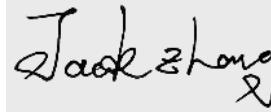




Test report No:
2490822R-RF-US-P20V01

RF Exposure Evaluation Exemption Report

Product Name	Level lock
Trademark	level
Model and /or type reference	C1,A3
FCC ID	2ATIO1
Applicant's name / address	Level Home Inc. 935 Main St Redwood City, CA 94063, United States of America
Test method requested, standard	FCC 47CFR §1.1307, §1.1310
Verdict Summary	IN COMPLIANCE
Documented By (name / position & signature)	Tim Cao/Project Manager 
Approved by (name / position & signature)	Jack Zhang/ Manager 
Date of issue	2024-10-21
Report Version	V1.0
Report template No	Template_FCC MPE-RF-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.

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The results presented in this Test Report apply only to the particular item under test established in this document.

IMPORTANT: No parts of this report may be reproduced or quoted out of context, in any form or by any means, except in full, without the previous written permission of DEKRA.

GENERAL CONDITIONS

Test Location	No. 99, Hongye Road, Suzhou Industrial Park Suzhou, 215006, P.R. China
Date (receive sample)	Sept. 25, 2024
Date (start test)	Sept. 27, 2024
Date (finish test)	Oct. 12, 2024

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or Competent Authorities.
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4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA.

ENVIRONMENTAL CONDITIONS

The climatic conditions during the tests are within the limits specified by the manufacturer for the operation of the EUT and the test equipment. The climatic conditions during the tests were within the following limits:

Ambient temperature	15°C - 35 °C
Relative Humidity air	30% - 60%

If explicitly required in the basic standard or applied product / product family standard the climatic values are recorded and documented separately in this test report.

POSSIBLE TEST CASE VERDICTS

Test case does not apply to test object	N/A
Test object does meet requirement	P (Pass) / PASS
Test object does not meet requirement	F (Fail) / FAIL
Not measured	N/M

ABBREVIATIONS

For the purposes of the present document, the following abbreviations apply:

EUT	: Equipment Under Test
QP	: Quasi-Peak
CAV	: CISPR Average
AV	: Average
CDN	: Coupling Decoupling Network
SAC	: Semi-Anechoic Chamber
OATS	: Open Area Test Site
BW	: Bandwidth
AM	: Amplitude Modulation
PM	: Pulse Modulation
HCP	: Horizontal Coupling Plane
VCP	: Vertical Coupling Plane
UN	: Nominal voltage
Tx	: Transmitter
Rx	: Receiver
N/A	: Not Applicable
N/M	: Not Measured

DOCUMENT HISTORY

Report No.	Version	Description	Issued Date
2490822R-RF-US-P20V01	V1.0	Initial issue of report.	2024-10-21

REMARKS AND COMMENTS

1. The equipment under test (EUT) does meet the essential requirements of the stated standard(s)/test(s).
2. These test results on a sample of the device are for the purpose of demonstrating Compliance with FCC 47CFR §1.1307 and §1.1310.
3. The measurement result is considered in conformance with the requirement if it is within the prescribed limit, it is not necessary to account the uncertainty associated with the measurement result.
4. The test results presented in this report relate only to the object tested.
5. The test report shall not be reproduced without the written approval of DEKRA Testing and Certification (Suzhou) Co., Ltd.
6. This report will not be used for social proof function in China market.
7. DEKRA declines any responsibility with the following test data provided by customer that may affect the validity of result:
 - Chapter 1.3 Antenna information.

1. RF Exposure Evaluation

1.1. Limits

SAR exemption limits

According to § 1.1307(b)(3)(i)(C)

Using Table 1 and the minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates, the ERP (watts) is no more than the calculated value prescribed for that frequency. For the exemption in Table 1 to apply, R must be at least $\lambda/2\pi$, where λ is the free-space operating wavelength in meters. If the ERP of a single RF source is not easily obtained, then the available maximum time-averaged power may be used in lieu of ERP if the physical dimensions of the radiating structure(s) do not exceed the electrical length of $\lambda/4$ or if the antenna gain is less than that of a half-wave dipole (1.64 linear value).

Table 1 to § 1.1307(b)(3)(i)(C) - Single RF Sources Subject to Routine Environmental Evaluation

RF Source frequency (MHz)	Threshold ERP (watts)
0.3-1.34	$1,920 R^2$.
1.34-30	$3,450 R^2/f^2$.
30-300	$3.83 R^2$.
300-1,500	$0.0128 R^2 f$.
1,500-100,000	$19.2R^2$.

Finally, when 10-g extremity SAR applies, SAR test exemption may be considered by applying a factor of 2.5 to the SAR-based exemption threshold.

