

# RF Exposure Evaluation Report

<b>Product</b>	: Wio-LR1121
<b>Trade mark</b>	: seeed studio
<b>Model/Type reference</b>	: Wio-LR1121, Wio-LR1121-N
<b>Serial Number</b>	: N/A
<b>Report Number</b>	: EED32R80625603
<b>FCC ID</b>	: Z4T-WIO-LR1121
<b>Date of Issue</b>	: Jun. 24, 2025
<b>Test Standards</b>	: 47 CFR Part 1.1307 47 CFR Part 1.1310 47 CFR Part 2.1091 47 CFR Part 2.1093 KDB 447498 D04 Interim General RF Exposure Guidance v01
<b>Test result</b>	: PASS

Prepared for:

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District, Shenzhen, Guangdong Province, P.R.C**

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## 2 General Information

### 2.1 Client Information

Applicant:	Seeed Technology Co., Ltd.
Address of Applicant:	9F, G3 Building, TCL International E City, Zhongshanyuan Road, Nanshan District, Shenzhen, Guangdong Province, P.R.C
Manufacturer:	Seeed Technology Co., Ltd.
Address of Manufacturer:	9F, G3 Building, TCL International E City, Zhongshanyuan Road, Nanshan District, Shenzhen, Guangdong Province, P.R.C
Factory:	Shenzhen Xinxian Technology Co., Limited
Address of Factory:	F5, Building B17, Hengfeng Industrial City, No. 739 Zhoushi Rd, Baoan District, Shenzhen, Guangdong, P.R.C.

### 2.2 General Description of EUT

Product Name:	Wio-LR1121
Model No.:	Wio-LR1121, Wio-LR1121-N
Test Model No.:	Wio-LR1121, Wio-LR1121-N
Trade mark:	seeed studio
Product Type:	<input checked="" type="checkbox"/> Mobile <input type="checkbox"/> Portable <input type="checkbox"/> Fix Location
Power Supply:	DC 5V
Test Voltage:	DC 5V
Sample Received Date:	May 09, 2025
Sample tested Date:	May 14, 2025 to Jun. 05, 2025
Remark:	Model No.: Wio-LR1121, Wio-LR1121-N Model Wio-LR1121, Wio-LR1121-N was tested. The electrical circuit design, layout, components used, and internal wiring are identical. Except for the presence of an IPPEX4 connector and antenna output path configuration via an internal $0\ \Omega$ resistor.

Feature	Wio-LR1121	Wio-LR1121-N
IPEX4 Connector	Present	Not Present
Antenna Output Path	Routed to IPEX4 Connector	Routed to Module Pad
Configuration Method	0Ω resistor bypasses pad	0Ω resistor connects to pad
RF Performance	Identical	Identical
Functionality	Identical	Identical
Other Components	Identical	Identical

### 2.3 Product Specification subjective to this standard

For 2.4G

Operation Frequency:	2403MHz~2479MHz
Modulation Type:	FSK
Number of Channel:	76
Antenna Type & Gain:	FPC Antenna: 2.53dBi Spring Antenna: 2.55dBi Fiberglass Antenna: 5.03dBi

For 915M

Operation Frequency:	903MHz~914.2MHz
Modulation Type:	FSK
Number of Channel:	8
Antenna Type & Gain:	FPC Antenna: -2.1dBi Spring Antenna: 2.25dBi Fiberglass Antenna: 8dBi

## 2.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Hongwei Industrial Park, Zone 70, Bao'an District, Shenzhen, Guangdong, China

Telephone: +86 (0) 755 33683668 Fax:+86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

## 2.5 Deviation from Standards

None.

## 2.6 Abnormalities from Standard Conditions

None.

## 2.7 Other Information Requested by the Customer

None.

### 3 SAR Evaluation

#### 3.1 RF Exposure Compliance Requirement

##### 3.1.1 Limits

The SAR-based exemption formula of § 1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold  $P_{th}$  (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive).  $P_{th}$  is given by Formula

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

where

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

and  $f$  is in GHz,  $d$  is the separation distance (cm), and  $ERP_{20\text{cm}}$  is per Formula (B.1).

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases} \quad (\text{B.1})$$

The 1 mW Blanket Exemption of § 1.1307(b)(3)(i)(A) applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power of no more than 1 mW, regardless of separation distance.

##### 3.1.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

**3.1.3 EUT RF Exposure Evaluation****For Stand alone:**

Frequency	Estimation distance (cm)	Max. Conducted Output power (dBm)	Antenna Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (mW)	MPE ratio	Result
@2.4GHz	20	12.3	5.03	15.18	32.96	3060	0.0108	Pass
@915MHz	20	20.8	8	26.65	462.38	1866.6	0.2477	Pass

**Note:**

- ①EIRP=conducted power+ antenna gain;
- ②ERP=EIRP-2.15;
- ③EIRP(dBm) = Field strength of the fundamental signal(dBuV/m@3m) – 95.23;
- ④ERP(mW) =  $10^{(ERP \text{ (dBm)}/10)}$ ;
- ⑤The estimation distance is 20cm;
- ⑥The Max. Conducted Output power refer to the report of EED32R80625601, EED32R80625602 and only the worst case data was recorded in the report.

## Statement

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. The Company Name shown on Report and Address, the sample(s) and sample information was/were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified;
3. The result(s) shown in this report refer(s) only to the sample(s) tested;
4. Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule stated in ILAC-G8:09/2019/CNAS-GL015:2022;
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\*\*\* End of Report \*\*\*