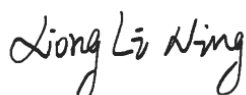


# TEST REPORT

**Applicant:** Shenzhen SEI Robotics Co., Ltd.  
**Address:** 11th Floor, Kangtai Group Building, No. 222 Kefa Road, Science and Technology Park Community, Yuehai Street, Nanshan District, Shenzhen  
**Equipment Type:** Video Conference System  
**Model Name:** SK850AA (refer to section 2.3)  
**Brand Name:** Emerson  
**FCC ID:** 2AOVU-SK850AA  
**Test Standard:** 47 CFR Part 2.1091  
KDB 447498 D04 v01  
**Sample Arrival Date:** Dec. 02, 2024  
**Test Date:** Dec. 16, 2024 - Dec. 23, 2024  
**Date of Issue:** Mar. 03, 2025

**ISSUED BY:**

Shenzhen BALUN Technology Co., Ltd.

**Tested by:** Xiong Lining**Checked by:** Xu Rui**Approved by:** Tolan Tu  
(Testing Director)

**Revision History**

| <u>Version</u> | <u>Issue Date</u>    | <u>Revisions Content</u> |
|----------------|----------------------|--------------------------|
| <u>Rev. 01</u> | <u>Mar. 03, 2025</u> | <u>Initial Issue</u>     |

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# 1 GENERAL INFORMATION

## 1.1 Test Laboratory

|              |                                                                                                                              |
|--------------|------------------------------------------------------------------------------------------------------------------------------|
| Name         | Shenzhen BALUN Technology Co., Ltd.                                                                                          |
| Address      | Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China |
| Phone Number | +86 755 6685 0100                                                                                                            |

## 1.2 Test Location

|                           |                                                                                                                                                                                                                                    |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name                      | Shenzhen BALUN Technology Co., Ltd.                                                                                                                                                                                                |
| Location                  | <input type="checkbox"/> Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China                                                                              |
|                           | <input checked="" type="checkbox"/> 1/F, Building B, Ganghongji High-tech Intelligent Industrial Park, No. 1008, Songbai Road, Yangguang Community, Xili Sub-district, Nanshan District, Shenzhen, Guangdong Province, P. R. China |
| Accreditation Certificate | The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196.                                                                                                   |

## 2 PRODUCT INFORMATION

### 2.1 Applicant Information

|           |                                                                                                                                         |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Applicant | Shenzhen SEI Robotics Co., Ltd.                                                                                                         |
| Address   | 11th Floor, Kangtai Group Building, No. 222 Kefa Road, Science and Technology Park Community, Yuehai Street, Nanshan District, Shenzhen |

### 2.2 Manufacturer Information

|              |                                                                                                                                         |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Manufacturer | Shenzhen SEI Robotics Co., Ltd.                                                                                                         |
| Address      | 11th Floor, Kangtai Group Building, No. 222 Kefa Road, Science and Technology Park Community, Yuehai Street, Nanshan District, Shenzhen |

### 2.3 General Description for Equipment under Test (EUT)

|                                           |                                                                                                                                                                                                                                                       |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EUT Name                                  | Video Conference System                                                                                                                                                                                                                               |
| Model Name Under Test                     | SK850AA                                                                                                                                                                                                                                               |
| Series Model Name                         | SK850AX; X:A-Z                                                                                                                                                                                                                                        |
| Description of Model name differentiation | he circuit, PCB layout, electrical components and appearance of the above model are exactly the same as the basic model, except the model names are different due to different market and customer needs. (this information provided by the customer) |
| Hardware Version                          | N/A                                                                                                                                                                                                                                                   |
| Software Version                          | N/A                                                                                                                                                                                                                                                   |
| Dimensions (Approx.)                      | N/A                                                                                                                                                                                                                                                   |
| Weight (Approx.)                          | N/A                                                                                                                                                                                                                                                   |

