



**Technical Consumer Products, Inc.**

**LAS11LC**

**FCC 15.247:2013**

**Report #: GLBC0119**



Report Prepared By Northwest EMC Inc.

NORTHWEST EMC – (888) 364-2378 – [www.nwemc.com](http://www.nwemc.com)

California – Minnesota – Oregon – New York – Washington

# CERTIFICATE OF TEST

**Last Date of Test: September 25, 2013**  
**Technical Consumer Products, Inc.**  
**Model: LAS11LC**

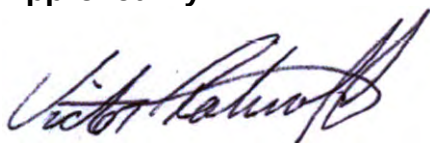
## Emissions

| Test Description              | Specification   | Test Method      | Pass/Fail |
|-------------------------------|-----------------|------------------|-----------|
| Duty Cycle                    | FCC 15.247:2013 | ANSI C63.10:2009 | Pass      |
| Output Power                  | FCC 15.247:2013 | ANSI C63.10:2009 | Pass      |
| Power Spectral Density        | FCC 15.247:2013 | ANSI C63.10:2009 | Pass      |
| Occupied Bandwidth            | FCC 15.247:2013 | ANSI C63.10:2009 | Pass      |
| Band Edge Compliance          | FCC 15.247:2013 | ANSI C63.10:2009 | Pass      |
| Spurious Radiated Emissions   | FCC 15.247:2013 | ANSI C63.10:2009 | Pass      |
| Powerline Conducted Emissions | FCC 15.207:2013 | ANSI C63.10:2009 | Pass      |

## Deviations From Test Standards

None

**Approved By:**



Victor Ratnoff, Operations Manager



NVLAP Lab Code: 200676-0

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

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

# REVISION HISTORY

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

## Barometric Pressure

The recorded barometric pressure has been normalized to sea level.

---

## United States

**FCC** - Designated by the FCC as a Telecommunications Certification Body (TCB). Certification chambers, Open Area Test Sites, and conducted measurement facilities are listed with the FCC.

**A2LA** - Accredited by A2LA to ISO / IEC Guide 65 as a product certifier. This allows Northwest EMC to certify transmitters to FCC and IC specifications.

**NVLAP** - Each laboratory is accredited by NVLAP to ISO 17025

---

## Canada

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

---

## European Union

**European Commission** – Validated by the European Commission as a Conformity Assessment Body (CAB) under the EMC directive and as a Notified Body under the R&TTE Directive.

---

## Australia/New Zealand

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

---

## Korea

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

---

## Japan

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

---

## Taiwan

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

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

---

## Singapore

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

---

## Hong Kong

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

---

## Vietnam

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

---

## Russia

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

---

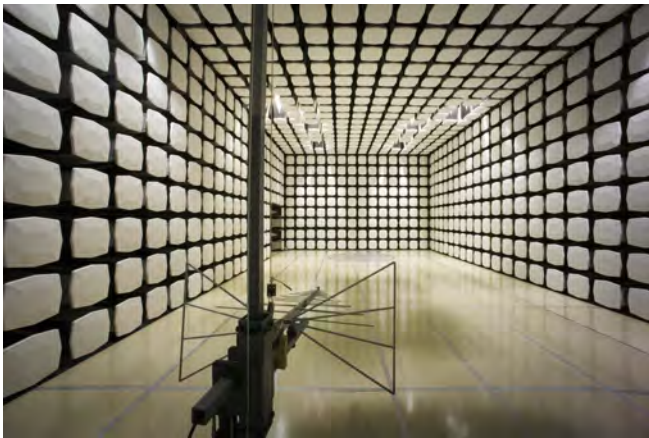
## SCOPE

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

<http://www.nwemc.com/accreditations/>



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



## Measurement Uncertainty

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

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) for each test is listed below. Our measurement data meets or exceeds the measurement uncertainty requirements of the applicable specification; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for estimating measurement uncertainty are based upon ETSI TR 100 028 (or CISPR 16-4-1 as applicable), and are available upon request.

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

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

## Client and Equipment Under Test (EUT) Information

|                                 |                                   |
|---------------------------------|-----------------------------------|
| <b>Company Name:</b>            | Technical Consumer Products, Inc. |
| <b>Address:</b>                 | 325 Campus Drive                  |
| <b>City, State, Zip:</b>        | Aurora, Ohio 44202                |
| <b>Test Requested By:</b>       | Leon Kogan                        |
| <b>Model:</b>                   | LAS11LC                           |
| <b>First Date of Test:</b>      | September 25, 2013                |
| <b>Last Date of Test:</b>       | September 25, 2013                |
| <b>Receipt Date of Samples:</b> | September 25, 2013                |
| <b>Equipment Design Stage:</b>  | Production                        |
| <b>Equipment Condition:</b>     | No Damage                         |

## Information Provided by the Party Requesting the Test

### Functional Description of the EUT (Equipment Under Test):

LAS11LC is 2.4 GHz ISM radio module, 802.15.4 complaint with 1 antenna contained in an 11 watt Remote Wireless LED type A19 lamp. There is a second model that is similar to the LAS11LC, but was not tested. This model is the LBR14LC which has the same radio. To which the PCB is electrically and mechanically identical however, contained in an 10 watt Remote Wireless LED type BR30 Lamp.

### Testing Objective:

To demonstrate compliance to FCC 15.247 requirements.

## Configuration GLBC0119- 1

| Software/Firmware Running during test |         |
|---------------------------------------|---------|
| Description                           | Version |
| Bulb Evaluation Tool                  | 1.2     |

| EUT         |                                   |                   |               |
|-------------|-----------------------------------|-------------------|---------------|
| Description | Manufacturer                      | Model/Part Number | Serial Number |
| Light Bulb  | Technical Consumer Products, Inc. | LAS11LC           | 972-A1        |

| Peripherals in test setup boundary |              |                   |               |
|------------------------------------|--------------|-------------------|---------------|
| Description                        | Manufacturer | Model/Part Number | Serial Number |
| Laptop                             | Toshiba      | PSAA8U-02200U     | 46170208Q     |
| Evaluation Kit                     | NXP          | JN5148-EK010      | None          |
| Evaluation Kit PS                  | Ktec         | KSAS006050100VUD  | None          |
| 2.4GHz Antenna                     | Generic      | 2.4GHz            | None          |

| Cables                                                                                                 |        |            |         |              |                |
|--------------------------------------------------------------------------------------------------------|--------|------------|---------|--------------|----------------|
| Cable Type                                                                                             | Shield | Length (m) | Ferrite | Connection 1 | Connection 2   |
| AC Cable                                                                                               | No     | 1.5m       | No      | AC Mains     | EUT            |
| Antenna Cable                                                                                          | No     | 4.5m       | No      | Antenna      | Evaluation Kit |
| USB Cable                                                                                              | Yes    | 1.8m       | No      | Laptop       | Evaluation Kit |
| DC Cable                                                                                               | No     | 1.5m       | No      | AC Mains     | Evaluation Kit |
| AC Cable                                                                                               | No     | 1.8m       | No      | AC Mains     | Laptop PS      |
| DC Cable                                                                                               | No     | 1.5m       | No      | Laptop       | Laptop PS      |
| PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown. |        |            |         |              |                |

## Equipment Modifications

| Item | Date      | Test                          | Modification                         | Note                                                                | Disposition of EUT                                |
|------|-----------|-------------------------------|--------------------------------------|---------------------------------------------------------------------|---------------------------------------------------|
| 1    | 9/25/2013 | Spurious Radiated Emissions   | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 2    | 9/25/2013 | Duty Cycle                    | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 3    | 9/25/2013 | 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. |
| 4    | 9/25/2013 | 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. |
| 5    | 9/25/2013 | 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. |
| 6    | 9/25/2013 | 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    | 9/25/2013 | Powerline Conducted Emissions | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | Scheduled testing was completed.                  |

## DUTY CYCLE

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

### TEST EQUIPMENT

| Description       | Manufacturer | Model            | ID  | Last Cal. | Interval |
|-------------------|--------------|------------------|-----|-----------|----------|
| Spectrum Analyzer | Agilent      | E4440A           | AFA | 6/15/2012 | 24       |
| Antenna, Horn     | EMCO         | 3115             | AHB | 3/8/2011  | 36       |
| OC10 Cables       | N/A          | 1-8GHz RE Cables | OCJ | 7/16/2013 | 12       |

### TEST DESCRIPTION

For software controlled or pre-programmed devices, the manufacturer shall declare the duty cycle class or classes for the equipment under test. For manually operated or event dependent devices, with or without software controlled functions, the manufacturer shall declare whether the device once triggered, follows a pre-programmed cycle, or whether the transmission is constant until the trigger is released or manually reset. The manufacturer shall also give a description of the application for the device and include a typical usage pattern. The typical usage pattern as declared by the manufacturer shall be used to determine the duty cycle and hence the duty class.

Where an acknowledgment is required, the additional transmitter on-time shall be included and declared by the manufacturer.

To derive average emissions measurements, a duty cycle correction factor per 15.35(c) was utilized:

Duty Cycle = On time/100 milliseconds (or the period, whichever is less)

Where "On time" =  $N1L1 + N2L2$

Where N1 is the number of type 1 pulses, L1 is the length of type 1 pulses, N2 is the number of type 2 pulses, L2 is the length of type 2 pulses, etc.

Therefore, Duty Cycle =  $(N1L1 + N2L2 + \dots) / 100\text{ms}$ . Where T is the period of the pulse train.

The measured value for the EUT's low channel is as follows:

Period = 8.148mSec

Pulsewidth of Type 1 Pulse = 0.165967 mSec

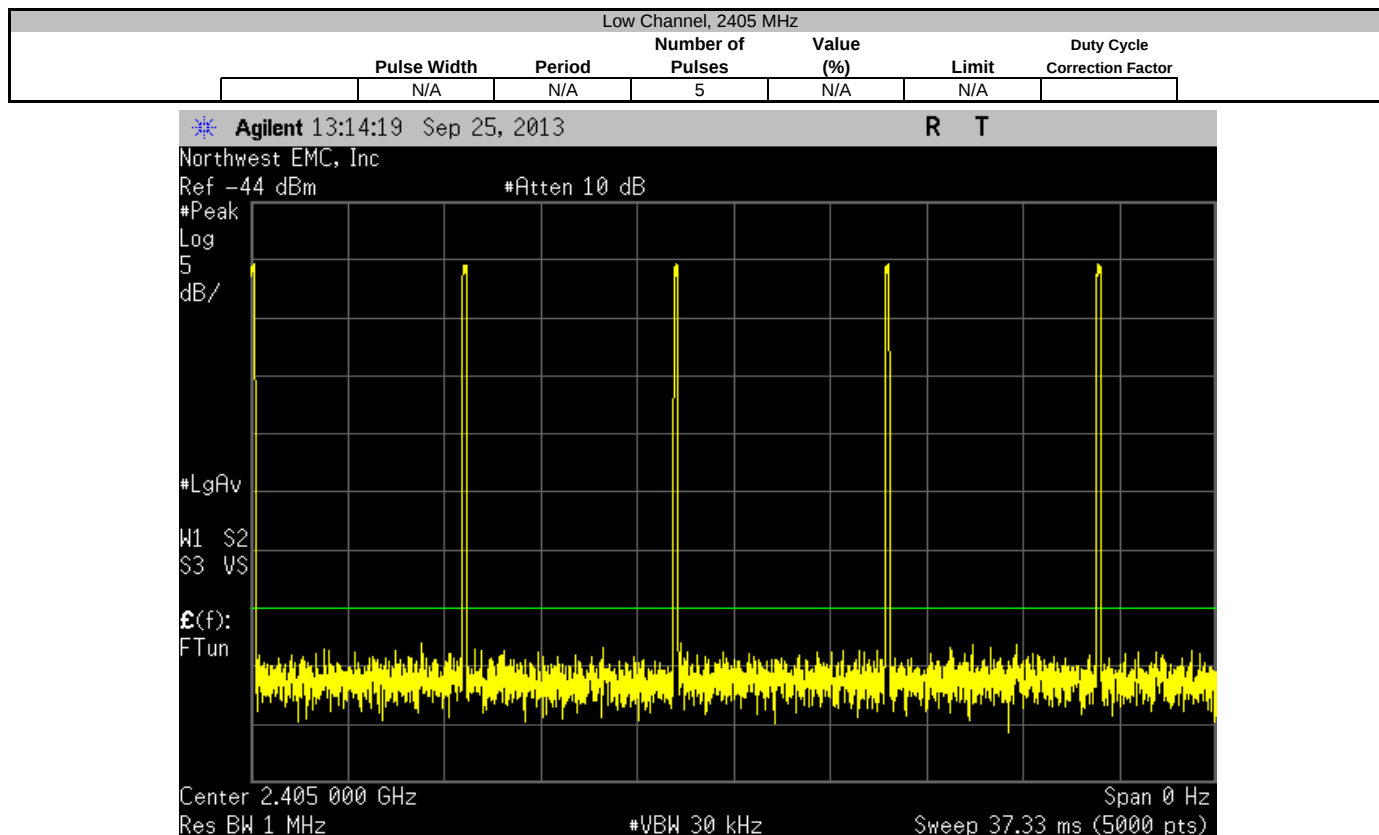
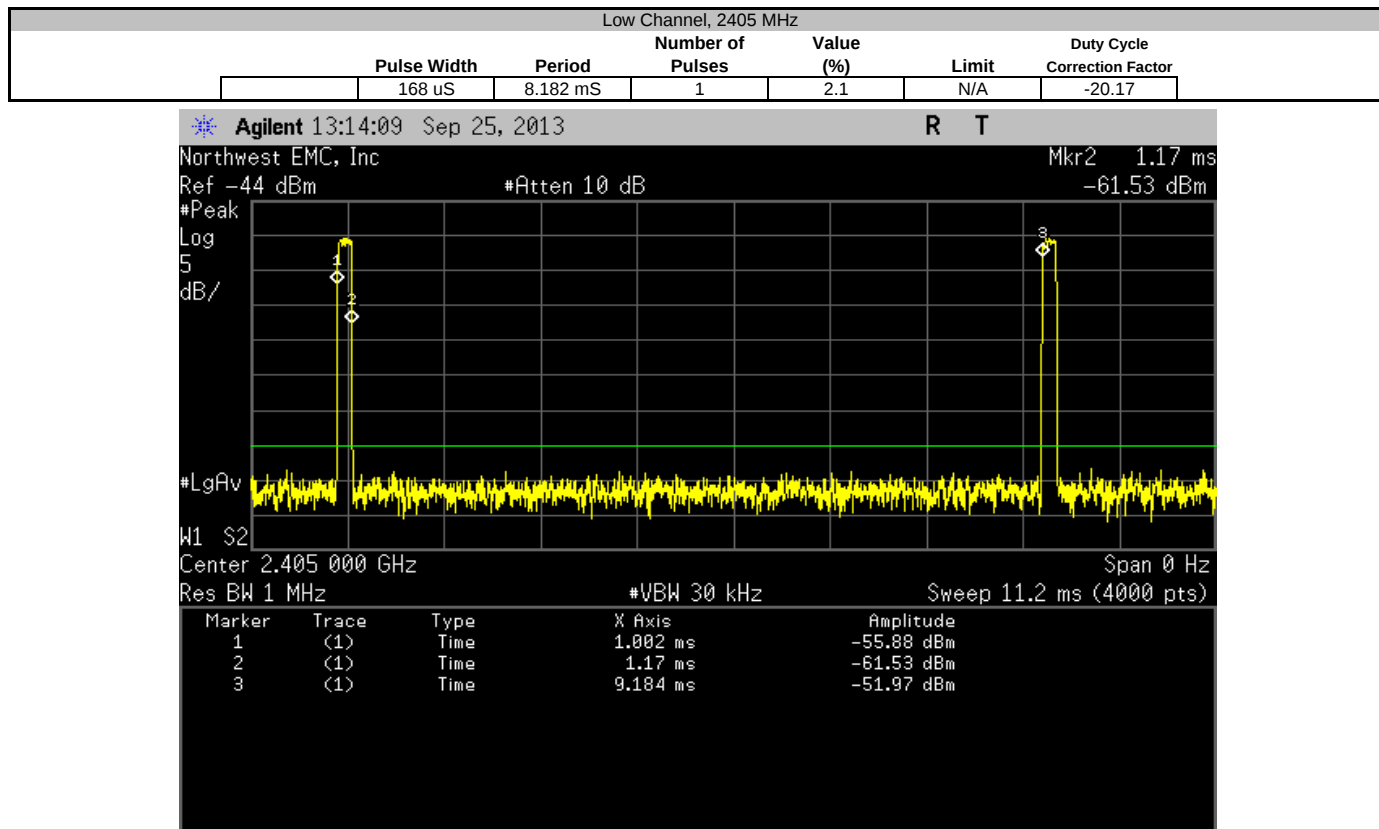
Number of Type 1 Pulses = 5

