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# **TEST REPORT**

Application No.: HKEM2206000565AT

**Applicant:** Meizhou Guo Wei Electronics Co., Ltd.

Address of Applicant: AD1 Section, Economic Development Area, Dongsheng Industrial District,

Meizhou, Guangdong, China.

**Equipment Under Test (EUT):** 

**EUT Name:** Video baby monitor

Model No.: VM481BU
Trademark: Motorola

**FCC ID:** 2ARRB-VM481ABU **IC:** 20353-VM481ABU

HVIN: VM481ABU

**Standard(s):** 47 CFR Part 1.1307; 47 CFR Part 2.1091

KDB447498 D04 General RF Exposure Guidance v01

RSS102 Issue 5

**Date of Receipt:** 2022-06-09

**Date of Test:** 2022-06-10 to 2022-06-22

**Date of Issue:** 2022-06-23

**Test Result:** The submitted sample was found to comply with the test requirement



Law Man Kit EMC Manager

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Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.



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|                                      | Revision Record |            |  |          |  |  |  |
|--------------------------------------|-----------------|------------|--|----------|--|--|--|
| Version Chapter Date Modifier Remark |                 |            |  |          |  |  |  |
| 01                                   |                 | 2022-06-23 |  | Original |  |  |  |
|                                      |                 |            |  |          |  |  |  |
|                                      |                 |            |  |          |  |  |  |

| Authorized for issue by: |                   |                  |
|--------------------------|-------------------|------------------|
|                          | Panner            |                  |
|                          | Panny Leung       |                  |
|                          | /Project Engineer | Date: 2022-06-23 |
|                          | Law               |                  |
|                          | Law Man Kit       |                  |
|                          | /Reviewer         | Date: 2022-06-23 |



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# 2 Test Summary

| Radio Spectrum Technical Requirement |  |                          |                |        |  |  |  |
|--------------------------------------|--|--------------------------|----------------|--------|--|--|--|
| Item                                 | Standard   | Method                   | Requirement    | Result |  |  |  |
| RF Exposure                          | 47 CFR Part 1.1307,<br>47 CFR Part 2.1091,<br>KDB 447498 D04 | KDB447498D04             | KDB447498D04   | PASS   |  |  |  |
| RF Exposure                          | RSS102 Issue 5   | RSS-102<br>Section 2.5.1 | RSS102 Issue 5 | PASS   |  |  |  |

### **Declaration of EUT Family Grouping:**

None.

#### Abbreviation:

Tx: In this whole report Tx (or tx) means Transmitter.

Rx: In this whole report Rx (or rx) means Receiver.

RF: In this whole report RF means Radiated Frequency.

CH: In this whole report CH means channel.

Volt: In this whole report Volt means Voltage.

Temp: In this whole report Temp means Temperature.

Humid: In this whole report Humid means humidity.

Press: In this whole report Press means Pressure.

N/A: In this whole report not application.



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# 4 General Information

## 4.1 Details of E.U.T.

| 4.1 | Details of E.U.T.    |  |
|-----|----------------------|--|
|     | Power supply:        | Adaptor 1  |
|     |                      | Model: BQ05A-0501000-U   |
|     |                      | Input: AC 100-240V, 50/60Hz, Max 300mA   |
|     |                      | Output: DC 5V, 1.0A  |
|     |                      |  |
|     |                      | or   |
|     |                      |  |
|     |                      | Adaptor 2  |
|     |                      | Model: AT-538A-050100A   |
|     |                      | Input: AC 100-240V, 50/60Hz, 200mA   |
|     |                      | Output: DC 5V, 1.0A  |
|     |                      |  |
|     | Test voltage:        | AC 120V  |
|     | Cable:               | Power Cable: 185cm unshielded 2 wires DC cable                                       |
|     | Antenna Gain:        | 0 dBi  |
|     | Antenna Type:        | Integral antenna   |
|     | Modulation Type:     | GFSK   |
|     | Number of Channels:  | 32   |
|     | Operation Frequency: | 2405MHz to 2475MHz   |
|     | Series number:       | A1   |
|     | Hardware Version:    | V1.0   |
|     | Software Version:    | V0.17  |
|     |                      | Remark: Power level setting was not adjustable and fixed default through SW Version. |



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## Frequency List

| Channel<br>Number | TX Freq (MHz) | Channel<br>Number | TX Freq (MHz) | Channel<br>Number | TX Freq (MHz) |
|-------------------|---------------|-------------------|---------------|-------------------|---------------|
| 1                 | 2405          | 13                | 2430          | 25                | 2458.5        |
| 2                 | 2407          | 14                | 2433          | 26                | 2460.5        |
| 3                 | 2409          | 15                | 2435          | 27                | 2462.5        |
| 4                 | 2411          | 16                | 2437          | 28                | 2467          |
| 5                 | 2413          | 17                | 2439          | 29                | 2469          |
| 6                 | 2415          | 18                | 2441          | 30                | 2471          |
| 7                 | 2418          | 19                | 2444          | 31                | 2473          |
| 8                 | 2420          | 20                | 2446          | 32                | 2475          |
| 9                 | 2422          | 21                | 2450          |                   |               |
| 10                | 2424          | 22                | 2452          |                   |               |
| 11                | 2426          | 23                | 2454          |                   |               |
| 12                | 2428          | 24                | 2456          |                   |               |

Remark: 1. Operation channel is total 32.

2. Testing Channels are highlighted in **bold**.

## 4.2 Description of Support Units

The EUT has been tested as an independent unit.



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#### 4.3 Test Location

All tests were performed at:

SGS Hong Kong Limited

Unit 2 and 3, G/F, Block A, Po Lung Centre,

11 Wang Chiu Road, Kowloon Bay, Kowloon, Hong Kong

Tel: +852 2305 2570 Fax: +852 2756 4480

No tests were sub-contracted.

