ECCE 2026: Exhibitors Showcase Power Components, Design Tools And More For Energy Conversion

by David G. Morrison, Editor, How2Power.com

At this year's IEEE Energy Conversion Congress & Expo (ECCE 2026) in Vancouver, B.C., Canada, suppliers of power components, test instruments, and design tools, as well as manufacturing equipment makers and test laboratories will present the latest products and services for developers of power electronics, electric machines and power systems in the exhibition taking place on October 5 and 6.

Among the products being shown this year are some of the latest GaN power transistors, ICs and modules; a digital control platform and components implementing a novel power-conversion architecture. Examples of advanced planar transformer designs and next-gen capacitors will also be on display.

Once again, design tools and test instruments for power electronics will be prominent. Among these are are a controller for a rapid control prototyping system, a real-time simulator for testing modern power systems and a digital real-time interface for programmable dc power supplies used in power-hardware-in-the-loop (P-HIL) testing. Instruments include a state-of the-art VNA/FRA, a two-port probe for PDN impedance measurements, and a precision power anayzer.

This year's Vancouver venue—the second time the conference has been held in Canada—has attracted some local companies to the exhibition. One of these is a large testing laboratory that offers 15 different testing labs, effectively a one-stop-shop approach to managing utility generation, transmission, and distribution power systems. Among the exhibitors offering production equipment, one offers advanced manufacturing solutions for electric motor and coil production.

This article gives a preview of the products that companies will be displaying or demonstrating in the ECCE 2026 exhibition.

Power Components

Wise Integration (Booth 515)

Wise Integration will show the WI73100 700-V e-mode GaN power IC, the WiseWare 2.1 digital control platform and the 7-kW WiseWare 1.3 controlled platform.

The WI73100 GaN power IC combines a high-performance GaN switch with an integrated driver and fast protection features. Designed specifically for digital control, it can be driven directly from a 3-V MCU signal and operates from a supply voltage from 5 V.

With a typical 100-mΩ $R_{DS(ON)}$, switching capability up to 5 MHz, very low 70 µA quiescent current and ultra-fast 15-ns overcurrent protection delay, the WI73100 enables compact, efficient and high-power-density converters for computing, e-mobility and industrial applications.

WiseWare 2.1 is the company's next-generation digital control platform based on a patented single-stage ac-dc architecture (isolated and regulated) with virtualized PFC. Running on a standard 32-bit MCU, it enables up to 2-MHz switching frequency precise control, timing and regulation without ripple while simplifying the overall power architecture. Designed to deliver up to 100% higher power density, according to the vendor, and up to 96% efficiency, WiseWare 2.1 is scalable from a 240-W evaluation platform to kilowatt-level applications, making it well suited for servers, AI PC , power tools and battery charger applications.

The 7-kW WiseWare 1.3 controlled platform demonstrates the scalability of Wise Integration's digital control technology for high-power conversion. Its architecture combines an interleaved totem-pole PFC and a full-bridge LLC enabling efficient management of complex multi half-bridge power topologies. By combining advanced digital control with SiC power stages, the platform targets higher efficiency and power density for applications such as e-mobility, industrial power supplies and next-generation server SMPSs.

For more information, see the WiseGan and WIW2101 pages.

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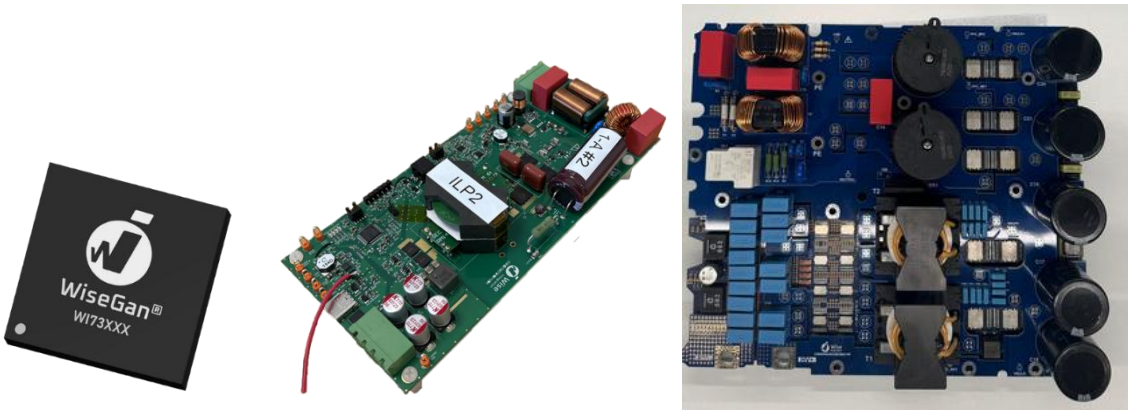

