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High Voltage Nanosecond Pulser Operating at 30 kW and 400 kHz MORGAN QUINLEY, TIMOTHY ZIEMBA, KENNETH E. MILLER, JAMES PRAGER, ILIA SLOBODOV, Eagle Harbor Technologies, Inc. — The generation of high voltage nanosecond pulses at high average power is important for a variety of industrial applications including water treatment, semiconductor processing, materials processing, and sterilization. Eagle Harbor Technologies, Inc. (EHT) has previously developed high voltage nanosecond pulsers that operate at 5 kW of average power and pulse at 100 kHz. This work has been extended to higher average power. This new nanosecond pulser can drive capacitive loads (7 nF) to 8 kV with rise times of 55 ns and a 200 ns pulse width. The pulses can be produced at 400 kHz for bursts of 1 ms with a burst repetition frequency of 200 Hz. The output voltage can be modulated between 500 V and 8 kV on the burst timescale. This system can be air or water cooled. EHT will present testing results demonstrating these new capabilities.

James Prager
Eagle Harbor Technologies, Inc.

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