FCC RF EXPOSURE TEST REPORT

Project Number	**: EA1902C-017**
Test Report Number	**: TR-W1905-011**
Type of Equipment	**: Biometric Access Control System(BACS RFID)**
Model Name	**: BRF-A001**
FCC ID	**: 2ASVS-BRF-A001**
Multiple Model Name	**: N/A**
Applicant	**: CRUCIALTRAK, INC.**
Address	**: 8F, 62, Pangyo-ro 255beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, South Korea**
Manufacturer	**: CRUCIALTRAK, INC.**
Address	**: 8F, 62, Pangyo-ro 255beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, South Korea**
Regulation	**: FCC Part 15 Subpart C Section 15.225**
	FCC KDB 447498 D01 General RF Exposure Guidance v06
Total page of Report	**: 6 Pages**
Date of Receipt	**: 2019-02-08**
Date of Issue	**: 2019-05-17**
Test Result	**: PASS**

This test report only contains the result of a single test of the sample supplied for the examination.

It is not a generally valid assessment of the features of the respective products of the mass-production.

Prepared by Song, In-young / Senior Engineer _____ (Signature) 2019-05-17 (Date)

Reviewed by Choi, Yeong-min / Technical Manager _____ (Signature) 2019-05-17 (Date)

ENG Co., Ltd. 135-60 Gyeongchung-daero, Gonjiam-eup, Gwangju-si, Gyeonggi-do, Korea 464-942 Report Form_01 (Rev.0)

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Release Control Record

Issue Report No.	Issued Date	Revisions	Effect Section
TR-W1905-011	2019-05-17	Initial Release	All

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1. EUT (Equipment Under Test)

1.1 General Description

The CRUCIALTRAK, INC., Model BRF-A001 (referred to as the EUT in this report) is a Biometric Access Control System(BACS RFID). The EUT is a device for transferring RFID (13.56 MHz) signal to an RFID TAG through wireless communication.

1.2 RF Output Power

Operating Mode	Channel	Frequency (MHz)	EIRP Output Power (dBm)
RFID	Center	13.56	-37.75

$S = E^2/Z_0 = P_{eirp} / (4 \prod r^2) \Rightarrow P_{eirp} = (E^2 \times r^2) / 30$

$E = 57.48$ dBμV/m, $r = 3$ m, $P_{eirp} = -37.75$ dBm

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2. TEST RESULT

2.1 RFID (13.56 MHz)

According to FCC KDB 447498 D01 General RF Exposure Guidance v06 chapter 4.3.1

a) For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] x [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR,
where,

b) For 100 MHz to 6 GHz and test separation distances > 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:
{[Power allowed at numeric threshold for 50 mm in step a)]+[(test separation distance-50 mm) x (f(MHz)/150)] mW, for 100 MHz to 1 500 MHz

c) For frequencies below 100 MHz, the following may be considered for SAR test exclusion
1) For test separation distances > 50 mm and < 200 mm, the power threshold at the corresponding test separation distance at 100 MHz in step b) is multiplied by [1 + log(100/f(MHz))]
2) For test separation distances ≤ 50 mm, the power threshold determined by the equation in c) 1) for 50 mm and 100 MHz is multiplied by 1/2

a) P_{max} (mW) = (d_{min1} x 3.0) / ($\sqrt{f_{GHz}}$) (d_{min1} = 50 mm, f_{GHz} = 0.1 GHz)
= (50 x 3.0) / ($\sqrt{0.1}$)
= 474.3

b) {[P_{max})] + [(d_{min2} - 50 mm) x (f_1(MHz)/150)]} mW
= {[474.3] + [(5-50) x (100/150)]} = 444.3 mW
(d_{min2} = 5 mm, f_1(MHz) = 100 MHz)

c) 1) [the power threshold at the corresponding test separation distance at 100 MHz in step b] x [1 + log(100/f_2(MHz)]
= 444.3 x [1+log(100/13.56)] = 829.9 mW
2) [the power threshold determined by the equation in c) 1)] x 1/2
= 829.9 x 1/2 = 414.9 mW
(f_2(MHz) = 13.56 MHz)

SAR test exclusion threshold is 414.9 mW

The power of EUT is -37.75 dBm = 0.000 17 mW

Hence the SAR Exclusion Threshold condition is satisfied and the SAR evaluation for general population exposure conditions is not required.

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