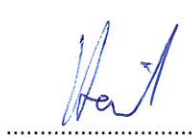


| <b>EMC TEST REPORT</b><br><b>FCC CFR Title 47 / Chapter I / Subchapter A / Part 15 / Subpart B</b><br><b>ISED ICES-003 Issue 7</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Report Reference No</b>                                                                                                         | G0M-2209-1690-EF0115B-V01                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Testing Laboratory</b>                                                                                                          | Eurofins Product Service GmbH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Address</b>                                                                                                                     | Storkower Str. 38c<br>15526 Reichenwalde<br>Germany                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Accreditation</b>                                                                                                               |     <p> A2LA - Registration number: 1983.01 (ISED)<br/> ISED wireless device testing laboratory: CN 3470A<br/> DAKKS - Registration number : D-PL-12092-01-04 (FCC)<br/> FCC Filed Test Laboratory, Reg.-No.: 96970 </p> |
| <b>Applicant</b>                                                                                                                   | digades GmbH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Address</b>                                                                                                                     | Äußere Weberstraße 20<br>02763 Zittau<br>DE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Test Specification Standard(s)</b>                                                                                              | FCC CFR Title 47 / Chapter I / Subchapter A / Part 15 / Subpart B<br>ISED ICES-Gen Issue 1 ; Amendment 1 (February 2021)<br>ISED ICES-003 Issue 7<br>ANSI C63.4:2014+A1:2017                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Non-Standard Test Method</b>                                                                                                    | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Equipment under Test (EUT):</b>                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Product Description</b>                                                                                                         | Head-up display for motorcycle helmets                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Model(s)</b>                                                                                                                    | TILSBERK Head-Up Display                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Additional Model(s)</b>                                                                                                         | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Brand Name(s)</b>                                                                                                               | TILSBERK Head-Up Display                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Hardware Version(s)</b>                                                                                                         | HW3622                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Software Version(s)</b>                                                                                                         | SW0201                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>FCC-ID</b>                                                                                                                      | QNFHUD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>IC</b>                                                                                                                          | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Test Result</b>                                                                                                                 | <b>PASSED</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                  |                                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|--------------------------------------------------------------------------------------|
| <b>Possible test case verdicts:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                  |                                                                                      |
| required by standard but not tested                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | N/T              |                                                                                      |
| not required by standard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | N/R              |                                                                                      |
| required by standard but not appl. to test object                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | N/A              |                                                                                      |
| test object does meet the requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | P(PASS)          |                                                                                      |
| test object does not meet the requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | F(FAIL)          |                                                                                      |
| <b>Testing:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                  |                                                                                      |
| Date of receipt of test item                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2022-12-19       |                                                                                      |
| <b>Report:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |                                                                                      |
| Compiled by                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Stephan Liebich  |                                                                                      |
| Tested by (+ signature)<br>(Responsible for Test)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Stephan Liebich  |   |
| Approved by (+ signature)<br>(Senior EMC Test Technician)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Matthias Handrik |  |
| Date of Issue                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 2023-02-20       |                                                                                      |
| Total number of pages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 43               |                                                                                      |
| <b>General Remarks:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                  |                                                                                      |
| <p>The test results presented in this report relate only to the object tested.</p> <p>The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.</p> <p>This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |                                                                                      |
| <p><b>Statement concerning the uncertainty of the measurement systems used for decisions on conformity (decision rule):</b></p> <p>The Decision Rule is applied on the basis of CISPR 16-4-2 and/or IEC 61000-4-x (TR 61000-1-6) and their national publications. These standards provide guidance on how to calculate and apply measurement uncertainty whilst providing maximum uncertainties allowance. In all cases due consideration will be given to ILAC-G8:09/2019.</p> <p>Compliance or non-compliance with a disturbance limit is determined in the following manner.</p> <ul style="list-style-type: none"> <li>- If <math>U_{lab}</math> is less than or equal to <math>U_{cispr}</math>, then: compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit; non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.</li> <li>- If <math>U_{lab}</math> is greater than <math>U_{cispr}</math>, then: compliance is deemed to occur if no measured disturbance level, increased by <math>(U_{lab} - U_{cispr})</math>, exceeds the disturbance limit; non-compliance is deemed to occur if any measured disturbance level, increased by <math>(U_{lab} - U_{cispr})</math>, exceeds the disturbance limit.</li> </ul> <p>Where appropriate for the test, for example for EMC pulsed immunity tests, the laboratory has demonstrated, by calibrating its equipment and facilities, that it complies with the above requirements and therefore no allowance of uncertainties has been given to the tolerances.</p> |                  |                                                                                      |
| <b>Additional Comments:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                  |                                                                                      |
| None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                  |                                                                                      |

## ABBREVIATIONS AND ACRONYMS

| Acronyms         |                                                     |
|------------------|-----------------------------------------------------|
| Acronym          | Description                                         |
| EUT              | Equipment Under Test                                |
| FCC              | Federal Communications Commission                   |
| ISED             | Innovation, Science and Economic Development Canada |
| T <sub>NOM</sub> | Nominal operating temperature                       |
| V <sub>NOM</sub> | Nominal supply voltage                              |

## VERSION HISTORY

| Version History |            |                 |            |
|-----------------|------------|-----------------|------------|
| Version         | Issue Date | Remarks         | Revised By |
| 01              | 2023-02-20 | Initial Release | -          |

## REPORT INDEX

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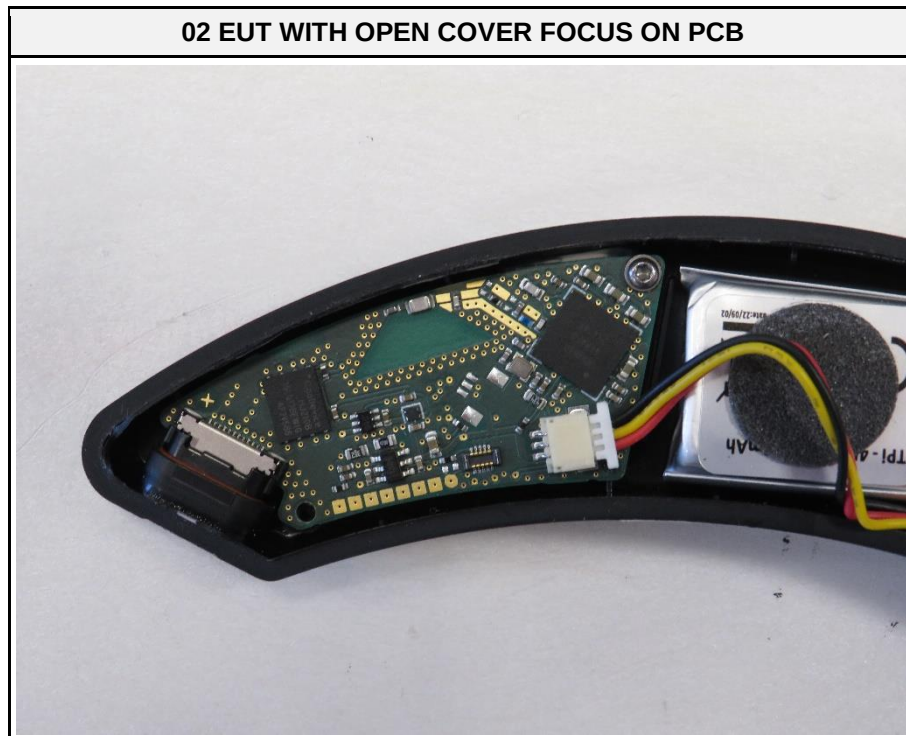
## 1 Equipment (Test Item) Under Test

|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                 |               |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|---------------|
| Description                      | Head-up display for motorcycle helmets                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                 |               |
| Intended Use                     | The TILSBERK Head-Up Display gives you the freedom to decide for yourself what is important during your motorcycle ride. The individually configurable head-up display was developed for your independence and safety. You no longer have to look down while riding to read the speed, navigation or compass. The information is displayed directly in front of your eyes. So you always have always have everything in view. |                                                                                 |               |
| Model                            | TILSBERK Head-Up Display                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                 |               |
| Additional Model(s)              | None                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                 |               |
| Brand Name(s)                    | TILSBERK Head-Up Display                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                 |               |
| Hardware Version(s)              | HW3622                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                 |               |
| Software Version(s)              | SW0201                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                 |               |
| Number of tested samples         | 1                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                 |               |
| Sample Identification            | EUT #                                                                                                                                                                                                                                                                                                                                                                                                                         | Sample-ID                                                                       | Serial Number |
|                                  | EUT 1                                                                                                                                                                                                                                                                                                                                                                                                                         | 42438                                                                           | 0003162       |
| EUT Dimensions [cm]              | 13.96 x 4.93 x 2.18                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                 |               |
| FCC-ID                           | QNFHUD                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                 |               |
| IC                               | --                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                 |               |
| Class                            | Class B                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                 |               |
| Equipment type                   | Table top                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                 |               |
| Highest internal frequency [MHz] | 64 (Radio frequency 2480MHz: Bluetooth Low Energy)                                                                                                                                                                                                                                                                                                                                                                            |                                                                                 |               |
| Protective Earth                 | No                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                 |               |
| Functional Earth                 | No                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                 |               |
| Radio Module                     | Type                                                                                                                                                                                                                                                                                                                                                                                                                          | Bluetooth Low Energy (BLE)                                                      |               |
|                                  | Model                                                                                                                                                                                                                                                                                                                                                                                                                         | nRF52840-QIAA                                                                   |               |
|                                  | Manufacturer                                                                                                                                                                                                                                                                                                                                                                                                                  | NORDIC Semiconductor                                                            |               |
|                                  | FCC-ID                                                                                                                                                                                                                                                                                                                                                                                                                        | --                                                                              |               |
|                                  | IC                                                                                                                                                                                                                                                                                                                                                                                                                            | --                                                                              |               |
| Supply Voltage                   | V <sub>NOM</sub>                                                                                                                                                                                                                                                                                                                                                                                                              | 3.7 V DC via internal rechargeable lithium battery<br>5 V DC via USB connection |               |
| AC/DC-Adaptor                    | None                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                 |               |
| Manufacturer                     | digades GmbH<br>Äußere Weberstraße 20<br>02763 Zittau<br>DE                                                                                                                                                                                                                                                                                                                                                                   |                                                                                 |               |
| Factory                          | digades GmbH<br>Äußere Weberstraße 20<br>02763 Zittau<br>DE                                                                                                                                                                                                                                                                                                                                                                   |                                                                                 |               |

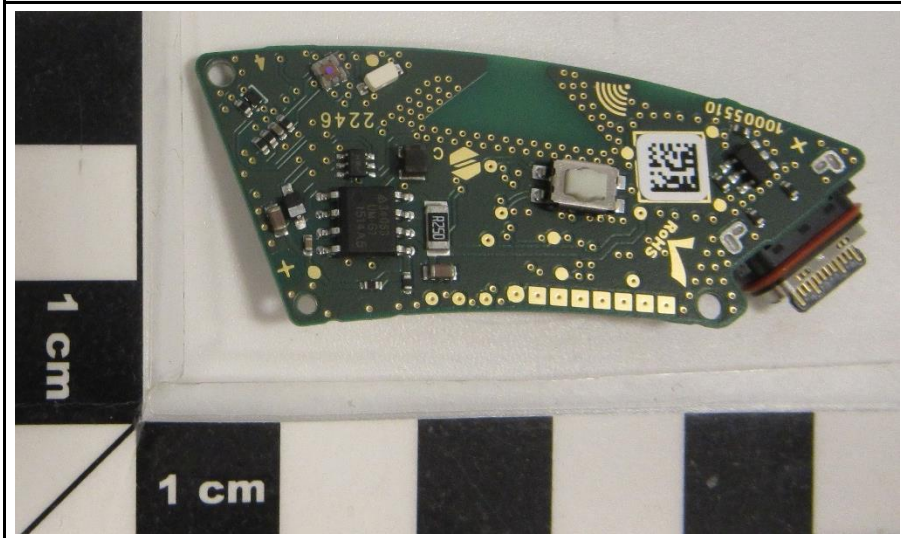
## 1.1 Equipment Ports

| Name         | Type                                              | Attributes                                                                            | Comment                                |
|--------------|---------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------|
| USB          | DC/IO                                             | Count: 1<br>Cable length [m]: 1<br>Direction: IO<br>Service only: No<br>Shielded: Yes | Charging only;<br>no data transmission |
| Description: |                                                   |                                                                                       |                                        |
| AC           | AC mains power input/output port                  |                                                                                       |                                        |
| DC           | DC power input/output port                        |                                                                                       |                                        |
| BAT          | DC power input port connected to external battery |                                                                                       |                                        |
| IO           | Input/Output port                                 |                                                                                       |                                        |
| TP           | Telecommunication port                            |                                                                                       |                                        |
| NE           | Non-electrical port                               |                                                                                       |                                        |

