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High Power Microwave Production with a Nanosecond Pulser and Nonlinear Transmission Line

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Eagle Harbor Technologies, Inc. (EHT) is utilizing the previously developed EHT Nanosecond Pulser (NSP) to drive a nonlinear transmission line (NLTL) for high power microwave production. The EHT NSP provides independent control of the output voltage (20 kV), pulse width (20 –200 ns), and pulse repetition frequency (up to 100 kHz). EHT is using this pulser to investigate RF production with a gyromagnetic NLTL and lumped-element NLTL based on nonlinear effects in Schottky diodes. The gyromagnetic NLTL has a frequency around 2 GHz, while the diode-based NLTL's frequency is lower. EHT will present experimental, including RF measurements with D-dot probes. Additionally, modeling results will be presented for the diode-based NLTL and compared with experiment.

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