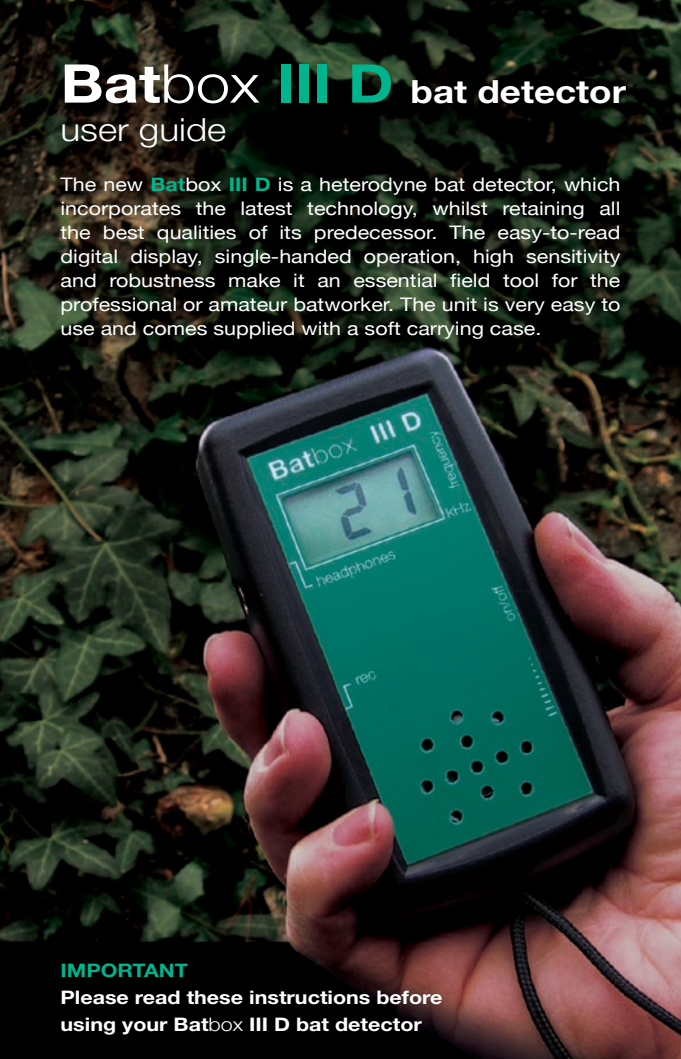
Batbox **III D** **bat detector**
user guide

The new **Bat**box **III D** is a heterodyne bat detector, which incorporates the latest technology, whilst retaining all the best qualities of its predecessor. The easy-to-read digital display, single-handed operation, high sensitivity and robustness make it an essential field tool for the professional or amateur batworker. The unit is very easy to use and comes supplied with a soft carrying case.



IMPORTANT

Please read these instructions before using your Batbox **III D bat detector**

BATTERY CONNECTION: When fitting the battery, make sure that the unit is switched off and that you fit it correctly. Connecting it the wrong way round may cause damage to the detector. The **Bat**box **III D** is designed to take a PP3, 9 volt battery. All brands and types should work but the performance and capacity will vary according to the type used. We recommend the use of NmHi batteries as they are the most economical way of powering the detector as well as being less harmful to the environment. They can be charged by day ready for use in the evening. Duration will depend on the quality of the battery but, on average, expect 12 hrs of intermittent use, per charge.

BATTERY LOW INDICATOR: When the battery voltage drops below 7 volts a 'BAT' legend will appear in the top left hand corner of the display. The **Bat**box **III D** will continue functioning normally for a few more minutes. You should change the battery soon after this sign appears. When the battery is low the frequency displayed is still accurate although the minimum and maximum of the tuning range may be affected.

HETERODYNE: Heterodyning involves the mixing of two signals, one being the bat call from the ultrasonic microphone and the other produced by a local-oscillator in the detector. These signals are mixed and filtered in such a way as to produce a difference between them at the output of the detector. The difference is low enough in frequency to hear.
For example, if the detector oscillator (frequency control) is set to 42kHz and a frequency of 40kHz supplied to the microphone, a difference of 2kHz will be heard at the output.

