Test Laboratory Services

Bosch Budapest

Test Laboratory Services Overview

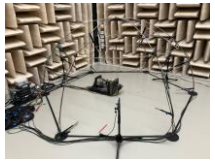
Click for direct links

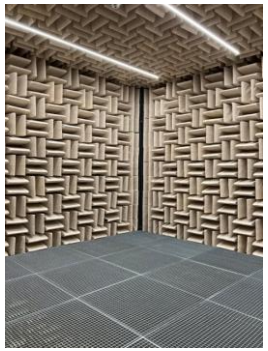
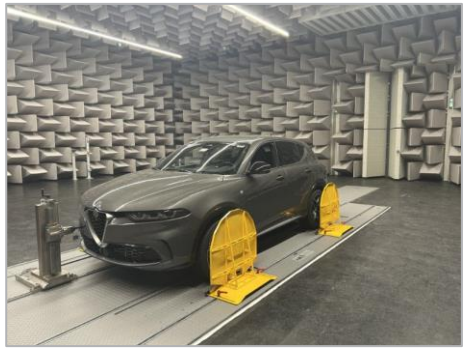
- Noise, Vibration and Harshness
- Electromagnetic Compatibility
- Application Center Vehicle Workshop
- ISO17025 accreditation
- Climatic testing
- Corrosion, IP, Media testing
- Battery testing
- Vibration testing
- Conformance & Security Testing
- High Voltage Testing
- Thermal Identification
- Product Analysis
- Contact details

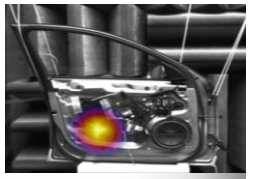
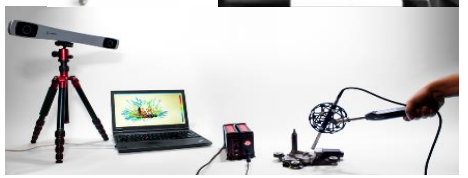
© Robert Bosch Kft. 2025. All rights reserved, also regarding any disposal, exploitation, reproduction, editing, distribution, as well as in the event of applications for industrial property rights.

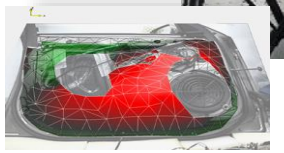
Noise, Vibration and Harshness

Back to overview





Acoustic validation

Chambers

- Anechoic and Semi-anechoic
- ISO 3744 and ISO 3745

High sensitivity measurements

- Background noise ~7 dB(A)
- Low noise microphones

From components to assemblies

- 6x6x6 m inner dimensions
- Load bearing floor

Vehicle testing

Passive and Active vehicle NVH testing

- Vehicle dyno with 4 independent rollers
- Braking and rolling up to performance speeds

Versatile size

- From 2 wheelers to LGV size trucks
- Indoor pass-by-noise test enabled

All industry standard systems

- HEAD acoustic, Simcenter SCADAS, Müller BBM PAK, Audio Precision

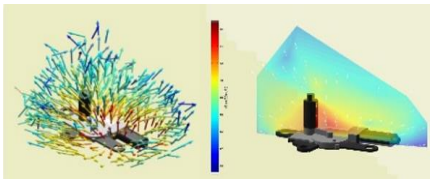
Noise source localisation

2D source localisation

- Acoustic camera system
- For transient events

3D mapping & visualisation

- Sound intensity system
- For near field and far field mapping



Structural validation

3D Scanning Laser Vibrometry

- Contactless measurement
- Time and frequency domain

Blocked Force testing and TPA

- Direct measurement of component forces
- In-situ force estimation

Squeak and Rattle testing

- Nonlinear dynamics expertise
- Silent shaker (in Semi-Anechoic chamber)
- Inertial Shaker

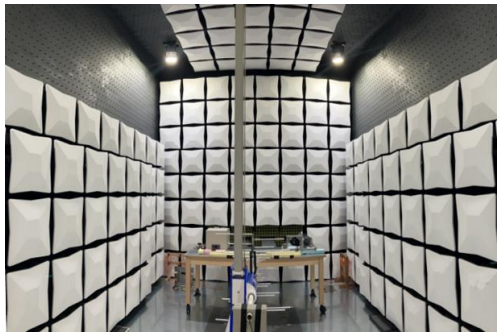
© Robert Bosch Kft. 2025. All rights reserved, also regarding any disposal, exploitation, reproduction, editing, distribution, as well as in the event of applications for industrial property rights.

