

# AR4 V1.50



## NFC Instructions V1.1

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Department of  
Conservation

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# Introduction

This manual is intended as a guide to installing and using the NFC programming capability of the recorders when setting up a number of units with the same settings.

The AR4 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 and includes the option of using inbuilt recording protocols for standardised monitoring.

The recorder uses easily available and low cost consumables (AA Batteries and SD cards). A GPS receiver is built in for accurate location and time stamping of recordings.

## Requirements:

- Android Phone with NFC capability - (Your phone should have one of these logos in the quick settings>



- AR4 with firmware 1.50 or higher ( Check at [www.doc.govt/electronics](http://www.doc.govt/electronics) to see if you AR4 is capable of being upgraded to 1.5 or above)

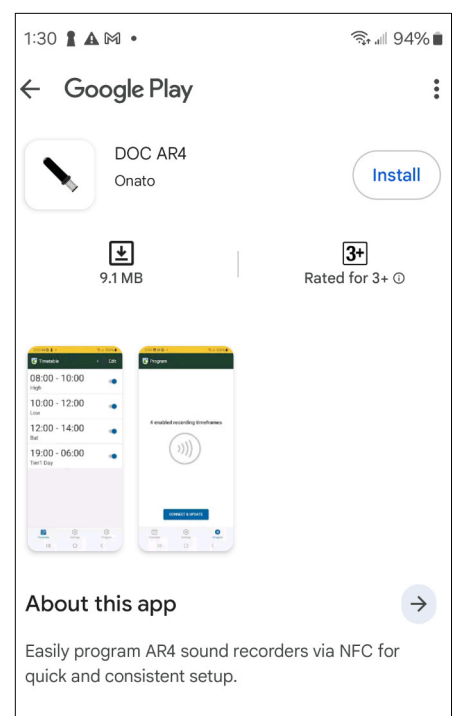
## Installing AR4 Manager - Android only

- Scan the QR code, or open google play store on your - Android phone and search for 'DOC AR4'



