

GYYWhi7 ca Zcfhi7 cfdcfUhjcb^{*}

' * \$G=E MMN' : 77 '%) ''&\$+. &\$% ' : 77 '%) ''&(+. &\$% A &'('; <n'8 HG`fN][VYYŁ`F UX]c`

FYdcfhi 'G97: \$\$*("&





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CERTIFICATE OF TEST



Last Date of Test: December 20, 2016 Select Comfort Corporation Model: 360SIQYYZ

Radio Equipment Testing

Standards

| Specification | Method |
|-----------------|------------------------------|
| FCC 15.207:2016 | ANGL C62 10:2012 KDD 659074 |
| FCC 15.247:2016 | ANSI C03.10.2013, KDB 556074 |

Results

| Method Clause | Test Description | Applied | Results | Comments |
|-------------------------------|-------------------------------|---------|---------|--------------------------------------|
| 6.2 | Powerline Conducted Emissions | Yes | Pass | |
| 11.6 | Duty Cycle | Yes | N/A | Characterization of radio operation. |
| 11.8.2 | Occupied Bandwidth | Yes | Pass | |
| 11.9.1.1 | Output Power | Yes | Pass | |
| 11.10.2 | Power Spectral Density | Yes | Pass | |
| 11.11 | Band Edge Compliance | Yes | Pass | |
| 11.11 | Spurious Conducted Emissions | Yes | Pass | |
| 11.12.1, 11.13.2, 6.5, 6.6 | Spurious Radiated Emissions | Yes | Pass | |

Deviations From Test Standards

None

Approved By:

Kyle Holgate, Operations Manager

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

REVISION HISTORY



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

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 17065 as a product certifier. This allows Northwest EMC to certify transmitters to FCC and IC specifications.

NVLAP - Each laboratory is accredited by NVLAP to ISO 17025

Canada

ISED - Recognized by Innovation, Science and Economic Development Canada as a Certification Body (CB). Certification chambers and Open Area Test Sites are filed with ISED.

European Union

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

Australia/New Zealand

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

Korea

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

Japan

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

Taiwan

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

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

Singapore

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

Israel

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

Hong Kong

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

Vietnam

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

SCOPE

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

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

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

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

FACILITIES





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



Test Setup Block Diagrams





PRODUCT DESCRIPTION



Client and Equipment Under Test (EUT) Information

| Company Name: | Select Comfort Corporation |
|--------------------------|----------------------------|
| Address: | 6105 Trenton Lane North |
| City, State, Zip: | Plymouth, MN 55442 |
| Test Requested By: | Nick Reynolds |
| Model: | 360SIQYYZ |
| First Date of Test: | December 19, 2016 |
| Last Date of Test: | December 20, 2016 |
| Receipt Date of Samples: | December 19, 2016 |
| Equipment Design Stage: | Production |
| Equipment Condition: | No Damage |
| Purchase Authorization: | Verified |

Information Provided by the Party Requesting the Test

Functional Description of the EUT:

Bed pump with a Zigbee radio, Bluetooth Low Energy radio, and Pre-certified Wi-Fi radio module installed. The pump can be a stand-alone unit or mounted in the base unit.

Testing Objective:

To demonstrate compliance of the 2.4 GHz DTS (Zigbee) radio to FCC 15.247 requirements.

CONFIGURATIONS



Configuration SECF0064-1

| Software/Firmware Running during test | | |
|---------------------------------------|---------|--|
| Description | Version | |
| TIIDE | Unknown | |

| EUT | | | |
|---|----------------------------|----------------------|---------------|
| Description | Manufacturer | Model/Part Number | Serial Number |
| 360 Connect Pump (Pulse Transformer) | Select Comfort Corporation | EVT3.1 830-000021 | 64DBA00000C0 |

| Peripherals in test setup boundary | | | | |
|------------------------------------|----------------------------|-------------------|---------------|--|
| Description | Manufacturer | Model/Part Number | Serial Number | |
| Integrated Base | Select Comfort Corporation | Unknown | Unknown | |

| Cables | | | | | |
|------------|--------|------------|---------|------------------|--------------|
| Cable Type | Shield | Length (m) | Ferrite | Connection 1 | Connection 2 |
| AC Cable | No | 2.5m | No | 360 Connect Pump | AC Mains |

Configuration SECF0064-2

| Software/Firmware Running during test | |
|---------------------------------------|---------|
| Description | Version |
| TIIDE | Unknown |

| EUT | | | |
|------------------|----------------------------|-------------------|---------------|
| Description | Manufacturer | Model/Part Number | Serial Number |
| 360 Connect Pump | Select Comfort Corporation | EVT3.1 830-000021 | 64DBA0000136 |

| Peripherals in test setup boundary | | | | | | | |
|------------------------------------|----------------------------|-------------------|---------------|--|--|--|--|
| Description | Manufacturer | Model/Part Number | Serial Number | | | | |
| Integrated Base | Select Comfort Corporation | Unknown | Unknown | | | | |

| Cables | | | | | |
|------------|--------|------------|---------|------------------|--------------|
| Cable Type | Shield | Length (m) | Ferrite | Connection 1 | Connection 2 |
| AC Cable | No | 2.5m | No | 360 Connect Pump | AC Mains |

MODIFICATIONS



Equipment Modifications

| Item | Date | Test | Modification | Note | Disposition of EUT |
|------|------------|-----------------|---------------|----------------------------|---------------------|
| | | Spurious | Tested as | No EMI suppression | EUT remained at |
| 1 | 12/19/2016 | Radiated | delivered to | devices were added or | Northwest EMC |
| | | Emissions | Test Station. | modified during this test. | following the test. |
| | | Powerline | Tested as | No EMI suppression | EUT remained at |
| 2 | 12/20/2016 | Conducted | delivered to | devices were added or | Northwest EMC |
| | | Emissions | Test Station. | modified during this test. | following the test. |
| | | Occupied | Tested as | No EMI suppression | EUT remained at |
| 3 | 12/20/2016 | Bandwidth | delivered to | devices were added or | Northwest EMC |
| | | Danuwiutn | Test Station. | modified during this test. | following the test. |
| | | /20/2016 Output | Tested as | No EMI suppression | EUT remained at |
| 4 | 12/20/2016 | | delivered to | devices were added or | Northwest EMC |
| | | TOWEI | Test Station. | modified during this test. | following the test. |
| | | Power | Tested as | No EMI suppression | EUT remained at |
| 5 | 12/20/2016 | Spectral | delivered to | devices were added or | Northwest EMC |
| | | Density | Test Station. | modified during this test. | following the test. |
| | | Band Edge | Tested as | No EMI suppression | EUT remained at |
| 6 | 12/20/2016 | Compliance | delivered to | devices were added or | Northwest EMC |
| | | Compliance | Test Station. | modified during this test. | following the test. |
| | | Spurious | Tested as | No EMI suppression | Scheduled testing |
| 7 | 12/20/2016 | Conducted | delivered to | devices were added or | was completed |
| | | Emissions | Test Station. | modified during this test. | nuo compieted. |



TEST DESCRIPTION

Using the mode of operation and configuration noted within this report, conducted emissions tests were performed. The frequency range investigated (scanned), is also noted in this report. Conducted power line measurements are made, unless otherwise specified, over the frequency range from 150 kHz to 30 MHz to determine the line-to-ground radio-noise voltage that is conducted from the EUT power-input terminals that are directly (or indirectly via separate transformer or power supplies) connected to a public power network. Per the standard, an insulating material was also added to ground plane between the EUT's power and remote I/O cables. Equipment is tested with power cords that are normally used or that have electrical or shielding characteristics that are the same as those cords normally used. Typically those measurements are made using a LISN (Line Impedance Stabilization Network), the 500hm measuring port is terminated by a 500hm EMI meter or a 500hm resistive load. All 500hm measuring ports of the LISN are terminated by 500hm. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

TEST EQUIPMENT

| Description | Manufacturer | Model | ID | Last Cal. | Cal. Due |
|----------------------------------|-------------------|------------------|------|-----------|-----------|
| Cable - Conducted Cable Assembly | Northwest EMC | EVG, HHD, RKA | EVGA | 5/10/2016 | 5/10/2017 |
| Receiver | Rohde & Schwarz | ESCI | ARH | 3/21/2016 | 3/21/2017 |
| LISN | Solar Electronics | 9252-50-R-24-BNC | LIP | 10/4/2016 | 10/4/2018 |

MEASUREMENT UNCERTAINTY

| Description | | | | | | |
|--------------|--------|---------|--|--|--|--|
| Expanded k=2 | 2.4 dB | -2.4 dB | | | | |
| | | | | | | |

CONFIGURATIONS INVESTIGATED

SECF0064-2

MODES INVESTIGATED

Transmit middle channel 2440 MHz.



| EUT: | 360SIQŸŸZ | | | Work Order: | SECF0064 | | |
|-------------------------------|----------------------------|----------|---------|--------------------------|------------|--|--|
| Serial Number: | 64DBA0000136 | | | Date: | 12/20/2016 | | |
| Customer: | Select Comfort Corporation | 1 | | Temperature: | 22.1°C | | |
| Attendees: | Jason Ortberg, Rob Munn | | | Relative Humidity: | 35.5% | | |
| Customer Project: | None | | | Bar. Pressure: | 1033 mb | | |
| Tested By: | Jared Ison | | | Job Site: | EV07 | | |
| Power: | 110VAC/60Hz | | | Configuration: | SECF0064-2 | | |
| TEST SPECIFICATIONS | | | | | | | |
| Specification: | | | Method: | | | | |
| FCC 15.207:2016 ANSI C63. | | | |):2013 | | | |
| TEST PARAME | TERS | | | | | | |
| Run #: 7 | Line: H | igh Line | Ade | d. Ext. Attenuation (dB) |): 0 | | |
| COMMENTS | | | | | | | |
| NUILE. | | | | | | | |
| EUT OPERATING MODES | | | | | | | |
| Transmit middle cha | annel 2440 MHz. | | | | | | |
| DEVIATIONS FROM TEST STANDARD | | | | | | | |

None.









