RF EXPOSURE

EXEMPT REPORT

APPLICANT	:	Lierda Science & Technology Group Co.,Ltd
PRODUCT NAME	:	2.4GHz Wireless Module
MODEL NAME	:	LSD4RF0436-10D0, LSD4RF0436-11D0
BRAND NAME	:	lierda
FCC ID	:	N8NLSD4RF043610D0
STANDARD(S)	:	47CFR 2.1093 KDB 447498
RECEIPT DATE	:	2021-01-04
TEST DATE	:	2021-01-20 to 2021-02-01
ISSUE DATE	:	2021-02-23

Edited by: Peng Mi

Peng Mi (Rapporteur)

Approved by:

Peng Huarui (Supervisor)

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Change History		
Version	**Date**	**Reason for Change**
1.0	2021-02-23	First edition

1. Technical Information

Note: Provide by applicant.

1.1 Applicant and Manufacturer Information

Applicant:	Lierda Science & Technology Group Co.,Ltd
Applicant Address:	Room 301, Building No.1, Lierda IoT park, No.1326 Wenyi Xi Road, Hangzhou, Zhejiang Prov., China
Manufacturer:	Lierda Science & Technology Group Co.,Ltd
Manufacturer Address:	Room 301, Building No.1, Lierda IoT park, No.1326 Wenyi Xi Road, Hangzhou, Zhejiang Prov., China

1.2 Equipment Under Test (EUT) Description

Product Name:	2.4GHz Wireless Module
Serial No:	(N/A, marked #1 by test site)
Hardware Version:	V01.00
Software Version:	V01.01
Equipment Type:	2-FSK
Operating Frequency Range:	2400MHz~2483.5MHz
Antenna Type:	PCB Antenna
Antenna Gain:	0.5dBi

Note 1: According to the certificate holder, they declared that the models LSD4RF0436-10D0 and LSD4RF0436-11D0, only the software version is different, everything else is the same. The main measuring model is LSD4RF0436-10D0, only the results for LSD4RF0436-10D0 were recorded in this report.

1.3 Applied Reference Documents

Leading reference documents for testing:

No.	Identity	Document Title	Method determination /Remark
1	47 CFR§2.1093	Radio Frequency Radiation Exposure Evaluation: portable devices	No deviation
2	KDB 447498 D01v06	General RF Exposure Guidance	No deviation

Note 1: Additions to, deviation, or exclusions from the method shall be judged in the "method determination" column of add, deviate or exclude from the specific method shall be explained in the "Remark" of the above table.

Note 2: When the test result is a critical value, we will use the measurement uncertainty give the judgment result based on the 95% risk level.

2. Device Category and RF Exposure Limit

Per user manual, this device is a 2.4GHz Wireless Module. Based on 47CFR 2.1093, this device belongs to portable device category with General Population/Uncontrolled exposure.

Portable Devices:

47CFR 2.1093(b)

For purposes of this section, a portable device is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 20 centimeters of the body of the user.

General Population/Uncontrolled Exposure:

47CFR 2.1093(d) (2)

Limits for General Population/Uncontrolled exposure: 0.08 W/kg as averaged over the whole-body and spatial peak SAR not exceeding 1.6 W/kg as averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the hands, wrists, feet and ankles where the spatial peak SAR shall not exceed 4 W/kg, as averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube). General Population/Uncontrolled limits apply when the general public may be exposed, or when persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or do not exercise control over their exposure. Warning labels placed on consumer devices such as cellular telephones will not be sufficient reason to allow these devices to be evaluated subject to limits for occupational/controlled exposure in paragraph (d)(1) of this section.

3. RF Output Power

Frequency(MHz)	Max. Emission E(dBμV/m)	Max. Emission (W)	Time-averaging EIRP (mW)
2402	90.36	0.0330	0.3259
2440	91.22	0.0364	0.3973
2480	93.07	0.0450	0.6083

Note 1: According to KDB 447498 Section 4.3, SAR test exclusion conditions are based on source-based time-averaged maximum conducted output power of the RF channel requiring evaluation, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions.

Note 2: The maximum average emission refers to report (Report No.: SZ20120204W01).

4. RF Exposure Evaluation

➢ **Standalone Transmission SAR Evaluation:**

1. According to KDB 447498 section 4.3.1, the 1-g SAR test exclusion thresholds at test separation Distances≤ 50 mm are determined by:
   [(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[√f(GHz)] ≤ 3.0.
   · f(GHz) is the RF channel transmit frequency in GHz
   · Power and distance are rounded to the nearest mW and mm before calculation
   · The result is rounded to one decimal place for comparison

2. Standalone SAR measurement is not required for the EIRP is less than the exempt condition according to FCC KDB 447498 D01v06 4.3.2).

➢ **Simultaneous SAR Evaluation:**

This device only incorporates one transmitter, therefore simultaneous SAR evaluation is not required.

Annex A Testing Laboratory Information

1. Identification of the Responsible Testing Laboratory

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Laboratory Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

END OF REPORT