

RF EXPOSURE EVALUATION REPORT

Application No.: GZCR2303000317AT
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.: STONET2A433I, STONET2B433I, ♣
♣ Please refer to section 2 of this report which indicates which model 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 to 2023-04-13

Date of Issue: 2023-05-15

Evaluation Result:	Pass*
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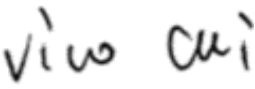
* In the configuration evaluated, the EUT complied with the standards specified above.

Ricky Liu
Manager



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Revision Record			
Version	Report No.	Date	Remark
01	GZCR230300031704	2023-05-15	Original

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



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2 Evaluation Summary

Item	Standard	Method	Requirement	Result
RF Exposure	KDB447498D01 General RF Exposure Guidance v06	KDB447498D01 General RF Exposure 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.: STONET2A433I, STONET2B433I

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
STONET2A433I	On board
STONET2B433I	External wired door sensor

Therefore only one model **STONET2B433I** was tested in this report.



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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: XMR202008EG91NAXD
Antenna gain: 4.61dBi

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.



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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



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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 ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f ²)	6
30–300	61.4	0.163	1.0	6
300–1500 .....	.....	.....	f/300	6
1500–100,000 .....	.....	.....	5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f ²)	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

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

Where

P_d = power density in mW/cm²

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/cm². 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.



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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 ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2402	1.977	-0.5	0.891	0.00035	1	Complies
2440	1.977	-0.12	0.973	0.00038	1	Complies
2480	1.977	-0.05	0.989	0.00039	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 ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
11B						
2412	2.661	11.37	13.709	0.00726	1	Complies
2437	2.661	11.20	13.183	0.00698	1	Complies
2462	2.661	11.23	13.274	0.00703	1	Complies
11G						
2412	2.661	10.90	12.303	0.00651	1	Complies
2437	2.661	11.04	12.706	0.00673	1	Complies
2462	2.661	11.16	13.062	0.00691	1	Complies
11N20						
2412	2.661	10.91	12.331	0.00653	1	Complies
2437	2.661	11.07	12.794	0.00677	1	Complies
2462	2.661	11.08	12.823	0.00679	1	Complies

For 4G LTE

LTE B2	2.891	24.5	281.838	0.16208	1	Complies
LTE B4	2.891	24.5	281.838	0.16208	1	Complies
LTE B5	2.891	24.5	281.838	0.16208	0.550	Complies
LTE B12	2.891	24.5	281.838	0.16208	0.470	Complies
LTE B13	2.891	24.5	281.838	0.16208	0.520	Complies
LTE B25	2.891	25	316.228	0.18185	1	Complies
LTE B26	2.891	25	316.228	0.18185	0.550	Complies

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

$$0.00039/1+0.00726/1+0.18185/0.550 = 0.33829 < 1.0$$

So SAR report is not required.

Note: Refer to report No. GZCR230300031702 & GZCR230300031703 & FCC ID: XMR202008EG91NAXD for EUT test Max Conducted Peak Output Power value.



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6 EUT Constructional Details (EUT Photos)

Refer to External and Internal Photos for GZCR2303000317AT

- End of the Report -



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