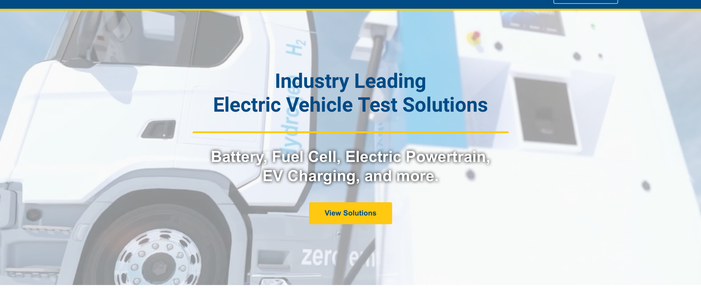


Industry Leading Electric Vehicle Test Solutions

Battery, Fuel Cell, Electric Powertrain, EV Charging, and more.

View Solutions

NHR Launches Regenerative Grid Simulator

The 9510 Regenerative Grid Simulator is the next generation AC test solution for testing and verification of all grid-tied applications in compliance with regulatory testing standards, worldwide. The built-in power amplifier mode for Power Hardware in the Loop (PHIL) applications provides further testing and simulation capability ideal for research labs.

Key Features:

- Modular and Scalable Power
- Widest True-Power Operating Envelope
- Optimized for PHIL
- High Accuracy Current Measurement
- Highest Power Density
- Optional 4-Q AC Load

Learn More

What NHR Offers

NHR's solutions provide the performance, simplicity, and safety that engineers and researchers desire. NHR is a leading manufacturer of power test instruments and systems for a variety of industries and markets.

- Reduced Testing Time
- Improved Safety
- Energy Savings

Industry Solutions

NHR enables electrification by accelerating innovation, validation and functional test of today's technologies. Backed by over 50 years of experience in power conversion and power supply test systems we provide world class test instruments and systems.

View All Solutions

Automotive & E-mobility Test

NHR provides Electric Vehicle (EV) test equipment and software for individual components and systems including EV battery modules/packs, electric powertrain, DC fast chargers and EV power electronics.

Battery

NHR is a leading manufacturer of battery test equipment and system solutions for all battery chemistries, fuel-cells, super capacitors, and energy storage systems.

Next Generation Battery Test Solutions

NHR Battery Test Systems easily integrate with your existing assets or future test requirement set-ups. Battery testing typically involves additional components such as communication modules, temperature chambers and chillers, and other power sources which factors into test requirements.

Battery Emulators

Battery test equipment and system solutions for all battery chemistries, fuel-cells, super capacitors, and energy storage systems.

View Systems

Battery Module/Pack Test Systems

Dramatically reduce testing time, provide highly repeatable test results, and create a safer test environment.

View Systems

Test & Measurement Software

Manage multiple lab and production test setups using a top level S/W solution capable of monitoring and controlling remotely.

View Software

View All Products

Succes Stories

Our engineering value to customers is the ability to benchmark an entire vehicle from the component to the system level…
E-mobility Subject Matter Expert Electric Vehicles Industry

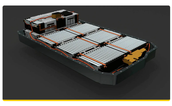
Read More

View Success Stories

News & Resources

NH Research Launches Next Generation Regenerative Grid Simulator for Testing High Power Grid-Tied Applications

NHR Exhibits and Presents at Intersolar and Energy Storage North America 2022



NH Research Exhibits at the Advanced Automotive Battery Conference 2021

Have a Question Regarding Our Products?

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

Contact Us

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Automotive & E-mobility Test Solutions

We simplify test so you can focus on innovation.

Application Guide

Electric Vehicles & E-mobility Test Solutions

NH Research (NHR) provides Electric Vehicle (EV) test equipment and software for individual components and systems including 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 traditional 300/400VDC to 800/1000VDC. Higher voltages permit faster EV charging and increase power transfer while reducing vehicle weight. These factors are driving the development of higher performing EV batteries, electric drive-trains, power converters, inverters and faster chargers. Today's EV test equipment needs to provide modular, scalable power, fast transients and integrated safety to address these changing test requirements.

Webinar: Testing EV Components Systems

Electric Powertrain Test Solutions

App Note: Electric Powertrain

Webinar: Electric Powertrain

NHR's battery emulation approach to testing the electric powertrain provides fast-transient speeds and accuracy to emulate real-world conditions for energy storage (battery) and wheel power. NHR's 9300/9200 Battery Emulator accepts back EMF and prevents safety hazards. The isolated input and output paths eliminate single points of failure and unstable conditions. This highly modular and scalable test solution meets current and future power requirements of electric powertrain systems.

- High Voltage Battery Emulator up to 2.4 MW - 9300 Series
- Med Voltage Battery Emulator up to 21 channels - 9200 Series

Learn More

Next Gen EV Battery Module/Pack Test Solutions

NHR's Battery Test Systems enable modular, scalable power for rigorous EV life-cycle, drive cycle and performance testing. NHR's **9300 High Voltage Battery Test System** provides a dual power range (600 V, 1200 V) and can be scaled up to 2.4 MW in 100 kW building blocks. NHR's **9200 Battery Test System** has a multi-channel capability (up to 21 channels) with the capability to mix and match voltage and current levels at lower power ranges.

