

# NORTHWEST EMC

## Select Comfort Corporation

Smart Outlet P/N: 121268

FCC 15.207:2015

FCC 15.247:2015

Report # SECF0021.1



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. This Report may only be duplicated in its entirety*

# CERTIFICATE OF TEST

**Last Date of Test: May 01, 2015**  
**Select Comfort Corporation**  
**Model: Smart Outlet P/N: 121268**

## Radio Equipment Testing

### Standards

| Specification   | Method           |
|-----------------|------------------|
| FCC 15.207:2015 | ANSI C63.10:2009 |
| FCC 15.247:2015 | ANSI C63.10:2009 |

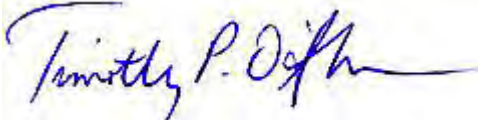
### Results

| Method Clause | Test Description              | Applied | Results | Comments                             |
|---------------|-------------------------------|---------|---------|--------------------------------------|
| 6.2           | Powerline Conducted Emissions | Yes     | Pass    |                                      |
| 6.5, 6.6      | Spurious Radiated Emissions   | Yes     | Pass    |                                      |
| 6.7           | Band Edge Compliance          | Yes     | Pass    |                                      |
| 6.7           | Spurious Conducted Emissions  | Yes     | Pass    |                                      |
| 6.9.1         | Occupied Bandwidth            | Yes     | Pass    |                                      |
| 6.10.2        | Output Power                  | Yes     | Pass    |                                      |
| 6.11.2        | Power Spectral Density        | Yes     | Pass    |                                      |
| 7.5           | Duty Cycle                    | Yes     | N/A     | Characterization of radio operation. |

### Deviations From Test Standards

None

### Approved By:



Tim O'Shea, Operations Manager

*Product compliance is the responsibility of the client; therefore, the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test.*

# REVISION HISTORY

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

# ACCREDITATIONS AND AUTHORIZATIONS

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## United States

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**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

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## Canada

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

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## European Union

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**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.

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## Australia/New Zealand

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

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## Korea

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

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## Japan

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

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## Taiwan

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**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.

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## Singapore

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

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## Israel

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

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## Hong Kong

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

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## Vietnam

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

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## SCOPE

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For details on the Scopes of our Accreditations, please visit:

<http://www.nwemc.com/accreditations/>  
<http://gsi.nist.gov/global/docs/cabs/designations.html>

# MEASUREMENT UNCERTAINTY

## Measurement Uncertainty

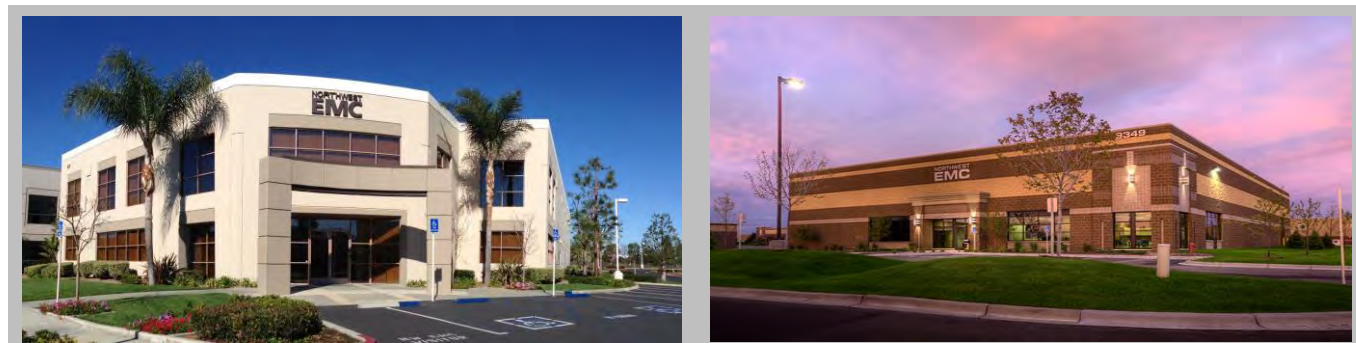
When a measurement is made, the result will be different from the true or theoretically correct value. The difference is the result of tolerances in the measurement system that cannot be completely eliminated. To the extent that technology allows us, it has been our aim to minimize this error. Measurement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

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) for each test is on each data sheet. Our measurement data meets or exceeds the measurement uncertainty requirements of the applicable specification; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for estimating measurement uncertainty are based upon ETSI TR 100 028 (or CISPR 16-4-2 as applicable), and are available upon request.

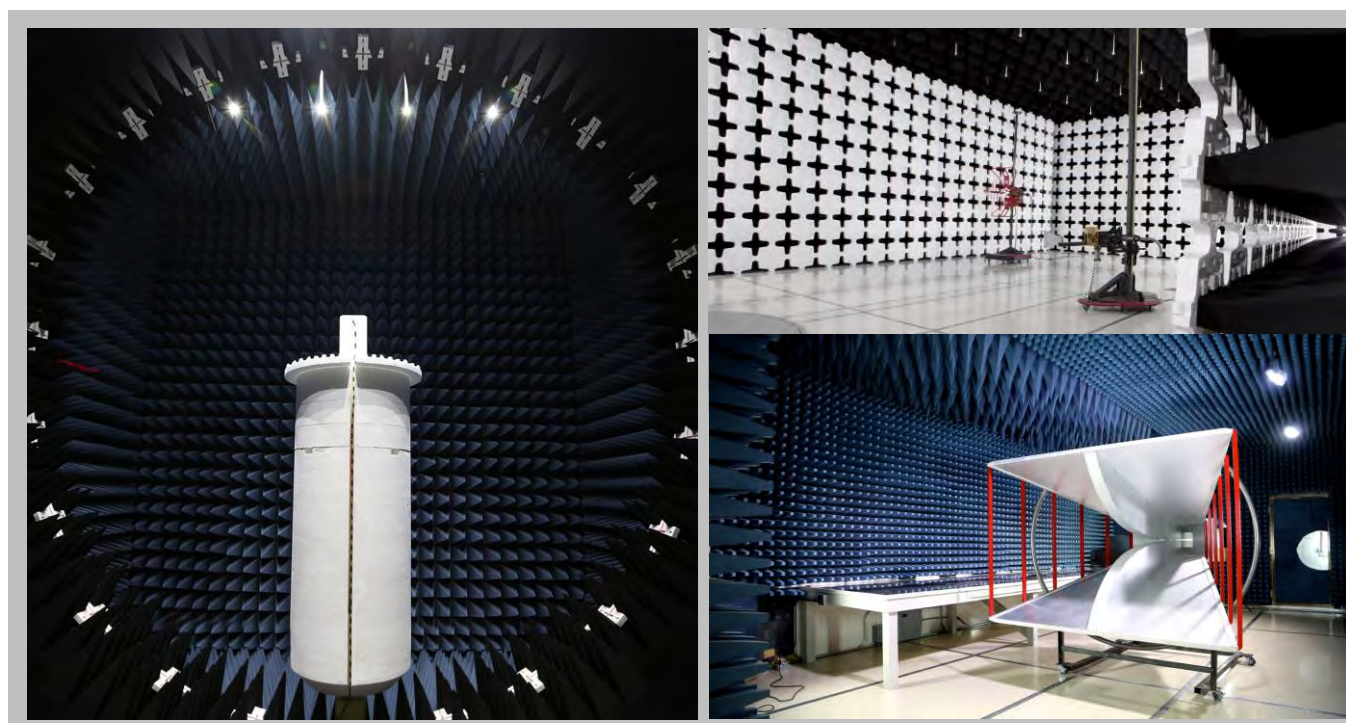
The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

| <b>Test</b>                           | <b>+ MU</b> | <b>- MU</b> |
|---------------------------------------|-------------|-------------|
| 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)                   | 4.7 dB      | -4.7 dB     |
| AC Powerline Conducted Emissions (dB) | 2.9 dB      | -2.9 dB     |

# FACILITIES



|                                                                                     |                                                                                                             |                                                                                            |                                                                                                   |                                                                                        |                                                                                                          |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| <b>California</b><br>Labs OC01-13<br>41 Tesla<br>Irvine, CA 92618<br>(949) 861-8918 | <b>Minnesota</b><br>Labs MN01-08, MN10<br>9349 W Broadway Ave.<br>Brooklyn Park, MN 55445<br>(612)-638-5136 | <b>New York</b><br>Labs NY01-04<br>4939 Jordan Rd.<br>Elbridge, NY 13060<br>(315) 554-8214 | <b>Oregon</b><br>Labs EV01-12<br>22975 NW Evergreen Pkwy<br>Hillsboro, OR 97124<br>(503) 844-4066 | <b>Texas</b><br>Labs TX01-09<br>3801 E Plano Pkwy<br>Plano, TX 75074<br>(469) 304-5255 | <b>Washington</b><br>Labs NC01-05<br>19201 120 <sup>th</sup> Ave NE<br>Bothell, WA 9801<br>(425)984-6600 |
| <b>NVLAP</b>                                                                        |                                                                                                             |                                                                                            |                                                                                                   |                                                                                        |                                                                                                          |
| 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                                                                                 |
| <b>Industry Canada</b>                                                              |                                                                                                             |                                                                                            |                                                                                                   |                                                                                        |                                                                                                          |
| 2834B-1, 2834B-3                                                                    | 2834E-1                                                                                                     | N/A                                                                                        | 2834D-1, 2834D-2                                                                                  | 2834G-1                                                                                | 2834F-1                                                                                                  |
| <b>BSMI</b>                                                                         |                                                                                                             |                                                                                            |                                                                                                   |                                                                                        |                                                                                                          |
| SL2-IN-E-1154R                                                                      | SL2-IN-E-1152R                                                                                              | N/A                                                                                        | SL2-IN-E-1017                                                                                     | SL2-IN-E-1158R                                                                         | SL2-IN-E-1153R                                                                                           |
| <b>VCCI</b>                                                                         |                                                                                                             |                                                                                            |                                                                                                   |                                                                                        |                                                                                                          |
| A-0029                                                                              | A-0109                                                                                                      | N/A                                                                                        | A-0108                                                                                            | A-0201                                                                                 | A-0110                                                                                                   |
| <b>Recognized Phase I CAB for ACMA, BSMI, IDA, KCC/RRR, MIC, MOC, NCC, OFCA</b>     |                                                                                                             |                                                                                            |                                                                                                   |                                                                                        |                                                                                                          |
| US0158                                                                              | US0175                                                                                                      | N/A                                                                                        | US0017                                                                                            | US0191                                                                                 | US0157                                                                                                   |



# PRODUCT DESCRIPTION

## Client and Equipment Under Test (EUT) Information

|                                 |                            |
|---------------------------------|----------------------------|
| <b>Company Name:</b>            | Select Comfort Corporation |
| <b>Address:</b>                 | 9800 59th Avenue North     |
| <b>City, State, Zip:</b>        | Minneapolis, MN 55442      |
| <b>Test Requested By:</b>       | Nick Reynolds              |
| <b>Model:</b>                   | Smart Outlet P/N: 121268   |
| <b>First Date of Test:</b>      | April 30, 2015             |
| <b>Last Date of Test:</b>       | May 01, 2015               |
| <b>Receipt Date of Samples:</b> | April 15, 2015             |
| <b>Equipment Design Stage:</b>  | Production                 |
| <b>Equipment Condition:</b>     | No Damage                  |

## Information Provided by the Party Requesting the Test

|                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Functional Description of the EUT:</b>                                                                                                                                           |
| Smart switchable outlet which will be controlled by the Select Comfort FCC approved smart pump, and this outlet will also be transmitting status back to the pump via Bluetooth LE. |
| <b>Testing Objective:</b>                                                                                                                                                           |
| To demonstrate compliance of the Bluetooth radio to FCC 15.247 requirements.                                                                                                        |

# CONFIGURATIONS

## Configuration SECF0021- 3

| EUT         |                            |                   |               |
|-------------|----------------------------|-------------------|---------------|
| Description | Manufacturer               | Model/Part Number | Serial Number |
| BLE Outlet  | Select Comfort Corporation | 121268            | None          |

| Peripherals in test setup boundary |                            |                   |               |
|------------------------------------|----------------------------|-------------------|---------------|
| Description                        | Manufacturer               | Model/Part Number | Serial Number |
| Light Puck                         | Select Comfort Corporation | Light Puck        | None          |

| Cables      |        |            |         |              |              |
|-------------|--------|------------|---------|--------------|--------------|
| Cable Type  | Shield | Length (m) | Ferrite | Connection 1 | Connection 2 |
| Power Cable | No     | 2m         | No      | BLE Outlet   | Light Puck   |
| AC Power    | No     | 1.8m       | No      | BLE Outlet   | AC Mains     |
| AC Power    | No     | 1.8m       | No      | BLE Outlet   | Unterminated |

# MODIFICATIONS

## Equipment Modifications

| Item | Date      | Test                          | Modification                         | Note                                                                | Disposition of EUT                                |
|------|-----------|-------------------------------|--------------------------------------|---------------------------------------------------------------------|---------------------------------------------------|
| 1    | 4/30/2015 | 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. |
| 2    | 4/30/2015 | Power Spectral Density        | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 3    | 4/30/2015 | Spurious Radiated Emissions   | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 4    | 5/1/2015  | Spurious Conducted Emissions  | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 5    | 5/1/2015  | Band Edge Compliance          | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 6    | 5/1/2015  | 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. |
| 7    | 5/1/2015  | Powerline Conducted Emissions | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | Scheduled testing was completed.                  |

# POWERLINE CONDUCTED EMISSIONS

## TEST DESCRIPTION

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

## TEST EQUIPMENT

| Description          | Manufacturer       | Model            | ID  | Last Cal.  | Cal. Due   |
|----------------------|--------------------|------------------|-----|------------|------------|
| High Pass Filter     | TTE                | H97-100K-50-720B | HGN | 5/23/2014  | 05/23/2015 |
| Attenuator 20dB, BNC | Fairview Microwave | SA01B-20         | AQP | 7/22/2014  | 07/22/2015 |
| MN03 Cables          | ESM Cable Corp.    | Conducted Cables | MNC | 11/20/2014 | 11/20/2015 |
| LISN                 | Solar Electronics  | 9252-50-R-24-BNC | LIY | 3/23/2015  | 03/23/2016 |
| Receiver             | Rohde & Schwarz    | ESR7             | ARI | 5/6/2014   | 05/06/2015 |

## MEASUREMENT UNCERTAINTY

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

## CONFIGURATIONS INVESTIGATED

SECF0021-3

## MODES INVESTIGATED

Bluetooth LE High Channel 2480 MHz  
Bluetooth LE Low Channel 2402 MHz  
Bluetooth LE Mid Channel 2442 MHz

# POWERLINE CONDUCTED EMISSIONS

|                   |                            |                    |            |
|-------------------|----------------------------|--------------------|------------|
| EUT:              | Smart Outlet P/N: 121268   | Work Order:        | SECF0021   |
| Serial Number:    | None                       | Date:              | 05/01/2015 |
| Customer:         | Select Comfort Corporation | Temperature:       | 24.3°C     |
| Attendees:        | None                       | Relative Humidity: | 29.2%      |
| Customer Project: | None                       | Bar. Pressure:     | 987.9 mb   |
| Tested By:        | Trevor Buls                | Job Site:          | MN03       |
| Power:            | 110VAC/60Hz                | Configuration:     | SECF0021-3 |

## TEST SPECIFICATIONS

|                 |                  |
|-----------------|------------------|
| Specification:  | Method:          |
| FCC 15.207:2015 | ANSI C63.10:2009 |

## TEST PARAMETERS

|        |   |       |           |                        |    |
|--------|---|-------|-----------|------------------------|----|
| Run #: | 4 | Line: | High Line | Ext. Attenuation (dB): | 20 |
|--------|---|-------|-----------|------------------------|----|

