

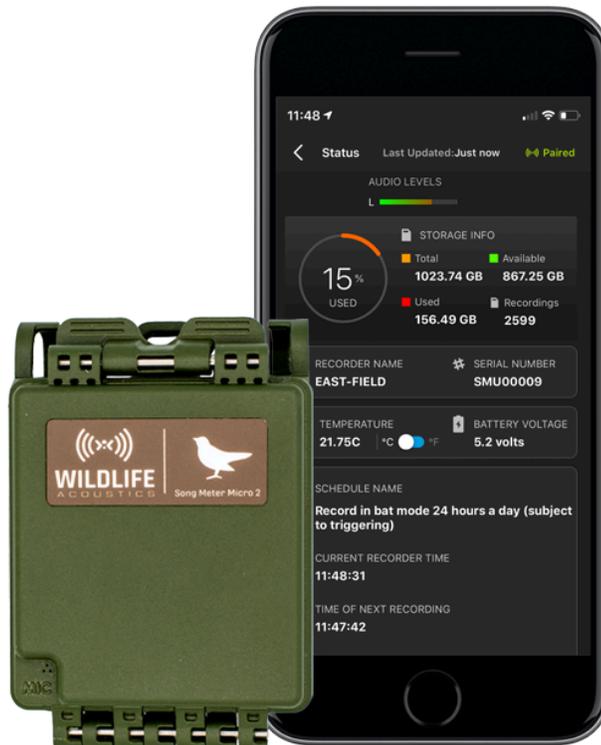


WILDLIFE
ACOUSTICS

Song Meter Micro 2

User Guide

2025-08-22



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1. Product Safety Information

AA Battery Safety

 CAUTION



AA battery leakage

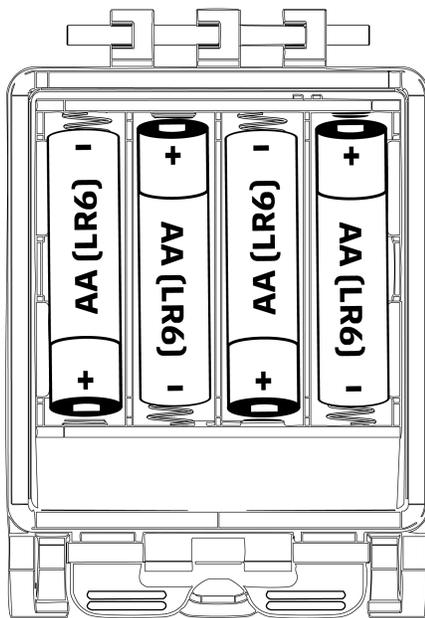
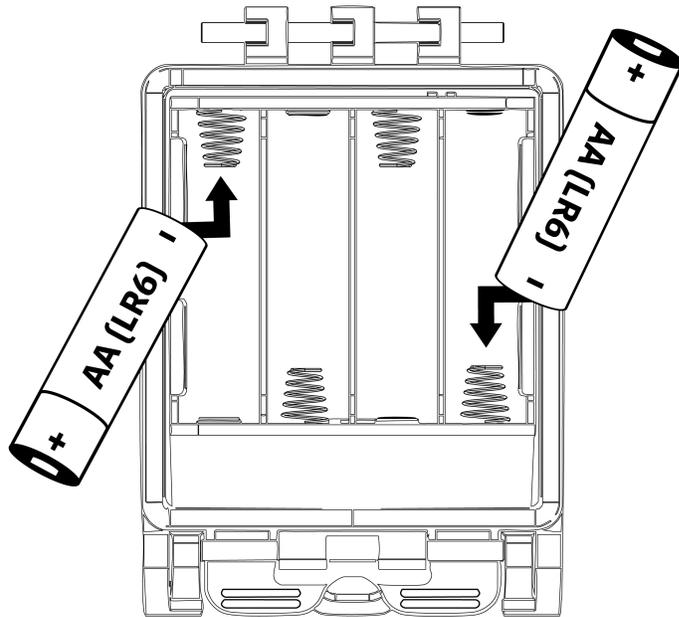
AA batteries may leak corrosive material if used incorrectly.

Pay attention to the polarity symbols (+ and -) on the battery tray. Ensure that each battery is installed correctly.

Do not mix batteries of different types.

Do not mix new batteries with used batteries.

Figure 1. Correct AA Battery Installation



Safe Disposal

The Song Meter Micro 2 recorder contains electronic components and should not be mixed with household waste.

Follow your local laws and regulations regarding electronic waste if you dispose of your Song Meter Micro 2.

2. Song Meter Micro 2 Quickstart Guide

About this task

Out of the box, the Song Meter® Micro 2 can be quickly configured to run one of a few preset schedules that cover common use cases.

Procedure

1. Unlatch and open the lid on the Song Meter Micro 2.

2.  **CAUTION:**

Batteries installed pointing the wrong direction may leak corrosive chemicals and damage the recorder.

Combining new batteries with used batteries may cause them to leak corrosive chemicals and damage the recorder.

Insert four brand-new or freshly charged AA batteries.

For additional information regarding batteries, see [Batteries and Power \(on page 110\)](#).

3. Insert a microSD Card into the recorder's microSD Card slot.

For additional information regarding microSD cards, see [microSD Card Compatibility \(on page 112\)](#).

4. Slide the **ON/OFF** switch to **ON**.

*If the **Bluetooth**® LED flashes red, this indicates that the recorder's internal clock is not set. It will be set when pairing.*

5. Install the Song Meter Configurator app from the Apple App Store or Google Play Store onto your mobile device.

6. Check that Bluetooth is enabled on your mobile device.

7. Open the Song Meter Configurator app.

The **Recorders** screen will be displayed. The Song Meter Micro 2 will automatically be detected by the app and will appear in the **Recorders** screen.

8. Press and hold the **PAIR/STATUS** button on the Song Meter Micro 2 for three seconds.

*The **Bluetooth** LED will blink green, indicating the recorder is ready to pair with the app.*

*In the Song Meter Configurator app **Recorders** screen, the **Pair** icon will be displayed next to the Song Meter Micro 2.*

9. Tap the **Pair** icon.

The icon will turn green, indicating successful pairing.

A pop-up message will appear asking if you want to set the recorder's time zone to your mobile device's time zone.

10. Tap **Yes**.

A pop-up message will appear asking if you want to set the recorder's location to your mobile device's location.

11. Tap **Yes**.

12. Tap the **Configure** icon for the paired Song Meter Micro 2 in the **Recorders** screen.

*The **Configuration Editor** screen is displayed.*

13. Select a preset recording schedule from the dropdown menu and make any desired settings changes.

Results

The Song Meter Micro 2 is now ready to deploy and record using the schedule you selected.

Any changes made in the **Configuration Editor** screen are immediately loaded and saved into the Song Meter Micro 2. There is no need to manually save changes. If the Song Meter Micro 2 is unpaired or powered off, it will remember any changes made from within the **Configuration Editor** screen.

3. Where to Find This User Guide

This user guide is published in multiple formats on our website and within the Song Meter Configurator app.

- View a searchable, [web-based guide](#) in a mobile or desktop web browser.
- View a full-size PDF in your web browser or download to your device at www.wildlifeacoustics.com/resources/user-guides.
- To view a searchable PDF formatted for small screens, in the Song Meter Configurator app, select **App Info > User Guides**.

English guides are installed with the Song Meter Configurator app and available without Internet access. Non-English guides require an Internet connection.



Note:

This user guide is updated regularly. If you use a saved copy of the PDF to view this guide, consider checking our website for an updated version. Whenever you update the Song Meter Configurator app, the latest version of the user guide is accessible from within the app.

4. About the Song Meter Micro 2

The Wildlife Acoustics® Song Meter Micro 2 is a bioacoustics recorder designed for recording the vocalizations of birds, frogs, and other wildlife. Its compact enclosure and budget-friendly price point make it the most widely accessible Song Meter recorder and well suited for projects requiring many recorders running in parallel.

Its IP67 weatherproof enclosure means it can be left unattended in the field for extended periods to collect audio recordings of nearby wildlife. Its flexible schedule system means you can tailor your deployment to record only periods of peak activity or to stretch the recorder's battery life over longer deployments.

The Song Meter Micro 2 is primarily configured through the Song Meter Configurator mobile app via Bluetooth. This free companion app is available for iOS and Android devices, and it provides a simple interface for configuring the recorder's audio settings. The app receives periodic status updates from Song Meter recorders within Bluetooth range (typically 10-20 meters). This allows you to check on your recorders even when they are out of direct reach.

