

Abstract Submitted
for the DPP12 Meeting of
The American Physical Society

A Robust Modular IGBT Power Supply for Innovative Confinement Concepts¹ TIMOTHY ZIEMBA, KENNETH MILLER, JAMES PRAGER, Eagle Harbor Technologies, Inc. — Eagle Harbor Technologies (EHT) has developed an IGBT-based switching module for pulsed high power (> 10 MW) RF applications. These modules contain a control voltage supply (isolated to 30 kV) and fiber optically isolated drive circuitry, which allows for easy integration into a wide variety of power supply configurations. Each module is capable of switching 2.5 kA (pulsed) or at 1 kV or switching 100 kW (CW) up to megahertz frequencies with rise times of 40 ns. The modules are designed for precise switching control, which reduces jitter (< 5 ns) between modules, enabling robust series operation. EHT will present the final module design and performance results. In addition, data will be presented from two power supplies utilizing the EHT module: a 10 kV series stack that drives a resistive load at 500 A and a half bridge configuration that drives series resonant network with over 5 MW oscillating power.

¹This work was supported by a DOE SBIR Phase I/II.

Timothy Ziemba
Eagle Harbor Technologies, Inc.

Date submitted: 17 Jul 2012

Electronic form version 1.4