(a) (b) (c)

Wise Integration's WI73100 700-V e-mode GaN power IC (a) WiseWare 2.1 digital control platform (b) and 7-kW WiseWare 1.3 controlled platform (c)

Infineon (Booth 403)

Infineon will showcase four CoolGaN power devices—the G5 IGLT65R055B2 650-V bidirectional switch, the G5 IGC016K10S2 100-V transistor, the G5 IGT65R055D2 650-V transistor and G3 IGK120B041S 40-V bidirectional switch.

The IGLT65R055B2 is a 650-V normally-off bidirectional power transistor in a TOLT package, enabling high power density designs with efficient voltage blocking in both directions. It features low gate charge, low output charge, stable $R_{SS(ON)}$ across temp. and freq. and a common-drain configuration. Described as compact, cost effective and having a short time to market, the bidirectional power switch targets server power supplies, one-phase and three-phase string inverters, microinverters and motor control applications.

The IGC016K10S2 is a 100-V normally-off e-mode GaN power transistor in a 3-mm x 5-mm package with integrated Schottky diode. With this integrated feature, reverse conduction losses are minimized and even higher system efficiencies can be reached.

Other features include no reverse recovery charge, low reverse conduction voltage, high power capability and ultrafast switching. Applications include data center power solutions, intermediate bus converters, telecommunications infrastructure, robotics, and motor control applications.

The IGT65R055D2 GaN power transistor allows for increased efficiency at high-frequency operation. According to the vendor, it meets the highest quality standards, enabling highly reliable designs with superior efficiency. Housed in a bottom-side-cooled TOLL package, it is designed for optimal power dissipation in various industrial applications.

Features include low gate charge, low output charge; no reverse recovery charge; ultrafast switching; low dynamic $R_{DS(ON)}$, and superior commutation ruggedness. Applications include data center power solutions, ac-dc power conversion for telecommunications infrastructure, EV charging, photovoltaic systems and industrial and medical SMPSs.

The IGK120B041S is a 40-V normally-off bidirectional power transistor housed in a small WLCSP 1.2 x 1.7 package, enabling high power density designs. Thanks to its very low on-state resistance, it offers reliable performance in demanding applications requiring bidirectional blocking capability such as load switches. Features include bidirectional blocking capability; drain-to-drain configuration; low gate charge, low output charge and JEDEC qualification.

Applications include overvoltage protection in mobile devices and smartphones and power conversion uses.

For more information, see the IGLT65R055B2, IGC016K10S2, IGT65R055D2, IGK120B041S pages.

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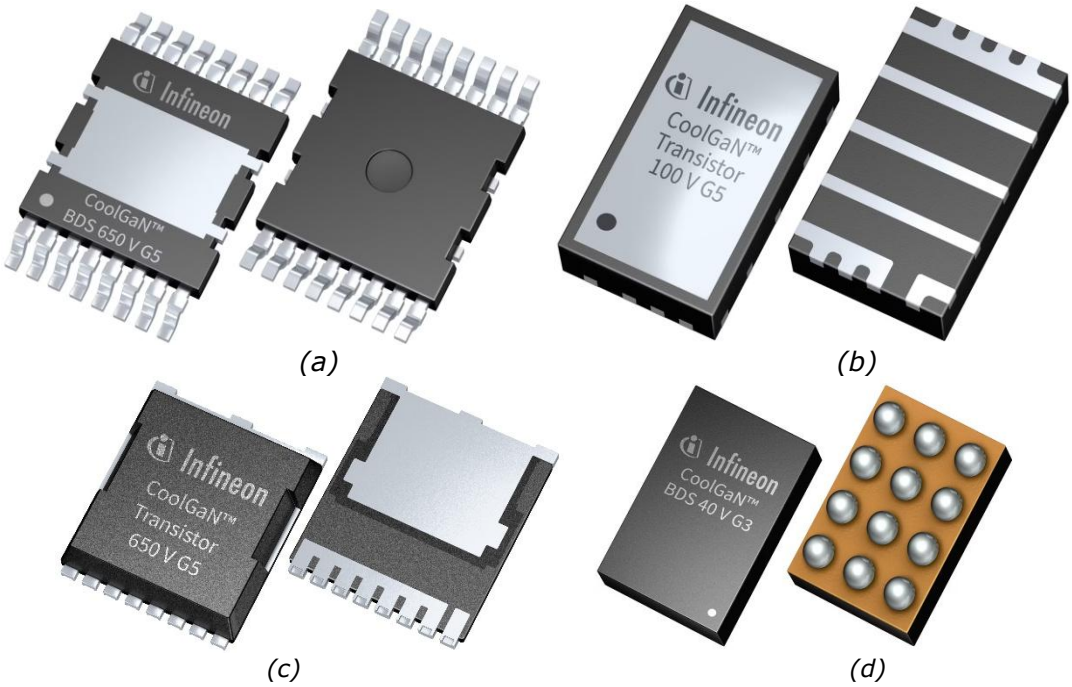

