

AR3



Acoustic Recorder

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Department of
Conservation

Introduction

The AR3 acoustic recorder has been developed by the Department of Conservation's electronics team to provide New Zealand conservation practitioners with a quality acoustic recorder at low cost. It is designed to be a light weight, weatherproof/waterproof, small and easy to use device.

The recorder uses easily available and low cost consumables (AA Batteries and SD cards).

This manual is intended as a guide to using the recorder, not as a guide to acoustic monitoring.

Recording Types

The AR3 can record using two recording types. The timing and type of recordings can be programmed for two separate daily routines.

Acoustic High

Sound recordings with a high sampling rate. The high sampling rate means that high frequency sounds can be captured. This recording type is usually used for birds with high pitch calls, e.g. forest birds. The high sampling rate uses a lot of power.

Files are saved as .WAV.

Acoustic Low

Sound recordings with a low sampling rate. This means that higher frequency sounds will not be captured, but uses less power and memory space than the higher sampling rate. This recording type is usually used for bird species with lower pitched calls such as Kiwi.

Files are saved as .WAV.

Basic specifications:

Weight: 370gms with batteries

Acoustic sampling rate:

High - 32KHz at 16bit resolution WAV files.

Low - 8KHz at 16bit resolution WAV files.

Batteries: 4x AA NiMH or Alkaline (NiMH recommended).

Memory cards: SD cards up to 32Gbyte (16Gbyte recommended).

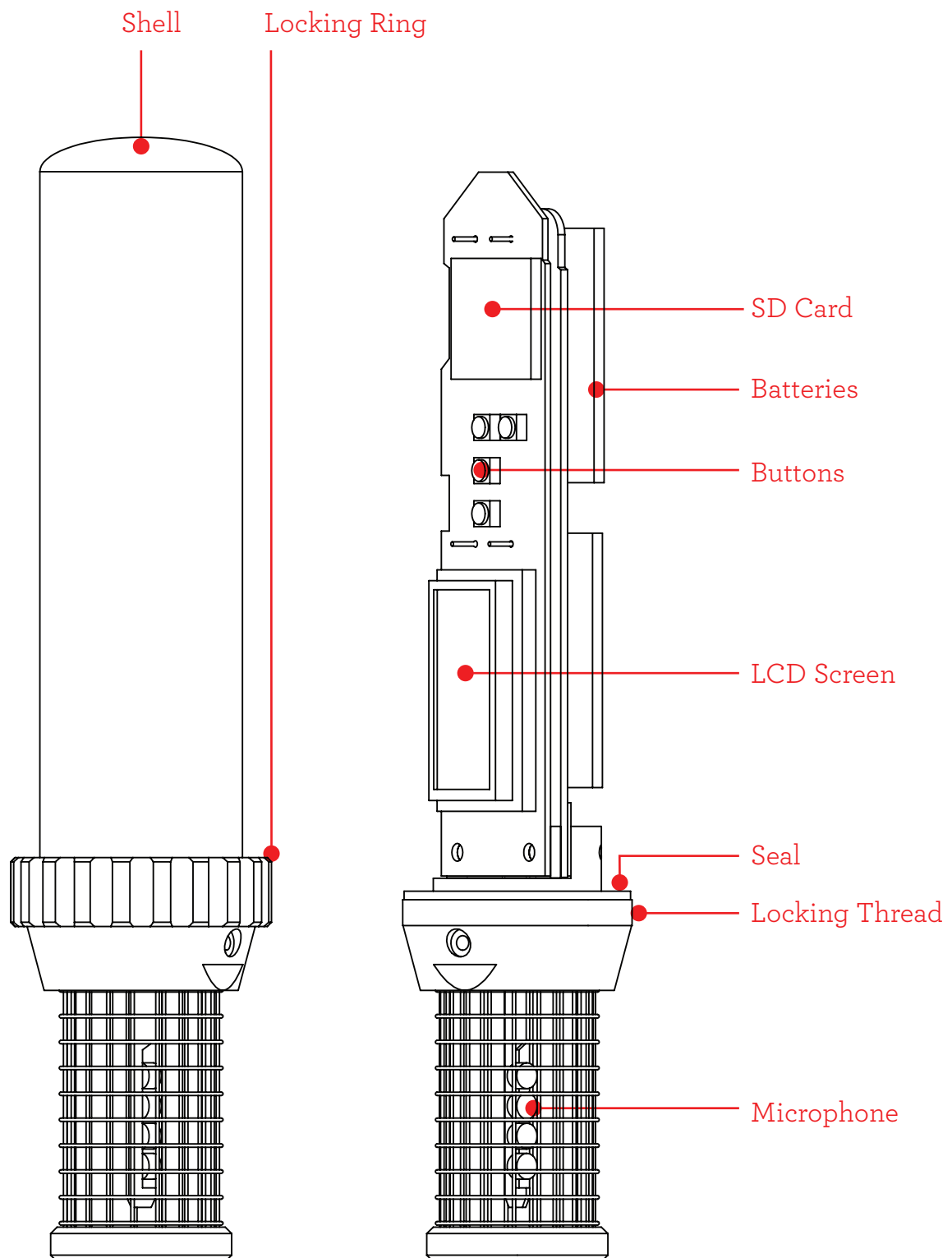
Recording times:

