Accessing Android Hardware

Android's application-neutral APIs provide low-level access to the increasingly diverse hardware commonly available on mobile devices. The ability to monitor and control these hardware features provides a great incentive for application development on the Android platform.

The hardware APIs available include:

- ❑ A telephony package that provides access to calls and phone status.
- ❑ A multimedia playback and recording library.
- ❑ Access to the device camera for taking pictures and previewing video.
- ❑ Extensible support for sensor hardware.
- ❑ Accelerometer and compass APIs to monitor orientation and movement.
- ❑ Communications libraries for managing Bluetooth, network, and Wi-Fi hardware.

In this chapter, you'll take a closer look at some of these hardware APIs. In particular, you'll learn how to play and record multimedia content including audio, video, and still images, as well as use the camera to capture images and preview and capture live video.

You'll also learn how to monitor hardware sensors using the Sensor Manager. The accelerometer and compass sensors will be used to determine changes in the device orientation and acceleration — which is extremely useful for creating motion-based User Interfaces — and lets you add new dimensions to your location-based applications.

Finally, you'll take a closer look at the communication hardware by examining the telephony package for monitoring phone state and phone calls, as well as seeing what's available in the Bluetooth, networking, and Wi-Fi APIs.