Infineon's IGLT65R055B2 650-V CoolGaN bidirectional switch (a), IGC016K10S2 100-V CoolGaN transistor (b), IGT65R055D2 650-V transistor (c) and IGK120B041S 40-V bidirectional switch (d).

Cambridge GaN Devices (Booth 220)

Cambridge GaN Devices will highlight its 3-kW totem-pole PFC reference design and 650-V HPD ICeGaN power module.

The totem-pole reference design is engineered to deliver exceptional efficiency, meeting 80+ Titanium standards when paired with a downstream dc-dc converter. It is optimized for high-power density applications, including cloud and server power supplies, computing, industrial systems, and data centers.

It features 2 x P2 DHDFN series 650-V/25-mΩ GaN HEMTs based on CGD's robust and simple-to-drive ICeGaN technology; top-side cooling, which aids in heat dissipation, ensuring the components run cool even under high performance and load conditions; and a modular design with three daughterboards, which enhances flexibility, making evaluation easier.

Specifications include a V_{IN} of 90 to 264 Vac, a V_{OUT} of 400 V, a 65-kHz switching frequency and a peak efficiency of 99%. The eval board measures 70 x 252 x 39 mm.

Targeting automotive, traction inverters, the HPD ICeGaN power module is a 650-V/370-A GaN HPD power module featuring ultra-low $R_{DS(ON)}$ and an industry-standard HPD package that enables seamless integration into existing inverter platforms. Its monolithically integrated ICeGaN dies are compatible with standard gate-drivers.

This module features the PD23HTVP6HT Star power module, 24 X CGD65F9R0MA4-W61-A1 GaN devices with 2.3-mΩ $R_{DS(ON)}$ per switch. It is compatible with MOSFET/IGBT drivers (8 to 20 V), has an integrated Miller clamp and Si-RC snubber, and comes in an industry-standard HPD module package for easy system integration. It is designed for high-frequency automotive EV inverter and motor drive applications.

For more information, see the Reference Design: CGD-ASY-EVB030FA-01 page.

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(a) (b)

Figure. CGD's 3-kW TP PFC reference design (a) and 650-V/370-A GaN HPD power module (b).

Daanaa Resolution (Booth 503)

Daanaa Resolution is a fabless power electronics company headquartered in Vancouver, BC. According to the company, it has created the world's first hyper-conversion ratio, real-time programmable, ultra-high efficiency, bidirectional, multi-mode (ac or dc) power converter.

Daanaa's innovation is rooted in its patented Power Transaction Unit (PTU), a fundamentally different power-conversion architecture. According to the company, it departs from conventional transformer-based and switched-capacitor approaches, instead leveraging near-field electromagnetic coupling for efficient power transfer and conversion.

Daanaa will be displaying their low and medium power PTU units, as well as application references for vehicle integrated solar, building integrated solar, and EV/data center power converters.

For more information, see the website.

Payton Planar (Booth 418)

Payton will highlight its planar magnetics for 800-V input for AI power in addition to its 200-kW power magnetics for data centers. "Our 800-V matrix transformers are playing a major role in the industry," says Jim Marinos, executive VP Engineering at Payton America.

From Payton Planar, matrix transformers employing planar magnetics enable scalable magnetics solutions from 800-V dc down to GPU rail voltages. Instead of one large transformer, multiple smaller transformers share power with current distributed among parallel magnetic paths. This achieves reduced ac copper losses, better thermal spreading, improved manufacturability and easier scaling to 10 kW, 20 kW, 50 kW, and beyond.

As an example, a 1-kW matrix transformer for a 1-MHz switching LLC steps an 800-V output down to 4 V in a planar magnetic that stands 7 mm high. It achieves 1500-Vdc isolation with 8-mm clearance.

Payton Planar's a 1-kW planar matrix transformer.