## 2.4 Technical Information

|                                   |                                                                                                                               |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Network and Wireless connectivity | Bluetooth (BR+EDR+BLE)<br>WIFI 802.11a, 802.11b, 802.11g, 802.11n(HT20/40),<br>802.11ac(VHT20/40/80) and 802.11ax(HE20/40/80) |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------|

The requirement for the following technical information of the EUT was tested in this report:

|                   |                                          |                     |
|-------------------|------------------------------------------|---------------------|
| Operating Mode    | 2.4G WIFI, 5G WIFI, Bluetooth            |                     |
| Frequency Range   | 802.11b/g/n(HT20/40)                     | 2412 MHz ~ 2462 MHz |
|                   | 802.11a                                  | 5150 MHz ~ 5250 MHz |
|                   |                                          | 5250 MHz ~ 5350 MHz |
|                   |                                          | 5470 MHz ~ 5725 MHz |
|                   |                                          | 5725 MHz ~ 5850 MHz |
|                   | 802.11n(HT20/HT40)                       | 5150 MHz ~ 5250 MHz |
|                   |                                          | 5250 MHz ~ 5350 MHz |
|                   |                                          | 5470 MHz ~ 5725 MHz |
|                   |                                          | 5725 MHz ~ 5850 MHz |
|                   | 802.11ac<br>(VHT20/VHT40/VHT80)          | 5150 MHz ~ 5250 MHz |
|                   |                                          | 5250 MHz ~ 5350 MHz |
|                   |                                          | 5470 MHz ~ 5725 MHz |
|                   |                                          | 5725 MHz ~ 5850 MHz |
|                   | 802.11ax<br>(HE20/HE40/HE80)             | 5150 MHz ~ 5250 MHz |
|                   |                                          | 5250 MHz ~ 5350 MHz |
|                   |                                          | 5470 MHz ~ 5725 MHz |
|                   |                                          | 5725 MHz ~ 5850 MHz |
|                   | Bluetooth                                | 2402 MHz ~ 2480 MHz |
| Antenna Type      | WIFI                                     | FPC Antenna         |
|                   | Bluetooth                                | FPC Antenna         |
| Exposure Category | General Population/Uncontrolled Exposure |                     |
| Product Type      | Mobile Device                            |                     |

### 3 SUMMARY OF TEST RESULT

#### 3.1 Test Standards

| No. | Identity           | Document Title                                      |
|-----|--------------------|-----------------------------------------------------|
| 1   | KDB 447498 D04 v01 | 447498 D04 Interim General RF Exposure Guidance v01 |

#### 3.2 Limit Standards

| No. | Identity           | Document Title                                               |
|-----|--------------------|--------------------------------------------------------------|
| 1   | 47 CFR Part 2.1091 | Radiofrequency radiation exposure evaluation: mobile devices |

## 4 DEVICE CATEGORY AND LEVELS LIMITS

### Mobile Devices:

CFR Title 47 §2.1091(b)

For purposes of this section, a mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons.

### FCC KDB 447498 D04 General RF Exposure Guidance v01 Limit

Evaluation of compliance with the exposure limits in § 1.1310 is necessary if the ERP of the device is greater than ERP<sub>20cm</sub> in Formula (B.1) [repeated from § 2.1091(c)(1) and § 1.1307(b)(1)(i)(B)].

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases} \quad (\text{B.1})$$

If the ERP is not easily obtained, then the available maximum time-averaged power may be used (i. e., without consideration of ERP only 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.

SAR-based exemptions are constant at separation distances between 20 cm and 40 cm to avoid discontinuities in the threshold when transitioning between SAR-based and MPE-based exemption criteria at 40 cm, considering the importance of reflections.

The SAR-based exemption formula of § 1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold  $P_{th}$  (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive).  $P_{th}$  is given by Formula (B.2).