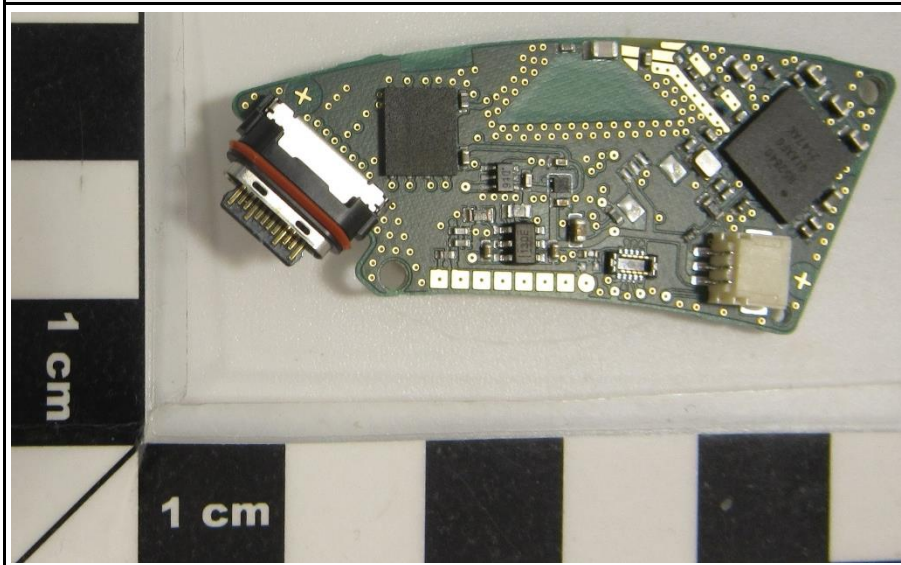
## 1.2 Equipment Photos - Internal



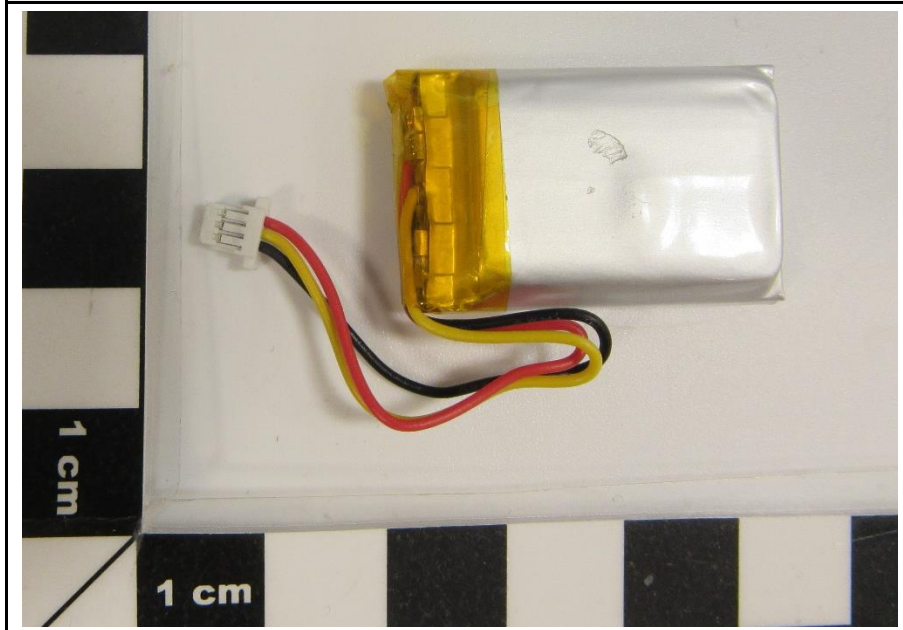
03 EUT PCB BOTTOM SIDE



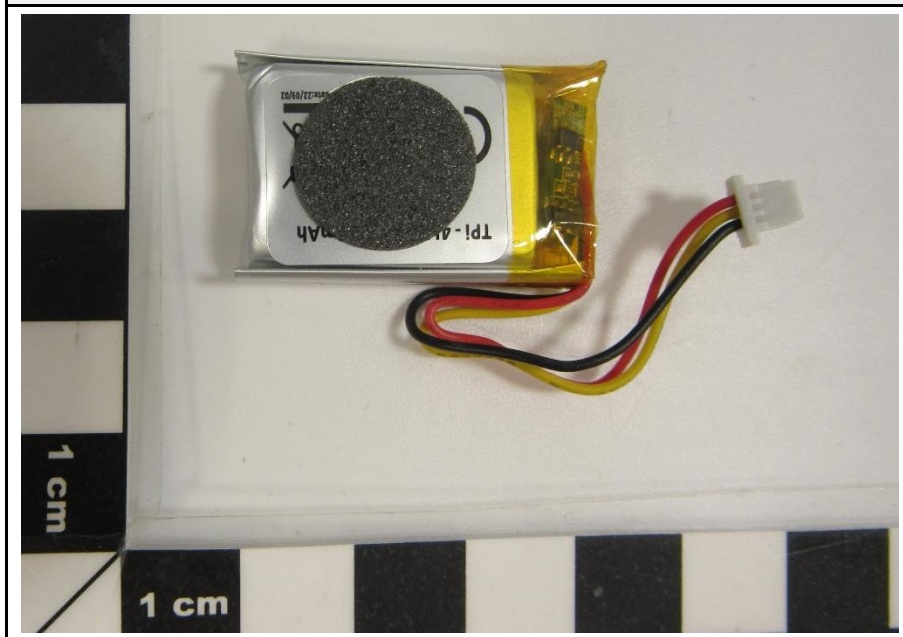
04 EUT PCB TOP SIDE



05 EUT BATTERY BOTTOM SIDE

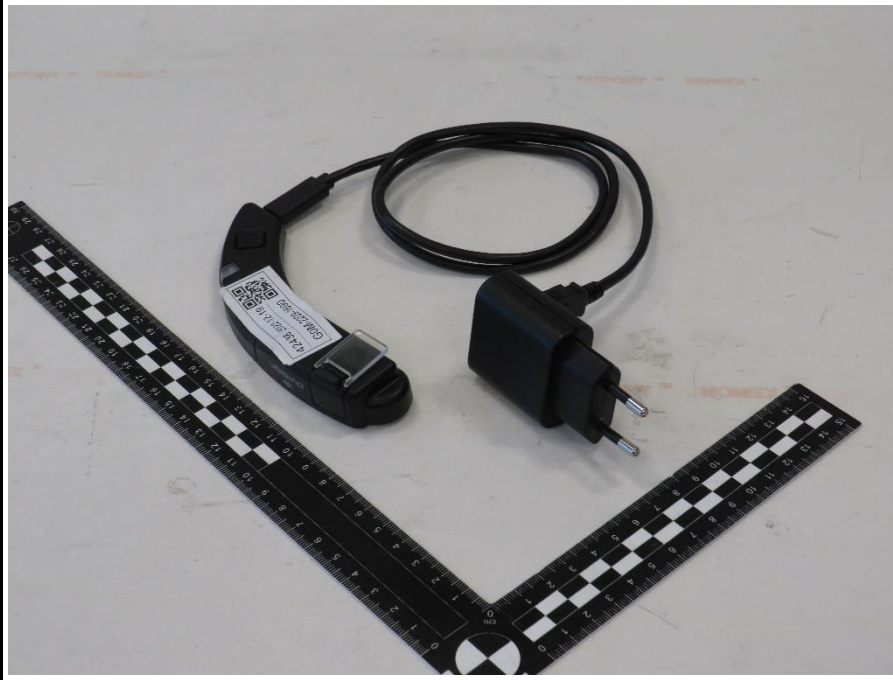


06 EUT BATTERY TOP SIDE

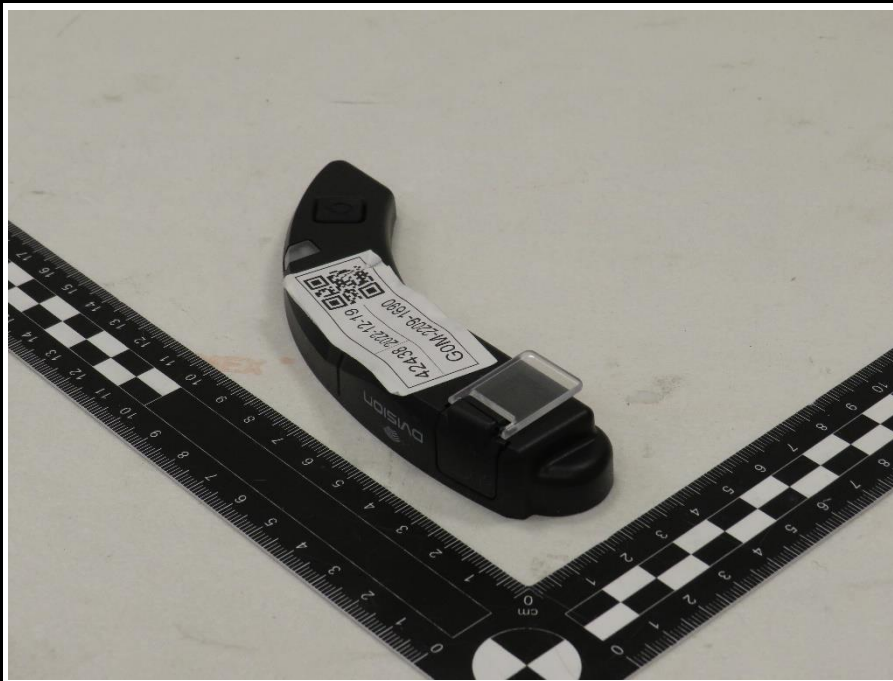


### 1.3 Equipment Photos - External

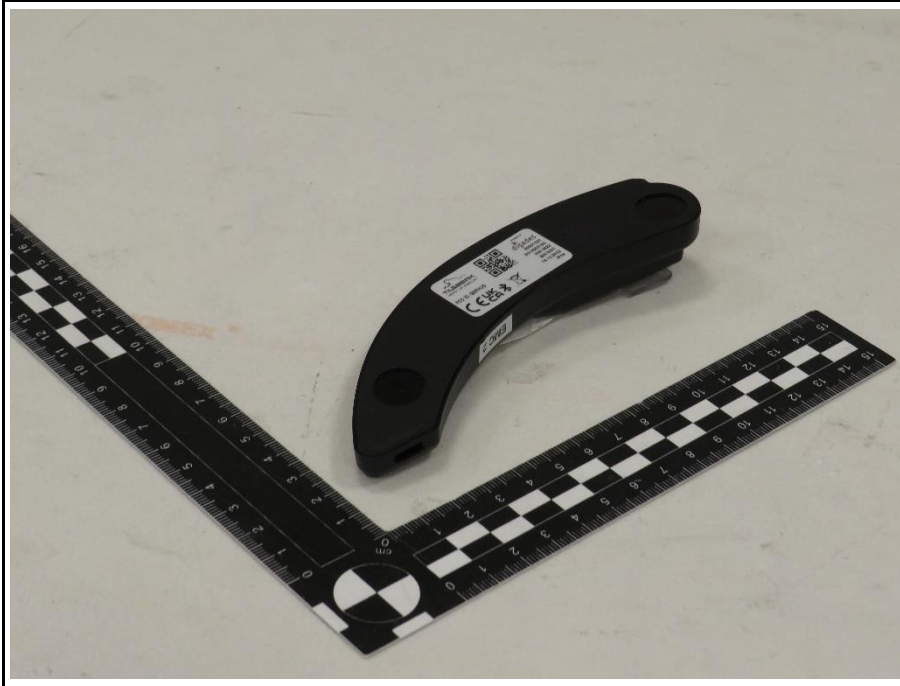
**01 EUT WITH SUPPORT EQUIPMENT IN PERSPECTIVE**



**02 EUT IN PERSPECTIVE I**



03 EUT IN PERSPECTIVE II



04 EUT TOP SIDE



05 EUT REAR SIDE



06 EUT LEFT SIDE



07 EUT RIGHT SIDE



08 EUT BOTTOM SIDE



09 EUT FRONT SIDE



10 EUT FRONT SIDE WITH TILSBERK BRAND NAME



11 EUT LABEL



#### 1.4 Support Equipment

| Product Type | Device               | Manufacturer | Model          | Comment                                        |
|--------------|----------------------|--------------|----------------|------------------------------------------------|
| AE           | AC/DC-adapter        | BlackBerry   | PSM03E-050Q-3  | --                                             |
| AE/MON       | Smartphone           | Apple        | iPhone 12 mini | Customer Support Equipment                     |
| SW           | App                  | DVISION      | 3.162          | Firmware 1.2.14;<br>Customer Support Equipment |
| CBL          | USB cable            | Copartner    | LL84201        | 1 m                                            |
| Description: |                      |              |                |                                                |
| AE           | Auxiliary Equipment  |              |                |                                                |
| SIM          | Simulator            |              |                |                                                |
| MON          | Monitoring Equipment |              |                |                                                |
| CBL          | Connecting Cable     |              |                |                                                |
| SW           | Software             |              |                |                                                |
| Comment: --  |                      |              |                |                                                |

#### 1.5 Operational Modes

| Mode #   | Description                                                                                                                                         |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| 1        | Permanent connection to Smartphone via BLE connection. App shows status data of the EUT display on Smartphone.<br>Display on and shows status data. |
| 2        | Internal battery is charging via USB connection. BLE is off.<br>Display on and shows status data.                                                   |
| Comment: |                                                                                                                                                     |

#### 1.6 EUT Configuration

| Configuration # | Description                                                                                                                                                                                                                                                    |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1               | EUT is powered by 3.7 V DC via internal rechargeable lithium battery.<br>EUT is connected with Smartphone via BLE connection                                                                                                                                   |
| 2               | EUT is powered by 5 V DC via USB connection.<br>EUT is connected with AC/DC-adapter via USB cable.<br>AC/DC-adapter is powered by external laboratory power supply unit.<br>Cable shield of the USB cable is connected on both sides of EUT and AC/DC-adapter. |
| Comment:        |                                                                                                                                                                                                                                                                |

## 1.7 Sample emission level calculation

The following is a description of terms and a sample calculation, as appears in the radiated emissions data table. The numbers used in the calculation are for example only. There is no direct correlation to the specific data taken for the product described in this document:

Reading:

This is the reading obtained on the spectrum analyser in dBµV. Any external preamplifiers used are taken into account through internal analyser settings.

