List of Test Methods – Location MD(CN.B)

Created or updated by	Review and release Division / department or process owner	Conformity with the integrated management system (IMS)
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Revision status	70034608	**Validity starts from** 01 / 2025	**Validity review on** 01 / 2030
Range of application and languages	☐ MD Group ☐ MD(D) ☐ MD(CZ) ☒ MD(CN) ☐ MD(MX) ☐ MD(BG)	☒ EN ☐ DE ☐ CS ☐ ZH ☐ ES ☐ BG	English German Czech Chinese Spanish Bulgarian
Original language version **(In case of doubt, this language prevails.)**	English		
Involved divisions / departments	n/a		

The list of test methods is intended to provide an overview of the accredited/non-accredited methods at the respective location in the test laboratory. The revision statuses specified in this document comply with those in the DAkkS certificate appendix or with a subsequent version that is within the framework of the flexible accreditation.
In addition to this document, the certificate of the German national accreditation body (Deutsche Akkreditierungsstelle GmbH) also applies with the tests regarding the fields specified on the certificate.
The following list contains all test methods including the publication date.

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1 List of test methods

1.1 Test range: Electrical engineering / EMC

Special field	Standard or test method / publication date	Title of the standard or test method	Limitations regarding the test method	Test method	
				Accr.	Non-accr.
Electrical engineering	**DIN EN 13018: 2016-06**	Non-destructive testing - Visual testing - General principles		X	
	DIN EN 50289-1-2: 2002-02 (Withdrawn)	Communication cables - Specifications for test methods - Part 1-2: Electrical test methods; DC resistance			X
	DIN EN 50289-1-2, VDE 0819-289-1-2: 2024-01	Communication cables - Specifications for test methods - Part 1-2: Electrical test methods; DC resistance			X
	DIN EN 50289-1-3: 2002-02	Communication cables - Specifications for test methods - Part 1-3: Electrical test methods; Dielectric strength	Limitations: only DC voltage is possible	X	
	DIN EN 50289-1-3: 2002-02	Communication cables - Specifications for test methods - Part 1-3: Electrical test methods; Dielectric strength			X
	DIN EN 50289-1-4: 2002-02	Communication cables - Specifications for test methods - Part 1-4: Electrical test methods; Insulation resistance		X	
	DIN EN 50289-1-5: 2002-02	Communication cables - Specifications for test methods - Part 1-5: Electrical test methods; Capacitance			X
	DIN EN 50289-1-6: 2002-12	Communication cables - Specifications for test methods- Part 1-6: Electrical test methods - Electromagnetic performance	Limitations: 6.Transferimpedance, triaxial method; 8. Screening attenuation test method; triaxial method are possible		X
	IEC 62153-4-3: 2013-10	Metallic communication cable test methods Part 4-3: Electromagnetic compatibility (EMC) — Surface transfer impedance —Triaxial method			X
	IEC 62153-4-4: 2015-04	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			X
	DIN EN IEC 62153-4-7, VDE 0819-153-4-7: 2023-06	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			X

Special field	Standard or test method / publication date	Title of the standard or test method	Limitations regarding the test method	Test method	
				Accr.	Non-accr.
	IEC 62153-4-7: 2021-09	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			X
	IEC 62153-4-9: 2018-05	Metallic communication cable test methods-Part 4-9: Electromagnetic compatibility (EMC) related test method for measuring coupling attenuation of screened balanced cables - Triaxial method			X
	DIN EN 50289-1-8, VDE 0819-289-1-8: 2018-02	Communication cables - Specifications for test methods - Part 1-8: Electrical test methods - Attenuation		X	
	DIN EN 50289-1-9, VDE 0819-289-1-9: 2018-01	Communication cables - Specifications for test methods - Part 1-9: Electrical test methods - Unbalance attenuation (transverse conversion loss TCL transverse conversion transfer loss TCTL)		X	
	DIN EN 50289-1-10: 2002-07	Communication cables - Specifications for test methods - Part 1-10: Electrical test methods; Crosstalk	Is performed without balun measuring technique	X	
	DIN EN 50289-1-11, VDE 0819-289-1-11: 2018-08	Communication cables - Specifications for test methods - Part 1-11: Electrical test methods - Characteristic impedance, input impedance, return loss		X	
	DIN EN 60512-1-1: 2003-01	Connectors for electronic equipment - Tests and measurements - Part 1-1: General examination; Test 1a: Visual examination		X	
	DIN EN 60512-2-1: 2003-01	Connectors for electronic equipment - Tests and measurements - Part 2-1: Electrical continuity and contact resistance tests; Test 2a: Contact resistance; Millivolt level method			X
	DIN EN 60512-2-5 2e: 2004-01	Connectors for electronic equipment - Tests and measurements - Part 2-5: Electrical continuity and contact resistance tests - Test 2e: Contact disturbance			X
	DIN EN 60512-3-1: 2003-01	Connectors for electronic equipment - Tests and measurements - Part 3-1: Insulation tests; Test 3a: Insulation resistance		X	
	DIN EN 60512-4-1: 2004-01	Connectors for electronic equipment - Tests and measurements - Part 4-1: Voltage stress tests - Test 4a: Voltage proof	Limitations: only DC voltage is possible	X	

