

Abstract Submitted
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Repetitive Operation of the E3P-1 Plasma Thruster ANDREW CASE, SAMUEL BROCKINGTON, F. DOUGLAS WITHERSPOON, HyperV Technologies Corp. — HyperV Technologies has developed a novel electric propulsion system based on high plasma density Minirailgun technology. The design goals were for a Specific Impulse (ISP) of over 2000 seconds and repetitive operation at 5 Hertz for 60 seconds. The thruster was successfully operated at 5 Hertz for 92 seconds, with a specific impulse of 2000-2800 seconds at an input power of 2.3kW, exceeding all design goals. Diagnostics for this series of tests include fast photodiodes for measuring plasma jet velocity, time integrated imaging, and Rogowski coils and Pearsons for electrical diagnostics of the high voltage systems.

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