Duty Cycle =  $20 \cdot \log((0.165967 \cdot 5) / 8.148\text{ms}) = 19.88 \text{ dB}$

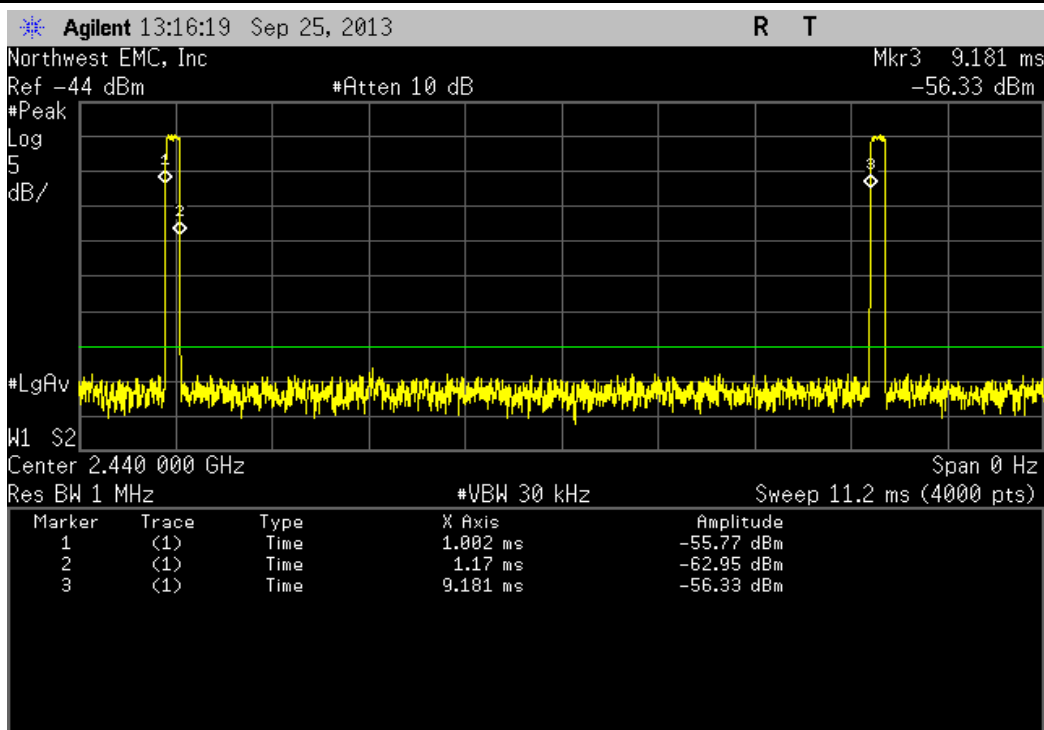
The measured value for the EUT's mid & high channels are as follows:

Duty Cycle =  $20 \cdot \log((0.160433 \cdot 5) / 8.178\text{ms}) = 20.17 \text{ dB}$

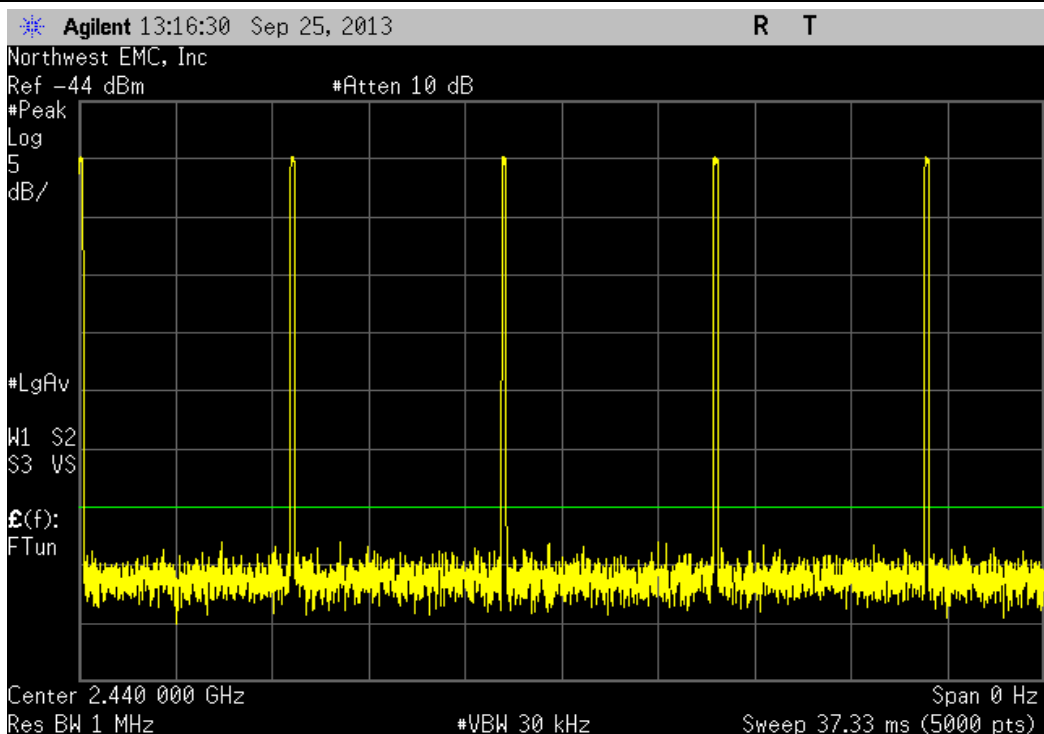


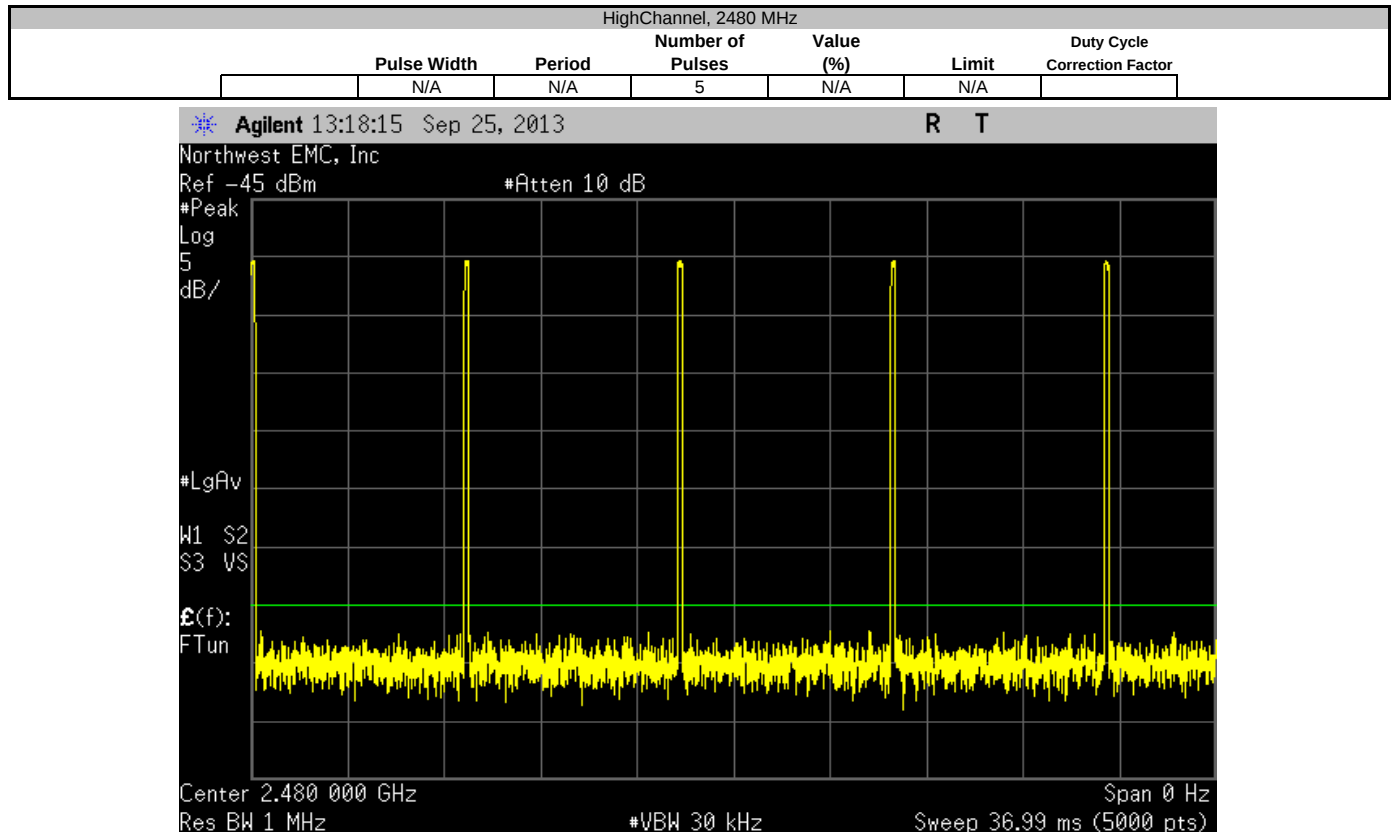
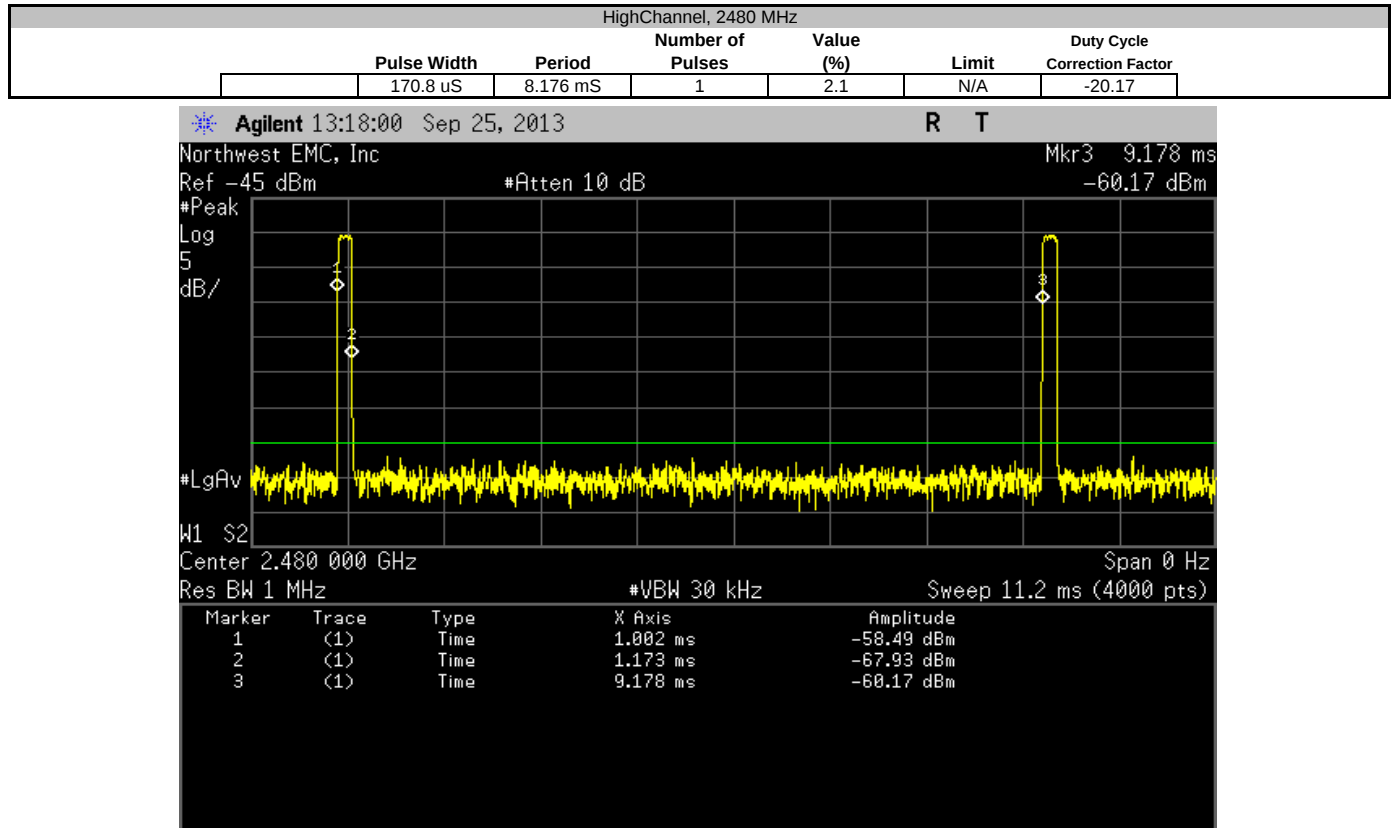


