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High Power, Solid-State RF Generation for Plasma Heating JAMES PRAGER, TIMOTHY ZIEMBA, KENNETH MILLER, CHRIS PIERREN, Eagle Harbor Technologies, Inc. — Radio Frequency heating systems are rarely used by the small-scale validation platform experiments due to the high cost and complexity of these systems. Eagle Harbor Technologies (EHT), Inc. is developing an all-solid-state RF plasma heating system that uses EHT's nanosecond pulser technology in an inductive adder configuration to drive nonlinear transmission lines (NLTL). The system under development does not require the use of vacuum tube technology, is inherently lower cost, and is more robust than traditional high power RF heating schemes. The inductive adder can produce 0 to20 kV pulses into 50 Ohms with sub-10 ns rise times. The inductive adder has been used to drive NLTLs near 2 GHz with other frequencies to be tested in the future. EHT will present experimental results, including RF measurements with D-dot probes and capacitve voltage probes. During this program, EHT will test the system on Helicity Injected Torus at the University of Washington and the High Beta Tokamak at Columbia University.

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