

题目：基于 System View 的 PCM 系统的设计与仿真

摘 要

本篇论文将介绍脉冲编码调制（PCM）通信原理以及其系统的技术规范以及要求，其次将会对 System View 这款仿真软件进行简要介绍，主要是对其每个功能模块进行展示。并在此基础上，利用 System View 仿真软件实现对脉冲编码调制（PCM）的仿真，这样一来，不仅可以为其硬件电路的设计实现做出理论的依据，而且可以通过 System View 仿真软件展示 PCM 系统的设计思路与过程。

为了在进行仿真设计的时候的思路更加清晰，本论文将会在阐述仿真设计原理设计思路之前，介绍 PCM 所要用到的 A 律 13 折线编码，同时将会说明为何选择 A 律 13 折线编码进行 PCM 编码，以及将会对在编码时给出具体的码位安排与设计；本论文将会重点分析 PCM 系统的原理和 PCM 系统的各个过程在 System View 仿真软件上是如何实现的，同时将会对仿真结果波形加以分析，进行对比得出结论 最后将会对本次毕业设计进行总结，归纳出个人在该设计上的创新部分，并同时分析在设计之中遇到的各种问题，并说明其解决方法。

该设计的最终目的是通过 System View 这款仿真软件对 PCM 进行仿真，然后对仿真的结果进行分析，完成对该课题的研究。

关键词：PCM；调制解调；仿真；System View

Abstract

This paper will introduce the pulse code modulation (PCM) communication principle and the technical specifications and requirements of its system. Secondly, it will briefly introduce System View, a simulation software, mainly to show each of its functional modules. And on this basis, the use of System View simulation software to achieve pulse code modulation (PCM) simulation, in this way, it can make a basis for the design of hardware circuits.

In order to make the thinking more clear during the simulation design, this paper will introduce the A-law 13 poly line encoding used by PCM before explaining the design concept of the simulation design principle, and will also explain why the A-law 13 poly line encoding is selected for PCM coding, and specific code arrangement and design will be given when coding; This paper will focus on the analysis of the principles of the PCM system and how the various processes of the PCM system are implemented in the System View simulation software. At the same time, the waveform of the simulation results will be analyzed to compare and draw conclusions; finally this graduation design Summarize, summarize the individual innovation part of the design, and at the same time analyze the various problems encountered in the design and explain their solutions.

The goal of the design is to simulate the PCM by the System View simulation software, and then analyze the simulation results to complete the research.

Key Words: PCM; modulation; simulation; System View

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