eVerest™ and NavX™ RF Delivery System

Forming a complete RF delivery system, the eVerest™ RF generator and NavX™ matching network propel process innovation as chips approach Angstrom scale geometries.

Direct generator-match synchronization accelerates tuning speed and enables tuning to multi-level pulse states. A ±10% frequency range provides faster electronic tuning and access to a wider impedance range than previously available. In addition, scalable pulse states open new energy regimes.

BENEFITS

- Ultimate control of plasma characteristics
- Expanded access to new energy regimes
- Increased power stability during pulsing and process transitions
- Unprecedented RF power repeatability run-to-run

FEATURES

- ±10% frequency range
- PowerInsight by Advanced Energy® IoT platform
- Multi-level pulse tuning
- Accelerated internal signal processing
- Frequency tuning

APPLICATIONS

- Etch
- PECVD
- PVD
- Chamber Clean
- HDP-CVD

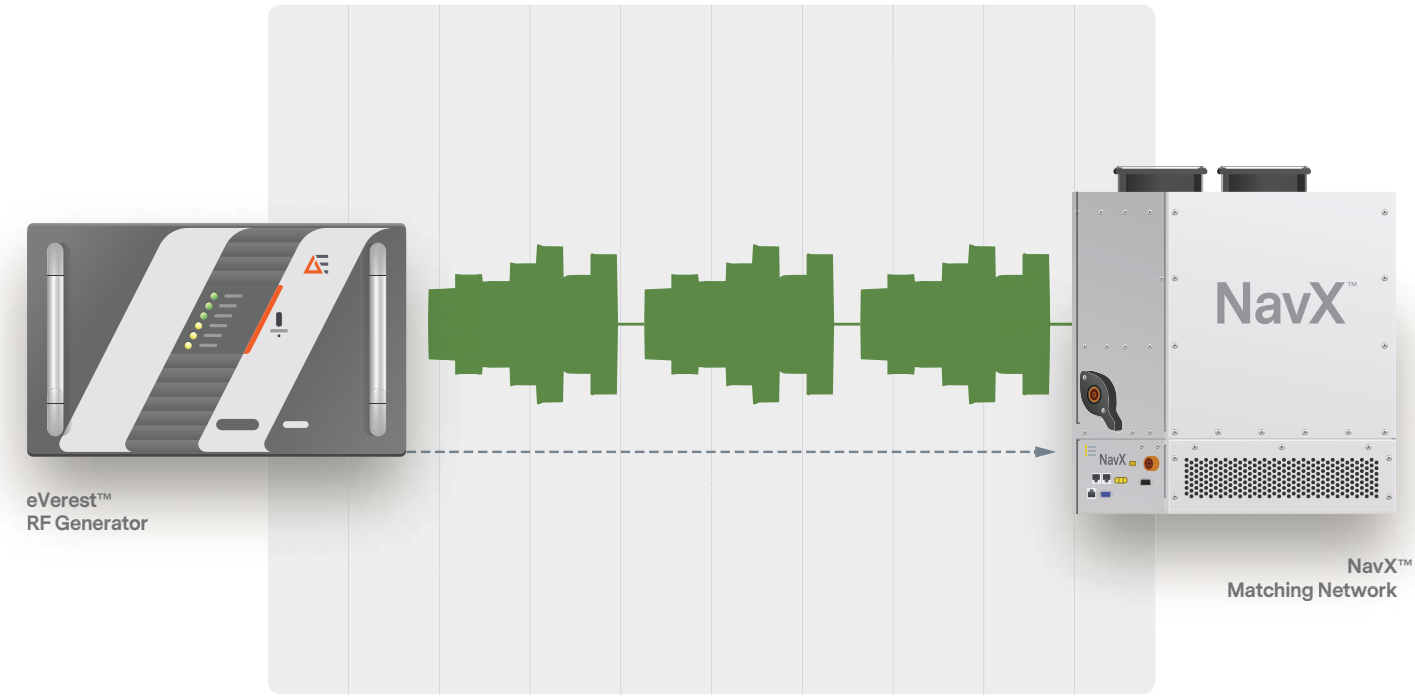
MARKETS

- Semiconductor
- Solar
- Flat Panel Display
- MEMs
- Industrial Coatings

EVEREST™ AND NAVX™ RF DELIVERY SYSTEM

Direct Match-Generator Synchronization

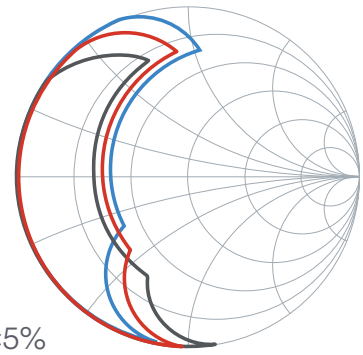
Ultrafast Tuning/Match Response