| Mid Channel, 2440 MHz |             |          |                  |           |       |                              |
|-----------------------|-------------|----------|------------------|-----------|-------|------------------------------|
|                       | Pulse Width | Period   | Number of Pulses | Value (%) | Limit | Duty Cycle Correction Factor |
|                       | 168 uS      | 8.179 mS | 1                | 2.1       | N/A   | -20.17                       |



| Mid Channel, 2440 MHz |             |        |                  |           |       |                              |
|-----------------------|-------------|--------|------------------|-----------|-------|------------------------------|
|                       | Pulse Width | Period | Number of Pulses | Value (%) | Limit | Duty Cycle Correction Factor |
|                       | N/A         | N/A    | 5                | N/A       | N/A   |                              |





## 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

Continuously Transmitting

### POWER SETTINGS INVESTIGATED

110VAC/60Hz

### CONFIGURATIONS INVESTIGATED

GLBC0119 - 1

### 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 |
|-------------------|-----------------|------------------|-----|-----------|----------|
| Antenna, Horn     | EMCO            | 3115             | AHQ | 9/12/2012 | 36 mo    |
| Power Sensor      | Agilent         | E4412A           | SQE | 4/11/2012 | 24 mo    |
| Power Meter       | Hewlett Packard | E4418A           | SPA | 4/11/2012 | 24 mo    |
| Signal Generator  | Agilent         | E8257D           | TGU | 2/1/2012  | 36 mo    |
| Spectrum Analyzer | Agilent         | E4440A           | AFG | 5/16/2012 | 24 mo    |
| OC10 Cables       | N/A             | 1-8GHz RE Cables | OCJ | 7/16/2013 | 12 mo    |
| Antenna, Horn     | EMCO            | 3115             | AHB | 3/8/2011  | 36 mo    |

### MEASUREMENT BANDWIDTHS

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

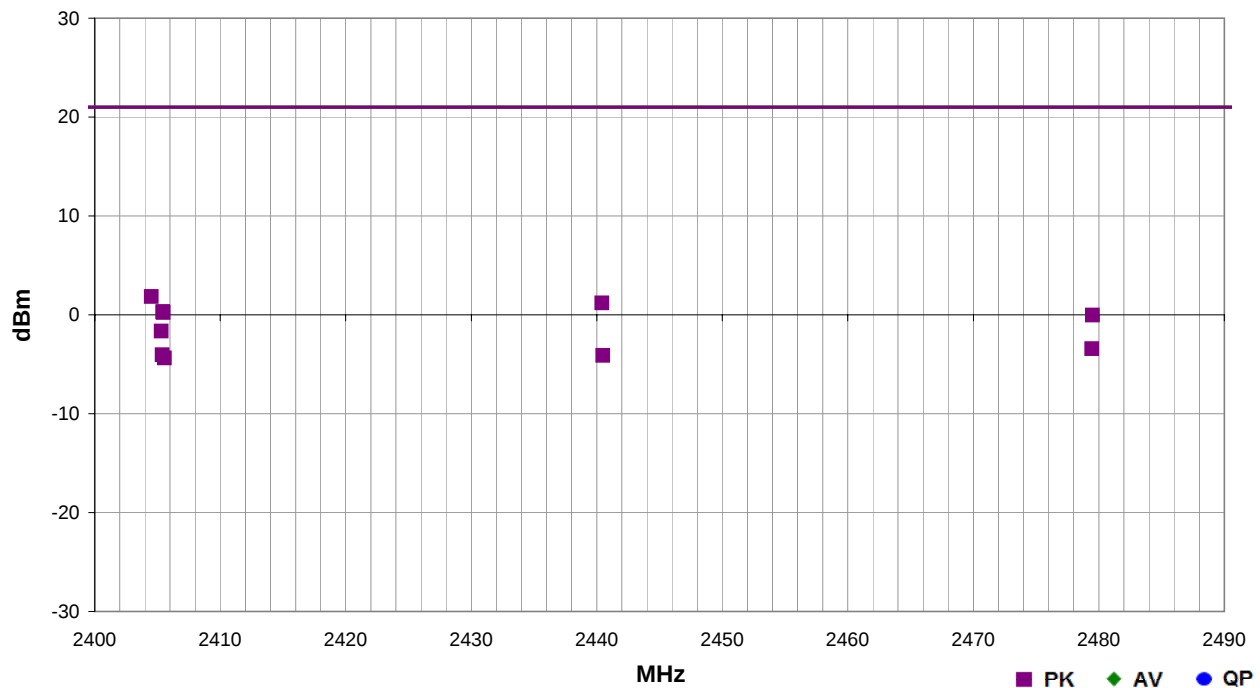
### TEST DESCRIPTION

The antennas to be used with EUT were tested. The EUT was continuously transmitting while set to the channel specified. While scanning, emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height and orientation in 3 orthogonal planes, the EUT and/or associated antenna is positioned in 3 orthogonal planes (per ANSI 63.10)

|                 |          |                                   |           |                                                                                    |
|-----------------|----------|-----------------------------------|-----------|------------------------------------------------------------------------------------|
| Work Order:     | GLBC0119 | Date:                             | 09/25/13  |  |
| Project:        | None     | Temperature:                      | 24.2 °C   |                                                                                    |
| Job Site:       | OC10     | Humidity:                         | 42.1% RH  |                                                                                    |
| Serial Number:  | 972-A1   | Barometric Pres.:                 | 1013 mbar |                                                                                    |
| EUT:            |          | LAS11LC                           |           |                                                                                    |
| Configuration:  |          | 1                                 |           |                                                                                    |
| Customer:       |          | Techincal Consumer Products, Inc. |           |                                                                                    |
| Attendees:      |          | Leon Kogan                        |           |                                                                                    |
| EUT Power:      |          | 110VAC/60Hz                       |           |                                                                                    |
| Operating Mode: |          | Continously Transmitting          |           |                                                                                    |
| Deviations:     |          | None                              |           |                                                                                    |
| Comments:       |          | None                              |           |                                                                                    |

|                     |                  |
|---------------------|------------------|
| Test Specifications | Test Method      |
| FCC 15.247:2013     | ANSI C63.10:2009 |

|       |   |                   |   |                   |      |         |      |
|-------|---|-------------------|---|-------------------|------|---------|------|
| Run # | 6 | Test Distance (m) | 3 | Antenna Height(s) | 1-4m | Results | Pass |
|-------|---|-------------------|---|-------------------|------|---------|------|



| Freq (MHz) | Antenna Height (meters) | Azimuth (degrees) | Polarity/ Transducer Type | Detector | EIRP (Watts) | EIRP (dBm) | Spec. Limit (dBm) | Compared to Spec. (dB) | Comments |
|------------|-------------------------|-------------------|---------------------------|----------|--------------|------------|-------------------|------------------------|----------|
| 2404.517   | 1.6                     | 208.0             | Horz                      | PK       | 1.53E-03     | 1.8        | 21.0              | -19.2                  | X-Axis   |
| 2440.420   | 1.6                     | 235.0             | Vert                      | PK       | 1.32E-03     | 1.2        | 21.0              | -19.8                  | X-Axis   |
| 2405.425   | 1.1                     | 134.0             | Horz                      | PK       | 1.08E-03     | 0.3        | 21.0              | -20.7                  | Z-Axis   |
| 2405.467   | 1.0                     | 226.0             | Vert                      | PK       | 1.06E-03     | 0.2        | 21.0              | -20.8                  | X-Axis   |
| 2479.500   | 1.0                     | 233.0             | Vert                      | PK       | 9.93E-04     | 0.0        | 21.0              | -21.0                  | X-Axis   |
| 2405.292   | 1.5                     | 29.0              | Vert                      | PK       | 6.82E-04     | -1.7       | 21.0              | -22.7                  | Y-Axis   |
| 2479.450   | 2.2                     | 162.0             | Horz                      | PK       | 4.54E-04     | -3.4       | 21.0              | -24.4                  | X-Axis   |
| 2405.367   | 1.8                     | 177.0             | Horz                      | PK       | 3.93E-04     | -4.1       | 21.0              | -25.1                  | Y-Axis   |
| 2440.490   | 1.2                     | 170.0             | Horz                      | PK       | 3.89E-04     | -4.1       | 21.0              | -25.1                  | X-Axis   |
| 2405.550   | 1.0                     | 282.0             | Vert                      | PK       | 3.66E-04     | -4.4       | 21.0              | -25.4                  | Z-Axis   |

## 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 |
|-------------------|--------------|------------------|-----|-----------|----------|
| Spectrum Analyzer | Agilent      | E4440A           | AFA | 6/15/2012 | 24       |
| Antenna, Horn     | EMCO         | 3115             | AHB | 3/8/2011  | 36       |
| OC10 Cables       | N/A          | 1-8GHz RE Cables | OCJ | 7/16/2013 | 12       |

### TEST DESCRIPTION

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

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:

$$\text{BWCF} = 10 \cdot \text{LOG} (3 \text{ kHz} / 100 \text{ kHz}) = -15.2 \text{ dB}$$