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Electronic Concepts (ECI) (Booth 203)

Electronic Concepts will present seven series of capacitors for various high-power, high-energy and high-temperature applications. Among these products, the company will highlight its 3PH series three-phase film capacitor. This is a packaged three-phase wye or delta film capacitor engineered for demanding power quality and harmonic filtering applications. Utilizing high-reliability dry film capacitor technology, the 3PH series is designed for use in harmonic filters, low- and medium-voltage drives, and power conversion equipment.

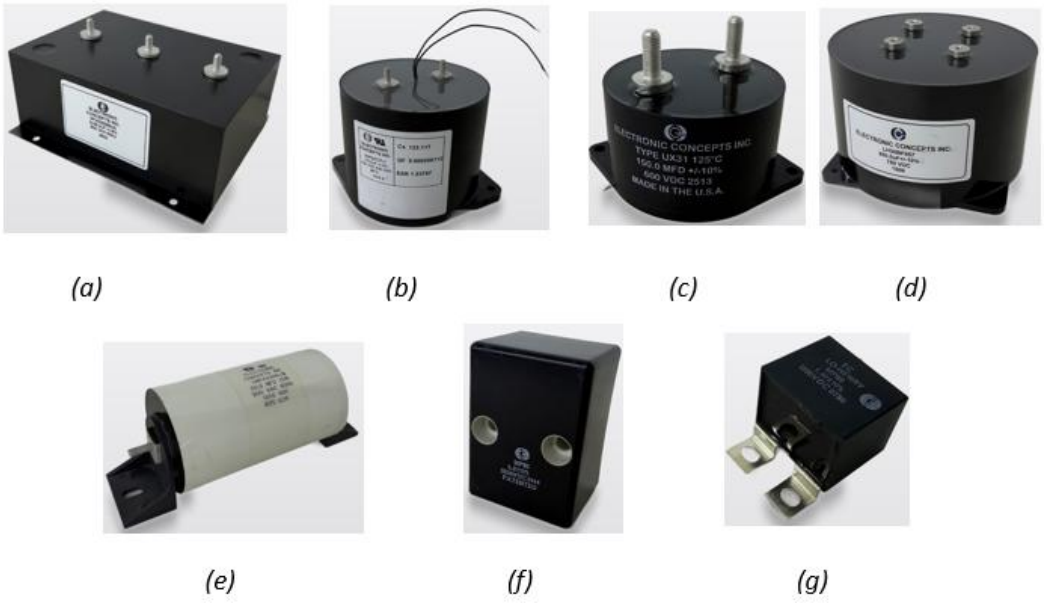
Another product on display at the ECI booth will be the 3MP series, which offers high-energy ac filtering with a versatile mounting flange and male/female terminal configurations. A key feature is a center-potted thermal cut-out (TCO), positioned at the capacitor hotspot, that can trigger a custom circuit when critical temperatures are reached. Custom sensor options are also available.

Other series such as the UX3 series support high-temperature applications. The UX3 series operates up to 125°C. Maintaining the same mechanical envelope as ECI's UL3 series, the UX3 series provides increased operating temperature capability and current-carrying performance for demanding power electronics applications.

Meanwhile, the UNLYTIC LH3 series, including the LH30 configuration, utilizes ECI's Lo-Henry coaxial film technology to achieve very low inductance (ESL). Designed with a compact terminal layout, the series can help designers reduce overall bus bar dimensions while supporting demanding inverter and power conversion applications.

Other products to be shown include the the 5MPA series, which is described as an excellent solution for ac motor run applications where high PWM and other feedback currents are present on top of line frequency; the MP80 series snubber capacitor, which mounts directly to IGBT terminal spacings using a leadless, ultra-low-inductance design; and the MP88-PT88 series, which features a design with no internal wires, significantly reducing equivalent series inductance (ESL) to provide strong high frequency response and peak reliability.

For more information, see the 3PH, 3MP, UX3, LH3, 5MP, MP80, and MP88-PT88 product pages.



ECI's 3PH (a), 3MP (b), UX3 (c), LH3 (d), 5MPA (e), MP80 (f) and MP88-PT88 (g) capacitor series..

Design Tools And Instruments

Imperix (Booth 303)

Imperix will highlight its B-Box 4 controller, PEB-800-40 SiC MOSFET module, and new current and voltage sensors.

