# Etherios Design Solutions

## ConnectCore i.MX6 WiFi/Bluetooth

## FCC 15.207:2014

## FCC 15.407:2014

**Report # ETHE0009.1**

NVLAP Lab Code: 200630-0
NVLAP Lab Code: 200881-0

NORTHWEST EMC

WTD 13.9.30

# CERTIFICATE OF TEST

**Last Date of Test: October 20, 2014**
**Etherios Design Solutions**
**Model: ConnectCore i.MX6 WiFi/Bluetooth**

## Radio Equipment Testing

### Standards

| Specification | Method |
|---|---|
| FCC 15.207:2014 | ANSI C63.10:2009 |
| FCC 15.407:2014 | ANSI C63.10:2009 |

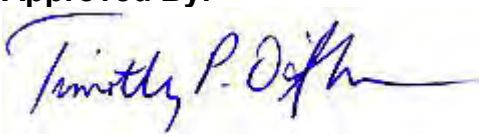
### Results

| Method Clause | Test Description | Applied | Results | Comments |
|---|---|---|---|---|
| 6.2 | Powerline Conducted Emissions | Yes | Pass | |
| 6.5, 6.6 | Spurious Radiated Emissions | Yes | Pass | |
| 6.7 | Band Edge | Yes | Pass | |
| 6.8 | Frequency Stability | Yes | Pass | |
| 6.9.1 | Emission Bandwidth | Yes | Pass | |
| 6.10.3 | Peak Transmit Power | Yes | Pass | |
| 6.10.4 | Peak Excursion of the Modulation Envelope | Yes | Pass | |
| 6.11.1 | Peak Power Spectral Density | Yes | Pass | |
| 7.5 | Duty Cycle | Yes | N/A | Characterization of radio operation. |

### 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.***

# REVISION HISTORY

NORTHWEST EMC
REV 2014.10.14

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

# ACCREDITATIONS AND AUTHORIZATIONS

NORTHWEST EMC
REV 2014.10.08

## 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 Guide 65 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 Conformity Assessment Body (CAB) under the EMC directive and 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

**OFTA** – Recognized by OFTA 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/

# MEASUREMENT UNCERTAINTY

## 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 WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) for each test is on each data sheet. 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.

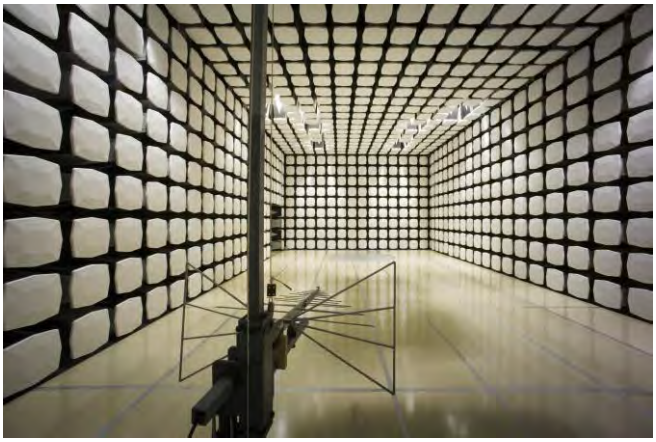
The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

| Test | + MU | - MU |
|---|---|---|
| Frequency Accuracy (Hz) | 0.0007% | -0.0007% |
| Amplitude Accuracy (dB) | 1.19 dB | -1.19 dB |
| Conducted Power (dB) | 0.29 dB | -0.29 dB |
| Radiated Power via Substitution (dB) | 0.71 dB | -0.71 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) | 4.7 dB | -4.7 dB |
| AC Powerline Conducted Emissions (dB) | 2.9 dB | -2.9 dB |

# FACILITIES

NORTHWEST EMC
REV 2014.10.08

| **Oregon**<br>Labs EV01-12<br>22975 NW Evergreen Pkwy<br>Hillsboro, OR 97124<br>(503) 844-4066 | **California**<br>Labs OC01-13<br>41 Tesla<br>Irvine, CA 92618<br>(949) 861-8918 | **New York**<br>Labs NY01-04<br>4939 Jordan Rd.<br>Elbridge, NY 13060<br>(315) 685-0796 | **Minnesota**<br>Labs MN01-08<br>9349 W Broadway Ave.<br>Brooklyn Park, MN 55445<br>(763) 425-2281 | **Washington**<br>Labs NC01-05,SU02,SU07<br>19201 120th Ave. NE<br>Bothell, WA 98011<br>(425) 984-6600 |
|---|---|---|---|---|
| **VCCI** | | | | |
| A-0108 | A-0029 | | A-0109 | A-0110 |
| **Industry Canada** | | | | |
| 2834D-1, 2834D-*2* | 2834B-1, 2834B-2, 2834B-3 | | 2834E-1 | 2834F-1 |
| **NVLAP** | | | | |
| NVLAP Lab Code: 200630-0 | NVLAP Lab Code: 200676-0 | NVLAP Lab Code: 200761-0 | NVLAP Lab Code: 200881-0 | NVLAP Lab Code: 200629-0 |



# PRODUCT DESCRIPTION

WTD 13.9.30

## Client and Equipment Under Test (EUT) Information

| | |
|---|---|
| **Company Name:** | Digi International |
| **Address:** | 11001 Bren Road East |
| **City, State, Zip:** | Minnetonka, MN 55343 |
| **Test Requested By:** | Collin LaFave |
| **Model:** | ConnectCore i.MX6 WiFi/Bluetooth |
| **First Date of Test:** | September 23, 2014 |
| **Last Date of Test:** | October 20, 2014 |
| **Receipt Date of Samples:** | September 12, 2014 |
| **Equipment Design Stage:** | Production |
| **Equipment Condition:** | No Damage |

## Information Provided by the Party Requesting the Test

| **Functional Description of the EUT:** |
|---|
| 802.11abgn SISO / Bluetooth radio module with quad core i.MX6 processor, and Kinetis microcontroller. Three possible antenna models for 2.4 GHz operation and two possible antenna models for 5 GHz operation. |

| **Testing Objective:** |
|---|
| To demonstrate compliance under FCC 15.407 for operation in the 5.2 GHz, 5.3 GHz, and 5.6 GHz bands. |

## Configuration ETHE0009- 1

| EUT | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| ConnectCore i.MX6 WiFi/Bluetooth | Etherios Design Solutions | 5001475-02 | 00409D 7C03B4 |

| Peripherals in test setup boundary | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Laptop Supply | Lenovo | 92P1160 | None |
| Laptop | Lenovo | T400 | L3-A9984 08/09 |
| Power Supply | Agilent | U8002A | TPZ |

| Cables | | | | | |
|---|---|---|---|---|---|
| **Cable Type** | **Shield** | **Length (m)** | **Ferrite** | **Connection 1** | **Connection 2** |
| AC Mains Cable | No | 1.8m | No | AC Mains | Laptop Supply |
| USB to Serial | Yes | 2.2m | No | Laptop | ConnectCore i.MX6 WiFi/Bluetooth |
| AC Mains Cable | No | 1.80m | No | AC Mains | Power Supply |
| DC Power | No | 1.80m | Yes | Laptop Supply | Laptop |
| DC Power | No | 1.20m | No | Power Supply | ConnectCore i.MX6 WiFi/Bluetooth |

## Configuration ETHE0009- 2

| Software/Firmware Running during test | |
|---|---|
| **Description** | **Version** |
| Windows XP | SP3 |
| iPerf via command prompt | Unknown |

| EUT | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| ConnectCore i.MX6 WiFi/Bluetooth | Etherios Design Solutions | 5001475-02 | 00409D 7C03CE |
| ANT-DB1-RAF(Antenna) | Unknown | ANT-DB1-RAF-XXX | None |

| Peripherals in test setup boundary | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Laptop Supply | Lenovo | 92P1160 | None |
| Laptop | Lenovo | T400 | L3-A9984 08/09 |
| Power Supply | Agilent | U8002A | TPZ |

| Cables | | | | | |
|---|---|---|---|---|---|
| **Cable Type** | **Shield** | **Length (m)** | **Ferrite** | **Connection 1** | **Connection 2** |
| AC Mains Cable | No | 1.8m | No | AC Mains | Laptop Supply |
| USB to Serial | Yes | 2.2m | No | Laptop | ConnectCore i.MX6 WiFi/Bluetooth |
| AC Mains Cable | No | 1.80m | No | AC Mains | Power Supply |
| DC Power | No | 1.80m | Yes | Laptop Supply | Laptop |
| DC Power | No | 1.20m | No | Power Supply | ConnectCore i.MX6 WiFi/Bluetooth |

## Configuration ETHE0009- 4

| EUT | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| ConnectCore i.MX6 WiFi/Bluetooth | Etherios Design Solutions | 5001475-02 | 00409D 7C03CA |

| Peripherals in test setup boundary | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| DC Power Supply | EZ | GP-4303D | TPY |
| AF Dual Band Antenna | Antenna Factor | ANT-DB1-RAF-XXX | None |

| Cables | | | | | |
|---|---|---|---|---|---|
| **Cable Type** | **Shield** | **Length (m)** | **Ferrite** | **Connection 1** | **Connection 2** |
| AC Mains Cable | No | 1.80m | No | AC Mains | Power Supply |
| DC Power | No | 1.20m | No | Power Supply | ConnectCore i.MX6 WiFi/Bluetooth |

## Configuration ETHE0009- 6

| Software/Firmware Running during test | |
|---|---|
| **Description** | **Version** |
| Windows XP | SP3 |
| iPerf via command prompt | Unknown |

| EUT | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| ConnectCore i.MX6 WiFi/Bluetooth | Etherios Design Solutions | 5001475-02 | 00409D 7C03CE |
| Ethertronics Antenna | Etherios Design Solutions | Unknown | None |

| Peripherals in test setup boundary | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Laptop Supply | Lenovo | 92P1160 | None |
| Laptop | Lenovo | T400 | L3-A9984 08/09 |
| Power Supply | Agilent | U8002A | TPZ |

| Cables | | | | | |
|---|---|---|---|---|---|
| **Cable Type** | **Shield** | **Length (m)** | **Ferrite** | **Connection 1** | **Connection 2** |
| AC Mains Cable | No | 1.8m | No | AC Mains | Laptop Supply |
| USB to Serial | Yes | 2.2m | No | Laptop | ConnectCore i.MX6 WiFi/Bluetooth |
| AC Mains Cable | No | 1.80m | No | AC Mains | Power Supply |
| DC Power | No | 1.80m | Yes | Laptop Supply | Laptop |
| DC Power | No | 1.20m | No | Power Supply | ConnectCore i.MX6 WiFi/Bluetooth |

# MODIFICATIONS

## Equipment Modifications

| Item | Date | Test | Modification | Note | Disposition of EUT |
|---|---|---|---|---|---|
| 1 | 9/23/2014 | Frequency Stability | 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 | 9/26/2014 | 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. |
| 3 | 9/26/2014 | 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. |
| 4 | 9/29/2014 | Emission 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. |
| 5 | 9/29/2014 | Peak Transmit 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 | 9/29/2014 | Peak Excursion of the Modulation Envelope | 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 | 9/29/2014 | Peak 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. |
| 8 | 10/20/2014 | Powerline Conducted Emissions | Modified from delivered configuration. | Customer added filtering to power supply. Modification authorized by Moshe Peri. | Scheduled testing was completed. |

# POWERLINE CONDUCTED EMISSIONS

## TEST DESCRIPTION

Using the mode of operation and configuration noted within this report, conducted emissions tests were performed. The frequency range investigated (scanned), is also noted in this report. Conducted power line measurements are made, unless otherwise specified, over the frequency range from 150 kHz to 30 MHz to determine the line-to-ground radio-noise voltage that is conducted from the EUT power-input terminals that are directly (or indirectly via separate transformer or power supplies) connected to a public power network. Equipment is tested with power cords that are normally used or that have electrical or shielding characteristics that are the same as those cords normally used. Typically those measurements are made using a LISN (Line Impedance Stabilization Network), the 50 Ω measuring port is terminated by a 50 Ω EMI meter or a 50 Ω resistive load. All 50 Ω measuring ports of the LISN are terminated by 50Ω.

## TEST EQUIPMENT

| Description | Manufacturer | Model | ID | Last Cal. | Interval |
|---|---|---|---|---|---|
| Receiver | Rohde & Schwarz | ESR7 | ARI | 05/06/2014 | 12 mo |
| Attenuator 20dB, BNC | Fairview Microwave | SA01B-20 | AQP | 07/22/2014 | 12 mo |
| High Pass Filter | TTE | H97-100K-50-720B | HGN | 05/23/2014 | 24 mo |
| LISN | Solar Electronics | 9252-50-R-24-BNC | LIY | 05/15/2014 | 12 mo |
| MN03 Cables | ESM Cable Corp. | Conducted Cables | MNC | 12/05/2013 | 12 mo |
| DC Power Supply | EZ Digital Co | GP-4303D | TPY | NCR | 0 mo |

## MEASUREMENT UNCERTAINTY

| Description | | |
|---|---|---|
| Expanded k=2 | 2.9 dB | -2.9 dB |

## CONFIGURATIONS INVESTIGATED

ETHE0009-4

## MODES INVESTIGATED

Transmitting 802.11 5180 MHz, 6 mbps
Transmitting 802.11 5240 MHz, 6 mbps
Transmitting 802.11 5260 MHz, 6 mbps
Transmitting 802.11 5320 MHz, 6 mbps
Transmitting 802.11 5500 MHz, 6 mbps
Transmitting 802.11 5580 MHz, 6 mbps
Transmitting 802.11 5700 MHz, 6 mbps

# POWERLINE CONDUCTED EMISSIONS

| | | | |
|---|---|---|---|
| EUT: | ConnectCore i.MX6 WiFi/Bluetooth | Work Order: | ETHE0009 |
| Serial Number: | 00409D 7C03CA | Date: | 10/17/2014 |
| Customer: | Etherios Design Solutions | Temperature: | 22.3°C |
| Attendees: | None | Relative Humidity: | 38.4% |
| Customer Project: | None | Bar. Pressure: | 1007 mb |
| Tested By: | Trevor Buls | Job Site: | MN03 |
| Power: | 5VDC | Configuration: | ETHE0009-4 |

## TEST SPECIFICATIONS

| Specification: | Method: |
|---|---|
| FCC 15.207:2014 | ANSI C63.10:2009 |

## TEST PARAMETERS

| | | | | | |
|---|---|---|---|---|---|
| Run #: | 29 | Line: | Negative Lead | Ext. Attenuation (dB): | 20 |

## COMMENTS

Customer added filtering to power supply. Modification authorized by Moshe Peri.

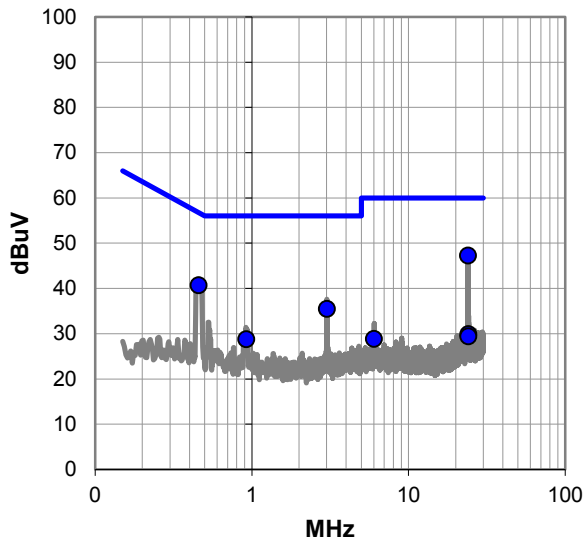
## EUT OPERATING MODES

Transmitting 802.11 5180 MHz, 6 mbps

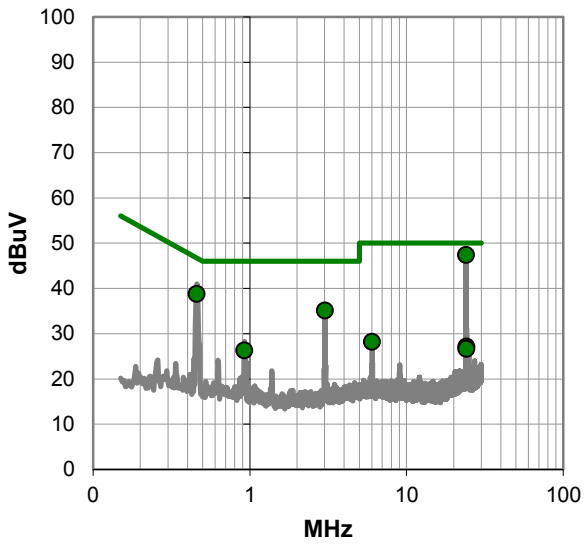
## DEVIATIONS FROM TEST STANDARD

None

**Quasi Peak Data - vs - Quasi Peak Limit**




**Average Data - vs - Average Limit**



# POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #29

Quasi Peak Data - vs - Quasi Peak Limit

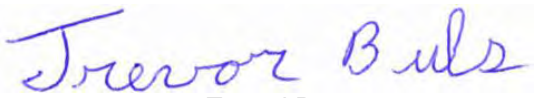
| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|---|---|---|---|---|---|
| 23.999 | 25.5 | 21.7 | 47.2 | 60.0 | -12.8 |
| 0.459 | 20.5 | 20.2 | 40.7 | 56.7 | -16.0 |
| 3.019 | 15.1 | 20.3 | 35.4 | 56.0 | -20.6 |
| 0.921 | 8.5 | 20.3 | 28.8 | 56.0 | -27.2 |
| 24.160 | 8.1 | 21.8 | 29.9 | 60.0 | -30.1 |
| 24.189 | 7.6 | 21.8 | 29.4 | 60.0 | -30.6 |
| 6.037 | 8.3 | 20.5 | 28.8 | 60.0 | -31.2 |

Average Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|---|---|---|---|---|---|
| 23.999 | 25.6 | 21.7 | 47.3 | 50.0 | -2.7 |
| 0.459 | 18.6 | 20.2 | 38.8 | 46.7 | -7.9 |
| 3.019 | 14.8 | 20.3 | 35.1 | 46.0 | -10.9 |
| 0.921 | 6.0 | 20.3 | 26.3 | 46.0 | -19.7 |
| 6.037 | 7.7 | 20.5 | 28.2 | 50.0 | -21.8 |
| 24.189 | 5.4 | 21.8 | 27.2 | 50.0 | -22.8 |
| 24.160 | 4.9 | 21.8 | 26.7 | 50.0 | -23.3 |

## CONCLUSION

Pass



Tested By

# POWERLINE CONDUCTED EMISSIONS

| | | | |
|---|---|---|---|
| EUT: | ConnectCore i.MX6 WiFi/Bluetooth | Work Order: | ETHE0009 |
| Serial Number: | 00409D 7C03CA | Date: | 10/17/2014 |
| Customer: | Etherios Design Solutions | Temperature: | 22.3°C |
| Attendees: | None | Relative Humidity: | 38.4% |
| Customer Project: | None | Bar. Pressure: | 1007 mb |
| Tested By: | Trevor Buls | Job Site: | MN03 |
| Power: | 5VDC | Configuration: | ETHE0009-4 |

## TEST SPECIFICATIONS

| Specification: | Method: |
|---|---|
| FCC 15.207:2014 | ANSI C63.10:2009 |

## TEST PARAMETERS

| | | | | | |
|---|---|---|---|---|---|
| Run #: | 30 | Line: | Positive Lead | Ext. Attenuation (dB): | 20 |

## COMMENTS

Customer added filtering to power supply. Modification authorized by Moshe Peri.

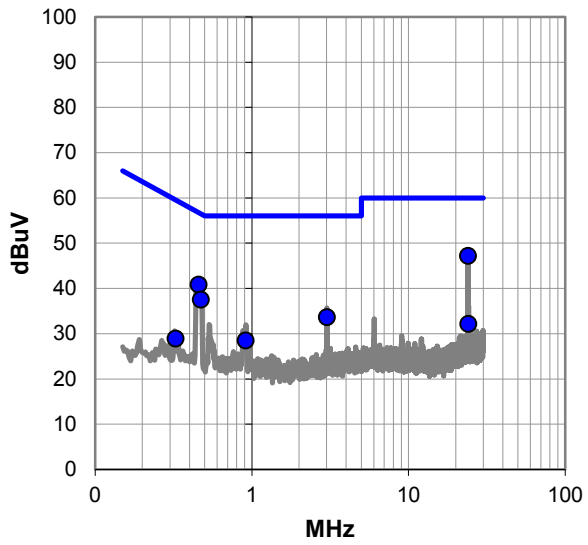
## EUT OPERATING MODES

Transmitting 802.11 5180 MHz, 6 mbps

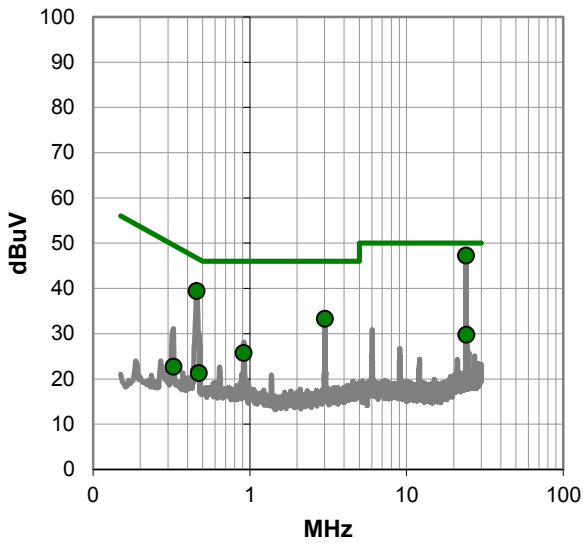
## DEVIATIONS FROM TEST STANDARD

None

**Quasi Peak Data - vs - Quasi Peak Limit**




**Average Data - vs - Average Limit**



# POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #30

Quasi Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|---|---|---|---|---|---|
| 23.999 | 25.4 | 21.7 | 47.1 | 60.0 | -12.9 |
| 0.459 | 20.6 | 20.2 | 40.8 | 56.7 | -15.9 |
| 0.473 | 17.3 | 20.2 | 37.5 | 56.5 | -19.0 |
| 3.018 | 13.3 | 20.3 | 33.6 | 56.0 | -22.4 |
| 0.916 | 8.2 | 20.3 | 28.5 | 56.0 | -27.5 |
| 24.143 | 10.4 | 21.8 | 32.2 | 60.0 | -27.8 |
| 0.327 | 8.7 | 20.2 | 28.9 | 59.5 | -30.6 |

Average Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|---|---|---|---|---|---|
| 23.999 | 25.5 | 21.7 | 47.2 | 50.0 | -2.8 |
| 0.459 | 19.2 | 20.2 | 39.4 | 46.7 | -7.3 |
| 3.018 | 12.9 | 20.3 | 33.2 | 46.0 | -12.8 |
| 24.143 | 8.0 | 21.8 | 29.8 | 50.0 | -20.2 |
| 0.916 | 5.4 | 20.3 | 25.7 | 46.0 | -20.3 |
| 0.473 | 1.1 | 20.2 | 21.3 | 46.5 | -25.2 |
| 0.327 | 2.5 | 20.2 | 22.7 | 49.5 | -26.8 |

## CONCLUSION

Pass

Trevor Buls

Tested By

NORTHWEST EMC

WTD.2014.08.28, PSA-ESCI 2014.09.10, EmiR5 2014.07.09

# POWERLINE CONDUCTED EMISSIONS

| | | | |
|---|---|---|---|
| EUT: | ConnectCore i.MX6 WiFi/Bluetooth | Work Order: | ETHE0009 |
| Serial Number: | 00409D 7C03CA | Date: | 10/20/2014 |
| Customer: | Etherios Design Solutions | Temperature: | 21.5°C |
| Attendees: | None | Relative Humidity: | 38.7% |
| Customer Project: | None | Bar. Pressure: | 1016.9 mb |
| Tested By: | Dustin Sparks | Job Site: | MN03 |
| Power: | 5VDC | Configuration: | ETHE0009-4 |

## TEST SPECIFICATIONS

| Specification: | Method: |
|---|---|
| FCC 15.207:2014 | ANSI C63.10:2009 |

## TEST PARAMETERS

| | | | | | |
|---|---|---|---|---|---|
| Run #: | 42 | Line: | Negative Lead | Ext. Attenuation (dB): | 20 |

## COMMENTS

Customer added filtering to power supply. Modification authorized by Moshe Peri.

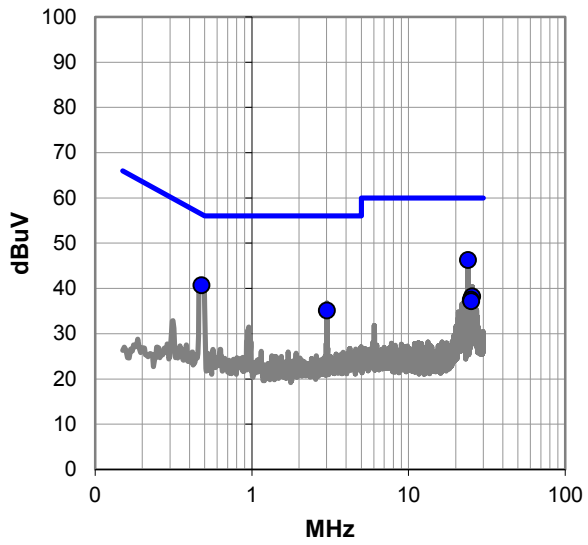
## EUT OPERATING MODES

Transmitting 802.11 5240 MHz, 6 mbps

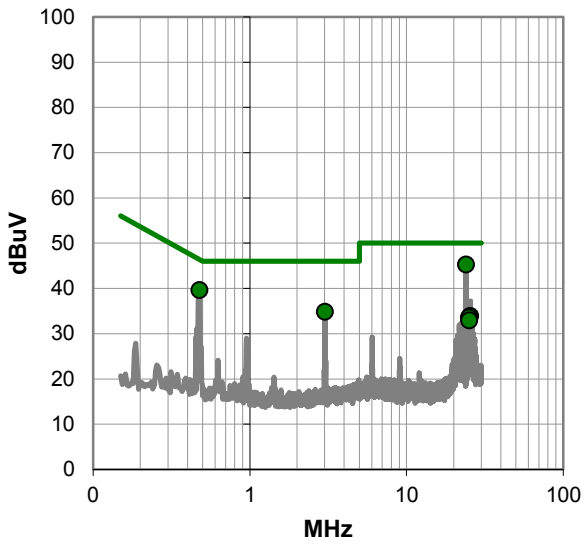
## DEVIATIONS FROM TEST STANDARD

None

**Quasi Peak Data - vs - Quasi Peak Limit**




**Average Data - vs - Average Limit**



# POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #42

Quasi Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|---|---|---|---|---|---|
| 23.999 | 24.5 | 21.7 | 46.2 | 60.0 | -13.8 |
| 0.477 | 20.5 | 20.2 | 40.7 | 56.4 | -15.7 |
| 3.020 | 14.8 | 20.3 | 35.1 | 56.0 | -20.9 |
| 25.594 | 16.3 | 21.9 | 38.2 | 60.0 | -21.8 |
| 25.063 | 15.7 | 21.8 | 37.5 | 60.0 | -22.5 |
| 25.167 | 15.3 | 21.8 | 37.1 | 60.0 | -22.9 |

Average Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|---|---|---|---|---|---|
| 23.999 | 23.5 | 21.7 | 45.2 | 50.0 | -4.8 |
| 0.477 | 19.4 | 20.2 | 39.6 | 46.4 | -6.8 |
| 3.020 | 14.5 | 20.3 | 34.8 | 46.0 | -11.2 |
| 25.594 | 12.0 | 21.9 | 33.9 | 50.0 | -16.1 |
| 25.063 | 11.7 | 21.8 | 33.5 | 50.0 | -16.5 |
| 25.167 | 11.1 | 21.8 | 32.9 | 50.0 | -17.1 |

## CONCLUSION

Pass

Tested By

# POWERLINE CONDUCTED EMISSIONS

| | | | |
|---|---|---|---|
| EUT: | ConnectCore i.MX6 WiFi/Bluetooth | Work Order: | ETHE0009 |
| Serial Number: | 00409D 7C03CA | Date: | 10/20/2014 |
| Customer: | Etherios Design Solutions | Temperature: | 21.5°C |
| Attendees: | None | Relative Humidity: | 38.7% |
| Customer Project: | None | Bar. Pressure: | 1016.9 mb |
| Tested By: | Dustin Sparks | Job Site: | MN03 |
| Power: | 5VDC | Configuration: | ETHE0009-4 |

## TEST SPECIFICATIONS

| Specification: | Method: |
|---|---|
| FCC 15.207:2014 | ANSI C63.10:2009 |

## TEST PARAMETERS

| | | | | | |
|---|---|---|---|---|---|
| Run #: | 43 | Line: | Positive Lead | Ext. Attenuation (dB): | 20 |

## COMMENTS

Customer added filtering to power supply. Modification authorized by Moshe Peri.

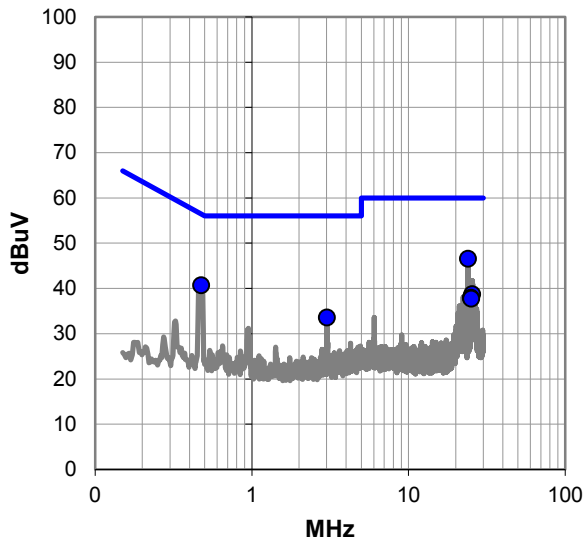
## EUT OPERATING MODES

Transmitting 802.11 5240 MHz, 6 mbps

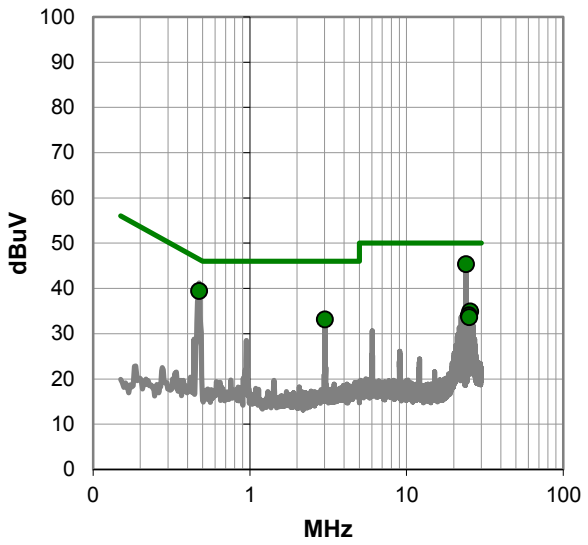
## DEVIATIONS FROM TEST STANDARD

None

**Quasi Peak Data - vs - Quasi Peak Limit**




**Average Data - vs - Average Limit**



NORTHWEST EMC

WTD.2014.08.28, PSA-ESCI 2014.09.10, EmiR5 2014.07.09

# POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #43

Quasi Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|---|---|---|---|---|---|
| 23.999 | 24.8 | 21.7 | 46.5 | 60.0 | -13.5 |
| 0.475 | 20.5 | 20.2 | 40.7 | 56.4 | -15.7 |
| 25.597 | 16.8 | 21.9 | 38.7 | 60.0 | -21.3 |
| 25.065 | 16.1 | 21.8 | 37.9 | 60.0 | -22.1 |
| 25.171 | 15.9 | 21.8 | 37.7 | 60.0 | -22.3 |
| 3.019 | 13.2 | 20.3 | 33.5 | 56.0 | -22.5 |

Average Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|---|---|---|---|---|---|
| 23.999 | 23.6 | 21.7 | 45.3 | 50.0 | -4.7 |
| 0.475 | 19.2 | 20.2 | 39.4 | 46.4 | -7.0 |
| 3.019 | 12.8 | 20.3 | 33.1 | 46.0 | -12.9 |
| 25.597 | 13.0 | 21.9 | 34.9 | 50.0 | -15.1 |
| 25.065 | 12.2 | 21.8 | 34.0 | 50.0 | -16.0 |
| 25.171 | 11.8 | 21.8 | 33.6 | 50.0 | -16.4 |

## CONCLUSION

Pass

Tested By

# POWERLINE CONDUCTED EMISSIONS

| | | | |
|---|---|---|---|
| EUT: | ConnectCore i.MX6 WiFi/Bluetooth | Work Order: | ETHE0009 |
| Serial Number: | 00409D 7C03CA | Date: | 10/20/2014 |
| Customer: | Etherios Design Solutions | Temperature: | 21.5°C |
| Attendees: | None | Relative Humidity: | 38.7% |
| Customer Project: | None | Bar. Pressure: | 1016.9 mb |
| Tested By: | Dustin Sparks | Job Site: | MN03 |
| Power: | 5VDC | Configuration: | ETHE0009-4 |

## TEST SPECIFICATIONS

| Specification: | Method: |
|---|---|
| FCC 15.207:2014 | ANSI C63.10:2009 |

## TEST PARAMETERS

| | | | | | |
|---|---|---|---|---|---|
| Run #: | 44 | Line: | Positive Lead | Ext. Attenuation (dB): | 20 |

## COMMENTS

Customer added filtering to power supply. Modification authorized by Moshe Peri.

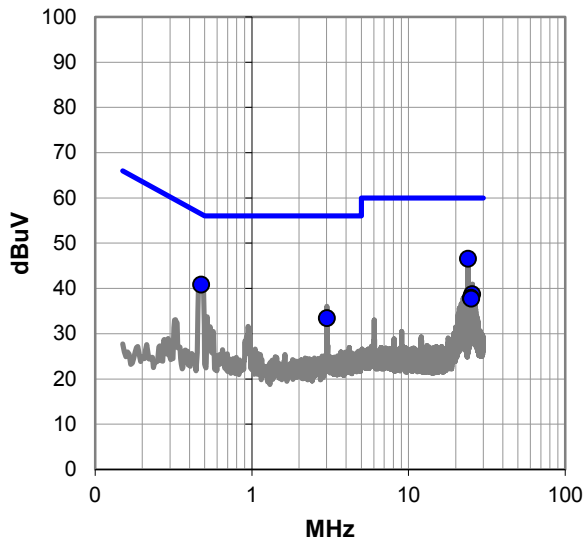
## EUT OPERATING MODES

Transmitting 802.11 5260 MHz, 6 mbps

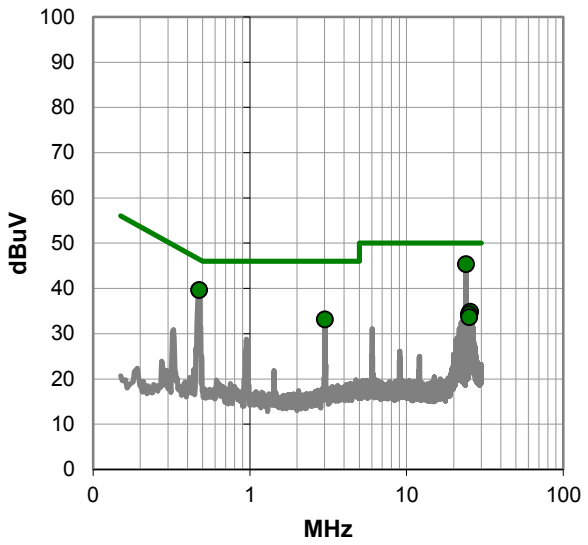
## DEVIATIONS FROM TEST STANDARD

None

**Quasi Peak Data - vs - Quasi Peak Limit**




**Average Data - vs - Average Limit**



NORTHWEST EMC

WTD.2014.08.28, PSA-ESCI 2014.09.10, EmiR5 2014.07.09

# POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #44

Quasi Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|---|---|---|---|---|---|
| 23.999 | 24.8 | 21.7 | 46.5 | 60.0 | -13.5 |
| 0.476 | 20.6 | 20.2 | 40.8 | 56.4 | -15.6 |
| 25.595 | 16.8 | 21.9 | 38.7 | 60.0 | -21.3 |
| 25.063 | 16.1 | 21.8 | 37.9 | 60.0 | -22.1 |
| 25.169 | 15.9 | 21.8 | 37.7 | 60.0 | -22.3 |
| 3.019 | 13.1 | 20.3 | 33.4 | 56.0 | -22.6 |

Average Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|---|---|---|---|---|---|
| 23.999 | 23.6 | 21.7 | 45.3 | 50.0 | -4.7 |
| 0.476 | 19.4 | 20.2 | 39.6 | 46.4 | -6.8 |
| 3.019 | 12.8 | 20.3 | 33.1 | 46.0 | -12.9 |
| 25.595 | 12.9 | 21.9 | 34.8 | 50.0 | -15.2 |
| 25.063 | 12.4 | 21.8 | 34.2 | 50.0 | -15.8 |
| 25.169 | 11.8 | 21.8 | 33.6 | 50.0 | -16.4 |

## CONCLUSION

Pass

Tested By

# POWERLINE CONDUCTED EMISSIONS

| | | | |
|---|---|---|---|
| EUT: | ConnectCore i.MX6 WiFi/Bluetooth | Work Order: | ETHE0009 |
| Serial Number: | 00409D 7C03CA | Date: | 10/20/2014 |
| Customer: | Etherios Design Solutions | Temperature: | 21.5°C |
| Attendees: | None | Relative Humidity: | 38.7% |
| Customer Project: | None | Bar. Pressure: | 1016.9 mb |
| Tested By: | Dustin Sparks | Job Site: | MN03 |
| Power: | 5VDC | Configuration: | ETHE0009-4 |

## TEST SPECIFICATIONS

| Specification: | Method: |
|---|---|
| FCC 15.207:2014 | ANSI C63.10:2009 |

## TEST PARAMETERS

| | | | | | |
|---|---|---|---|---|---|
| Run #: | 45 | Line: | Negative Lead | Ext. Attenuation (dB): | 20 |

## COMMENTS

Customer added filtering to power supply. Modification authorized by Moshe Peri.

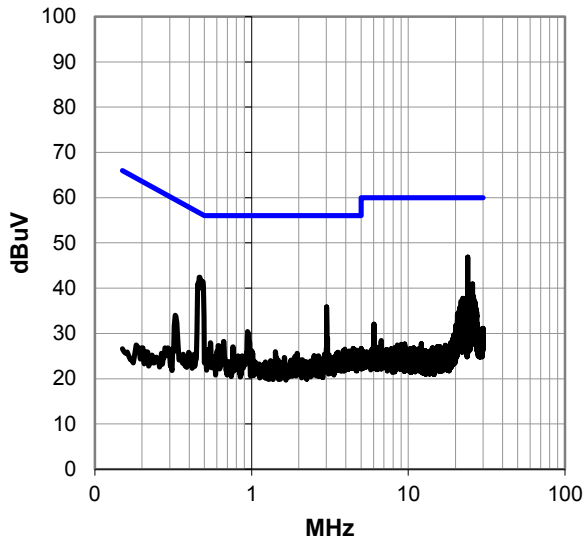
## EUT OPERATING MODES

Transmitting 802.11 5260 MHz, 6 mbps

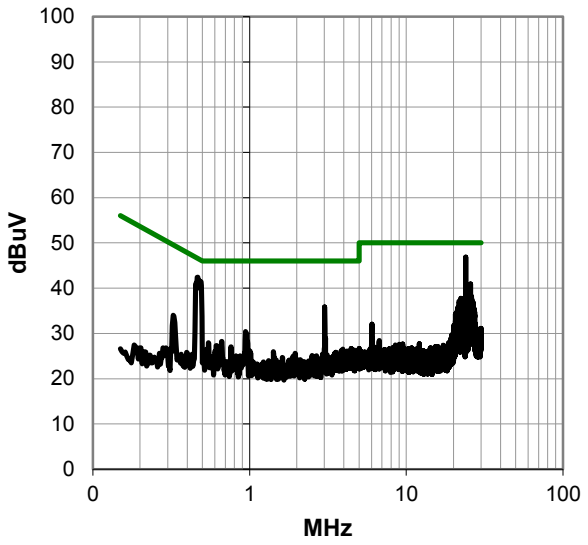
## DEVIATIONS FROM TEST STANDARD

None

**Peak Data - vs - Quasi Peak Limit**




**Peak Data - vs - Average Limit**



# POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #45

Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|---|---|---|---|---|---|
| 23.997 | 25.1 | 21.7 | 46.8 | 60.0 | -13.2 |
| 0.463 | 22.2 | 20.2 | 42.4 | 56.6 | -14.2 |
| 25.695 | 19.0 | 21.9 | 40.9 | 60.0 | -19.1 |
| 25.590 | 18.7 | 21.9 | 40.6 | 60.0 | -19.4 |
| 3.015 | 15.5 | 20.3 | 35.8 | 56.0 | -20.2 |
| 25.064 | 17.9 | 21.8 | 39.7 | 60.0 | -20.3 |
| 25.172 | 17.8 | 21.8 | 39.6 | 60.0 | -20.4 |
| 25.489 | 16.7 | 21.9 | 38.6 | 60.0 | -21.4 |
| 24.960 | 16.7 | 21.8 | 38.5 | 60.0 | -21.5 |
| 26.124 | 16.2 | 22.0 | 38.2 | 60.0 | -21.8 |
| 22.292 | 16.1 | 21.6 | 37.7 | 60.0 | -22.3 |
| 26.239 | 15.6 | 22.0 | 37.6 | 60.0 | -22.4 |
| 26.019 | 15.5 | 21.9 | 37.4 | 60.0 | -22.6 |
| 24.534 | 15.6 | 21.8 | 37.4 | 60.0 | -22.6 |
| 24.635 | 15.5 | 21.8 | 37.3 | 60.0 | -22.7 |
| 21.766 | 15.5 | 21.6 | 37.1 | 60.0 | -22.9 |
| 26.265 | 14.9 | 22.0 | 36.9 | 60.0 | -23.1 |
| 25.273 | 15.0 | 21.9 | 36.9 | 60.0 | -23.1 |
| 26.657 | 14.8 | 22.0 | 36.8 | 60.0 | -23.2 |
| 26.336 | 14.7 | 22.0 | 36.7 | 60.0 | -23.3 |
| 25.810 | 14.6 | 21.9 | 36.5 | 60.0 | -23.5 |
| 26.057 | 14.2 | 21.9 | 36.1 | 60.0 | -23.9 |
| 22.400 | 14.3 | 21.6 | 35.9 | 60.0 | -24.1 |
| 25.128 | 14.1 | 21.8 | 35.9 | 60.0 | -24.1 |
| 26.702 | 13.9 | 22.0 | 35.9 | 60.0 | -24.1 |
| 22.938 | 14.1 | 21.7 | 35.8 | 60.0 | -24.2 |

Peak Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|---|---|---|---|---|---|
| 23.997 | 25.1 | 21.7 | 46.8 | 50.0 | -3.2 |
| 0.463 | 22.2 | 20.2 | 42.4 | 46.6 | -4.2 |
| 25.695 | 19.0 | 21.9 | 40.9 | 50.0 | -9.1 |
| 25.590 | 18.7 | 21.9 | 40.6 | 50.0 | -9.4 |
| 3.015 | 15.5 | 20.3 | 35.8 | 46.0 | -10.2 |
| 25.064 | 17.9 | 21.8 | 39.7 | 50.0 | -10.3 |
| 25.172 | 17.8 | 21.8 | 39.6 | 50.0 | -10.4 |
| 25.489 | 16.7 | 21.9 | 38.6 | 50.0 | -11.4 |
| 24.960 | 16.7 | 21.8 | 38.5 | 50.0 | -11.5 |
| 26.124 | 16.2 | 22.0 | 38.2 | 50.0 | -11.8 |
| 22.292 | 16.1 | 21.6 | 37.7 | 50.0 | -12.3 |
| 26.239 | 15.6 | 22.0 | 37.6 | 50.0 | -12.4 |
| 26.019 | 15.5 | 21.9 | 37.4 | 50.0 | -12.6 |
| 24.534 | 15.6 | 21.8 | 37.4 | 50.0 | -12.6 |
| 24.635 | 15.5 | 21.8 | 37.3 | 50.0 | -12.7 |
| 21.766 | 15.5 | 21.6 | 37.1 | 50.0 | -12.9 |
| 26.265 | 14.9 | 22.0 | 36.9 | 50.0 | -13.1 |
| 25.273 | 15.0 | 21.9 | 36.9 | 50.0 | -13.1 |
| 26.657 | 14.8 | 22.0 | 36.8 | 50.0 | -13.2 |
| 26.336 | 14.7 | 22.0 | 36.7 | 50.0 | -13.3 |
| 25.810 | 14.6 | 21.9 | 36.5 | 50.0 | -13.5 |
| 26.057 | 14.2 | 21.9 | 36.1 | 50.0 | -13.9 |
| 22.400 | 14.3 | 21.6 | 35.9 | 50.0 | -14.1 |
| 25.128 | 14.1 | 21.8 | 35.9 | 50.0 | -14.1 |
| 26.702 | 13.9 | 22.0 | 35.9 | 50.0 | -14.1 |
| 22.938 | 14.1 | 21.7 | 35.8 | 50.0 | -14.2 |

## CONCLUSION

Pass

Tested By

# POWERLINE CONDUCTED EMISSIONS

| | | | |
|---|---|---|---|
| EUT: | ConnectCore i.MX6 WiFi/Bluetooth | Work Order: | ETHE0009 |
| Serial Number: | 00409D 7C03CA | Date: | 10/20/2014 |
| Customer: | Etherios Design Solutions | Temperature: | 21.5°C |
| Attendees: | None | Relative Humidity: | 38.7% |
| Customer Project: | None | Bar. Pressure: | 1016.9 mb |
| Tested By: | Dustin Sparks | Job Site: | MN03 |
| Power: | 5VDC | Configuration: | ETHE0009-4 |

## TEST SPECIFICATIONS

| Specification: | Method: |
|---|---|
| FCC 15.207:2014 | ANSI C63.10:2009 |

## TEST PARAMETERS

| | | | | | |
|---|---|---|---|---|---|
| Run #: | 46 | Line: | Negative Lead | Ext. Attenuation (dB): | 20 |

## COMMENTS

Customer added filtering to power supply. Modification authorized by Moshe Peri.

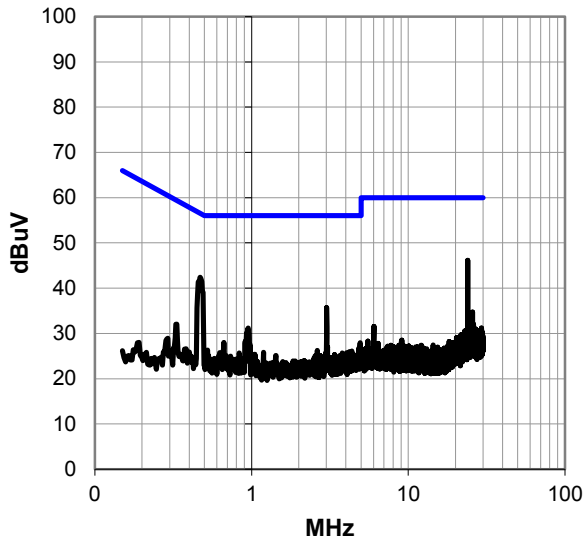
## EUT OPERATING MODES

Transmitting 802.11 5320 MHz, 6 mbps

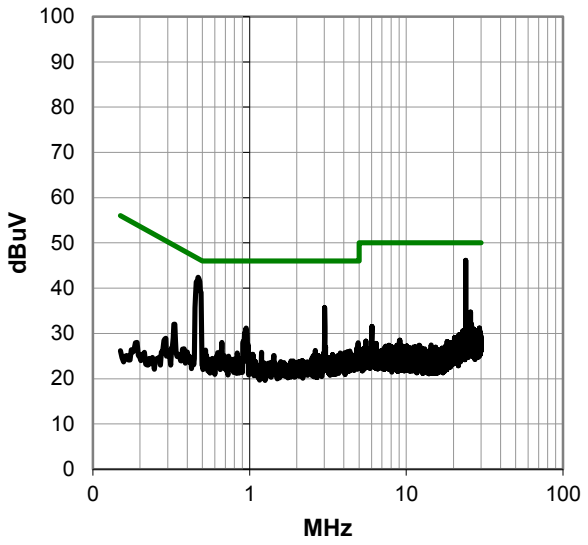
## DEVIATIONS FROM TEST STANDARD

None

**Peak Data - vs - Quasi Peak Limit**




**Peak Data - vs - Average Limit**



# POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #46

Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|---|---|---|---|---|---|
| 23.997 | 24.4 | 21.7 | 46.1 | 60.0 | -13.9 |
| 0.471 | 22.2 | 20.2 | 42.4 | 56.5 | -14.1 |
| 3.015 | 15.4 | 20.3 | 35.7 | 56.0 | -20.3 |
| 0.952 | 10.9 | 20.3 | 31.2 | 56.0 | -24.8 |
| 25.698 | 12.8 | 21.9 | 34.7 | 60.0 | -25.3 |
| 24.135 | 10.9 | 21.8 | 32.7 | 60.0 | -27.3 |
| 25.598 | 10.7 | 21.9 | 32.6 | 60.0 | -27.4 |
| 24.102 | 10.8 | 21.8 | 32.6 | 60.0 | -27.4 |
| 0.329 | 11.8 | 20.2 | 32.0 | 59.5 | -27.5 |
| 0.911 | 8.0 | 20.3 | 28.3 | 56.0 | -27.7 |
| 25.060 | 10.3 | 21.8 | 32.1 | 60.0 | -27.9 |
| 26.127 | 10.1 | 22.0 | 32.1 | 60.0 | -27.9 |
| 0.665 | 7.8 | 20.2 | 28.0 | 56.0 | -28.0 |
| 4.925 | 7.5 | 20.5 | 28.0 | 56.0 | -28.0 |
| 24.176 | 10.1 | 21.8 | 31.9 | 60.0 | -28.1 |
| 25.161 | 9.9 | 21.8 | 31.7 | 60.0 | -28.3 |
| 24.997 | 9.7 | 21.8 | 31.5 | 60.0 | -28.5 |
| 6.033 | 11.0 | 20.5 | 31.5 | 60.0 | -28.5 |
| 0.978 | 7.2 | 20.3 | 27.5 | 56.0 | -28.5 |
| 26.224 | 9.5 | 22.0 | 31.5 | 60.0 | -28.5 |
| 24.665 | 9.5 | 21.8 | 31.3 | 60.0 | -28.7 |
| 29.302 | 8.9 | 22.3 | 31.2 | 60.0 | -28.8 |
| 24.441 | 9.4 | 21.8 | 31.2 | 60.0 | -28.8 |
| 3.053 | 6.7 | 20.3 | 27.0 | 56.0 | -29.0 |
| 26.870 | 8.9 | 22.0 | 30.9 | 60.0 | -29.1 |
| 25.486 | 9.0 | 21.9 | 30.9 | 60.0 | -29.1 |

Peak Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|---|---|---|---|---|---|
| 23.997 | 24.4 | 21.7 | 46.1 | 50.0 | -3.9 |
| 0.471 | 22.2 | 20.2 | 42.4 | 46.5 | -4.1 |
| 3.015 | 15.4 | 20.3 | 35.7 | 46.0 | -10.3 |
| 0.952 | 10.9 | 20.3 | 31.2 | 46.0 | -14.8 |
| 25.698 | 12.8 | 21.9 | 34.7 | 50.0 | -15.3 |
| 24.135 | 10.9 | 21.8 | 32.7 | 50.0 | -17.3 |
| 25.598 | 10.7 | 21.9 | 32.6 | 50.0 | -17.4 |
| 24.102 | 10.8 | 21.8 | 32.6 | 50.0 | -17.4 |
| 0.329 | 11.8 | 20.2 | 32.0 | 49.5 | -17.5 |
| 0.911 | 8.0 | 20.3 | 28.3 | 46.0 | -17.7 |
| 25.060 | 10.3 | 21.8 | 32.1 | 50.0 | -17.9 |
| 26.127 | 10.1 | 22.0 | 32.1 | 50.0 | -17.9 |
| 0.665 | 7.8 | 20.2 | 28.0 | 46.0 | -18.0 |
| 4.925 | 7.5 | 20.5 | 28.0 | 46.0 | -18.0 |
| 24.176 | 10.1 | 21.8 | 31.9 | 50.0 | -18.1 |
| 25.161 | 9.9 | 21.8 | 31.7 | 50.0 | -18.3 |
| 24.997 | 9.7 | 21.8 | 31.5 | 50.0 | -18.5 |
| 6.033 | 11.0 | 20.5 | 31.5 | 50.0 | -18.5 |
| 0.978 | 7.2 | 20.3 | 27.5 | 46.0 | -18.5 |
| 26.224 | 9.5 | 22.0 | 31.5 | 50.0 | -18.5 |
| 24.665 | 9.5 | 21.8 | 31.3 | 50.0 | -18.7 |
| 29.302 | 8.9 | 22.3 | 31.2 | 50.0 | -18.8 |
| 24.441 | 9.4 | 21.8 | 31.2 | 50.0 | -18.8 |
| 3.053 | 6.7 | 20.3 | 27.0 | 46.0 | -19.0 |
| 26.870 | 8.9 | 22.0 | 30.9 | 50.0 | -19.1 |
| 25.486 | 9.0 | 21.9 | 30.9 | 50.0 | -19.1 |

## CONCLUSION

Pass

Tested By

# POWERLINE CONDUCTED EMISSIONS

| | | | |
|---|---|---|---|
| EUT: | ConnectCore i.MX6 WiFi/Bluetooth | Work Order: | ETHE0009 |
| Serial Number: | 00409D 7C03CA | Date: | 10/20/2014 |
| Customer: | Etherios Design Solutions | Temperature: | 21.5°C |
| Attendees: | None | Relative Humidity: | 38.7% |
| Customer Project: | None | Bar. Pressure: | 1016.9 mb |
| Tested By: | Dustin Sparks | Job Site: | MN03 |
| Power: | 5VDC | Configuration: | ETHE0009-4 |

## TEST SPECIFICATIONS

| Specification: | Method: |
|---|---|
| FCC 15.207:2014 | ANSI C63.10:2009 |

## TEST PARAMETERS

| | | | | | |
|---|---|---|---|---|---|
| Run #: | 47 | Line: | Positive Lead | Ext. Attenuation (dB): | 20 |

## COMMENTS

Customer added filtering to power supply. Modification authorized by Moshe Peri.

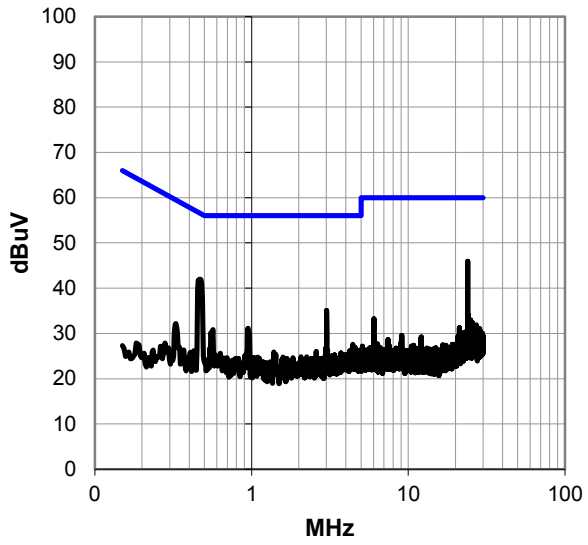
## EUT OPERATING MODES

Transmitting 802.11 5320 MHz, 6 mbps

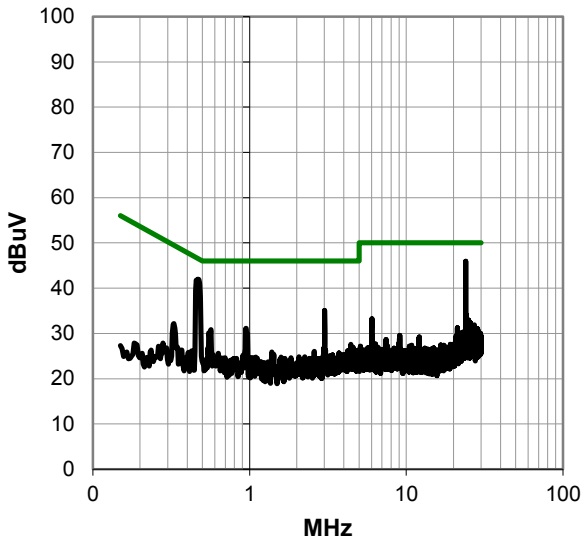
## DEVIATIONS FROM TEST STANDARD

None

**Peak Data - vs - Quasi Peak Limit**




**Peak Data - vs - Average Limit**



# POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #47

Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|---|---|---|---|---|---|
| 23.997 | 24.2 | 21.7 | 45.9 | 60.0 | -14.1 |
| 0.467 | 21.8 | 20.2 | 42.0 | 56.6 | -14.6 |
| 3.015 | 14.7 | 20.3 | 35.0 | 56.0 | -21.0 |
| 0.952 | 10.8 | 20.3 | 31.1 | 56.0 | -24.9 |
| 0.568 | 10.6 | 20.2 | 30.8 | 56.0 | -25.2 |
| 24.146 | 12.4 | 21.8 | 34.2 | 60.0 | -25.8 |
| 0.971 | 9.7 | 20.3 | 30.0 | 56.0 | -26.0 |
| 24.176 | 11.7 | 21.8 | 33.5 | 60.0 | -26.5 |
| 24.113 | 11.6 | 21.8 | 33.4 | 60.0 | -26.6 |
| 6.037 | 12.7 | 20.5 | 33.2 | 60.0 | -26.8 |
| 24.956 | 11.1 | 21.8 | 32.9 | 60.0 | -27.1 |
| 0.329 | 12.0 | 20.2 | 32.2 | 59.5 | -27.3 |
| 25.165 | 10.7 | 21.8 | 32.5 | 60.0 | -27.5 |
| 25.698 | 10.4 | 21.9 | 32.3 | 60.0 | -27.7 |
| 25.594 | 10.4 | 21.9 | 32.3 | 60.0 | -27.7 |
| 25.064 | 10.4 | 21.8 | 32.2 | 60.0 | -27.8 |
| 25.799 | 10.1 | 21.9 | 32.0 | 60.0 | -28.0 |
| 24.068 | 10.2 | 21.8 | 32.0 | 60.0 | -28.0 |
| 27.153 | 9.8 | 22.1 | 31.9 | 60.0 | -28.1 |
| 4.422 | 7.2 | 20.4 | 27.6 | 56.0 | -28.4 |
| 26.210 | 9.4 | 22.0 | 31.4 | 60.0 | -28.6 |
| 26.336 | 9.3 | 22.0 | 31.3 | 60.0 | -28.7 |
| 21.240 | 9.7 | 21.6 | 31.3 | 60.0 | -28.7 |
| 26.583 | 9.2 | 22.0 | 31.2 | 60.0 | -28.8 |
| 28.545 | 8.8 | 22.2 | 31.0 | 60.0 | -29.0 |
| 24.534 | 9.2 | 21.8 | 31.0 | 60.0 | -29.0 |

Peak Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|---|---|---|---|---|---|
| 23.997 | 24.2 | 21.7 | 45.9 | 50.0 | -4.1 |
| 0.467 | 21.8 | 20.2 | 42.0 | 46.6 | -4.6 |
| 3.015 | 14.7 | 20.3 | 35.0 | 46.0 | -11.0 |
| 0.952 | 10.8 | 20.3 | 31.1 | 46.0 | -14.9 |
| 0.568 | 10.6 | 20.2 | 30.8 | 46.0 | -15.2 |
| 24.146 | 12.4 | 21.8 | 34.2 | 50.0 | -15.8 |
| 0.971 | 9.7 | 20.3 | 30.0 | 46.0 | -16.0 |
| 24.176 | 11.7 | 21.8 | 33.5 | 50.0 | -16.5 |
| 24.113 | 11.6 | 21.8 | 33.4 | 50.0 | -16.6 |
| 6.037 | 12.7 | 20.5 | 33.2 | 50.0 | -16.8 |
| 24.956 | 11.1 | 21.8 | 32.9 | 50.0 | -17.1 |
| 0.329 | 12.0 | 20.2 | 32.2 | 49.5 | -17.3 |
| 25.165 | 10.7 | 21.8 | 32.5 | 50.0 | -17.5 |
| 25.698 | 10.4 | 21.9 | 32.3 | 50.0 | -17.7 |
| 25.594 | 10.4 | 21.9 | 32.3 | 50.0 | -17.7 |
| 25.064 | 10.4 | 21.8 | 32.2 | 50.0 | -17.8 |
| 25.799 | 10.1 | 21.9 | 32.0 | 50.0 | -18.0 |
| 24.068 | 10.2 | 21.8 | 32.0 | 50.0 | -18.0 |
| 27.153 | 9.8 | 22.1 | 31.9 | 50.0 | -18.1 |
| 4.422 | 7.2 | 20.4 | 27.6 | 46.0 | -18.4 |
| 26.210 | 9.4 | 22.0 | 31.4 | 50.0 | -18.6 |
| 26.336 | 9.3 | 22.0 | 31.3 | 50.0 | -18.7 |
| 21.240 | 9.7 | 21.6 | 31.3 | 50.0 | -18.7 |
| 26.583 | 9.2 | 22.0 | 31.2 | 50.0 | -18.8 |
| 28.545 | 8.8 | 22.2 | 31.0 | 50.0 | -19.0 |
| 24.534 | 9.2 | 21.8 | 31.0 | 50.0 | -19.0 |

## CONCLUSION

Pass

Tested By

# POWERLINE CONDUCTED EMISSIONS

| | | | |
|---|---|---|---|
| EUT: | ConnectCore i.MX6 WiFi/Bluetooth | Work Order: | ETHE0009 |
| Serial Number: | 00409D 7C03CA | Date: | 10/20/2014 |
| Customer: | Etherios Design Solutions | Temperature: | 21.5°C |
| Attendees: | None | Relative Humidity: | 38.7% |
| Customer Project: | None | Bar. Pressure: | 1016.9 mb |
| Tested By: | Dustin Sparks | Job Site: | MN03 |
| Power: | 5VDC | Configuration: | ETHE0009-4 |

## TEST SPECIFICATIONS

| Specification: | Method: |
|---|---|
| FCC 15.207:2014 | ANSI C63.10:2009 |

## TEST PARAMETERS

| | | | | | |
|---|---|---|---|---|---|
| Run #: | 48 | Line: | Positive Lead | Ext. Attenuation (dB): | 20 |

## COMMENTS

Customer added filtering to power supply. Modification authorized by Moshe Peri.

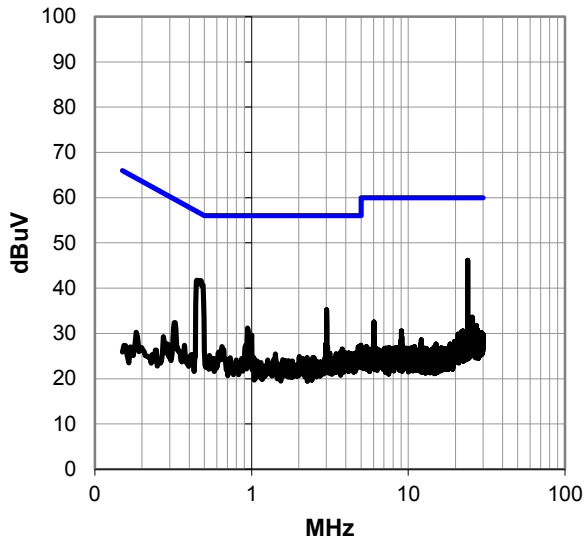
## EUT OPERATING MODES

Transmitting 802.11 5500 MHz, 6 mbps

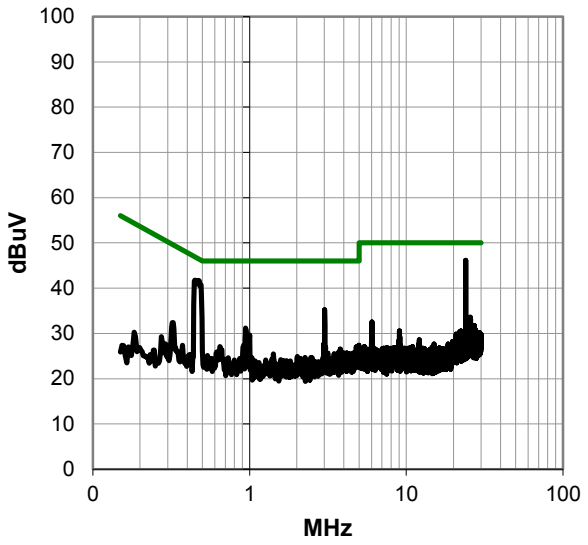
## DEVIATIONS FROM TEST STANDARD

None

**Peak Data - vs - Quasi Peak Limit**




**Peak Data - vs - Average Limit**



# POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #48

Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|---|---|---|---|---|---|
| 23.997 | 24.4 | 21.7 | 46.1 | 60.0 | -13.9 |
| 0.448 | 21.6 | 20.2 | 41.8 | 56.9 | -15.1 |
| 3.015 | 14.9 | 20.3 | 35.2 | 56.0 | -20.8 |
| 0.945 | 10.9 | 20.3 | 31.2 | 56.0 | -24.8 |
| 1.001 | 9.3 | 20.3 | 29.6 | 56.0 | -26.4 |
| 25.598 | 11.7 | 21.9 | 33.6 | 60.0 | -26.4 |
| 24.180 | 11.6 | 21.8 | 33.4 | 60.0 | -26.6 |
| 25.169 | 11.5 | 21.8 | 33.3 | 60.0 | -26.7 |
| 25.698 | 11.3 | 21.9 | 33.2 | 60.0 | -26.8 |
| 24.146 | 11.4 | 21.8 | 33.2 | 60.0 | -26.8 |
| 25.060 | 11.0 | 21.8 | 32.8 | 60.0 | -27.2 |
| 0.322 | 12.2 | 20.2 | 32.4 | 59.7 | -27.3 |
| 6.033 | 12.0 | 20.5 | 32.5 | 60.0 | -27.5 |
| 24.113 | 10.4 | 21.8 | 32.2 | 60.0 | -27.8 |
| 24.038 | 10.2 | 21.8 | 32.0 | 60.0 | -28.0 |
| 27.168 | 9.7 | 22.1 | 31.8 | 60.0 | -28.2 |
| 2.985 | 7.4 | 20.3 | 27.7 | 56.0 | -28.3 |
| 0.919 | 7.1 | 20.3 | 27.4 | 56.0 | -28.6 |
| 4.978 | 6.9 | 20.5 | 27.4 | 56.0 | -28.6 |
| 24.217 | 9.6 | 21.8 | 31.4 | 60.0 | -28.6 |
| 24.426 | 9.5 | 21.8 | 31.3 | 60.0 | -28.7 |
| 26.124 | 9.3 | 22.0 | 31.3 | 60.0 | -28.7 |
| 24.639 | 9.4 | 21.8 | 31.2 | 60.0 | -28.8 |
| 0.646 | 6.9 | 20.2 | 27.1 | 56.0 | -28.9 |
| 25.236 | 9.2 | 21.9 | 31.1 | 60.0 | -29.0 |
| 4.795 | 6.6 | 20.4 | 27.0 | 56.0 | -29.0 |

Peak Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|---|---|---|---|---|---|
| 23.997 | 24.4 | 21.7 | 46.1 | 50.0 | -3.9 |
| 0.448 | 21.6 | 20.2 | 41.8 | 46.9 | -5.1 |
| 3.015 | 14.9 | 20.3 | 35.2 | 46.0 | -10.8 |
| 0.945 | 10.9 | 20.3 | 31.2 | 46.0 | -14.8 |
| 1.001 | 9.3 | 20.3 | 29.6 | 46.0 | -16.4 |
| 25.598 | 11.7 | 21.9 | 33.6 | 50.0 | -16.4 |
| 24.180 | 11.6 | 21.8 | 33.4 | 50.0 | -16.6 |
| 25.169 | 11.5 | 21.8 | 33.3 | 50.0 | -16.7 |
| 25.698 | 11.3 | 21.9 | 33.2 | 50.0 | -16.8 |
| 24.146 | 11.4 | 21.8 | 33.2 | 50.0 | -16.8 |
| 25.060 | 11.0 | 21.8 | 32.8 | 50.0 | -17.2 |
| 0.322 | 12.2 | 20.2 | 32.4 | 49.7 | -17.3 |
| 6.033 | 12.0 | 20.5 | 32.5 | 50.0 | -17.5 |
| 24.113 | 10.4 | 21.8 | 32.2 | 50.0 | -17.8 |
| 24.038 | 10.2 | 21.8 | 32.0 | 50.0 | -18.0 |
| 27.168 | 9.7 | 22.1 | 31.8 | 50.0 | -18.2 |
| 2.985 | 7.4 | 20.3 | 27.7 | 46.0 | -18.3 |
| 0.919 | 7.1 | 20.3 | 27.4 | 46.0 | -18.6 |
| 4.978 | 6.9 | 20.5 | 27.4 | 46.0 | -18.6 |
| 24.217 | 9.6 | 21.8 | 31.4 | 50.0 | -18.6 |
| 24.426 | 9.5 | 21.8 | 31.3 | 50.0 | -18.7 |
| 26.124 | 9.3 | 22.0 | 31.3 | 50.0 | -18.7 |
| 24.639 | 9.4 | 21.8 | 31.2 | 50.0 | -18.8 |
| 0.646 | 6.9 | 20.2 | 27.1 | 46.0 | -18.9 |
| 25.236 | 9.2 | 21.9 | 31.1 | 50.0 | -19.0 |
| 4.795 | 6.6 | 20.4 | 27.0 | 46.0 | -19.0 |

## CONCLUSION

Pass

Tested By

# POWERLINE CONDUCTED EMISSIONS

| | | | |
|---|---|---|---|
| EUT: | ConnectCore i.MX6 WiFi/Bluetooth | Work Order: | ETHE0009 |
| Serial Number: | 00409D 7C03CA | Date: | 10/20/2014 |
| Customer: | Etherios Design Solutions | Temperature: | 21.5°C |
| Attendees: | None | Relative Humidity: | 38.7% |
| Customer Project: | None | Bar. Pressure: | 1016.9 mb |
| Tested By: | Dustin Sparks | Job Site: | MN03 |
| Power: | 5VDC | Configuration: | ETHE0009-4 |

## TEST SPECIFICATIONS

| Specification: | Method: |
|---|---|
| FCC 15.207:2014 | ANSI C63.10:2009 |

## TEST PARAMETERS

| | | | | | |
|---|---|---|---|---|---|
| Run #: | 49 | Line: | Negative Lead | Ext. Attenuation (dB): | 20 |

## COMMENTS

Customer added filtering to power supply. Modification authorized by Moshe Peri.

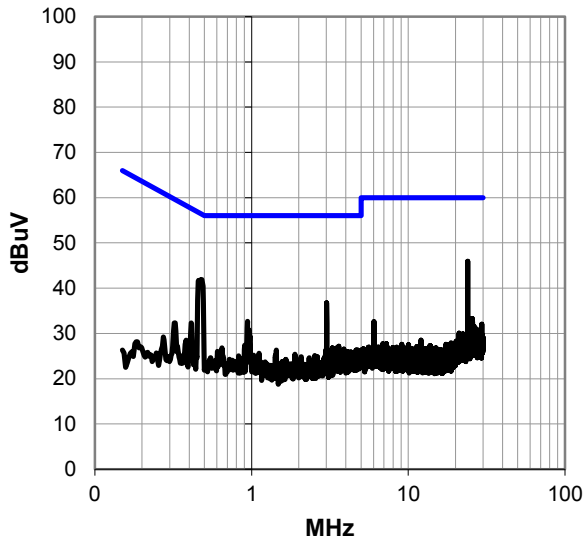
## EUT OPERATING MODES

Transmitting 802.11 5500 MHz, 6 mbps

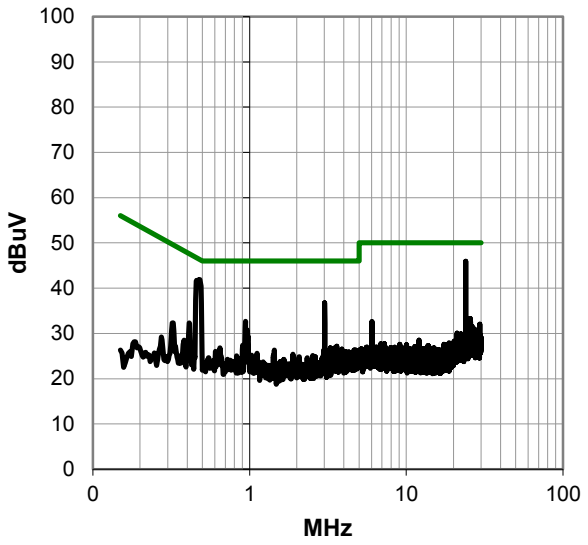
## DEVIATIONS FROM TEST STANDARD

None

**Peak Data - vs - Quasi Peak Limit**




**Peak Data - vs - Average Limit**



NORTHWEST EMC

WTD.2014.08.28, PSA-ESCI 2014.09.10, EmiR5 2014.07.09

# POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #49

Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|---|---|---|---|---|---|
| 23.997 | 24.2 | 21.7 | 45.9 | 60.0 | -14.1 |
| 0.478 | 21.7 | 20.2 | 41.9 | 56.4 | -14.5 |
| 3.015 | 16.4 | 20.3 | 36.7 | 56.0 | -19.3 |
| 0.941 | 12.4 | 20.3 | 32.7 | 56.0 | -23.3 |
| 0.411 | 12.1 | 20.2 | 32.3 | 57.6 | -25.3 |
| 25.594 | 11.4 | 21.9 | 33.3 | 60.0 | -26.7 |
| 24.143 | 11.4 | 21.8 | 33.2 | 60.0 | -26.8 |
| 0.322 | 12.1 | 20.2 | 32.3 | 59.7 | -27.4 |
| 6.037 | 12.1 | 20.5 | 32.6 | 60.0 | -27.4 |
| 25.695 | 10.7 | 21.9 | 32.6 | 60.0 | -27.4 |
| 25.489 | 10.4 | 21.9 | 32.3 | 60.0 | -27.7 |
| 29.429 | 9.7 | 22.3 | 32.0 | 60.0 | -28.0 |
| 25.064 | 10.1 | 21.8 | 31.9 | 60.0 | -28.1 |
| 24.113 | 9.9 | 21.8 | 31.7 | 60.0 | -28.3 |
| 25.161 | 9.8 | 21.8 | 31.6 | 60.0 | -28.4 |
| 26.299 | 9.6 | 22.0 | 31.6 | 60.0 | -28.4 |
| 25.001 | 9.6 | 21.8 | 31.4 | 60.0 | -28.6 |
| 0.904 | 7.1 | 20.3 | 27.4 | 56.0 | -28.6 |
| 25.803 | 9.4 | 21.9 | 31.3 | 60.0 | -28.7 |
| 3.605 | 6.8 | 20.4 | 27.2 | 56.0 | -28.8 |
| 24.173 | 9.3 | 21.8 | 31.1 | 60.0 | -28.9 |
| 24.057 | 9.3 | 21.8 | 31.1 | 60.0 | -28.9 |
| 27.168 | 8.9 | 22.1 | 31.0 | 60.0 | -29.0 |
| 26.019 | 9.0 | 21.9 | 30.9 | 60.0 | -29.1 |
| 24.281 | 9.1 | 21.8 | 30.9 | 60.0 | -29.1 |
| 26.232 | 8.9 | 22.0 | 30.9 | 60.0 | -29.1 |

Peak Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|---|---|---|---|---|---|
| 23.997 | 24.2 | 21.7 | 45.9 | 50.0 | -4.1 |
| 0.478 | 21.7 | 20.2 | 41.9 | 46.4 | -4.5 |
| 3.015 | 16.4 | 20.3 | 36.7 | 46.0 | -9.3 |
| 0.941 | 12.4 | 20.3 | 32.7 | 46.0 | -13.3 |
| 0.411 | 12.1 | 20.2 | 32.3 | 47.6 | -15.3 |
| 25.594 | 11.4 | 21.9 | 33.3 | 50.0 | -16.7 |
| 24.143 | 11.4 | 21.8 | 33.2 | 50.0 | -16.8 |
| 0.322 | 12.1 | 20.2 | 32.3 | 49.7 | -17.4 |
| 6.037 | 12.1 | 20.5 | 32.6 | 50.0 | -17.4 |
| 25.695 | 10.7 | 21.9 | 32.6 | 50.0 | -17.4 |
| 25.489 | 10.4 | 21.9 | 32.3 | 50.0 | -17.7 |
| 29.429 | 9.7 | 22.3 | 32.0 | 50.0 | -18.0 |
| 25.064 | 10.1 | 21.8 | 31.9 | 50.0 | -18.1 |
| 24.113 | 9.9 | 21.8 | 31.7 | 50.0 | -18.3 |
| 25.161 | 9.8 | 21.8 | 31.6 | 50.0 | -18.4 |
| 26.299 | 9.6 | 22.0 | 31.6 | 50.0 | -18.4 |
| 25.001 | 9.6 | 21.8 | 31.4 | 50.0 | -18.6 |
| 0.904 | 7.1 | 20.3 | 27.4 | 46.0 | -18.6 |
| 25.803 | 9.4 | 21.9 | 31.3 | 50.0 | -18.7 |
| 3.605 | 6.8 | 20.4 | 27.2 | 46.0 | -18.8 |
| 24.173 | 9.3 | 21.8 | 31.1 | 50.0 | -18.9 |
| 24.057 | 9.3 | 21.8 | 31.1 | 50.0 | -18.9 |
| 27.168 | 8.9 | 22.1 | 31.0 | 50.0 | -19.0 |
| 26.019 | 9.0 | 21.9 | 30.9 | 50.0 | -19.1 |
| 24.281 | 9.1 | 21.8 | 30.9 | 50.0 | -19.1 |
| 26.232 | 8.9 | 22.0 | 30.9 | 50.0 | -19.1 |

## CONCLUSION

Pass

Tested By

# POWERLINE CONDUCTED EMISSIONS

| | | | |
|---|---|---|---|
| EUT: | ConnectCore i.MX6 WiFi/Bluetooth | Work Order: | ETHE0009 |
| Serial Number: | 00409D 7C03CA | Date: | 10/20/2014 |
| Customer: | Etherios Design Solutions | Temperature: | 21.5°C |
| Attendees: | None | Relative Humidity: | 38.7% |
| Customer Project: | None | Bar. Pressure: | 1016.9 mb |
| Tested By: | Dustin Sparks | Job Site: | MN03 |
| Power: | 5VDC | Configuration: | ETHE0009-4 |

## TEST SPECIFICATIONS

| Specification: | Method: |
|---|---|
| FCC 15.207:2014 | ANSI C63.10:2009 |

## TEST PARAMETERS

| | | | | | |
|---|---|---|---|---|---|
| Run #: | 50 | Line: | Negative Lead | Ext. Attenuation (dB): | 20 |

## COMMENTS

Customer added filtering to power supply. Modification authorized by Moshe Peri.

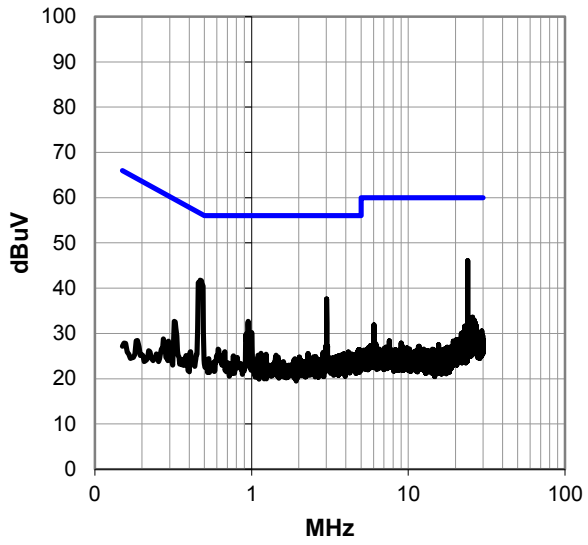
## EUT OPERATING MODES

Transmitting 802.11 5580 MHz, 6 mbps

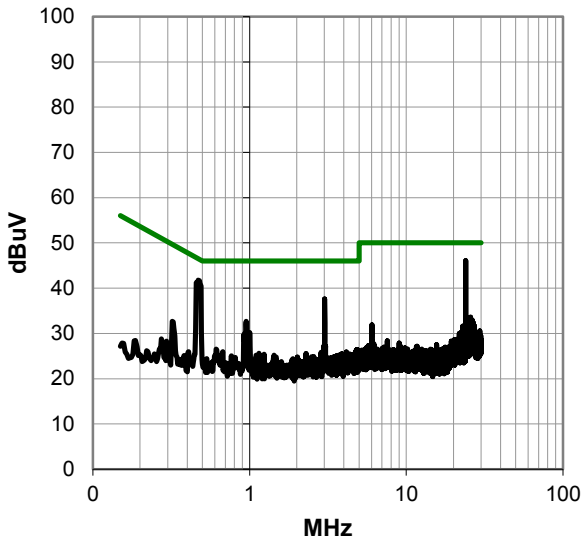
## DEVIATIONS FROM TEST STANDARD

None

**Peak Data - vs - Quasi Peak Limit**




**Peak Data - vs - Average Limit**



# POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #50

Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|---|---|---|---|---|---|
| 23.997 | 24.3 | 21.7 | 46.0 | 60.0 | -14.0 |
| 0.471 | 21.6 | 20.2 | 41.8 | 56.5 | -14.7 |
| 3.015 | 17.3 | 20.3 | 37.6 | 56.0 | -18.4 |
| 0.952 | 12.4 | 20.3 | 32.7 | 56.0 | -23.3 |
| 1.001 | 9.9 | 20.3 | 30.2 | 56.0 | -25.8 |
| 0.926 | 9.6 | 20.3 | 29.9 | 56.0 | -26.1 |
| 25.702 | 11.7 | 21.9 | 33.6 | 60.0 | -26.4 |
| 25.594 | 11.6 | 21.9 | 33.5 | 60.0 | -26.5 |
| 0.322 | 12.5 | 20.2 | 32.7 | 59.7 | -27.0 |
| 26.340 | 11.0 | 22.0 | 33.0 | 60.0 | -27.0 |
| 24.143 | 10.7 | 21.8 | 32.5 | 60.0 | -27.5 |
| 26.874 | 10.3 | 22.0 | 32.3 | 60.0 | -27.7 |
| 24.176 | 10.5 | 21.8 | 32.3 | 60.0 | -27.7 |
| 24.639 | 10.4 | 21.8 | 32.2 | 60.0 | -27.8 |
| 25.165 | 10.3 | 21.8 | 32.1 | 60.0 | -27.9 |
| 25.057 | 10.2 | 21.8 | 32.0 | 60.0 | -28.0 |
| 24.105 | 10.2 | 21.8 | 32.0 | 60.0 | -28.0 |
| 6.033 | 11.4 | 20.5 | 31.9 | 60.0 | -28.1 |
| 25.348 | 9.9 | 21.9 | 31.8 | 60.0 | -28.2 |
| 26.736 | 9.7 | 22.0 | 31.7 | 60.0 | -28.3 |
| 27.168 | 9.6 | 22.1 | 31.7 | 60.0 | -28.3 |
| 26.127 | 9.7 | 22.0 | 31.7 | 60.0 | -28.3 |
| 22.934 | 9.9 | 21.7 | 31.6 | 60.0 | -28.4 |
| 26.217 | 9.5 | 22.0 | 31.5 | 60.0 | -28.5 |
| 24.076 | 9.7 | 21.8 | 31.5 | 60.0 | -28.5 |
| 3.049 | 6.9 | 20.3 | 27.2 | 56.0 | -28.8 |

Peak Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|---|---|---|---|---|---|
| 23.997 | 24.3 | 21.7 | 46.0 | 50.0 | -4.0 |
| 0.471 | 21.6 | 20.2 | 41.8 | 46.5 | -4.7 |
| 3.015 | 17.3 | 20.3 | 37.6 | 46.0 | -8.4 |
| 0.952 | 12.4 | 20.3 | 32.7 | 46.0 | -13.3 |
| 1.001 | 9.9 | 20.3 | 30.2 | 46.0 | -15.8 |
| 0.926 | 9.6 | 20.3 | 29.9 | 46.0 | -16.1 |
| 25.702 | 11.7 | 21.9 | 33.6 | 50.0 | -16.4 |
| 25.594 | 11.6 | 21.9 | 33.5 | 50.0 | -16.5 |
| 0.322 | 12.5 | 20.2 | 32.7 | 49.7 | -17.0 |
| 26.340 | 11.0 | 22.0 | 33.0 | 50.0 | -17.0 |
| 24.143 | 10.7 | 21.8 | 32.5 | 50.0 | -17.5 |
| 26.874 | 10.3 | 22.0 | 32.3 | 50.0 | -17.7 |
| 24.176 | 10.5 | 21.8 | 32.3 | 50.0 | -17.7 |
| 24.639 | 10.4 | 21.8 | 32.2 | 50.0 | -17.8 |
| 25.165 | 10.3 | 21.8 | 32.1 | 50.0 | -17.9 |
| 25.057 | 10.2 | 21.8 | 32.0 | 50.0 | -18.0 |
| 24.105 | 10.2 | 21.8 | 32.0 | 50.0 | -18.0 |
| 6.033 | 11.4 | 20.5 | 31.9 | 50.0 | -18.1 |
| 25.348 | 9.9 | 21.9 | 31.8 | 50.0 | -18.2 |
| 26.736 | 9.7 | 22.0 | 31.7 | 50.0 | -18.3 |
| 27.168 | 9.6 | 22.1 | 31.7 | 50.0 | -18.3 |
| 26.127 | 9.7 | 22.0 | 31.7 | 50.0 | -18.3 |
| 22.934 | 9.9 | 21.7 | 31.6 | 50.0 | -18.4 |
| 26.217 | 9.5 | 22.0 | 31.5 | 50.0 | -18.5 |
| 24.076 | 9.7 | 21.8 | 31.5 | 50.0 | -18.5 |
| 3.049 | 6.9 | 20.3 | 27.2 | 46.0 | -18.8 |

## CONCLUSION

Pass

Tested By

# POWERLINE CONDUCTED EMISSIONS

| | | | |
|---|---|---|---|
| EUT: | ConnectCore i.MX6 WiFi/Bluetooth | Work Order: | ETHE0009 |
| Serial Number: | 00409D 7C03CA | Date: | 10/20/2014 |
| Customer: | Etherios Design Solutions | Temperature: | 21.5°C |
| Attendees: | None | Relative Humidity: | 38.7% |
| Customer Project: | None | Bar. Pressure: | 1016.9 mb |
| Tested By: | Dustin Sparks | Job Site: | MN03 |
| Power: | 5VDC | Configuration: | ETHE0009-4 |

## TEST SPECIFICATIONS

| Specification: | Method: |
|---|---|
| FCC 15.207:2014 | ANSI C63.10:2009 |

## TEST PARAMETERS

| | | | | | |
|---|---|---|---|---|---|
| Run #: | 51 | Line: | Positive Lead | Ext. Attenuation (dB): | 20 |

## COMMENTS

Customer added filtering to power supply. Modification authorized by Moshe Peri.

