RF EXPOSURE REPORT

Applicant	Shenzhen Everbest Machinery Industry Co., Ltd
Address	19th Building, 5th Region, Baiwangxin Industrial Park, SongBai Rd.,Baimang, Xili, Nanshan, Shenzhen China

Manufacturer or Supplier	Shenzhen Everbest Machinery Industry Co., Ltd
Address	19th Building, 5th Region, Baiwangxin Industrial Park, SongBai Rd.,Baimang, Xili, Nanshan, Shenzhen China
Product	Face Recognition Scanner
Brand Name	CEM
Model	AI-321
Additional Models & Model Difference	AI-322, AI-328
Date of tests	May. 21, 2020 ~ Jun. 22, 2020

☒ **FCC Part 2 (Section 2.1091)**

☒ **KDB 447498 D01**

☒ **IEEE C95.1**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Tested by Breeze Jiang Senior Project Engineer / EMC Department	Approved by Glyn He Assistant Manager / EMC Department
Breeze	Date: Jun. 24, 2020

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FM200521N025	Original release	Jun. 24, 2020

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1. CERTIFICATION

FCC ID:	WIGAI-321
PRODUCT:	Face Recognition Scanner
BRAND NAME:	CEM
MODEL NO.:	AI-321
ADDITIONAL NO.:	AI-322, AI-328
TEST SAMPLE:	Engineering Sample
APPLICANT:	Shenzhen Everbest Machinery Industry Co., Ltd
STANDARDS:	FCC Part 2 (Section 2.1091)
	KDB 447498 D01
	IEEE C95.1

Note:
1. Additional models AI-322, AI-328 are identical with the test model AI-321 except the model name for trading purpose.

2. RF EXPOSURE LIMIT

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

FREQUENCY RANGE (MHz)	ELECTRIC FIELD STRENGTH (V/m)	MAGNETIC FIELD STRENGTH (A/m)	POWER DENSITY (mW/cm^2)	AVERAGE TIME (minutes)
LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE				
300-1500	…	…	F/1500	30
1500-100,000	…	…	1.0	30

F = Frequency in MHz

3. MPE CALCULATION FORMULA

$Pd = (Pout*G) / (4*pi*r^2)$

where

Pd = power density in mW/cm^2

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

4. CLASSIFICATION

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

5. ANTENNA GAIN

The antennas provided to the EUT, please refer to the following table:

Mode	Transmitter Circuit	Peak Gain (dBi)	Antenna Type
BT	Chain 0	2.32	Integral Antenna
WIFI	Chain 0	2.32	Integral Antenna

6. CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

The tuned conducted Average Power (declared by client)

Mode	Frequency (MHz)	Target Power (dBm)	Tolerance (dBm)	Lower Tolerance (dBm)	Upper Tolerance (dBm)
BT (GFSK)	2402-2480MHz	-2	+-3.5	-5.5	1.5
BT (8DPSK)	2402-2480MHz	-6.5	+-3.5	-10	-3
BT-LE (GFSK)	2402-2480MHz	7	+-2	5	9
802.11b	2412-2462MHz	15	+-1	14	16
802.11g	2412-2462MHz	14	+-1	13	15
802.11n HT20	2412-2462MHz	13	+-1	12	14

The measured conducted Average Power

Mode	Frequency (MHz)	Averaged Power (dBm)
BT (GFSK)	2402	0.98
BT (8DPSK)	2402	-4.19
BT-LE (GFSK)	2402	7.36
802.11b	2462	15.43
802.11g	2462	14.02
802.11n HT20	2437	13.29

FREQUENCY BAND (MHz)	MAX AVERAGE POWER (dBm)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm^2)	LIMIT (mW/cm^2)
BT 2402-2480	9	2.32	20	0.002696	1.0
WiFi 2412-2462	16	2.32	20	0.013512	1.0

CONCLUSION:

The BT and WiFi can transmit simultaneously, the formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1

CPD = Calculation power density

LPD = Limit of power density

(0.002696/1)+(0.013512/1) = 0.016208<1, which is less than the “1” limit.

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