

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

Created or updated by	Review and release Division / department or process owner	Conformity with the integrated management system (IMS)	
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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	DIN EN 50289-1-2: 2002-02 (Withdrawn)	Communication cables - Specifications for test methods - Part 1-2: Electrical test methods; DC resistance		X	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: 2024-02	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		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	Limitation to: 6.Transferimpedance, triaxial method 8. Screening attenuation test method, triaxial method are possible	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	

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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 60512-1-1: 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		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	
	IEC 62153-4-3, CEI 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, CEI 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	

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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 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	
	IEC 62153-4-7, CEI 62153-4-7: 2021-07	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, CEI 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 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 <u>Limitations:</u> test group 2 environmental test; 4 mech. shock/vibration;	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 <u>Limitations:</u> 2 environmental test; test group 4 mech. shock/vibration;	X	
	1000BASE-T1 Channel and Components Requirement-Link Segment Type A(STP) Version 2.0: 2020-06	Channel and Components Requirements for 1000BASE-T1 Link Segment Type A (STP)		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(UTP) Version 2.3: 2021-01	Channel and Components Requirements for 1000BASE-T1 Link Segment Type A (UTP)		X	
	100BASE-T1 Channel and Components Requirement Version 1.0: 2017-06	IEEE 100BASE-T1 Definitions for Communication Channel		X	
	BMW GS 95006-7-1: 2021-11	Wiring harnesses in motor vehicles – Plug connector – Tests	<u>Limitations:</u> PG0; PG1; PG7; PG8; PG10; PG11 are possible	X	
	BMW GS 95006-7-1: 2021-11	Wiring harnesses in motor vehicles – Plug connector – Tests	<u>Limitations:</u> Without PG2, PG3, PG4, PG5, PG6, PG9, PG12 to PG19, PG22, B21.1, B23.1, B19.1, B23.2, B23.4, B23.5, B23.6, B23.8, PG24 to PG27, PG29.		X
	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)		X	
	QV 61 111: 2018-06	Freigabe- und Validierungsrichtlinie für konfektionierte HSD-Leitungen		X	
	LAH V03 825 V06.00R: 2019-08	Component Performance Specification for Cables – Manufactured Coaxial Cables – Processing of RF standard parts and multi-use parts		X	
	LAH V03 825 V06.01R: 2020-02	Component Performance Specification for Cables – Manufactured Coaxial Cables		X	
	LAH V03 825 D V04.02R: 2020-03	Component Performance Specification for Cables – Manufactured HSD and HSDc cables		X	
	LAH.85E.035.D V04: 2025-06	Konfektionierte Multi Gigabit Shielded Twisted Pair Leitungen Verarbeitung von HF-Norm- und Wiederhol-Teilen		X	
	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		X	

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				Accr.	Non-accr.
	LAH.4N0.035.K V4: 2025-12	Bauteillastenheft Testspezifikation mini Koax Component test specification mini Coax Testspezifikation für mini Koax Test specification mini Coax	<u>Limitation to:</u> 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 and 7.3.16 are impossible	X	
	MBN 10384: 2010-11 (LV 214)	Motor Vehicle Connectors – Test Specification	<u>Limitations:</u> Without PG2, PG3, PG4, PG5, PG6, PG9, PG12 to PG22, B19.3, B19.1, B23.3, B23.4, PG24 to PG29	X	
	MBN 10 384-3: 2010-11 (LV214-3)	Automotive Connectors Test Procedures	<u>Limitation to:</u> Without PG2, PG3, PG4, PG5, PG6, PG9, PG12 to PG22, B19.3, B19.1, B23.3, B23.4, PG24 to PG29.	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/USCAR-2 Revision 9: 2024-12	Performance Specification for Automotive Electrical Connector Systems	<u>Limitations:</u> 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) 5.4.3 Connector to Connector Mate/Unmate Forces (Mechanical Assist) 5.4.4 Polarization Feature Effectiveness 5.4.5 Miscellaneous Component Engage/Disengage Force 5.4.7 Connector-to-Connector Audible Click 5.4.8 Connector Drop Test 5.4.9 Cavity Damage Susceptibility 5.4.10 Terminal/Cavity Polarization Test 5.4.11 Connector Mounting Feature Mechanical Strength 5.4.12 Mechanical Assist Integrity (Connectors with Mechanical Assist Only) 5.4.14 Connector Seal Retention - Mated Connector 5.5.1 Insulation Resistance 5.6.1 Thermal Shock 5.6.2 Temperature/Humidity Cycling 5.6.3 High Temperature Exposure 5.6.5 Submersion 5.5.6 Pressure/Vacuum Leak 5.7.1 Header Pin Retention are possible.	X	

