



SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZEMC-TRF-01 Rev. A/1

Report No.: SZCR240500161404

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RF EXPOSURE EVALUATION REPORT

Application No.: SZCR2405001614AT
Applicant: Segway Technology Co., Ltd.
Address of Applicant: No. 395, Xiacheng South Road, Wujin National High-tech Industrial Development Zone, Changzhou, 213100 China
Manufacturer: Segway Technology Co., Ltd.
Address of Manufacturer: No. 395, Xiacheng South Road, Wujin National High-tech Industrial Development Zone, Changzhou, 213100 China
Factory: Shenzhen Omni Intelligent Technology Co., LTD.
Address of Factory: 11th Floor, Building 31, Phase III, Lianchuang Technology Park, Nanwan Street, Longgang District, Shenzhen, Guang Dong, China
Equipment Under Test (EUT):
EUT Name: T-BOX
Model No.: NB-ORBOXC14
Trade Mark: Segway
FCC ID: 2BGR3-OR0002
Standard(s) : FCC Rules 47 CFR §2.1091
KDB 447498 D04 interim General RF Exposure Guidance v01
Date of Receipt: 2024-05-06
Date of Evaluation: 2024-05-14 to 2024-06-05
Date of Issue: 2024-06-08

Evaluation Result:	Pass*
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* In the configuration evaluated, the EUT complied with the standards specified above.

Kenx. Xu

Keny Xu
EMC Laboratory Manager



SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch EMC Laboratory

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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2024-06-08		Original

Authorized for issue by:				
		Vincent Chen		
		Vincent Chen/Project Engineer		
		Eric Fu		
		Eric Fu/Reviewer		

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3 General Information

3.1 General Description of E.U.T.

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.

Power supply:	DC 12V Input
For BLE:	
Cable Loss (for RF conducted test):	0.5dB
Operation Frequency:	2402MHz to 2480MHz
Bluetooth Version:	V5.0 LE
Modulation Type:	GFSK
Number of Channels:	40
Data Rate:	1Mbps, 2Mbps
Channel Spacing:	2MHz
Antenna Type:	PCB Antenna
Antenna Gain:	0.58dBi
For 3G:	
Cable Loss (for RF conducted test):	0.7dB(below 1GHz), 1dB(above 1GHz)
Sample Type:	Mobile production
Support Network:	RMC, HSDPA, HSUPA
Operation Frequency Band:	UMTS FDD Band II/V
Modulation Type:	QPSK for WCDMA
Supported Channel Bandwidth:	5MHz for WCDMA
UMTS Power Class:	Level 3
Antenna Type:	PIFA Antenna
Antenna Gain:	WCDMA B2: -1.25dBi; B5: -0.87dBi
For 4G:	
Cable Loss (for RF conducted test):	0.7dB(below 1GHz), 1dB(above 1GHz)
Sample Type:	Mobile production
LTE Operation	LTE FDD Band 2,4,12

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Frequency Band:	
Modulation Type:	QPSK, 16QAM
LTE Power Class:	Level 3
Antenna Type:	PIFA Antenna
Antenna Gain:	B2: -1.25dBi, B4: -0.86dBi, B12: -0.72dBi

Remark: The information in this section is provided by the applicant or manufacturer, SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.

3.3 Separation Distance

Minimum test separation distance:	20cm
Remark: This minimum test separation distance is determined by the smallest distance from the antenna and radiating structures or outer surface of the device, according to the host form factor, exposure conditions and platform requirements, to any part of the body or extremity of a user or bystander.	



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3.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China. 518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

3.5 Test Facility

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

• A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• VCCI (Member No. 1937)

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd.

Shenzhen EMC laboratory have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• FCC –Designation Number: CN1336

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1336. Test Firm Registration Number: 787754.

• Innovation, Science and Economic Development Canada

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

3.6 Deviation from Standards

None

3.7 Abnormalities from Standard Conditions

None



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4 FCC Radiofrequency radiation exposure limits

According to §1.1310, the limit for general population/uncontrolled exposures

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

5 Measurement and Calculation

MPE Calculation

According to the formula $S = P / 4\pi R^2$, we can calculate S which is MPE.

Note:

- 1) P (mW)
- 2) R = distance to the center of radiation of antenna (in centimeter)
- 3) MPE limit = 1mW/cm²

Operating Band	Frequency (MHz)	Antenna Gain (dBi)	Max Conducted Power (dBm)	EIRP(ERP) (dBm)	EIRP(ERP) Limit (dBm)	Power Density at R = 20 cm (mW/cm ²)	Limit (mW/cm ²)	Gain according to EIRP(ERP) (dBi)	Gain according to Pd (dBi)	Max Gain Allowed (dBi)	conclusion
WCDMA Band II	1852.4	-1.25	23.57	22.32	33.00	0.0339	1.0000	9.43	13.44	9.43	Pass
WCDMA Band V	826.4	-0.87	24.71	21.69	38.45	0.0482	0.5509	15.89	9.71	9.71	Pass
LTE Band 2	1880.0	-1.25	23.69	22.44	33.00	0.0349	1.0000	9.31	13.32	9.31	Pass
LTE Band 4	1745.0	-0.86	23.75	22.89	30.00	0.0387	1.0000	6.25	13.26	6.25	Pass
LTE Band 12	700.5	-0.72	24.41	21.54	34.77	0.0465	0.4670	12.51	9.29	9.29	Pass
BLE	2402.0	0.58	0.59	1.17	30.00	0.0003	1.0000				Pass

In order to ensure compliance with the MPE for a uncontrolled environment, the sum of the ratios of the power density to the corresponding MPE should not exceed unit.

The product also has multiple transmitters The Simultaneous Transmission Possibilities are as below:

Simultaneous Tx Combination	Configuration
1	WWAN + BLE

No.	Mode	Total Ratio	Limit	Result
1	LTE Band 12+BLE	0.0999	1.0000	Pass

6 EUT Construction Details (EUT Photos)

Refer to Appendix – External and Internal Photos for SZCR2405001614AT

--End of the Report--



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