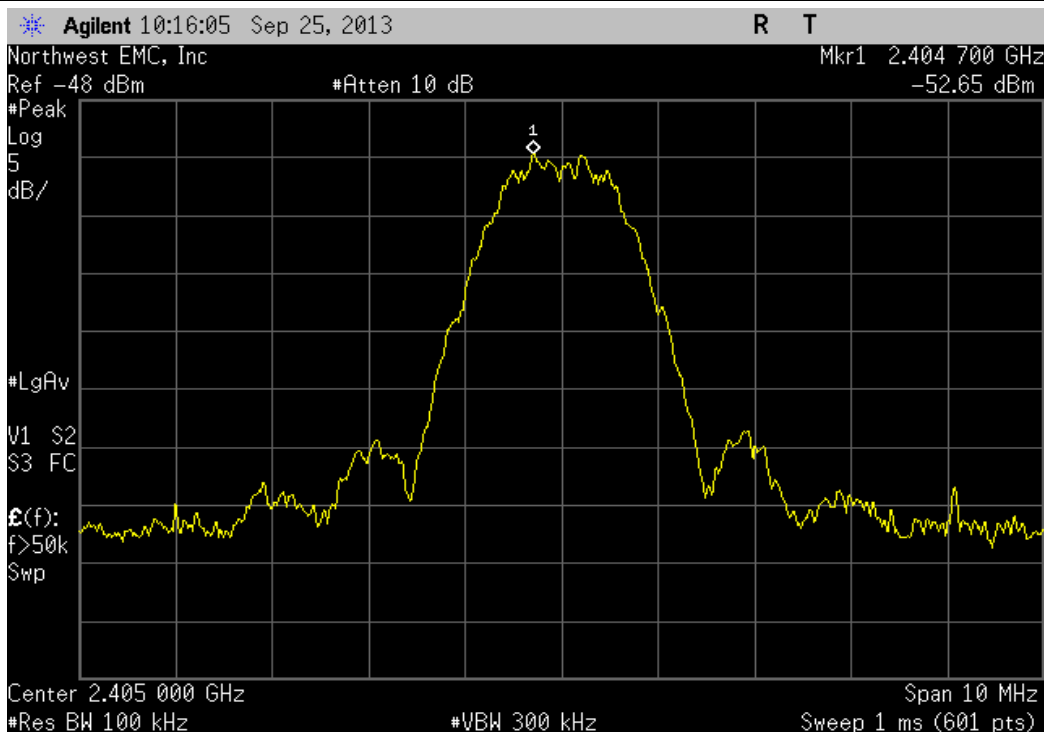


# POWER SPECTRAL DENSITY

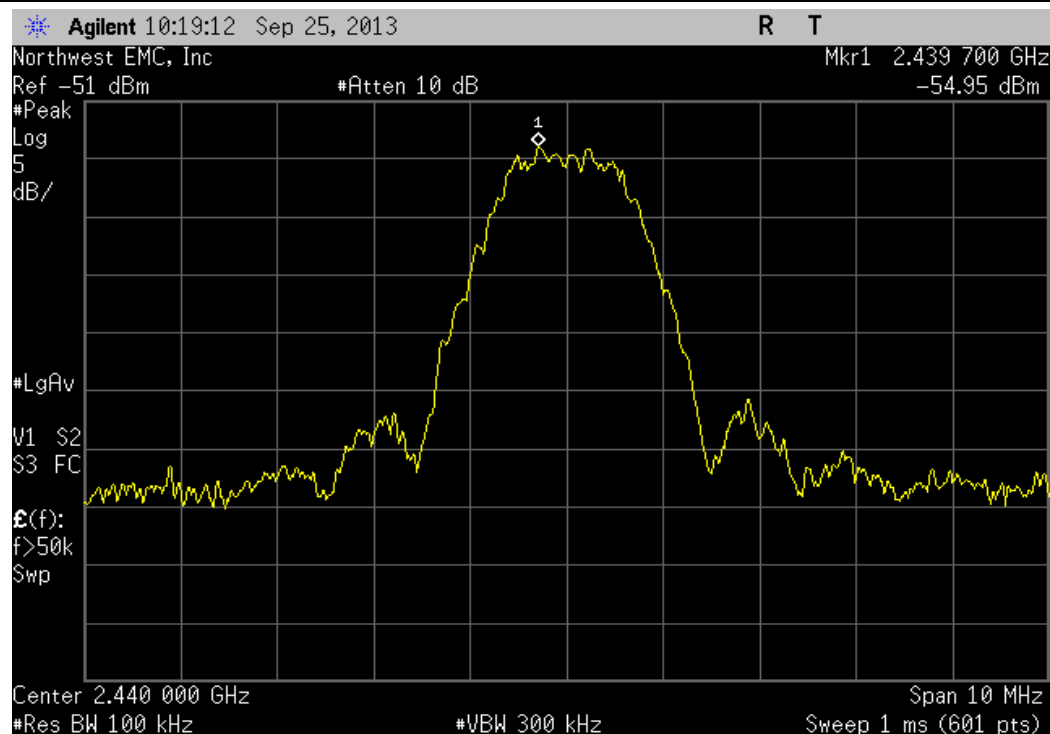
XMit 2013.08.15  
PsaTx 2013.07.11

|                                                                                                                                                                                                                            |   |                                                                                             |                  |                        |                |                |        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---------------------------------------------------------------------------------------------|------------------|------------------------|----------------|----------------|--------|
| EUT: LAS11LC                                                                                                                                                                                                               |   | Work Order: GLBC0119                                                                        |                  |                        |                |                |        |
| Serial Number: 972-A1                                                                                                                                                                                                      |   | Date: 09/25/13                                                                              |                  |                        |                |                |        |
| Customer: Techincal Consumer Products, Inc.                                                                                                                                                                                |   | Temperature: 24.2°C                                                                         |                  |                        |                |                |        |
| Attendees: Leon Kogan                                                                                                                                                                                                      |   | Humidity: 39%                                                                               |                  |                        |                |                |        |
| Project: None                                                                                                                                                                                                              |   | Barometric Pres.: 1012                                                                      |                  |                        |                |                |        |
| Tested by: Jaemi Suh                                                                                                                                                                                                       |   | Power: 110VAC/60Hz                                                                          |                  |                        |                |                |        |
|                                                                                                                                                                                                                            |   | Job Site: OC10                                                                              |                  |                        |                |                |        |
| TEST SPECIFICATIONS                                                                                                                                                                                                        |   | Test Method                                                                                 |                  |                        |                |                |        |
| FCC 15.247:2013                                                                                                                                                                                                            |   | ANSI C63.10:2009                                                                            |                  |                        |                |                |        |
| COMMENTS                                                                                                                                                                                                                   |   |                                                                                             |                  |                        |                |                |        |
| The transmitter has a very low output power. The measurement was made in a radiated configuration in a semi-anechoic chamber with pre-amp bypassed. Correction factor is Antenna Gain + Cable loss from Output Power data. |   |                                                                                             |                  |                        |                |                |        |
| DEVIATIONS FROM TEST STANDARD                                                                                                                                                                                              |   |                                                                                             |                  |                        |                |                |        |
| None                                                                                                                                                                                                                       |   |                                                                                             |                  |                        |                |                |        |
| Configuration #                                                                                                                                                                                                            | 1 | Signature  |                  |                        |                |                |        |
|                                                                                                                                                                                                                            |   | Correction Factor (dBm)                                                                     | Value dBm/100kHz | dBm/100kHz To dBm/3kHz | Value dBm/3kHz | Limit dBm/3kHz | Result |
| Low Channel, 2405 MHz                                                                                                                                                                                                      |   | 33.93                                                                                       | -52.654          | -15.2                  | -33.924        | 8              | Pass   |
| Mid Channel, 2440 MHz                                                                                                                                                                                                      |   | 33.93                                                                                       | -54.951          | -15.2                  | -36.221        | 8              | Pass   |
| HighChannel, 2480 MHz                                                                                                                                                                                                      |   | 33.93                                                                                       | -56.591          | -15.2                  | -37.861        | 8              | Pass   |

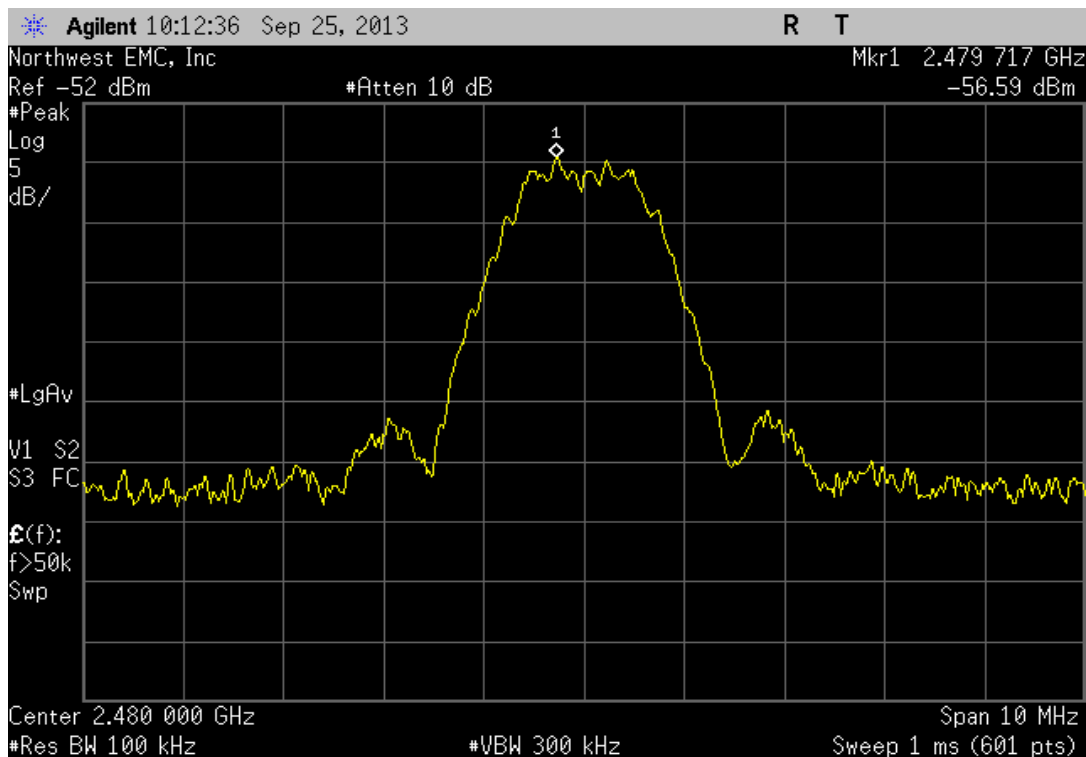
| Low Channel, 2405 MHz   |                  |                        |                |                |        |  |
|-------------------------|------------------|------------------------|----------------|----------------|--------|--|
| Correction Factor (dBm) | Value dBm/100kHz | dBm/100kHz To dBm/3kHz | Value dBm/3kHz | Limit dBm/3kHz | Result |  |
| 33.93                   | -52.654          | -15.2                  | -33.924        | 8              | Pass   |  |



| Mid Channel, 2440 MHz   |                  |                        |                |                |        |  |
|-------------------------|------------------|------------------------|----------------|----------------|--------|--|
| Correction Factor (dBm) | Value dBm/100kHz | dBm/100kHz To dBm/3kHz | Value dBm/3kHz | Limit dBm/3kHz | Result |  |
| 33.93                   | -54.951          | -15.2                  | -36.221        | 8              | Pass   |  |



| HighChannel, 2480 MHz |                            |                     |                           |                   |                   |        |
|-----------------------|----------------------------|---------------------|---------------------------|-------------------|-------------------|--------|
|                       | Correction<br>Factor (dBm) | Value<br>dBm/100kHz | dBm/100kHz<br>To dBm/3kHz | Value<br>dBm/3kHz | Limit<br>dBm/3kHz | Result |
|                       | 33.93                      | -56.591             | -15.2                     | -37.861           | 8                 | 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 |
|---------------------------------|--------------|------------------|-----|------------|----------|
| Antenna, Dipole (ADAA included) | Roberts      | Roberts          | ADA | 12/21/2012 | 36       |
| Antenna, Horn                   | EMCO         | 3115             | AHB | 3/8/2011   | 36       |
| OC10 Cables                     | N/A          | 1-8GHz RE Cables | OCJ | 7/16/2013  | 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 in a semi-anechoic chamber with the fundamental of the carrier full maximized for its highest radiated power. The EUT was transmitting at the data rate(s) listed in the datasheet.

