: 5745 MHz 6 Mbps, EUT Vert |
| | 5724.957 | 1.6 | 270.0 | Horz | AV | 5.03E-08 | -43.0 | -17.0 | -26.0 | Ch. 149: 5745 MHz MCS7, EUT On Side |
| | 5724.840 | 1.6 | 13.0 | Vert | AV | 4.18E-08 | -43.8 | -17.0 | -26.8 | Ch. 149: 5745 MHz 6 Mbps, EUT Horz |

# FREQUENCY STABILITY

XMit 2015.01.14

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

**TEST EQUIPMENT**

| Description | Manufacturer | Model | ID | Last Cal. | Interval (mo) |
|---|---|---|---|---|---|
| Meter - Multimeter | Fluke | 117 | MLS | 1/20/2014 | 36 |
| Thermometer | Omega Engineering, Inc. | HH311 | DUB | 11/3/2014 | 36 |
| Chamber - Temperature/Humidity | Cincinnati Sub Zero (CSZ) | ZPH-32-3.5-SCT/AC | TBF | 10/21/2015 | 12 |
| Cable | ESM Cable Corp. | TTBJ141 KMKM-72 | MNU | 9/18/2015 | 12 |
| Block - DC | Fairview Microwave | SD3379 | AMI | 9/18/2015 | 12 |
| Attenuator | S.M. Electronics | SA26B-20 | RFW | 2/26/2016 | 12 |
| Cable | ESM Cable Corp. | TTBJ141 KMKM-72 | MNU | 9/18/2015 | 12 |
| Analyzer - Spectrum Analyzer | Agilent | E4440A | AAX | 3/24/2016 | 12 |

**TEST DESCRIPTION**

A direct connect measurement was made between the EUT's antenna cable and a spectrum analyzer. The spectrum analyzer is equipped with a precision frequency reference that exceeds the stability requirement of the EUT.

Measurements were made at the edges of the main transmit bands as called out on the data sheets. Testing was done with an absence of modulation in a CW mode of operation.

The primary supply voltage was varied from 85 % to 115% of the nominal voltage Using a temperature chamber, the transmit frequency was recorded at the extremes of the specified temperature range (-30 ° to +50° C) and at 10°C intervals.

Where a ppm limit applies: ppm = (Measured Frequency / Measured Nominal Frequency - 1) * 1,000,000

Per the requirements of FCC 15.407:

"Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual."

No specific limits are provided in either FCC 15.407, the product specific rule part, or FCC 2.1055, the equipment authorization procedure for testing frequency stability. While there are no limits called out, any results less than 100ppm will still allow the radio to be operating within the band.

# FREQUENCY STABILITY

NORTHWEST EMC

XMit 2015.01.14

| | | | | | |
|---|---|---|---|---|---|
| **EUT:** | Zoll CF Card Module | | | **Work Order:** | LGPD0188 |
| **Serial Number:** | 2012M01206 | | | **Date:** | 04/22/16 |
| **Customer:** | ZOLL Medical Corp. | | | **Temperature:** | 22.8°C |
| **Attendees:** | None | | | **Humidity:** | 24% |
| **Project:** | None | | | **Barometric Pres.:** | 987.1 mb |
| **Tested by:** | Jared Ison | **Power:** | 5 VDC | **Job Site:** | MN08 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.407:2016 | ANSI C63.10:2013 |
| | |

**COMMENTS**

None

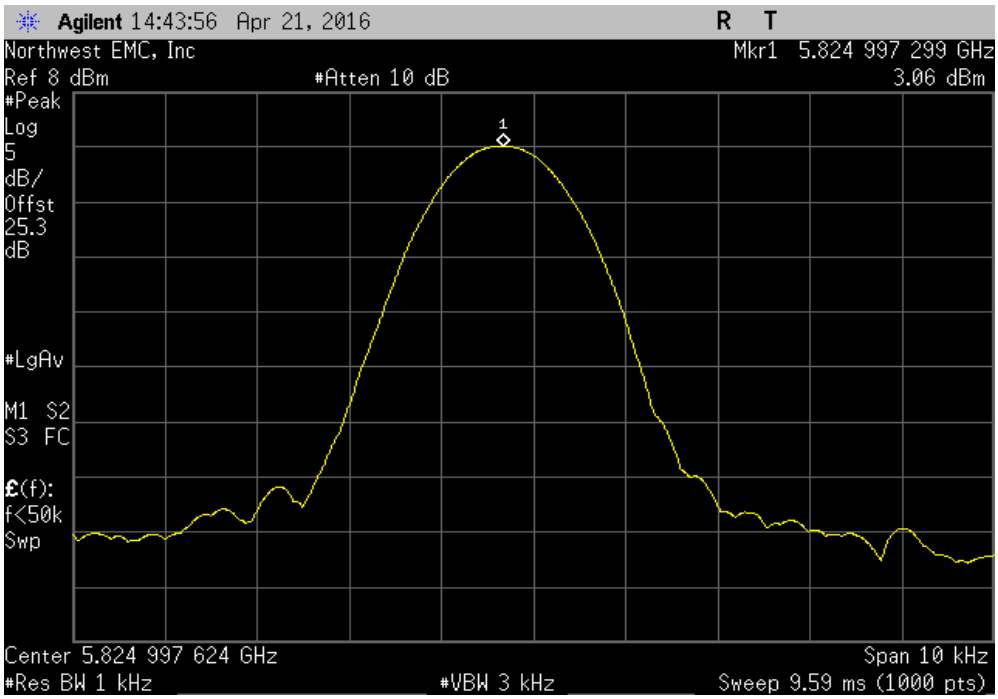
**DEVIATIONS FROM TEST STANDARD**

None

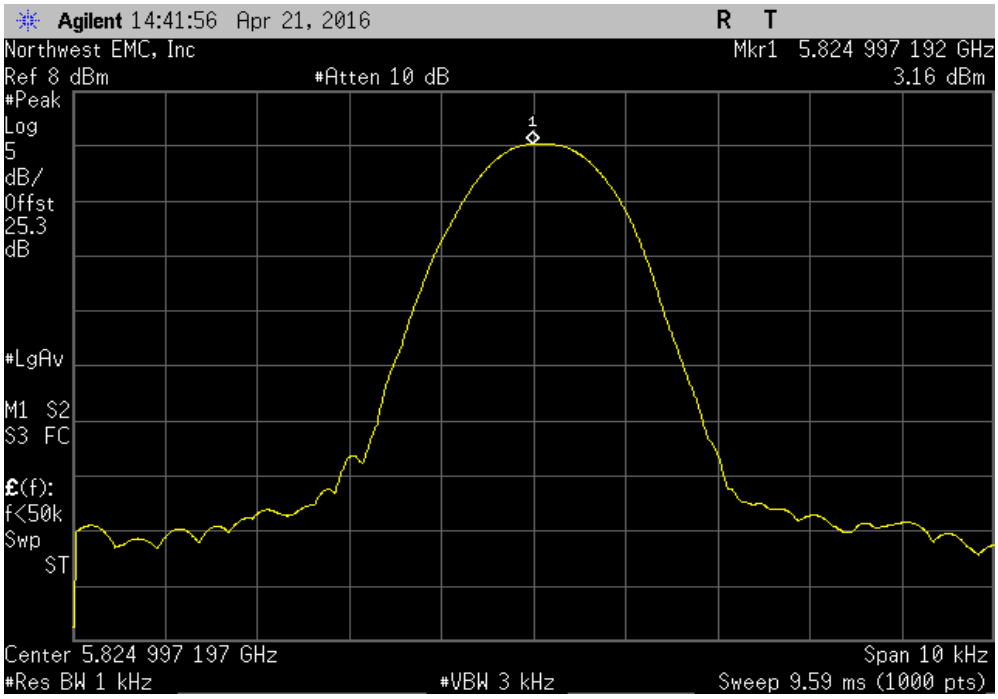
| Configuration # | 1 | Signature |
|---|---|---|

| | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
|---|---|---|---|---|---|
| 5725 MHz - 5850 MHz - High Channel, 5825 MHz | | | | | |
| Voltage: 115% | 5824.997299 | 5825 | 0.5 | 100 | Pass |
| Voltage: 100% | 5824.997227 | 5825 | 0.5 | 100 | Pass |
| Voltage: 85% | 5824.997131 | 5825 | 0.5 | 100 | Pass |
| Temperature: +50° | 5824.997459 | 5825 | 0.4 | 100 | Pass |
| Temperature: +40° | 5824.998103 | 5825 | 0.3 | 100 | Pass |
| Temperature: +30° | 5824.99769 | 5825 | 0.4 | 100 | Pass |
| Temperature: +20° | 5824.997289 | 5825 | 0.5 | 100 | Pass |
| Temperature: +10° | 5824.997248 | 5825 | 0.5 | 100 | Pass |
| Temperature: 0° | 5824.997569 | 5825 | 0.4 | 100 | Pass |
| Temperature: -10° | 5824.998151 | 5825 | 0.3 | 100 | Pass |
| Temperature: -20° | 5824.998466 | 5825 | 0.3 | 100 | Pass |
| Temperature: -30° | 5824.998838 | 5825 | 0.2 | 100 | Pass |

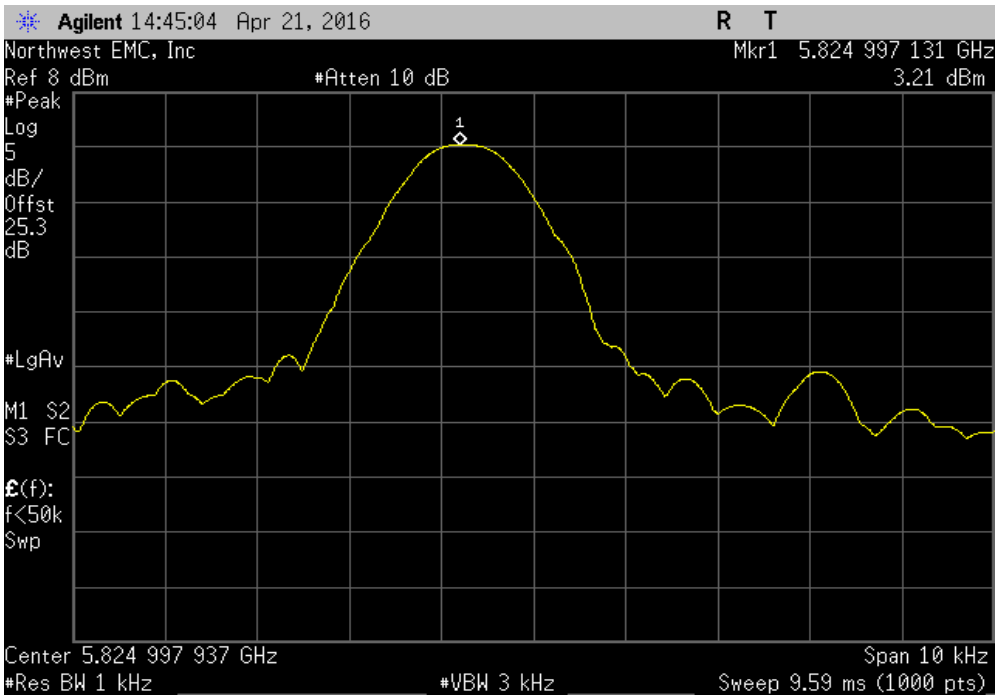
| 5725 MHz - 5850 MHz - High Channel, 5825 MHz, Voltage: 115% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5824.997299 | 5825 | 0.5 | 100 | Pass |



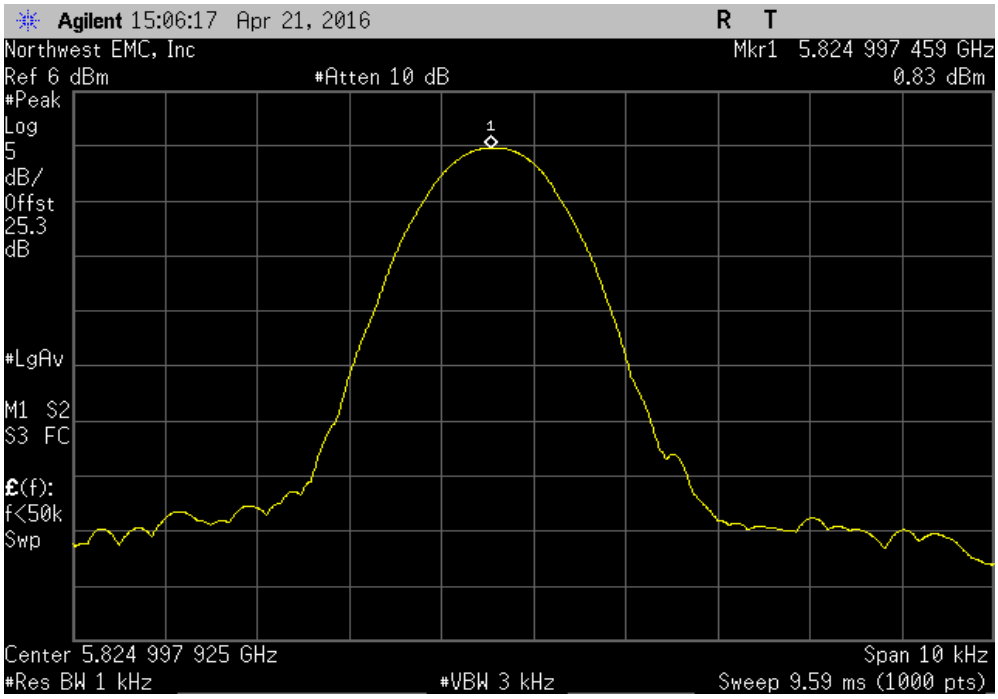

| 5725 MHz - 5850 MHz - High Channel, 5825 MHz, Voltage: 100% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5824.997227 | 5825 | 0.5 | 100 | Pass |



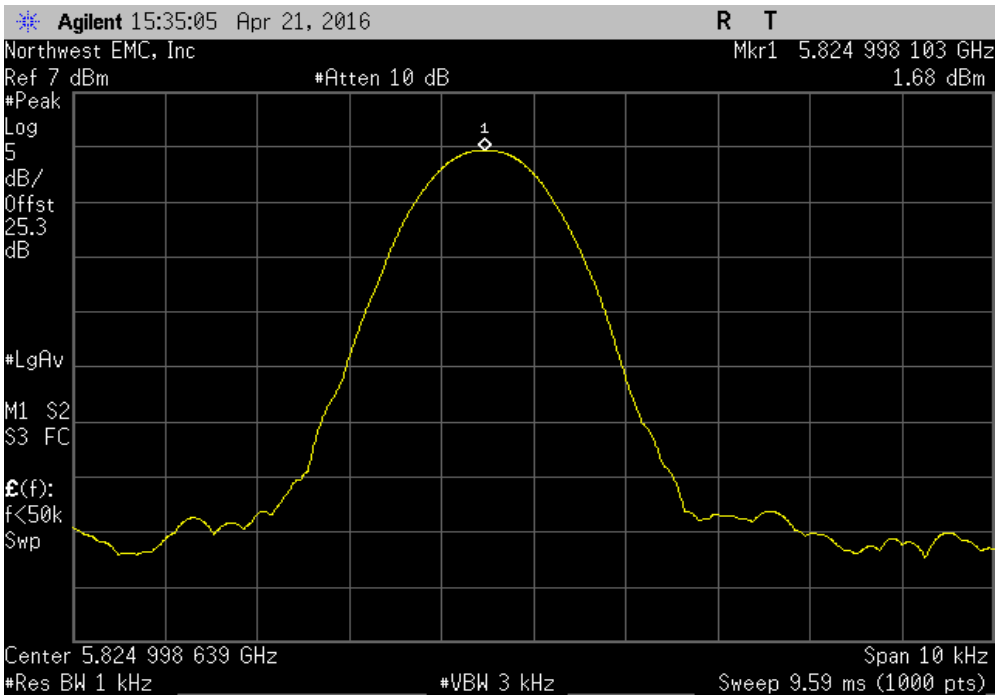
| 5725 MHz - 5850 MHz - High Channel, 5825 MHz, Voltage: 85% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5824.997131 | 5825 | 0.5 | 100 | Pass |



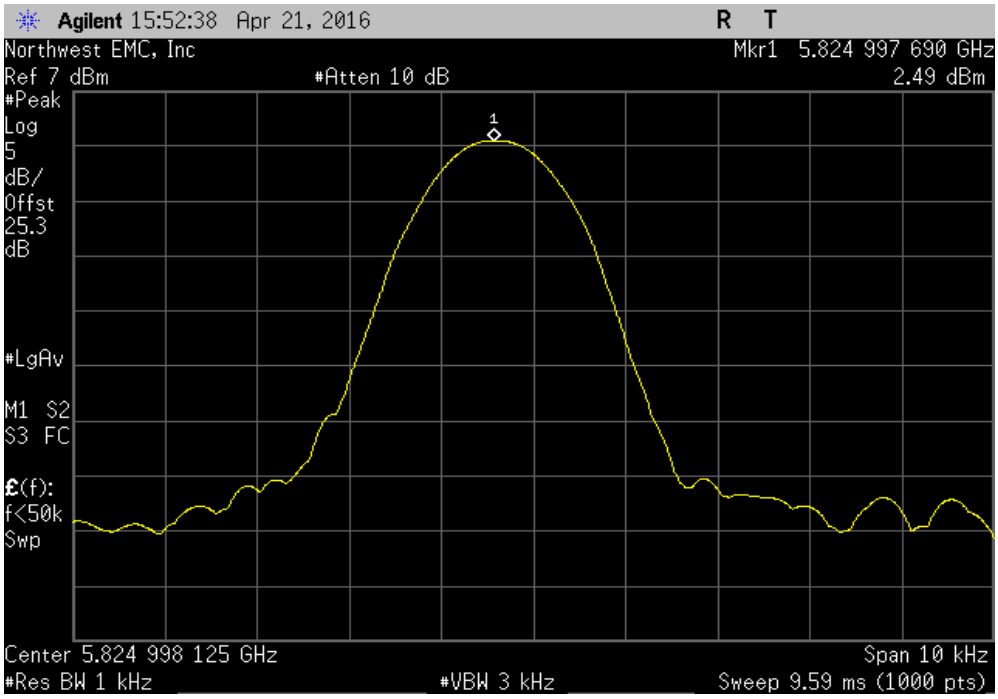

| 5725 MHz - 5850 MHz - High Channel, 5825 MHz, Temperature: +50° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5824.997459 | 5825 | 0.4 | 100 | Pass |



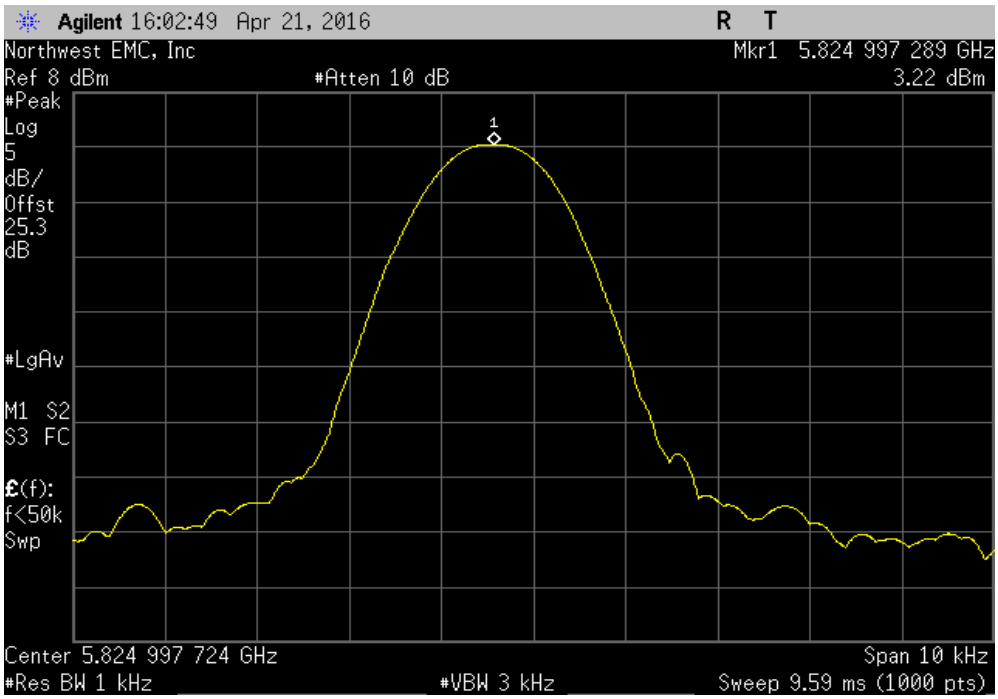
| 5725 MHz - 5850 MHz - High Channel, 5825 MHz, Temperature: +40° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5824.998103 | 5825 | 0.3 | 100 | Pass |



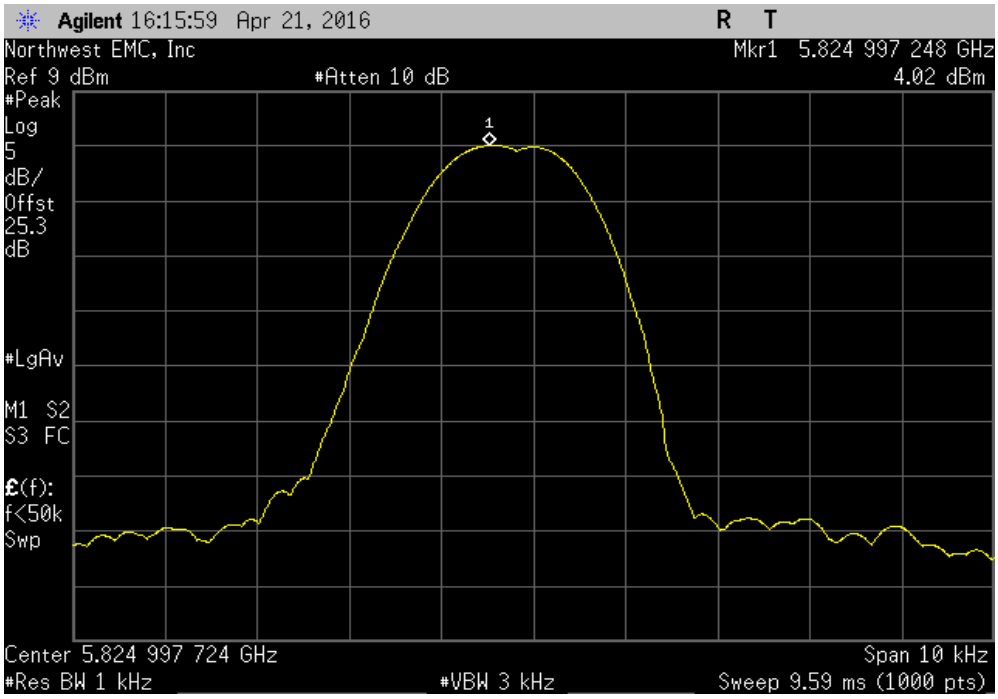

| 5725 MHz - 5850 MHz - High Channel, 5825 MHz, Temperature: +30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5824.99769 | 5825 | 0.4 | 100 | Pass |



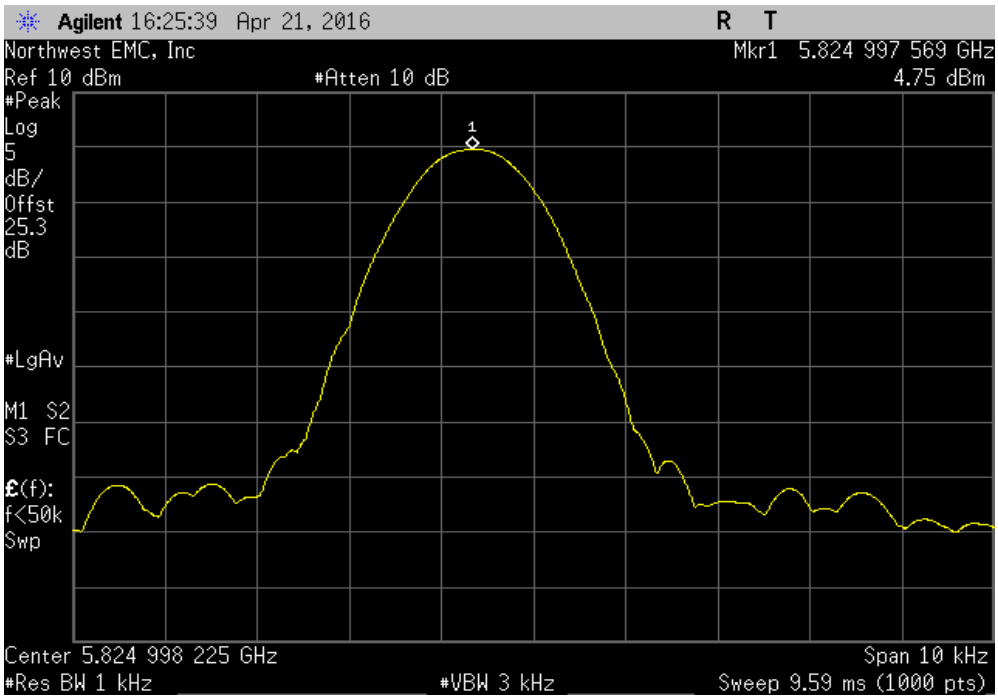
| 5725 MHz - 5850 MHz - High Channel, 5825 MHz, Temperature: +20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5824.997289 | 5825 | 0.5 | 100 | Pass |



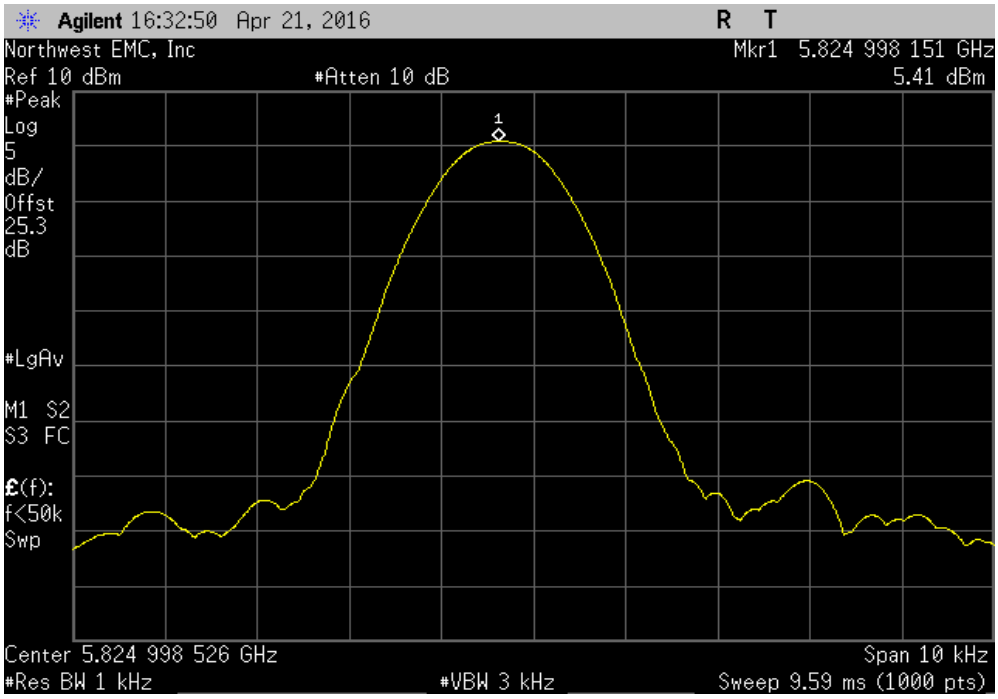

| 5725 MHz - 5850 MHz - High Channel, 5825 MHz, Temperature: +10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5824.997248 | 5825 | 0.5 | 100 | Pass |



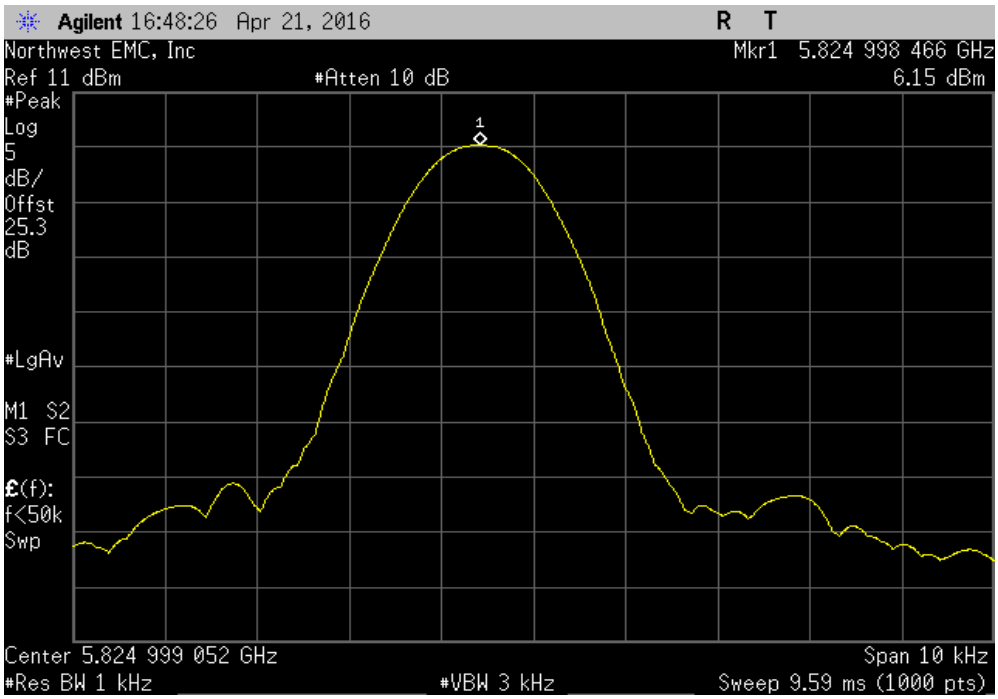
| 5725 MHz - 5850 MHz - High Channel, 5825 MHz, Temperature: 0° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5824.997569 | 5825 | 0.4 | 100 | Pass |



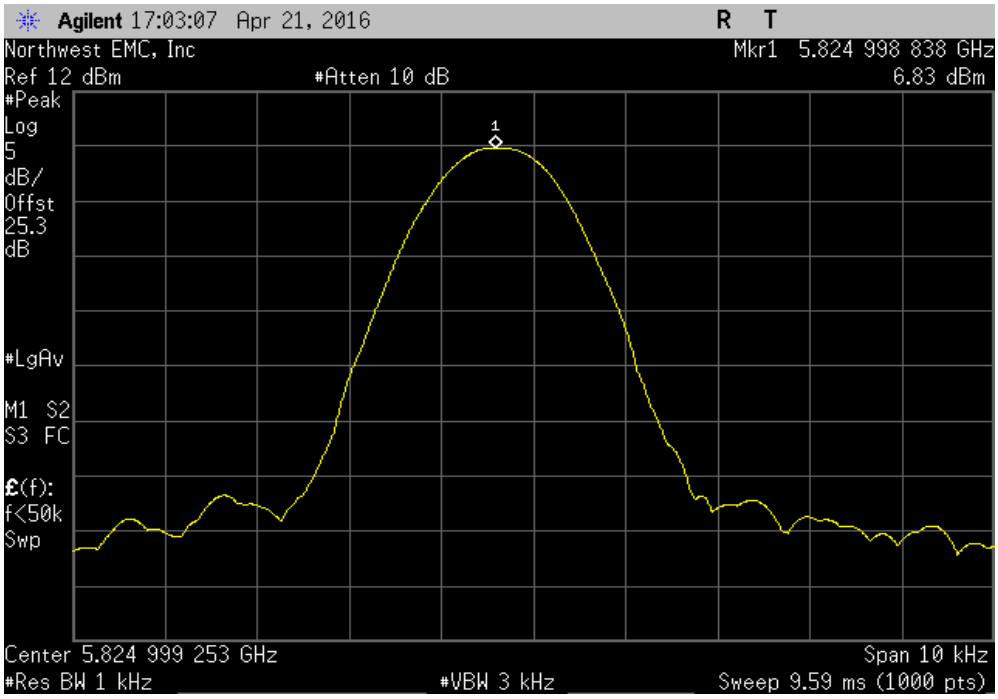

| 5725 MHz - 5850 MHz - High Channel, 5825 MHz, Temperature: -10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5824.998151 | 5825 | 0.3 | 100 | Pass |



| 5725 MHz - 5850 MHz - High Channel, 5825 MHz, Temperature: -20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5824.998466 | 5825 | 0.3 | 100 | Pass |




| 5725 MHz - 5850 MHz - High Channel, 5825 MHz, Temperature: -30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5824.998838 | 5825 | 0.2 | 100 | Pass |



# DUTY CYCLE

XMit 2015.01.14

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

**TEST EQUIPMENT**

| Description | Manufacturer | Model | ID | Last Cal. | Interval (mo) |
|---|---|---|---|---|---|
| Generator - Signal | Agilent | N5183A | TIK | 10/17/2014 | 36 |
| Cable | ESM Cable Corp. | TTBJ141 KMKM-72 | MNU | 9/18/2015 | 12 |
| Attenuator | S.M. Electronics | SA26B-20 | RFW | 2/26/2016 | 12 |
| Block - DC | Fairview Microwave | SD3379 | AMI | 9/18/2015 | 12 |
| Analyzer - Spectrum Analyzer | Agilent | E4440A | AAX | 3/24/2016 | 12 |

**TEST DESCRIPTION**

The Duty Cycle (x) of the single channel operation of the radio as controlled by the provided test software was measured for each of the EUT operating modes.

