

RF Evaluation Report

Product : TouchLock TSA PLUS
Trade mark : BIO-key
Model/Type reference : BFS1709
Serial Number : N/A
Report Number : EED32K00187702
FCC ID : 2AIKJ-BFS1709
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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2 Version

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3 Contents

	Page
1 COVER PAGE.....	1
2 VERSION.....	2
3 CONTENTS.....	3
4 GENERAL INFORMATION.....	4
4.1 CLIENT INFORMATION.....	4
4.2 GENERAL DESCRIPTION OF EUT.....	4
4.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD.....	4
4.4 TEST LOCATION.....	5
4.5 DEVIATION FROM STANDARDS.....	5
4.6 ABNORMALITIES FROM STANDARD CONDITIONS.....	5
4.7 OTHER INFORMATION REQUESTED BY THE CUSTOMER.....	5
5 SAR EVALUATION.....	6
5.1 RF EXPOSURE COMPLIANCE REQUIREMENT.....	6
5.1.1 Standard Requirement.....	6
5.1.2 Limits.....	6
5.1.3 EUT RF Exposure.....	6
PHOTOGRAPHS OF EUT CONSTRUCTIONAL DETAILS.....	7

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 PLUS
Model No.(EUT):	BFS1709
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:	2.902dBm
	The Conducted Peak Output Power data refer to the report EED32K00187701
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.	

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 ≤ 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 ≤ 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 calculation¹⁷

The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 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 2.902dBm in middle channel(2.402GHz);

EIRP=2.902+0.49=3.392dBm

4.736dBm logarithmic terms convert to numeric result is nearly 2.18mW

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 = $(2.18\text{mW} / 5 \text{ mm}) \times \sqrt{2.402\text{GHz}} = 0.68$ 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. EED32K00187701 for EUT external and internal photos.

*** End of Report ***

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