DAkkS
Deutsche
Akkreditierungsstelle

Accreditation

The Deutsche Akkreditierungsstelle attests with this **Accreditation Certificate** that

MD (China) ELECTRONICS Co., Ltd.
No. 5, Yunhu Road, Jintan District, 213200 Changzhou, P.R. China

operates a testing laboratory that fulfills the requirements according to DIN EN ISO/IEC 17025:2018 for those conformity assessment activities specified in detail in the annexes listed below. This includes additional existing legal and normative requirements for the testing laboratory including those in relevant sectoral schemes, provided that these are explicitly confirmed in the annexes listed below.

D-PL-22492-01-01 **Valid from: 27.02.2026** **Valid to: 12.06.2029**

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories and they conform to the principles of DIN EN ISO 9001.

This accreditation was issued after an accreditation procedure was carried out in compliance with the minimum requirements of DIN EN ISO/IEC 17011 and on the basis of a review and decision of the appointed accreditation committees.

This accreditation certificate with accreditation number D-PL-22492-01 is valid to 12.06.2029. It consists of this cover sheet, the reverse side of the cover sheet and the corresponding annexes.

Registration number of the accreditation certificate: **D-PL-22492-01-00**

Berlin, 27.02.2026 Tim Fuchs | Head of Service Unit

See notes overleaf

Deutsche Akkreditierungsstelle GmbH

Office Berlin
Spittelmarkt 10
10117 Berlin

The Deutsche Akkreditierungsstelle GmbH (DAkkS) is the entrusted national accreditation body of the Federal Republic of Germany according to § 8 section 1 AkkStelleG in conjunction with § 1 section 1 AkkStelleGBV. DAkkS is designated as the national accreditation authority by Germany according to Art. 4 Para. 4 of Regulation (EC) 765/2008 and clause 4.7 of DIN EN ISO/IEC 17000.

The accreditation certificate shall be recognised as equivalent by the WTO member states that have committed themselves in bilateral or multilateral mutual agreements to recognise the certificates of accreditation bodies that are members of ILAC or IAF as equivalent.

DAkkS is a signatory to the multilateral agreements for mutual recognition of the European co-operation for Accreditation (EA), International Accreditation Forum (IAF) and International Laboratory Accreditation Co-operation (ILAC).

The up-to-date state of membership can be retrieved from the following websites:
EA: www.european-accreditation.org
ILAC: www.ilac.org
IAF: www.iaf.nu

Deutsche Akkreditierungsstelle

Annex to the Accreditation Certificate D-PL-22492-01-01 according to DIN EN ISO/IEC 17025:2018

Valid from:	**27.02.2026**	**Valid to:**	**12.06.2029**
Date of issue:	27.02.2026		

This annex is part of the Accreditation Certificate D-PL-22492-01-00.

Holder of the Accreditation Certificate:

MD (China) ELECTRONICS Co., Ltd.
No. 5, Yunhu Road, Jintan District, 213200 Changzhou, P.R. China

with the location

MD (China) ELECTRONICS Co., Ltd.
No. 5, Yunhu Road, Jintan District, 213200 Changzhou, P.R. China

The testing laboratory meets the requirements of DIN EN ISO/IEC 17025:2018 to carry out the conformity assessment activities listed in this annex. The testing laboratory meets additional legal and normative requirements, if applicable, including those in relevant sectoral schemes, provided that these are explicitly confirmed below.

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories and they conform to the principles of DIN EN ISO 9001.

Mechanical, electrical, and analytic tests, radio frequency tests on assembled and unassembled cables, connectors, polymer materials, and components.

Flexible Scope of Accreditation:

Within the indicated test areas the testing laboratory is permitted without being required to prior inform and obtain approval from DAkkS

[Flex A] to use standardised or equivalent test methods listed here with different issue dates.

[Flex B] to have the free choice from standardised or equivalent test methods.

The test methods listed are examples. The testing laboratory has an up-to-date list of all test methods within the flexible scope of accreditation. The list is publicly available on the website of the testing laboratory.

