



## RF Exposure Evaluation Report

**Application No.:** HKEM1912001228AT  
**Applicant:** 23/F., Tai Ping Ind Center Block 1, 57 Ting Kok Rd Tai Po NT Hong Kong  
**Address of Applicant:** VTech Telecommunications Ltd  
**Manufacturer:** 23/F., Tai Ping Ind Center Block 1, 57 Ting Kok Rd Tai Po NT Hong Kong  
**Address of Manufacturer:** 23/F., Tai Ping Ind Center Block 1, 57 Ting Kok Rd Tai Po NT Hong Kong  
**Factory:** VTech (Dongguan) Telecommunications Limited.  
**Address of Factory:** VTech Science Park, Xia Ling Bei Management Zone, Liaobu, Dongguan, Guangdong, China

**Equipment Under Test (EUT):**  
**EUT Name:** DECT Audio Baby monitor  
**Model No.:** DM1212 BU, DM1212-2 BU, DM1212-ab BU ♣  
♣ Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.  
**Trade mark:** Vtech  
**FCC ID:** EW780-1993-00  
**HVIN:** 35-201286BU  
**Standards:** 47 CFR Part 1.1307  
47 CFR Part 1.1310  
47 CFR Part 2.1091  
**Date of Receipt:** 2019-12-12  
**Date of Test:** 2019-12-13 to 2020-01-02  
**Date of Issue:** 2020-01-03

|                      |              |
|----------------------|--------------|
| <b>Test Result :</b> | <b>PASS*</b> |
|----------------------|--------------|

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

Keny Xu

Keny Xu  
EMC Laboratory Manager



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

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or 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/Terms-e-Document.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. This 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.  
**Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com**  
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn  
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com



## 2 Version

| Revision Record |         |            |          |          |
|-----------------|---------|------------|----------|----------|
| Version         | Chapter | Date       | Modifier | Remark   |
| 01              |         | 2020-01-06 |          | Original |
|                 |         |            |          |          |
|                 |         |            |          |          |

|                          |  |                                                                                     |  |  |
|--------------------------|--|-------------------------------------------------------------------------------------|--|--|
| Authorized for issue by: |  |                                                                                     |  |  |
|                          |  |   |  |  |
|                          |  | Vincent Chen /Project Engineer                                                      |  |  |
|                          |  |  |  |  |
|                          |  | Eric Fu /Reviewer                                                                   |  |  |





### 3 Contents

|                                                       | Page |
|-------------------------------------------------------|------|
| 1 COVER PAGE .....                                    | 1    |
| 2 VERSION .....                                       | 2    |
| 3 CONTENTS .....                                      | 3    |
| 4 GENERAL INFORMATION .....                           | 4    |
| 4.1 GENERAL DESCRIPTION OF EUT .....                  | 4    |
| 4.2 TEST LOCATION .....                               | 5    |
| 4.3 TEST FACILITY .....                               | 5    |
| 4.4 DEVIATION FROM STANDARDS .....                    | 5    |
| 4.5 ABNORMALITIES FROM STANDARD CONDITIONS .....      | 5    |
| 4.6 OTHER INFORMATION REQUESTED BY THE CUSTOMER ..... | 5    |
| 5 RF EXPOSURE EVALUATION .....                        | 6    |
| 5.1 RF EXPOSURE COMPLIANCE REQUIREMENT .....          | 6    |
| 5.1.1 Limits .....                                    | 6    |
| 5.1.2 Test Procedure .....                            | 6    |
| 5.1.3 EUT RF Exposure Evaluation .....                | 7    |