- High Voltage Battery Test System - 9300 Series
- Med Voltage Battery Test System - 9200 Series

Learn More

App Note: Fundamentals of Battery Test

Guide: Battery Test Solutions

DC Fast Charging Test Solutions

App Note: Battery Emulation

DC fast charging infrastructure now operates at higher voltage levels to accommodate faster charge times and larger electric vehicle batteries. Using batteries as power sources for testing fast charger systems is extremely time-consuming and costly. NHR's bi-directional DC source can safely emulate an electric vehicle DC fast charger or a high voltage battery pack that can accept fast charging. The ability to emulate a wide range of vehicles, regardless of its battery characteristics and power levels, 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 - 9300 Series
- Med Voltage Bi-directional DC Source - 9200 Series

Learn More

EV Power Electronic Components Test Solutions

NHR provides electric vehicle test equipment for power electronic components including AC/DC loads and sources. Applications include the EV on-board charger (OBC), EVSE, APM, DC-DC converter, etc. Our AC loads are ideal for simulating any inductive, capacitive or resistive load while our DC Loads are ideal for fast transient inrush simulations. The 9430 Regenerative 4 Quadrant AC Load has the capability of simulating almost any linear or non-linear load.

- Bi-directional DC Source - 9200/9300 Series
- Regenerative Grid Sim/AC Source - Model 9410/9420
- AC Loads
- DC Loads

App Note: EV Test Solutions

Heavy Duty Electric Trucks, Buses & Fleet Test Solutions

Guide: Fuel Cell EVs

Guide: EV Test Solutions

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

- Fuel 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 campus management and urban commuting require testing individual components and entire systems. Our next generation battery cyclers, battery emulators, AC/DC loads and AC/DC sources provide comprehensive test solutions for simulating real world conditions.

Applications include testing batteries, drive train/motors, power electronics, and charger technologies.

Utility Grid & V2G Test Solutions

Test the impacts of electric vehicles on the utility grid and vehicle-to-grid (V2G) technologies. Test equipment simulating the bidirectional power flows to and from the grid substantially speeds up test time and reduces energy costs. NHR's 9410 Regenerative Grid Simulator is used to simulate the utility grid while NHR's 9300 Bi-directional DC Source is used to emulate the EV battery, energy storage system, or fast charger. NHR's 9430 AC Regenerative Load is used to simulate any inductive, capacitive or resistive load. This combination is an ideal test solution for IEEE 1547, UL 1741, and similar grid-tied standards as well as impact studies around the globe.

- Regenerative Grid Simulator - Model 9410
- Regenerative 4 Quadrant Load - Model 9430
- Bi-directional DC Source - 9300 Series

Resources

Webinar Electric Powertrain

App Note: 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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Test Instruments & Systems

We simplify test so you can focus on innovation.

View Product Guide

Power Electronics Test Instruments & Systems

NH Research (NHR) is a leading manufacturer of power electronics test instruments and systems for the automotive, aerospace and defense, battery/energy storage, renewable energy and power conversion industries. Our application test solutions provide modular configurations, expandable power, integrated safety features, wider operating envelopes, built-in measurements, and faster transient response-times. We enable you to confidently push the boundaries of test.

Battery Emulators & Simulators

NHR's battery emulators are used to emulate a battery or DC Power. Applications include testing components and systems such as powertrain, DC fast charging, satellites, solar PV, and energy storage systems.

View Systems

Battery Module Pack Test

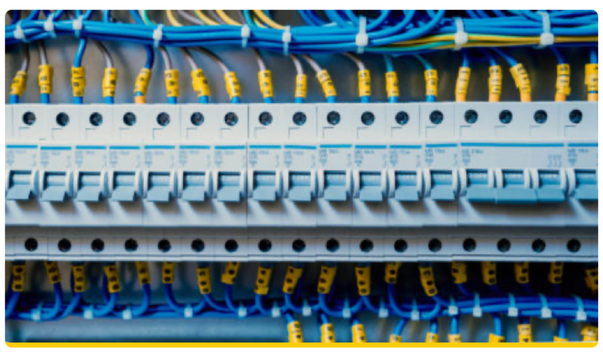
NHR's battery module and pack test systems are used to test all battery chemistries, fuel cells and super capacitors. We offer comprehensive test solutions for R&D and manufacturing.

View Systems

Battery Test Management Software

Enerchron® is a powerful but easy to use test executive created for battery testing to simplify and accelerate your test automation.

View Software



AC & DC Electronic Loads

NHR's programmable AC and DC loads are flexible instruments that can be used in customer built test systems.

View Loads

AC & DC Sources

NHR's programmable AC and DC sources are flexible instruments that can be used in customer built test systems.

View Sources

AC & DC Regenerative Loads/Sources

NHR's AC & DC regenerative loads are high performance, energy efficient test solutions that reduce energy waste and provide significant cost savings.

View Loads/Sources

Have a Question Regarding Our Products?

