

RF Exposure Evaluation Report

Applicant: Smartmatic International Corporation

Address of Applicant: Pine Lodge, #26 Pine Road St. Michael, W. I. BB, 11112
Barbados

Equipment Under Test (EUT)

Product Name: Voter Identification Unit

Model No.: VIU-811

Trade mark: SMARTMATIC

FCC ID: 2AGVK-VIU811

Applicable standards: FCC CFR Title 47 Part 2 Subpart J Section 2.1093

Date of sample receipt: 25 Dec., 2019

Date of Test: 25 Dec., 2019 to 25 May., 2020

Date of report issue: 23 Jul., 2020

Test Result: PASS*

Authorized Signature:



Bruce Zhang
Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the CCIS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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2 Version

Version No.	Date	Description
00	28 May, 2020	Original
01	16 Jul, 2020	1. Updated evaluation of test exclusion thresholds on page 6.
02	23 Jul., 2020	Updated Model No.

Tested by: Janet Wei
Test Engineer

Date: 23 Jul., 2020

Reviewed by: Winner Zhang
Project Engineer

Date: 23 Jul., 2020

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4 General Information

4.1 Client Information

Applicant:	Smartmatic International Corporation
Address:	Pine Lodge, #26 Pine Road St. Michael, W. I. BB, 11112 Barbados
Manufacturer:	Aratek Biometrics Technology Co., Ltd.
Address:	2F, T2-A Building, ShenZhen Software Park, South Area, Hi-Tech Park, Shenzhen, Guangdong, China

4.2 General Description of E.U.T.

Product Name:	Voter Identification Unit
Model No.:	VIU-811
Operation Frequency:	2.4G Wi-Fi: 2412MHz~2472MHz Bluetooth/ BLE: 2402MHz~2480MHz
Modulation technology:	802.11b: DSSS, 802.11g/n: OFDM Bluetooth BDR /BLE: GFSK, Bluetooth EDR: π /4-QPSK, 8DPSK
Antenna Type:	Internal Antenna
Antenna gain:	WIFI: 2.0dBi, BT: 2.0dBi
Test Sample Condition:	The test samples were provided in good working order with no visible defects.

4.3 Operating Modes

Operating mode	Detail description
BLE mode	Keep the EUT in continuously transmitting in BLE mode
BT mode	Keep the EUT in continuously transmitting in BT mode
2.4G WIFI mode	Keep the EUT in continuously transmitting in 2.4G WIFI mode

4.4 Additions to, deviations, or exclusions from the method

No

4.5 Laboratory Facility

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

- **FCC - Designation No.: CN1211**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.

- **ISED – CAB identifier.: CN0021**

The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

- **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <https://portal.a2la.org/scopepdf/4346-01.pdf>

4.6 Laboratory Location

Shenzhen Zhongjian Nanfang Testing Co., Ltd.

Address: No.110~116, Building B, Jinyuan Business Building, Xixiang Road, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755-23118282, Fax: +86-755-23116366

Email: info@ccis-cb.com, Website: <http://www.ccis-cb.com>

5 Technical Requirements Specification in FCC CFR Title 47 Part 2.1093

5.1 Limits

According to 447498 D01 General RF Exposure Guidance v06 Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies.

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:

- 1) $[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ 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 calculation
 - The result is rounded to one decimal place for comparison
- 2) 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 (also illustrated in Appendix B):
 - i) $\{[\text{Power allowed at numeric threshold for 50 mm in step a)}] + [(\text{test separation distance} - 50 \text{ mm}) (f_{\text{MHz}}/150)]\}$ mW, for 100 MHz to 1500 MHz
 - ii) $\{[\text{Power allowed at numeric threshold for 50 mm in step a)}] + [(\text{test separation distance} - 50 \text{ mm}) \cdot 10]\}$ mW, for > 1500 MHz and ≤ 6 GHz

5.2 Result

The min distance between the ANT and DUT edge is 92mm, thus, the test exclusion thresholds of WIFI/BT is 516mW,

The Max output power(tune-up tolerance) of WIFI is 16.5dBm(44.67 mW) $<$ 516mW,

The Max output power(tune-up tolerance) of BT is 7.5dBm(5.62 mW) $<$ 516mW,

The Max output power(tune-up tolerance) of BLE is 6.0dBm(3.98 mW) $<$ 516mW,

5.3 Conclusion

The device is exempt from the RF exposure evaluation.

-----End of report-----