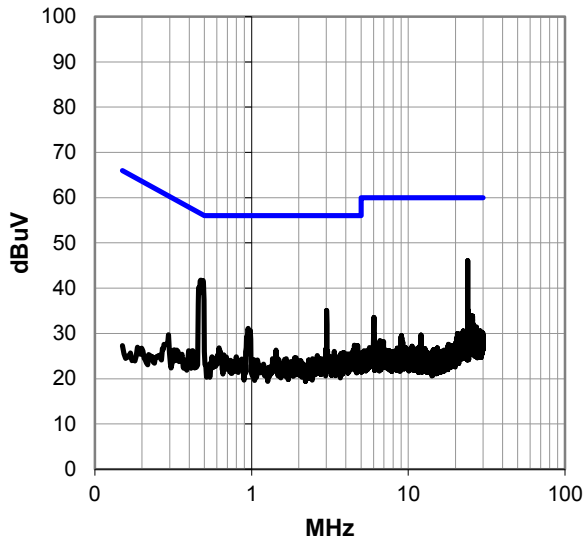
## EUT OPERATING MODES

Transmitting 802.11 5580 MHz, 6 mbps

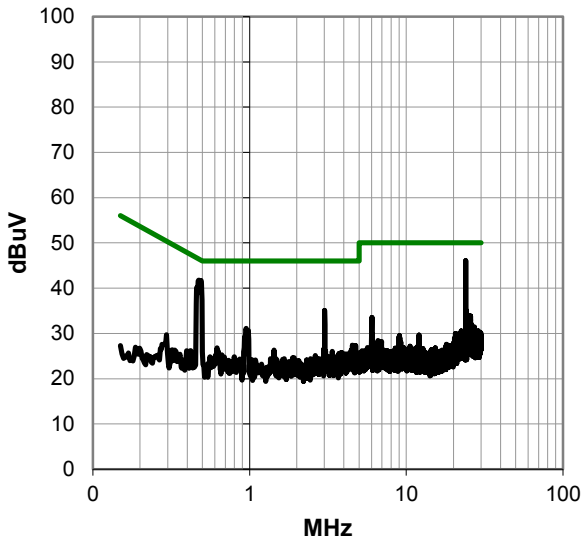
## DEVIATIONS FROM TEST STANDARD

None

**Peak Data - vs - Quasi Peak Limit**




**Peak Data - vs - Average Limit**



# POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #51

Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|---|---|---|---|---|---|
| 23.997 | 24.3 | 21.7 | 46.0 | 60.0 | -14.0 |
| 0.475 | 21.6 | 20.2 | 41.8 | 56.4 | -14.6 |
| 3.015 | 14.7 | 20.3 | 35.0 | 56.0 | -21.0 |
| 0.952 | 10.8 | 20.3 | 31.1 | 56.0 | -24.9 |
| 24.143 | 13.3 | 21.8 | 35.1 | 60.0 | -24.9 |
| 0.982 | 10.3 | 20.3 | 30.6 | 56.0 | -25.4 |
| 24.105 | 12.3 | 21.8 | 34.1 | 60.0 | -25.9 |
| 25.590 | 12.0 | 21.9 | 33.9 | 60.0 | -26.1 |
| 25.695 | 11.9 | 21.9 | 33.8 | 60.0 | -26.2 |
| 6.033 | 13.0 | 20.5 | 33.5 | 60.0 | -26.5 |
| 25.165 | 11.2 | 21.8 | 33.0 | 60.0 | -27.0 |
| 25.620 | 11.0 | 21.9 | 32.9 | 60.0 | -27.1 |
| 24.176 | 11.1 | 21.8 | 32.9 | 60.0 | -27.1 |
| 25.060 | 10.9 | 21.8 | 32.7 | 60.0 | -27.3 |
| 24.079 | 10.7 | 21.8 | 32.5 | 60.0 | -27.5 |
| 24.635 | 10.4 | 21.8 | 32.2 | 60.0 | -27.8 |
| 24.534 | 10.4 | 21.8 | 32.2 | 60.0 | -27.8 |
| 26.127 | 10.0 | 22.0 | 32.0 | 60.0 | -28.0 |
| 26.243 | 9.7 | 22.0 | 31.7 | 60.0 | -28.3 |
| 4.541 | 7.0 | 20.4 | 27.4 | 56.0 | -28.6 |
| 27.161 | 9.3 | 22.1 | 31.4 | 60.0 | -28.6 |
| 4.758 | 6.9 | 20.4 | 27.3 | 56.0 | -28.7 |
| 26.646 | 9.3 | 22.0 | 31.3 | 60.0 | -28.7 |
| 26.336 | 9.1 | 22.0 | 31.1 | 60.0 | -28.9 |
| 25.001 | 9.2 | 21.8 | 31.0 | 60.0 | -29.0 |
| 24.956 | 9.2 | 21.8 | 31.0 | 60.0 | -29.0 |

Peak Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|---|---|---|---|---|---|
| 23.997 | 24.3 | 21.7 | 46.0 | 50.0 | -4.0 |
| 0.475 | 21.6 | 20.2 | 41.8 | 46.4 | -4.6 |
| 3.015 | 14.7 | 20.3 | 35.0 | 46.0 | -11.0 |
| 0.952 | 10.8 | 20.3 | 31.1 | 46.0 | -14.9 |
| 24.143 | 13.3 | 21.8 | 35.1 | 50.0 | -14.9 |
| 0.982 | 10.3 | 20.3 | 30.6 | 46.0 | -15.4 |
| 24.105 | 12.3 | 21.8 | 34.1 | 50.0 | -15.9 |
| 25.590 | 12.0 | 21.9 | 33.9 | 50.0 | -16.1 |
| 25.695 | 11.9 | 21.9 | 33.8 | 50.0 | -16.2 |
| 6.033 | 13.0 | 20.5 | 33.5 | 50.0 | -16.5 |
| 25.165 | 11.2 | 21.8 | 33.0 | 50.0 | -17.0 |
| 25.620 | 11.0 | 21.9 | 32.9 | 50.0 | -17.1 |
| 24.176 | 11.1 | 21.8 | 32.9 | 50.0 | -17.1 |
| 25.060 | 10.9 | 21.8 | 32.7 | 50.0 | -17.3 |
| 24.079 | 10.7 | 21.8 | 32.5 | 50.0 | -17.5 |
| 24.635 | 10.4 | 21.8 | 32.2 | 50.0 | -17.8 |
| 24.534 | 10.4 | 21.8 | 32.2 | 50.0 | -17.8 |
| 26.127 | 10.0 | 22.0 | 32.0 | 50.0 | -18.0 |
| 26.243 | 9.7 | 22.0 | 31.7 | 50.0 | -18.3 |
| 4.541 | 7.0 | 20.4 | 27.4 | 46.0 | -18.6 |
| 27.161 | 9.3 | 22.1 | 31.4 | 50.0 | -18.6 |
| 4.758 | 6.9 | 20.4 | 27.3 | 46.0 | -18.7 |
| 26.646 | 9.3 | 22.0 | 31.3 | 50.0 | -18.7 |
| 26.336 | 9.1 | 22.0 | 31.1 | 50.0 | -18.9 |
| 25.001 | 9.2 | 21.8 | 31.0 | 50.0 | -19.0 |
| 24.956 | 9.2 | 21.8 | 31.0 | 50.0 | -19.0 |

## CONCLUSION

Pass

Tested By

# POWERLINE CONDUCTED EMISSIONS

| | | | |
|---|---|---|---|
| EUT: | ConnectCore i.MX6 WiFi/Bluetooth | Work Order: | ETHE0009 |
| Serial Number: | 00409D 7C03CA | Date: | 10/20/2014 |
| Customer: | Etherios Design Solutions | Temperature: | 21.5°C |
| Attendees: | None | Relative Humidity: | 38.7% |
| Customer Project: | None | Bar. Pressure: | 1016.9 mb |
| Tested By: | Dustin Sparks | Job Site: | MN03 |
| Power: | 5VDC | Configuration: | ETHE0009-4 |

## TEST SPECIFICATIONS

| Specification: | Method: |
|---|---|
| FCC 15.207:2014 | ANSI C63.10:2009 |

## TEST PARAMETERS

| | | | | | |
|---|---|---|---|---|---|
| Run #: | 52 | Line: | Positive Lead | Ext. Attenuation (dB): | 20 |

## COMMENTS

Customer added filtering to power supply. Modification authorized by Moshe Peri.

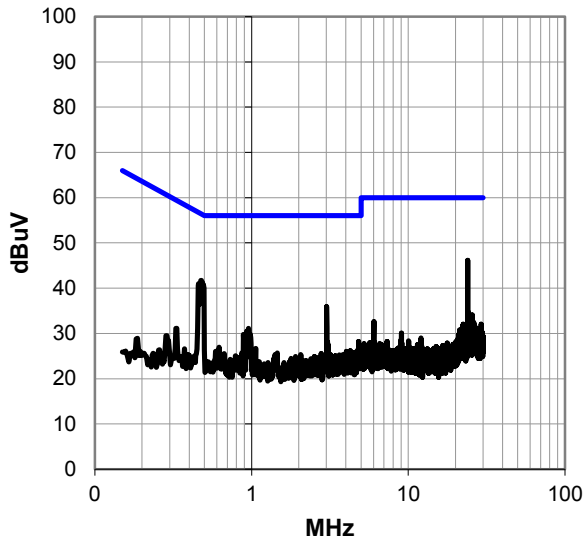
## EUT OPERATING MODES

Transmitting 802.11 5700 MHz, 6 mbps

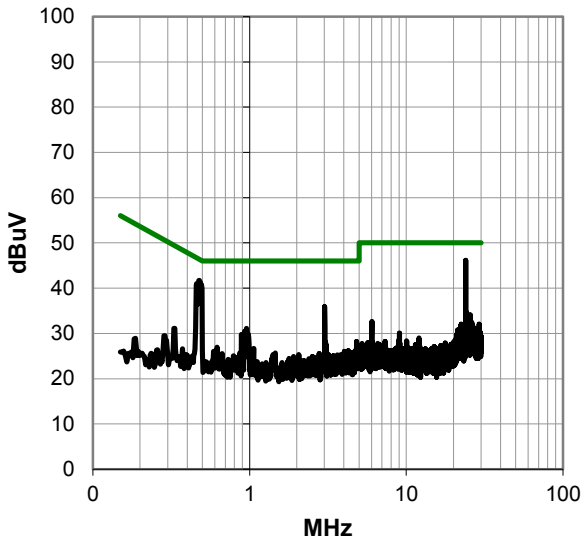
## DEVIATIONS FROM TEST STANDARD

None

**Peak Data - vs - Quasi Peak Limit**




**Peak Data - vs - Average Limit**



NORTHWEST EMC

WTD.2014.08.28, PSA-ESCI 2014.09.10, EmiR5 2014.07.09

# POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #52

Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|---|---|---|---|---|---|
| 23.997 | 24.4 | 21.7 | 46.1 | 60.0 | -13.9 |
| 0.475 | 21.5 | 20.2 | 41.7 | 56.4 | -14.7 |
| 0.460 | 20.8 | 20.2 | 41.0 | 56.7 | -15.7 |
| 3.015 | 15.6 | 20.3 | 35.9 | 56.0 | -20.1 |
| 0.956 | 10.8 | 20.3 | 31.1 | 56.0 | -24.9 |
| 24.146 | 12.9 | 21.8 | 34.7 | 60.0 | -25.3 |
| 0.933 | 10.2 | 20.3 | 30.5 | 56.0 | -25.5 |
| 25.594 | 12.2 | 21.9 | 34.1 | 60.0 | -25.9 |
| 0.982 | 9.5 | 20.3 | 29.8 | 56.0 | -26.2 |
| 0.889 | 9.5 | 20.3 | 29.8 | 56.0 | -26.2 |
| 25.060 | 11.9 | 21.8 | 33.7 | 60.0 | -26.3 |
| 25.169 | 11.7 | 21.8 | 33.5 | 60.0 | -26.5 |
| 24.173 | 11.6 | 21.8 | 33.4 | 60.0 | -26.6 |
| 24.109 | 11.4 | 21.8 | 33.2 | 60.0 | -26.8 |
| 25.698 | 11.0 | 21.9 | 32.9 | 60.0 | -27.1 |
| 24.079 | 11.1 | 21.8 | 32.9 | 60.0 | -27.1 |
| 6.033 | 12.1 | 20.5 | 32.6 | 60.0 | -27.4 |
| 26.232 | 10.4 | 22.0 | 32.4 | 60.0 | -27.6 |
| 4.813 | 7.8 | 20.4 | 28.2 | 56.0 | -27.8 |
| 3.049 | 7.8 | 20.3 | 28.1 | 56.0 | -27.9 |
| 25.807 | 10.2 | 21.9 | 32.1 | 60.0 | -27.9 |
| 22.397 | 10.4 | 21.6 | 32.0 | 60.0 | -28.0 |
| 29.243 | 9.7 | 22.3 | 32.0 | 60.0 | -28.0 |
| 22.307 | 10.1 | 21.6 | 31.7 | 60.0 | -28.3 |
| 24.631 | 9.9 | 21.8 | 31.7 | 60.0 | -28.3 |
| 25.489 | 9.8 | 21.9 | 31.7 | 60.0 | -28.3 |

Peak Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|---|---|---|---|---|---|
| 23.997 | 24.4 | 21.7 | 46.1 | 50.0 | -3.9 |
| 0.475 | 21.5 | 20.2 | 41.7 | 46.4 | -4.7 |
| 0.460 | 20.8 | 20.2 | 41.0 | 46.7 | -5.7 |
| 3.015 | 15.6 | 20.3 | 35.9 | 46.0 | -10.1 |
| 0.956 | 10.8 | 20.3 | 31.1 | 46.0 | -14.9 |
| 24.146 | 12.9 | 21.8 | 34.7 | 50.0 | -15.3 |
| 0.933 | 10.2 | 20.3 | 30.5 | 46.0 | -15.5 |
| 25.594 | 12.2 | 21.9 | 34.1 | 50.0 | -15.9 |
| 0.982 | 9.5 | 20.3 | 29.8 | 46.0 | -16.2 |
| 0.889 | 9.5 | 20.3 | 29.8 | 46.0 | -16.2 |
| 25.060 | 11.9 | 21.8 | 33.7 | 50.0 | -16.3 |
| 25.169 | 11.7 | 21.8 | 33.5 | 50.0 | -16.5 |
| 24.173 | 11.6 | 21.8 | 33.4 | 50.0 | -16.6 |
| 24.109 | 11.4 | 21.8 | 33.2 | 50.0 | -16.8 |
| 25.698 | 11.0 | 21.9 | 32.9 | 50.0 | -17.1 |
| 24.079 | 11.1 | 21.8 | 32.9 | 50.0 | -17.1 |
| 6.033 | 12.1 | 20.5 | 32.6 | 50.0 | -17.4 |
| 26.232 | 10.4 | 22.0 | 32.4 | 50.0 | -17.6 |
| 4.813 | 7.8 | 20.4 | 28.2 | 46.0 | -17.8 |
| 3.049 | 7.8 | 20.3 | 28.1 | 46.0 | -17.9 |
| 25.807 | 10.2 | 21.9 | 32.1 | 50.0 | -17.9 |
| 22.397 | 10.4 | 21.6 | 32.0 | 50.0 | -18.0 |
| 29.243 | 9.7 | 22.3 | 32.0 | 50.0 | -18.0 |
| 22.307 | 10.1 | 21.6 | 31.7 | 50.0 | -18.3 |
| 24.631 | 9.9 | 21.8 | 31.7 | 50.0 | -18.3 |
| 25.489 | 9.8 | 21.9 | 31.7 | 50.0 | -18.3 |

## CONCLUSION

Pass

Tested By

# POWERLINE CONDUCTED EMISSIONS

| | | | |
|---|---|---|---|
| EUT: | ConnectCore i.MX6 WiFi/Bluetooth | Work Order: | ETHE0009 |
| Serial Number: | 00409D 7C03CA | Date: | 10/20/2014 |
| Customer: | Etherios Design Solutions | Temperature: | 21.5°C |
| Attendees: | None | Relative Humidity: | 38.7% |
| Customer Project: | None | Bar. Pressure: | 1016.9 mb |
| Tested By: | Dustin Sparks | Job Site: | MN03 |
| Power: | 5VDC | Configuration: | ETHE0009-4 |

## TEST SPECIFICATIONS

| Specification: | Method: |
|---|---|
| FCC 15.207:2014 | ANSI C63.10:2009 |

## TEST PARAMETERS

| | | | | | |
|---|---|---|---|---|---|
| Run #: | 53 | Line: | Negative Lead | Ext. Attenuation (dB): | 20 |

## COMMENTS

Customer added filtering to power supply. Modification authorized by Moshe Peri.

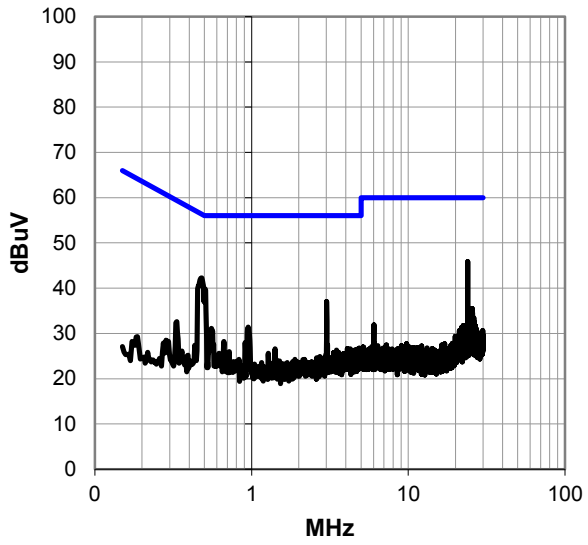
## EUT OPERATING MODES

Transmitting 802.11 5700 MHz, 6 mbps

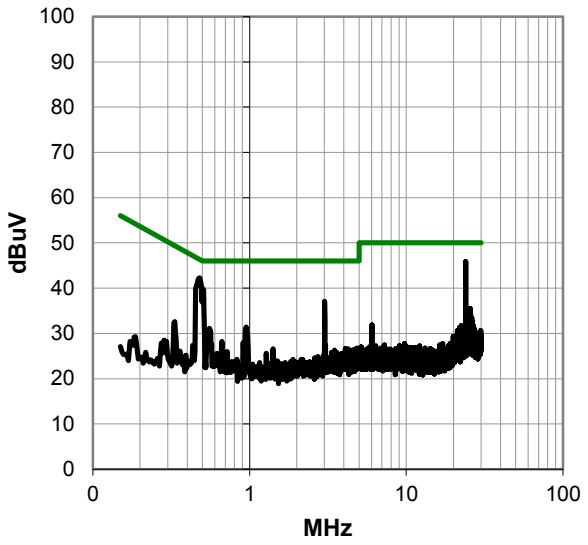
## DEVIATIONS FROM TEST STANDARD

None

**Peak Data - vs - Quasi Peak Limit**




**Peak Data - vs - Average Limit**



# POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #53

Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|---|---|---|---|---|---|
| 0.482 | 22.1 | 20.2 | 42.3 | 56.3 | -14.0 |
| 23.997 | 24.1 | 21.7 | 45.8 | 60.0 | -14.2 |
| 3.015 | 16.7 | 20.3 | 37.0 | 56.0 | -19.0 |
| 25.590 | 13.6 | 21.9 | 35.5 | 60.0 | -24.5 |
| 0.952 | 11.1 | 20.3 | 31.4 | 56.0 | -24.6 |
| 0.553 | 10.9 | 20.2 | 31.1 | 56.0 | -24.9 |
| 25.695 | 12.7 | 21.9 | 34.6 | 60.0 | -25.4 |
| 24.105 | 12.2 | 21.8 | 34.0 | 60.0 | -26.0 |
| 25.064 | 12.0 | 21.8 | 33.8 | 60.0 | -26.2 |
| 25.169 | 11.8 | 21.8 | 33.6 | 60.0 | -26.4 |
| 26.239 | 11.5 | 22.0 | 33.5 | 60.0 | -26.5 |
| 25.277 | 11.6 | 21.9 | 33.5 | 60.0 | -26.5 |
| 0.333 | 12.4 | 20.2 | 32.6 | 59.4 | -26.8 |
| 26.131 | 11.1 | 22.0 | 33.1 | 60.0 | -26.9 |
| 25.803 | 10.9 | 21.9 | 32.8 | 60.0 | -27.2 |
| 24.531 | 10.9 | 21.8 | 32.7 | 60.0 | -27.3 |
| 24.956 | 10.8 | 21.8 | 32.6 | 60.0 | -27.4 |
| 25.489 | 10.7 | 21.9 | 32.6 | 60.0 | -27.4 |
| 24.184 | 10.8 | 21.8 | 32.6 | 60.0 | -27.4 |
| 24.139 | 10.8 | 21.8 | 32.6 | 60.0 | -27.4 |
| 0.665 | 8.0 | 20.2 | 28.2 | 56.0 | -27.8 |
| 25.113 | 10.2 | 21.8 | 32.0 | 60.0 | -28.0 |
| 0.911 | 7.7 | 20.3 | 28.0 | 56.0 | -28.0 |
| 6.033 | 11.4 | 20.5 | 31.9 | 60.0 | -28.1 |
| 22.404 | 10.1 | 21.6 | 31.7 | 60.0 | -28.3 |
| 26.019 | 9.8 | 21.9 | 31.7 | 60.0 | -28.3 |

Peak Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|---|---|---|---|---|---|
| 0.482 | 22.1 | 20.2 | 42.3 | 46.3 | -4.0 |
| 23.997 | 24.1 | 21.7 | 45.8 | 50.0 | -4.2 |
| 3.015 | 16.7 | 20.3 | 37.0 | 46.0 | -9.0 |
| 25.590 | 13.6 | 21.9 | 35.5 | 50.0 | -14.5 |
| 0.952 | 11.1 | 20.3 | 31.4 | 46.0 | -14.6 |
| 0.553 | 10.9 | 20.2 | 31.1 | 46.0 | -14.9 |
| 25.695 | 12.7 | 21.9 | 34.6 | 50.0 | -15.4 |
| 24.105 | 12.2 | 21.8 | 34.0 | 50.0 | -16.0 |
| 25.064 | 12.0 | 21.8 | 33.8 | 50.0 | -16.2 |
| 25.169 | 11.8 | 21.8 | 33.6 | 50.0 | -16.4 |
| 26.239 | 11.5 | 22.0 | 33.5 | 50.0 | -16.5 |
| 25.277 | 11.6 | 21.9 | 33.5 | 50.0 | -16.5 |
| 0.333 | 12.4 | 20.2 | 32.6 | 49.4 | -16.8 |
| 26.131 | 11.1 | 22.0 | 33.1 | 50.0 | -16.9 |
| 25.803 | 10.9 | 21.9 | 32.8 | 50.0 | -17.2 |
| 24.531 | 10.9 | 21.8 | 32.7 | 50.0 | -17.3 |
| 24.956 | 10.8 | 21.8 | 32.6 | 50.0 | -17.4 |
| 25.489 | 10.7 | 21.9 | 32.6 | 50.0 | -17.4 |
| 24.184 | 10.8 | 21.8 | 32.6 | 50.0 | -17.4 |
| 24.139 | 10.8 | 21.8 | 32.6 | 50.0 | -17.4 |
| 0.665 | 8.0 | 20.2 | 28.2 | 46.0 | -17.8 |
| 25.113 | 10.2 | 21.8 | 32.0 | 50.0 | -18.0 |
| 0.911 | 7.7 | 20.3 | 28.0 | 46.0 | -18.0 |
| 6.033 | 11.4 | 20.5 | 31.9 | 50.0 | -18.1 |
| 22.404 | 10.1 | 21.6 | 31.7 | 50.0 | -18.3 |
| 26.019 | 9.8 | 21.9 | 31.7 | 50.0 | -18.3 |

## CONCLUSION

Pass

Tested By

# 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**

| |
|---|
| Ch. 36, 5180MHz |
| Ch. 48, 5240MHz |
| Ch. 64, 5320MHz |
| Ch. 100, 5500MHz |
| Ch. 116, 5580MHz |
| Ch. 140, 5700MHz |

**MODES OF OPERATION**

| |
|---|
| 1 Mbps |
| 6 Mbps |
| 36 Mbps |
| 54 Mbps |
| MCS0 |
| MCS7 |

**POWER SETTINGS INVESTIGATED**

| |
|---|
| 5VDC |

**CONFIGURATIONS INVESTIGATED**

| |
|---|
| ETHE0009 - 2 |

**FREQUENCY RANGE INVESTIGATED**

| | | | |
|---|---|---|---|
| Start Frequency | 30 MHz | Stop Frequency | 40 GHz |

**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 |
|---|---|---|---|---|---|
| EV Cable | ESM Cable Corp. | KMKM-72 | EWB | 6/25/2014 | 12 mo |
| Pre-Amplifier | Miteq | JSW45-26004000-40-5P | PAE | 6/25/2014 | 12 mo |
| Antenna, Horn | ETS Lindgren | 3160-10 | AIW | NCR | 0 mo |
| Pre-Amplifier | Miteq | AMF-6F-18002650-25-10P | AVU | 9/10/2013 | 14 mo |
| Antenna, Horn | ETS | 3160-08 | AHV | NCR | 0 mo |
| EV01 Cables | N/A | Standard Gain Horns Cables | EVF | 2/18/2014 | 12 mo |
| Pre-Amplifier | Miteq | AMF-6F-08001200-30-10P | AVC | 2/18/2014 | 12 mo |
| Antenna, Horn | ETS | 3160-07 | AHU | NCR | 0 mo |
| EV01 Cables | N/A | Double Ridge Horn Cables | EVB | 8/26/2014 | 12 mo |
| Pre-Amplifier | Miteq | AMF-3D-00100800-32-13P | PAG | 8/26/2014 | 12 mo |
| Antenna, Horn | ETS | 3115 | AIZ | 1/24/2014 | 24 mo |
| EV01 Cables | N/A | Bilog Cables | EVA | 2/18/2014 | 12 mo |
| Pre-Amplifier | Miteq | AM-1616-1000 | AOL | 2/18/2014 | 12 mo |
| Antenna, Biconilog | EMCO | 3141 | AXE | 8/29/2014 | 36 mo |
| Spectrum Analyzer | Agilent | E4446A | AAQ | 1/21/2014 | 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**

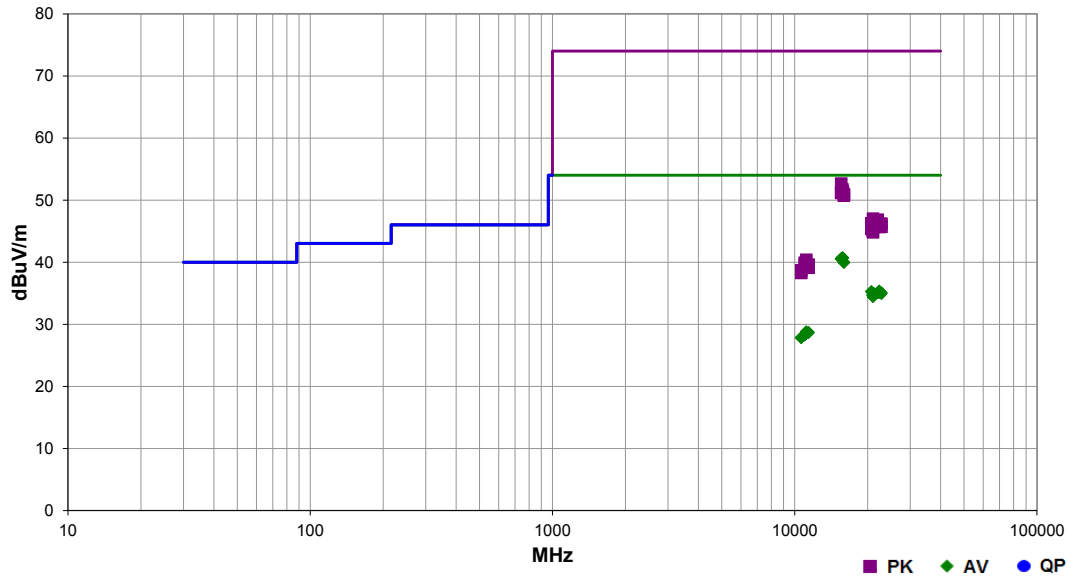
The highest gain of each type of antenna to be used with the EUT was tested. The EUT was configured for low, mid, and high band transmit frequencies. For each configuration, the spectrum was scanned throughout the specified range. In addition, measurements were made in the restricted bands to verify compliance. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and the EUT antenna in three orthogonal axis, and adjusting measurement antenna height and polarization. A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

# SPURIOUS RADIATED EMISSIONS

| | | | | | |
|---|---|---|---|---|---|
| **Work Order:** | ETHE0009 | **Date:** | 09/24/14 | | |
| **Project:** | None | **Temperature:** | 23 °C | | |
| **Job Site:** | EV01 | **Humidity:** | 50% RH | | |
| **Serial Number:** | 00409D 7C03CE | **Barometric Pres.:** | 1009 mbar | **Tested by:** | Brandon Hobbs |
| **EUT:** | ConnectCore i.MX6 WiFi/Bluetooth | | | | |
| **Configuration:** | 2 | | | | |
| **Customer:** | Etherios Design Solutions | | | | |
| **Attendees:** | None | | | | |
| **EUT Power:** | 5VDC | | | | |
| **Operating Mode:** | Continuous Tx using ANT-DB1-RAF-xxx Antenna | | | | |
| **Deviations:** | None | | | | |
| **Comments:** | Please reference the data comments for EUT orientation, power level, modulation and frequency. | | | | |

| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.407:2014 | ANSI C63.10:2009 |

| **Run #** | 189 | **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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15788.290 | 28.2 | 12.5 | 3.1 | 81.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 40.7 | 54.0 | -13.3 | Ch. 52, 5260MHz, 6Mbps, PL=11, EUT Horz |
| 15714.960 | 28.2 | 12.5 | 1.7 | 315.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 40.7 | 54.0 | -13.3 | Ch. 48, 5240MHz, 6Mbps, PL=11, EUT Vert |
| 15784.880 | 28.1 | 12.5 | 1.0 | 101.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 40.6 | 54.0 | -13.4 | Ch. 52, 5260MHz, 6Mbps, PL=11, EUT Vert |
| 15722.620 | 28.1 | 12.5 | 2.9 | 342.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 40.6 | 54.0 | -13.4 | Ch. 48, 5240MHz, 6Mbps, PL=11, EUT Horz |
| 15537.000 | 28.5 | 12.0 | 1.0 | 220.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 40.5 | 54.0 | -13.5 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Horz |
| 15530.120 | 28.5 | 12.0 | 1.0 | 330.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 40.5 | 54.0 | -13.5 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Vert |
| 15948.460 | 27.6 | 12.4 | 1.0 | 1.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 40.0 | 54.0 | -14.0 | Ch. 64, 5320MHz, 6Mbps, PL=11, EUT Horz |
| 15960.000 | 27.5 | 12.4 | 1.0 | 112.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 39.9 | 54.0 | -14.1 | Ch. 64, 5320MHz, 6Mbps, PL=11, EUT Vert |
| 22320.860 | 35.0 | 0.4 | 1.2 | 101.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 35.4 | 54.0 | -18.6 | Ch. 116, 5580MHz, 6Mbps, PL-=11, EUT Vert |
| 20721.700 | 35.8 | -0.5 | 1.2 | 244.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 35.3 | 54.0 | -18.7 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Vert |
| 20720.890 | 35.8 | -0.5 | 1.0 | 135.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 35.3 | 54.0 | -18.7 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Horz |
| 22800.090 | 34.7 | 0.4 | 1.2 | 301.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 35.1 | 54.0 | -18.9 | Ch. 140, 5700MHz, 6Mbps, PL=11, EUT Vert |
| 22321.480 | 34.7 | 0.4 | 1.2 | 121.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 35.1 | 54.0 | -18.9 | Ch. 116, 5580MHz, 6Mbps, PL-=11, EUT Horz |
| 21999.870 | 34.8 | 0.2 | 1.2 | 324.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 35.0 | 54.0 | -19.0 | Ch. 100, 5500MHz, 6Mbps, PL=11, EUT Vert |
| 21998.330 | 34.8 | 0.2 | 1.2 | 289.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 35.0 | 54.0 | -19.0 | Ch. 100, 5500MHz, 6Mbps, PL=11, EUT Horz |
| 21281.940 | 35.2 | -0.2 | 1.2 | 198.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 35.0 | 54.0 | -19.0 | Ch. 64, 5320MHz, 6Mbps, PL=11, EUT Vert |
| 22798.860 | 34.5 | 0.4 | 1.2 | 330.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 34.9 | 54.0 | -19.1 | Ch. 140, 5700MHz, 6Mbps, PL=11, EUT Horz |
| 21278.670 | 35.0 | -0.2 | 1.2 | 44.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 34.8 | 54.0 | -19.2 | Ch. 64, 5320MHz, 6Mbps, PL=11, EUT Horz |
| 20961.780 | 35.0 | -0.3 | 1.2 | 241.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 34.7 | 54.0 | -19.3 | Ch. 48, 5240MHz, 6Mbps, PL=11, EUT Vert |
| 20959.280 | 35.0 | -0.3 | 1.2 | 192.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 34.7 | 54.0 | -19.3 | Ch. 48, 5240MHz, 6Mbps, PL=11, EUT Horz |
| 21039.480 | 34.9 | -0.3 | 1.2 | 290.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 34.6 | 54.0 | -19.4 | Ch. 52, 5260MHz, 6Mbps, PL=11, EUT Vert |
| 21038.880 | 34.7 | -0.3 | 1.2 | 305.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 34.4 | 54.0 | -19.6 | Ch. 52, 5260MHz, 6Mbps, PL=11, EUT Horz |
| 15542.710 | 40.6 | 12.1 | 1.0 | 330.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 52.7 | 74.0 | -21.3 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Vert |
| 15708.960 | 39.3 | 12.5 | 1.7 | 315.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 51.8 | 74.0 | -22.2 | Ch. 48, 5240MHz, 6Mbps, PL=11, EUT Vert |
| 15777.250 | 38.9 | 12.5 | 3.1 | 81.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 51.4 | 74.0 | -22.6 | Ch. 52, 5260MHz, 6Mbps, PL=11, EUT Horz |
| 15789.540 | 38.7 | 12.5 | 1.0 | 101.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 51.2 | 74.0 | -22.8 | Ch. 52, 5260MHz, 6Mbps, PL=11, EUT Vert |
| 15718.420 | 38.7 | 12.5 | 2.9 | 342.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 51.2 | 74.0 | -22.8 | Ch. 48, 5240MHz, 6Mbps, PL=11, EUT Horz |
| 15538.250 | 39.1 | 12.0 | 1.0 | 220.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 51.1 | 74.0 | -22.9 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Horz |
| 15971.670 | 38.5 | 12.4 | 1.0 | 1.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 50.9 | 74.0 | -23.1 | Ch. 64, 5320MHz, 6Mbps, PL=11, EUT Horz |
| 15952.750 | 38.3 | 12.4 | 1.0 | 112.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 50.7 | 74.0 | -23.3 | Ch. 64, 5320MHz, 6Mbps, PL=11, EUT Vert |
| 11160.380 | 36.2 | -7.4 | 1.0 | 50.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 28.8 | 54.0 | -25.2 | Ch. 116, 5580MHz, 6Mbps, PL-=11, EUT Horz |
| 11158.570 | 36.2 | -7.4 | 1.0 | 49.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 28.8 | 54.0 | -25.2 | Ch. 116, 5580MHz, 6Mbps, PL-=11, EUT Vert |

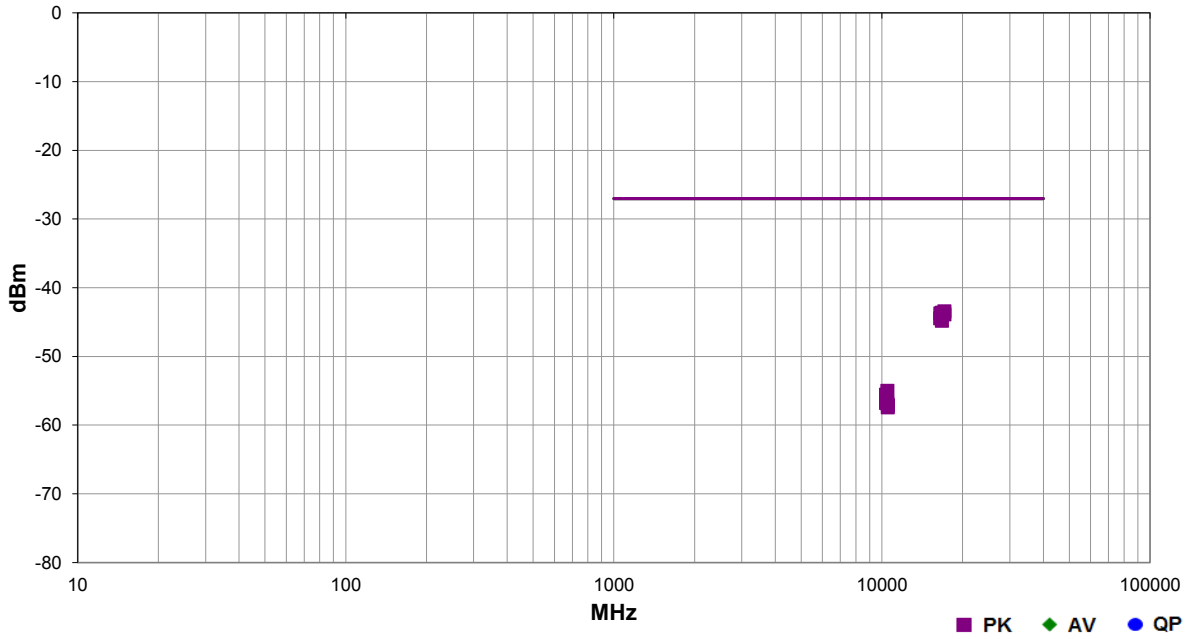
| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Antenna Height (meters) | Azimuth (degrees) | Test Distance (meters) | External Attenuation (dB) | Polarity/ Transducer Type | Detector | Distance Adjustment (dB) | Adjusted (dBuV/m) | Spec. Limit (dBuV/m) | Compared to Spec. (dB) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11399.090 | 33.8 | -5.1 | 1.0 | 2.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 28.7 | 54.0 | -25.3 | Ch. 140, 5700MHz, 6Mbps, PL=11, EUT Horz |
| 11399.630 | 33.7 | -5.1 | 1.0 | 328.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 28.6 | 54.0 | -25.4 | Ch. 140, 5700MHz, 6Mbps, PL=11, EUT Vert |
| 11002.480 | 36.8 | -8.6 | 1.0 | 159.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 28.2 | 54.0 | -25.8 | Ch. 100, 5500MHz, 6Mbps, PL=11, EUT Vert |
| 11002.470 | 36.8 | -8.6 | 1.0 | 72.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 28.2 | 54.0 | -25.8 | Ch. 100, 5500MHz, 6Mbps, PL=11, EUT Horz |
| 10638.600 | 37.7 | -9.8 | 1.0 | 62.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 27.9 | 54.0 | -26.1 | Ch. 64, 5320MHz, 6Mbps, PL=11, EUT Horz |
| 10640.470 | 37.6 | -9.8 | 1.0 | 3.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 27.8 | 54.0 | -26.2 | Ch. 64, 5320MHz, 6Mbps, PL=11, EUT Vert |
| 21039.120 | 47.3 | -0.3 | 1.2 | 290.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 47.0 | 74.0 | -27.0 | Ch. 52, 5260MHz, 6Mbps, PL=11, EUT Vert |
| 22000.830 | 46.6 | 0.2 | 1.2 | 324.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 46.8 | 74.0 | -27.2 | Ch. 100, 5500MHz, 6Mbps, PL=11, EUT Vert |
| 20720.430 | 46.8 | -0.5 | 1.2 | 244.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 46.3 | 74.0 | -27.7 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Vert |
| 21998.730 | 46.0 | 0.2 | 1.2 | 289.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 46.2 | 74.0 | -27.8 | Ch. 100, 5500MHz, 6Mbps, PL=11, EUT Horz |
| 22800.980 | 45.8 | 0.4 | 1.2 | 301.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 46.2 | 74.0 | -27.8 | Ch. 140, 5700MHz, 6Mbps, PL=11, EUT Vert |
| 22319.820 | 45.8 | 0.4 | 1.2 | 101.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 46.2 | 74.0 | -27.8 | Ch. 116, 5580MHz, 6Mbps, PL-=11, EUT Vert |
| 21278.830 | 46.0 | -0.2 | 1.2 | 198.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 45.8 | 74.0 | -28.2 | Ch. 64, 5320MHz, 6Mbps, PL=11, EUT Vert |
| 22798.380 | 45.3 | 0.4 | 1.2 | 330.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 45.7 | 74.0 | -28.3 | Ch. 140, 5700MHz, 6Mbps, PL=11, EUT Horz |
| 22319.690 | 45.3 | 0.4 | 1.2 | 121.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 45.7 | 74.0 | -28.3 | Ch. 116, 5580MHz, 6Mbps, PL-=11, EUT Horz |
| 21282.070 | 45.9 | -0.2 | 1.2 | 44.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 45.7 | 74.0 | -28.3 | Ch. 64, 5320MHz, 6Mbps, PL=11, EUT Horz |
| 20960.070 | 45.8 | -0.3 | 1.2 | 241.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 45.5 | 74.0 | -28.5 | Ch. 48, 5240MHz, 6Mbps, PL=11, EUT Vert |
| 20719.490 | 45.9 | -0.5 | 1.0 | 135.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 45.4 | 74.0 | -28.6 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Horz |
| 20957.550 | 45.4 | -0.3 | 1.2 | 192.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 45.1 | 74.0 | -28.9 | Ch. 48, 5240MHz, 6Mbps, PL=11, EUT Horz |
| 21041.870 | 45.1 | -0.3 | 1.2 | 305.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 44.8 | 74.0 | -29.2 | Ch. 52, 5260MHz, 6Mbps, PL=11, EUT Horz |
| 11160.270 | 47.8 | -7.4 | 1.0 | 49.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 40.4 | 74.0 | -33.6 | Ch. 116, 5580MHz, 6Mbps, PL-=11, EUT Vert |
| 10998.360 | 48.5 | -8.6 | 1.0 | 72.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 39.9 | 74.0 | -34.1 | Ch. 100, 5500MHz, 6Mbps, PL=11, EUT Horz |
| 11162.020 | 47.1 | -7.4 | 1.0 | 50.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 39.7 | 74.0 | -34.3 | Ch. 116, 5580MHz, 6Mbps, PL-=11, EUT Horz |
| 10999.290 | 48.2 | -8.6 | 1.0 | 159.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 39.6 | 74.0 | -34.4 | Ch. 100, 5500MHz, 6Mbps, PL=11, EUT Vert |
| 11398.610 | 44.7 | -5.1 | 1.0 | 328.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 39.6 | 74.0 | -34.4 | Ch. 140, 5700MHz, 6Mbps, PL=11, EUT Vert |
| 11398.080 | 44.2 | -5.1 | 1.0 | 2.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 39.1 | 74.0 | -34.9 | Ch. 140, 5700MHz, 6Mbps, PL=11, EUT Horz |
| 10638.820 | 48.5 | -9.8 | 1.0 | 3.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 38.7 | 74.0 | -35.3 | Ch. 64, 5320MHz, 6Mbps, PL=11, EUT Vert |
| 10638.760 | 48.1 | -9.8 | 1.0 | 62.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 38.3 | 74.0 | -35.7 | Ch. 64, 5320MHz, 6Mbps, PL=11, EUT Horz |

# SPURIOUS RADIATED EMISSIONS

| | | | | | |
|---|---|---|---|---|---|
| **Work Order:** | ETHE0009 | **Date:** | 09/24/14 | | |
| **Project:** | None | **Temperature:** | 23 °C | | |
| **Job Site:** | EV01 | **Humidity:** | 50% RH | | |
| **Serial Number:** | 00409D 7C03CE | **Barometric Pres.:** | 1009 mbar | **Tested by:** | Brandon Hobbs |
| **EUT:** | ConnectCore i.MX6 WiFi/Bluetooth | | | | |
| **Configuration:** | 2 | | | | |
| **Customer:** | Etherios Design Solutions | | | | |
| **Attendees:** | None | | | | |
| **EUT Power:** | 5VDC | | | | |
| **Operating Mode:** | Continuous Tx using ANT-DB1-RAF-xxx Antenna | | | | |
| **Deviations:** | None | | | | |
| **Comments:** | Please reference the data comments for EUT orientation, power level, modulation and frequency. | | | | |

| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.407:2014 | ANSI C63.10:2009 |

| **Run #** | 190 | **Test Distance (m)** | 3 | **Antenna Height(s)** | 1 to 4(m) | **Results** | Pass |
|---|---|---|---|---|---|---|---|



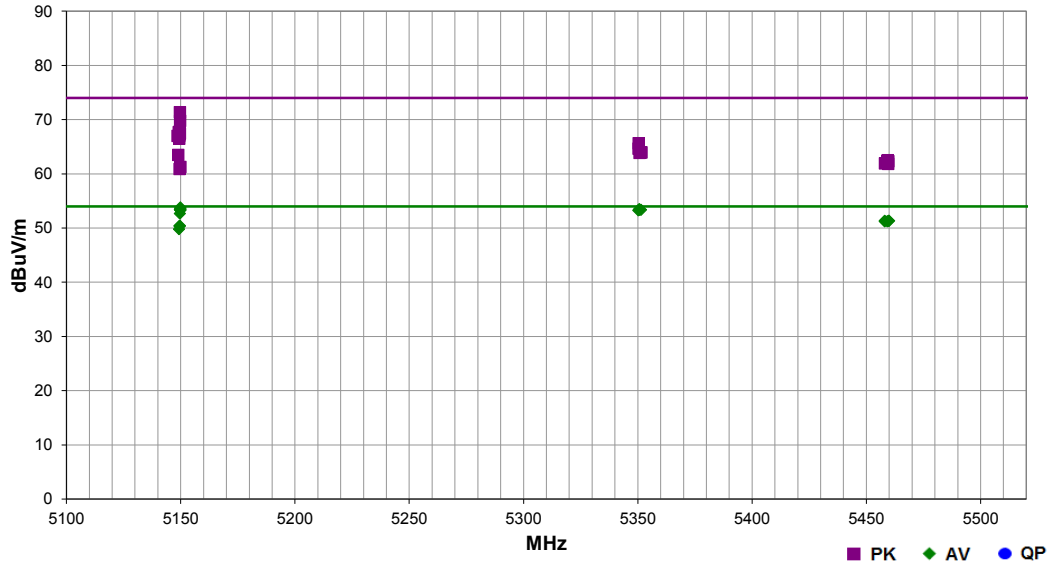

| | Freq (MHz) | Antenna Height (meters) | Azimuth (degrees) | Polarity/ Transducer Type | Detector | EIRP (Watts) | EIRP (dBm) | Spec. Limit (dBm) | Compared to Spec. (dB) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| | 17109.290 | 2.2 | 20.0 | Vert | PK | 4.54E-08 | -43.4 | -27.0 | -16.4 | Ch. 140, 5700MHz, 6Mbps, PL=11, EUT Vert |
| | 16744.960 | 2.8 | 329.0 | Vert | PK | 4.35E-08 | -43.6 | -27.0 | -16.6 | Ch. 116, 5580MHz, 6Mbps, PL-=11, EUT Vert |
| | 16508.460 | 1.0 | 322.0 | Horz | PK | 4.24E-08 | -43.7 | -27.0 | -16.7 | Ch. 100, 5500MHz, 6Mbps, PL=11, EUT Horz |
| | 17088.290 | 3.5 | 167.0 | Horz | PK | 4.09E-08 | -43.9 | -27.0 | -16.9 | Ch. 140, 5700MHz, 6Mbps, PL=11, EUT Horz |
| | 16499.380 | 1.6 | 255.0 | Vert | PK | 3.61E-08 | -44.4 | -27.0 | -17.4 | Ch. 100, 5500MHz, 6Mbps, PL=11, EUT Vert |
| | 16741.080 | 1.0 | 184.0 | Horz | PK | 3.30E-08 | -44.8 | -27.0 | -17.8 | Ch. 116, 5580MHz, 6Mbps, PL-=11, EUT Horz |
| | 10480.940 | 1.4 | 118.0 | Vert | PK | 3.17E-09 | -55.0 | -27.0 | -28.0 | Ch. 48, 5240MHz, 6Mbps, PL=11, EUT Vert |
| | 10358.320 | 1.3 | 132.0 | Vert | PK | 2.77E-09 | -55.6 | -27.0 | -28.6 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Vert |
| | 10360.060 | 1.0 | 85.0 | Horz | PK | 2.11E-09 | -56.8 | -27.0 | -29.8 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Horz |
| | 10477.920 | 1.0 | 123.0 | Horz | PK | 2.08E-09 | -56.8 | -27.0 | -29.8 | Ch. 48, 5240MHz, 6Mbps, PL=11, EUT Horz |
| | 10522.160 | 1.0 | 56.0 | Vert | PK | 1.95E-09 | -57.1 | -27.0 | -30.1 | Ch. 52, 5260MHz, 6Mbps, PL=11, EUT Vert |
| | 10519.020 | 1.0 | 128.0 | Horz | PK | 1.82E-09 | -57.4 | -27.0 | -30.4 | Ch. 52, 5260MHz, 6Mbps, PL=11, EUT Horz |

# SPURIOUS RADIATED EMISSIONS

| | | | | | |
|---|---|---|---|---|---|
| **Work Order:** | ETHE0009 | **Date:** | 09/24/14 | | |
| **Project:** | None | **Temperature:** | 23.1 °C | | |
| **Job Site:** | EV01 | **Humidity:** | 50.6% RH | | |
| **Serial Number:** | 00409D 7C03CE | **Barometric Pres.:** | 1009 mbar | **Tested by:** | Jared Ison |
| **EUT:** | ConnectCore i.MX6 WiFi/Bluetooth | | | | |
| **Configuration:** | 2 | | | | |
| **Customer:** | Etherios Design Solutions | | | | |
| **Attendees:** | None | | | | |
| **EUT Power:** | 5VDC | | | | |
| **Operating Mode:** | Continuous Tx ANT-DB1-RAF-xxx Antenna | | | | |
| **Deviations:** | None | | | | |
| **Comments:** | Please reference the data comments for EUT orientation, power level, modulation and frequency. | | | | |

| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.407:2014 | ANSI C63.10:2009 |

| **Run #** | 140 | **Test Distance (m)** | 1 | **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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5149.870 | 26.4 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 53.8 | 54.0 | -0.2 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT On Side |
| 5149.880 | 26.2 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 53.6 | 54.0 | -0.4 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Horz |
| 5149.863 | 26.1 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 53.5 | 54.0 | -0.5 | Ch. 36, 5180MHz, MCS0, PL=11, EUT On Side |
| 5350.670 | 25.5 | 37.5 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 53.5 | 54.0 | -0.5 | Ch. 64, 5320MHz, 36Mbps, PL=11, EUT On Side |
| 5350.683 | 25.5 | 37.5 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 53.5 | 54.0 | -0.5 | Ch. 64, 5320MHz, 54Mbps, PL=11, EUT On Side |
| 5149.660 | 26.0 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 53.4 | 54.0 | -0.6 | Ch. 36, 5180MHz, 54Mbps, PL=11, EUT On Side |
| 5149.807 | 26.0 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 53.4 | 54.0 | -0.6 | Ch. 36, 5180MHz, 36Mbps, PL=11, EUT On Side |
| 5149.747 | 26.0 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 53.4 | 54.0 | -0.6 | Ch. 36, 5180MHz, MCS7, PL=11, EUT On Side |
| 5350.847 | 25.4 | 37.5 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 53.4 | 54.0 | -0.6 | Ch. 64, 5320MHz, 6Mbps, PL=11, EUT On Side |
| 5351.410 | 25.4 | 37.5 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 53.4 | 54.0 | -0.6 | Ch. 64, 5320MHz, MCS0, PL=11, EUT On Side |
| 5149.987 | 25.9 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Vert | AV | -9.5 | 53.3 | 54.0 | -0.7 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Vert |
| 5350.267 | 25.3 | 37.5 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 53.3 | 54.0 | -0.7 | Ch. 64, 5320MHz, MCS7, PL=11, EUT On Side |
| 5149.647 | 25.3 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 52.7 | 54.0 | -1.3 | Ch. 36, 5180MHz, 6Mbps, PL=10, EUT Horz |
| 5149.670 | 44.0 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 71.4 | 74.0 | -2.6 | Ch. 36, 5180MHz, MCS7, PL=11, EUT On Side |
| 5459.993 | 23.3 | 37.6 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 51.3 | 54.0 | -2.7 | Ch. 100, 5500MHz, 36Mbps, PL=11, EUT On Side |
| 5459.657 | 23.3 | 37.6 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 51.3 | 54.0 | -2.7 | Ch. 100, 5500MHz, 6Mbps, PL=11, EUT On Side |
| 5458.057 | 23.3 | 37.6 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 51.3 | 54.0 | -2.7 | Ch. 100, 5500MHz, 54Mbps, PL=11, EUT On Side |
| 5459.187 | 23.2 | 37.6 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 51.2 | 54.0 | -2.8 | Ch. 100, 5500MHz, MCS7, PL=11, EUT On Side |
| 5458.063 | 23.2 | 37.6 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 51.2 | 54.0 | -2.8 | Ch. 100, 5500MHz, MCS0, PL=11, EUT On Side |
| 5149.433 | 23.0 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Vert | AV | -9.5 | 50.4 | 54.0 | -3.6 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT On Side |
| 5149.737 | 23.0 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Vert | AV | -9.5 | 50.4 | 54.0 | -3.6 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Horz |
| 5149.263 | 22.4 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 49.8 | 54.0 | -4.2 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Vert |
| 5149.740 | 42.4 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 69.8 | 74.0 | -4.2 | Ch. 36, 5180MHz, 6Mbps, PL=12, EUT Horz |
| 5149.477 | 40.4 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 67.8 | 74.0 | -6.2 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT On Side |
| 5149.150 | 40.3 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 67.7 | 74.0 | -6.3 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Horz |
| 5149.687 | 40.1 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 67.5 | 74.0 | -6.5 | Ch. 36, 5180MHz, MCS0, PL=11, EUT On Side |
| 5149.497 | 39.9 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 67.3 | 74.0 | -6.7 | Ch. 36, 5180MHz, 36Mbps, PL=11, EUT On Side |
| 5148.590 | 39.6 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Vert | PK | -9.5 | 67.0 | 74.0 | -7.0 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Vert |
| 5149.377 | 39.6 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 67.0 | 74.0 | -7.0 | Ch. 36, 5180MHz, 54Mbps, PL=11, EUT On Side |
| 5149.383 | 39.1 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 66.5 | 74.0 | -7.5 | Ch. 36, 5180MHz, 6Mbps, PL=10, EUT Horz |
| 5350.380 | 37.7 | 37.5 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 65.7 | 74.0 | -8.3 | Ch. 64, 5320MHz, 36Mbps, PL=11, EUT On Side |
| 5350.327 | 36.7 | 37.5 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 64.7 | 74.0 | -9.3 | Ch. 64, 5320MHz, 54Mbps, PL=11, EUT On Side |
| 5351.407 | 36.0 | 37.5 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 64.0 | 74.0 | -10.0 | Ch. 64, 5320MHz, MCS0, PL=11, EUT On Side |
| 5351.603 | 36.0 | 37.5 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 64.0 | 74.0 | -10.0 | Ch. 64, 5320MHz, 6Mbps, PL=11, EUT On Side |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5350.730 | 35.9 | 37.5 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 63.9 | 74.0 | -10.1 | Ch. 64, 5320MHz, MCS7, PL=11, EUT On Side |
| 5148.943 | 36.1 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Vert | PK | -9.5 | 63.5 | 74.0 | -10.5 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Horz |
| 5459.320 | 34.5 | 37.6 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 62.5 | 74.0 | -11.5 | Ch. 100, 5500MHz, 54Mbps, PL=11, EUT On Side |
| 5459.650 | 34.3 | 37.6 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 62.3 | 74.0 | -11.7 | Ch. 100, 5500MHz, MCS0, PL=11, EUT On Side |
| 5459.160 | 34.3 | 37.6 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 62.3 | 74.0 | -11.7 | Ch. 100, 5500MHz, 36Mbps, PL=11, EUT On Side |
| 5458.170 | 33.9 | 37.6 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 61.9 | 74.0 | -12.1 | Ch. 100, 5500MHz, MCS7, PL=11, EUT On Side |
| 5459.560 | 33.8 | 37.6 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 61.8 | 74.0 | -12.2 | Ch. 100, 5500MHz, 6Mbps, PL=11, EUT On Side |
| 5149.860 | 33.9 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Vert | PK | -9.5 | 61.3 | 74.0 | -12.7 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT On Side |
| 5149.497 | 33.5 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 60.9 | 74.0 | -13.1 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Vert |

# 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**

| |
|---|
| Ch. 36, 5180MHz |
| Ch. 48, 5240MHz |
| Ch. 64, 5320MHz |
| Ch. 100, 5500MHz |
| Ch. 116, 5580MHz |
| Ch. 140, 5700MHz |

**MODES OF OPERATION**

| |
|---|
| 1 Mbps |
| 6 Mbps |
| 36 Mbps |
| 54 Mbps |
| MCS0 |
| MCS7 |

**POWER SETTINGS INVESTIGATED**

5VDC

**CONFIGURATIONS INVESTIGATED**

ETHE0009 - 6

**FREQUENCY RANGE INVESTIGATED**

| | | | |
|---|---|---|---|
| Start Frequency | 30 MHz | Stop Frequency | 40 GHz |

**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 |
|---|---|---|---|---|---|
| EV Cable | ESM Cable Corp. | KMKM-72 | EWB | 6/25/2014 | 12 mo |
| Pre-Amplifier | Miteq | JSW45-26004000-40-5P | PAE | 6/25/2014 | 12 mo |
| Antenna, Horn | ETS Lindgren | 3160-10 | AIW | NCR | 0 mo |
| Pre-Amplifier | Miteq | AMF-6F-18002650-25-10P | AVU | 9/10/2013 | 14 mo |
| Antenna, Horn | ETS | 3160-08 | AHV | NCR | 0 mo |
| EV01 Cables | N/A | Standard Gain Horns Cables | EVF | 2/18/2014 | 12 mo |
| Pre-Amplifier | Miteq | AMF-6F-08001200-30-10P | AVC | 2/18/2014 | 12 mo |
| Antenna, Horn | ETS | 3160-07 | AHU | NCR | 0 mo |
| EV01 Cables | N/A | Double Ridge Horn Cables | EVB | 8/26/2014 | 12 mo |
| Pre-Amplifier | Miteq | AMF-3D-00100800-32-13P | PAG | 8/26/2014 | 12 mo |
| Antenna, Horn | ETS | 3115 | AIZ | 1/24/2014 | 24 mo |
| EV01 Cables | N/A | Bilog Cables | EVA | 2/18/2014 | 12 mo |
| Pre-Amplifier | Miteq | AM-1616-1000 | AOL | 2/18/2014 | 12 mo |
| Antenna, Biconilog | EMCO | 3141 | AXE | 8/29/2014 | 36 mo |
| Spectrum Analyzer | Agilent | E4446A | AAQ | 1/21/2014 | 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**

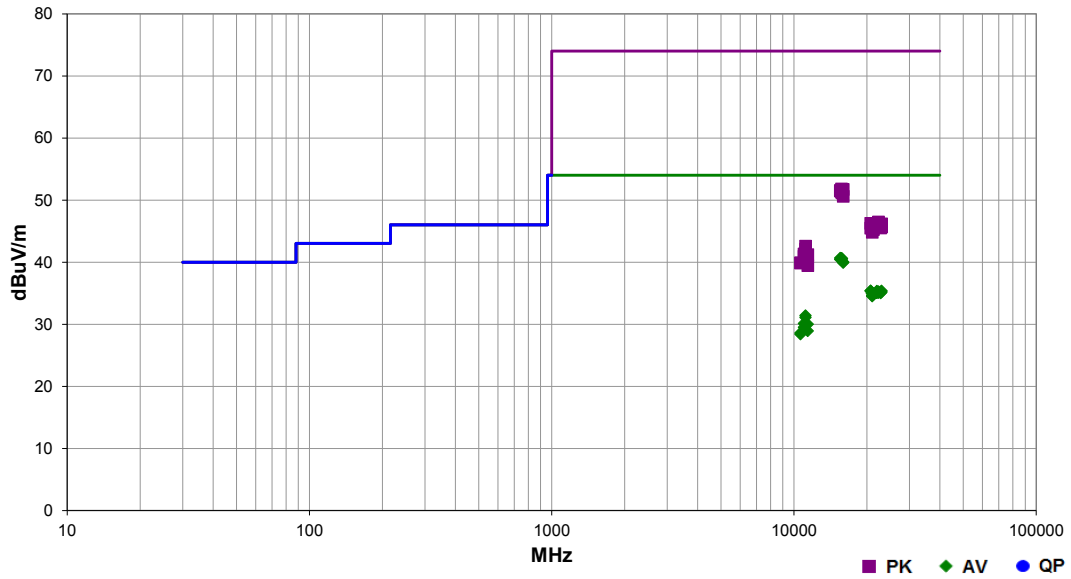
The highest gain of each type of antenna to be used with the EUT was tested. The EUT was configured for low, mid, and high band transmit frequencies. For each configuration, the spectrum was scanned throughout the specified range. In addition, measurements were made in the restricted bands to verify compliance. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and the EUT antenna in three orthogonal axis, and adjusting measurement antenna height and polarization. A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

# SPURIOUS RADIATED EMISSIONS

| | | | | | |
|---|---|---|---|---|---|
| **Work Order:** | ETHE0009 | **Date:** | 09/26/14 | | |
| **Project:** | None | **Temperature:** | 23.2 °C | | |
| **Job Site:** | EV01 | **Humidity:** | 47.5% RH | | |
| **Serial Number:** | 00409D 7C03CE | **Barometric Pres.:** | 1016.6 mbar | **Tested by:** | Jared Ison |
| **EUT:** | ConnectCore i.MX6 WiFi/Bluetooth | | | | |
| **Configuration:** | 6 | | | | |
| **Customer:** | Etherios Design Solutions | | | | |
| **Attendees:** | None | | | | |
| **EUT Power:** | 5VDC | | | | |
| **Operating Mode:** | Continuous Tx using Ethertronics Antenna | | | | |
| **Deviations:** | None | | | | |
| **Comments:** | Please reference the data comments for EUT orientation, power level, modulation and frequency. | | | | |

| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.407:2014 | ANSI C63.10:2009 |

| **Run #** | 193 | **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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15538.490 | 28.6 | 12.0 | 1.1 | 213.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 40.6 | 54.0 | -13.4 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Horz |
| 15720.620 | 28.1 | 12.5 | 1.0 | 269.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 40.6 | 54.0 | -13.4 | Ch. 48, 5240MHz, 6Mbps, PL=11, EUT Horz |
| 15718.790 | 28.1 | 12.5 | 1.0 | 213.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 40.6 | 54.0 | -13.4 | Ch. 48, 5240MHz, 6Mbps, PL=11, EUT Vert |
| 15778.970 | 28.0 | 12.5 | 3.1 | 185.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 40.5 | 54.0 | -13.5 | Ch. 52, 5260MHz, 6Mbps, PL=11, EUT Vert |
| 15779.710 | 28.0 | 12.5 | 1.0 | 330.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 40.5 | 54.0 | -13.5 | Ch. 52, 5260MHz, 6Mbps, PL=11, EUT Horz |
| 15538.690 | 28.4 | 12.0 | 1.0 | 248.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 40.4 | 54.0 | -13.6 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Vert |
| 15961.410 | 27.6 | 12.4 | 1.0 | 105.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 40.0 | 54.0 | -14.0 | Ch. 64, 5320MHz, 6Mbps, PL=11, EUT Vert |
| 15961.140 | 27.5 | 12.4 | 1.7 | 215.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 39.9 | 54.0 | -14.1 | Ch. 64, 5320MHz, 6Mbps, PL=11, EUT Horz |
| 22980.110 | 35.0 | 0.4 | 1.2 | 325.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 35.4 | 54.0 | -18.6 | Ch. 149, 5745MHz, 6Mbps, PL=11, EUT Vert |
| 20721.110 | 35.9 | -0.5 | 1.2 | 330.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 35.4 | 54.0 | -18.6 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Horz |
| 20719.000 | 35.9 | -0.5 | 1.2 | 130.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 35.4 | 54.0 | -18.6 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Vert |
| 22000.680 | 35.1 | 0.2 | 1.2 | 248.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 35.3 | 54.0 | -18.7 | Ch. 100, 5500MHz, 6Mbps, PL=11, EUT Vert |
| 22318.910 | 34.9 | 0.4 | 1.2 | 106.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 35.3 | 54.0 | -18.7 | Ch. 116, 5580MHz, 6Mbps, PL=11, EUT Vert |
| 22799.250 | 34.8 | 0.4 | 1.2 | 230.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 35.2 | 54.0 | -18.8 | Ch. 140, 5700MHz, 6Mbps, PL=11, EUT Vert |
| 22978.480 | 34.8 | 0.4 | 1.2 | 104.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 35.2 | 54.0 | -18.8 | Ch. 149, 5745MHz, 6Mbps, PL=11, EUT Horz |
| 22322.190 | 34.7 | 0.4 | 1.2 | 257.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 35.1 | 54.0 | -18.9 | Ch. 116, 5580MHz, 6Mbps, PL=11, EUT Horz |
| 20962.040 | 35.4 | -0.3 | 1.2 | 98.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 35.1 | 54.0 | -18.9 | Ch. 48, 5240MHz, 6Mbps, PL=11, EUT Horz |
| 22001.200 | 34.8 | 0.2 | 1.2 | 320.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 35.0 | 54.0 | -19.0 | Ch. 100, 5500MHz, 6Mbps, PL=11, EUT Horz |
| 22799.720 | 34.6 | 0.4 | 1.2 | 163.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 35.0 | 54.0 | -19.0 | Ch. 140, 5700MHz, 6Mbps, PL=11, EUT Horz |
| 20960.780 | 35.3 | -0.3 | 1.2 | 20.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 35.0 | 54.0 | -19.0 | Ch. 48, 5240MHz, 6Mbps, PL=11, EUT Vert |
| 21282.270 | 35.1 | -0.2 | 1.2 | 179.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 34.9 | 54.0 | -19.1 | Ch. 64, 5320MHz, 6Mbps, PL=11, EUT Vert |
| 21282.110 | 35.0 | -0.2 | 1.2 | 307.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 34.8 | 54.0 | -19.2 | Ch. 64, 5320MHz, 6Mbps, PL=11, EUT Horz |
| 21041.100 | 34.9 | -0.3 | 1.2 | 52.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 34.6 | 54.0 | -19.4 | Ch. 52, 5260MHz, 6Mbps, PL=11, EUT Vert |
| 21038.060 | 34.8 | -0.3 | 1.2 | 110.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 34.5 | 54.0 | -19.5 | Ch. 52, 5260MHz, 6Mbps, PL=11, EUT Vert |
| 15719.280 | 39.3 | 12.5 | 1.0 | 269.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 51.8 | 74.0 | -22.2 | Ch. 48, 5240MHz, 6Mbps, PL=11, EUT Horz |
| 15960.260 | 39.3 | 12.4 | 1.0 | 105.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 51.7 | 74.0 | -22.3 | Ch. 64, 5320MHz, 6Mbps, PL=11, EUT Vert |
| 15539.060 | 39.5 | 12.0 | 1.1 | 213.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 51.5 | 74.0 | -22.5 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Horz |
| 15780.640 | 39.0 | 12.5 | 3.1 | 185.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 51.5 | 74.0 | -22.5 | Ch. 52, 5260MHz, 6Mbps, PL=11, EUT Vert |
| 15539.710 | 39.4 | 12.0 | 1.0 | 248.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 51.4 | 74.0 | -22.6 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Vert |
| 11160.010 | 38.8 | -7.4 | 1.0 | 349.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 31.4 | 54.0 | -22.6 | Ch. 116, 5580MHz, 6Mbps, PL=18, EUT Vert |
| 15719.850 | 38.8 | 12.5 | 1.0 | 213.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 51.3 | 74.0 | -22.7 | Ch. 48, 5240MHz, 6Mbps, PL=11, EUT Vert |
| 15778.630 | 38.6 | 12.5 | 1.0 | 330.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 51.1 | 74.0 | -22.9 | Ch. 52, 5260MHz, 6Mbps, PL=11, EUT Horz |

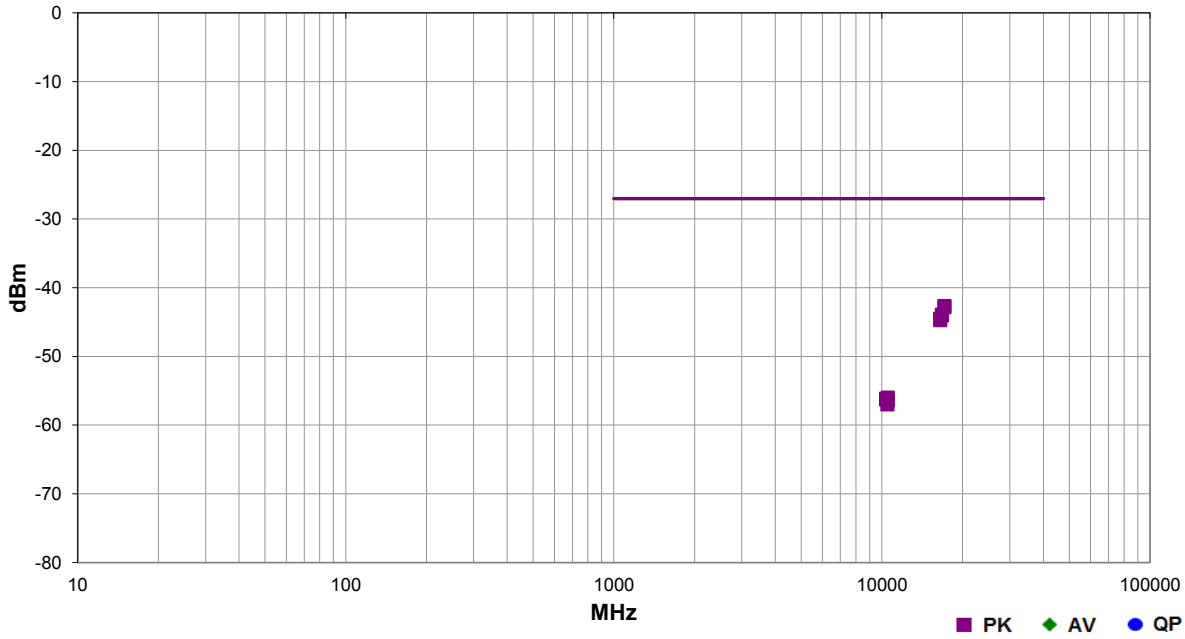
| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Antenna Height (meters) | Azimuth (degrees) | Test Distance (meters) | External Attenuation (dB) | Polarity/ Transducer Type | Detector | Distance Adjustment (dB) | Adjusted (dBuV/m) | Spec. Limit (dBuV/m) | Compared to Spec. (dB) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11160.010 | 38.5 | -7.4 | 1.1 | 322.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 31.1 | 54.0 | -22.9 | Ch. 116, 5580MHz, 6Mbps, PL=18, EUT Horz |
| 15961.080 | 38.2 | 12.4 | 1.7 | 215.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 50.6 | 74.0 | -23.4 | Ch. 64, 5320MHz, 6Mbps, PL=11, EUT Horz |
| 10999.860 | 38.7 | -8.6 | 1.0 | 7.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 30.1 | 54.0 | -23.9 | Ch. 100, 5500MHz, 6Mbps, PL=18, EUT Vert |
| 11398.580 | 35.1 | -5.1 | 1.7 | 330.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 30.0 | 54.0 | -24.0 | Ch. 140, 5700MHz, 6Mbps, PL=18, EUT Vert |
| 10997.780 | 38.1 | -8.6 | 1.0 | 247.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 29.5 | 54.0 | -24.5 | Ch. 100, 5500MHz, 6Mbps, PL=18, EUT Horz |
| 11398.610 | 34.0 | -5.1 | 1.0 | 261.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 28.9 | 54.0 | -25.1 | Ch. 140, 5700MHz, 6Mbps, PL=18, EUT Horz |
| 10638.760 | 38.4 | -9.8 | 1.0 | 47.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 28.6 | 54.0 | -25.4 | Ch. 64, 5320MHz, 6Mbps, PL=11, EUT Horz |
| 10640.100 | 38.2 | -9.8 | 1.0 | 1.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 28.4 | 54.0 | -25.6 | Ch. 64, 5320MHz, 6Mbps, PL=11, EUT Vert |
| 22322.130 | 46.1 | 0.4 | 1.2 | 257.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 46.5 | 74.0 | -27.5 | Ch. 116, 5580MHz, 6Mbps, PL=11, EUT Horz |
| 22319.530 | 46.0 | 0.4 | 1.2 | 106.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 46.4 | 74.0 | -27.6 | Ch. 116, 5580MHz, 6Mbps, PL=11, EUT Vert |
| 20719.310 | 46.8 | -0.5 | 1.2 | 130.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 46.3 | 74.0 | -27.7 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Vert |
| 22002.170 | 46.0 | 0.2 | 1.2 | 248.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 46.2 | 74.0 | -27.8 | Ch. 100, 5500MHz, 6Mbps, PL=11, EUT Vert |
| 22982.220 | 45.8 | 0.4 | 1.2 | 325.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 46.2 | 74.0 | -27.8 | Ch. 149, 5745MHz, 6Mbps, PL=11, EUT Vert |
| 22001.900 | 45.9 | 0.2 | 1.2 | 320.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 46.1 | 74.0 | -27.9 | Ch. 100, 5500MHz, 6Mbps, PL=11, EUT Horz |
| 22801.060 | 45.6 | 0.4 | 1.2 | 230.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 46.0 | 74.0 | -28.0 | Ch. 140, 5700MHz, 6Mbps, PL=11, EUT Vert |
| 22982.490 | 45.3 | 0.4 | 1.2 | 104.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 45.7 | 74.0 | -28.3 | Ch. 149, 5745MHz, 6Mbps, PL=11, EUT Horz |
| 21041.780 | 45.9 | -0.3 | 1.2 | 52.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 45.6 | 74.0 | -28.4 | Ch. 52, 5260MHz, 6Mbps, PL=11, EUT Vert |
| 20960.820 | 45.9 | -0.3 | 1.2 | 20.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 45.6 | 74.0 | -28.4 | Ch. 48, 5240MHz, 6Mbps, PL=11, EUT Vert |
| 21281.270 | 45.8 | -0.2 | 1.2 | 179.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 45.6 | 74.0 | -28.4 | Ch. 64, 5320MHz, 6Mbps, PL=11, EUT Vert |
| 22798.250 | 45.1 | 0.4 | 1.2 | 163.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 45.5 | 74.0 | -28.5 | Ch. 140, 5700MHz, 6Mbps, PL=11, EUT Horz |
| 20722.410 | 46.0 | -0.5 | 1.2 | 330.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 45.5 | 74.0 | -28.5 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Horz |
| 20962.190 | 45.8 | -0.3 | 1.2 | 98.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 45.5 | 74.0 | -28.5 | Ch. 48, 5240MHz, 6Mbps, PL=11, EUT Horz |
| 21279.810 | 45.5 | -0.2 | 1.2 | 307.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 45.3 | 74.0 | -28.7 | Ch. 64, 5320MHz, 6Mbps, PL=11, EUT Horz |
| 21041.830 | 45.1 | -0.3 | 1.2 | 110.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 44.8 | 74.0 | -29.2 | Ch. 52, 5260MHz, 6Mbps, PL=11, EUT Vert |
| 11159.840 | 50.0 | -7.4 | 1.0 | 349.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 42.6 | 74.0 | -31.4 | Ch. 116, 5580MHz, 6Mbps, PL=18, EUT Vert |
| 11160.830 | 49.5 | -7.4 | 1.1 | 322.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 42.1 | 74.0 | -31.9 | Ch. 116, 5580MHz, 6Mbps, PL=18, EUT Horz |
| 11002.330 | 49.9 | -8.6 | 1.0 | 247.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 41.3 | 74.0 | -32.7 | Ch. 100, 5500MHz, 6Mbps, PL=18, EUT Horz |
| 11399.590 | 46.3 | -5.1 | 1.7 | 330.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 41.2 | 74.0 | -32.8 | Ch. 140, 5700MHz, 6Mbps, PL=18, EUT Vert |
| 11001.130 | 49.5 | -8.6 | 1.0 | 7.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 40.9 | 74.0 | -33.1 | Ch. 100, 5500MHz, 6Mbps, PL=18, EUT Vert |
| 10639.580 | 49.7 | -9.8 | 1.0 | 1.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 39.9 | 74.0 | -34.1 | Ch. 64, 5320MHz, 6Mbps, PL=11, EUT Vert |
| 10639.330 | 49.7 | -9.8 | 1.0 | 47.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 39.9 | 74.0 | -34.1 | Ch. 64, 5320MHz, 6Mbps, PL=11, EUT Horz |
| 11400.360 | 44.5 | -5.1 | 1.0 | 261.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 39.4 | 74.0 | -34.6 | Ch. 140, 5700MHz, 6Mbps, PL=18, EUT Horz |

# SPURIOUS RADIATED EMISSIONS

| | | | | | |
|---|---|---|---|---|---|
| **Work Order:** | ETHE0009 | **Date:** | 09/26/14 | | |
| **Project:** | None | **Temperature:** | 23.2 °C | | |
| **Job Site:** | EV01 | **Humidity:** | 47.5% RH | | |
| **Serial Number:** | 00409D 7C03CE | **Barometric Pres.:** | 1016.6 mbar | **Tested by:** | Jared Ison |
| **EUT:** | ConnectCore i.MX6 WiFi/Bluetooth | | | | |
| **Configuration:** | 6 | | | | |
| **Customer:** | Etherios Design Solutions | | | | |
| **Attendees:** | None | | | | |
| **EUT Power:** | 5VDC | | | | |
| **Operating Mode:** | Continuous Tx using Ethertronics Antenna | | | | |
| **Deviations:** | None | | | | |
| **Comments:** | Please reference the data comments for EUT orientation, power level, modulation and frequency. | | | | |

| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.407:2014 | ANSI C63.10:2009 |

| **Run #** | 194 | **Test Distance (m)** | 3 | **Antenna Height(s)** | 1 to 4(m) | **Results** | Pass |
|---|---|---|---|---|---|---|---|



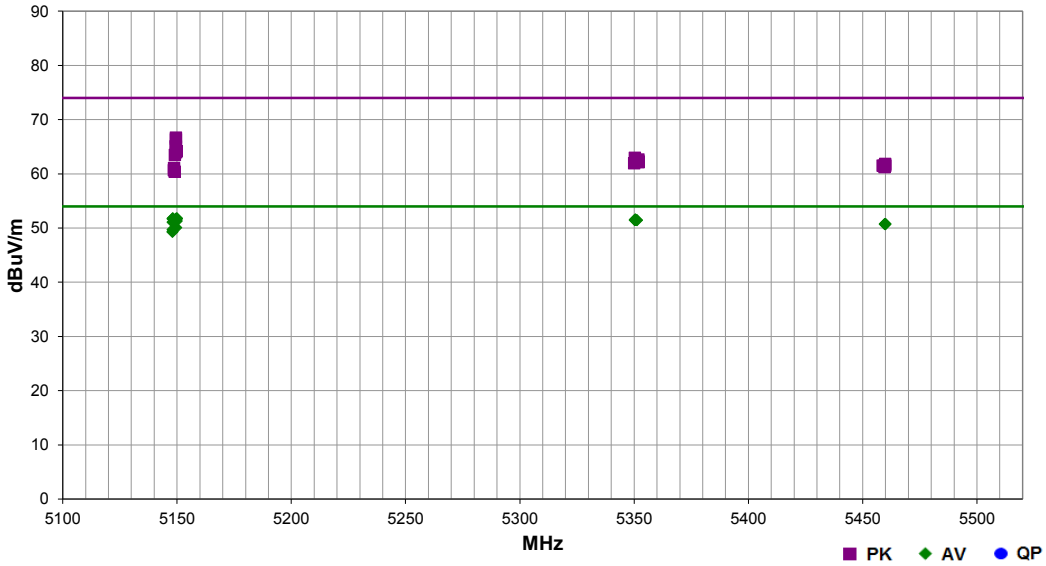

| | Freq (MHz) | Antenna Height (meters) | Azimuth (degrees) | Polarity/ Transducer Type | Detector | EIRP (Watts) | EIRP (dBm) | Spec. Limit (dBm) | Compared to Spec. (dB) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| | 17100.240 | 1.0 | 206.0 | Vert | PK | 5.43E-08 | -42.7 | -27.0 | -15.7 | Ch. 140, 5700MHz, 6Mbps, PL=18, EUT Vert |
| | 17100.790 | 1.0 | 242.0 | Horz | PK | 5.18E-08 | -42.9 | -27.0 | -15.9 | Ch. 140, 5700MHz, 6Mbps, PL=18, EUT Horz |
| | 16738.590 | 3.6 | 264.0 | Vert | PK | 4.06E-08 | -43.9 | -27.0 | -16.9 | Ch. 116, 5580MHz, 6Mbps, PL=18, EUT Vert |
| | 16740.880 | 1.0 | 117.0 | Horz | PK | 3.97E-08 | -44.0 | -27.0 | -17.0 | Ch. 116, 5580MHz, 6Mbps, PL=18, EUT Horz |
| | 16500.670 | 1.0 | 112.0 | Vert | PK | 3.52E-08 | -44.5 | -27.0 | -17.5 | Ch. 100, 5500MHz, 6Mbps, PL=18, EUT Vert |
| | 16499.180 | 1.0 | 83.0 | Horz | PK | 3.36E-08 | -44.7 | -27.0 | -17.7 | Ch. 100, 5500MHz, 6Mbps, PL=18, EUT Horz |
| | 10521.180 | 1.0 | 39.0 | Horz | PK | 2.51E-09 | -56.0 | -27.0 | -29.0 | Ch. 52, 5260MHz, 6Mbps, PL=11, EUT Horz |
| | 10360.720 | 1.0 | 286.0 | Horz | PK | 2.42E-09 | -56.2 | -27.0 | -29.2 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Horz |
| | 10360.300 | 1.0 | 181.0 | Vert | PK | 2.37E-09 | -56.3 | -27.0 | -29.3 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Vert |
| | 10479.130 | 1.0 | 330.0 | Horz | PK | 2.34E-09 | -56.3 | -27.0 | -29.3 | Ch. 48, 5240MHz, 6Mbps, PL=11, EUT Horz |
| | 10520.810 | 1.0 | 323.0 | Vert | PK | 2.29E-09 | -56.4 | -27.0 | -29.4 | Ch. 52, 5260MHz, 6Mbps, PL=11, EUT Vert |
| | 10481.140 | 1.0 | 78.0 | Vert | PK | 2.00E-09 | -57.0 | -27.0 | -30.0 | Ch. 48, 5240MHz, 6Mbps, PL=11, EUT Vert |

# SPURIOUS RADIATED EMISSIONS

| | | | | | |
|---|---|---|---|---|---|
| **Work Order:** | ETHE0009 | **Date:** | 09/24/14 | | |
| **Project:** | None | **Temperature:** | 23.1 °C | | |
| **Job Site:** | EV01 | **Humidity:** | 50.6% RH | | |
| **Serial Number:** | 00409D 7C03CE | **Barometric Pres.:** | 1009 mbar | **Tested by:** | Jared Ison |
| **EUT:** | ConnectCore i.MX6 WiFi/Bluetooth | | | | |
| **Configuration:** | 6 | | | | |
| **Customer:** | Etherios Design Solutions | | | | |
| **Attendees:** | None | | | | |
| **EUT Power:** | 5VDC | | | | |
| **Operating Mode:** | Continuous Tx Ethertronics Antenna | | | | |
| **Deviations:** | None | | | | |
| **Comments:** | Please reference the data comments for EUT orientation, power level, modulation and frequency. | | | | |

| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.407:2014 | ANSI C63.10:2009 |

| **Run #** | 141 | **Test Distance (m)** | 1 | **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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5148.157 | 24.4 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 51.8 | 54.0 | -2.2 | Ch. 36, 5180MHz, 54Mbps, PL=11, EUT Vert |
| 5149.923 | 24.4 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 51.8 | 54.0 | -2.2 | Ch. 36, 5180MHz, MCS0, PL=11, EUT Vert |
| 5148.100 | 24.3 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 51.7 | 54.0 | -2.3 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Vert |
| 5149.507 | 24.3 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 51.7 | 54.0 | -2.3 | Ch. 36, 5180MHz, 36Mbps, PL=11, EUT Vert |
| 5149.940 | 24.3 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 51.7 | 54.0 | -2.3 | Ch. 36, 5180MHz, MCS7, PL=11, EUT Vert |
| 5350.613 | 23.6 | 37.5 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 51.6 | 54.0 | -2.4 | Ch. 64, 5320MHz, 6Mbps, PL=11, EUT Vert |
| 5350.303 | 23.5 | 37.5 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 51.5 | 54.0 | -2.5 | Ch. 64, 5320MHz, 54Mbps, PL=11, EUT Vert |
| 5350.420 | 23.5 | 37.5 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 51.5 | 54.0 | -2.5 | Ch. 64, 5320MHz, MCS7, PL=11, EUT Vert |
| 5350.610 | 23.5 | 37.5 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 51.5 | 54.0 | -2.5 | Ch. 64, 5320MHz, MCS0, PL=11, EUT Vert |
| 5351.260 | 23.5 | 37.5 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 51.5 | 54.0 | -2.5 | Ch. 64, 5320MHz, 36Mbps, PL=11, EUT Vert |
| 5149.893 | 23.9 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 51.3 | 54.0 | -2.7 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Horz |
| 5148.077 | 23.7 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Vert | AV | -9.5 | 51.1 | 54.0 | -2.9 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT On Side |
| 5459.943 | 22.7 | 37.6 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 50.7 | 54.0 | -3.3 | Ch. 100, 5500MHz, 36Mbps, PL=11, EUT Vert |
| 5459.947 | 22.7 | 37.6 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 50.7 | 54.0 | -3.3 | Ch. 100, 5500MHz, MCS7, PL=11, EUT Vert |
| 5459.883 | 22.7 | 37.6 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 50.7 | 54.0 | -3.3 | Ch. 100, 5500MHz, MCS0, PL=11, EUT Vert |
| 5459.870 | 22.7 | 37.6 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 50.7 | 54.0 | -3.3 | Ch. 100, 5500MHz, 6Mbps, PL=11, EUT Vert |
| 5459.700 | 22.7 | 37.6 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 50.7 | 54.0 | -3.3 | Ch. 100, 5500MHz, 54Mbps, PL=11, EUT Vert |
| 5149.623 | 22.7 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Vert | AV | -9.5 | 50.1 | 54.0 | -3.9 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Horz |
| 5148.127 | 22.3 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 49.7 | 54.0 | -4.3 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT On Side |
| 5148.020 | 21.9 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Vert | AV | -9.5 | 49.3 | 54.0 | -4.7 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Vert |
| 5149.533 | 39.3 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 66.7 | 74.0 | -7.3 | Ch. 36, 5180MHz, MCS0, PL=11, EUT Vert |
| 5149.500 | 39.0 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 66.4 | 74.0 | -7.6 | Ch. 36, 5180MHz, 36Mbps, PL=11, EUT Vert |
| 5149.413 | 37.7 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Vert | PK | -9.5 | 65.1 | 74.0 | -8.9 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT On Side |
| 5149.490 | 37.7 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 65.1 | 74.0 | -8.9 | Ch. 36, 5180MHz, 54Mbps, PL=11, EUT Vert |
| 5149.820 | 36.8 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 64.2 | 74.0 | -9.8 | Ch. 36, 5180MHz, MCS7, PL=11, EUT Vert |
| 5149.563 | 36.6 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 64.0 | 74.0 | -10.0 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Vert |
| 5149.063 | 36.1 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 63.5 | 74.0 | -10.5 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Horz |
| 5350.333 | 35.0 | 37.5 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 63.0 | 74.0 | -11.0 | Ch. 64, 5320MHz, 36Mbps, PL=11, EUT Vert |
| 5351.840 | 34.7 | 37.5 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 62.7 | 74.0 | -11.3 | Ch. 64, 5320MHz, 6Mbps, PL=11, EUT Vert |
| 5351.837 | 34.4 | 37.5 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 62.4 | 74.0 | -11.6 | Ch. 64, 5320MHz, MCS7, PL=11, EUT Vert |
| 5351.947 | 34.2 | 37.5 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 62.2 | 74.0 | -11.8 | Ch. 64, 5320MHz, 54Mbps, PL=11, EUT Vert |
| 5350.023 | 34.0 | 37.5 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 62.0 | 74.0 | -12.0 | Ch. 64, 5320MHz, MCS0, PL=11, EUT Vert |
| 5459.827 | 33.8 | 37.6 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 61.8 | 74.0 | -12.2 | Ch. 100, 5500MHz, 6Mbps, PL=11, EUT Vert |
| 5459.930 | 33.5 | 37.6 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 61.5 | 74.0 | -12.5 | Ch. 100, 5500MHz, 54Mbps, PL=11, EUT Vert |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5459.463 | 33.5 | 37.6 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 61.5 | 74.0 | -12.5 | Ch. 100, 5500MHz, MCS7, PL=11, EUT Vert |
| 5458.753 | 33.5 | 37.6 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 61.5 | 74.0 | -12.5 | Ch. 100, 5500MHz, MCS0, PL=11, EUT Vert |
| 5459.573 | 33.2 | 37.6 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 61.2 | 74.0 | -12.8 | Ch. 100, 5500MHz, 36Mbps, PL=11, EUT Vert |
| 5148.673 | 33.7 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 61.1 | 74.0 | -12.9 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT On Side |
| 5148.620 | 33.3 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Vert | PK | -9.5 | 60.7 | 74.0 | -13.3 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Horz |
| 5148.973 | 33.0 | 36.9 | 1.2 | 360.0 | 1.0 | 0.0 | Vert | PK | -9.5 | 60.4 | 74.0 | -13.6 | Ch. 36, 5180MHz, 6Mbps, PL=11, EUT Vert |

# BAND EDGE COMPLIANCE

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 |
|---|---|---|---|---|---|
| Attenuator - 20db, 'SMA' | SM Electronics | SA26B-20 | RFW | 4/3/2014 | 12 |
| 40 GHz DC block | Fairview Microwave | SD3379 | AMI | 9/26/2013 | 14 |
| Signal Generator MXG | Agilent | N5183A | TIK | 6/7/2012 | 36 |
| Spectrum Analyzer | Agilent | E4440A | AAX | 4/28/2014 | 12 |

**TEST DESCRIPTION**

The spurious RF conducted emissions at the edges of the authorized bands were measured with the EUT set to low and high transmit frequencies in each available band. The channels closest to the band edges were selected. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet.

