RF Exposure Evaluation Report

Product	:	Bluebird AI Camera
Trade mark	:	bluebird.ai
Model/Type reference	:	BB-2FWD-GS, BB-2FWD-HS
Serial Number	:	N/A
Report Number	:	EED32Q81832604
FCC ID	:	2BL89-GC458367
Date of Issue	:	Dec. 03, 2024
Test Standards	:	47 CFR Part 1.1307 47 CFR Part 1.1310 47 CFR Part 2.1091 47 CFR Part 2.1093 447498 D04 Interim General RF Exposure Guidance v01
Test result	:	PASS

Prepared for:

Bluebird AI

2140 Peralta Blvd # 209, Fremont, CA 94536

Prepared by:

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Approved by:	Aaron Ma	Date:	Dec. 03, 2024

Check No.: 7735121124

1 Version

Version No.	Date	Description
00	Dec. 03, 2024	Original

2 Contents

3 General Information

3.1 Client Information

Applicant:	Bluebird AI
Address of Applicant:	2140 Peralta Blvd # 209, Fremont, CA 94536
Manufacturer:	Bluebird AI
Address of Manufacturer:	2140 Peralta Blvd # 209, Fremont, CA 94536

3.2 General Description of EUT

Product Name:	Bluebird AI Camera
Model No.(EUT):	BB-2FWD-GS, BB-2FWD-HS
Test Model No.:	BB-2FWD-GS
Trade Mark:	bluebird.ai

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	
Modulation Type:	BLE: GFSK BT: GFSK, π/4DQPSK, 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) : OFDM (64QAM, 16QAM,QPSK,BPSK)	
Test Power Grade:	Default	
Test Software of EUT:	MobaXterm_Personal_22.1	
Antenna Type:	External Antenna	
Antenna Gain:	4dBi	
Power Supply:	Adapter:	DC 12V
Sample Received Date:	Mar. 13, 2024	
Sample tested Date:	Mar. 13, 2024 to Apr. 20, 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.: BB-2FWD-GS, BB-2FWD-HS Only the model BB-2FWD-GS was tested. Their electrical circuit design, layout, components used and internal wiring are identical. Only the model, appearance and shape are 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

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

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).

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

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 BLE

Frequency (MHz)	Max. Conducted Output power (dBm)	Antenna Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (mW)	MPE ratio	Result
2402	5.86	4	7.71	5.902	3060	0.002	PASS

For BT:

Frequency (MHz)	Max. Conducted Output power (dBm)	Antenna Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (mW)	MPE ratio	Result
2402	9.32	4	11.17	13.092	3060	0.004	PASS

For 2.4G Wi-Fi

Frequency (MHz)	Max. Conducted Output power (dBm)	Antenna Gain (dBi)	ERP (dBm)	ERP (mW)	Limit (mW)	MPE ratio	Result
2412	12.92	4	14.77	29.992	3060	0.010	PASS

Note：

①EIRP=conducted power+antenna gain；

②ERP=EIRP-2.15;

③EIRP(dBm) = Field strength of the fundamental signal(dBuV/m@3m) – 95.23;

④ERP(mW) = 10^(ERP (dBm)/10);

⑤The estimation distance is 20cm;

⑥The test data please refer to the report of EED32Q81832601, EED32Q81832602, EED32Q81832603 and only the worst case data was recorded in the report.

*** End of Report ***