

AK416 烧录器中 XY 轴模组电控系统
设计

**Design of Electric Control System of
XY Axis Module in AK416 Device**

摘 要

随着消费方式的升级和移动互联网的蓬勃发展，越来越多的消费电子产品已经加上了智能的标签，并逐步进入消费者的日常生活，成为潮流生活的必备装备。可穿戴设备、AR/VR(增强现实/虚拟现实)、智能家居和儿童智能是智能产品的代表产物。这就代表智能芯片行业的市场潜力巨大，前景一片大好。

本课题所研究的芯片烧录器 AK416 能够实现智能化、自动化的芯片测试机烧录，主要原理就是通过 PLC 编程、驱动器、直线电机、实现对 XYZ 方向的运动控制，对烧录前的芯片以及烧录完成后的芯片进行准确无误的搬运。本次课题将围绕 AK416 的基本功能的实现以及 XY 轴模块的电控设计进行展开。

作为三轴机械手的一部分，XY 轴主要负责的是对 Z 轴模块进行一个搬运与精确定位的功能。机器开始运行之后，上料机会把托盘运送到指定位置，这时三轴机械手就要开始工作了。通过一系列参数设置，包括编程器设置、运动设置、系统设置、配置参数设置，XY 轴运动，将 Z 轴模组搬运到指定位置，然后进行对芯片的拿取和放置动作。工作完成后在复位，将 Z 轴模组搬运到整个工作台的右上角进行等待，等待下一个工作指令。

关键词：芯片 PLC 控制 直线电机 驱动器 电控

Abstract

With the upgrading of consumption methods and the vigorous development of mobile Internet, more and more consumer electronic products have been added with smart labels, and gradually entered the daily life of consumers, becoming an essential equipment for trendy life. Wearable devices, AR / VR (augmented reality / virtual reality), smart home and children's intelligence are representative products of smart products. This represents a huge market potential in the smart chip industry and a bright future.

The chip burner AK416 studied in this topic can realize intelligent and automatic chip tester burning. The main principle is to realize the motion control of the XYZ direction through PLC programming, drivers, linear motors, and the After the burning is completed, the chips are transported accurately. This topic will focus on the realization of the basic functions of AK416 and the electrical control design of the XY axis module.

As a part of the three-axis manipulator, the XY axis is mainly responsible for a function of carrying and precise positioning of the Z-axis module. After the machine starts to run, the loader will transport the pallet to the designated position, and then the three-axis manipulator will begin to work. Through a series of parameter settings, including programmer settings, motion settings, system settings, configuration parameter settings, XY axis movement, the Z-axis module is transported to a specified location, and then the chip is picked and placed. After the work is completed, it is reset, and the Z-axis module is transported to the upper right corner of the entire work table to wait, waiting for the next work instruction.

Keywords: Chip PLC Control Linear Motor Driver Electronic Control

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