The spectrum was scanned below the lower band edge and above the higher band edge.

# BAND EDGE COMPLIANCE

| | | | | | |
|---|---|---|---|---|---|
| EUT: | ConnectCore i.MX6 WiFi/Bluetooth | | | Work Order: | ETHE0009 |
| Serial Number: | 00409D 7C03B4 | | | Date: | 09/26/14 |
| Customer: | Etherios Design Solutions | | | Temperature: | 23 |
| Attendees: | None | | | Humidity: | 48% |
| Project: | None | | | Barometric Pres.: | 1024.7 |
| Tested by: | Trevor Buls | Power: | 5VDC | Job Site: | MN08 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.407:2014 | ANSI C63.10:2009 |
| | |

**COMMENTS**

None

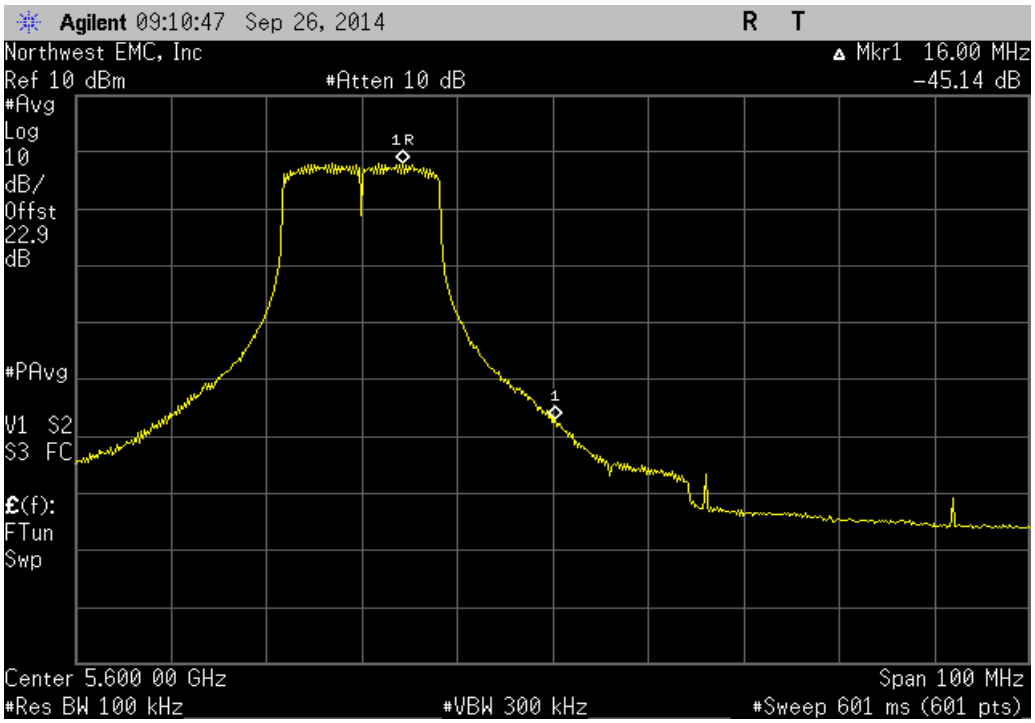
**DEVIATIONS FROM TEST STANDARD**

None

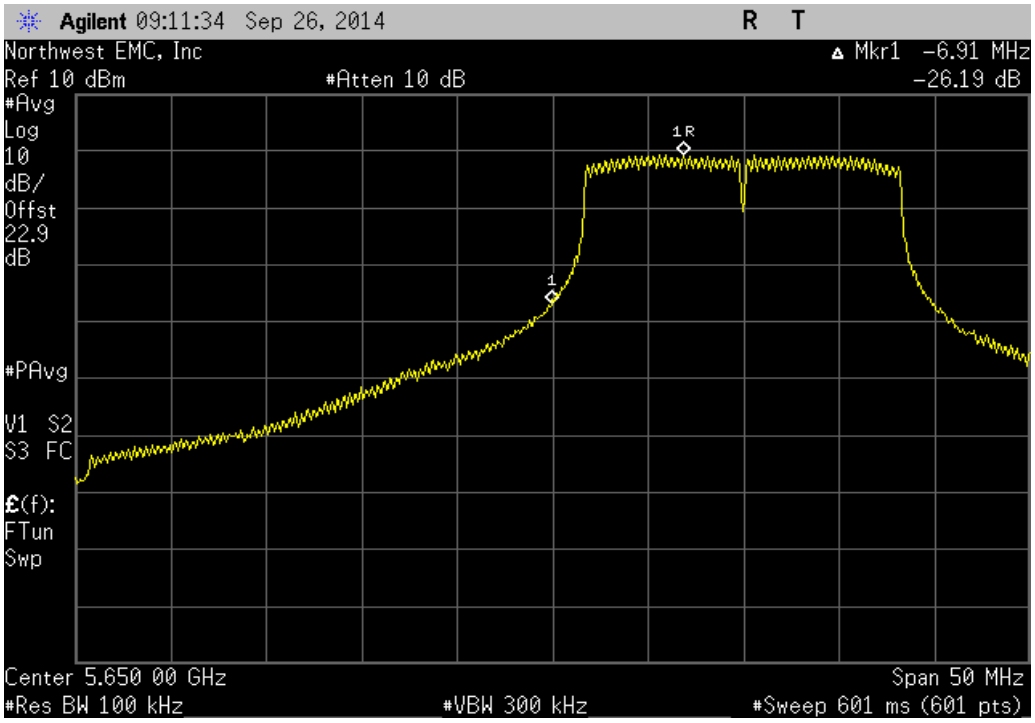
| Configuration # | 1 | Signature | Trevor Buls |
|---|---|---|---|

| | | Value (dBc) | Limit < (dBc) | Result |
|---|---|---|---|---|
| 802.11(a) 6 Mbps | | | | |
| | 5600 MHz Band Edge | | | |
| | Channel 116, 5580 MHz | -45.14 | -20 | Pass |
| | 5650 MHz Band Edge | | | |
| | Channel 132, 5660 MHz | -26.19 | dBc | Pass |
| 802.11(a) 36 Mbps | | | | |
| | 5600 MHz Band Edge | | | |
| | Channel 116, 5580 MHz | -43.66 | -20 | Pass |
| | 5650 MHz Band Edge | | | |
| | Channel 132, 5660 MHz | -26.48 | dBc | Pass |
| 802.11(a) 54 Mbps | | | | |
| | 5600 MHz Band Edge | | | |
| | Channel 116, 5580 MHz | -52.07 | -20 | Pass |
| | 5650 MHz Band Edge | | | |
| | Channel 132, 5660 MHz | -26.75 | dBc | Pass |
| 802.11(n) MCS0 | | | | |
| | 5600 MHz Band Edge | | | |
| | Channel 116, 5580 MHz | -43.15 | -20 | Pass |
| | 5650 MHz Band Edge | | | |
| | Channel 132, 5660 MHz | -24.19 | dBc | Pass |
| 802.11(n) MCS7 | | | | |
| | 5600 MHz Band Edge | | | |
| | Channel 116, 5580 MHz | -51.02 | -20 | Pass |
| | 5650 MHz Band Edge | | | |
| | Channel 132, 5660 MHz | -25.69 | dBc | Pass |

| 802.11(a) 6 Mbps, 5600 MHz Band Edge, Channel 116, 5580 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBc) | Limit < (dBc) | Result |
| | | | | -45.14 | -20 | Pass |

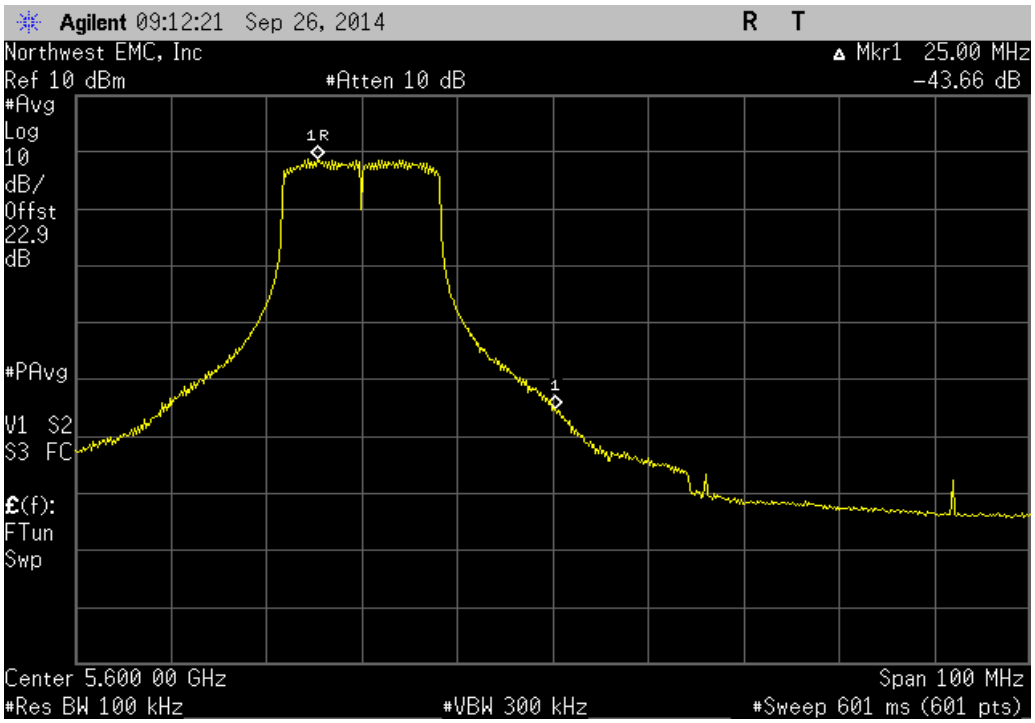



| 802.11(a) 6 Mbps, 5650 MHz Band Edge, Channel 132, 5660 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBc) | Limit < (dBc) | Result |
| | | | | -26.19 | dBc | Pass |

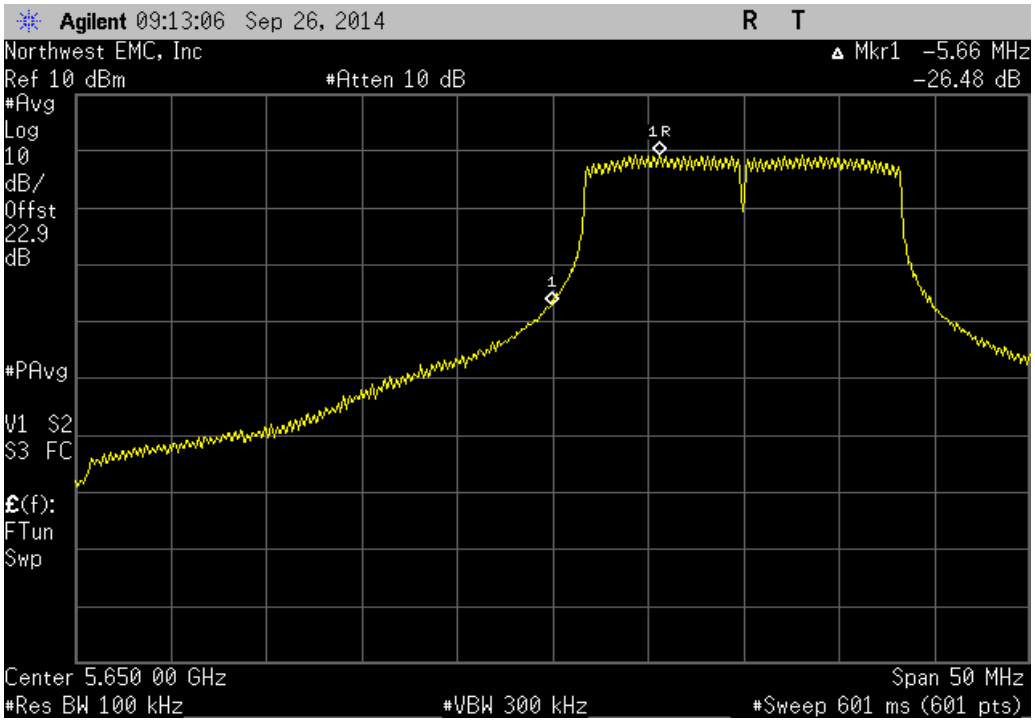


# BAND EDGE COMPLIANCE

| 802.11(a) 36 Mbps, 5600 MHz Band Edge, Channel 116, 5580 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBc) | Limit < (dBc) | Result |
| | | | | -43.66 | -20 | Pass |

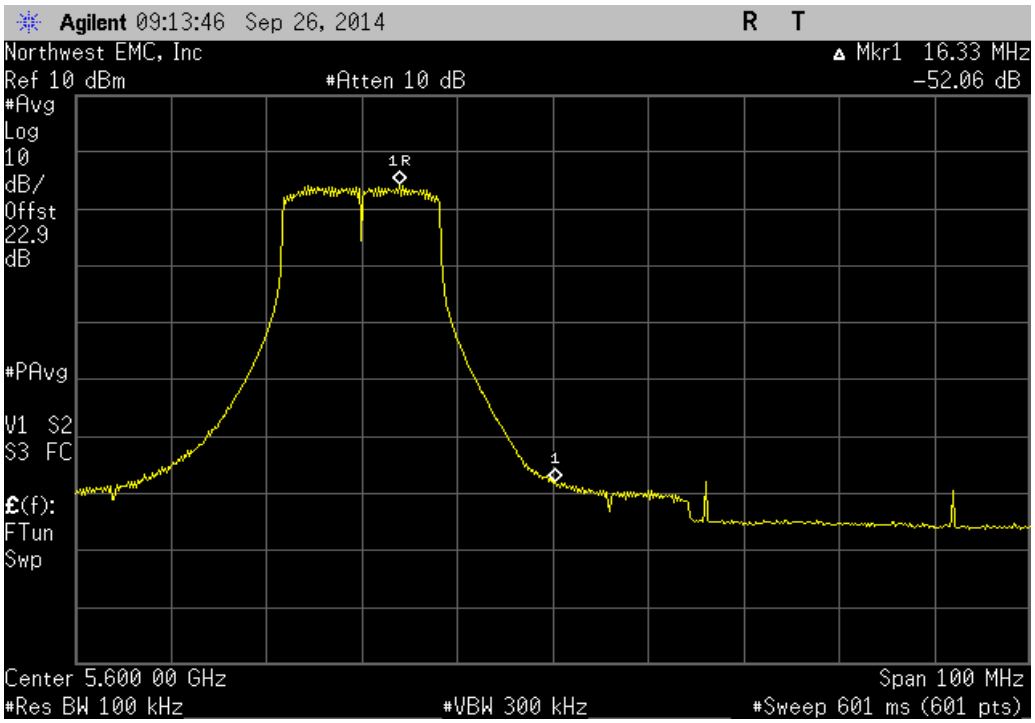



| 802.11(a) 36 Mbps, 5650 MHz Band Edge, Channel 132, 5660 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBc) | Limit < (dBc) | Result |
| | | | | -26.48 | dBc | Pass |

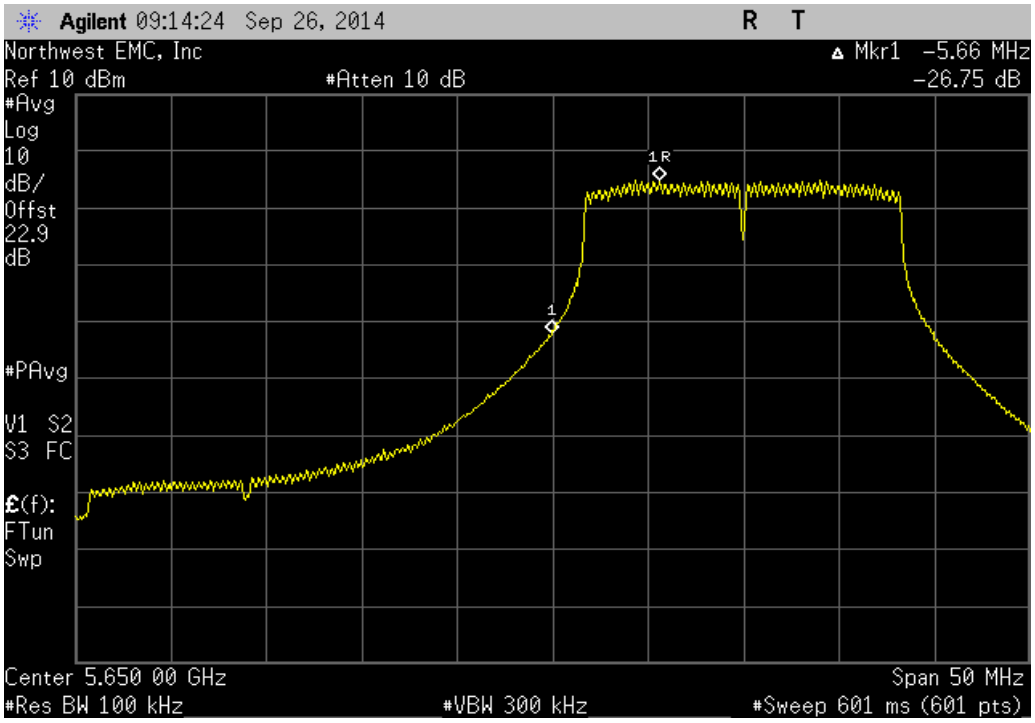


# BAND EDGE COMPLIANCE

| 802.11(a) 54 Mbps, 5600 MHz Band Edge, Channel 116, 5580 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBc) | Limit < (dBc) | Result |
| | | | | -52.07 | -20 | Pass |

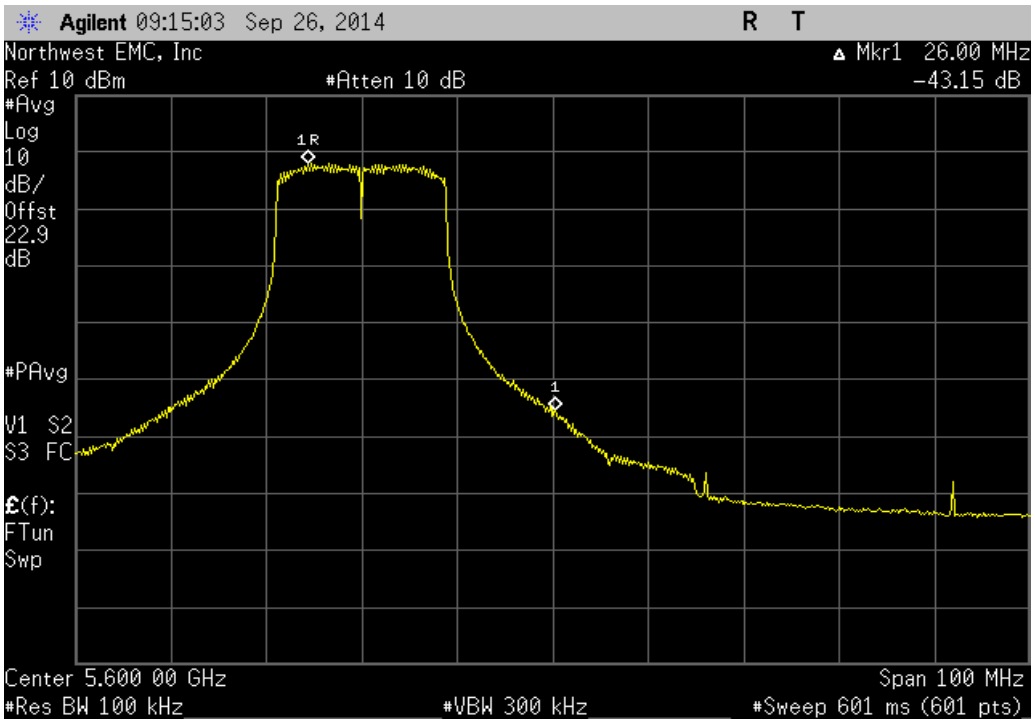



| 802.11(a) 54 Mbps, 5650 MHz Band Edge, Channel 132, 5660 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBc) | Limit < (dBc) | Result |
| | | | | -26.75 | dBc | Pass |

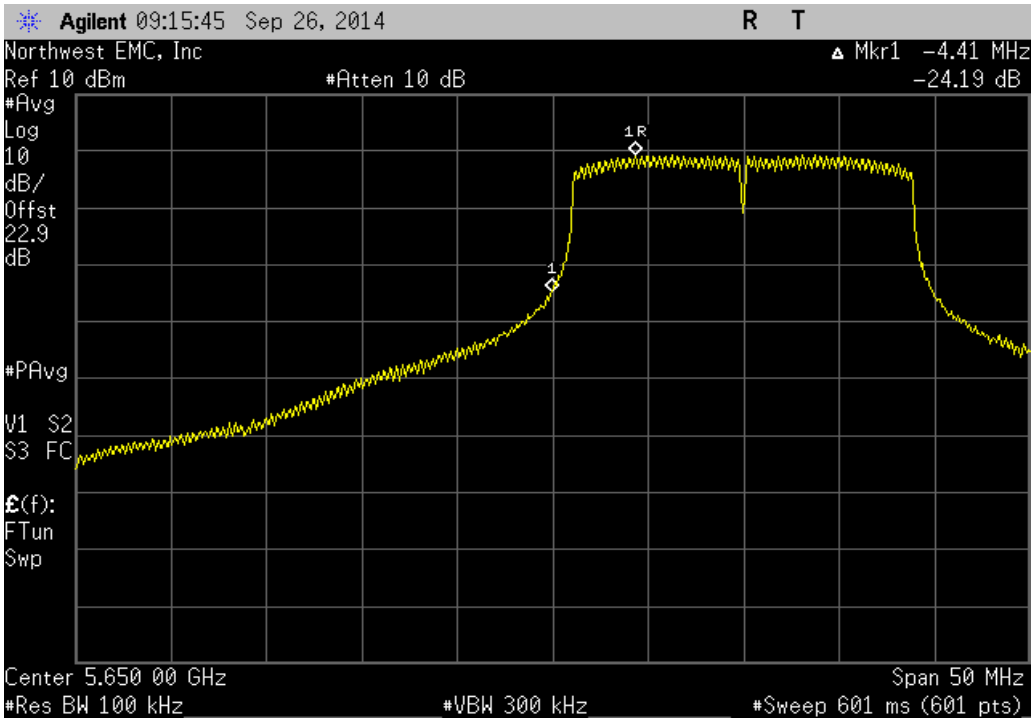


# BAND EDGE COMPLIANCE

| 802.11(n) MCS0, 5600 MHz Band Edge, Channel 116, 5580 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBc) | Limit < (dBc) | Result |
| | | | | -43.15 | -20 | Pass |

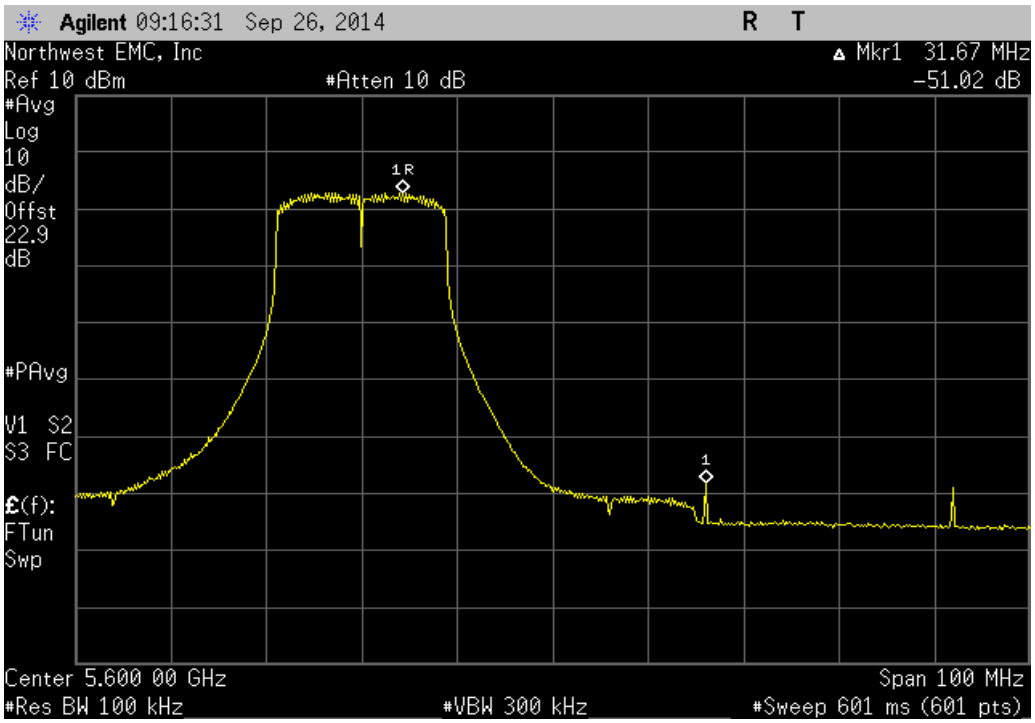



| 802.11(n) MCS0, 5650 MHz Band Edge, Channel 132, 5660 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBc) | Limit < (dBc) | Result |
| | | | | -24.19 | dBc | Pass |

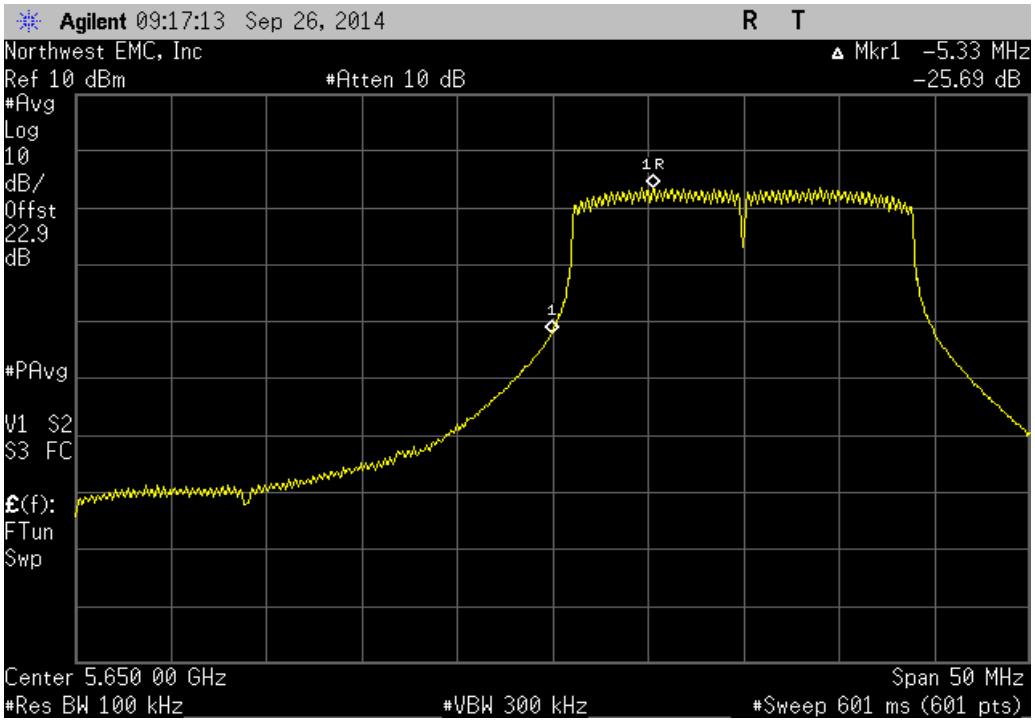


# BAND EDGE COMPLIANCE

| 802.11(n) MCS7, 5600 MHz Band Edge, Channel 116, 5580 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBc) | Limit < (dBc) | Result |
| | | | | -51.02 | -20 | Pass |




| 802.11(n) MCS7, 5650 MHz Band Edge, Channel 132, 5660 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBc) | Limit < (dBc) | Result |
| | | | | -25.69 | dBc | Pass |



# FREQUENCY STABILITY

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 |
|---|---|---|---|---|---|
| Single Output DC Power Supply, 30V/5A, 150W | Agilent | U8002A | TPZ | NCR | 0 |
| Multimeter | Fluke | 114 | MMU | 6/30/2014 | 36 |
| Humidity Temperature Meter | Omega Engineering, Inc. | HH31 | DUB | 10/25/2011 | 36 |
| Humidity Temperature Chamber | Cincinnati Sub Zero (CSZ) | ZPH-32-3.5-SCT/AC | TBF | NCR | 0 |
| Attenuator - 20db, 'SMA' | SM Electronics | SA26B-20 | RFW | 4/3/2014 | 12 |
| 40 GHz DC block | Fairview Microwave | SD3379 | AMI | 9/26/2013 | 12 |
| Signal Generator MXG | Agilent | N5183A | TIK | 6/7/2012 | 36 |
| Spectrum Analyzer | Agilent | E4440A | AAX | 4/28/2014 | 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.

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.

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

| | | | | | |
|---|---|---|---|---|---|
| EUT: | ConnectCore i.MX6 WiFi/Bluetooth | | | Work Order: | ETHE0009 |
| Serial Number: | 00409D 7C03B4 | | | Date: | 09/23/14 |
| Customer: | Etherios Design Solutions | | | Temperature: | 22.1 |
| Attendees: | None | | | Humidity: | 49% |
| Project: | None | | | Barometric Pres.: | 1025.4 |
| Tested by: | Trevor Buls | Power: | 5VDC | Job Site: | MN08 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.407:2014 | ANSI C63.10:2009 |

**COMMENTS**

Varied voltage from 4.25-5.75Vdc.

**DEVIATIONS FROM TEST STANDARD**

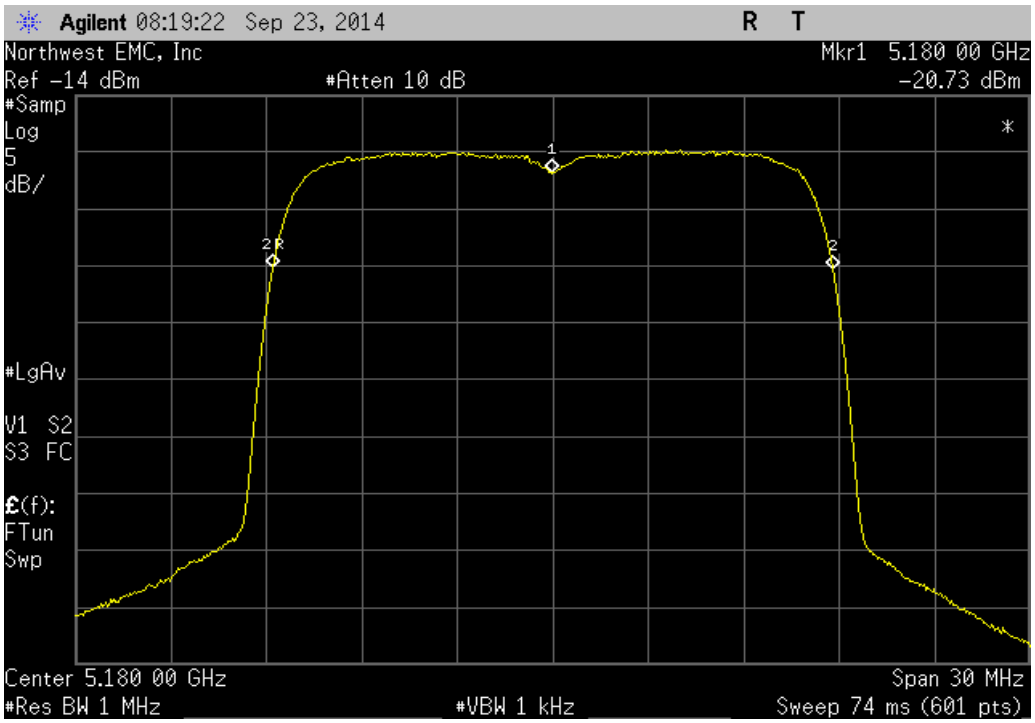
None

| Configuration # | 1 | Signature Trevor Buls |
|---|---|---|

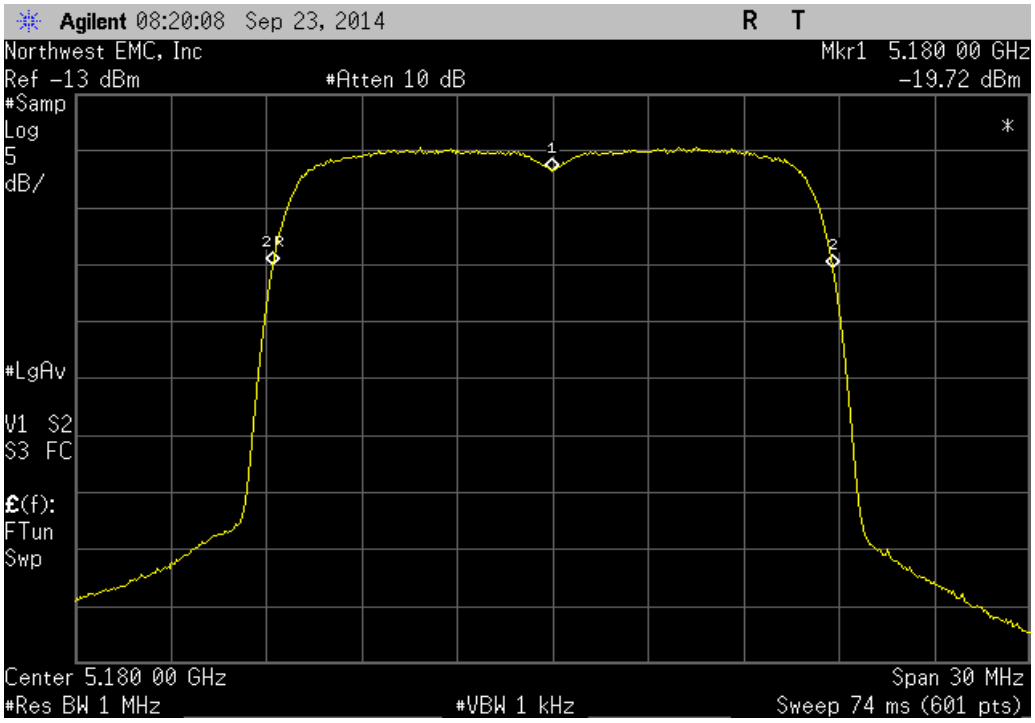
| | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
|---|---|---|---|---|---|
| 5150 MHz - 5250 MHz - Low Channel, 5180 MHz | | | | | |
| Voltage: 115% | 5180 | 5180 | 0 | 100 | Pass |
| Voltage: 100% | 5180 | 5180 | 0 | 100 | Pass |
| Voltage: 85% | 5180 | 5180 | 0 | 100 | Pass |
| Temperature: +50° | 5180 | 5180 | 0 | 100 | Pass |
| Temperature: +40° | 5180 | 5180 | 0 | 100 | Pass |
| Temperature: +30° | 5180 | 5180 | 0 | 100 | Pass |
| Temperature: +20° | 5180 | 5180 | 0 | 100 | Pass |
| Temperature: +10° | 5180.02 | 5180 | 3.9 | 100 | Pass |
| Temperature: 0° | 5180.02 | 5180 | 3.9 | 100 | Pass |
| Temperature: -10° | 5180.02 | 5180 | 3.9 | 100 | Pass |
| Temperature: -20° | 5180.05 | 5180 | 9.7 | 100 | Pass |
| Temperature: -30° | 5180.02 | 5180 | 3.9 | 100 | Pass |
| 5250 MHz - 5350 MHz - High Channel, 5320 MHz | | | | | |
| Voltage: 115% | 5320 | 5320 | 0 | 100 | Pass |
| Voltage: 100% | 5320 | 5320 | 0 | 100 | Pass |
| Voltage: 85% | 5319.98 | 5320 | 3.8 | 100 | Pass |
| Temperature: +50° | 5320 | 5320 | 0 | 100 | Pass |
| Temperature: +40° | 5320 | 5320 | 0 | 100 | Pass |
| Temperature: +30° | 5320 | 5320 | 0 | 100 | Pass |
| Temperature: +20° | 5320 | 5320 | 0 | 100 | Pass |
| Temperature: +10° | 5320 | 5320 | 0 | 100 | Pass |
| Temperature: 0° | 5320.02 | 5320 | 3.8 | 100 | Pass |
| Temperature: -10° | 5320.02 | 5320 | 3.8 | 100 | Pass |
| Temperature: -20° | 5320.02 | 5320 | 3.8 | 100 | Pass |
| Temperature: -30° | 5320.02 | 5320 | 3.8 | 100 | Pass |
| 5470 MHz - 5725 MHz - Low Channel, 5500 MHz | | | | | |
| Voltage: 115% | 5499.98 | 5500 | 3.6 | 100 | Pass |
| Voltage: 100% | 5499.98 | 5500 | 3.6 | 100 | Pass |
| Voltage: 85% | 5499.98 | 5500 | 3.6 | 100 | Pass |
| Temperature: +50° | 5500 | 5500 | 0 | 100 | Pass |
| Temperature: +40° | 5499.98 | 5500 | 3.6 | 100 | Pass |
| Temperature: +30° | 5499.98 | 5500 | 3.6 | 100 | Pass |
| Temperature: +20° | 5500 | 5500 | 0 | 100 | Pass |
| Temperature: +10° | 5500 | 5500 | 0 | 100 | Pass |
| Temperature: 0° | 5500.02 | 5500 | 3.6 | 100 | Pass |
| Temperature: -10° | 5500.02 | 5500 | 3.6 | 100 | Pass |
| Temperature: -20° | 5500.02 | 5500 | 3.6 | 100 | Pass |
| Temperature: -30° | 5500.02 | 5500 | 3.6 | 100 | Pass |
| 5470 MHz - 5725 MHz - High Channel, 5700 MHz | | | | | |
| Voltage: 115% | 5699.98 | 5700 | 3.5 | 100 | Pass |
| Voltage: 100% | 5699.98 | 5700 | 3.5 | 100 | Pass |
| Voltage: 85% | 5699.98 | 5700 | 3.5 | 100 | Pass |
| Temperature: +50° | 5699.98 | 5700 | 3.5 | 100 | Pass |
| Temperature: +40° | 5699.98 | 5700 | 3.5 | 100 | Pass |
| Temperature: +30° | 5699.98 | 5700 | 3.5 | 100 | Pass |
| Temperature: +20° | 5699.98 | 5700 | 3.5 | 100 | Pass |
| Temperature: +10° | 5700 | 5700 | 0 | 100 | Pass |
| Temperature: 0° | 5700 | 5700 | 0 | 100 | Pass |
| Temperature: -10° | 5700 | 5700 | 0 | 100 | Pass |
| Temperature: -20° | 5700.02 | 5700 | 3.5 | 100 | Pass |
| Temperature: -30° | 5700 | 5700 | 0 | 100 | Pass |

# FREQUENCY STABILITY

| 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Voltage: 115% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5180 | 5180 | 0 | 100 | Pass |

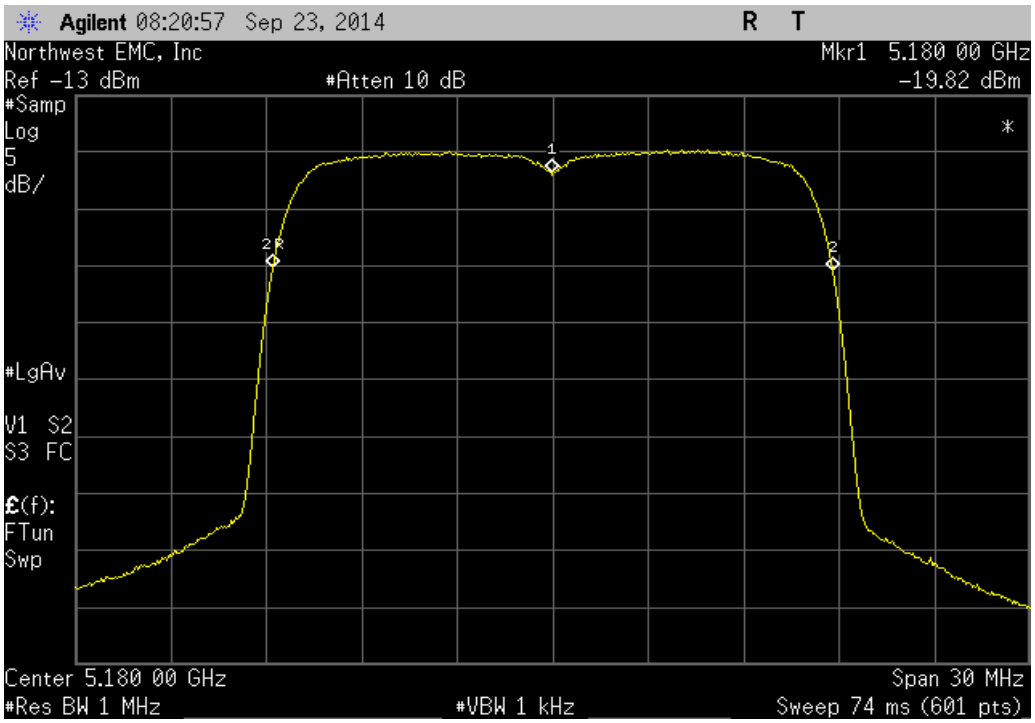



| 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Voltage: 100% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5180 | 5180 | 0 | 100 | Pass |

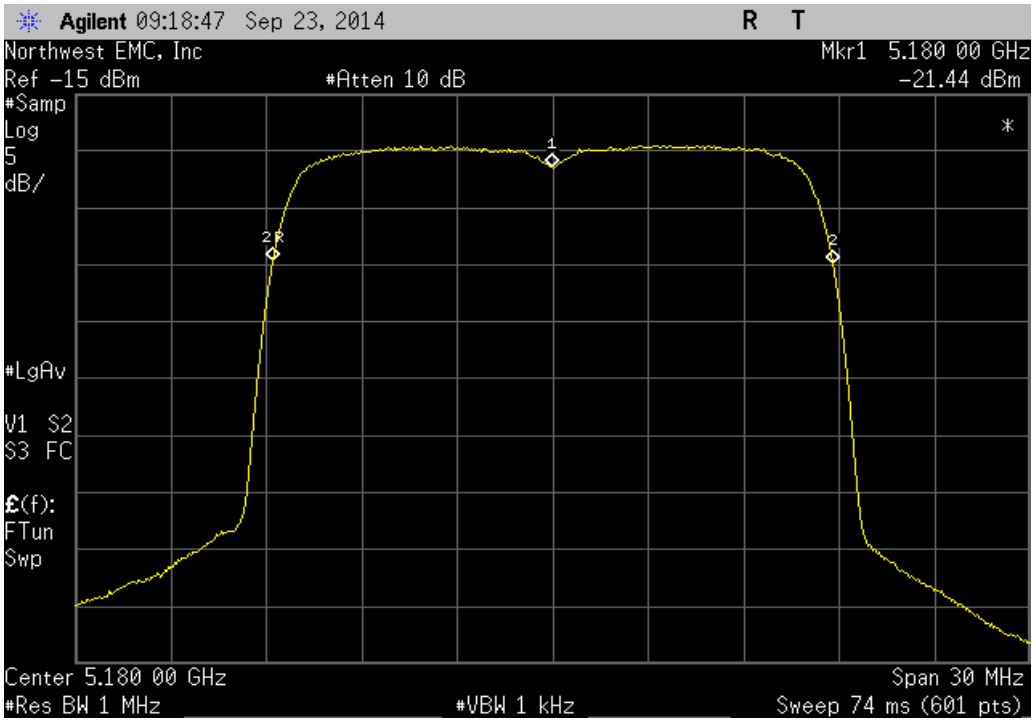


# FREQUENCY STABILITY

| 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Voltage: 85% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5180 | 5180 | 0 | 100 | Pass |

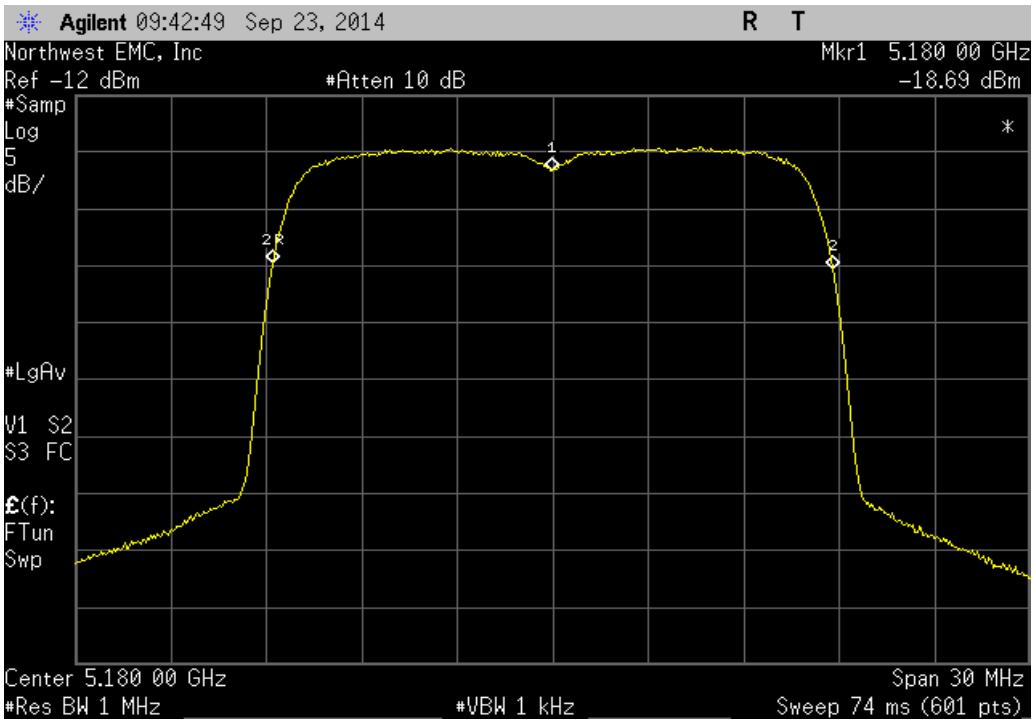



| 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +50° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5180 | 5180 | 0 | 100 | Pass |

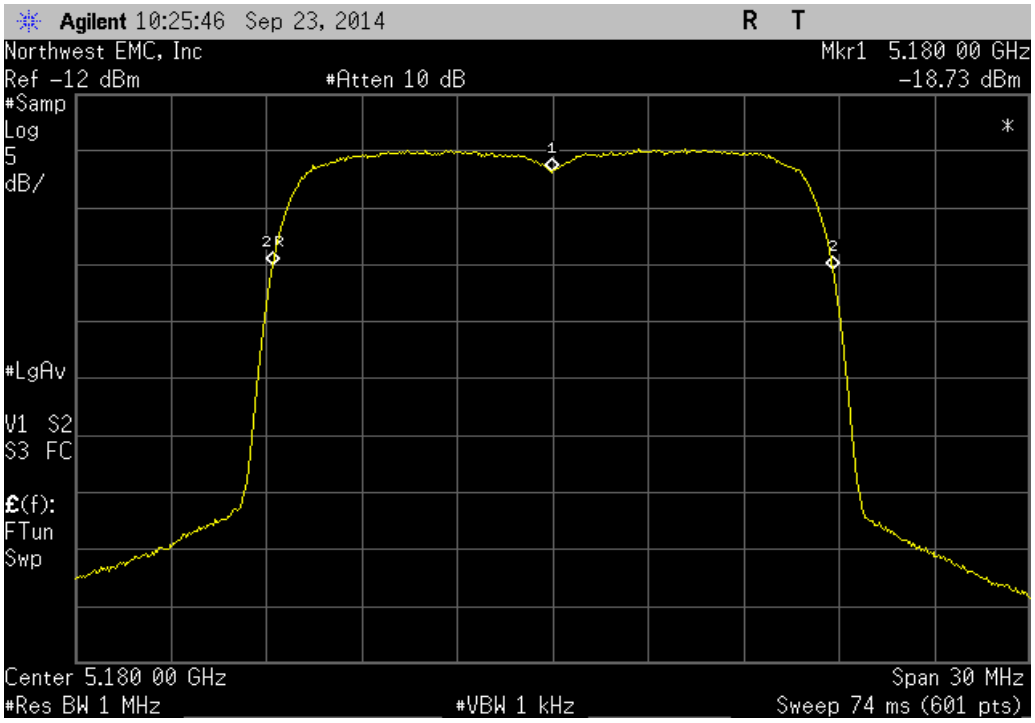


# FREQUENCY STABILITY

| 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +40° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5180 | 5180 | 0 | 100 | Pass |

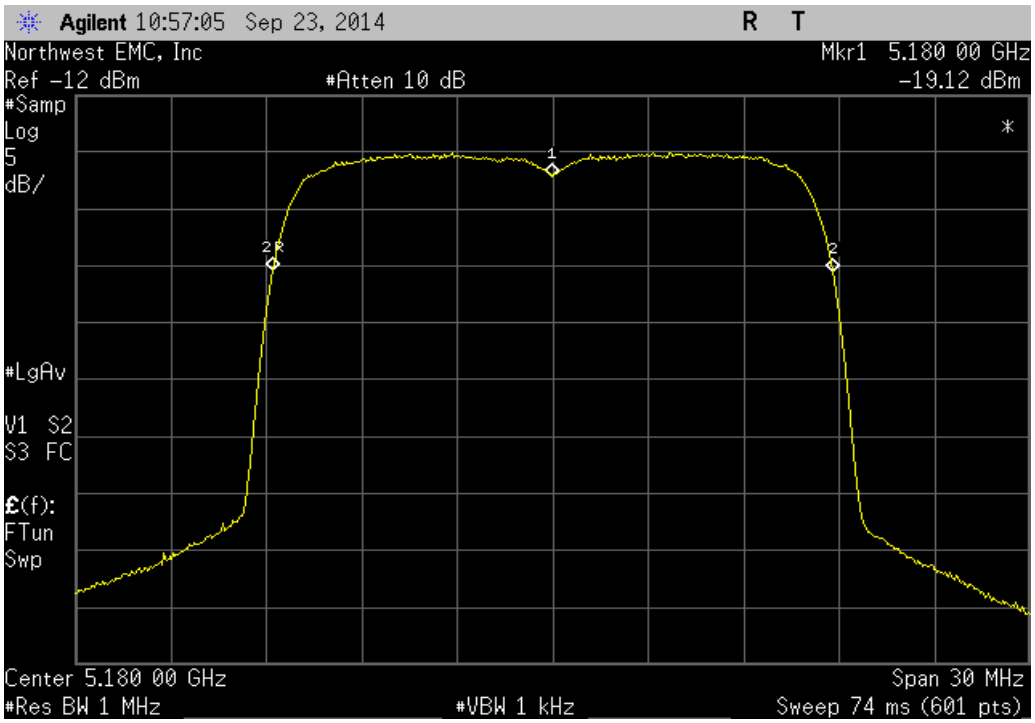



| 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5180 | 5180 | 0 | 100 | Pass |

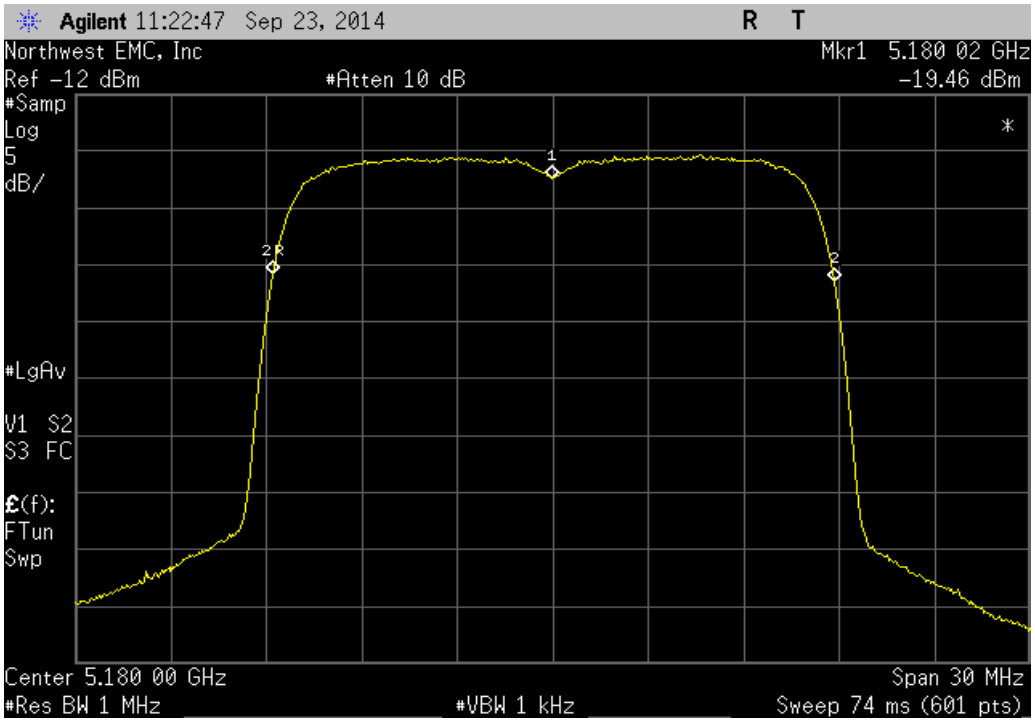


# FREQUENCY STABILITY

| 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5180 | 5180 | 0 | 100 | Pass |

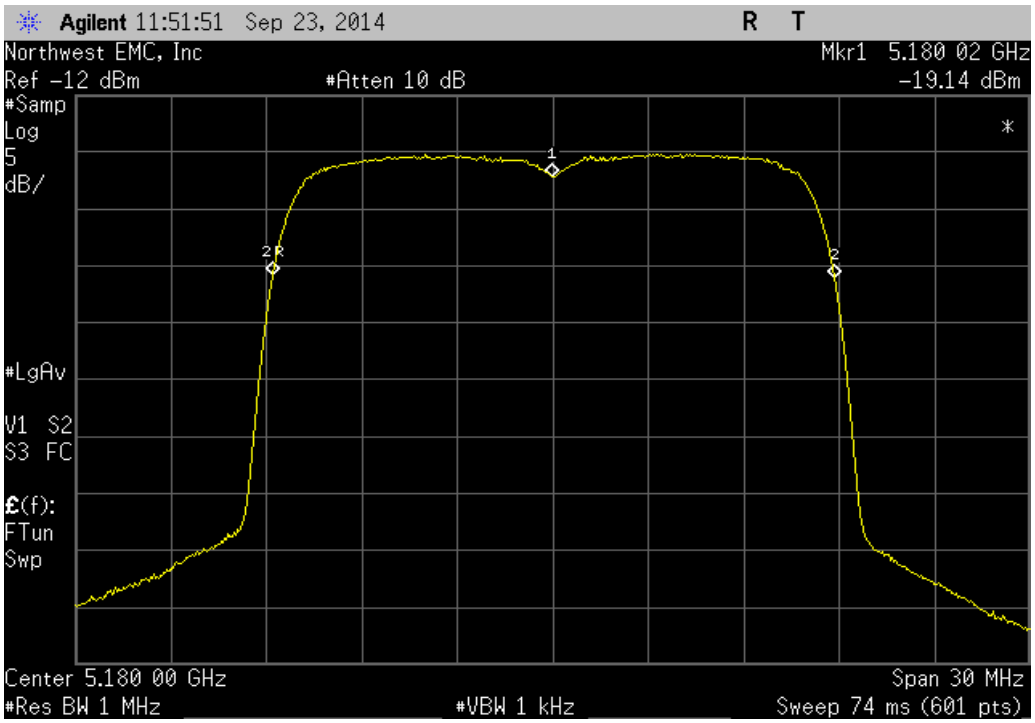



| 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5180.02 | 5180 | 3.9 | 100 | Pass |

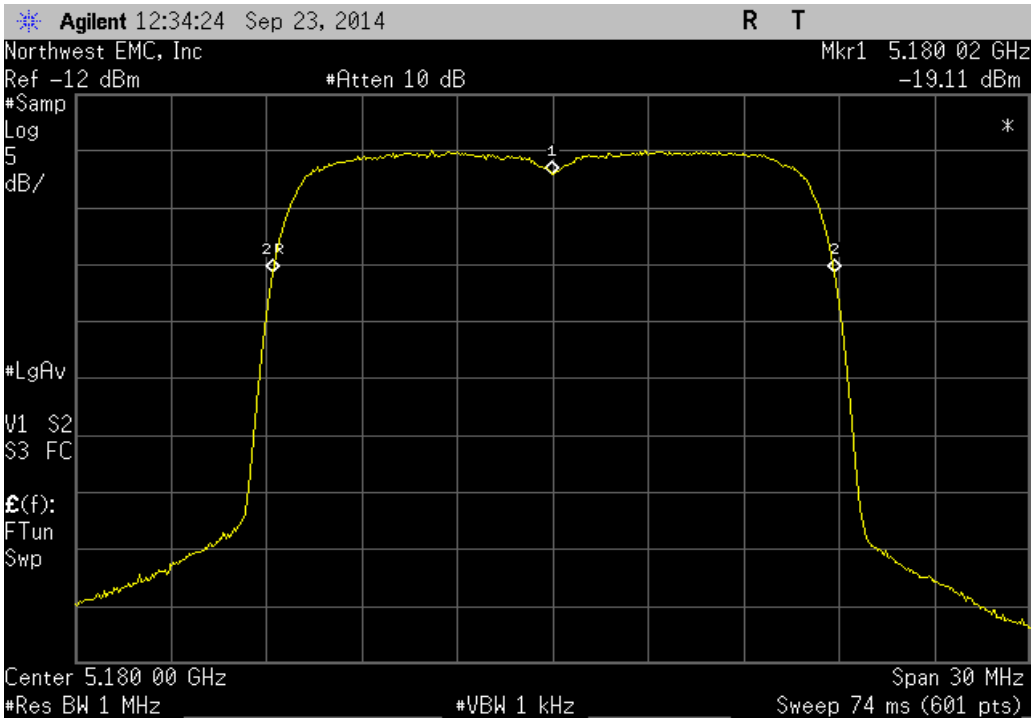


# FREQUENCY STABILITY

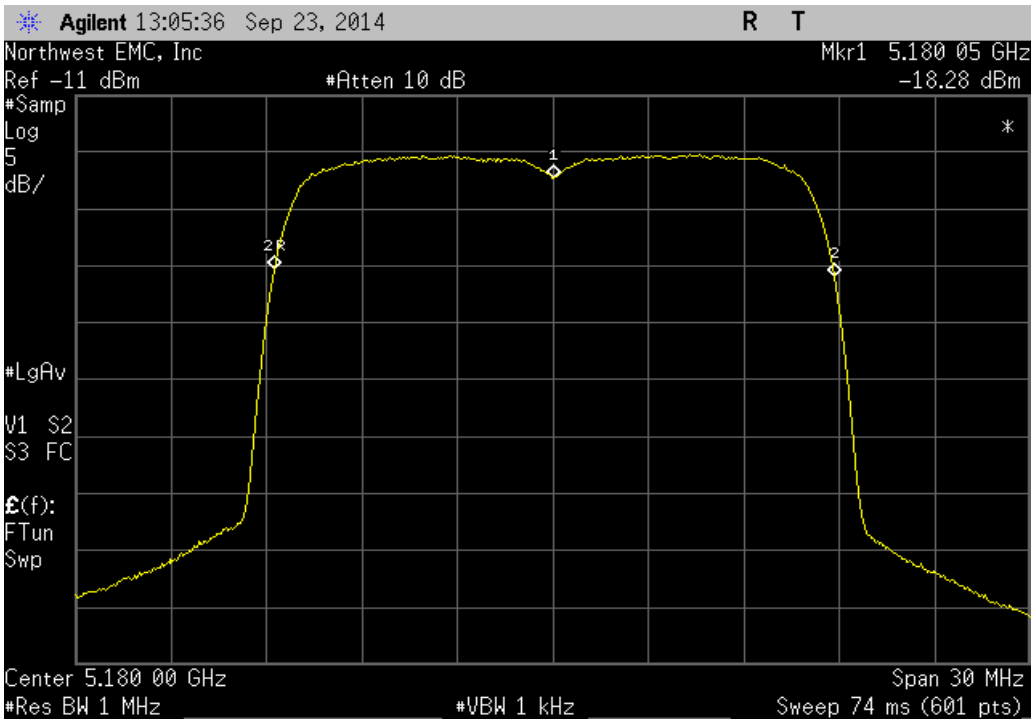
| 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: 0° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5180.02 | 5180 | 3.9 | 100 | Pass |



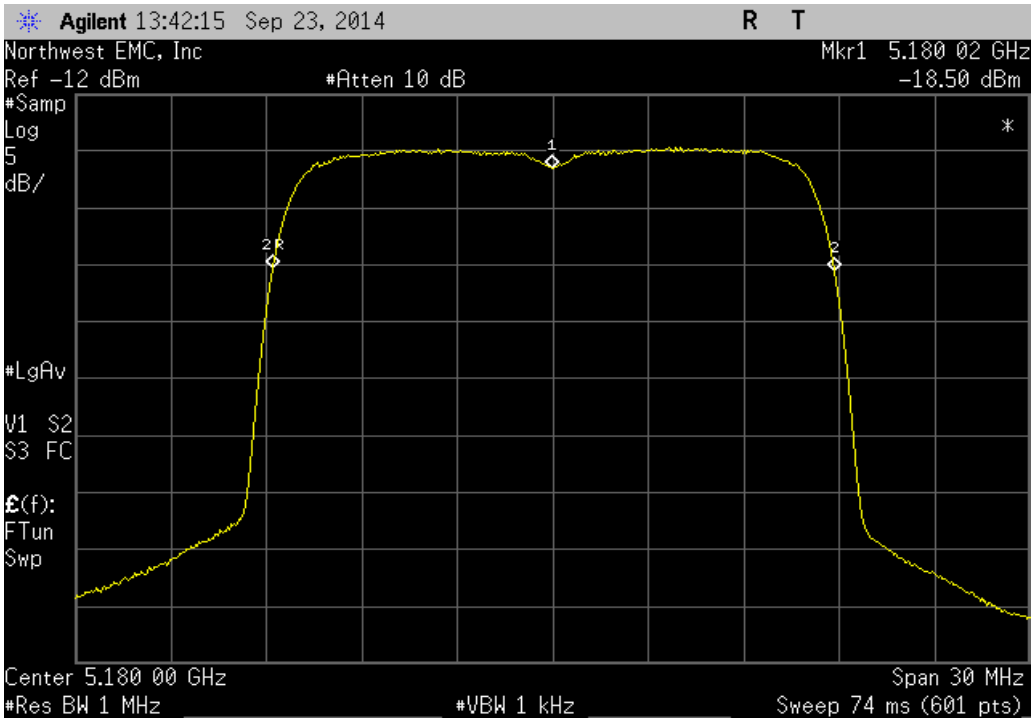

| 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: -10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5180.02 | 5180 | 3.9 | 100 | Pass |



| 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: -20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5180.05 | 5180 | 9.7 | 100 | Pass |

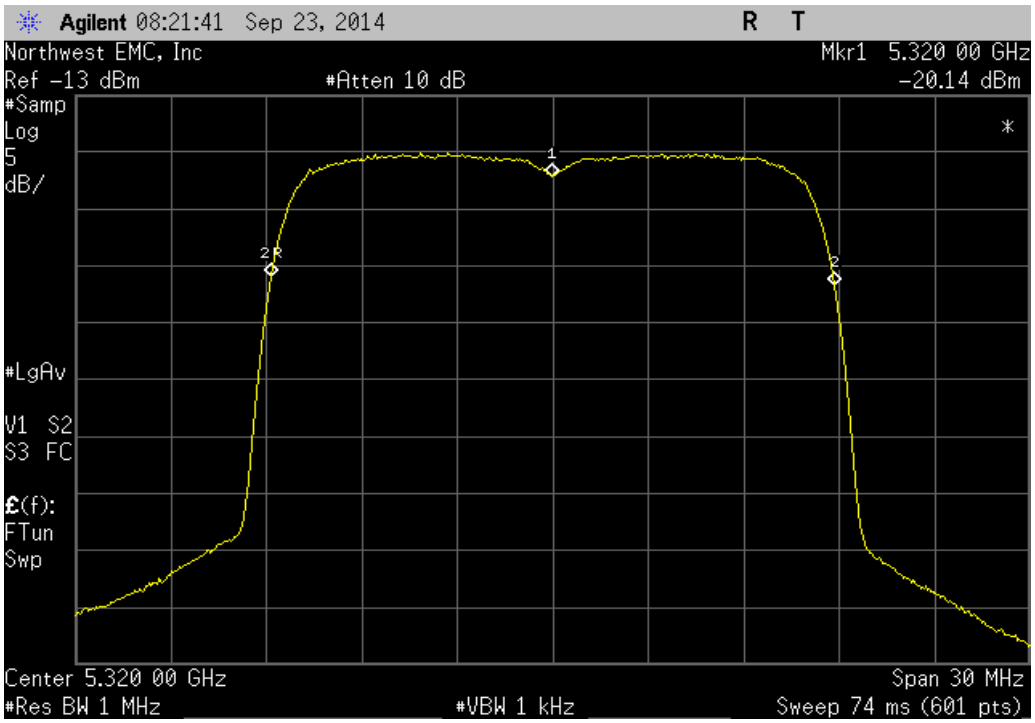



| 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: -30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5180.02 | 5180 | 3.9 | 100 | Pass |

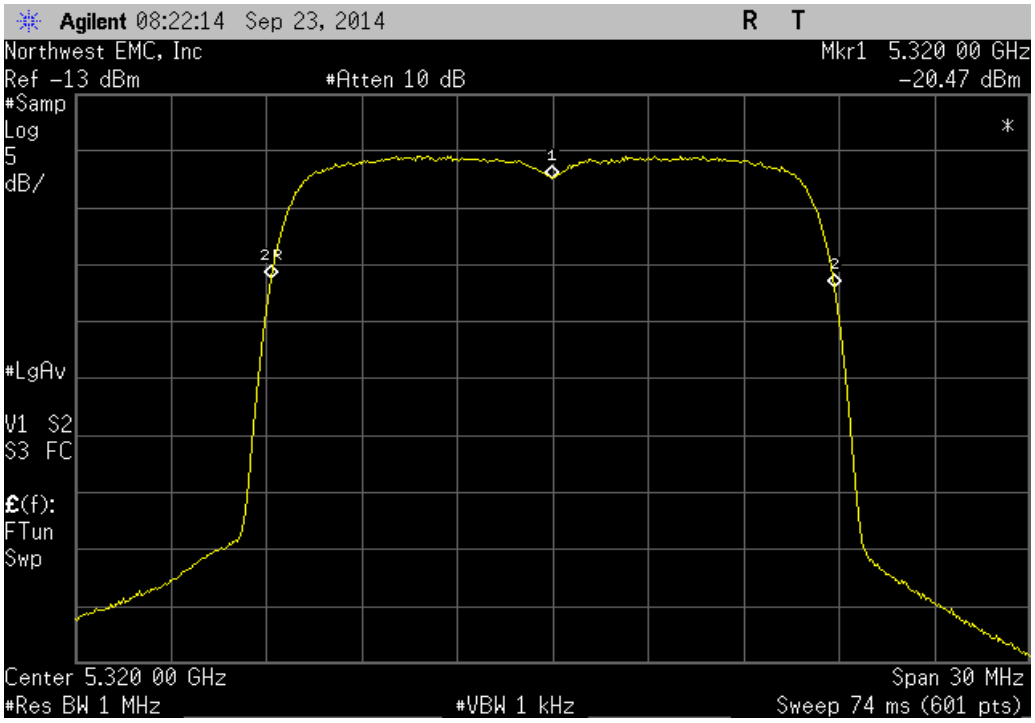


# FREQUENCY STABILITY

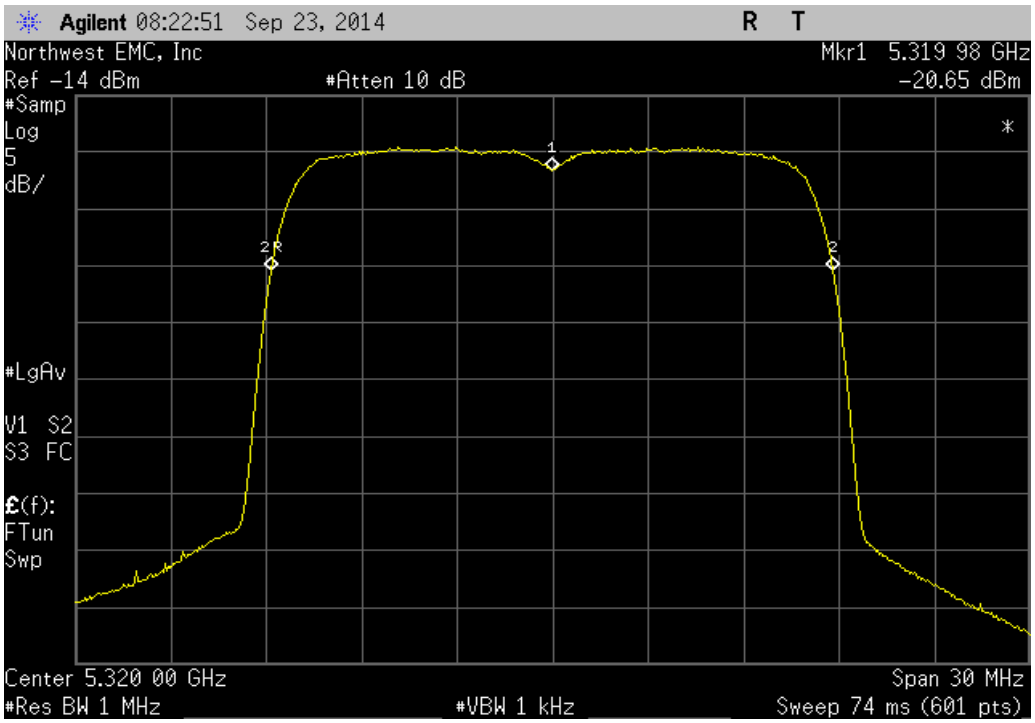
| 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Voltage: 115% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5320 | 5320 | 0 | 100 | Pass |



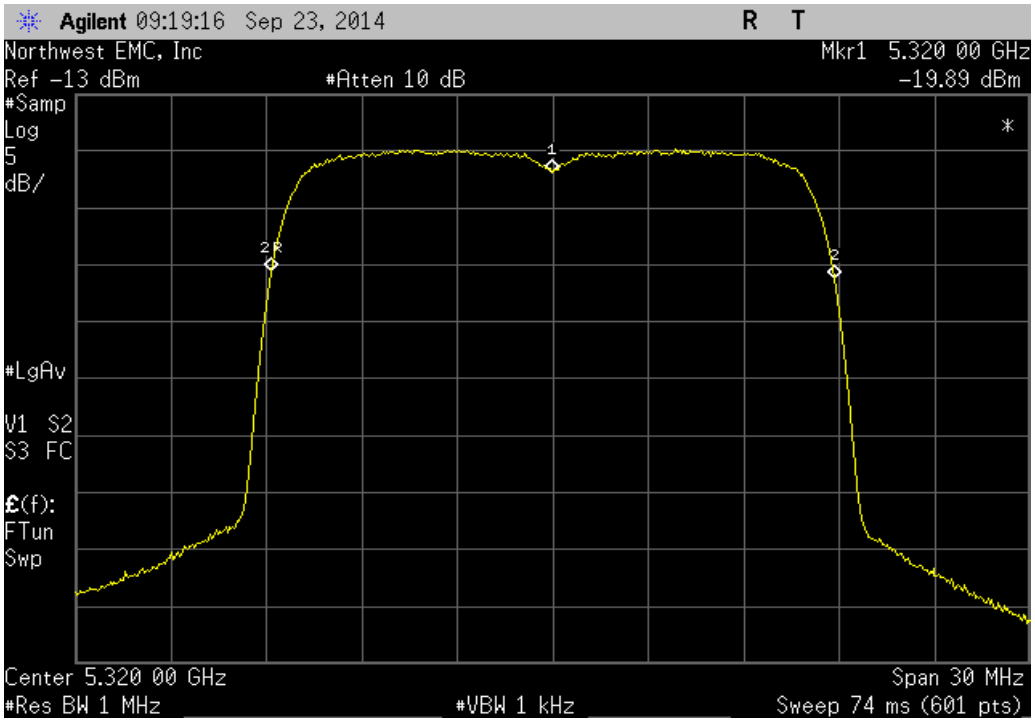

| 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Voltage: 100% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5320 | 5320 | 0 | 100 | Pass |



| 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Voltage: 85% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5319.98 | 5320 | 3.8 | 100 | Pass |

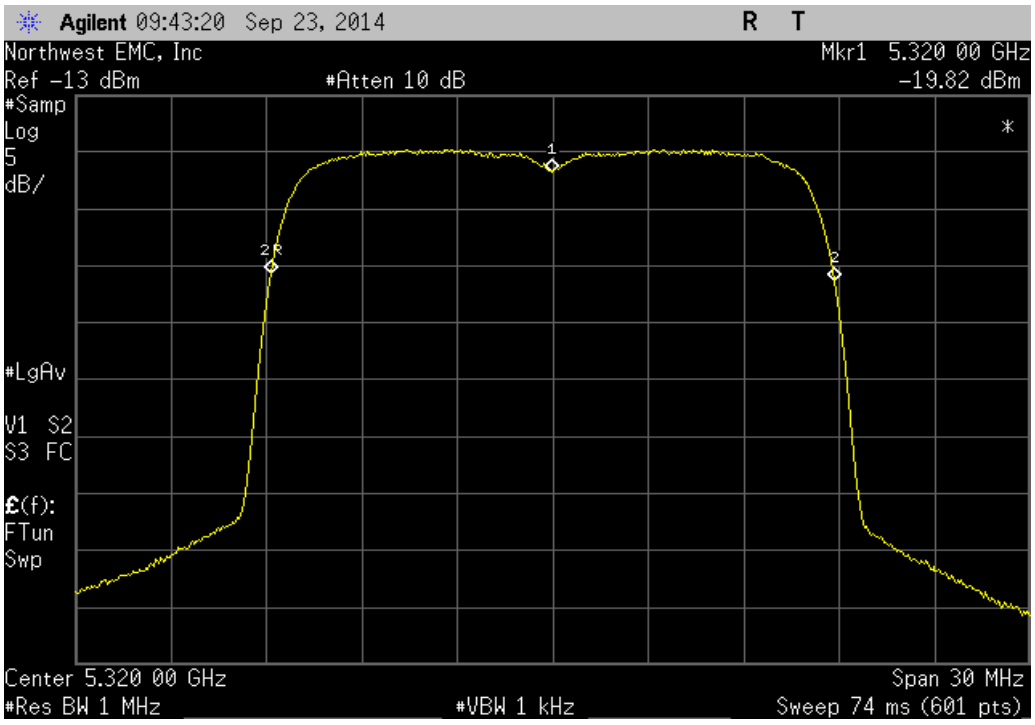



| 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +50° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5320 | 5320 | 0 | 100 | Pass |

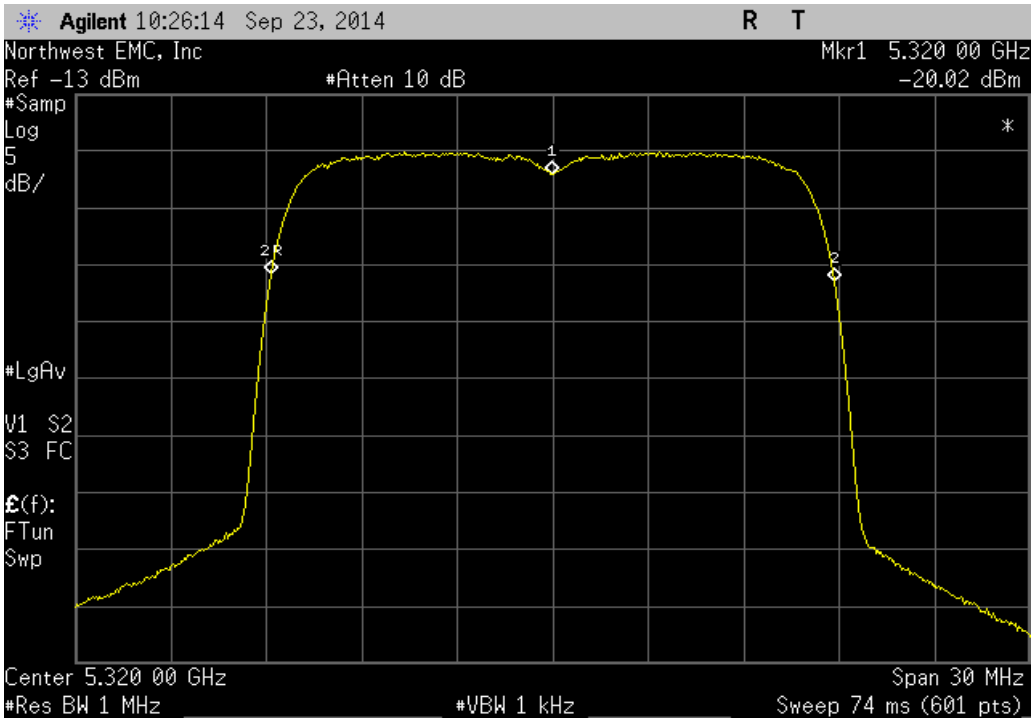


# FREQUENCY STABILITY

| 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +40° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5320 | 5320 | 0 | 100 | Pass |

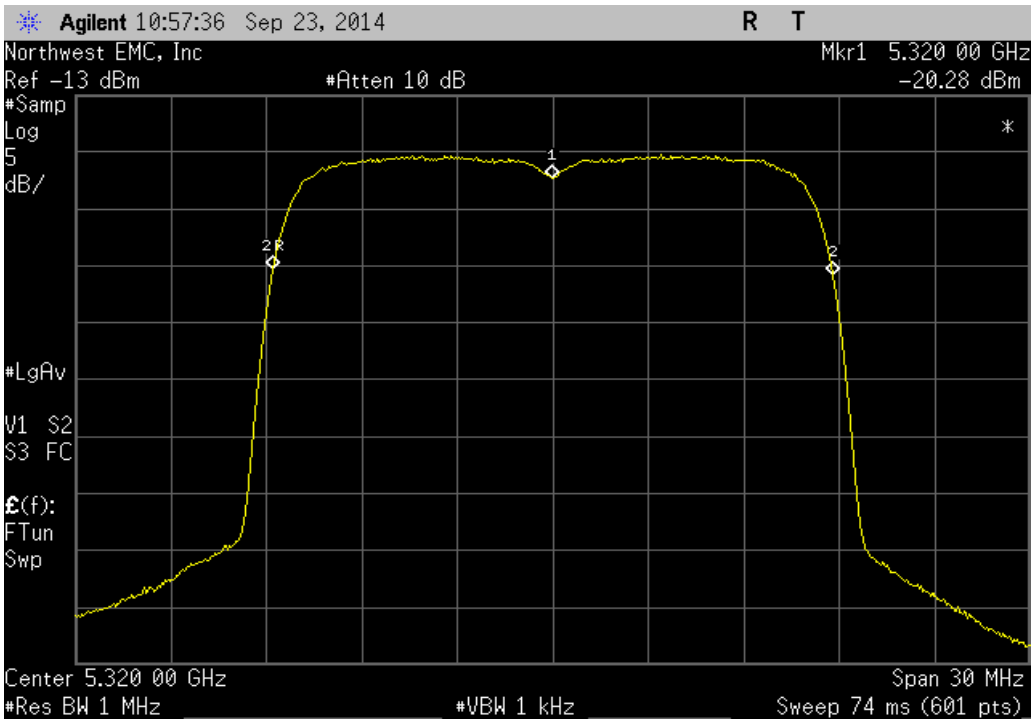



| 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5320 | 5320 | 0 | 100 | Pass |

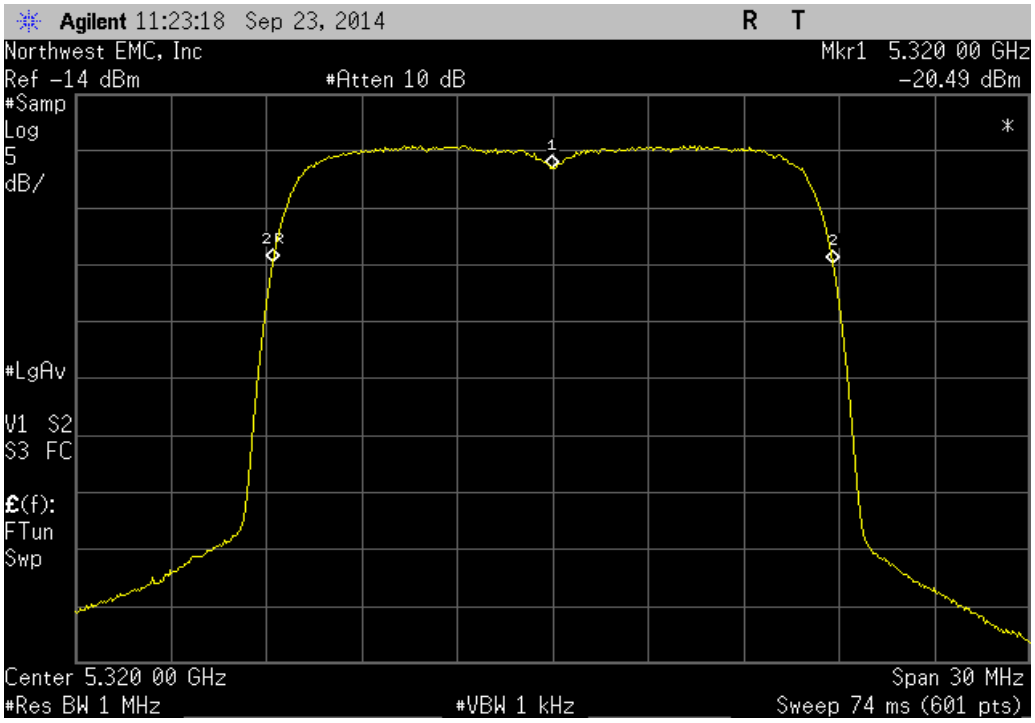


# FREQUENCY STABILITY

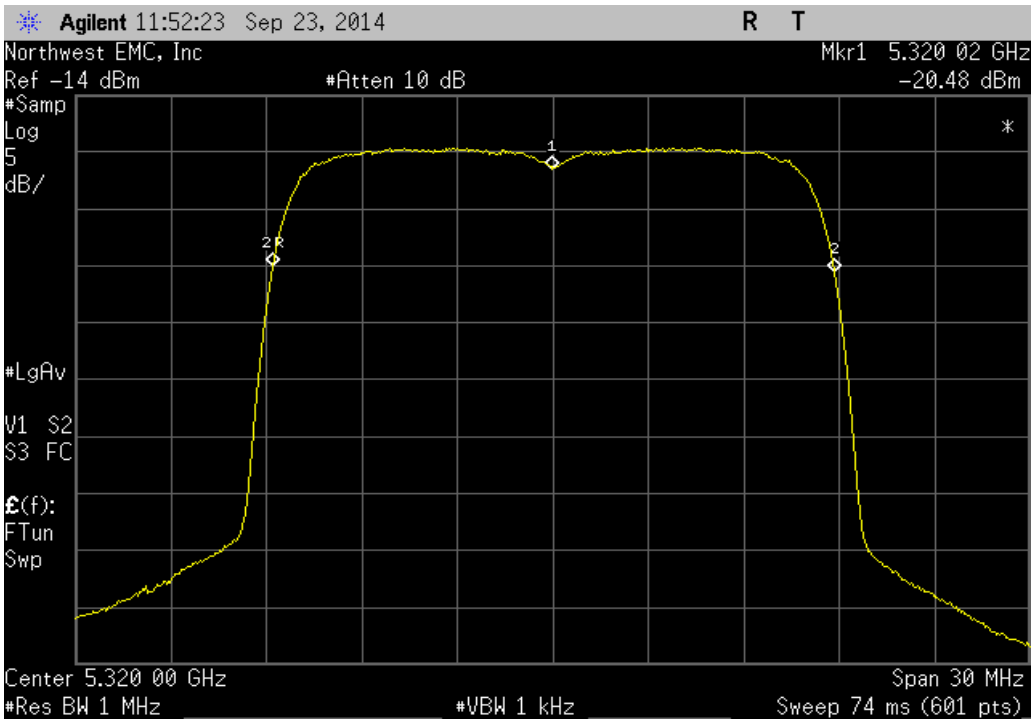
| 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5320 | 5320 | 0 | 100 | Pass |



