

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 of 100 to 1000 pixels can be constructed. By interfacing analog photodiode systems directly to commercial analog-to-digital converters and modern memory chips, a prototype 100 pixel array with an extremely deep record length (128k points at 20 Msamples/s) and 10 bit pixel resolution has already been achieved. HyperV now seeks to extend these techniques to construct a prototype 1000 Pixel framing camera with up to 100 Msamples/sec rate and 10 to 12 bit depth. Preliminary experimental results as well as Phase 2 plans will be discussed. Work supported by USDOE Phase 2 SBIR Grant DE-SC0009492

Samuel Brockington  
HyperV Technologies Corp

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