

# 基于状态机的芯片访问控制实现

徐平江, 袁艳芳, 付青琴

(北京智芯微电子科技有限公司, 北京 100172)

**摘要:** 本文提出了一种芯片访问控制方法, 解决了多应用芯片中文件的访问权限控制问题. 该方法首先设计了一种安全权限状态机, 该状态机将访问权限细分为 32 级, 在用户指令的驱动下安全状态机发生安全状态的变迁, 只有安全状态满足预置的文件访问条件, 文件访问才被许可. 同时为了隔离不同应用的访问权限, 定义了环境权限状态机和应用权限状态机. 环境状态机控制芯片整体访问权限, 应用状态机控制单个应用的访问权限, 通过两种状态机的组合应用, 实现芯片文件访问控制的精细化管理.

**关键词:** 安全芯片; 访问控制; 安全状态; 文件系统

## Implementation of chip access control based on state machine

XU Ping-jiang, YUAN Yang-fang, FU Qing-qin

(Beijing Smartchip Microelectronics Technology Company Ltd, Beijing 100192, China)

**Abstract:** A chip access control method is proposed in this paper to solve the file access control problem of multi-applications chip. Firstly, a security state machine is designed, which subdivides the access right into 32 levels. Driven by user instructions, the security state machine undergoes security state transition. Only when the security state meets the preset file access conditions, file access is allowed. At the same time, in order to isolate the access right of different applications, the environment state machine and the application state machine are defined. The environment state machine controls the access authority of the chip as a whole, the application state machine controls the access authority of a single application, and through the combination of two state machines, the fine management of chip file access control is realized.

**Key words:** security chip; access control; state of safety; file system

作者简介:

徐平江 男, (1977-), 硕士, 工程师. 研究方向为安全芯片操作系统.

E-mail: xupingjiang@126.com.

袁艳芳 女, (1980-), 硕士. 研究方向为智能电网.

付青琴 女, (1982-), 硕士, 副高. 研究方向为电力芯片测试.