

## SAR Compliance Test Report

|                                                         |                                                                                                                                                                       |                                   |                                                                                  |
|---------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------------------------------------------------------------------|
| <b>Date of Report</b>                                   | 26/04/2021                                                                                                                                                            | <b>Client's Contact person:</b>   | Paul Johnston                                                                    |
| <b>Number of pages:</b>                                 | 4                                                                                                                                                                     | <b>Responsible Test engineer:</b> | Kirsi Kyllönen                                                                   |
| <b>Testing laboratory:</b>                              | <b>Verkotan Oy</b><br>Elektroniikkatie 17<br>90590 Oulu<br>Finland                                                                                                    | <b>Client:</b>                    | <b>WhiffAway Ltd</b><br>Queensmead Rd<br>HP10 9XA High Wycombe<br>United Kingdom |
| <b>Tested devices</b>                                   | <b>BrightShield Smart Occupancy Light</b>                                                                                                                             |                                   |                                                                                  |
| <b>Related reports:</b>                                 | -                                                                                                                                                                     |                                   |                                                                                  |
| <b>Testing has been carried out in accordance with:</b> | <b>47CFR §2.1093</b><br>Radiofrequency Radiation Exposure Evaluation: Portable Devices<br><br><b>FCC published RF exposure KDB procedures</b>                         |                                   |                                                                                  |
| <b>Documentation:</b>                                   | The test report must always be reproduced in full; reproduction of an excerpt only is subject to written approval of the testing laboratory                           |                                   |                                                                                  |
| <b>Test Results:</b>                                    | <b>The DUT complies with the requirements in respect of all parameters subject to the test.</b><br>The test results relate only to devices specified in this document |                                   |                                                                                  |

**Date and signatures:** 26.04.2021

For the contents:

**Laboratory Manager**

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## 1. SUMMARY OF SAR TEST REPORT

### 1.1 Test Details

Device under Test (DUT):

|                          |                                                                        |
|--------------------------|------------------------------------------------------------------------|
| <b>Product:</b>          | BrightShield Smart Occupancy Light                                     |
| <b>Manufacturer:</b>     | WhiffAway Ltd                                                          |
| <b>Model:</b>            | LOP / Z-LIGHT-W1                                                       |
| <b>Hardware Version:</b> | LOP_01                                                                 |
| <b>FCC ID:</b>           | 2AY4MZURNOL                                                            |
| <b>Document ID:</b>      | FCC SAR test report_BrightShield Smart Occupancy Light_ID4561_26042021 |

### 1.2 Evaluation Results

The device conforms to the requirements of the standards when the maximum output power is less than or equal to the Test Exclusion Threshold Limit.

| Regulator | System | Test Exclusion Threshold/<br>Exemption Limit at<br>10mm separation<br>[mW] | Maximum<br>Output<br>Power<br>[mW] | Result |
|-----------|--------|----------------------------------------------------------------------------|------------------------------------|--------|
| FCC       | BT LE  | 19                                                                         | 2.5                                | PASS   |

## 2. DESCRIPTION OF THE DEVICE UNDER TEST (DUT)

The DUT is a device monitoring and indicating with lights a toilet occupancy and reporting this information wirelessly to a backend system.

|                             |                                  |
|-----------------------------|----------------------------------|
| <b>Exposure Environment</b> | General population, uncontrolled |
|-----------------------------|----------------------------------|

### 2.1 Supported Frequency Bands and Operational Modes

| Bands | Modes of<br>Operation                       | Transmitter Frequency<br>Range<br>(MHz) |
|-------|---------------------------------------------|-----------------------------------------|
| 2.4   | Wirepas protocol stack<br>using BT LE radio | 2.402- 2.480                            |

## 2.2 Test Exclusions

FCC SAR test exclusion thresholds in 447498D01 are shown in a table below.

### Appendix A

#### *SAR Test Exclusion Thresholds for 100 MHz – 6 GHz and $\leq 50$ mm*

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table. The equation and threshold in 4.3.1 must be applied to determine SAR test exclusion.

| MHz  | 5  | 10 | 15  | 20  | 25  | mm                                      |
|------|----|----|-----|-----|-----|-----------------------------------------|
| 150  | 39 | 77 | 116 | 155 | 194 | SAR Test<br>Exclusion<br>Threshold (mW) |
| 300  | 27 | 55 | 82  | 110 | 137 |                                         |
| 450  | 22 | 45 | 67  | 89  | 112 |                                         |
| 835  | 16 | 33 | 49  | 66  | 82  |                                         |
| 900  | 16 | 32 | 47  | 63  | 79  |                                         |
| 1500 | 12 | 24 | 37  | 49  | 61  |                                         |
| 1900 | 11 | 22 | 33  | 44  | 54  |                                         |
| 2450 | 10 | 19 | 29  | 38  | 48  |                                         |
| 3600 | 8  | 16 | 24  | 32  | 40  |                                         |
| 5200 | 7  | 13 | 20  | 26  | 33  |                                         |
| 5400 | 6  | 13 | 19  | 26  | 32  |                                         |
| 5800 | 6  | 12 | 19  | 25  | 31  |                                         |

## 3. OUTPUT POWER

### 3.1 Maximum defined Output Power

| Transmission mode | Output power<br>[dBm] | Output power<br>[mW] |
|-------------------|-----------------------|----------------------|
| Wirepass          | 4.0                   | 2.5                  |

## 4. RESULTS

According Appendix A in 447498D01 the SAR test exclusion power threshold for 2450MHz is 19mW at 10 mm separation distance.

The maximum output power of the DUT is 2.5mW thus it is below the test exclusion threshold.