

Most of this manual describes functions—what the Apple IIe does. This chapter, on the other hand, describes objects—the pieces of hardware the Apple IIe uses to carry out its functions. If you are designing a piece of peripheral hardware to attach to the Apple IIe, or if you just want to know more about how the Apple IIe is built, you should study this chapter.

**Extended keyboard IIe**

Because the extended keyboard IIe uses several new components and includes the Extended 80-Column Text Card as a standard feature, its schematic diagram is slightly different from that of the original and enhanced IIe's. The schematic for the extended keyboard IIe is provided in Figure 7-16a-d at the end of this chapter. If you have an extended keyboard IIe you should refer to this schematic whenever the text refers to the schematic for the original and the enhanced IIe's (Figure 7-15a-d).

**Table 7-1**  
Summary of environmental specifications

<b>Operating temperature</b>	10° to 40° C (50° to 104° F)
<b>Relative humidity</b>	10% to 90%
<b>Line voltage</b>	95 to 127 VAC

**Environmental specifications**

The Apple IIe is quite sturdy when used in the way it was intended. Table 7-1 defines the conditions under which the Apple IIe is designed to function properly.

You should treat the Apple IIe with the same kind of care as any other electrical appliance. You should protect it from physical violence, such as hammer blows or defenestration. You should protect the mechanical keyboard and the electrical connectors inside the case from spilled liquids, especially those with dissolved contaminants, such as coffee and cola drinks.

In normal operation, enough air flows through the slots in the case to keep the insides from getting too hot, although some of the parts inside the Apple IIe normally get rather warm to the touch. If you manage to overheat your Apple IIe, by blocking the ventilation slots in the top and bottom for example, the first symptom will be erratic operation. The memory devices in the Apple IIe are sensitive to heat: when they get too hot, they occasionally change a bit of data. The exact result depends on what kind of program you are running and on just which bit of memory is affected.