The Song Meter Micro 2 records audio in the widely supported .wav format, meaning recordings can be reviewed and processed in almost any audio software, including Wildlife Acoustics' Kaleidoscope® Pro analysis software.

Comparing the Song Meter Micro and Song Meter Micro 2

The Song Meter Micro 2 builds on the first-generation Song Meter Micro by taking into account the feedback we have received from users in all types of scenarios since the original product's launch in 2021.

The first- and second-generation recorders share much in common, and users coming from the original Song Meter Micro will find themselves well at home with the new Song Meter Micro 2. However, there are several major improvements worth highlighting, as well as functional differences that we recommend keeping in mind, particularly if you have a mixed fleet of first- and second-generation recorders.

Improved Enclosure

The Song Meter Micro 2's enclosure has been completely redesigned from the ground up to be more robust and easier to use.

While the first-generation Song Meter Micro's enclosure was comprised of a separate base and lid, the enclosure of the Song Meter Micro 2 is joined by a permanent hinge, and the latch can be more easily operated with one hand.

The seal around the edges of the enclosure has been improved, and the enclosure meets IP67 standards. This means it can withstand temporary submersion in water up to a depth of one meter without water intrusion.

The back of the Song Meter Micro 2 features a tripod-style, ¼"-20 threaded mounting point. This enables you to mount the recorder using many accessories designed for trail cameras and similar devices.

For more detailed information on the new enclosure, see [Song Meter Micro 2 Hardware](#).

Extended Battery Life

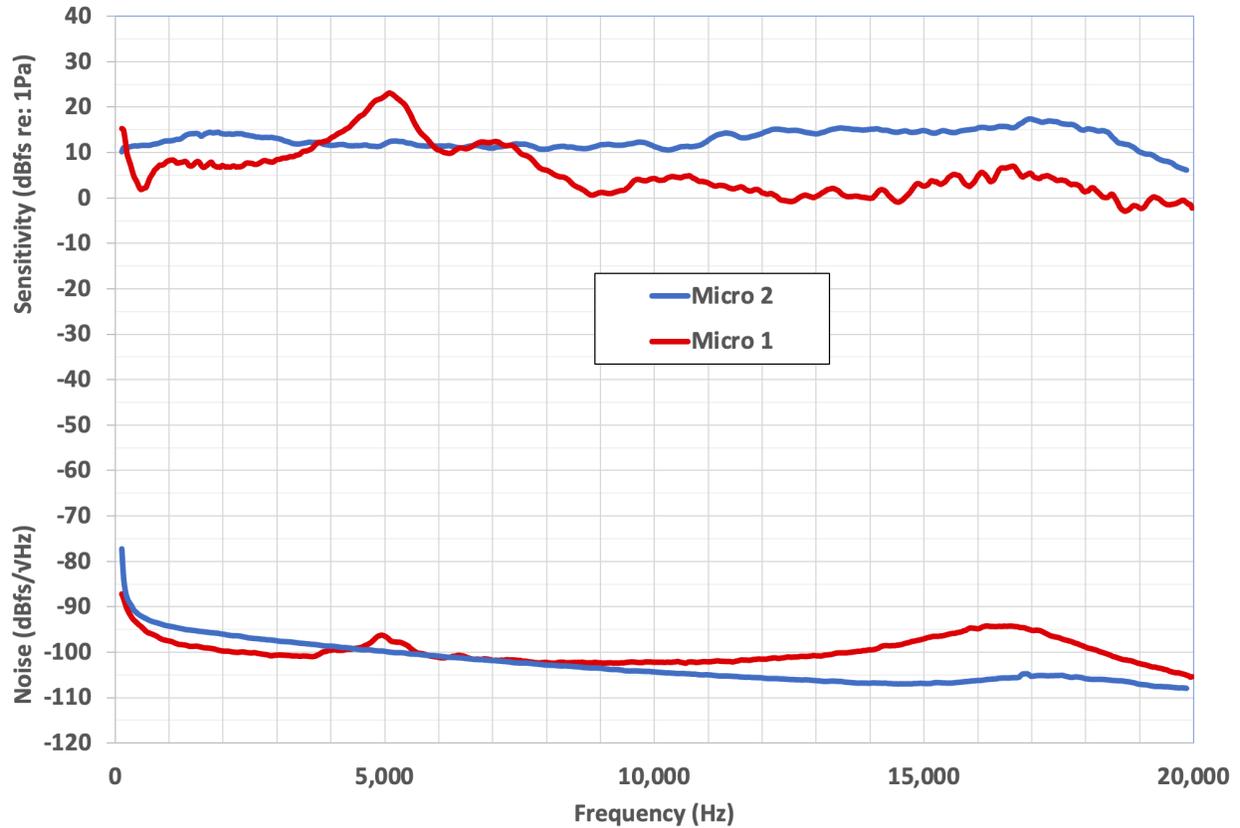
The new Song Meter Micro 2 enclosure now allows for four AA batteries instead of three, and the recorder's circuitry has been made more energy-efficient. With these two improvements, the Song Meter Micro 2 can **run for twice as long** as the Song Meter Micro, assuming identical microSD cards and batteries, at room temperature conditions.

A ribbon built into the AA battery tray allows you to remove batteries much more easily.

Flatter Microphone Response

The enclosure and electronics of the Song Meter Micro 2 have been redesigned to complement the microphone element and improve the recorder's frequency response. The result is a recorder that is more evenly sensitive across the vast majority of the audible spectrum.

Figure 2. Sensitivity and Noise Floor of the Song Meter Micro 1 and Song Meter Micro 2



Configuration and Firmware Files are Cross-Compatible

The Song Meter Micro and Song Meter Micro 2 run the same firmware versions, meaning both will be improved by the same new features and bug fixes as we release firmware updates.

Both recorders can also share configuration files. A configuration file exported from a Song Meter Micro can be imported into a Song Meter Micro 2, and vice-versa. This provides a simple way to maintain consistent settings across a mixed fleet of recorders.

5. Hardware Overview

External Features

Durable, Weatherproof Enclosure

The Song Meter Micro 2 recorder is designed for long-term, outdoor deployment. Made from durable polycarbonate plastic, it is UV-resistant and weatherproof. The enclosure meets **IP67 standards**, meaning it can withstand temporary submersion in water up to a depth of one meter without water intrusion.

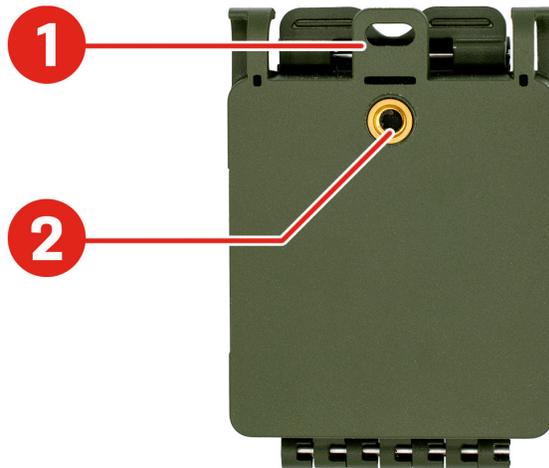
Figure 3. Front-Left View



1. One of two **Mounting Loops**, which can accommodate bungee cords, rope, or cable locks up to a diameter of 0.420 in. (10.67 mm). See [Versatile Mounting Options \(on page 16\)](#).
2. The **Enclosure Latch** snaps into place to keep the enclosure sealed.
3. The **Enclosure Hinge** keeps the lid and body of the recorder permanently attached.
4. One **Acoustic Microphone** is installed behind a vent on the front cover. It is protected by an internal, weatherproof membrane.

Figure 4. Front-Right View

1. One of two **Mounting Loops**, which can accommodate bungee cords, rope, or cable locks up to a diameter of 0.420 in. (10.67 mm). See [Versatile Mounting Options \(on page 16\)](#).
2. The **Barcode Label** lists the recorder's **Model Name** and **Serial Number**.
This information is also visible in the Song Meter Configurator app on the [Status Screen \(on page 66\)](#).

Figure 5. Rear View

1. The **Mounting Tab** can accommodate bolts or screws with a maximum thread diameter of 3/16 in. (4.6 mm). It can also serve as attachment points for bungee cords or zip ties.
2. A **Tripod Mount** fits a 1/4"-20 bolt, the same specification used by many cameras, including trail cameras.

