



Shenzhen GUOREN Certification Technology Service Co., Ltd.

101#, Building K & Building T, The Second Industrial Zone, Jiazitang Community, Fenghuang Street, Guangming District, Shenzhen, China

## RF Exposure evaluation

Report Reference No.: GRCTR250702060-02

FCC ID.: YEB-CLUB6000

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Date of issue: Aug. 07, 2025

Testing Laboratory Name: Shenzhen GUOREN Certification Technology Service Co., Ltd.

Address: 101#, Building K & Building T, The Second Industrial Zone, Jiazitang Community, Fenghuang Street, Guangming District, Shenzhen, China

Applicant's name: OPALUX ELECTRONICS MFY. CO., LTD.

Address: 21F, No.86 LONGWAN NEW RESIDENTIAL QUARTERS, NINGBO, China

Test specification:

Standard: 47CFR §2.1091  
KDB447498 D01 v06

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Test item description: PA SYSTEM

Trade Mark: /

Manufacturer: OPALUX ELECTRONICS MFY. CO., LTD.

Model/Type reference: CLUB 6000

800EX, CLUB-2000, CLUB 3000, CLUB AEF, CLUB 3200, CLUB AB, CLUB 3500, CLUB 3500 PLUS, CLUB 4000, 18

Listed Models: MAX, CLUB 8000, CLUB 6000 PLUS, VENUE SET, CONCERT SET, STAGE 1260, STAGE PRO 12, STAGE 18 PRO, STAGE 18 MAX, STAGE 18

Hardware Version: V1.0

Software Version: V1.0

Frequency: From 2402MHz to 2480MHz

Ratings: Input: AC 120V/230V, 50/60Hz 3A

Result: PASS



## TEST REPORT

Equipment under Test : PA SYSTEM

Model /Type : CLUB 6000

Listed Models : 800EX,CLUB-2000,CLUB 3000,CLUB AEF,CLUB 3200, CLUB AB,CLUB 3500,CLUB 3500 PLUS,CLUB 4000,18 MAX,CLUB 8000,CLUB 6000 PLUS,VENUE SET,CONCERT SET,STAGE 1260,STAGE PRO 12,STAGE 18 PRO,STAGE 18 MAX,STAGE 18

**Applicant** : OPALUX ELECTRONICS MFY. CO., LTD.

Address : 21F, No.86 LONGWAN NEW RESIDENTIAL QUARTERS,NINGBO,China

**Manufacturer** : OPALUX ELECTRONICS MFY. CO., LTD.

Address : 21F, No.86 LONGWAN NEW RESIDENTIAL QUARTERS,NINGBO,China

<b>Test Result:</b>	<b>PASS</b>
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The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

## Contents

<b>1. SUMMARY .....</b>	<b>4</b>
1.1. General Remarks .....	4
1.2. Product Description .....	4
1.3. Equipment Under Test .....	4
1.4. Short description of the Equipment under Test (EUT).....	4
1.5. EUT configuration .....	4
1.6. Modifications .....	5
<b>2. TEST ENVIRONMENT .....</b>	<b>6</b>
2.1. Address of the test laboratory .....	6
2.2. Test Facility .....	6
2.3. Environmental conditions .....	6
2.4. Statement of the measurement uncertainty .....	6
<b>3. METHOD OF MEASUREMENT .....</b>	<b>8</b>
3.1. Applicable Standard .....	8
3.2. Limit .....	8
3.3. MPE Calculation Method .....	8
3.4. Antenna Information .....	9
3.5. Manufacturing Tolerance .....	9
<b>4. EVALUATION RESULT .....</b>	<b>9</b>
<b>5. CONCLUSION .....</b>	<b>9</b>

## 1. SUMMARY

### 1.1. General Remarks

Date of receipt of test sample	:	Jul. 15, 2025
Testing commenced on	:	Jul. 15, 2025
Testing concluded on	:	Aug. 07, 2025

### 1.2. Product Description

Product Name:	PA SYSTEM
Model/Type reference:	CLUB 6000
Listed Models:	800EX,CLUB-2000,CLUB 3000,CLUB AEF,CLUB 3200, CLUB AB,CLUB 3500,CLUB 3500 PLUS,CLUB 4000,18 MAX,CLUB 8000,CLUB 6000 PLUS,VENUE SET,CONCERT SET,STAGE 1260,STAGE PRO 12,STAGE 18 PRO,STAGE 18 MAX,STAGE 18(The products are identical in interior structure, electrical circuits and components, just model names and color are different.)
Power supply:	Input:AC 120V/230V, 50/60Hz 3A
Testing sample ID:	GRCTR250702060-1# (Engineer sample), GRCTR250702060-2# (Normal sample)
<b>Bluetooth</b>	
Supported type:	Bluetooth low Energy
Modulation:	GFSK
Operation frequency:	2402MHz to 2480MHz
Channel number:	40
Channel separation:	2 MHz
Antenna type:	PCB antenna
Antenna gain*(Supplied by the customer):	1.70 dBi
Remark: *When the information provided by the customer was used to calculate test results, if the information provided by the customer is not accurate, shenzhen GUOREN Certification Technology Service Co., Ltd. does not assume any responsibility.	

