# TE Connectivity / ADC Telecommunications

## Prism HDM 800 MHz/1900 MHz SISO RF Module

## FCC 90I:2014

**Report #: TECO0013.1**

Report Prepared By Northwest EMC Inc.

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

California – Minnesota – Oregon – New York – Washington

NORTHWEST EMC

WTD 12.5.23

# CERTIFICATE OF TEST

**Last Date of Test: April 16, 2014**
**TE Connectivity / ADC Telecommunications**
**Model: Prism HDM 800 MHz/1900 MHz SISO RF Module**

## Emissions

| Test Description | Specification | Test Method | Pass/Fail |
|---|---|---|---|
| Conducted Output Power | FCC 90I:2014 | ANSI/TIA/EIA-603-C-2004 | Pass |
| Out of Band Emissions –Conducted | FCC 90I:2014 | ANSI/TIA/EIA-603-C-2004 | Pass |
| Intermodulation | FCC 90I:2014 | ANSI/TIA/EIA-603-C-2004 | Pass |
| Frequency Stability | FCC 90I:2014 | ANSI/TIA/EIA-603-C-2004 | Pass |
| Occupied Bandwidth | FCC 90I:2014 | ANSI/TIA/EIA-603-C-2004 | Pass |
| Field Strength of Spurious Emissions | FCC 90I:2014 | ANSI/TIA/EIA-603-C-2004 | Pass |

## Deviations From Test Standards

None

## Approved By:

*Tim O'Shea, Operations Manager*

NVLAP

**NVLAP Lab Code: 200881-0**

***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.

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/

# 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.

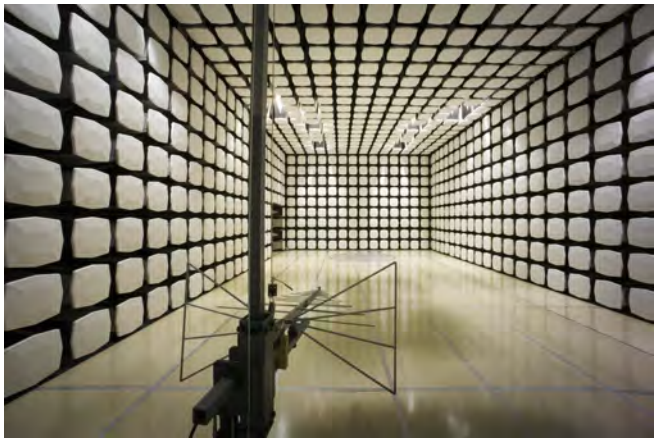
| Test | + MU | - MU |
|---|---|---|
| Frequency Accuracy (Hz) | 0.12 | -0.01 |
| Amplitude Accuracy (dB) | 0.49 | -0.49 |
| Conducted Power (dB) | 0.41 | -0.41 |
| Radiated Power via Substitution (dB) | 0.69 | -0.68 |
| Temperature (degrees C) | 0.81 | -0.81 |
| Humidity (% RH) | 2.89 | -2.89 |
| Field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

NORTHWEST EMC

REV 2013.06.28

# FACILITIES

| 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 | 2834F-1 |
| **NVLAP** | | | | |
| NVLAP Lab Code: 200630-0 | NVLAP Lab Code: 200676-0 | NVLAP Lab Code: 200761-0 | NVLAP Lab Code: 200881-0 | NVLAP Lab Code: 200629-0 |



# PRODUCT DESCRIPTION

WTD 12.5.23

## Client and Equipment Under Test (EUT) Information

| | |
|---|---|
| **Company Name:** | TE Connectivity / ADC Telecommunications |
| **Address:** | 1187 Park Place |
| **City, State, Zip:** | Shakopee, MN 55379 |
| **Test Requested By:** | Joshua Wittman |
| **Model:** | Prism HDM 800 MHz/1900 MHz SISO RF Module |
| **First Date of Test:** | April 09, 2014 |
| **Last Date of Test:** | April 16, 2014 |
| **Receipt Date of Samples:** | April 09, 2014 |
| **Equipment Design Stage:** | Production |
| **Equipment Condition:** | No Damage |

## Information Provided by the Party Requesting the Test

| **Functional Description of the EUT (Equipment Under Test):** |
|---|
| Prism HDM 800 MHz/1900 MHz SISO RF Module. The Prism HDM is an industrial signal booster which is used to enhance wireless networks in outdoor locations and large venues. |

| **Testing Objective:** |
|---|
| To demonstrate compliance to FCC Part 90. |

# CONFIGURATIONS

## Configuration TECO0013- 1

| EUT | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Prism HDM 800 MHz/1900 MHz SISO RF Module | TE Connectivity / ADC Telecommunications | FWP-441T841MOD | None |

| Peripherals in test setup boundary | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| RF Signal Generator | Aeroflex | IFR 3413 | 341006/252 |
| Power Supply | Mean Well | SE-600-48 | EB11101765 |
| IO Control Device | TE Connectivity / ADC Telecommunications | SVT-GU-1011 | None |
| 30 dB attenuator | Aeroflex | 57-30-43 | RA434 |
| RF Signal Generator | Aeroflex | IFR 3413 | 341006/056 |
| 30 dB attenuator | Aeroflex | 86-30-12 DC -22 GHz | 369 |
| Laptop | Lenovo | T500 | L3-AFD7K 09/04 |
| Laptop Supply | Lenovo | 42T4418 | 11S42T4418Z1ZGWG19659N |

| Cables | | | | | |
|---|---|---|---|---|---|
| **Cable Type** | **Shield** | **Length (m)** | **Ferrite** | **Connection 1** | **Connection 2** |
| AC Power | No | > 3m | No | Prism HDM 800 MHz/1900 MHz SISO RF Module | AC Mains |
| Fiber | No | > 3m | No | Prism HDM 800 MHz/1900 MHz SISO RF Module | IO Control Device |
| RF | Yes | 0.8m | No | Prism HDM 800 MHz/1900 MHz SISO RF Module | 30 dB attenuator |
| RF | Yes | 1.8m | No | IO Control Device | RF Signal Generator |
| AC Power x2 | No | 1.8m | No | RF Signal Generator | AC Mains |
| AC Power | No | 1.8m | No | Power Supply | AC Mains |
| DC Power | No | 2.8m | Yes | IO Control Device | Power Supply |
| AC Power | No | 1.8m | No | Laptop Supply | AC Mains |
| DC Power | No | 1.8m | Yes | Laptop | Laptop Supply |
| Ethernet | No | 1.5m | No | Laptop | IO Control Device |
| RF | Yes | 0.8m | No | Prism HDM 800 MHz/1900 MHz SISO RF Module | 30 dB attenuator |
| RF | Yes | 0.9m | No | IO Control Device | RF Signal Generator |
| **PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.** | | | | | |

# CONFIGURATIONS

## Configuration TECO0013- 2

| EUT | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Prism HDM 800 MHz/1900 MHz SISO RF Module | TE Connectivity / ADC Telecommunications | FWP-441T841MOD | None |

| Peripherals in test setup boundary | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| 30 dB attenuator | Aeroflex | 57-30-43 | NL616 |
| 30 dB attenuator | Aeroflex | 57-30-43 | RA434 |

| Remote Equipment Outside of Test Setup Boundary | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| RF Signal Generator | Aeroflex | IFR 3413 | 341006/252 |
| Power Supply | Mean Well | SE-600-48 | EB11101765 |
| IO Control Device | TE Connectivity / ADC Telecommunications | SVT-GU-1011 | None |
| RF Signal Generator | Aeroflex | IFR 3413 | 341006/056 |
| Laptop | Lenovo | T500 | L3-AFD7K 09/04 |
| Laptop Supply | Lenovo | 42T4418 | 11S42T4418Z1ZGWG19659N |

| Cables | | | | | |
|---|---|---|---|---|---|
| **Cable Type** | **Shield** | **Length (m)** | **Ferrite** | **Connection 1** | **Connection 2** |
| AC Power | No | > 3m | No | Prism HDM 800 MHz/1900 MHz SISO RF Module | AC Mains |
| Fiber | No | > 3m | No | Prism HDM 800 MHz/1900 MHz SISO RF Module | IO Control Device |
| RF | Yes | 0.8m | No | Prism HDM 800 MHz/1900 MHz SISO RF Module | 30 dB attenuator |
| RF | Yes | 1.8m | No | IO Control Device | RF Signal Generator |
| AC Power x2 | No | 1.8m | No | RF Signal Generator | AC Mains |
| AC Power | No | 1.8m | No | Power Supply | AC Mains |
| DC Power | No | 2.8m | Yes | IO Control Device | Power Supply |
| AC Power | No | 1.8m | No | Laptop Supply | AC Mains |
| DC Power | No | 1.8m | Yes | Laptop | Laptop Supply |
| Ethernet | No | 1.5m | No | Laptop | IO Control Device |
| RF | Yes | 0.8m | No | Prism HDM 800 MHz/1900 MHz SISO RF Module | 30 dB attenuator |
| RF | Yes | 0.9m | No | IO Control Device | RF Signal Generator |
| Ground | No | 1.3m | No | Prism HDM 800 MHz/1900 MHz SISO RF Module | Ground |
| **PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.** | | | | | |

# MODIFICATIONS

## Equipment Modifications

| Item | Date | Test | Modification | Note | Disposition of EUT |
|---|---|---|---|---|---|
| 1 | 4/9/2014 | Intermodulation | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 2 | 4/9/2014 | Occupied Bandwidth | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 3 | 4/9/2014 | Out of Band Emissions – Conducted | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 4 | 4/9/2014 | Conducted Output Power | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 5 | 4/14/2014 | Frequency Stability | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 6 | 4/16/2014 | Field Strength of Spurious Emissions | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | Scheduled testing was completed. |

# DUTY CYCLE

**TEST DESCRIPTION**

The Duty Cycle (x) were measured for each of the EUT operating modes. The measurements were made using a zero span on the spectrum analyzer to see the pulses in the time domain. The transmit power was set to its default maximum. A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used

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

The EUT operates at 100% Duty Cycle.

# CONDUCTED OUTPUT 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 - 20db, 'SMA' | SM Electronics | SA26B-20 | RFW | 4/3/2014 | 12 |
| 40 GHz DC block | Fairview Microwave | SD3379 | AMI | 9/26/2013 | 12 |
| Signal Generator MXG | Agilent | N5183A | TIK | 6/7/2012 | 36 |
| Spectrum Analyzer | Agilent | E4440A | AAX | 5/15/2012 | 24 |

**TEST DESCRIPTION**

The Average (RMS) output power was measured with the EUT set to the parameters called out in the data sheets. The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. Prior to making the measurements the setup, including cables and attenuators were calibrated and added into the reference level offset.

# CONDUCTED OUTPUT POWER

| | | | | | |
|---|---|---|---|---|---|
| **EUT:** | Prism HDM 800 MHz/1900 MHz SISO RF Module | | | **Work Order:** | TECO0013 |
| **Serial Number:** | None | | | **Date:** | 04/09/14 |
| **Customer:** | TE Connectivity / ADC Telecommunications | | | **Temperature:** | 24.2°C |
| **Attendees:** | None | | | **Humidity:** | 21% |
| **Project:** | None | | | **Barometric Pres.:** | 1013.5 |
| **Tested by:** | Trevor Buls | **Power:** | 110VAC/60Hz | **Job Site:** | MN08 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 90I:2014 | ANSI/TIA/EIA-603-C-2004 |
| | |

**COMMENTS**

Customer provided a high wattage 30 dB attenuator that was added into the reference level offset.

**DEVIATIONS FROM TEST STANDARD**

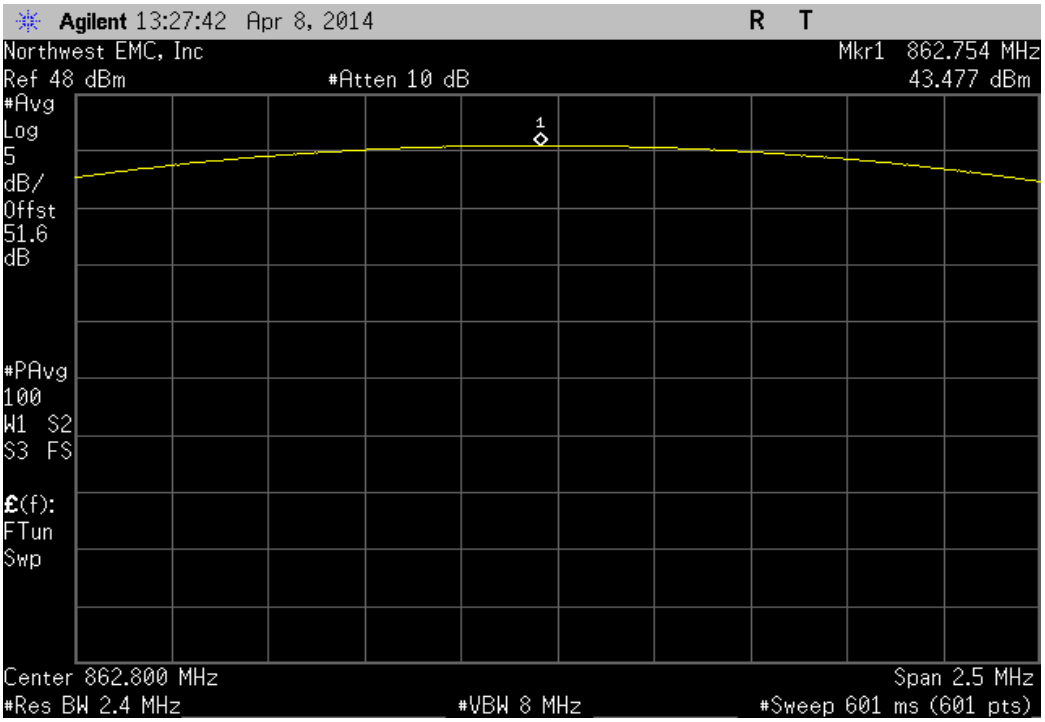
None

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

| | | Value | Limit | Result |
|---|---|---|---|---|
| CDMA | | | | |
| | Low Channel | 43.477 dBm | < 1640 W | Pass |
| | Mid Channel | 43.809 dBm | < 1640 W | Pass |
| | High Channel | 43.491 dBm | < 1640 W | Pass |
| LTE 1.4 MHz | | | | |
| | Low Channel | 43.397 dBm | < 1640 W | Pass |
| | Mid Channel | 43.742 dBm | < 1640 W | Pass |
| | High Channel | 43.634 dBm | < 1640 W | Pass |
| LTE 3 MHz | | | | |
| | Low Channel | 43.914 dBm | < 1640 W | Pass |
| | Mid Channel | 43.97 dBm | < 1640 W | Pass |
| | High Channel | 43.846 dBm | < 1640 W | Pass |

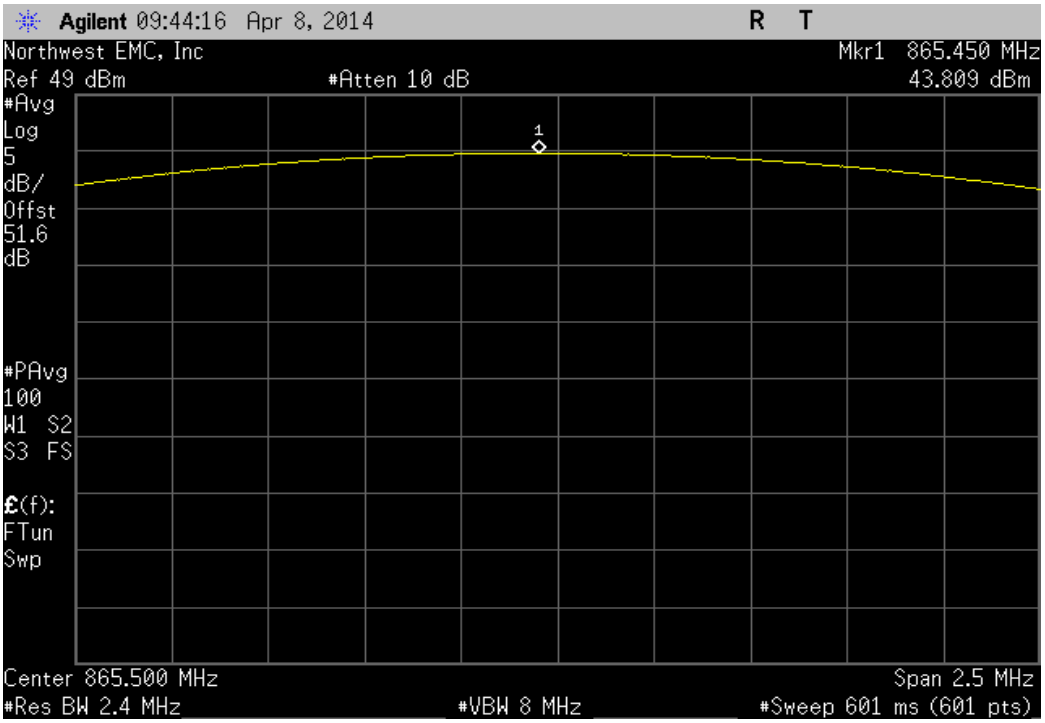
CDMA, Low Channel

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 43.477 dBm | < 1640 W | Pass |



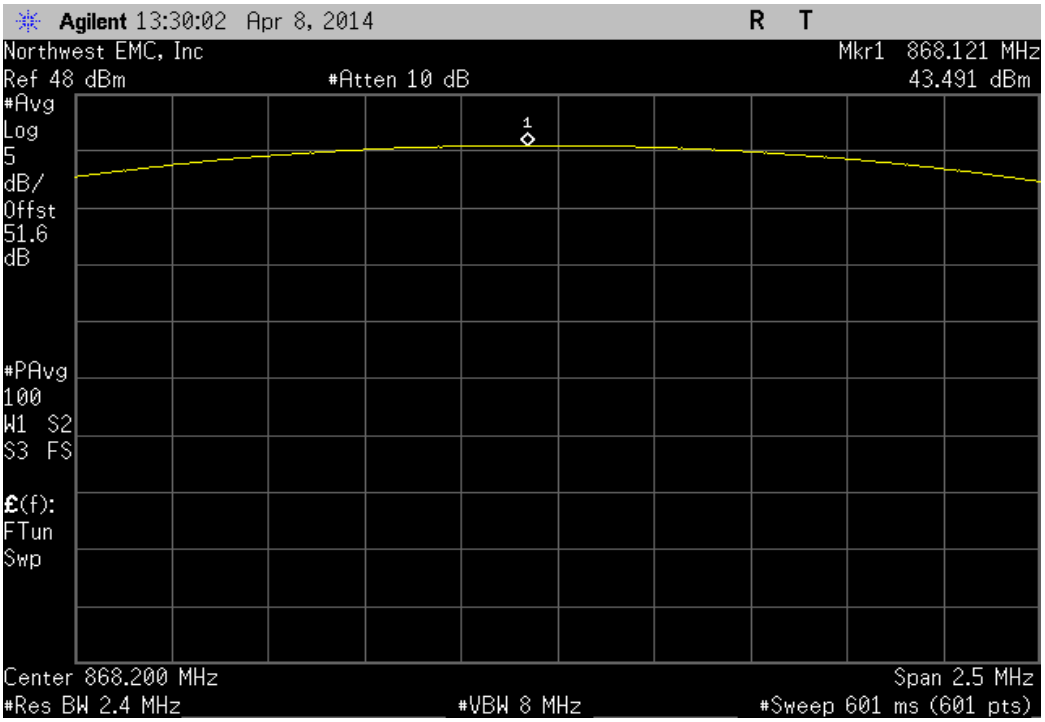

CDMA, Mid Channel

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 43.809 dBm | < 1640 W | Pass |



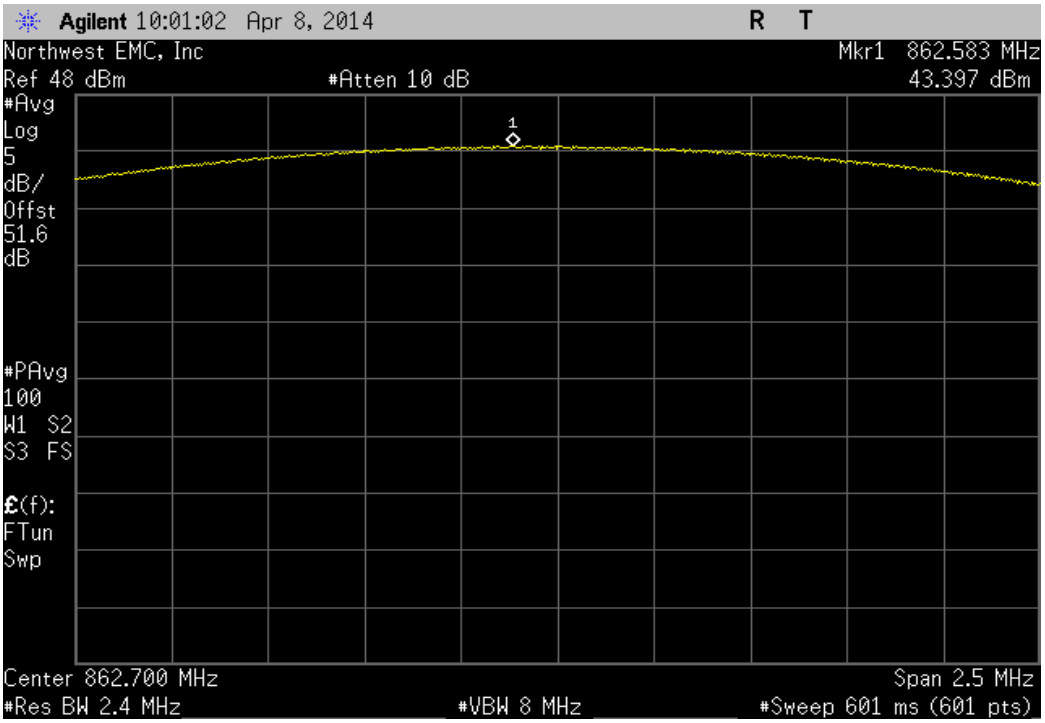
CDMA, High Channel

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 43.491 dBm | < 1640 W | Pass |



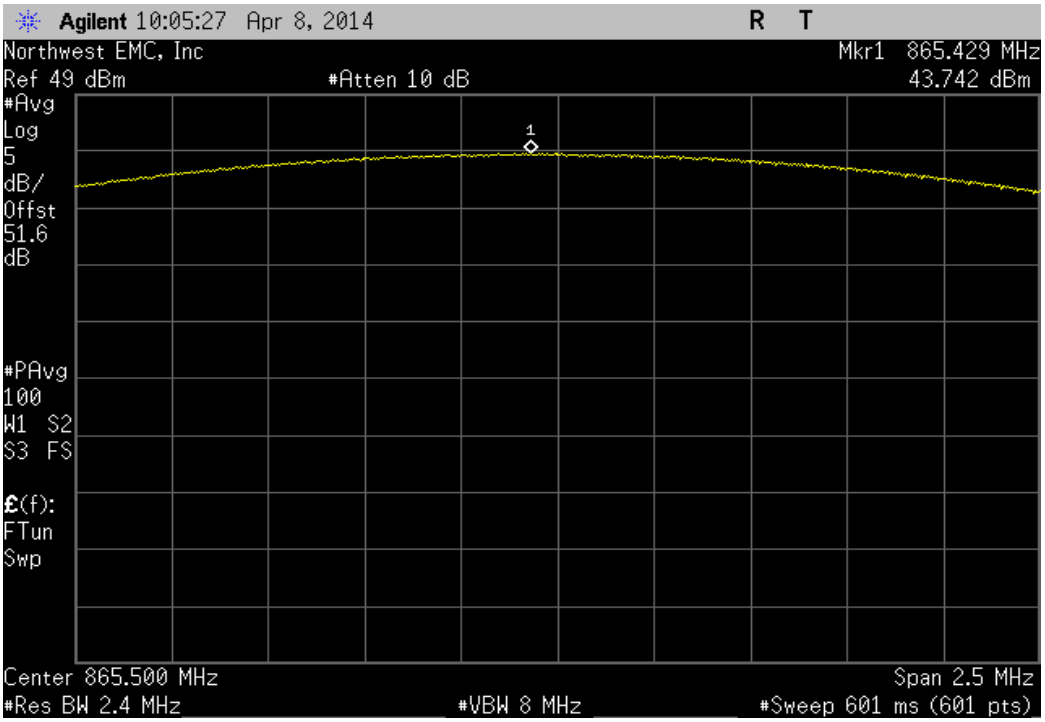

LTE 1.4 MHz, Low Channel

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 43.397 dBm | < 1640 W | Pass |



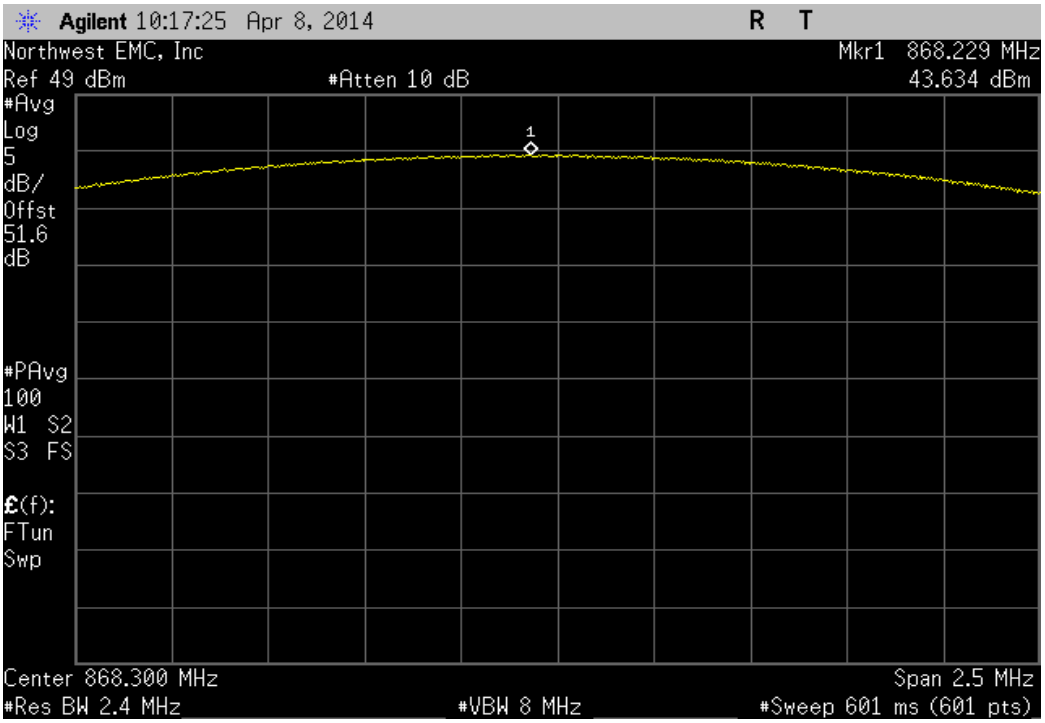
LTE 1.4 MHz, Mid Channel

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 43.742 dBm | < 1640 W | Pass |



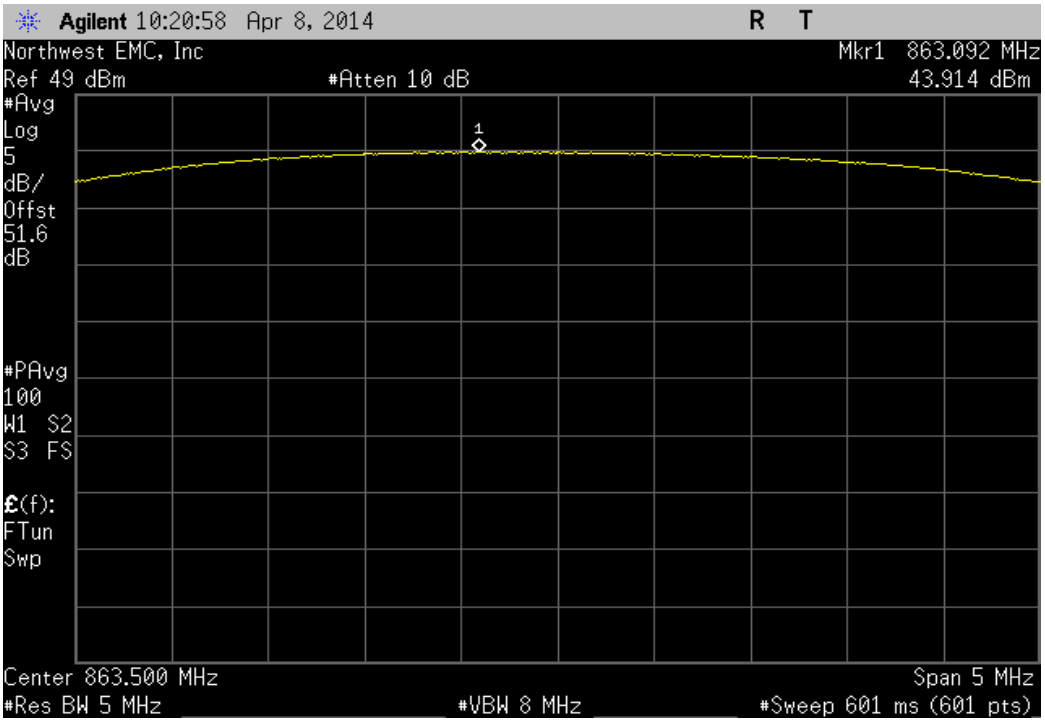

LTE 1.4 MHz, High Channel

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 43.634 dBm | < 1640 W | Pass |



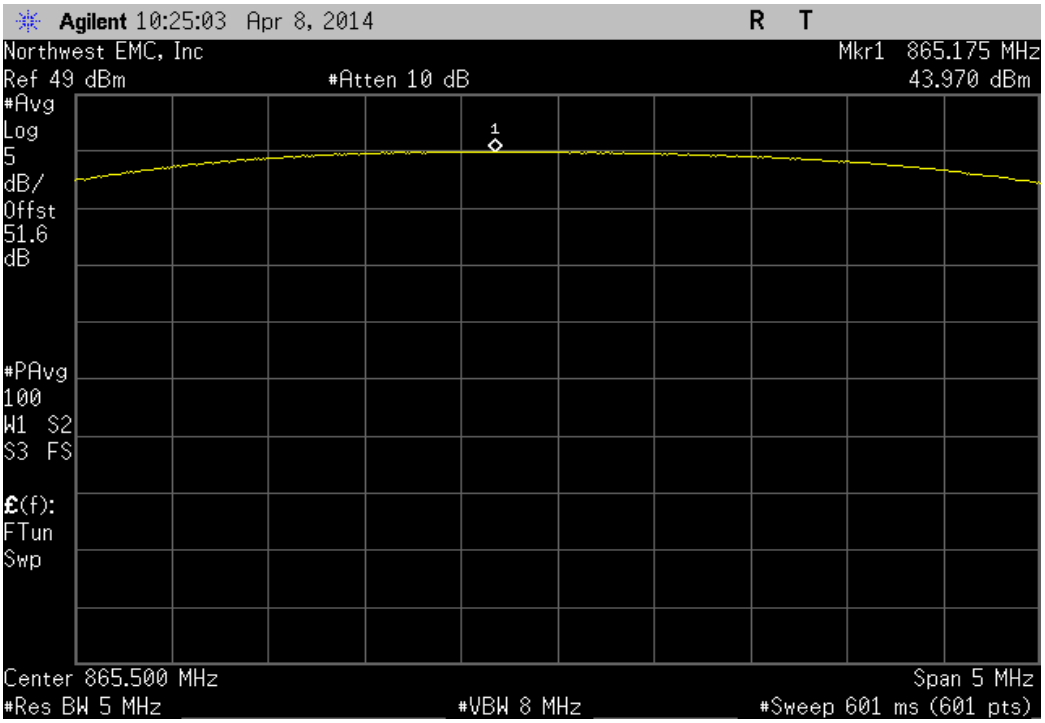
LTE 3 MHz, Low Channel

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 43.914 dBm | < 1640 W | Pass |



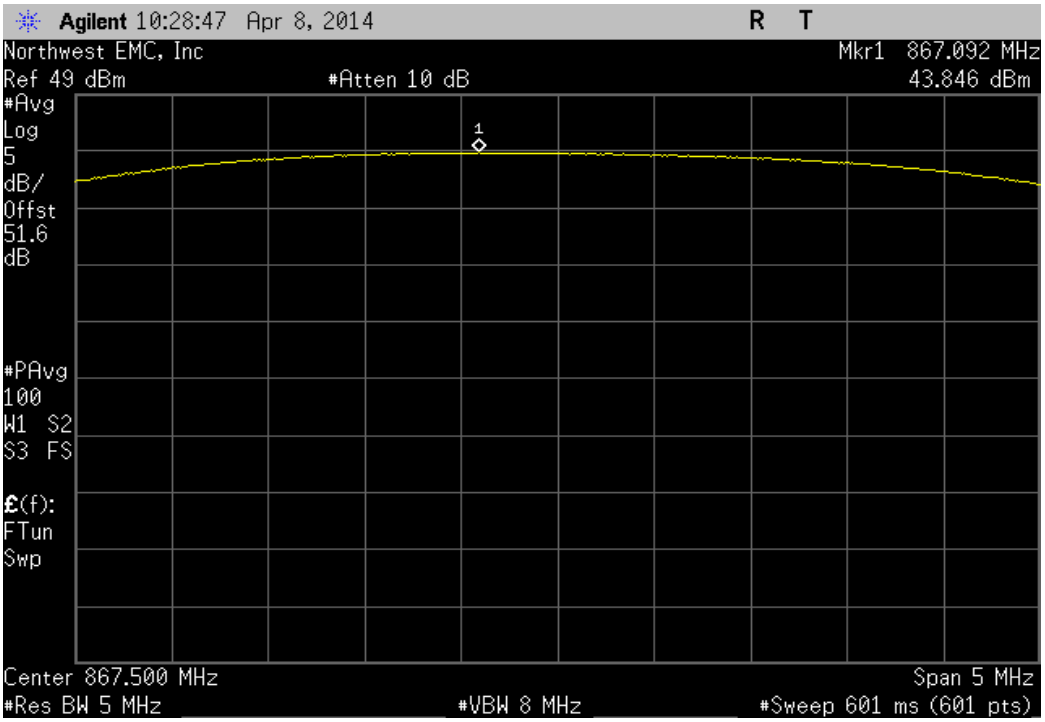

LTE 3 MHz, Mid Channel

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 43.97 dBm | < 1640 W | Pass |



LTE 3 MHz, High Channel

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 43.846 dBm | < 1640 W | Pass |



# OUT OF BAND EMISSIONS - CONDUCTED

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 |
|---|---|---|---|---|---|
| Low Pass Filter 0-425 MHz | Micro-Tronics | LPM50003 | HGU | 10/5/2012 | 24 |
| High Pass Filter 1.2-18 GHz | Micro-Tronics | HPM50108 | HGX | 10/5/2012 | 24 |
| Attenuator | Aeroflex | 48-30-34 | RCU | 7/3/2013 | 12 |
| Attenuator - 20db, 'SMA' | SM Electronics | SA26B-20 | RFW | 4/3/2014 | 12 |
| 40 GHz DC block | Fairview Microwave | SD3379 | AMI | 9/26/2013 | 12 |
| Signal Generator MXG | Agilent | N5183A | TIK | 6/7/2012 | 36 |
| Spectrum Analyzer | Agilent | E4440A | AAX | 5/15/2012 | 24 |

**TEST DESCRIPTION**

The antenna port spurious emissions were measured at the RF output terminal of the EUT with external attenuation on the RF input of the spectrum analyzer. Analyzer plots utilizing a 1 MHz resolution bandwidth and no video filtering were made for each modulation type from 30 MHz to 9 GHz. The peak conducted power of spurious emissions, up to the 10th harmonic of the transmit frequency, were investigated to ensure they were less than or equal to –13 dBm.

