



**SUPER
SCIENTIFIC
INSTRUMENTS**

INSTRUMENTS | SYSTEMS | INTEGRATION | CUSTOMIZED SOLUTIONS

TECHNOLOGY
PEOPLE
A SUSTAINABLE
TOMORROW

Test, Measurement & Advanced Technology Solutions



Global
Technologies



Engineered
Systems



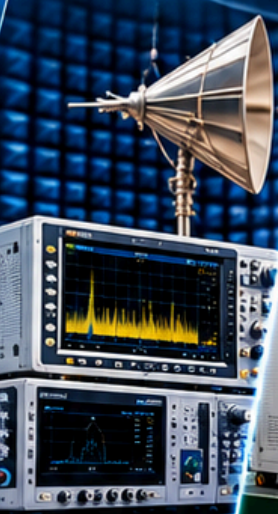
Integration
Expertise



Customized
Solutions



RF &
MICROWAVE
TEST SOLUTIONS



- Spectrum Analyzers
- Signal Generators
- Network Analyzers
- RF Components
- RF Test Instruments



POWER &
ENERGY
TEST SOLUTIONS



- Programmable Power Supplies
- Regenerative Systems
- Electronic Loads
- Power Analyzers
- Grid Simulation



BATTERY &
EV TEST SOLUTIONS



- Battery Test Systems
- Cell & Pack Testing
- BMS & HIL Solutions
- EV Component Testing
- Environmental Chambers



LABORATORY &
RESEARCH SOLUTIONS



- Electrochemistry Solutions
- Fuel & Cells & Electrolyzers
- Materials & Consumables
- Research Instruments
- Laboratory Equipment



CUSTOMIZED
ENGINEERING &
AUTOMATION SOLUTIONS



- Industrial Automation
- Data Acquisition Systems
- Control Panels
- IoT & Remote Monitoring
- Embedded & Custom Solutions



Academic
Institutions



Research
Laboratories



Industries



Government
Organizations

ADVANCING
RESEARCH
ENABLING INDUSTRY
BUILDING A
SUSTAINABLE FUTURE



RF / MICROWAVE



POWER / LOADS



CURRENT SENSING

PROGRAMMABLE DC POWER SUPPLIES

- MP: 80-2250 V | 6-510 A | 1.5-15 kW
- GP/WP: 36-800 V | up to 600 A | up to 300 kW
- Accuracy: $\leq 0.1\%$ Umax / $\leq 0.2\%$ Imax
- CAN • RS485/232 • LAN; USB / analog options

SPECTRUM & SIGNAL ANALYSIS

- Selected platforms: 2 Hz to 50 GHz
- Coaxial systems to 110 GHz; external extension to 750 GHz
- Analysis bandwidth up to 1.2 GHz; selected platform to 2 GHz
- Real-time / swept spectrum and signal-analysis platforms

BIDIRECTIONAL / REGENERATIVE DC

- WB3000: 12-1200 V | 300-1200 A | 100-600 kW
- Voltage/current accuracy: $\pm 0.05\%$ FS
- Response/switching: 2 ms / 4 ms; PF ≥ 0.99
- Battery simulation • DC source • load • regeneration

VECTOR NETWORK ANALYZERS

- S3674 family: 500 Hz to 110 GHz
- Dynamic range up to 131 dB at 20 GHz on selected configuration
- 2-port / 4-port families; other platforms to 43.5 GHz
- S-parameters • gain compression • mixer / converter analysis

BATTERY SIMULATOR / PACK TEST

- 24-1000 V standard | 50-500 kW
- Rated current ± 200 to ± 1000 A; peak to ± 1300 A
- Optional 24-800 V / 24-1200 V; customizable current
- 48 V family: 10-200 V | 18-50 kW

RF SOURCES / FIELD ANALYZERS

- Signal generators: 9 kHz to 20 / 40 GHz
- Approx. -120 dBm to +17 dBm; 0.001 Hz resolution
- Cable/antenna: 2 MHz to 4.4 / 6 GHz
- Multifunction microwave analyzer: 30 kHz to 40 GHz

PRECISION CURRENT TRANSDUCERS

- Nominal DC current coverage: 12 A to 10,000 A
- Selected bandwidth: 200 kHz, 300 kHz, 650 kHz, 1-2 MHz
- High-frequency models listed up to 300 MHz
- Precision sensing for EV • power electronics • calibration