RESULTS - Run #7

| Quasi Peak Data - vs - Quasi Peak Limit | | | | | | | |
|---|----------------|----------------|--------------------|--------------------------|----------------|--|--|
| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) | | |
| 0.158 | 32.2 | 19.7 | 51.9 | 65.5 | -13.6 | | |
| 0.210 | 28.8 | 19.7 | 48.5 | 63.2 | -14.7 | | |
| 0.263 | 23.8 | 19.7 | 43.5 | 61.3 | -17.8 | | |
| 0.627 | 16.1 | 19.6 | 35.7 | 56.0 | -20.3 | | |
| 0.527 | 13.5 | 19.6 | 33.1 | 56.0 | -22.9 | | |
| 0.580 | 12.5 | 19.6 | 32.1 | 56.0 | -23.9 | | |

Average Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|---------------|----------------|----------------|--------------------|--------------------------|----------------|
| 0.210 | 20.3 | 19.7 | 40.0 | 53.2 | -13.2 |
| 0.627 | 12.7 | 19.6 | 32.3 | 46.0 | -13.7 |
| 0.263 | 16.9 | 19.7 | 36.6 | 51.3 | -14.7 |
| 0.527 | 10.5 | 19.6 | 30.1 | 46.0 | -15.9 |
| 0.158 | 19.1 | 19.7 | 38.8 | 55.5 | -16.7 |
| 0.580 | 9.5 | 19.6 | 29.1 | 46.0 | -16.9 |

CONCLUSION

Pass





| EUT: | 360SIQŸŸZ | | | | Work Order: | SECF0064 | |
|-------------------------------|-----------------|---------|---------|-------|-------------|---------------------------|------------|
| Serial Number: | 64DBA0000136 | | | Date: | 12/20/2016 | | |
| Customer: | Select Comfort | Corpora | tion | | | Temperature: | 22.1°C |
| Attendees: | Jason Ortberg, | Rob Mu | nn | | | Relative Humidity: | 35.5% |
| Customer Project: | None | | | | | Bar. Pressure: | 1033 mb |
| Tested By: | Jared Ison | | | | | Job Site: | EV07 |
| Power: | 110VAC/60Hz | | | | | Configuration: | SECF0064-2 |
| TEST SPECIFICATIONS | | | | | | | |
| Specification: | | | | | Method: | | |
| FCC 15.207:2016 ANSI C63.10: | | | 0:2013 | 2013 | | | |
| TEST PARAME | TERS | | | | | | |
| Run #: 8 | Li | ine: | Neutral | | А | dd. Ext. Attenuation (dB) |): 0 |
| COMMENTS | | | | | | | |
| None. | | | | | | | |
| EUT OPERATING MODES | | | | | | | |
| Transmit middle cha | annel 2440 MHz. | | | | | | |
| DEVIATIONS FROM TEST STANDARD | | | | | | | |

None.









RESULTS - Run #8

| Quasi Peak Data - vs - Quasi Peak Limit | | | | | | | |
|---|----------------|----------------|--------------------|--------------------------|----------------|--|--|
| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) | | |
| 0.163 | 31.0 | 19.7 | 50.7 | 65.3 | -14.6 | | |
| 0.210 | 27.8 | 19.7 | 47.5 | 63.2 | -15.7 | | |
| 0.626 | 19.7 | 19.6 | 39.3 | 56.0 | -16.7 | | |
| 0.468 | 16.9 | 19.6 | 36.5 | 56.5 | -20.0 | | |
| 0.516 | 16.3 | 19.6 | 35.9 | 56.0 | -20.1 | | |
| 0.315 | 18.6 | 19.6 | 38.2 | 59.8 | -21.6 | | |

Average Data - vs - Average Limit

| Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|----------------|--|---|--|---|
| 17.2 | 19.6 | 36.8 | 46.0 | -9.2 |
| 21.9 | 19.7 | 41.6 | 53.2 | -11.6 |
| 14.1 | 19.6 | 33.7 | 46.5 | -12.8 |
| 11.5 | 19.6 | 31.1 | 46.0 | -14.9 |
| 14.6 | 19.6 | 34.2 | 49.8 | -15.6 |
| 19.5 | 19.7 | 39.2 | 55.3 | -16.1 |
| | Amp. (dBuV) 17.2 21.9 14.1 11.5 14.6 19.5 | Amp. (dBuV) Factor (dB) 17.2 19.6 21.9 19.7 14.1 19.6 11.5 19.6 14.6 19.6 19.5 19.7 | Amp. (dBuV) Factor (dB) Adjusted (dBuV) 17.2 19.6 36.8 21.9 19.7 41.6 14.1 19.6 33.7 11.5 19.6 31.1 14.6 19.6 34.2 19.5 19.7 39.2 | Amp. (dBUV) Factor (dB) Adjusted (dBuV) Spec. Limit (dBuV) 17.2 19.6 36.8 46.0 21.9 19.7 41.6 53.2 14.1 19.6 33.7 46.5 11.5 19.6 31.1 46.0 14.6 19.6 34.2 49.8 19.5 19.7 39.2 55.3 |

CONCLUSION

Pass



DUTY CYCLE



TEST DESCRIPTION

The Duty Cycle (x) were measured for each of the EUT operating modes. The measurements were made using a zero span on the spectrum analyzer to see the pulses in the time domain. The transmit power was set to its default maximum.

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.



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. | Cal. Due |
|------------------------------|--------------------|-----------------------|-----|------------|------------|
| Generator - Signal | Keysight | N5182B | TFU | 10/27/2015 | 10/27/2018 |
| Analyzer - Spectrum Analyzer | Keysight | N9010A | AFP | 8/10/2016 | 8/10/2017 |
| Cable | Micro-Coax | UFD150A-1-0720-200200 | EVH | 6/7/2016 | 6/7/2017 |
| Attenuator | S.M. Electronics | SA26B-20 | AWT | NCR | NCR |
| Block - DC | Fairview Microwave | SD3379 | AMQ | 6/8/2016 | 6/8/2017 |

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The EUT was set to the channels and modes listed in the datasheet.

The 6dB occupied bandwidth was measured using 100 kHz resolution bandwidth and 300 kHz video bandwidth. The 99.0% occupied bandwidth was also measured at the same time which can be needed during Output Power depending on the applicable method.

| OCCUPIED BANDWIDTH | NORTHWEST EMC XMI 2016.09.29 NWTX 2016.09.14.2 |
|--|---|
| EUT: 360SIQMMN | Work Order: SECF0064 |
| Serial Number: 64DBA0000136 | Date: 12/20/16 |
| Customer: Select Comfort Corporation | Temperature: 23.2 °C |
| Attendees: Jason Ortberg, Rob Munn | Humidity: 34.2% RH |
| Project: None | Barometric Pres.: 1031 mbar |
| Tested by: Jared Ison Power: 110VAC/60Hz | Job Site: EV06 |
| TEST SPECIFICATIONS Test Method | |
| FCC 15.247:2016 ANSI C63.10:2013 | |
| | |
| COMMENTS | |
| None. | |
| DEVIATIONS FROM TEST STANDARD | |
| None | |
| Configuration # 2 Signature | |
| | Limit |
| | Value (>) Result |
| 2400 MHz - 2483.5 MHz Band OQPSK | |
| Low Ch, 2405 MHz | 1.632 MHz 500 kHz Pass |
| Mid Ch. 2440 MHz | 1.607 MHz 500 kHz Pass |
| High Ch, 2480 MHz | 1.626 MHz 500 kHz Pass |





1.607 MHz

x dB

-6.00 dB

s 1 DC Coupled

x dB 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. | Cal. Due |
|------------------------------|--------------------|-----------------------|-----|------------|------------|
| Generator - Signal | Keysight | N5182B | TFU | 10/27/2015 | 10/27/2018 |
| Analyzer - Spectrum Analyzer | Keysight | N9010A | AFP | 8/10/2016 | 8/10/2017 |
| Cable | Micro-Coax | UFD150A-1-0720-200200 | EVH | 6/7/2016 | 6/7/2017 |
| Attenuator | S.M. Electronics | SA26B-20 | AWT | NCR | NCR |
| Block - DC | Fairview Microwave | SD3379 | AMQ | 6/8/2016 | 6/8/2017 |

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The transmit frequency was set to the required channels in each band. The transmit power was set to its default maximum.

Prior to measuring peak transmit power the DTS bandwidth (B) was measured.

The method found in ANSI C63.10:2013 Section 11.9.1.1 was used because the RBW on the analyzer was greater than the DTS Bandwidth of the radio.



| | | | | | | | NweTx 2016.09.14.2 |
|---------------------|-------------------------|-----------|--------------------|-----|-------------------|-----------|--------------------|
| EUT: 3 | 360 SIQ MMN | | | | Work Order: | SECF0064 | |
| Serial Number: | 64DBA0000136 | | | | Date: | 12/20/16 | |
| Customer: | Select Comfort Corporat | ion | | | Temperature: | 23.2 °C | |
| Attendees: | Jason Ortberg, Rob Mun | in | | | Humidity: | 34.2% RH | |
| Project: | None | | | | Barometric Pres.: | 1031 mbar | |
| Tested by: | Jared Ison | | Power: 110VAC/60Hz | | Job Site: | EV06 | |
| TEST SPECIFICATIO | DNS | | Test Method | | | | |
| FCC 15.247:2016 | | | ANSI C63.10:20 |)13 | | | |
| | | | | | | | |
| COMMENTS | | | | | | | |
| None. | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| DEVIATIONS FROM | TEST STANDARD | | | | | | |
| None | | | | | | | |
| | | | \square | | | | |
| Configuration # | 2 | | | | | | |
| | | Signature | | | | | |
| | | | | | | Limit | |
| | | | | | Value | (<) | Result |
| 2400 MHz - 2483.5 M | Hz Band | | | | | | |
| (| OQPSK | | | | | | |
| | Low Ch, 240 | 5 MHz | | | 634.22 uW | 1 W | Pass |
| | Mid Ch. 2440 |) MHz | | | 590.1 uW | 1 W | Pass |
| | High Ch, 248 | 30 MHz | | | 567.97 uW | 1 W | Pass |



| | | PNO: Fast ↔→ IFGain:Low | Trig: Free Run #Atten: 10 dB | #Avg Type: Log-Pwr Avg Hold: 100/100 | TRACE 1 2 3 4 5 6 TYPE M WWWW DET P P P P P P |
|-----------|---|----------------------------|---------------------------------|---|---|
| 5 dB/div | Ref Offset 21.14 dB Ref 2.500 mW | | | N | lkr1 2.439 555 GHz 590.10 μW |
| 791 µW - | | | 1 | | |
| 250 μW - | | | | | |
| 79.1 μW - | | | | | |
| 25.0 μW | Aurona de la companya | | | | |
| 7.91 µ₩ - | | | | | |
| 2.50 µ₩ - | | | | | |
| 791 n₩ - | | | | | |
| 79.1 nW - | | | | | |
| Center | 2.440000 GHz | | | | Span 10.00 MHz |
| #Res B | W 4 MHz | #VBW | 8.0 MHz | #Swe | ep 66.40 ms (1000 pts) |

