

SAR Exclusion Evaluation Report

Applicant : LEXON
Product Type : OSLO ENERGY+
Trade Name : LEXON
Model Number : LL141
Date of Received : Oct. 08, 2021
Test Period : Oct. 19 ~ Oct. 20, 2021
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Issue by

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American Association for Laboratory Accreditation number: 3464.02

Test Firm MRA designation number: CN1168



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Revision History

Rev.	Issue Date	Revisions
00	Nov. 01, 2021	Initial Issue

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1. Description of Equipment under Test (EUT)

Applicant	LEXON 125 avenue des Champs Elysées 75008 Paris France			
Manufacturer	LEXON 125 avenue des Champs Elysées 75008 Paris France			
Product Type	OSLO ENERGY+			
Trade Name	LEXON			
Model Number	LL141			
FCC ID	2ARD3-LL141			
Frequency Range	Operate Band		Frequency Range (MHz)	
	Bluetooth BR		2402 - 2480	
	Bluetooth EDR		2402 - 2480	
Antenna information	Model	Type	Max. Gain (dBi)	
	2.4G ANT	PCB Antenna	2402-2480	-0.58

The above equipment was tested by Eurofins Wireless Testing Service (Shenzhen) Co., Ltd. For compliance with the requirements set forth in 47 CFR § 2.1093. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

2. Reference Applicable Standard

Standard	Description	Version
ANSI/IEEE C95.1	American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 300 kHz to 100 GHz, New York.	1992
IEEE 1528	IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head From Wireless Communications Devices: Measurement Techniques.	2013
FCC 47 CFR Part 2.1093	Radiofrequency radiation exposure evaluation: portable devices.	---
FCC KDB 865664 D01	SAR measurement 100 MHz to 6 GHz - describes SAR measurement procedures for devices operating between 100 MHz to 6 GHz	v01r04
FCC KDB 865664 D02	RF Exposure Reporting - provides general reporting requirements as well as certain specific information required to support MPE and SAR compliance.	v01r02
FCC KDB 447498 D01	General RF Exposure Guidance - provides guidance pertaining to RF exposure requirements for mobile and portable device equipment authorizations.	v06

3. SAR Test Exclusion

As RF exposure evaluation of portable device, SAR test is not required when the evaluation results. According to KDB 447498 4.3.1, unless excluded by specific FCC test procedures, portable devices shall include SAR data for equipment approval. SAR test necessity will be based on the exclusion result.

The test exclusion refers KDB 447498 as below:

≤50 mm:

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

>50 mm and <200 mm:

- [Power allowed at numeric threshold for 50 mm in step 1) + (test separation distance - 50 mm) · (f(MHz)/150)] mW, at 100 MHz to 1500 MHz
- [Power allowed at numeric threshold for 50 mm in step 1) + (test separation distance - 50 mm) · 10] mW at > 1500 MHz and ≤ 6 GHz

3.1 Conducted Power

The conducted power turn-up tolerance, please reference manufacturer specification.

Band	Modulation Type	Data Rate (Mbps)	Frequency (MHz)	Packet Type	Peak Power (dBm)
Bluetooth BR	GFSK	1	2402.0	DH1	1.13
				DH3	-0.69
				DH5	-2.95
			2441.0	DH1	0.69
				DH3	-0.78
				DH5	-2.91
			2480.0	DH1	0.77
				DH3	-0.73
				DH5	-2.85
Bluetooth EDR	$\pi/4$ -DQPSK	2	2402.0	2DH1	0.84
				2DH3	-0.74
				2DH5	-2.96
			2441.0	2DH1	0.64
				2DH3	-0.91
				2DH5	-3.08
			2480.0	2DH1	0.8
				2DH3	-0.72
				2DH5	-2.96
	8DPSK	3	2402.0	3DH1	0.63
				3DH3	-0.99
				3DH5	-3.15
			2441.0	3DH1	0.72
				3DH3	-0.78
				3DH5	-3.05
			2480.0	3DH1	0.7
				3DH3	-0.84
				3DH5	-2.98

3.2 Antenna Location

Ant. Used	Antenna to user distance (mm)					
	Side 1	Side 2	Side 3	Side 4	Side 5	Side 6
Bluetooth Antenna	5	5	5	5	5	5

3.3 Evaluation Results

The evaluation of SAR test reduction according to KDB447498

SAR test is not required when the results showed "EXEMPT".

SAR test reduction										
Ant. Used	Band	Frequency (GHz)	Power		Calculated threshold value					
			(dBm)	(mW)	Side 1	Side 2	Side 3	Side 4	Side 5	Side 6
Bluetooth Antenna	BT	2.402	1.13	1.30	0.4030	0.4030	0.4030	0.4030	0.4030	0.4030
					EXEMPT	EXEMPT	EXEMPT	EXEMPT	EXEMPT	EXEMPT
		2.441	0.84	1.21	0.3781	0.3781	0.3781	0.3781	0.3781	0.3781
					EXEMPT	EXEMPT	EXEMPT	EXEMPT	EXEMPT	EXEMPT
		2.480	0.72	1.18	0.3717	0.3717	0.3717	0.3717	0.3717	0.3717
					EXEMPT	EXEMPT	EXEMPT	EXEMPT	EXEMPT	EXEMPT

Exclusion Considerations: SAR is not required

- Note:
1. Calculated Value include string "mW", that is mean through compare output power with threshold, if the output power more than threshold value the SAR test should be perform. Otherwise, the SAR test could be exempt. (>50mm)
 2. Calculated Value only include number format, that is mean through compare output power with threshold, if the threshold value more than 3, the SAR test should be perform. Otherwise, the SAR test could be exempt. (<50mm)
 3. When an antenna qualifies for the standalone SAR test exclusion of KDB447498 section 4.3.1 and also transmits simultaneously with other antennas, the standalone SAR value must be estimated according to KDB447498 section "4.3.2. Simultaneous transmission SAR test exclusion considerations b) ".
 4. We used highest frequency and power, the result should be evaluated the worst case.
 5. Power and distance are rounded to the nearest mW and mm before calculation.
 6. The result is rounded to once decimal place for comparison.
 7. We use a minimum distance of 5mm for Bluetooth function.