

Testing



Generator test bench

Contact us



Bosch Engineering GmbH
in Abstatt near Stuttgart

Bosch Engineering GmbH Power supply systems and energy management



Power network test bench

- ▶ Generators
 - Parallel operation of two generators
 - Mounting of generators for passenger cars and commercial vehicles
 - Torque and rotational-speed measurement
 - Tempering: -40°C...+140°C
- ▶ Power network assembly
 - Testbench assemblies with wiring and electrical components
- ▶ Control and measuring technology
 - Automated control (driving cycles)
 - Benchmark test for generators (ripple, efficiency, performance)

Battery test bench

- ▶ Capacity test
- ▶ Tempering: -40°C...+140°C
- ▶ Cyclization (range up to 60 V/1,000 A)

In-vehicle verification

- ▶ Mobile measuring equipment
 - Voltage, current, temperature, humidity
 - CAN and LIN data
 - Sampling rate up to 50 kHz
 - Endurance test
- ▶ Test for charge balance, thermal profiles etc.
- ▶ Benchmark test
- ▶ Vehicle dynamometers (performance, cold-test, exhaust-gas)



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Power supply systems and energy management

System configuration for power networks



System simulation and configuration, EMC project design

Development of energy management functions and software

We advance the development of power supply systems and develop solutions for the perfect integration of new systems, loads and functions. Here we focus on the availability of vehicle functions and the stability of the electrical energy supply.

Fields of activity

- ▶ Design and verification of power supply systems
- ▶ Electrical Energy Management EEM
- ▶ Electromagnetic compatibility EMC

Our services

- ▶ E/E integration for start/stop systems and hybrid vehicles
- ▶ On-board power net verification (charge balance, EMV, temperature)
- ▶ Development of Electrical Energy Management functions and software
- ▶ Battery sensor application
- ▶ System simulation and configuration
- ▶ Power net and battery test bench

System analysis

- ▶ Conception and configuration of power networks
- ▶ Integration of new electrical systems, components and functions
- ▶ System evaluation of interactions
- ▶ FTA reliability analysis

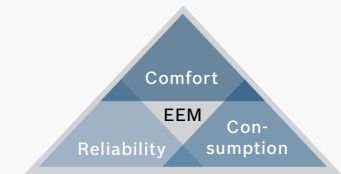
System simulation

- ▶ Simulation verified in the vehicle
 - ▶ Analysis of charge balance, electrical system design and dynamic processes
 - ▶ Analysis of concepts for reduced fuel consumption
 - ▶ In-house development of models (generator, starter motor, wiring etc.)
 - ▶ Concept studies
- Simulation tools supported: SABER, Simplorer, Matlab/Simulink

Electrical Energy Management EEM

Aims:

- ▶ Starting reliability
- ▶ Fuel economy
- ▶ Comfort



Functions of Electrical Energy Management

- ▶ 14 V recuperation (generator management)
- ▶ Standby current management
- ▶ Power management

Development of functions and software

- ▶ Concept and test vehicles
 - Evaluation of benefits
- ▶ Customer-specific EEM software for control units
 - Engine management
 - Gateway
 - Body computer



Let us help you optimize electrical power supply in passenger cars and commercial vehicles



System simulation environment for charge balance and fuel consumption



Battery sensor application

- ▶ Software application for niche products
- ▶ Integrated energy-management functions