THERMAL TEST VEHICLE FOR ELECTRONICS COOLING SOLUTIONS

Tech ID: 33617 / UC Case 2024-156-0

PATENT STATUS

Patent Pending

BRIEF DESCRIPTION

As the density and performance of electronics continues to increase, thermal challenges have become a primary concern. Removing heat from electronic components can be extremely challenging, given their small size, electrical activity, and mechanical constraints. This necessitates the design of cooling solutions for a wide variety of electronic designs in applications such as datacenters, renewables, aircraft, etc.

To address this problem, researchers at UC Berkeley have developed a thermal test vehicle (TTV) for characterizing the performance of electronics cooling solutions under a wide variety of operating conditions. All of the TTV circuitry required to perform measurements and temperature estimations can be included on one printed circuit board (PCB). This represents a simple, highly flexible approach for thermal test vehicle design. The overall size of the array can be scaled to any desired amount.

This novel TTV represents a simple, highly flexible approach for thermal test vehicle design. Furthermore, its use of standard commercial electronic components allows for a vast reduction in cost compared to existing commercial solutions.

SUGGESTED USES

- Thermal test vehicle for electronics cooling solutions
- High-performance controllable heater
- Testing equipment for data center comissioning

ADVANTAGES

- simple and highly flexible approach
- uses standardized commercial components
- reduces costs compared to existing commercial options

RELATED MATERIALS

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Multi-Phase Hybrid Power Converter Architecture With Large Conversion Ratios

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OTHER INFORMATION

KEYWORDS

data center, thermal testing, test equipment

CATEGORIZED AS

- **Computer**
  - Hardware
- **Research Tools**
  - Other
- **Sensors & Instrumentation**
  - Physical Measurement
  - Scientific/Research

RELATED CASES

2024-156-0

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