(approximate for NiMH)

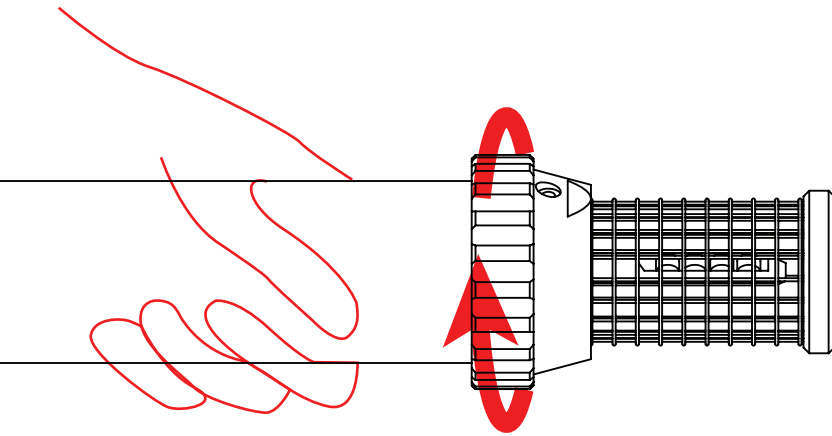
Acoustic high 120 hours

Acoustic low 180 hours

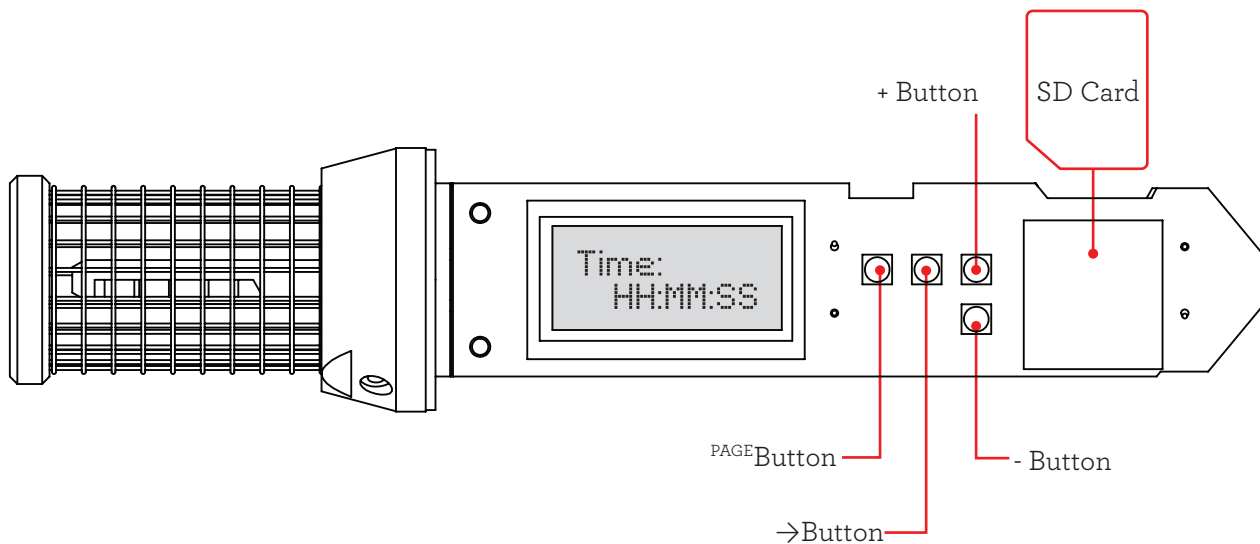
Overview



Using the Recorder



Open and close the Recorder by holding the shell and turning the locking anti-clockwise. Be sure not to hold the microphone cage while applying force to the ring, as it will compress and damage the cage. If the ring is too tight, or you find it hard to tighten it enough, please use the tool provided.



The AR3 has waterproof coatings on all the electronics, and we think it is pretty robust. Nevertheless, try to avoid getting moisture or debris inside the recorder. We also strongly recommend including properly dried silica gel inside the shell of the recorder to protect the electronics from moisture and condensation.

Settings

Press the page key to turn the display on. The first page will be the time page. Use the page key to move between pages, → to cycle between values and +- to modify them.

After about 20 seconds of no activity from the user the display will power down. The recorder will continue to wake up and record at the preset times as long as the batteries are in. To turn off completely, remove the batteries.

The LCD display shows the word "Time:" on the first line and "HH:MM:SS" on the second line in a monospaced font.

Sets the current time. 24 hour format

The LCD display shows the word "Date:" on the first line and "DD/MM/YYYY" on the second line in a monospaced font.