Special field	Standard or test method / publication date	Title of the standard or test method	Limitations regarding the test method	Test method	
				Accr.	Non-accr.
	DIN EN 60512-4-1: 2004-01	Connectors for electronic equipment - Tests and measurements - Part 4-1: Voltage stress tests - Test 4a: Voltage proof			X
	DIN EN 60512-13-5: 2006-11 With corrigendum: 2008-11	Connectors for electronic equipment - Tests and measurements - Part 13-5: Mechanical operation tests - Test 13e: Polarizing and keying method		X	
	DIN EN 60512-25-1: 2002-08	Connectors for electronic equipment - Tests and measurements - Part 25-1: Test 25a: Crosstalk ratio		X	
	DIN EN 60512-25-2: 2002-12	Connectors for electronic equipment - Tests and measurements - Part 25-2: Test 25b: Attenuation (insertion loss)		X	
	DIN EN 60512-25-5: 2005-05	Connectors for electronic equipment - Tests and measurements - Part 25-5: Test 25e - Return loss		X	
	DIN EN 60512-25-7: 2005-12	Connectors for electronic equipment - Tests and measurements - Part 25-7: Test 25g - Impedance, reflection coefficient and standing voltage wave ratio (VSWR)		X	
	DIN 72594-2: 2009-05	Road vehicles - 50 ohm radio frequency interface (50 Ω RFI) - Part 2: Test procedures	In case of chapter 6.6, the currently valid standard is used Limitations: test group 2 environmental test; test group 3 temperature/ humidity cycling; 4 mech. shock/vibration; 5 temperature; chapter 6.6 RF leakage are impossible	X	
	ISO 20860-1: 2008-10	Road vehicles - 50 ohms impedance radio frequency connection system interface - Part 1: Dimensions and electrical requirements		X	
	ISO 20860-2: 2009-03	Road vehicles - 50 ohms impedance radio frequency connection system interface - Part 2: Test procedures	In case of chapter 7.7, the currently valid standard is used Limitations: test group 2 environmental test; test group 3 temperature/ humidity cycling; 4 mech. shock/vibration; 5 temperature; 7.4 Dielectric withstand voltage; chapter 7.7 RF leakage are impossible	X	

Special field	Standard or test method / publication date	Title of the standard or test method	Limitations regarding the test method	Test method	
				Accr.	Non-accr.
	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)	Limitations: 5.1 Measurement Setups for Connectors; 6.1.1 Measurement for connectors in context of SCC; 6.1.2 Requirements for cable in context of SCC; 6.2.1 Requirements for connectors in context of SCC; 6.2.2 Requirements for cables in context of SCC are impossible		X
	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)	Limitations: 5.1 Measurement Setups for Connectors; 6.1.1 Requirements for connectors (SCC Context); 6.1.2 Requirements for cable (SCC Context); 6.2.1 Requirements for connectors (ES Context); 6.2.2 Requirements for cables (ES Context)-Informative are impossible		X
	100BASE-T1 Channel and Components Requirement Version 1.0: 15 June 2017	IEEE 100BASE-T1 Definitions for Communication Channel	Limitations: 4.4 Cable evaluation; 4.5 Connector evaluation; 5.1.1 Requirements for cables (SCC); 5.1.2 Requirements for connectors (SCC); 5.2.1 Requirements for cables (ES); 5.2.2 Requirements for connectors (ES) are impossible		X
	BMW GS 95006-7-1: 2016-03 (LV 214) (Withdrawn)	Wiring harnesses in motor vehicles – Plug connector – Tests	Limitations: PG0; PG1; PG4; PG7; PG8; PG10; PG11 are possible from PG23 only B23.3 and B23.4 are possible		X
	BMW GS 95006-7-1: 2021-11	Wiring harnesses in motor vehicles – Plug connector – Tests	Limitations: PG0; PG1; PG4; PG7; PG8; PG10; PG11 are possible from PG23 only B23.3 and B23.4 are possible		X