# OUT OF BAND EMISSIONS -CONDUCTED

| | | | | | |
|---|---|---|---|---|---|
| **EUT:** | Prism HDM 800 MHz/1900 MHz SISO RF Module | | | **Work Order:** | TECO0013 |
| **Serial Number:** | None | | | **Date:** | 04/09/14 |
| **Customer:** | TE Connectivity / ADC Telecommunications | | | **Temperature:** | 24.2°C |
| **Attendees:** | None | | | **Humidity:** | 21% |
| **Project:** | None | | | **Barometric Pres.:** | 1013.5 |
| **Tested by:** | Trevor Buls | **Power:** | 110VAC/60Hz | **Job Site:** | MN08 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 90I:2014 | ANSI/TIA/EIA-603-C-2004 |
| | |

**COMMENTS**

None

**DEVIATIONS FROM TEST STANDARD**

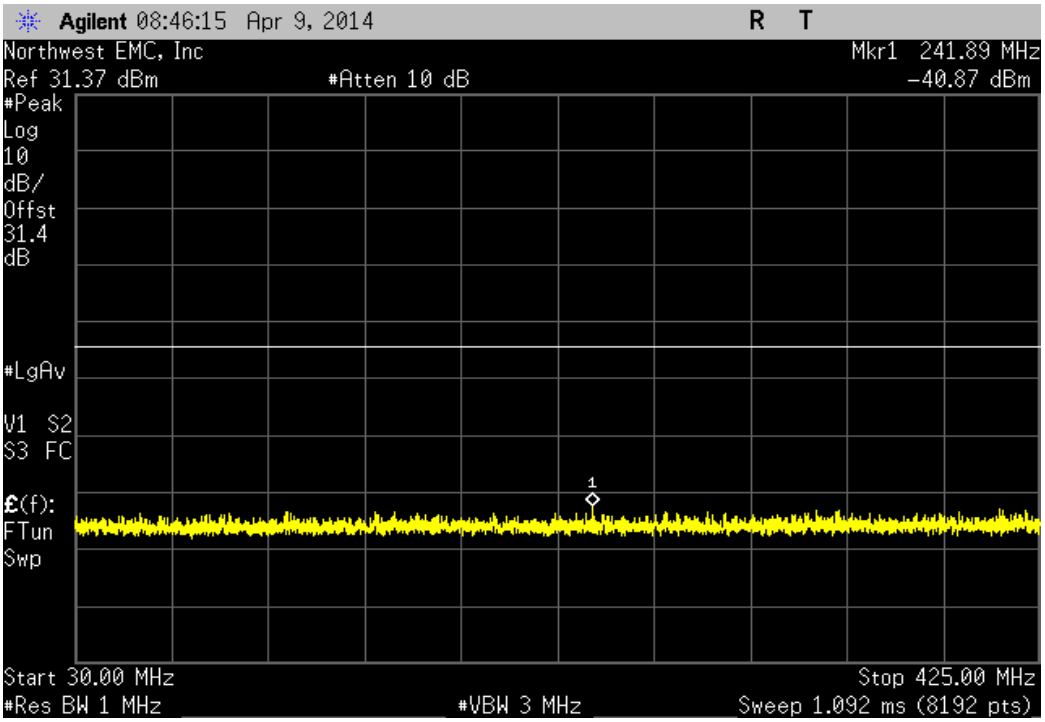
None

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

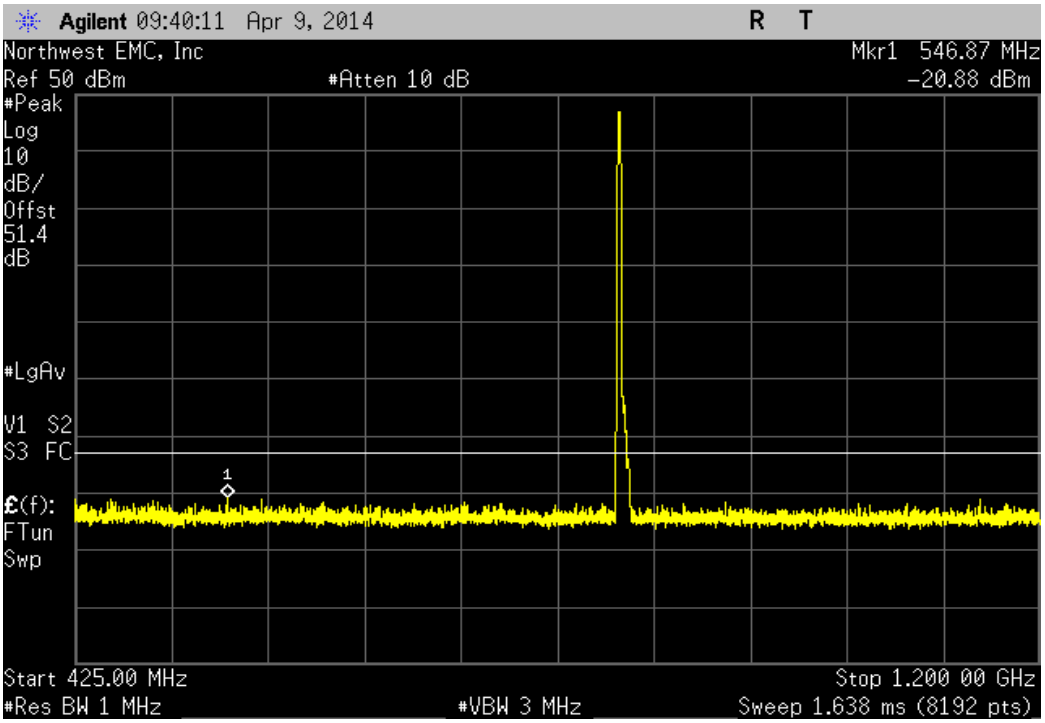
| | | Frequency Range | Value | Limit | Result |
|---|---|---|---|---|---|
| CDMA | | | | | |
| | Low Channel | 30 MHz - 425 MHz | -40.87 dBm | ≤ -13 dBm | Pass |
| | Low Channel | 425 MHz - 1.2 GHz | -20.88 dBm | ≤ -13 dBm | Pass |
| | Low Channel | 1.2 GHz - 9 GHz | -37.11 dBm | ≤ -13 dBm | Pass |
| | Mid Channel | 30 MHz - 425 MHz | -41.32 dBm | ≤ -13 dBm | Pass |
| | Mid Channel | 425 MHz - 1.2 GHz | -19.7 dBm | ≤ -13 dBm | Pass |
| | Mid Channel | 1.2 GHz - 9 GHz | -37.6 dBm | ≤ -13 dBm | Pass |
| | High Channel | 30 MHz - 425 MHz | -39.79 dBm | ≤ -13 dBm | Pass |
| | High Channel | 425 MHz - 1.2 GHz | -20.56 dBm | ≤ -13 dBm | Pass |
| | High Channel | 1.2 GHz - 9 GHz | -36.68 dBm | ≤ -13 dBm | Pass |
| LTE 1.4 MHz | | | | | |
| | Low Channel | 30 MHz - 425 MHz | -38.87 dBm | ≤ -13 dBm | Pass |
| | Low Channel | 425 MHz - 1.2 GHz | -20.74 dBm | ≤ -13 dBm | Pass |
| | Low Channel | 1.2 GHz - 9 GHz | -37.56 dBm | ≤ -13 dBm | Pass |
| | Mid Channel | 30 MHz - 425 MHz | -40.05 dBm | ≤ -13 dBm | Pass |
| | Mid Channel | 425 MHz - 1.2 GHz | -20.67 dBm | ≤ -13 dBm | Pass |
| | Mid Channel | 1.2 GHz - 9 GHz | -37.5 dBm | ≤ -13 dBm | Pass |
| | High Channel | 30 MHz - 425 MHz | -39.37 dBm | ≤ -13 dBm | Pass |
| | High Channel | 425 MHz - 1.2 GHz | -20.5 dBm | ≤ -13 dBm | Pass |
| | High Channel | 1.2 GHz - 9 GHz | -37.23 dBm | ≤ -13 dBm | Pass |
| LTE 3 MHz | | | | | |
| | Low Channel | 30 MHz - 425 MHz | -39.36 dBm | ≤ -13 dBm | Pass |
| | Low Channel | 425 MHz - 1.2 GHz | -20.73 dBm | ≤ -13 dBm | Pass |
| | Low Channel | 1.2 GHz - 9 GHz | -37.53 dBm | ≤ -13 dBm | Pass |
| | Mid Channel | 30 MHz - 425 MHz | -39.69 dBm | ≤ -13 dBm | Pass |
| | Mid Channel | 425 MHz - 1.2 GHz | -21.37 dBm | ≤ -13 dBm | Pass |
| | Mid Channel | 1.2 GHz - 9 GHz | -37.63 dBm | ≤ -13 dBm | Pass |
| | High Channel | 30 MHz - 425 MHz | -39.87 dBm | ≤ -13 dBm | Pass |
| | High Channel | 425 MHz - 1.2 GHz | -20.63 dBm | ≤ -13 dBm | Pass |
| | High Channel | 1.2 GHz - 9 GHz | -37.63 dBm | ≤ -13 dBm | Pass |

# OUT OF BAND EMISSIONS -CONDUCTED

| CDMA, Low Channel | | | | |
|---|---|---|---|---|
| **Frequency Range** | | **Value** | **Limit** | **Result** |
| 30 MHz - 425 MHz | | -40.87 dBm | ≤ -13 dBm | Pass |

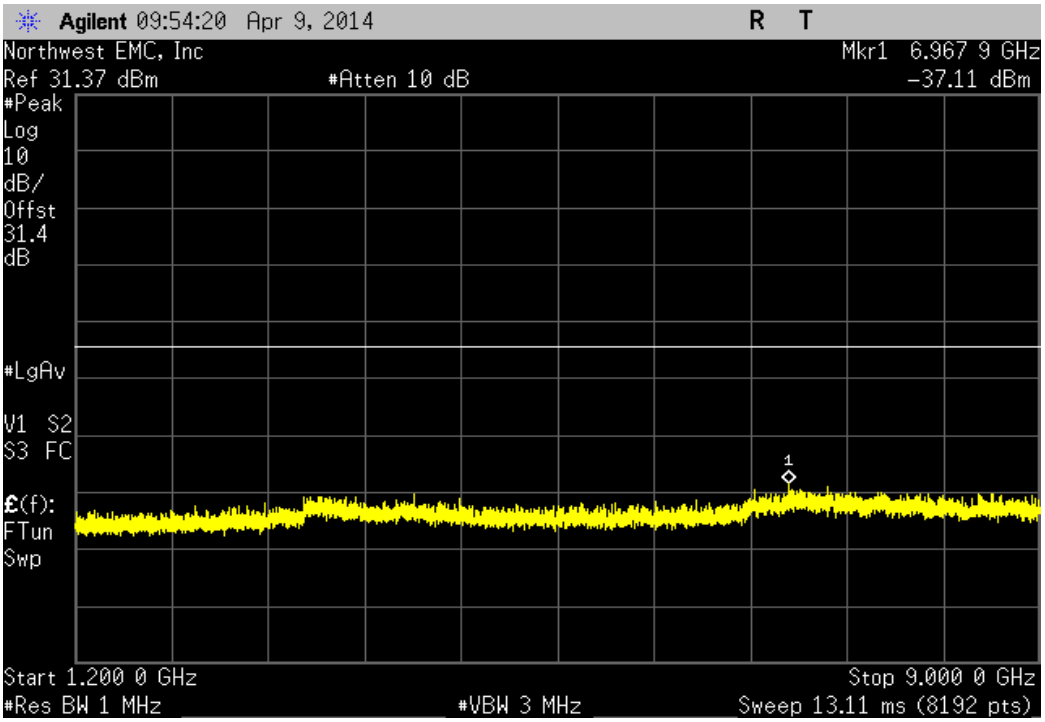



| CDMA, Low Channel | | | | |
|---|---|---|---|---|
| **Frequency Range** | | **Value** | **Limit** | **Result** |
| 425 MHz - 1.2 GHz | | -20.88 dBm | ≤ -13 dBm | Pass |

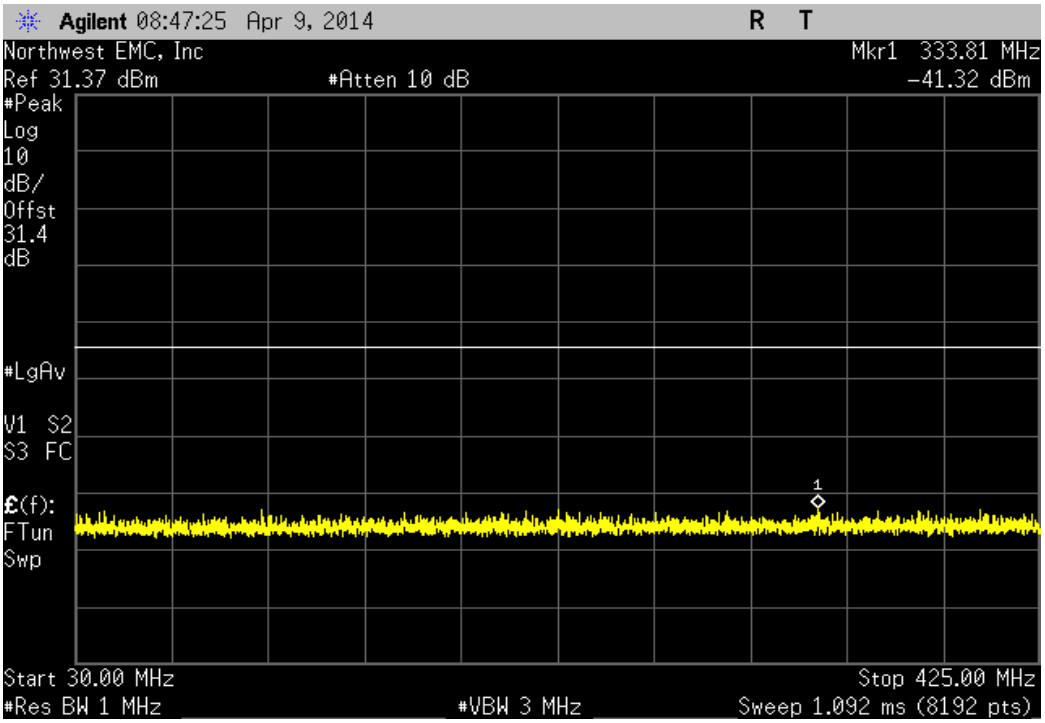


# OUT OF BAND EMISSIONS -CONDUCTED

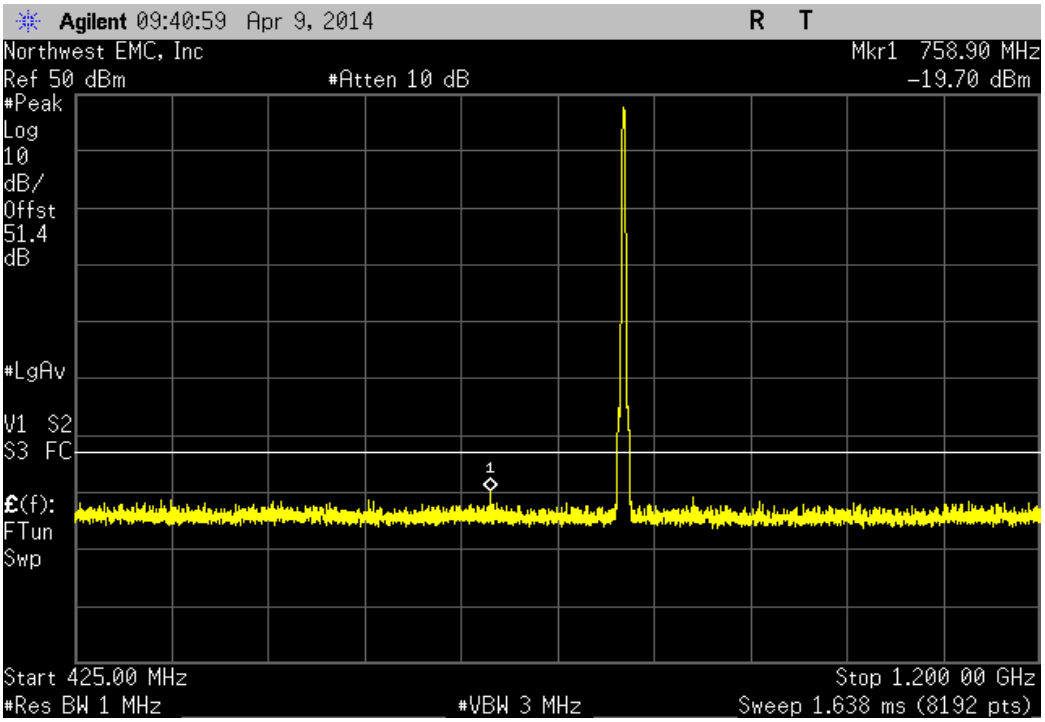
| CDMA, Low Channel | | | | | |
|---|---|---|---|---|---|
| Frequency Range | | | Value | Limit | Result |
| 1.2 GHz - 9 GHz | | | -37.11 dBm | ≤ -13 dBm | Pass |



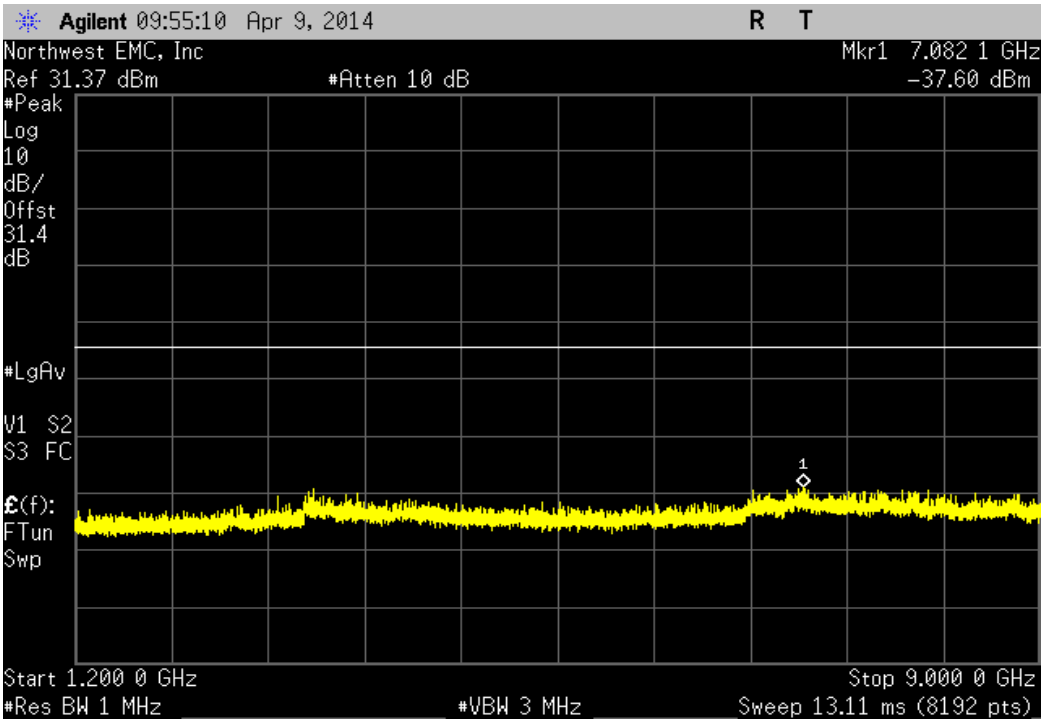

| CDMA, Mid Channel | | | | | |
|---|---|---|---|---|---|
| Frequency Range | | | Value | Limit | Result |
| 30 MHz - 425 MHz | | | -41.32 dBm | ≤ -13 dBm | Pass |



| CDMA, Mid Channel | | | | |
|---|---|---|---|---|
| Frequency Range | | Value | Limit | Result |
| 425 MHz - 1.2 GHz | | -19.7 dBm | ≤ -13 dBm | Pass |

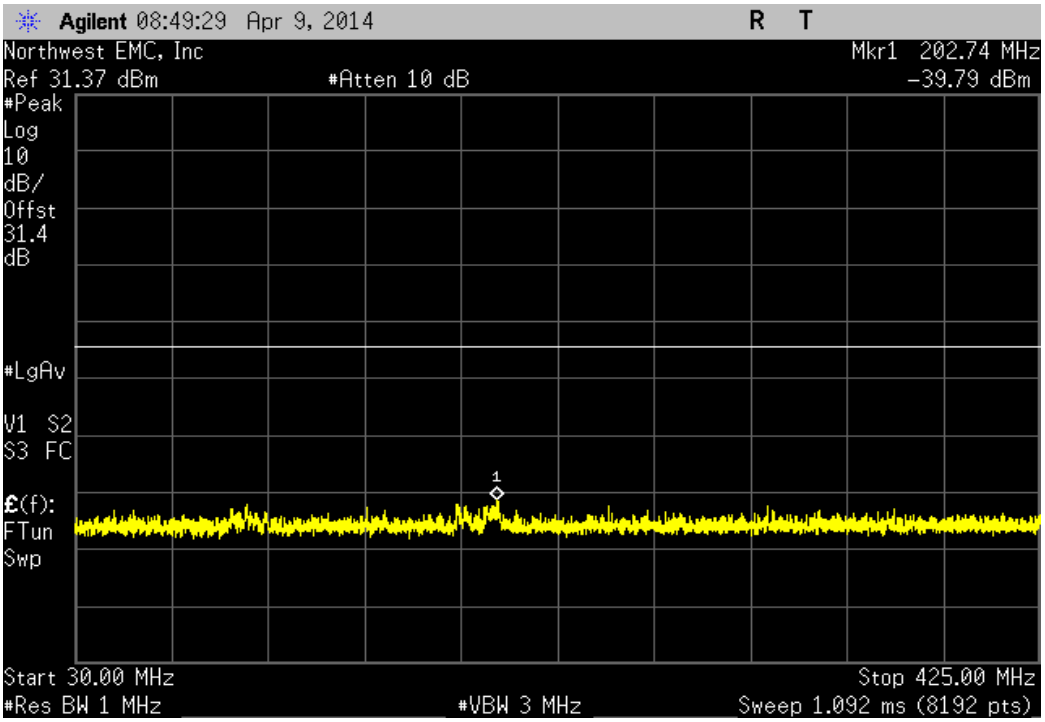



| CDMA, Mid Channel | | | | | |
|---|---|---|---|---|---|
| Frequency Range | | | Value | Limit | Result |
| | 1.2 GHz - 9 GHz | | -37.6 dBm | ≤ -13 dBm | Pass |

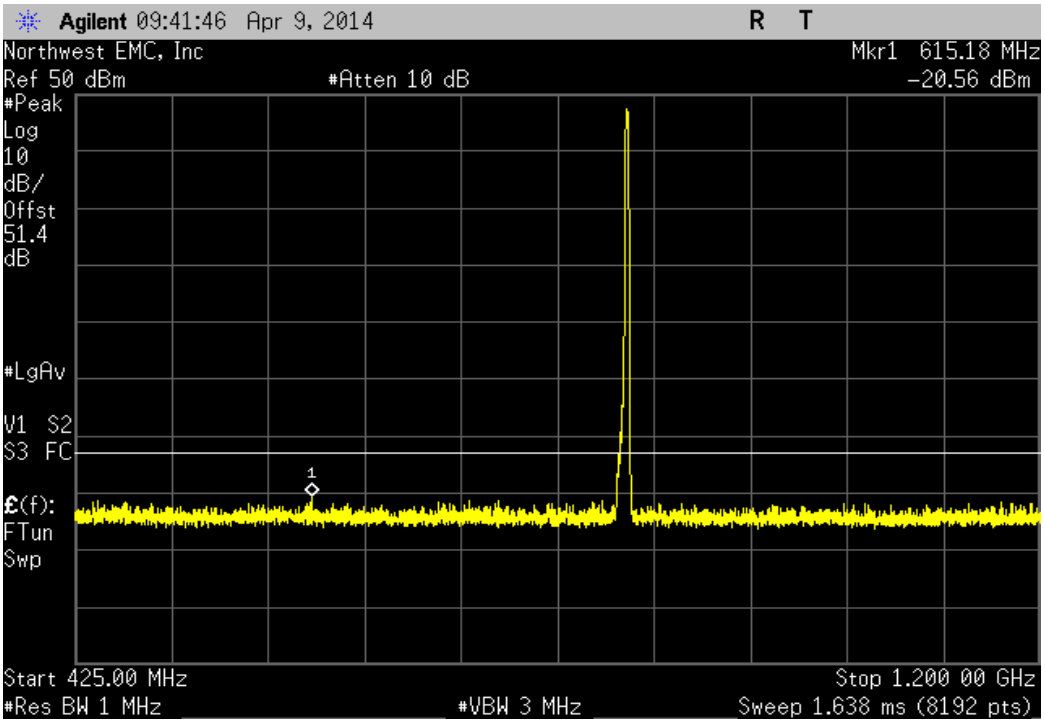


# OUT OF BAND EMISSIONS -CONDUCTED

| CDMA, High Channel | | | | |
|---|---|---|---|---|
| **Frequency Range** | | **Value** | **Limit** | **Result** |
| 30 MHz - 425 MHz | | -39.79 dBm | ≤ -13 dBm | Pass |

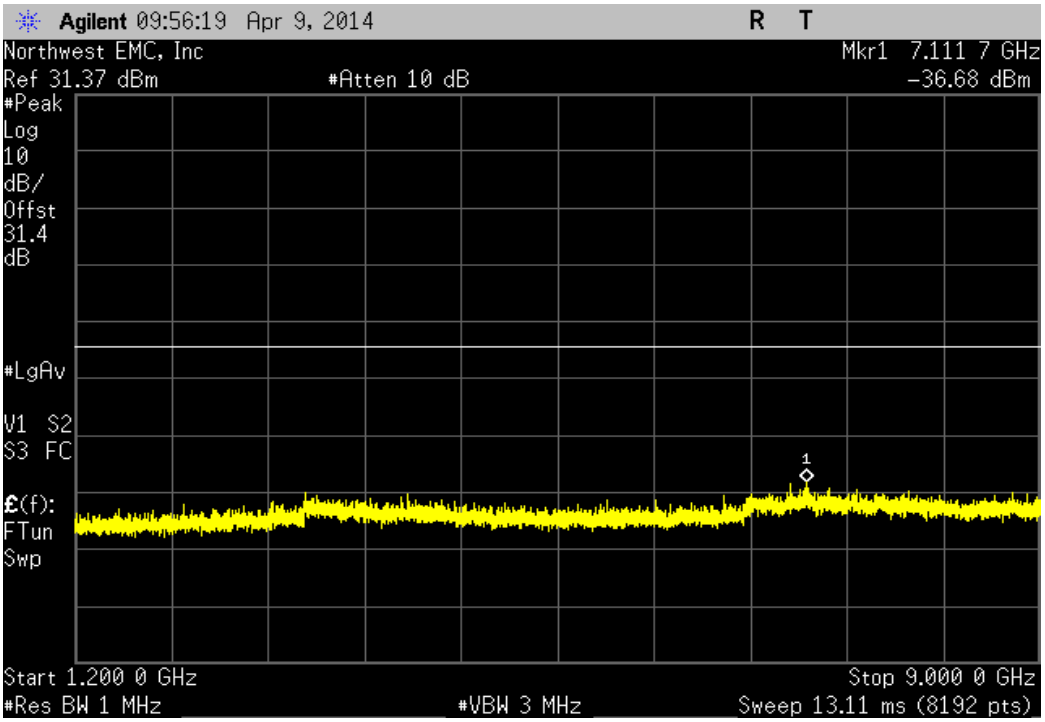



| CDMA, High Channel | | | | |
|---|---|---|---|---|
| **Frequency Range** | | **Value** | **Limit** | **Result** |
| 425 MHz - 1.2 GHz | | -20.56 dBm | ≤ -13 dBm | Pass |

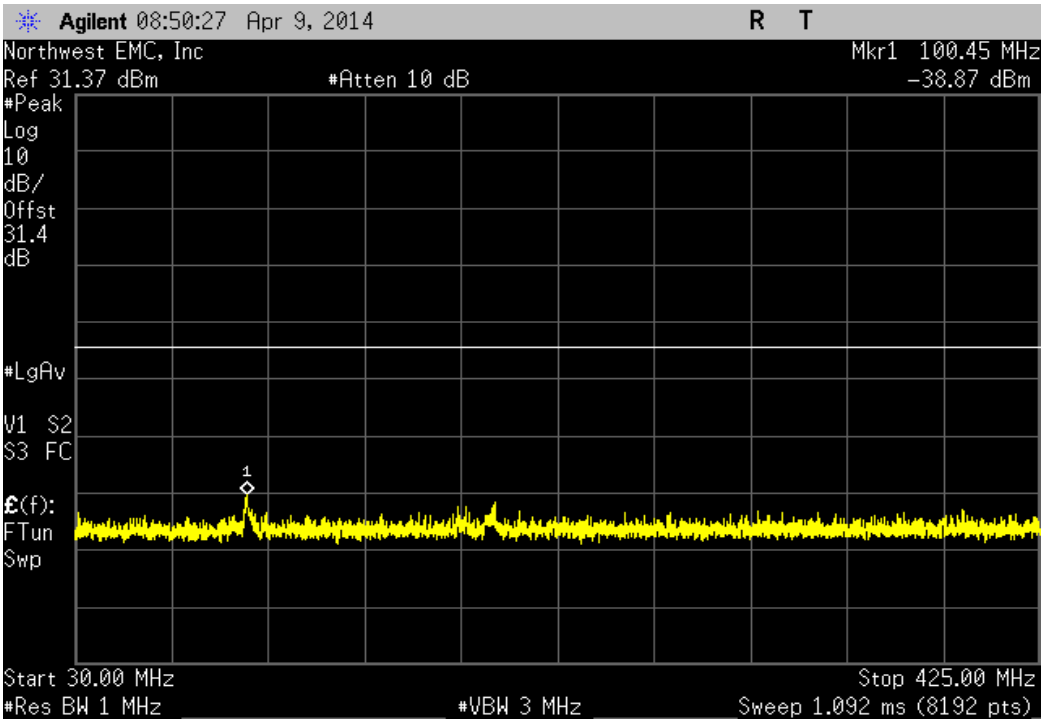


# OUT OF BAND EMISSIONS -CONDUCTED

| CDMA, High Channel | | | | | |
|---|---|---|---|---|---|
| Frequency Range | | | Value | Limit | Result |
| 1.2 GHz - 9 GHz | | | -36.68 dBm | ≤ -13 dBm | Pass |

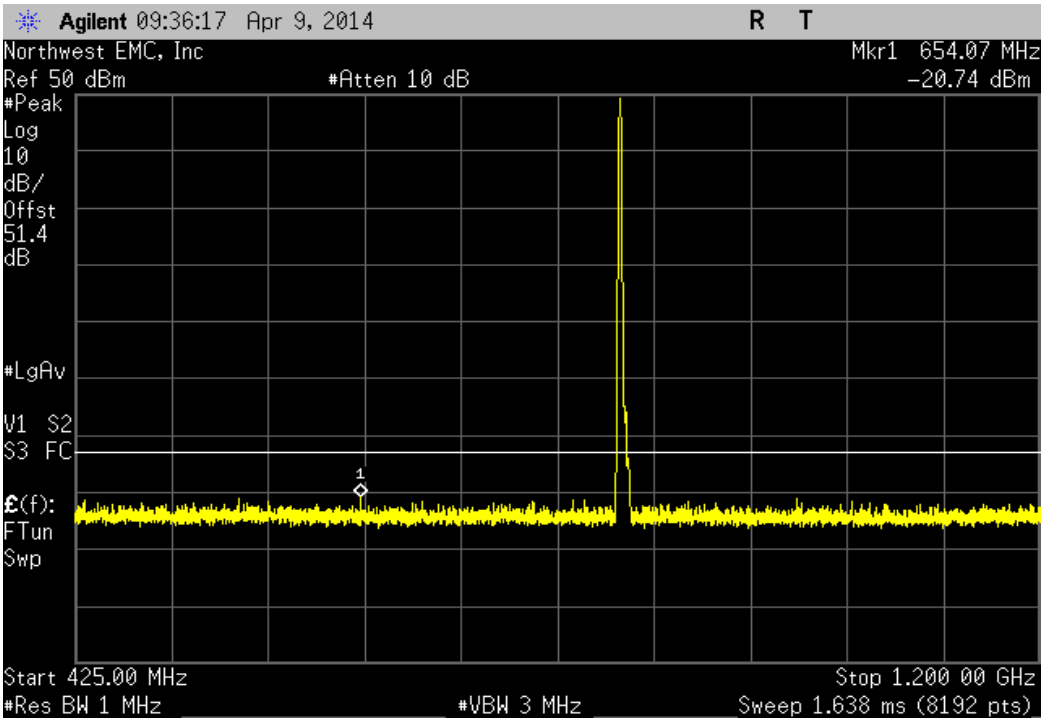



| LTE 1.4 MHz, Low Channel | | | | | |
|---|---|---|---|---|---|
| Frequency Range | | | Value | Limit | Result |
| 30 MHz - 425 MHz | | | -38.87 dBm | ≤ -13 dBm | Pass |

