# Summit Semiconductor

## Model 444-2225 (Athena UFL)

## FCC 15.407:2013

**Report #: FOCU0140**

Report Prepared By Northwest EMC Inc.

NORTHWEST EMC – (888) 364-2378 – www.nwemc.com

California – Minnesota – Oregon – New York – Washington

# CERTIFICATE OF TEST

WTD 12.5.23

**Last Date of Test: May 16, 2013**
**Summit Semiconductor**
**Model: Model 444-2225 (Athena UFL)**

## Emissions

| Test Description | Specification | Test Method | Pass/Fail |
|---|---|---|---|
| Transmissions Burst Duration | FCC 15.407:2013 | FCC 15.407:2013 | Pass |
| Peak Transmit Power | FCC 15.407:2013 | FCC 15.407:2013 | Pass |
| Peak Power Spectral Density | FCC 15.407:2013 | FCC 15.407:2013 | Pass |
| Emission Bandwidth | FCC 15.407:2013 | FCC 15.407:2013 | Pass |
| Peak Excursion | FCC 15.407:2013 | FCC 15.407:2013 | Pass |
| Frequency Stability | FCC 15.407:2013 | FCC 15.407:2013 | Pass |
| Spurious Radiated Emissions | FCC 15.407:2013 | FCC 15.407:2013 | Pass |
| AC Powerline Conducted Emissions | FCC 15.407:2013 | FCC 15.407:2013 | Pass |

## Deviations From Test Standards

None

**Approved By:**

*Tim O'Shea, Operations Manager*

**NVLAP Lab Code: 200630-0**

***Test Facility***

The measurement facility used to collect the data is located at:

Northwest EMC, Inc.
22975 NW Evergreen Parkway, Suite 400
Hillsboro, OR 97124

Phone: (503) 844-4066 Fax: 844-3826

This site has been fully described in a report filed with and accepted by the FCC (Federal Communications Commission) and Industry Canada (Site filing #2834D-1).

***This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government of the United States of America.***

***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. This Report may only be duplicated in its entirety. 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.***

NORTHWEST EMC
REV 2012.08.02

# REVISION HISTORY

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

## Barometric Pressure

The recorded barometric pressure has been normalized to sea level.

NORTHWEST EMC

REV 2012.05.24

# ACCREDITATIONS AND AUTHORIZATIONS

## 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

**KCC / 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.

## 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.

## Russia

**GOST** – Accredited by Certinform VNIINMASH, CERTINFO, SAMTES, and Federal CHEC to perform EMC and Hygienic testing for Information Technology products to GOST standards.

## SCOPE

For details on the Scopes of our Accreditations, please visit:
http://www.nwemc.com/accreditations/

NORTHWEST EMC

REV 2012.08.13

# EXPLANATION OF NWEMC PERFORMANCE CRITERIA

## How Important Is It To Understand Performance Criteria?

It is the responsibility of the test laboratory to observe the results of the tests that are performed and to accurately report those results. The data sheets detail the observable and repeatable performance criterion.

The variety and diversity of the apparatus within the scope of standard make it difficult to define precise criteria for the evaluation of the immunity test results. The manufacturer has the obligation to express the performance criteria in terms which relate to the performance of his specific product when used as intended. If the minimum performance level (or the permissible performance loss) is not specified by the manufacturer, then it may be derived from the product description, documentation, and/or by what the user may reasonably expect from the EUT if used as intended.

As the responsible party (manufacturer, importer, etc.) it is your responsibility that you are fully aware of the requirements, how your device performs when tested to those requirements, and what information is being used to declare conformity.

To better assist you in making those conformity decisions, Northwest EMC has adopted a very simple, yet very clear performance assessment procedure. The following criteria's are used when performing immunity or susceptibility tests. In all cases the observed phenomena will be documented in the data sheets.

## Performance Criteria 1:

The EUT exhibited no change in performance when operating as specified by the manufacturer.

- In most cases this would be equivalent to Performance Criteria A. When operating the equipment in the modes or configurations specified by the responsible party, monitoring the parameters specified, no changes were observed, user intervention was not required, nothing happened.

## Performance Criteria 2:

The EUT exhibited a temporary change in performance when operating as specified by the manufacturer. Operator Intervention was not required to resume normal operation.

- In most cases this would be equivalent to Performance Criteria B. When operating the equipment in the modes or configurations specified by the responsible party, monitoring the parameters specified, a Temporary loss of function was observed. The EUT was able to recover from those changes without any operator intervention, once the test signal was removed. The apparatus continued to operate as intended after the test. No loss of data was observed.

- Example: During testing, an analogue function value may deviate. After the test, the deviation vanishes.

## Performance Criteria 3:

A temporary loss of function was observed. User intervention is required to restore the operation of device to the mode specified by the responsible party.

- In most cases this would be equivalent to Performance Criteria C. When operating the equipment in the modes or configurations specified by the responsible party, monitoring the parameters specified, changes were observed. The EUT requires some sort of operator intervention to recover. There was no permanent damage and the EUT appeared to function normally after completion of test.

- Example: The EUT locked up during the immunity test; User intervention is required to restore the device to the specified mode of operation.

## Performance Criteria 4:

- In this case the equipment was damaged and/or would not recover to the mode specified by the responsible party. The data sheets will detail the exact phenomena observed.

# 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 listed below. 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 16-4-1 as applicable), and are available upon request.

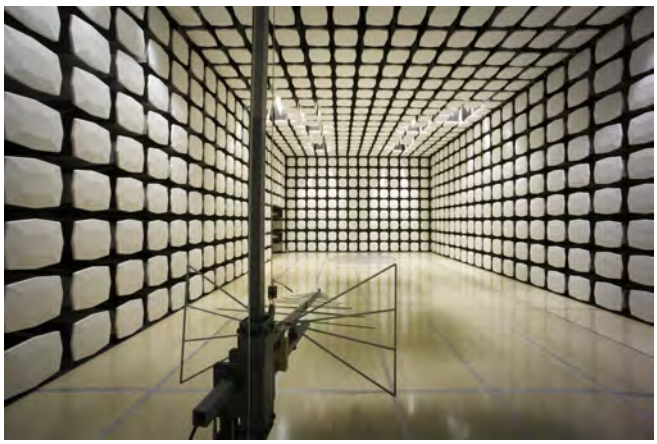
The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

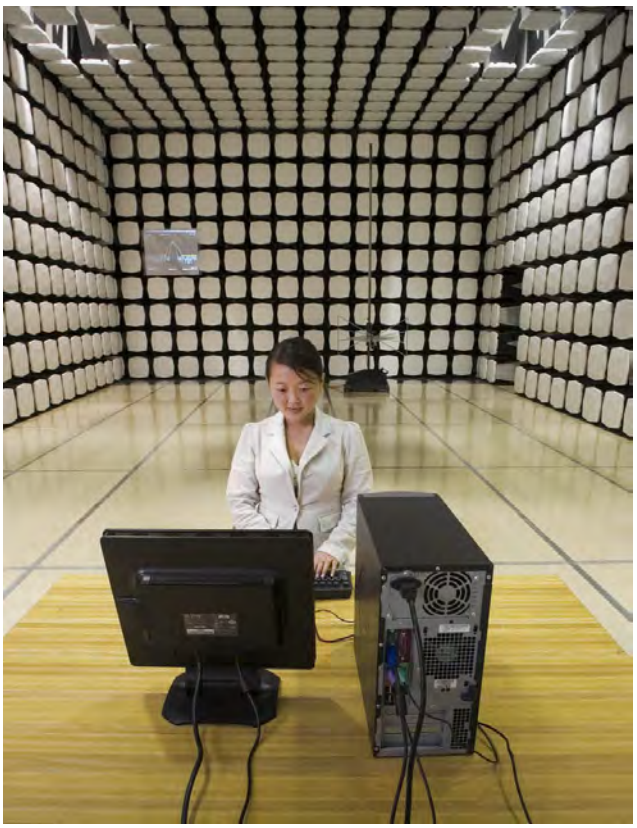
| Test | + MU | - MU |
|---|---|---|
| Frequency Accuracy (Hz) | 0.12 | -0.01 |
| Amplitude Accuracy (dB) | 0.49 | -0.49 |
| Conducted Power (dB) | 0.41 | -0.41 |
| Radiated Power via Substitution (dB) | 0.69 | -0.68 |
| Temperature (degrees C) | 0.81 | -0.81 |
| Humidity (% RH) | 2.89 | -2.89 |
| Field Strength (dB) | 3.80 | -3.80 |
| AC Powerline Conducted Emissions (dB) | 2.94 | -2.94 |

# LOCATIONS

REV 2013.02.26

| Oregon | California | New York | Minnesota | Washington |
|---|---|---|---|---|
| Labs EV01-12<br>22975 NW Evergreen Pkwy<br>Hillsboro, OR 97124<br>(503) 844-4066 | Labs OC01-13<br>41 Tesla<br>Irvine, CA 92618<br>(949) 861-8918 | Labs NY01-04<br>4939 Jordan Rd.<br>Elbridge, NY 13060<br>(315) 685-0796 | Labs MN01-08<br>9349 W Broadway Ave.<br>Brooklyn Park, MN 55445<br>(763) 425-2281 | 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 | 2834C-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 12.5.23

## Client and Equipment Under Test (EUT) Information

| | |
|---|---|
| **Company Name:** | Summit Semiconductor |
| **Address:** | 22867 NW Bennett St, Suite 200 |
| **City, State, Zip:** | Hillsboro, OR 97124 |
| **Test Requested By:** | Ponnappa Pasura |
| **Model:** | Model 444-2225 (Athena UFL) |
| **First Date of Test:** | May 14, 2013 |
| **Last Date of Test:** | May 09, 2013 |
| **Receipt Date of Samples:** | May 1, 2013 |
| **Equipment Design Stage:** | Production |
| **Equipment Condition:** | No Damage |

## Information Provided by the Party Requesting the Test

| **Functional Description of the EUT (Equipment Under Test):** |
|---|
| Digital wireless Audio client device (Athena UFL ) using an 802.11a SISO radio with one antenna. |

| **Testing Objective:** |
|---|
| Seeking modular approval of the client under FCC 15.407 for operation in the 5.2, 5.3, and 5.6 GHz bands. |

# CONFIGURATIONS

## Configuration FOCU0140- 1

| EUT | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Athena UFL | Summit Semiconductor | 444-2225 | 02EA4D000027 |

| Peripherals in test setup boundary | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Laptop | Dell | Latitude D820 | 26000021917 |
| La Grande Amplifier/DC Power Supply | Summit Semiconductor | Unknown | 1 |
| Inverted F Antenna | Tyco | Unknown | Unknown |

| Remote Equipment Outside of Test Setup Boundary | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Laptop DC Power Supply | Dell | AC-PA-10 | Unknown |

| Cables | | | | | |
|---|---|---|---|---|---|
| **Cable Type** | **Shield** | **Length (m)** | **Ferrite** | **Connection 1** | **Connection 2** |
| AC Power | No | 2.4m | No | AC Mains | La Grande Amplifier/DC Power Supply |
| Antenna Wires x 4 | No | 0.36m | No | Athena UFL | Inverted F Antenna |
| RS232 | Yes | 1.7m | No | I/O to Serial Adapter | Laptop |
| DC Power | No | 1.1m | Yes | Laptop DC Power Supply | Laptop |
| AC Power | No | 0.8 | No | AC Mains | Laptop DC Power Supply |
| **PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.** | | | | | |

# CONFIGURATIONS

## Configuration FOCU0140- 2

| EUT | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Athena UFL | Summit Semiconductor | 444-2225 | 02EA4D000027 |

| Peripherals in test setup boundary | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Inverted F Antenna | Tyco | Unknown | Unknown |
| Topward DC Power Supply | Topward Electronic Instruments Co., LTD. | TPS-2000 | 946425 |

| Remote Equipment Outside of Test Setup Boundary | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Laptop | Dell | Latitude D820 | 26000021917 |

| Cables | | | | | |
|---|---|---|---|---|---|
| **Cable Type** | **Shield** | **Length (m)** | **Ferrite** | **Connection 1** | **Connection 2** |
| Antenna Wires x 4 | No | 0.36m | No | Athena UFL | Inverted F Antenna |
| RS232 | Yes | 1.7m | No | I/O to Serial Adapter | Laptop |
| DC Power | No | 1.1m | Yes | Laptop DC Power Supply | Laptop |
| AC Power | No | 0.8 | No | AC Mains | Laptop DC Power Supply |
| AC Power | No | 1.4m | No | AC Mains | Topward DC Supply |
| I/O to Serial Adapter | No | .1m | No | RS232 | Athena |
| DC Power Cable x1 | No | 1.5m | No | Topward DC Power Supply | Athena |
| **PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.** | | | | | |

# CONFIGURATIONS

## Configuration FOCU0140- 3

| EUT | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Athena UFL | Summit Semiconductor | 444-2225 | 02EA4D000003 |

| Peripherals in test setup boundary | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Topward DC Power Supply | Topward Electronic Instruments Co., LTD. | TPS-2000 | 946425 |
| Laptop DC Power Supply | Dell | AC-PA-10 | Unknown |

| Remote Equipment Outside of Test Setup Boundary | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Laptop | Dell | Latitude D820 | 26000021917 |

| Cables | | | | | |
|---|---|---|---|---|---|
| **Cable Type** | **Shield** | **Length (m)** | **Ferrite** | **Connection 1** | **Connection 2** |
| RS232 | Yes | 1.7m | No | I/O to Serial Adapter | Laptop |
| DC Power | No | 1.1m | Yes | Laptop DC Power Supply | Laptop |
| AC Power | No | 0.8 | No | AC Mains | Laptop DC Power Supply |
| AC Power | No | 1.4m | No | AC Mains | Topward DC Supply |
| I/O to Serial Adapter | No | .1m | No | RS232 | Athena |
| DC Power Cable x1 | No | 1.5m | No | Topward DC Power Supply | Athena |
| **PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.** | | | | | |

## Configuration FOCU0140- 4

| EUT | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Athena UFL | Summit Semiconductor | 444-2225 | 02EA4D000027 |

| Peripherals in test setup boundary | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Topward DC Power Supply | Topward Electronic Instruments Co., LTD. | TPS-2000 | 946425 |
| Laptop DC Power Supply | Dell | AC-PA-10 | Unknown |

| Remote Equipment Outside of Test Setup Boundary | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Laptop | Dell | Latitude D820 | 26000021917 |

| Cables | | | | | |
|---|---|---|---|---|---|
| **Cable Type** | **Shield** | **Length (m)** | **Ferrite** | **Connection 1** | **Connection 2** |
| RS232 | Yes | 1.7m | No | I/O to Serial Adapter | Laptop |
| DC Power | No | 1.1m | Yes | Laptop DC Power Supply | Laptop |
| AC Power | No | 0.8 | No | AC Mains | Laptop DC Power Supply |
| AC Power | No | 1.4m | No | AC Mains | Topward DC Supply |
| I/O to Serial Adapter | No | .1m | No | RS232 | Athena |
| DC Power Cable x1 | No | 1.5m | No | Topward DC Power Supply | Athena |
| **PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.** | | | | | |

# CONFIGURATIONS

## Configuration FOCU0140- 5

| EUT | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Athena UFL | Summit Semiconductor | 444-2225 | 02EA4D000027 |

| Peripherals in test setup boundary | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Laptop DC Power Supply | Dell | AC-PA-10 | Unknown |

| Remote Equipment Outside of Test Setup Boundary | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Laptop | Dell | Latitude D820 | 26000021917 |

| Cables | | | | | |
|---|---|---|---|---|---|
| **Cable Type** | **Shield** | **Length (m)** | **Ferrite** | **Connection 1** | **Connection 2** |
| RS232 | Yes | 1.7m | No | I/O to Serial Adapter | Laptop |
| DC Power | No | 1.1m | Yes | Laptop DC Power Supply | Laptop |
| AC Power | No | 0.8 | No | AC Mains | Laptop DC Power Supply |
| I/O to Serial Adapter | No | .1m | No | RS232 | Athena |
| AC/DC Power Adapter Cable | PA | 1.5m | Yes | AC Mains | Athena |
| **PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.** | | | | | |

# CONFIGURATIONS

## Configuration FOCU0140- 6

| EUT | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Inverted F Antenna | Tyco | Unknown | Unknown |
| Athena UFL | Summit Semiconductor | 444-2225 | 02EA4D000003 |

| Peripherals in test setup boundary | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Laptop | Dell | Latitude D820 | 26000021917 |
| La Grande Amplifier/DC Power Supply | Summit Semiconductor | Unknown | 1 |
| Laptop DC Power Supply | Dell | AC-PA-10 | Unknown |

| Cables | | | | | |
|---|---|---|---|---|---|
| **Cable Type** | **Shield** | **Length (m)** | **Ferrite** | **Connection 1** | **Connection 2** |
| AC Power | No | 2.4m | No | AC Mains | La Grande Amplifier/DC Power Supply |
| Antenna Wires x 4 | No | 0.36m | No | Athena UFL | Inverted F Antenna |
| RS232 | Yes | 1.7m | No | I/O to Serial Adapter | Laptop |
| DC Power | No | 1.1m | Yes | Laptop DC Power Supply | Laptop |
| AC Power | No | 0.8 | No | AC Mains | Laptop DC Power Supply |
| **PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.** | | | | | |

# CONFIGURATIONS

## Configuration FOCU0140- 7

| EUT | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Athena UFL | Summit Semiconductor | 444-2225 | 02EA4D000003 |

| Peripherals in test setup boundary | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Inverted F Antenna | Tyco | Unknown | Unknown |
| Topward DC Power Supply | Topward Electronic Instruments Co., LTD. | TPS-2000 | 946425 |

| Remote Equipment Outside of Test Setup Boundary | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Laptop | Dell | Latitude D820 | 26000021917 |

| Cables | | | | | |
|---|---|---|---|---|---|
| **Cable Type** | **Shield** | **Length (m)** | **Ferrite** | **Connection 1** | **Connection 2** |
| Antenna Wires x 4 | No | 0.36m | No | Athena UFL | Inverted F Antenna |
| RS232 | Yes | 1.7m | No | I/O to Serial Adapter | Laptop |
| DC Power | No | 1.1m | Yes | Laptop DC Power Supply | Laptop |
| AC Power | No | 0.8 | No | AC Mains | Laptop DC Power Supply |
| AC Power | No | 1.4m | No | AC Mains | Topward DC Supply |
| I/O to Serial Adapter | No | .1m | No | RS232 | Athena |
| DC Power Cable x1 | No | 1.5m | No | Topward DC Power Supply | Athena |
| **PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.** | | | | | |

# MODIFICATIONS

WTD 12.5.23

## Equipment Modifications

| Item | Date | Test | Modification | Note | Disposition of EUT |
|---|---|---|---|---|---|
| 1 | 5/7/2013 | Spurious Radiated Emissions | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 2 | 5/8/2013 | 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 | 5/8/2013 | Radiated Immunity | 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 | 5/8/2013 | 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. |
| 5 | 5/9/2013 | 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. |
| 6 | 5/14/2013 | 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. |
| 7 | 5/15/2013 | 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. |
| 8 | 5/17/2013 | 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. |

# Transmissions Burst Duration

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 |
|---|---|---|---|---|---|
| Power Sensor | Gigatronics | 80701A | SPL | 7/8/2011 | 24 |
| Attenuator, 6dB | S.M. Electronics | 18N-06 | AWN | 3/25/2013 | 12 |
| MXG Vector Signal Generator | Agilent | N5182A | TIF | NCR | 0 |
| Power Meter | Gigatronics | 8651A | SPM | 1/9/2012 | 24 |
| EV06 Direct Connect Cable | ESM Cable Corp. | TT | ECA | NCR | 0 |
| Attenuator, 6 dB, 'SMA' | N/A | 93459 3330A-6 | AUF | 3/5/2013 | 12 |
| 40GHz DC Block | Miteq | DCB4000 | AMD | 6/25/2012 | 12 |
| Spectrum Analyzer | Agilent | E4446A | AAQ | 2/7/2012 | 24 |

**TEST DESCRIPTION**

The transmission pulse duration (T) and Duty Cycle (x) were measured for each of the EUT operating modes per the FCC KDB 789033 D01 General UNII Test Procedures.

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

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

If the transmit duty cycle < 98 percent, burst gating was used during some of the other tests in this report only measure during the burst duration.

# Transmissions Burst Duration

| | | | | | |
|---|---|---|---|---|---|
| **EUT:** | Model 444-2225 (Athena UFL) | | | **Work Order:** | FOCU0140 |
| **Serial Number:** | 02EA4D000027 | | | **Date:** | 05/03/13 |
| **Customer:** | Summit Semiconductor | | | **Temperature:** | 24°C |
| **Attendees:** | None | | | **Humidity:** | 30% |
| **Project:** | None | | | **Barometric Pres.:** | 1023 |
| **Tested by:** | Brandon Hobbs | **Power:** | 3.3V DC | **Job Site:** | EV06 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.407:2013 | ANSI C63.10:2009 |
| | |

**COMMENTS**

All testing was completed on the highest output power antenna port A2.

**DEVIATIONS FROM TEST STANDARD**

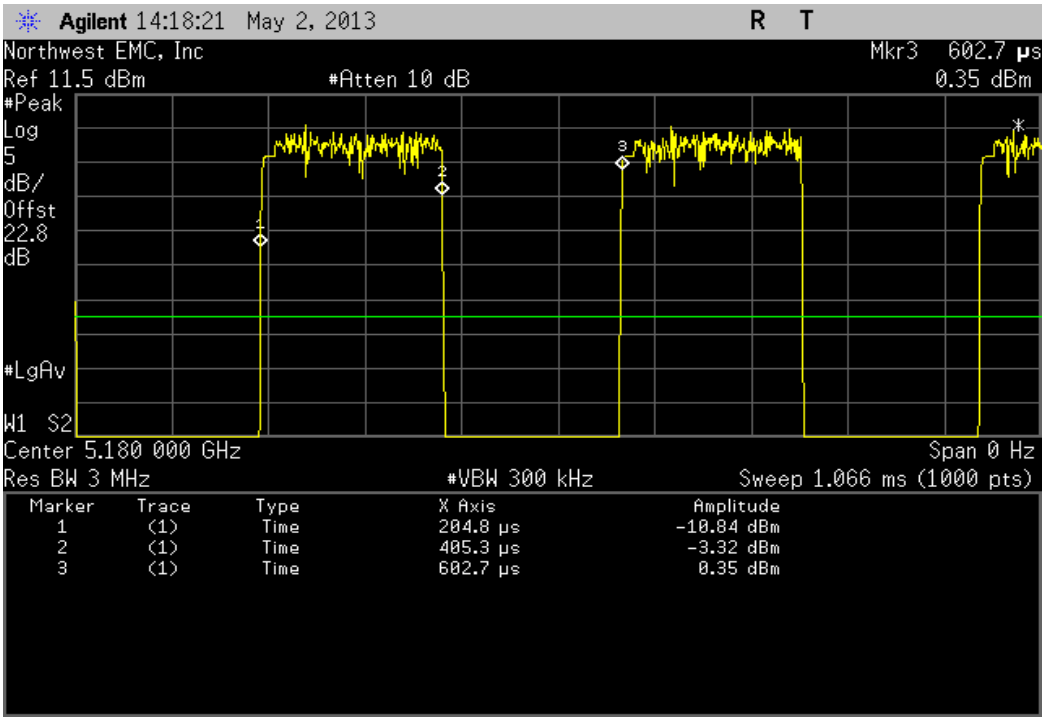
None

| Configuration # | 5 | Signature |
|---|---|---|

| | | Pulse Width | Period | Number of Pulses | Value (%) | Limit | Result |
|---|---|---|---|---|---|---|---|
| 802.11(a) 6 Mbps | | | | | | | |
| | 5150 - 5250 MHz Band | | | | | | |
| | Channel 36, Low Channel 5180 MHz | 200.516 uS | 397.884 uS | 1 | 50.4 | N/A | N/A |
| | Channel 36, Low Channel 5180 MHz | N/A | N/A | 5 | N/A | N/A | N/A |
| | Channel 48, High Channel 5240 MHz | 199.449 uS | 396.8 uS | 1 | 50.3 | N/A | N/A |
| | Channel 48, High Channel 5240 MHz | N/A | N/A | 5 | N/A | N/A | N/A |
| | 5250 - 5350 MHz Band | | | | | | |
| | Channel 52, Low Channel 5260 MHz | 199.449 uS | 396.783 uS | 1 | 50.3 | N/A | N/A |
| | Channel 52, Low Channel 5260 MHz | N/A | N/A | 5 | N/A | N/A | N/A |
| | Channel 64, High Channel 5320 MHz | 200.551 uS | 396.817 uS | 1 | 50.5 | N/A | N/A |
| | Channel 64, High Channel 5320 MHz | N/A | N/A | 5 | N/A | N/A | N/A |
| | 5470 - 5725 MHz Band | | | | | | |
| | Channel 100, Low Channel 5500 MHz | 200.516 uS | 396.817 uS | 1 | 50.5 | N/A | N/A |
| | Channel 100, Low Channel 5500 MHz | N/A | N/A | 5 | N/A | N/A | N/A |
| | Channel 116, Mid Channel 5580 MHz | 199.484 uS | 396.8 uS | 1 | 50.3 | N/A | N/A |
| | Channel 116, Mid Channel 5580 MHz | N/A | N/A | 5 | N/A | N/A | N/A |
| | Channel 140, High Channel5700 MHz | 200.516 uS | 397.867 uS | 1 | 50.4 | N/A | N/A |
| | Channel 140, High Channel5700 MHz | N/A | N/A | 5 | N/A | N/A | N/A |
| 802.11(a) 18 Mbps | | | | | | | |
| | 5150 - 5250 MHz Band | | | | | | |
| | Channel 36, Low Channel 5180 MHz | 87.484 uS | 284.8 uS | 1 | 30.7 | N/A | N/A |
| | Channel 36, Low Channel 5180 MHz | N/A | N/A | 5 | N/A | N/A | N/A |
| | Channel 48, High Channel 5240 MHz | 88.516 uS | 284.766 uS | 1 | 31.1 | N/A | N/A |
| | Channel 48, High Channel 5240 MHz | N/A | N/A | 5 | N/A | N/A | N/A |
| | 5250 - 5350 MHz Band | | | | | | |
| | Channel 52, Low Channel 5260 MHz | 87.449 uS | 293.333 uS | 1 | 29.8 | N/A | N/A |
| | Channel 52, Low Channel 5260 MHz | N/A | N/A | 5 | N/A | N/A | N/A |
| | Channel 64, High Channel 5320 MHz | 87.501 uS | 283.733 uS | 1 | 30.8 | N/A | N/A |
| | Channel 64, High Channel 5320 MHz | N/A | N/A | 5 | N/A | N/A | N/A |
| | 5470 - 5725 MHz Band | | | | | | |
| | Channel 100, Low Channel 5500 MHz | 88.516 uS | 284.8 uS | 1 | 31.1 | N/A | N/A |
| | Channel 100, Low Channel 5500 MHz | N/A | N/A | 5 | N/A | N/A | N/A |
| | Channel 116, Mid Channel 5580 MHz | 87.501 uS | 284.8 uS | 1 | 30.7 | N/A | N/A |
| | Channel 116, Mid Channel 5580 MHz | N/A | N/A | 5 | N/A | N/A | N/A |
| | Channel 140, High Channel 5700 MHz | 88.568 uS | 284.8 uS | 1 | 31.1 | N/A | N/A |
| | Channel 140, High Channel 5700 MHz | N/A | N/A | 5 | N/A | N/A | N/A |

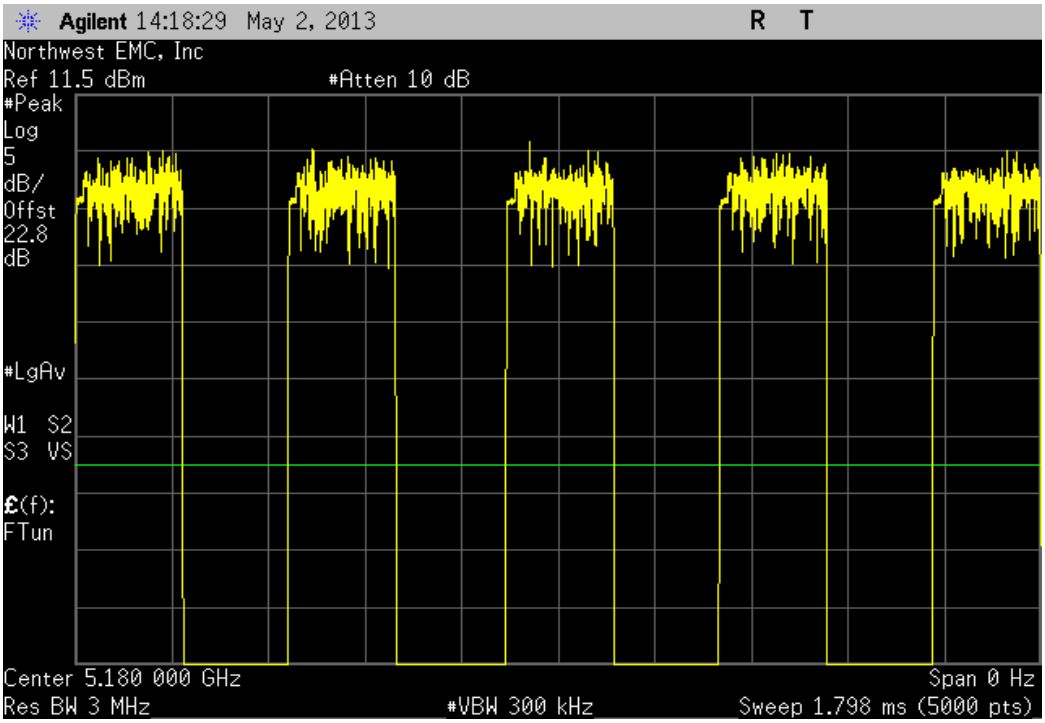
802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel 5180 MHz

| Pulse Width | Period | Number of Pulses | Value (%) | Limit | Result |
|---|---|---|---|---|---|
| 200.516 uS | 397.884 uS | 1 | 50.4 | N/A | N/A |



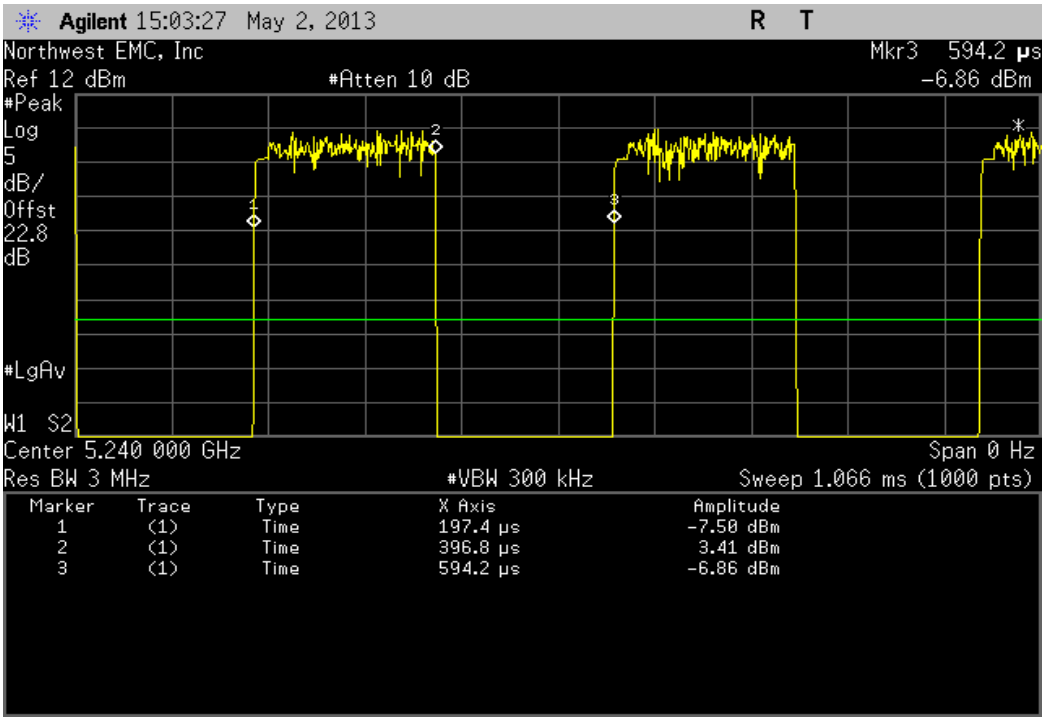

802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel 5180 MHz

| Pulse Width | Period | Number of Pulses | Value (%) | Limit | Result |
|---|---|---|---|---|---|
| N/A | N/A | 5 | N/A | N/A | N/A |



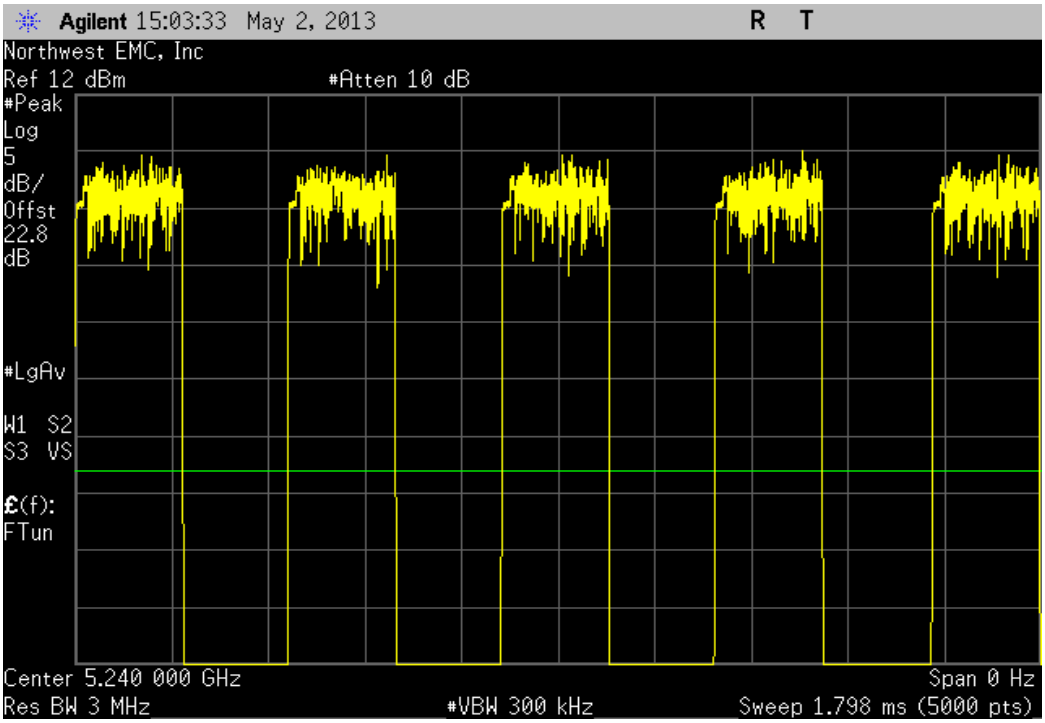
802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel 5240 MHz

| Pulse Width | Period | Number of Pulses | Value (%) | Limit | Result |
|---|---|---|---|---|---|
| 199.449 uS | 396.8 uS | 1 | 50.3 | N/A | N/A |



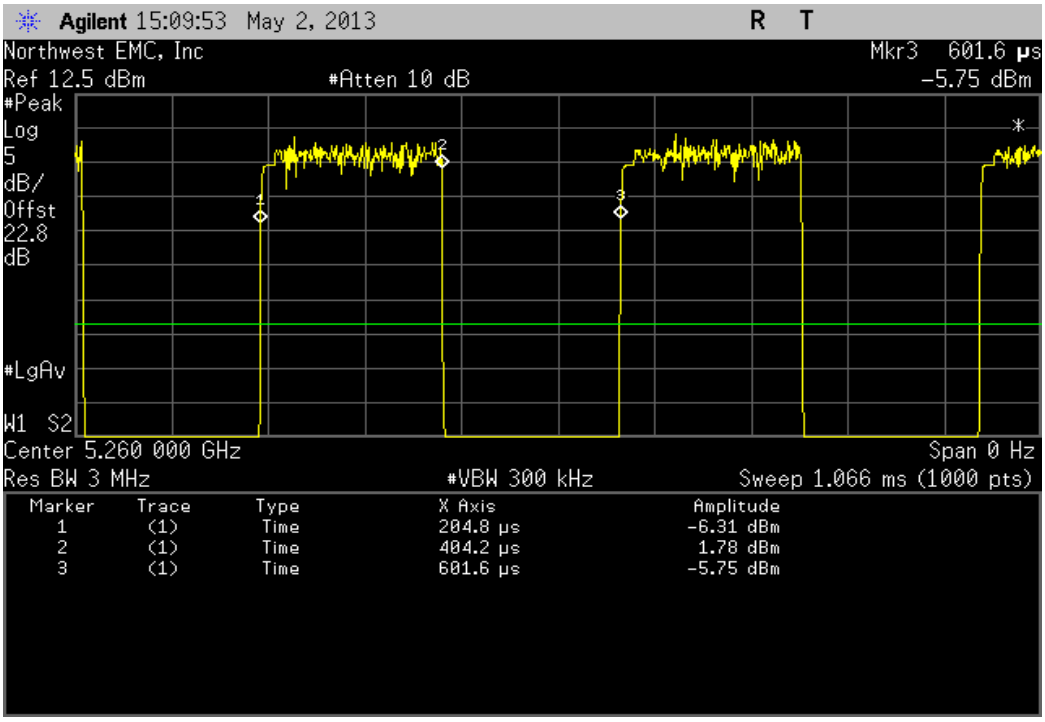

802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel 5240 MHz

| Pulse Width | Period | Number of Pulses | Value (%) | Limit | Result |
|---|---|---|---|---|---|
| N/A | N/A | 5 | N/A | N/A | N/A |



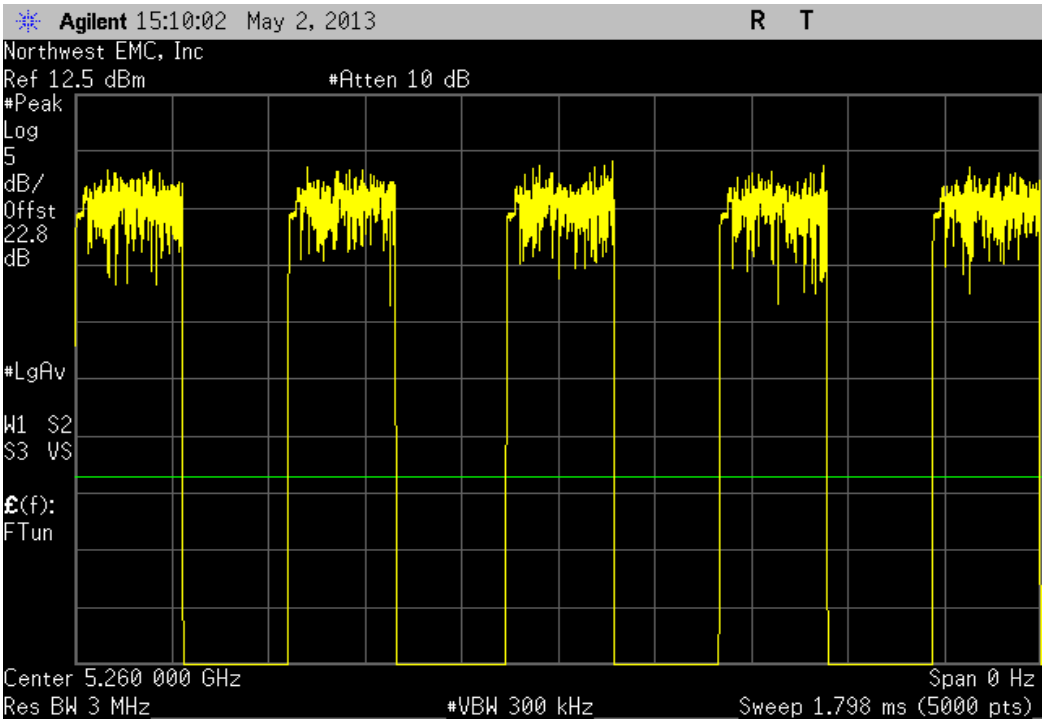
802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel 5260 MHz

| | Pulse Width | Period | Number of Pulses | Value (%) | Limit | Result |
|---|---|---|---|---|---|---|
| | 199.449 uS | 396.783 uS | 1 | 50.3 | N/A | N/A |



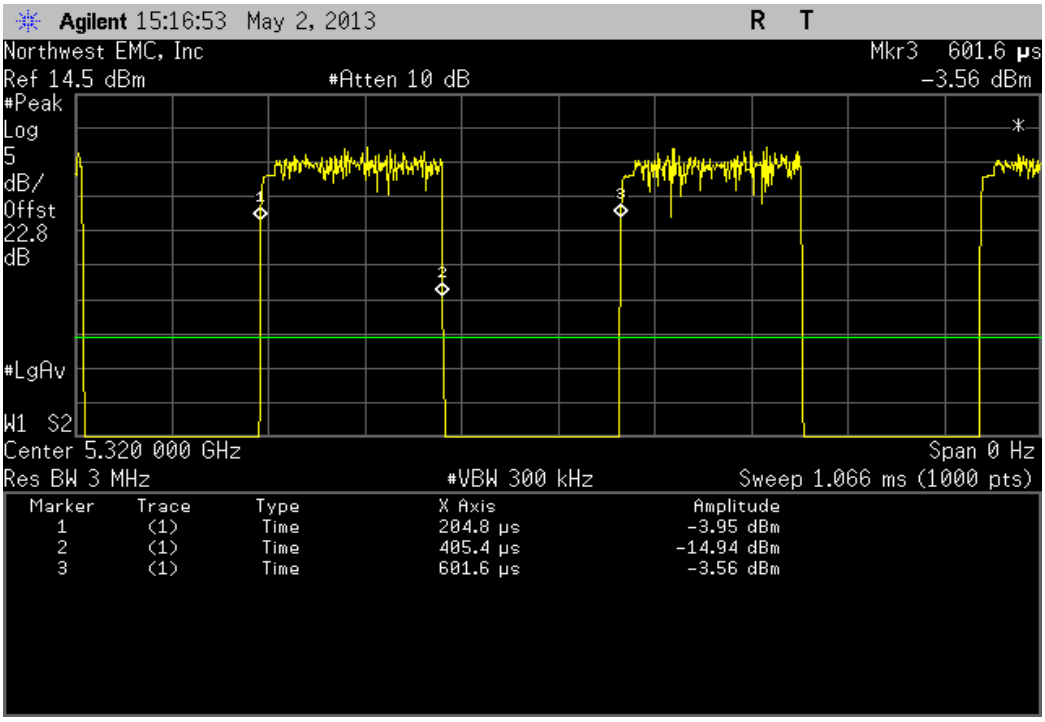

802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel 5260 MHz

| | Pulse Width | Period | Number of Pulses | Value (%) | Limit | Result |
|---|---|---|---|---|---|---|
| | N/A | N/A | 5 | N/A | N/A | N/A |



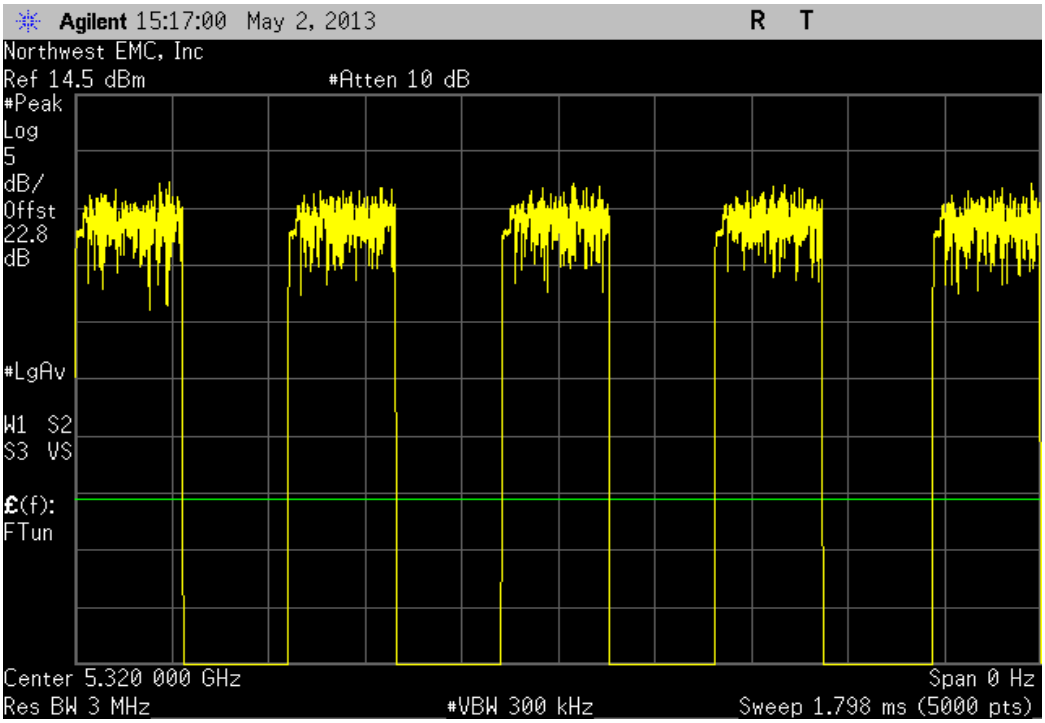
802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel 5320 MHz

| Pulse Width | Period | Number of Pulses | Value (%) | Limit | Result |
|---|---|---|---|---|---|
| 200.551 uS | 396.817 uS | 1 | 50.5 | N/A | N/A |




802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel 5320 MHz

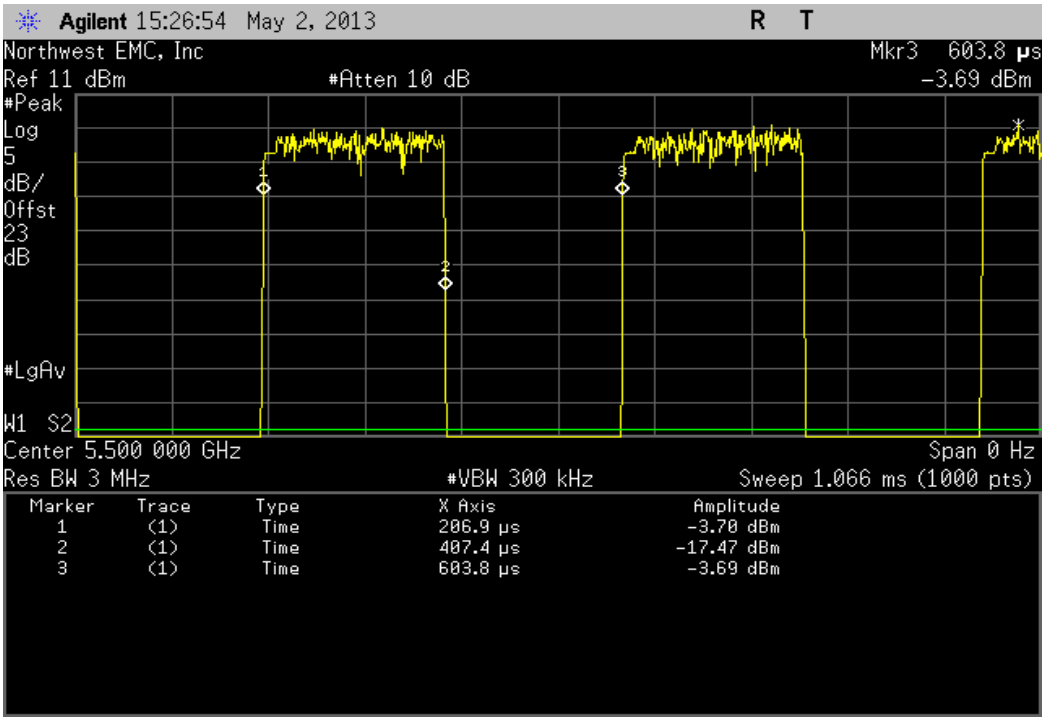
| Pulse Width | Period | Number of Pulses | Value (%) | Limit | Result |
|---|---|---|---|---|---|
| N/A | N/A | 5 | N/A | N/A | N/A |



# Transmissions Burst Duration

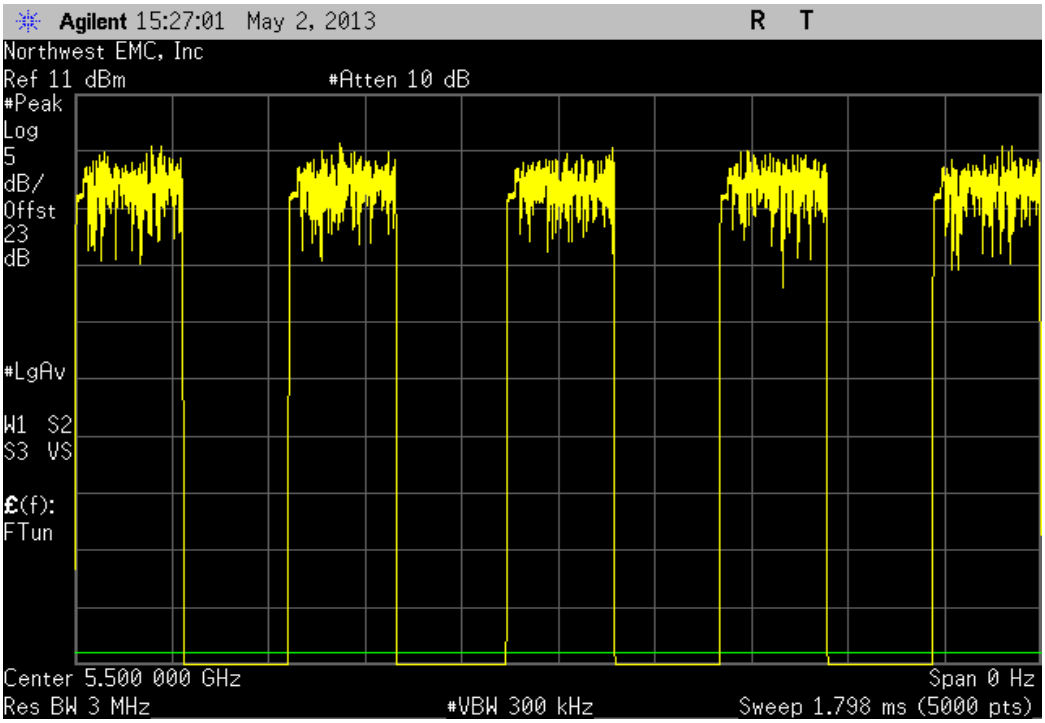
802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel 5500 MHz

| | Pulse Width | Period | Number of Pulses | Value (%) | Limit | Result |
|---|---|---|---|---|---|---|
| | 200.516 uS | 396.817 uS | 1 | 50.5 | N/A | N/A |




802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel 5500 MHz

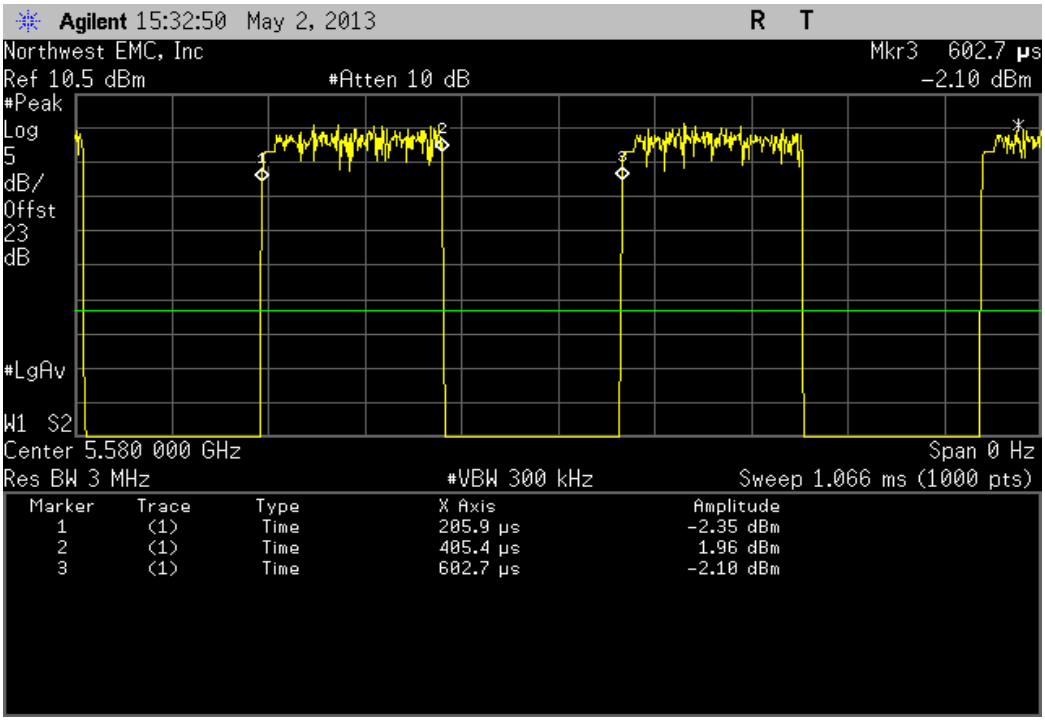
| | Pulse Width | Period | Number of Pulses | Value (%) | Limit | Result |
|---|---|---|---|---|---|---|
| | N/A | N/A | 5 | N/A | N/A | N/A |



# Transmissions Burst Duration

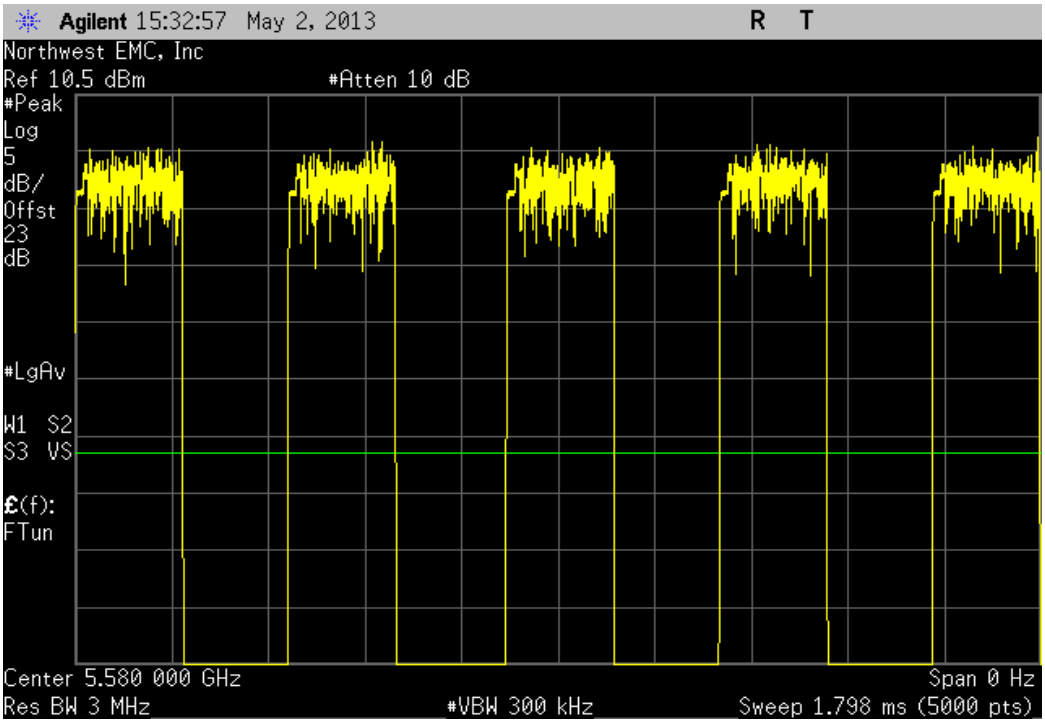
802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel 5580 MHz

| | Pulse Width | Period | Number of Pulses | Value (%) | Limit | Result |
|---|---|---|---|---|---|---|
| | 199.484 uS | 396.8 uS | 1 | 50.3 | N/A | N/A |



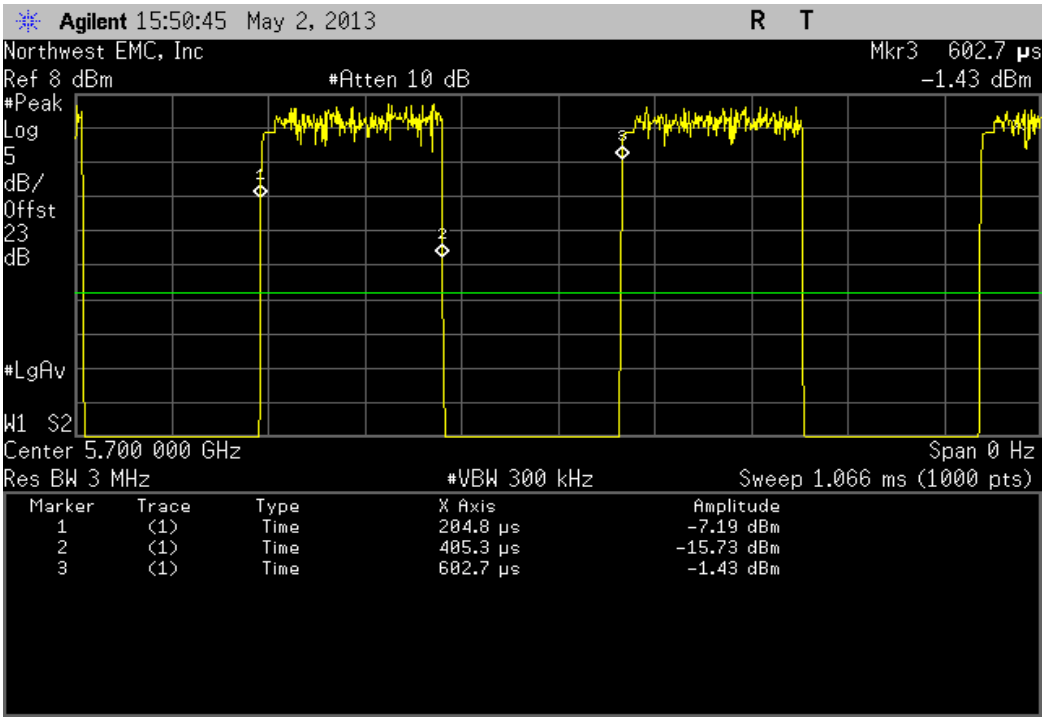

802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel 5580 MHz

| | Pulse Width | Period | Number of Pulses | Value (%) | Limit | Result |
|---|---|---|---|---|---|---|
| | N/A | N/A | 5 | N/A | N/A | N/A |



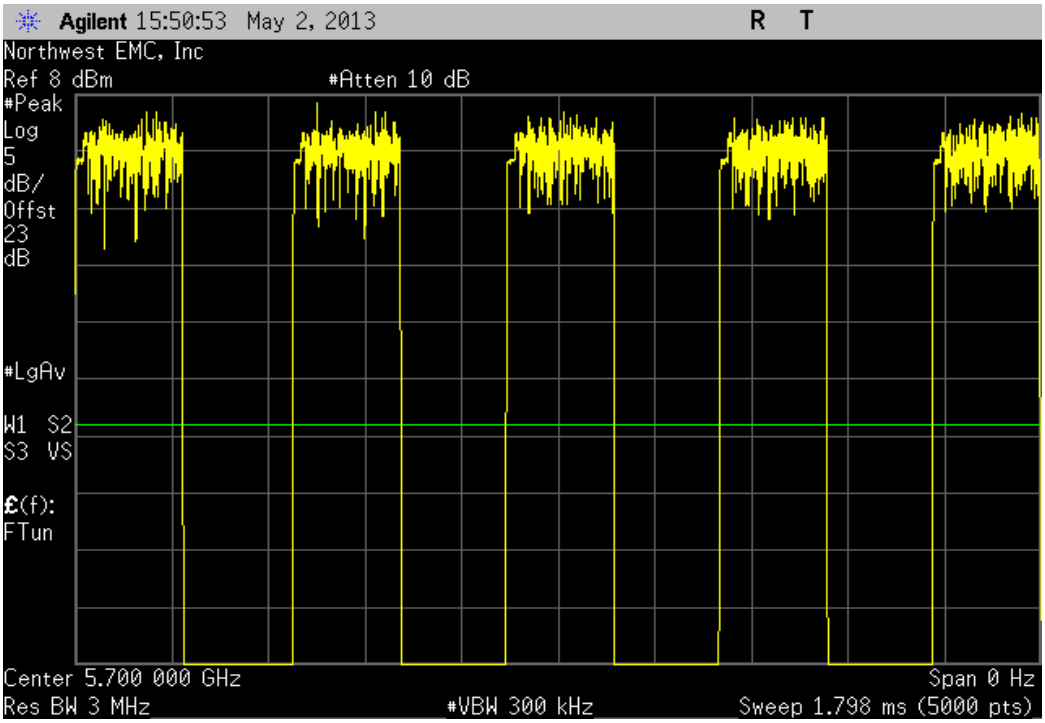
802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel5700 MHz

| Pulse Width | Period | Number of Pulses | Value (%) | Limit | Result |
|---|---|---|---|---|---|
| 200.516 uS | 397.867 uS | 1 | 50.4 | N/A | N/A |



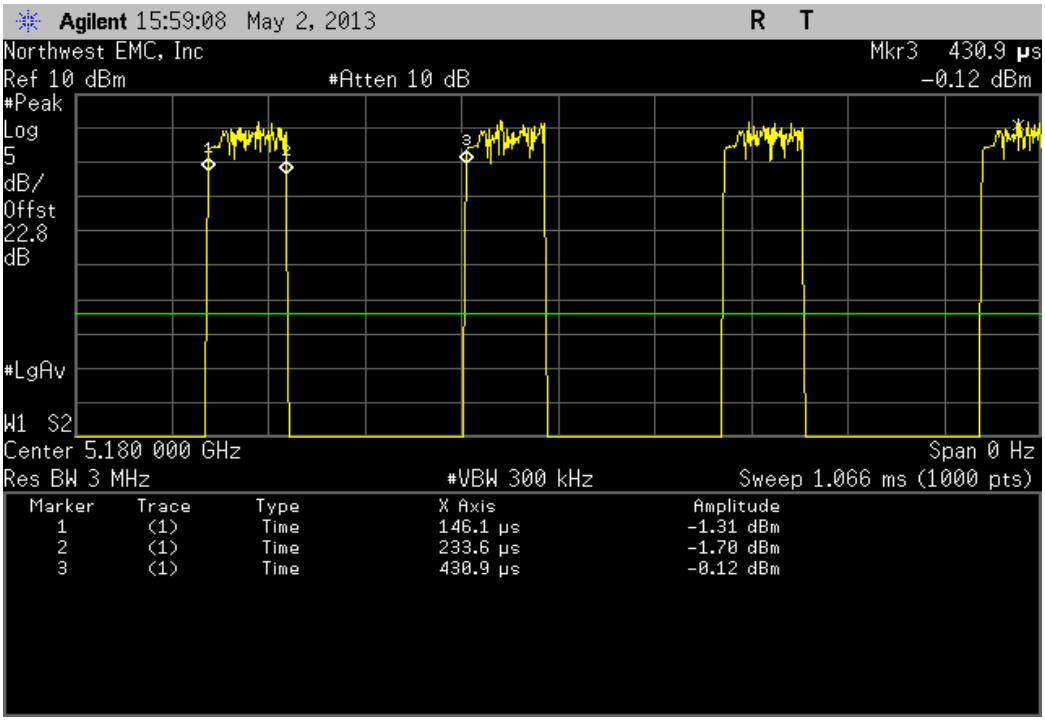

802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel5700 MHz

| Pulse Width | Period | Number of Pulses | Value (%) | Limit | Result |
|---|---|---|---|---|---|
| N/A | N/A | 5 | N/A | N/A | N/A |



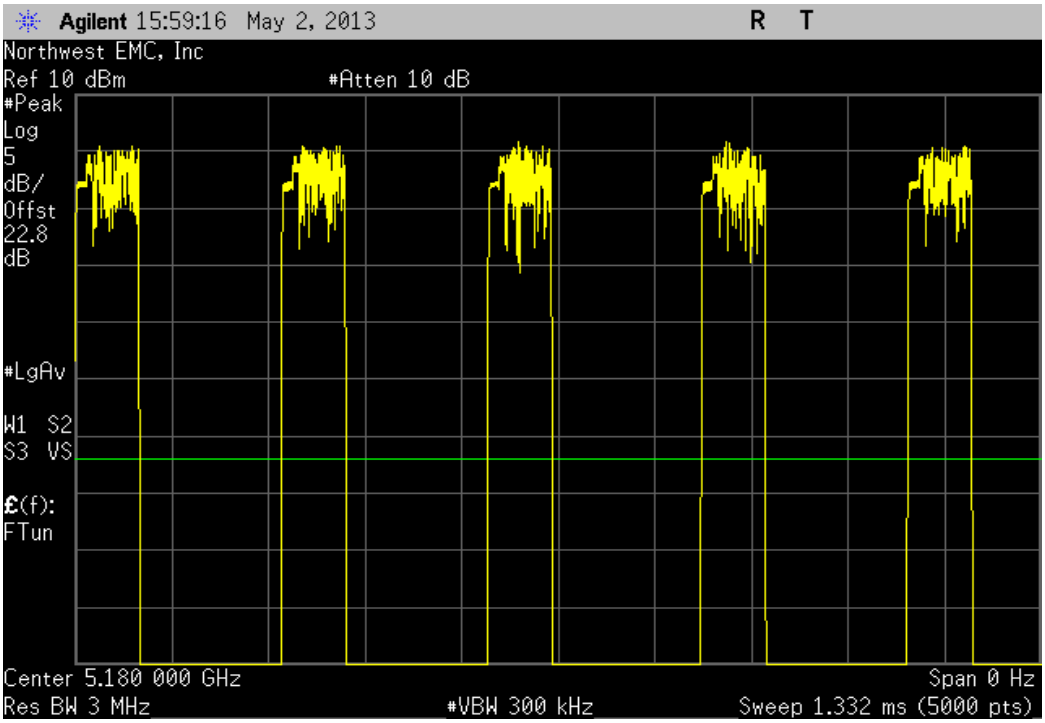
802.11(a) 18 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel 5180 MHz

| Pulse Width | Period | Number of Pulses | Value (%) | Limit | Result |
|---|---|---|---|---|---|
| 87.484 uS | 284.8 uS | 1 | 30.7 | N/A | N/A |



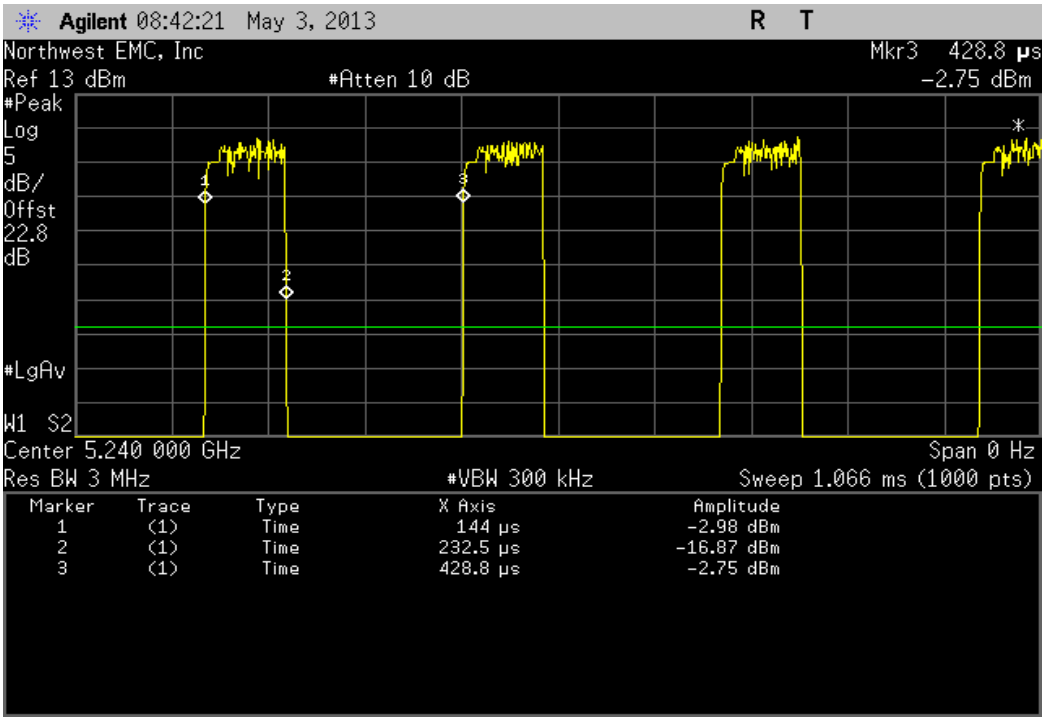

802.11(a) 18 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel 5180 MHz

| Pulse Width | Period | Number of Pulses | Value (%) | Limit | Result |
|---|---|---|---|---|---|
| N/A | N/A | 5 | N/A | N/A | N/A |



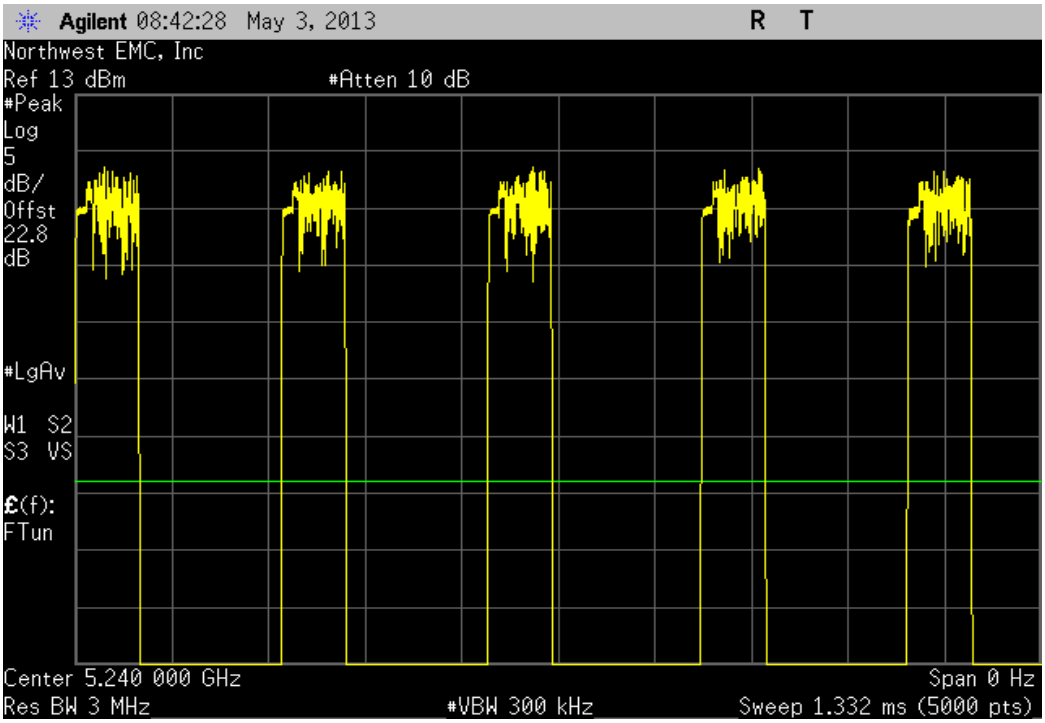
802.11(a) 18 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel 5240 MHz

| Pulse Width | Period | Number of Pulses | Value (%) | Limit | Result |
|---|---|---|---|---|---|
| 88.516 uS | 284.766 uS | 1 | 31.1 | N/A | N/A |



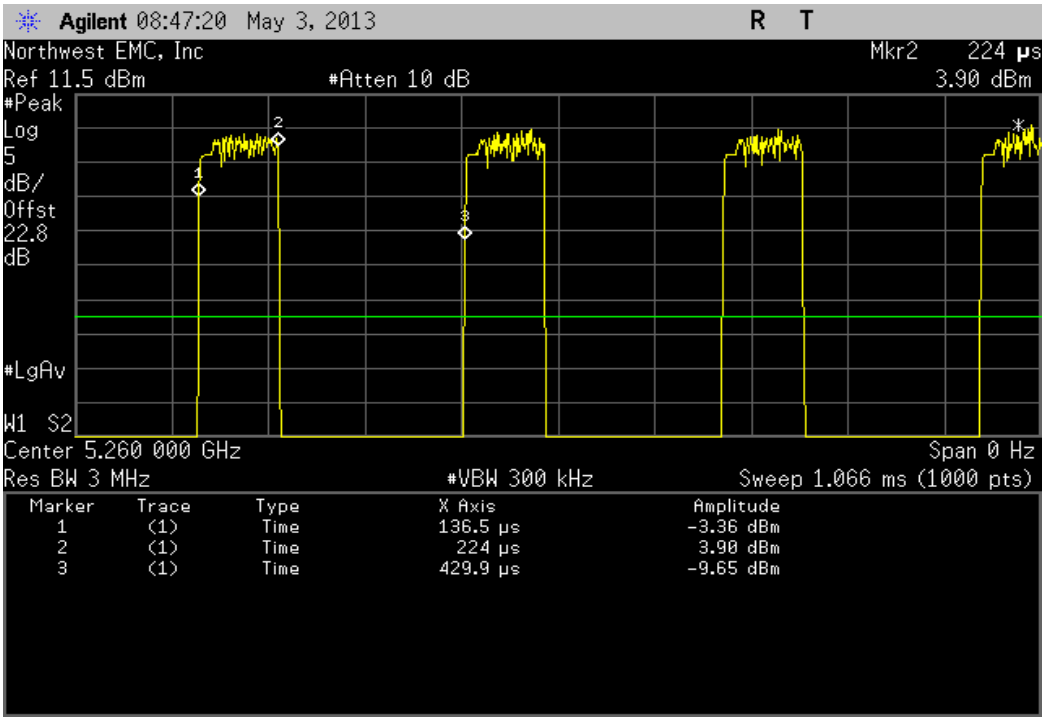

802.11(a) 18 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel 5240 MHz

| Pulse Width | Period | Number of Pulses | Value (%) | Limit | Result |
|---|---|---|---|---|---|
| N/A | N/A | 5 | N/A | N/A | N/A |



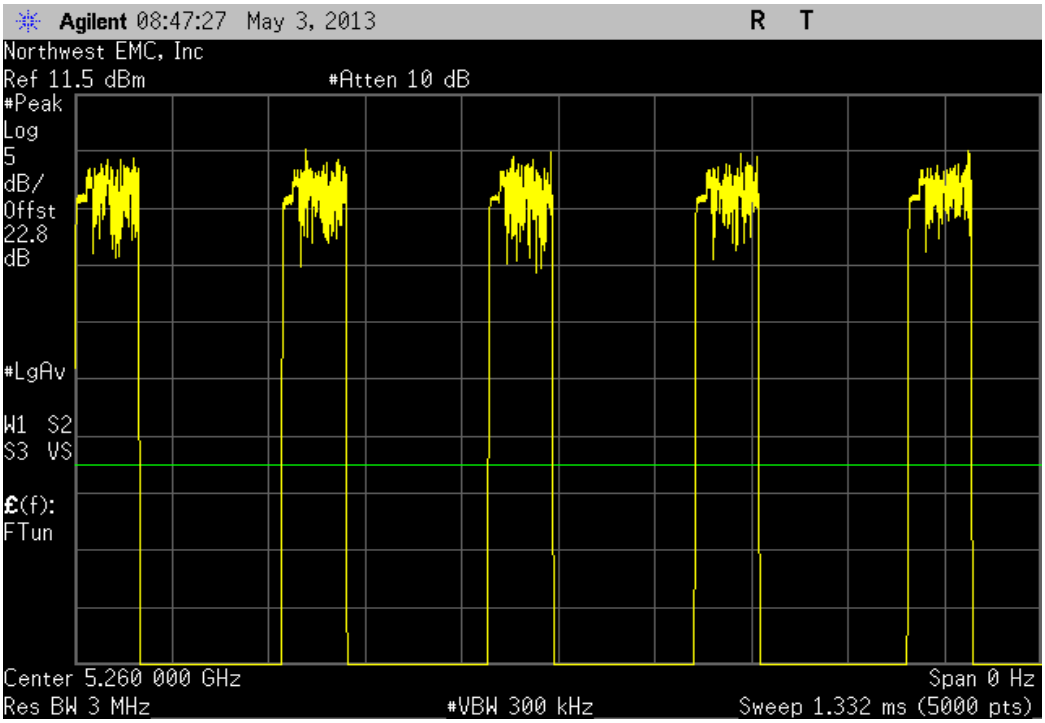
802.11(a) 18 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel 5260 MHz

| Pulse Width | Period | Number of Pulses | Value (%) | Limit | Result |
|---|---|---|---|---|---|
| 87.449 uS | 293.333 uS | 1 | 29.8 | N/A | N/A |



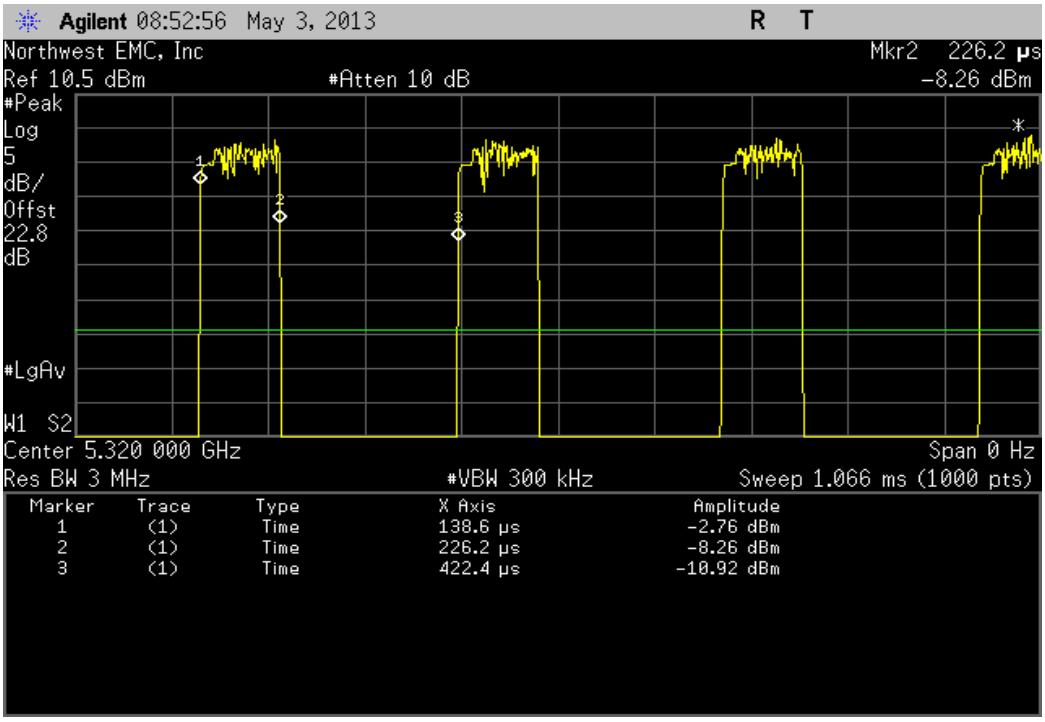

802.11(a) 18 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel 5260 MHz

| Pulse Width | Period | Number of Pulses | Value (%) | Limit | Result |
|---|---|---|---|---|---|
| N/A | N/A | 5 | N/A | N/A | N/A |



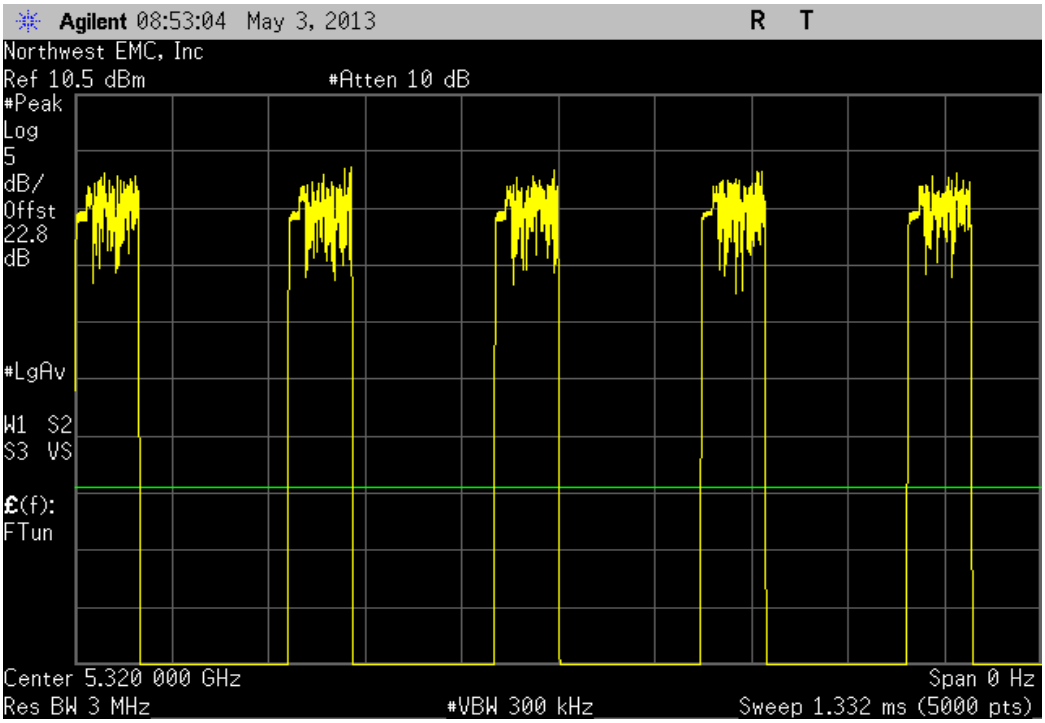
802.11(a) 18 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel 5320 MHz

| Pulse Width | Period | Number of Pulses | Value (%) | Limit | Result |
|---|---|---|---|---|---|
| 87.501 uS | 283.733 uS | 1 | 30.8 | N/A | N/A |



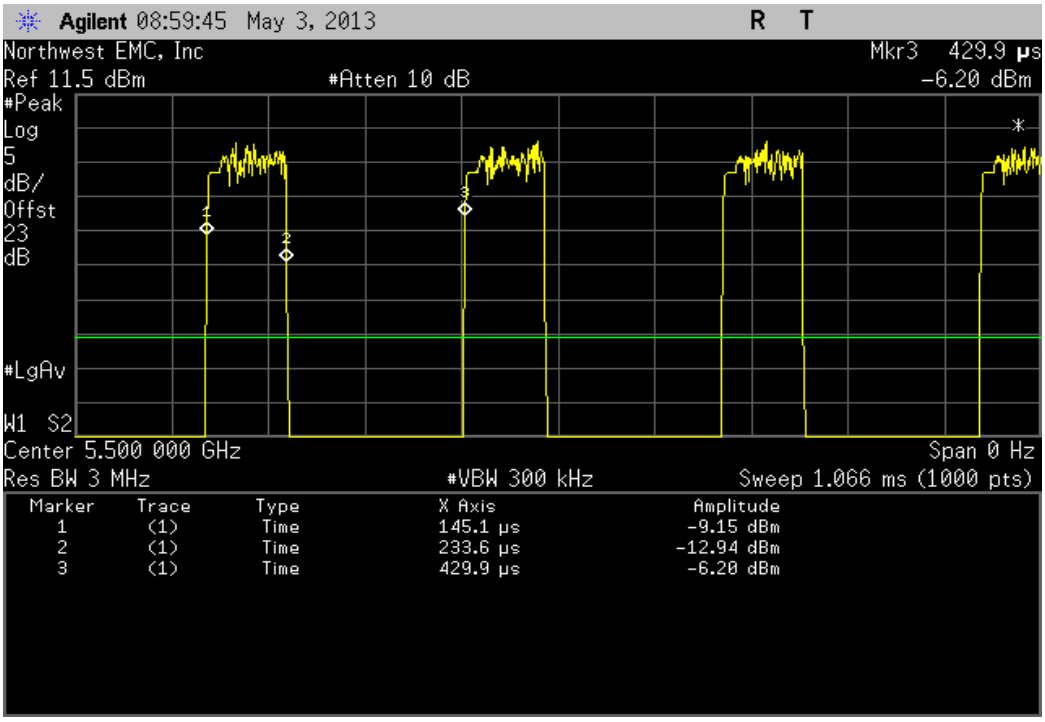

802.11(a) 18 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel 5320 MHz

| Pulse Width | Period | Number of Pulses | Value (%) | Limit | Result |
|---|---|---|---|---|---|
| N/A | N/A | 5 | N/A | N/A | N/A |



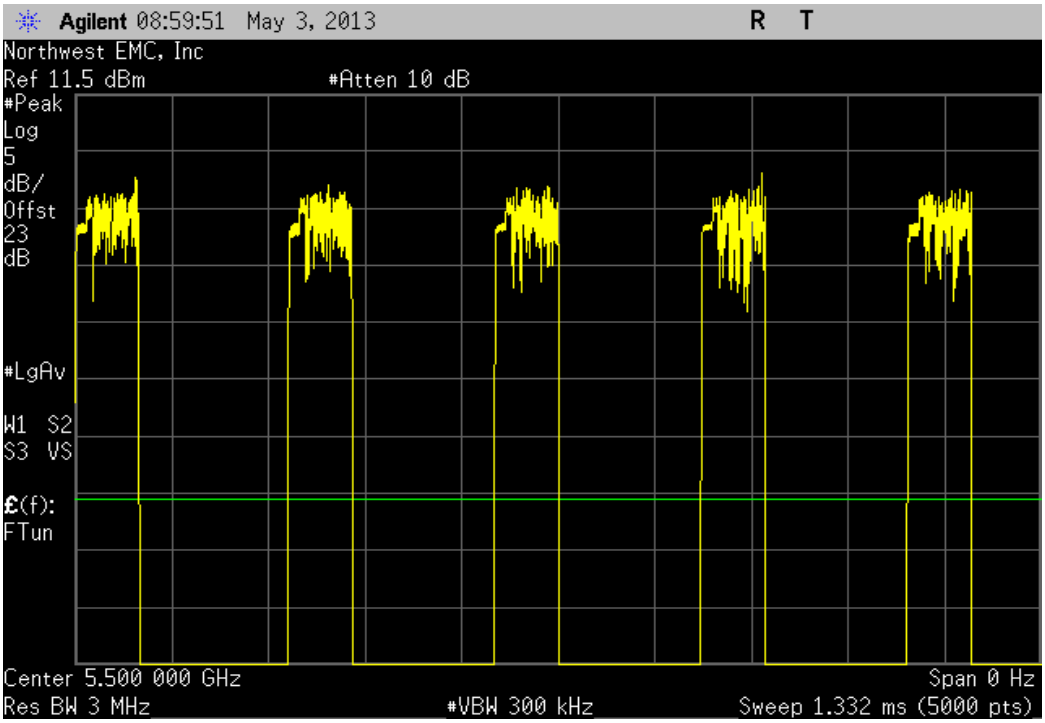
802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel 5500 MHz

| Pulse Width | Period | Number of Pulses | Value (%) | Limit | Result |
|---|---|---|---|---|---|
| 88.516 uS | 284.8 uS | 1 | 31.1 | N/A | N/A |




802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel 5500 MHz

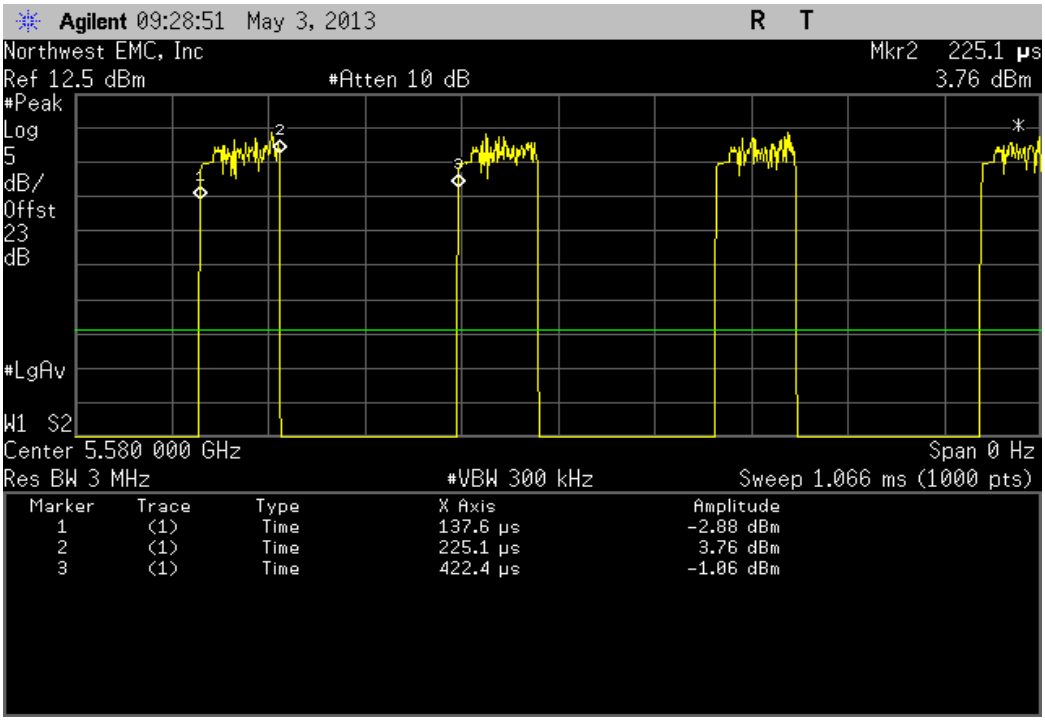
| Pulse Width | Period | Number of Pulses | Value (%) | Limit | Result |
|---|---|---|---|---|---|
| N/A | N/A | 5 | N/A | N/A | N/A |



# Transmissions Burst Duration

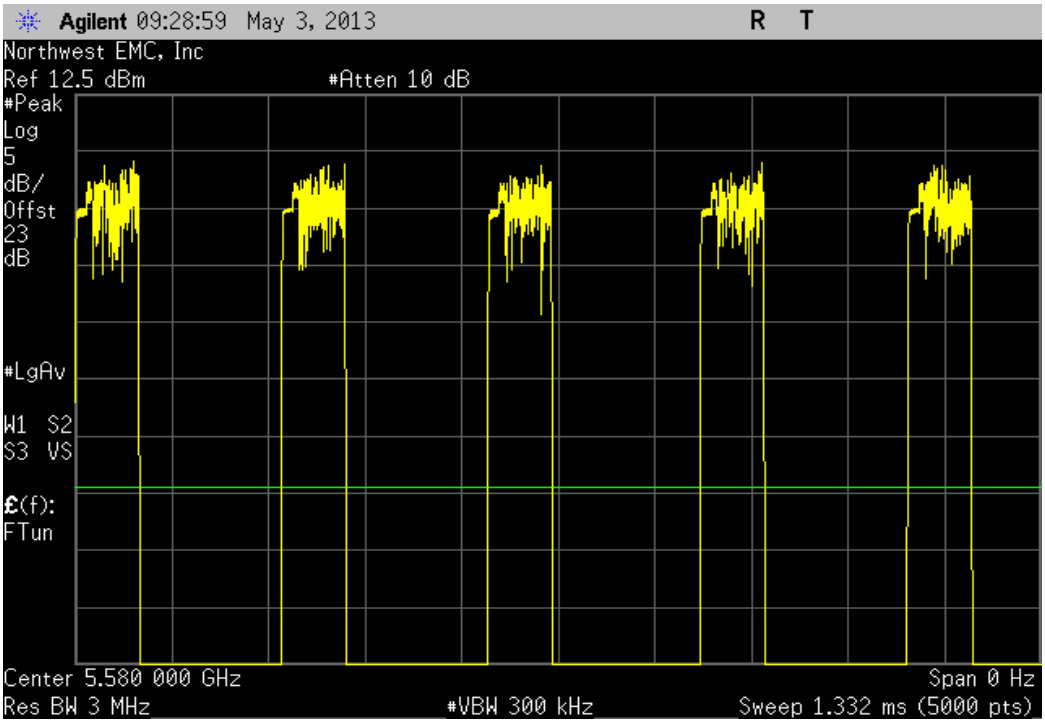
802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel 5580 MHz

| Pulse Width | Period | Number of Pulses | Value (%) | Limit | Result |
|---|---|---|---|---|---|
| 87.501 uS | 284.8 uS | 1 | 30.7 | N/A | N/A |



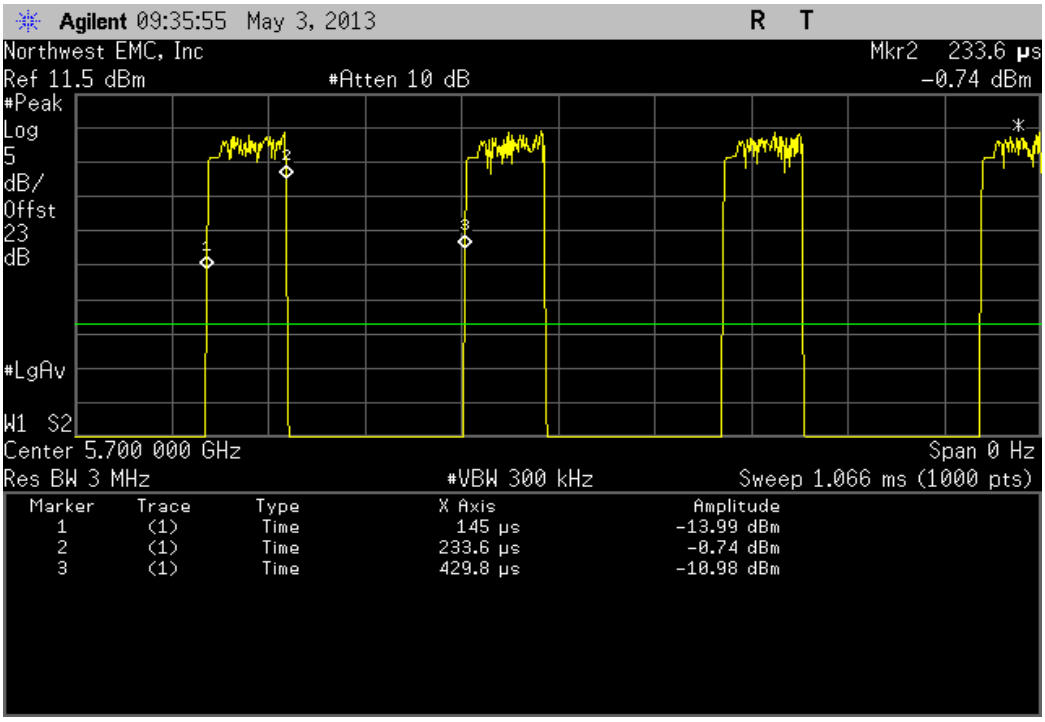

802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel 5580 MHz

| Pulse Width | Period | Number of Pulses | Value (%) | Limit | Result |
|---|---|---|---|---|---|
| N/A | N/A | 5 | N/A | N/A | N/A |



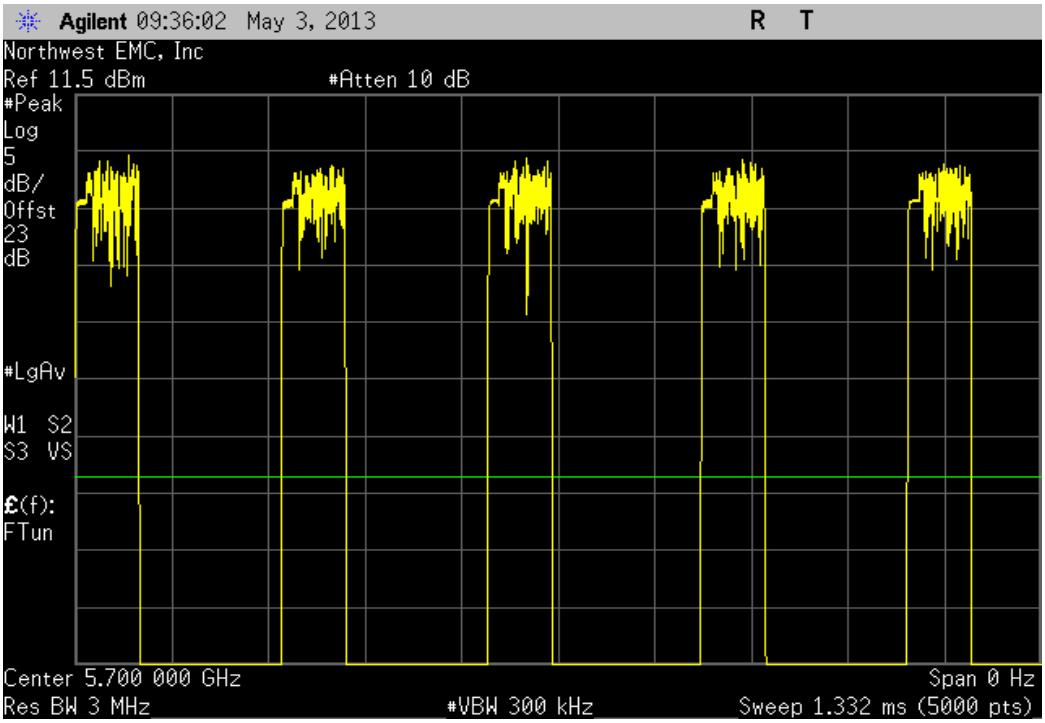
802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel 5700 MHz

| Pulse Width | Period | Number of Pulses | Value (%) | Limit | Result |
|---|---|---|---|---|---|
| 88.568 uS | 284.8 uS | 1 | 31.1 | N/A | N/A |




802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel 5700 MHz

| Pulse Width | Period | Number of Pulses | Value (%) | Limit | Result |
|---|---|---|---|---|---|
| N/A | N/A | 5 | N/A | N/A | N/A |



# 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 |
|---|---|---|---|---|---|
| Attenuator, 6dB | S.M. Electronics | 18N-06 | AWN | 3/25/2013 | 12 |
| MXG Vector Signal Generator | Agilent | N5182A | TIF | NCR | 0 |
| Power Meter | Gigatronics | 8651A | SPM | 1/9/2012 | 24 |
| Power Sensor | Gigatronics | 80701A | SPL | 7/8/2011 | 24 |
| EV06 Direct Connect Cable | ESM Cable Corp. | TT | ECA | NCR | 0 |
| Attenuator, 6 dB, 'SMA' | N/A | 93459 3330A-6 | AUF | 3/5/2013 | 12 |
| 40GHz DC Block | Miteq | DCB4000 | AMD | 6/25/2012 | 12 |
| Spectrum Analyzer | Agilent | E4446A | AAQ | 2/7/2012 | 24 |

**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 Transmit Power

| | | | | | |
|---|---|---|---|---|---|
| **EUT:** | Model 444-2225 (Athena UFL) | | | **Work Order:** | FOCU0140 |
| **Serial Number:** | 02EA4D000027 | | | **Date:** | 05/03/13 |
| **Customer:** | Summit Semiconductor | | | **Temperature:** | 24°C |
| **Attendees:** | None | | | **Humidity:** | 30% |
| **Project:** | None | | | **Barometric Pres.:** | 1023 |
| **Tested by:** | Brandon Hobbs | **Power:** | 3.3V DC | **Job Site:** | EV06 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.407:2013 | ANSI C63.10:2009 |
| | |

**COMMENTS**

All testing was completed on the highest output power antenna port A2.

