

1 Cover Page

RF Exposure REPORT

Application No.: SHCR2210002244HS
FCC ID: 2ALS8-KS0017
IC: 22636-KS0017
Applicant: Ninebot (Changzhou) Tech Co., Ltd
Address of Applicant: 16F-17F, Block A, Building 3, No.18, Changwu Mid Rd, Wujin Dist., Changzhou, Jiangsu, China.
Manufacturer: Ninebot (Changzhou) Tech Co., Ltd
Address of Manufacturer: 16F-17F, Block A, Building 3, No.18, Changwu Mid Rd, Wujin Dist., Changzhou, Jiangsu, China.
Factory: Ninebot (Changzhou) Tech Co., Ltd
Address of Factory: 16F-17F, Block A, Building 3, No.18, Changwu Mid Rd, Wujin Dist., Changzhou, Jiangsu, China.

Equipment Under Test (EUT):
EUT Name: Ninebot eKickScooter C2 Pro
Model No.: 051404U
Trade mark: ninebot
Standard(s) : FCC Rules 47 CFR §2.1093
 KDB447498 D01 General RF Exposure Guidance v06
 RSS-102 Issue 5 Amendment 1 (February 2, 2021)

Date of Receipt: 2022-10-21
Date of Test: 2022-10-22 to 2022-11-07
Date of Issue: 2022-11-17

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.

Parlan Zhan

Parlan Zhan
E&E Section Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.



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Revision Record			
Version	Description	Date	Remark
00	Original	2022-11-17	/

Authorized for issue by:			
	<hr/>		
	Bill Wu / Project Engineer		
	<hr/>		
	Parlam Zhan / Reviewer		



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3 General Information

3.1 General Description of E.U.T.

Power supply:	DC 21.6V Rechargeable battery Charging adapter: Model: NBW25D201D5N-US Input:100-240V~50-60Hz Output:24.2V 1.5A
Product Type:	<input type="checkbox"/> Portable device
	<input checked="" type="checkbox"/> Mobile device
	<input type="checkbox"/> Fixed device

3.2 Details of E.U.T.

BT

Operation Frequency:	2402MHz to 2480MHz
Modulation Type:	GFSK, Pi/4DQPSK, 8DPSK
Channel Spacing:	1MHz
Number of Channels:	79
Antenna Gain:	4 dBi (Provided by manufacturer)
Antenna Type:	PCB Antenna
S/N:	N2SKA2241P0008
Firmware Version:	V1.1

BLE

Operation Frequency:	2402MHz to 2480MHz
Modulation Type:	GFSK
Data Rate:	1Mbps,2Mbps
Channel Spacing:	2MHz
Number of Channels:	40
Antenna Gain:	4 dBi (Provided by manufacturer)
Antenna Type:	PCB Antenna
S/N:	N2SKA2241P0008
Firmware Version:	V1.1



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3.3 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. E&E Lab

588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China.

Tel: +86 21 6191 5666

Fax: +86 21 6191 5678

No tests were sub-contracted.

Note:

1. SGS is not responsible for wrong test results due to incorrect information (e.g. max. clock frequency, highest internal frequency, antenna gain, cable loss, etc) is provided by the applicant. (if applicable).
2. SGS is not responsible for the authenticity, integrity and the validity of the conclusion based on results of the data provided by applicant. (if applicable).

3.4 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS (No. CNAS L0599)**

CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **A2LA (Certificate No. 6332.01)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. is accredited by the American Association for Laboratory Accreditation(A2LA).

- **FCC (Designation Number: CN1301)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been recognized as an accredited testing laboratory.

- **ISED (CAB Identifier: CN0020)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. EMC Laboratory has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory.

Company Number: 8617A

- **VCCI (Member No.: 3061)**

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-13868, C-14336, T-12221, G-10830 respectively.



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4 Test Standards and Limits

4.1 FCC Radiofrequency radiation exposure limits

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances \leq 50 mm are determined by:

$[(\text{max power of channel})/(\text{min test separation distance})]^*[\sqrt{f}(\text{GHz})] \leq 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

- $f(\text{GHz})$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds

The test exclusions are applicable only when the minimum test separation distance is \leq 50 mm, and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is $<$ 5 mm, a distance of 5 mm according to 4.1 f) is applied to determine SAR test exclusion. The practical use condition for this device is as a handheld accessories. So the applicable limit is 10-g extremity SAR

For 2.4G band device, the limit of worse case is

$$P_{\text{max}} \leq 7.5 * D_{\text{min}} / \sqrt{f} = 7.5 * 5 / \sqrt{2.480} = 23.81 \text{ mW}$$



4.2 IC Radiofrequency radiation exposure limits

According to RSS-102 section 2.5.1, SAR evaluation is required if the separation distance between the user and/or bystander and the antenna and/or radiating element of the device is less than or equal to 20 cm, except when the device operates at or below the applicable output power level (adjusted for tune-up tolerance) for the specified separation distance

MHz	5	10	15	20	25	30	35	40	45	50	mm
≤300	71	101	132	162	193	223	254	284	315	345	mW
450	52	70	88	106	123	141	159	177	195	213	
835	17	30	42	55	67	80	92	105	117	130	
1900	7	10	18	34	60	99	153	225	316	431	
2450	4	7	15	30	52	83	123	173	235	309	
3500	2	6	16	32	55	86	124	170	225	290	
5800	1	6	15	27	41	56	71	85	97	106	

Output power level shall be the higher of the maximum conducted or equivalent isotropically radiated power (e.i.r.p.) source-based, time-averaged output power. For controlled use devices where the 8 W/kg for 1 gram of tissue applies, the exemption limits for routine evaluation are multiplied by a factor of 5. For limb-worn devices where the 10 gram value applies, the exemption limits for routine evaluation in Table 1 are multiplied by a factor of 2.5. If the operating frequency of the device is between two frequencies located in Table 1, linear interpolation shall be applied for the applicable separation distance. For test separation distance less than 5 mm, the exemption limits for a separation distance of 5 mm can be applied to determine if a routine evaluation is required.

The practical use condition for this device is as a handheld accessories. So the applicable limit is 10-g extremity SAR

For 2.4G band device, the limit is $P_{max} \leq 2.5 * 4 = 10mW$



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5 Measurement and Calculation

The Power Data is based on the RF Test Report SHCR221000224201 & SHCR221000224202

TestMode	Antenna	Channel	Result [dBm]	Power [mW]
DH5	Ant1	2402	-0.41	0.91
		2441	-0.65	0.86
		2480	-1.61	0.69
2DH5	Ant1	2402	-0.05	0.99
		2441	-0.14	0.97
		2480	-1.12	0.77
3DH5	Ant1	2402	-0.18	0.97
		2441	-0.24	0.95
		2480	-0.67	0.86

Test Mode	Antenna	Channel	Result [dBm]	Power [mW]
BLE_1M	Ant1	2402	-0.24	0.95
		2440	-0.46	0.90
		2480	-1.58	0.70
BLE_2M	Ant1	2402	-0.35	0.92
		2440	-0.56	0.88
		2480	-1.59	0.69



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5.1 RF Exposure Calculation

The Max Conducted Peak Output Power is 0.99mW. The best case gain of the antenna is 4dBi. 4dBi logarithmic terms convert to numeric result is nearly 2.51

According to the formula. calculate the EIRP test result:

$$EIRP= P \times G = 0.99 \text{ mW} \times 2.51 = 2.489\text{mW} < 10\text{mW} < 23.81\text{mW}$$

So the SAR report is not required.

--End of the Report--



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