
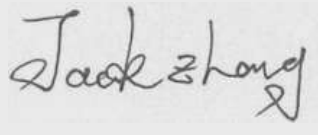




Test report No:  
2061189R-RF-US-P20V01

## SAR Exemption Evaluation Report

|   |  |
|---|--|
| Product Name                                | DriveWell Tag  |
| Trademark                                   | DriveWell  |
| Model and /or type reference                | DriveWell Tag v6.0   |
| FCC ID                                      | 2AFGD000600  |
| Applicant's name / address                  | Cambridge Mobile Telematics.<br>101 Main Street, 14 <sup>th</sup> Floor, Cambridge, MA 02142, USA                      |
| Test method requested, standard             | KDB 447498D01V06<br>FCC Part1.1310   |
| Verdict Summary                             | IN COMPLIANCE  |
| Documented by (name / position & signature) | Kitty Li/Project Assistant<br>     |
| Reviewed by (name / position & signature)   | Frank He/ Technical Supervisor<br> |
| Approved by (name / position & signature)   | Jack Zhang/ Supervisor<br>         |
| Date of issue                               | 2020-09-29   |
| Report template No                          | Template_FCC MPE-RF-V1.0   |

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## COMPETENCES AND GUARANTEES

DEKRA is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

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## GENERAL CONDITIONS

|                      |  |
|----------------------|--|
| Test Location        | No. 99, Hongye Road, Suzhou Industrial Park Suzhou, 215006, P.R. China |
| Date(receive sample) | Sept. 15, 2020   |
| Date (start test)    | Sept. 17, 2020   |
| Date (finish test)   | Sept. 29, 2020   |

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or Competent Authorities.
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## ENVIRONMENTAL CONDITIONS

The climatic conditions during the tests are within the limits specified by the manufacturer for the operation of the EUT and the test equipment. The climatic conditions during the tests were within the following limits:

|                       |               |
|-----------------------|---------------|
| Ambient temperature   | 15 °C – 35 °C |
| Relative Humidity air | 30% - 60%     |

If explicitly required in the basic standard or applied product / product family standard the climatic values are recorded and documented separately in this test report.

## POSSIBLE TEST CASE VERDICTS

|   |                 |
|---|-----------------|
| Test case does not apply to test object | N/A             |
| Test object does meet requirement       | P (Pass) / PASS |
| Test object does not meet requirement   | F (Fail) / FAIL |
| Not measured                            | N/M             |

## ABBREVIATIONS

For the purposes of the present document, the following abbreviations apply:

|       |                               |
|-------|-------------------------------|
| EUT   | : Equipment Under Test        |
| QP    | : Quasi-Peak                  |
| CAV   | : CISPR Average               |
| AV    | : Average                     |
| CDN   | : Coupling Decoupling Network |
| SAC   | : Semi-Anechoic Chamber       |
| OATS  | : Open Area Test Site         |
| BW    | : Bandwidth                   |
| AM    | : Amplitude Modulation        |
| PM    | : Pulse Modulation            |
| HCP   | : Horizontal Coupling Plane   |
| VCP   | : Vertical Coupling Plane     |
| $U_N$ | : Nominal voltage             |
| $T_x$ | : Transmitter                 |
| $R_x$ | : Receiver                    |
| N/A   | : Not Applicable              |
| N/M   | : Not Measured                |

## DOCUMENT HISTORY

| Report No.            | Version | Description              | Issued Date |
|-----------------------|---------|--------------------------|-------------|
| 2061189R-RF-US-P20V01 | V1.0    | Initial issue of report. | 2020-09-29  |
|                       |         |                          |             |
|                       |         |                          |             |
|                       |         |                          |             |
|                       |         |                          |             |
|                       |         |                          |             |
|                       |         |                          |             |
|                       |         |                          |             |
|                       |         |                          |             |

## REMARKS AND COMMENTS

1. The equipment under test (EUT) does meet the essential requirements of the stated standard(s)/test(s).
2. These test results on a sample of the device are for the purpose of demonstrating Compliance with KDB 447498 and FCC Part 1.1310
3. The measurement result is considered in conformance with the requirement if it is within the prescribed limit, It is not necessary to account the uncertainty associated with the measurement result.
4. The test results presented in this report relate only to the object tested.
5. The test report shall not be reproduced without the written approval of DEKRA Testing and Certification (Suzhou) Co., Ltd.
6. This report will not be used for social proof function in China market.
7. DEKRA declines any responsibility with the following test data provided by customer that may affect the validity of result:
  - Chapter 1.3 Antenna Informaion.