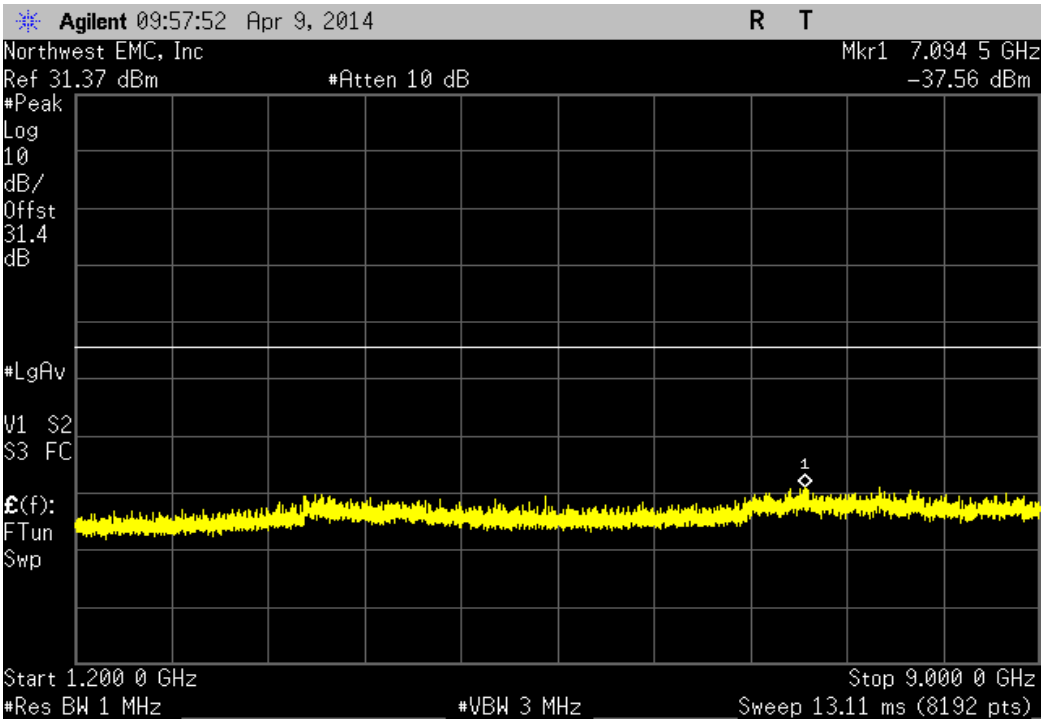


# OUT OF BAND EMISSIONS -CONDUCTED

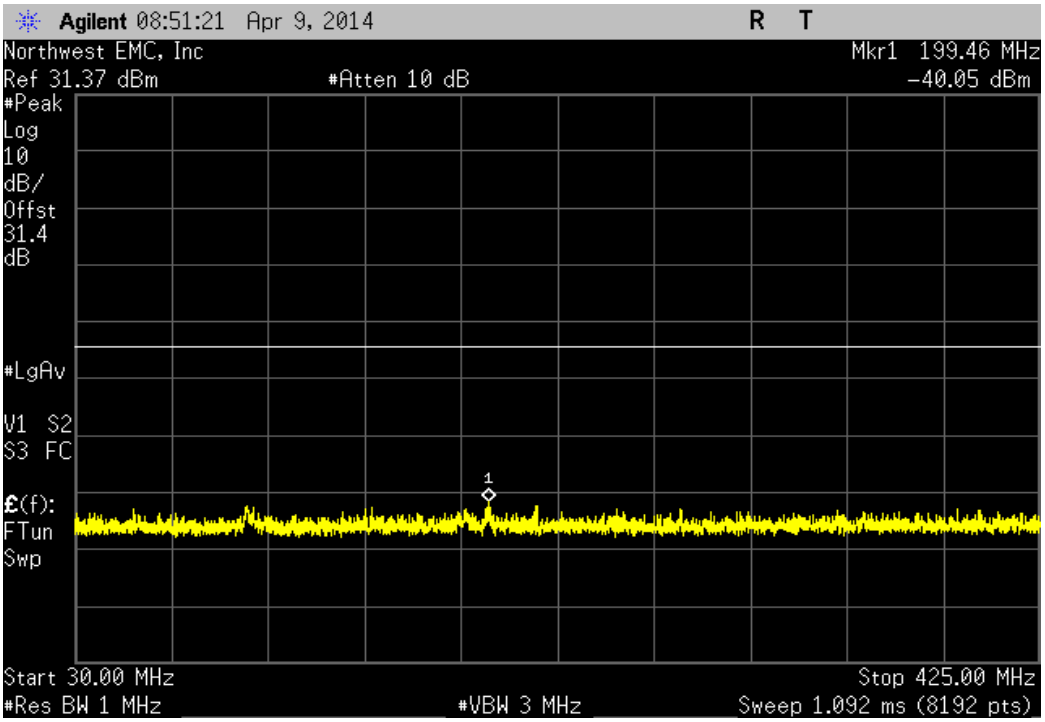
| LTE 1.4 MHz, Low Channel | | | | |
|---|---|---|---|---|
| **Frequency Range** | | **Value** | **Limit** | **Result** |
| 425 MHz - 1.2 GHz | | -20.74 dBm | ≤ -13 dBm | Pass |



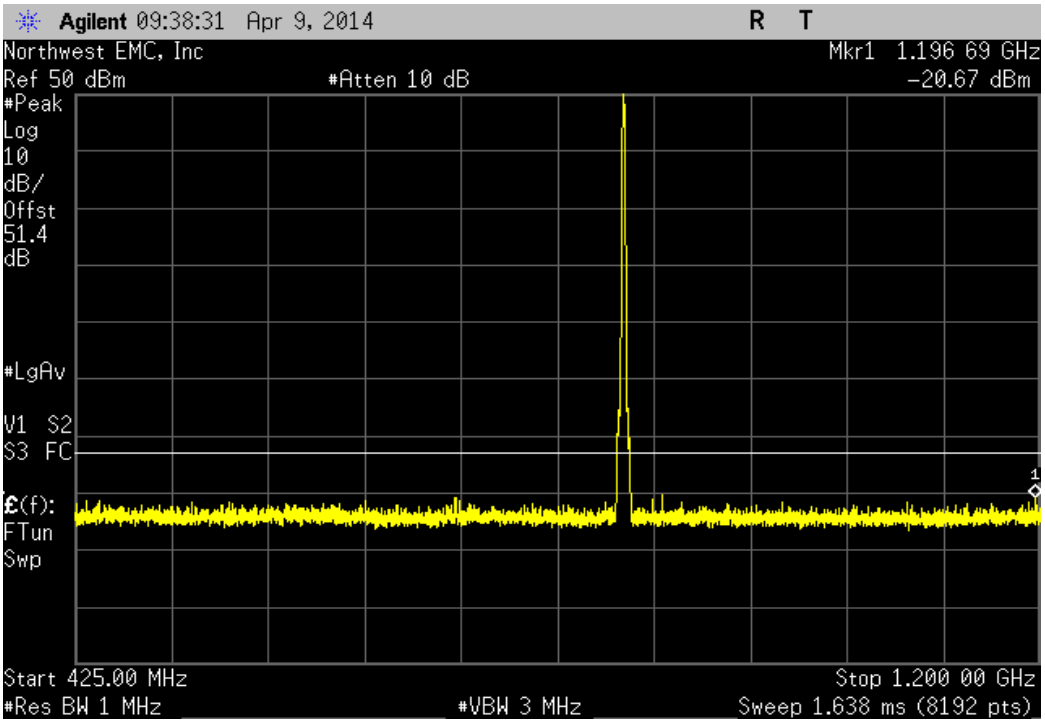

| LTE 1.4 MHz, Low Channel | | | | | | |
|---|---|---|---|---|---|---|
| **Frequency Range** | | | | **Value** | **Limit** | **Result** |
| | 1.2 GHz - 9 GHz | | | -37.56 dBm | ≤ -13 dBm | Pass |



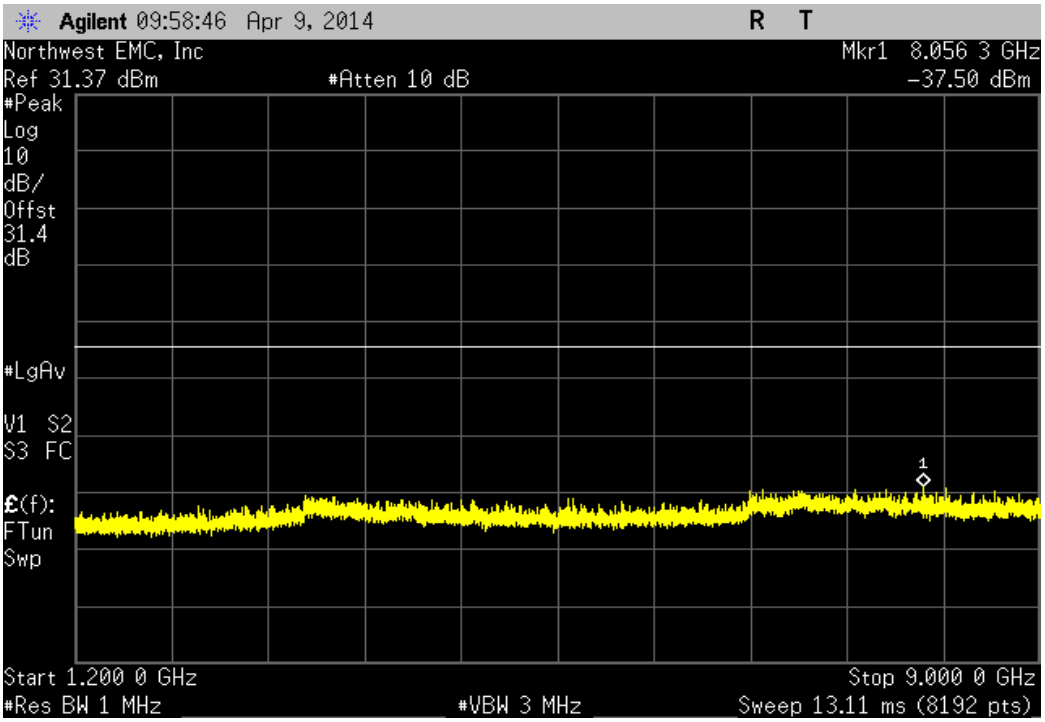
| LTE 1.4 MHz, Mid Channel | | | | |
|---|---|---|---|---|
| **Frequency Range** | | **Value** | **Limit** | **Result** |
| 30 MHz - 425 MHz | | -40.05 dBm | ≤ -13 dBm | Pass |



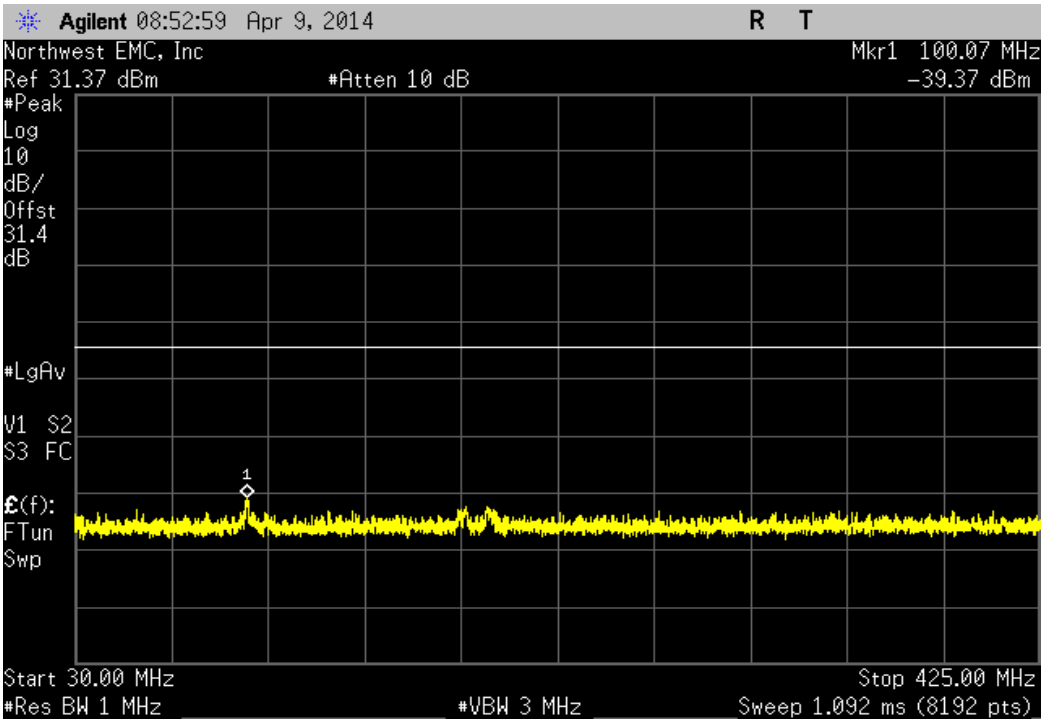

| LTE 1.4 MHz, Mid Channel | | | | |
|---|---|---|---|---|
| **Frequency Range** | | **Value** | **Limit** | **Result** |
| 425 MHz - 1.2 GHz | | -20.67 dBm | ≤ -13 dBm | Pass |



| LTE 1.4 MHz, Mid Channel | | | | | |
|---|---|---|---|---|---|
| Frequency Range | | | Value | Limit | Result |
| 1.2 GHz - 9 GHz | | | -37.5 dBm | ≤ -13 dBm | Pass |

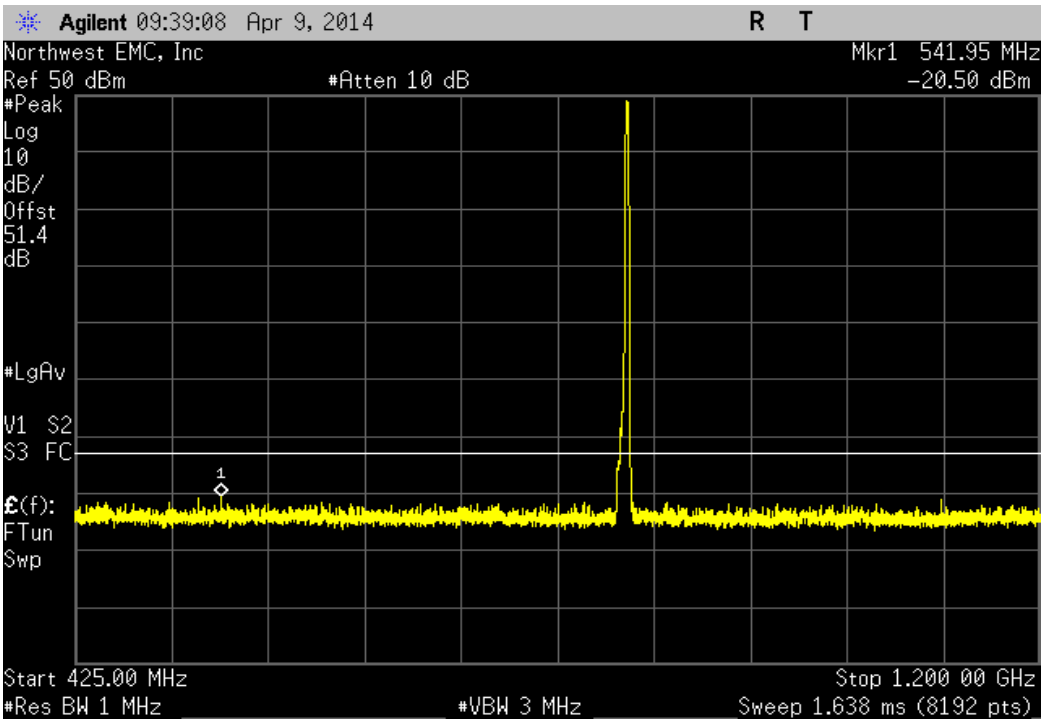



| LTE 1.4 MHz, High Channel | | | | | |
|---|---|---|---|---|---|
| Frequency Range | | | Value | Limit | Result |
| 30 MHz - 425 MHz | | | -39.37 dBm | ≤ -13 dBm | Pass |

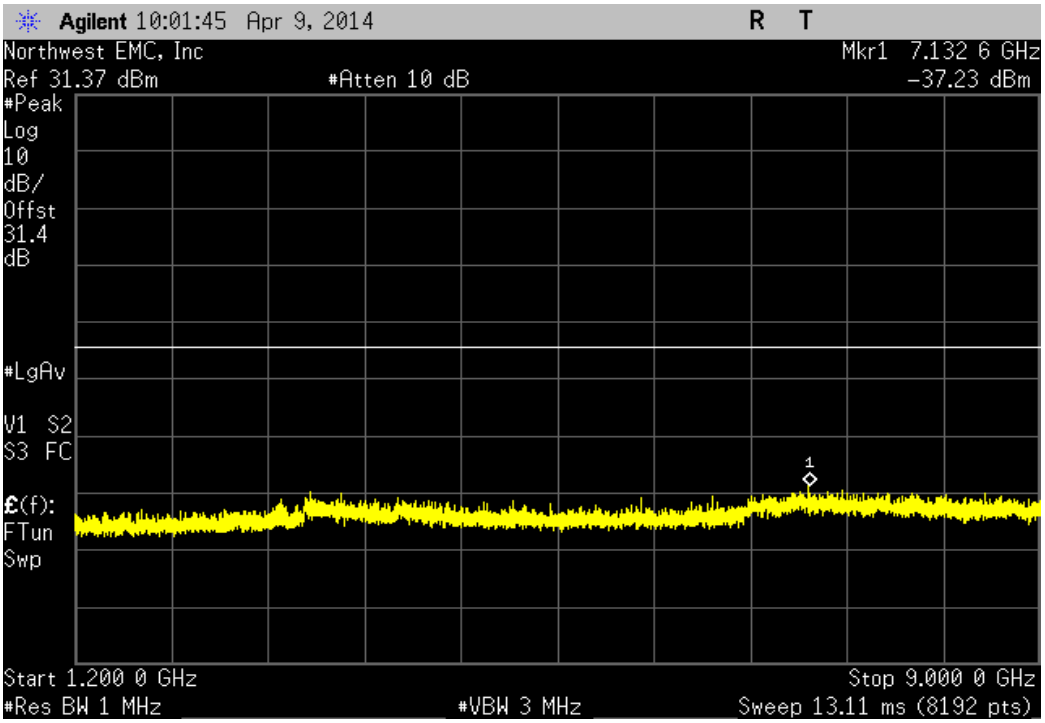


# OUT OF BAND EMISSIONS -CONDUCTED

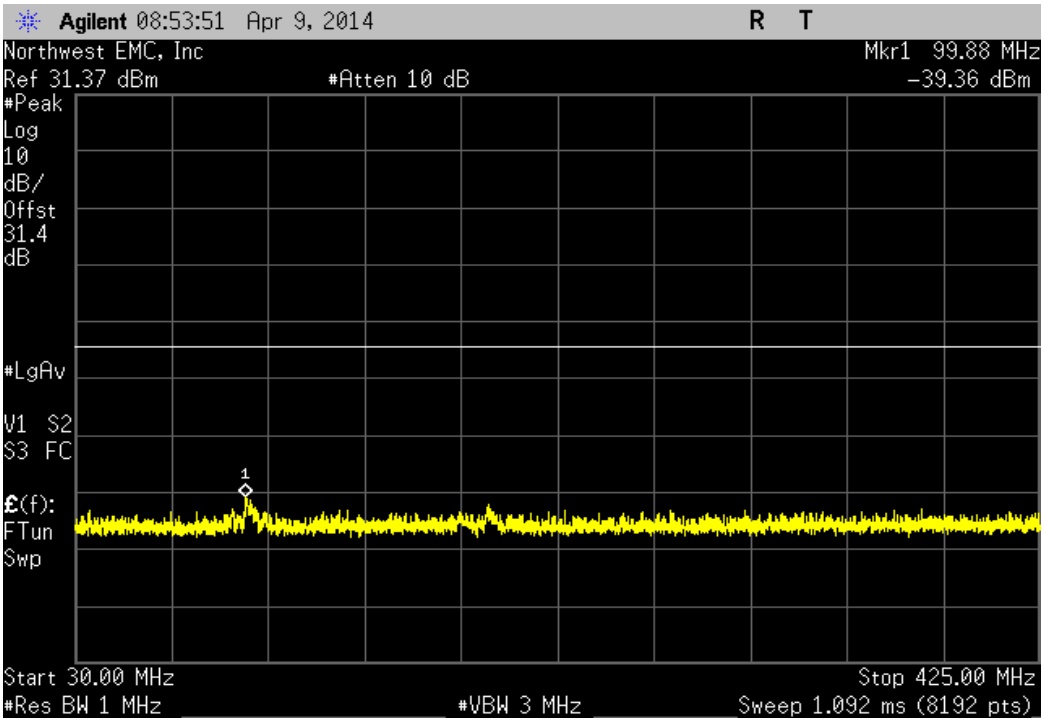
| LTE 1.4 MHz, High Channel | | | | |
|---|---|---|---|---|
| **Frequency Range** | | **Value** | **Limit** | **Result** |
| 425 MHz - 1.2 GHz | | -20.5 dBm | ≤ -13 dBm | Pass |



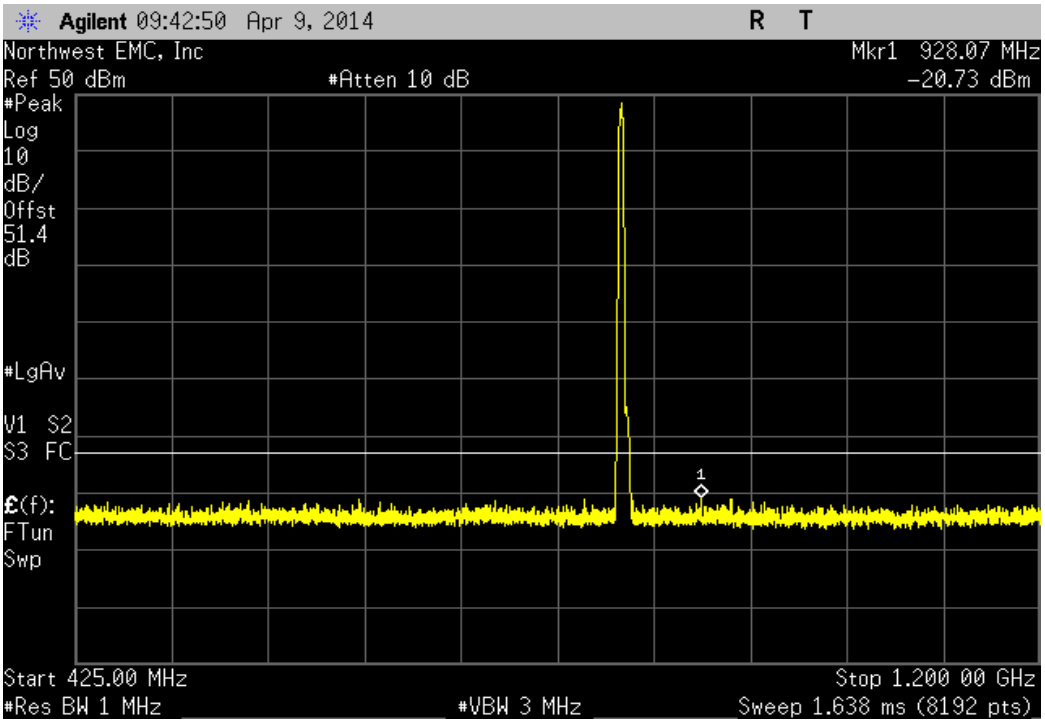

| LTE 1.4 MHz, High Channel | | | | |
|---|---|---|---|---|
| **Frequency Range** | | **Value** | **Limit** | **Result** |
| 1.2 GHz - 9 GHz | | -37.23 dBm | ≤ -13 dBm | Pass |



| LTE 3 MHz, Low Channel | | | | |
|---|---|---|---|---|
| **Frequency Range** | | **Value** | **Limit** | **Result** |
| 30 MHz - 425 MHz | | -39.36 dBm | ≤ -13 dBm | Pass |

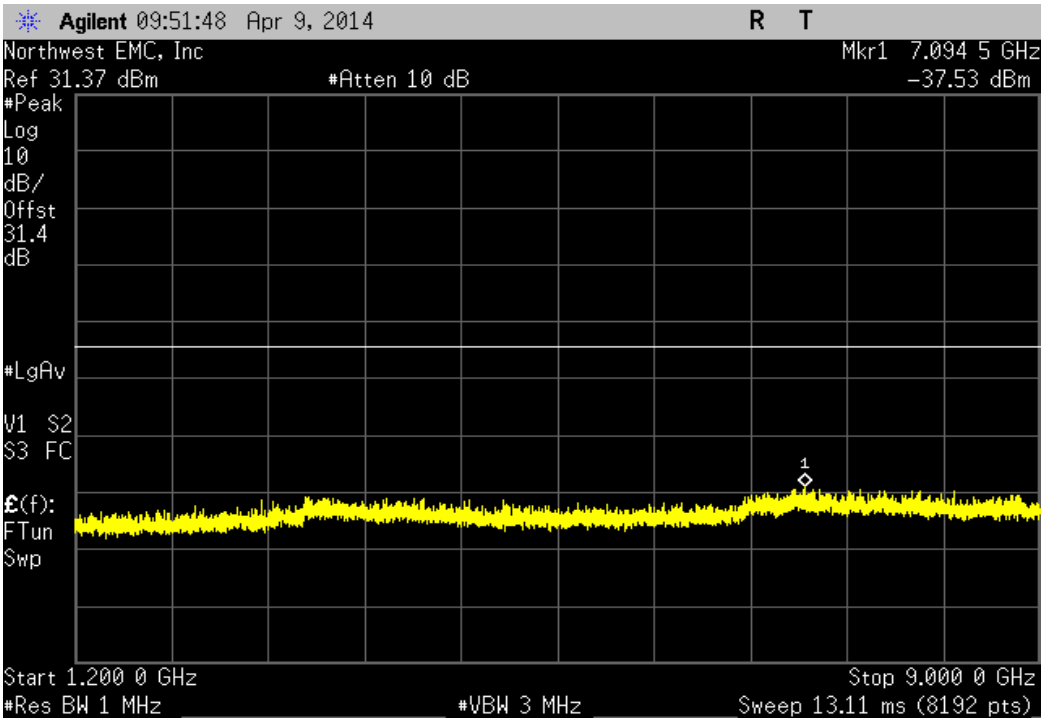



| LTE 3 MHz, Low Channel | | | | |
|---|---|---|---|---|
| **Frequency Range** | | **Value** | **Limit** | **Result** |
| 425 MHz - 1.2 GHz | | -20.73 dBm | ≤ -13 dBm | Pass |

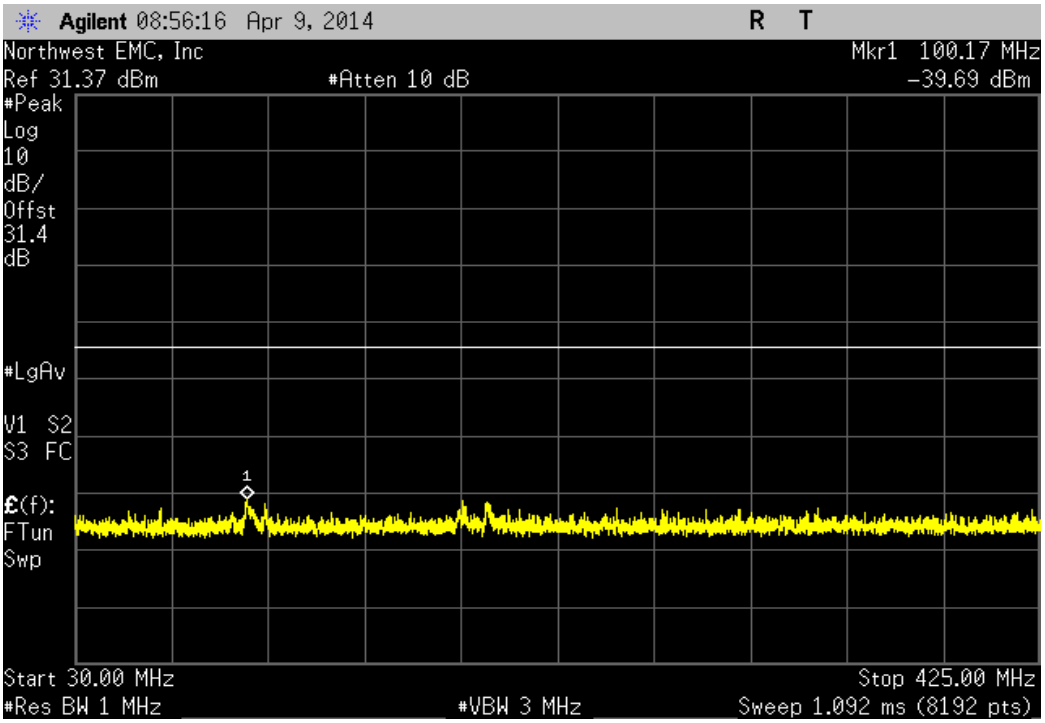


# OUT OF BAND EMISSIONS -CONDUCTED

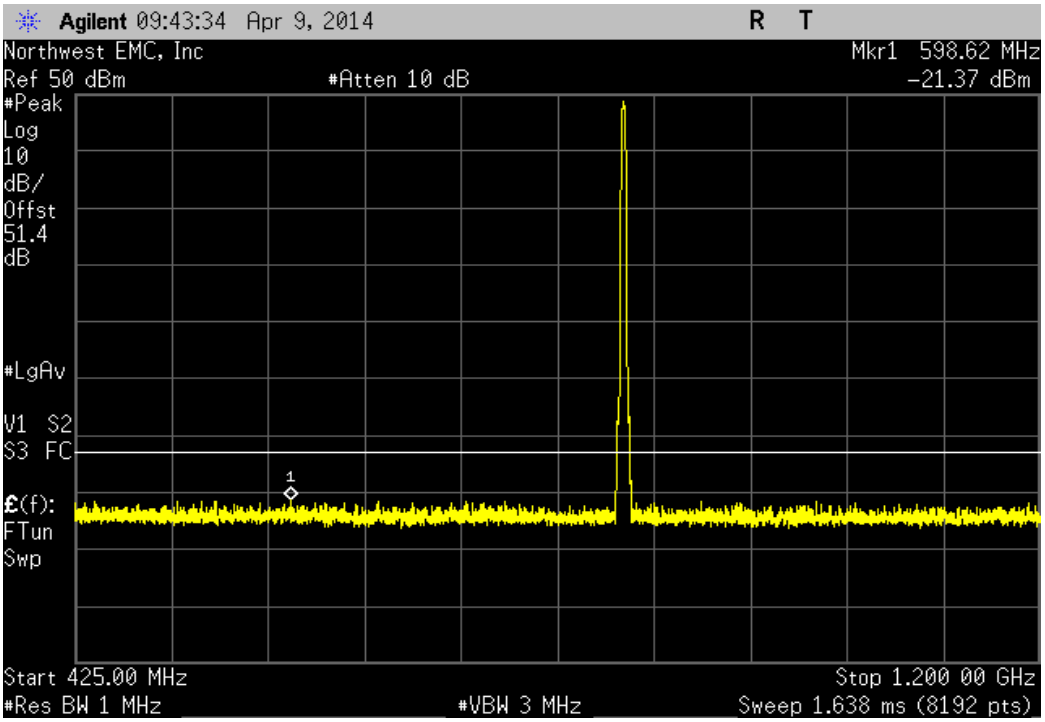
| LTE 3 MHz, Low Channel | | | | | |
|---|---|---|---|---|---|
| Frequency Range | | | Value | Limit | Result |
| 1.2 GHz - 9 GHz | | | -37.53 dBm | ≤ -13 dBm | Pass |



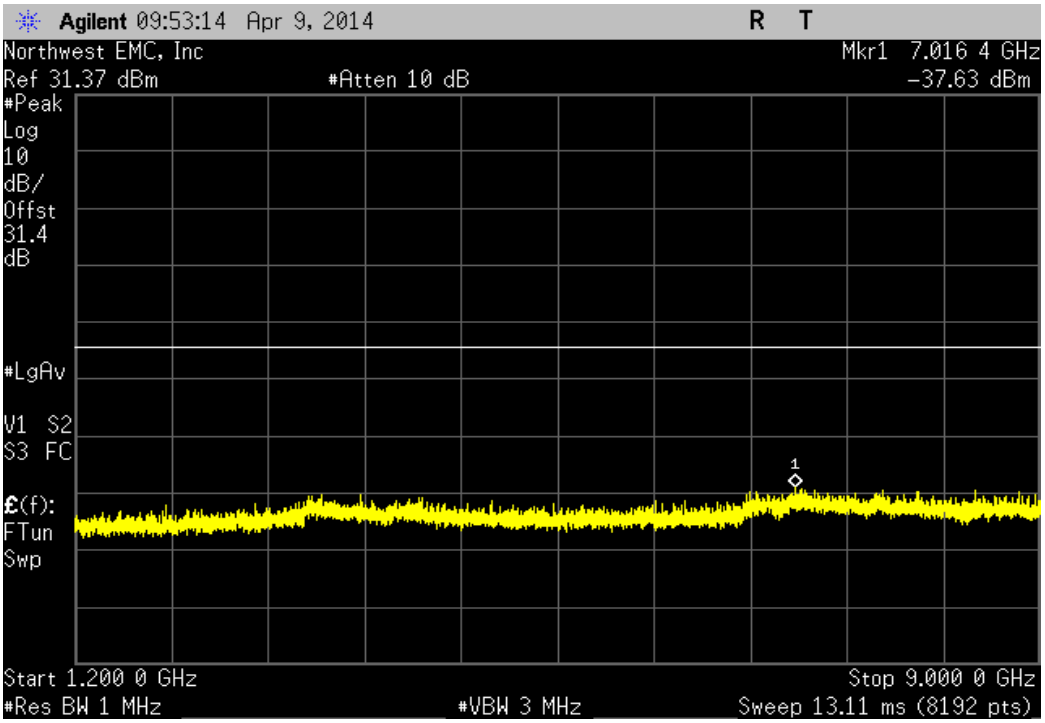

| LTE 3 MHz, Mid Channel | | | | | |
|---|---|---|---|---|---|
| Frequency Range | | | Value | Limit | Result |
| 30 MHz - 425 MHz | | | -39.69 dBm | ≤ -13 dBm | Pass |



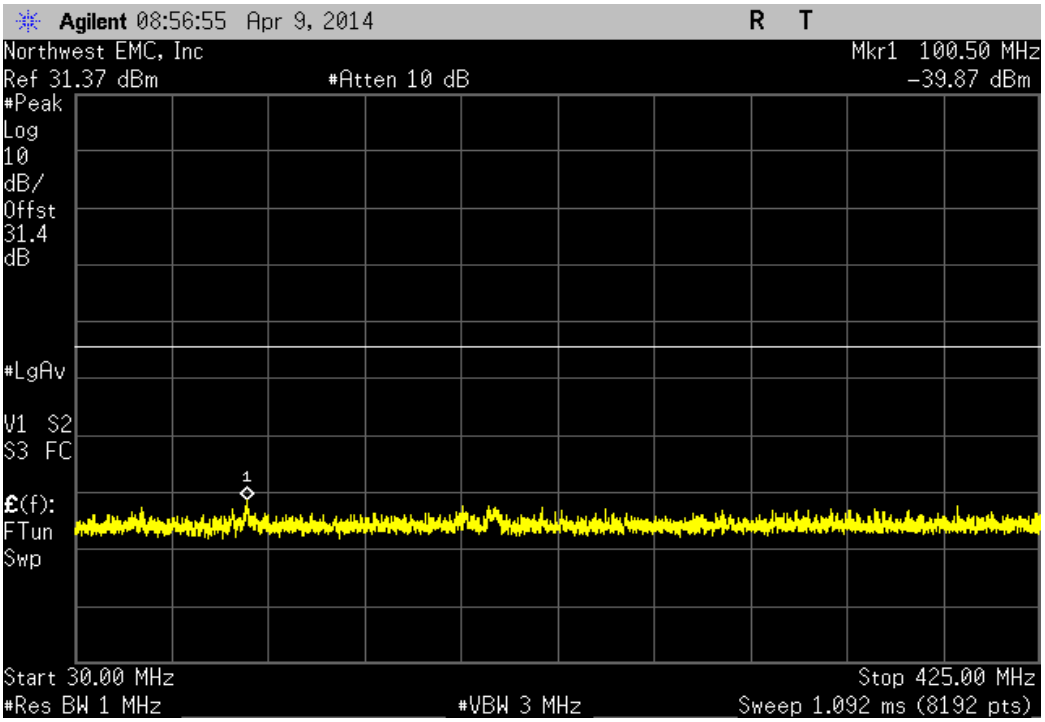
| LTE 3 MHz, Mid Channel | | | | |
|---|---|---|---|---|
| Frequency Range | | Value | Limit | Result |
| 425 MHz - 1.2 GHz | | -21.37 dBm | ≤ -13 dBm | Pass |