NORTHWEST







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. | Cal. Due |
|------------------------------|--------------------|-----------------------|-----|------------|------------|
| Generator - Signal | Keysight | N5182B | TFU | 10/27/2015 | 10/27/2018 |
| Analyzer - Spectrum Analyzer | Keysight | N9010A | AFP | 8/10/2016 | 8/10/2017 |
| Cable | Micro-Coax | UFD150A-1-0720-200200 | EVH | 6/7/2016 | 6/7/2017 |
| Attenuator | S.M. Electronics | SA26B-20 | AWT | NCR | NCR |
| Block - DC | Fairview Microwave | SD3379 | AMQ | 6/8/2016 | 6/8/2017 |

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The maximum power spectral density measurements was measured using the channels and modes as called out on the following data sheets.

Per the procedure outlined in ANSI C63.10 the peak power spectral density was measured in a 3 kHz RBW.

| | | | | | | | NweTx 2016.09.14.2 |
|---------------------|-------------------------|-----------|--------------|------------|-------------------|---------------------|--------------------|
| EUT: | 360SIQMMN | | | | Work Order: | SECF0064 | |
| Serial Number: | 64DBA0000136 | | | | Date: | 12/20/16 | |
| Customer: | Select Comfort Corporat | ion | | | Temperature: | 23.2 °C | |
| Attendees: | Jason Ortberg, Rob Mun | n | | | Humidity: | 34.2% RH | |
| Project: | None | | | | Barometric Pres.: | 1031 mbar | |
| Tested by: | Jared Ison | | Power: 110VA | C/60Hz | Job Site: | EV06 | |
| TEST SPECIFICATI | ONS | | Test N | ethod | | | |
| FCC 15.247:2016 | | | ANSI | 63.10:2013 | | | |
| | | | | | | | |
| COMMENTS | | | | | | | |
| None. | | | | | | | |
| DEVIATIONS FROM | I TEST STANDARD | | | | | | |
| None | | | | | | | |
| Configuration # | 2 | Signature | \leq | | | | |
| | | | | | Value dBm/3kHz | Limit < dBm/3kHz | Results |
| 2400 MHz - 2483.5 M | MHz Band OQPSK | | | | | | |
| | Low Ch, 240 | 5 MHz | | | -16.072 | 8 | Pass |
| | Mid Ch. 2440 |) MHz | | | -16.369 | 8 | Pass |
| | High Ch, 248 | 0 MHz | | | -16.648 | 8 | Pass |











NORTHWEST

BAND EDGE COMPLIANCE



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

TEST EQUIPMENT

| Description | Manufacturer | Model | ID | Last Cal. | Cal. Due |
|------------------------------|--------------------|-----------------------|-----|------------|------------|
| Analyzer - Spectrum Analyzer | Keysight | N9010A | AFP | 8/10/2016 | 8/10/2017 |
| Generator - Signal | Keysight | N5182B | TFU | 10/27/2015 | 10/27/2018 |
| Cable | Micro-Coax | UFD150A-1-0720-200200 | EVH | 6/7/2016 | 6/7/2017 |
| Attenuator | S.M. Electronics | SA26B-20 | AWT | NCR | NCR |
| Block - DC | Fairview Microwave | SD3379 | AMQ | 6/8/2016 | 6/8/2017 |

TEST DESCRIPTION

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

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

BAND EDGE COMPLIANCE

| | | | | | | | NweTx 2016.09.14.2 |
|---------------------|----------------------------|-------------|----------|------------------|-------------------|------------------|--------------------|
| EUT: | 360SIQMMN | | | | Work Order: | SECF0064 | |
| Serial Number: | 64DBA0000136 | | | | Date: | 12/20/16 | |
| Customer: | Select Comfort Corporation | | | | Temperature: | 23.1 °C | |
| Attendees: | Jason Ortberg, Rob Munn | | | | Humidity: | 34.3% RH | |
| Project: | None | | | | Barometric Pres.: | 1031 mbar | |
| Tested by: | Jared Ison | | Power: | 110VAC/60Hz | Job Site: | EV06 | |
| TEST SPECIFICAT | ONS | | | Test Method | - | • • | |
| FCC 15.247:2016 | | | | ANSI C63.10:2013 | | | |
| | | | | | | | |
| COMMENTS | | | | | | | |
| None. | | | | | | | |
| DEVIATIONS FROM | I TEST STANDARD | | | | | | |
| None | | | | | | | |
| Configuration # | 2 | Signature – | $ \leq $ | | | | |
| | | | | | Value (dBc) | Limit ≤ (dBc) | Result |
| 2400 MHz - 2483.5 I | MHz Band | | | | | | |
| | OQPSK | | | | | | |
| | Low Ch, 2405 MHz | | | | -41.72 | -20 | Pass |
| | High Ch, 2480 MHz | | | | -37.06 | -20 | Pass |

NORTHWEST

XMit 2016.09.29

BAND EDGE COMPLIANCE









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

TEST EQUIPMENT

| Description | Manufacturer | Model | ID | Last Cal. | Cal. Due |
|------------------------------|--------------------|-----------------------|-----|------------|------------|
| Generator - Signal | Keysight | N5182B | TFU | 10/27/2015 | 10/27/2018 |
| Analyzer - Spectrum Analyzer | Keysight | N9010A | AFP | 8/10/2016 | 8/10/2017 |
| Cable | Micro-Coax | UFD150A-1-0720-200200 | EVH | 6/7/2016 | 6/7/2017 |
| Attenuator | S.M. Electronics | SA26B-20 | AWT | NCR | NCR |
| Block - DC | Fairview Microwave | SD3379 | AMQ | 6/8/2016 | 6/8/2017 |

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The spurious RF conducted emissions were measured with the EUT set to low, medium and high transmit frequencies. The EUT was transmitting at the data rate(s) listed in the datasheet. For each transmit frequency, the spectrum was scanned throughout the specified frequency range.



| EUT | 360SIQMMN | | | Work Order: | SECF0064 | |
|---|---|--|--|---|--|---|
| Serial Number: | : 64DBA0000136 | | | Date: | 12/20/16 | |
| Customer | : Select Comfort Corporat | ion | | Temperature: | 23.2 °C | |
| Attendees | Jason Ortberg, Rob Mun | in | | Humidity: | 34.2% RH | |
| Project: | None | | | Barometric Pres.: | 1031 mbar | |
| Tested by: | : Jared Ison | | Power: 110VAC/60Hz | Job Site: | EV06 | |
| TEST SPECIFICAT | TIONS | | Test Method | | | |
| FCC 15.247:2016 | | | ANSI C63.10:2013 | | | |
| | | | | | | |
| COMMENTS | | | | | | |
| None. | | | | | | |
| | | | | | | |
| | | | | | | |
| | IL TEAT ATAUDADD | | | | | |
| DEVIATIONS FROM | MIESISIANDARD | | | | | |
| DEVIATIONS FROM None | M TEST STANDARD | | | | | |
| DEVIATIONS FROM None | | 6 | | | | |
| DEVIATIONS FROM None Configuration # | 2 | | | | | |
| DEVIATIONS FROM None Configuration # | 2 | Signature | | | | |
| DEVIATIONS FROM | 2 | Signature — | Frequency | Max Value | Limit | |
| DEVIATIONS FROM | 2 | Signature | Frequency Range | Max Value (dBc) | Limit ≤ (dBc) | Result |
| DEVIATIONS FROM None Configuration # 2400 MHz - 2483.5 | 2 MHz Band | Signature | Frequency Range | Max Value (dBc) | Limit ≤ (dBc) | Result |
| DEVIATIONS FROM None Configuration # 2400 MHz - 2483.5 | 2 MHz Band OQPSK | Signature — | Frequency Range | Max Value (dBc) | Limit ≤ (dBc) | Result |
| DEVIATIONS FROM None Configuration # 2400 MHz - 2483.5 | MHz Band OQPSK Low Ch, 240 | Signature | Frequency Range Fundamental | Max Value (dBc) N/A | Limit ≤ (dBc) N/A | Result N/A |
| DEVIATIONS FROM None Configuration # 2400 MHz - 2483.5 | M TEST STANDARD 2 MHz Band OQPSK Low Ch, 240 Low Ch, 240 | Signature | Frequency Range Fundamental 30 MHz - 12.5 GHz | Max Value (dBc) N/A -39.74 | Limit ≤(dBc) N/A -20 | Result N/A Pass |
| DEVIATIONS FROM None Configuration # 2400 MHz - 2483.5 | M TEST STANDARD 2 MHz Band OQPSK Low Ch, 240 Low Ch, 240 Low Ch, 240 Low Ch, 240 | 5 MHz 5 MHz 5 MHz | Frequency Range Fundamental 30 MHz - 12.5 GHz 12.5 GHz - 25 GHz | Max Value (dBc) N/A -39.74 -33.34 | Limit ≤ (dBc) N/A -20 -20 | Result N/A Pass Pass |
| DEVIATIONS FROM None Configuration # 2400 MHz - 2483.5 | MHz Band OQPSK Low Ch, 240 Low Ch, 240 Mid Ch. 2440 Mid Ch. 2440 | 5 MHz 5 MHz 5 MHz 5 MHz 9 MHz 9 MHz | Frequency Range Fundamental 30 MHz - 12.5 GHz 12.5 GHz - 25 GHz Fundamental | Max Value (dBc) N/A -39.74 -33.34 N/A | Limit ≤ (dBc) N/A -20 -20 N/A | Result N/A Pass Pass N/A |
| DEVIATIONS FROM None Configuration # 2400 MHz - 2483.5 | M TEST STANDARD 2 MHz Band OQPSK Low Ch, 240 Low Ch, 240 Mid Ch. 2444 Mid Ch. 2444 | 5 MHz 5 MHz 5 MHz 5 MHz 9 MHz 9 MHz 9 MHz | Frequency Range Fundamental 30 MHz - 12.5 GHz 12.5 GHz - 25 GHz Fundamental 30 MHz - 12.5 GHz | Max Value (dBc) N/A -39.74 -33.34 N/A -47.62 | Limit ≤ (dBc) N/A -20 -20 N/A -20 | Result N/A Pass Pass N/A Pass |
| DEVIATIONS FROM None Configuration # 2400 MHz - 2483.5 | M TEST STANDARD 2 MHz Band OQPSK Low Ch, 240 Low Ch, 240 Mid Ch, 2440 Mid Ch, 2444 | 5 MHz 5 MHz 5 MHz 5 MHz 9 MHz 9 MHz 9 MHz 9 MHz | Frequency Range Fundamental 30 MHz - 12.5 GHz 12.5 GHz - 25 GHz Fundamental 30 MHz - 12.5 GHz 12.5 GHz - 25 GHz | Max Value (dBc) -39.74 -33.34 N/A -47.62 -33.18 | Limit ≤ (dBc) -20 -20 N/A -20 -20 -20 | Result N/A Pass Pass N/A Pass Pass |
| DEVIATIONS FROM None Configuration # 2400 MHz - 2483.5 | MHz Band OQPSK Low Ch, 240 Low Ch, 240 Mid Ch. 244(Mid Ch. 244(Mid Ch. 244(High Ch, 245) | 5 MHz 5 MHz 5 MHz 5 MHz) MHz) MHz) MHz) MHz 0 MHz | Frequency Range Fundamental 30 MHz - 12.5 GHz 12.5 GHz - 25 GHz Fundamental 30 MHz - 12.5 GHz 12.5 GHz - 25 GHz Fundamental | Max Value (dBc) N/A -39.74 -33.34 N/A -47.62 -33.18 N/A | Limit ≤ (dBc) -20 -20 N/A -20 -20 -20 -20 N/A | Result N/A Pass N/A Pass N/A Pass N/A |
| DEVIATIONS FROM None Configuration # 2400 MHz - 2483.5 | M TEST STANDARD 2 MHz Band OQPSK Low Ch, 240 Low Ch, 240 Mid Ch. 244(Mid Ch. 244(High Ch, 244 High Ch, 242 | 5 MHz 5 MHz 5 MHz 5 MHz 5 MHz 0 MHz 0 MHz 0 MHz 0 MHz 0 MHz | Frequency Range Fundamental 30 MHz - 12.5 GHz 12.5 GHz - 25 GHz Fundamental 30 MHz - 12.5 GHz 12.5 GHz - 25 GHz Fundamental 30 MHz - 12.5 GHz | Max Value (dBc) | Limit ≤ (dBc) -20 -20 -20 -20 -20 -20 -20 -20 | Result N/A Pass Pass N/A Pass Pass N/A Pass |

