TEST REPORT

Reference No.	:	WTD24D05127511W004
FCC ID	:	2AJIV-MF8470
Applicant	:	Creative Labs Pte. Ltd.
Address	:	31 International Business Park, #03-01 Singapore 609921
Manufacturer	:	Creative Labs Pte. Ltd.
Address	:	31 International Business Park, #03-01 Singapore 609921
Product	:	Sound Blaster GS5
Model(s)	:	MF8470
Standards	:	FCC 47CFR Part 2 Subpart J Section 2.1091
Date of Receipt sample	:	2024-06-17
Date of Test	:	2024-06-17 to 2024-08-20
Date of Issue	:	2024-09-30
Test Result	:	**Pass**

Remarks:
The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

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2. Contents

3. Revision History

Test Report No.	Date of Receipt Sample	Date of Test	Date of Issue	Purpose	Comment	Approved
WTD24D05127511W004	2024-06-17	2024-06-17 to 2024-08-20	2024-09-30	Original	-	Valid

4. General Information

4.1. General Description of E.U.T.

Product:	Sound Blaster GS5
Model(s):	MF8470
Model Description:	N/A
Test Sample No.:	1-1/1
BT Version:	V5.3
Hardware Version:	V1.6
Software Version:	V0.997

4.2. Details of E.U.T.

Operation Frequency:	Bluetooth: 2402-2480MHz, 79 Channels in total BLE: 2402-2480MHz, 40 Channels in total
Max. RF output power:	Bluetooth: 6.80dBm BLE: 1M:0.23dBm; 2M:0.19dBm
Modulation Technology:	Bluetooth: GFSK, π/4DQPSK, 8DPSK BLE: GFSK
Antenna installation:	PCB Printed Antenna
Antenna Gain:	3.83dBi

Note:

#: The antenna gain is provided by the applicant, and the applicant should be responsible for its authenticity, WALTEK lab has not verified the authenticity of its information.

Voltage:	24V⎓1.25A
Adapter:	Model: GJ27WE-2400125DP Input: 100-240V~, 50/60 Hz, 0.8A Output: 24V⎓1.25A, 30W Manufacturer: Shenzhen Guijin Technology Co., Ltd.

4.3. Test Facility

The test facility has a test site registered with the following organizations:

ISED CAB identifier: CN0013. Test Firm Registration No.: 7760A.

Waltek Testing Group Co., Ltd. Has been registered and fully described in a report filed with the Industry Canada. The acceptance letter from the Industry Canada is maintained in our files. Registration number 7760A, October 15, 2016.

FCC Designation No.: CN1201. Test Firm Registration No.: 523476.

Waltek Testing Group 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 number 523476, September 10, 2019.

4.4. Subcontracted

Whether parts of tests for the product have been subcontracted to other labs:

☐ Yes ☒ No

If Yes, list the related test items and lab information:

Test Lab: N/A

Lab address: N/A

Test items: N/A

4.5. Abnormalities from Standard Conditions

None.

5. Test Summary

Test Items	Test Requirement	Result
Maximum Permissible Exposure (Exposure of Humans to RF Fields)	47 CFR Part 2 §2. 1091	PASS

6. RF Exposure

Test Requirement:	FCC 47CFR Part 2 Subpart J Section 2.1091 47 CFR Part 1 §1.1307 47 CFR Part 1 §1.1310
Evaluation Method:	KDB 447498 D01 General RF Exposure Guidance v06

6.1. Definitions

According to § 2.1093 (b), 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 RF source's radiating structure(s) and the body of the user or nearby persons.

This device belongs to mobile device and with multiple RF sources.

6.2. Method of Evaluation

Determination of Exemption:
For single RF sources

Option A

Option A 1-mW Test Exemption
Applies to all frequencies and all distances

a) Could be considered SAR-based and MPE-based exclusions
b) P < 1mW
c) Limitation–when there are simultaneously operating transmitters this exclusion only applies when all simultaneously operating transmitters meet this exemption
d) Refer 1.1307(b)(3)(i)(A) and 1.1307(b)(3)(ii)(A)

Option B SAR-Based Exemption
Frequency range 300 MHz -6 GHz, 5mm≤distance ≤ 40cm

a) The maximum time-averaged power or effective radiated power (ERP), whichever is greater, ≤P_{th}.
b) P_{th} is calculated based on separation distance d cm from transmitter to person for the device operating at f GHz.

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

Where

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

and

$$ERP_{20\ cm}\ (\text{mW}) = \begin{cases} 2040f & 0.3\ \text{GHz} \le f < 1.5\ \text{GHz} \\ 3060 & 1.5\ \text{GHz} \le f \le 6\ \text{GHz} \end{cases}$$

d = the separation distance (cm);

Option C MPE-Based Exemption
1.1307(b)(3)(i)(C): ERP is below a threshold calculated based on the distance R between the person and the antenna / radiating structure, where R > λ/ 2π.

Table 1 to § 1.1307(b)(3)(i)(C) - Single RF Sources Subject to Routine Environmental Evaluation

RF Source frequency (MHz)	Threshold ERP (watts)
0.3-1.34	1,920 R^2.
1.34-30	3,450 R^2/f^2.
30-300	3.83 R^2.
300-1,500	0.0128 R^2f.
1,500-100,000	19.2R^2.
Note: R in meters, f in MHz	

For multiple RF sources
According to 47CFR 1.1307(b)(3)(ii), the calculation formula is as follow:

$$\sum_{i=1}^{a}\frac{P_i}{P_{th,i}}+\sum_{j=1}^{b}\frac{ERP_j}{ERP_{th,j}}+\sum_{k=1}^{c}\frac{Evaluated_k}{Exposure\ Limit_k}\leq 1$$

6.3. Evaluation Results

Option B is applicable.

Single Source Transmissions

Description	Frequency GHz	Conducted Power dBm	Gain dBi	Tune-up dB	ERP mW	ERP_{th} mW	Ratio
BT-TX	2.402	6.80	3.83	±1.0	8.87	3060	0.00290
BLE-TX	2.402	0.23	3.83	±1.0	1.96	3060	0.00064

Note:
EIRP= Conducted Power +Gain, ERP=EIRP-2.15

Simultaneous Transmissions

Description	Calculation	Limit
BT+BLE	0.00354	≤1.0

Note:
1. For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band.
2. Chose the maximum power to do MPE analysis.
3. BT and BLE can be transmit simultaneously using same antenna.

Conclusion:
RF Exposure is FCC compliant.

======End of Report======