Sets the current date

The LCD display shows "Start1 :HH:MM" on the first line and "Span :HH:MM" on the second line in a monospaced font.

Start and span time for the first daily recording session.

The LCD display shows "Start 2 :HH:MM" on the first line and "Span :HH:MM" on the second line in a monospaced font.

As above but for the second daily recording session

The LCD display shows the word "Sampling:" on the first line and the word "Low" on the second line in a monospaced font.

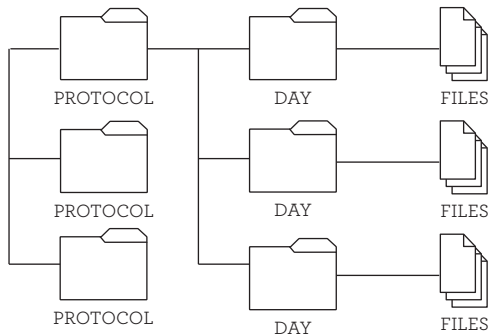
Audio Sampling rate for the recorder, the options are Low or High.

The LCD display shows the word "Card:" on the first line and the words "CHECK CARD" on the second line in a monospaced font.

Use the card page to check (free space and function) and format the card. Use +- to toggle these functions, and → to execute them

Files

Files are saved onto the SD card in the structure;



The files themselves are automatically named with the current date & time, e.g. a sound file recorded on the 30/08/16 at 1:36:25PM will be named 20160830_133625.wav.

Updates

Software fixes and updates can be programmed into the AR3 using files provided by the electronics team.

Feedback and Problems

If you have any feedback on the AR3 or are experiencing problems, please contact the DOC electronics team at

electronics@doc.govt.nz

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