## COMMENTS

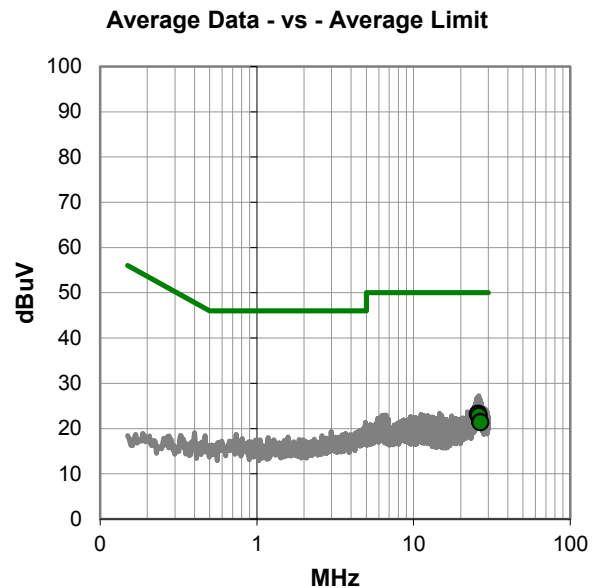
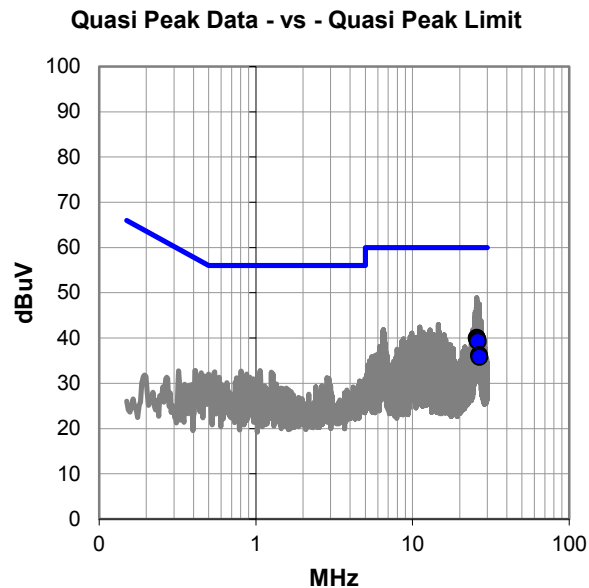
|      |
|------|
| None |
|------|

## EUT OPERATING MODES

|                                   |
|-----------------------------------|
| Bluetooth LE Low Channel 2402 MHz |
|-----------------------------------|

## DEVIATIONS FROM TEST STANDARD

|      |
|------|
| None |
|------|



# POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #4

Quasi Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 25.742     | 18.0        | 22.0        | 40.0            | 60.0               | -20.0       |
| 25.800     | 17.9        | 22.0        | 39.9            | 60.0               | -20.1       |
| 25.997     | 17.6        | 22.0        | 39.6            | 60.0               | -20.4       |
| 26.166     | 17.2        | 22.1        | 39.3            | 60.0               | -20.7       |
| 26.662     | 14.1        | 22.1        | 36.2            | 60.0               | -23.8       |
| 26.753     | 13.7        | 22.1        | 35.8            | 60.0               | -24.2       |

Average Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 25.997     | 1.2         | 22.0        | 23.2            | 50.0               | -26.8       |
| 25.800     | 1.2         | 22.0        | 23.2            | 50.0               | -26.8       |
| 25.742     | 1.2         | 22.0        | 23.2            | 50.0               | -26.8       |
| 26.166     | 0.7         | 22.1        | 22.8            | 50.0               | -27.2       |
| 26.662     | -0.6        | 22.1        | 21.5            | 50.0               | -28.5       |
| 26.753     | -0.8        | 22.1        | 21.3            | 50.0               | -28.7       |

## CONCLUSION

Pass

*Trevor Buls*

Tested By

# POWERLINE CONDUCTED EMISSIONS

|                   |                            |                    |            |
|-------------------|----------------------------|--------------------|------------|
| EUT:              | Smart Outlet P/N: 121268   | Work Order:        | SECF0021   |
| Serial Number:    | None                       | Date:              | 05/01/2015 |
| Customer:         | Select Comfort Corporation | Temperature:       | 24.3°C     |
| Attendees:        | None                       | Relative Humidity: | 29.2%      |
| Customer Project: | None                       | Bar. Pressure:     | 987.9 mb   |
| Tested By:        | Trevor Buls                | Job Site:          | MN03       |
| Power:            | 110VAC/60Hz                | Configuration:     | SECF0021-3 |

## TEST SPECIFICATIONS

|                 |                  |
|-----------------|------------------|
| Specification:  | Method:          |
| FCC 15.207:2015 | ANSI C63.10:2009 |

## TEST PARAMETERS

|        |   |       |         |                        |    |
|--------|---|-------|---------|------------------------|----|
| Run #: | 5 | Line: | Neutral | Ext. Attenuation (dB): | 20 |
|--------|---|-------|---------|------------------------|----|

## COMMENTS

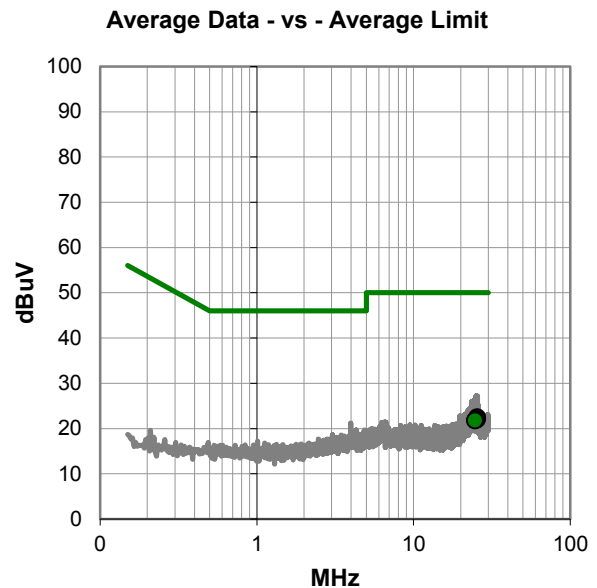
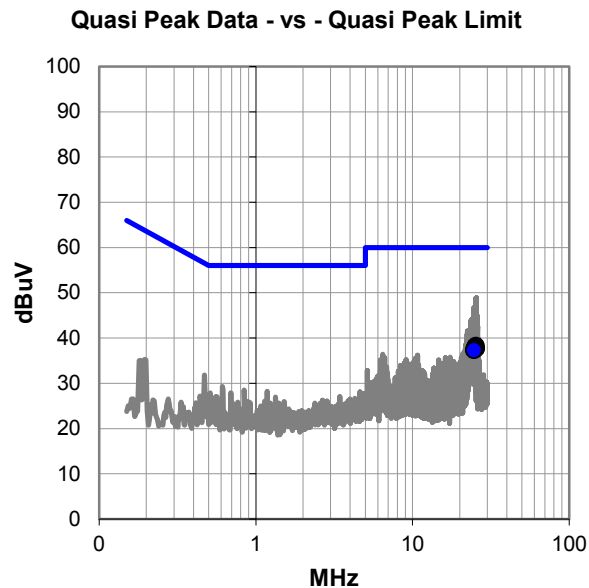
|      |
|------|
| None |
|------|

## EUT OPERATING MODES

|                                   |
|-----------------------------------|
| Bluetooth LE Low Channel 2402 MHz |
|-----------------------------------|

## DEVIATIONS FROM TEST STANDARD

|      |
|------|
| None |
|------|



# POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #5

Quasi Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 25.368     | 16.3        | 22.0        | 38.3            | 60.0               | -21.7       |
| 25.035     | 16.0        | 21.9        | 37.9            | 60.0               | -22.1       |
| 25.598     | 15.7        | 22.0        | 37.7            | 60.0               | -22.3       |
| 25.433     | 15.7        | 22.0        | 37.7            | 60.0               | -22.3       |
| 24.964     | 15.7        | 21.9        | 37.6            | 60.0               | -22.4       |
| 24.698     | 15.4        | 21.9        | 37.3            | 60.0               | -22.7       |

Average Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 25.598     | 0.5         | 22.0        | 22.5            | 50.0               | -27.5       |
| 25.368     | 0.1         | 22.0        | 22.1            | 50.0               | -27.9       |
| 25.433     | 0.0         | 22.0        | 22.0            | 50.0               | -28.0       |
| 25.035     | 0.0         | 21.9        | 21.9            | 50.0               | -28.1       |
| 24.964     | 0.0         | 21.9        | 21.9            | 50.0               | -28.1       |
| 24.698     | -0.1        | 21.9        | 21.8            | 50.0               | -28.2       |

## CONCLUSION

Pass

*Trevor Buls*

Tested By

# POWERLINE CONDUCTED EMISSIONS

|                   |                            |                    |            |
|-------------------|----------------------------|--------------------|------------|
| EUT:              | Smart Outlet P/N: 121268   | Work Order:        | SECF0021   |
| Serial Number:    | None                       | Date:              | 05/01/2015 |
| Customer:         | Select Comfort Corporation | Temperature:       | 24.3°C     |
| Attendees:        | None                       | Relative Humidity: | 29.2%      |
| Customer Project: | None                       | Bar. Pressure:     | 987.9 mb   |
| Tested By:        | Trevor Buls                | Job Site:          | MN03       |
| Power:            | 110VAC/60Hz                | Configuration:     | SECF0021-3 |

## TEST SPECIFICATIONS

|                 |                  |
|-----------------|------------------|
| Specification:  | Method:          |
| FCC 15.207:2015 | ANSI C63.10:2009 |

## TEST PARAMETERS

|        |   |       |         |                        |    |
|--------|---|-------|---------|------------------------|----|
| Run #: | 6 | Line: | Neutral | Ext. Attenuation (dB): | 20 |
|--------|---|-------|---------|------------------------|----|

## COMMENTS

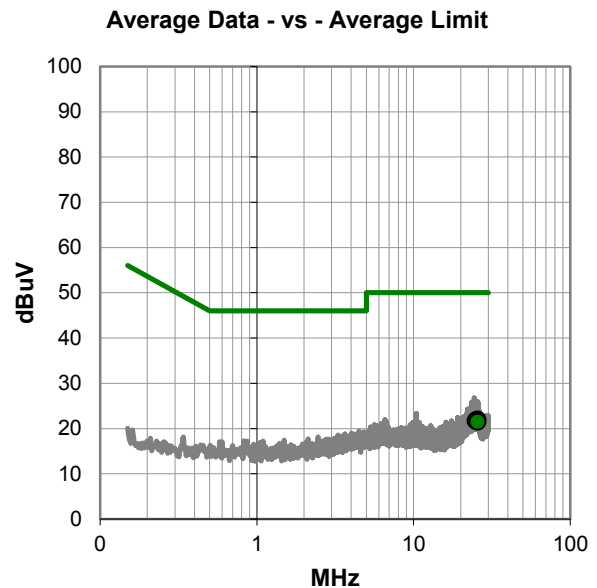
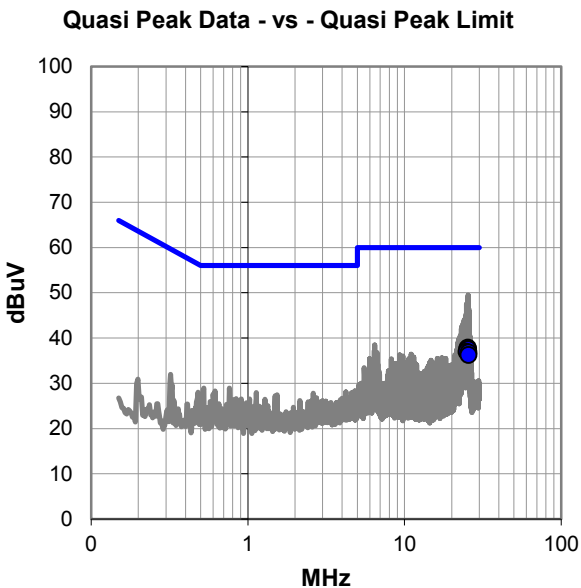
|      |
|------|
| None |
|------|

## EUT OPERATING MODES

|                                   |
|-----------------------------------|
| Bluetooth LE Mid Channel 2442 MHz |
|-----------------------------------|

## DEVIATIONS FROM TEST STANDARD

|      |
|------|
| None |
|------|



# POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #6

Quasi Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 25.406     | 15.9        | 22.0        | 37.9            | 60.0               | -22.1       |
| 25.187     | 15.7        | 21.9        | 37.6            | 60.0               | -22.4       |
| 25.510     | 15.5        | 22.0        | 37.5            | 60.0               | -22.5       |
| 24.906     | 15.0        | 21.9        | 36.9            | 60.0               | -23.1       |
| 25.605     | 14.8        | 22.0        | 36.8            | 60.0               | -23.2       |
| 25.720     | 14.2        | 22.0        | 36.2            | 60.0               | -23.8       |

Average Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 25.605     | 0.0         | 22.0        | 22.0            | 50.0               | -28.0       |
| 25.406     | -0.1        | 22.0        | 21.9            | 50.0               | -28.1       |
| 25.510     | -0.2        | 22.0        | 21.8            | 50.0               | -28.2       |
| 25.187     | -0.2        | 21.9        | 21.7            | 50.0               | -28.3       |
| 24.906     | -0.2        | 21.9        | 21.7            | 50.0               | -28.3       |
| 25.720     | -0.5        | 22.0        | 21.5            | 50.0               | -28.5       |

## CONCLUSION

Pass

*Trevor Buls*

Tested By

# POWERLINE CONDUCTED EMISSIONS

|                   |                            |                    |            |
|-------------------|----------------------------|--------------------|------------|
| EUT:              | Smart Outlet P/N: 121268   | Work Order:        | SECF0021   |
| Serial Number:    | None                       | Date:              | 05/01/2015 |
| Customer:         | Select Comfort Corporation | Temperature:       | 24.3°C     |
| Attendees:        | None                       | Relative Humidity: | 29.2%      |
| Customer Project: | None                       | Bar. Pressure:     | 987.9 mb   |
| Tested By:        | Trevor Buls                | Job Site:          | MN03       |
| Power:            | 110VAC/60Hz                | Configuration:     | SECF0021-3 |

## TEST SPECIFICATIONS

|                 |                  |
|-----------------|------------------|
| Specification:  | Method:          |
| FCC 15.207:2015 | ANSI C63.10:2009 |

## TEST PARAMETERS

|        |   |       |           |                        |    |
|--------|---|-------|-----------|------------------------|----|
| Run #: | 7 | Line: | High Line | Ext. Attenuation (dB): | 20 |
|--------|---|-------|-----------|------------------------|----|

## COMMENTS

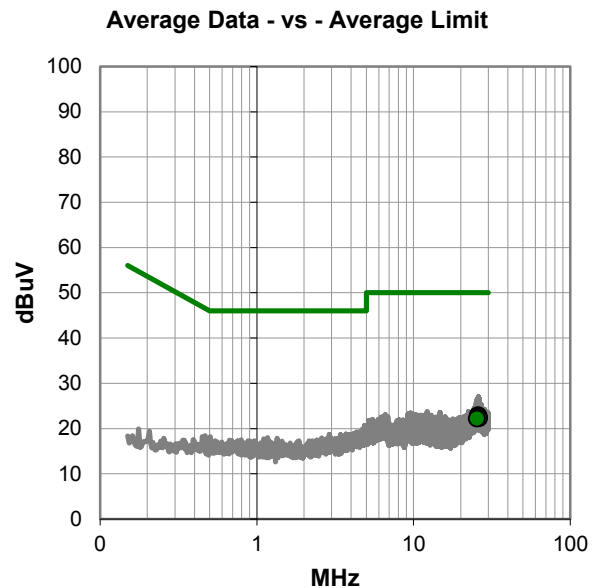
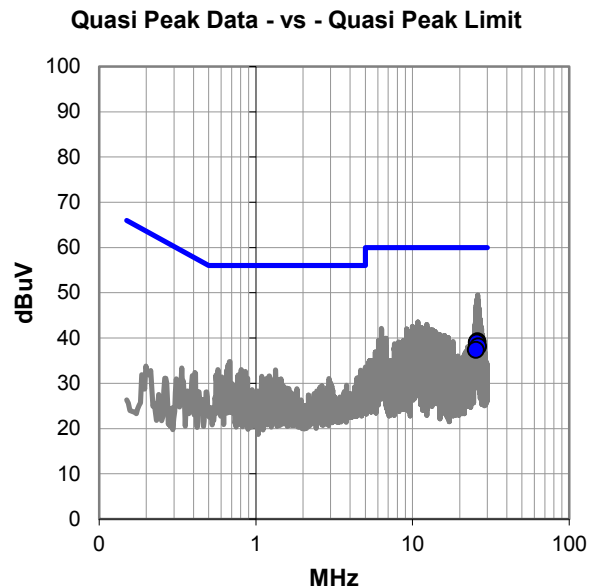
|      |
|------|
| None |
|------|