The digital frequency counter of the **Bat**box **III D** gives the exact frequency of the local-oscillator to the nearest 1kHz. When the detector is tuned to the peak frequency of a bat call there is, in theory, zero frequency output. In practice, because the bat is in motion the calls will always be heard, but the lower the pitch of the output, the closer the local-oscillator frequency is to that of the bat's peak-frequency.

If there are no bats around, you can test the functioning of the bat detector by rattling a bunch of keys or by rubbing your fingers together in front of the unit.

CONNECTION TO RECORDING DEVICE: (minidisc, MP3, solid-state recorder etc.) **Bat**box **III D** has an output for recording as well as a headphone socket. Bat calls may be recorded for reference or reviewing. Heterodyne recordings are not suitable for computer analysis, other than for counting pulse-rates. The recording output (rec) has a fixed signal level and cannot be adjusted with the volume control. Adjustments should be made on the input of the recording device used.

The recording device should have a line level input. If not, and your recorder has only a microphone input, a special attenuation lead may be required, in order to reduce the signal level from the detector.

HEADPHONES: Although it is possible to listen through the built in monitor speaker, listening with headphones provides greater sensitivity and clearer reception, for hearing bats. Do not turn the volume up too high with headphones, as you may not be able to hear people and things around you. In some circumstances this may put your personal safety at risk, especially near roads at night.

Before inserting headphones into the headphone socket, make sure that the volume is turned down. When the volume control is set high, the headphone level may be too great for comfort. Higher levels should only be used for listening to distant bats.

BACKLIGHT: The backlight behind the LCD display will not be apparent in daylight but as light levels go down, sufficient light to read the display will be apparent, without being so bright as to spoil night-vision.

MICROPHONE CARE: The ultrasonic microphone, situated at the front of the **Bat**box **III D** is a very sensitive device and should be treated with the same respect as a camera lens. Do not allow any ingress of moisture or excessive dust. Do not use the bat detector in rain, unless under cover.

Batbox **III D** is guaranteed for 12 months from the date of purchase against faulty manufacture. However you can expect many years of excellent service, if the unit is treated with care.

Make sure that the detector is switched off before replacing it in the case provided. Remove the battery when storing the bat detector for more than two weeks.

SPECIFICATIONS:

Frequency reduction system:	Heterodyne
Tunable range:	19kHz – 125 kHz
Bandwidth:	> 16kHz
Record out (3.5 mm socket):	line level (mono)
Headphone out (3.5 mm socket):	to both channels (8 -16 ohm)
Display:	12.5 mm digital LCD with back-light
Display Accuracy:	1 digit
Microphone:	broadband electret condenser
Speaker:	weatherproof 35mm
Amplifier:	350mW (max)
Power supply:	1 x 9v PP3
Quiescent current:	24mA
Wrist strap:	high-strength polyester woven cord
Case:	fitted soft nylon micro-weave with zip and belt loop
Dimensions:	125 x 69 x 32 (mm)
Weight:	131gm (without battery)

Due to continuing improvements, specifications may change without notice.

The following table shows the preferred listening frequencies for British bats. These frequencies may vary according to individual bats and environmental conditions.

SPECIES		Detector Setting **(kHz)**
Pipistrelle (45)	*(Pipistrellus pipistrellus)*	45–50
Pipistrelle (55)	*(Pipistrellus pygmaeus)*	50–60
Nathusius'Pipistrelle	*(Pipistrelle nathusii)*	38–42
Brown long-eared	*(Plecotus auritus)*	40–45
Grey long-eared	*(Plecotus austriacus)*	40–45
Barbastelle	*(Barbastelle barbastellus)*	35–45
Bechstein's	*(Myotis bechsteinii)*	45–50
Daubenton's	*(Myotis daubentonii)*	40–45
Natterer's	*(Myotis nattereri)*	45–50
Whiskered	*(Myotis mystacinus)*	40–50
Brandt's	*(Myotis brandtii)*	40–50
Mouse-eared	*(Myotis myotis)*	35–45
Noctule	*(Nyctalus noctula)*	20–25
Leisler's	*(Nyctalus leisleri)*	20–30
Serotine	*(Eptesicus serotinus)*	25–30
Lesser Horseshoe	*(Rhinolophus hipposideros)*	105–115
Greater Horseshoe	*(Rhinolophus ferrumequinum)*	80–85

Leaflet design : www.mikeharwood.co.uk

Batbox **III D** is made in England by **Bat**box Ltd

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