

Abstract Submitted
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Fast, Deep-Record-Length, Fiber-Coupled Photodiode Imaging Array for Plasma Diagnostics SAMUEL BROCKINGTON, ANDREW CASE, F. DOUGLAS WITHERSPOON, HyperV Technologies Corp. — HyperV Technologies has been developing an imaging diagnostic comprised of an array of fast, low-cost, long-record-length, fiber-optically-coupled photodiode channels to investigate plasma dynamics and other fast, bright events. By coupling an imaging fiber bundle to a bank of amplified photodiode channels, imagers and streak imagers can be constructed. By interfacing analog photodiode systems directly to commercial analog-to-digital converters and modern memory chips, a scalable solution for 100 to 1000 pixel systems with 14 bit resolution and record-lengths of 128k frames has been developed. HyperV is applying these techniques to construct a prototype 1000 Pixel framing camera with up to 100 Msamples/sec rate and 10 to 14 bit depth. Preliminary experimental results as well as future plans will be discussed. Work supported by USDOE Phase 2 SBIR Grant DE-SC0009492.

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