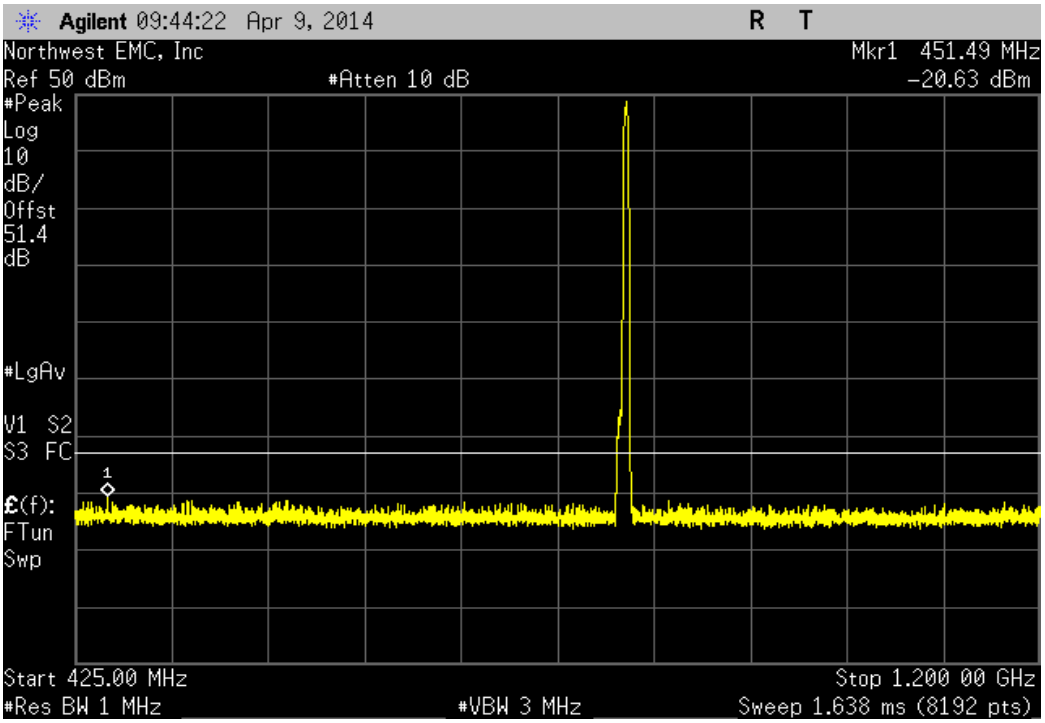

| LTE 3 MHz, Mid Channel | | | | | |
|---|---|---|---|---|---|
| Frequency Range | | | Value | Limit | Result |
| | 1.2 GHz - 9 GHz | | -37.63 dBm | ≤ -13 dBm | Pass |



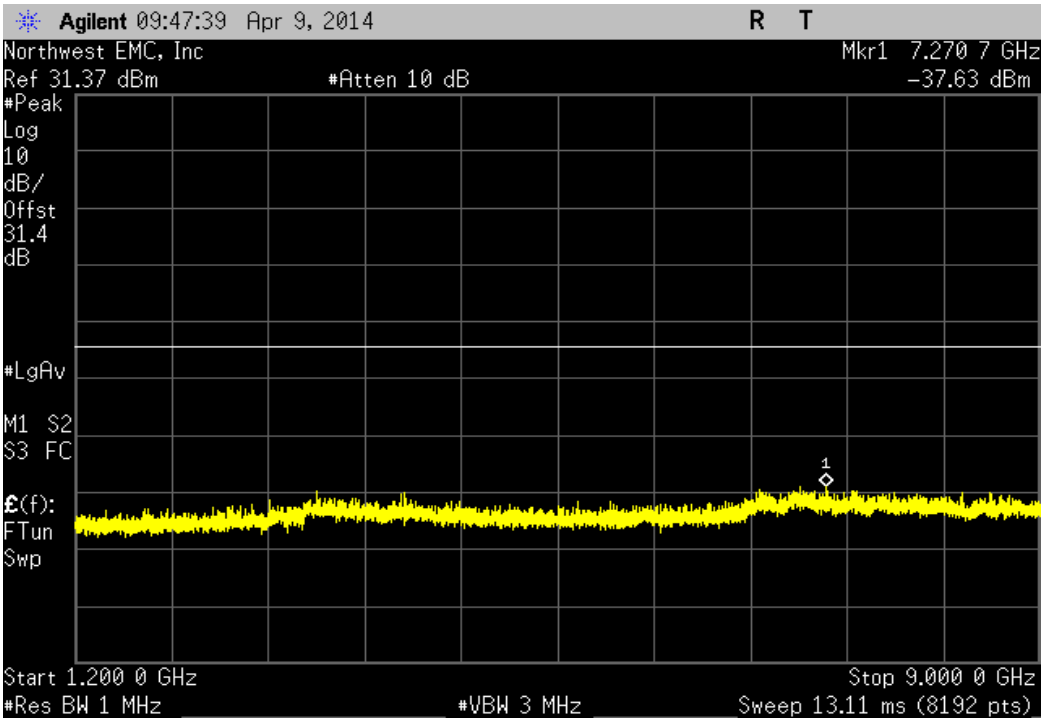
| LTE 3 MHz, High Channel | | | | |
|---|---|---|---|---|
| Frequency Range | | Value | Limit | Result |
| 30 MHz - 425 MHz | | -39.87 dBm | ≤ -13 dBm | Pass |




| LTE 3 MHz, High Channel | | | | |
|---|---|---|---|---|
| Frequency Range | | Value | Limit | Result |
| 425 MHz - 1.2 GHz | | -20.63 dBm | ≤ -13 dBm | Pass |



| LTE 3 MHz, High Channel | | | | | | |
|---|---|---|---|---|---|---|
| | Frequency Range | | | Value | Limit | Result |
| | 1.2 GHz - 9 GHz | | | -37.63 dBm | ≤ -13 dBm | Pass |



# INTERMODULATION

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 |
|---|---|---|---|---|---|
| High Pass Filter 1.2-18 GHz | Micro-Tronics | HPM50108 | HGX | 10/5/2012 | 24 |
| Low Pass Filter 0-425 MHz | Micro-Tronics | LPM50003 | HGU | 10/5/2012 | 24 |
| Power Divider/Combiner | Fairview Microwave Inc (SM electronics) | MP8451-2 | IAD | NCR | 0 |
| Power Divider/Combiner | Fairview Microwave Inc (SM electronics) | MP8451-2 | IAC | NCR | 0 |
| Attenuator | Aeroflex | 48-30-34 | RCU | 7/3/2013 | 12 |
| Attenuator - 20db, 'SMA' | SM Electronics | SA26B-20 | RFW | 4/3/2014 | 12 |
| 40 GHz DC block | Fairview Microwave | SD3379 | AMI | 9/26/2013 | 12 |
| Signal Generator MXG | Agilent | N5183A | TIK | 6/7/2012 | 36 |
| Spectrum Analyzer | Agilent | E4440A | AAX | 5/15/2012 | 24 |

**TEST DESCRIPTION**

The EUT was configured with an input of a modulated pulse at the bottom of the band, a CW pulse at the bottom of the band, and a CW pulse near the bottom of the band.

The antenna port spurious emissions were measured at the RF output terminal of the EUT with external attenuation on the RF input of the spectrum analyzer. Analyzer plots utilizing a 1MHz resolution bandwidth and no video filtering were made for each modulation type from 30 MHz to 20 GHz. The peak conducted power of spurious emissions, up to the 10th harmonic of the transmit frequency, were investigated to ensure they were less than or equal to –13 dBm.

# INTERMODULATION

| | | | | | |
|---|---|---|---|---|---|
| **EUT:** | Prism HDM 800 MHz/1900 MHz SISO RF Module | | | **Work Order:** | TECO0013 |
| **Serial Number:** | None | | | **Date:** | 04/09/14 |
| **Customer:** | TE Connectivity / ADC Telecommunications | | | **Temperature:** | 24.2°C |
| **Attendees:** | None | | | **Humidity:** | 21% |
| **Project:** | None | | | **Barometric Pres.:** | 1013.5 |
| **Tested by:** | Trevor Buls | **Power:** | 110VAC/60Hz | **Job Site:** | MN08 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 90I:2014 | ANSI/TIA/EIA-603-C-2004 |
| | |

**COMMENTS**

None

**DEVIATIONS FROM TEST STANDARD**

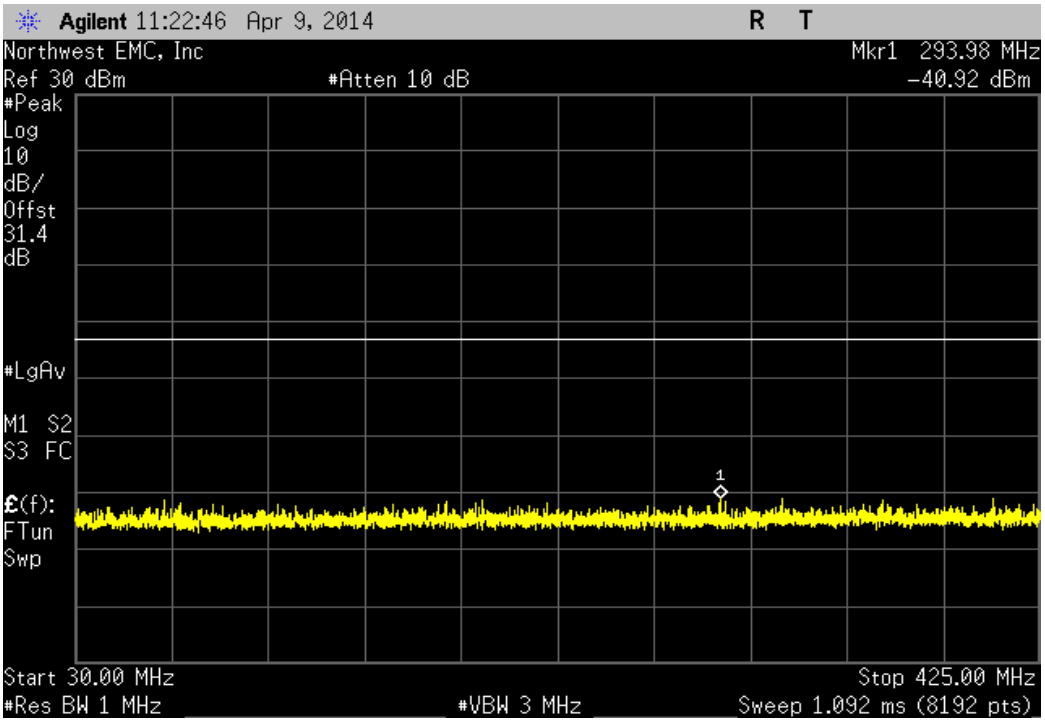
None

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

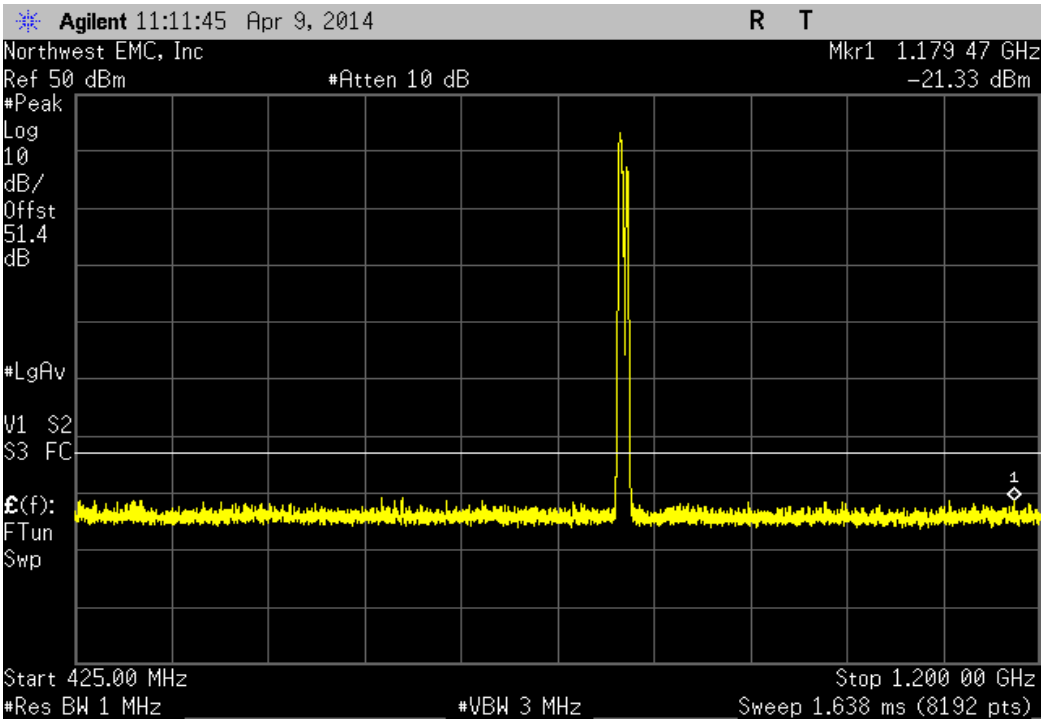
| | | Value (dBm) | Limit (dBm) | Result |
|---|---|---|---|---|
| CDMA | | | | |
| | 30 MHz - 425 MHz | -40.92 | -13 | Pass |
| | 425 MHz - 1.2 GHz | -21.33 | -13 | Pass |
| | 1.2 GHz - 9 GHz | -36.97 | -13 | Pass |
| LTE 1.4 MHZ | | | | |
| | 30 MHz - 425 MHz | -40.43 | -13 | Pass |
| | 425 MHz - 1.2 GHz | -20.2 | -13 | Pass |
| | 1.2 GHz - 9 GHz | -37.38 | -13 | Pass |
| LTE 3 MHZ | | | | |
| | 30 MHz - 425 MHz | -41.17 | -13 | Pass |
| | 425 MHz - 1.2 GHz | -21.25 | -13 | Pass |
| | 1.2 GHz - 9 GHz | -36.8 | -13 | Pass |

# INTERMODULATION

| CDMA, 30 MHz - 425 MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | Value (dBm) | Limit (dBm) | Result |
| | | | | | -40.92 | -13 | Pass |

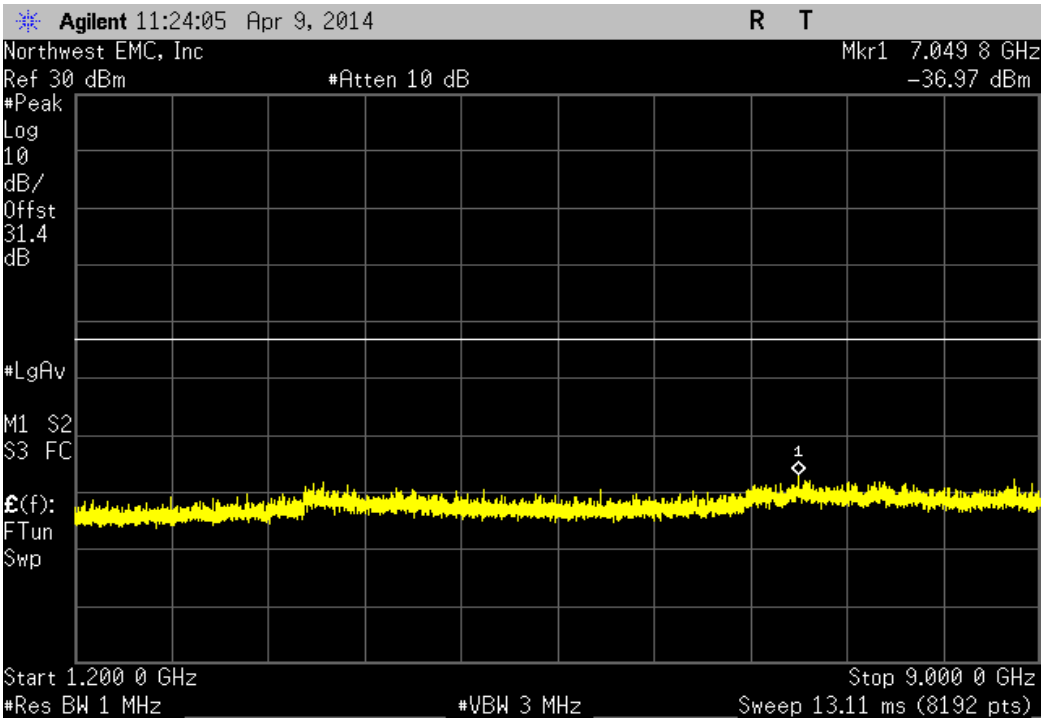



| CDMA, 425 MHz - 1.2 GHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | Value (dBm) | Limit (dBm) | Result |
| | | | | | -21.33 | -13 | Pass |

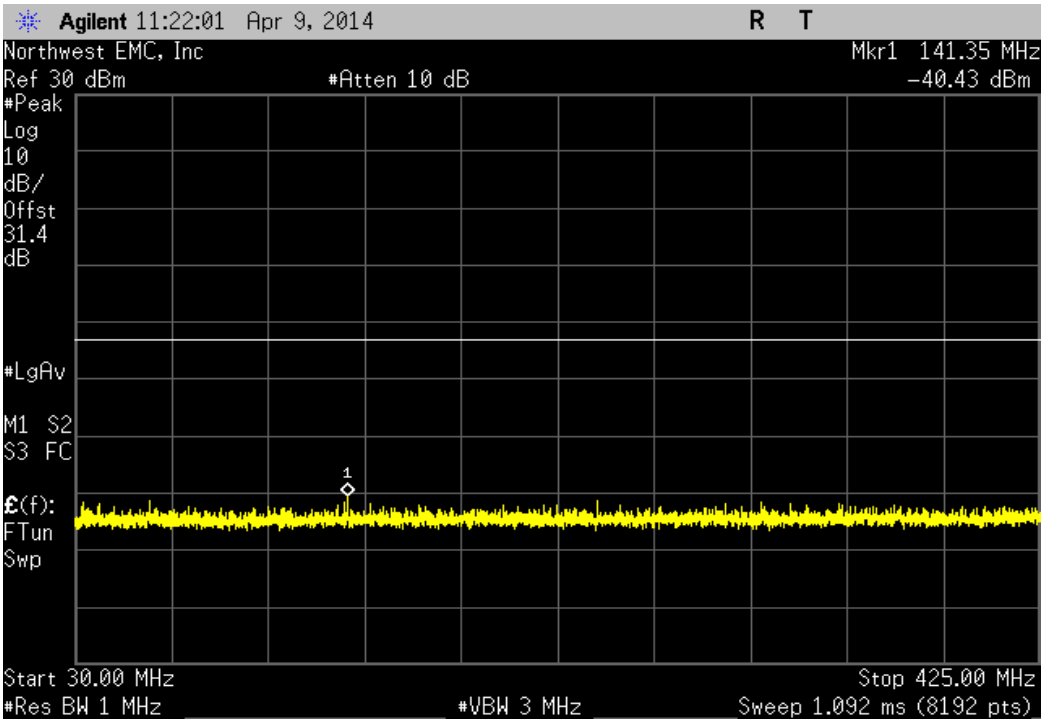


# INTERMODULATION

| CDMA, 1.2 GHz - 9 GHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | Value (dBm) | Limit (dBm) | Result |
| | | | | | -36.97 | -13 | Pass |

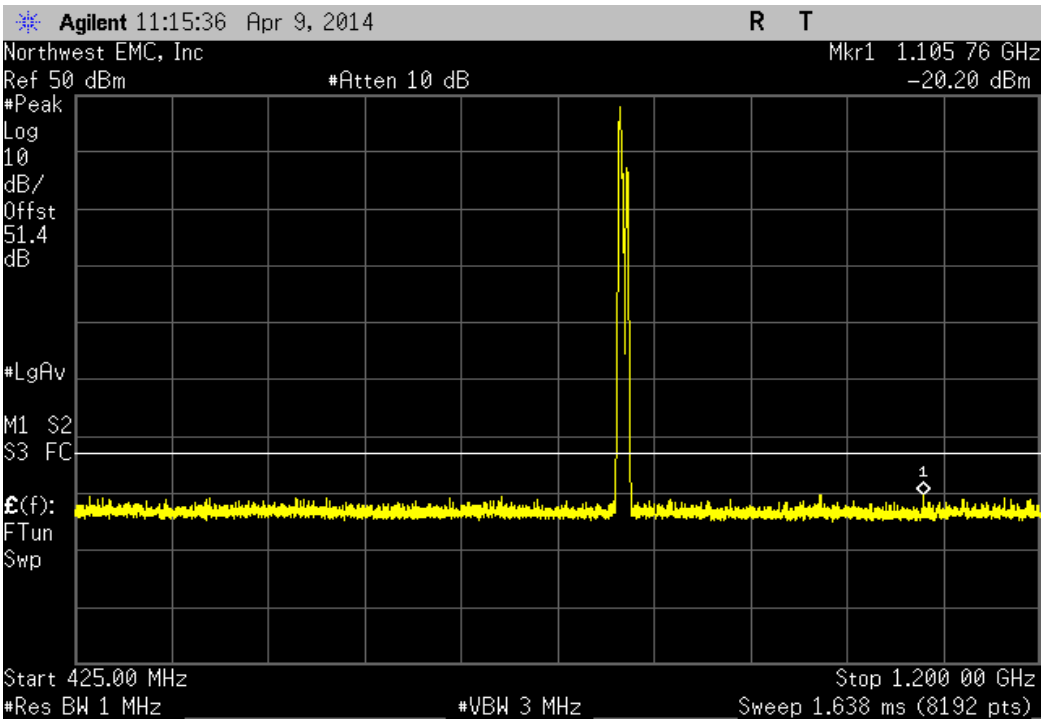



| LTE 1.4 MHZ, 30 MHz - 425 MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | Value (dBm) | Limit (dBm) | Result |
| | | | | | -40.43 | -13 | Pass |

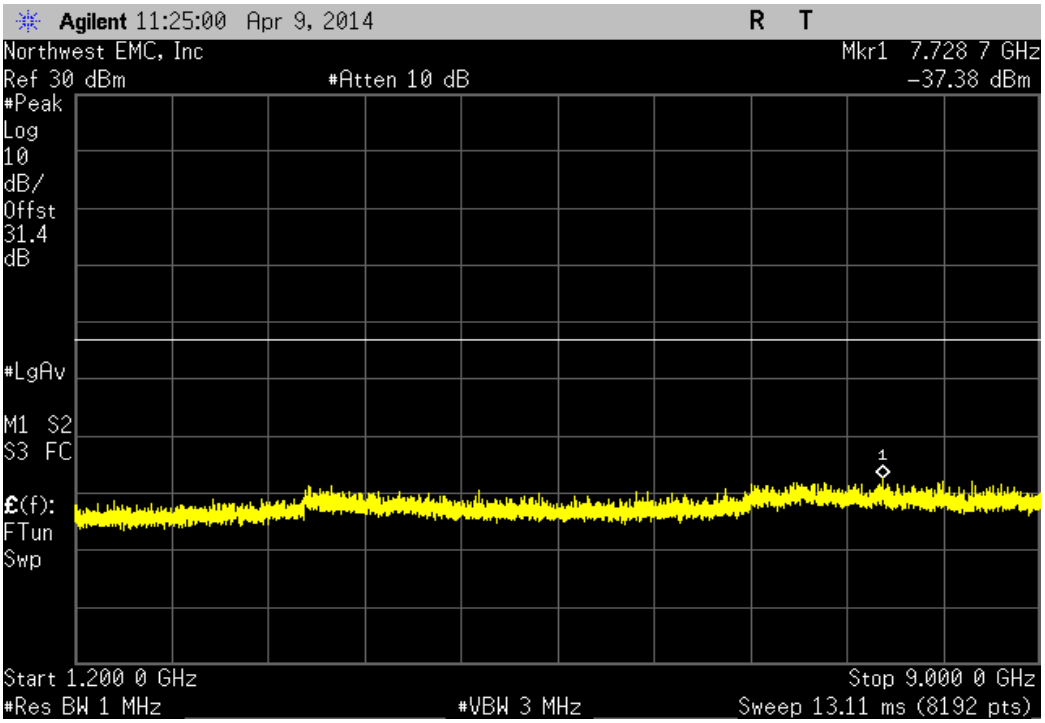


# INTERMODULATION

| LTE 1.4 MHZ, 425 MHz - 1.2 GHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | Value (dBm) | Limit (dBm) | Result |
| | | | | | -20.2 | -13 | Pass |

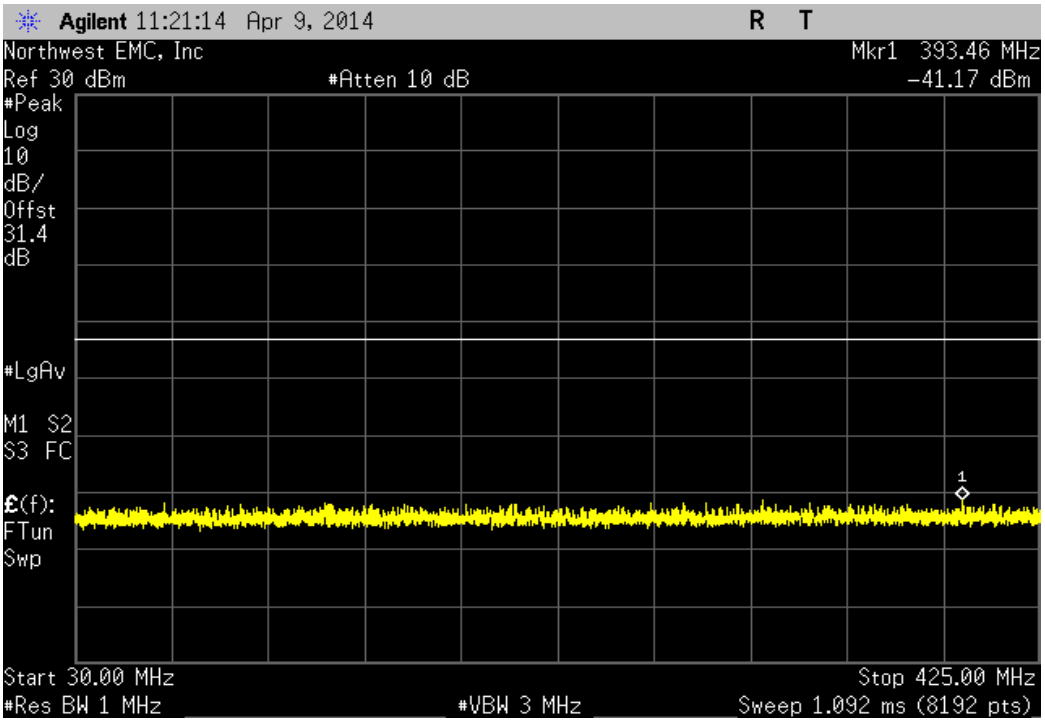



| LTE 1.4 MHZ, 1.2 GHz - 9 GHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | Value (dBm) | Limit (dBm) | Result |
| | | | | | -37.38 | -13 | Pass |

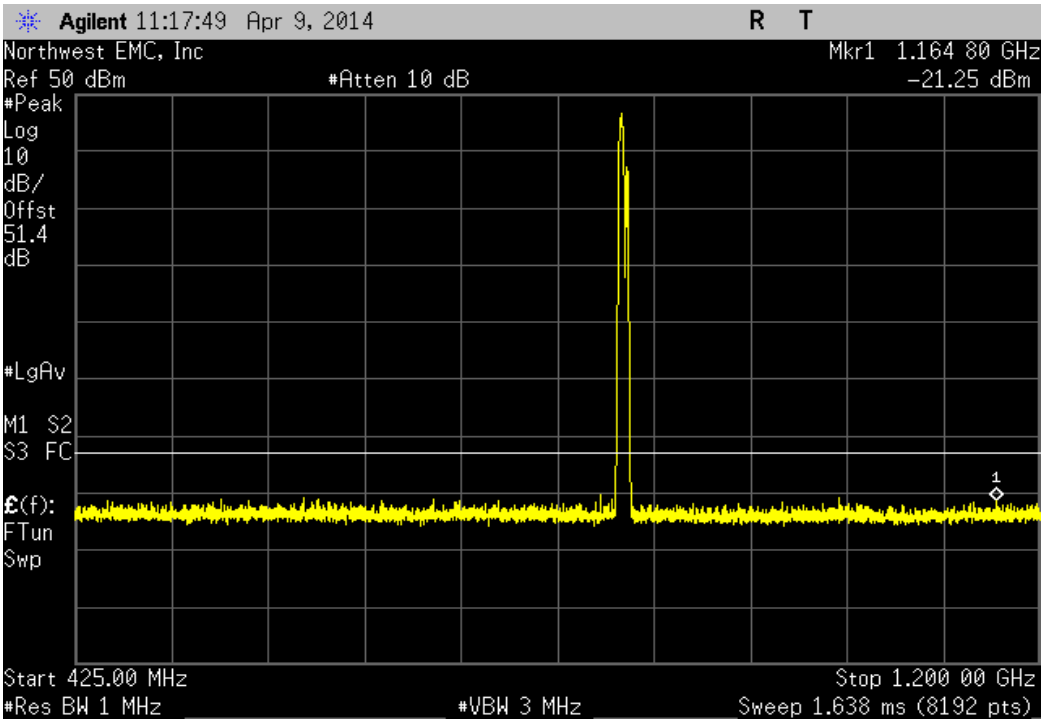


## INTERMODULATION

| LTE 3 MHZ, 30 MHz - 425 MHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | Value (dBm) | Limit (dBm) | Result |
| | | | | | -41.17 | -13 | Pass |

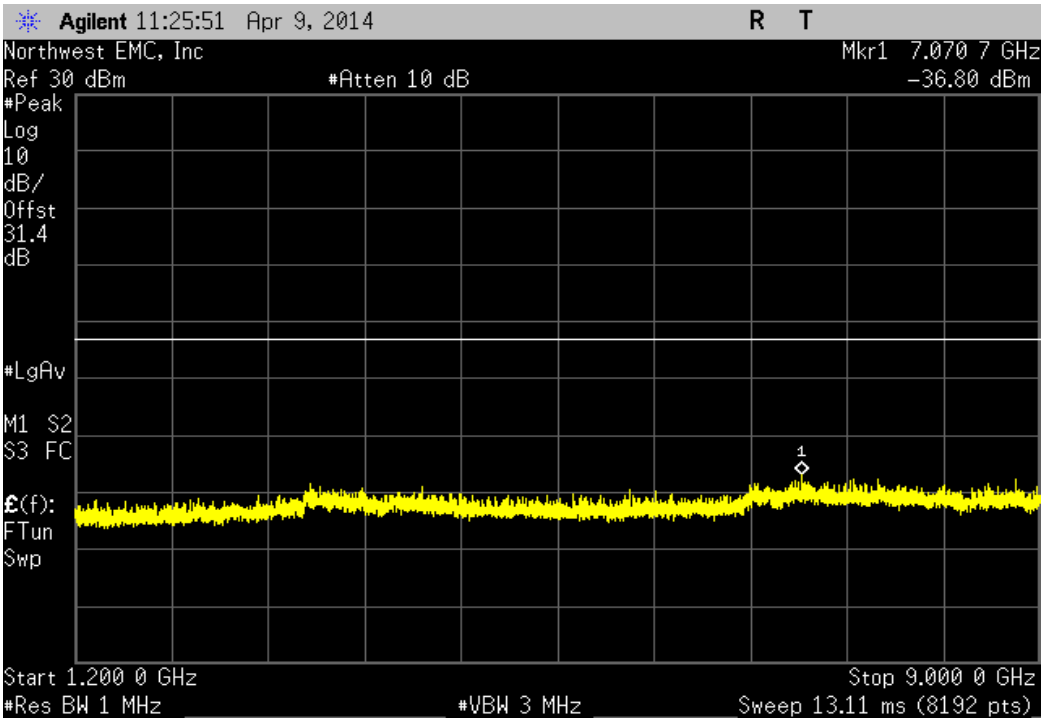



| LTE 3 MHZ, 425 MHz - 1.2 GHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | Value (dBm) | Limit (dBm) | Result |
| | | | | | -21.25 | -13 | Pass |



## INTERMODULATION

| LTE 3 MHZ, 1.2 GHz - 9 GHz | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | Value (dBm) | Limit (dBm) | Result |
| | | | | | -36.8 | -13 | 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 |
|---|---|---|---|---|---|
| Variable Transformer | Powerstat | 246 | XFR | NCR | 0 |
| Multimeter | Fluke | 117 | MNN | 1/20/2014 | 36 |
| Humidity Temperature Meter | Omega Engineering, Inc. | HH31 | DUB | 10/25/2011 | 36 |
| Temp./Humidity Chamber | Cincinnati Sub Zero (CSZ) | ZPH-32-3.5-SCT/AC | TBF | NCR | 0 |
| Attenuator - 20db, 'SMA' | SM Electronics | SA26B-20 | RFW | 4/3/2014 | 12 |
| 40 GHz DC block | Fairview Microwave | SD3379 | AMI | 9/26/2013 | 12 |
| Signal Generator MXG | Agilent | N5183A | TIK | 6/7/2012 | 36 |
| Spectrum Analyzer | Agilent | E4440A | AAX | 5/15/2012 | 24 |

**TEST DESCRIPTION**

A direct connect measurement was made between the EUT's antenna cable and a spectrum analyzer. The spectrum analyzer is equipped with a precision frequency reference that exceeds the stability requirement of the EUT. Testing was done with an absence of modulation in a CW mode of operation.

