Automotive & E-mobility Test Solutions

We simplify test and performance automation.

Application Guide

Electric Vehicles & E-mobility Test Solutions

NHR Technologies offers a wide range of electronic test and measurement solutions for electrical vehicle components and complete EV battery modules/packs, electric powertrain, DC fast chargers and EV power electronics.

With the accelerated growth of electric vehicles, engineers must address new testing challenges. Voltage and power levels are transitioning from a standard 400VDC to 800/1000VDC. Higher voltages permit faster charging, lower current and improved efficiency. Electric vehicle battery packs have grown, allowing the development of higher performing EV batteries, electric motors, power converters, inverters and faster chargers. Electrical and electronic systems in EV provide reliable, scalable, power, fast transients and high-voltage capabilities, enhance these changing test requirements.

Webinar: Testing EV Components Systems

App Note: Electric Powertrain

Webinar: Electric Powertrain

Electric Powertrain Test Solutions

NHR's battery emulation approach to testing the electric powertrain provides fast bidirectional speeds and accuracy to simulate real-world battery behavior. NHR's bidirectional DC power supplies with 800/1000VDC Battery Emulator accurately tests EMF and presents transients, ripple, and noise to the motor and power electronics. Bidirectional DC power supplies with 800/1000VDC Battery Emulator also provides fast bidirectional power, NHR's **800/1000VDC Battery Emulator** provides a multi-channel capability up to 24 channels with the capability to source and accept voltage and current levels at lower power ranges.

- High Voltage Bi-directional DC Source - 9200 Series
- Test Voltage Battery Test System - 9200 Series

Learn More

App Note: Fundamentals of Battery Test

Guide: Battery Test Solutions

Next Gen EV Battery Module/Pack Test Solutions

NHR's Battery Test Systems enable modular, scalable power ranges from 12V to 1000V, cycle and performance testing, NHR's **9200 High Voltage Battery Test System** provides a dual power range (800 V, 1200 V) and can be used for 400V and 800V battery packs.

App Note: Battery Emulation

DC Fast Charging Test Solutions

DC fast charging infrastructure now operates at higher voltage levels to accommodate faster charge times and longer electric vehicle batteries. Using batteries as power sources for DC fast charging stations, reduces power grid consuming and costly. NHR's bi-directional DC source can safely emulate an electric vehicle battery and provide a fast charge, and battery that can accept fast charging. The ability to emulate a battery and provide a fast charge of its battery improves fast charge stations and dramatically simplifies test. NHR's unique battery emulation capability can substantially reduce test time, energy consumption and operating costs.

- High Voltage Bi-directional DC Source - 9200 Series
- Test Voltage Bi-directional DC Source - 9200 Series

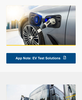
Learn More

App Note: EV Test Solutions

EV Power Electronic Components Test Solutions

NHR provides electric vehicle test equipment for power electronic components including AC/DC loads and sources, Applications include testing battery chargers, DC-DC, EV/HEV, HPM, EV/HEV inverter, etc. **DC loads** are ideal for simulating any inductive, resistive or motor load within an **DC Loads** are ideal for fast transient input simulations. The **NHR Regenerative 4-Quadrant AC Load** provides a bidirectional power source and linear or non-linear load.

- Bi-directional DC Source - 8200/8300 Series
- Regenerative Grid Simulator - Model 1M-10 Series
- AC Loads
- DC Loads



Guide: Fast Cell Eval

Guide: EV Test Solutions

Heavy Duty Electric Trucks, Buses & Fleet Test Solutions

NHR's advanced test equipment is ideal for designing, manufacturing and servicing electric and hybrid heavy duty trucks, buses and commercial fleets. NHR's scalable test solutions range from EV batteries and fuel cells to electric motors, power electronics, and charging infrastructure and increases electric fleet service centers need to be equipped to test higher power levels and higher volumes on demand. NHR's test solutions include battery packs, battery emulation, AC/DC loads and sources.

- Fast Cell Test Solutions

Learn More

E-Mobility Test Solutions for Electric Utility Vehicles, Scooters & E-bikes

NHR's e-mobility test solutions are ideal for R&D and manufacturing of utility electric vehicles, scooters, golf carts, and e-bikes.

New electric transportation solutions for overseas management and service providing require testing individual components and complete systems. NHR's test solutions include e-bikes, battery emulators, AC/DC loads and AC/DC sources provide comprehensive test solutions for emulating and conditioning.

Applications include testing batteries, drive transmission, power electronics, and charger infrastructure.

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Utility Grid & V2G Test Solutions

Utility Grid & V2G Test Solutions

Vehicle-to-grid (V2G) technology allows electric vehicles to the utility grid and vehicle-to-grid (V2G) technologies. Test equipment capabilities must provide the bidirectional power flows to and from the grid. Bidirectional DC power supplies can be used to emulate charge mode. NHR's **DC Power Supplies and Simulators** is used to emulate the utility grid, and **NHR's 8200 Bi-directional DC Source** is used to emulate the EV battery, energy storage system, or fast charger. NHR's **9000 AC Regenerative Load** is used to simulate any grid condition, and provide power to the EV battery or energy storage system. Applicable to the IEEE 1547, UL 1741, and similar grid test standards as well as impact studies around the grid.

- Regenerative Grid Simulator - Model 1M-10
- Regenerative AC Load - Model 9000 Series
- Bi-directional DC Source - 8200 Series

Resources

App Note: Electric Powertrain

Webinar: Electric Powertrain

Article: Testing Fuel Cell EV Applications

Have a Question Regarding Our Industry Test Solutions?

Contact us today to learn how NHR can customize a test solution that fits your specific needs.

Contact Us

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