Content

1 Flexibilization of accreditation according [Flex B]

Test type	Test area	Test parameters	Typical test methods
Mechanic	Push and pull	Force transducer: 2 N until 1 kN Length variation traverse: 0,5 mm until 50 mm	DIN EN 60512-16-4 DIN EN 60512-13-1 DIN EN 60512-13-2 DIN EN 60512-13-5 DIN EN 60512-15-6

2 Test range: electrical engineering / EMC [Flex A]

Testing field	Standard / In-House Procedure / Version	Title of Standard or In-House Procedure	Test Range / Restrictions
Electrical Engineering	DIN EN 50289-1-3: 2002-02 [Flex A]	Communication cables - Specifications for test methods - Part 1-3: Electrical test methods; Dielectric strength	
Electrical Engineering	DIN EN 50289-1-4: 2002-02 [Flex A]	Communication cables - Specifications for test methods - Part 1-4: Electrical test methods; Insulation resistance	
Electrical Engineering	DIN EN 50289-1-8, VDE 0819-289-1-8: 2018-02 [Flex A]	Communication cables - Specifications for test methods - Part 1-8: Electrical test methods - Attenuation	
Electrical Engineering	DIN EN 50289-1-9, VDE 0819-289-1-9: 2018-01 [Flex A]	Communication cables - Specifications for test methods - Part 1-9: Electrical test methods - Unbalance attenuation (transverse conversion loss TCL transverse conversion transfer loss TCTL)	
Electrical Engineering	DIN EN 50289-1-10: 2002-07 [Flex A]	Communication cables - Specifications for test methods - Part 1-10: Electrical test methods; Crosstalk	Is performed without balun measuring technique
Electrical Engineering	DIN EN 50289-1-11, VDE 0819-289-1-11: 2018-08 [Flex A]	Communication cables - Specifications for test methods - Part 1-11: Electrical test methods - Characteristic impedance, input impedance, return loss	
Electrical Engineering	DIN EN 13018: 2016-06 [FlexA]	Non-destructive testing - Visual testing - General principles	

Testing field	Standard / In-House Procedure / Version	Title of Standard or In-House Procedure	Test Range / Restrictions
Electrical Engineering	DIN EN 60512-1-1: 2003-01 [Flex A]	Connectors for electronic equipment - Tests and measurements - Part 1-1: General examination; Test 1a: Visual examination	
Electrical Engineering	DIN EN 60512-3-1: 2003-01 [Flex A]	Connectors for electronic equipment - Tests and measurements - Part 3-1: Insulation tests; Test 3a: Insulation resistance	
Electrical Engineering	DIN EN 60512-4-1: 2004-01 [Flex A]	Connectors for electronic equipment - Tests and measurements - Part 4-1: Voltage stress tests - Test 4a: Voltage proof	
Electrical Engineering	DIN EN 60512-25-1: 2002-08 [Flex A]	Connectors for electronic equipment - Tests and measurements - Part 25-1: Test 25a: Crosstalk ratio	
Electrical Engineering	DIN EN 60512-25-2: 2002-12 [Flex A]	Connectors for electronic equipment - Tests and measurements - Part 25-2: Test 25b: Attenuation (insertion loss)	
Electrical Engineering	DIN EN 60512-25-5: 2005-05 [Flex A]	Connectors for electronic equipment - Tests and measurements - Part 25-5: Test 25e - Return loss	
Electrical Engineering	DIN EN 60512-25-7: 2005-12 [Flex A]	Connectors for electronic equipment - Tests and measurements - Part 25-7: Test 25g - Impedance, reflection coefficient and standing voltage wave ratio (VSWR)	
Electrical Engineering	DIN EN 60512-2-1: 2003-01 [Flex A]	Connectors for electronic equipment - Tests and measurements - Part 2-1: Electrical continuity and contact resistance tests - Test 2a: Contact resistance - Millivolt level method	
Electrical Engineering	DIN EN 50289-1-2: 2002-02	Communication cables - Specifications for test methods - Part 1-2: Electrical test methods - DC resistance	