## EUT OPERATING MODES

|                                   |
|-----------------------------------|
| Bluetooth LE Mid Channel 2442 MHz |
|-----------------------------------|

## DEVIATIONS FROM TEST STANDARD

|      |
|------|
| None |
|------|



# POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #7

Quasi Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 25.990     | 17.2        | 22.0        | 39.2            | 60.0               | -20.8       |
| 26.084     | 17.0        | 22.0        | 39.0            | 60.0               | -21.0       |
| 25.882     | 17.0        | 22.0        | 39.0            | 60.0               | -21.0       |
| 25.782     | 17.0        | 22.0        | 39.0            | 60.0               | -21.0       |
| 26.245     | 16.1        | 22.1        | 38.2            | 60.0               | -21.8       |
| 25.438     | 15.4        | 22.0        | 37.4            | 60.0               | -22.6       |

Average Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 25.782     | 0.9         | 22.0        | 22.9            | 50.0               | -27.1       |
| 25.990     | 0.8         | 22.0        | 22.8            | 50.0               | -27.2       |
| 25.882     | 0.7         | 22.0        | 22.7            | 50.0               | -27.3       |
| 26.084     | 0.6         | 22.0        | 22.6            | 50.0               | -27.4       |
| 26.245     | 0.2         | 22.1        | 22.3            | 50.0               | -27.7       |
| 25.438     | 0.2         | 22.0        | 22.2            | 50.0               | -27.8       |

## CONCLUSION

Pass

*Trevor Buls*

Tested By

# POWERLINE CONDUCTED EMISSIONS

|                   |                            |                    |            |
|-------------------|----------------------------|--------------------|------------|
| EUT:              | Smart Outlet P/N: 121268   | Work Order:        | SECF0021   |
| Serial Number:    | None                       | Date:              | 05/01/2015 |
| Customer:         | Select Comfort Corporation | Temperature:       | 24.3°C     |
| Attendees:        | None                       | Relative Humidity: | 29.2%      |
| Customer Project: | None                       | Bar. Pressure:     | 987.9 mb   |
| Tested By:        | Trevor Buls                | Job Site:          | MN03       |
| Power:            | 110VAC/60Hz                | Configuration:     | SECF0021-3 |

## TEST SPECIFICATIONS

|                 |                  |
|-----------------|------------------|
| Specification:  | Method:          |
| FCC 15.207:2015 | ANSI C63.10:2009 |

## TEST PARAMETERS

|        |   |       |           |                        |    |
|--------|---|-------|-----------|------------------------|----|
| Run #: | 8 | Line: | High Line | Ext. Attenuation (dB): | 20 |
|--------|---|-------|-----------|------------------------|----|

## COMMENTS

None

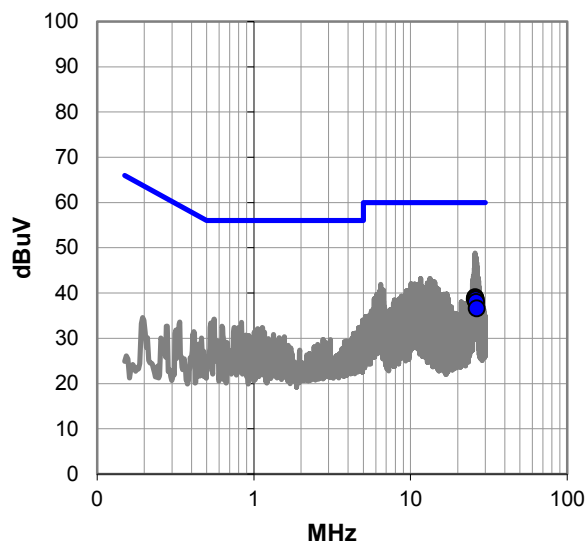
## EUT OPERATING MODES

Bluetooth LE High Channel 2480 MHz

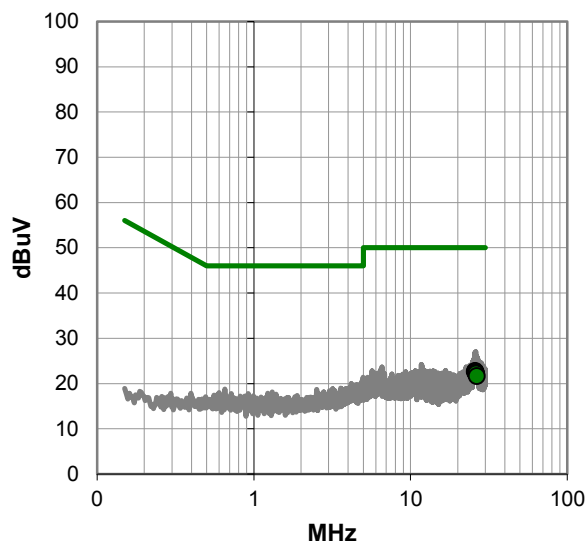
## DEVIATIONS FROM TEST STANDARD

None

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



# POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #8

Quasi Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 25.910     | 17.0        | 22.0        | 39.0            | 60.0               | -21.0       |
| 26.021     | 16.7        | 22.0        | 38.7            | 60.0               | -21.3       |
| 25.769     | 16.6        | 22.0        | 38.6            | 60.0               | -21.4       |
| 26.189     | 16.5        | 22.1        | 38.6            | 60.0               | -21.4       |
| 26.302     | 15.9        | 22.1        | 38.0            | 60.0               | -22.0       |
| 26.506     | 14.5        | 22.1        | 36.6            | 60.0               | -23.4       |

Average Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 25.910     | 0.7         | 22.0        | 22.7            | 50.0               | -27.3       |
| 25.769     | 0.6         | 22.0        | 22.6            | 50.0               | -27.4       |
| 26.021     | 0.5         | 22.0        | 22.5            | 50.0               | -27.5       |
| 26.189     | 0.3         | 22.1        | 22.4            | 50.0               | -27.6       |
| 26.302     | 0.1         | 22.1        | 22.2            | 50.0               | -27.8       |
| 26.506     | -0.5        | 22.1        | 21.6            | 50.0               | -28.4       |

## CONCLUSION

Pass

*Trevor Buls*

Tested By

# POWERLINE CONDUCTED EMISSIONS

|                   |                            |                    |            |
|-------------------|----------------------------|--------------------|------------|
| EUT:              | Smart Outlet P/N: 121268   | Work Order:        | SECF0021   |
| Serial Number:    | None                       | Date:              | 05/01/2015 |
| Customer:         | Select Comfort Corporation | Temperature:       | 24.3°C     |
| Attendees:        | None                       | Relative Humidity: | 29.2%      |
| Customer Project: | None                       | Bar. Pressure:     | 987.9 mb   |
| Tested By:        | Trevor Buls                | Job Site:          | MN03       |
| Power:            | 110VAC/60Hz                | Configuration:     | SECF0021-3 |

## TEST SPECIFICATIONS

|                 |                  |
|-----------------|------------------|
| Specification:  | Method:          |
| FCC 15.207:2015 | ANSI C63.10:2009 |

## TEST PARAMETERS

|        |   |       |         |                        |    |
|--------|---|-------|---------|------------------------|----|
| Run #: | 9 | Line: | Neutral | Ext. Attenuation (dB): | 20 |
|--------|---|-------|---------|------------------------|----|

## COMMENTS

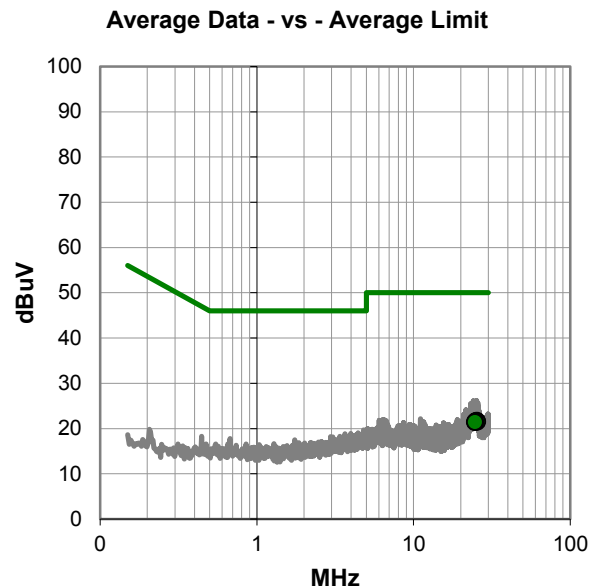
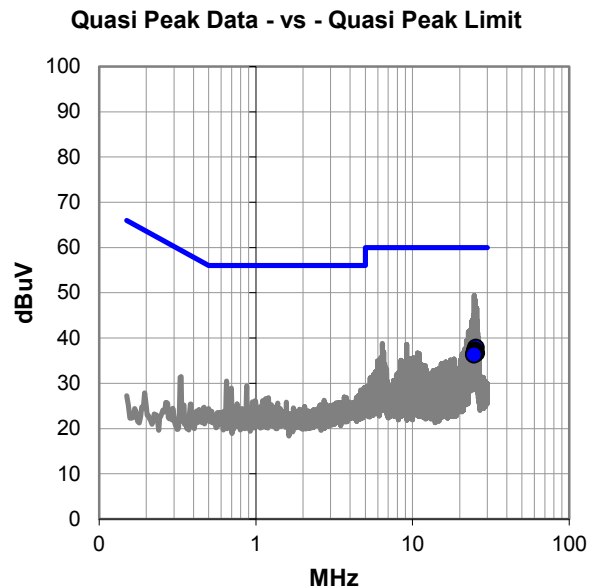
None

## EUT OPERATING MODES

Bluetooth LE High Channel 2480 MHz

## DEVIATIONS FROM TEST STANDARD

None



# POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #9

Quasi Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 25.448     | 15.9        | 22.0        | 37.9            | 60.0               | -22.1       |
| 25.104     | 15.3        | 21.9        | 37.2            | 60.0               | -22.8       |
| 25.146     | 15.1        | 21.9        | 37.0            | 60.0               | -23.0       |
| 25.593     | 14.7        | 22.0        | 36.7            | 60.0               | -23.3       |
| 24.796     | 14.7        | 21.9        | 36.6            | 60.0               | -23.4       |
| 24.692     | 14.4        | 21.9        | 36.3            | 60.0               | -23.7       |

Average Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 25.448     | -0.3        | 22.0        | 21.7            | 50.0               | -28.3       |
| 25.146     | -0.3        | 21.9        | 21.6            | 50.0               | -28.4       |
| 25.104     | -0.3        | 21.9        | 21.6            | 50.0               | -28.4       |
| 25.593     | -0.5        | 22.0        | 21.5            | 50.0               | -28.5       |
| 24.796     | -0.5        | 21.9        | 21.4            | 50.0               | -28.6       |
| 24.692     | -0.5        | 21.9        | 21.4            | 50.0               | -28.6       |

## CONCLUSION

Pass

*Trevor Buls*

Tested By

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

Bluetooth LE Low, Mid High channel: 2402, 2442, 2480 MHz (see comments)

## POWER SETTINGS INVESTIGATED

110VAC/60Hz

## CONFIGURATIONS INVESTIGATED

SECF0021 - 3

## FREQUENCY RANGE INVESTIGATED

|                 |        |                |        |
|-----------------|--------|----------------|--------|
| Start Frequency | 30 MHz | Stop Frequency | 25 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 |
|--------------------------------|-----------------|-----------------------------------|-----|------------|----------|
| High Pass Filter, 2.8 - 18 GHz | Micro-Tronics   | HPM50111                          | HGQ | 3/2/2015   | 12 mo    |
| Low Pass Filter, 0 - 1000 MHz  | Micro-Tronics   | LPM50004                          | HGK | 3/2/2015   | 12 mo    |
| Attenuator, 20 dB, 'SMA'       | SM Electronics  | SA6-20                            | REO | 3/2/2015   | 12 mo    |
| Pre-Amplifier                  | Miteq           | JSD4-18002600-26-8P               | APU | 10/3/2014  | 12 mo    |
| MN05 Cable                     | N/A             | 18-26GHz Standard Gain Horn Cable | MNP | 10/3/2014  | 12 mo    |
| Antenna, Horn                  | ETS             | 3160-09                           | AHG | NCR        | 0 mo     |
| Antenna, Horn                  | ETS             | 3160-07                           | AXP | NCR        | 0 mo     |
| Antenna, Horn                  | ETS Lindgren    | 3160-08                           | AIQ | NCR        | 0 mo     |
| Pre-Amplifier                  | Miteq           | AMF-6F-12001800-30-10P            | AVW | 3/2/2015   | 12 mo    |
| Pre-Amplifier                  | Miteq           | AMF-6F-08001200-30-10P            | AVV | 3/2/2015   | 12 mo    |
| MN05 Cables                    | ESM Cable Corp. | Standard Gain Horn Cables         | MNJ | 3/30/2015  | 12 mo    |
| Pre-Amplifier                  | Miteq           | AMF-3D-00100800-32-13P            | AVX | 3/2/2015   | 12 mo    |
| MN05 Cables                    | ESM Cable Corp. | Double Ridge Guide Horn Cables    | MNI | 3/30/2015  | 12 mo    |
| Antenna, Horn                  | ETS             | 3115                              | AJA | 6/3/2014   | 24 mo    |
| Pre-Amplifier                  | Miteq           | AM-1616-1000                      | PAD | 3/2/2015   | 12 mo    |
| MN05 Cables                    | ESM Cable Corp. | Bilog Cables                      | MNH | 3/30/2015  | 12 mo    |
| Antenna, Biconilog             | Teseq           | CBL 6141B                         | AYD | 12/17/2013 | 24 mo    |
| Spectrum Analyzer              | Agilent         | N9010A                            | AFI | 1/27/2015  | 12 mo    |

