

Report on the FCC and IC Testing of the LID Technologies WUS MOTO GEN3 4x4 Model: 171090

In accordance with FCC 47 CFR Part 1.1310,
Part 2.1093 and RSS-102

Prepared for: LID Technologies
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FCC ID: T45171090
IC: 6450A-171090





Product Service

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COMMERCIAL-IN-CONFIDENCE

Date: 2023-07-24

Document Number: TR-713294441-06 | Revision: 1

| RESPONSIBLE FOR | NAME | DATE | SIGNATURE |
|----------------------|-----------------|------------|---|
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Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD Product Service document control rules.

ENGINEERING STATEMENT

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with FCC 47 CFR Part 1.1310, Part 2.1093 and RSS 102 Issue 5 (March 2015) + Amendment 1 (February 2021). The sample tested was found to comply with the requirements defined in the applied rules.

| RESPONSIBLE FOR | NAME | DATE | SIGNATURE |
|-----------------|-----------|------------|---|
| Testing | Alex Fink | 2023-07-24 |  SIGN-ID 815464 |

Laboratory Accreditation

DAkKS Reg. No. D-PL-11321-11-03

DAkKS Reg. No. D-PL-11321-11-04

Laboratory recognition

Registration No. BNetzA-CAB-16/21-15

ISED Canada test site registration

3050A-2

EXECUTIVE SUMMARY

A sample of this product was tested and found to be compliant with FCC 47 CFR Part 1.1310, Part 2.1093 and RSS 102 Issue 5 (March 2015) + Amendment 1 (February 2021)

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ACCREDITATION

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1 Report Summary

1.1 Report Modification Record

Alterations and additions to this report will be issued to the holders of each copy in the form of a complete document.

| Revision | Description of Change | Date of Issue |
|----------|---|---------------|
| 0 | First Issue | 2023-05-22 |
| 1 | Model number corrected from "17109" to "171090" | 2023-07-24 |

Table 1

1.2 Introduction

| | |
|-------------------------------|--|
| Applicant | LID Technologies |
| Manufacturer | LID Technologies |
| Model Number(s) | 171090 |
| Serial Number(s) | N/A |
| Hardware Version(s) | 321-093-1090-B |
| Software Version(s) | 421234014021 |
| Number of Samples Tested | 1 |
| Test Specification/Issue/Date | FCC 47 CFR Part 1.1310 and Part 2.1093 RSS 102 Issue 5 (March 2015) + Amendment 1 (February 2021) |
| Test Plan/Issue/Date | NA |
| Order Number | CD-220553 |
| Date | 2022-07-22 |
| Date of Receipt of EUT | 2023-02-20 |
| Start of Test | 2023-03-07 |
| Finish of Test | 2023-04-27 |
| Name of Engineer(s) | Patrick Müller |
| Related Document(s) | KDB 447498 D01 General RF Exposure Guidance v07 ANSI C63.10 (2013) |



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1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with FCC 47 CFR Part 1.1310, Part 2.1093 and RSS-102 is shown below.

| Section | Specification Clause | Test Description | Result | Comments/Base Standard |
|---|---------------------------|------------------------|--------|------------------------|
| Configuration and Mode: Continuously transmitting with modulation | | | | |
| 2.1 | 1.1310 2.5.1, 2.5.2, 3 | RF Exposure Evaluation | Pass | KDB 447498 D01 v07 |

Table 2



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1.4 EUT Modification Record

The table below details modifications made to the EUT during the test programme.
The modifications incorporated during each test are recorded on the appropriate test pages.

| Modification State | Description of Modification still fitted to EUT | Modification Fitted By | Date Modification Fitted |
|--------------------|---|------------------------|--------------------------|
| 0 | As supplied by the customer (S/N: N/A) | Not Applicable | Not Applicable |

Table 3

1.5 Test Location

TÜV SÜD Product Service conducted the following tests at our Straubing Test Laboratory.

| Test Name | Name of Engineer(s) |
|--|---------------------|
| Configuration and Mode: Transmitting continuously with modulation - 12 V DC power supply | |
| RF Exposure Evaluation | Alex Fink |

Table 4

Office Address:

Äußere Frühlingstraße 45
94315 Straubing
Germany



2 Test Details

2.1 RF Exposure Assessment

2.1.1 Specification Reference

CFR 47 Pt.1.1310
RSS-102

2.1.2 Equipment Under Test and Modification State

171090, S/N: N/A - Modification State 0

2.1.3 Test Method

The test was performed in accordance with KDB 447498 D01 v07
Evaluation distance is "direct contact".