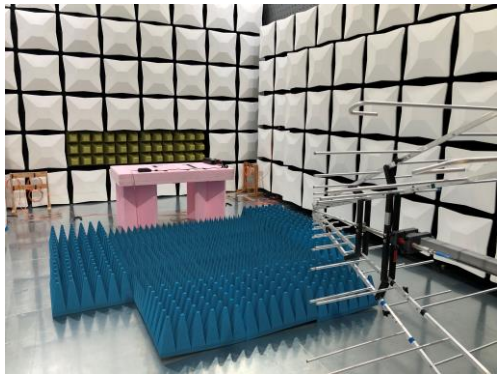
BOSCH

Electromagnetic Compatibility

Back to overview

NAH-1-1710/2021
TESTING LABORATORY





Certificates and standards

ISO 17025 accreditation since 2005

OEM recognitions: JLR, Ford, FCA

Validation standards of automotive products

- ISO 11452; CISPR 25; ISO 10605
- ISO 7637-2/3; ISO 16750
- ECE R10; ISO 11451; CISPR 12/32/36

Validation standards of consumer goods

- CISPR 16-2-1/3
- IEC 61000-3/4

Automotive component

Sensors, ECUs, displays, eAxle, HV-applications, etc.

- Radiated immunity test: 80MHz – 6GHz
- Radiated emission test: 1Hz – 26GHz
- Reverberation method: 200MHz – 6GHz
- ESD test up to +/- 30kV
- Real time spectrum for analysing frequency components
- Transient emission and immunity test
- HV capability up to 1000VDC/64A
- Hydraulic load for eAxle application with 120kW power

Consumer level

Heat-pumps, chargers, power tools, e-bike, etc.

- Fully automatic radiated disturbance measurement: 30MHz – 6GHz
- Diameter of Quiet zone: 6m
- Radiated immunity test with 16 points of field homogenity with 54V/m
- Surge-burst test up to 3phase/32A
- Harmonics & Flicker test up to 3phase/32A

Vehicle level

Passenger cars, 2 wheelers, Trucks

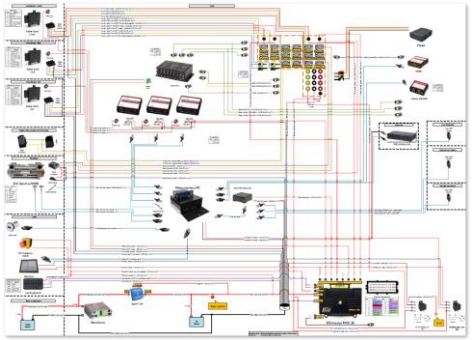
- Frequency range: 100kHz – 6GHz
- Radiated immunity: 20MHz – 6GHz
- Radiated emission: 30MHz – 6GHz
- Under driving conditions: 0 – 200km/h
- Wind simulation: 0 – 140km/h
- Wheelbase adjustment: 1.6 – 4.6m
- Dynamometer: 432kW power
- Max. tractive force: 5000Nm
- Max. load per axle: 6 tons
- DC/AC charging for EV

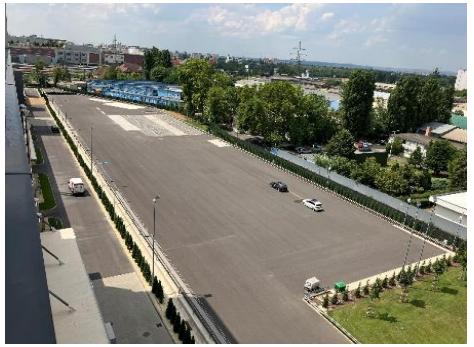
© Robert Bosch Kft. 2025. All rights reserved, also regarding any disposal, exploitation, reproduction, editing, distribution, as well as in the event of applications for industrial property rights.

BOSCH

Application Center – Vehicle Workshop

Back to overview





Vehicle Fleet Coordination

- Regulation and legal framework
- Vehicle transportation
- Incoming process and vehicle database
- Technical inspection and maintenance
- Handling of prototypes
- Road safety and training coordination
- Infrastructure (Parking, HV chargers, Fuel station, Carwash

System and Tooling

- Architecture planning
- Network adaptation
- System startup
- Unique equipment / tool design

Vehicle Workshop

- Vehicle Conversion and sensor equipment
- Special cable assembly
- Measurement system installation
- Equipment and raw material management
- Mechanical and high voltage competency