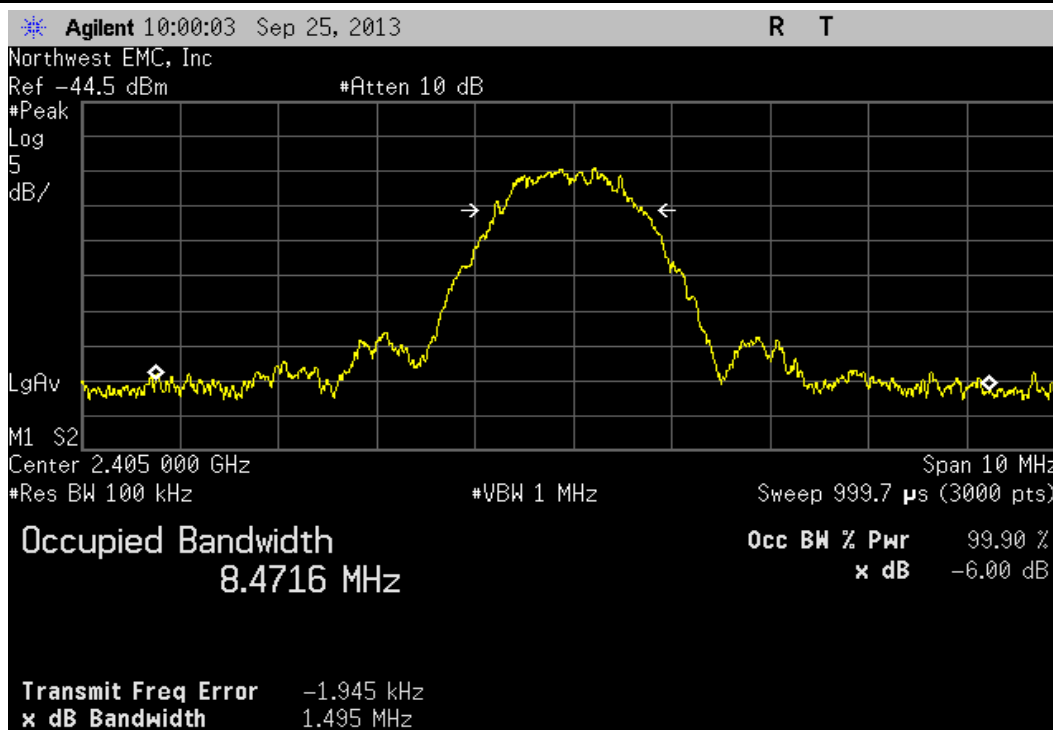


# OCCUPIED BANDWIDTH

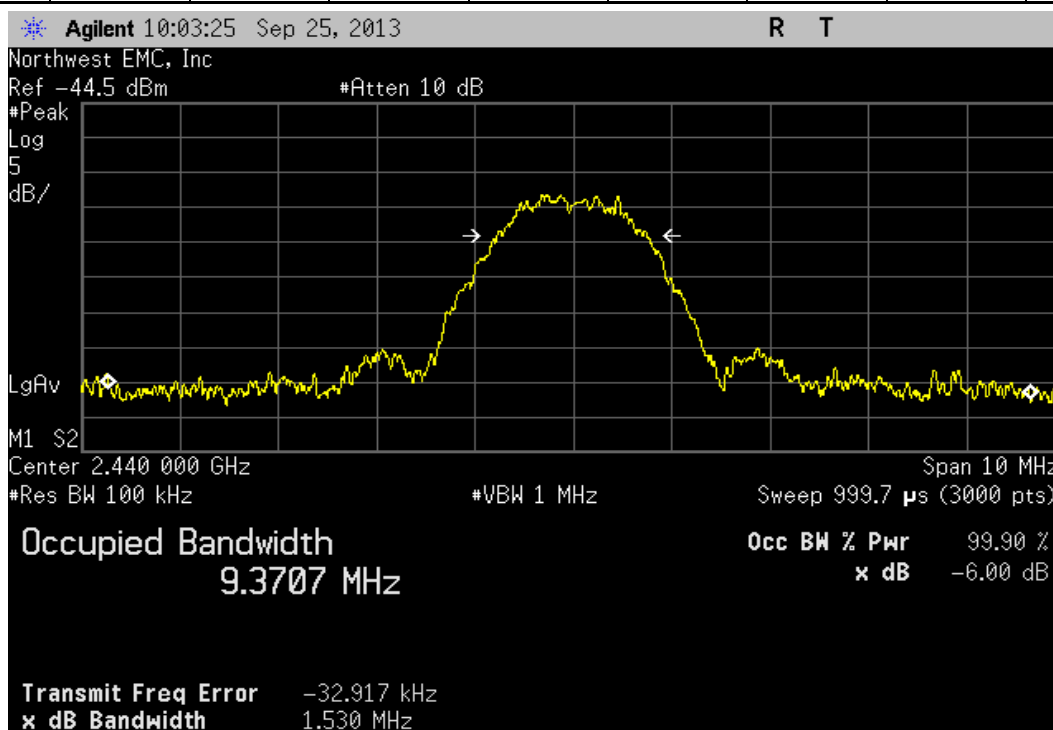
XMit 2013.08.15

|                                             |   |                                                                                             |           |
|---------------------------------------------|---|---------------------------------------------------------------------------------------------|-----------|
| EUT: LAS11LC                                |   | Work Order: GLBC0119                                                                        |           |
| Serial Number: 972-A1                       |   | Date: 09/25/13                                                                              |           |
| Customer: Techincal Consumer Products, Inc. |   | Temperature: 24.2°C                                                                         |           |
| Attendees: Leon Kogan                       |   | Humidity: 39%                                                                               |           |
| Project: None                               |   | Barometric Pres.: 1012                                                                      |           |
| Tested by: Jaemi Suh                        |   | Power: 110VAC/60Hz                                                                          |           |
|                                             |   | Job Site: OC10                                                                              |           |
| TEST SPECIFICATIONS                         |   | Test Method                                                                                 |           |
| FCC 15.247:2013                             |   | ANSI C63.10:2009                                                                            |           |
| COMMENTS                                    |   |                                                                                             |           |
| None                                        |   |                                                                                             |           |
| DEVIATIONS FROM TEST STANDARD               |   |                                                                                             |           |
| None                                        |   |                                                                                             |           |
| Configuration #                             | 1 | Signature  |           |
|                                             |   | Value                                                                                       | Limit     |
| Low Channel, 2405 MHz                       |   | 1.495 MHz                                                                                   | ≥ 500 KHz |
| Mid Channel, 2440 MHz                       |   | 1.530 MHz                                                                                   | ≥ 500 KHz |
| High Channel, 2480 MHz                      |   | 1.553 MHz                                                                                   | ≥ 500 KHz |
|                                             |   |                                                                                             | Result    |
|                                             |   |                                                                                             | Pass      |
|                                             |   |                                                                                             | Pass      |
|                                             |   |                                                                                             | Pass      |

| Low Channel, 2405 MHz |  |  |  |           |           |        |
|-----------------------|--|--|--|-----------|-----------|--------|
|                       |  |  |  | Value     | Limit     | Result |
|                       |  |  |  | 1.495 MHz | ≥ 500 KHz | Pass   |

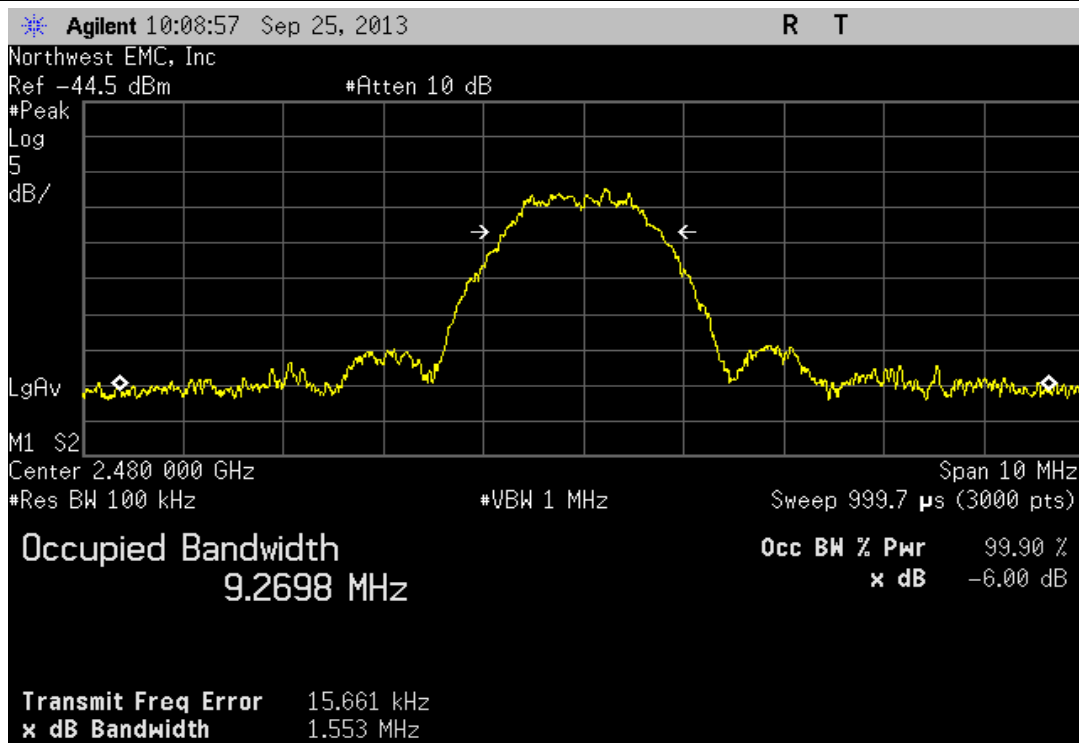


| Mid Channel, 2440 MHz |  |  |  |           |           |        |
|-----------------------|--|--|--|-----------|-----------|--------|
|                       |  |  |  | Value     | Limit     | Result |
|                       |  |  |  | 1.530 MHz | ≥ 500 KHz | Pass   |



High Channel, 2480 MHz

|  |  |  |  | Value     | Limit     | Result |
|--|--|--|--|-----------|-----------|--------|
|  |  |  |  | 1.553 MHz | ≥ 500 KHz | Pass   |



**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 |
|-------------------|--------------|------------------|-----|-----------|----------|
| Antenna, Horn     | EMCO         | 3115             | AHB | 3/8/2011  | 36       |
| OC10 Cables       | N/A          | 1-8GHz RE Cables | OCJ | 7/16/2013 | 12       |
| Spectrum Analyzer | Agilent      | E4440A           | AFA | 6/15/2012 | 24       |

**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

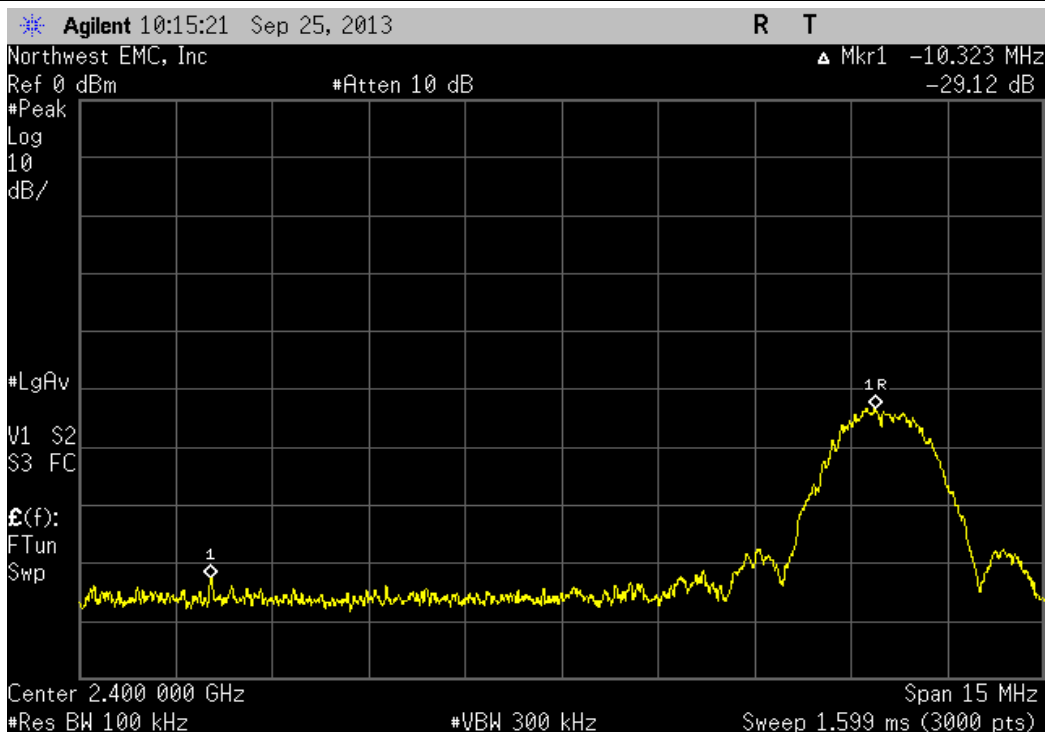
XMit 2013.08.15  
PsaTx 2013.07.11

|                                             |   |                                                                                             |  |
|---------------------------------------------|---|---------------------------------------------------------------------------------------------|--|
| EUT: LAS11LC                                |   | Work Order: GLBC0119                                                                        |  |
| Serial Number: 972-A1                       |   | Date: 09/25/13                                                                              |  |
| Customer: Techincal Consumer Products, Inc. |   | Temperature: 24.2°C                                                                         |  |
| Attendees: Leon Kogan                       |   | Humidity: 39%                                                                               |  |
| Project: None                               |   | Barometric Pres.: 1012                                                                      |  |
| Tested by: Jaemi Suh                        |   | Power: 110VAC/60Hz                                                                          |  |
|                                             |   | Job Site: OC10                                                                              |  |
| TEST SPECIFICATIONS                         |   | Test Method                                                                                 |  |
| FCC 15.247:2013                             |   | ANSI C63.10:2009                                                                            |  |
| COMMENTS                                    |   |                                                                                             |  |
| None                                        |   |                                                                                             |  |
| DEVIATIONS FROM TEST STANDARD               |   |                                                                                             |  |
| None                                        |   |                                                                                             |  |
| Configuration #                             | 1 | Signature  |  |

|                       | Value      | Limit     | Result |
|-----------------------|------------|-----------|--------|
| Low Channel, 2405 MHz | -29.12 dBc | ≤ -20 dBc | Pass   |
| HighChannel, 2480 MHz | -24.98 dBc | ≤ -20 dBc | Pass   |

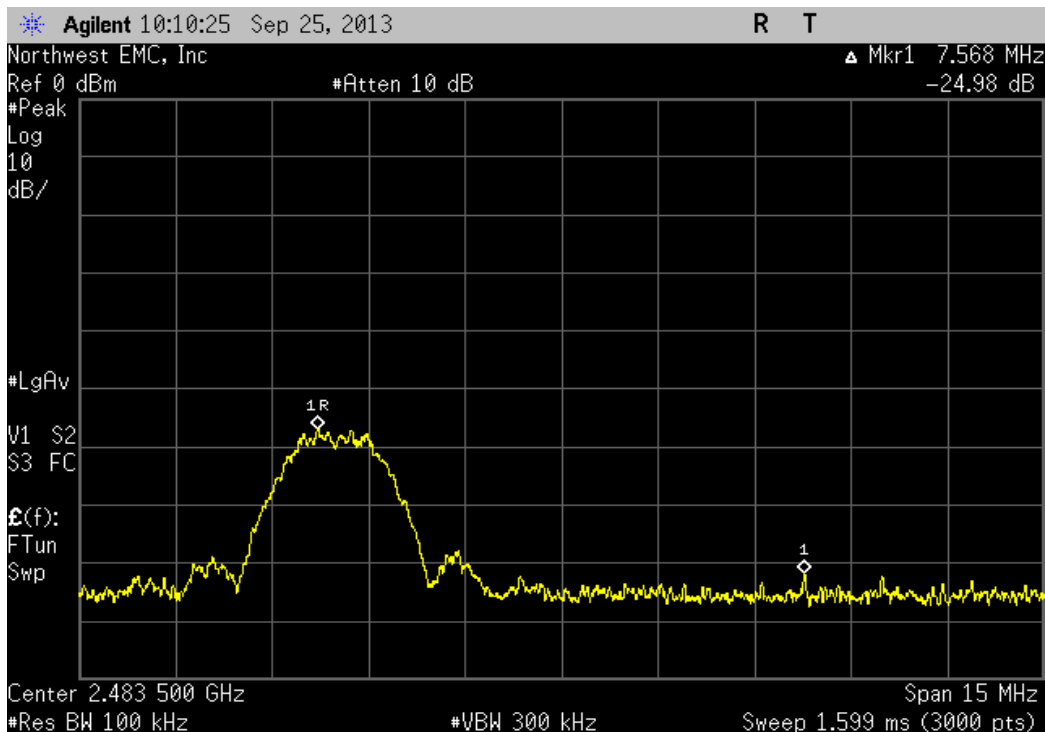
Low Channel, 2405 MHz

|  |  |  |  | Value      | Limit     | Result |
|--|--|--|--|------------|-----------|--------|
|  |  |  |  | -29.12 dBc | ≤ -20 dBc | Pass   |