| | Range | | | | (dBc) | ≤ (dBc) | F | Result |
|---|--|---|--------------|--|--|--|---------------|--|
| | Fundamenta | al | | | N/A | N/A | | N/A |
| Keysight Spectrum | Analyzer - Northwest EMC Tes | - | | | | | | |
| Keysight Spectrum | F 50 Ω AC | | SENSE:INT | A | IGN OFF | l og Pur | 03:17 | 38 AM Dec 21, 2016 |
| | | PNO: Wide | Trig: Free R | Run | #Avg Type. | Log-Pwr | | TYPE MWWWWW DET PPPPP |
| | | IFGain:Low | #Atten: 10 0 | ав | | Mkr | 1 2 404 | 769 1 GHz |
| 10 dB/div Re | f Offset 21.14 dB ef 10.00 dBm | | | | | | | -5.05 dBm |
| | | | | | | | | |
| 0.00 | | | 1 | | | | | |
| 40.0 | | a manana harrow | | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | www.commonlyn | A | | |
| -10.0 | and and a second the | | | | | and a survey of the second | www | |
| -20.0 | so s | | | | | | man | munn |
| -30.0 | | | | | | | | Wy Contraction |
| / ~ | | | | | | | | June 1 |
| -40.0 | | | | | | | | |
| -50.0 | | | | | | | | |
| | | | | | | | | |
| -60.0 | | | | | | | | |
| -70.0 | | | | | | | | |
| -90.0 | | | | | | | | |
| -00.0 | | | | | | | | |
| Center 2.4050 | 000 GHz | | | | | | Spa | n 3.000 MHz |
| #Res BW 100 | kHz | #VB | W 300 kHz | | ,, <i>,</i> | Swee | 5 1.092 n | ns (8192 pts) |
| MSG | | | | | STATUS | | | |
| | 2 | 400 MHz - 2483.5 | MHz Band, (| OQPSK, Lov | v Ch, 2405 I | MHz | | |
| | Frequency | | | Ma | ax Value | Limit | | Posult |
| | 30 MHz - 12.5 | GHz | | | -39.74 | -20 | | Pass |
| | | | | | | | | |
| Keysight Spectrum | F Analyzer - Northwest EMC, Ind F 50 Ω AC | | SENSE:INT | A | IGN OFF | 1 | 03:18 | 00 AM Dec 21, 2016 |
| | | PNO: Fast | Trig: Free F | Run | #Avg Type: | Log-Pwr | | IRACE 1 2 3 4 5 6 |
| | | IFGain:Low | #Atten. To t | | | | | TYPE M WWWWW DET PPPPP |
| Bat | f Offeret 21 14 dP | | | | | | Mkr1 4. | TYPE MWWWWW DET PPPPPP |
| Ref 10 dB/div Re | f Offset 21.14 dB ef 10.00 dBm | | | | | | Mkr1 4. -4 | түре Минини ост реререре 810 3 GHz 4.79 dBm |
| 10 dB/div Re | f Offset 21.14 dB ef 10.00 dBm | | | | | | Mkr1 4. -4 | 810 3 GHz 4.79 dBm |
| 10 dB/div Re | f Offset 21.14 dB ef 10.00 dBm | | | | | | Mkr1 4. -4 | 10 3 GHz 4.79 dBm |
| 0.00 -10.0 | f Offset 21.14 dB ef 10.00 dBm | | | | | | Mkr1 4. -⁄ | 810 3 GHz 4.79 dBm |
| -10.0 Ref | f0ffset21.14 dB f10.00 dBm | | | | | | Mkr1 4. -4 | 810 3 GHz 4.79 dBm |
| 10 dB/div Re 0.00 | f Offset 21.14 dB If 10.00 dBm | | | | | | Mkr1 4. | туре Милино ост Р Р Р Р Р Р Р 810 3 GHz I4.79 dBm |
| -20.0 | f0ffset21.14 dB ff 10.00 dBm | | | | | | Mkr1 4. | Billion Control Contro |
| -10.0 | f Offset 21.14 dB ef 10.00 dBm | | | | | | Mkr1 4. -4 | BID 3 GHz 44.79 dBm |
| -10.0 | f0ffset21.14 dB f10.00 dBm | | | | | | Mkr1 4. | Type Bittoria Det P 810 3 GHz H4.79 dBm |
| -10.0 | f0ffset21.14 dB f10.00 dBm | | | | | | Mkr1 4. -/ | Reference in the second |
| Ref Ref 0.00 | f Offset 21.14 dB ff 10.00 dBm | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | | | | Mkr1 4. | Representation of the second s |
| Best Ref 0.00 | f Offset 21.14 dB f 10.00 dBm | | | | printerg 1. https://www.oky.org.ok | | Mkr1 4. | Representation of the second s |
| Beg Ref 0.00 | f Offset 21.14 dB f 10.00 dBm | | | ng yang sa | unite of the state | ality and the site of the site | Mkr1 4. | A Constant of the second secon |
| Ref 0.00 | f Offset 21.14 dB f 10.00 dBm | | | | printer of high stage and gaving all | | Mkr1 4. | A Constant of the second secon |
| Ref Ref 0.00 | foffset 21.14 dB f 10.00 dBm | | | | unite de la constance de serie participado | | Mkr1 4. | A Constraint of the second sec |
| Ref Ref 0.00 | f Offset 21.14 dB f 10.00 dBm | | | | | | Mkr1 4. | 12.500 GHz |
| Below Ref 0 dB/div Re 0 0 0 10.0 0 0 10.0 0 0 10.0 0 0 10.0 0 0 10.0 0 0 10.0 0 0 30.0 0 0 50.0 0 0 50.0 0 0 50.0 0 0 50.0 0 0 50.0 0 0 50.0 0 0 50.0 0 0 50.0 0 0 50.0 0 0 50.0 0 0 50.0 0 0 50.0 0 0 50.0 0 0 50.0 0 0 50.0 0 0 50.0 0 0 <t< td=""><td>f Offset 21.14 dB f 10.00 dBm</td><td></td><td></td><td></td><td></td><td>Sweep</td><td>Mkr1 4.</td><td>12.500 GHz 12.500 GHz 12.500 GHz</td></t<> | f Offset 21.14 dB f 10.00 dBm | | | | | Sweep | Mkr1 4. | 12.500 GHz 12.500 GHz 12.500 GHz |

