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| **Project Title:** | **Dedicated USB Data Acquisition Device (DUDAD)** |
| **Client:** | ONU Engineering Department |
| **School Year:** | 2003-2004 |
| **Students:** | Jeff Leach and Jay Hatcher |
| **Summary:** | Acquiring data from circuits and having the ability to control them with a computer is fast becoming a foundation in many engineering disciples. Unfortunately, the equipment to accomplish these tasks can be quite expensive. So much so, that it can be prohibitive for universities wishing to purchase these devices. The purpose of the DUDAD is to replace the common tools used in circuit design with a cheaper alternative, by cutting the accuracy and precision to levels below those found on critical applications, but still maintaining an adequate quality for teaching purposes. Some of the most common functions that are used in the classroom are methods of acquiring data, signal generation, and digital 110, along with PLC programming. The DUDAD accomplishes analog and digital operations, each handled by a different processor. The analog operations will include acquiring data and signal generation. More specifically the analog processor manages ADC, DAC, and PWM. The other microprocessor handles digital input and output (I/O) operations and the synchronization and communications between the analog coprocessor and the PC. The USB interface on a PC allows the DUDAD to transfer data in a user-friendly fashion without installing new hardware into an existing PC. By combining multiple tasks in a single device and avoiding overbuilt precision, the DUDAD will be available at a lower cost than buying separate professional quality devices. |