

TEST REPORT

Application No.: HKEM1911001140AT
Applicant: VTECH TELECOMMUNICATIONS LTD.
Address of Applicant: 23/F., BLOCK 1, TAI PING INDUSTRIAL CENTRE, NO. 57 TING KOK ROAD, TAI PO, N.T., HONG KONG
Equipment Under Test (EUT):
EUT Name: Video Baby Monitor
Model No.: VM5254 BU, VM5254-2 BU, VM5X54-ab BU♣
♣ Please refer to section 2 of this report which indicates which item was actually tested and which were electrically identical.
FCC ID: EW780-1920-00
IC: 1135B-80192000
HVIN: 35-201286BU
Date of Test: 2019-11-18 to 2019-11-28
Date of Issue: 2019-12-08
Test Result : **Pass***

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

Keny Xu

Keny Xu
EMC Laboratory Manager



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Revision Record				
Version	Chapter	Date	Modifier	Remark
00		2019-12-08		Original

Authorized for issue by:			
Tested by:		<i>Vincent Chen</i>	
		Vincent Chen /Project Engineer	
Checked by:		<i>Eric Fu</i>	
		Eric Fu /Reviewer	



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2 General Information

2.1 Details of E.U.T.

Power supply:	AC 120 V, 60 Hz
Adapter	Adaptor 1 AC 100-240V ~ 50/60Hz 200mA to DC 5.0V 1000 mA Model no: S006AKU0500100 Adaptor 2 AC 100-240V ~ 50/60Hz 150mA to DC 5.0V 1000 mA Model no: VT05EUS05100
Battery	N/A
Function	Monitoring Device
Test Voltage	AC120 V 60 Hz
Operation Frequency:	2405-2475MHz
Channel Numbers:	16
Channel Separation:	≥ 2MHz
Type of Modulation:	Frequency Hopping Spread Spectrum (FHSS)
Sample Type:	Indoor
Antenna Type:	Dipole
Antenna Gain:	0 dBi
Frequency List	

Channel Number	TX Freq (MHz)	Channel Number	TX Freq (MHz)	Channel Number	TX Freq (MHz)
1	2405	12	2428	23	2454
2	2407	13	2430	24	2456
3	2409	14	2433	25	2458.5
4	2411	15	2435	26	2460.5
5	2413	16	2437	27	2462.5
6	2415	17	2439	28	2467
7	2418	18	2441	29	2469



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8	2420	19	2444	30	2471
9	2422	20	2446	31	2473
10	2424	21	2450	32	2475
11	2426	22	2452		

Remark: 1. Operation channel is only 16.
2. Testing Channels are highlighted in **bold**.

2.2 Description of Support Units

The EUT has been tested with corresponding accessories as below:

Supplied by client

Description	Manufacturer	Model No.	SN/Certificate NO
UART Test board	N/A	MX3232	N/A
Test Software	MicroRidge System	Version 3.0.0.108	N/A

Supplied by SGS:

Description	Manufacturer	Model No.	SN/Certificate NO
NoteBook (EMC2)	Dell	P75F	N/A



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2.3 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China.
518057.

Tel: +86 755 2601 2053

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2.4 Test Facility

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

- **CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

- **VCCI**

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

- **FCC –Designation Number: CN1178**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

- **Innovation, Science and Economic Development Canada**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.



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2.5 Deviation from Standards

None

2.6 Abnormalities from Standard Conditions

None



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3 RF Exposure Evaluation

3.1 RF Exposure Compliance Requirement

3.1.1 FCC Radiofrequency radiation 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: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

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.



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3.1.2 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 $22.48/f0.5W$ (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).

3.1.3 Test Procedure

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



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3.2 EUT RF Exposure Evaluation

Antenna Gain: 0dBi

Output Power Into Antenna & RF Exposure Evaluation Distance:

For FCC:

Channel	Frequency (MHz)	Conduct power (including Tune-up tolerance) (dBm)	E.I.R.P (mW)	Power Density at R = 20 cm (mW/cm2)	Limit	MPE Ratios	Result
Low	2405	14.4	27.542	0.00548	1	0.00548	PASS
Middle	2439	13.2	20.893	0.00416	1	0.00416	PASS
High	2475	11.8	15.136	0.00301	1	0.00301	PASS

For IC:

Channel	Frequency (MHz)	Conduct power (including Tune-up tolerance) (dBm)	E.I.R.P (W)	Limit (W)	Result
Low	2405	14.4	0.0275	2.7	PASS
Middle	2439	13.2	0.0209	2.7	PASS
High	2475	11.8	0.0151	2.7	PASS

Note: Refer to report No. HKEM191100114001 or EUT test EIRP value. The distance (5th column) calculated from the Fries transmission formula is far greater than 20 cm separation requirement.

- End of the Report -



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