A.F.:

This is the antenna factor for the receiving antenna. It is a conversion factor, which converts electric fields strengths to voltages, which can be measured directly on the spectrum analyser. It is treated as a loss in dB. Cable losses have been included with the A.F. to simplify the calculations. The antenna factor is used in calculations as follows:

$$\text{Reading on Analyser (dB}\mu\text{V)} + \text{A.F. (dB/m)} = \text{Net field strength (dB}\mu\text{V/m)}$$

Net:

This is the net field strength measurement (as shown above).

Limit:

This is the FCC Class B radiated emission limit (in units of dBµV/m). The FCC limits are given in units of µV/m. The following formula is used to convert the units of µV/m to dBµV/m:

$$\text{Limit (dB}\mu\text{V/m)} = 20 \cdot \log(\mu\text{V/m})$$

Margin:

This is the margin of compliance below the FCC limit. The units are given in dB. A negative margin indicates the emission was below the limit. A positive margin indicates that the emission exceeds the limit.

Example only:

|                      |               |   |                           |           |
|----------------------|---------------|---|---------------------------|-----------|
| Reading + AF         | = Net Reading | : | Net reading - FCC limit   | = Margin  |
| +21.5 dBµV + 26 dB/m | = 47.5 dBµV/m | : | 47.5 dBµV/m - 57.0 dBµV/m | = -9.5 dB |

## 2 Result Summary

| Title 47 CFR Part 15B, ISED ICES-003 Issue 7 |                                   |                             |        |         |
|----------------------------------------------|-----------------------------------|-----------------------------|--------|---------|
| Reference                                    | Requirement                       | Reference Method            | Result | Remarks |
| Emission                                     |                                   |                             |        |         |
| FCC 15.109<br>ICES-003, 3.2.2                | Radiated emissions                | ANSI C63.4:2014<br>+A1:2017 | PASS   | --      |
| FCC 15.107<br>ICES-003, 3.2.1                | AC power line conducted emissions | ANSI C63.4:2014<br>+A1:2017 | PASS   | --      |
| Comment:                                     |                                   |                             |        |         |

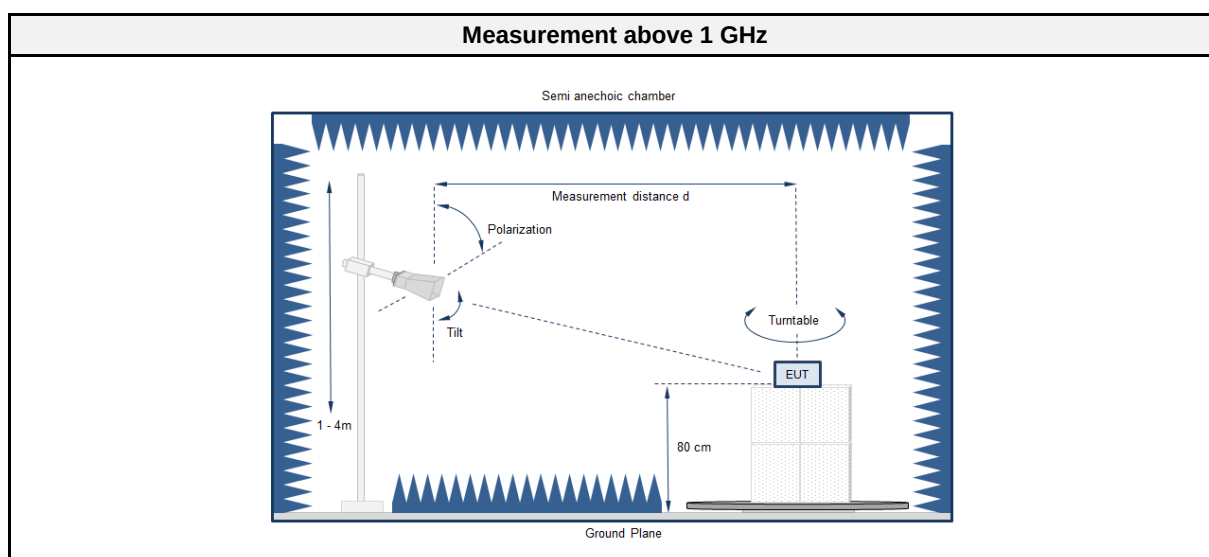
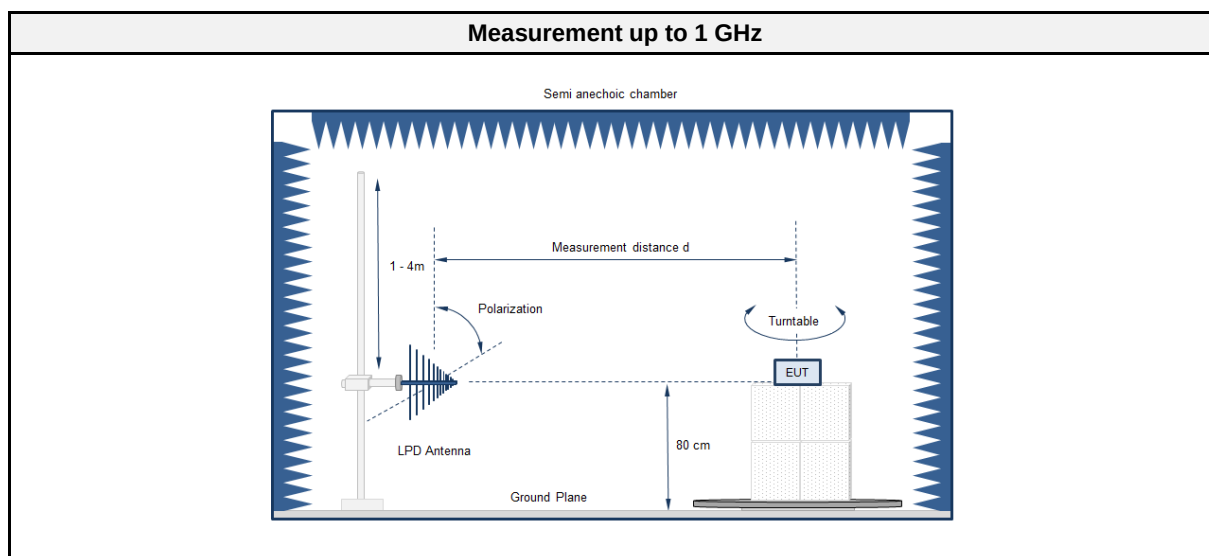
| Possible Test Case Verdicts |                                              |
|-----------------------------|----------------------------------------------|
| PASS                        | Test object does meet the requirements       |
| FAIL                        | Test object does not meet the requirements   |
| N/T                         | Required by standard but not tested          |
| N/R                         | Not required by standard for the test object |

## 2.1 Test Conditions and Results - Radiated emissions acc. to ANSI C63.4

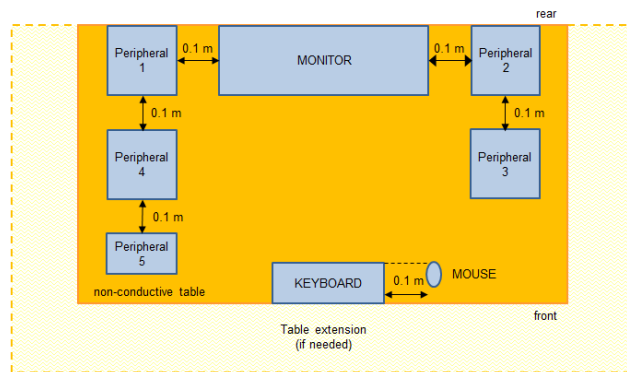
### 2.1.1 Information

| Test Information                 |                                   |
|----------------------------------|-----------------------------------|
| Reference                        | FCC 15.109, ICES-003, 3.2.2       |
| Reference method                 | ANSI C63.4:2014+A1:2017 Section 8 |
| Equipment class                  | Class B                           |
| Equipment type                   | Table top / Floor standing        |
| Highest internal frequency [MHz] | 2480                              |
| Measurement range                | 30 MHz to 13000 MHz               |
| Temperature [°C]                 | 20 – 22                           |
| Humidity [%]                     | 27 – 33                           |
| Operator                         | Stephan Liebich                   |
| Date                             | 2023-02-16                        |

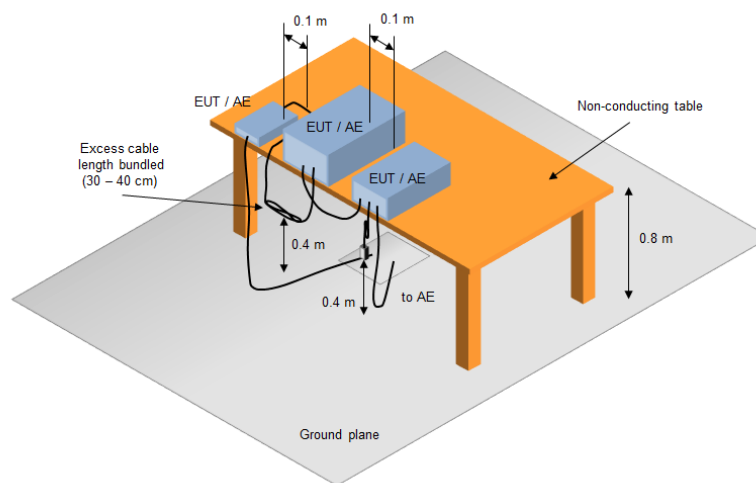
### 2.1.2 Setup *Table top*:



### Equipment placement - Table top



### Test Setup



### 2.1.3 Equipment

| Test Software |                  |            |          |
|---------------|------------------|------------|----------|
| Description   | Manufacturer     | Name       | Version  |
| EMC Software  | DARE Instruments | Radimation | 2020.1.8 |

| Test Equipment           |                                |                      |            |           |          |
|--------------------------|--------------------------------|----------------------|------------|-----------|----------|
| Description              | Manufacturer                   | Model                | Identifier | Cal. Date | Cal. Due |
| Anechoic chamber (NSA)   | Frankonia                      | AC1                  | EF00062    | 2022-11   | 2025-11  |
| Anechoic chamber (SVSWR) | Frankonia                      | AC 1                 | EF01011    | 2022-11   | 2023-11  |
| Programmable AC Source   | Chroma ATE Inc.                | 61604                | EF01068    | 2021-07   | 2023-07  |
| Horn Antenna             | Schwarzbeck                    | BBHA9120D            | EF00018    | 2022-12   | 2025-12  |
| EMI Test Receiver        | Rohde & Schwarz Vertriebs GmbH | ESU8                 | EF00379    | 2022-10   | 2023-10  |
| Spectrum analyzer        | Rohde & Schwarz GmbH & Co. KG  | FSU43                | EF01631    | 2022-08   | 2023-08  |
| Trilog Broadband Antenna | Schwarzbeck                    | VULB 9168            | EF01824    | 2022-10   | 2023-10  |
| Climatic Sensor          | Embedded Data Systems, LLC.    | 2800100000254<br>17E | EF01054    | 2022-04   | 2023-04  |

### 2.1.4 Procedure

| Exploratory measurement Table top                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"> <li>The EUT was placed on a non-conductive table at a height of 0.8m.</li> <li>The EUT and support equipment, if needed, were set up to simulate typical usage.</li> <li>Cables, of type and length specified by the manufacturer, were connected to at least one port of each type and were terminated by a device or simulating load of actual usage.</li> <li>The antenna was placed at a distance of 3m.</li> <li>The received signal was monitored at the measurement receiver.</li> <li>This procedure has to be performed in both antenna polarizations, horizontal and vertical.</li> <li>The arrangement of the equipment with the maximum emission level is shown on the setup picture at item 2.1.2</li> </ol> |

| Final measurement 3m Table top                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"> <li>The EUT was placed on a 0.8 m non-conductive table at a 3m distance from the receive antenna. The antenna output was connected to the measurement receiver.</li> <li>A broadband hybrid antenna was used for the frequency range 30 – 1000 MHz. Above 1 GHz the antenna was placed on an adjustable height antenna mast. If required, in the range 1- 18 GHz a double ridged broadband horn antenna was used, from 18 – 26.5 GHz the AT4560 and above 26.5 GHz the antenna CBL26402075.</li> <li>The EUT and cable arrangement were based on the exploratory measurement results.</li> <li>Emissions were maximized at each frequency by rotating the EUT and adjusting the receive antenna height and polarization. The maximum values were recorded.</li> <li>The test data of the worst-case conditions were recorded and shown on the next pages.</li> </ol> |

### 2.1.5 Limits

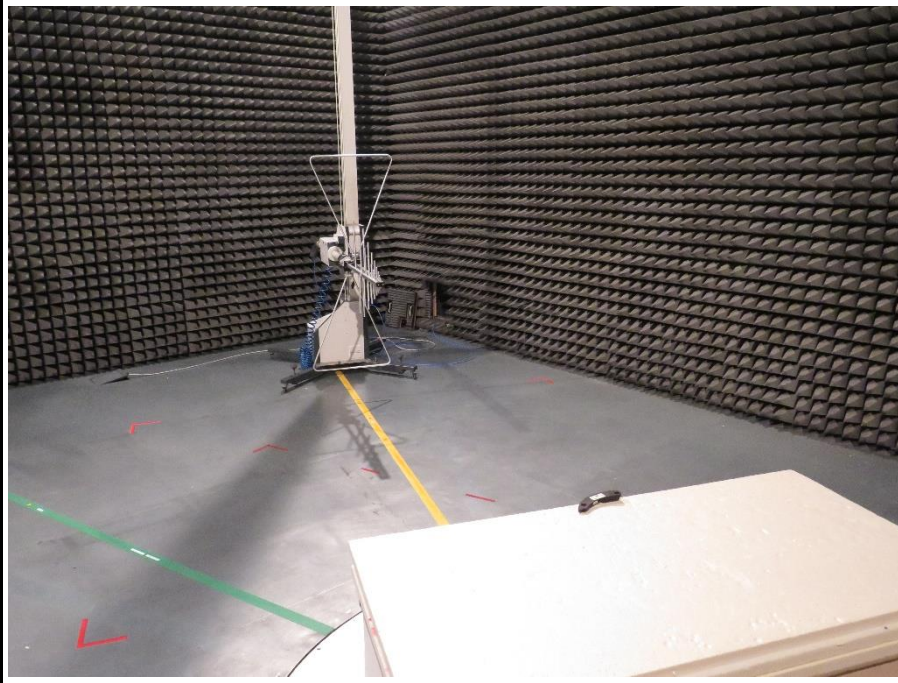
| Class B @ 3 m      |            |                   |
|--------------------|------------|-------------------|
| Frequency<br>[MHz] | Detector   | Limit<br>[dBμV/m] |
| 30 - 88            | Quasi-peak | 40                |
| 88 - 216           | Quasi-peak | 43.5              |
| 216 - 960          | Quasi-peak | 46                |
| 960 - 1000         | Quasi-peak | 54                |
| > 1000             | Peak       | 74                |
|                    | Average    | 54                |