HighChannel, 2480 MHz

|  |  |  |  | Value      | Limit     | Result |
|--|--|--|--|------------|-----------|--------|
|  |  |  |  | -24.98 dBc | ≤ -20 dBc | Pass   |



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

Continuously Transmitting High Channel 26, 2480 MHz

Continuously Transmitting Mid Channel 18, 2440 MHz

Continuously Transmitting Low Channel 11, 2405 MHz

## POWER SETTINGS INVESTIGATED

110VAC/60Hz

## CONFIGURATIONS INVESTIGATED

GLBC0119 - 1

## FREQUENCY RANGE INVESTIGATED

|                 |        |                |           |
|-----------------|--------|----------------|-----------|
| Start Frequency | 30 MHz | Stop Frequency | 26000 MHz |
|-----------------|--------|----------------|-----------|

## SAMPLE CALCULATIONS

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

## TEST EQUIPMENT

| Description                | Manufacturer  | Model                  | ID  | Last Cal.  | Interval |
|----------------------------|---------------|------------------------|-----|------------|----------|
| Low Pass Filter 0-1000 MHz | Micro-Tronics | LPM50004               | LFC | 11/27/2012 | 24 mo    |
| Attenuator                 | Coaxicom      | 66702 3910AF-20        | TKH | 6/6/2013   | 12 mo    |
| HP Filter                  | Micro-Tronics | HPM50111               | HFM | 4/2/2012   | 36 mo    |
| Pre-Amplifier              | Miteq         | AMF-6F-18002650-25-10P | AOI | 4/29/2013  | 12 mo    |
| Antenna, Horn              | EMCO          | 3160-09                | AHN | NCR        | 0 mo     |
| OC floating Cable          | N/A           | 18-26GHz RE Cables     | OCK | 4/29/2013  | 12 mo    |
| Pre-Amplifier              | Miteq         | AMF-6F-12001800-30-10P | AOF | 11/21/2012 | 12 mo    |
| Antenna, Horn              | ETS           | 3160-08                | AHT | NCR        | 0 mo     |
| Pre-Amplifier              | Miteq         | AMF-6F-08001200-30-10P | AOE | 11/21/2012 | 12 mo    |
| Antenna, Horn              | ETS           | 3160-07                | AHR | NCR        | 0 mo     |
| OC 10 Cables               | N/A           | 8-18GHz RE Cables      | OCO | 7/16/2013  | 12 mo    |
| Pre-Amplifier              | Miteq         | AMF-4D-010120-30-10P-1 | AOP | 6/6/2013   | 12 mo    |
| Antenna, Horn              | EMCO          | 3115                   | AHB | 3/8/2011   | 36 mo    |
| OC10 Cables                | N/A           | 1-8GHz RE Cables       | OCJ | 7/16/2013  | 12 mo    |
| Antenna, Biconilog         | EMCO          | 3142                   | AXB | 6/2/2013   | 36 mo    |
| OC10 Cables                | N/A           | 10kHz-1GHz RE Cables   | OCH | 6/6/2013   | 12 mo    |
| Pre-Amplifier              | Miteq         | AM-1064-9079           | AOO | 6/6/2013   | 12 mo    |
| Spectrum Analyzer          | Agilent       | E4440A                 | AFA | 6/15/2012  | 24 mo    |

## MEASUREMENT BANDWIDTHS

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

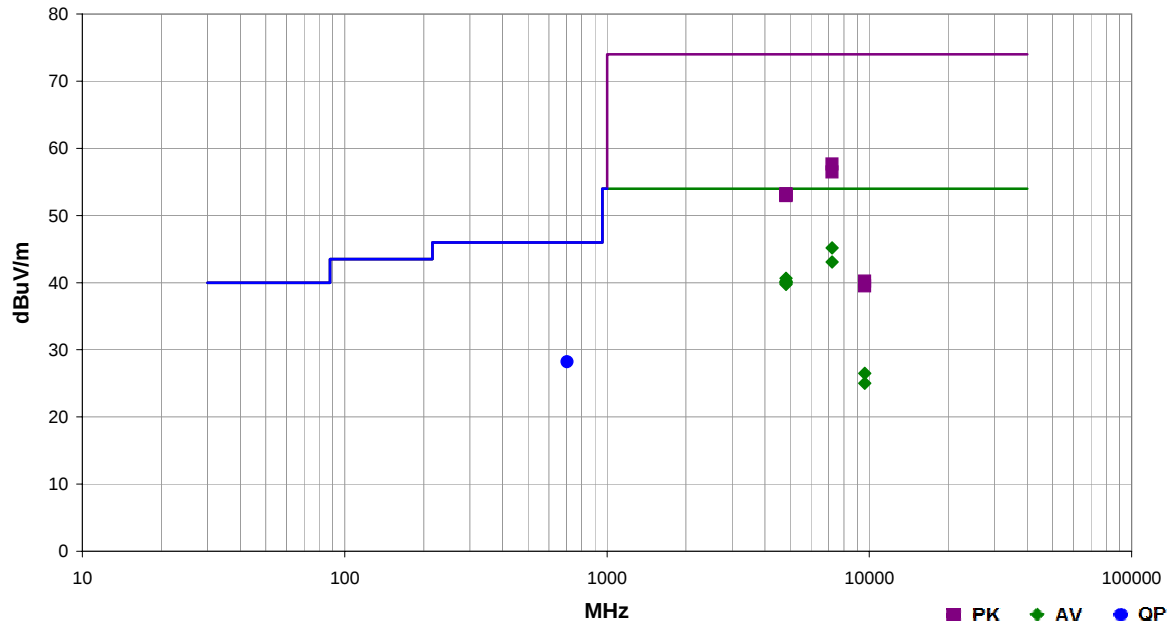
## TEST DESCRIPTION

The highest gain 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:     | GLBC0119                                           | Date:             | 09/25/13  |  |
| Project:        | None                                               | Temperature:      | 24.2 °C   |                                                                                    |
| Job Site:       | OC10                                               | Humidity:         | 42.3% RH  |                                                                                    |
| Serial Number:  | 972-A1                                             | Barometric Pres.: | 1012 mbar |                                                                                    |
| EUT:            | LAS11LC                                            |                   |           |                                                                                    |
| Configuration:  | 1                                                  |                   |           |                                                                                    |
| Customer:       | Technical Consumer Products, Inc.                  |                   |           |                                                                                    |
| Attendees:      | Leon Kogan                                         |                   |           |                                                                                    |
| EUT Power:      | 110VAC/60Hz                                        |                   |           |                                                                                    |
| Operating Mode: | Continuously Transmitting Low Channel 11, 2405 MHz |                   |           |                                                                                    |
| Deviations:     | None                                               |                   |           |                                                                                    |
| Comments:       | None                                               |                   |           |                                                                                    |

| Test Specifications | Test Method      |
|---------------------|------------------|
| FCC 15.247:2013     | ANSI C63.10:2009 |

| Run # | 8 | Test Distance (m) | 3 | Antenna Height(s) | 1-4m | Results | Pass |
|-------|---|-------------------|---|-------------------|------|---------|------|
|-------|---|-------------------|---|-------------------|------|---------|------|



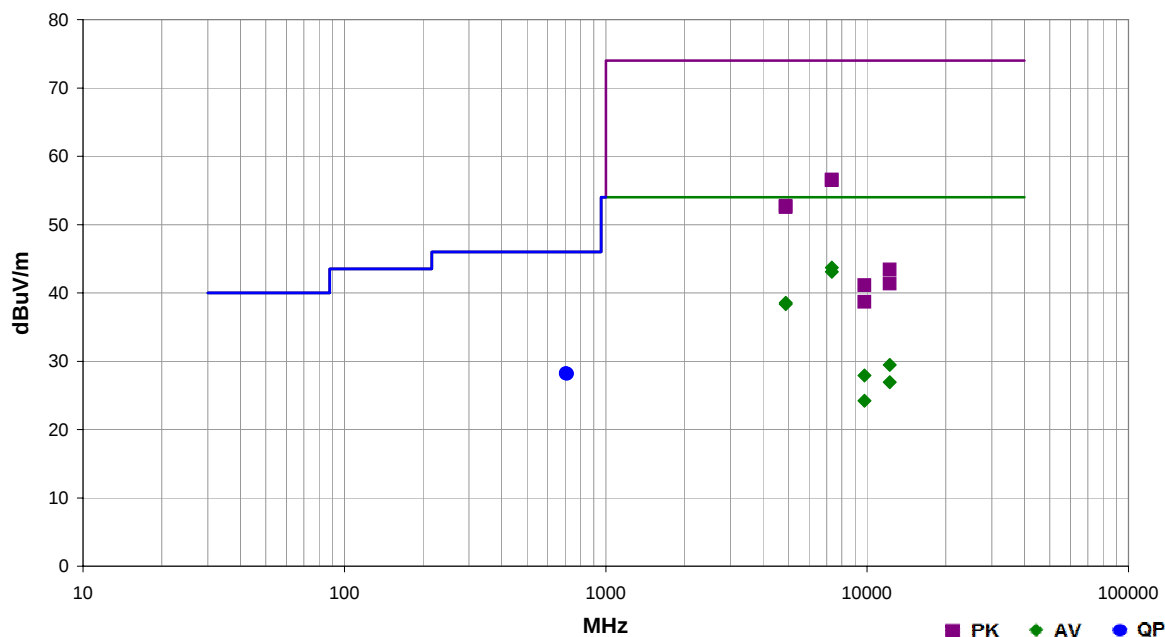
| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Antenna Height (meters) | Azimuth (degrees) | Test Distance (meters) | External Attenuation (dB) | Polarity/ Transducer Type | Detector | Distance Adjustment (dB) | Adjusted (dBuV/m) | Spec. Limit (dBuV/m) | Compared to Spec. (dB) | Comments |
|------------|------------------|-------------|-------------------------|-------------------|------------------------|---------------------------|---------------------------|----------|--------------------------|-------------------|----------------------|------------------------|----------|
| 7213.645   | 29.5             | 15.7        | 1.2                     | 216.0             | 3.0                    | 0.0                       | Vert                      | AV       | 0.0                      | 45.2              | 54.0                 | -8.8                   | X-Axis   |
| 7213.660   | 27.4             | 15.7        | 1.5                     | 123.0             | 3.0                    | 0.0                       | Horz                      | AV       | 0.0                      | 43.1              | 54.0                 | -10.9                  | X-Axis   |
| 4809.000   | 28.6             | 12.0        | 1.2                     | 244.0             | 3.0                    | 0.0                       | Horz                      | AV       | 0.0                      | 40.6              | 54.0                 | -13.4                  | Y-Axis   |
| 4809.055   | 28.2             | 12.0        | 1.2                     | 50.0              | 3.0                    | 0.0                       | Horz                      | AV       | 0.0                      | 40.2              | 54.0                 | -13.8                  | X-Axis   |
| 4809.085   | 28.1             | 12.0        | 1.2                     | 343.0             | 3.0                    | 0.0                       | Horz                      | AV       | 0.0                      | 40.1              | 54.0                 | -13.9                  | Z-Axis   |
| 4810.920   | 28.0             | 12.0        | 1.2                     | 344.0             | 3.0                    | 0.0                       | Vert                      | AV       | 0.0                      | 40.0              | 54.0                 | -14.0                  | Z-Axis   |
| 4810.895   | 27.9             | 12.0        | 1.2                     | 239.0             | 3.0                    | 0.0                       | Vert                      | AV       | 0.0                      | 39.9              | 54.0                 | -14.1                  | Y-Axis   |
| 4810.870   | 27.7             | 12.0        | 1.2                     | 259.0             | 3.0                    | 0.0                       | Vert                      | AV       | 0.0                      | 39.7              | 54.0                 | -14.3                  | X-Axis   |
| 7213.850   | 42.0             | 15.7        | 1.2                     | 216.0             | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 57.7              | 74.0                 | -16.3                  | X-Axis   |
| 7213.315   | 40.8             | 15.7        | 1.5                     | 123.0             | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 56.5              | 74.0                 | -17.5                  | X-Axis   |
| 704.818    | 20.4             | 7.8         | 2.8                     | 149.0             | 3.0                    | 0.0                       | Vert                      | QP       | 0.0                      | 28.2              | 46.0                 | -17.8                  | X-Axis   |
| 4808.695   | 41.2             | 12.0        | 1.2                     | 244.0             | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 53.2              | 74.0                 | -20.8                  | Y-Axis   |
| 4810.685   | 41.1             | 12.0        | 1.2                     | 344.0             | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 53.1              | 74.0                 | -20.9                  | Z-Axis   |
| 4811.065   | 41.0             | 12.0        | 1.2                     | 259.0             | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 53.0              | 74.0                 | -21.0                  | X-Axis   |
| 4810.600   | 41.0             | 12.0        | 1.2                     | 239.0             | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 53.0              | 74.0                 | -21.0                  | Y-Axis   |
| 4808.835   | 41.0             | 12.0        | 1.2                     | 343.0             | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 53.0              | 74.0                 | -21.0                  | Z-Axis   |
| 4808.880   | 40.9             | 12.0        | 1.2                     | 50.0              | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 52.9              | 74.0                 | -21.1                  | X-Axis   |
| 9618.008   | 36.9             | -10.4       | 1.0                     | 0.0               | 3.0                    | 0.0                       | Vert                      | AV       | 0.0                      | 26.5              | 54.0                 | -27.5                  | X-Axis   |
| 9617.933   | 35.4             | -10.4       | 1.0                     | 84.0              | 3.0                    | 0.0                       | Horz                      | AV       | 0.0                      | 25.0              | 54.0                 | -29.0                  | X-Axis   |
| 9617.875   | 50.6             | -10.4       | 1.0                     | 0.0               | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 40.2              | 74.0                 | -33.8                  | X-Axis   |
| 9621.083   | 49.9             | -10.4       | 1.0                     | 84.0              | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 39.5              | 74.0                 | -34.5                  | X-Axis   |

