Abstract Submitted
for the DPP12 Meeting of
The American Physical Society

High Gain and Frequency Ultra-Stable Integrators for ICC and Long Pulse ITER Applications[1] KENNETH MILLER, TIMOTHY ZIEMBA, JAMES PRAGER, Eagle Harbor Technologies, Inc. — Eagle Harbor Technologies has developed a high gain and frequency ultra-stable integrator for small scale concept experiments and long pulse ITER applications. The Phase I integrator has a 10 μs RC time with a frequency response greater than 10 MHz. The device has been operated for the 3600 s with a drift error less than 600 μV, which exceeds the ITER specification. Longer period operation is also possible ($>$ 30 hours). Additionally, this integrator has an extremely large dynamic range thereby increasing the effective bit depth of a digitizer. These integrators allow for both the fast and slow magnetic/plasma dynamics to be resolved with a single diagnostic. Data will be presented demonstrating the success of the Phase I program, and the Phase II work plan will be discussed. Work has begun to incorporate the integrators into legacy (CAMAC) and modern (National Instruments) DAQ systems.

[1]This work is supported by a DOE SBIR Phase II.

Kenneth Miller
Eagle Harbor Technologies, Inc.

Date submitted: 13 Jul 2012 Electronic form version 1.4