

High-efficiency DC-DC PSU required for battery powered mobile X-ray unit

INDUSTRY

Medical Imaging

SOLUTION

4x AVE450B-48S28 &
1x AVO200-48S12B

EQUIPMENT

Mobile X-ray unit

CHALLENGE

A medical technology end-customer required a modular power supply that operates from a battery DC input with minimum power rating of 1300 W. In addition, the input had to cover a range from 36 to 60 VDC and the power supply unit had to provide five total outputs (4 at 24 V as well as 1 at 12 V) for their next generation mobile X-ray unit.

Based on the above requirements the power supplies also needed:

1. To meet standard safety approvals
2. Have an efficiency of more than 92%
3. No fan-cooling
4. To be small (1U height)
5. OCP, OVP and OTP protections
6. A remote ON/OFF control



SOLUTION

The solution proposed by Advanced Energy was to use five standard baseplate-cooled DC-DC modules (4 x AVE450B-48S28 and 1x AVO200-48S12B), which would be able to cover the huge input range from 36 V up to 60 V and provide the requested 5 outputs, 4x 24 V and 1x 12 V. These DC-DC modules provide excellent thermal performance, high efficiency (typically 94% at full load), no fan cooling but baseplate cooling instead and a MTBF of 1.5 million hours to support the equipment's serviceability. The AE team proposed adding input and output-caps assembled altogether in one enclosure case with input and output connectors.

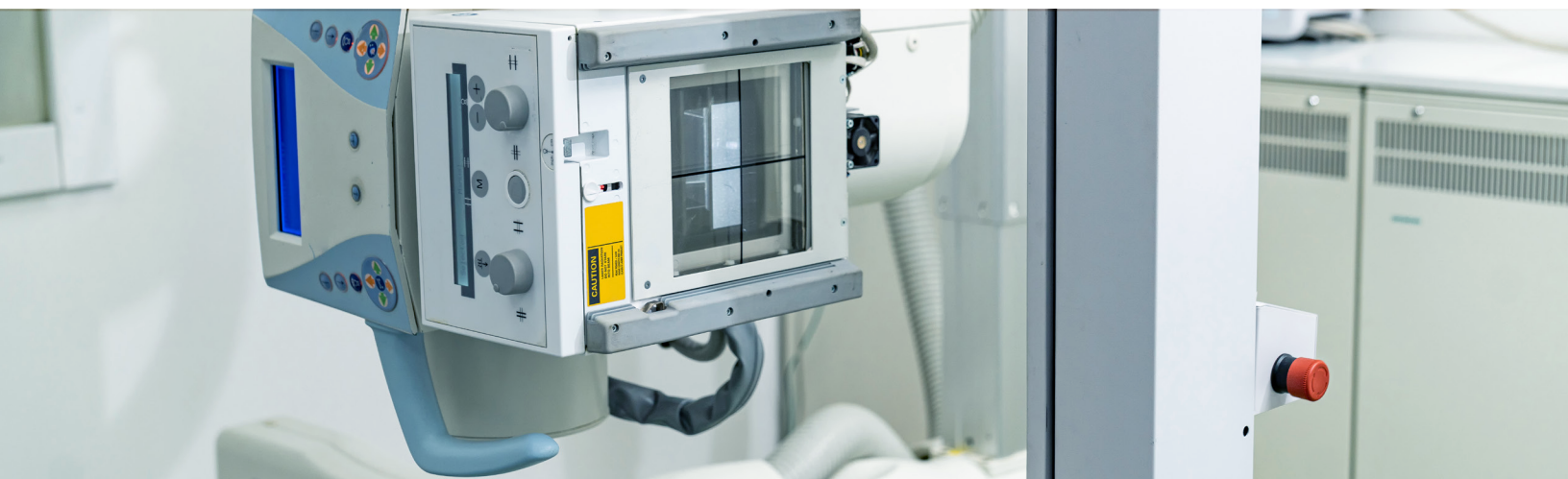
RESULT

Selecting the correct power source for imaging applications is crucial to ensure the optimal performance of the equipment.

Considerations that medical equipment manufacturers need to keep in mind while choosing a power supply for their medical imaging products are:

- Reduced size and increased reliability will provide better patient comfort
- Improved workflow to allow better equipment serviceability
- Supporting a higher resolution for more accurate and faster detection

Advanced Energy power supplies provide steady and reliable power flow that optimize device performance for accurate and consistent results. The customized solution not only met but also exceeded all customer requirements and expectations. AE's reputation for building high reliability solutions along with a history of superior performance ensured the customer that we were the right fit for their application.



For international contact information, visit advancedenergy.com.

powersales@aei.com

PRECISION | POWER | PERFORMANCE | TRUST

Specifications are subject to change without notice. Not responsible for errors or omissions.
©2024 Advanced Energy Industries, Inc. All rights reserved. Advanced Energy and AE are U.S. trademarks of Advanced Energy Industries, Inc.