## SPURIOUS RADIATED EMISSIONS

|                 |                                                   |                   |           |                                                                                    |
|-----------------|---------------------------------------------------|-------------------|-----------|------------------------------------------------------------------------------------|
| Work Order:     | GLBC0119                                          | Date:             | 09/25/13  |  |
| Project:        | None                                              | Temperature:      | 24.2 °C   |                                                                                    |
| Job Site:       | OC10                                              | Humidity:         | 42.3% RH  |                                                                                    |
| Serial Number:  | 972-A1                                            | Barometric Pres.: | 1012 mbar |                                                                                    |
| EUT:            | LAS11LC                                           |                   |           |                                                                                    |
| Configuration:  | 1                                                 |                   |           |                                                                                    |
| Customer:       | Technical Consumer Products, Inc.                 |                   |           |                                                                                    |
| Attendees:      | Leon Kogan                                        |                   |           |                                                                                    |
| EUT Power:      | 110VAC/60Hz                                       |                   |           |                                                                                    |
| Operating Mode: | Continously Transmitting Mid Channel 18, 2440 MHz |                   |           |                                                                                    |
| Deviations:     | None                                              |                   |           |                                                                                    |
| Comments:       | X-Axis                                            |                   |           |                                                                                    |

|                     |                  |
|---------------------|------------------|
| Test Specifications | Test Method      |
| FCC 15.247:2013     | ANSI C63.10:2009 |

|       |    |                   |   |                   |      |         |      |
|-------|----|-------------------|---|-------------------|------|---------|------|
| Run # | 11 | Test Distance (m) | 3 | Antenna Height(s) | 1-4m | Results | Pass |
|-------|----|-------------------|---|-------------------|------|---------|------|



| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Antenna Height (meters) | Azimuth (degrees) | Test Distance (meters) | External Attenuation (dB) | Polarity/ Transducer Type | Detector | Distance Adjustment (dB) | Adjusted (dBuV/m) | Spec. Limit (dBuV/m) | Compared to Spec. (dB) |
|------------|------------------|-------------|-------------------------|-------------------|------------------------|---------------------------|---------------------------|----------|--------------------------|-------------------|----------------------|------------------------|
| 7318.650   | 27.6             | 16.1        | 2.0                     | 47.0              | 3.0                    | 0.0                       | Horz                      | AV       | 0.0                      | 43.7              | 54.0                 | -10.3                  |
| 7318.633   | 27.0             | 16.1        | 1.0                     | 93.0              | 3.0                    | 0.0                       | Vert                      | AV       | 0.0                      | 43.1              | 54.0                 | -10.9                  |
| 4878.958   | 26.3             | 12.3        | 1.9                     | 175.0             | 3.0                    | 0.0                       | Horz                      | AV       | 0.0                      | 38.6              | 54.0                 | -15.4                  |
| 4879.058   | 26.1             | 12.3        | 1.0                     | 292.0             | 3.0                    | 0.0                       | Vert                      | AV       | 0.0                      | 38.4              | 54.0                 | -15.6                  |
| 7318.592   | 40.5             | 16.1        | 2.0                     | 47.0              | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 56.6              | 74.0                 | -17.4                  |
| 7318.733   | 40.4             | 16.1        | 1.0                     | 93.0              | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 56.5              | 74.0                 | -17.5                  |
| 705.736    | 20.4             | 7.8         | 3.8                     | 360.0             | 3.0                    | 0.0                       | Vert                      | QP       | 0.0                      | 28.2              | 46.0                 | -17.8                  |
| 704.841    | 20.4             | 7.8         | 3.8                     | 224.0             | 3.0                    | 0.0                       | Horz                      | QP       | 0.0                      | 28.2              | 46.0                 | -17.8                  |
| 712.777    | 20.4             | 7.7         | 3.8                     | 247.0             | 3.0                    | 0.0                       | Horz                      | QP       | 0.0                      | 28.1              | 46.0                 | -17.9                  |
| 4878.975   | 40.5             | 12.3        | 1.0                     | 292.0             | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 52.8              | 74.0                 | -21.2                  |
| 4880.750   | 40.3             | 12.3        | 1.9                     | 175.0             | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 52.6              | 74.0                 | -21.4                  |
| 12202.180  | 38.9             | -9.5        | 1.2                     | 253.0             | 3.0                    | 0.0                       | Vert                      | AV       | 0.0                      | 29.4              | 54.0                 | -24.6                  |
| 9757.942   | 38.1             | -10.2       | 1.0                     | 11.0              | 3.0                    | 0.0                       | Vert                      | AV       | 0.0                      | 27.9              | 54.0                 | -26.1                  |
| 12202.280  | 36.4             | -9.5        | 1.2                     | 144.0             | 3.0                    | 0.0                       | Horz                      | AV       | 0.0                      | 26.9              | 54.0                 | -27.1                  |
| 9757.958   | 34.4             | -10.2       | 1.0                     | 136.0             | 3.0                    | 0.0                       | Horz                      | AV       | 0.0                      | 24.2              | 54.0                 | -29.8                  |
| 12201.620  | 52.9             | -9.5        | 1.2                     | 253.0             | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 43.4              | 74.0                 | -30.6                  |
| 12201.450  | 50.8             | -9.5        | 1.2                     | 144.0             | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 41.3              | 74.0                 | -32.7                  |
| 9761.833   | 51.3             | -10.2       | 1.0                     | 11.0              | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 41.1              | 74.0                 | -32.9                  |
| 9758.733   | 48.9             | -10.2       | 1.0                     | 136.0             | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 38.7              | 74.0                 | -35.3                  |



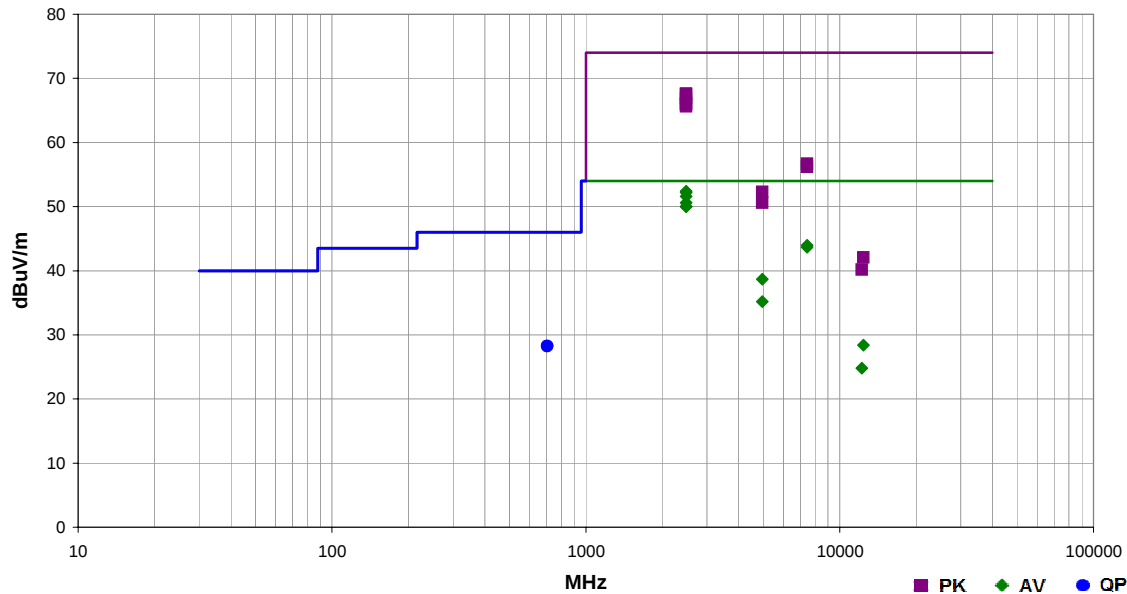
## SPURIOUS RADIATED EMISSIONS

PSA-ESCI 2012.12.14  
EmiRS 2013.08.26

|                 |                                                     |                   |           |                                                                                    |
|-----------------|-----------------------------------------------------|-------------------|-----------|------------------------------------------------------------------------------------|
| Work Order:     | GLBC0119                                            | Date:             | 09/25/13  |  |
| Project:        | None                                                | Temperature:      | 24.2 °C   |                                                                                    |
| Job Site:       | OC10                                                | Humidity:         | 42.3% RH  |                                                                                    |
| Serial Number:  | 972-A1                                              | Barometric Pres.: | 1012 mbar |                                                                                    |
| EUT:            |                                                     | LAS11LC           |           |                                                                                    |
| Configuration:  | 1                                                   |                   |           |                                                                                    |
| Customer:       | Technical Consumer Products, Inc.                   |                   |           |                                                                                    |
| Attendees:      | Leon Kogan                                          |                   |           |                                                                                    |
| EUT Power:      | 110VAC/60Hz                                         |                   |           |                                                                                    |
| Operating Mode: | Continuously Transmitting High Channel 26, 2480 MHz |                   |           |                                                                                    |
| Deviations:     | None                                                |                   |           |                                                                                    |
| Comments:       | None                                                |                   |           |                                                                                    |

|                     |                  |
|---------------------|------------------|
| Test Specifications | Test Method      |
| FCC 15.247:2013     | ANSI C63.10:2009 |

|       |    |                   |   |                   |      |         |      |
|-------|----|-------------------|---|-------------------|------|---------|------|
| Run # | 14 | Test Distance (m) | 3 | Antenna Height(s) | 1-4m | Results | Pass |
|-------|----|-------------------|---|-------------------|------|---------|------|



| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Antenna Height (meters) | Azimuth (degrees) | Test Distance (meters) | External Attenuation (dB) | Polarity/ Transducer Type | Detector | Distance Adjustment (dB) | Adjusted (dBuV/m) | Spec. Limit (dBuV/m) | Compared to Spec. (dB) | Comments |
|------------|------------------|-------------|-------------------------|-------------------|------------------------|---------------------------|---------------------------|----------|--------------------------|-------------------|----------------------|------------------------|----------|
| 2483.500   | 30.4             | 2.0         | 1.5                     | 128.0             | 3.0                    | 20.0                      | Horz                      | AV       | 0.0                      | 52.4              | 54.0                 | -1.6                   | X-Axis   |
| 2483.500   | 30.2             | 2.0         | 1.8                     | 314.0             | 3.0                    | 20.0                      | Horz                      | AV       | 0.0                      | 52.2              | 54.0                 | -1.8                   | Y-Axis   |
| 2483.500   | 29.6             | 2.0         | 1.0                     | 243.0             | 3.0                    | 20.0                      | Vert                      | AV       | 0.0                      | 51.6              | 54.0                 | -2.4                   | Z-Axis   |
| 2483.500   | 28.6             | 2.0         | 1.5                     | 291.0             | 3.0                    | 20.0                      | Vert                      | AV       | 0.0                      | 50.6              | 54.0                 | -3.4                   | X-Axis   |
| 2483.500   | 28.0             | 2.0         | 2.4                     | 180.0             | 3.0                    | 20.0                      | Horz                      | AV       | 0.0                      | 50.0              | 54.0                 | -4.0                   | Z-Axis   |
| 2483.500   | 28.0             | 2.0         | 1.0                     | 95.0              | 3.0                    | 20.0                      | Vert                      | AV       | 0.0                      | 50.0              | 54.0                 | -4.0                   | Y-Axis   |
| 2483.500   | 45.6             | 2.0         | 1.5                     | 128.0             | 3.0                    | 20.0                      | Horz                      | PK       | 0.0                      | 67.6              | 74.0                 | -6.4                   | X-Axis   |
| 2483.500   | 45.5             | 2.0         | 1.8                     | 314.0             | 3.0                    | 20.0                      | Horz                      | PK       | 0.0                      | 67.5              | 74.0                 | -6.5                   | Y-Axis   |
| 2483.500   | 44.9             | 2.0         | 1.0                     | 243.0             | 3.0                    | 20.0                      | Vert                      | PK       | 0.0                      | 66.9              | 74.0                 | -7.1                   | Z-Axis   |
| 2483.500   | 44.1             | 2.0         | 2.4                     | 180.0             | 3.0                    | 20.0                      | Horz                      | PK       | 0.0                      | 66.1              | 74.0                 | -7.9                   | Z-Axis   |
| 2483.500   | 43.9             | 2.0         | 1.5                     | 291.0             | 3.0                    | 20.0                      | Vert                      | PK       | 0.0                      | 65.9              | 74.0                 | -8.1                   | X-Axis   |
| 2483.500   | 43.6             | 2.0         | 1.0                     | 95.0              | 3.0                    | 20.0                      | Vert                      | PK       | 0.0                      | 65.6              | 74.0                 | -8.4                   | Y-Axis   |
| 7438.608   | 27.8             | 16.2        | 1.5                     | 340.0             | 3.0                    | 0.0                       | Horz                      | AV       | 0.0                      | 44.0              | 54.0                 | -10.0                  | X-Axis   |
| 7438.567   | 27.5             | 16.2        | 1.0                     | 343.0             | 3.0                    | 0.0                       | Vert                      | AV       | 0.0                      | 43.7              | 54.0                 | -10.3                  | X-Axis   |
| 4960.933   | 26.1             | 12.6        | 1.0                     | 177.0             | 3.0                    | 0.0                       | Vert                      | AV       | 0.0                      | 38.7              | 54.0                 | -15.3                  | X-Axis   |
| 7438.550   | 40.5             | 16.2        | 1.5                     | 340.0             | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 56.7              | 74.0                 | -17.3                  | X-Axis   |
| 705.514    | 20.4             | 7.8         | 2.8                     | 71.0              | 3.0                    | 0.0                       | Vert                      | QP       | 0.0                      | 28.2              | 46.0                 | -17.8                  | X-Axis   |
| 705.388    | 20.4             | 7.8         | 1.0                     | 100.0             | 3.0                    | 0.0                       | Horz                      | QP       | 0.0                      | 28.2              | 46.0                 | -17.8                  | X-Axis   |
| 7441.550   | 40.0             | 16.2        | 1.0                     | 343.0             | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 56.2              | 74.0                 | -17.8                  | X-Axis   |
| 4960.933   | 22.6             | 12.6        | 1.0                     | 162.0             | 3.0                    | 0.0                       | Horz                      | AV       | 0.0                      | 35.2              | 54.0                 | -18.8                  | X-Axis   |
| 4960.725   | 39.7             | 12.6        | 1.0                     | 177.0             | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 52.3              | 74.0                 | -21.7                  | X-Axis   |
| 4959.867   | 38.0             | 12.6        | 1.0                     | 162.0             | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 50.6              | 74.0                 | -23.4                  | X-Axis   |
| 12397.510  | 37.6             | -9.2        | 1.0                     | 328.0             | 3.0                    | 0.0                       | Horz                      | AV       | 0.0                      | 28.4              | 54.0                 | -25.6                  | X-Axis   |
| 12237.030  | 34.2             | -9.4        | 1.2                     | 326.0             | 3.0                    | 0.0                       | Vert                      | AV       | 0.0                      | 24.8              | 54.0                 | -29.2                  | X-Axis   |
| 12397.620  | 51.3             | -9.2        | 1.0                     | 328.0             | 3.0                    | 0.0                       | Horz                      | PK       | 0.0                      | 42.1              | 74.0                 | -31.9                  | X-Axis   |
| 12237.570  | 49.6             | -9.4        | 1.2                     | 326.0             | 3.0                    | 0.0                       | Vert                      | PK       | 0.0                      | 40.2              | 74.0                 | -33.8                  | X-Axis   |