**DEVIATIONS FROM TEST STANDARD**

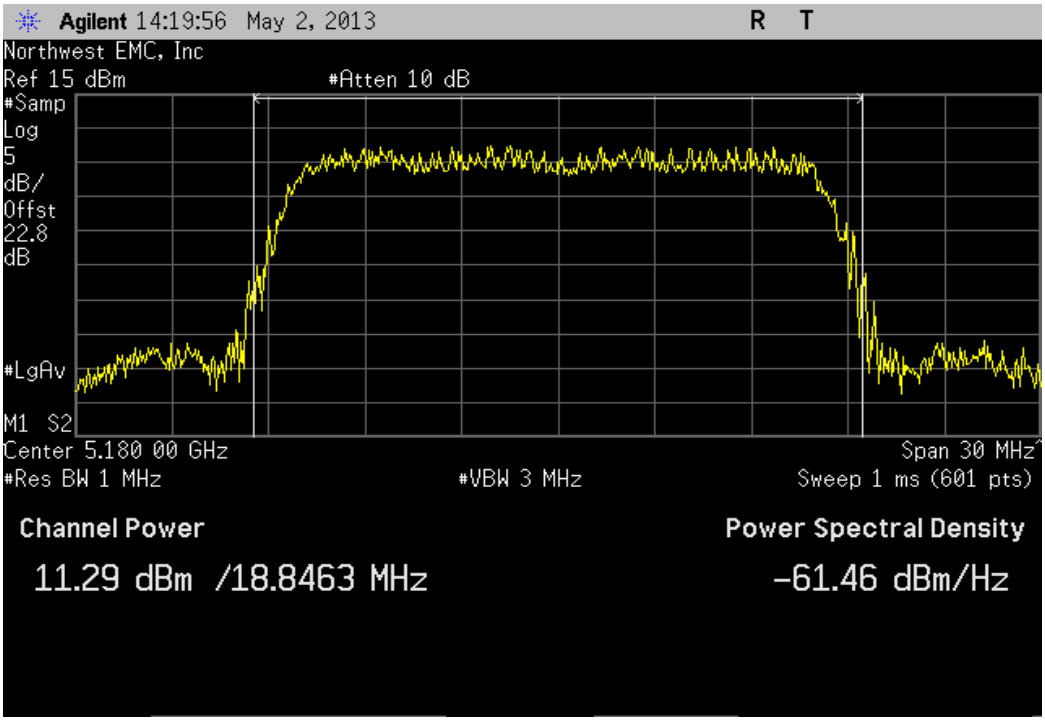
None

| Configuration # | 5 | Signature |
|---|---|---|

| | | Value | Limit | Result |
|---|---|---|---|---|
| 802.11(a) 6 Mbps | | | | |
| | 5150 - 5250 MHz Band | | | |
| | Channel 36, Low Channel 5180 MHz | 11.292 dBm | < 17 dBm | Pass |
| | Channel 48, High Channel 5240 MHz | 11.465 dBm | < 17 dBm | Pass |
| | 5250 - 5350 MHz Band | | | |
| | Channel 52, Low Channel 5260 MHz | 11.037 dBm | < 24 dBm | Pass |
| | Channel 64, High Channel 5320 MHz | 11.419 dBm | < 24 dBm | Pass |
| | 5470 - 5725 MHz Band | | | |
| | Channel 100, Low Channel 5500 MHz | 11.275 dBm | < 24 dBm | Pass |
| | Channel 116, Mid Channel 5580 MHz | 11.051 dBm | < 24 dBm | Pass |
| | Channel 140, High Channel5700 MHz | 11.267 dBm | < 24 dBm | Pass |
| 802.11(a) 18 Mbps | | | | |
| | 5150 - 5250 MHz Band | | | |
| | Channel 36, Low Channel 5180 MHz | 11.049 dBm | < 17 dBm | Pass |
| | Channel 48, High Channel 5240 MHz | 11.712 dBm | < 17 dBm | Pass |
| | 5250 - 5350 MHz Band | | | |
| | Channel 52, Low Channel 5260 MHz | 11.294 dBm | < 24 dBm | Pass |
| | Channel 64, High Channel 5320 MHz | 11.729 dBm | < 24 dBm | Pass |
| | 5470 - 5725 MHz Band | | | |
| | Channel 100, Low Channel 5500 MHz | 11.421 dBm | < 24 dBm | Pass |
| | Channel 116, Mid Channel 5580 MHz | 11.279 dBm | < 24 dBm | Pass |
| | Channel 140, High Channel 5700 MHz | 10.984 dBm | < 24 dBm | Pass |

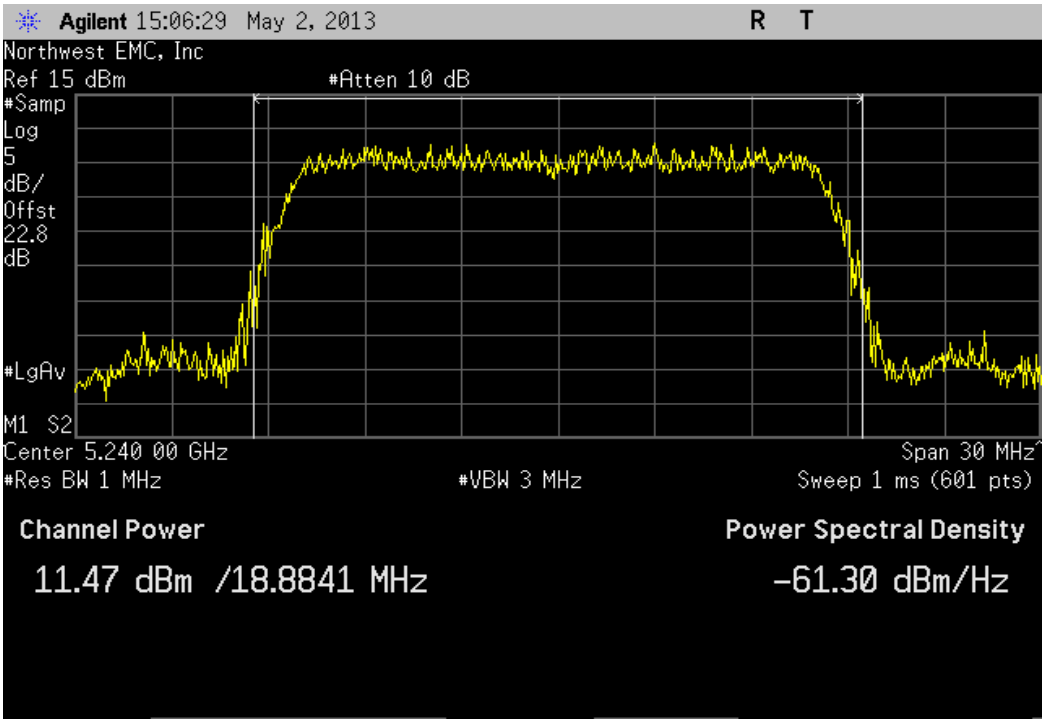
802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel 5180 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 11.292 dBm | < 17 dBm | Pass |



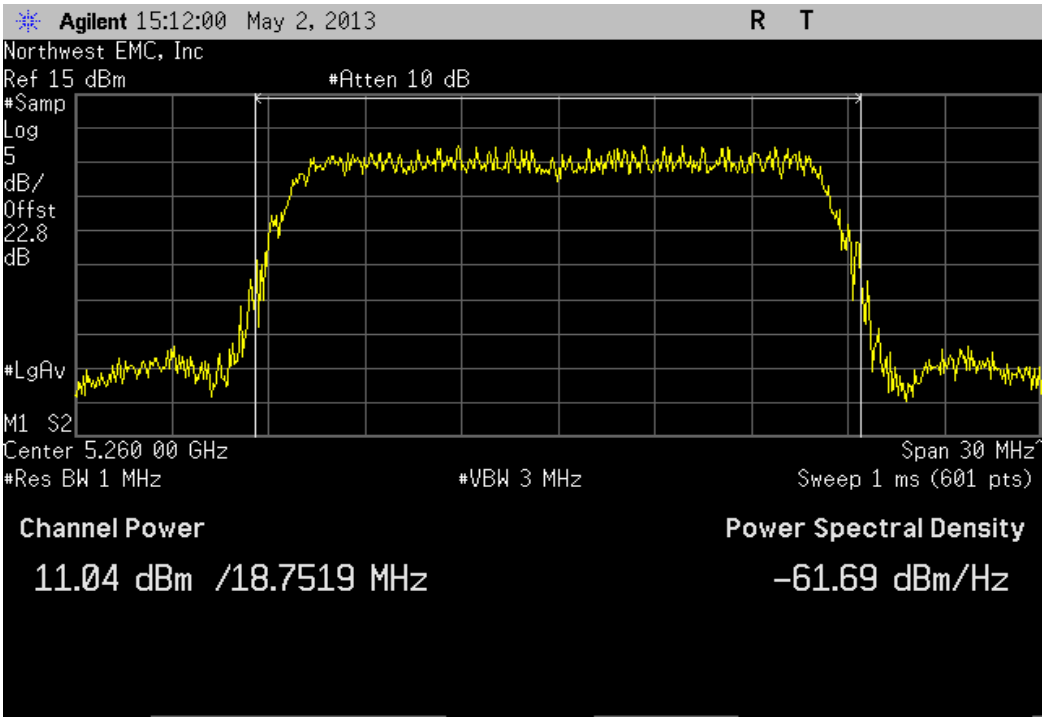

802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel 5240 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 11.465 dBm | < 17 dBm | Pass |



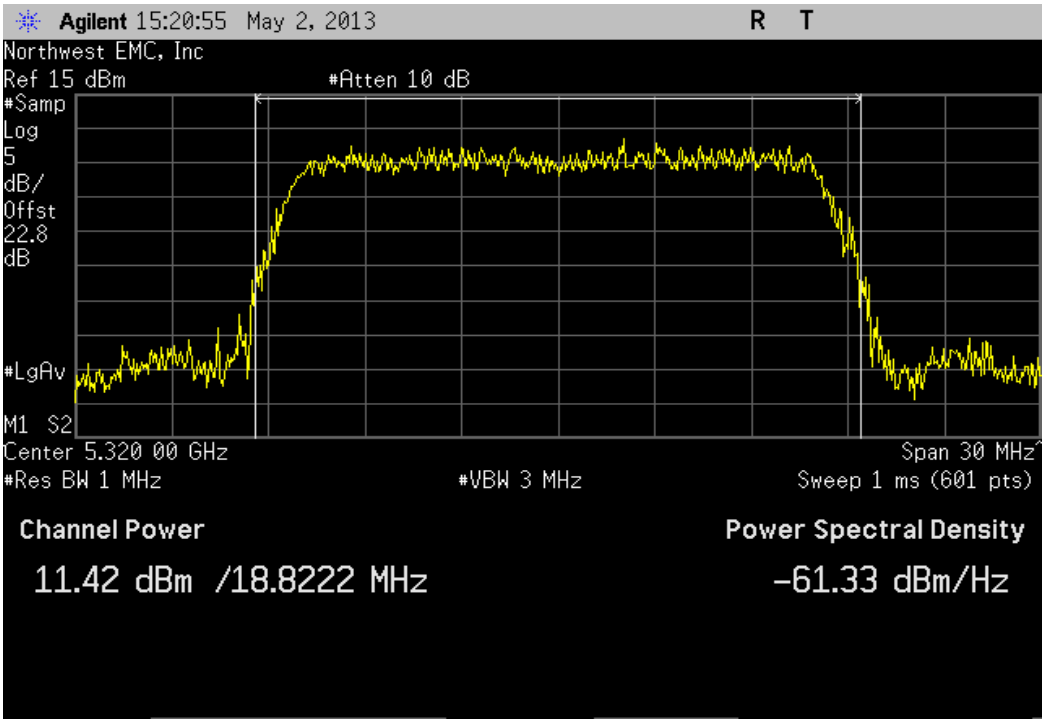
802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel 5260 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 11.037 dBm | < 24 dBm | Pass |



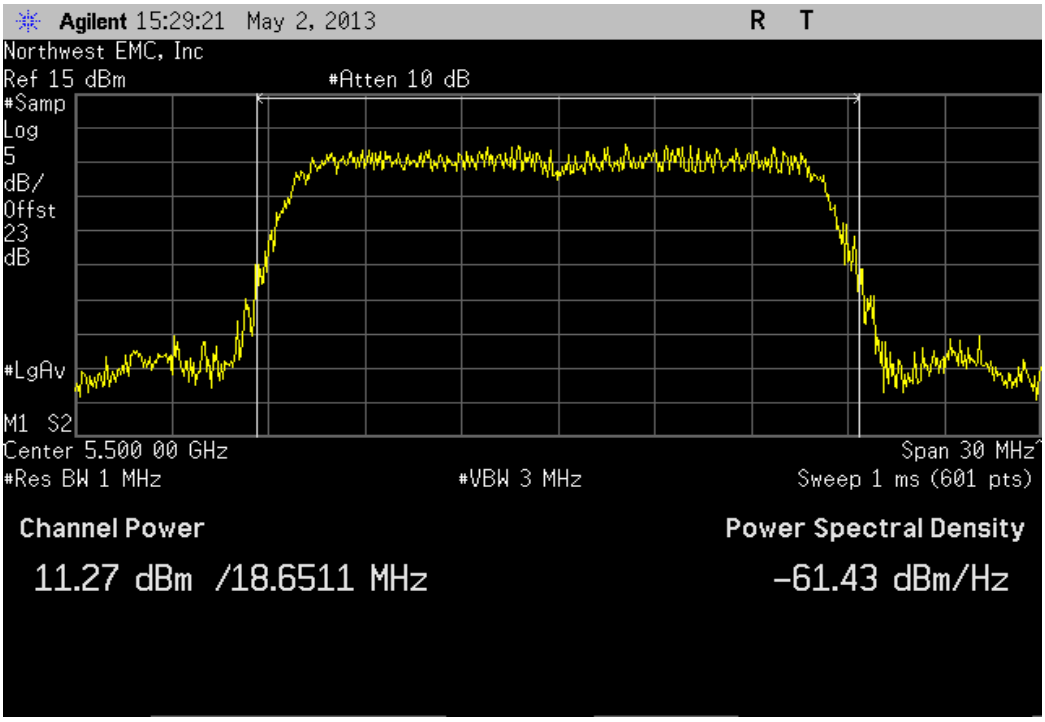

802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel 5320 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 11.419 dBm | < 24 dBm | Pass |



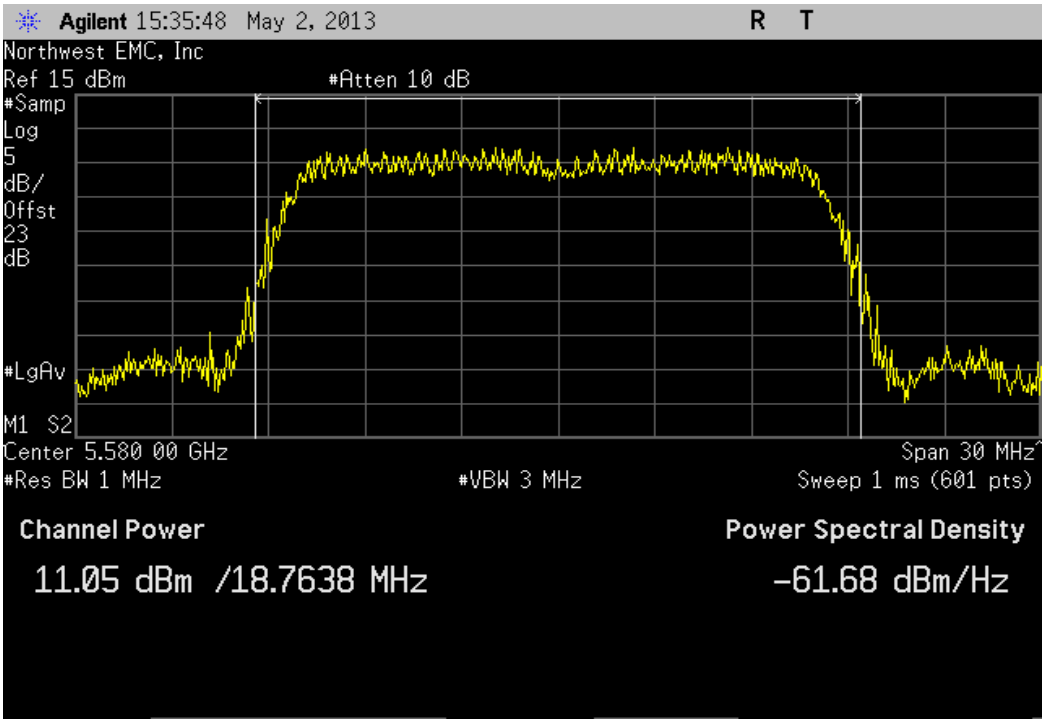
802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel 5500 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 11.275 dBm | < 24 dBm | Pass |



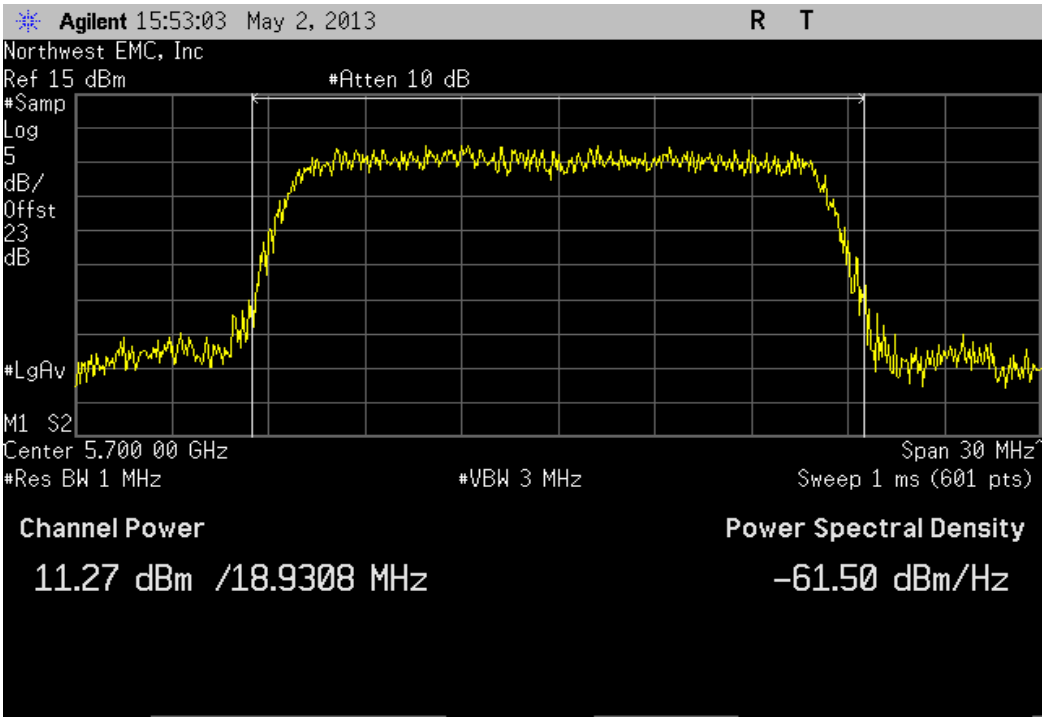

802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel 5580 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 11.051 dBm | < 24 dBm | Pass |



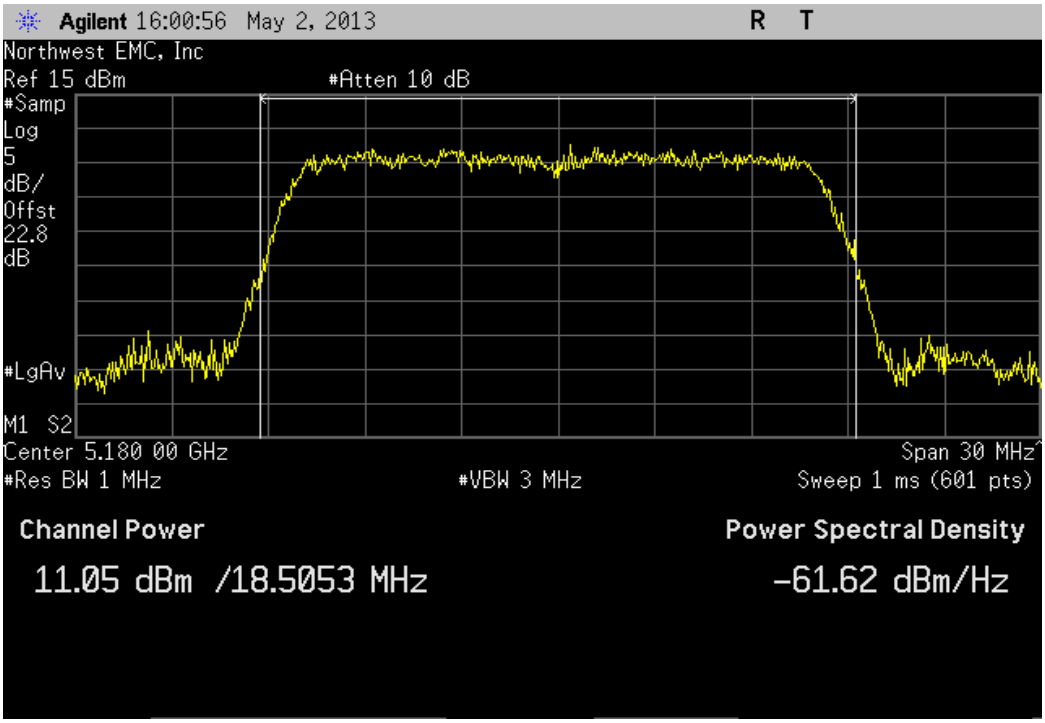
802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel5700 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 11.267 dBm | < 24 dBm | Pass |



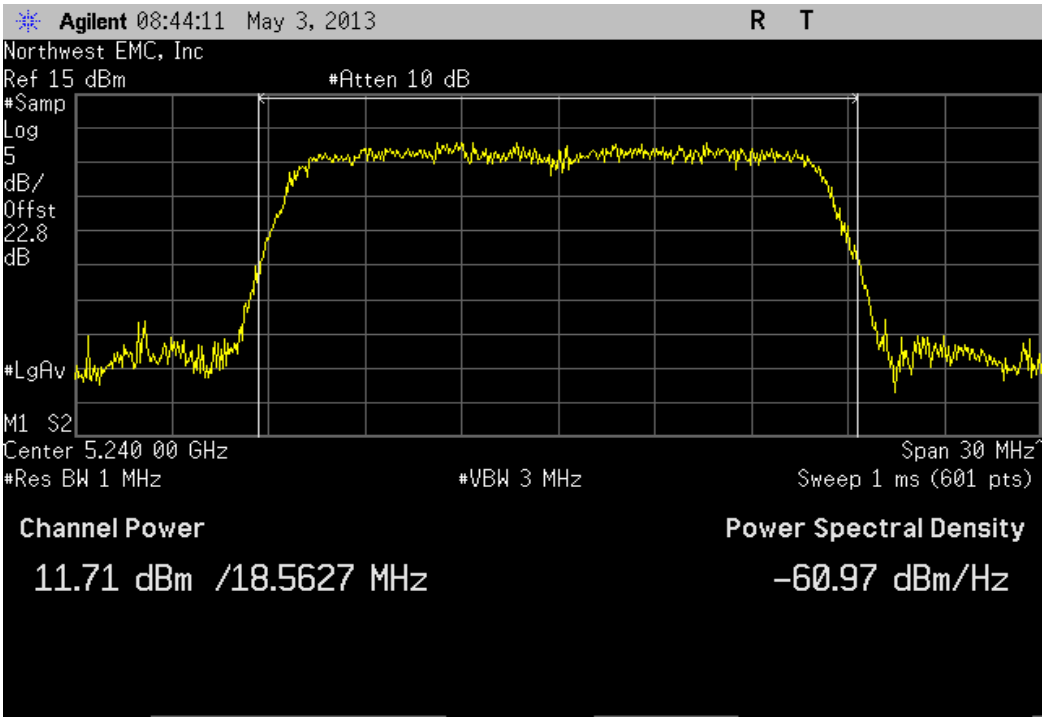

802.11(a) 18 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel 5180 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 11.049 dBm | < 17 dBm | Pass |



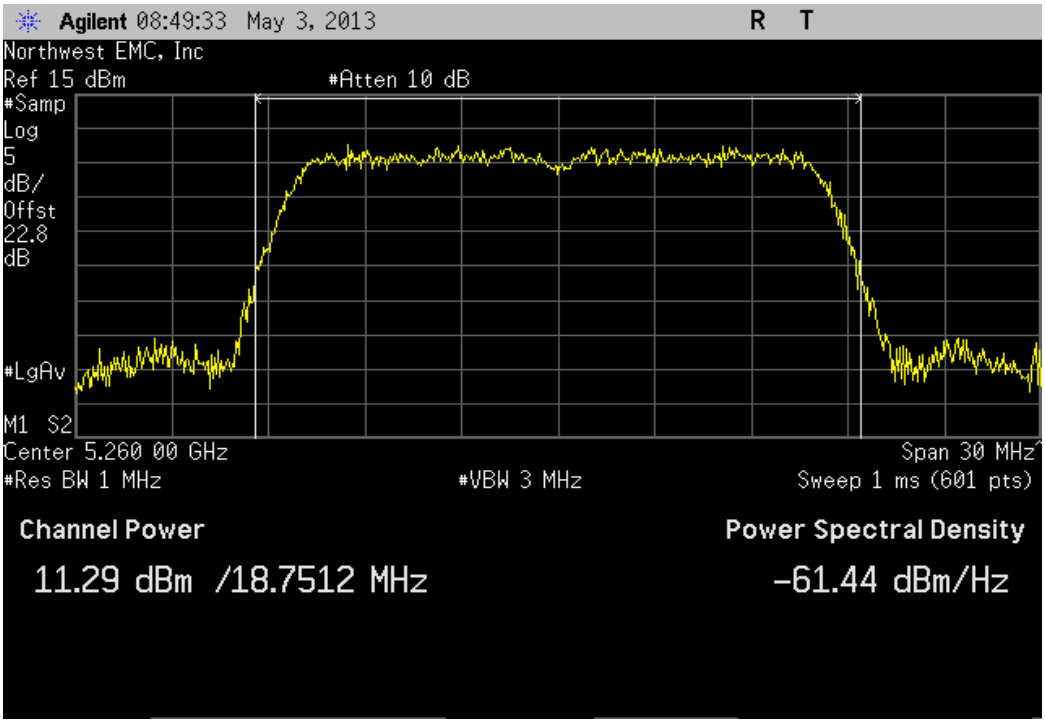
802.11(a) 18 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel 5240 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 11.712 dBm | < 17 dBm | Pass |



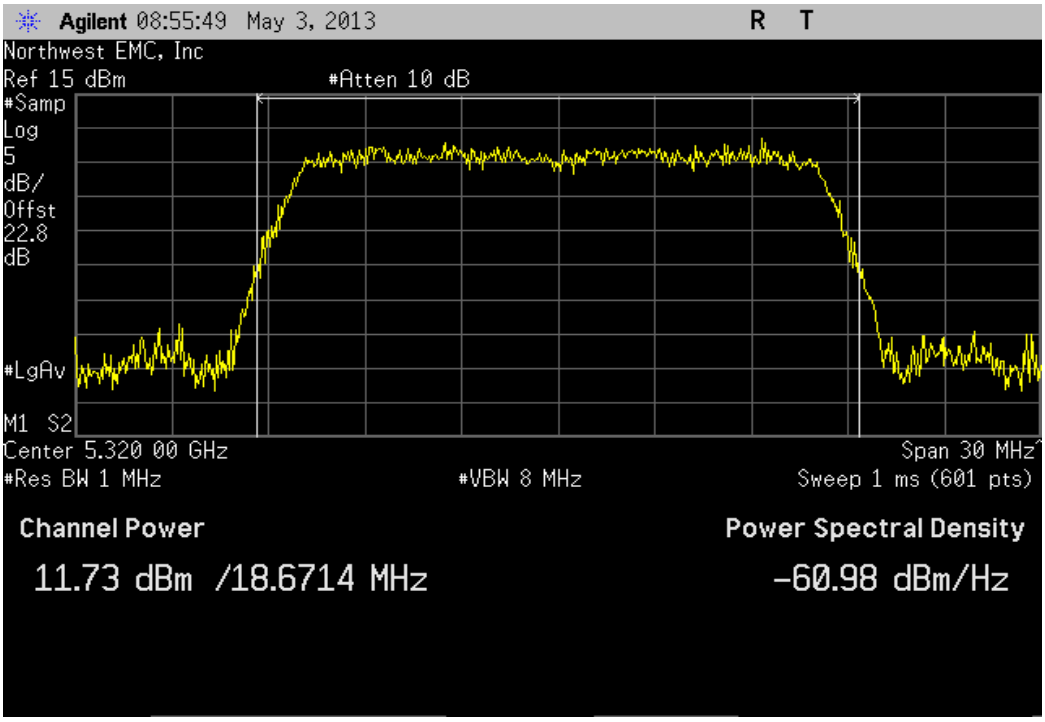

802.11(a) 18 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel 5260 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 11.294 dBm | < 24 dBm | Pass |



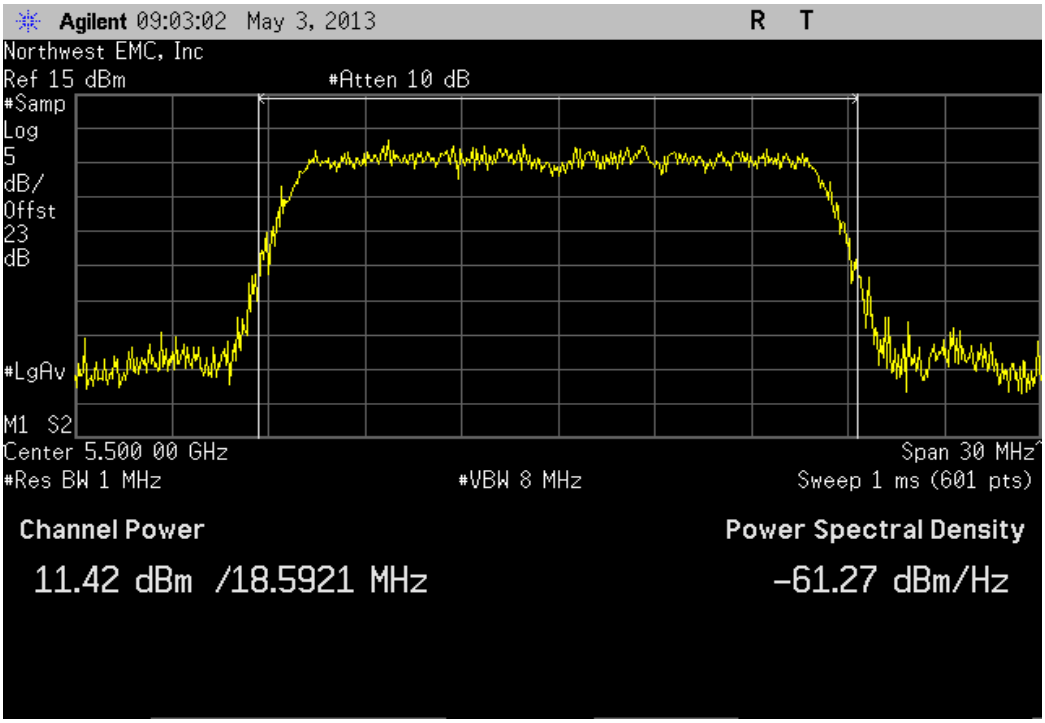
802.11(a) 18 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel 5320 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 11.729 dBm | < 24 dBm | Pass |



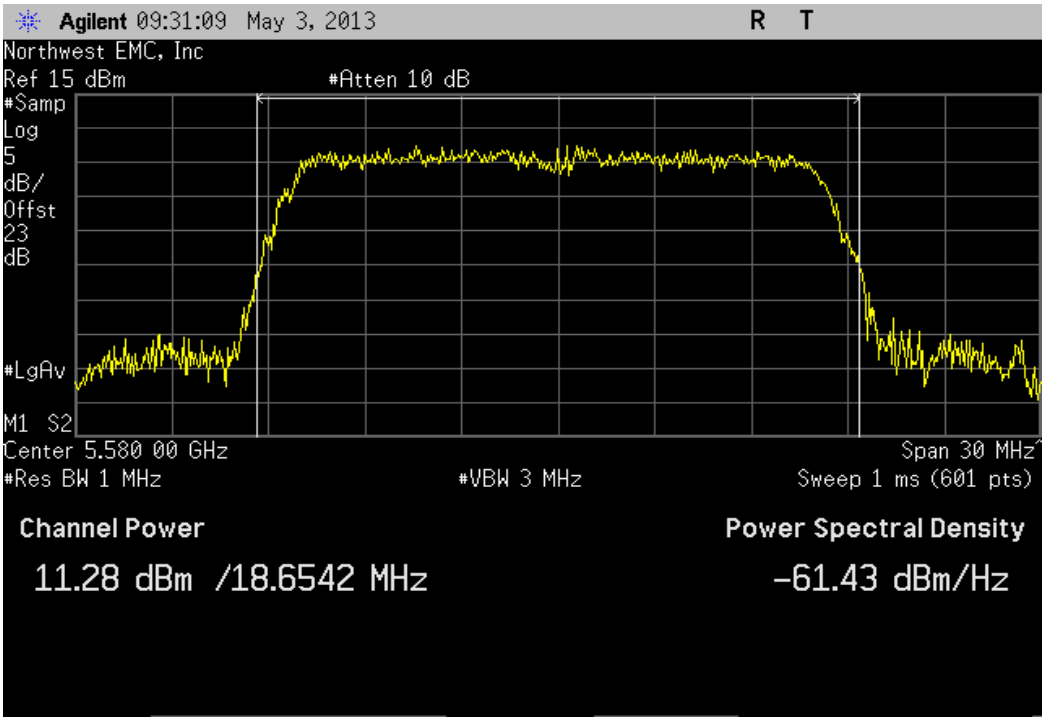

802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel 5500 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 11.421 dBm | < 24 dBm | Pass |



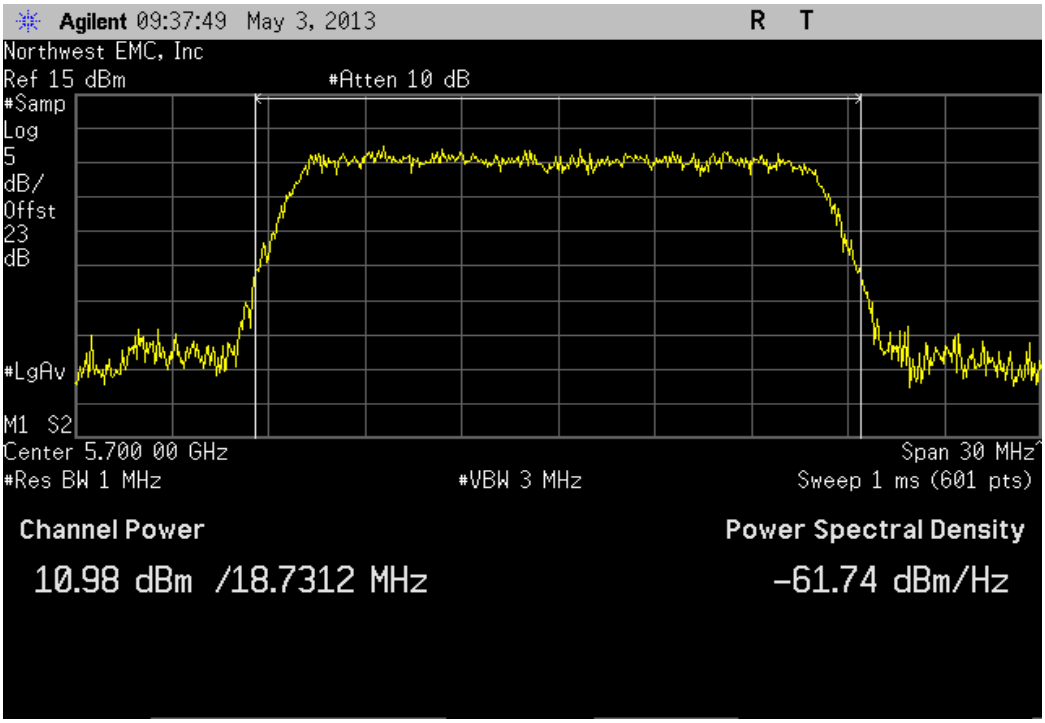
802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel 5580 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 11.279 dBm | < 24 dBm | Pass |




802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel 5700 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 10.984 dBm | < 24 dBm | 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 |
|---|---|---|---|---|---|
| Attenuator, 6dB | S.M. Electronics | 18N-06 | AWN | 3/25/2013 | 12 |
| MXG Vector Signal Generator | Agilent | N5182A | TIF | NCR | 0 |
| Power Meter | Gigatronics | 8651A | SPM | 1/9/2012 | 24 |
| Power Sensor | Gigatronics | 80701A | SPL | 7/8/2011 | 24 |
| EV06 Direct Connect Cable | ESM Cable Corp. | TT | ECA | NCR | 0 |
| Attenuator, 6 dB, 'SMA' | N/A | 93459 3330A-6 | AUF | 3/5/2013 | 12 |
| 40GHz DC Block | Miteq | DCB4000 | AMD | 6/25/2012 | 12 |
| Spectrum Analyzer | Agilent | E4446A | AAQ | 2/7/2012 | 24 |

**TEST DESCRIPTION**

FCC KDB 789033 D01 General UNII Test Procedures Section F 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:** | Model 444-2225 (Athena UFL) | | | **Work Order:** | FOCU0140 |
| **Serial Number:** | 02EA4D000027 | | | **Date:** | 05/03/13 |
| **Customer:** | Summit Semiconductor | | | **Temperature:** | 24°C |
| **Attendees:** | None | | | **Humidity:** | 30% |
| **Project:** | None | | | **Barometric Pres.:** | 1023 |
| **Tested by:** | Brandon Hobbs | **Power:** | 3.3V DC | **Job Site:** | EV06 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.407:2013 | ANSI C63.10:2009 |
| | |

**COMMENTS**

All testing was completed on the highest output power antenna port A2.

**DEVIATIONS FROM TEST STANDARD**

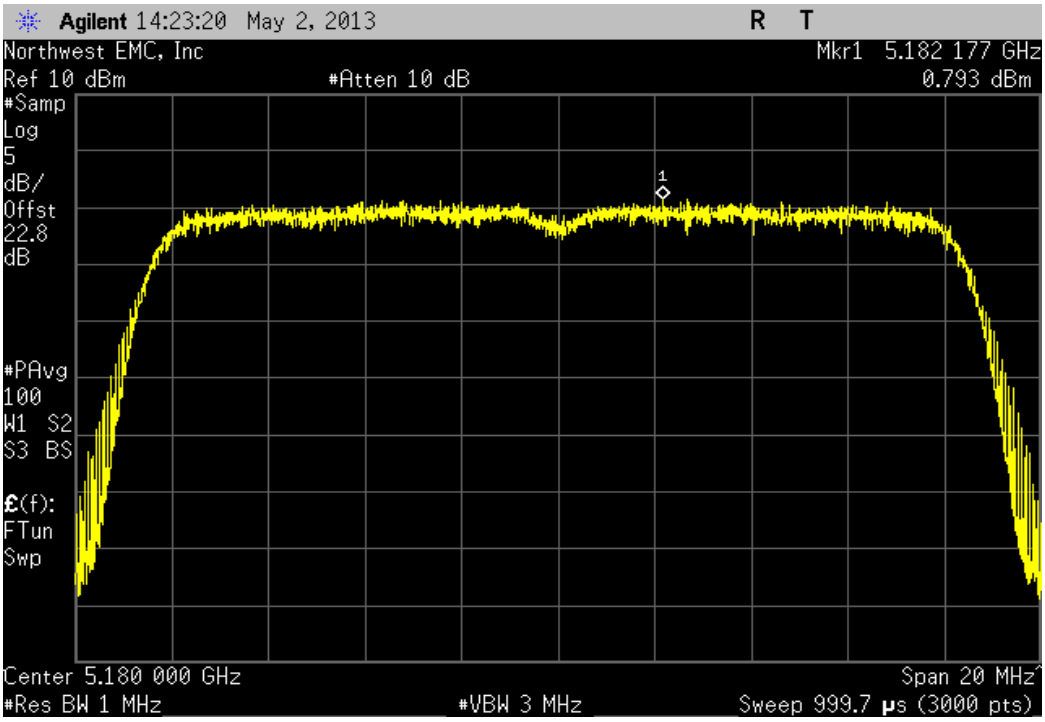
None

| Configuration # | 5 | Signature |
|---|---|---|

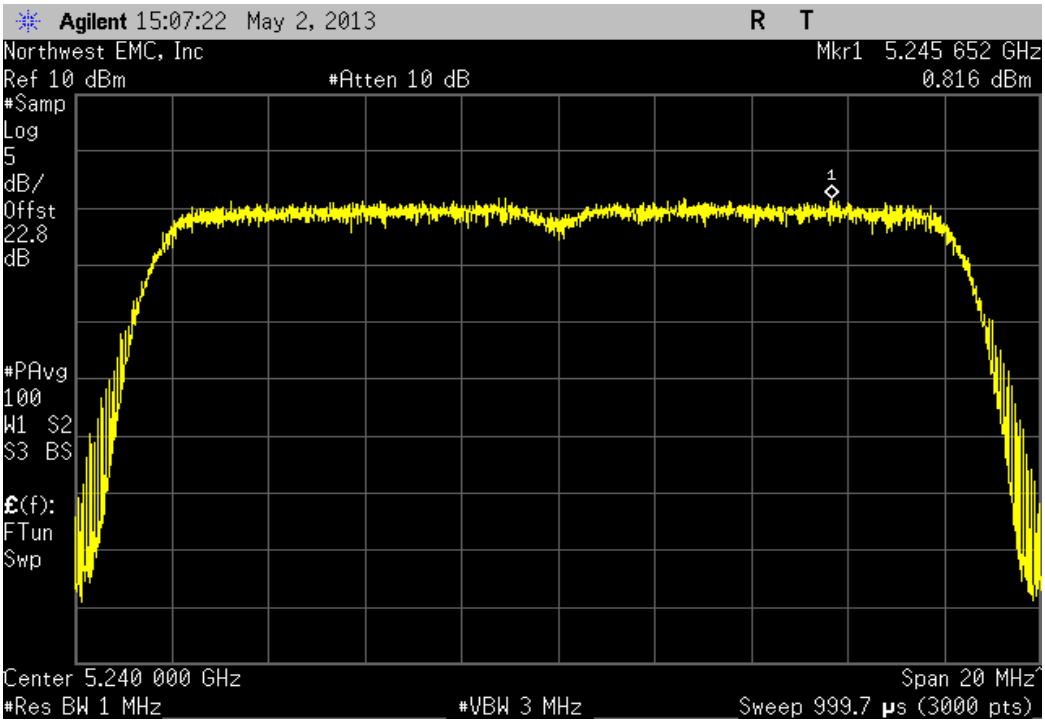
| | | Value (dBm / MHz) | Limit (dBm / MHz) | Result |
|---|---|---|---|---|
| 802.11(a) 6 Mbps | | | | |
| | 5150 - 5250 MHz Band | | | |
| | Channel 36, Low Channel 5180 MHz | 0.793 | 4 | Pass |
| | Channel 48, High Channel 5240 MHz | 0.816 | 4 | Pass |
| | 5250 - 5350 MHz Band | | | |
| | Channel 52, Low Channel 5260 MHz | 0.993 | 4 | Pass |
| | Channel 64, High Channel 5320 MHz | 1.198 | 4 | Pass |
| | 5470 - 5725 MHz Band | | | |
| | Channel 100, Low Channel 5500 MHz | 0.671 | 4 | Pass |
| | Channel 116, Mid Channel 5580 MHz | 0.824 | 4 | Pass |
| | Channel 140, High Channel5700 MHz | 1.354 | 4 | Pass |
| 802.11(a) 18 Mbps | | | | |
| | 5150 - 5250 MHz Band | | | |
| | Channel 36, Low Channel 5180 MHz | 1.47 | 4 | Pass |
| | Channel 48, High Channel 5240 MHz | 2.758 | 4 | Pass |
| | 5250 - 5350 MHz Band | | | |
| | Channel 52, Low Channel 5260 MHz | 2.039 | 4 | Pass |
| | Channel 64, High Channel 5320 MHz | 3.791 | 4 | Pass |
| | 5470 - 5725 MHz Band | | | |
| | Channel 100, Low Channel 5500 MHz | 2.419 | 4 | Pass |
| | Channel 116, Mid Channel 5580 MHz | 2.414 | 4 | Pass |
| | Channel 140, High Channel 5700 MHz | 2.179 | 4 | Pass |

# Peak Power Spectral Density

| 802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel 5180 MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Result |
| | | | | | 0.793 | 4 | Pass |



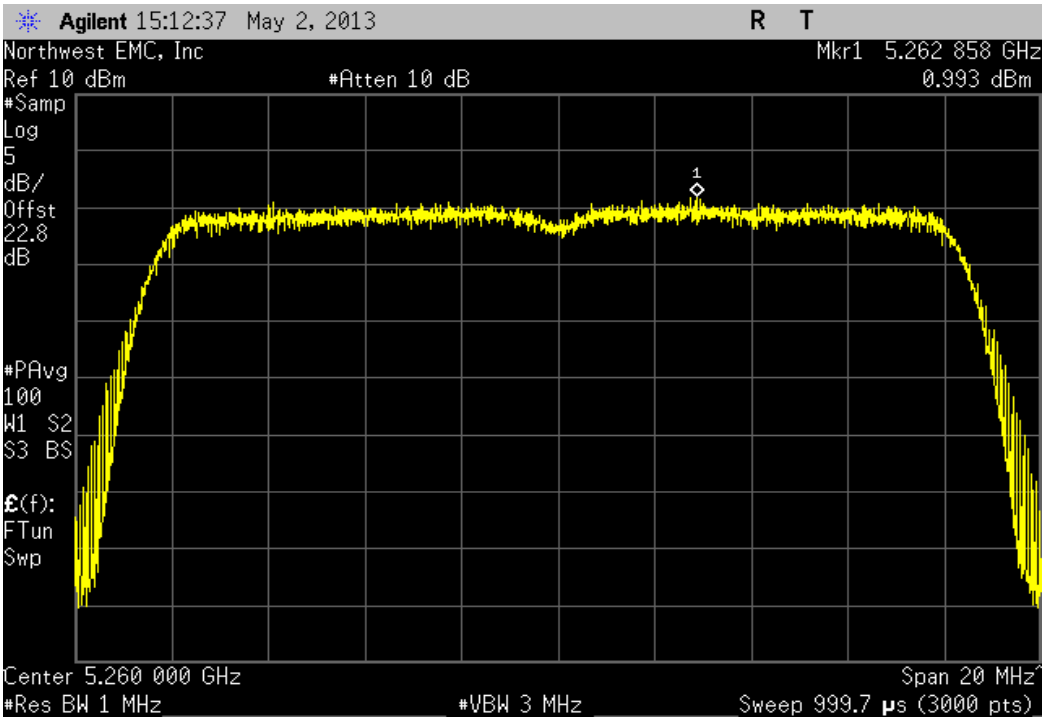

| 802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel 5240 MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Result |
| | | | | | 0.816 | 4 | Pass |



# Peak Power Spectral Density

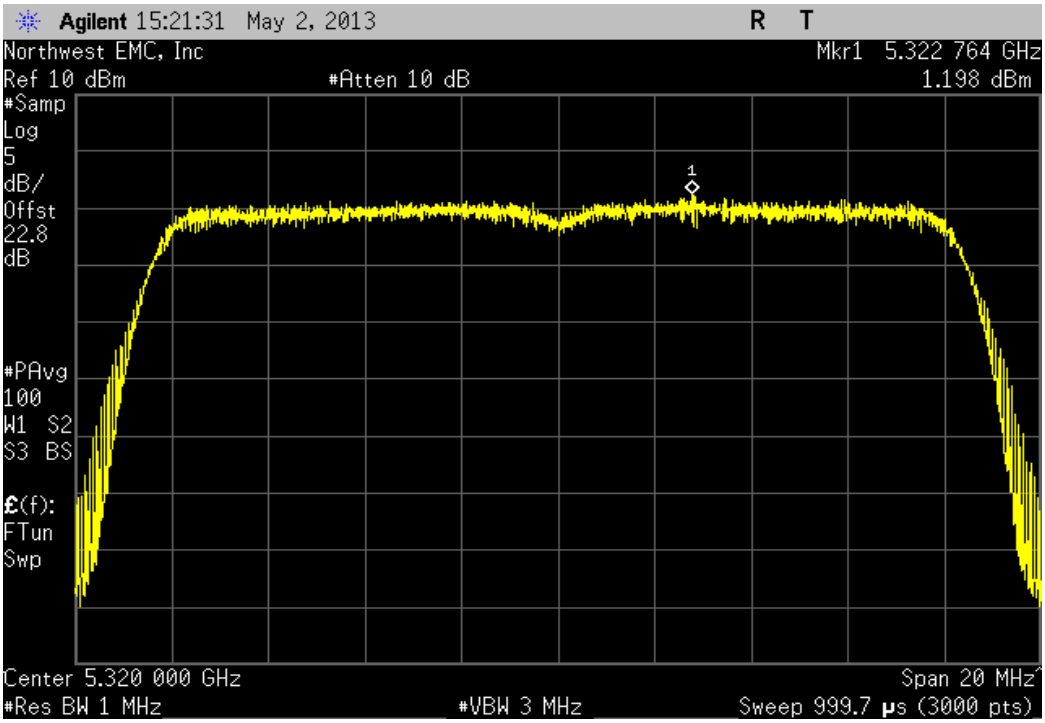
802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel 5260 MHz

| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Result |
|---|---|---|---|---|---|---|
| | | | | 0.993 | 4 | Pass |

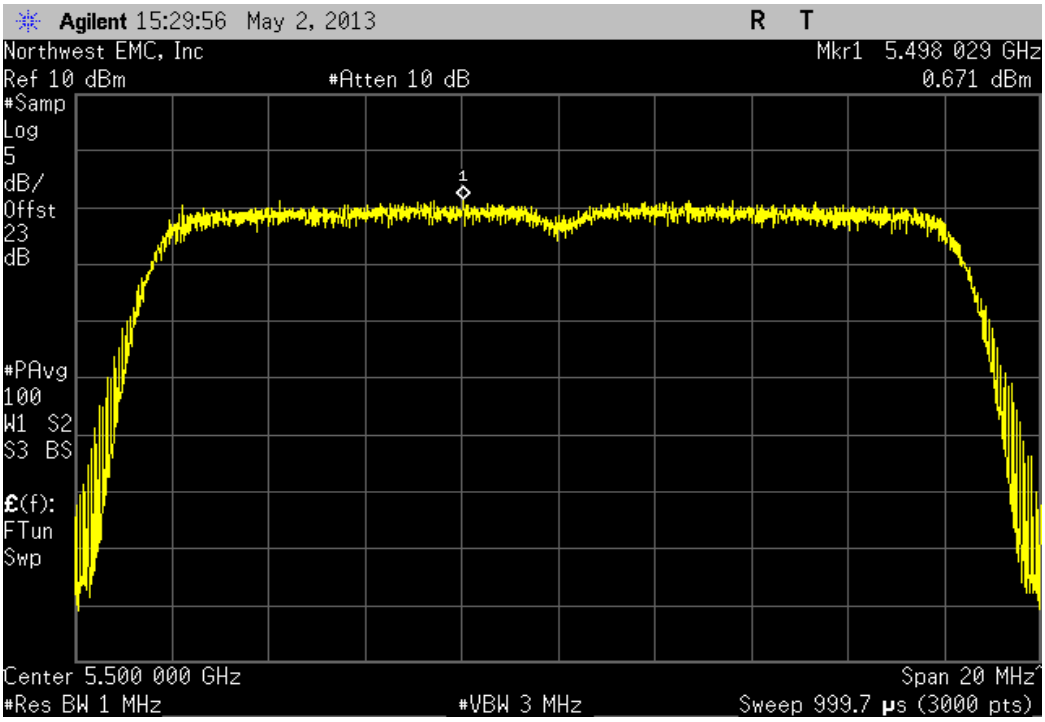



802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel 5320 MHz

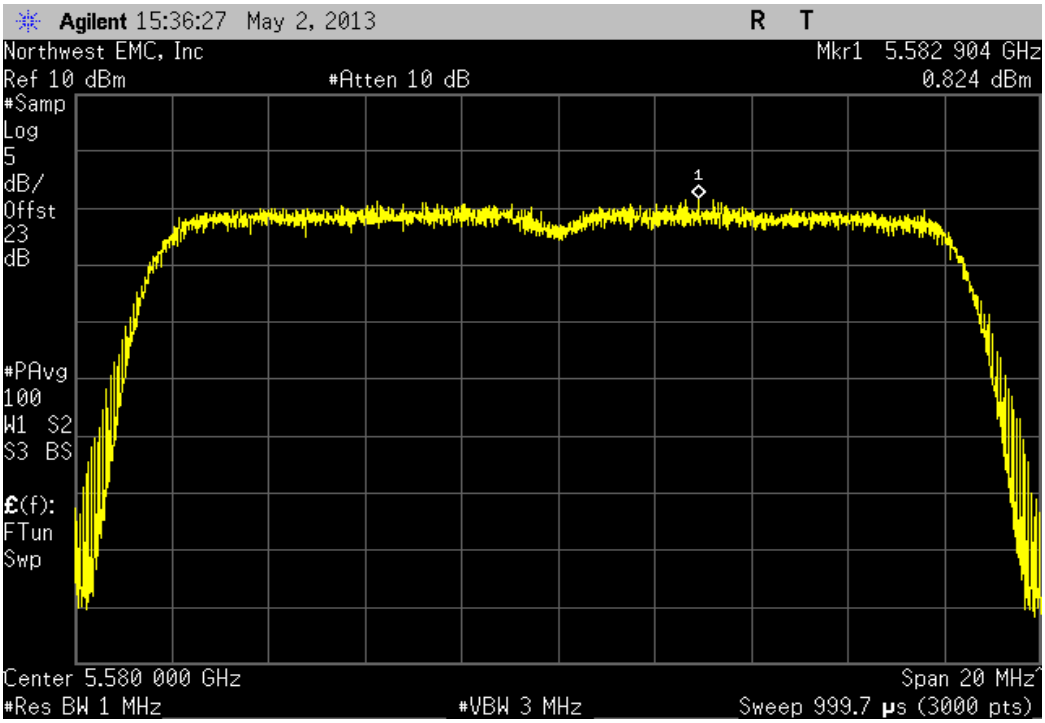
| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Result |
|---|---|---|---|---|---|---|
| | | | | 1.198 | 4 | Pass |



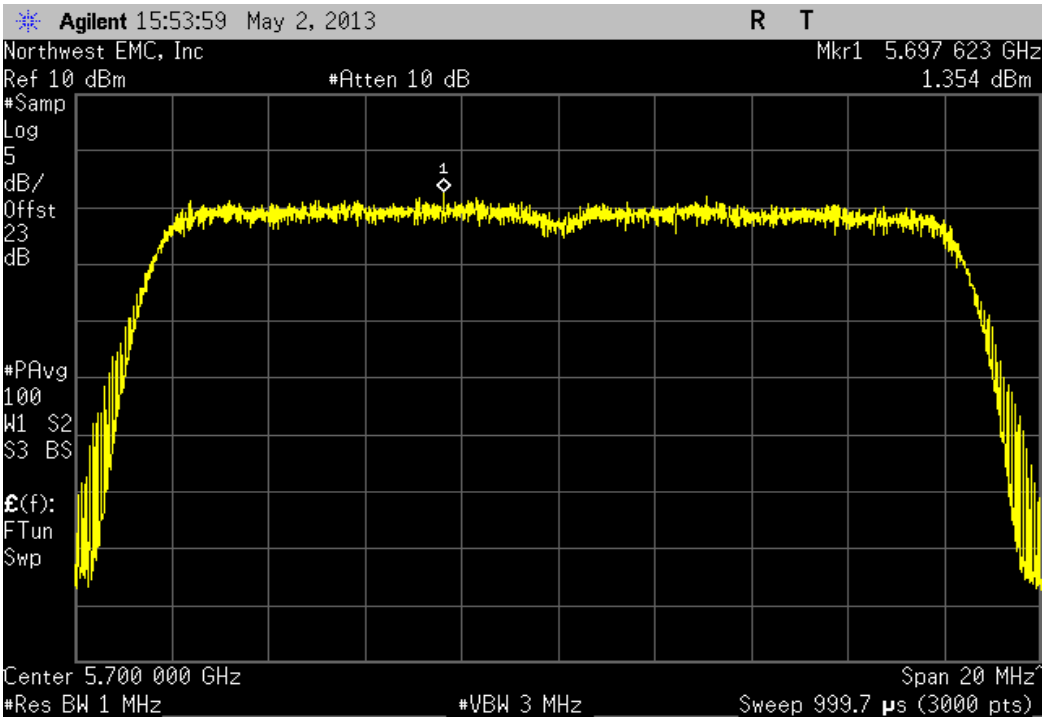
| 802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel 5500 MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Result |
| | | | | | 0.671 | 4 | Pass |



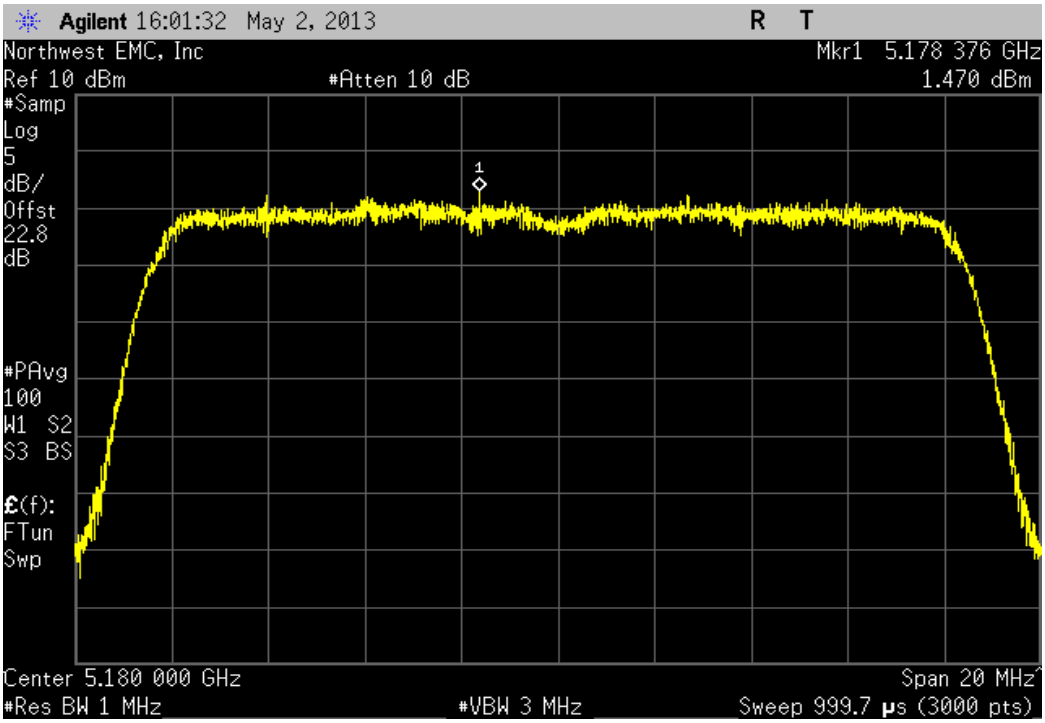

| 802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel 5580 MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Result |
| | | | | | 0.824 | 4 | Pass |



| 802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel5700 MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Result |
| | | | | | 1.354 | 4 | Pass |

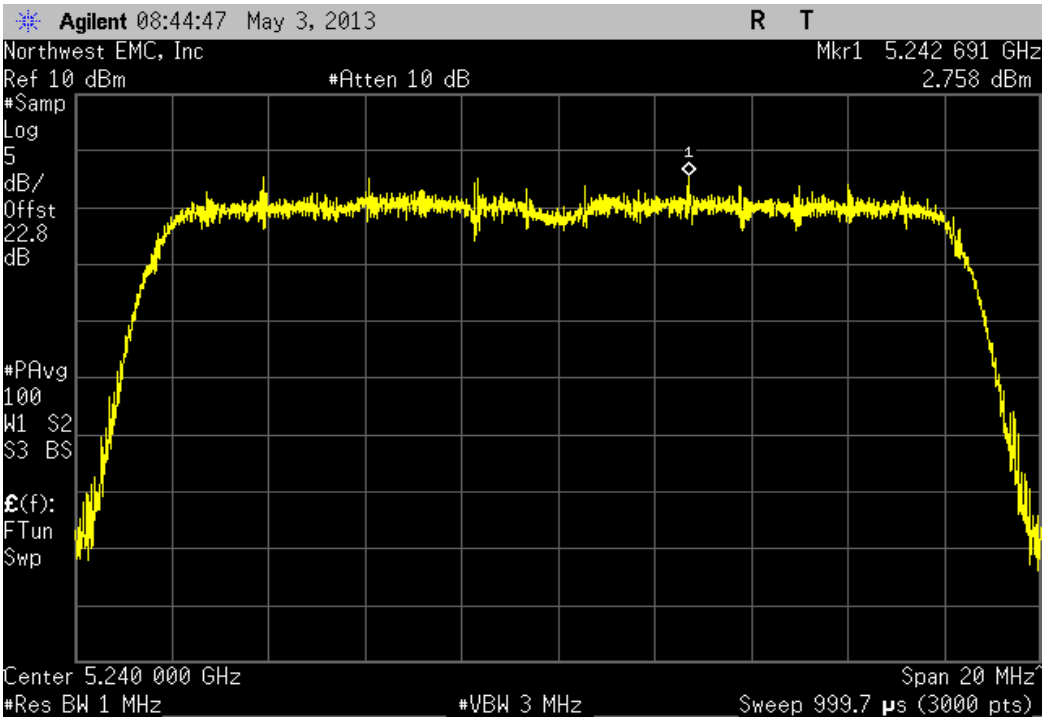



| 802.11(a) 18 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel 5180 MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Result |
| | | | | | 1.47 | 4 | Pass |



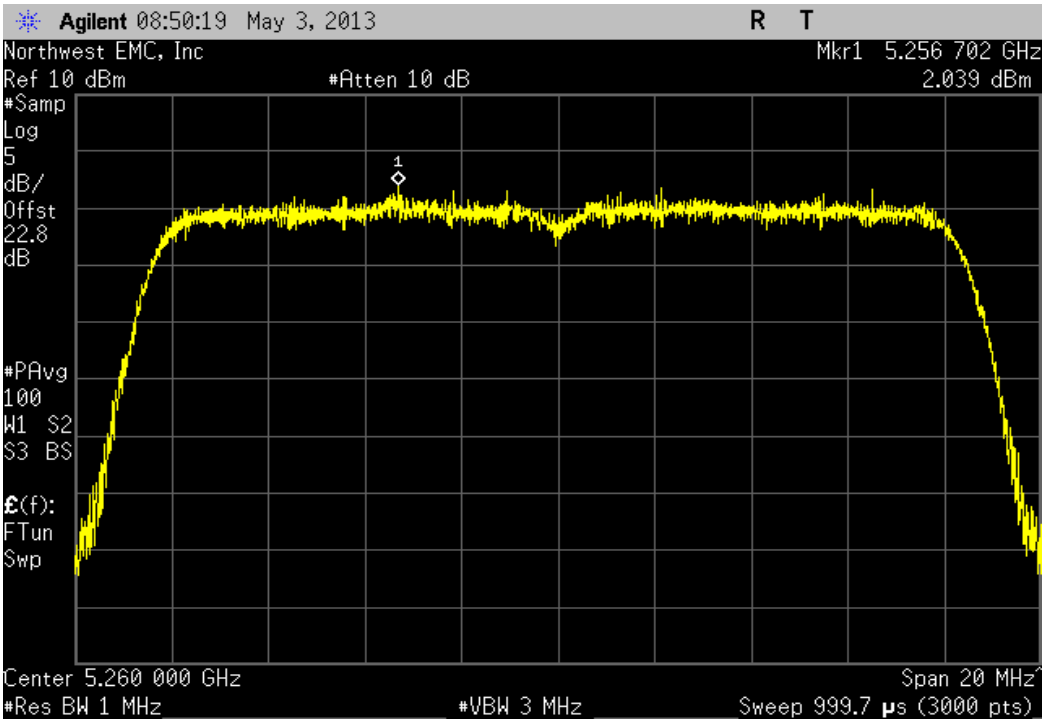
802.11(a) 18 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel 5240 MHz

| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Result |
|---|---|---|---|---|---|---|
| | | | | 2.758 | 4 | Pass |



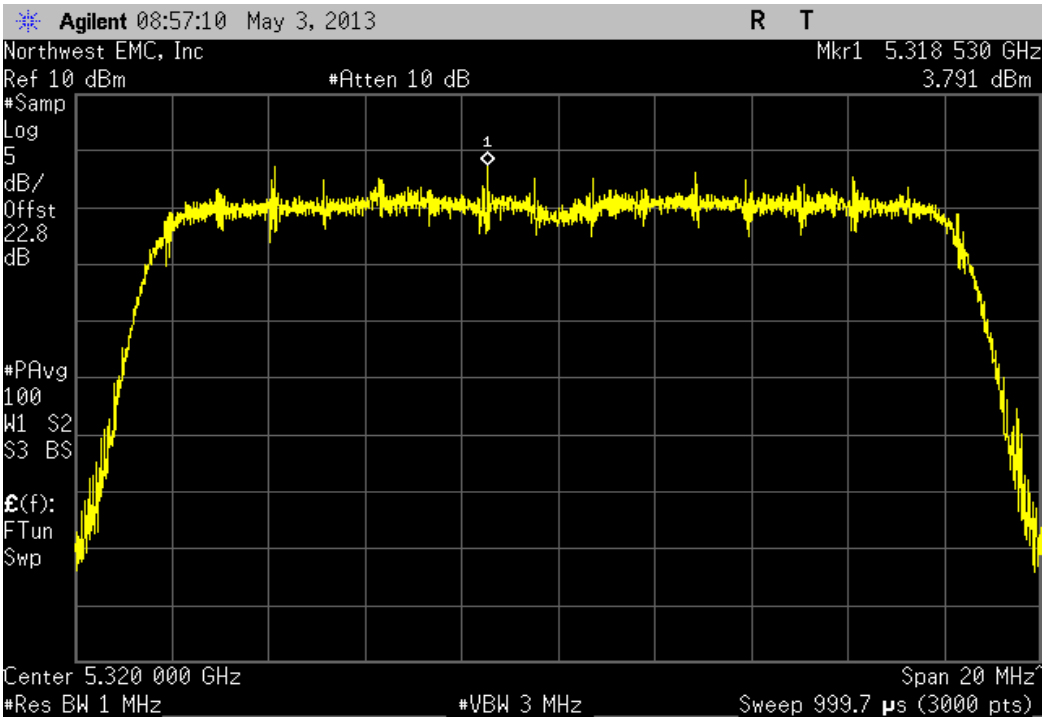

802.11(a) 18 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel 5260 MHz

| | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Result |
|---|---|---|---|---|---|---|
| | | | | 2.039 | 4 | Pass |

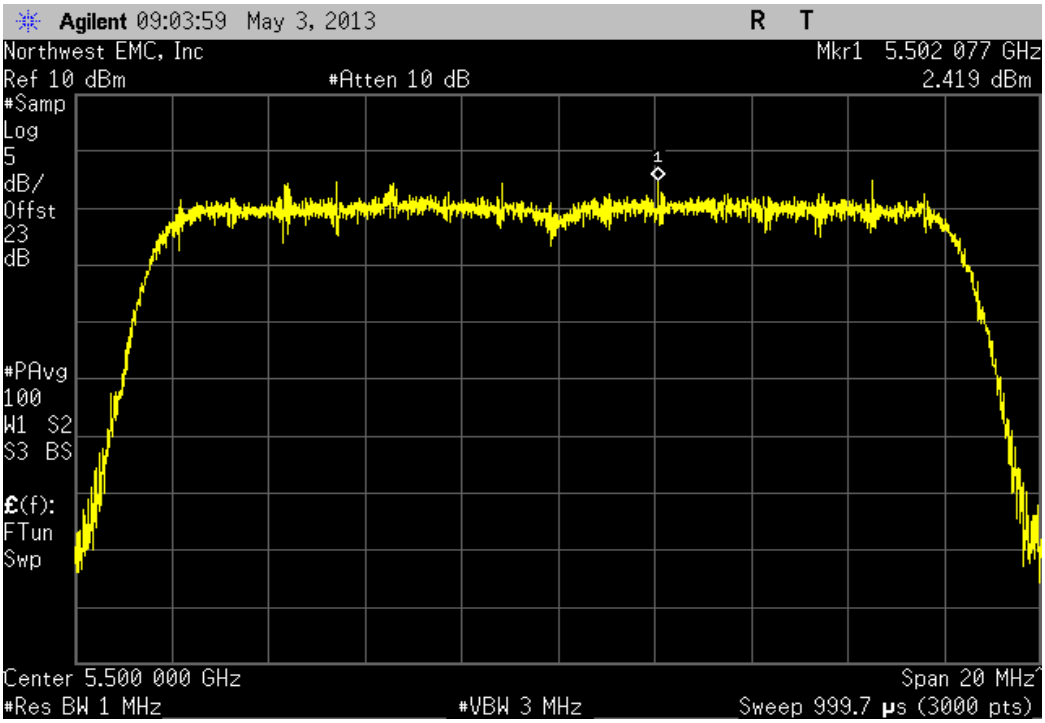


# Peak Power Spectral Density

| 802.11(a) 18 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel 5320 MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Result |
| | | | | | 3.791 | 4 | Pass |

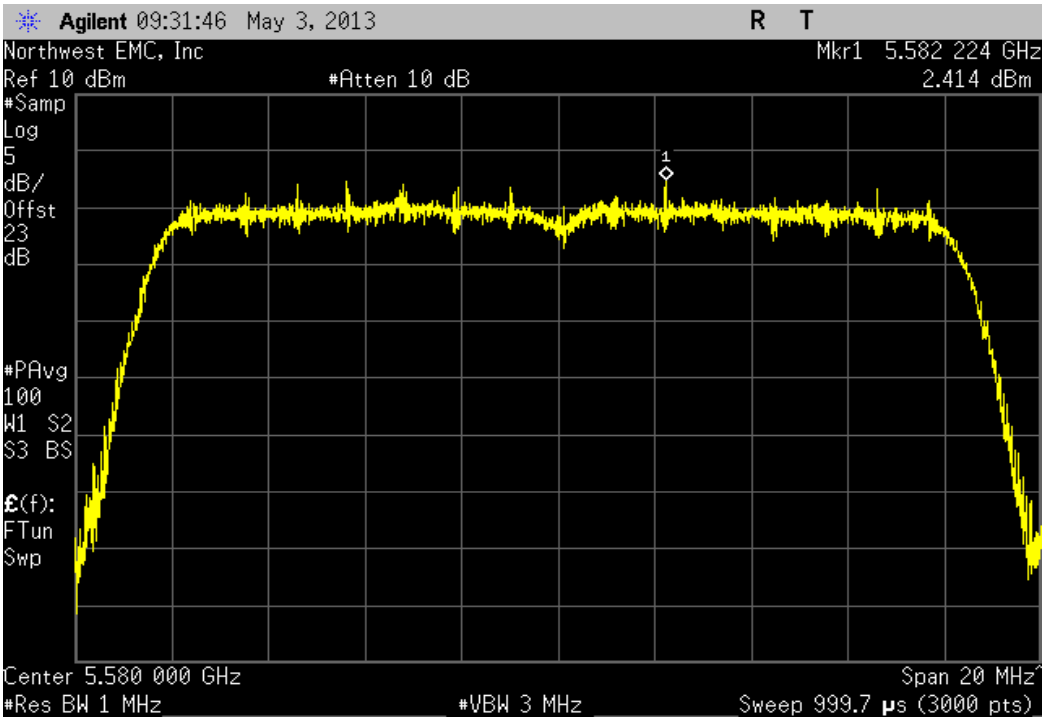



| 802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel 5500 MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Result |
| | | | | | 2.419 | 4 | Pass |

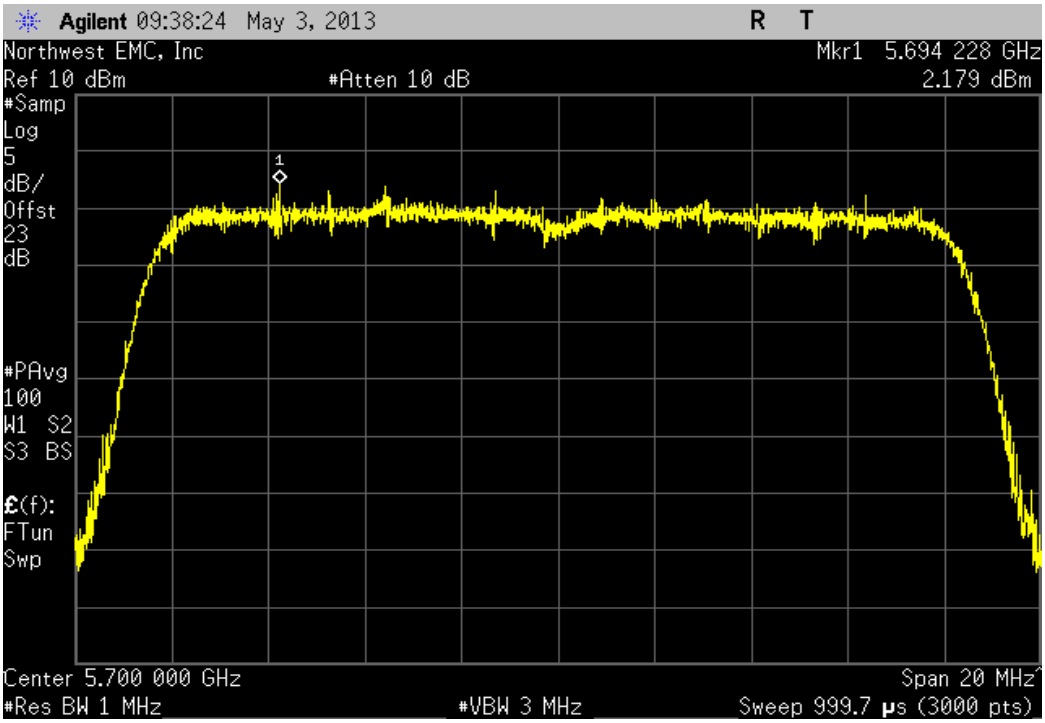


# Peak Power Spectral Density

| 802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel 5580 MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Result |
| | | | | | 2.414 | 4 | Pass |




| 802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel 5700 MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | Value (dBm / MHz) | Limit (dBm / MHz) | Result |
| | | | | | 2.179 | 4 | 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 |
|---|---|---|---|---|---|
| Attenuator, 6dB | S.M. Electronics | 18N-06 | AWN | 3/25/2013 | 12 |
| MXG Vector Signal Generator | Agilent | N5182A | TIF | NCR | 0 |
| Power Meter | Gigatronics | 8651A | SPM | 1/9/2012 | 24 |
| Power Sensor | Gigatronics | 80701A | SPL | 7/8/2011 | 24 |
| EV06 Direct Connect Cable | ESM Cable Corp. | TT | ECA | NCR | 0 |
| Attenuator, 6 dB, 'SMA' | N/A | 93459 3330A-6 | AUF | 3/5/2013 | 12 |
| 40GHz DC Block | Miteq | DCB4000 | AMD | 6/25/2012 | 12 |
| Spectrum Analyzer | Agilent | E4446A | AAQ | 2/7/2012 | 24 |

**TEST DESCRIPTION**

FCC KDB 789033 D01 General UNII Test Procedures Section C was followed. The transmit frequency was set to the lowest, a medium, and the highest channels in each band. The transmit power was set to its default maximum. The data rate(s) listed in the datasheet were measured. 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 = approximately 1.5 to 2 times the emission bandwidth, centered on the transmit channel.
- RBW = Approx. 1% of the emission bandwidth (B). This was an iterative process to determine the RBW based on the emissions bandwidth (B).
- A peak detector was used.

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

# Emission Bandwidth

| | | | | | |
|---|---|---|---|---|---|
| **EUT:** | Model 444-2225 (Athena UFL) | | | **Work Order:** | FOCU0140 |
| **Serial Number:** | 02EA4D000027 | | | **Date:** | 05/03/13 |
| **Customer:** | Summit Semiconductor | | | **Temperature:** | 24°C |
| **Attendees:** | None | | | **Humidity:** | 30% |
| **Project:** | None | | | **Barometric Pres.:** | 1023 |
| **Tested by:** | Brandon Hobbs | **Power:** | 3.3V DC | **Job Site:** | EV06 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.407:2013 | ANSI C63.10:2009 |
| | |

**COMMENTS**

All testing was completed on the highest output power antenna port A2.

**DEVIATIONS FROM TEST STANDARD**

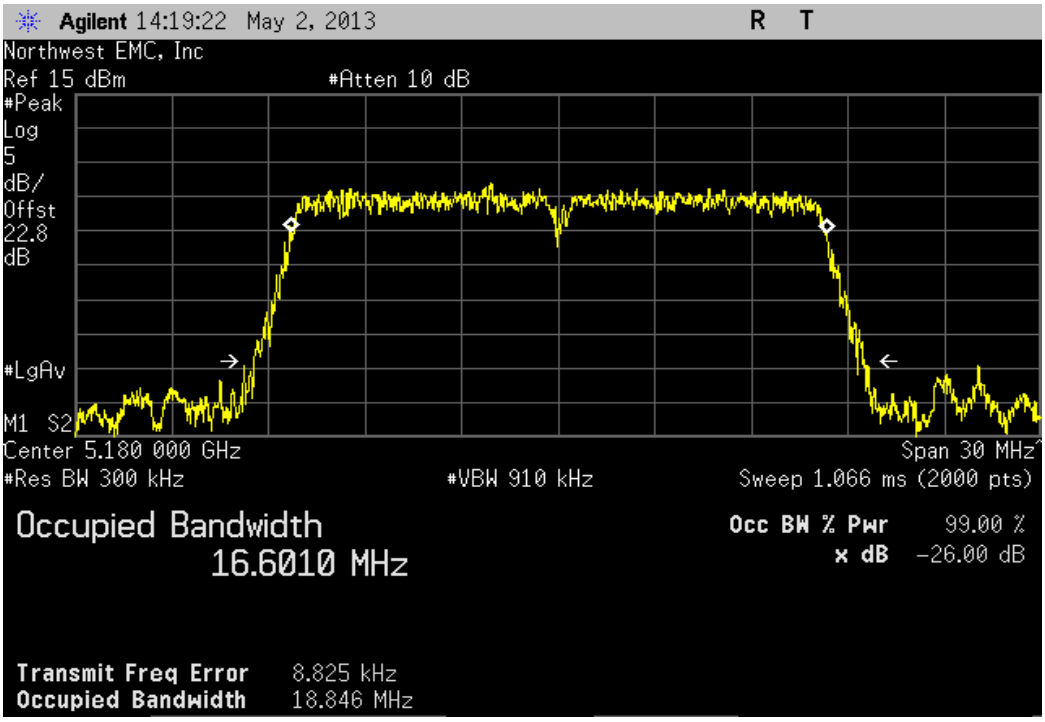
None

| Configuration # | 5 | Signature |
|---|---|---|

| | | Value | Limit | Result |
|---|---|---|---|---|
| 802.11(a) 6 Mbps | | | | |
| | 5150 - 5250 MHz Band | | | |
| | Channel 36, Low Channel 5180 MHz | 18.846 MHz | > 500 kHz | Pass |
| | Channel 48, High Channel 5240 MHz | 18.884 MHz | > 500 kHz | Pass |
| | 5250 - 5350 MHz Band | | | |
| | Channel 52, Low Channel 5260 MHz | 18.752 MHz | > 500 kHz | Pass |
| | Channel 64, High Channel 5320 MHz | 18.822 MHz | > 500 kHz | Pass |
| | 5470 - 5725 MHz Band | | | |
| | Channel 100, Low Channel 5500 MHz | 18.651 MHz | > 500 kHz | Pass |
| | Channel 116, Mid Channel 5580 MHz | 18.764 MHz | > 500 kHz | Pass |
| | Channel 140, High Channel5700 MHz | 18.931 MHz | > 500 kHz | Pass |
| 802.11(a) 18 Mbps | | | | |
| | 5150 - 5250 MHz Band | | | |
| | Channel 36, Low Channel 5180 MHz | 18.505 MHz | > 500 kHz | Pass |
| | Channel 48, High Channel 5240 MHz | 18.563 MHz | > 500 kHz | Pass |
| | 5250 - 5350 MHz Band | | | |
| | Channel 52, Low Channel 5260 MHz | 18.751 MHz | > 500 kHz | Pass |
| | Channel 64, High Channel 5320 MHz | 18.671 MHz | > 500 kHz | Pass |
| | 5470 - 5725 MHz Band | | | |
| | Channel 100, Low Channel 5500 MHz | 18.592 MHz | > 500 kHz | Pass |
| | Channel 116, Mid Channel 5580 MHz | 18.654 MHz | > 500 kHz | Pass |
| | Channel 140, High Channel 5700 MHz | 18.731 MHz | > 500 kHz | Pass |

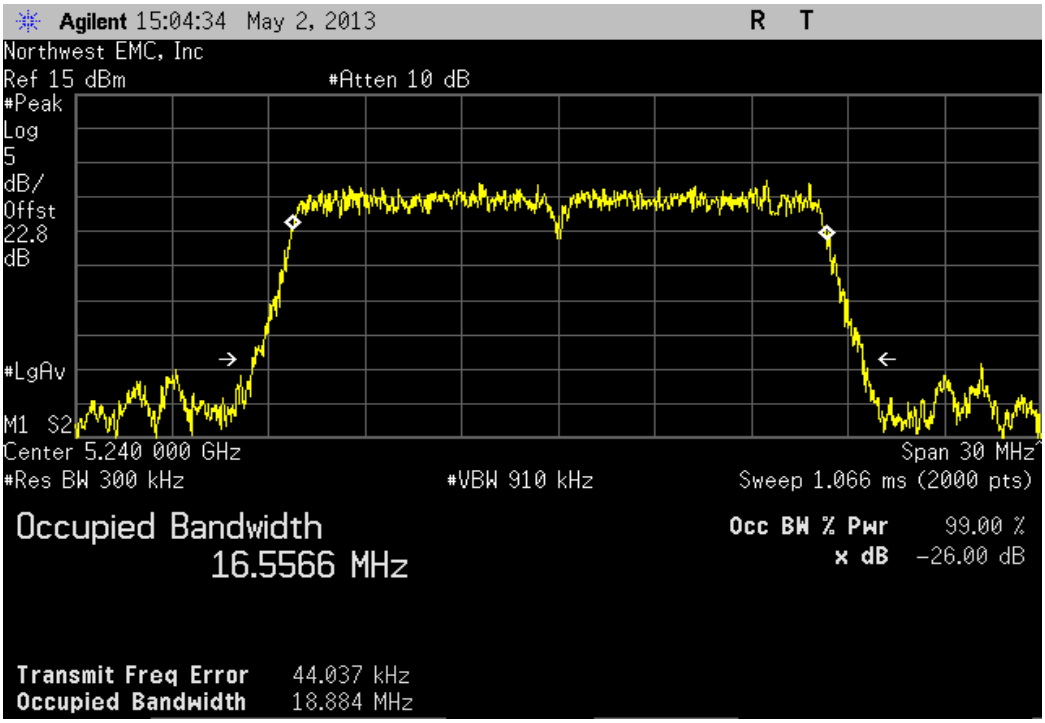
802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel 5180 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 18.846 MHz | > 500 kHz | Pass |



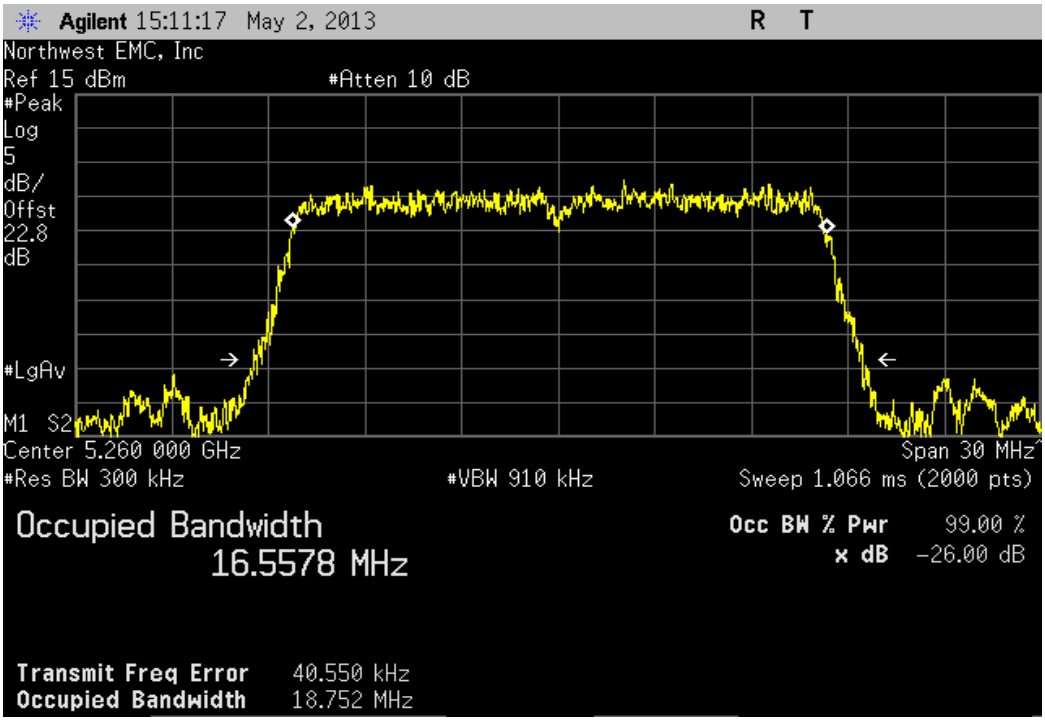

802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel 5240 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 18.884 MHz | > 500 kHz | Pass |



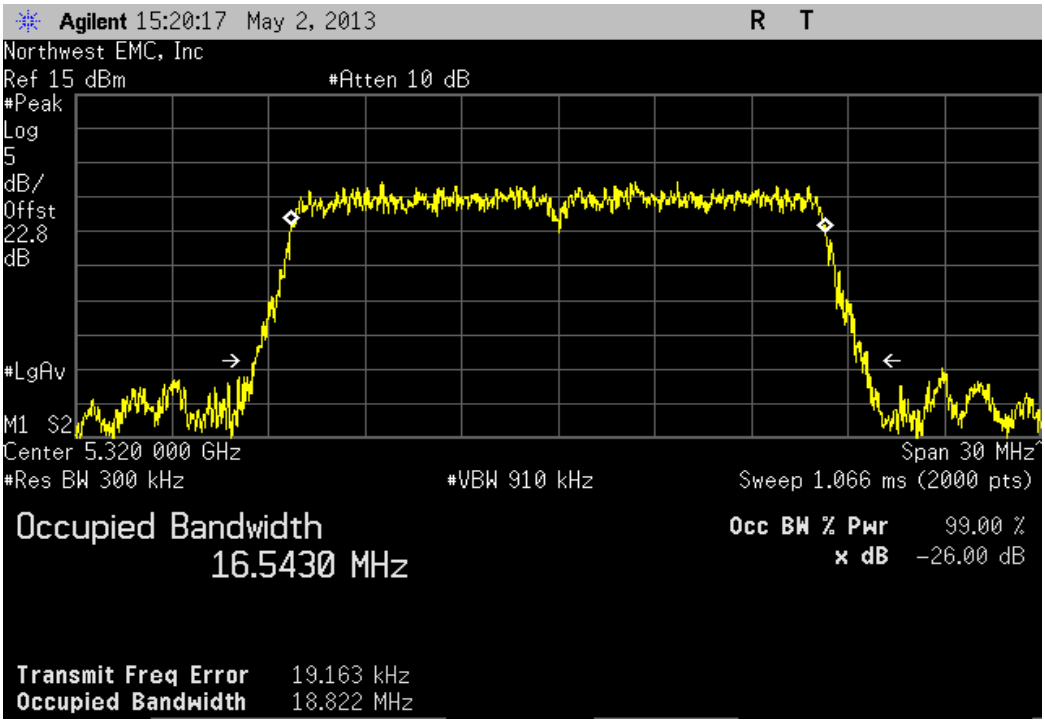
802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel 5260 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 18.752 MHz | > 500 kHz | Pass |



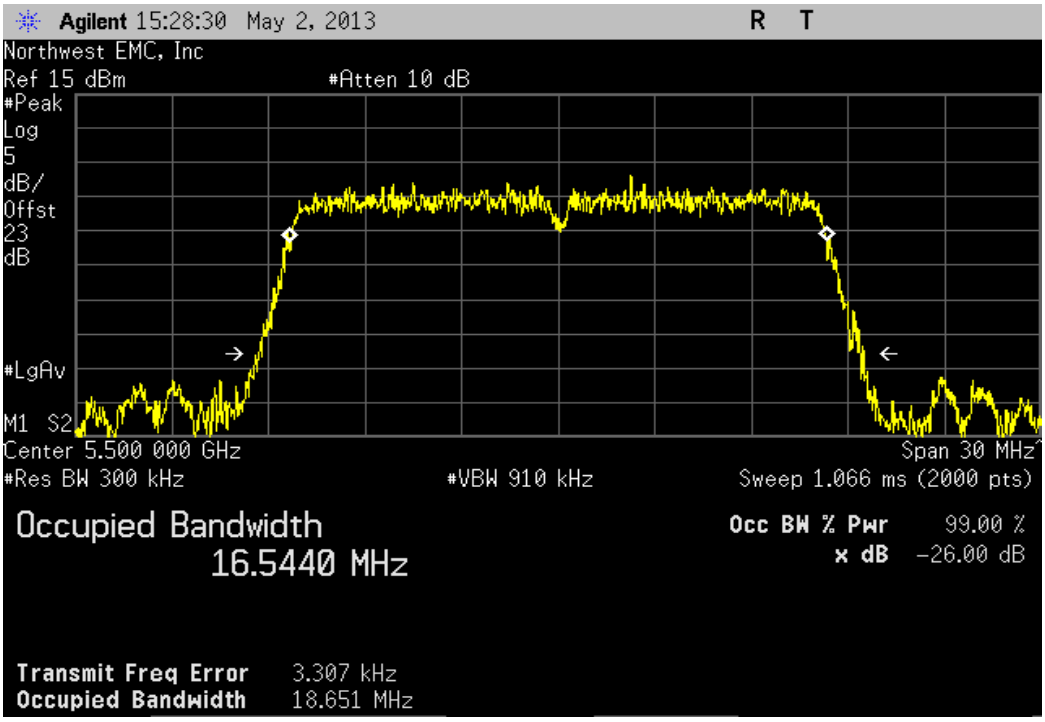

802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel 5320 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 18.822 MHz | > 500 kHz | Pass |