2400 MHz - 2483.5 MHz Band, OQPSK, Low Ch, 2405 MHz





| | Frequency Range | | | I | Max Value (dBc) | Limit ≤ (dBc) | Result | |
|-----------------------------|--|---|------------------------------|---|--|------------------|--------------------------------|----------------------|
| | 30 MHz - 12.5 GHz | | | | -47.62 | -20 | Pass | |
| 🎉 Keysight Spectru | um Analyzer - Northwest EMC, Inc | | | | | | - | |
| L <mark>XI</mark> RL | RF 50 Ω AC | SE | ENSE:INT | ▲ | ALIGN OFF #Avg Type | Log-Pwr | 03:22:49 AM Dec 21 TRACE 12 | ,2016 |
| | 1 | PNO: Fast 😱 IFGain:Low | Trig: Free R #Atten: 10 d | un B | | | TYPE MWW DET P P F | PPP |
| 10 dB/div | Ref Offset 21.14 dB Ref 10.00 dBm | | | | | M | kr1 2.543 5 (-52.81 d | GHz Bm |
| L09 | | | | | | | | |
| 0.00 | | | | | | | | |
| -10.0 | | | | | | | | |
| | | | | | | | | |
| -20.0 | | | | | | | | |
| -30.0 | | | | | | | | |
| -40.0 | | | | | | | | |
| -40.0 | | | | | | | | |
| -50.0 | | | | | | | | |
| -60.0 | والميان المتحاجية الماسية الطيطة المتقطع والمترسط طواريه | A state in the second se | | and the second secon | Ale de la compañía d | | | A IN CONTRACT |
| | | | | | | | | |
| -70.0 | | | | | | | | |
| -80.0 | | | | | | | | |
| | | | | | | | | |
| Start 0.030 (#Res BW 10 | GHz 00 kHz | #VBW | / 300 kHz | | | Sweep 4 | Stop 12.500 0.96 ms (8192 | GHz pts) |
| MSG | | | | | STATUS | | | |
| | 2400 | MHz - 2483 5 M | MHz Band | OOPSK N | 1id Ch 2440 | MHz | | |
| | Frequency | 2100.01 | | | Max Value | Limit | | |
| | 12.5 GHz - 25 GHz | | | | (dBc) | ≤ (dBc) -20 | Result Pass | |