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

# FREQUENCY STABILITY

| | | | | | |
|---|---|---|---|---|---|
| **EUT:** | Prism HDM 800 MHz/1900 MHz SISO RF Module | | | **Work Order:** | TECO0013 |
| **Serial Number:** | None | | | **Date:** | 04/14/14 |
| **Customer:** | TE Connectivity / ADC Telecommunications | | | **Temperature:** | 22.8°C |
| **Attendees:** | None | | | **Humidity:** | 16% |
| **Project:** | None | | | **Barometric Pres.:** | 1020.6 |
| **Tested by:** | Trevor Buls | **Power:** | 110VAC/60Hz | **Job Site:** | MN08 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 90I:2014 | ANSI/TIA/EIA-603-C-2004 |
| | |

**COMMENTS**

Customer provided a high wattage 30 dB attenuator. Voltage range varied from 126.5 to 93.5 VAC

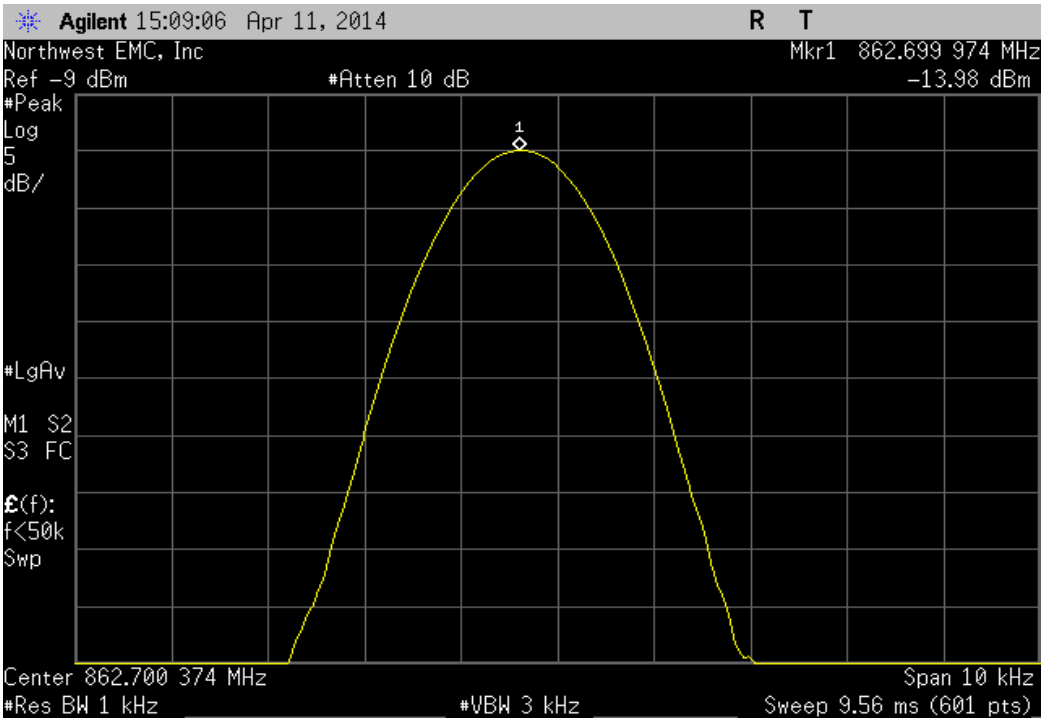
**DEVIATIONS FROM TEST STANDARD**

None

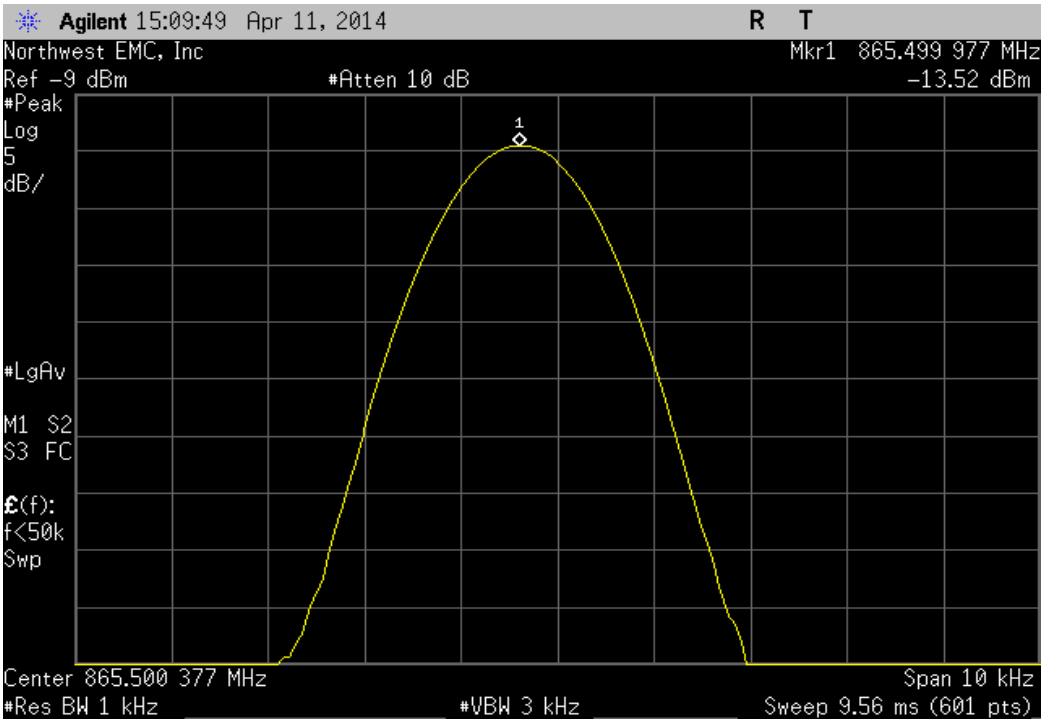
| Configuration # | 1 | Signature | Trevor Buls |
|---|---|---|---|

| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
|---|---|---|---|---|---|---|
| Voltage: 115% | | | | | | |
| | Low Channel, 862.7 MHz | 862.699974 | 862.7 | 0.0301 | 1 | Pass |
| | Mid Channel, 865.5 MHz | 865.499977 | 865.5 | 0.0266 | 1 | Pass |
| | High Channel, 868.2 MHz | 868.199984 | 868.2 | 0.0184 | 1 | Pass |
| Voltage: 100% | | | | | | |
| | Low Channel, 862.7 MHz | 862.699991 | 862.7 | 0.0104 | 1 | Pass |
| | Mid Channel, 865.5 MHz | 865.499977 | 865.5 | 0.0266 | 1 | Pass |
| | High Channel, 868.2 MHz | 868.199984 | 868.2 | 0.0184 | 1 | Pass |
| Voltage: 85% | | | | | | |
| | Low Channel, 862.7 MHz | 862.699974 | 862.7 | 0.0301 | 1 | Pass |
| | Mid Channel, 865.5 MHz | 865.499977 | 865.5 | 0.0266 | 1 | Pass |
| | High Channel, 868.2 MHz | 868.199984 | 868.2 | 0.0184 | 1 | Pass |
| Temperature: +50° | | | | | | |
| | Low Channel, 862.7 MHz | 862.699971 | 862.7 | 0.0336 | 1 | Pass |
| | Mid Channel, 865.5 MHz | 865.499988 | 865.5 | 0.0139 | 1 | Pass |
| | High Channel, 868.2 MHz | 868.199984 | 868.2 | 0.0184 | 1 | Pass |
| Temperature: +40° | | | | | | |
| | Low Channel, 862.7 MHz | 862.699976 | 862.7 | 0.0278 | 1 | Pass |
| | Mid Channel, 865.5 MHz | 865.499977 | 865.5 | 0.0266 | 1 | Pass |
| | High Channel, 868.2 MHz | 868.199984 | 868.2 | 0.0184 | 1 | Pass |
| Temperature: +30° | | | | | | |
| | Low Channel, 862.7 MHz | 862.699974 | 862.7 | 0.0301 | 1 | Pass |
| | Mid Channel, 865.5 MHz | 865.499977 | 865.5 | 0.0266 | 1 | Pass |
| | High Channel, 868.2 MHz | 868.199984 | 868.2 | 0.0184 | 1 | Pass |
| Temperature: +20° | | | | | | |
| | Low Channel, 862.7 MHz | 862.699971 | 862.7 | 0.0336 | 1 | Pass |
| | Mid Channel, 865.5 MHz | 865.499977 | 865.5 | 0.0266 | 1 | Pass |
| | High Channel, 868.2 MHz | 868.199967 | 868.2 | 0.0380 | 1 | Pass |
| Temperature: +10° | | | | | | |
| | Low Channel, 862.7 MHz | 862.699971 | 862.7 | 0.0336 | 1 | Pass |
| | Mid Channel, 865.5 MHz | 865.499972 | 865.5 | 0.0324 | 1 | Pass |
| | High Channel, 868.2 MHz | 868.199967 | 868.2 | 0.0380 | 1 | Pass |
| Temperature: 0° | | | | | | |
| | Low Channel, 862.7 MHz | 862.699974 | 862.7 | 0.0301 | 1 | Pass |
| | Mid Channel, 865.5 MHz | 865.499972 | 865.5 | 0.0324 | 1 | Pass |
| | High Channel, 868.2 MHz | 868.199967 | 868.2 | 0.0380 | 1 | Pass |
| Temperature: -10° | | | | | | |
| | Low Channel, 862.7 MHz | 862.699974 | 862.7 | 0.0301 | 1 | Pass |
| | Mid Channel, 865.5 MHz | 865.499977 | 865.5 | 0.0266 | 1 | Pass |
| | High Channel, 868.2 MHz | 868.199984 | 868.2 | 0.0184 | 1 | Pass |
| Temperature: -20° | | | | | | |
| | Low Channel, 862.7 MHz | 862.699971 | 862.7 | 0.0336 | 1 | Pass |
| | Mid Channel, 865.5 MHz | 865.499972 | 865.5 | 0.0324 | 1 | Pass |
| | High Channel, 868.2 MHz | 868.199967 | 868.2 | 0.0380 | 1 | Pass |
| Temperature: -30° | | | | | | |
| | Low Channel, 862.7 MHz | 862.699974 | 862.7 | 0.0301 | 1 | Pass |
| | Mid Channel, 865.5 MHz | 865.499972 | 865.5 | 0.0324 | 1 | Pass |
| | High Channel, 868.2 MHz | 868.199967 | 868.2 | 0.0380 | 1 | Pass |

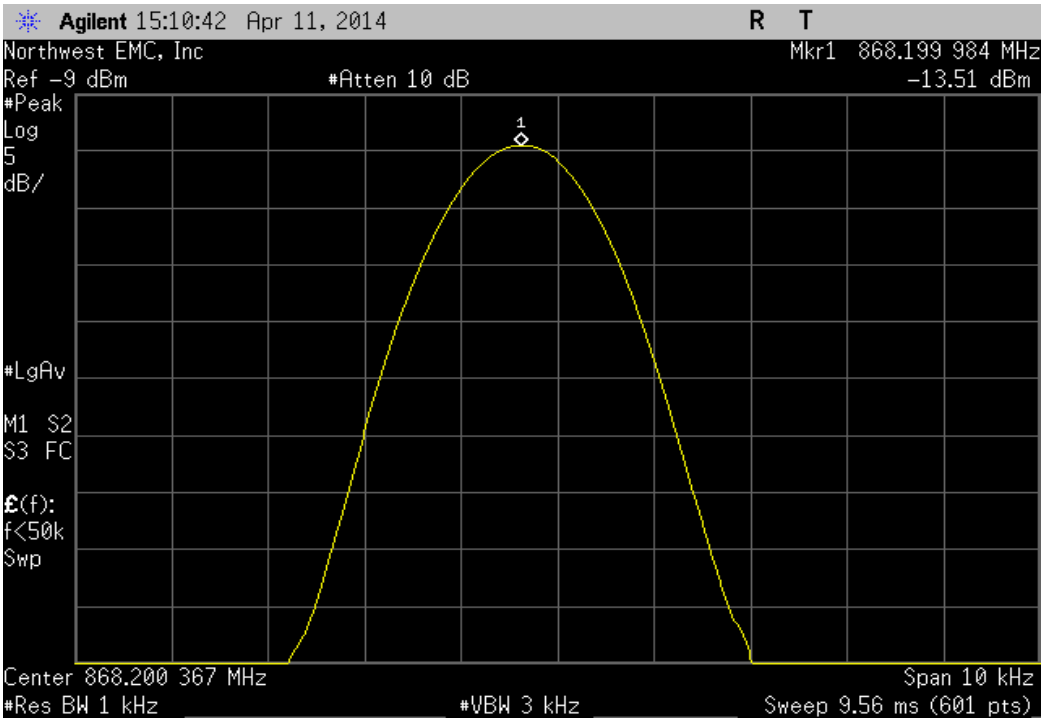
| Voltage: 115%, Low Channel, 862.7 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 862.699974 | 862.7 | 0.0301 | 1 | Pass |



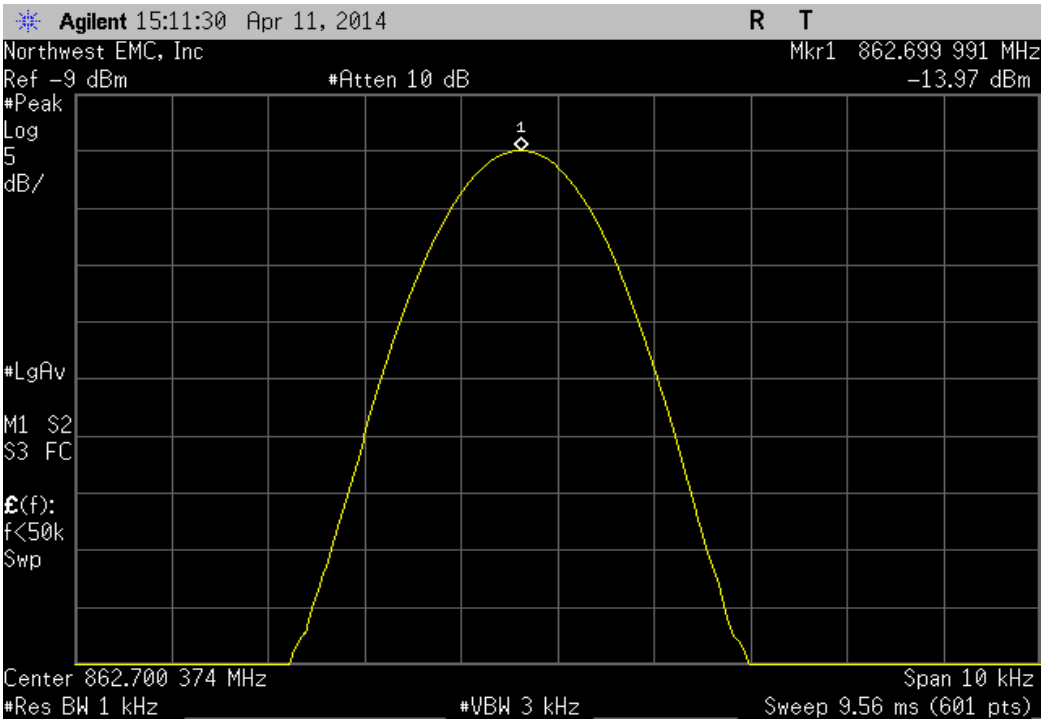

| Voltage: 115%, Mid Channel, 865.5 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 865.499977 | 865.5 | 0.0266 | 1 | Pass |



| Voltage: 115%, High Channel, 868.2 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 868.199984 | 868.2 | 0.0184 | 1 | Pass |

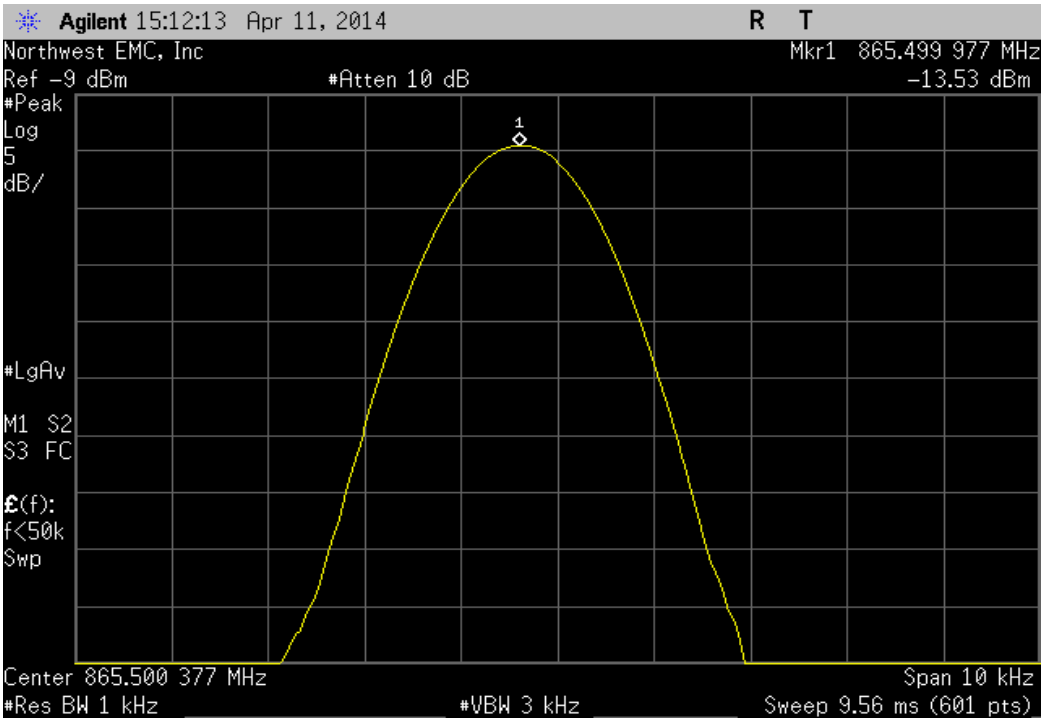



| Voltage: 100%, Low Channel, 862.7 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 862.699991 | 862.7 | 0.0104 | 1 | Pass |

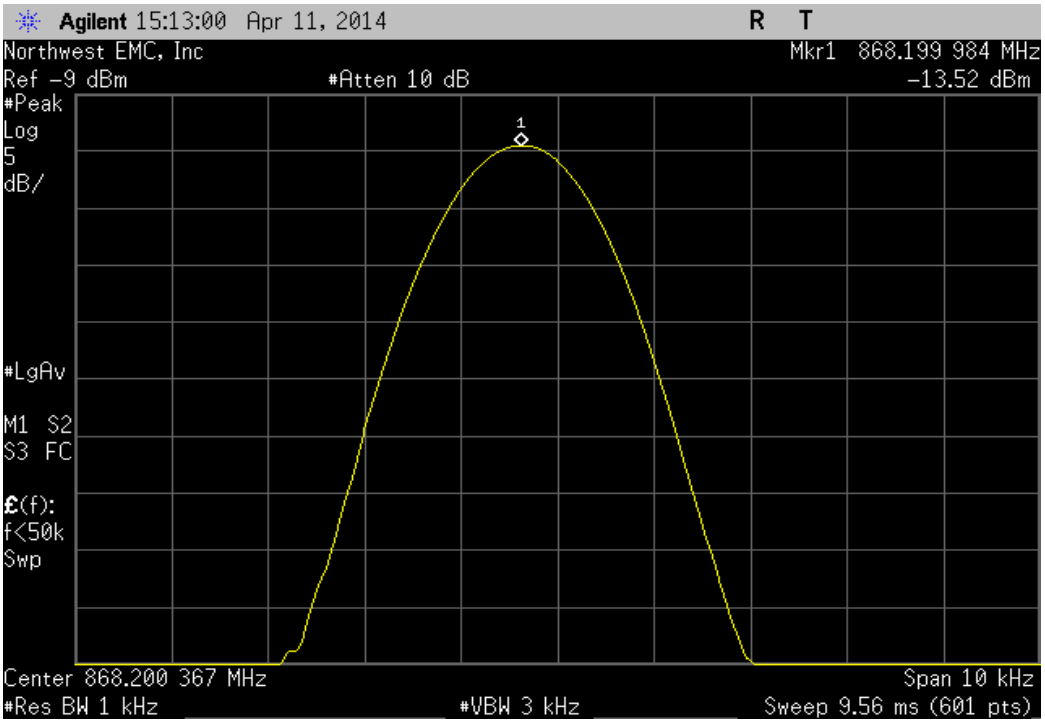


# FREQUENCY STABILITY

| Voltage: 100%, Mid Channel, 865.5 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 865.499977 | 865.5 | 0.0266 | 1 | Pass |

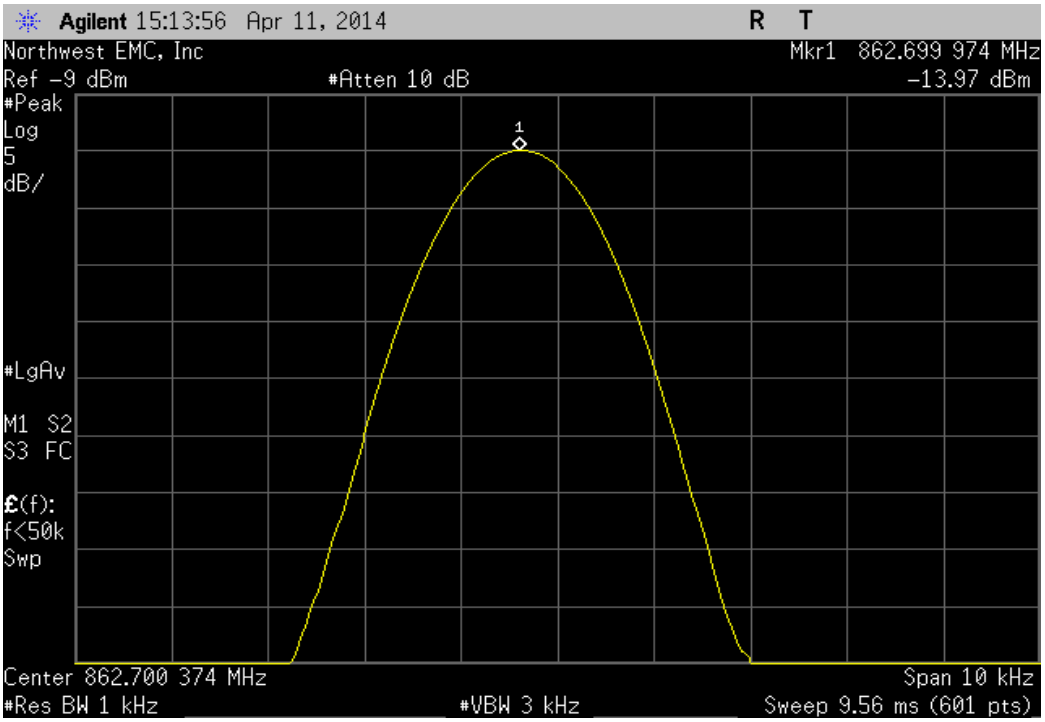



| Voltage: 100%, High Channel, 868.2 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 868.199984 | 868.2 | 0.0184 | 1 | Pass |

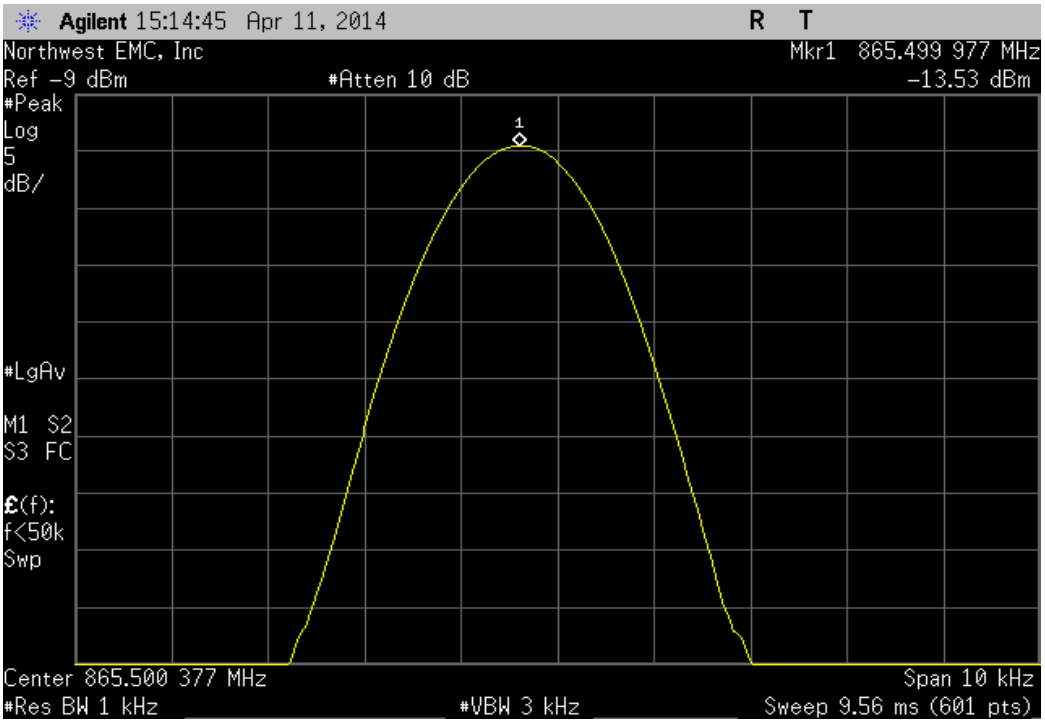


# FREQUENCY STABILITY

| Voltage: 85%, Low Channel, 862.7 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 862.699974 | 862.7 | 0.0301 | 1 | Pass |

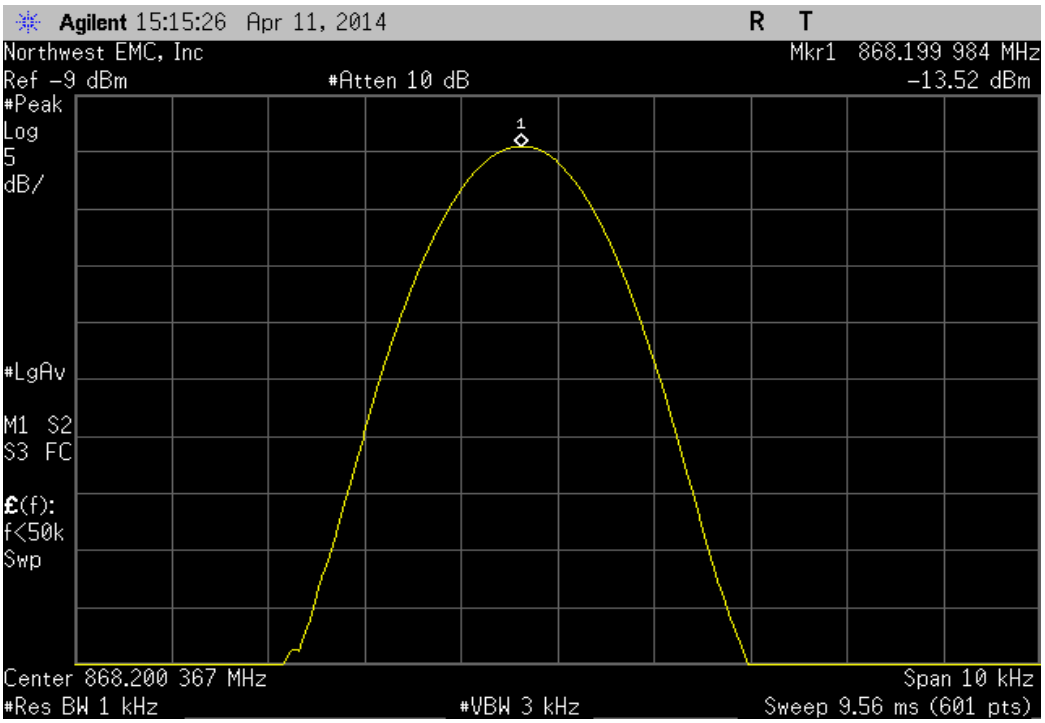



| Voltage: 85%, Mid Channel, 865.5 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 865.499977 | 865.5 | 0.0266 | 1 | Pass |

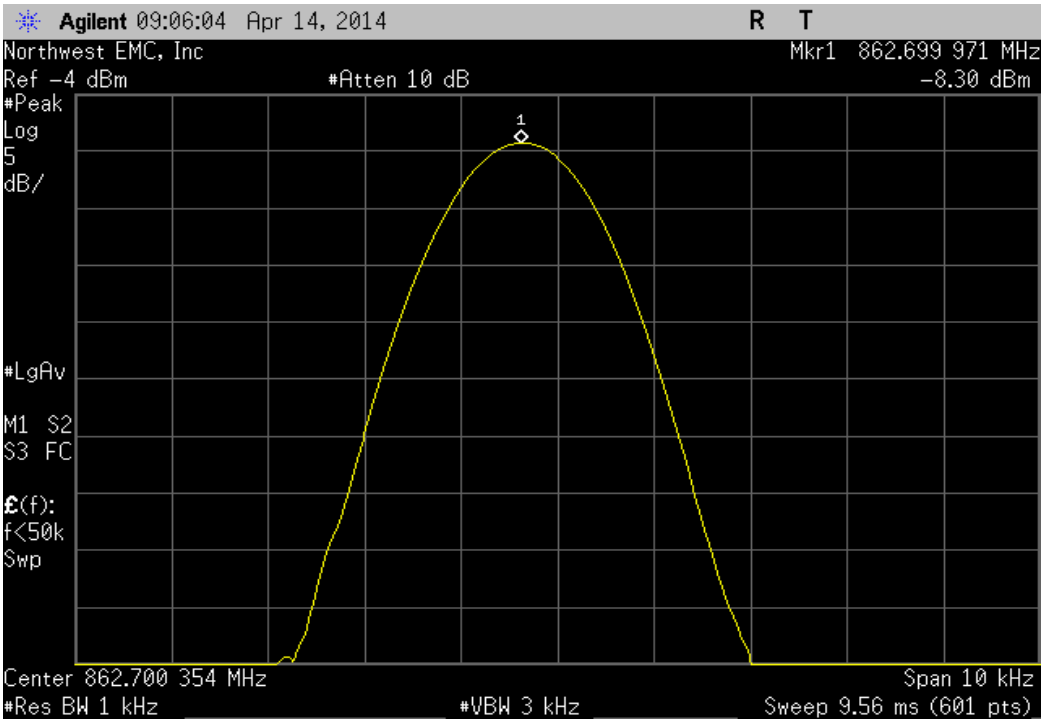


# FREQUENCY STABILITY

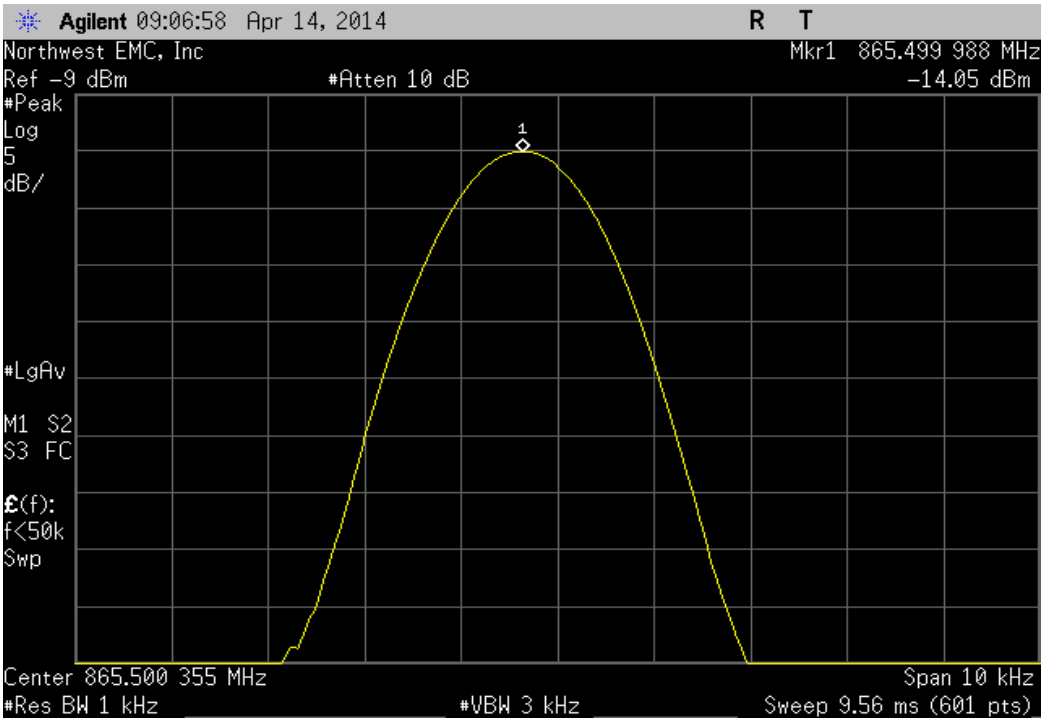
| Voltage: 85%, High Channel, 868.2 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 868.199984 | 868.2 | 0.0184 | 1 | Pass |



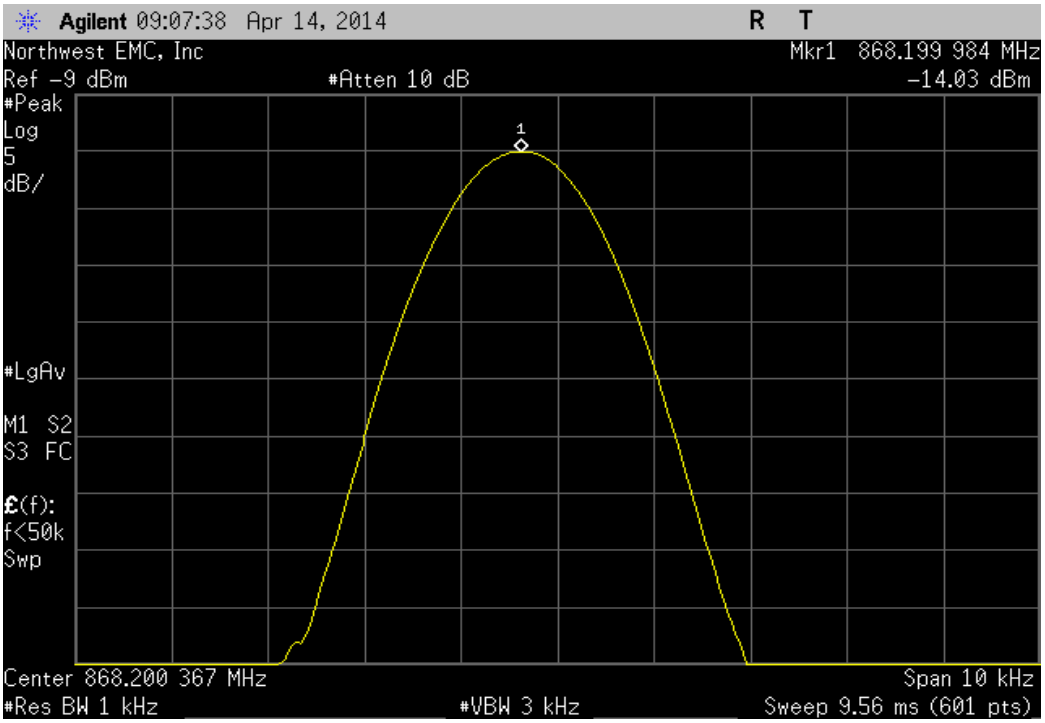

| Temperature: +50°, Low Channel, 862.7 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 862.699971 | 862.7 | 0.0336 | 1 | Pass |



