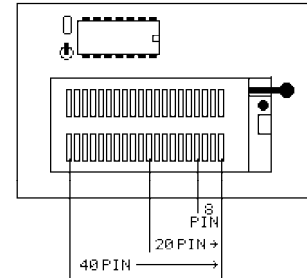


# USING THE A90S (AVR) ADAPTER

The A90S adapter allows the Andromeda Research EPROM+ programming system to support both the 90SXXXX and 89SXXXX microcontroller families from ATMEL. Install the adapter fully left in the programming unit socket by lifting the handle on the programming unit socket and inserting the adapter base pins into the open socket leaves. Release the handle to lock the adapter in place.

This adapter is capable of supporting the 8, 20 and 40 pin parts. Parts with fewer than 40 pin are **right** justified in the adapter socket.



## SPECIAL NOTE ABOUT THE 90SXXXX ARCHITECTURE

The 90SXXXX memory array begins at 0 and ends at the maximum address for the selected device. All members of the 90SXXXX family have internal eeprom. The EPROM+ system software maps the eeprom memory directly after the program memory in the systems buffer. **EXAMPLE:** The 90S1200 device has 512 words or 1K bytes of program memory. This is mapped between 0 and 3FFH. There is 64 bytes of eeprom memory which is mapped from 400 to 43F. Any data located between these addresses will be programmed into the device after the program memory is processed. If you do not wish to program the eeprom memory, instruct the software to use the last ending address in the program memory array instead of the maximum device size.

## PROGRAMMING THE EEPROM FROM A SEPARATE FILE

Certain applications provide the data which is to be programmed into the EEPROM memory area in a separate file. The EPROM+ software treats the entire memory array (program and data eeprom) as one segment. To arrange the program and data files as one segment perform the following steps:

1. Load the eeprom (data) file using command 4 option 1. This will load the file into the buffer at address 0.
2. Use the editor transfer (T) command and move the block of memory from 0 to the eeprom area which is directly after the program memory. Reference the information in the ARCHITECTURE paragraph above. In this example the program memory ranges from 0 to 3FF while the eeprom ranges from 400 to 43F. The transfer command would be "T 0 3F 400 <ENTER>". This will move the data from 0 to 3F up to 400.
3. Load the program file using command 4 option 2. Specify the load address as 0. This will load the program file while leaving the eeprom data unchanged.
4. Use command 2 to program the entire device, both program memory and data eeprom.
5. If you wish you may save a copy of the data in the part by using command B. This will allow you to create future parts from the file.

## PROGRAMMING THE LOCK BITS

You may program the lock bits (LB1 & LB2) manually with the Z command or automatically by setting either to 0. If either lock bit is set to 0, the system software will automatically program the lock bit after the memory array has been programmed. This allows you to use the system to not only program but automatically lock the part after the programming process is complete. **NOTE:** Both lock bits are cleared when the device is erased.