## MEASUREMENT BANDWIDTHS

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

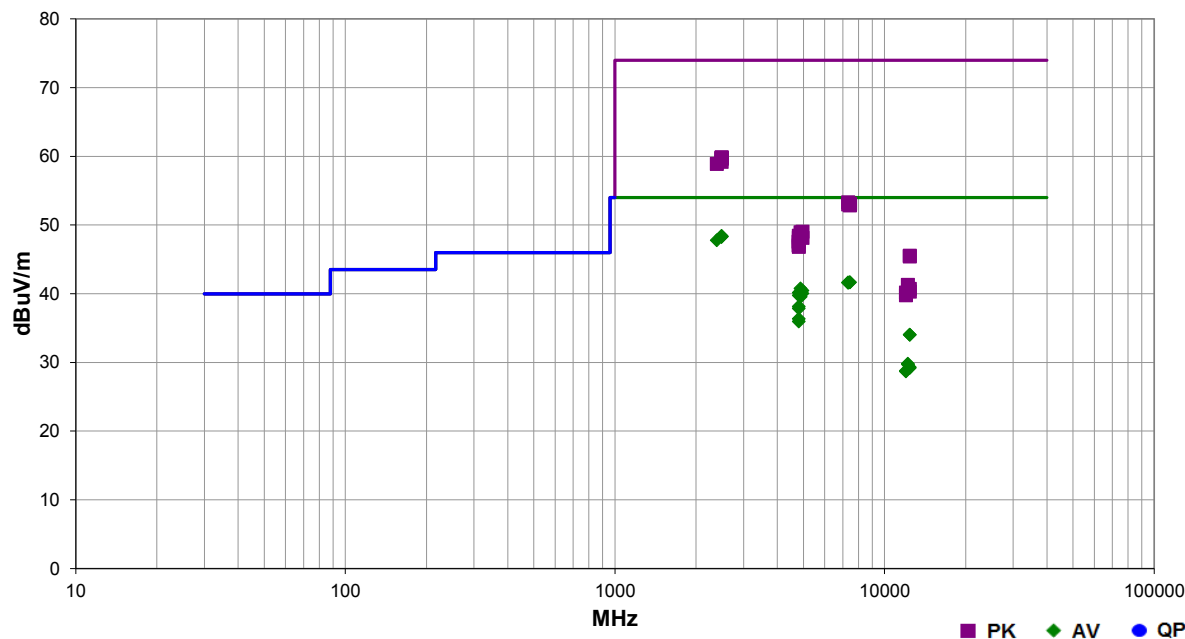
## TEST DESCRIPTION

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

|                 |                                                                         |                   |            |                    |
|-----------------|-------------------------------------------------------------------------|-------------------|------------|--------------------|
| Work Order:     | SECF0021                                                                | Date:             | 04/30/15   | <i>Trevor Buls</i> |
| Project:        | None                                                                    | Temperature:      | 22.9 °C    |                    |
| Job Site:       | MN05                                                                    | Humidity:         | 28.3% RH   |                    |
| Serial Number:  | None                                                                    | Barometric Pres.: | 988.4 mbar |                    |
| EUT:            | Smart Outlet P/N: 121268                                                |                   |            |                    |
| Configuration:  | 3                                                                       |                   |            |                    |
| Customer:       | Select Comfort Corporation                                              |                   |            |                    |
| Attendees:      | Jason Ortberg, John Cebula                                              |                   |            |                    |
| EUT Power:      | 110VAC/60Hz                                                             |                   |            |                    |
| Operating Mode: | Bluetooth LE Low, Mid High channel: 2402, 2442, 2480 MHz (see comments) |                   |            |                    |
| Deviations:     | None                                                                    |                   |            |                    |
| Comments:       | None                                                                    |                   |            |                    |

| Test Specifications | Test Method      |
|---------------------|------------------|
| FCC 15.247:2015     | ANSI C63.10:2009 |

| Run # | 12 | Test Distance (m) | 3 | Antenna Height(s) | 1 to 4(m) | Results | Pass |
|-------|----|-------------------|---|-------------------|-----------|---------|------|
|-------|----|-------------------|---|-------------------|-----------|---------|------|



| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Antenna Height (meters) | Azimuth (degrees) | Test Distance (meters) | External Attenuation (dB) | Polarity/Transducer Type | Detector | Distance Adjustment (dB) | Adjusted (dBuV/m) | Spec. Limit (dBuV/m) | Compared to Spec. (dB) | Comments                |
|------------|------------------|-------------|-------------------------|-------------------|------------------------|---------------------------|--------------------------|----------|--------------------------|-------------------|----------------------|------------------------|-------------------------|
| 2488.325   | 31.3             | -2.9        | 1.0                     | 229.0             | 3.0                    | 20.0                      | Vert                     | AV       | 0.0                      | 48.4              | 54.0                 | -5.6                   | EUT Vertical, High Ch   |
| 2486.825   | 31.2             | -2.9        | 1.0                     | 340.0             | 3.0                    | 20.0                      | Vert                     | AV       | 0.0                      | 48.3              | 54.0                 | -5.7                   | EUT Horizontal, High Ch |
| 2486.525   | 31.2             | -2.9        | 1.0                     | 137.1             | 3.0                    | 20.0                      | Vert                     | AV       | 0.0                      | 48.3              | 54.0                 | -5.7                   | EUT on Side, High Ch    |
| 2485.983   | 31.2             | -2.9        | 3.7                     | 319.9             | 3.0                    | 20.0                      | Horz                     | AV       | 0.0                      | 48.3              | 54.0                 | -5.7                   | EUT Vertical, High Ch   |
| 2484.683   | 31.2             | -2.9        | 1.0                     | 115.0             | 3.0                    | 20.0                      | Horz                     | AV       | 0.0                      | 48.3              | 54.0                 | -5.7                   | EUT on Side, High Ch    |
| 2483.867   | 31.2             | -2.9        | 1.0                     | 101.1             | 3.0                    | 20.0                      | Horz                     | AV       | 0.0                      | 48.3              | 54.0                 | -5.7                   | EUT Horizontal, High Ch |
| 2386.433   | 31.0             | -3.2        | 1.0                     | 242.0             | 3.0                    | 20.0                      | Vert                     | AV       | 0.0                      | 47.8              | 54.0                 | -6.2                   | EUT Vertical, Low Ch    |
| 7437.792   | 28.4             | 13.3        | 2.1                     | 326.9             | 3.0                    | 0.0                       | Vert                     | AV       | 0.0                      | 41.7              | 54.0                 | -12.3                  | EUT on Side, High Ch    |
| 7437.525   | 28.4             | 13.3        | 1.2                     | 146.0             | 3.0                    | 0.0                       | Horz                     | AV       | 0.0                      | 41.7              | 54.0                 | -12.3                  | EUT Vertical, High Ch   |
| 7326.400   | 28.8             | 12.8        | 3.6                     | 195.1             | 3.0                    | 0.0                       | Horz                     | AV       | 0.0                      | 41.6              | 54.0                 | -12.4                  | EUT Vertical, High Ch   |
| 7325.758   | 28.8             | 12.8        | 1.0                     | 229.9             | 3.0                    | 0.0                       | Vert                     | AV       | 0.0                      | 41.6              | 54.0                 | -12.4                  | EUT on Side, Mid Ch     |
| 4882.033   | 35.8             | 5.0         | 1.1                     | 307.0             | 3.0                    | 0.0                       | Vert                     | AV       | 0.0                      | 40.8              | 54.0                 | -13.2                  | EUT on Side, Mid Ch     |
| 4957.967   | 35.3             | 5.1         | 1.0                     | 288.0             | 3.0                    | 0.0                       | Horz                     | AV       | 0.0                      | 40.4              | 54.0                 | -13.6                  | EUT Vertical, High Ch   |
| 4803.950   | 35.0             | 5.1         | 1.0                     | 89.0              | 3.0                    | 0.0                       | Horz                     | AV       | 0.0                      | 40.1              | 54.0                 | -13.9                  | EUT Vertical, Low Ch    |
| 4958.050   | 34.9             | 5.1         | 1.0                     | 325.0             | 3.0                    | 0.0                       | Vert                     | AV       | 0.0                      | 40.0              | 54.0                 | -14.0                  | EUT on Side, High Ch    |
| 2488.017   | 42.7             | -2.9        | 1.0                     | 137.1             | 3.0                    | 20.0                      | Vert                     | PK       | 0.0                      | 59.8              | 74.0                 | -14.2                  | EUT on Side, High Ch    |
| 2486.508   | 42.7             | -2.9        | 1.0                     | 229.0             | 3.0                    | 20.0                      | Vert                     | PK       | 0.0                      | 59.8              | 74.0                 | -14.2                  | EUT Vertical, High Ch   |
| 2485.325   | 42.7             | -2.9        | 1.0                     | 101.1             | 3.0                    | 20.0                      | Horz                     | PK       | 0.0                      | 59.8              | 74.0                 | -14.2                  | EUT Horizontal, High Ch |
| 4804.133   | 34.6             | 5.1         | 1.0                     | 12.1              | 3.0                    | 0.0                       | Vert                     | AV       | 0.0                      | 39.7              | 54.0                 | -14.3                  | EUT on Side, Low Ch     |
| 2484.683   | 42.6             | -2.9        | 1.0                     | 115.0             | 3.0                    | 20.0                      | Horz                     | PK       | 0.0                      | 59.7              | 74.0                 | -14.3                  | EUT on Side, High Ch    |
| 2487.067   | 42.5             | -2.9        | 3.7                     | 319.9             | 3.0                    | 20.0                      | Horz                     | PK       | 0.0                      | 59.6              | 74.0                 | -14.4                  | EUT Vertical, High Ch   |
| 4883.933   | 34.6             | 4.9         | 1.0                     | 315.0             | 3.0                    | 0.0                       | Horz                     | AV       | 0.0                      | 39.5              | 54.0                 | -14.5                  | EUT Vertical, Mid Ch    |

| 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                |
|------------|------------------|-------------|-------------------------|-------------------|------------------------|---------------------------|---------------------------|----------|--------------------------|-------------------|----------------------|------------------------|-------------------------|
| 2485.333   | 42.1             | -2.9        | 1.0                     | 340.0             | 3.0                    | 20.0                      | Vert                      | PK       | 0.0                      | 59.2              | 74.0                 | -14.8                  | EUT Horizontal, High Ch |
| 2385.500   | 42.1             | -3.2        | 1.0                     | 242.0             | 3.0                    | 20.0                      | Vert                      | PK       | 0.0                      | 58.9              | 74.0                 | -15.1                  | EUT Vertical, Low Ch    |
| 4803.942   | 33.0             | 5.1         | 1.1                     | 42.0              | 3.0                    | 0.0                       | Horz                      | AV       | 0.0                      | 38.1              | 54.0                 | -15.9                  | EUT Horizontal, Low Ch  |
| 4803.842   | 32.7             | 5.1         | 1.0                     | 40.1              | 3.0                    | 0.0                       | Horz                      | AV       | 0.0                      | 37.8              | 54.0                 | -16.2                  | EUT on Side, Low Ch     |
| 4804.042   | 31.2             | 5.1         | 1.0                     | 169.0             | 3.0                    | 0.0                       | Vert                      | AV       | 0.0                      | 36.3              | 54.0                 | -17.7                  | EUT Horizontal, Low Ch  |
| 4803.933   | 30.8             | 5.1         | 1.0                     | 311.0             | 3.0                    | 0.0                       | Vert                      | AV       | 0.0                      | 35.9              | 54.0                 | -18.1                  | EUT Vertical, Low Ch    |
| 12400.200  | 33.8             | 0.2         | 1.0                     | 67.0              | 3.0                    | 0.0                       | Vert                      | AV       | 0.0                      | 34.0              | 54.0                 | -20.0                  | EUT on Side, High Ch    |
| 12400.030  | 33.8             | 0.2         | 1.0                     | 92.0              | 3.0                    | 0.0                       | Horz                      | AV       | 0.0                      | 34.0              | 54.0                 | -20.0                  | EUT Vertical, High Ch   |
| 7327.400   | 40.5             | 12.8        | 3.6                     | 195.1             | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 53.3              | 74.0                 | -20.7                  | EUT Vertical, Mid Ch    |
| 7442.117   | 39.8             | 13.3        | 1.2                     | 146.0             | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 53.1              | 74.0                 | -20.9                  | EUT Vertical, High Ch   |
| 7325.883   | 40.2             | 12.8        | 1.0                     | 229.9             | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 53.0              | 74.0                 | -21.0                  | EUT on Side, Mid Ch     |
| 7441.575   | 39.6             | 13.3        | 2.1                     | 326.9             | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 52.9              | 74.0                 | -21.1                  | EUT on Side, High Ch    |
| 12209.500  | 34.5             | -4.7        | 1.0                     | 175.0             | 3.0                    | 0.0                       | Vert                      | AV       | 0.0                      | 29.8              | 54.0                 | -24.2                  | EUT on Side, Mid Ch     |
| 12211.630  | 34.4             | -4.7        | 1.8                     | 8.1               | 3.0                    | 0.0                       | Horz                      | AV       | 0.0                      | 29.7              | 54.0                 | -24.3                  | EUT Vertical, Mid Ch    |
| 12399.130  | 34.0             | -4.7        | 1.0                     | 263.0             | 3.0                    | 0.0                       | Horz                      | AV       | 0.0                      | 29.3              | 54.0                 | -24.7                  | EUT Vertical, High Ch   |
| 12398.570  | 33.9             | -4.7        | 1.0                     | 272.9             | 3.0                    | 0.0                       | Vert                      | AV       | 0.0                      | 29.2              | 54.0                 | -24.8                  | EUT on Side, High Ch    |
| 4958.242   | 43.9             | 5.1         | 1.0                     | 325.0             | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 49.0              | 74.0                 | -25.0                  | EUT on Side, High Ch    |
| 4881.900   | 44.0             | 5.0         | 1.0                     | 315.0             | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 49.0              | 74.0                 | -25.0                  | EUT Vertical, Mid Ch    |
| 12011.000  | 34.1             | -5.3        | 1.0                     | 294.9             | 3.0                    | 0.0                       | Vert                      | AV       | 0.0                      | 28.8              | 54.0                 | -25.2                  | EUT on Side, Low Ch     |
| 12009.280  | 34.0             | -5.3        | 1.0                     | 54.0              | 3.0                    | 0.0                       | Horz                      | AV       | 0.0                      | 28.7              | 54.0                 | -25.3                  | EUT Vertical, Low Ch    |
| 4804.492   | 43.3             | 5.1         | 1.0                     | 89.0              | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 48.4              | 74.0                 | -25.6                  | EUT Vertical, Low Ch    |
| 4884.800   | 43.3             | 4.9         | 1.1                     | 307.0             | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 48.2              | 74.0                 | -25.8                  | EUT on Side, Mid Ch     |
| 4958.433   | 43.0             | 5.1         | 1.0                     | 288.0             | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 48.1              | 74.0                 | -25.9                  | EUT Vertical, High Ch   |
| 4804.725   | 43.0             | 5.1         | 1.0                     | 12.1              | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 48.1              | 74.0                 | -25.9                  | EUT on Side, Low Ch     |
| 4803.592   | 42.5             | 5.1         | 1.0                     | 40.1              | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 47.6              | 74.0                 | -26.4                  | EUT on Side, Low Ch     |
| 4803.392   | 42.4             | 5.1         | 1.1                     | 42.0              | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 47.5              | 74.0                 | -26.5                  | EUT Horizontal, Low Ch  |
| 4803.242   | 41.9             | 5.1         | 1.0                     | 311.0             | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 47.0              | 74.0                 | -27.0                  | EUT Vertical, Low Ch    |
| 4806.092   | 41.7             | 5.1         | 1.0                     | 169.0             | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 46.8              | 74.0                 | -27.2                  | EUT Horizontal, Low Ch  |
| 12401.280  | 45.3             | 0.2         | 1.0                     | 92.0              | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 45.5              | 74.0                 | -28.5                  | EUT Vertical, High Ch   |
| 12401.700  | 45.2             | 0.2         | 1.0                     | 67.0              | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 45.4              | 74.0                 | -28.6                  | EUT on Side, High Ch    |
| 12207.980  | 46.0             | -4.7        | 1.0                     | 175.0             | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 41.3              | 74.0                 | -32.7                  | EUT on Side, Mid Ch     |
| 12397.810  | 45.4             | -4.7        | 1.0                     | 263.0             | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 40.7              | 74.0                 | -33.3                  | EUT Vertical, High Ch   |
| 12211.630  | 45.4             | -4.7        | 1.8                     | 8.1               | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 40.7              | 74.0                 | -33.3                  | EUT Vertical, Mid Ch    |
| 12398.710  | 45.0             | -4.7        | 1.0                     | 272.9             | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 40.3              | 74.0                 | -33.7                  | EUT on Side, High Ch    |
| 12009.730  | 45.5             | -5.3        | 1.0                     | 294.9             | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 40.2              | 74.0                 | -33.8                  | EUT on Side, Low Ch     |
| 12009.520  | 45.1             | -5.3        | 1.0                     | 54.0              | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 39.8              | 74.0                 | -34.2                  | EUT Vertical, Low Ch    |

