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# RF Exposure Evaluation Report

**Report No. :** CQASZ20180600055E-02

**Applicant:** Siemens Shanghai Medical Equipment Ltd.

**Address of Applicant:** No. 278 Zhou Zhu Rd. Pudong New Area, Shanghai P.R.China

**Manufacturer:** Siemens Shanghai Medical Equipment Ltd.

**Address of Manufacturer:** No. 278 Zhou Zhu Rd. Pudong New Area, Shanghai P.R.China

**Equipment Under Test (EUT):**

**Product:** Wireless remote control

**Model No.:** 11333741

**Brand Name:** SIEMENS

**FCC ID:** 2AK5E-11333741

**Standards:** 47 CFR Part 1.1307

47 CFR Part 2.1093

KDB447498D01 General RF Exposure Guidance v06

**Date of Test:** 2018-06-22 to 2018-06-28

**Date of Issue:** 2018-06-28

**Test Result :** PASS\*

**Tested By:**

*Martin Lee*

( Martin Lee)

**Reviewed By:**

*Jack Ai*

( Jack Ai)

**Approved By:**

*Jack Ai*

( Jack Ai)



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

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CQA, this report can't be reproduced except in full.

## 1 Version

### Revision History Of Report

| Report No.           | Version | Description    | Issue Date |
|----------------------|---------|----------------|------------|
| CQASZ20180600055E-02 | Rev.01  | Initial report | 2018-06-28 |

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### 3 General Information

#### 3.1 Client Information

|                          |  |
|--------------------------|--|
| Applicant:               | Siemens Shanghai Medical Equipment Ltd.                  |
| Address of Applicant:    | No. 278 Zhou Zhu Rd. Pudong New Area, Shanghai P.R.China |
| Manufacturer:            | Siemens Shanghai Medical Equipment Ltd.                  |
| Address of Manufacturer: | No. 278 Zhou Zhu Rd. Pudong New Area, Shanghai P.R.China |

#### 3.2 General Description of EUT

|                       |  |
|-----------------------|--|
| Product Name:         | Wireless remote control                  |
| Model No.:            | 11333741                                 |
| Trade Mark:           | SIEMENS                                  |
| Hardware Version:     | V1.0                                     |
| Software Version:     | V1.0                                     |
| Operation Frequency:  | 2402MHz~2480MHz                          |
| Bluetooth Version:    | V4.0                                     |
| Modulation Type:      | GFSK                                     |
| Number of Channel:    | 40                                       |
| Sample Type:          | portable production                      |
| Test Software of EUT: | RF Test (manufacturer declare )          |
| Antenna Type:         | PCB antenna                              |
| Antenna Gain:         | 5.3dBi                                   |
| Power Supply:         | lithium battery:DC2.4V, Charge by DC5.0V |

## 4 SAR Evaluation

### 4.1 RF Exposure Compliance Requirement

#### 4.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

##### 4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

#### 4.1.2 Limits

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances  $\leq 50$  mm are determined by:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$

$f(\text{GHz})$  is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation<sup>17</sup>

The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is  $\leq 50$  mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is  $< 5$  mm, a distance of 5 mm is applied to determine SAR test exclusion

#### 4.1.3 EUT RF Exposure

**For BT:****Measurement Data**

| GFSK mode    |                         |
|--------------|-------------------------|
| Test channel | Peak Output Power (dBm) |
| Lowest       | 3.77                    |
| Middle       | 3.60                    |
| Highest      | 3.42                    |

The Max Conducted Peak Output Power is 3.77dBm in Lowest channel(2.402GHz);

The best case gain of the antenna is 5.3dBi.

EIRP= 3.77dBm + 5.3dBi = 9.07dBm

9.07dBm logarithmic terms convert to numeric result is nearly 8.07mW

According to the formula. calculate the EIRP test result:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}]$

General RF Exposure =  $(8.07\text{mW} / 5 \text{ mm}) \times \sqrt{2.402\text{GHz}} = 2.50 \text{ ①}$

SAR requirement:

$S = 3.0 \text{ ② ;}$

① < ②.

So the SAR report is not required.

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20180600055E-01