

Test Report No:  
23A0648R-RFUSV17S-A

## RF EXPOSURE EVALUATION DECLARATION

|                                 |                                                                                                    |
|---------------------------------|----------------------------------------------------------------------------------------------------|
| Product Name                    | Communication Module                                                                               |
| Brand Name                      | muRata                                                                                             |
| Model No.                       | LBEE5XV1YM                                                                                         |
| FCC ID                          | QHQ-LB1YM                                                                                          |
| Applicant's Name / Address      | Laerdal Medical AS<br>Tanke Svilandsgate 30 P.O. Box 377, Stavanger, 4002 Norway                   |
| Manufacturer's Name / Address   | Murata Manufacturing Co., Ltd.<br>1-10-1, Higashikotari, Nagaokakyo-shi, Kyoto 617-8555 Japan      |
| Test Method Requested, Standard | FCC CFR Title 47 Part 2.1091 Radiofrequency radiation exposure evaluation: mobile devices.         |
| Verdict Summary                 | IN COMPLIANCE                                                                                      |
| Documented By                   | <br>Hailey Peng |
| Approved By                     | <br>Allen Lin   |
| Date of Receipt                 | Oct. 25, 2023                                                                                      |
| Date of Issue                   | Dec. 15, 2023                                                                                      |
| Report Version                  | V1.0                                                                                               |

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## Competences and Guarantees

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DEKRA is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

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## General Conditions

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1. The test results relate only to the samples tested.
2. The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.
3. This report must not be used to claim product endorsement by TAF or any agency of the government.
4. The test report shall not be reproduced without the written approval of DEKRA Testing and Certification Co., Ltd.
5. Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Revision History

| Version | Description             | Issued Date   |
|---------|-------------------------|---------------|
| V1.0    | Initial issue of report | Dec. 15, 2023 |
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## Permissive Change

| Permissive Change                 | Modifications                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Class II Permissive Change (C2PC) | <p>1. Additional platform added (Product: LinkBox PLUS 2, Brand: Laerdal Medical AS, Model: 204-00250).</p> <p>2. Add two same type antennas (Type: dipole, model: GEPH-057 and model: GEPH-023) but higher gain for WiFi 2.4GHz and lower gain for WiFi 5GHz/Bluetooth than the original certificate.</p> <p>After evaluating, it was calculated for the test result of RF exposure evaluation and record in the report.</p> |

## 1. General Information

### 1.1. EUT Description

| RF General Information |                                                          |                                                          |                                                            |
|------------------------|----------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------------|
| Evaluation Mode        | Frequency Range (MHz)                                    | Operating Frequency (MHz)                                | Modulation Type                                            |
| WiFi 2.4 GHz           | 2400 ~ 2483.5                                            | 2412 ~ 2462                                              | 802.11b: DSSS<br>802.11g/n: OFDM                           |
| WiFi 5 GHz             | 5150 ~ 5250<br>5250 ~ 5350<br>5470 ~ 5725<br>5725 ~ 5850 | 5180 ~ 5240<br>5260 ~ 5320<br>5500 ~ 5720<br>5745 ~ 5825 | 802.11a/n/ac: OFDM                                         |
| Bluetooth              | 2400 ~ 2483.5                                            | 2402 ~ 2480                                              | BR / EDR: FHSS (GFSK / $\pi/4$ -DQPSK / 8DPSK)<br>LE: GFSK |

Note: The above EUT information is declared by the manufacturer.

### 1.2. Testing Location Information

| Testing Location Information                                                                                                             |                                                                                                                                                                |  |
|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Test Laboratory : DEKRA Testing and Certification Co., Ltd.                                                                              |                                                                                                                                                                |  |
| 1<br>(TAF: 3024)                                                                                                                         | ADD: No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C.<br>TEL: +886-3-582-8001                      FAX: +886-3-582-8958 |  |
| 2<br>(TAF: 3024)                                                                                                                         | ADD: No.372, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C.<br>TEL: +886-3-582-8001                      FAX: +886-3-582-8958   |  |
| Test site number for address 1 includes HC-SR02. Test site number for address 2 includes HC-CB02, HC-CB03, HC-CB04, HC-SR10 and HC-SR12. |                                                                                                                                                                |  |