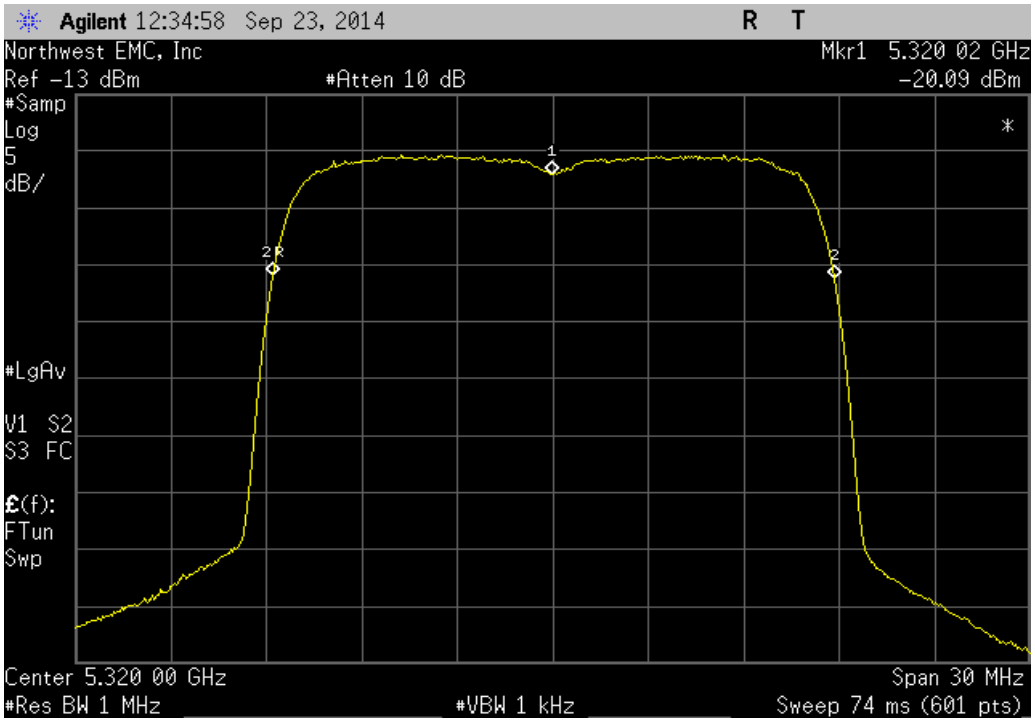

| 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5320 | 5320 | 0 | 100 | Pass |



| 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: 0° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5320.02 | 5320 | 3.8 | 100 | Pass |

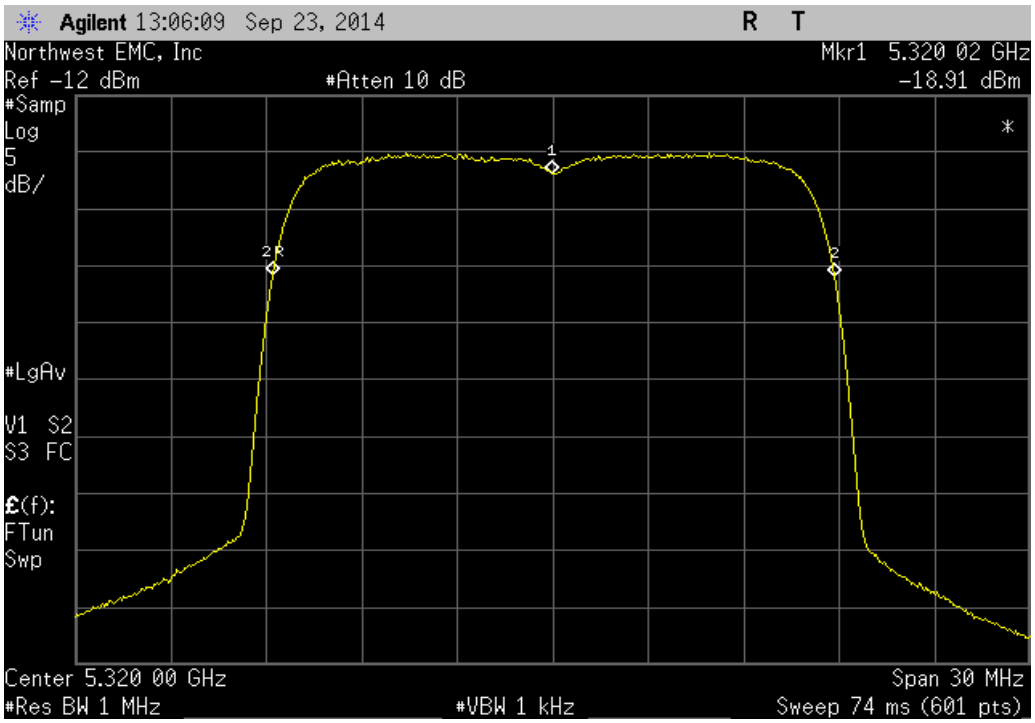



| 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: -10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5320.02 | 5320 | 3.8 | 100 | Pass |

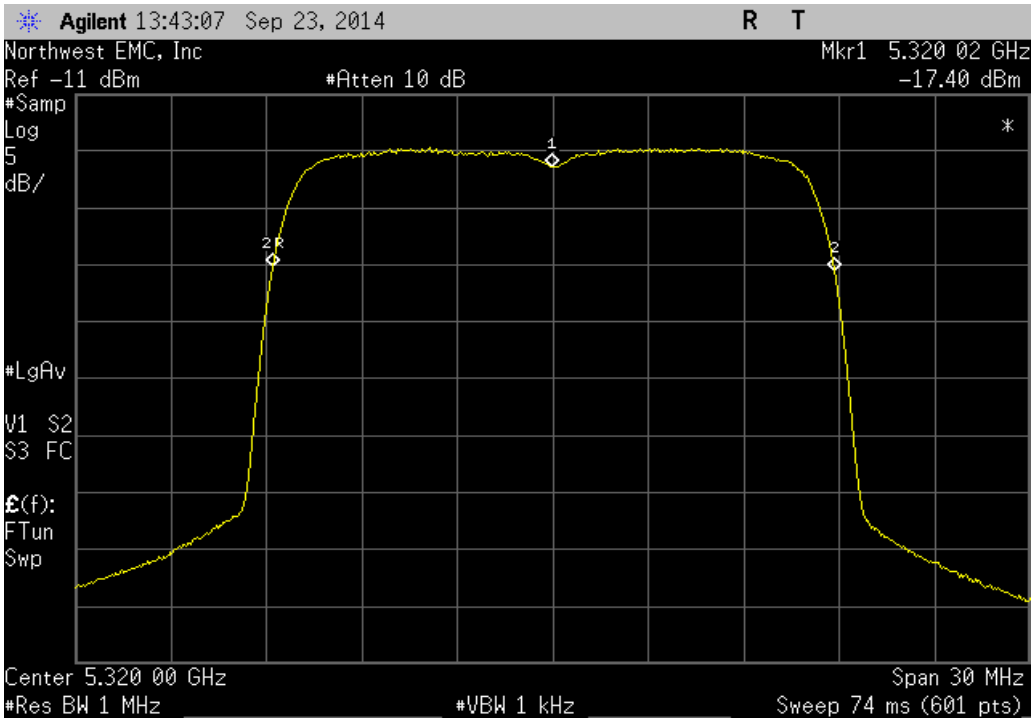


# FREQUENCY STABILITY

| 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: -20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5320.02 | 5320 | 3.8 | 100 | Pass |

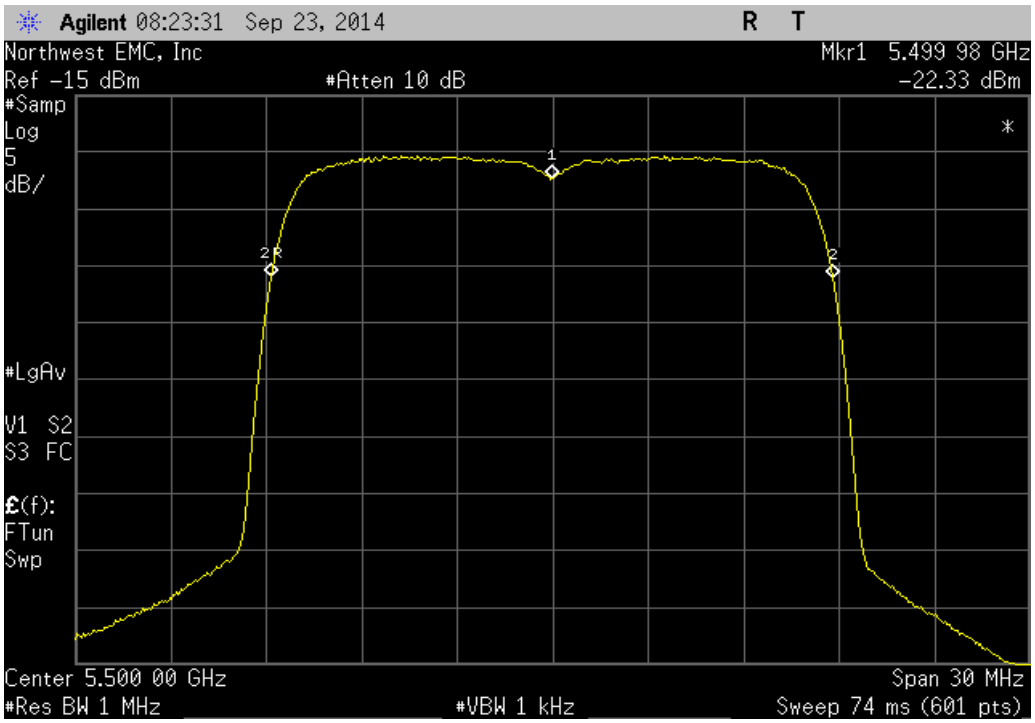



| 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: -30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5320.02 | 5320 | 3.8 | 100 | Pass |

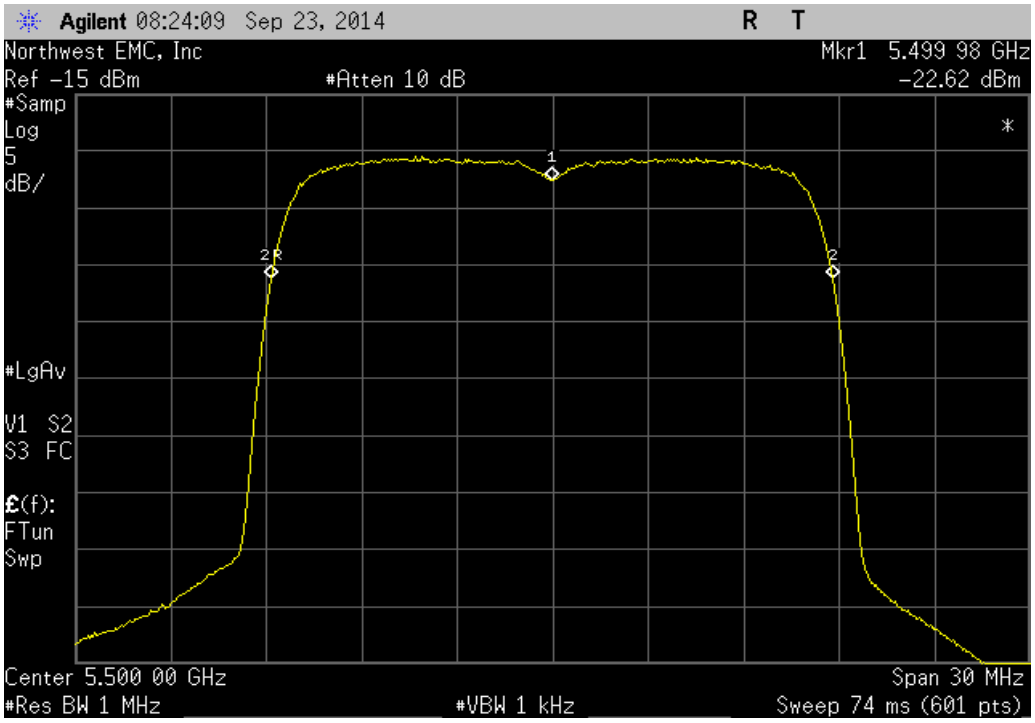


# FREQUENCY STABILITY

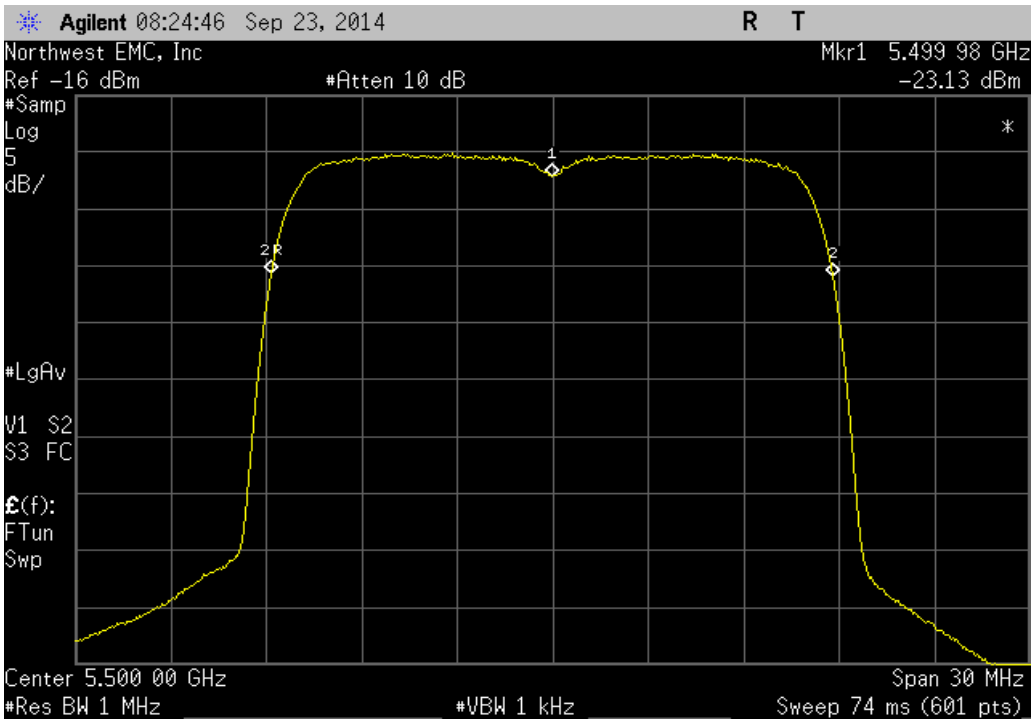
| 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Voltage: 115% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5499.98 | 5500 | 3.6 | 100 | Pass |



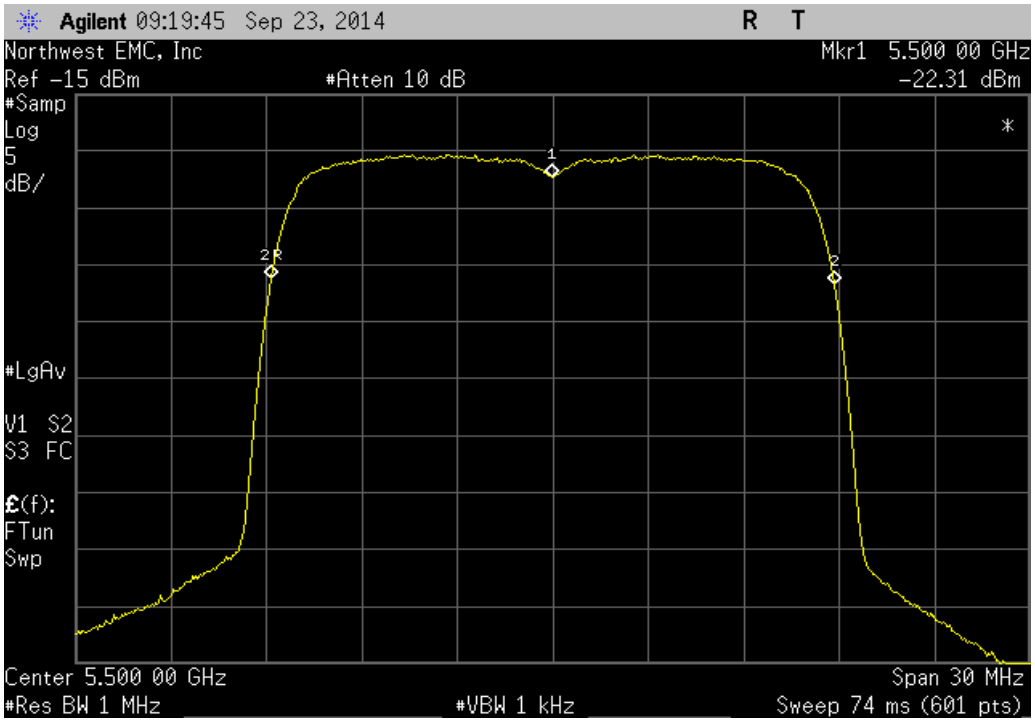

| 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Voltage: 100% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5499.98 | 5500 | 3.6 | 100 | Pass |



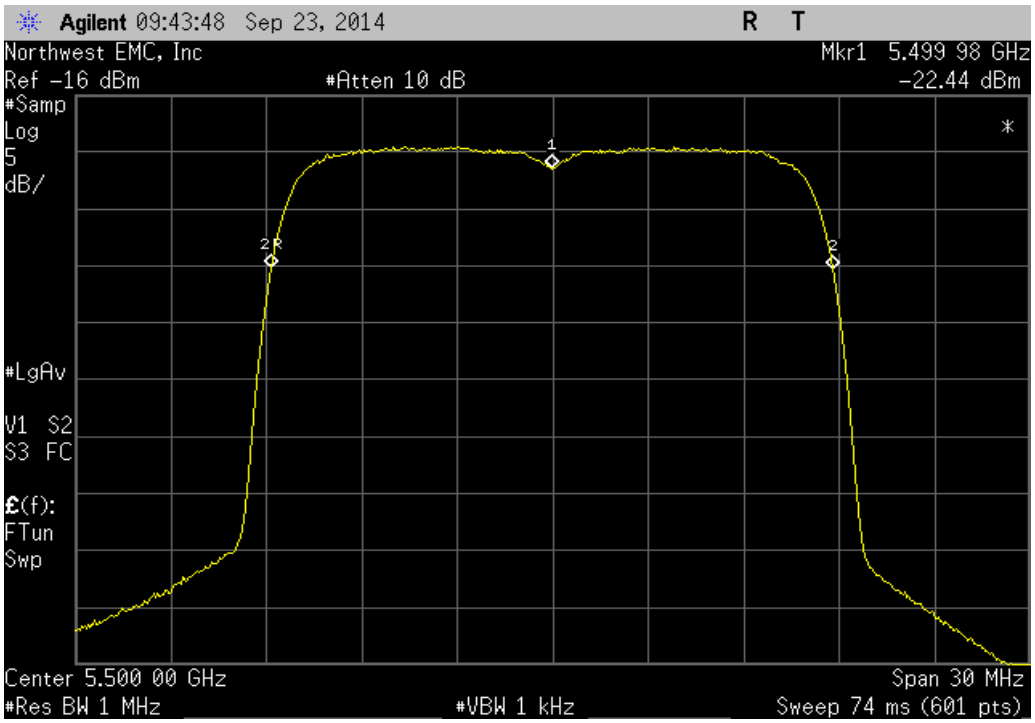
| 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Voltage: 85% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5499.98 | 5500 | 3.6 | 100 | Pass |



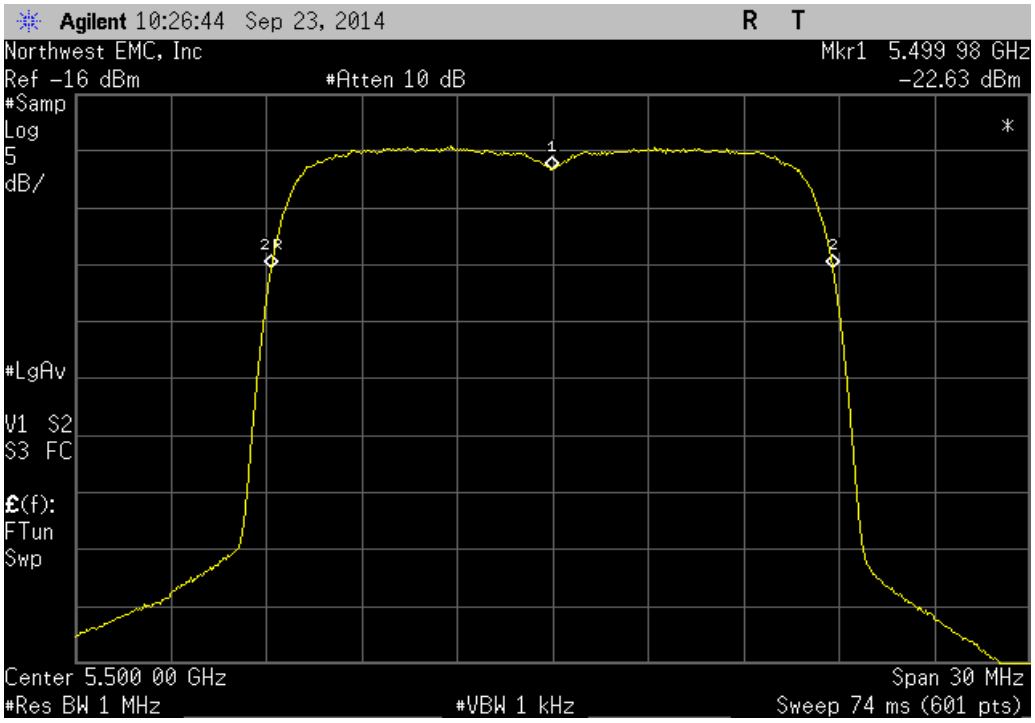

| 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +50° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5500 | 5500 | 0 | 100 | Pass |



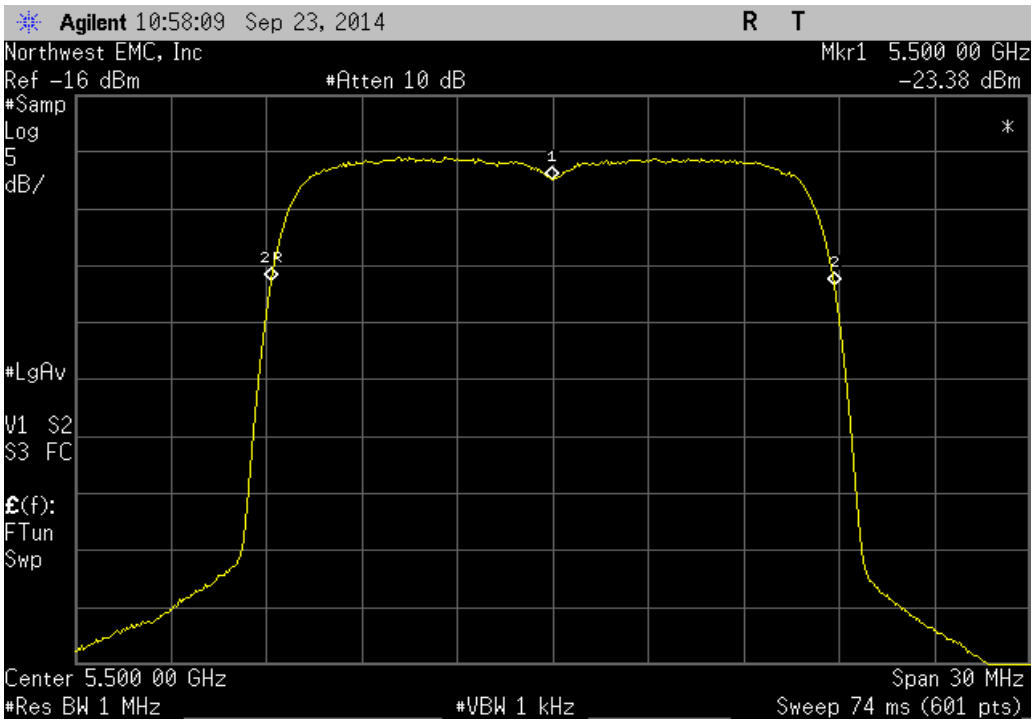
| 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +40° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5499.98 | 5500 | 3.6 | 100 | Pass |



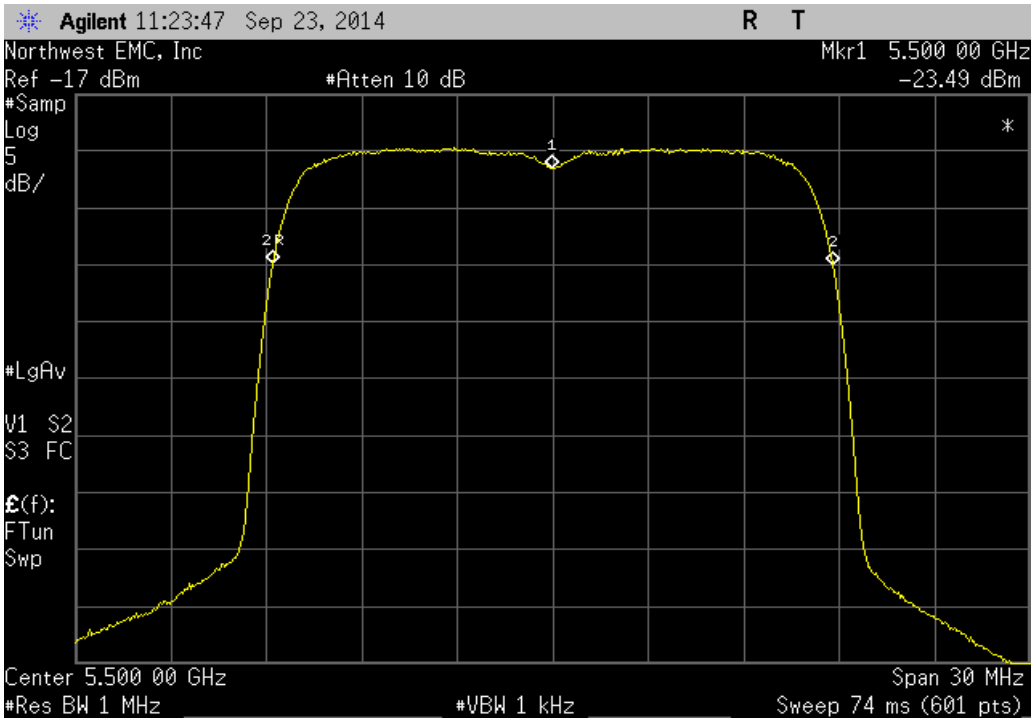

| 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5499.98 | 5500 | 3.6 | 100 | Pass |



| 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5500 | 5500 | 0 | 100 | Pass |

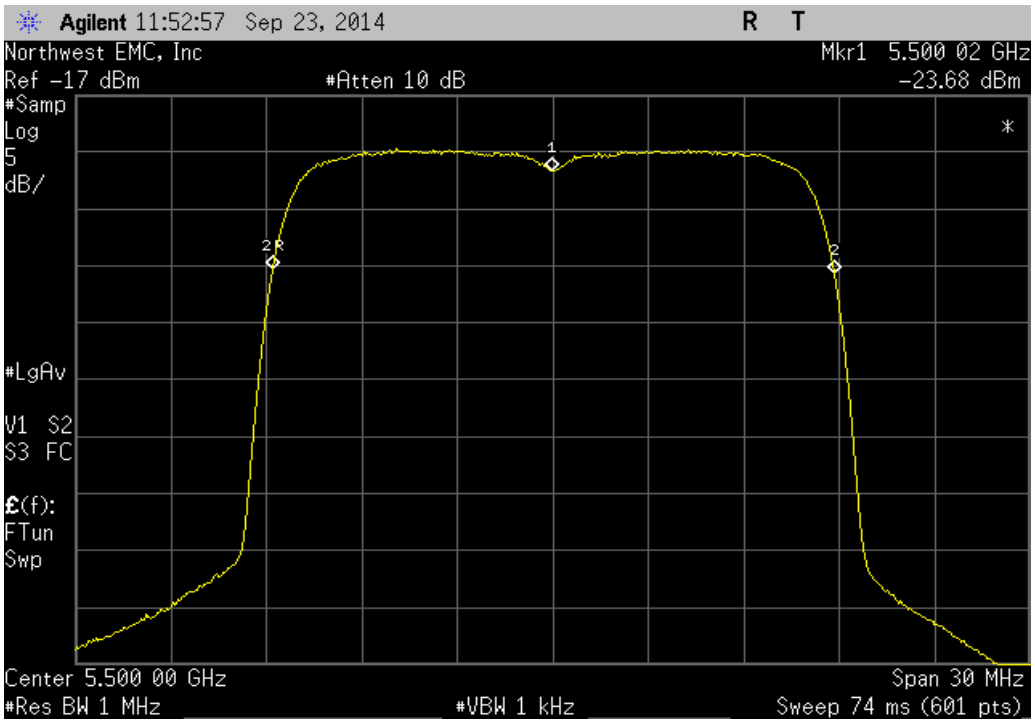



| 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5500 | 5500 | 0 | 100 | Pass |

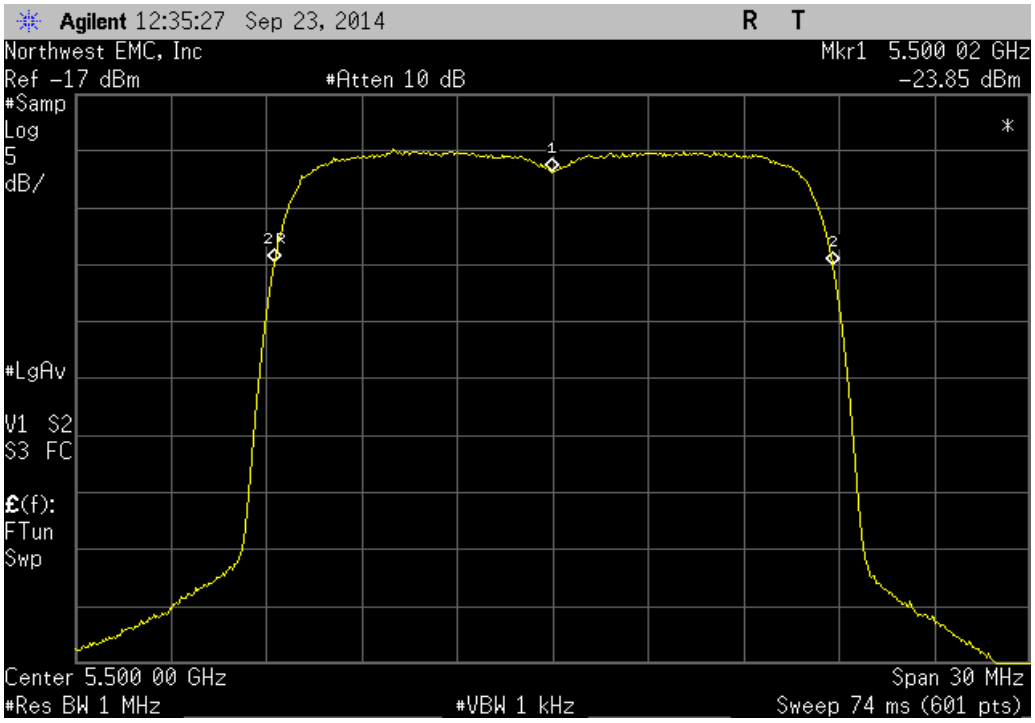


# FREQUENCY STABILITY

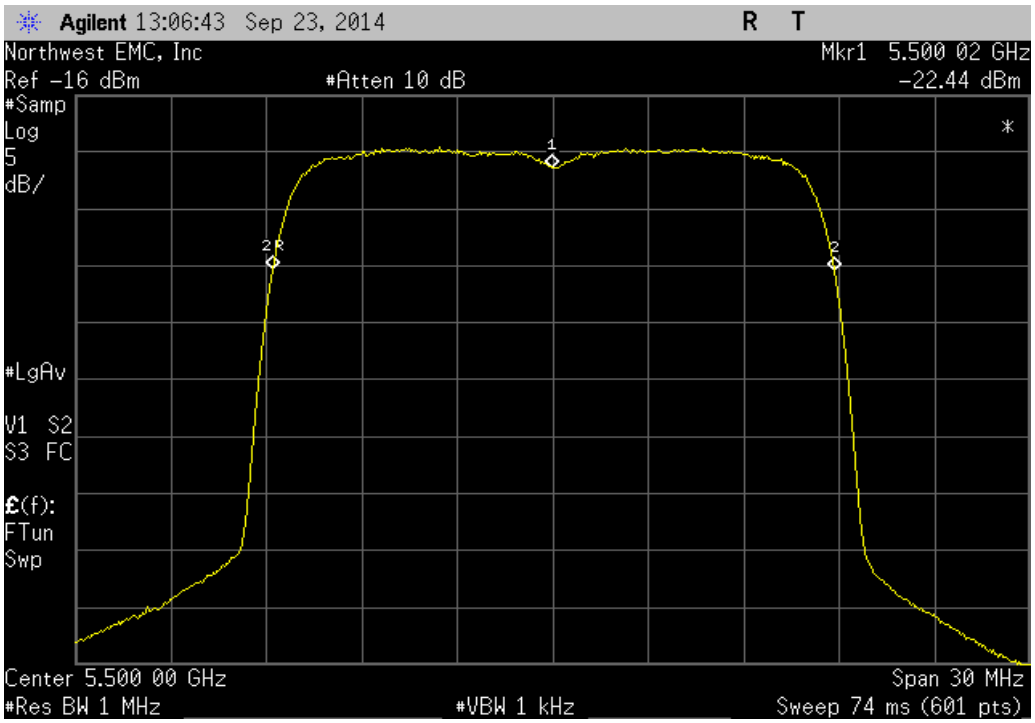
| 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: 0° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5500.02 | 5500 | 3.6 | 100 | Pass |



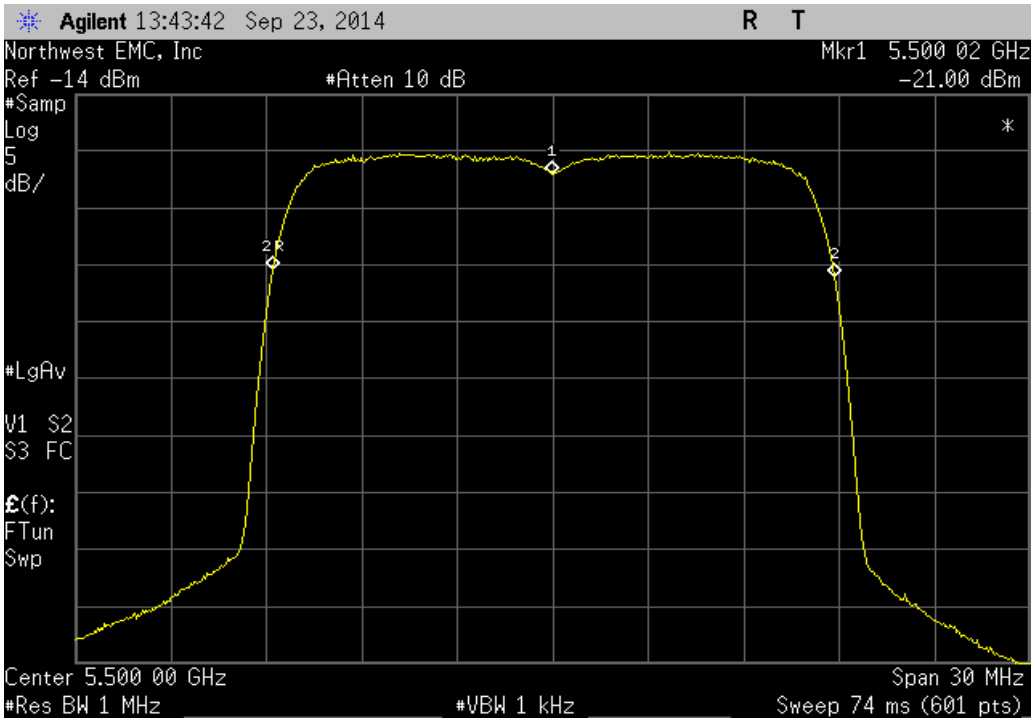

| 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: -10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5500.02 | 5500 | 3.6 | 100 | Pass |



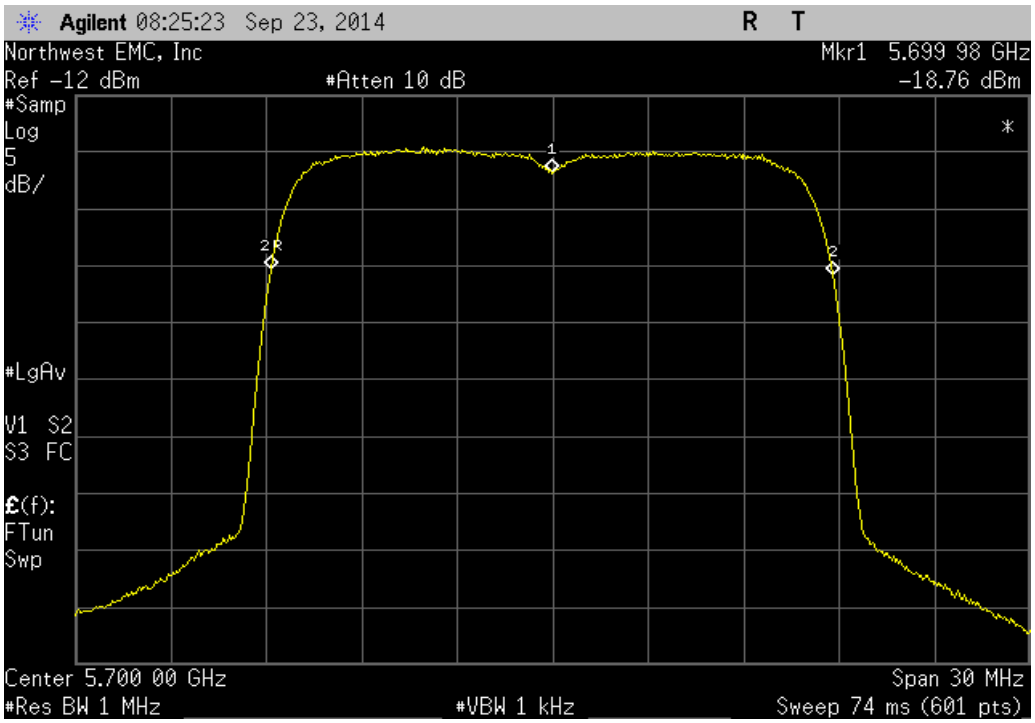
| 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: -20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5500.02 | 5500 | 3.6 | 100 | Pass |



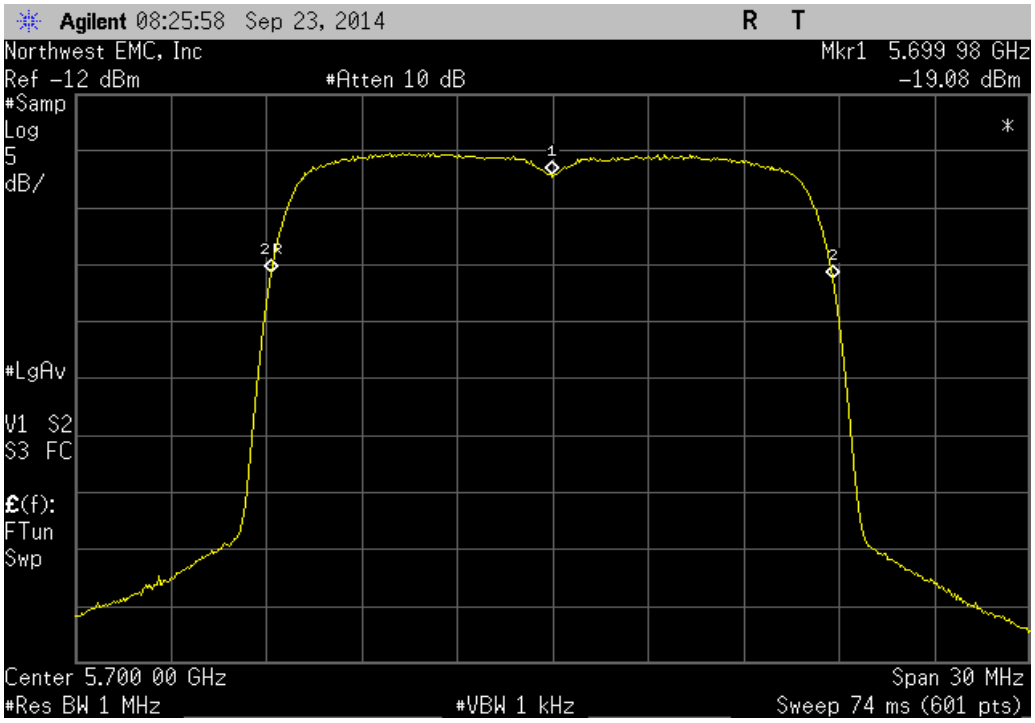

| 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: -30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5500.02 | 5500 | 3.6 | 100 | Pass |



| 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Voltage: 115% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5699.98 | 5700 | 3.5 | 100 | Pass |

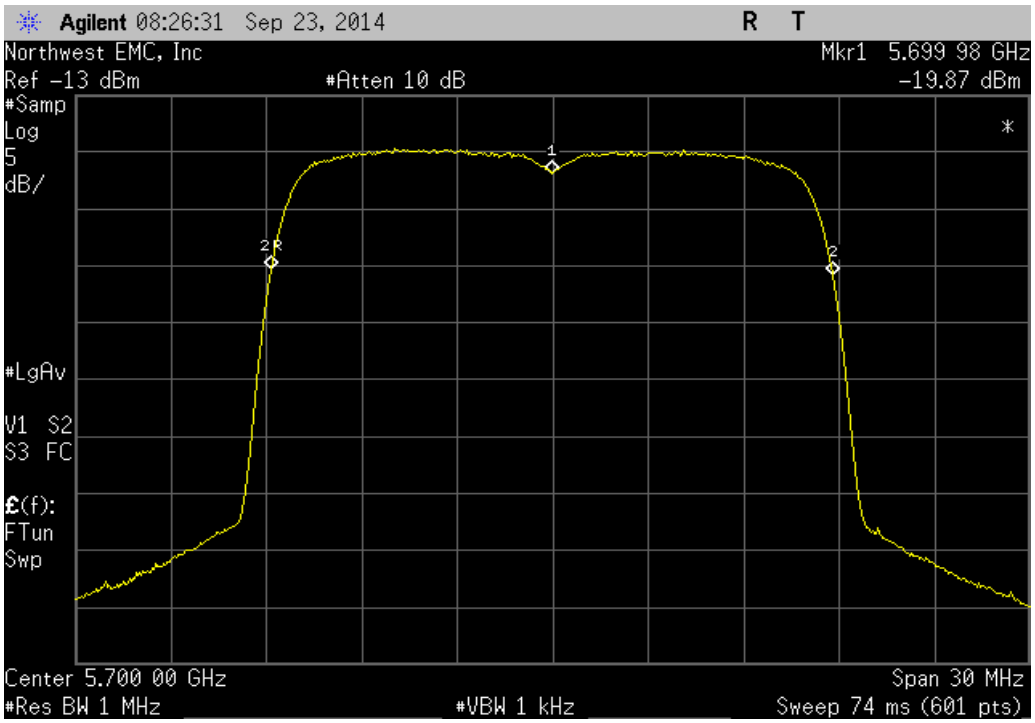



| 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Voltage: 100% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5699.98 | 5700 | 3.5 | 100 | Pass |

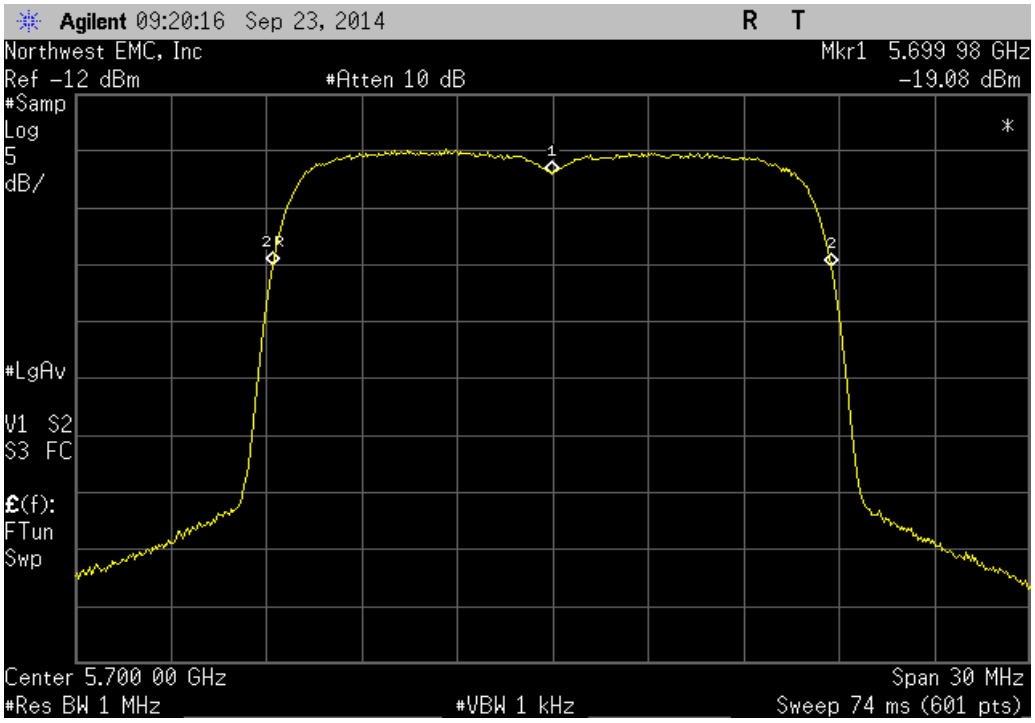


# FREQUENCY STABILITY

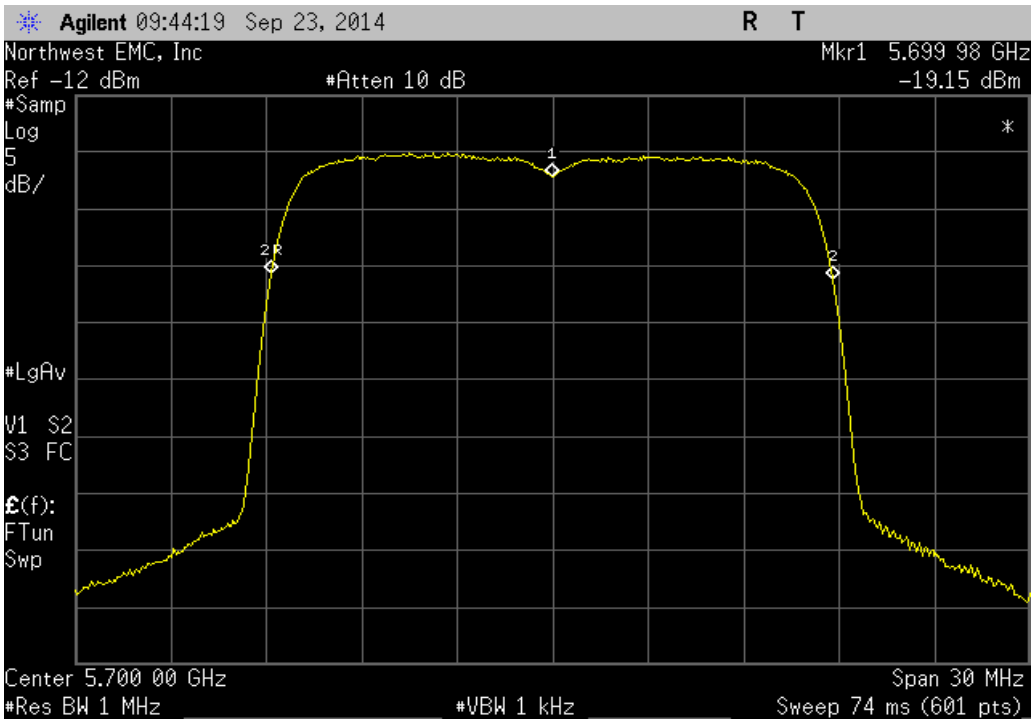
| 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Voltage: 85% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5699.98 | 5700 | 3.5 | 100 | Pass |



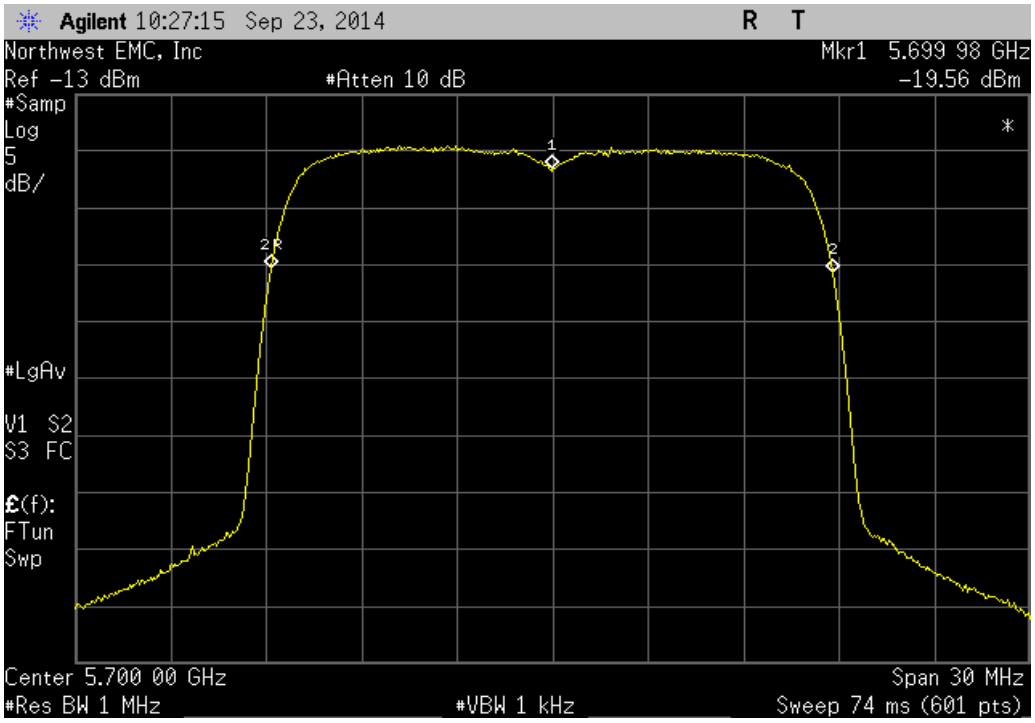

| 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +50° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5699.98 | 5700 | 3.5 | 100 | Pass |



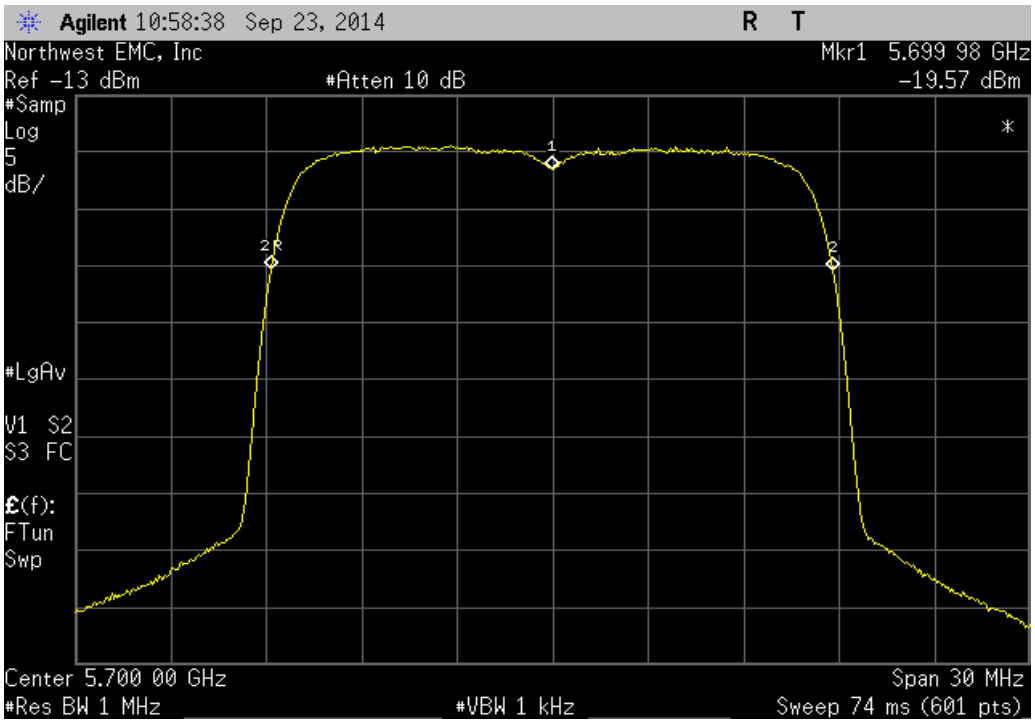
| 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +40° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5699.98 | 5700 | 3.5 | 100 | Pass |



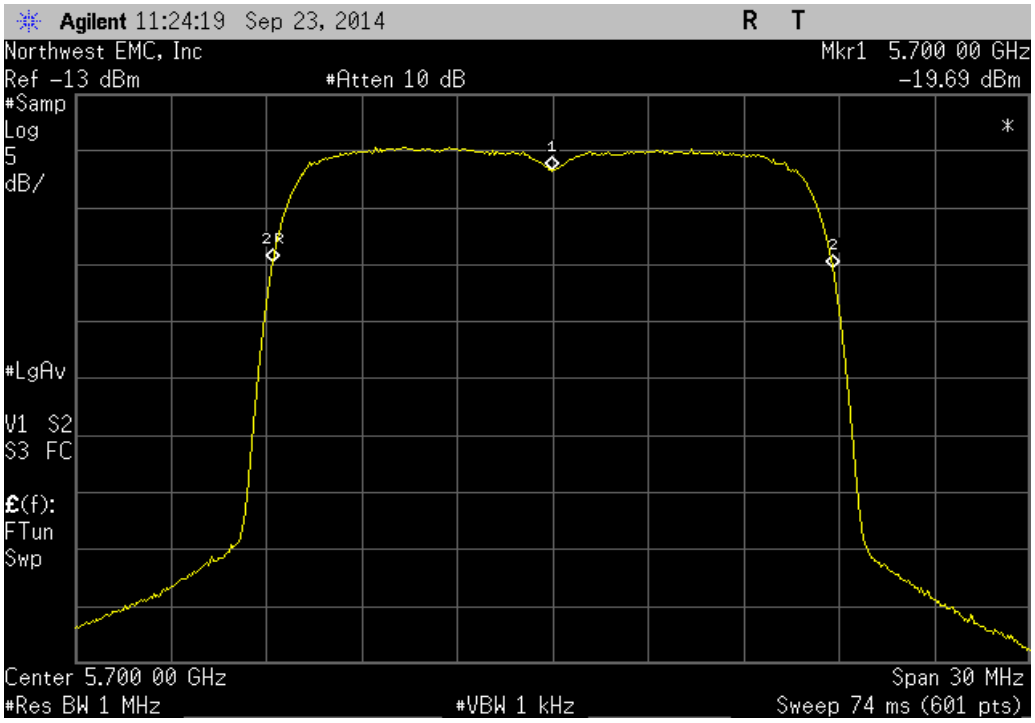

| 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5699.98 | 5700 | 3.5 | 100 | Pass |



| 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5699.98 | 5700 | 3.5 | 100 | Pass |

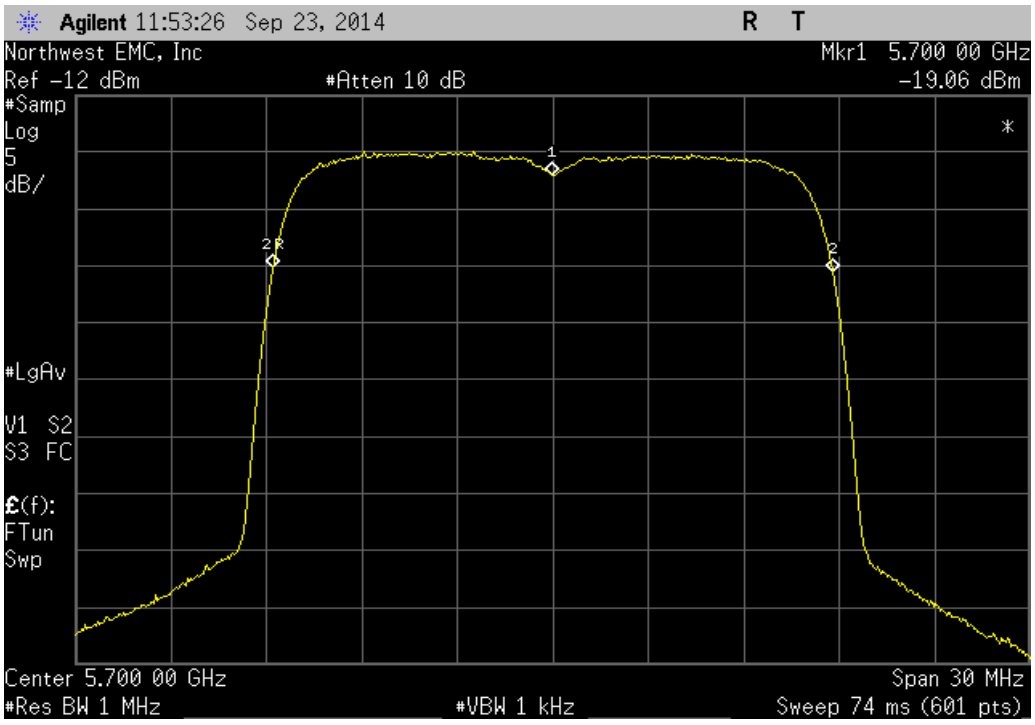



| 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5700 | 5700 | 0 | 100 | Pass |

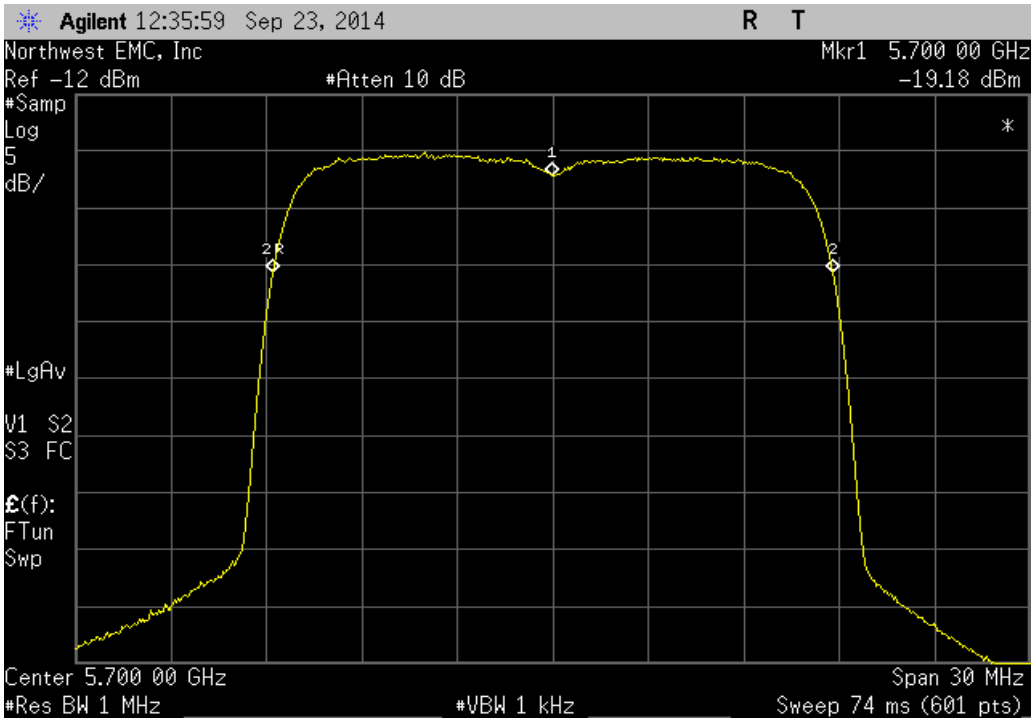


# FREQUENCY STABILITY

| 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: 0° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5700 | 5700 | 0 | 100 | Pass |

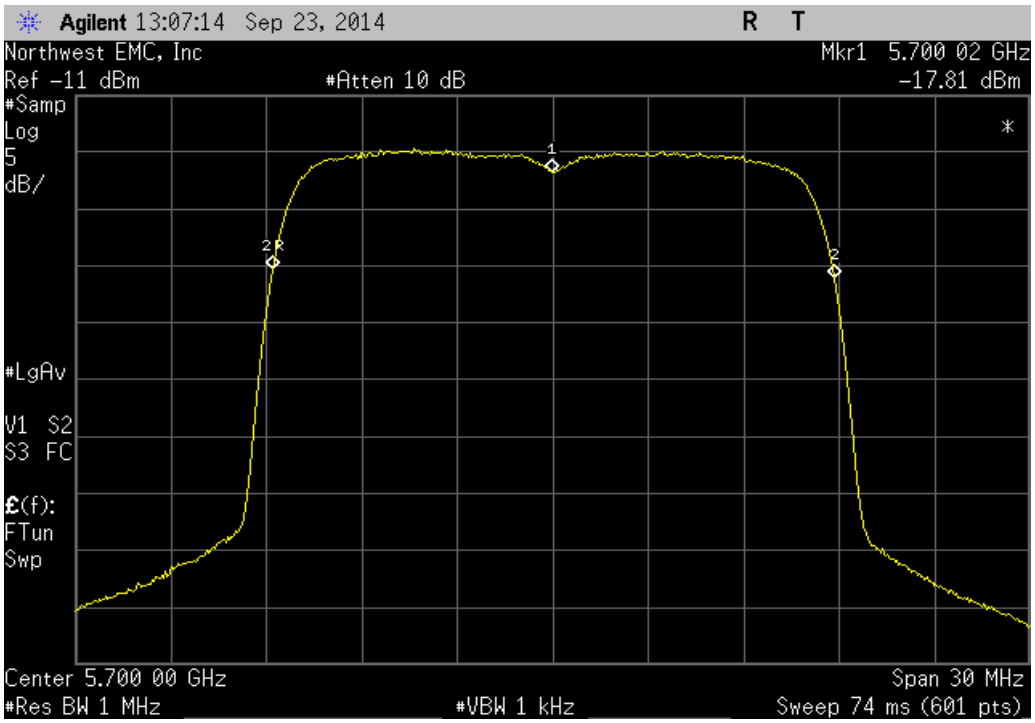



| 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: -10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5700 | 5700 | 0 | 100 | Pass |

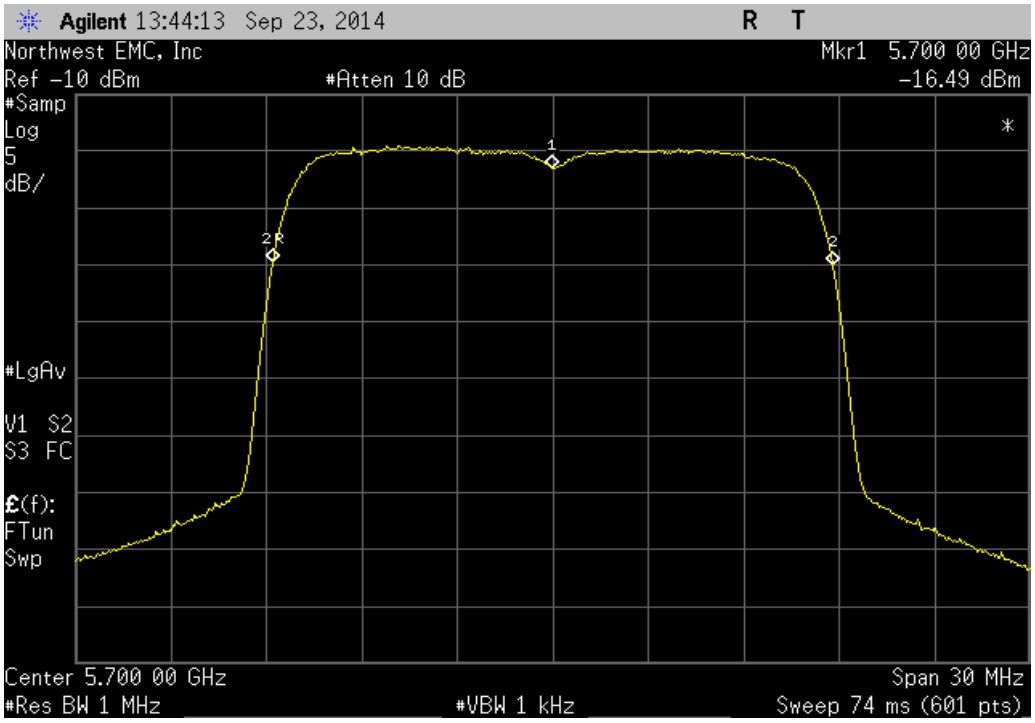


# FREQUENCY STABILITY

| 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: -20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5700.02 | 5700 | 3.5 | 100 | Pass |




| 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: -30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | | 5700 | 5700 | 0 | 100 | Pass |



# EMISSION BANDWIDTH

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 |
|---|---|---|---|---|---|
| Signal Generator MXG | Agilent | N5183A | TIK | 6/7/2012 | 36 |
| 40 GHz DC block | Fairview Microwave | SD3379 | AMI | 9/26/2013 | 14 |
| Attenuator - 20db, 'SMA' | SM Electronics | SA26B-20 | RFW | 4/3/2014 | 12 |
| Spectrum Analyzer | Agilent | E4440A | AAX | 4/28/2014 | 12 |

**TEST DESCRIPTION**

FCC KDB 789033 D01 General UNII Test Procedures were followed.

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.

The spectrum analyzer settings were as follows:

- RBW = Approx. 1% of the emission bandwidth (B). This was an iterative process to determine the RBW based on the emissions bandwidth (B).
- VBW= > RBW
- A peak detector was used
- Trace max hold.

The spectrum analyzer occupied bandwidth measurement function was then used to measure 26 dB emission bandwidth.

There is no required limit to be met in the rule part for this test. The purpose of the test is to both report the results as required by the KDB, and to utilize the emission bandwidth for setting the channel power integration bandwidth during conducted output

# EMISSION BANDWIDTH

| | | | | | |
|---|---|---|---|---|---|
| EUT: | ConnectCore i.MX6 WiFi/Bluetooth | | | Work Order: | ETHE0009 |
| Serial Number: | 00409D 7C03B4 | | | Date: | 09/29/14 |
| Customer: | Etherios Design Solutions | | | Temperature: | 22.7°C |
| Attendees: | None | | | Humidity: | 47% |
| Project: | None | | | Barometric Pres.: | 1023.7 |
| Tested by: | Trevor Buls | Power: | 5VDC | Job Site: | MN08 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.407:2014 | ANSI C63.10:2009 |

**COMMENTS**

None

**DEVIATIONS FROM TEST STANDARD**

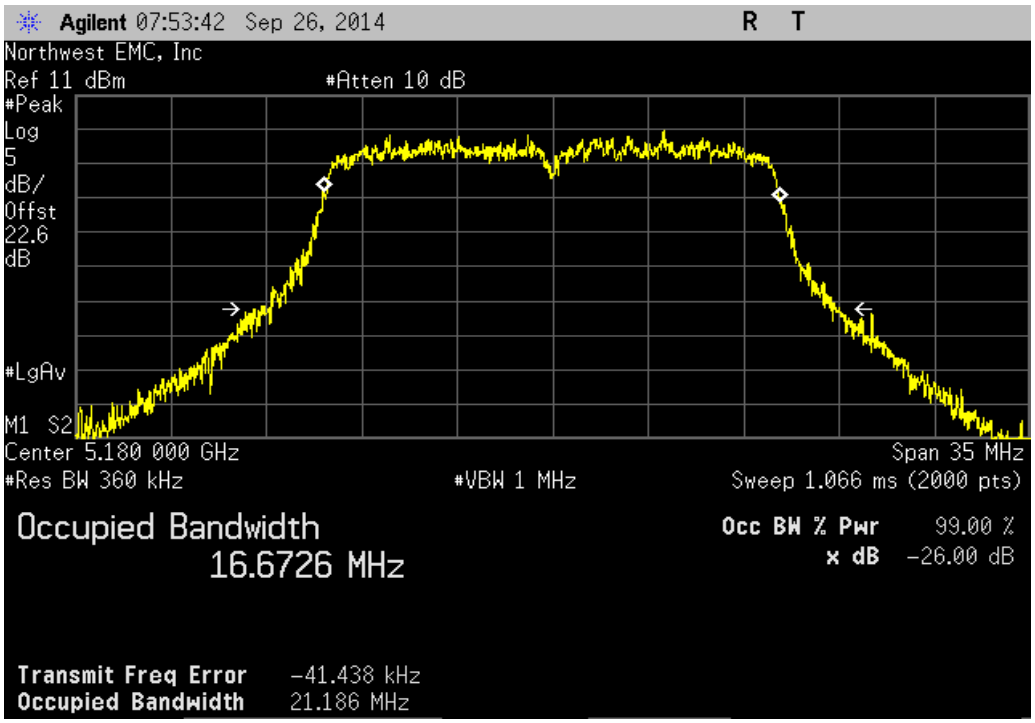
None

| Configuration # | 1 | Signature | Trevor Buls |
|---|---|---|---|

| | | Value | Limit (>) | Result |
|---|---|---|---|---|
| 802.11(a) 6 Mbps | | | | |
| | 5150 - 5250 MHz Band | | | |
| | Channel 36, Low Channel | 21.186 MHz | 500 kHz | Pass |
| | Channel 48, High Channel | 21.621 MHz | 500 kHz | Pass |
| | 5250 - 5350 MHz Band | | | |
| | Channel 52, Low Channel | 21.661 MHz | 500 kHz | Pass |
| | Channel 64, High Channel | 21.539 MHz | 500 kHz | Pass |
| | 5470 - 5725 MHz Band | | | |
| | Channel 100, Low Channel | 21.571 MHz | 500 kHz | Pass |
| | Channel 116, Mid Channel | 21.859 MHz | 500 kHz | Pass |
| | Channel 140, High Channel | 21.355 MHz | 500 kHz | Pass |
| 802.11(a) 36 Mbps | | | | |
| | 5150 - 5250 MHz Band | | | |
| | Channel 36, Low Channel | 21.173 MHz | 500 kHz | Pass |
| | Channel 48, High Channel | 21.251 MHz | 500 kHz | Pass |
| | 5250 - 5350 MHz Band | | | |
| | Channel 52, Low Channel | 21.14 MHz | 500 kHz | Pass |
| | Channel 64, High Channel | 21.113 MHz | 500 kHz | Pass |
| | 5470 - 5725 MHz Band | | | |
| | Channel 100, Low Channel | 21.256 MHz | 500 kHz | Pass |
| | Channel 116, Mid Channel | 21.245 MHz | 500 kHz | Pass |
| | Channel 140, High Channel | 21.25 MHz | 500 kHz | Pass |
| 802.11(a) 54 Mbps | | | | |
| | 5150 - 5250 MHz Band | | | |
| | Channel 36, Low Channel | 21.107 MHz | 500 kHz | Pass |
| | Channel 48, High Channel | 20.979 MHz | 500 kHz | Pass |
| | 5250 - 5350 MHz Band | | | |
| | Channel 52, Low Channel | 21.353 MHz | 500 kHz | Pass |
| | Channel 64, High Channel | 21.131 MHz | 500 kHz | Pass |
| | 5470 - 5725 MHz Band | | | |
| | Channel 100, Low Channel | 21.281 MHz | 500 kHz | Pass |
| | Channel 116, Mid Channel | 20.84 MHz | 500 kHz | Pass |
| | Channel 140, High Channel | 21.085 MHz | 500 kHz | Pass |
| 802.11(n) MCS0 | | | | |
| | 5150 - 5250 MHz Band | | | |
| | Channel 36, Low Channel | 22.681 MHz | 500 kHz | Pass |
| | Channel 48, High Channel | 22.343 MHz | 500 kHz | Pass |
| | 5250 - 5350 MHz Band | | | |
| | Channel 52, Low Channel | 22.526 MHz | 500 kHz | Pass |
| | Channel 64, High Channel | 22.134 MHz | 500 kHz | Pass |
| | 5470 - 5725 MHz Band | | | |
| | Channel 100, Low Channel | 22.668 MHz | 500 kHz | Pass |
| | Channel 116, Mid Channel | 22.225 MHz | 500 kHz | Pass |
| | Channel 140, High Channel | 22.516 MHz | 500 kHz | Pass |
| 802.11(n) MCS7 | | | | |
| | 5150 - 5250 MHz Band | | | |
| | Channel 36, Low Channel | 21.343 MHz | 500 kHz | Pass |
| | Channel 48, High Channel | 21.92 MHz | 500 kHz | Pass |
| | 5250 - 5350 MHz Band | | | |
| | Channel 52, Low Channel | 21.983 MHz | 500 kHz | Pass |
| | Channel 64, High Channel | 21.503 MHz | 500 kHz | Pass |
| | 5470 - 5725 MHz Band | | | |
| | Channel 100, Low Channel | 21.683 MHz | 500 kHz | Pass |
| | Channel 116, Mid Channel | 21.65 MHz | 500 kHz | Pass |
| | Channel 140, High Channel | 22.007 MHz | 500 kHz | Pass |

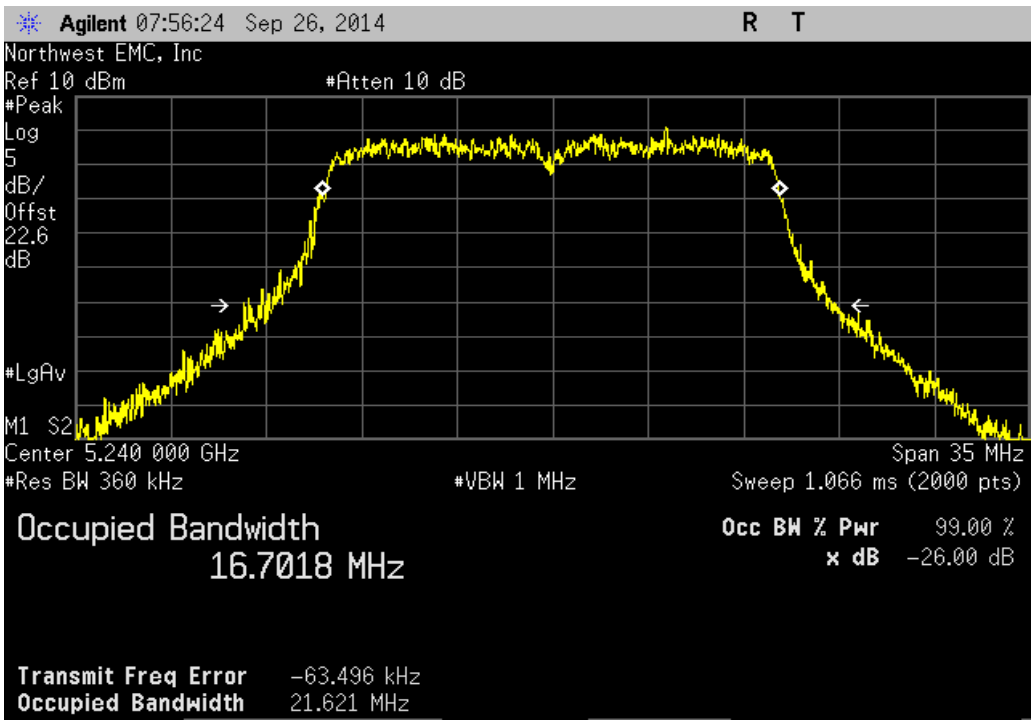
802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel

| | | | | Value | Limit (>) | Result |
|---|---|---|---|---|---|---|
| | | | | 21.186 MHz | 500 kHz | Pass |

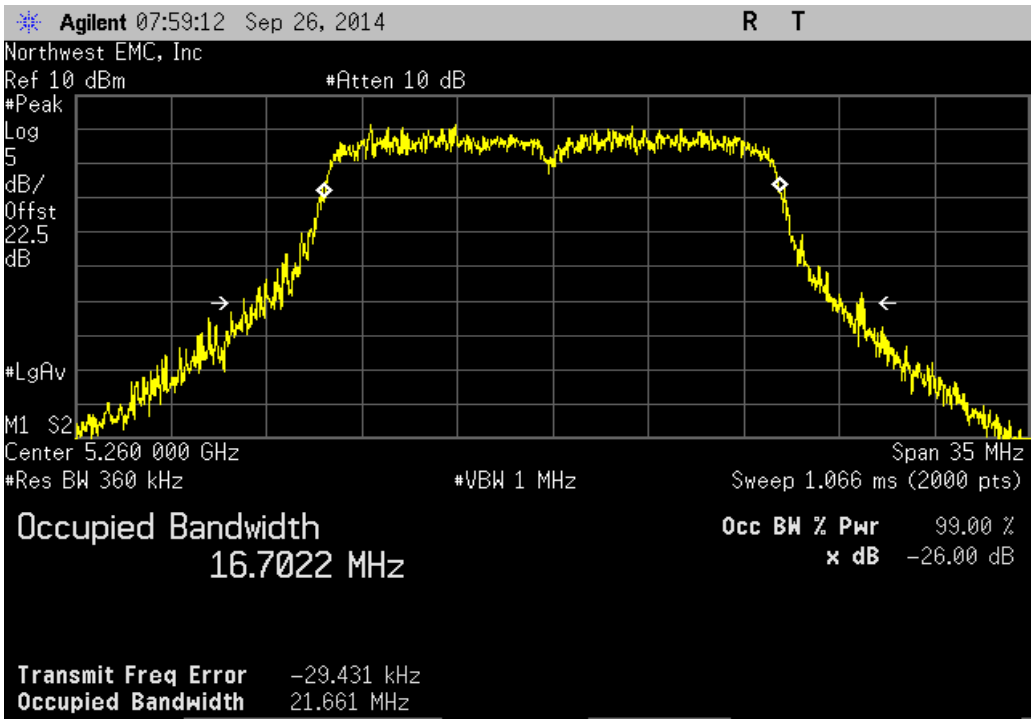



802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel

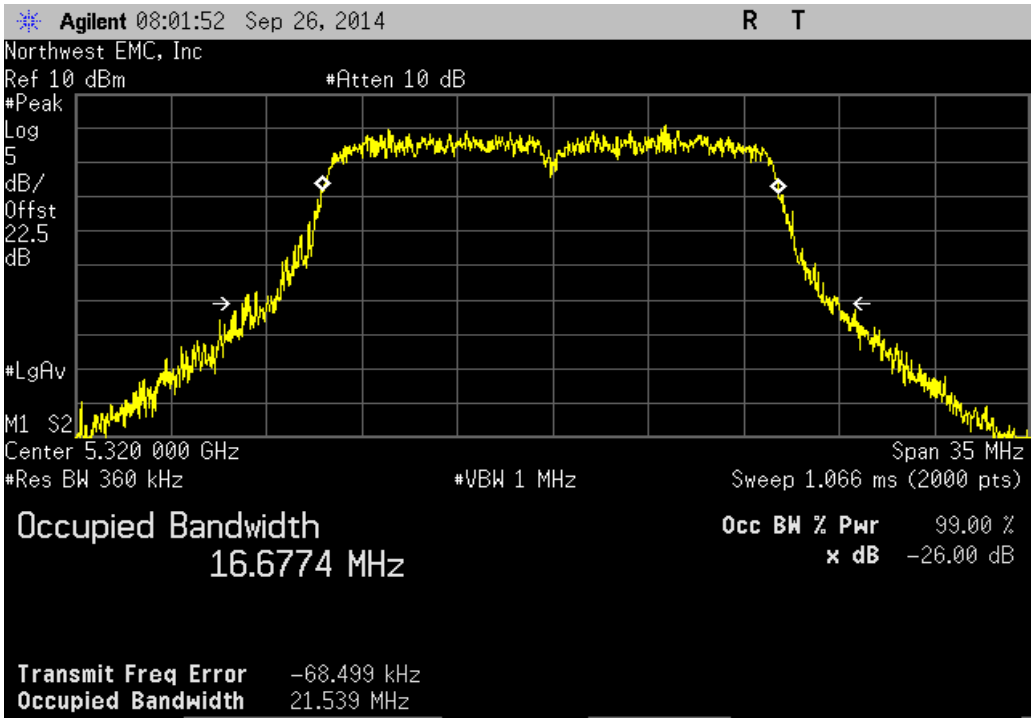
| | | | | Value | Limit (>) | Result |
|---|---|---|---|---|---|---|
| | | | | 21.621 MHz | 500 kHz | Pass |



| 802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (>) | Result |
| | | | | 21.661 MHz | 500 kHz | Pass |

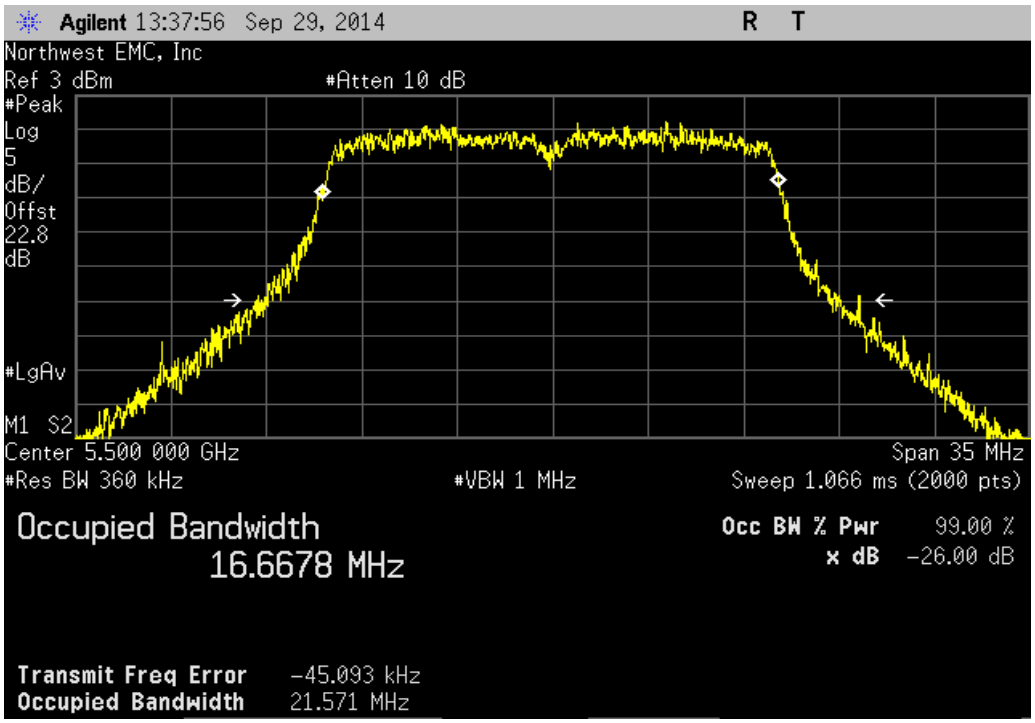



| 802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (>) | Result |
| | | | | 21.539 MHz | 500 kHz | Pass |



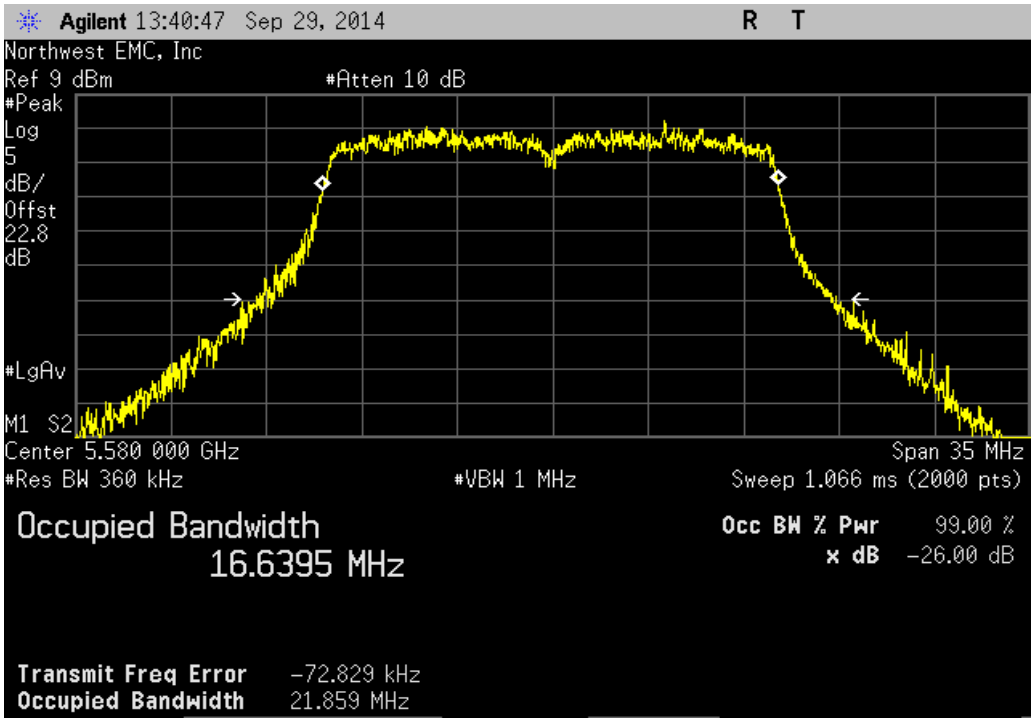
802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel

| | | | | Value | Limit (>) | Result |
|---|---|---|---|---|---|---|
| | | | | 21.571 MHz | 500 kHz | Pass |



