

## FCC SAR Exclusion Report

Product name : SC 358 E3 Connect  
Applicant : Lukas Hydraulik GmbH  
FCC ID : 2A3RJ-E3CS

Test report No. : 210300633 003 Ver 3.00

## Laboratory information

### Accreditation

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### Documentation

The test report must always be reproduced in full; reproduction of an excerpt only is subject to written approval of the testing laboratory. The documentation of the testing performed on the tested devices is archived for 10 years at Telefication Netherlands.

### Testing Location

|                           |                                                                                   |
|---------------------------|-----------------------------------------------------------------------------------|
| <b>Test Site</b>          | Kiwa Telefication BV                                                              |
| <b>Test Site location</b> | Wilmersdorf 50<br>7327 AC Apeldoorn<br>The Netherlands<br><br>Tel. +31 88998 3393 |
| <b>Test Site FCC</b>      | NL0001                                                                            |
| <b>CABID</b>              | NL0001                                                                            |

## Revision History

| Version | Date       | Remarks                                                                                  | By  |
|---------|------------|------------------------------------------------------------------------------------------|-----|
| v1.00   | 07-07-2021 | Release version                                                                          | R.T |
| v2.00   | 22-12-2021 | Updated FCC +ISED ID                                                                     | R.T |
| v3.00   | 23-03-2022 | Updated<br>Clause 1.4 from mobile to portable<br>Clause 1.4.1 updated Wi-Fi output power | R.T |

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## 1 General Description

### 1.1 Applicant

|                      |                                         |
|----------------------|-----------------------------------------|
| <b>Client name:</b>  | Lukas Hydraulik GmbH                    |
| <b>Address:</b>      | Weinstrasse 39, 91058 Erlangen, Germany |
| <b>Telephone:</b>    | +49 9131 / 698 - 274                    |
| <b>E-mail:</b>       | tlittwin@idexcorp.com                   |
| <b>Contact name:</b> | Thomas Littwin                          |

### 1.2 Manufacturer

|                           |                                             |
|---------------------------|---------------------------------------------|
| <b>Manufacturer name:</b> | Hurst Jaws of Life INC                      |
| <b>Address:</b>           | 711 North Post Road, 28150, NC, Shelby, USA |
| <b>Telephone:</b>         | +1 800 537 3645                             |
| <b>E-mail:</b>            | thorne@idexcorp.com                         |
| <b>Contact name:</b>      | Tammy Horne                                 |

### 1.3 Tested Equipment Under Test (EUT)

|                                |                       |
|--------------------------------|-----------------------|
| <b>Product name:</b>           | SC 358 E3 Connect     |
| <b>Brand name:</b>             | HURST Jaws of Life    |
| <b>FCC ID:</b>                 | 2A3RJ-E3CS            |
| <b>Product type:</b>           | Hydraulic Rescue Tool |
| <b>Model(s):</b>               | See next page         |
| <b>Batch and/or serial No.</b> | See next page         |
| <b>Software version:</b>       | -                     |
| <b>Hardware version:</b>       | -                     |
| <b>Date of receipt</b>         | 08-06-2021            |
| <b>Tests started:</b>          | 14-06-2021            |
| <b>Testing ended:</b>          | 17-06-2021            |

**Overview of variant models**

## Model overview

| <b>OEM/Variant</b> | <b>Description</b>    | <b>Trademark</b> | <b>Type Designation</b> |
|--------------------|-----------------------|------------------|-------------------------|
| Variant            | Hydraulic Rescue Tool | HURST            | S 378 E3 Connect        |
| Variant            | Hydraulic Rescue Tool | HURST            | S 789 E3 Connect        |
| Variant            | Hydraulic Rescue Tool | HURST            | S 799 E3 Connect        |
| Variant            | Hydraulic Rescue Tool | HURST            | SC 258 E3 Connect       |
| OEM                | Hydraulic Rescue Tool | HURST            | SC 358 E3 Connect       |
| Variant            | Hydraulic Rescue Tool | HURST            | SC 758 E3 Connect       |
| Variant            | Hydraulic Rescue Tool | HURST            | SP 333 E3 Connect       |
| Variant            | Hydraulic Rescue Tool | HURST            | SP 555 E3 Connect       |
| Variant            | Hydraulic Rescue Tool | HURST            | SP 777 E3 Connect       |

## 2 SAR exclusion Evaluation

### 2.1 Transmitter specifications

#### Transmitter 1 ( WIFI B )

| Variable (unit)                           | Value | Symbol                 |
|-------------------------------------------|-------|------------------------|
| Conducted time-averaged output power (mW) | 70,79 | <b>P</b>               |
| Time-averaged output power ERP (mW)       | 70,79 | <b>P<sub>ERP</sub></b> |
| Operating frequency range (MHz)           | 2412  | <b>f</b>               |
| Separation distance (cm)                  | 3.5   | <b>d</b>               |
| Separation distance (m)                   | 0.035 | <b>R</b>               |

**Note:** The output power of the WIFI B module can found in test report 210300633 001

#### Transmitter 2 ( BT )

| Variable (unit)                           | Value | Symbol                 |
|-------------------------------------------|-------|------------------------|
| Conducted time-averaged output power (mW) | 10    | <b>P</b>               |
| Time-averaged output power ERP (mW)       | 10    | <b>P<sub>ERP</sub></b> |
| Operating frequency range (MHz)           | 2402  | <b>f</b>               |
| Separation distance (cm)                  | 3.5   | <b>D</b>               |
| Separation distance (m)                   | 0.035 | <b>R</b>               |

**Note:** The output power of the BT module can be found in test report test report No. RSHD200218007-00A

## 2.2 Evaluation calculations

### Transmitter 1

Transmitter 1 is evaluated according to method B of KDB 447498 D04 v01

Method B:

$$P_{th}(mW) = \begin{cases} ERP_{20cm} \left( \frac{d}{20cm} \right)^x & d \leq 20 \text{ cm} \\ ERP_{20cm} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$$

Where:

$$x = -\log_{10} \left( \frac{60}{ERP_{20cm} * \sqrt{f}} \right)$$

$$ERP_{20cm}(mW) = \begin{cases} 2040 * f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6.0 \text{ GHz} \end{cases}$$

Filling in the values of d (cm) and f (GHz) as reported in clause 2.1 in the equations above gives the result:

$P_{th} = 113 \text{ mW}$

P or  $P_{ERP} = 70.79 \text{ mW}$  which is less than the calculated  $P_{th}$  so the EUT complies with the SAR based exemption requirement.

**Transmitter 2**

Transmitter 2 is evaluated according to method B of KDB 447498 D04 v01

Method B:

$$P_{th}(mW) = \begin{cases} ERP_{20cm} \left( \frac{d}{20cm} \right)^x & d \leq 20 \text{ cm} \\ ERP_{20cm} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$$

Where:

$$x = -\log_{10} \left( \frac{60}{ERP_{20cm} * \sqrt{f}} \right)$$

$$ERP_{20cm}(mW) = \begin{cases} 2040 * f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6.0 \text{ GHz} \end{cases}$$

Filling in the values of d (cm) and f (GHz) as reported in clause 2.1 in the equations above gives the result:

$P_{th} = 113 \text{ mW}$

P or  $P_{ERP} = 10 \text{ mW}$  which is less than the calculated  $P_{th}$  so the EUT complies with the SAR based exemption requirement.

## **2.3 Conclusion**

Since the EUT does not cause exposure in excess of the general population limit, no additional mitigation actions are required.