Versatile Mounting Options

The enclosure of the Song Meter Micro 2 is equipped with attachment points that support a wide range of mounting options:

- The **Mounting Tab** at the top of the enclosure's back can accommodate bolts or screws up to 3/16 in. (4.6 mm) in diameter. It can also be used for attaching bungee cord hooks or zip ties, for example.
- **Mounting Loops** at the upper-left and upper-right of the enclosure are suitable for cable locks, rope, zip ties, or bungee cords, among other possibilities. The internal diameter of these loops is 0.420 in. (10.67 mm).
- The brass **Tripod Mount** on the back of the enclosure fits a 1/4"-20 bolt, enabling compatibility with many mounting accessories designed for trail cameras. We recommend mounting accessories with brass bolts, as different metals can react with the brass of the mounting insert and corrode when wet.



Note:

Be aware that not all camera mounts use the same bolt specification. For example, mounts designed for heavy video cameras may use a 3/8"-16 bolt. Check the manufacturer's specifications when shopping for a compatible mount.



Important:

With any mounting method, be careful not to apply excess force to the enclosure of the Song Meter Micro 2. If too much force is applied, the enclosure can flex, opening gaps between the lid and body and compromising the recorder's weatherproofing.

Take extra care when attaching the recorder to young trees. The tree's growth over the course of a deployment could increase the strain on the enclosure.

Lock Compatibility



A cable lock can be threaded through the two **Mounting Loops** along the top of the Song Meter Micro 2 to keep it attached to a tree or structure.

The diameter of a cable lock must be narrower than 0.420 in. (10.67 mm) to fit through the two **Mounting Loops**.

Internal Features

Figure 6. Internal Overview



1. The **AA Battery Compartment** holds four AA batteries.
2. The **microSD Card Slot** holds a microSD card with a capacity up to 2 TB for storing recordings and other files.
3. The **Control Panel** is where you'll find several basic, physical controls. See [Control Panel \(on page 21\)](#) for a detailed image of this section.
4. The **Status LED Key** provides a guide for understanding the **STATUS** LEDs. This table can also be found under [STATUS LEDs \(on page 21\)](#).

AA Battery Compartment



The AA battery compartment holds four AA batteries. All four batteries must be installed in order for the Song Meter Micro 2 to turn on.

The battery compartment has two ribbons fastened to the left and right edges of the compartment. Each ribbon should be positioned behind two batteries, with the free ends visible in between the middle two batteries. To easily remove the batteries, pull on the free ends of the ribbons.

For information on the different types of AA batteries, including Energizer® Ultimate Lithium™, see [Types of AA Batteries](#) (on page 110).

AA Battery Insertion Order

When inserting batteries, start near the attached end of each ribbon at the outer side of each tray and work towards the free end. This will ensure the ribbon has enough slack to make room for each battery. Without enough slack, the ribbon may push batteries out of the tray.

Best Practices for AA Batteries

Improper battery use can permanently damage your recorder. Always take care to follow these guidelines.

- Do not mix new or freshly charged batteries with used or uncharged batteries. **A single dead battery will prevent the entire set from functioning.**
 - The recorder will lose power prematurely and may not power on at all.
 - **Batteries may leak corrosive chemicals that can damage the recorder.**
- Do not mix multiple types of batteries (e.g. combining alkaline with NiMH). All four batteries must be of the same type.
Ideally, all batteries should be of the same brand and model. Mixing batteries with different characteristics can produce unpredictable results.
- Ensure batteries are oriented correctly. The negative, flat end of the battery should contact the battery tray spring.
If one AA battery out of eight is inserted backwards, the Song Meter Micro 2 may power on, but **a backwards battery will eventually leak corrosive chemicals that can damage the recorder.**
- Ensure batteries are oriented with the correct positive/negative polarity.

microSD Card Slot

The Song Meter Micro 2 recorder saves recording files and a summary log to a microSD card installed in the memory card slot.

To insert a microSD card, slide it into the slot until it clicks into place. To remove, gently press the card further into the slot until it clicks again, and let the internal spring mechanism eject the card.

- Only remove the SD card after setting the power switch to **OFF** and waiting until all **Status LEDs** have turned off.
- Use the Song Meter Configurator app to check recording space available on the SD card.

"SD Card" and "microSD Card"

Language in the Song Meter Configurator app and in this documentation may use the term "SD card" generically. This refers to both the full-size SD card used by the Song Meter Mini family and the microSD card used by the Song Meter Micro family.

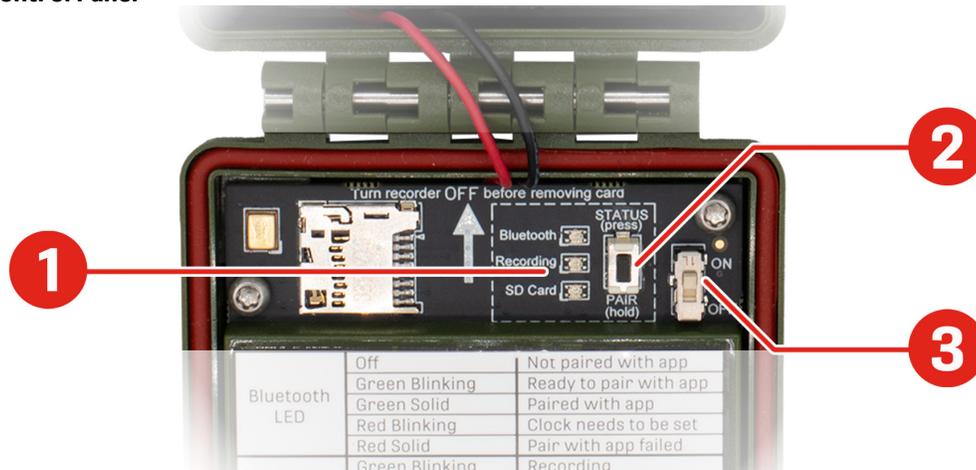
The Song Meter Micro 2 only supports the use of microSD cards.

Recommended SD Card Brands

Wildlife Acoustics recommends the SanDisk® brand of SD cards for their superior performance. Kingston® and PNY® are also suitable.

Control Panel

Figure 7. Control Panel



1. The **STATUS** LEDs provide visual feedback on the recorder's **Bluetooth**, **Recording**, and **SD Card** status. See [STATUS LEDs \(on page 21\)](#).
2. The **PAIR/STATUS** button serves two functions:
 - a. Press and hold the button to initiate pairing with the Song Meter Configurator app. See [Pair the Recorder with the Song Meter Configurator App \(on page 25\)](#).
 - b. Press the button briefly to activate the **STATUS** LEDs. See [STATUS LEDs \(on page 21\)](#).
3. The **ON/OFF** switch powers the recorder on or sets it to a low-power, idle state. See [ON/OFF Switch \(on page 22\)](#).

STATUS LEDs

The three **STATUS LEDs** on the recorder provide **Bluetooth**, **Recording**, and **SD Card** information.

The **STATUS LEDs** remain active while the recorder is paired with the Song Meter Configurator app.

The table of **STATUS LEDs** definitions, below, is also found inside the recorder's lid for reference.

Table 1. Status LED Key

LED Label	LED Activity	Status Meaning
Bluetooth	Off	Not paired with the Song Meter Configurator app
	Green Blinking	Ready to pair with the Song Meter Configurator app
	Green Solid	Paired with the Song Meter Configurator app
	Red Blinking	Clock needs to be set
	Red Solid	Pairing failed
Recording	Green Blinking	Recording
	Green Solid	Waiting for next recording period
	Red Solid	Error: Cannot record
SD Card	Off	No SD card is detected
	Green Blinking	SD Card is active: do not eject

Table 1. Status LED Key (continued)

LED Label	LED Activity	Status Meaning
	Green Solid	SD Card is inactive: safe to eject
	Red Blinking	SD Card is full
	Red Solid	Error: SD Card issue

ON/OFF Switch

- **ON** (up position): Full power is enabled. Schedule is started.
- **OFF** (down position): The recorder enters a low-power idle state. Schedule is stopped.

When the Song Meter Micro 2 recorder is first powered on, the **STATUS** LEDs show **Bluetooth**, **Recording**, and **SD Card** status. If the recorder is unpaired and its buttons are not touched for one minute, the LEDs will turn off.



Note:

When the Song Meter Micro 2 recorder is switched off, it goes through a routine to end and save any current recording. This can take a few seconds.

This process means it is safe to set the switch to **OFF** at any time.

Microphone

The Song Meter Micro 2 utilizes a single, built-in microphone. The microphone is installed flush with the front face of the recorder. It is protected by a vent in the enclosure and an internal, weatherproof membrane.

6. Deploying the Song Meter Micro 2

Deployment Checklists

Following these steps before, during, and after a deployment will prevent common errors and ensure quality data collection.

Checklist: Before Deploying

Before you travel to the deployment location, check that the batteries, SD card, and Song Meter Configurator app are installed and working correctly.