Special field	Standard or test method / publication date	Title of the standard or test method	Limitations regarding the test method	Test method	
				Accr.	Non-accr.
	BMW GS 95007-5-1: 2018-09	Radio-frequency cables for motor vehicles – Coaxial cables – Requirements, tests	Limitations: Testing group 10: Cable construction; Testing group 11.1-11.3: HF properties; 12.1: Insulation strippability; 12.5.1: Static bending test; 12.7.2: Dielectric strength are possible		X
	QV 61 101: 2018-05	Release and validation guideline for prefabricated coaxial cables (FAKRA / Mini Coax)	Limitations: M-04 Alternating bending stress; M-05 Dynamic tensile test; K-01 High / low temperature storage are impossible		X
	QV 61 111: 2018-06	Release and validation guideline for prefabricated HSD-cables	Limitations: M-04 Alternating bending stress; M-05 Dynamic tensile test; K-01 High / low temperature storage are impossible		X
	LAH V03 825 V06.00R: 2019-08 (Withdrawn)	Component Performance Specification for Cables – Manufactured Coaxial Cables – Processing of RF standard parts and multi-use parts	Limitations: E04 Screening attenuation; M04 Dyn. tensile test are impossible	X	
	LAH V03 825 V06.00R: 2019-08 (Withdrawn)	Component Performance Specification for Cables – Manufactured Coaxial Cables – Processing of RF standard parts and multi-use parts	Limitations: M04 Dyn. tensile test is impossible		X
	LAH V03 825 V06.01R: 2020-02	Component Performance Specification for Cables – Manufactured Coaxial Cables	Limitations: E04 Screening attenuation; M04 Dyn. tensile test are impossible	X	
	LAH V03 825 V06.01R: 2020-02	Component Performance Specification for Cables – Manufactured Coaxial Cables	Limitations: M04 Dyn. tensile test is impossible		X
	LAH V03 825 D V04.02R: 2020-03	Component Performance Specification for Cables – Manufactured HSD and HSDe cables	Limitations: E01 Contact resistance; E05 Screening attenuation are impossible	X	
	LAH V03 825 D V04.02R: 2020-03	Component Performance Specification for Cables – Manufactured HSD and HSDe cables			X
	LAH.85E.035.D V03.1: 2022-08	Konfektionierte Multi Gigabit Shielded Twisted Pair Leitungen Verarbeitung von HF-Norm- und Wiederhol-Teilen			X

Special field	Standard or test method / publication date	Title of the standard or test method	Limitations regarding the test method	Test method	
				Accr.	Non-accr.
	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	Limitations: Without M-04 Wechselbiegebelastung (Alternating bending load); M-06 Dynamische Zugprüfung (Dynamic tensile test); K-01 Hoch-/Tieftemperaturlagerung (High/low temperature storage) are impossible		X
	LAH.4N0.035.K V3.1: 2022-11	Bauteillastenheft Testspezifikation mini Koax Component test specification mini Coax Testspezifikation für mini Koax Test specification mini Coax	Limitations: TG2; TG3; TG5; TG6; TG9; TG12 to TG22; B19.3; B19.1; B23.3; B23.4; TG28 to TG29; TGZ3; TGZ4; 7.3.15; 7.3.16 are impossible		X
	MBN 10384: 2010-11 (LV 214)	Motor Vehicle Connectors – Test Specification	Limitations: PG0; PG1; PG4; PG7; PG8; PG10; PG11 are possible from PG23 only B23.1 and B23.2 are possible		X
	SAE/USCAR-2-7: 2020-02 (Withdrawn)	Performance Specification for Automotive Electrical Connector Systems	Limitations: Maximum Test Current Capability; Voltage drop; Current Cycling; Vibration / Mechanical Shock; Connector-to-connector Audible Click Test; Connector Seal Retention – Unmated Connector; Fluid Resistance; High Pressure Spray; Pressure/Vacuumleak are impossible		X
	SAE/USCAR-17-5: 2016-11 (Withdrawn)	Performance Specification for Automotive RF Connector Systems	Limitations: Mating Under Side load; Connector-to-connector Audible Click Test; Resistance to Applied Torque; Environmental tests are impossible		X

