

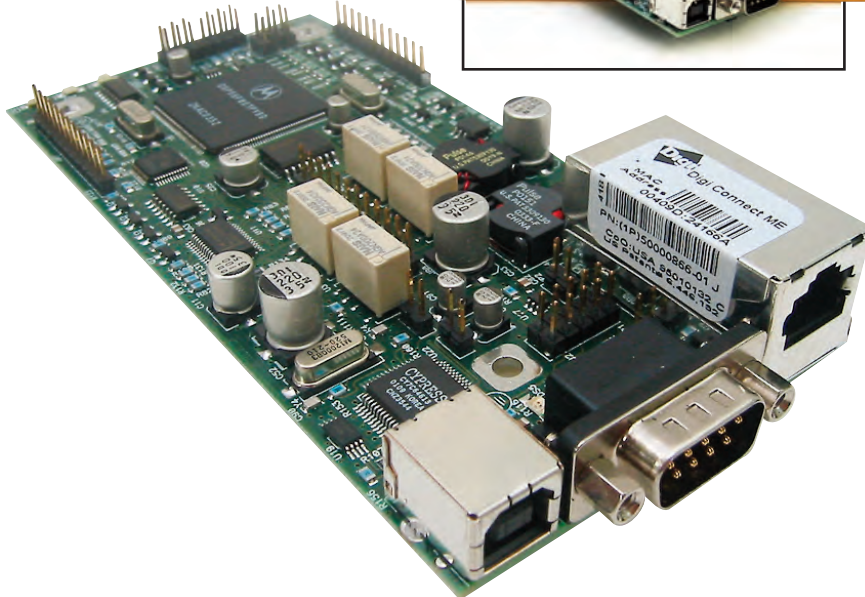
The SIC Option Provides 3 Types of Communications Interfaces:

- **RS-232**
- **Ethernet (10/100-Base-T)**
- **USB—Universal Serial Bus**

Data Acquisition and Control capabilities are Provided by:

- **14 Channels of 12 Bit Analog to Digital Converters**
- **2 Additional Analog Channels that Monitor the Housekeeping Power Supply and Ambient Temperature**
- **5 Digital Output Bits**
- **8 Digital Input Bits**
- **3 Relays/Interlocks**

[www.spellmanhv.com/manuals/SIC](http://www.spellmanhv.com/manuals/SIC)



## HARDWARE FEATURES

The digital hardware includes a 40MIPS digital signal processor, a network processor, and a USB processor/controller. Serial port 0 of the DSP is jumper selectable to allow firmware updating through either the RS-232 port or the Ethernet interface.

### RS232 INTERFACE

- 115k bits per second
- No Parity
- 8 Data Bits
- 1 Stop Bit
- No Handshaking
- DB-9 Connector (as shown)

### ETHERNET INTERFACE

- 10/100-Base-T
- IP Address can be set by the system integrator
- Network Mask can be set by the system integrator
- TCP Port Number can be set by the system integrator
- RJ-45 connector
- Network attachment via Crossover and standard Ethernet cables
- Supported Operating Systems: Windows 98 2ED, Windows 2000 (SP2), Windows NT (SP6), Windows XP Professional, and most other major operating systems

### USB—UNIVERSAL SERIAL BUS INTERFACE

- Compliant with USB 1.1 and USB 2.0 specifications
- Type B male connector
- Included driver can be communicated with via standard Windows serial communications methods

### RS-232 CABLING

A standard RS-232 cable where lines 2 and 3 are reversed is used to connect the SIC serial port to the serial port on a standard personal computer

### ETHERNET CABLING

Category 5 (CAT5) Ethernet patch cables are used to connect the SIC to the host computer. There are two ways to connect the SIC board via Ethernet: the first is to directly cable between the host and the SIC board, and the second is through the use of a hub, switch or network

### USB CABLING

A high-quality double-shielded USB 2.0 Type A or B (host to slave) cable should be used in all applications. This type of cable is a standard PC to peripheral cable that utilizes full size connectors.

### High EMI Environments

If the SIC USB interface is being used in a high-EMI environment, ferrites should be added to the USB cable.

### SOFTWARE COMPATIBILITY

#### RS232

The RS-232 interface makes use of a standard 'command/response' communications protocol. All software that addresses the RS-232 interface must adhere to the following parameters:

- 115k bits per second
- No Parity
- 8 Data Bits
- 1 Stop Bit
- No handshaking

#### ETHERNET

The SIC board contains an embedded diagnostic web server that can be accessed through any standard web browser by browsing to the SIC's IP address. The Ethernet interface communicates using the following protocols:

- TCP/IP
- HTTP
- Telnet
- FTP

These assemblies can auto-switch between 10 Mb/s and 100Mb/s

#### USB

The USB interface makes use of a standard 'command/response' communications protocol. The USB interface is accessed through a Windows USB driver that emulates a standard communications port (just like in RS-232). Before you can communicate with the SIC USB interface, you must load the supplied USB driver disc. This driver will create a 'virtual' comm port that can be checked by using Windows Device Manager.

### Diagnostic Web Server

The screenshot shows a web browser window titled "Spellman High Voltage Diagnostic Web Server - Microsoft Internet Exp...". The main content area has a light blue background and contains several sections:

- Settings:** A button labeled "Settings".
- Monitor:** A table with columns for parameter name, current value, and setpoint.
 

Monitor	Value	Click to Set	Setpoint
V	110	V	0
mA	0.0047	mA	0.0000
Filament A	0.0000	Filament Preheat A	0.0000
Filament V	0.0000	Filament Limit A	0.0000
24 V Supply	24.17		
- Temperatures:** A table with columns for parameter name, current value, and setpoint.
 

Temperatures	Value	Click to Reset	Setpoint
Power	0.0°C	Total Hrs HV On	0.0
Control	27.2°C		
- Control/Status:**
  - HV Control: A green button with "HV" text.
  - Interlock: A red button with "Interlock" text.
  - Fault Status: A green button with "Fault" text.
  - Buttons: "Click to Turn HV ON", "Click to Reset", and "Click to Disconnect".
- TCP/IP Status:** A box showing "Connected" with a progress indicator.

The diagnostic web server can control and monitor an SIC equipped power supply from a web browser. It displays operating status of the Power Supply and allows the unit to be configured in real time. The application consists of three web pages; a page displaying contact information, a license agreement, and a monitoring and control applet that is at the heart of this application.