# BAND EDGE COMPLIANCE

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

## TEST EQUIPMENT

| Description               | Manufacturer    | Model           | ID  | Last Cal. | Interval (mo) |
|---------------------------|-----------------|-----------------|-----|-----------|---------------|
| MN08 Direct Connect Cable | ESM Cable Corp. | TTBJ141 KMKM-72 | MNU | 10/2/2014 | 12            |
| Near Field Probe Set      | ETS Lindgren    | 7405            | IPO | NCR       | 0             |
| Spectrum Analyzer         | Agilent         | E4440A          | AAX | 4/20/2015 | 12            |

## TEST DESCRIPTION

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

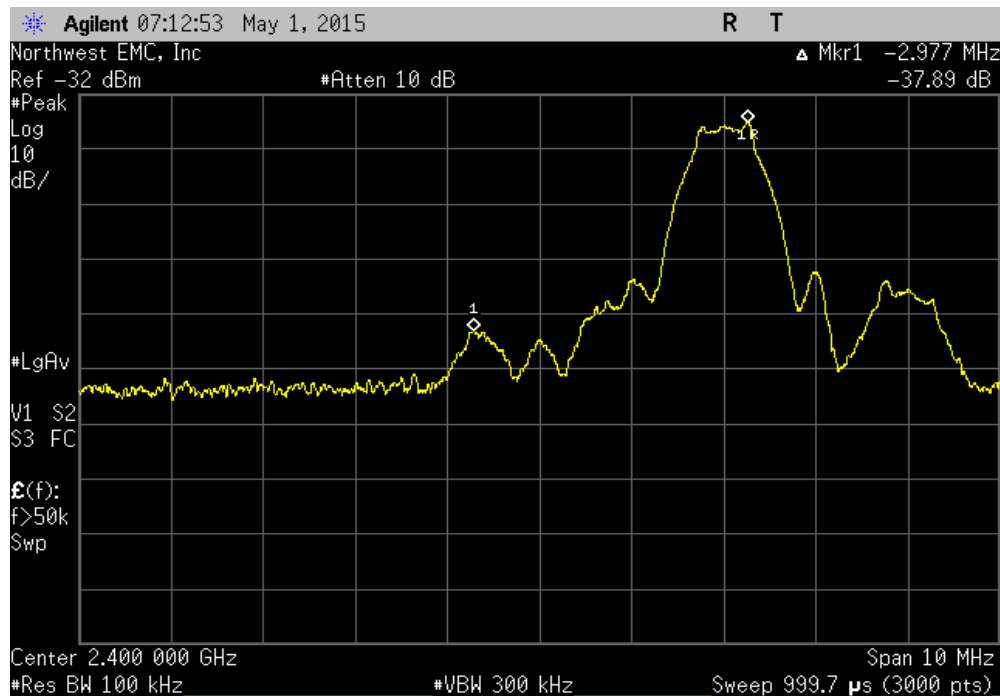
The spectrum was scanned below the lower band edge and above the higher band edge.

# BAND EDGE COMPLIANCE

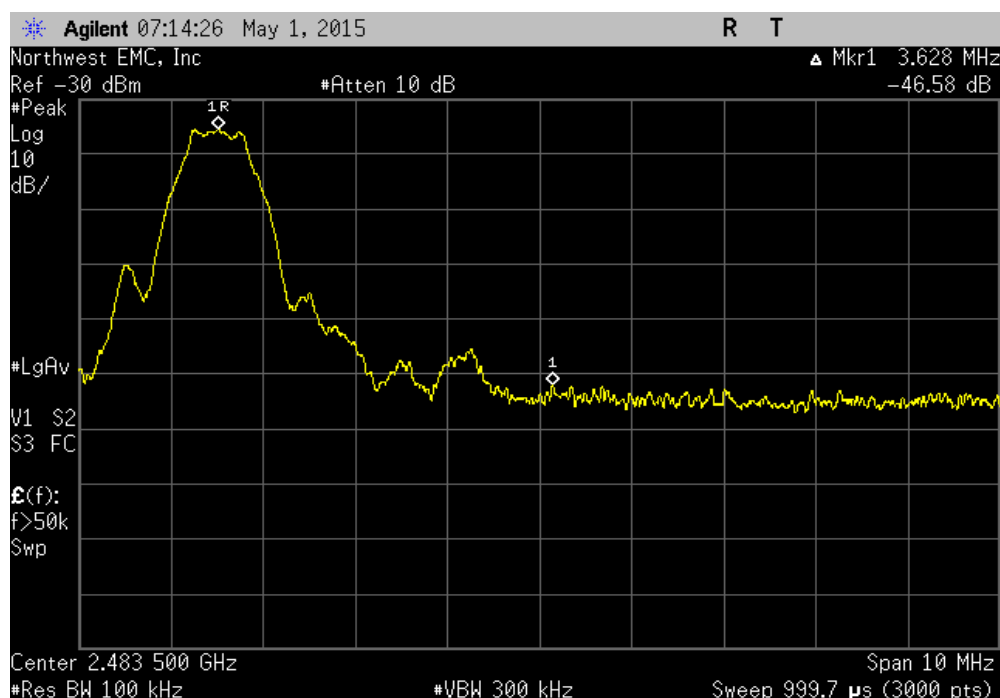
|                                      |                    |                              |                      |
|--------------------------------------|--------------------|------------------------------|----------------------|
| EUT: Smart Outlet P/N: 121268        |                    | Work Order: SECF0021         |                      |
| Serial Number: None                  |                    | Date: 05/01/15               |                      |
| Customer: Select Comfort Corporation |                    | Temperature: 23.7°C          |                      |
| Attendees: None                      |                    | Humidity: 24%                |                      |
| Project: None                        |                    | Barometric Pres.: 988.7      |                      |
| Tested by: Trevor Buls               | Power: 110VAC/60Hz | Job Site: MN08               |                      |
| TEST SPECIFICATIONS                  |                    |                              |                      |
| FCC 15.247:2015                      |                    | Test Method                  |                      |
|                                      |                    | ANSI C63.10:2009             |                      |
| COMMENTS                             |                    |                              |                      |
| None                                 |                    |                              |                      |
| DEVIATIONS FROM TEST STANDARD        |                    |                              |                      |
| None                                 |                    |                              |                      |
| Configuration #                      | 3                  | Signature <i>Trevor Buls</i> |                      |
|                                      |                    | Value (dBc)                  | Limit ≤ (dBc) Result |
| Low Channel, 2402 MHz                |                    | -37.89                       | -20 Pass             |
| High Channel, 2480 MHz               |                    | -46.58                       | -20 Pass             |

# BAND EDGE COMPLIANCE

| Low Channel, 2402 MHz |  |  |  | Value<br>(dBc) | Limit<br>≤ (dBc) | Result |
|-----------------------|--|--|--|----------------|------------------|--------|
|                       |  |  |  | -37.89         | -20              | Pass   |



| High Channel, 2480 MHz |  |  |  | Value<br>(dBc) | Limit<br>≤ (dBc) | Result |
|------------------------|--|--|--|----------------|------------------|--------|
|                        |  |  |  | -46.58         | -20              | Pass   |



# SPURIOUS CONDUCTED EMISSIONS

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

## TEST EQUIPMENT

| Description       | Manufacturer    | Model        | ID  | Last Cal. | Interval (mo) |
|-------------------|-----------------|--------------|-----|-----------|---------------|
| MN05 Cables       | ESM Cable Corp. | Bilog Cables | MNH | 3/30/2015 | 12            |
| Antenna, Horn     | ETS             | 3115         | AJA | 6/3/2014  | 24            |
| Spectrum Analyzer | Agilent         | N9010A       | AFI | 1/27/2015 | 12            |

## TEST DESCRIPTION

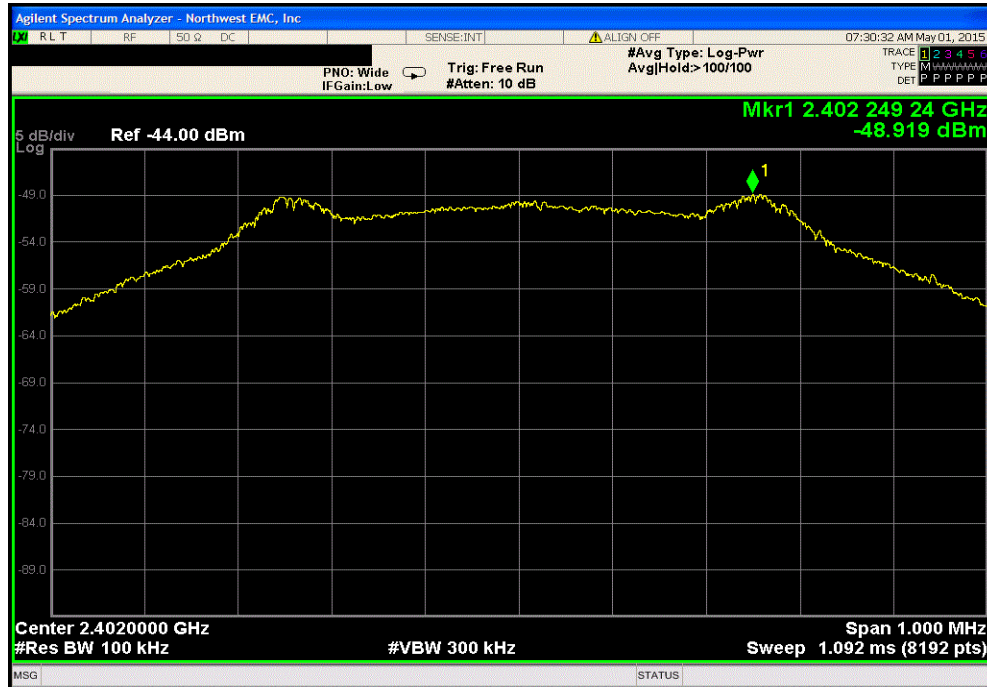
The spurious RF conducted emissions were measured with the EUT set to low, medium and high transmit frequencies. The measurements were made using a the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet. For each transmit frequency, the spectrum was scanned throughout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

# SPURIOUS CONDUCTED EMISSIONS

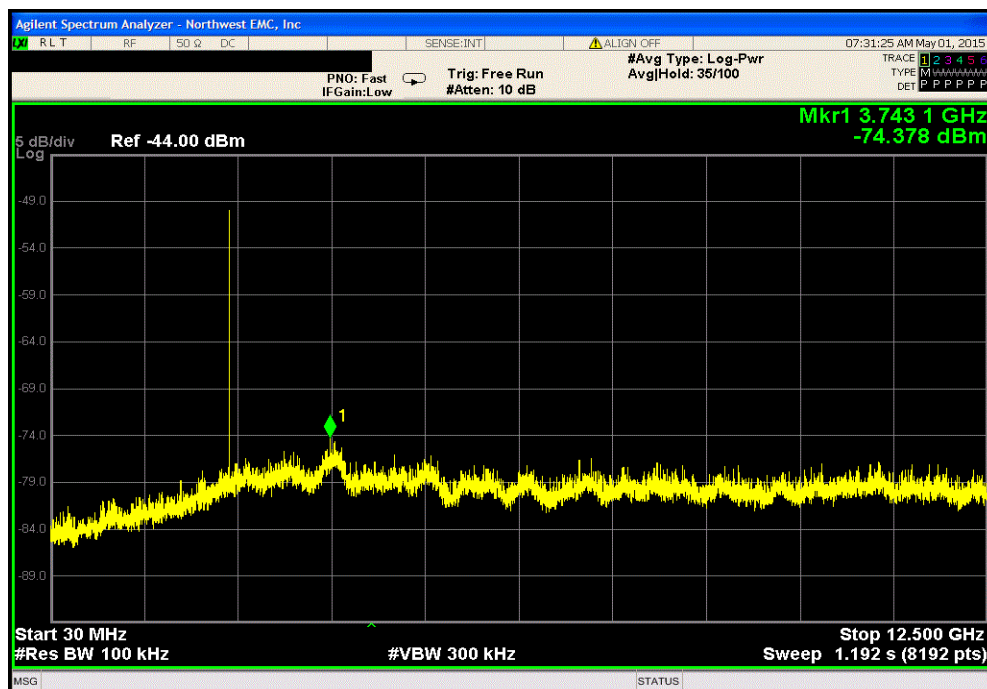
|                                      |                    |                              |             |               |        |
|--------------------------------------|--------------------|------------------------------|-------------|---------------|--------|
| EUT: Smart Outlet P/N: 121268        |                    | Work Order: SECF0021         |             |               |        |
| Serial Number: None                  |                    | Date: 05/01/15               |             |               |        |
| Customer: Select Comfort Corporation |                    | Temperature: 23.7°C          |             |               |        |
| Attendees: None                      |                    | Humidity: 24%                |             |               |        |
| Project: None                        |                    | Barometric Pres.: 988.7      |             |               |        |
| Tested by: Trevor Buls               | Power: 110VAC/60Hz | Job Site: MN05               |             |               |        |
| TEST SPECIFICATIONS                  |                    | Test Method                  |             |               |        |
| FCC 15.247:2015                      |                    | ANSI C63.10:2009             |             |               |        |
| COMMENTS                             |                    |                              |             |               |        |
| None                                 |                    |                              |             |               |        |
| DEVIATIONS FROM TEST STANDARD        |                    |                              |             |               |        |
| None                                 |                    |                              |             |               |        |
| Configuration #                      | 3                  | Signature <i>Trevor Buls</i> |             |               |        |
|                                      |                    | Frequency Range              | Value (dBc) | Limit ≤ (dBc) | Result |
| Low Channel, 2402 MHz                |                    | Fundamental                  | N/A         | N/A           | N/A    |
| Low Channel, 2402 MHz                |                    | 30 MHz - 12.5 GHz            | -25.46      | -20           | Pass   |
| Low Channel, 2402 MHz                |                    | 12.5 GHz - 25 GHz            | -24.42      | -20           | Pass   |
| Mid Channel, 2442 MHz                |                    | Fundamental                  | N/A         | N/A           | N/A    |
| Mid Channel, 2442 MHz                |                    | 30 MHz - 12.5 GHz            | -26.89      | -20           | Pass   |
| Mid Channel, 2442 MHz                |                    | 12.5 GHz - 25 GHz            | -25.64      | -20           | Pass   |
| High Channel, 2480 MHz               |                    | Fundamental                  | N/A         | N/A           | N/A    |
| High Channel, 2480 MHz               |                    | 30 MHz - 12.5 GHz            | -25.1       | -20           | Pass   |
| High Channel, 2480 MHz               |                    | 12.5 GHz - 25 GHz            | -23.15      | -20           | Pass   |

# SPURIOUS CONDUCTED EMISSIONS

| Low Channel, 2402 MHz |  |  |             |               |        |  |
|-----------------------|--|--|-------------|---------------|--------|--|
| Frequency Range       |  |  | Value (dBc) | Limit ≤ (dBc) | Result |  |
| Fundamental           |  |  | N/A         | N/A           | N/A    |  |

