

# Driving Innovation in Microwave Ablation Systems with Advanced Energy's CoolX1800

**INDUSTRY**

Medical

**SOLUTION**

CoolX1800 Series

**APPLICATION**

Microwave Ablation Systems

**CHALLENGE**

A leader in microwave ablation technology for soft tissue and oncology applications, sought to upgrade its next-generation system to deliver higher performance and reliability.

The customer's flagship system enables minimally invasive procedures for treating tumors in organs such as the liver, lung, and kidney. As part of their next-generation platform development, they sought a power solution that could deliver high reliability, modular flexibility, and compliance with stringent medical standards.

The customer faced several hurdles:

- **Engineering Resource Constraints:** Design cycles slowed due to limited engineering bandwidth, compounded by staff turnover.
- **Stringent EMI Requirements:** Compliance with medical EMI standards was critical for regulatory approval.
- **Complex Power Architecture:** The next-gen system required separate power configurations for the power amplifier and control section, with high flexibility and reliability.
- **Product Evaluation:** High time investment, fear of picking the wrong product that does not perform across environments and looking for clear differentiations.

**SOLUTION**

AE engineering team partnered closely with the customer to deliver a tailored solution:

- **CoolX1800 Modular Platform:** Offered high configurability and medical-grade performance.
- **Collaborative Engineering Support:** AE's Customer Experience Center (CEC) provided EMI pre-compliance testing and suppression recommendations, reducing risk and accelerating certification.
- **Rapid Prototyping & Mechanical Integration:** AE supplied STP files and mechanical guidance early in the design phase to support the engineering layout work.
- **Supply Chain Coordination:** Worked with AE distribution partner to ensure timely sample availability and standard part number alignment.

## KEY ADVANTAGES OF USING CX18M FOR NEXT-GEN MICROWAVE ABLATION SYSTEM

### 1. Medical-Grade Safety & Compliance

Fully certified to IEC60601-1 (3rd edition) and IEC60601-1-2 standards, ensuring patient and operator safety while simplifying regulatory approval.

### 2. High Power in a Compact, Fanless Design

Up to 1800 W output with exceptional power density which are ideal for the space-constrained system architecture and thermal-sensitive environment.

### 3. Modular Flexibility for Complex Designs

Supports up to 12 isolated outputs, enabling separate, optimized power rails for the power amplifier and control section without additional hardware.

### 4. Reliability for Mission-Critical Applications

High MTBF and robust thermal management ensure long-term performance and uptime for life-saving procedures.

### 5. Superior EMI Performance

Integrated filtering combined with AE's CEC pre-compliance testing and suppression expertise helps to meet stringent EMI requirements quickly and confidently.

### 6. Global Deployment Ready

Universal input range and medical-grade isolation simplify worldwide system rollout.

AE's Customer Experience Center (CEC) accelerates medical device development by providing expert engineering support and compliance guidance. Services include EMI/EMC pre-compliance testing to resolve interference early, design optimization for thermal management and power architecture, rapid prototyping with CAD/STP file sharing, and regulatory assistance to meet IEC60601 standards to help reduce time-to-market.



## RESULTS AND CONCLUSION

- **Accelerated Compliance:** Through EMI pre-compliance testing and expert suppression strategies at AE's Customer Experience Center, the customer was able to minimize regulatory risk and shorten time-to-market.
- **Optimized Design Flexibility:** The CoolX1800's modular architecture allowed the customer to configure dedicated power rails for both the power amplifier and control section, meeting complex system requirements without additional hardware.
- **Strengthened Partnership:** Continuous technical engagement, rapid prototyping support, and supply chain coordination positioned AE as a trusted collaborator, reinforcing the customers' confidence in the CoolX platform.

This collaboration demonstrates how engineering partnership, configurable power technology, and compliance expertise can accelerate innovation in critical medical applications. By leveraging Advanced Energy's capabilities, the customer achieved a robust, EMI-compliant power solution for its next-generation microwave ablation system.



For international contact information, visit [advancedenergy.com](http://advancedenergy.com).

[powersales@aei.com](mailto:powersales@aei.com)  
[productsupport.ep@aei.com](mailto:productsupport.ep@aei.com)  
+1 888 412 7832

PRECISION | POWER | PERFORMANCE | TRUST

Specifications are subject to change without notice. Not responsible for errors or omissions.  
©2025 Advanced Energy Industries, Inc. All rights reserved. Advanced Energy and AE are U.S. trademarks of Advanced Energy Industries, Inc.