RF Exposure Evaluation Report

Product	:	Smart Projector
Trade mark	:	OVO
Model/Type reference	:	OVO-K2, OVO-K3
Test Model No.	:	OVO-K2
Serial Number	:	N/A
Report Number	:	EED32N80943805
FCC ID	:	2AAUL-OVO-K2
Date of Issue	:	Oct. 29, 2021
Test Standards	:	47 CFR Part 1.1307 47 CFR Part 2.1093 KDB447498D01 General RF Exposure Guidance v06
Test result	:	PASS

Prepared for:

OVOMEDIA CREATIVE INC.
3F., No. 151, Ziqiang 5th Rd., Zhubei City,
Hsinchu County, Taiwan

Prepared by:

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Check No.: 2402270921

2 Version

Version No.	Date	Description
00	Oct. 29, 2021	Original

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4 General Information

4.1 Client Information

Applicant:	OVOMEDIA CREATIVE INC.
Address of Applicant:	3F., No. 151, Ziqiang 5th Rd., Zhubei City, Hsinchu County, Taiwan
Manufacturer:	Shenzhen WOWOTO Technology Co., Ltd.
Address of Manufacturer:	5 Lay, Gaoxin factory, zone 67, Xingdong community, Xin'an street, Bao'an District, Shenzhen, China
Factory:	Shenzhen WOWOTO Technology Co., Ltd.
Address of Factory:	2nd Floor, 5th Building, Chuangjian Industrial Park, 2nd Phase, Yingrenshi Street Community, Bao' an, Shenzhen, China

4.2 General Description of EUT

Product Name:	Smart Projector
Mode No.:	OVO-K2, OVO-K3
Test Mode No.:	OVO-K2
Trade mark:	OVO
EUT Supports Radios application:	Bluetooth 5.0 dual mode: 2402-2480MHz 2.4GHz Wi-Fi: IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz IEEE 802.11n(HT40): 2422MHz to 2452MHz 5GHz Wi-Fi: U-NII-1: 5180-5240MHz; U-NII-3: 5745-5825MHz

4.3 Product Specification subjective to this standard

Frequency Range:	Bluetooth : 2402-2480MHz 2.4GHz Wi-Fi: IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz IEEE 802.11n(HT40): 2422MHz to 2452MHz 5GHz Wi-Fi: U-NII-1: 5180-5240MHz; U-NII-3: 5745-5825MHz
Modulation Type:	IEEE for 802.11a: OFDM (BPSK, QPSK, 16QAM, 64QAM) IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g :OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20/HT40): OFDM (BPSK, QPSK, 16QAM, 64QAM) IEEE for 802.11ac(VHT20/VHT40/VHT80): OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM) Bluetooth:GFSK, π/4DQPSK, 8DPSK
Test Power Grade:	Default
Test Software of EUT:	SecureCRT
Antenna Type (Bluetooth):	FPC Antenna
Antenna Gain (Bluetooth):	-1.2dBi

Antenna Type (Wi-Fi):	FPC Antenna	
Antenna Gain (Wi-Fi):	Ant1 (2.4G): 3.92dBi; Ant1(5G): 0.82dBi; Ant2 (2.4G): 4.08dBi; Ant2 (5G): 1.17dBi;	
Function (Wi-Fi):	☒ SISO ☐ 2x2 MIMO ☐ 3x3 MIMO ☐ 4x4MIMO	
Power Supply:	AC/DC ADAPTER	Model: ADP-120RH BB Input: 100-240V~2A 50/60Hz OUTPUT: 19.0V⎓6.32A,120.1W
Max Conducted Peak Output Power:	BT:6.95dBm, BLE: 4.47dBm, 2.4G WIFI:15.96dBm; 5G WIFI:17.46dBm	
	The Max Conducted Peak Output Power data refer to the report EED32N80943801, EED32N80943802, EED32N80943803, EED32N80943804	
Sample Received Date:	Sep. 27, 2021	
Sample tested Date:	Sep. 27, 2021 to Oct. 25, 2021	
Company Name and Address shown on Report, the sample(s) and sample Information was/ were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified. Model No.: OVO-K2, OVO-K3 Only the model OVO-K2 was tested, since the electrical circuit design, layout, components used and internal wiring were identical for the above models, with difference being model and color of appearance.		

4.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax:+86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

4.5 Deviation from Standards

None.

4.6 Abnormalities from Standard Conditions

None.

4.7 Other Information Requested by the Customer

None.

5 RF Exposure Evaluation

5.1 RF Exposure Compliance Requirement

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{377}$

Where E = Field strength in Volts / meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{377 d^2}$$

Changing to units of mW and cm, using:

P (mW) = P (W) / 1000 and

d (cm) = d(m) / 100

Yields

$$S = \frac{30 \times (P/1000) \times G}{377 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2}$$ **Equation 1**

Where d = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm^2

5.2 Maximum Permissible Exposure

Substituting the MPE safe distance using d = 20 cm into Equation 1:

$$S = 0.000199 \times P \times G$$

Where P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm^2

BLE:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
39	2480	2.798	0.758	20	0.0004	1

BT Classic:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
78	2480	4.9545	0.758	20	0.0007	1

2.4G WIFI:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
11	2462	39.445	2.56	20	0.0201	1

5G WIFI:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
149	5745	55.718	1.31	20	0.0145	1

The product also has multiple transmitters The Simultaneous Transmission Possibilities are as below:

Simultaneous Tx Combination	Configuration
1	WIFI+BT

WIFI+BT

Band	$S_{2.4G}$ (mW/cm^2)	MPE Ratios 2.4G	S_{5G} (mW/cm^2)	MPE Ratios 5G	S_{BT} (mW/cm^2)	MPE $Ratios_{BT}$	R (cm)	MPE $Ratios_{SUM}$	Limit	Result
WIFI+BT	0.0201	0.0201	0.0145	0.0145	0.0007	0.0007	20	0.0353	1	Pass

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32N80943801 for EUT external and internal photos.

*** End of Report ***