Procedure

1. Install brand-new or freshly charged batteries into the Song Meter Micro 2. **Ensure that each battery is oriented correctly.**
If one battery is installed backwards, the Song Meter Micro 2 may turn on initially, but the batteries will drain more quickly than normal and may permanently damage the recorder.
2. [Install the latest version of the Song Meter Configurator app \(on page 24\)](#) from the Apple App Store or Google Play store.
3. [Format the SD Card \(on page 27\)](#).
4. [Check the Status screen \(on page 28\)](#) for each recorder.
 - a. If the **Status** screen displays an alert for an available firmware update, [install the update \(on page 57\)](#).
 - b. Check for [SD Card error messages \(on page 100\)](#).
5. [Pair with the recorder \(on page 25\)](#) and confirm that the settings and schedule are correct.
6. **Optional:** If you do not plan on pairing with the recorder at the deployment site to update its location, manually [set the recorder's location and time zone \(on page 30\)](#).

Checklist: Starting the Deployment

When you arrive at the deployment location, follow these steps to confirm the Song Meter Micro 2 is ready to record.

Procedure

1. Make sure batteries are oriented correctly and were not knocked loose during travel.
The Song Meter Micro 2 may turn on even if one battery is installed backwards. Visually confirm that each battery is installed correctly.
2. [Pair with the Song Meter Micro 2 \(on page 25\)](#) to update its internal clock.
 - a. If desired, accept the prompts during pairing to automatically set the recorder's time zone and deployment location to match your mobile device.
3. [Check the recorder's Status screen \(on page 28\)](#).
 - a. Resolve any [SD card error messages \(on page 100\)](#) you see on the **Status** screen.
4. [Unpair from the Song Meter Micro 2 \(on page 26\)](#).
5. Latch the Song Meter Micro 2 shut, making sure the battery tray ribbon or debris does not block the enclosure from sealing.
6. Mount and secure the recorder.

- a. **Optional:** Use a [cable lock \(on page 60\)](#) to secure the recorder.
- b. If you tie the Song Meter Micro 2 to a tree or post, **do not overtighten**.
Excess force on the recorder can bend the enclosure and cause water intrusion.
Young trees may grow and put additional force on the recorder over the duration of a deployment.

Results

The Song Meter Micro 2 automatically runs its recording schedule while it is turned on.

Checklist: After the Deployment

When you collect the recorder or switch SD cards, follow these steps to ensure your data is saved for analysis.

Procedure

1. Turn the power switch **Off** before removing the SD card.
Removing the SD card while the Song Meter Micro 2 is recording can cause file corruption.
2. Copy all files from the SD card to a long-term storage drive, including all `summary.txt` and `.minidiags` files.
Files ending in `.txt` or `.minidiags` take up very little storage space and contain useful information for data analysis and troubleshooting.
3. Before putting away the Song Meter Micro 2, remove all batteries.
Batteries can leak corrosive chemicals if left installed in a device for long periods of time.

Install the Song Meter Configurator App

The Song Meter Configurator app is available free-of-charge and is necessary to configure the Song Meter Micro 2. The Song Meter Configurator app is available on the Apple App Store for iOS devices and on the Google Play store for Android devices.

Install the Song Meter Configurator App on iOS

Procedure

1. On your iOS device, open the **App Store** app.
If you cannot find the **App Store** on your device's home screen, you can search for it using the built-in Spotlight Search feature on iOS. See this [Apple Support article on Spotlight Search](#) for instructions.
2. In the **App Store**, tap **Search** and search for " Song Meter Configurator ."
3. In the list of search results, find the app titled **Song Meter Configurator** .
4. Tap the **Get** icon to download the Song Meter Configurator app and install it to your home screen.
If you previously had the Song Meter Configurator app installed, you will see a  icon instead of a **Get** icon. Tap this icon to reinstall the latest version of the Song Meter Configurator app.

If you are unable to install the Song Meter Configurator app, [check your installed version of iOS](#). The version number must be at least 12.0.

If you are unable to check your iOS version or have continued difficulty installing the Song Meter Configurator app, [contact Apple Support](#).

Install the Song Meter Configurator App on Android

Procedure

1. On your Android device, open the **Play Store** app.
If you cannot find the **Play Store** on your device's home screen, you can search for it from the **All Apps** menu. See this [Android Help article on finding apps](#).
2. In the **Play Store**, search for " Song Meter Configurator ."
3. In the list of search results, find the app titled **Song Meter Configurator** .
*If the Song Meter Configurator app is not already installed on your device, you will see an **Install** button.*
*If an outdated version of the Song Meter Configurator app is installed on your device, you will see an **Update** button.*
*If the latest version of the Song Meter Configurator app is already installed on your device, you will see an **Open** button.*
4. Tap the **Install** or **Update** button to install the latest version of the Song Meter Configurator app to your device.
5. To open the Song Meter Configurator app, tap the **Open** button in the **Play Store** entry, or tap on the **Song Meter** icon in your device's home screen or **All Apps** menu.

If you are unable to install the Song Meter Configurator app, [check your installed version of Android](#). The version number must be at least 8.0.

If you continue to have difficulty installing or accessing the Song Meter Configurator , refer to Google's [Android Help Center](#) for general Android documentation and for links to contact your device's manufacturer for direct assistance.

Pair the Recorder with the Song Meter Configurator App

About this task

To set the Song Meter Micro 2's date and time and to configure the recorder's settings using the Song Meter Configurator mobile app, you must pair the app with the recorder.

The Song Meter Configurator app can only be paired with a single recorder at a time. When you are done configuring one recorder, unpair from it before trying to pair with the next one.

Pairing does not affect the recording schedule nor interrupt a recording in progress. The Song Meter Micro 2 recorder will not go to sleep while paired. If the recorder finishes a recording period and is ready to go to sleep, it will not go to sleep until it is unpaired.

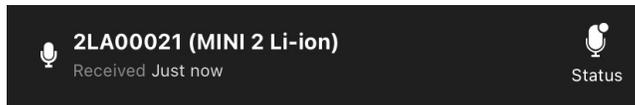
Procedure

1. **Enable Bluetooth®** in your mobile device's settings.
On iOS or Android, open the **Settings** app and select the **Bluetooth** page to turn Bluetooth on or off.
2. If using an Android device, ensure that Location is turned on in your device's settings.
See this [Google support article](#) for instructions on how to turn on Location.
3. Make sure the Song Meter Configurator app has been granted all requested permissions.
On some devices, GPS and Bluetooth connections are handled by the same hardware component, so the Song Meter app must have access to Location permissions in order to use Bluetooth.

Option	Description
On iOS:	a. Open the Settings app. b. Tap the Song Meter entry to open the settings page for the Song Meter app. Permissions can be toggled from this page.
On Android:	a. Open the Settings app. b. Tap Apps . c. Tap on the Song Meter app entry. d. Tap Permissions . e. Enable all permissions on this page.

4. Open the Song Meter Configurator app and tap on the **Recorders** icon if the **Recorders** screen is not already shown.
5. Turn on the Song Meter Micro 2

*If the recorder had been set to broadcast Bluetooth beacons, the recorder name will appear in the **Recorders** list. The **Received** text should read "Just now" or a duration of less than one minute.*



6. Press and hold the **PAIR/STATUS** button on the Song Meter Micro 2 for three seconds.
A **Pair** icon will appear to the right of the recorder's name in the **Recorders** screen.
7. Tap the **Pair** icon in the app.

The app will display messages indicating it is updating the recorder's clock and reading the recorder's settings.

The app may prompt you to update the Song Meter Micro 2's Time Zone and/or Location settings to match the settings on your mobile device. See [Automatically Set the Recorder's Clock, Time Zone, and Deployment Location \(on page 30\)](#).

Results

In the **Recorders** screen, **Configure** and **Unpair** icons will be displayed to the right of the paired recorder's name and to the left of the **Status** icon. The recorder name and all three of these icons will be colored green to indicate Paired status.



Unpair from the Recorder

Procedure

To unpair from a paired recorder, tap the **Unpair** icon to the right of the recorder's name in the **Recorders** screen.

Results

The **Configure** and **Unpair** icons will disappear, and the recorder's name and **Status** icon will change color from green back to white.

Related information

[Remove Entries from the Recorders Screen \(on page 65\)](#)

Format the SD Card

Formatting an SD card erases all of its content and resets the structure of the card. This reset allows the Song Meter Micro 2 to make full use of all of the card's available space. We recommend formatting the card prior to the start of each deployment.

Simply moving files to the Trash or Recycle Bin using a computer is not a replacement for formatting the card. "Trashing" files from the card can leave behind the structure of those files, preventing the Song Meter Micro 2 from making use of the full space and resulting in missing recordings.