Proving Ground

- Facility Management (Kiskunlacháza Airfield, Vehicle Verification Area @Bosch Campus, ZalaZone)
- Test equipment management (maintenance and spare parts)
- Test operator service

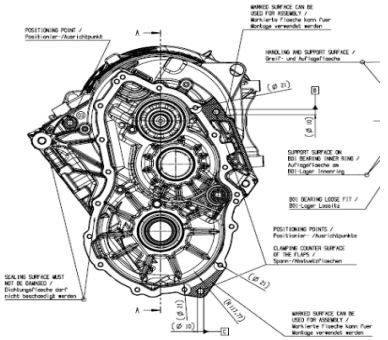
Application Center is a collection of infrastructures, tools, equipment, competency and activities which supports vehicle testing achievements

© Robert Bosch Kft. 2025. All rights reserved, also regarding any disposal, exploitation, reproduction, editing, distribution, as well as in the event of applications for industrial property rights.

BOSCH

Application Center – Mechanical Workshop

Back to overview



Metal Working

- Turning and milling with traditional and CNC milling machine
- Production of various metal parts

Sample Modification

- Opening for analysis
- Modification, rework

Cable Processing

- Cable harness production
- Cable preparation (cutting, stripping)

3D Printing

- Printing on industrial SLS printer
- System and tool development

Center of multivarious manufacturing

© Robert Bosch Kft. 2025. All rights reserved, also regarding any disposal, exploitation, reproduction, editing, distribution, as well as in the event of applications for industrial property rights.

BOSCH

Environmental Validation – Climatic Testing

Back to overview

Laboratory Capacities

Range of services

- 110 Temperature and climatic test chambers
- Temperature range: -50°C to +150°C
- Temperature change rate: up to 20 K/min
- Relative humidity: 10 % to 100 % r.H

Accredited Testing

ISO:17025 accredited services

- IEC 60068-2-1, 2007-03:
  - Environmental testing – Part 2-1:
    - Test A: Cold
- IEC 60068-2-2, 2007-07:
  - Environmental testing – Part 2-2:
    - Test B: Dry heat
- IEC 60068-2-14, 2023-07:
  - Environmental testing – Part 2-14:
    - Test N: Change of temperature
- IEC 60068-2-30, 2005-08:
  - Environmental testing –Part 2-30:
    - Test Db: Damp heat, cyclic (12 + 12 h cycle)
- IEC 60068-2-38, 2021-03:
  - Environmental testing –Part 2-38:
    - Test Z/AD: Composite temperature/humidity cyclic test

Active and Passive Testing

Test types

- Humid heat (constant, cyclic and with frost)
- Thermal shock
- Endurance test
- Solar test
- Dewing test
- Thermography (IR camera and Thermocouple)

Electrical and Mechanical Testing

Range of services (electrical)

- Voltage measurements
- Voltage interruption tests
- Resistance measurements
- Current measurements
- Insulation resistance test
- 4 wire resistance test
- Withstand voltage test

Range of services (mechanical)

- Free fall / drop test
- Tensile testing: 50N-10kN
- Screwing station testing: 16Nm-32Nm

© Robert Bosch Kft. 2025. All rights reserved, also regarding any disposal, exploitation, reproduction, editing, distribution, as well as in the event of applications for industrial property rights.

BOSCH

Environmental Validation – Corrosion, IP & Media testing

Back to overview

IP Testing

Standards & Accreditations

- Testing according to **ISO 20653**
- Laboratory accredited per **ISO 17025**

Water Ingress Protection

- IPX2: Drip protection
- IPX3-4: Spraying and splashing water resistance
- IPX5-6-6K: Powerful water jet resistance
- IPX7: Immersion
- IPX9K: High-pressure, water jet protection

Dust Ingress Protection

- Testing with Arizona A2 dust
- Using vertical dust chambers

Corrosion Testing

Chambers

- Salt fog chambers

Typical tests

- Continuous salt fog (According to ISO 9227 NSS, ISO 17025 accredited testing)
- Cyclic corrosion tests (alternating wet/dry/salt cycles)
- Salt spray tests

Chemical Testing, Gravel Bombardment

Chemical testing

- Testing with ~100 different types of chemicals
- Application methods: spraying, brushing, wiping, immersing, pouring, dipping
- Storage conditions after application: at room temperature in a chemical fume hood, in a high temperature chamber or in a climate chamber (controlled temperature and humidity)

Gravel bombardment

- Grids: metal grindings, smaller stones
- Optional sample cooling with climate chamber

Ice – Water Temperature Shock Tests

Submersion test

- Automatic immersion chamber with 5% salt solution
- According to ISO 16750-4

Splash test

- According to ISO 16750-4
- ISO 17025 accredited testing
- Medium: water mixed with Arizona dust

Click on link for video intro

© Robert Bosch Kft. 2025. All rights reserved, also regarding any disposal, exploitation, reproduction, editing, distribution, as well as in the event of applications for industrial property rights.

