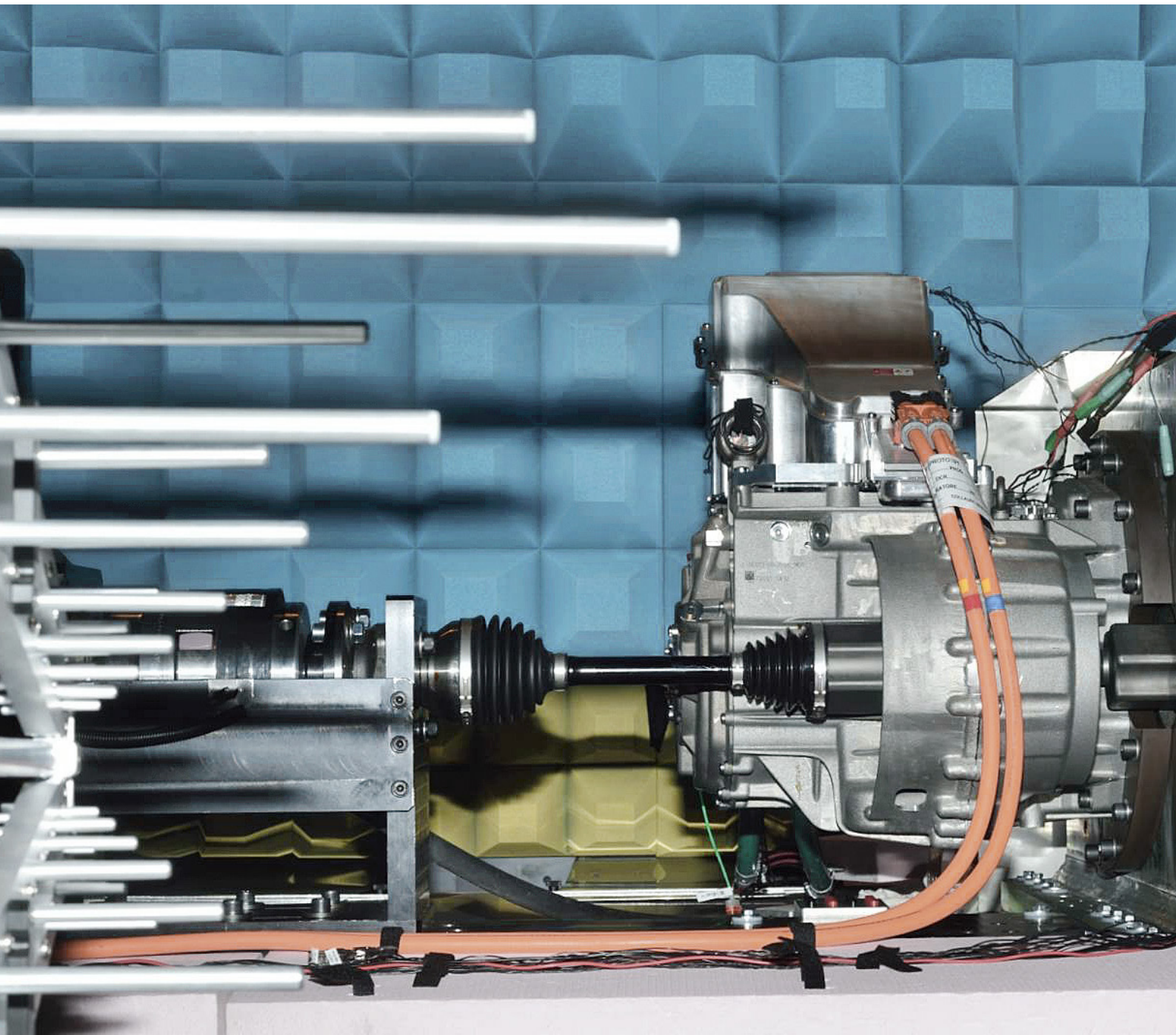


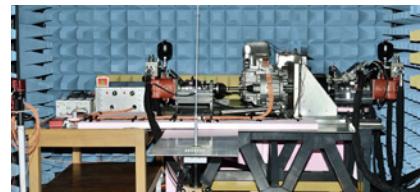
EMC Engineering and Laboratory for Automotive Products



