

Advanced Energy's New Impedance Matching Network Provides Ultra-Fast, RF-Synchronized Tuning to Multilevel Pulse States

NavX™ match platform's accelerated response minimizes reflected power for precise control of plasma characteristics in complex semiconductor processes

DENVER, Colo., June 25, 2024 — Advanced Energy Industries, Inc. (Nasdaq: AEIS) – a global leader in highly engineered, precision power conversion, measurement and control solutions – has unveiled the NavX™ impedance matching network with industry-leading algorithms and direct generator communication, enabling superior levels of precise and repeatable plasma control, critical in 'Angstrom-Era' fabrication.

Next-generation semiconductor etch processes require unprecedented levels of plasma control during rapid pulsing, frequent transitions, and longer recipes that are needed to fabricate smaller, faster and more efficient chips with more complex 3D structures.

Advanced Energy's NavX matching network is specifically designed with direct match-generator communication and ultra-fast tuning leveraging AE hardware and proprietary algorithms. This enables RF-synchronized impedance matching during multilevel pulse states for precise control of plasma characteristics. Paired with the eVerest™ generator, NavX completes AE's latest RF delivery system (RFDS), enabling unparalleled control of plasma characteristics.

"Building on over 20 years of experience in developing advanced RF delivery systems for plasma processes, the NavX matching network redefines tuning speed, sophistication and RF synchronization for exacting plasma control across the most complex pulsing profiles," said Juergen Braun, Advanced Energy's senior vice president of plasma power products. "The platform's groundbreaking selectable tuning algorithm, which enables impedance matching to multiple RF pulse states, instantly reduces reflected power in processes with shorter RF-on times."

NavX directly synchronizes with the eVerest RF generator and incorporates proprietary Advanced Selectable Tuning and Velocity Tuning algorithms that optimize response speeds for pulse sequences. The system's +/- 10% frequency span enables faster tuning and access to a wider impedance range. Intermodulation distortion (IMD) immunity maintains tuning accuracy in multi-frequency applications, and scalable pulse states provide a path to new energy regimes.

The NavX matching network is fully compatible with the PowerInsight by Advanced Energy® IoT platform, which provides rapid access to high-resolution, actionable data that supports process optimization.

Read more about NavX [here](#).



About Advanced Energy

Advanced Energy Industries, Inc. (Nasdaq: AEIS) is a global leader in the design and manufacture of highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes. Advanced Energy's power solutions enable customer innovation in complex applications for a wide range of industries including semiconductor equipment, industrial production, medical and life sciences, data center computing, networking and telecommunications. With engineering know-how and responsive service and support for customers around the globe, the company builds collaborative partnerships to meet technology advances, propels growth of its customers and innovates the future of power. Advanced Energy has devoted four decades to perfecting power. It is headquartered in Denver, Colorado, USA.

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