BOSCH

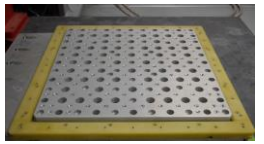
Environmental Validation – Battery Testing

Back to overview











Climatic testing

Constant / cycling aging

- -72 – 180 ℃
- 10% - 93% rH
- 1500 L chamber volume

Thermal shock

- -65 – 200 ℃

Active cooling

- Ethylene glycol – water mixture
- -40 – 80 ℃

Electrical testing

Active operation and electric load on the samples

- During the thermal and humidity tests
- From 0V up to 60V
- From 0.1A up to 600A

„On table" measurements, flashing smaples

Isolation resistance measurement

- Up to 500V DC

Vibration testing

Shaker systems

- 40 kN shaker
  - with 0,8 * 0,8 m slip table
  - with 1100 L climate chamber
- 80 kN shaker
  - with 1 * 1 m slip table
  - with 1200 L climate chamber
- Mechanical shock
- Sinusodial & Random vibration

Slip tables

- Ensures X,Y direction testing without axis tilt/rotation

Thermal profile

- -40 to 180 °C

Physical analysis

Analysis of test samples

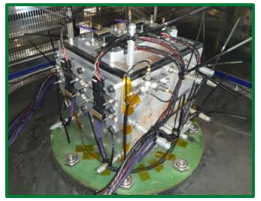
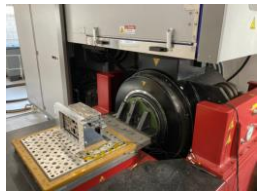
- Destructive analysis on modul level (sample opening, electric measurements)
- Component level analysis (matterial composition analysis, contamination measurement etc.)
- Non-destructive analysis (X-ray, CT, SEM-EDX etc.)

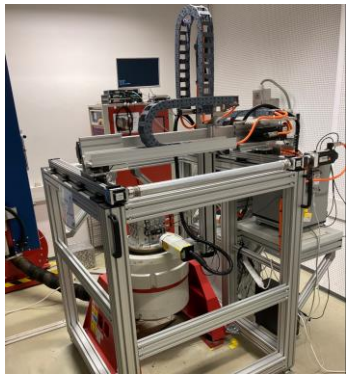
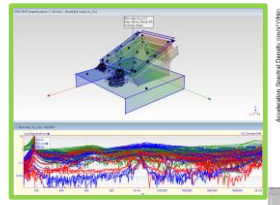
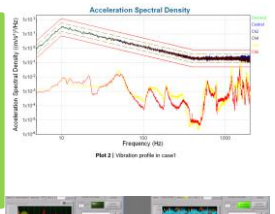
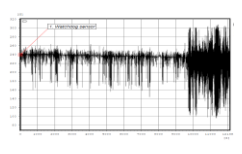
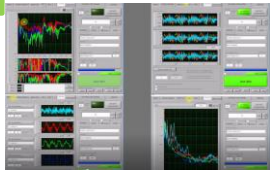
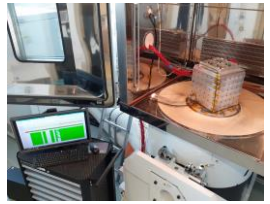
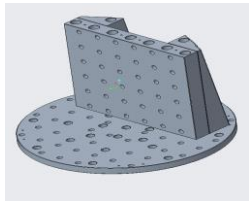
© Robert Bosch Kft. 2025. All rights reserved, also regarding any disposal, exploitation, reproduction, editing, distribution, as well as in the event of applications for industrial property rights.