There is no compliance requirement to be met by this test, so therefore no Pass / Fail criteria.

The measurements were made using a zero span on the spectrum analyzer to see the pulses in the time domain. The transmit power was set to its default maximum. A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used.

The duty cycle was calculated by dividing the transmission pulse duration (T) by the total period of a single on and total off time.

If the transmit duty cycle < 98 percent, burst gating may have been used during some of the other tests in this report to only take the measurement during the burst duration.

# DUTY CYCLE

NORTHWEST EMC

XMit 2015.01.14

| | | | | | |
|---|---|---|---|---|---|
| **EUT:** | Zoll CF Card Module | | | **Work Order:** | LGPD0188 |
| **Serial Number:** | 2012M01206 | | | **Date:** | 04/08/16 |
| **Customer:** | ZOLL Medical Corp. | | | **Temperature:** | 22.8°C |
| **Attendees:** | Adam Ford | | | **Humidity:** | 24% |
| **Project:** | None | | | **Barometric Pres.:** | 987.1 mb |
| **Tested by:** | Jared Ison | **Power:** | 5 VDC | **Job Site:** | MN08 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.407:2016 | ANSI C63.10:2013 |
| | |

**COMMENTS**

None

**DEVIATIONS FROM TEST STANDARD**

None

| Configuration # | 1 | Signature |
|---|---|---|

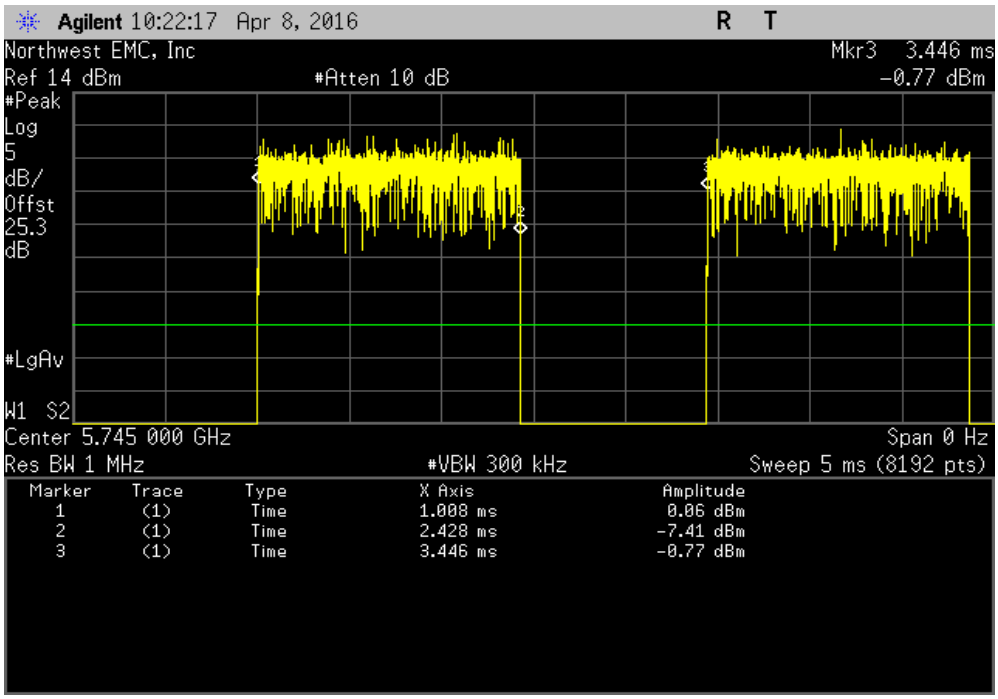
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit (%) | Results |
|---|---|---|---|---|---|---|
| 5725 - 5825 MHz Band | | | | | | |
| Low Channel, Ch 149 - 5745 MHz | | | | | | |
| 802.11(a) 6 Mbps | 1.421 ms | 2.439 ms | 1 | 58.2 | N/A | N/A |
| 802.11(a) 6 Mbps | N/A | N/A | 5 | N/A | N/A | N/A |
| 802.11(a) 36 Mbps | 249.1 us | 1.267 ms | 1 | 19.7 | N/A | N/A |
| 802.11(a) 36 Mbps | N/A | N/A | 5 | N/A | N/A | N/A |
| 802.11(a) 54 Mbps | 172.9 us | 1.191 ms | 1 | 14.5 | N/A | N/A |
| 802.11(a) 54 Mbps | N/A | N/A | 5 | N/A | N/A | N/A |
| 802.11(n) MCS0 | 1.329 ms | 2.347 ms | 1 | 56.6 | N/A | N/A |
| 802.11(n) MCS0 | N/A | N/A | 5 | N/A | N/A | N/A |
| 802.11(n) MCS7 | 160.8 us | 1.179 ms | 1 | 13.6 | N/A | N/A |
| 802.11(n) MCS7 | N/A | N/A | 5 | N/A | N/A | N/A |
| Mid Channel, Ch 157 - 5785 MHz | | | | | | |
| 802.11(a) 6 Mbps | 1.421 ms | 2.439 ms | 1 | 58.3 | N/A | N/A |
| 802.11(a) 6 Mbps | N/A | N/A | 5 | N/A | N/A | N/A |
| 802.11(a) 36 Mbps | 249.1 us | 1.267 ms | 1 | 19.7 | N/A | N/A |
| 802.11(a) 36 Mbps | N/A | N/A | 5 | N/A | N/A | N/A |
| 802.11(a) 54 Mbps | 172.9 us | 1.191 ms | 1 | 14.5 | N/A | N/A |
| 802.11(a) 54 Mbps | N/A | N/A | 5 | N/A | N/A | N/A |
| 802.11(n) MCS0 | 1.329 ms | 2.347 ms | 1 | 56.6 | N/A | N/A |
| 802.11(n) MCS0 | N/A | N/A | 5 | N/A | N/A | N/A |
| 802.11(n) MCS7 | 160.8 us | 1.179 ms | 1 | 13.6 | N/A | N/A |
| 802.11(n) MCS7 | N/A | N/A | 5 | N/A | N/A | N/A |
| High Channel, Ch 165 - 5825 MHz | | | | | | |
| 802.11(a) 6 Mbps | 1.421 ms | 2.439 ms | 1 | 58.3 | N/A | N/A |
| 802.11(a) 6 Mbps | N/A | N/A | 5 | N/A | N/A | N/A |
| 802.11(a) 36 Mbps | 248.7 us | 1.267 ms | 1 | 19.6 | N/A | N/A |
| 802.11(a) 36 Mbps | N/A | N/A | 5 | N/A | N/A | N/A |
| 802.11(a) 54 Mbps | 172.9 us | 1.191 ms | 1 | 14.5 | N/A | N/A |
| 802.11(a) 54 Mbps | N/A | N/A | 5 | N/A | N/A | N/A |
| 802.11(n) MCS0 | 1.329 ms | 2.347 ms | 1 | 56.6 | N/A | N/A |
| 802.11(n) MCS0 | N/A | N/A | 5 | N/A | N/A | N/A |
| 802.11(n) MCS7 | 160.8 us | 1.179 ms | 1 | 13.6 | N/A | N/A |
| 802.11(n) MCS7 | N/A | N/A | 5 | N/A | N/A | N/A |

# DUTY CYCLE

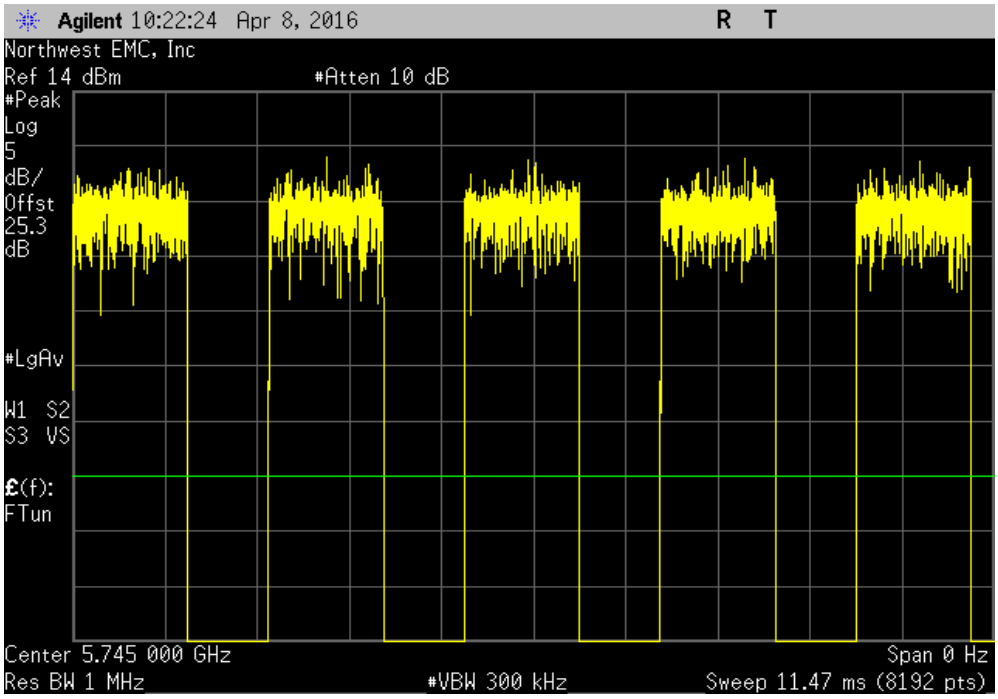
NORTHWEST EMC

XMit 2015.01.14

| 5725 - 5825 MHz Band, Low Channel, Ch 149 - 5745 MHz, 802.11(a) 6 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit (%) | Results |
| | 1.421 ms | 2.439 ms | 1 | 58.2 | N/A | N/A |



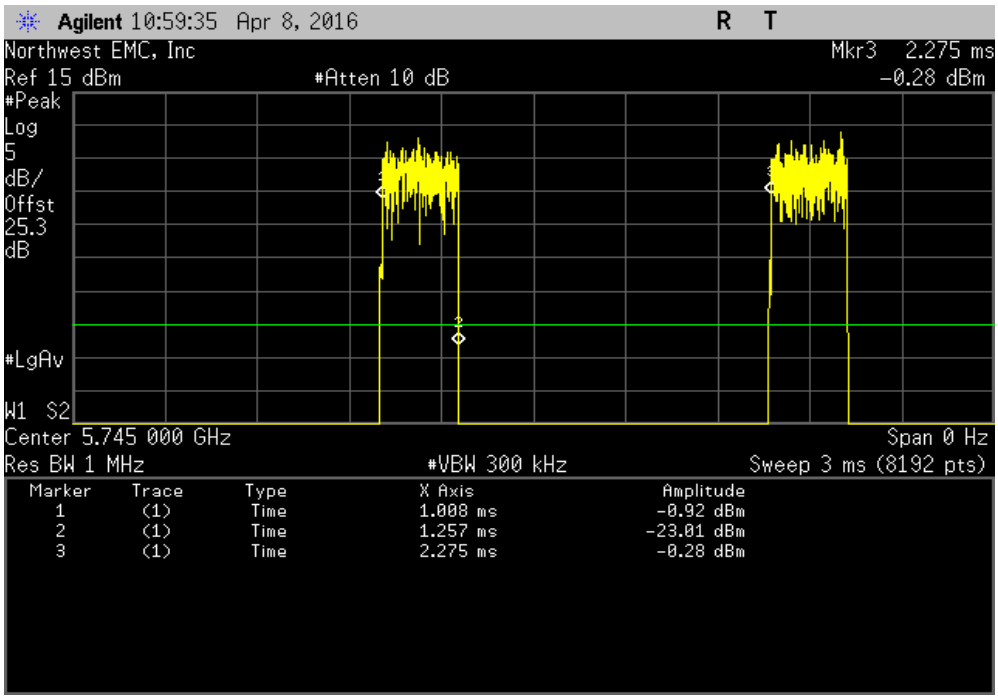

| 5725 - 5825 MHz Band, Low Channel, Ch 149 - 5745 MHz, 802.11(a) 6 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit (%) | Results |
| | N/A | N/A | 5 | N/A | N/A | N/A |



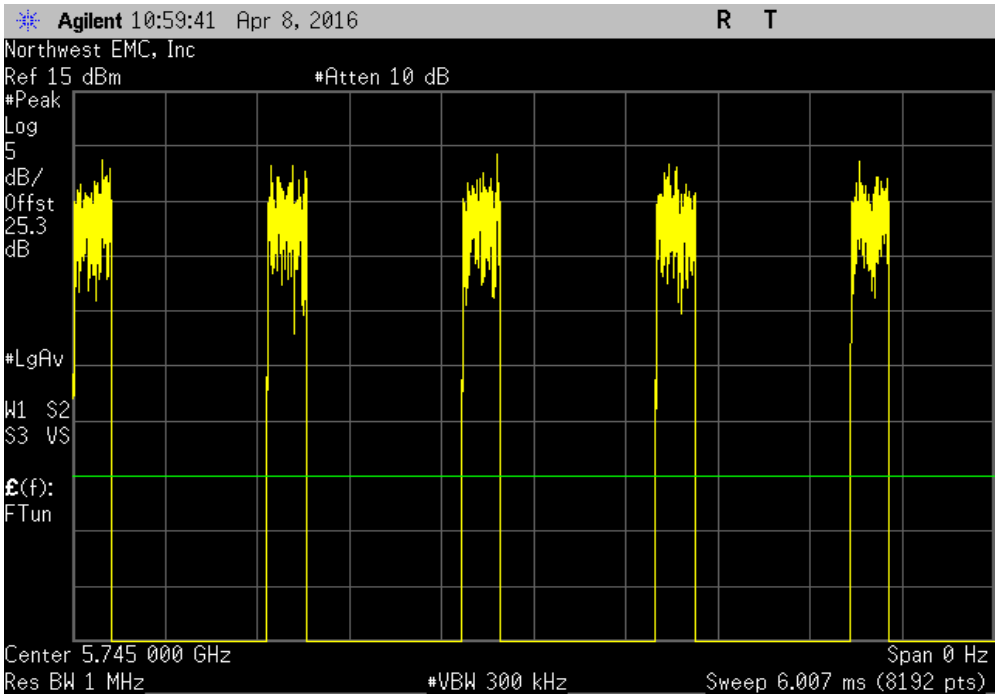
# DUTY CYCLE

XMit 2015.01.14

| 5725 - 5825 MHz Band, Low Channel, Ch 149 - 5745 MHz, 802.11(a) 36 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit (%) | Results |
| | 249.1 us | 1.267 ms | 1 | 19.7 | N/A | N/A |



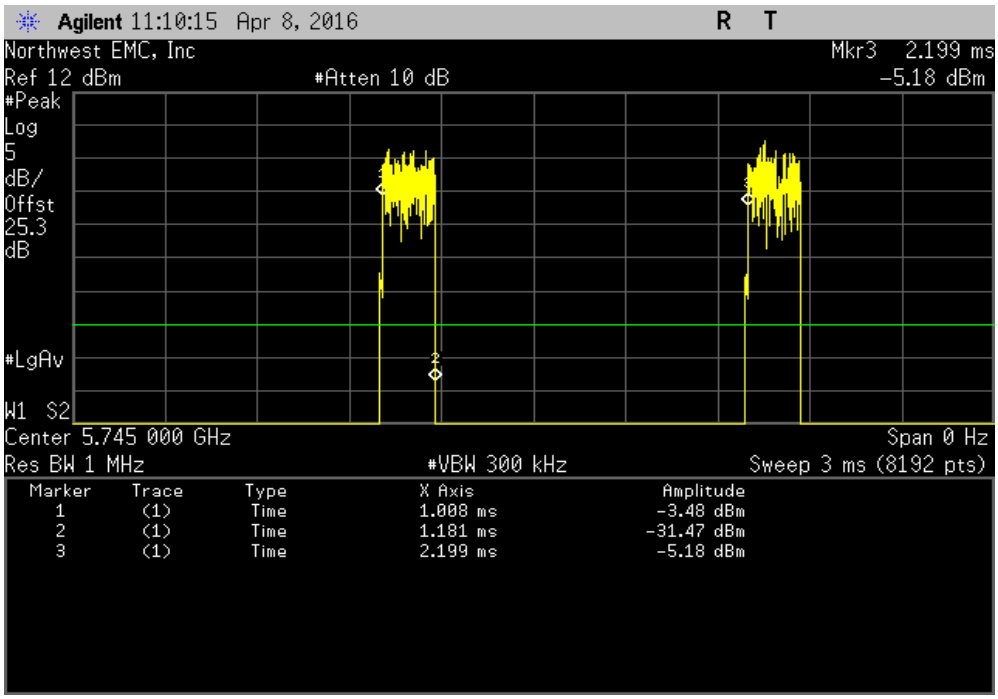

| 5725 - 5825 MHz Band, Low Channel, Ch 149 - 5745 MHz, 802.11(a) 36 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit (%) | Results |
| | N/A | N/A | 5 | N/A | N/A | N/A |



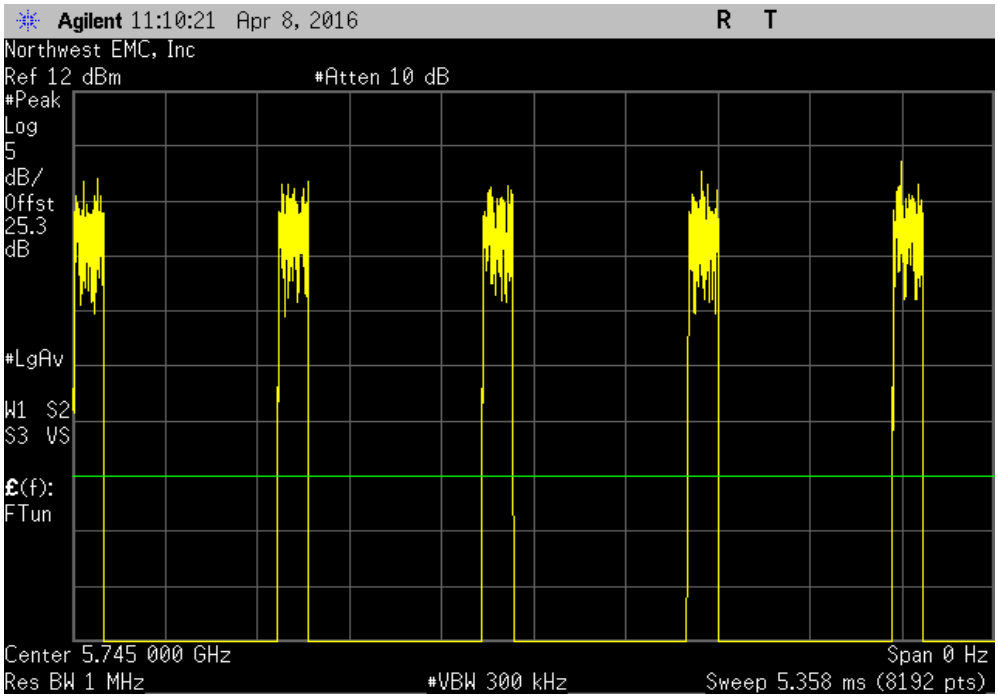
# DUTY CYCLE

XMit 2015.01.14

| 5725 - 5825 MHz Band, Low Channel, Ch 149 - 5745 MHz, 802.11(a) 54 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit (%) | Results |
| | 172.9 us | 1.191 ms | 1 | 14.5 | N/A | N/A |



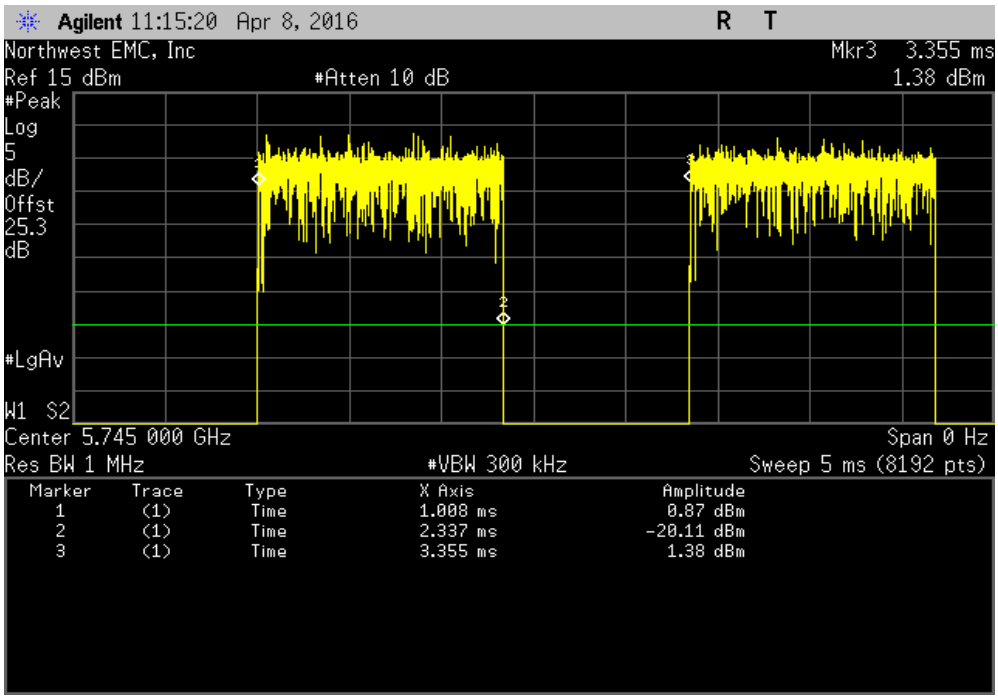

| 5725 - 5825 MHz Band, Low Channel, Ch 149 - 5745 MHz, 802.11(a) 54 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit (%) | Results |
| | N/A | N/A | 5 | N/A | N/A | N/A |



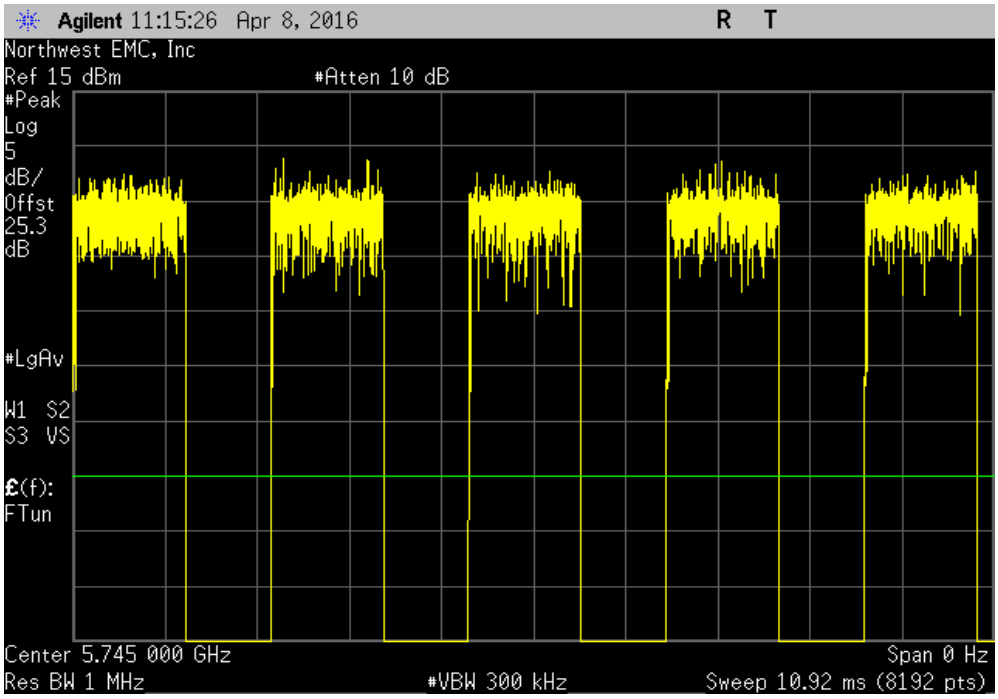
# DUTY CYCLE

XMit 2015.01.14

| 5725 - 5825 MHz Band, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS0 | | | | | | |
|---|---|---|---|---|---|---|
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit (%) | Results |
| | 1.329 ms | 2.347 ms | 1 | 56.6 | N/A | N/A |



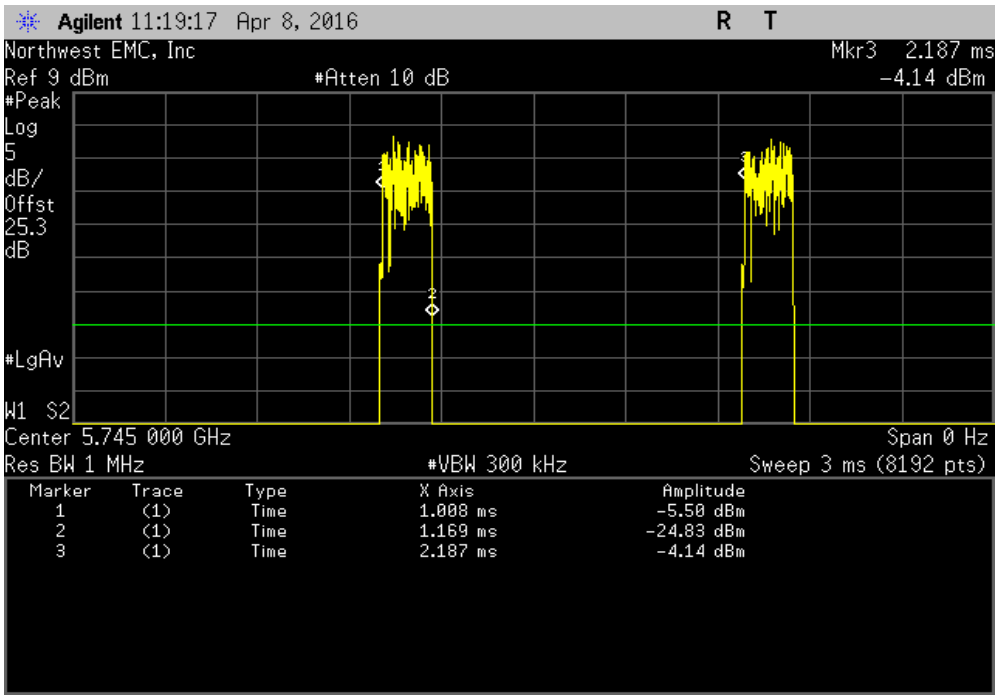

| 5725 - 5825 MHz Band, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS0 | | | | | | |
|---|---|---|---|---|---|---|
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit (%) | Results |
| | N/A | N/A | 5 | N/A | N/A | N/A |



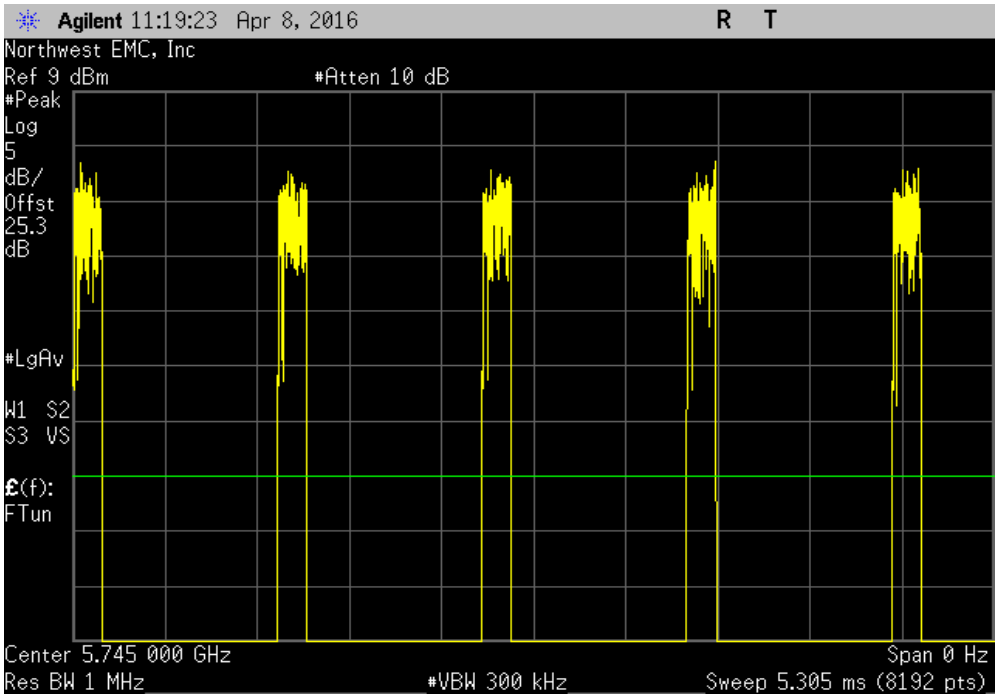
# DUTY CYCLE

XMit 2015.01.14

| 5725 - 5825 MHz Band, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS7 | | | | | | |
|---|---|---|---|---|---|---|
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit (%) | Results |
| | 160.8 us | 1.179 ms | 1 | 13.6 | N/A | N/A |



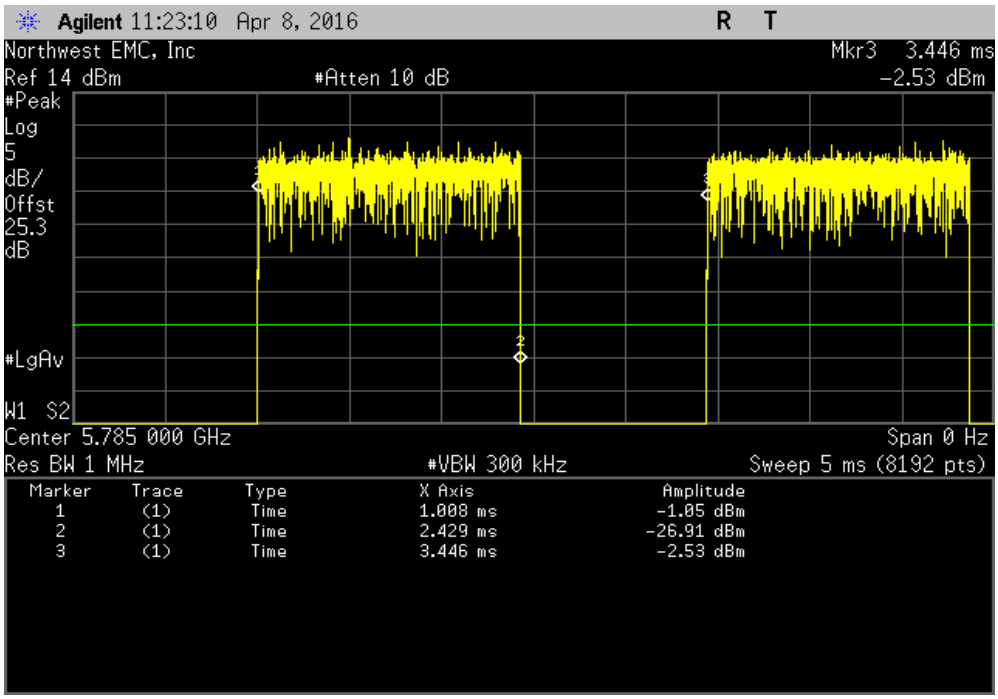

| 5725 - 5825 MHz Band, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS7 | | | | | | |
|---|---|---|---|---|---|---|
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit (%) | Results |
| | N/A | N/A | 5 | N/A | N/A | N/A |



