

Abstract Submitted
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A Robust Modular IGBT Power Supply for Magnetic Confinement Concepts¹ TIMOTHY ZIEMBA, Eagle Harbor Technologies, KEN MILLER, Redmond Plasma Physics Laboratory, JOHN CARSCADDEN, JIM PRAGER, Eagle Harbor Technologies — Among current challenges in fusion science, and in particular within the Innovative Confinement Concepts (ICC) community, is the ability to generate increased power levels for pulsed magnets, arc plasma sources, radio frequency (RF) heating and current drive schemes at reasonable cost with current generation solid state devices. Continuous wave (CW) tube based power supplies are typically large and expensive, making them prohibitive for smaller experimental facilities or not cost effective when only pulsed input power is required. Next generation solid state power supplies could allow for multiple use applications with a single well developed module that can be easily reconfigured. As such, this type of robust power supply could be beneficial to several important fusion applications including high power RF heating and current drive schemes, high current pulsed magnets and plasma pre-ionization sources. Data will be presented on design characteristics and testing of a modular robust solid state power supply based on Insulate Gate Bi-polar Transistor (IGBT) technologies and developed by Eagle Harbor Technologies, INC. The modular power supply system can be assembled in multiple ways to address a wide range of applications and needs for the magnetic confinement community.

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