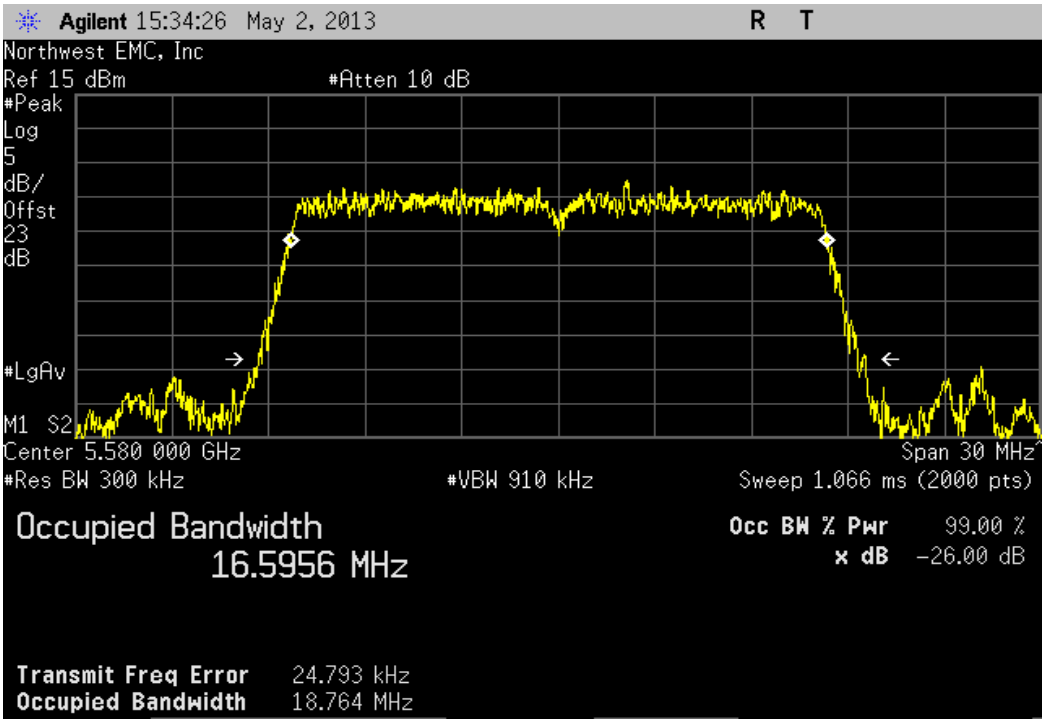
802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel 5500 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 18.651 MHz | > 500 kHz | Pass |



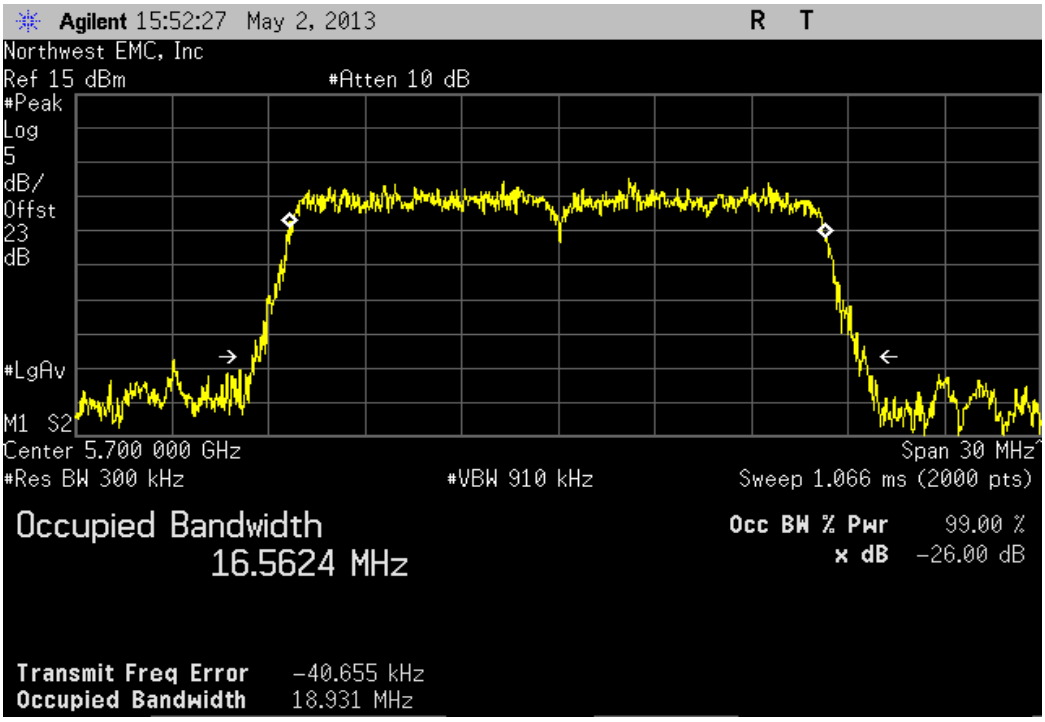

802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel 5580 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 18.764 MHz | > 500 kHz | Pass |



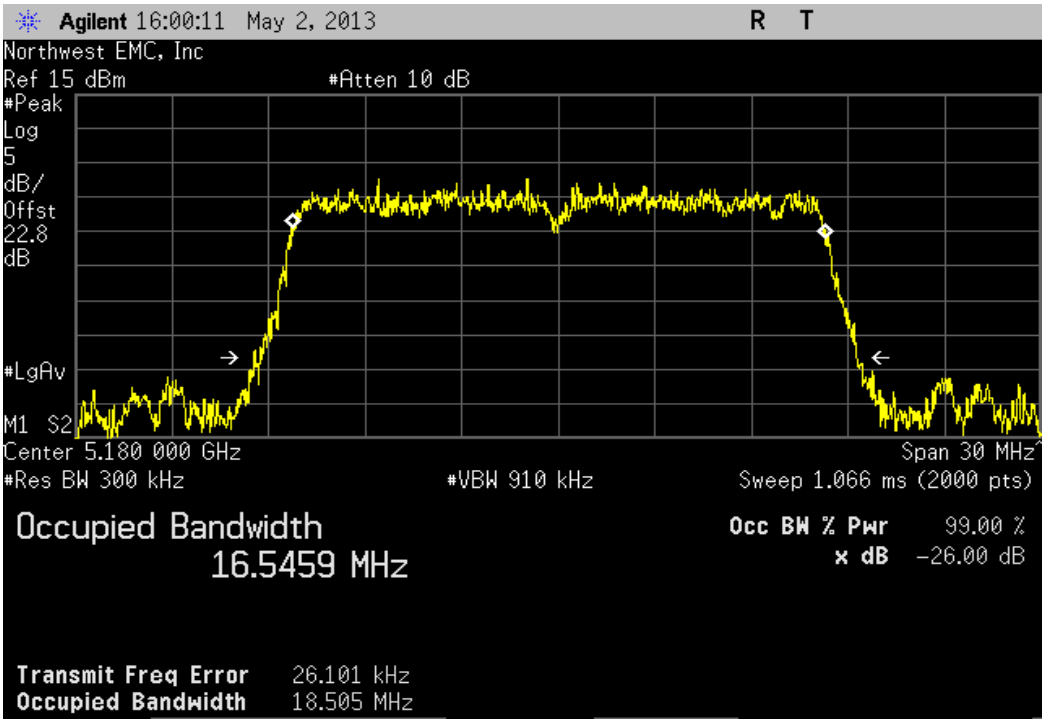
802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel5700 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 18.931 MHz | > 500 kHz | Pass |



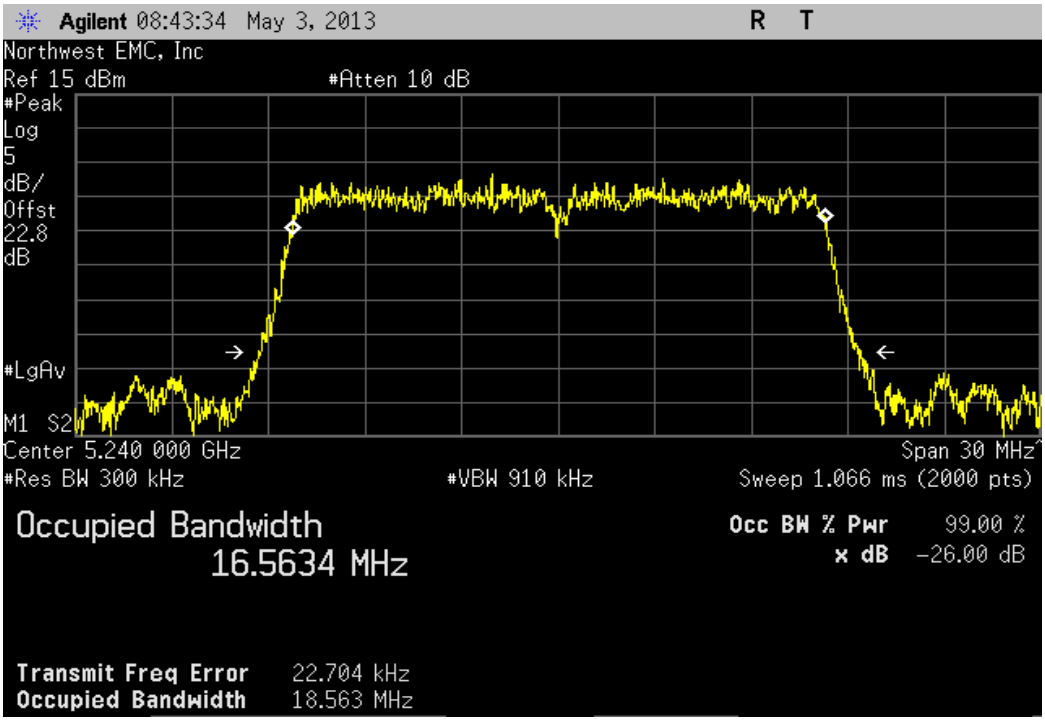

802.11(a) 18 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel 5180 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 18.505 MHz | > 500 kHz | Pass |



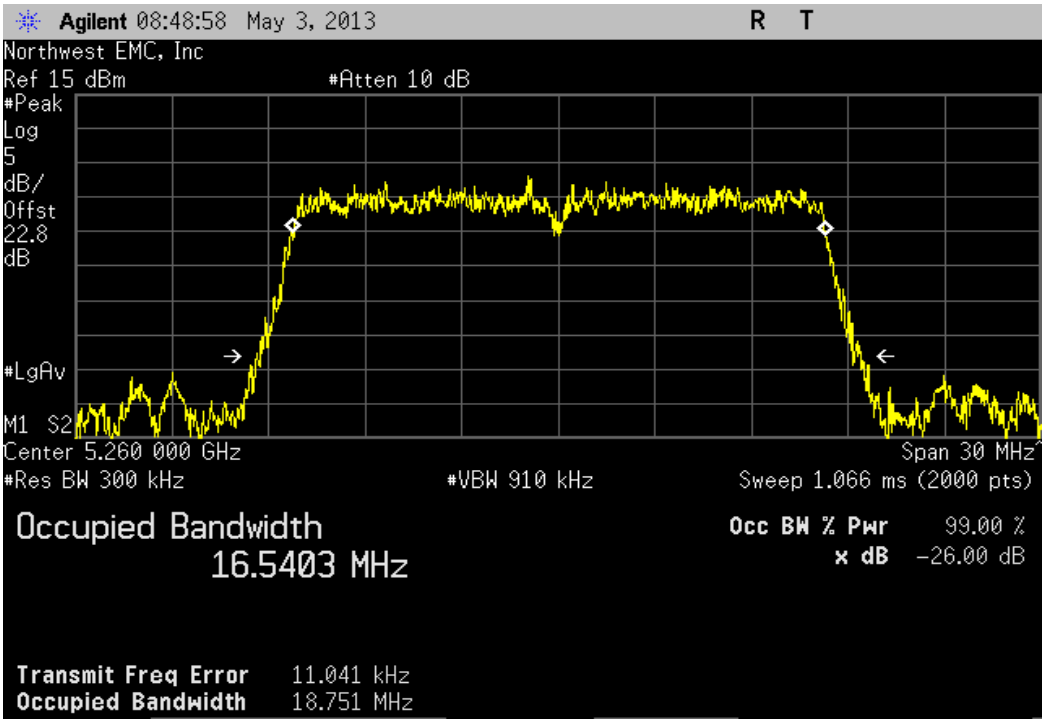
802.11(a) 18 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel 5240 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 18.563 MHz | > 500 kHz | Pass |



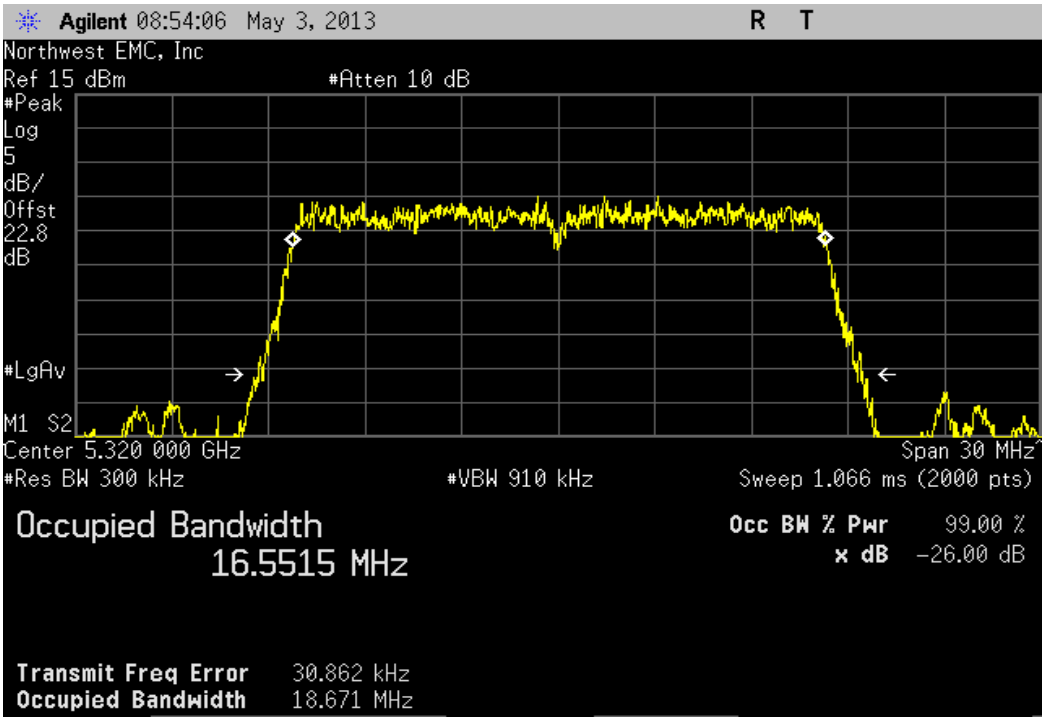

802.11(a) 18 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel 5260 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 18.751 MHz | > 500 kHz | Pass |



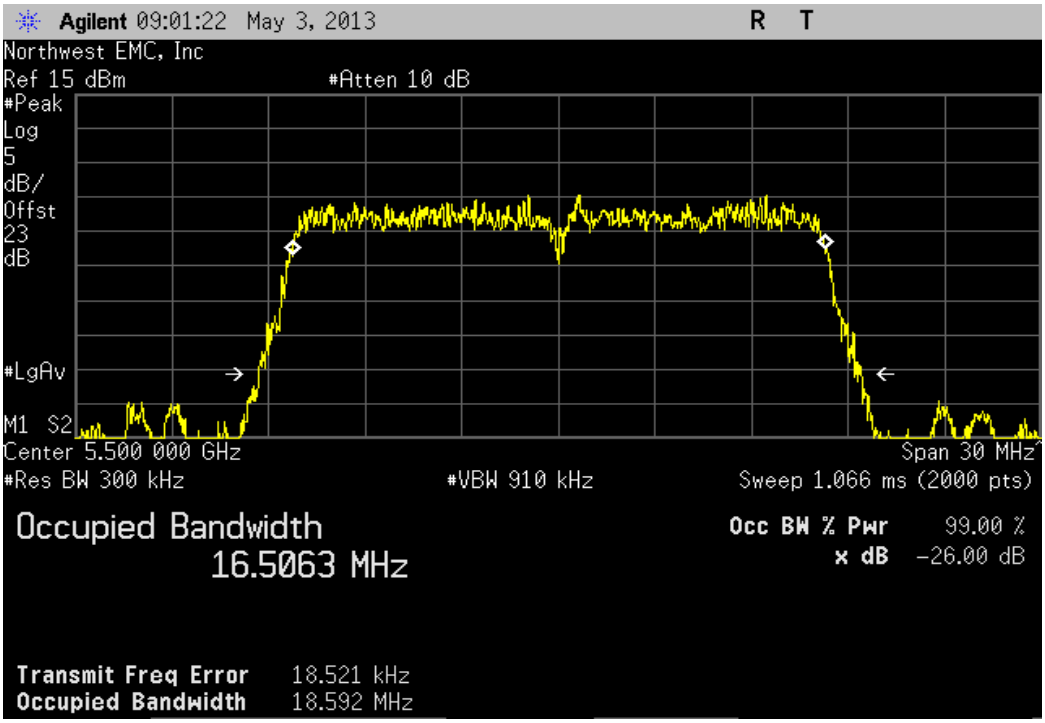
802.11(a) 18 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel 5320 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 18.671 MHz | > 500 kHz | Pass |



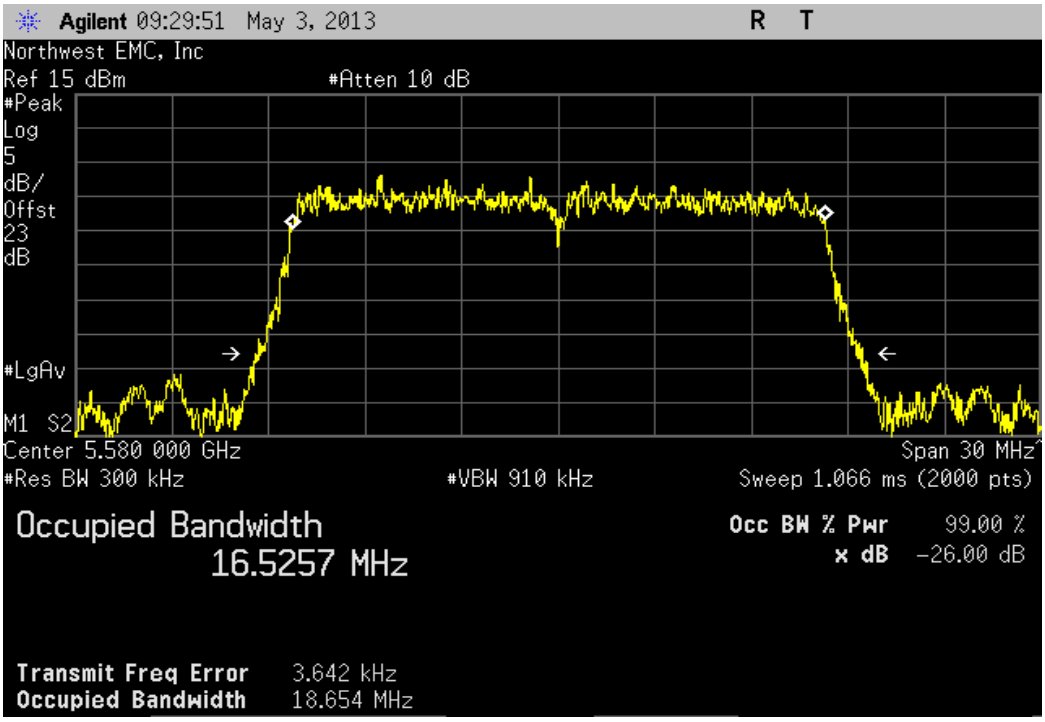

802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel 5500 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 18.592 MHz | > 500 kHz | Pass |



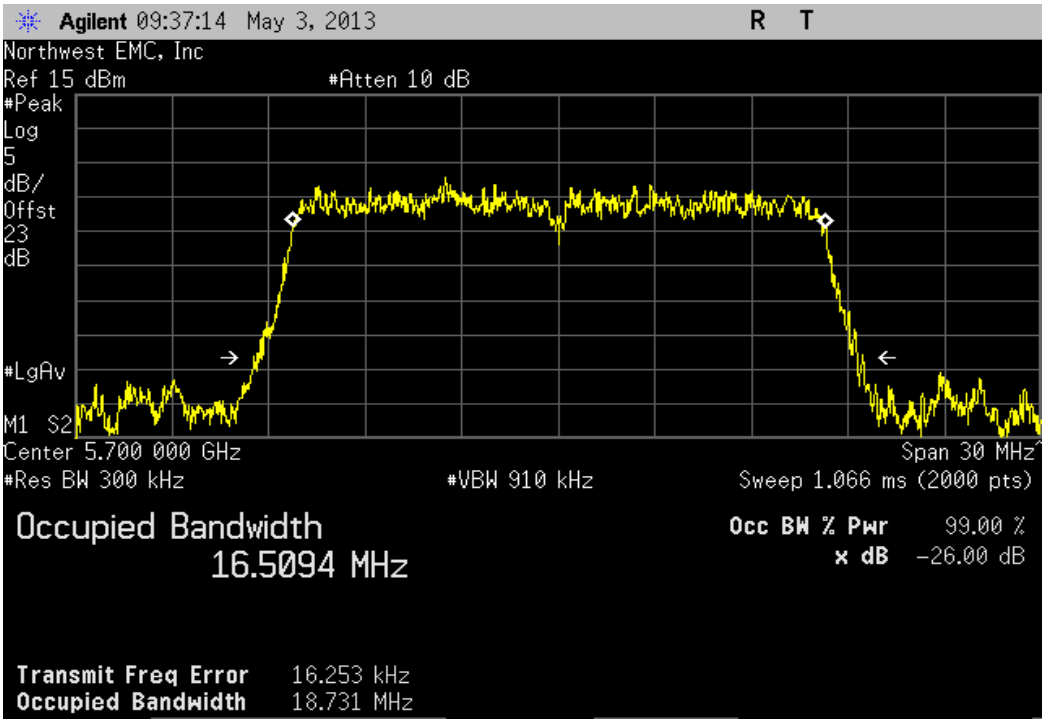
802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel 5580 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 18.654 MHz | > 500 kHz | Pass |




802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel 5700 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 18.731 MHz | > 500 kHz | Pass |



# Peak Excursion

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, 6dB | S.M. Electronics | 18N-06 | AWN | 3/25/2013 | 12 |
| MXG Vector Signal Generator | Agilent | N5182A | TIF | NCR | 0 |
| Power Meter | Gigatronics | 8651A | SPM | 1/9/2012 | 24 |
| Power Sensor | Gigatronics | 80701A | SPL | 7/8/2011 | 24 |
| EV06 Direct Connect Cable | ESM Cable Corp. | TT | ECA | NCR | 0 |
| Attenuator, 6 dB, 'SMA' | N/A | 93459 3330A-6 | AUF | 3/5/2013 | 12 |
| 40GHz DC Block | Miteq | DCB4000 | AMD | 6/25/2012 | 12 |
| Spectrum Analyzer | Agilent | E4446A | AAQ | 2/7/2012 | 24 |

**TEST DESCRIPTION**

FCC KDB 789033 D01 General UNII Test Procedures Section G 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..

# Peak Excursion

| | | | | | |
|---|---|---|---|---|---|
| **EUT:** | Model 444-2225 (Athena UFL) | | | **Work Order:** | FOCU0140 |
| **Serial Number:** | 02EA4D000027 | | | **Date:** | 05/03/13 |
| **Customer:** | Summit Semiconductor | | | **Temperature:** | 24°C |
| **Attendees:** | None | | | **Humidity:** | 30% |
| **Project:** | None | | | **Barometric Pres.:** | 1023 |
| **Tested by:** | Brandon Hobbs | **Power:** | 3.3V DC | **Job Site:** | EV06 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.407:2013 | ANSI C63.10:2009 |
| | |

**COMMENTS**

All testing was completed on the highest output power antenna port A2.

**DEVIATIONS FROM TEST STANDARD**

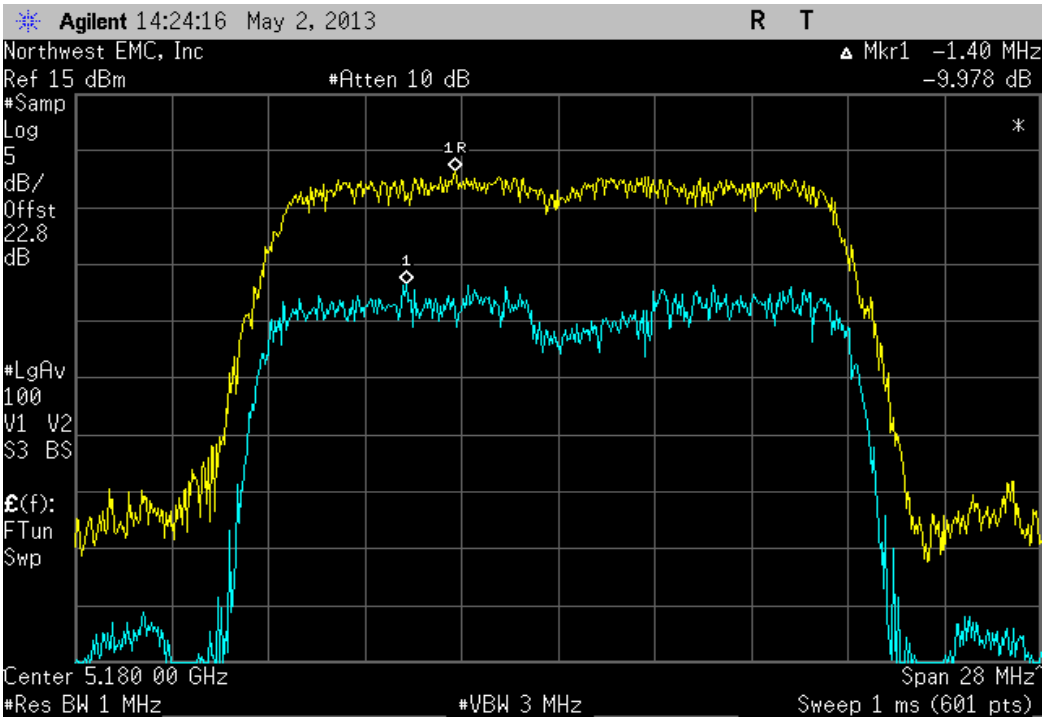
None

| Configuration # | 5 | Signature |
|---|---|---|

| | | Value | Limit | Result |
|---|---|---|---|---|
| 802.11(a) 6 Mbps | | | | |
| | 5150 - 5250 MHz Band | | | |
| | Channel 36, Low Channel 5180 MHz | 9.978 dB | ≤ 13 dB | Pass |
| | Channel 48, High Channel 5240 MHz | 9.73 dB | ≤ 13 dB | Pass |
| | 5250 - 5350 MHz Band | | | |
| | Channel 52, Low Channel 5260 MHz | 10.042 dB | ≤ 13 dB | Pass |
| | Channel 64, High Channel 5320 MHz | 8.536 dB | ≤ 13 dB | Pass |
| | 5470 - 5725 MHz Band | | | |
| | Channel 100, Low Channel 5500 MHz | 9.138 dB | ≤ 13 dB | Pass |
| | Channel 116, Mid Channel 5580 MHz | 8.704 dB | ≤ 13 dB | Pass |
| | Channel 140, High Channel5700 MHz | 9.266 dB | ≤ 13 dB | Pass |
| 802.11(a) 18 Mbps | | | | |
| | 5150 - 5250 MHz Band | | | |
| | Channel 36, Low Channel 5180 MHz | 10.315 dB | ≤ 13 dB | Pass |
| | Channel 48, High Channel 5240 MHz | 9.843 dB | ≤ 13 dB | Pass |
| | 5250 - 5350 MHz Band | | | |
| | Channel 52, Low Channel 5260 MHz | 10.34 dB | ≤ 13 dB | Pass |
| | Channel 64, High Channel 5320 MHz | 10.866 dB | ≤ 13 dB | Pass |
| | 5470 - 5725 MHz Band | | | |
| | Channel 100, Low Channel 5500 MHz | 9.712 dB | ≤ 13 dB | Pass |
| | Channel 116, Mid Channel 5580 MHz | 9.036 dB | ≤ 13 dB | Pass |
| | Channel 140, High Channel 5700 MHz | 10.042 dB | ≤ 13 dB | Pass |

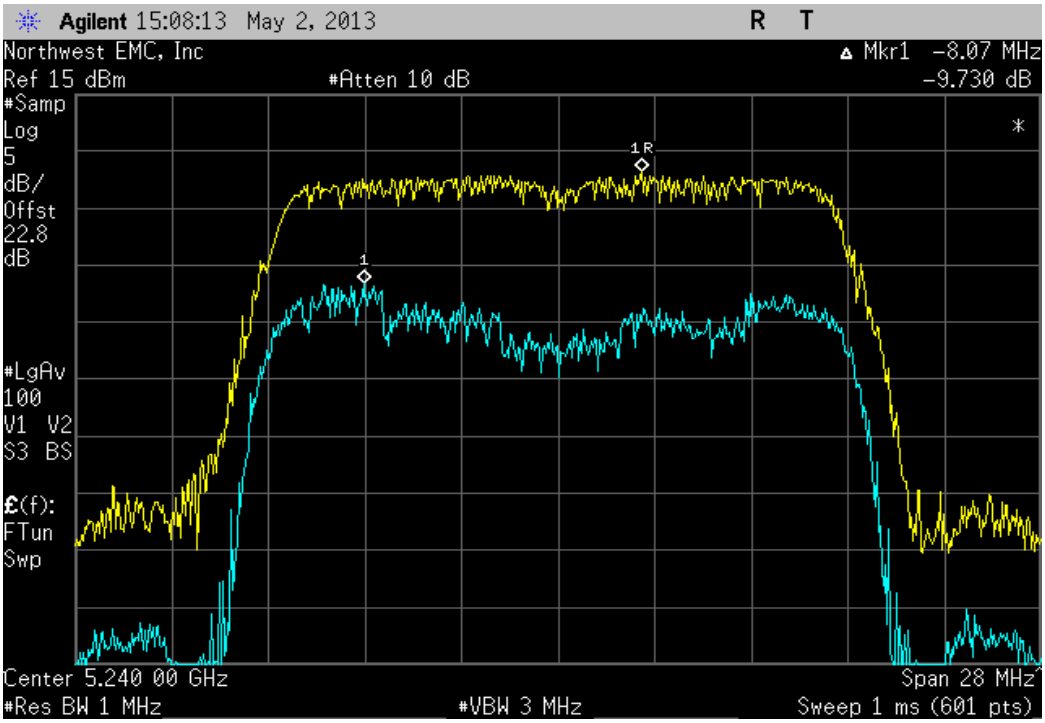
802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel 5180 MHz

| Value | Limit | Result |
|---|---|---|
| 9.978 dB | ≤ 13 dB | Pass |




802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel 5240 MHz

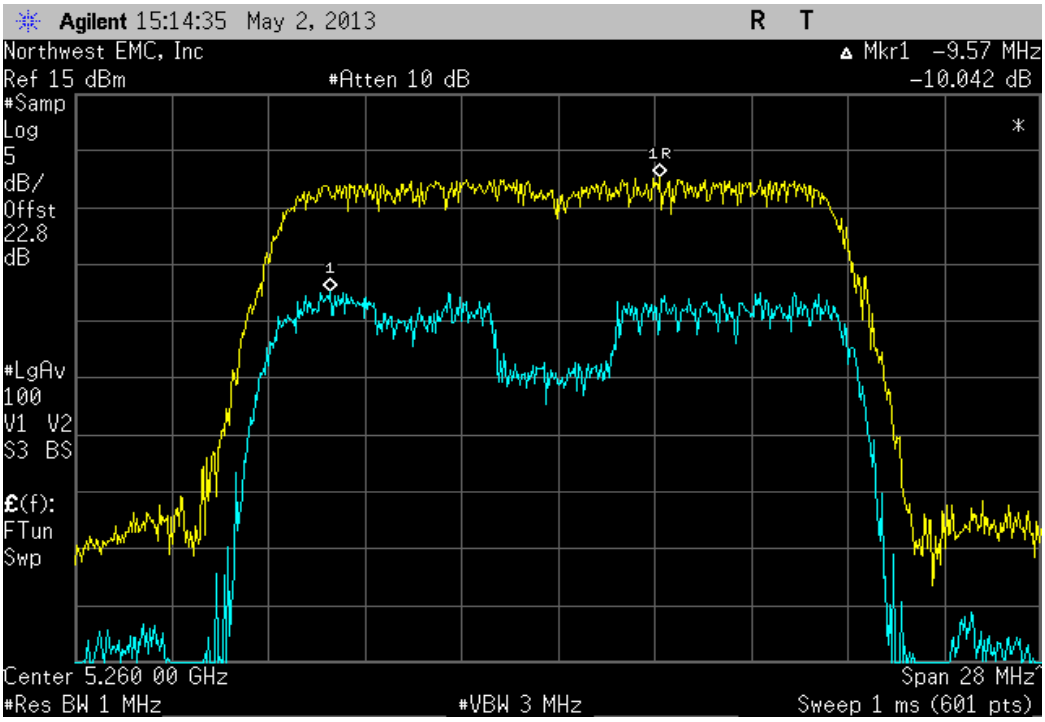
| Value | Limit | Result |
|---|---|---|
| 9.73 dB | ≤ 13 dB | Pass |



# Peak Excursion

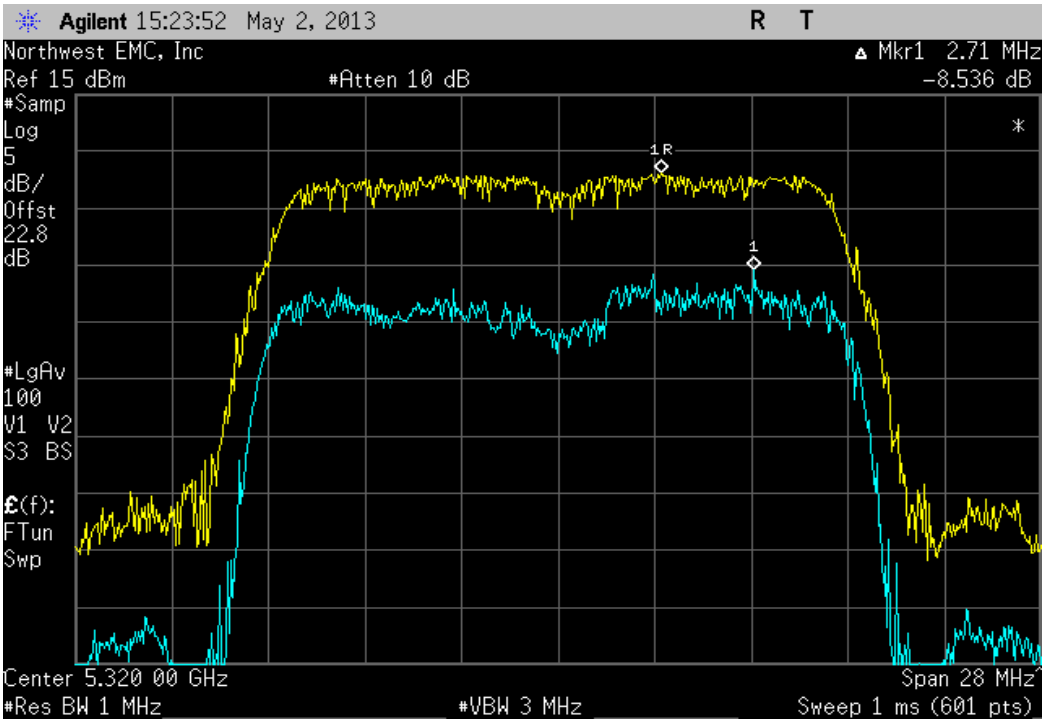
802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel 5260 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 10.042 dB | ≤ 13 dB | Pass |




802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel 5320 MHz

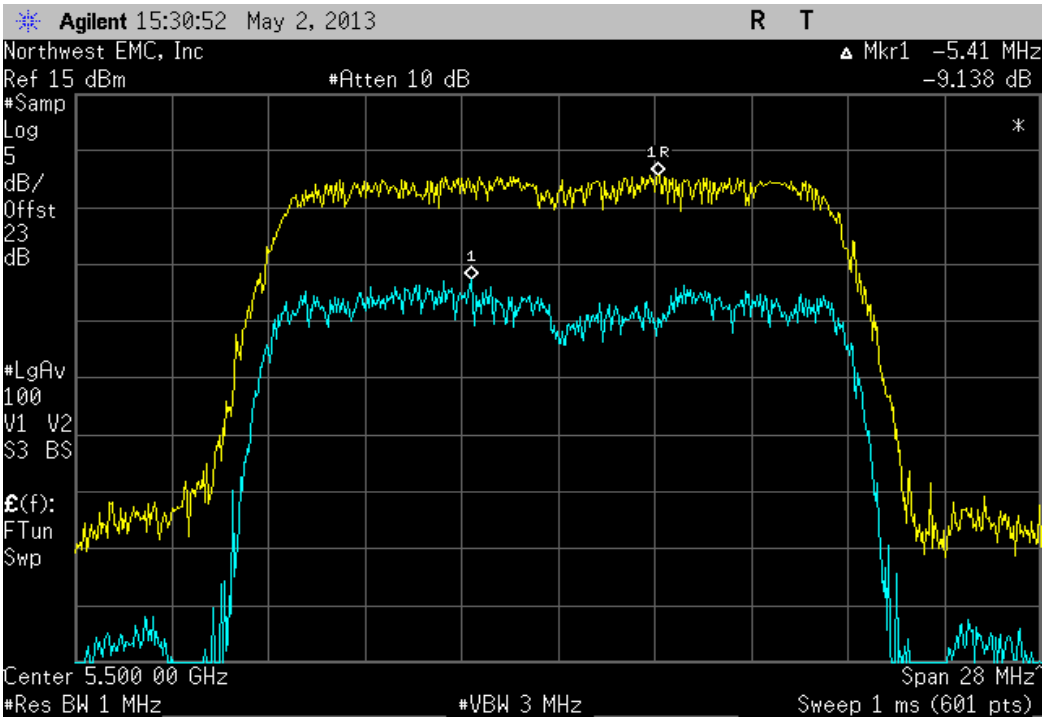
| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 8.536 dB | ≤ 13 dB | Pass |



# Peak Excursion

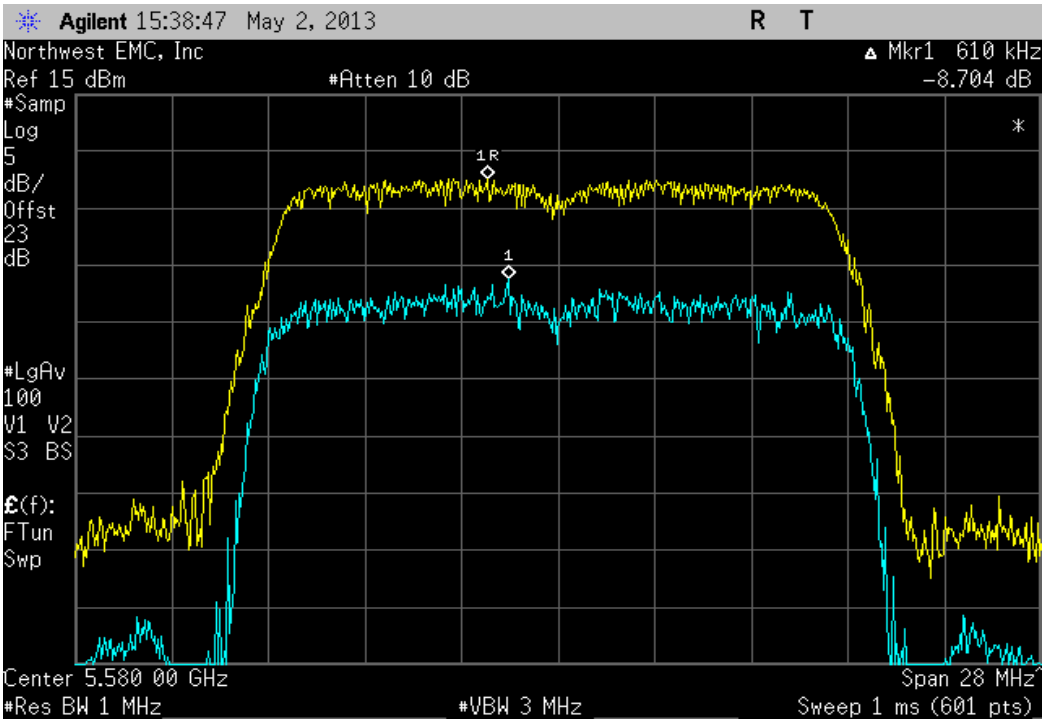
802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel 5500 MHz

| Value | Limit | Result |
|---|---|---|
| 9.138 dB | ≤ 13 dB | Pass |



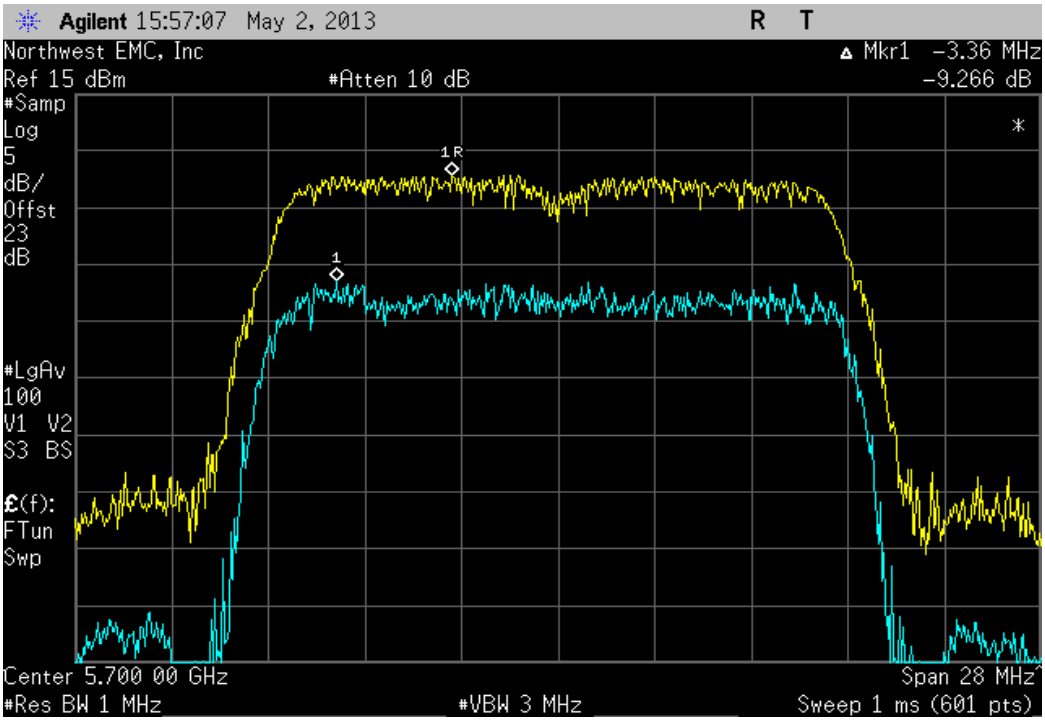

802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel 5580 MHz

| Value | Limit | Result |
|---|---|---|
| 8.704 dB | ≤ 13 dB | Pass |



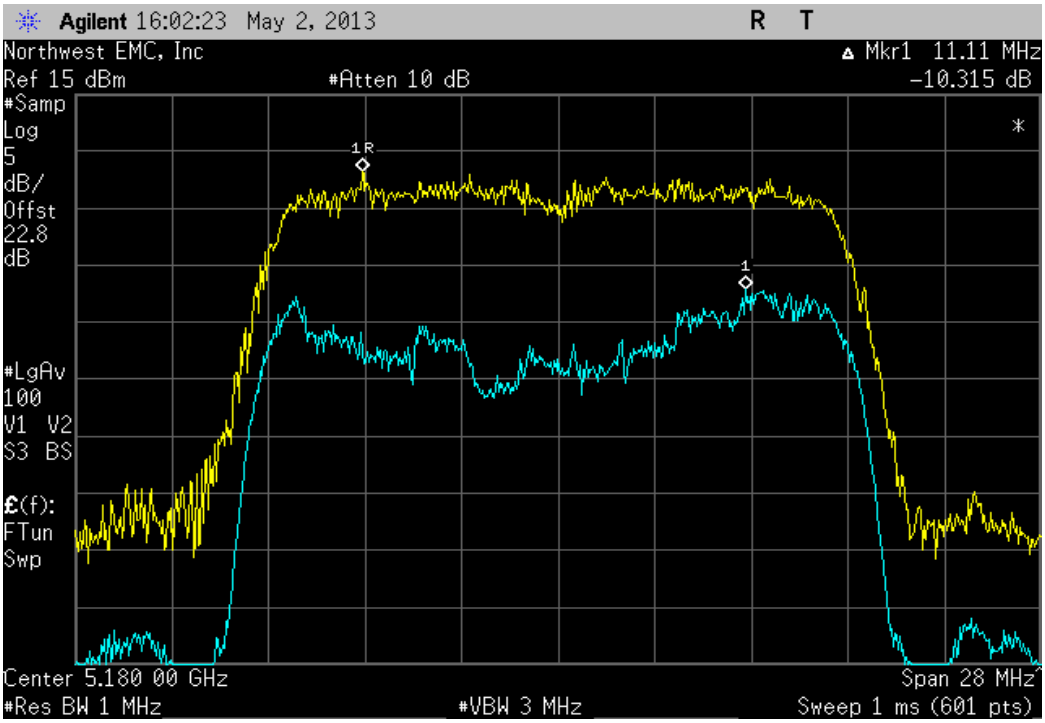
802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel5700 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 9.266 dB | ≤ 13 dB | Pass |



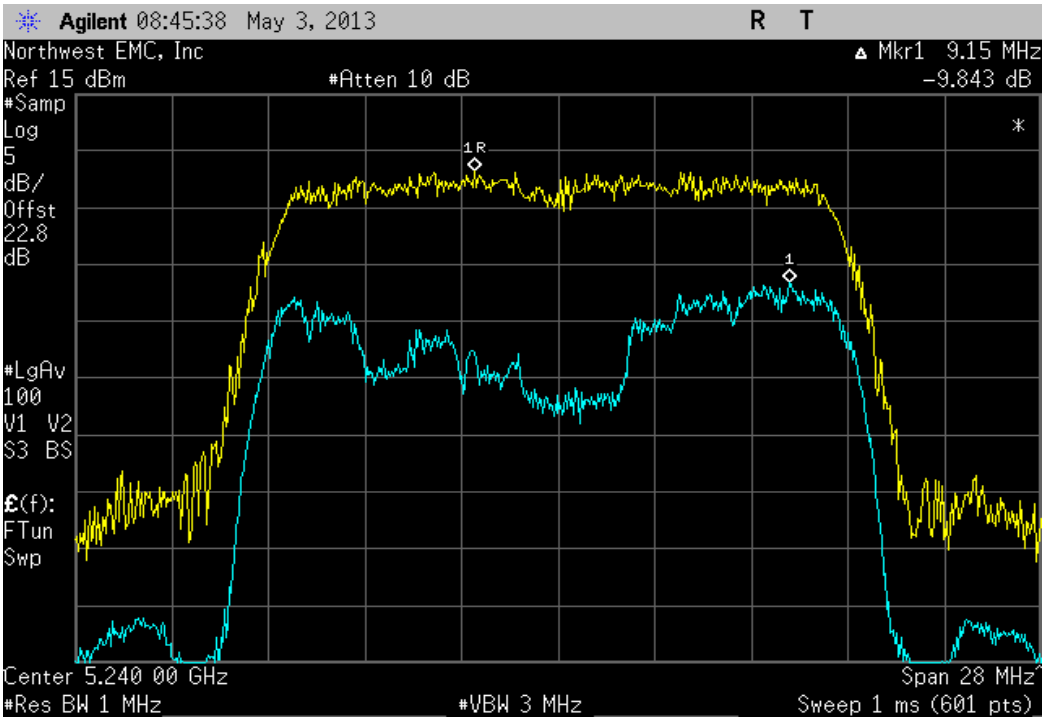

802.11(a) 18 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel 5180 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 10.315 dB | ≤ 13 dB | Pass |



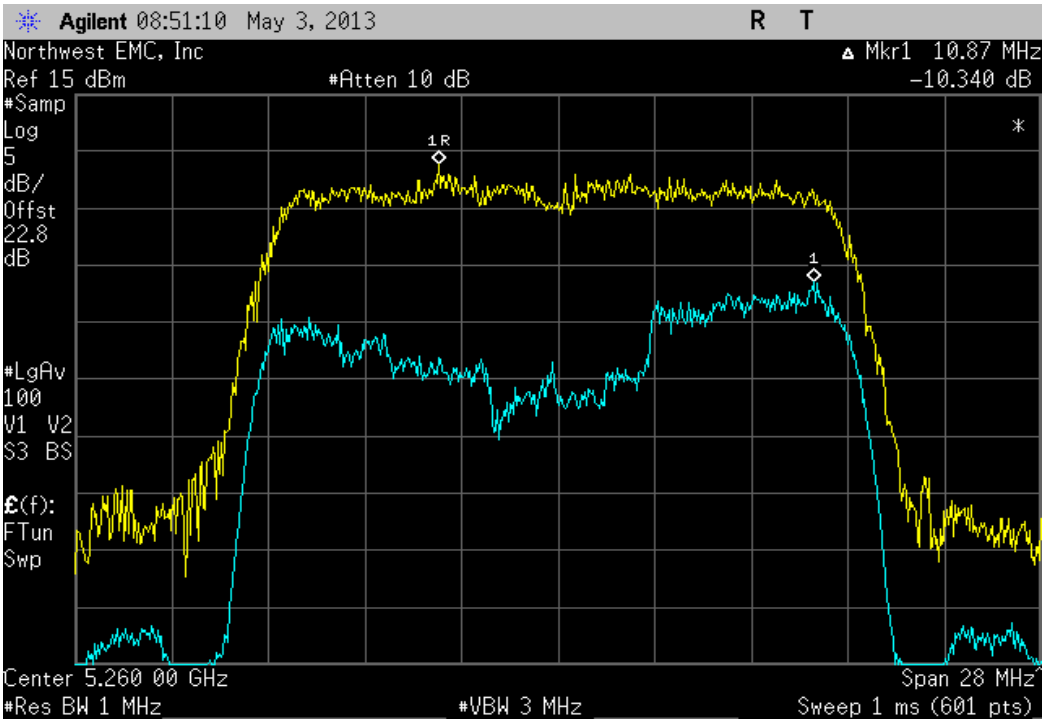
802.11(a) 18 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel 5240 MHz

| Value | Limit | Result |
|---|---|---|
| 9.843 dB | ≤ 13 dB | Pass |



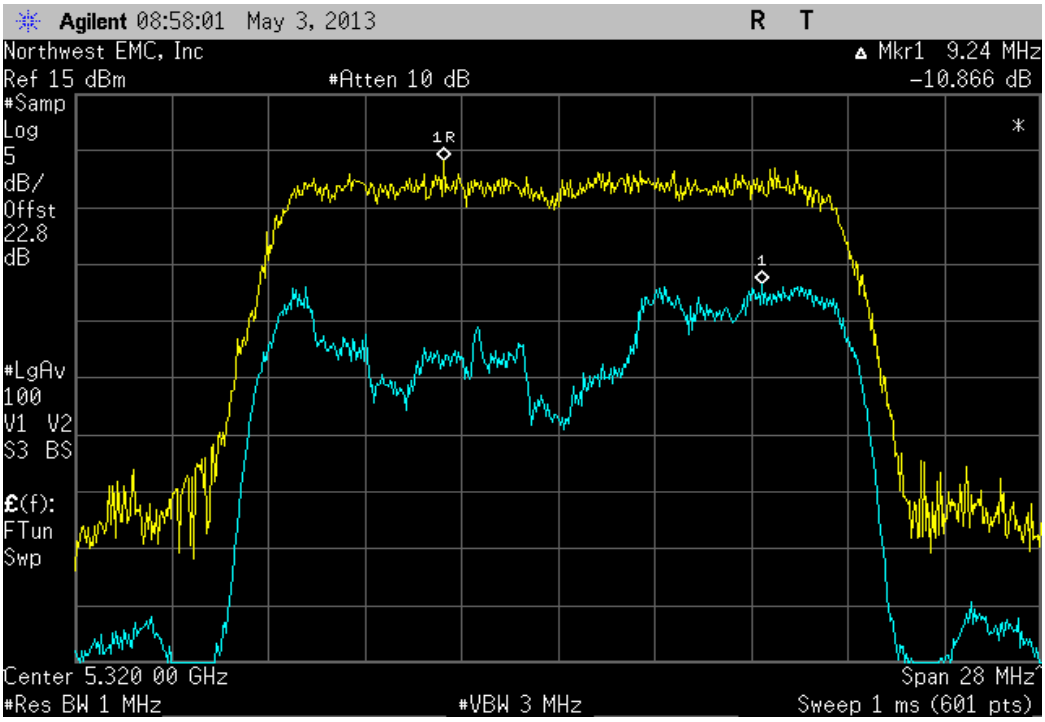

802.11(a) 18 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel 5260 MHz

| Value | Limit | Result |
|---|---|---|
| 10.34 dB | ≤ 13 dB | Pass |



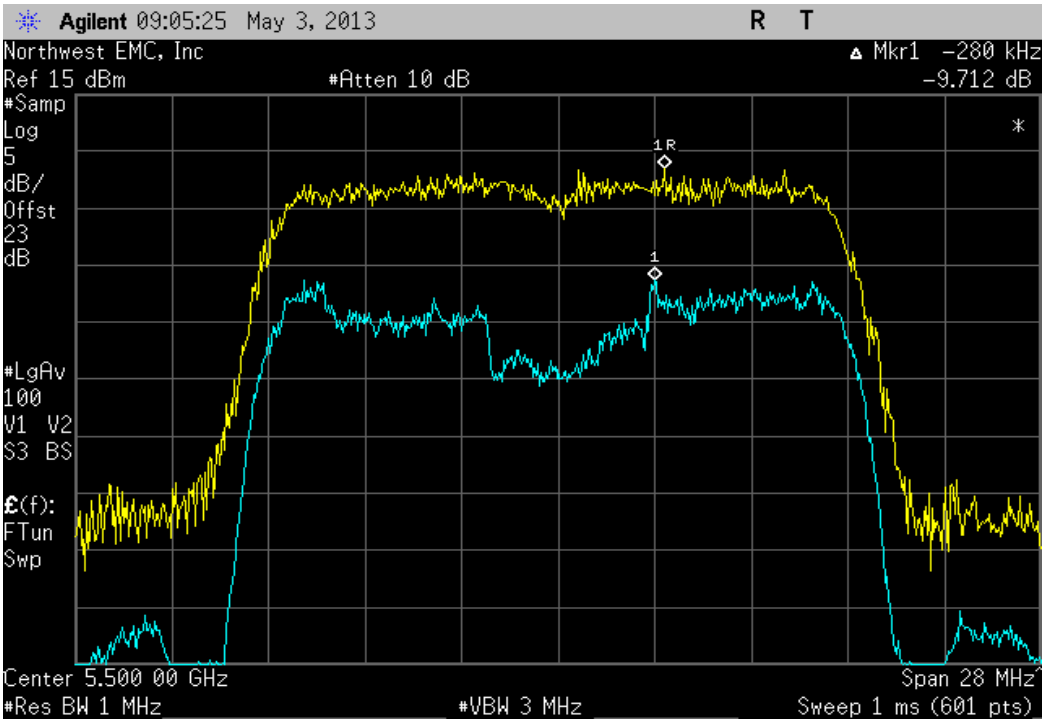
802.11(a) 18 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel 5320 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 10.866 dB | ≤ 13 dB | Pass |



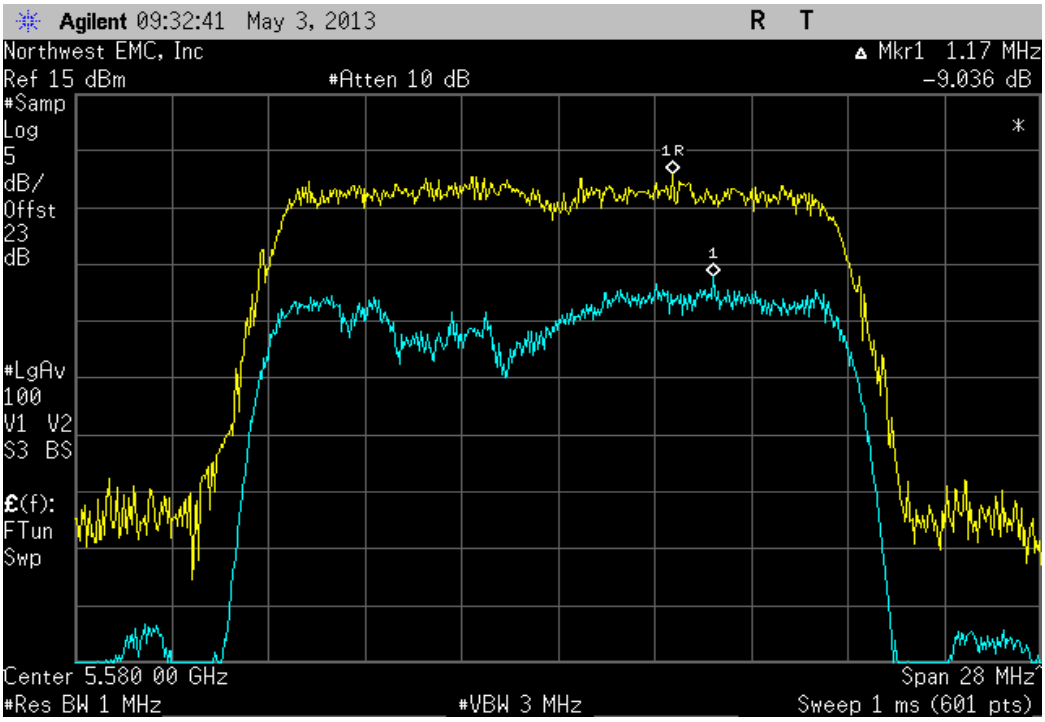

802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel 5500 MHz

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 9.712 dB | ≤ 13 dB | Pass |



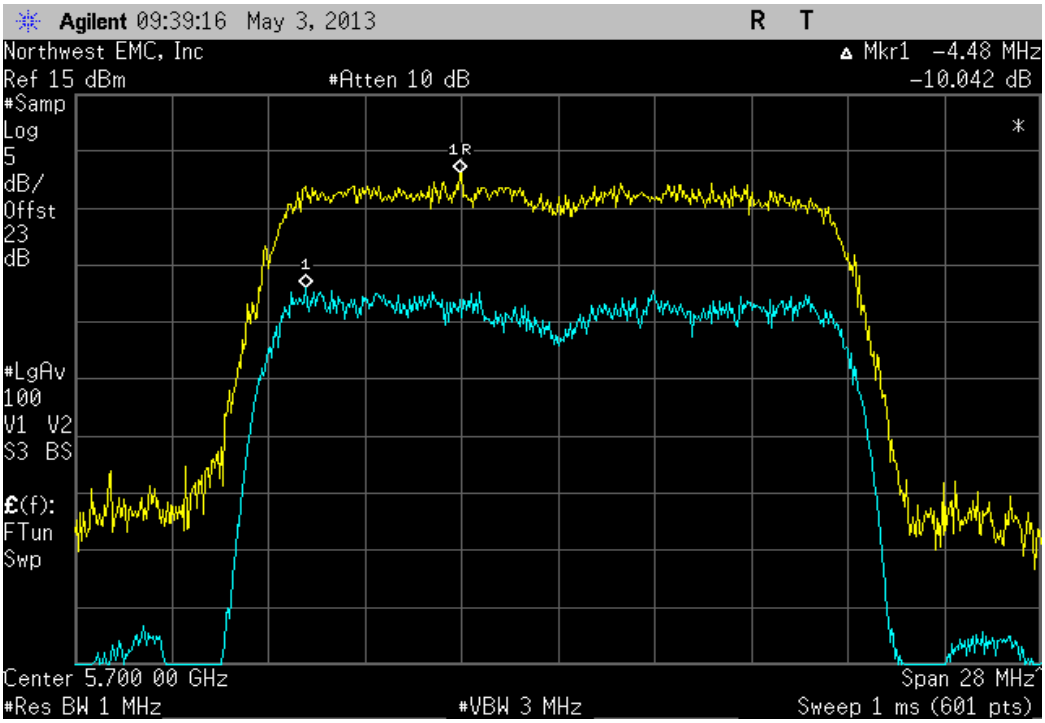
802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel 5580 MHz

| Value | Limit | Result |
|---|---|---|
| 9.036 dB | ≤ 13 dB | Pass |




802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel 5700 MHz

| Value | Limit | Result |
|---|---|---|
| 10.042 dB | ≤ 13 dB | 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 |
|---|---|---|---|---|---|
| Temp./Humidity Chamber | Cincinnati Sub Zero (CSZ) | ZH-32-2-2-H/AC | TBA | NCR | 0 |
| DC Power Supply | MPJA | 9950 PS | TQA | NCR | 0 |
| Multimeter | Tektronix | DMM912 | MMH | 2/5/2013 | 24 |
| Humidity Temperature Meter | Omegaette | HH311 | DTY | 3/29/2011 | 36 |
| Attenuator, 6dB | S.M. Electronics | 18N-06 | AWN | 3/25/2013 | 12 |
| MXG Vector Signal Generator | Agilent | N5182A | TIF | NCR | 0 |
| Power Meter | Gigatronics | 8651A | SPM | 1/9/2012 | 24 |
| Power Sensor | Gigatronics | 80701A | SPL | 7/8/2011 | 24 |
| EV06 Direct Connect Cable | ESM Cable Corp. | TT | ECA | NCR | 0 |
| Attenuator, 6 dB, 'SMA' | N/A | 93459 3330A-6 | AUF | 3/5/2013 | 12 |
| 40GHz DC Block | Miteq | DCB4000 | AMD | 6/25/2012 | 12 |
| Spectrum Analyzer | Agilent | E4446A | AAQ | 2/7/2012 | 24 |

**TEST DESCRIPTION**

Variation of Supply Voltage

The primary supply voltage was varied from 85 % to 115% of the nominal voltage

Variation of Ambient Temperature
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.

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 mid channel of each band to determine frequency stability. If the frequency variation is less than 100 ppm, the EUT will meet the requirement of 15.407(g), that the emissions are maintained within the band of operation.

NORTHWEST EMC

# Frequency Stability

| | | | |
|---|---|---|---|
| **EUT:** | Model 444-2225 (Athena UFL) | **Work Order:** | FOCU0140 |
| **Serial Number:** | 02EA4D000027 | **Date:** | 05/07/13 |
| **Customer:** | Summit Semiconductor | **Temperature:** | 24°C |
| **Attendees:** | None | **Humidity:** | 37% |
| **Project:** | None | **Barometric Pres.:** | 1014 |
| **Tested by:** | Brandon Hobbs | **Power:** 3.3 VDC | **Job Site:** EV06 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.407:2013 | ANSI C63.10:2009 |

**COMMENTS**

All testing was completed on the highest output power antenna port A2.

**DEVIATIONS FROM TEST STANDARD**

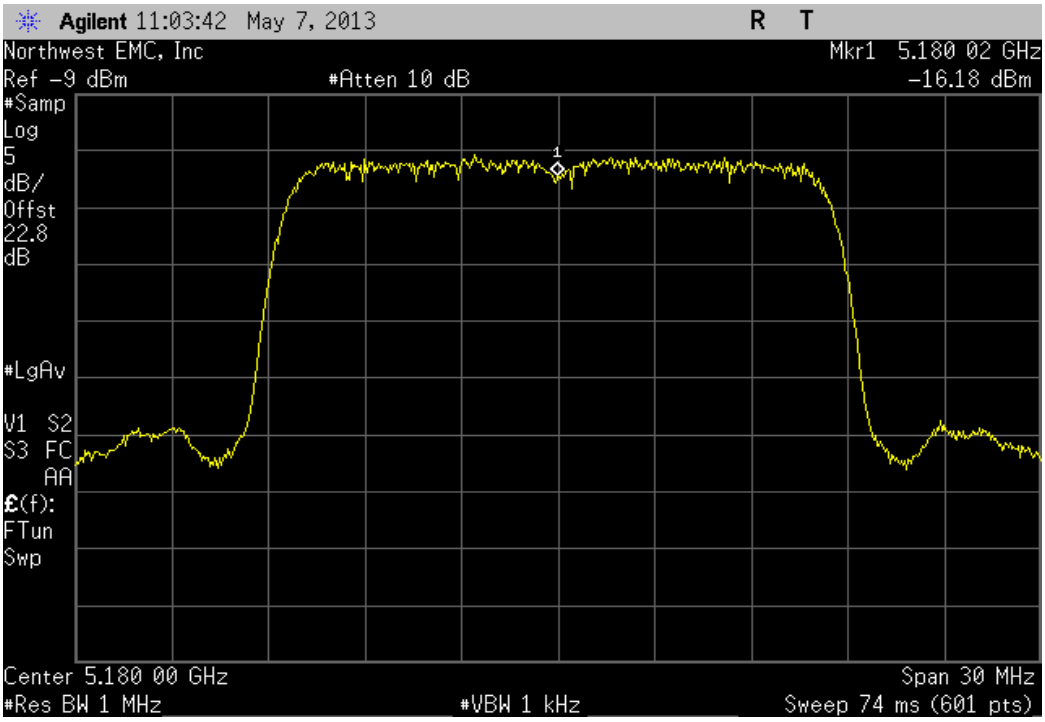
None

| Configuration # | 4 | Signature |
|---|---|---|

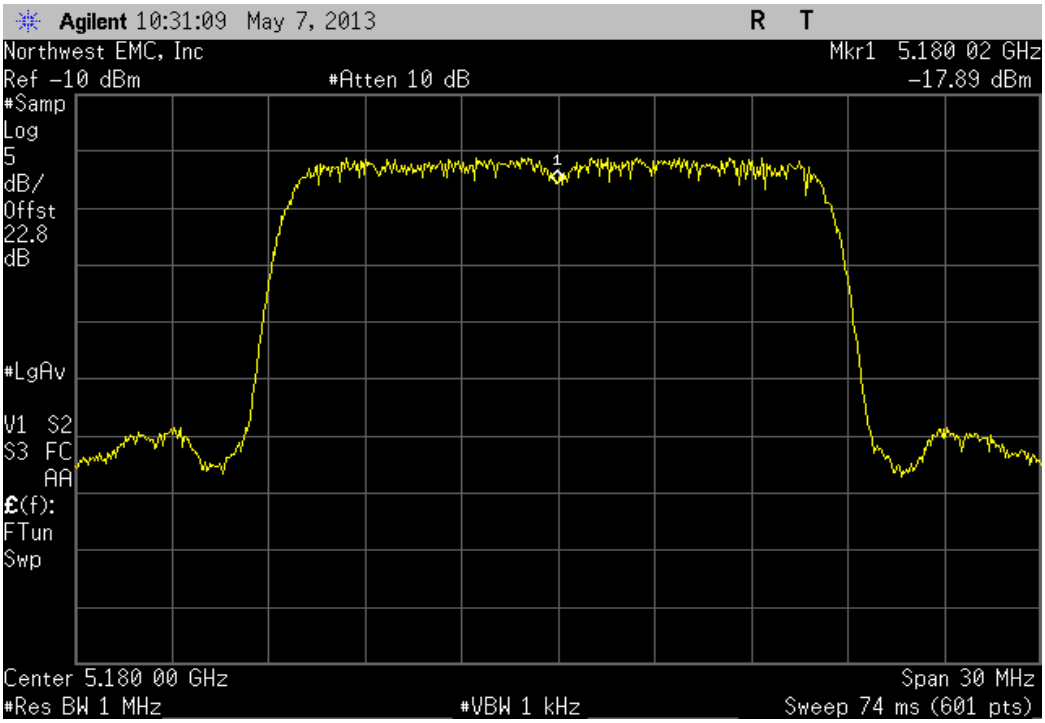
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
|---|---|---|---|---|---|---|
| 6 Mbps | | | | | | |
| | 5150 MHz - 5250 MHz - Low Channel, 5180 MHz | | | | | |
| | Voltage: 115% | 5180.02 | 5180 | 3.9 | 100 | Pass |
| | Voltage: 100% | 5180.02 | 5180 | 3.9 | 100 | Pass |
| | Voltage: 85% | 5180 | 5180 | 0 | 100 | Pass |
| | Temperature: +50° | 5180.02 | 5180 | 3.9 | 100 | Pass |
| | Temperature: +40° | 5180.02 | 5180 | 3.9 | 100 | Pass |
| | Temperature: +30° | 5180.02 | 5180 | 3.9 | 100 | Pass |
| | Temperature: +20° | 5180.02 | 5180 | 3.9 | 100 | Pass |
| | Temperature: +10° | 5180.02 | 5180 | 3.9 | 100 | Pass |
| | Temperature: 0° | 5180.08 | 5180 | 15.4 | 100 | Pass |
| | Temperature: -10° | 5180.05 | 5180 | 9.6 | 100 | Pass |
| | Temperature: -20° | 5180.05 | 5180 | 9.6 | 100 | Pass |
| | Temperature: -30° | 5180 | 5180 | 0 | 100 | Pass |
| | 5150 MHz - 5250 MHz - High Channel, 5240 MHz | | | | | |
| | Voltage: 115% | 5239.98 | 5240 | 3.8 | 100 | Pass |
| | Voltage: 100% | 5240.02 | 5240 | 3.8 | 100 | Pass |
| | Voltage: 85% | 5240.02 | 5240 | 3.8 | 100 | Pass |
| | Temperature: +50° | 5240.02 | 5240 | 3.8 | 100 | Pass |
| | Temperature: +40° | 5240.02 | 5240 | 3.8 | 100 | Pass |
| | Temperature: +30° | 5240.02 | 5240 | 3.8 | 100 | Pass |
| | Temperature: +20° | 5240.02 | 5240 | 3.8 | 100 | Pass |
| | Temperature: +10° | 5240.05 | 5240 | 9.5 | 100 | Pass |
| | Temperature: 0° | 5240.02 | 5240 | 3.8 | 100 | Pass |
| | Temperature: -10° | 5240.02 | 5240 | 3.8 | 100 | Pass |
| | Temperature: -20° | 5240.02 | 5240 | 3.8 | 100 | Pass |
| | Temperature: -30° | 5239.98 | 5240 | 3.8 | 100 | Pass |
| | 5150 MHz - 5250 MHz - Low Channel, 5260 MHz | | | | | |
| | Voltage: 115% | 5260.02 | 5260 | 3.8 | 100 | Pass |
| | Voltage: 100% | 5260.02 | 5260 | 3.8 | 100 | Pass |
| | Voltage: 85% | 5260.02 | 5260 | 3.8 | 100 | Pass |
| | Temperature: +50° | 5260.02 | 5260 | 3.8 | 100 | Pass |
| | Temperature: +40° | 5260.02 | 5260 | 3.8 | 100 | Pass |
| | Temperature: +30° | 5260.02 | 5260 | 3.8 | 100 | Pass |
| | Temperature: +20° | 5260.02 | 5260 | 3.8 | 100 | Pass |
| | Temperature: +10° | 5260.05 | 5260 | 9.5 | 100 | Pass |
| | Temperature: 0° | 5260.05 | 5260 | 9.5 | 100 | Pass |
| | Temperature: -10° | 5260.02 | 5260 | 3.8 | 100 | Pass |
| | Temperature: -20° | 5260.02 | 5260 | 3.8 | 100 | Pass |
| | Temperature: -30° | 5260.02 | 5260 | 3.8 | 100 | Pass |
| | 5250 MHz - 5350 MHz - High Channel, 5320 MHz | | | | | |
| | Voltage: 115% | 5320.02 | 5320 | 3.8 | 100 | Pass |
| | Voltage: 100% | 5320.05 | 5320 | 9.4 | 100 | Pass |
| | Voltage: 85% | 5320.02 | 5320 | 3.8 | 100 | Pass |
| | Temperature: +50° | 5320.02 | 5320 | 3.8 | 100 | Pass |
| | Temperature: +40° | 5320.02 | 5320 | 3.8 | 100 | Pass |
| | Temperature: +30° | 5320 | 5320 | 0 | 100 | Pass |
| | Temperature: +20° | 5320.02 | 5320 | 3.8 | 100 | Pass |
| | Temperature: +10° | 5320.02 | 5320 | 3.8 | 100 | Pass |
| | Temperature: 0° | 5320.08 | 5320 | 15 | 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% | 5500.02 | 5500 | 3.6 | 100 | Pass |
| | Voltage: 100% | 5500.02 | 5500 | 3.6 | 100 | Pass |
| | Voltage: 85% | 5500.05 | 5500 | 9.1 | 100 | Pass |
| | Temperature: +50° | 5500.02 | 5500 | 3.6 | 100 | Pass |
| | Temperature: +40° | 5500.02 | 5500 | 3.6 | 100 | Pass |
| | Temperature: +30° | 5500.05 | 5500 | 9.1 | 100 | Pass |
| | Temperature: +20° | 5500.02 | 5500 | 3.6 | 100 | Pass |
| | Temperature: +10° | 5500.02 | 5500 | 3.6 | 100 | Pass |
| | Temperature: 0° | 5500.05 | 5500 | 9.1 | 100 | Pass |
| | Temperature: -10° | 5500 | 5500 | 0 | 100 | Pass |
| | Temperature: -20° | 5500 | 5500 | 0 | 100 | Pass |
| | Temperature: -30° | 5500 | 5500 | 0 | 100 | Pass |
| | 5470 MHz - 5725 MHz - High Channel, 5700 MHz | | | | | |
| | Voltage: 115% | 5700 | 5700 | 0 | 100 | Pass |
| | Voltage: 100% | 5700.02 | 5700 | 3.5 | 100 | Pass |
| | Voltage: 85% | 5700 | 5700 | 0 | 100 | Pass |
| | Temperature: +50° | 5700.02 | 5700 | 3.5 | 100 | Pass |
| | Temperature: +40° | 5700.02 | 5700 | 3.5 | 100 | Pass |
| | Temperature: +30° | 5700.05 | 5700 | 8.8 | 100 | Pass |
| | Temperature: +20° | 5700.02 | 5700 | 3.5 | 100 | Pass |
| | Temperature: +10° | 5700.02 | 5700 | 3.5 | 100 | Pass |
| | Temperature: 0° | 5700.02 | 5700 | 3.5 | 100 | Pass |
| | Temperature: -10° | 5700.05 | 5700 | 8.8 | 100 | Pass |
| | Temperature: -20° | 5700.02 | 5700 | 3.5 | 100 | Pass |
| | Temperature: -30° | 5700 | 5700 | 0 | 100 | Pass |
| 18 Mbps | | | | | | |
| | 5150 MHz - 5250 MHz - Low Channel, 5180 MHz | | | | | |
| | Voltage: 115% | 5180.05 | 5180 | 9.6 | 100 | Pass |
| | Voltage: 100% | 5180.02 | 5180 | 3.9 | 100 | Pass |
| | Voltage: 85% | 5180.02 | 5180 | 3.9 | 100 | Pass |
| | Temperature: +50° | 5180.02 | 5180 | 3.9 | 100 | Pass |
| | Temperature: +40° | 5180 | 5180 | 0 | 100 | Pass |
| | Temperature: +30° | 5180.02 | 5180 | 3.9 | 100 | Pass |
| | Temperature: +20° | 5180.05 | 5180 | 9.6 | 100 | Pass |
| | Temperature: +10° | 5180.05 | 5180 | 9.6 | 100 | Pass |
| | Temperature: 0° | 5180.05 | 5180 | 9.6 | 100 | Pass |
| | Temperature: -10° | 5180.05 | 5180 | 9.6 | 100 | Pass |
| | Temperature: -20° | 5180.02 | 5180 | 3.9 | 100 | Pass |
| | Temperature: -30° | 5179.98 | 5180 | 3.9 | 100 | Pass |
| | 5150 MHz - 5250 MHz - High Channel, 5240 MHz | | | | | |
| | Voltage: 115% | 5240.02 | 5240 | 3.8 | 100 | Pass |
| | Voltage: 100% | 5240.02 | 5240 | 3.8 | 100 | Pass |
| | Voltage: 85% | 5240 | 5240 | 0 | 100 | Pass |
| | Temperature: +50° | 5240.02 | 5240 | 3.8 | 100 | Pass |
| | Temperature: +40° | 5240 | 5240 | 0 | 100 | Pass |
| | Temperature: +30° | 5240 | 5240 | 0 | 100 | Pass |
| | Temperature: +20° | 5240.02 | 5240 | 3.8 | 100 | Pass |
| | Temperature: +10° | 5240.05 | 5240 | 9.5 | 100 | Pass |
| | Temperature: 0° | 5240.05 | 5240 | 9.5 | 100 | Pass |
| | Temperature: -10° | 5240.08 | 5240 | 15.3 | 100 | Pass |
| | Temperature: -20° | 5240.05 | 5240 | 9.5 | 100 | Pass |
| | Temperature: -30° | 5239.98 | 5240 | 3.8 | 100 | Pass |
| | 5150 MHz - 5250 MHz - Low Channel, 5260 MHz | | | | | |
| | Voltage: 115% | 5260.02 | 5260 | 3.8 | 100 | Pass |
| | Voltage: 100% | 5260.02 | 5260 | 3.8 | 100 | Pass |
| | Voltage: 85% | 5260.05 | 5260 | 9.5 | 100 | Pass |
| | Temperature: +50° | 5260.02 | 5260 | 3.8 | 100 | Pass |
| | Temperature: +40° | 5260.02 | 5260 | 3.8 | 100 | Pass |
| | Temperature: +30° | 5260.02 | 5260 | 3.8 | 100 | Pass |
| | Temperature: +20° | 5260.05 | 5260 | 9.5 | 100 | Pass |
| | Temperature: +10° | 5260.02 | 5260 | 3.8 | 100 | Pass |
| | Temperature: 0° | 5260.12 | 5260 | 22.8 | 100 | Pass |
| | Temperature: -10° | 5260.02 | 5260 | 3.8 | 100 | Pass |
| | Temperature: -20° | 5260.05 | 5260 | 9.5 | 100 | Pass |
| | Temperature: -30° | 5259.98 | 5260 | 3.8 | 100 | Pass |
| | 5250 MHz - 5350 MHz - High Channel, 5320 MHz | | | | | |
| | Voltage: 115% | 5320 | 5320 | 0 | 100 | Pass |
| | Voltage: 100% | 5320.05 | 5320 | 9.4 | 100 | Pass |
| | Voltage: 85% | 5320.08 | 5320 | 15 | 100 | Pass |
| | Temperature: +50° | 5320.05 | 5320 | 9.4 | 100 | Pass |
| | Temperature: +40° | 5320.05 | 5320 | 9.4 | 100 | Pass |
| | Temperature: +30° | 5320.02 | 5320 | 3.8 | 100 | Pass |
| | Temperature: +20° | 5320.02 | 5320 | 3.8 | 100 | Pass |
| | Temperature: +10° | 5320.02 | 5320 | 3.8 | 100 | Pass |
| | Temperature: 0° | 5320.05 | 5320 | 9.4 | 100 | Pass |
| | Temperature: -10° | 5320.02 | 5320 | 3.8 | 100 | Pass |
| | Temperature: -20° | 5320 | 5320 | 0 | 100 | Pass |
| | Temperature: -30° | 5320 | 5320 | 0 | 100 | Pass |
| | 5470 MHz - 5725 MHz - Low Channel, 5500 MHz | | | | | |
| | Voltage: 115% | 5500.05 | 5500 | 9.1 | 100 | Pass |
| | Voltage: 100% | 5500.05 | 5500 | 9.1 | 100 | Pass |
| | Voltage: 85% | 5500.02 | 5500 | 3.6 | 100 | Pass |
| | Temperature: +50° | 5500.02 | 5500 | 3.6 | 100 | Pass |
| | Temperature: +40° | 5500 | 5500 | 0 | 100 | Pass |
| | Temperature: +30° | 5500 | 5500 | 0 | 100 | Pass |
| | Temperature: +20° | 5500.02 | 5500 | 3.6 | 100 | Pass |
| | Temperature: +10° | 5500.05 | 5500 | 9.1 | 100 | Pass |
| | Temperature: 0° | 5500.05 | 5500 | 9.1 | 100 | Pass |
| | Temperature: -10° | 5500.08 | 5500 | 14.6 | 100 | Pass |
| | Temperature: -20° | 5500 | 5500 | 0 | 100 | Pass |
| | Temperature: -30° | 5499.92 | 5500 | 14.6 | 100 | Pass |
| | 5470 MHz - 5725 MHz - High Channel, 5700 MHz | | | | | |
| | Voltage: 115% | 5700 | 5700 | 0 | 100 | Pass |
| | Voltage: 100% | 5700.02 | 5700 | 3.5 | 100 | Pass |
| | Voltage: 85% | 5700.18 | 5700 | 31.6 | 100 | Pass |
| | Temperature: +50° | 5700.02 | 5700 | 3.5 | 100 | Pass |
| | Temperature: +40° | 5700.02 | 5700 | 3.5 | 100 | Pass |
| | Temperature: +30° | 5700.02 | 5700 | 3.5 | 100 | Pass |
| | Temperature: +20° | 5700.05 | 5700 | 8.8 | 100 | Pass |
| | Temperature: +10° | 5700.05 | 5700 | 8.8 | 100 | Pass |
| | Temperature: 0° | 5700.02 | 5700 | 3.5 | 100 | Pass |
| | Temperature: -10° | 5700.05 | 5700 | 8.8 | 100 | Pass |
| | Temperature: -20° | 5700.02 | 5700 | 3.5 | 100 | Pass |
| | Temperature: -30° | 5699.98 | 5700 | 3.5 | 100 | Pass |

# Frequency Stability

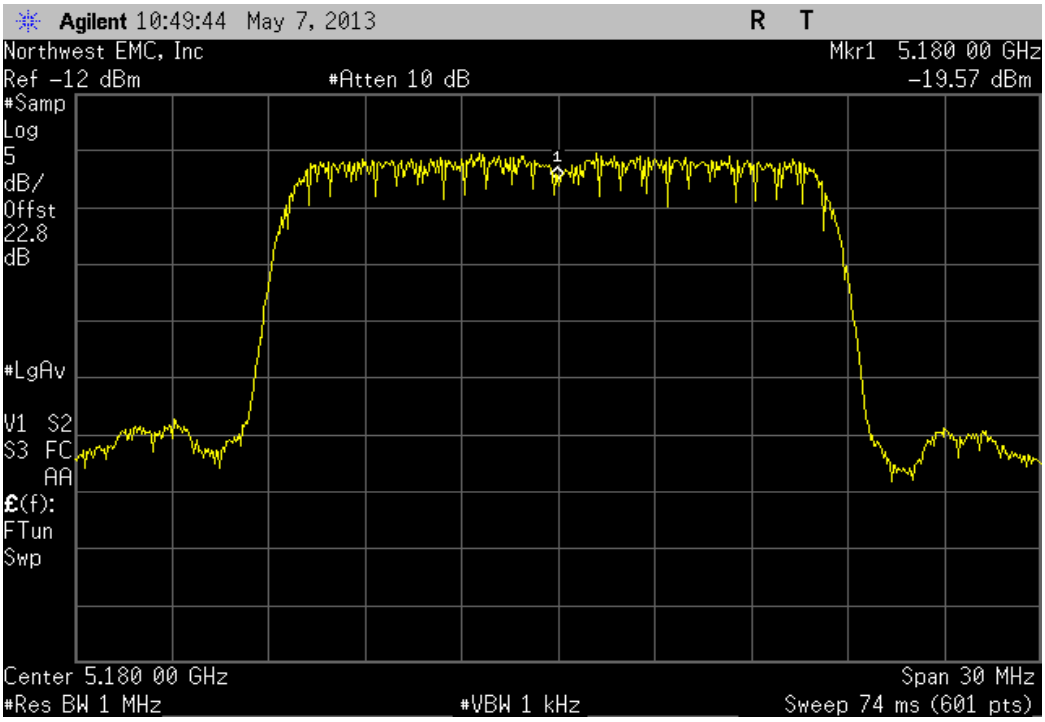
| 6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Voltage: 115% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5180.02 | 5180 | 3.9 | 100 | Pass |



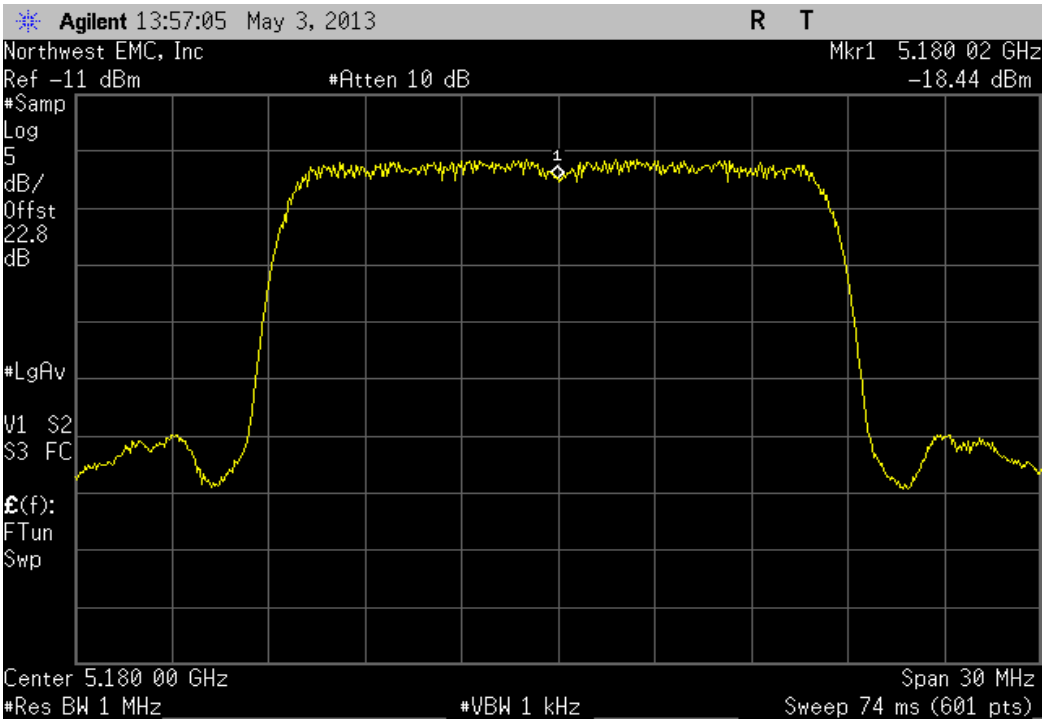

| 6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Voltage: 100% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5180.02 | 5180 | 3.9 | 100 | Pass |



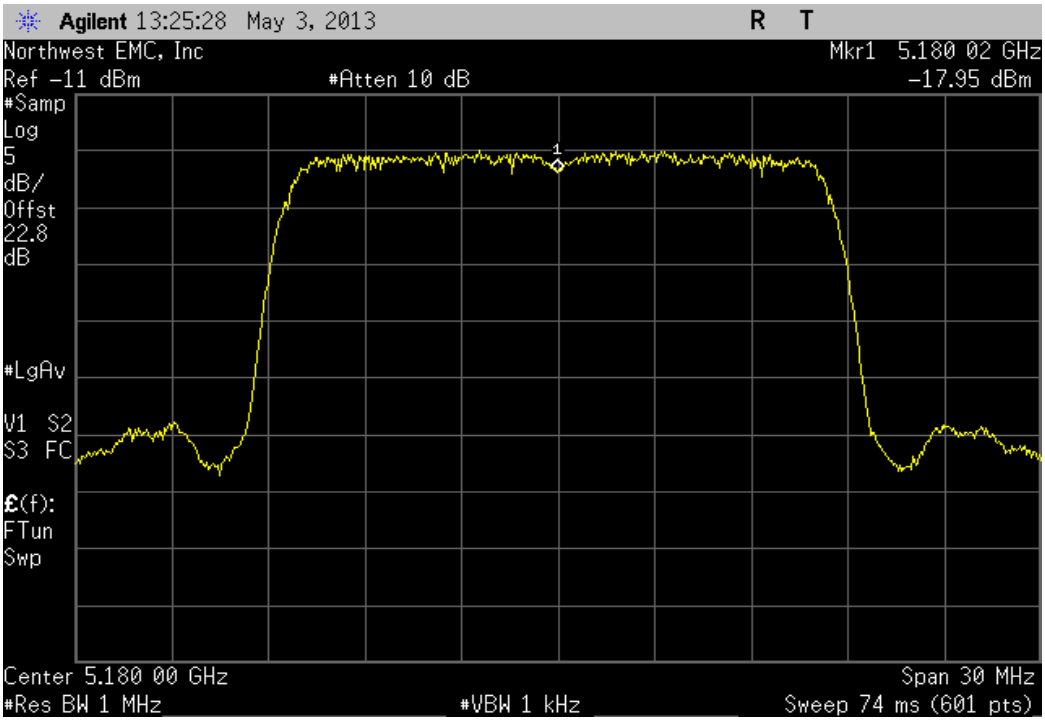
| 6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Voltage: 85% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5180 | 5180 | 0 | 100 | Pass |



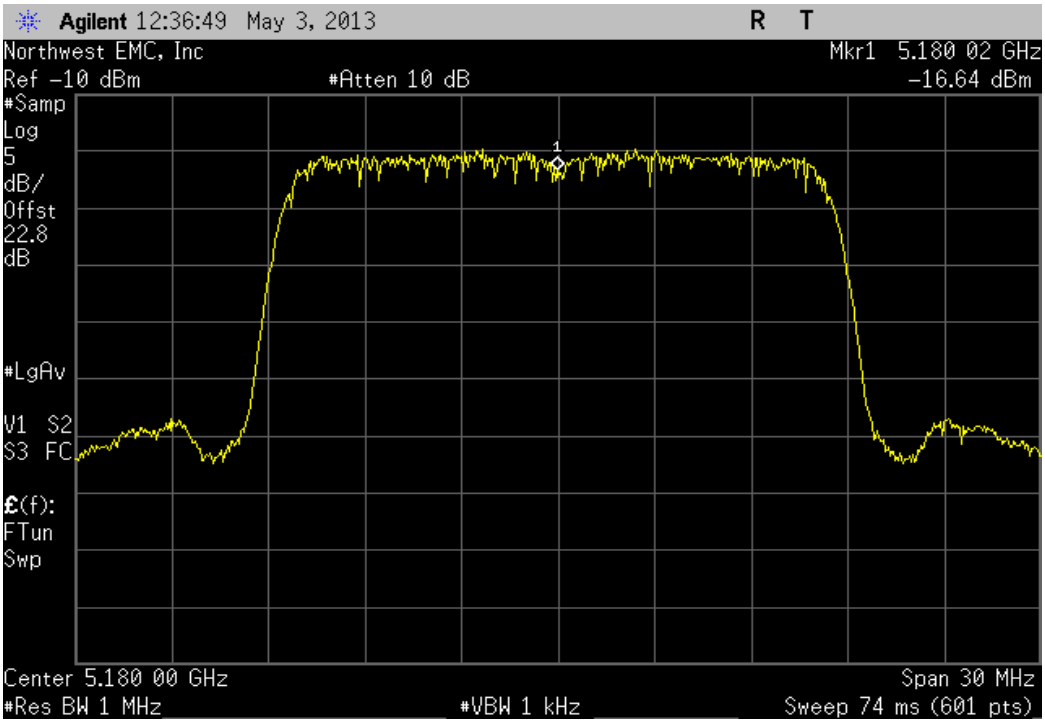

| 6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +50° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5180.02 | 5180 | 3.9 | 100 | Pass |



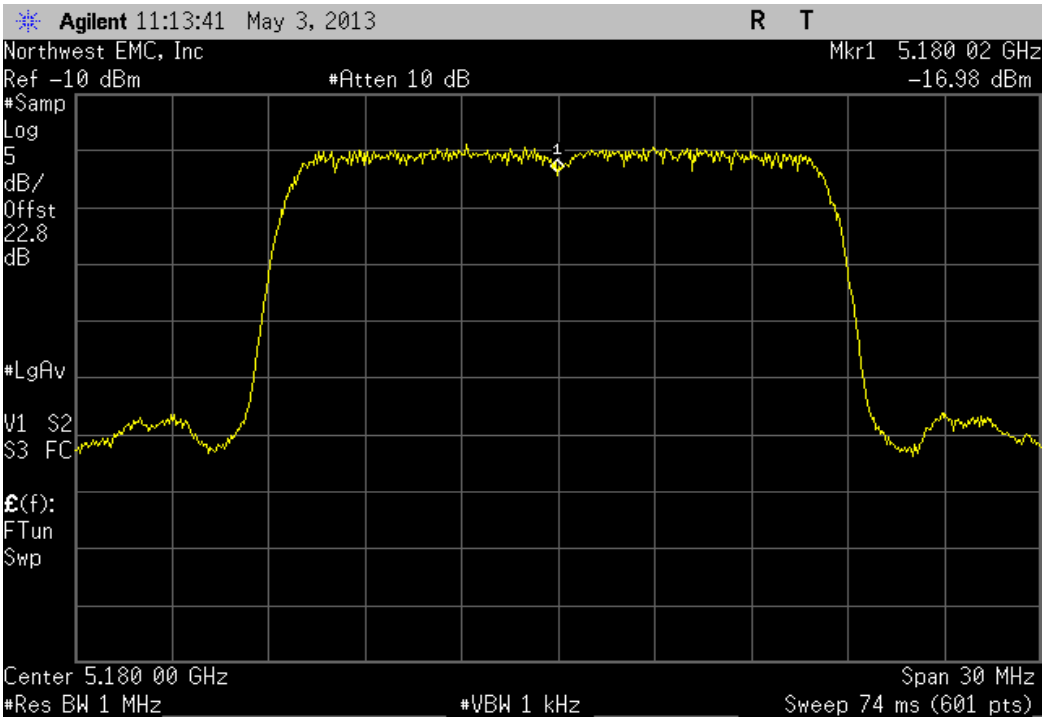
| 6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +40° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5180.02 | 5180 | 3.9 | 100 | Pass |



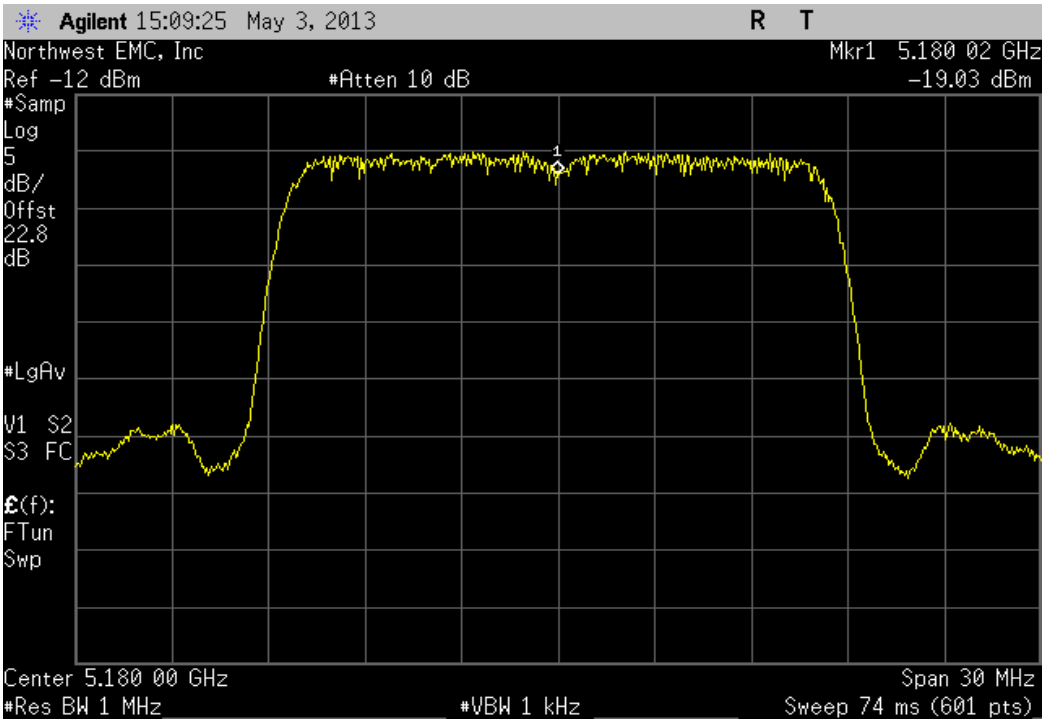

| 6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5180.02 | 5180 | 3.9 | 100 | Pass |



