

## FCC RF Exposure Test (BT-LE)

**Report No.:** FCC\_RF\_SL19100101-CAE-01\_BLE\_MPE

**FCC ID:** 2AUTG-1003910ACC

**Test Model:** 1003910

**Received Date:** 10/01/2019

**Issued Date:** 10/17/2019

**Applicant:** Circuit Services LLC

**Address:** 9134 Independence Avenue Chatsworth, CA 91311, USA

**Manufacturer:** Circuit Services LLC

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**Issued By:** Bureau Veritas Consumer Products Services, Inc.

**Lab Address:** 775 Montague Expressway, Milpitas, CA 95035

**FCC Registration /  
Designation Number:** 540430



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### Release Control Record

Issue No.	Description	Date Issued
FCC_RF_Exposure_SL19100101-CAE-01_BLE	Original Release	10/17/2019

## 1 Certificate of Conformity

**Product:** General purpose BLE dongle

**Brand:** Circuit Services LLC

**Test Model:** 1003910

**Sample Status:** Engineering sample

**Applicant:** Circuit Services LLC

**Issue Date:** 10/17/2019

**Standards:** 47 CFR FCC Part 15, Subpart C (Section 15.247)

ANSI C63.10: 2013

The above equipment has been tested by **Bureau Veritas Consumer Products Services, Inc., Milpitas Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

  
**Prepared by :** \_\_\_\_\_, **Date:** 10/17/2019

Yao-Wei Lee / Test Engineer

  
**Approved by :** \_\_\_\_\_, **Date:** 10/21/2019

Chen Ge / Engineer Reviewer

## 2 Evaluation Result

Following FCC KDB 447498 D01 "General SAR test exclusion guidance"

The corresponding SAR Exclusion Threshold condition, listed below:

- 1) The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances  $\leq 50$  mm are determined by:  
$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$
  - $f(\text{GHz})$  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) At 100 MHz to 6 GHz and for test separation distances  $> 50$  mm, the SAR test exclusion threshold is determined according to the following:
  - a)  $[\text{Threshold at } 50 \text{ mm in step 1} + (\text{test separation distance} - 50 \text{ mm}) \cdot (f(\text{MHz})/150)] \text{ mW}$ , at 100MHz to 1500 MHz
  - b)  $[\text{Threshold at } 50 \text{ mm in step 1} + (\text{test separation distance} - 50 \text{ mm}) \cdot 10] \text{ mW}$  at  $> 1500$  MHz and  $\leq 6$  GHz
- 3) At frequencies below 100 MHz, the following may be considered for SAR test exclusion.
  - a) The threshold at the corresponding test separation distance at 100 MHz in step 2) is multiplied by  $[1 + \log(100/f(\text{MHz}))]$  for test separation distances  $> 50$  mm and  $< 200$  mm.
  - b) The threshold determined by the equation in a) for 50 mm and 100 MHz is multiplied by  $\frac{1}{2}$  for test separation distances  $\leq 50$  mm.
  - c) SAR measurement procedures are not established below 100 MHz. When SAR test exclusion cannot be applied, a KDB inquiry is required to determine SAR evaluation requirements for any test results to be acceptable.

### 3 SAR Test Exclusion Thresholds

Maximum measured transmitter power:

Body SAR

Frequency (GHz)	Max. Power (mW)	Min. test separation distance (mm)	SAR test exclusion calculation value <sup>(NOTE 2)</sup>	1-g SAR test exclusion thresholds	Result
2.402	2.328	5	0.721	3	Pass

Extremity SAR

Frequency (GHz)	Max. Power (mW)	Min. test separation distance (mm)	SAR test exclusion calculation value <sup>(NOTE 2)</sup>	10-g extremity SAR test exclusion thresholds	Result
2.402	2.328	5	0.721	7.5	Pass

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. The antenna type is an inverse F antenna with 5.3dBi gain.
3. Result is based on  $\pm 1$ dB of tune-up tolerance.

### 4 Conclusion

Since Source-base time average power is below SAR test exclusion power thresholds, the SAR evaluation is not required.

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