Testing field	Standard / In-House Procedure / Version	Title of Standard or In-House Procedure	Test Range / Restrictions
Electrical Engineering	DIN EN 50289-1-7: 2002-02 [Flex A]	Communication cables - Specifications for test methods Part 1-7: Electrical test methods - Velocity of propagation	
Electrical Engineering	DIN EN 50289-1-6: 2002-12 [Flex A]	Communication cables - Specifications for test methods- Part 1-6: Electrical test methods - Electromagnetic performance	Limitation to: 6.Transferimpedance, triaxial method 8. Screening attenuation test method, triaxial method are possible
Electrical Engineering	IEC 62153-4-3: 2013-10 [Flex A]	Metallic communication cable test methods Part 4-3: Electromagnetic compatibility (EMC) — Surface transfer impedance — Triaxial method	
Electrical Engineering	IEC 62153-4-4: 2015-04 [Flex A]	Metallic communication cable test methods – Part 4-4: Electromagnetic compatibility (EMC) –Shielded screening attenuation, test method for measuring of the screening attenuation as up to and above 3 GHz	
Electrical Engineering	DIN EN IEC 62153-4-7 VDE 0819-153-4-7: 2023-06 [Flex A]	Metallic cables and other passive components test methods Part 4-7: Electromagnetic compatibility (EMC) — Test method for measuring of transfer impedance ZT and screening attenuation aS or coupling attenuation aC of connectors and assemblies — Triaxial tube in tube method	

Testing field	Standard / In-House Procedure / Version	Title of Standard or In-House Procedure	Test Range / Restrictions
Electrical Engineering	IEC 62153-4-7: 2021-09 [Flex A]	Metallic cables and other passive components test methods Part 4-7: Electromagnetic compatibility (EMC) — Test method for measuring of transfer impedance ZT and screening attenuation aS or coupling attenuation aC of connectors and assemblies — Triaxial tube in tube method	
Electrical Engineering	IEC 62153-4-9: 2018-05 [Flex A]	Metallic communication cable test methods-Part 4-9: Electromagnetic compatibility (EMC) related test method for measuring coupling attenuation of screened balanced cables - Triaxial method	
Electrical Engineering	1000BASE-T1 Channel and Components Requirement-Link Segment Type A(STP): Version 2.0 24 June 2020	Channel and Components Requirements for 1000BASE-T1 Link Segment Type A (STP)	
Electrical Engineering	1000BASE-T1 Channel and Components Requirement-Link Segment Type A(UTP): Version 2.3 12 January 2021.	Channel and Components Requirements for 1000BASE-T1 Link Segment Type A (UTP)	
Electrical Engineering	100BASE-T1 Channel and Components Requirement: Version 1.0 June 15, 2017.	IEEE 100BASE-T1 Definitions for Communication Channel	
Electrical Engineering	DIN 72594-2: 2009-05 [Flex A]	Road vehicles - 50 ohms radio frequency interface (50 Ω RFI) - Part 2: Test procedures	Limitation to: Without 7.1 Gauge test in test group 1, Test group 2 Environmental test, 4 Mechan. shock/ vibration

Testing field	Standard / In-House Procedure / Version	Title of Standard or In-House Procedure	Test Range / Restrictions
Electrical Engineering	ISO 20860-1: 2008-10 [Flex A]	Road vehicles - 50 ohms impedance radio frequency connection system interface - Part 1: Dimensions and electrical requirements	
Electrical Engineering	ISO 20860-2: 2009-03 [Flex A]	Road vehicles - 50 ohms impedance radio frequency connection system interface - Part 2: Test procedures	Limitation to: Without Test group 1 8.1 gauge test, 2 Environmental tests, 4 Mech. shock/ vibration
Electrical Engineering	ISO 20653: 2023-08	Road vehicles — Degrees of protection (IP code) — Protection of electrical equipment against foreign objects, water and access	Limitation to: IPX7 is possible.
Electrical Engineering	LAH V03.825 V06.00R: 2019-08	Component Performance specification for cables Manufactured Coaxial Cables	
Electrical Engineering	LAH V03.825 V06.01R: 2020-02	Component Performance specification for cables Manufactured Coaxial Cables	
Electrical Engineering	QV 61 101: 2018-05	Freigabe- und Validierungsrichtlinie für konfektionierte Koaxialleitungen (FAKRA /Mini Koax) Release and validation guideline for prefabricated coaxial cables (FAKRA/Mini Coax)	
Electrical Engineering	LAH V03 825 D V04.02R: 2020-03	Component Performance Specification for cables, Manufactured HSD and HSDe cables	
Electrical Engineering	QV 61 111: 2018-06	Freigabe- und Validierungsrichtlinie für konfektionierte HSD-Leitungen	
Electrical Engineering	LAH.85E.035.D V03.1: 2022-08	Konfektionierte Multi Gigabit Shielded Twisted Pair Leitungen Verarbeitung von HF-Norm- und Wiederhol-Teilen	