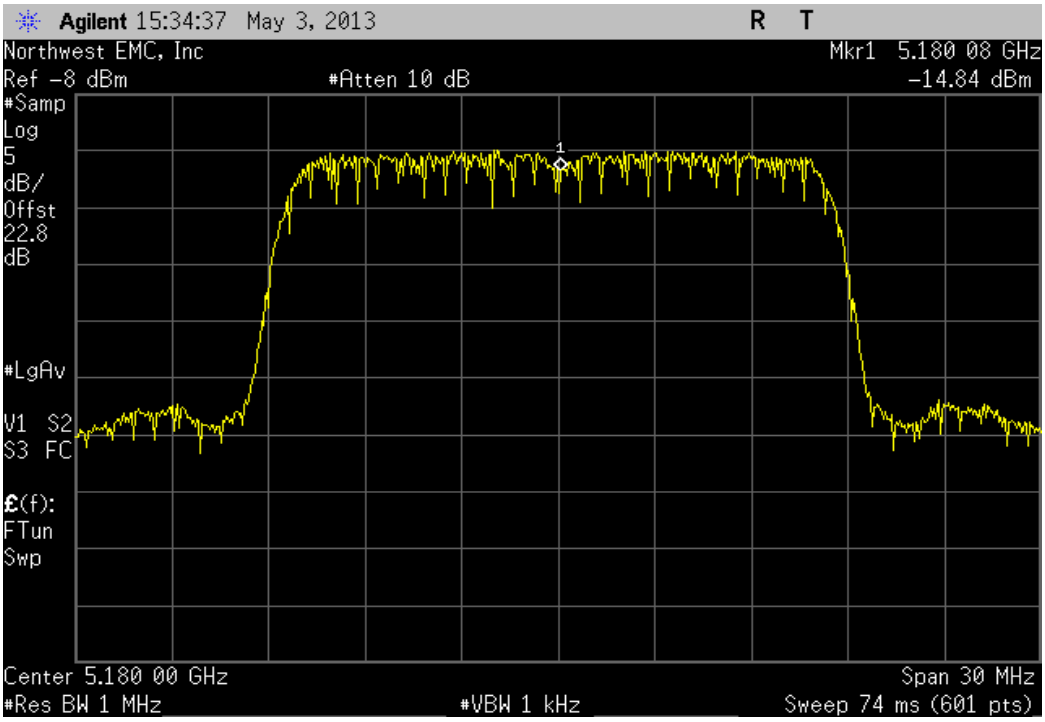
| 6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5180.02 | 5180 | 3.9 | 100 | Pass |



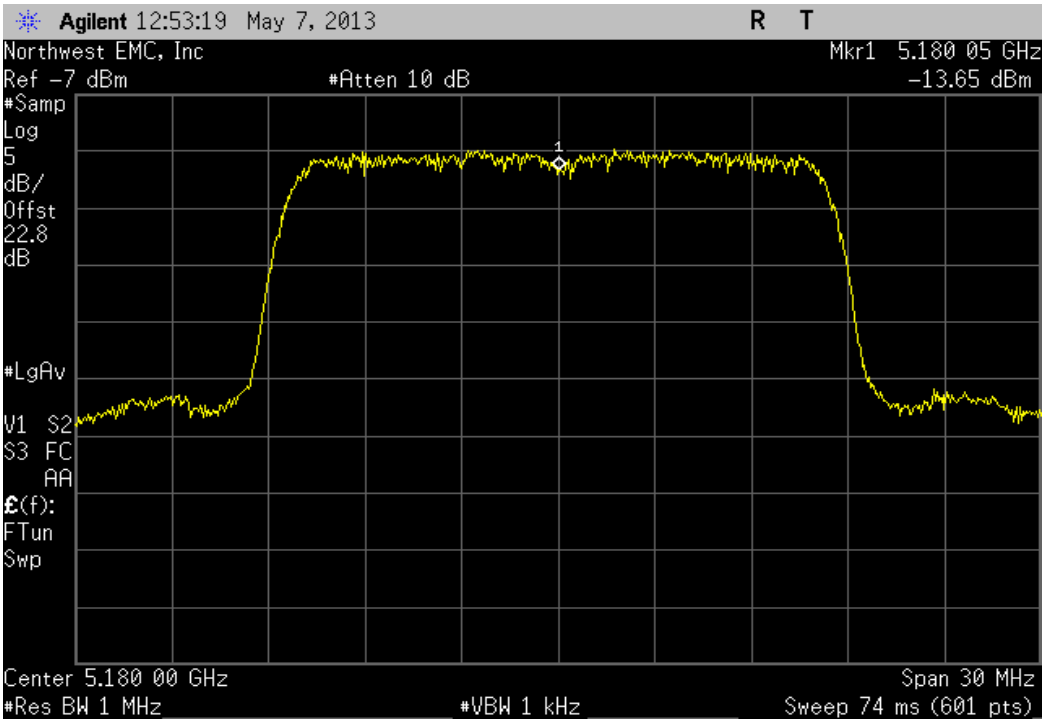

| 6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5180.02 | 5180 | 3.9 | 100 | Pass |



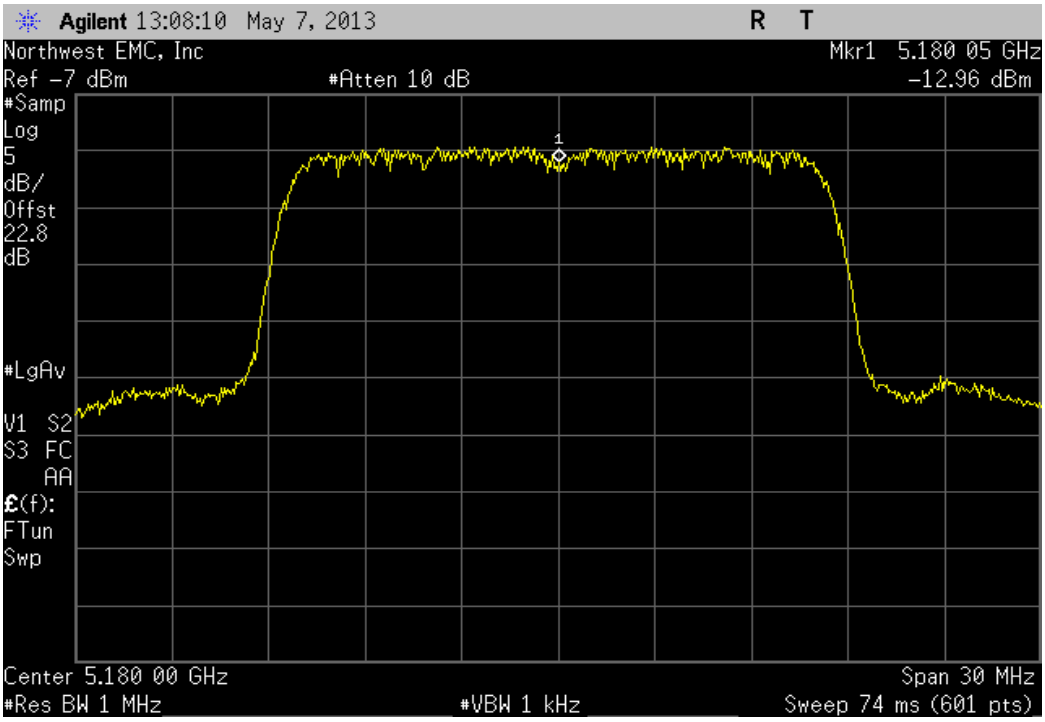
| 6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: 0° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5180.08 | 5180 | 15.4 | 100 | Pass |



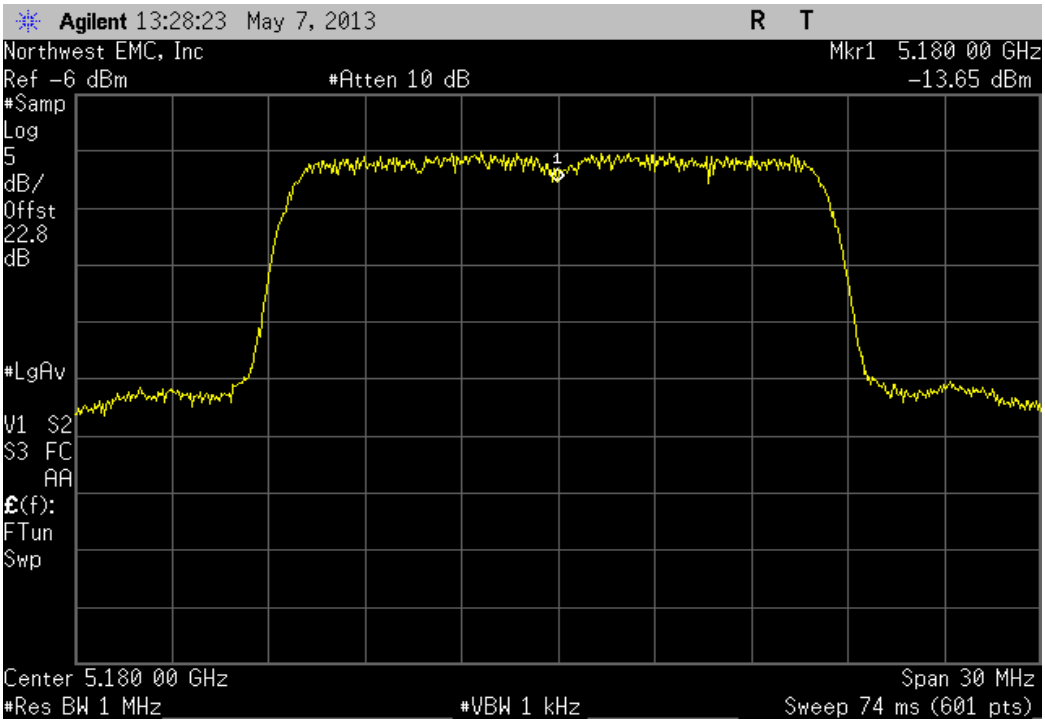

| 6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: -10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5180.05 | 5180 | 9.6 | 100 | Pass |



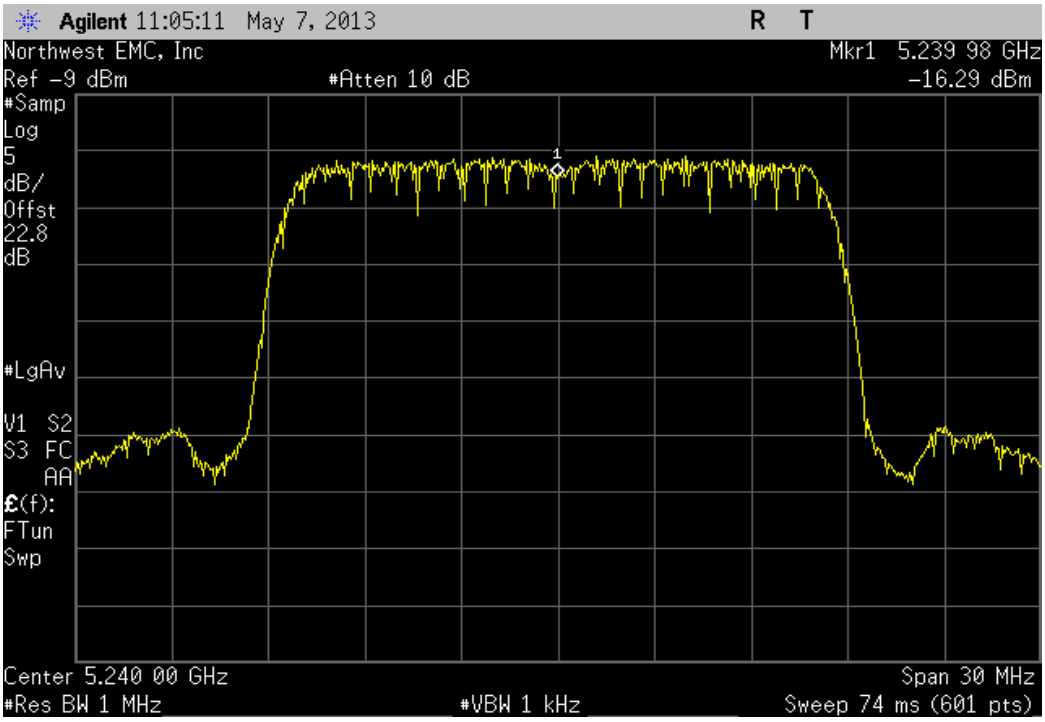
| 6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: -20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5180.05 | 5180 | 9.6 | 100 | Pass |



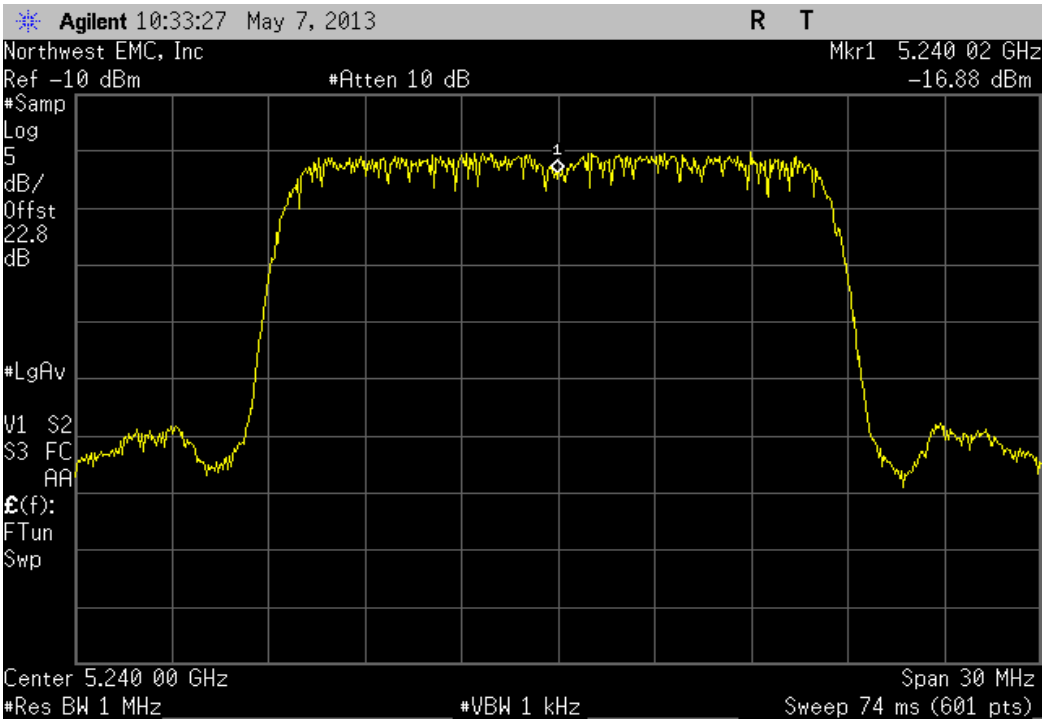

| 6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: -30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5180 | 5180 | 0 | 100 | Pass |



| 6 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Voltage: 115% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5239.98 | 5240 | 3.8 | 100 | Pass |

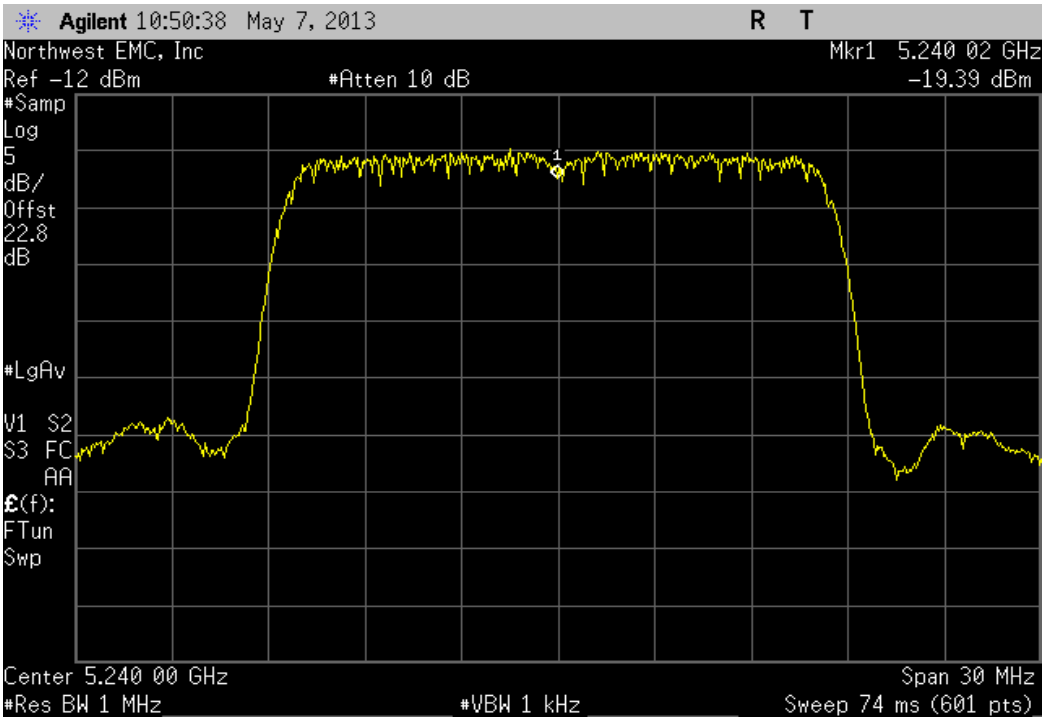



| 6 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Voltage: 100% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5240.02 | 5240 | 3.8 | 100 | Pass |

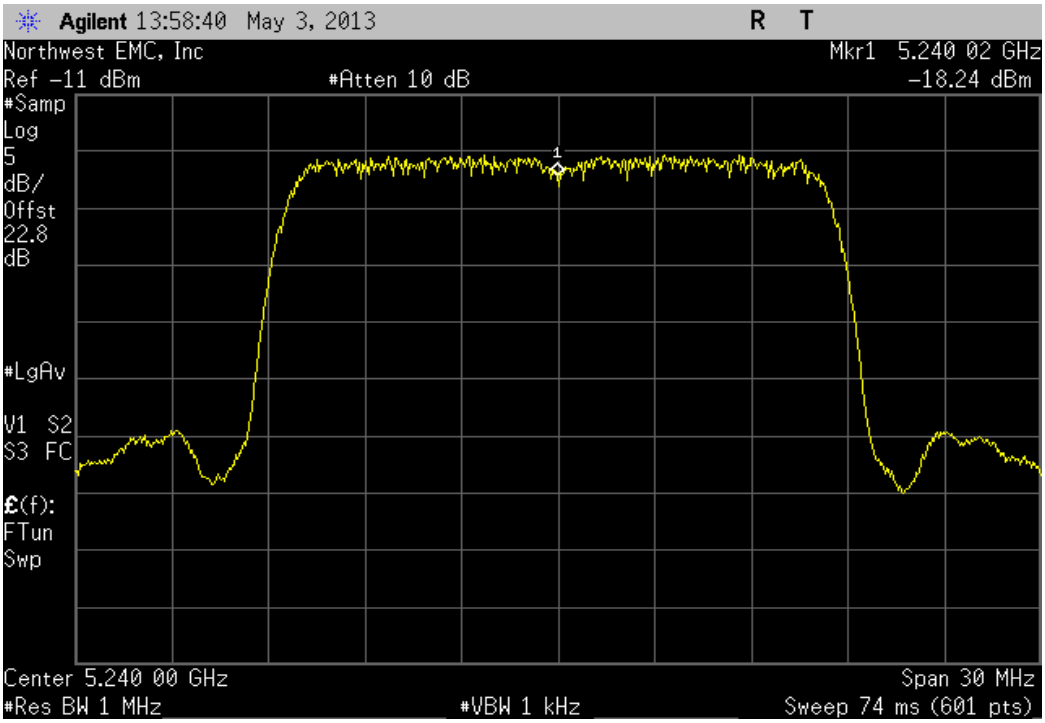


# Frequency Stability

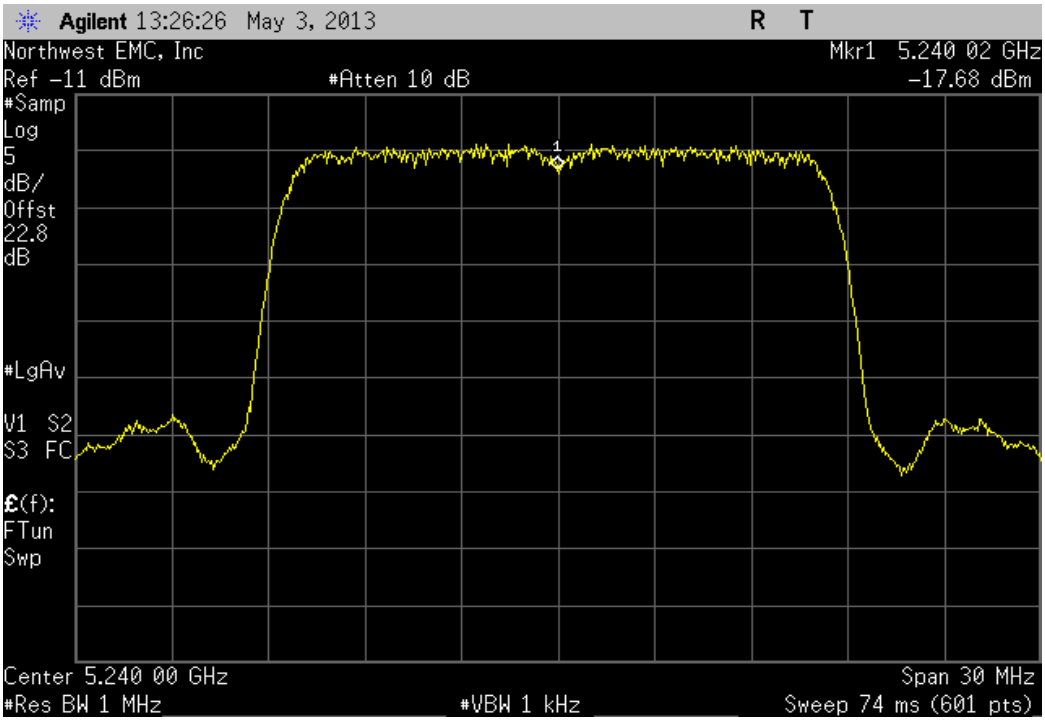
| 6 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Voltage: 85% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5240.02 | 5240 | 3.8 | 100 | Pass |



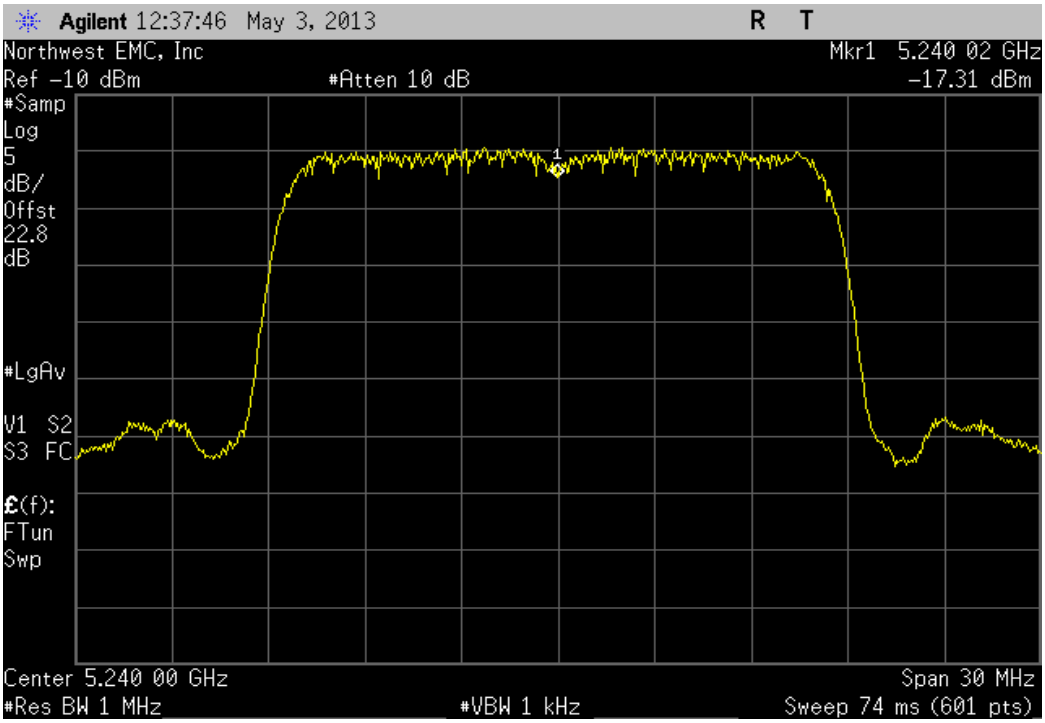

| 6 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: +50° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5240.02 | 5240 | 3.8 | 100 | Pass |



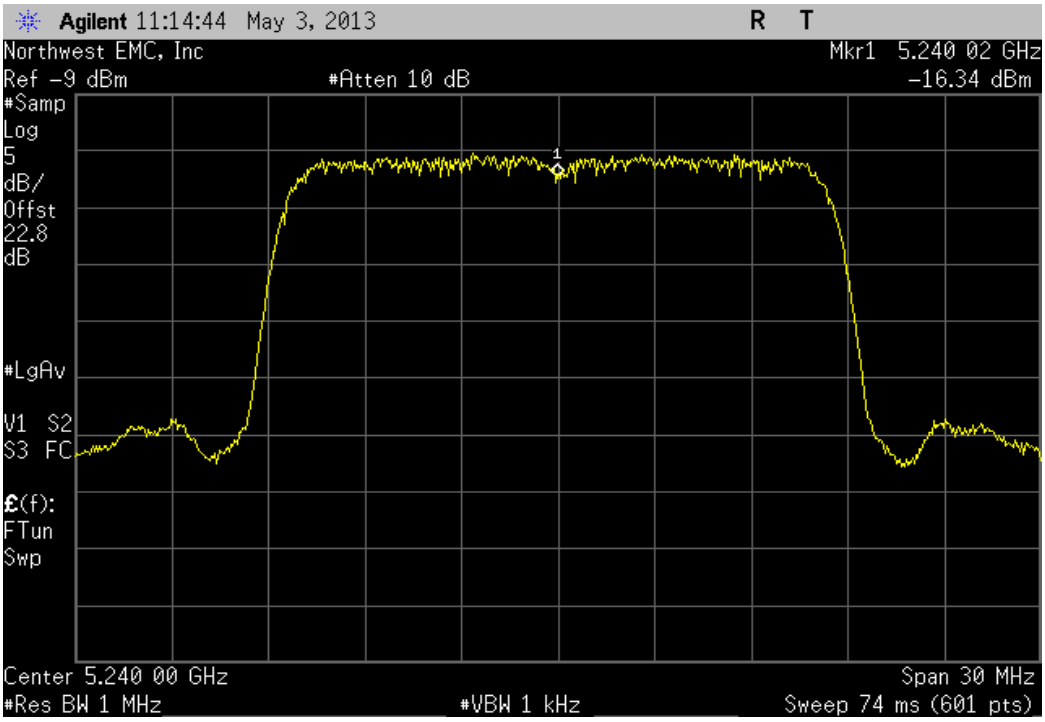
| 6 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: +40° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5240.02 | 5240 | 3.8 | 100 | Pass |



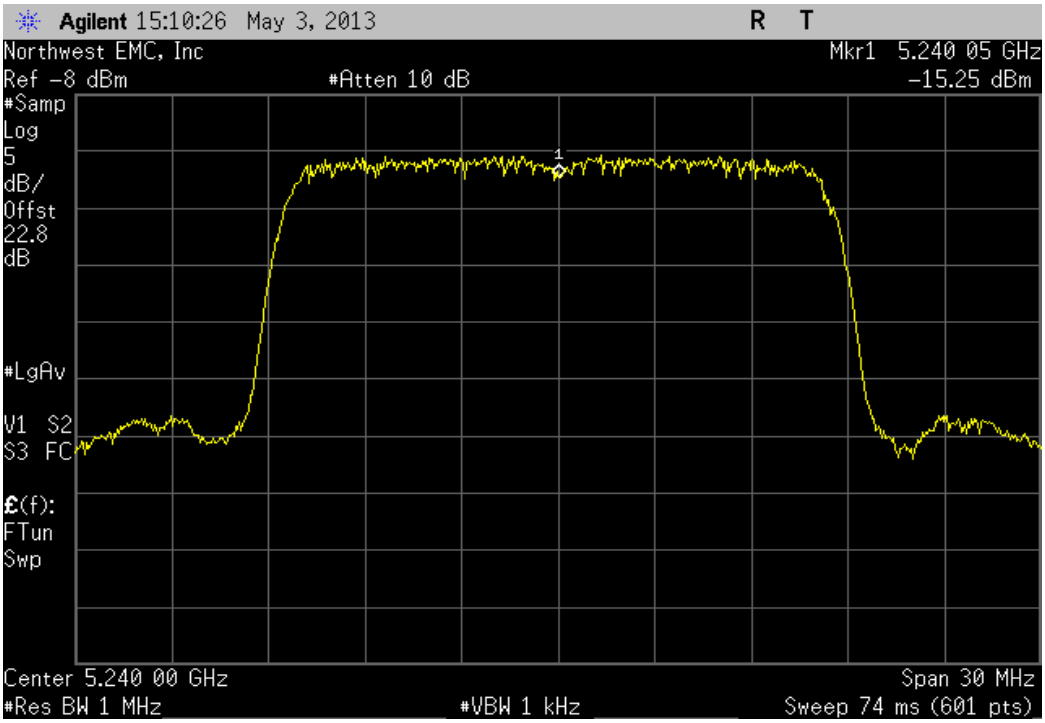

| 6 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: +30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5240.02 | 5240 | 3.8 | 100 | Pass |



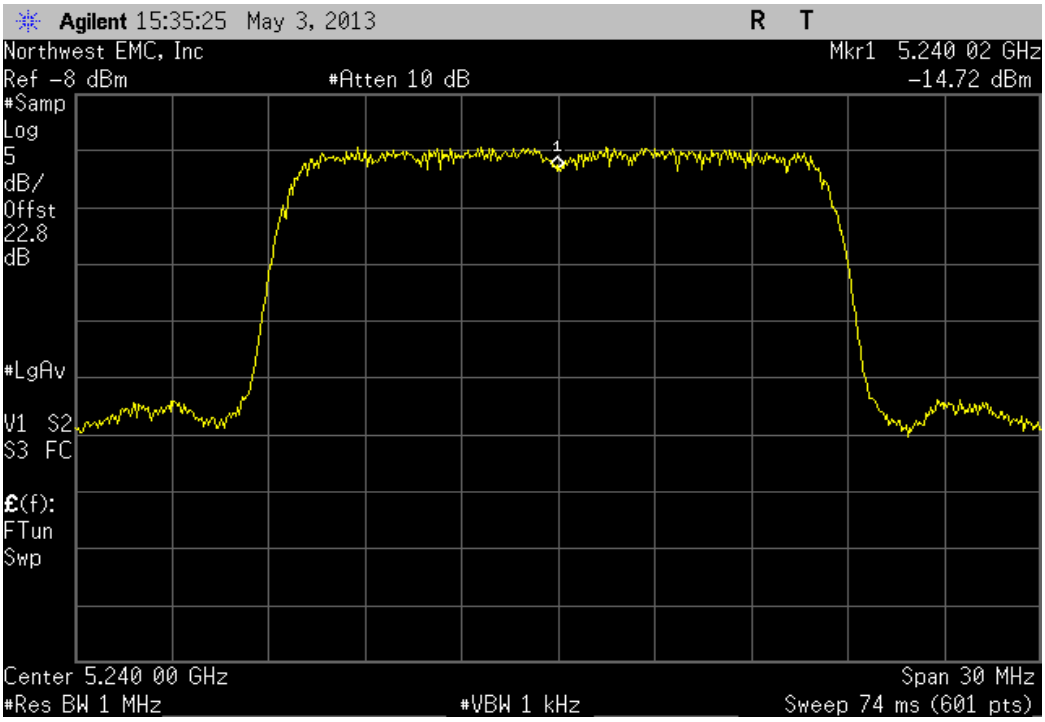
| 6 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: +20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5240.02 | 5240 | 3.8 | 100 | Pass |



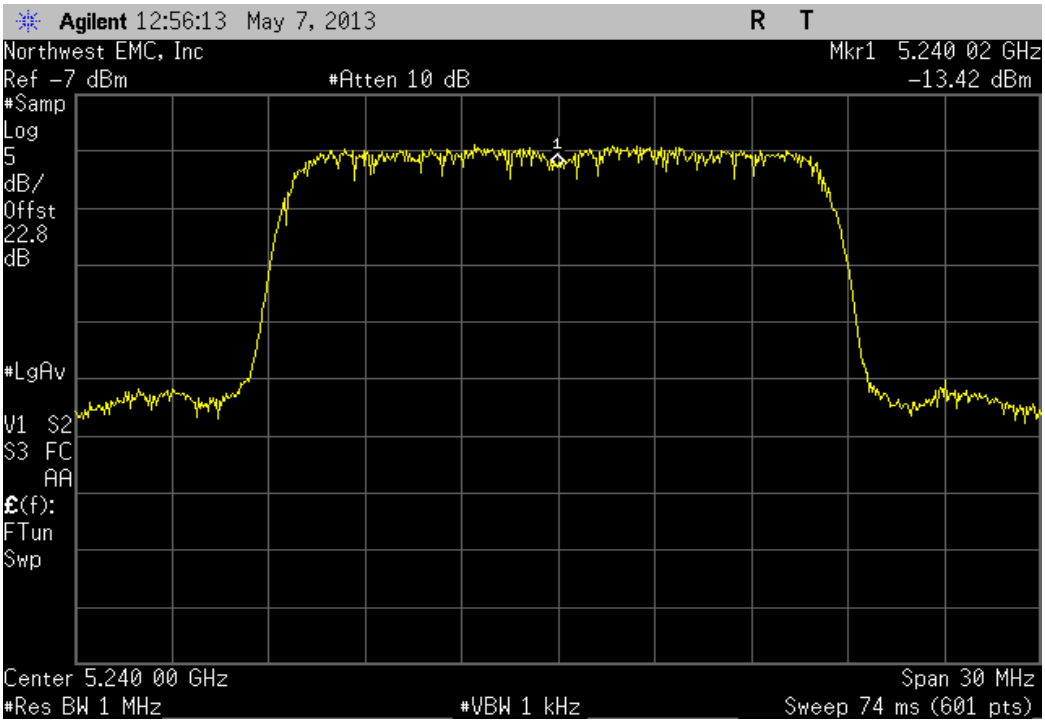

| 6 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: +10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5240.05 | 5240 | 9.5 | 100 | Pass |



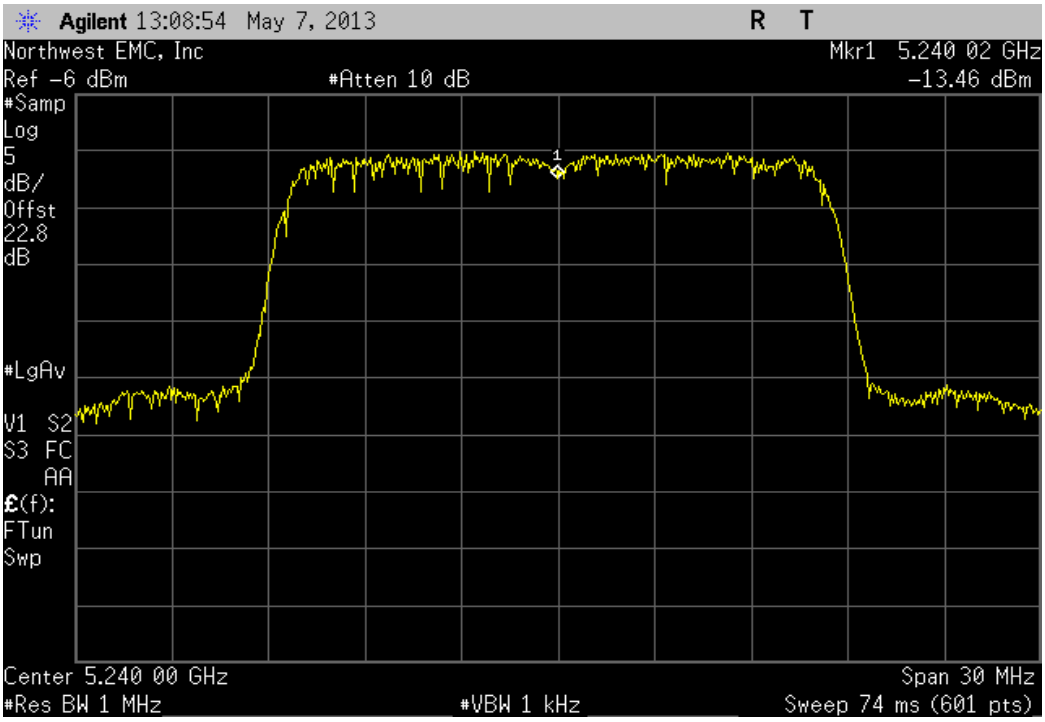
| 6 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: 0° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5240.02 | 5240 | 3.8 | 100 | Pass |



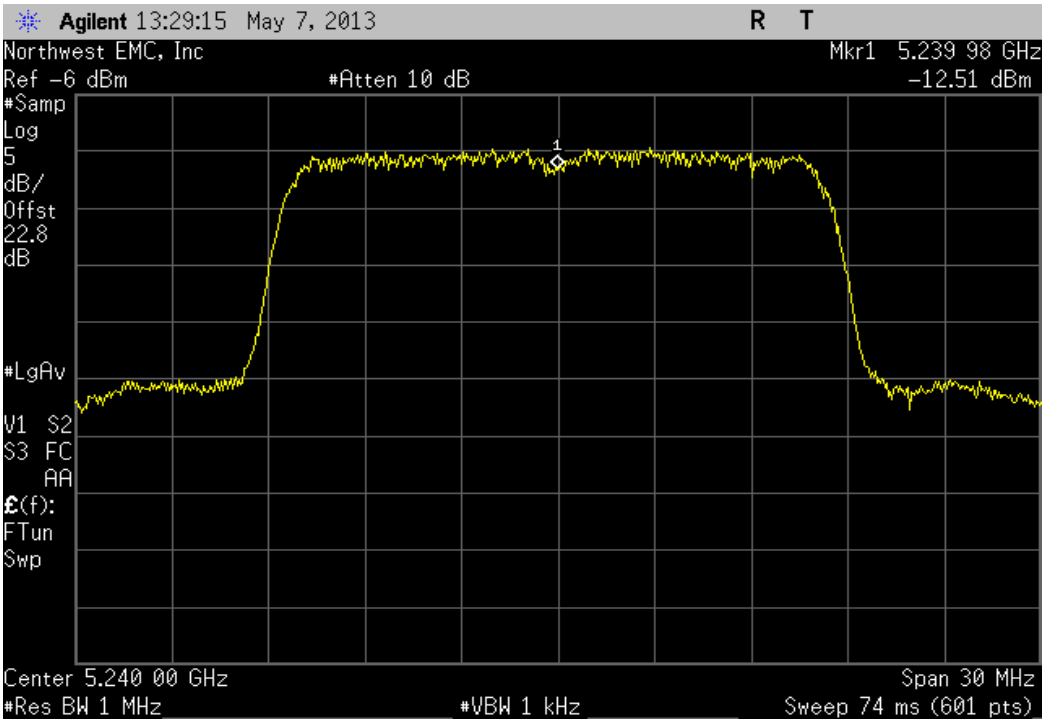

| 6 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: -10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5240.02 | 5240 | 3.8 | 100 | Pass |



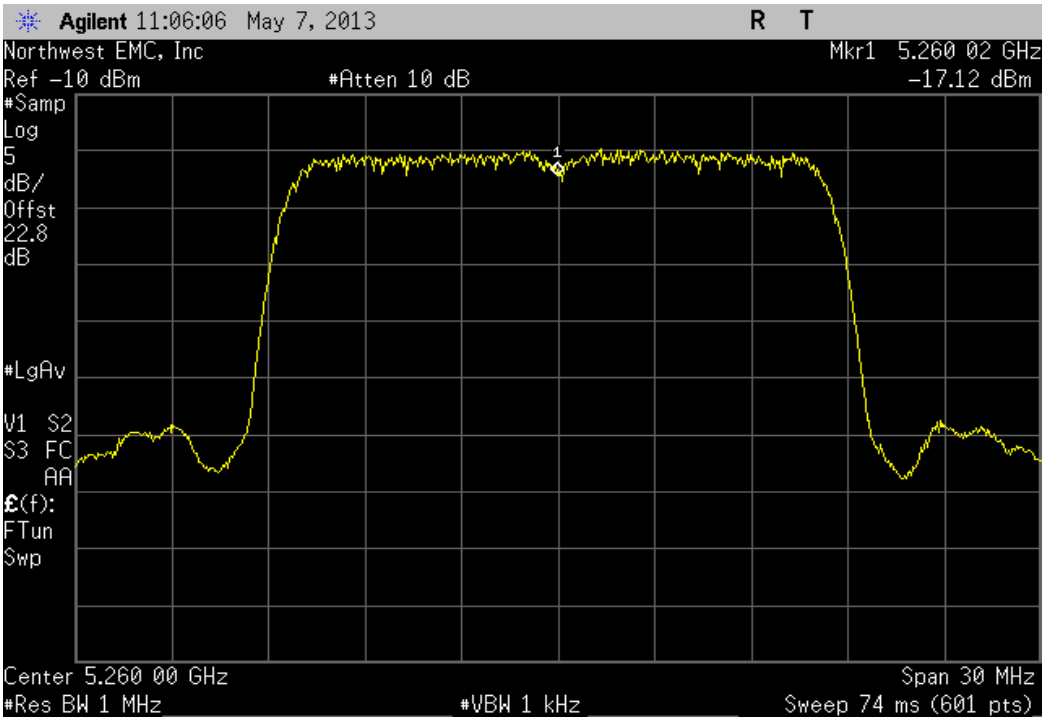
| 6 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: -20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5240.02 | 5240 | 3.8 | 100 | Pass |



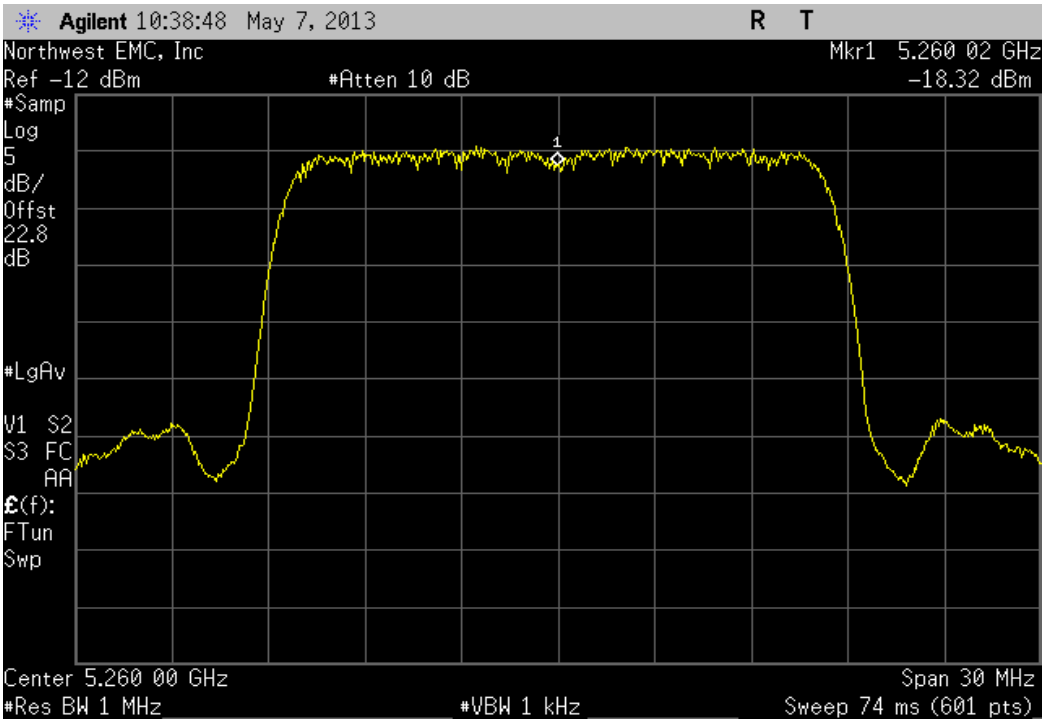

| 6 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: -30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5239.98 | 5240 | 3.8 | 100 | Pass |



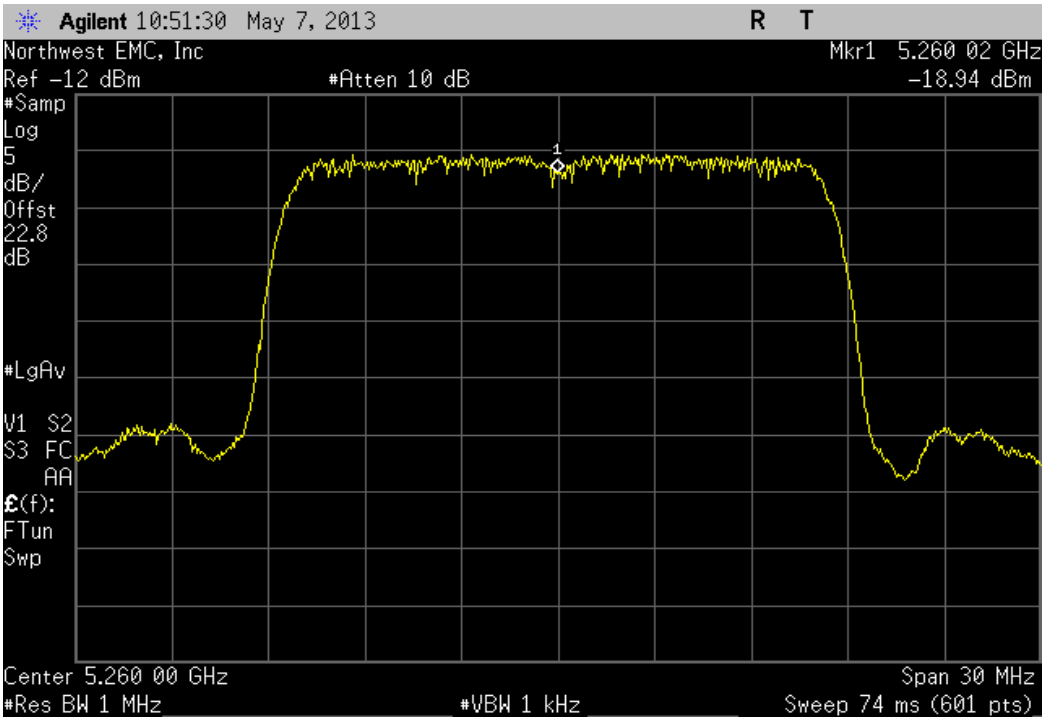
| 6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Voltage: 115% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5260.02 | 5260 | 3.8 | 100 | Pass |



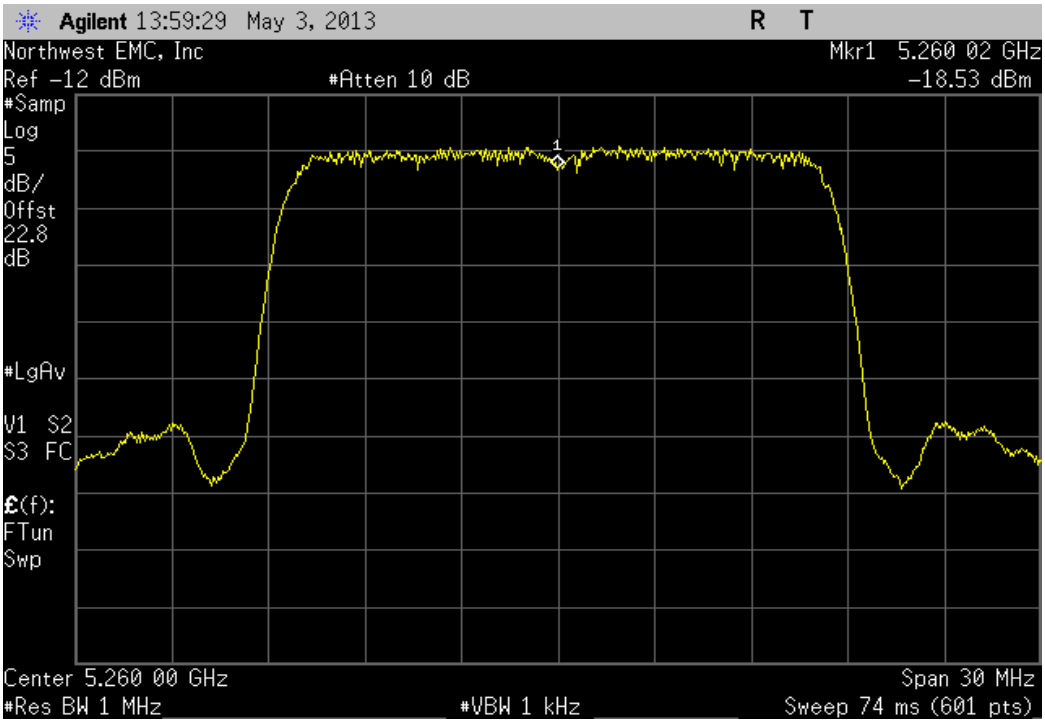

| 6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Voltage: 100% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5260.02 | 5260 | 3.8 | 100 | Pass |



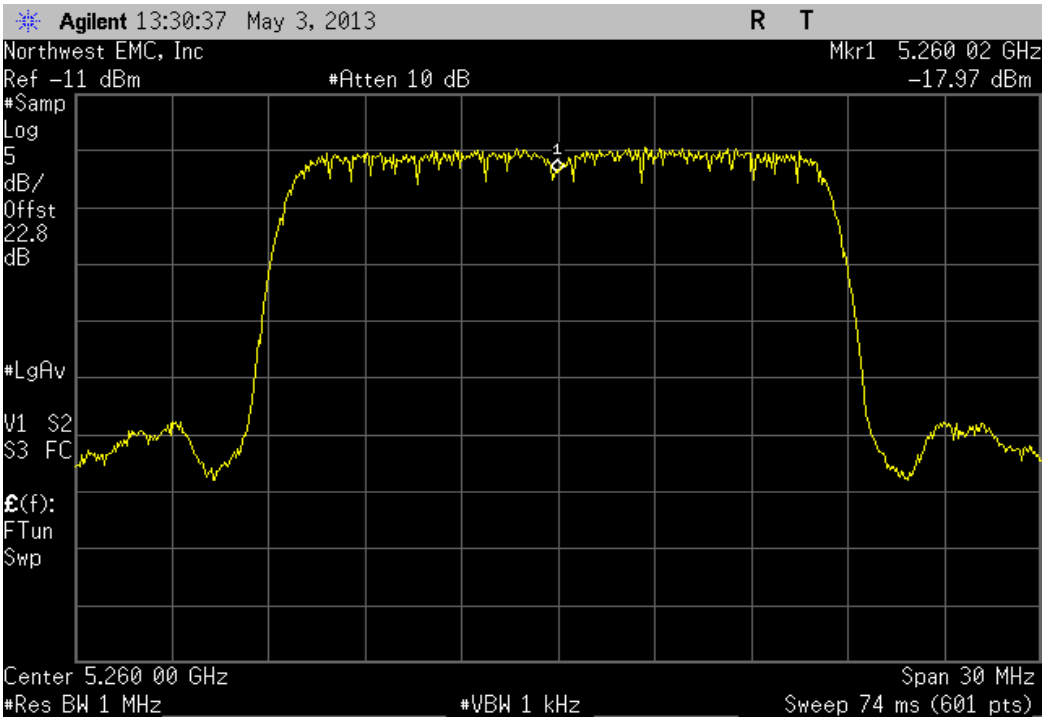
| 6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Voltage: 85% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5260.02 | 5260 | 3.8 | 100 | Pass |



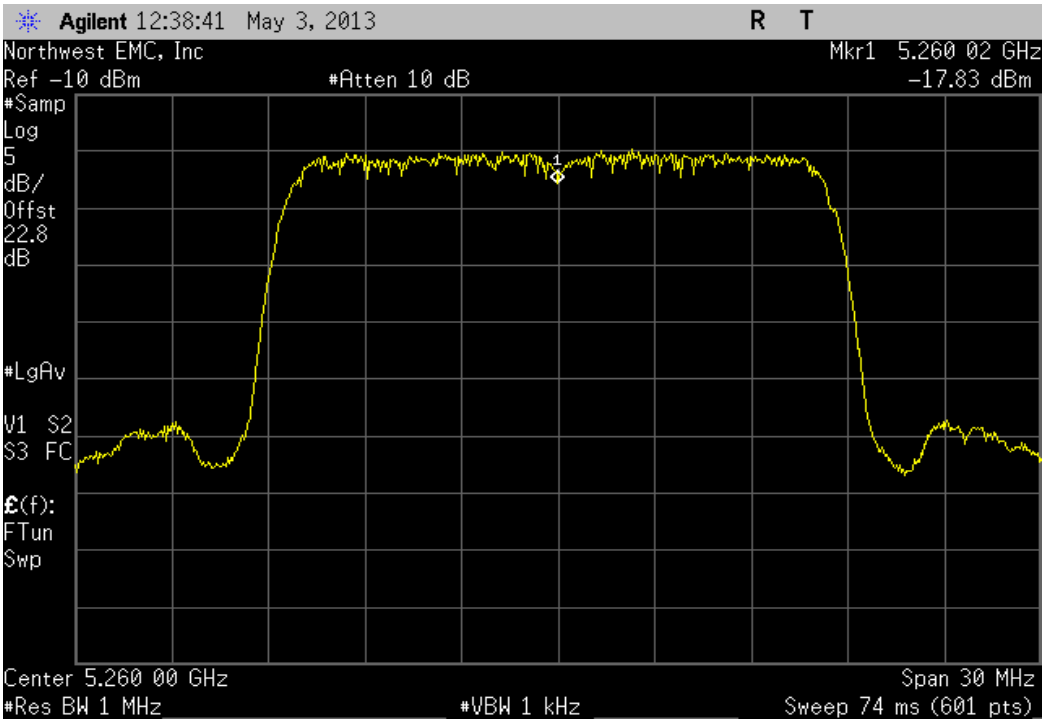

| 6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: +50° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5260.02 | 5260 | 3.8 | 100 | Pass |



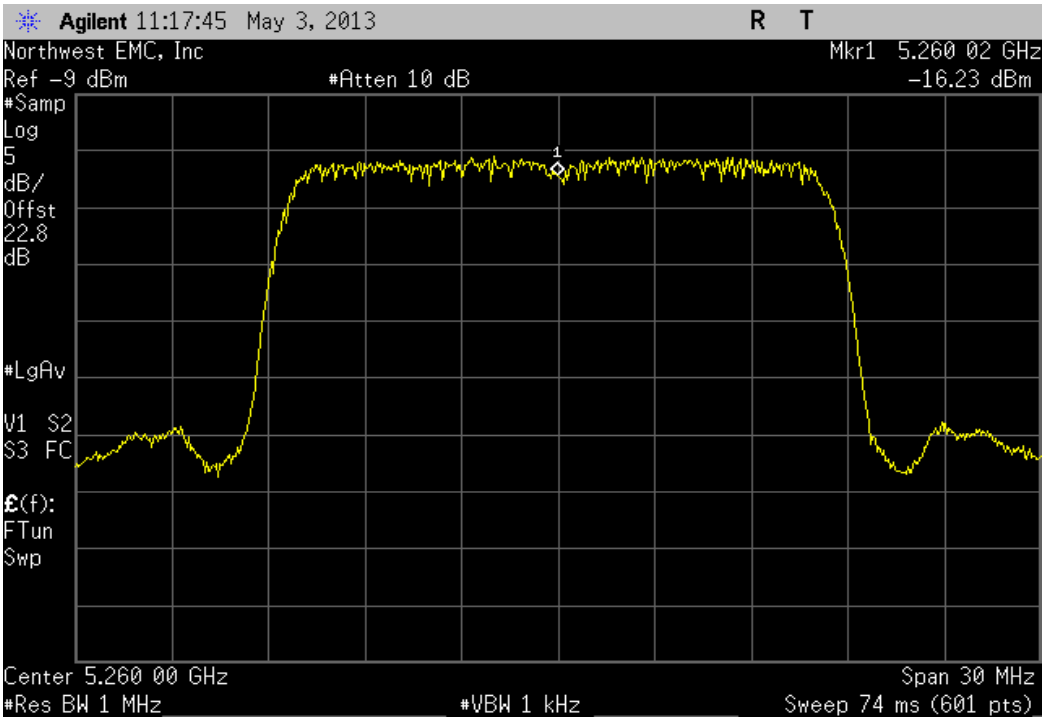
| 6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: +40° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5260.02 | 5260 | 3.8 | 100 | Pass |



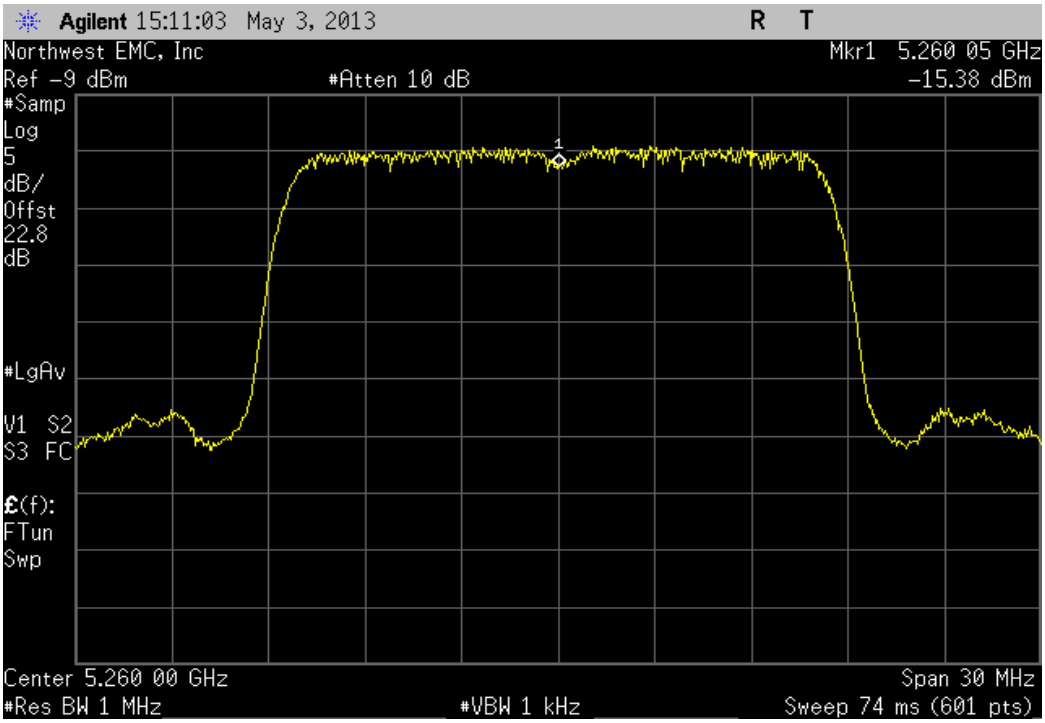

| 6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: +30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5260.02 | 5260 | 3.8 | 100 | Pass |



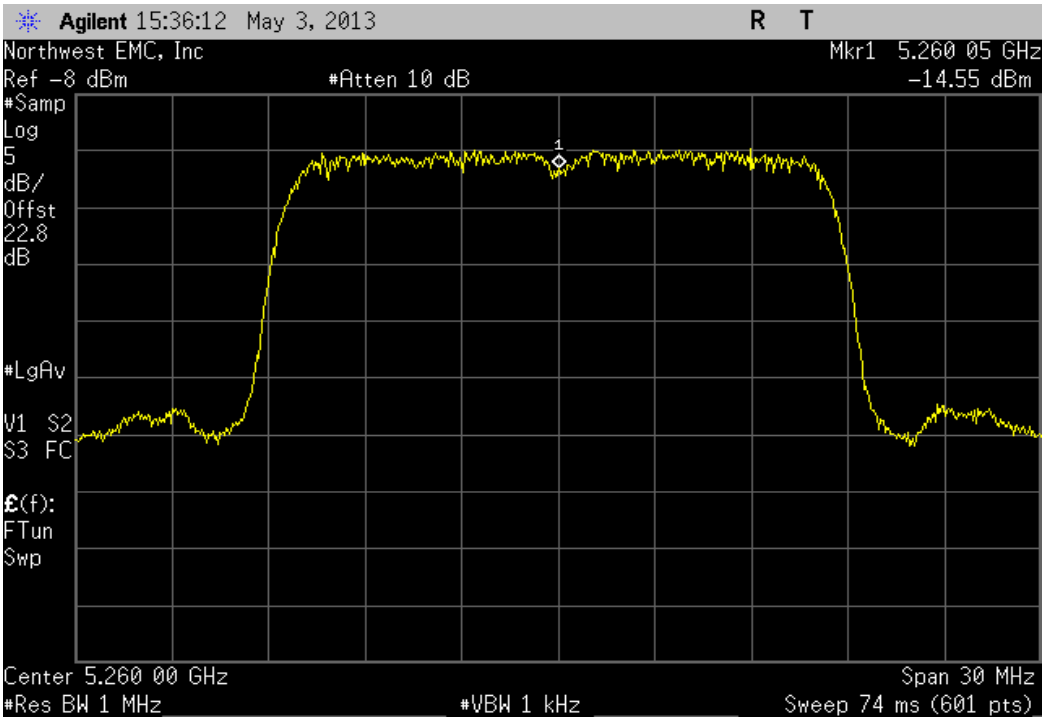
| 6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: +20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5260.02 | 5260 | 3.8 | 100 | Pass |



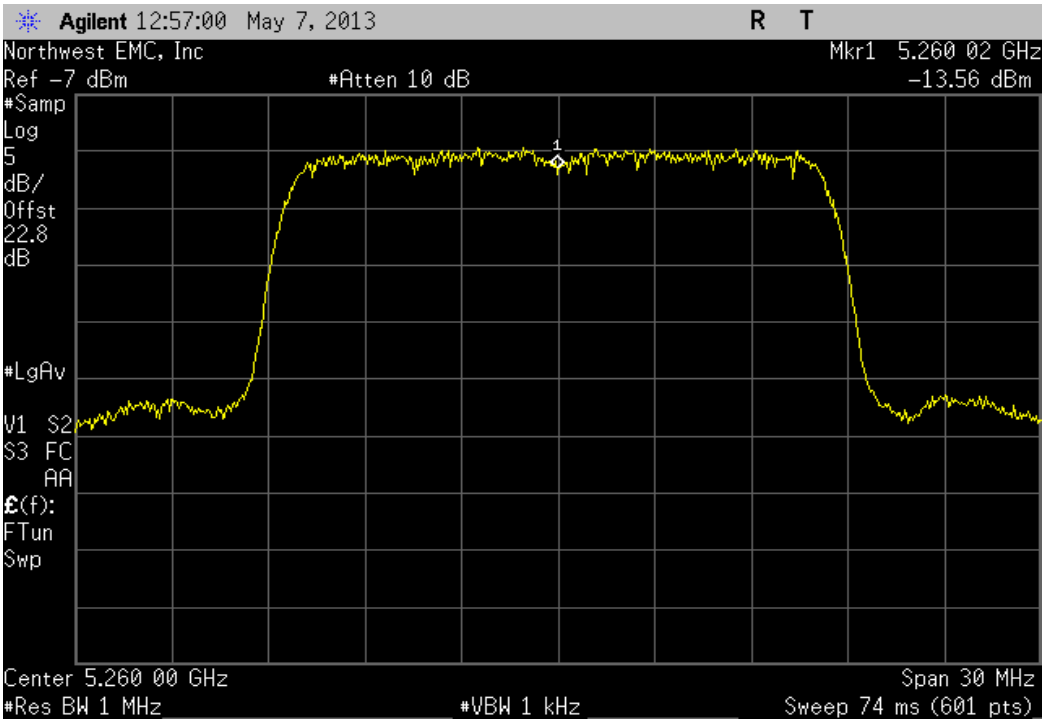

| 6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: +10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5260.05 | 5260 | 9.5 | 100 | Pass |



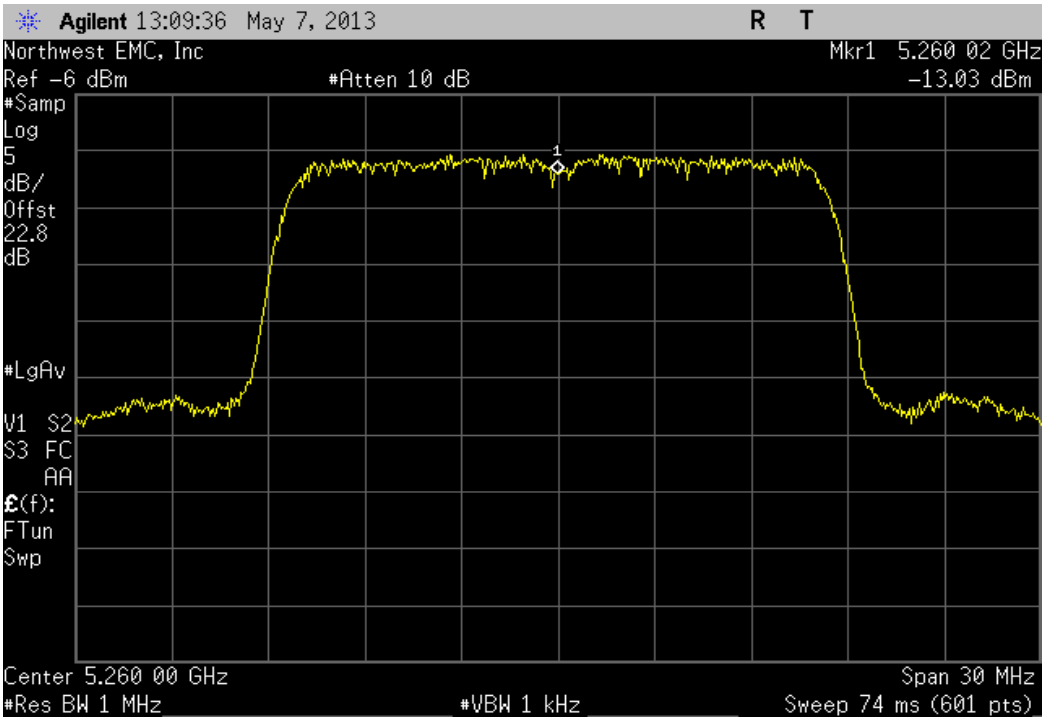
| 6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: 0° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5260.05 | 5260 | 9.5 | 100 | Pass |



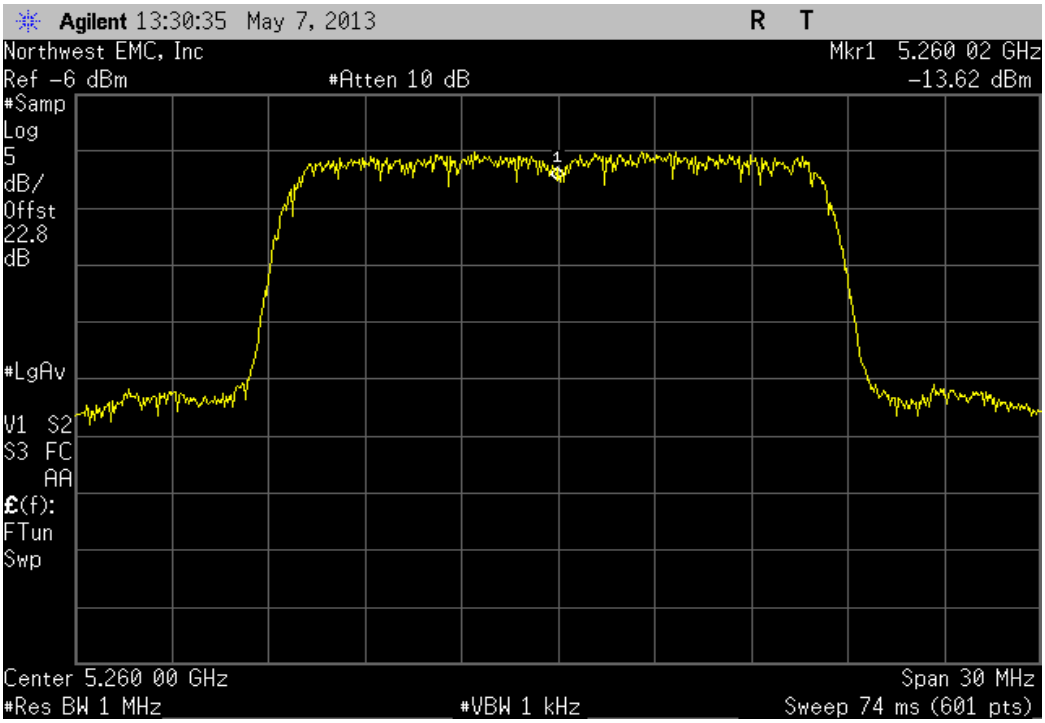

| 6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: -10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5260.02 | 5260 | 3.8 | 100 | Pass |



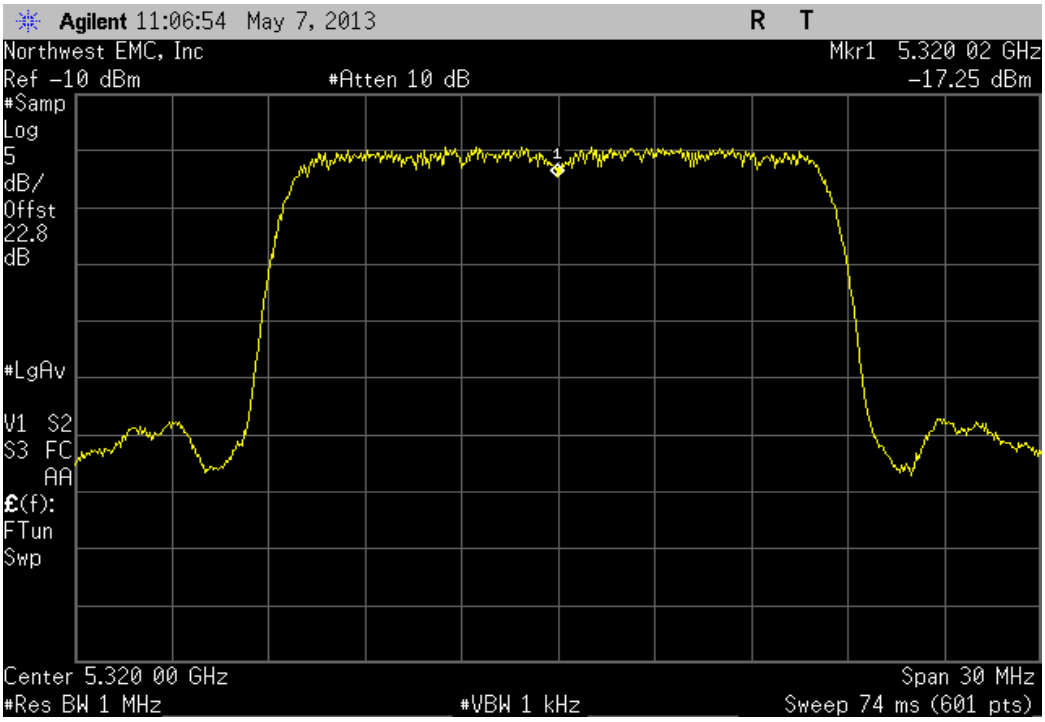
| 6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: -20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5260.02 | 5260 | 3.8 | 100 | Pass |



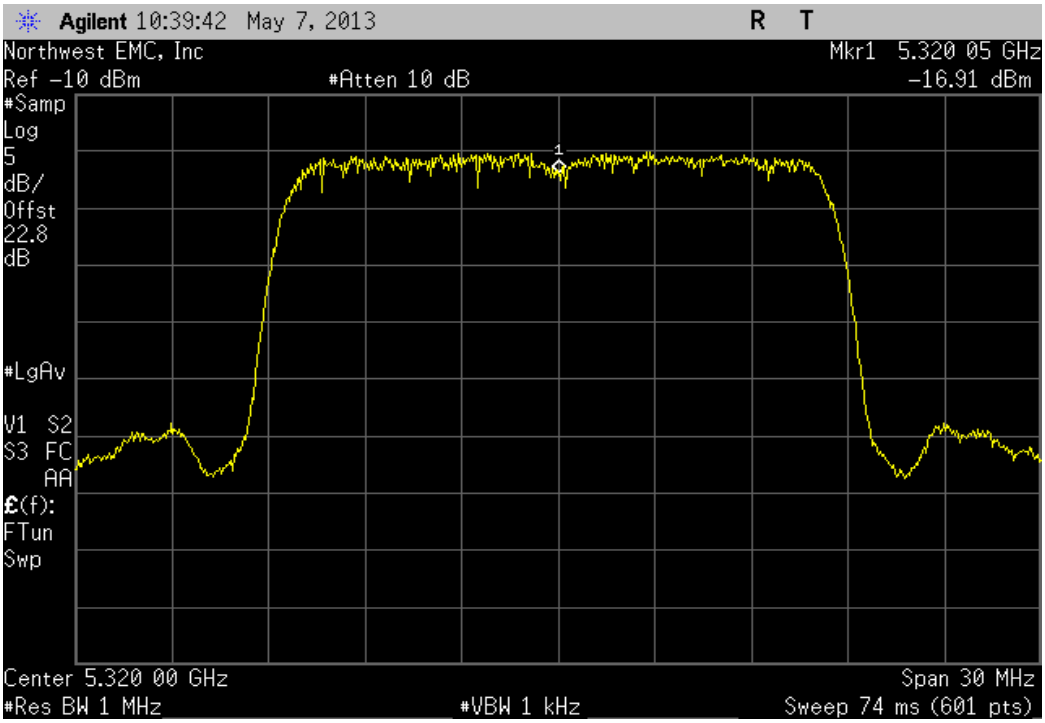

| 6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: -30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5260.02 | 5260 | 3.8 | 100 | Pass |



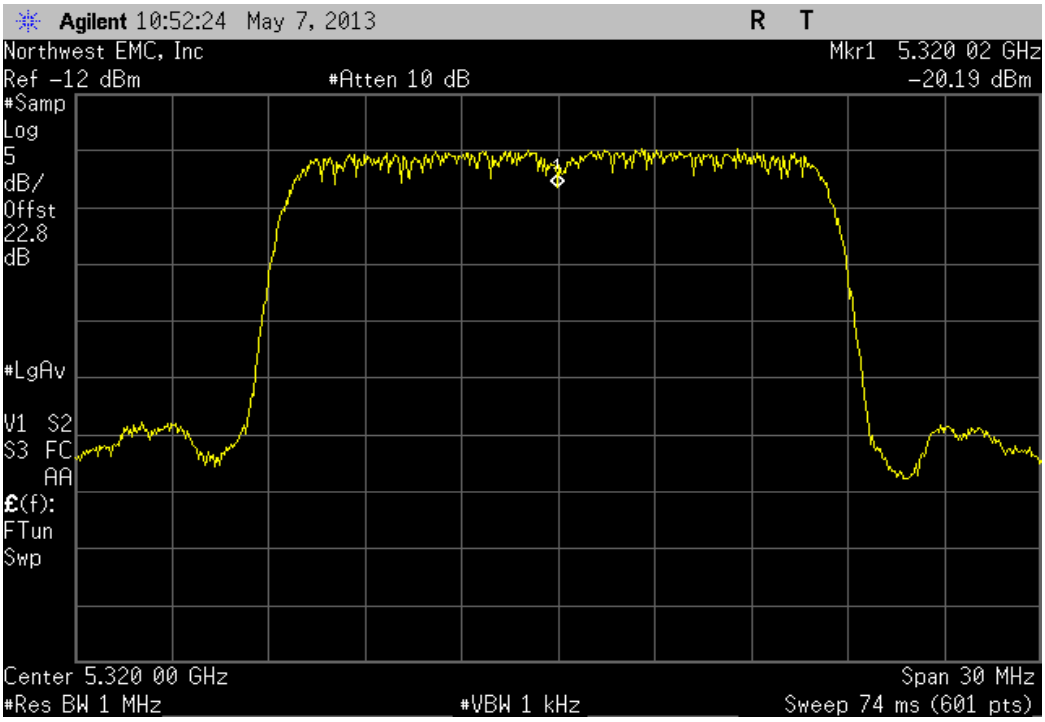
| 6 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Voltage: 115% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5320.02 | 5320 | 3.8 | 100 | Pass |



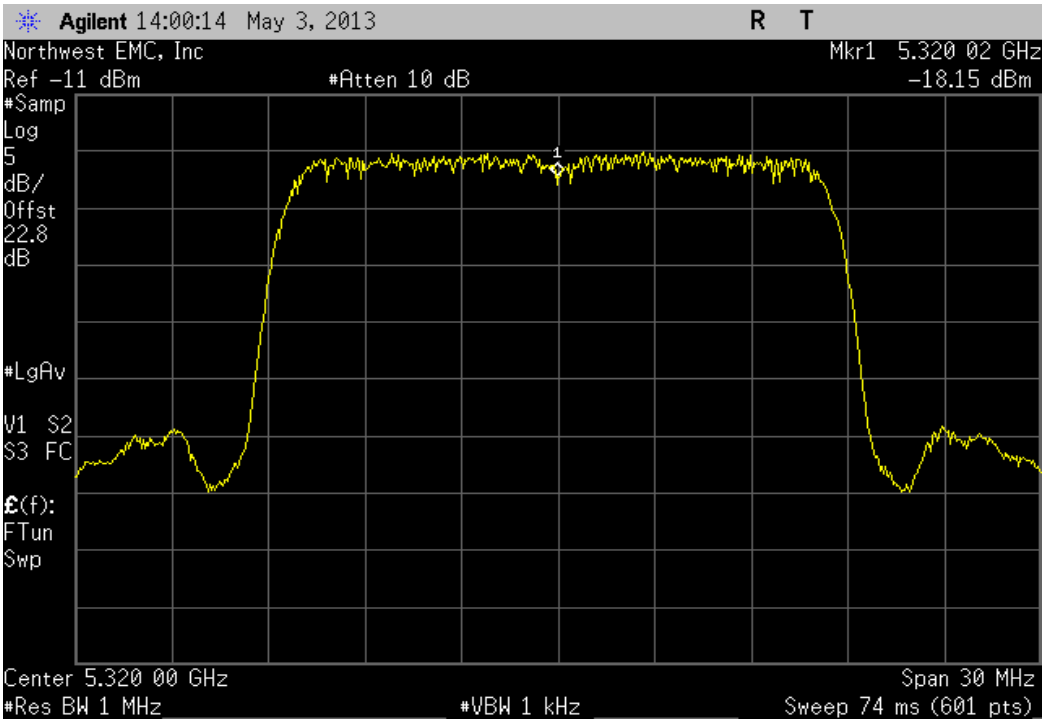

| 6 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Voltage: 100% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5320.05 | 5320 | 9.4 | 100 | Pass |



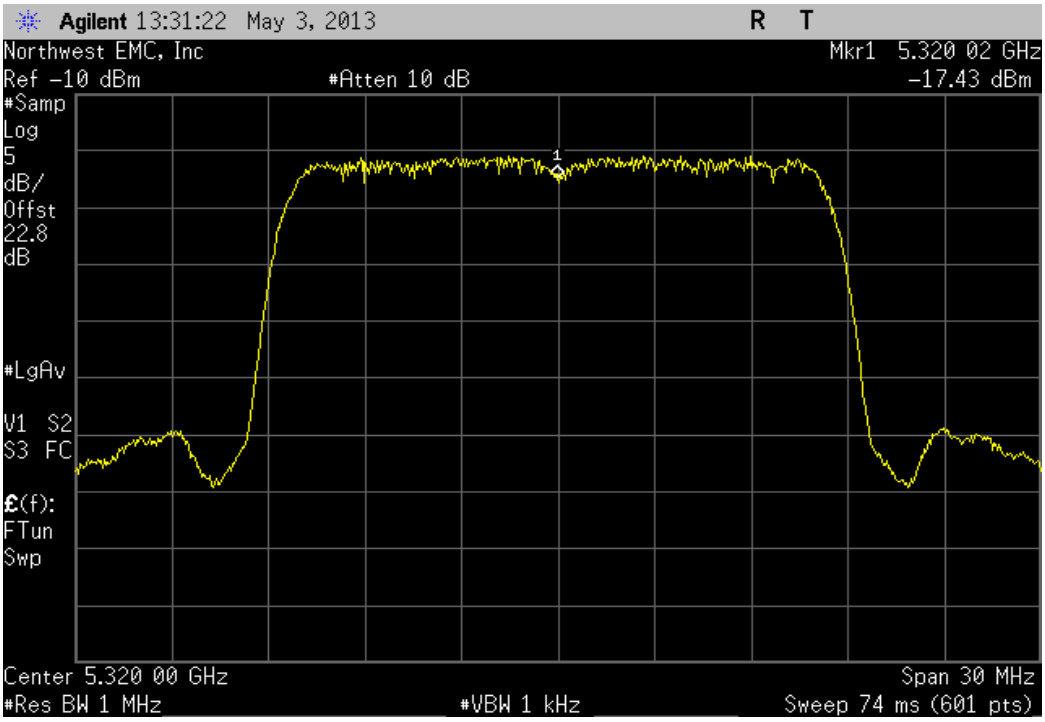
| 6 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Voltage: 85% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5320.02 | 5320 | 3.8 | 100 | Pass |



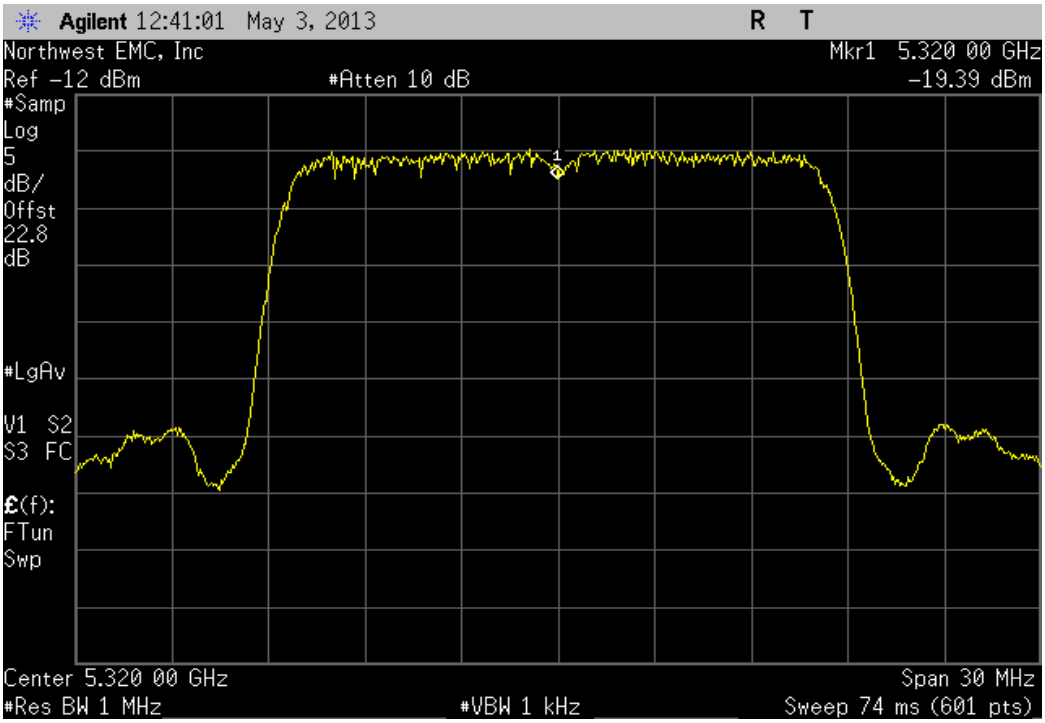

| 6 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +50° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5320.02 | 5320 | 3.8 | 100 | Pass |



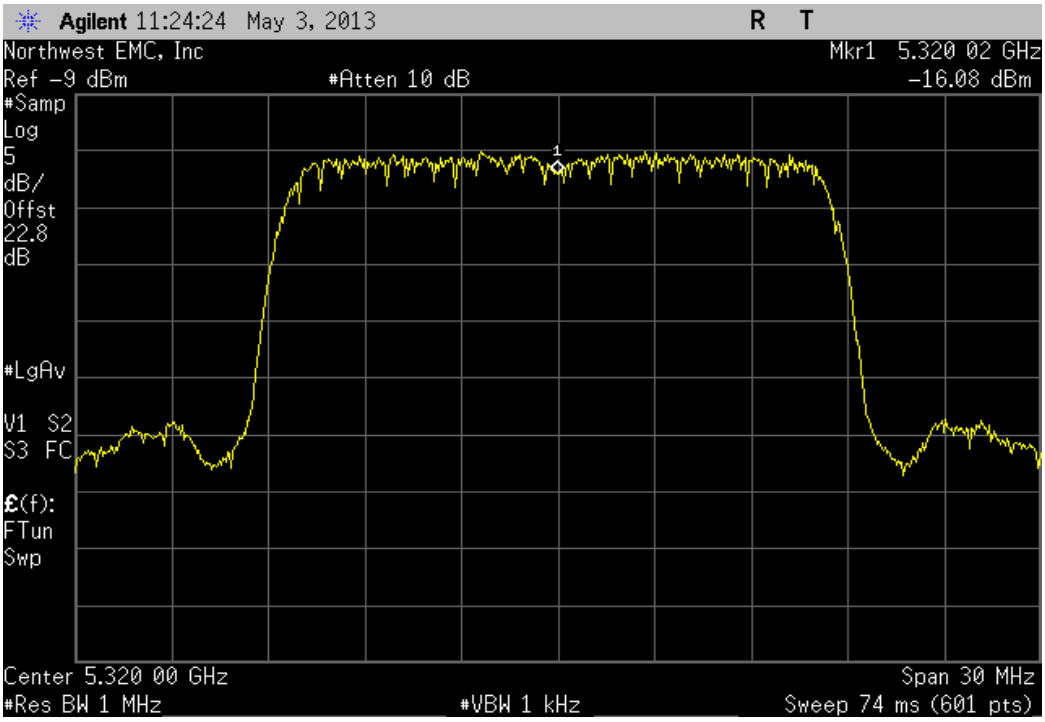
| 6 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +40° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5320.02 | 5320 | 3.8 | 100 | Pass |



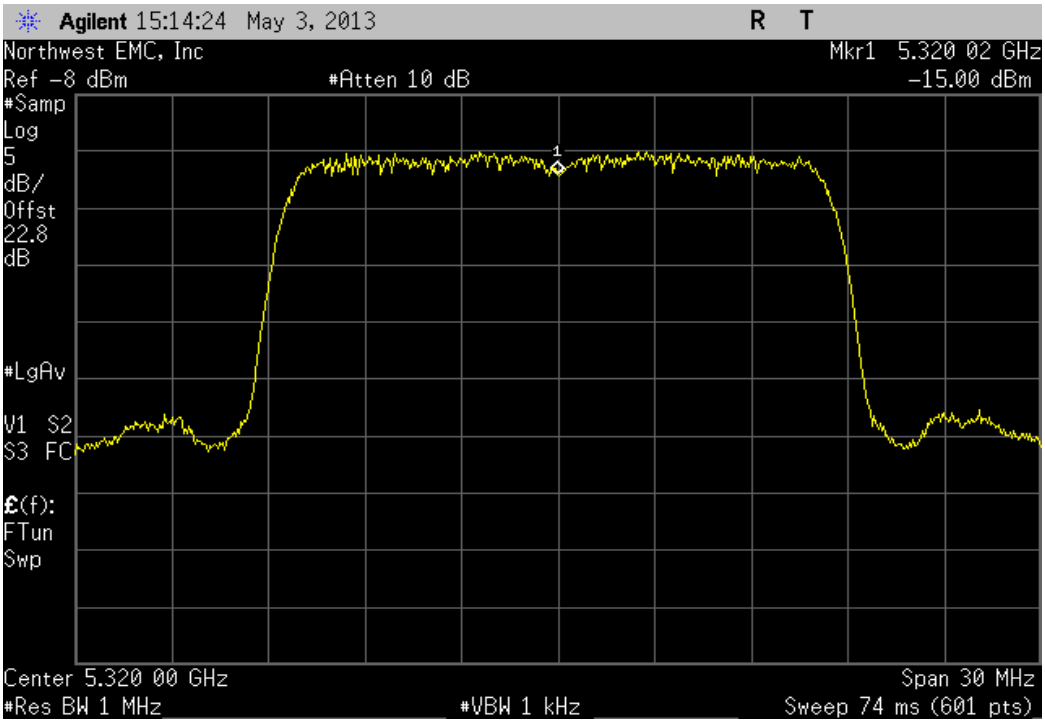

| 6 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5320 | 5320 | 0 | 100 | Pass |



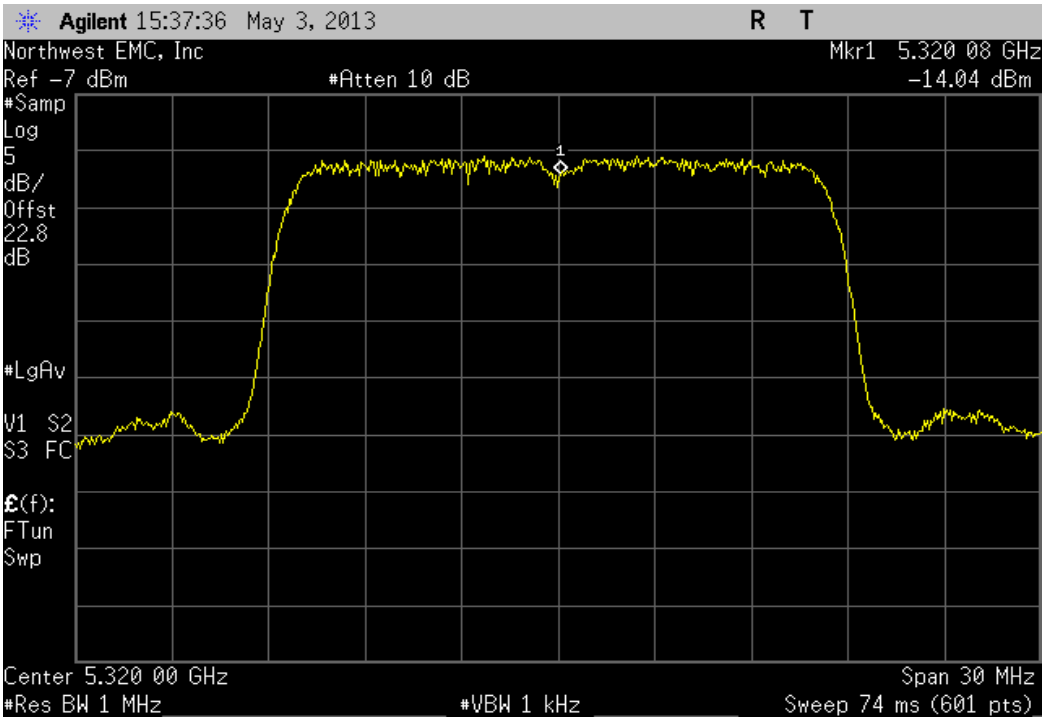
| 6 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5320.02 | 5320 | 3.8 | 100 | Pass |



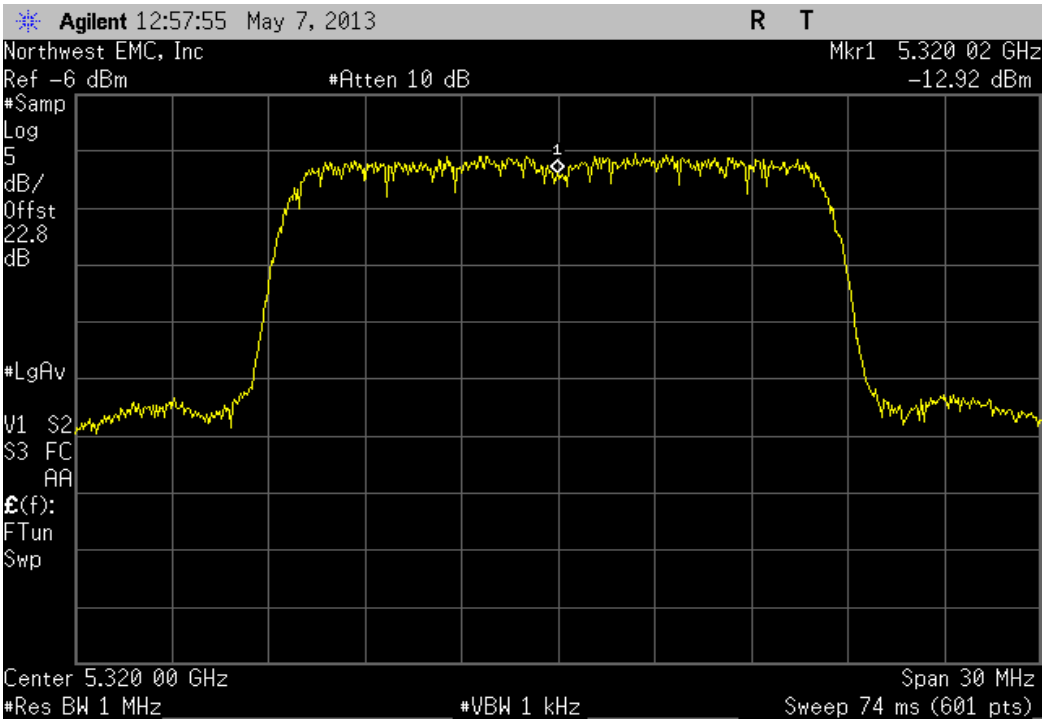

| 6 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5320.02 | 5320 | 3.8 | 100 | Pass |



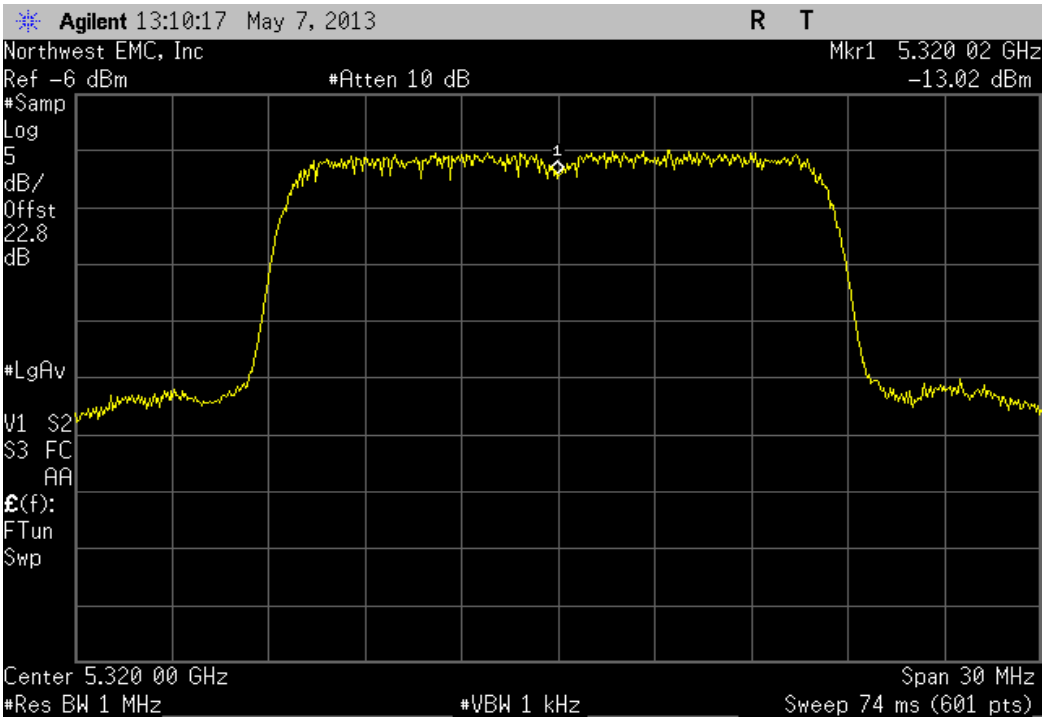
| 6 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: 0° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5320.08 | 5320 | 15 | 100 | Pass |