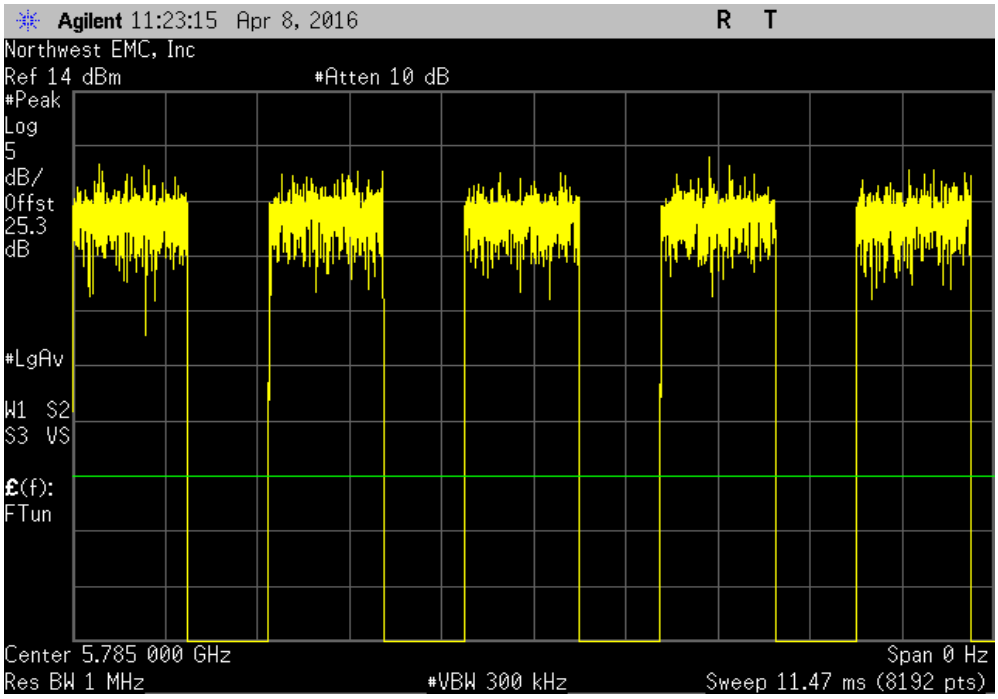
# DUTY CYCLE

XMit 2015.01.14

| 5725 - 5825 MHz Band, Mid Channel, Ch 157 - 5785 MHz, 802.11(a) 6 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit (%) | Results |
| | 1.421 ms | 2.439 ms | 1 | 58.3 | N/A | N/A |



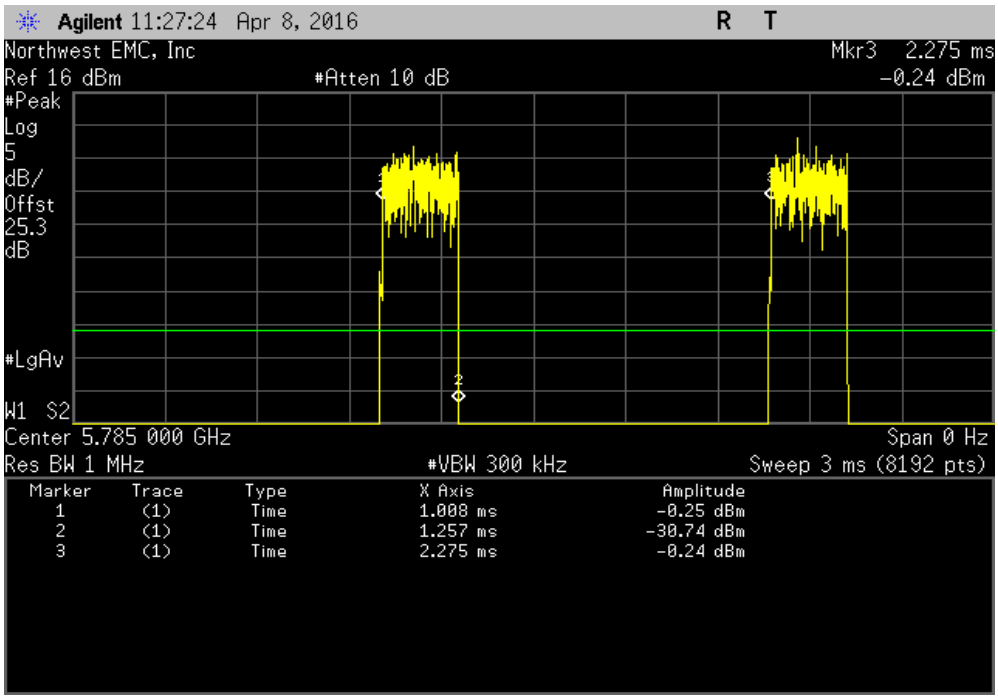

| 5725 - 5825 MHz Band, Mid Channel, Ch 157 - 5785 MHz, 802.11(a) 6 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit (%) | Results |
| | N/A | N/A | 5 | N/A | N/A | N/A |



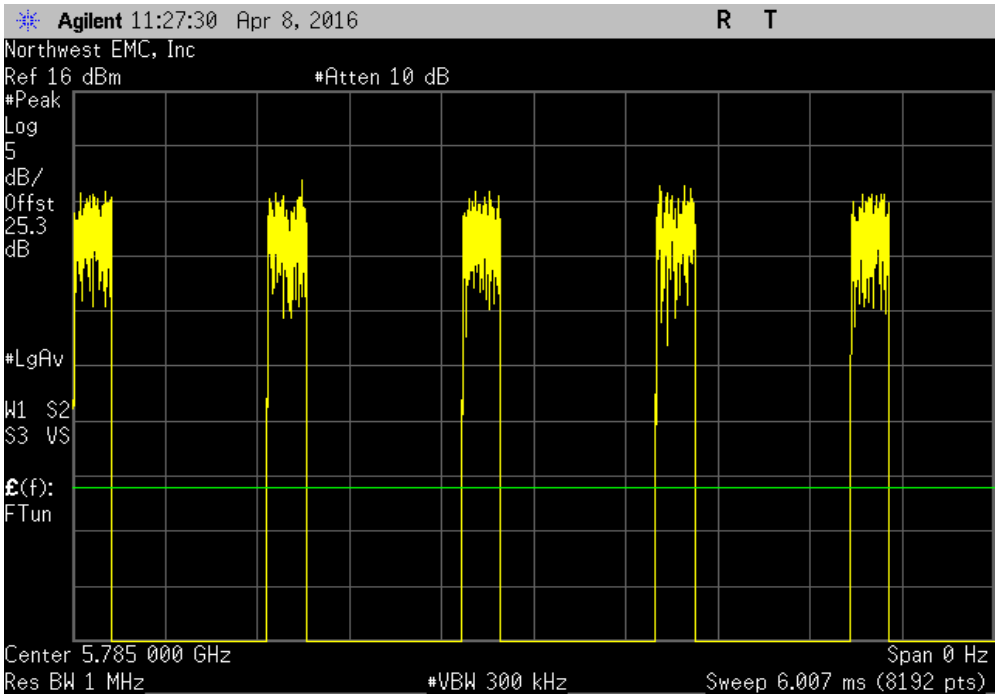
# DUTY CYCLE

XMit 2015.01.14

| 5725 - 5825 MHz Band, Mid Channel, Ch 157 - 5785 MHz, 802.11(a) 36 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit (%) | Results |
| | 249.1 us | 1.267 ms | 1 | 19.7 | N/A | N/A |



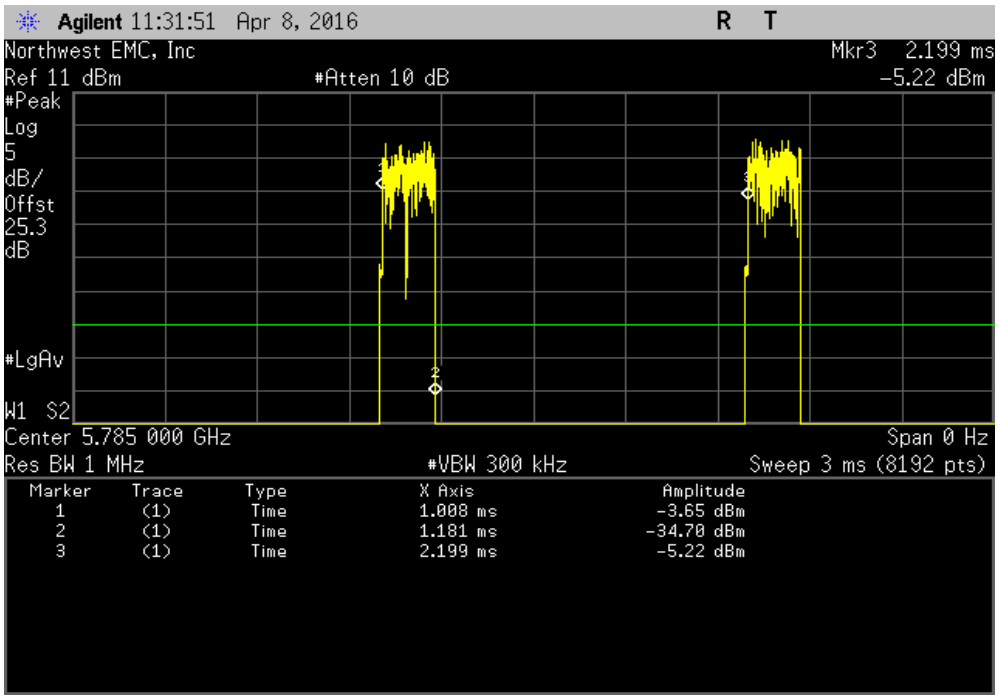

| 5725 - 5825 MHz Band, Mid Channel, Ch 157 - 5785 MHz, 802.11(a) 36 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit (%) | Results |
| | N/A | N/A | 5 | N/A | N/A | N/A |



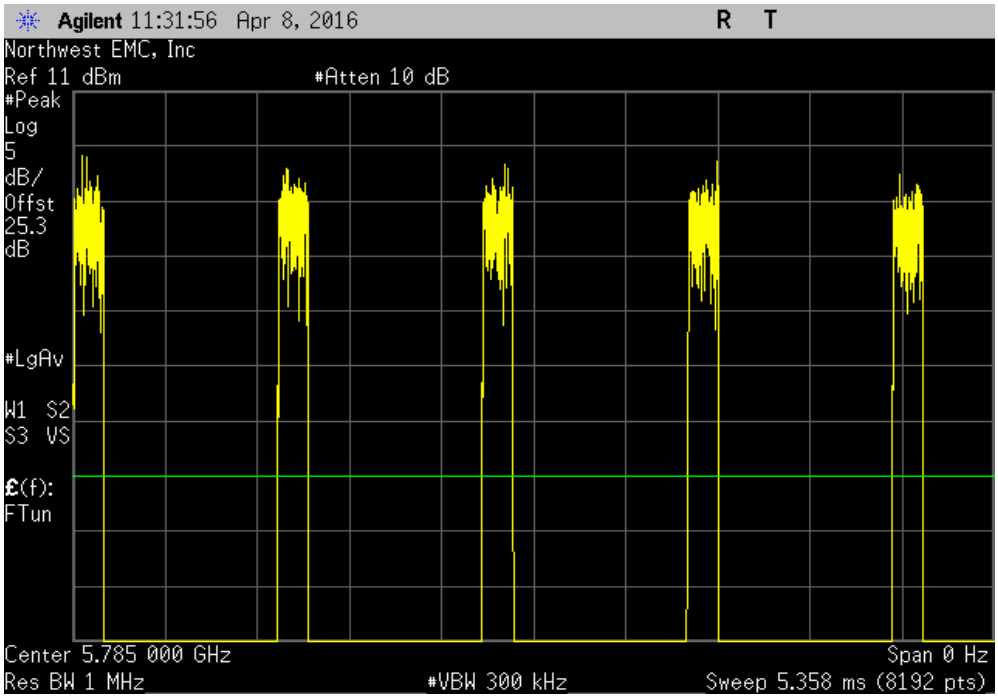
# DUTY CYCLE

XMit 2015.01.14

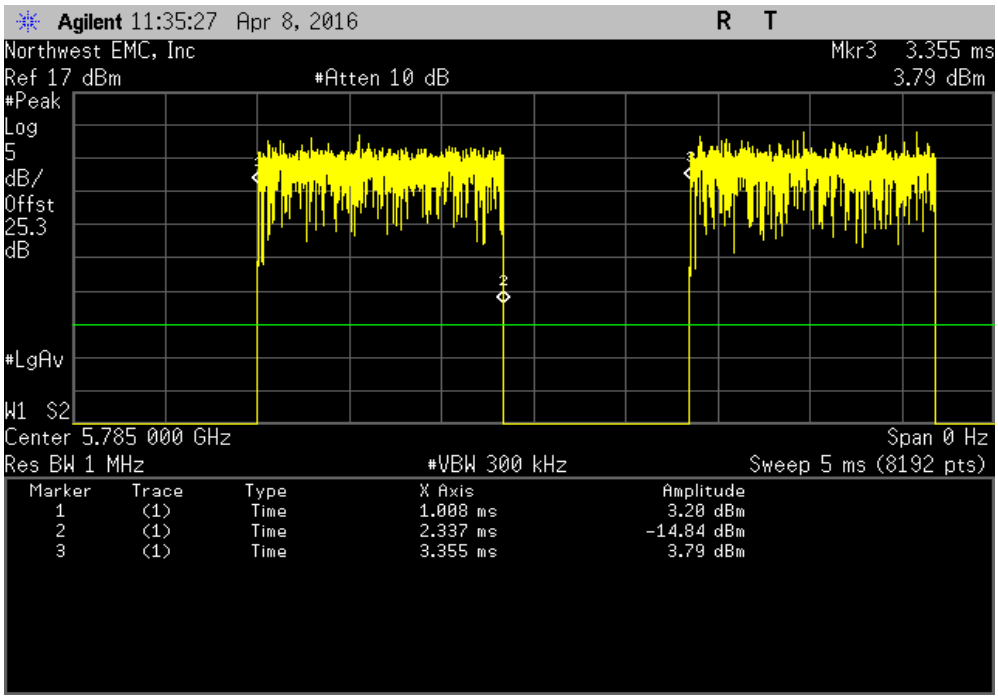
| 5725 - 5825 MHz Band, Mid Channel, Ch 157 - 5785 MHz, 802.11(a) 54 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit (%) | Results |
| | 172.9 us | 1.191 ms | 1 | 14.5 | N/A | N/A |



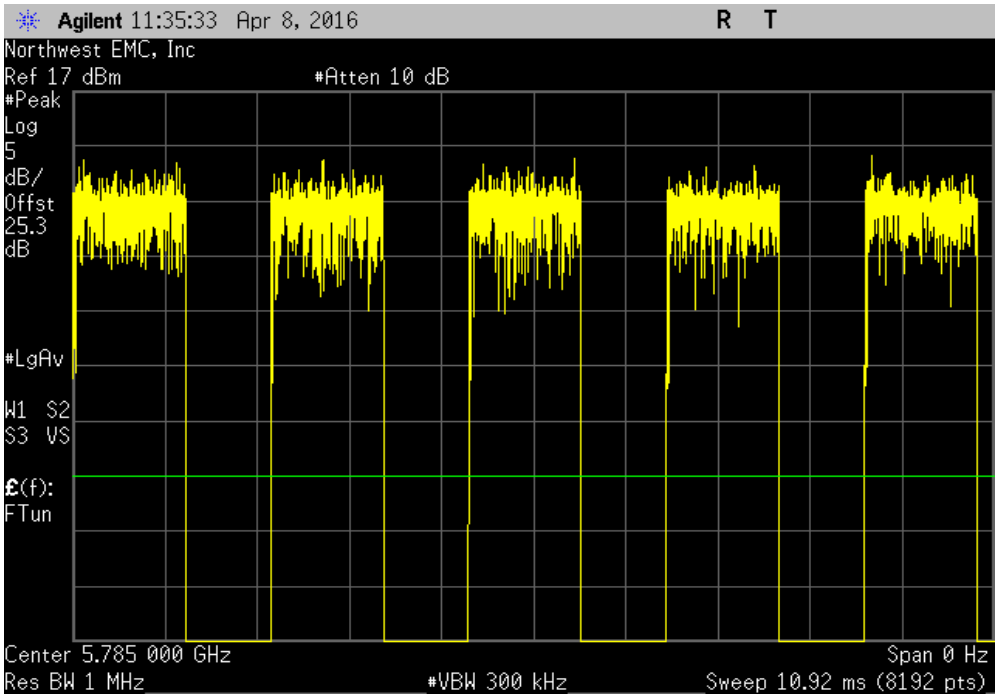

| 5725 - 5825 MHz Band, Mid Channel, Ch 157 - 5785 MHz, 802.11(a) 54 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit (%) | Results |
| | N/A | N/A | 5 | N/A | N/A | N/A |



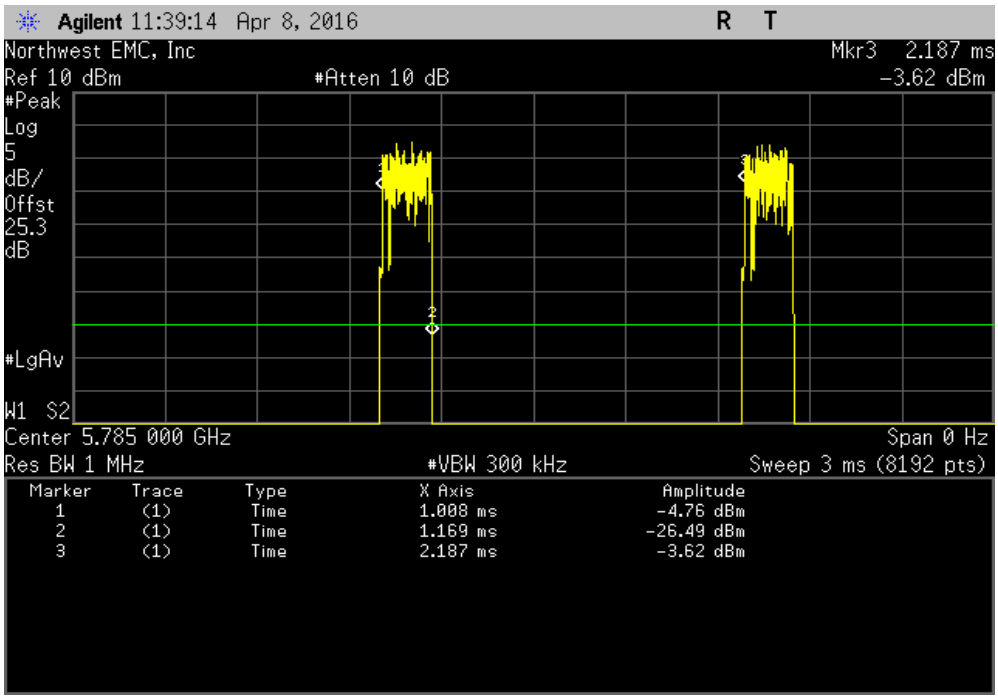
| 5725 - 5825 MHz Band, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS0 | | | | | | |
|---|---|---|---|---|---|---|
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit (%) | Results |
| | 1.329 ms | 2.347 ms | 1 | 56.6 | N/A | N/A |



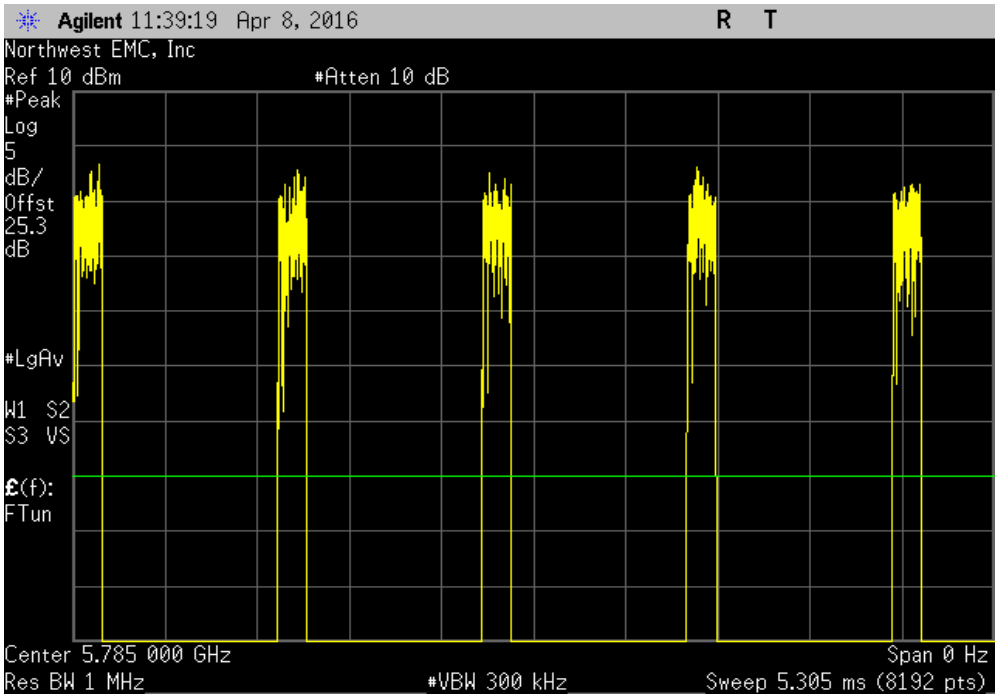

| 5725 - 5825 MHz Band, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS0 | | | | | | |
|---|---|---|---|---|---|---|
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit (%) | Results |
| | N/A | N/A | 5 | N/A | N/A | N/A |



| 5725 - 5825 MHz Band, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS7 | | | | | | |
|---|---|---|---|---|---|---|
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit (%) | Results |
| | 160.8 us | 1.179 ms | 1 | 13.6 | N/A | N/A |



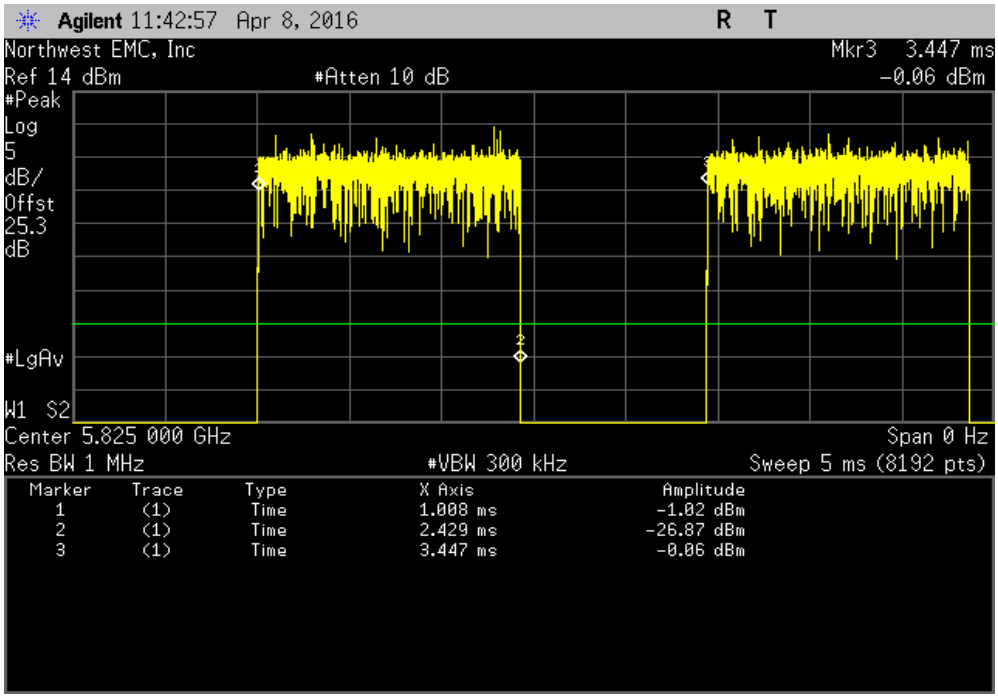

| 5725 - 5825 MHz Band, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS7 | | | | | | |
|---|---|---|---|---|---|---|
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit (%) | Results |
| | N/A | N/A | 5 | N/A | N/A | N/A |



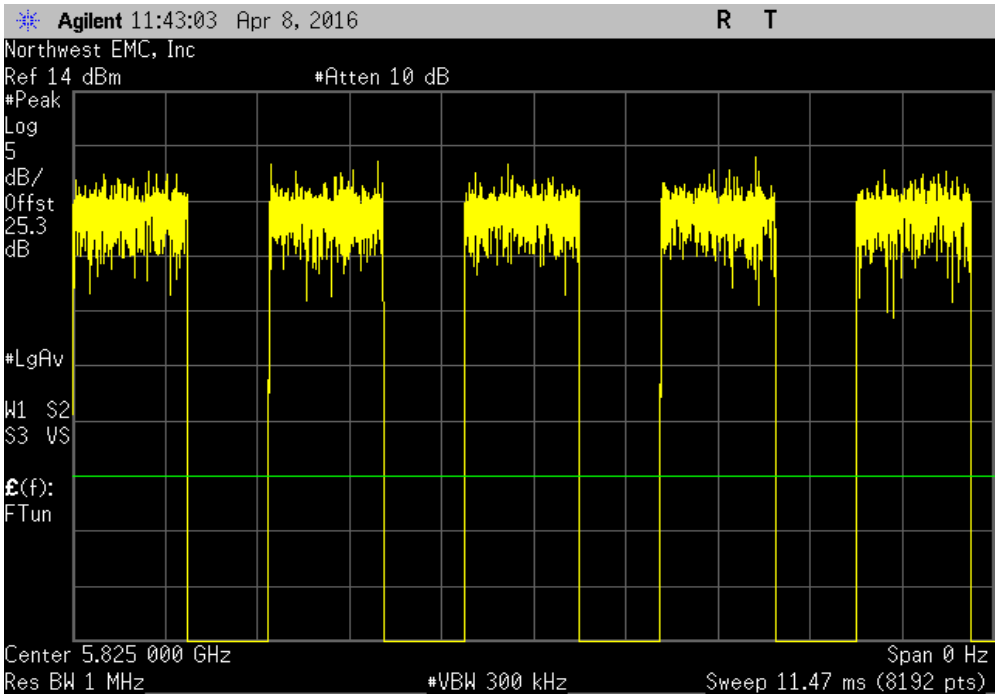
# DUTY CYCLE

XMit 2015.01.14

| 5725 - 5825 MHz Band, High Channel, Ch 165 - 5825 MHz, 802.11(a) 6 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit (%) | Results |
| | 1.421 ms | 2.439 ms | 1 | 58.3 | N/A | N/A |



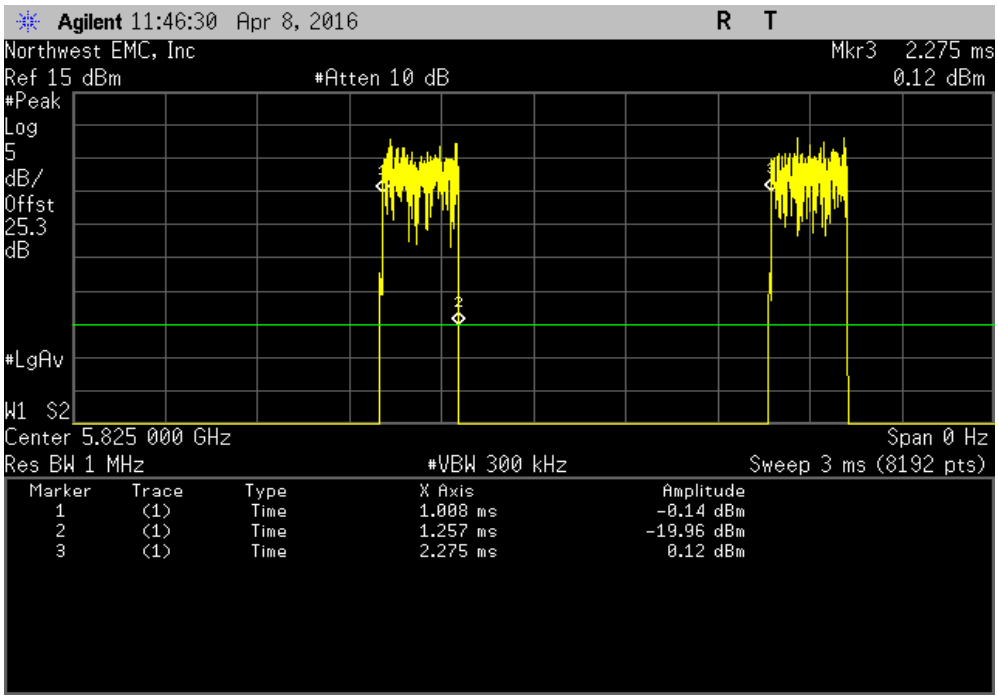

| 5725 - 5825 MHz Band, High Channel, Ch 165 - 5825 MHz, 802.11(a) 6 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit (%) | Results |
| | N/A | N/A | 5 | N/A | N/A | N/A |



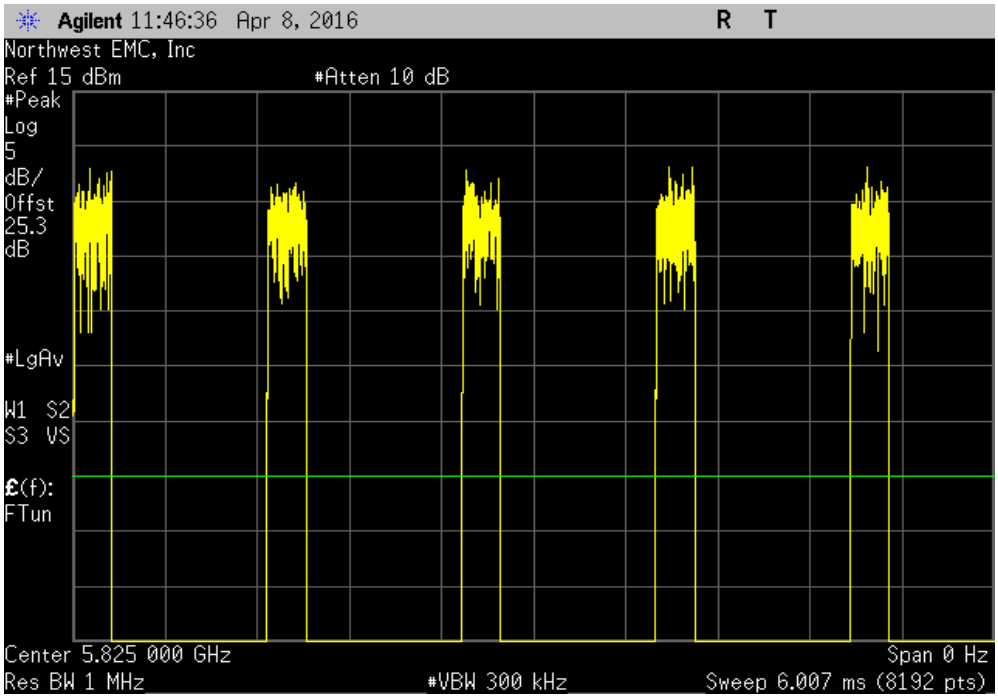
# DUTY CYCLE

XMit 2015.01.14

| 5725 - 5825 MHz Band, High Channel, Ch 165 - 5825 MHz, 802.11(a) 36 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit (%) | Results |
| | 248.7 us | 1.267 ms | 1 | 19.6 | N/A | N/A |




| 5725 - 5825 MHz Band, High Channel, Ch 165 - 5825 MHz, 802.11(a) 36 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit (%) | Results |
| | N/A | N/A | 5 | N/A | N/A | N/A |