EMC Engineering – Offered services and performance of the test bench for electric motors

From product idea to validated series production sample

At Schaeffler Engineering, electromagnetic compatibility (EMC) is an essential part of the electronics development. We offer accompanying services in our EMC laboratory in addition to our hardware and software development services.



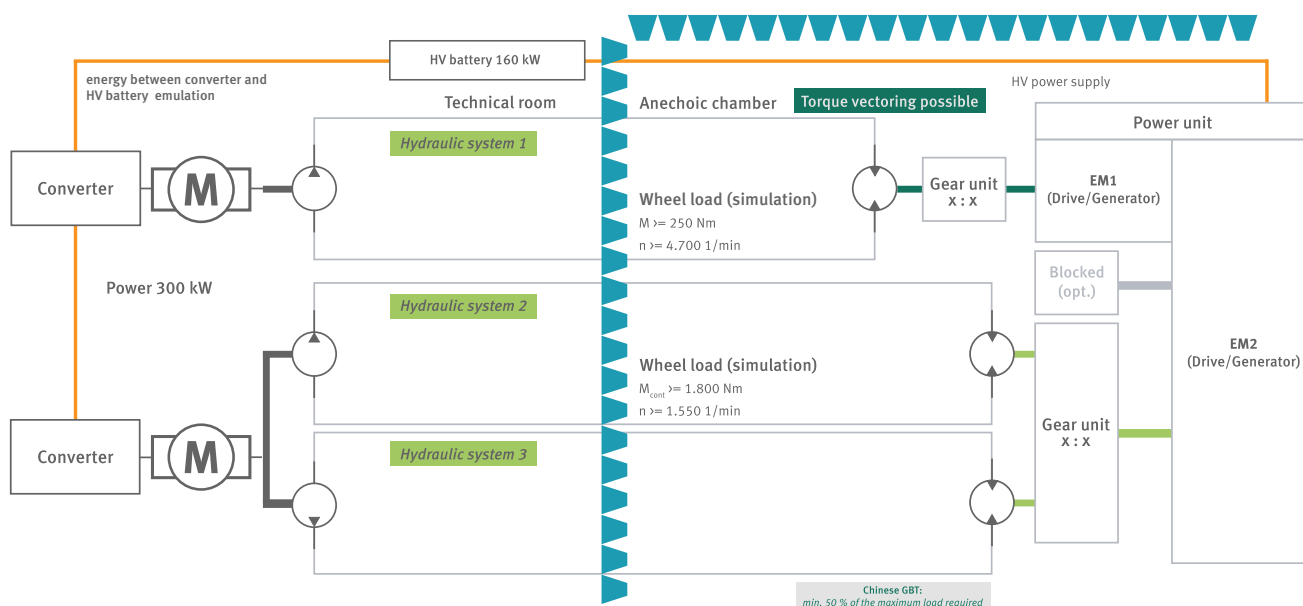
EMC @ Schaeffler Engineering – Competences and services

- Electrical component, device and system tests up to tests on small vehicles
- Product certification of conformity support
- Supporting interference suppression of devices and systems
- Development-accompanying measurements in the field of high-frequency technology (Bluetooth, wifi and other radio services)
- Realistic environmental conditions during EMC tests (use of brakes, air conditioning units, battery emulation and more)
- High-frequency simulation
- EMC trainings

EMC services

- Specification analysis
- Test plan development including OEM approval
- (Tailored) EMC measurement in each development step
- Re-design prevention
- On-site development team available

Technical data and performance of the test bench for electric motors



Contact:

