Transportation Electrification Test Solutions

NH Research (NHR)
Enabling Electrification
Enabling Electrification

NHR enables electrification by accelerating innovation, validation & functional test of today’s & tomorrow’s technologies

Backed by over 50 years of experience

- Best in class performance
- Ease of use
- Modular & scalable solutions
- Reduced testing time
- Improved safety
- Energy savings
World-Class Test Solutions

Flexible, Modular Hardware AND Software

Product Portfolio
- Battery/Fuel Cell Test Systems
- Bi-directional DC Source
- Grid Simulators
- AC & DC Electronic Loads
- AC & DC Power Sources
- Power Supply Test Systems

...Your Partner in Test
E-Mobility Test Solutions

Electric Vehicles
School Buses, Public Transportation
Fast Charging
Batteries, Fuel Cells, Powertrain
Heavy Duty Commercial Trucks
E-Motorcycle, E-Bikes

…and more!
High Voltage Battery

Onboard Charger & EVSE

EV Drive Train

DC/DC Converter

12V Battery

EV Hybrid Vehicle

EV Testing Solutions
High or Low Voltage Battery Cycling

High Voltage Battery Pack

9200/9300 Battery Cycler

EV Battery Cycling
Battery Emulation

*Bi-directional*

**EV Drive Train**

**Motor**

**Inverter**

**9200/9300 Battery Emulator**
Powertrain Test Approaches

The NHR Approach accepts back EMF and prevents safety hazards. Isolated input and output paths eliminates single points of failure.
Onboard Charger & EVSE
Emulate Batteries & DC Busses (PV)

DC/DC Converter

4700/4760 DC Load

9200/9300 Battery Emulator

Emulate Batteries & DC Busses (PV)
Bi-Directional DC/DC Converter

Emulate Batteries & DC Busses (PV)

9200/9300 Regen DC Load
9200/9300 Battery Emulator
Electric Vehicle Test Solutions

- **9430 Regen 4 Quadrant Load**
  - up to 96kW

- **9410 Grid Sim**
  - up to 96kW

- **9420 AC Source**
  - up to 96kW

- **4600 AC Load**
  - up to 36kW

- **9200 Series**
  - 12 kW, 21 channels

- **9300 Series**
  - 100 kW to 2.4 MW

- **4300 Chassis**
  - 150W, 300W, 600W

- **4700 & 4760**
  - 1kW to 36kW

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  - up to 96kW

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Access Resource Library

- **Download Application Notes**
  - The Fundamentals of Battery Test
  - Electric Powertrain Testing Challenges & Solutions
  - Battery Emulation: Testing without Batteries

- **On-Demand Webinars**

- **Schedule a Consultation**

- **Electric Vehicles Webpage**

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