

# RF EXPOSURE EVALUATION REPORT

**Application No.:** GZCR2303000318AT  
**Applicant:** Vision IOT Inc  
**Address of Applicant:** 22994 LAVENDER VALLEY CT, ASHBURN, VA 20148  
**Manufacturer:** Vision IOT Inc  
**Address of Manufacturer:** 22994 LAVENDER VALLEY CT, ASHBURN, VA 20148  
**Factory:** SHI JIAZHUANG OURPCB Tech. Ltd  
**Address of Factory:** 3RD FLOOR NANHAI PLAZA, NO.505 XINHUA ROAD, XINHUA DISTRICT, SHIJIAZHUANG, HEBEI, CHINA

## Equipment Under Test (EUT):

**EUT Name:** Smart Tag AON

**Model No.:** STONET2A433D, STONET2B433D ♣

♣ Please refer to section 2 of this report which indicates which item was actually tested and which were electrically identical.

**Trade Mark:** Vision IoT

**Standard(s) :** 47 CFR Part 1.1310  
 KDB447498D01 General RF Exposure Guidance v06

**Date of Receipt:** 2023-03-27

**Date of Evaluation:** 2023-04-13

**Date of Issue:** 2023-05-09

**Evaluation Result:**

**Pass\***

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

*Ricky Liu*

Ricky Liu  
Manager

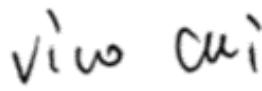


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

**Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)**

SGS-CSTC Standards Technical Services Co., Ltd. No.198 Kexhu Road, Sciotech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgsgroup.com.cn  
 Guangzhou Branch Testing & Inspection Laboratory 中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

| Revision Record |                  |            |          |
|-----------------|------------------|------------|----------|
| Version         | Report No.       | Date       | Remark   |
| 01              | GZCR230300031804 | 2023-05-09 | Original |
|                 |                  |            |          |
|                 |                  |            |          |

|                          |  |                                                                                     |  |
|--------------------------|--|-------------------------------------------------------------------------------------|--|
| Authorized for issue by: |  |                                                                                     |  |
|                          |  |  |  |
|                          |  | Curry Wu/Project Engineer                                                           |  |
|                          |  |  |  |
|                          |  | Vico Cui/Reviewer                                                                   |  |

## 2 Evaluation Summary

| Item        | Standard                                               | Method                                              | Requirement        | Result |
|-------------|--------------------------------------------------------|-----------------------------------------------------|--------------------|--------|
| RF Exposure | KDB447498D01<br>General RF<br>Exposure<br>Guidance v06 | KDB447498D01<br>General RF Exposure<br>Guidance v06 | 47 CFR Part 1.1310 | Pass   |

### Note:

E.U.T./EUT means Equipment Under Test.

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.

### ♣ Declaration of EUT Family Grouping:

Model No.: STONET2A433D, STONET2B433D

According to the declaration from the applicant, the electrical circuit design, layout, components used and internal wiring were identical for all models, with only difference on the sensor type:

| Model        | Sensor                     |
|--------------|----------------------------|
| STONET2A433D | On board                   |
| STONET2B433D | External wired door sensor |

Therefore, only one model STONET2A433D was tested in this report.

### 3 Contents

|                                                    | Page |
|----------------------------------------------------|------|
| 1 Cover Page .....                                 | 1    |
| 2 Evaluation Summary.....                          | 3    |
| 3 Contents.....                                    | 4    |
| 4 General Information .....                        | 5    |
| 4.1 Details of E.U.T. ....                         | 5    |
| 4.2 Evaluating Location .....                      | 5    |
| 4.3 Facility .....                                 | 6    |
| 4.4 Deviation from Standards.....                  | 6    |
| 4.5 Abnormalities from Standard Conditions .....   | 6    |
| 5 Technical Requirements Specification .....       | 7    |
| 5.1 General Description of Applied Standards ..... | 7    |
| 5.2 RF Exposure Evaluation.....                    | 7    |
| 5.2.1 Limit & Test Method .....                    | 7    |
| 5.2.2 Conclusion .....                             | 8    |
| 6 EUT Constructional Details (EUT Photos) .....    | 9    |



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

SGS-CSTC Standards Technical Services Co., Ltd.  
Guangzhou Branch Technical Services EEC Laboratory

