

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

Address: 9134 Independence Avenue Chatsworth, CA 91311, USA

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 ≤ 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 ≤ 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) [Threshold at 50 mm in step 1) + (test separation distance - 50mm) \cdot (f(MHz)/150)] mW, at 100MHz to 1500 MHz
 - b) [Threshold at 50 mm in step 1) + (test separation distance - 50 mm) \cdot 10] mW at > 1500 MHz and ≤ 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 ≤ 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 ^(NOTE 2)	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 ^(NOTE 2)	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 ± 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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