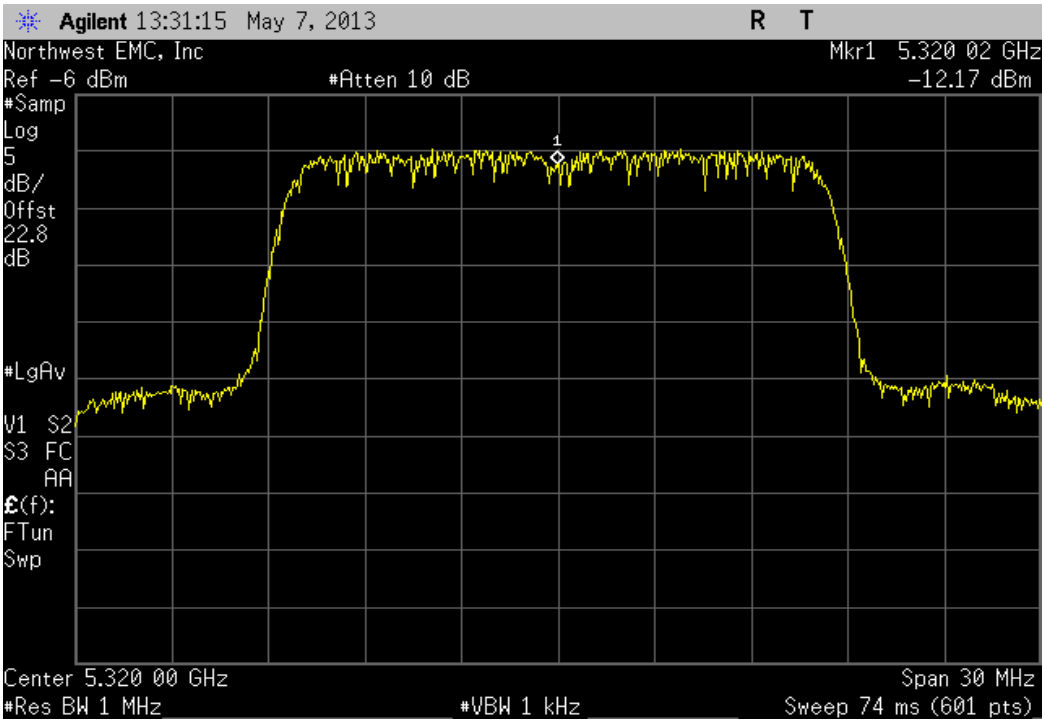

| 6 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: -10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5320.02 | 5320 | 3.8 | 100 | Pass |



| 6 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: -20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5320.02 | 5320 | 3.8 | 100 | Pass |

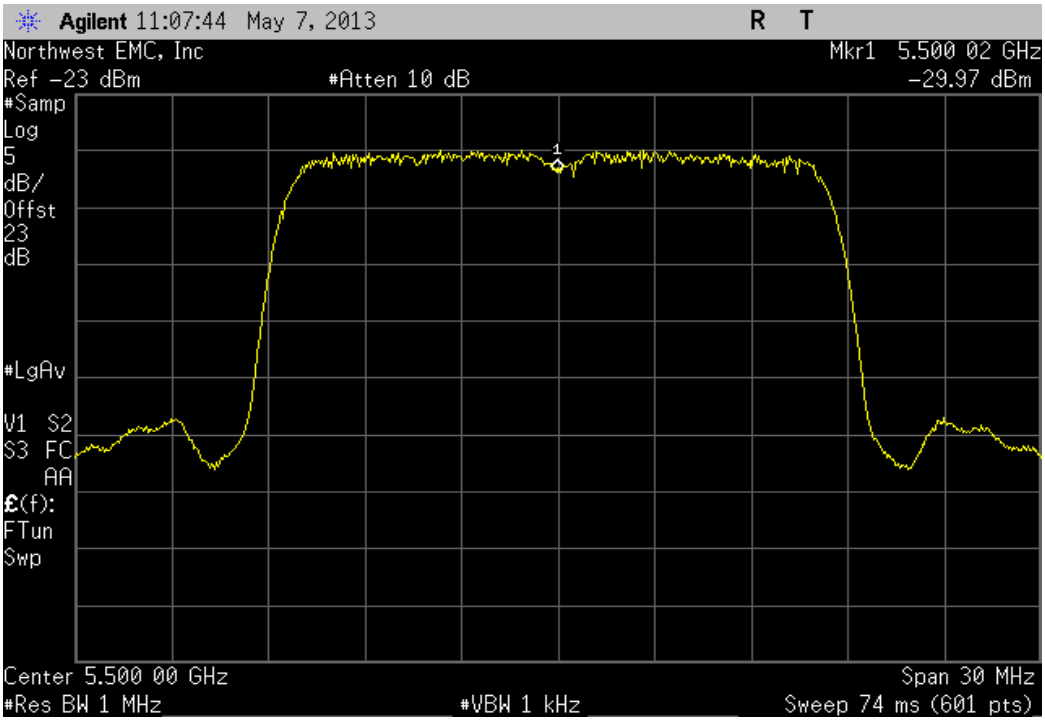



| 6 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: -30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5320.02 | 5320 | 3.8 | 100 | Pass |

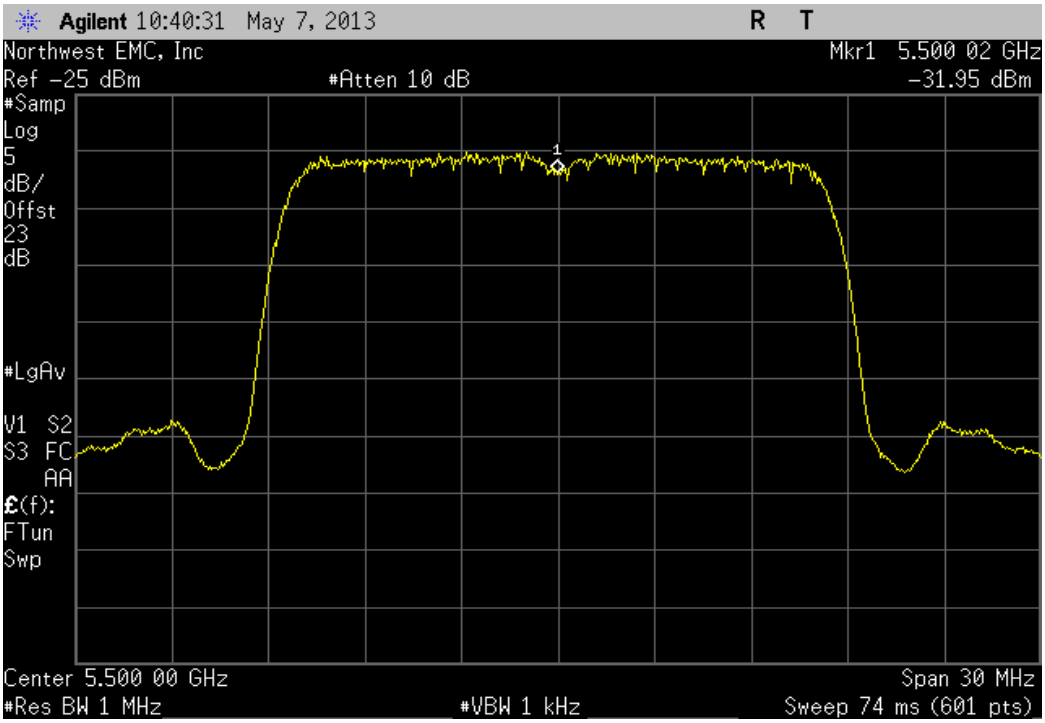


# Frequency Stability

| 6 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Voltage: 115% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5500.02 | 5500 | 3.6 | 100 | Pass |

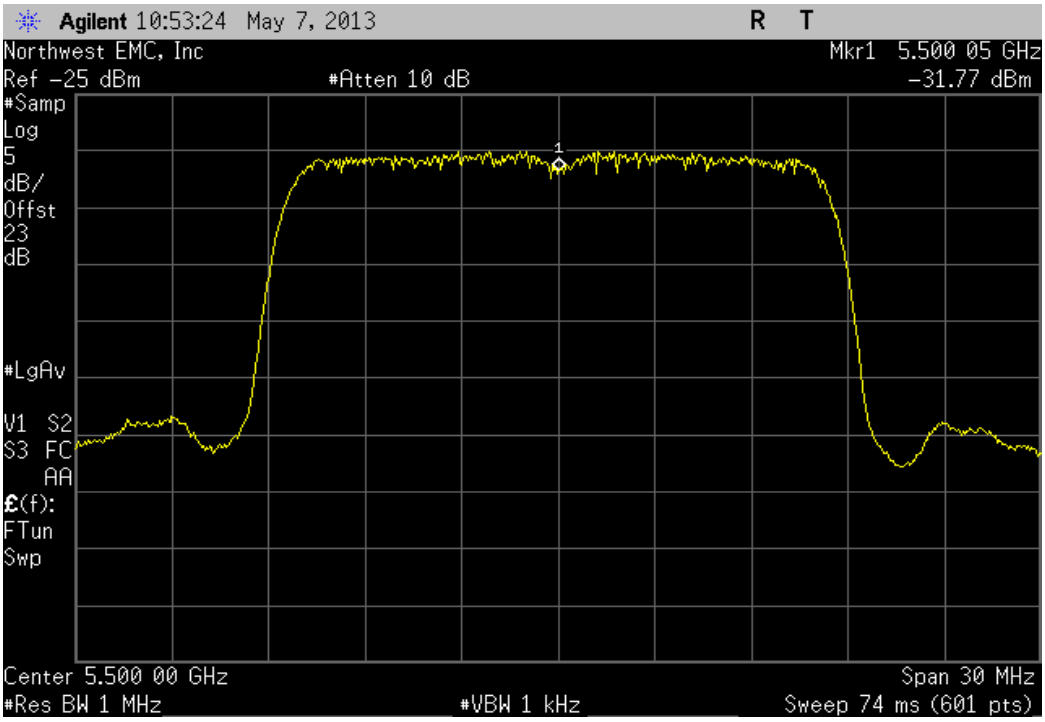



| 6 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Voltage: 100% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5500.02 | 5500 | 3.6 | 100 | Pass |

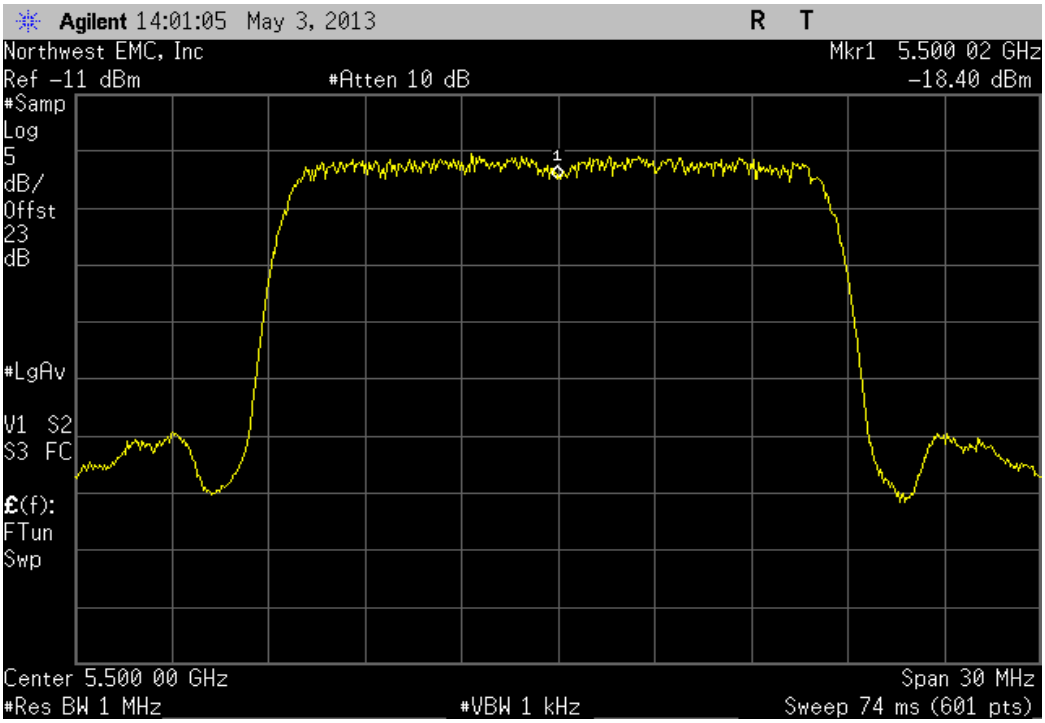


# Frequency Stability

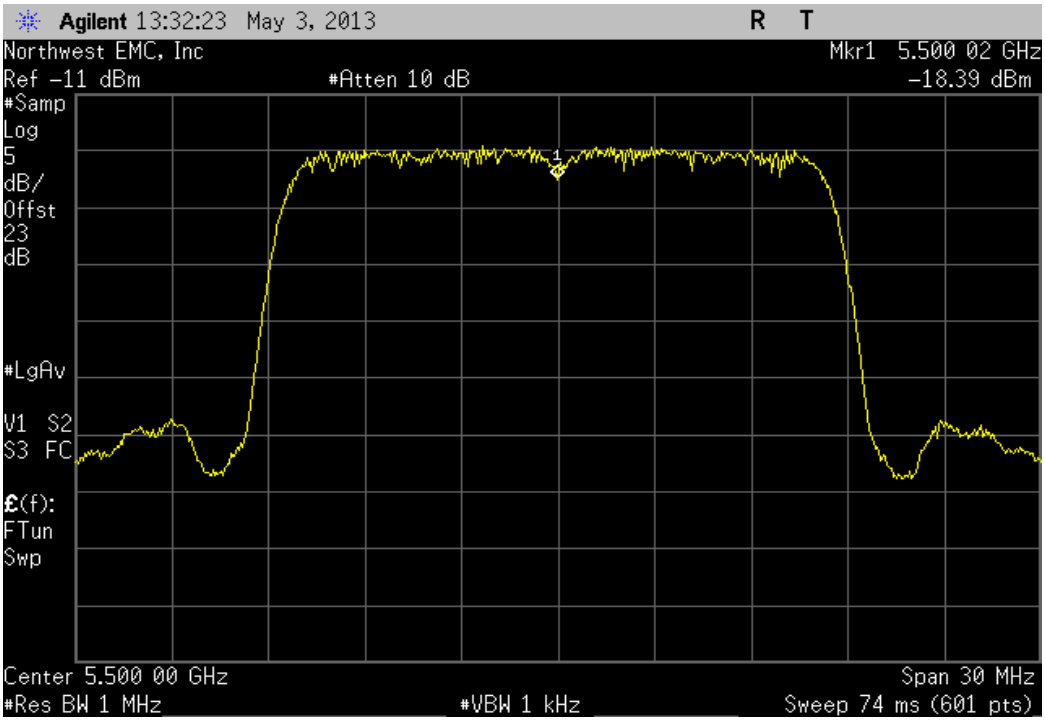
| 6 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Voltage: 85% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5500.05 | 5500 | 9.1 | 100 | Pass |



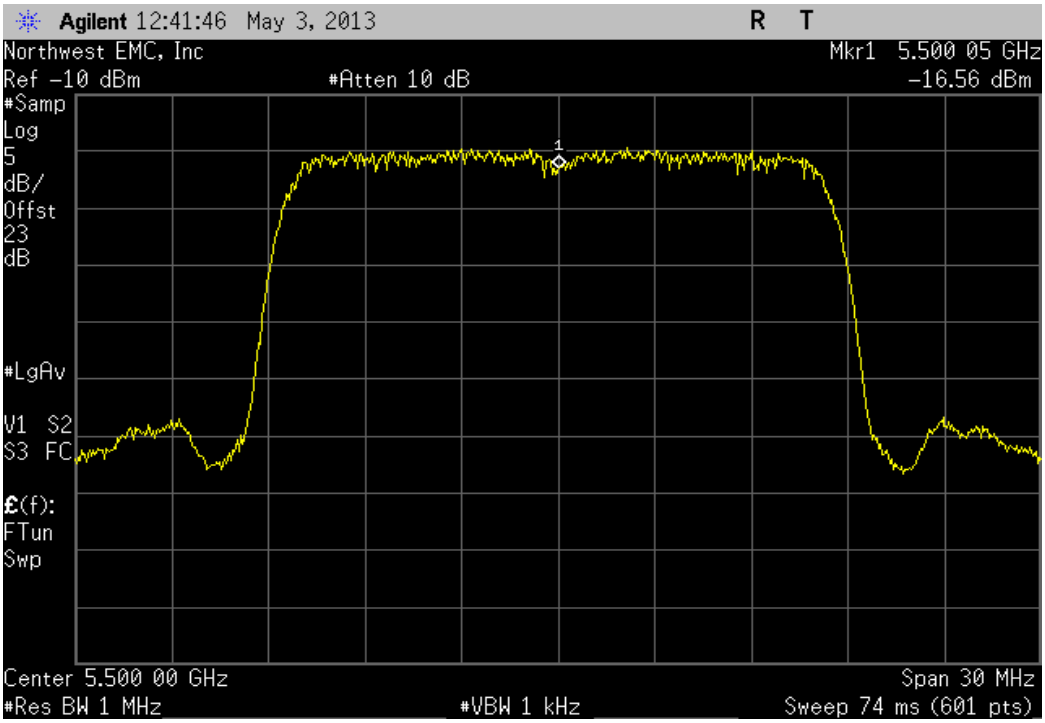

| 6 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +50° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5500.02 | 5500 | 3.6 | 100 | Pass |



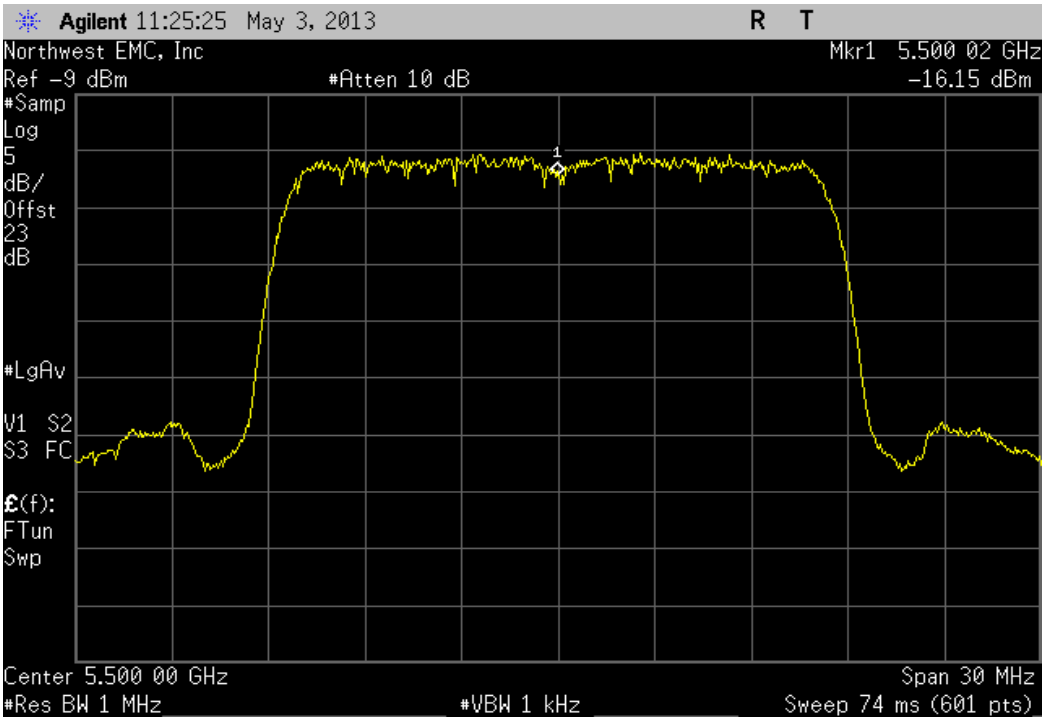
| 6 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +40° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5500.02 | 5500 | 3.6 | 100 | Pass |



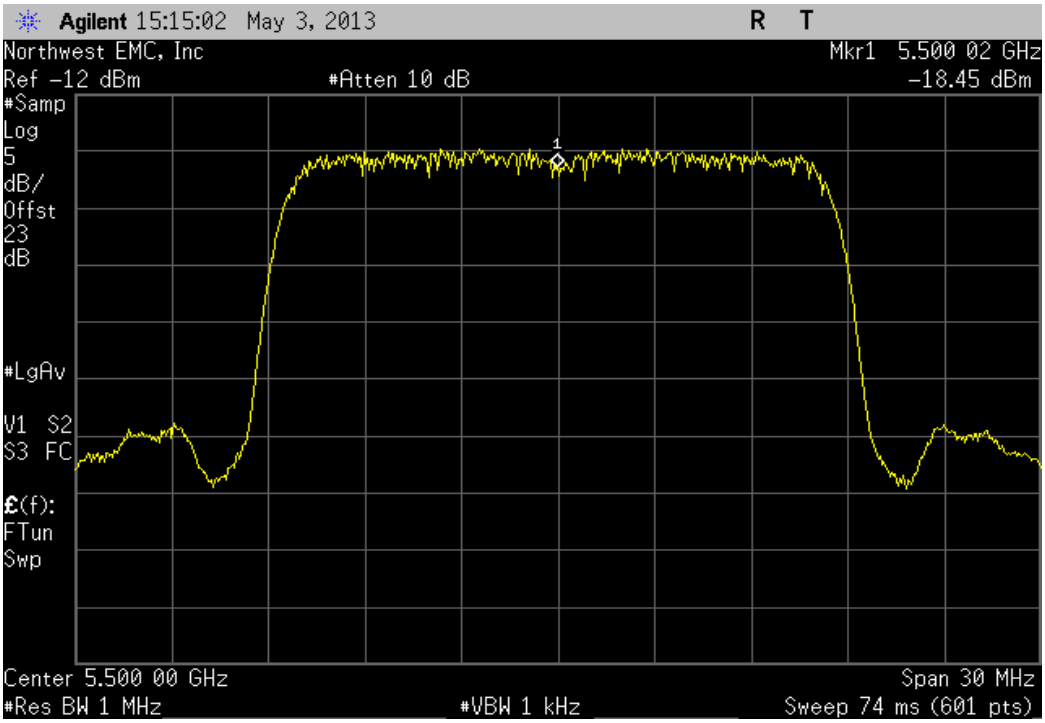

| 6 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5500.05 | 5500 | 9.1 | 100 | Pass |



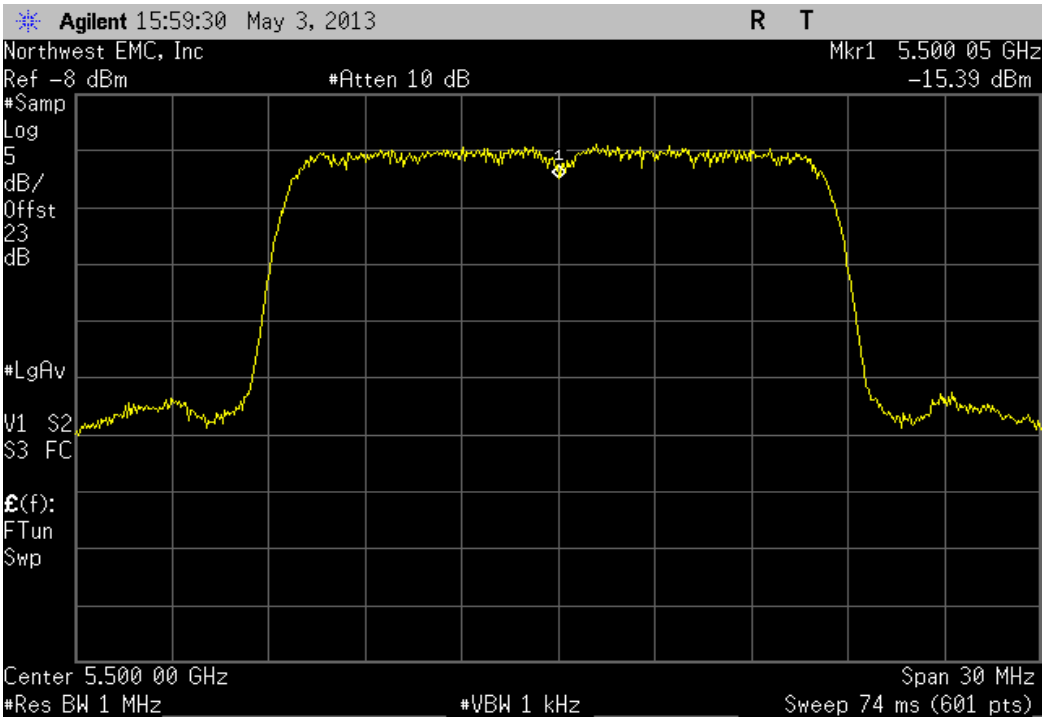
| 6 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5500.02 | 5500 | 3.6 | 100 | Pass |



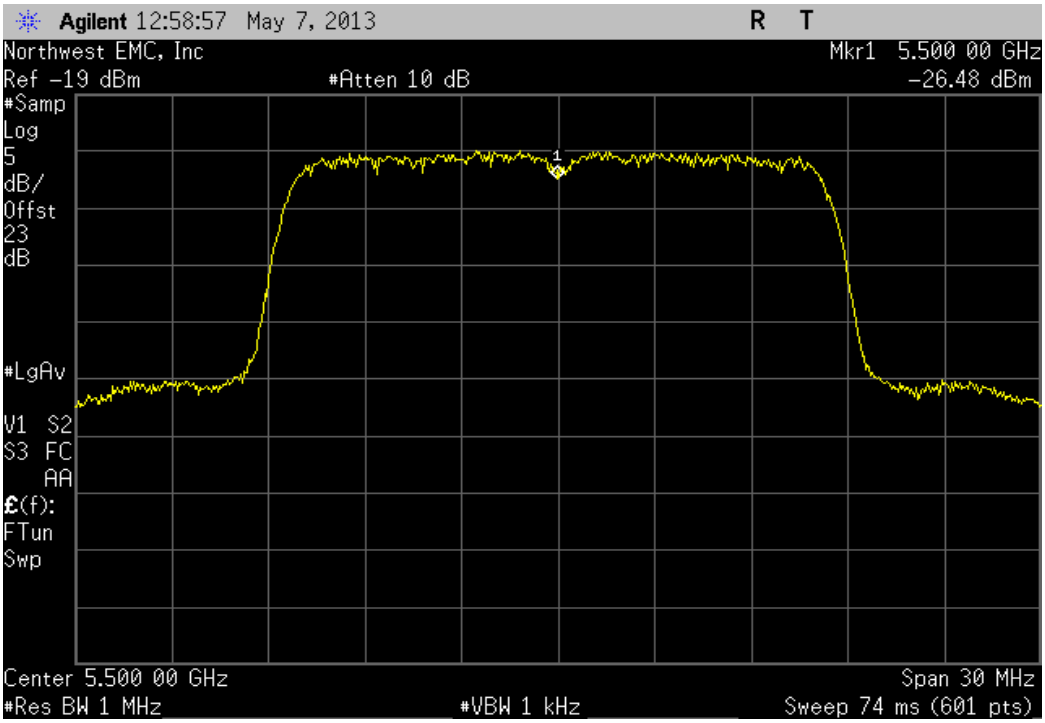

| 6 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5500.02 | 5500 | 3.6 | 100 | Pass |



| 6 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: 0° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5500.05 | 5500 | 9.1 | 100 | Pass |

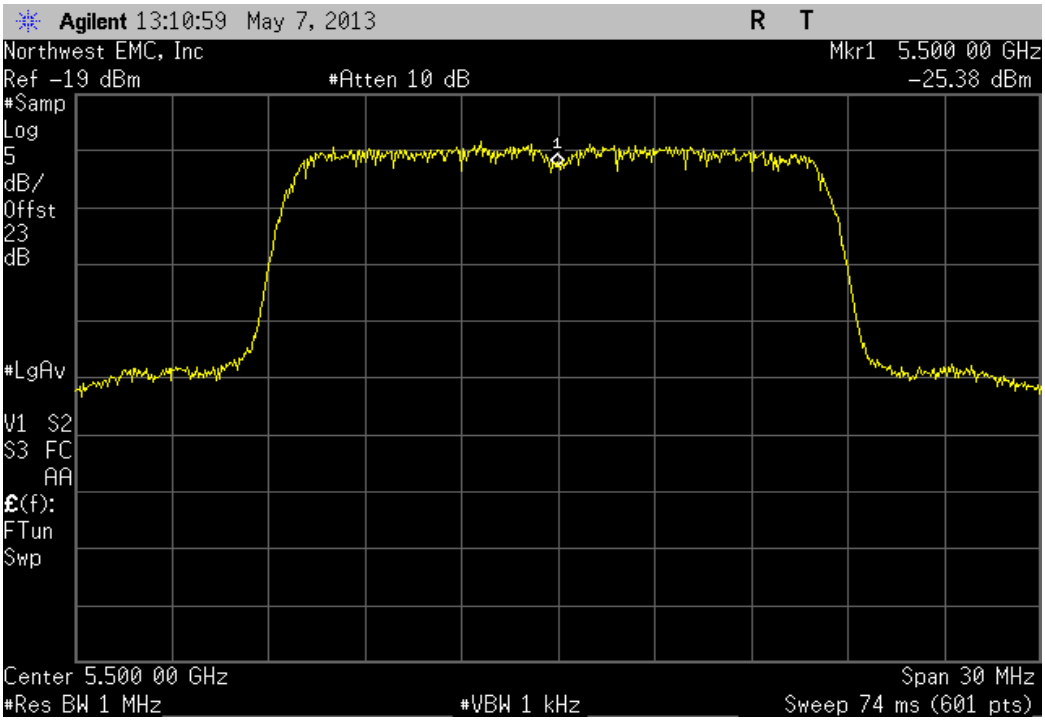



| 6 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: -10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5500 | 5500 | 0 | 100 | Pass |

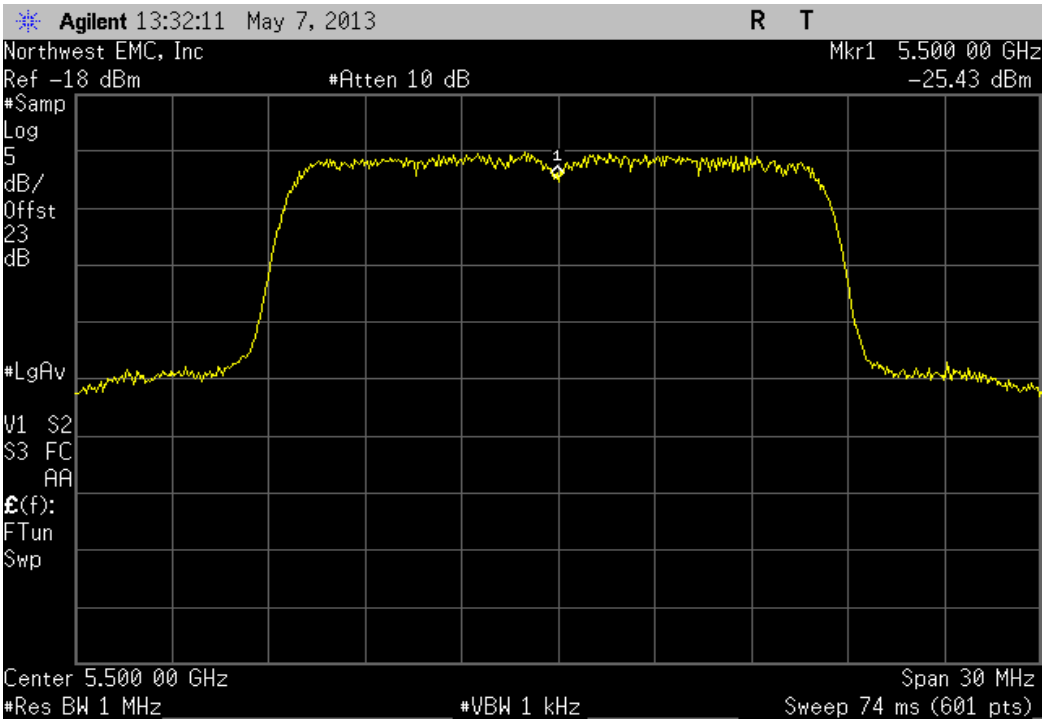


# Frequency Stability

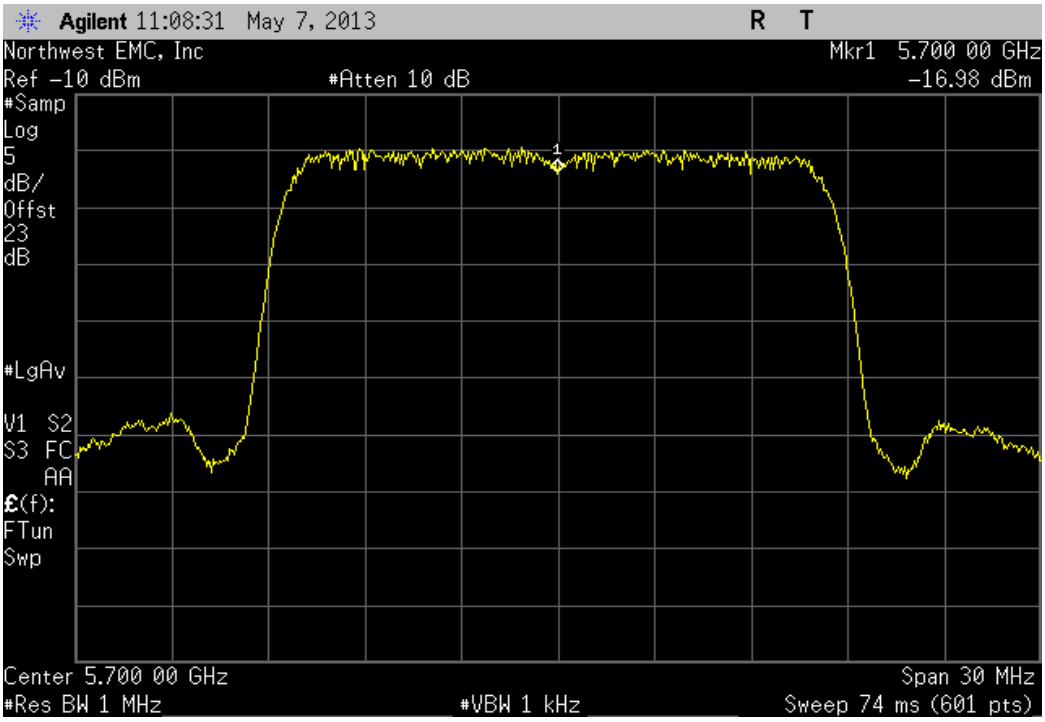
| 6 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: -20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5500 | 5500 | 0 | 100 | Pass |



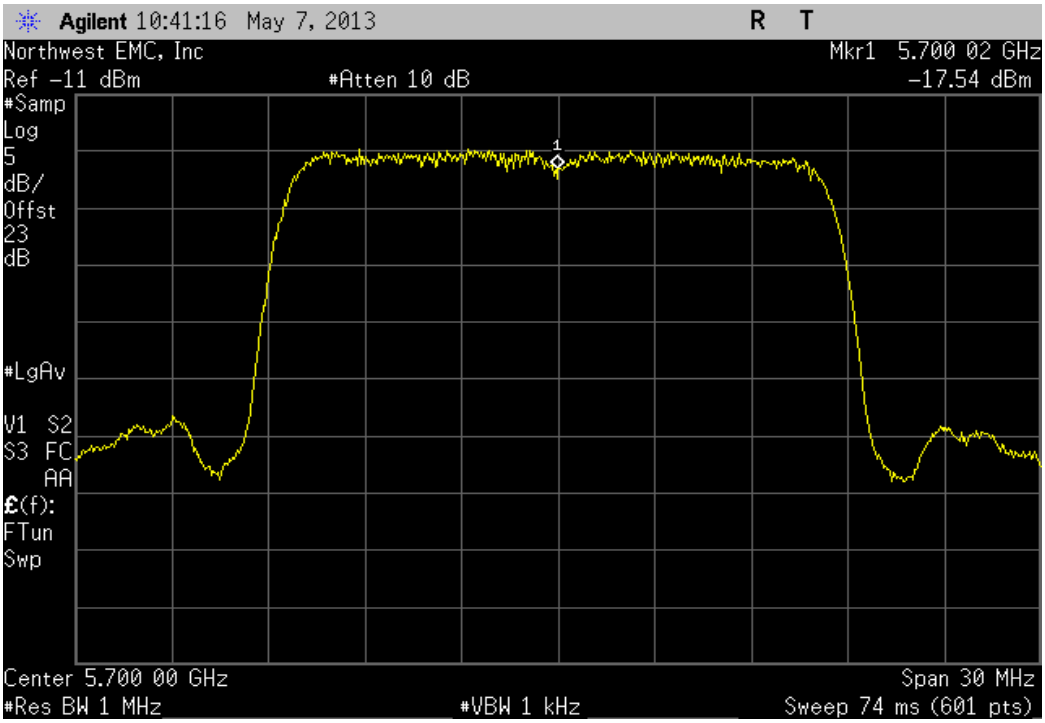

| 6 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: -30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5500 | 5500 | 0 | 100 | Pass |



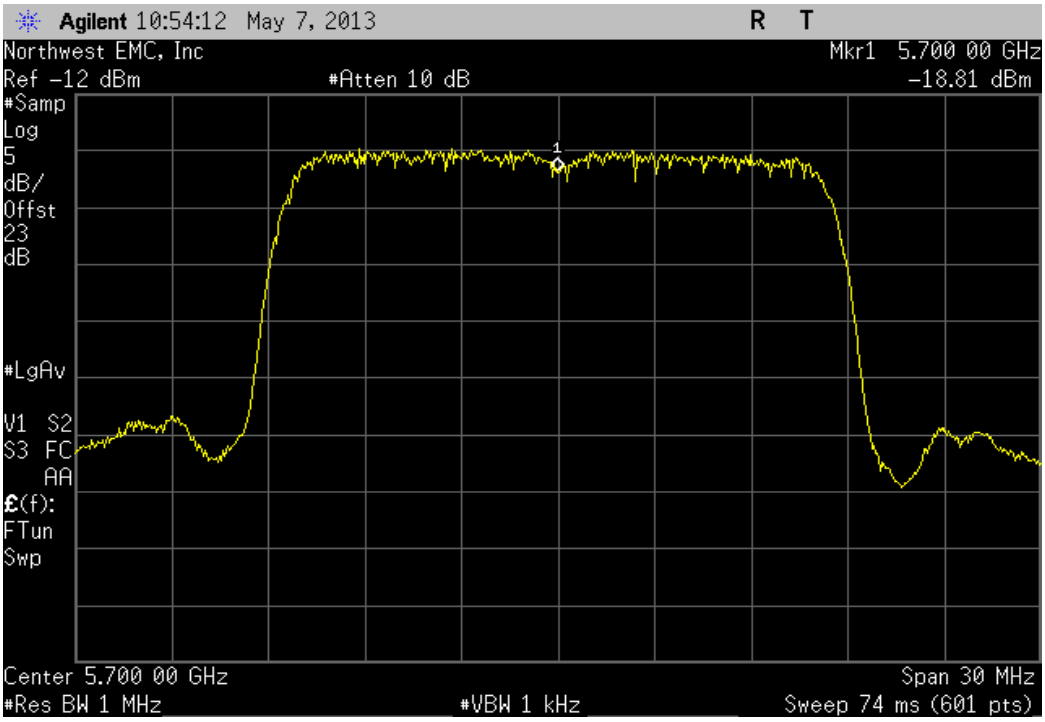
| 6 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Voltage: 115% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5700 | 5700 | 0 | 100 | Pass |



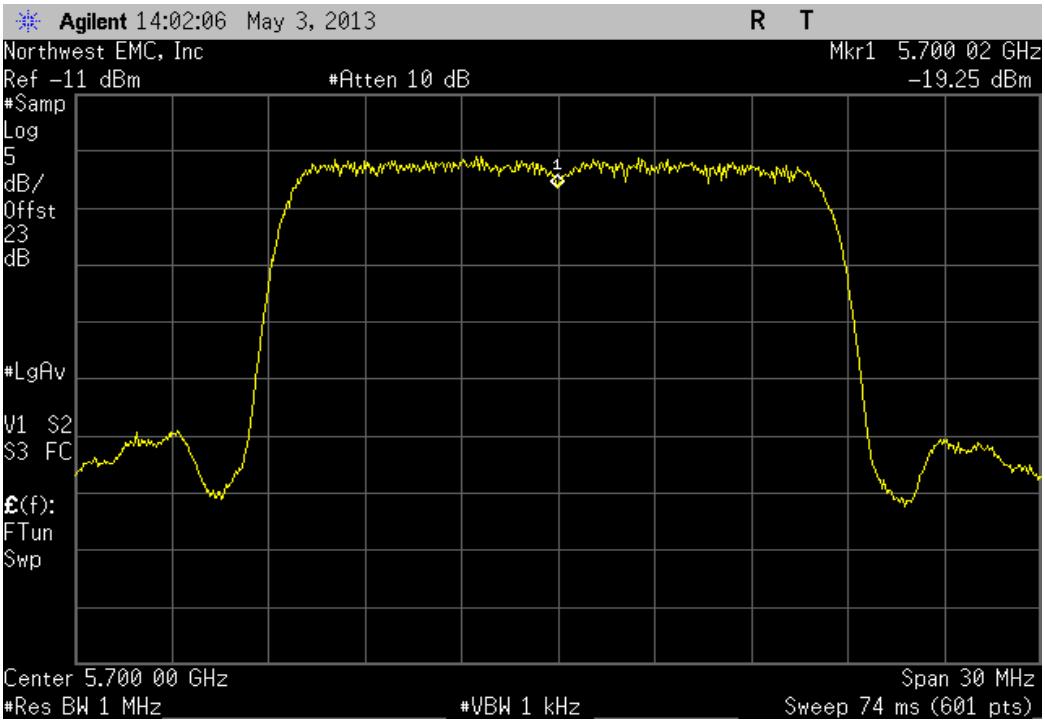

| 6 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Voltage: 100% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5700.02 | 5700 | 3.5 | 100 | Pass |



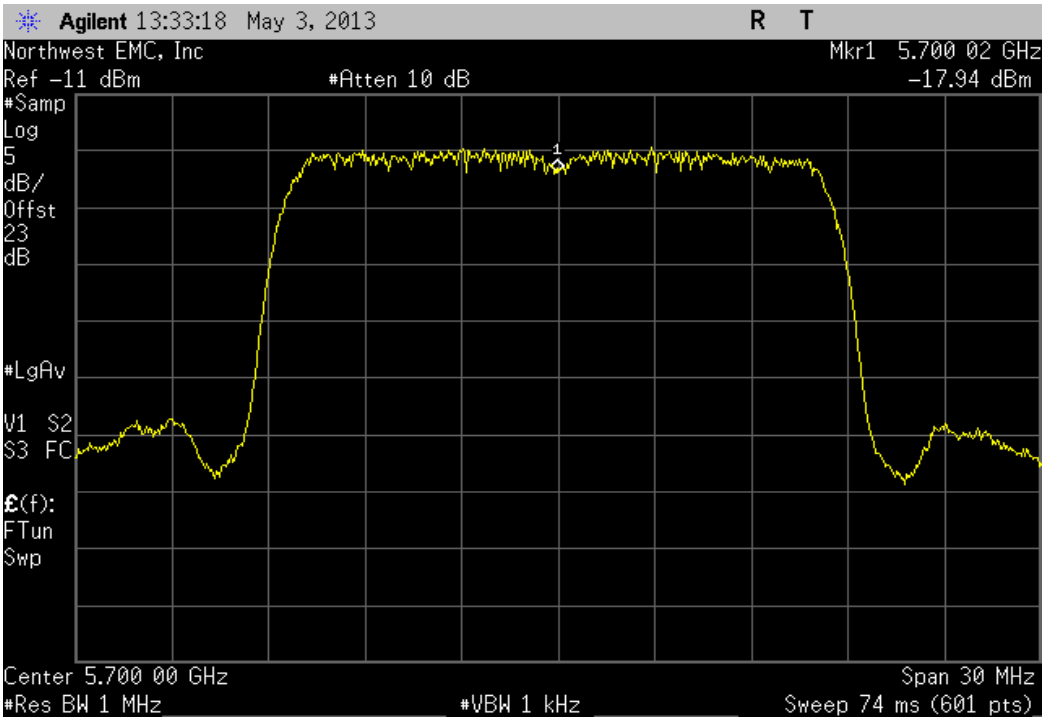
| 6 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Voltage: 85% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5700 | 5700 | 0 | 100 | Pass |



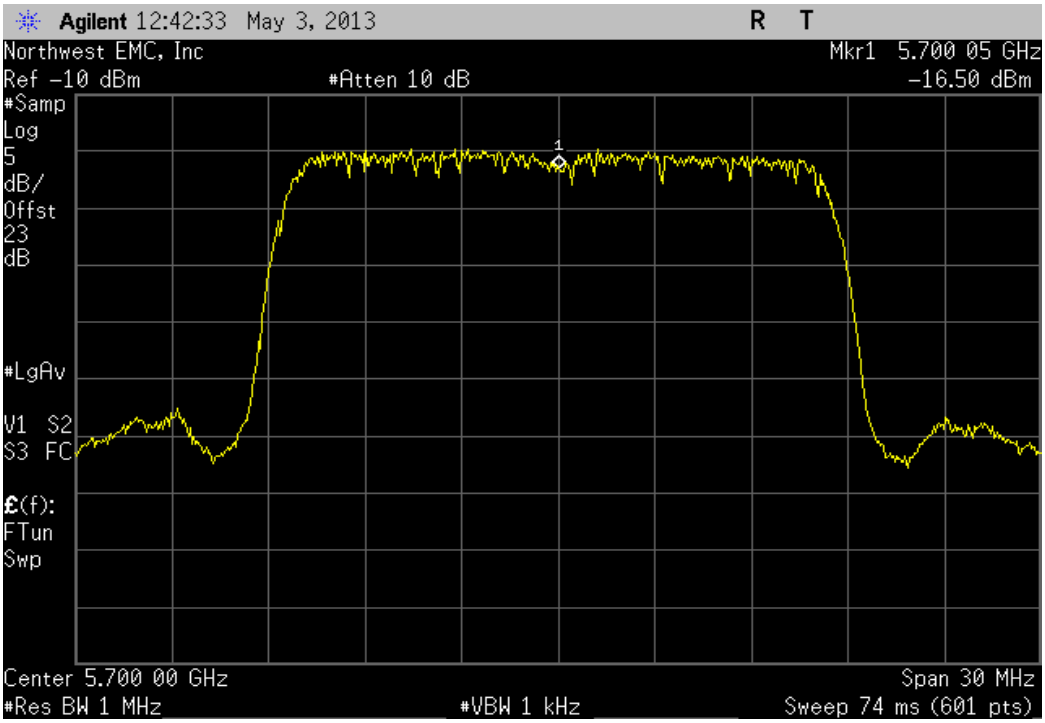

| 6 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +50° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5700.02 | 5700 | 3.5 | 100 | Pass |



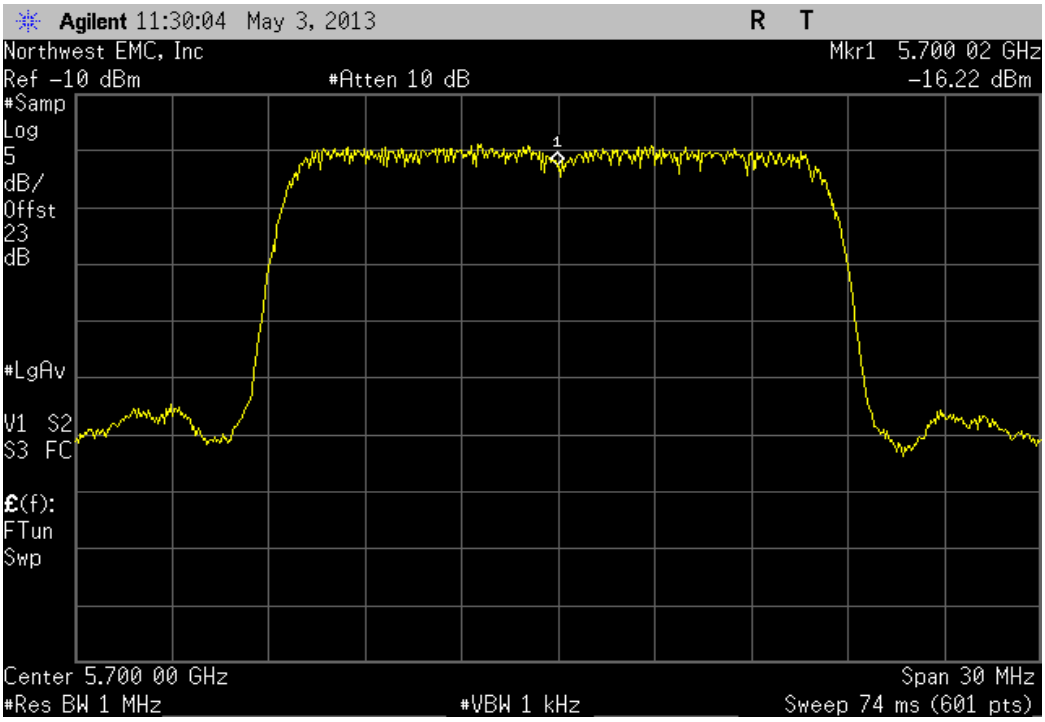
| 6 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +40° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5700.02 | 5700 | 3.5 | 100 | Pass |



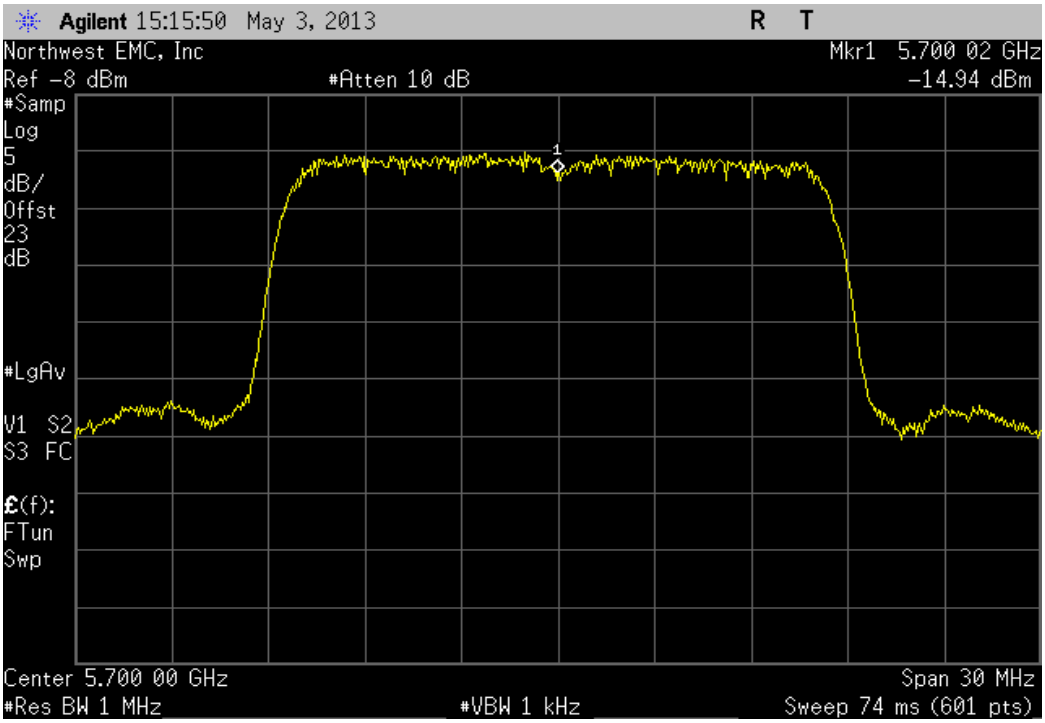

| 6 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5700.05 | 5700 | 8.8 | 100 | Pass |



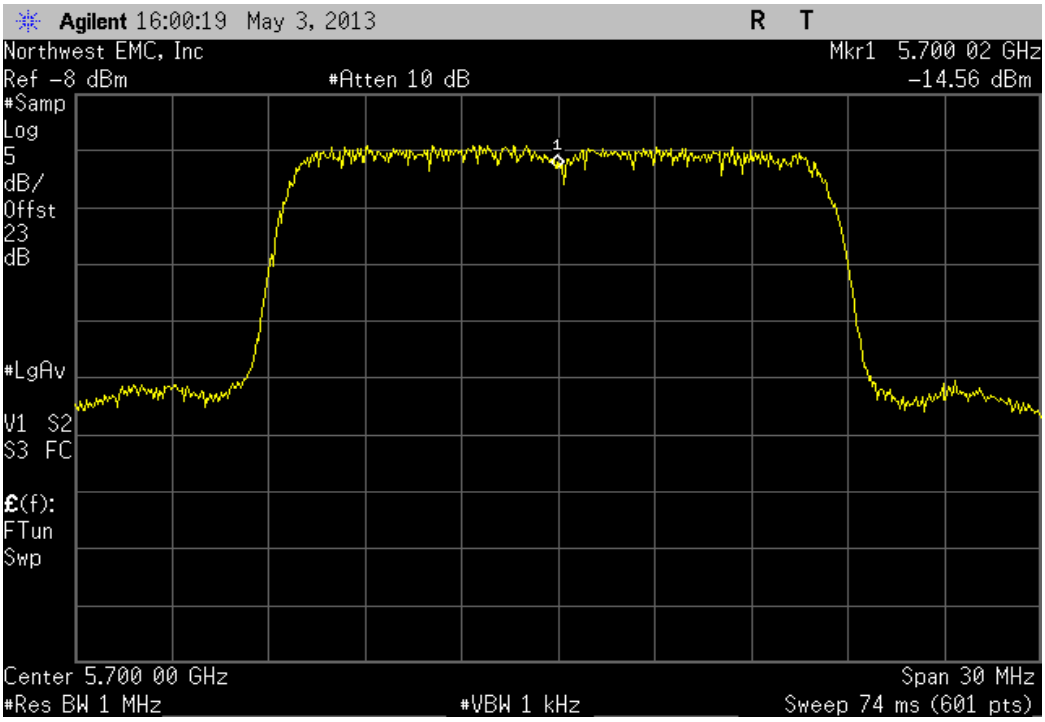
| 6 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5700.02 | 5700 | 3.5 | 100 | Pass |



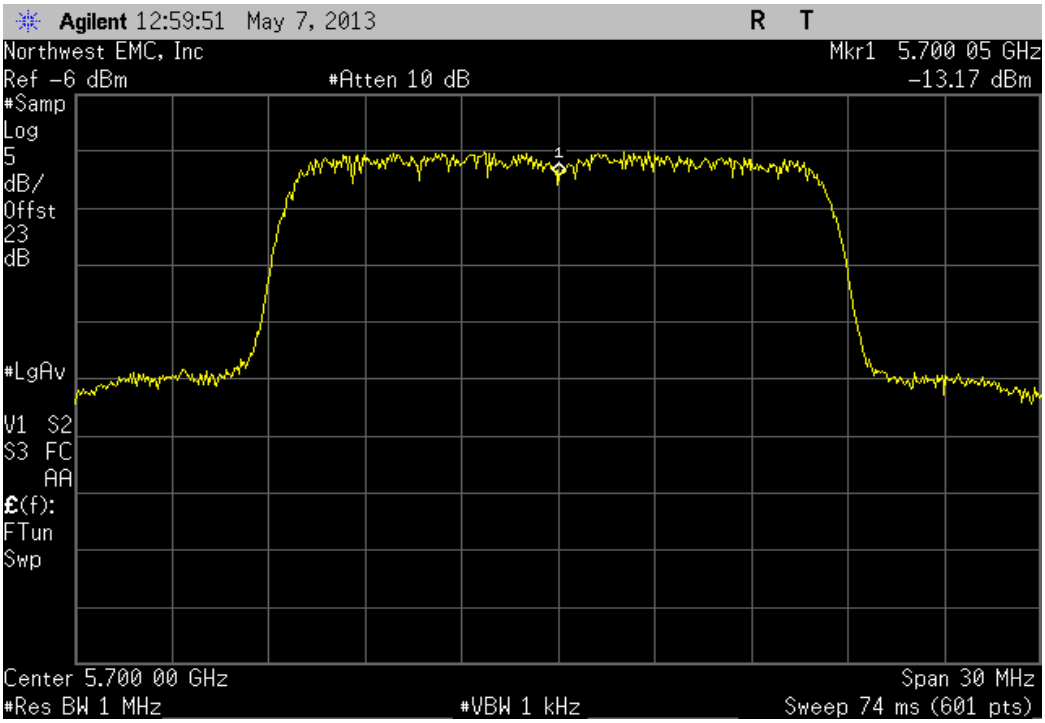

| 6 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5700.02 | 5700 | 3.5 | 100 | Pass |



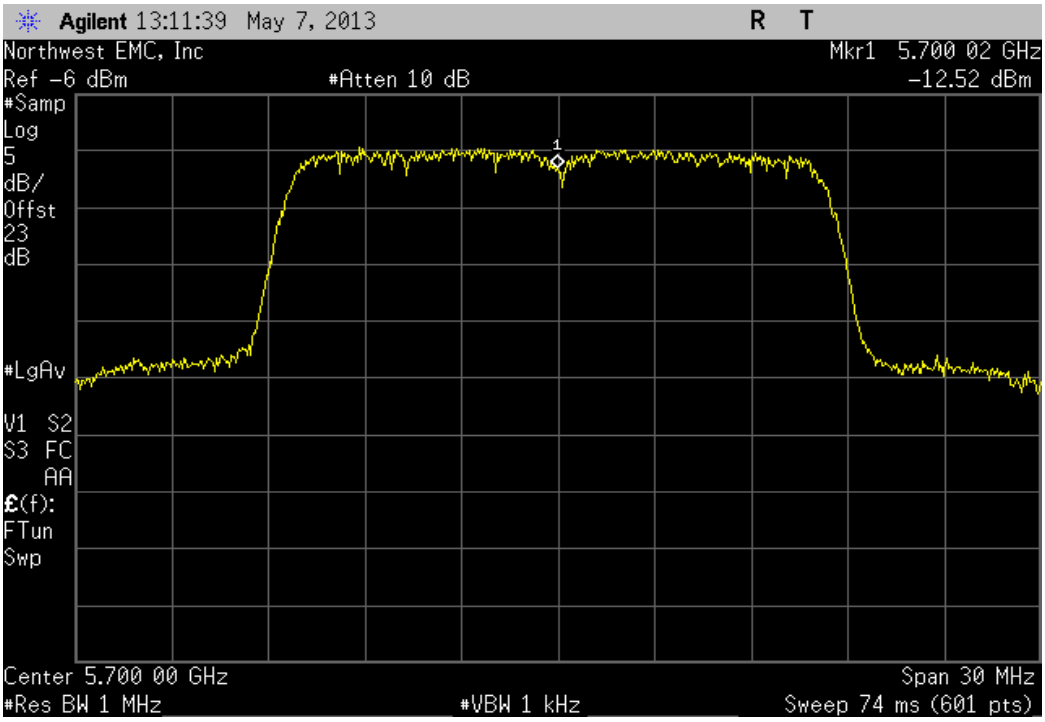
| 6 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: 0° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5700.02 | 5700 | 3.5 | 100 | Pass |



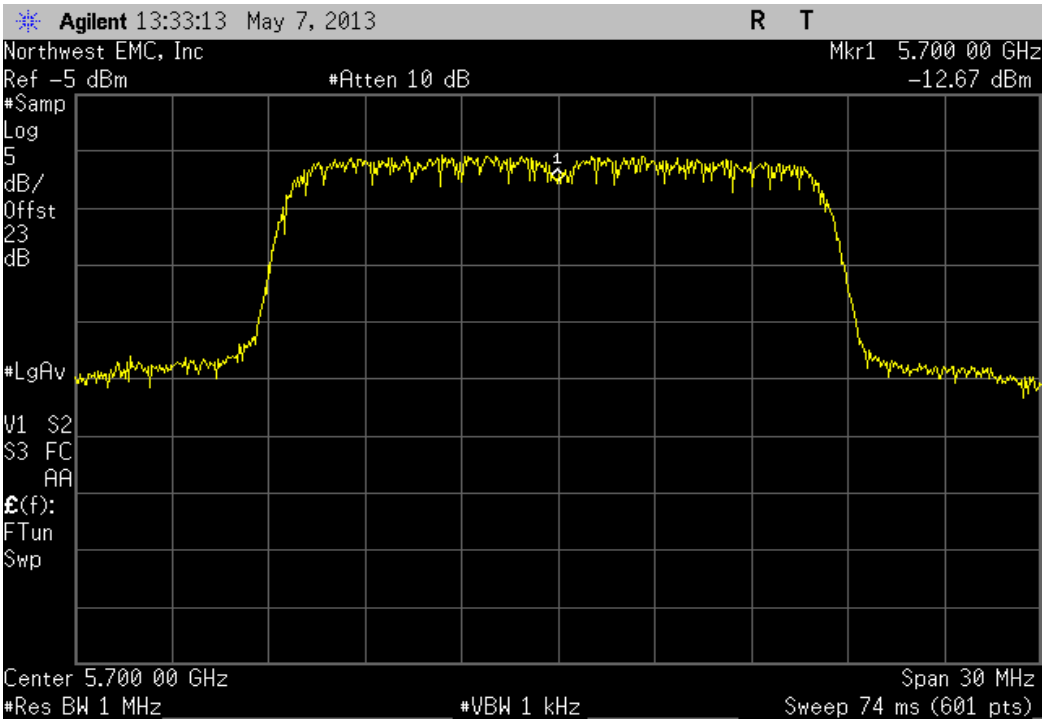

| 6 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: -10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5700.05 | 5700 | 8.8 | 100 | Pass |



| 6 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: -20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5700.02 | 5700 | 3.5 | 100 | Pass |

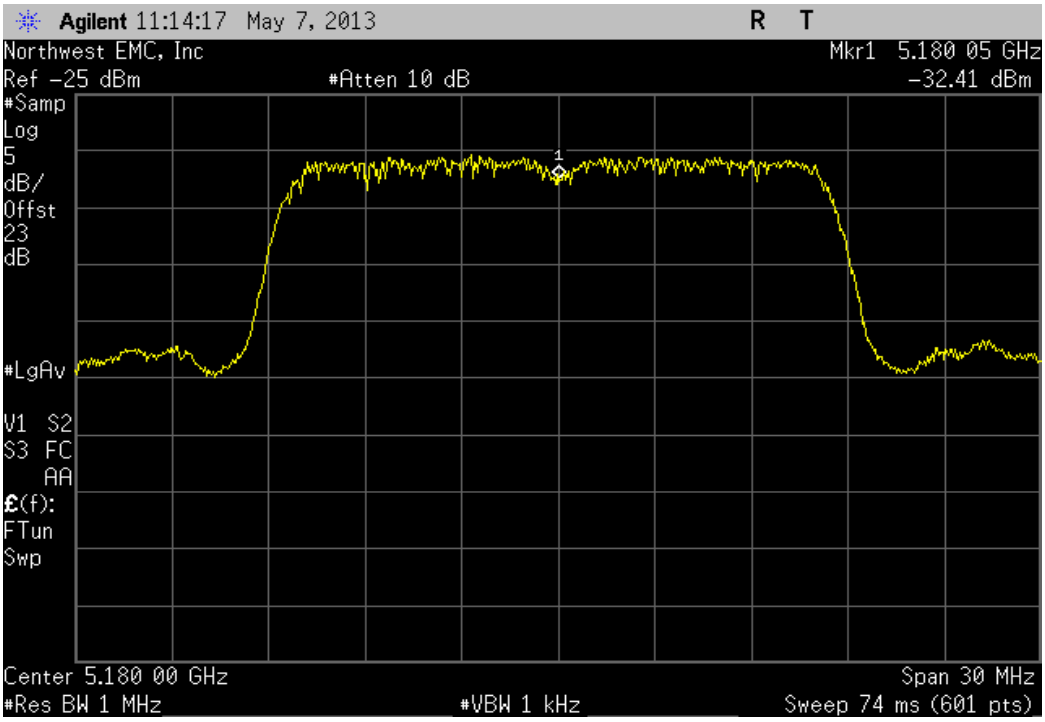



| 6 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: -30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5700 | 5700 | 0 | 100 | Pass |

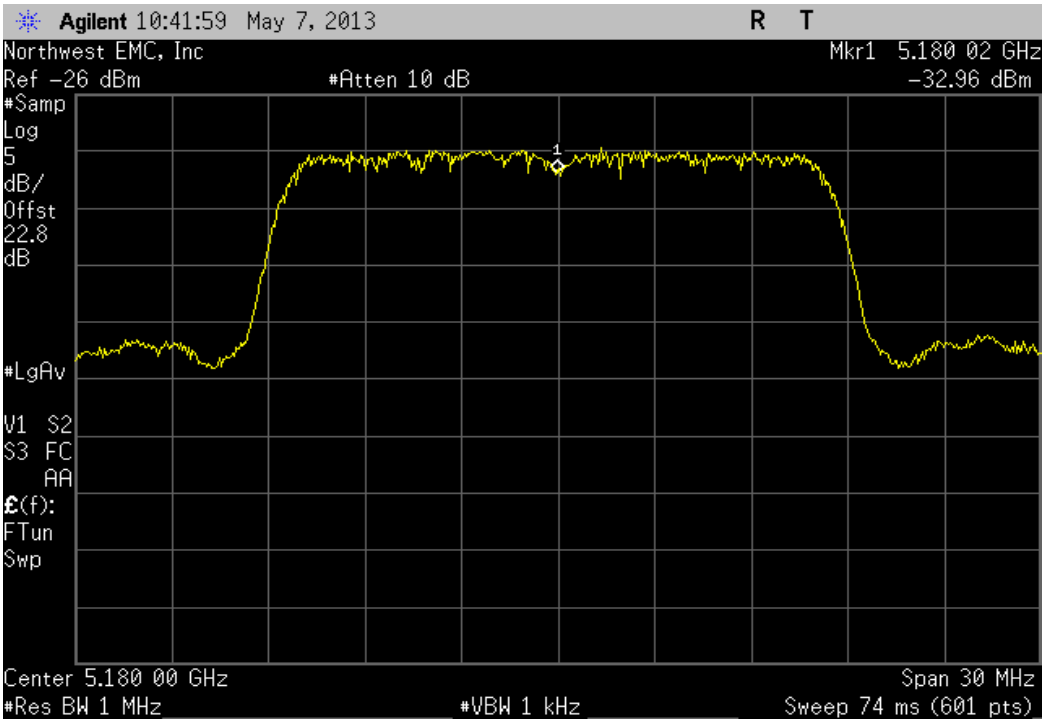


# Frequency Stability

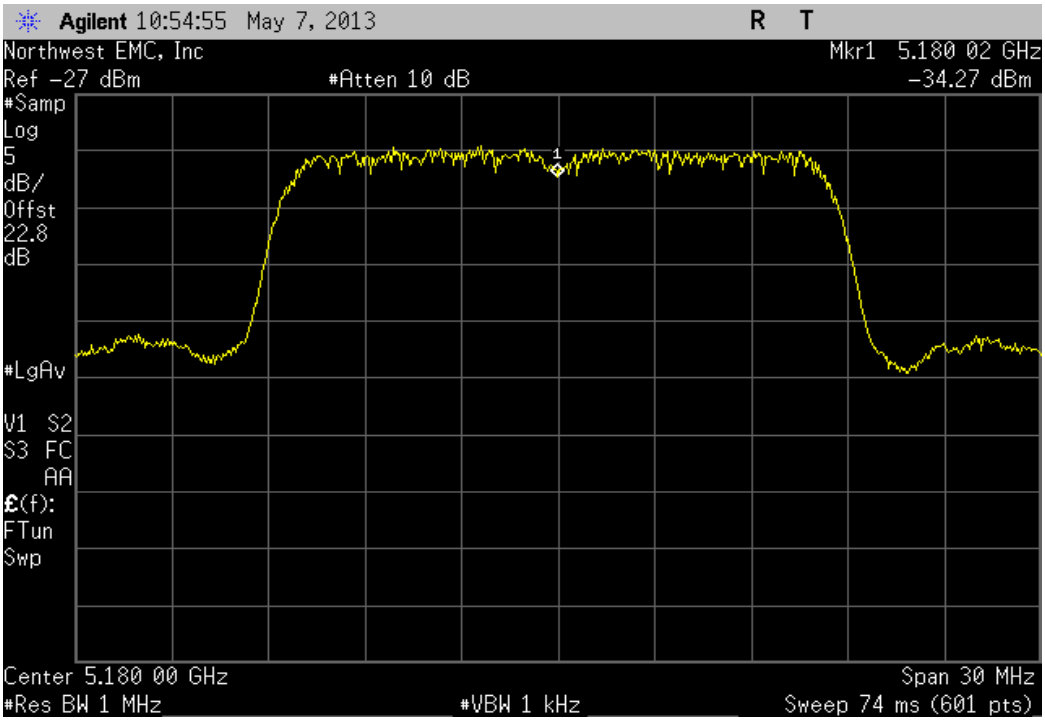
| 18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Voltage: 115% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5180.05 | 5180 | 9.6 | 100 | Pass |



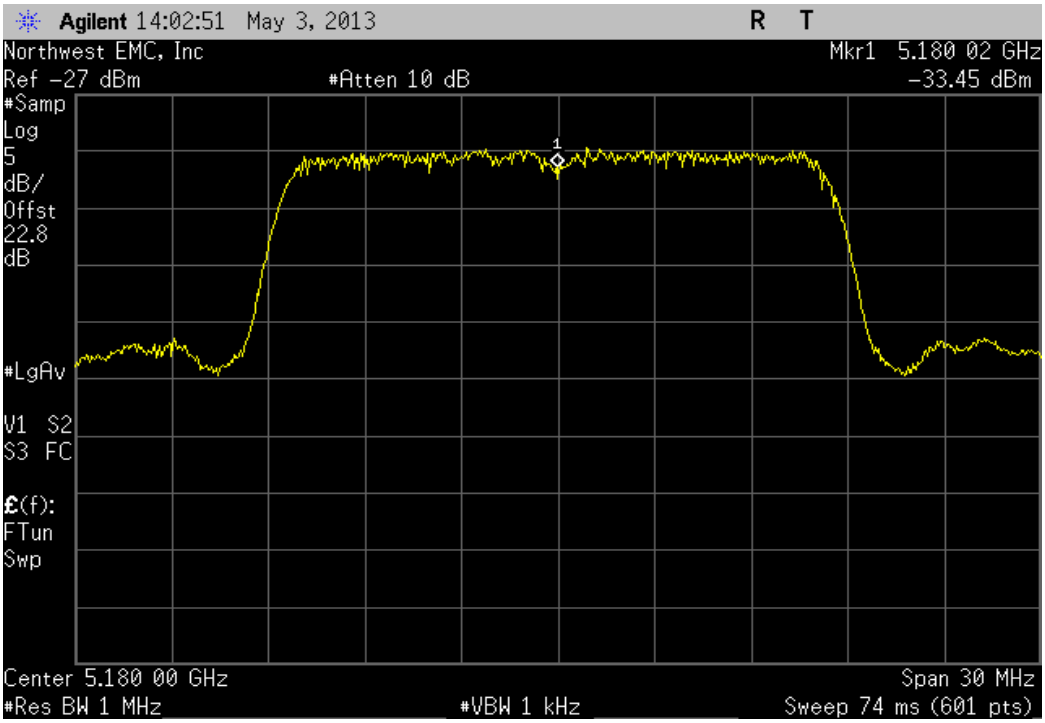

| 18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Voltage: 100% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5180.02 | 5180 | 3.9 | 100 | Pass |



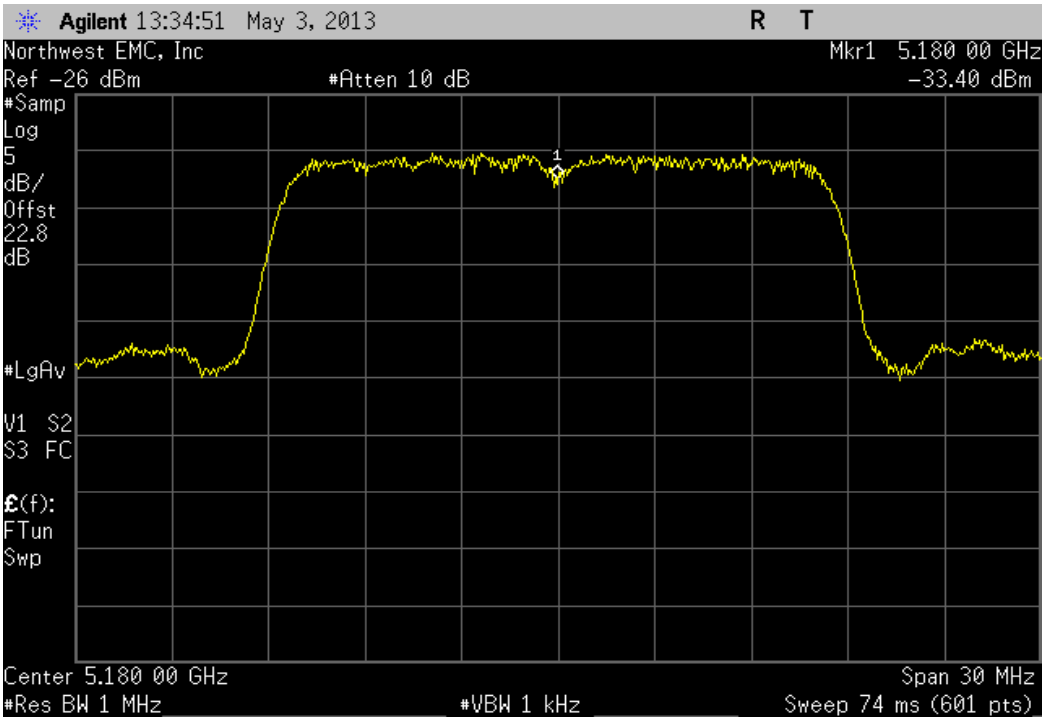
| 18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Voltage: 85% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5180.02 | 5180 | 3.9 | 100 | Pass |



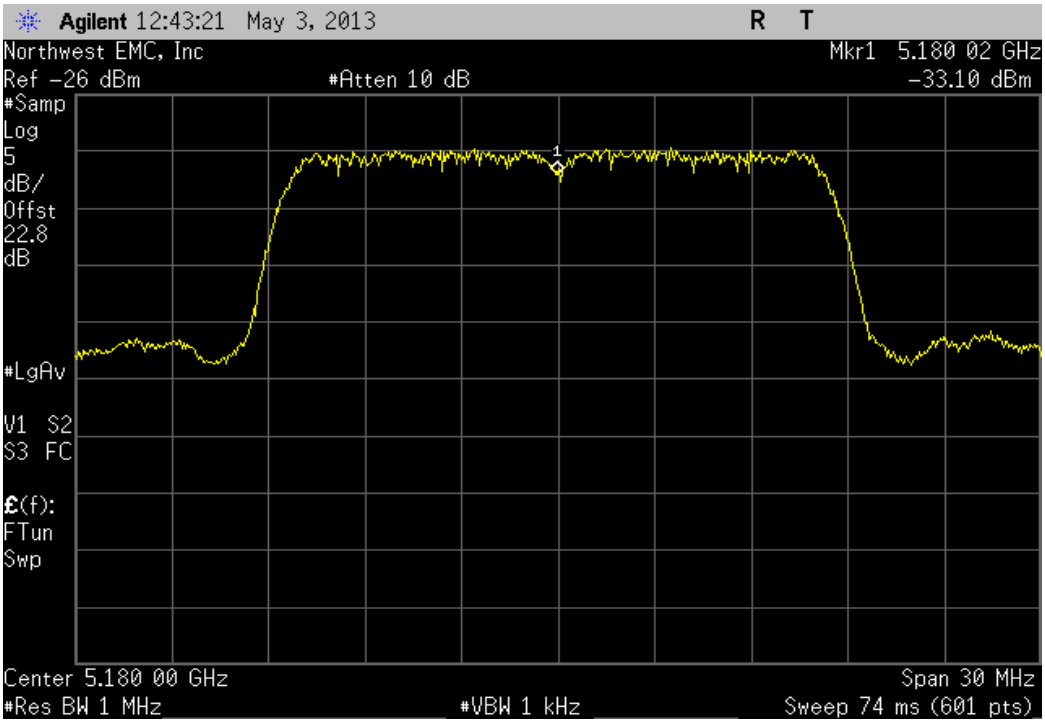

| 18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +50° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5180.02 | 5180 | 3.9 | 100 | Pass |



| 18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +40° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5180 | 5180 | 0 | 100 | Pass |

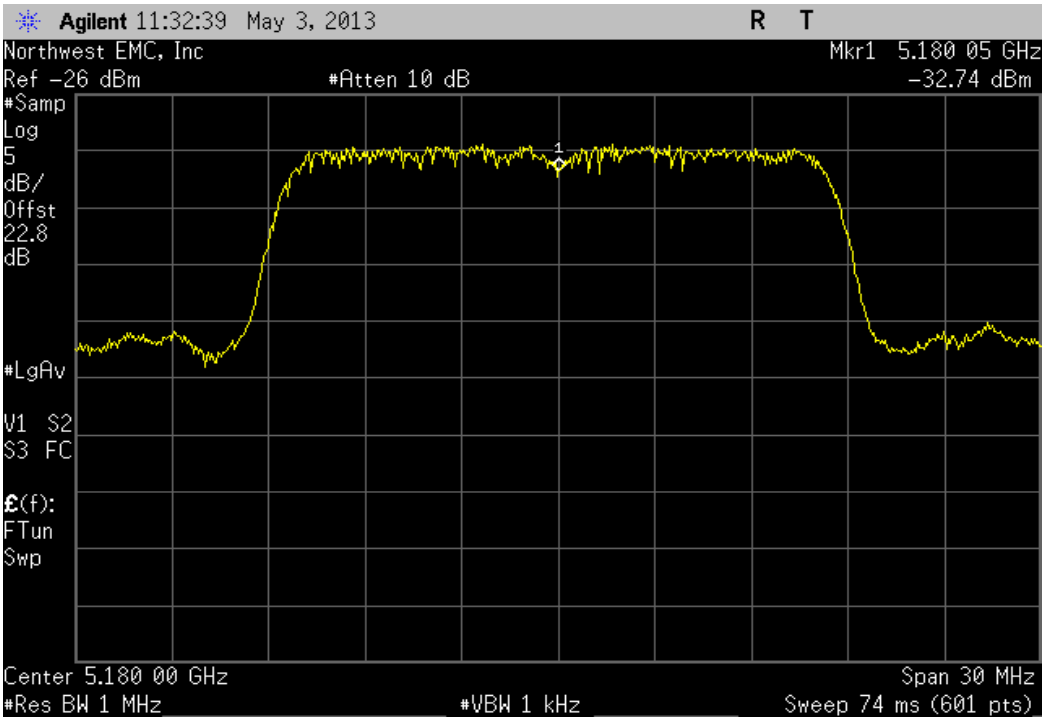



| 18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5180.02 | 5180 | 3.9 | 100 | Pass |

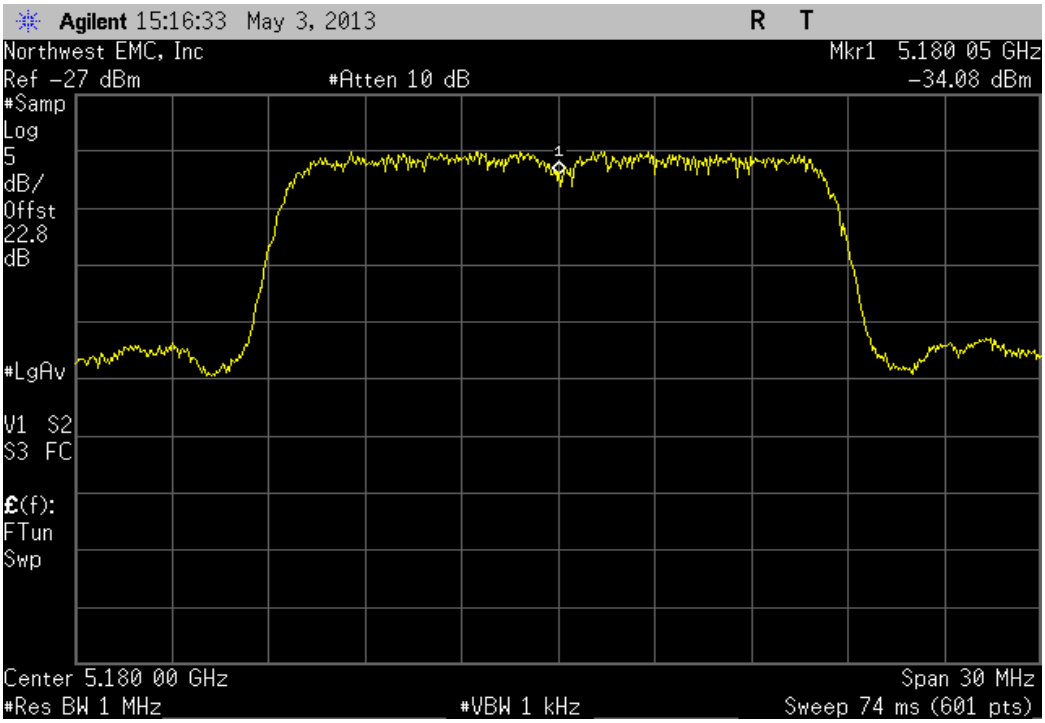


# Frequency Stability

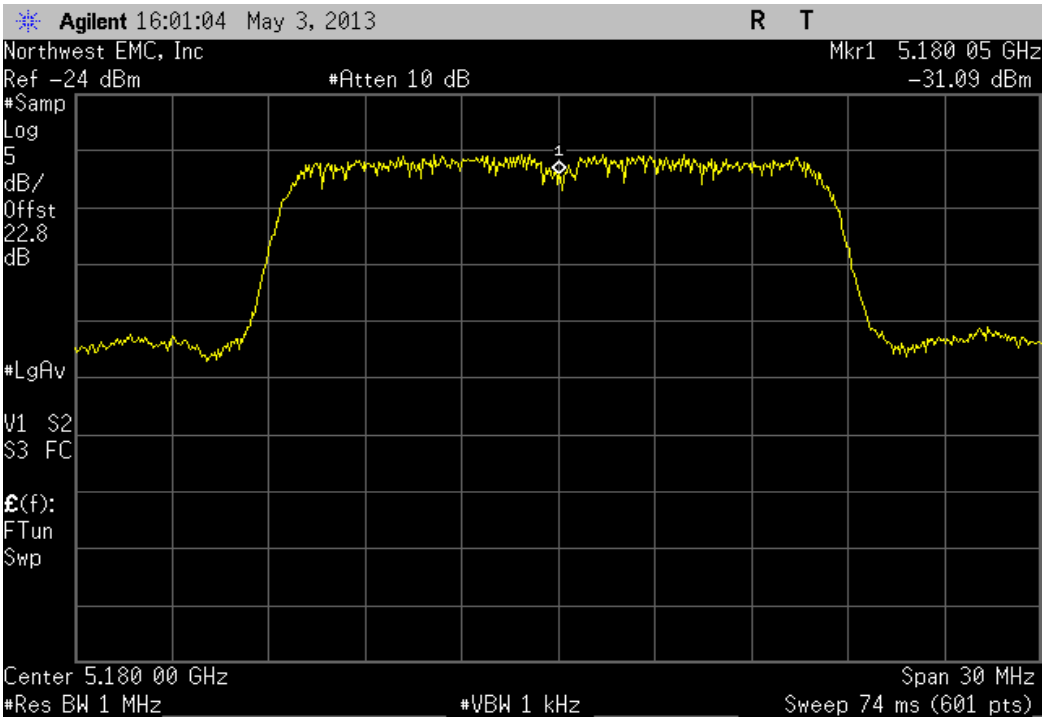
| 18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5180.05 | 5180 | 9.6 | 100 | Pass |



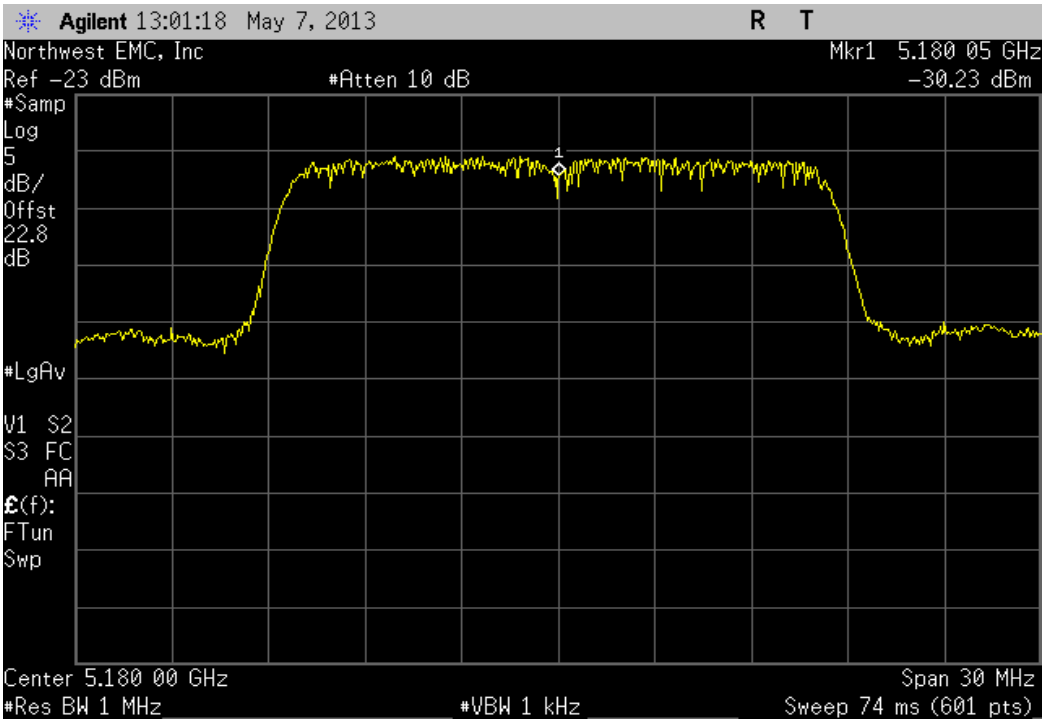

| 18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5180.05 | 5180 | 9.6 | 100 | Pass |



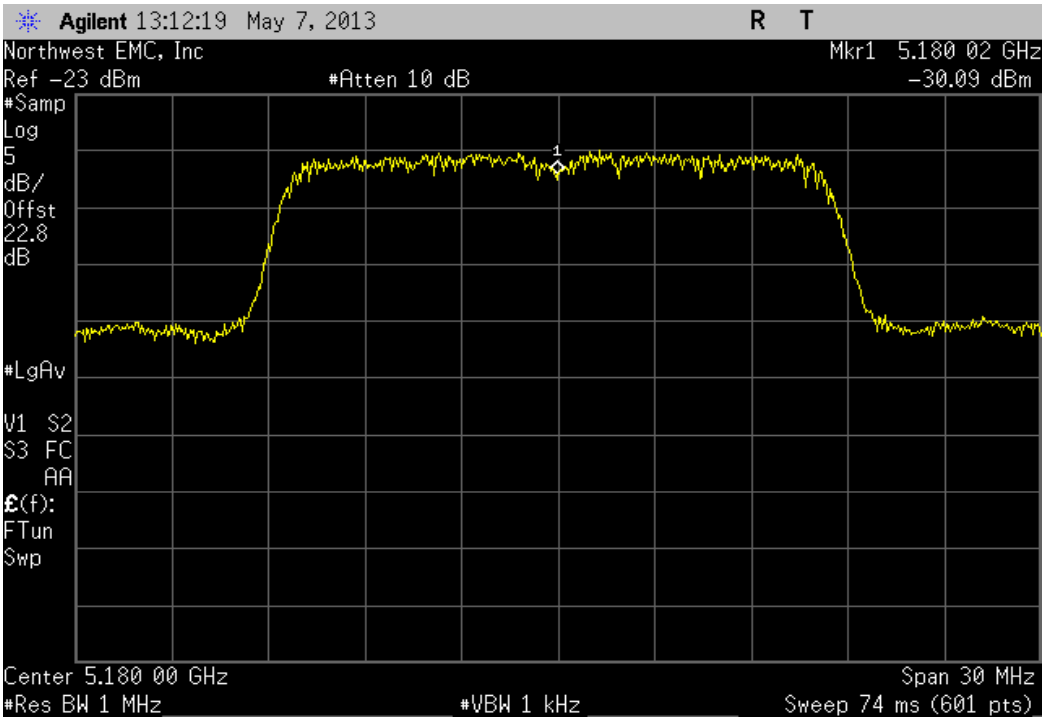
| 18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: 0° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5180.05 | 5180 | 9.6 | 100 | Pass |



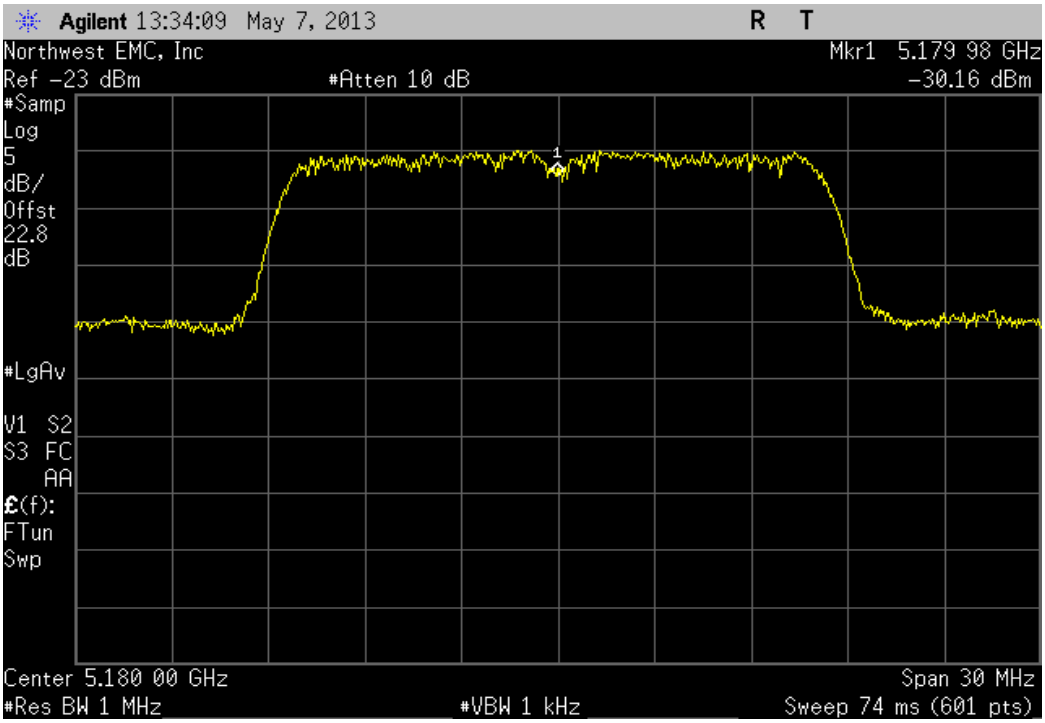

| 18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: -10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5180.05 | 5180 | 9.6 | 100 | Pass |



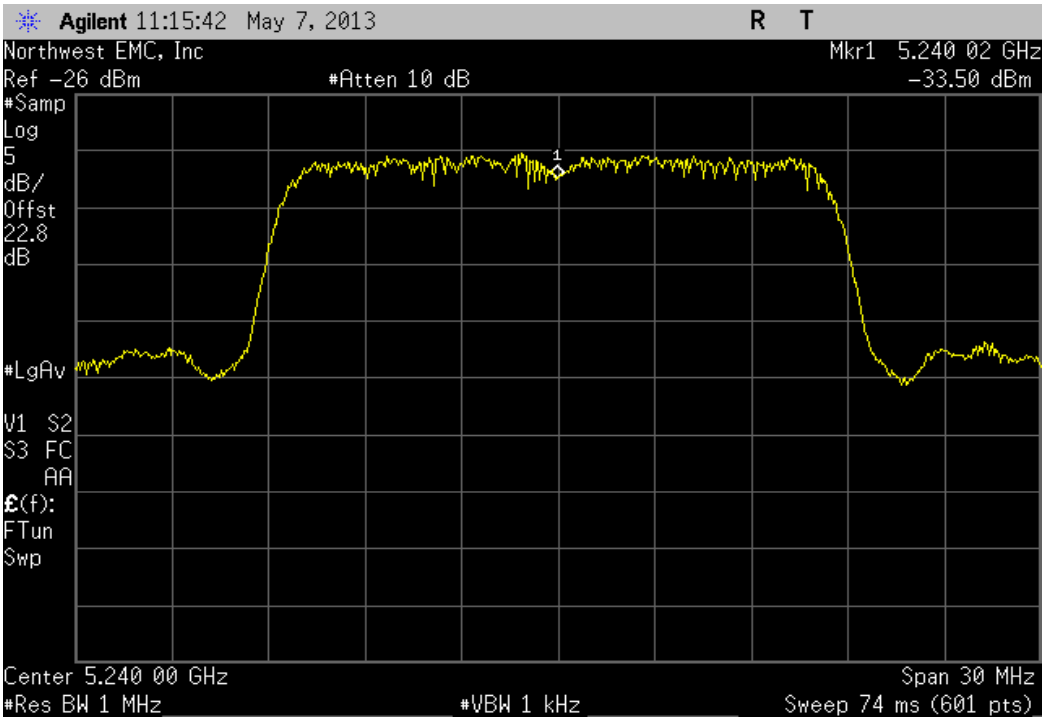
| 18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: -20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5180.02 | 5180 | 3.9 | 100 | Pass |



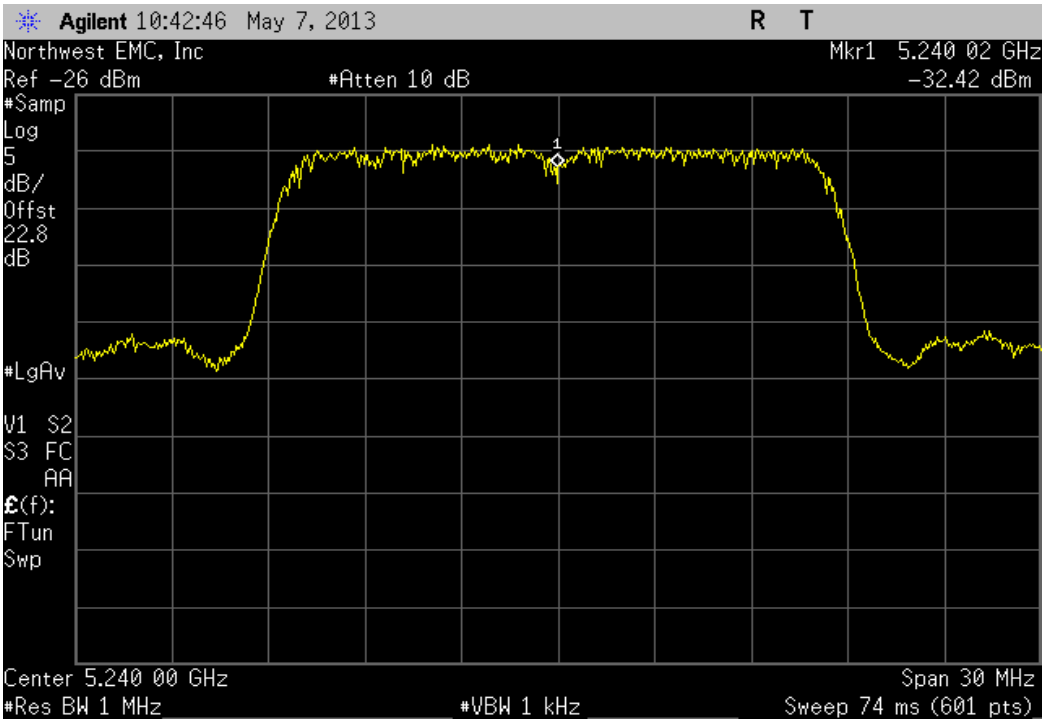

| 18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: -30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5179.98 | 5180 | 3.9 | 100 | Pass |