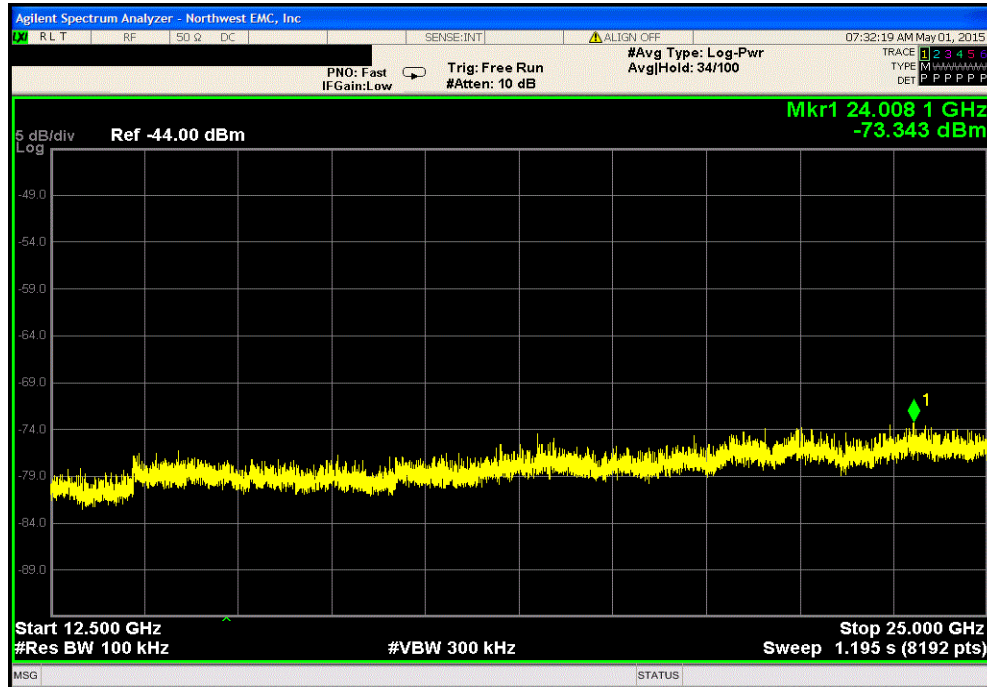


| Low Channel, 2402 MHz |  |  |             |               |        |  |
|-----------------------|--|--|-------------|---------------|--------|--|
| Frequency Range       |  |  | Value (dBc) | Limit ≤ (dBc) | Result |  |
| 30 MHz - 12.5 GHz     |  |  | -25.46      | -20           | Pass   |  |

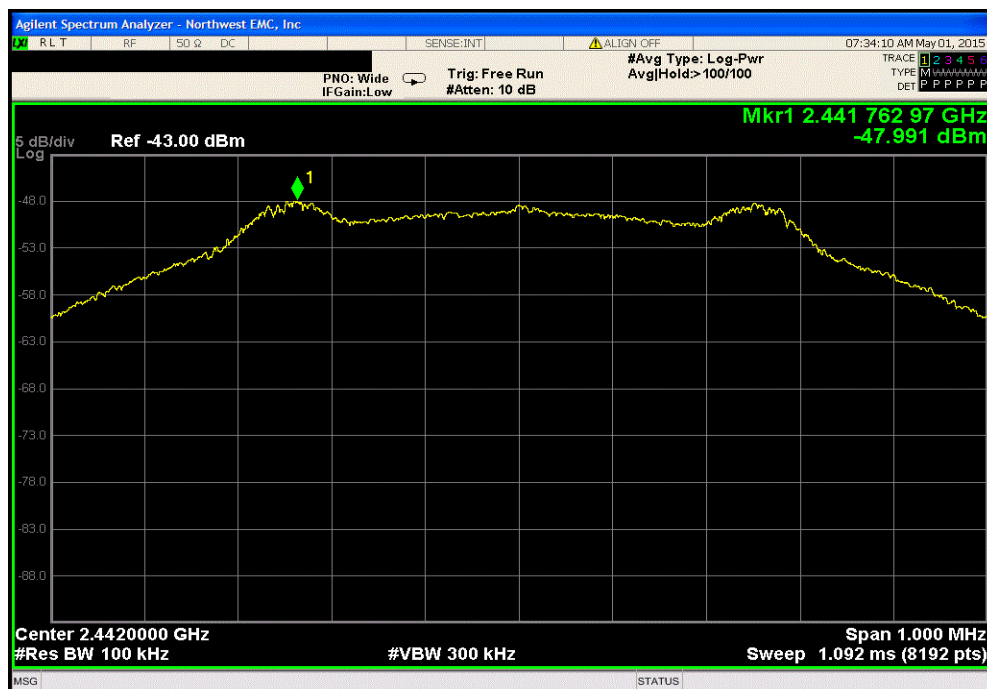


# SPURIOUS CONDUCTED EMISSIONS

| Low Channel, 2402 MHz |             |               |        |  |
|-----------------------|-------------|---------------|--------|--|
| Frequency Range       | Value (dBc) | Limit ≤ (dBc) | Result |  |
| 12.5 GHz - 25 GHz     | -24.42      | -20           | Pass   |  |

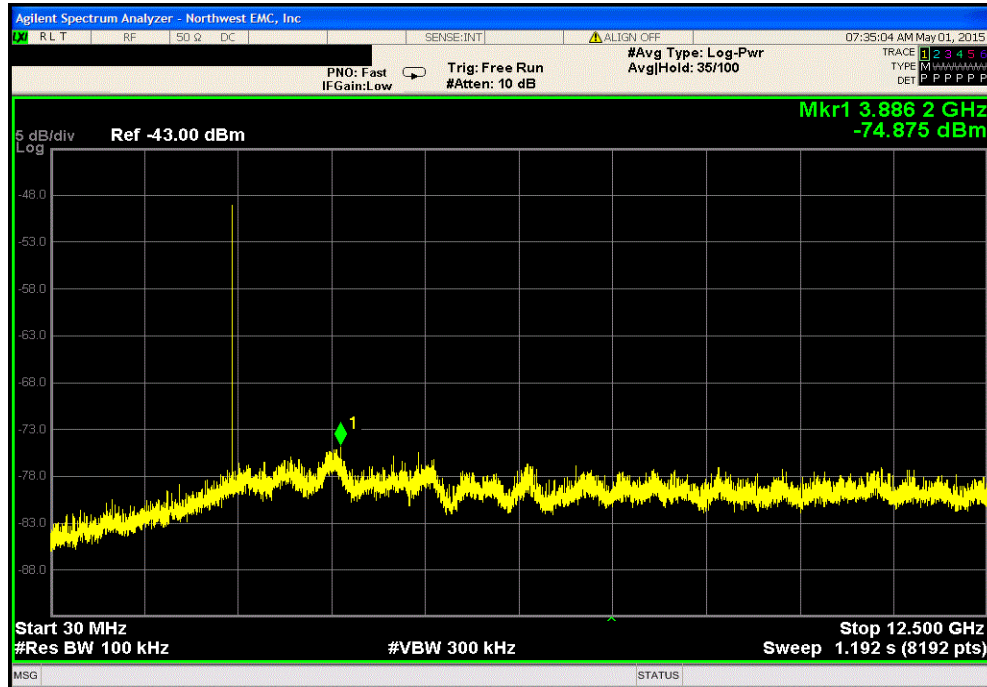


| Mid Channel, 2442 MHz |             |               |        |  |
|-----------------------|-------------|---------------|--------|--|
| Frequency Range       | Value (dBc) | Limit ≤ (dBc) | Result |  |
| Fundamental           | N/A         | N/A           | N/A    |  |

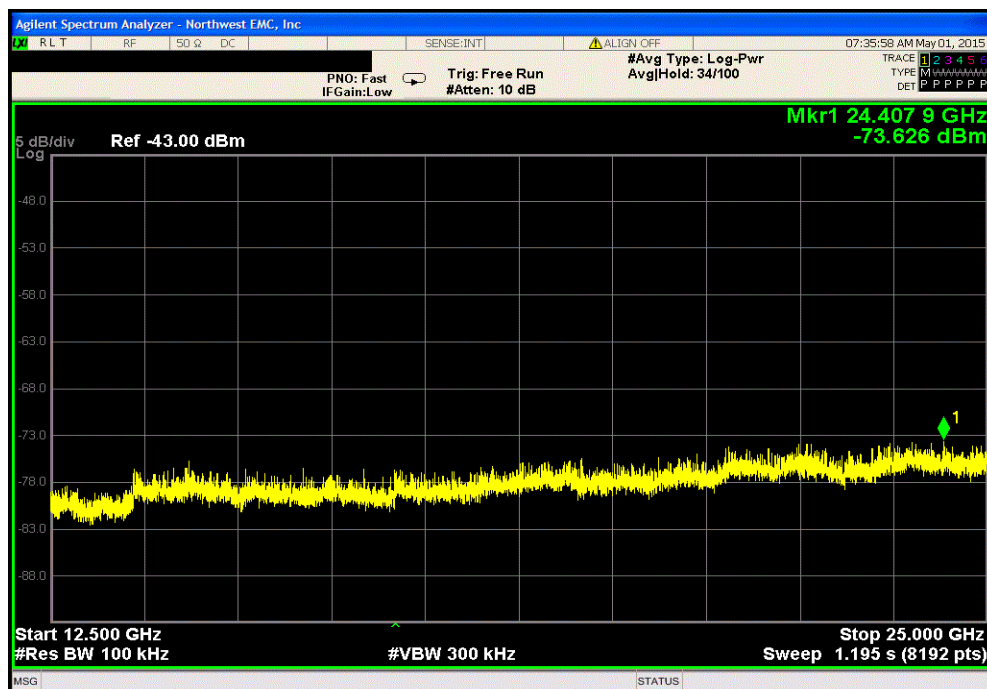


# SPURIOUS CONDUCTED EMISSIONS

| Mid Channel, 2442 MHz |             |               |        |  |
|-----------------------|-------------|---------------|--------|--|
| Frequency Range       | Value (dBc) | Limit ≤ (dBc) | Result |  |
| 30 MHz - 12.5 GHz     | -26.89      | -20           | Pass   |  |

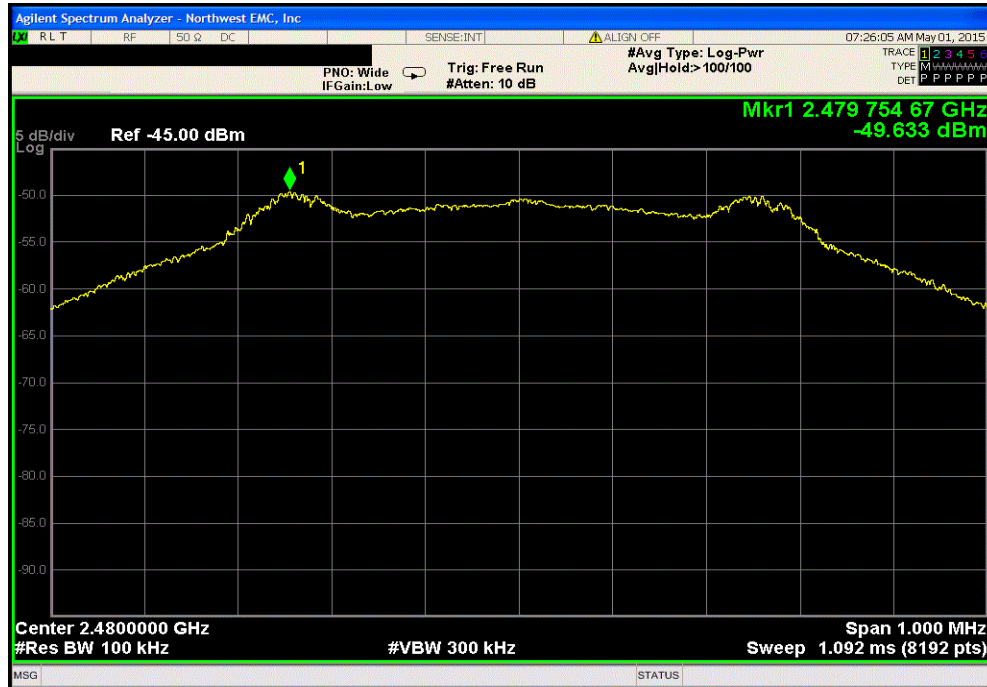


| Mid Channel, 2442 MHz |             |               |        |  |
|-----------------------|-------------|---------------|--------|--|
| Frequency Range       | Value (dBc) | Limit ≤ (dBc) | Result |  |
| 12.5 GHz - 25 GHz     | -25.64      | -20           | Pass   |  |

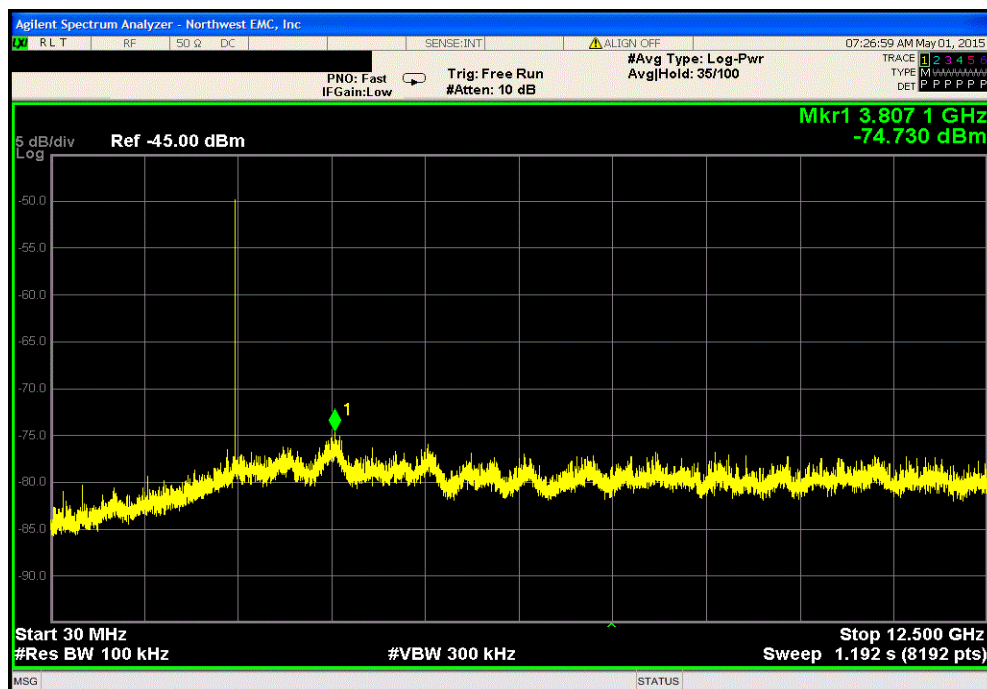


# SPURIOUS CONDUCTED EMISSIONS

| High Channel, 2480 MHz |  |  |             |               |        |  |
|------------------------|--|--|-------------|---------------|--------|--|
| Frequency Range        |  |  | Value (dBc) | Limit ≤ (dBc) | Result |  |
| Fundamental            |  |  | N/A         | N/A           | N/A    |  |

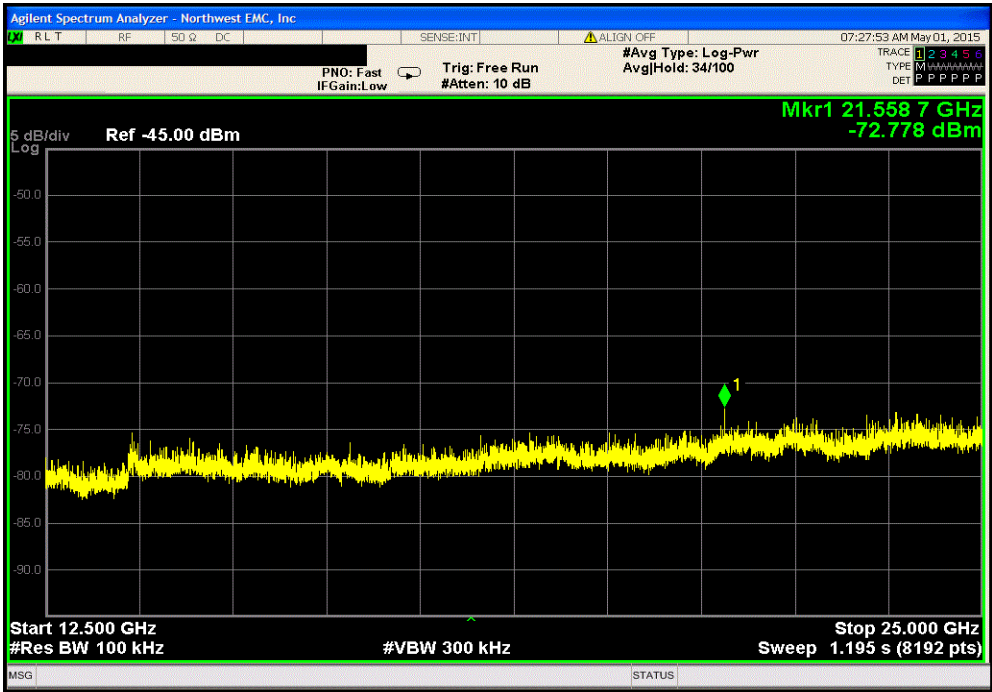


| High Channel, 2480 MHz |  |  |             |               |        |  |
|------------------------|--|--|-------------|---------------|--------|--|
| Frequency Range        |  |  | Value (dBc) | Limit ≤ (dBc) | Result |  |
| 30 MHz - 12.5 GHz      |  |  | -25.1       | -20           | Pass   |  |



SPURIOUS CONDUCTED EMISSIONS

| High Channel, 2480 MHz |             |               |        |  |
|------------------------|-------------|---------------|--------|--|
| Frequency Range        | Value (dBc) | Limit ≤ (dBc) | Result |  |
| 12.5 GHz - 25 GHz      | -23.15      | -20           | Pass   |  |



# OCCUPIED BANDWIDTH

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

## TEST EQUIPMENT

| Description               | Manufacturer    | Model           | ID  | Last Cal. | Interval (mo) |
|---------------------------|-----------------|-----------------|-----|-----------|---------------|
| MN08 Direct Connect Cable | ESM Cable Corp. | TTBJ141 KMKM-72 | MNU | 10/2/2014 | 12            |
| Near Field Probe Set      | ETS Lindgren    | 7405            | IPO | NCR       | 0             |
| Spectrum Analyzer         | Agilent         | E4440A          | AAX | 4/20/2015 | 12            |

## TEST DESCRIPTION

The 6dB occupied bandwidth was measured. The 26 dB (99.9%) emission bandwidth (EBW) was also measured at the same time.