| Fréquency Max Value Limit Production Fundamental N/A N/A Production Result N/A N/A Production Result N/A N/A Production Result Production Production Production Tig: Free Nun Extent: 10 dB Mix1 2:479 727.3 GHz 45.52 dBm Production Tig: Free Nun Extent: 10 dB Mix1 2:479 727.3 GHz 45.52 dBm Production Tig: Free Nun Extent: 10 dB Mix1 2:479 727.3 GHz 45.52 dBm Production Tig: Free Nun Extent: 10 dB Mix1 2:479 727.3 GHz 45.52 dBm Production Tig: Free Nun Extent: 10 dB Mix1 2:479 727.3 GHz 45.52 dBm Production Tig: Free Nun Extent: 10 dB Mix1 2:479 727.3 GHz 45.52 dBm Production Tig: Free Nun Extent: 10 dB Mix1 2:479 727.3 GHz 45.52 dBm Production Tig: Free Nun Extent: 10 dB Span 3.0000 MHz Sweep 1:02 ms (B122 PD) Production Tig: Free Nun Extent: 10 dB Span 3.0000 MHz Sweep 1:02 ms (B122 PD) Production Tig: Free Nun Extent: 10 dB Span 3.0000 MHz Sweep 1:02 ms (B122 PD) Production Tig: Free Nun Extent: 10 dB Span 3.0000 MHz Sweep 1:02 ms (B122 PD) Production Tig: Free Nun Extent: 10 dB Span 3.0000 MHz Sweep 1:02 ms (B12 PD) Production Ti | | | 21001 | VINZ - 2403.5 | MHZ Band, Q | JUPSK, HI | yn on, 2400 | 1411 12 | | |
|--|--|---|--|-------------------------|---|---------------------------------------|---|--|--------------------------------------|--|
| Fundamental N/A N/A Increases | | F | Frequency Range | | | M | lax Value (dBc) | Limit < (dBc) | R | esult |
| Provide Section Analyses - Notweed MC by Section Constrained and Section Const | | Fi | undamental | | | | N/A | N/A | | N/A |
| Event August - Nature 1900; Event Status Event Status <td></td> | | | | | | | | | | |
| Build Mark Trigs Free Ban Wave Type: Log-Par Trics Free Ban 10 gBuild Ref 70.00 dBm Mkr1 2.479 727.3 GHz GHz 00 gBuild Ref 70.00 dBm Mkr1 2.479 727.3 GHz GHz 00 gBuild Ref 70.00 dBm Mkr1 2.479 727.3 GHz GHz 00 gBuild Ref 70.00 dBm Mkr1 2.479 727.3 GHz GHz 00 gBuild Ref 70.00 dBm Mkr1 2.479 727.3 GHz GHz 00 gBuild Ref 70.00 dBm Mkr1 2.479 727.3 GHz GHz 00 gBuild Ref 70.00 dBm Mkr1 2.479 727.3 GHz GHz 01 gBuild Ref 70.00 GHz Span 3.000 MHz Span 3.000 MHz 02 gBuild Ref 70.00 GHz RyBW 300 KHz System 1.092 ms (8192 pts) 02 GHZ Max 70 Mz Limit Max 70 Mz Limit 10 GHZ Max 70 Mz Limit Max 70 Mz Limit 10 GHZ Max 70 Mz Limit Max 70 Mz Limit 10 GHZ Max 70 Mz Limit Max 70 Mz Limit 10 GHZ Max 70 Mz Limit <td>💓 Keysight LXI R.L</td> <td>Spectrum Analyzer - Nort RF 50 Ω</td> <td>thwest EMC, Inc</td> <td></td> <td>SENSE:INT</td> <td></td> <td>ALIGN OFF</td> <td></td> <td>03:26:3</td> <td>2 AM Dec 21, 2016</td> | 💓 Keysight L XI R.L | Spectrum Analyzer - Nort RF 50 Ω | thwest EMC, Inc | | SENSE:INT | | ALIGN OFF | | 03:26:3 | 2 AM Dec 21, 2016 |
| Incluitive Atten: 10 dB Mixt1 2.479 727 3 GLB 00 gBdW Ref 10.00 dBm 90 gBdW Mixt1 2.479 727 3 GLB 00 gBdW Ref 10.00 dBm 90 gBdW 90 gBdW 90 gBdW 00 gBdW Ref 10.00 dBm 90 gBdW 90 gBdW 90 gBdW 00 gBdW Ref 10.00 dBm 90 gBdW 90 gBdW 90 gBdW 90 gBdW 00 gBdW Ref 10.00 dBm 90 gBdW | | | | PNO: Wide | Trig: Free F | Run | #Avg Type | : Log-Pwr | т | RACE 1 2 3 4 5 6 TYPE M WWWW |
| Ref 10.00 dBm Ref 10.00 dBm Start 0.00 dBm Ref 10.00 dBm Start 0.00 dBm S | | | | IFGain:Low | #Atten: 10 | B | | | | DET PPPPP |
| Control Span 3.000 MHz 200 | | Ref Offset 21. | 14 dB Bm | | | | | Mkr1 | 2.479 / | 27 3 GHz 5.52 dBm |
| a a b b b b b b b b b b b b b b b b b b | Log | | | | | | | | | |
| 100 100 100 100 100 100 100 100 | 0.00 | | | | 1 | | | | | |
| 100 100 <td></td> <td></td> <td></td> <td>mumany</td> <td>· ····································</td> <td>man man</td> <td>hanne</td> <td>a</td> <td></td> <td></td> | | | | mumany | · ···································· | man man | hanne | a | | |
| 200 00 00 00 00 00 00 00 00 00 | -10.0 | | and the second second second | | | | | 1 American Marine | <u>~</u> | |
| 500 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | -20.0 | monter | | | | | | | and many No. | harr |
| 300 400 <td>- N</td> <td>manne</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>m Mary</td> | - N | manne | | | | | | | | m Mary |
| 400 400 400 400 400 400 400 400 | -00.0 M | | | | | | | | | Source and the second |
| 500 500 500 500 500 500 500 500 | -40.0 | | | | | | | | | |
| 600 700 700 700 700 700 700 700 | -50.0 | | | | | | | | | |
| 00.0 | | | | | | | | | | |
| 2700 Span 3.000 MHz Center 2.480000 GHz #VEW 300 kHz #Res EW 100 kHz #VEW 300 kHz Start us (Back 2400 MHz - 2483.5 MHz Band, OOPSK, High Ch, 2480 MHz Lange (dBc) 2400 MHz - 2483.5 MHz Band, OOPSK, High Ch, 2480 MHz Start us (Back Res BW 100 kHz Frequency Max Value Limit Res BW 100 kHz Start us PNO: Fast Trig: Free Run Star 10.000 GBm Star 10.000 GBm Free RUN 100 kHz Star 10.000 GHz Star 10.000 GHz #VBW 3000 kHz | -60.0 | | | | | | | | | |
| Start 0.030 GHz At 104 GHz At 104 GHz Span 3.000 MHz Start 0.030 GHz #VBW 300 KHz Sweep 1.092 ms (8192 pts) Start 0.030 GHz #VBW 300 KHz Sweep 1.092 ms (8192 pts) Start 0.030 GHz #VBW 300 KHz Sweep 1.092 ms (8192 pts) Start 0.030 GHz #VBW 300 KHz Start 0.000 GHz #Kee BW 100 KHz #VBW 300 KHz Start 0.000 GHz Start 0.030 GHz #VBW 300 KHz Start 0.030 GHz | -70.0 | | | | | | | | | |
| Center 2.480000 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 1.092 ms (8192 pts) sec 2400 MHz - 2493.5 MHz Band, OQPSK, High Ch, 2480 MHz Frequency Max Value Limit Range (BC) ≤ (dBC) Result 30 MHz - 12.5 GHz Ref 00 Sector Analyzer - Northwet BMC Inc Ref 07 Sector Analyzer - Northwet BMC Inc Ref 08 Sector Analyzer - Northwet BMC Inc Ref 08 Sector Analyzer - Northwet BMC Inc Ref 08 Sector Analyzer - Northwet BMC | | | | | | | | | | |
| Center 2.480000 GHz #Res BW 100 kHz #VBW 300 kHz Span 3.000 MHz Sweep 1.092 ms (8192 pts) sec 2400 MHz - 2483.5 MHz Band, OQPSK, High Ch, 2480 MHz Frequency Max Value Limit Range (BBC) S(BC) Result S(BC) Result Ref 0 MHz - 12.5 GHz Ref 0 MHz Re | -80.0 | | | | | | | | | |
| Brees BW 100 kHz #VEW 300 kHz Sweep 1.092 ms (\$192 pts) ssci [stratus] 2400 MHz - 2483.5 MHz Band, OQPSK, High Ch, 2480 MHz Range (dBc) Startus And Startus Prequency Max Value Limit Range (dBc) Startus Startus Action of the startus <tr< td=""><td>Center</td><td>2 480000 GHz</td><td></td><td></td><td></td><td></td><td></td><td></td><td>Snar</td><td>3 000 MHz</td></tr<> | Center | 2 480000 GHz | | | | | | | Snar | 3 000 MHz |
| ASG STATUS | #Res B | W 100 kHz | | #VB | W 300 kHz | | | Sweep | 1.092 m | s (8192 pts) |
| 2400 MHz - 2483.5 MHz Band, OQPSK, High Ch, 2480 MHz Frequency Max Value Limit Range (dBc) ≤ (dBc) Result 30 MHz - 12.5 GHz -42.27 -20 Pass Regigti Spectrum Analyzer - Northweit EMC, Inc. Image: Charles and the second | MSG | | | | | | STATUS | | | |
| Frequency Max Value Limit Range (dBc) ≤ (dBc) Result 30 MHz - 12.5 GHz -42.27 -20 Pass Image: Image: -42.27 -20 Pass Image: Image: Image: Image: Image: Image: Image: Image: Image: Image: Image: Image: Image: Image: Image: Image: Image: Image: Image: Image: Image: Image: Image: Image: Image: Image: Image: Image: Image: Image: Image: Image: </th <th></th> <th></th> <th>2400 </th> <th>MHz - 2483.5</th> <th>MHz Band, (</th> <th>DQPSK, Hig</th> <th>gh Ch, 2480</th> <th>MHz</th> <th></th> <th></th> | | | 2400 | MHz - 2483.5 | MHz Band, (| DQPSK, Hig | gh Ch, 2480 | MHz | | |
| Number NetWit NetWit 30 MHz - 12.5 GHz -42.27 -20 Pass Replicit Spectrum Analyzer - Northwest EMC, Inc Complexity Aution OFF 002/2014 Monthwest EMC, Inc RL RF 50.0 AC SENSE.INT Aution OFF 002/2014 Monthwest EMC, Inc PRO: Fast PRO: Fast Trig: Free Run #Aution OFF 002/2014 Monthwest EMC, Inc Trig: Free Run PRO: Fast Order Ref Offset21.14 dB Mkr1 2.487 2 GHz -47.79 dBm Order Order Ref Offset21.14 dB Mkr1 2.487 2 GHz -47.79 dBm Order Order Image: Ref Offset21.14 dB Mkr1 2.487 2 GHz -47.79 dBm Order Order Image: Ref Offset21.14 dB Mkr1 2.487 2 GHz -47.79 dBm Order Order Image: Ref Offset21.14 dB Image: Ref Off | | | requency | | | м | | Lingit | | |
| Keysight Spectrum Analyzer - Northwest EMC, Inc SENSE:INT Aal GN OFF 03:227:01 AM Dec 21, 200 Per 21 Trace 03:237:01 AM Dec 21, 200 Per 21 04:200 Per 21< | | ſ | Range | | | | (dBc) | | R | ocult |
| in: Argan spectrum Analyse - Northwelt LHK, line in: Control of the spectrum Analyse - Northwelt LHK, | | с 30 М | Range Hz - 12.5 GHz | | | | (dBc) -42.27 | ≤ (dBc) -20 | R | esult Pass |
| PNO: Fast IFGain:Low Trig: Free Run #Atten: 10 dB Mkr1 2:487 2 GHz -47.79 dBm 000 Mkr1 2:487 2 GHz -47.79 dBm 000 Mkr1 2:487 2 GHz -47.79 dBm 000 Image: State of the state of | | 30 M | Range Hz - 12.5 GHz | | | | (dBc) -42.27 | ≤ (dBc) -20 | R/ | esult Pass |
| Ref Offset 21.14 dB Mkr1 2.487 2 GHz 000 | ₩ Keysight X RL | 30 M Spectrum Analyzer - Nort RF 50 Ω | Range Hz - 12.5 GHz thwest EMC, Inc AC | | SENSE:INT | 1 | (dBc) -42.27 | ≤ (dBc) -20 | 03:27:0 | esult Pass |
| Ref 10.00 dBm -47.79 dBm 000 | ₩ Keysight LXI RL | 30 M Spectrum Analyzer - Nort RF 50 Ω | HZ - 12.5 GHZ | PNO: Fast | SENSE:INT | L L L L L L L L L L L L L L L L L L L | ALIGN OFF AVg Type | ≤ (dBc) -20 | 03:27:0 T | esult Pass 11 AM Dec 21, 2016 RACE 2 3 4 5 6 TYPE M WWW |
| 000 | ₩ Keysight ₩ RL | ЗО М Spectrum Analyzer - Nord | Range Hz - 12.5 GHz | PNO: Fast | SENSE:INT) Trig: Free F #Atten: 10 (| Run dB | ALIGN OFF AVG Type | ≤ (dBc) -20 | Ri F 03:27:0 T Wkr1 2.4 | esult Pass 11 AM Dec 21, 2016 TYPE MWWWW DET P P P P P P B87 2 GHz |
| 0.000 | 10 dB/div | 30 M Spectrum Analyzer - Nort RF 50 Ω Ref Offset 21. Ref 10.00 d | Range Hz - 12.5 GHz thwest EMC, Inc AC 14 dB Bm | PNO: Fast | SENSE:INT) Trig: Free F #Atten: 10 o | Lun dB Lun | (dBc) -42.27 ALIGN OFF AVY Type | ≤ (dBc) -20 | Ri 03:27:0 T Wkr1 2.4 -4 | esult Pass DIAMDec 21, 2016 RACE 1 2 3 4 5 6 DET P P P P P P B87 2 GHz 7.79 dBm |
| -100 | 10 dB/div | 30 M Spectrum Analyzer - Nort RF 50 Ω Ref Offset 21. γ Ref 10.00 d | Hz - 12.5 GHz Hz - 12.5 GHz thwest EMC, Inc AC | PNO: Fast IFGain:Low | SENSE:INT Trig: Free F #Atten: 10 d | tun 1B | (dBc) -42.27 ALIGN OFF AVg Type | <u>≤ (dBc)</u> -20 :: Log-Pwr | R 03:27:0 T Mkr1 2.4 -4 | esult Pass 11 AMDec 21, 2016 TYPE Det PPPPPP 187 2 GHz 7.79 dBm |
| -200 -200 -200 -200 -200 -200 -200 -200 | 10 dB/div | 30 M Spectrum Analyzer - Nort RF 50 Ω Ref Offset 21. Ref 10.00 d | Hz - 12.5 GHz Hz - 12.5 GHz thwest EMC, Inc AC | PNO: Fast | SENSE:INT Trig: Free F #Atten: 10 (| Lun dB | (dBc) -42.27 | ≤ (dBc) -20 E: Log-Pwr | R 03:27:0 T Wkr1 2.4 -4 | esult Pass 11 AMDec 21, 2016 TYPE MARCE 11, 23 4 2016 DET PPP PPP B87 2 GHz 7.79 dBm |
| 2000 2000 2000 2000 2000 2000 2000 200 | Keysight 10 dB/div -0.00 | Spectrum Analyzer - Nort Spectrum Analyzer - Nort RF 50 Ω Ref Offset 21.: Ref 10.00 d | Hz - 12.5 GHz Hz - 12.5 GHz thwest EMC, Inc AC | PNO: Fast | SENSE:INT Trig: Free F #Atten: 10 (| Run HB | (dBc) -42.27 ALIGN OFF 4 #Avg Type | ≤ (dBc) -20 E: Log-Pwr | R 03:27:0 T Mkr1 2.4 -4 | esult Pass RAGE [] 23 45 6 TYPE [] 23 45 6 CTYPE PP PP I87 2 GHz 7.79 dBm |
| 300 | Image: Keysight Keysight 10 dB/div RL 0.00 | Spectrum Analyzer - Nort RF 50 Ω Ref Offset 21. Ref 10.00 d | Hz - 12.5 GHz Hz - 12.5 GHz Hwest EMC, Inc AC | PNO: Fast | SENSE:INT Trig: Free F #Atten: 10 (| Run JB | (dBc) -42.27 #Avg Type | <u>≤ (dBc)</u> -20 E: Log-Pwr | R 03:27:0 T Wkr1 2.4 -4 | esult Pass 1 AMDec 21, 2016 RACE 22, 2016 RACE 23, 24 5 6 TYPE DEPPPP 187 2 GHz 7.79 dBm |
| 40.0 | Keysight 10 dB/div 0.00 -10.0 | 30 M Spectrum Analyzer - Nort RF 50 Ω Ref Offset 21.1 Ref 10.00 d | Hz - 12.5 GHz Hz - 12.5 GHz Hwest EMC, Inc AC | PNO: Fast FGain:Low | SENSE:INT | Run 1B | (dBc) -42.27 | <u>≤ (dBc)</u> -20 :: Log-Pwr | R 63:27:0 T Mkr1 2.4 -4 | esult Pass 1 Andre 21,2016 RAGE 12345 TYPE 12345 123555 123555 123555 123555 123555 123555 123555 123555 123555 123555 123555 123555 123555 1235555 1235555 1235555 1235555555 12355555 12355555555 123555555555 12355555555555555555 |
| -500 -1 < | Keysight (y) RL 10 dB/div -10.0 -20.0 -30.0 | 30 M Spectrum Analyzer - Nort RF 50 Ω Ref Offset 21. Ref 10.00 d | Hz - 12.5 GHz | PNO: Fast | SENSE:INT Trig: Free F #Atten: 10 o | Lun dB dB | (dBc) -42.27 ALIGN OFF AVG Type | ≤ (dBc) -20 | R 63:27:0 T Mkr1 2.4 -4 | esult Pass |
| -500 <li< td=""><td>Keysight RL</td><td>Spectrum Analyzer - Nord RF 50 Ω Ref Offset 21.: Ref 10.00 d</td><td>Hz - 12.5 GHz Hz - 12.5 GHz thwest EMC, Inc AC</td><td>PNO: Fast</td><td>SENSE:INT Trig: Free F #Atten: 10 (</td><td>Run HB</td><td>(dBc) -42.27 ALIGN OFF AAVING Type</td><td>≤ (dBc) -20 E: Log-Pwr</td><td>R 03:27:0 T Mkr1 2.4 -4</td><td>esult Pass RACE [] 23 4 5 TYPE [] 23 4 5 EF PPPPPP 87 2 GHz 7.79 dBm</td></li<> | Keysight RL | Spectrum Analyzer - Nord RF 50 Ω Ref Offset 21.: Ref 10.00 d | Hz - 12.5 GHz Hz - 12.5 GHz thwest EMC, Inc AC | PNO: Fast | SENSE:INT Trig: Free F #Atten: 10 (| Run HB | (dBc) -42.27 ALIGN OFF AAVING Type | ≤ (dBc) -20 E: Log-Pwr | R 03:27:0 T Mkr1 2.4 -4 | esult Pass RACE [] 23 4 5 TYPE [] 23 4 5 EF PPPPPP 87 2 GHz 7.79 dBm |
| | Keysight N RL 10 dB/div 0.00 -10.0 -20.0 -30.0 -40.0 | Spectrum Analyzer - Nort | Hz - 12.5 GHz Hz - 12.5 GHz Hxwest EMC, Inc AC | PNO: Fast FGain:Low | SENSE:INT Trig: Free F #Atten: 10 (| Run JB | (dBc) -42.27 #Avg Type | ≤ (dBc) -20 E: Log-Pwr | R 03:27:0 T VIKr1 2.4 -4 | esult Pass |
| -70.0 -7 | Keysight 10 dB/dli 0.00 -10.0 -20.0 -30.0 -40.0 | Spectrum Analyzer - Nort | Hz - 12.5 GHz Hz - 12.5 GHZ - 12.5 GHZ HZ - 12.5 GHZ HZ - 12.5 GHZ HZ - 12.5 GHZ HZ - | PNO: Fast FGain:Low | SENSE:INT | Run JB | (dBc) -42.27 #Avg Type | ≤ (dBc) -20 E: Log-Pwr | R 03:27:0 T Wkr1 2.4 -4 | esult Pass 1 AMDec 21, 2016 RACE 22, 2016 RACE 23, 24 5 6 TYPE PPPP 187 2 GHz 7.79 dBm |
| 70.0 80.0 Start 0.030 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 40.96 ms (8192 pts) | Keysight Keysight RL 10 gB/div -10.0 -20.0 -30.0 -40.0 -50.0 | Spectrum Analyzer - Nort Spectrum Analyzer - Nort RF 50 Ω Ref Offset 21. Ref 10.00 d | Ange Hz - 12.5 GHz Hz - 12.5 GHz Hz - 12.5 GHz AC | PNO: Fast FGain:Low | SENSE:INT | Run 1B | (dBc) -42.27 ALIGN OFF #Avg Type | ≤ (dBc) -20 E: Log-Pwr | R 03:27:0 T Wkr1 2.4 -4 | esult Pass 1 ANDec 21, 2016 RACE 23, 4 3 0 TYPE PPPP 87 2 GHz 7.79 dBm |
| Start 0.030 GHz Stop 12.500 GHz #Res BW 100 kHz \$Sweep 40.96 ms (8192 pts) | Keysight 10 dB/div -10.0 | Spectrum Analyzer - Nort Spectrum Analyzer - Nort RF 50 Ω Ref OffSet 21.: Ref 10.00 d | Hz - 12.5 GHz Hz | PNO: Fast | SENSE:INT | Run dB | ALIGN OFF | Elimit ≤ (dBc) -20 E: Log-Pwr | R 03:27:0 T Mkr1 2.4 -4 | esult Pass 1 AMDec 21, 216 RACE [] 23 4 C EF P PP P P 187 2 GHz 7.79 dBm |
| Start 0.030 GHz Stop 12.500 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 40.96 ms (8192 pts) | Keysight RL RL | Spectrum Analyzer - Nort Spectrum Analyzer - Nort Ref OffSet 21.: Ref 10.00 d | Hz - 12.5 GHz Hz | PNO: Fast | SENSE:INT | Run HB | ALIGN OFF | ≤ (dBc) -20 2: Log-Pwr | R 03:27:0 T VIkr1 2.4 -4 | esult Pass |
| Start 0.030 GHz Stop 12.500 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 40.96 ms (8192 pts) | Keysight RL 0.00 -10.0 -20.0 -30.0 -30.0 -30.0 -50.0 -50.0 -50.0 -50.0 | Spectrum Analyzer - Nort Spectrum Analyzer - Nort Ref Offset 21.1 Ref 10.00 d | Hz - 12.5 GHz Hz - 12.5 GHz Hz - 12.5 GHz Hz - 12.5 GHz AC AC AC AC AC AC AC AC AC AC AC AC AC | PNO: Fast IFGain:Low | SENSE:INT | Run iB | ALIGN OFF 42.27 #Avg Type | ≤ (dBc) -20 E: Log-Pwr | R 03:27:0 T WKr1 2.4 -4 | esult Pass |
| #Res BW 100 KH2 #VBW 300 KH2 Sweep 40.96 ms (8192 pts) | Keysight 10 dB/dly 0.00 - -10.0 - -20.0 - -30.0 - -60.0 - -70.0 - -80.0 - | Spectrum Analyzer - Nort | the second secon | PNO: Fast FGain:Low | SENSE:INT | Run IB | ALIGN OFF 42.27 | ≤ (dBc) -20 :: Log-Pwr :: Log-Pwr :: Log-Pwr :: 100 - 100 | R 03:27:0 T Wkr1 2.4 -4 | esult Pass I and pec 21, 2016 RACE 23, 24 5 6 TYPE DEPPPP 187 2 GHz 7.79 dBm |
| | Keysight 10 dB/dli 0.00 -10.0 -20.0 -30.0 -30.0 -50.0 -50.0 -50.0 -50.0 -50.0 -50.0 -50.0 -50.0 -50.0 -50.0 | 30 M 30 M 30 K | Ange Hz - 12.5 GHz Hz - 12.5 GHz Htwest EMC, Inc AC | PNO: Fast FGain:Low | SENSE:INT | Run 1B | ALIGN OFF 42.27 | ≤ (dBc) -20 :: Log-Pwr :: Log-Pwr | R 03:27:0 7 Mkr1 2.4 -4 | esult Pass TYPE 1235 PP PP PP PP P P P P P P P P P P P P P |





