CMU232: A Low Cost Serial Data Tool and Servo Controller

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Introduction

CMU232 is a new low-cost, low-power serial smart switch for serial data communications. It is intended for use by hobbyists to control multiple devices that use the RS232 protocol while only using one serial line. It essentially acts as a multiplexer for serial data, switching between three possible slave devices.
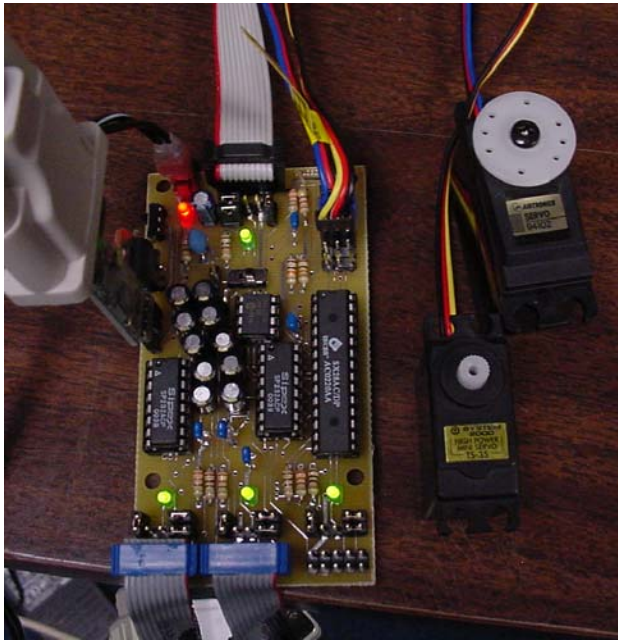

Figure 1. CMU232 controlling 2 servos

Features

CMU232 also has a variety of other modes and options that are tremendously useful for hobbyists looking to satisfy all their serial data needs. Many of functions of the CMU232 are currently available as commercial products separately at up to 10x the cost of CMU232. CMU232 combines many valuable functions onto just one low cost board.

Feature Description

Smart Switch
The main functionality of CMU232 is its ability to control multiple serial devices with just one line. To switch between devices, the CMU232 looks for control characters to enable the switch.

Baud Rate Converter:
CMU232 is capable of converting between baud rates between 115.2kbs to 2400bps. Baud rate and other options can easily be set through a simple interface program on a computer.

Servo Controller
CMU232 is capable of reading servo control signals from the serial data line while still in smart switch mode. This enables it to drive up to 4 servos with PWM while still communicating with numerous devices.

Mirror Mode
CMU232 is capable of acting as an invisible line monitor, mirroring the output of a line onto other ports for serial data debugging needs.

TTL or RS232 Logic Option, Null Modem
To provide hobbyists with the widest variety of devices that the CMU232 is able to connect to, both TTL logic and 12V RS232 logic works on the board. Also, the option to null modem any port makes it more helpful and easier to use.

Some other features include:

128k EEPROM for storing all user options
Configurable Status LEDs
Line filtering
50Mhz Programmable Controller