INTERNATIONAL ROAD SAFETY
MHF Test Lab
EVALUATION • DEVELOPMENT • TEST

SWEDAC ACKREDITERING
Ackred. nr. 2012
Provning
ISO/IEC 17025

Test report summary

Tested for:	Dignita System AB Formvägen 16 906 21 Umeå
Tested by:	MHF International Road Safety Test Lab Storgatan 3 543 31 Tibro Sweden
Subcontractor:	Autoliv Sverige AB, DT&C Co., Ltd
Product name:	AL-100
Serial number:	Handunit: HG7U 0001, HG7U 0002, HG1T 0001, HG1T 0002, HG1T 0003, HF9A 0001, HF9A 0003 Centralunit: CG7U 0001, CG7U 0002, CG1T 0001, CG1T 0002, CG1T 0003, CF9A 0001, CF9A 0003
Test Standard:	EN 50436-2:2014
Classification:	6.7 Electrical disturbances, class A 6.9 EMC The tests according to the e-MARK 72/245/EEC as last Amended by ECE 10.05: E9-.10R-05.11406 8.1 Temperature cycles, code G 8.3 Vibration testing ISO16750-3:2010 4.1.2.4, 4.1.2.8 9.7 Type of protection: IP40 14 Long term behavior (test) 24 month.
Test report no:	1194
Test results:	**Approved** In all tests according to EN 50436-2:2014. With classification according to the specifications above.

Tibro 2017-11-23

Tomas Jonsson
CEO

Ph.D Lars Olov Sjöström
Quality leader

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Test report

Every test element has been performed according to approved standards and has been documented in the appendix. The result only applies to the tested objects. The result and the limitations of each test element are shown in this test report.

Date: 2017-11-23

Tested for:
Dignita System AB
Formvägen 16
906 21 Umeå

Tested by:
MHF International Road Safety Test Lab
Organisation no: 556108-4384
Accredited by Swedac (www.swedac.se)
Storgatan 3
543 31 Tibro Sweden

Subcontractor: The following ISO/IEC 17025:2005 laboratories has been used

Autoliv Sverige AB
Accredited by Swedac (www.swedac.se)
Wallentinsvägen 22
447 83 Vårgårda

DT&C Co ., Ltd
Accredited by KOLAS (www.dakks.de)
42, Yurim-ro, 154 beon-gil, Cheoin-gu, Yongin-si
Gyeonggi-di 449-935 Korea

Test report no: 1194

Test period: 2015-09-11 – 2017-10-10

Product name: AL-100

Serial number: Handunit: HG7U 0001, HG7U 0002, HG1T 0001, HG1T 0003, HF9A 0001, HF9A 0003.
Centralunit: CG7U 0001, CG7U 0002, CG1T 0001, CG1T 0003, CF9A 0001, CF9A 0003

Test Standard: EN 50436-2-:2014

Test result: The following table shows the test result, with reference to detailed documentation in appendix.

Test element	Lab	Result	Appendix
4.1 Blocking and unblocking	MHF	Pass	1&2
4.2 Influence on the vehicle motor	MHF	Pass	1&2
4.3 Tampering	MHF	Pass	1&2
4.4 Concentration limit	MHF	Pass	1&2
4.5 Mouthpiece	MHF	Pass	1&2
4.6 Readiness	MHF	Pass	1&2
4.7 Data memory, download and evalu.	MHF	Pass	1&2
4.8 Retests	MHF	Pass	1&2
4.10 Override function	MHF	Pass	1&2
4.11 Combination with other system	MHF	Pass	1&2
4.12 Communication integrity	MHF	Pass	1&2
4.13 Wireless communication	MHF	Pass	1&2
4.14 Basic functionality	MHF	Pass	1&2
6.2 Supply voltage	MHF	Pass	1&2
6.3 Excess supply voltage	MHF	Pass	1&2
6.4 Short-circuit	MHF	Pass	1&2
6.5 Reversed polarity	MHF	Pass	1&2
6.6 Low-power-consumption state	MHF	Pass	1&2
6.7.1 Supply lines	DT&C	Pass	3
6.7.2 Lines other than supply lines	DT&C	Pass	3
6.8 Electrostatic discharge	DT&C	Pass	4
6.9 Electromagnetic compatibility	E-mark	Pass	5
6.10 Functional test under normal	MHF	Pass	1&2
7 Calibration curve	MHF	Pass	1&2
8.1 Temperature cycles	MHF	Pass	1&2
8.2 Condensed water	MHF	Pass	1&2
8.3 Vibration test	Autoliv	Pass	6
8.4 Drop test	MHF	Pass	1&2
9.2 Temperature	MHF	Pass	1&2
9.3 Temperature and supply voltage	MHF	Pass	1&2
9.4 Temperature and humidity	MHF	Pass	1&2
9.5.1 Temperature 20°C	MHF	Pass	1&2
9.5.2 Temperature -5°C	MHF	Pass	1&2
9.5.3 Temperature -20°C	MHF	Pass	1&2
9.6 Pressure	MHF	Pass	1&2
9.7 Protection by enclosure	MHF	Pass	1&2
10.1 Volume	MHF	Pass	1&2

10.2 Flow	MHF	Pass	1&2
10.3 Exhalation time	MHF	Pass	1&2
10.4 Response time	MHF	Pass	1&2
11.1 Test gases	MHF	Pass	1&2
11.2 Cigarette smoke	MHF	Pass	1&2
12.2 Pressurised air	MHF	Pass	1&2
12.3 Prov. of the sample with a mouth. att	MHF	Pass	1&2
12.4 Prov. of the sample without a mouth	MHF	Pass	1&2
12.5 Obstruction of the mouthpiece	MHF	Pass	1&2
12.6 Filter	MHF	Pass	1&2
12.7 Condensation	MHF	Pass	1&2
12.8 Water	MHF	Pass	1&2
12.9 Putting out of service	MHF	Pass	1&2
12.10 Removal of handset	MHF	Pass	1&2
12.11 Bypass	MHF	Pass	1&2
13.1 Start period	MHF	Pass	1&2
13.2 Restart period	MHF	Pass	1&2
13.4.1 Calib. Interval stored in the alcolock	MHF	Pass	1&2
13.4.2 Calib. Interval not stored in the alco	MHF	Pass	1&2
14 Long term behaviour (tested 24 months)	MHF	Pass	1&2
15.1 Instructions for installation	MHF	Pass	1&2
15.2 Instructions for use	MHF	Pass	1&2
15.3 Instructions for servicing the alcohol	MHF	Pass	1&2
17 Labelling and marking	MHF	Pass	1&2

Possible annotations are shown in the test protocol document appendix 1 and 2.

Limits:

6.7 Electrical disturbances, class A
6.9 EMC The tests according to the e-MARK 72/245/EEC as last Amended by ECE 10.05: E9-.10R-05.11406
8.1 Temperature cycles, code G
8.3 Vibration testing ISO16750-3:2010 4.1.2.4, 4.1.2.8
9.7 Type of protection: IP40
14 Long term behavior (test) 24 month.

Test result: **Approved** In all tests according to EN 50436-2:2014. With classification according to the specifications above.

Appendix:

No 1: Test protocol document for alkolock no: 247:09
No 2: Test protocol document for alkolock no: 247:11
No 3: Test reoprt DT&C no: DRAUTO 1611-0789
No 4: Test report DT&C no: DRAUTO 1605-0280
No 5: Ministerio de industria, energia y turismo E9-10R-05.11406
No 6: Autoliv Sverige AB no: 16-k710

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