

# RF Evaluation Report

**Product** : TouchLock TSA BT  
**Trade mark** : BIO-key  
**Model/Type reference** : BS1609  
**Serial Number** : N/A  
**Report Number** : EED32K00187602  
**FCC ID** : 2AIKJ-BS  
**Date of Issue** : Aug. 10, 2018  
: 47 CFR Part 1.1307  
: 47 CFR Part 2.1093  
**Test Standards** : 47 CFR Part 1.1310  
: KDB 447498 D01 v06  
**Test result** : PASS

Prepared for:

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Date:

Aug. 10, 2018

Check No.:1022594255



## 2 Version

| Version No. | Date          | Description |
|-------------|---------------|-------------|
| 00          | Aug. 10, 2018 | Original    |
|             |               |             |
|             |               |             |

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## 4 General Information

### 4.1 Client Information

|                          |                                                                                                 |
|--------------------------|-------------------------------------------------------------------------------------------------|
| Applicant:               | BIO-key Hong Kong Limited                                                                       |
| Address of Applicant:    | Unit 1212, 12/F, Grand City Plaza, 1-17 Sai Lau Kok Road, Tsuen Wan, New Territories, Hong Kong |
| Manufacturer:            | ZHUHAI SKYGOOD TECH. INDUSTRIAL CO., LTD.                                                       |
| Address of Manufacturer: | 4/F, 3RD, BUILDING 30 NANWAN ROAD(N), NANPING, ZHUHAI, GUANGDONG, P.R. CHINA                    |
| Factory:                 | ZHUHAI SKYGOOD TECH. INDUSTRIAL CO., LTD.                                                       |
| Address of Factory:      | 4/F, 3RD, BUILDING 30 NANWAN ROAD(N), NANPING, ZHUHAI, GUANGDONG, P.R. CHINA                    |

### 4.2 General Description of EUT

|                                  |                                  |
|----------------------------------|----------------------------------|
| Product Name:                    | TouchLock TSA BT                 |
| Model No.(EUT):                  | BS1609                           |
| Trade mark:                      | BIO-key                          |
| EUT Supports Radios application: | 4.1 BT Single mode, 2402-2480MHz |
| Power Supply:                    | Battery: 3.7V, 85mAh             |

### 4.3 Product Specification subjective to this standard

|                                                                             |                                                                         |
|-----------------------------------------------------------------------------|-------------------------------------------------------------------------|
| Frequency Range:                                                            | 2402-2480MHz                                                            |
| Modulation Type:                                                            | GFSK                                                                    |
| Firmware version of the sample:                                             | 29(manufacturer declare)                                                |
| Hardware version of the sample:                                             | 5.0(manufacturer declare)                                               |
| Test power grade:                                                           | N/A                                                                     |
| Test software of EUT:                                                       | BLUENRG_GUI.exe(manufacturer declare)                                   |
| Antenna Type:                                                               | PCB Antenna                                                             |
| Antenna gain:                                                               | 0.49dBi                                                                 |
| Output Power:                                                               | 4.246dBm                                                                |
|                                                                             | The Conducted Peak Output Power data refer to the report EED32K00187601 |
| Test Voltage:                                                               | Battery: 3.7V, 85mAh                                                    |
| Sample Received Date:                                                       | Jul. 17, 2018                                                           |
| Sample tested Date:                                                         | Jul. 17, 2018 to Aug. 10, 2018                                          |
| The tested sample(s) and the sample information are provided by the client. |                                                                         |

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#### **4.4 Test Location**

All tests were performed at:  
Centre Testing International Group Co., Ltd.  
Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, Guangdong, China 518101  
Telephone: +86 (0) 755 33683668 Fax: +86 (0) 755 33683385  
No tests were sub-contracted.  
FCC Designation No.: CN1164

#### **4.5 Deviation from Standards**

None.

#### **4.6 Abnormalities from Standard Conditions**

None.

#### **4.7 Other Information Requested by the Customer**

None.

## 5 SAR Evaluation

### 5.1 RF Exposure Compliance Requirement

#### 5.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06  
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.

#### 5.1.2 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:

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

#### 5.1.3 EUT RF Exposure

The Max Conducted Peak Output Power is 4.246dBm in middle channel(2.480GHz);

EIRP=4.246+0.49=4.736dBm

4.736dBm logarithmic terms convert to numeric result is nearly 2.98mW

According to the formula. calculate the power 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 =  $(2.98\text{mW} / 5 \text{ mm}) \times \sqrt{2.480\text{GHz}} = 0.94$  ①

SAR requirement:

S= 3.0

① < ②.

② ;

So the SAR report is not required.

## PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32K00187601 for EUT external and internal photos.

\*\*\* End of Report \*\*\*

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