Stand Alone Microprocessor-Based Optical Data Acquisition System

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Summary

The design of a stand-alone optical data acquisition system is presented. The system hardware consists of optical analog inputs, optical digital inputs, analog and digital inputs/outputs, and a Motorola MC68-HC11 microcontroller. The system software consists of several subroutines, which enables the user through the input-driven menu to read, store, analyze, process, and display the incoming data. In addition, the user can select the direction of the data, the number of analog or digital channels to be monitored, the sampling rate per channel, and the throughput rate. The user has the option of programming the unit itself for special application. The system is programmable, inexpensive, compact, and versatile