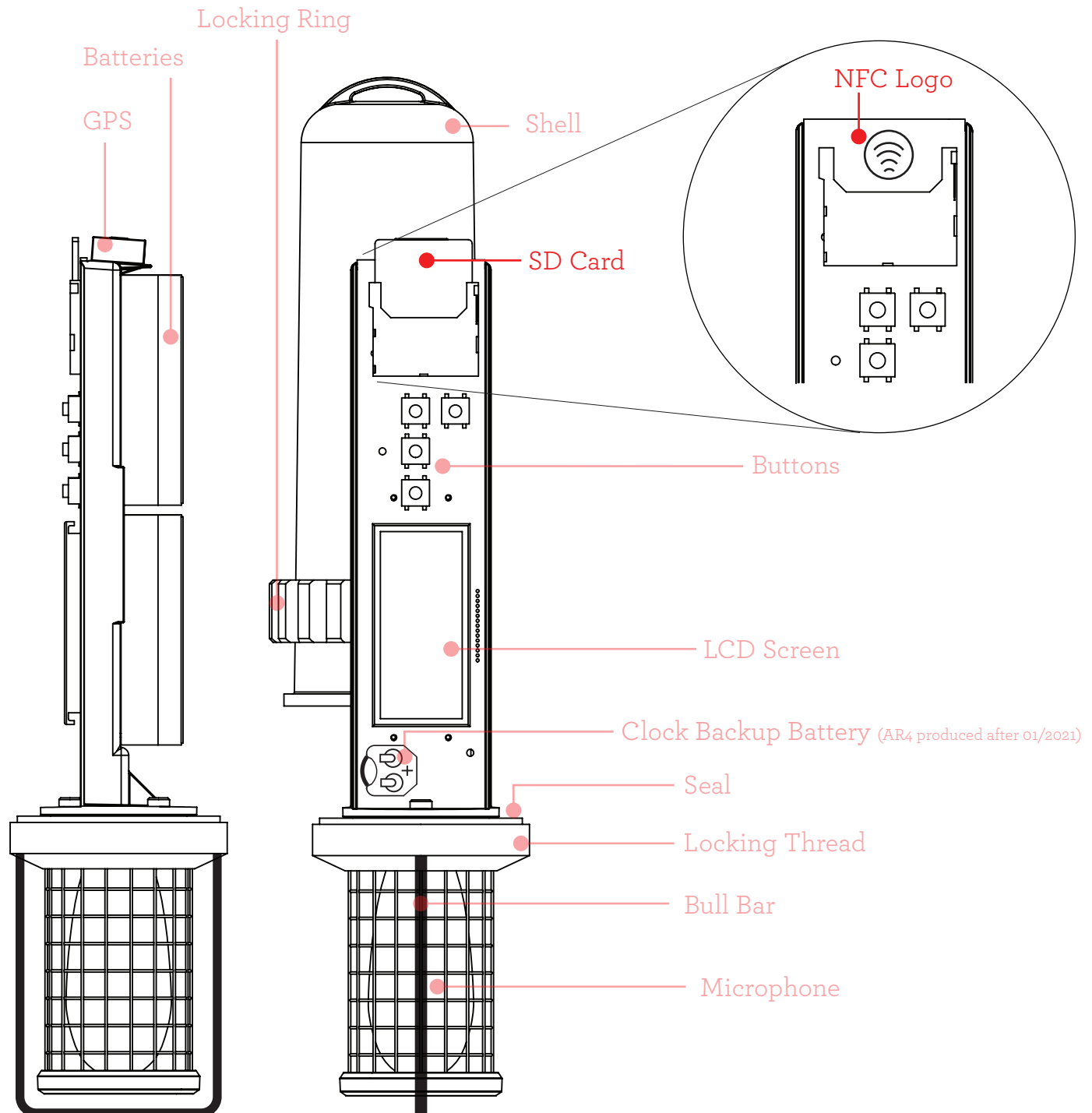
*Look for this logo*

- Select and Install
- Open the app when installation is complete.
- A message will show if NFC is not enabled, make sure it is enabled in the phones quick settings.



# Identification

If your AR4 is capable of NFC you will see the NFC logo underneath the SDCARD



# Using the AR4 Manager App

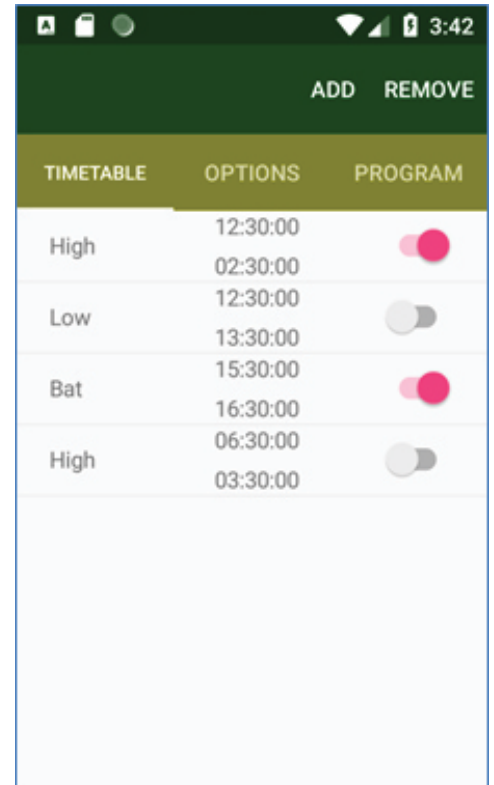
Opening the app you will see three tabs in khaki green.  
**Timetable, Options and Program.**

## TIMETABLE TAB

This is where to set up the start times for recording. Up to 6 start times can be set.

**There are three columns:**

- The protocol used - High, Low, Bat or Tier1 etc
- The start time (center top) and the span time of recording (center bottom)
- Enable/disable of timetable setting.



Tap **ADD** in the top right to create a new start time

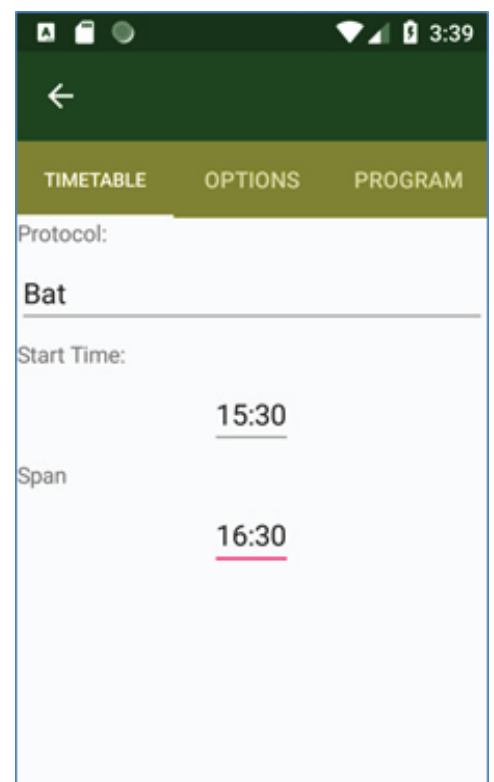
Highlight a start time entry by tapping on it, then Tap **REMOVE** to delete the selected entry

**Double Tap** the start time to edit the settings. This will open a new page where you can set the protocol and modify the start/span time. When you are happy with the settings tap the back arrow in the top left.

The enable/disable toggle switch for each recording period determines which settings will be programmed into the AR4s.

NOTE: If more than two start times are programmed into the AR4, then these extra slots will be available for manual edit in the AR4 menu. If desired, you can set it back to the two default start times as follows:

- Reprogram via the app with 0-2 start times enabled
- Set the protocols for each start time to OFF in the AR4 menu, then cycle the full menu once.