±10% Frequency Range

Expanded Impedance Range

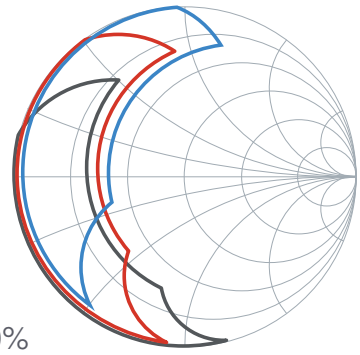
BEFORE



13.56 MHz ±5%

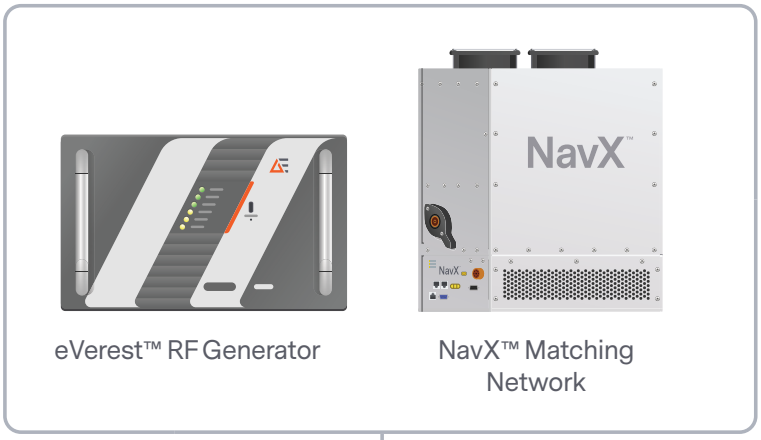
AFTER

NavX+ eVerest RF
Delivery System



13.56 MHz ±10%

PowerInsight by Advanced Energy® IOT Platform





Start browsing data immediately by connecting to Ethernet Port

BENEFITS

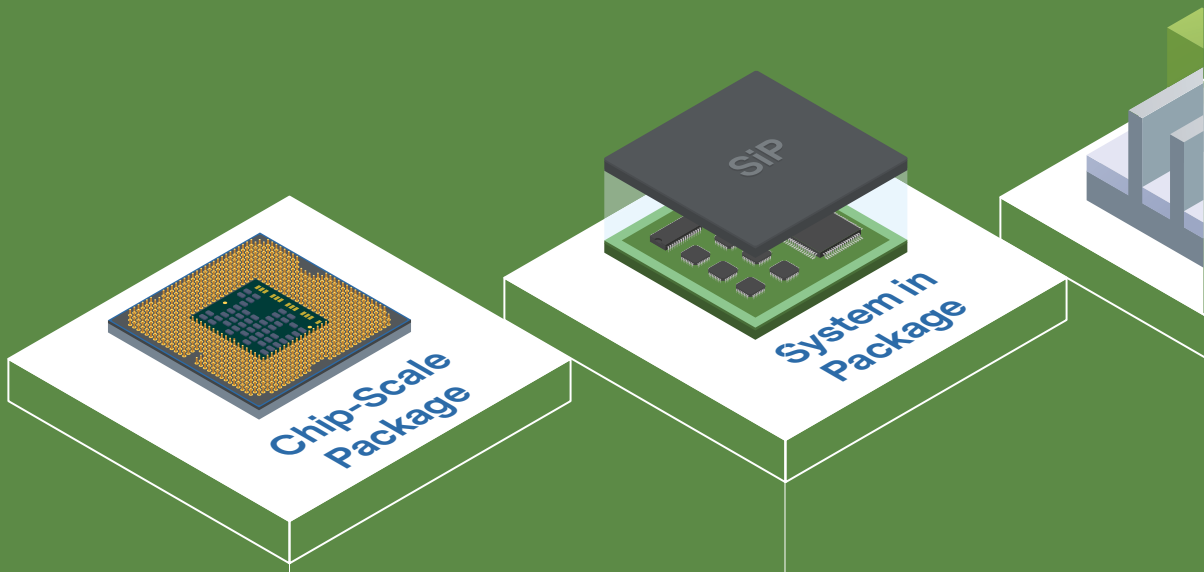
- Actionable insights and data-driven decision making
- Reduced need to open chamber to install an oscilloscope
- Reduced “no problem found” returns and faster troubleshooting

FEATURES

- Auto-reconnect after generator power cycle
- Configurable onboard oscilloscope data recording in nanoseconds for critical events (FastDAQ™)
- Cybersecure, comprehensive real-time and long-term data collection
- Exclusive customer control of data with local or remote access
- Virtually unlimited historical data storage
- Customizable, browser-based dashboards (no need to install software)
- Tailor-made algorithms based on AE’s decades of experience

Over 20 Years of Full RF Systems

Advanced Energy has offered full RF delivery systems for over 20 years, with multiple options for matching solutions and intelligent SyncTech™ synchronization.



