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14. ABSTRACT
The purpose of the thermal chamber test is to gather a spectrum of thermal data to increase the fidelity of thermal simulations for future line-replaceable unit (LRU) designs. Data acquisition systems with data recorders are commonly used in airborne instrumentation to capture the various data parameters required, which can generate sufficient heat that exceed the upper thermal limits of electrical components within the LRU. The experimental results from the LRU thermal chamber test is then used in a numerical-thermal simulation to narrow the possible values of the convection and conduction cooling factors to more accurately define expected thermal properties for future thermal tests and LRU designs. The test results obtained from the digital model thermal validation will then help reduce overall Air Force program costs and prevent flight schedule slippage by avoiding possible redesign and rework of LRUs.

15. SUBJECT TERMS
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