Beginning in firmware version 4.4, formatting an SD card using the Song Meter Micro 2 renames the card to the first 11 characters of the recorder name.

Several SD card errors can be resolved by reformatting the card. See [SD Card Error Messages \(on page 100\)](#) for details on common SD card errors.



Notice:

Formatting erases all data on the SD card. Verify that you have backed up any important configuration files, recordings, or other files before formatting the card.

When to Reformat the SD Card

It is important to reformat the SD card prior to each deployment to allow the Song Meter Micro 2 to make full use of the card's storage space. However, if you wish to use your SD card to update the recorder's firmware¹ or load a configuration file², reformatting the SD card will also delete those files.

If you first format the SD card, then save a firmware file and/or configuration file to the SD card, you do not need to format the card a second time before your deployment. Formatting the card first ensures the firmware and configuration files are saved to the start of the SD card's storage space, with the remainder fully available for the Song Meter Micro 2's recordings.

Firmware files and configuration files are small enough that they will not meaningfully reduce your available recording space.

Format the SD Card Using the Song Meter Configurator App

About this task

When paired with a Song Meter Micro 2 that has an SD card installed, you can use the Song Meter Configurator app to format the SD card.

Procedure

1. Install brand-new or freshly charged batteries into the Song Meter Micro 2.
2. Insert the SD Card you wish to format into the Song Meter Micro 2's card slot.
3. In the Song Meter Configurator app, open the **Utilities** menu:

1. See [Update the Recorder's Firmware \(on page 57\)](#).
 2. See [Configuration Files on the SD Card \(on page 44\)](#).

- a. [Pair the Recorder with the Song Meter Configurator App \(on page 25\)](#).
Configure and **Unpair** icons will appear next to the recorder's name.
 - b. Tap the **Configure** icon for the paired Song Meter Micro 2 in the **Recorders** screen.
 - c. Tap the **Utilities** icon in the upper-right corner of the **Configuration Editor**.
4. In the **Utilities** menu, tap **Format SD card**.
A confirmation message will ask if you are sure you want to reformat the card.
 5. Tap **YES** to confirm the format operation.
*A **FORMATTING** activity indicator will appear onscreen, followed by a success message.*
*If the format operation is unsuccessful, check the recorder's **STATUS** screen in the Song Meter Configurator app for [SD Card Error Messages \(on page 100\)](#).*

Format the SD Card Using a Computer

About this task

The SD Association provides a free program for formatting SD cards at <https://www.sdcard.org/downloads/formatter/>.

If you want to format an SD card using a desktop or laptop computer, this program is the recommended tool.

Procedure

1. Insert the SD card you wish to format into an SD card reader attached to your computer.
2. Open the SD Card Formatter application.
3. Use the **Select card** menu to select your SD card.
4. Under **Formatting options**, select **Quick format**.
5. Optional: Use the **Volume label** field to enter a name for your SD card.
6. Select **Format**.
7. Eject the SD card from your computer according to your operating system's instructions.

Begin a Recording Deployment

The Song Meter Micro 2 will automatically begin running its programmed schedule when it is powered on. If any of the recorder's settings are edited, it will pause its recording schedule for ten seconds, then resume its schedule automatically.

See [Deployment Checklists \(on page 23\)](#) for a list of best practices to make sure every deployment occurs without issue.

Check the Song Meter Micro 2's Status over Bluetooth

About this task

By default, the Song Meter Micro 2 broadcasts status beacons over Bluetooth once every ten seconds. When your mobile device is within Bluetooth range (typically under ten to twenty meters) of the Song Meter Micro 2, it will receive these status beacons, and you can check this status using the Song Meter Configurator app without pairing with the recorder. Status beacons include information like SD card usage, battery voltage, and installed firmware version.

In order to receive status updates when not paired with the recorder, **Send Bluetooth Beacons?** must be enabled (see [Send Bluetooth Beacons? \(on page 47\)](#)).

Procedure

1. Open the Song Meter Configurator app.
2. Navigate to the **Recorders** screen.
3. Bring your mobile device to within 10-20 meters of the Song Meter Micro 2.
*When you are within Bluetooth range of a recorder that is broadcasting status beacons, the **Received** text should read "Just now."*
4. Tap the **Status** icon to the right of the recorder's name.
*The **Status** screen for the recorder opens. See [Status Screen \(on page 66\)](#) for a description of all information available on this screen.*
5. To close the **Status** screen, tap the < **Back** icon.

7. Configuring the Song Meter Micro 2

Setting the Recorder's Clock, Deployment Location, and Time Zone

These settings must be set correctly in order for the Song Meter Micro 2 to record its schedule. These settings can be updated automatically during pairing or by manually entering settings.

Clock

The Song Meter Micro 2 has an internal clock that tracks the current date and time. It is powered by the primary batteries and a small, rechargeable backup battery built into the recorder's circuitry. The backup battery will keep the clock running for long enough to replace the primary batteries in between deployments. After longer periods spent without primary batteries, the clock will stop running, and you will need to pair the Song Meter Configurator app with the Song Meter Micro 2 to resynchronize the clock before recording.

Time Zone

The recorder's **Time Zone** setting determines what local time convention the Song Meter Micro 2 follows, determined by an offset from Coordinated Universal Time (UTC). In most circumstances, you can simply apply your mobile device's time zone setting to the Song Meter Micro 2 during pairing.

There are scenarios in which you may choose to set the recorder's time zone manually, including the following:

- You are configuring the recorder in a different location with a different time zone than your deployment location, and you will not be able to pair with the recorders at the deployment location.
- Your region will switch its daylight saving time convention during the course of your deployment. The Song Meter Micro 2 cannot update its own **Time Zone** setting mid-deployment, so you should choose to use either standard or daylight time for the duration of the deployment.

Deployment Location

The Song Meter Micro 2 can save one set of latitude and longitude coordinates at a time. This saved location is used to calculate the times of sunset and sunrise each day, and it is also saved as metadata to each recording file and to the recorder's summary text file. This provides a record of where each audio file originated.

During pairing, the Song Meter Micro 2 can take its deployment location from your mobile device's location. Alternatively, you can manually set the recorder's deployment location by configuring the recorder directly or using a configuration file.

Automatically Set the Recorder's Clock, Time Zone, and Deployment Location

When you pair the Song Meter Micro 2 with the Song Meter Configurator app, the app will prompt you to update the recorder's time and location settings to match your mobile device.

Procedure

1. [Pair the Recorder with the Song Meter Configurator App \(on page 25\)](#).
2. If the Song Meter Micro 2 has had its batteries removed for long enough that the internal clock has lost power, it will automatically resynchronize its internal clock with your mobile device's clock.
3. Accept the prompt to update the recorder's time zone if it appears.
4. Accept the prompt to update the recorder's location if it appears.

Manually Set the Recorder's Deployment Location

You can manually specify the saved deployment location for a Song Meter Micro 2 when configuring it directly or by loading a configuration file that includes location settings.

Procedure

1. Open the **Configuration Editor**:
 - Pair with the Song Meter Micro 2 and select **Configure**.
 - Create or edit a configuration file in the **Configuration Library**.
2. Select **Location & time zone**.
3. Select a location using an address, a set of coordinates, or the map panel:
 - Under **Set Location to Address**, search for and select an address.
 - Enter coordinates and hemisphere values (N/S and E/W) for **Latitude** and **Longitude**.
 - Tap the map panel with one finger to place a red pin.
4. Select **Save**.

*If you are configuring a paired recorder, its **Status** LEDs will flash green to confirm the settings change.*

Manually Set the Recorder's Time Zone

About this task

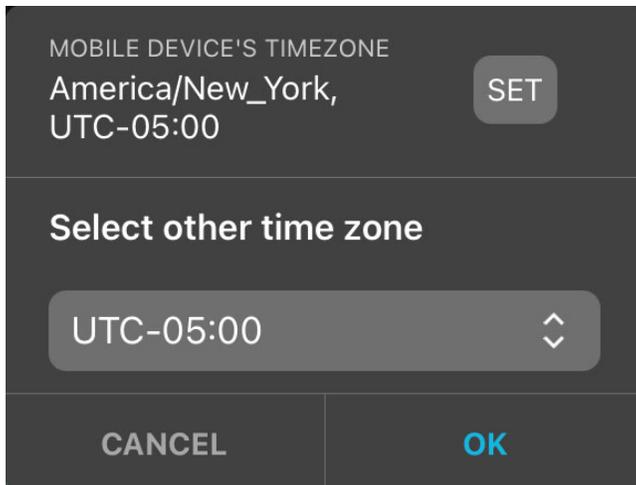
When you [Pair the Recorder with the Song Meter Configurator App \(on page 25\)](#), the app will prompt you to update the Song Meter Micro 2's time zone setting if it does not match your mobile device's time zone.