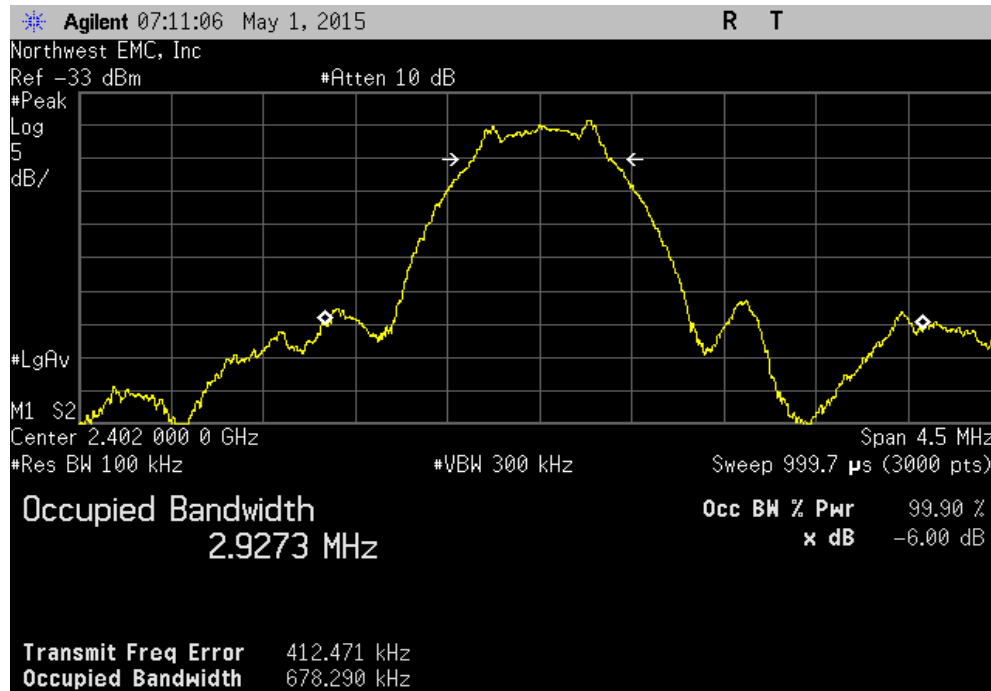
The EUT was set to low, medium and high transmit frequencies. The measurement was made in a radiated configuration. The EUT was transmitting at the data rate(s) listed in the datasheet.

# OCCUPIED BANDWIDTH

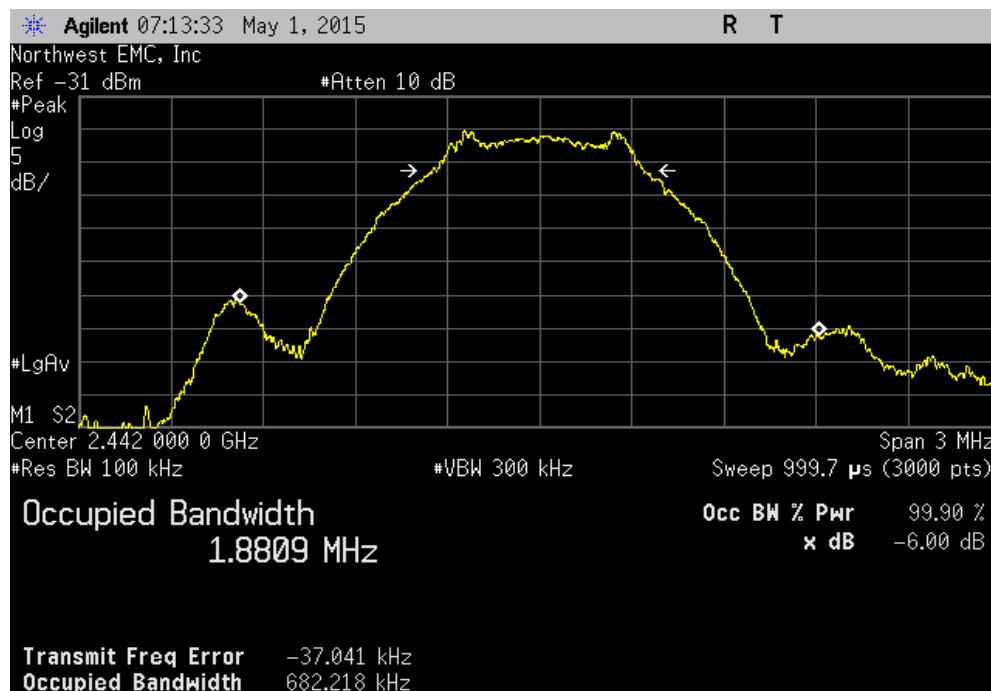
|                                      |                    |                              |              |
|--------------------------------------|--------------------|------------------------------|--------------|
| EUT: Smart Outlet P/N: 121268        |                    | Work Order: SECF0021         |              |
| Serial Number: None                  |                    | Date: 05/01/15               |              |
| Customer: Select Comfort Corporation |                    | Temperature: 23.7°C          |              |
| Attendees: None                      |                    | Humidity: 24%                |              |
| Project: None                        |                    | Barometric Pres.: 988.7      |              |
| Tested by: Trevor Buls               | Power: 110VAC/60Hz | Job Site: MN08               |              |
| TEST SPECIFICATIONS                  |                    | Test Method                  |              |
| FCC 15.247:2015                      |                    | ANSI C63.10:2009             |              |
| COMMENTS                             |                    |                              |              |
| None                                 |                    |                              |              |
| DEVIATIONS FROM TEST STANDARD        |                    |                              |              |
| None                                 |                    |                              |              |
| Configuration #                      | 3                  | Signature <i>Trevor Buls</i> |              |
|                                      |                    | Value                        | Limit<br>(±) |
| Low Channel, 2402 MHz                |                    | 678.29 kHz                   | 500 kHz      |
| Mid Channel, 2442 MHz                |                    | 682.218 kHz                  | 500 kHz      |
| High Channel, 2480 MHz               |                    | 665.593 kHz                  | 500 kHz      |
|                                      |                    |                              | Result       |
|                                      |                    |                              | Pass         |
|                                      |                    |                              | Pass         |
|                                      |                    |                              | Pass         |

# OCCUPIED BANDWIDTH

| Low Channel, 2402 MHz |  |  |  |            |              |        |
|-----------------------|--|--|--|------------|--------------|--------|
|                       |  |  |  | Value      | Limit<br>(≥) | Result |
|                       |  |  |  | 678.29 kHz | 500 kHz      | Pass   |

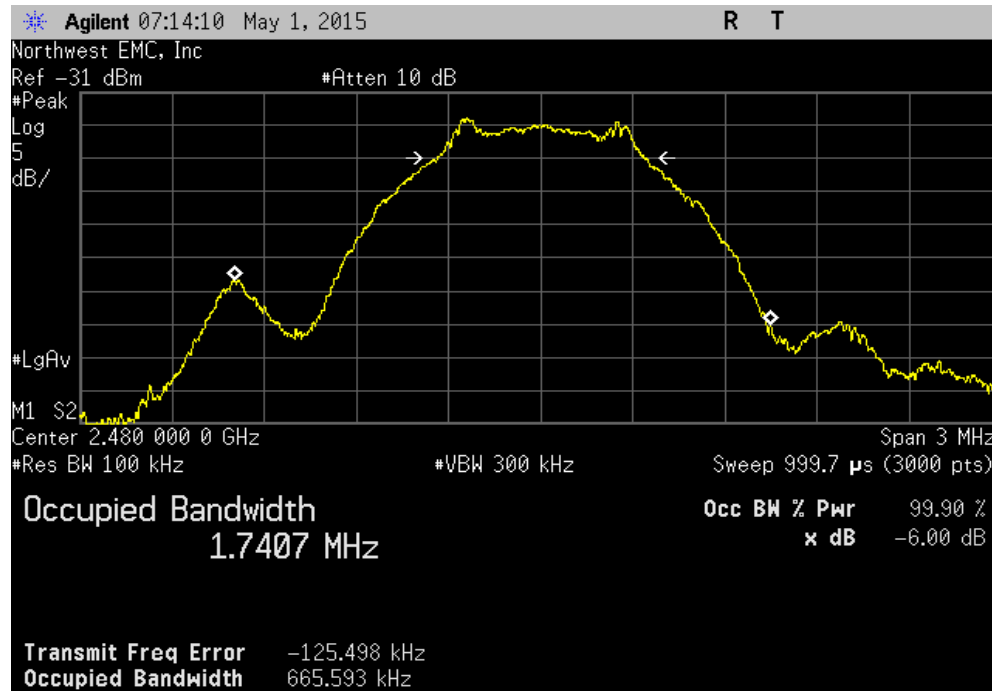


| Mid Channel, 2442 MHz |  |  |  |             |              |        |
|-----------------------|--|--|--|-------------|--------------|--------|
|                       |  |  |  | Value       | Limit<br>(≥) | Result |
|                       |  |  |  | 682.218 kHz | 500 kHz      | Pass   |



# OCCUPIED BANDWIDTH

| High Channel, 2480 MHz |  |  |  |             |              |        |
|------------------------|--|--|--|-------------|--------------|--------|
|                        |  |  |  | Value       | Limit<br>(≥) | Result |
|                        |  |  |  | 665.593 kHz | 500 kHz      | Pass   |



# 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. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

## MODES OF OPERATION

Bluetooth LE Low, Mid, High channel: 2402, 2442, 2480 MHz (see comments)

## POWER SETTINGS INVESTIGATED

110VAC/60Hz

## CONFIGURATIONS INVESTIGATED

SECF0021 - 3

## FREQUENCY RANGE INVESTIGATED

Start Frequency 2400 MHz

Stop Frequency 2483.5 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 (mo) |
|-------------------|-----------------|--------------------------------|-----|-----------|---------------|
| Power Sensor      | Agilent         | N8481A                         | SQN | 8/22/2014 | 12 mo         |
| Power Meter       | Agilent         | N1913A                         | SQL | 8/22/2014 | 12 mo         |
| Signal Generator  | Agilent         | E4422B                         | TGQ | 3/23/2015 | 36 mo         |
| Antenna, Horn     | ETS             | 3115                           | AIB | 8/12/2014 | 24 mo         |
| Spectrum Analyzer | Agilent         | N9010A                         | AFI | 1/27/2015 | 12 mo         |
| MN05 Cables       | ESM Cable Corp. | Double Ridge Guide Horn Cables | MNI | 3/30/2015 | 12 mo         |
| Antenna, Horn     | ETS             | 3115                           | AJA | 6/3/2014  | 24 mo         |

## TEST DESCRIPTION

The fundamental emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height (1-4 meters) and polarization and manipulating the EUT antenna in 3 orthogonal planes. The antennas to be used with the EUT were tested. The EUT was transmitting while set at the lowest channel, a middle channel, and the highest channel available. The EUT was then replaced with a horn antenna. A signal generator was connected to the horn antenna and its output was adjusted to match the level previously noted for each frequency. The output of the signal generator was recorded, and by factoring in the gain (dBi) of the horn antenna the effective radiated power for each emission was determined.

Prior to measuring peak transmit power the DTS bandwidth (B) and the transmission pulse duration (T) were measured. Both are required to determine the method of measuring Maximum Conducted Output Power. The transmission pulse duration (T) was measured using a zero span on the spectrum analyzer to see the pulses in the time domain.

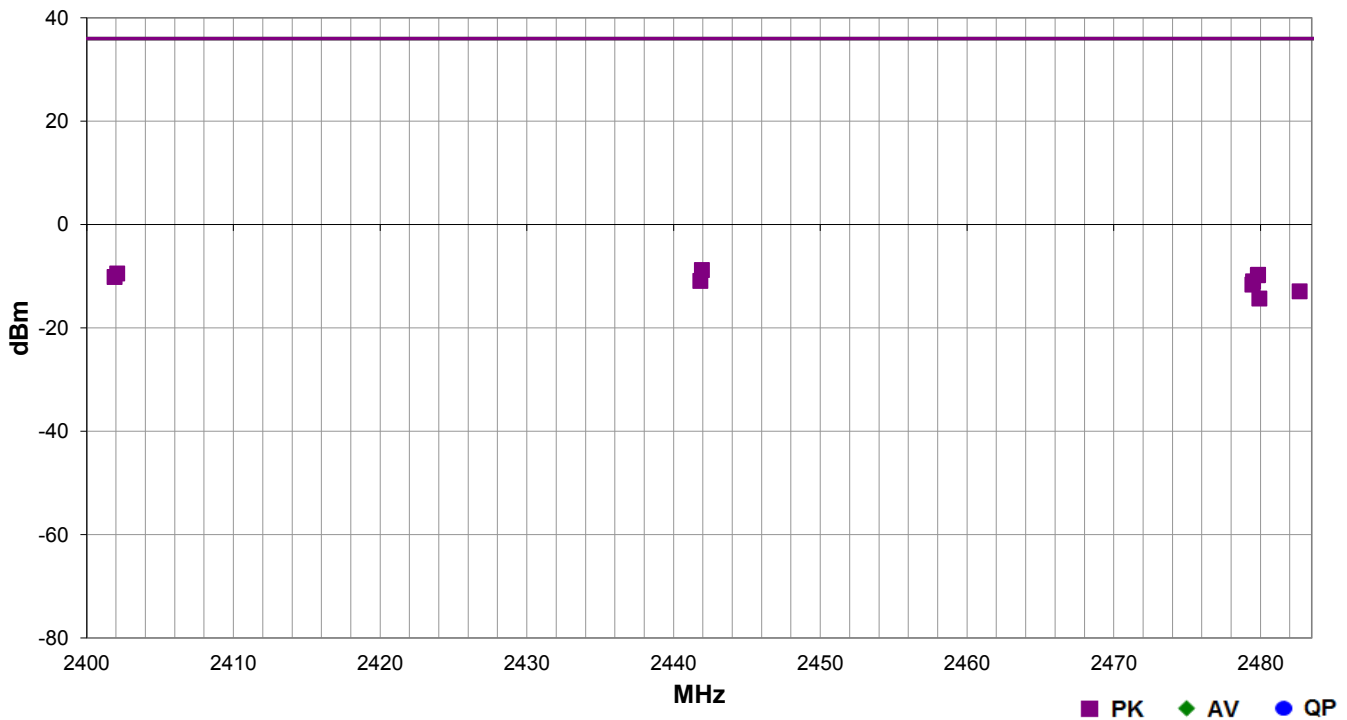
The method found in KDB 558074 DTS D01 Measurement Section 9.1.1 was used because the RBW on the analyzer was greater than the DTS Bandwidth of the radio.

