

RF EXPOSURE REPORT



Applicant: LEDGER SAS
106 Rue du Temple, 75003 Paris, France
Manufacturer: LEDGER SAS
106 Rue du Temple, 75003 Paris, France
Product Name: LEDGER STAX
Brand Name: [L] or [LEDGER]
Model No.: 2103
FCC ID 2ASAL-2103
Date of EUT Received: Jul. 08, 2025
Issue Date: Aug. 06, 2025

Approved By

John Yeh

We hereby certify that:

The above equipment was evaluated by SGS Taiwan Ltd. The evaluation in this report is in compliance with FCC Rule Part §2.1093, KDB 447498 D01 v06.

The results of this report relate only to the sample identified in this report.

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Revision History

Report Number	Revision	Description	Issue Date	Revised By	Remark
TESA2507000539ES	00	Original	Aug. 06, 2025	Cindy Chou	

Note:

- 1、The remark "" indicates modification of the report upon requests from certification body.

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1 DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)

1.1 Product Description

Product Name:	LEDGER STAX
Brand Name:	[L] or [LEDGER]
Model No.:	2103

1.2 Evaluation site

Laboratory	Site Address		FCC Designation number	ISED Company Number	CAB Identifier
SGS Taiwan Ltd. Central RF Lab. (TAF code 3702)	☐	No. 134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, 24803, Taiwan.	TW0027	4620A	TW3702
	☒	No. 2, Keji 1st Rd., Guishan Township, Taoyuan County, 333 Taiwan.	TW0028	4620E	
	☐	1F, No. 8, Alley 15, Lane 120, Sec. 1, Nei Hu Road, Nei Hu District, Taipei City, 222 Taiwan.	TW0029	23862	

1.3 Antenna Information:

Antenna Type	Supplier	Antenna Part No.	Freq. (MHz)	Peak Antenna Gain (dBi)
Internal	LEDGER SAS	2103	2.4GHz	-3.71

Note: Antenna information is provided by the applicant.

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1.4 Rated Power

Mode	Freq. Range (MHz)	Channels	Modulation Technology	Max Output Power (dBm)	Antenna Gain (dBi)	Antenna Directional Gain (dBi)	EIRP (dBm)
BLE	2402-2480	40	GFSK	0	-3.71	N/A	-3.71

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2 RF EXPOSURE EVALUATION FOR PORTABLE CONDITIONS

2.1 FCC Standard Applicable:

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

2.1.1 As per KDB 447498 D01 4.3.1,

Step a: For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

$$\left[\frac{(\text{max. power of channel, including tune-up tolerance, mW})}{(\text{min. test separation distance, mm})} \right] \cdot \sqrt{f(\text{GHz})} \leq 3.0 \text{ for 1-g Head \& Body SAR and } \leq 7.5 \text{ for 10-g extremity Hand SAR, where}$$

- $f(\text{GHz})$ 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
- The values 3.0 and 7.5 are referred to as numeric thresholds in **step b)** below

Step b: For 100 MHz to 6 GHz and test separation distances > 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following (also illustrated in Appendix B):

- 1) $\{[\text{Power allowed at numeric threshold for 50 mm in step a)}] + [(\text{test separation distance} - 50 \text{ mm}) \cdot (f(\text{MHz})/150)]\}$ mW, for 100 MHz to 1500 MHz
- 2) $\{[\text{Power allowed at numeric threshold for 50 mm in step a)}] + [(\text{test separation distance} - 50 \text{ mm}) \cdot 10]\}$ mW, for > 1500 MHz and ≤ 6 GHz

Step c: For frequencies below 100 MHz, the following may be considered for SAR test exclusion (also illustrated in Appendix C):

- 1) For test separation distances > 50 mm and < 200 mm, the power threshold at the corresponding test separation distance at 100 MHz in step b) is multiplied by $[1 + \log(100/f(\text{MHz}))]$
- 2) For test separation distances ≤ 50 mm, the power threshold determined by the equation in c) 1) for 50 mm and 100 MHz is multiplied by $\frac{1}{2}$
- 3) SAR measurement procedures are not established below 100 MHz

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2.2 Measurement Result:

Step a:

This is a portable device and the max. output power including tune-up tolerance is 1 (mW), lower than the threshold given and derived as formula given above, where

$$=1(\text{mW})/5(\text{mm}) \cdot \sqrt{2.402(\text{GHz})} = 0.31 < 3.0$$

Frequency (MHz)	Max. output power including tune-up tolerance(dBm)	Max. output power including tune-up tolerance(mW)	Distance (mm)	Result	≤ 3.0 for 1-g SAR
2402	0	1	5	0.310	TRUE

As the result of calculation result indicates, the RF exposure generating from given transmitter (transmitter employed digital modulation) can be excluded from SAR measurement, and is deemed compliant with RF exposure as per FCC.

Conclusion: Source-base time average power is below Exemption Criteria and/or Routine Evaluation MPE thresholds, therefore the device is compliant FCC RF exposure requirement.

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2.2.1 As per KDB447498D01v06 4.3.1 c)

SAR test exclusion threshold for NFC (13.56MHz) shall be evaluated as below,

- a) For test separation distances ≤ 50 mm, the power threshold determined by the equation in 4.3.1 c)
 - 1) for 50 mm and 100 MHz is multiplied by $\frac{1}{2}$
 - b) The power threshold at 50mm/100 MHz in 4.3.1 b) is multiplied by $[1 + \log(100/f(\text{MHz}))]$ where f is 13.56MHz
 - c) The power threshold in 4.3.1 b) is $[\text{Power allowed at numeric threshold for 50 mm in 4.3.1 a)} + [(\text{test separation distance} - 50 \text{ mm}) \cdot (f(\text{MHz})/150)] \text{ mW}$, for 100 MHz to 1500 MHz where test separation distance is 50mm, frequency is 100MHz.
 - d) Power allowed at numeric threshold for 50 mm in 4.3.1 a) is $[3/\sqrt{f(\text{GHz})}] \cdot (\text{test separation distance})$
- Hence, SAR test exclusion threshold is calculated in reverse sequence:
- d) : $[3/\sqrt{0.1}] \cdot 50 = 474.3416\text{mW}$
 - c) : $474.3416 + (50-50) \cdot (100/150) = 474.3416\text{mW}$
 - b) : $474.3416 \cdot [1 + \log(100/13.56)] = 885.9470\text{mW}$
 - a) : $885.9470 \cdot 0.5 = 442.974\text{mW}$

NFC

Frequency (MHz)	E-FIELD dBuV/m	Test Distance (m)	EIRP (dBm)	EIRP (mW)
13.56	7.25	30	-67.90757	0.0000002

Note:

Distance Factor = $40\log(\text{Test Distance (m)} / \text{Separation Distance (m)})$

E-FIELD (dBuV/m) = E-FIELD (dBuV/m) + Distance Factor(dB)

EIRP (dBm) = (E-FIELD(dBuV/m)+ 20log(d(m)))-104.7

EIRP(W) = $(10^{(\text{EIRP(dBm)}/10)})/1000$

~ End of Report ~

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