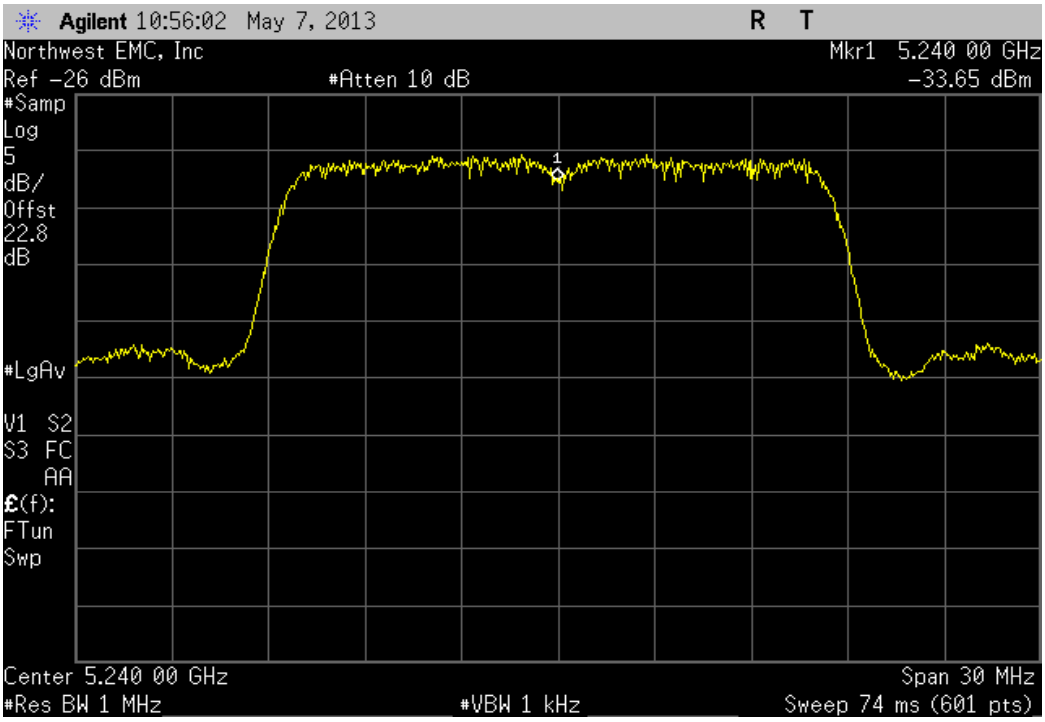
| 18 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Voltage: 115% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5240.02 | 5240 | 3.8 | 100 | Pass |



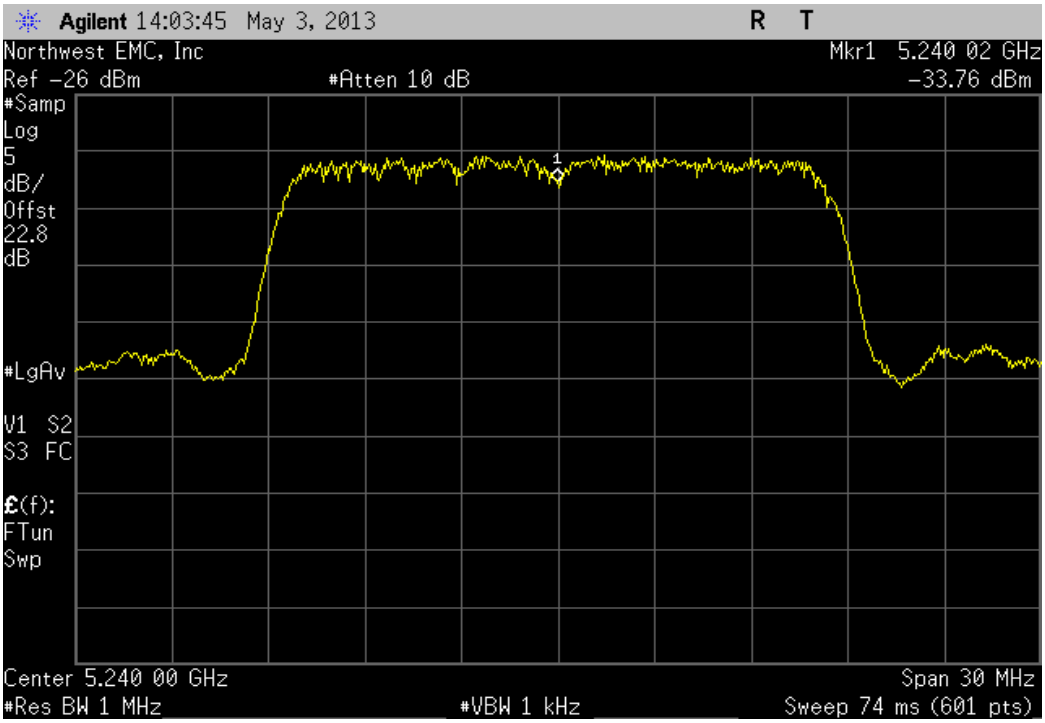

| 18 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Voltage: 100% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5240.02 | 5240 | 3.8 | 100 | Pass |



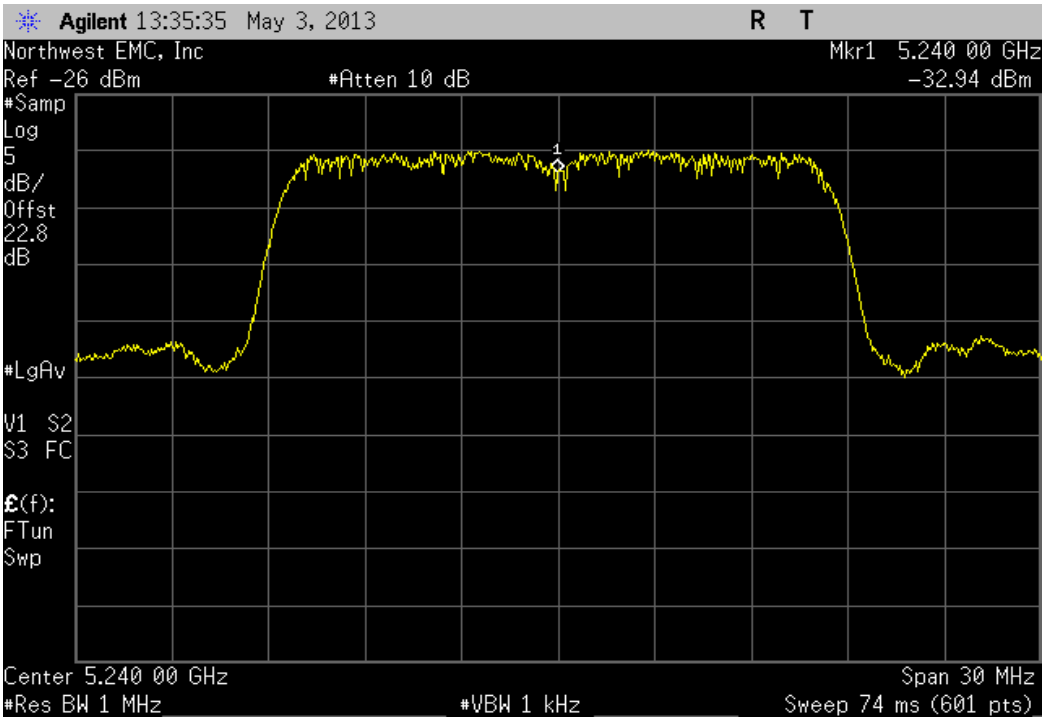
| 18 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Voltage: 85% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5240 | 5240 | 0 | 100 | Pass |



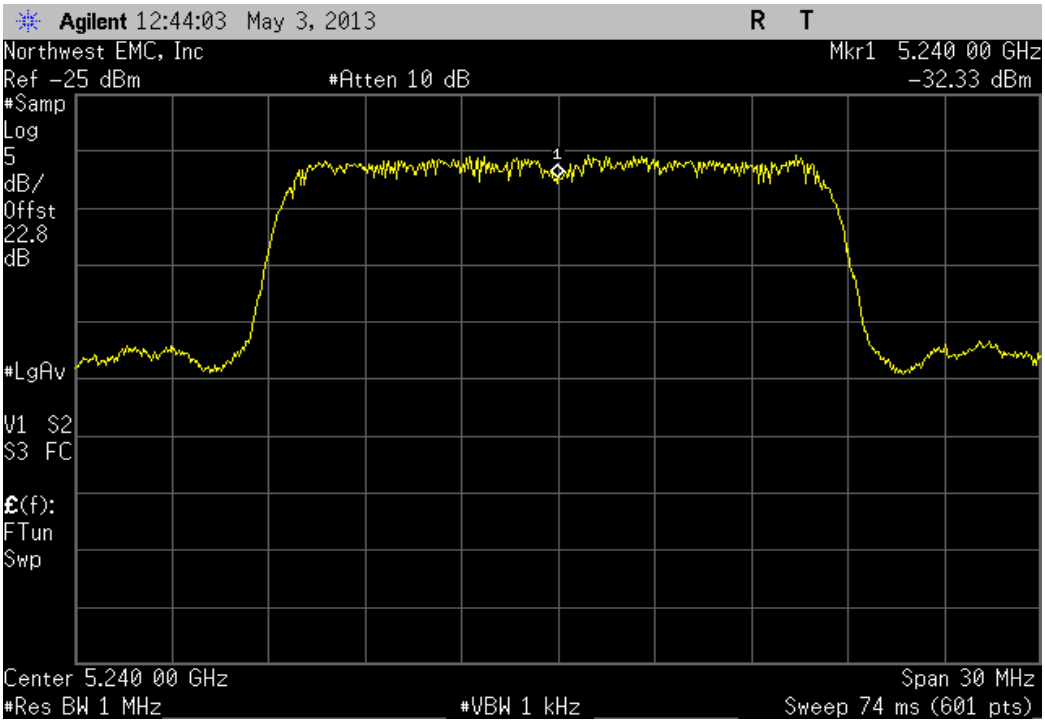

| 18 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: +50° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5240.02 | 5240 | 3.8 | 100 | Pass |



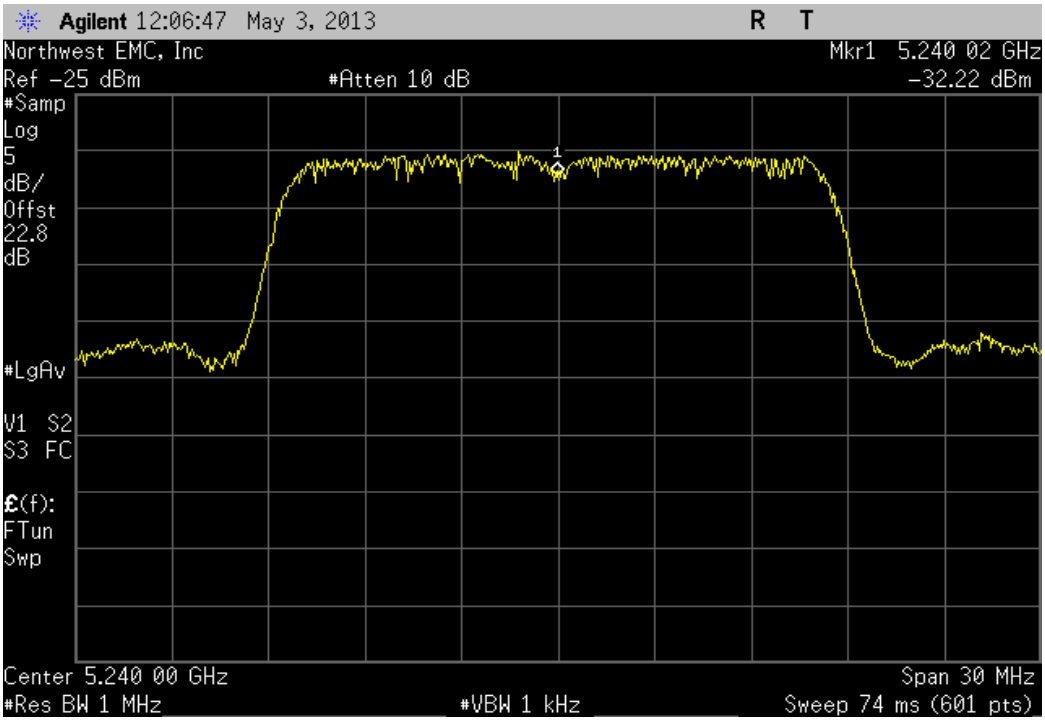
| 18 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: +40° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5240 | 5240 | 0 | 100 | Pass |



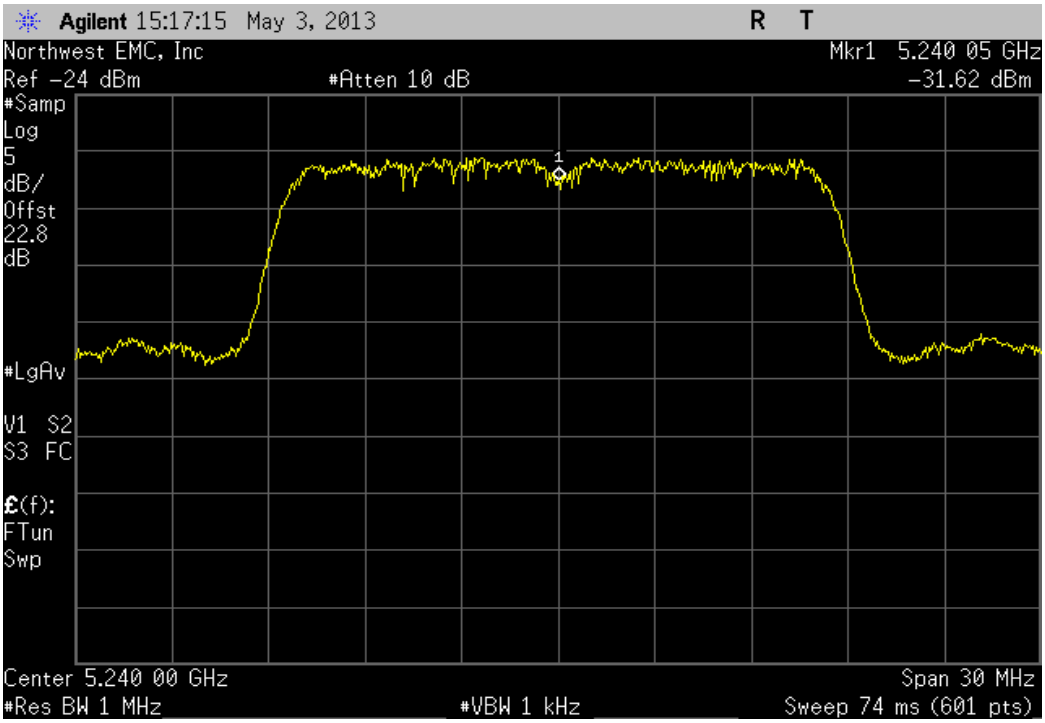

| 18 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: +30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5240 | 5240 | 0 | 100 | Pass |



| 18 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: +20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5240.02 | 5240 | 3.8 | 100 | Pass |

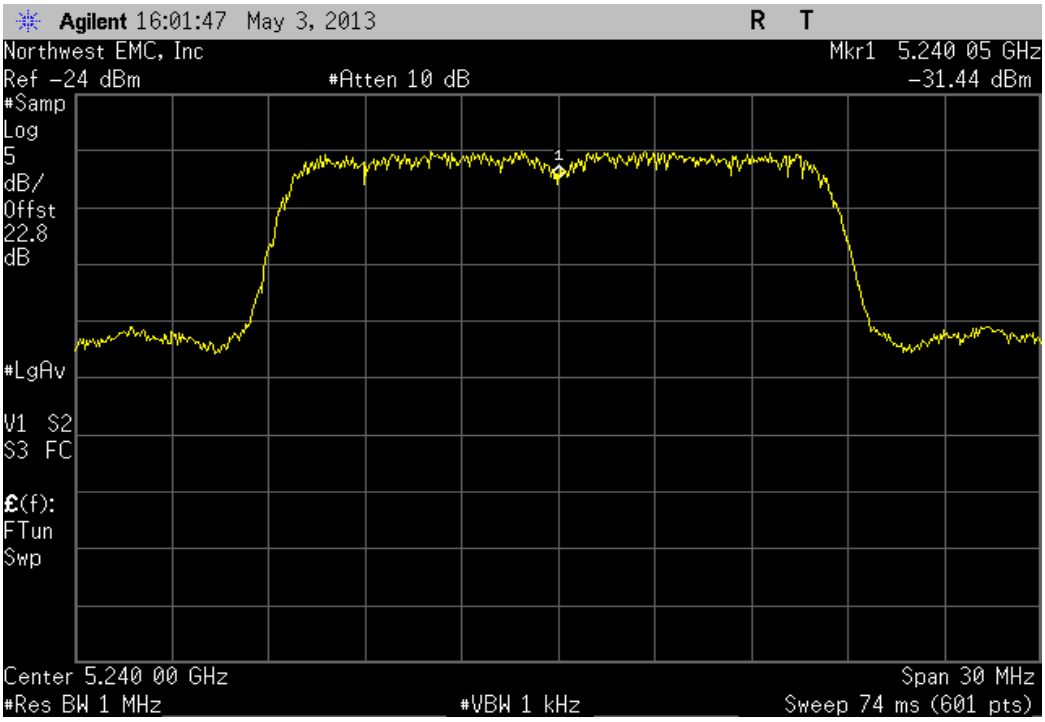



| 18 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: +10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5240.05 | 5240 | 9.5 | 100 | Pass |

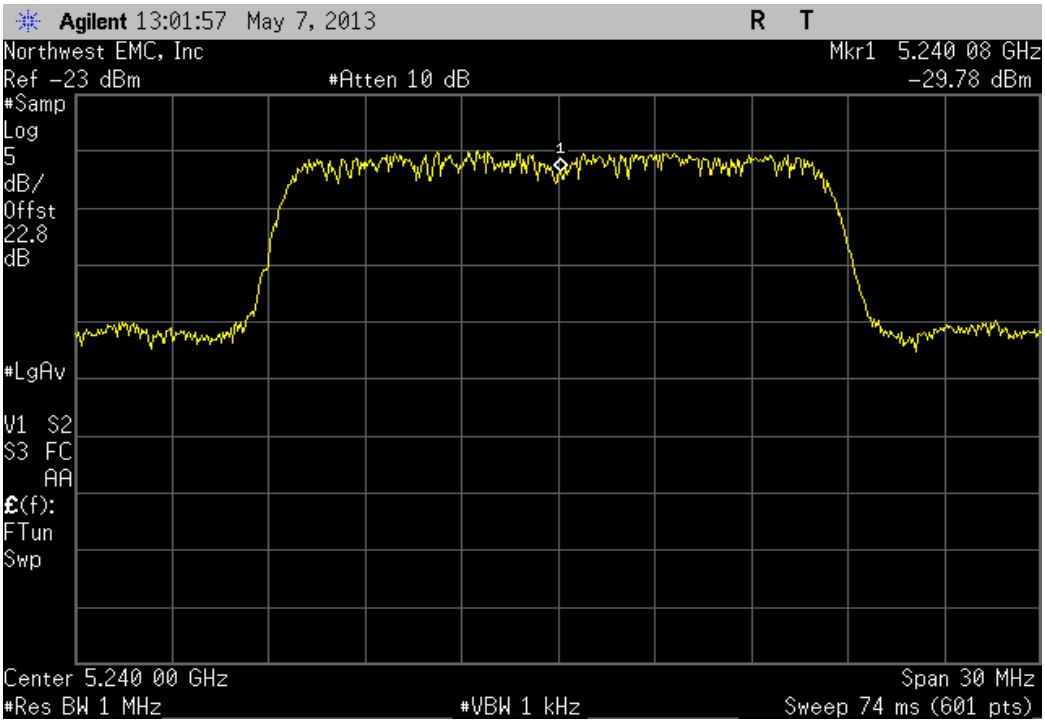


# Frequency Stability

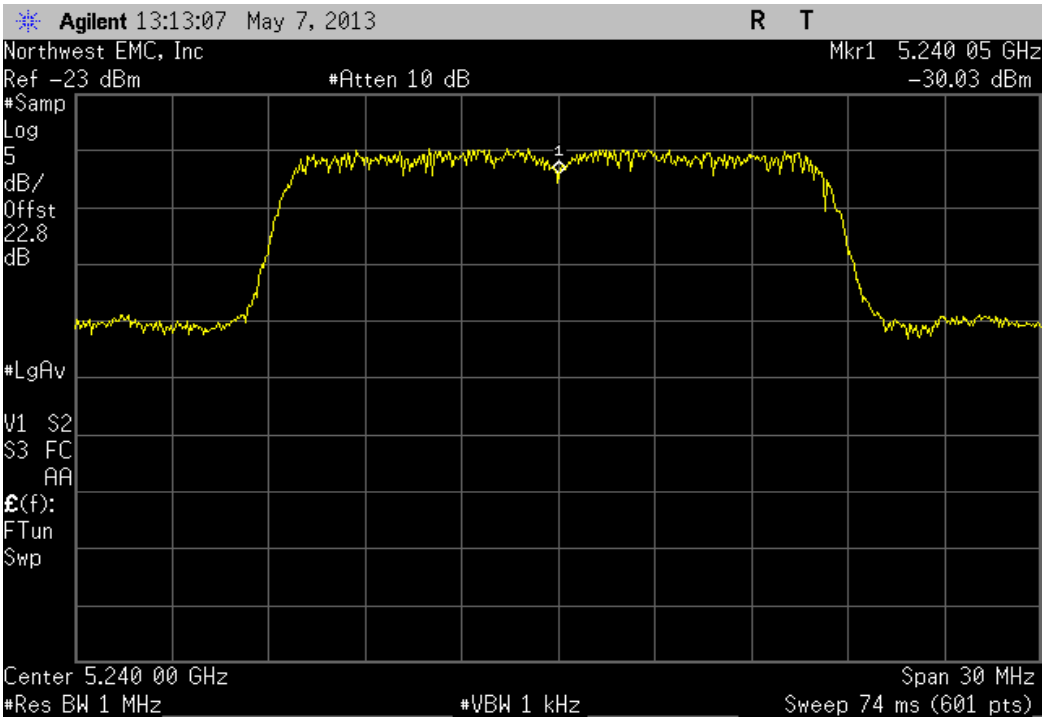
| 18 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: 0° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5240.05 | 5240 | 9.5 | 100 | Pass |



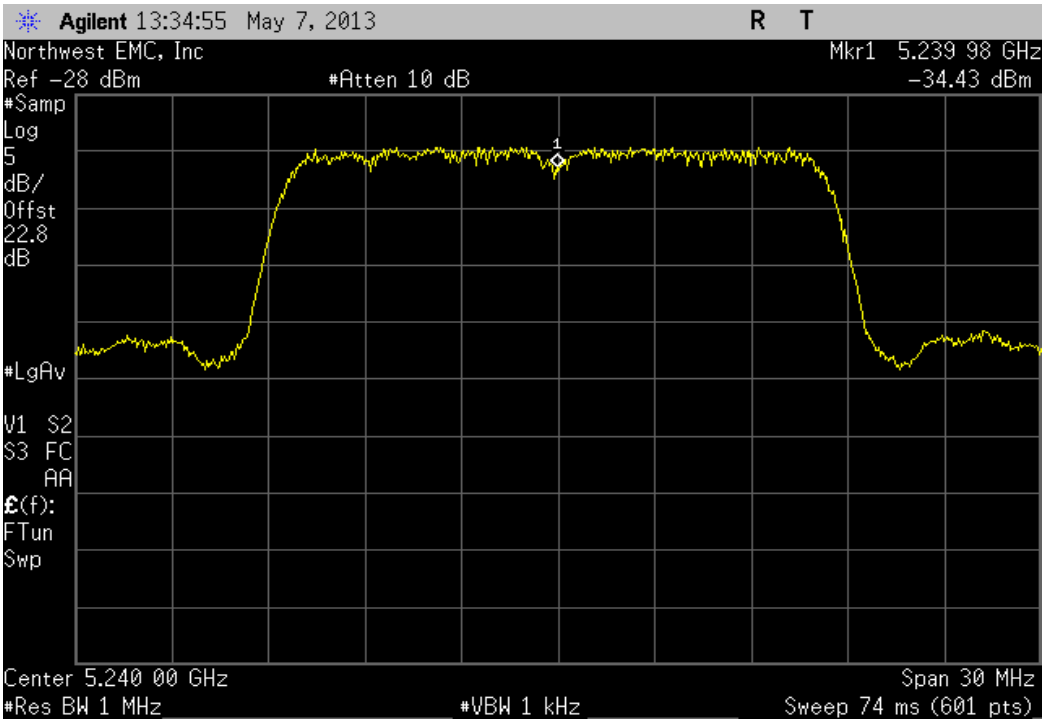

| 18 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: -10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5240.08 | 5240 | 15.3 | 100 | Pass |



| 18 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: -20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5240.05 | 5240 | 9.5 | 100 | Pass |

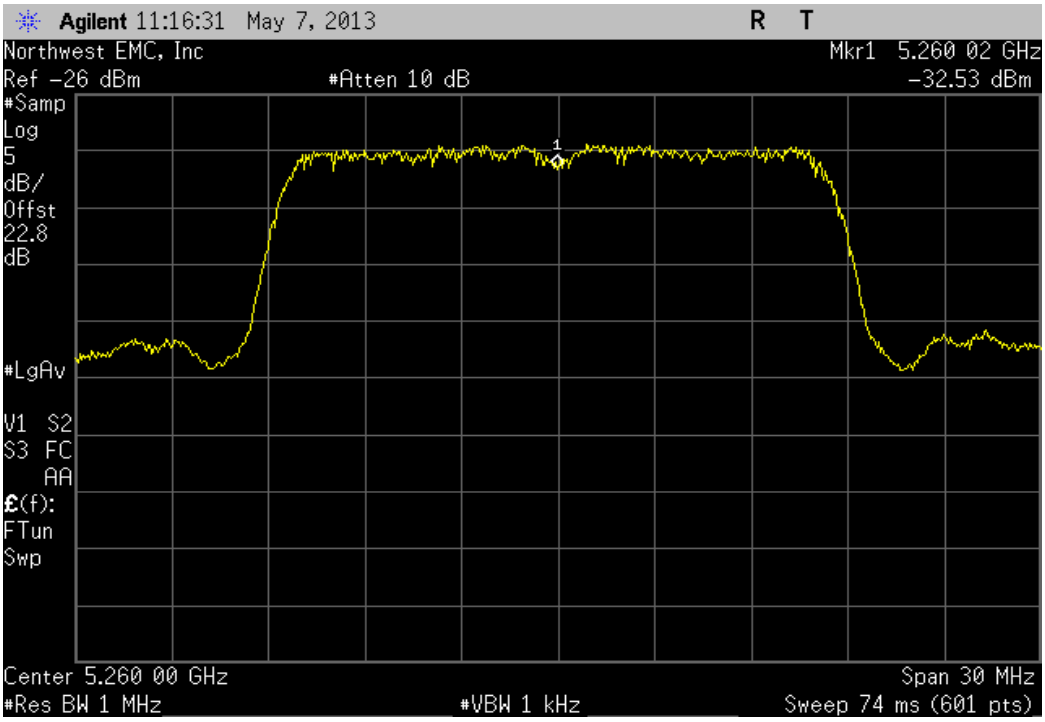



| 18 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: -30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5239.98 | 5240 | 3.8 | 100 | Pass |

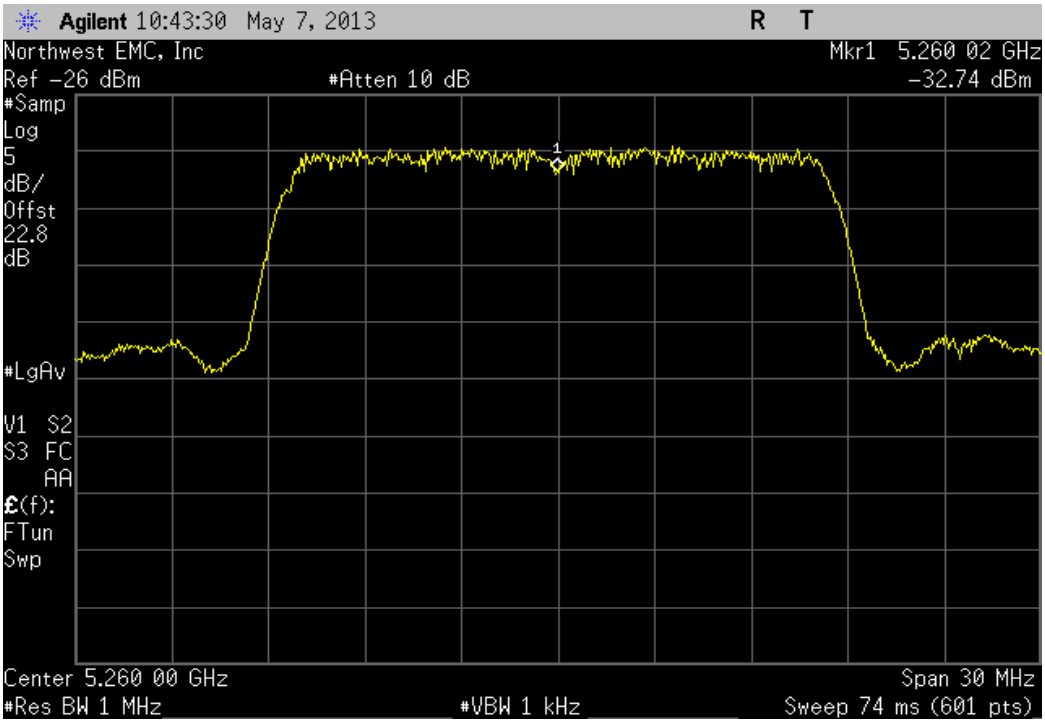


# Frequency Stability

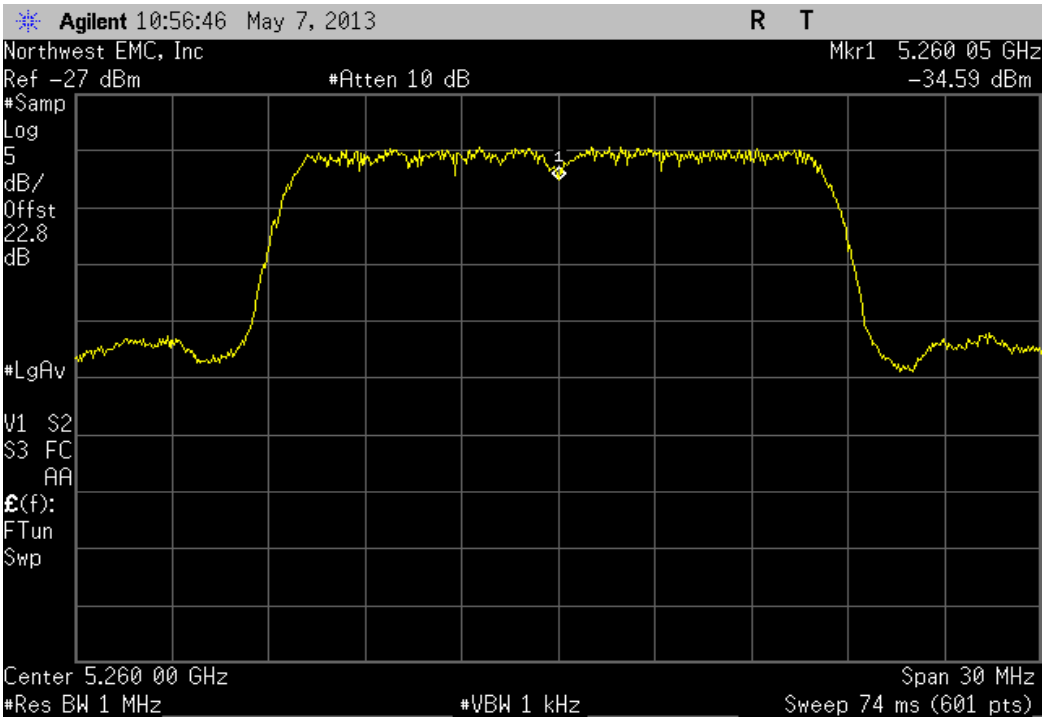
| 18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Voltage: 115% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5260.02 | 5260 | 3.8 | 100 | Pass |



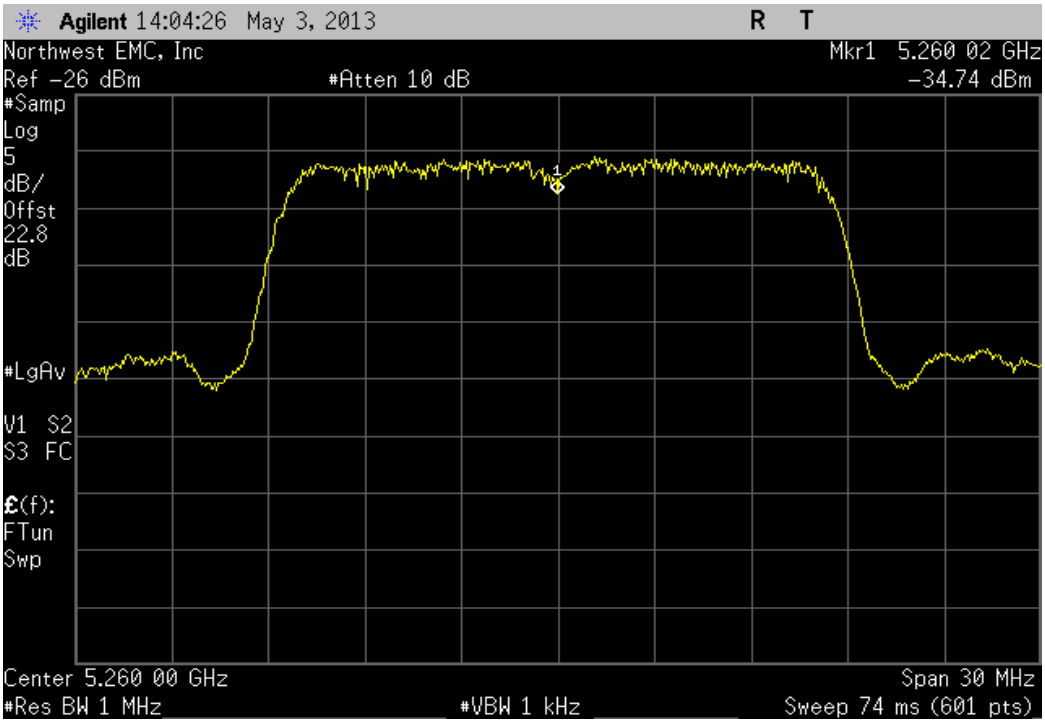

| 18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Voltage: 100% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5260.02 | 5260 | 3.8 | 100 | Pass |



| 18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Voltage: 85% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5260.05 | 5260 | 9.5 | 100 | Pass |

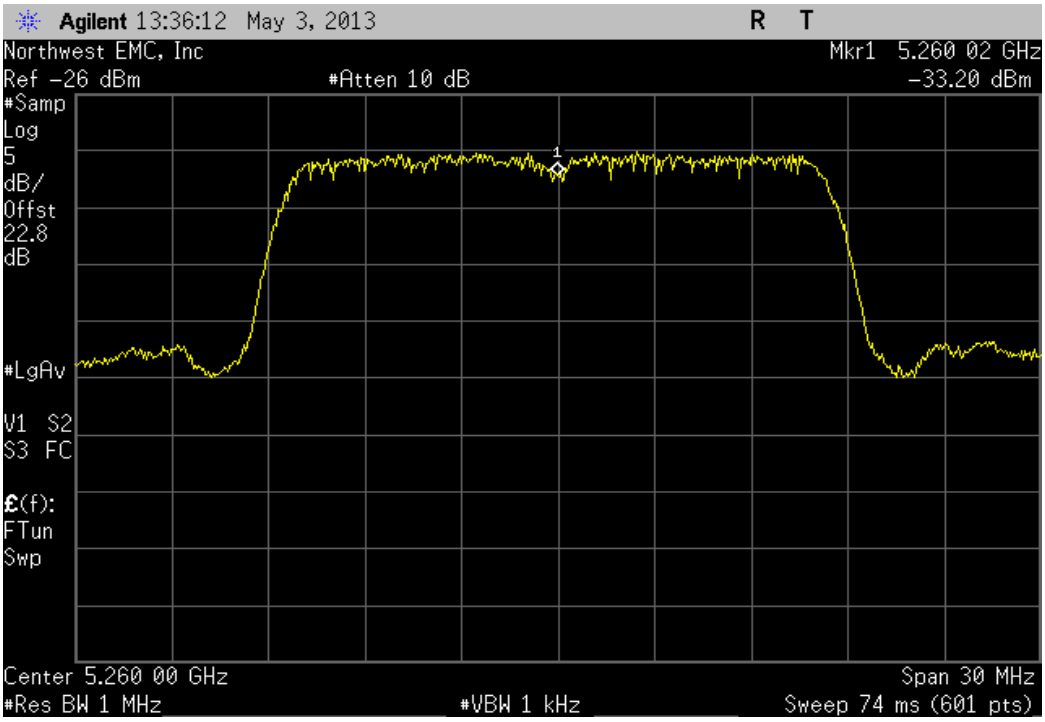



| 18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: +50° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5260.02 | 5260 | 3.8 | 100 | Pass |

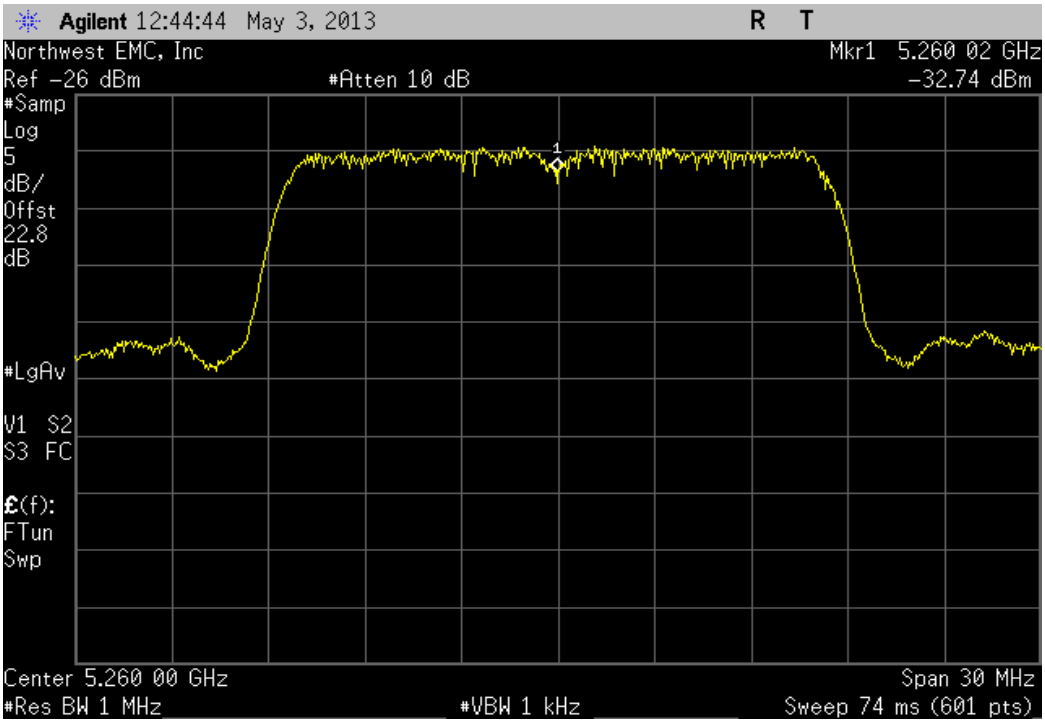


# Frequency Stability

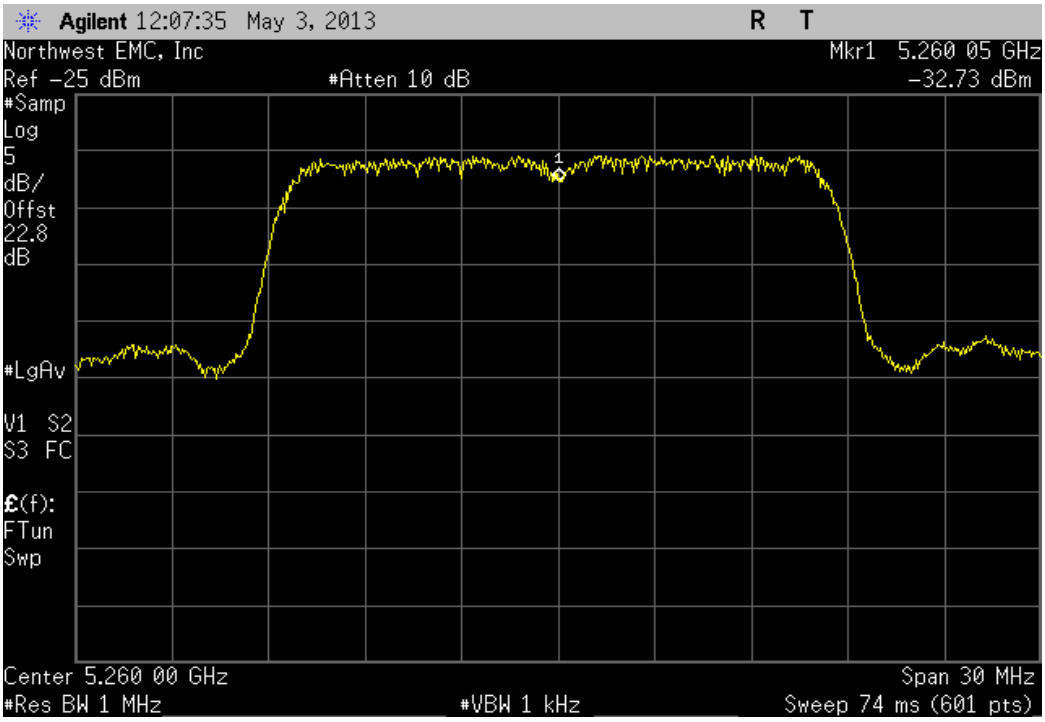
| 18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: +40° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5260.02 | 5260 | 3.8 | 100 | Pass |



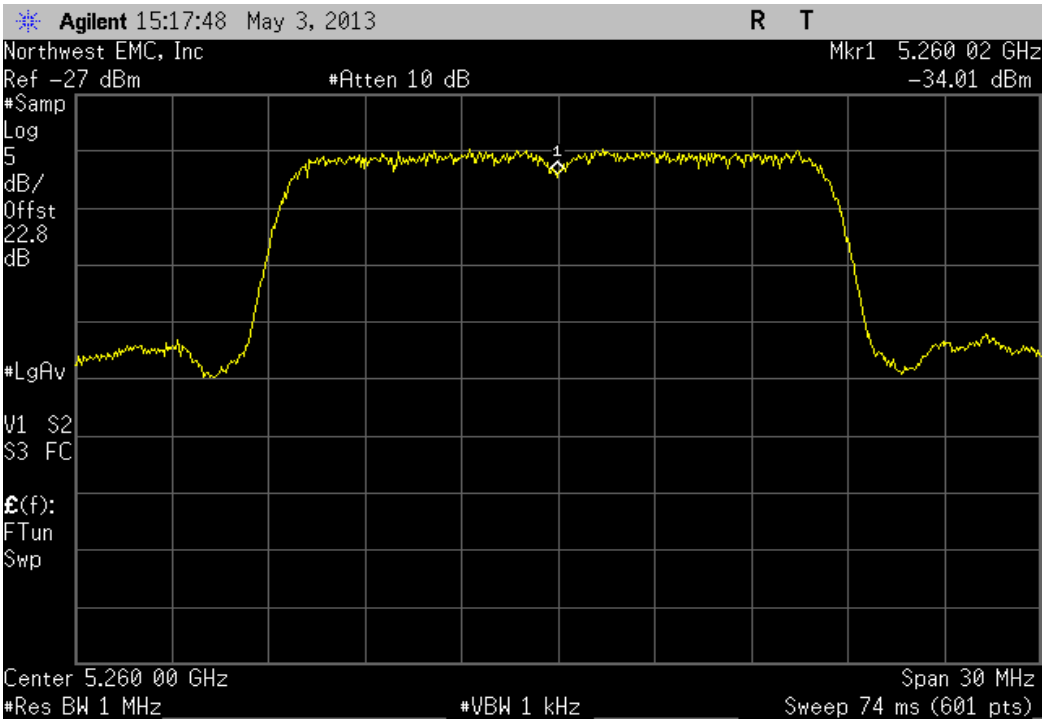

| 18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: +30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5260.02 | 5260 | 3.8 | 100 | Pass |



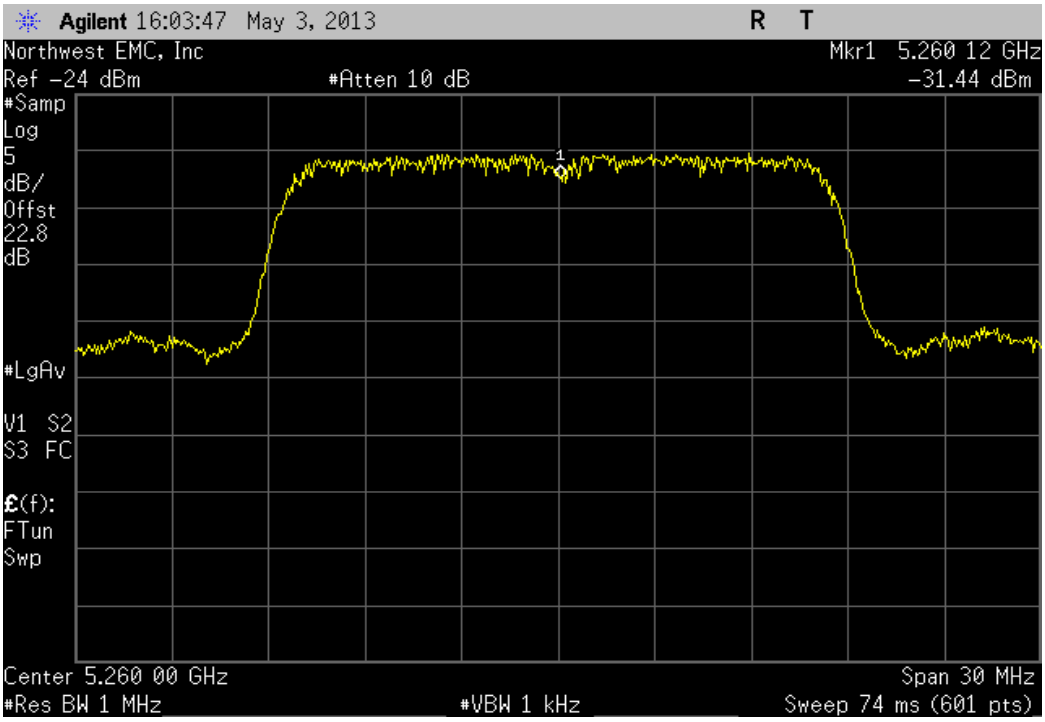
| 18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: +20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5260.05 | 5260 | 9.5 | 100 | Pass |



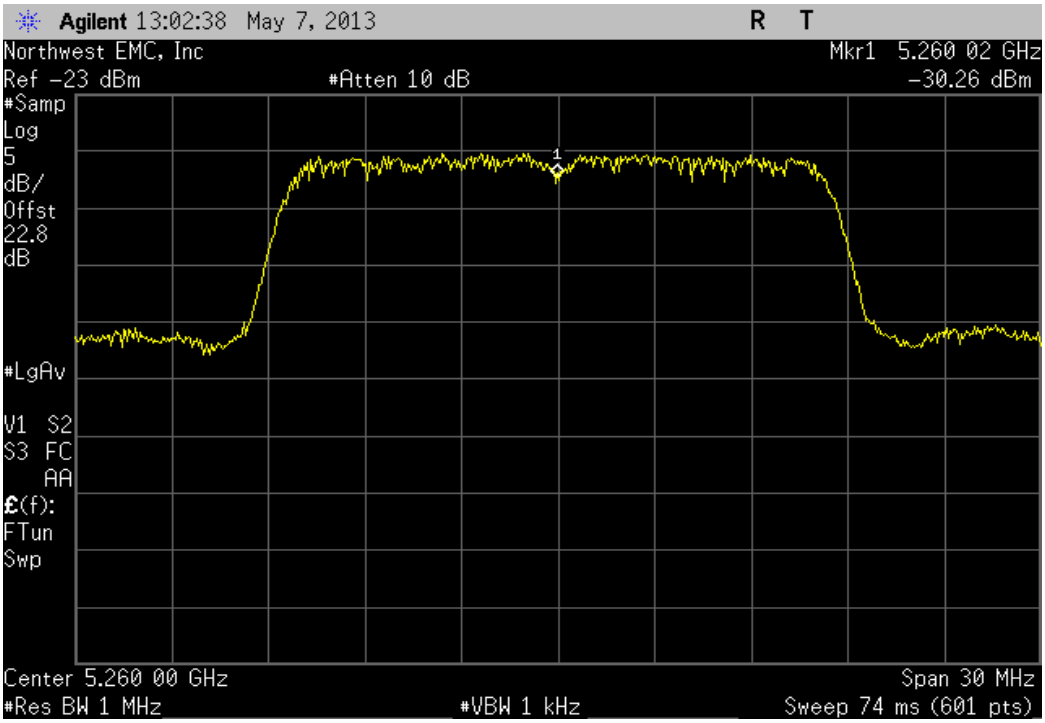

| 18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: +10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5260.02 | 5260 | 3.8 | 100 | Pass |



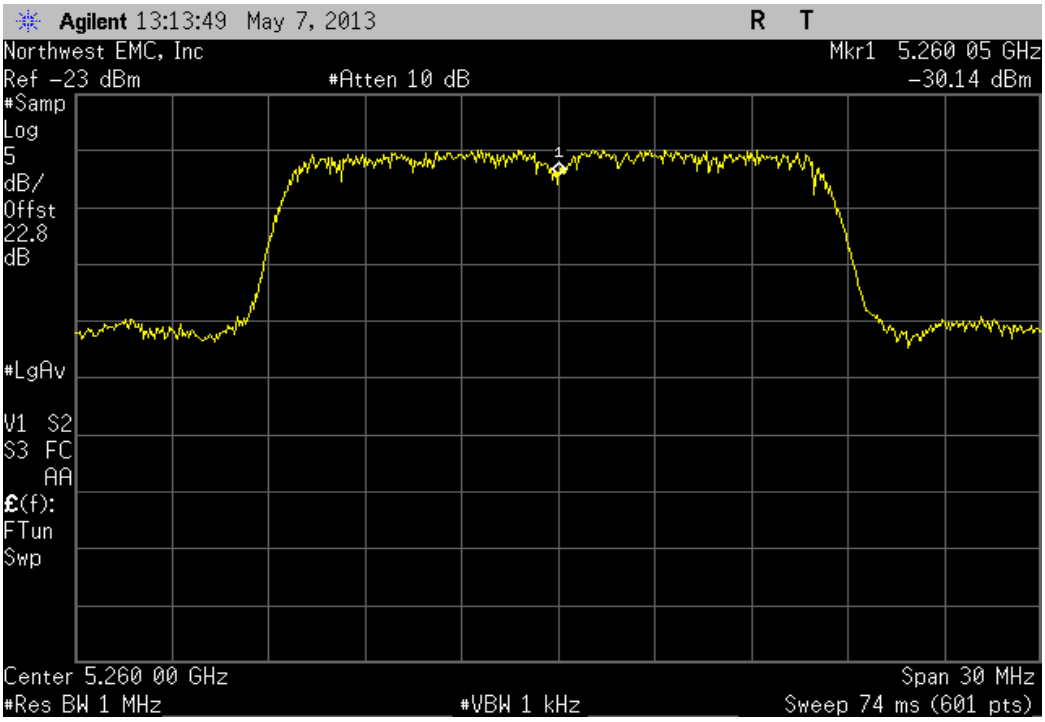
| 18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: 0° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5260.12 | 5260 | 22.8 | 100 | Pass |



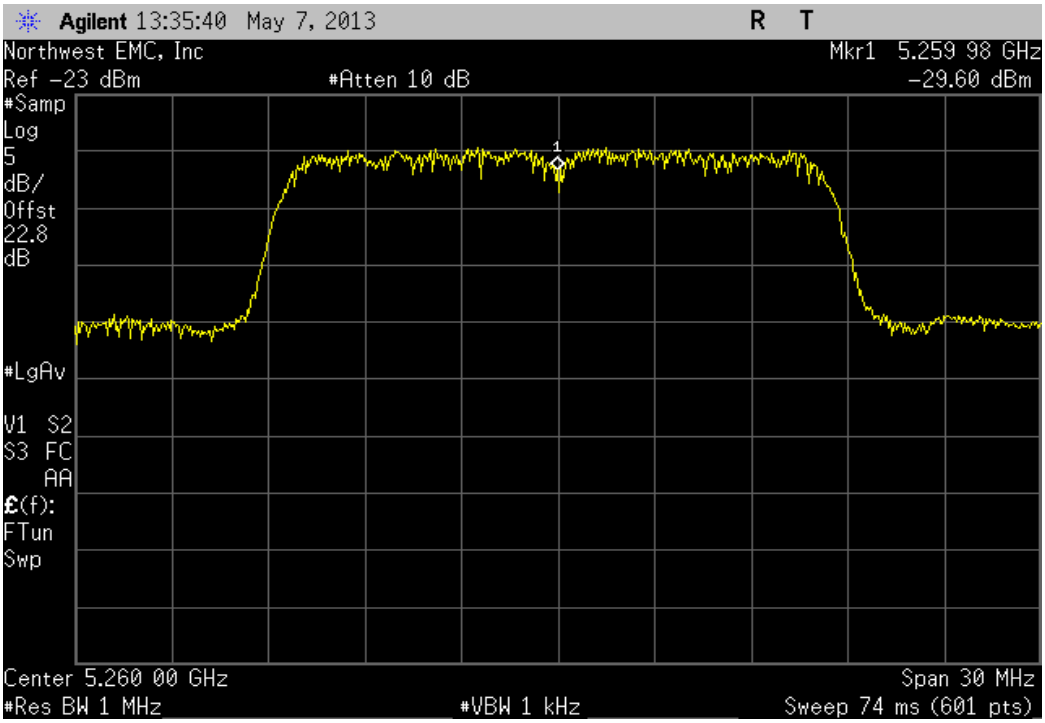

| 18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: -10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5260.02 | 5260 | 3.8 | 100 | Pass |



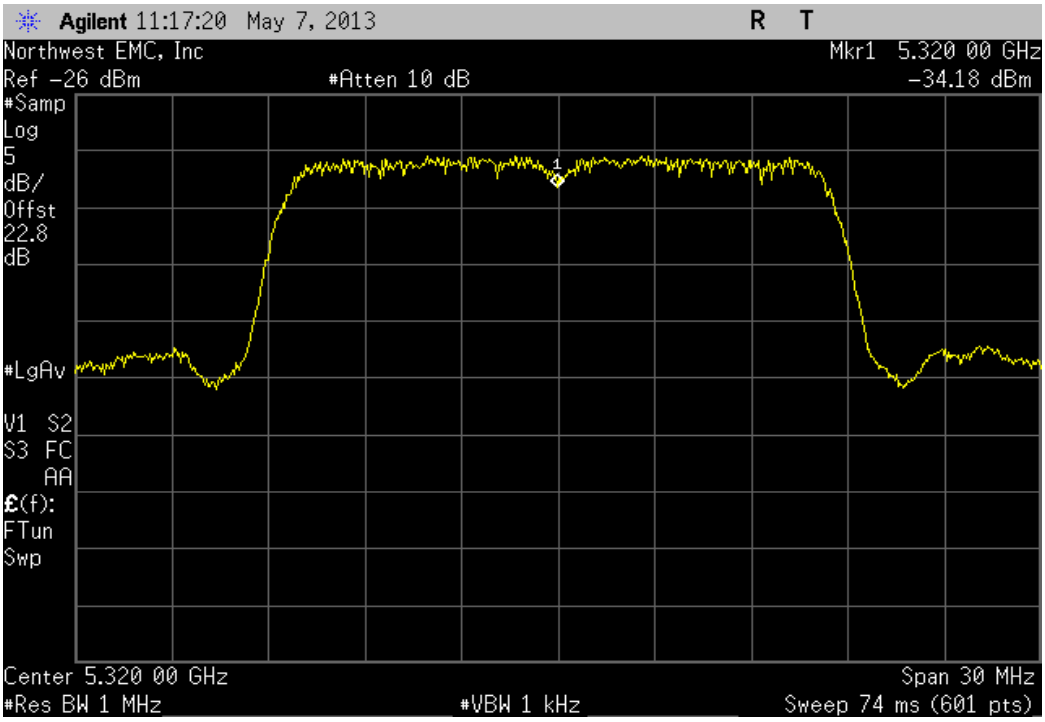
| 18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: -20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5260.05 | 5260 | 9.5 | 100 | Pass |



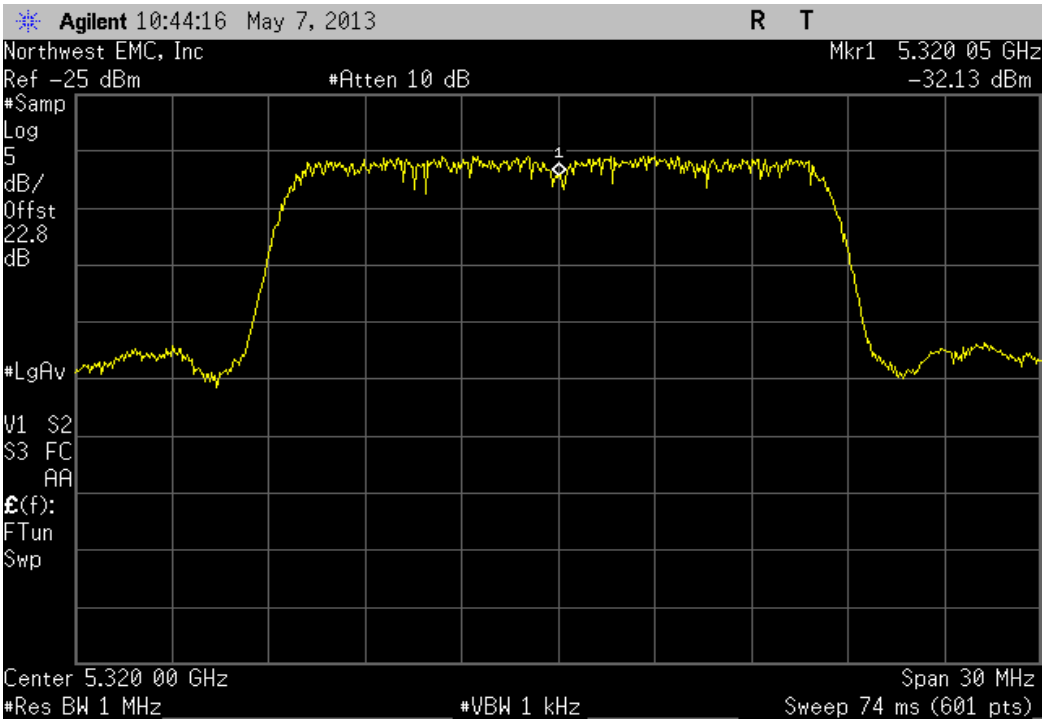

| 18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: -30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5259.98 | 5260 | 3.8 | 100 | Pass |



| 18 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Voltage: 115% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5320 | 5320 | 0 | 100 | Pass |

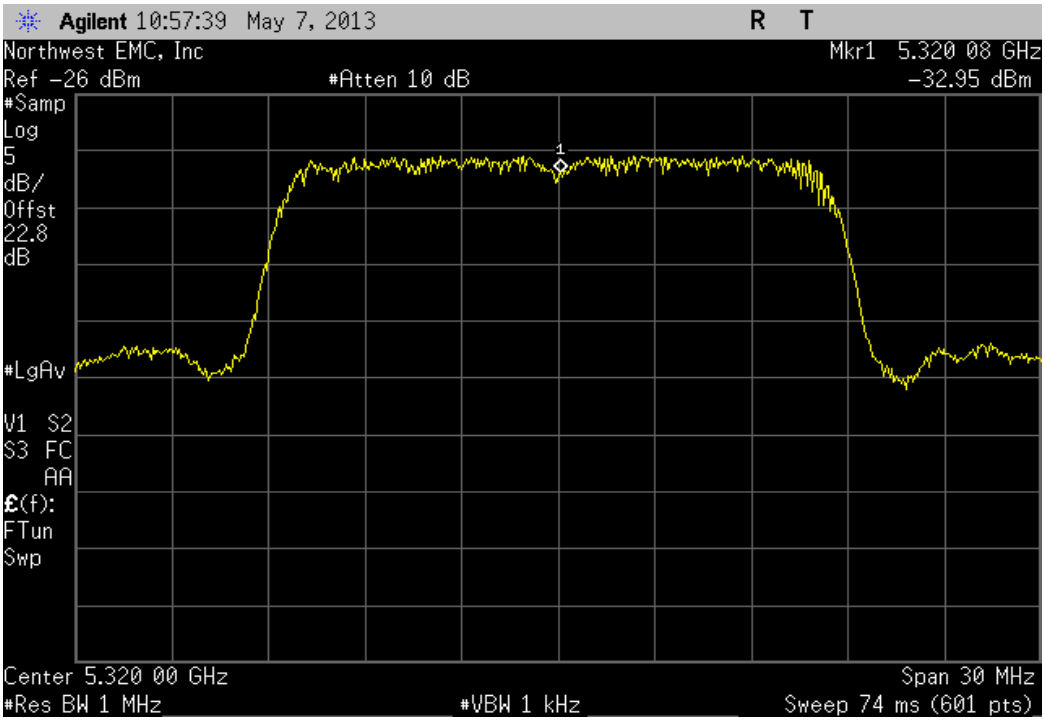



| 18 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Voltage: 100% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5320.05 | 5320 | 9.4 | 100 | Pass |

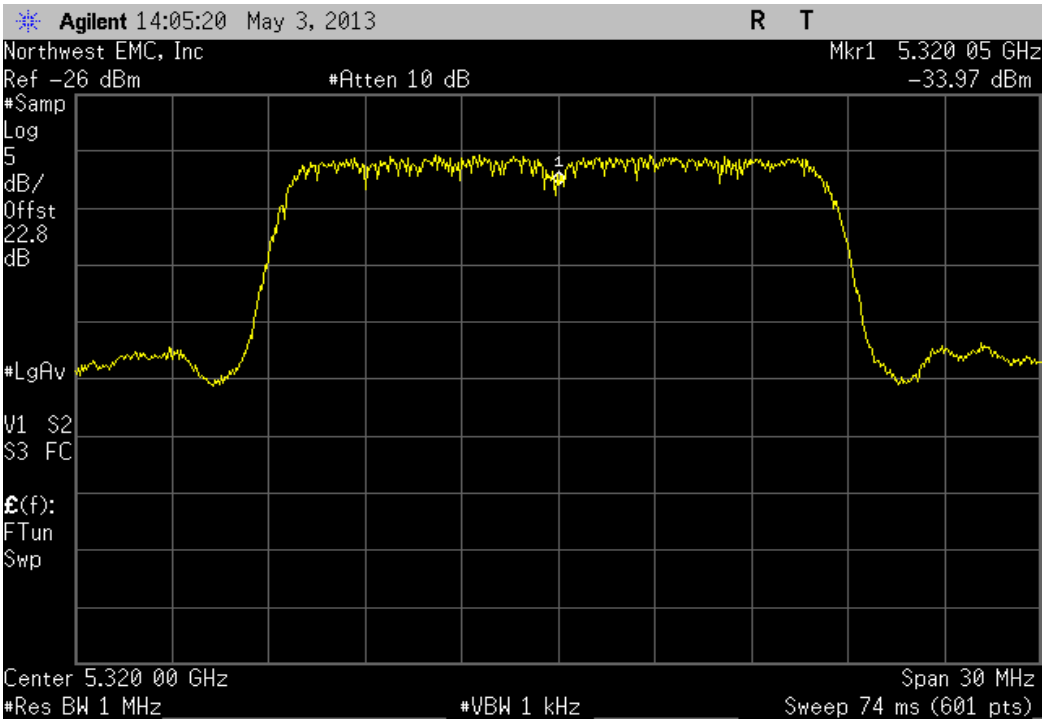


# Frequency Stability

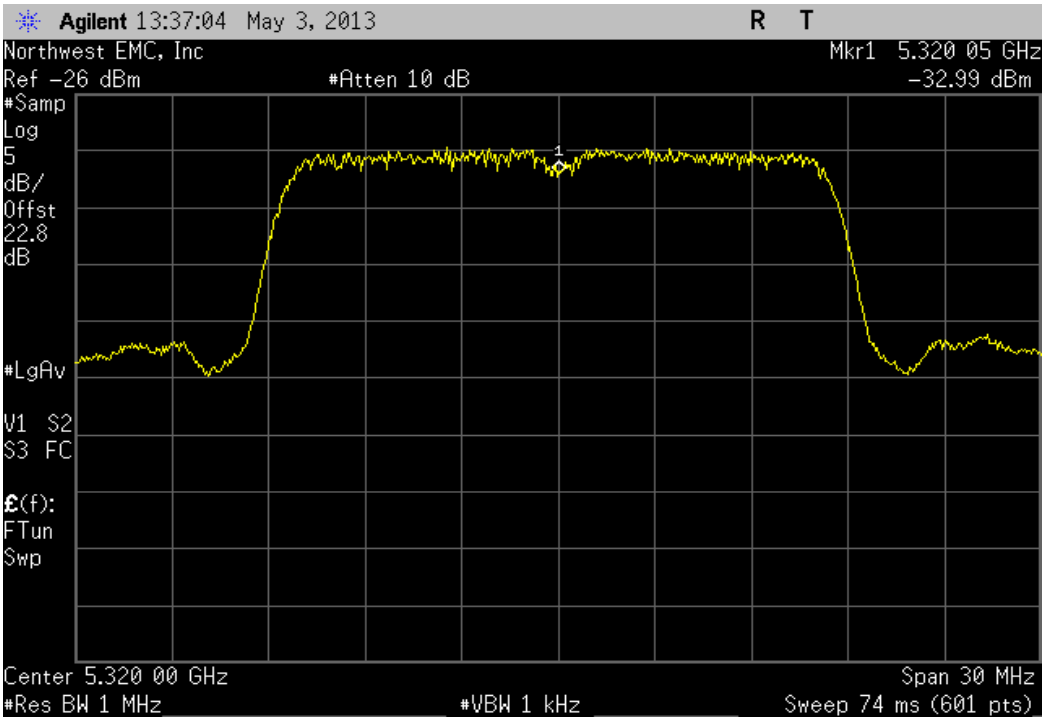
| 18 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Voltage: 85% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5320.08 | 5320 | 15 | 100 | Pass |



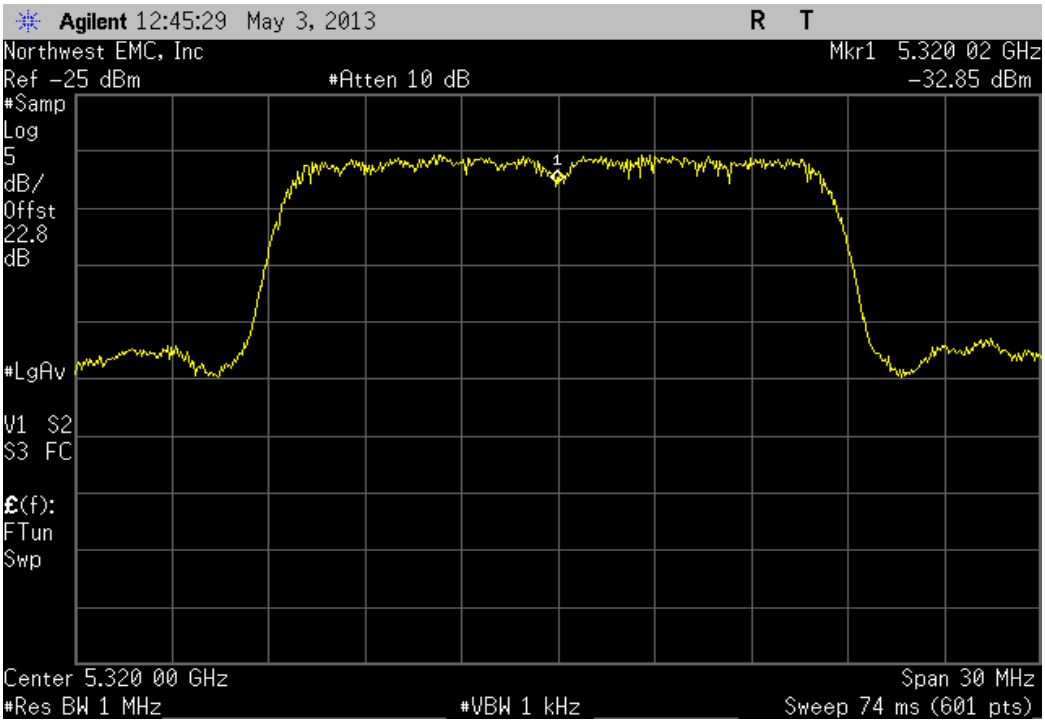

| 18 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +50° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5320.05 | 5320 | 9.4 | 100 | Pass |



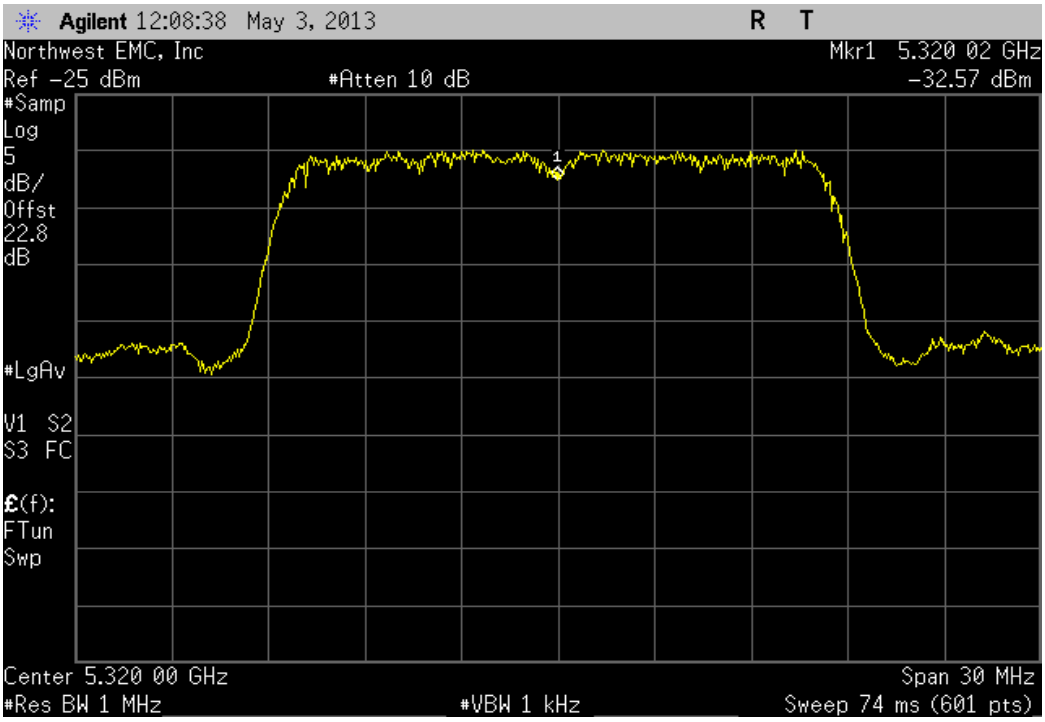
| 18 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +40° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5320.05 | 5320 | 9.4 | 100 | Pass |



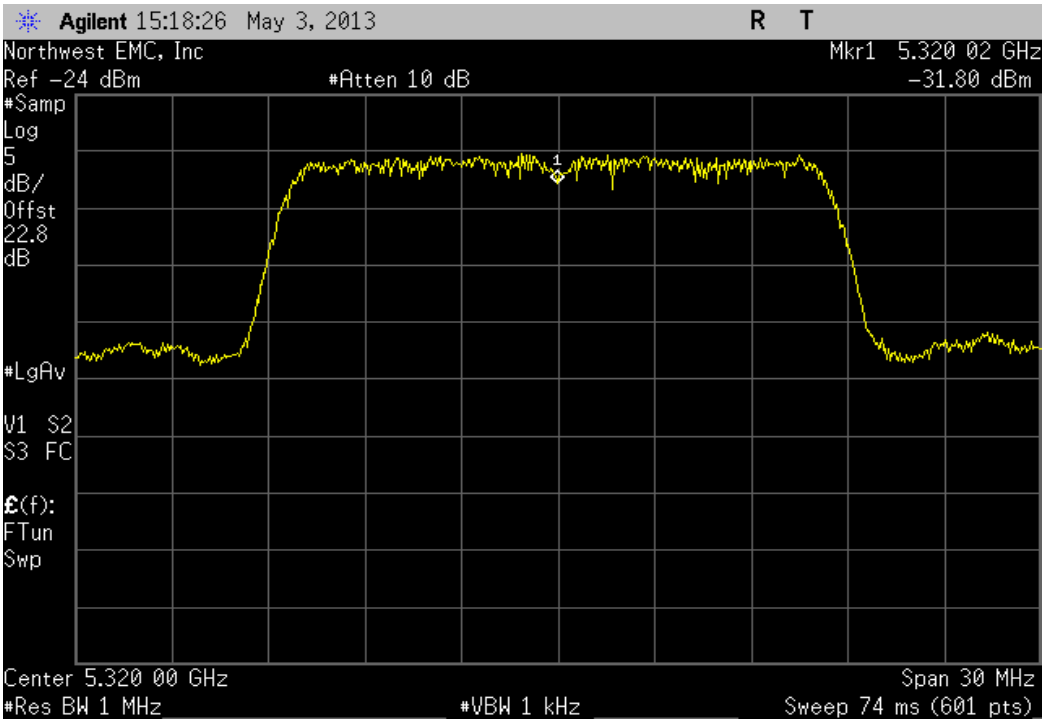

| 18 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5320.02 | 5320 | 3.8 | 100 | Pass |



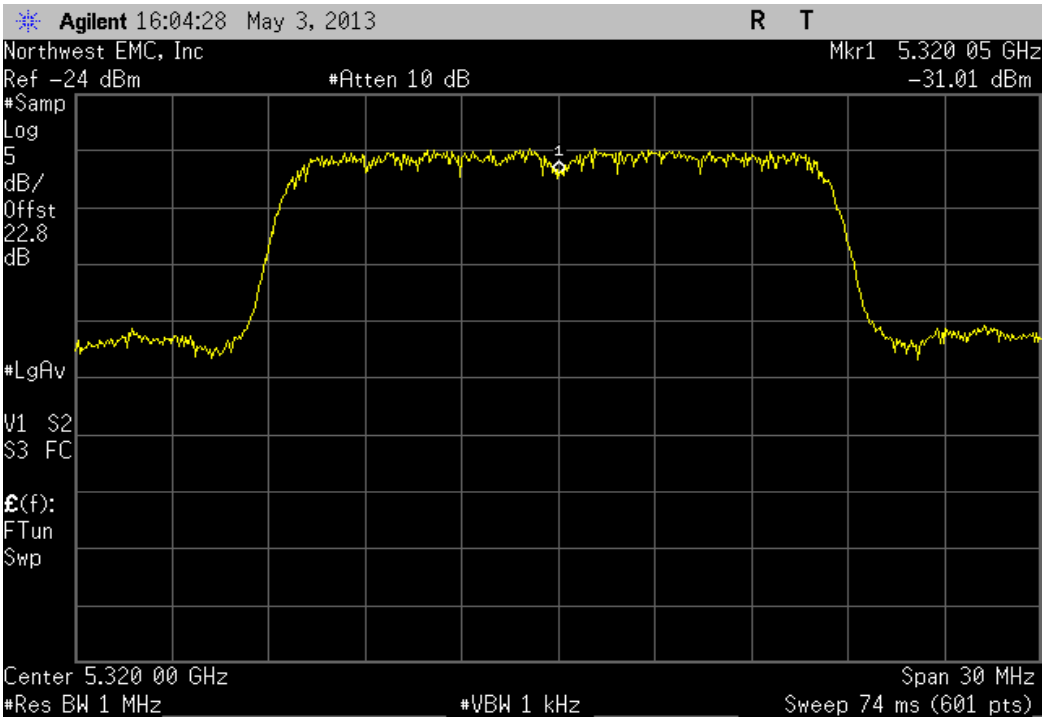
| 18 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5320.02 | 5320 | 3.8 | 100 | Pass |



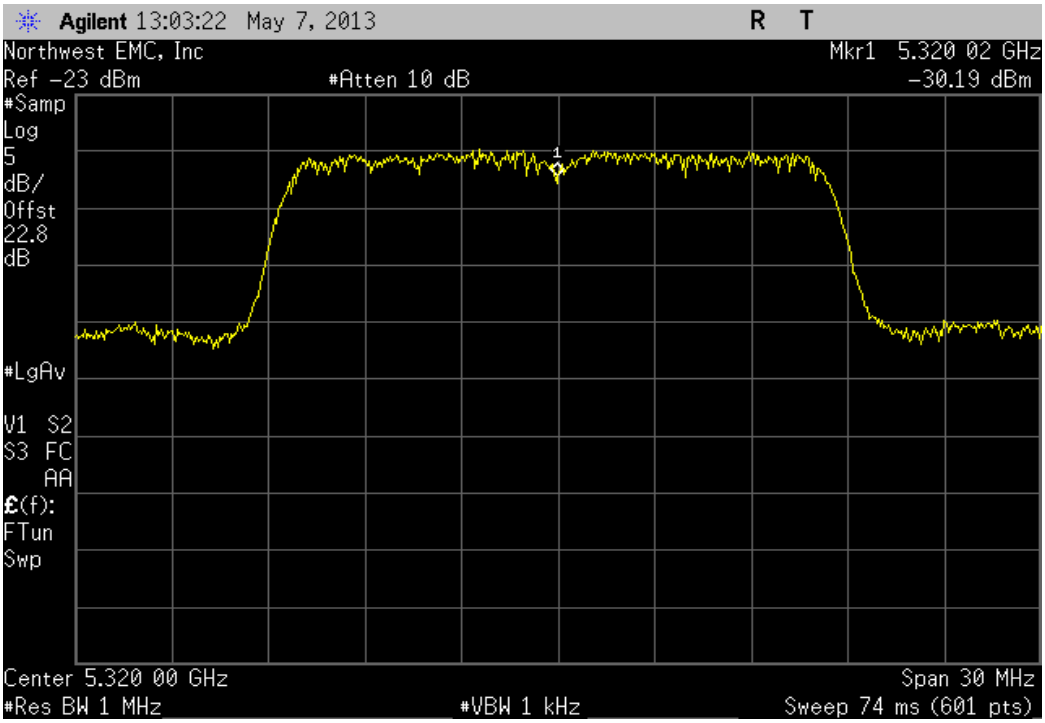

| 18 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5320.02 | 5320 | 3.8 | 100 | Pass |



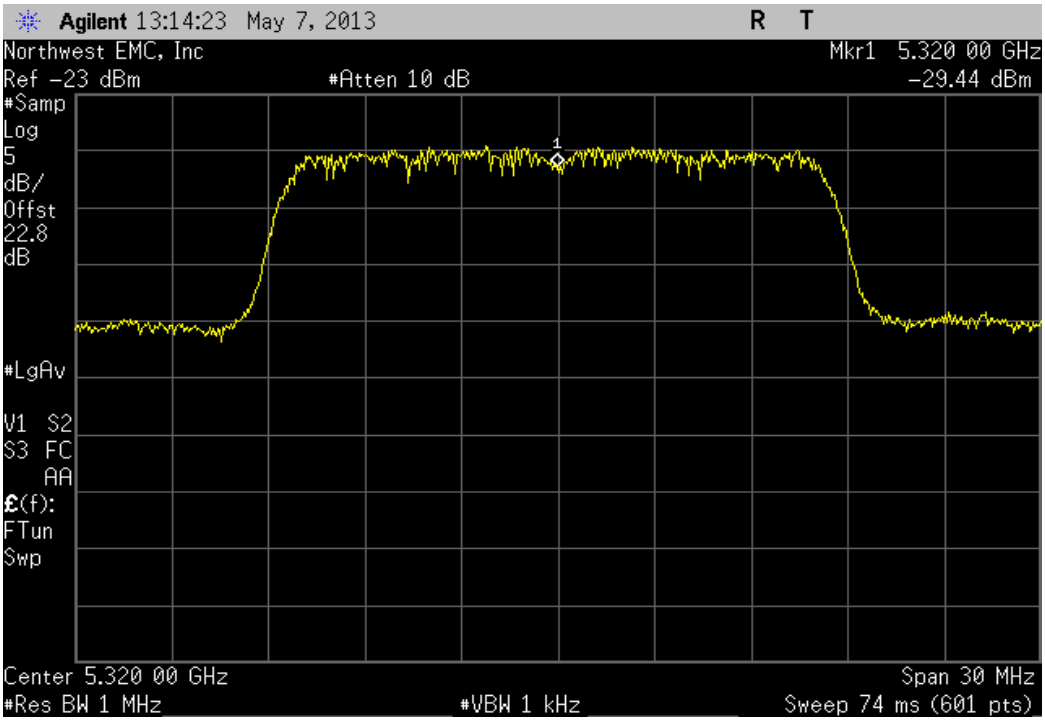
| 18 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: 0° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5320.05 | 5320 | 9.4 | 100 | Pass |



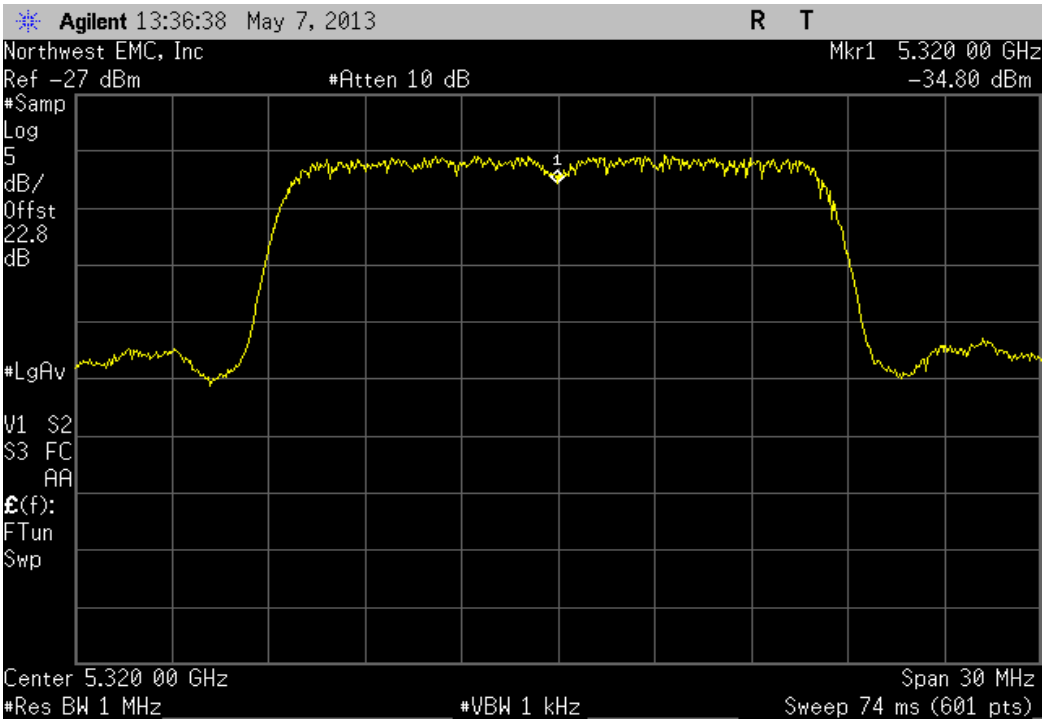

| 18 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: -10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5320.02 | 5320 | 3.8 | 100 | Pass |



| 18 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: -20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5320 | 5320 | 0 | 100 | Pass |

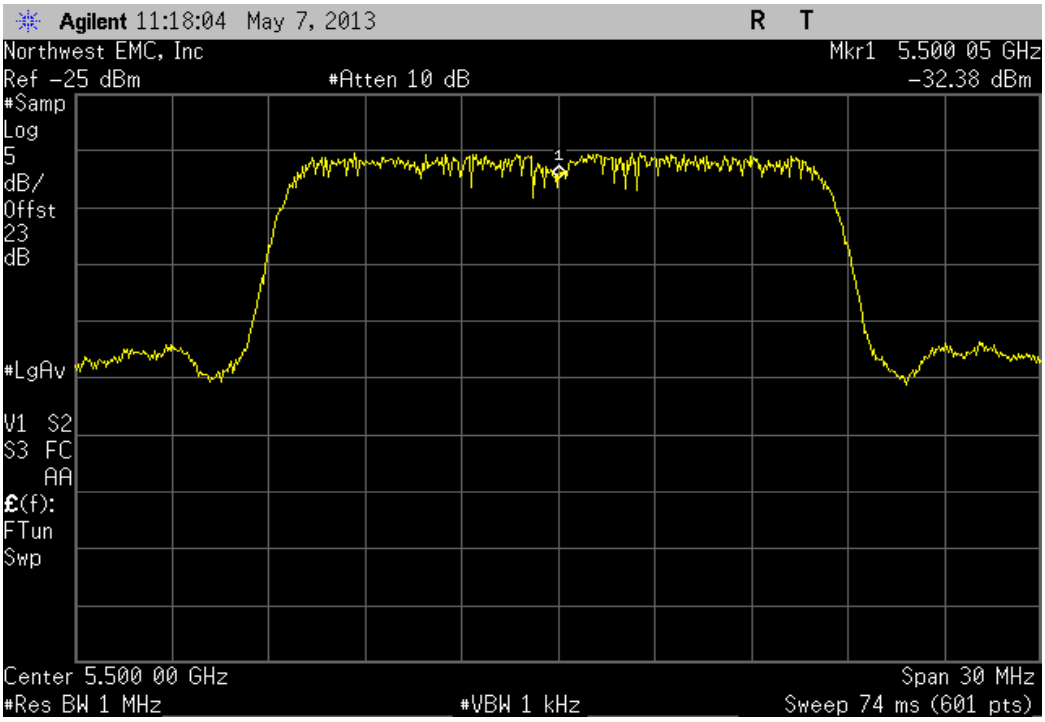



| 18 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: -30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5320 | 5320 | 0 | 100 | Pass |

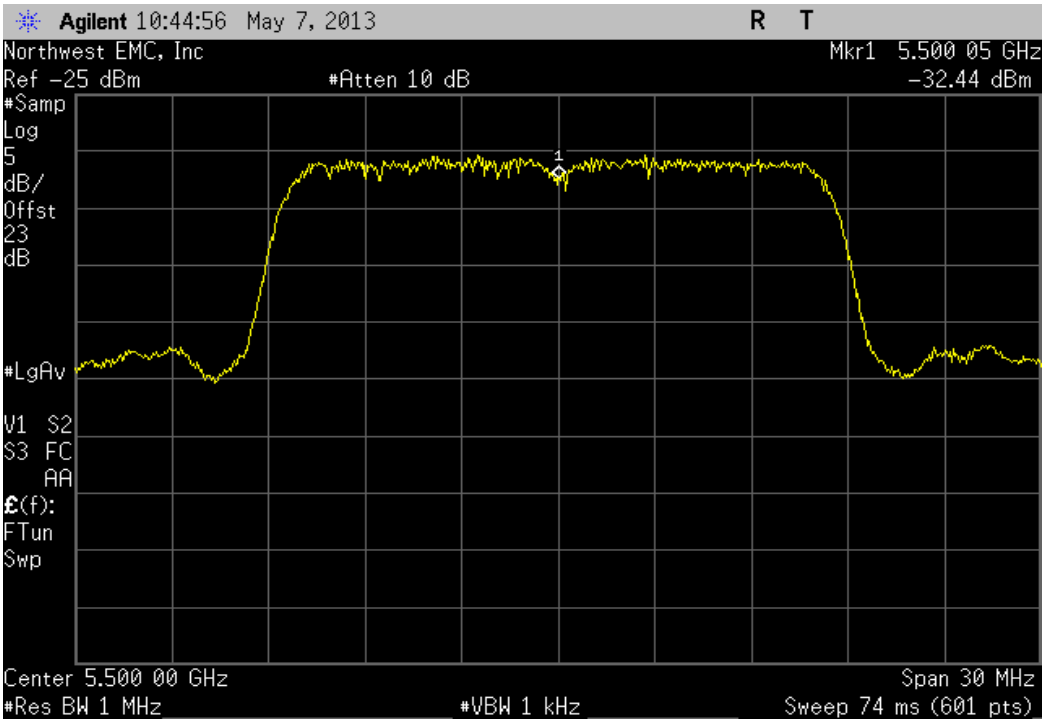


# Frequency Stability

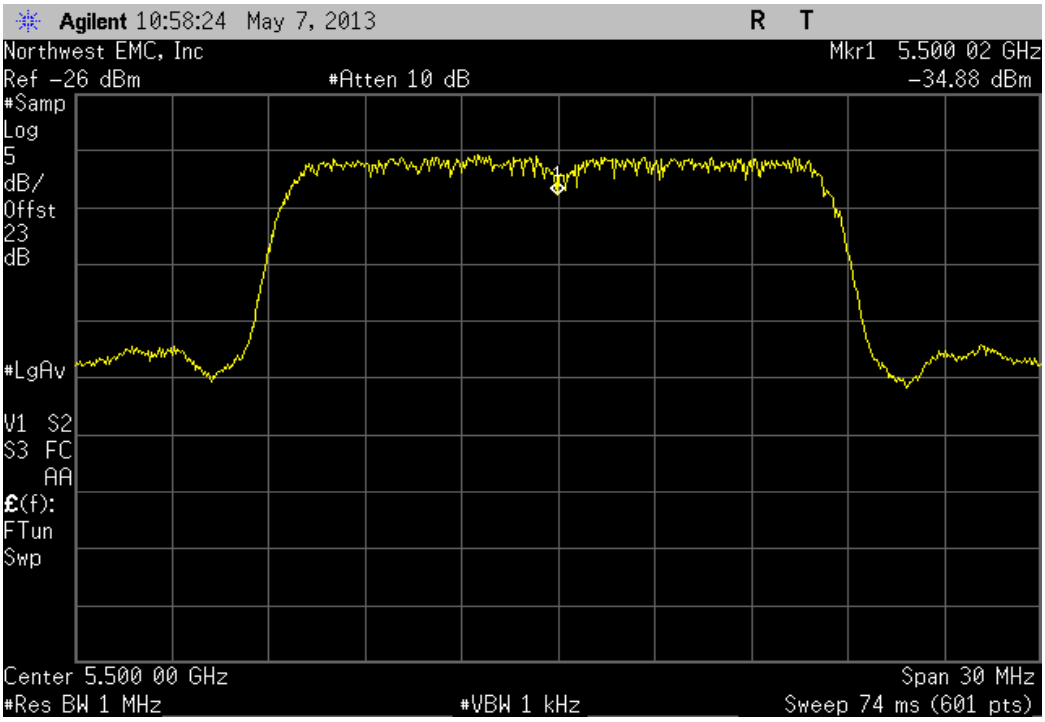
| 18 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Voltage: 115% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5500.05 | 5500 | 9.1 | 100 | Pass |



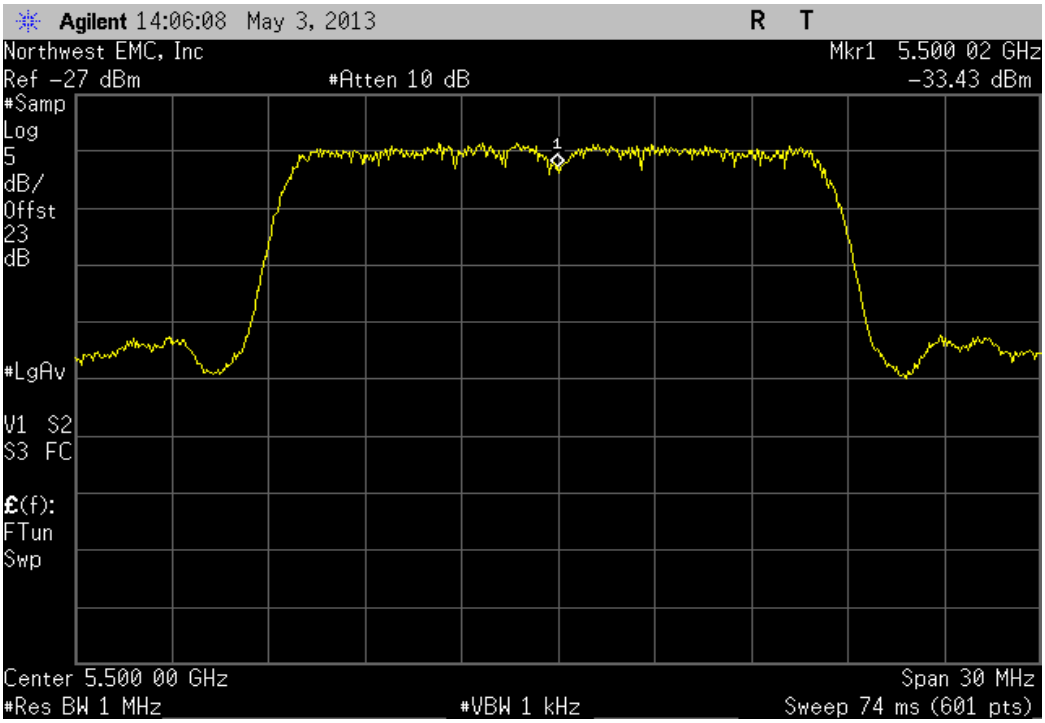

| 18 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Voltage: 100% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5500.05 | 5500 | 9.1 | 100 | Pass |



| 18 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Voltage: 85% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5500.02 | 5500 | 3.6 | 100 | Pass |

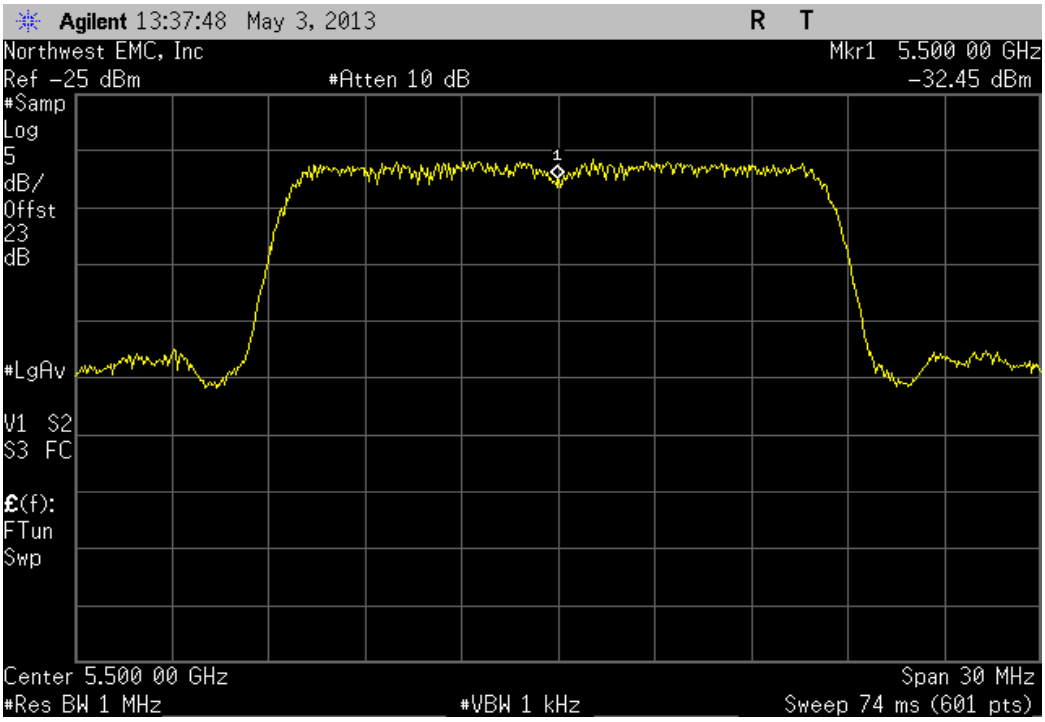



| 18 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +50° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5500.02 | 5500 | 3.6 | 100 | Pass |

