

高速图像传感器CCD60驱动电路设计

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摘要:

本文提供了一种高速EMCCD图像传感器CCD60时序驱动电路的设计方法。采用CPLD进行时序逻辑设计, 利用DS0026集成器件对标准时钟进行电平转换, 分立电路对快速高压(电子增益)时钟进行电平转换, 从而建立EMCCD工作环境。本文建立的驱动电路能够输出电压范围为0-50V, 最高频率20MHz的时钟信号, 实现了电子增益的效果。本设计方法建立的驱动电路已经成功应用于1000帧每秒CCD60高帧频摄像机设计中。

关键词: EMCCD, 时钟驱动电路, CPLD, 时序电路

Design of the Driving Circuit on High Speed Image Sensor CCD60

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Abstract:

A design method of the driving circuit on a new high speed EMCCD image sensor (CCD60) is provided. A CPLD is adopted to design the logic control sequence. DS0026 clock driver ICs are used for the standard clocks. The discrete circuit is used for fast pulsed high-voltage (multiplication) clock, which lays the frame work for EMCCD camera. The clock driver circuit can output a high voltage of 50Vp-p, whose maximum rate is up to 20Hz. The electronic multiplication effect is realized. The circuit with this method has been utilized in 1000 fps High Frame Rate CCD60 camera design successfully.

Keywords: EMCCD Image Sensor; Clock Driver Circuit; CPLD; Time Sequence Circuit

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