## 1. RF Exposure Evaluation

### 1.1. Limits

According to KDB 447498 D01 General RF Exposure Guidance v06

#### 4.3.1 Standalone SAR test exclusion considerations

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
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

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 according to 5) in section 4.1 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, and as illustrated in Appendix B:

- a)  $[\text{Power allowed at numeric threshold for 50 mm in step 1}) + (\text{test separation distance} - 50 \text{ mm}) \cdot (f(\text{MHz})/150)] \text{ mW}$ , at 100 MHz to 1500 MHz
- b)  $[\text{Power allowed at numeric threshold for 50 mm in step 1}) + (\text{test separation distance} - 50 \text{ mm}) \cdot 10] \text{ mW}$  at  $> 1500$  MHz and  $\leq 6$  GHz

3) The 1-g and 10-g SAR test exclusion thresholds for below 100 MHz at test separation distances  $\leq 50$  mm are determined by:

- a) The power 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 power 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. Note: when the minimum test separation distance is  $< 5$  mm, a distance of 5 mm is applied to determine SAR test exclusion.

## 1.2. Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

The temperature and related humidity: 18°C and 78% RH.

## 1.3. Test Result of RF Exposure Evaluation

|           |   |                        |
|-----------|---|------------------------|
| Product   | : | DriveWell Tag          |
| Test Item | : | RF Exposure Evaluation |
| Test Site | : | AC-6                   |

### Antenna information

|                                   |                                     |           |                                     |                        |
|-----------------------------------|-------------------------------------|-----------|-------------------------------------|------------------------|
| Antenna model / type number ..... | PCB antenna                         |           |                                     |                        |
| Antenna serial number.....        | N/A                                 |           |                                     |                        |
| Antenna Delivery .....            | <input checked="" type="checkbox"/> | 1TX + 1RX |                                     |                        |
|                                   | <input type="checkbox"/>            | 2TX + 2RX |                                     |                        |
| Antenna technology .....          | <input checked="" type="checkbox"/> | SISO      |                                     |                        |
|                                   | <input type="checkbox"/>            | MIMO      | <input type="checkbox"/>            | CDD                    |
|                                   |                                     |           | <input type="checkbox"/>            | Beam-forming           |
| Antenna Type .....                | <input type="checkbox"/>            | External  | <input type="checkbox"/>            | Dipole                 |
|                                   |                                     |           | <input type="checkbox"/>            | Sectorized             |
|                                   | <input checked="" type="checkbox"/> | Internal  | <input type="checkbox"/>            | PIFA                   |
|                                   |                                     |           | <input checked="" type="checkbox"/> | PCB                    |
|                                   |                                     |           | <input type="checkbox"/>            | Metal Monopole Antenna |
|                                   |                                     |           | <input type="checkbox"/>            | Others.....            |
| Antenna Gain .....                | 1.1 dBi                             |           |                                     |                        |

Note: The antenna information for the EUT in clause 1.3 are provided and confirmed by the client.

Based on The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm and the formula below:

$$\text{Estimated SAR} = \sqrt{f(\text{GHz})} * \frac{(\text{Max Power of channel, mW})}{\text{Min. Separation Distance, mm}}$$

The tune-up power is 0.5 dB, so the maximum conducted power we used to calculate RF exposure is 5.27 dBm.

| Band | Exposure Condition | Pmax  | Pmax | Distance | f(GHz) | calculation result | Stand-alone Test exclusion threshold | SAR Test |
|------|--------------------|-------|------|----------|--------|--------------------|--------------------------------------|----------|
|      |                    | (dBm) | (mw) | (mm)     |        |                    |                                      |          |
| BT   | Body               | 5.27  | 3.37 | 5        | 2.402  | 1.04               | 3.00                                 | No       |

Conclusion: 2.4GHz SAR was not required.

The End