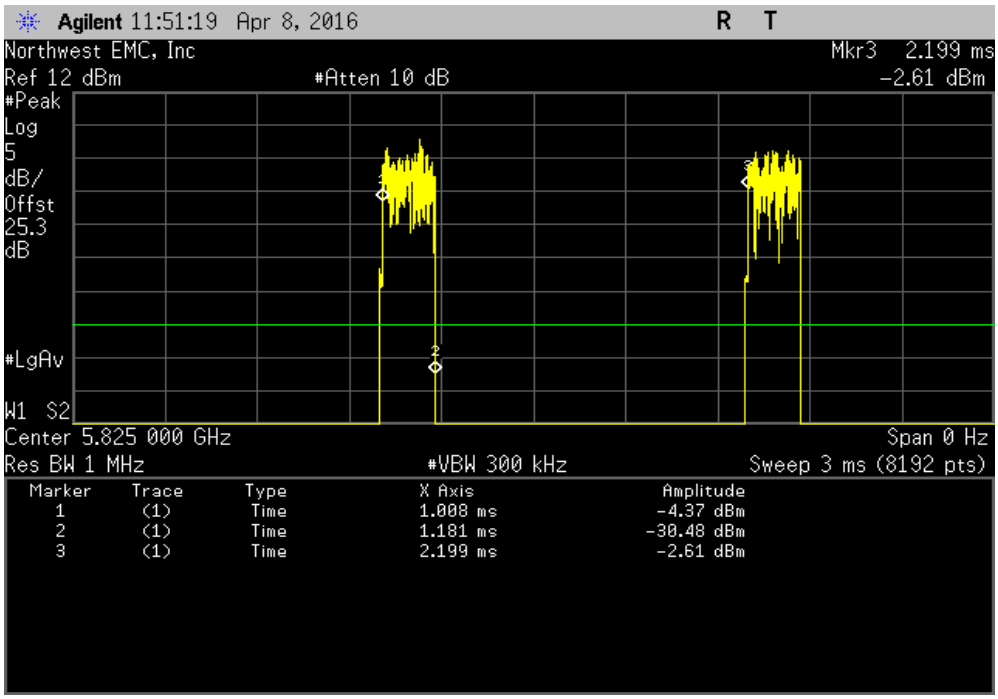


# DUTY CYCLE

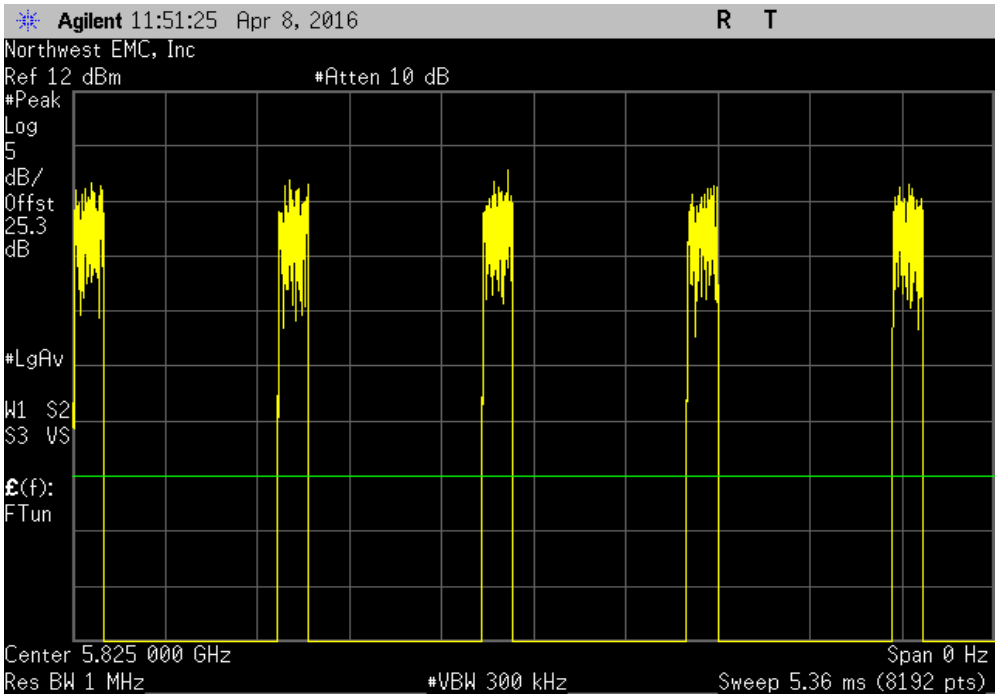
NORTHWEST EMC

XMit 2015.01.14

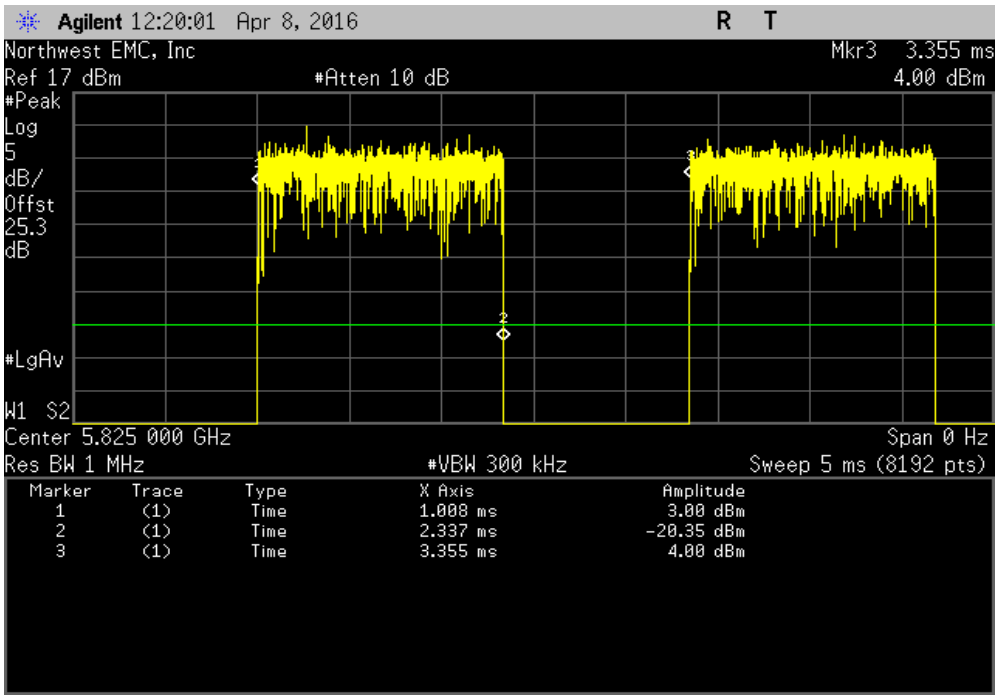
| 5725 - 5825 MHz Band, High Channel, Ch 165 - 5825 MHz, 802.11(a) 54 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit (%) | Results |
| | 172.9 us | 1.191 ms | 1 | 14.5 | N/A | N/A |



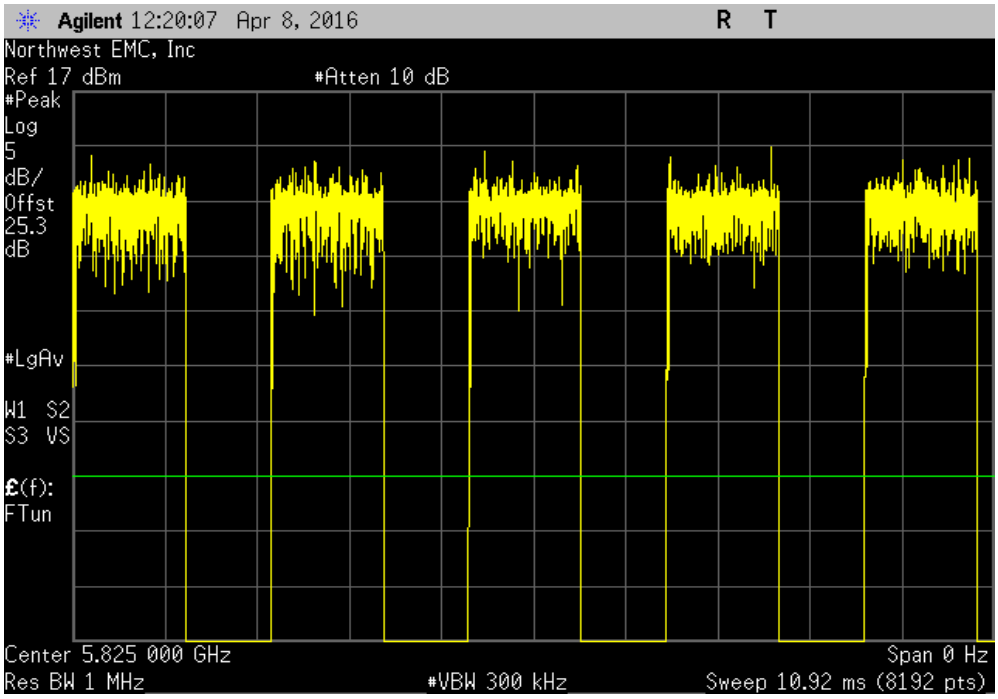

| 5725 - 5825 MHz Band, High Channel, Ch 165 - 5825 MHz, 802.11(a) 54 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit (%) | Results |
| | N/A | N/A | 5 | N/A | N/A | N/A |



| 5725 - 5825 MHz Band, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS0 | | | | | | |
|---|---|---|---|---|---|---|
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit (%) | Results |
| | 1.329 ms | 2.347 ms | 1 | 56.6 | N/A | N/A |



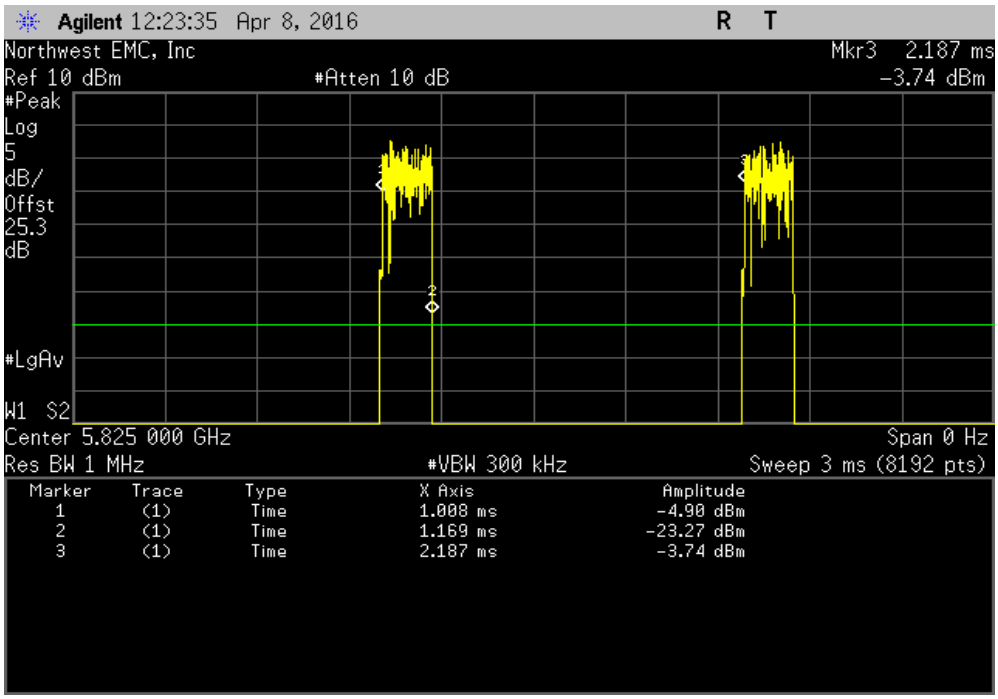

| 5725 - 5825 MHz Band, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS0 | | | | | | |
|---|---|---|---|---|---|---|
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit (%) | Results |
| | N/A | N/A | 5 | N/A | N/A | N/A |



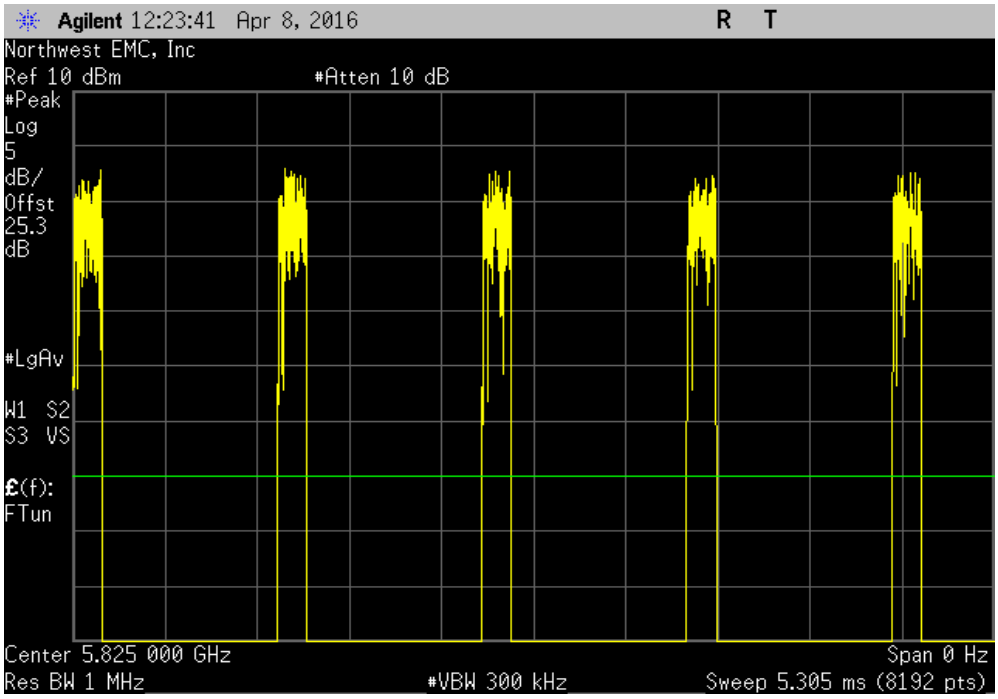
# DUTY CYCLE

XMit 2015.01.14

| 5725 - 5825 MHz Band, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS7 | | | | | | |
|---|---|---|---|---|---|---|
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit (%) | Results |
| | 160.8 us | 1.179 ms | 1 | 13.6 | N/A | N/A |




| 5725 - 5825 MHz Band, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS7 | | | | | | |
|---|---|---|---|---|---|---|
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit (%) | Results |
| | N/A | N/A | 5 | N/A | N/A | N/A |



# MAXIMUM CONDUCTED OUTPUT POWER

XMit 2015.01.14

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

**TEST EQUIPMENT**

| Description | Manufacturer | Model | ID | Last Cal. | Interval (mo) |
|---|---|---|---|---|---|
| Generator - Signal | Agilent | N5183A | TIK | 10/17/2014 | 36 |
| Block - DC | Fairview Microwave | SD3379 | AMI | 9/18/2015 | 12 |
| Attenuator | S.M. Electronics | SA26B-20 | RFW | 2/26/2016 | 12 |
| Cable | ESM Cable Corp. | TTBJ141 KMKM-72 | MNU | 9/18/2015 | 12 |
| Analyzer - Spectrum Analyzer | Agilent | E4440A | AAX | 3/24/2016 | 12 |

**TEST DESCRIPTION**

The transmit frequency was set to the required channels in each band. The transmit power was set to its default maximum. The radio was operated in the modes as shown in the following data sheets.

A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used. The reference level offset on the spectrum analyzer was adjusted to compensate for cable loss and the external attenuation used between the RF output and the spectrum analyzer.

Prior to measuring maximum transmit power; the emission bandwidth (B) and the transmission pulse duration (T) were measured. The method of measuring the emission bandwidth and the associated data are found elsewhere in this test report. The transmission pulse duration (T) was measured using a zero span on the spectrum analyzer to see the pulses in the time domain.

The maximum conducted output power was measured using ANSI C63.10, Method SA-2 (RMS detection and trace averaging across the on and off times of the EUT transmission and use of a duty cycle correction factor).

The spectrum analyzer settings were set per the guidance as well as the following specifics:

-RMS Detector

-Trace average 100 traces in power averaging mode.

-Power was integrated across “B”, by using the channel power function of the analyzer.

A duty cycle correction factor was added to the measurement using the results of the formula of 10*LOG(1/D) where D is the duty cycle.

# MAXIMUM CONDUCTED OUTPUT POWER

NORTHWEST EMC

XMit 2015.01.14

| | | | | | |
|---|---|---|---|---|---|
| **EUT:** | Zoll CF Card Module | | | **Work Order:** | LGPD0188 |
| **Serial Number:** | 2012M01206 | | | **Date:** | 04/08/16 |
| **Customer:** | ZOLL Medical Corp. | | | **Temperature:** | 22.8°C |
| **Attendees:** | Adam Ford | | | **Humidity:** | 24% |
| **Project:** | None | | | **Barometric Pres.:** | 987.1 mb |
| **Tested by:** | Jared Ison | **Power:** | 5 VDC | **Job Site:** | MN08 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.407:2016 | ANSI C63.10:2013 |

**COMMENTS**

Using the channel and modulation combination that produced the highest output power, a measurement was captured using original Peak detector method in order to match verified power against the original grant.

**DEVIATIONS FROM TEST STANDARD**

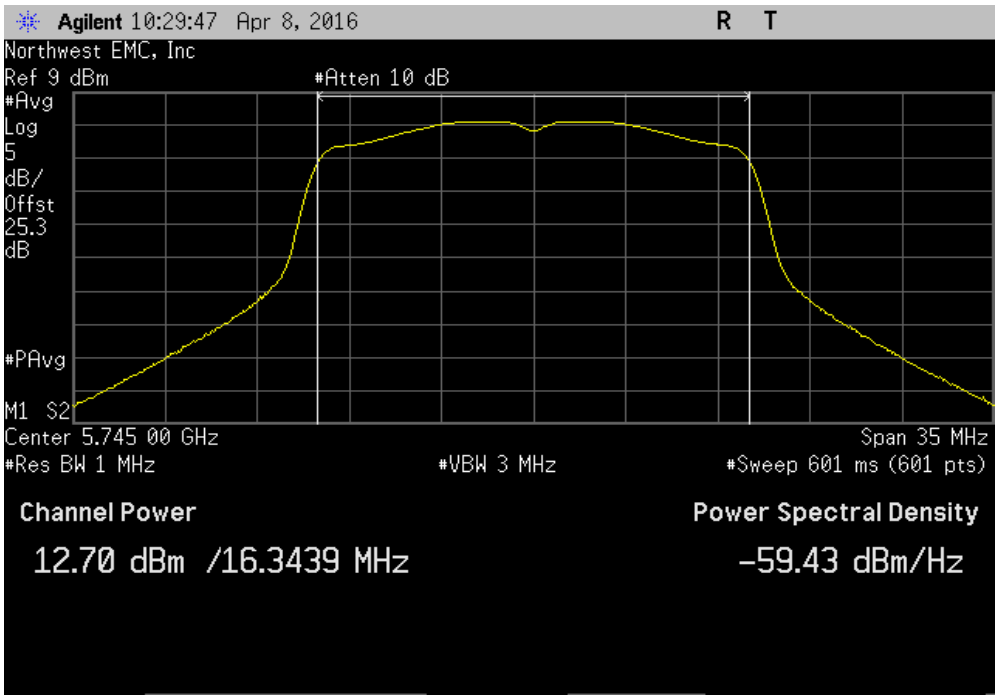
None

| Configuration # | 1 | Signature |
|---|---|---|

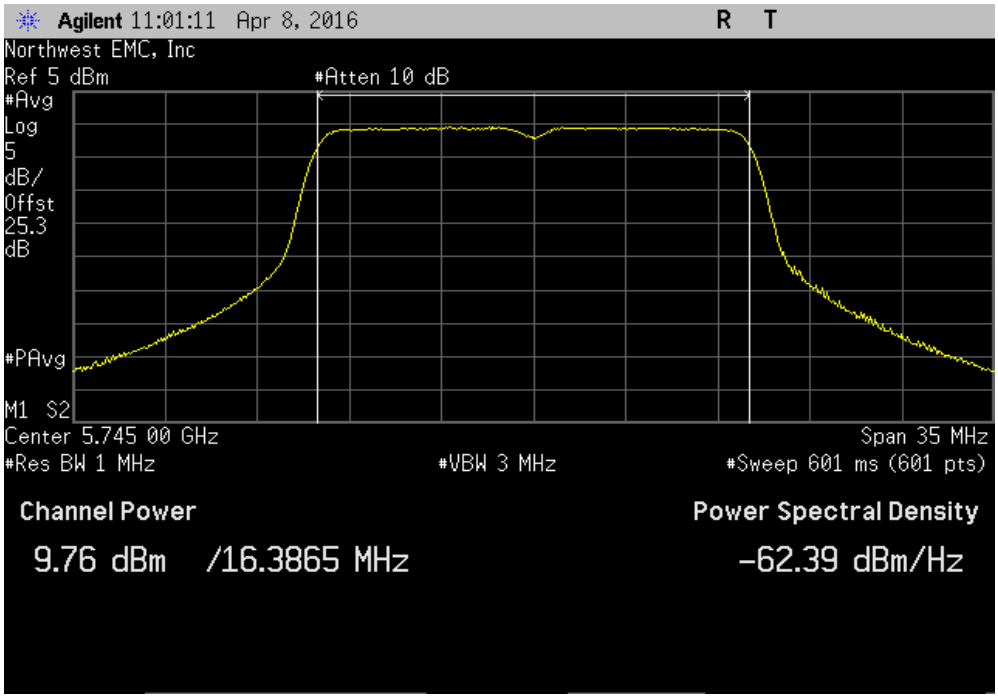
| | Avg Cond Pwr (dBm) | Duty Cycle Factor (dB) | Value (dBm) | Limit (dBm) | Results |
|---|---|---|---|---|---|
| 5785 - 5825 MHz Band | | | | | |
| Low Channel, Ch 149 - 5745 MHz | | | | | |
| 802.11(a) 6 Mbps | 12.705 | 2.4 | 15.1 | 30 | Pass |
| 802.11(a) 36 Mbps | 9.757 | 7.1 | 16.8 | 30 | Pass |
| 802.11(a) 54 Mbps | 4.792 | 8.4 | 13.2 | 30 | Pass |
| 802.11(n) MCS0 | 13.471 | 2.5 | 15.9 | 30 | Pass |
| 802.11(n) MCS7 | 2.833 | 8.7 | 11.5 | 30 | Pass |
| Mid Channel, Ch 157 - 5785 MHz | | | | | |
| 802.11(a) 6 Mbps | 12.083 | 2.3 | 14.4 | 30 | Pass |
| 802.11(a) 36 Mbps | 9.383 | 7.1 | 16.4 | 30 | Pass |
| 802.11(a) 54 Mbps | 4.78 | 8.4 | 13.2 | 30 | Pass |
| 802.11(n) MCS0 | 15.854 | 2.5 | 18.3 | 30 | Pass |
| 802.11(n) MCS7 | 3.525 | 8.7 | 12.2 | 30 | Pass |
| High Channel, Ch 165 - 5825 MHz | | | | | |
| 802.11(a) 6 Mbps | 12.367 | 2.3 | 14.7 | 30 | Pass |
| 802.11(a) 36 Mbps | 9.543 | 7.1 | 16.6 | 30 | Pass |
| 802.11(a) 54 Mbps | 4.632 | 8.4 | 13 | 30 | Pass |
| 802.11(n) MCS0 | 15.903 | 2.5 | 18.4 | 30 | Pass |
| 802.11(n) MCS7 | 3.547 | 8.7 | 12.2 | 30 | Pass |

| | Value (dBm) | Limit (dBm) | Results |
|---|---|---|---|
| Peak Detector Method, Verification of power from Original Grant | | | |
| High Channel, Ch 165 - 5825 MHz | | | |
| 802.11(n) MCS0 | 20.096 | 30 | Pass |

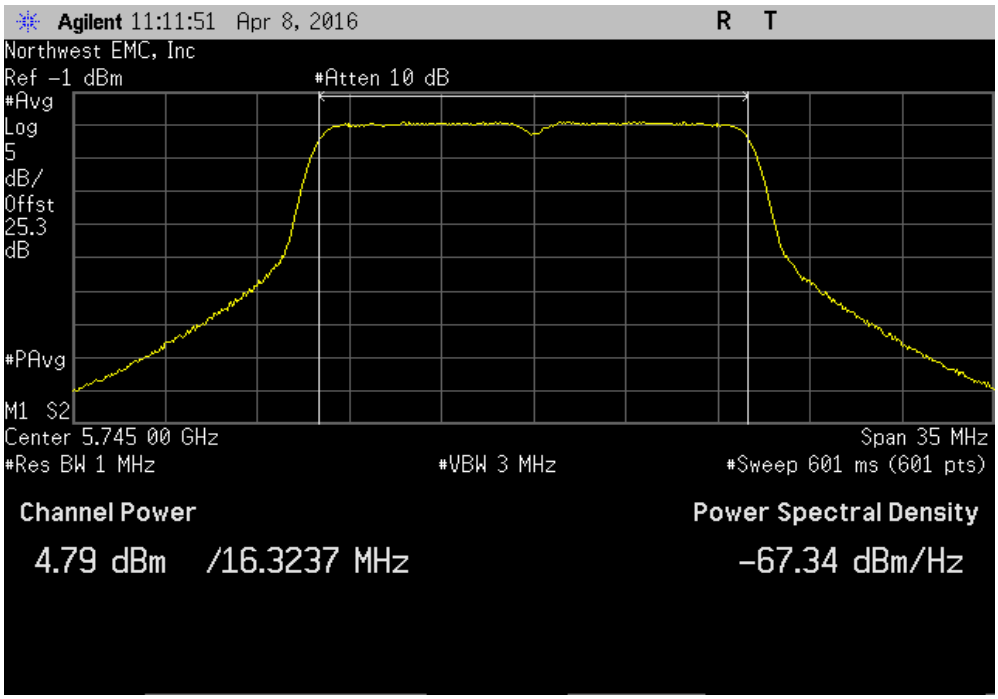
| 5785 - 5825 MHz Band, Low Channel, Ch 149 - 5745 MHz, 802.11(a) 6 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Avg Cond Pwr (dBm) | Duty Cycle Factor (dB) | | Value (dBm) | Limit (dBm) | Results |
| | 12.705 | 2.4 | | 15.1 | 30 | Pass |



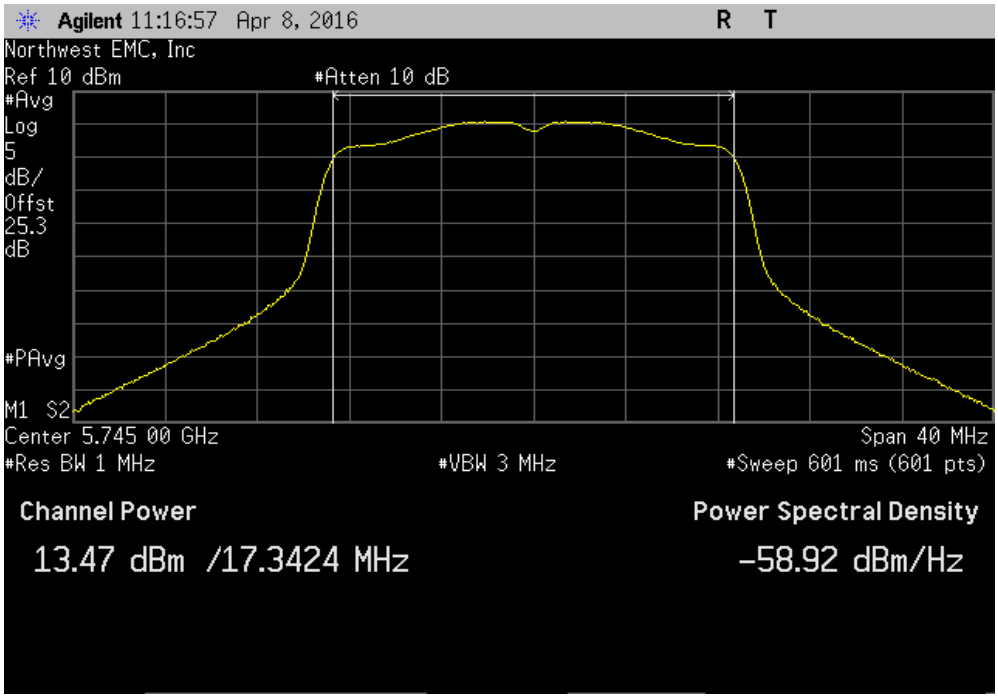

| 5785 - 5825 MHz Band, Low Channel, Ch 149 - 5745 MHz, 802.11(a) 36 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Avg Cond Pwr (dBm) | Duty Cycle Factor (dB) | | Value (dBm) | Limit (dBm) | Results |
| | 9.757 | 7.1 | | 16.8 | 30 | Pass |



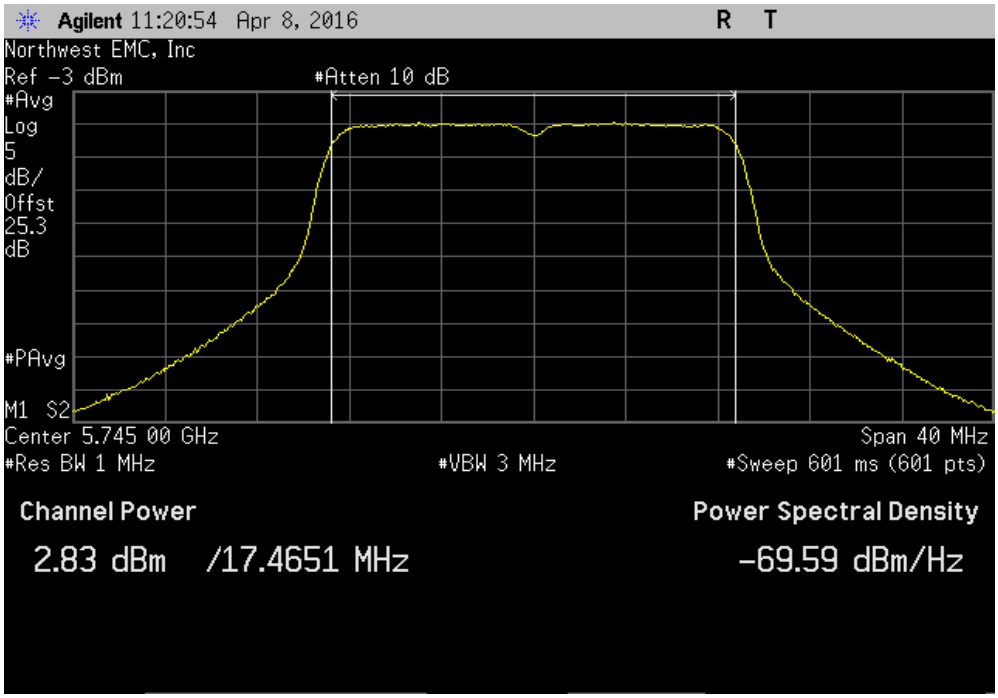
| 5785 - 5825 MHz Band, Low Channel, Ch 149 - 5745 MHz, 802.11(a) 54 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Avg Cond Pwr (dBm) | Duty Cycle Factor (dB) | | Value (dBm) | Limit (dBm) | Results |
| | 4.792 | 8.4 | | 13.2 | 30 | Pass |



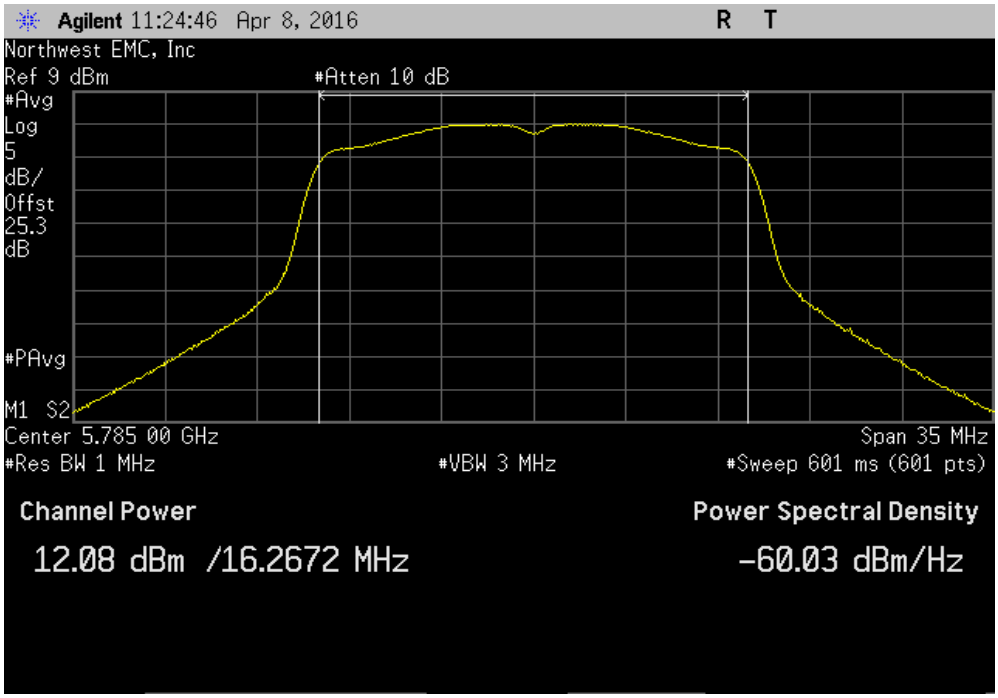

| 5785 - 5825 MHz Band, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS0 | | | | | | |
|---|---|---|---|---|---|---|
| | Avg Cond Pwr (dBm) | Duty Cycle Factor (dB) | | Value (dBm) | Limit (dBm) | Results |
| | 13.471 | 2.5 | | 15.9 | 30 | Pass |



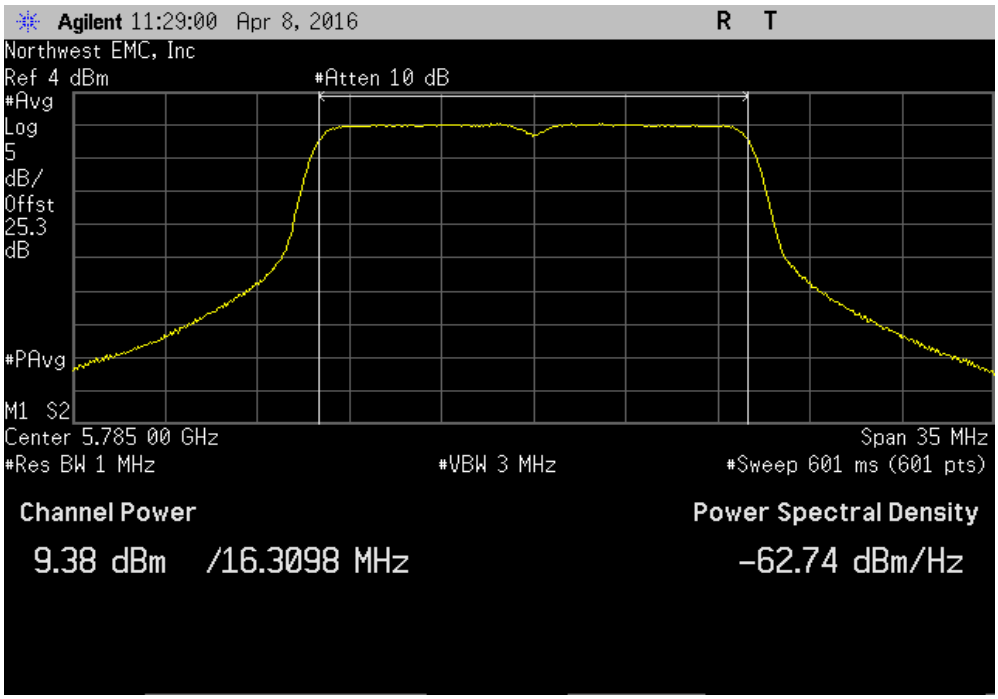
| 5785 - 5825 MHz Band, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS7 | | | | | | |
|---|---|---|---|---|---|---|
| | Avg Cond Pwr (dBm) | Duty Cycle Factor (dB) | | Value (dBm) | Limit (dBm) | Results |
| | 2.833 | 8.7 | | 11.5 | 30 | Pass |



