Abstract Submitted
for the DPP14 Meeting of
The American Physical Society

A high voltage nanosecond pulser with independently adjustable output voltage, pulse width, and pulse repetition frequency[1] JAMES PRAGER, TIMOTHY ZIEMBA, KENNETH MILLER, JOHN CARSCADDEN, ILIA SLOBODOV, Eagle Harbor Technologies — Eagle Harbor Technologies (EHT) is developing a high voltage nanosecond pulser capable of generating microwaves and non-equilibrium plasmas for plasma medicine, material science, enhanced combustion, drag reduction, and other research applications. The EHT nanosecond pulser technology is capable of producing high voltage (up to 60 kV) pulses (width 20 – 500 ns) with fast rise times (<10 ns) at high pulse repetition frequency (adjustable up to 100 kHz) for CW operation. The pulser does not require the use of saturable core magnetics, which allows for the output voltage, pulse width, and pulse repetition frequency to be fully adjustable, enabling researchers to explore non-equilibrium plasmas over a wide range of parameters. A magnetic compression stage can be added to improve the rise time and drive lower impedance loads without sacrificing high pulse repetition frequency operation.

[1]Work supported in part by the US Navy under contract number N00014-14-P-1055 and the US Air Force under contract number FA9550-14-C-0006

James Prager
Eagle Harbor Technologies

Date submitted: 11 Jul 2014 Electronic form version 1.4