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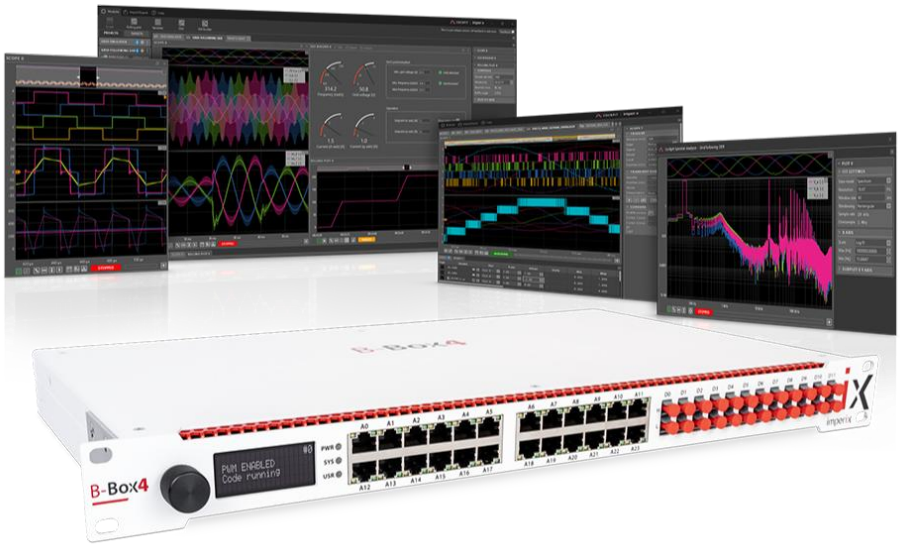
The B-Box 4 is described as a new state-of-the-art controller that combines next-level processing with breakthrough oscilloscope functions. It maintains the ease of use and rapid programming that drove the success of the B-Box RCP 3.0, says the vendor, including full support for simulation and automated code generation from within Simulink or PLECS. The B-Box 4 is able to run closed control loops up to 500 kHz, delivering FPGA-level performance with CPU-level simplicity.



Imperix's B-Box 4 controller.

The PEB-800-40 SiC MOSFET module is designed to cover both high-current and fast-switching applications, superseding both the PEB8038 and PEB8024. With upgraded on-board protections, research engineers get superior performance and enhanced safety in one package.

Imperix PEB-800-40 SiC MOSFET module.

The current and voltage sensors fully leverage the B-Box 4's ultra-fast analog inputs and oversampling capabilities. Besides being faster and more accurate than the previous generation, they now enable automatic identification and calibration directly from Cockpit.

Imperix's voltage (left) and current (right) sensors.

For more information, see the B-Box 4, PEB-800-40, and sensors pages.

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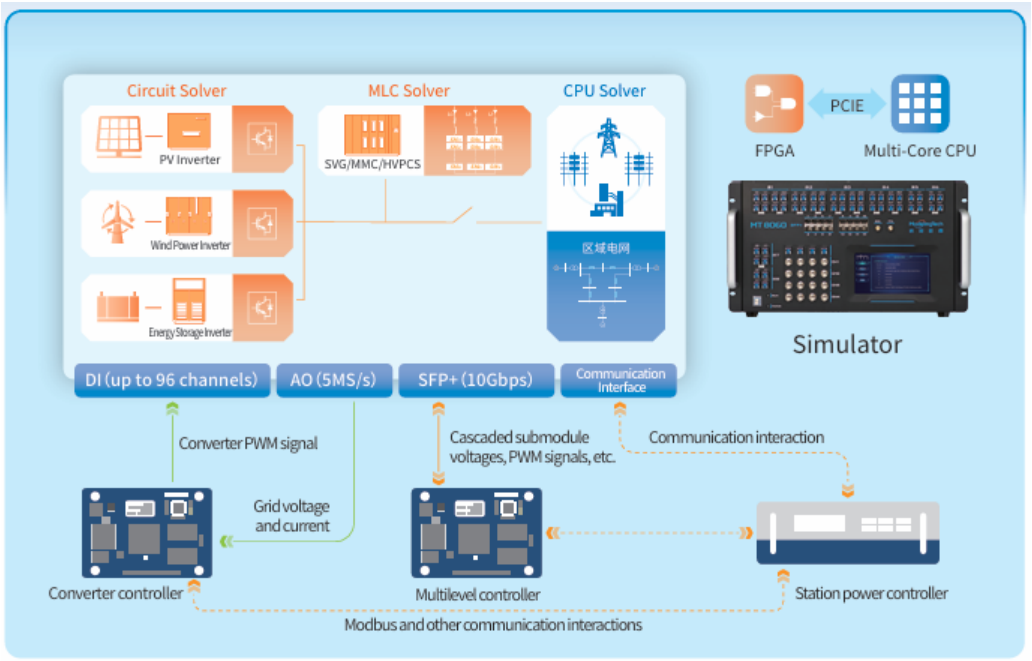
ModelingTech Energy Technology Co. (Booth 510)

ModelingTech will showcase the MT 8060, its company's flagship real-time simulator. Features include a powerful CPU supporting multicore parallel simulation, a high-performance FPGA supporting microsecond-level simulation of power electronics models, an ultra-high-speed I/O; and 16 SFP+ fiber optic expansion channels supporting high-speed paralel simulation.

