

RF Exposure Evaluation Report

Product : Playback Control Processor
Trade mark : Colorlight
Model/Type reference : AX08, AX06
Serial Number : N/A
Report Number : EED32Q82139303
FCC ID : 2AVV2AXZRZX068
Date of Issue : Mar. 28, 2025
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:

Colorlight Cloud Tech Ltd

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1 Version

Version No.	Date	Description
00	Mar. 28, 2025	Original

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3 General Information

3.1 Client Information

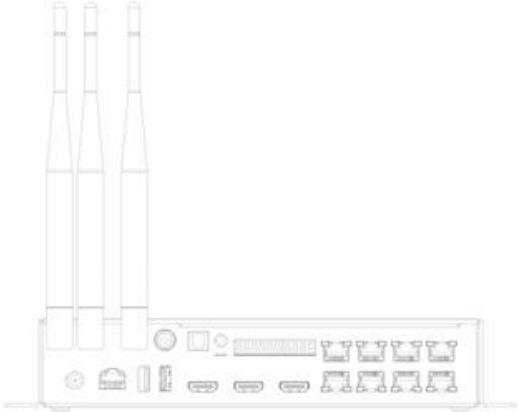
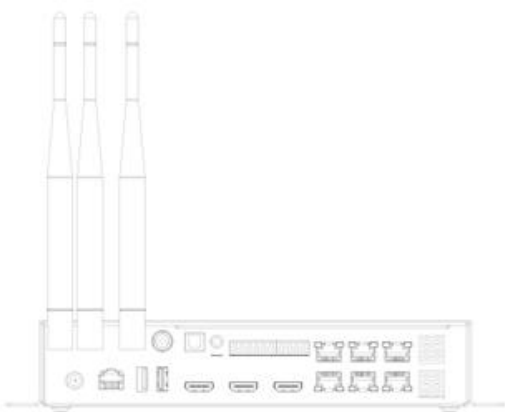
Applicant:	Colorlight Cloud Tech Ltd
Address of Applicant:	Room 3801(37-39F), Tower A, Building 8, Block C, Phase 3, Vanke Cloud City, Xili Community, Xili Street, Nanshan District, Shenzhen City, China
Manufacturer:	Colorlight Cloud Tech Ltd
Address of Manufacturer:	Room 3801(37-39F), Tower A, Building 8, Block C, Phase 3, Vanke Cloud City, Xili Community, Xili Street, Nanshan District, Shenzhen City, China
Factory:	Colorlight Cloud Tech Ltd
Address of Factory:	4F/5F, 4th Building, Zhongyuntai Technology Industrial Park, Shiyan, Baoan District, Shenzhen City, China

3.2 General Description of EUT

Product Name:	Playback Control Processor
Model No.:	AX08, AX06
Test Model No.:	AX08
Trade mark:	Colorlight

3.3 Product Specification subjective to this standard

Frequency Range:	2.4G Wi-Fi: IEEE 802.11b/g/n(HT20)/ax(HE20): 2412MHz to 2472MHz IEEE 802.11n(HT40)/ax(HE40): 2422MHz to 2462MHz 5G Wi-Fi: U-NII-1: 5150-5250MHz U-NII-3: 5745-5825MHz	
Modulation Type:	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) IEEE for 802.11ax(HE20 and HE40): OFDM (1024QAM, 256QAM, 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) IEEE 802.11ax(HE20/HE40/HE80): OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM,1024QAM)	
Test Power Grade:	Default	
Test Software of EUT:	Adb.exe	
Antenna Type:	Rubber Rod Antenna	
Antenna Gain:	2.4G Wi-Fi: ANT1: 4.73 dBi, ANT2: 4.73 dBi 5G Wi-Fi: U-NII-1: ANT1: 3.18 dBi, ANT2: 3.18 dBi U-NII-3:ANT1: 3.64 dBi, ANT2: 3.64 dBi	
Power Supply:	Adapter:	Model: FJ-GN2048B1203000D Input: 100-240V, 50/60Hz, 1.5A Ouptut: 12V, 3A

Sample Received Date:	Feb. 06, 2025
Sample tested Date:	Feb. 06, 2025 to Mar. 11, 2025
Remark: Model No.: AX08, AX06 Only the model AX08 was tested, since the electrical, PCB and layout, only the model's name and output terminals are different for marketing requirements. Details as below: 1.AX06 is a new product derived from AX08 with some functions simplified.  AX08  AX06 2.Differences between AX06 and AX08: ①Removal of 2 signal output ports.	

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 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

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

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 $ERP_{20 \text{ cm}}$ 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:

Frequency (MHz)	Estimation distance (cm)	Max. Conducted Output power (dBm)	Antenna Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (mW)	MPE ratio	Result
@2.4GHz	20	12.8	4.73	15.38	34.5144	3060	0.0113	Pass

Frequency (MHz)	Estimation distance (cm)	Max. Conducted Output power (dBm)	Antenna Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (mW)	MPE ratio	Result
@5GHz	20	12.79	3.64	14.28	26.7917	3060	0.0088	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 report of EED32Q82139301, EED32Q82139302 and only the worst case data was recorded in the report.

For Simultaneous Transmission:

As MPE ratio (2.4G Wi-Fi+5G Wi-Fi)= $0.0113^2 + 0.0088^2 = 0.0002 < 1$, it's deemed to fulfil the RF exposure requirement.

Statement

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. The Company Name shown on Report and Address, the sample(s) and sample information was/were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified;
3. The result(s) shown in this report refer(s) only to the sample(s) tested;
4. Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule stated in ILAC-G8:09/2019/CNAS-GL015:2022;
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*** End of Report ***

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