### 2.1.6 Results

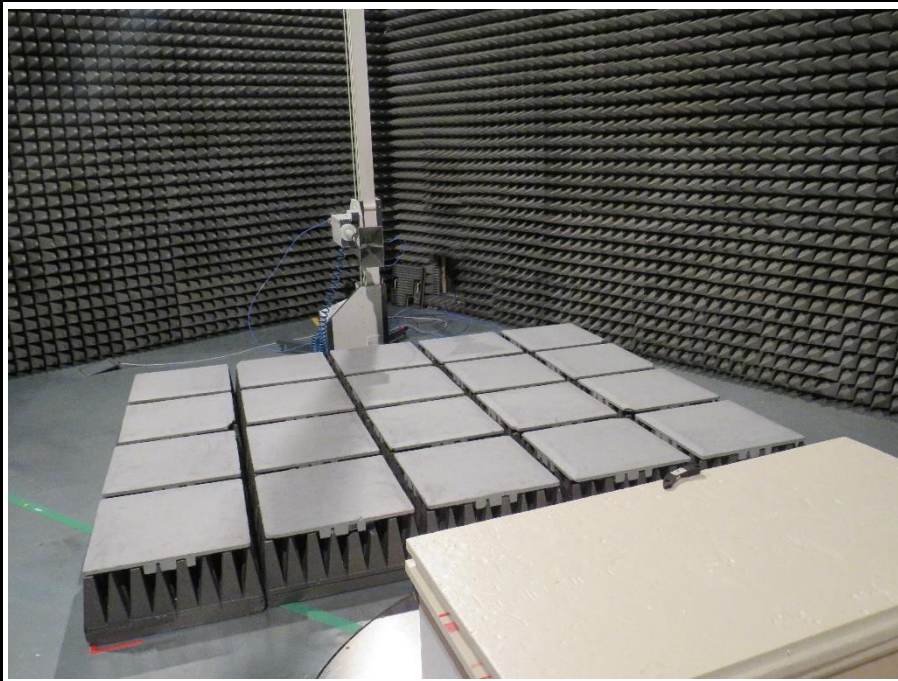
| Results          |                   |         |          |
|------------------|-------------------|---------|----------|
| Operational mode | EUT Configuration | Verdict | Remark   |
| 1                | 1                 | PASS    | 3.7 V DC |
| 2                | 2                 | PASS    | 5 V DC   |
| Comment: --      |                   |         |          |

### 2.1.7 Setup Photos

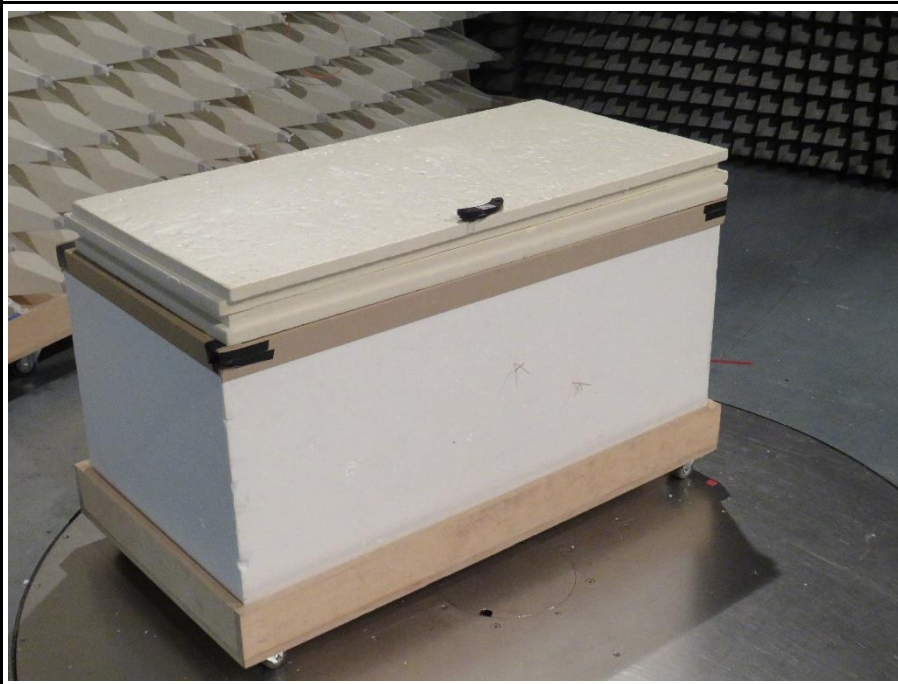
**01 TEST SETUP - 30 MHz to 1 GHz - CONFIGURATION 1**



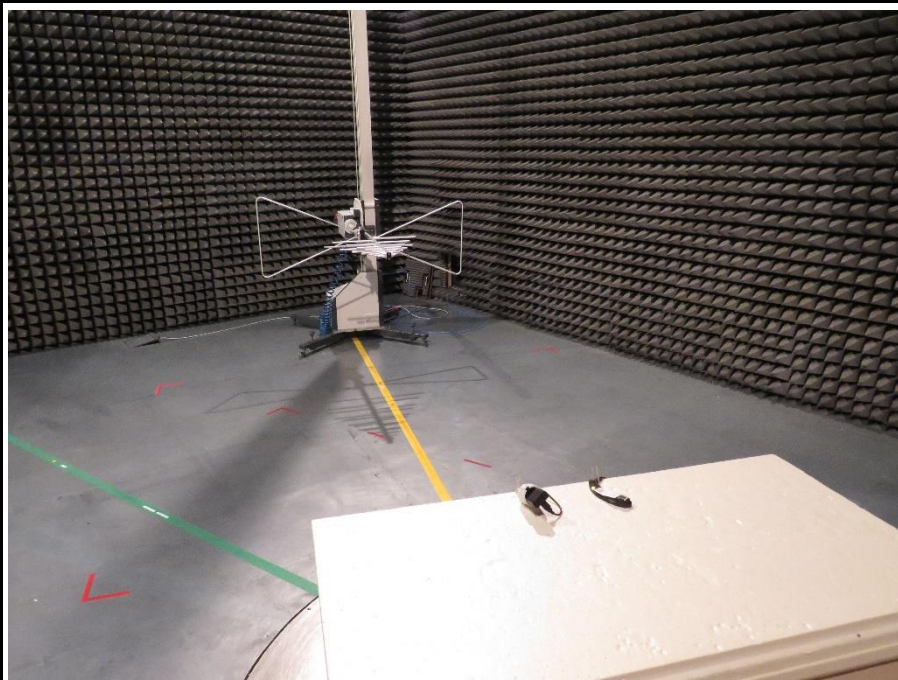
**02 TEST SETUP - 1 GHz to 13 GHz - CONFIGURATION 1**



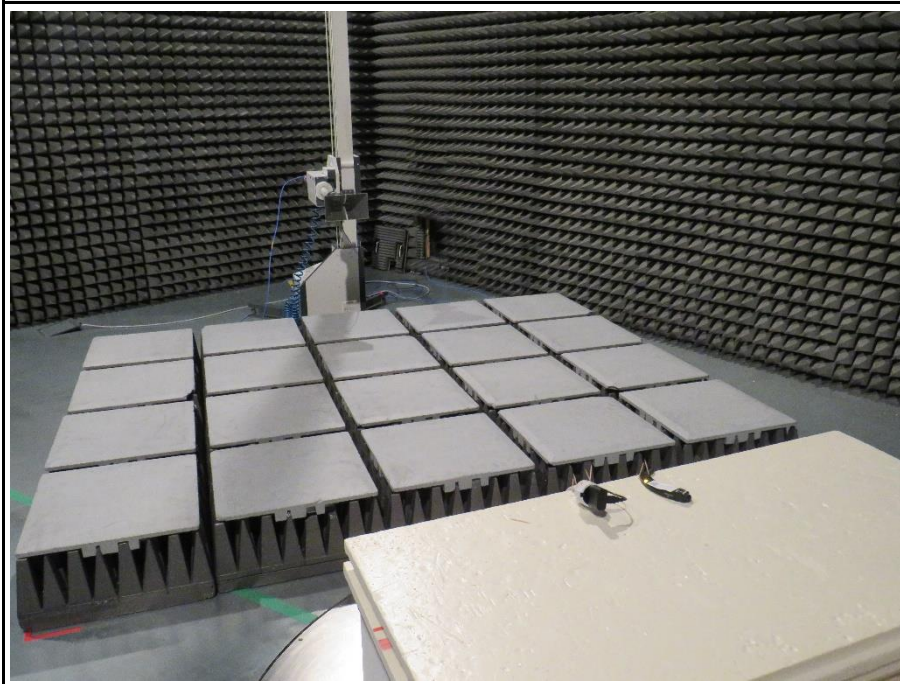
**03 TEST SETUP - FOCUS - CONFIGURATION 1**



**04 TEST SETUP - 30 MHz to 1 GHz - CONFIGURATION 2**



**05 TEST SETUP - 1 GHz to 13 GHz - CONFIGURATION 2**



**06 TEST SETUP - FOCUS - CONFIGURATION 1**



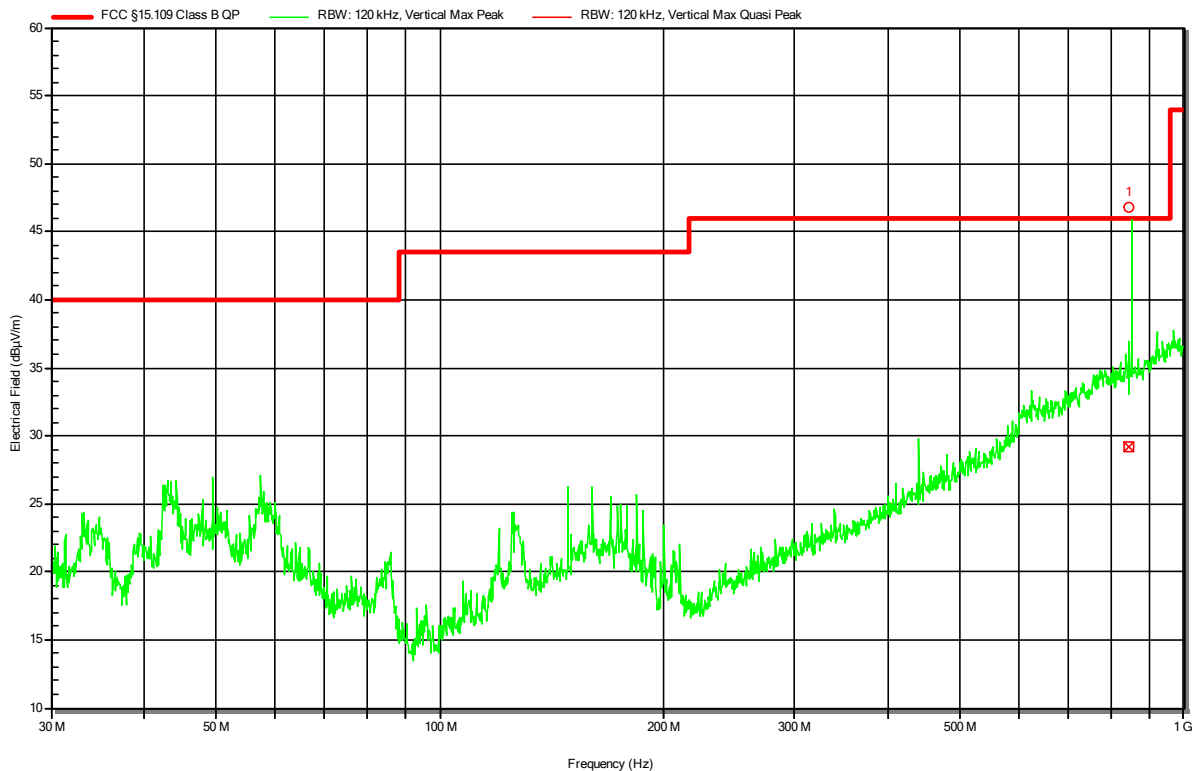
## 2.1.8 Records

### Radiated emissions according to FCC part 15B

Project Number: G0M-2209-1690  
 Applicant: digades GmbH  
 Model Description: Head-up display for motorcycle helmets  
 Model: TILSBERK Head-Up Display  
 Test Sample ID: 42438  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Neuner  
 Test Date: 2023-02-16  
 Operating Conditions: ambient temperature: 23 °Celsius  
 power input: 3.7 V DC via internal rechargeable lithium battery  
 Antenna: Schwarzbeck VULB 9168, Vertical  
 Measurement Distance: 3m  
 Operational Mode: 1  
 EUT Configuration: 1  
 Note 1: --