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

Low Channel 2405 MHz Middle Channel 2440 MHz High Channel 2480 MHz

POWER SETTINGS INVESTIGATED

110VAC/60Hz

CONFIGURATIONS INVESTIGATED

SECF0064 - 2

FREQUENCY RANGE INVESTIGATED

Start Frequency 30 MHz

Stop Frequency 26000 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 |
|------------------------------|-----------------|---------------------------|-----|------------|----------|
| Filter - High Pass | Micro-Tronics | HPM50111 | HFO | 3/22/2016 | 12 mo |
| Cable | ESM Cable Corp. | KMKM-72 | EVY | 10/17/2016 | 12 mo |
| Amplifier - Pre-Amplifier | Miteq | AMF-6F-18002650-25-10P | AVU | 10/17/2016 | 12 mo |
| Antenna - Standard Gain | ETS Lindgren | 3160-09 | AIV | NCR | 0 mo |
| Amplifier - Pre-Amplifier | Miteq | AMF-6F-12001800-30-10P | AVD | 3/11/2016 | 12 mo |
| Antenna - Standard Gain | ETS Lindgren | 3160-08 | AHV | NCR | 0 mo |
| Antenna - Standard Gain | ETS Lindgren | 3160-07 | AHU | NCR | 0 mo |
| Cable | N/A | Double Ridge Horn Cables | EVB | 3/11/2016 | 12 mo |
| Amplifier - Pre-Amplifier | Miteq | AMF-3D-00100800-32-13P | PAG | 3/11/2016 | 12 mo |
| Cable | N/A | Bilog Cables | EVA | 3/11/2016 | 12 mo |
| Amplifier - Pre-Amplifier | Miteq | AM-1616-1000 | AOL | 3/11/2016 | 12 mo |
| Cable | None | Standard Gain Horns Cable | EVF | 3/11/2016 | 12 mo |
| Amplifier - Pre-Amplifier | Miteq | AMF-6F-08001200-30-10P | AVC | 3/11/2016 | 12 mo |
| Antenna - Biconilog | Teseq | CBL 6141B | AXR | 6/30/2016 | 24 mo |
| Analyzer - Spectrum Analyzer | Agilent | E4446A | AAQ | 4/22/2016 | 12 mo |