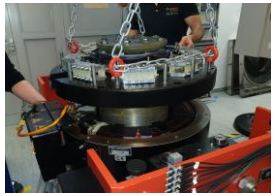
BOSCH

Environmental Validation – Vibration testing

Back to overview



Validation testing

Laboratory capabilities

- Accredited test execution according to ISO 17025
- 11 shakers (600N – 80kN force)
- Random vibration
- Sine & multisine sweeps
- Mechanical shock (up to 100G, 11ms)
- Under temperature profile with active control
- 1m x 1m slip table

Resonance measurement

CLV 3D laser head

- Locally developed axis system (Automatic Head Positioning System)

PSV400 laser head

- 1D laser scanning
- Analysis of structrual vibration

3D sensor measurements

- When temperature profile is needed during measurement

Data evaluation

Support for development

- Data verification
- Report creation
- Visualization of measurements
- Fixture verification
- Fixture improvement suggestions
- Guidelines to reproduce the on-field vibration loads

Engineering support

In all development phases

- 3D design of fixtures & holders
- Simulation & verification
- Testing guidelines
- Reliability and technical support
- Labview applications

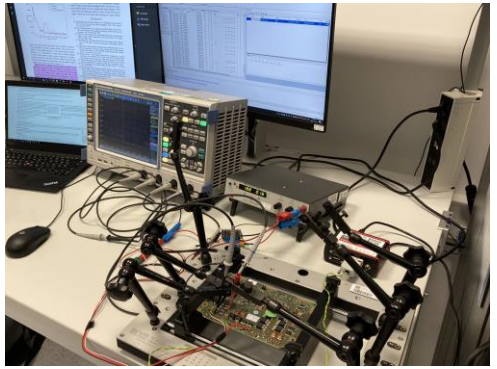
Click on link for video intro

© Robert Bosch Kft. 2025. All rights reserved, also regarding any disposal, exploitation, reproduction, editing, distribution, as well as in the event of applications for industrial property rights.

BOSCH

Network Conformance and Product Security Testing

Back to overview



Network Conformance Testing

More than 15+ years of experience

- CAN/CAN-FD/CAN-XL, LIN, FlexRay, Automotive Ethernet (up to 10 Gbps)
- Coverage of most international and OEM-specific standards

Physical Layer testing

- Validating electrical properties
- Measurements in temperature chambers
- Measurements with worst-case load conditions

Higher Layer testing

- Automated test environment for test execution and report generation, full communication logs
- Covering of data-link layer, network management, diagnostics, transport layer, protocol integrity
- TC8 specification fully implemented (800+ test cases)
- CANoe, Spirent, CANstress, FRstress

Penetration Testing

Vehicle- and ECU-level penetration testing

- Threat analysis and risk assessment (TARA)

Hardware

- Low-level interfaces (JTAG, SPI, etc.)
- Chip-to-chip communication
- Fault injection
- Side-channel attacks

Software

- Secure boot, secure flashing, secure diagnostics
- Network communication (scanning, flooding, etc.)
- Reverse engineering

Protocol Fuzzing

Internal state-of-the-art fuzz engine

- Automotive specific-protocols (CAN/CAN-FD, UDS, XCP, DoIP, SOME/IP)
- Core IP protocols (IP, UDP, TCP, EAP, MKA, MACsec, TLS, ...)
- Wireless protocols (WLAN, Bluetooth, BLE, ...)
- Stateful fuzzing, targeted test cases, custom health-checks

© Robert Bosch Kft. 2025. All rights reserved, also regarding any disposal, exploitation, reproduction, editing, distribution, as well as in the event of applications for industrial property rights.

BOSCH

High Voltage Laboratories

Back to overview

Endurance Laboratory

Accelerated lifetime validation on electronic devices

- From 12V up to 1200V devices
- Temperature / Humidity Cycling
- Abrasion and Corrosion testing
- Active and Passive testing

Technical Details

- 325 kW/TB
- Up to 1200A & 1200V
- -40 ... + 180 °C
- Up to 98% Humidity

Hardware Laboratory

Flexible usage

- From 12V up to 1200V DUTs
- Up to 66kW
- Main focus on **Inverters, Converters** and **Chargers** but application for other products also possible

Complex measurement system

- 16 channel transient recorder, 8 channel high speed oscilloscope, power analyzer, temperatures etc.
- Real time automatization system (with CAN, LIN and Flexray)

eDrive Laboratory

Hardware and System testing

- Functional and Robustness validation for eDrive systems
- Specialised for LV123 and LV124 measurements

State of the art design

- Compatible with all the latest inverter and eMachine generations
- Up to 1000V/1080kW/1300Nm
- Unmanned 24/7 operation possible

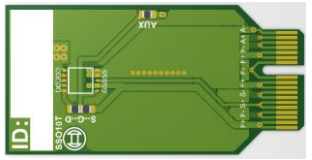
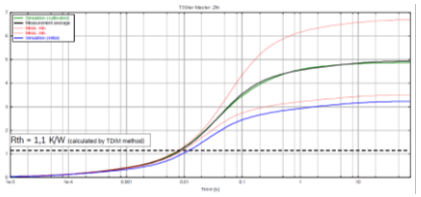
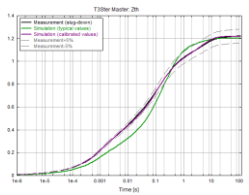
© Robert Bosch Kft. 2025. All rights reserved, also regarding any disposal, exploitation, reproduction, editing, distribution, as well as in the event of applications for industrial property rights.