# OPTIONS TAB

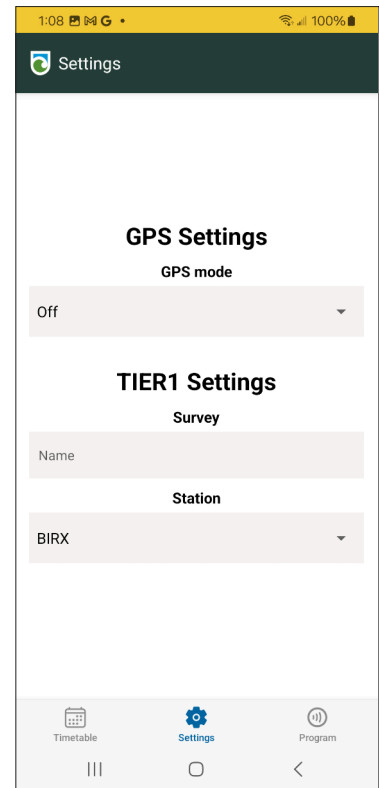
Some additional settings can be programmed into the AR4

## GPS Settings - There are 3 settings

- **OFF** - no logging of GPS
- **Log Only** - save gps position to log file after each recording session
- **LOG & Sync** - Save the GPS position to a log file after each recording session AND sync the AR4 clock with current GPS

## Tier1 Settings

Settings for DOC internal Tier1 survey can be set here. These are only applicable if Tier1 is chosen for the recording protocol in the timetable tab.



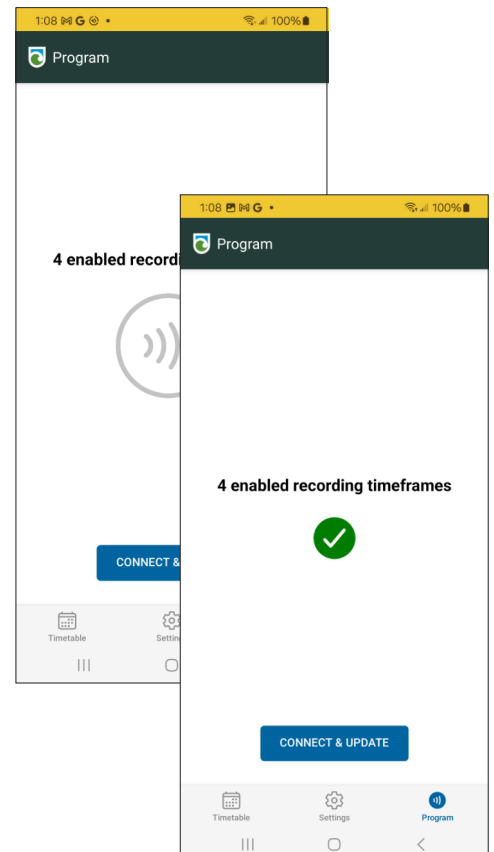
# PROGRAM TAB

This is where we program the settings to the AR4

Before programming, check that the settings are correct and that the time spans for recording are enabled in the Timetable tab

The AR4 must be powered on and in its MENU Showing for programming to work. AR4 firmware must be 1.50 or higher. - *NOTE: the menu will timeout, so press the page button periodically to keep it awake.*

- When ready - Tap the **Connect and Update** button on the phone
- Hold the phone over the SD card in the AR4  
A green Tick will appear on the screen confirming the AR4 settings have been updated. You will also see a message on the AR4 display.
- Cycle through the timetable on the AR4 to confirm



# Deployment

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Power off the AR4 once programming is complete.

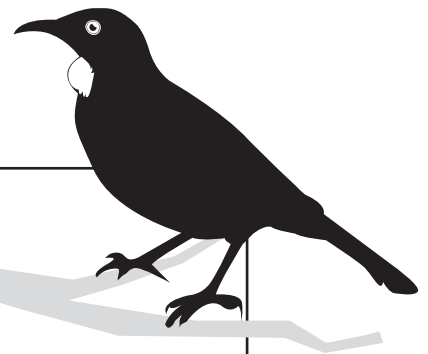
When the AR4 is next powered up it will record at the intervals pre programmed into it via the app.

## Feedback and Problems

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If you have any feedback on the AR4 or are experiencing problems, please contact the DOC electronics team at

*electronics@doc.govt.nz*



### Basic specifications:

**Weight:** 370gms with batteries

### Acoustic sampling rate:

High - 32KHz at 16bit resolution WAV files.

Low - 8KHz at 16bit resolution WAV files.

Bat - Proprietary 0-88KHz compressed spectrogram bitmap.

**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

Bat (deployment time) up to 4 weeks (reduced by high levels of bat activity).

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