No.198 Kezhu Road, Sciotech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 [www.sgsgroup.com.cn](http://www.sgsgroup.com.cn)  
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 [sgs.china@sgs.com](mailto:sgs.china@sgs.com)

## 4 General Information

### 4.1 Details of E.U.T.

Power supply: DC 7.2V =Size 'A' battery x2  
 BLE:  
 Operation Frequency: 2402MHz to 2480MHz  
 Modulation Type: GFSK  
 Number of Channels: 40  
 Channel Spacing: 2MHz  
 Antenna type: PCB antenna  
 Antenna gain: 2.96dBi  
 Power setting: default  
 2.4GHz WiFi:  
 Operation Frequency: 802.11b/g/n(HT20): 2412MHz to 2462MHz  
 Modulation Type: 802.11b: DSSS (CCK, DQPSK, DBPSK);802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK)  
 Number of Channels: 802.11b/g/n(HT20):11  
 Channel Spacing: 5MHz  
 Antenna Type: Chip Antenna  
 Antenna Gain: 4.25dBi  
 Power setting: Default  
 LTE module: FCC ID: XMR201910BG95M3  
 Antenna gain: 4.19dBi

### 4.2 Evaluating Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,  
 198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District,  
 Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.  
 Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

## 4.3 Facility

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

- **ACMA**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian/New Zealand Regulatory Compliance Mark (RCM).

- **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

- **FCC Recognized Accredited Test Firm(Registration No.: 486818)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: CN5016, Test Firm Registration Number: 486818.

- **ISED (Registration No.: 4620B, CAB identifier: CN0052)**

SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Innovation Science and Economic Development Canada for Wireless Device Testing laboratories to test to Canadian radio equipment requirements. Registration No. 4620B, CAB identifier: CN0052.

- **VCCI (Registration No.: R-12460, C-12584, G-20107 and T-11179)**

The 10m Semi-anechoic chamber, 966 Anechoic Chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-12460, C-12584, G-20107 and T-11179 respectively.

- **CBTL (Lab Code: TL129)**

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2017, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.

## 4.4 Deviation from Standards

None

## 4.5 Abnormalities from Standard Conditions

None



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

SGS-CSTC Standards Technical Services Co., Ltd.  
Guangzhou Branch EMC Laboratory

No. 198 Kezhu Road, Sciotech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgsgroup.com.cn  
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

## 5 Technical Requirements Specification

### 5.1 General Description of Applied Standards

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.

### 5.2 RF Exposure Evaluation

#### 5.2.1 Limit & Test Method

According to FCC Part1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in part1.1307(b)

**TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)**

| Frequency range (MHz)                                          | Electric field strength (V/m) | Magnetic field strength (A/m) | Power density (mW/cm <sup>2</sup> ) | Averaging time (minutes) |
|----------------------------------------------------------------|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| <b>(A) Limits for Occupational/Controlled Exposures</b>        |                               |                               |                                     |                          |
| 0.3–3.0 .....                                                  | 614                           | 1.63                          | *(100)                              | 6                        |
| 3.0–30 .....                                                   | 1842/f                        | 4.89/f                        | *(900/f <sup>2</sup> )              | 6                        |
| 30–300 .....                                                   | 61.4                          | 0.163                         | 1.0                                 | 6                        |
| 300–1500 .....                                                 | .....                         | .....                         | f/300                               | 6                        |
| 1500–100,000 .....                                             | .....                         | .....                         | 5                                   | 6                        |
| <b>(B) Limits for General Population/Uncontrolled Exposure</b> |                               |                               |                                     |                          |
| 0.3–1.34 .....                                                 | 614                           | 1.63                          | *(100)                              | 30                       |
| 1.34–30 .....                                                  | 824/f                         | 2.19/f                        | *(180/f <sup>2</sup> )              | 30                       |
| 30–300 .....                                                   | 27.5                          | 0.073                         | 0.2                                 | 30                       |
| 300–1500 .....                                                 | .....                         | .....                         | f/1500                              | 30                       |
| 1500–100,000 .....                                             | .....                         | .....                         | 1.0                                 | 30                       |

F= Frequency in MHz

Friis Formula

Friis transmission formula:  $P_d = (P_{out} * G) / (4 * P_i * R^2)$

Where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

G = gain of antenna in linear scale

$P_i$  = 3.1416

R = distance between observation point and center of the radiator in cm

$P_d$  is the limit of MPE, 1 mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)  
 No.198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgs.com.cn  
 中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