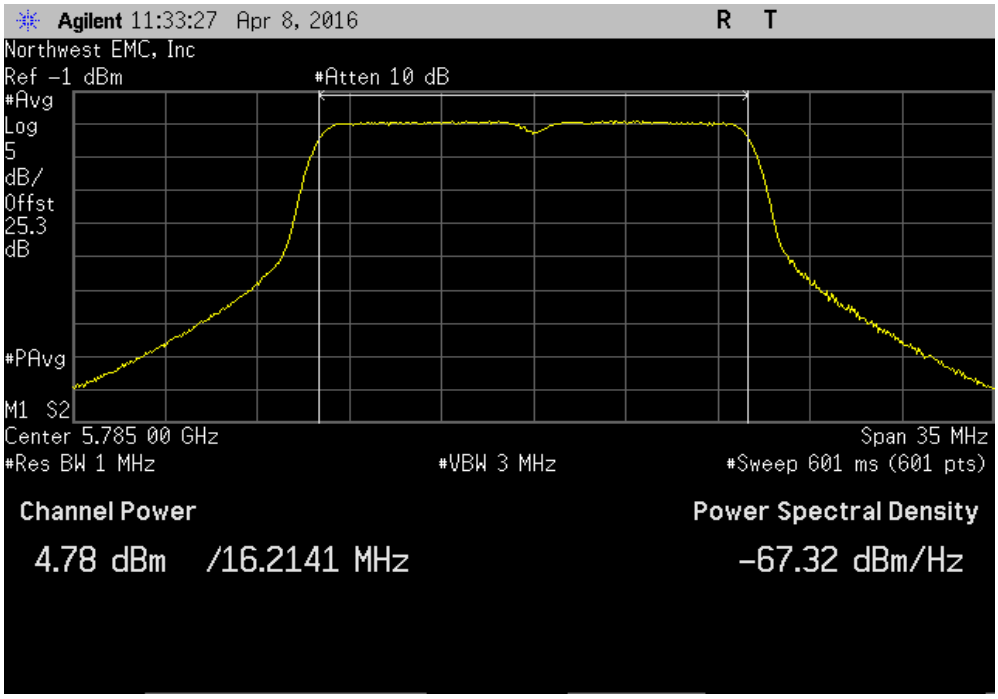

| 5785 - 5825 MHz Band, Mid Channel, Ch 157 - 5785 MHz, 802.11(a) 6 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Avg Cond Pwr (dBm) | Duty Cycle Factor (dB) | | Value (dBm) | Limit (dBm) | Results |
| | 12.083 | 2.3 | | 14.4 | 30 | Pass |



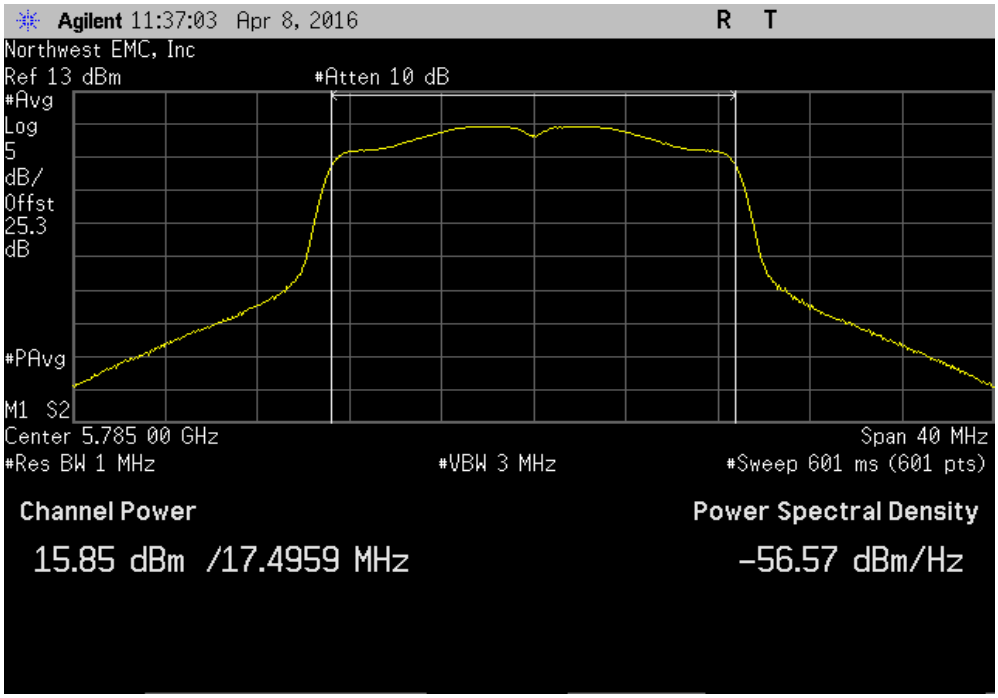
| 5785 - 5825 MHz Band, Mid Channel, Ch 157 - 5785 MHz, 802.11(a) 36 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Avg Cond Pwr (dBm) | Duty Cycle Factor (dB) | | Value (dBm) | Limit (dBm) | Results |
| | 9.383 | 7.1 | | 16.4 | 30 | Pass |



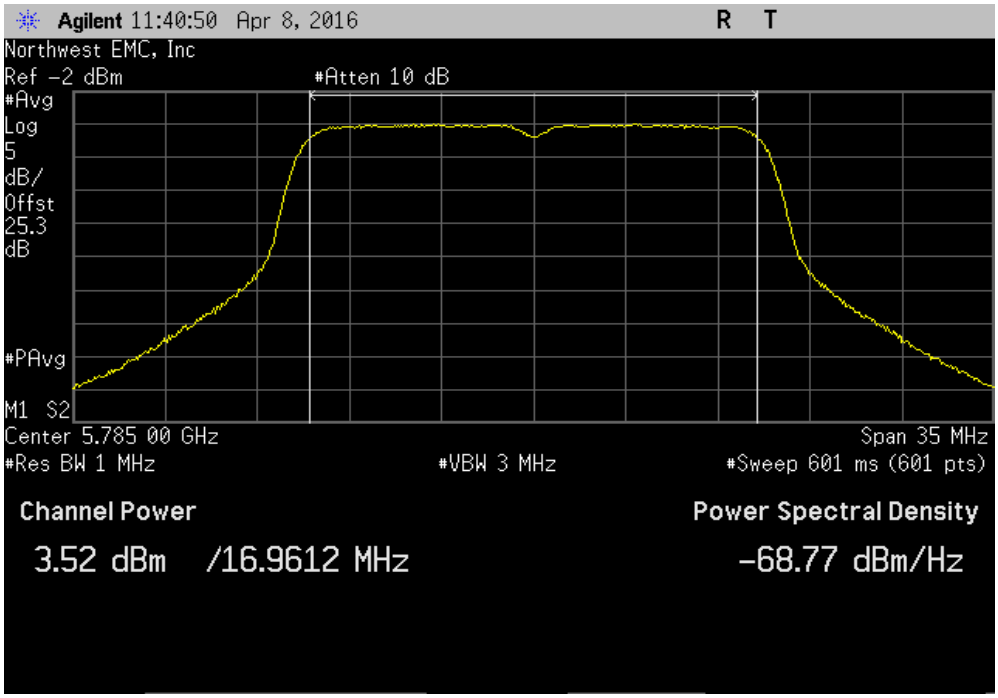

| 5785 - 5825 MHz Band, Mid Channel, Ch 157 - 5785 MHz, 802.11(a) 54 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Avg Cond Pwr (dBm) | Duty Cycle Factor (dB) | | Value (dBm) | Limit (dBm) | Results |
| | 4.78 | 8.4 | | 13.2 | 30 | Pass |



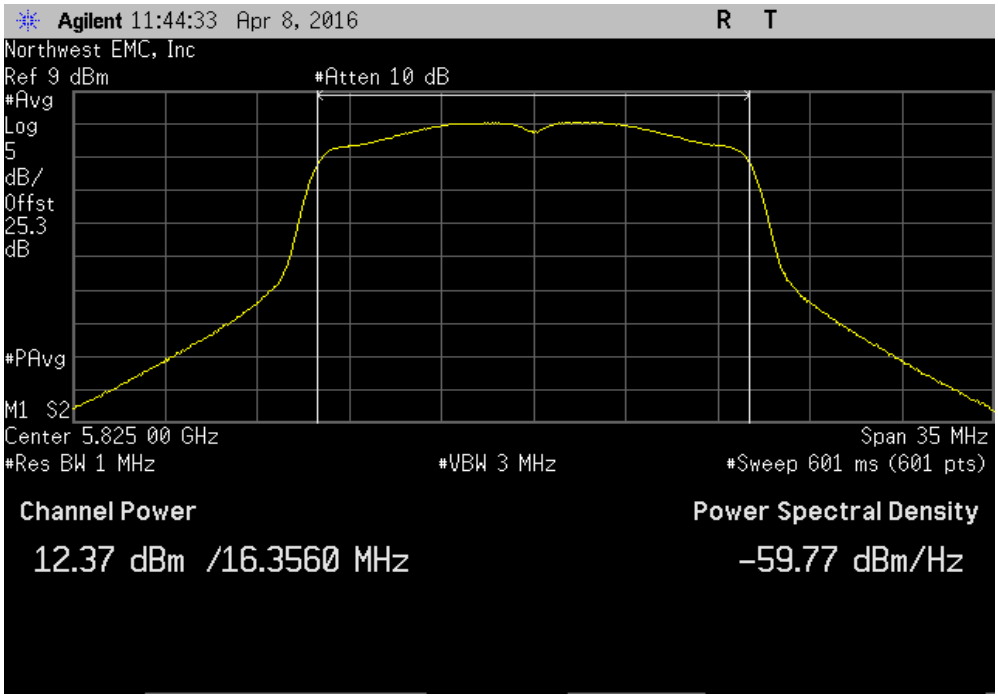
| 5785 - 5825 MHz Band, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS0 | | | | | | |
|---|---|---|---|---|---|---|
| | Avg Cond Pwr (dBm) | Duty Cycle Factor (dB) | | Value (dBm) | Limit (dBm) | Results |
| | 15.854 | 2.5 | | 18.3 | 30 | Pass |



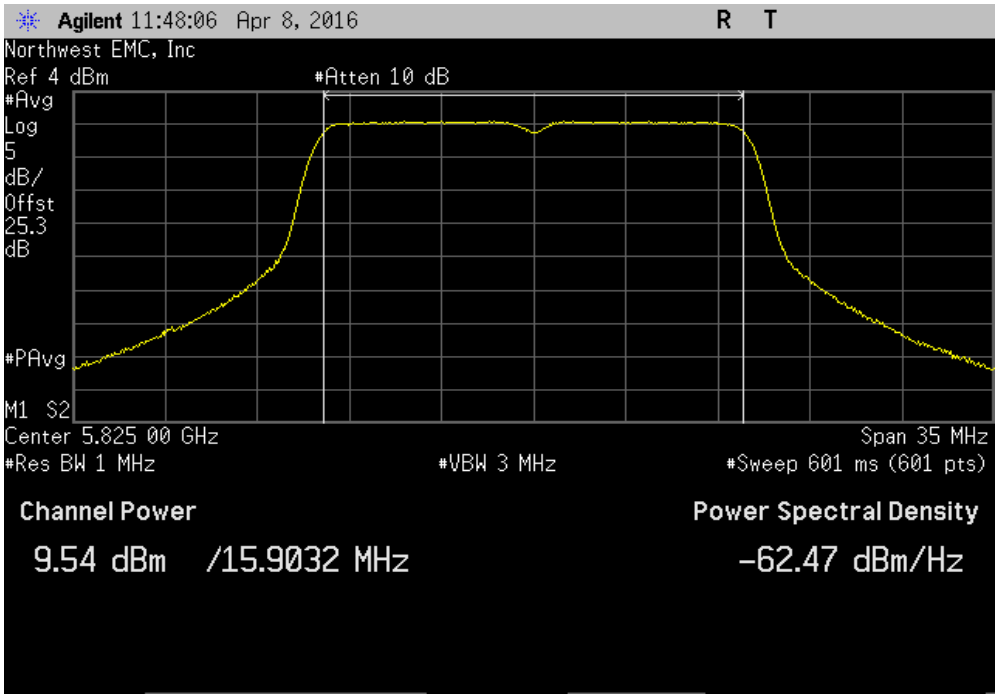

| 5785 - 5825 MHz Band, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS7 | | | | | | |
|---|---|---|---|---|---|---|
| | Avg Cond Pwr (dBm) | Duty Cycle Factor (dB) | | Value (dBm) | Limit (dBm) | Results |
| | 3.525 | 8.7 | | 12.2 | 30 | Pass |



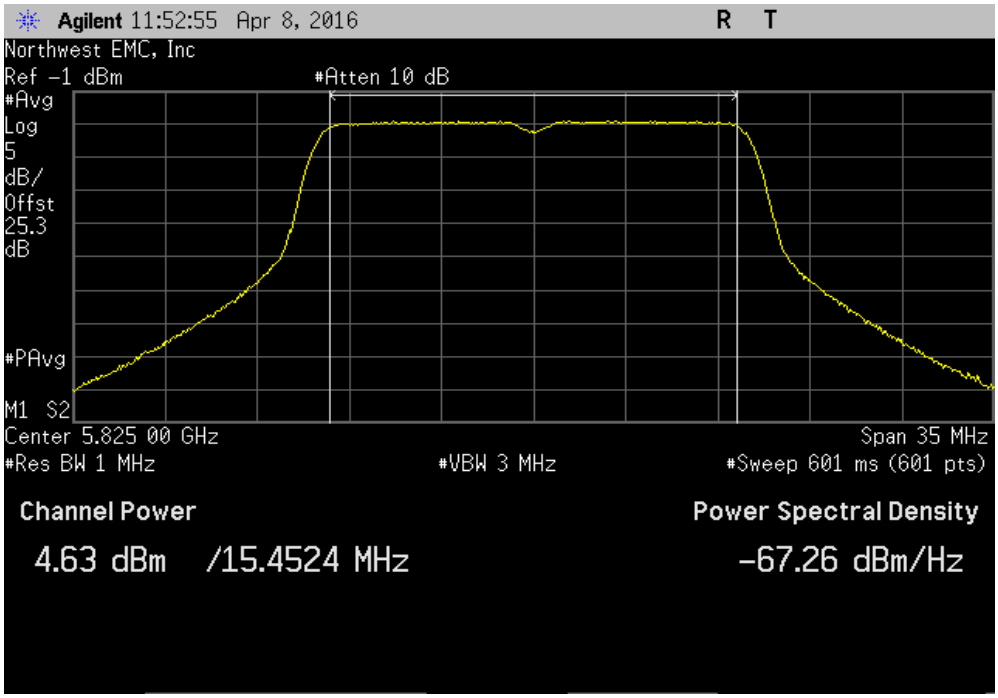
| 5785 - 5825 MHz Band, High Channel, Ch 165 - 5825 MHz, 802.11(a) 6 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Avg Cond Pwr (dBm) | Duty Cycle Factor (dB) | | Value (dBm) | Limit (dBm) | Results |
| | 12.367 | 2.3 | | 14.7 | 30 | Pass |



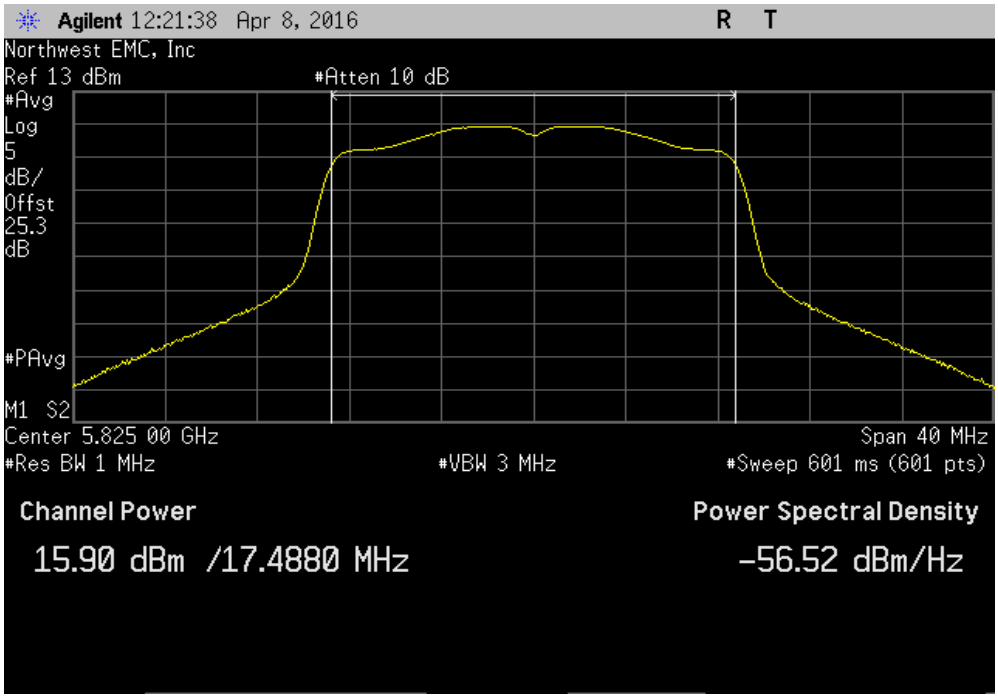

| 5785 - 5825 MHz Band, High Channel, Ch 165 - 5825 MHz, 802.11(a) 36 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Avg Cond Pwr (dBm) | Duty Cycle Factor (dB) | | Value (dBm) | Limit (dBm) | Results |
| | 9.543 | 7.1 | | 16.6 | 30 | Pass |



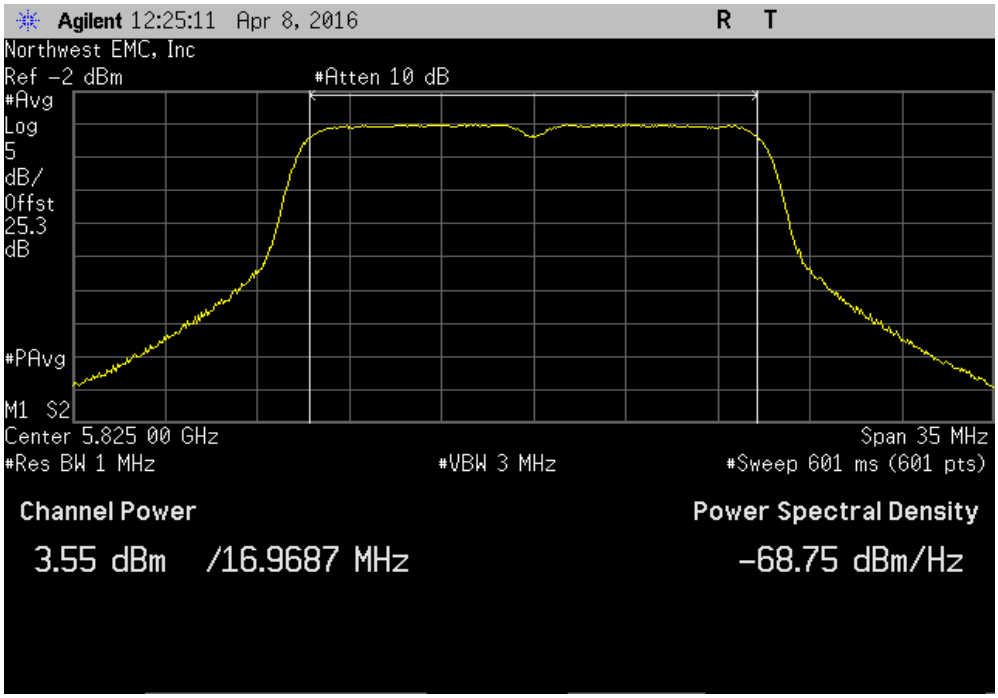
| 5785 - 5825 MHz Band, High Channel, Ch 165 - 5825 MHz, 802.11(a) 54 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Avg Cond Pwr (dBm) | Duty Cycle Factor (dB) | | Value (dBm) | Limit (dBm) | Results |
| | 4.632 | 8.4 | | 13 | 30 | Pass |



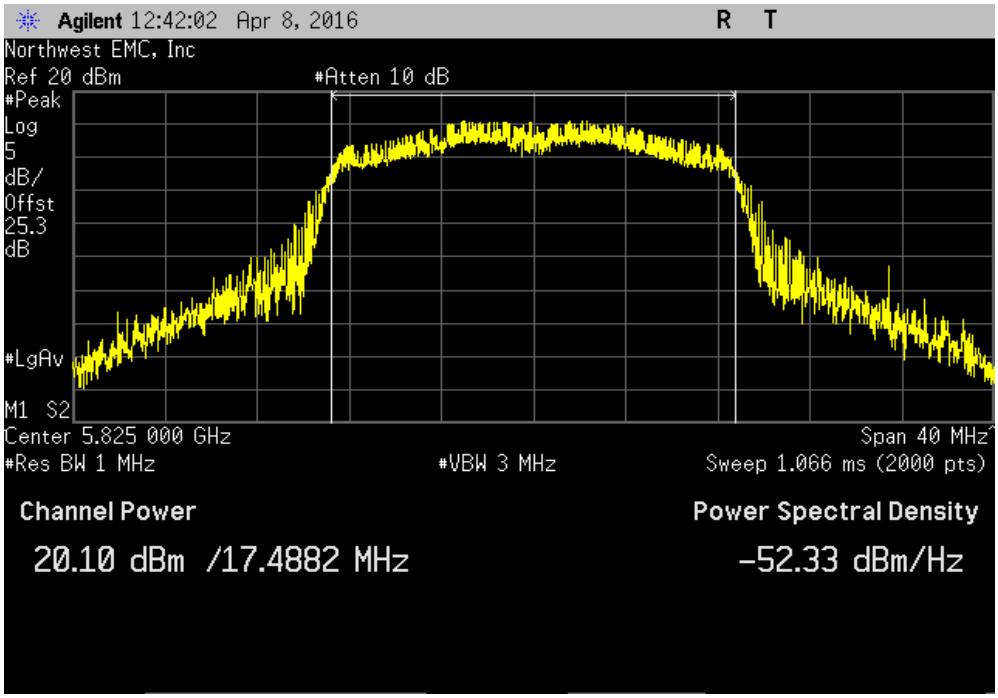

| 5785 - 5825 MHz Band, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS0 | | | | | | |
|---|---|---|---|---|---|---|
| | Avg Cond Pwr (dBm) | Duty Cycle Factor (dB) | | Value (dBm) | Limit (dBm) | Results |
| | 15.903 | 2.5 | | 18.4 | 30 | Pass |



| 5785 - 5825 MHz Band, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS7 | | | | | | |
|---|---|---|---|---|---|---|
| | Avg Cond Pwr (dBm) | Duty Cycle Factor (dB) | | Value (dBm) | Limit (dBm) | Results |
| | 3.547 | 8.7 | | 12.2 | 30 | Pass |



| 5725 - 5785 MHz Band, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS0 | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBm) | Limit (<) | Results |
| | | | | 20.096 | 30 | Pass |



# OCCUPIED BANDWIDTH

XMit 2015.01.14

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

**TEST EQUIPMENT**

| Description | Manufacturer | Model | ID | Last Cal. | Interval (mo) |
|---|---|---|---|---|---|
| Attenuator | S.M. Electronics | SA26B-20 | RFW | 2/26/2016 | 12 |
| Block - DC | Fairview Microwave | SD3379 | AMI | 9/18/2015 | 12 |
| Cable | ESM Cable Corp. | TTBJ141 KMKM-72 | MNU | 9/18/2015 | 12 |
| Generator - Signal | Agilent | N5183A | TIK | 10/17/2014 | 36 |
| Analyzer - Spectrum Analyzer | Agilent | E4440A | AAX | 3/24/2016 | 12 |

**TEST DESCRIPTION**

The transmit frequencies and data rates listed in the datasheet were measured in each band utilized by the radio. The transmit power was set to its default maximum.

A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used. The reference level offset on the spectrum analyzer was adjusted to compensate for cable loss and the external attenuation used between the RF output and the spectrum analyzer input.

Per ANSI C63.10, the spectrum analyzer settings were as follows:

-RBW = 100 kHz

-VBW = ≥ 3x RBW

-Detector = Peak

-Trace mode = max hold

The spectrum analyzer occupied bandwidth measurement function was then used to measure the 6 dB emission bandwidth.

The 99.9% (approximate 26 dB) emission bandwidth (EBW) was also measured at the same time to be used for setting the

# OCCUPIED BANDWIDTH

NORTHWEST EMC

XMit 2015.01.14

| | | | | | |
|---|---|---|---|---|---|
| **EUT:** | Zoll CF Card Module | | | **Work Order:** | LGPD0188 |
| **Serial Number:** | 2012M01206 | | | **Date:** | 04/08/16 |
| **Customer:** | ZOLL Medical Corp. | | | **Temperature:** | 22.8°C |
| **Attendees:** | Adam Ford | | | **Humidity:** | 24% |
| **Project:** | None | | | **Barometric Pres.:** | 987.1 mb |
| **Tested by:** | Jared Ison | **Power:** | 5 VDC | **Job Site:** | MN08 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.407:2016 | ANSI C63.10:2013 |
| | |

**COMMENTS**

None

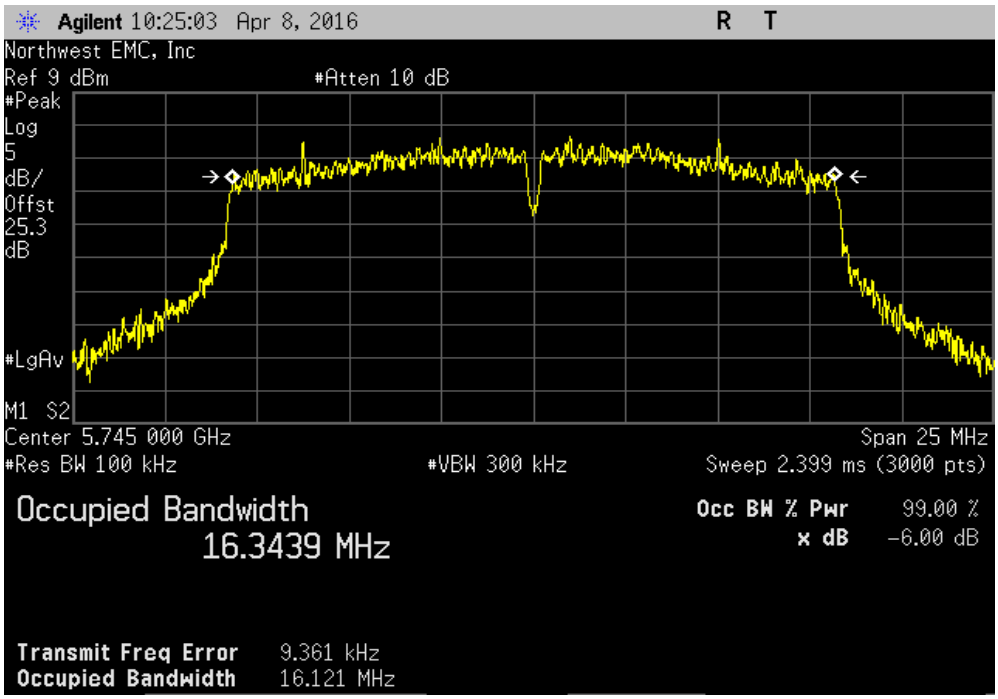
**DEVIATIONS FROM TEST STANDARD**

None

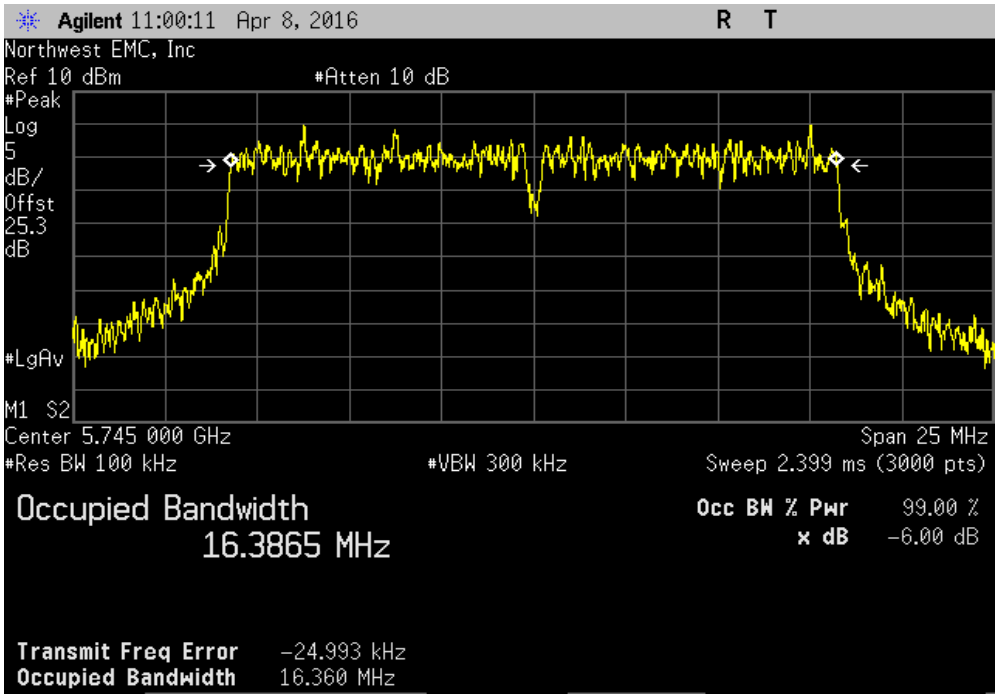
| Configuration # | 1 | Signature |
|---|---|---|

| | Value | Limit (>) | Result |
|---|---|---|---|
| 5785 - 5825 MHz Band | | | |
| Low Channel, Ch 149 - 5745 MHz | | | |
| 802.11(a) 6 Mbps | 16.121 MHz | 500 kHz | Pass |
| 802.11(a) 36 Mbps | 16.36 MHz | 500 kHz | Pass |
| 802.11(a) 54 Mbps | 16.199 MHz | 500 kHz | Pass |
| 802.11(n) MCS0 | 11.659 MHz | 500 kHz | Pass |
| 802.11(n) MCS7 | 17.215 MHz | 500 kHz | Pass |
| Mid Channel, Ch 157 - 5785 MHz | | | |
| 802.11(a) 6 Mbps | 14.491 MHz | 500 kHz | Pass |
| 802.11(a) 36 Mbps | 16.023 MHz | 500 kHz | Pass |
| 802.11(a) 54 Mbps | 15.778 MHz | 500 kHz | Pass |
| 802.11(n) MCS0 | 14.252 MHz | 500 kHz | Pass |
| 802.11(n) MCS7 | 16.474 MHz | 500 kHz | Pass |
| High Channel, Ch 165 - 5825 MHz | | | |
| 802.11(a) 6 Mbps | 14.899 MHz | 500 kHz | Pass |
| 802.11(a) 36 Mbps | 15.8 MHz | 500 kHz | Pass |
| 802.11(a) 54 Mbps | 15.337 MHz | 500 kHz | Pass |
| 802.11(n) MCS0 | 14.423 MHz | 500 kHz | Pass |
| 802.11(n) MCS7 | 16.456 MHz | 500 kHz | Pass |

