LABORATORY MEASUREMENTS

Pursuant To
and
ANSI C63.4: 2014

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 Digital Device / Unintentional Radiator

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 47 CFR Part 15 requirement.

Prepared and Checked by: Approved by:
Kan Chung Ting, Clement/ty Chan Chi Hung, Terry
Senior Lead Engineer 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</td>
<td>Provided by Intertek</td>
</tr>
<tr>
<td>(P/N: 1K9AP1-502; S/N: NA7XH3NF)</td>
<td></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>Section 15.107 of 47 CFR Part 15</td>
<td>Class B</td>
<td>Pass</td>
</tr>
<tr>
<td>Radiated Emission</td>
<td>Section 15.109 of 47 CFR Part 15</td>
<td>Class B</td>
<td>Pass</td>
</tr>
</tbody>
</table>

Remark:

The EUT has been tested/evaluated and pass the 47 CFR Part 15 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 FCC Labelling and Instruction Manual Requirements.
3. Test Specifications

3.1 Standards

Both conducted and radiated emission tests were performed according to the procedures in ANSI C63.4: 2014. Test results are in compliance with the requirements of 47 CFR Part 15 [10-01-15 Edition].

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

3.2 Definition of Device Classification

Unintentional radiator:
A device which is not intended to emit RF energy by radiation or induction.

Class A Digital Device:
A digital device which is marketed for use in commercial or business environment.

Class B Digital Device:
A digital device which is marketed for use by the general public or in a residential environment.

Note:
A manufacturer may also qualify a device intended to be marketed in a commercial, business or industrial environment as a Class B digital device, and in fact is encouraged to do so, provided the device complies with the technical specifications for a Class B Digital Device. In the event that a particular type of device has been found to repeatedly cause harmful interference to radio communications, the Commission may classify such a digital device as a Class B Digital Device, Regardless of its intended use.

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 (Section 15.107 of 47 CFR Part 15)

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>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Class A (dB(\mu)V)</td>
<td>Class B (dB(\mu)V)</td>
</tr>
<tr>
<td></td>
<td>Q.P.</td>
<td>Ave.</td>
</tr>
<tr>
<td>0.15~0.50</td>
<td>79</td>
<td>66</td>
</tr>
<tr>
<td>0.50~5.00</td>
<td>73</td>
<td>60</td>
</tr>
<tr>
<td>5.00~30.0</td>
<td>73</td>
<td>60</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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17050798HKG-001 (CHARGING & LIGHT ON)
Date: 17.MAY.2017 18:05:08
**Phase:** Live / Neutral  
**Model No.:** SK LIGHTBOTTLE1  
**Worst Case:** Charging with LED On

### EDIT PEAK LIST (Final Measurement Results)

<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>Quasi Peak</td>
<td>172.5 kHz</td>
<td>46.20 L1</td>
</tr>
<tr>
<td>1</td>
<td>Quasi Peak</td>
<td>3.9615 MHz</td>
<td>33.42 N</td>
</tr>
<tr>
<td>1</td>
<td>Quasi Peak</td>
<td>4.2945 MHz</td>
<td>32.13 N</td>
</tr>
</tbody>
</table>

Date: 17.MAY.2017  18:04:31
5. Radiated Emission Measurements (Section 15.109 of 47 CFR Part 15)

5.1 Operating Environment

Temperature: 25°C ± 10°C  
Test Voltage: Powered by 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.

![Test Setup Diagram]

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 frequency spectrum from 30MHz to 1000MHz was investigated.

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</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</td>
<td>RADIALL</td>
<td>nm/ br5d/ sma 14m</td>
<td>Nil</td>
</tr>
</tbody>
</table>

5.4 Radiated Emission Limits

According to Section 15.109 of 47 CFR Part 15, except for Class A digital device, the field strength of radiated emission from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Class B Radiated Emission Limits:

<table>
<thead>
<tr>
<th>Frequency (MHz)</th>
<th>Field Strength (dBµV/m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>30-88</td>
<td>40.0</td>
</tr>
<tr>
<td>88-216</td>
<td>43.5</td>
</tr>
<tr>
<td>216-960</td>
<td>46.0</td>
</tr>
<tr>
<td>Above 960</td>
<td>54.0</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 Section 15.109 of 47 CFR Part 15: 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
Appendix B2: Radiated Emission Test Set-up

Front View
Devices subject to FCC Part 15, Subpart B verification (not certification) must be labelled with the following statement. The label can be affixed at any space external to the product except the battery door or detachable parts.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

In addition, for a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

– Reorient or relocate the receiving antenna.
– Increase the separation between the equipment and receiver.
– Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
– Consult the dealer or an experienced radio TV technician for help.

If shielded cables or other specialized accessories are necessary for the unit to achieve compliance, a statement similar to the following should be added:

Shielded cables must be used with this unit to ensure compliance with the Class B FCC limits.

Devices subject to FCC Part 15, Subpart B verification shall be labelled with an unique identifier. e.g. model number, serial number, etc. However, the identification shall not be of a format which could be confused with the FCC Identifier required on certified, notified or type accepted equipment. The importer or manufacturer shall maintain adequate identification records to facilitate positive identification for each verified device.