

CoolX1000 Provides Power Density and Acoustic Noise Requirements for Portable MRI Equipment

INDUSTRY

Medical Imaging

SOLUTION

CoolX1000

EQUIPMENT

Portable MRI Equipment

OVERVIEW

The latest compact high power density AC-DC power supplies are aiding the development of the next generation of portable imaging equipment. This type of imaging equipment is increasingly being used in hospitals and clinics as an aid to improve patient care. One such technology is portable MRI systems. Over the years, AE's medical power experts have worked in providing AC-DC power solutions for imaging equipment. This experience has led to the incorporation of new features into our power supplies for medical imaging equipment.

CHALLENGE

An innovative MRI company was developing a new portable MRI system, which was aimed at neurocritical applications that require high image quality. Instruments such as MRI are very sensitive to unwanted interference such as acoustic noise. They also need to be relatively light weight and powered from wall sockets so they can be moved between surgeries, wards, and physician offices.

SOLUTION

To meet the challenge the AE CX1000 high power density fanless product was selected to compete against other major AC-DC power supplies from multiple competitors.

The fanless CX10M medical AC-DC power supply platform provided a low noise, lightweight solution that our client was looking for. This product is certified to the latest medical safety standards IEC60601-1 (3rd edition) and IEC60601-1-2 (4th edition). Its

modular design provides equipment design engineers the flexibility for voltage, power, and current leakage requirements to meet low voltage medical needs. Up to 12 isolated outputs ranging from 2.5 to 58 volts can be configured into power supply using power modules known as CoolMods.

The built-in PMbus® digital interface provided easy integration into equipment control and software systems.



RESULT

After extensive testing, the CX10M power supply won the business by providing the flexibility and the performance needed to deliver on the customer's size, power, and noise requirements. The table below shows the flexibility that our CoolMods can provide customers for these types of applications. The voltages provide power for instrumentation, control systems and software systems.

Power	CoolMod	Description
180W/280W	CMB	6.0V-15.0V/15A (23.3A)
200W/300W	CMC	15.0V-28.0V/8.33A (12.5A)
200W/300W	CMD	28.0V-58.0V/4.17A (6.25A)
Aux	B	5V/4.7A Aux (Standard)

CONCLUSION

Our compact CX10M fanless high power density AC/DC power supply is ideally designed to meet the requirements of highly sensitive portable imaging systems such as mobile MRI.

The mobile MRI solution was delivered not only by the CX10M product design, flexibility, and capability but also due to the technical experience and support provided AE team.



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