For more information, see the MT 8060 product page.



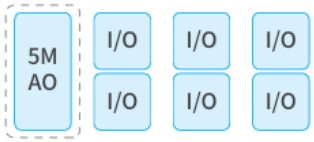
Modeling Tech's MT 8060 real-time simulator.

Table. Key parameters for the MT 8060.

Technical Parameters	
Processor	16 cores, Main Frequency 3.6GHz
Memory	32GB DDR4 SDRAM
FPGA	1451K Logic Cells, 75.9Mb On-Chip RAM, 5520 DSP Slices
Fiber Optic Interface	16 SFP+
Communication	Modbus , Ethernet , CAN/CAN-FD , GOOSE , IEC 104 , EtherCAT
Dimension	480mm*533mm*267mm(L*W*H)

IO capability

- Includes 1 × 5M AO slot and 6 × general-purpose I/O slots.
- The 5M slot supports 32 channels of analog output signals.
- Each general-purpose slot supports 16 channels of AI or 16 channels of AO.
- Each general-purpose slot supports 32 channels of DI or 32 channels of DO.



REGATRON (Booth 218)

REGATRON will showcase its new G5.RegaLink RT, a high-speed digital real-time interface for the G5 series of programmable dc power supplies, designed for advanced Power-Hardware-in-the-Loop (P-HIL) applications. Based on the Aurora protocol, G5.RegaLink RT provides direct digital communication between real-time simulators and REGATRON G5 power supplies.

By eliminating digital-to-analog and analog-to-digital conversion stages, the interface reduces command delay from 90 µs to just 45 µs, enabling faster system response and high-fidelity reproduction of dynamic electrical behavior.

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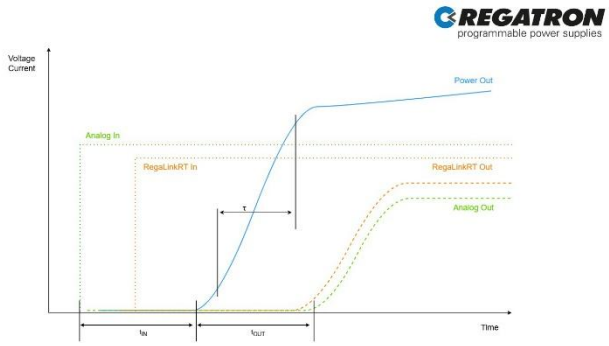

G5 Step Response Times

Analog	G5.RegaLink RT	
90 µs	45 µs	t_{IN} time delay setpoint in to power out
42 µs	42 µs	t_{OUT} time delay power out to setpoint out
20 µs	20 µs	τ rise/fall time current step 10 % ... 90 % full scale
170 µs	170 µs	τ rise/fall time voltage step 10 % ... 90 % full scale

The new interface further reduces command delays from 90 µs to just 45 µs, enabling faster system response and more accurate simulation of dynamic electrical systems.

Performance of Regatron's high-speed digital real-time interface for P-HIL testing.

A single optical SFP connection also simplifies integration by eliminating multiple analog signal lines, gain adjustments and offset calibration while providing excellent immunity to electromagnetic interference.

G5.RegaLink RT supports real-time simulation environments from OPAL-RT, RTDS, Speedgoat and Typhoon HIL and is suited for applications including battery systems, electric powertrains, aerospace electrical networks, power converters and energy storage systems. For more information, see the website.

MathWorks (Booth 518)

MathWorks will showcase how MATLAB and Simulink can help engineers design, optimize, and deploy engineered systems, while leveraging AI. One topic to be addressed is modeling and simulation of data center power, cooling, and HVAC systems with Simscape to evaluate performance and efficiency at scale.

Other topics include integrating MATLAB into agentic AI workflows using the MATLAB MCP Server and MATLAB Agentic Toolkit to enable AI-assisted engineering, code generation, testing, and automation; and establishing a digital thread that connects requirements, models, simulations, tests, and deployed systems to improve traceability, collaboration, and lifecycle management.

