

## **FAIL SAFE CONTROL UNIT WITH REDUNDANT CONTROLLER FOR AEROSTAT APPLICATION**

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### **Abstract**

Aerostats are being used as stable platforms at higher altitudes to achieve better line of sight for efficient utilization of onboard surveillance payloads. ADRDE has vast experience on design, development and flights of different classes of aerostat systems. Onboard balloon pressure control to retain aerodynamic shape and health monitoring is a foremost and critical requirement for flight of any aerostat system. Pressure control system has to be most reliable with 24 x 7 functionality for entire flight duration to avoid any catastrophic failure. Based on past experiences, a versatile and reliable ARM architecture based Single Board Computer with process redundancy and high processing power has been developed. The system has been used continuously for more than six months. This hardware may also be reconfigured and is capable for use in many other important programs. This paper briefs about the hardware and its inbuilt redundancies.

**Keywords:** Aerostat; ARM; Pressure control; Single board computer