Testing field	Standard / In-House Procedure / Version	Title of Standard or In-House Procedure	Test Range / Restrictions
Electrical Engineering	LAH.V03.825.E V05.00R: 2023.02	Bauteil-Lastenheft elektrische Leitungen -Konfektionierte Leitungen für 1000 BASE-T1 Ethernet -Verarbeitung von HF-Norm- und Wiederhol-Teilen	
Electrical Engineering	LAH.4N0.035.K V3.1: 2022.11.18	Bauteillastenheft Testspezifikation mini Koax Component test specification mini Coax Testspezifikation für mini Koax Test specification mini Coax	Limitation to: Without TG2, TG3, TG4, TG5, TG6, TG9, TG12 to TG22, B19.1, B23.3, B23.4 TG28 to TG29, TGZ3, TGZ4, 7.3.7, 7.3.15, 7.3.16
Electrical Engineering	VW 75174: 2018-10	Motor Vehicle Connectors tests	Limitation to: Without TG2, TG3, TG4, TG5, TG6, TG9, TG12 to TG22, L19.3, L19.1, L23.3, L23.4, TG24 to TG31.
Electrical Engineering	VW 75174-3: 2010-04 (LV214, LV214-3)	Motor Vehicle Connectors Test Sequences	Limitation to: Without PG2, PG3, PG4, PG5, PG6, PG9, PG12 to PG22, B19.3, B19.1, B23.3, B23.4, PG24 to PG31.
Electrical Engineering	MBN 10 384: 2010-11 (LV214)	Automotive Connectors Test Specification	Limitation to: Without PG2, PG3, PG4, PG5, PG6, PG9, PG12 to PG22, B19.3, B19.1, B23.3, B23.4, PG24 to PG29
Electrical Engineering	MBN 10 384-3: 2010-11 (LV214-3)	Automotive Connectors Test Procedures	Limitation to: Without PG2, PG3, PG4, PG5, PG6, PG9, PG12 to PG22, B19.3, B19.1, B23.3, B23.4, PG24 to PG29.

Testing field	Standard / In-House Procedure / Version	Title of Standard or In-House Procedure	Test Range / Restrictions
Electrical Engineering	GS 95006-7-1: 2021-11	Wiring harnesses in motor vehicles Plug connectors Tests	Limitation to: Without PG2, PG3, PG4, PG5, PG6, PG9, PG12 to PG22, B21.1, B23.1, B19.1, B23.2, B23.4, B23.5, B23.6, B23.8, PG24 to PG29.
Electrical Engineering	SAE/USCAR17-6: 2023-07	Performance Specification for Automotive RF Connector Systems	Limitation to: Without 4.2.2.2 Mating Under Side load 4.2.4 Connector-to-Connector Audible Click Test 4.2.6 Resistance to Applied Torque 4.4.4 Capacitance 4.5.1 Thermal Shock Environmental Conditioning
Electrical Engineering	SAE/USCAR 21 Revision 4: 2021-01	Performance Specification for Cable-to-Terminal Electrical Crimps	Limitation to: 4.5.1 Electric Current Cycling Test (ECC) 4.5.2 Accelerated Environmental Exposure Test (ENV) 4.5.5 Thermal Shock Conditioning Procedure 4.5.6 Voltage Drop Measurement Procedure

