
SESSION 12: Aerospace Coolers, Drive & Control Electronics

Paper 12.4

Wednesday ORAL Session

3:30 PM

New Generation “Valet” Cryocooler Electronics for Space

S. Pence, E. Stagmer, Northrop Grumman Technical Services, Lanham, MD; E. Nguyen, Northrop Grumman Space Systems, Redondo Beach, CA

This paper describes the design features and performance of our new generation “Valet” flight electronics for Space pulse-tube cryocoolers, aimed primarily at the lower cost proliferated LEO missions. The new generation electronics provides the usual control engineering diagnostics, telemetry, and safety protection functions offered on the Advanced Cryocooler Electronics (ACE) design. Additionally, they provide modular control loop assignment to optional channels. The 3kg unit is able to deliver 250W continuous power into back-to-back 10-ohm impedance coolers, such as NGSS’s High-Efficiency Cryocooler (HEC) and MiniCooler Plus (MCP), as well as next generation cryocooler topologies.