MEASUREMENT BANDWIDTHS

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

TEST DESCRIPTION

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





| 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 |
|---------------|---------------------|----------------|-------------------------------|----------------------|---------------------------|---------------------------------|---------------------------------|----------|--------------------------------|----------------------|-------------------------|------------------------------|-----------------------------|
| 7441.750 | 27.5 | 18.5 | 1.0 | 53.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 46.0 | 54.0 | -8.0 | High Ch. 2480 MHz, EUT Horz |
| 7438.392 | 27.4 | 18.5 | 3.5 | 313.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 45.9 | 54.0 | -8.1 | High Ch. 2480 MHz, EUT Horz |
| 4960.875 | 34.4 | 9.4 | 1.8 | 166.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 43.8 | 54.0 | -10.2 | High Ch. 2480 MHz, EUT Horz |
| 4810.892 | 32.3 | 9.0 | 1.8 | 169.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 41.3 | 54.0 | -12.7 | Low Ch. 2405 MHz, EUT Horz |
| 4880.905 | 30.7 | 9.2 | 1.5 | 176.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 39.9 | 54.0 | -14.1 | Mid Ch. 2440 MHz, EUT Horz |
| 4810.950 | 28.8 | 9.0 | 1.0 | 79.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 37.8 | 54.0 | -16.2 | Low Ch. 2405 MHz, EUT Horz |
| 4961.042 | 27.8 | 9.4 | 3.2 | 90.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 37.2 | 54.0 | -16.8 | High Ch. 2480 MHz, EUT Horz |
| 4881.300 | 27.4 | 9.2 | 1.0 | 275.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 36.6 | 54.0 | -17.4 | Mid Ch. 2440 MHz, EUT Horz |
| 7438.717 | 38.0 | 18.5 | 3.5 | 313.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 56.5 | 74.0 | -17.5 | High Ch. 2480 MHz, EUT Horz |
| 7441.142 | 37.9 | 18.5 | 1.0 | 53.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 56.4 | 74.0 | -17.6 | High Ch. 2480 MHz, EUT Horz |
| 19241.190 | 33.9 | 1.1 | 1.7 | 5.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 35.0 | 54.0 | -19.0 | Low Ch. 2405 MHz, EUT Horz |
| 19239.840 | 33.6 | 1.1 | 1.7 | 294.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 34.7 | 54.0 | -19.3 | Low Ch. 2405 MHz, EUT Horz |
| 12397.630 | 27.8 | 5.0 | 1.0 | 148.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 32.8 | 54.0 | -21.2 | High Ch. 2480 MHz, EUT Horz |
| 12399.080 | 27.4 | 5.0 | 1.0 | 332.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 32.4 | 54.0 | -21.6 | High Ch. 2480 MHz, EUT Horz |
| 12198.350 | 27.6 | 4.4 | 1.0 | 112.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 32.0 | 54.0 | -22.0 | Mid Ch. 2440 MHz, EUT Horz |
| 12201.180 | 27.6 | 4.4 | 1.0 | 217.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 32.0 | 54.0 | -22.0 | Mid Ch. 2440 MHz, EUT Horz |
| 4960.900 | 42.4 | 9.4 | 1.8 | 166.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 51.8 | 74.0 | -22.2 | High Ch. 2480 MHz, EUT Horz |
| 12027.430 | 27.9 | 3.4 | 1.5 | 91.0 | 3.0 | 0.0 | Horz | AV | 0.0 | 31.3 | 54.0 | -22.7 | Low Ch. 2405 MHz, EUT Horz |
| 12024.010 | 27.4 | 3.4 | 1.0 | 16.0 | 3.0 | 0.0 | Vert | AV | 0.0 | 30.8 | 54.0 | -23.2 | Low Ch. 2405 MHz, EUT Horz |
| 4808.858 | 41.3 | 9.0 | 1.8 | 169.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 50.3 | 74.0 | -23.7 | Low Ch. 2405 MHz, EUT Horz |
| 4880.900 | 41.1 | 9.2 | 1.5 | 176.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 50.3 | 74.0 | -23.7 | Mid Ch. 2440 MHz, EUT Horz |
| 4961.900 | 38.5 | 9.4 | 3.2 | 90.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 47.9 | 74.0 | -26.1 | High Ch. 2480 MHz, EUT Horz |

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Antenna Height (meters) | Azimuth (degrees) | Test Distance (meters) | External Attenuation (dB) | Polarity/ Transducer Type | Detector | Distance Adjustment (dB) | Adjusted (dBuV/m) | Spec. Limit (dBuV/m) | Compared to Spec. (dB) | Comments |
|---------------|---------------------|----------------|-------------------------------|----------------------|---------------------------|---------------------------------|---------------------------------|----------|--------------------------------|----------------------|-------------------------|------------------------------|-----------------------------|
| 4810.233 | 38.5 | 9.0 | 1.0 | 79.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 47.5 | 74.0 | -26.5 | Low Ch. 2405 MHz, EUT Horz |
| 4879.020 | 38.3 | 9.2 | 1.0 | 275.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 47.5 | 74.0 | -26.5 | Mid Ch. 2440 MHz, EUT Horz |
| 19240.170 | 44.8 | 1.1 | 1.7 | 5.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 45.9 | 74.0 | -28.1 | Low Ch. 2405 MHz, EUT Horz |
| 19239.890 | 44.0 | 1.1 | 1.7 | 294.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 45.1 | 74.0 | -28.9 | Low Ch. 2405 MHz, EUT Horz |
| 12397.720 | 39.3 | 5.0 | 1.0 | 148.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 44.3 | 74.0 | -29.7 | High Ch. 2480 MHz, EUT Horz |
| 12398.970 | 39.1 | 5.0 | 1.0 | 332.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 44.1 | 74.0 | -29.9 | High Ch. 2480 MHz, EUT Horz |
| 12200.880 | 38.2 | 4.4 | 1.0 | 217.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 42.6 | 74.0 | -31.4 | Mid Ch. 2440 MHz, EUT Horz |
| 12201.240 | 37.9 | 4.4 | 1.0 | 112.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 42.3 | 74.0 | -31.7 | Mid Ch. 2440 MHz, EUT Horz |
| 12026.280 | 38.8 | 3.4 | 1.0 | 16.0 | 3.0 | 0.0 | Vert | PK | 0.0 | 42.2 | 74.0 | -31.8 | Low Ch. 2405 MHz, EUT Horz |
| 12026.270 | 37.8 | 3.4 | 1.5 | 91.0 | 3.0 | 0.0 | Horz | PK | 0.0 | 41.2 | 74.0 | -32.8 | Low Ch. 2405 MHz, EUT Horz |



| | | | | | | | | | | | | | | | | | | | | | | I | EmiR5 | 2016.08. |
|--|---------|---------|---------|--------|----------|--------|--------|--------|--------|--|------|--------------|----------|--------|-----|------|-------|--------|------|------|-----|----|-------|----------|
| V | Work (| Order: | co C | SECF00 | 064 | | | | Date: | | 12/ | 19/10 | 6 | | C | | | | C | 1 | | | | |
| | Pr | oject: | | None | ; | | Ten | npera | ture | | 20 | .5 °C | ; | | - | _ | - | - | ~ | / | | | | |
| | Job | o Site: | | EV01 | | | | Hum | idity: | | 29.2 | 2% R | H | | - | - | - | \geq | | | | | | |
| Seri | ial Nu | mber: | B | luetoo | th 1 | B | Barome | tric F | res.: | | 1028 | 3 mb | ar | | | Test | ted b | by: J | ared | Ison | | | | |
| | | EUT: | 360SI | QŶŶZ | | | | | | | | | | | | | | | | | | | | |
| Col | nfigur | ation: | 1 | | | | | | | | | | | | | | | | | | | | | |
| | Cust | omer: | Select | Comfo | ort Corp | oratic | on | | | | | | | | | | | | | | | | | |
| | Atten | dees: | Jason | Ortber | g, Rob | Munn | 1 I | | | | | | | | | | | | | | | | | |
| I | EUT P | ower: | 110VA | C/60H | z | | | | | | | | | | | | | | | | | | | |
| Opera | ating | Mode: | Transı | nit. | | | | | | | | | | | | | | | | | | | | |
| | Devia | tions: | None. | | | | | | | | | | | | | | | | | | | | | |
| | Comn | nents: | None. | | | | | | | | | | | | | | | | | | | | | |
| Test Spe | ecifica | tions | | | | | | | | | | Tes | st Met | hod | | | | | | | | | | |
| FCC 15.2 | 247:20 | 16 | · | | | | | | | | | AN | SI C63 | 3.10:2 | 013 | | | | | | | | | |
| Run # 24 Test Distance (m) 3 Antenna Height(s) 1 to 4(m) | | | | | | | | | | | | Results Pass | | | | | | | | | | | | |
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| 2 | აზს | | | ∠400 | | | 2 | 420 | | | | 244 | U | | | 246 | 50 | | | | 248 | 50 | | |
| | | | | | | | | | | | MHz | | | | | | | | | PK | ٠ | AV | • | QP |

| 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 |
|---------------|---------------------|----------------|----------------------------|----------------------|---------------------------|---------------------------------|---------------------------------|----------|--------------------------------|----------------------|-------------------------|------------------------------|---|
| 2483.500 | 32.2 | -1.1 | 1.0 | 73.0 | 3.0 | 20.0 | Vert | AV | 0.0 | 51.1 | 54.0 | -2.9 | High Ch. 2480 MHz, EUT Horz |
| 2389.240 | 31.2 | -1.6 | 1.0 | 136.0 | 3.0 | 20.0 | Horz | AV | 0.0 | 49.6 | 54.0 | -4.4 | Low Ch. 2405 MHz, EUT Horz |
| 2388.693 | 30.8 | -1.6 | 1.0 | 236.0 | 3.0 | 20.0 | Vert | AV | 0.0 | 49.2 | 54.0 | -4.8 | Low Ch. 2405 MHz, EUT Horz |
| 2483.500 | 46.0 | -1.1 | 1.0 | 126.0 | 3.0 | 20.0 | Horz | PK | 0.0 | 64.9 | 74.0 | -9.1 | High Ch. 2480 MHz, EUT Horz |
| 2388.987 | 43.3 | -1.6 | 1.0 | 136.0 | 3.0 | 20.0 | Horz | PK | 0.0 | 61.7 | 74.0 | -12.3 | Low Ch. 2405 MHz, EUT Horz |
| 2483.500 | 42.7 | -1.1 | 1.0 | 73.0 | 3.0 | 20.0 | Vert | PK | 0.0 | 61.6 | 74.0 | -12.4 | High Ch. 2480 MHz, EUT Horz |
| 2483.500 | 22.2 | -1.2 | 1.0 | 147.0 | 3.0 | 20.0 | Horz | AV | 0.0 | 41.0 | 54.0 | -13.0 | High Ch. 2480 MHz, EUT Horz: Fund 39.1dBuV + -16.9dBc = 22.2dBuV (calc. amp.) |
| 2389.180 | 41.8 | -1.6 | 1.0 | 236.0 | 3.0 | 20.0 | Vert | PK | 0.0 | 60.2 | 74.0 | -13.8 | Low Ch. 2405 MHz, EUT Horz |
| 2483.500 | 31.0 | -1.2 | 1.0 | 147.0 | 3.0 | 20.0 | Horz | PK | 0.0 | 49.8 | 74.0 | -24.2 | High Ch. 2480 MHz, EUT Horz: Fund 47.9dBuV + -16.9dBc = 31.0dBuV (calc. amp.) |