Together, these workflows help organizations accelerate the development of reliable, energy-efficient, and AI-enabled engineering systems.

Omicron Lab (Booth 530)

Omicron Lab will show the Bode 500 vector network analyzer (VNA) including the Picotest 2 Port probe for PDN impedance measurements, the new B-TCA Test Card Adapter and the new software features for Circuit Fit.

The Bode 500 is a described as a state-of-the-art VNA which also works as a frequency response analyzer (FRA) or gain/phase meter, and as a powerful impedance analyzer from 10 mHz (millihertz) to 450 MHz. With an output power range of −30 dBm to +16 dBm, network connectivity, and PoE support, the Bode 500 enables engineers to characterize passive components across a broad frequency range.

Its wide bandwidth reveals important behaviors such as self-resonance, parasitic effects, and impedance variations at higher frequencies, while its low-frequency capability supports applications involving batteries, electrochemical systems, and slow control loops, including PFC controllers.

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When combined with Picotest P2102A two-port probes, the Bode 500 provides a powerful solution for power distribution network (PDN) analysis. Output-impedance measurements across a PDN can reveal self-resonances, trace inductance, output capacitor behavior, and other effects that influence power-integrity performance. The Bode Analyzer Suite software also includes the Non-Invasive Stability Measurement (NISM) feature, which estimates phase margin directly from output-impedance measurements.

The B-TCA test card adapter simplifies the characterization of surface-mount components used in power converters and filter networks. Supporting one-port, series-thru, and shunt-thru measurements up to 450 MHz, the adapter can be used to evaluate inductors, capacitors, ferrite beads, common-mode chokes, and other passive components.

Engineers can use the B-TCA to measure component impedance, identify self-resonant frequencies, quantify parasitic effects, and compare component performance across frequency. These capabilities are valuable when designing input and output filters, optimizing EMI suppression, validating component models, and analyzing the high-frequency behavior of power-converters.

(a) *(b)*

The Bode 500 VNA (a) and B-TCA test card adapter (b).

The Bode Analyzer Suite's Circuit Fit feature helps engineers convert measured impedance or admittance data into equivalent-circuit models. Depending on the complexity of the device under test, users can select predefined series or parallel models or create more advanced ladder networks with multiple poles.

The resulting models can be exported as SPICE netlists, making Circuit Fit useful for modeling inductors, capacitors, filters, transformers, power-rail networks, and other components whose frequency-dependent behavior is difficult to represent using ideal values. By combining measurement and modeling in one software environment, engineers can improve simulation accuracy and account for real-world parasitics and resonances.

The Bode Analyzer Suite's Gain Fit feature provides a measurement-based method for modeling the transfer function of a system from its measured gain and phase values. It can be applied to control-loop and frequency-response analysis in dc-dc converters, PFC, amplifiers, filters, and other dynamic systems.

Gain Fit supports transfer-function models with up to 20 poles, provides separate pole-zero visualization, and allows the results to be exported as equations, parameter tables, or SPICE models. This enables engineers to analyze measured gain and phase behavior, identify dominant poles and resonances, compare hardware performance with simulations, and support stability verification during converter development.

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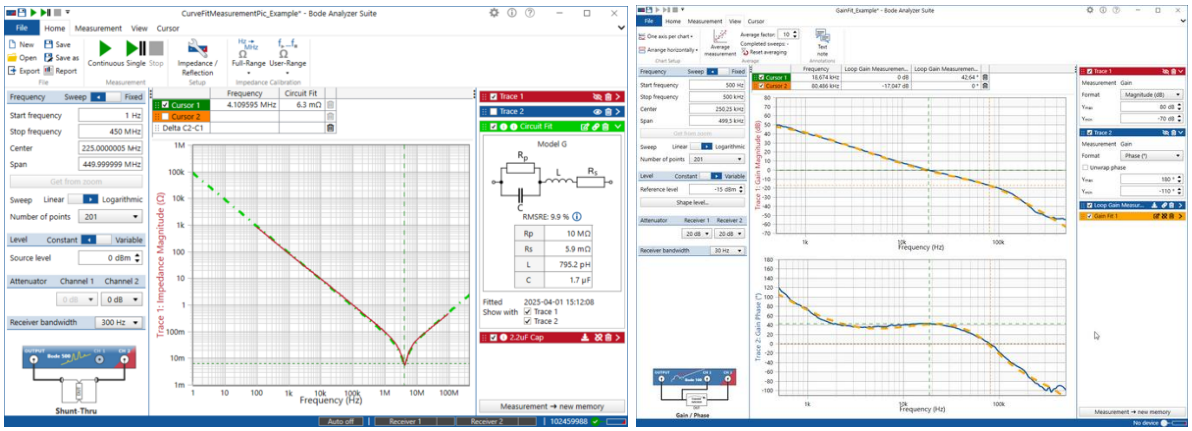

(a) (b)

Bode Analyzer Suite's Circuit Fit feature (a) and Bode Analyzer Suite's Gain Fit feature (b).

