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Report Template Version: V06
Report Template Revision Date: 2026-01-30

RF Exposure Evaluation Report

Report No.: CQASZ20260701405E-02
Applicant: Dongguan Yu'aoran Electronic Technology Co., Ltd
Address of Applicant: Room 901, Building 2, No. 23, Dalingshan Section, Guanchang Road, Dalingshan Town, Dongguan City, Guangdong Province
Equipment Under Test (EUT):
EUT Name: Intelligent visual doorbell
Model No.: M30, M29, M17, M16, X7
Test Model No.: M30
Brand Name: N/A
FCC ID: 2BWUM-M30
Standards: 47 CFR Part 1.1307
47 CFR Part 1.1310
KDB447498 D01 General RF Exposure Guidance v06
Date of Receipt: 2026-07-03
Date of Test: 2026-07-03 to 2026-08-31
Date of Issue: 2026-9-14
Test Result: PASS*

*In the configuration tested, the EUT complied with the standards specified above

Tested By: Azir Wang
(Azir Wang)

Reviewed By: Timo Lei
(Timo Lei)

Approved By: Jack Ai
(Jack Ai)



1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20260701405E-02	Rev.01	Initial report	2026-9-14

Note:

Model No.:M30, M29, M17, M16, X7

Their electrical circuit design, layout, components used and internal wiring are identical,

Only the appearance is different.

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3 General Information

3.1 Client Information

Applicant:	Dongguan Yu'aoran Electronic Technology Co., Ltd
Address of Applicant:	Room 901, Building 2, No. 23, Dalingshan Section, Guanchang Road, Dalingshan Town, Dongguan City, Guangdong Province
Manufacturer:	Dongguan Yu'aoran Electronic Technology Co., Ltd
Address of Manufacturer:	Room 901, Building 2, No. 23, Dalingshan Section, Guanchang Road, Dalingshan Town, Dongguan City, Guangdong Province
Factory:	Dongguan Yu'aoran Electronic Technology Co., Ltd
Address of Factory:	Room 901, Building 2, No. 23, Dalingshan Section, Guanchang Road, Dalingshan Town, Dongguan City, Guangdong Province

3.2 General Description of EUT

Product Name:	Intelligent visual doorbell
Model No.:	M30, M29, M17, M16, X7
Test Model No.:	M30
Trade Mark:	N/A
Software Version:	V1.0
Hardware Version:	V1.0
EUT Power Supply:	Li-ion battery DC 3.7V 1800mAh, Charge by DC 5V for adapter

3.3 General Description of 2.4G WIFI Classic

Operation Frequency:	IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz
Type of Modulation:	802.11b: DSSS(CCK/QPSK/BPSK) 802.11g: OFDM(BPSK/QPSK/16QAM/64QAM) 802.11n : OFDM (64QAM, 16QAM, QPSK, BPSK)
Number of Channel:	IEEE 802.11b/g, IEEE 802.11n HT20: 11 Channels
Channel Separation:	5MHz
Transfer Rate:	802.11b: 1M/2M/5.5M/11M bps 802.11g: 6M/9M/12M/18M/24M/36M/48M/54M bps 802.11n: 7.2M/14.4M/21.7M/28.9M/43.3M/57.8M/65M/72.2M bps
Sample Type:	☒ Mobile ☐ Portable
Antenna Type:	PIFA antenna
Antenna Gain:	2.13dBi

Note:

The above parameters will directly affect the test results. The information is provided by the applicant.

4 MPE Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Limits

According to FCC Part1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in part1.1307(b)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f ²)	6
30–300	61.4	0.163	1.0	6
300–1500			f/300	6
1500–100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f ²)	30
30–300	27.5	0.073	0.2	30
300–1500			f/1500	30
1500–100,000			1.0	30

F= Frequency in MHz

Friis Formula

Friis transmission formula: $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

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

P_d is the limit of MPE, 1 mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

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

1) For 2.4G WIFI

Antenna Gain: 2.13dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 1.63 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

Measurement Data

11B mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2412MHz)	10.33	10.5±1	11.5	14.13
Middle(2437MHz)	10.06	10.0±1	11.0	12.59
Highest(2462MHz)	9.59	10.0±1	11.0	12.59

The worst case:

Maximum tune-up Power (mW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
14.13	1.86	0.0045891170	1.0	PASS

Note: 1) Refer to report No. CQASZ20250100185E-03 for EUT test Max Conducted AV Output Power value.

2) $P_d = (P_{out} * G) / (4 * \pi * R^2) = (14.13 * 1.63) / (4 * 3.1416 * 20^2) = 0.0045891170$

*** END OF REPORT ***