Special field	Standard or test method / publication date	Title of the standard or test method	Limitations regarding the test method	Test method	
				Accr.	Non-accr.
	SAE/USCAR17-6: 2023-07	Performance Specification for Automotive RF Connector Systems	Limitations: 4.2.2.2 Mating Under Side load; 4.2.4 Connector-to-Connector Audible Click Test; 4.2.6 Resistance to Applied Torque; 4.5.1 Thermal Shock Environmental Conditioning; 4.5.2 Temperature / Humidity Cycle Environmental Conditioning are impossible		X
	SAE/USCAR-21-4: 2020-01	Performance Specification for Cable-to-Terminal Electrical Crimps	Limitations: Electrical Current Cycling Test (ECC); ENV; Accelerated Temperature/Humidity Cycle Conditioning; Thermal Shock; Voltage Drop; are impossible		X
	VW 75174: 2018-10	Motor Vehicle Connectors – Test	Limitations: PG0; PG1; PG4; PG7; PG8; PG10; PG11 are possible from PG23 only B23.1 and B23.2 are possible		X
	VW 75206-1: 2008-10 (Withdrawn)	Radio-Frequency Cables in Motor Vehicles - Requirements for Coaxial Cables	Limitations: Testing group 5: Cable structure; Testing group 6: RF properties (except 6.5 and 6.6); 7.1: Insulation strippability; 7.5.2: Static bending test; 7.7: Electrical properties are possible		X
	VW 75206-1: 2020-11	Radio-Frequency Cables in Motor Vehicles - Requirements for Coaxial Cables	Limitations: Testing group 5: Cable structure; Testing group 6: RF properties (except 6.5 and 6.6); 7.1: Insulation strippability; 7.5.2: Static bending test; 7.7: Electrical properties are possible		X

Special field	Standard or test method / publication date	Title of the standard or test method	Limitations regarding the test method	Test method	
				Accr.	Non-accr.
	Q/JLY J7111620A: 2020-12	Audio / video FAKRA & HSD Special wire assembly technical requirement – Enterprise Standard of Zhejinag Geely Automobile Research Institute Co.,Ltd	Limitations: 5.2.13 High pressure test (AC voltage); 5.2.9 Torsion test; 5.2.13 High pressure test; 5.2.16 Shielding effectiveness; 5.2.18 Vibration test; 5.2.19 Cycling bending load; 5.2.20 Bending test; 5.2.21 High/low temperature storage; 5.2.22 Temperature and humidity cycle; 5.2.23 Thermal aging test are impossible	X	
	Q/JLY J7111620A: 2020-12	Audio / video FAKRA & HSD Special wire assembly technical requirement – Enterprise Standard of Zhejinag Geely Automobile Research Institute Co.,Ltd	Limitations: 5.2.9 Torsion test; 5.2.18 Vibration test; 5.2.19 Cycling bending load; 5.2.20 Bending test; 5.2.21 High/low temperature storage; 5.2.22 Temperature and humidity cycle; 5.2.23 Thermal aging test are impossible		X
	Q/JLY J7111175B: 2022-10	Technical Specification for Audio / video FAKRA & HSD Connector – Enterprise Standard of Zhejinag Geely Automobile Research Institute Co.,Ltd	Limitations: 5.2.12 until 5.2.14 and 5.2.20; 5.2.24 to 5.2.35 are impossible	X	
	Q/JLY J7111175B: 2022-10	Technical Specification for Audio / video FAKRA & HSD Connector – Enterprise Standard of Zhejinag Geely Automobile Research Institute Co.,Ltd	Limitations: 5.2.13 (h) and 5.2.24 to 5.2.35 are impossible		X
	SMTC 2 861 001: 2013-11	Low-Voltage harness for automobiles design procedure – Enterprise Standard of SAIC MOTOR Technical Center	Limitations: only 6.1.1 Crimping of terminal is possible	X	

Special field	Standard or test method / publication date	Title of the standard or test method	Limitations regarding the test method	Test method	
				Accr.	Non-accr.
	SMTC 3 862 001: 2019-09	Test method of automobile connectors - Enterprise Standard of SAIC MOTOR Technical Center	Limitations: 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	X	
	SMTC 3 862 001: 2019-09	Test method of automobile connectors - Enterprise Standard of SAIC MOTOR Technical Center	Limitations: 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; 7.5.2 Dielectric Strength; 7.6.2 Pressure/Vacuum Leak (without 7.6.2.2 step 8) are possible		X

