

Abstract Submitted
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SiC MOSFET Switching Power Amplifier Project Summary¹

KENNETH E. MILLER, TIMOTHY ZIEMBA, JAMES PRAGER, ILIA SLOBODOV, ALEX HENSON, Eagle Harbor Technologies, Inc. — Eagle Harbor Technologies has completed a Phase I/II program to develop SiC MOSFET based Switching Power Amplifiers (SPA) for precision magnet control in fusion science applications. During this program, EHT developed several units have been delivered to the Helicity Injected Torus (HIT) experiment at the University of Washington to drive both the voltage and flux circuits of the helicity injectors. These units are capable of switching 700 V at 100 kHz with an adjustable duty cycle from 10 – 90% and a combined total output current of 96 kA for 4 ms (at max current). The SPAs switching is controlled by the microcontroller at HIT, which adjusts the duty cycle to maintain a specific waveform in the injector. The SPAs include overcurrent and shoot-through protection circuitry. EHT will present an overview of the program including final results for the SPA waveforms.

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