

# USING THE ASERSM1 SERIAL EEPROM IN-CIRCUIT INTERFACE ADAPTER

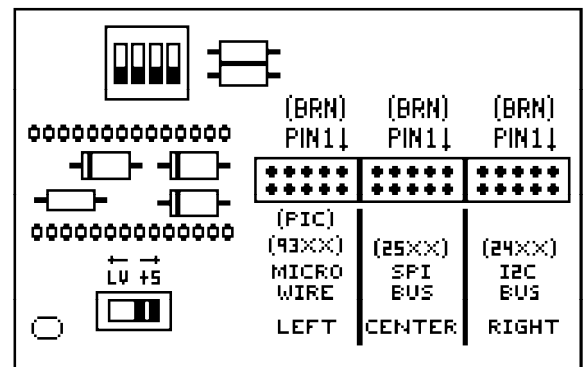
The ASERSM1 is an enhanced version of the ASEREE2 adapter and is specifically designed to support in-circuit programming of serial eeproms and compatible PIC microcontrollers. The adapter supports both low voltage (LV) and 5 volt (+5) parts using a switch to select the desired voltage range. Unlike the ASEREE2, which uses a ZIF socket, this adapter connects to the in-circuit component (serial eeprom) using a standard cable assembly provided by Andromeda Research. There are cable assemblies for DIP devices (#ADIP8), SOIC devices (#ASOIC8) and a probe set (#SMP8) with individual probes which attach to each device pin. Each cable assembly terminates with a 10 pin female connector on the end opposite the clip or probe set.

## INSTALLING THE ADAPTER

To install the adapter into the programming unit, lift the handle on the programming unit ZIF socket to about 45 degrees. This will release the mechanism and allow the adapter base pins to be inserted into the socket. **NOTE:** This adapter has a 28 pin base and must be fully left justified in the 32 pin programming unit socket. After the adapter is inserted and flush with the socket, release the handle to lock the adapter in place. To remove the adapter, reverse the procedure.

## CONNECTING THE CABLE ASSEMBLY TO THE ASERSM1 ADAPTER

The ASERSM1 adapter includes a 30 pin header arranged as three groups of ten pins. Each group of pins supports a specific family of serial eeprom device. The pin groups are defined as LEFT, CENTER and RIGHT. The left group supports the MicroWire family of serial eeproms (93XX), the center group supports the SPI BUS family and the right group supports I2C BUS devices. Each group is clearly marked with bold white vertical lines plus the device family name and typical industry number (93XX, 25XX, 24XX). To attach the female connector and cable to the proper header group align the connector such the brown wire (Pin #1) is on the right. This is marked directly above each header group. Position the female connector such that the holes in the connector align with the pins in the selected group and press the connector onto the pins. Be sure the connector is flush against the base of the header. **NOTE:** When a device part number is selected, the system software will indicate device placement based on the socket found on the ASEREE2 (socket left, center or right). This same position (left, center or right) applies to the female connector placement when attached to the pin groups of the ASERSM1. Use this reference if there is a question regarding placement of the female connector.



## SETTING THE OPERATING VOLTAGE

The ASERSM1 adapter uses a slide switch to select the operating voltage which is applied to the device. For most devices the switch is set to the +5 (5 volt) position. If, however, a device must operate at with a lower voltage the system software will indicate that the switch must be set to LV. **NOTE:** Many 5 volt devices will operate at a lower voltage. This is an advantage when working with circuits or modules which include other active components such as a microcontroller. If you are unsuccessful reading or programming a part due to interference from other active components while using the +5 switch setting, you have the option to set the device power to a lower voltage (LV). In many cases powering the device with a lower voltage will prevent other components on the board or module from becoming active while allowing the serial eeprom to function normally. If inconsistent data is read or a device will not program correctly, set the switch to LV and try the operation again.

## ADAPTER DIP SWITCH

The ASERSM1 adapter uses a 4 position dip switch to support certain devices and device features. The setting for the dip switch is displayed when the device with which you are working is selected from the system software or you may recall the setting at any time by using the “S” command.

**IMPORTANT NOTE:** Switch 4 has a unique function as it is connected to a pin used by certain 24 series (I2C bus) devices to write-protect the part. Write protection prevents the internal memory from being altered. If you are experiencing a problem programming a 24 series part, set Switch 4 to on (disable write protect) and again attempt to program the part.

## ADDITIONAL DEVICE FAMILIES

The ASERSM1 supports all of the devices supported by the ASEREE2 except FPGA configurators (ASEREE2 only). If you choose a part which is listed in the system software (device selection table) but does not conform to one of the device number families printed on the ASERSM1 adapter, simply observe the specified family name and position reference. Proceed by installing the female header at the specified location (left, center or right) as specified. (**EXAMPLE:** A 95020 is an SPI part and will require the female connector to be placed in the center position.)

## DEVICE PIN CONNECTIONS AND THE CABLE COLOR CODE

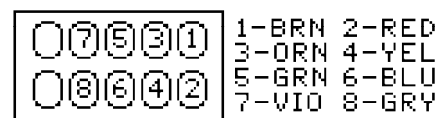
The ASERSM1 adapter maps the header pins to the corresponding color of the connecting cable. The EIA color code is an industry standard whereby each number from 0 through 9 is represented by a corresponding color. The numbers and corresponding colors follow: 0 - BLACK, 1 - BROWN, 2 - RED, 3 - ORANGE, 4 - YELLOW, 5 - GREEN, 6 - BLUE, 7 - VIOLET, 8 - GREY, 9 - WHITE. Notice that the connecting cable is composed of the colors brown through grey (1 through 8). These map directly to the pin numbers of the connected device.

## CONNECTING A PIC MICROCONTROLLER

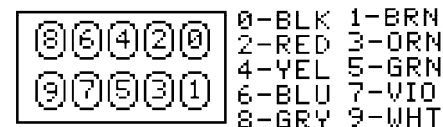
Many members of the Microchip PIC microcontroller family support in-circuit programming using a serial programming algorithm. The ASERSM1 allows the connection of a supported PIC microcontroller by attaching the required programming signals to the corresponding pins on the selected PIC part. The signals required to support the PIC serial programming mode follow: SCLK, SDAT, Vcc, GND and Vpp. These signals are provided at the left pin group which is marked (PIC). **NOTE:** To allow this group of pins to support both the MicroWire (93XX) and the PIC devices, the PIC connections reference the group as 10 pins (0 through 9) instead of 8 (1 through 8) which is used for serial eeproms. The PIC programming functions map to the following pin numbers/colors: (SCLK/PIN#1/BRN), (SDAT/PIN#3/ORN), (Vcc/PIN#7/VIOLET), (GND/PIN#9/WHT), (Vpp/PIN#8/GRY).

**NOTE:** Refer to the Microchip serial programming algorithm information for specific information regarding programming of these parts ([www.microchip.com](http://www.microchip.com)).

### SERIAL EEPROM PIN ASSIGNMENTS



### PIC MICROCONTROLLER



1-SCLK 3-SDAT 7-Vcc  
8-Vpp 9-GND