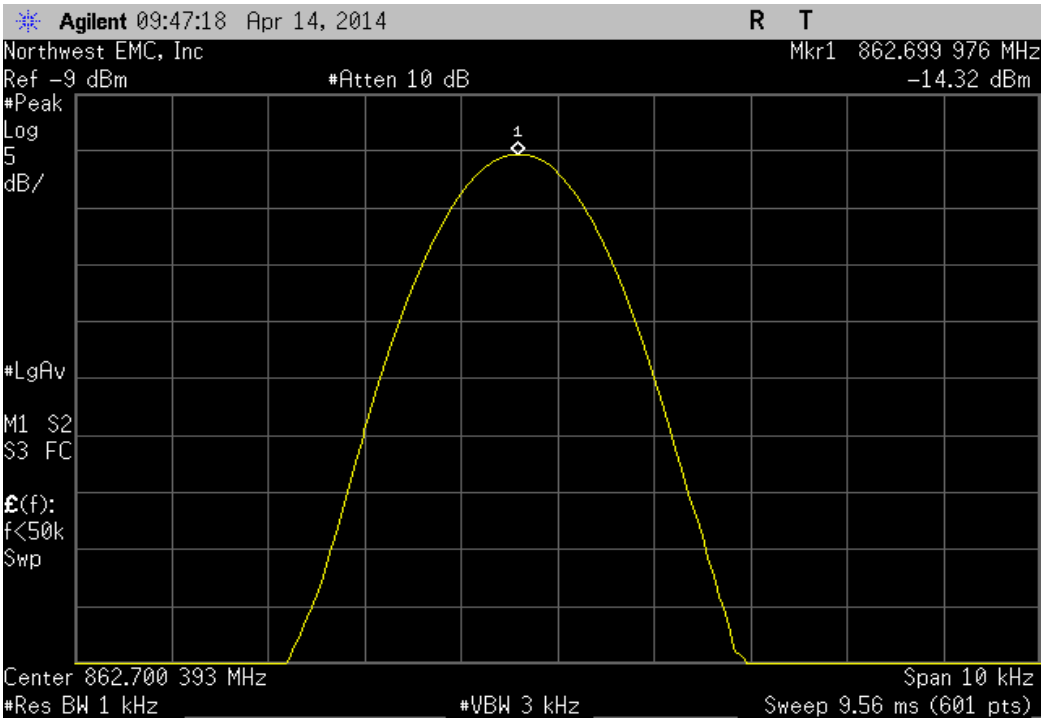
| Temperature: +50°, Mid Channel, 865.5 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 865.499988 | 865.5 | 0.0139 | 1 | Pass |



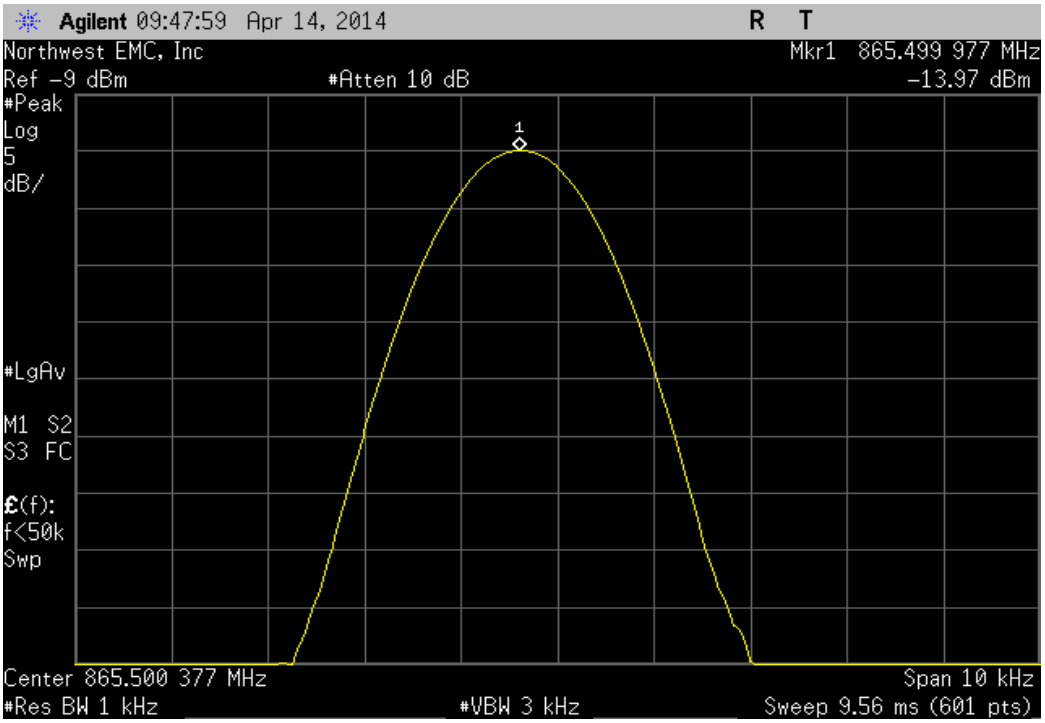

| Temperature: +50°, High Channel, 868.2 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 868.199984 | 868.2 | 0.0184 | 1 | Pass |



| Temperature: +40°, Low Channel, 862.7 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 862.699976 | 862.7 | 0.0278 | 1 | Pass |

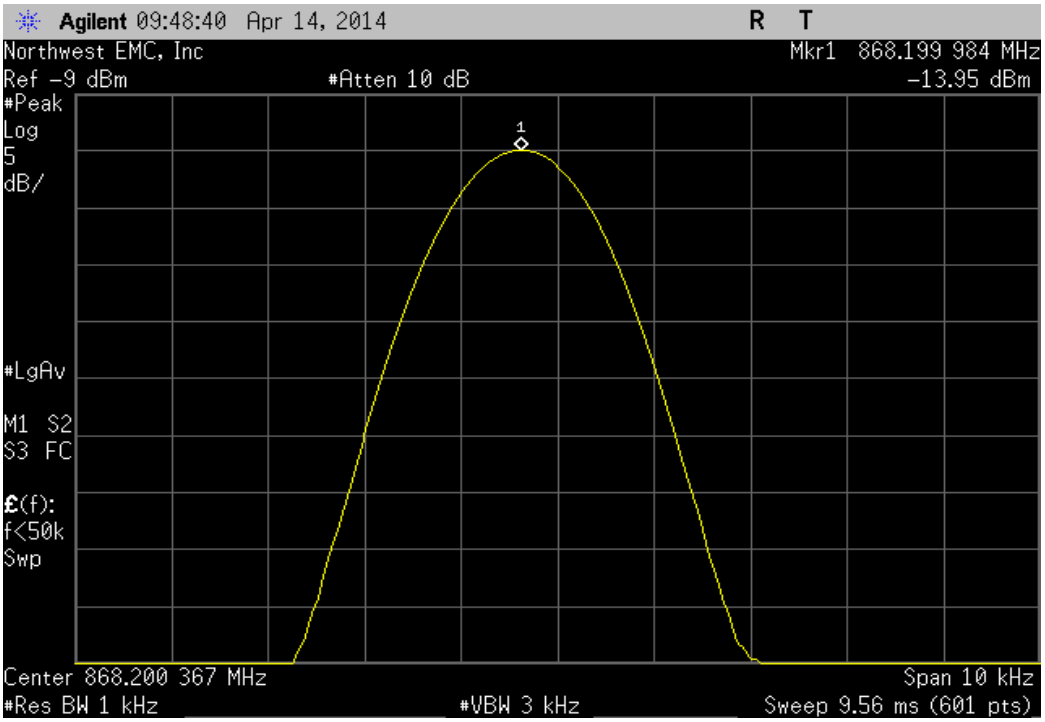



| Temperature: +40°, Mid Channel, 865.5 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 865.499977 | 865.5 | 0.0266 | 1 | Pass |

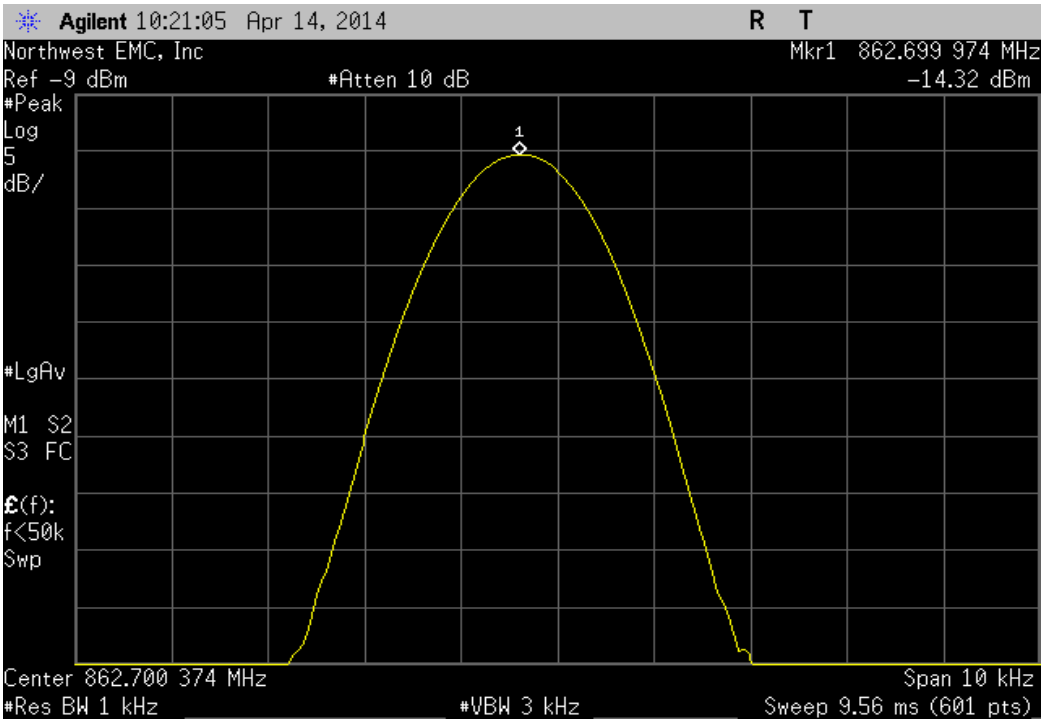


# FREQUENCY STABILITY

| Temperature: +40°, High Channel, 868.2 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 868.199984 | 868.2 | 0.0184 | 1 | Pass |

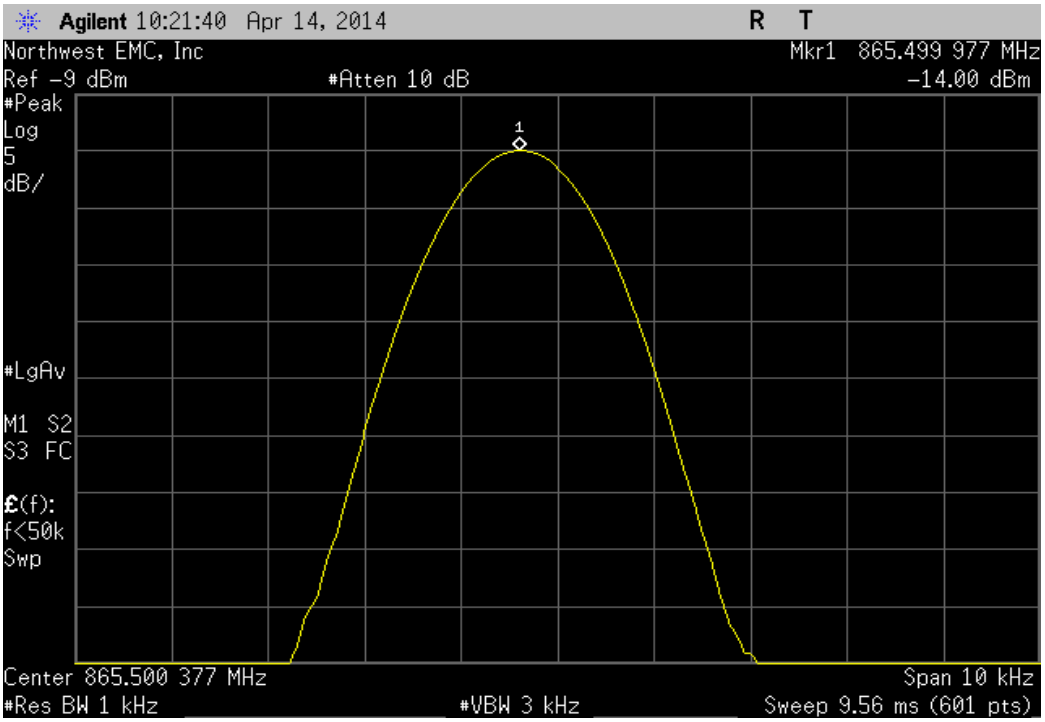



| Temperature: +30°, Low Channel, 862.7 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 862.699974 | 862.7 | 0.0301 | 1 | Pass |

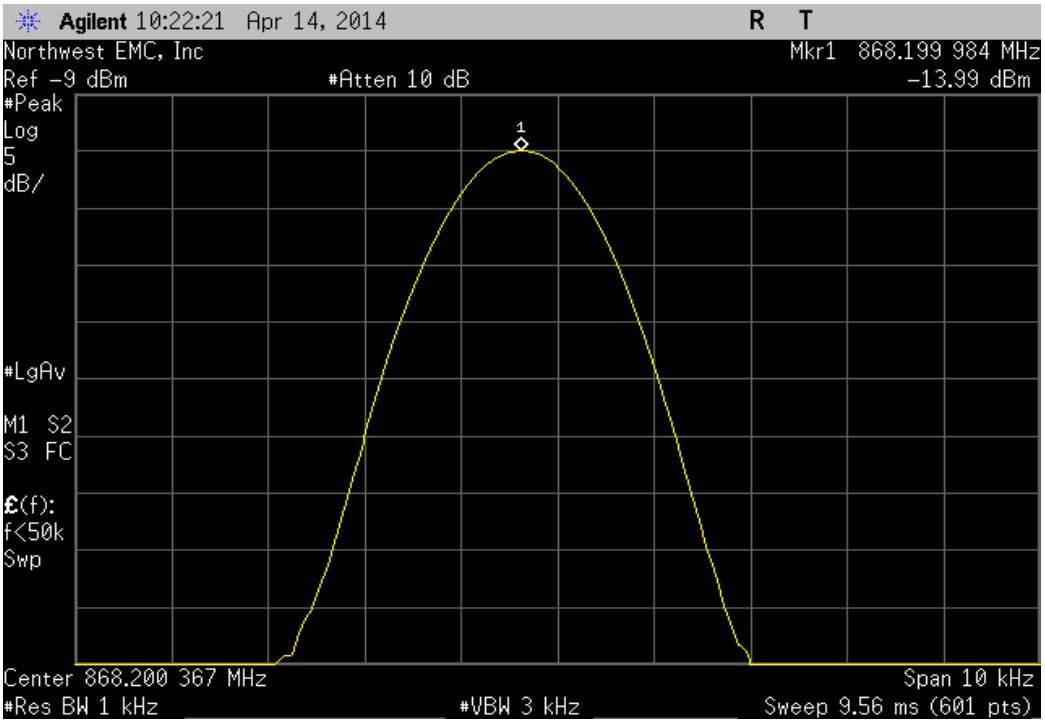


# FREQUENCY STABILITY

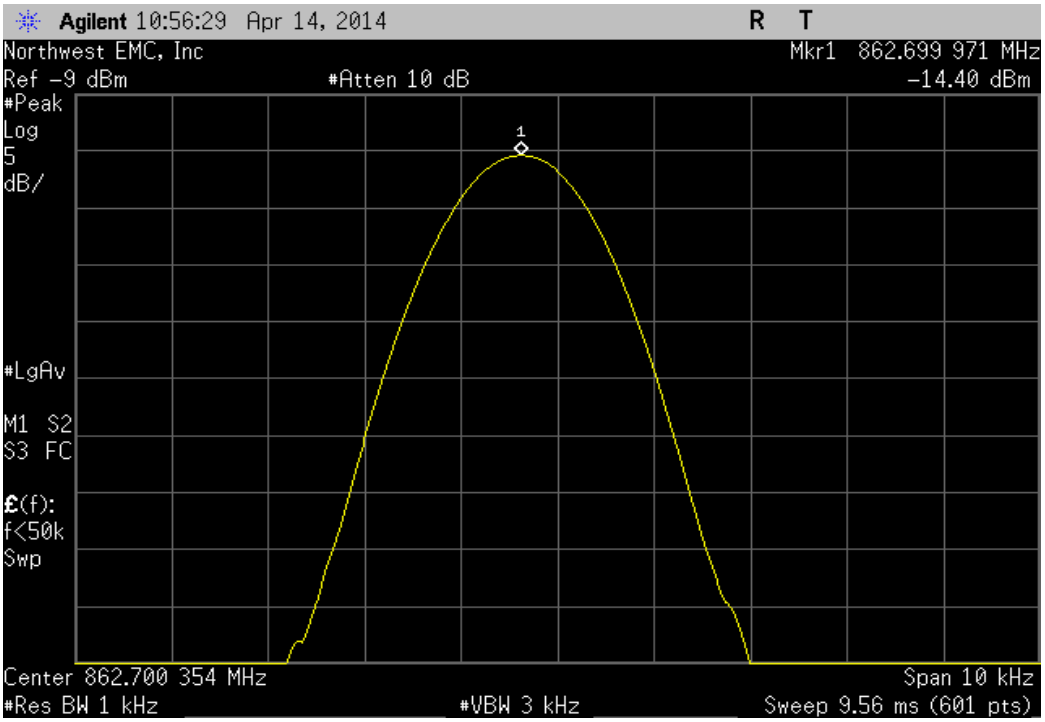
| Temperature: +30°, Mid Channel, 865.5 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 865.499977 | 865.5 | 0.0266 | 1 | Pass |



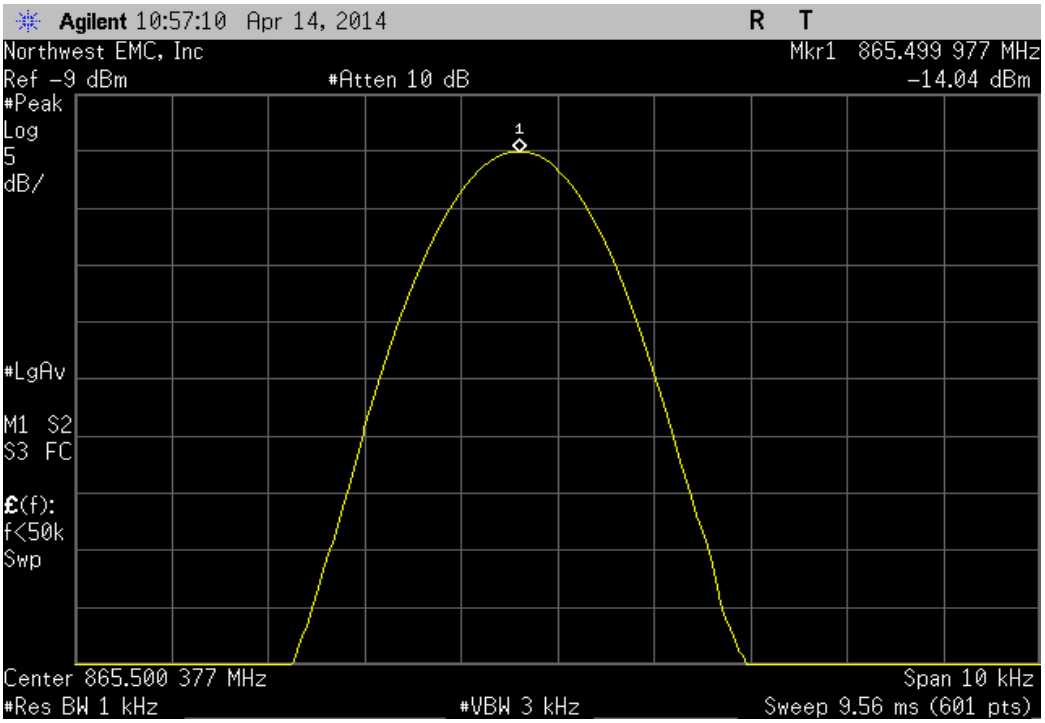

| Temperature: +30°, High Channel, 868.2 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 868.199984 | 868.2 | 0.0184 | 1 | Pass |



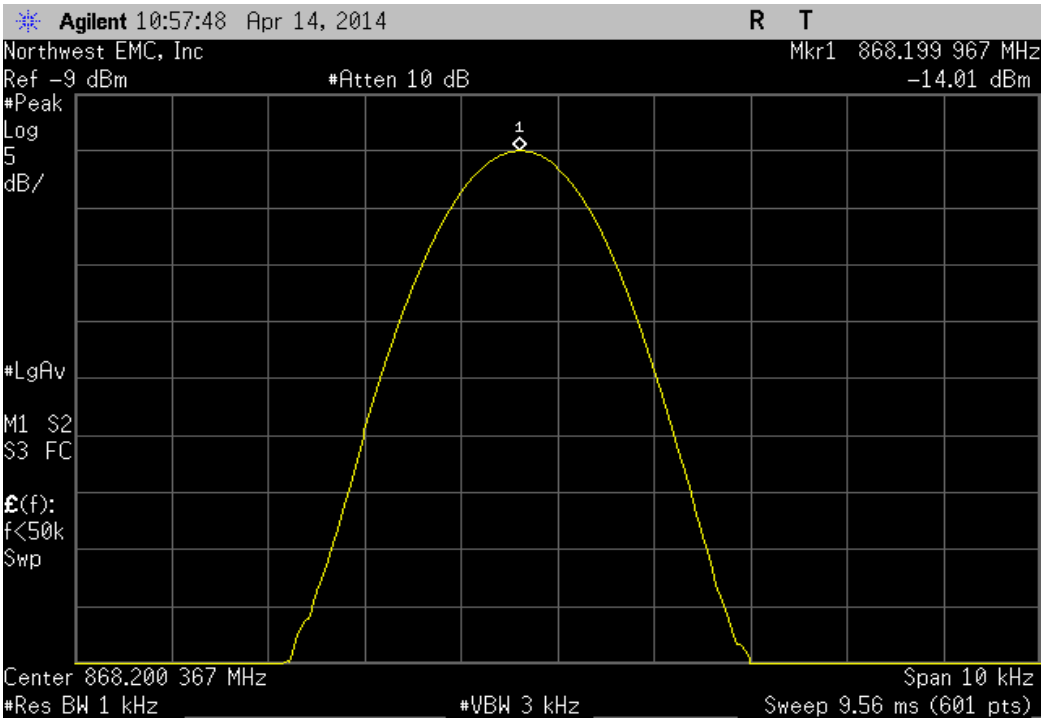
| Temperature: +20°, Low Channel, 862.7 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 862.699971 | 862.7 | 0.0336 | 1 | Pass |



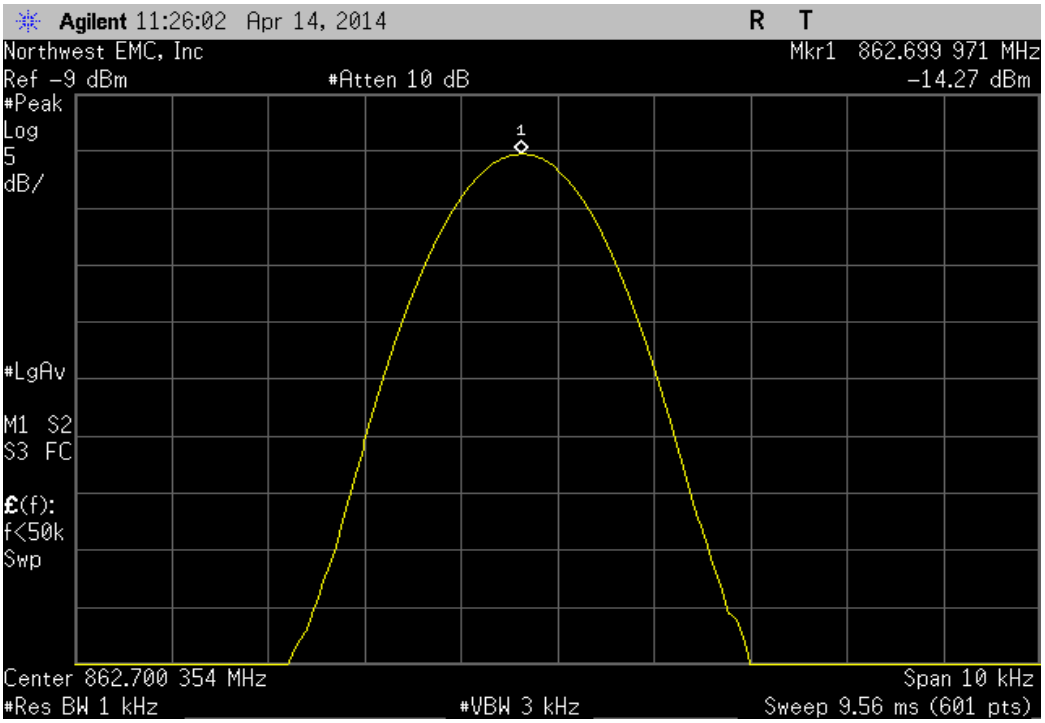

| Temperature: +20°, Mid Channel, 865.5 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 865.499977 | 865.5 | 0.0266 | 1 | Pass |



| Temperature: +20°, High Channel, 868.2 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 868.199967 | 868.2 | 0.0380 | 1 | Pass |

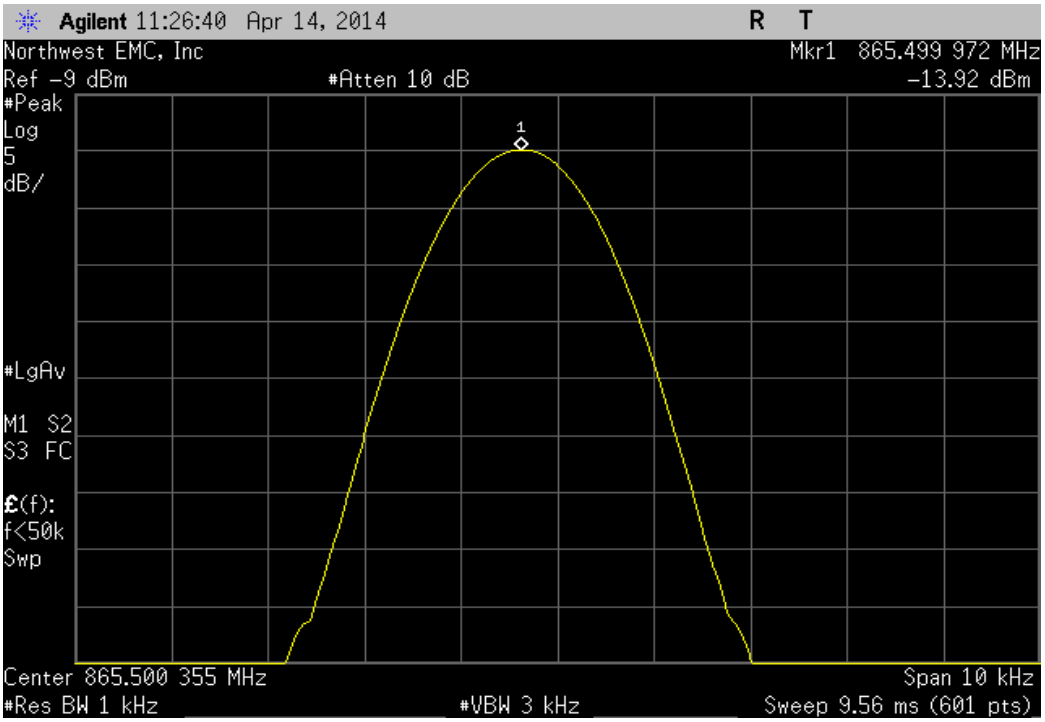



| Temperature: +10°, Low Channel, 862.7 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 862.699971 | 862.7 | 0.0336 | 1 | Pass |

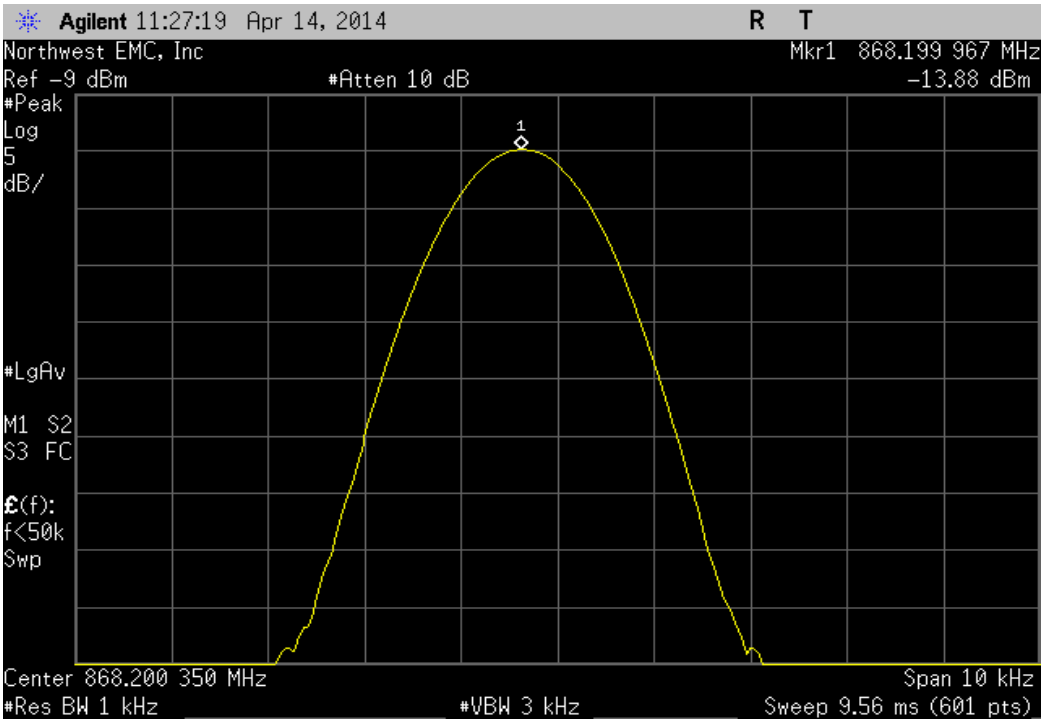


# FREQUENCY STABILITY

| Temperature: +10°, Mid Channel, 865.5 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 865.499972 | 865.5 | 0.0324 | 1 | Pass |

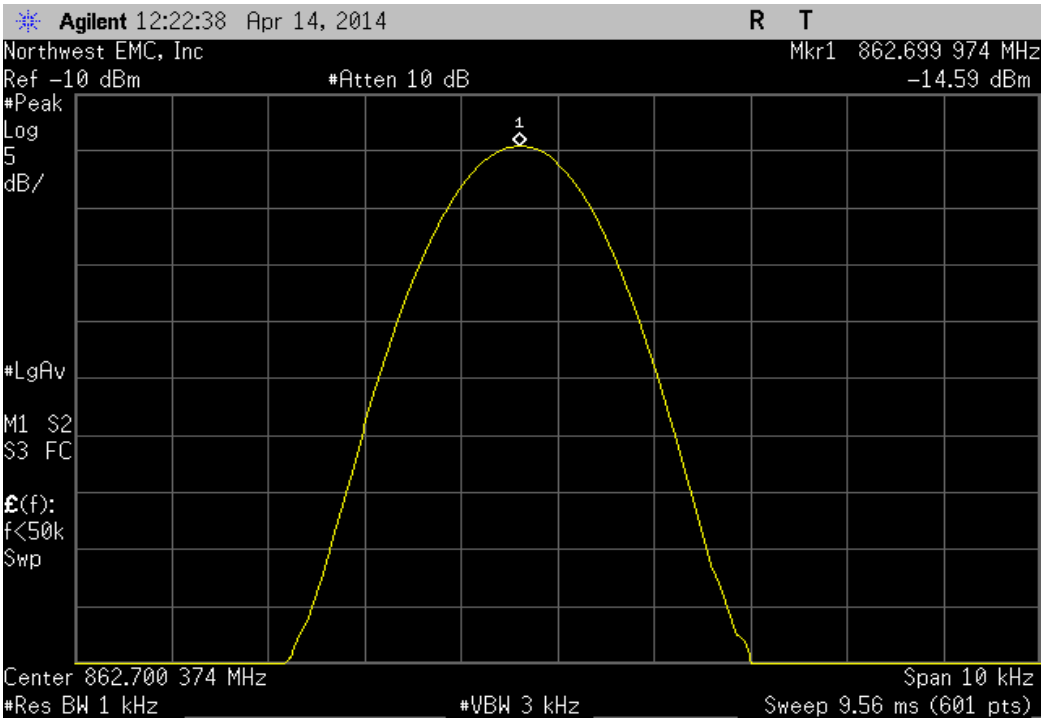



| Temperature: +10°, High Channel, 868.2 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 868.199967 | 868.2 | 0.0380 | 1 | Pass |

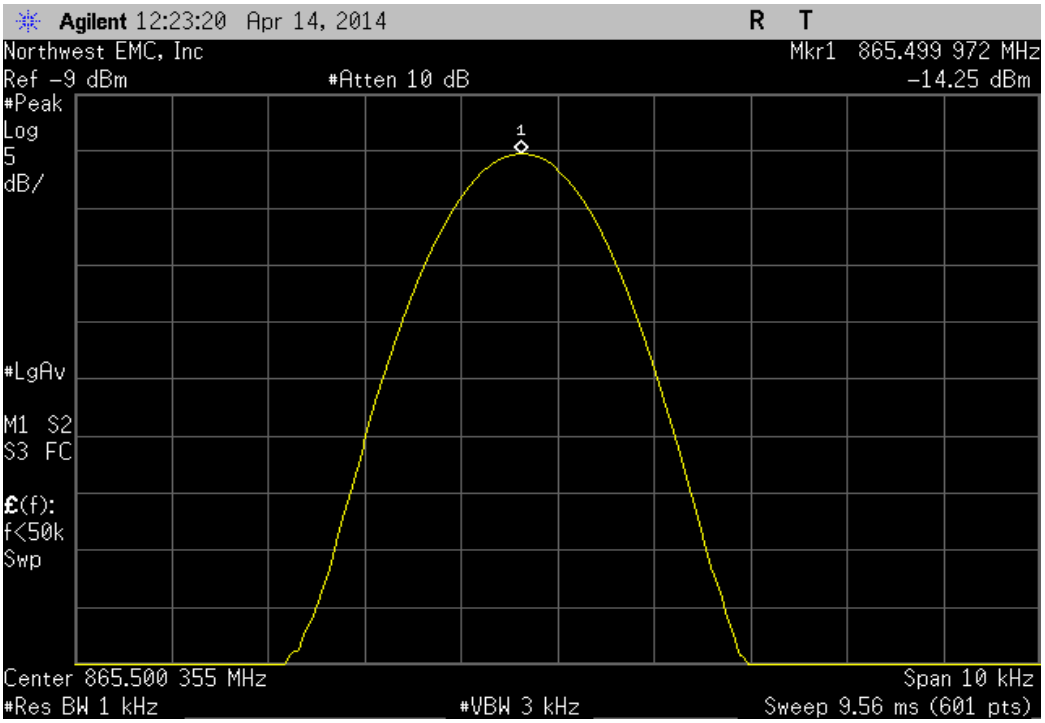


# FREQUENCY STABILITY

| Temperature: 0°, Low Channel, 862.7 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 862.699974 | 862.7 | 0.0301 | 1 | Pass |

