# Scope of laboratory accreditation according to EN ISO/IEC 17025:2017

**DELTA Development Technology AB**
Elektronikgatan 47
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Sweden

Accreditation no:
**1688**

## *EMC*

| *Standard reference* | *Title* |
|---|---|
| **EN 61000-3-2:2019** | IEC 61000-3-2 ed 3.0 Electromagnetic compatibility (EMC) Part 3-2: Limits - **Limits for harmonic current emissions (equipment input current <= 16 A per phase)** |
| **EN 61000-3-3:2013** | EN 61000-3-3:2013 Electromagnetic compatibility (EMC) Part 3-3: Limits - Limitation of **voltage fluctuations and flicker** in low-voltage supply systems for equipment with rated current < 16 A per phase and not subject to conditional connection<= 16 A per phase) |
| **IEC 61000-4-2:2008**<br>**EN 61000-4-2:2009** | Electromagnetic compatibility (EMC)<br>- Part 4-2: Testing and measurement techniques<br>**Electrostatic discharge immunity test** |
| **IEC 61000-4-3:2020**<br>**IEC 61000-4-3:2010**<br>**EN 61000-4-3:2020**<br>**EN 61000-4-3:2006+A1+A2** | Electromagnetic compatibility (EMC)<br>- Part 4-3: Testing and measurement techniques<br>**Radiated, radio-frequency, electromagnetic field immunity test** |
| **IEC 61000-4-4:2012**<br>**EN 61000-4-4:2012** | Electromagnetic compatibility (EMC)<br>- Part 4-4: Testing and measurement techniques<br>**Electrical fast transient/burst immunity test** |
| **IEC 61000-4-5:2014+A1**<br>**EN 61000-4-5:2014+A1** | Electromagnetic compatibility (EMC)<br>- Part 4-5: Testing and measurement techniques<br>**Surge immunity test** |
| **IEC 61000-4-6:2013**<br>**EN 61000-4-6:2014** | Electromagnetic compatibility (EMC)<br>- Part 4-6: Testing and measurement techniques<br>**Immunity to conducted disturbances, induced by radio-frequency fields** |
| **IEC 61000-4-8:2009**<br>**EN 61000-4-8:2010** | Electromagnetic compatibility (EMC)<br>- Part 4-8: Testing and measurement techniques<br>**Power frequency magnetic field immunity test** |
| **IEC 61000-4-9:2016**<br>**EN 61000-4-9:2016** | Electromagnetic compatibility (EMC)<br>- Part 4-9: Testing and measurement techniques<br>**Pulse magnetic field Immunity test** |
| **IEC 61000-4-11:2004+A1**<br>**IEC 61000-4-11:2020**<br>**EN 61000-4-11:2004+A1**<br>**EN 61000-4-11:2020** | Electromagnetic compatibility (EMC)<br>- Part 4-11: Testing and measurement techniques<br>**Voltage dips, short interruptions and voltage variations immunity tests** |
| **IEC 61000-4-16:2015** | Electromagnetic compatibility (EMC)<br>- Part 4-16: Testing and measurement techniques<br>**Immunity to conducted CM disturbances 0 to 150 kHz** |

