

Abstract Submitted
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Demonstrated 3600 s Integrator Operation with 5.4 μV -s Drift Error for ITER Long Pulse Applications¹ KENNETH MILLER, TIMOTHY ZIEMBA, JAMES PRAGER, ILIA SLOBODOV, Eagle Harbor Technologies — Eagle Harbor Technologies has developed a high gain and frequency ultra-stable integrator for small scale concept experiments and long pulse ITER applications. The 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 5.4 μV -s, which exceeds the ITER specification. Longer period operation has also been demonstrated (72 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. Software has been written for fast, real-time data acquisition and processing using a field programmable gate array (FPGA).

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Kenneth Miller
Eagle Harbor Technologies

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