

The cold-start reset routine stores the starting address of the built-in Applesoft interpreter, low-order byte first, in the reset vector address at locations 1010 and 1011 (hexadecimal \$03F2 and \$03F3). It then stores a validity-check byte, also called the *power-up byte*, at location 1012 (hexadecimal \$03F4). The validity-check byte is computed by performing an exclusive-OR of the second byte of the vector with the constant 165 (hexadecimal \$A5). Each time you reset the Apple IIe, the reset routine uses this byte to determine whether the reset vector is still valid.

You can change the reset vector so that the reset routine will transfer control to your program instead of to the Applesoft interpreter. For this to work, you must also change the validity-check byte to the exclusive-OR of the high-order byte of your new reset vector with the constant 165 (\$A5). If you fail to do this, then the next time you reset the Apple IIe the reset routine will determine that the reset vector is invalid and perform a cold-start reset, eventually transferring control to the disk startup routine or to Applesoft.

The reset routine has a subroutine that generates the validity-check byte for the current reset vector. You can use this subroutine by doing a subroutine call to location -1169 (hexadecimal \$FB6F). When your program finishes, it can return the Apple IIe to normal operation by restoring the original reset vector and again calling the subroutine to fix up the validity-check byte.

Table 4-11
Page 3 vectors

| Vector address | Vector function |
|-----------------|--|
| \$3F0\$3F1 | Address of the subroutine that handles BRK requests (normally \$59, \$FA) |
| \$3F2\$3F3 | Reset vector (see text) |
| \$3F4 | Power-up byte (see text) |
| \$3F5\$3F6\$3F7 | Jump instruction to the subroutine that handles Applesoft & commands (normally \$4C, \$58, \$FF) |
| \$3F8\$3F9\$3FA | Jump instruction to the subroutine that handles user Control-Y commands |
| \$3FB\$3FC\$3FD | Jump instruction to the subroutine that handles nonmaskable interrupts |
| \$3FE\$3FF | Interrupt vector (address of the subroutine that handles interrupt requests) |