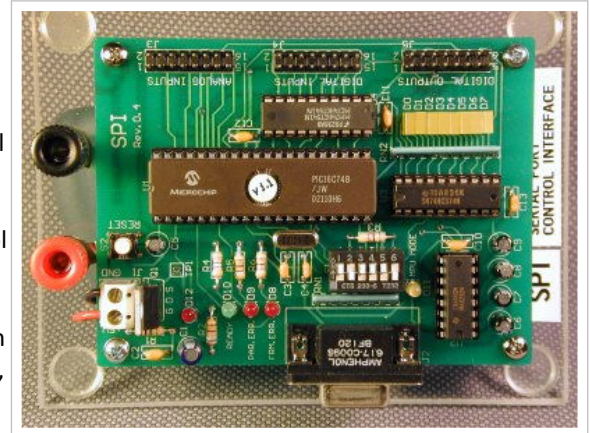


SPI at a Glance ...

SPI module is a general-purpose I/O platform designed to support a wide range of digital control experiments in the electronics lab. It provides various control ports to the host PC through a serial port or a USB port. These control ports include digital outputs, digital inputs, analog inputs, analog reference voltage input, PWM outputs and stepper motor control outputs. The SPI Control Panel (a Windows program running on the PC) provides direct control of the output channels and display of input channels, and thus facilitates control experimentation without any programming. For experiments and projects that require programming, the advantage of using the serial ports on the PC is that for most program development environments (like Visual Basic, Visual C, etc.) no additional software is needed to use the serial ports. The MPU on-board the SPI interprets commands from the host PC to carry out complex operations using all I/O features.



Experimentation Concepts

- Using PC serial ports
- Configuring serial ports and their parameters
- Configuring a serial peripheral device
- Reading analog signals into the PC in digital form
- Digital control of external circuits and devices
- Receiving input from external circuits and devices
- Using Visual Basic to interface the PC to external systems and circuits
- Using Visual Basic or other programming environments to write control programs
- Serial port programming using Visual Basic
- PWM signal generation
- Control of DC motors using PWM signals
- Controlling stepper motors

Operation with the USB Port

Both the SPI Control Panel application and the SPI module will also work through the USB port using the USB-to-Serial (RS232) converter module (SUA or USC). This converter comes with its driver software that needs to be installed on the lab computer and configured to match the settings of the SPI module.

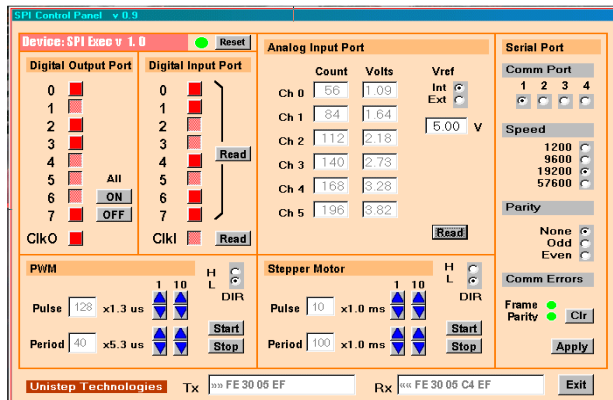
Installation and configuration of the SUA module also has significant educational value, and will enhance the lab experience of the students

Ordering Information

SPI Assembled & Tested Lab Module SPI-LM-010
 USB-to-RS232 Converter SUA-FP-010
 Serial cable, 6 ft, DB-09 M/F DB9-FM-06

The SPI Control Panel

This is the 'front end' host computer application program that is used with the SPI module for testing the SPI board and carrying out basic I/O and control experimentation. It displays the values of all the signals at the input channels and lets the user change the values of the digital outputs. The stepper motor and the PWM parameters can all be controlled, along with the serial communication parameters.



A Word to the Instructor ...

We have designed the SPI module completely with the needs of the post-secondary education in mind. It is suitable for lab use in courses on **Digital Control, PC Architecture, Serial Communications, Construction Project, Digital-Analog Conversions, Power Control, and Electric Motors** (both stepper and DC). If you are considering the SPI module for your lab sessions, please feel free to contact us (support@unistep.ca) with your course contents and we'll be more than happy to provide you with some experimentation ideas and outlines of lab experiments.

More Info...

- User Manual
- List of Features
- Circuit Diagram
- Suggestions for Lab Use
- SPI Exec Command Set