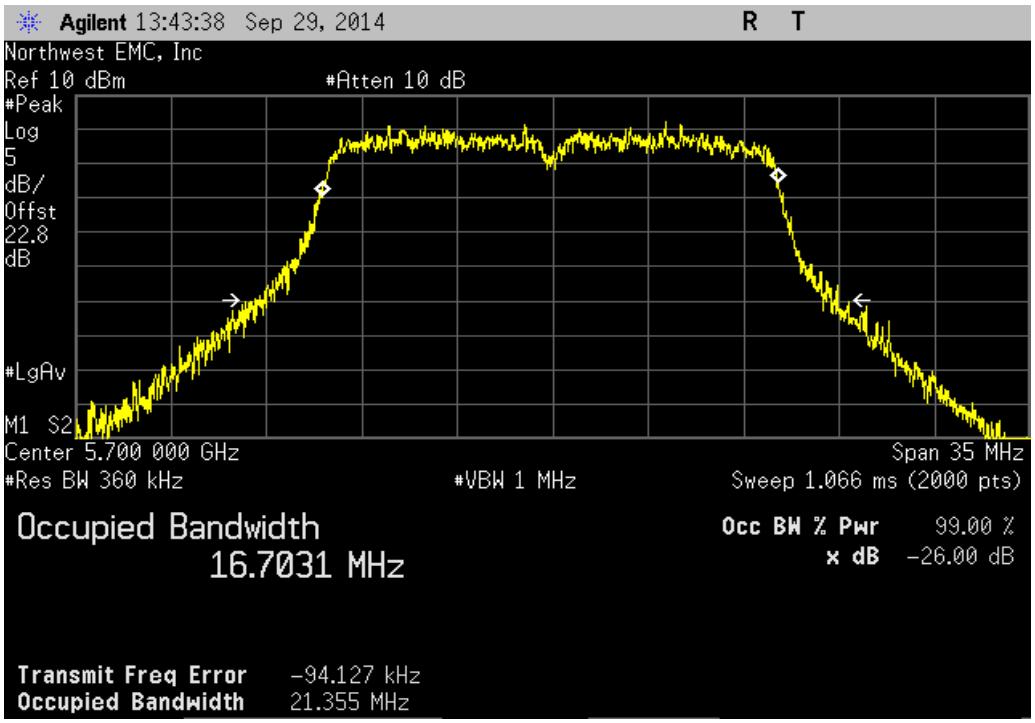

802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel

| | | | | Value | Limit (>) | Result |
|---|---|---|---|---|---|---|
| | | | | 21.859 MHz | 500 kHz | Pass |



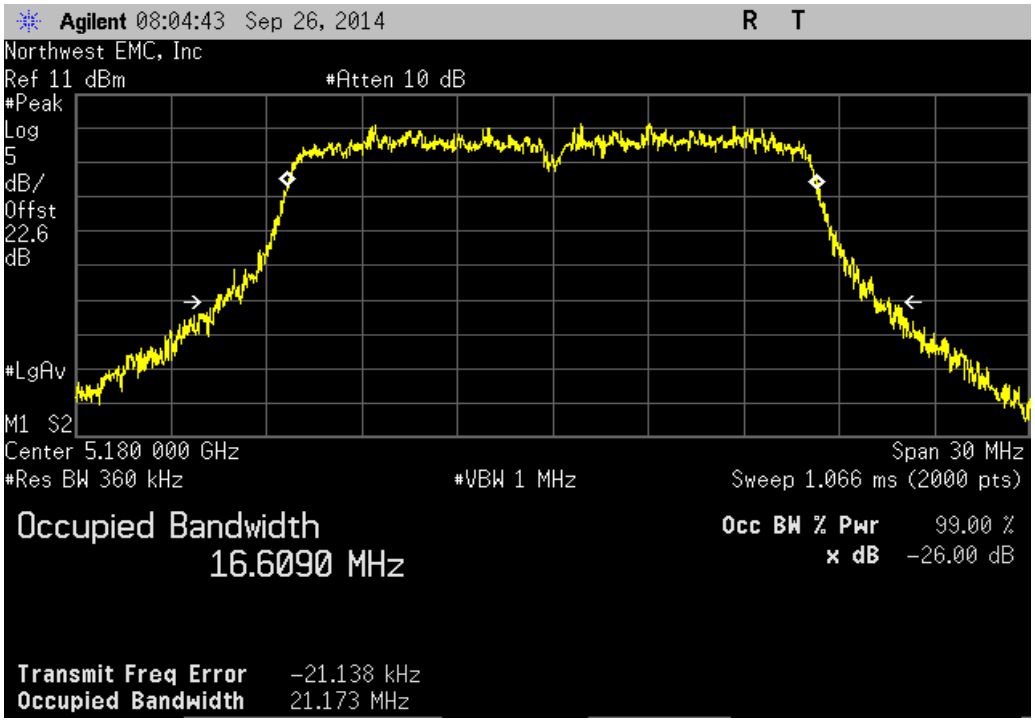
802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel

| | | | | Value | Limit (>) | Result |
|---|---|---|---|---|---|---|
| | | | | 21.355 MHz | 500 kHz | Pass |



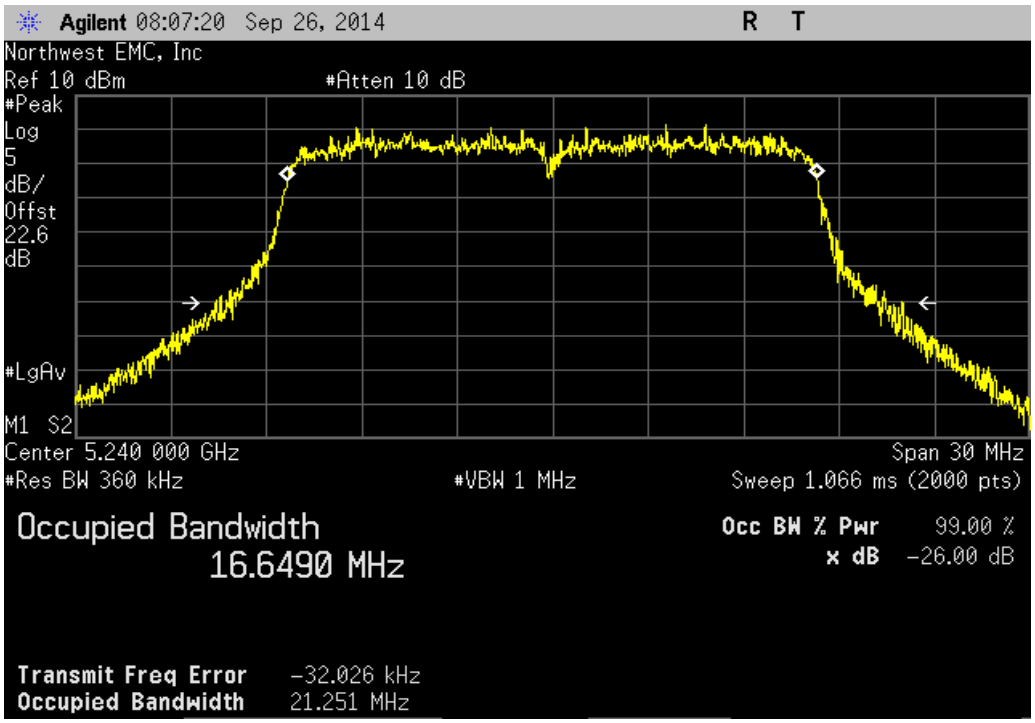

802.11(a) 36 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel

| | | | | Value | Limit (>) | Result |
|---|---|---|---|---|---|---|
| | | | | 21.173 MHz | 500 kHz | Pass |



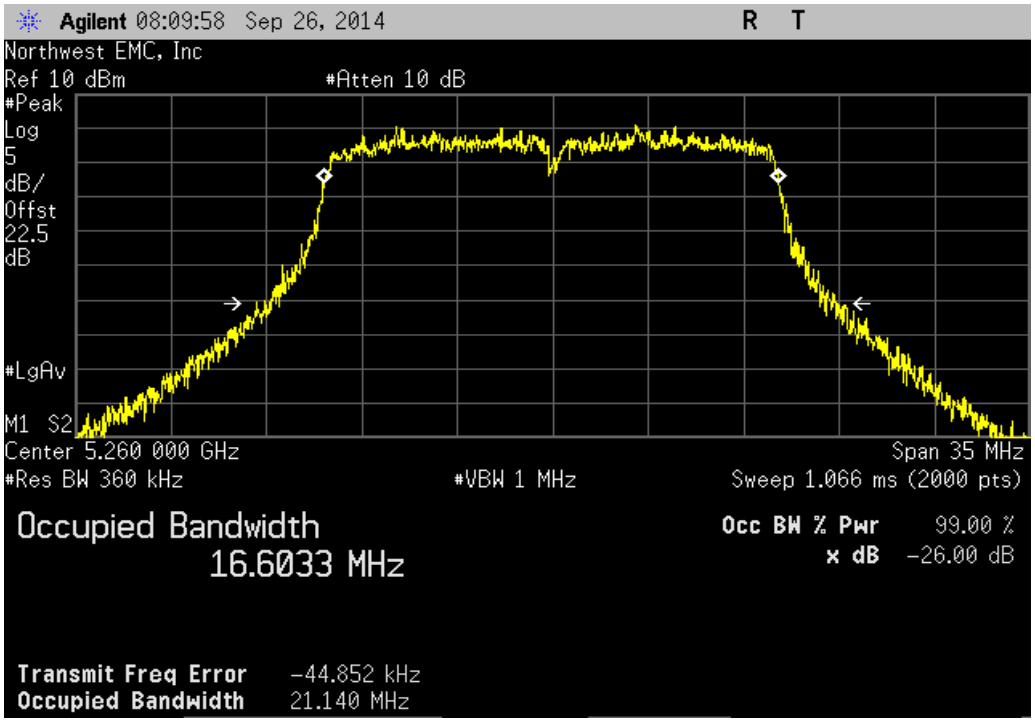
802.11(a) 36 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel

| | | | | Value | Limit (>) | Result |
|---|---|---|---|---|---|---|
| | | | | 21.251 MHz | 500 kHz | Pass |



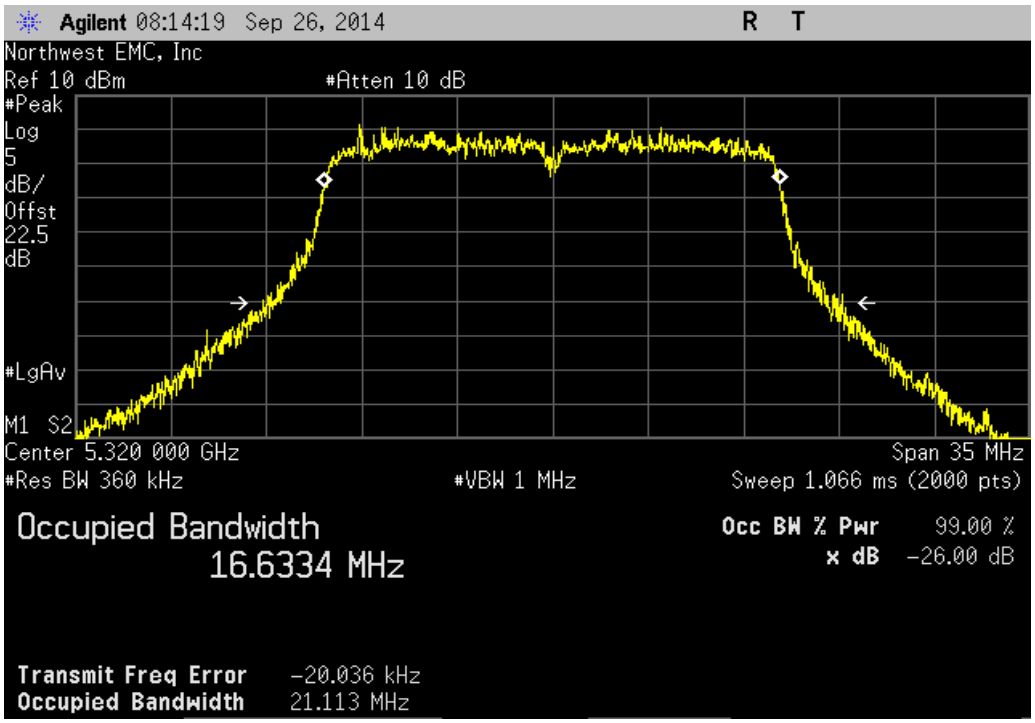

802.11(a) 36 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel

| | | | | Value | Limit (>) | Result |
|---|---|---|---|---|---|---|
| | | | | 21.14 MHz | 500 kHz | Pass |



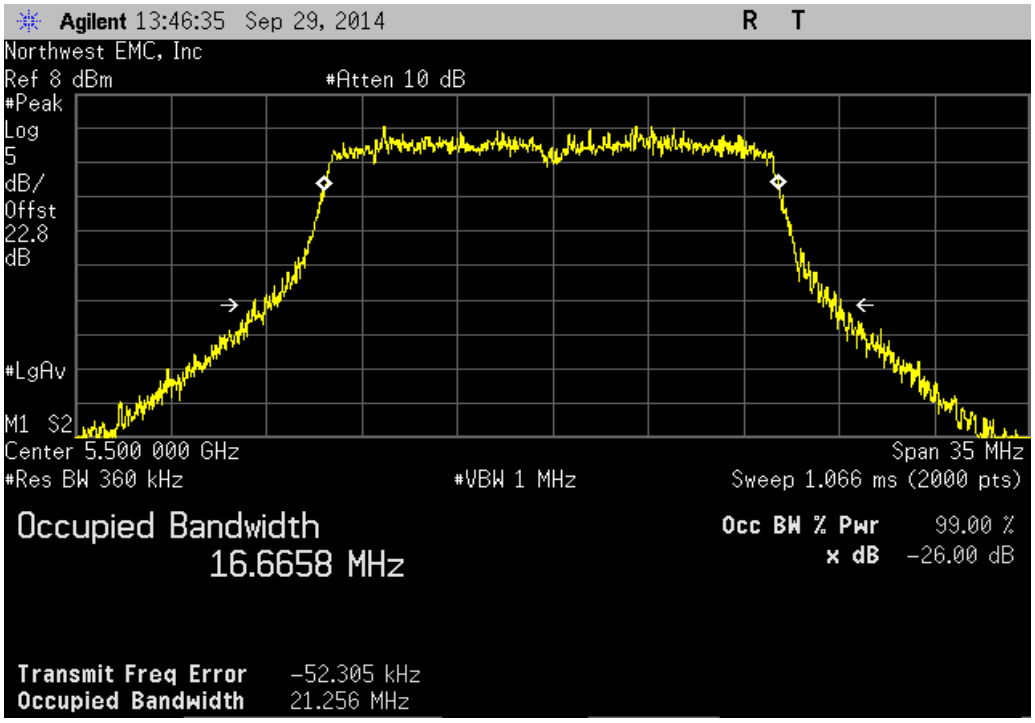
802.11(a) 36 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel

| | | | | Value | Limit (>) | Result |
|---|---|---|---|---|---|---|
| | | | | 21.113 MHz | 500 kHz | Pass |



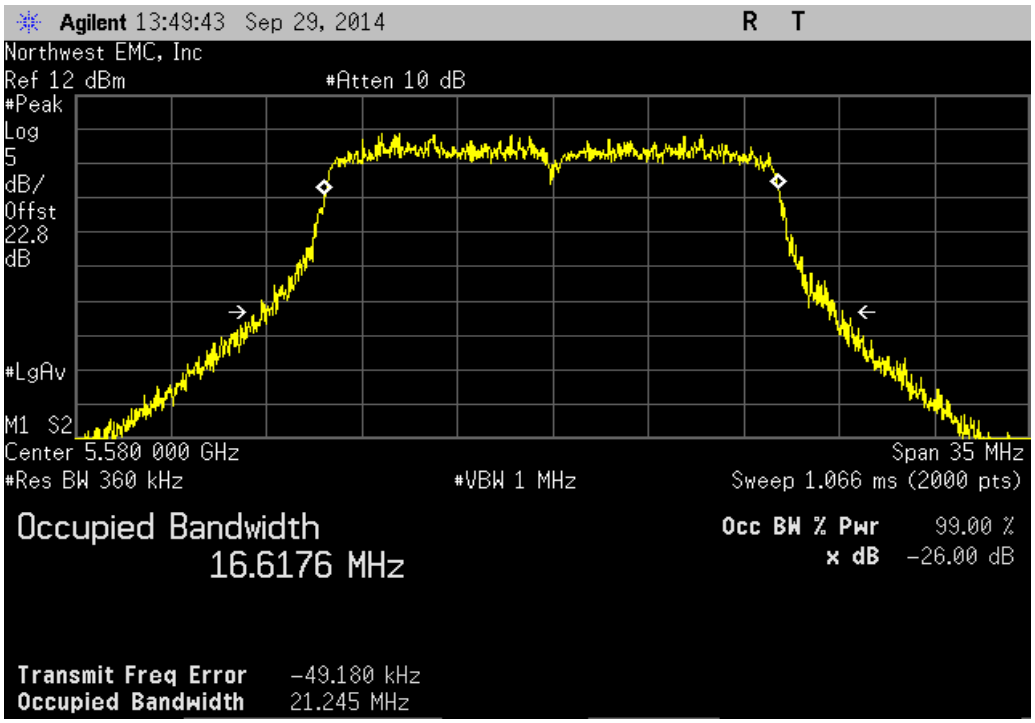

802.11(a) 36 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel

| | | | | Value | Limit (>) | Result |
|---|---|---|---|---|---|---|
| | | | | 21.256 MHz | 500 kHz | Pass |



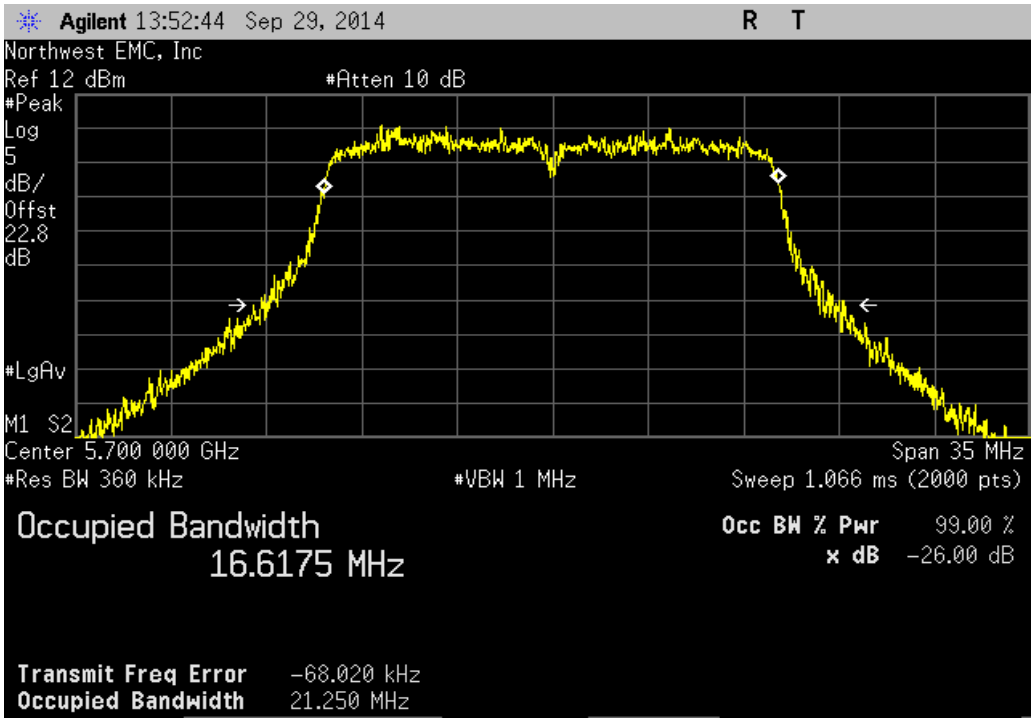
802.11(a) 36 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel

| | | | | Value | Limit (>) | Result |
|---|---|---|---|---|---|---|
| | | | | 21.245 MHz | 500 kHz | Pass |



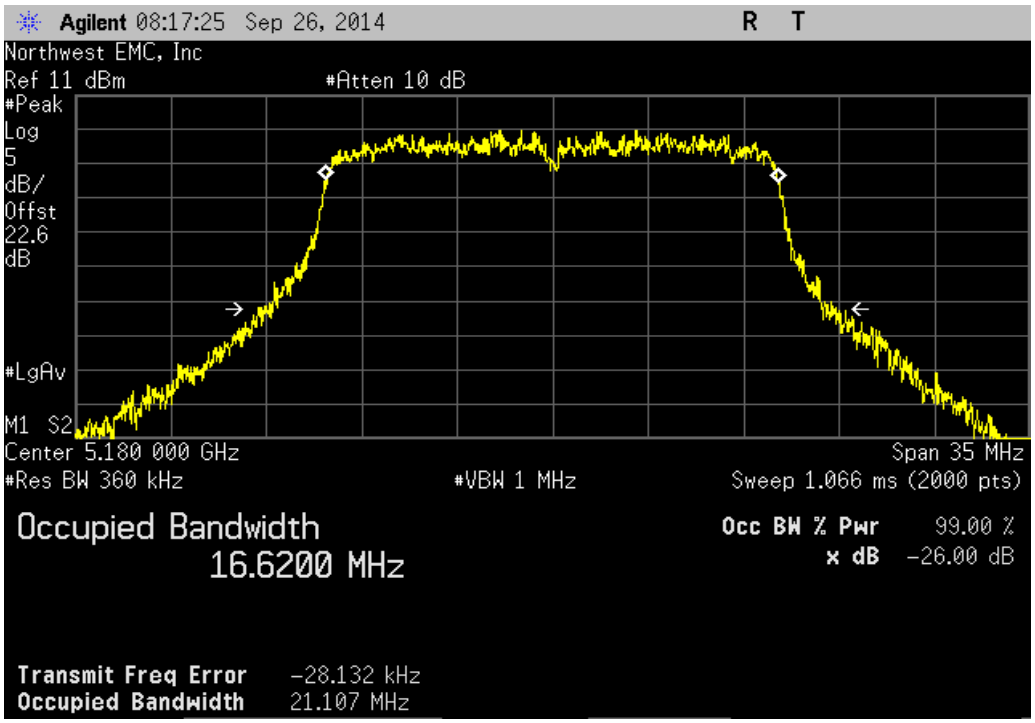

802.11(a) 36 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel

| | | | | Value | Limit (>) | Result |
|---|---|---|---|---|---|---|
| | | | | 21.25 MHz | 500 kHz | Pass |



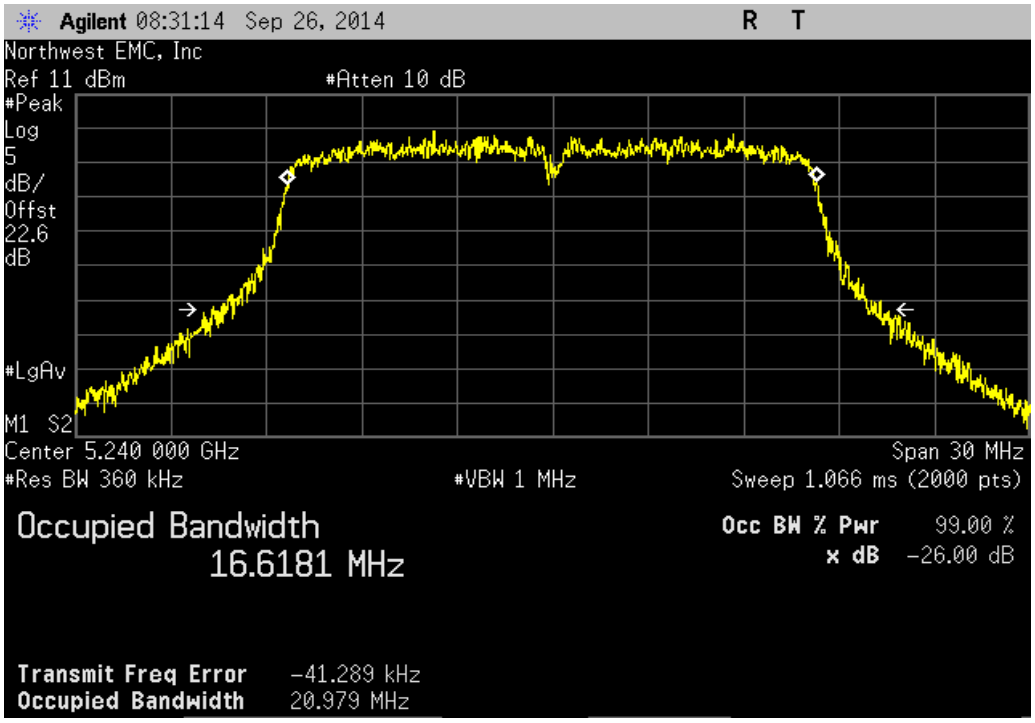
802.11(a) 54 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel

| | | | | Value | Limit (>) | Result |
|---|---|---|---|---|---|---|
| | | | | 21.107 MHz | 500 kHz | Pass |



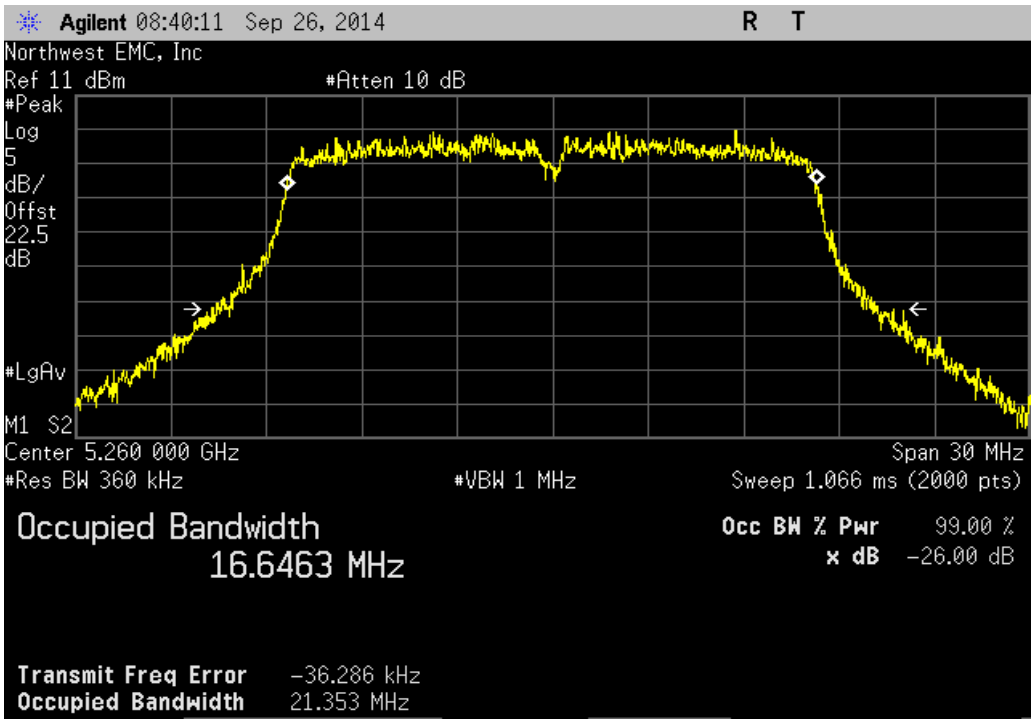

802.11(a) 54 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel

| | | | | Value | Limit (>) | Result |
|---|---|---|---|---|---|---|
| | | | | 20.979 MHz | 500 kHz | Pass |



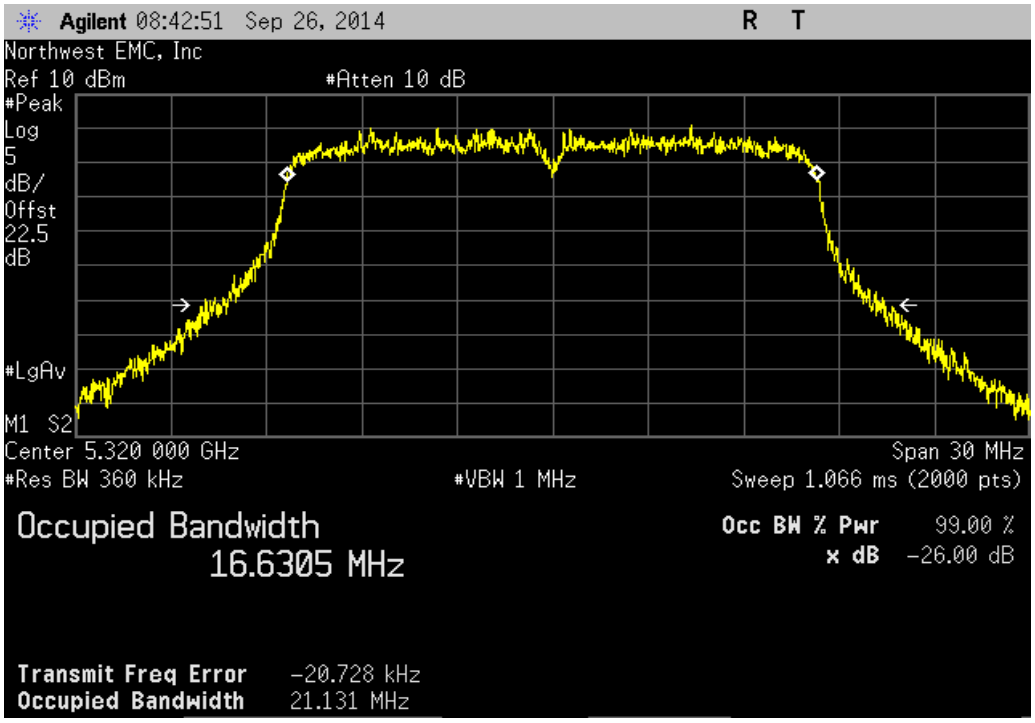
802.11(a) 54 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel

| | | | | Value | Limit (>) | Result |
|---|---|---|---|---|---|---|
| | | | | 21.353 MHz | 500 kHz | Pass |



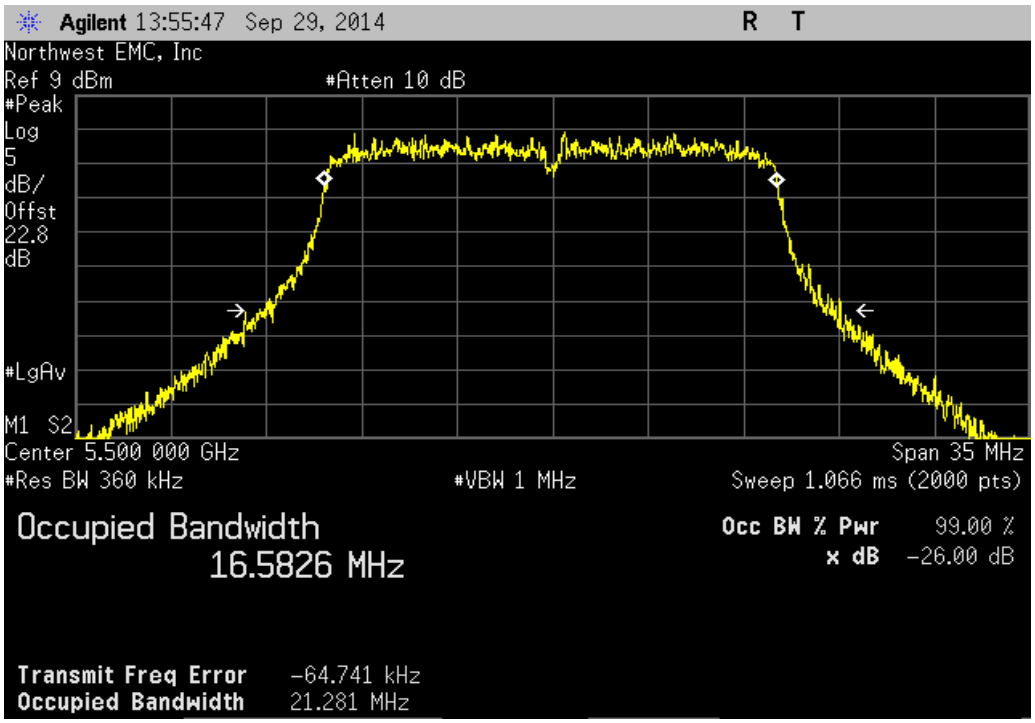

802.11(a) 54 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel

| | | | | Value | Limit (>) | Result |
|---|---|---|---|---|---|---|
| | | | | 21.131 MHz | 500 kHz | Pass |



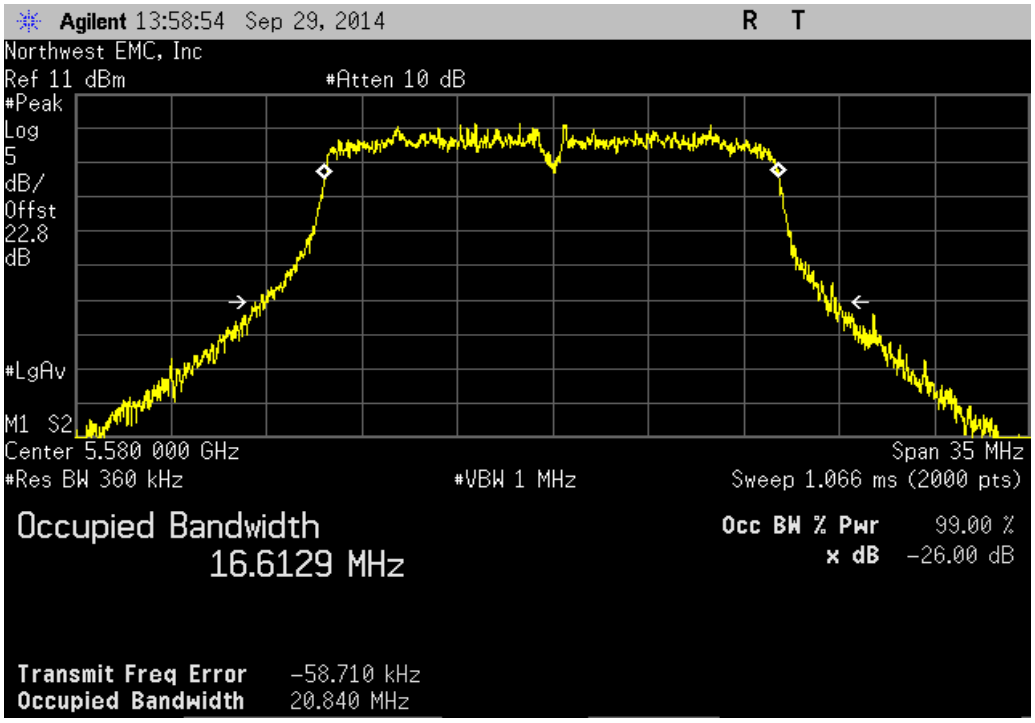
802.11(a) 54 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel

| | | | | Value | Limit (>) | Result |
|---|---|---|---|---|---|---|
| | | | | 21.281 MHz | 500 kHz | Pass |



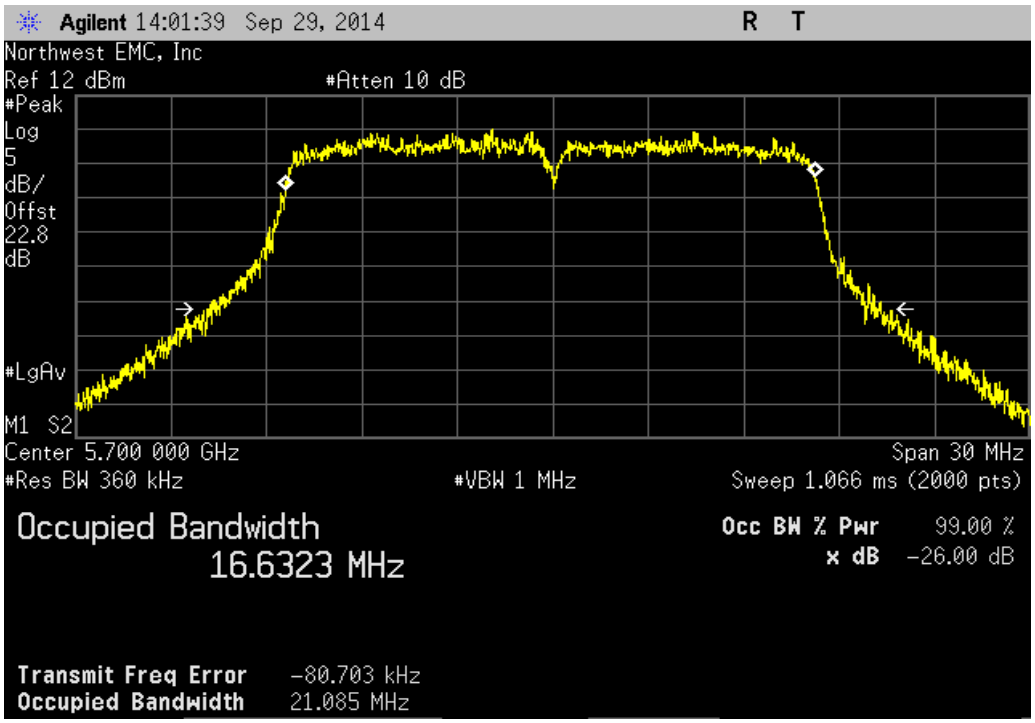

802.11(a) 54 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel

| | | | | Value | Limit (>) | Result |
|---|---|---|---|---|---|---|
| | | | | 20.84 MHz | 500 kHz | Pass |



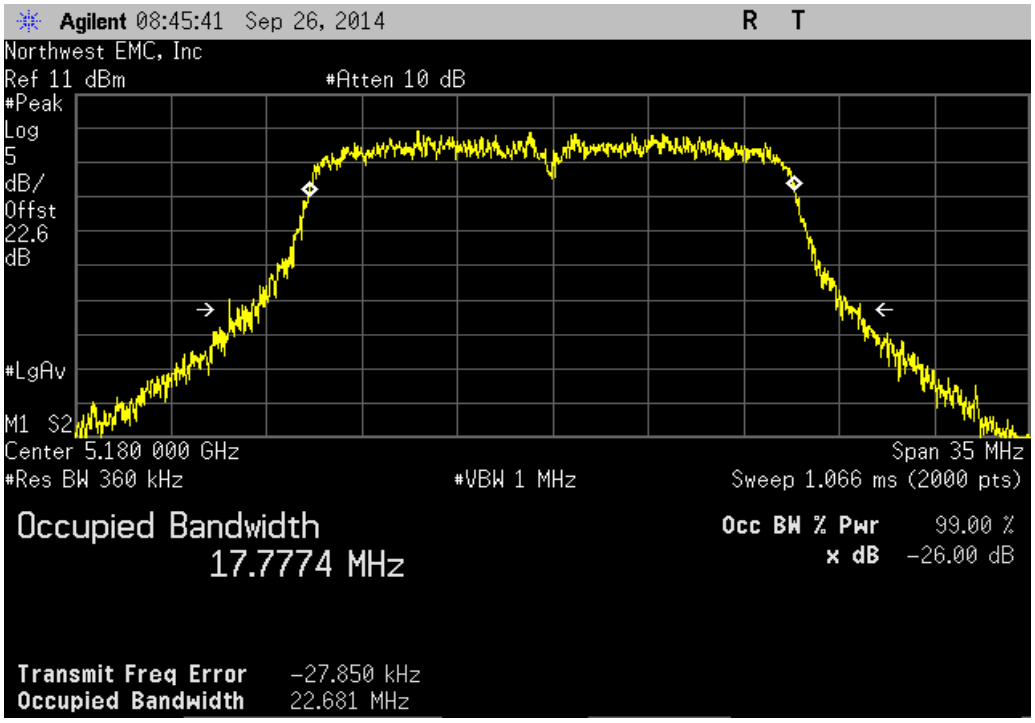
802.11(a) 54 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel

| | | | | Value | Limit (>) | Result |
|---|---|---|---|---|---|---|
| | | | | 21.085 MHz | 500 kHz | Pass |



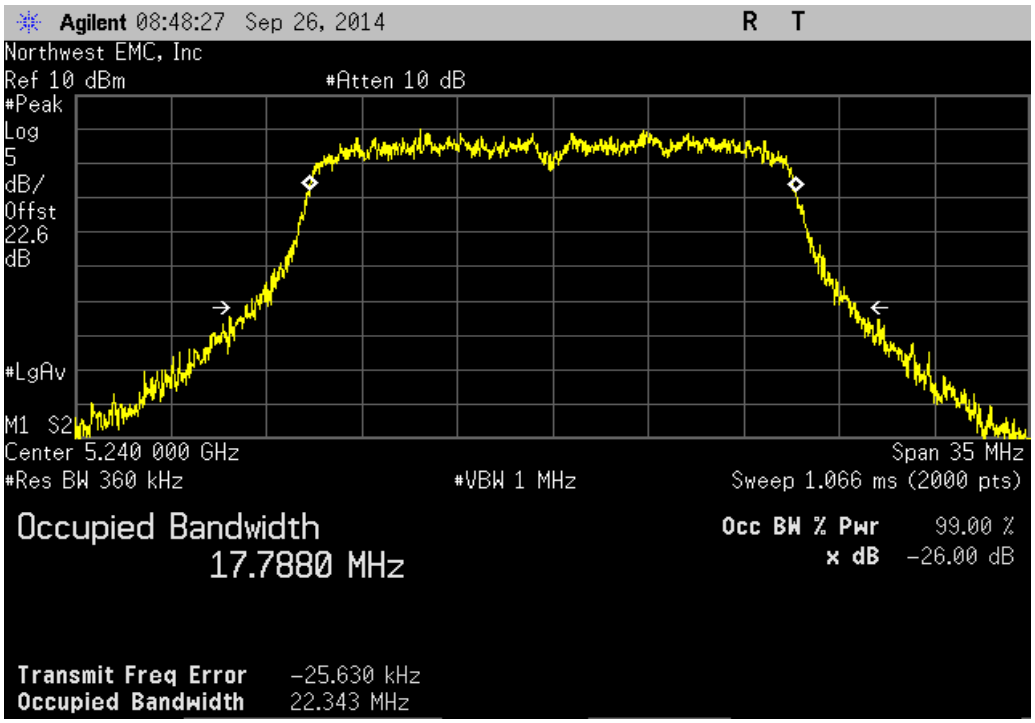

802.11(n) MCS0, 5150 - 5250 MHz Band, Channel 36, Low Channel

| | | | | Value | Limit (>) | Result |
|---|---|---|---|---|---|---|
| | | | | 22.681 MHz | 500 kHz | Pass |



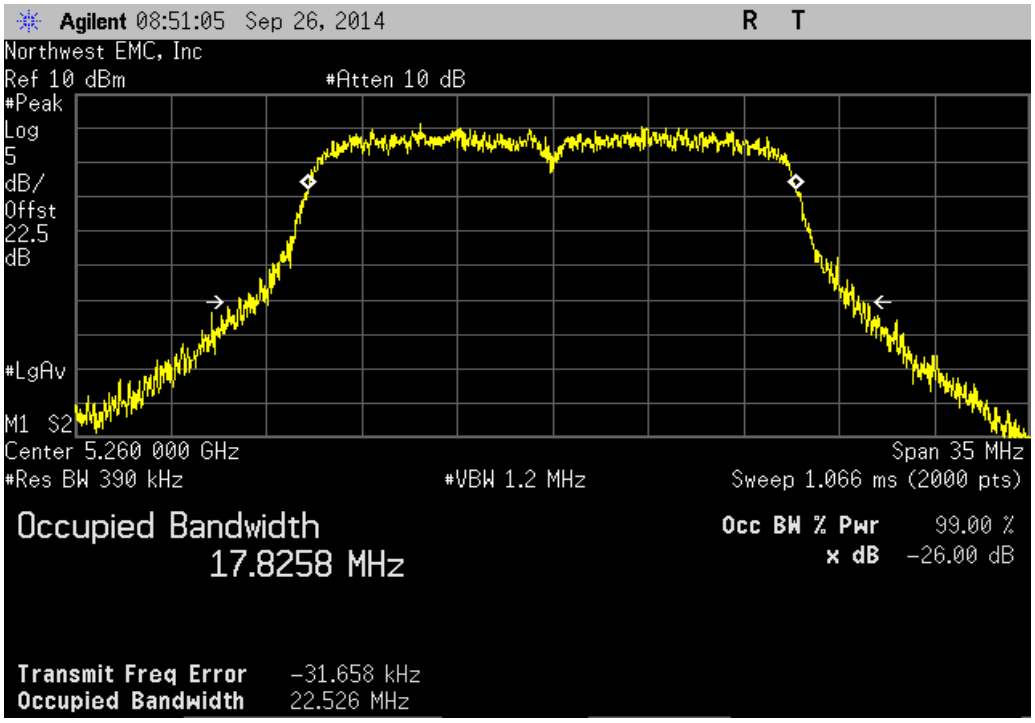
802.11(n) MCS0, 5150 - 5250 MHz Band, Channel 48, High Channel

| | | | | Value | Limit (>) | Result |
|---|---|---|---|---|---|---|
| | | | | 22.343 MHz | 500 kHz | Pass |



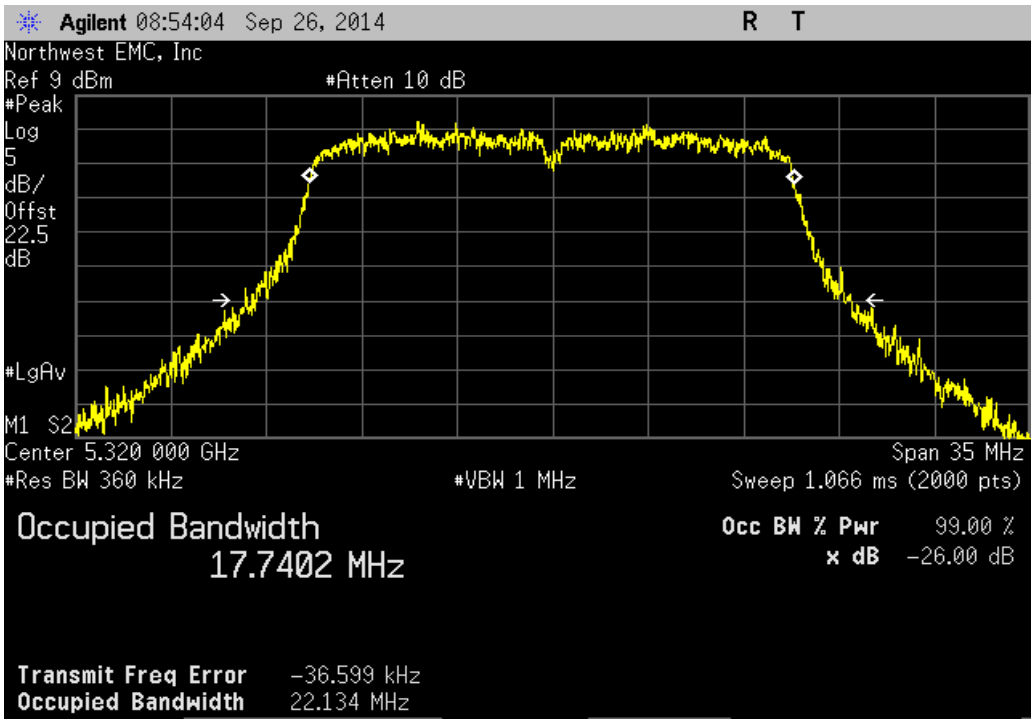

802.11(n) MCS0, 5250 - 5350 MHz Band, Channel 52, Low Channel

| | | | | Value | Limit (>) | Result |
|---|---|---|---|---|---|---|
| | | | | 22.526 MHz | 500 kHz | Pass |



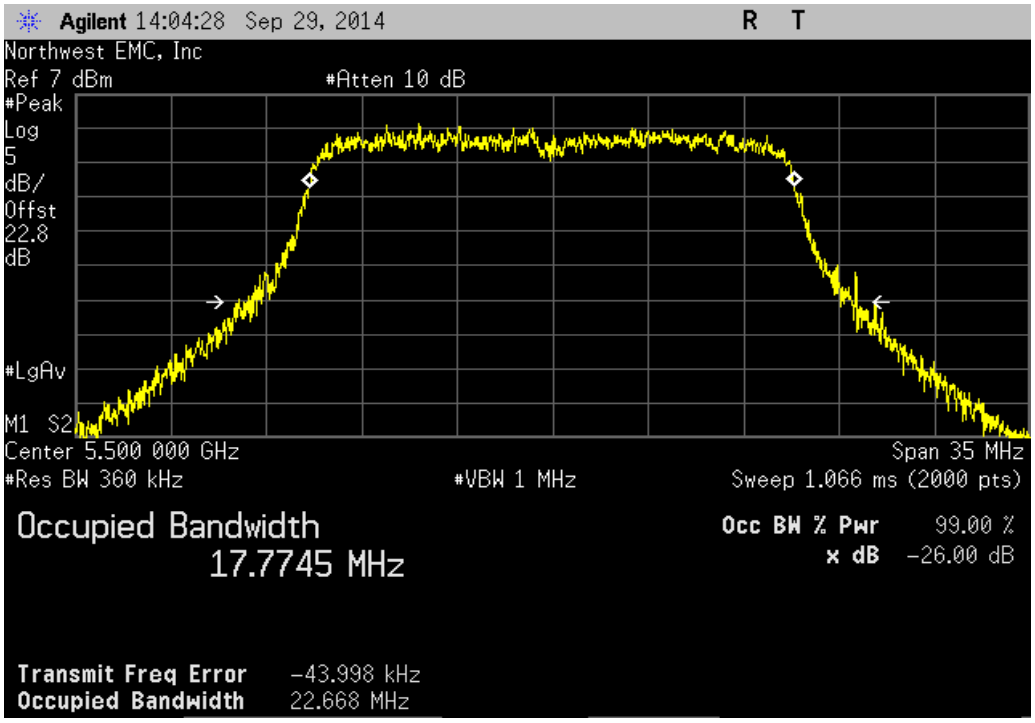
802.11(n) MCS0, 5250 - 5350 MHz Band, Channel 64, High Channel

| | | | | Value | Limit (>) | Result |
|---|---|---|---|---|---|---|
| | | | | 22.134 MHz | 500 kHz | Pass |



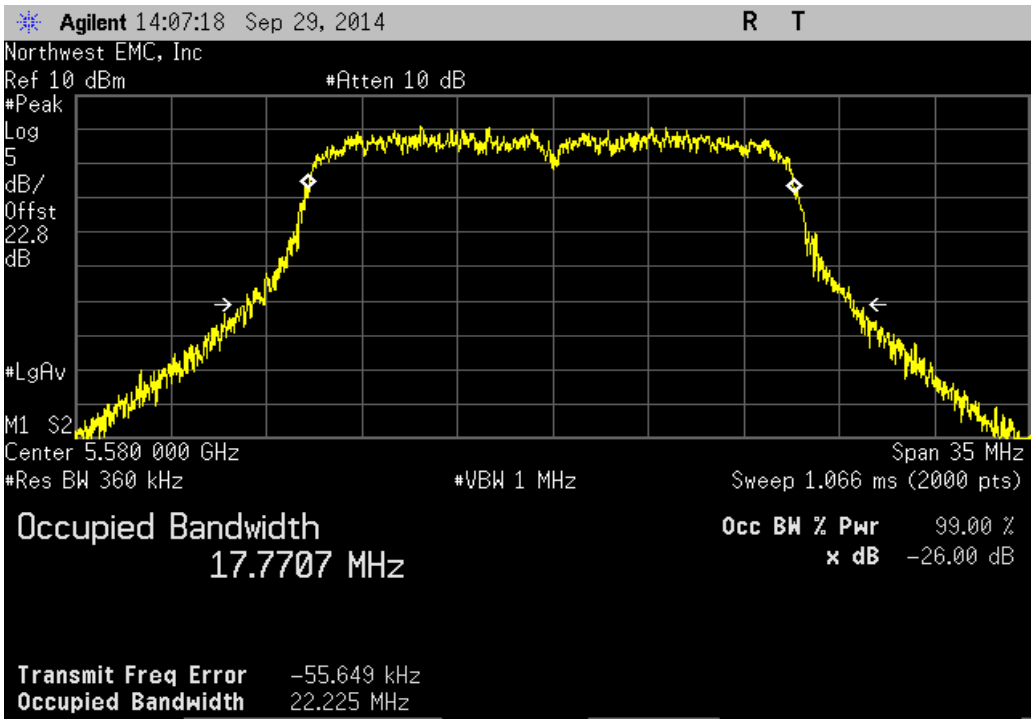

802.11(n) MCS0, 5470 - 5725 MHz Band, Channel 100, Low Channel

| | | | | Value | Limit (>) | Result |
|---|---|---|---|---|---|---|
| | | | | 22.668 MHz | 500 kHz | Pass |



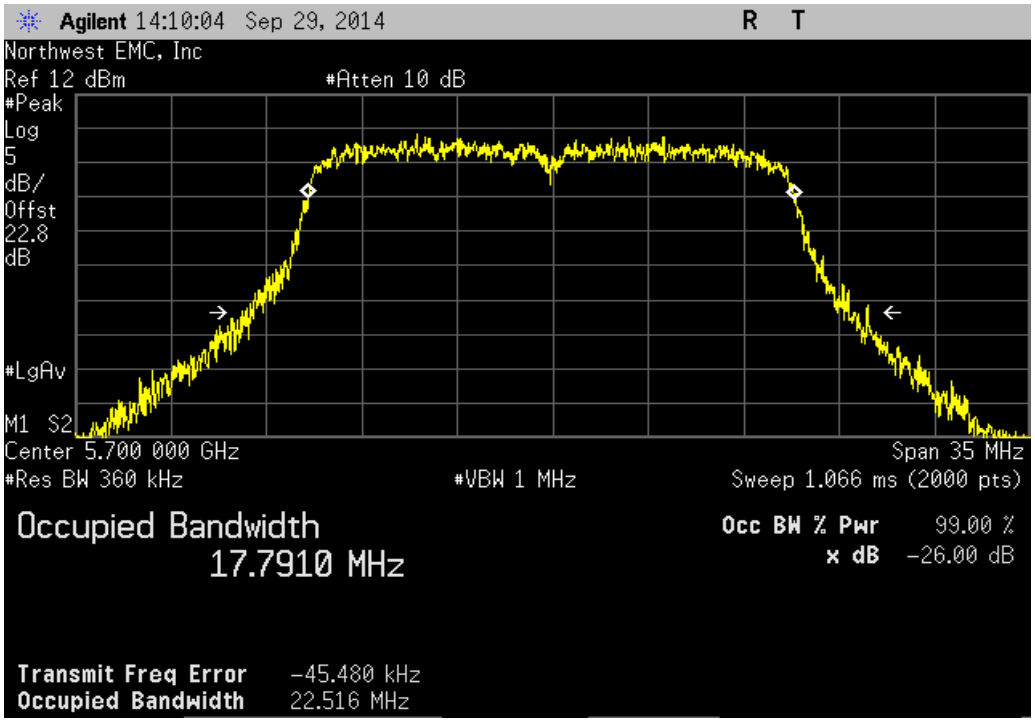
802.11(n) MCS0, 5470 - 5725 MHz Band, Channel 116, Mid Channel

| | | | | Value | Limit (>) | Result |
|---|---|---|---|---|---|---|
| | | | | 22.225 MHz | 500 kHz | Pass |



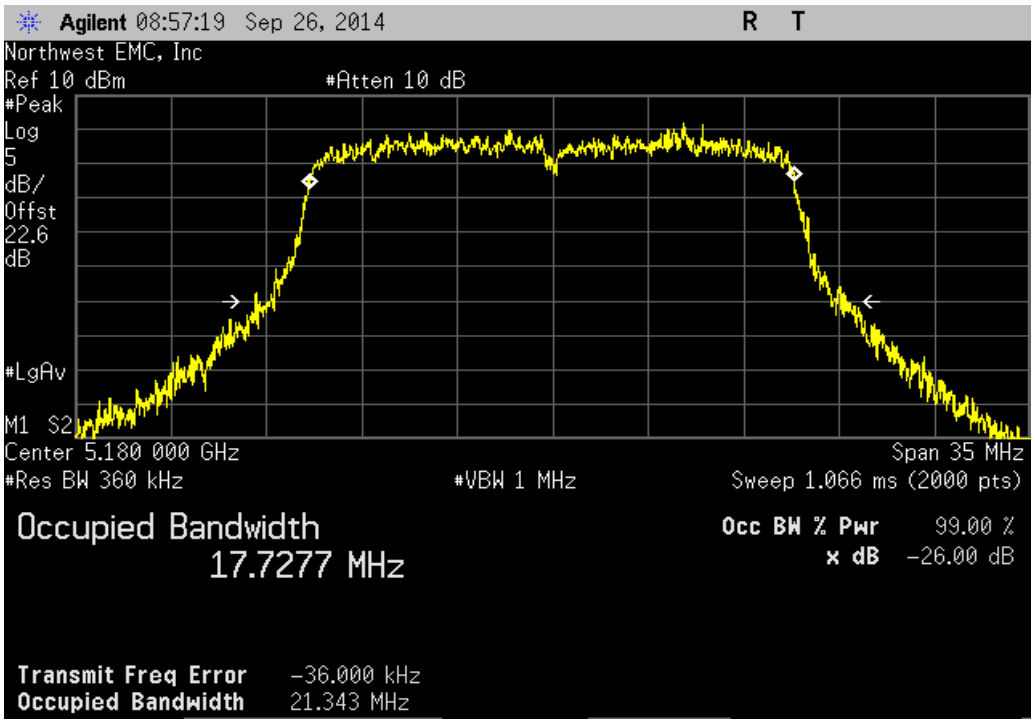

802.11(n) MCS0, 5470 - 5725 MHz Band, Channel 140, High Channel

| | | | | Value | Limit (>) | Result |
|---|---|---|---|---|---|---|
| | | | | 22.516 MHz | 500 kHz | Pass |



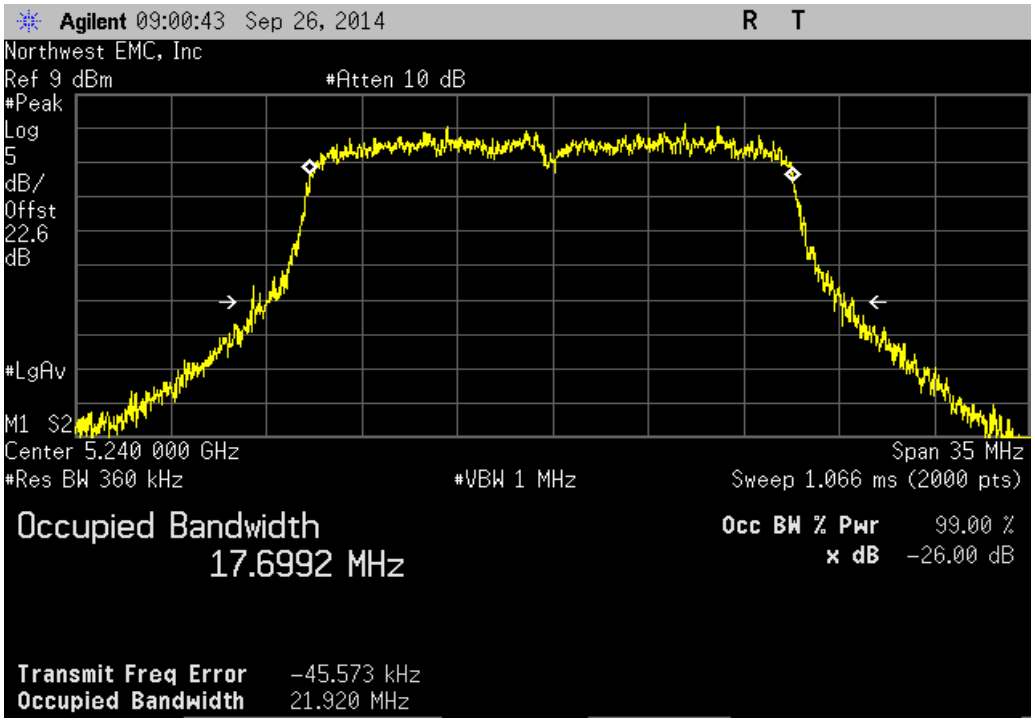
802.11(n) MCS7, 5150 - 5250 MHz Band, Channel 36, Low Channel

| | | | | Value | Limit (>) | Result |
|---|---|---|---|---|---|---|
| | | | | 21.343 MHz | 500 kHz | Pass |



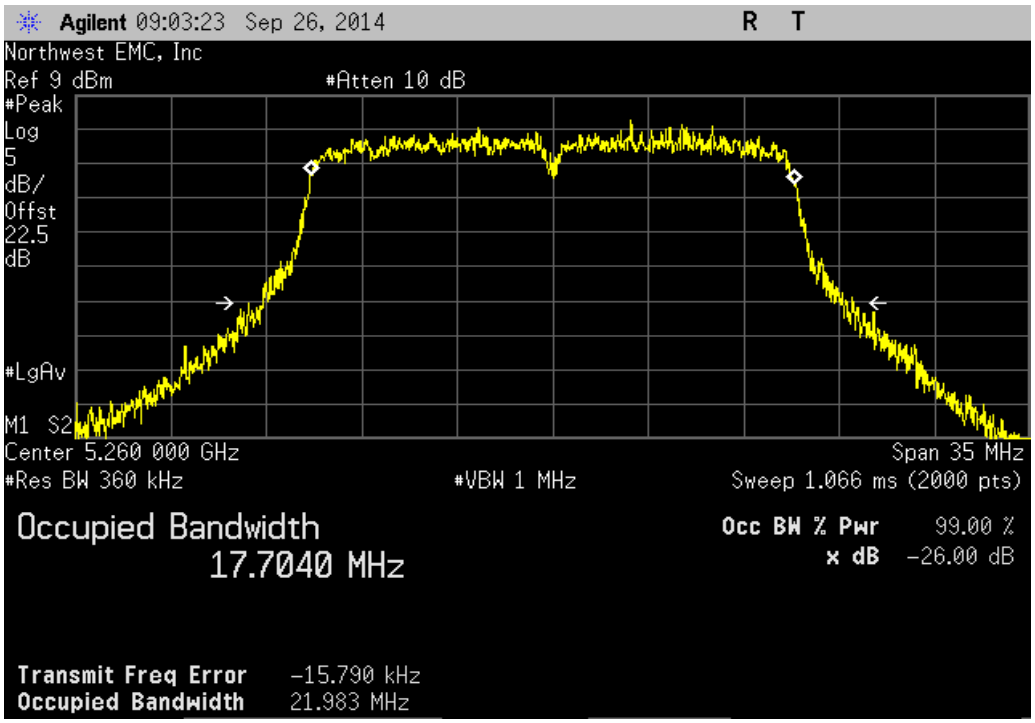

802.11(n) MCS7, 5150 - 5250 MHz Band, Channel 48, High Channel

| | | | | Value | Limit (>) | Result |
|---|---|---|---|---|---|---|
| | | | | 21.92 MHz | 500 kHz | Pass |



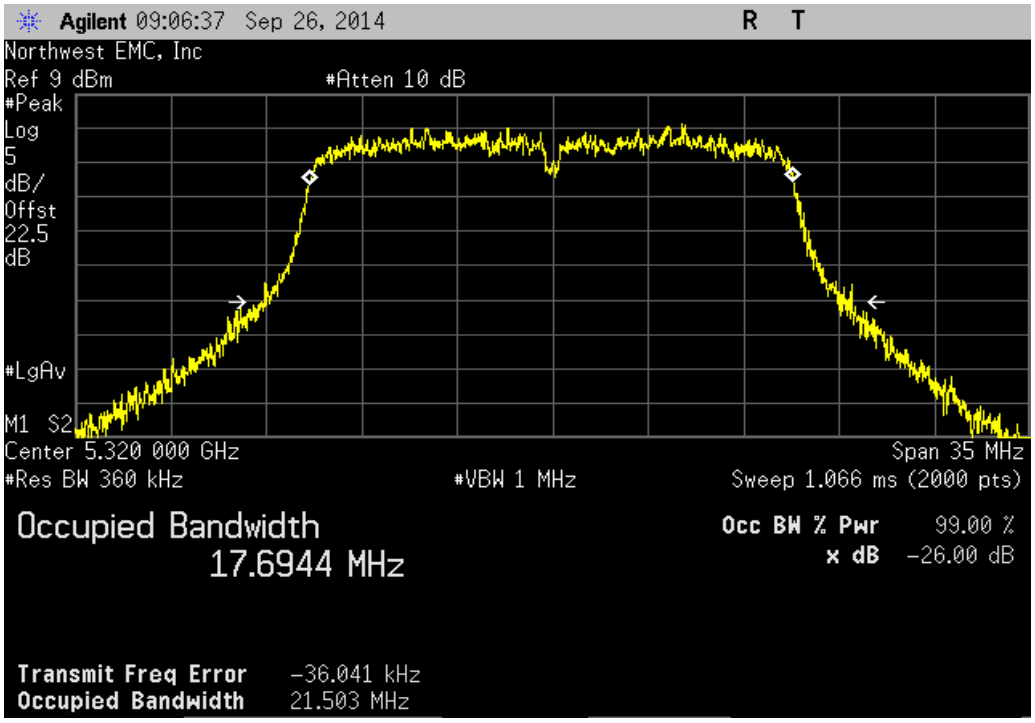
802.11(n) MCS7, 5250 - 5350 MHz Band, Channel 52, Low Channel

| | | | | Value | Limit (>) | Result |
|---|---|---|---|---|---|---|
| | | | | 21.983 MHz | 500 kHz | Pass |

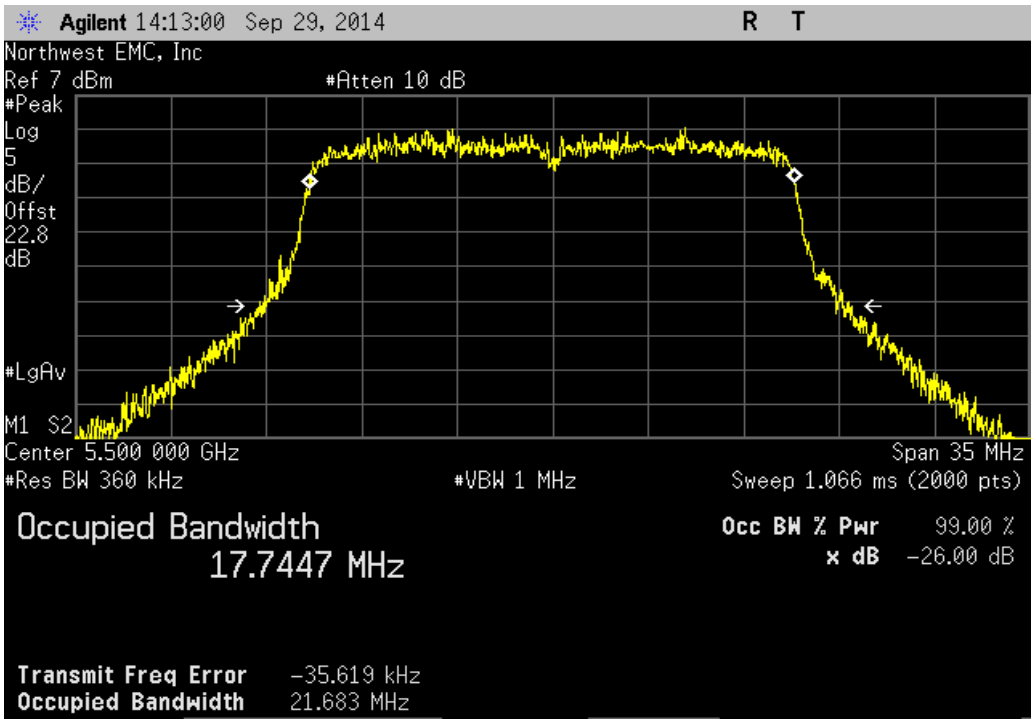



802.11(n) MCS7, 5250 - 5350 MHz Band, Channel 64, High Channel

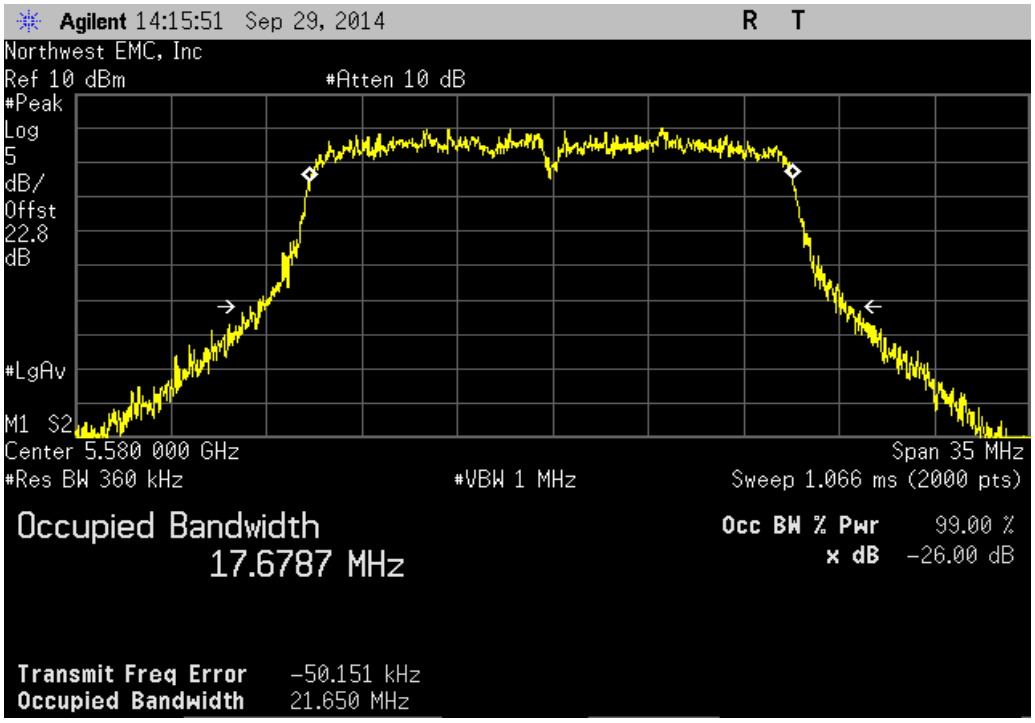
| | | | | Value | Limit (>) | Result |
|---|---|---|---|---|---|---|
| | | | | 21.503 MHz | 500 kHz | Pass |



| 802.11(n) MCS7, 5470 - 5725 MHz Band, Channel 100, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (>) | Result |
| | | | | 21.683 MHz | 500 kHz | Pass |

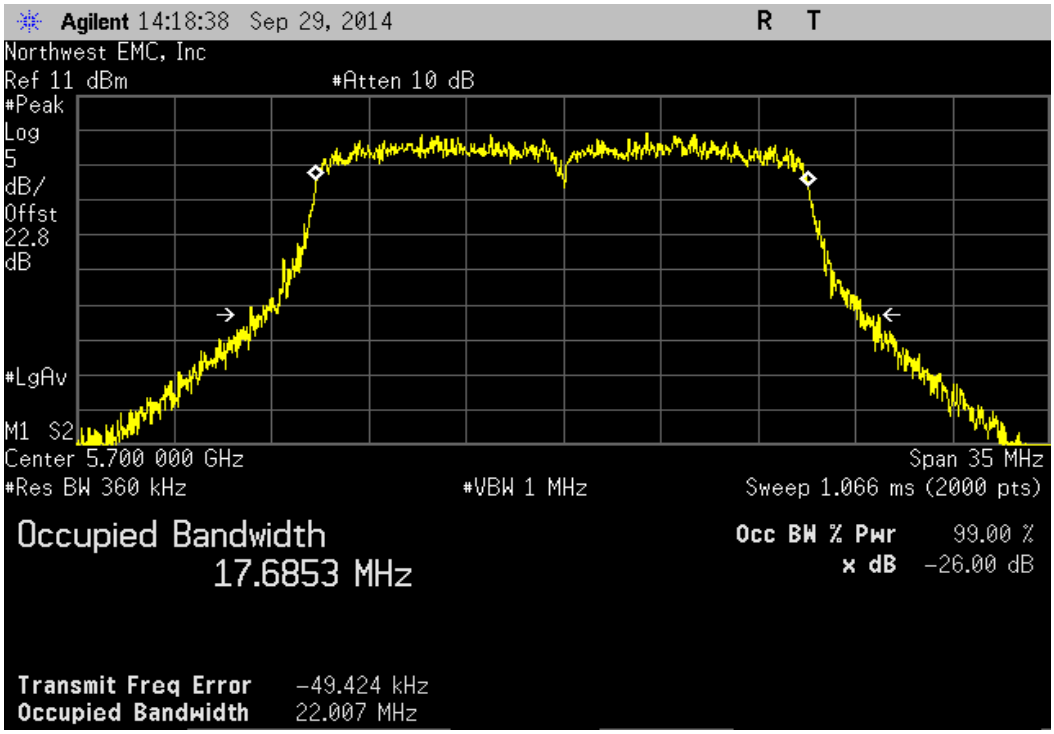



| 802.11(n) MCS7, 5470 - 5725 MHz Band, Channel 116, Mid Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (>) | Result |
| | | | | 21.65 MHz | 500 kHz | Pass |



# EMISSION BANDWIDTH

| 802.11(n) MCS7, 5470 - 5725 MHz Band, Channel 140, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (>) | Result |
| | | | | 22.007 MHz | 500 kHz | Pass |



# PEAK TRANSMIT POWER

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 |
|---|---|---|---|---|---|
| Signal Generator MXG | Agilent | N5183A | TIK | 6/7/2012 | 36 |
| 40 GHz DC block | Fairview Microwave | SD3379 | AMI | 9/26/2013 | 14 |
| Attenuator - 20db, 'SMA' | SM Electronics | SA26B-20 | RFW | 4/3/2014 | 12 |
| Spectrum Analyzer | Agilent | E4440A | AAX | 4/28/2014 | 12 |

**TEST DESCRIPTION**

FCC KDB 789033 D01 General UNII Test Procedures Section C was followed. The transmit frequency was set to the required channels in each band. 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.

Prior to measuring peak 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.

Method SA-1 (trace averaging with the EUT transmitting at full power throughout each sweep) was used for this test.

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

- RBW = 1 MHz, VBW = 3 MHz
- Sample Detector
- The number of points was set to 601. This satisfied the requirement of being > 2 * span / RBW
- Trace average 100 traces in power averaging mode.
- Power was integrated across “B”, by using the channel power function of the analyzer.

