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Ocean Optics Inc.
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# Engineering Note

Topic: USB Devices: Recovering a Corrupted EEPROM

Products Affected: ADC1000-USB, HR2000, HR4000, USB2000

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## Description

While reprogramming a USB device, it is critical that the programming session finishes without interruption. However, in cases where an interruption occurs (i.e., other programs hang up the PC, the device becomes unplugged, etc.), it may be possible to rectify this situation.

If the USB device appears as an Ocean Optics device with a yellow exclamation point, chances are that the device is functioning properly but a configuration file on your PC is missing. See the manual or operating instructions that came with your USB device on how to rectify an incorrect installation.

Typically, if an Ocean Optics USB device has a corrupted EEPROM, it appears in the Device Manager as an Unknown Device.

### ► *Procedure*

To recover from a corrupted EEPROM follow the steps below:

1. Download and install the USB EEPROM Programmer utility from our web site at, http://www.OceanOptics.com/Technical/SoftwareDownloads.asp.
2. Unplug the USB device from the PC.
3. Using a paper clip or wire, short the SDA pin to ground (see Table 1 below for pin location).

**Table 1: SDA Pin Location**

| USB Device | Location of SDA Pin | Convent location for Ground |
|---|---|---|
| ADC1000-USB | J8: Pin 4 (Remove case by removing 2 outer | J8: Pin 2, shell of USB Connector or DB25 Connector |
| HR2000 | Pin 10 of 20-pin connector | Pin 6 of 20- pin connector, shell of USB Connector |
| HR4000 | Pin 8 of 30-pin connector | Pins 5, 27 and 29; shell of USB Connector |
| USB2000 | Pin 10 of 10-pin connector screws on the back panel) | Pin 6 of 10-pin connector, shell of USB Connector |

4. With the pin shorted, power up the device by connecting it to the PC with the USB cable.
5. Remove the Shorting wire.
6. Start up the USB EEPROM Programmer.
7. In the utility, the USB device should show up under **Unprogrammed OOI USB Devices**.

   If the device does appear under **Unprogrammed OOI USB Devices**, select this unit by clicking on it and then clicking the **Program** button to select the appropriate EEPROM file.

   If the device does not appear under **Unprogrammed OOI USB Devices**, repeat steps 4-6, making sure the appropriate pin is shorted to ground.

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**Caution**

While the device is programming, do NOT remove the cable, turn off the computer, or run other programs on the computer.

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8. Once the programming is complete, detach and reconnect the USB device, wait 10 seconds for the device to become fully enabled, and then click the **Refresh Tree** button. The device should appear in the appropriate category.

# USB Connection

The ADC1000-USB interfaces an S2000 Spectrometer to a notebook or desktop PC via a USB port. When interfaced to a PC via the USB port, the ADC1000-USB does not require an external power supply since it draws its power from the PC to which it is connected.

# Serial Port

The ADC1000-USB also has a serial port for interfacing the S2000 or S1024DW Spectrometer to PCs, PLCs and other devices that support the RS-232 communication protocol. The serial port on the ADC1000-USB can also be used to interface a spectrometer to a handheld PC running Windows CE 3.0.