

TEST REPORT

Application No.: HKEM2110001095AT
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
Additional Model: Please refer to section 2 of this report which indicates which item was actually tested and which were electrically identical.

Trademark: Motorola
FCC ID: 2ARRB-VM481BU
IC: 20353-VM481BU
HVIN: VM481BU
Standard(s) : 47 CFR Part 1.1307; 47 CFR Part 2.1093
 KDB447498D01 General RF Exposure Guidance v06
 RSS102 Issue 5 March 2015

Date of Receipt: 2021-11-05
Date of Test: 2021-11-06 to 2021-11-19
Date of Issue: 2021-11-22

Test Result:	Pass*
---------------------	--------------

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



Law Man Kit
EMC Manager

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request and accessible at <http://www.sgs.com/en/Terms-and-conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-conditions.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. The document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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.

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2021-11-22		Original

Authorized for issue by:			
			
		<hr/> Panny Leung /Project Engineer	Date: 2021-11-22
			
		<hr/> Law Man Kit /Reviewer	Date: 2021-11-22

2 Test Summary

Radio Spectrum Technical Requirement				
Item	Standard	Method	Requirement	Result
RF Exposure	47 CFR Part 1.1307, 47 CFR Part 2.1093, KDB 447498 D01	KDB447498D01	KDB447498D01	PASS
RF Exposure	RSS102 Issue 5	RSS-102 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.



3 Contents

	Page
1 COVER PAGE	1
2 TEST SUMMARY	3
3 CONTENTS	4
4 GENERAL INFORMATION	5
4.1 DETAILS OF E.U.T.....	5
4.2 DESCRIPTION OF SUPPORT UNITS.....	6
4.3 TEST LOCATION	7
4.4 TEST FACILITY	7
4.5 DEVIATION FROM STANDARDS	7
4.6 ABNORMALITIES FROM STANDARD CONDITIONS	7
5 RADIO SPECTRUM TECHNICAL REQUIREMENT	8
5.1 RF EXPOSURE	8
5.1.1 <i>Test Requirement:</i>	8
5.1.1 <i>IC Radiofrequency radiation</i>	9
5.1.2 <i>EUT RF Exposure Evaluation</i>	10
6 PHOTOGRAPHS	11

4 General Information

4.1 Details of E.U.T.

Power supply:	<p>Adaptor 1 Model: BQ05A-0501000-U Input: AC 100-240V, 50/60Hz, Max 300mA Output: DC 5V, 1.0A</p> <p>or</p> <p>Adaptor 2 Model: AT-538A-050100A Input: AC 100-240V, 50/60Hz, 200mA Output: DC 5V, 1.0A</p> <p>Pre-scan test for RF conducted power were performed on the sample in this report, BQ05A-0501000-U is the worst case and used for fully test.</p>
Test voltage:	AC 120V
Cable:	Power Cable: 180cm 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.

Frequency List

Channel Number	TX Freq (MHz)	Channel Number	TX Freq (MHz)	Channel 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.

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:

• **HOKLAS (Lab Code: 009)**

SGS Hong Kong Limited has been accepted by HKAS Executive, on the recommendation of the Accreditation Advisory Board, as a HOKLAS Accredited Laboratory, this laboratory meets the requirements of ISO/IEC 17025:2017 and it has been accredited for performing specific test as listed in the scope of accreditation within the test category of Electrical and Electronic Products.

• **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

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/cm ²)	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/f ²	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 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
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz

* = Plane-wave equivalent power density

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/cm²)
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)

5.1.1 IC Radiofrequency 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 $22.48/f^{0.5}W$ (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 $1.31 \times 10^{-2} f^{0.6834} W$ (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).



5.1.2 EUT RF Exposure Evaluation

Antenna Gain:

The maximum Gain measured in fully anechoic chamber is 1.585 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

For FCC;

FHSS:

Channel	Frequency (MHz)	Conduct power (including Tune-up tolerance) (dBm)	Conduct power (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit	MPE Ratios	Result
Low	2405	18.7	74.131	0.02337	1	0.02337	PASS
Middle	2439	17.3	53.703	0.01693	1	0.01693	PASS
High	2475	17.9	61.660	0.01944	1	0.01944	PASS

For IC:

FHSS:

Channel	Frequency (MHz)	Conduct power (including Tune-up tolerance) (dBm)	E.I.R.P (dBm)	E.I.R.P (W)	Limit (W)	Result
Low	2405	18.7	20.7	0.11749	2.7	PASS
Middle	2439	17.3	19.3	0.08511	2.7	PASS
High	2475	17.9	19.9	0.09772	2.7	PASS

Note: 1. Refer to report No. HKEM211000109502 for EUT test conducted power value. requirement.



Report No.: HKEM211000109503
Page: 11 of 11

6 Photographs

Remark: Photos refer to Appendix of HKEM2110001095AT.

- End of the Report -