De Facto EIRP Limit: Per 47 CFR 15.247 (b)(1-3), the EUT meets the de facto EIRP limit of +36 dBm.

|                        |                                                                          |                          |            |                    |
|------------------------|--------------------------------------------------------------------------|--------------------------|------------|--------------------|
| <b>Work Order:</b>     | SECF0021                                                                 | <b>Date:</b>             | 04/30/15   | <i>Trevor Buls</i> |
| <b>Project:</b>        | None                                                                     | <b>Temperature:</b>      | 22.9 °C    |                    |
| <b>Job Site:</b>       | MN05                                                                     | <b>Humidity:</b>         | 28.3% RH   |                    |
| <b>Serial Number:</b>  | None                                                                     | <b>Barometric Pres.:</b> | 988.4 mbar |                    |
| <b>EUT:</b>            | Smart Outlet P/N: 121268                                                 |                          |            |                    |
| <b>Configuration:</b>  | 3                                                                        |                          |            |                    |
| <b>Customer:</b>       | Select Comfort Corp.                                                     |                          |            |                    |
| <b>Attendees:</b>      | None                                                                     |                          |            |                    |
| <b>EUT Power:</b>      | 110VAC/60Hz                                                              |                          |            |                    |
| <b>Operating Mode:</b> | Bluetooth LE Low, Mid, High channel: 2402, 2442, 2480 MHz (see comments) |                          |            |                    |
| <b>Deviations:</b>     | None                                                                     |                          |            |                    |
| <b>Comments:</b>       | None                                                                     |                          |            |                    |

| Test Specifications | Test Method      |
|---------------------|------------------|
| FCC 15.247:2015     | ANSI C63.10:2009 |

| Run # | 18 | Test Distance (m) | 3 | Antenna Height(s) | 1 to 4(m) | Results | Pass |
|-------|----|-------------------|---|-------------------|-----------|---------|------|
|-------|----|-------------------|---|-------------------|-----------|---------|------|



| Freq (MHz) | Antenna Height (meters) | Azimuth (degrees) | Polarity/Transducer Type | Detector | EIRP (Watts) | EIRP (dBm) | Spec. Limit (dBm) | Compared to Spec. (dB) | Comments                |
|------------|-------------------------|-------------------|--------------------------|----------|--------------|------------|-------------------|------------------------|-------------------------|
| 2441.933   | 1.5                     | 282.0             | Horz                     | PK       | 1.32E-04     | -8.8       | 36.0              | -44.8                  | EUT Vertical, Mid Ch    |
| 2402.083   | 2.0                     | 292.0             | Horz                     | PK       | 1.14E-04     | -9.4       | 36.0              | -45.4                  | EUT Vertical, Low Ch    |
| 2479.833   | 1.4                     | 296.0             | Vert                     | PK       | 1.07E-04     | -9.7       | 36.0              | -45.7                  | EUT on Side, High Ch    |
| 2479.817   | 1.9                     | 294.9             | Horz                     | PK       | 1.05E-04     | -9.8       | 36.0              | -45.8                  | EUT Vertical, High Ch   |
| 2401.900   | 1.1                     | 289.9             | Vert                     | PK       | 9.68E-05     | -10.1      | 36.0              | -46.1                  | EUT on Side, Low Ch     |
| 2441.833   | 1.0                     | 288.0             | Vert                     | PK       | 8.15E-05     | -10.9      | 36.0              | -46.9                  | EUT on Side, Mid Ch     |
| 2479.500   | 1.0                     | 175.0             | Horz                     | PK       | 7.96E-05     | -11.0      | 36.0              | -47.0                  | EUT Horizontal, High Ch |
| 2479.450   | 1.4                     | 306.0             | Horz                     | PK       | 6.93E-05     | -11.6      | 36.0              | -47.6                  | EUT on Side, High Ch    |
| 2482.667   | 1.1                     | 340.9             | Vert                     | PK       | 5.14E-05     | -12.9      | 36.0              | -48.9                  | EUT Vertical, High Ch   |
| 2479.933   | 1.0                     | 35.0              | Vert                     | PK       | 3.72E-05     | -14.3      | 36.0              | -50.3                  | EUT Horizontal, High Ch |

# POWER SPECTRAL DENSITY

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

## TEST EQUIPMENT

| Description       | Manufacturer    | Model                       | ID  | Last Cal. | Interval (mo) |
|-------------------|-----------------|-----------------------------|-----|-----------|---------------|
| Antenna, Horn     | ETS             | 3115                        | AJA | 6/3/2014  | 24            |
| MN05 Cables       | ESM Cable Corp. | Double Ridge Guide Horn Cab | MNI | 3/30/2015 | 12            |
| Spectrum Analyzer | Agilent         | N9010A                      | AFI | 1/27/2015 | 12            |

## TEST DESCRIPTION

The maximum power spectral density measurements were measured with the EUT set to the required transmit frequencies in each band. The EUT was transmitting at the lowest, middle, and maximum data rate for each modulation type available.

The final data was converted from a field strength to a radiated power value. Equation 5 found in ANSI C63.10:2009, was used to derive this conversion formula:

$$\text{dBm/m (field strength)} + 11.77 = \text{dBm EIRP}$$

Per the procedure outlined in FCC KDB 558074 D01 DTS Measurement Section 5.3.1, the spectrum analyzer was used as follows:

- RBW = 100 kHz
- VBW = 300 kHz
- Detector = Peak (to match method used for power measurement)
- Trace = Max hold

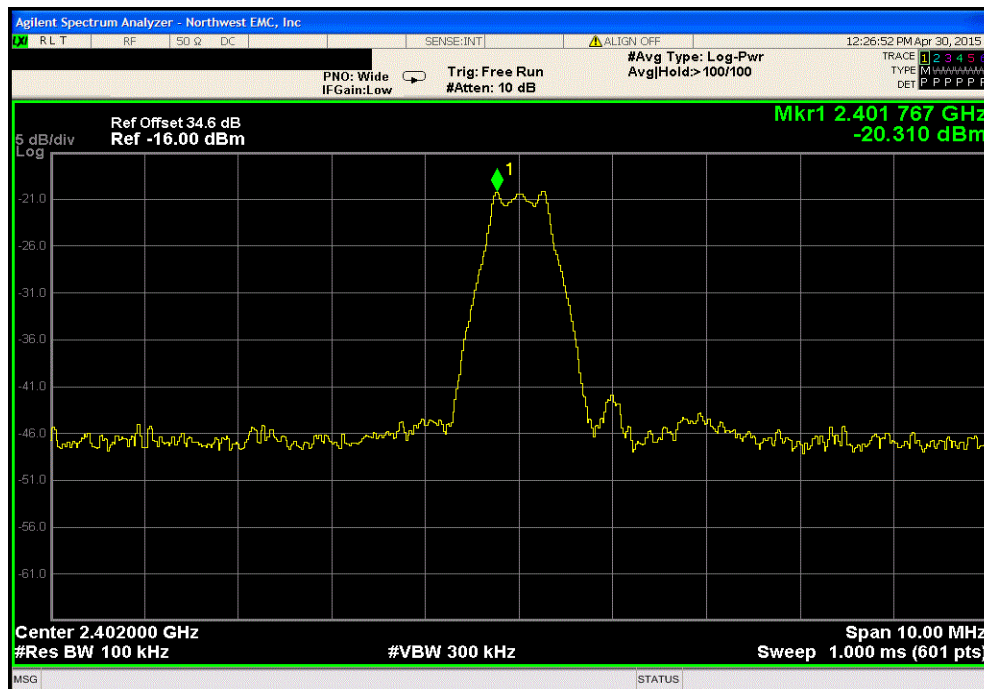
The observed power level is then scaled to an equivalent value in 3 kHz by adding a Bandwidth Correction Factor (BWCF) where:

# POWER SPECTRAL DENSITY

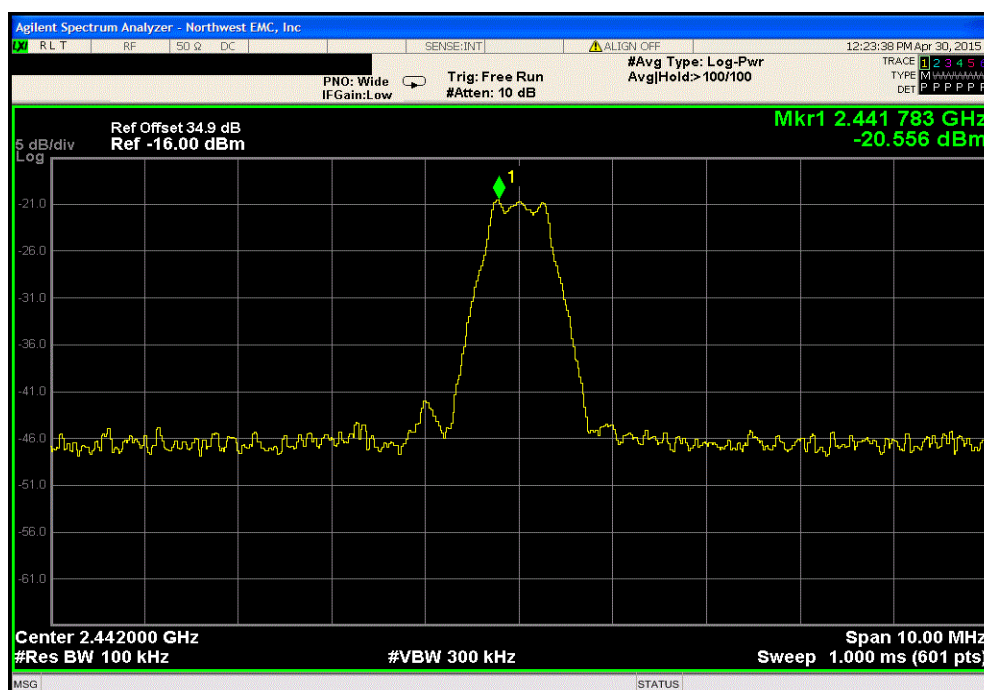
|                                      |                    |                              |                   |
|--------------------------------------|--------------------|------------------------------|-------------------|
| EUT: Smart Outlet P/N: 121268        |                    | Work Order: SECF0021         |                   |
| Serial Number: None                  |                    | Date: 04/30/15               |                   |
| Customer: Select Comfort Corporation |                    | Temperature: 24.1°C          |                   |
| Attendees: None                      |                    | Humidity: 25%                |                   |
| Project: None                        |                    | Barometric Pres.: 988.1      |                   |
| Tested by: Trevor Buls               | Power: 110VAC/60Hz | Job Site: MN05               |                   |
| TEST SPECIFICATIONS                  |                    |                              |                   |
| FCC 15.247:2015                      |                    | Test Method                  |                   |
|                                      |                    | ANSI C63.10:2009             |                   |
| COMMENTS                             |                    |                              |                   |
| None                                 |                    |                              |                   |
| DEVIATIONS FROM TEST STANDARD        |                    |                              |                   |
| None                                 |                    |                              |                   |
| Configuration #                      | 3                  | Signature <i>Trevor Buls</i> |                   |
|                                      |                    | Value<br>dBm/100kHz          | dBm/m to<br>dBm   |
| Low Channel, 2402 MHz                |                    | -20.31                       | 11.77             |
| Mid Channel, 2442 MHz                |                    | -20.556                      | 11.77             |
| High Channel, 2480 MHz               |                    | -21.339                      | 11.77             |
|                                      |                    | dBm/100kHz<br>To dBm/3kHz    | Value<br>dBm/3kHz |
|                                      |                    | -15.2                        | -23.74            |
|                                      |                    | -15.2                        | -23.986           |
|                                      |                    | -15.2                        | -24.769           |
|                                      |                    | Limit<br>dBm/3kHz            | Results           |
|                                      |                    | 8                            | Pass              |
|                                      |                    | 8                            | Pass              |
|                                      |                    | 8                            | Pass              |

# POWER SPECTRAL DENSITY

| Low Channel, 2402 MHz |          |             |          |          |         |  |
|-----------------------|----------|-------------|----------|----------|---------|--|
| Value                 | dBm/m to | dBm/100kHz  | Value    | Limit    | Results |  |
| dBm/100kHz            | dBm      | To dBm/3kHz | dBm/3kHz | dBm/3kHz |         |  |
| -20.31                | 11.77    | -15.2       | -23.74   | 8        | Pass    |  |

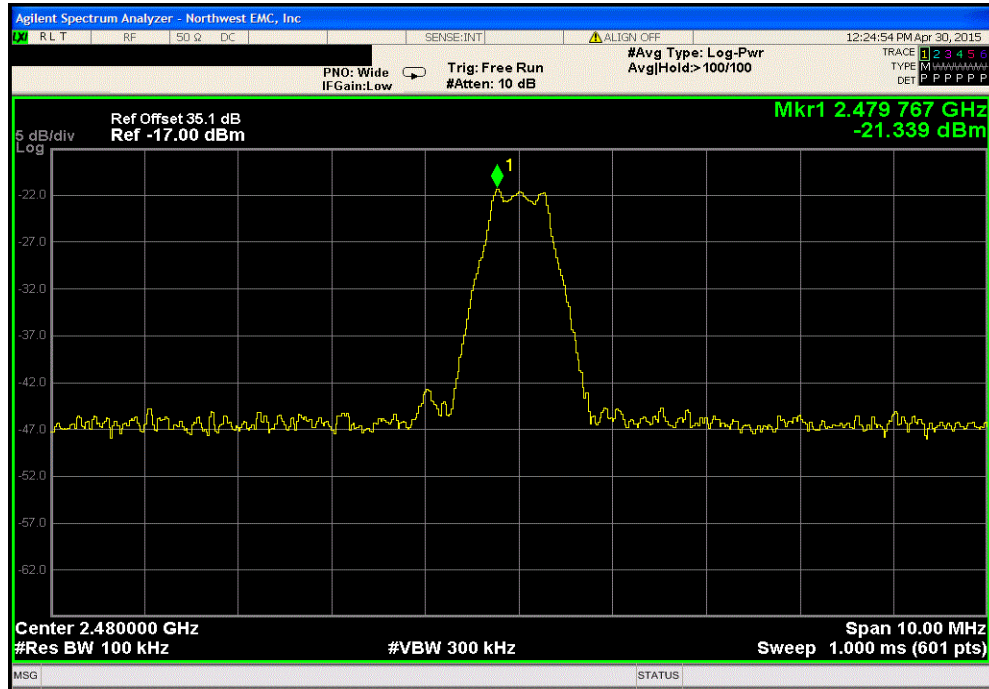


| Mid Channel, 2442 MHz |          |             |          |          |         |  |
|-----------------------|----------|-------------|----------|----------|---------|--|
| Value                 | dBm/m to | dBm/100kHz  | Value    | Limit    | Results |  |
| dBm/100kHz            | dBm      | To dBm/3kHz | dBm/3kHz | dBm/3kHz |         |  |
| -20.556               | 11.77    | -15.2       | -23.986  | 8        | Pass    |  |



# POWER SPECTRAL DENSITY

| High Channel, 2480 MHz |            |          |             |          |          |         |
|------------------------|------------|----------|-------------|----------|----------|---------|
|                        | Value      | dBm/m to | dBm/100kHz  | Value    | Limit    | Results |
|                        | dBm/100kHz | dBm      | To dBm/3kHz | dBm/3kHz | dBm/3kHz |         |
|                        | -21.339    | 11.77    | -15.2       | -24.769  | 8        | Pass    |



# DUTY CYCLE

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## 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.