For more information see the Bode 500, P2102A, B-TCA, Circuit Fit, and Gain Fit product pages.

Rohde & Schwarz (Booth 212)

Rohde & Schwarz will showcase a comprehensive motor drive and power electronics test solution featuring the LMG671 power analyzer and MXO58 oscilloscope. The demonstration highlights precise power conversion measurements together with advanced waveform characterization and analysis, enabling engineers to evaluate efficiency, power quality, switching behavior, harmonics, and transient events.

By combining high-accuracy power analysis with detailed signal insight, developers can accelerate the design, debugging, and validation of electric drive systems and power converters.

For more information, see the LMG600 series power analyzer page and the MXO 5 page.

Rohde & Schwarz's MXO58 oscilloscope (top) and LMG671 power analyzer (bottom).

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Testing Labs

Powertech Labs (Booth 103)

Powertech Labs will present information on one of the largest testing and research laboratories in North America. Situated in British Columbia, Canada, its 11-acre facility offers 15 different testing labs for a one-stop-shop approach to managing utility generation, transmission, and distribution power systems.

Powertech is home to a broad range of scientists, engineers, and technical specialists, with capabilities in electrical testing, cable condition assessment, mechanical and materials engineering, software technologies, power system studies, chemical analysis, gas systems engineering, and smart utility services. These researchers have decades of collective and real-world experience and often work in cross-departmental teams to investigate, diagnose, and solve complex problems.

As an independent, third-party testing facility, it adheres to the highest laboratory (ISO 17025), quality (ISO 9001), environmental (ISO 14001) and occupational health and safety (ISO 45001) management standards. Additionally, the company has the capabilities to derive and develop non-standard testing method setups required to test product prototypes and perform forensic analysis.

Outside of the utilities industry, Powertech provides routine testing capabilities, product development, research, and consulting services to support an array of industrial-type operations, electrical equipment manufacturers, and automotive original equipment manufacturers.

For more information, see the video.

Powertech Labs' 11-acre facility encompasses 15 testing labs for managing utility generation, transmission, and distribution power systems.

Manufacturing Equipment

WAFIOS (Booth 100)

WAFIOS will highlight advanced manufacturing solutions for electric motor and coil production, with a focus on technologies for enameled copper coils and edgewise-bent motor coils.

For the production of enameled copper coils, WAFIOS offers the FTU series of bending and winding machines. These coils are used in applications such as interference suppression chokes and inductors for the automotive and electrical industries. Designed for efficient, high-volume manufacturing, the FTU series combines high production performance with flexible programming and short setup times.

The machines feature the WPS 3.2 EasyCam programming system, which uses fast and intuitive operating sequences to simplify machine setup and support a wide range of coil geometries. Optional equipment for automated insulation stripping and tin-plating can also be integrated into the production process, helping

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manufacturers achieve reliable, repeatable production of ready-to-install coils while reducing the need for additional downstream operations.

WAFIOS will also highlight its technology for the production of edgewise-bent coils made from insulated copper or aluminum wire. The WAFIOS FMU 40E is designed for the flexible production of these complex coil geometries and supports applications ranging from development and small batches through high-volume manufacturing. These conductive components are increasingly used in electric vehicle motors, industrial motors, high-efficiency pumps, and other modern electric-drive applications as an alternative to traditional round-wire windings.

A key advantage of edgewise-bent coils produced using WAFIOS technology is their extremely thin geometry, which allows manufacturers to achieve a very high copper fill factor within the stator. Increasing the amount of copper within the available installation space can contribute to greater power density and improved motor efficiency.

WAFIOS offers bending technology and automation solutions for a wide range of production requirements, from small-batch manufacturing to fully automated high-volume production. In addition to individual manufacturing processes, WAFIOS works with technology partners Gehring, Nagel, and LambdaResins to support complete production solutions for axial-flux motors. For more information, see the website.

Axial-flux coils produced with Wafios equipment.

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