

# Deutsche Akkreditierungsstelle GmbH

## Annex to the Accreditation Certificate D-PL-12077-01-00 according to ISO/IEC 17025:2005

Period of validity: 2019-04-12 to 2021-04-26 Date of issue: 2019-05-16

Holder of certificate:

**TÜV Rheinland (Guangdong) Ltd.**  
**No.199 Kezhu Road, Science City, Guangzhou Development Zone, Luogang District,**  
**Guangzhou 510663, P.R. China**

At the location:

**No.102, 1F of Southwest and No.205, 2F of West Warehouse Building, No.767**  
**Tianyuan Road, Tianhe District, Guangzhou 510650, Guangdong, P.R. China**

Tests in the fields:

**Electromagnetic Compatibility (EMC), Automotive**

The laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, to use standard test methods listed here with different issue dates or revision status updates. Limitation: for Electro-magnetic Compatibility, Radio and Automotive this is only permitted for standards marked with \*.

The testing laboratory maintains a current list of all testing within the flexible scope of accreditation.

Department	Standard / in house procedure / Version	Title of standard or in house procedure (deviations / modifications of standard)	Test area / reductions
EMC	DIN EN 61000-4-2:2009-12 VDE 0847-4-2:2009-12* (EN 61000-4-2:2009)	Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	

Department	Standard / in house procedure / Version	Title of standard or in house procedure (deviations / modifications of standard)	Test area / reductions
EMC	IEC 61000-4-2:2008*	Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	
EMC	DIN EN 61000-4-3:2011-04 VDE 0847-4-3:2011-04'* (EN 61000-4-2:2006 + A1:2008 + A2:2010)	Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test	Highest Emit Frequency = 3,2GHz
EMC	IEC 61000-4-3:2006 + A1:2007 + A2:2010*	Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test	Highest Emit Frequency = 3,2GHz
EMC	DIN EN 61000-4-4:2013-04 VDE 0847-4-4:2013-04* (EN 61000-4-4:2012)	Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test	Limitation: One Phase only
EMC	IEC 61000-4-4:2012*	Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test	Limitation: One Phase only
EMC	DIN EN 61000-4-5:2019-03 VDE 0847-4-5:2019-03* (EN 61000-4-5:2014 + A1:2017)	Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques – Surge immunity test	Limitation: One Phase only
EMC	IEC 61000-4-5:2014*	Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques – Surge immunity test	Limitation: One Phase only
EMC	DIN EN 61000-4-6:2014-08 VDE 0847-4-6:2014-08* (EN 61000-4-6:2014)	Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques – immunity to conducted disturbances, induced by radio-frequency fields	
EMC	IEC 61000-4-6:2013*	Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques – immunity to conducted disturbances, induced by radio-frequency fields	

Department	Standard / in house procedure / Version	Title of standard or in house procedure (deviations / modifications of standard)	Test area / reductions
EMC	DIN EN 61000-4-8:2010-11 VDE 0847-4-8:2010-11* (EN 61000-4-8:2009)	Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques – Power frequency magnetic field immunity test	
EMC	IEC 61000-4-8:2009*	Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques – Power frequency magnetic field immunity test	
EMC	DIN EN 61000-4-11:2005-02 VDE 0847-4-11:2005-02* (EN 6100-4-11:2014)	Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement techniques – Voltage dips, short interruptions and voltage variations immunity tests	
EMC	IEC 61000-4-11:2004*	Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement techniques – Voltage dips, short interruptions and voltage variations immunity tests	
EMC	DIN EN 61000-4-13:2016-10 VDE 0847-4-13:2016-10* (EN 61000-4-13:2002)	Electromagnetic compatibility (EMC) — Part 4-13: Testing and measurement techniques — Harmonics and interharmonics including mains signalling at a.c. power port, low frequency immunity tests.	
EMC	IEC 61000-4-13:2002+A1*	Electromagnetic compatibility (EMC) — Part 4-13: Testing and measurement techniques — Harmonics and interharmonics including mains signalling at a.c. power port, low frequency immunity tests.	
EMC	DIN EN 61000-3-2:2015-03 VDE 0838-2:2015-03* (EN 61000-3-2:2014)	Electromagnetic compatibility (EMC) - Part 3-2: Limits-Limits for harmonic current emissions (equipment input current ≤ 16A per phase)	Limitation: One Phase only
EMC	IEC 61000-3-2:2014*	Electromagnetic compatibility (EMC) - Part 3-2: Limits-Limits for harmonic current emissions (equipment input current ≤ 16A per phase)	Limitation: One Phase only