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases} \quad (\text{B. 2})$$

where

$$x = -\log_{10} \left( \frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

and  $f$  is in GHz,  $d$  is the separation distance (cm), and  $ERP_{20 \text{ cm}}$  is per Formula (B.1). The example values shown in Table B.2 are for illustration only.

Table B.2—Example Power Thresholds (mW)

| Frequency (MHz) | Distance (mm) |    |    |    |     |     |     |     |     |     |     |
|-----------------|---------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|
|                 |               | 5  | 10 | 15 | 20  | 25  | 30  | 35  | 40  | 45  | 50  |
| 300             |               | 39 | 65 | 88 | 110 | 129 | 148 | 166 | 184 | 201 | 217 |
| 450             |               | 22 | 44 | 67 | 89  | 112 | 135 | 158 | 180 | 203 | 226 |
| 835             |               | 9  | 25 | 44 | 66  | 90  | 116 | 145 | 175 | 207 | 240 |
| 1900            |               | 3  | 12 | 26 | 44  | 66  | 92  | 122 | 157 | 195 | 236 |
| 2450            |               | 3  | 10 | 22 | 38  | 59  | 83  | 111 | 143 | 179 | 219 |
| 3600            |               | 2  | 8  | 18 | 32  | 49  | 71  | 96  | 125 | 158 | 195 |
| 5800            |               | 1  | 6  | 14 | 25  | 40  | 58  | 80  | 106 | 136 | 169 |

## 5 ASSESSMENT RESULT

### 5.1 Output Power

| Bluetooth                                                                                                                                       |       |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| Mode                                                                                                                                            | GFSK  |
| Conducted Power (dBm)                                                                                                                           | 10.34 |
| Antenna Gain (dBi)                                                                                                                              | 4.62  |
| EIRP (dBm)                                                                                                                                      | 14.96 |
| Note: This report listed the worst case conducted power value, please refer to BL-SZ24C0136-601, BL-SZ24C0136-602 test report for more details. |       |

| 2.4G WIFI                                                                                                                     |                   |                   |       |
|-------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------|-------|
| Mode                                                                                                                          | SISO-Main Antenna | SISO-Aux. Antenna | MIMO  |
| Conducted Power (dBm)                                                                                                         | 14.72             | 14.61             | 14.65 |
| Antenna Gain (dBi)                                                                                                            | 3.94              | 5.81              | 4.97  |
| EIRP (dBm)                                                                                                                    | 18.66             | 20.42             | 19.62 |
| Note: This report listed the worst case conducted power value, please refer to BL-SZ24C0136-603 test report for more details. |                   |                   |       |

| 5.2G WIFI             |                   |                   |       |
|-----------------------|-------------------|-------------------|-------|
| Mode                  | SISO-Main Antenna | SISO-Aux. Antenna | MIMO  |
| Conducted Power (dBm) | 17.78             | 17.80             | 17.89 |
| Antenna Gain (dBi)    | 7.60              | 6.03              | 6.89  |
| EIRP (dBm)            | 25.38             | 23.83             | 24.78 |

| 5.3G WIFI             |                   |                   |       |
|-----------------------|-------------------|-------------------|-------|
| Mode                  | SISO-Main Antenna | SISO-Aux. Antenna | MIMO  |
| Conducted Power (dBm) | 17.77             | 17.97             | 17.71 |
| Antenna Gain (dBi)    | 7.99              | 5.33              | 6.86  |
| EIRP (dBm)            | 25.76             | 23.30             | 24.57 |

| 5.6G WIFI             |                   |                   |       |
|-----------------------|-------------------|-------------------|-------|
| Mode                  | SISO-Main Antenna | SISO-Aux. Antenna | MIMO  |
| Conducted Power (dBm) | 17.81             | 18.01             | 17.75 |
| Antenna Gain (dBi)    | 8.33              | 6.96              | 7.70  |
| EIRP (dBm)            | 26.14             | 24.97             | 25.45 |

| 5.8G WIFI             |                   |                   |       |
|-----------------------|-------------------|-------------------|-------|
| Mode                  | SISO-Main Antenna | SISO-Aux. Antenna | MIMO  |
| Conducted Power (dBm) | 17.75             | 17.81             | 17.70 |
| Antenna Gain (dBi)    | 8.58              | 6.58              | 7.69  |
| EIRP (dBm)            | 26.33             | 24.39             | 25.39 |

Note: This report listed the worst case conducted power value, please refer to BL-SZ24C0136-604 test report for more

details.