RF COMPONENTS & INTERCONNECT

- Amplifiers approx. 0.1-52 GHz; LNA approx. 1 kHz-67 GHz
- Dividers / switches / couplers / attenuators to 50-67 GHz
- Flexible test cables and precision interconnect to 110 GHz
- Calibration kits and adapters to 67 GHz / 110 GHz families

SELECT BY APPLICATION

EV / Battery: bidirectional source + pack cyclers + current transducer
 Power Electronics: programmable source + regenerative load + power analysis
 RF Lab: spectrum analyzer + VNA + signal generator + cables / calibration
 Production / ATE: LAN / CAN / RS485 instruments + automation / DAQ integration



BATTERY / EV

BATTERY & EV TEST

- Charge/discharge: CC • CV • CP • CCCV • CR modes
- Capacity • cycle life • HPPC • efficiency • DCIR • road simulation
- Pack systems: 24-1000 V | 50-500 kW | +/-200 to +/-1000 A
- BMS / HIL • battery simulator • motor / EV component testing



HYDROGEN / ENERGY

CELL ASSEMBLY EQUIPMENT

- Coin-cell crimping / de-crimping and cell hardware
- Pouch / prismatic stacking, winding and heat sealing
- Vacuum mixer • vacuum drying oven • electrode processing
- Capacity grading • sorting • formation / cycling support

ELECTROLYZERS & FUEL CELLS

- PEM • AEM • alkaline electrolyzers • CO2 electrolyzer systems
- Fuel cells • stacks • educational PEM hydrogen systems
- Custom active-area electrochemical hardware / MEA solutions
- Research, demonstration and laboratory-scale configurations

ELECTROCHEMICAL CELLS

- Three-electrode • flow • Swagelok-type configurations
- Reference electrodes: Ag/AgCl • SCE • Hg/HgO
- Platinum plate / mesh / wire electrodes
- Bipolar plates: graphite and metallic SS316L options



LAB / THERMAL

MEMBRANES & IONOMERS

- Nafion N117 / N212 and ionomer solutions
- Fumasep membrane families and AEMION membranes
- GDL • gaskets • membrane / electrode assembly consumables
- Custom sizing subject to material / manufacturer availability

CATALYSTS & ELECTRODES

- Pt/C catalyst families • IrO2 • catalyst inks
- Carbon cloth / felt • nickel felt / foam
- Catalyst-coated substrates and custom electrode preparation
- MEA / GDL / catalyst integration for electrochemical research

OVENS & FURNACES

- Hot-air oven • vacuum oven • vacuum drying systems
- Muffle / box furnace • tube / tubular furnace
- High-temperature • atmosphere / vacuum furnace configurations
- Programmable temperature control; range by selected model

RESEARCH & RENEWABLE LAB

- Solar simulator + I-V characterization • four-probe station
- Portable / dynamic solar and wind trainers
- Wind-solar hybrid and hydrogen education laboratories
- Customized research instruments and integrated laboratory setups

CUSTOMIZATION EXAMPLES

Electrochemical cell geometry • electrode material / loading • membrane / GDL selection
 Battery tester voltage-current-power configuration • channels • chamber / oven integration
 Furnace atmosphere / tube size / temperature controller selected against final process requirement
 Complete renewable-energy, hydrogen, battery and electrochemistry teaching / research laboratories

CUSTOMIZED ENGINEERING & SYSTEM INTEGRATION

From instrument selection to complete automated test, research and training systems.



AUTOMATION • CONTROL • DAQ • HIL

Integration Capabilities

- Automated test equipment and application-specific test benches
- Industrial automation, PLC / control panels and data acquisition
- Battery / EV / motor HIL and power-electronics test integration
- RF / microwave laboratory setup and instrument integration
- Hydrogen, fuel-cell, electrolyzer and electrochemistry laboratories
- Solar / wind / renewable-energy teaching and research laboratories
- Remote monitoring, IoT, embedded interfaces and custom electronics

APPLICATION SECTORS

ACADEMIC / R&D

Universities • IITs / NITs • research laboratories • teaching labs

EV / BATTERY

Cells • modules • packs • BMS • motors • converters • charging

POWER / ENERGY

Power electronics • grid simulation • renewable energy • storage

RF / ELECTRONICS

Wireless • microwave • antennas • components • production test

INDUSTRIAL

Automation • production validation • control • DAQ • customized ATE

GOVERNMENT / LABS

Scientific organizations • testing labs • institutional projects

ONE PARTNER. MULTIPLE TECHNOLOGIES.

Selection • supply • customization • integration • installation • commissioning • application support

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