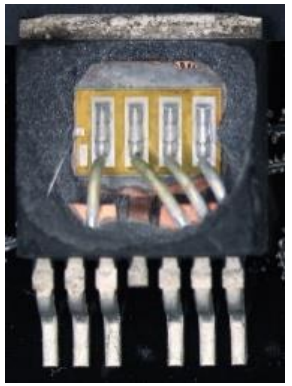
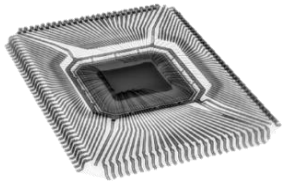
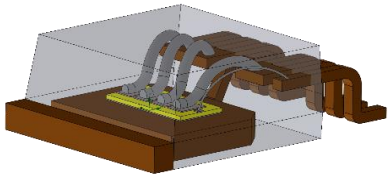
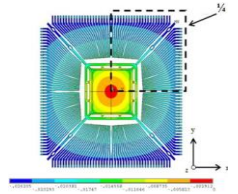
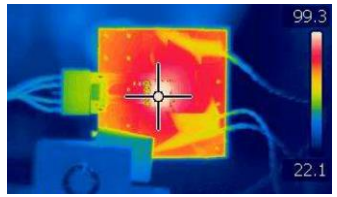
BOSCH

Thermal Identification and Measurement

Back to overview



Thermal performance characterisation

Single components

- MOSFET (Si and SiC), ASIC, uC, diode, BJT, passive components, etc.
- Z_{th} measurements with model parameter extraction ($\theta_{JC/JB/JA}$, Ψ_{thJC}, RC-ladder, pulse-Z_{th} etc.)
- Compare thermal performance after supplier & process changes
- Execution of tests acc. JESD51-x standards
- Test dissipations from 0,2W to 200W

Subassemblies/products

- Components mounted on product-specific PCB, DCB/AMB, air- or fluid-cooled heatsink, etc.
- R_{th}-matrix, Z_{th}-matrix extraction
- Measurements of component and spot temperatures under tightly controlled boundary conditions
- Multiple and mixed measurement methods: T3Ster, IR camera, thermocouple, RTD, TSEP
- Spatial resolution up to 25um/pixel
- Temperature resolution up to 0,01 °C/LSB

Ageing and degradation

Non-destructive measurements of cooling systems

- Accurately measure the same sample repeatedly over the course of pTC ageing
- Quantitative assessments of degradation for each material layer or interface
- Assess TIM pumpout, TIM dryout, delamination, solder cracking
- Automated, low overhead test setup, allowing for efficient measurement of populations

Supporting measurements and engineering services

- Temperature sensitive electrical parameter (TSEP) calibration
- Thermal model creation for simulation (FEM)
- Emissivity measurement
- Support for thermal design of PCBs and coolers

© Robert Bosch Kft. 2025. All rights reserved, also regarding any disposal, exploitation, reproduction, editing, distribution, as well as in the event of applications for industrial property rights.

BOSCH

Product Analysis

Back to overview

NEMZETI AKKREDITÁLÓ HATÓSÁG
ISO17025 accredited laboratory

Zeiss Xradia 620 Versa
X-ray microscope

GE Phoenix Micromex
X-ray radiography

PVA TePla SAM300
Scanning Acoustic Microscope

Leakage testing
Pressure drop, mass flow

Pfeiffer ASM300
He leakage testing setup

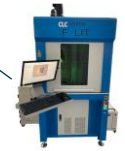
Bruker Lumos
Fourier-transform infrared spectroscopy

Hitachi IM 4000II
Ion Milling with argon ions

Bruker M4 Tornado
X-ray fluorescence spectrometer

Struers Tegramin-25
Cross-section preparation

Thermo Fisher Scios 2 DualBeam
Focused Ion Beam Scanning Electron Microscopy with EDS, DBS, STEM



CLC FALIT DUO ICO-ECOBlue
Laser decapsulation and treatment

Zeiss Evo LS25
Scanning Electron Microscopy with Energy Dispersive X-ray Spectroscopy

Dage 4000 plus
Xyztec Condor Sigma
Shear and pull testing

GOM ScanBox with ATOS Capsule
Geometrical Optical 3D Measurement

Instron 5966 & 5565
Force measurement

Mitutoyo Crysta Apex S7106
Precision Coordinate Measurement Machine

Zeiss Imager A2m
Metallographic Microscopy

Olympus BX53M
Infrared Microscopy

Zeiss Discovery V20
Stereographic Microscopy

Click on link for video intro

© Robert Bosch Kft. 2025. All rights reserved, also regarding any disposal, exploitation, reproduction, editing, distribution, as well as in the event of applications for industrial property rights.

