

- » **Channels:** Wireless networks can transmit over any of several channels. For computers to talk to one another, though, they must be configured to transmit on the same channel.
- » **Ad-hoc:** The simplest type of wireless network consists of two or more computers with wireless network adapters. This type of network is an *ad-hoc mode network*.
- » **Infrastructure mode:** A more complex type of network is an infrastructure mode network. All this really means is that a group of wireless computers can be connected not only to one another, but also to an existing cabled network via a device called a *wireless access point* (WAP). (I tell you more about ad-hoc and infrastructure networks later in this chapter.)

A Little High School Electronics

I was a real nerd in high school: I took three years of electronics. The electronics class at my school was right next door to the auto shop. All the cool kids took auto shop, of course, and only nerds like me took electronics. We hung in there, though, and learned all about capacitors and diodes while the cool kids were learning how to raise their cars and install 2-gigawatt stereo systems.

It turns out that a little of that high school electronics information proves useful when it comes to wireless networking — not much, but a little. You'll understand wireless networking much better if you know the meanings of some basic radio terms.

Waves and frequencies

For starters, radio consists of electromagnetic waves sent through the atmosphere. You can't see or hear them, but radio receivers can pick them up and convert them to sounds, images, or — in the case of wireless networks — data. Radio waves are actually cyclical waves of electronic energy that repeat at a particular rate: the *frequency*.

Figure 8-1 shows two frequencies of radio waves. The first is one cycle per second; the second is two cycles per second. (Real radio doesn't operate at that low a frequency, but I figured that one and two cycles per second would be easier to draw than 680,000 and 2.4 million cycles per second.)