### 1.3. Equipment Under Test

#### Power supply system utilised

Power supply voltage	:	<input type="radio"/>	230V / 50 Hz	<input checked="" type="radio"/>	120V / 60Hz
		<input type="radio"/>	12 V DC	<input type="radio"/>	24 V DC
		<input type="radio"/>	Other (specified in blank below)		

L

### 1.4. Short description of the Equipment under Test (EUT)

This is a PA SYSTEM.

For more details, refer to the user's manual of the EUT.

### 1.5. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

- supplied by the manufacturer

- supplied by the lab

<input type="radio"/> /	M/N: /
	Manufacturer: /

## 1.6. Modifications

No modifications were implemented to meet testing criteria.

## **2. TEST ENVIRONMENT**

### **2.1. Address of the test laboratory**

**Shenzhen GUOREN Certification Technology Service Co., Ltd.**

101#, Building K & Building T, The Second Industrial Zone, Jiaxitang Community, Fenghuang Street, Guangming District, Shenzhen, China

### **2.2. Test Facility**

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

**FCC-Registration No.: 920798 Designation Number: CN1304**

Shenzhen GUOREN Certification Technology Service Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

**A2LA-Lab Cert. No.: 6202.01**

Shenzhen GUOREN Certification Technology Service Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

**ISED#: 27264 CAB identifier: CN0115**

Shenzhen GUOREN Certification Technology Service Co., Ltd. has been listed by Innovation, Science and Economic Development Canada to perform electromagnetic emission measurement.

**CNAS-Lab Code: L15631**

Shenzhen GUOREN Certification Technology Service Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories for the Competence of Testing and Calibration Laboratories.

The 3m-Semi anechoic test site fulfills CISPR 16-1-4 according to ANSI C63.10 and CISPR 16-1-4:2010.

### **2.3. Environmental conditions**

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15-35 ° C
Humidity:	30-60 %
Atmospheric pressure:	950-1050mbar

### **2.4. Statement of the measurement uncertainty**

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01 "Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 2 " and is documented in the Shenzhen GUOREN Certification Technology Service Co., Ltd.quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen GUOREN Certification Technology Service Co., Ltd.:

Test Items	Measurement Uncertainty	Notes
Max output power	0.54 dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

### **3. Method of measurement**

#### **3.1. Applicable Standard**

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

According to §1.1310 and §2.1091 RF exposure is calculated.

KDB447498 D01 v06: RF EXPOSURE PROCEDURES AND EQUIPMENT AUTHORIZATION POLICIES FOR MOBILE AND PORTABLE DEVICES

#### **3.2. Limit**

Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	6
3.0 – 30	1842/f	4.89/f	(900/f <sup>2</sup> )*	6
30 – 300				
300 – 1500	61.4	0.163	1.0	6
1500 –	/	/	f/300	6
100,000	/	/	5	6

Limits for Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	30
3.0 – 30	824/f	2.19/f	(180/f <sup>2</sup> )*	30
30 – 300				
300 – 1500	27.5	0.073	0.2	30
1500 –	/	/	f/1500	30
100,000	/	/	1.0	30

F=frequency in MHz

\*=Plane-wave equivalent power density

#### **3.3. MPE Calculation Method**

Predication of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = PG/4\pi R^2$$

Where: S=power density

P=power input to antenna

G=power gain of the antenna in the direction of interest relative to an isotropic radiator

R=distance to the center of radiation of the antenna

### 3.4. Antenna Information

EUT can only use antennas certificated as follows provided by manufacturer;

Antenna No.	Model No. of antenna:	Type of antenna:	Gain of the antenna (Max.)	Frequency range:
BLE	/	PCB ANT	1.70 dBi for 2400-2500MHz	

### 3.5. Manufacturing Tolerance

BLE(Peak)				
BLE				
Channel	Channel 00		Channel 19	
Target (dBm)	2.0		2.0	
Tolerance $\pm$ (dB)	1.0		1.0	

## 4. Evaluation Result

As declared by the Applicant, the EUT is a wireless device used in a fix application, at least 20 cm from any body part of the user or nearby persons; from the maximum EUT RF output power, the minimum separation distance,  $r=20\text{cm}$ , as well as the gain of the used antenna refer to antenna information, the RF power density can be obtained.

Modulation Type	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	MPE (mW/cm <sup>2</sup> )	MPE Limits (mW/cm <sup>2</sup> )
	dBm	mW				
BLE	3	0.0251	1.70	1.4791	0.00001	1.0000

Remark:

1. Output power (Peak) including turn-up tolerance;
2. MPE evaluate distance is 20cm from user manual provide by manufacturer.

## 5. Conclusion

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure of mobile device.

.....End of Report.....