



**TÜVRheinland®**  
Precisely Right.

# RF Exposure Report

**EUT Name:** Token  
**Model No.:** Token

*Prepared for:*

Tokenize Inc.  
4545 East River Road  
West Henreitta, NY, 14586 USA

*Prepared by:*

TUV Rheinland of North America, Inc.  
710 Resende Road, Bldg 199. Webster, NY 14580, USA  
Tel: (585) 645-0125  
<http://www.tuv.com/>

*Report/Issue Date:* April 9, 2020  
*Report Number:* 32061418.001  
*Job Number:* 234115241

TABLE OF CONTENTS

**1 PRODUCT SPECIFICATIONS..... 4**

1.1 PRODUCT DESCRIPTION ..... 4

1.2 PRODUCT SPECIFICATIONS ..... 4

1.3 AIR INTERFACES..... 4

1.4 TEST SEPARATION DISTANCE ..... 4

**2 STAND-ALONE SAR EVALUATION EXCLUSION..... 6**

2.1 PURPOSE..... 6

2.2 SAR EXCLUSION LIMITS AND CALCULATION ..... 6

2.3 ASSESSMENT CALCULATION..... 6

2.4 CONCLUSION ..... 6

**3 DUTY CYCLE MEASUREMENT ..... 7**

3.1 DUTY CYCLE VALUE..... 7

# Statement of Compliance

*Manufacturer:* Tokenize Inc.  
4545 East River Road  
West Henreitta, NY, 14586 USA

*Name of Equipment:* Token  
*Model No.* Token  
*Application of Regulations:* CFR 47 Part 2.1093

## *Guidance Documents:*

FCC Part 2.1091

## *Test Methods:*

FCC Part 1.1310, KDB 447498 D01

The electromagnetic compatibility test and documented data described in this report has been performed and recorded by TUV Rheinland, in accordance with the standards and procedures listed herein. As the responsible authorized agent of the EMC laboratory, I hereby declare that the equipment described above has been shown to be compliant with the EMC requirements of the stated regulations and standards based on these results. If any special accessories and/or modifications were required for compliance, they are listed in this report.

This report must not be used to claim product endorsement by A2LA or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written authorization of TUV Rheinland of North America.

Alexander Sowinski April 9, 2020

Test Engineer Date

Rachana Khanduri April 9, 2020

Laboratory Signatory Date



**Test Cert. # 3331.08**

## 1 Product Specifications

### 1.1 Product Description

Token replaces your keys, cards, passwords, and badges with a biometrically-secured ring, so that you can prove your identity safely and easily.

Token is a ring (worn on the finger) and is offered in several sizes 6-12 for example, with different finish platings.

### 1.2 Product Specifications

EUT Specifications	
Exposure Type	<input checked="" type="checkbox"/> General Population / Uncontrolled <input type="checkbox"/> Occupational / Controlled
Multiple Antenna Feeds:	<input type="checkbox"/> Yes and how many <input checked="" type="checkbox"/> No
Note:	

### 1.3 Air Interfaces

Air Interface	Supported Capabilities	Modulation	Maximum Duty Cycle	Band	Frequency Range (MHz)	Maximum Output Power Including Tolerance (dBm)
Bluetooth	• Low Energy	• GFSK	100%	N/A	2400 – 2483.5	1.38

### 1.4 Test Separation Distance

The minimum RF exposure distance between the device antenna and the user is less than 5mm apart. The value of 5mm is therefore used as required by KDB 447498. Device is handheld, directly in contact with the user, therefore the distance between user and antenna is identical to the distance between the external of the device and the antenna.



#### External Pictures

## 2 Stand-Alone SAR Evaluation Exclusion

### 2.1 Purpose

This report will demonstrate the compliance of RF exposure to the human body of the Token according to FCC rule part 2.1091. All transmitters, regardless if it is categorically excluded, are assessed to ensure the product can operate in manners that meet or exceed the minimum test separation distance as required by KDB 447498.

### 2.2 SAR Exclusion Limits and Calculation

For 100 MHz to 6 GHz and *test separation distances*  $\leq 50$  mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$$
 for 1-g SAR, and  $\leq 7.5$  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

The test exclusions are applicable only when the minimum *test separation distance* is  $\leq 50$  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.

### 2.3 Assessment Calculation

The maximum output power and antenna gain is declared by the manufacturer and used in this assessment. The minimum RF exposure distance during normal operation is 5mm .

#### Stand Alone Analysis

Frequency Band	Frequency of Max Power (GHz)	Max Conducted Power (dBm)	Conducted Power (mW)	Test Separation Distance (mm)	1-g $\leq 3.0$	Result
2.4 GHz BLE	2.440	1.38	1.374	5	0.429	Pass

### 2.4 Conclusion

The EUT was found to be compliant to the requirements of FCC part 1.1310 and part 2.1091 with a separation distance of 5mm.

### **3 Duty Cycle Measurement**

#### **3.1 *Duty Cycle Value***

The maximum duty cycle for the Bluetooth Low Energy transmitter contained within this device is 100%

**END OF REPORT**