



## SAR Evaluation Report

**Application No.:** SZEM1909018907CR  
**Applicant:** Ocean Star Electronics Ltd.  
**Address of Applicant:** Unit 15, 8/F., Wah Wai Center, 38-40 Au Pui Wan Street Fo Tan Hong Kong  
**Manufacturer:** Ocean Star Electronics Limited  
**Address of Manufacturer:** Flat 15, 8/F., Wah Wai Center, 38-40 Au Pui Wan Street, Fo Tan, N.T., Hong Kong  
**Factory:** Ocean Star Electronics Limited  
**Address of Factory:** Flat 15, 8/F., Wah Wai Center, 38-40 Au Pui Wan Street, Fo Tan, N.T., Hong Kong  
**Equipment Under Test (EUT):**  
**EUT Name:** 24" Sound Bar with Lights  
**Model No.:** SBC24L, iBar25L ♣  
♣ Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.  
**Trade mark:** Altec, Ocean  
**FCC ID:** LMZ-SBC24L  
**Standards:** 47 CFR Part 1.1307  
47 CFR Part 2.1093  
KDB447498D01 General RF Exposure Guidance v06  
**Date of Receipt:** 2019-09-26  
**Date of Test:** 2019-10-23 to 2019-10-25  
**Date of Issue:** 2019-10-29

|                      |              |
|----------------------|--------------|
| <b>Test Result :</b> | <b>PASS*</b> |
|----------------------|--------------|

\* In the configuration tested, the EUT complied with the standards specified above.

Keny Xu

Keny Xu  
EMC Laboratory Manager



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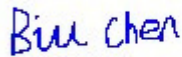
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## 2 Version

| Revision Record |         |            |          |          |
|-----------------|---------|------------|----------|----------|
| Version         | Chapter | Date       | Modifier | Remark   |
| 01              |         | 2019-10-29 |          | Original |
|                 |         |            |          |          |
|                 |         |            |          |          |

|                          |  |                                                                                     |  |  |
|--------------------------|--|-------------------------------------------------------------------------------------|--|--|
| Authorized for issue by: |  |                                                                                     |  |  |
|                          |  |    |  |  |
|                          |  | Bill Chen /Project Engineer                                                         |  |  |
|                          |  |  |  |  |
|                          |  | Eric Fu /Reviewer                                                                   |  |  |



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## 4 General Information

### 4.1 General Description of EUT

|                             |                                                                                                                                                    |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Power Supply:               | AC Adapter:<br>Model:THX-180230KU<br>Input:AC 100-240V 50/60Hz 1.0A Max<br>Output:DC 18V 2.3A<br>Remote control:DC 3.0V by 1.5V x 2"AAA" batteries |
| Cable:                      | DC cable:160cm unshielded<br>Audio in cable: 75cm ubshielded                                                                                       |
| Operation Frequency:        | 2402MHz to 2480MHz                                                                                                                                 |
| Bluetooth Version:          | V5.0 Classic                                                                                                                                       |
| Spectrum Spread Technology: | Frequency Hopping Spread Spectrum(FHSS)                                                                                                            |
| Modulation Type:            | GFSK, $\pi/4$ DQPSK, 8DPSK                                                                                                                         |
| Number of Channels:         | 79                                                                                                                                                 |
| Channel Spacing:            | 1MHz                                                                                                                                               |
| Antenna Type:               | Board antenna                                                                                                                                      |
| Antenna Gain:               | 1.2dBi                                                                                                                                             |

#### Declaration of EUT Family Grouping:

Model No.: SBC24L, iBar25L

Only the model SBC24L was tested, since the electrical circuit design, layout, components used, internal wiring and functions were identical for the above models, with only difference on model name and brand name.



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## 4.2 Test Location

All tests were performed at:

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

Telephone: +86 (0) 755 2601 2053 Fax: +86 (0) 755 2671 0594

No tests were sub-contracted.

## 4.3 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**

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. 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: CN1178**

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

Designation Number: CN1178. Test Firm Registration Number: 406779.

- **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.



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#### **4.4 Deviation from Standards**

None.

#### **4.5 Abnormalities from Standard Conditions**

None.

#### **4.6 Other Information Requested by the Customer**

None.



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## 5 SAR Evaluation

### 5.1 RF Exposure Compliance Requirement

#### 5.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

##### 4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

#### 5.1.2 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:

$$\left[ \frac{\text{(max. power of channel, including tune-up tolerance, mW)}}{\text{(min. test separation distance, mm)}} \right] \cdot \sqrt{f(\text{GHz})} \leq 3.0$$
 for 1-g SAR and  $\leq 7.5$  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 before calculation<sup>17</sup>

The result is rounded to one decimal place for comparison

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 is applied to determine SAR test exclusion

#### 5.1.3 EUT RF Exposure

The Max. power (including tune-up tolerance) is 3.27 dBm on the lowest channel 2.402 GHz (\*)  
3.27 dBm logarithmic terms convert to numeric result is nearly 2.12 mW

According to the formula. calculate the test exclusion thresholds:

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

$$\text{General RF Exposure} = (2.12 \text{ mW} / 5 \text{ mm}) \times \sqrt{2.402 \text{ GHz}} = 0.66 \quad (1)$$

SAR requirement:

$$S = 3.0 \quad (2)$$

$(1) < (2)$

So the SAR report is not required.

(\*) Max. power refer to Report No.:SZEM190901890702

- End of the Report -



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