

Analog Text Display

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This project will consist of a system for displaying text using analog signals. This promises to be both fun and challenging, as I will be taking the problem of text display, a naturally digital domain, and solving it “the hard way,” using analog circuits. The plan is to use an x-y display, a laser with a pair of actuated mirrors, to actually draw the characters, so the system will have three control signals available: x, y, and laser on/off. By carefully controlling the shapes and timing of these three signals, it should be possible to draw arbitrary shapes. There are a few notable sources of difficulty. The first will be to create a small number of circuits with a reasonable number of inputs that are capable of producing the entire range of shapes needed for English letters and numbers. Another challenge will be to convert digital characters into a set of inputs to control these circuits. Finally, the system will need to be sufficiently precise that the character shapes can be easily recognized, and also sufficiently fast that the scanning of the laser is above the blending frequency of the human eye. Achieving an acceptable balance between these two performance metrics will be a high priority for the project.