

# FCC RF EXPOSURE EVALUATION REPORT

Product Name: Video Doorbell  
Trade Mark: Yobi  
Model No.: B2  
Report Number: 180726001EMC-2  
Test Standards: FCC 47 CFR Part 1 Subpart I  
FCC ID: ZUXIBB-B2  
Test Result: PASS  
Date of Issue: September 10, 2018

Prepared for:

**iBaby Labs, Inc.**

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**Version**

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|-------------|--------------------|-------------|
| V1.0        | September 10, 2018 | Original    |

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## 1. GENERAL INFORMATION

### 1.1 CLIENT INFORMATION

|                                 |                                                                                                                  |
|---------------------------------|------------------------------------------------------------------------------------------------------------------|
| <b>Applicant:</b>               | iBaby Labs, Inc.                                                                                                 |
| <b>Address of Applicant:</b>    | Room 601, 6/F, Block T2-B, Software Park, No.22, S. Gaoxin7th Ave., Nanshan District, Shenzhen, Guangdong, China |
| <b>Manufacturer:</b>            | iBaby Labs, Inc.                                                                                                 |
| <b>Address of Manufacturer:</b> | Room 601, 6/F, Block T2-B, Software Park, No.22, S. Gaoxin7th Ave., Nanshan District, Shenzhen, Guangdong, China |

### 1.2 EUT INFORMATION

|                                                                                                                             |                                    |
|-----------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| <b>Product Name:</b>                                                                                                        | Video Doorbell                     |
| <b>Model No.:</b>                                                                                                           | B2                                 |
| <b>Add. Model No.:</b>                                                                                                      | B1, B3                             |
| <b>Trade Mark:</b>                                                                                                          | Yobi                               |
| <b>DUT Stage:</b>                                                                                                           | Identical Prototype                |
| <b>EUT Supports Function:</b>                                                                                               | 2.4 GHz ISM Band: IEEE 802.11b/g/n |
| <b>Software Version:</b>                                                                                                    | MTV1.1.0                           |
| <b>Hardware Version:</b>                                                                                                    | V2.0                               |
| <b>Sample Received Date:</b>                                                                                                | August 10, 2018                    |
| <b>Sample Tested Date:</b>                                                                                                  | August 11, 2018 to August 22, 2018 |
| <b>Note:</b> The additional model B1, B3 is identical with the test model B2 except the model number for marketing purpose. |                                    |

### 1.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD

|                             |                                                                                                                                                |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Frequency Band:</b>      | 2400 MHz to 2483.5 MHz                                                                                                                         |
| <b>Frequency Range:</b>     | 2412 MHz to 2462 MHz                                                                                                                           |
| <b>Support Standards:</b>   | IEEE 802.11b, IEEE 802.11g, IEEE 802.11n-HT20                                                                                                  |
| <b>Type of Modulation:</b>  | IEEE 802.11b: DSSS(CCK, DQPSK, DBPSK)<br>IEEE 802.11g: OFDM(64-QAM, 16-QAM, QPSK, BPSK)<br>IEEE 802.11n-HT20: OFDM(64-QAM, 16-QAM, QPSK, BPSK) |
| <b>Data Rate:</b>           | IEEE 802.11b: Up to 11 Mbps<br>IEEE 802.11g: Up to 54 Mbps<br>IEEE 802.11n-HT20: Up to MCS7                                                    |
| <b>Number of Channels:</b>  | IEEE 802.11b: 11<br>IEEE 802.11g: 11<br>IEEE 802.11n-HT20: 11                                                                                  |
| <b>Channel Separation:</b>  | 5 MHz                                                                                                                                          |
| <b>Antenna Type:</b>        | FPCB Antenna                                                                                                                                   |
| <b>Antenna Gain:</b>        | 3 dBi                                                                                                                                          |
| <b>Maximum Peak Power:</b>  | IEEE 802.11b: 17.89 dBm<br>IEEE 802.11g: 19.78 dBm<br>IEEE 802.11n-HT20: 19.36 dBm                                                             |
| <b>Normal Test Voltage:</b> | 120V~60Hz and/or 3.7V Battery                                                                                                                  |