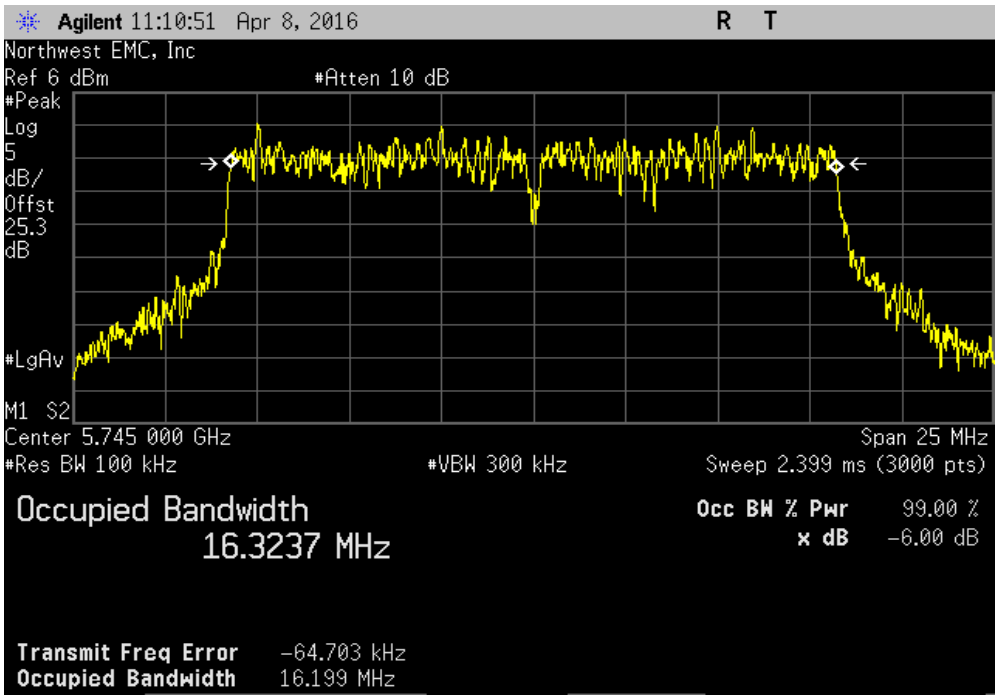
| 5785 - 5825 MHz Band, Low Channel, Ch 149 - 5745 MHz, 802.11(a) 6 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (>) | Result |
| | | | | 16.121 MHz | 500 kHz | Pass |



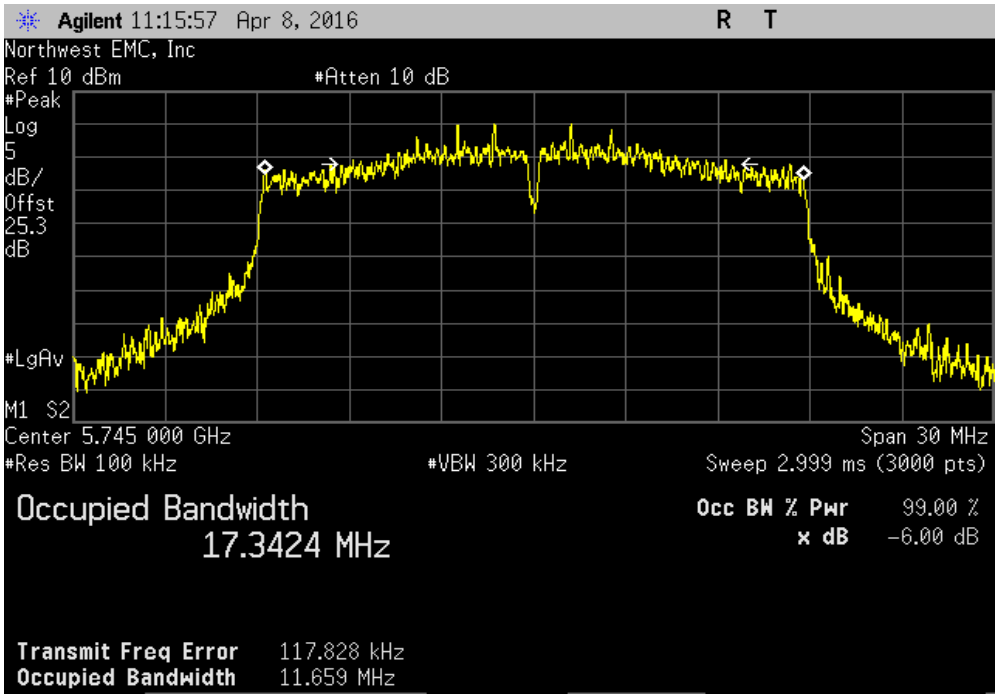

| 5785 - 5825 MHz Band, Low Channel, Ch 149 - 5745 MHz, 802.11(a) 36 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (>) | Result |
| | | | | 16.36 MHz | 500 kHz | Pass |



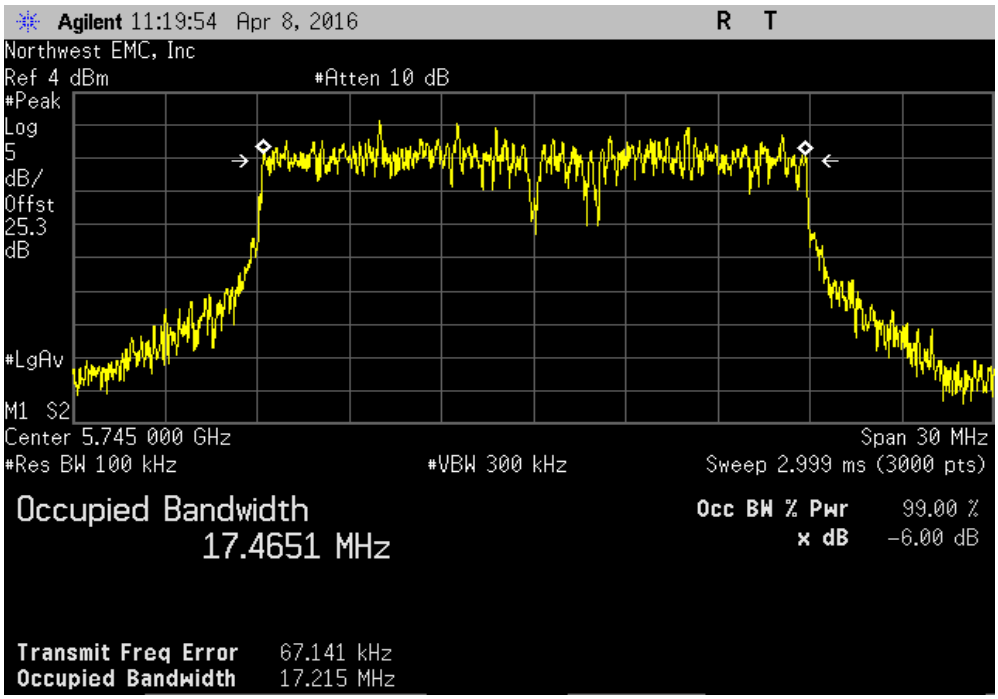
| 5785 - 5825 MHz Band, Low Channel, Ch 149 - 5745 MHz, 802.11(a) 54 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (>) | Result |
| | | | | 16.199 MHz | 500 kHz | Pass |



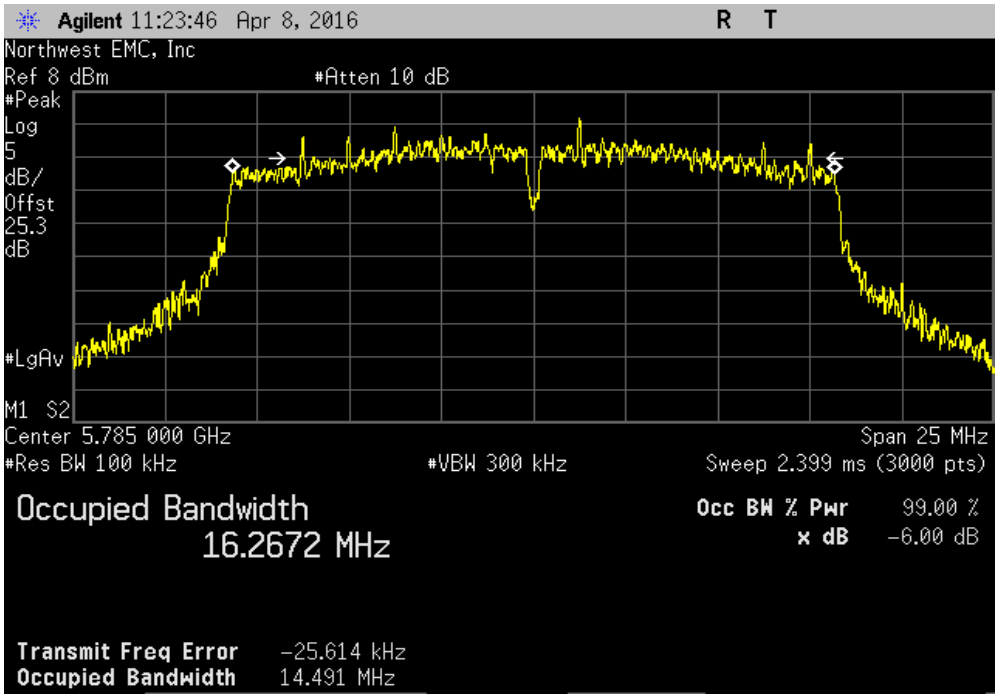

| 5785 - 5825 MHz Band, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS0 | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (>) | Result |
| | | | | 11.659 MHz | 500 kHz | Pass |



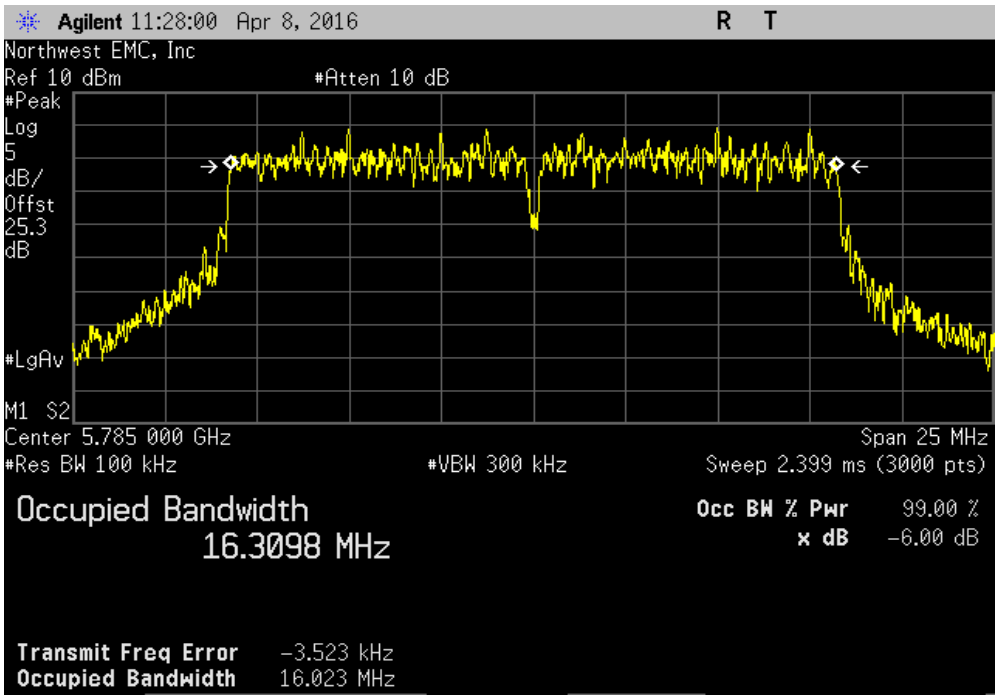
| 5785 - 5825 MHz Band, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS7 | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (>) | Result |
| | | | | 17.215 MHz | 500 kHz | Pass |



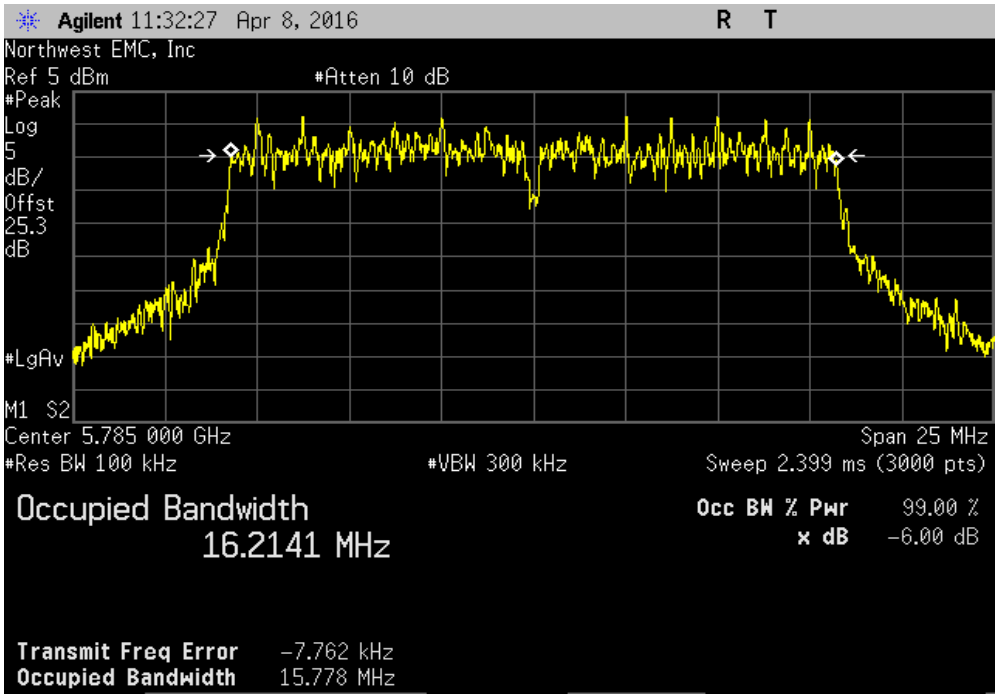

| 5785 - 5825 MHz Band, Mid Channel, Ch 157 - 5785 MHz, 802.11(a) 6 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (>) | Result |
| | | | | 14.491 MHz | 500 kHz | Pass |



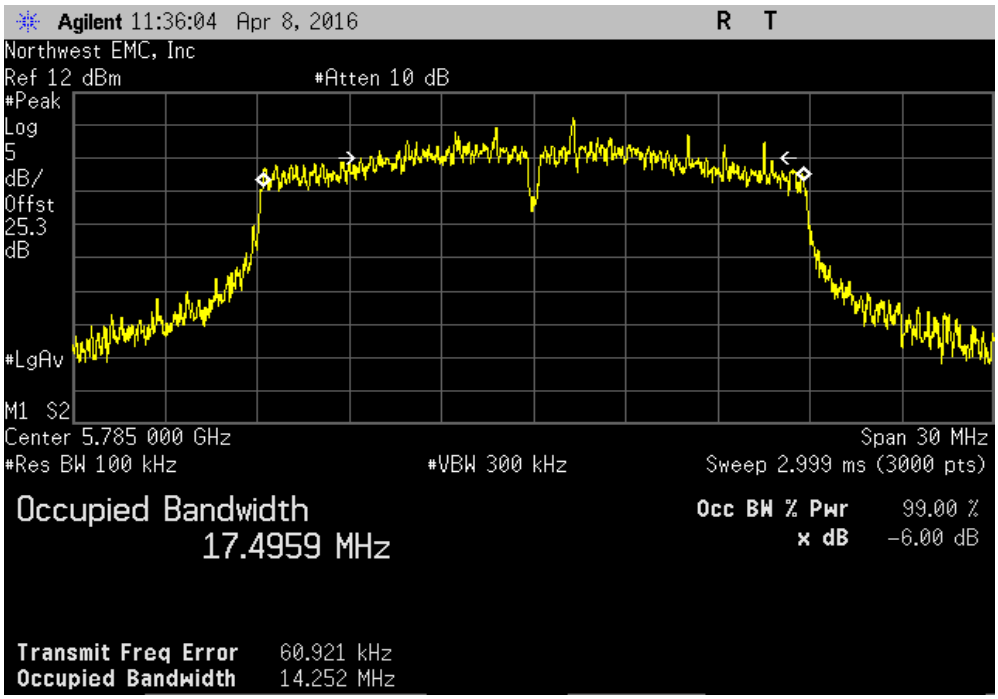
| 5785 - 5825 MHz Band, Mid Channel, Ch 157 - 5785 MHz, 802.11(a) 36 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (>) | Result |
| | | | | 16.023 MHz | 500 kHz | Pass |



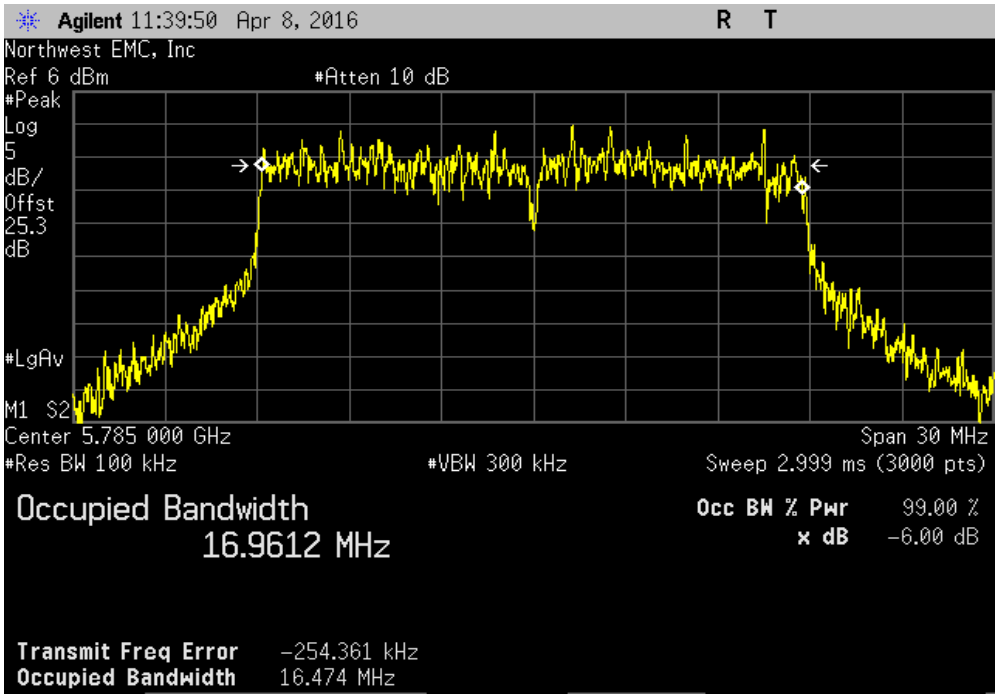

| 5785 - 5825 MHz Band, Mid Channel, Ch 157 - 5785 MHz, 802.11(a) 54 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (>) | Result |
| | | | | 15.778 MHz | 500 kHz | Pass |



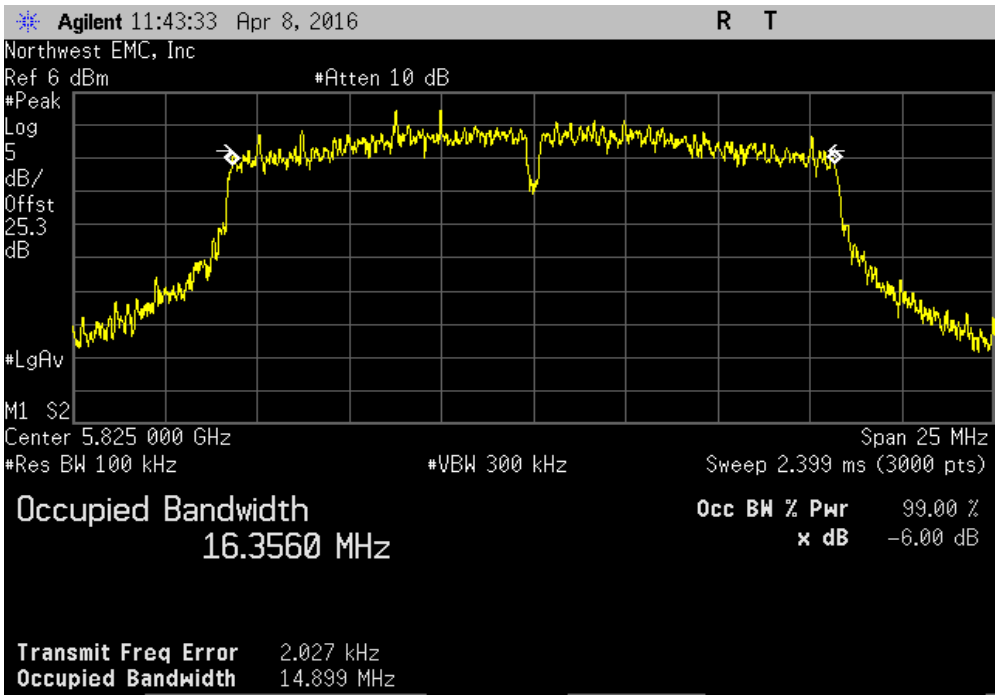
| 5785 - 5825 MHz Band, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS0 | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (>) | Result |
| | | | | 14.252 MHz | 500 kHz | Pass |



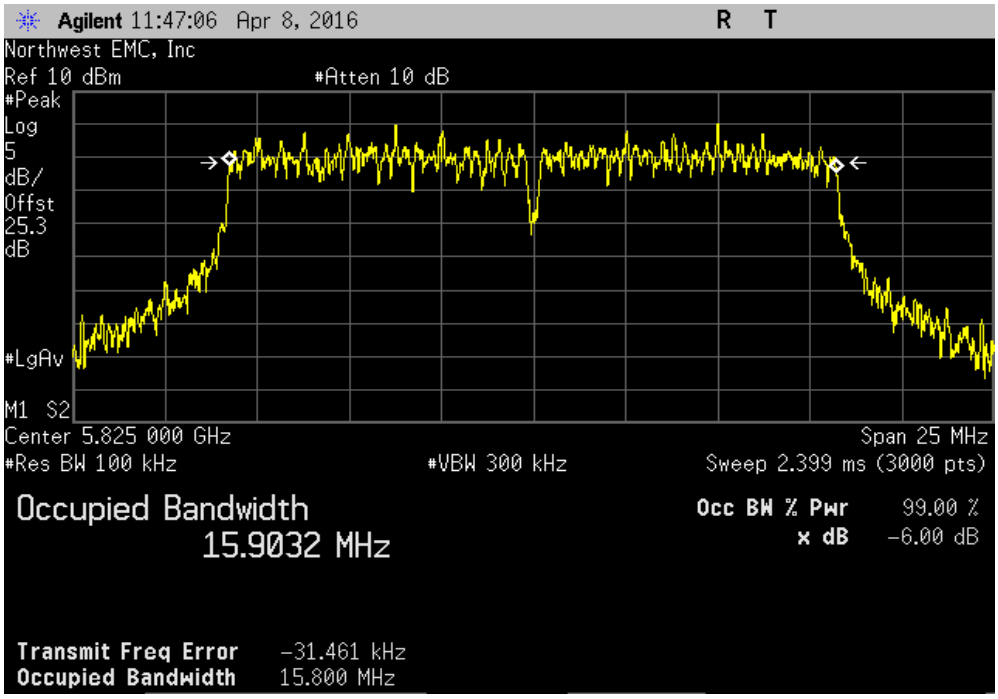

| 5785 - 5825 MHz Band, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS7 | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (>) | Result |
| | | | | 16.474 MHz | 500 kHz | Pass |



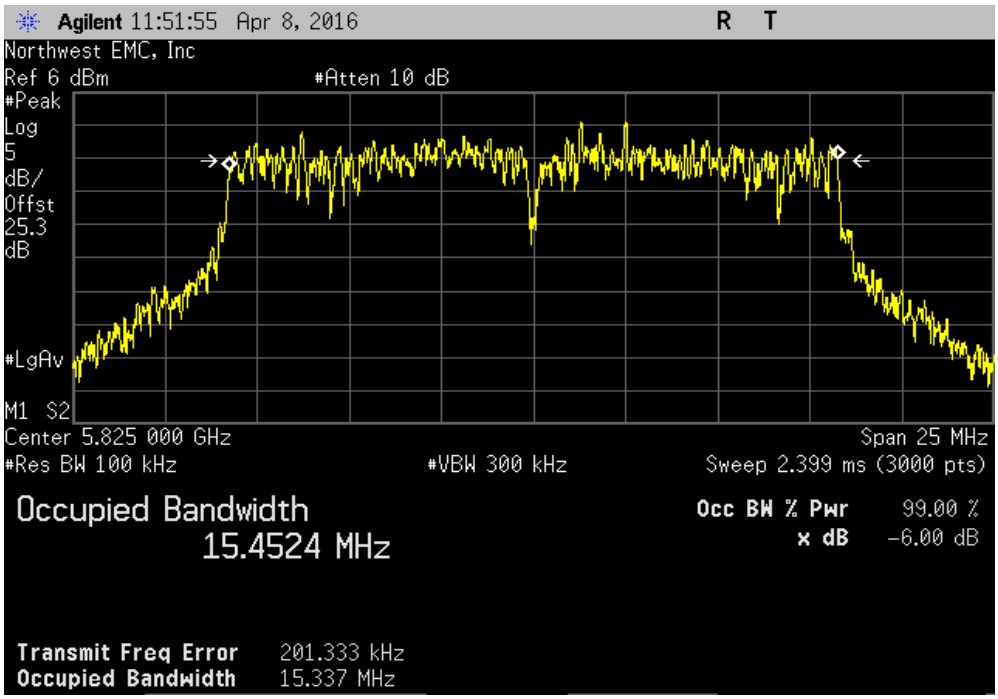
| 5785 - 5825 MHz Band, High Channel, Ch 165 - 5825 MHz, 802.11(a) 6 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (>) | Result |
| | | | | 14.899 MHz | 500 kHz | Pass |



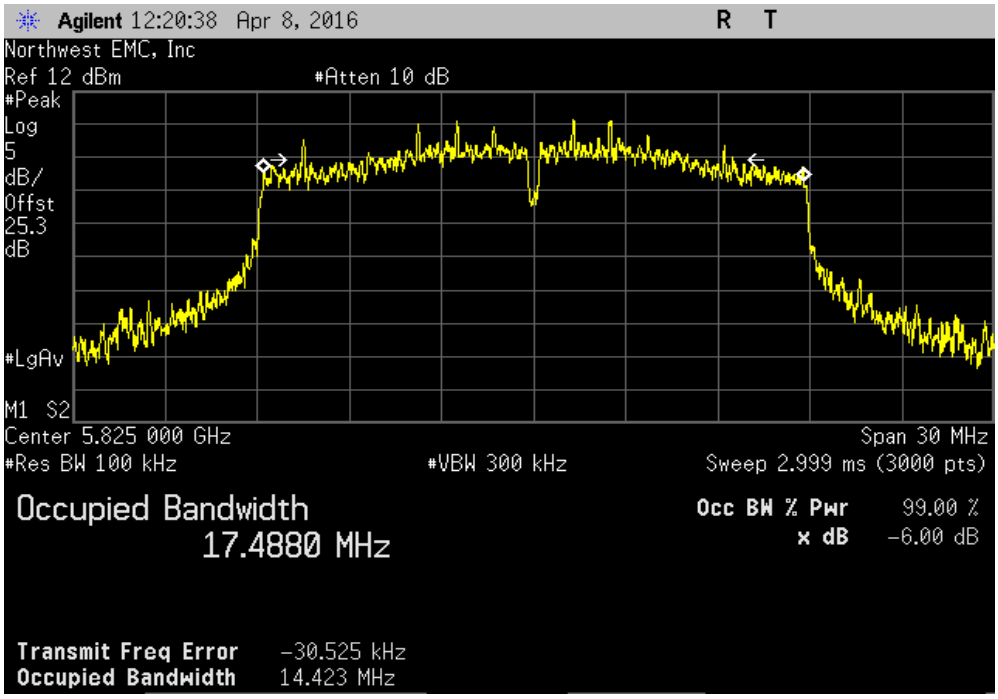

| 5785 - 5825 MHz Band, High Channel, Ch 165 - 5825 MHz, 802.11(a) 36 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (>) | Result |
| | | | | 15.8 MHz | 500 kHz | Pass |



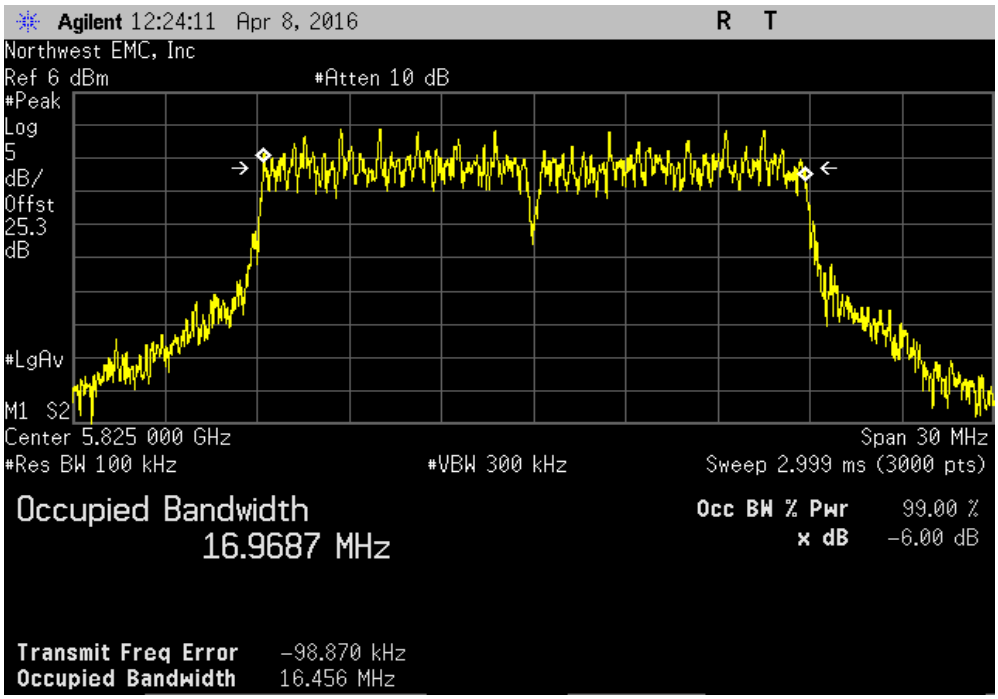
| 5785 - 5825 MHz Band, High Channel, Ch 165 - 5825 MHz, 802.11(a) 54 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (>) | Result |
| | | | | 15.337 MHz | 500 kHz | Pass |




| 5785 - 5825 MHz Band, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS0 | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (>) | Result |
| | | | | 14.423 MHz | 500 kHz | Pass |



| 5785 - 5825 MHz Band, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS7 | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (>) | Result |
| | | | | 16.456 MHz | 500 kHz | Pass |



# BAND EDGE

XMit 2015.01.14

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

**TEST EQUIPMENT**

| Description | Manufacturer | Model | ID | Last Cal. | Interval (mo) |
|---|---|---|---|---|---|
| Meter - Multimeter | Fluke | 117 | MLS | 1/20/2014 | 36 |
| Generator - Signal | Agilent | N5183A | TIK | 10/17/2014 | 36 |
| Block - DC | Fairview Microwave | SD3379 | AMI | 9/18/2015 | 12 |
| Attenuator | S.M. Electronics | SA26B-20 | RFW | 2/26/2016 | 12 |
| Cable | ESM Cable Corp. | TTBJ141 KMKM-72 | MNU | 9/18/2015 | 12 |
| Analyzer - Spectrum Analyzer | Agilent | E4440A | AAX | 3/24/2016 | 12 |

**TEST DESCRIPTION**

The -99% occupied bandwidth of the carrier was measured to ensure that no part of the emission of the carrier operating in a non-DFS band was operating in a band where DFS testing is required. This test is done with the U-NII-1 band (5.2 GHz band) to ensure no portion of the carrier is contained within the U-NII-2A band and with the U-NII-3 band (5.8 GHz band) to ensure no portion of the carrier is contained in the U-NII-2C band.

The transmit frequencies and data rates listed in the datasheet were measured. The transmit power was set to its default maximum.

A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used. The reference level offset on the spectrum analyzer was adjusted to compensate for cable loss and the external attenuation used between the RF output and the spectrum analyzer input.

