

RF Exposure Evaluation Report

Application No.: GZEM2101000395CR
Applicant: DSEA A/S
Address of Applicant: Kongebakken 9, DK-2765 Smørum, Denmark
Manufacturer: DSEA A/S
Address of Manufacturer: Kongebakken 9, DK-2765 Smørum, Denmark
Factory: Minami Acoustics Limited
Address of Factory: #13, Maonan Road, Torch Development District, 528437, Zhongshan, Guangdong, China

Equipment Under Test (EUT):

EUT Name: ADAPT 230/ ADAPT 231/ADAPT 260/ADAPT 261

Model No.: SCBT22, SCBT23 □

□ Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.

Trade Mark: EPOS | SENNHEISER

Standard(s): 47 CFR Part 1.1307, Part 2.1093, KDB 447498

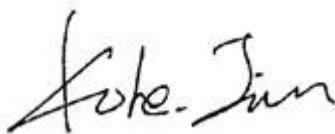
Date of Receipt: 2021-01-19

Date of Test: 2021-01-23 to 2021-02-02

Date of Issue: 2021-02-25

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



Kobe Jian
 EMC Laboratory Manager



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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2021-02-25		Original

Authorized for issue by:			
Tested By			
	<hr/>	Curry_Wu /Project Engineer	
Reviewed By			
	<hr/>	Ricky_Liu /Reviewer	



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2 Test Summary

Radio Spectrum Technical Requirement				
Item	Standard	Method	Requirement	Result
RF Exposure	47 CFR Part 1.1307, Part 2.1093, KDB 447498	CFR 47 Part 2.1093	CFR 47 Part 2.1093	Pass

▣ Declaration of EUT Family Grouping:

Model No.: SCBT22, SCBT23

According to the declaration from the applicant, the electrical circuit design, layout, components used, and internal wiring were identical for all models, with only difference on the SCBT22 with Single sided speaker and SCBT23 with double sided speaker.

Therefore, only one mode SCB23 was tested in this report.



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4 General Information

4.1 Details of E.U.T.

Power Supply:	DC 5V for USB port battery charging. DC 3.7V by internal rechargeable battery.
Cable:	about 1m unscreened USB type C cable(model:EPUL1002)
Antenna Gain:	2.65dBi declared by applicant
Antenna Type:	Integrated PCB antenna
Bluetooth version:	Bluetooth 5.2 dual mode
For BLE:	
Channel Spacing:	2MHz
Modulation Type:	GFSK
Number of Channels:	40
Operation Frequency:	2402MHz to 2480MHz
For Bluetooth Classic :	
Channel Spacing:	1MHz
Modulation Type:	GFSK, π/4DQPSK, 8DPSK
Number of channel:	79

4.2 Description of Support Units

The EUT has been tested as an independent unit.

4.3 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,
 198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District,
 Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.



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4.4 Test Facility

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

● **NVLAP (Lab Code: 200611-0)**

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

● **ACMA**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our NVLAP accreditation.

● **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

● **CNAS (Lab Code: L0167)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2018 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2017 General Requirements) for the Competence of Testing Laboratories.

● **FCC Recognized 2.948 Listed Test Firm(Registration No.: 282399)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 282399, May 31, 2002.

● **FCC Recognized Accredited Test Firm(Registration No.: 486818)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: CN5016, Test Firm Registration Number: 486818, Jul 13, 2017.

● **Industry Canada (Registration No.: 4620B, CAB identifier: CN0052)**

SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Innovation Science and Economic Development Canada for Wireless Device Testing laboratories to test to Canadian radio equipment requirements. Registration No. 4620B, CAB identifier: CN0052.

● **VCCI (Registration No.: R-12460, C-12584, G-10449 and T-11179)**

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-12460, C-12584, G-10449 and T-11179 respectively.

● **CBTL (Lab Code: TL129)**

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2005, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.



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4.5 Deviation from Standards

None

4.6 Abnormalities from Standard Conditions

None



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5 Radio Spectrum Technical Requirement

5.1 RF Exposure

5.1.1 Test Requirement:

CFR 47 Part 2.1093

Limit:

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

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

f(GHz) is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation¹⁷

The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 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 is applied to determine SAR test exclusion



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5.1.2 Conclusion

EUT measured power:

Test Mode	Antenna	Channel	Result[dBm]
BLE_1M	Ant1	2402	4.05
		2442	4.55
		2480	4.44

Test Mode	Antenna	Channel	Result[dBm]
BLE_2M	Ant1	2402	2.52
		2442	3.04
		2480	2.94

Test Mode	Antenna	Channel	Result[dBm]
DH5	Ant1	2402	-2.13
		2441	-1.97
		2480	-2.69
2DH5	Ant1	2402	0.13
		2441	0.00
		2480	-1.27
3DH5	Ant1	2402	0.71
		2441	0.41
		2480	-0.99

The Maximum Conducted Peak Output Power is 4.55 dBm in channel 2.442 GHz for BLE, i.e.2.85 mW.

$$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}]$$

$$\text{General RF Exposure} = (2.85 \text{ mW} / 5 \text{ mm}) \times \sqrt{2.442 \text{ GHz}} = 0.891 \quad \text{①};$$

$$\text{SAR requirement:} \quad S = 3.0 \quad \text{②};$$

∵ ① < ②. ∴ the SAR report is not required.



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6 Photographs

6.1 EUT Constructional Details

Please refer to Appendix A - Photographs of EUT Constructional Details for GZEM2101000395CR.

--End of Report--



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