

Reduced-Size Cryocooler Electronics for Space

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Iris Technology has developed a set of GaN FET based dual piston cryocooler electronics (CCE) that provide a significant size advantage over MOSFET based electronics with similar performance. This CCE also provides additional features such as the capability of operating the CCEs in a master/slave configuration and adaptive vibration control not available on the MOSFET version. In addition to GaN FET technology, this CCE incorporates a radiation tolerant microcontroller. This facilitates personality driven configurations that can be applied without any changes to the hardware design. The design and testing of this CCE will be discussed along with potential next step developments to support SmallSat deployments.