Testing field	Standard / In-House Procedure / Version	Title of Standard or In-House Procedure	Test Range / Restrictions
Electrical Engineering	SAE/USCAR-2 Revision 8: 2022-06	Performance Specification for Automotive Electrical Connector Systems	Limitation to: 5.1.7 Connector and/or Terminal Cycling 5.1.8 Visual Inspection 5.1.10 Mat Seal Sample Preparation 5.2.1 Terminal to Terminal Engage/Disengage Force 5.2.2 Terminal Bend Resistance 5.3.1 Dry Circuit Resistance 5.4.1 Terminal - Connector Insertion/Retention and Forward Stop Force 5.4.2 Connector-Connector Mating/Unmating/Retention /Lock Deflection Forces (Non-Assist) 5.4.4 Polarization Feature Effectiveness 5.4.8 Connector Drop Test 5.4.9 Cavity Damage Susceptibility 5.5.1 Insulation Resistance 5.6.2 Temperature/Humidity Cycling 5.6.3 High Temperature Exposure are possible.
Electrical Engineering	Q/JLY J7111620A: 2020-12	Audio / video FAKRA & HSD Special wire assembly technical requirement – Enterprise Standard of Zhejinag Geely Automobile Research Institute Co.,Ltd	Limitation to: Without 5.2.9 Torsion test 5.2.18 Vibration test 5.2.20 Bending test
Electrical Engineering	Q/JLY J7111175B: 2022-10	Technical Specification for Audio / video FAKRA & HSD Connector – Enterprise Standard of Zhejinag Geely Automobile Research Institute Co.,Ltd	Limitation to: Without 5.2.13 (h), and 5.2.24 to 5.2.26, and 5.2.29 to 5.2.31, and 5.2.33 to 5.2.35

Testing field	Standard / In-House Procedure / Version	Title of Standard or In-House Procedure	Test Range / Restrictions
Electrical Engineering	SMTC 2 861 001: 2013-11	Low-Voltage harness for automobiles design procedure – Enterprise Standard of SAIC MOTOR Technical Center	Limitation to: only 6.1.1 Crimping of terminal possible
Electrical Engineering	SMTC 3 862 001: 2019-09	Connectors for electrical wiring harness test procedure - Enterprise Standard of SAIC MOTOR Technical Center	Limitation to: 7.2.1 Connection and disconnection of terminal 7.2.2 Tensile Strength of Cable Attachment 7.2.3 Side pull test 7.2.4 Terminal Bend Resistance 7.3.1 Terminal-housing insertion force 7.3.2 Terminal retention in housing (7.3.2.3.1-step 8 are impossible) 7.3.3 Connection of assembled connectors 7.3.4 Intentional disconnection of assembled connectors 7.3.5 Unintentional disconnection of assembled Connectors 7.4.1 Contact Resistance-Low Voltage 7.5.1 Insulation Resistance are possible. 7.5.2 Dielectric Strength 7.6.2 Pressure/Vacuum Leak (without 7.6.2.2 step 8) 7.6.5 Temperature/Humidity Test 7.6.6 Thermal Ageing are possible

Testing field	Standard / In-House Procedure / Version	Title of Standard or In-House Procedure	Test Range / Restrictions
Electrical Engineering	SMTC 3 861 004: 2012-04	Low-Voltage vinyl sheath shielded cable – Enterprise Standard of SAIC MOTOR Technical Center	Limitation to: 6.1 Construction of individual cores 6.2 Test of diameter 6.3 Wall-thickness of sheath are possible
Electrical Engineering	SMTC 3 861 003: 2012-09	Low-Voltage for automobile cable test procedure – Enterprise Standard of SAIC MOTOR Technical Center	Limitation to: 9 Dimensional check (without 9.5 Measurement of conductor lay length) 10.1 Conductor resistance 11.2 Adhesion of insulating layer to conductor are possible
Electrical Engineering	CTS-17.01.01.41-a1: 2019-05	Technical Specification for FAKRA Wire Harness for Automobiles – CHANGAN	Limitation to: 7.2 Appearance and dimensions 7.3.1 Connector bonding force 7.3.2 Connector disengagement force 7.3.3 Connector locking retention force 7.3.4 Connector cable retention force 7.3.5 Unlocking force 7.4 Electrical performance without 7.4.1 contact resistance. and 7.4.3 withstand high voltage 7.5 Signal integrity test 7.7.1 Heat resistance 7.7.6 Temperature/ humidity cycle are possible