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RadiMation



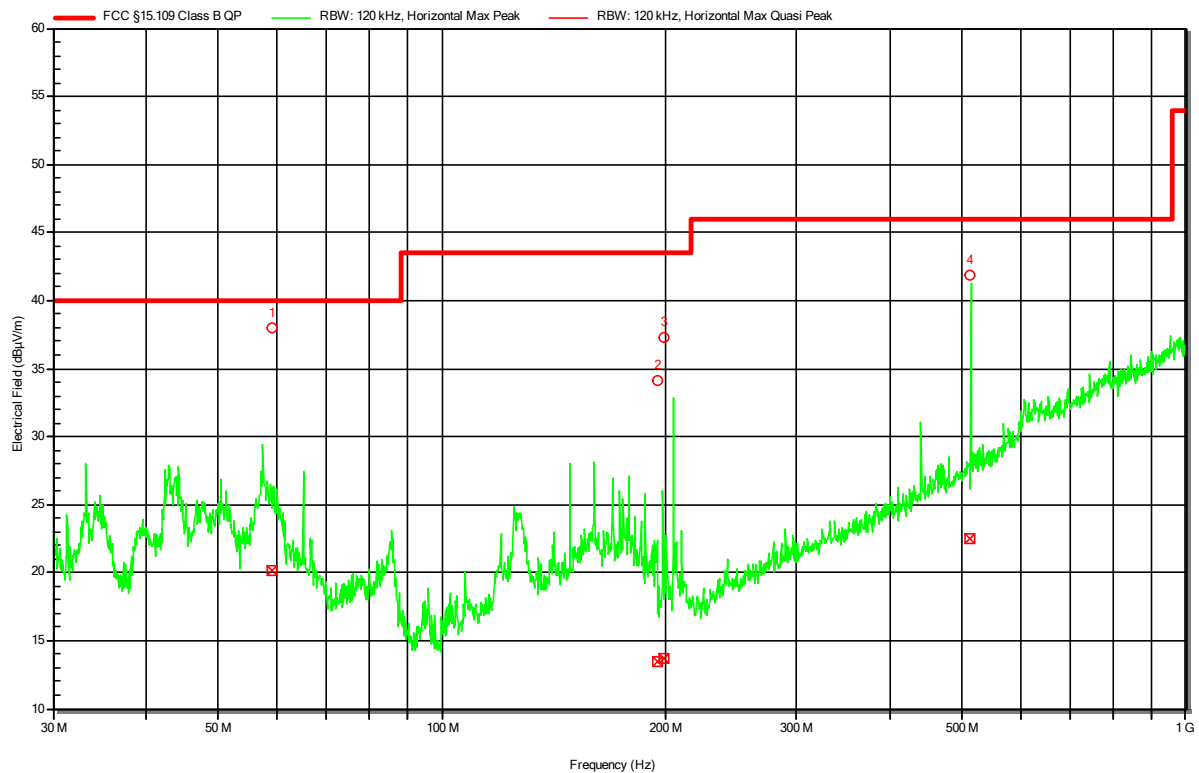
| Peak Number | Frequency  | Quasi-Peak   | Quasi-Peak Limit | Quasi-Peak Difference | Quasi-Peak Status | Angle     | Height |
|-------------|------------|--------------|------------------|-----------------------|-------------------|-----------|--------|
| 1           | 842.76 MHz | 29.22 dBµV/m | 46.02 dBµV/m     | -16.8 dB              | Pass              | 0 degrees | 1 m    |

## Radiated emissions according to FCC part 15B

Project Number: G0M-2209-1690  
Applicant: digades GmbH  
Model Description: Head-up display for motorcycle helmets  
Model: TILSBERK Head-Up Display  
Test Sample ID: 42438  
Test Site: Eurofins Product Service GmbH  
Operator: Mr. Neuner  
Test Date: 2023-02-16  
Operating Conditions: ambient temperature: 21 °Celsius  
power input: 3.7 V DC via internal rechargeable lithium battery  
Antenna: Schwarzbeck VULB 9168, Horizontal  
Measurement Distance: 3m  
Operational Mode: 1  
EUT Configuration: 1  
Note 1: --

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Radiation



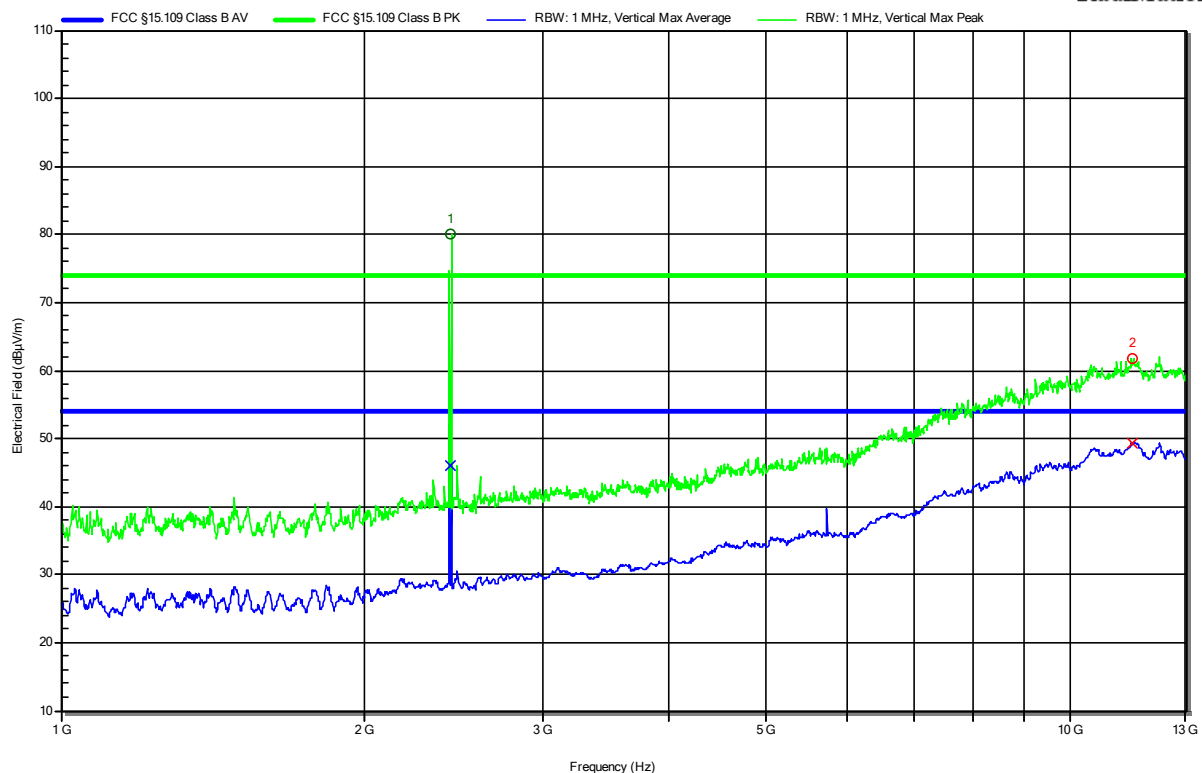
| Peak Number | Frequency  | Quasi-Peak   | Quasi-Peak Limit | Quasi-Peak Difference | Quasi-Peak Status | Angle     | Height |
|-------------|------------|--------------|------------------|-----------------------|-------------------|-----------|--------|
| 1           | 59.1 MHz   | 20.15 dBμV/m | 40 dBμV/m        | -19.85 dB             | Pass              | 0 degrees | 1 m    |
| 2           | 195.36 MHz | 13.49 dBμV/m | 43.52 dBμV/m     | -30.04 dB             | Pass              | 0 degrees | 1 m    |
| 3           | 199.32 MHz | 13.69 dBμV/m | 43.52 dBμV/m     | -29.83 dB             | Pass              | 0 degrees | 1 m    |
| 4           | 513.66 MHz | 22.55 dBμV/m | 46.02 dBμV/m     | -23.47 dB             | Pass              | 0 degrees | 1 m    |

## Radiated emissions according to FCC part 15B

Project Number: G0M-2209-1690  
 Applicant: digades GmbH  
 Model Description: Head-up display for motorcycle helmets  
 Model: TILSBERK Head-Up Display  
 Test Sample ID: 42438  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Liebich  
 Test Date: 2023-02-16  
 Operating Conditions: ambient temperature: 21 °Celsius  
 power input: 3.7 V DC via internal rechargeable lithium battery  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement Distance: 3m  
 Operational Mode: 1  
 EUT Configuration: 1  
 Note 1: --

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RadiMation



| Peak Number | Frequency  | Peak         | Peak Limit   | Peak Difference | Peak Status | Angle     | Height |
|-------------|------------|--------------|--------------|-----------------|-------------|-----------|--------|
| 1           | 2.435 GHz  | BLE-carrier  |              |                 |             |           |        |
| 2           | 11.527 GHz | 61.66 dBμV/m | 73.98 dBμV/m | -12.32 dB       | Pass        | 0 degrees | 2.9 m  |

| Peak Number | Frequency  | Average      | Average Limit | Average Difference | Average Status | Angle     | Height |
|-------------|------------|--------------|---------------|--------------------|----------------|-----------|--------|
| 1           | 2.435 GHz  | BLE-carrier  |               |                    |                |           |        |
| 2           | 11.527 GHz | 49.31 dBμV/m | 53.98 dBμV/m  | -4.67 dB           | Pass           | 0 degrees | 2.9 m  |

Test Report No.: G0M-2209-1690-EF0115B-V01

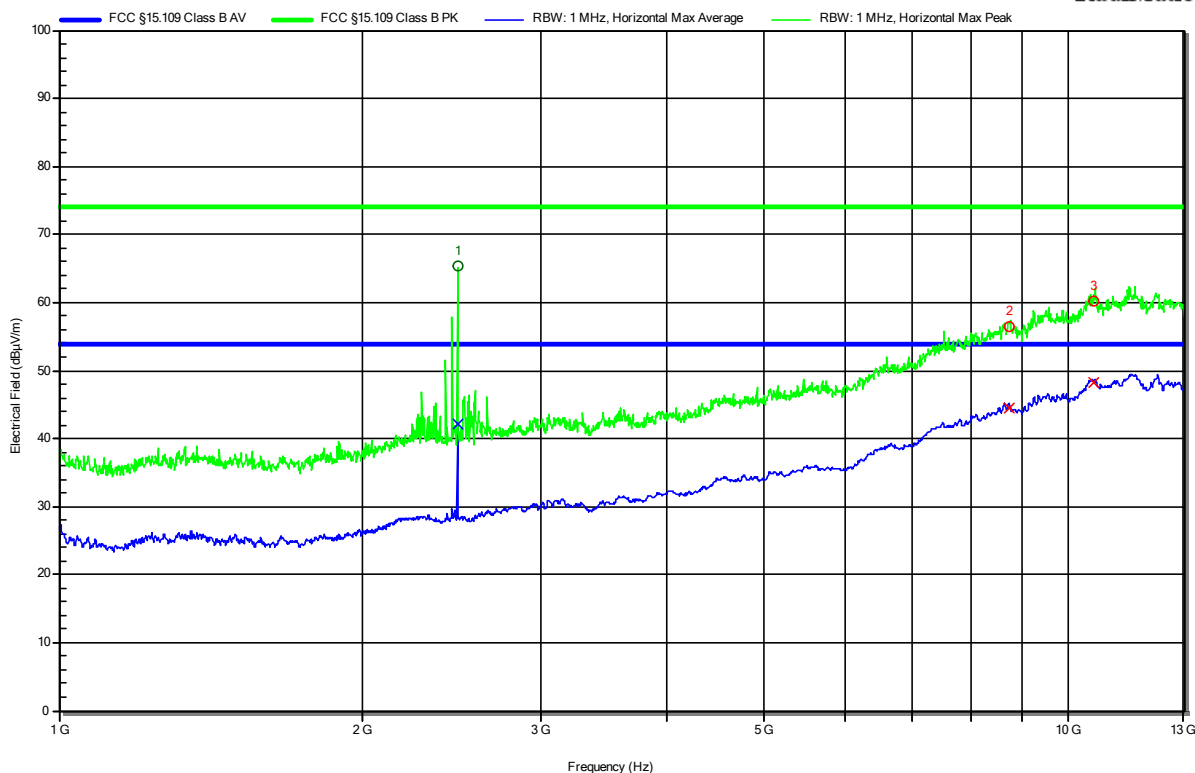
Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

# Radiated emissions according to FCC part 15B

Project Number: G0M-2209-1690  
Applicant: digades GmbH  
Model Description: Head-up display for motorcycle helmets  
Model: TILSBERK Head-Up Display  
Test Sample ID: 42438  
Test Site: Eurofins Product Service GmbH  
Operator: Mr. Liebich  
Test Date: 2023-02-16  
Operating Conditions: ambient temperature: 21 °Celsius  
power input: 3.7 V DC via internal rechargeable lithium battery  
Antenna: Schwarzbeck BBHA 9120D, Horizontal  
Measurement Distance: 3m  
Operational Mode: 1  
EUT Configuration: 1  
Note 1: --

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**RadiMation**



| Peak Number | Frequency  | Peak         | Peak Limit   | Peak Difference | Peak Status | Angle     | Height |
|-------------|------------|--------------|--------------|-----------------|-------------|-----------|--------|
| 1           | 2.481 GHz  | BLE-carrier  |              |                 |             |           |        |
| 2           | 8.744 GHz  | 56.5 dBμV/m  | 73.98 dBμV/m | -17.48 dB       | Pass        | 0 degrees | 2 m    |
| 3           | 10.577 GHz | 60.17 dBμV/m | 73.98 dBμV/m | -13.81 dB       | Pass        | 0 degrees | 2 m    |

