



# SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

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Report No.: SHEM161200795904  
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## 1 Cover Page

# RF Exposure REPORT

Application No.:	SHEM1612007959CR
Applicant:	Siemens Shanghai Medical Equipment Ltd.
FCC ID:	2AK5E-11061366
IC:	22421-11061366
<b>Equipment Under Test (EUT):</b> <b>NOTE:</b> The following sample(s) submitted was/were identified on behalf of the client as	
Product Name:	Remote control wireless receiver
Model No.(EUT):	11061366
Standards:	FCC Rules 47 CFR §2.1093 RSS-102 Issue 5: 2015 KDB 447498 D01 General RF Exposure Guidance v06
Date of Receipt:	2016-12-14
Date of Test:	2016-12-16 to 2017-01-07
Date of Issue:	2017-02-08
Test Result:	<b>Pass*</b>

\*\*In the configuration tested, the EUT detailed in this report complied with the standards specified above.





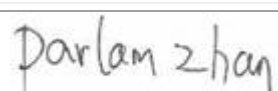
The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

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## 2 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
00	/	2017-02-08	/	Original

Authorized for issue by:			
Engineer	Eddy Zong		
	Print Name		
Clerk	Vincent Zhu		
	Print Name		
Reviewer	Parlam Zhan		
	Print Name		

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## 4 General Information

### 4.1 Client Information

Applicant:	Siemens Shanghai Medical Equipment Ltd.
Address of Applicant:	278 Zhou Zhu Road, Shanghai,China
Manufacturer:	Siemens Shanghai Medical Equipment Ltd.
Address of Manufacturer:	278 Zhou Zhu Road, Shanghai,China
Factory:	Shenyang Torch-Bigtide Digital Technology Co.,Ltd
Address of Factory:	No.18-6B, Yaoyang Road, Huishan Economic Development Area, Shenbei New District, Shenyang, China

### 4.2 General Description of E.U.T.

Product Description:	Fixed product with BT function
Test Voltage:	DC 24V

### 4.3 Details of E.U.T.

Operation Frequency:	2402-2480MHz
Bluetooth Version:	BT4.0 single mode
Modulation Type:	GFSK
Number of Channel:	40
Antenna Type	PIFA antenna
Antenna Gain	5.3 dBi

#### 4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China.

Tel: +86 21 6191 5666

Fax: +86 21 6191 5678

#### 4.5 Test Facility

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

- **CNAS (No. CNAS L0599)**

CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. 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. Date of expiry: 2017-07-14.

- **FCC – Registration No.: 402683**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered and fully described in a report filed with the Federal Communications Commission (FCC). The acceptance letter from the FCC is maintained in our files. Registration No.: 402683, Expiry Date: 2017-09-16.

- **Industry Canada (IC) – IC Assigned Code: 8617A**

The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 8617A-1. Expiry Date: 2017-06-18.

- **VCCI (Member No.: 3061)**

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-3868, C-4336, T-2221, G-830 respectively. Date of Expiry: 2017-11-16.

## 5 Test Standards and Limits

### 5.1 FCC Radiofrequency radiation exposure limits:

According to §1.1310, the limit for general population/uncontrolled exposures

Frequency	Power density(mW/cm <sup>2</sup> )	Averaging time(minutes)
300MHz~1.5GHz	$f/1500$	30
1.5GHz~100GHz	1.0	30

### 5.2 IC Radiofrequency radiation exposure limits:

According to RSS-102 section 2.5.2, RF exposure evaluation is required if the separation distance between the user and/or bystander 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  $4.49/f^{0.5}$  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).

For 2.4G device, the limit of worse case is 2.68 W

## 6 Measurement and Calculation

### 6.1 Maximum transmit power

The Power Data is based on the RF Test Report SHEM161200795903.

**Test Data:**

Test mode	Channel	Peak Power (dBm)	Peak Power (mW)
GFSK	2402	2.09	1.62
	2440	1.83	1.52
	2480	1.58	1.44

### 6.2 RF Exposure Calculation

The Max Conducted Peak Output Power is 1.62mW. The best case gain of the antenna is 5.3dBi.

5.3dB logarithmic terms convert to numeric result is nearly 3.39

For FCC:

According to the formula  $S = \frac{PG}{4R^2\pi}$ , we can calculate S which is MPE.

Note:

- 1) P (Watts)
- 2) G (Antenna gain in numeric)
- 3) R = distance to the center of radiation of antenna (in meter) = 20cm
- 4) MPE limit = 1mW/cm<sup>2</sup>

$$S = \frac{PG}{4R^2\pi} = \frac{1.62 \times 3.39}{4 \times 400 \times 3.14} = 0.00109 \text{ mW/cm}^2 < 1 \text{ mW/cm}^2$$

For IC:

$$\text{E.I.R.P.} = P \times G = 5.4918 \text{ mW} < 2.68 \text{ W}$$

So the SAR report is not required.

## 7 EUT Constructional Details

Refer to the < 11061366 \_External Photos > & < 11061366 \_Internal Photos>.

**--End of the Report--**