

研发、设计、测试

通用测试系统硬件集成模型与集成策略

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摘要 提出了通用测试系统硬件集成的策略问题, 给出了系统功能分层描述, 建立了数学模型, 定义了性能评价指标, 并对指标进行了求解, 基于此构建了基于遗传算法的硬件集成策略, 给出了算法步骤, 并以某测试系统的组建为例, 对提出的硬件集成策略和算法的可行性进行了验证, 从结果可以看出提出的通用测试系统硬件集成策略具有较好的适用性、合理性和可行性。

关键词 [硬件](#) [集成策略](#) [测试系统](#) [遗传算法](#)

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Integration model and strategy of general purpose automatic test system

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Abstract

The paper puts forward the question how to choose an integration strategy after the content and function hierarchy of hardware integration of general purpose automatic test system is elaborated. To answer the question, the mathematic model is established and the performance evaluation function is presented. Finally, a hardware integration strategy based on the genetic algorithm is constructed, and the solution approach is given. The strategy is used in the construction of a certain test system. The application instance proves that the hardware integration strategy given in the paper has good rationality, applicability and feasibility.

Key words [hardware](#) [integration strategy](#) [automatic test system](#) [Genetic Algorithm \(GA\)](#)

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