LABORATORY MEASUREMENTS

Pursuant To
ICES-005: 2015, Issue 4

Applicant: SUCK UK LTD
31 Regent Studios,
8 Andrews Road,
London, E8 4QN.

Equipment Under Test (EUT):
Product Description: Bottle Light - White
Model: SK LIGHTBOTTLE1
Brand Name: SUCK UK
Equipment Type: Class B Non Gas-discharge Lighting Equipment
Sample Receipt Date: May 12, 2017
Test Conducted Date: May 12, 2017 to May 23, 2017
Issue Date: May 25, 2017
Test Site Location: Roof Top and 2nd Floor, Garment Centre,
576 Castle Peak Road,
Kowloon, Hong Kong.

Conclusion: The sample as received complied with the Industry Canada Interference-Causing Equipment Standard ICES-005 requirement.

Prepared and Checked by: Approved by:
Kan Chung Ting, Clement/ty
Senior Lead Engineer
Digital signature
Chan Chi Hung, Terry
Assistant Manager

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1. General Information

1.1 Client Information
Applicant: SUCK UK LTD

1.2 General Description of EUT
Product Description: Bottle Light - White
Model No.: SK LIGHTBOTTLE1
Serial No.: Not Labelled

1.3 Details of EUT
Rated Voltage: Powered by USB port and/or 3.7VDC (1 x 3.7V "50mAH Lithium" rechargeable battery)
Cables: Not Applicable
For more detail features, please refer to user's Manual.

1.4 Description of Peripherals

<table>
<thead>
<tr>
<th>Description</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lenovo Notebook (TYPE: 20GJ-S00N00; S/N: LR-05ZRE7)</td>
<td>Provided by Intertek</td>
</tr>
<tr>
<td>Seagate 1TB USB 3.0 Ext. HDD (P/N: 1K9AP1-502; S/N: NA7XH3NF)</td>
<td>Provided by Intertek</td>
</tr>
<tr>
<td>1 x USB cable with length of 0.4 meter long</td>
<td>Provided by Intertek</td>
</tr>
</tbody>
</table>
2. Test Summary

<table>
<thead>
<tr>
<th>Test</th>
<th>Standard</th>
<th>Class</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conducted Emission</td>
<td>ICES-005 Section 4.5.1, Alternative 1</td>
<td>Class B</td>
<td>Pass</td>
</tr>
<tr>
<td>Radiated Emission</td>
<td>ICES-005 Section 4.5.2, Alternative 1</td>
<td>Class B</td>
<td>Pass</td>
</tr>
</tbody>
</table>

Remark:

The EUT has been tested/evaluated and pass the ICES-005 without modification.

The production units are required to conform to the initial sample as received when the units are placed on the market.

Enclosed please find the Canadian Emissions Requirements.
3. Test Specifications

3.1 Standards

Both conducted and radiated emission tests were performed according to the requirement of section 4.5.1 and section 4.5.2 of ICES-005: 2015 where the measurement procedures in ANSI C63.4: 2014 was employed. Test results are in compliance with the requirements of ICES-005: 2015.

The EUT setup configuration please refers to the photo of test configuration in item.

3.2 Classes of Lighting Equipment

For the purpose of the requirements set out in this section (Alternative 1), ICES-005 differentiates between two classes of lighting equipment, Class A and Class B, based on the characteristics and intended use of the equipment.

Class A lighting equipment is, by virtue of its characteristics, highly unlikely to be used in a residential environment, including a home business. Characteristics considered in this assessment include price, marketing and advertising methodology, the degree to which the functional design inhibits applications suitable to residential environments, or any combination of features that would effectively preclude the use of such lighting equipment in a residential environment.

Class B lighting equipment is any lighting equipment that cannot be classified as Class A.

3.3 EUT Operation Condition

The EUT was powered by USB port and/or 3.7VDC (1 x 3.7V "50mAH Lithium" rechargeable battery) and was running in accordance with the manufacturer’s operation manual.
4. Conducted Emission Measurements

4.1 Operating Environment

Temperature: 25°C ± 10°C  Test Voltage: Powered by USB port

4.2 Test Setup and Procedure

The EUT along with its peripherals were placed on a 1.0m(W)×1.5m(L) and 0.8m in height wooden table and the EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane. The EUT was connected to power mains through a line impedance stabilization network (LISN), which provided 50 ohm coupling impedance for measuring instrument and the chassis ground was bounded to the horizontal ground plane of shielded room. The excess power cable between the EUT and the LISN was bundled.