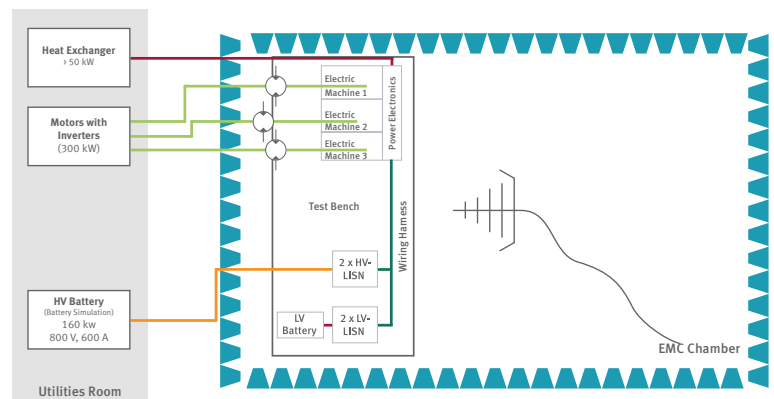
+49 2392 809-0

emv@schaeffler-engineering.com

EMC Chamber – Technical data and test specifications

Technical data:

- Semi anechoic chamber:
 - Manufacturer Albatros
 - testing automotive components and systems, 1 m measurement distance
 - testing non-automotive components and systems, 3 m measurement distance
- External dimensions: 9,1 x 4,6 x 4,5 m (L x W x H)
- Frequency range: 1 Hz...40 GHz
- Heavy-duty test table: up to 2 t loadable
- DUT (device under test) dimensions: max. 3,3 x 3,3 x 2,0 m (L x W x H)



The EMC chamber with optional e-motor test bench (2 independent hydraulic circuits) allows torque vectoring and testing of e-axes without a blocked differential.

Test specifications: Automotive EUB and subcompacts

Specifications, EMC phenomena	Levels, parameters
ECE R 10 <i>CISPR 25, DIN EN 55025</i>	Automotive directive <ul style="list-style-type: none"> – Radiated emission (radiated) 30...6,000 MHz (120 kHz, broadband, narrow-band-measurement) Conducted emission, receiver with time domain function
<i>ISO 11452-4</i>	BCI (conducted) immunity 20...400 MHz, min. 60 mA
<i>ISO 11452-2</i>	RI (radiated immunity) 400...6,000 MHz, 30 V/m
<i>ISO 7637-1,-2</i>	Pulses 1, 2a, 2b, 3a, 3b, 4, 6
EN 61000-4-x	Conducted immunity tests on charging ports for e-mobility systems <ul style="list-style-type: none"> EN 61000-4-2 EN 61000-4-4 EN 61000-4-5 EN 61000-4-6 EN 61000-4-11
LV 124/148	Electrical tests
VW TL 81 000 <i>CISPR 25, DIN EN 55025</i>	OEM Specification <ul style="list-style-type: none"> – Radiated emission 0.009...6,000 MHz – Conducted emission 0.15...108 MHz
<i>ISO 11452-4</i>	BCI (conducted immunity) 0.1...400 MHz, 106 dBµA
<i>ISO 11452-2</i>	RI (radiated immunity) 200...6,000 MHz, 140 V/m (CW, AM, pulse modified)
<i>ISO 7637-1, -2</i>	Pulses 1, 2a, 2b, 3a, 3b, 4, 6
<i>ISO 10605, EN 61000-4-2</i>	+/- 8 kV contact discharge, +/- 15 kV air discharge
Further OEM requirements	Please contact us.

Schaeffler Engineering GmbH

Gewerbestrasse 14
58791 Werdohl
Germany
www.schaeffler-engineering.com
info@schaeffler-engineering.com

In Germany:

Phone 02392 8090

From other countries:

Phone +49 2392 809-0

Every care has been taken to ensure the correctness of the information contained in this publication but no liability can be accepted for any errors or omissions. We reserve the right to make technical changes.

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