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| **IEC 61000-4-18:2011**<br>**EN 61000-4-18:2007+A1** | Electromagnetic compatibility (EMC) –<br>Part 4-18: Testing and measurement techniques – **Damped oscillatory wave**<br>**immunity test** |
| **IEC 61000-4-29:2000**<br>**EN 61000-4-29:2000** | Electromagnetic compatibility (EMC)<br>- Part 4-29: Testing and measurement techniques<br>**Voltage dips, short interruptions and voltage variations on d.c. input power port immunity tests** |
| **CISPR 11:2019**<br>**EN 55011:2009+A1**<br>**EN 55011:2016+A1+A11** | Industrial, scientific and medical (ISM) radio-frequency equipment<br>- Electromagnetic disturbance characteristics<br>- Limits and methods of measurement |
| **CISPR 22:2008**<br>**EN 55022:2010** | Information technology equipment<br>- Radio disturbance characteristics<br>- Limits and methods of measurement |
| **CISPR 32:2015+A1**<br>**EN 55032:2015+A1+A11** | Electromagnetic compatibility of multimedia equipment - Emission requirements |
| **EN 55035:2017** | Electromagnetic compatibility of multimedia equipment – Immunity requirements |
| **CISPR 16-2-1:2014+A1** | Specification for radio disturbance and immunity measuring apparatus and methods - Part 2-1: Methods of measurement of disturbances and immunity - Conducted disturbance measurements |
| **CISPR 16-2-3:2016+A1** | "Specification for radio disturbance and immunity measuring apparatus and methods -<br>Part 2-3: Methods of measurement of disturbance and immunity - Radiated disturbance measurements" |
| **CISPR 24:2010+A1**<br>**EN 55024:2010+A1** | ITE Information technology equipment-<br>Immunity characteristics- Limits and methods of measurement |
| **IEC 61000-6-1:2016**<br>**EN IEC 61000-6-1:2019** | Generic standards - Immunity for residential, commercial and light-industrial environments |
| **IEC 61000-6-2:2016**<br>**EN 61000-6-2:2019** | Generic standards - Immunity for industrial environments |
| **IEC 61000-6-3:2020**<br>**EN IEC 61000-6-3:2021** | Generic standards - Emission standard for equipment in residential environments |
| **IEC 61000-6-4:2018**<br>**EN IEC 61000-6-4:2019** | Generic standards - Emission standard for industrial environments |
| **EN 61000-6-5:2015** | EMC Generic Standards - Immunity for power station and substation environments |
| **IEC 61000-6-8:2020**<br>**EN IEC 61000-6-8:2020** | Generic standards - Emission standard for professional equipment in commercial and light-industrial locations |
| **EN 12895:2015+A1** | Industrial trucks – Electromagnetic compatibility |
| **EN 50121-3-2:2016+A1**<br>**IEC 62236-3-2:2008** | Railway applications<br>Electromagnetic compatibility<br>Part 3-2: Rolling stock - Apparatus |
| **EN 50121-4:2016**<br>**IEC 62236-4:2008** | Railway applications - Electromagnetic compatibility<br>Part 4: Emission and immunity of the signalling and telecommunications apparatus |
| **EN 60601-1-2:2015**<br>**Chapter 7, 8** | Medical electrical equipment<br>Part 1-2: General requirements for safety - Collateral standard: Electromagnetic compatibility -Requirements and tests |
| **IEC 61326-1:2012**<br>**IEC 61326-1:2020**<br>**EN 61326-1:2013**<br>**EN 61326-1:2021** | Equipment for measurement, control and laboratory use |
| **EN 61326-2-6:2013**<br>**EN IEC 61326-2-6:2021** | Electrical equipment for measurement, control and laboratory use -<br>EMC requirements - Part 2-6: Particular requirements -<br>In vitro diagnostic (IVD) medical equipment |