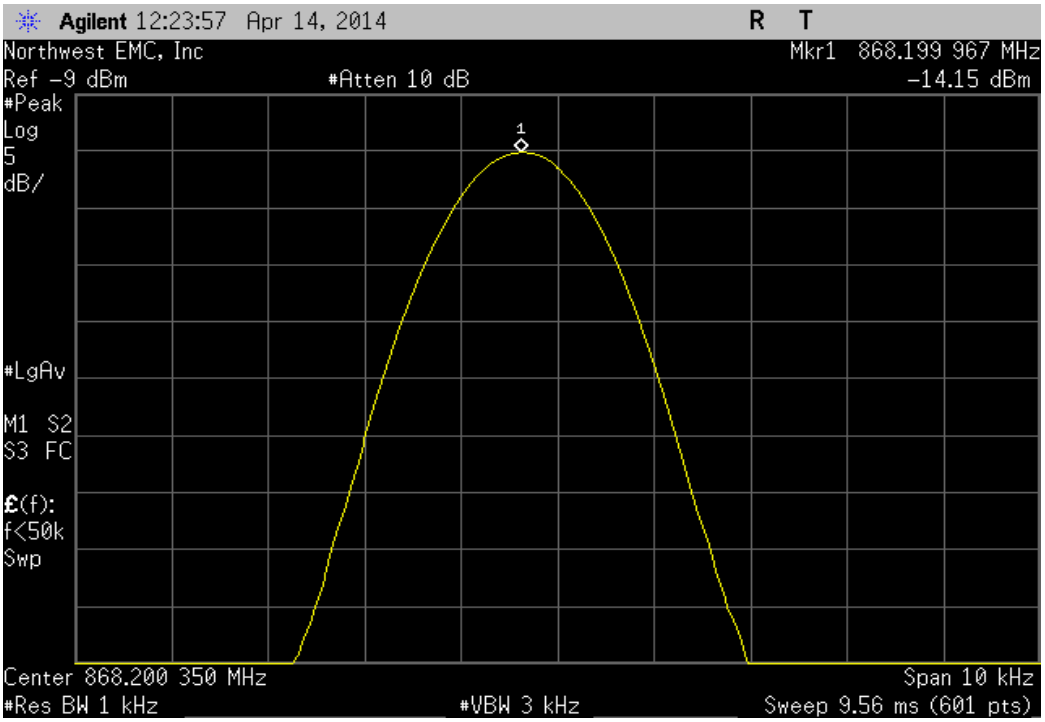



| Temperature: 0°, Mid Channel, 865.5 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 865.499972 | 865.5 | 0.0324 | 1 | Pass |

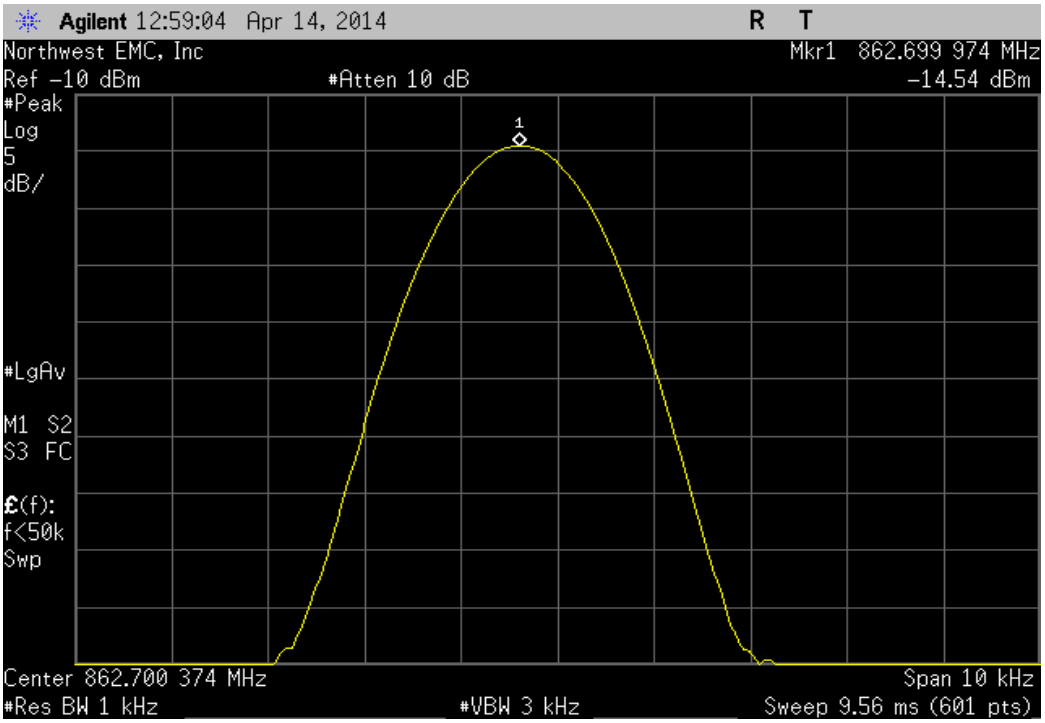


# FREQUENCY STABILITY

| Temperature: 0°, High Channel, 868.2 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 868.199967 | 868.2 | 0.0380 | 1 | Pass |

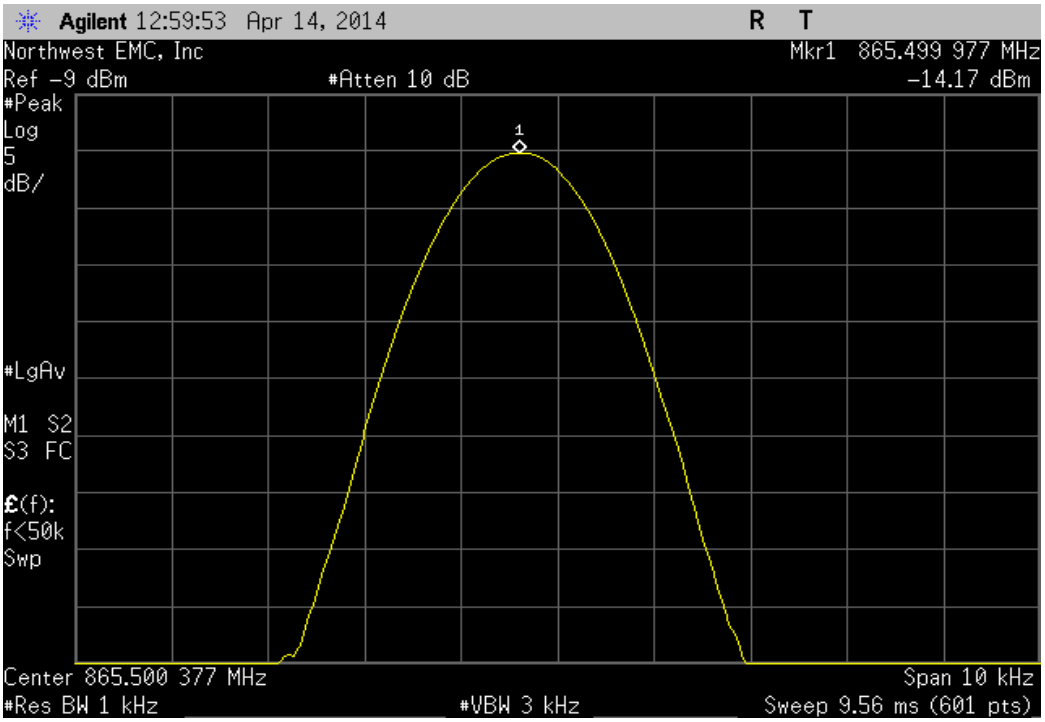



| Temperature: -10°, Low Channel, 862.7 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 862.699974 | 862.7 | 0.0301 | 1 | Pass |

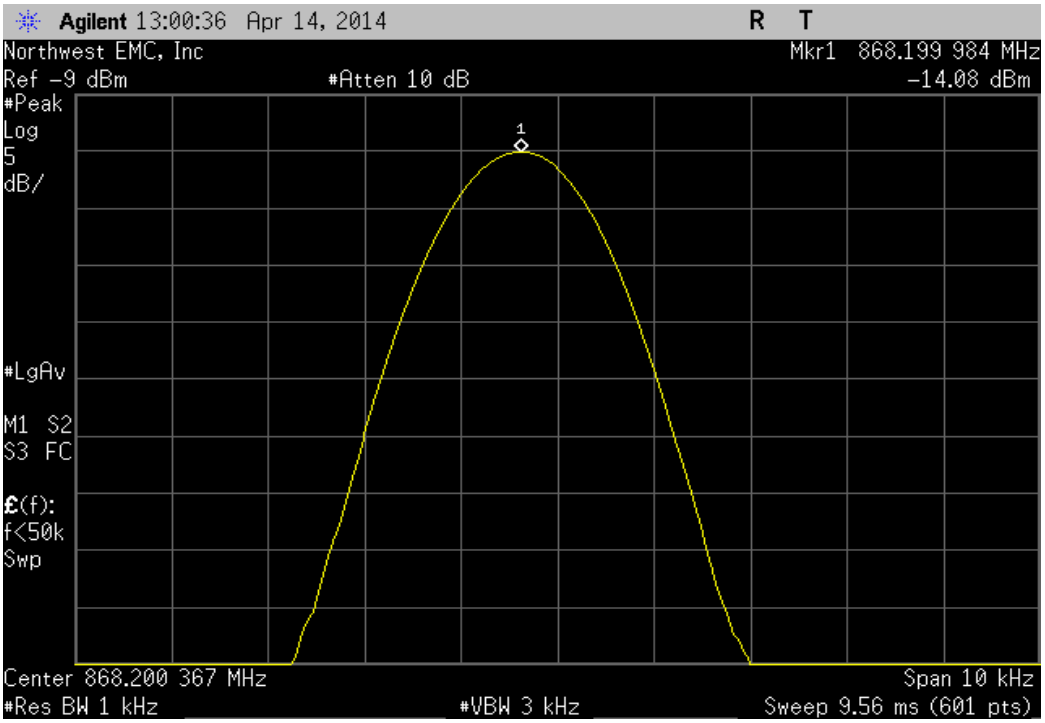


# FREQUENCY STABILITY

| Temperature: -10°, Mid Channel, 865.5 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 865.499977 | 865.5 | 0.0266 | 1 | Pass |

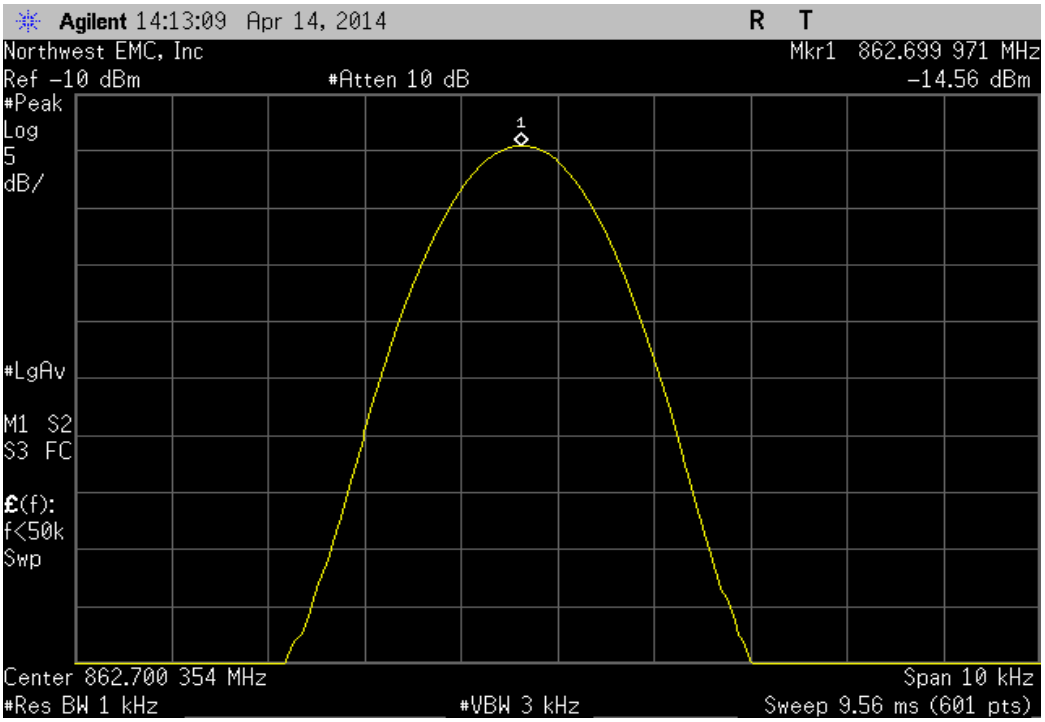



| Temperature: -10°, High Channel, 868.2 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 868.199984 | 868.2 | 0.0184 | 1 | Pass |

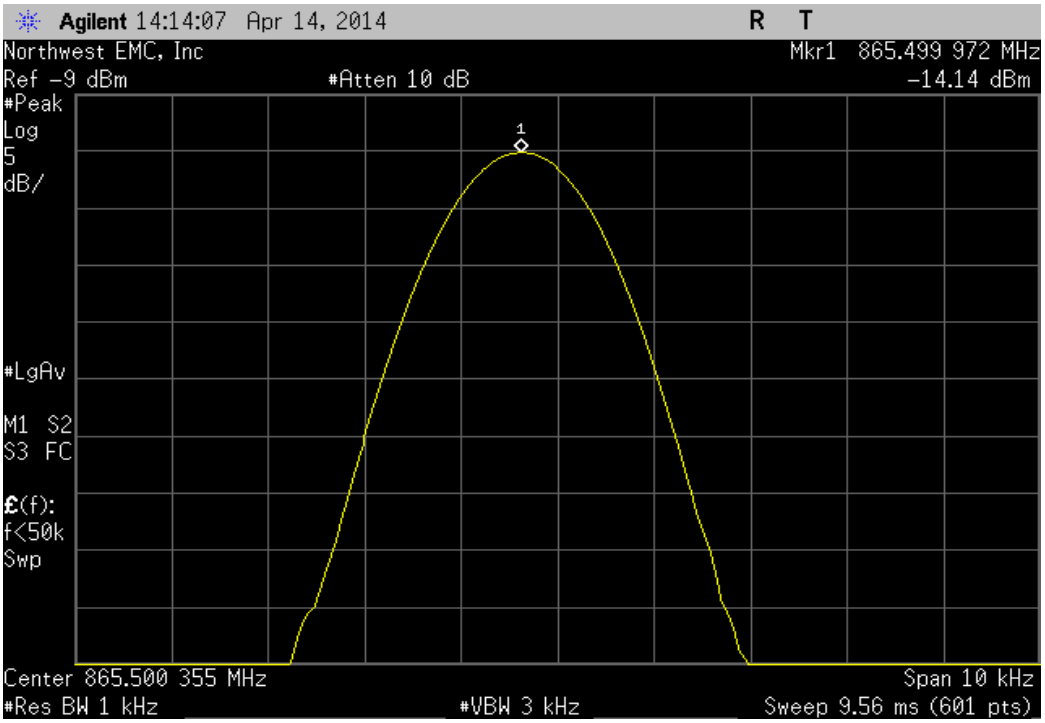


# FREQUENCY STABILITY

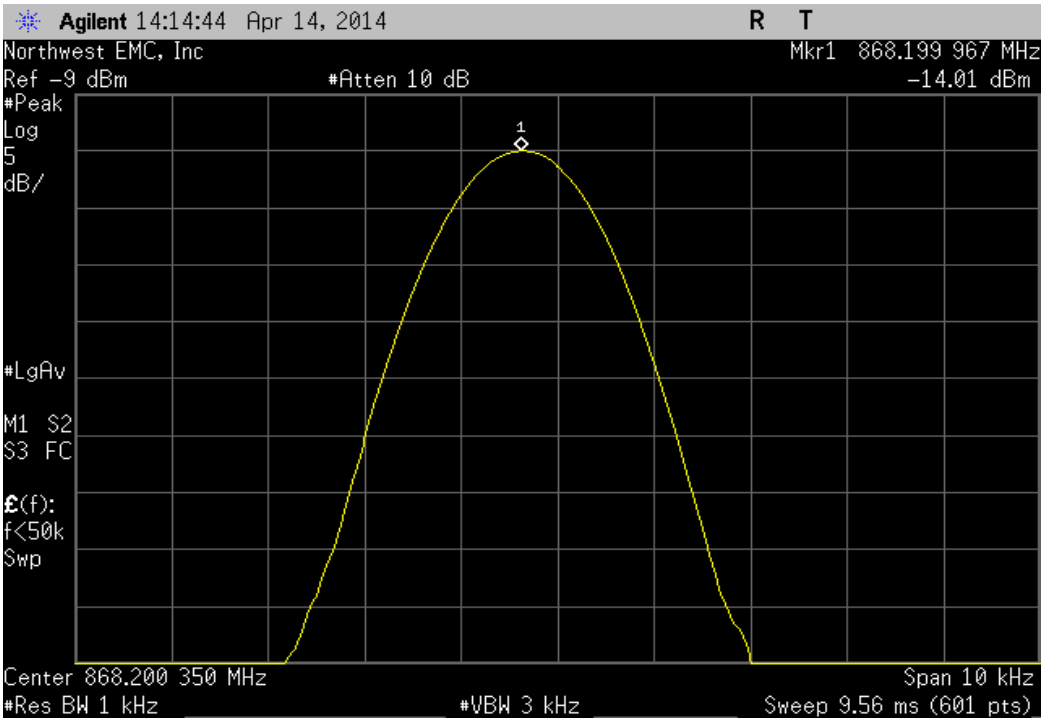
| Temperature: -20°, Low Channel, 862.7 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 862.699971 | 862.7 | 0.0336 | 1 | Pass |



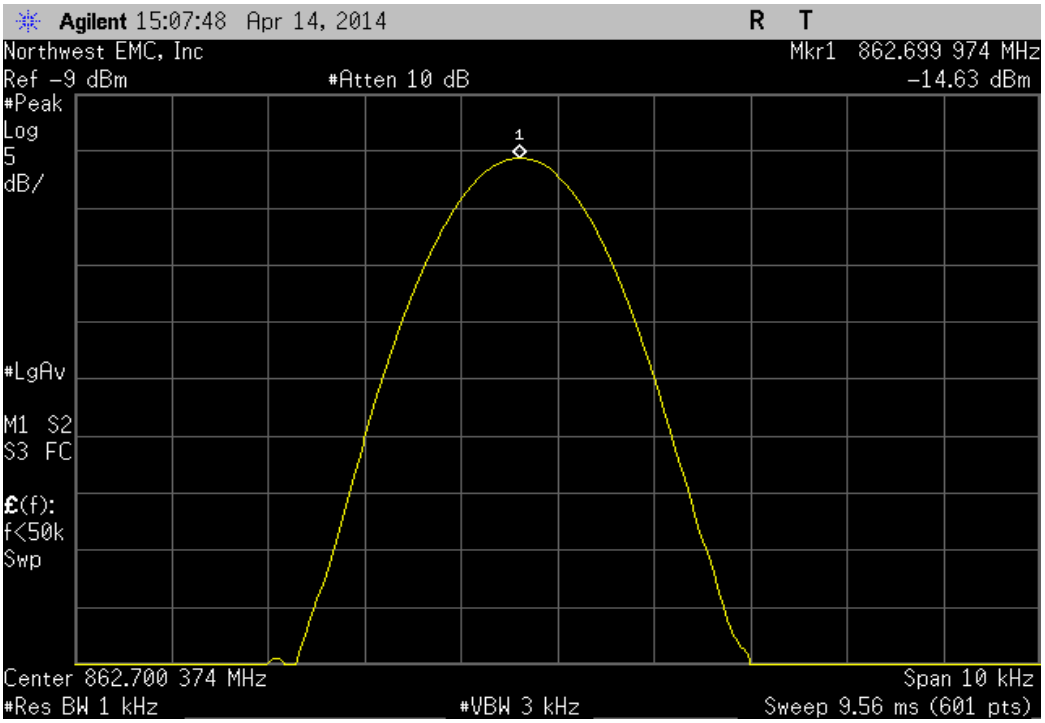

| Temperature: -20°, Mid Channel, 865.5 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 865.499972 | 865.5 | 0.0324 | 1 | Pass |



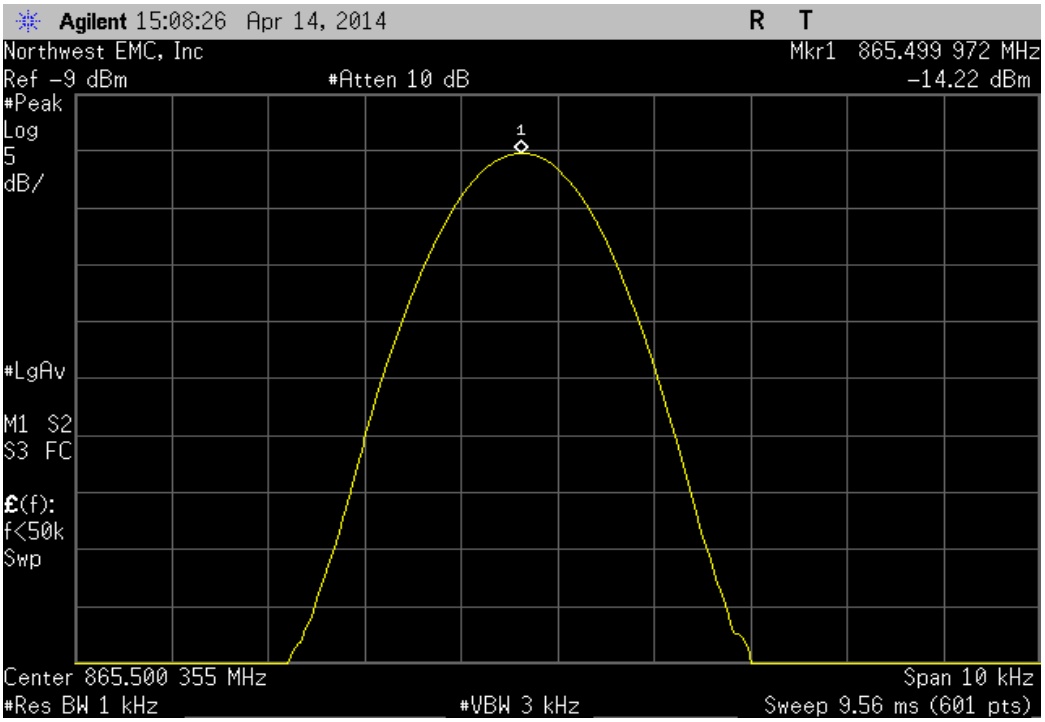
| Temperature: -20°, High Channel, 868.2 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 868.199967 | 868.2 | 0.0380 | 1 | Pass |



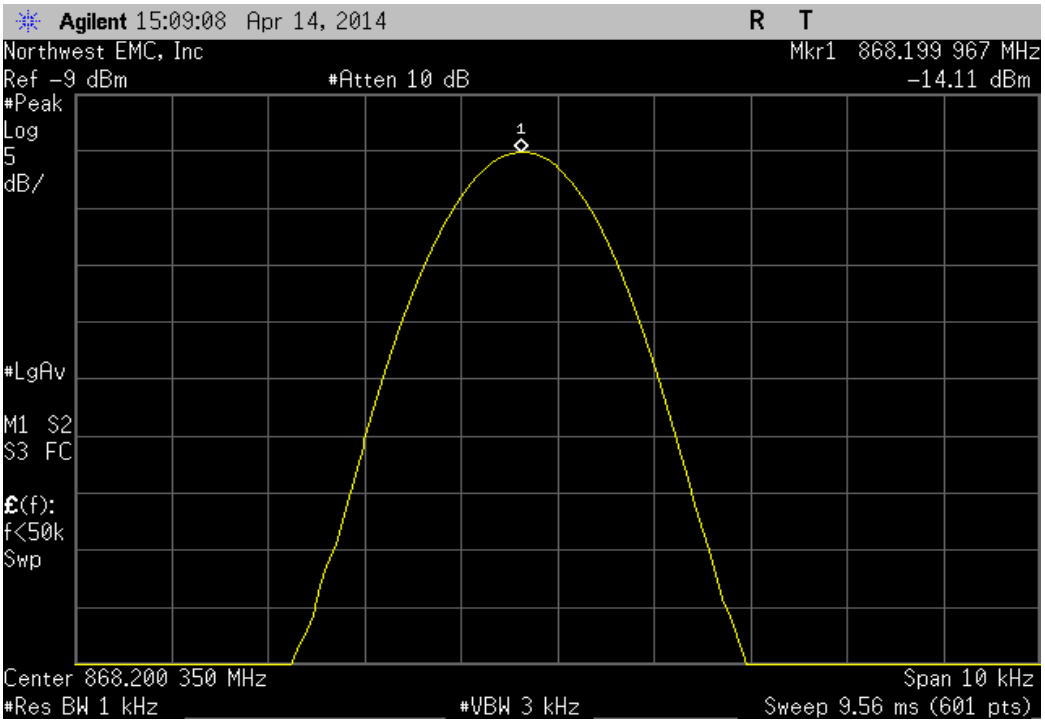

| Temperature: -30°, Low Channel, 862.7 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 862.699974 | 862.7 | 0.0301 | 1 | Pass |



| Temperature: -30°, Mid Channel, 865.5 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 865.499972 | 865.5 | 0.0324 | 1 | Pass |




| Temperature: -30°, High Channel, 868.2 MHz | | | | | | |
|---|---|---|---|---|---|---|
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Result |
| | | 868.199967 | 868.2 | 0.0380 | 1 | Pass |



# OCCUPIED BANDWIDTH (26 dB)

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

**TEST EQUIPMENT**

| Description | Manufacturer | Model | ID | Last Cal. | Interval |
|---|---|---|---|---|---|
| Attenuator - 20db, 'SMA' | SM Electronics | SA26B-20 | RFW | 4/3/2014 | 12 |
| 40 GHz DC block | Fairview Microwave | SD3379 | AMI | 9/26/2013 | 12 |
| Signal Generator MXG | Agilent | N5183A | TIK | 6/7/2012 | 36 |
| Spectrum Analyzer | Agilent | E4440A | AAX | 5/15/2012 | 24 |

**TEST DESCRIPTION**

The 26 dB occupied bandwidth was measured utilizing the analyzer's peak detector based on the peak output power level measured. A plot was taken to show the occupied bandwidth is contained within the allowable transmit band.

A direct connection was made between the EUT and a spectrum analyzer. The resolution bandwidth was approximately equal to 1% of the 26 dB bandwidth and the video bandwidth was greater than or equal to the resolution bandwidth.

The occupied bandwidth was measured with the EUT configured in the modes called out in the data sheets.

# OCCUPIED BANDWIDTH (26 dB)

| | | | | | |
|---|---|---|---|---|---|
| **EUT:** | Prism HDM 800 MHz/1900 MHz SISO RF Module | | | **Work Order:** | TECO0013 |
| **Serial Number:** | None | | | **Date:** | 04/09/14 |
| **Customer:** | TE Connectivity / ADC Telecommunications | | | **Temperature:** | 24.2°C |
| **Attendees:** | None | | | **Humidity:** | 21% |
| **Project:** | None | | | **Barometric Pres.:** | 1013.5 |
| **Tested by:** | Trevor Buls | **Power:** | 110VAC/60Hz | **Job Site:** | MN08 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 90I:2014 | ANSI/TIA/EIA-603-C-2004 |
| | |

**COMMENTS**

Customer provided a high wattage 30 dB attenuator that was added into the reference level offset.

**DEVIATIONS FROM TEST STANDARD**

None

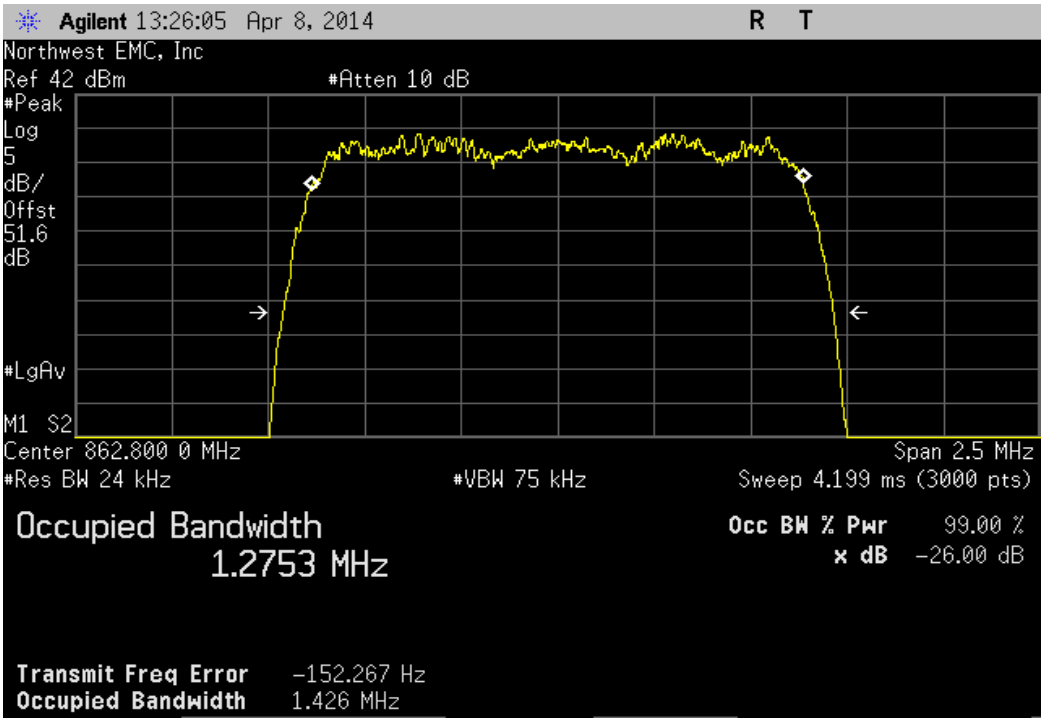
| Configuration # | 1 | Signature | Trevor Buls |
|---|---|---|---|

| | | Value | Limit | Result |
|---|---|---|---|---|
| CDMA | | | | |
| | Low Channel | 1.426 MHz | N/A | N/A |
| | Mid Channel | 1.422 MHz | N/A | N/A |
| | High Channel | 1.424 MHz | N/A | N/A |
| LTE 1.4 MHz | | | | |
| | Low Channel | 1.32 MHz | N/A | N/A |
| | Mid Channel | 1.375 MHz | N/A | N/A |
| | High Channel | 1.342 MHz | N/A | N/A |
| LTE 3 MHz | | | | |
| | Low Channel | 3.027 MHz | N/A | N/A |
| | Mid Channel | 3.032 MHz | N/A | N/A |
| | High Channel | 3.019 MHz | N/A | N/A |
| Input CDMA | | | | |
| | Mid Channel | 1.416 MHz | N/A | N/A |
| Input LTE 1.4 MHz | | | | |
| | Mid Channel | 1.317 MHz | N/A | N/A |
| Input LTE 3 MHz | | | | |
| | Mid Channel | 3.01 MHz | N/A | N/A |

# OCCUPIED BANDWIDTH (26 dB)

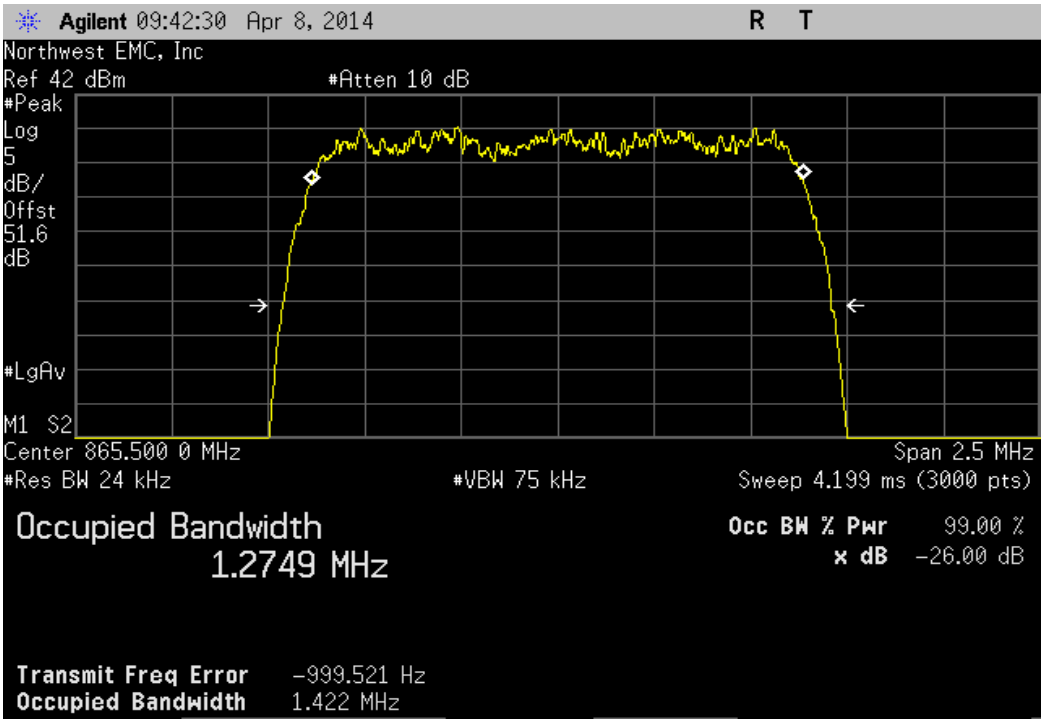
CDMA, Low Channel

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 1.426 MHz | N/A | N/A |




CDMA, Mid Channel

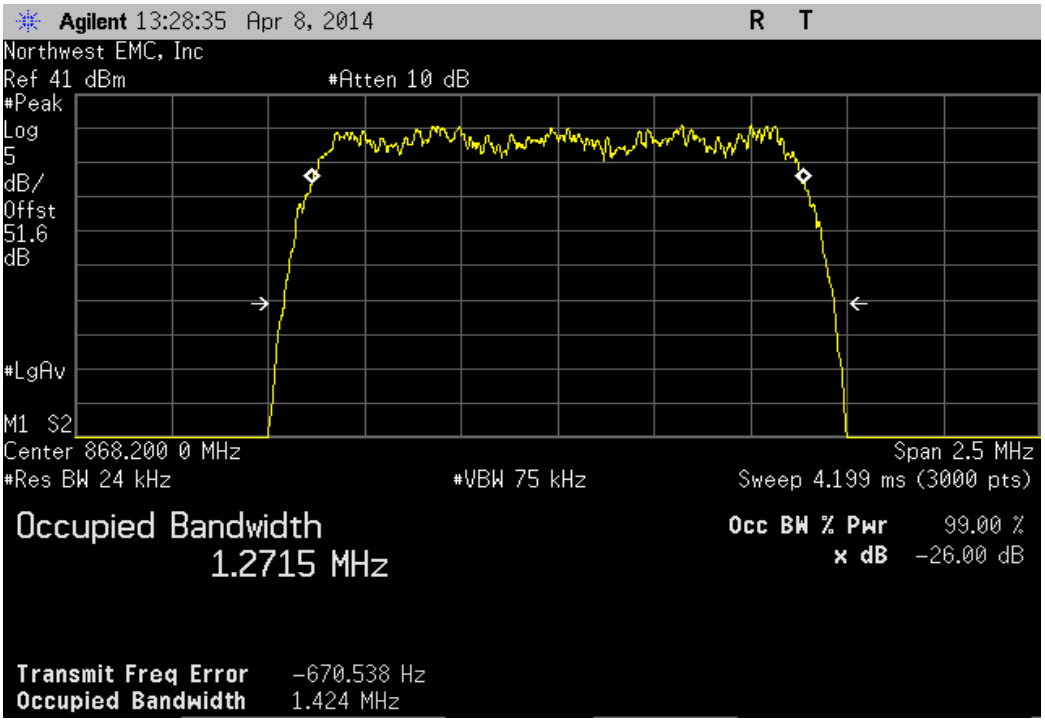
| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 1.422 MHz | N/A | N/A |