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

## MODES OF OPERATION

Continuously Transmitting, Lamp "ON", Maximum Lumens

## POWER SETTINGS INVESTIGATED

120VAC/60Hz

## CONFIGURATIONS INVESTIGATED

GLBC0119 - 1

## SAMPLE CALCULATIONS

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

## TEST EQUIPMENT

| Description | Manufacturer    | Model            | ID  | Last Cal. | Interval |
|-------------|-----------------|------------------|-----|-----------|----------|
| LISN        | Solar           | 9252-50-24-BNC   | LIA | 6/3/2013  | 12 mo    |
| Attenuator  | Pasternack      | 6N10W-20         | AWC | 2/28/2013 | 12 mo    |
| HP Filter   | TTE             | H97-100K-50-720B | HFP | 3/1/2012  | 36 mo    |
| OC06 Cables | N/A             | Telecom Cables   | OCP | 4/5/2013  | 12 mo    |
| Receiver    | Rohde & Schwarz | ESCI             | ARF | 5/21/2013 | 12 mo    |

## MEASUREMENT BANDWIDTHS

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

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

## TEST DESCRIPTION

The EUT will be powered either directly or indirectly from the AC power line. Therefore, conducted emissions measurements were made on the AC input of the EUT, or on the AC input of the device used to power the EUT. The AC power line conducted emissions were measured with the EUT operating 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.

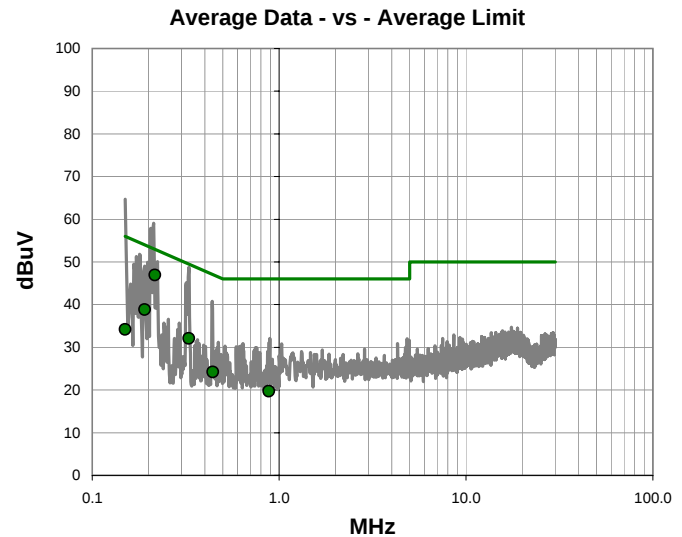
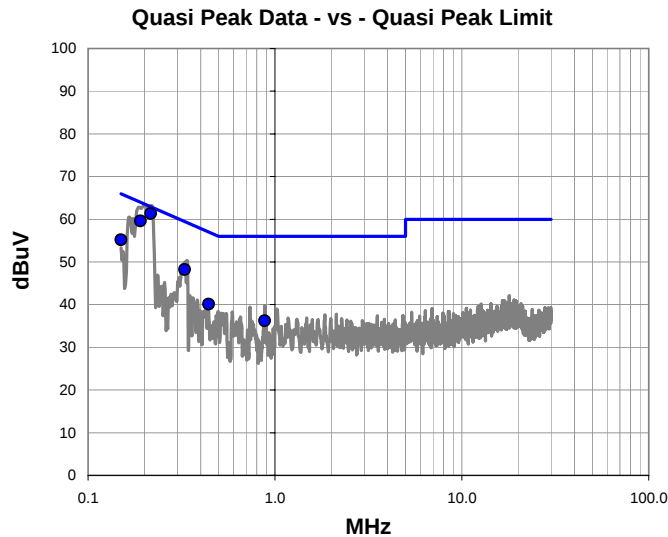


# POWERLINE CONDUCTED EMISSIONS

PSA-ESCI 2012.12.14  
PSA-ESCI Version 2013.2.20

|                 |                                                      |                   |           |                                                                                    |             |
|-----------------|------------------------------------------------------|-------------------|-----------|------------------------------------------------------------------------------------|-------------|
| Work Order:     | GLBC0119                                             | Date:             | 09/25/13  |  |             |
| Project:        | None                                                 | Temperature:      | 24.9 °C   |                                                                                    |             |
| Job Site:       | OC06                                                 | Humidity:         | 43.5% RH  |                                                                                    |             |
| Serial Number:  | 972-A1                                               | Barometric Pres.: | 1011 mbar | Tested by:                                                                         | Mark Baytan |
| EUT:            | LAS11LC                                              |                   |           |                                                                                    |             |
| Configuration:  | 1                                                    |                   |           |                                                                                    |             |
| Customer:       | Technical Consumer Products, Inc.                    |                   |           |                                                                                    |             |
| Attendees:      | Leon Kogan                                           |                   |           |                                                                                    |             |
| EUT Power:      | 120VAC/60Hz                                          |                   |           |                                                                                    |             |
| Operating Mode: | Continuously Transmitting, Lamp "ON", Maximum Lumens |                   |           |                                                                                    |             |
| Deviations:     | None                                                 |                   |           |                                                                                    |             |
| Comments:       | None                                                 |                   |           |                                                                                    |             |

|                     |                 |       |             |                   |      |
|---------------------|-----------------|-------|-------------|-------------------|------|
| Test Specifications | FCC 15.207:2013 |       | Test Method | ANSI C63.10:2009  |      |
| Run #               | 3               | Line: | High Line   | Ext. Attenuation: | 20   |
|                     |                 |       |             | Results           | Pass |



Quasi Peak Data - vs - Quasi Peak Limit

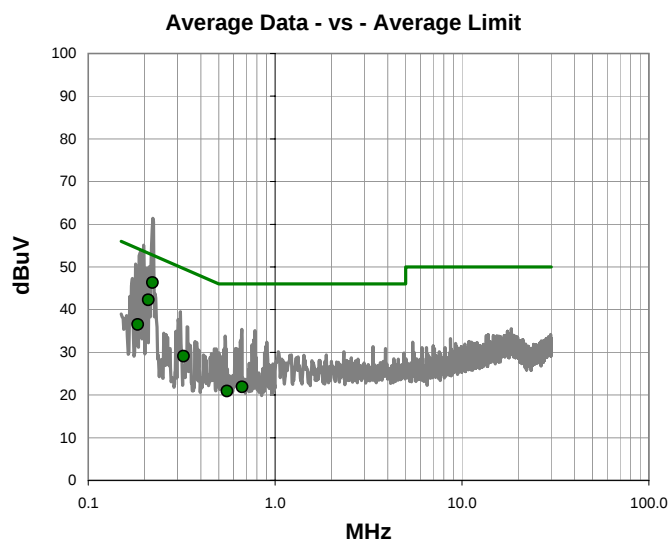
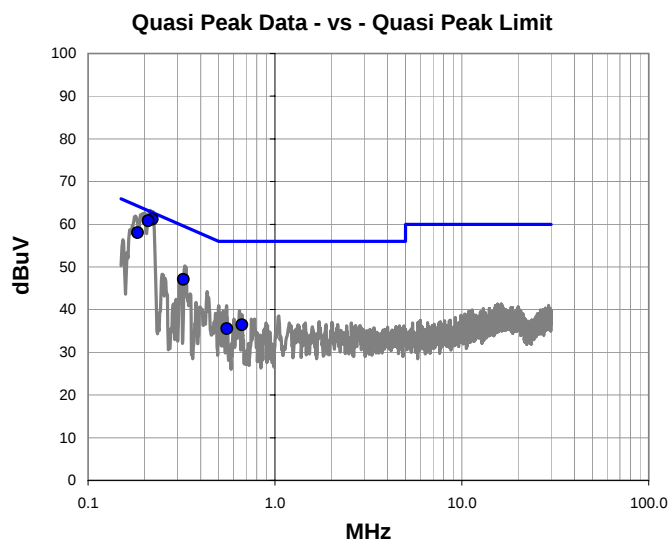
| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 0.217      | 41.2             | 20.1        | 61.3            | 62.9               | -1.6                   |
| 0.191      | 39.5             | 20.1        | 59.6            | 64.0               | -4.4                   |
| 0.150      | 35.1             | 20.1        | 55.2            | 66.0               | -10.8                  |
| 0.329      | 28.1             | 20.1        | 48.2            | 59.5               | -11.3                  |
| 0.443      | 20.0             | 20.1        | 40.1            | 57.0               | -16.9                  |
| 0.883      | 16.1             | 20.1        | 36.2            | 56.0               | -19.8                  |

Average Data - vs - Average Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 0.217      | 26.8             | 20.1        | 46.9            | 52.9               | -6.0                   |
| 0.191      | 18.7             | 20.1        | 38.8            | 54.0               | -15.2                  |
| 0.329      | 12.0             | 20.1        | 32.1            | 49.5               | -17.4                  |
| 0.150      | 14.1             | 20.1        | 34.2            | 56.0               | -21.8                  |
| 0.443      | 4.1              | 20.1        | 24.2            | 47.0               | -22.8                  |
| 0.883      | -0.4             | 20.1        | 19.7            | 46.0               | -26.3                  |

|                 |                                                      |                   |           |                                                                                     |
|-----------------|------------------------------------------------------|-------------------|-----------|-------------------------------------------------------------------------------------|
| Work Order:     | GLBC0119                                             | Date:             | 09/25/13  |  |
| Project:        | None                                                 | Temperature:      | 24.9 °C   |                                                                                     |
| Job Site:       | OC06                                                 | Humidity:         | 43.5% RH  |                                                                                     |
| Serial Number:  | 972-A1                                               | Barometric Pres.: | 1011 mbar |                                                                                     |
| EUT:            |                                                      | LAS11LC           |           |                                                                                     |
| Configuration:  | 1                                                    |                   |           |                                                                                     |
| Customer:       | Technical Consumer Products, Inc.                    |                   |           |                                                                                     |
| Attendees:      | Leon Kogan                                           |                   |           |                                                                                     |
| EUT Power:      | 120VAC/60Hz                                          |                   |           |                                                                                     |
| Operating Mode: | Continuously Transmitting, Lamp "ON", Maximum Lumens |                   |           |                                                                                     |
| Deviations:     | None                                                 |                   |           |                                                                                     |
| Comments:       | None                                                 |                   |           |                                                                                     |

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



Quasi Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 0.221      | 41.1             | 20.1        | 61.2            | 62.8               | -1.6                   |
| 0.210      | 40.7             | 20.1        | 60.8            | 63.2               | -2.4                   |
| 0.184      | 37.9             | 20.1        | 58.0            | 64.3               | -6.3                   |
| 0.324      | 27.0             | 20.1        | 47.1            | 59.6               | -12.5                  |
| 0.667      | 16.3             | 20.1        | 36.4            | 56.0               | -19.6                  |
| 0.553      | 15.4             | 20.1        | 35.5            | 56.0               | -20.5                  |

Average Data - vs - Average Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Compared to Spec. (dB) |
|------------|------------------|-------------|-----------------|--------------------|------------------------|
| 0.221      | 26.2             | 20.1        | 46.3            | 52.8               | -6.5                   |
| 0.210      | 22.2             | 20.1        | 42.3            | 53.2               | -10.9                  |
| 0.184      | 16.4             | 20.1        | 36.5            | 54.3               | -17.8                  |
| 0.324      | 9.0              | 20.1        | 29.1            | 49.6               | -20.5                  |
| 0.667      | 1.8              | 20.1        | 21.9            | 46.0               | -24.1                  |
| 0.553      | 0.8              | 20.1        | 20.9            | 46.0               | -25.1                  |