# BAND EDGE

NORTHWEST EMC

XMit 2015.01.14

| | | | | | |
|---|---|---|---|---|---|
| **EUT:** | Zoll CF Card Module | | | **Work Order:** | LGPD0188 |
| **Serial Number:** | 2012M01206 | | | **Date:** | 04/21/16 |
| **Customer:** | ZOLL Medical Corp. | | | **Temperature:** | 22.8°C |
| **Attendees:** | None | | | **Humidity:** | 24% |
| **Project:** | None | | | **Barometric Pres.:** | 987.1 mb |
| **Tested by:** | Jared Ison | **Power:** | 5 VDC | **Job Site:** | MN08 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.407:2016 | ANSI C63.10:2013 |
| | |

**COMMENTS**

None

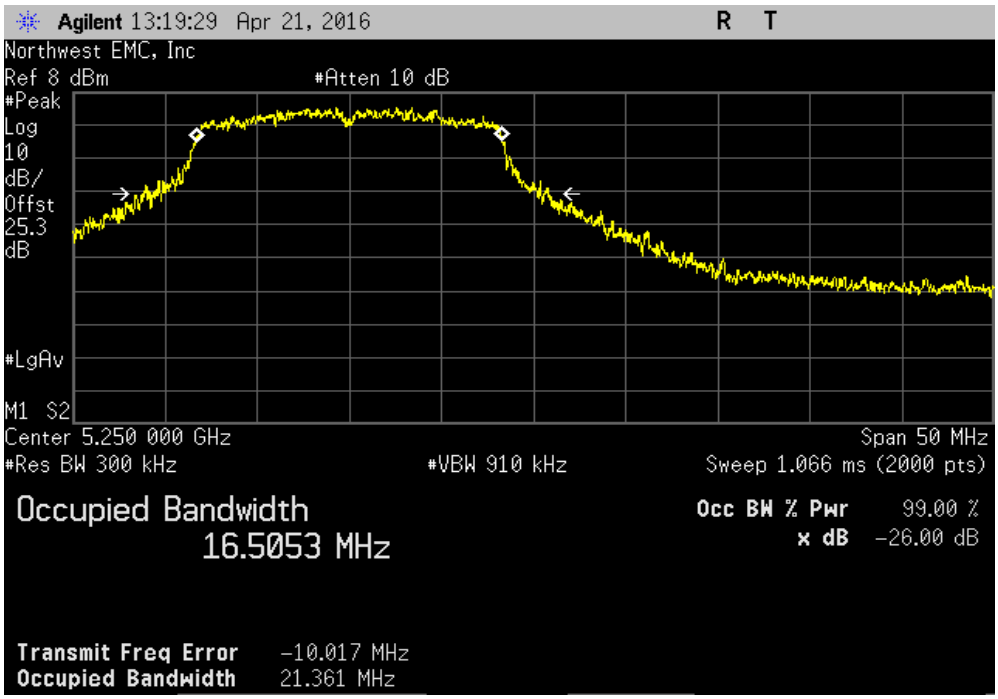
**DEVIATIONS FROM TEST STANDARD**

None

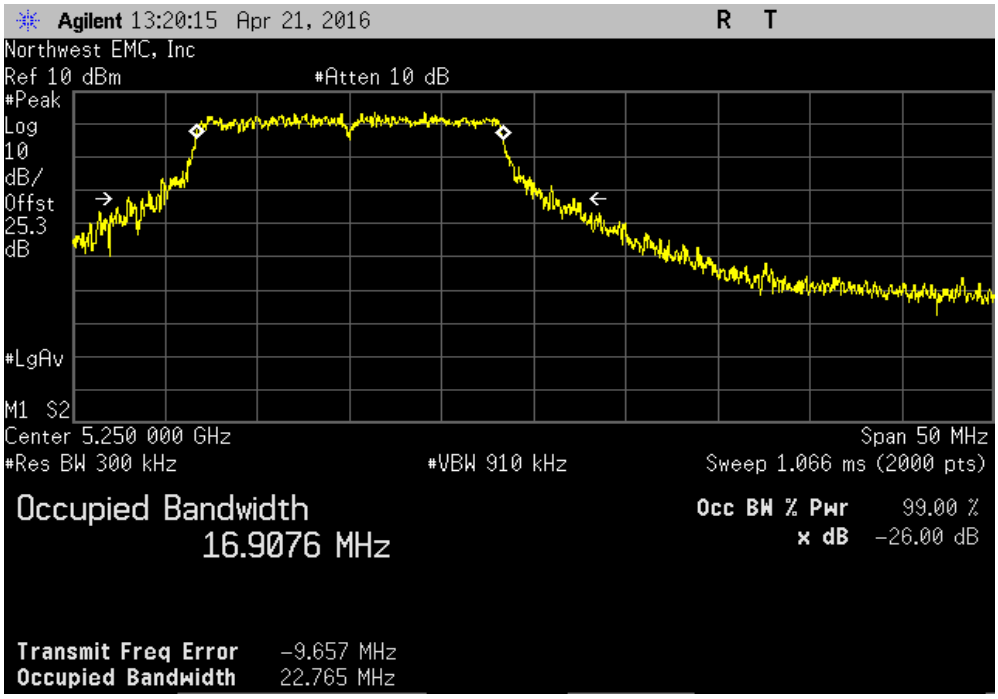
| Configuration # | 1 | Signature |
|---|---|---|

| | OBW Within Band | Band Edge (MHz) | Result |
|---|---|---|---|
| 5150 - 5250 MHz Band | | | |
| High Channel, Ch 48 - 5240 MHz | | | |
| 802.11(a) 6 Mbps | Yes | 5250 | Pass |
| 802.11(a) 36 Mbps | Yes | 5250 | Pass |
| 802.11(a) 54 Mbps | Yes | 5250 | Pass |
| 802.11(n) MCS0 | Yes | 5250 | Pass |
| 802.11(n) MCS7 | Yes | 5250 | Pass |
| 5725 - 5825 MHz Band | | | |
| Low Channel, Ch 149 - 5745 MHz | | | |
| 802.11(a) 6 Mbps | Yes | 5725 | Pass |
| 802.11(a) 36 Mbps | Yes | 5725 | Pass |
| 802.11(a) 54 Mbps | Yes | 5725 | Pass |
| 802.11(n) MCS0 | Yes | 5725 | Pass |
| 802.11(n) MCS7 | Yes | 5725 | Pass |

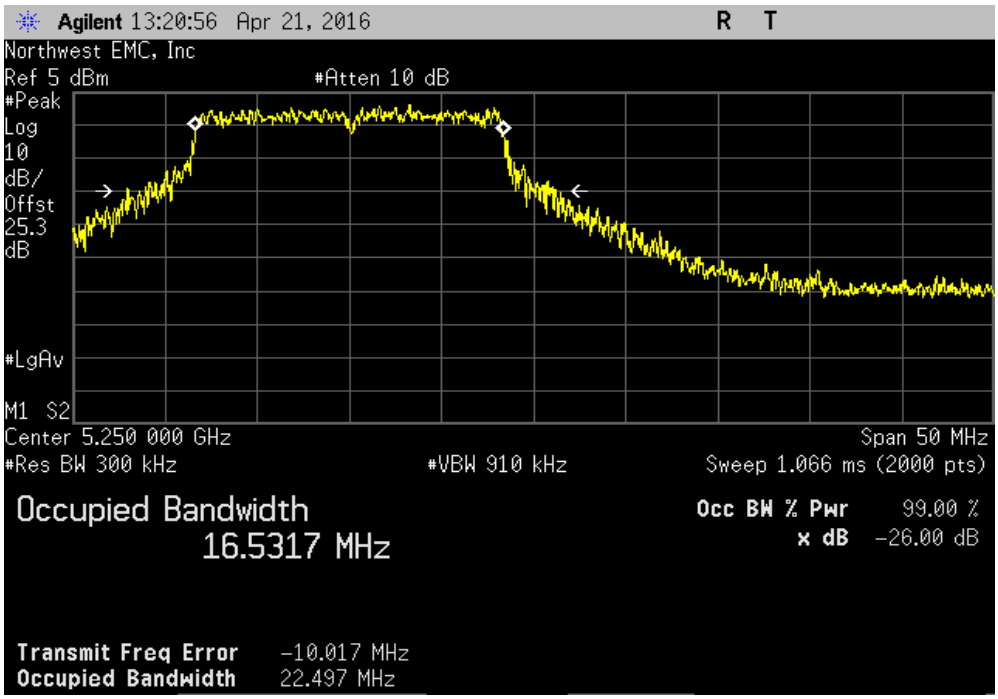
| 5150 - 5250 MHz Band, High Channel, Ch 48 - 5240 MHz, 802.11(a) 6 Mbps | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | OBW Within Band | Band Edge (MHz) | Result |
| | | | | | Yes | 5250 | Pass |



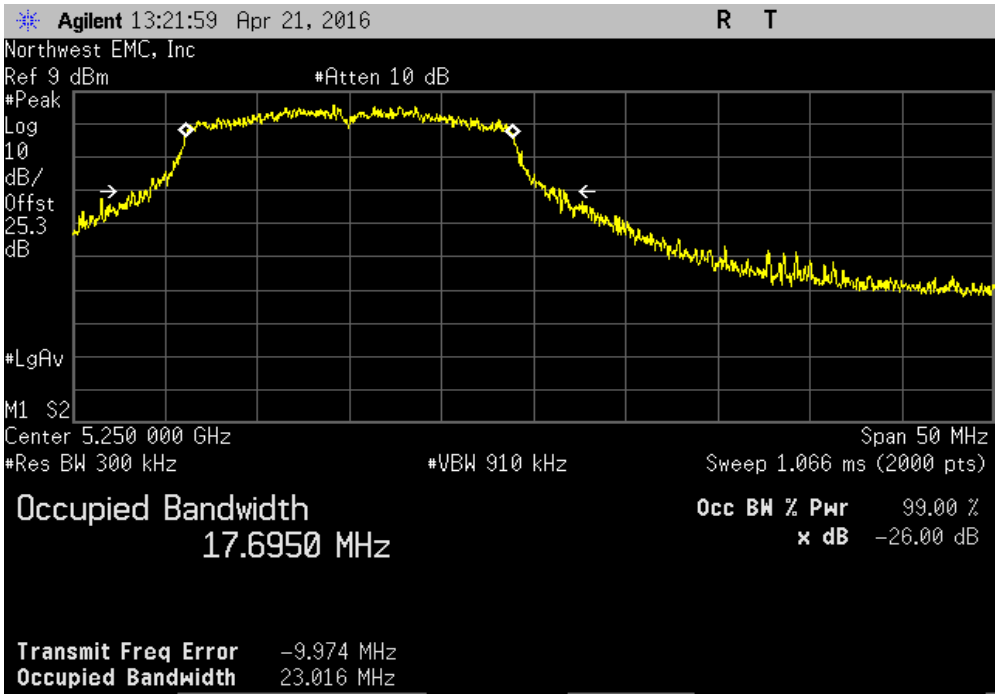

| 5150 - 5250 MHz Band, High Channel, Ch 48 - 5240 MHz, 802.11(a) 36 Mbps | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | OBW Within Band | Band Edge (MHz) | Result |
| | | | | | Yes | 5250 | Pass |



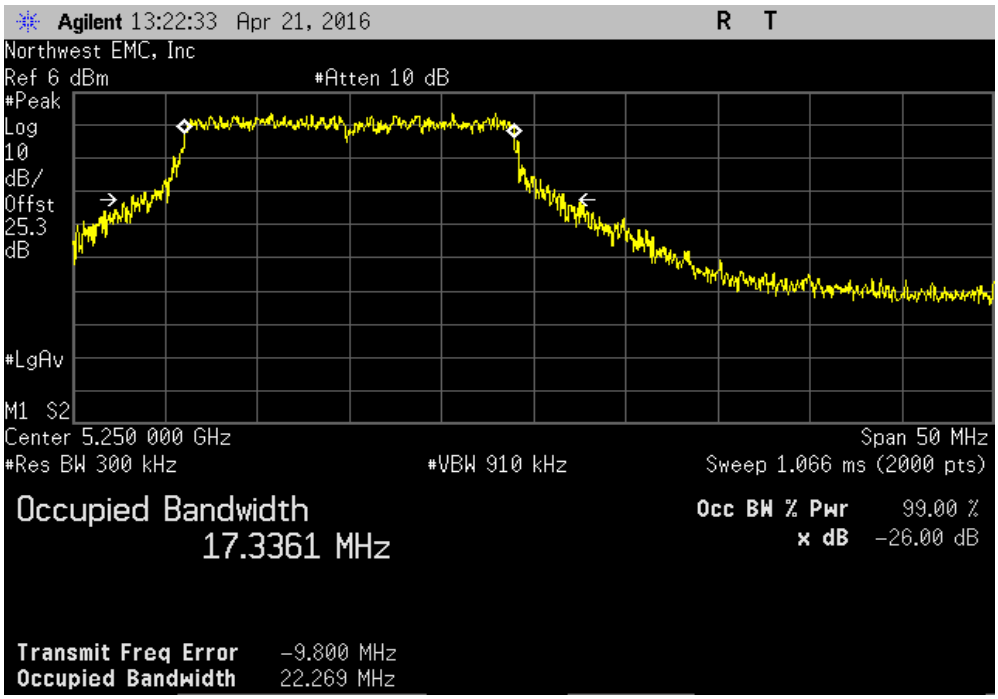
| 5150 - 5250 MHz Band, High Channel, Ch 48 - 5240 MHz, 802.11(a) 54 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | | | | OBW Within Band | Band Edge (MHz) | Result |
| | | | | Yes | 5250 | Pass |



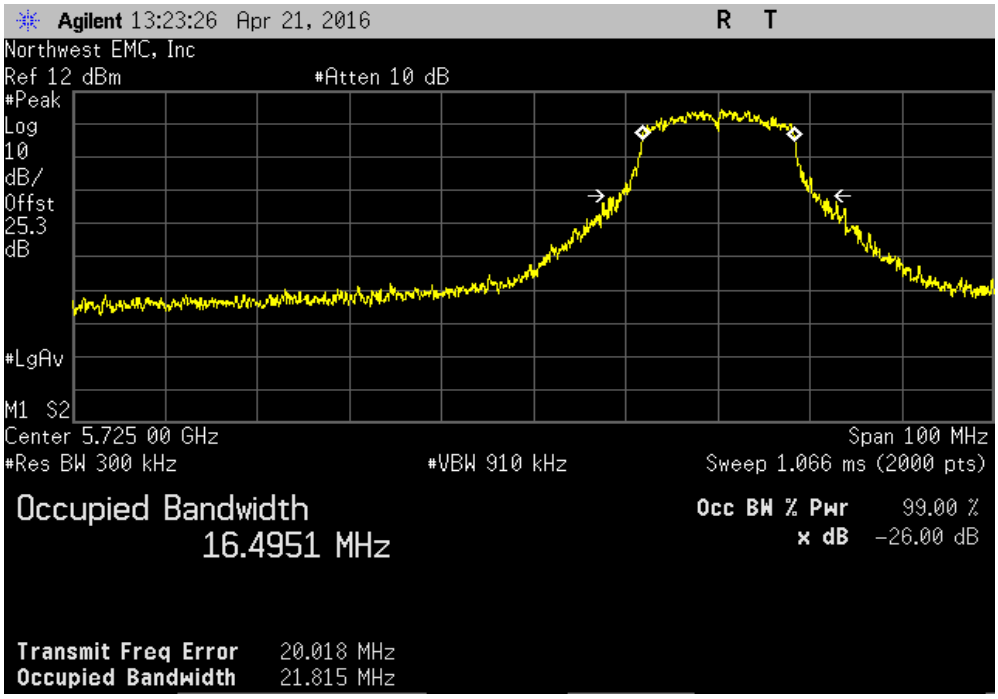

| 5150 - 5250 MHz Band, High Channel, Ch 48 - 5240 MHz, 802.11(n) MCS0 | | | | | | |
|---|---|---|---|---|---|---|
| | | | | OBW Within Band | Band Edge (MHz) | Result |
| | | | | Yes | 5250 | Pass |



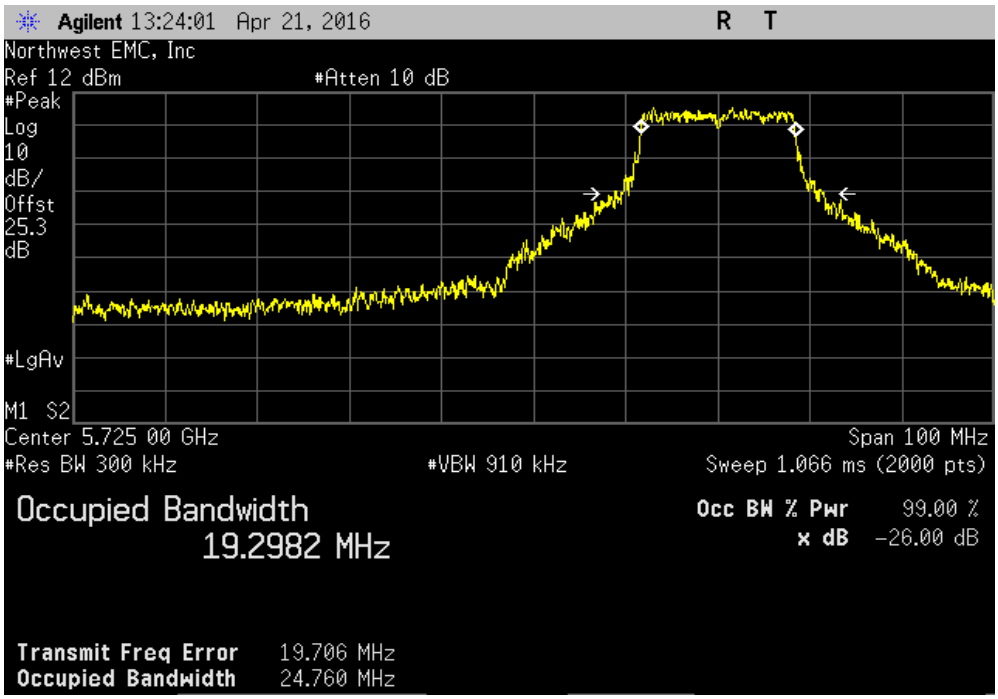
| 5150 - 5250 MHz Band, High Channel, Ch 48 - 5240 MHz, 802.11(n) MCS7 | | | | | | |
|---|---|---|---|---|---|---|
| | | | | OBW Within Band | Band Edge (MHz) | Result |
| | | | | Yes | 5250 | Pass |



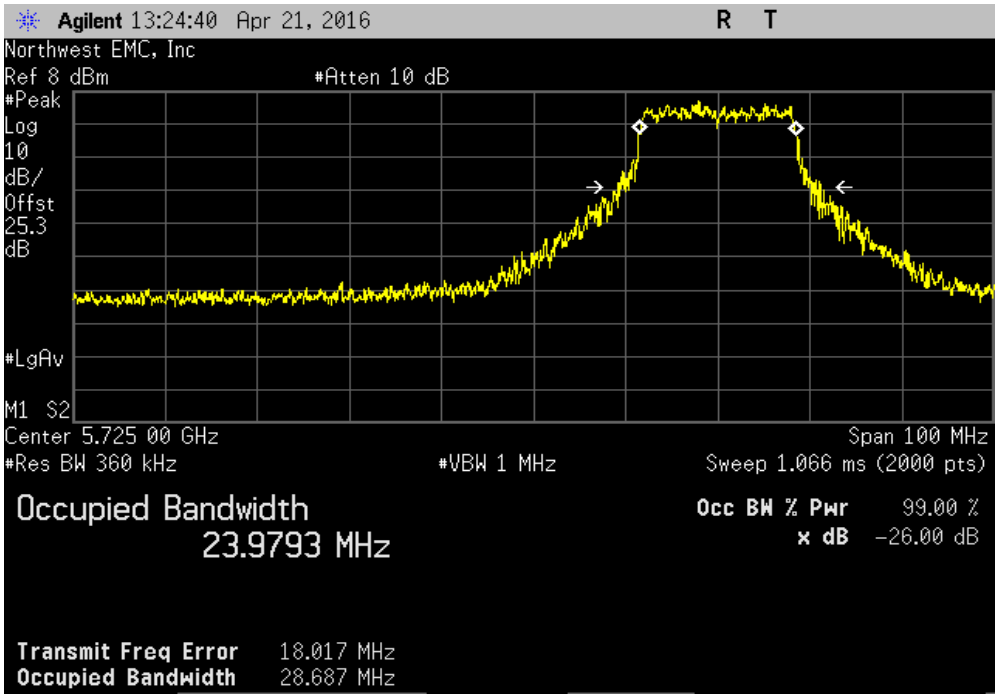

| 5725 - 5825 MHz Band, Low Channel, Ch 149 - 5745 MHz, 802.11(a) 6 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | | | | OBW Within Band | Band Edge (MHz) | Result |
| | | | | Yes | 5725 | Pass |



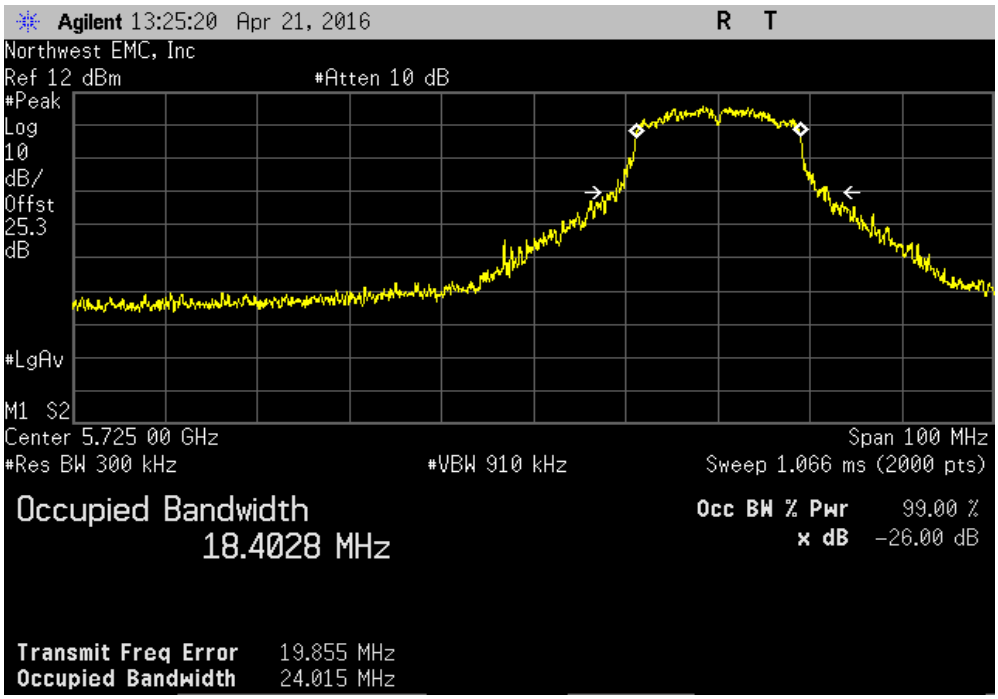
| 5725 - 5825 MHz Band, Low Channel, Ch 149 - 5745 MHz, 802.11(a) 36 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | | | | OBW Within Band | Band Edge (MHz) | Result |
| | | | | Yes | 5725 | Pass |



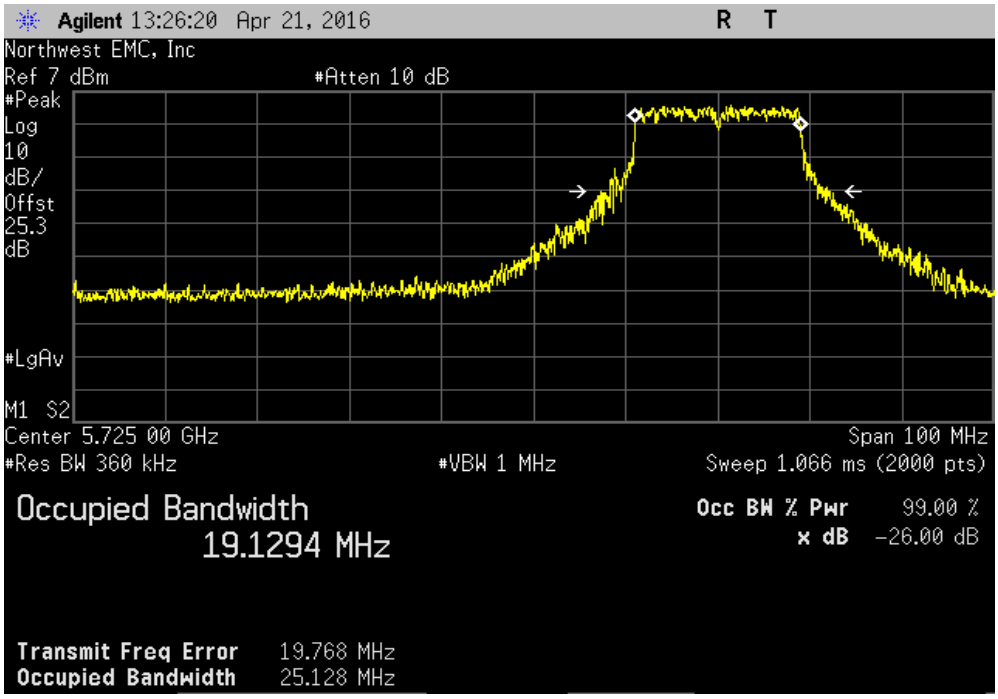

| 5725 - 5825 MHz Band, Low Channel, Ch 149 - 5745 MHz, 802.11(a) 54 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | | | | OBW Within Band | Band Edge (MHz) | Result |
| | | | | Yes | 5725 | Pass |



| 5725 - 5825 MHz Band, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS0 | | | | | | |
|---|---|---|---|---|---|---|
| | | | | OBW Within Band | Band Edge (MHz) | Result |
| | | | | Yes | 5725 | Pass |




| 5725 - 5825 MHz Band, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS7 | | | | | | |
|---|---|---|---|---|---|---|
| | | | | OBW Within Band | Band Edge (MHz) | Result |
| | | | | Yes | 5725 | Pass |



# MAXIMUM POWER SPECTRAL DENSITY

NORTHWEST EMC

XMit 2015.01.14

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

**TEST EQUIPMENT**

| Description | Manufacturer | Model | ID | Last Cal. | Interval (mo) |
|---|---|---|---|---|---|
| Generator - Signal | Agilent | N5183A | TIK | 10/17/2014 | 36 |
| Attenuator | S.M. Electronics | SA26B-20 | RFW | 2/26/2016 | 12 |
| Block - DC | Fairview Microwave | SD3379 | AMI | 9/18/2015 | 12 |
| Cable | ESM Cable Corp. | TTBJ141 KMKM-72 | MNU | 9/18/2015 | 12 |
| Analyzer - Spectrum Analyzer | Agilent | E4440A | AAX | 3/24/2016 | 12 |

**TEST DESCRIPTION**

The transmit frequency was set to the required channels in each band. The transmit power was set to its default maximum. The radio was operated in the modes as shown in the following data sheets.

A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used. The reference level offset on the spectrum analyzer was adjusted to compensate for cable loss and the external attenuation used between the RF output and the spectrum analyzer input.

Prior to measuring maximum power spectral density, the emission bandwidth (B) was measured. The method of measuring the emission bandwidth and the associated data are found elsewhere in this test report

The maximum power spectral density was measured using ANSI C63.10, Method SA-2 (RMS detection and trace averaging across the on and off times of the EUT transmission and use of a duty cycle correction factor), consistent with the method used for maximum conducted output power.

The spectrum analyzer settings were set per the guidance as well as the following specifics:

-Resolution Bandwidth of 510 kHz

-RMS Detector

-Trace average 100 traces in power averaging mode

The peak power spectral density (PPSD) was determined to be the highest level found across the emission in the reference bandwidth after 100 sweeps of power averaging (not video averaging).

A duty cycle correction factor was added to the measurement using the results of the formula of 10*LOG(1/D) where D is the duty cycle.

# MAXIMUM POWER SPECTRAL DENSITY

NORTHWEST EMC

XMit 2015.01.14

| | | | | | |
|---|---|---|---|---|---|
| **EUT:** | Zoll CF Card Module | | | **Work Order:** | LGPD0188 |
| **Serial Number:** | 2012M01206 | | | **Date:** | 04/08/16 |
| **Customer:** | ZOLL Medical Corp. | | | **Temperature:** | 22.8°C |
| **Attendees:** | Adam Ford | | | **Humidity:** | 24% |
| **Project:** | None | | | **Barometric Pres.:** | 987.1 mb |
| **Tested by:** | Jared Ison | **Power:** | 5 VDC | **Job Site:** | MN08 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.407:2016 | ANSI C63.10:2013 |
| | |

**COMMENTS**

None

**DEVIATIONS FROM TEST STANDARD**

None

| Configuration # | 1 | Signature |
|---|---|---|

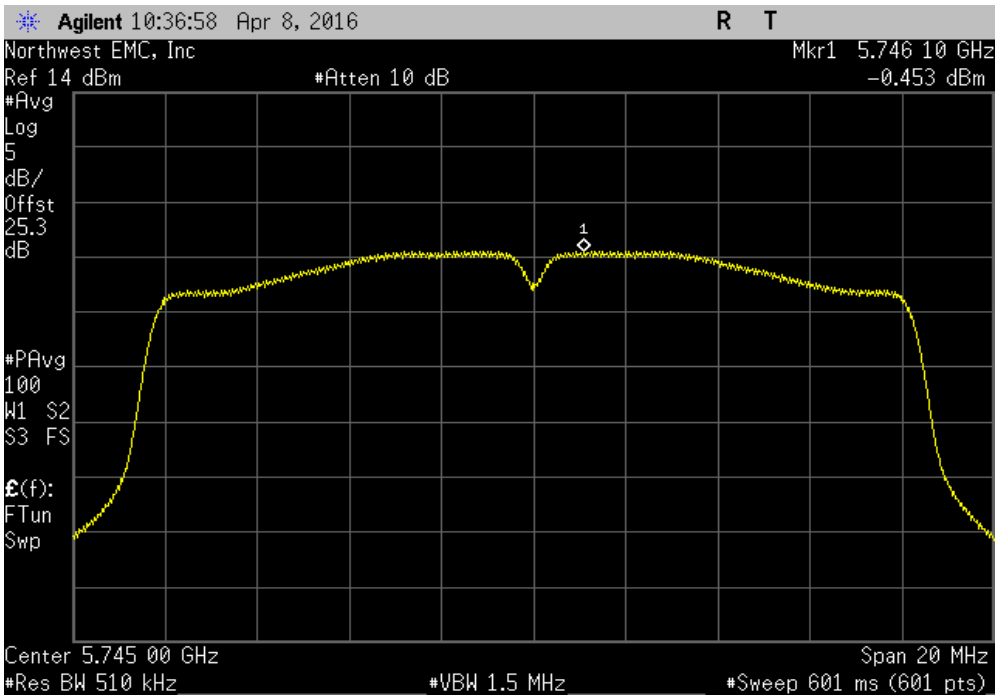
| | Power (dBm/MHz) | Duty Cycle Factor (dB) | Density (dBm/MHz) | Limit ≤ (dBm / Ref BW) | Results |
|---|---|---|---|---|---|
| 5785 - 5825 MHz Band | | | | | |
| Low Channel, Ch 149 - 5745 MHz | | | | | |
| 802.11(a) 6 Mbps | -0.453 | 2.4 | 1.9 | 30 | Pass |
| 802.11(a) 36 Mbps | -4.291 | 7.1 | 2.8 | 30 | Pass |
| 802.11(a) 54 Mbps | -9.203 | 8.4 | -0.8 | 30 | Pass |
| 802.11(n) MCS0 | 0.602 | 2.5 | 3.1 | 30 | Pass |
| 802.11(n) MCS7 | -11.381 | 8.7 | -2.7 | 30 | Pass |
| Mid Channel, Ch 157 - 5785 MHz | | | | | |
| 802.11(a) 6 Mbps | -1.161 | 2.3 | 1.2 | 30 | Pass |
| 802.11(a) 36 Mbps | -4.48 | 7.1 | 2.6 | 30 | Pass |
| 802.11(a) 54 Mbps | -9.468 | 8.4 | -1.1 | 30 | Pass |
| 802.11(n) MCS0 | 2.466 | 2.5 | 4.9 | 30 | Pass |
| 802.11(n) MCS7 | -10.642 | 8.7 | -2 | 30 | Pass |
| High Channel, Ch 165 - 5825 MHz | | | | | |
| 802.11(a) 6 Mbps | -0.835 | 2.3 | 1.5 | 30 | Pass |
| 802.11(a) 36 Mbps | -4.339 | 7.1 | 2.7 | 30 | Pass |
| 802.11(a) 54 Mbps | -9.373 | 8.4 | -1 | 30 | Pass |
| 802.11(n) MCS0 | 2.45 | 2.5 | 4.9 | 30 | Pass |
| 802.11(n) MCS7 | -10.513 | 8.7 | -1.8 | 30 | Pass |