# OCCUPIED BANDWIDTH (26 dB)

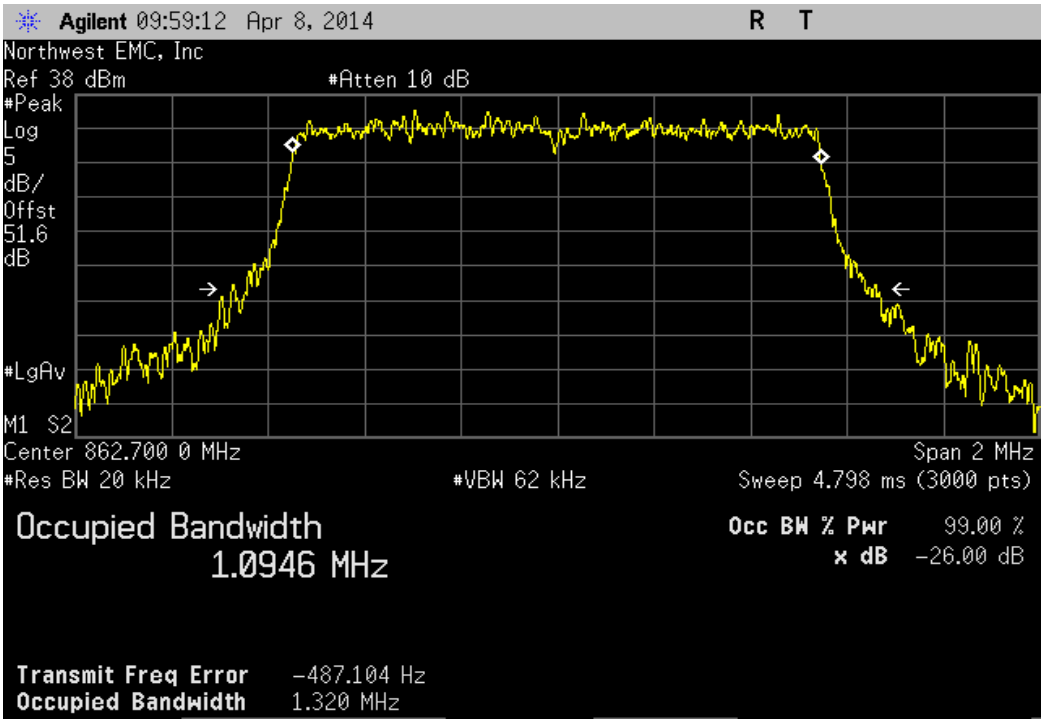
CDMA, High Channel

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 1.424 MHz | N/A | N/A |




LTE 1.4 MHz, Low Channel

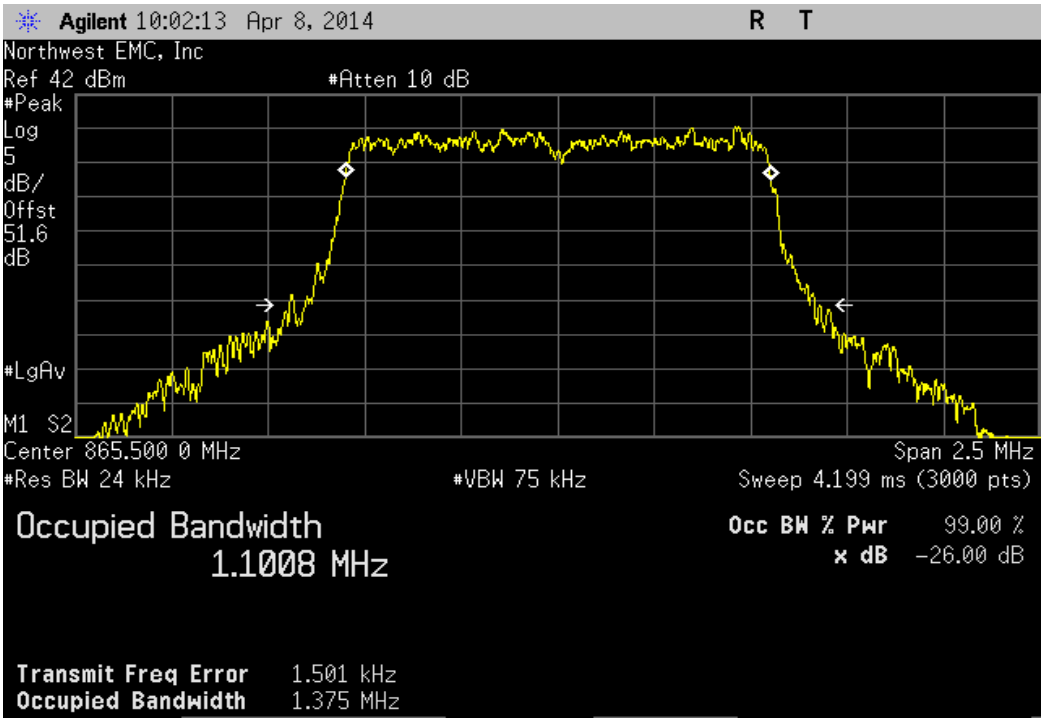
| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 1.32 MHz | N/A | N/A |



# OCCUPIED BANDWIDTH (26 dB)

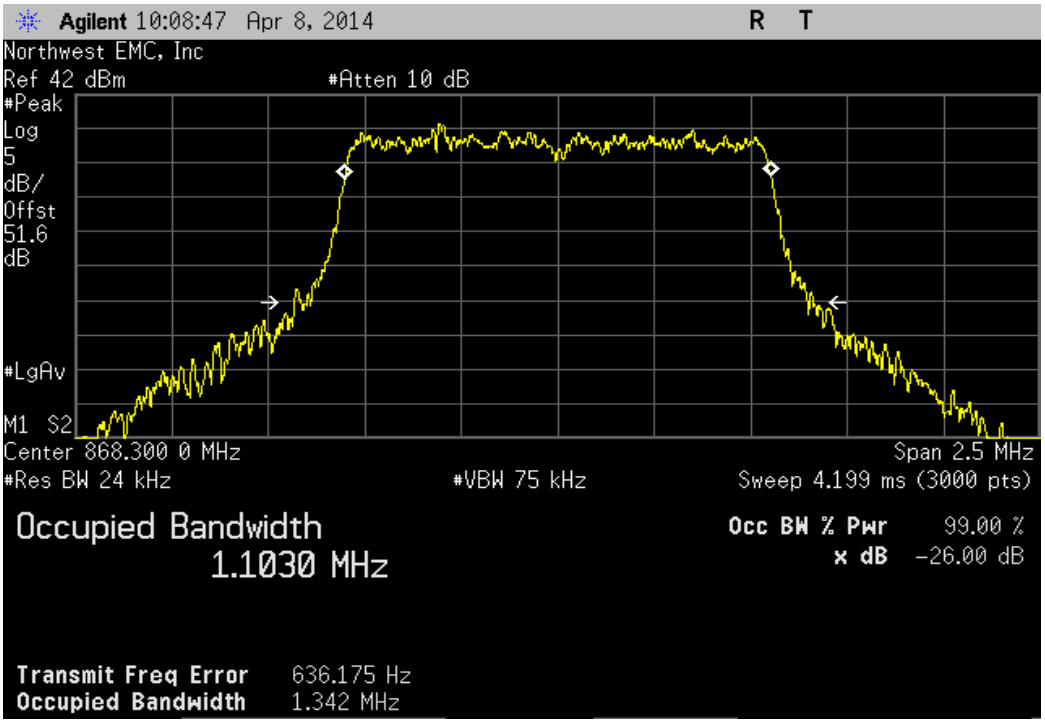
LTE 1.4 MHz, Mid Channel

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 1.375 MHz | N/A | N/A |




LTE 1.4 MHz, High Channel

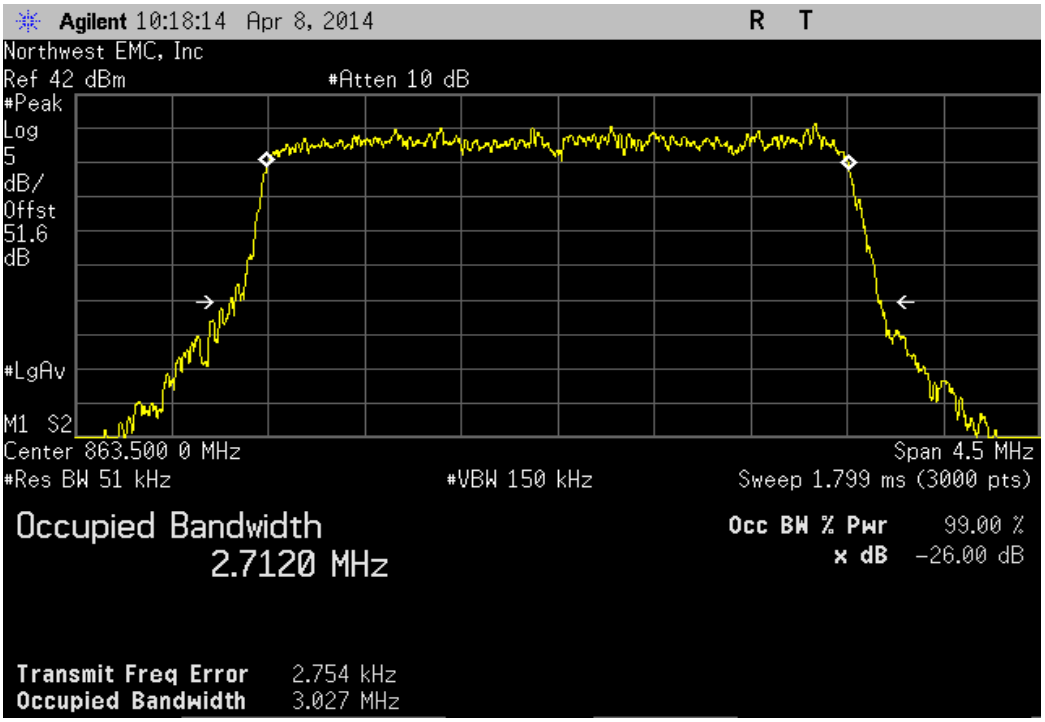
| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 1.342 MHz | N/A | N/A |



# OCCUPIED BANDWIDTH (26 dB)

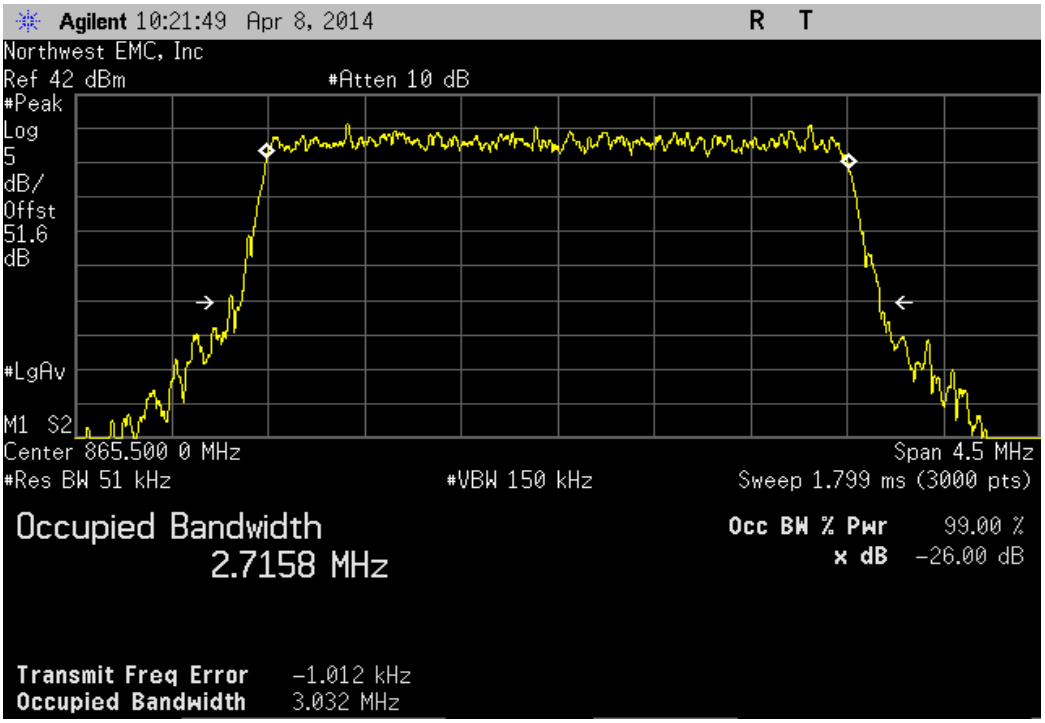
LTE 3 MHz, Low Channel

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 3.027 MHz | N/A | N/A |




LTE 3 MHz, Mid Channel

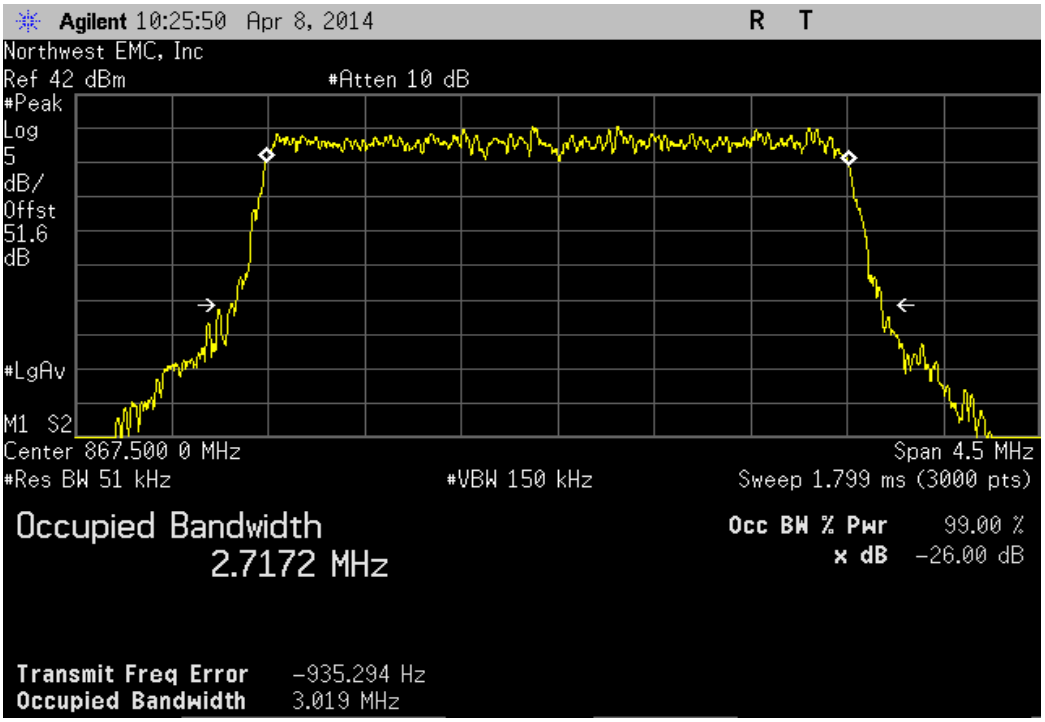
| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 3.032 MHz | N/A | N/A |



# OCCUPIED BANDWIDTH (26 dB)

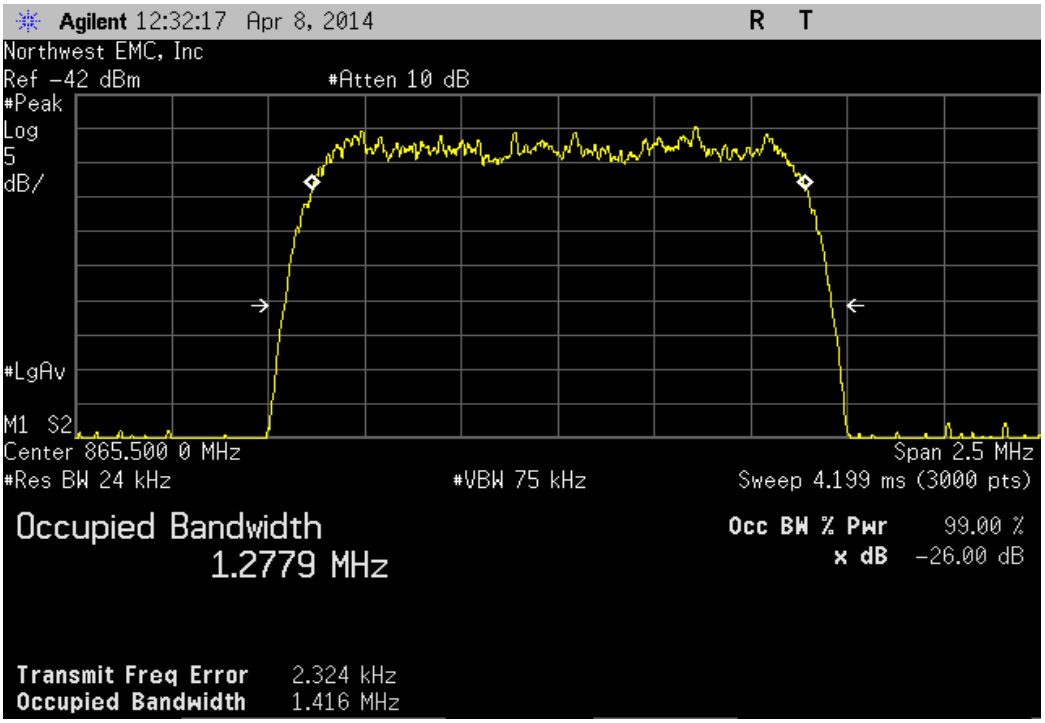
LTE 3 MHz, High Channel

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 3.019 MHz | N/A | N/A |



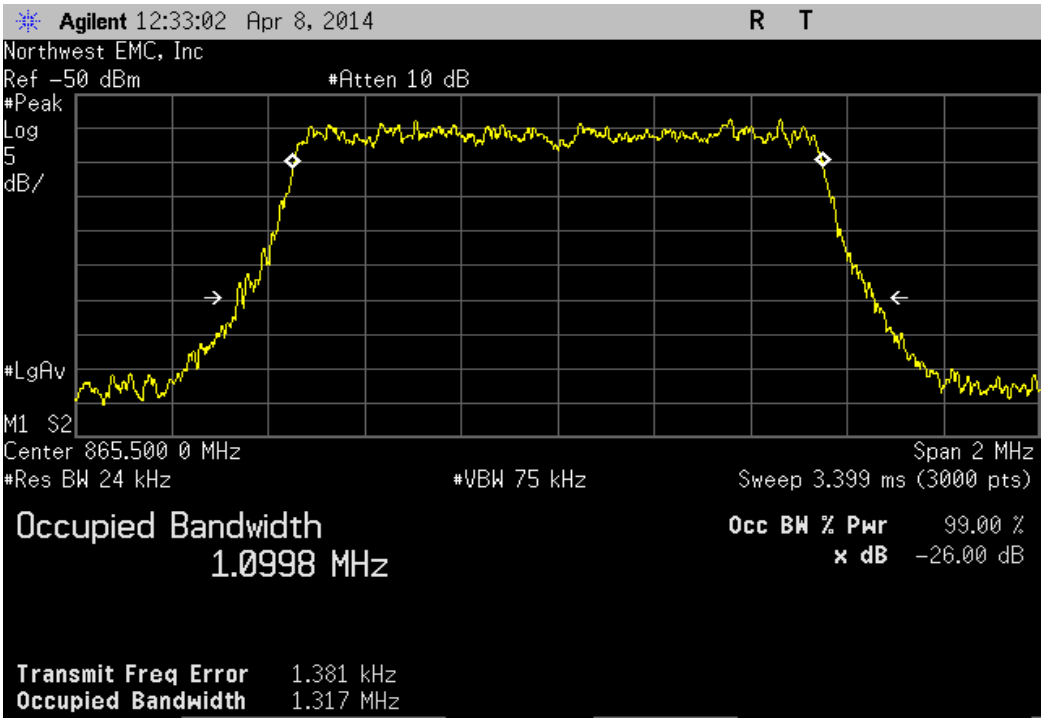

Input CDMA, Mid Channel

| | | | | Value | Limit | Result |
|---|---|---|---|---|---|---|
| | | | | 1.416 MHz | N/A | N/A |

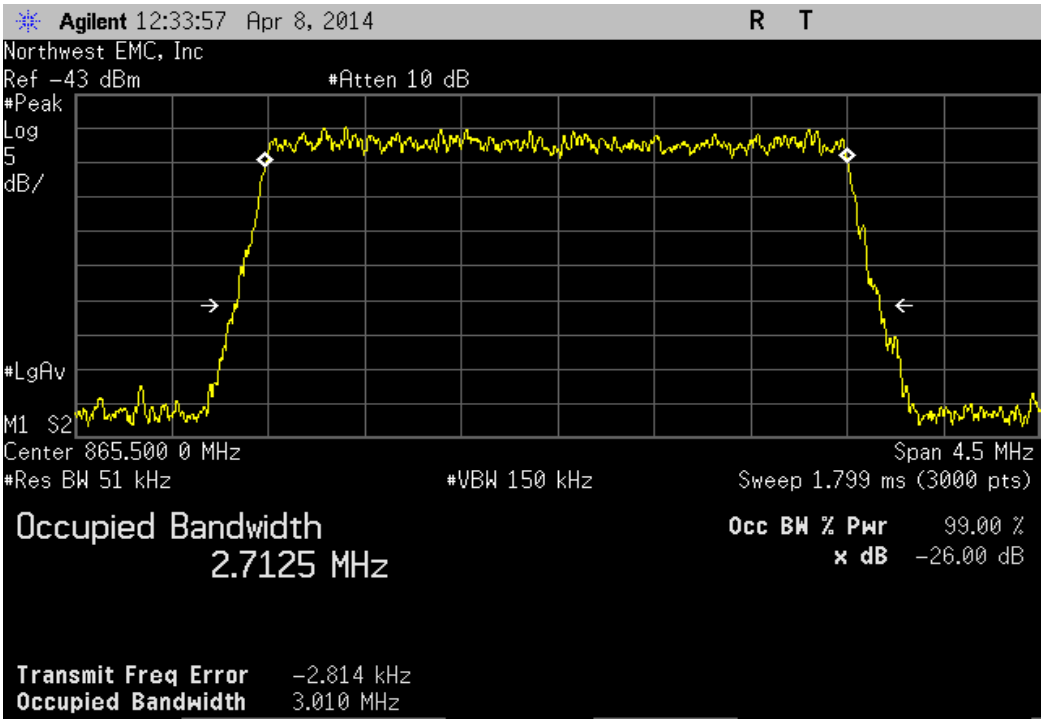


# OCCUPIED BANDWIDTH (26 dB)

| Input LTE 1.4 MHz, Mid Channel | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | Value | Limit | Result |
| | | | | | 1.317 MHz | N/A | N/A |




| Input LTE 3 MHz, Mid Channel | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | Value | Limit | Result |
| | | | | | 3.01 MHz | N/A | N/A |



# FIELD STRENGTH OF SPURIOUS 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 Low Mid High CDMA: 862.8, 865.5, 868.2 MHz; LTE 1.4 MHz: 862.7, 865.5, 868.3 MHz; LTE 3 MHz: 863.5, 865.5, 867.5 MHz (see comments)

**POWER SETTINGS INVESTIGATED**

110VAC/60Hz

**CONFIGURATIONS INVESTIGATED**

TECO0013 - 2

**FREQUENCY RANGE INVESTIGATED**

| | | | |
|---|---|---|---|
| Start Frequency | 30 MHz | Stop Frequency | 9 GHz |

**SAMPLE CALCULATIONS**

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

**TEST EQUIPMENT**

| Description | Manufacturer | Model | ID | Last Cal. | Interval |
|---|---|---|---|---|---|
| Antenna, Horn | ETS | 3115 | AJA | 5/13/2011 | 36 mo |
| Antenna, Dipole | EMCO | 3121C-DB4 | ADI | 12/21/2012 | 36 mo |
| Signal Generator MXG | Agilent | N5183A | TIK | 6/7/2012 | 36 mo |
| Power Sensor | Agilent | N8481A | SQN | 8/27/2012 | 24 mo |
| Power Meter | Agilent | N1913A | SQL | 8/27/2012 | 24 mo |
| Low Pass Filter 0-425 MHz | Micro-Tronics | LPM50003 | HGO | 5/31/2012 | 24 mo |
| High Pass Filter | Micro-Tronics | HPM50108 | HGP | 5/31/2012 | 24 mo |
| Attenuator, 20 dB, 'SMA' | SM Electronics | SA6-20 | REO | 5/20/2013 | 12 mo |
| Attenuator, 10db, 'SMA' | S.M. Electronics | SA18H-10 | REN | 5/20/2013 | 12 mo |
| MN05 Cables | ESM Cable Corp. | Standard Gain Horn Cables | MNJ | 3/14/2014 | 12 mo |
| Pre-Amplifier | Miteq | AMF-6F-08001200-30-10P | AVV | 3/14/2014 | 12 mo |
| Antenna, Horn | ETS | 3160-07 | AXP | NCR | 0 mo |
| Pre-Amplifier | Miteq | AMF-3D-00100800-32-13P | AVX | 3/14/2014 | 12 mo |
| MN05 Cables | ESM Cable Corp. | Double Ridge Guide Horn Cables | MNI | 3/14/2014 | 12 mo |
| Antenna, Horn (DRG) | ETS Lindgren | 3115 | AIP | 6/29/2011 | 36 mo |
| Pre-Amplifier | Miteq | AM-1616-1000 | PAD | 3/14/2014 | 12 mo |
| MN05 Cables | ESM Cable Corp. | Bilog Cables | MNH | 3/14/2014 | 12 mo |
| Antenna, Bilog | Teseq | CBL 6141B | AYD | 12/17/2013 | 12 mo |
| Spectrum Analyzer | Agilent | N9010A | AFI | 1/27/2013 | 24 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 to be used with the EUT was tested for final measurements. 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. 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.

For licensed transmitters, the FCC references TIA/EIA-603 as the measurement procedure standard. TIA/EIA-603 Section 2.2.12 describes a method for measuring radiated spurious emissions that utilizes an antenna substitution method:

At an approved test site, the transmitter is place on a remotely controlled turntable, and the measurement antenna is placed 3 meters from the transmitter. The turntable azimuth is varied to maximize the level of spurious emissions. The height of the measurement antenna is also varied from 1 to 4 meters. The amplitude and frequency of the highest emissions are noted. The transmitter is then replaced with a ½ wave dipole that is successively tuned to each of the highest spurious emissions for emissions below 1 GHz, and a horn antenna for emissions above 1 GHz. A signal generator is connected to the dipole (horn antenna for frequencies above 1 GHz), and its output is adjusted to match the level previously noted for each frequency. The output of the signal generator is recorded, and by factoring in the cable loss to the antenna and its gain; the power (dBm) into an ideal ½ wave dipole antenna is determined for each radiated spurious emission.

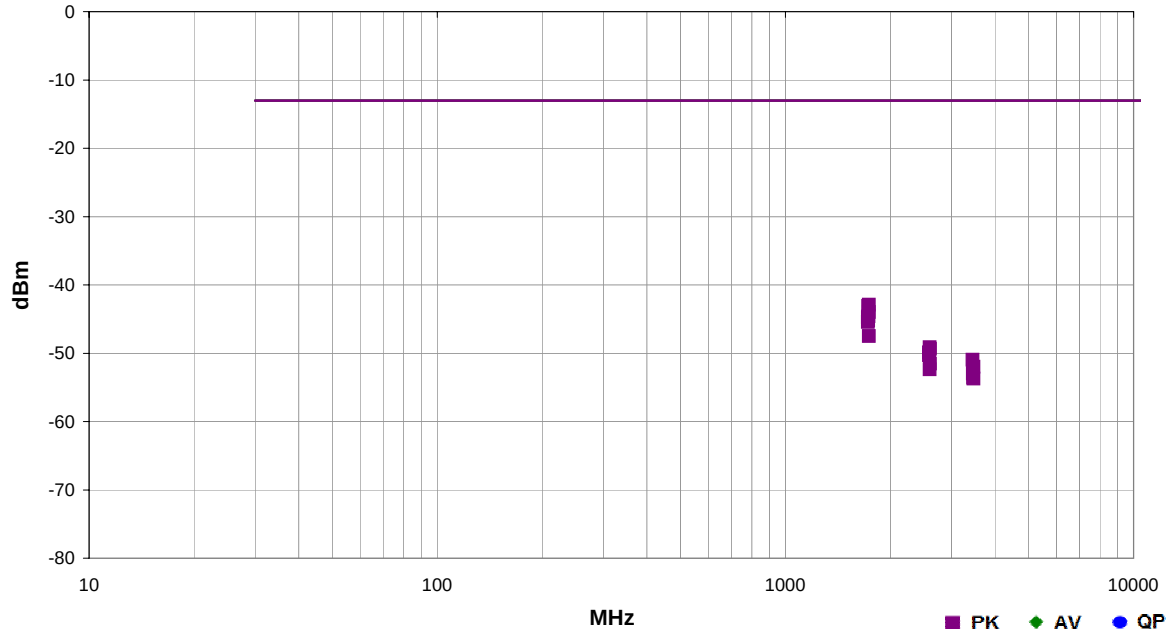
For the purposes of preliminary measurements, the field strength of the spurious emissions can be measured and compared with a 3 meter limit. The 3 meter limit was calculated to be 82.5 dBuV/m at 3 meters. The final measurements must be made utilizing the substitution method described above

# FIELD STRENGTH OF SPURIOUS EMISSIONS

| | | | | | |
|---|---|---|---|---|---|
| **Work Order:** | TECO0013 | **Date:** | 04/16/14 | | |
| **Project:** | None | **Temperature:** | 22.7 °C | | |
| **Job Site:** | MN05 | **Humidity:** | 15.5% RH | | |
| **Serial Number:** | None | **Barometric Pres.:** | 1017.6 mbar | **Tested by:** | Trevor Buls |
| **EUT:** | Prism HDM 800 MHz/1900 MHz SISO RF Module | | | | |
| **Configuration:** | 2 | | | | |
| **Customer:** | TE Connectivity / ADC Telecommunications | | | | |
| **Attendees:** | None | | | | |
| **EUT Power:** | 110VAC/60Hz | | | | |
| **Operating Mode:** | Transmitting Low Mid High CDMA: 862.8, 865.5, 868.2 MHz; LTE 1.4 MHz: 862.7, 865.5, 868.3 MHz; LTE 3 MHz: 863.5, 865.5, 867.5 MHz (see comments) | | | | |
| **Deviations:** | None | | | | |
| **Comments:** | Customer provided a high wattage 30 dB attenuator that was used to terminate the antenna output. Tested in normal upright position as device is always a floorstanding system. | | | | |

| **Test Specifications** | **Test Method** |
|---|---|
| FCC 90I:2014 | ANSI/TIA/EIA-603-C:2004 |

| **Run #** | 10 | **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 |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1736.800 | 1.0 | 95.0 | Horz | PK | 5.14E-08 | -42.9 | -13.0 | -29.9 | High Ch, CDMA |
| | 1730.717 | 1.0 | 96.0 | Horz | PK | 4.90E-08 | -43.1 | -13.0 | -30.1 | Mid Ch, CDMA |
| | 1736.217 | 1.0 | 124.0 | Horz | PK | 3.99E-08 | -44.0 | -13.0 | -31.0 | High Ch, LTE 1.4MHz |
| | 1733.933 | 1.1 | 96.0 | Horz | PK | 3.47E-08 | -44.6 | -13.0 | -31.6 | High Ch, LTE 3MHz |
| | 1725.367 | 1.0 | 341.0 | Vert | PK | 3.38E-08 | -44.7 | -13.0 | -31.7 | Low Ch, CDMA |
| | 1731.125 | 1.0 | 342.0 | Vert | PK | 3.02E-08 | -45.2 | -13.0 | -32.2 | Mid Ch, CDMA |
| | 1725.283 | 1.0 | 125.0 | Horz | PK | 2.87E-08 | -45.4 | -13.0 | -32.4 | Low Ch, CDMA |
| | 1737.017 | 1.0 | 307.0 | Vert | PK | 1.78E-08 | -47.5 | -13.0 | -34.5 | High Ch, CDMA |
| | 2596.267 | 1.0 | 100.0 | Vert | PK | 1.22E-08 | -49.2 | -13.0 | -36.2 | Mid Ch, CDMA |
| | 2604.658 | 1.0 | 276.0 | Vert | PK | 1.16E-08 | -49.3 | -13.0 | -36.3 | High Ch, CDMA |
| | 2587.967 | 1.0 | 35.0 | Vert | PK | 1.02E-08 | -49.9 | -13.0 | -36.9 | Low Ch, CDMA |
| | 2587.717 | 1.0 | 36.0 | Horz | PK | 9.33E-09 | -50.3 | -13.0 | -37.3 | Low Ch, CDMA |
| | 3452.108 | 1.0 | 12.0 | Vert | PK | 7.98E-09 | -51.0 | -13.0 | -38.0 | Low Ch, CDMA |
| | 2604.042 | 1.0 | 168.0 | Horz | PK | 7.01E-09 | -51.5 | -13.0 | -38.5 | High Ch, CDMA |
| | 3474.458 | 1.0 | 274.0 | Vert | PK | 6.30E-09 | -52.0 | -13.0 | -39.0 | High Ch, CDMA |
| | 2596.150 | 1.0 | 148.0 | Horz | PK | 5.82E-09 | -52.4 | -13.0 | -39.4 | Mid Ch, CDMA |
| | 3462.708 | 1.0 | 11.0 | Vert | PK | 5.51E-09 | -52.6 | -13.0 | -39.6 | Mid Ch, CDMA |
| | 3453.033 | 1.3 | 195.0 | Horz | PK | 5.03E-09 | -53.0 | -13.0 | -40.0 | Low Ch, CDMA |
| | 3464.458 | 2.6 | 11.0 | Horz | PK | 4.37E-09 | -53.6 | -13.0 | -40.6 | Mid Ch, CDMA |
| | 3471.642 | 1.0 | 306.0 | Horz | PK | 4.27E-09 | -53.7 | -13.0 | -40.7 | High Ch, CDMA |