## 4 General Information

### 4.1 General Description of EUT

|                              |                                                                                                                                                                                                                                                                        |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power supply:                | Adapter 1 model: S003AKU0600040<br>Input: AC 100-120V, 60Hz, 150mA<br>Output: DC 6V, 400mA<br>Adapter 2 model: VT05UUS06040<br>Input: AC 100-120V, 60Hz, 150mA<br>Output: DC 6V, 400mA<br>Both adapters are tested, only show the worst adapter's data in this report. |
| Frequency Range:             | 1921.536 to 1928.448 MHz                                                                                                                                                                                                                                               |
| Number of Channels:          | 5 RF Channels, 5 × 12 = 60 TDMA Duplex Channels                                                                                                                                                                                                                        |
| Type of Modulation:          | Digital (Gaussian Frequency Shift Keying)                                                                                                                                                                                                                              |
| Modulation Technique:        | GFSK                                                                                                                                                                                                                                                                   |
| Antenna Connector:           | None                                                                                                                                                                                                                                                                   |
| Antenna Gain:                | 0dBi                                                                                                                                                                                                                                                                   |
| Number of Antennas:          | 2                                                                                                                                                                                                                                                                      |
| Antenna Diversity Supported: | Yes                                                                                                                                                                                                                                                                    |
| Hardware Version:            | 35-201313BU                                                                                                                                                                                                                                                            |
| Software Version:            | B004B1103                                                                                                                                                                                                                                                              |
| Remark:                      | Two antennas can not simultaneous transmission, only show the worst case antenna 1 in this report.                                                                                                                                                                     |

#### Remark:

Model No.: DM1212 BU, DM1212-2 BU, DM1212-ab BU

Only the model DM1212 BU was tested, since the electrical circuit design, layout, components used, internal wiring and functions were identical for the above models, with only difference on color and model No. and others as below:

a=any alphanumeric character or blank is presenting number of parent unit.

b = any alphanumeric character or blank is presenting color of enclosure.



## 4.2 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

Telephone: +86 (0) 755 2601 2053 Fax: +86 (0) 755 2671 0594

No tests were sub-contracted.

## 4.3 Test Facility

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

- **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.

## 4.4 Deviation from Standards

None.

## 4.5 Abnormalities from Standard Conditions

None.

## 4.6 Other Information Requested by the Customer

None.



## 5 RF Exposure Evaluation

### 5.1 RF Exposure Compliance Requirement

#### 5.1.1 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<br>(MHz)                                       | Electric field<br>strength<br>(V/m) | Magnetic field<br>strength<br>(A/m) | Power density<br>(mW/cm <sup>2</sup> ) | Averaging time<br>(minutes) |
|----------------------------------------------------------------|-------------------------------------|-------------------------------------|----------------------------------------|-----------------------------|
| <b>(A) Limits for Occupational/Controlled Exposures</b>        |                                     |                                     |                                        |                             |
| 0.3–3.0 .....                                                  | 614                                 | 1.63                                | *(100)                                 | 6                           |
| 3.0–30 .....                                                   | 1842/f                              | 4.89/f                              | *(900/f <sup>2</sup> )                 | 6                           |
| 30–300 .....                                                   | 61.4                                | 0.163                               | 1.0                                    | 6                           |
| 300–1500 .....                                                 | .....                               | .....                               | f/300                                  | 6                           |
| 1500–100,000 .....                                             | .....                               | .....                               | 5                                      | 6                           |
| <b>(B) Limits for General Population/Uncontrolled Exposure</b> |                                     |                                     |                                        |                             |
| 0.3–1.34 .....                                                 | 614                                 | 1.63                                | *(100)                                 | 30                          |
| 1.34–30 .....                                                  | 824/f                               | 2.19/f                              | *(180/f <sup>2</sup> )                 | 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/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

G = gain of antenna in linear scale

$\pi$  = 3.1416

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

$P_d$  is the limit of MPE, 1 mW/cm<sup>2</sup>. 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.

#### 5.1.2 Test Procedure

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





### 5.1.3 EUT RF Exposure Evaluation

Antenna Gain: 0dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 1.00 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

Worst case Antenna 1:

| Channel | Frequency<br>(MHz) | Max Conducted<br>Peak Output<br>Power (dBm) | Output Power<br>to Antenna<br>(mW) | Power Density<br>at R = 20 cm<br>(mW/cm <sup>2</sup> ) | Limit | Result |
|---------|--------------------|---------------------------------------------|------------------------------------|--------------------------------------------------------|-------|--------|
| Highest | 1928.448           | 20.84                                       | 121.34                             | 0.024                                                  | 1.0   | PASS   |

Note: Refer to report No. HKEM191200122802 for EUT test Max Conducted Peak Output Power value.

The distance r (4th column) calculated from the Fries transmission formula is far greater than 20 cm separation requirement.

- End of the Report -

