

Getting Started with Acoustic Monitoring of Bats

A beginner's guide for the 2026 Ohio Bat Working Group Bat Blitz

Bats “speak” in ultrasound — mostly above the range of human hearing. **Acoustic monitoring** uses a specialized detector to capture those echolocation calls so you can hear bats on a walk or record them and later identify which species are present. It is non-invasive (you never handle a bat), it works in the dark, and it is one of the most accessible ways for students, volunteers, educators, land managers, and new researchers to contribute real data. This guide explains the types of gear, what things cost, and how to choose a first device for the Bat Blitz and beyond.

The four device levels

- **Entry-level / general use:** For listening, education, and bat walks. Great for learning; limited species-ID capability.
- **Citizen science / introductory recording:** Saves usable recordings and supports structured monitoring but needs more setup and validation.
- **Intermediate / professional field use:** For active surveys, transects, and robust deployments; better mics, metadata, and scheduling.
- **Scientific research grade:** Full-spectrum systems for repeatable passive monitoring and analysis. Note: “research grade” does not guarantee correct IDs — placement, calibration, and expert review still matter.

How to choose your first detector

- **Want to walk around and hear/ID bats tonight?** Start with a handheld / active detector. The Echo Meter Touch 2 (\$179) plugs into your phone and IDs calls live.
- **Want to leave a unit out for nights or weeks?** Choose a passive / unattended recorder such as the Song Meter Mini Bat 2 or Titley Chorus/Ranger.
- **On a tight budget or comfortable with DIY?** A USB microphone or the open-source AudioMoth (~\$100) records full-spectrum audio for far less — you supply the computer/phone and setup.
- **Doing formal or permitted surveys (e.g., NABat)?** Use recognized research-grade recorders (Song Meter SM5BAT/SM4BAT FS, Titley Ranger, Pettersson D500X).

Companies & devices available in the U.S. (Summer 2026)

Prices are approximate U.S. retail before tax, shipping, batteries, memory cards, microphones, cases, host devices, or analysis software unless noted. International prices were converted approximately. **Always request a current quote before budgeting or purchasing.**

Manufacturer	Model	Approx. Cost (USD)	Level	System type & best fit
Active / handheld detectors — listen, learn, and run bat walks (great first purchase)				
Batbox Ltd.	Baton w/ BatScan batmanagement.com	\$130	Entry-level / general use	Simple, durable listening detector for hearing activity and teaching; not for species ID.
Elekon AG	BATSCANNER batmanagement.com	\$395	Entry-level / general use	Auto-tuning heterodyne with peak-frequency display; very simple for education and nature walks.
Wildlife Acoustics	Echo Meter Touch 2 wildlifeacoustics.com	\$179	Entry-level / citizen science	Plugs into a phone/tablet; live display and auto-ID. Most popular entry point. USB-C host required.
Wildlife Acoustics	Echo Meter Touch 2 PRO wildlifeacoustics.com	\$349	Intermediate / prof. active	Adjustable gain and better mic for active surveys, voucher calls, and training. Host device required.
Titely Scientific	Scout titely-scientific.com	~\$790	Entry / intermediate active	Rugged standalone active detector for bat walks and surveys; saves files for later review.
Titely Scientific	Walkabout titely-scientific.com	~\$1,285	Professional active / research	All-in-one handheld: touchscreen, GPS, spectrogram, full-spectrum recording.
Elekon AG	BATLOGGER M2 elekon.ch	~\$2,000-3,000 (quote)	Professional active / research	Handheld full-spectrum with GPS and triggering; U.S. availability via specialty distributors.
Passive / unattended recorders — deploy for nights to months, analyze later (survey workhorses)				
Open Acoustic Devices	AudioMoth 1.2.0 openacousticdevices.info	~\$100-145 w/ case	Citizen science / intro research	Very low-cost open-source logger up to 384 kHz. You add microSD, batteries, case, and setup.
Wildlife Acoustics	Song Meter Mini Bat 2 (AA) wildlifeacoustics.com	\$749	Research grade	Compact, weatherproof (IP67), lockable; up to ~50 ten-hour nights on AA cells. Easy to configure.
Wildlife Acoustics	Song Meter Mini Bat 2 (Li-ion) wildlifeacoustics.com	\$849	Research grade	Longer-duration version (~125 ten-hour nights) using 18650 Li-ion cells; compact and lockable.
Wildlife Acoustics	Song Meter SM5BAT wildlifeacoustics.com	\$1,049 incl. mic	Research grade	Current flagship long-term recorder; two channels, external power, cabled mic placement.
Wildlife Acoustics	Song Meter SM4BAT FS wildlifeacoustics.com	\$1,349 incl. mic	Research grade	Long-established professional platform still listed and supported; SM5BAT is the newer model.
Titely Scientific	Chorus titely-scientific.com	~\$525-620	Citizen science to research	Affordable programmable recorder; successor to Anabat Express. Price varies by mic configuration.
Titely Scientific	Ranger titely-scientific.com	~\$1,080-1,280	Research grade	Successor to Anabat Swift; GPS, touchscreen, complex schedules, replaceable mics, solar/external power.
Pettersson Elektronik	D500X batmanagement.com	\$1,724.99	Research grade	Long-established autonomous full-spectrum recorder; external mic and power options; uses CompactFlash.
Elekon AG	BATLOGGER A+ elekon.ch	~\$3,000-4,500 (quote)	Research grade	Professional long-term station with GPS/metadata and triggered recording. Verify U.S. lead time.
USB microphones & DIY systems — lowest hardware cost, but you supply a laptop/tablet/phone				
Pettersson Elektronik	M500 USB Microphone batmanagement.com	\$449	Intermediate / prof. active	High-quality USB mic for a laptop/tablet system; recording software and host computer required.
Pettersson Elektronik	u256 / u384 / u500 USB mics batmanagement.com	\$274 / \$364 / ~\$500	Introductory to professional	Host-powered USB mics at different sample rates; choose rate for target frequencies and software.
Dodotronic	Ultramic USB (model dependent) dodotronic.com	~\$250-600	Introductory to professional / DIY	Computer- or Android-hosted ultrasonic mic. Verify model, OS compatibility, U.S. shipping, enclosure.
Open Acoustic Devices	AudioMoth Dev openacousticdevices.info	~\$115-160	Advanced DIY / research dev.	AudioMoth with external power/mic connections. Best for technically experienced users and custom builds.