Department	Standard / in house procedure / Version	Title of standard or in house procedure (deviations / modifications of standard)	Test area / reductions
EMC	DIN EN 61000-3-3:2014-03 VDE 0838-3:2014-03* (EN 61000-3-3:2013)	Electromagnetic compatibility (EMC) - Part 3-3: Limits-Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current $\leq 16A$ per phase and not subjected to conditional connection	Limitation: One Phase only
EMC	IEC 61000-3-3:2013*	Electromagnetic compatibility (EMC) - Part 3-3: Limits-Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current $\leq 16A$ per phase and not subjected to conditional connection	Limitation: One Phase only
EMC	DIN EN 61000-3-11:2001 VDE 0838-11:2001* (EN 61000-3-11:2000)	Electromagnetic compatibility (EMC) - Part 3-11: Limits-Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current $\leq 75A$ per phase and not subjected to conditional connection	Limitation: One Phase only , only for EUT rated $\leq 16A$
EMC	IEC 61000-3-11:2000*	Electromagnetic compatibility (EMC) - Part 3-11: Limits-Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current $\leq 75A$ per phase and not subjected to conditional connection	Limitation: One Phase only , only for EUT rated $\leq 16A$
EMC	DIN EN 61000-6-1:2007 VDE 0839-6-1:2007* (EN 61000-6-1:2007)	Electromagnetic compatibility (EMC) - Part 6-1: Generic standards – Immunity for residential, commercial and light-industrial environments	
EMC	IEC 61000-6-1:2005*	Electromagnetic compatibility (EMC) - Part 6-1: Generic standards – Immunity for residential, commercial and light-industrial environments	
EMC	DIN EN 61000-6-2:2006 VDE 0839-6-2:2006* (EN 61000-6-2:2005)	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards – Immunity for industrial environments	

Department	Standard / in house procedure / Version	Title of standard or in house procedure (deviations / modifications of standard)	Test area / reductions
EMC	IEC 61000-6-2:2005*	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards – Immunity for industrial environments	
EMC	DIN EN 61000-6-3:2011-09 VDE 0839-6-3:2011-09* (EN 61000-6-3:2007 +A1:2011)	Electromagnetic compatibility (EMC) - Part 6-3: Generic standards – Emission standard for residential, commercial and light-industrial environments	
EMC	IEC 61000-6-3 :2006 +A1:2010)*	Electromagnetic compatibility (EMC) - Part 6-3: Generic standards – Emission standard for residential, commercial and light-industrial environments	
EMC	DIN EN 61000-6-4:2011-09 VDE 0839-6-4:2011-09* (EN 61000-6-4:2017+A1:2011)	Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments	
EMC	IEC 61000-6-4:2006 +A1:2010*	Electromagnetic compatibility (EMC) - Part 6-4: Generic standards – Emission standard for industrial environments	Limitation: Floor standing equipment : On site testing only
EMC	DIN EN 55012:2010-04 VDE 0879-1:2010-04* (EN 55012:2017+A1:2019) (IEC/CISPR 12:2017+A1:2009)	Vehicles, boats and internal combustion engines - Radio disturbance characteristics - Limits and methods of measurement for the protection of off-board receivers	Only for EUT with less than 2 m size and a mass of less than 2500 kg.
EMC	IEC/CISPR 25: 2002*	Vehicles, boats and internal combustion engines - Radio disturbance characteristics - Limits and methods of measurement for the protection of on-board receivers	Limitation: Exclusion: Clause 6.5
EMC	IEC/CISPR 25:1995*	Vehicles, boats and internal combustion engines - Radio disturbance characteristics - Limits and methods of measurement for the protection of on-board receivers	Limitation: Exclusion: Clause 15, 16, 17