## 5.2 Tune-up power

| Mode                        | Conducted Power Range (dBm) | EIRP Range (dBm) | ERP Range (dBm) |
|-----------------------------|-----------------------------|------------------|-----------------|
| Bluetooth                   | [9.00,11.00]                | [14.00,16.00]    | [15.85,17.85]   |
| 2.4G WIFI SISO-Main Antenna | [13.00,15.00]               | [18.00,20.00]    | [15.85,17.85]   |
| 2.4G WIFI SISO-Aux. Antenna | [13.00,15.00]               | [19.00,21.00]    | [16.85,18.85]   |
| 2.4G WIFI MIMO              | [13.00,15.00]               | [19.00,21.00]    | [16.85,18.85]   |
| 5.2G WIFI SISO-Main Antenna | [16.00,18.00]               | [24.00,26.00]    | [21.85,23.85]   |
| 5.2G WIFI SISO-Main Antenna | [16.00,18.00]               | [23.00,25.00]    | [20.85,22.85]   |
| 5.2G WIFI MIMO              | [16.00,18.00]               | [24.00,26.00]    | [21.85,23.85]   |
| 5.3G WIFI SISO-Main Antenna | [16.00,18.00]               | [25.00,27.00]    | [22.85,24.85]   |
| 5.3G WIFI SISO-Main Antenna | [17.00,19.00]               | [22.00,24.00]    | [19.85,21.85]   |
| 5.3G WIFI MIMO              | [16.00,18.00]               | [23.00,25.00]    | [20.85,22.85]   |
| 5.6G WIFI SISO-Main Antenna | [17.00,19.00]               | [25.00,27.00]    | [22.85,24.85]   |
| 5.6G WIFI SISO-Main Antenna | [17.00,19.00]               | [24.00,26.00]    | [21.85,23.85]   |
| 5.6G WIFI MIMO              | [16.00,18.00]               | [24.00,26.00]    | [21.85,23.85]   |
| 5.8G WIFI SISO-Main Antenna | [16.00,18.00]               | [25.00,27.00]    | [22.85,24.85]   |
| 5.8G WIFI SISO-Main Antenna | [16.00,18.00]               | [23.00,25.00]    | [20.85,22.85]   |
| 5.8G WIFI MIMO              | [16.00,18.00]               | [24.00,26.00]    | [21.85,23.85]   |

Note1: ERP= EIRP -2.15dB.

Note2: According KDB 447498 D04, used the greater of maximum conducted power and ERP to compare with the threshold value Pth.