BOSCH

ISO17025 accredited test list (1/3)

Back to overview

Climatic testing

IEC 60068-2-1	Environmental testing – Part 2-1: Tests – Test A: Cold
IEC 60068-2-14 Na	Environmental testing – Part 2-14: Test Na: Rapid temperature change
IEC 60068-2-14 Nb	Environmental testing – Part 2-14: Test Nb: Temperature change with a fixed rate of change
IEC 60068-2-2	Environmental testing – Part 2-2: Tests – Test B: Dry heat
IEC 60068-2-30	Environmental testing – Part 2-30: Test Db: Damp heat, cyclic (12 + 12 h cycle)
IEC 60068-2-38	Environmental testing – Part 2-38: Tests – Test Z/AD: Composite temperature/humidity cyclic test
*IEC 60068-2-67**	*Environmental testing – Part 2-67: Tests – Test Cy: Damp heat, steady state, accelerated test primarily intended for components*
*IEC 60068-2-78**	*Environmental testing – Part 2-78: Tests – Test Cab: Damp heat, steady state*
*ISO 16750-4 CH.5.2**	*Environmental conditions and testing for electrical and electronic equipment — Part 4: Climatic loads*

**ongoing accreditation*

Corrosion/IP/Media

ISO 16750-4	Environmental conditions and testing for electrical and electronic equipment Part 4: Climatic Loads - Cold water shock tests - Splash Water test
ISO 20653	Degrees of protection (IP code) — Protection of electrical equipment against foreign objects, water and access Sealing validation with water and dust tests
ISO 9227	Corrosion testing in artificial atmospheres - Neutral Salt Spray (NSS) test

Physical analysis

ASTM E1508	Standard Guide for Quantitative Analysis by Spectroscopy Scanning electron microscopy with attached energy dispersive X-ray spectroscopy
ASTM E573-01	Standard Practice for General Techniques of Infrared Microanalysis – Fourier transform infrared spectroscopy
ASTM E334-01	Standard Practices for Internal Reflection Spectroscopy – Fourier transform infrared spectroscopy
ASTM B568-98	Standard Test Method for Measurement of Coating Thickness - X-Ray Spectrometry
EN 13018	Non-destructive testing – Visual testing
EN 13184	Non-destructive testing – Leak testing - Pressure change method
EN 1593	Non-destructive testing – Leak testing – Bubble emission techniques – Liquid application technique
EN 1593:1999	Non-destructive testing – Leak testing – Bubble emission techniques – Immersion technique
IPC-A-610	Standard for Acceptability of Electronic Assemblies – Visual inspection of printed circuit boards
ISO 20485	Non-destructive testing – Leak testing – Tracer gas method
ISO 3479	Metallic coatings – Measurement of coating thickness – X-ray spectrometric methods

© Robert Bosch Kft. 2025. All rights reserved, also regarding any disposal, exploitation, reproduction, editing, distribution, as well as in the event of applications for industrial property rights.

BOSCH

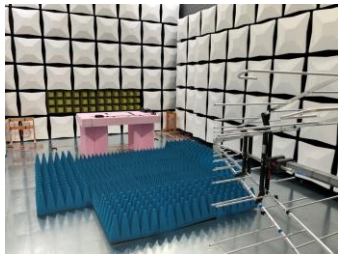
ISO17025 accredited test list (2/3)

Back to overview

Vibration testing

IEC 60068-2-80	Environmental testing – Part 2-80: Test Fi: Vibration (mixed mode)
IEC 60068-2-27	Environmental testing – Part 2-27: Test Ea and guidance: Repetitive and non-repetitive shock
IEC 60068-2-6	Environmental testing – Part 2-6: Test Fc: Vibration (sinusodial)
IEC 60068-2-64	Environmental testing – Part 2-64: Test Fh: Vibration, broadband random and guidance
ISO 16750-3	Environmental conditions and testing for electrical and electronic equipment Part 3: Mechanical Loads - Vibration and Mechanical shock test

EMC – Section 1.