Exposure limits

According to § 1.1310(e)(1):

Table 1 to § 1.1310(e)(1) sets forth limits for Maximum Permissible Exposure (MPE) to radiofrequency electromagnetic fields.

Table 1 to § 1.1310(e)(1)—Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging Time (minutes)
(i) Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	*(100)	≤6
3.0 – 30	1842/f	4.89/f	*(900/f ²)	<6
30 – 300	61.4	0.163	1.0	<6
300 – 1500			f/300	<6
1500 – 100000			5	<6
(ii) Limits for General Population/Uncontrolled Exposure				
0.3 – 3.0	614	1.63	*(100)	<30
3.0 – 30	824/f	2.19/f	*(180/f ²)	<30
30 – 300	27.5	0.073	0.2	<30
300 – 1500			f/1500	<30
1500 – 100000			1.0	<30
f = frequency in MHz. * = Plane-wave equivalent power density.				

1.2. Test Procedure

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

The temperature and related humidity: 18°C and 78% RH.

1.3. Test Result of RF Exposure Evaluation

Product Name.....:	Level lock
Model No.:	C1,A3
Trademark	level
FCC ID.....:	2ATIO1
Hardware version	309000121010R6
Software version.....:	v3.2.0.214
Manufacturer	Level Home Inc.
Manufacturer address.....:	935 Main St Redwood City, CA 94063, United States of America
Model Difference(s)	C1 and A3 have the same circuit, there is no circuit for internal and external locks. C1 contains a lock cylinder and internal and external locks, while A3 only has a lock cylinder.

Wireless specification	BLE 5.0					
Operating frequency range(s)	2402~2480MHz					
Type of Modulation	GFSK					
PHYs.....:	<input checked="" type="checkbox"/>	LE 1M	<input checked="" type="checkbox"/>	LE 2M	<input checked="" type="checkbox"/>	LE Coded S=2/8
Data Rate	<input checked="" type="checkbox"/>	1Mbit/s	<input checked="" type="checkbox"/>	2Mbit/s	<input checked="" type="checkbox"/>	500/125 Kbit/s
Number of channel	40					

Wireless specification	Thread			
Operating frequency range(s)	2405~2480MHz			
Type of Modulation	QPSK			
Data Rate	250kbps			
Number of channel	16			

Rated power supply.....	Voltage and Frequency	
	<input type="checkbox"/>	AC: 220 – 240 Vac, 50/60 Hz
	<input type="checkbox"/>	AC: 110 – 130 Vac, 50/60 Hz
	<input type="checkbox"/>	DC:
	<input checked="" type="checkbox"/>	Battery: 3Vdc
	<input type="checkbox"/>	PoE:
Mounting position	<input checked="" type="checkbox"/>	Table top equipment
	<input type="checkbox"/>	Wall/Ceiling mounted equipment
	<input type="checkbox"/>	Floor standing equipment
	<input type="checkbox"/>	Hand-held equipment
	<input type="checkbox"/>	Other:

Antenna information:**Bluetooth, Thread:**

Antenna model / type number	N/A		
Antenna serial number	N/A		
Antenna Delivery	<input checked="" type="checkbox"/>	1TX + 1RX	
	<input type="checkbox"/>	2TX + 2RX	
	<input type="checkbox"/>	Others:.....	
Antenna technology.....	<input checked="" type="checkbox"/>	SISO	
	<input type="checkbox"/>	MIMO	<input type="checkbox"/> CDD <input type="checkbox"/> Beam-forming
	<input type="checkbox"/>	External	<input type="checkbox"/> Dipole <input type="checkbox"/> Sectorized
Antenna Type	<input type="checkbox"/>	Internal	<input type="checkbox"/> Ceramic Chip <input type="checkbox"/> PIFA <input checked="" type="checkbox"/> PCB <input type="checkbox"/> Others.....
	<input checked="" type="checkbox"/>		
Antenna Gain.....	-6.5 dBi		

Note: The antenna information for the EUT in clause 1.3 are provided and confirmed by the client.

Standalone modes:
Bluetooth, Thread:

The tune-up power is 1dB, so the maximum conducted we used to calculate RF exposure is 3.31 dBm for Bluetooth and 6.82 dBm for Thread.

Mode	Exposure Condition	Maximum conducted Output power (dBm)	EIRP (mW)	ERP (mW)	Distance (mm)	$\lambda/2\pi$ (mm)	f(MHz)	Threshold ERP (mW)	RF exposure evaluation verdict
Bluetooth	Body	3.31	0.48	0.29	200	19.9	2402	768	Not required
Thread	Body	6.82	1.08	0.66	200	19.9	2405	768	Not required

Note: Bluetooth data is quoted from original report, report no. 1942175R-RF-US-P06V02. And Thread and Bluetooth cannot be used at the same time.

Conclusion: SAR test is not required..

The End