Special field	Standard or test method / publication date	Title of the standard or test method	Limitations regarding the test method	Test method	
				Accr.	Non-accr.
	SMTC 3 861 004: 2012-04	Low-Voltage vinyl sheath shielded cable – Enterprise Standard of SAIC MOTOR Technical Center	Limitations: 6.1 Construction of individual cores; 6.2 Test of diameter; 6.3 Wall-thickness of sheath are possible	X	
	SMTC 3 861 003: 2012-09	Low-Voltage for automobile cable test procedure – Enterprise Standard of SAIC MOTOR Technical Center	Limitations: 9 Dimensional check (9.5 is impossible); 10.1 Conductor resistance; 11.2 Adhesion of insulating layer to conductor are possible	X	
	CTS-17.01.01.41-a1: 2019-05	Technical Specification for FAKRA Wire Harness for Automobiles – CHANGAN	Limitations: 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; 7.4.3 withstand high voltage; 7.5 Signal integrity test without RF leakage are possible	X	
	CTS-17.01.01.41-a1: 2019-05	Technical Specification for FAKRA Wire Harness for Automobiles – CHANGAN	Limitations: 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; 7.4.3 withstand high voltage; 7.5 Signal integrity test are possible		X

Special field	Standard or test method / publication date	Title of the standard or test method	Limitations regarding the test method	Test method	
				Accr.	Non-accr.
	CTS-17.01.01.40-a1: 2019-05	Technical Specification for HSD Harness for Automobiles – CHANGAN	Limitations: 7.2 Appearance and dimensions; 7.3 Mechanical properties; 7.4 Electrical performance without; 7.4.1 contact resistance; 7.4.3 withstand high voltage; 7.5 Signal integrity test without eye chart are possible	X	
	CTS-17.01.01.40-a1: 2019-05	Technical Specification for HSD Harness for Automobiles – CHANGAN	Limitations: 7.2 Appearance and dimensions; 7.3 Mechanical properties; 7.4 Electrical performance without; 7.4.1 contact resistance; 7.5 Signal integrity test without eye chart are possible		X

1.2 Test range: Mechanical tests

Special field	Standard or test method / publication date	Title of the standard or test method	Limitations regarding the test method	Test method	
				Accr.	Non-accr.
Mechanical tests	**DIN EN 50289-3-17: 2002-09**	Communication cables - Specifications for test methods - Part 3-17: Mechanical test methods; Adhesion of dielectric and sheath			X
	DIN EN 60512-1-2: 2003-01	Connectors for electronic equipment - Tests and measurements - Part 1-2: General examination; Test 1b: Examination of dimension and mass		X	
	DIN EN 60512-13-1: 2006-11 With corrigendum: 2008-11	Connectors for electronic equipment - Tests and measurements - Part 13-1: Mechanical operation tests - Test 13a: Engaging and separating forces		X	
	DIN EN 60512-13-2: 2006-11 With corrigendum: 2008-11	Connectors for electronic equipment - Tests and measurements - Part 13-2: Mechanical operation tests - Test 13b: Insertion and withdrawal forces		X	
	DIN EN 60512-15-6: 2009-03	Connectors for electronic equipment - Tests and measurements - Part 15-6: Connector tests (mechanical) - Test 15f: Effectiveness of connector coupling devices		X	
	DIN EN 60512-16-4: 2009-03	Connectors for electronic equipment - Tests and measurements - Part 16-4: Mechanical tests on contacts and terminations - Test 16d: Tensile strength (crimped connections)		X	
	VW 60330: 2013-12	Crimp Connections Solderless electrical connections	Limitations: Chapter 4.2.1 General; Chapter 4.2.2 Stripping; Chapter 4.3.1 Contact elements; Chapter 5.2 Crimping devices are impossible	X	

2 Used abbreviations

- Accr. Accredited test methods
- Non-accr. Non-accredited test methods
- BMW Bayerische Motoren Werke Aktiengesellschaft
- DIN German Institute for Standardization
- EMC Electromagnetic compatibility
- EN European standard
- GS Group standard
- IEC International Electrotechnical Commission
- ISO International Organization for Standardization
- LAH Specification sheet
- LV Delivery specifications
- MBN Mercedes Benz standard
- VDE Association for Electrical, Electronic & Information Technologies
- VW Volkswagen Aktiengesellschaft

3 Modification history

Revision status	Originator	Type of modification	Modification date
70034608	Han Jianxin	New creation This document replaces document C11439/C10543	01/13/2025

Modifications are carried out exclusively by the technically responsible organizational unit.
The last modifications are always highlighted with blue font color.