2.1.4 Test Results

| | |
|--|------------------------------------|
| Field strength @3m | 71.44 dB μ V/m (Quasi-Peak) |
| Maximum <i>EIRP</i> | -23.78 dBm = 0.004 mW (Quasi-Peak) |
| Frequency: | 434.92 MHz |
| Minimum separation distance <i>r</i> : | < 0.5 cm (declared by applicant) |
| FCC Limit | 1.0 mW |
| ISED Limit: | 1.0 mW |
| Result | Pass |



3 Measurement Uncertainty

The measurement uncertainty in the laboratory is less than or equal to the maximum measurement uncertainty according to EN 55016-4-2: 2011 + A1 + A2 + AC and CISPR16-4-2: 2011 + A1 + A2 + Cor1 (UCISPR). This normative regulation means that the measured value is also the value to be assessed in relation to the limit value.

For a 95% confidence level. the measurement uncertainties for defined systems are:

| Radio Testing | | | |
|---|------|-----------------------|------|
| Test Name | kp | Expanded Uncertainty | Note |
| Occupied Bandwidth | 2.0 | ±1.14 % | 2 |
| RF-Frequency error | 1.96 | ±1 · 10 ⁻⁷ | 7 |
| RF-Power. conducted carrier | 2 | ±0.079 dB | 2 |
| RF-Power uncertainty for given BER | 1.96 | +0.94 dB / -1.05 | 7 |
| RF power. conducted. spurious emissions | 1.96 | +1.4 dB / -1.6 dB | 7 |
| RF power. radiated | | | |
| 25 MHz – 4 GHz | 1.96 | +3.6 dB / -5.2 dB | 8 |
| 1 GHz – 18 GHz | 1.96 | +3.8 dB / -5.6 dB | 8 |
| 18 GHz – 26.5 GHz | 1.96 | +3.4 dB / -4.5 dB | 8 |
| 40 GHz – 170 GHz | 1.96 | +4.2 dB / -7.1 dB | 8 |
| Spectral Power Density. conducted | 2.0 | ±0.53 dB | 2 |
| Maximum frequency deviation | | | |
| 300 Hz – 6 kHz | 2 | ±2.89 % | 2 |
| 6 kHz – 25 kHz | 2 | ±0.2 dB | 2 |
| Maximum frequency deviation for FM | 2 | ±2.89 % | 2 |
| Adjacent channel power 25 MHz – 1 GHz | 2 | ±2.31 % | 2 |
| Temperature | 2 | ±0.39 K | 4 |
| (Relative) Humidity | 2 | ±2.28 % | 2 |
| DC- and low frequency AC voltage | | | |
| DC voltage | 2 | ±0.01 % | 2 |
| AC voltage up to 1 kHz | 2 | ±1.2 % | 2 |
| Time | 2 | ±0.6 % | 2 |