If you instead want to manually set the recorder's time zone either by directly configuring a paired recorder or by configuring a time zone in a configuration file, you can do so in the [Location & Time Zone Screen \(on page 74\)](#).

Procedure

1. Open the **Configuration Editor**.
 - To configure a paired recorder directly, see [Configure a Paired Recorder Directly \(on page 32\)](#).
 - To configure a saved configuration file, see [Edit a Saved Configuration File \(on page 41\)](#).
2. Tap **Location & time zone** to open the [Location & Time Zone Screen \(on page 74\)](#).
3. Tap **Select time zone**.

*A pop-up window appears with a display of your **MOBILE DEVICE'S TIMEZONE** and a dropdown menu for selecting a manual time zone.*



4. Select a time zone using either of these methods:

- Tap **SET** to update the saved time zone setting to match your mobile device's current time zone.
- Tap the dropdown menu labeled **Select other time zone** to manually set the time zone.
Tap **OK** to confirm the time zone change and dismiss the pop-up window.

Configure the Recorder's Settings

There are two ways to configure the settings on the Song Meter Micro 2:

- You can pair with a recorder and configure its settings directly. Using this method, every settings change is immediately applied to the paired recorder.
- You can also prepare a configuration file in advance, then load it to apply all of the configuration file's settings to a recorder at once. This is particularly helpful for maintaining consistent settings across multiple recorders or multiple deployments.

Configuration files can be loaded from the **Configuration Library** section of the Song Meter Configurator app or from an SD card installed in the Song Meter Micro 2.

Configure a Paired Recorder Directly

About this task

When the Song Meter Micro 2 recorder pairs with the Song Meter Configurator app, the **Paired Configuration Editor** automatically displays the recorder's current settings. Any changes you make in the **Configuration Editor** are immediately saved to the paired recorder. The **Status** LEDs on the paired recorder will flash green three times each time a setting is changed.

To view and alter the schedule and settings of a paired recorder:

Procedure

1. In the Song Meter Configurator app, open the **Recorders** screen.
2. [Pair the Recorder with the Song Meter Configurator App \(on page 25\)](#).
Configure and **Unpair** icons will appear next to the recorder's name.
3. Tap the **Configure** icon to open the **Configuration Editor**.
4. In any part of the **Configuration Editor** or its sub-pages, change a setting.

See [Settings Reference \(on page 45\)](#) for detailed descriptions of all available settings.

The **STATUS** LEDs on the Song Meter Micro 2 flash green three times, indicating that the setting has been updated and applied to the recorder.

Results

Making a configuration change stops any recording in progress and pauses the schedule for ten seconds. This allows changes to be made to the configuration without constantly starting and stopping a record schedule. Each configuration change resets the ten-second pause.

Ten seconds after no further changes have been made, the recorder will resume its schedule, which may mean that it starts recording again if scheduled to do so.

Rename a Recorder

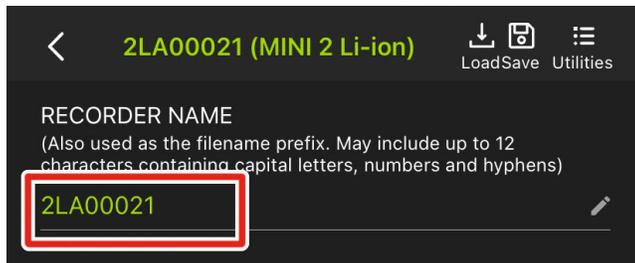
About this task

Each Song Meter Micro 2 can be assigned a name. This name identifies the recorder in the **Recorders** screen, and it is also added as a prefix to the name of each audio recording, summary file, and diagnostics file the recorder saves to its SD card. See [File Name Conventions \(on page 93\)](#).

By default, the recorder's name matches its serial number, printed on the side of the enclosure. You can assign a custom name to serve as a quick reminder of where the files were recorded or the project they were associated with. This can be helpful for keeping your files organized during analysis.

Procedure

1. [Pair the Recorder with the Song Meter Configurator App \(on page 25\)](#).
Configure and **Unpair** icons will appear next to the recorder's name.
2. Tap the **Configure** icon for the paired Song Meter Micro 2 in the **Recorders** screen.
3. Under the **RECORDER NAME** heading, tap the text field displaying the recorder's current name.



4. Edit the text field.
5. Tap **Return**, or tap outside of the keyboard interface.

Results

The edited recorder name is immediately saved.

All **STATUS** LEDs will flash green to confirm the setting change.

Recorder Name Requirements

Recorder names must be **12 or fewer characters**. Valid characters include:

- Capital, unaccented, Roman letters
- Numbers

- Hyphens
- Underscores³

Configure a Recorder Using a Configuration File

This section describes how to configure a Song Meter Micro 2's settings using a configuration file. Configuration files can be used to configure multiple recorders with a particular set of settings. They can be loaded onto a recorder from the Song Meter Configurator app's **Configuration Library** or from an SD card installed in the recorder.

Configuration files are described in more detail in [Manage Configuration Files \(on page 36\)](#). That section includes instructions on creating, editing, and sharing configuration files.

Load a Configuration from the Configuration Library to a Paired Recorder

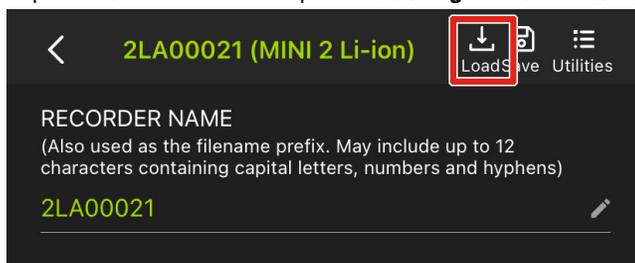
About this task

Loading a configuration file sets all of the paired recorder's settings to match how the settings were set in the configuration file. This is useful if you want multiple recorders to use identical settings, or if you want to maintain consistent settings from one deployment to the next. A single configuration file can be used repeatedly, on multiple Song Meter Micro or Song Meter Micro 2 recorders.

The following procedure loads a saved configuration file from the **Configuration Library** to a paired recorder using the Song Meter Configurator app.

Procedure

1. Make sure the configuration file you want to load is saved in the **Configuration Library**.
See [Configuration Library Screen \(on page 84\)](#) for methods on creating or importing a configuration file into the app.
2. [Pair the Recorder with the Song Meter Configurator App \(on page 25\)](#).
3. Tap the **Configure** icon to open the recorder's **Configuration Editor** screen.
4. Tap the **Load** icon at the top of the **Configuration Editor** screen.



A **Load Configuration** window will appear.

5. Select your configuration file from the **Load Configuration** window.
A dialog window will ask if you are sure you want to load the selected configuration.
6. Tap **OK**.

Results

A **Success** window will display a message confirming the configuration has been loaded.

All of the Song Meter Micro 2's **STATUS LEDs** will flash green to indicate the configuration has been loaded.

3. Support for underscores was added in firmware version 4.4 and Song Meter Configurator app version 2.2.

Load a Configuration File from an SD Card

A configuration file can be loaded from an SD card to configure all of a Song Meter Micro 2's settings.

The configuration file must be saved to the top-level of an SD card, also called the "root." This means that the file is not located inside a subfolder on the SD card. When you export a configuration file from a recorder to its SD card, the configuration file is automatically saved to the top-level of the card.

Load a Configuration to a Paired Recorder from an SD Card

About this task

This is one of multiple ways to apply a configuration file to a Song Meter Micro 2, updating all of the recorder's settings to match the configuration file. For a full list of methods for programming a recorder's settings, see [Configure the Recorder's Settings \(on page 32\)](#).

This procedure loads a configuration file (ending in `.miniconfig`) and/or firmware file (ending in `.smm`), from the SD card to the recorder. If there are both a configuration file and firmware file on the card, the configuration file will be loaded first, and then the firmware update will be loaded.

After the configuration file has been loaded and the Song Meter Micro 2's settings are configured, it is no longer necessary to keep the configuration file on the SD card.