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| **IACS E10 rev 8:2021**<br>**Test no. 13, 14, 15, 16-20** | E10 Test specification for type approval<br>(specification is applicable, but not confined, to all equipment used for*:<br>- control, protection and safety;<br>- internal communication.) |
| **IEC 60945:2002** | Maritime navigation and radiocommunication equipment and systems<br>- General requirements – Methods of testing and required test result |
| **ANSI C63.4: 2014** | Standard for methods of radio-noise emission from low-voltage electrical and electronic equipment in range of 9 kHz to 40 GHz |
| **ANSI C63.10: 2013** | American National Standard of<br>Procedures for Compliance Testing of<br>Unlicensed Wireless Devices |
| **ETSI EN 300 328**<br>**V2.1.1:2016**<br>**V2.2.2:2019**<br>**Radiated spurious emissions** | Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband transmission systems; Data transmission equipment operating in the 2.4 GHz ISM band and using wide band modulation techniques |
| **ETSI EN 300 330**<br>**V2.1.1:2017**<br>**Radiated H-field and spurious emissions** | Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment in the frequency range 9 kHz to 25 MHz and inductive loop systems in the frequency range 9 kHz to 30 MHz; |
| **ETSI EN 300 330-1**<br>**V1.8.1:2015**<br>**Radiated spurious emissions** | Electromagnetic compatibility<br>and Radio spectrum Matters (ERM);<br>Short Range Devices (SRD);<br>Radio equipment in the frequency range<br>9 kHz to 25 MHz and inductive loop systems<br>in the frequency range 9 kHz to 30 MHz;<br>Part 1: Technical characteristics and test methods |
| **ETSI EN 300 386**<br>**V2.1.1:2016** | Electromagnetic compatibility<br>and Radio spectrum Matters (ERM);<br>Telecommunication network equipment;<br>ElectroMagnetic Compatibility (EMC) requirements |
| **ETSI EN 301 489-1**<br>**V2.2.3:2019** | Electromagnetic compatibility<br>and Radio spectrum Matters (ERM);<br>ElectroMagnetic Compatibility (EMC)<br>standard for radio equipment and services;<br>**Part 1: Common technical requirements** |
| **draft ETSI EN 301 489-3**<br>**V2.1.1:2017** | Electromagnetic compatibility<br>and Radio spectrum Matters (ERM);<br>ElectroMagnetic Compatibility (EMC)<br>standard for radio equipment and services;<br>**Part 3: Specific conditions for Short-Range Devices (SRD)**<br>**operating on frequencies between 9 kHz and 246 GHz** |
| **ETSI EN 301 489-4**<br>**V2.1.1:2012** | Electromagnetic compatibility and Radio spectrum Matters (ERM);<br>ElectroMagnetic Compatibility (EMC) standard for radio equipment and services;<br>**Part 4: Specific conditions for fixed radio links and ancillary equipment** |
| **ETSI EN 301 489-8**<br>**V1.2.1:2002** | Electromagnetic compatibility<br>and Radio spectrum Matters (ERM);<br>ElectroMagnetic Compatibility (EMC)<br>standard for radio equipment and services;<br>**Part 8: Specific conditions for**<br>**GSM base stations** |
| **draft ETSI EN 301 489-17**<br>**V3.2.0:2017** | Electromagnetic compatibility and Radio spectrum Matters (ERM);<br>ElectroMagnetic Compatibility (EMC) standard for radio equipment;<br>**Part 17: Specific conditions for Broad Band Data Transmission Systems** |

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| **ETSI EN 301 489-23 V1.5.1:2011** | Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; **Part 23: Specific conditions for IMT-2000 CDMA Direct Spread (UTRA) Base Station (BS) radio, repeater and ancillary equipment** |
| **ETSI EN 301 489-50 V2.2.1:2019** | Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; **Part 50: Specific conditions for Cellular Communication Base Station (BS), repeater and ancillary equipment** |
| **ETSI EN 301 908-1 V7.1.1:2015** | **IMT cellular networks; Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive; Part 1: Introduction and common requirements** |
| **ETSI TS101 087 V8.11.0:2009 Radiated spurious emissions** | Digital cellular telecommunications system (Phase 2+); Base Station System (BSS) equipment specification; Radio aspects (3GPP TS 11.21) **Chapter 8 Radiated spurious emissions** |
| **ETSI EN 301 502 V9.2.1:2010 Radiated spurious emissions** | Harmonized EN for Global System for Mobile communications (GSM);Base Station and Repeater equipment covering essential requirements under article 3.2 of the R&TTE directive |
| **FDIS ETSI EN 302 608 V2.1.1:2017 Radiated emission** | Short Range Devices (SRD); Radio equipment for Eurobalise railway systems; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU |
| **ETSI TS 125.113 / 3GPP TS25:113 V10.0.0:2011** | Universal Mobile Telecommunications System (UMTS); Base station and repeater ElectroMagnetic Compatibility (EMC) |
| **ETSI TS 136.113 / 3GPP TS 36.113 V10.4.0:2011** | Evolved Universal Terrestrial Radio Access (E-UTRA); Base Station (BS) and repeater ElectroMagnetic Compatibility (EMC) |
| **ETSI TS 137.113 / 3GPP TS 37.113 V11.3.0:2014** | Universal Mobile Telecommunications System (UMTS); LTE; E-UTRA, UTRA and GSM/EDGE; Multi-Standard Radio (MSR) Base Station (BS) Electromagnetic Compatibility (EMC) |
| **ETSI TS 137.114 / 3GPP TS 37.114 V15.6.0:2019** | Universal Mobile Telecommunication System, (UMTS); LTE; Active Antenna System (AAS) Base Station (BS) Electromagnetic Compatibility (EMC) |

