

产品、研发、测试

IDE接口的一种新型实现方法

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摘要 目前硬盘的接口依然以IDE接口为主. 通常IDE接口实现方法有两种: 采用南桥芯片提供IDE接口; 或者采用自带IDE接口的处理器. 本文利用一种全新的方法实现IDE接口, 无需采用上述两种方法, 利用逻辑芯片配合处理器产生IDE接口通信所需要的信号, 用硬件编程语言VHDL (Very High Speed Integrated Circuit Hardware Description Language) 实现IDE接口所要求的时序. 通过对本设计进行仿真, 结果证明此IDE接口遵循ATA规范, 可以挂接普通硬盘. 利用本文的设计, 任何支持16位数据通信的处理器都可以实现IDE接口通信. 如果利用现有的硬件设备, 则本设计无需增加额外成本, 其稳定性也得到了实际验证.

关键词 [硬件编程语言](#) [逻辑芯片](#) [硬盘](#) [ATA](#)

分类号

A New Realization Method of IDE Interface

Abstract

The main communication interface of hard disk is IDE. The design for IDE interface focuses on two methods: one is to adopt the south bridge IC that can supply the IDE interface for data communication; the other is to adopt the processor with IDE interface. In this paper, an IDE interface is realized without using the above two methods. A logic IC is used to present the signals that are necessary for IDE communication, the program in VHDL (Very High Speed Integrated Circuit Hardware Description Language) language is for the timing of IDE communication. A simulation result is also presented, and this result proves that the design in this paper complies with the ATA standard. By using the method in this paper, any processor that supports 16bit bus can support IDE communication. This is a very new method. It gives a hint to system design with IDE interface. This design based on ATA standard can accommodate normal hard disk. By adopting the existing hardware, the system does not need additional cost, and its stability has been proved in practice.

Key words [VHDL](#) [Verilog](#) [EPLD](#) [Hard Disk](#) [ATA](#)

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