ACCREDITED
CERTIFICATE #5473.01

Test Report No.:
FCC2022-0035-H/R2

TEST REPORT

FCC ID	:	2AK43RD-836
Applicant	:	Guangzhou Rigal Electronics Co., Ltd.
Product Name	:	Multimedia Projector
Mode No.	:	RD-***(***for 0-9), ACE K1

CVC Testing Technology Co., Ltd.

Applicant	**Name:** Guangzhou Rigal Electronics Co., Ltd. **Address:** Floor 1, Floor 2, Floor3, Factory Building, No.30, The north of Hongmlandadao, Xiuquan Street, Huadu District, Guangzhou
Manufacturer	**Name:** Guangzhou Rigal Electronics Co., Ltd. **Address:** No.3, Ruixiang Road,Huadu District,Guangzhou
Equipment Under Test	**Product Name :** Multimedia Projector **Model No. :** RD-***(***for 0-9), ACE K1 **Trade mark : —** **Serial no. : —** **Sampling :** 1-1

Date of Receipt.	**2022.06.29**	Date of Testing	**2022.08.30**

Test Specification	**Test Result**
FCC Part 2 (Section 2.1093) KDB 447498 D04 IEEE C95.1	PASS
Evaluation of Test Result	The equipment under test was found to comply with the requirements of the standards applied. **Seal of CVC** **Issue Date: 2022.10.13**

Tested by:	Reviewed by:	Approved by:
Xu Zhenfei	**Liu Yonghai**	**Chen Huawen**

Other Aspects: NONE.

Abbreviations:OK, Pass= passed Fail = failed N/A= not applicable EUT= equipment, sample(s) under tested

This test report relates only to the EUT, and shall not be reproduced except in full, without written approval of **CVC**.
This report replaces the report No.FCC2022-0035-H/R1 after issuance.

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1. General Product Information

1.1 General information

Product Name	Multimedia Projector
Model No.	RD-836
Additional model	RD-***(***for 0-9), ACE K1
Power Supply	AC100-240V~ 50/60Hz
Antenna Type	Internal Antenna
Antenna Gain	WIFI 2.4GHz/Bluetooth(Antenna 1): 1.42 dBi (provided by client) WIFI 5GHz(Antenna 1): 1.53 dBi (provided by client)
Beamforming gain	Unsupported
Frequency Range	Bluetooth: 2402~2480MHz IEEE 802.11b/g/n/ax(20MHz): 2412~2462MHz IEEE 802.11n/ax(40MHz): 2422~2452MHz U-NII-1: 5150-5250MHz U-NII-2A:5250-5350MHz U-NII-2C:5470-5725MHz(without 5600~5650MHz) U-NII-3: 5725-5850MHz
Resource Unit(802.11ax)	■Full RU ☐Partial RU
TPC Function	■Support ☐Not support
TDWR Band	☐Support ■Not support
Operate Temp.Range	+5°C to +40°C

Note：
1. The information of the EUT is declared by the manufacturer.
2. The laboratory is not responsible for the product technical specification provided by the client.

2. Human Exposure Assessment

2.1 RF EXPOSURE DEFINE

SAR-based thresholds are derived based on frequency, power, and separation distance of the RF source. The formula defines the thresholds in general for either available maximum time-averaged power or maximum time-averaged ERP, whichever is greater.
If the ERP of a device is not easily determined, such as for a portable device with a small form factor, the applicant may use the available maximum time-averaged power exclusively if the device antenna or radiating structure does not exceed an electrical length of λ/4.
As for devices with antennas of length greater than λ/4 where the gain is not well defined, but always less than that of a half-wave dipole (length λ/2), the available maximum time-averaged power generated by the device may be used in place of the maximum time-averaged ERP, where that value is not known.
The separation distance is the smallest distance from any part of the antenna or radiating structure for all persons, during operation at the applicable ERP. In the case of mobile or portable devices, the separation distance is from the outer housing of the device where it is closest to the antenna.
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).

$$ERP_{20cm}(mW) = \begin{cases} 2040f_{(GHz)} & 0.3GHz \le f \le 1.5GHz \\ 3060 & 1.5GHz \le f \le 6GHz \end{cases} \quad (B.1)$$

$$Pth(mW) = \begin{cases} ERP_{20cm}(d_{(cm)}/20cm)^{x} & d \le 20cm \\ ERP_{20cm} & 20cm < d \le 40cm \end{cases} \quad (B.2)$$

Where

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

and f is in GHz, d is the separation distance (cm), and ERP_{20cm} is per Formula (B.1).

2.2 CLASSIFICATION

The antenna of this product, under normal use condition, is at less than 20cm away from the body of the user. So, this device is classified as Portable Device.

3. RF Output Power

The tuned conducted Average Power (declared by client)

Band	Frequency (MHz)	Target Power (dBm)	Tolerance (dBm)	Lower Tolerance (dBm)	Upper Tolerance (dBm)
2.4GHz (Bluetooth)	2402-2480MHz	3.00	+-2	1.00	5.00
2.4GHz (Low Energy)	2402-2480MHz	3.00	+-2	1.00	5.00
2.4GHz (WIFI)	2412-2472MHz	15.00	+-2	13.00	17.00
U-NII-1	5150-5250MHz	13.00	+-2	11.00	15.00
U-NII-2A	5250-5350MHz	13.00	+-2	11.00	15.00
U-NII-2C	5470-5725MHz	13.00	+-2	11.00	15.00
U-NII-3	5725-5850MHz	13.00	+-2	11.00	15.00

The conducted power turn-up tolerance reference manufacturer specification.

Band	Antenna	Center Frequency[MHz]	Result[dBm]	Limit[dBm]	Verdict
2.4GHz (Bluetooth)	Ant 1	2480	4.29	<=20.97	Pass
2.4GHz (Low Energy)	Ant 1	2480	4.32	<=30	Pass
2.4GHz (WIFI)	Ant 1	2437	16.20	<=30	Pass
U-NII-1	Ant 1	5220	11.92	<=23.98	Pass
U-NII-2A	Ant 1	5320	11.78	<=23.98	Pass
U-NII-2C	Ant 1	5510	14.47	<=23.98	Pass
U-NII-3	Ant 1	5700	14.56	<=30.00	Pass

Note: The relevant measured result has the offset with cable loss already.

4. Test Results

Frequency (MHz)	Maximum source-based time averaged conducted output power (dBm)	Maximum source-based time averaged conducted output power (mW)	Minimum separation distance (cm)	Limit for SAR-based Exemption (mW)	Verdict
2402-2480 (Bluetooth)	5.00	3.16	20	3060	Exempt from SAR
2412-2472 (WIFI2.4GHz)	17.00	50.12	20	3060	Exempt from SAR
5150-5250 (U-NII-1)	15.00	31.62	20	3060	Exempt from SAR
5250-5350 (U-NII-2A)	15.00	31.62	20	3060	Exempt from SAR
5470-5725 (U-NII-2C)	15.00	31.62	20	3060	Exempt from SAR
5725-5850 (U-NII-3)	15.00	31.62	20	3060	Exempt from SAR

Therefore this device complies with FCC's RF radiation exposure limits for general population without SAR evaluation.