RF Plasma Generators



RFG
Digital/Analog



APEX®
Digital/Analog

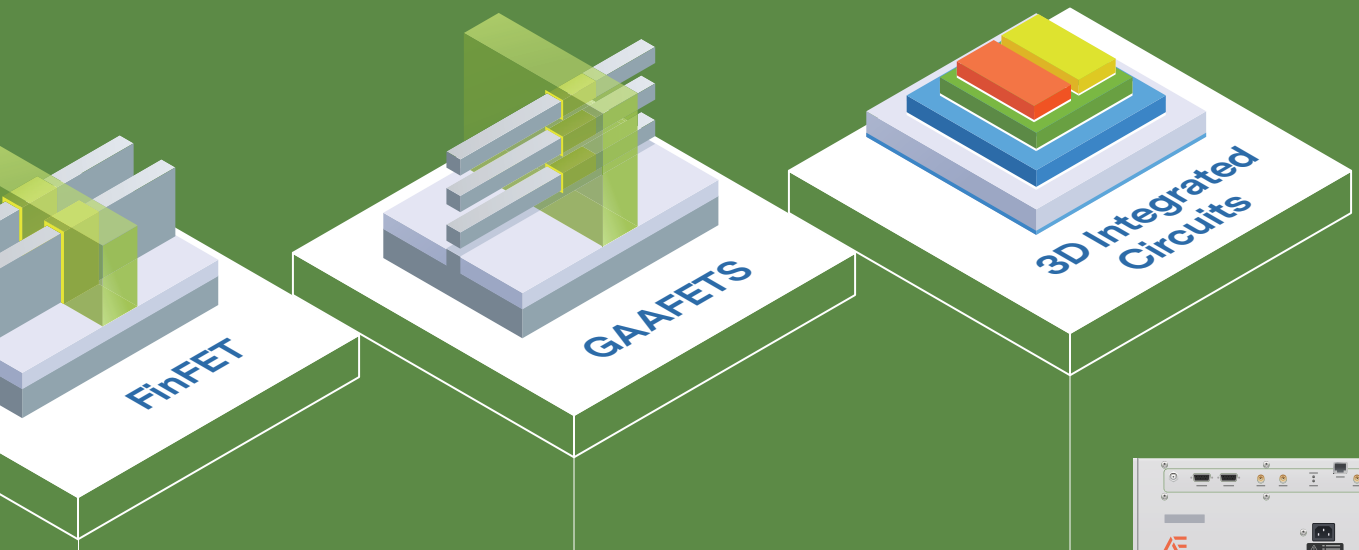
RF Match Networks



Navigator®
All Digital

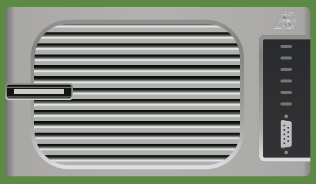


Navigator®
All Digital





eVos™
Tunable Ion Energy



Paramount®
Higher Density



Paramount®+
Digital Control



eVerest™
Accelerated Digital Control



Navigator® II
Model-Based



Navigator® II
Model-Based



NavX™ Matching Network
MLP Tuning
In-State Pulse Tuning

Specifications eVerest™ RF Generator

eVerest RF Generator	
General Specifications [1]	
RF Output Power	3.5 to 10 kW
Frequencies	1 to 60 MHz
Power Accuracy into 50 Ω	± 1 W or ± 1% of setpoint, whichever is greater
Auto Frequency Tuning	Available
Pulse State Time	11 µsec to 250 msec
Available Communication Interfaces	EtherCAT®, RS-232, Ethernet

[1] Electrical specifications vary by model number. Please contact an AE representative for more information.





Specifications NavX™ Matching Network

Electrical Specifications	
Match Types	Single Frequency Dual Frequency
Available Matching Topologies	L match, T match, design per customer's tune range requirements
Frequency Range	1 to 60 MHz
Current Range	0.1 to 150 A, design per customer's requirements
Voltage Range	1 to 10 kVpk, design per customer's requirements
RF Output Power Range	1 to 10 kW
Communication Interface	Serial (RS-232) EtherCAT Ethernet
Pulsing State Time	11 µsec to 250 msec