Department	Standard / in house procedure / Version	Title of standard or in house procedure (deviations / modifications of standard)	Test area / reductions
EMC	IEC/CISPR 25:2008*	Vehicles, boats and internal combustion engines - Radio disturbance characteristics - Limits and methods of measurement for the protection of on-board receivers	Limitation: Exclusion: Clause 6.5,6.6
EMC	DIN EN 55025:2018-03 VDE 0879-2:2018-03* (EN 55025:2017 + AC:2017 (CISPR 25:2016+COR1:2017)	Vehicles, boats and internal combustion engines - Radio disturbance characteristics - Limits and methods of measurement for the protection of on-board receivers	Limitation: Exclusion: Clause 6.6, annex F and current probe measurement on HV lines for EUTs with shielded power supply systems with electric motor attached to the bench according to figure 1.5(conducted emissions) and figure 1.8 (radiated emissions)
EMC	IEC/CISPR 25:2016*	Vehicles, boats and internal combustion engines - Radio disturbance characteristics - Limits and methods of measurement for the protection of on-board receivers	Limitation: Exclusion: Clause 6.6, annex F and current probe measurement on HV lines for EUTs with shielded power supply systems with electric motor attached to the bench according to figure 1.5(conducted emissions) and figure 1.8 (radiated emissions)

Department	Standard / in house procedure / Version	Title of standard or in house procedure (deviations / modifications of standard)	Test area / reductions
Automotive	ISO 10605:2001*	Road vehicles - Test methods for electrical disturbances from electrostatic discharge	
Automotive	ISO 10605:2008*	Road vehicles - Test methods for electrical disturbances from electrostatic discharge	
Automotive	ISO 11451-4:2006*	Road vehicles - Vehicle test methods for electrical disturbances from narrowband radiated electromagnetic energy - Part 4: Bulk current injection (BCI)	
Automotive	ISO 11452-2:2004*	Road vehicles - Component test methods for electrical disturbances from narrowband radiated electromagnetic energy - Part 2: Absorber-lined shielded enclosure	Limitation: Frequency up to 4.2 GHz, $130\text{MHz} \leq f < 300\text{MHz}$ , $E = 130\text{V/m}$ , $300\text{MHz} \leq f < 1\text{GHz}$ . $E = 200\text{V/m}$
Automotive	ISO 11452-4:2005*	Road vehicles - Component test methods for electrical disturbances from narrowband radiated electromagnetic energy - Part 4: Bulk current injection (BCI)	
Automotive	ISO 11452-4:2011*	Road vehicles - Component test methods for electrical disturbances from narrowband radiated electromagnetic energy - Part 4: Bulk current injection (BCI)	Limitation: Exclusion 6.2 TWC test method
Automotive	ISO 11452-8:2007*	Road vehicles Component test methods for electrical disturbances from narrowband radiated electromagnetic energy Part 8: Immunity to magnetic fields	
Automotive	ISO 11452-9:2012*	Road vehicles Component test methods for electrical disturbances from narrowband radiated electromagnetic energy Part 9: Portable transmitters	Limitation: Frequency up to 4.2 GHz

Department	Standard / in house procedure / Version	Title of standard or in house procedure (deviations / modifications of standard)	Test area / reductions
Automotive	ISO 16750-2:2006*	Road vehicles Environmental conditions and testing for electrical and electronic equipment Part 2: Electrical loads	
Automotive	ISO 16750-4:2006*	Road vehicles Environmental conditions and testing for electrical and electronic equipment Part 4: Climatic loads	Limitation: Exclusion 5.8 No Corrosion test with flow of mixed
Automotive	36-00-808:2004 (Renault standard)	Resistance to electrical disturbance and electromagnetic compatibility instructions concerning electrical ,electronic and pyrotechnic equipment	Limitation: Exclusion 6.2.3 No EQ/IC 09: Immunity to ignition high voltage.
Automotive	28401NDS02[3]:2006 (NISSAN Standard)	EMC specifications of Electrical and electronic parts	Limitation: Exclusion 6.2.3 No EQ/IC 09: Immunity to ignition high voltage.
Automotive	28401NDS02[4]:2008 (NISSAN Standard)	EMC specifications of Electrical and electronic parts	Limitation: Exclusion 6.2.3 No EQ/IC 09: Immunity to ignition high voltage.