Testing field	Standard / In-House Procedure / Version	Title of Standard or In-House Procedure	Test Range / Restrictions
Electrical Engineering	CTS-17.01.01.40-a1: 2019-05	Technical Specification for HSD Harness for Automobiles – CHANGAN	Limitation to: 7.2 Appearance and dimensions 7.3 Mechanical properties 7.4 Electrical performance (without 7.4.1 contact resistance. and 7.4.3 withstand high voltage) 7.5 Signal integrity test without eye chart 7.7.1 Heat resistance 7.7.3 Temperature/humidity cycle are possible

3 Test range: mechanical tests, [Flex A]

Testing field	Standard / In-House Procedure / Version	Title of Standard or In-House Procedure	Test Range / Restrictions
Mechanical tests	DIN EN 60512-1-2: 2003-01 [Flex A]	Connectors for electronic equipment - Tests and measurements - Part 1-2: General examination; Test 1b: Examination of dimension and mass	Without mass
Mechanical tests	DIN EN 60512-13-1: 2006-11 [Flex A] with corrigendum: 2008-11 [Flex A]	Connectors for electronic equipment - Tests and measurements - Part 13-1: Mechanical operation tests - Test 13a: Engaging and separating forces	
Mechanical tests	DIN EN 60512-13-2: 2006-11 [Flex A] with corrigendum: 2008-11 [Flex A]	Connectors for electronic equipment - Tests and measurements - Part 13-2: Mechanical operation tests - Test 13b: Insertion and withdrawal forces	
Mechanical tests	DIN EN 60512-13-5: 2006-11 [Flex A] with corrigendum: 2008-11 [Flex A]	Connectors for electronic equipment - Tests and measurements - Part 13-5: Mechanical operation tests - Test 13e: Polarizing and keying method	

Testing field	Standard / In-House Procedure / Version	Title of Standard or In-House Procedure	Test Range / Restrictions
Mechanical tests	DIN EN 60512-15-6: 2009-03 [Flex A]	Connectors for electronic equipment - Tests and measurements - Part 15-6: Connector tests (mechanical) - Test 15f: Effectiveness of connector coupling devices	
Mechanical tests	DIN EN 60512-16-4: 2009-03 [Flex A]	Connectors for electronic equipment - Tests and measurements - Part 16-4: Mechanical tests on contacts and terminations - Test 16d: Tensile strength (crimped connections)	
Mechanical tests	VW 60330: 2013-12	Crimp Connections; Solderless Electrical Connections	Limitation to: Chap. 4.2.1 General Chap. 4.2.2 Stripping Chap. 4.3.1 Contact element Chap. 5.2 Crimp equipment are impossible

4 Test range: Climate simulation, [Flex A]

Testing field	Standard / In-House Procedure / Version	Title of Standard or In-House Procedure	Test Range / Restrictions
Climate tests	DIN EN 60068-2-1: 2008-01 [Flex A]	Environmental testing - Part 2-1: Tests - Test A: Cold	Without Ascertaining high or low air velocity in the test chamber
Climate tests	DIN EN 60068-2-2 2008-05 [Flex A]	Environmental testing - Part 2-1: Tests - Test B: Dry Heat	Without Ascertaining high or low air velocity in the test chamber
Climate tests	DIN EN 60068-2-30 2006-06 [Flex A]	Environmental testing - Part 2-30: Tests – Test b: Damp heat, cyclic (12 h + 12 h cycle)	
Climate tests	DIN EN IEC 60068-2-38 2022-09 [Flex A]	Environmental testing - Part 2-38: Tests – Test /AD: Composite temperature/humidity cyclic test	

Abbreviations used:

DIN	Deutsches Institut für Normung e.V.
EN	European Standard
ISO	International Organization for Standardization
CTS	CHANGAN Technical Specification
EMC	electromagnetic compatibility
LAH	Lastenheft (specification sheet)
SMTC	SAIC Motor Technical Center
VDE	Verband Deutscher Elektrotechniker (Association for Electrical, Electronic & Information Technologies)
VW	Volkswagen Aktiengesellschaft