# MAXIMUM POWER SPECTRAL DENSITY

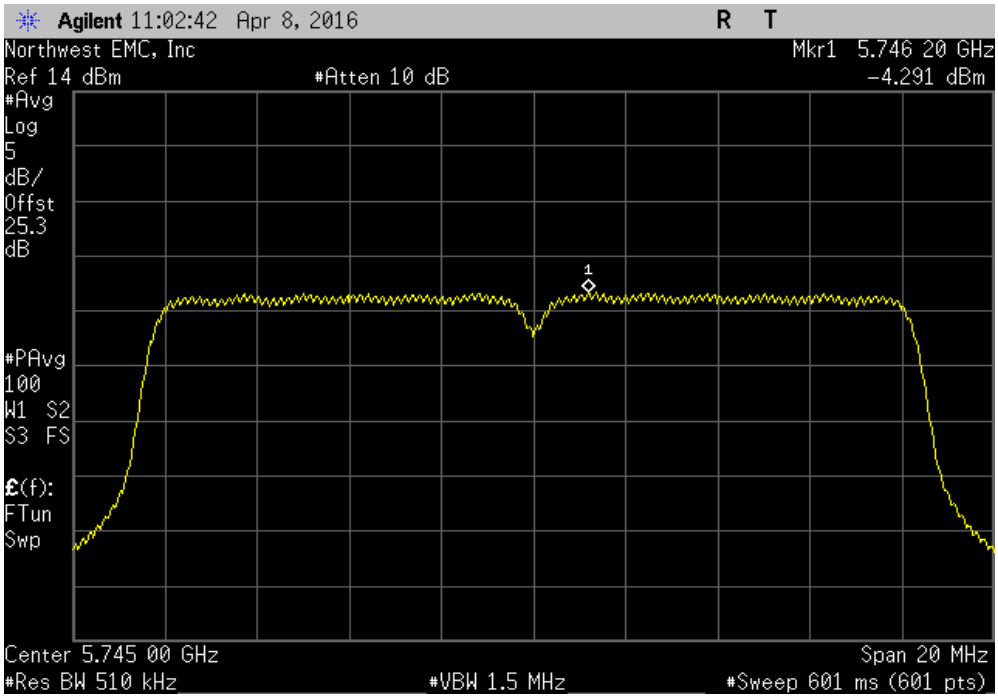
NORTHWEST EMC

XMit 2015.01.14

| 5785 - 5825 MHz Band, Low Channel, Ch 149 - 5745 MHz, 802.11(a) 6 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Power (dBm/MHz) | Duty Cycle Factor (dB) | | Density (dBm/MHz) | Limit (dBm / Ref BW | Results |
| | -0.453 | 2.4 | | 1.9 | 30 | Pass |




| 5785 - 5825 MHz Band, Low Channel, Ch 149 - 5745 MHz, 802.11(a) 36 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Power (dBm/MHz) | Duty Cycle Factor (dB) | | Density (dBm/MHz) | Limit (dBm / Ref BW | Results |
| | -4.291 | 7.1 | | 2.8 | 30 | Pass |

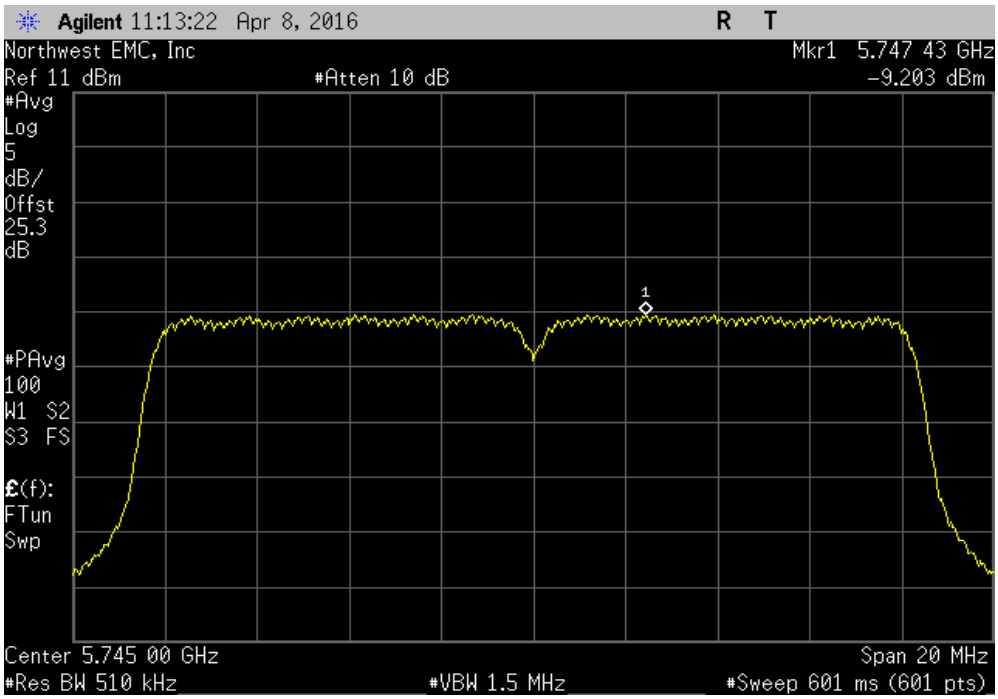


# MAXIMUM POWER SPECTRAL DENSITY

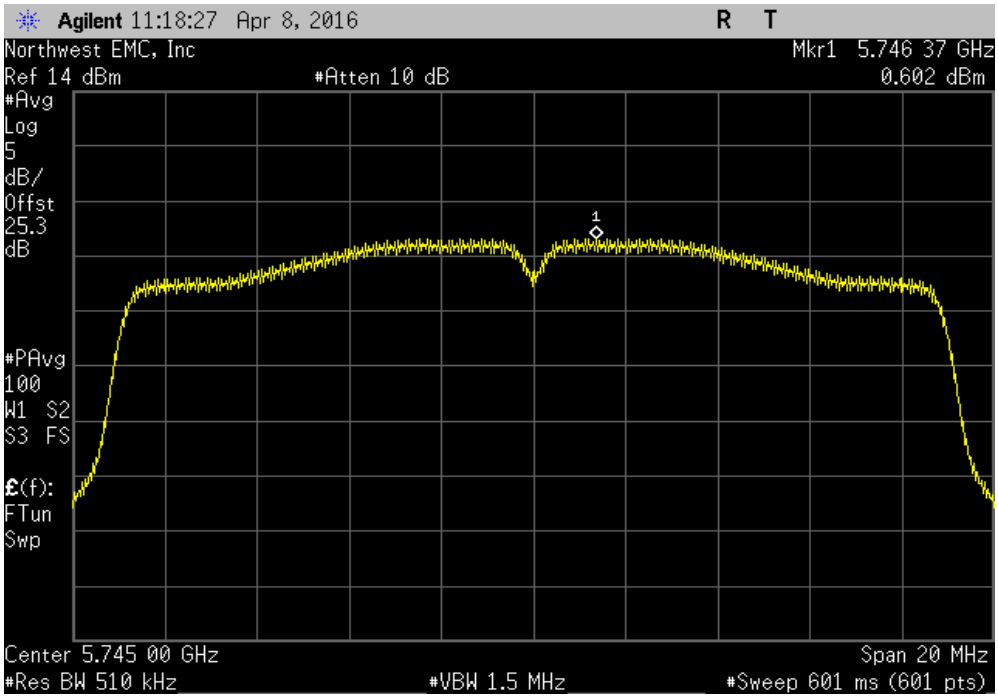
NORTHWEST EMC

XMit 2015.01.14

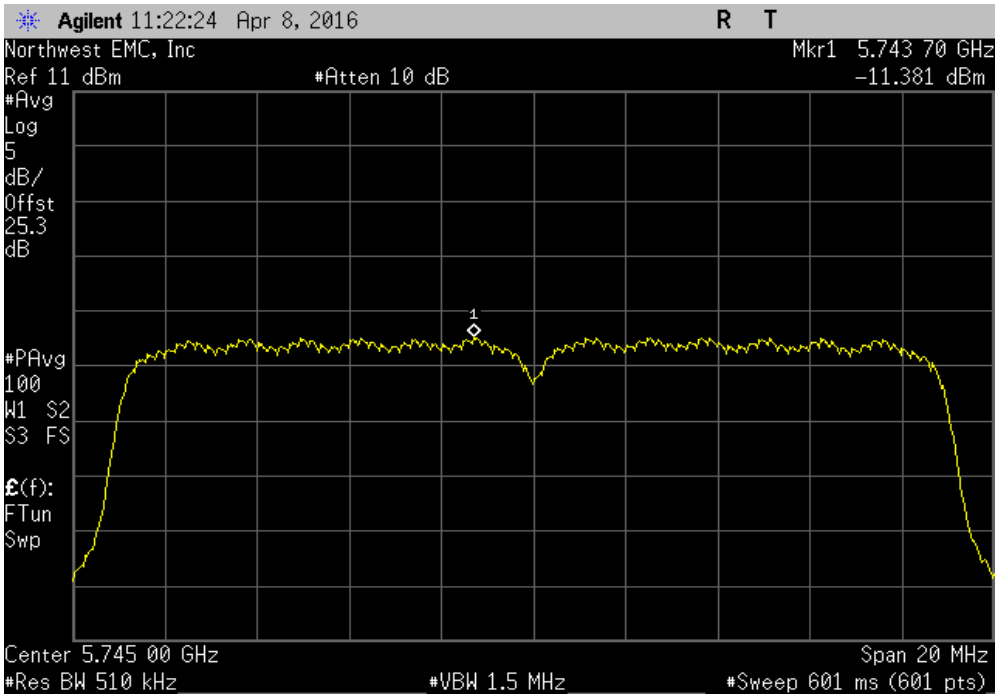
| 5785 - 5825 MHz Band, Low Channel, Ch 149 - 5745 MHz, 802.11(a) 54 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Power (dBm/MHz) | Duty Cycle Factor (dB) | | Density (dBm/MHz) | Limit (dBm / Ref BW | Results |
| | -9.203 | 8.4 | | -0.8 | 30 | Pass |



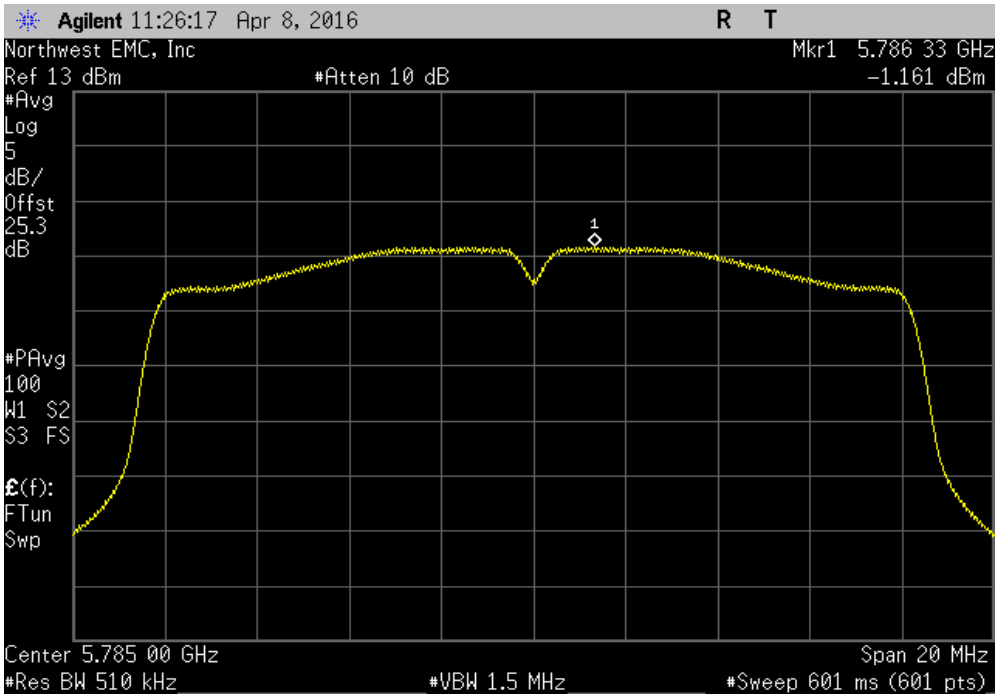

| 5785 - 5825 MHz Band, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS0 | | | | | | |
|---|---|---|---|---|---|---|
| | Power (dBm/MHz) | Duty Cycle Factor (dB) | | Density (dBm/MHz) | Limit (dBm / Ref BW | Results |
| | 0.602 | 2.5 | | 3.1 | 30 | Pass |



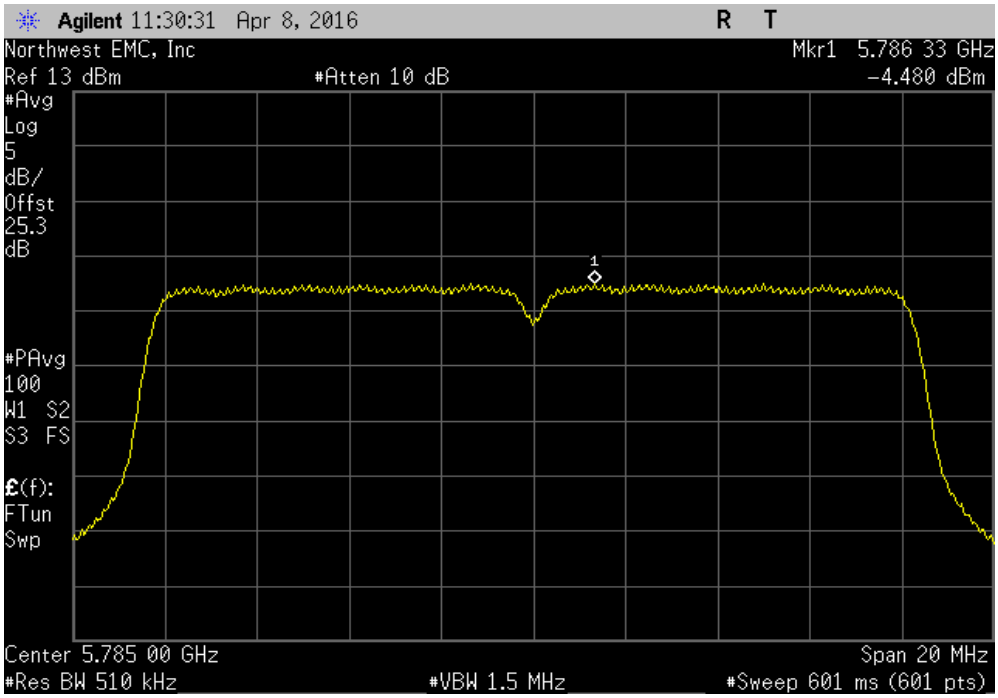
| 5785 - 5825 MHz Band, Low Channel, Ch 149 - 5745 MHz, 802.11(n) MCS7 | | | | | | |
|---|---|---|---|---|---|---|
| | Power (dBm/MHz) | Duty Cycle Factor (dB) | | Density (dBm/MHz) | Limit (dBm / Ref BW | Results |
| | -11.381 | 8.7 | | -2.7 | 30 | Pass |



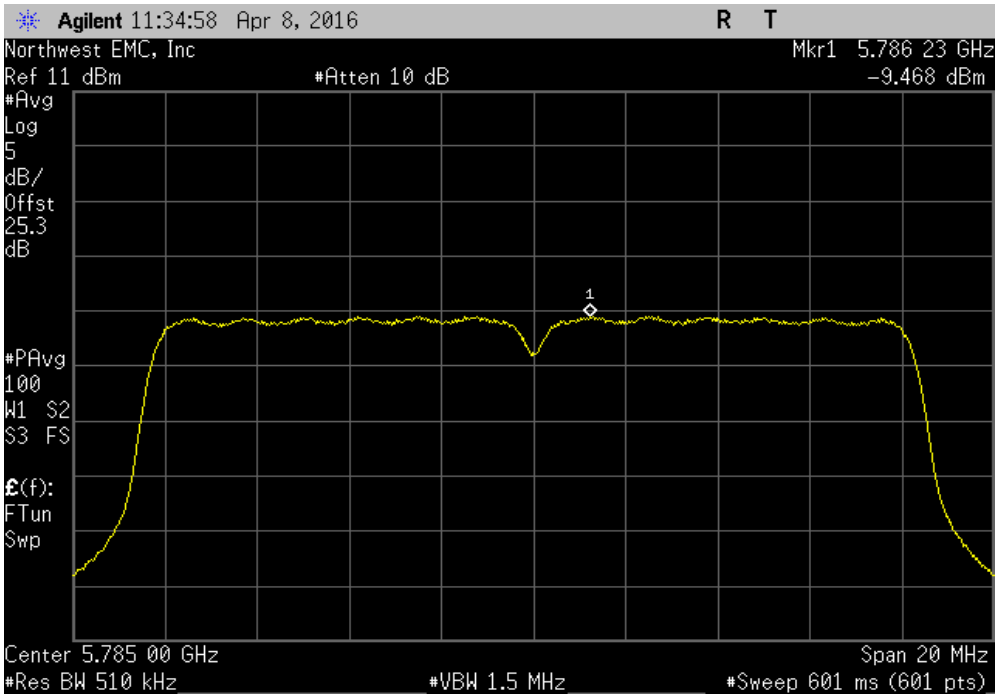

| 5785 - 5825 MHz Band, Mid Channel, Ch 157 - 5785 MHz, 802.11(a) 6 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Power (dBm/MHz) | Duty Cycle Factor (dB) | | Density (dBm/MHz) | Limit (dBm / Ref BW | Results |
| | -1.161 | 2.3 | | 1.2 | 30 | Pass |



| 5785 - 5825 MHz Band, Mid Channel, Ch 157 - 5785 MHz, 802.11(a) 36 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Power (dBm/MHz) | Duty Cycle Factor (dB) | | Density (dBm/MHz) | Limit (dBm / Ref BW | Results |
| | -4.48 | 7.1 | | 2.6 | 30 | Pass |




| 5785 - 5825 MHz Band, Mid Channel, Ch 157 - 5785 MHz, 802.11(a) 54 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Power (dBm/MHz) | Duty Cycle Factor (dB) | | Density (dBm/MHz) | Limit (dBm / Ref BW | Results |
| | -9.468 | 8.4 | | -1.1 | 30 | Pass |

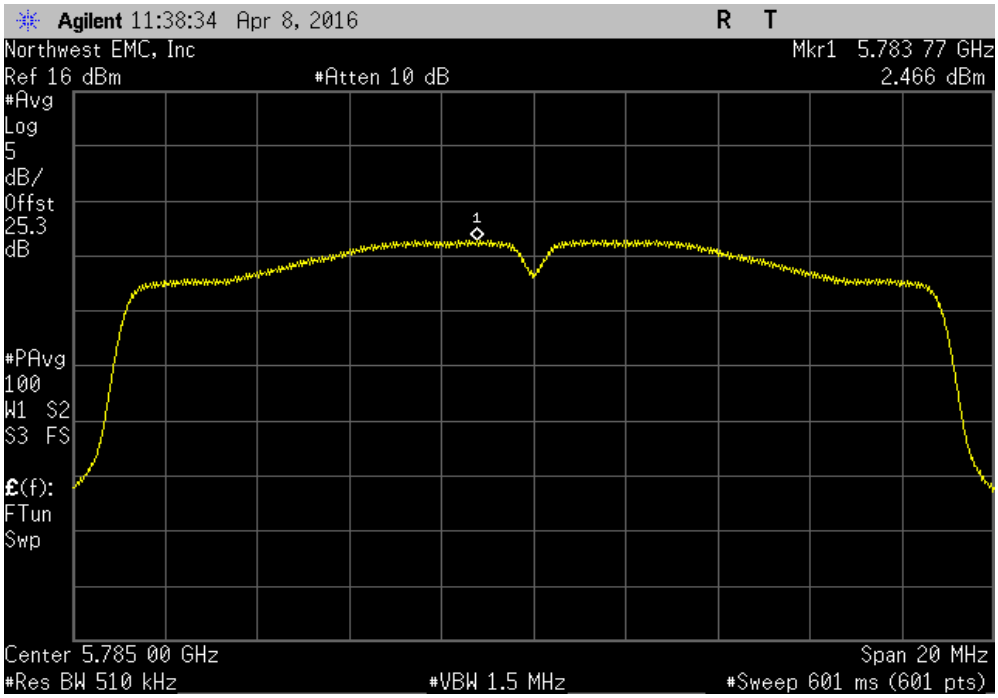


# MAXIMUM POWER SPECTRAL DENSITY

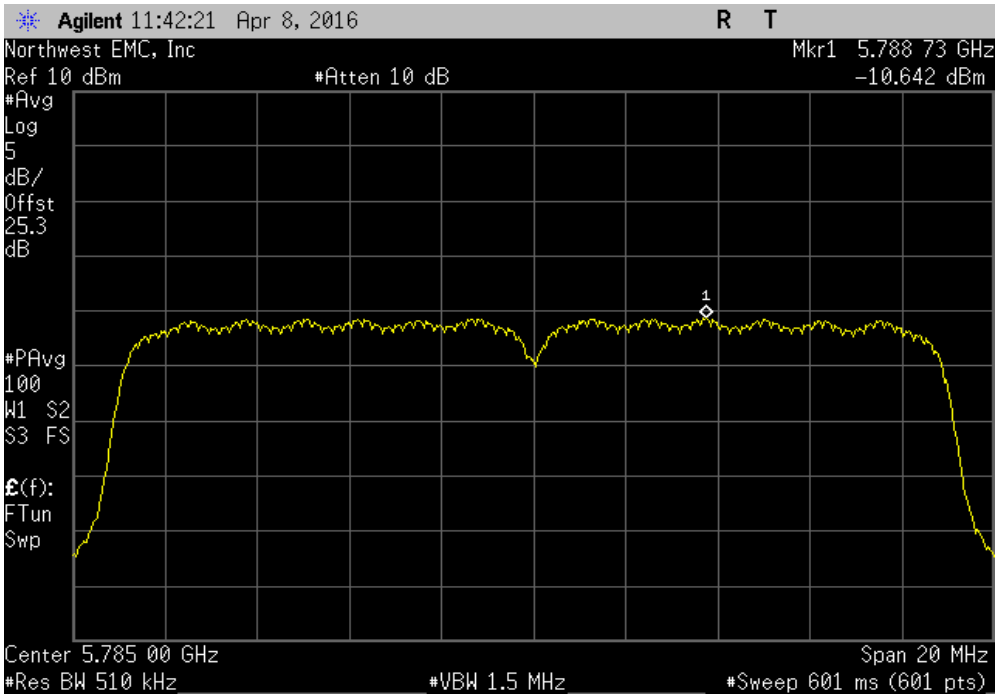
NORTHWEST EMC

XMit 2015.01.14

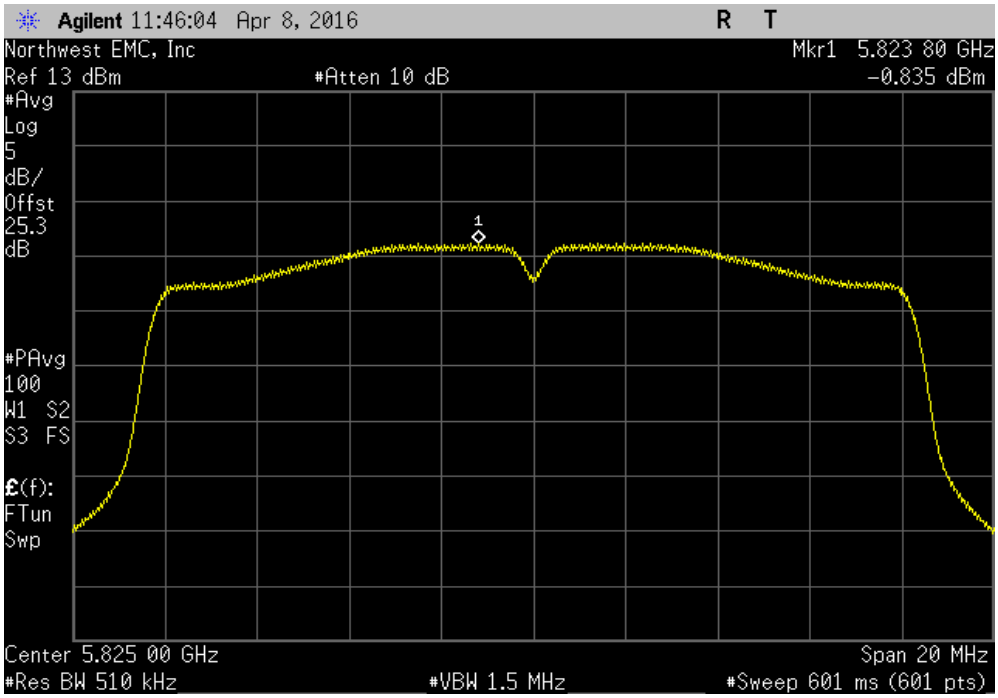
| 5785 - 5825 MHz Band, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS0 | | | | | | |
|---|---|---|---|---|---|---|
| | Power (dBm/MHz) | Duty Cycle Factor (dB) | | Density (dBm/MHz) | Limit (dBm / Ref BW | Results |
| | 2.466 | 2.5 | | 4.9 | 30 | Pass |



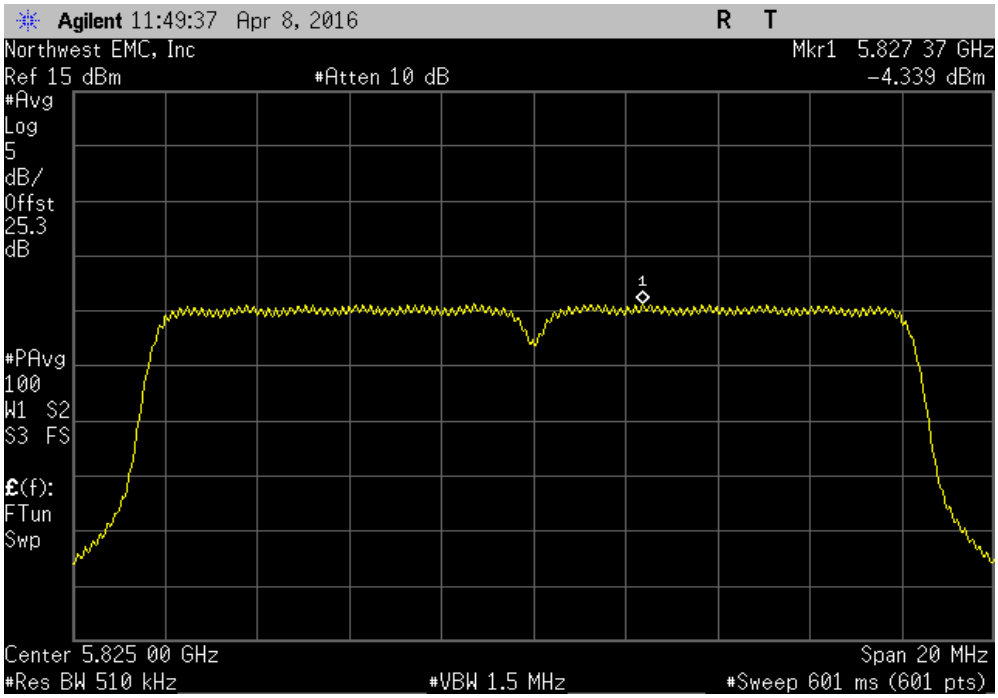

| 5785 - 5825 MHz Band, Mid Channel, Ch 157 - 5785 MHz, 802.11(n) MCS7 | | | | | | |
|---|---|---|---|---|---|---|
| | Power (dBm/MHz) | Duty Cycle Factor (dB) | | Density (dBm/MHz) | Limit (dBm / Ref BW | Results |
| | -10.642 | 8.7 | | -2 | 30 | Pass |



| 5785 - 5825 MHz Band, High Channel, Ch 165 - 5825 MHz, 802.11(a) 6 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Power (dBm/MHz) | Duty Cycle Factor (dB) | | Density (dBm/MHz) | Limit (dBm / Ref BW | Results |
| | -0.835 | 2.3 | | 1.5 | 30 | Pass |




| 5785 - 5825 MHz Band, High Channel, Ch 165 - 5825 MHz, 802.11(a) 36 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Power (dBm/MHz) | Duty Cycle Factor (dB) | | Density (dBm/MHz) | Limit (dBm / Ref BW | Results |
| | -4.339 | 7.1 | | 2.7 | 30 | Pass |

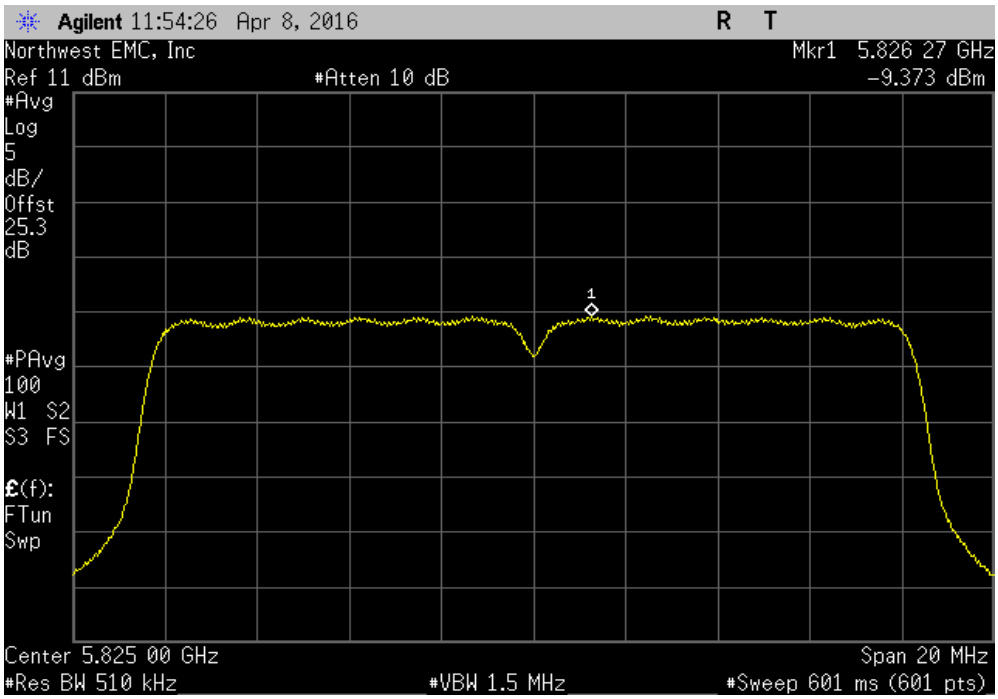


# MAXIMUM POWER SPECTRAL DENSITY

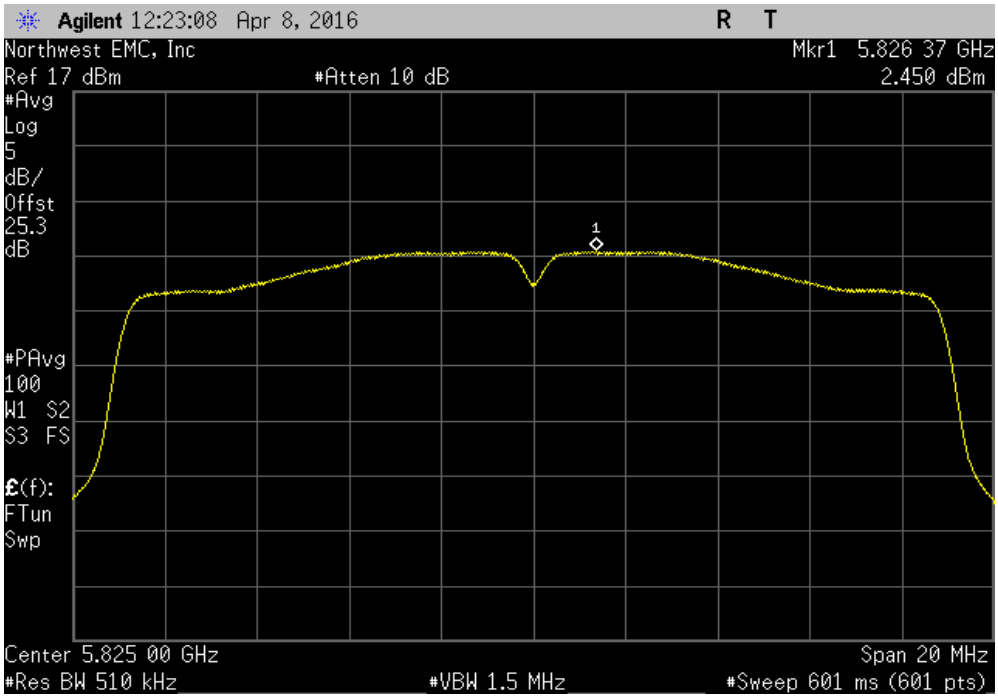
NORTHWEST EMC

XMit 2015.01.14

| 5785 - 5825 MHz Band, High Channel, Ch 165 - 5825 MHz, 802.11(a) 54 Mbps | | | | | | |
|---|---|---|---|---|---|---|
| | Power (dBm/MHz) | Duty Cycle Factor (dB) | | Density (dBm/MHz) | Limit (dBm / Ref BW | Results |
| | -9.373 | 8.4 | | -1 | 30 | Pass |




| 5785 - 5825 MHz Band, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS0 | | | | | | |
|---|---|---|---|---|---|---|
| | Power (dBm/MHz) | Duty Cycle Factor (dB) | | Density (dBm/MHz) | Limit (dBm / Ref BW | Results |
| | 2.45 | 2.5 | | 4.9 | 30 | Pass |



# MAXIMUM POWER SPECTRAL DENSITY

NORTHWEST EMC

XMit 2015.01.14

| 5785 - 5825 MHz Band, High Channel, Ch 165 - 5825 MHz, 802.11(n) MCS7 | | | | | | |
|---|---|---|---|---|---|---|
| | Power (dBm/MHz) | Duty Cycle Factor (dB) | | Density (dBm/MHz) | Limit (dBm / Ref BW | Results |
| | -10.513 | 8.7 | | -1.8 | 30 | Pass |