Department	Standard / in house procedure / Version	Title of standard or in house procedure (deviations / modifications of standard)	Test area / reductions
Automotive	28401NDS02[5]:2010 (NISSAN Standard)	EMC specifications of Electrical and electronic parts	Limitation: Exclusion 6.2.3 No EQ/IC 09: Immunity to ignition high voltage.
Automotive	28401NDS02[6]:2013 (NISSAN Standard)	EMC specifications of Electrical and electronic parts	Limitation: Exclusion 6.2.3 No EQ/IC 09: Immunity to ignition high voltage.
Automotive	PSA B21 7110:version B 2005 (PSA Standard)	Technical specifications concerning the environment of electronic and electrical equipment electrical characteristics	Limitation: Exclusion 6.2.3 No EQ/IC 09:Immunity to ignition high/low voltage
Automotive	PSA B21 7110:version C 2008 (PSA Standard)	Technical specifications concerning the environment of electronic and electrical equipment electrical characteristics	Limitation: Exclusion 6.2.3 No EQ/IC 09:Immunity to ignition high/low voltage

Department	Standard / in house procedure / Version	Title of standard or in house procedure (deviations / modifications of standard)	Test area / reductions
Automotive	PSA B21 7110:version D 2012 (PSA Standard)	Technical specifications concerning the environment of electronic and electrical equipment electrical characteristics	Limitation: Exclusion 6.2.3 No EQ/IC 09:Immunity to ignition high/low voltage 6.3.2 EQ/IR 06:Immunity to radiated field in reverberation chamber
Automotive	PSA B21 7110:version E 2012 (PSA Standard)	Environment specifications for electrical and electronic equipment electrical characteristics	Limitation: Exclusion 7.2.3 No EQ/IC 09:Immunity to ignition high/low voltage 7.2.5 EQ/IR 06:Immunity to radiated field in reverberation chamber
Automotive	62.21.627:2004 (MG Rover Standard)	Automotive electromagnetic compatibility(EMC)	Exclusion: 6.3 No TEM and stripline method No vehicle test
Automotive	ES-XW7T-1A278-AC:2003 (Ford Standard)	Component and Subsystem Electromagnetic Compatibility Worldwide Requirements and Test Procedures	
Automotive	EMC-CS-2009:2010 (Ford Standard)	Electromagnetic Compatibility Specification For Electrical/Electronic Components and Subsystems	
Automotive	MES PW 67602A:2011 (Mazda Standard)	Electromagnetic Compatibility (EMC) of electronic and electric components used for automobiles and specifies applicable tests and requirements.	Limitation: RI 114: RF immunity, reverberation method.

Department	Standard / in house procedure / Version	Title of standard or in house procedure (deviations / modifications of standard)	Test area / reductions
Automotive	MES PW 67602B:2013 (Mazda Standard)	Automobile Parts Standard	Limitation: RI 114: RF immunity, reverberation method.
Automotive	MES PW 67602C:2015 (Mazda Standard)	Automobile Parts Standard	Limitation: RI 114: RF immunity, reverberation method.
Automotive	GWM3097:2004 (GM Standard)	General Specification for Electrical/Electronic Components and Subsystems, Electromagnetic Compatibility	Limitation: Exclusion 3.4.3 RI, Reverberation Chamber, Mode Tuning, 3.4.4 RI, Reverberation Chamber, Mode Stirring
Automotive	GWM3097:2006 (GM Standard)	General Specification for Electrical/Electronic Components and Subsystems, Electromagnetic Compatibility	Limitation: Exclusion 3.4.3 RI, Reverberation Chamber, Mode Tuning
Automotive	GWM3097:2012 (GM Standard)	General Specification for Electrical/Electronic Components and Subsystems, Electromagnetic Compatibility	Limitation: Exclusion 3.4.3 RI, Reverberation Chamber, Mode Tuning