All connecting cables of EUT and peripherals were moved to find the maximum emission.

The EUT setup configuration please refers to the photo of test configuration in Appendix B1.
4.3 Test Equipment

<table>
<thead>
<tr>
<th>Equipment No.</th>
<th>Equipment</th>
<th>Manufacturer</th>
<th>Model No.</th>
<th>Serial No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EW-2666</td>
<td>EMI Test Receiver</td>
<td>R&amp;S</td>
<td>ESCI7</td>
<td>100792</td>
</tr>
<tr>
<td>EW-2501</td>
<td>Artificial Mains Network</td>
<td>R&amp;S</td>
<td>ENV-216</td>
<td>100483</td>
</tr>
<tr>
<td>EW-2451</td>
<td>RF Cable 80cm (RG142)</td>
<td>RADIALL</td>
<td>bnc m st/ 142/ bnc m st 80cm</td>
<td>Nil</td>
</tr>
</tbody>
</table>

4.4 Conducted Emission Limits

<table>
<thead>
<tr>
<th>Frequency (MHz)</th>
<th>Maximum RF Line Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Class A (dBμV)</td>
</tr>
<tr>
<td></td>
<td>Q.P.</td>
</tr>
<tr>
<td>0.15~0.50</td>
<td>79</td>
</tr>
<tr>
<td>0.50~5.00</td>
<td>73</td>
</tr>
<tr>
<td>5.00~30.0</td>
<td>73</td>
</tr>
</tbody>
</table>

4.5 Uncertainty of Conducted Emission

When determining the test conclusion, the Measurement Uncertainty of test has been considered.
4.6 Conducted Emission Test Data

Phase: Live / Neutral
Model No.: SK LIGHTBOTTLE1
Worst Case: Charging with LED On

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Phase: Live / Neutral
Model No.: SK LIGHTBOTTLE1
Worst Case: Charging with LED On

<table>
<thead>
<tr>
<th>Trace</th>
<th>Frequency</th>
<th>Level (dBµV)</th>
<th>Delta Limit (dB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>172.5 kHz</td>
<td>46.20</td>
<td>-18.63</td>
</tr>
<tr>
<td>1</td>
<td>3.9615 MHz</td>
<td>33.42</td>
<td>-22.57</td>
</tr>
<tr>
<td>1</td>
<td>4.2945 MHz</td>
<td>32.13</td>
<td>-23.86</td>
</tr>
</tbody>
</table>
5. Radiated Emission Measurements

5.1 Operating Environment

Temperature: 25°C ± 10°C    Test Voltage: USB port

5.2 Test Setup and Procedure

The figure below shows the test setup, which is utilized to make these measurements.

The frequency spectrum from 30MHz to 1000MHz was investigated.

The equipment under test was placed on the top of rotation table 0.8 meter above ground plane.

The table was 360 degrees to determine the position of the highest radiation.

EUT is set 3 meters from the EMI receiving antenna, which is mounted on a variable height mast. The antenna height is varied between one meter and four meters above ground to find the maximum value of the field strength. Both horizontal polarization and vertical polarization of the antenna are set to make the measurement. The bandwidth was setting on the EMI meter 120kHz.

The levels are quasi peak value readings.

The EUT setup configuration please refers to the photo of test configuration in Appendix B2.
5.3 Test Equipment