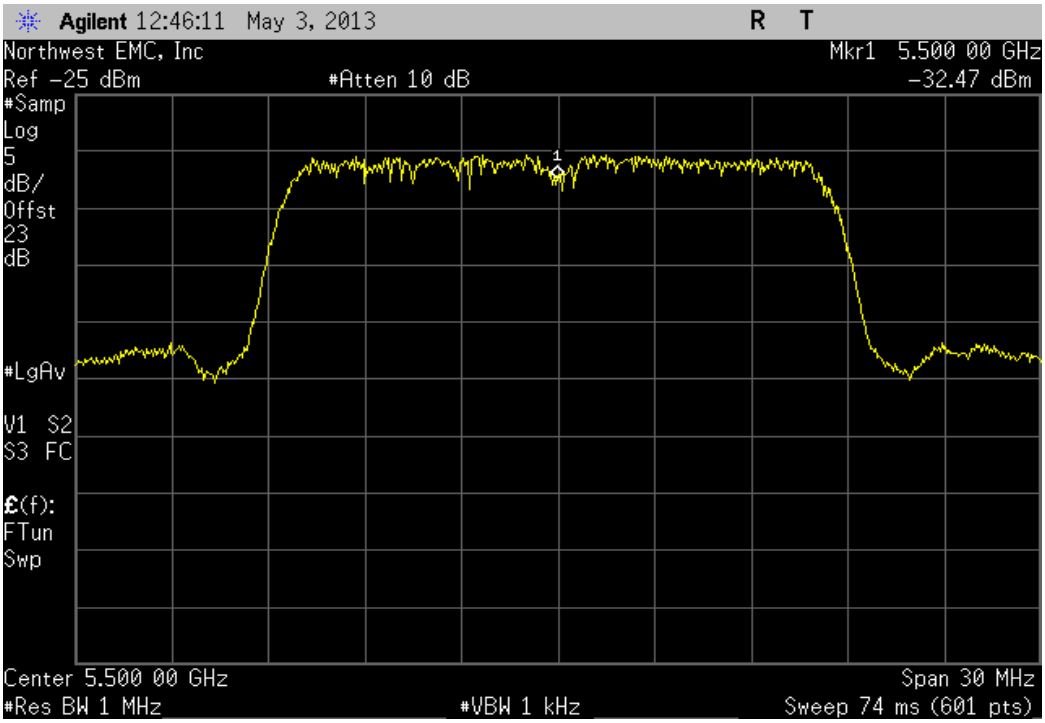


# Frequency Stability

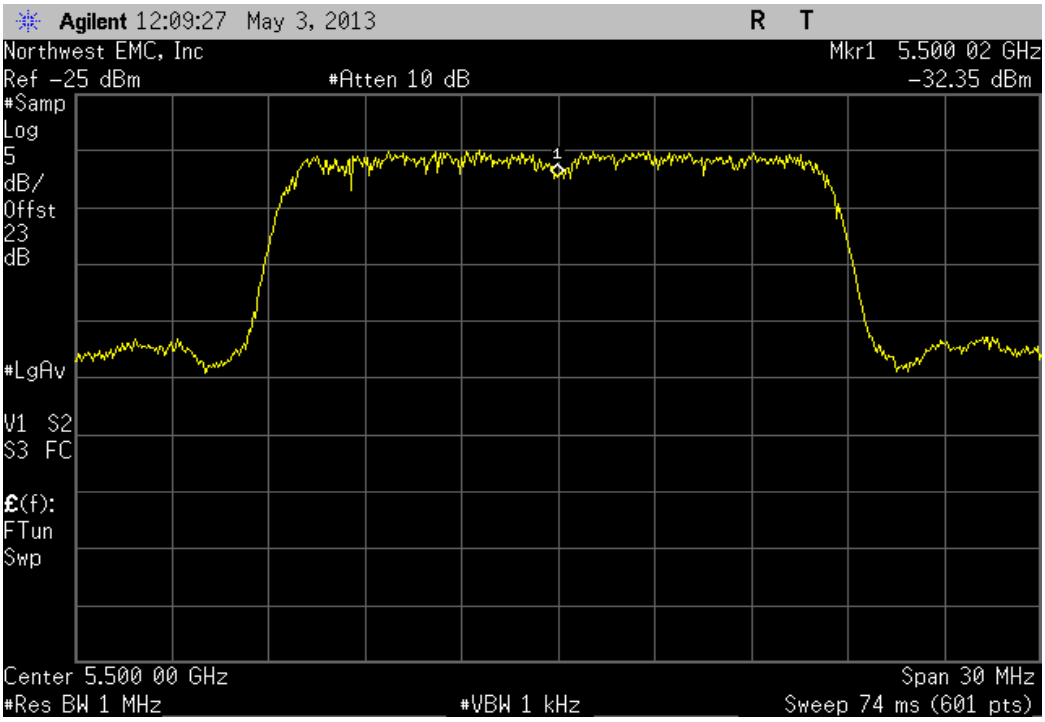
| 18 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +40° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5500 | 5500 | 0 | 100 | Pass |



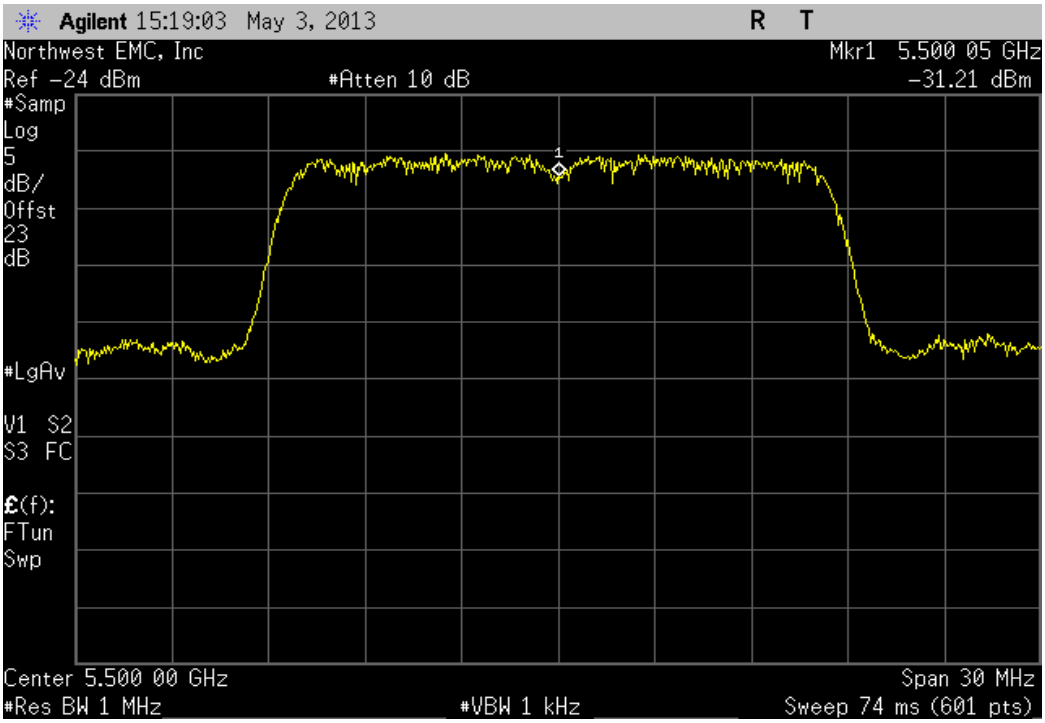

| 18 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5500 | 5500 | 0 | 100 | Pass |



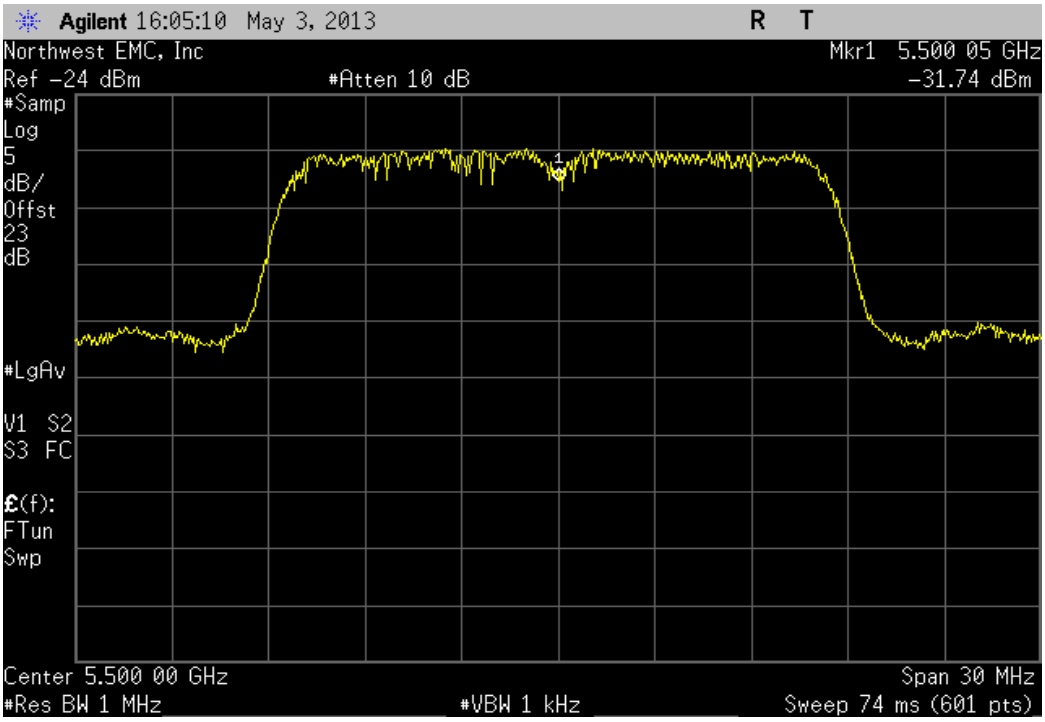
| 18 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5500.02 | 5500 | 3.6 | 100 | Pass |



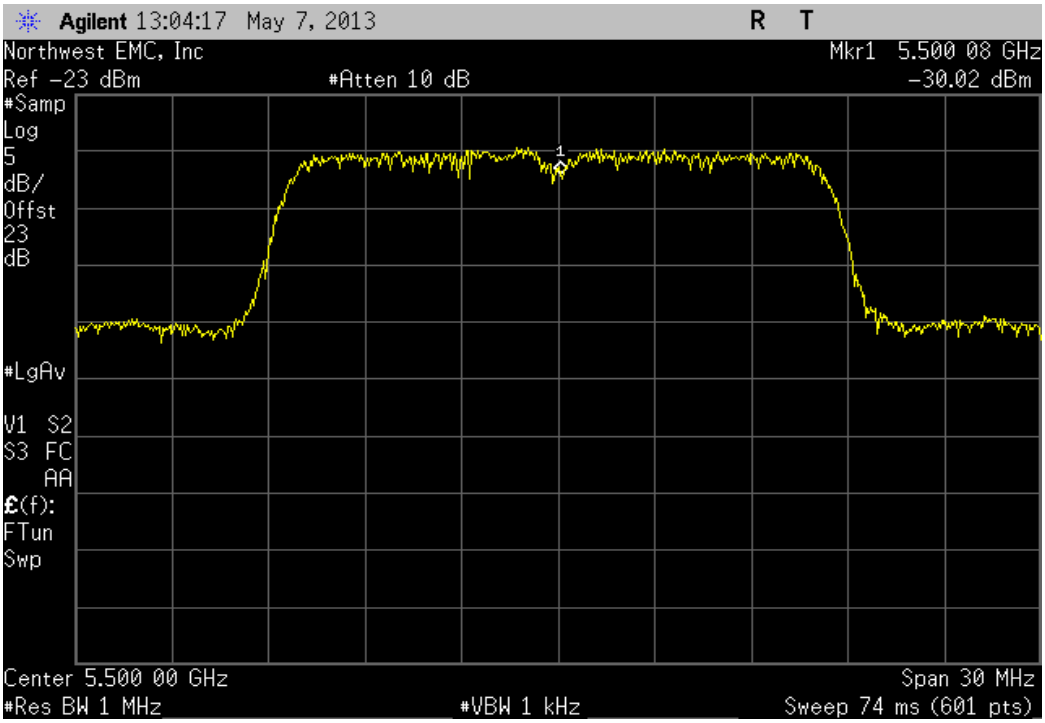

| 18 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5500.05 | 5500 | 9.1 | 100 | Pass |



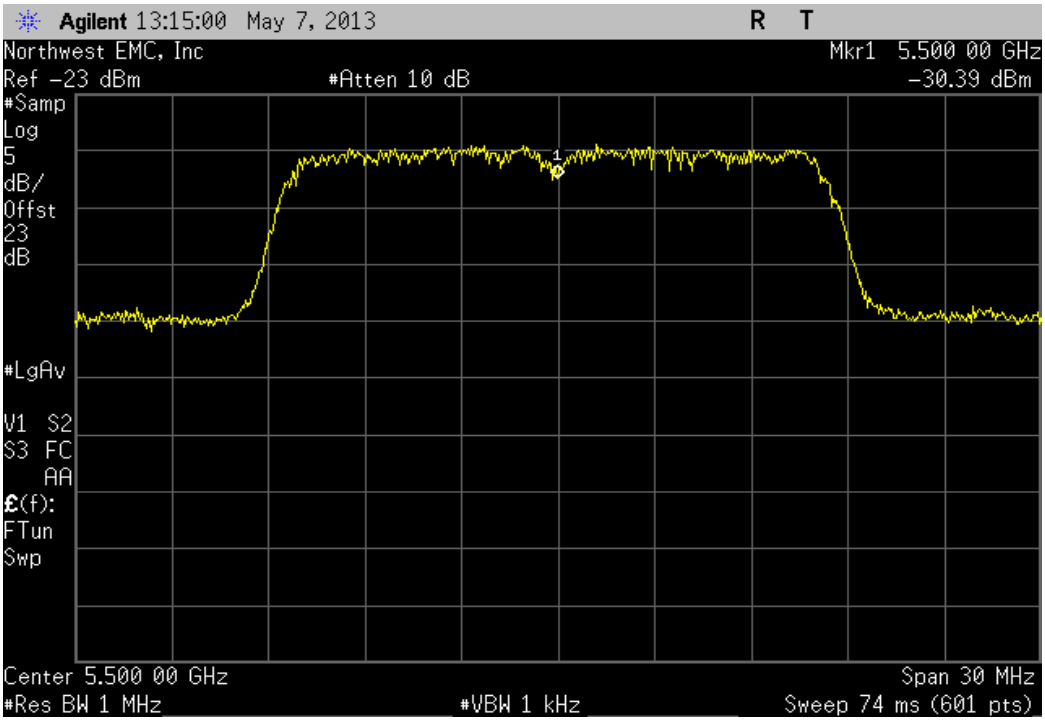
| 18 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: 0° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5500.05 | 5500 | 9.1 | 100 | Pass |



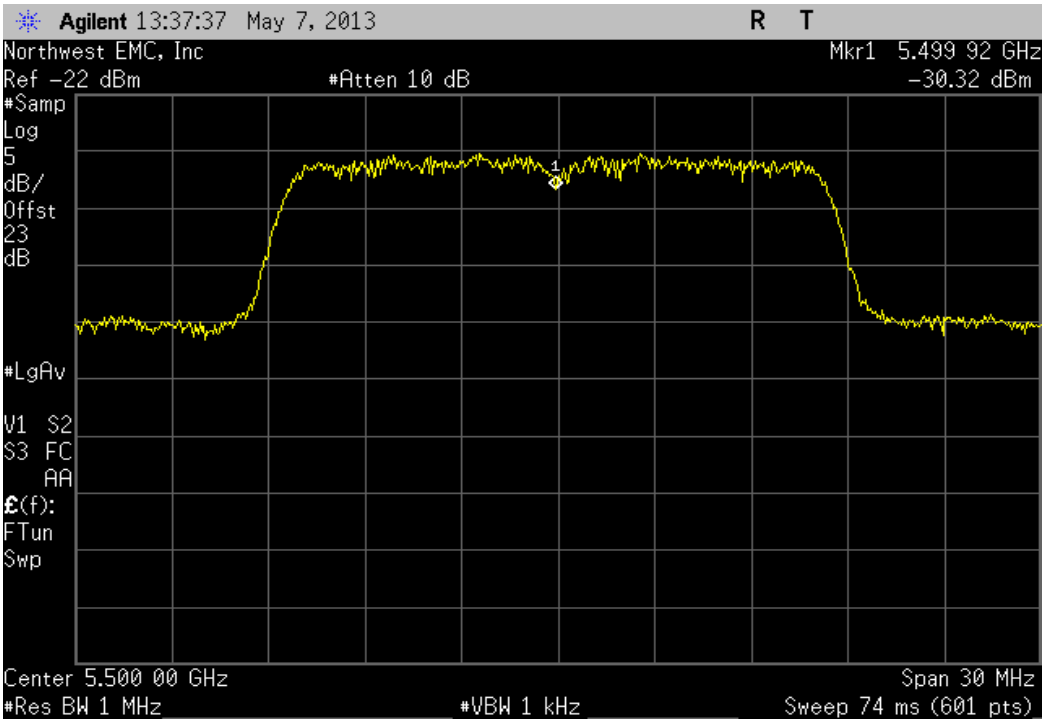

| 18 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: -10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5500.08 | 5500 | 14.6 | 100 | Pass |



| 18 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: -20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5500 | 5500 | 0 | 100 | Pass |

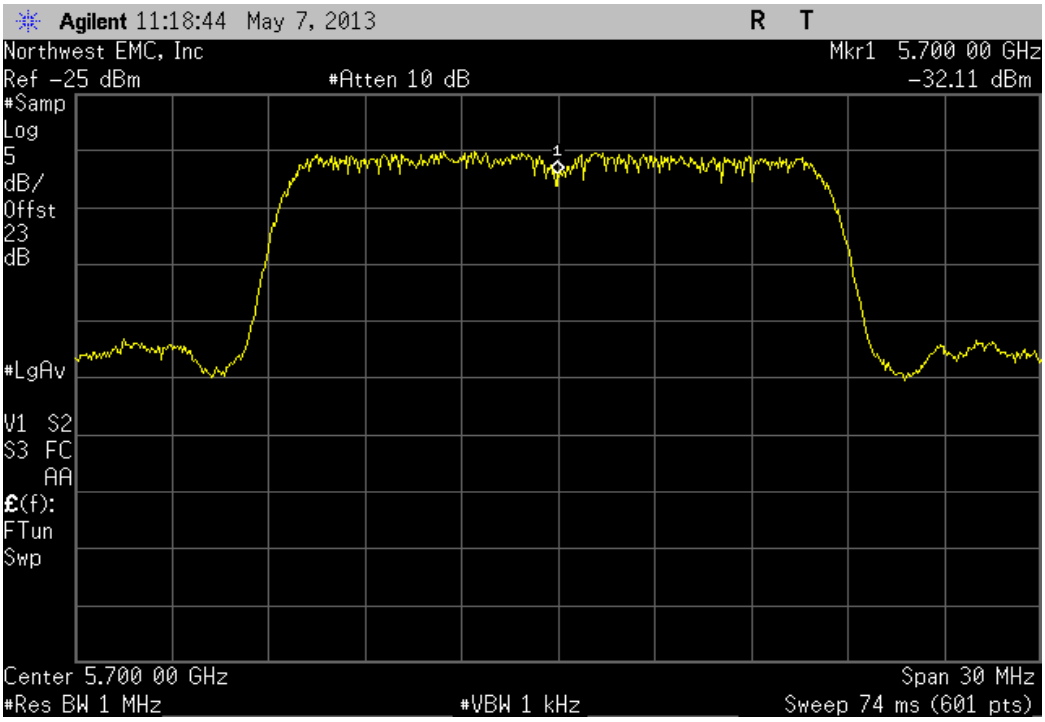



| 18 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: -30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5499.92 | 5500 | 14.6 | 100 | Pass |

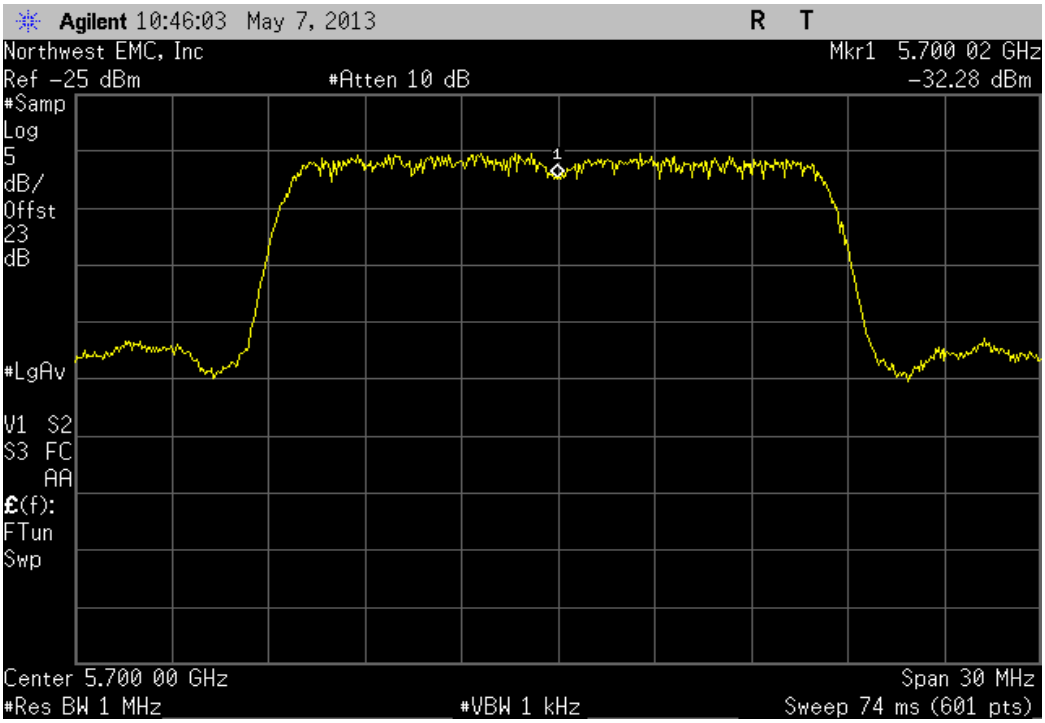


# Frequency Stability

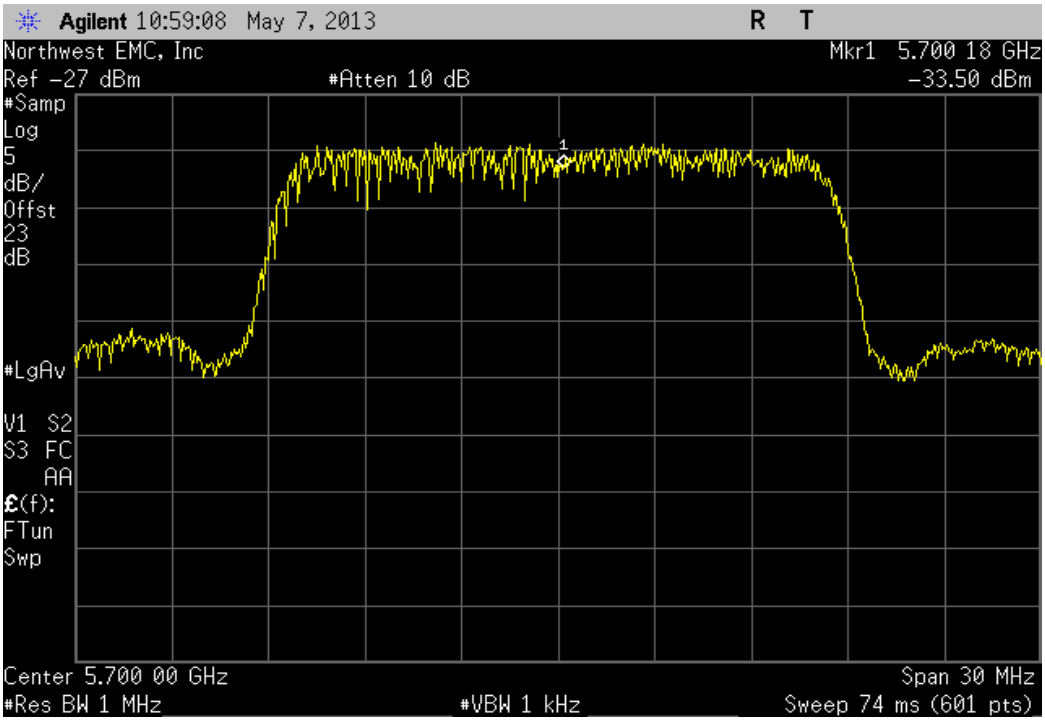
| 18 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Voltage: 115% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5700 | 5700 | 0 | 100 | Pass |



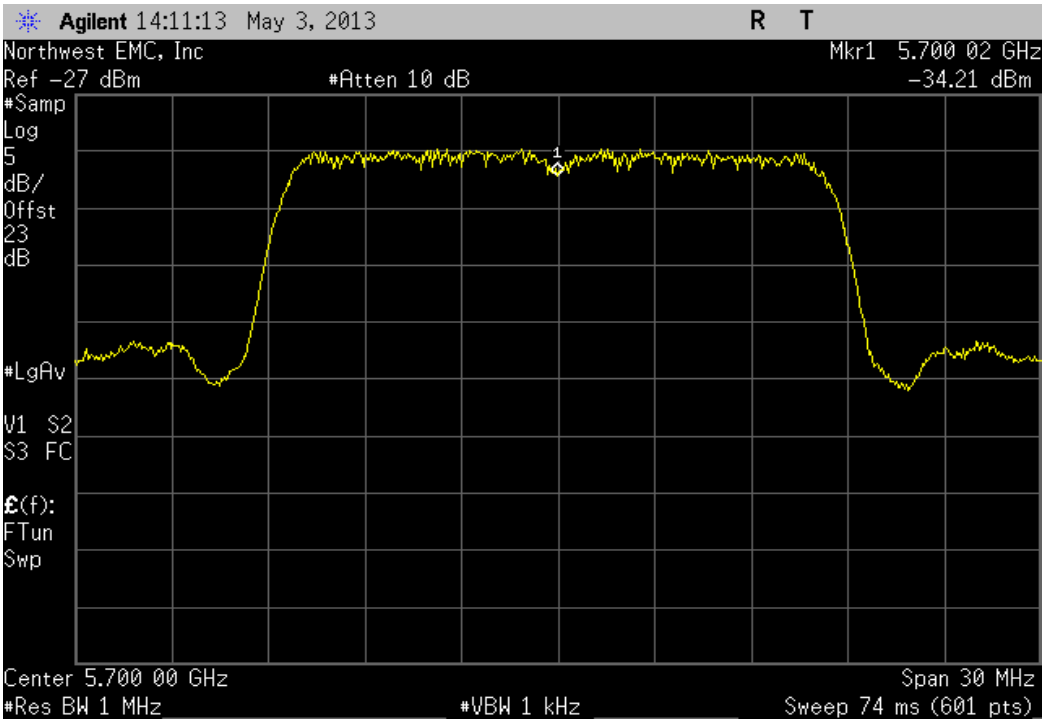

| 18 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Voltage: 100% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5700.02 | 5700 | 3.5 | 100 | Pass |



| 18 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Voltage: 85% | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5700.18 | 5700 | 31.6 | 100 | Pass |

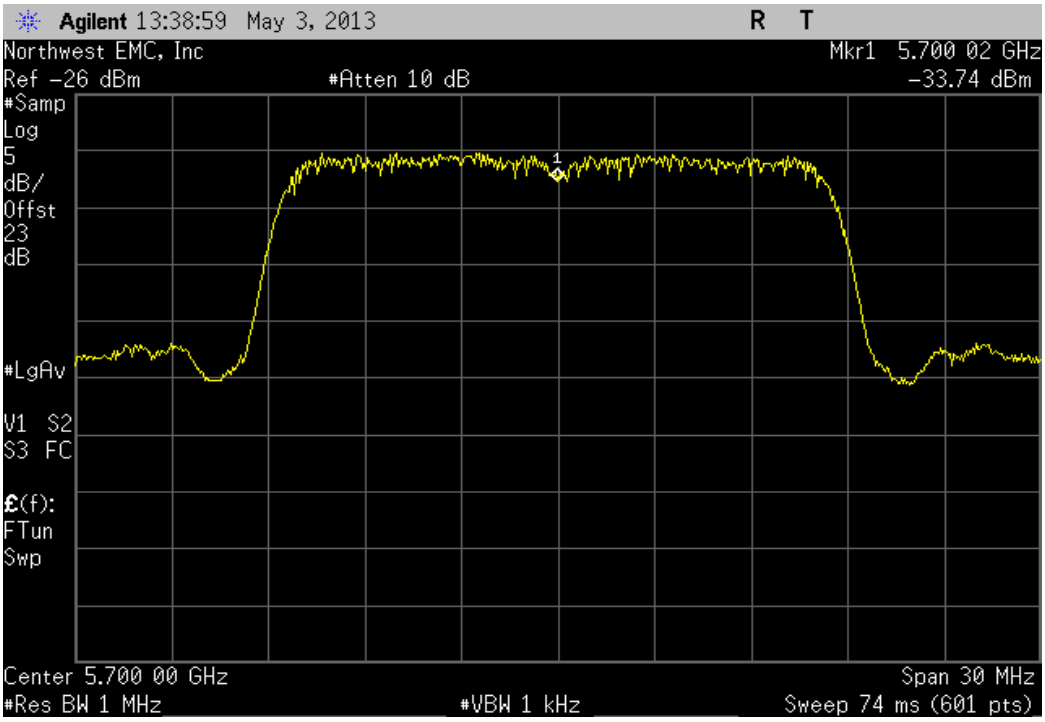



| 18 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +50° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5700.02 | 5700 | 3.5 | 100 | Pass |

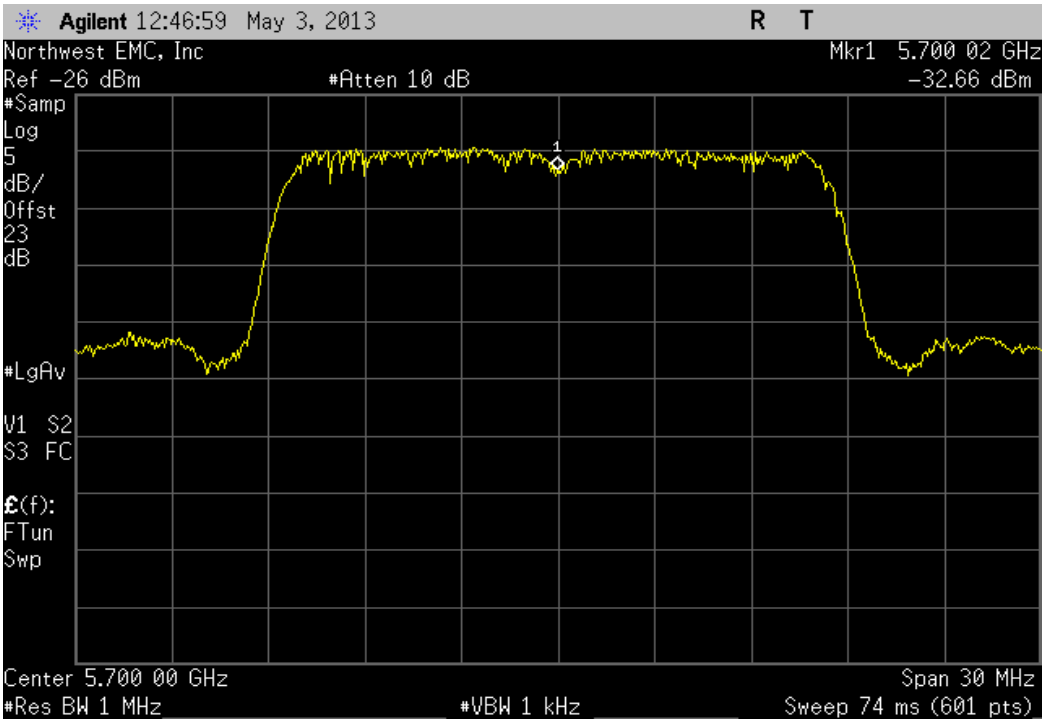


# Frequency Stability

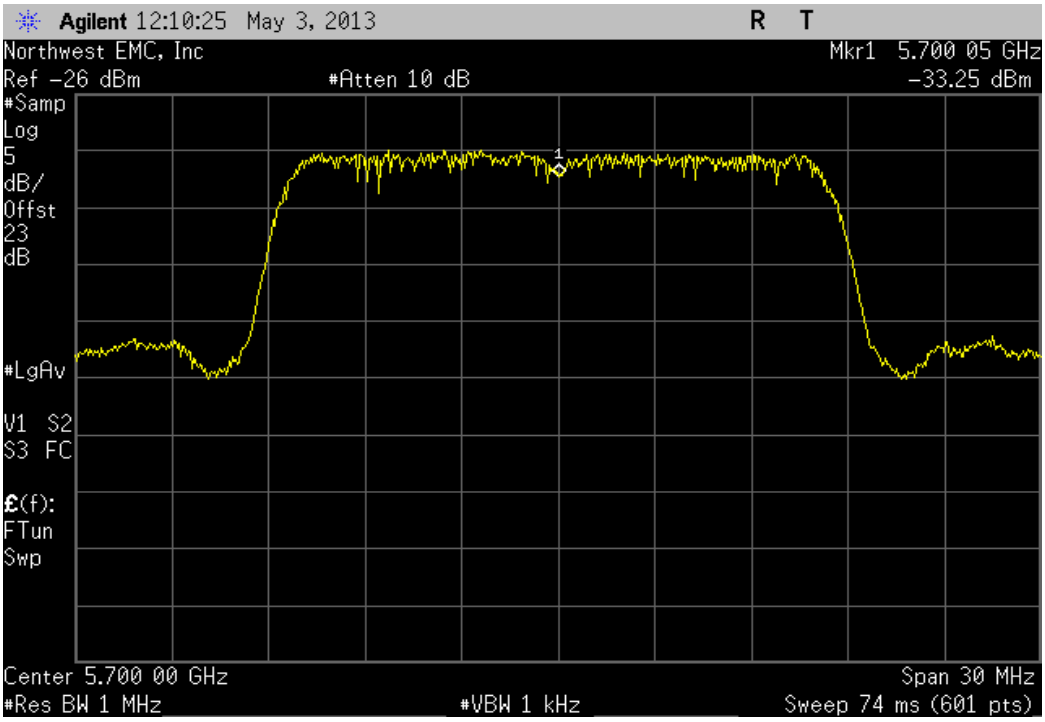
| 18 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +40° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5700.02 | 5700 | 3.5 | 100 | Pass |



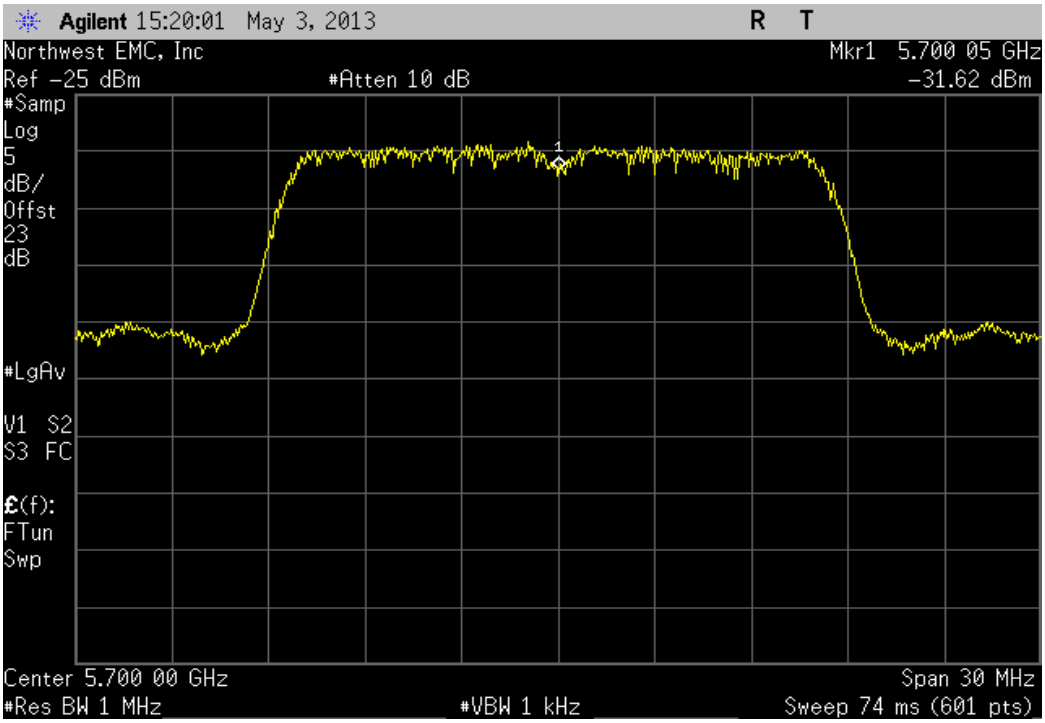

| 18 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5700.02 | 5700 | 3.5 | 100 | Pass |



| 18 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5700.05 | 5700 | 8.8 | 100 | Pass |

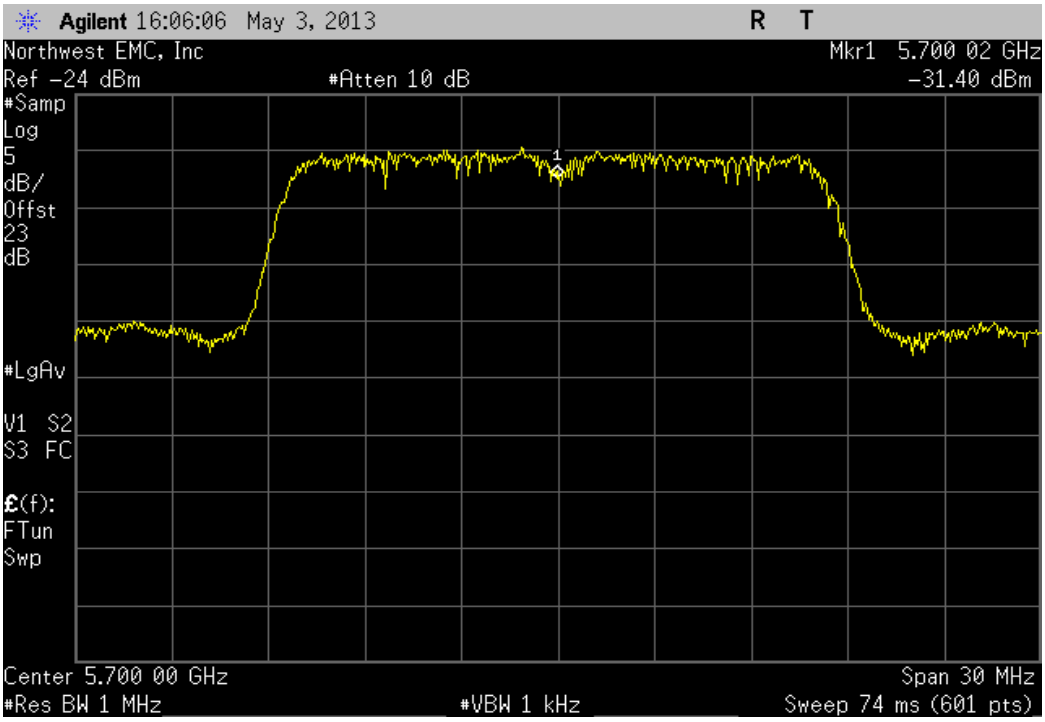



| 18 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +10° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5700.05 | 5700 | 8.8 | 100 | Pass |



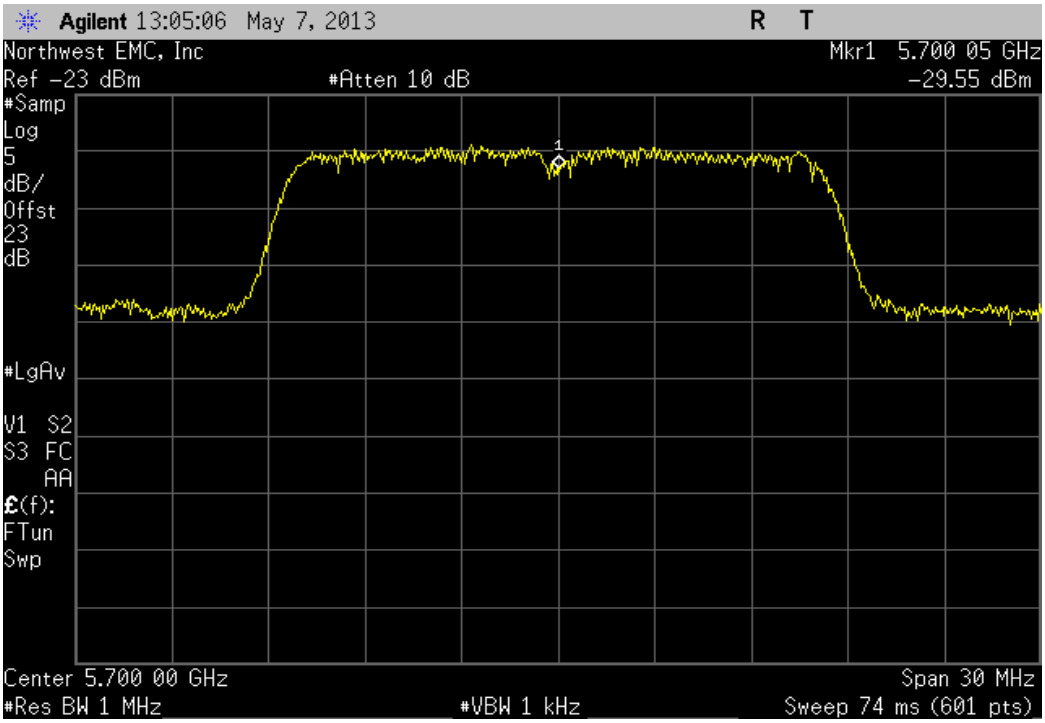
18 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: 0°

| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
|---|---|---|---|---|---|---|
| | | 5700.02 | 5700 | 3.5 | 100 | Pass |



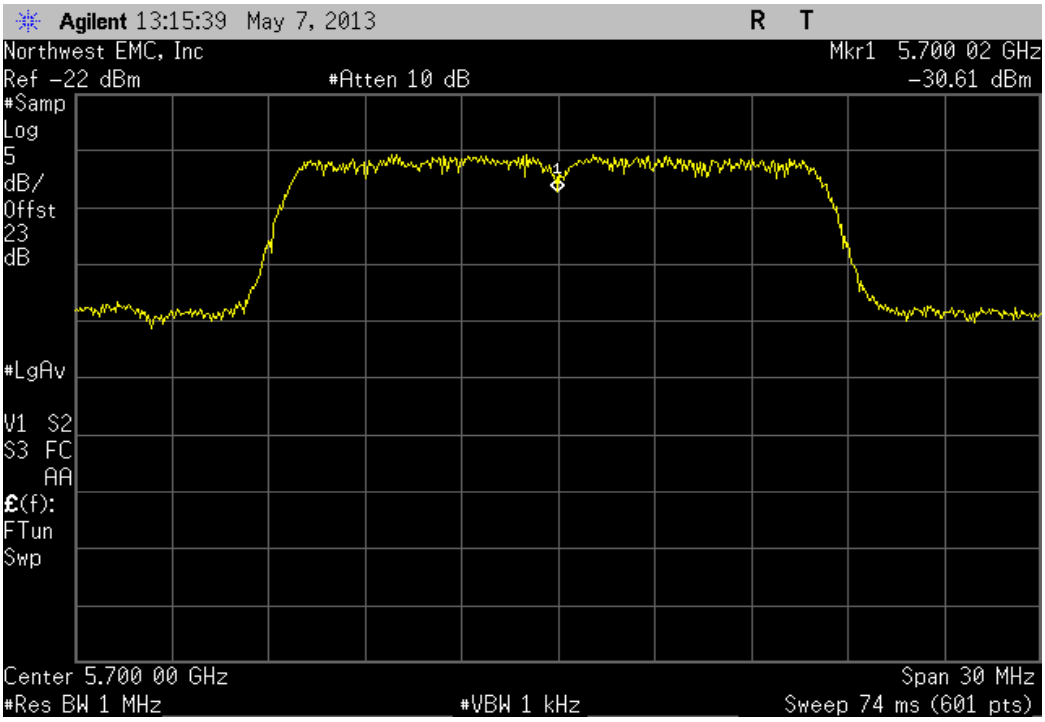

18 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: -10°

| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
|---|---|---|---|---|---|---|
| | | 5700.05 | 5700 | 8.8 | 100 | Pass |

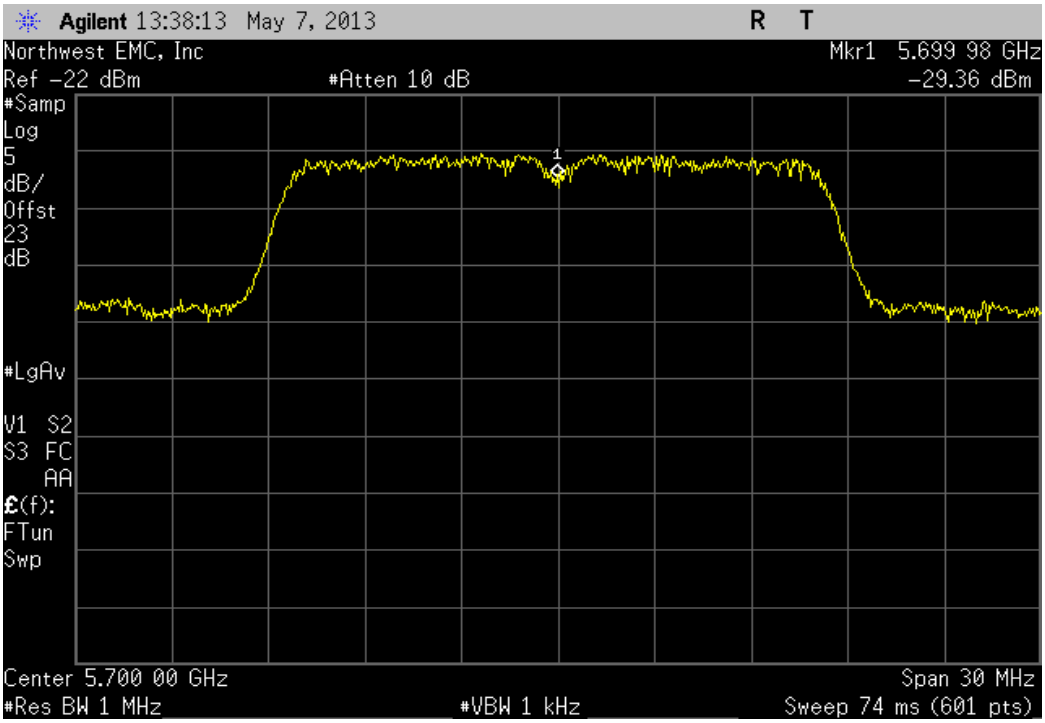


# Frequency Stability

| 18 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: -20° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5700.02 | 5700 | 3.5 | 100 | Pass |




| 18 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: -30° | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 5699.98 | 5700 | 3.5 | 100 | Pass |



# 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.

**MODES OF OPERATION**

Transmitting 802.11a, 50% Duty Cycle

**POWER SETTINGS INVESTIGATED**

3.3V DC

**CONFIGURATIONS INVESTIGATED**

FOCU0140 - 2
FOCU0140 - 7

**FREQUENCY RANGE INVESTIGATED**

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

**SAMPLE CALCULATIONS**

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

**TEST EQUIPMENT**

| Description | Manufacturer | Model | ID | Last Cal. | Interval |
|---|---|---|---|---|---|
| High Pass Filter | Micro-Tronics | HPM50112 | HGA | 10/4/2012 | 24 mo |
| 5.725-5.875 Notch Filter | Micro-Tronics | BRC50705 | HGJ | 3/21/2012 | 24 mo |
| 5.47-5.725 Notch Filter | Micro-Tronics | BRC50704 | HGI | 10/4/2012 | 24 mo |
| 5.25 GHz Notch Filter | K&L Microwave | 8N50-5250/X200-0/0 | HFK | 3/21/2012 | 24 mo |
| EV01 Cable | ESM Cable Corp. | TTBJ-141 KMKM-72 | ECC | 8/27/2012 | 12 mo |
| Antenna, Horn | EMCO | 3115 | AHC | 6/20/2012 | 24 mo |
| Spectrum Analyzer | Agilent | E4440A | AFD | 7/5/2012 | 24 mo |
| OC Cable | ESM Cable Corp. | KMKM-72 | OCV | 6/28/2012 | 12 mo |
| Pre-Amplifier | Miteq | JSW45-26004000-40-5P | AVR | 6/28/2012 | 12 mo |
| Antenna, Horn | ETS Lindgren | 3160-10 | AIW | NCR | 0 mo |
| Cable | ESM Cable Corp. | KMKM-72 | EVY | 9/11/2012 | 12 mo |
| Pre-Amplifier | Miteq | AMF-6F-18002650-25-10P | AVU | 9/11/2012 | 12 mo |
| Antenna, Horn | ETS Lindgren | 3160-09 | AIV | NCR | 0 mo |
| Pre-Amplifier | Miteq | AMF-6F-12001800-30-10P | AVD | 2/27/2013 | 12 mo |
| Antenna, Horn | ETS | 3160-08 | AHV | NCR | 0 mo |
| EV01 Cables | N/A | Standard Gain Horns Cables | EVF | 2/27/2013 | 12 mo |
| Pre-Amplifier | Miteq | AMF-6F-08001200-30-10P | AVC | 2/27/2013 | 12 mo |
| Antenna, Horn | ETS | 3160-07 | AHU | NCR | 0 mo |
| EV01 Cables | N/A | Double Ridge Horn Cables | EVB | 6/27/2012 | 12 mo |
| Pre-Amplifier | Miteq | AMF-4D-010100-24-10P | APW | 6/27/2012 | 12 mo |
| Antenna, Horn | ETS | 3115 | AIZ | 1/24/2011 | 36 mo |
| EV01 Cables | N/A | Bilog Cables | EVA | 6/26/2012 | 12 mo |
| Pre-Amplifier | Miteq | AM-1616-1000 | AOL | 6/26/2012 | 12 mo |
| Antenna, Biconilog | EMCO | 3141 | AXG | 4/10/2012 | 36 mo |
| Attenuator, 6dB | S.M. Electronics | 18N-06 | AWN | 3/25/2013 | 12 mo |
| MXG Vector Signal Generator | Agilent | N5182A | TIF | NCR | 0 mo |
| Power Meter | Gigatronics | 8651A | SPM | 1/9/2012 | 24 mo |
| Power Sensor | Gigatronics | 80701A | SPL | 7/8/2011 | 36 mo |

**MEASUREMENT BANDWIDTHS**

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

**TEST DESCRIPTION**

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

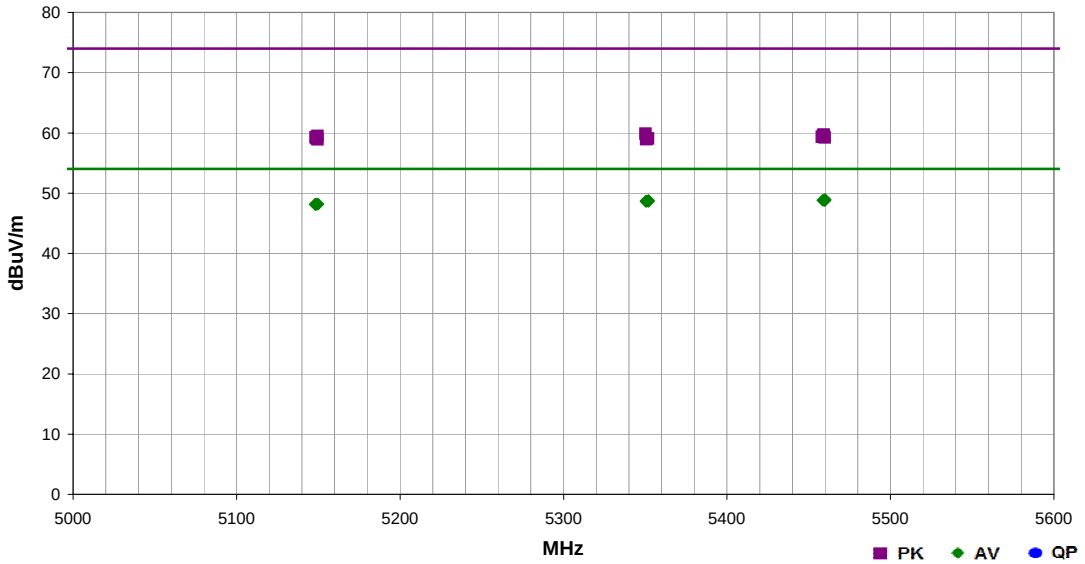
While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis, and adjusting the measurement antenna height and polarization (per ANSI C63.10:2009). A preamp and high pass filter (and notch filter)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

# Spurious Radiated Emissions

| | | | | | |
|---|---|---|---|---|---|
| **Work Order:** | FOCU0140 | **Date:** | 05/09/13 | | |
| **Project:** | None | **Temperature:** | 23.2 °C | | |
| **Job Site:** | EV01 | **Humidity:** | 46% RH | | |
| **Serial Number:** | 02EA4D000027 | **Barometric Pres.:** | 1020 mbar | **Tested by:** | Carl Engholm, Rod Peloquin |
| **EUT:** | Model 444-2225 (Athena UFL) | | | | |
| **Configuration:** | 2 | | | | |
| **Customer:** | Summit Semiconductor | | | | |
| **Attendees:** | None | | | | |
| **EUT Power:** | 3.3V DC | | | | |
| **Operating Mode:** | Transmitting 802.11a, 50% Duty Cycle | | | | |
| **Deviations:** | None | | | | |
| **Comments:** | See comments below for channel, frequency, data rate and EUT orientation. | | | | |

| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.209:2013 | ANSI C63.10:2009 |

| **Run #** | 50 | **Test Distance (m)** | 1 | **Antenna Height(s)** | 1-4m | **Results** | Pass |
|---|---|---|---|---|---|---|---|



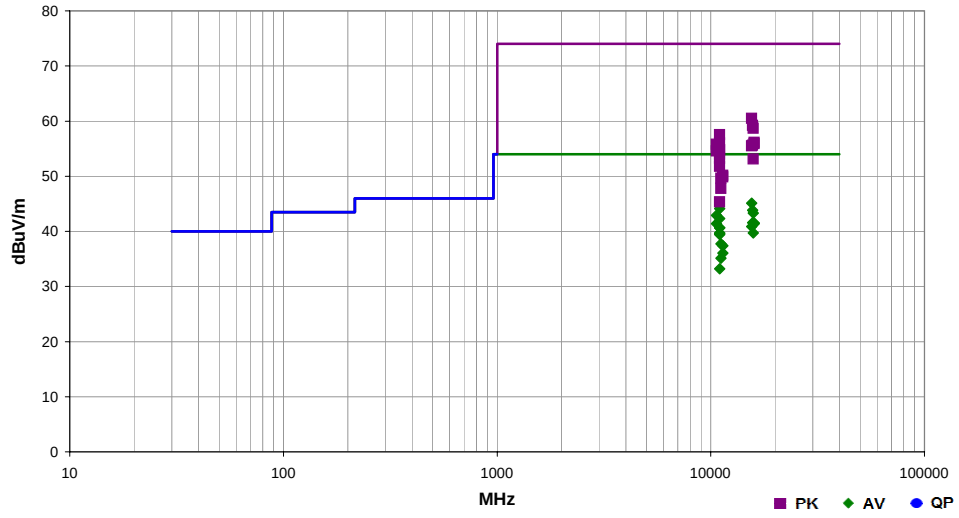

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Antenna Height (meters) | Azimuth (degrees) | Test Distance (meters) | External Attenuation (dB) | Polarity/ Transducer Type | Detector | Distance Adjustment (dB) | Adjusted (dBuV/m) | Spec. Limit (dBuV/m) | Compared to Spec. (dB) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5459.973 | 20.9 | 37.6 | 1.0 | 263.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 48.9 | 54.0 | -5.1 | Ch.19 (5500 MHz), 6 Mbps, EUT on Side |
| 5459.930 | 20.8 | 37.6 | 1.0 | 210.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 48.8 | 54.0 | -5.2 | Ch.19 (5500 MHz), 18 Mbps, EUT on Side |
| 5459.900 | 20.8 | 37.6 | 1.0 | 302.0 | 1.0 | 0.0 | Vert | AV | -9.5 | 48.8 | 54.0 | -5.2 | Ch.19 (5500 MHz), 18 Mbps, EUT on Side |
| 5458.640 | 20.8 | 37.6 | 1.0 | 286.0 | 1.0 | 0.0 | Vert | AV | -9.5 | 48.8 | 54.0 | -5.2 | Ch.19 (5500 MHz), 6 Mbps, EUT on Side |
| 5351.983 | 20.9 | 37.4 | 1.0 | 169.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 48.8 | 54.0 | -5.2 | Ch.18 (5320 MHz), 18 Mbps, EUT on Side |
| 5350.380 | 20.8 | 37.4 | 1.0 | 305.0 | 1.0 | 0.0 | Vert | AV | -9.5 | 48.7 | 54.0 | -5.3 | Ch.18 (5320 MHz), 6 Mbps, EUT on Side |
| 5350.767 | 20.8 | 37.4 | 1.0 | 307.0 | 1.0 | 0.0 | Vert | AV | -9.5 | 48.7 | 54.0 | -5.3 | Ch.18 (5320 MHz), 18 Mbps, EUT on Side |
| 5352.000 | 20.8 | 37.4 | 1.0 | 283.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 48.7 | 54.0 | -5.3 | Ch.18 (5320 MHz), 6 Mbps, EUT on Side |
| 5148.467 | 20.9 | 36.8 | 1.0 | 157.0 | 1.0 | 0.0 | Vert | AV | -9.5 | 48.2 | 54.0 | -5.8 | Ch.8 (5180 MHz), 6 Mbps, EUT on Side |
| 5149.740 | 20.9 | 36.8 | 1.0 | 83.0 | 1.0 | 0.0 | Vert | AV | -9.5 | 48.2 | 54.0 | -5.8 | Ch.8 (5180 MHz), 18 Mbps, EUT on Side |
| 5148.180 | 20.8 | 36.8 | 1.0 | 59.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 48.1 | 54.0 | -5.9 | Ch.8 (5180 MHz), 18 Mbps, EUT on Side |
| 5148.403 | 20.8 | 36.8 | 1.0 | 201.0 | 1.0 | 0.0 | Horz | AV | -9.5 | 48.1 | 54.0 | -5.9 | Ch.8 (5180 MHz), 6 Mbps, EUT on Side |
| 5350.197 | 32.0 | 37.4 | 1.0 | 169.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 59.9 | 74.0 | -14.1 | Ch.18 (5320 MHz), 18 Mbps, EUT on Side |
| 5459.230 | 31.7 | 37.6 | 1.0 | 210.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 59.7 | 74.0 | -14.3 | Ch.19 (5500 MHz), 18 Mbps, EUT on Side |
| 5458.910 | 31.6 | 37.6 | 1.0 | 286.0 | 1.0 | 0.0 | Vert | PK | -9.5 | 59.6 | 74.0 | -14.4 | Ch.19 (5500 MHz), 6 Mbps, EUT on Side |
| 5149.630 | 32.2 | 36.8 | 1.0 | 83.0 | 1.0 | 0.0 | Vert | PK | -9.5 | 59.5 | 74.0 | -14.5 | Ch.8 (5180 MHz), 18 Mbps, EUT on Side |
| 5458.127 | 31.3 | 37.6 | 1.0 | 263.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 59.3 | 74.0 | -14.7 | Ch.19 (5500 MHz), 6 Mbps, EUT on Side |
| 5148.297 | 32.0 | 36.8 | 1.0 | 59.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 59.3 | 74.0 | -14.7 | Ch.8 (5180 MHz), 18 Mbps, EUT on Side |
| 5459.773 | 31.2 | 37.6 | 1.0 | 302.0 | 1.0 | 0.0 | Vert | PK | -9.5 | 59.2 | 74.0 | -14.8 | Ch.19 (5500 MHz), 18 Mbps, EUT on Side |
| 5148.690 | 31.8 | 36.8 | 1.0 | 201.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 59.1 | 74.0 | -14.9 | Ch.8 (5180 MHz), 6 Mbps, EUT on Side |
| 5351.780 | 31.2 | 37.4 | 1.0 | 305.0 | 1.0 | 0.0 | Vert | PK | -9.5 | 59.1 | 74.0 | -14.9 | Ch.18 (5320 MHz), 6 Mbps, EUT on Side |
| 5350.527 | 31.1 | 37.4 | 1.0 | 283.0 | 1.0 | 0.0 | Horz | PK | -9.5 | 59.0 | 74.0 | -15.0 | Ch.18 (5320 MHz), 6 Mbps, EUT on Side |
| 5350.750 | 31.1 | 37.4 | 1.0 | 307.0 | 1.0 | 0.0 | Vert | PK | -9.5 | 59.0 | 74.0 | -15.0 | Ch.18 (5320 MHz), 18 Mbps, EUT on Side |
| 5149.583 | 31.6 | 36.8 | 1.0 | 157.0 | 1.0 | 0.0 | Vert | PK | -9.5 | 58.9 | 74.0 | -15.1 | Ch.8 (5180 MHz), 6 Mbps, EUT on Side |

# Spurious Radiated Emissions

| | | | | | |
|---|---|---|---|---|---|
| **Work Order:** | FOCU0140 | **Date:** | 05/09/13 | | |
| **Project:** | None | **Temperature:** | 24 °C | | |
| **Job Site:** | EV01 | **Humidity:** | 39% RH | | |
| **Serial Number:** | 02EA4D000027 | **Barometric Pres.:** | 1022 mbar | **Tested by:** | Brandon Hobbs |
| **EUT:** | Model 444-2225 (Athena UFL) | | | | |
| **Configuration:** | 2 | | | | |
| **Customer:** | Summit Semiconductor | | | | |
| **Attendees:** | None | | | | |
| **EUT Power:** | 3.3V DC | | | | |
| **Operating Mode:** | Transmitting 802.11a, 50% Duty Cycle | | | | |
| **Deviations:** | None | | | | |
| **Comments:** | Please reference the data comments for EUT frequency, orientation and channel | | | | |

| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.209:2013 | ANSI C63.10:2009 |

| **Run #** | 32 | **Test Distance (m)** | 3 | **Antenna Height(s)** | 1-4m | **Results** | Pass |
|---|---|---|---|---|---|---|---|



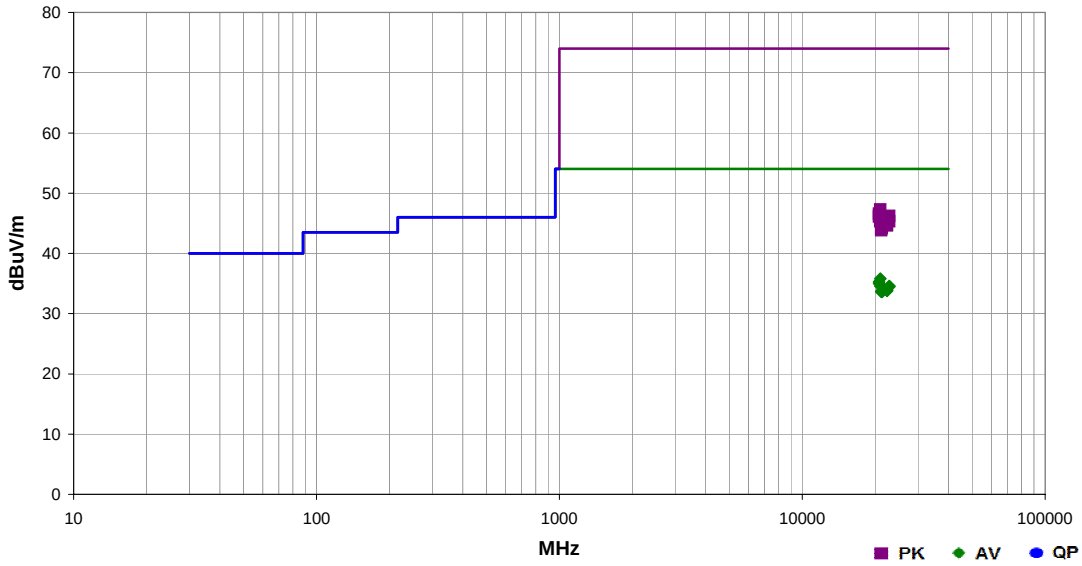

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Antenna Height (meters) | Azimuth (degrees) | Test Distance (meters) | External Attenuation (dB) | Polarity/ Transducer Type | Detector | Distance Adjustment (dB) | Adjusted (dBuV/m) | Spec. Limit (dBuV/m) | Compared to Spec. (dB) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15540.210 | 35.0 | 10.1 | 1.0 | 81.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 45.1 | 54.0 | -8.9 | Ch.8 (5180 MHz) 6Mbps, EUT Vert |
| 10998.650 | 53.5 | -9.4 | 1.3 | 70.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 44.1 | 54.0 | -9.9 | Ch.19 (5500 MHz) 6Mbps, EUT Vert |
| 15718.630 | 33.6 | 10.2 | 1.0 | 83.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 43.8 | 54.0 | -10.2 | Ch.14 (5240 MHz) 6Mbps, EUT Vert |
| 15780.090 | 33.0 | 10.3 | 1.0 | 218.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 43.3 | 54.0 | -10.7 | Ch.15 (5260 MHz) 6Mbps, EUT Vert |
| 10638.720 | 54.1 | -11.2 | 1.3 | 170.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 42.9 | 54.0 | -11.1 | Ch.18 (5320 MHz) 6Mbps, EUT Vert |
| 10998.900 | 51.7 | -9.4 | 1.2 | 337.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 42.3 | 54.0 | -11.7 | Ch.19 (5500 MHz) 6Mbps, EUT On Side |
| 15720.400 | 31.3 | 10.2 | 1.0 | 87.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 41.5 | 54.0 | -12.5 | Ch.14 (5240 MHz) 6Mbps, EUT Vert |
| 15960.750 | 30.9 | 10.6 | 1.0 | 86.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 41.5 | 54.0 | -12.5 | Ch.18 (5320 MHz) 6Mbps, EUT Vert |
| 15959.570 | 30.8 | 10.6 | 1.1 | 88.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 41.4 | 54.0 | -12.6 | Ch.18 (5320 MHz) 6Mbps, EUT Vert |
| 10638.660 | 52.6 | -11.2 | 1.0 | 185.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 41.4 | 54.0 | -12.6 | Ch.18 (5320 MHz) 6Mbps, EUT Vert |
| 15540.060 | 30.8 | 10.1 | 1.0 | 85.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 40.9 | 54.0 | -13.1 | Ch.8 (5180 MHz) 6Mbps, EUT Vert |
| 10998.910 | 50.0 | -9.4 | 1.2 | 237.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 40.6 | 54.0 | -13.4 | Ch.19 (5500 MHz) 18Mbps, EUT Vert |
| 10998.550 | 50.0 | -9.4 | 1.4 | 351.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 40.6 | 54.0 | -13.4 | Ch.19 (5500 MHz) 6Mbps, EUT Vert |
| 15540.160 | 50.4 | 10.1 | 1.0 | 81.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 60.5 | 74.0 | -13.5 | Ch.8 (5180 MHz) 6Mbps, EUT Vert |
| 15780.410 | 29.4 | 10.3 | 1.0 | 223.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 39.7 | 54.0 | -14.3 | Ch.15 (5260 MHz) 6Mbps, EUT Vert |
| 10998.650 | 49.1 | -9.4 | 1.2 | 42.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 39.7 | 54.0 | -14.3 | Ch.19 (5500 MHz) 6Mbps, EUT On Side |
| 10998.870 | 49.0 | -9.4 | 1.4 | 66.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 39.6 | 54.0 | -14.4 | Ch.19 (5500 MHz) 6Mbps, EUT Horiz |
| 10998.810 | 48.8 | -9.4 | 1.4 | 166.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 39.4 | 54.0 | -14.6 | Ch.19 (5500 MHz) 18Mbps, EUT Vert |
| 15720.220 | 49.0 | 10.2 | 1.0 | 83.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 59.2 | 74.0 | -14.8 | Ch.14 (5240 MHz) 6Mbps, EUT Vert |
| 15779.160 | 48.4 | 10.3 | 1.0 | 218.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 58.7 | 74.0 | -15.3 | Ch.15 (5260 MHz) 6Mbps, EUT Vert |
| 11161.190 | 46.5 | -8.8 | 1.0 | 36.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 37.7 | 54.0 | -16.3 | Ch.23 (5580 MHz) 6Mbps, EUT Vert |
| 10998.110 | 66.9 | -9.4 | 1.3 | 70.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 57.5 | 74.0 | -16.5 | Ch.19 (5500 MHz) 6Mbps, EUT On Side |
| 11398.590 | 45.3 | -7.9 | 1.3 | 197.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 37.4 | 54.0 | -16.6 | Ch.29 (5700 MHz) 6Mbps, EUT Vert |
| 15958.400 | 45.5 | 10.6 | 1.1 | 88.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 56.1 | 74.0 | -17.9 | Ch.18 (5320 MHz) 6Mbps, EUT Vert |
| 11398.650 | 44.0 | -7.9 | 1.1 | 235.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 36.1 | 54.0 | -17.9 | Ch.29 (5700 MHz) 6Mbps, EUT Vert |
| 10998.150 | 65.4 | -9.4 | 1.2 | 337.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 56.0 | 74.0 | -18.0 | Ch.19 (5500 MHz) 6Mbps, EUT On Side |
| 15961.430 | 45.3 | 10.6 | 1.0 | 86.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 55.9 | 74.0 | -18.1 | Ch.18 (5320 MHz) 6Mbps, EUT Vert |
| 10638.040 | 67.0 | -11.2 | 1.3 | 170.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 55.8 | 74.0 | -18.2 | Ch.18 (5320 MHz) 6Mbps, EUT Vert |
| 15721.810 | 45.4 | 10.2 | 1.0 | 87.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 55.6 | 74.0 | -18.4 | Ch.14 (5240 MHz) 6Mbps, EUT Vert |
| 15541.850 | 45.4 | 10.1 | 1.0 | 85.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 55.5 | 74.0 | -18.5 | Ch.8 (5180 MHz) 6Mbps, EUT Vert |
| 11158.590 | 43.9 | -8.8 | 1.2 | 166.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 35.1 | 54.0 | -18.9 | Ch.23 (5580 MHz) 6Mbps, EUT Vert |
| 10998.990 | 64.2 | -9.4 | 1.2 | 237.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 54.8 | 74.0 | -19.2 | Ch.19 (5500 MHz) 18Mbps, EUT Vert |
| 11001.770 | 64.1 | -9.4 | 1.4 | 166.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 54.7 | 74.0 | -19.3 | Ch.19 (5500 MHz) 18Mbps, EUT Vert |
| 10638.090 | 65.8 | -11.2 | 1.0 | 185.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 54.6 | 74.0 | -19.4 | Ch.18 (5320 MHz) 6Mbps, EUT Vert |
| 10998.030 | 63.4 | -9.4 | 1.4 | 351.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 54.0 | 74.0 | -20.0 | Ch.19 (5500 MHz) 6Mbps, EUT On Side |
| 10998.840 | 42.6 | -9.4 | 1.0 | 100.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 33.2 | 54.0 | -20.8 | Ch.19 (5500 MHz) 6Mbps, EUT Horiz |
| 10998.070 | 62.6 | -9.4 | 1.2 | 42.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 53.2 | 74.0 | -20.8 | Ch.19 (5500 MHz) 6Mbps, EUT On Side |
| 15781.670 | 42.8 | 10.3 | 1.0 | 223.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 53.1 | 74.0 | -20.9 | Ch.15 (5260 MHz) 6Mbps, EUT Vert |
| 10998.120 | 61.2 | -9.4 | 1.4 | 66.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 51.8 | 74.0 | -22.2 | Ch.19 (5500 MHz) 6Mbps, EUT Horiz |
| 11398.040 | 58.1 | -7.9 | 1.3 | 197.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 50.2 | 74.0 | -23.8 | Ch.29 (5700 MHz) 6Mbps, EUT Vert |
| 11398.210 | 57.8 | -7.9 | 1.1 | 235.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 49.9 | 74.0 | -24.1 | Ch.29 (5700 MHz) 6Mbps, EUT Vert |
| 11160.910 | 58.4 | -8.8 | 1.0 | 36.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 49.6 | 74.0 | -24.4 | Ch.23 (5580 MHz) 6Mbps, EUT Vert |
| 11158.060 | 56.6 | -8.8 | 1.2 | 166.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 47.8 | 74.0 | -26.2 | Ch.23 (5580 MHz) 6Mbps, EUT Vert |
| 10999.710 | 54.7 | -9.4 | 1.0 | 100.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 45.3 | 74.0 | -28.7 | Ch.19 (5500 MHz) 6Mbps, EUT Horiz |

# Spurious Radiated Emissions

| | | | | | |
|---|---|---|---|---|---|
| **Work Order:** | FOCU0140 | **Date:** | 05/09/13 | | |
| **Project:** | None | **Temperature:** | 22.3 °C | | |
| **Job Site:** | EV01 | **Humidity:** | 40.8% RH | | |
| **Serial Number:** | 02EA4D000003 | **Barometric Pres.:** | 1018 mbar | **Tested by:** | Carl Engholm, Rod Peloquin |
| **EUT:** | Model 444-2225 (Athena UFL) | | | | |
| **Configuration:** | 7 | | | | |
| **Customer:** | Summit Semiconductor | | | | |
| **Attendees:** | None | | | | |
| **EUT Power:** | 3.3 VDC Nominal | | | | |
| **Operating Mode:** | Transmitting 802.11a, 50% Duty Cycle | | | | |
| **Deviations:** | None | | | | |
| **Comments:** | See comments below for channel, frequency, data rate and EUT orientation. | | | | |

| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.209:2013 | ANSI C63.10:2009 |

| **Run #** | 81 | **Test Distance (m)** | 3 | **Antenna Height(s)** | 1-4m | **Results** | Pass |
|---|---|---|---|---|---|---|---|



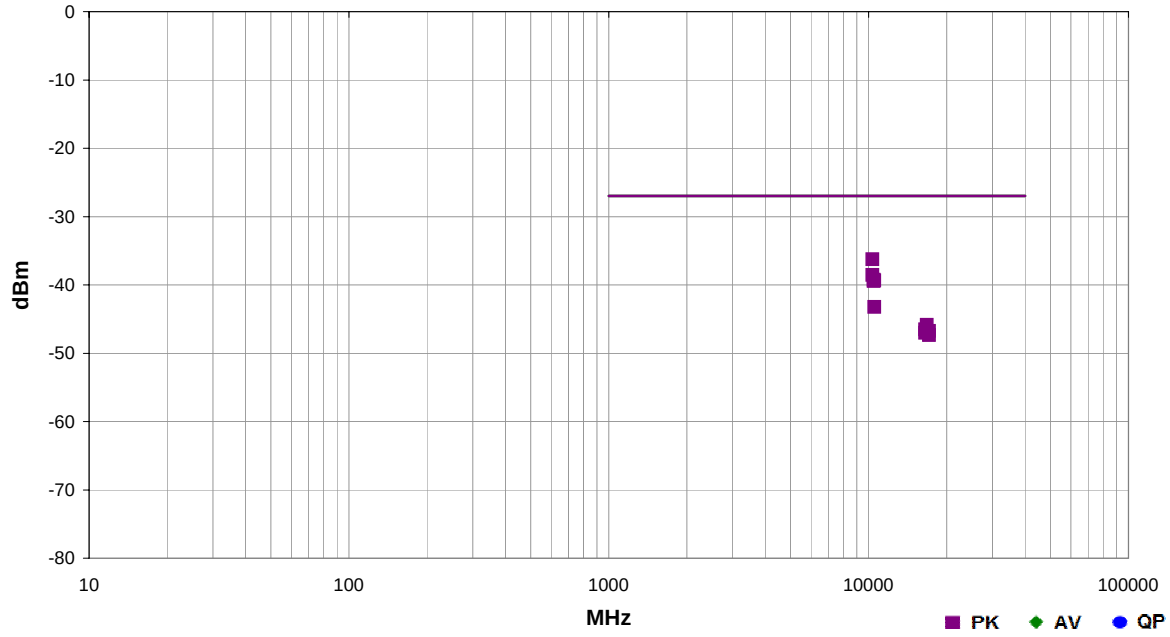

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Antenna Height (meters) | Azimuth (degrees) | Test Distance (meters) | External Attenuation (dB) | Polarity/ Transducer Type | Detector | Distance Adjustment (dB) | Adjusted (dBuV/m) | Spec. Limit (dBuV/m) | Compared to Spec. (dB) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20958.530 | 39.8 | -4.0 | 1.0 | 313.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 35.8 | 54.0 | -18.2 | Ch.14 (5240 MHz), 6 Mbps, EUT Vertical |
| 20719.270 | 39.3 | -4.0 | 1.0 | 111.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 35.3 | 54.0 | -18.7 | Ch.8 (5180 MHz), 6 Mbps, EUT Vertical |
| 20718.010 | 39.0 | -4.0 | 1.0 | 181.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 35.0 | 54.0 | -19.0 | Ch.8 (5180 MHz), 6 Mbps, EUT Vertical |
| 22801.680 | 37.6 | -3.0 | 1.0 | 69.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 34.6 | 54.0 | -19.4 | Ch.29 (5700 MHz), 6 Mbps, EUT Vertical |
| 20959.690 | 38.6 | -4.0 | 1.0 | 261.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 34.6 | 54.0 | -19.4 | Ch.14 (5240 MHz), 6 Mbps, EUT Vertical |
| 22800.450 | 37.5 | -3.0 | 1.0 | 250.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 34.5 | 54.0 | -19.5 | Ch.29 (5700 MHz), 6 Mbps, EUT Vertical |
| 22318.070 | 37.5 | -3.6 | 1.0 | 14.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 33.9 | 54.0 | -20.1 | Ch.23 (5580 MHz), 6 Mbps, EUT Vertical |
| 22319.150 | 37.4 | -3.6 | 1.0 | 190.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 33.8 | 54.0 | -20.2 | Ch.23 (5580 MHz), 6 Mbps, EUT Vertical |
| 21139.450 | 37.8 | -4.1 | 1.0 | 296.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 33.7 | 54.0 | -20.3 | Ch.15 (5260 MHz), 6 Mbps, EUT Vertical |
| 21278.470 | 37.8 | -4.2 | 1.0 | 139.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 33.6 | 54.0 | -20.4 | Ch.18 (5320 MHz), 6 Mbps, EUT Vertical |
| 21279.190 | 37.8 | -4.2 | 1.0 | 307.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 33.6 | 54.0 | -20.4 | Ch.18 (5320 MHz), 6 Mbps, EUT Vertical |
| 21138.100 | 37.7 | -4.1 | 1.0 | 194.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 33.6 | 54.0 | -20.4 | Ch.15 (5260 MHz), 6 Mbps, EUT Vertical |
| 20959.520 | 51.3 | -4.0 | 1.0 | 313.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 47.3 | 74.0 | -26.7 | Ch.14 (5240 MHz), 6 Mbps, EUT Vertical |
| 20718.870 | 50.6 | -4.0 | 1.0 | 111.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 46.6 | 74.0 | -27.4 | Ch.8 (5180 MHz), 6 Mbps, EUT Vertical |
| 22798.410 | 49.2 | -3.0 | 1.0 | 250.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 46.2 | 74.0 | -27.8 | Ch.29 (5700 MHz), 6 Mbps, EUT Vertical |
| 20718.110 | 50.1 | -4.0 | 1.0 | 181.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 46.1 | 74.0 | -27.9 | Ch.8 (5180 MHz), 6 Mbps, EUT Vertical |
| 21280.160 | 49.7 | -4.2 | 1.0 | 307.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 45.5 | 74.0 | -28.5 | Ch.18 (5320 MHz), 6 Mbps, EUT Vertical |
| 22801.700 | 48.3 | -3.0 | 1.0 | 69.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 45.3 | 74.0 | -28.7 | Ch.29 (5700 MHz), 6 Mbps, EUT Vertical |
| 20959.030 | 49.3 | -4.0 | 1.0 | 261.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 45.3 | 74.0 | -28.7 | Ch.14 (5240 MHz), 6 Mbps, EUT Vertical |
| 22318.180 | 48.3 | -3.6 | 1.0 | 14.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 44.7 | 74.0 | -29.3 | Ch.23 (5580 MHz), 6 Mbps, EUT Vertical |
| 22321.940 | 48.2 | -3.6 | 1.0 | 190.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 44.6 | 74.0 | -29.4 | Ch.23 (5580 MHz), 6 Mbps, EUT Vertical |
| 21278.970 | 48.4 | -4.2 | 1.0 | 139.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 44.2 | 74.0 | -29.8 | Ch.18 (5320 MHz), 6 Mbps, EUT Vertical |
| 21138.690 | 48.1 | -4.1 | 1.0 | 194.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 44.0 | 74.0 | -30.0 | Ch.15 (5260 MHz), 6 Mbps, EUT Vertical |
| 21138.420 | 47.9 | -4.1 | 1.0 | 296.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 43.8 | 74.0 | -30.2 | Ch.15 (5260 MHz), 6 Mbps, EUT Vertical |

# Spurious Radiated Emissions

| | | | | | |
|---|---|---|---|---|---|
| **Work Order:** | FOCU0140 | **Date:** | 05/09/13 | | |
| **Project:** | None | **Temperature:** | 24 °C | | |
| **Job Site:** | EV01 | **Humidity:** | 39% RH | | |
| **Serial Number:** | 02EA4D000027 | **Barometric Pres.:** | 1022 mbar | **Tested by:** | Brandon Hobbs |
| **EUT:** | Model 444-2225 (Athena UFL) | | | | |
| **Configuration:** | 2 | | | | |
| **Customer:** | Summit Semiconductor | | | | |
| **Attendees:** | None | | | | |
| **EUT Power:** | 3.3V DC | | | | |
| **Operating Mode:** | Transmitting 802.11a, 50% Duty Cycle | | | | |
| **Deviations:** | None | | | | |
| **Comments:** | Please reference the data comments for EUT frequency, orientation and channel | | | | |

| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.407:2013 | ANSI C63.10:2009 |

| **Run #** | 33 | **Test Distance (m)** | 3 | **Antenna Height(s)** | 1-4m | **Results** | Pass |
|---|---|---|---|---|---|---|---|



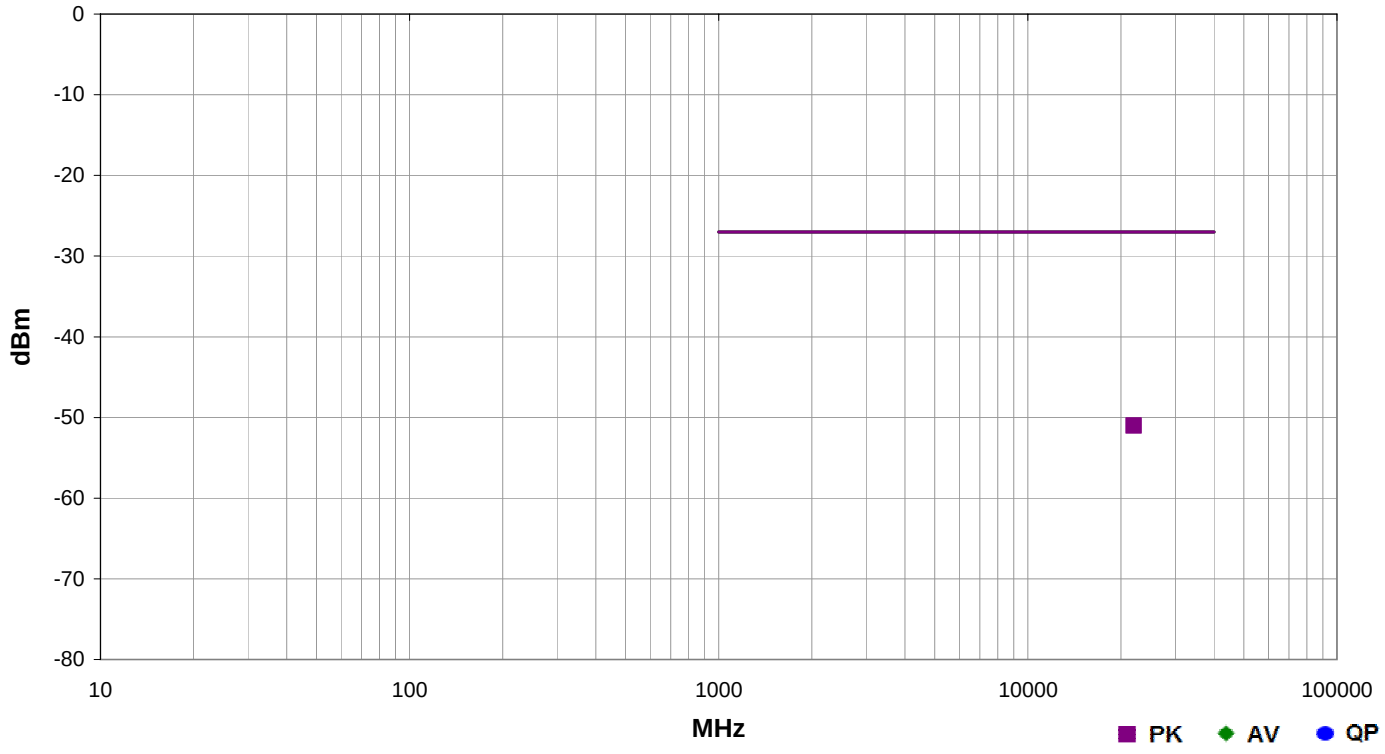

| | Freq (MHz) | Antenna Height (meters) | Azimuth (degrees) | Polarity/ Transducer Type | Detector | EIRP (Watts) | EIRP (dBm) | Spec. Limit (dBm) | Compared to Spec. (dB) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| | 10358.000 | 1.4 | 208.0 | Vert | PK | 2.37E-07 | -36.3 | -27.0 | -9.3 | Ch.8 (5180 MHz) 6Mbps, EUT Vert |
| | 10358.100 | 1.2 | 179.0 | Horz | PK | 1.40E-07 | -38.6 | -27.0 | -11.6 | Ch.8 (5180 MHz) 6Mbps, EUT Vert |
| | 10478.030 | 1.1 | 182.0 | Horz | PK | 1.19E-07 | -39.3 | -27.0 | -12.3 | Ch.14 (5240 MHz) 6Mbps, EUT Vert |
| | 10518.130 | 1.1 | 180.0 | Horz | PK | 1.16E-07 | -39.3 | -27.0 | -12.3 | Ch.15 (5260 MHz) 6Mbps, EUT Vert |
| | 10478.140 | 1.2 | 176.0 | Vert | PK | 1.13E-07 | -39.5 | -27.0 | -12.5 | Ch.14 (5240 MHz) 6Mbps, EUT Vert |
| | 10518.800 | 1.0 | 197.0 | Vert | PK | 4.74E-08 | -43.2 | -27.0 | -16.2 | Ch.15 (5260 MHz) 6Mbps, EUT Vert |
| | 16739.400 | 3.1 | 286.0 | Vert | PK | 2.60E-08 | -45.9 | -27.0 | -18.9 | Ch.23 (5580 MHz) 6Mbps, EUT Vert |
| | 16498.010 | 1.7 | 71.0 | Horz | PK | 2.22E-08 | -46.5 | -27.0 | -19.5 | Ch.19 (5500 MHz) 6Mbps, EUT Vert |
| | 17098.110 | 1.0 | 357.0 | Vert | PK | 2.11E-08 | -46.7 | -27.0 | -19.7 | Ch.29 (5700 MHz) 6Mbps, EUT Vert |
| | 16738.310 | 3.1 | 199.0 | Horz | PK | 2.06E-08 | -46.9 | -27.0 | -19.9 | Ch.23 (5580 MHz) 6Mbps, EUT Vert |
| | 16499.420 | 1.0 | 53.0 | Vert | PK | 1.98E-08 | -47.0 | -27.0 | -20.0 | Ch.19 (5500 MHz) 6Mbps, EUT Vert |
| | 17102.000 | 3.7 | 225.0 | Horz | PK | 1.84E-08 | -47.4 | -27.0 | -20.4 | Ch.29 (5700 MHz) 6Mbps, EUT Vert |

# Spurious Radiated Emissions

| | | | | | |
|---|---|---|---|---|---|
| **Work Order:** | FOCU0140 | **Date:** | 05/09/13 | | |
| **Project:** | None | **Temperature:** | 22.3 °C | | |
| **Job Site:** | EV01 | **Humidity:** | 40.8% RH | | |
| **Serial Number:** | 02EA4D000003 | **Barometric Pres.:** | 1018 mbar | **Tested by:** | Carl Engholm, Rod Peloquin |
| **EUT:** | Model 444-2225 (Athena UFL) | | | | |
| **Configuration:** | 7 | | | | |
| **Customer:** | Summit Semiconductor | | | | |
| **Attendees:** | None | | | | |
| **EUT Power:** | 3.3 VDC Nominal | | | | |
| **Operating Mode:** | Transmitting 802.11a, 50% Duty Cycle | | | | |
| **Deviations:** | None | | | | |
| **Comments:** | See comments below for channel, frequency, data rate and EUT orientation. | | | | |

| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.407:2013 | ANSI C63.10:2009 |

| **Run #** | 81 | **Test Distance (m)** | 3 | **Antenna Height(s)** | 1-4m | **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 |
|---|---|---|---|---|---|---|---|---|---|---|
| | 21998.860 | 1.0 | 54.0 | Vert | PK | 7.95E-09 | -51.0 | -27.0 | -24.0 | Ch.19 (5500 MHz), 6 Mbps, EUT Vertica |
| | 21998.290 | 1.0 | 238.0 | Horz | PK | 7.95E-09 | -51.0 | -27.0 | -24.0 | Ch.19 (5500 MHz), 6 Mbps, EUT Vertica |

# AC Power Line Conducted 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.

**MODES OF OPERATION**

| |
|---|
| Transmitting 802.11a, 50% Duty Cycle, Ch. 29, 5700 MHz |
| Transmitting 802.11a, 50% Duty Cycle, Ch. 23, 5580 MHz |
| Transmitting 802.11a, 50% Duty Cycle, Ch. 19, 5500 MHz |
| Transmitting 802.11a, 50% Duty Cycle, Ch. 18, 5320 MHz |
| Transmitting 802.11a, 50% Duty Cycle, Ch. 15, 5260 MHz |
| Transmitting 802.11a, 50% Duty Cycle, Ch. 14, 5240 MHz |
| Transmitting 802.11a, 50% Duty Cycle, Ch. 8, 5180 MHz |

**POWER SETTINGS INVESTIGATED**

| |
|---|
| 3.3 VDC Nominal |

**CONFIGURATIONS INVESTIGATED**

| |
|---|
| FOCU0140 - 7 |

**SAMPLE CALCULATIONS**

Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator

**TEST EQUIPMENT**

| Description | Manufacturer | Model | ID | Last Cal. | Interval |
|---|---|---|---|---|---|
| DC Power Supply | Topward | TPS-2000 | TPD | NCR | 0 mo |
| LISN | Solar | 9252-50-R-24-BNC | LIN | 3/11/2013 | 12 mo |
| Receiver | Rohde & Schwarz | ESCI | ARH | 1/24/2013 | 12 mo |
| High Pass Filter | TTE | H97-100K-50-720B | HHD | 2/1/2012 | 24 mo |
| Attenuator | Coaxicom | 66702 2910-20 | RBR | 4/25/2013 | 12 mo |
| EV07 Cables | N/A | Conducted Cables | EVG | 4/25/2013 | 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 |

Measurements were made using the bandwidths and detectors specified. No video filter was used.

**TEST DESCRIPTION**

The EUT will be powered either directly or indirectly from the AC power line. Therefore, conducted emissions measurements were made on the AC input of the EUT, or on the AC input of the device used to power the EUT. The AC power line conducted emissions were measured with the EUT operating at the lowest, the highest, and a middle channel in the operational band. The EUT was transmitting at its maximum data rate. For each mode, the spectrum was scanned from 150 kHz to 30 MHz. The test setup and procedures were in accordance with ANSI C63.10-2009.