Costs often left out of the sticker price

- Batteries, charger, matched rechargeable cells, or an external battery/solar system
- High-quality SD, microSD, or CompactFlash memory cards
- External or replacement ultrasonic microphones and extension cables
- Weatherproof case, security box, cable lock, mounting pole, straps, or tripod
- Compatible smartphone, tablet, laptop, USB adapter, headphones, or field power bank
- Call-analysis / auto-classification software, data storage, and staff or volunteer review time
- Microphone testing and calibration, maintenance, repairs, shipping, customs, and spare units

You'll also need analysis software

Recording is only half the job — identifying species usually means running files through classifier software. Common options include **Kaleidoscope Pro** (Wildlife Acoustics), **Anabat Insight** (Titley, free), **SonoBat**, and the free [BTO Acoustic Pipeline](#). Handheld detectors like the Echo Meter Touch include free live auto-ID in their apps, which is why they are so beginner-friendly. Remember: **automatic species suggestions are hypotheses, not confirmed identifications.**

Cautions for beginning users

- Auto-ID results are affected by call quality, habitat, geography, behavior, overlapping species, and non-bat noise. Verify important IDs.
- A high sample rate alone does not make a device better. Mic sensitivity, noise floor, weather protection, triggering, placement, and clock accuracy matter just as much.
- Comparisons across sites or years are strongest when model, mic type, placement, settings, and schedule are standardized and documented.
- Before buying several units, test one or two through the full workflow: configure, deploy, retrieve, organize files, analyze, review, back up, and report.

Where to buy in the U.S.

Many brands are made overseas but sold in the U.S. through the manufacturer's web store or specialty dealers. [Bat Conservation and Management \(batmanagement.com\)](#) is a primary U.S. dealer for Pettersson, Titley/Anabat, Elekon, Batbox, and accessories — and rents gear, so you can try a research-grade recorder before buying. Wildlife Acoustics (Massachusetts) is a U.S.-based manufacturer that sells direct.

A note on Ohio, permits & ethics

Recording bat calls acoustically is non-invasive and generally does not require a permit, unlike capturing or handling bats. However, if your work involves federally or state-listed species, entering caves or mines, or a formal survey protocol, check first with the **Ohio Division of Wildlife** and the U.S. Fish & Wildlife Service. If you'd like your effort to count toward continent-wide science, consider contributing to [NABat, the North American Bat Monitoring Program](#), which sets the equipment and protocol standards used across Ohio and beyond. The **Ohio Bat Working Group** Bat Blitz is an excellent place to try gear, learn protocols, and meet people already doing this work.

About discontinued and used gear

You may see older models on the used market. Titley's *Anabat Swift* and *Anabat Express* are discontinued (replaced by Ranger and Chorus). Older Song Meters (SM2/SM3) and legacy handheld detectors can still work but are not current new-purchase recommendations. Used units can be a budget-friendly start — just confirm microphone condition, software support, and parts availability first.

Prepared by Discover Bats Ohio

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Compiled from manufacturer and authorized U.S. reseller listings, Summer 2026: Wildlife Acoustics, Titley Scientific, Open Acoustic Devices, Elekon, Pettersson Elektronik, Batbox, Dodotronic, and Bat Conservation and Management.



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