## *Climate and environmental durability*

| *Standard reference* | *Title* |
|---|---|
| **IEC 60068-2-1: 2007** | Environmental testing - Part 2-1: Tests - Test A: Cold |
| **IEC 60068-2-2: 2007** | Environmental testing - Part 2-2: Tests - Test B: Dry heat |
| **IEC 60068-2-14: 2009** | Environmental testing - Part 2-14: Tests - Test N: Change of temperature |
| **IEC 60068-2-30: 2005** | Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle) |
| **IEC 60068-2-38: 2021, Edition 3** | Environmental testing - Part 2-38: Test - Test Z/AD: Composite temperature/humidity cyclic test |
| **IEC 60068-2-67: 1995** | Environmental testing – Part 2-67: Tests – Test Cy: Damp heat, steady state, accelerated test primarily intended for components |
| **IEC 60068-2-78: 2012** | Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state |
| **IEC 60068-2-6: 2007** | Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal) |
| **IEC 60068-2-27: 2008** | Environmental testing - Part 2-27: Test - Test Ea and guidance: Shock |
| **IEC 60068-2-64: 2008** | Environmental testing – Part 2-64: Tests – Test Fh: Vibration, broadband random and guidance |
| **IEC 60529: 1989+A1+A2** | Degrees of protection provided by enclosures (IP Code) |
| **IEC 60068-2-11: 2021, edition 4** | Environmental testing - Part 2-11: Tests - Test Ka: Salt mist |
| **IEC 60068-2-52: 2017+A2:2013** | Environmental testing - Part 2-52: Tests - Test Kb: Salt mist cyclic |

SWEDAC

Styrelsen för ackreditering och teknisk kontroll
Swedish Board for Accreditation and Conformity Assessment

# ACKREDITERINGSBEVIS

## *ACCREDITATION CERTIFICATE*

# DELTA Development Technology AB

har genom beslut den
*following the decision on*

**22 september 1999**

ackrediterats som
*is accredited as*

**provningslaboratorium**
*testing laboratory*

och därvid erhållit registreringsnummer
*and has been assigned registration number*

**1688**

Styrelsen för ackreditering och teknisk kontroll
*Swedish Board for Accreditation and Conformity Assessment*

Lars Ettarp
Generaldirektör
*Director General*

Ackrediterat organ har rätt att använda nedanstående märke.
*An accredited body is entitled to use the following logotype.*

SWEDAC ACKREDITERING

Ackrediteringens omfattning och villkor framgår av ackrediteringsbeslutet.
*The scope and conditions of accreditation are specified in the accreditation decision.*

# ACCREDITATION CERTIFICATE

Ackred. nr. 1688
Testing
ISO/IEC 17025

## DELTA Development Technology AB

Registration number 556556-2070

is accredited as a testing laboratory for the scope specified in appendix 2 to decision dated 2020-03-05. The applicable terms of the accreditation are specified in appendix 1 in the same decision.

This laboratory is accredited in accordance with the International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system. The accredited laboratory is responsible for the results of performed *testing* and submitted judgements as well as, where applicable, for the selection and application of work methods within the scope of the granted accreditation.

*The accreditation is valid until further notice.* The Swedish Board for Accreditation and Conformity Assessment (Swedac) regularly carries out surveillance, and a full reassessment every fourth year, in order to verify that the applicable terms of accreditation, see appendix 1 as above, are continually fulfilled.

This accreditation certificate is valid from **2020-03-05** by
Fredrik Langmead,
Deputy Manager of the Industry division

*Accreditation was granted in accordance with Article 5 (1) or Regulation (EC) No 765/2008 regarding accreditation and market surveillance etc. and the Act (SFS 2011:791) concerning Accreditation and Conformity Assessment. Swedac is the national accreditation body responsible for the assessment of the competence of certification bodies, inspection bodies, laboratories, environmental verifiers, validation and verification bodies and bodies for organisation of programme for proficiency testing applying for accreditation. This accreditation has been issued under the EA MLA and is therefore recognised as equivalent to other accreditations issued under the EA MLA within the same accreditation scope.*