

RF Exposure Evaluation Report

Product : Smart LCD Gimbal Projector
Trade mark :  BladeCine
Model/Type reference : Cube 600, Cube 600 Pro,
Cube 600 Max, Cube 600 Plus
Serial Number : N/A
Report Number : EED32Q81115005
FCC ID : 2BKWN-CUBE600
Date of Issue : Sep. 24, 2024
Test Standards : 47 CFR Part 1.1307
47 CFR Part 1.1310
47 CFR Part 2.1091
47 CFR Part 2.1093
KDB 447498 D04 Interim General RF
Exposure Guidance v01
Test result : PASS

Prepared for:

Valerion Technology USA Co., Ltd
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Sep. 24, 2024



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1 Version

Version No.	Date	Description
00	Sep. 24, 2024	Original

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3 General Information

3.1 Client Information

Applicant:	Valerion Technology USA Co., Ltd
Address of Applicant:	1312 17th Street, Unit Num 2955, Denver, CO 80202, United States.
Manufacturer:	Shenzhen WeProTalk Technology Co., Ltd
Address of Manufacturer:	1902, 2501, Yihua Financial Technology Building, No. 3939, Baishi Road, Binhai Community, Yuehai Street, Nanshan District, Shenzhen
Factory:	Shenzhen WeProTalk Technology Co., Ltd
Address of Factory:	1902, 2501, Yihua Financial Technology Building, No. 3939, Baishi Road, Binhai Community, Yuehai Street, Nanshan District, Shenzhen

3.2 General Description of EUT

Product Name:	Smart LCD Gimbal Projector
Model No.:	Cube 600, Cube 600 Pro, Cube 600 Max, Cube 600 Plus
Test Model No.:	Cube 600
Trade mark:	 BladeCine

3.3 Product Specification subjective to this standard

Frequency Range:	BLE/BT: 2402MHz~2480MHz 2.4G Wi-Fi: IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz IEEE 802.11n(HT40): 2422MHz to 2452MHz 5G Wi-Fi: U-NII-1: 5150-5250MHz U-NII-3:5745-5825MHz	
Modulation Type:	BLE: GFSK BT: GFSK, $\pi/4$ DQPSK, 8DPSK 2.4G Wi-Fi: IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g :OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20 and HT40) : OFDM (64QAM, 16QAM,QPSK,BPSK) 5G Wi-Fi: IEEE 802.11a: OFDM (BPSK, QPSK, 16QAM, 64QAM) IEEE 802.11n(HT20/HT40): OFDM (BPSK, QPSK, 16QAM, 64QAM) IEEE 802.11ac(VHT20/VHT40/VHT80): OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)	
Test Power Grade:	Default	
Test Software of EUT:	N/A	
Antenna Type:	Dipole Antenna	
Antenna Gain:	BLE/BT: 2.34dBi 2.4G Wi-Fi: ANT 0: 2.12dBi, ANT 1: 2.48dBi 5G Wi-Fi: ANT 0: Band1: 1.78dBi, Band4: 1.31dBi ANT 1: Band1: 1.06dBi, Band4: 1.66dBi	
Power Supply:	Adapter:	AC 120V
Sample Received Date:	Aug. 09, 2024	
Sample tested Date:	Aug. 09, 2024 to Aug. 24, 2024	

Remark:

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.: Cube 600, Cube 600 Pro, Cube 600 Max, Cube 600 Plus

Only the model Cube 600 was tested, their electrical circuit design, layout, components used and internal wiring are identical, Only the color of the appearance and package is different.

3.4 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

3.5 Deviation from Standards

None.

3.6 Abnormalities from Standard Conditions

None.

3.7 Other Information Requested by the Customer

None.

4 SAR Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Limits

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 Pth (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). Pth is given by Formula

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

where

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

and f is in GHz, d is the separation distance (cm), and ERP20cm is per Formula (B.1).

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases} \quad (\text{B.1})$$

The 1 mW Blanket Exemption of § 1.1307(b)(3)(i)(A) applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power of no more than 1 mW, regardless of separation distance.

4.1.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

4.1.3 EUT RF Exposure Evaluation

For Stand alone:

For Bluetooth LE:

Frequency (MHz)	Max. Conducted Output power (W)	Max. Conducted Output power (dBm)	Antenna Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (mW)	MPE ratio	Result
@2.4G	0.0033	5.19	2.34	5.38	3.45	3060	0.0011	PASS

For Bluetooth Classic:

Frequency (MHz)	Max. Conducted Output power (W)	Max. Conducted Output power (dBm)	Antenna Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (mW)	MPE ratio	Result
@2.4G	0.0046	6.63	2.34	6.82	4.81	3060	0.0016	PASS

For 2.4G Wi-Fi:

Frequency (MHz)	Max. Conducted Output power (W)	Max. Conducted Output power (dBm)	Antenna Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (mW)	MPE ratio	Result
@2.4G	0.056	17.48	2.48	17.81	60.39	3060	0.0197	PASS

For 5G Wi-Fi:

Frequency (MHz)	Max. Conducted Output power (W)	Max. Conducted Output power (dBm)	Antenna Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (mW)	MPE ratio	Result
@5G	0.0459	16.62	1.66	16.13	41.02	3060	0.0134	PASS

Note:

- ① EIRP=conducted power+antenna gain;
- ② $ERP = EIRP - 2.15$;
- ③ $EIRP(dBm) = \text{Field strength of the fundamental signal}(dBuV/m@3m) - 95.23$;
- ④ $ERP(mW) = 10^{(ERP(dBm)/10)}$;
- ⑤ The estimation distance is 20cm;
- ⑥ The test data please refer to the module's report of FCC ID:2AR82-SKIWB663U21. and only the worst case data was recorded in the report.

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For Simultaneous Transmission:

As MPE ratio (2.4G Wi-Fi+5G Wi-Fi)= $0.0197 + 0.0134 = 0.0331 < 1$, it's deemed to fulfil the RF exposure requirement.

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*** End of Report ***