Table 5



| Radio Interference Emission Testing | | | |
|---|----|----------------------|------|
| Test Name | kp | Expanded Uncertainty | Note |
| Conducted Voltage Emission | | | |
| 9 kHz to 150 kHz (50Ω/50μH AMN) | 2 | ± 3.8 dB | 1 |
| 150 kHz to 30 MHz (50Ω/50μH AMN) | 2 | ± 3.4 dB | 1 |
| 100 kHz to 200 MHz (50Ω/5μH AMN) | 2 | ± 3.6 dB | 1 |
| Discontinuous Conducted Emission | | | |
| 9 kHz to 150 kHz (50Ω/50μH AMN) | 2 | ± 3.8 dB | 1 |
| 150 kHz to 30 MHz (50Ω/50μH AMN) | 2 | ± 3.4 dB | 1 |
| Conducted Current Emission | | | |
| 9 kHz to 200 MHz | 2 | ± 3.5 dB | 1 |
| Magnetic Fieldstrength | | | |
| 9 kHz to 30 MHz (with loop antenna) | 2 | ± 3.9 dB | 1 |
| 9 kHz to 30 MHz (large-loop antenna 2 m) | 2 | ± 3.5 dB | 1 |
| Radiated Emission | | | |
| Test distance 1 m (ALSE) | | | |
| 9 kHz to 150 kHz | 2 | ± 4.6 dB | 1 |
| 150 kHz to 30 MHz | 2 | ± 4.1 dB | 1 |
| 30 MHz to 200 MHz | 2 | ± 5.2 dB | 1 |
| 200 MHz to 2 GHz | 2 | ± 4.4 dB | 1 |
| 2 GHz to 3 GHz | 2 | ± 4.6 dB | 1 |
| Test distance 3 m | | | |
| 30 MHz to 300 MHz | 2 | ± 4.9 dB | 1 |
| 300 MHz to 1 GHz | 2 | ± 5.0 dB | 1 |
| 1 GHz to 6 GHz | 2 | ± 4.6 dB | 1 |
| Test distance 10 m | | | |
| 30 MHz to 300 MHz | 2 | ± 4.9 dB | 1 |
| 300 MHz to 1 GHz | 2 | ± 4.9 dB | 1 |
| Radio Interference Power | | | |
| 30 MHz to 300 MHz | 2 | ± 3.5 dB | 1 |
| Harmonic Current Emissions | | | 4 |
| Voltage Changes. Voltage Fluctuations and Flicker | | | 4 |

Table 6



| Immunity Testing | | | |
|--|------|----------------------|------|
| Test Name | kp | Expanded Uncertainty | Note |
| Electrostatic Discharges | | | 4 |
| Radiated RF-Field | | | |
| Pre-calibrated field level | 2 | +32.2 / -24.3 % | 5 |
| Dynamic feedback field level | 2.05 | +21.2 / -17.5 % | 3 |
| Electrical Fast Transients (EFT) / Bursts | | | 4 |
| Surges | | | 4 |
| Conducted Disturbances. induced by RF-Fields | | | |
| via CDN | 2 | +15.1 / -13.1 % | 6 |
| via EM clamp | 2 | +42.6 / -29.9 % | 6 |
| via current clamp | 2 | +43.9 / -30.5 % | 6 |
| Power Frequency Magnetic Field | 2 | +20.7 / -17.1 % | 2 |
| Pulse Magnetic Field | | | 4 |
| Voltage Dips. Short Interruptions and Voltage Variations | | | 4 |
| Oscillatory Waves | | | 4 |
| Conducted Low Frequency Disturbances | | | |
| Voltage setting | 2 | ± 0.9 % | 2 |
| Frequency setting | 2 | ± 0.1 % | 2 |
| Electrical Transient Transmission in Road Vehicles | | | 4 |

Table 7

Note 1:

The expanded uncertainty reported according to CISPR 16-4-2:2003-11 is based on a standard uncertainty multiplied by a coverage factor of $k_p = 2$. providing a level of confidence of $p = 95.45\%$

Note 2:

The expanded uncertainty reported according to UKAS Lab 34 (Edition 1. 2002-08) is based on a standard uncertainty multiplied by a coverage factor of $k_p = 2$. providing a level of confidence of $p = 95.45\%$

Note 3:

The expanded uncertainty reported according to UKAS Lab 34 (Edition 1. 2002-08) is based on a standard uncertainty multiplied by a coverage factor of $k_p = 2.05$. providing a level of confidence of $p = 95.45\%$

Note 4:

It has been demonstrated that the used test equipment meets the specified requirements in the standard with at least a 95%confidence.

Note 5:

The expanded uncertainty reported according to IEC 61000-4-3 is based on a standard uncertainty multiplied by a coverage factor of $k_p = 2$. providing a level of confidence of $p = 95.45\%$

Note 6:

The expanded uncertainty reported according to IEC 61000-4-6 is based on a standard uncertainty multiplied by a coverage factor of $k_p = 2$. providing a level of confidence of $p = 95.45\%$

Note 7:

The expanded uncertainty reported according ETSI TR 100 028 V1.4.1 (all parts) to is based on a standard uncertainty multiplied by a coverage factor of $k_p = 1.96$. providing a level of confidence of $p = 95.45\%$

Note 8:



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The expanded uncertainty reported according to ETSI TR 102 273 V1.2.1 (all parts) is based on a standard uncertainty multiplied by a coverage factor of $k_p = 1.96$, providing a level of confidence of $p = 95.45\%$