

Brilliance LED, LLC

MPE ASSESSMENT REPORT

Report Type:

FCC MPE assessment report

Model:

BRILLIANCE SECTOR SELECTOR

REPORT NUMBER:

230401401SHA-003

ISSUE DATE:

August 18, 2023

DOCUMENT CONTROL NUMBER:

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Applicant: Brilliance LED, LLC
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Manufacturer: Lizhi Technology (Chengdu) Co., Ltd.
No.6021, Building 1, No.88 Tian Chen Road, High-Tech District,
Chengdu, Sichuan, 610097, China

Factory: Lizhi Technology (Chengdu) Co., Ltd.
No.6021, Building 1, No.88 Tian Chen Road, High-Tech District,
Chengdu, Sichuan, 610097, China

FCC ID: 2AWS5-SELECTOR

SUMMARY:

The equipment complies with the requirements according to the following standard(s) or Specification:

KDB447498 D01 General RF Exposure Guidance v06
FCC Part2.1091, FCC Part1.1307(b)

PREPARED BY:

REVIEWED BY:

Alexander Li



Project Engineer
Alexander Li

Reviewer
Wakeyou Wang

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Revision History

Report No.	Version	Description	Issued Date
230401401SHA-003	Rev. 01	Initial issue of report	August 18, 2023

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	BRILLIANCE SECTOR SELECTOR
Type/Model/PMN/HVIN:	BRILLIANCE SECTOR SELECTOR
Description of EUT:	EUT is a sector selector with BLE and WIFI functions, there is one model. We tested it and listed the worst results in this report.
Brand name	
Rating:	12-24VAC/DC
Category of EUT:	Class B
EUT type:	<input checked="" type="checkbox"/> Table top <input type="checkbox"/> Floor standing
Software Version:	/
Hardware Version:	/
Sample Identification No.:	0230426-46-002
Sample received date:	May 8, 2023
Date of test:	May 8, 2023 to June 6, 2023

1.2 Technical Specification

Frequency Band:	2400MHz ~ 2483.5MHz
Support Standards:	IEEE 802.11b, IEEE 802.11g, IEEE 802.11n-HT20, IEEE 802.11n-HT40
Type of Modulation:	IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64-QAM, 16-QAM, QPSK, BPSK) IEEE 802.11n-HT20: OFDM (64-QAM, 16-QAM, QPSK, BPSK) IEEE 802.11n-HT40: OFDM (64-QAM, 16-QAM, QPSK, BPSK)
Channel Number:	11 Channels for 802.11b, 802.11g and 802.11n(HT20) 7 Channels for 802.11n(HT40)
Channel Separation:	5 MHz
Antenna:	External Dipole Antenna, gain is 1.87dBi

Frequency Band:	2402MHz to 2480MHz
Support Standards:	Bluetooth Low Energy
Type of Modulation:	GFSK
Channel Number:	40
Channel Separation:	2MHz
Antenna Information:	External Dipole Antenna, gain is 1.87dBi

TEST REPORT**1.3 Description of Test Facility**

Name:	Intertek Testing Services Shanghai
Address:	Building 86, No. 1198 Qinzhou Road(North), Shanghai 200233, P.R. China
Telephone:	86 21 61278200
Telefax:	86 21 54262353

The test facility is recognized, certified, or accredited by these organizations:	CNAS Accreditation Lab Registration No. CNAS L0139
	FCC Accredited Lab Designation Number: CN0175
	IC Registration Lab CAB identifier.: CN0014
	VCCI Registration Lab Registration No.: R-14243, G-10845, C-14723, T-12252
	A2LA Accreditation Lab Certificate Number: 3309.02

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2 MPE Assessment

Test result: Pass

2.1 MPE Assessment Limit

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)
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

F=Frequency in MHz; *Plane-wave equivalent power density

Mobile device exposure for simultaneous transmission operations: **the sum of the MPE ratios for all simultaneously transmitting antennas incorporated in a host device is ≤ 1.0.**

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2.2 Assessment Results

Power density (S) is calculated according to the formula:

$$S = P / (4\pi R^2)$$

Where S = power density in mW/cm²

P = Radiated transmit power in mW

G = numeric gain of transmit antenna

R = distance (cm)

As we can see from the test report 230401401SHA-001, 230401401SHA-002:

The calculations in the table below use the highest gain of antenna for client EUT. These calculations represent worst case in terms of the exposure levels.

Mode	Frequency band	Max Power	Antenna Gain	R	S	Limits
	(MHz)	dBm	dBi	(cm)	(mW/cm ²)	(mW/cm ²)
BLE	2402 -2480	4.42	1.87	20	0.0008	1
WIFI 2.4G	2412 -2462	16.92	1.87	20	0.0151	1

Note: 1 mW/cm² from §1.1310 Table 1

Bluetooth and 2.4G WIFI can't support simultaneous transmitting.

Result: Compliance, the device meets MPE requirement for Devices Used by the General Public (Uncontrolled Environment) at distance ≥ 20 cm.

Appendix I

Definition below must be outlined in the User Manual:

To satisfy FCC RF exposure requirements, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation. To ensure compliance, operations at closer than this distance is not recommended.

***** END *****