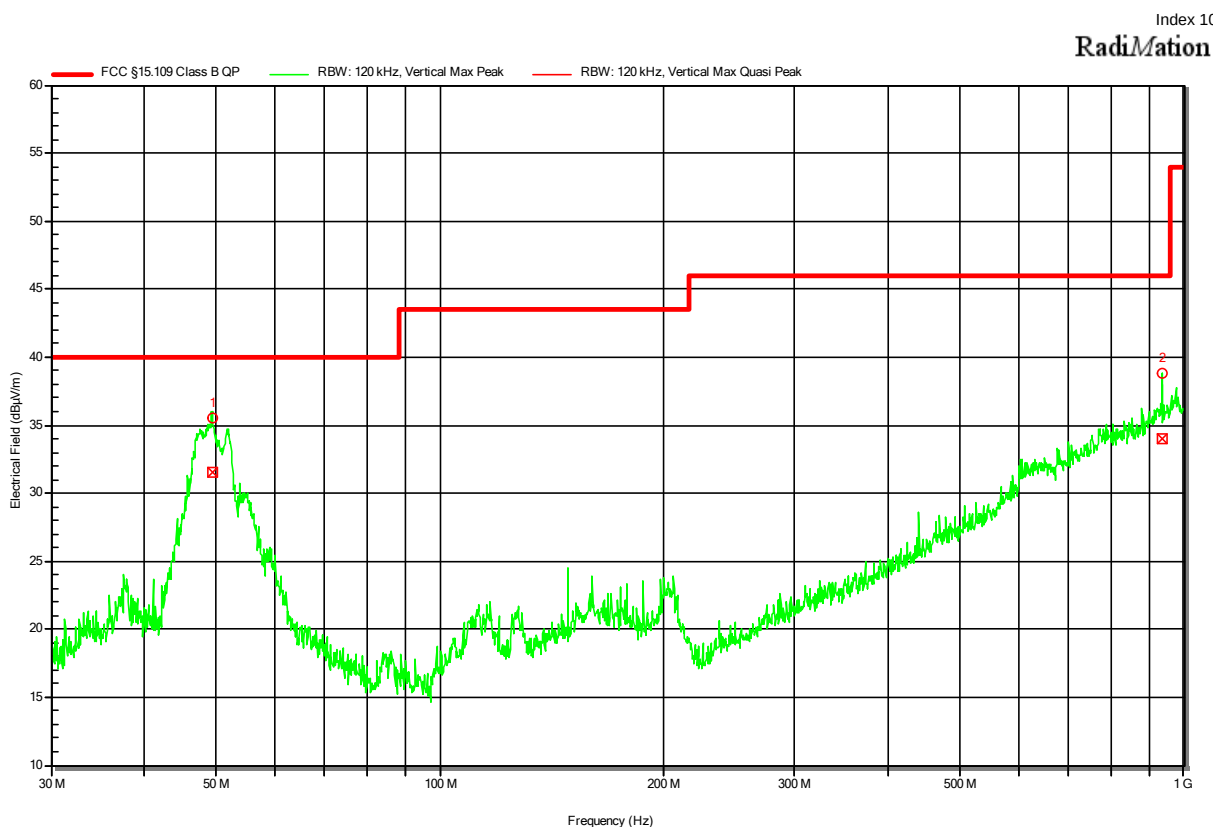
| Peak Number | Frequency  | Average      | Average Limit | Average Difference | Average Status | Angle     | Height |
|-------------|------------|--------------|---------------|--------------------|----------------|-----------|--------|
| 1           | 2.481 GHz  | BLE-carrier  |               |                    |                |           |        |
| 2           | 8.744 GHz  | 44.58 dBμV/m | 53.98 dBμV/m  | -9.4 dB            | Pass           | 0 degrees | 2 m    |
| 3           | 10.577 GHz | 48.18 dBμV/m | 53.98 dBμV/m  | -5.8 dB            | Pass           | 0 degrees | 2 m    |

Test Report No.: G0M-2209-1690-EF0115B-V01

Eurofins Product Service GmbH  
Storkower Str. 38c, D-15526 Reichenwalde, Germany

**Radiated emissions  
according to FCC part 15B**

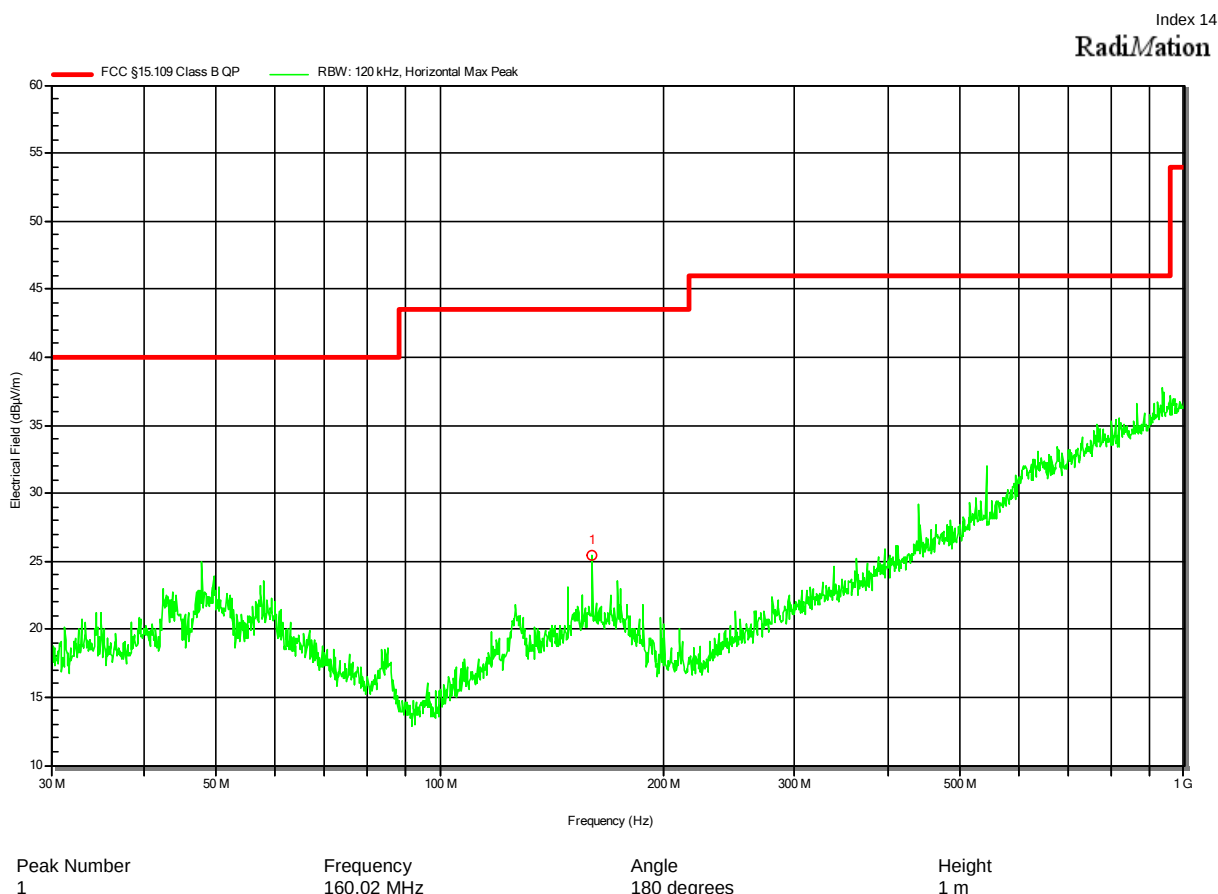
Project Number: G0M-2209-1690  
 Applicant: digades GmbH  
 Model Description: Head-up display for motorcycle helmets  
 Model: TILSBERK Head-Up Display  
 Test Sample ID: 42438  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Neuner  
 Test Date: 2023-02-16  
 Operating Conditions: ambient temperature: 23 °Celsius  
 power input: 5 V DC via USB connection and AC/DC-Adapter (120 V AC / 60 Hz)  
 Antenna: Schwarzbeck VULB 9168, Vertical  
 Measurement Distance: 3m  
 Operational Mode: 2  
 EUT Configuration: 2  
 Note 1: --



| Peak Number | Frequency   | Quasi-Peak   | Quasi-Peak Limit | Quasi-Peak Difference | Quasi-Peak Status | Angle       | Height |
|-------------|-------------|--------------|------------------|-----------------------|-------------------|-------------|--------|
| 1           | 49.38 MHz   | 31.58 dBµV/m | 40 dBµV/m        | -8.42 dB              | Pass              | 180 degrees | 1 m    |
| 2           | 936.138 MHz | 33.96 dBµV/m | 46.02 dBµV/m     | -12.06 dB             | Pass              | 180 degrees | 1 m    |

**Radiated emissions  
according to FCC part 15B**

Project Number: G0M-2209-1690  
 Applicant: digades GmbH  
 Model Description: Head-up display for motorcycle helmets  
 Model: TILSBERK Head-Up Display  
 Test Sample ID: 42438  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Neuner  
 Test Date: 2023-02-16  
 Operating Conditions: ambient temperature: 23 °Celsius  
 power input: 5 V DC via USB connection and AC/DC-Adapter (120 V AC / 60 Hz)  
 Antenna: Schwarzbeck VULB 9168, Horizontal  
 Measurement Distance: 3m  
 Operational Mode: 2  
 EUT Configuration: 2  
 Note 1: --

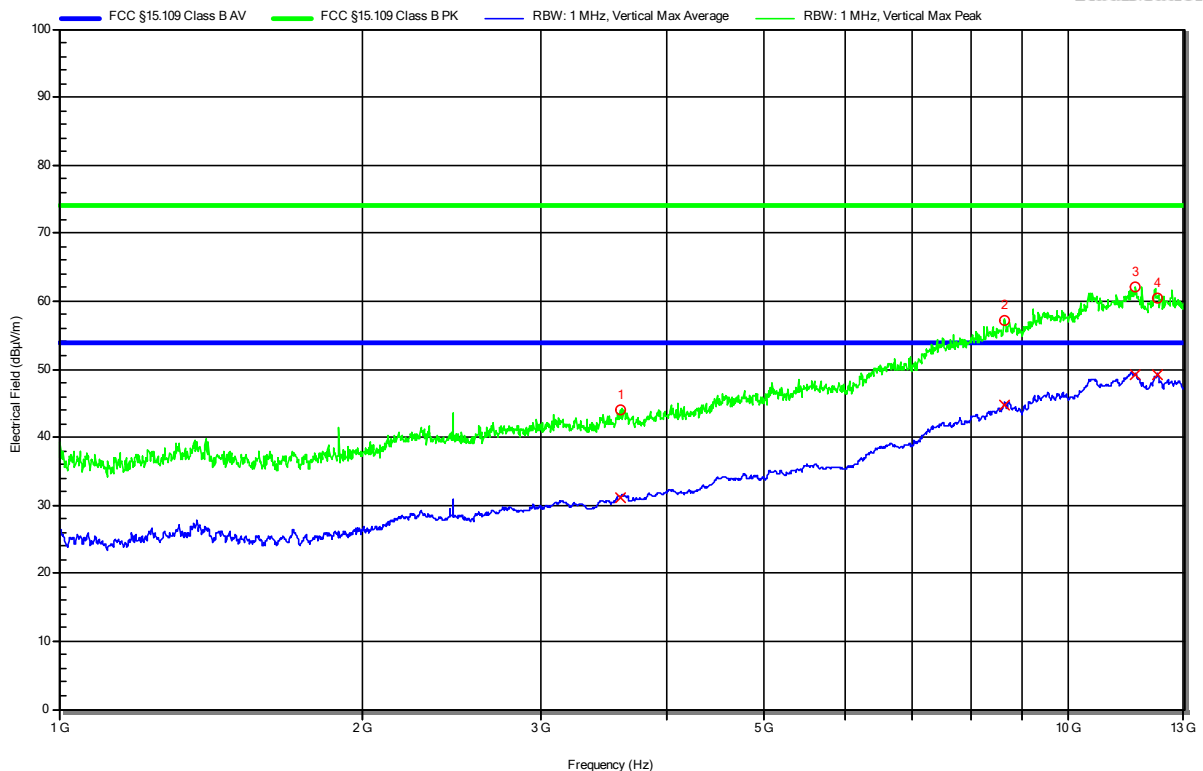


## Radiated emissions according to FCC part 15B

Project Number: G0M-2209-1690  
 Applicant: digades GmbH  
 Model Description: Head-up display for motorcycle helmets  
 Model: TILSBERK Head-Up Display  
 Test Sample ID: 42438  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Liebich  
 Test Date: 2023-02-16  
 Operating Conditions: ambient temperature: 21 °Celsius  
 power input: 5 V DC via USB connection and AC/DC-Adapter (120 V AC / 60 Hz)  
 Antenna: Schwarzbeck BBHA 9120D, Vertical  
 Measurement Distance: 3m  
 Operational Mode: 2  
 EUT Configuration: 2  
 Note 1: --

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| Peak Number | Frequency  | Peak         | Peak Limit   | Peak Difference | Peak Status | Angle     | Height |
|-------------|------------|--------------|--------------|-----------------|-------------|-----------|--------|
| 1           | 3.605 GHz  | 44.06 dBµV/m | 73.98 dBµV/m | -29.92 dB       | Pass        | 0 degrees | 1 m    |
| 2           | 8.639 GHz  | 57.05 dBµV/m | 73.98 dBµV/m | -16.93 dB       | Pass        | 0 degrees | 1 m    |
| 3           | 11.641 GHz | 62.11 dBµV/m | 73.98 dBµV/m | -11.87 dB       | Pass        | 0 degrees | 1 m    |
| 4           | 12.247 GHz | 60.33 dBµV/m | 73.98 dBµV/m | -13.65 dB       | Pass        | 0 degrees | 1 m    |