Department	Standard / in house procedure / Version	Title of standard or in house procedure (deviations / modifications of standard)	Test area / reductions
Automotive	GWM3097:2015 (GM Standard)	General Specification for Electrical/Electronic Components and Subsystems, Electromagnetic Compatibility	Limitation: Exclusion 3.4.3 RI, Reverberation Chamber, Mode Tuning
Automotive	DC11224:2007 (Chrysler Standard)	EMC Performance Requirements --- Components	
Automotive	ISO 7637-2:2004+A1*	Road vehicles - Electrical disturbances from conduction and coupling - Part 2: Electrical transient conduction along supply lines only	
Automotive	ISO 7637-2:2011*	Road vehicles - Electrical disturbances from conduction and coupling - Part 2: Electrical transient conduction along supply lines only	
Automotive	ISO 7637-3:2007*	Road vehicles - Electrical disturbances from conduction and coupling - Part 3: Electrical transient transmission by capacitive and inductive coupling via lines other than supply lines	
Automotive	SAE J1113-4:2004*	Immunity to Radiated Electromagnetic Fields Bulk Current Injection (BCI) Method	
Automotive	SAE J1113-11: 2012 *	Immunity to Conducted Transients on Power Leads	
Automotive	SAE J1113-12:2006 *	Electrical Interference by Conduction and Coupling-Capacitive and Inductive Coupling via Lines Other than Supply Lines	
Automotive	SAE J1113-13:2011 *	Electromagnetic Compatibility Measurement Procedure for Vehicle Components Part 13: Immunity to Electrostatic Discharge	

Department	Standard / in house procedure / Version	Title of standard or in house procedure (deviations / modifications of standard)	Test area / reductions
Automotive	SAE J1113-21:2005 *	Electromagnetic Compatibility Measurement Procedure for Vehicle Components Part 21: Immunity to Electromagnetic Fields, 30 MHz to 18 GHz, Absorber-Lined Chamber	Limitation: Frequency up to 4.2 GHz, 130MHz≤f<300MHz, E=130V/m, 300MHz≤f<1GHz. E=200V/m
Automotive	SAE J1113-41:2006 *	Limits and Methods of Measurement of Radio Disturbance Characteristics of Components and Modules for the Protection of Receivers Used on Board Vehicles	Limitation: No TEM cell method, components only
Automotive	Fiat 7 Z0446:1995 (Fiat Standard)	Bench Test for Electromagnetic Susceptibility of Electronic System By Bulk Current Injection Method (Current Injection at Radio Frequency on Cable Harness)	
Automotive	TL 965:2004	Interference Emission	No vehicle testing, No TEM testing, No stripline testing
Automotive	TL 965:2006	Interference Emission	No vehicle testing, No TEM testing, No stripline testing
Automotive	TL 965:2009	Interference Emission	No vehicle testing, No TEM testing, No stripline testing
Automotive	TL 82066:2006	Electromagnetic compatibility of automotive electronic components- Conducted interferences	No Reduction
Automotive	TL 82166:2011	Electromagnetic compatibility of automotive electronic components - Radiated Interference	No stripline, no full vehicle test
Automotive	TL 82366:2008	Electromagnetic compatibility of automotive electronic components-Coupled Interference on Sensor Cables	

Department	Standard / in house procedure / Version	Title of standard or in house procedure (deviations / modifications of standard)	Test area / reductions
Automotive	TL 82466:2009	Electromagnetic compatibility of automotive electronic components-Immunity Against Electrostatic Discharge	
Automotive	Fiat 9.90111/01: 2012 (Fiat Standard)	Electrical and EMC Performance Requirements – E/E Components	
Automotive	TL 82566:2006	Electromagnetic Compatibility of Automotive Electronic Components - Interference Immunity with Respect to Magnetic Fields	
Automotive	TL 81000:2013	Electromagnetic Compatibility of Automotive Electronic Components.	Limitation: No stripline testing; no full vehicle test.
Automotive	TL 81000:2016	Electromagnetic Compatibility of Automotive Electronic Components.	Limitation: vehicle test.
Automotive	TL 81000:2018	Electromagnetic Compatibility of Electronic Components for motor vehicles EMC changes	Limitation: exclusion:Clause 6
Automotive	VW 80000:2009	Electric and Electronic Components in Motor Vehicles up to 3.5t General Requirement,Test Conditions and Tests	Limitation: Electrical tests according to clause 4 only
Automotive	VW 80000:2013	Electric and Electronic Components in Motor Vehicles up to 3.5t General Requirement,Test Conditions and Tests	Limitation: Electrical tests according to clause 6 only
Automotive	VW 80000:2017	Electric and Electronic Components in Motor Vehicles up to 3.5t General Requirement,Test Conditions and Tests	Limitation: exclusion Part II
Automotive	GS 95024-2-1:2010	Electric and Electronic Components in Motor Vehicles Electrical requirements and testings	
Automotive	GS 95024-2-2: 2011	Electric and Electronic Components in Motor Vehicles Electrical requirements and tests Additional requirements to GS 95024-2-1	

