

## Echo Meter Touch

### Specifications

**Manufacturer:** Wildlife Acoustics

**Price:** \$499 (Ultrasonic Module); \$149 (Bat Auto-ID feature)

**Website:** [www.wildlifeacoustics.com/education/](http://www.wildlifeacoustics.com/education/)

**Grade level:** Elementary through College

The Echo Meter Touch is a hardware module (with ultrasonic microphone) and software app that work together to let you monitor, record, and analyze bat echolocation. The module plugs into the power port of an Apple iPhone or iPad. Considering that bats represent about 20% of all classified mammal species with over 1,000 species worldwide, this device could have broad applications.

So, how does it work? Bats emit sound waves to find prey and navigate in flight. The bats' ultrasonic sounds are detected, recorded, and logged by the Echo Meter Touch. Using the Global Positioning System (GPS) function of your Apple device, this product will also record the location. These recordings can be saved for later analysis. It is amazing to me that this device can automatically identify the species of the bat, based on how the bat sounds. In my area, I was able to find several *Eptesicus fuscus* (big brown bat). Near our school, I found *Lasiionmycteris noctivagans* (silver-haired bat), and then was surprised to find in my own backyard a *Lasiurus cinereus* (hoary bat) hovering around my swimming pool.

To get started, you'll need an iPhone or cellular-equipped iPad. The Echo Meter Touch Bat Detector software can then be downloaded for free from iTunes. I also recommend the Bat Auto-ID feature, available on iTunes for an additional \$149, which automatically identifies bats in the field. This software

updates itself with new bat classifiers as they become available. Without this feature, you will get records of the bats' locations but not precise identifications.

Once you have all of the necessary equipment, you're ready to find bats in your area. Set the device to live mode, and the GPS view will track where you walk and give the exact location of where a bat is detected. To identify the bat species, you simply scroll back from live mode and click on the bat symbol. With the Bat Auto-ID enabled, the device displays an abbreviation that you can use to identify the species in the software database, which includes all North American bat species. The database includes pictures and in-depth information about each type of bat and is easy to navigate, which makes this device appropriate for upper elementary through high school science teaching. I believe the product—a durable and reliable scientific instrument—would be useful in field work to a bat seeker at any level of expertise.

The Echo Meter Touch comes with *Discover Bats*, a DVD that includes segments on how and where bats live, how bats can be helped, and other bat-related issues. The product also comes with a handbook that is the backbone of the kit. It contains 21 integrated lessons, library references, background information, a detailed glossary, and a bibliography of supporting resources.

This outstanding device enhances instruction and motivates students to learn more about bats. It seems plausible that by integrating the Echo Meter Touch into instruction, teachers will not only engage their students but will also have the opportunity to include parents and many others from the community. Using the Echo Meter Touch in science instruction will heighten interest in bats and offer students meaningful adventures in scientific discovery.

*Edwin P. Christmann*



The Echo Meter Touch module (*above*), which contains an ultrasonic microphone, plugs into an iPad (*right*).