## 5.2.2 Conclusion

Normal use condition for  
Distance between antenna and body: 20cm declared by applicant

For Bluetooth BLE

| Frequency (MHz) | Antenna Gain (Numeric) | Peak Output Power (dBm) | Peak Output Power (mW) | Power Density (S) (mW/cm <sup>2</sup> ) | Limit of Power Density (S) (mW/cm <sup>2</sup> ) | Test Result |
|-----------------|------------------------|-------------------------|------------------------|-----------------------------------------|--------------------------------------------------|-------------|
| 2402            | 1.977                  | -0.08                   | 0.982                  | 0.00038                                 | 1                                                | Complies    |
| 2440            | 1.977                  | 0.68                    | 1.169                  | 0.00046                                 | 1                                                | Complies    |
| 2480            | 1.977                  | 0.84                    | 1.213                  | 0.00047                                 | 1                                                | Complies    |

For 2.4 GHz Wi-Fi

| Frequency (MHz) | Antenna Gain (Numeric) | Peak Output Power (dBm) | Peak Output Power (mW) | Power Density (S) (mW/cm <sup>2</sup> ) | Limit of Power Density (S) (mW/cm <sup>2</sup> ) | Test Result |
|-----------------|------------------------|-------------------------|------------------------|-----------------------------------------|--------------------------------------------------|-------------|
| 11B             |                        |                         |                        |                                         |                                                  |             |
| 2412            | 2.661                  | 9.63                    | 9.183                  | 0.00486                                 | 1                                                | Complies    |
| 2437            | 2.661                  | 9.91                    | 9.795                  | 0.00518                                 | 1                                                | Complies    |
| 2462            | 2.661                  | 9.97                    | 9.931                  | 0.00526                                 | 1                                                | Complies    |
| 11G             |                        |                         |                        |                                         |                                                  |             |
| 2412            | 2.661                  | 11.17                   | 13.092                 | 0.00693                                 | 1                                                | Complies    |
| 2437            | 2.661                  | 11.36                   | 13.677                 | 0.00724                                 | 1                                                | Complies    |
| 2462            | 2.661                  | 11.39                   | 13.772                 | 0.00729                                 | 1                                                | Complies    |
| 11N20           |                        |                         |                        |                                         |                                                  |             |
| 2412            | 2.661                  | 11.17                   | 13.092                 | 0.00693                                 | 1                                                | Complies    |
| 2437            | 2.661                  | 11.28                   | 13.428                 | 0.00711                                 | 1                                                | Complies    |
| 2462            | 2.661                  | 11.40                   | 13.804                 | 0.00731                                 | 1                                                | Complies    |

For 4G LTE

|         |       |       |         |         |       |          |
|---------|-------|-------|---------|---------|-------|----------|
| LTE B2  | 2.624 | 22.00 | 158.489 | 0.08274 | 1     | Complies |
| LTE B4  | 2.624 | 22.00 | 158.489 | 0.08274 | 1     | Complies |
| LTE B5  | 2.624 | 22.00 | 158.489 | 0.08274 | 0.566 | Complies |
| LTE B12 | 2.624 | 22.00 | 158.489 | 0.08274 | 0.477 | Complies |
| LTE B13 | 2.624 | 22.00 | 158.489 | 0.08274 | 0.525 | Complies |
| LTE B25 | 2.624 | 22.00 | 158.489 | 0.08274 | 1     | Complies |
| LTE B26 | 2.624 | 22.00 | 158.489 | 0.08274 | 0.566 | Complies |
| LTE B66 | 2.624 | 22.00 | 158.489 | 0.08274 | 1     | Complies |
| LTE B85 | 2.624 | 22.00 | 158.489 | 0.08274 | 0.477 | Complies |

The Bluetooth and Wi-Fi can be transmitted together, the result is

$$0.00047/1+0.00729/1+0.08274/0.477=0.1812<1.0$$

So SAR report is not required.

Note: Refer to reports No. GZCR230300031802 and GZCR230300031803 & FCC ID: XMR201910BG95M3 for EUT test Max Conducted Peak Output Power value.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No. 198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgsgroup.com.cn  
Guangzhou branch Technical Services Co., Ltd. 中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

## 6 EUT Constructional Details (EUT Photos)

Refer to External and Internal Photos for GZCR2303000318AT

- End of the Report -