

摘 要

信息化时代改变了人们传统的生产和生活方式。计算机的普及和现代通信体系的完善带来了信息技术的革命。单片机作为一种高度集成的芯片在现在的作用是越来越大。同时，音乐存在于我们生活当中的方方面面，很多人把音乐作为一种娱乐方式，会练习一些乐器，在亲自演奏音乐的过程中，身心都得到了放松。电子琴作为一种比较基础，经济实惠的乐器受到人们的青睐。本论文以 ATmega128 单片机为核心控制器，研制一种简易的电子琴。

本次设计中电子琴的功能由硬件和软件两部神完成。硬件使用的是 Protel99SE 来绘制元件及原理图。软件部分则由 ICCAVR 来进行，通过了解 ATmega128 的芯片各引脚功能及其内部寄存器工作模式完成程序的编译。最后把代码烧写到芯片中，通过硬件来实现播放音乐的功能。

关键词： ATmega128；电子琴；单片机

Abstract

People's traditional production and live is changed by informational age. The popularize of computer and the improvement of modern communications makes information technology innovation. Microcontroller which is a sort of highly intergrated chip have more affect. Meanwhile, music exists everywhere in our lives. Many people choose music to be a kind of entertainment, and they may practice one musical instrument. When they play the instrument personally, they relax. Keyboard is basal and inexpensive, so people favored this instrument. This paper uses ATmega128 microcontroller to be core controller, make a simple keyboard.

The keyboard function of this paper is divided into two parts, complete hardware and software. In hardware, we use Protel99SE to make organ and illustrative diagram. And we use ICCAVR to make the part of software, we programme by comprehending the pin's function of ATmega128 and the work of inside register. Finally, we put the code into the chip ,and make it paly music by hardware.

Keywords:ATmega128;keyboard;microcontroller

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