## 1.4 OTHER INFORMATION

| Test channels for 2.4 GHz ISM Band of Wi-Fi |                      |                       |           |            |
|---------------------------------------------|----------------------|-----------------------|-----------|------------|
| Mode                                        | Tx/Rx Frequency      | Test RF Channel Lists |           |            |
|                                             |                      | Lowest(L)             | Middle(M) | Highest(H) |
| IEEE 802.11b                                | 2412 MHz to 2462 MHz | Channel 1             | Channel 6 | Channel 11 |
|                                             |                      | 2412 MHz              | 2437 MHz  | 2462 MHz   |
| IEEE 802.11g                                | 2412 MHz to 2462 MHz | Channel 1             | Channel 6 | Channel 11 |
|                                             |                      | 2412 MHz              | 2437 MHz  | 2462 MHz   |
| IEEE 802.11n-HT20                           | 2412 MHz to 2462 MHz | Channel 1             | Channel 6 | Channel 11 |
|                                             |                      | 2412 MHz              | 2437 MHz  | 2462 MHz   |

## 1.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product, according to the specifications of the manufacturers. It must comply with the requirements of the following standards:

### FCC 47 CFR Part 1 Subpart I

All test items have been performed and recorded as per the above standards

## 1.6 TEST LOCATION

All tests were performed at:

### Shenzhen UnionTrust Quality and Technology Co., Ltd.

Address: 16/F, Block A, Building 6, Baoneng Science and Technology Park, Qingxiang Road No.1, Longhua New District, Shenzhen, China 518109

Telephone: +86 (0) 755 2823 0888

Fax: +86 (0) 755 2823 0886

## 1.7 TEST FACILITY

The test facility is recognized, certified, or accredited by the following organizations:

### CNAS-Lab Code: L9069

The measuring equipment utilized to perform the tests documented in this report has been calibrated once a year or in accordance with the manufacturer's recommendations, and is traceable under the ISO/IEC/EN 17025 to international or national standards. Equipment has been calibrated by accredited calibration laboratories.

### IC-Registration No.: 21600-1

The 3m Semi-anechoic chamber of Shenzhen UnionTrust Quality and Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 21600-1.

### A2LA-Lab Certificate No.: 4312.01

Shenzhen UnionTrust Quality and Technology Co., Ltd. has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

### Shenzhen UnionTrust Quality and Technology Co., Ltd.

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**FCC Accredited Lab.**

Designation Number: CN1194

Test Firm Registration Number: 259480

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**1.8 DEVIATION FROM STANDARDS**

None.

**1.9 ABNORMALITIES FROM STANDARD CONDITIONS**

None.

**1.10 OTHER INFORMATION REQUESTED BY THE CUSTOMER**

None.

**2. EQUIPMENT LIST**

Please refer to the RF test report.

### 3. MPE EVALUATION

#### 3.1 REFERENCE DOCUMENTS FOR EVALUATION

| No. | Identity                                        | Document Title                                                                              |
|-----|-------------------------------------------------|---------------------------------------------------------------------------------------------|
| 1   | FCC 47 CFR Part 1 Subpart I                     | PROCEDURES IMPLEMENTING THE NATIONAL ENVIRONMENTAL POLICY ACT OF 1969                       |
| 2   | KDB 447498 D01 General RF Exposure Guidance v06 | RF EXPOSURE PROCEDURES AND EQUIPMENT AUTHORIZATION POLICIES FOR MOBILE AND PORTABLE DEVICES |

#### 3.2 MPE COMPLIANCE REQUIREMENT

##### 3.2.1 Limits

According to §1.1307(b)(1), system operating under the provisions of this section shall be operating in a manner that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure.