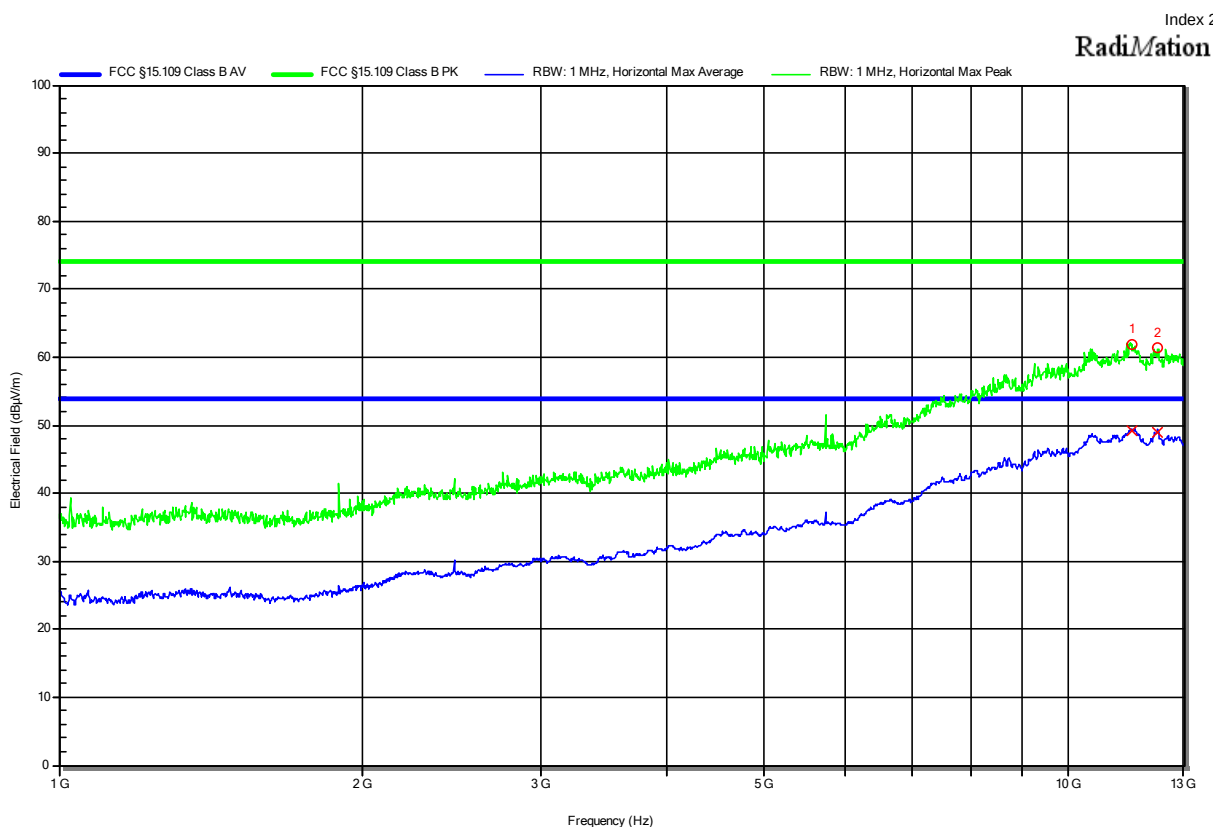
| Peak Number | Frequency  | Average      | Average Limit | Average Difference | Average Status | Angle     | Height |
|-------------|------------|--------------|---------------|--------------------|----------------|-----------|--------|
| 1           | 3.605 GHz  | 31.21 dBµV/m | 53.98 dBµV/m  | -22.77 dB          | Pass           | 0 degrees | 1 m    |
| 2           | 8.639 GHz  | 44.71 dBµV/m | 53.98 dBµV/m  | -9.27 dB           | Pass           | 0 degrees | 1 m    |
| 3           | 11.641 GHz | 49.14 dBµV/m | 53.98 dBµV/m  | -4.84 dB           | Pass           | 0 degrees | 1 m    |
| 4           | 12.247 GHz | 49.06 dBµV/m | 53.98 dBµV/m  | -4.92 dB           | Pass           | 0 degrees | 1 m    |

Test Report No.: G0M-2209-1690-EF0115B-V01

Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

## Radiated emissions according to FCC part 15B

Project Number: G0M-2209-1690  
 Applicant: digades GmbH  
 Model Description: Head-up display for motorcycle helmets  
 Model: TILSBERK Head-Up Display  
 Test Sample ID: 42438  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Liebich  
 Test Date: 2023-02-16  
 Operating Conditions: ambient temperature: 21 °Celsius  
 power input: 5 V DC via USB connection and AC/DC-Adapter (120 V AC / 60 Hz)  
 Antenna: Schwarzbeck BBHA 9120D, Horizontal  
 Measurement Distance: 3m  
 Operational Mode: 2  
 EUT Configuration: 2  
 Note 1: --



| Peak Number | Frequency  | Peak         | Peak Limit   | Peak Difference | Peak Status | Angle     | Height |
|-------------|------------|--------------|--------------|-----------------|-------------|-----------|--------|
| 1           | 11.555 GHz | 61.96 dBµV/m | 73.98 dBµV/m | -12.02 dB       | Pass        | 0 degrees | 1 m    |
| 2           | 12.25 GHz  | 61.3 dBµV/m  | 73.98 dBµV/m | -12.68 dB       | Pass        | 0 degrees | 1 m    |

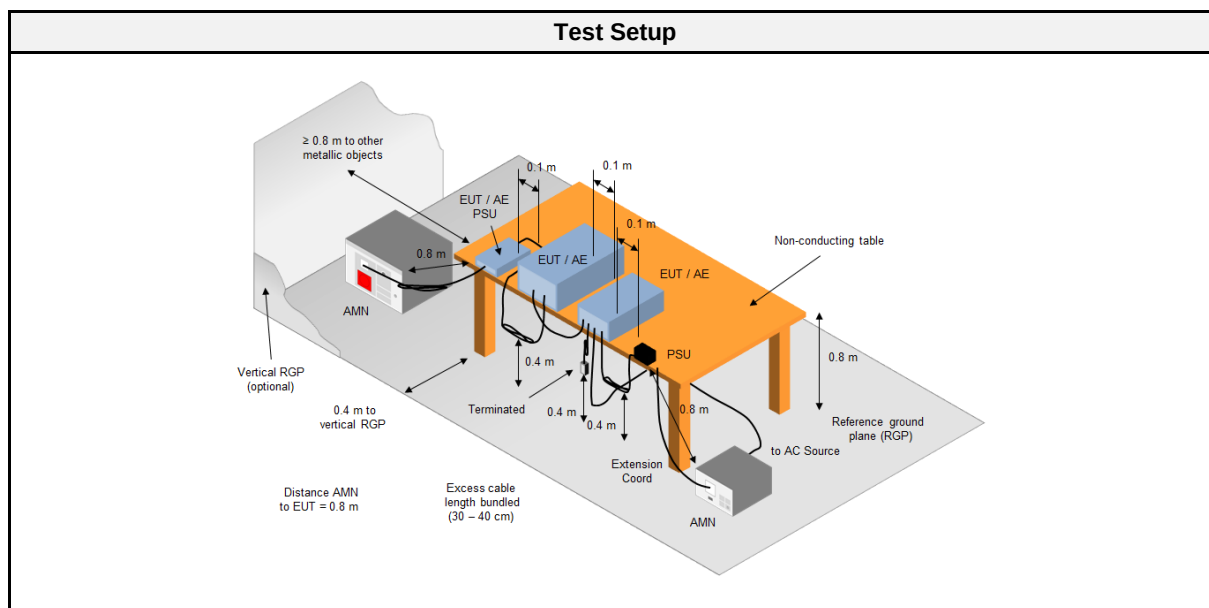
| Peak Number | Frequency  | Average      | Average Limit | Average Difference | Average Status | Angle     | Height |
|-------------|------------|--------------|---------------|--------------------|----------------|-----------|--------|
| 1           | 11.555 GHz | 49.28 dBµV/m | 53.98 dBµV/m  | -4.7 dB            | Pass           | 0 degrees | 1 m    |
| 2           | 12.25 GHz  | 48.99 dBµV/m | 53.98 dBµV/m  | -4.99 dB           | Pass           | 0 degrees | 1 m    |

Test Report No.: G0M-2209-1690-EF0115B-V01

Eurofins Product Service GmbH  
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

### 2.2.1 Information

### 2.2.2 Setup *Table top*



### 2.2.3 Equipment

| Test Software |                  |            |          |
|---------------|------------------|------------|----------|
| Description   | Manufacturer     | Name       | Version  |
| EMC Software  | DARE Instruments | Radimation | 2020.1.8 |

| Test Equipment    |                             |                      |            |           |          |
|-------------------|-----------------------------|----------------------|------------|-----------|----------|
| Description       | Manufacturer                | Model                | Identifier | Cal. Date | Cal. Due |
| AMN               | R&S                         | ESH3-Z5              | EF00036    | 2021-08   | 2023-08  |
| Pulse Limiter     | R&S                         | ESH3-Z2              | EF01063    | 2021-07   | 2023-07  |
| EMI Test Receiver | R&S                         | ESR 7                | EF00943    | 2022-07   | 2023-07  |
| Climatic Sensor   | Embedded Data Systems, LLC. | 2800100000254<br>17E | EF01054    | 2022-04   | 2023-04  |

### 2.2.4 Procedure

| Exploratory measurement Table top |                                                                                                                                                                                     |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.                                | The EUT was placed on a non conductive table 0.8 m above the reference ground plane and 0.4 m away from the vertical conducting plane (ANSI C63.4: 2014 item 7.3.1)                 |
| 2.                                | The power cord that is normally supplied or recommended by the manufacturer was connected to the LISN.                                                                              |
| 3.                                | The distance between the outer edge of the EUT and the LISN shall be set to 0.8 m. A longer power cord shall be bundled to this length (bundling shall not exceed 40 cm in length). |
| 4.                                | The LISN measurement port was connected to a measurement receiver                                                                                                                   |
| 5.                                | I/O cables were bundled not longer than 0.4 m                                                                                                                                       |
| 6.                                | Measurement was performed in the frequency range 0.15 – 30MHz on each current-carrying conductor                                                                                    |
| 7.                                | To maximize the emissions the cable positions were manipulated                                                                                                                      |
| 8.                                | The worst configuration of EUT and cables is shown on a test setup picture at item 2.2.2                                                                                            |

| Final measurement Table Top |                                                                                                                                                                                     |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.                          | The EUT was placed on a non conductive table 0.8 m above the reference ground plane and 0.4 m away from the vertical conducting plane (ANSI C63.4: 2014 item 7.3.1)                 |
| 2.                          | The power cord that is normally supplied or recommended by the manufacturer was connected to the LISN.                                                                              |
| 3.                          | The distance between the outer edge of the EUT and the LISN shall be set to 0.8 m. A longer power cord shall be bundled to this length (bundling shall not exceed 40 cm in length). |
| 4.                          | The LISN measurement port was connected to a measurement receiver                                                                                                                   |
| 5.                          | The EUT and cable arrangement were based on the exploratory measurement results                                                                                                     |
| 6.                          | The test data of the worst-case conditions were recorded and shown on the next pages                                                                                                |

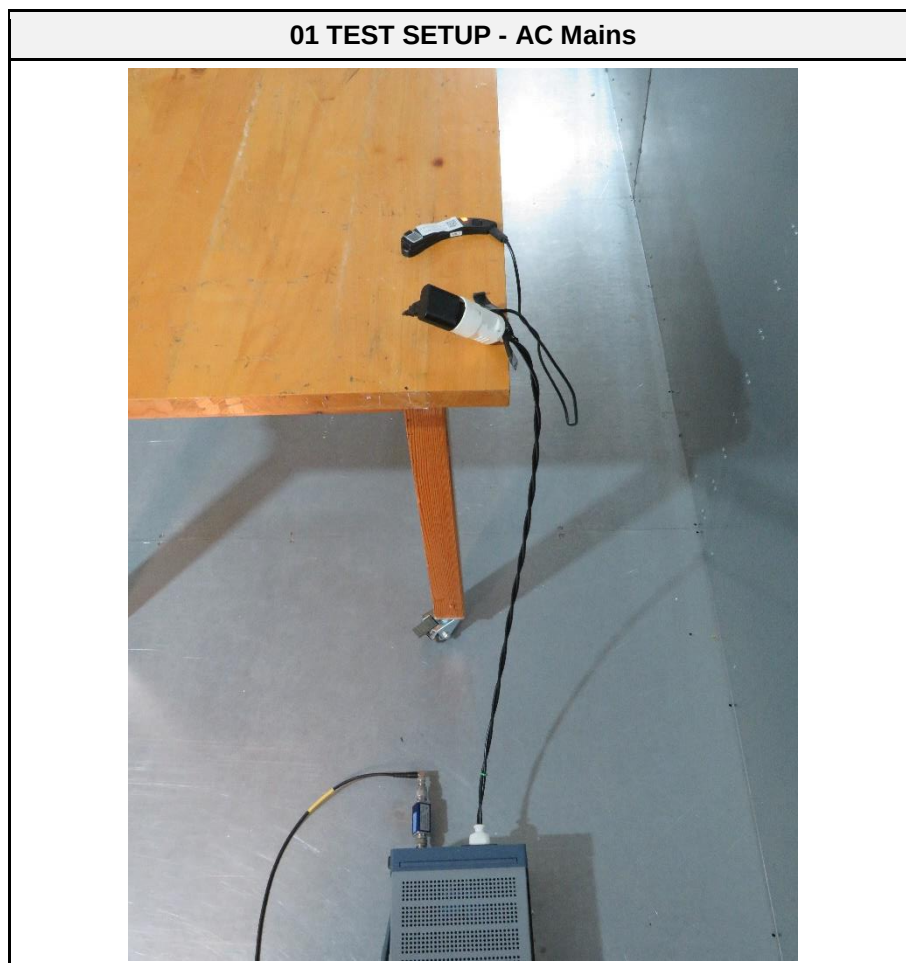
### 2.2.5 Limits

| Class B                                         |                         |                      |
|-------------------------------------------------|-------------------------|----------------------|
| Frequency [MHz]                                 | Quasi-peak Limit [dBμV] | Average Limit [dBμV] |
| 0.15 - 0.5                                      | 66 - 56 *               | 56 - 46 *            |
| 0.5 - 5                                         | 56                      | 46                   |
| 5 - 30                                          | 60                      | 50                   |
| * Decreases with the logarithm of the frequency |                         |                      |