Procedure

1. Save a configuration file to the top-level of an SD card.
 - There must be only one configuration file on the card.
 - See [Manage Configuration Files \(on page 36\)](#) for instructions on saving configuration files directly from a Song Meter Micro 2 or by using a computer.
2. Insert the SD card into the Song Meter Micro 2.
3. Install brand-new or freshly charged batteries into the Song Meter Micro 2.
 - Partially drained batteries can cause the load process to fail.
4. In the Song Meter Configurator app, open the **Utilities** menu:
 - a. [Pair the Recorder with the Song Meter Configurator App \(on page 25\)](#).
Configure and **Unpair** icons will appear next to the recorder's name.
 - b. Tap the **Configure** icon for the paired Song Meter Micro 2 in the **Recorders** screen.
 - c. Tap the **Utilities** icon in the upper-right corner of the **Configuration Editor**.
5. In the **Utilities** menu, tap **Load firmware or a configuration from card**.
 - A message appears to remind you to have fresh batteries installed in the recorder and to not interrupt the load process.*
6. Tap **PROCEED** to load the configuration file.
 - An **Updating** indicator appears, followed by the message **Load successful**.*
7. Tap **OK** to dismiss the message.

Results

The settings shown in the **Configuration Editor** for the paired recorder should now match the settings saved in the configuration file.

Manage Configuration Files

This section covers what configuration files are and how to use them.

Configuration Files in the Configuration Library

The Song Meter Configurator app's **Configuration Library** allows you to save as many configuration files as you want, for multiple recorder models.

Configuration files can be added to the **Configuration Library** screen by three methods:

- To create a new configuration starting from the **Configuration Library** screen, see [Create a Configuration File in the Configuration Library Screen \(on page 36\)](#).
- To save the settings from a paired recorder to a configuration file, see [Save a Configuration File from a Paired Recorder to the Configuration Library \(on page 37\)](#).
- To import a configuration file from another app, such as an email or cloud storage app, see [Import a Configuration File from Another App \(on page 38\)](#).

Saved configuration files can be edited and deleted in the **Configuration Library**.

- To edit a configuration file in the **Configuration Library**, see [Edit a Saved Configuration File \(on page 41\)](#).
- To delete a configuration file from the **Configuration Library**, see [Delete a Saved Configuration File \(on page 42\)](#).

Configuration files can be exported from the **Configuration Library** screen and sent to someone else with the Song Meter Configurator app installed, allowing multiple people to program recorders with matching settings.

- To export a configuration file from the **Configuration Library** to another app (to send to another person or a different device, for example), see [Share a Saved Configuration File \(on page 43\)](#).
- To import a configuration file from an outside source to the **Configuration Library**, see [Import a Configuration File from Another App \(on page 38\)](#).

Create a Configuration File in the Configuration Library Screen

Procedure

1. Navigate to the **Configuration Library** screen.
2. Tap the + icon to open the **Add configuration** screen.
3. Choose which Song Meter model the configuration is intended for.
4. Tap on the **CONFIGURATION NAME** text field to enter a custom name.
5. Choose a **PRESET SCHEDULE** from the dropdown menu to use as a starting point.
The schedule can be changed on the next screen.
6. Choose whether to **Use Mobile Device Location** or not.
If this option is disabled, fields will appear to manually enter coordinates or an address or to tap a location on a map.
7. Choose whether to **Use Mobile Device Time Zone** or not.
If this option is disabled, a menu item will appear to select a Time Zone from a dropdown list.
8. Tap **NEXT**.

The **Configuration Editor** will open.

9. Adjust the Settings and Schedule as necessary (see [Configuration Editor Screen \(on page 71\)](#)).
10. When you are done making changes to the configuration, tap the configuration's name at the top of the screen.

Results

The app will return to the **Configuration Library** screen, and the configuration file you just created will be present in the list of configurations.

Save a Configuration File from a Paired Recorder to the Configuration Library

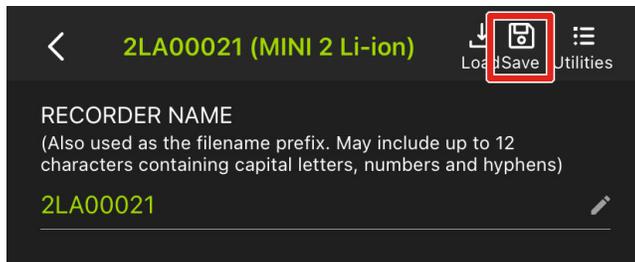
About this task

Saving a configuration file copies all of the paired recorder's settings into a configuration file, which is saved to the Song Meter Configurator app's **Configuration Library**. This configuration file can be loaded into the same recorder or another of the same model to restore those saved settings. This is useful for duplicating settings across multiple recorders, and it is also a way to back up your settings before you experiment with changes to how a recorder is configured.

The following procedure uses the Song Meter Configurator app to save a configuration file from a paired recorder to the app's **Configuration Library**.

Procedure

1. [Pair the Recorder with the Song Meter Configurator App \(on page 25\)](#).
2. Tap the **Configure** icon to open the recorder's **Configuration Editor** screen.
3. Tap the **Save** icon at the top of the **Configuration Editor** screen.



A **Configuration Name** window appears. An editable text box is prepopulated with the paired recorder's **Recorder Name**.

4. Edit the text field to set a name for your configuration.
5. Tap **OK**.
Your configuration will be saved.
6. To view your configuration file,
 - a. Exit the **Configuration Editor** by tapping the < button at the top left of the screen.
 - b. Tap the **Configuration Library** button at the bottom of the **Recorders** screen.
*Your configuration will be listed in the **Configuration Library** screen.*
7. To make further changes to the saved configuration, see [Edit a Saved Configuration File \(on page 41\)](#).

Import a Configuration File from Another App

Configuration files can be imported from other apps on your mobile device into the **Configuration Library** of the Song Meter Configurator app. Once stored in the **Configuration Library**, saved configurations can be used to update a recorder's settings.

For more information on the **Configuration Library** and configuration files, see [Configuration Library Screen \(on page 84\)](#).

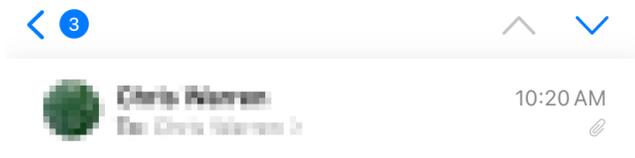
iOS: Import from Mail

About this task

If a `.miniconfig` file is sent to you as an email attachment, you can import the file into the Song Meter Configurator's **Configuration Library**. Importing files sent via other means, such as a message app, a cloud storage app, or Apple AirDrop, works via a similar series of steps.

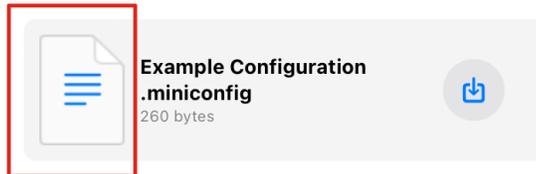
Procedure

1. Open the iOS Mail app.
2. Open the message containing the `.miniconfig` file attachment.
3. Tap on the attachment to open a preview window. **Do not** tap on the **Download** icon, shown as a square with a downward arrow.



Example Config Attachment

See Song Meter `.miniconfig` file attached

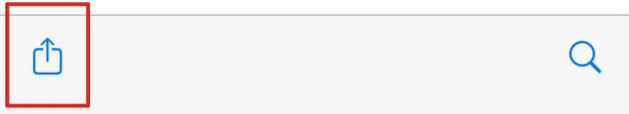


Because the iOS Mail app cannot interpret a `.miniconfig` file, the body of the preview window will display a short string of nonsensical text.