## 2. RF Exposure Evaluation

### 2.1. Test Limit

(A) Test Limit for Occupational / Controlled Exposure

| Frequency Range<br>(MHz) | Electric Field<br>Strength (E) (V/m) | Magnetic Field<br>Strength (H) (A/m) | Power Density (S)<br>(mW/ cm <sup>2</sup> ) | Averaging Time<br> E  <sup>2</sup> , H  <sup>2</sup> or S<br>(minutes) |
|--------------------------|--------------------------------------|--------------------------------------|---------------------------------------------|------------------------------------------------------------------------|
| 0.3-3.0                  | 614                                  | 1.63                                 | *(100)                                      | <6                                                                     |
| 3.0-30                   | 1842/f                               | 4.89/f                               | *(900/f <sup>2</sup> )                      | <6                                                                     |
| 30-300                   | 61.4                                 | 0.163                                | 1.0                                         | <6                                                                     |
| 300-1500                 | -                                    | -                                    | f/300                                       | <6                                                                     |
| 1500-100,000             | -                                    | -                                    | 5                                           | <6                                                                     |

(B) Test Limit for General Population / Uncontrolled Exposure

| Frequency Range<br>(MHz) | Electric Field<br>Strength (E) (V/m) | Magnetic Field<br>Strength (H) (A/m) | Power Density (S)<br>(mW/ cm <sup>2</sup> ) | Averaging Time<br> E  <sup>2</sup> , H  <sup>2</sup> or S<br>(minutes) |
|--------------------------|--------------------------------------|--------------------------------------|---------------------------------------------|------------------------------------------------------------------------|
| 0.3-1.34                 | 614                                  | 1.63                                 | *(100)                                      | <30                                                                    |
| 1.34-30                  | 824/f                                | 2.19/f                               | *(180/f <sup>2</sup> )                      | <30                                                                    |
| 30-300                   | 27.5                                 | 0.073                                | 0.2                                         | <30                                                                    |
| 300-1500                 | -                                    | -                                    | f/1500                                      | <30                                                                    |
| 1500-100,000             | -                                    | -                                    | 1.0                                         | <30                                                                    |

Note: f = frequency in MHz; \*Plane-wave equivalent power density

Power Density (S) is calculated by the following formula:

$$S=(P*G)/4\pi R^2$$

where:

S = power density (in appropriate units, e.g. mW/ cm<sup>2</sup>)

P = power input to the antenna (in appropriate units, e.g., mW)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

$\pi$  = 3.1416

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

## 2.2. Test Result of RF Exposure Evaluation

### Exposure Environment: General Population / Uncontrolled Exposure

| Evaluation Mode    | E.I.R.P<br>(dBm) | E.I.R.P<br>(mW) | Power Density<br>(mW/cm <sup>2</sup> ) | Limit<br>(mW/cm <sup>2</sup> ) | Test Result<br>(PASS/FAIL) |
|--------------------|------------------|-----------------|----------------------------------------|--------------------------------|----------------------------|
| WiFi 2.4 GHz       | 25.096           | 323.296         | 0.064                                  | 1.000                          | PASS                       |
| WiFi 5 GHz Band 1  | 18.160           | 65.464          | 0.013                                  | 1.000                          | PASS                       |
| WiFi 5 GHz Band 2  | 22.270           | 168.655         | 0.034                                  | 1.000                          | PASS                       |
| WiFi 5 GHz Band 3  | 21.820           | 152.055         | 0.030                                  | 1.000                          | PASS                       |
| WiFi 5 GHz Band 4  | 24.200           | 263.027         | 0.052                                  | 1.000                          | PASS                       |
| Bluetooth BR / EDR | 8.260            | 6.699           | 0.001                                  | 1.000                          | PASS                       |
| Bluetooth LE       | 8.290            | 6.745           | 0.001                                  | 1.000                          | PASS                       |

Distance (cm): 20 for Maximum Permissible Exposure.

| Co-location                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Conclusion:</b></p> <p>The formula of calculated the MPE is:</p> <p><b>CPD1 / LPD1 + CPD2 / LPD2 + .....etc. &lt; 1</b></p> <p><b>CPD = Calculation power density</b></p> <p><b>LPD = Limit of power density</b></p> <p>WiFi 2.4 GHz + Bluetooth = 0.064 + 0.001 = 0.065, therefore the maximum calculations of above situations are less than the "1" limit.</p> |

Note:

1. The above EUT information is declared by the manufacturer.
2. The EUT was installed to the host (brand name: Laerdal Medical AS, model: 204-00250) to perform the test.
3. The results are based on the maximum power.