

Power Solutions for Next-Generation Mass Spectrometry Equipment

INDUSTRY**Medical Equipment****SOLUTION****LCM300, iVS1 & HVPS****EQUIPMENT****Mass Spectrometer****BACKGROUND**

To meet the evolving demands of next-generation mass spectrometry equipment, a leader in scientific instrumentation sought a significant technology refresh. They desired a highly efficient, reliable, and easily integrated power solution to help them advance biomarker processing and improve beam guidance.

CHALLENGE

Consolidating the mass spectrometry system's power supply into a single front-end stage not only maximizes available space but also enhances overall efficiency. Achieving high power density is essential to support the compact design requirements of modern instruments, while minimizing system leakage current is vital for ensuring both patient safety and equipment reliability in medical environments.

SOLUTION

To address these challenges, the customer partnered with Advanced Energy, implementing a tailored suite of power solutions:

- **LCM300 W AC-DC Power Supply:** Used to provide peak power for system heaters, offering exceptional output in a compact package
- **iVS1 Configurable Power Supply:** Enabled integration of multiple outputs into a single unit, simplifying system architecture; the iVS1 supports advanced monitoring and control capabilities via PMBus communication protocol, providing precise control and diagnostics.
- **Custom UV High Voltage Power Supply (HVPS):** Delivered robust and reliable power for the detector stage dynode, consolidating three outputs into one for maximum efficiency and space savings



RESULTS

Through close collaboration with the customer's design team, Advanced Energy gained a comprehensive understanding of the project's technical requirements, enabling the development of an optimal power solution.

The resulting system delivered superior power density, which was essential in supporting the compact and integrated architecture of the new mass spectrometry equipment. By achieving low leakage current, the solution not only met stringent medical standards but also enhanced both the safety and reliability of the device.

Advanced Energy's reputation for high-quality products and strong technical support ensured a seamless integration process, ultimately exceeding the customer's expectations. By leveraging advanced power supply technologies and deep technical expertise, the customer was able to deliver next-generation mass spectrometry tools that set new standards for performance.



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