### 5.3 RF Exposure Evaluation Result

| Evolution mode              | Frequency (MHz) | Maximum power (dBm) | Maximum power (mw) | Distance (mm) | Threshold Power (mW) | Power / Limit | Verdict |
|-----------------------------|-----------------|---------------------|--------------------|---------------|----------------------|---------------|---------|
| Bluetooth                   | 2.480           | 11.85               | 15.31              | 200           | 3060.00              | 0.005         | Pass    |
| 2.4G WIFI SISO-Main Antenna | 2.462           | 17.85               | 60.95              | 200           | 3060.00              | 0.020         | Pass    |
| 2.4G WIFI SISO-Aux. Antenna | 2.462           | 18.85               | 76.74              | 200           | 3060.00              | 0.025         | Pass    |
| 2.4G WIFI MIMO              | 2.462           | 18.85               | 76.74              | 200           | 3060.00              | 0.025         | Pass    |
| 5.2G WIFI SISO-Main Antenna | 5.250           | 23.85               | 242.66             | 200           | 3060.00              | 0.079         | Pass    |
| 5.2G WIFI SISO-Main Antenna | 5.250           | 22.85               | 192.75             | 200           | 3060.00              | 0.063         | Pass    |
| 5.2G WIFI MIMO              | 5.250           | 23.85               | 242.66             | 200           | 3060.00              | 0.079         | Pass    |
| 5.3G WIFI SISO-Main Antenna | 5.350           | 24.85               | 305.49             | 200           | 3060.00              | 0.100         | Pass    |
| 5.3G WIFI SISO-Main Antenna | 5.350           | 21.85               | 153.11             | 200           | 3060.00              | 0.050         | Pass    |
| 5.3G WIFI MIMO              | 5.350           | 22.85               | 192.75             | 200           | 3060.00              | 0.063         | Pass    |
| 5.6G WIFI SISO-Main Antenna | 5.725           | 24.85               | 305.49             | 200           | 3060.00              | 0.100         | Pass    |
| 5.6G WIFI SISO-Main Antenna | 5.725           | 23.85               | 242.66             | 200           | 3060.00              | 0.079         | Pass    |
| 5.6G WIFI MIMO              | 5.725           | 23.85               | 242.66             | 200           | 3060.00              | 0.079         | Pass    |
| 5.8G WIFI SISO-Main Antenna | 5.850           | 24.85               | 305.49             | 200           | 3060.00              | 0.100         | Pass    |
| 5.8G WIFI SISO-Main Antenna | 5.850           | 22.85               | 192.75             | 200           | 3060.00              | 0.063         | Pass    |
| 5.8G WIFI MIMO              | 5.850           | 23.85               | 242.66             | 200           | 3060.00              | 0.079         | Pass    |

## 5.4 Collocated Power Calculation

| Evolution mode | Frequency(MHz)    | Power /Limit | $\Sigma(\text{Power} / \text{Limit})$<br>of<br>2.4G WIFI + 5G WIFI +BT | Verdict |
|----------------|-------------------|--------------|------------------------------------------------------------------------|---------|
| Bluetooth      | 2400 ~ 2483.5 MHz | 0.005        | <b>0.13</b>                                                            | Pass    |
| Max 2.4G WIFI  | 2412 ~ 2462 MHz   | 0.025        |                                                                        |         |
| Max 5G WIFI    | 5250 ~ 5350 MHz   | 0.100        |                                                                        |         |

Note:

1.  $\Sigma(\text{Power} / \text{Limit})$ : This is a summation of [(power for each transmitter/ antenna included in the simultaneous transmission)/ (corresponding Power limit)], for 2.4G WIFI+5G WIFI + BT.
2. Both of the 2.4G/5G/BT can transmit simultaneously, the formula of calculated the Power is  

$$\text{CP1} / \text{LP1} + \text{CP2} / \text{LP2} + \dots \text{etc.} < 1$$

CP = Calculation power  
LP = Limit of power
3. The worst-case situation is 0.13, which is less than “1”. This confirmed that the device comply with FCC KDB 447498 D04 Power limit.
4. The DUT work frequency range used is 2402 MHz ~ 2480 MHz, 5250 MHz~ 5350 MHz and 2412 MHz ~ 2462 MHz the result close to the limit by the above formula, so we select worst case power to calculate the exclusion power threshold.

## 5.5 Conclusion

This EUT is deemed to comply with the reference level limits, therefore the basic restrictions are compliant with human exposure limits.

## Statement

1. The laboratory guarantees the scientificity, accuracy and impartiality of the test, and is responsible for all the information in the report, except the information provided by the customer. The customer is responsible for the impact of the information provided on the validity of the results.
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--END OF REPORT--