

Pascal 1.1 firmware protocol	145
Device identification	145
I/O routine entry points	145
Interrupts on the enhanced Apple IIe	147
What is an interrupt?	147
Interrupts on Apple IIe series computers	148
Rules of the interrupt handler	149
Interrupt handling on the 65C02 and 6502	150
The interrupt vector at \$FFFE	151
The built-in interrupt handler	151
Saving the Apple IIe's memory configuration	152
Managing main and auxiliary stacks	153
The user's interrupt handler at \$3FE	154
Handling break instructions	155
Interrupt differences: Apple IIe versus Apple IIc	156

## **Chapter 7 Hardware Implementation 157**

Environmental specifications	158
The power supply	159
The power connector	160
The 65C02 microprocessor	161
65C02 timing	162
The custom integrated circuits	164
The Memory Management Unit	164
The Input/Output Unit	165
The PAL device	167
Memory addressing	168
ROM addressing	168
RAM addressing	169
Dynamic-RAM refreshment	170
Dynamic-RAM timing	171
The video display	173
The video counters	173
Display memory addressing	174
Display address mapping	175
Video display modes	178
Text displays	178
Low-resolution display	181
High-resolution display	183
Double high-resolution display	184
Video output signals	185
Built-in I/O circuits	186
The keyboard	187
Connecting a keypad	188
Cassette I/O	188
The speaker	189
Game I/O signals	189