CISPR 16-2-1	Radio disturbance and immunity measuring apparatus and methods - Part 2-1: Conducted disturbance measurements		
CISPR 16-2-3	Radio disturbance and immunity measuring apparatus and methods - Part 2-1: Radiated disturbance measurements		
CISPR 25	Vehicles, boats and internal combustion engines - Radio disturbance characteristics: Limits and methods of measurement for the protection of on-board receivers		
Def Stan 59 411	Ministry of Defense: Electromagnetic compatibility - Immunity to magnetic fields		
ISO 10605	Road vehicles - Test methods for electrical disturbances from electrostatic discharge		
ISO 11452	Road vehicles - Component test methods for electrical disturbances from narrowband radiated electromagnetic energy		
ISO 11452-2	Part 2: Absorber-lined shielded enclosure	ISO 11452-8	Part 8: Immunity to magnetic fields
ISO 11452-4	Part 4: Harness excitation methods	ISO 11452-9	Part 9: Portable transmitters
ISO 11452-5	Part 5: Stripline	ISO 11452-11	Part 11: Reverberation chamber
ISO 16750-2	Road vehicles - Environmental conditions and testing for electrical and electronic equipment - Part 2: Electrical loads		
ISO 7637-2	Road vehicles - Electrical disturbances from conduction and coupling Part 2: Electrical transient conduction along supply lines only		
ISO 7637-3	Road vehicles - Electrical disturbances from conduction and coupling Part 3: Electrical transient transmission by capacitive and inductive coupling via lines other than supply lines		
MIL STD 461	Military Standard: Electromagnetic interference characteristics requirements for equipment - Immunity to magnetic fields		

© Robert Bosch Kft. 2025. All rights reserved, also regarding any disposal, exploitation, reproduction, editing, distribution, as well as in the event of applications for industrial property rights.

ISO17025 accredited test list (3/3)

Back to overview

EMC – Section 2.

IEC 61000-4	Electromagnetic compatibility – Part 4: Testing and measurement techniques
IEC 61000-4-2	Part 4-2: Electrostatic discharge immunity test
IEC 61000-4-3	Part 4-3: Radiated, radio-frequency, electromagnetic field immunity test
IEC 61000-4-4	Part 4-4: Electrical fast transient/burst immunity test
IEC 61000-4-5	Part 4-5: Surge immunity test
IEC 61000-4-6	Part 4-6: Immunity to conducted disturbances, induced by radio-frequency fields
IEC 61000-4-11	Part 4-11: Voltage dips, short interruptions and voltage variations immunity tests Equipment with input current up to 16 A per phase
IEC 61000-4-13	Part 4-13: Harmonics and interharmonics including mains signalling at a.c. power port, low frequency immunity tests
IEC 61000-4-21	Part 4-21: Reverberation chamber test methods
IEC 61000-4-28	Part 4-28: Variation of power frequency, immunity test for equipment with input current not exceeding 16 A per phase
IEC 61000-4-34	Part 4-34: Voltage dips, short interruptions and voltage variations immunity tests Equipment with mains current more than 16 A per phase
IEC 61000-3	Electromagnetic compatibility – Part 3: Limits
IEC 61000-3-2	Part 3-2: Limits for harmonic current emissions (equipment input current ≤16 A per phase)
IEC 61000-3-3	Part 3-3: Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems Equipment with rated current ≤ 16 A per phase and not subject to conditional connection
IEC 61000-3-11	Part 3-11: Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems Equipment with rated current ≤75 A and subject to conditional connection
IEC 61000-3-12	Part 3-12: Limits for harmonic currents produced by equipment connected to public low-voltage systems Input current >16 A and ≤ 75 A per phase
EN IEC 55014-2	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus Part 2: Immunity - Product family standard

Our accreditation scope is under continuous review and expansion.
For further information about upcoming standards, please contact our test laboratory.

© Robert Bosch Kft. 2025. All rights reserved, also regarding any disposal, exploitation, reproduction, editing, distribution, as well as in the event of applications for industrial property rights.

Contact Us

Test Laboratory Services

Bosch Budapest

Robert Bosch Kft.

Back to overview

1103 Budapest, Gyömrői út 104.
Hungary

testlabservices@hu.bosch.com

Environmental Validation

Click or scan!

Electromagnetic Compatibility

For more information about our accredited test processes, please visit official website of National Accreditation Authority!

BOSCH