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				Accr.	Non-accr.
	SAE/USCAR17-7: 2025-04	Performance Specification for Automotive RF Connector Systems		X	
	SAE/USCAR 21 Revision 4: 2021-01	Performance Specification for Cable-to-Terminal Electrical Crimps	<u>Limitations:</u> 4.5.1 Electric Current Cycling Test (ECC) 4.5.2 Accelerated Environmental Exposure Test (ENV) 4.5.6 Voltage Drop Measurement Procedure	X	
	VW 75174: 2018-10	Motor Vehicle Connectors – Test	<u>Limitations:</u> Without TG2, TG3, TG4, TG9, TG12 to TG22, L19.3, L19.1, L23.3, L23.4, TG24 to TG31.	X	
	VW 75174-3: 2010-04 (LV214, LV214-3)	Motor Vehicle Connectors Test Sequences	<u>Limitation to:</u> Without PG2, PG3, PG4, PG5, PG6, PG9, PG12 to PG22, B19.3, B19.1, B23.3, B23.4, PG24 to PG31.	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	<u>Limitations:</u> Without 5.2.9 Torsion test 5.2.18 Vibration test 5.2.20 Bending test	X	
	Q/JLY J7111175B: 2022-10	Technical Specification for Audio / video FAKRA & HSD Connector – Enterprise Standard of Zhejinag Geely Automobile Research Institute Co.,Ltd	<u>Limitations:</u> 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	X	
	SMTC 2 861 001: 2013-11	Low-Voltage harness for automobiles design procedure – Enterprise Standard of SAIC MOTOR Technical Center	<u>Limitations:</u> only 6.1.1 Crimping of terminal is possible	X	

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	SMTC 3 862 001: 2019-09	Test method of automobile connectors - Enterprise Standard of SAIC MOTOR Technical Center	<u>Limitations:</u> 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	X	
	SMTC 3 861 004: 2012-04	Low-Voltage vinyl sheath shielded cable – Enterprise Standard of SAIC MOTOR Technical Center	<u>Limitations:</u> 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	<u>Limitations:</u> 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	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-17.01.01.41-a1: 2019-05	Technical Specification for FAKRA Wire Harness for Automobiles – CHANGAN	<u>Limitations:</u> 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	X	
	CTS-17.01.01.41-a1: 2019-05	Technical Specification for FAKRA Wire Harness for Automobiles – CHANGAN	<u>Limitations:</u> 7.7.1 Heat resistance; 7.7.6 Temperature/ humidity cycle are possible		X
	CTS-17.01.01.40-a1: 2019-05	Technical Specification for HSD Harness for Automobiles – CHANGAN	<u>Limitations:</u> 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	X	
	Q/MAP 3307: 2022-07	Technical Specification of Automotive Coax Cable Assembly			X
	Q/MAP 3310: 2022-08	Technical Specification of 1000 BASE-T1 ETHERNET CABLE ASSEMBLY of Automotive			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	Without 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: 2025-02	Crimp Connections Solderless electrical connections	<u>Limitations:</u> Chapter 4.2.1 General; Chapter 4.2.2 Stripping; Chapter 4.3.1 Contact elements; Chapter 5.2 Crimping devices are impossible	X	

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1.3 Test range: Environmental simulation

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				Accr.	Non-accr.
Environmental simulation	DIN EN 60068-2-1: 2008-01	Environmental testing - Part 2-1: Tests - Test A: Cold	<u>Limitations:</u> Ascertaining high or low air velocity in the test chamber is impossible	X	
	DIN EN 60068-2-2: 2008-05	Environmental testing - Part 2-1: Tests - Test B: Dry Heat	<u>Limitations:</u> Ascertaining high or low air velocity in the test chamber is impossible	X	
	DIN EN 60068-2-30: 2006-06	Environmental testing - Part 2-30: Tests – Test b: Damp heat, cyclic (12 h + 12 h cycle)		X	
	DIN EN IEC 60068-2-38: 2022-09	Environmental testing - Part 2-38: Tests – Test /AD: Composite temperature/humidity cyclic test		X	
	DIN EN 60068-2-14: 2000-08 DIN EN IEC 60068-2-14: 2025-03	Environmental testing - Part 2-14: Tests - Test N: Change of temperature (IEC 60068-2-14:2023); German version EN IEC 60068-2-14:2023	<u>Limitations:</u> Without Nc method.		X

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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
70034605	Han Jianxin	New creation This document replaces document C11439/C10543	01/13/2025
70125976	Hu Youyi	Update the test scope issue date and add the DIN EN 50289-1-5, DIN EN 60068-2-14/IEC 60068-2-14, Q/MAP 3307 and Q/MAP 3310.	29/09/2026

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

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