<table>
<thead>
<tr>
<th>Equipment No.</th>
<th>Equipment</th>
<th>Manufacturer</th>
<th>Model No.</th>
<th>Serial No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EW-2666</td>
<td>EMI Test Receiver</td>
<td>R&amp;S</td>
<td>ESCI7</td>
<td>100792</td>
</tr>
<tr>
<td>EW-2188</td>
<td>Spectrum Analyzer</td>
<td>Agilent</td>
<td>E4407B</td>
<td>MY45103609</td>
</tr>
<tr>
<td>EW-0954</td>
<td>Biconical Antenna</td>
<td>EMCO</td>
<td>3104C</td>
<td>9911-4872</td>
</tr>
<tr>
<td>EW-0446</td>
<td>Log Periodic Antenna</td>
<td>EMCO</td>
<td>3146</td>
<td>9905-5219</td>
</tr>
<tr>
<td>EW-2074</td>
<td>14m Double Shield RF Cable (20MHz to 6GHz)</td>
<td>RADIALL</td>
<td>N(m)-RG142-BNC(m) L=14M</td>
<td>Nil</td>
</tr>
<tr>
<td>EW-2528</td>
<td>14m Double Shield RF Cable (20MHz to 6GHz)</td>
<td>RADIALL</td>
<td>nm/br5d/sma 14m</td>
<td>Nil</td>
</tr>
</tbody>
</table>

5.4 Radiated Emission Limits

According to ICES-005, the field strength of radiated emission from lighting equipment at a distance of 3 meters or 10 meters shall not exceed the following values:

<table>
<thead>
<tr>
<th>Frequency Range (MHz)</th>
<th>Class A (dBµV/m, quasi-peak)</th>
<th>Class B (dBµV/m, quasi-peak)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3 meters</td>
<td>10 meters</td>
</tr>
<tr>
<td>30 - 88</td>
<td>49.5</td>
<td>39.1</td>
</tr>
<tr>
<td>88 - 216</td>
<td>54</td>
<td>43.5</td>
</tr>
<tr>
<td>216 - 1000</td>
<td>56.9</td>
<td>46.4</td>
</tr>
</tbody>
</table>

5.5 Uncertainty of Radiated Emission

When determining the test conclusion, the Measurement Uncertainty of test has been considered.
5.6 Radiated Emission Test Data

Polarity: Horizontal / Vertical
Model No.: SK LIGHTBOTTLE1
Worst Case: LED On

Data Table
Radiated Scan
Pursuant to ICES-005: Emissions Requirement

<table>
<thead>
<tr>
<th>Polarization</th>
<th>Frequency (MHz)</th>
<th>Net at 3m (dBμV/m)</th>
<th>Limit at 3m (dBμV/m)</th>
<th>Margin (dB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>32.569</td>
<td>34.0</td>
<td>40.0</td>
<td>-6.0</td>
</tr>
<tr>
<td>V</td>
<td>45.378</td>
<td>33.6</td>
<td>40.0</td>
<td>-6.4</td>
</tr>
<tr>
<td>V</td>
<td>64.854</td>
<td>34.1</td>
<td>40.0</td>
<td>-5.9</td>
</tr>
<tr>
<td>V</td>
<td>112.306</td>
<td>34.5</td>
<td>43.5</td>
<td>-9.0</td>
</tr>
<tr>
<td>H</td>
<td>188.457</td>
<td>33.8</td>
<td>43.5</td>
<td>-9.7</td>
</tr>
<tr>
<td>H</td>
<td>230.165</td>
<td>33.6</td>
<td>46.0</td>
<td>-12.4</td>
</tr>
</tbody>
</table>

Note: Negative signs (–) in the margin column signify levels below the limit.
Appendix A: External Photo of EUT
Appendix B1: Conducted Emission Test Set-up

Front View
Left Side View
Right Side View
Appendix B2: Radiated Emission Test Set-up

Front View
Back View
Labelling Requirements

Each unit of a lighting equipment model shall bear a label, which represents the manufacturer’s or importer’s self-declaration of compliance with Innovation, Science and Economic Development Canada’s ICES-005. This label shall be permanently affixed to each unit of the lighting equipment or displayed electronically as per Notice 2014 - DRS1003 and its text must be clearly legible. However, if the lighting equipment is too small or if it is not otherwise practical to place the label on the lighting equipment and if electronic labelling has not been implemented, the label may alternatively be placed in a prominent location in the user manual supplied with the equipment and/or on its packaging. The user manual may be in an electronic format, in which case it must be readily available.

This Innovation, Science and Economic Development Canada compliance label shall include the word “Canada” (or “CAN”) and a reference to this standard, in both English and French. If Alternative 1 is used for verifying compliance, the label shall also include the Class of the lighting equipment. An example is given below:

**CAN ICES-005 (*) / NMB-005 (*)**

* Insert either "A" or "B", but not both, to identify the applicable Class of the lighting equipment.