## 4.4 Test Facility

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

### • IAS Accreditation (Lab Code: TL-817)

SGS Hong Kong Limited has met the requirements of AC89, IAS Accreditation Criteria for Testing Laboratories, and has demonstrated compliance with ISO/IEC Standard 17025:2017, General requirements for the competence of testing and calibration laboratories. This organization is accredited to provide the services specified in the scope of accreditation maintained on the IAS website (www.iasonline.org).

The report must not be used by the client to claim product certification, approval, or endorsement by IAS, NIST, or any agency of the Federal Government.

#### • FCC Recognized Accredited Test Firm(CAB Registration No.: 514599)

SGS Hong Kong Limited has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: HK0015, Test Firm Registration Number: 514599.

#### • Industry Canada (Site Registration No.: 26103; CAB Identifier No.: HK0015)

SGS Hong Kong Limited has been recognized by Department of Innovation, Science and Economic Development (ISED) Canada as a wireless testing laboratory. The acceptance letter from the ISED is maintained in our files. CAB Identifier No: HK0015, Site Registration Number: 26103.

#### 4.5 Deviation from Standards

None

#### 4.6 Abnormalities from Standard Conditions

None



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## 5 Radio Spectrum Technical Requirement

### 5.1 RF Exposure

### 5.1.1 Test Requirement:

CFR 47 Part 1.1310

Limit:

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/cm²) | Averaging time (minutes) |  |  |  |  |
|-----------------------|---|-------------------------------|------------------------|--------------------------|--|--|--|--|
|                       | (A) Limits for Occupational/Controlled Exposure |                               |                        |                          |  |  |  |  |
| 0.3-3.0               | 614   | 1.63                          | *100                   | 6                        |  |  |  |  |
| 3.0-30                | 1842/f  | 4.89/f                        | *900/f²                | 6                        |  |  |  |  |
| 30-300                | 61.4  | 0.163                         | 1.0                    | 6                        |  |  |  |  |
| 300-1,500             |   |                               | f/300                  | 6                        |  |  |  |  |
| 1,500-100,000         |   |                               | 5                      | 6                        |  |  |  |  |
|                       | (B) Limits for Generation                       | al Population/Uncontrolled    | d Exposure             |                          |  |  |  |  |
| 0.3-1.34              | 614   | 1.63                          | *100                   | 30                       |  |  |  |  |
| 1.34-30               | 824/f   | 2.19/f                        | *180/f²                | 30                       |  |  |  |  |
| 30-300                | 27.5  | 0.073                         | 0.2                    | 30                       |  |  |  |  |
| 300-1,500             |   |                               | f/1500                 | 30                       |  |  |  |  |
| 1,500-100,000         |   |                               | 1.0                    | 30                       |  |  |  |  |

f = frequency in MHz

According to IEEE C95.3:2002 section 5.5.1.1, The power density S at a point on the axis at a distance d from a transmitting antenna is given by the Friis free-space transmission formula

$$S = \frac{PG}{4\pi d^2}$$

 $S = power density (mW/cm^2)$ 

P = the net power delivered to the antenna (mW)

G = gain of the antenna in linear scale

d = distance between observation point and center of the radiator (cm)

<sup>\* =</sup> Plane-wave equivalent power density



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#### 5.1.1 IC Radiofrequecy radiation

According to RSS-102 Issue 5, section 2.5.2 Exemption.

RF exposure evaluation is required if the separation distance between the user and the device's radiating element is greater than 20 cm, except when the device operates as follows:

below 20 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1 W (adjusted for tune-up tolerance);

at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 22.48/f0.5W (adjusted for tune-up tolerance), where f is in MHz;

at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance);

at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1.31  $\times$  10-2 f0.6834 W (adjusted for tune-up tolerance), where f is in MHz;

at or above 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 5 W (adjusted for tune-up tolerance).



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### 5.1.2 EUT RF Exposure Evaluation

Antenna Gain:

The maximum Gain measured in fully anechoic chamber is 1.0 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

For FCC;

FHSS:

| Channel | Frequency<br>(MHz) | Conduct power<br>(including Tune-up<br>tolerance) (dBm) | Conduct<br>power<br>(mW) | Power Density<br>at R = 20 cm<br>(mW/cm2) | Limit | MPE<br>Ratios | Result |
|---------|--------------------|---|--------------------------|---|-------|---------------|--------|
| Low     | 2405               | 18.5  | 70.795                   | 0.014                                     | 1     | 0.014         | PASS   |
| Middle  | 2439               | 17.1  | 51.286                   | 0.010                                     | 1     | 0.010         | PASS   |
| High    | 2475               | 16.6  | 45.709                   | 0.009                                     | 1     | 0.009         | PASS   |

For IC:

FHSS:

| Channel | Frequency<br>(MHz) | Conduct power<br>(including Tune-up<br>tolerance) (dBm) | E.I.R.P<br>(dBm) | E.I.R.P<br>(W) | Limit<br>(W) | Result |
|---------|--------------------|---|------------------|----------------|--------------|--------|
| Low     | 2405               | 18.5  | 18.5             | 0.071          | 2.679        | PASS   |
| Middle  | 2439               | 17.1  | 17.1             | 0.051          | 2.705        | PASS   |
| High    | 2475               | 16.6  | 16.6             | 0.046          | 2.732        | PASS   |

Note: 1. Refer to report No. HKEM220600056502 for EUT test conducted power value. requirement.



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# 6 Photographs

Remark: Photos refer to Appendix: External Photo, Internal Photo, and setup Photo.

- End of the Report -