# PEAK TRANSMIT POWER

| | | | | | |
|---|---|---|---|---|---|
| EUT: | ConnectCore i.MX6 WiFi/Bluetooth | | | Work Order: | ETHE0009 |
| Serial Number: | 00409D 7C03B4 | | | Date: | 09/29/14 |
| Customer: | Etherios Design Solutions | | | Temperature: | 22.7°C |
| Attendees: | None | | | Humidity: | 47% |
| Project: | None | | | Barometric Pres.: | 1023.7 |
| Tested by: | Trevor Buls | Power: | 5VDC | Job Site: | MN08 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.407:2014 | ANSI C63.10:2009 |

**COMMENTS**

None

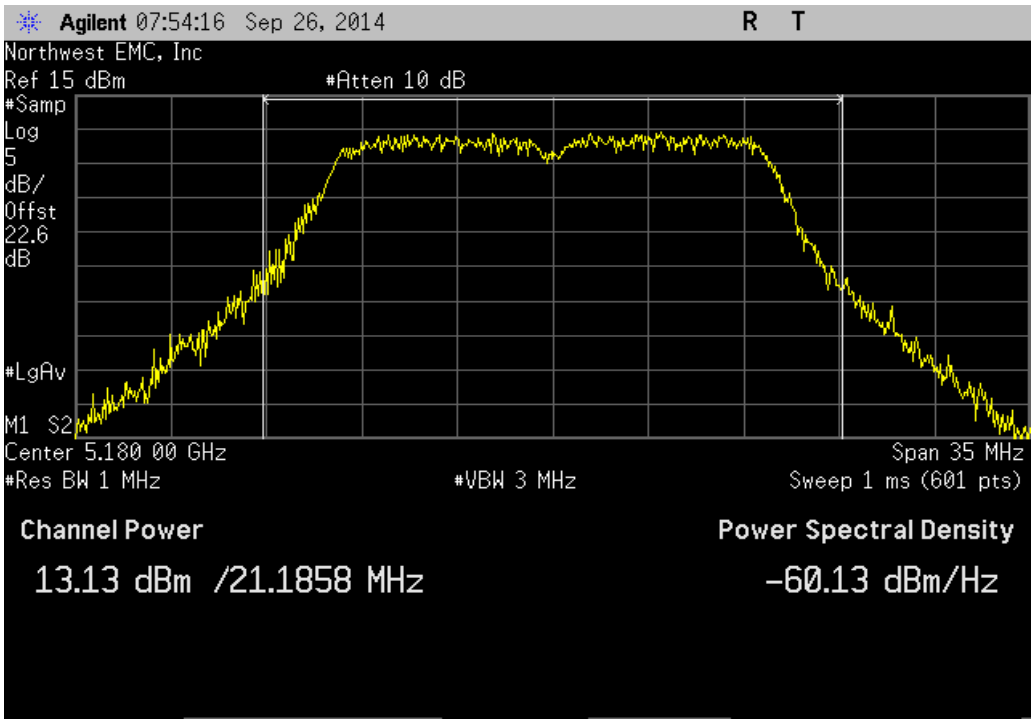
**DEVIATIONS FROM TEST STANDARD**

None

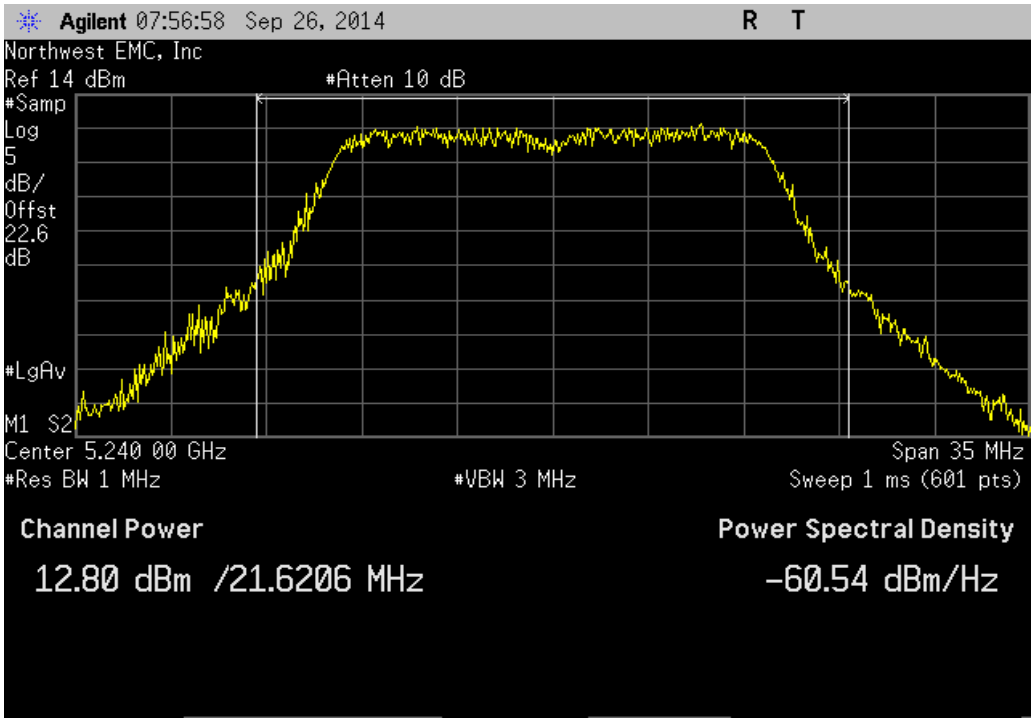
| Configuration # | 1 | Signature | Trevor Buls |
|---|---|---|---|

| | | Value | Limit (<) | Result |
|---|---|---|---|---|
| 802.11(a) 6 Mbps | | | | |
| | 5150 - 5250 MHz Band | | | |
| | Channel 36, Low Channel | 13.129 dBm | 17 dBm | Pass |
| | Channel 48, High Channel | 12.805 dBm | 17 dBm | Pass |
| | 5250 - 5350 MHz Band | | | |
| | Channel 52, Low Channel | 13.425 dBm | 24 dBm | Pass |
| | Channel 64, High Channel | 12.987 dBm | 24 dBm | Pass |
| | 5470 - 5725 MHz Band | | | |
| | Channel 100, Low Channel | 8.935 dBm | 24 dBm | Pass |
| | Channel 116, Mid Channel | 12.882 dBm | 24 dBm | Pass |
| | Channel 140, High Channel | 13.791 dBm | 24 dBm | Pass |
| 802.11(a) 36 Mbps | | | | |
| | 5150 - 5250 MHz Band | | | |
| | Channel 36, Low Channel | 13.881 dBm | 17 dBm | Pass |
| | Channel 48, High Channel | 12.669 dBm | 17 dBm | Pass |
| | 5250 - 5350 MHz Band | | | |
| | Channel 52, Low Channel | 12.798 dBm | 24 dBm | Pass |
| | Channel 64, High Channel | 12.746 dBm | 24 dBm | Pass |
| | 5470 - 5725 MHz Band | | | |
| | Channel 100, Low Channel | 10.484 dBm | 24 dBm | Pass |
| | Channel 116, Mid Channel | 13.668 dBm | 24 dBm | Pass |
| | Channel 140, High Channel | 14.556 dBm | 24 dBm | Pass |
| 802.11(a) 54 Mbps | | | | |
| | 5150 - 5250 MHz Band | | | |
| | Channel 36, Low Channel | 13.357 dBm | 17 dBm | Pass |
| | Channel 48, High Channel | 12.758 dBm | 17 dBm | Pass |
| | 5250 - 5350 MHz Band | | | |
| | Channel 52, Low Channel | 12.98 dBm | 24 dBm | Pass |
| | Channel 64, High Channel | 12.518 dBm | 24 dBm | Pass |
| | 5470 - 5725 MHz Band | | | |
| | Channel 100, Low Channel | 10.41 dBm | 24 dBm | Pass |
| | Channel 116, Mid Channel | 13.882 dBm | 24 dBm | Pass |
| | Channel 140, High Channel | 14.355 dBm | 24 dBm | Pass |
| 802.11(n) MCS0 | | | | |
| | 5150 - 5250 MHz Band | | | |
| | Channel 36, Low Channel | 13.769 dBm | 17 dBm | Pass |
| | Channel 48, High Channel | 13.131 dBm | 17 dBm | Pass |
| | 5250 - 5350 MHz Band | | | |
| | Channel 52, Low Channel | 13.369 dBm | 24 dBm | Pass |
| | Channel 64, High Channel | 12.94 dBm | 24 dBm | Pass |
| | 5470 - 5725 MHz Band | | | |
| | Channel 100, Low Channel | 10.704 dBm | 24 dBm | Pass |
| | Channel 116, Mid Channel | 13.658 dBm | 24 dBm | Pass |
| | Channel 140, High Channel | 14.308 dBm | 24 dBm | Pass |
| 802.11(n) MCS7 | | | | |
| | 5150 - 5250 MHz Band | | | |
| | Channel 36, Low Channel | 12.661 dBm | 17 dBm | Pass |
| | Channel 48, High Channel | 11.686 dBm | 17 dBm | Pass |
| | 5250 - 5350 MHz Band | | | |
| | Channel 52, Low Channel | 11.944 dBm | 24 dBm | Pass |
| | Channel 64, High Channel | 11.404 dBm | 24 dBm | Pass |
| | 5470 - 5725 MHz Band | | | |
| | Channel 100, Low Channel | 9.629 dBm | 24 dBm | Pass |
| | Channel 116, Mid Channel | 12.584 dBm | 24 dBm | Pass |
| | Channel 140, High Channel | 13.243 dBm | 24 dBm | Pass |

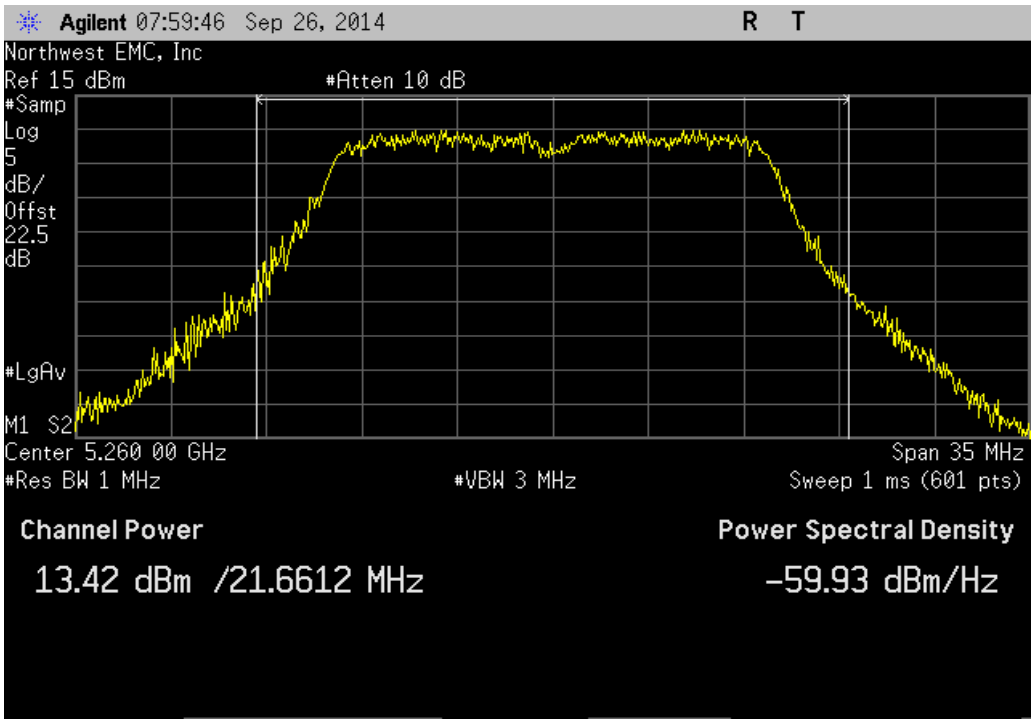
| 802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (<) | Result |
| | | | | 13.129 dBm | 17 dBm | Pass |



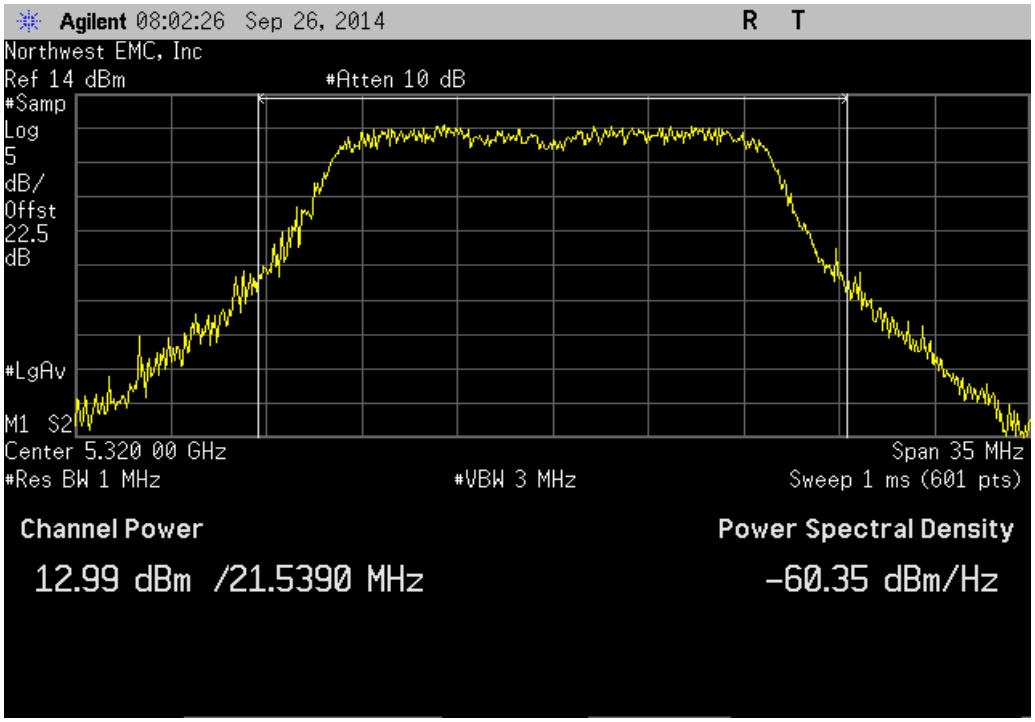

| 802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (<) | Result |
| | | | | 12.805 dBm | 17 dBm | Pass |



| 802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (<) | Result |
| | | | | 13.425 dBm | 24 dBm | Pass |

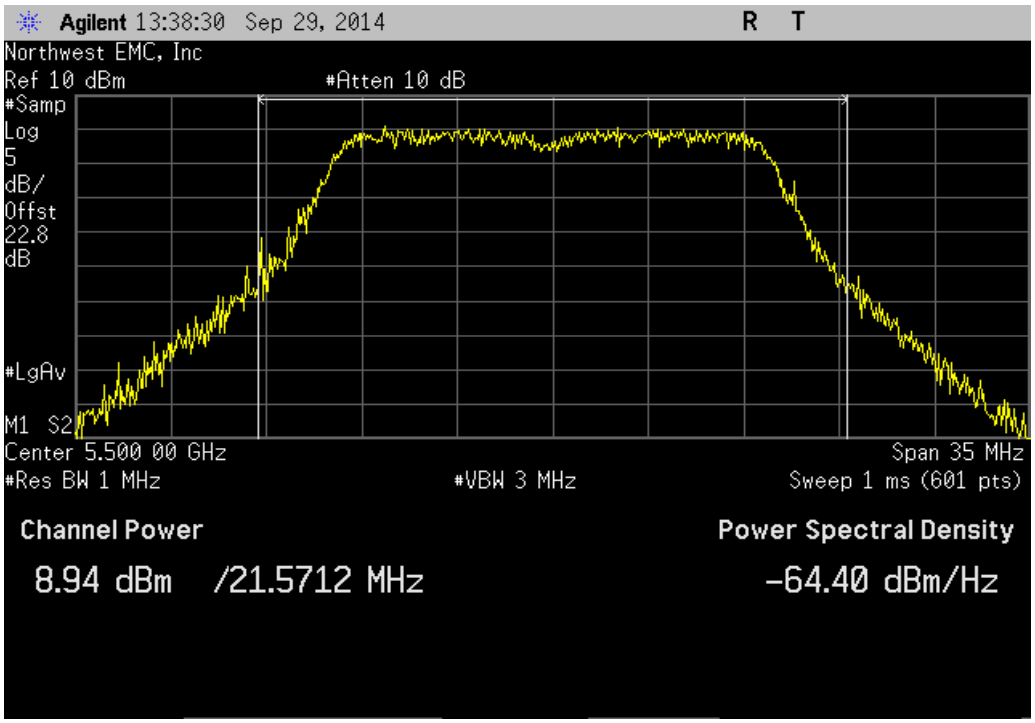



| 802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (<) | Result |
| | | | | 12.987 dBm | 24 dBm | Pass |



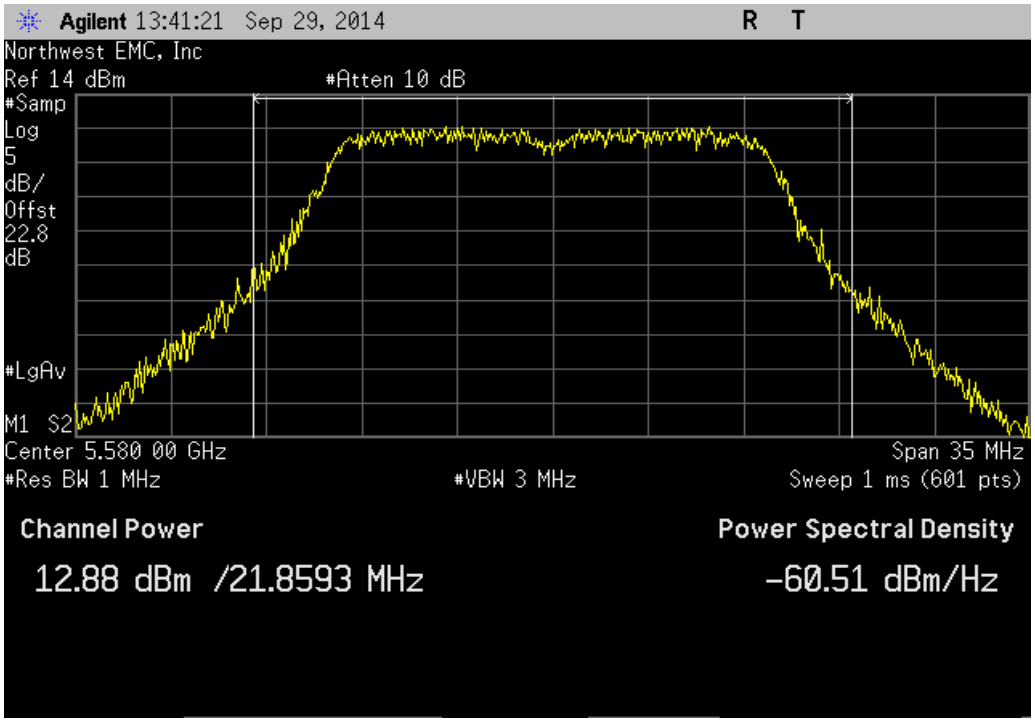
802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel

| | | | | Value | Limit (<) | Result |
|---|---|---|---|---|---|---|
| | | | | 8.935 dBm | 24 dBm | Pass |

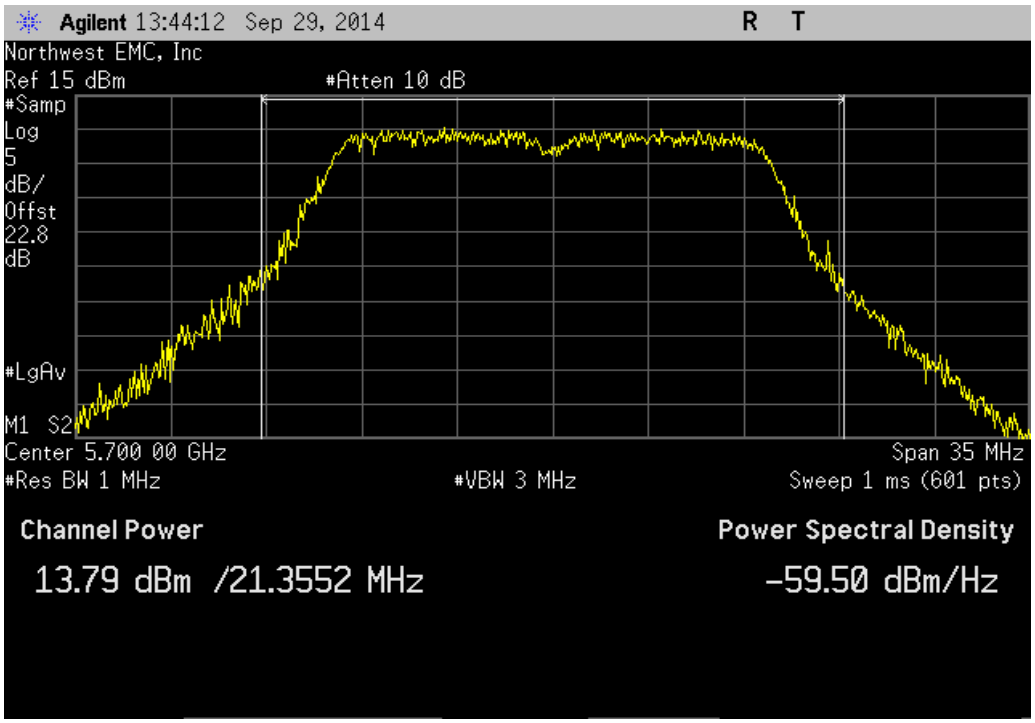



802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel

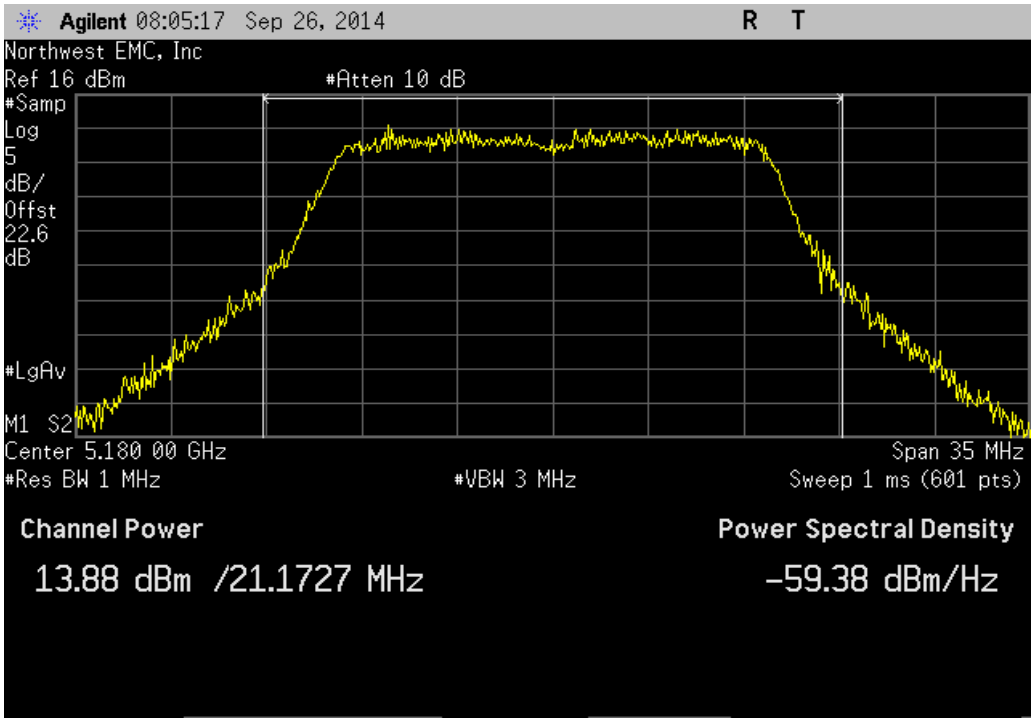
| | | | | Value | Limit (<) | Result |
|---|---|---|---|---|---|---|
| | | | | 12.882 dBm | 24 dBm | Pass |



| 802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (<) | Result |
| | | | | 13.791 dBm | 24 dBm | Pass |

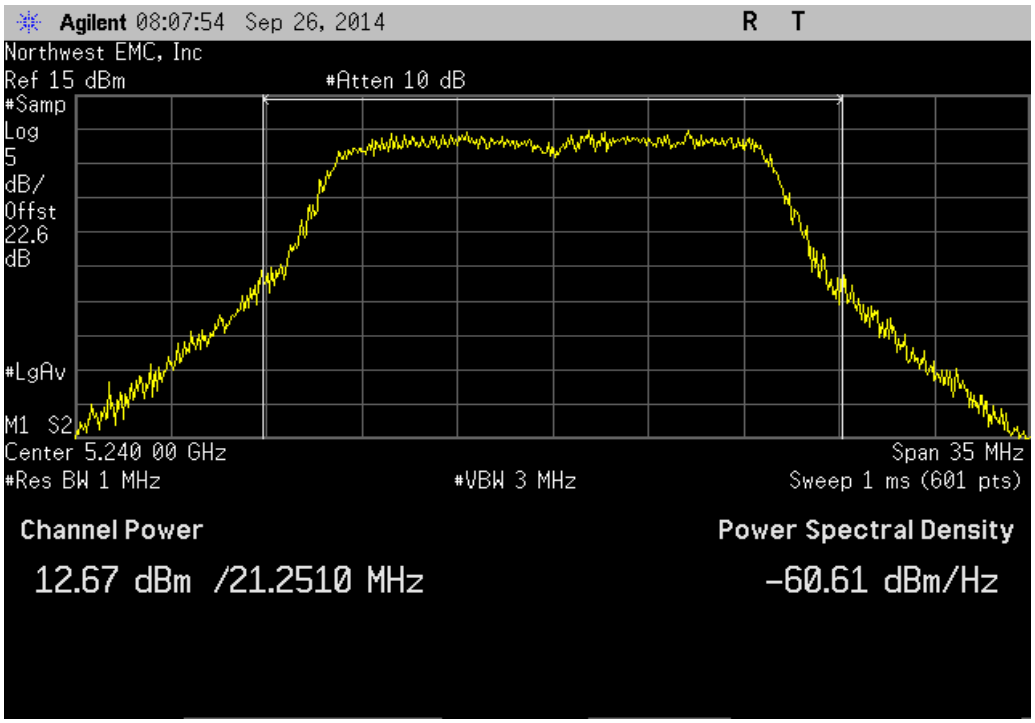



| 802.11(a) 36 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (<) | Result |
| | | | | 13.881 dBm | 17 dBm | Pass |

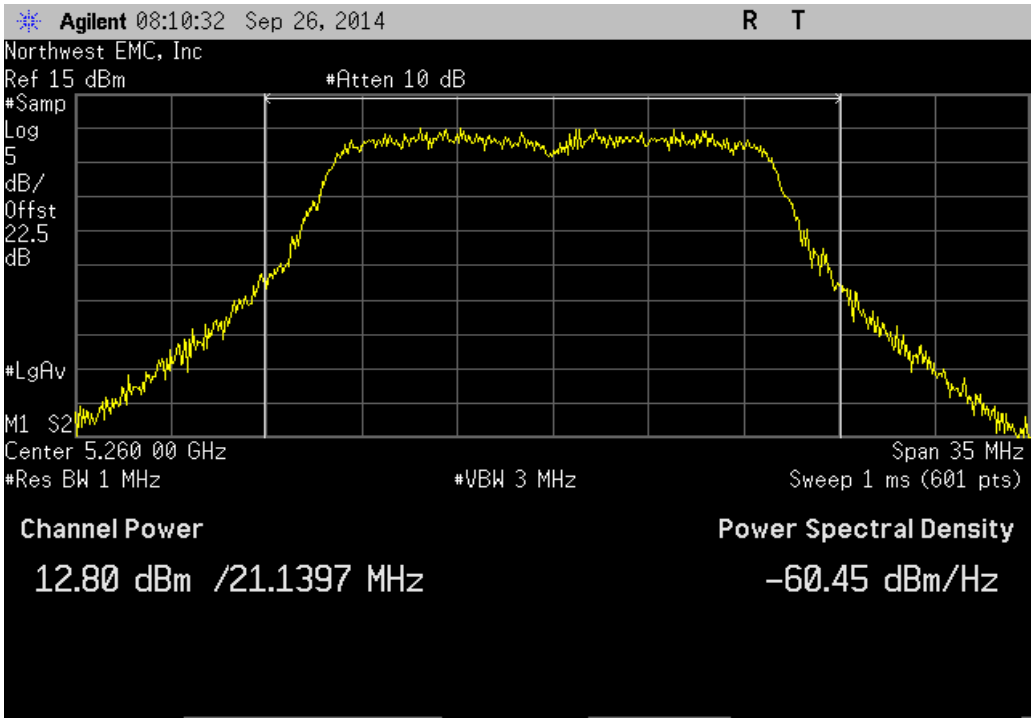


# PEAK TRANSMIT POWER

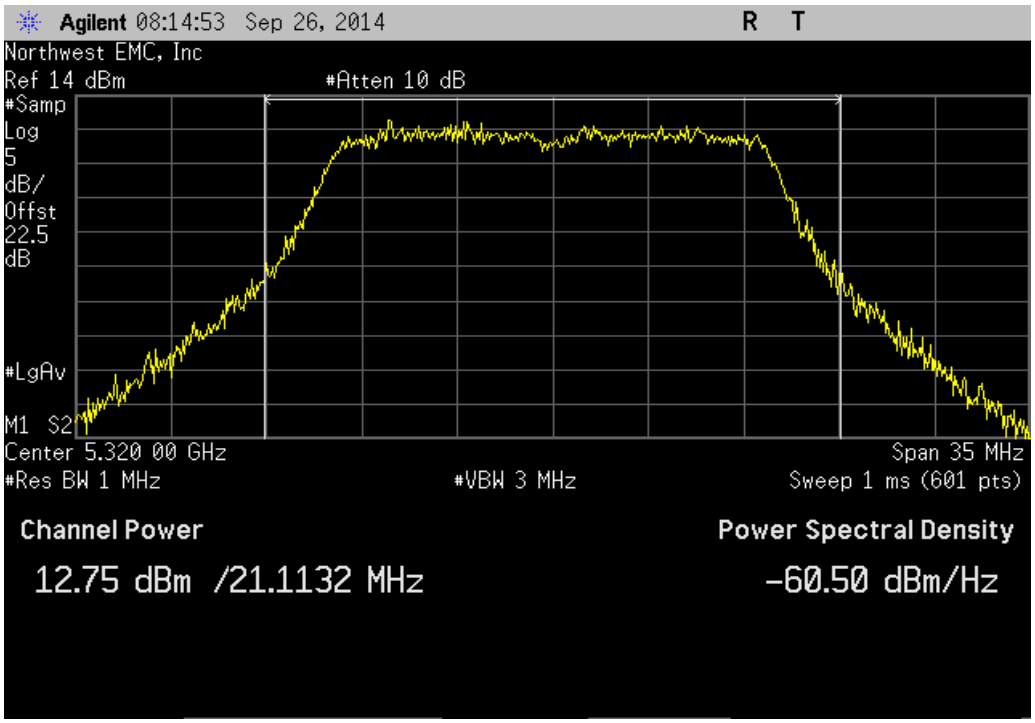
| 802.11(a) 36 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (<) | Result |
| | | | | 12.669 dBm | 17 dBm | Pass |



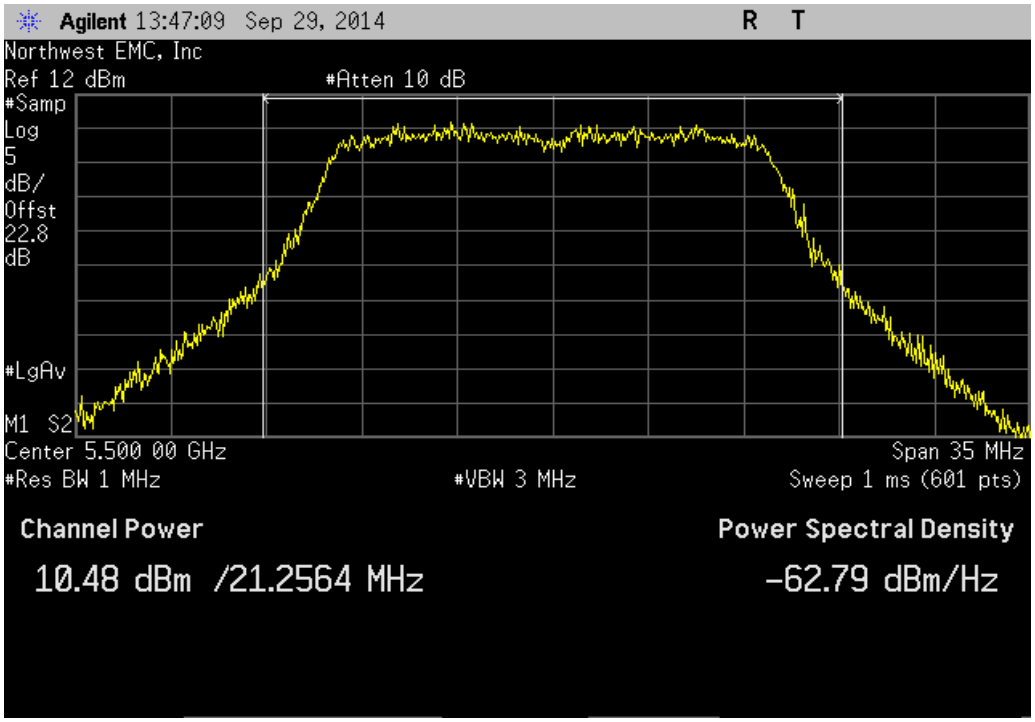

| 802.11(a) 36 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (<) | Result |
| | | | | 12.798 dBm | 24 dBm | Pass |



| 802.11(a) 36 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (<) | Result |
| | | | | 12.746 dBm | 24 dBm | Pass |

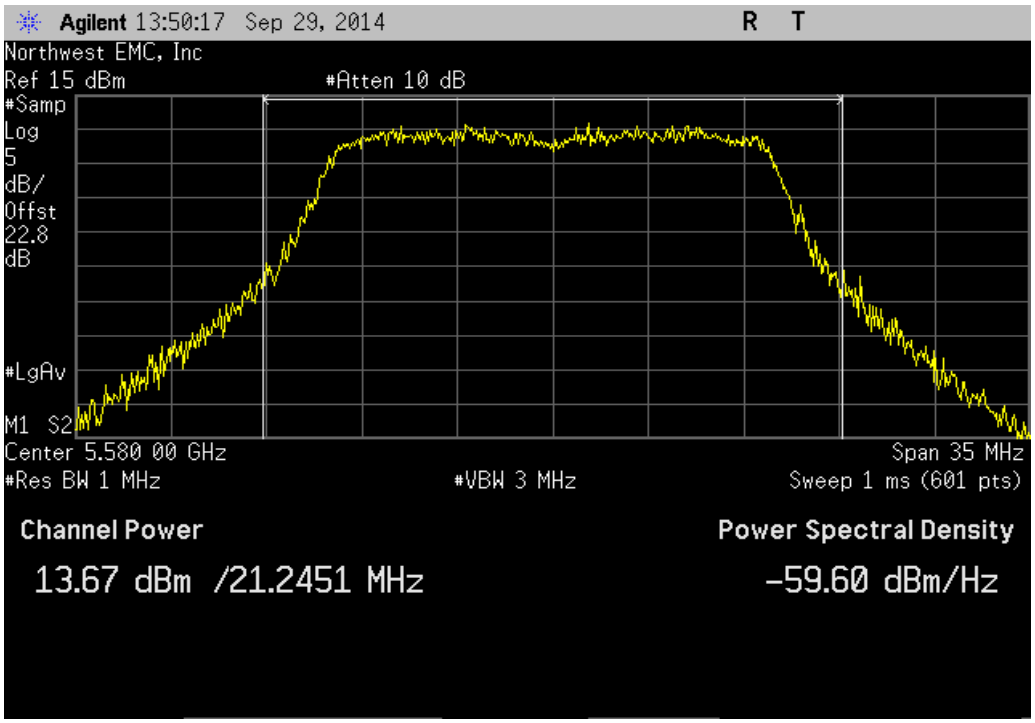



| 802.11(a) 36 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (<) | Result |
| | | | | 10.484 dBm | 24 dBm | Pass |

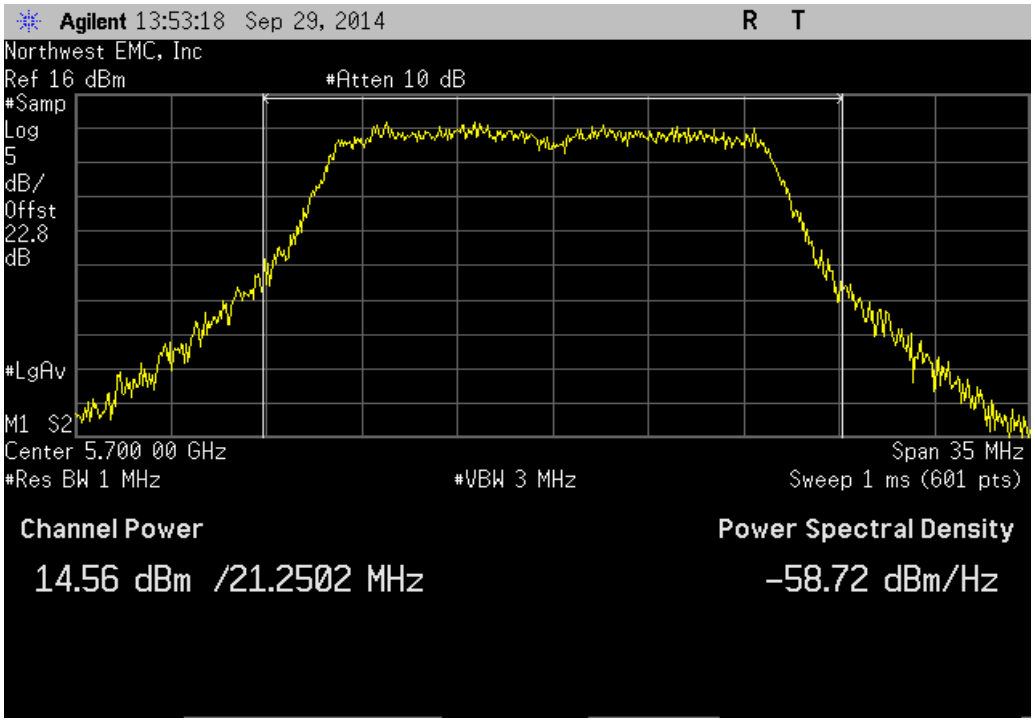


# PEAK TRANSMIT POWER

| 802.11(a) 36 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (<) | Result |
| | | | | 13.668 dBm | 24 dBm | Pass |

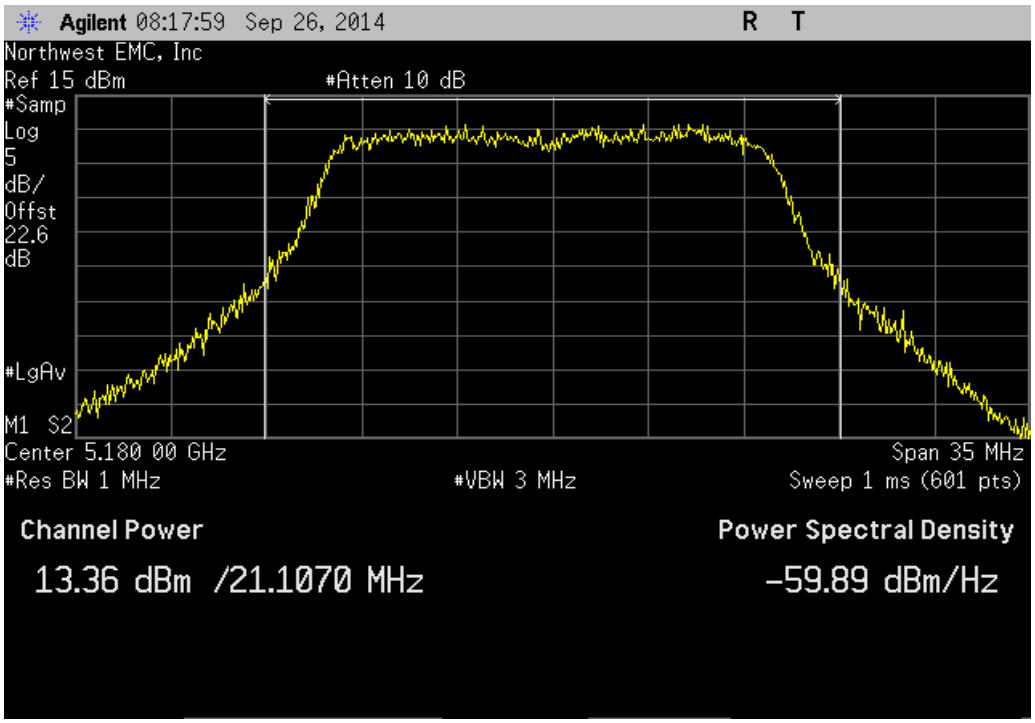



| 802.11(a) 36 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (<) | Result |
| | | | | 14.556 dBm | 24 dBm | Pass |



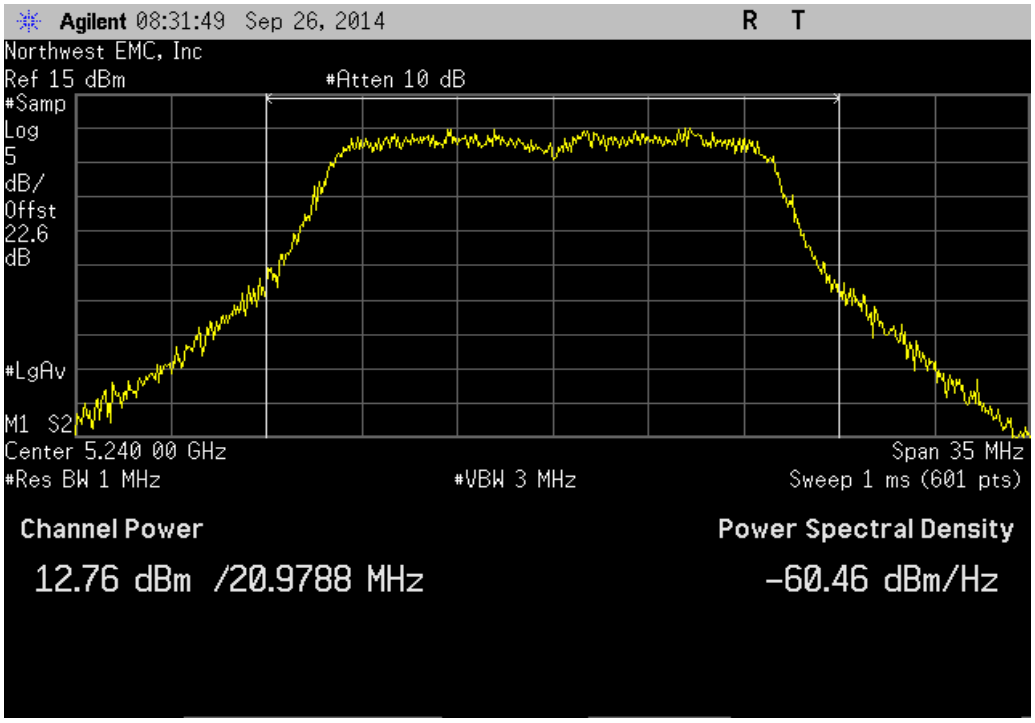
802.11(a) 54 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel

| | | | | Value | Limit (<) | Result |
|---|---|---|---|---|---|---|
| | | | | 13.357 dBm | 17 dBm | Pass |



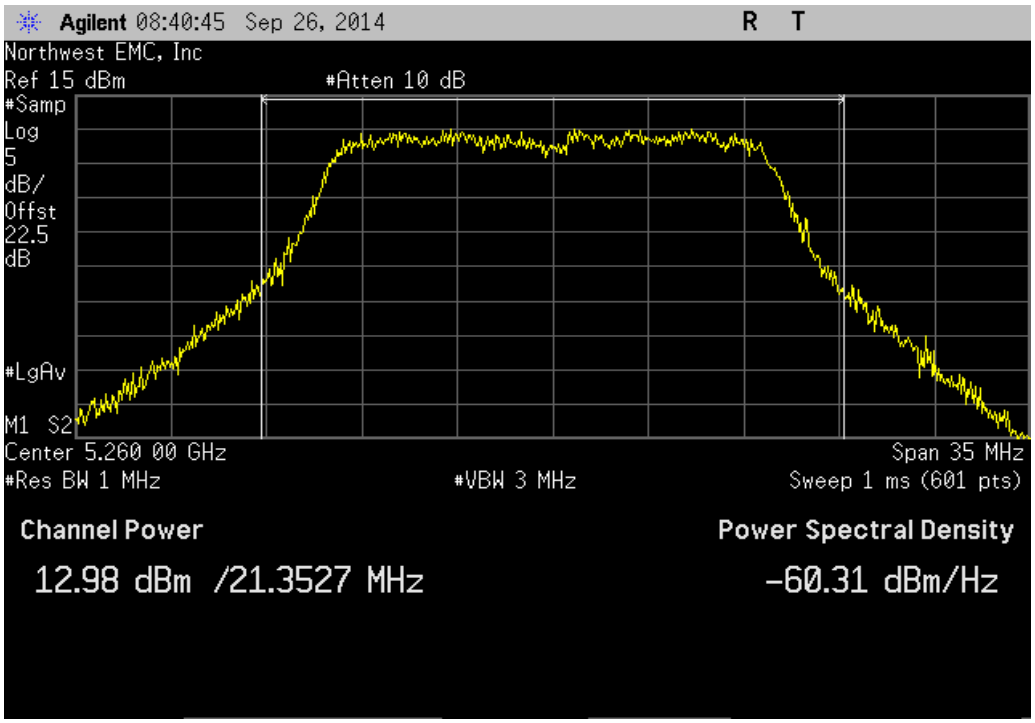

802.11(a) 54 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel

| | | | | Value | Limit (<) | Result |
|---|---|---|---|---|---|---|
| | | | | 12.758 dBm | 17 dBm | Pass |

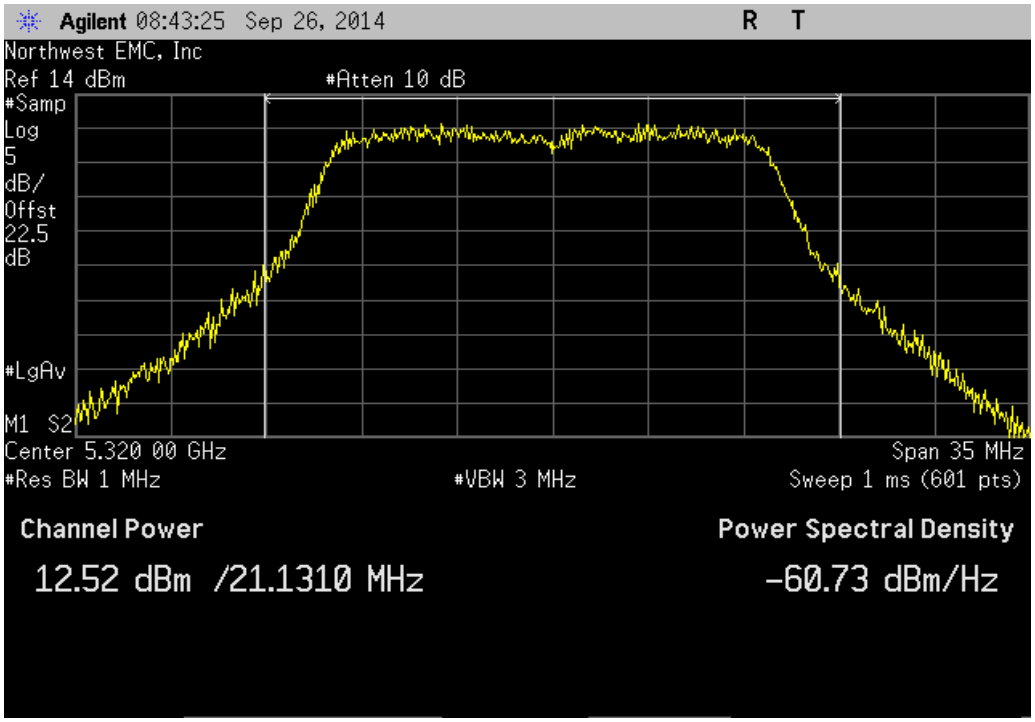


# PEAK TRANSMIT POWER

| 802.11(a) 54 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (<) | Result |
| | | | | 12.98 dBm | 24 dBm | Pass |

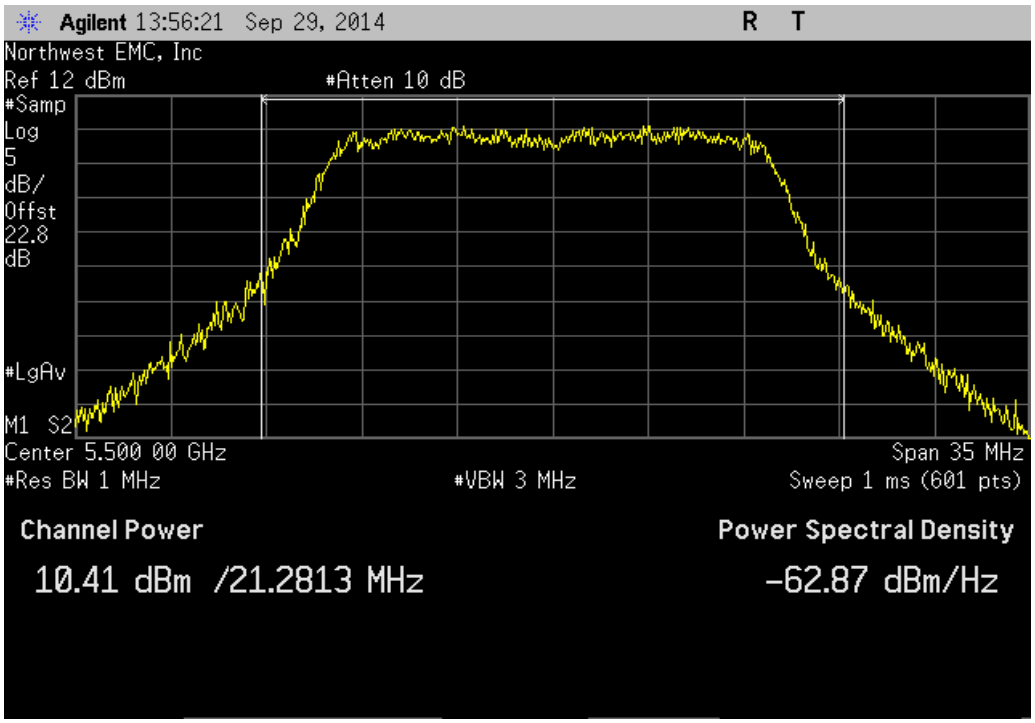



| 802.11(a) 54 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (<) | Result |
| | | | | 12.518 dBm | 24 dBm | Pass |

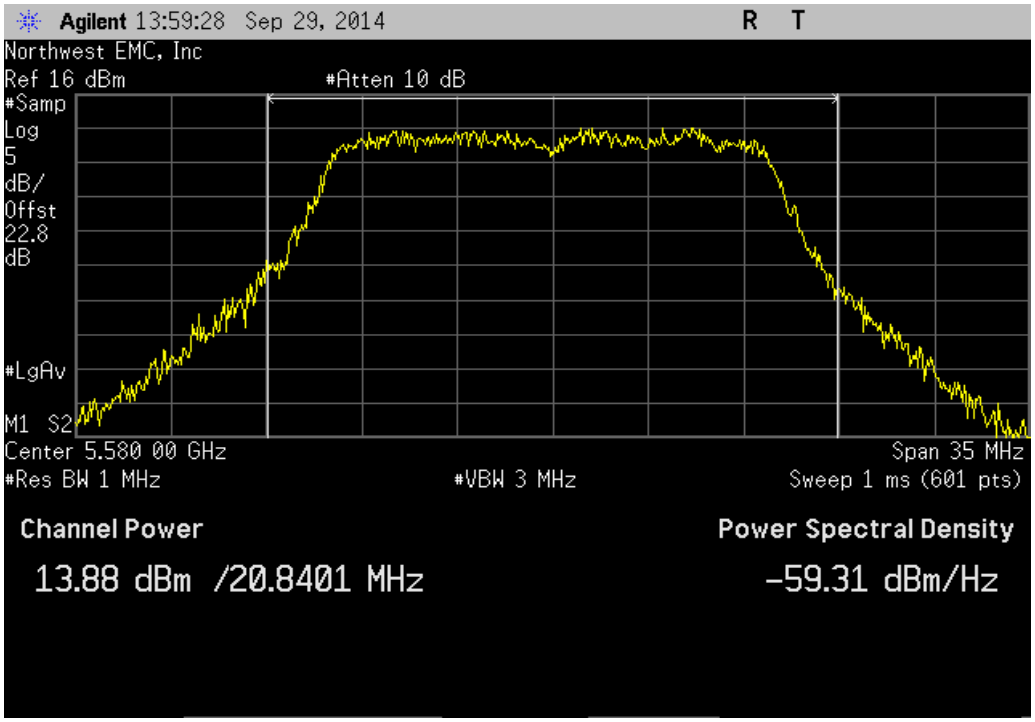


# PEAK TRANSMIT POWER

| 802.11(a) 54 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (<) | Result |
| | | | | 10.41 dBm | 24 dBm | Pass |

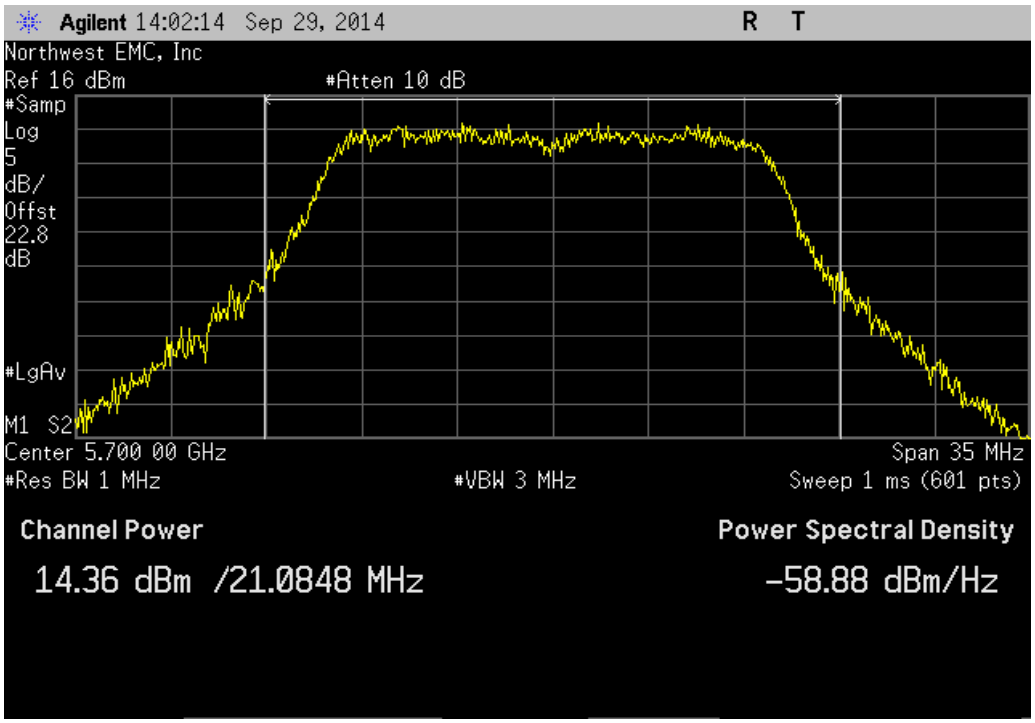



| 802.11(a) 54 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (<) | Result |
| | | | | 13.882 dBm | 24 dBm | Pass |

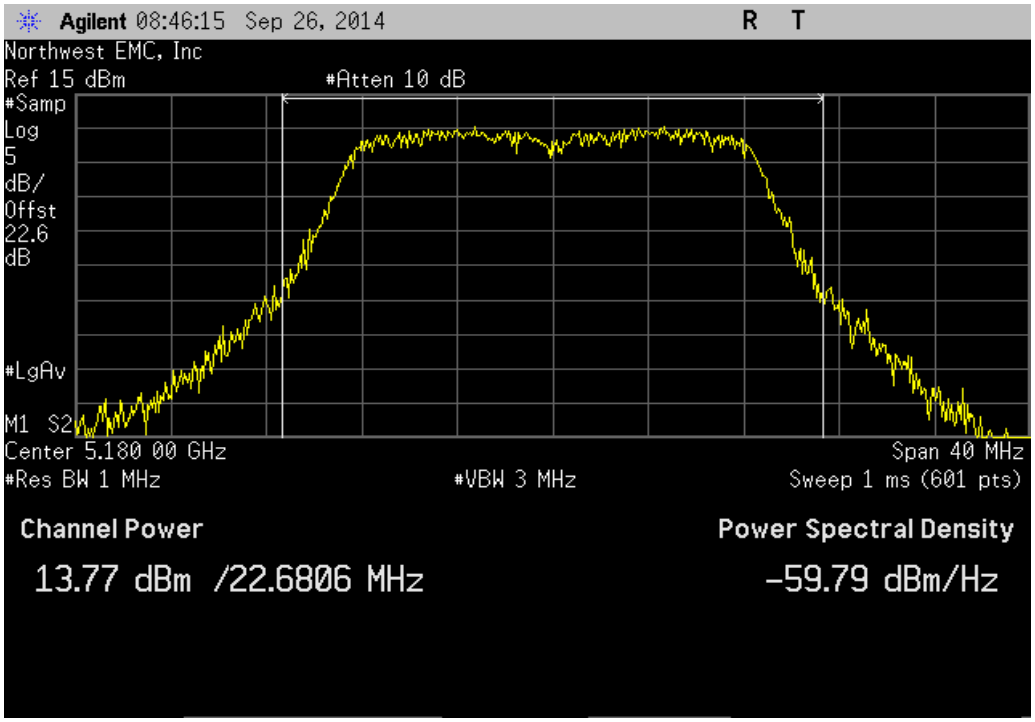


# PEAK TRANSMIT POWER

| 802.11(a) 54 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (<) | Result |
| | | | | 14.355 dBm | 24 dBm | Pass |

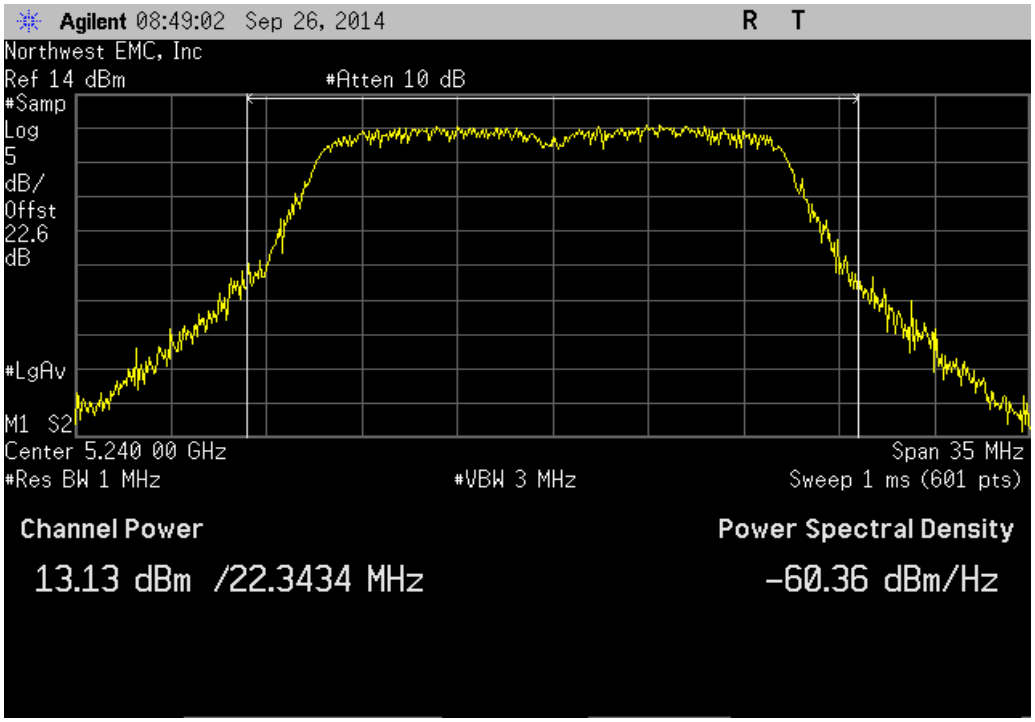



| 802.11(n) MCS0, 5150 - 5250 MHz Band, Channel 36, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (<) | Result |
| | | | | 13.769 dBm | 17 dBm | Pass |

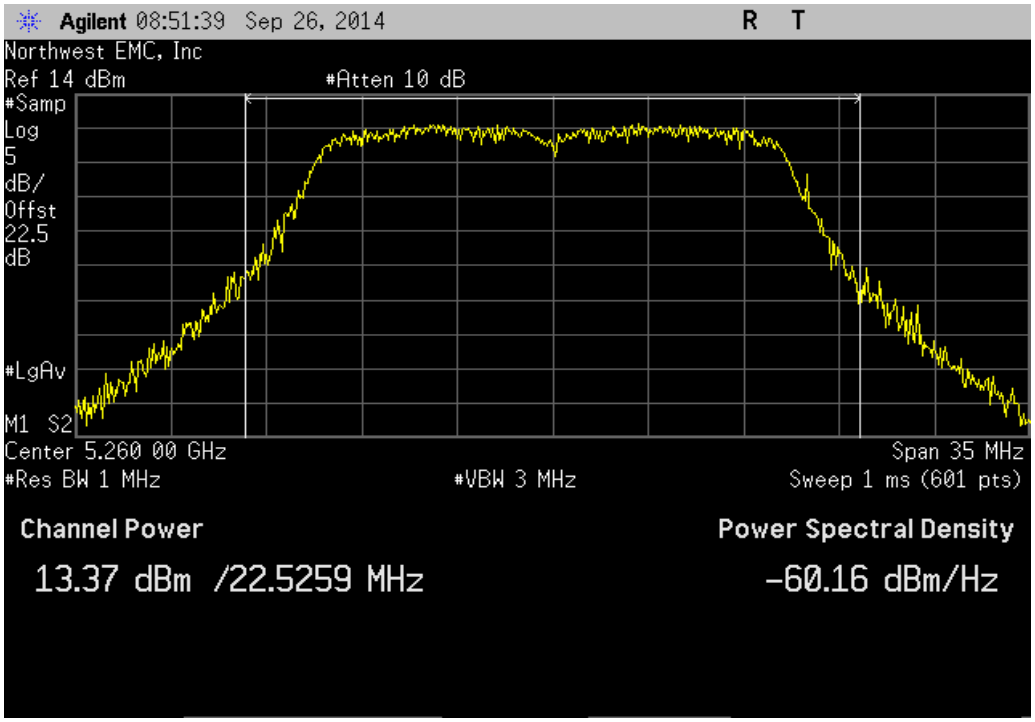


# PEAK TRANSMIT POWER

| 802.11(n) MCS0, 5150 - 5250 MHz Band, Channel 48, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (<) | Result |
| | | | | 13.131 dBm | 17 dBm | Pass |

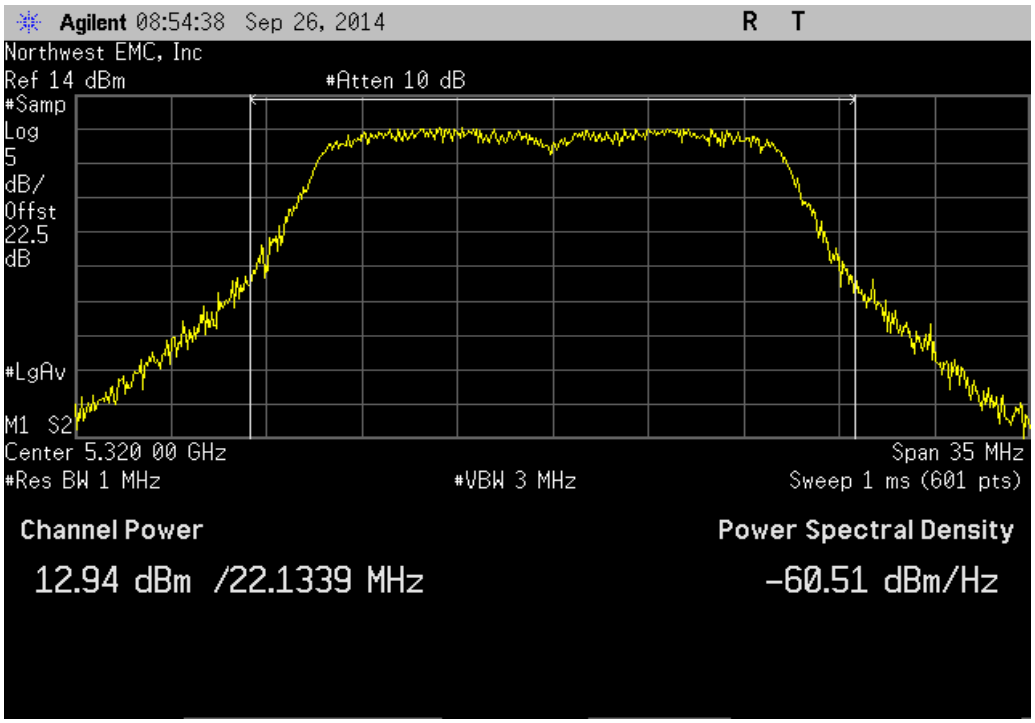



| 802.11(n) MCS0, 5250 - 5350 MHz Band, Channel 52, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (<) | Result |
| | | | | 13.369 dBm | 24 dBm | Pass |



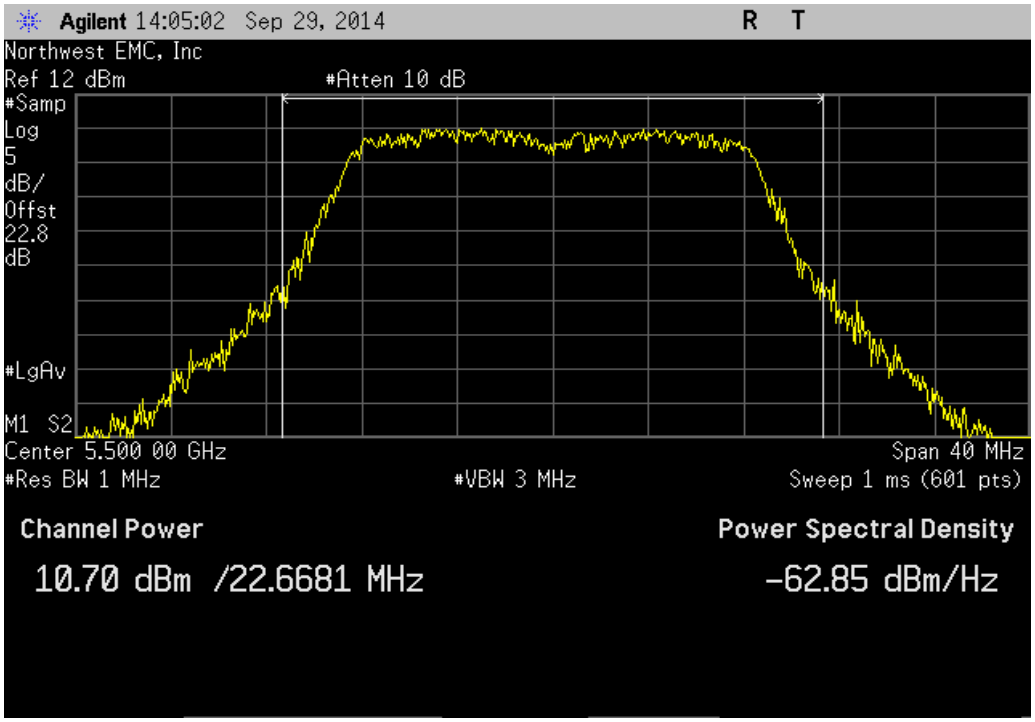
802.11(n) MCS0, 5250 - 5350 MHz Band, Channel 64, High Channel

| | | | | Value | Limit (<) | Result |
|---|---|---|---|---|---|---|
| | | | | 12.94 dBm | 24 dBm | Pass |

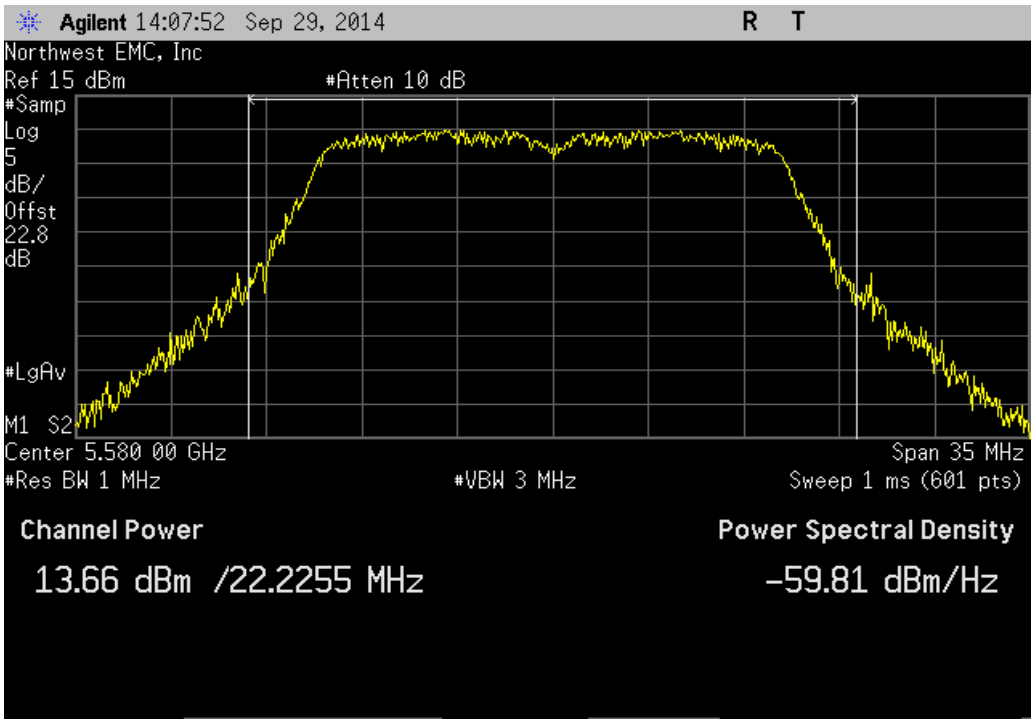



802.11(n) MCS0, 5470 - 5725 MHz Band, Channel 100, Low Channel

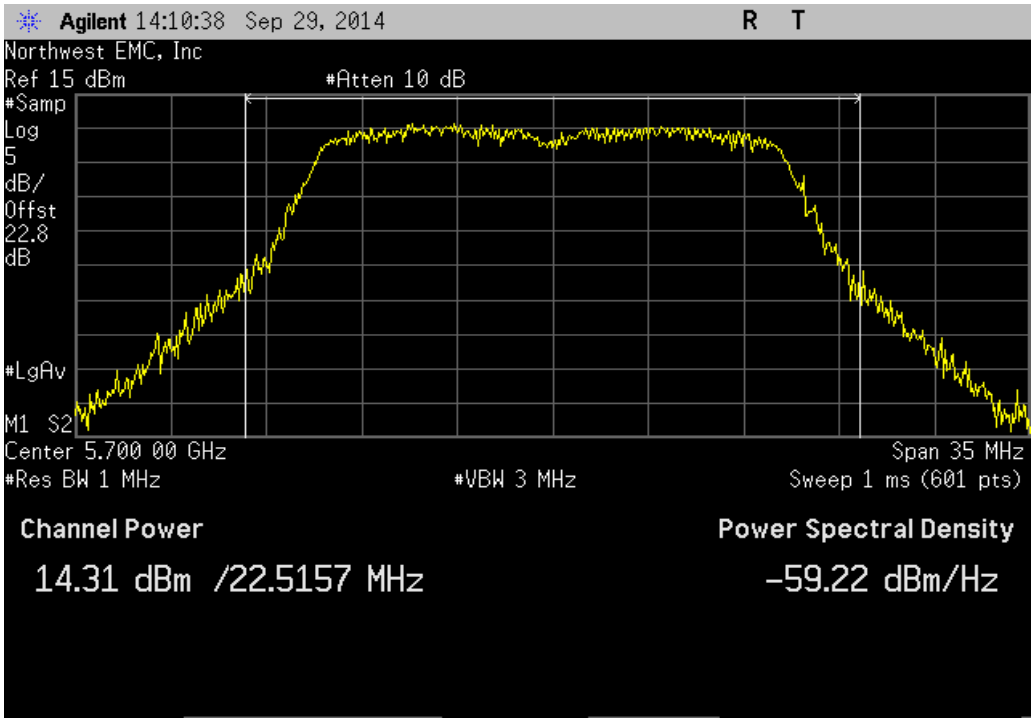
| | | | | Value | Limit (<) | Result |
|---|---|---|---|---|---|---|
| | | | | 10.704 dBm | 24 dBm | Pass |



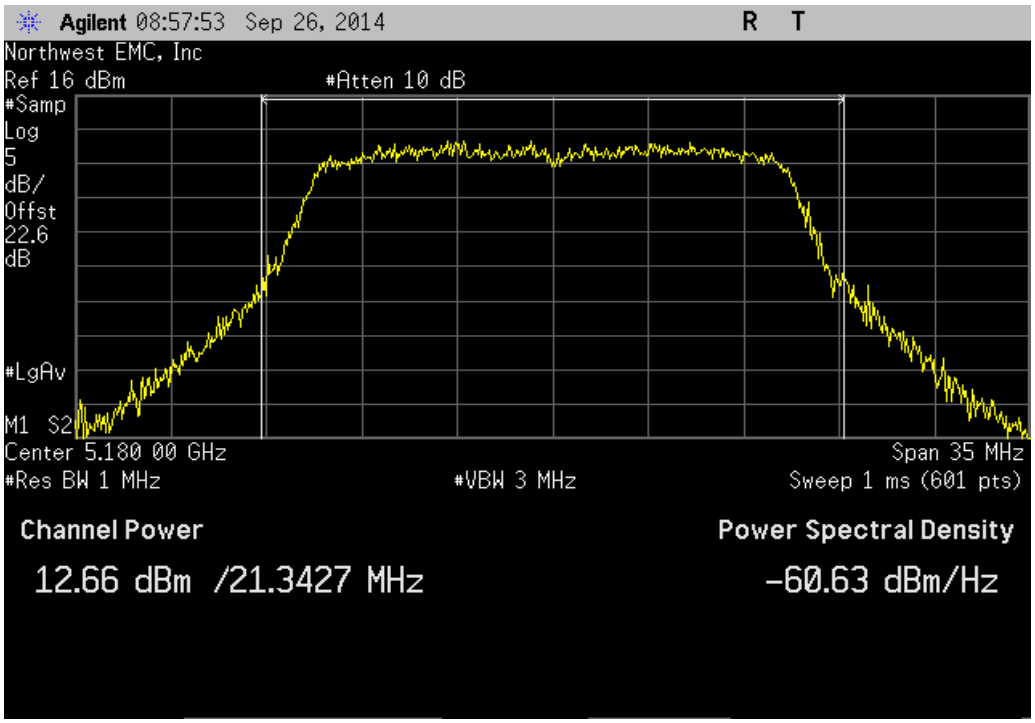
| 802.11(n) MCS0, 5470 - 5725 MHz Band, Channel 116, Mid Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (<) | Result |
| | | | | 13.658 dBm | 24 dBm | Pass |



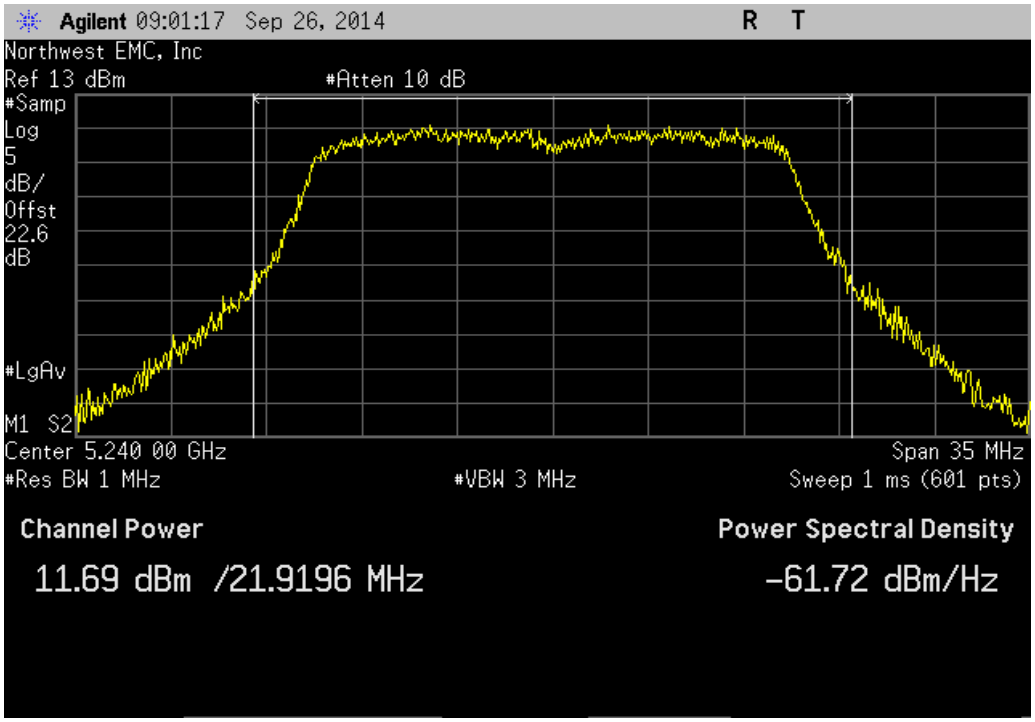

| 802.11(n) MCS0, 5470 - 5725 MHz Band, Channel 140, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (<) | Result |
| | | | | 14.308 dBm | 24 dBm | Pass |



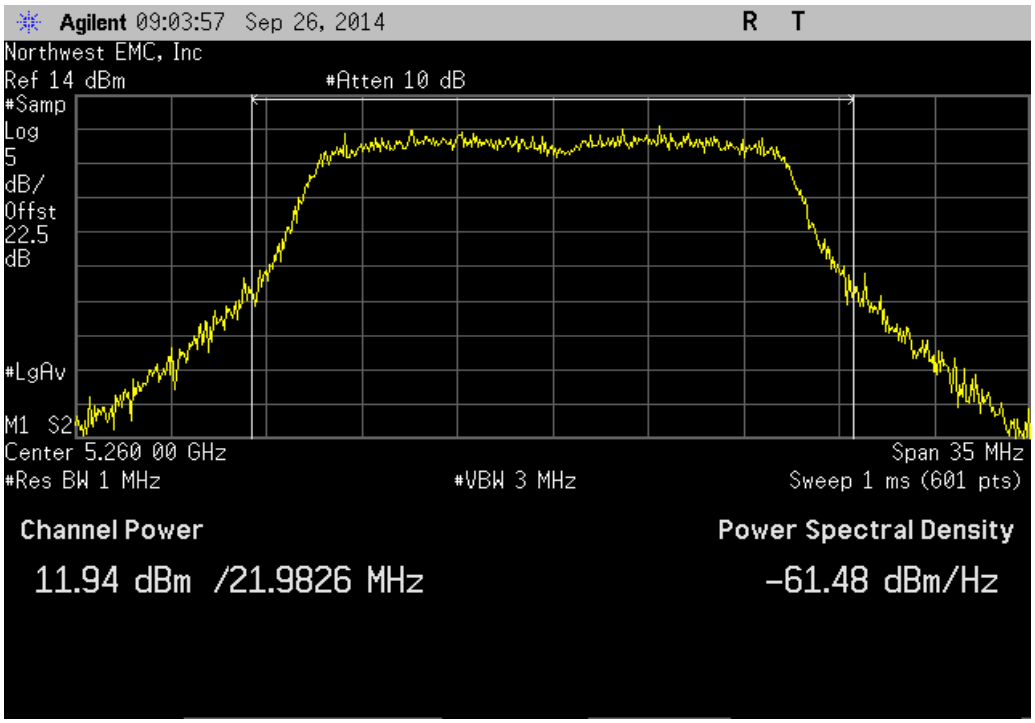
| 802.11(n) MCS7, 5150 - 5250 MHz Band, Channel 36, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (<) | Result |
| | | | | 12.661 dBm | 17 dBm | Pass |



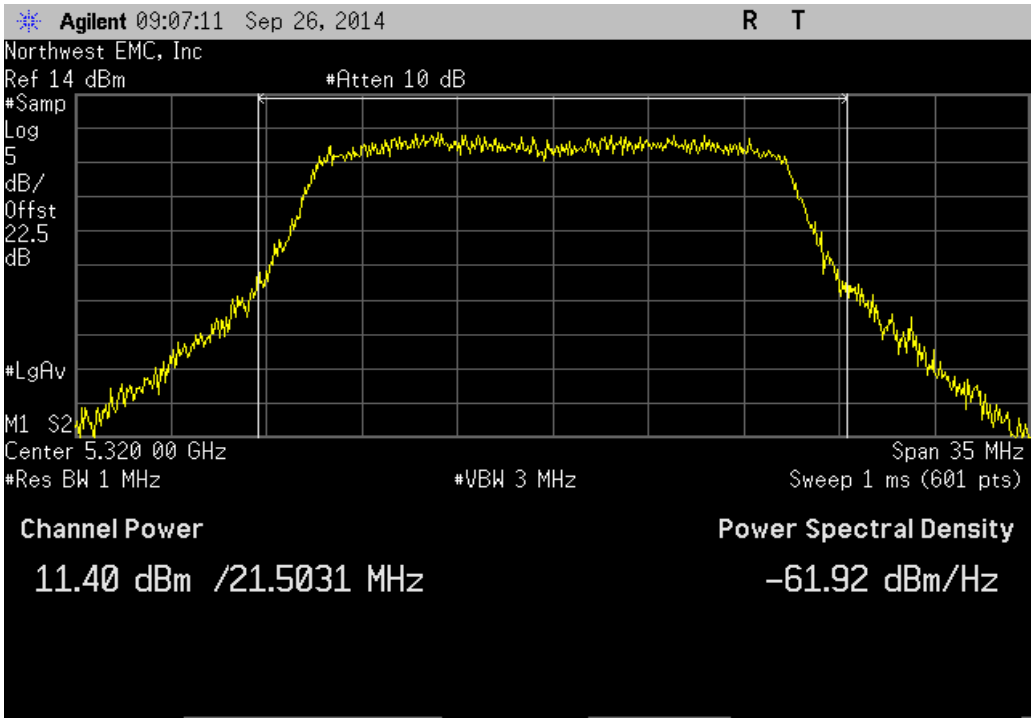

| 802.11(n) MCS7, 5150 - 5250 MHz Band, Channel 48, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (<) | Result |
| | | | | 11.686 dBm | 17 dBm | Pass |



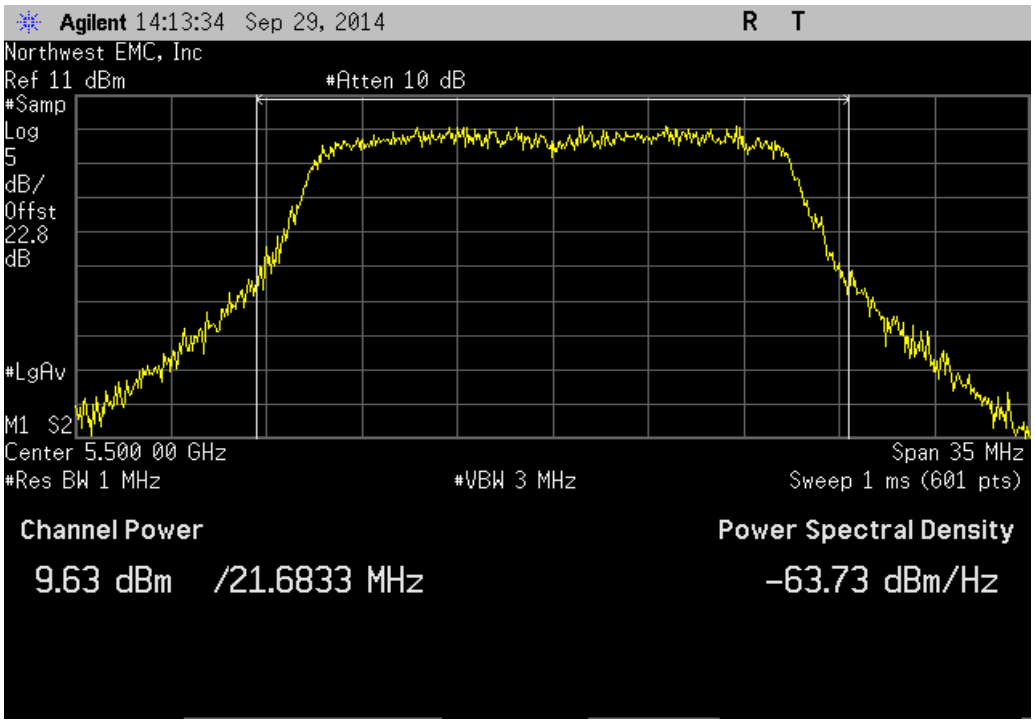
| 802.11(n) MCS7, 5250 - 5350 MHz Band, Channel 52, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (<) | Result |
| | | | | 11.944 dBm | 24 dBm | Pass |



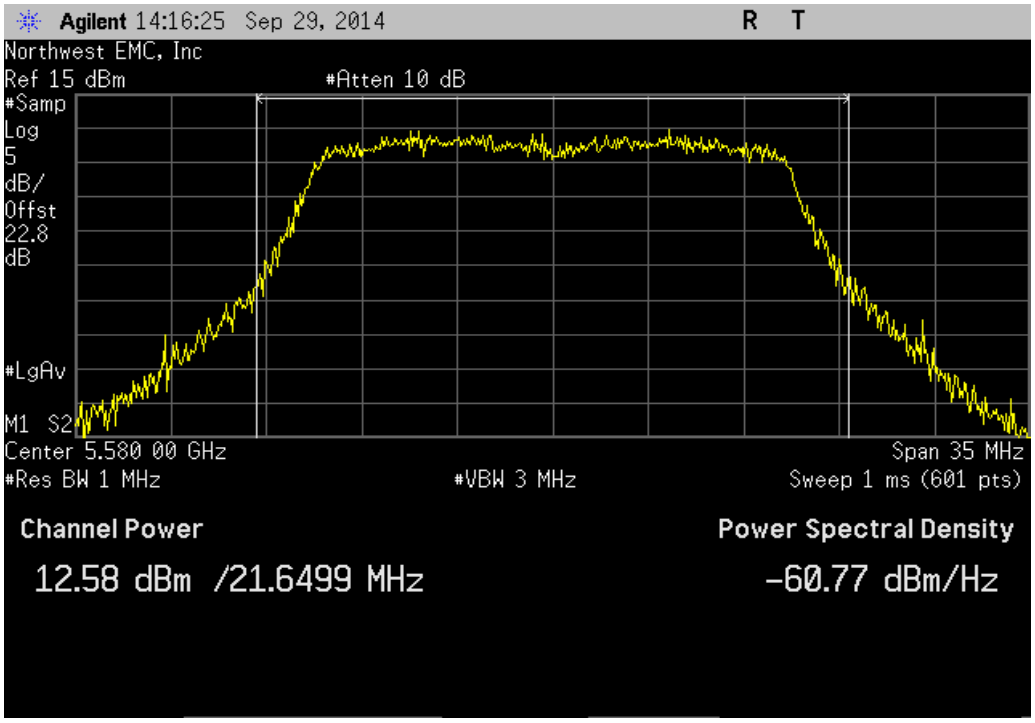

| 802.11(n) MCS7, 5250 - 5350 MHz Band, Channel 64, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (<) | Result |
| | | | | 11.404 dBm | 24 dBm | Pass |



| 802.11(n) MCS7, 5470 - 5725 MHz Band, Channel 100, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (<) | Result |
| | | | | 9.629 dBm | 24 dBm | Pass |

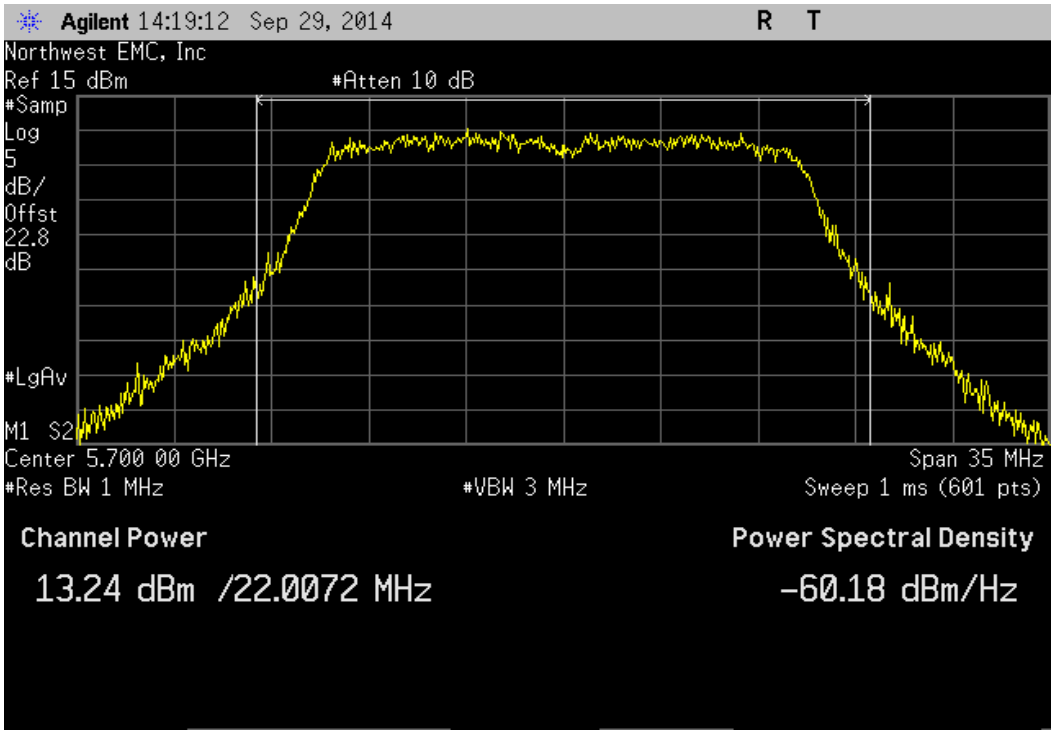



| 802.11(n) MCS7, 5470 - 5725 MHz Band, Channel 116, Mid Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (<) | Result |
| | | | | 12.584 dBm | 24 dBm | Pass |



# PEAK TRANSMIT POWER

| 802.11(n) MCS7, 5470 - 5725 MHz Band, Channel 140, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value | Limit (<) | Result |
| | | | | 13.243 dBm | 24 dBm | Pass |



# PEAK EXCURSION OF THE MODULATION ENVELOPE

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 |
|---|---|---|---|---|---|
| Signal Generator MXG | Agilent | N5183A | TIK | 6/7/2012 | 36 |
| 40 GHz DC block | Fairview Microwave | SD3379 | AMI | 9/26/2013 | 14 |
| Attenuator - 20db, 'SMA' | SM Electronics | SA26B-20 | RFW | 4/3/2014 | 12 |
| Spectrum Analyzer | Agilent | E4440A | AAX | 4/28/2014 | 12 |

**TEST DESCRIPTION**

FCC KDB 789033 D01 General UNII Test Procedures Section F was followed to show that the radio of the maximum peak-max-hold spectrum to the maximum of the average spectrum does not exceed 13 dBm.

The transmit frequency was set to the required channels in each band. 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.

The spectrum analyzer settings were as follows:

Span set to encompass the entire emission bandwidth (B), centered on the transmit channel.

