



Technology Overview



Advanced Medical Device Power Supply

OTT1461

Applications

Medical imaging systems for healthcare systems, medical facilities, data centers

Target Problems

Static UPS systems have long switching times and poor performance, and no output voltage regulation, while online configurations suffer from lower efficiency due to double stage power conversion.

Key Benefits

- **More compact** – can replace larger bulkier UPS systems
- **Cost Effective** – reduces installation cost and time
- **Reliable**– improves imaging device up-time
- **More Efficient** – combines the advantages of online and line-interactive UPS systems

Technology

The patented system proposed is a cost effective and compact DC line-interactive UPS system for replacing with the AC online UPS employed in the medical imaging machine like CT scan machine. The proposed DC UPS, as illustrated in Fig. 1, is integrated with a safe and high-power density battery, which links to the DC bus of the medical machine. In case of utility power disruptions, the proposed system provides power from the battery to directly energize the DC section and ensure continue and reliable operation.

The proposed system will also provide load leveling for the main AC/DC rectifier which has not been offered by conventional AC UPS systems. It applies load power smoothing to reduce the rating of the incoming AC line and consequently reduce the installation cost and time. Moreover, the new UPS technology improves CT scanner up-time, reliability, efficiency, and cost, and is applicable to other imaging modalities such as MR and X-ray as well.

Intellectual Property

[US10116163B2](#), [US10404098B2](#), [US10003214B2](#)

About the Inventor(s)

[Adel Nasiri, Ph.D.](#), formerly UWM professor, electrical engineering and inaugural holder of the Richard and Joanne Grigg Professorship, currently Distinguished Professor, Electrical Engineering, University of South Carolina
[Ahmad Hamidi, Ph.D.](#), Power Systems Manager, EnerSys

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