Test Report No:
2420385R-RFUSV17S-A

# RF EXPOSURE EVALUATION DECLARATION

| | |
|---|---|
| Product Name | Module |
| Brand Name | Semtech |
| Model No. | HL7900 |
| FCC ID | N7NHL79 |
| Applicant´s Name / Address | Sierra Wireless, ULC<br>13811 Wireless Way, Richmond, BC V6V 3A4, Canada |
| Manufacturer's Name / Address | Sierra Wireless, ULC<br>13811 Wireless Way, Richmond, BC V6V 3A4, Canada |
| Test Method Requested, Standard | FCC CFR Title 47 Part 2.1091 Radiofrequency radiation exposure evaluation: mobile devices. |
| Verdict Summary | IN COMPLIANCE |
| Documented By | Amelia Wu |
| Approved By | Rueyyan Lin |
| Date of Receipt | Feb. 23, 2024 |
| Date of Issue | Aug. 02, 2024 |
| Report Version | V1.0 |

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## Competences and Guarantees

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.



## General Conditions

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 | Aug. 02, 2024 |
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# 1. General Information

## 1.1. EUT Description

| RF General Information | | | | |
|---|---|---|---|---|
| Evaluation Mode | Band | Uplink Frequency (MHz) | Downlink Frequency (MHz) | Modulation Type |
| WWAN 4G | LTE Band 2 | 1850 ~ 1910 | 1930 ~ 1990 | Cat-M1: QPSK / 16QAM<br>NB-IoT: BPSK / QPSK |
| | LTE Band 4 | 1710 ~ 1755 | 2110 ~ 2115 | |
| | LTE Band 5 | 824 ~ 849 | 869 ~ 894 | |
| | LTE Band 12 | 699 ~ 716 | 729 ~ 746 | |
| | LTE Band 13 | 777 ~ 787 | 746 ~ 756 | |
| | LTE Band 25 | 1850 ~ 1915 | 1930 ~ 1995 | |
| | LTE Band 26 | 814 ~ 849 | 859 ~ 894 | |
| | LTE Band 66 | 1710 ~ 1780 | 2110 ~ 2200 | |
| | LTE Band 70 | 1695~1710 | 1995~2020 | |
| | LTE Band 85 | 698 ~ 716 | 728 ~ 746 | |

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<br>Test site Designation No. TW3024 with FCC.<br>Conformity Assessment Body Identifier (CABID) TW3024 with ISED. |
| | 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<br>Test site Designation No. TW3024 with FCC.<br>Conformity Assessment Body Identifier (CABID) TW3024 with ISED. |
| 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 (MHz) | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/ cm²) | Averaging Time \|E\|²,\|H\|² or S (minutes) |
|---|---|---|---|---|
| 0.3-3.0 | 614 | 1.63 | *(100) | <6 |
| 3.0-30 | 1842/f | 4.89/f | *(900/f²) | <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 (MHz) | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/ cm²) | Averaging Time \|E\|²,\|H\|² or S (minutes) |
|---|---|---|---|---|
| 0.3-1.34 | 614 | 1.63 | *(100) | <30 |
| 1.34-30 | 824/f | 2.19/f | *(180/f²) | <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/ cm²)

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

π = 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 (dBm) | E.I.R.P (mW) | Power Density ($mW/cm^2$) | Limit ($mW/cm^2$) | Test Result (PASS/FAIL) |
|---|---|---|---|---|---|
| Cat-M1 Band 2 / 25 | 27.000 | 501.187 | 0.100 | 1.000 | PASS |
| Cat-M1 Band 4 / 66 | 27.000 | 501.187 | 0.100 | 1.000 | PASS |
| Cat-M1 Band 5 / 26 (Part 22) | 25.500 | 354.813 | 0.071 | 0.549 | PASS |
| Cat-M1 Band 12 | 25.500 | 354.813 | 0.071 | 0.543 | PASS |
| Cat-M1 Band 13 | 25.500 | 354.813 | 0.071 | 0.466 | PASS |
| Cat-M1 Band 26 (Part 90) | 25.500 | 354.813 | 0.071 | 0.518 | PASS |
| NB-IoT Band 2 / 25 | 27.000 | 501.187 | 0.100 | 1.000 | PASS |
| NB-IoT Band 4 / 66 | 27.000 | 501.187 | 0.100 | 1.000 | PASS |
| NB-IoT Band 5 / 26 (Part 22) | 25.500 | 354.813 | 0.071 | 0.549 | PASS |
| NB-IoT Band 12 | 25.500 | 354.813 | 0.071 | 0.543 | PASS |
| NB-IoT Band 13 | 25.500 | 354.813 | 0.071 | 0.466 | PASS |
| NB-IoT Band 26 (Part 90) | 25.500 | 354.813 | 0.071 | 0.518 | PASS |
| NB-IoT Band 70 | 27.000 | 501.187 | 0.100 | 1.000 | PASS |
| NB-IoT Band 85 | 25.500 | 354.813 | 0.071 | 0.465 | PASS |

Distance (cm): 20 for Maximum Permissible Exposure.

Note:

1. The above EUT information is declared by the manufacturer.
2. The results are based on the maximum power.