Abstract Submitted
for the DPP17 Meeting of
The American Physical Society

Repetitively Pulsed High Power RF Solid-State System[1] CHRIS BOWMAN, TIMOTHY ZIEMBA, KENNETH E. MILLER, JAMES PRAGER, MORGAN QUINLEY, Eagle Harbor Technologies, Inc. — Eagle Harbor Technologies, Inc. (EHT) is developing a low-cost, fully solid-state architecture for the generation of the RF frequencies and power levels necessary for plasma heating and diagnostic systems at validation platform experiments within the fusion science community. In Year 1 of this program, EHT has developed a solid-state RF system that combines an inductive adder, nonlinear transmission line (NLTL), and antenna into a single system that can be deployed at fusion science experiments. EHT has designed and optimized a lumped-element NLTL that will be suitable RF generation near the lower-hybrid frequency at the High Beta Tokamak (HBT) located at Columbia University. In Year 2, EHT will test this system at the Helicity Injected Torus at the University of Washington and HBT at Columbia. EHT will present results from Year 1 testing and optimization of the NLTL-based RF system.

[1]With support of DOE SBIR

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Date submitted: 14 Jul 2017 Electronic form version 1.4