##### Limits for Occupational / Controlled Exposure

| Frequency range (MHz) | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/cm <sup>2</sup> ) | Averaging Times   E   <sup>2</sup> ,   H   <sup>2</sup> or S (minutes) |
|-----------------------|-----------------------------------|-----------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| 0.3-3.0               | 614                               | 1.63                              | (100)*                                  | 6                                                                      |
| 3.0-30                | 1842/f                            | 4.89/f                            | (900/f)*                                | 6                                                                      |
| 30-300                | 61.4                              | 0.163                             | 1.0                                     | 6                                                                      |
| 300-1500              | /                                 | /                                 | F/300                                   | 6                                                                      |
| 1500-100000           | /                                 | /                                 | 5                                       | 6                                                                      |

##### Limits for General Population / Uncontrolled Exposure

| Frequency range (MHz) | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/cm <sup>2</sup> ) | Averaging Times   E   <sup>2</sup> ,   H   <sup>2</sup> or S (minutes) |
|-----------------------|-----------------------------------|-----------------------------------|-----------------------------------------|------------------------------------------------------------------------|
| 0.3-1.34              | 614                               | 1.63                              | (100)*                                  | 30                                                                     |
| 1.34-30               | 824/f                             | 2.19/f                            | (180/f)*                                | 30                                                                     |
| 30-300                | 27.5                              | 0.073                             | 0.2                                     | 30                                                                     |
| 300-1500              | /                                 | /                                 | F/1500                                  | 30                                                                     |
| 1500-100000           | /                                 | /                                 | 1                                       | 30                                                                     |

**Note:** f = frequency in MHz: \* = Plane-wave equivalents power density.

##### 3.2.2 Test Procedure

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

#### 3.3 MPE CALCULATION METHOD

$$S = PG/4\pi R^2 = EIRP/4\pi R^2$$

S = power density (in appropriate units, e.g., mW/cm<sup>2</sup>)

P = power input to the antenna (in appropriate units, e.g., mW)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor is normally numeric gain.

R = distance to the center of radiation of the antenna (in appropriate units, e.g., cm)

### 3.4 MPE CALCULATION RESULTS

**Note:** For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

#### 3.4.1 For WLAN

For Wi-Fi function, operating at 2412MHz to 2462 MHz for IEEE802.11b/g/n

##### 3.4.1.1 Antenna Type:

Chain 0: FPCB Antenna

##### 3.4.1.2 Antenna Gain:

Chain 0: 2412MHz to 2462 MHz: 3 dBi

##### 3.4.1.3 Results for WLAN

| Operating Mode    | Freq.     | Declared maximum conducted average output power | Max. positive tolerance according manufacturer | Antenna Gain | Calculated maximum EIRP | Declared maximum EIRP | MPE Limit             | MPE Value |
|-------------------|-----------|-------------------------------------------------|------------------------------------------------|--------------|-------------------------|-----------------------|-----------------------|-----------|
|                   | (MHz)     | (dBm)                                           |                                                | (dBi)        | (dBm)                   | (mW)                  | (mw/cm <sup>2</sup> ) |           |
| IEEE 802.11b      | 2412-2462 | 15                                              | 2                                              | 3            | 20                      | 100.0000              | 1                     | 0.0199    |
| IEEE 802.11g      | 2412-2462 | 8                                               | 2                                              | 3            | 13                      | 19.9526               | 1                     | 0.0040    |
| IEEE 802.11n-HT20 | 2412-2462 | 8                                               | 2                                              | 3            | 13                      | 19.9526               | 1                     | 0.0040    |

## APPENDIX 1 PHOTOS OF TEST SETUP

N/A

## APPENDIX 2 PHOTOS OF EUT CONSTRUCTIONAL DETAILS

Refer to Appendix 2 for EUT external and internal photos.

\*\*\* End of Report \*\*\*

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The test report is effective only with both signature and specialized stamp. The result(s) shown in this report refer only to the sample(s) tested. Without written approval of UnionTrust, this report can't be reproduced except in full.

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