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

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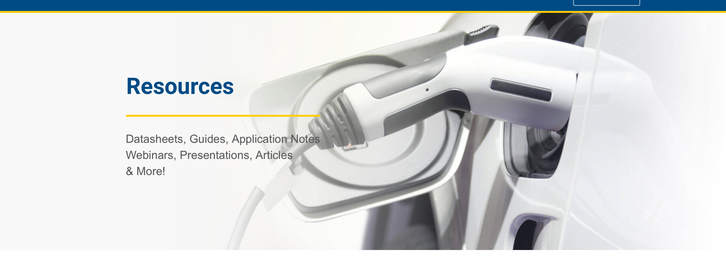

Resources

Datasheets, Guides, Application Notes, Webinars, Presentations, Articles & More!

Datasheets

View All

9510 Regenerative Grid Simulator

9430 Regenerative AC Load

9420 AC Power Source

9410 Regenerative Grid Simulator

Guides

View All

Battery Test Solutions Product Guide

Electric Vehicle Test Solutions Product Guide

Renewable Energy & Microgrid Test Solutions Product Guide

EV Charging Test Solutions Product Guide

Application Notes

View All

LVRT Testing in Solar PV Inverters and Grid Tied Systems

Bi-directional Power Supplies vs. Battery Emulator

Battery Test Safety Requirements

Battery Cycler vs. Bi-directional Power Supply for Battery Test

On Demand Webinars

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Selecting a Battery Cycler or Building Your Own

AC Load Testing Fundamentals

Electric Aircraft Test Solutions

Testing EV Components & Systems

Presentations

Battery Module/Pack Testing: Current Challenges & Opportunities

Using Battery/Fuel Cell Emulation for Testing DC Fast Chargers & Powertrains

Bi-directional Test Solutions to Manage the Impacts of Electrification on the Grid

Articles

View All

How is a Battery Emulator Different from Power Supplies & Electronic Loads?

Testing Electric Vehicles Using Battery Emulation

Fuel Cell Test Solutions: Hydrogen Technologies on the Rise

Fuel Cell Test Solutions: Hydrogen Technologies on the Rise

Access Our Library of Documents & More!

All Documents

Do You Have a Question Regarding Our Resources?

Contact us today to learn about additional resources NHR has to fit your specific needs.

Contact Us

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Power Electronics Testing Webinars

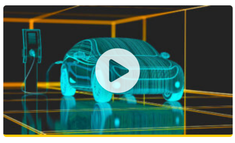
Application Test Solutions & Approaches

NH Research is launching a series of webinars to help educate our customers across a wide range of markets and industry applications. Our application experts present on advanced test solutions and approaches related to electrification including electric vehicles, aerospace and defense, energy storage and renewable energy. Please contact us to request a specific topic. To register for our **live** webinars, go to the **events** page.

Watch Our On-Demand Webinars

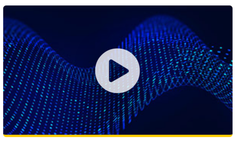
Did you miss a webinar? You can read a short description and watch our past webinars by clicking on a webinar title below. To watch the recording, click the "Watch Now" button on the webinar's description page, complete the form request and you will be immediately directed to the recording.

AC Grid Emulation for Smart Grid and EV Charging



Get Your Battery Project Back On Track in 2021

Selecting a Battery Cycler or Building Your Own



AC Load Testing Fundamentals

Electric Aircraft Test Solutions

Testing EV Components & Systems

Accelerate Battery Test Automation with Enerchron®

Accelerate Battery Test Automation with Enerchron® (Intl. Edition)

Electric Powertrain Next Gen Test Solutions

Electric Powertrain Next Gen Test Solutions (Intl. Edition)

The Fundamentals of Battery Module & Pack Test

The Fundamentals of Battery Module & Pack Test (Intl. Edition)

Have a Question Regarding Our On-Demand Webinars?

Contact us today to learn more about NHR's on-demand webinar series.

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Please fill out the information below to receive your quote for test systems or instruments. You may be contacted by one of our sales engineers and asked some additional questions in order to give you an accurate quote.

Fields marked with a * are required.

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Products Requested *

- AC Loads
- AC Sources
- AC/DC Regenerative
- Battery Emulation
- Battery Test
- DC Loads
- DC Power Supplies
- DC Sources
- Power Supply Testing
- Software Solutions

Application Notes *

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- Social Media
- Tradeshow
- Web
- Other (Fill In Box)

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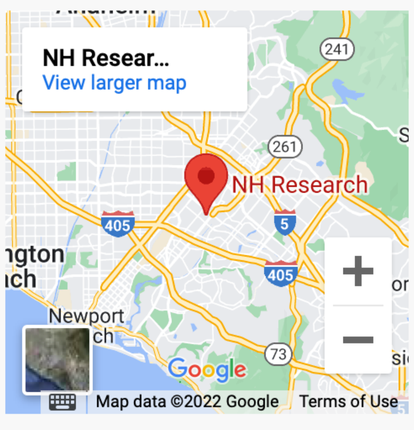

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