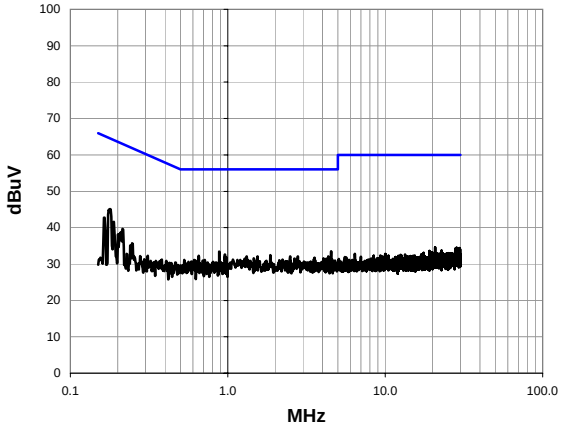
# AC Power Line Conducted Emissions

| | | | | | |
|---|---|---|---|---|---|
| **Work Order:** | FOCU0140 | **Date:** | 05/16/13 | | |
| **Project:** | None | **Temperature:** | 23.7 °C | | |
| **Job Site:** | EV07 | **Humidity:** | 40.3% RH | | |
| **Serial Number:** | 02EA4D000003 | **Barometric Pres.:** | 1014 mbar | **Tested by:** | Brandon Hobbs |
| **EUT:** | Model 444-2225 (Athena UFL) | | | | |
| **Configuration:** | 7 | | | | |
| **Customer:** | Summit Semiconductor | | | | |
| **Attendees:** | None | | | | |
| **EUT Power:** | 3.3 VDC Nominal | | | | |
| **Operating Mode:** | Transmitting 802.11a, 50% Duty Cycle, Ch. 8, 5180 MHz | | | | |
| **Deviations:** | None | | | | |
| **Comments:** | Power Supply plugged into 110VAC/60Hz | | | | |

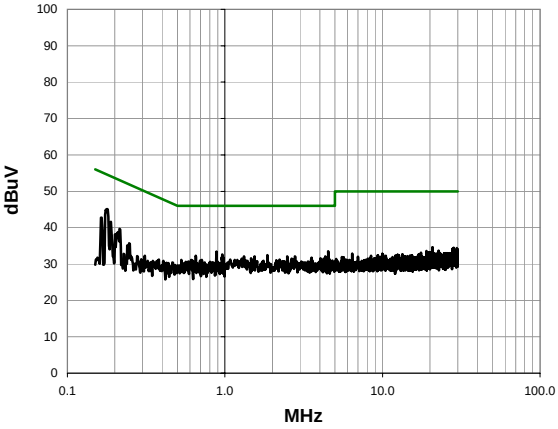
| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.207:2013 | ANSI C63.10:2009 |

| **Run #** | 3 | **Line:** | Neutral | **Ext. Attenuation:** | 20 | **Results** | Pass |
|---|---|---|---|---|---|---|---|

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




**Peak Data - vs - Average Limit**




Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|---|---|---|---|---|---|
| 0.179 | 24.8 | 20.3 | 45.1 | 64.5 | -19.4 |
| 0.189 | 21.3 | 20.3 | 41.6 | 64.1 | -22.5 |
| 4.528 | 12.8 | 20.7 | 33.5 | 56.0 | -22.5 |
| 0.164 | 22.4 | 20.3 | 42.7 | 65.3 | -22.5 |
| 0.883 | 13.1 | 20.3 | 33.4 | 56.0 | -22.6 |
| 0.961 | 12.3 | 20.3 | 32.6 | 56.0 | -23.4 |
| 0.215 | 19.3 | 20.3 | 39.6 | 63.0 | -23.4 |
| 1.864 | 12.0 | 20.4 | 32.4 | 56.0 | -23.6 |
| 0.653 | 12.0 | 20.3 | 32.3 | 56.0 | -23.7 |
| 1.544 | 11.7 | 20.4 | 32.1 | 56.0 | -23.9 |
| 2.784 | 11.6 | 20.5 | 32.1 | 56.0 | -23.9 |
| 1.320 | 11.7 | 20.4 | 32.1 | 56.0 | -23.9 |
| 2.488 | 11.6 | 20.5 | 32.1 | 56.0 | -23.9 |
| 4.344 | 11.4 | 20.7 | 32.1 | 56.0 | -23.9 |
| 0.981 | 11.4 | 20.3 | 31.7 | 56.0 | -24.3 |
| 3.552 | 11.1 | 20.6 | 31.7 | 56.0 | -24.3 |
| 1.464 | 11.2 | 20.4 | 31.6 | 56.0 | -24.4 |
| 4.048 | 10.9 | 20.6 | 31.5 | 56.0 | -24.5 |
| 4.232 | 10.8 | 20.7 | 31.5 | 56.0 | -24.5 |
| 3.528 | 10.7 | 20.6 | 31.3 | 56.0 | -24.7 |

Peak Data - vs - Average Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|---|---|---|---|---|---|
| 0.179 | 24.8 | 20.3 | 45.1 | 54.5 | -9.4 |
| 0.189 | 21.3 | 20.3 | 41.6 | 54.1 | -12.5 |
| 4.528 | 12.8 | 20.7 | 33.5 | 46.0 | -12.5 |
| 0.164 | 22.4 | 20.3 | 42.7 | 55.3 | -12.5 |
| 0.883 | 13.1 | 20.3 | 33.4 | 46.0 | -12.6 |
| 0.961 | 12.3 | 20.3 | 32.6 | 46.0 | -13.4 |
| 0.215 | 19.3 | 20.3 | 39.6 | 53.0 | -13.4 |
| 1.864 | 12.0 | 20.4 | 32.4 | 46.0 | -13.6 |
| 0.653 | 12.0 | 20.3 | 32.3 | 46.0 | -13.7 |
| 1.544 | 11.7 | 20.4 | 32.1 | 46.0 | -13.9 |
| 2.784 | 11.6 | 20.5 | 32.1 | 46.0 | -13.9 |
| 1.320 | 11.7 | 20.4 | 32.1 | 46.0 | -13.9 |
| 2.488 | 11.6 | 20.5 | 32.1 | 46.0 | -13.9 |
| 4.344 | 11.4 | 20.7 | 32.1 | 46.0 | -13.9 |
| 0.981 | 11.4 | 20.3 | 31.7 | 46.0 | -14.3 |
| 3.552 | 11.1 | 20.6 | 31.7 | 46.0 | -14.3 |
| 1.464 | 11.2 | 20.4 | 31.6 | 46.0 | -14.4 |
| 4.048 | 10.9 | 20.6 | 31.5 | 46.0 | -14.5 |
| 4.232 | 10.8 | 20.7 | 31.5 | 46.0 | -14.5 |
| 3.528 | 10.7 | 20.6 | 31.3 | 46.0 | -14.7 |

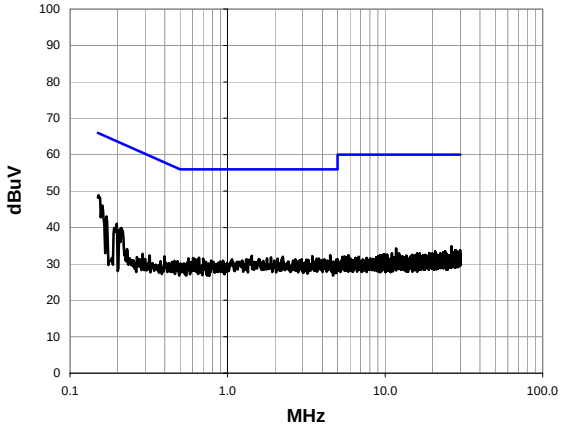
# AC Power Line Conducted Emissions

| | | | | | |
|---|---|---|---|---|---|
| **Work Order:** | FOCU0140 | **Date:** | 05/16/13 | | |
| **Project:** | None | **Temperature:** | 23.7 °C | | |
| **Job Site:** | EV07 | **Humidity:** | 40.3% RH | | |
| **Serial Number:** | 02EA4D000003 | **Barometric Pres.:** | 1014 mbar | **Tested by:** | Brandon Hobbs |
| **EUT:** | Model 444-2225 (Athena UFL) | | | | |
| **Configuration:** | 7 | | | | |
| **Customer:** | Summit Semiconductor | | | | |
| **Attendees:** | None | | | | |
| **EUT Power:** | 3.3 VDC Nominal | | | | |
| **Operating Mode:** | Transmitting 802.11a, 50% Duty Cycle, Ch. 8, 5180 MHz | | | | |
| **Deviations:** | None | | | | |
| **Comments:** | Power Supply plugged into 110VAC/60Hz | | | | |

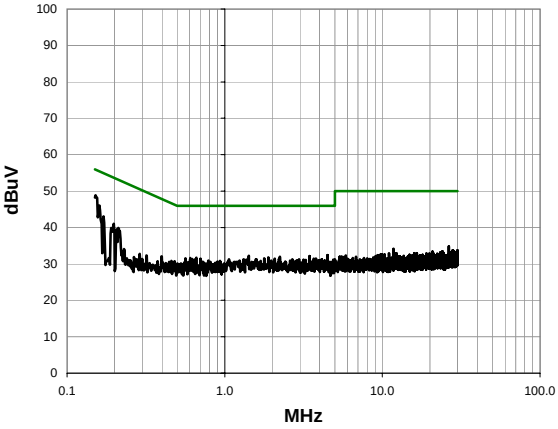
| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.207:2013 | ANSI C63.10:2009 |

| **Run #** | 4 | **Line:** | High Line | **Ext. Attenuation:** | 20 | **Results** | Pass |
|---|---|---|---|---|---|---|---|

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




**Peak Data - vs - Average Limit**




Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|---|---|---|---|---|---|
| 0.152 | 28.4 | 20.4 | 48.8 | 65.9 | -17.1 |
| 0.160 | 25.7 | 20.3 | 46.0 | 65.5 | -19.4 |
| 0.170 | 22.7 | 20.3 | 43.0 | 64.9 | -21.9 |
| 0.198 | 20.7 | 20.3 | 41.0 | 63.7 | -22.7 |
| 0.211 | 19.6 | 20.3 | 39.9 | 63.2 | -23.2 |
| 4.488 | 11.8 | 20.7 | 32.5 | 56.0 | -23.5 |
| 1.424 | 11.9 | 20.4 | 32.3 | 56.0 | -23.7 |
| 0.208 | 19.2 | 20.3 | 39.5 | 63.3 | -23.8 |
| 3.456 | 11.6 | 20.6 | 32.2 | 56.0 | -23.8 |
| 2.240 | 11.5 | 20.5 | 32.0 | 56.0 | -24.0 |
| 1.888 | 11.4 | 20.4 | 31.8 | 56.0 | -24.2 |
| 0.660 | 11.4 | 20.3 | 31.7 | 56.0 | -24.3 |
| 0.606 | 11.4 | 20.3 | 31.7 | 56.0 | -24.3 |
| 0.563 | 11.3 | 20.3 | 31.6 | 56.0 | -24.4 |
| 0.701 | 11.2 | 20.3 | 31.5 | 56.0 | -24.5 |
| 2.080 | 11.0 | 20.4 | 31.4 | 56.0 | -24.6 |
| 3.800 | 10.8 | 20.6 | 31.4 | 56.0 | -24.6 |
| 3.680 | 10.8 | 20.6 | 31.4 | 56.0 | -24.6 |
| 0.621 | 11.1 | 20.3 | 31.4 | 56.0 | -24.6 |
| 2.960 | 10.8 | 20.5 | 31.3 | 56.0 | -24.7 |

Peak Data - vs - Average Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|---|---|---|---|---|---|
| 0.152 | 28.4 | 20.4 | 48.8 | 55.9 | -7.1 |
| 0.160 | 25.7 | 20.3 | 46.0 | 55.5 | -9.4 |
| 0.170 | 22.7 | 20.3 | 43.0 | 54.9 | -11.9 |
| 0.198 | 20.7 | 20.3 | 41.0 | 53.7 | -12.7 |
| 0.211 | 19.6 | 20.3 | 39.9 | 53.2 | -13.2 |
| 4.488 | 11.8 | 20.7 | 32.5 | 46.0 | -13.5 |
| 1.424 | 11.9 | 20.4 | 32.3 | 46.0 | -13.7 |
| 0.208 | 19.2 | 20.3 | 39.5 | 53.3 | -13.8 |
| 3.456 | 11.6 | 20.6 | 32.2 | 46.0 | -13.8 |
| 2.240 | 11.5 | 20.5 | 32.0 | 46.0 | -14.0 |
| 1.888 | 11.4 | 20.4 | 31.8 | 46.0 | -14.2 |
| 0.660 | 11.4 | 20.3 | 31.7 | 46.0 | -14.3 |
| 0.606 | 11.4 | 20.3 | 31.7 | 46.0 | -14.3 |
| 0.563 | 11.3 | 20.3 | 31.6 | 46.0 | -14.4 |
| 0.701 | 11.2 | 20.3 | 31.5 | 46.0 | -14.5 |
| 2.080 | 11.0 | 20.4 | 31.4 | 46.0 | -14.6 |
| 3.800 | 10.8 | 20.6 | 31.4 | 46.0 | -14.6 |
| 3.680 | 10.8 | 20.6 | 31.4 | 46.0 | -14.6 |
| 0.621 | 11.1 | 20.3 | 31.4 | 46.0 | -14.6 |
| 2.960 | 10.8 | 20.5 | 31.3 | 46.0 | -14.7 |

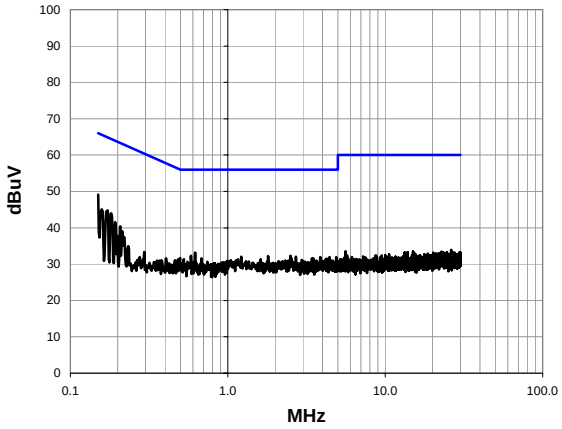
# AC Power Line Conducted Emissions

| | | | | | |
|---|---|---|---|---|---|
| **Work Order:** | FOCU0140 | **Date:** | 05/16/13 | | |
| **Project:** | None | **Temperature:** | 23.7 °C | | |
| **Job Site:** | EV07 | **Humidity:** | 40.3% RH | | |
| **Serial Number:** | 02EA4D000003 | **Barometric Pres.:** | 1014 mbar | **Tested by:** | Brandon Hobbs |
| **EUT:** | Model 444-2225 (Athena UFL) | | | | |
| **Configuration:** | 7 | | | | |
| **Customer:** | Summit Semiconductor | | | | |
| **Attendees:** | None | | | | |
| **EUT Power:** | 3.3 VDC Nominal | | | | |
| **Operating Mode:** | Transmitting 802.11a, 50% Duty Cycle, Ch. 14, 5240 MHz | | | | |
| **Deviations:** | None | | | | |
| **Comments:** | Power Supply plugged into 110VAC/60Hz | | | | |

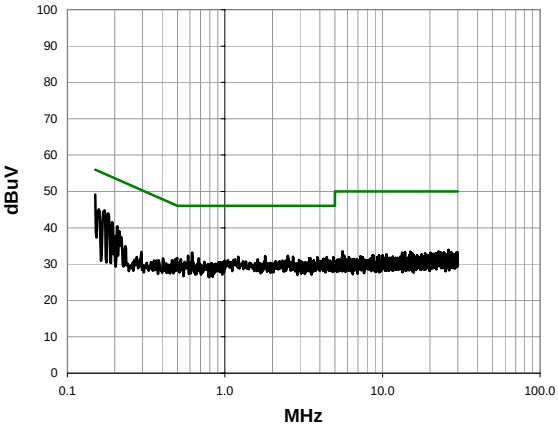
| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.207:2013 | ANSI C63.10:2009 |

| **Run #** | 5 | **Line:** | High Line | **Ext. Attenuation:** | 20 | **Results** | Pass |
|---|---|---|---|---|---|---|---|

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




**Peak Data - vs - Average Limit**




Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|---|---|---|---|---|---|
| 0.150 | 28.7 | 20.4 | 49.1 | 66.0 | -16.9 |
| 0.172 | 24.5 | 20.3 | 44.8 | 64.9 | -20.0 |
| 0.182 | 23.6 | 20.3 | 43.9 | 64.4 | -20.5 |
| 0.159 | 24.7 | 20.4 | 45.1 | 65.5 | -20.5 |
| 0.193 | 21.2 | 20.3 | 41.5 | 63.9 | -22.4 |
| 0.619 | 12.9 | 20.3 | 33.2 | 56.0 | -22.8 |
| 0.208 | 20.1 | 20.3 | 40.4 | 63.3 | -22.9 |
| 0.584 | 12.0 | 20.3 | 32.3 | 56.0 | -23.7 |
| 2.504 | 11.8 | 20.5 | 32.3 | 56.0 | -23.7 |
| 1.800 | 11.8 | 20.4 | 32.2 | 56.0 | -23.8 |
| 2.704 | 11.6 | 20.5 | 32.1 | 56.0 | -23.9 |
| 1.216 | 11.7 | 20.4 | 32.1 | 56.0 | -23.9 |
| 0.213 | 18.8 | 20.3 | 39.1 | 63.1 | -24.0 |
| 4.880 | 11.3 | 20.7 | 32.0 | 56.0 | -24.0 |
| 4.424 | 11.3 | 20.7 | 32.0 | 56.0 | -24.0 |
| 3.864 | 11.3 | 20.6 | 31.9 | 56.0 | -24.1 |
| 0.497 | 11.4 | 20.3 | 31.7 | 56.1 | -24.4 |
| 3.496 | 11.0 | 20.6 | 31.6 | 56.0 | -24.4 |
| 0.682 | 11.3 | 20.3 | 31.6 | 56.0 | -24.4 |
| 3.432 | 11.0 | 20.6 | 31.6 | 56.0 | -24.4 |

Peak Data - vs - Average Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|---|---|---|---|---|---|
| 0.150 | 28.7 | 20.4 | 49.1 | 56.0 | -6.9 |
| 0.172 | 24.5 | 20.3 | 44.8 | 54.9 | -10.0 |
| 0.182 | 23.6 | 20.3 | 43.9 | 54.4 | -10.5 |
| 0.159 | 24.7 | 20.4 | 45.1 | 55.5 | -10.5 |
| 0.193 | 21.2 | 20.3 | 41.5 | 53.9 | -12.4 |
| 0.619 | 12.9 | 20.3 | 33.2 | 46.0 | -12.8 |
| 0.208 | 20.1 | 20.3 | 40.4 | 53.3 | -12.9 |
| 0.584 | 12.0 | 20.3 | 32.3 | 46.0 | -13.7 |
| 2.504 | 11.8 | 20.5 | 32.3 | 46.0 | -13.7 |
| 1.800 | 11.8 | 20.4 | 32.2 | 46.0 | -13.8 |
| 2.704 | 11.6 | 20.5 | 32.1 | 46.0 | -13.9 |
| 1.216 | 11.7 | 20.4 | 32.1 | 46.0 | -13.9 |
| 0.213 | 18.8 | 20.3 | 39.1 | 53.1 | -14.0 |
| 4.880 | 11.3 | 20.7 | 32.0 | 46.0 | -14.0 |
| 4.424 | 11.3 | 20.7 | 32.0 | 46.0 | -14.0 |
| 3.864 | 11.3 | 20.6 | 31.9 | 46.0 | -14.1 |
| 0.497 | 11.4 | 20.3 | 31.7 | 46.1 | -14.4 |
| 3.496 | 11.0 | 20.6 | 31.6 | 46.0 | -14.4 |
| 0.682 | 11.3 | 20.3 | 31.6 | 46.0 | -14.4 |
| 3.432 | 11.0 | 20.6 | 31.6 | 46.0 | -14.4 |

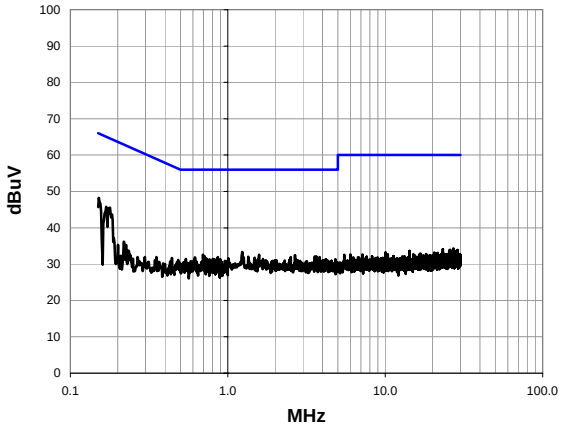
# AC Power Line Conducted Emissions

| | | | | | |
|---|---|---|---|---|---|
| **Work Order:** | FOCU0140 | **Date:** | 05/16/13 | | |
| **Project:** | None | **Temperature:** | 23.7 °C | | |
| **Job Site:** | EV07 | **Humidity:** | 40.3% RH | | |
| **Serial Number:** | 02EA4D000003 | **Barometric Pres.:** | 1014 mbar | **Tested by:** | Brandon Hobbs |
| **EUT:** | Model 444-2225 (Athena UFL) | | | | |
| **Configuration:** | 7 | | | | |
| **Customer:** | Summit Semiconductor | | | | |
| **Attendees:** | None | | | | |
| **EUT Power:** | 3.3 VDC Nominal | | | | |
| **Operating Mode:** | Transmitting 802.11a, 50% Duty Cycle, Ch. 14, 5240 MHz | | | | |
| **Deviations:** | None | | | | |
| **Comments:** | Power Supply plugged into 110VAC/60Hz | | | | |

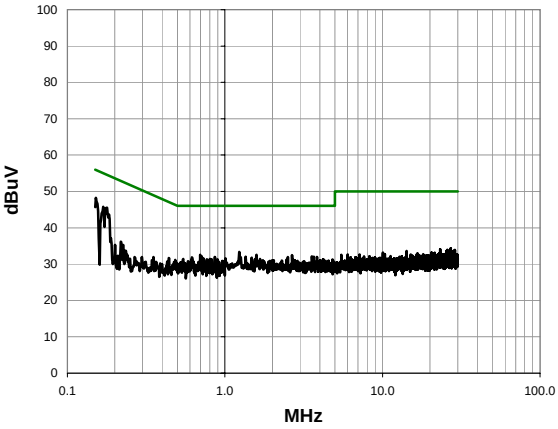
| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.207:2013 | ANSI C63.10:2009 |

| **Run #** | 6 | **Line:** | Neutral | **Ext. Attenuation:** | 20 | **Results** | Pass |
|---|---|---|---|---|---|---|---|

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




**Peak Data - vs - Average Limit**




Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|---|---|---|---|---|---|
| 0.152 | 27.8 | 20.4 | 48.2 | 65.9 | -17.7 |
| 0.177 | 25.2 | 20.3 | 45.5 | 64.6 | -19.1 |
| 0.169 | 25.4 | 20.3 | 45.7 | 65.0 | -19.3 |
| 1.232 | 13.0 | 20.4 | 33.4 | 56.0 | -22.6 |
| 1.584 | 12.2 | 20.4 | 32.6 | 56.0 | -23.4 |
| 0.697 | 12.3 | 20.3 | 32.6 | 56.0 | -23.4 |
| 2.672 | 12.0 | 20.5 | 32.5 | 56.0 | -23.5 |
| 3.568 | 11.5 | 20.6 | 32.1 | 56.0 | -23.9 |
| 0.713 | 11.8 | 20.3 | 32.1 | 56.0 | -23.9 |
| 1.352 | 11.7 | 20.4 | 32.1 | 56.0 | -23.9 |
| 2.512 | 11.5 | 20.5 | 32.0 | 56.0 | -24.0 |
| 3.840 | 11.3 | 20.6 | 31.9 | 56.0 | -24.1 |
| 0.864 | 11.6 | 20.3 | 31.9 | 56.0 | -24.1 |
| 0.618 | 11.6 | 20.3 | 31.9 | 56.0 | -24.1 |
| 1.480 | 11.4 | 20.4 | 31.8 | 56.0 | -24.2 |
| 1.008 | 11.3 | 20.3 | 31.6 | 56.0 | -24.4 |
| 0.730 | 11.3 | 20.3 | 31.6 | 56.0 | -24.4 |
| 0.543 | 11.2 | 20.3 | 31.5 | 56.0 | -24.5 |
| 0.804 | 11.1 | 20.3 | 31.4 | 56.0 | -24.6 |
| 4.208 | 10.7 | 20.7 | 31.4 | 56.0 | -24.6 |

Peak Data - vs - Average Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|---|---|---|---|---|---|
| 0.152 | 27.8 | 20.4 | 48.2 | 55.9 | -7.7 |
| 0.177 | 25.2 | 20.3 | 45.5 | 54.6 | -9.1 |
| 0.169 | 25.4 | 20.3 | 45.7 | 55.0 | -9.3 |
| 1.232 | 13.0 | 20.4 | 33.4 | 46.0 | -12.6 |
| 1.584 | 12.2 | 20.4 | 32.6 | 46.0 | -13.4 |
| 0.697 | 12.3 | 20.3 | 32.6 | 46.0 | -13.4 |
| 2.672 | 12.0 | 20.5 | 32.5 | 46.0 | -13.5 |
| 3.568 | 11.5 | 20.6 | 32.1 | 46.0 | -13.9 |
| 0.713 | 11.8 | 20.3 | 32.1 | 46.0 | -13.9 |
| 1.352 | 11.7 | 20.4 | 32.1 | 46.0 | -13.9 |
| 2.512 | 11.5 | 20.5 | 32.0 | 46.0 | -14.0 |
| 3.840 | 11.3 | 20.6 | 31.9 | 46.0 | -14.1 |
| 0.864 | 11.6 | 20.3 | 31.9 | 46.0 | -14.1 |
| 0.618 | 11.6 | 20.3 | 31.9 | 46.0 | -14.1 |
| 1.480 | 11.4 | 20.4 | 31.8 | 46.0 | -14.2 |
| 1.008 | 11.3 | 20.3 | 31.6 | 46.0 | -14.4 |
| 0.730 | 11.3 | 20.3 | 31.6 | 46.0 | -14.4 |
| 0.543 | 11.2 | 20.3 | 31.5 | 46.0 | -14.5 |
| 0.804 | 11.1 | 20.3 | 31.4 | 46.0 | -14.6 |
| 4.208 | 10.7 | 20.7 | 31.4 | 46.0 | -14.6 |

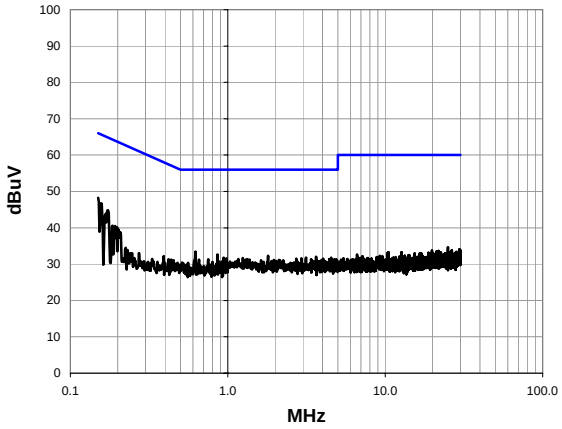
# AC Power Line Conducted Emissions

| | | | | | |
|---|---|---|---|---|---|
| **Work Order:** | FOCU0140 | **Date:** | 05/16/13 | | |
| **Project:** | None | **Temperature:** | 23.7 °C | | |
| **Job Site:** | EV07 | **Humidity:** | 40.3% RH | | |
| **Serial Number:** | 02EA4D000003 | **Barometric Pres.:** | 1014 mbar | **Tested by:** | Brandon Hobbs |
| **EUT:** | Model 444-2225 (Athena UFL) | | | | |
| **Configuration:** | 7 | | | | |
| **Customer:** | Summit Semiconductor | | | | |
| **Attendees:** | None | | | | |
| **EUT Power:** | 3.3 VDC Nominal | | | | |
| **Operating Mode:** | Transmitting 802.11a, 50% Duty Cycle, Ch. 15, 5260 MHz | | | | |
| **Deviations:** | None | | | | |
| **Comments:** | Power Supply plugged into 110VAC/60Hz | | | | |

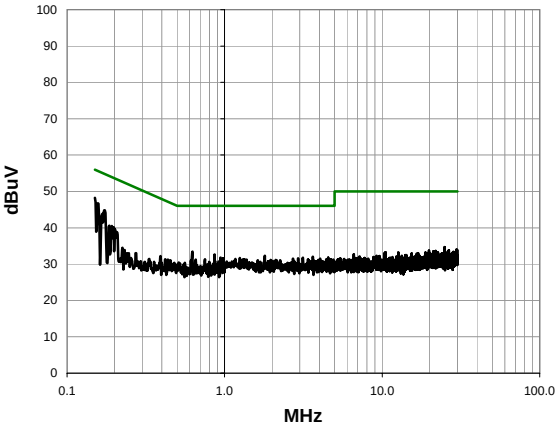
| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.207:2013 | ANSI C63.10:2009 |

| **Run #** | 7 | **Line:** | Neutral | **Ext. Attenuation:** | 20 | **Results** | Pass |
|---|---|---|---|---|---|---|---|

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




**Peak Data - vs - Average Limit**




Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|---|---|---|---|---|---|
| 0.150 | 27.8 | 20.4 | 48.2 | 66.0 | -17.8 |
| 0.157 | 26.4 | 20.4 | 46.8 | 65.6 | -18.9 |
| 0.172 | 24.5 | 20.3 | 44.8 | 64.9 | -20.0 |
| 0.624 | 13.2 | 20.3 | 33.5 | 56.0 | -22.5 |
| 0.862 | 12.3 | 20.3 | 32.6 | 56.0 | -23.4 |
| 0.193 | 20.2 | 20.3 | 40.5 | 63.9 | -23.4 |
| 0.198 | 19.8 | 20.3 | 40.1 | 63.7 | -23.6 |
| 0.186 | 20.3 | 20.3 | 40.6 | 64.2 | -23.6 |
| 1.800 | 11.9 | 20.4 | 32.3 | 56.0 | -23.7 |
| 0.201 | 19.4 | 20.3 | 39.7 | 63.6 | -23.8 |
| 3.632 | 11.4 | 20.6 | 32.0 | 56.0 | -24.0 |
| 3.144 | 11.3 | 20.5 | 31.8 | 56.0 | -24.2 |
| 4.544 | 11.1 | 20.7 | 31.8 | 56.0 | -24.2 |
| 0.942 | 11.4 | 20.3 | 31.7 | 56.0 | -24.3 |
| 1.248 | 11.3 | 20.4 | 31.7 | 56.0 | -24.3 |
| 0.980 | 11.3 | 20.3 | 31.6 | 56.0 | -24.4 |
| 2.928 | 11.1 | 20.5 | 31.6 | 56.0 | -24.4 |
| 4.040 | 10.9 | 20.6 | 31.5 | 56.0 | -24.5 |
| 2.720 | 11.0 | 20.5 | 31.5 | 56.0 | -24.5 |
| 4.744 | 10.7 | 20.7 | 31.4 | 56.0 | -24.6 |

Peak Data - vs - Average Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|---|---|---|---|---|---|
| 0.150 | 27.8 | 20.4 | 48.2 | 56.0 | -7.8 |
| 0.157 | 26.4 | 20.4 | 46.8 | 55.6 | -8.9 |
| 0.172 | 24.5 | 20.3 | 44.8 | 54.9 | -10.0 |
| 0.624 | 13.2 | 20.3 | 33.5 | 46.0 | -12.5 |
| 0.862 | 12.3 | 20.3 | 32.6 | 46.0 | -13.4 |
| 0.193 | 20.2 | 20.3 | 40.5 | 53.9 | -13.4 |
| 0.198 | 19.8 | 20.3 | 40.1 | 53.7 | -13.6 |
| 0.186 | 20.3 | 20.3 | 40.6 | 54.2 | -13.6 |
| 1.800 | 11.9 | 20.4 | 32.3 | 46.0 | -13.7 |
| 0.201 | 19.4 | 20.3 | 39.7 | 53.6 | -13.8 |
| 3.632 | 11.4 | 20.6 | 32.0 | 46.0 | -14.0 |
| 3.144 | 11.3 | 20.5 | 31.8 | 46.0 | -14.2 |
| 4.544 | 11.1 | 20.7 | 31.8 | 46.0 | -14.2 |
| 0.942 | 11.4 | 20.3 | 31.7 | 46.0 | -14.3 |
| 1.248 | 11.3 | 20.4 | 31.7 | 46.0 | -14.3 |
| 0.980 | 11.3 | 20.3 | 31.6 | 46.0 | -14.4 |
| 2.928 | 11.1 | 20.5 | 31.6 | 46.0 | -14.4 |
| 4.040 | 10.9 | 20.6 | 31.5 | 46.0 | -14.5 |
| 2.720 | 11.0 | 20.5 | 31.5 | 46.0 | -14.5 |
| 4.744 | 10.7 | 20.7 | 31.4 | 46.0 | -14.6 |

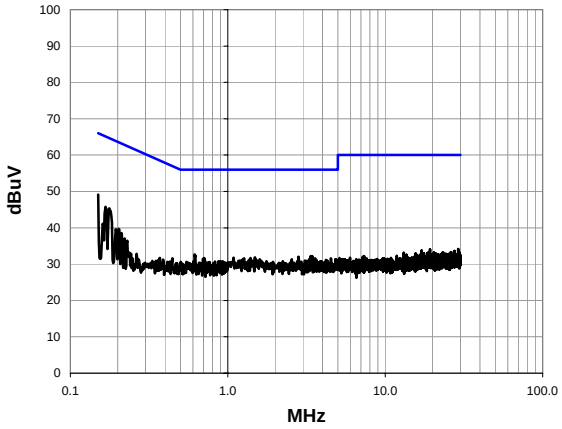
# AC Power Line Conducted Emissions

| | | | | | |
|---|---|---|---|---|---|
| **Work Order:** | FOCU0140 | **Date:** | 05/16/13 | | |
| **Project:** | None | **Temperature:** | 23.7 °C | | |
| **Job Site:** | EV07 | **Humidity:** | 40.3% RH | | |
| **Serial Number:** | 02EA4D000003 | **Barometric Pres.:** | 1014 mbar | **Tested by:** | Brandon Hobbs |
| **EUT:** | Model 444-2225 (Athena UFL) | | | | |
| **Configuration:** | 7 | | | | |
| **Customer:** | Summit Semiconductor | | | | |
| **Attendees:** | None | | | | |
| **EUT Power:** | 3.3 VDC Nominal | | | | |
| **Operating Mode:** | Transmitting 802.11a, 50% Duty Cycle, Ch. 15, 5260 MHz | | | | |
| **Deviations:** | None | | | | |
| **Comments:** | Power Supply plugged into 110VAC/60Hz | | | | |

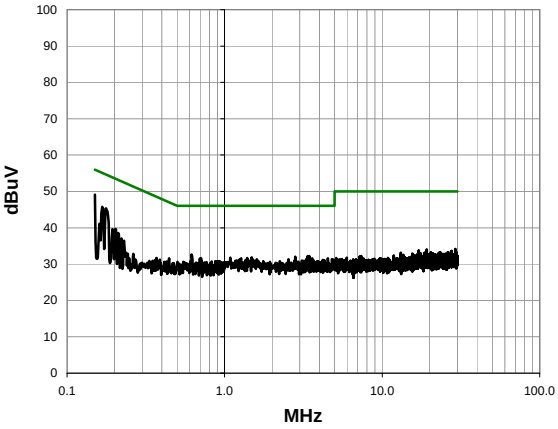
| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.207:2013 | ANSI C63.10:2009 |

| **Run #** | 8 | **Line:** | High Line | **Ext. Attenuation:** | 20 | **Results** | Pass |
|---|---|---|---|---|---|---|---|

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




**Peak Data - vs - Average Limit**




Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|---|---|---|---|---|---|
| 0.150 | 28.7 | 20.4 | 49.1 | 66.0 | -16.9 |
| 0.177 | 25.0 | 20.3 | 45.3 | 64.6 | -19.3 |
| 0.167 | 25.4 | 20.3 | 45.7 | 65.1 | -19.4 |
| 0.618 | 12.4 | 20.3 | 32.7 | 56.0 | -23.3 |
| 3.368 | 11.7 | 20.6 | 32.3 | 56.0 | -23.7 |
| 0.203 | 19.4 | 20.3 | 39.7 | 63.5 | -23.8 |
| 3.448 | 11.6 | 20.6 | 32.2 | 56.0 | -23.8 |
| 2.808 | 11.6 | 20.5 | 32.1 | 56.0 | -23.9 |
| 1.488 | 11.5 | 20.4 | 31.9 | 56.0 | -24.1 |
| 0.194 | 19.3 | 20.3 | 39.6 | 63.9 | -24.2 |
| 1.088 | 11.4 | 20.3 | 31.7 | 56.0 | -24.3 |
| 0.708 | 11.4 | 20.3 | 31.7 | 56.0 | -24.3 |
| 0.160 | 20.8 | 20.3 | 41.1 | 65.5 | -24.3 |
| 1.392 | 11.3 | 20.4 | 31.7 | 56.0 | -24.3 |
| 3.592 | 11.0 | 20.6 | 31.6 | 56.0 | -24.4 |
| 1.272 | 11.2 | 20.4 | 31.6 | 56.0 | -24.4 |
| 4.520 | 10.9 | 20.7 | 31.6 | 56.0 | -24.4 |
| 0.697 | 11.2 | 20.3 | 31.5 | 56.0 | -24.5 |
| 2.544 | 10.9 | 20.5 | 31.4 | 56.0 | -24.6 |
| 0.211 | 18.2 | 20.3 | 38.5 | 63.2 | -24.6 |

Peak Data - vs - Average Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|---|---|---|---|---|---|
| 0.150 | 28.7 | 20.4 | 49.1 | 56.0 | -6.9 |
| 0.177 | 25.0 | 20.3 | 45.3 | 54.6 | -9.3 |
| 0.167 | 25.4 | 20.3 | 45.7 | 55.1 | -9.4 |
| 0.618 | 12.4 | 20.3 | 32.7 | 46.0 | -13.3 |
| 3.368 | 11.7 | 20.6 | 32.3 | 46.0 | -13.7 |
| 0.203 | 19.4 | 20.3 | 39.7 | 53.5 | -13.8 |
| 3.448 | 11.6 | 20.6 | 32.2 | 46.0 | -13.8 |
| 2.808 | 11.6 | 20.5 | 32.1 | 46.0 | -13.9 |
| 1.488 | 11.5 | 20.4 | 31.9 | 46.0 | -14.1 |
| 0.194 | 19.3 | 20.3 | 39.6 | 53.9 | -14.2 |
| 1.088 | 11.4 | 20.3 | 31.7 | 46.0 | -14.3 |
| 0.708 | 11.4 | 20.3 | 31.7 | 46.0 | -14.3 |
| 0.160 | 20.8 | 20.3 | 41.1 | 55.5 | -14.3 |
| 1.392 | 11.3 | 20.4 | 31.7 | 46.0 | -14.3 |
| 3.592 | 11.0 | 20.6 | 31.6 | 46.0 | -14.4 |
| 1.272 | 11.2 | 20.4 | 31.6 | 46.0 | -14.4 |
| 4.520 | 10.9 | 20.7 | 31.6 | 46.0 | -14.4 |
| 0.697 | 11.2 | 20.3 | 31.5 | 46.0 | -14.5 |
| 2.544 | 10.9 | 20.5 | 31.4 | 46.0 | -14.6 |
| 0.211 | 18.2 | 20.3 | 38.5 | 53.2 | -14.6 |

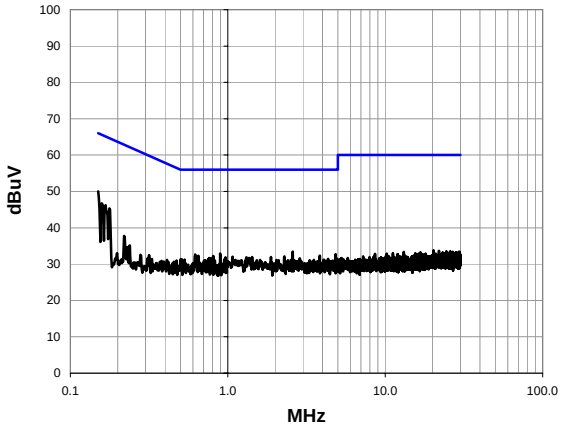
# AC Power Line Conducted Emissions

| | | | | | |
|---|---|---|---|---|---|
| **Work Order:** | FOCU0140 | **Date:** | 05/16/13 | | |
| **Project:** | None | **Temperature:** | 23.7 °C | | |
| **Job Site:** | EV07 | **Humidity:** | 40.3% RH | | |
| **Serial Number:** | 02EA4D000003 | **Barometric Pres.:** | 1014 mbar | **Tested by:** | Brandon Hobbs |
| **EUT:** | Model 444-2225 (Athena UFL) | | | | |
| **Configuration:** | 7 | | | | |
| **Customer:** | Summit Semiconductor | | | | |
| **Attendees:** | None | | | | |
| **EUT Power:** | 3.3 VDC Nominal | | | | |
| **Operating Mode:** | Transmitting 802.11a, 50% Duty Cycle, Ch. 18, 5320 MHz | | | | |
| **Deviations:** | None | | | | |
| **Comments:** | Power Supply plugged into 110VAC/60Hz | | | | |

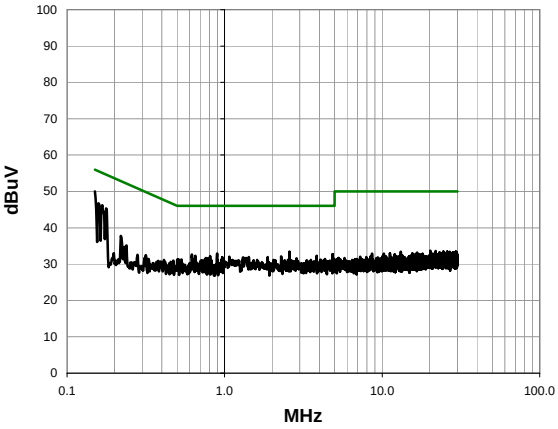
| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.207:2013 | ANSI C63.10:2009 |

| **Run #** | 9 | **Line:** | High Line | **Ext. Attenuation:** | 20 | **Results** | Pass |
|---|---|---|---|---|---|---|---|

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




**Peak Data - vs - Average Limit**




Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|---|---|---|---|---|---|
| 0.150 | 29.6 | 20.4 | 50.0 | 66.0 | -16.0 |
| 0.159 | 26.4 | 20.4 | 46.8 | 65.5 | -18.8 |
| 0.167 | 25.9 | 20.3 | 46.2 | 65.1 | -18.9 |
| 0.177 | 25.0 | 20.3 | 45.3 | 64.6 | -19.3 |
| 2.584 | 13.0 | 20.5 | 33.5 | 56.0 | -22.5 |
| 0.895 | 12.6 | 20.3 | 32.9 | 56.0 | -23.1 |
| 4.848 | 12.1 | 20.7 | 32.8 | 56.0 | -23.2 |
| 0.621 | 12.4 | 20.3 | 32.7 | 56.0 | -23.3 |
| 3.848 | 11.7 | 20.6 | 32.3 | 56.0 | -23.7 |
| 0.652 | 12.0 | 20.3 | 32.3 | 56.0 | -23.7 |
| 0.810 | 11.9 | 20.3 | 32.2 | 56.0 | -23.8 |
| 2.288 | 11.7 | 20.5 | 32.2 | 56.0 | -23.8 |
| 1.072 | 11.7 | 20.3 | 32.0 | 56.0 | -24.0 |
| 1.424 | 11.6 | 20.4 | 32.0 | 56.0 | -24.0 |
| 1.880 | 11.5 | 20.4 | 31.9 | 56.0 | -24.1 |
| 1.312 | 11.5 | 20.4 | 31.9 | 56.0 | -24.1 |
| 0.966 | 11.5 | 20.3 | 31.8 | 56.0 | -24.2 |
| 0.762 | 11.4 | 20.3 | 31.7 | 56.0 | -24.3 |
| 0.782 | 11.3 | 20.3 | 31.6 | 56.0 | -24.4 |
| 2.864 | 11.1 | 20.5 | 31.6 | 56.0 | -24.4 |

Peak Data - vs - Average Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|---|---|---|---|---|---|
| 0.150 | 29.6 | 20.4 | 50.0 | 56.0 | -6.0 |
| 0.159 | 26.4 | 20.4 | 46.8 | 55.5 | -8.8 |
| 0.167 | 25.9 | 20.3 | 46.2 | 55.1 | -8.9 |
| 0.177 | 25.0 | 20.3 | 45.3 | 54.6 | -9.3 |
| 2.584 | 13.0 | 20.5 | 33.5 | 46.0 | -12.5 |
| 0.895 | 12.6 | 20.3 | 32.9 | 46.0 | -13.1 |
| 4.848 | 12.1 | 20.7 | 32.8 | 46.0 | -13.2 |
| 0.621 | 12.4 | 20.3 | 32.7 | 46.0 | -13.3 |
| 3.848 | 11.7 | 20.6 | 32.3 | 46.0 | -13.7 |
| 0.652 | 12.0 | 20.3 | 32.3 | 46.0 | -13.7 |
| 0.810 | 11.9 | 20.3 | 32.2 | 46.0 | -13.8 |
| 2.288 | 11.7 | 20.5 | 32.2 | 46.0 | -13.8 |
| 1.072 | 11.7 | 20.3 | 32.0 | 46.0 | -14.0 |
| 1.424 | 11.6 | 20.4 | 32.0 | 46.0 | -14.0 |
| 1.880 | 11.5 | 20.4 | 31.9 | 46.0 | -14.1 |
| 1.312 | 11.5 | 20.4 | 31.9 | 46.0 | -14.1 |
| 0.966 | 11.5 | 20.3 | 31.8 | 46.0 | -14.2 |
| 0.762 | 11.4 | 20.3 | 31.7 | 46.0 | -14.3 |
| 0.782 | 11.3 | 20.3 | 31.6 | 46.0 | -14.4 |
| 2.864 | 11.1 | 20.5 | 31.6 | 46.0 | -14.4 |

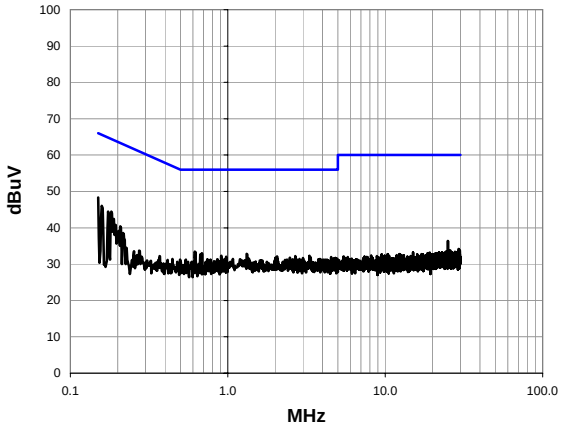
# AC Power Line Conducted Emissions

| | | | | | |
|---|---|---|---|---|---|
| **Work Order:** | FOCU0140 | **Date:** | 05/16/13 | | |
| **Project:** | None | **Temperature:** | 23.7 °C | | |
| **Job Site:** | EV07 | **Humidity:** | 40.3% RH | | |
| **Serial Number:** | 02EA4D000003 | **Barometric Pres.:** | 1014 mbar | **Tested by:** | Brandon Hobbs |
| **EUT:** | Model 444-2225 (Athena UFL) | | | | |
| **Configuration:** | 7 | | | | |
| **Customer:** | Summit Semiconductor | | | | |
| **Attendees:** | None | | | | |
| **EUT Power:** | 3.3 VDC Nominal | | | | |
| **Operating Mode:** | Transmitting 802.11a, 50% Duty Cycle, Ch. 18, 5320 MHz | | | | |
| **Deviations:** | None | | | | |
| **Comments:** | Power Supply plugged into 110VAC/60Hz | | | | |

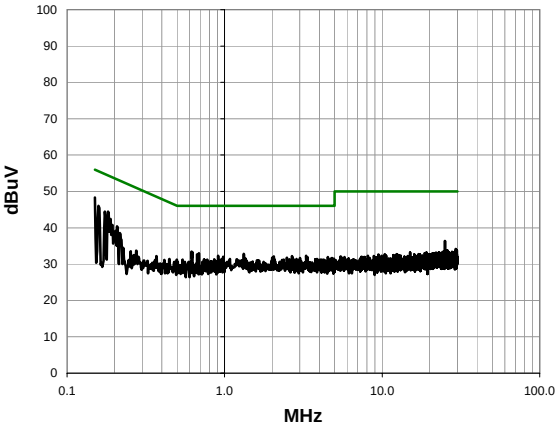
| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.207:2013 | ANSI C63.10:2009 |

| **Run #** | 10 | **Line:** | Neutral | **Ext. Attenuation:** | 20 | **Results** | Pass |
|---|---|---|---|---|---|---|---|

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




**Peak Data - vs - Average Limit**




Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|---|---|---|---|---|---|
| 0.150 | 27.9 | 20.4 | 48.3 | 66.0 | -17.7 |
| 0.159 | 25.7 | 20.4 | 46.1 | 65.5 | -19.5 |
| 0.182 | 24.1 | 20.3 | 44.4 | 64.4 | -20.0 |
| 0.174 | 24.1 | 20.3 | 44.4 | 64.8 | -20.4 |
| 0.189 | 22.1 | 20.3 | 42.4 | 64.1 | -21.7 |
| 0.618 | 13.2 | 20.3 | 33.5 | 56.0 | -22.5 |
| 0.208 | 20.1 | 20.3 | 40.4 | 63.3 | -22.9 |
| 0.686 | 12.7 | 20.3 | 33.0 | 56.0 | -23.0 |
| 1.320 | 12.5 | 20.4 | 32.9 | 56.0 | -23.1 |
| 0.669 | 12.4 | 20.3 | 32.7 | 56.0 | -23.3 |
| 25.020 | 14.7 | 21.7 | 36.4 | 60.0 | -23.6 |
| 3.296 | 11.8 | 20.5 | 32.3 | 56.0 | -23.7 |
| 0.910 | 12.0 | 20.3 | 32.3 | 56.0 | -23.7 |
| 2.680 | 11.7 | 20.5 | 32.2 | 56.0 | -23.8 |
| 2.056 | 11.7 | 20.4 | 32.1 | 56.0 | -23.9 |
| 0.978 | 11.7 | 20.3 | 32.0 | 56.0 | -24.0 |
| 4.528 | 11.3 | 20.7 | 32.0 | 56.0 | -24.0 |
| 2.480 | 11.3 | 20.5 | 31.8 | 56.0 | -24.2 |
| 2.008 | 11.3 | 20.4 | 31.7 | 56.0 | -24.3 |
| 3.008 | 11.2 | 20.5 | 31.7 | 56.0 | -24.3 |

Peak Data - vs - Average Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|---|---|---|---|---|---|
| 0.150 | 27.9 | 20.4 | 48.3 | 56.0 | -7.7 |
| 0.159 | 25.7 | 20.4 | 46.1 | 55.5 | -9.5 |
| 0.182 | 24.1 | 20.3 | 44.4 | 54.4 | -10.0 |
| 0.174 | 24.1 | 20.3 | 44.4 | 54.8 | -10.4 |
| 0.189 | 22.1 | 20.3 | 42.4 | 54.1 | -11.7 |
| 0.618 | 13.2 | 20.3 | 33.5 | 46.0 | -12.5 |
| 0.208 | 20.1 | 20.3 | 40.4 | 53.3 | -12.9 |
| 0.686 | 12.7 | 20.3 | 33.0 | 46.0 | -13.0 |
| 1.320 | 12.5 | 20.4 | 32.9 | 46.0 | -13.1 |
| 0.669 | 12.4 | 20.3 | 32.7 | 46.0 | -13.3 |
| 25.020 | 14.7 | 21.7 | 36.4 | 50.0 | -13.6 |
| 3.296 | 11.8 | 20.5 | 32.3 | 46.0 | -13.7 |
| 0.910 | 12.0 | 20.3 | 32.3 | 46.0 | -13.7 |
| 2.680 | 11.7 | 20.5 | 32.2 | 46.0 | -13.8 |
| 2.056 | 11.7 | 20.4 | 32.1 | 46.0 | -13.9 |
| 0.978 | 11.7 | 20.3 | 32.0 | 46.0 | -14.0 |
| 4.528 | 11.3 | 20.7 | 32.0 | 46.0 | -14.0 |
| 2.480 | 11.3 | 20.5 | 31.8 | 46.0 | -14.2 |
| 2.008 | 11.3 | 20.4 | 31.7 | 46.0 | -14.3 |
| 3.008 | 11.2 | 20.5 | 31.7 | 46.0 | -14.3 |

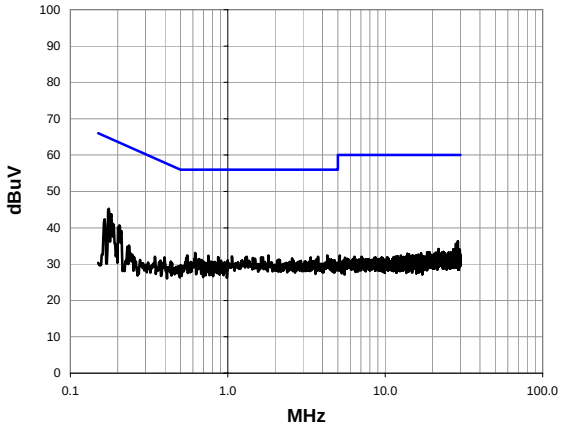
# AC Power Line Conducted Emissions

| | | | | | |
|---|---|---|---|---|---|
| **Work Order:** | FOCU0140 | **Date:** | 05/16/13 | | |
| **Project:** | None | **Temperature:** | 23.7 °C | | |
| **Job Site:** | EV07 | **Humidity:** | 40.3% RH | | |
| **Serial Number:** | 02EA4D000003 | **Barometric Pres.:** | 1014 mbar | **Tested by:** | Brandon Hobbs |
| **EUT:** | Model 444-2225 (Athena UFL) | | | | |
| **Configuration:** | 7 | | | | |
| **Customer:** | Summit Semiconductor | | | | |
| **Attendees:** | None | | | | |
| **EUT Power:** | 3.3 VDC Nominal | | | | |
| **Operating Mode:** | Transmitting 802.11a, 50% Duty Cycle, Ch. 19, 5500 MHz | | | | |
| **Deviations:** | None | | | | |
| **Comments:** | Power Supply plugged into 110VAC/60Hz | | | | |

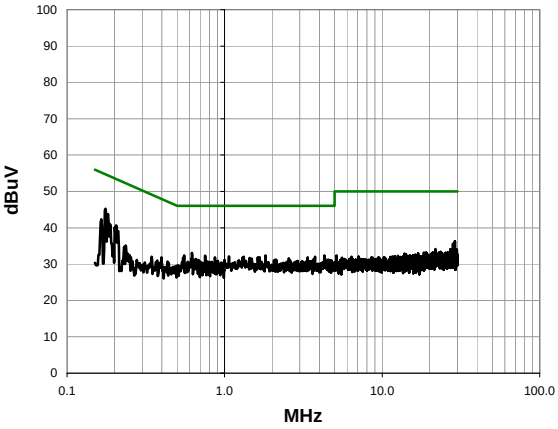
| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.207:2013 | ANSI C63.10:2009 |

| **Run #** | 11 | **Line:** | Neutral | **Ext. Attenuation:** | 20 | **Results** | Pass |
|---|---|---|---|---|---|---|---|

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




**Peak Data - vs - Average Limit**




Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|---|---|---|---|---|---|
| 0.176 | 24.9 | 20.3 | 45.2 | 64.7 | -19.5 |
| 0.182 | 23.4 | 20.3 | 43.7 | 64.4 | -20.7 |
| 0.204 | 20.3 | 20.3 | 40.6 | 63.4 | -22.8 |
| 0.165 | 22.0 | 20.3 | 42.3 | 65.2 | -22.9 |
| 0.621 | 12.8 | 20.3 | 33.1 | 56.0 | -22.9 |
| 0.187 | 20.7 | 20.3 | 41.0 | 64.2 | -23.1 |
| 1.816 | 12.0 | 20.4 | 32.4 | 56.0 | -23.6 |
| 0.553 | 12.1 | 20.3 | 32.4 | 56.0 | -23.6 |
| 4.296 | 11.7 | 20.7 | 32.4 | 56.0 | -23.6 |
| 28.920 | 14.3 | 22.0 | 36.3 | 60.0 | -23.7 |
| 0.753 | 12.0 | 20.3 | 32.3 | 56.0 | -23.7 |
| 1.064 | 11.8 | 20.3 | 32.1 | 56.0 | -23.9 |
| 1.320 | 11.7 | 20.4 | 32.1 | 56.0 | -23.9 |
| 3.744 | 11.4 | 20.6 | 32.0 | 56.0 | -24.0 |
| 0.211 | 18.8 | 20.3 | 39.1 | 63.2 | -24.0 |
| 1.672 | 11.5 | 20.4 | 31.9 | 56.0 | -24.1 |
| 3.368 | 11.3 | 20.6 | 31.9 | 56.0 | -24.1 |
| 0.869 | 11.5 | 20.3 | 31.8 | 56.0 | -24.2 |
| 1.448 | 11.3 | 20.4 | 31.7 | 56.0 | -24.3 |
| 2.560 | 11.1 | 20.5 | 31.6 | 56.0 | -24.4 |

Peak Data - vs - Average Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|---|---|---|---|---|---|
| 0.176 | 24.9 | 20.3 | 45.2 | 54.7 | -9.5 |
| 0.182 | 23.4 | 20.3 | 43.7 | 54.4 | -10.7 |
| 0.204 | 20.3 | 20.3 | 40.6 | 53.4 | -12.8 |
| 0.165 | 22.0 | 20.3 | 42.3 | 55.2 | -12.9 |
| 0.621 | 12.8 | 20.3 | 33.1 | 46.0 | -12.9 |
| 0.187 | 20.7 | 20.3 | 41.0 | 54.2 | -13.1 |
| 1.816 | 12.0 | 20.4 | 32.4 | 46.0 | -13.6 |
| 0.553 | 12.1 | 20.3 | 32.4 | 46.0 | -13.6 |
| 4.296 | 11.7 | 20.7 | 32.4 | 46.0 | -13.6 |
| 28.920 | 14.3 | 22.0 | 36.3 | 50.0 | -13.7 |
| 0.753 | 12.0 | 20.3 | 32.3 | 46.0 | -13.7 |
| 1.064 | 11.8 | 20.3 | 32.1 | 46.0 | -13.9 |
| 1.320 | 11.7 | 20.4 | 32.1 | 46.0 | -13.9 |
| 3.744 | 11.4 | 20.6 | 32.0 | 46.0 | -14.0 |
| 0.211 | 18.8 | 20.3 | 39.1 | 53.2 | -14.0 |
| 1.672 | 11.5 | 20.4 | 31.9 | 46.0 | -14.1 |
| 3.368 | 11.3 | 20.6 | 31.9 | 46.0 | -14.1 |
| 0.869 | 11.5 | 20.3 | 31.8 | 46.0 | -14.2 |
| 1.448 | 11.3 | 20.4 | 31.7 | 46.0 | -14.3 |
| 2.560 | 11.1 | 20.5 | 31.6 | 46.0 | -14.4 |

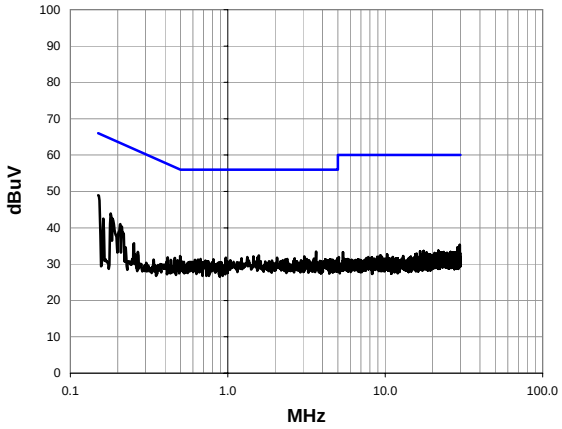
# AC Power Line Conducted Emissions

| | | | | | |
|---|---|---|---|---|---|
| **Work Order:** | FOCU0140 | **Date:** | 05/16/13 | | |
| **Project:** | None | **Temperature:** | 23.7 °C | | |
| **Job Site:** | EV07 | **Humidity:** | 40.3% RH | | |
| **Serial Number:** | 02EA4D000003 | **Barometric Pres.:** | 1014 mbar | **Tested by:** | Brandon Hobbs |
| **EUT:** | Model 444-2225 (Athena UFL) | | | | |
| **Configuration:** | 7 | | | | |
| **Customer:** | Summit Semiconductor | | | | |
| **Attendees:** | None | | | | |
| **EUT Power:** | 3.3 VDC Nominal | | | | |
| **Operating Mode:** | Transmitting 802.11a, 50% Duty Cycle, Ch. 19, 5500 MHz | | | | |
| **Deviations:** | None | | | | |
| **Comments:** | Power Supply plugged into 110VAC/60Hz | | | | |

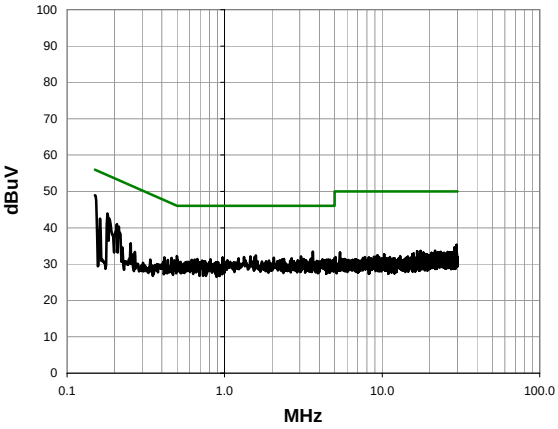
| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.207:2013 | ANSI C63.10:2009 |

| **Run #** | 12 | **Line:** | High Line | **Ext. Attenuation:** | 20 | **Results** | Pass |
|---|---|---|---|---|---|---|---|

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




**Peak Data - vs - Average Limit**




Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|---|---|---|---|---|---|
| 0.150 | 28.5 | 20.4 | 48.9 | 66.0 | -17.1 |
| 0.181 | 23.6 | 20.3 | 43.9 | 64.5 | -20.5 |
| 0.186 | 22.2 | 20.3 | 42.5 | 64.2 | -21.7 |
| 0.208 | 20.7 | 20.3 | 41.0 | 63.3 | -22.3 |
| 3.632 | 12.8 | 20.6 | 33.4 | 56.0 | -22.6 |
| 0.213 | 20.0 | 20.3 | 40.3 | 63.1 | -22.8 |
| 0.162 | 22.2 | 20.3 | 42.5 | 65.4 | -22.8 |
| 1.576 | 12.0 | 20.4 | 32.4 | 56.0 | -23.6 |
| 0.499 | 12.0 | 20.3 | 32.3 | 56.0 | -23.8 |
| 3.056 | 11.6 | 20.5 | 32.1 | 56.0 | -23.9 |
| 1.456 | 11.7 | 20.4 | 32.1 | 56.0 | -23.9 |
| 1.328 | 11.6 | 20.4 | 32.0 | 56.0 | -24.0 |
| 1.544 | 11.5 | 20.4 | 31.9 | 56.0 | -24.1 |
| 0.971 | 11.4 | 20.3 | 31.7 | 56.0 | -24.3 |
| 2.056 | 11.3 | 20.4 | 31.7 | 56.0 | -24.3 |
| 2.664 | 11.1 | 20.5 | 31.6 | 56.0 | -24.4 |
| 3.528 | 10.9 | 20.6 | 31.5 | 56.0 | -24.5 |
| 2.384 | 11.0 | 20.5 | 31.5 | 56.0 | -24.5 |
| 3.184 | 10.9 | 20.5 | 31.4 | 56.0 | -24.6 |
| 0.672 | 11.1 | 20.3 | 31.4 | 56.0 | -24.6 |

Peak Data - vs - Average Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|---|---|---|---|---|---|
| 0.150 | 28.5 | 20.4 | 48.9 | 56.0 | -7.1 |
| 0.181 | 23.6 | 20.3 | 43.9 | 54.5 | -10.5 |
| 0.186 | 22.2 | 20.3 | 42.5 | 54.2 | -11.7 |
| 0.208 | 20.7 | 20.3 | 41.0 | 53.3 | -12.3 |
| 3.632 | 12.8 | 20.6 | 33.4 | 46.0 | -12.6 |
| 0.213 | 20.0 | 20.3 | 40.3 | 53.1 | -12.8 |
| 0.162 | 22.2 | 20.3 | 42.5 | 55.4 | -12.8 |
| 1.576 | 12.0 | 20.4 | 32.4 | 46.0 | -13.6 |
| 0.499 | 12.0 | 20.3 | 32.3 | 46.0 | -13.8 |
| 3.056 | 11.6 | 20.5 | 32.1 | 46.0 | -13.9 |
| 1.456 | 11.7 | 20.4 | 32.1 | 46.0 | -13.9 |
| 1.328 | 11.6 | 20.4 | 32.0 | 46.0 | -14.0 |
| 1.544 | 11.5 | 20.4 | 31.9 | 46.0 | -14.1 |
| 0.971 | 11.4 | 20.3 | 31.7 | 46.0 | -14.3 |
| 2.056 | 11.3 | 20.4 | 31.7 | 46.0 | -14.3 |
| 2.664 | 11.1 | 20.5 | 31.6 | 46.0 | -14.4 |
| 3.528 | 10.9 | 20.6 | 31.5 | 46.0 | -14.5 |
| 2.384 | 11.0 | 20.5 | 31.5 | 46.0 | -14.5 |
| 3.184 | 10.9 | 20.5 | 31.4 | 46.0 | -14.6 |
| 0.672 | 11.1 | 20.3 | 31.4 | 46.0 | -14.6 |

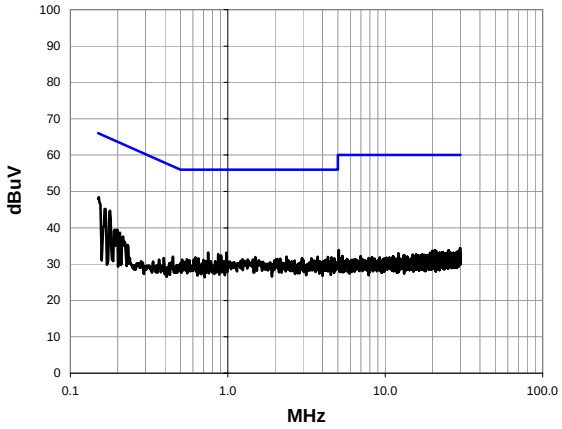
# AC Power Line Conducted Emissions

| | | | | | |
|---|---|---|---|---|---|
| **Work Order:** | FOCU0140 | **Date:** | 05/16/13 | | |
| **Project:** | None | **Temperature:** | 23.7 °C | | |
| **Job Site:** | EV07 | **Humidity:** | 40.3% RH | | |
| **Serial Number:** | 02EA4D000003 | **Barometric Pres.:** | 1014 mbar | **Tested by:** | Brandon Hobbs |
| **EUT:** | Model 444-2225 (Athena UFL) | | | | |
| **Configuration:** | 7 | | | | |
| **Customer:** | Summit Semiconductor | | | | |
| **Attendees:** | None | | | | |
| **EUT Power:** | 3.3 VDC Nominal | | | | |
| **Operating Mode:** | Transmitting 802.11a, 50% Duty Cycle, Ch. 23, 5580 MHz | | | | |
| **Deviations:** | None | | | | |
| **Comments:** | Power Supply plugged into 110VAC/60Hz | | | | |

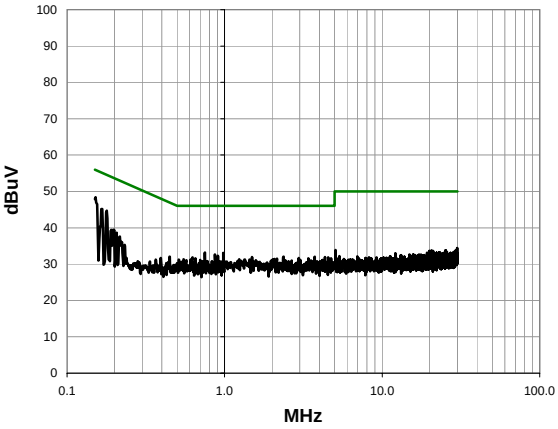
| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.207:2013 | ANSI C63.10:2009 |

| **Run #** | 13 | **Line:** | High Line | **Ext. Attenuation:** | 20 | **Results** | Pass |
|---|---|---|---|---|---|---|---|

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




**Peak Data - vs - Average Limit**




Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|---|---|---|---|---|---|
| 0.152 | 28.0 | 20.4 | 48.4 | 65.9 | -17.5 |
| 0.179 | 24.4 | 20.3 | 44.7 | 64.5 | -19.8 |
| 0.165 | 24.8 | 20.3 | 45.1 | 65.2 | -20.1 |
| 0.750 | 12.9 | 20.3 | 33.2 | 56.0 | -22.8 |
| 0.981 | 12.8 | 20.3 | 33.1 | 56.0 | -22.9 |
| 0.869 | 12.3 | 20.3 | 32.6 | 56.0 | -23.4 |
| 0.906 | 12.0 | 20.3 | 32.3 | 56.0 | -23.7 |
| 2.368 | 11.6 | 20.5 | 32.1 | 56.0 | -23.9 |
| 3.728 | 11.4 | 20.6 | 32.0 | 56.0 | -24.0 |
| 1.496 | 11.6 | 20.4 | 32.0 | 56.0 | -24.0 |
| 4.328 | 11.3 | 20.7 | 32.0 | 56.0 | -24.0 |
| 0.624 | 11.6 | 20.3 | 31.9 | 56.0 | -24.1 |
| 4.552 | 11.2 | 20.7 | 31.9 | 56.0 | -24.1 |
| 0.199 | 19.1 | 20.3 | 39.4 | 63.6 | -24.2 |
| 2.960 | 11.2 | 20.5 | 31.7 | 56.0 | -24.3 |
| 0.652 | 11.3 | 20.3 | 31.6 | 56.0 | -24.4 |
| 4.744 | 10.9 | 20.7 | 31.6 | 56.0 | -24.4 |
| 3.400 | 11.0 | 20.6 | 31.6 | 56.0 | -24.4 |
| 2.152 | 11.1 | 20.4 | 31.5 | 56.0 | -24.5 |
| 2.072 | 11.0 | 20.4 | 31.4 | 56.0 | -24.6 |

Peak Data - vs - Average Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|---|---|---|---|---|---|
| 0.152 | 28.0 | 20.4 | 48.4 | 55.9 | -7.5 |
| 0.179 | 24.4 | 20.3 | 44.7 | 54.5 | -9.8 |
| 0.165 | 24.8 | 20.3 | 45.1 | 55.2 | -10.1 |
| 0.750 | 12.9 | 20.3 | 33.2 | 46.0 | -12.8 |
| 0.981 | 12.8 | 20.3 | 33.1 | 46.0 | -12.9 |
| 0.869 | 12.3 | 20.3 | 32.6 | 46.0 | -13.4 |
| 0.906 | 12.0 | 20.3 | 32.3 | 46.0 | -13.7 |
| 2.368 | 11.6 | 20.5 | 32.1 | 46.0 | -13.9 |
| 3.728 | 11.4 | 20.6 | 32.0 | 46.0 | -14.0 |
| 1.496 | 11.6 | 20.4 | 32.0 | 46.0 | -14.0 |
| 4.328 | 11.3 | 20.7 | 32.0 | 46.0 | -14.0 |
| 0.624 | 11.6 | 20.3 | 31.9 | 46.0 | -14.1 |
| 4.552 | 11.2 | 20.7 | 31.9 | 46.0 | -14.1 |
| 0.199 | 19.1 | 20.3 | 39.4 | 53.6 | -14.2 |
| 2.960 | 11.2 | 20.5 | 31.7 | 46.0 | -14.3 |
| 0.652 | 11.3 | 20.3 | 31.6 | 46.0 | -14.4 |
| 4.744 | 10.9 | 20.7 | 31.6 | 46.0 | -14.4 |
| 3.400 | 11.0 | 20.6 | 31.6 | 46.0 | -14.4 |
| 2.152 | 11.1 | 20.4 | 31.5 | 46.0 | -14.5 |
| 2.072 | 11.0 | 20.4 | 31.4 | 46.0 | -14.6 |

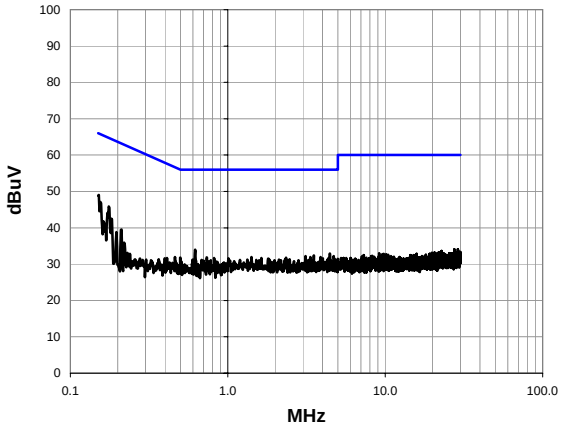
# AC Power Line Conducted Emissions

| | | | | | |
|---|---|---|---|---|---|
| **Work Order:** | FOCU0140 | **Date:** | 05/16/13 | | |
| **Project:** | None | **Temperature:** | 23.7 °C | | |
| **Job Site:** | EV07 | **Humidity:** | 40.3% RH | | |
| **Serial Number:** | 02EA4D000003 | **Barometric Pres.:** | 1014 mbar | **Tested by:** | Brandon Hobbs |
| **EUT:** | Model 444-2225 (Athena UFL) | | | | |
| **Configuration:** | 7 | | | | |
| **Customer:** | Summit Semiconductor | | | | |
| **Attendees:** | None | | | | |
| **EUT Power:** | 3.3 VDC Nominal | | | | |
| **Operating Mode:** | Transmitting 802.11a, 50% Duty Cycle, Ch. 23, 5580 MHz | | | | |
| **Deviations:** | None | | | | |
| **Comments:** | Power Supply plugged into 110VAC/60Hz | | | | |

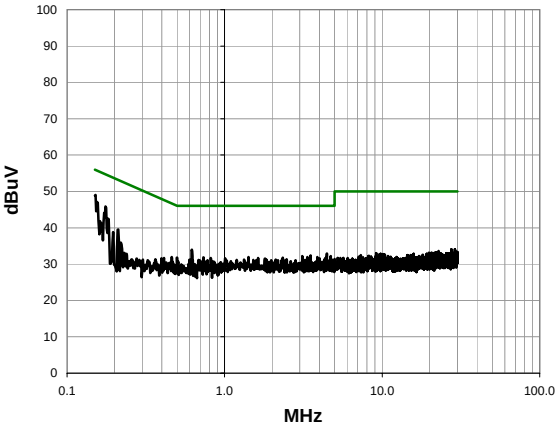
| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.207:2013 | ANSI C63.10:2009 |

| **Run #** | 14 | **Line:** | Neutral | **Ext. Attenuation:** | 20 | **Results** | Pass |
|---|---|---|---|---|---|---|---|

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




**Peak Data - vs - Average Limit**




Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|---|---|---|---|---|---|
| 0.152 | 28.6 | 20.4 | 49.0 | 65.9 | -16.9 |
| 0.176 | 25.5 | 20.3 | 45.8 | 64.7 | -18.9 |
| 0.182 | 22.2 | 20.3 | 42.5 | 64.4 | -21.9 |
| 0.619 | 13.7 | 20.3 | 34.0 | 56.0 | -22.0 |
| 4.456 | 12.3 | 20.7 | 33.0 | 56.0 | -23.0 |
| 0.162 | 21.5 | 20.3 | 41.8 | 65.4 | -23.5 |
| 3.520 | 11.8 | 20.6 | 32.4 | 56.0 | -23.6 |
| 0.211 | 19.2 | 20.3 | 39.5 | 63.2 | -23.6 |
| 3.112 | 11.7 | 20.5 | 32.2 | 56.0 | -23.8 |
| 4.712 | 11.5 | 20.7 | 32.2 | 56.0 | -23.8 |
| 1.416 | 11.6 | 20.4 | 32.0 | 56.0 | -24.0 |
| 3.352 | 11.4 | 20.6 | 32.0 | 56.0 | -24.0 |
| 3.880 | 11.3 | 20.6 | 31.9 | 56.0 | -24.1 |
| 0.735 | 11.6 | 20.3 | 31.9 | 56.0 | -24.1 |
| 0.500 | 11.5 | 20.3 | 31.8 | 56.0 | -24.2 |
| 2.344 | 11.3 | 20.5 | 31.8 | 56.0 | -24.2 |
| 0.818 | 11.4 | 20.3 | 31.7 | 56.0 | -24.3 |
| 1.632 | 11.3 | 20.4 | 31.7 | 56.0 | -24.3 |
| 4.360 | 11.0 | 20.7 | 31.7 | 56.0 | -24.3 |
| 4.008 | 11.0 | 20.6 | 31.6 | 56.0 | -24.4 |

Peak Data - vs - Average Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|---|---|---|---|---|---|
| 0.152 | 28.6 | 20.4 | 49.0 | 55.9 | -6.9 |
| 0.176 | 25.5 | 20.3 | 45.8 | 54.7 | -8.9 |
| 0.182 | 22.2 | 20.3 | 42.5 | 54.4 | -11.9 |
| 0.619 | 13.7 | 20.3 | 34.0 | 46.0 | -12.0 |
| 4.456 | 12.3 | 20.7 | 33.0 | 46.0 | -13.0 |
| 0.162 | 21.5 | 20.3 | 41.8 | 55.4 | -13.5 |
| 3.520 | 11.8 | 20.6 | 32.4 | 46.0 | -13.6 |
| 0.211 | 19.2 | 20.3 | 39.5 | 53.2 | -13.6 |
| 3.112 | 11.7 | 20.5 | 32.2 | 46.0 | -13.8 |
| 4.712 | 11.5 | 20.7 | 32.2 | 46.0 | -13.8 |
| 1.416 | 11.6 | 20.4 | 32.0 | 46.0 | -14.0 |
| 3.352 | 11.4 | 20.6 | 32.0 | 46.0 | -14.0 |
| 3.880 | 11.3 | 20.6 | 31.9 | 46.0 | -14.1 |
| 0.735 | 11.6 | 20.3 | 31.9 | 46.0 | -14.1 |
| 0.500 | 11.5 | 20.3 | 31.8 | 46.0 | -14.2 |
| 2.344 | 11.3 | 20.5 | 31.8 | 46.0 | -14.2 |
| 0.818 | 11.4 | 20.3 | 31.7 | 46.0 | -14.3 |
| 1.632 | 11.3 | 20.4 | 31.7 | 46.0 | -14.3 |
| 4.360 | 11.0 | 20.7 | 31.7 | 46.0 | -14.3 |
| 4.008 | 11.0 | 20.6 | 31.6 | 46.0 | -14.4 |

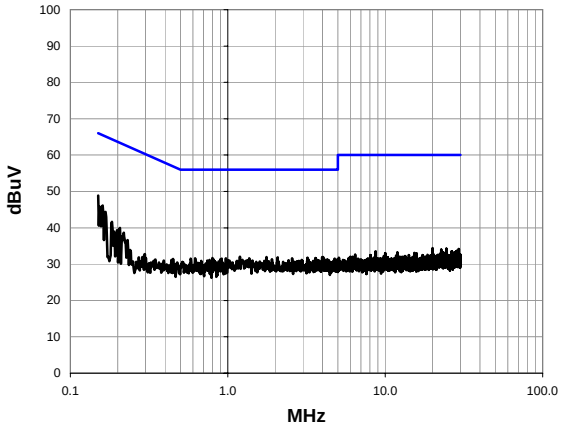
# AC Power Line Conducted Emissions

| | | | | | |
|---|---|---|---|---|---|
| **Work Order:** | FOCU0140 | **Date:** | 05/16/13 | | |
| **Project:** | None | **Temperature:** | 23.7 °C | | |
| **Job Site:** | EV07 | **Humidity:** | 40.3% RH | | |
| **Serial Number:** | 02EA4D000003 | **Barometric Pres.:** | 1014 mbar | **Tested by:** | Brandon Hobbs |
| **EUT:** | Model 444-2225 (Athena UFL) | | | | |
| **Configuration:** | 7 | | | | |
| **Customer:** | Summit Semiconductor | | | | |
| **Attendees:** | None | | | | |
| **EUT Power:** | 3.3 VDC Nominal | | | | |
| **Operating Mode:** | Transmitting 802.11a, 50% Duty Cycle, Ch. 29, 5700 MHz | | | | |
| **Deviations:** | None | | | | |
| **Comments:** | Power Supply plugged into 110VAC/60Hz | | | | |

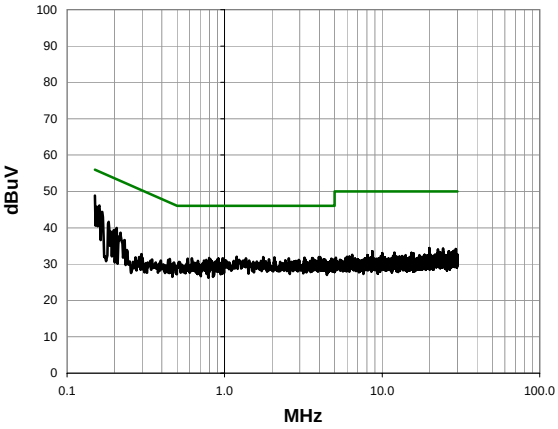
| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.207:2013 | ANSI C63.10:2009 |

| **Run #** | 15 | **Line:** | Neutral | **Ext. Attenuation:** | 20 | **Results** | Pass |
|---|---|---|---|---|---|---|---|

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




**Peak Data - vs - Average Limit**




Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|---|---|---|---|---|---|
| 0.150 | 28.4 | 20.4 | 48.8 | 66.0 | -17.2 |
| 0.160 | 25.8 | 20.3 | 46.1 | 65.5 | -19.3 |
| 0.153 | 25.4 | 20.4 | 45.8 | 65.8 | -20.0 |
| 0.167 | 24.0 | 20.3 | 44.3 | 65.1 | -20.8 |
| 0.184 | 21.3 | 20.3 | 41.6 | 64.3 | -22.7 |
| 0.206 | 19.6 | 20.3 | 39.9 | 63.4 | -23.4 |
| 1.192 | 11.7 | 20.4 | 32.1 | 56.0 | -23.9 |
| 4.040 | 11.3 | 20.6 | 31.9 | 56.0 | -24.1 |
| 3.976 | 11.3 | 20.6 | 31.9 | 56.0 | -24.1 |
| 1.760 | 11.5 | 20.4 | 31.9 | 56.0 | -24.1 |
| 2.072 | 11.4 | 20.4 | 31.8 | 56.0 | -24.2 |
| 3.208 | 11.3 | 20.5 | 31.8 | 56.0 | -24.2 |
| 0.218 | 18.3 | 20.3 | 38.6 | 62.9 | -24.3 |
| 3.600 | 11.1 | 20.6 | 31.7 | 56.0 | -24.3 |
| 0.799 | 11.4 | 20.3 | 31.7 | 56.0 | -24.3 |
| 0.974 | 11.3 | 20.3 | 31.6 | 56.0 | -24.4 |
| 0.198 | 19.0 | 20.3 | 39.3 | 63.7 | -24.4 |
| 0.621 | 11.3 | 20.3 | 31.6 | 56.0 | -24.4 |
| 2.560 | 11.1 | 20.5 | 31.6 | 56.0 | -24.4 |
| 0.913 | 11.2 | 20.3 | 31.5 | 56.0 | -24.5 |

Peak Data - vs - Average Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|---|---|---|---|---|---|
| 0.150 | 28.4 | 20.4 | 48.8 | 56.0 | -7.2 |
| 0.160 | 25.8 | 20.3 | 46.1 | 55.5 | -9.3 |
| 0.153 | 25.4 | 20.4 | 45.8 | 55.8 | -10.0 |
| 0.167 | 24.0 | 20.3 | 44.3 | 55.1 | -10.8 |
| 0.184 | 21.3 | 20.3 | 41.6 | 54.3 | -12.7 |
| 0.206 | 19.6 | 20.3 | 39.9 | 53.4 | -13.4 |
| 1.192 | 11.7 | 20.4 | 32.1 | 46.0 | -13.9 |
| 4.040 | 11.3 | 20.6 | 31.9 | 46.0 | -14.1 |
| 3.976 | 11.3 | 20.6 | 31.9 | 46.0 | -14.1 |
| 1.760 | 11.5 | 20.4 | 31.9 | 46.0 | -14.1 |
| 2.072 | 11.4 | 20.4 | 31.8 | 46.0 | -14.2 |
| 3.208 | 11.3 | 20.5 | 31.8 | 46.0 | -14.2 |
| 0.218 | 18.3 | 20.3 | 38.6 | 52.9 | -14.3 |
| 3.600 | 11.1 | 20.6 | 31.7 | 46.0 | -14.3 |
| 0.799 | 11.4 | 20.3 | 31.7 | 46.0 | -14.3 |
| 0.974 | 11.3 | 20.3 | 31.6 | 46.0 | -14.4 |
| 0.198 | 19.0 | 20.3 | 39.3 | 53.7 | -14.4 |
| 0.621 | 11.3 | 20.3 | 31.6 | 46.0 | -14.4 |
| 2.560 | 11.1 | 20.5 | 31.6 | 46.0 | -14.4 |
| 0.913 | 11.2 | 20.3 | 31.5 | 46.0 | -14.5 |

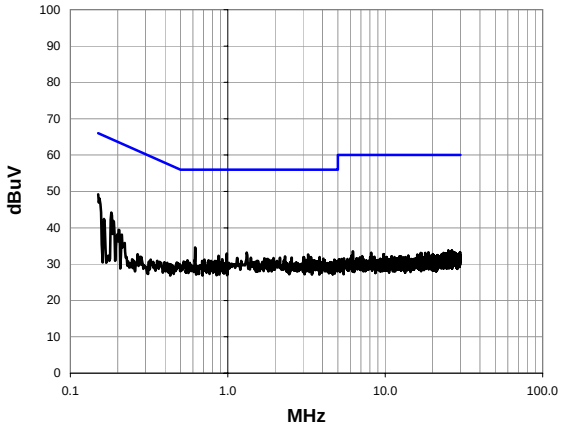
# AC Power Line Conducted Emissions

| | | | | | |
|---|---|---|---|---|---|
| **Work Order:** | FOCU0140 | **Date:** | 05/16/13 | | |
| **Project:** | None | **Temperature:** | 23.7 °C | | |
| **Job Site:** | EV07 | **Humidity:** | 40.3% RH | | |
| **Serial Number:** | 02EA4D000003 | **Barometric Pres.:** | 1014 mbar | **Tested by:** | Brandon Hobbs |
| **EUT:** | Model 444-2225 (Athena UFL) | | | | |
| **Configuration:** | 7 | | | | |
| **Customer:** | Summit Semiconductor | | | | |
| **Attendees:** | None | | | | |
| **EUT Power:** | 3.3 VDC Nominal | | | | |
| **Operating Mode:** | Transmitting 802.11a, 50% Duty Cycle, Ch. 29, 5700 MHz | | | | |
| **Deviations:** | None | | | | |
| **Comments:** | Power Supply plugged into 110VAC/60Hz | | | | |

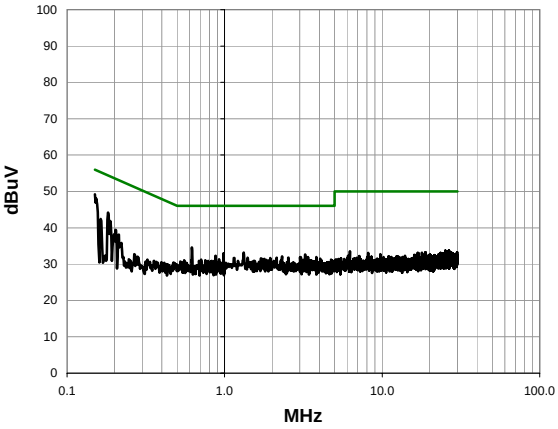
| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.207:2013 | ANSI C63.10:2009 |

| **Run #** | 16 | **Line:** | High Line | **Ext. Attenuation:** | 20 | **Results** | Pass |
|---|---|---|---|---|---|---|---|

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




**Peak Data - vs - Average Limit**



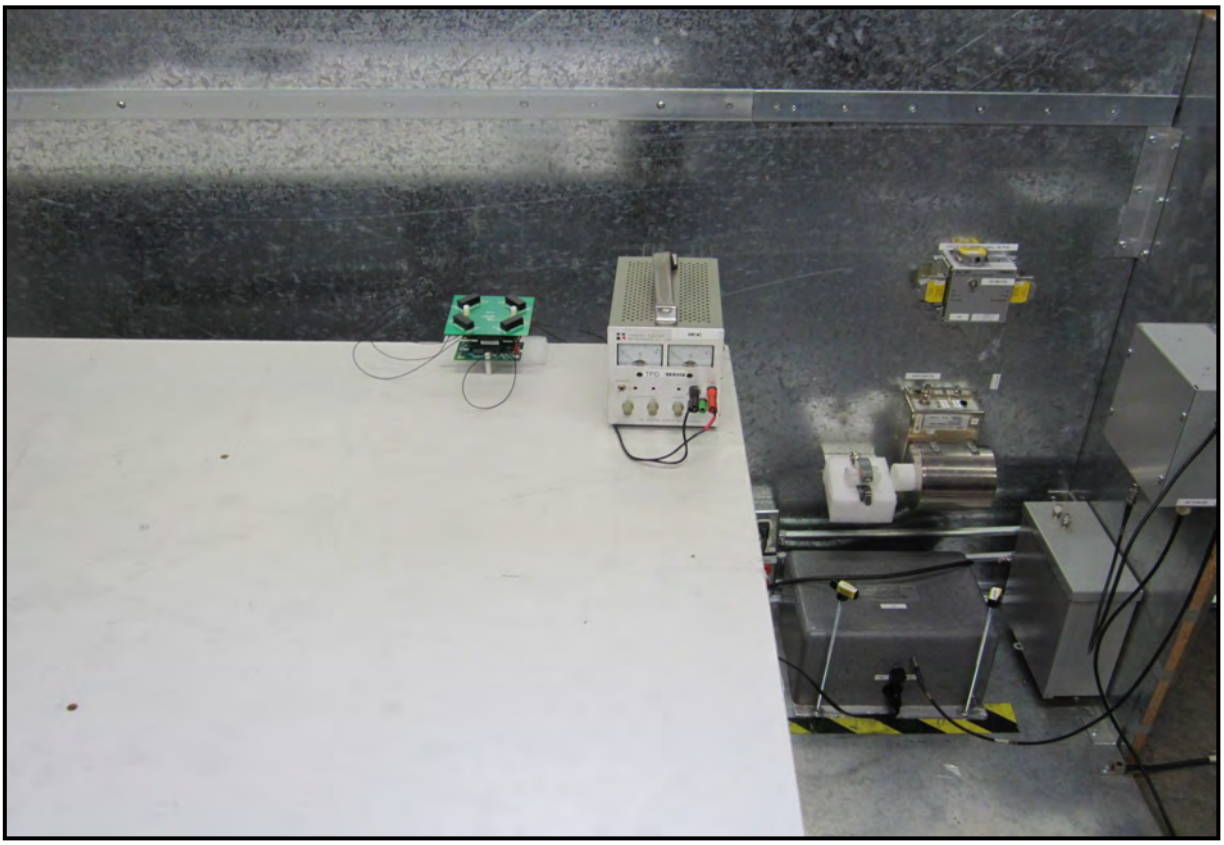

Peak Data - vs - Quasi Peak Limit

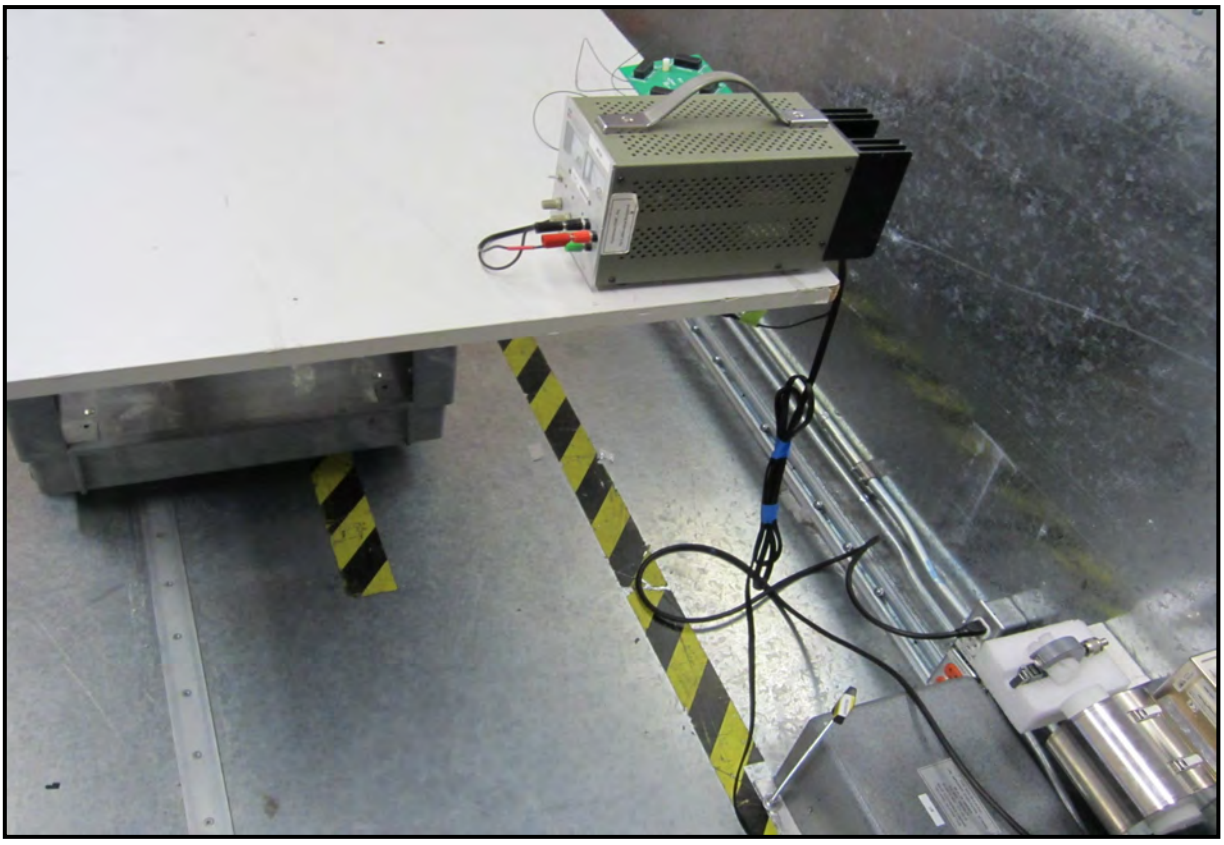
| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|---|---|---|---|---|---|
| 0.150 | 28.8 | 20.4 | 49.2 | 66.0 | -16.8 |
| 0.182 | 23.9 | 20.3 | 44.2 | 64.4 | -20.2 |
| 0.621 | 14.3 | 20.3 | 34.6 | 56.0 | -21.4 |
| 0.187 | 21.6 | 20.3 | 41.9 | 64.2 | -22.2 |
| 1.320 | 12.8 | 20.4 | 33.2 | 56.0 | -22.8 |
| 0.164 | 22.1 | 20.3 | 42.4 | 65.3 | -22.8 |
| 0.985 | 12.6 | 20.3 | 32.9 | 56.0 | -23.1 |
| 3.240 | 12.1 | 20.5 | 32.6 | 56.0 | -23.4 |
| 0.874 | 12.0 | 20.3 | 32.3 | 56.0 | -23.7 |
| 2.312 | 11.7 | 20.5 | 32.2 | 56.0 | -23.8 |
| 3.040 | 11.5 | 20.5 | 32.0 | 56.0 | -24.0 |
| 3.384 | 11.4 | 20.6 | 32.0 | 56.0 | -24.0 |
| 3.824 | 11.3 | 20.6 | 31.9 | 56.0 | -24.1 |
| 0.203 | 19.1 | 20.3 | 39.4 | 63.5 | -24.1 |
| 1.400 | 11.4 | 20.4 | 31.8 | 56.0 | -24.2 |
| 2.544 | 11.3 | 20.5 | 31.8 | 56.0 | -24.2 |
| 2.144 | 11.3 | 20.4 | 31.7 | 56.0 | -24.3 |
| 1.952 | 11.3 | 20.4 | 31.7 | 56.0 | -24.3 |
| 1.152 | 11.3 | 20.4 | 31.7 | 56.0 | -24.3 |
| 1.704 | 11.2 | 20.4 | 31.6 | 56.0 | -24.4 |

Peak Data - vs - Average Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|---|---|---|---|---|---|
| 0.150 | 28.8 | 20.4 | 49.2 | 56.0 | -6.8 |
| 0.182 | 23.9 | 20.3 | 44.2 | 54.4 | -10.2 |
| 0.621 | 14.3 | 20.3 | 34.6 | 46.0 | -11.4 |
| 0.187 | 21.6 | 20.3 | 41.9 | 54.2 | -12.2 |
| 1.320 | 12.8 | 20.4 | 33.2 | 46.0 | -12.8 |
| 0.164 | 22.1 | 20.3 | 42.4 | 55.3 | -12.8 |
| 0.985 | 12.6 | 20.3 | 32.9 | 46.0 | -13.1 |
| 3.240 | 12.1 | 20.5 | 32.6 | 46.0 | -13.4 |
| 0.874 | 12.0 | 20.3 | 32.3 | 46.0 | -13.7 |
| 2.312 | 11.7 | 20.5 | 32.2 | 46.0 | -13.8 |
| 3.040 | 11.5 | 20.5 | 32.0 | 46.0 | -14.0 |
| 3.384 | 11.4 | 20.6 | 32.0 | 46.0 | -14.0 |
| 3.824 | 11.3 | 20.6 | 31.9 | 46.0 | -14.1 |
| 0.203 | 19.1 | 20.3 | 39.4 | 53.5 | -14.1 |
| 1.400 | 11.4 | 20.4 | 31.8 | 46.0 | -14.2 |
| 2.544 | 11.3 | 20.5 | 31.8 | 46.0 | -14.2 |
| 2.144 | 11.3 | 20.4 | 31.7 | 46.0 | -14.3 |
| 1.952 | 11.3 | 20.4 | 31.7 | 46.0 | -14.3 |
| 1.152 | 11.3 | 20.4 | 31.7 | 46.0 | -14.3 |
| 1.704 | 11.2 | 20.4 | 31.6 | 46.0 | -14.4 |

# CONDUCTED EMISSIONS





# CONDUCTED EMISSIONS