

一种新型 BIT 技术在机载计算机设计中的应用研究

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摘 要: BIT (Built-in Test) 技术由于其不依赖外部设备, 仅使用自身软、硬件完成故障诊断及隔离的特点, 目前成为提高机载计算机测试性和维修性的有效措施。“故障覆盖率”和“虚警率”是评价 BIT 系统的两个重要因素, 较低的故障覆盖率是阻碍 BIT 技术在机载计算机中广泛应用的一个重要原因.本文在对机载计算机 BIT 故障检测机理进行分析的基础上, 提出一种新型的机载计算机 BIT 故障检测方法, 并给出关键技术解决方案, 经过实践证明使用该策略后机载计算机 BIT 系统的故障覆盖率显著增长, 机载计算机的可靠性及可维护性明显提高.

关键词: BIT; 机载计算机; 可靠性; 可维护性

On Implementing And Researching BIT Capability

In Airborne Computer

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Abstract: BIT (Built-in Test) technology is an effective measure to improve the testability and maintainability of the airborne computers for the Characteristics that it does not rely on external equipment and uses its own software and hardware to complete fault diagnosis and isolation. "Fault coverage" and "false alarm rate" are two important factors in evaluating BIT systems. Lower fault coverage is an important reason to hinder the widespread use of BIT technology in airborne computers. Based on the analysis of the BIT fault detection mechanism in the airborne computer, a new BIT fault detection method in the airborne computer is proposed, and the key technical solutions are given in this paper. It is proved by practice that the Fault coverage has increased significantly of the airborne computer BIT systems , the reliability and maintainability of the airborne computer have increased significantly after using this strategy.

Key words: BIT; The airborne computer; Reliability; Maintainability

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