Department	Standard / in house procedure / Version	Title of standard or in house procedure (deviations / modifications of standard)	Test area / reductions
Automotive	GS 95025-1:2012	Environmental requirements for electric and electronic equipment, EMC characteristics.	Limitation: EQ/CI_02: Immunity to low ignition voltage
Automotive	IEC 62236-3-1: 2008*	Railway applications-Electromagnetic compatibility-part 3-1:Rolling stock-Train and complete vehicle	Only radiated electromagnetic disturbances
Automotive	IEC 62236-3-2: 2008*	Railway applications-Electromagnetic compatibility-part 3-1:Rolling stock-Apparatus	Limitation: Exclusion: Emission-Traction a.c.power ports,Emission-Traction d.c.power ports
Rolling stock	DIN EN 50121-1:2017-11 VDE 0115-121-1:2017-11* (EN 50121-1:2017)	Railway applications – Electromagnetic Compatibility – Part 5: Emission and immunity of fixed power supply installations and Apparatus.	Limitation: No emission measurement above 1 GHz. Excluding damped oscillatory voltage (oscillatory waves).
Rolling stock	DIN EN 50121-2:2017-11 VDE 0115-121-2:2017-11* (EN 50121-2:2017)	Railway applications-Electromagnetic compatibility-part 2: Emission of the whole railway system to the outside world	
Rolling stock	DIN EN 50121-3-1:2017-11 VDE 0115-121-3-1:2017-11* (EN 50121-3-1:2017)	Railway applications-Electromagnetic compatibility-part 3-1:Rolling stock-Train and complete vehicle	
Rolling stock	DIN EN 50121-3-2:2017-11 VDE 0115-121-3-2:2017-11* (EN 50121-3-2:2017)	Railway applications-Electromagnetic compatibility-part 3-2:Rolling stock-Apparatus	Exclusion Emission-Traction a.c.power ports, Emission-Traction d.c.power ports

Department	Standard / in house procedure / Version	Title of standard or in house procedure (deviations / modifications of standard)	Test area / reductions
Rolling stock	DIN EN 50121-4:2017-11 VDE 0115-121-4:2017-11* (EN 50121-4:2016)	Railway applications – Electromagnetic Compatibility – Part 4: Emission and immunity of the signalling and telecommunications apparatus.	Limitation: No emission measurement above 1 GHz.
Rolling stock	DIN EN 50121-5:2017-11 VDE 0115-121-5:2017-11* (EN 50121-5:2017)	Railway applications - Electromagnetic compatibility - Part 5: Emission and immunity of fixed power supply installations and apparatus	Limitation: No emission measurement above 1 GHz.
Rolling stock	DIN EN 50155:2018-05* VDE 0115-200:2018-05 (EN 50155:2017)	Railway applications —Electronic equipment used on rolling stock.	Limitation: No vibration, shock and bump test according to clause 12.2.11.
Rolling stock	DIN EN 50500:2009-03 VDE 0115-500:2009-03* (EN 50500:2009)	Measurement procedures of magnetic field levels generated by electronic and electrical apparatus in the railway environment with respect to human exposure	
Rolling stock	IEC 62597:2011*	Measurement procedures of magnetic field levels generated by electronic and electrical apparatus in the railway environment with respect to human exposure	
Rolling stock	CLC/TS 50238-2:2015	Railway applications - Compatibility between rolling stock and train detection systems - Part 2: Compatibility with track circuits	
Rolling stock	CLC/TS 50238-3:2013	Railway applications - Compatibility between rolling stock and train detection systems - Part 3: Compatibility with axle counters	