#### 2.2.6 Results

| AC power line conducted emissions              |          |                  |                   |         |                  |
|------------------------------------------------|----------|------------------|-------------------|---------|------------------|
| Port                                           | Coupling | Operational mode | EUT Configuration | Verdict | Remark           |
| AC Mains                                       | AMN      | 2                | 2                 | PASS    | 120 V AC / 60 Hz |
| Comment: AC Mains is port of the AC/DC-adapter |          |                  |                   |         |                  |

## 2.2.7 Setup Photos



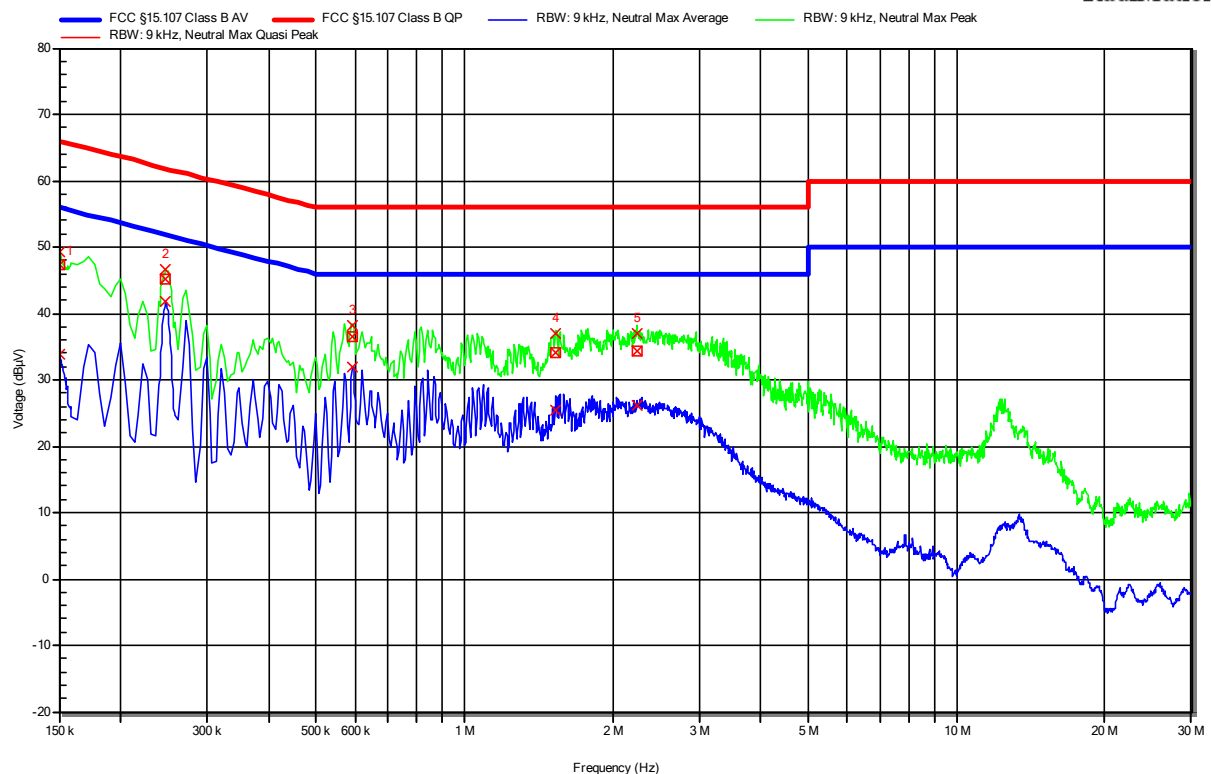
## 2.2.8 Records

### Conducted emissions at the mains power port according to FCC part 15B

|                       |                                                                                                                 |
|-----------------------|-----------------------------------------------------------------------------------------------------------------|
| Project Number:       | G0M-2209-1690                                                                                                   |
| Applicant:            | digades GmbH                                                                                                    |
| Model Description:    | Head-up display for motorcycle helmets                                                                          |
| Model:                | TILSBERK Head-Up Display                                                                                        |
| Test Sample ID:       | 42438                                                                                                           |
| Test Site:            | Eurofins Product Service GmbH                                                                                   |
| Operator:             | Mr. Liebich                                                                                                     |
| Test Date:            | 2023-02-17                                                                                                      |
| Operating Conditions: | ambient temperature: 22 °Celsius<br>power input: 5 V DC via USB connection and AC/DC-Adapter (120 V AC / 60 Hz) |
| LISN:                 | ESH3-Z5 (N)                                                                                                     |
| Operational Mode:     | 2                                                                                                               |
| EUT Configuration:    | 2                                                                                                               |
| Applied to Port:      | AC Mains                                                                                                        |
| Note 1:               | --                                                                                                              |

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**RadiMation**



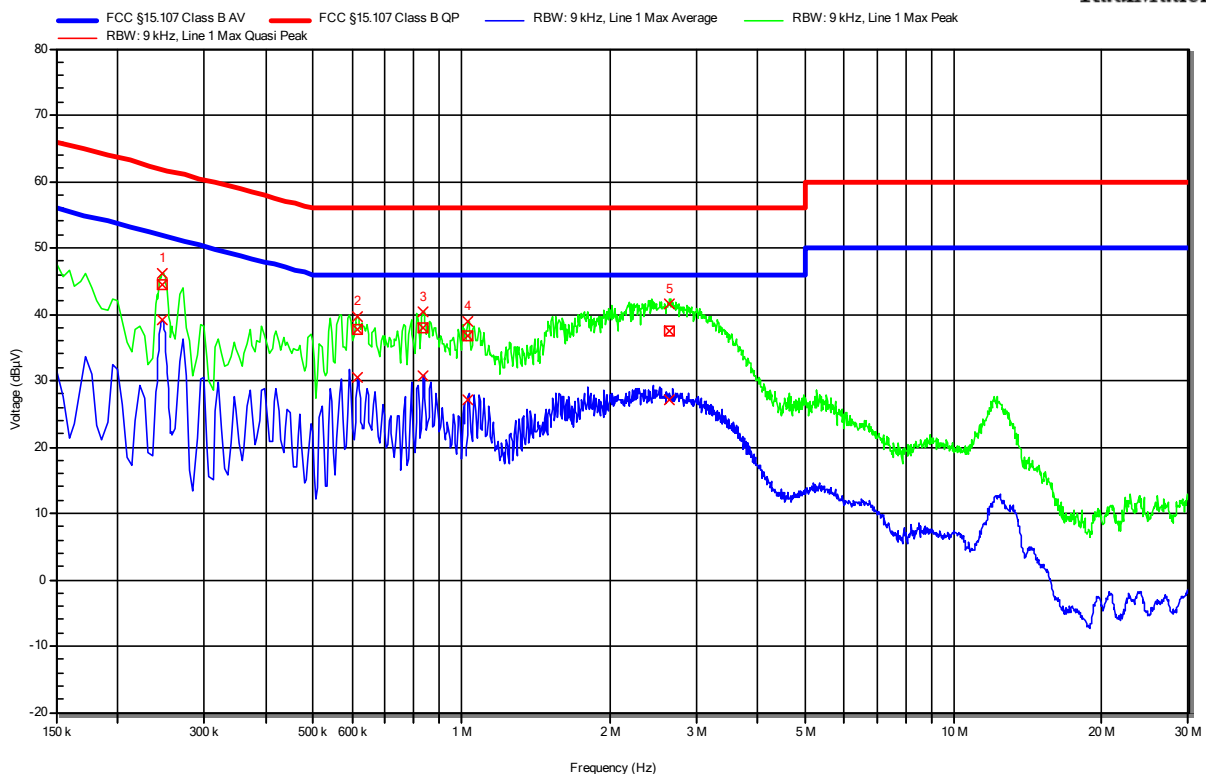
| Peak Number | Frequency | Quasi-Peak | Quasi-Peak Limit | Quasi-Peak Difference | Quasi-Peak Status | LISN    |
|-------------|-----------|------------|------------------|-----------------------|-------------------|---------|
| 1           | 150 kHz   | 47.41 dBµV | 66 dBµV          | -18.59 dB             | Pass              | Neutral |
| 2           | 247.2 kHz | 45.23 dBµV | 61.85 dBµV       | -16.62 dB             | Pass              | Neutral |
| 3           | 591.9 kHz | 36.57 dBµV | 56 dBµV          | -19.43 dB             | Pass              | Neutral |
| 4           | 1.527 MHz | 34.2 dBµV  | 56 dBµV          | -21.8 dB              | Pass              | Neutral |
| 5           | 2.242 MHz | 34.39 dBµV | 56 dBµV          | -21.61 dB             | Pass              | Neutral |

| Peak Number | Frequency | Average    | Average Limit | Average Difference | Average Status | LISN    |
|-------------|-----------|------------|---------------|--------------------|----------------|---------|
| 1           | 150 kHz   | 33.86 dBµV | 56 dBµV       | -22.14 dB          | Pass           | Neutral |
| 2           | 247.2 kHz | 41.72 dBµV | 51.85 dBµV    | -10.13 dB          | Pass           | Neutral |
| 3           | 591.9 kHz | 31.93 dBµV | 46 dBµV       | -14.07 dB          | Pass           | Neutral |
| 4           | 1.527 MHz | 25.53 dBµV | 46 dBµV       | -20.47 dB          | Pass           | Neutral |
| 5           | 2.242 MHz | 26.14 dBµV | 46 dBµV       | -19.86 dB          | Pass           | Neutral |

**Conducted emissions at the mains power port  
according to FCC part 15B**

Project Number: G0M-2209-1690  
 Applicant: digades GmbH  
 Model Description: Head-up display for motorcycle helmets  
 Model: TILSBERK Head-Up Display  
 Test Sample ID: 42438  
 Test Site: Eurofins Product Service GmbH  
 Operator: Mr. Liebich  
 Test Date: 2023-02-17  
 Operating Conditions: ambient temperature: 22 °Celsius  
 power input: 5 V DC via USB connection and AC/DC-Adapter (120 V AC / 60 Hz)  
 LISN: ESH3-Z5 (L)  
 Operational Mode: 2  
 EUT Configuration: 2  
 Applied to Port: AC Mains  
 Note 1: --

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**RadiMation**



| Peak Number | Frequency  | Quasi-Peak | Quasi-Peak Limit | Quasi-Peak Difference | Quasi-Peak Status | LISN   |
|-------------|------------|------------|------------------|-----------------------|-------------------|--------|
| 1           | 246.3 kHz  | 44.52 dBµV | 61.88 dBµV       | -17.36 dB             | Pass              | Line 1 |
| 2           | 615.75 kHz | 37.64 dBµV | 56 dBµV          | -18.36 dB             | Pass              | Line 1 |
| 3           | 837.6 kHz  | 38.05 dBµV | 56 dBµV          | -17.95 dB             | Pass              | Line 1 |
| 4           | 1.033 MHz  | 36.63 dBµV | 56 dBµV          | -19.37 dB             | Pass              | Line 1 |
| 5           | 2.648 MHz  | 37.36 dBµV | 56 dBµV          | -18.64 dB             | Pass              | Line 1 |

| Peak Number | Frequency  | Average    | Average Limit | Average Difference | Average Status | LISN   |
|-------------|------------|------------|---------------|--------------------|----------------|--------|
| 1           | 246.3 kHz  | 39.06 dBµV | 51.88 dBµV    | -12.82 dB          | Pass           | Line 1 |
| 2           | 615.75 kHz | 30.52 dBµV | 46 dBµV       | -15.48 dB          | Pass           | Line 1 |
| 3           | 837.6 kHz  | 30.62 dBµV | 46 dBµV       | -15.38 dB          | Pass           | Line 1 |
| 4           | 1.033 MHz  | 26.99 dBµV | 46 dBµV       | -19.01 dB          | Pass           | Line 1 |
| 5           | 2.648 MHz  | 27.19 dBµV | 46 dBµV       | -18.81 dB          | Pass           | Line 1 |

### 3 Measurement Uncertainty

All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95%, with a coverage factor of 2.

| Test Name                                   | Measurement Uncertainty                                                                 |
|---------------------------------------------|-----------------------------------------------------------------------------------------|
| Conducted emissions at the mains power port | 150kHz to 30MHz, 3.35dB                                                                 |
| Radiated Emission                           | 30MHz to 200MHz @ 3m, 5.1dB<br>200MHz to 1GHz @ 3m, 5.3dB<br>>1GHz to 13GHz @3m, 5.95dB |