Using the marker delta function, the largest difference between the following two traces was measured:

- 1st Trace: RBW = 1 MHz, VBW >= 3 MHz with peak detector and trace max-hold..
- 2nd Trace: The same procedure and settings as was used for peak power spectral density

# PEAK EXCURSION OF THE MODULATION ENVELOPE

| | | | | | |
|---|---|---|---|---|---|
| EUT: | ConnectCore i.MX6 WiFi/Bluetooth | | | Work Order: | ETHE0009 |
| Serial Number: | 00409D 7C03B4 | | | Date: | 09/29/14 |
| Customer: | Etherios Design Solutions | | | Temperature: | 22.7°C |
| Attendees: | None | | | Humidity: | 47% |
| Project: | None | | | Barometric Pres.: | 1023.7 |
| Tested by: | Trevor Buls | Power: | 5VDC | Job Site: | MN08 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.407:2014 | ANSI C63.10:2009 |

**COMMENTS**

None

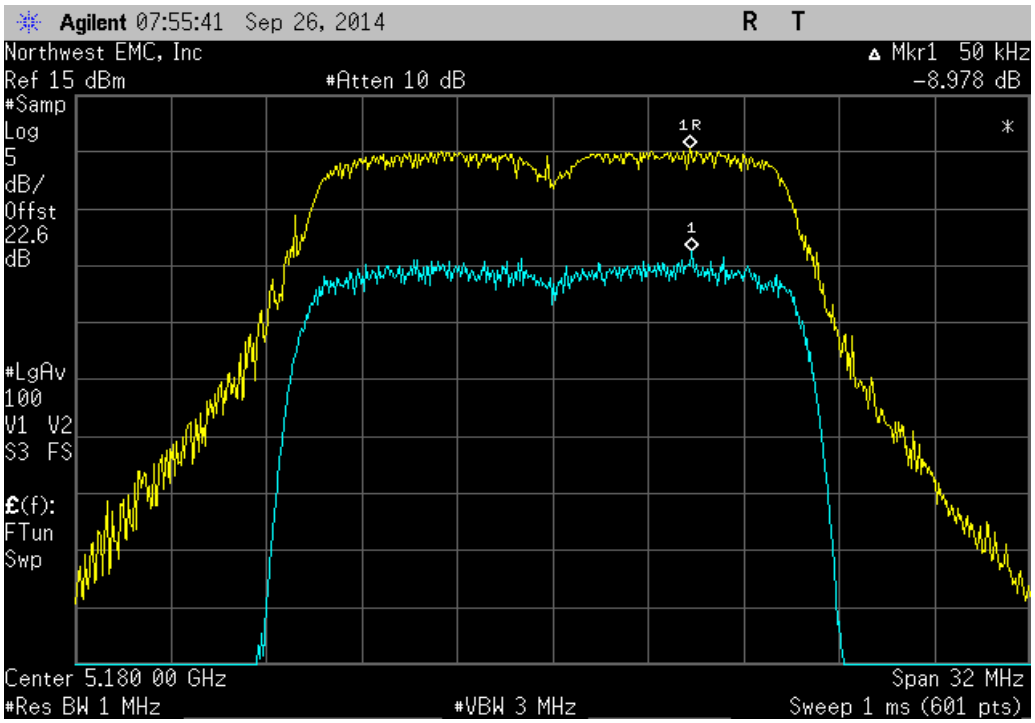
**DEVIATIONS FROM TEST STANDARD**

None

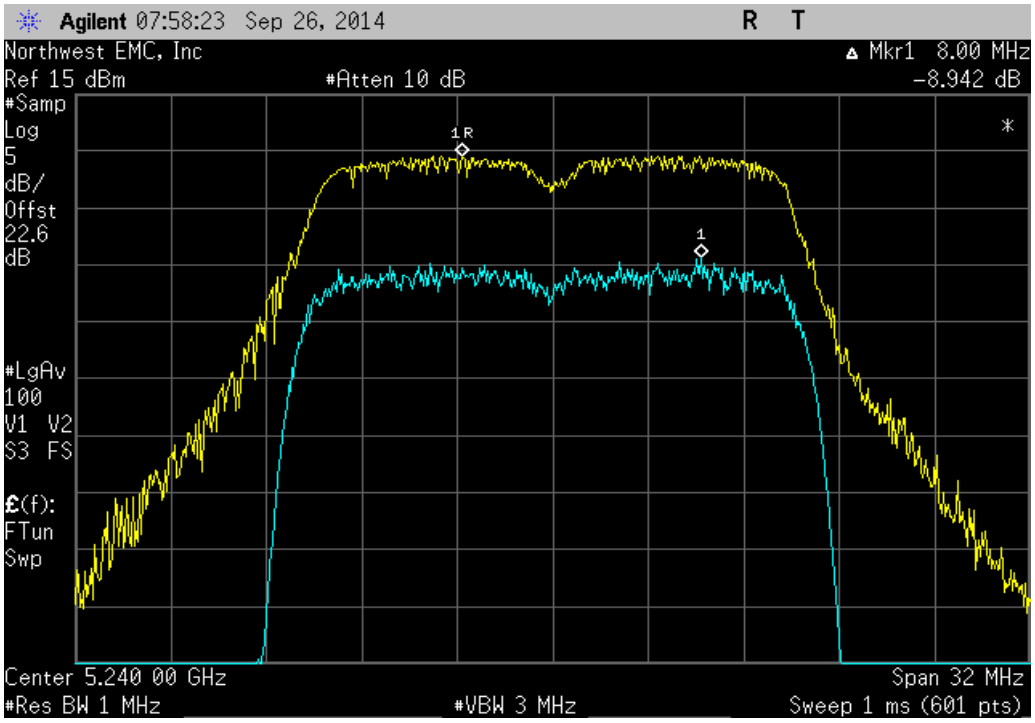
| Configuration # | 1 | Signature | Trevor Buls |
|---|---|---|---|

| | | Value (dB) | Limit ≤ (dB) | Results |
|---|---|---|---|---|
| 802.11(a) 6 Mbps | | | | |
| | 5150 - 5250 MHz Band | | | |
| | Channel 36, Low Channel | 8.978 | 13 | Pass |
| | Channel 48, High Channel | 8.942 | 13 | Pass |
| | 5250 - 5350 MHz Band | | | |
| | Channel 52, Low Channel | 9.665 | 13 | Pass |
| | Channel 64, High Channel | 8.871 | 13 | Pass |
| | 5470 - 5725 MHz Band | | | |
| | Channel 100, Low Channel | 9.19 | 13 | Pass |
| | Channel 116, Mid Channel | 9.194 | 13 | Pass |
| | Channel 140, High Channel | 9.281 | 13 | Pass |
| 802.11(a) 36 Mbps | | | | |
| | 5150 - 5250 MHz Band | | | |
| | Channel 36, Low Channel | 10.884 | 13 | Pass |
| | Channel 48, High Channel | 10.165 | 13 | Pass |
| | 5250 - 5350 MHz Band | | | |
| | Channel 52, Low Channel | 10.586 | 13 | Pass |
| | Channel 64, High Channel | 9.988 | 13 | Pass |
| | 5470 - 5725 MHz Band | | | |
| | Channel 100, Low Channel | 10.164 | 13 | Pass |
| | Channel 116, Mid Channel | 10.046 | 13 | Pass |
| | Channel 140, High Channel | 10.345 | 13 | Pass |
| 802.11(a) 54 Mbps | | | | |
| | 5150 - 5250 MHz Band | | | |
| | Channel 36, Low Channel | 10.348 | 13 | Pass |
| | Channel 48, High Channel | 11.563 | 13 | Pass |
| | 5250 - 5350 MHz Band | | | |
| | Channel 52, Low Channel | 10.059 | 13 | Pass |
| | Channel 64, High Channel | 11.107 | 13 | Pass |
| | 5470 - 5725 MHz Band | | | |
| | Channel 100, Low Channel | 11.213 | 13 | Pass |
| | Channel 116, Mid Channel | 10.887 | 13 | Pass |
| | Channel 140, High Channel | 11.165 | 13 | Pass |
| 802.11(n) MCS0 | | | | |
| | 5150 - 5250 MHz Band | | | |
| | Channel 36, Low Channel | 9.33 | 13 | Pass |
| | Channel 48, High Channel | 9.523 | 13 | Pass |
| | 5250 - 5350 MHz Band | | | |
| | Channel 52, Low Channel | 9.287 | 13 | Pass |
| | Channel 64, High Channel | 9.495 | 13 | Pass |
| | 5470 - 5725 MHz Band | | | |
| | Channel 100, Low Channel | 9.277 | 13 | Pass |
| | Channel 116, Mid Channel | 9.463 | 13 | Pass |
| | Channel 140, High Channel | 9.443 | 13 | Pass |
| 802.11(n) MCS7 | | | | |
| | 5150 - 5250 MHz Band | | | |
| | Channel 36, Low Channel | 10.866 | 13 | Pass |
| | Channel 48, High Channel | 9.855 | 13 | Pass |
| | 5250 - 5350 MHz Band | | | |
| | Channel 52, Low Channel | 10.357 | 13 | Pass |
| | Channel 64, High Channel | 9.925 | 13 | Pass |
| | 5470 - 5725 MHz Band | | | |
| | Channel 100, Low Channel | 10.626 | 13 | Pass |
| | Channel 116, Mid Channel | 10.325 | 13 | Pass |
| | Channel 140, High Channel | 9.968 | 13 | Pass |

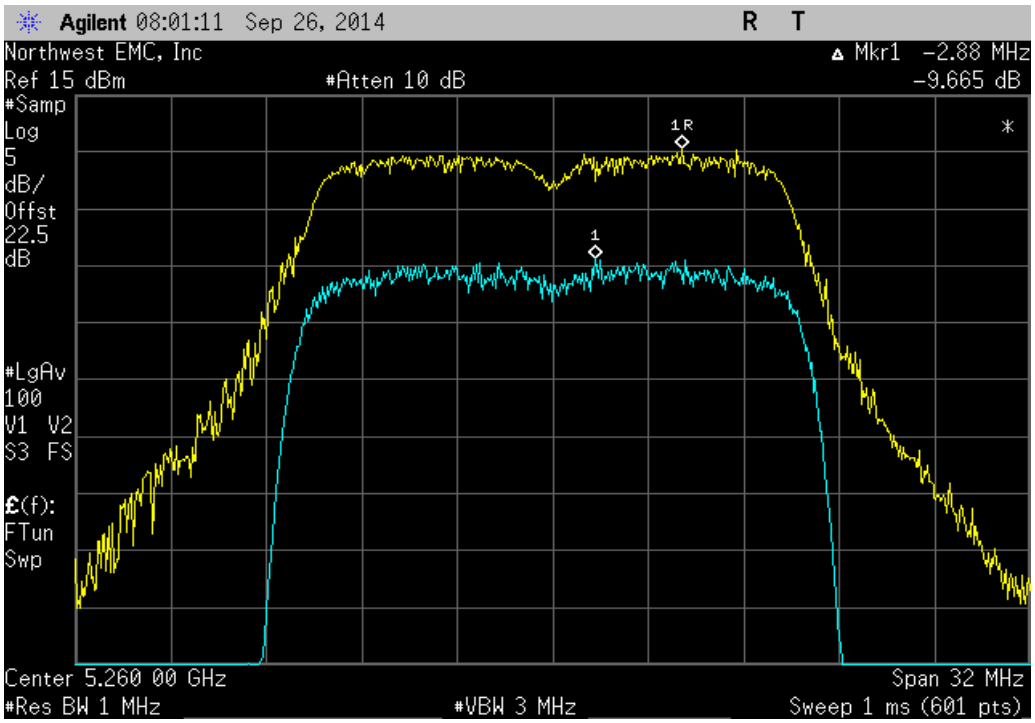
| 802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 8.978 | 13 | Pass |



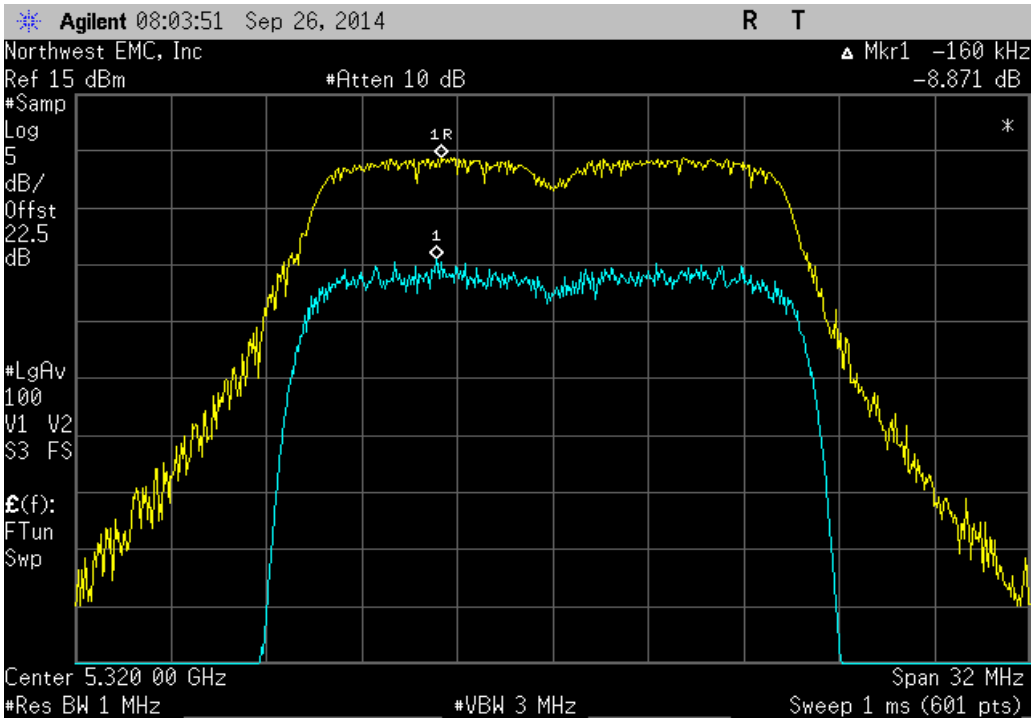

| 802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 8.942 | 13 | Pass |



| 802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 9.665 | 13 | Pass |

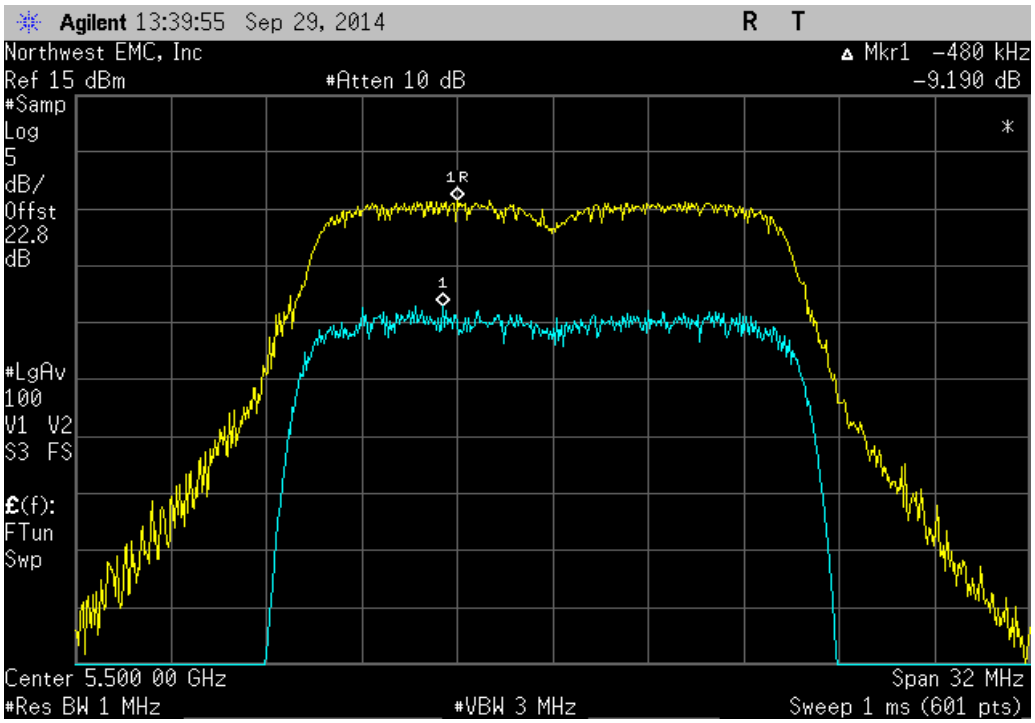



| 802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 8.871 | 13 | Pass |

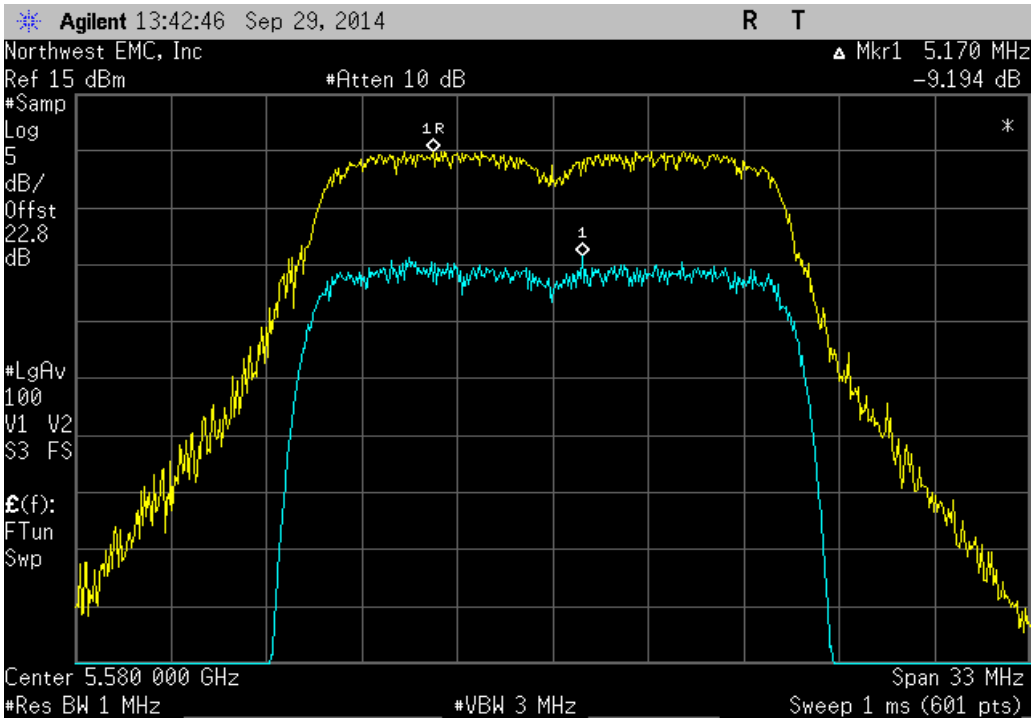


# PEAK EXCURSION OF THE MODULATION ENVELOPE

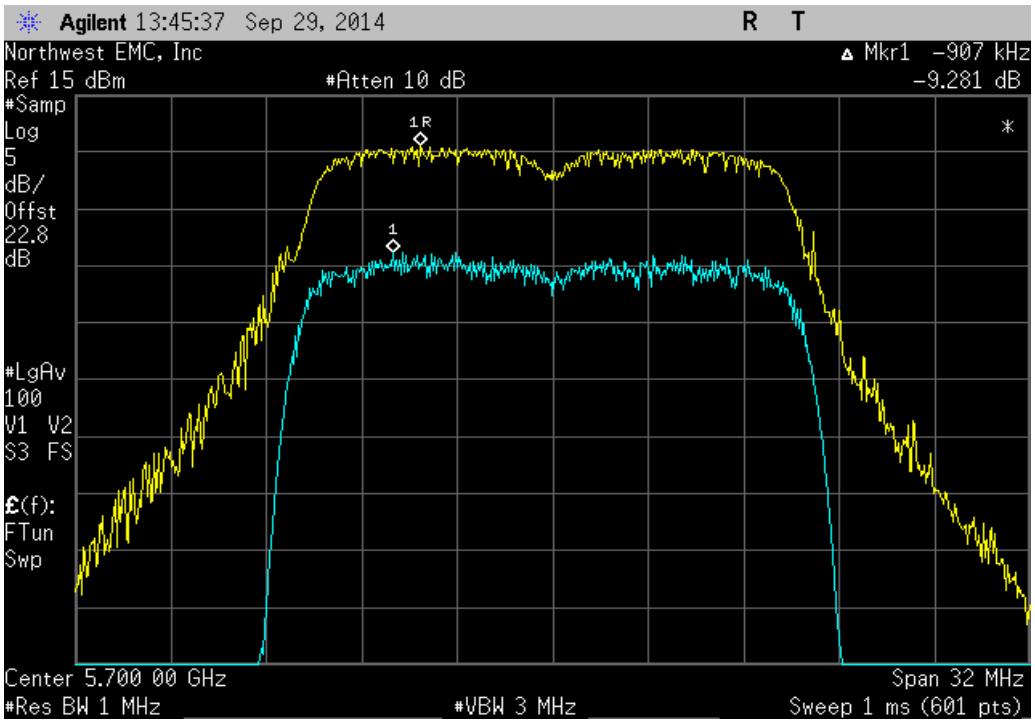
| 802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 9.19 | 13 | Pass |



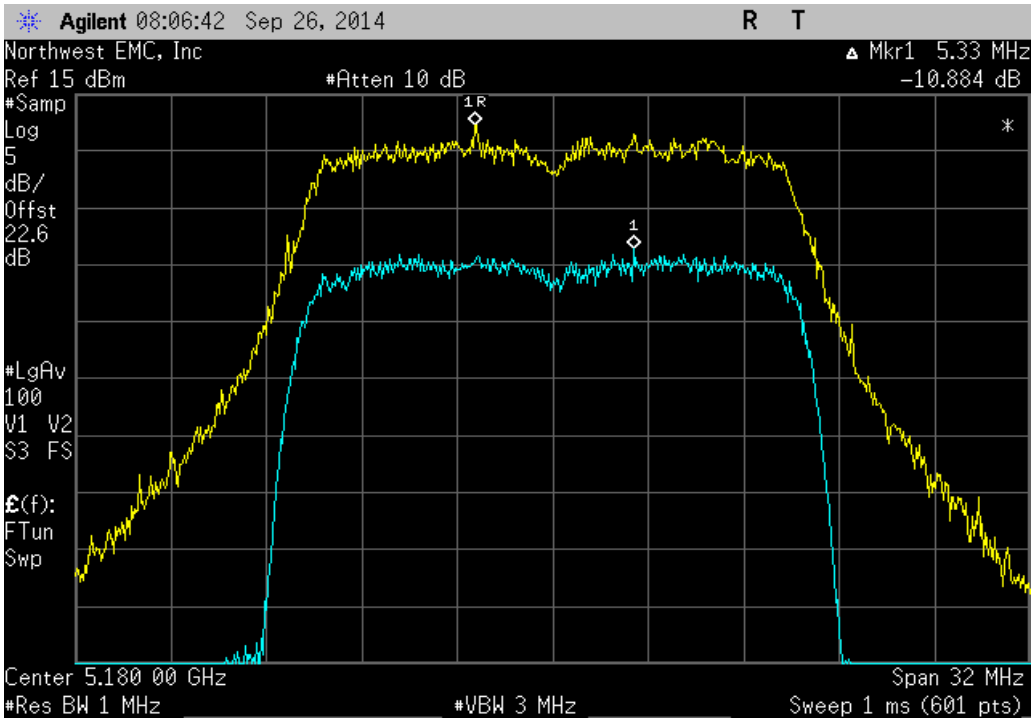

| 802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 9.194 | 13 | Pass |



| 802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 9.281 | 13 | Pass |

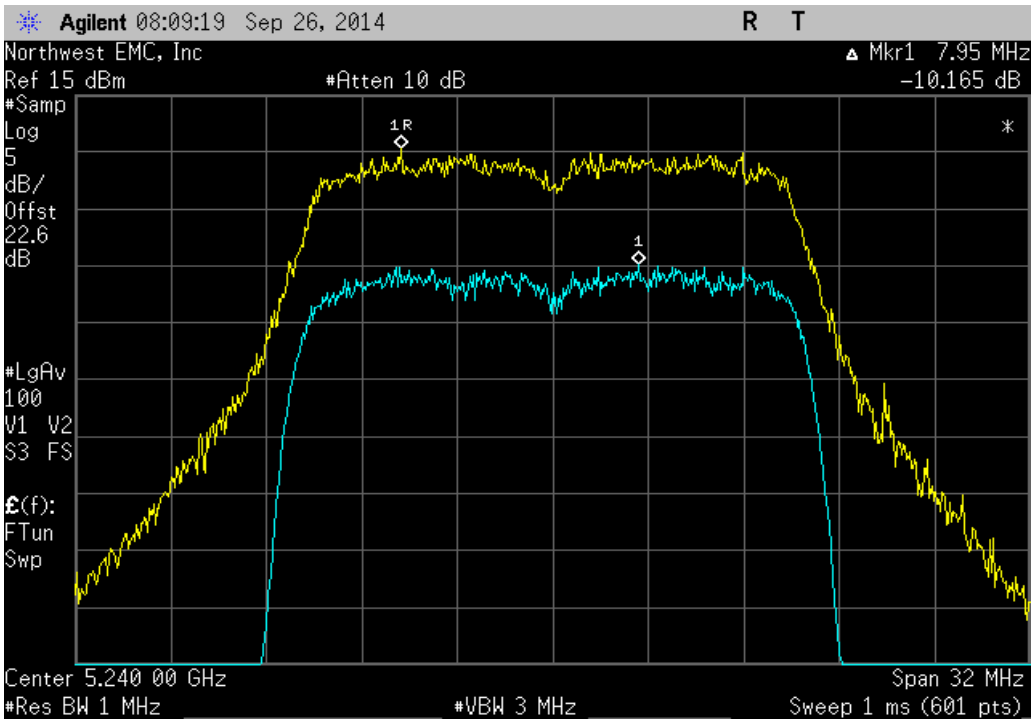



| 802.11(a) 36 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 10.884 | 13 | Pass |



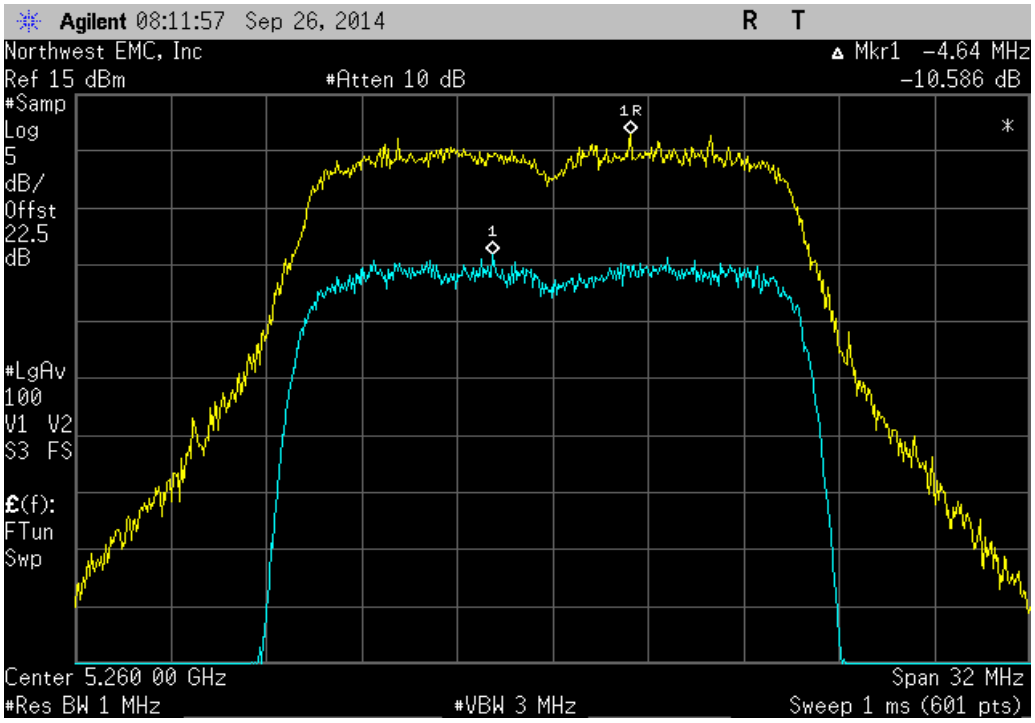
802.11(a) 36 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel

| | | | | Value (dB) | Limit ≤ (dB) | Results |
|---|---|---|---|---|---|---|
| | | | | 10.165 | 13 | Pass |



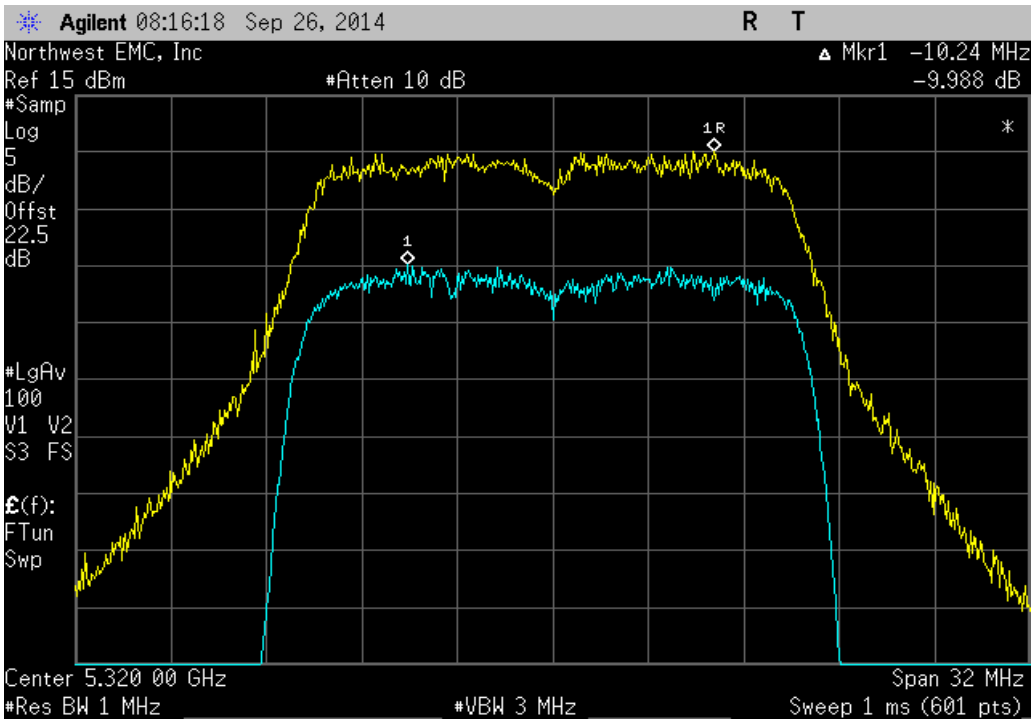

802.11(a) 36 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel

| | | | | Value (dB) | Limit ≤ (dB) | Results |
|---|---|---|---|---|---|---|
| | | | | 10.586 | 13 | Pass |

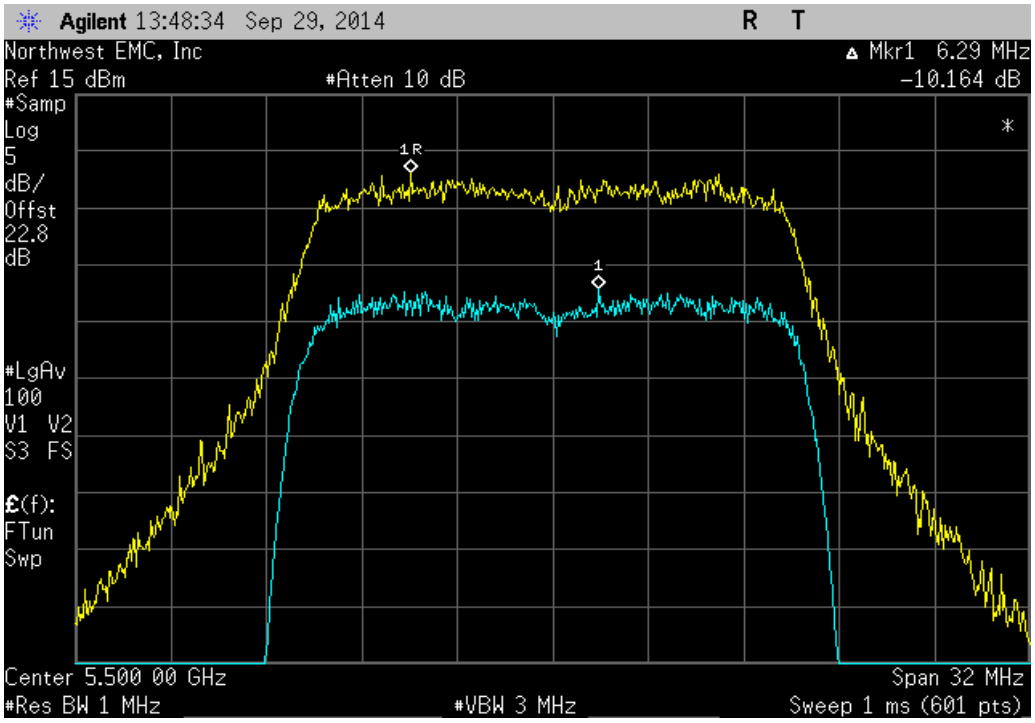


# PEAK EXCURSION OF THE MODULATION ENVELOPE

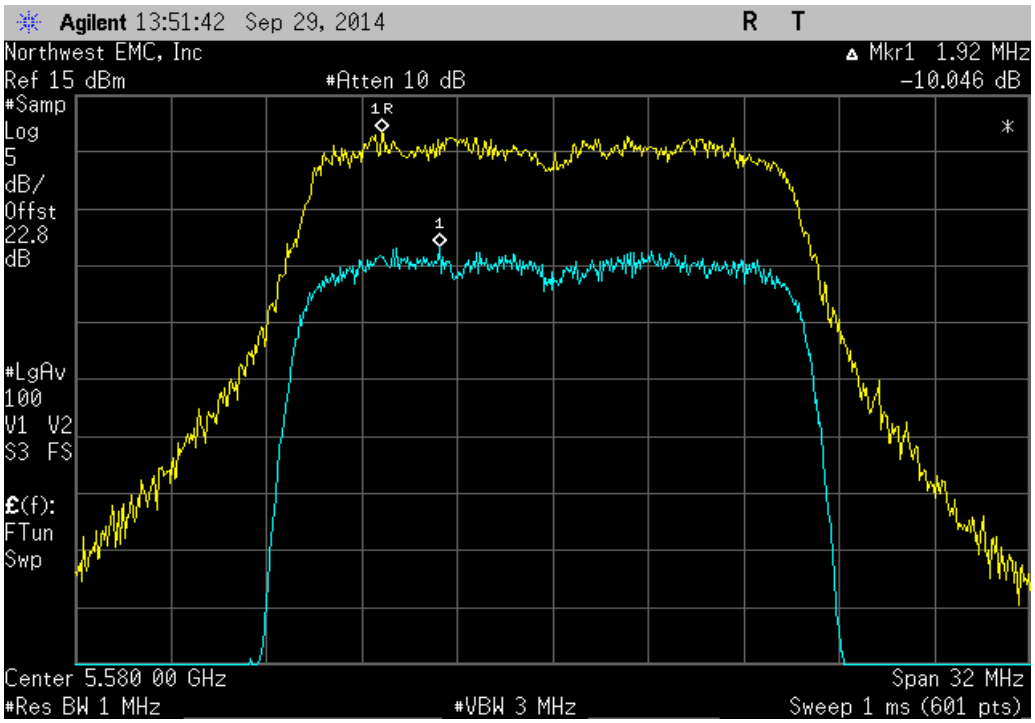
| 802.11(a) 36 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 9.988 | 13 | Pass |



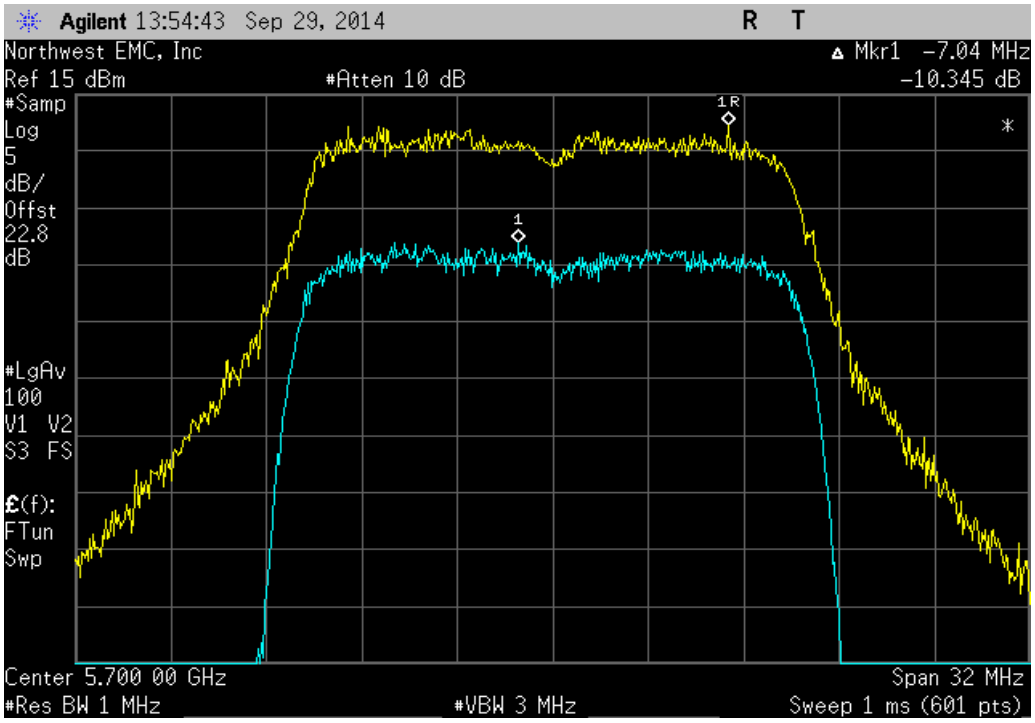

| 802.11(a) 36 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 10.164 | 13 | Pass |



| 802.11(a) 36 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 10.046 | 13 | Pass |

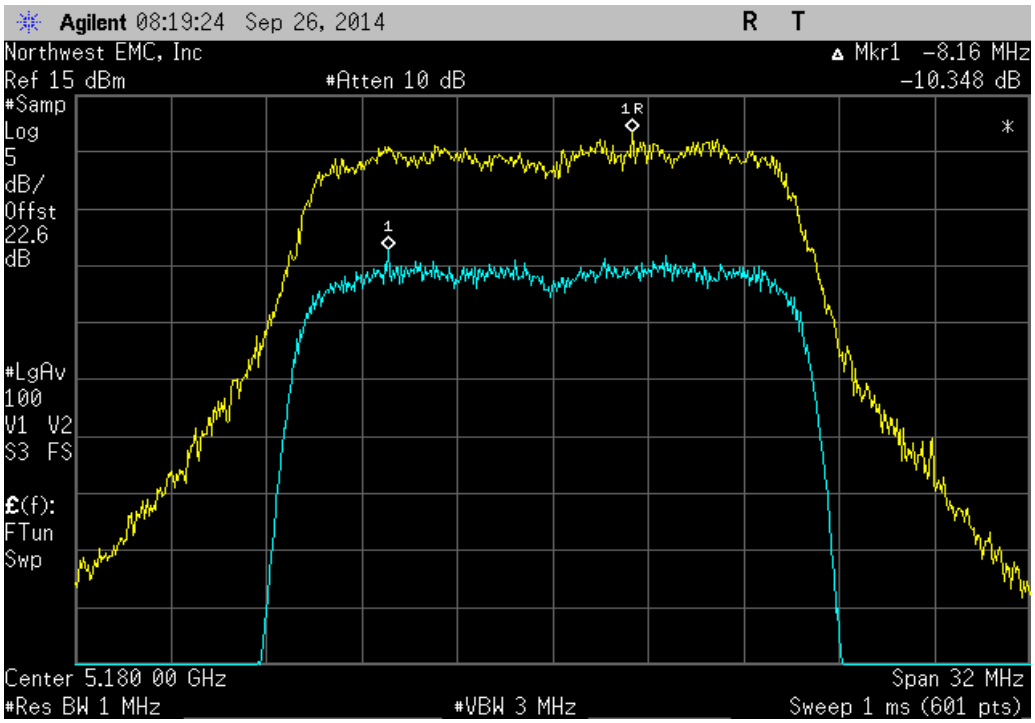



| 802.11(a) 36 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 10.345 | 13 | Pass |

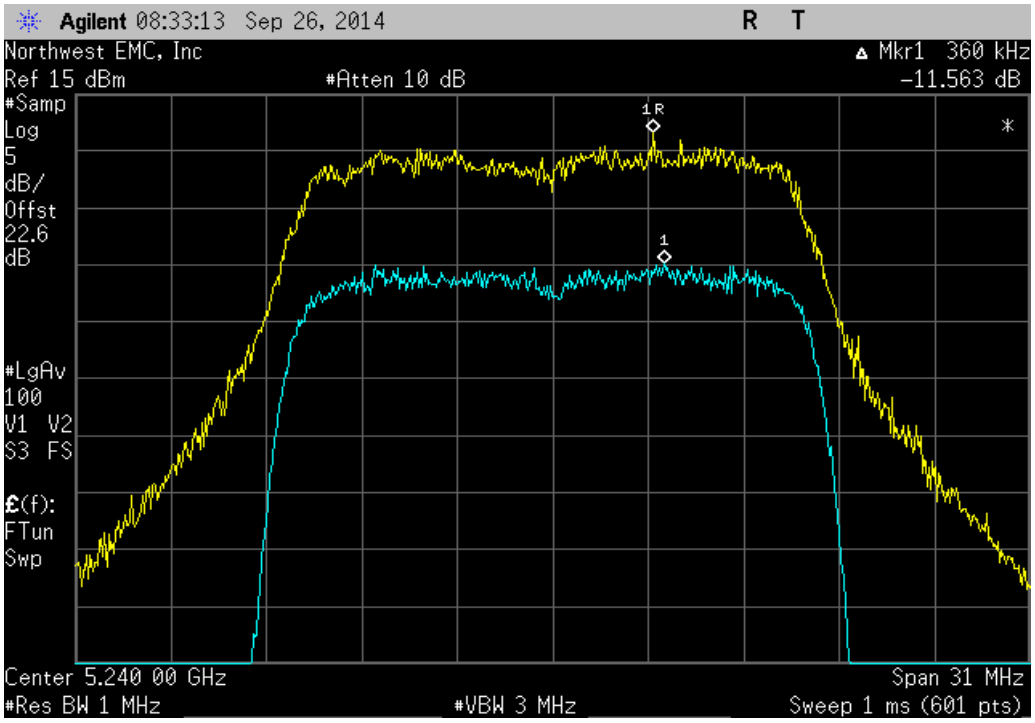


# PEAK EXCURSION OF THE MODULATION ENVELOPE

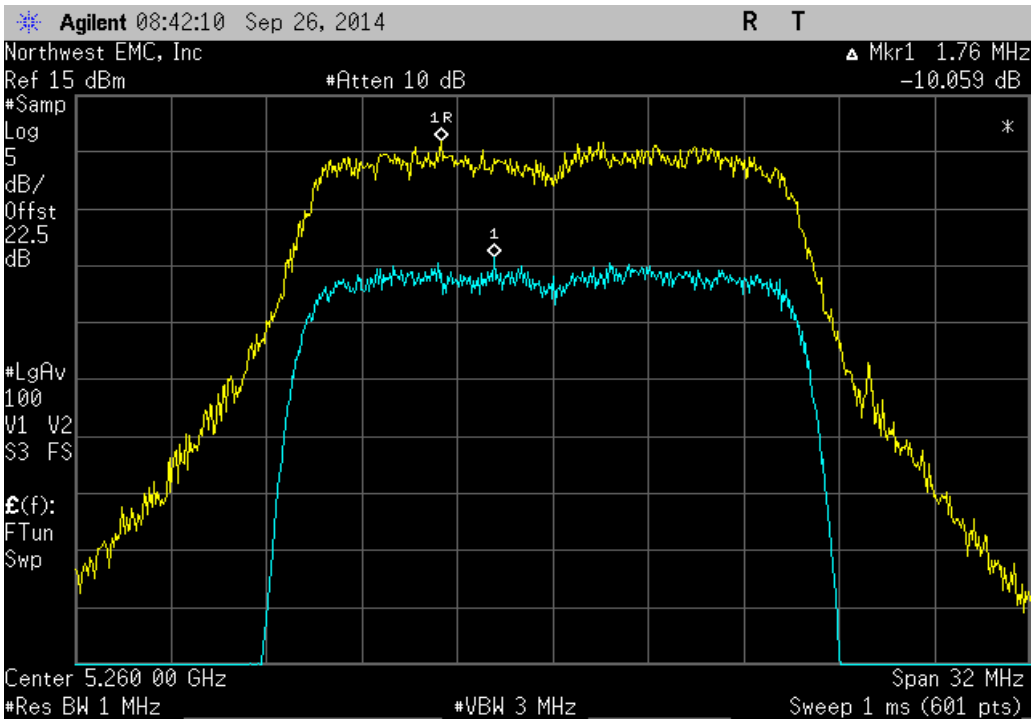
| 802.11(a) 54 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 10.348 | 13 | Pass |



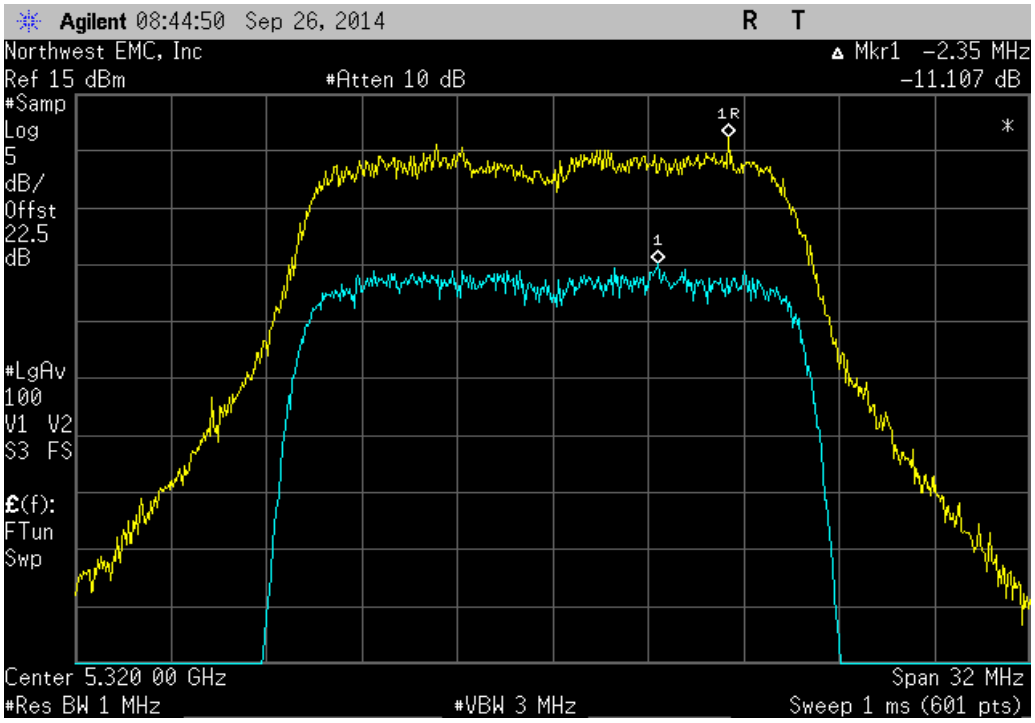

| 802.11(a) 54 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 11.563 | 13 | Pass |



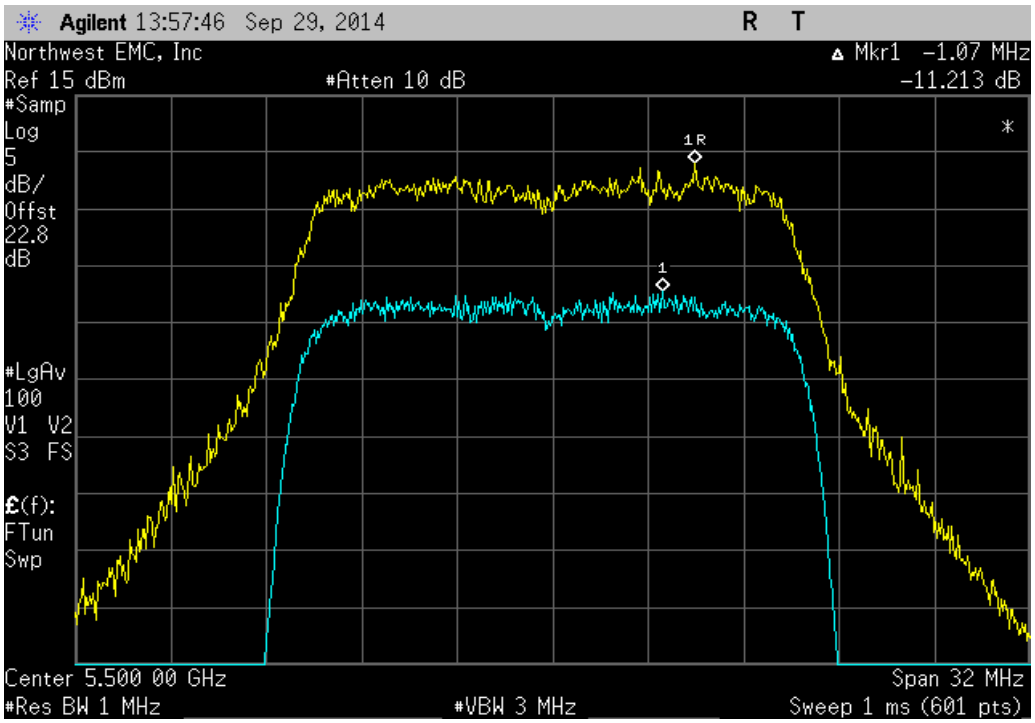
| 802.11(a) 54 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 10.059 | 13 | Pass |



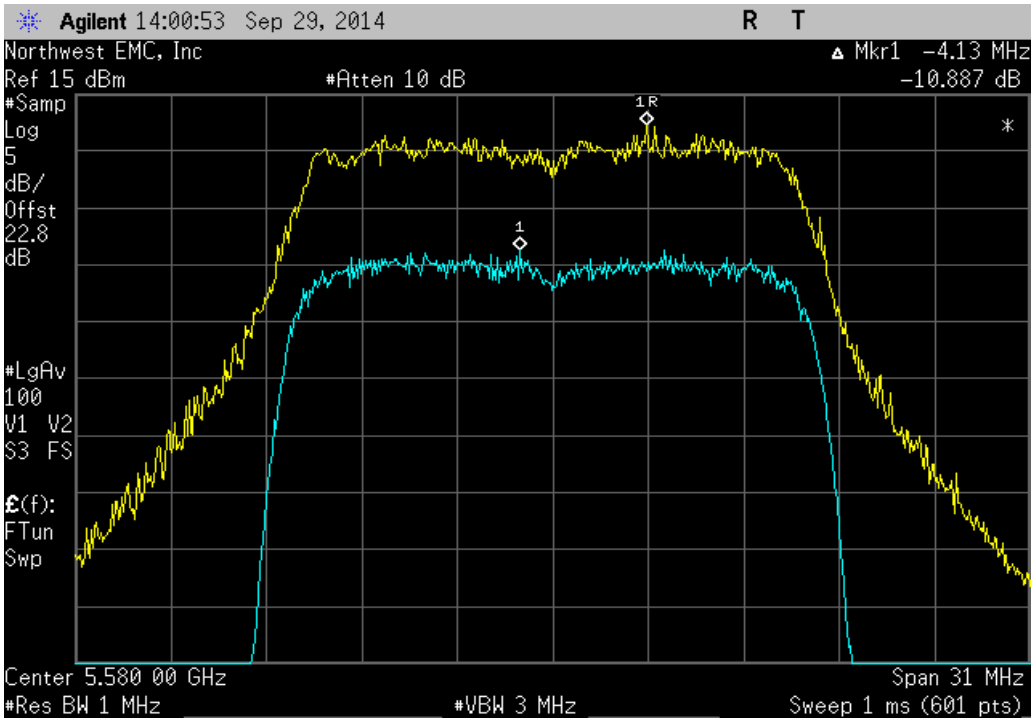

| 802.11(a) 54 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 11.107 | 13 | Pass |



| 802.11(a) 54 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 11.213 | 13 | Pass |

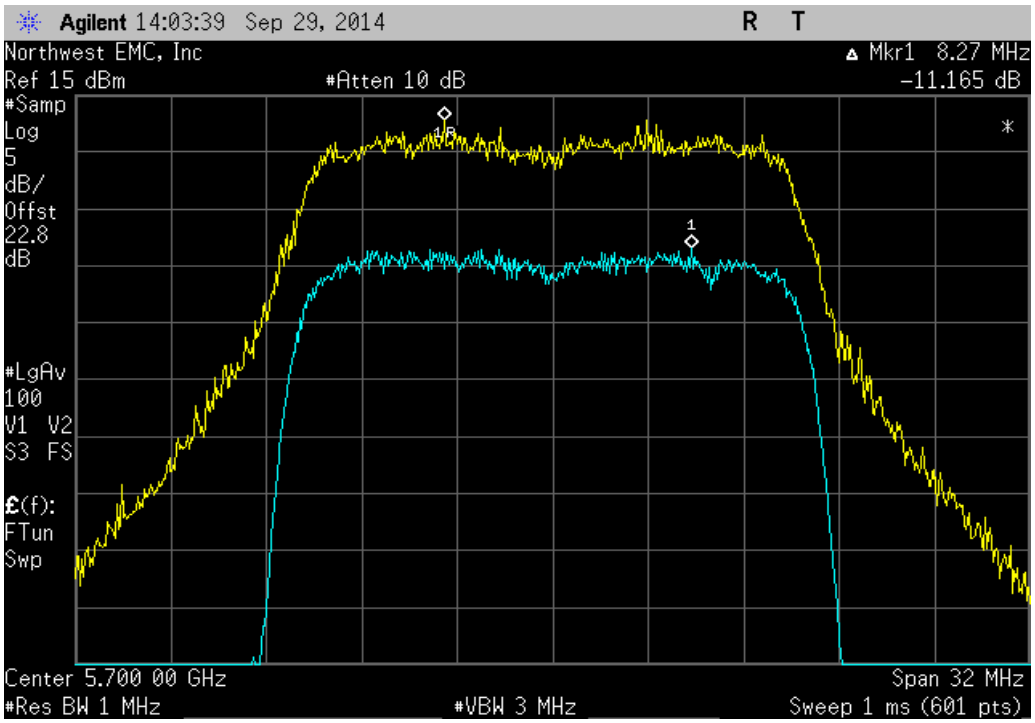



| 802.11(a) 54 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 10.887 | 13 | Pass |

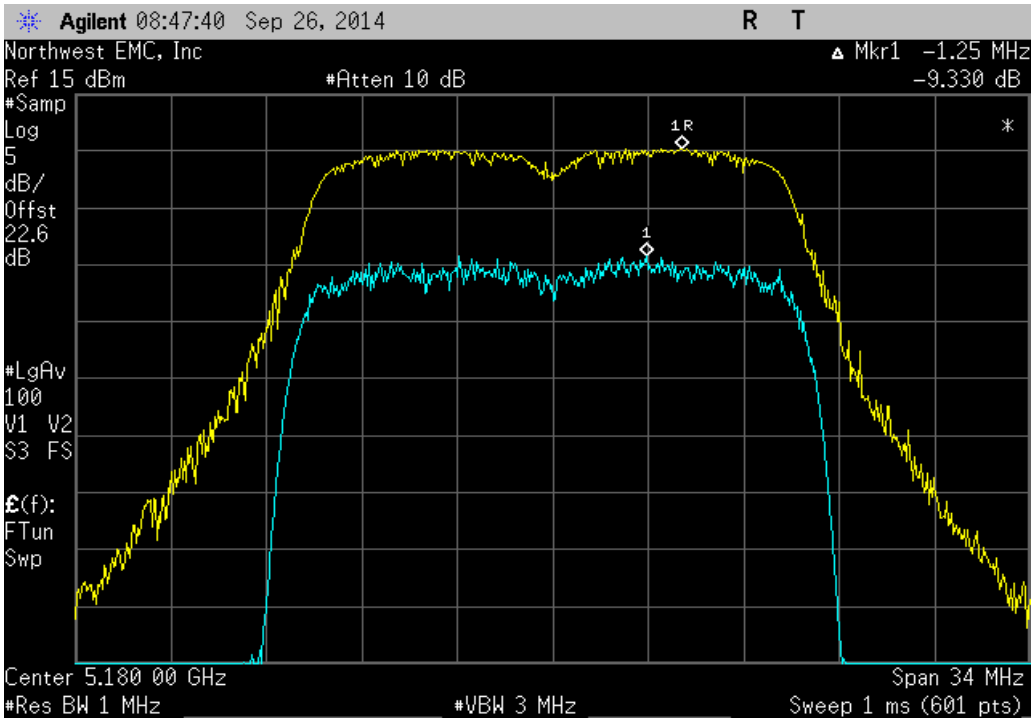


# PEAK EXCURSION OF THE MODULATION ENVELOPE

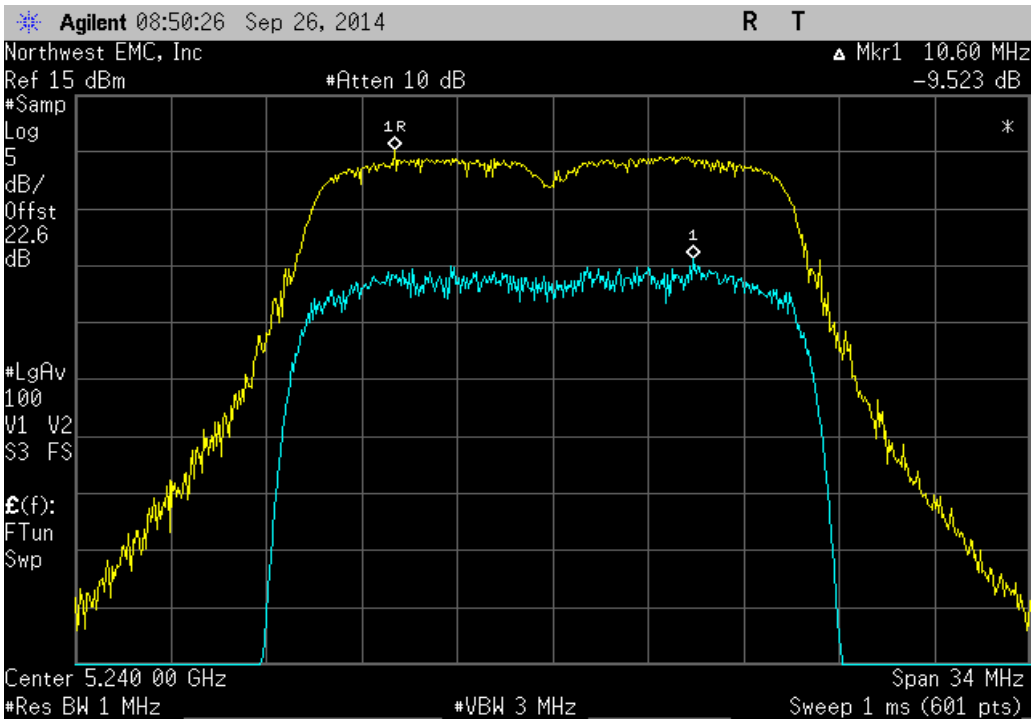
| 802.11(a) 54 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 11.165 | 13 | Pass |



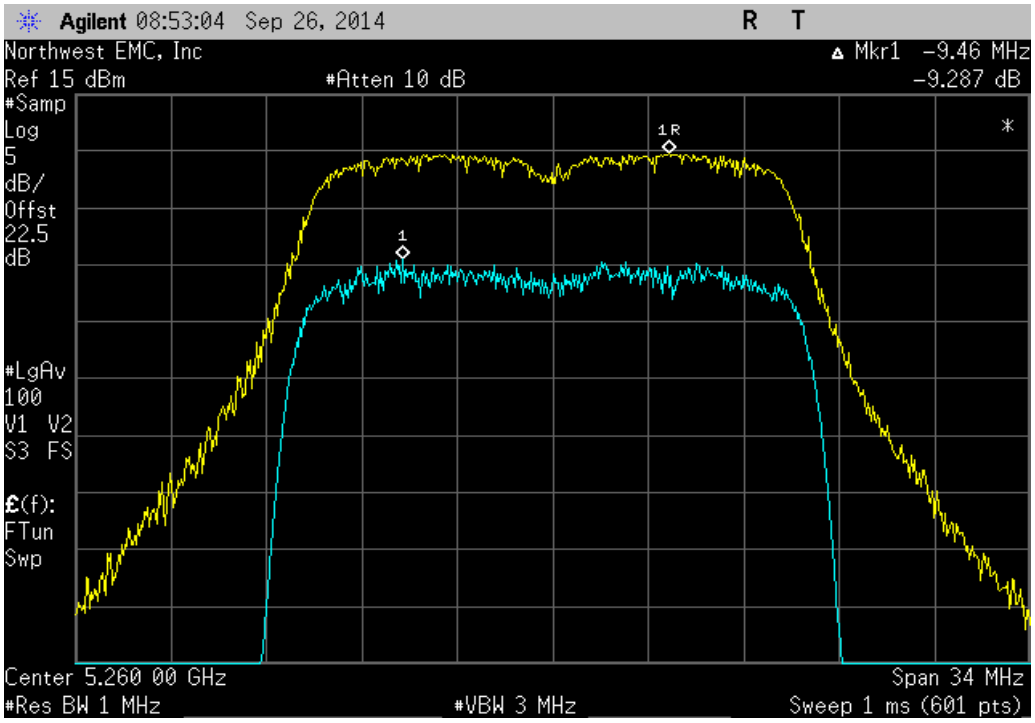

| 802.11(n) MCS0, 5150 - 5250 MHz Band, Channel 36, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 9.33 | 13 | Pass |



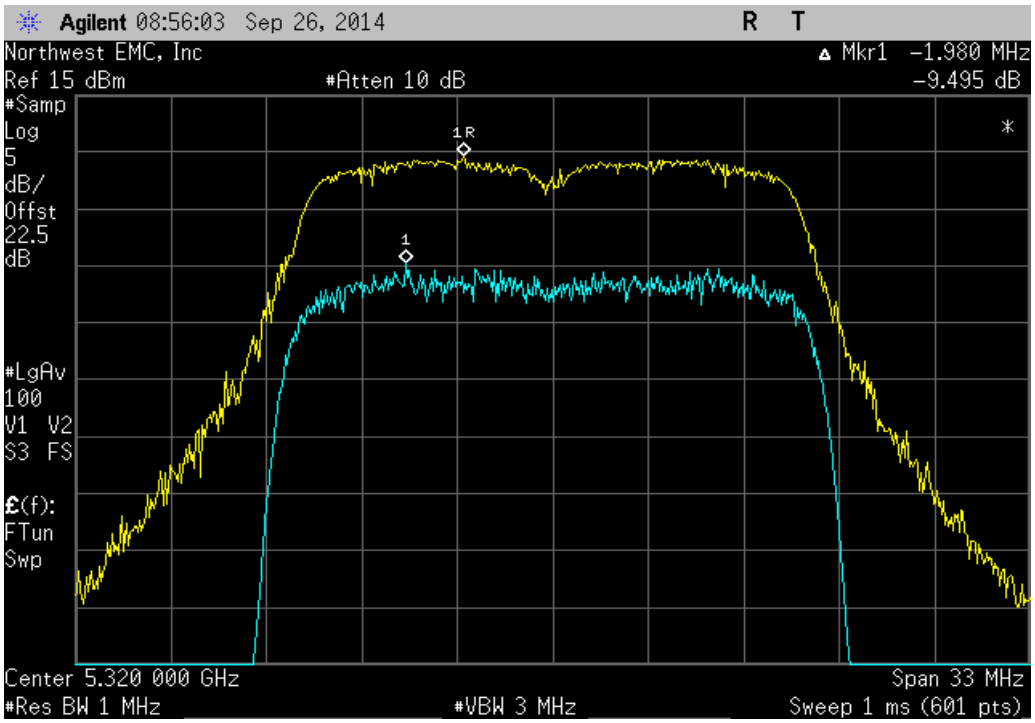
| 802.11(n) MCS0, 5150 - 5250 MHz Band, Channel 48, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 9.523 | 13 | Pass |



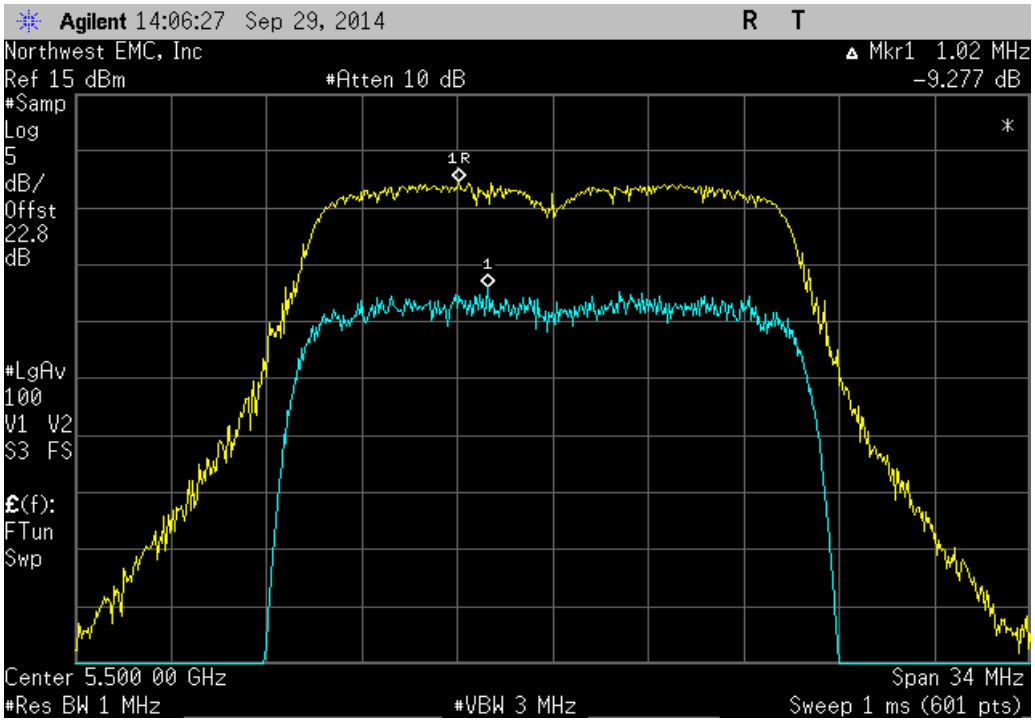

| 802.11(n) MCS0, 5250 - 5350 MHz Band, Channel 52, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 9.287 | 13 | Pass |



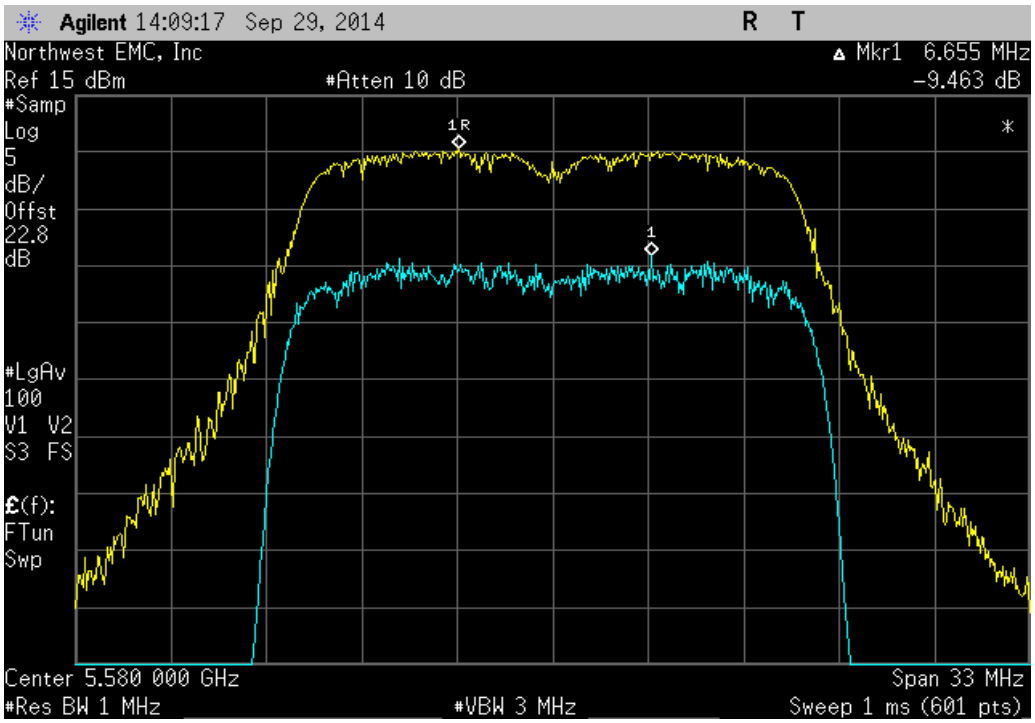
| 802.11(n) MCS0, 5250 - 5350 MHz Band, Channel 64, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 9.495 | 13 | Pass |



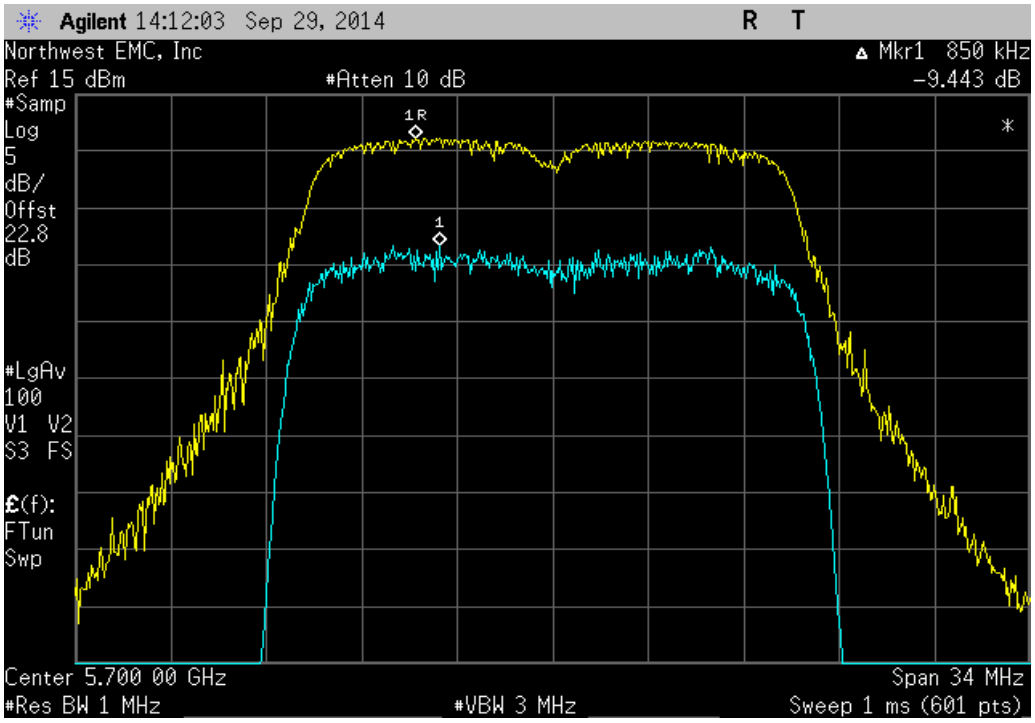

| 802.11(n) MCS0, 5470 - 5725 MHz Band, Channel 100, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 9.277 | 13 | Pass |



| 802.11(n) MCS0, 5470 - 5725 MHz Band, Channel 116, Mid Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 9.463 | 13 | Pass |

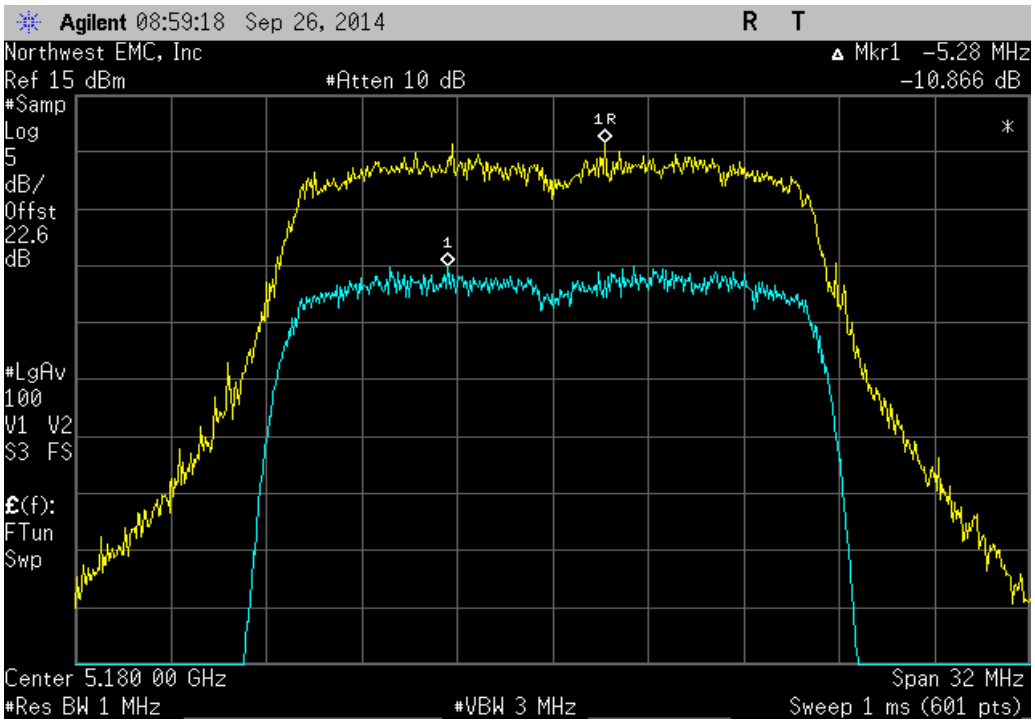



| 802.11(n) MCS0, 5470 - 5725 MHz Band, Channel 140, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 9.443 | 13 | Pass |

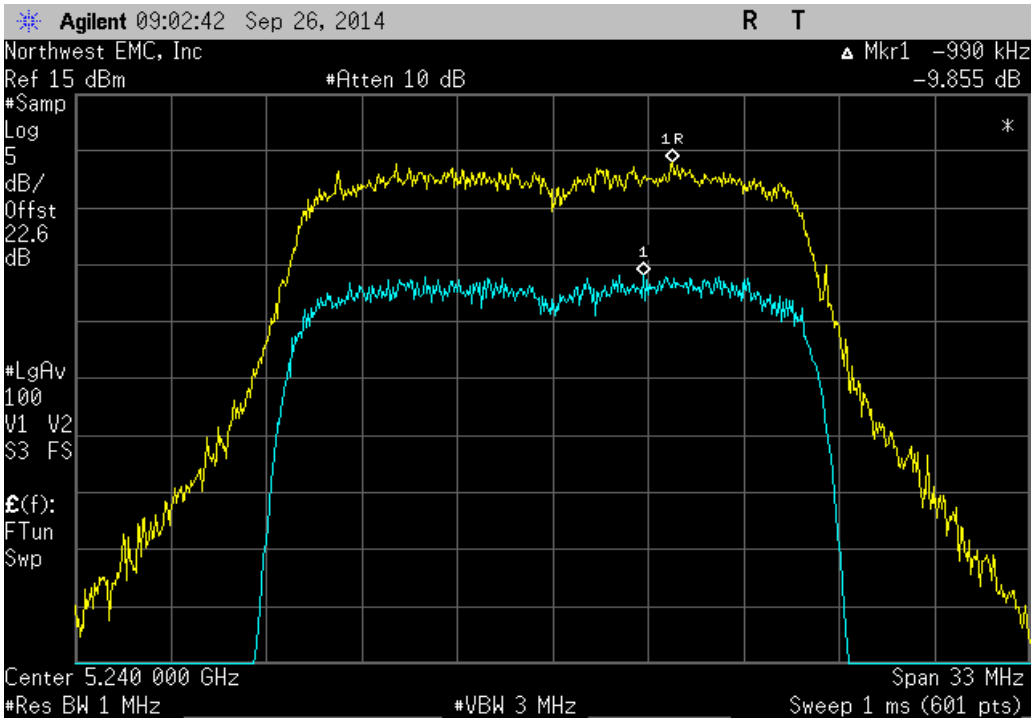


# PEAK EXCURSION OF THE MODULATION ENVELOPE

| 802.11(n) MCS7, 5150 - 5250 MHz Band, Channel 36, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 10.866 | 13 | Pass |

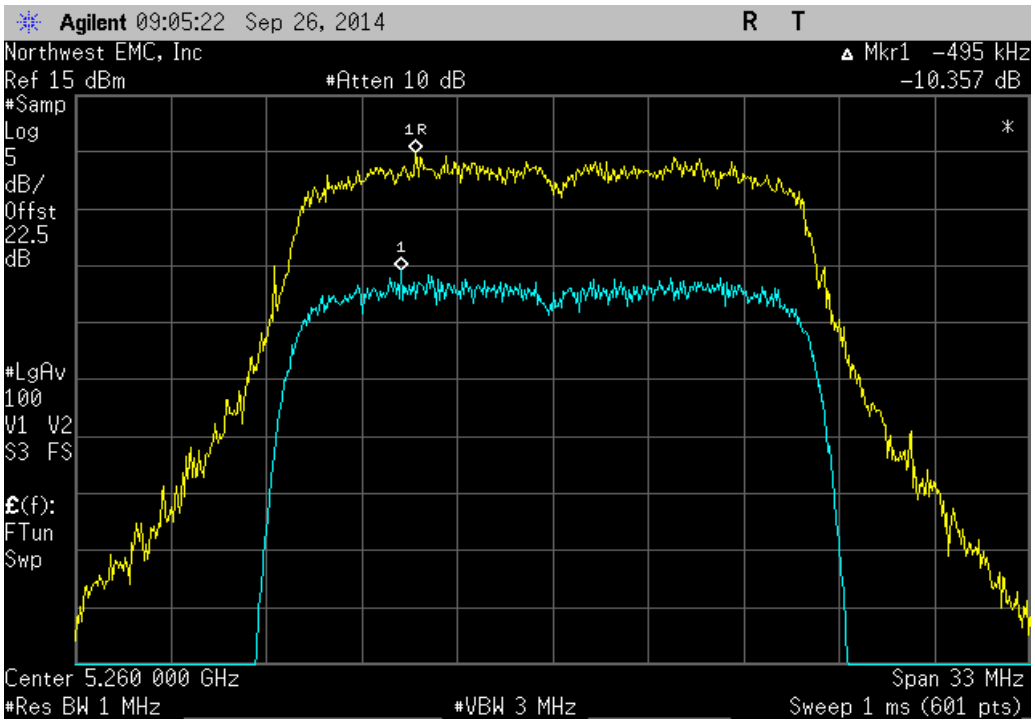



| 802.11(n) MCS7, 5150 - 5250 MHz Band, Channel 48, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 9.855 | 13 | Pass |

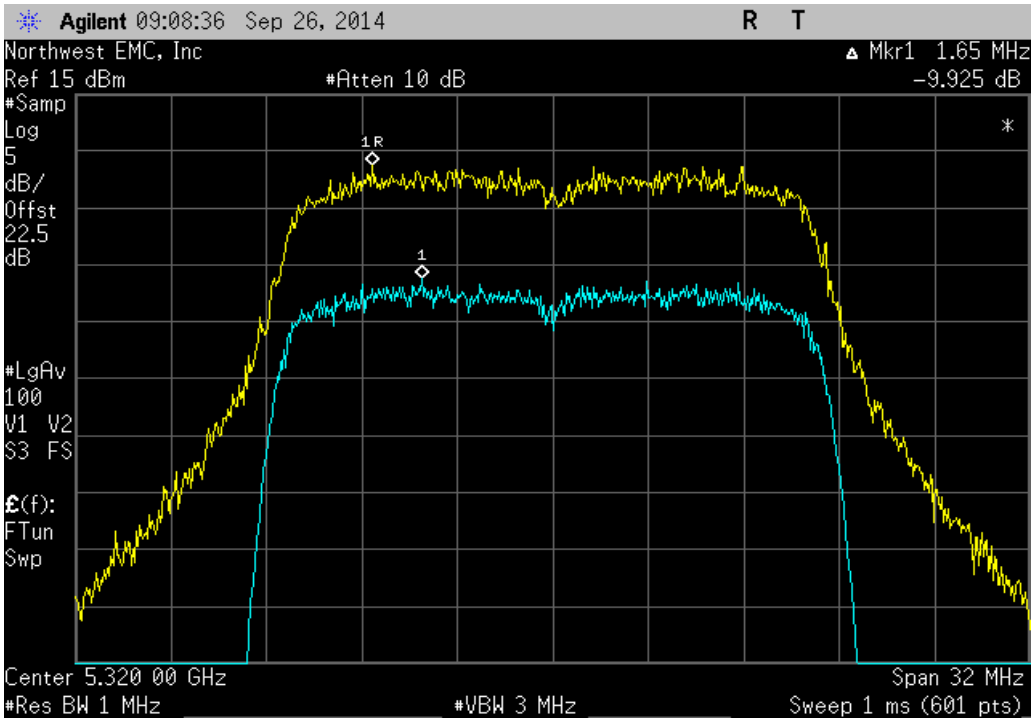


# PEAK EXCURSION OF THE MODULATION ENVELOPE

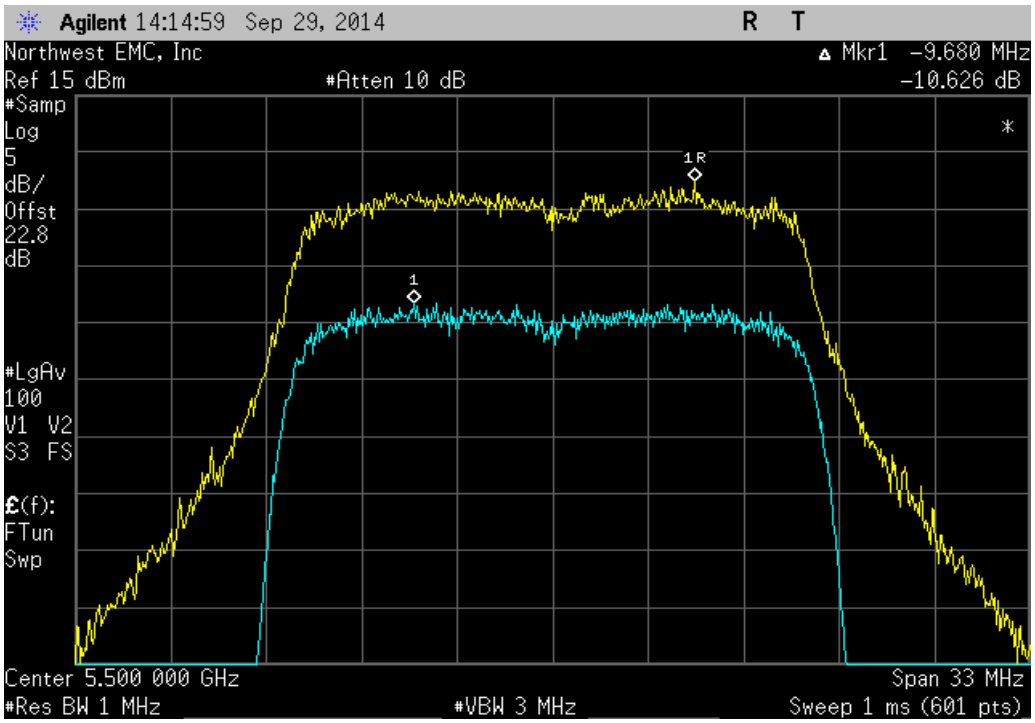
| 802.11(n) MCS7, 5250 - 5350 MHz Band, Channel 52, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 10.357 | 13 | Pass |



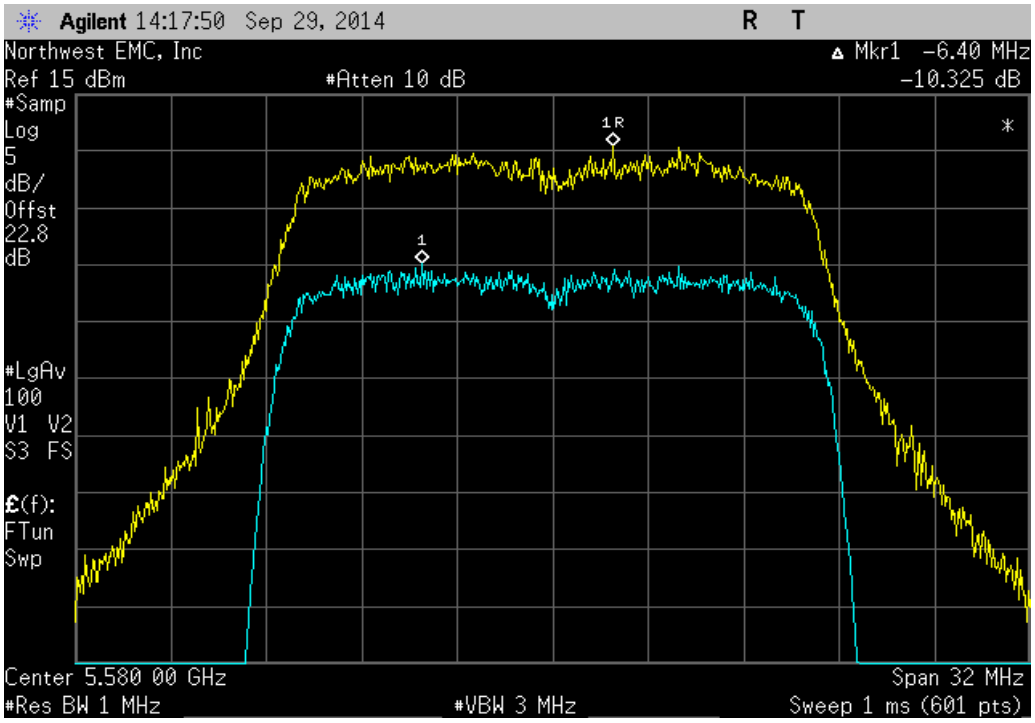

| 802.11(n) MCS7, 5250 - 5350 MHz Band, Channel 64, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 9.925 | 13 | Pass |



| 802.11(n) MCS7, 5470 - 5725 MHz Band, Channel 100, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 10.626 | 13 | Pass |

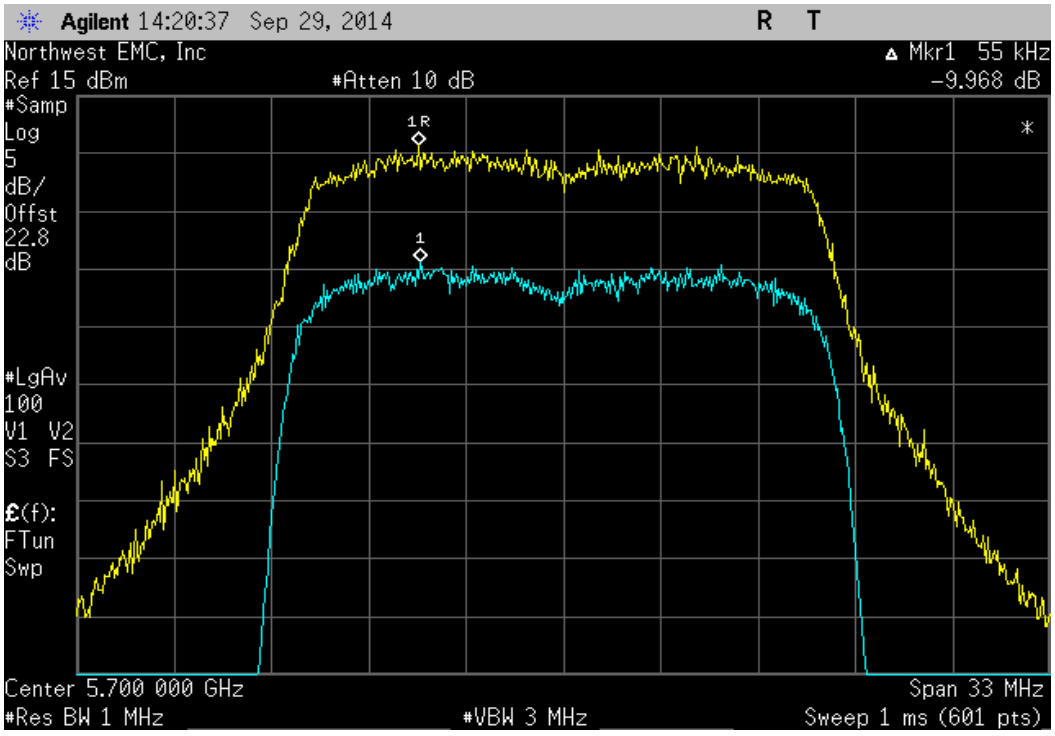



| 802.11(n) MCS7, 5470 - 5725 MHz Band, Channel 116, Mid Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 10.325 | 13 | Pass |



# PEAK EXCURSION OF THE MODULATION ENVELOPE

| 802.11(n) MCS7, 5470 - 5725 MHz Band, Channel 140, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dB) | Limit ≤ (dB) | Results |
| | | | | 9.968 | 13 | Pass |



# PEAK POWER SPECTRAL DENSITY

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 |
|---|---|---|---|---|---|
| Signal Generator MXG | Agilent | N5183A | TIK | 6/7/2012 | 36 |
| 40 GHz DC block | Fairview Microwave | SD3379 | AMI | 9/26/2013 | 14 |
| Attenuator - 20db, 'SMA' | SM Electronics | SA26B-20 | RFW | 4/3/2014 | 12 |
| Spectrum Analyzer | Agilent | E4440A | AAX | 4/28/2014 | 12 |

**TEST DESCRIPTION**

FCC KDB 789033 D01 General UNII Test Procedures Section E was followed. The transmit frequency was set to the required channels in each band. The transmit power was set to its default maximum. The data rate(s) listed in the datasheet were tested. 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 peak power spectral density, the transmission pulse duration (T) was measured. The transmission pulse duration and the associated data are found elsewhere in this test report.

The spectrum analyzer settings were as follows:

- The span was set to encompass entire emission bandwidth (B), centered on the transmit channel.
- RBW = 1 MHz, VBW ≥ 3 MHz
- Sample detector was used because Method SA-1 Alternate was used to measure the Maximum Conducted Output Power.
- Trace average 100 traces in power averaging mode (not video averaging).

The peak power spectral density (PPSD) was determined to be the highest level found across the emission in any 1 MHz band after 100 sweeps of power averaging (not video averaging).

# PEAK POWER SPECTRAL DENSITY

| | | | | | |
|---|---|---|---|---|---|
| EUT: | ConnectCore i.MX6 WiFi/Bluetooth | | | Work Order: | ETHE0009 |
| Serial Number: | 00409D 7C03B4 | | | Date: | 09/29/14 |
| Customer: | Etherios Design Solutions | | | Temperature: | 22.7°C |
| Attendees: | None | | | Humidity: | 47% |
| Project: | None | | | Barometric Pres.: | 1023.7 |
| Tested by: | Trevor Buls | Power: | 5VDC | Job Site: | MN08 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.407:2014 | ANSI C63.10:2009 |

**COMMENTS**

None

**DEVIATIONS FROM TEST STANDARD**

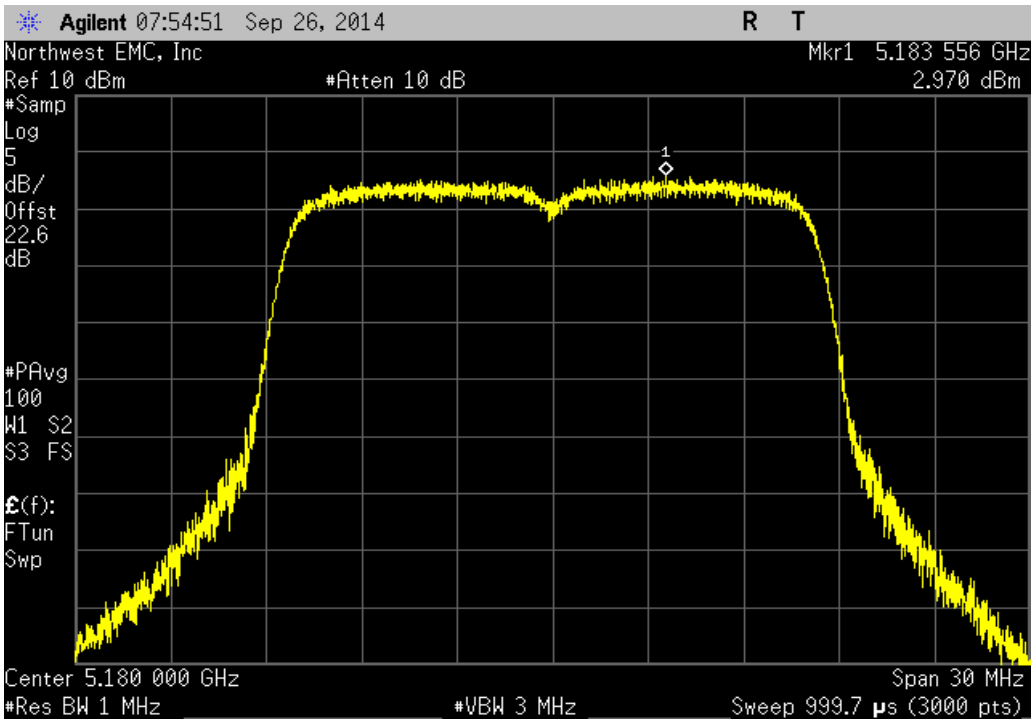
None

| Configuration # | 1 | Signature | Trevor Buls |
|---|---|---|---|

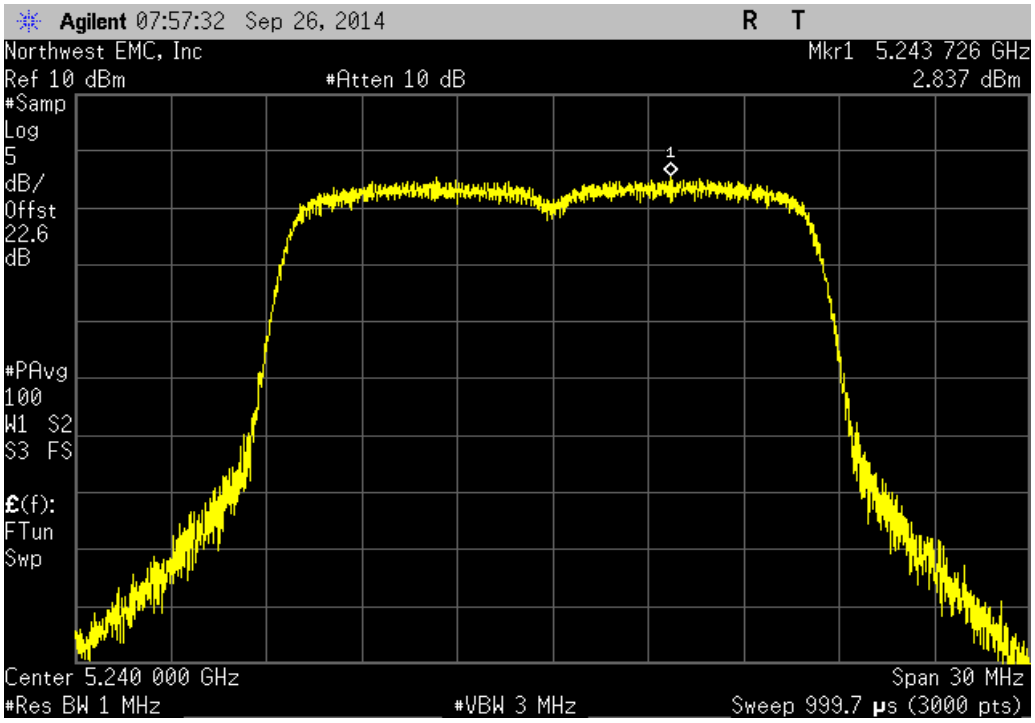
| | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
|---|---|---|---|---|
| 802.11(a) 6 Mbps | | | | |
| | 5150 - 5250 MHz Band | | | |
| | Channel 36, Low Channel | 2.97 | 4 | Pass |
| | Channel 48, High Channel | 2.837 | 4 | Pass |
| | 5250 - 5350 MHz Band | | | |
| | Channel 52, Low Channel | 2.897 | 11 | Pass |
| | Channel 64, High Channel | 2.35 | 11 | Pass |
| | 5470 - 5725 MHz Band | | | |
| | Channel 100, Low Channel | -1.552 | 11 | Pass |
| | Channel 116, Mid Channel | 2.07 | 11 | Pass |
| | Channel 140, High Channel | 3.48 | 11 | Pass |
| 802.11(a) 36 Mbps | | | | |
| | 5150 - 5250 MHz Band | | | |
| | Channel 36, Low Channel | 3.4 | 4 | Pass |
| | Channel 48, High Channel | 2.311 | 4 | Pass |
| | 5250 - 5350 MHz Band | | | |
| | Channel 52, Low Channel | 2.379 | 11 | Pass |
| | Channel 64, High Channel | 2.321 | 11 | Pass |
| | 5470 - 5725 MHz Band | | | |
| | Channel 100, Low Channel | 0.062 | 11 | Pass |
| | Channel 116, Mid Channel | 3.21 | 11 | Pass |
| | Channel 140, High Channel | 4.177 | 11 | Pass |
| 802.11(a) 54 Mbps | | | | |
| | 5150 - 5250 MHz Band | | | |
| | Channel 36, Low Channel | 2.969 | 4 | Pass |
| | Channel 48, High Channel | 2.402 | 4 | Pass |
| | 5250 - 5350 MHz Band | | | |
| | Channel 52, Low Channel | 2.478 | 11 | Pass |
| | Channel 64, High Channel | 1.92 | 11 | Pass |
| | 5470 - 5725 MHz Band | | | |
| | Channel 100, Low Channel | 0.03 | 11 | Pass |
| | Channel 116, Mid Channel | 3.429 | 11 | Pass |
| | Channel 140, High Channel | 3.907 | 11 | Pass |
| 802.11(n) MCS0 | | | | |
| | 5150 - 5250 MHz Band | | | |
| | Channel 36, Low Channel | 3.091 | 4 | Pass |
| | Channel 48, High Channel | 2.323 | 4 | Pass |
| | 5250 - 5350 MHz Band | | | |
| | Channel 52, Low Channel | 2.666 | 11 | Pass |
| | Channel 64, High Channel | 2.431 | 11 | Pass |
| | 5470 - 5725 MHz Band | | | |
| | Channel 100, Low Channel | 0.202 | 11 | Pass |
| | Channel 116, Mid Channel | 2.983 | 11 | Pass |
| | Channel 140, High Channel | 4.05 | 11 | Pass |
| 802.11(n) MCS7 | | | | |
| | 5150 - 5250 MHz Band | | | |
| | Channel 36, Low Channel | 2.017 | 4 | Pass |
| | Channel 48, High Channel | 1.064 | 4 | Pass |
| | 5250 - 5350 MHz Band | | | |
| | Channel 52, Low Channel | 1.277 | 11 | Pass |
| | Channel 64, High Channel | 0.683 | 11 | Pass |
| | 5470 - 5725 MHz Band | | | |
| | Channel 100, Low Channel | -1.092 | 11 | Pass |
| | Channel 116, Mid Channel | 1.896 | 11 | Pass |
| | Channel 140, High Channel | 2.584 | 11 | Pass |

# PEAK POWER SPECTRAL DENSITY

| 802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
| | | | | 2.97 | 4 | Pass |

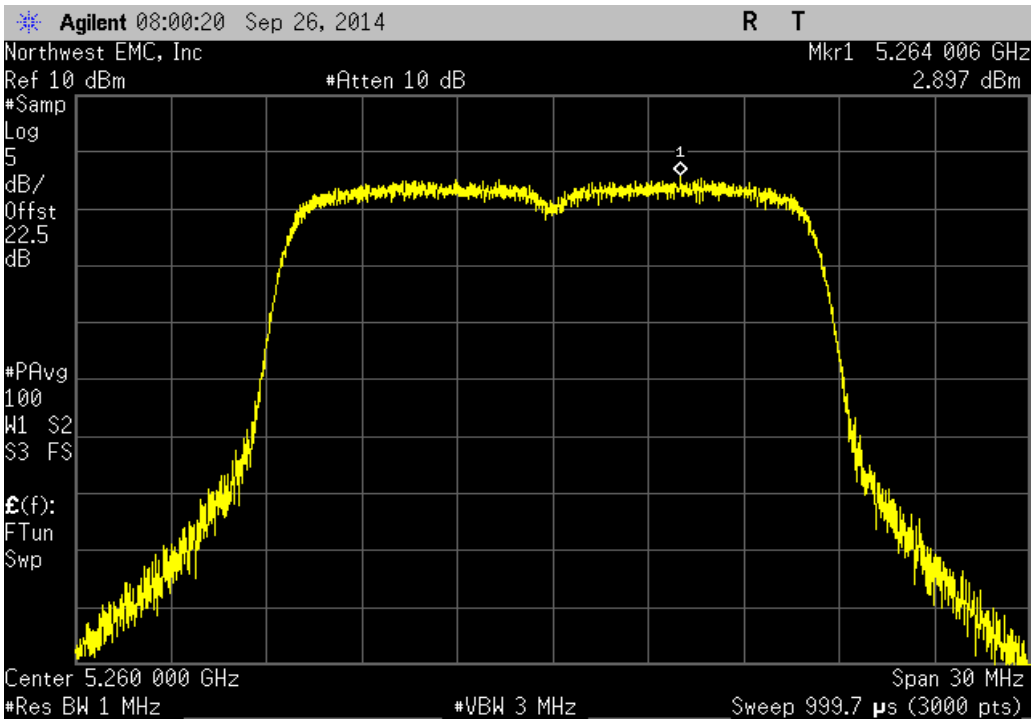



| 802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
| | | | | 2.837 | 4 | Pass |

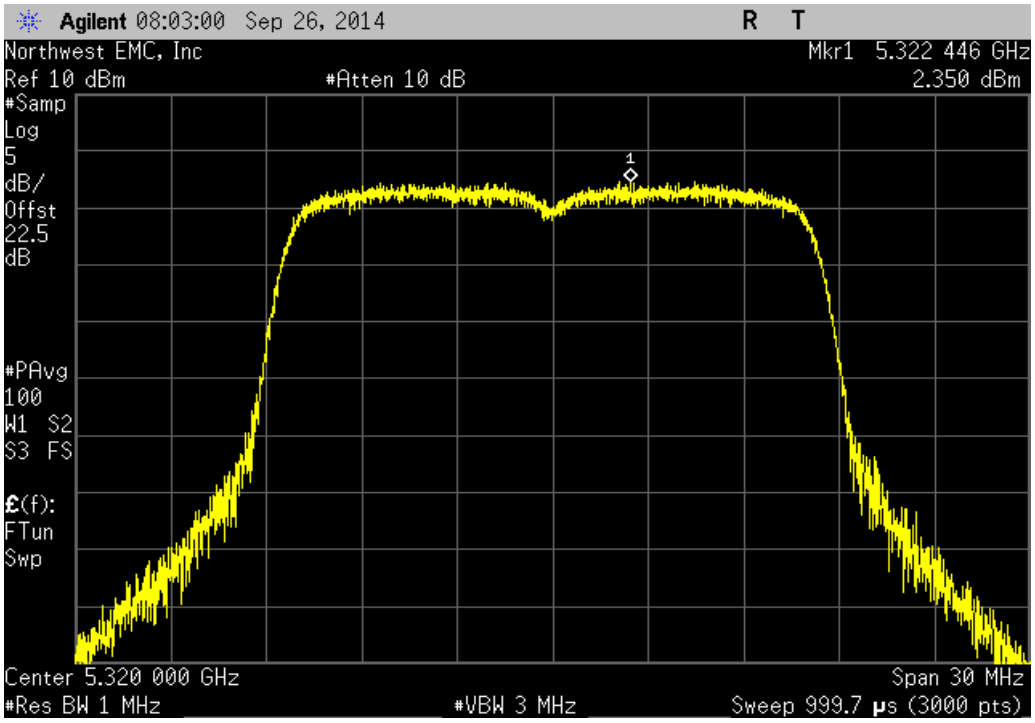


# PEAK POWER SPECTRAL DENSITY

| 802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
| | | | | 2.897 | 11 | Pass |

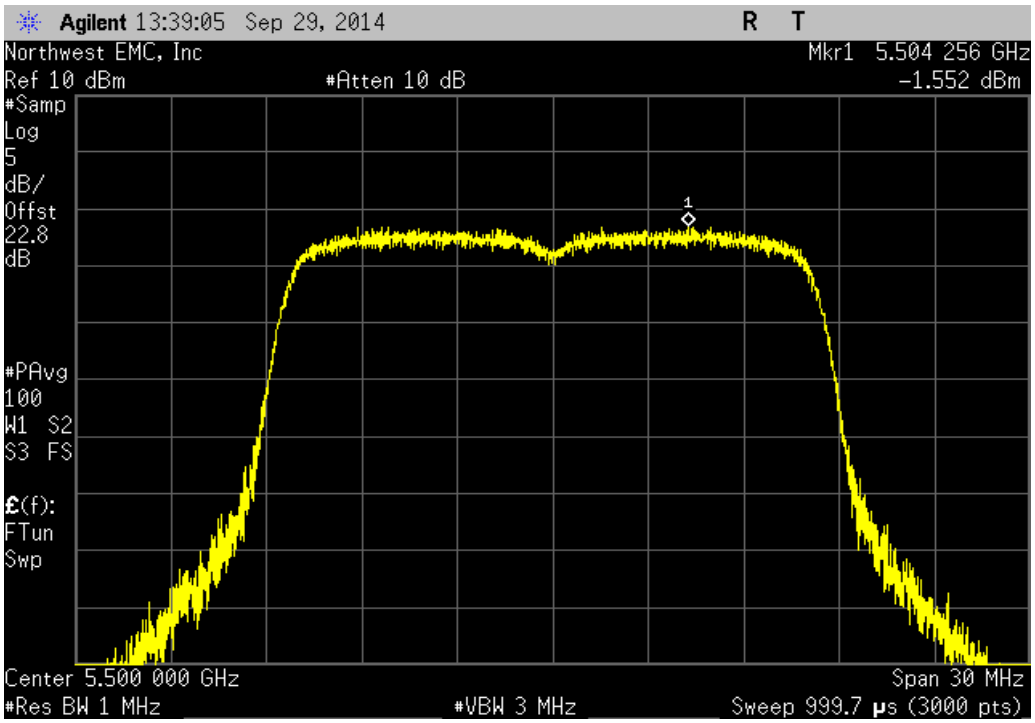



| 802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
| | | | | 2.35 | 11 | Pass |

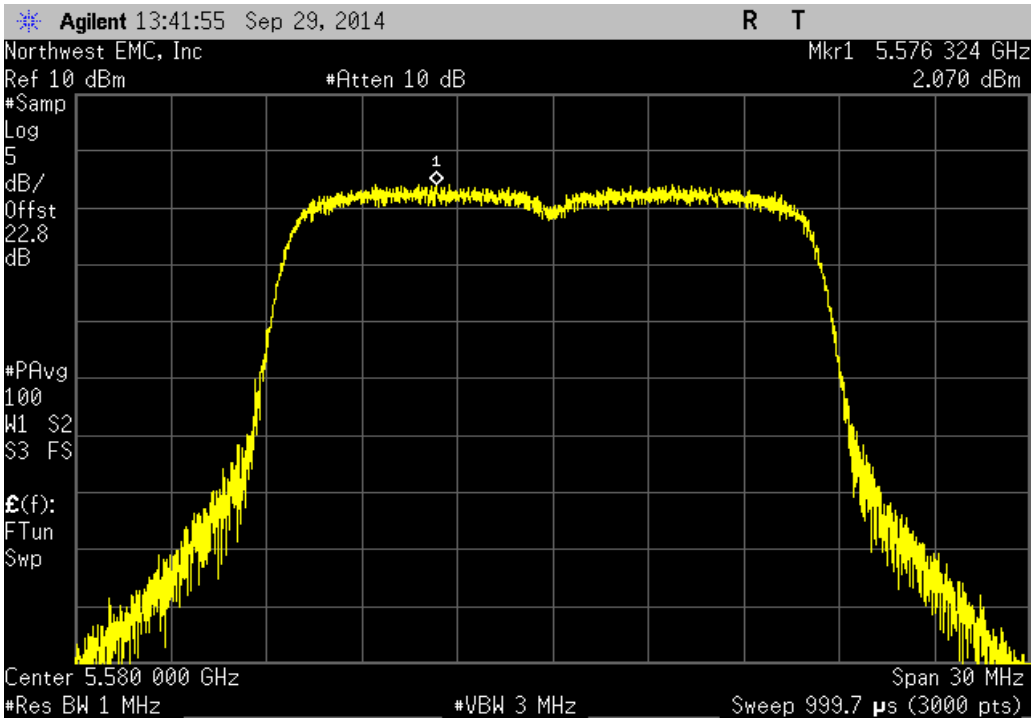


# PEAK POWER SPECTRAL DENSITY

| 802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
| | | | | -1.552 | 11 | Pass |

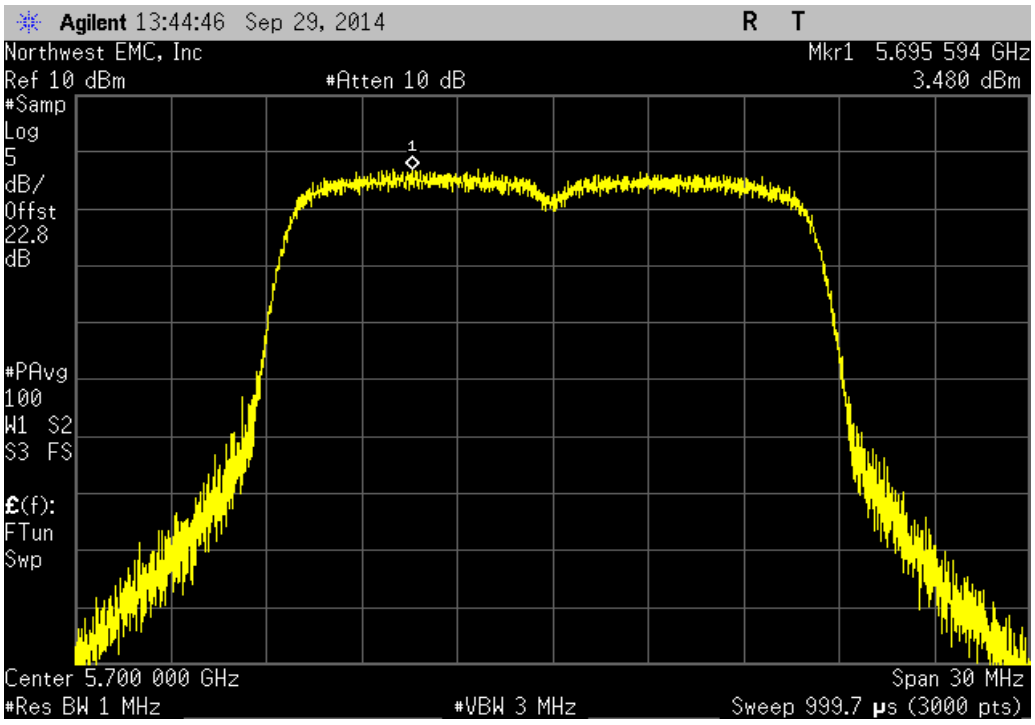



| 802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
| | | | | 2.07 | 11 | Pass |



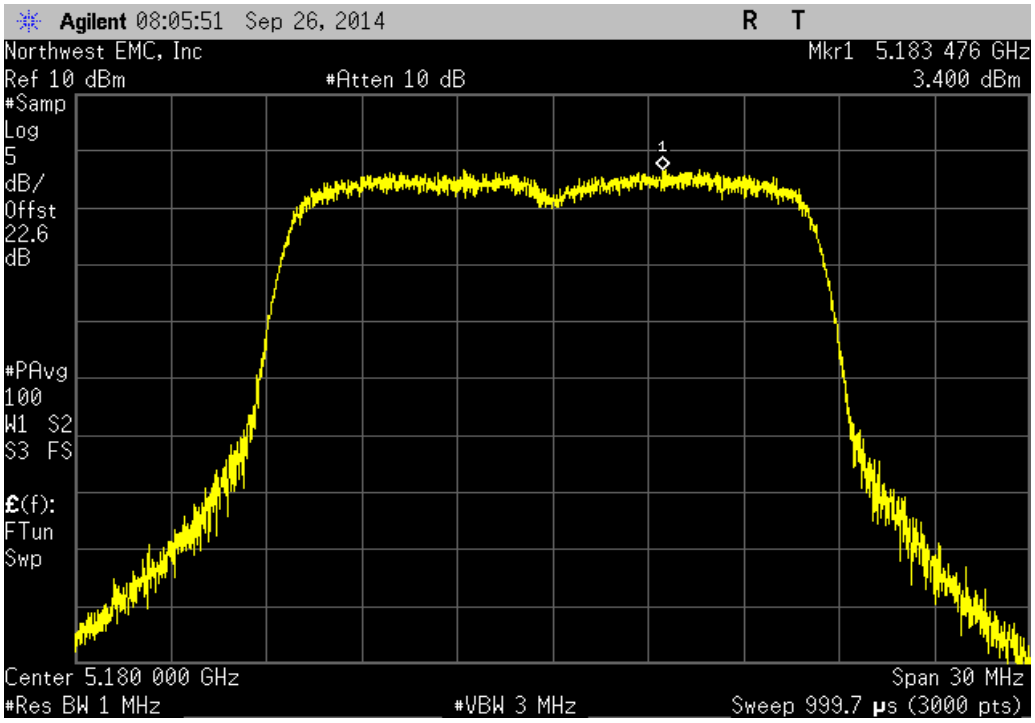
802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel

| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
|---|---|---|---|---|---|---|
| | | | | 3.48 | 11 | Pass |



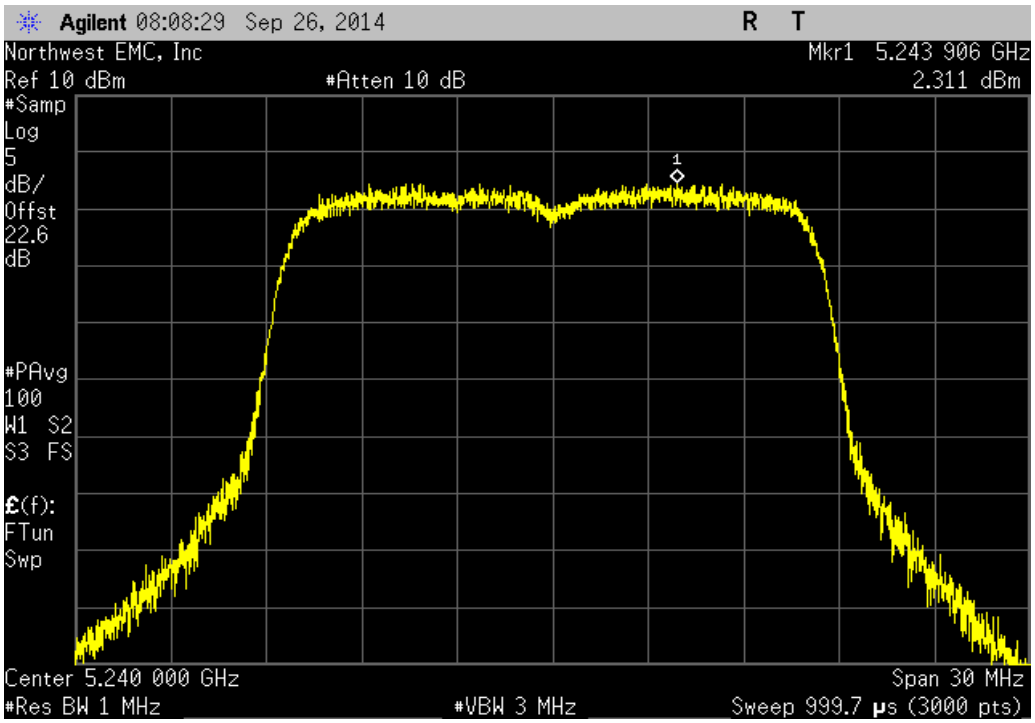

802.11(a) 36 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel

| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
|---|---|---|---|---|---|---|
| | | | | 3.4 | 4 | Pass |

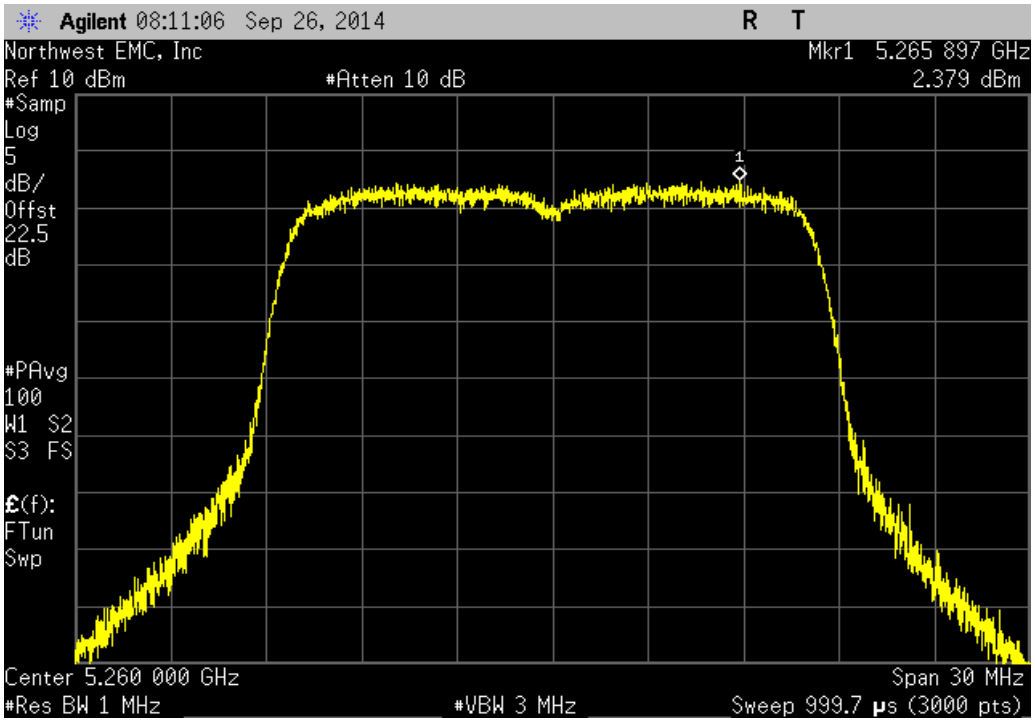


# PEAK POWER SPECTRAL DENSITY

| 802.11(a) 36 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
| | | | | 2.311 | 4 | Pass |

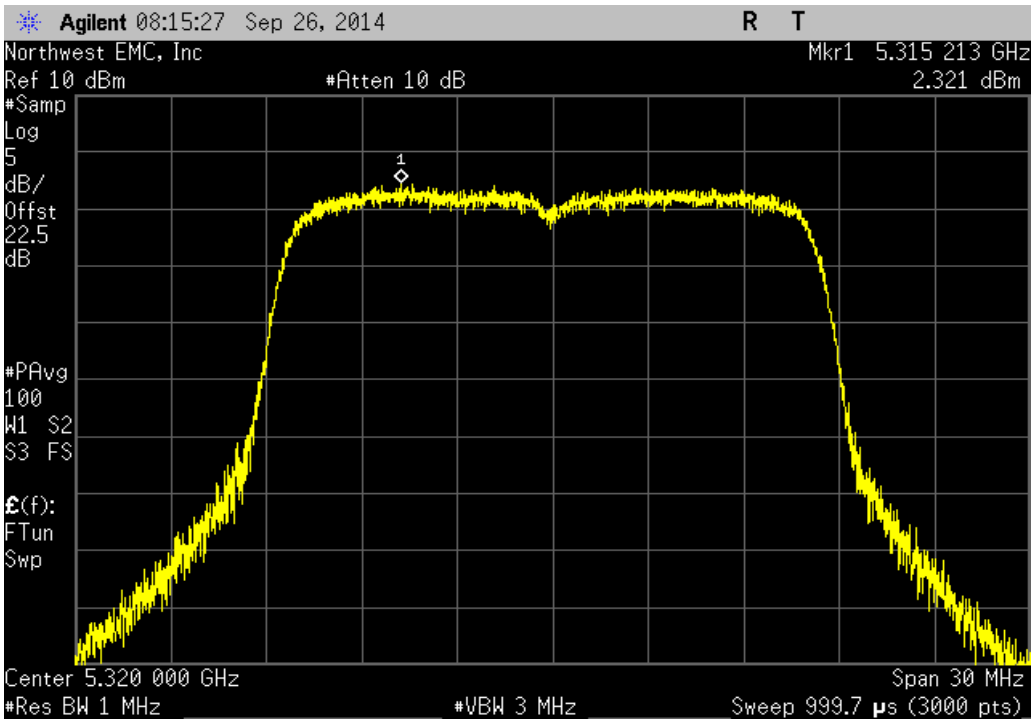



| 802.11(a) 36 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
| | | | | 2.379 | 11 | Pass |

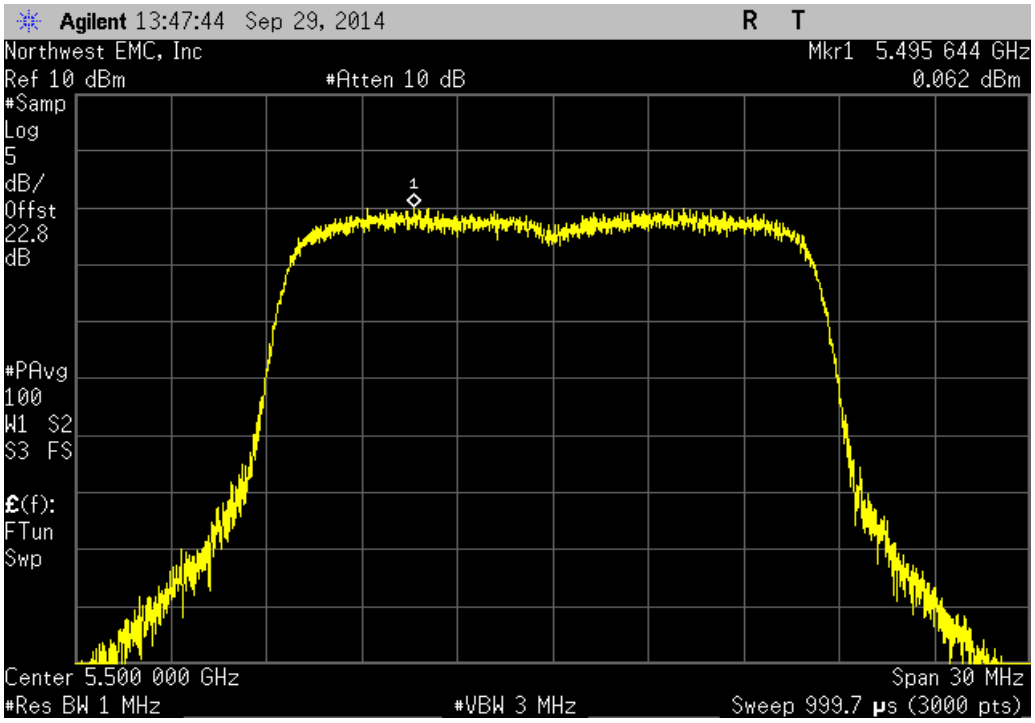


# PEAK POWER SPECTRAL DENSITY

| 802.11(a) 36 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
| | | | | 2.321 | 11 | Pass |



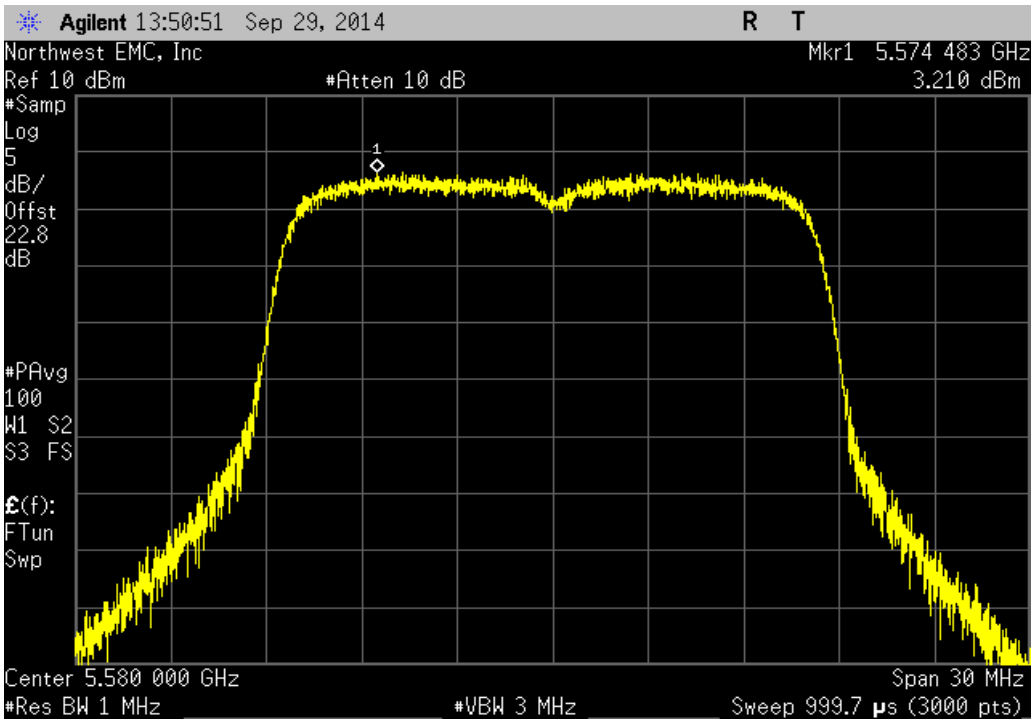

| 802.11(a) 36 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
| | | | | 0.062 | 11 | Pass |



# PEAK POWER SPECTRAL DENSITY

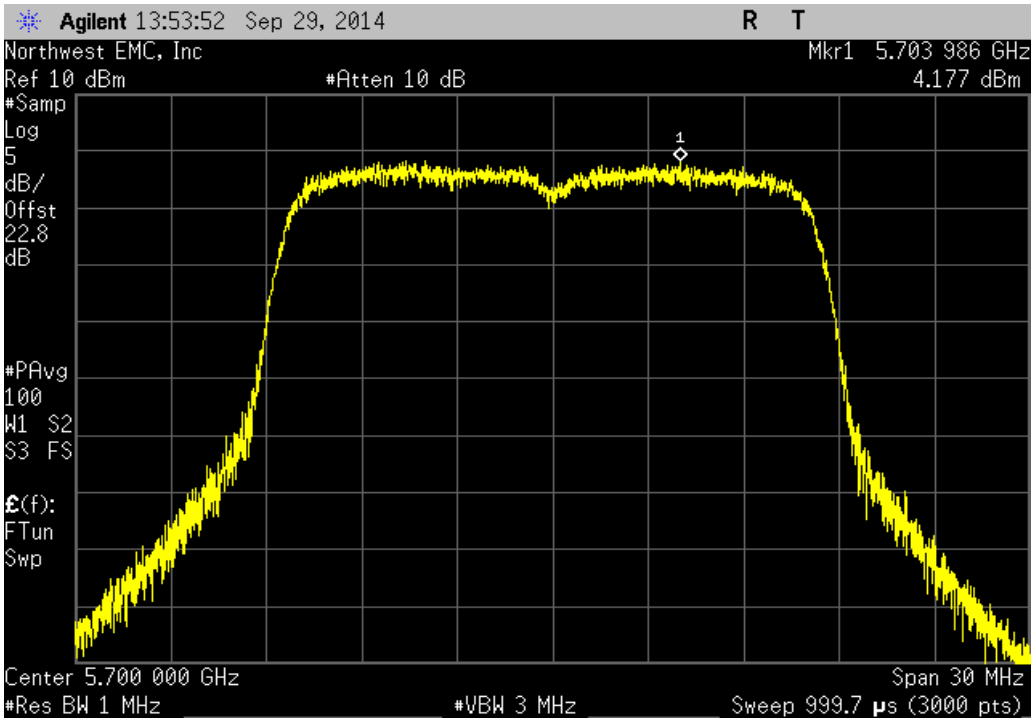
802.11(a) 36 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel

| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
|---|---|---|---|---|---|---|
| | | | | 3.21 | 11 | Pass |



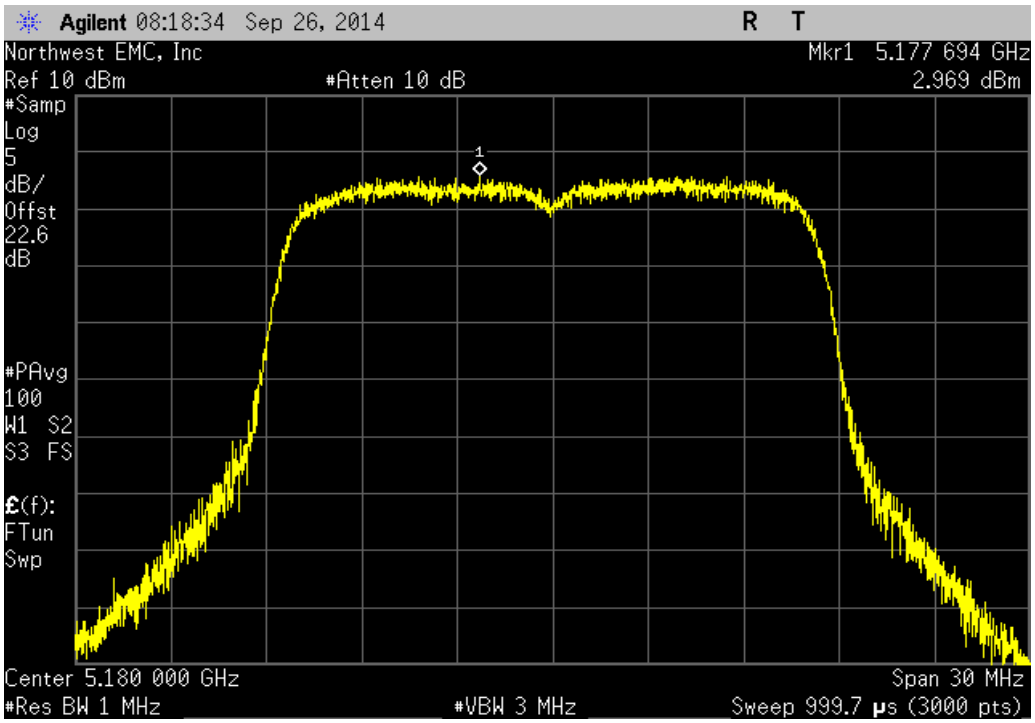

802.11(a) 36 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel

| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
|---|---|---|---|---|---|---|
| | | | | 4.177 | 11 | Pass |

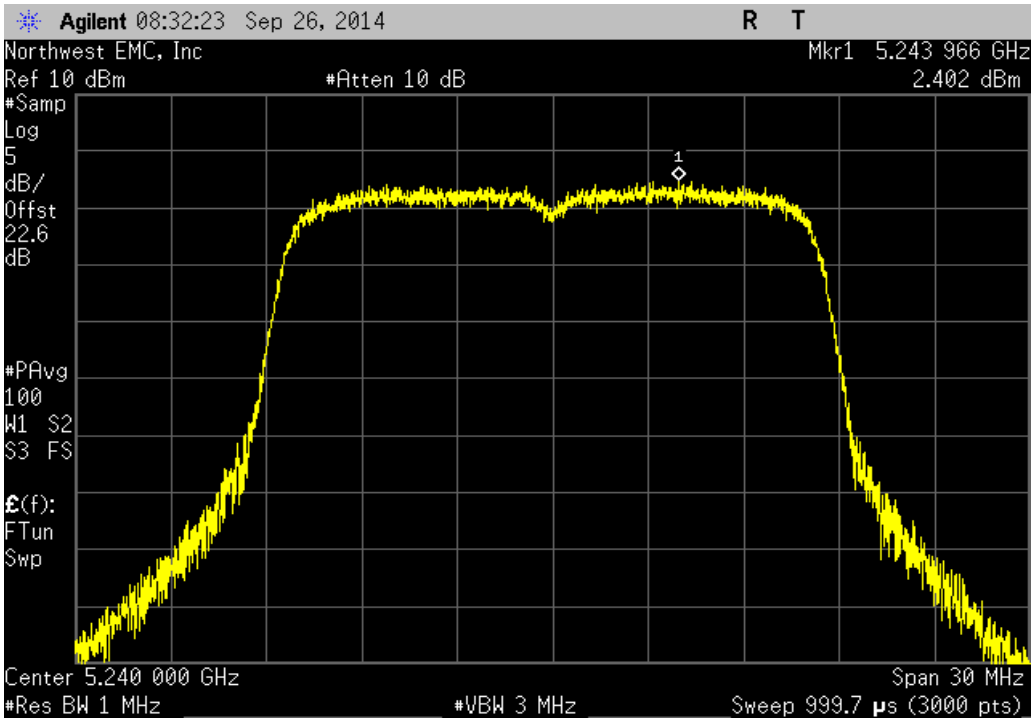


# PEAK POWER SPECTRAL DENSITY

| 802.11(a) 54 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
| | | | | 2.969 | 4 | Pass |

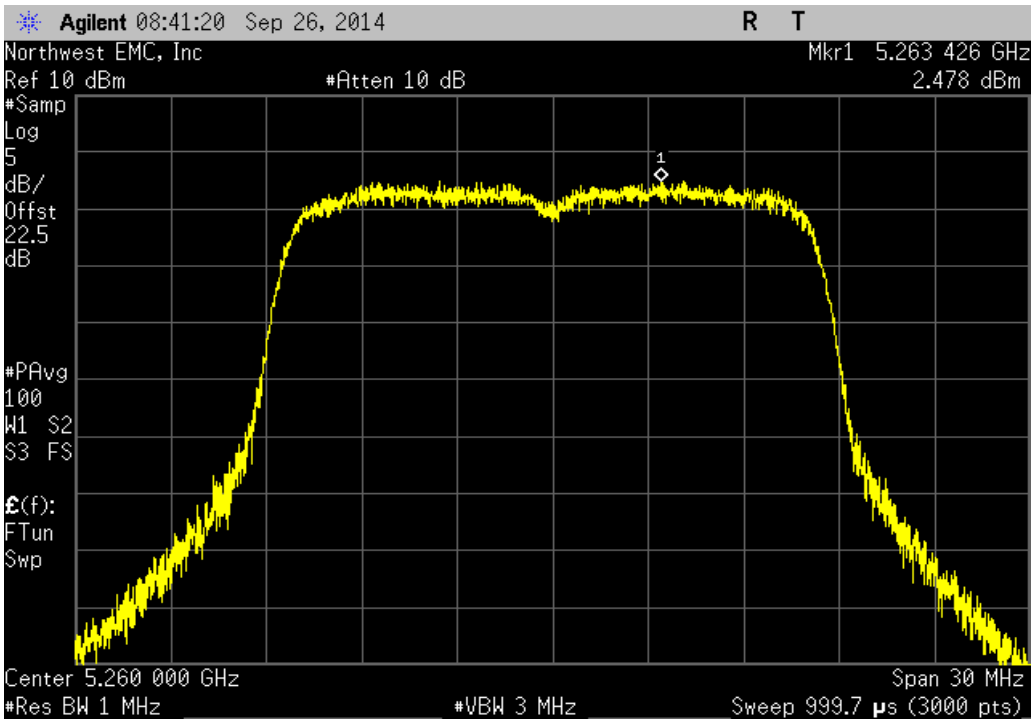



| 802.11(a) 54 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
| | | | | 2.402 | 4 | Pass |

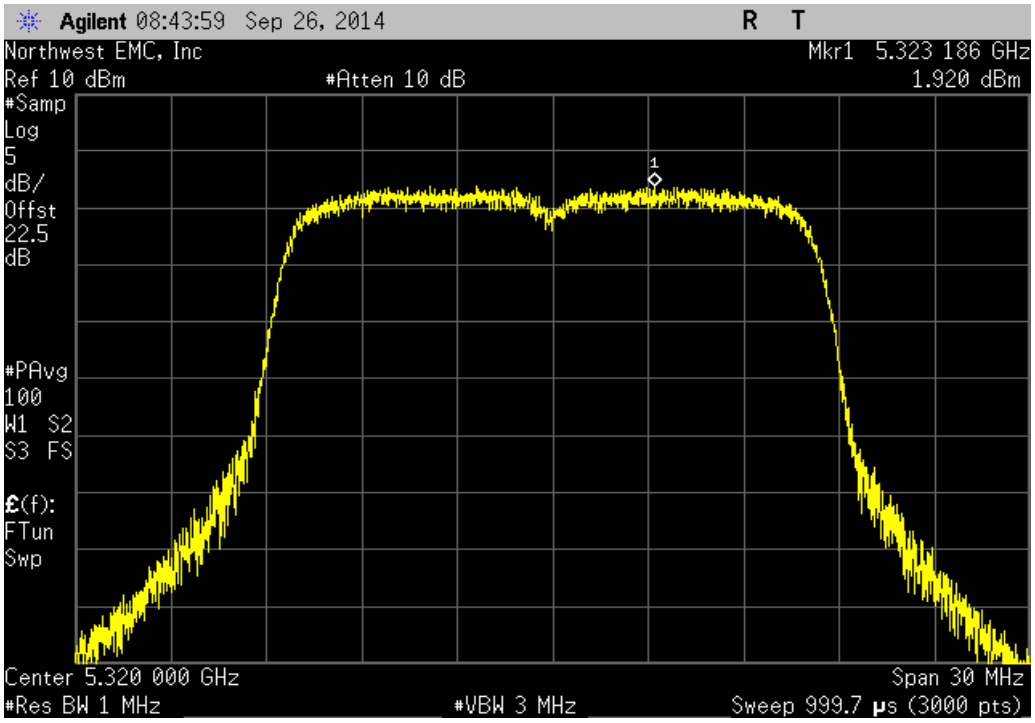


# PEAK POWER SPECTRAL DENSITY

| 802.11(a) 54 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
| | | | | 2.478 | 11 | Pass |



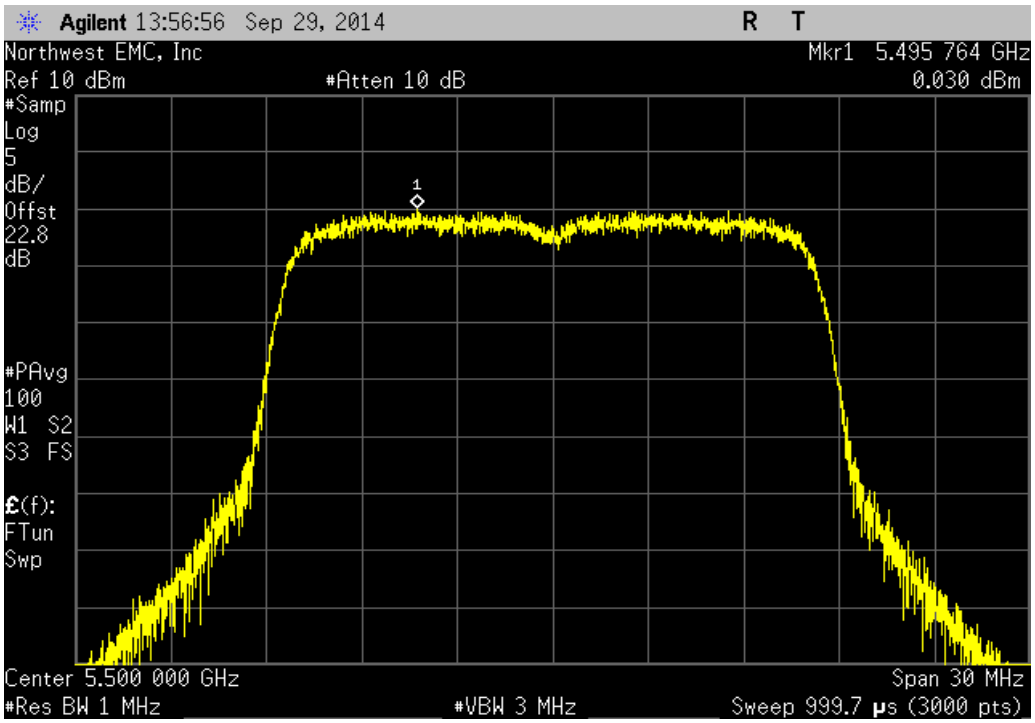

| 802.11(a) 54 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
| | | | | 1.92 | 11 | Pass |



# PEAK POWER SPECTRAL DENSITY

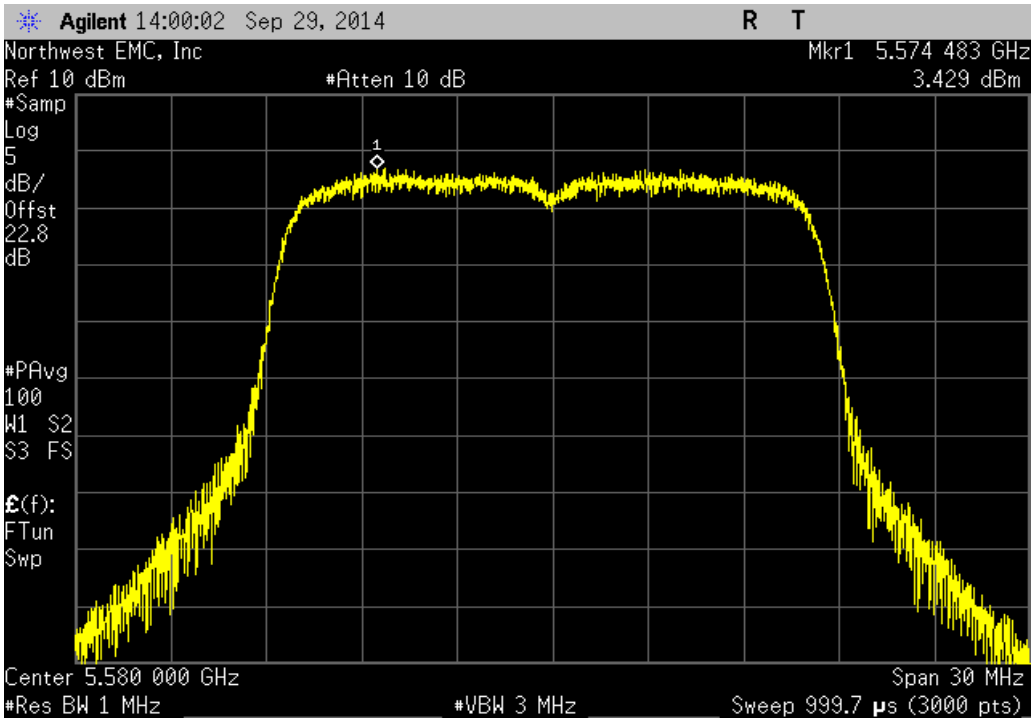
802.11(a) 54 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel

| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
|---|---|---|---|---|---|---|
| | | | | 0.03 | 11 | Pass |




802.11(a) 54 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel

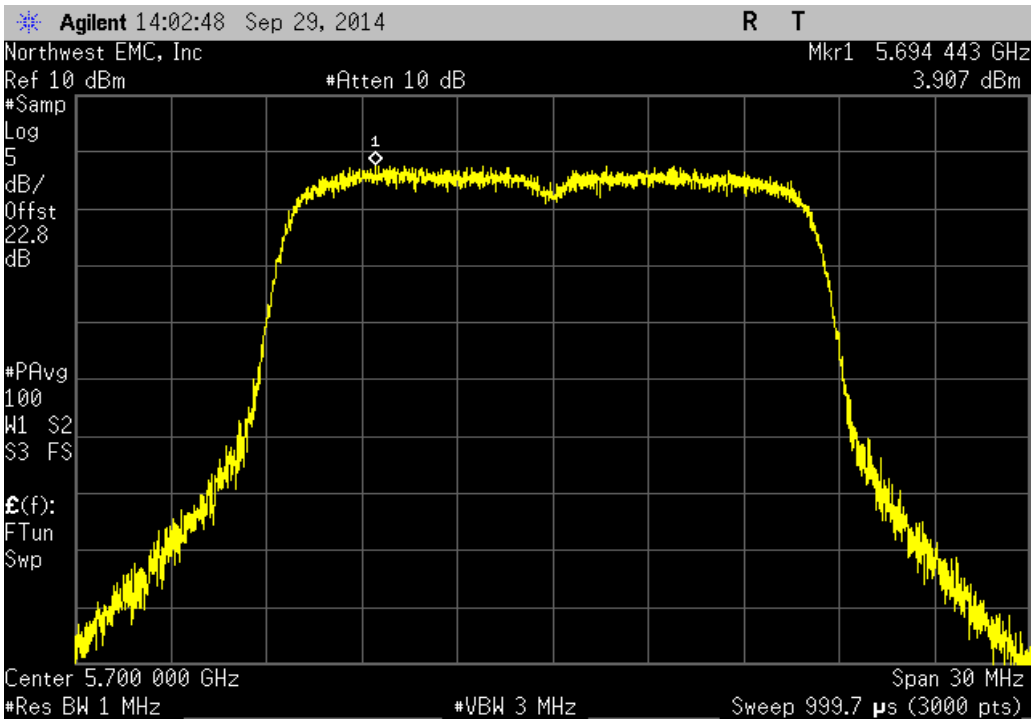
| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
|---|---|---|---|---|---|---|
| | | | | 3.429 | 11 | Pass |



# PEAK POWER SPECTRAL DENSITY

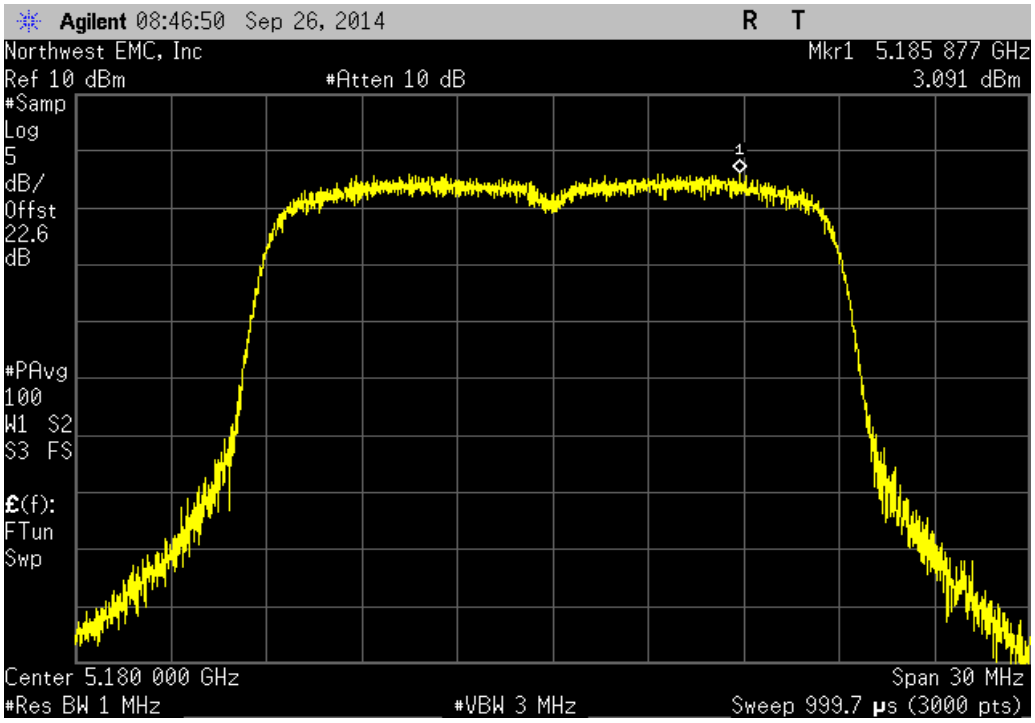
802.11(a) 54 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel

| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
|---|---|---|---|---|---|---|
| | | | | 3.907 | 11 | Pass |




802.11(n) MCS0, 5150 - 5250 MHz Band, Channel 36, Low Channel

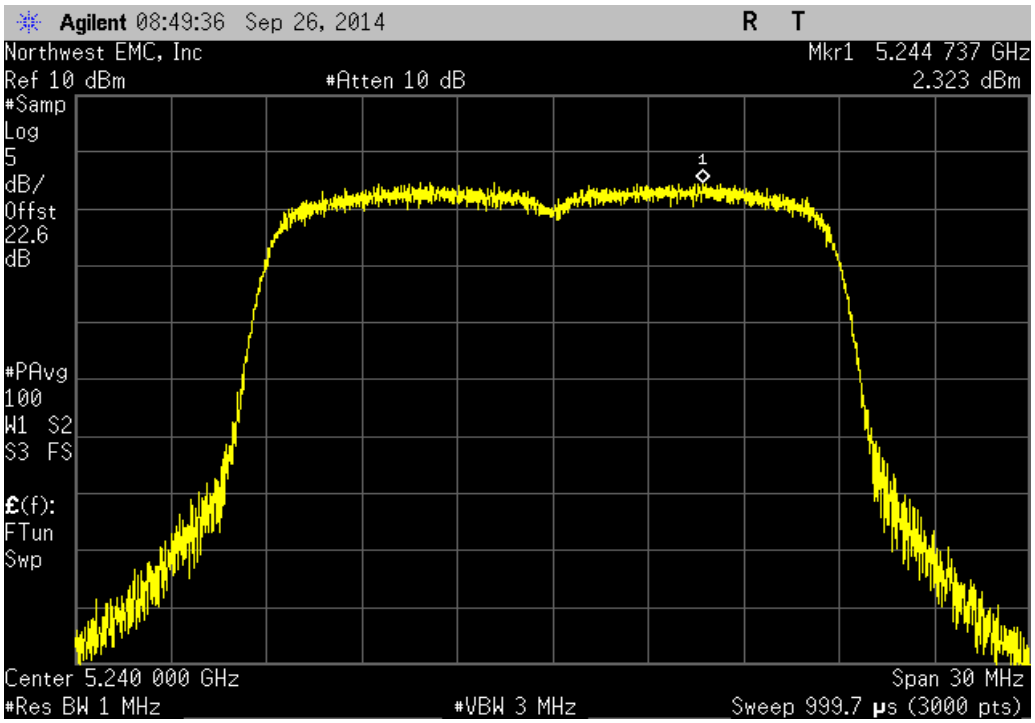
| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
|---|---|---|---|---|---|---|
| | | | | 3.091 | 4 | Pass |



# PEAK POWER SPECTRAL DENSITY

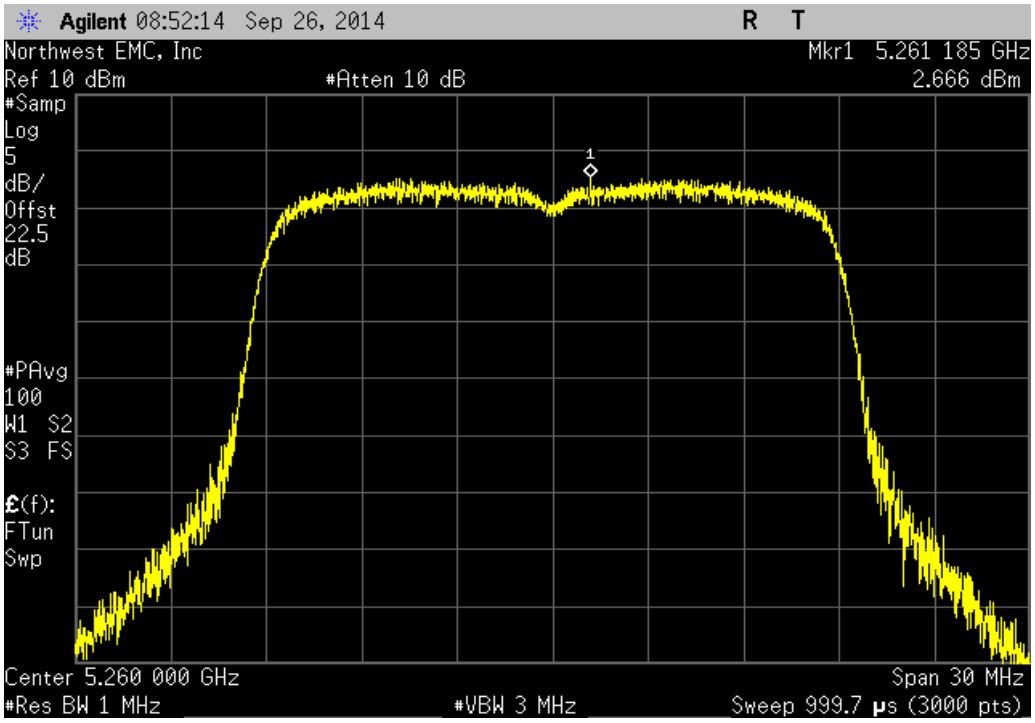
802.11(n) MCS0, 5150 - 5250 MHz Band, Channel 48, High Channel

| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
|---|---|---|---|---|---|---|
| | | | | 2.323 | 4 | Pass |

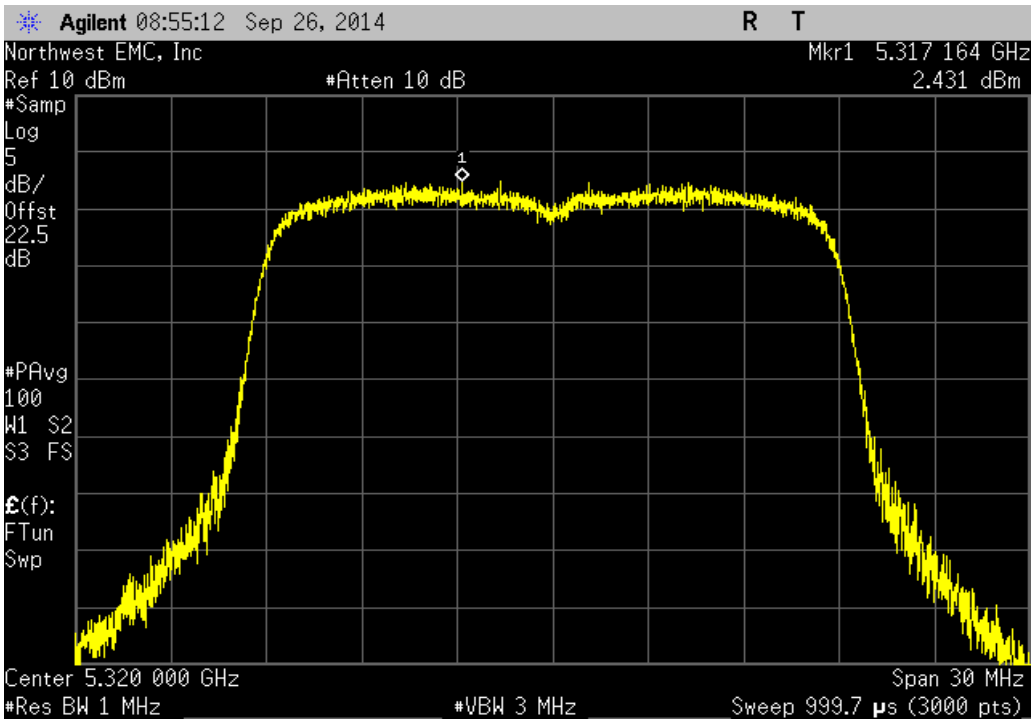



802.11(n) MCS0, 5250 - 5350 MHz Band, Channel 52, Low Channel

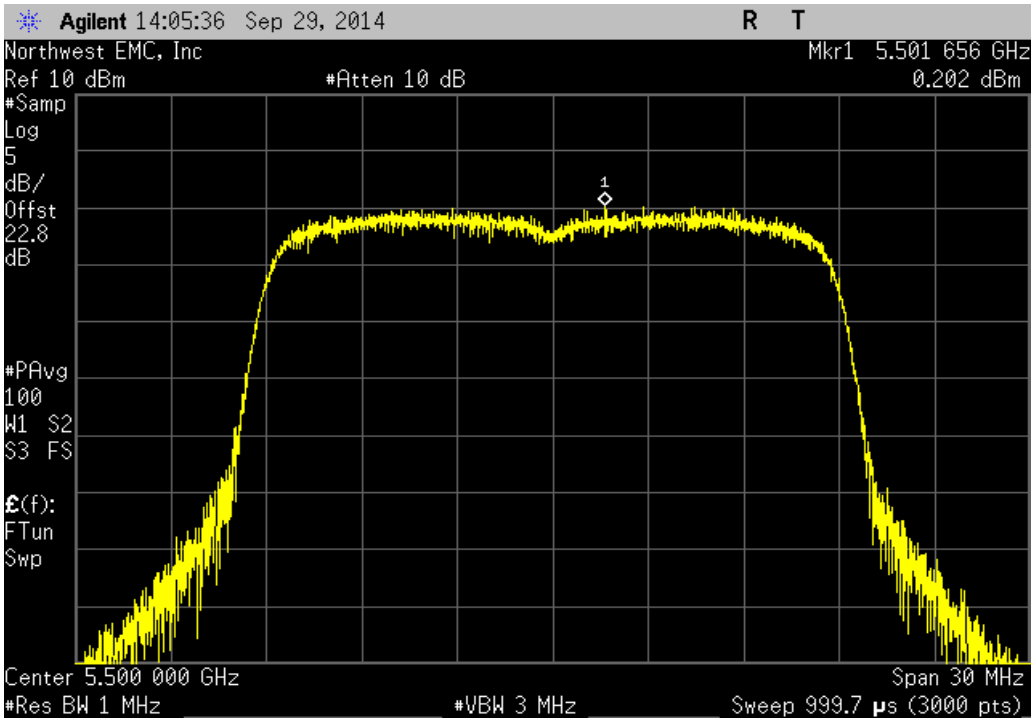
| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
|---|---|---|---|---|---|---|
| | | | | 2.666 | 11 | Pass |



| 802.11(n) MCS0, 5250 - 5350 MHz Band, Channel 64, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
| | | | | 2.431 | 11 | Pass |

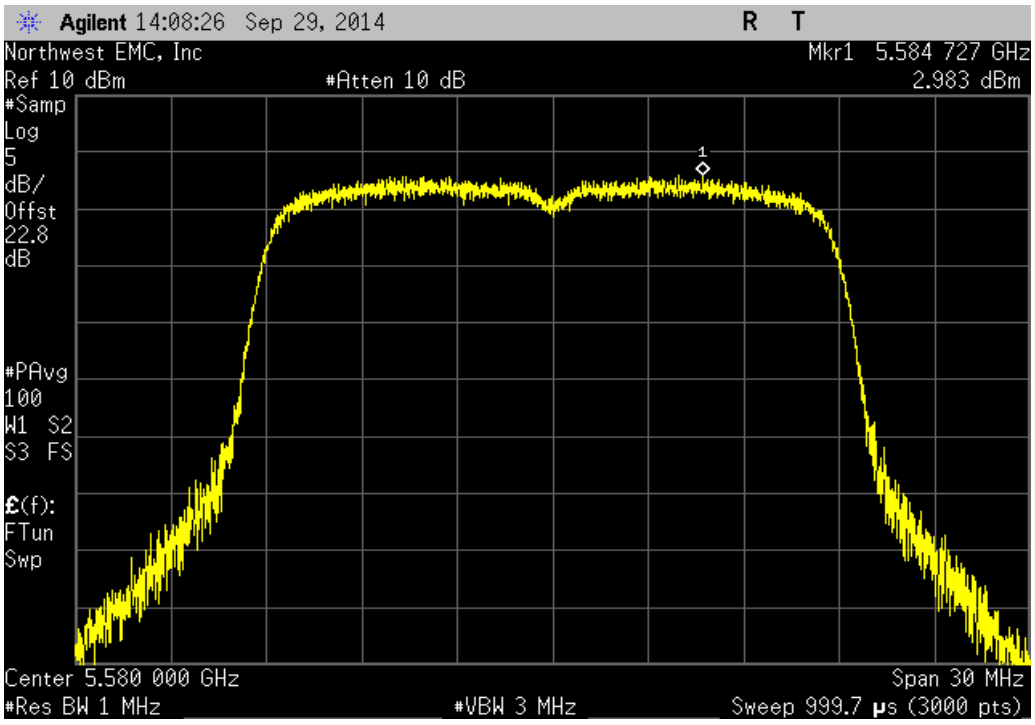



| 802.11(n) MCS0, 5470 - 5725 MHz Band, Channel 100, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
| | | | | 0.202 | 11 | Pass |

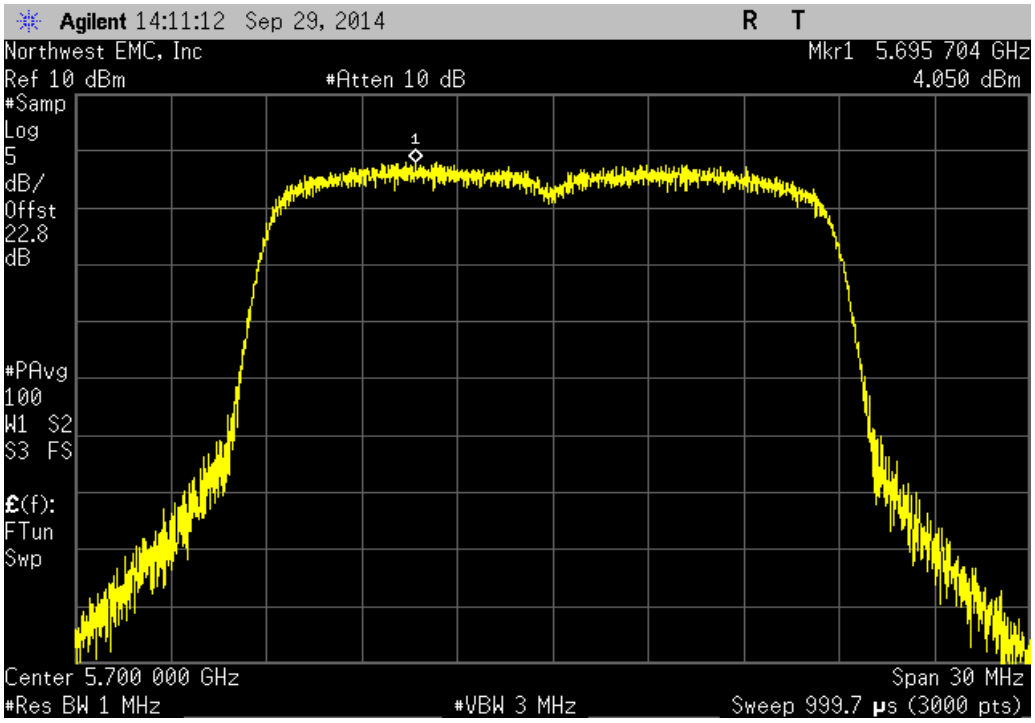


# PEAK POWER SPECTRAL DENSITY

| 802.11(n) MCS0, 5470 - 5725 MHz Band, Channel 116, Mid Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
| | | | | 2.983 | 11 | Pass |

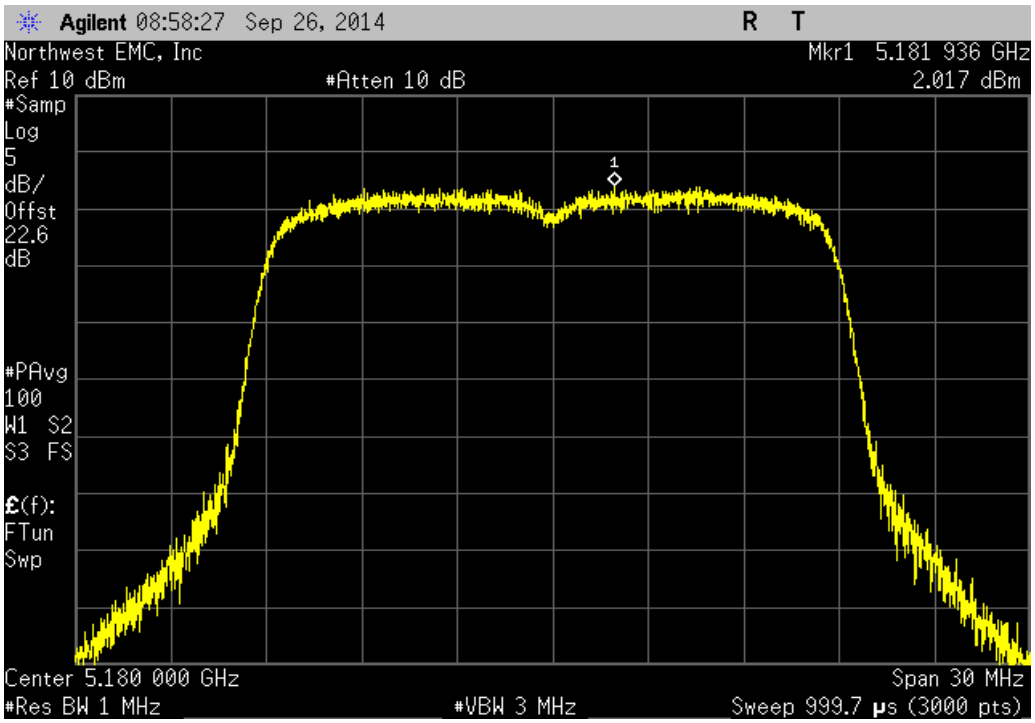



| 802.11(n) MCS0, 5470 - 5725 MHz Band, Channel 140, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
| | | | | 4.05 | 11 | Pass |

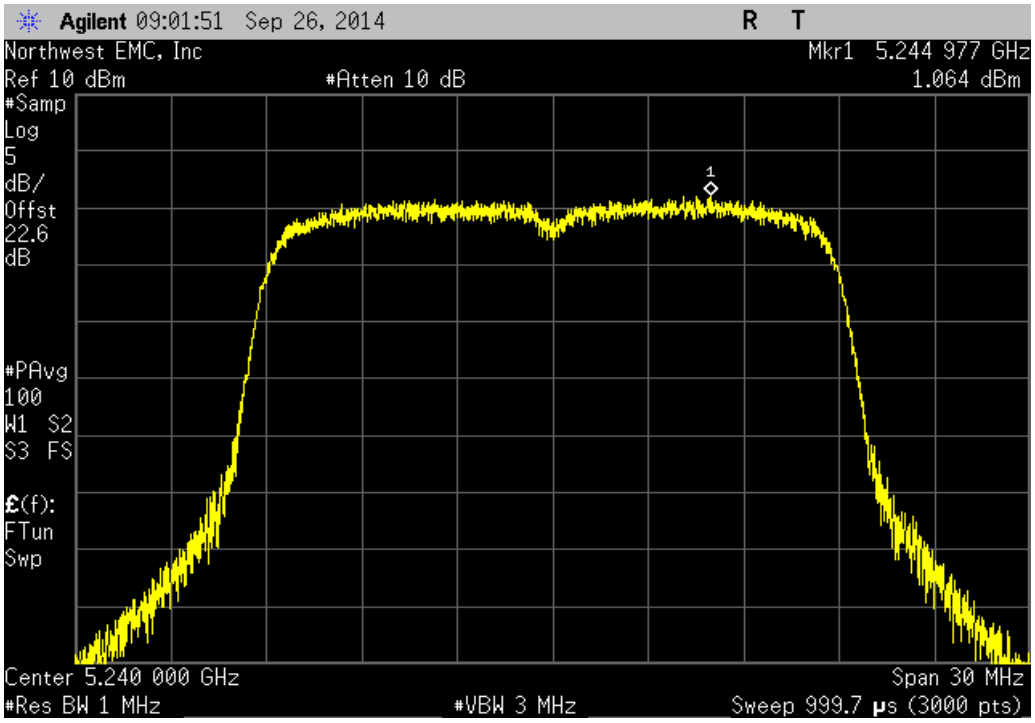


# PEAK POWER SPECTRAL DENSITY

| 802.11(n) MCS7, 5150 - 5250 MHz Band, Channel 36, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
| | | | | 2.017 | 4 | Pass |



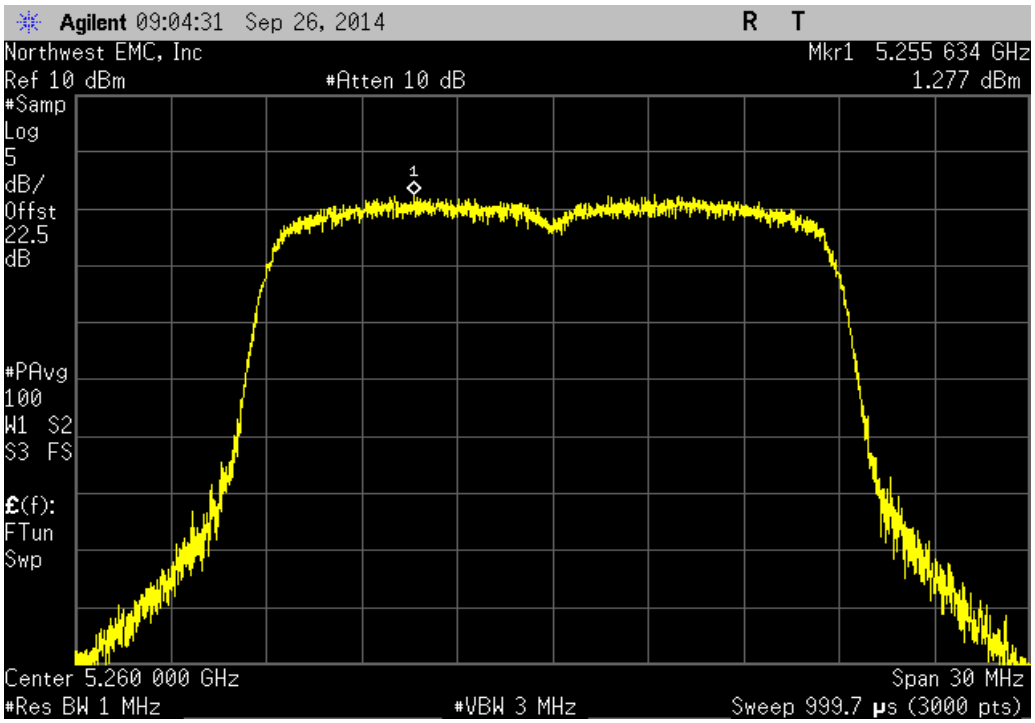

| 802.11(n) MCS7, 5150 - 5250 MHz Band, Channel 48, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
| | | | | 1.064 | 4 | Pass |



# PEAK POWER SPECTRAL DENSITY

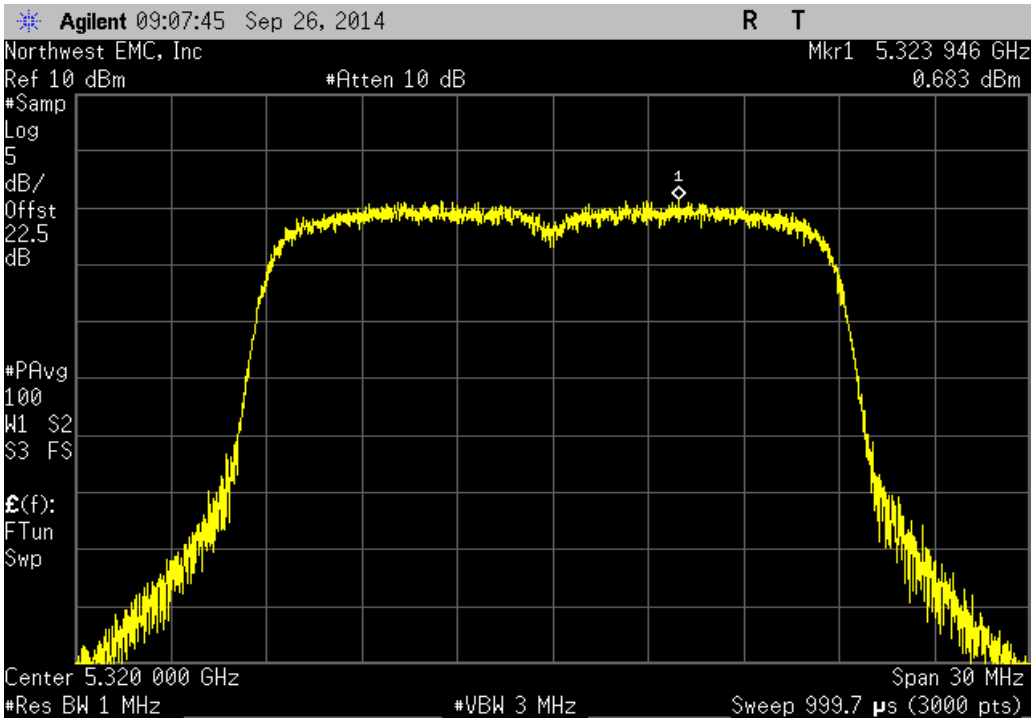
802.11(n) MCS7, 5250 - 5350 MHz Band, Channel 52, Low Channel

| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
|---|---|---|---|---|---|---|
| | | | | 1.277 | 11 | Pass |



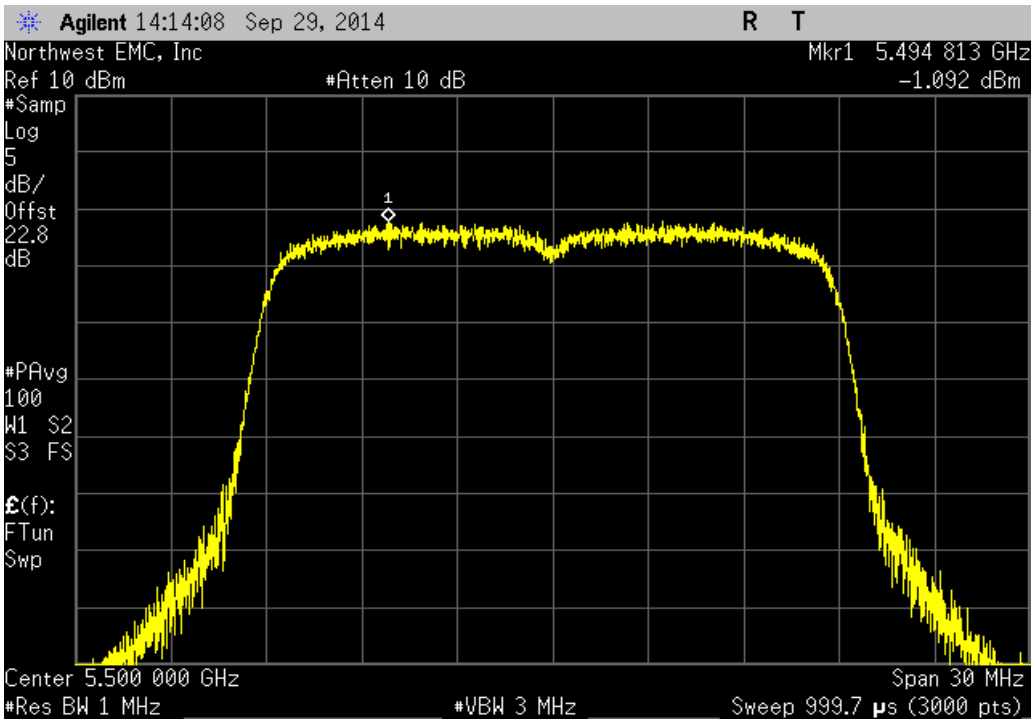

802.11(n) MCS7, 5250 - 5350 MHz Band, Channel 64, High Channel

| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
|---|---|---|---|---|---|---|
| | | | | 0.683 | 11 | Pass |

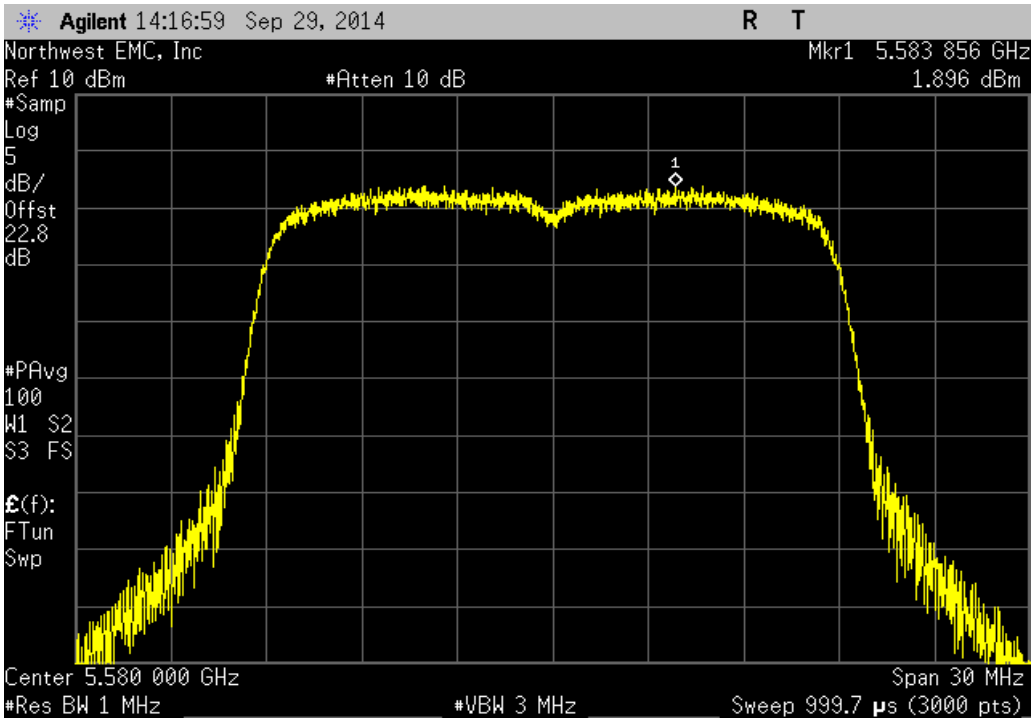


# PEAK POWER SPECTRAL DENSITY

| 802.11(n) MCS7, 5470 - 5725 MHz Band, Channel 100, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
| | | | | -1.092 | 11 | Pass |

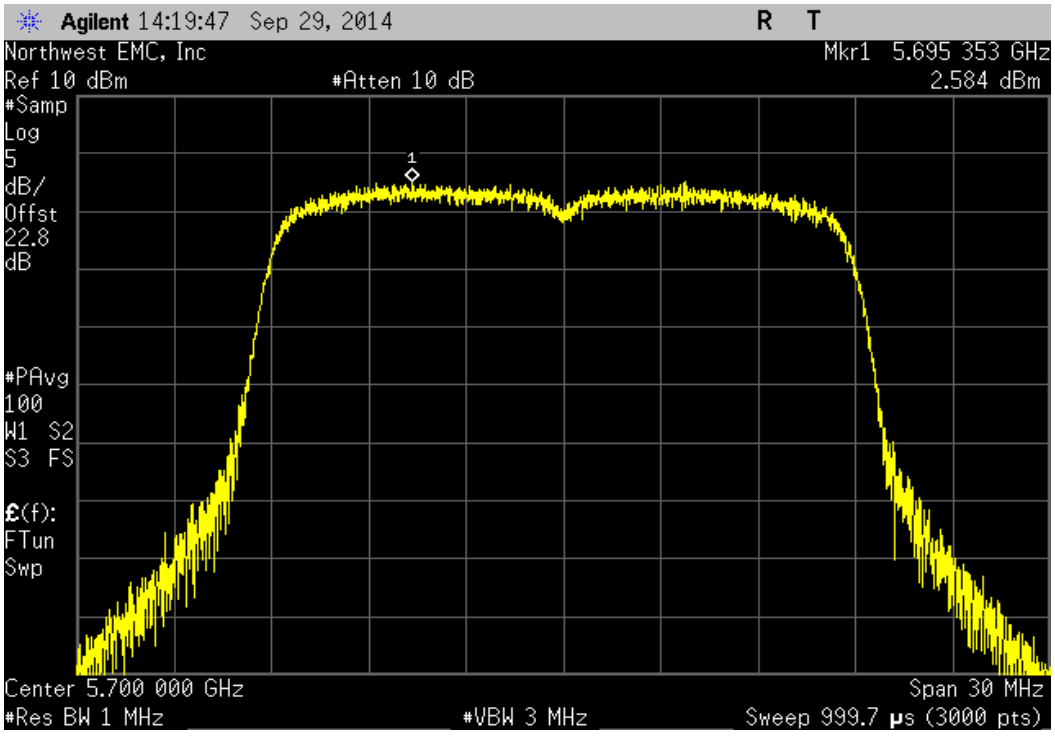



| 802.11(n) MCS7, 5470 - 5725 MHz Band, Channel 116, Mid Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
| | | | | 1.896 | 11 | Pass |



# PEAK POWER SPECTRAL DENSITY

| 802.11(n) MCS7, 5470 - 5725 MHz Band, Channel 140, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Results |
| | | | | 2.584 | 11 | Pass |



# DUTY CYCLE

**TEST DESCRIPTION**

The Duty Cycle (x) were measured for each of the EUT operating modes. 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.

The EUT operates at 100% Duty Cycle.