4. Tap on the **Share** icon, shown as a square with an upwards arrow.

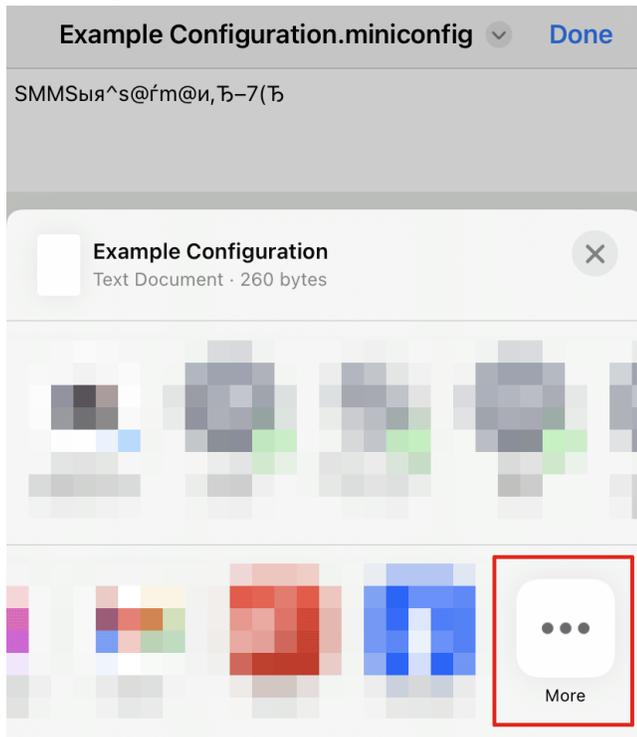
Example Configuration.miniconfig ▼ Done

SMMSыя^s@fm@и, Ъ-7(Ъ



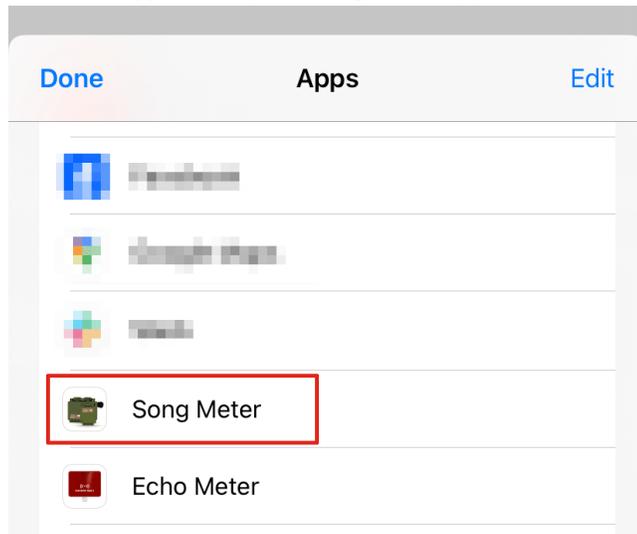
This opens the iOS interface for sharing files between apps.

5. If the Song Meter app is not shown in the list of apps in the sharing interface, tap the **More** icon at the far-right end of the list.



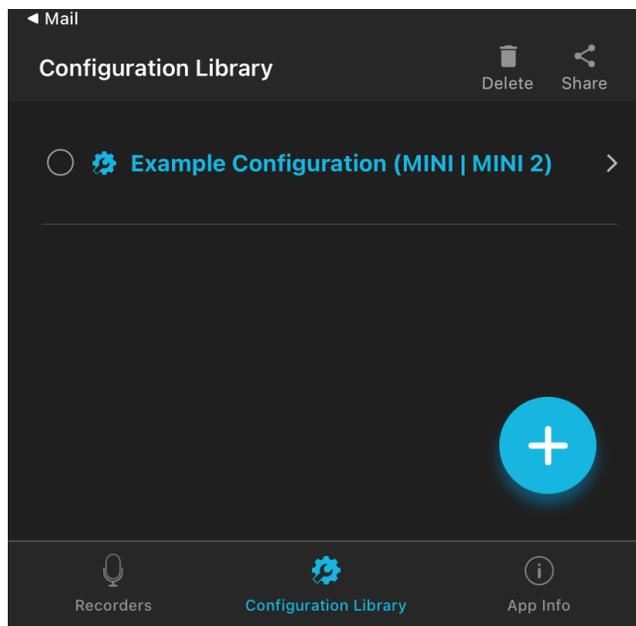
*This will bring up an **Apps** list.*

6. From the **Apps** list, tap the **Song Meter** app.



Results

The Configuration file will be imported and visible in the **Configuration Library**.



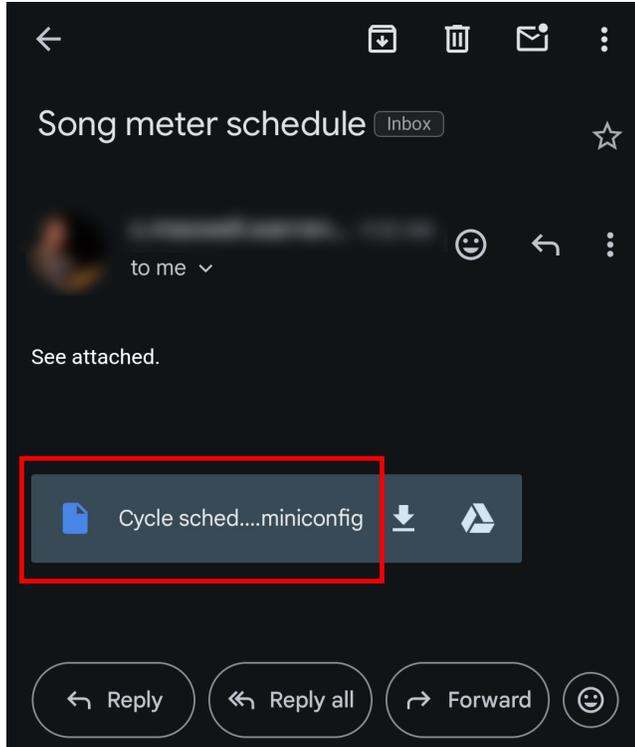
Android: Import from Gmail

About this task

If a `.miniconfig` file is sent to you as an email attachment, you can import the file into the Song Meter Configurator's **Configuration Library**. Importing files sent via other means, such as a message app, a cloud storage app, or the device's file browser, works via a similar series of steps.

Procedure

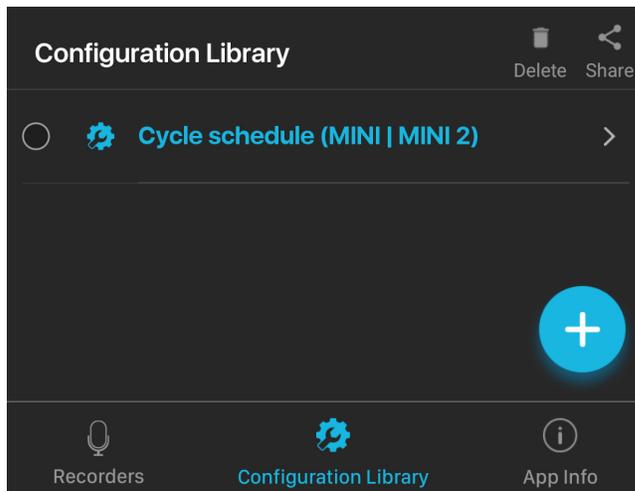
1. Open the Gmail app.
2. Open the message containing the `.miniconfig` file attachment.



3. Tap on the attachment name. Do not tap on the **Download** or **Google Drive** icons.

Results

The Configuration file will be imported and visible in the **Configuration Library**.



Edit a Saved Configuration File

About this task

You can edit any configuration stored in the **Configuration Library**, whether it was created from scratch, saved from a paired recorder, or imported from an email or file storage app.

Procedure

1. In the **Configuration Library** screen, tap on the name of the configuration you wish to edit.
*The **Configuration Editor** screen opens.*
2. Edit the settings and schedule (see [Configuration Editor Screen \(on page 71\)](#)).
Each settings change made to a configuration file is saved immediately.
3. Tap the **Rename** button at the top-right of the screen to rename the saved configuration File.
4. Tap the **Configuration Name** at the top of the screen to return to the **Configuration Library** screen.

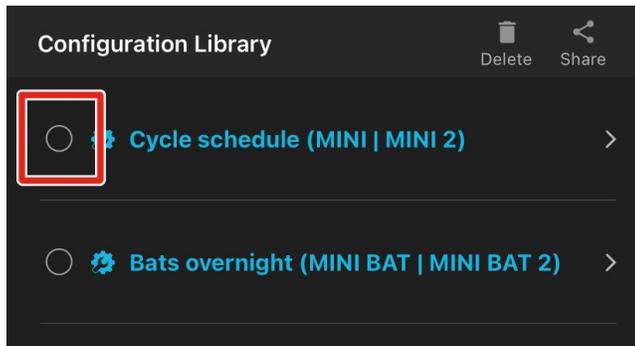
Delete a Saved Configuration File

About this task

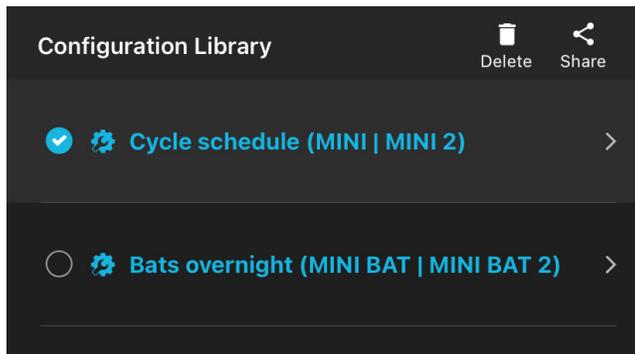
To remove a saved configuration from the **Configuration Library**:

Procedure

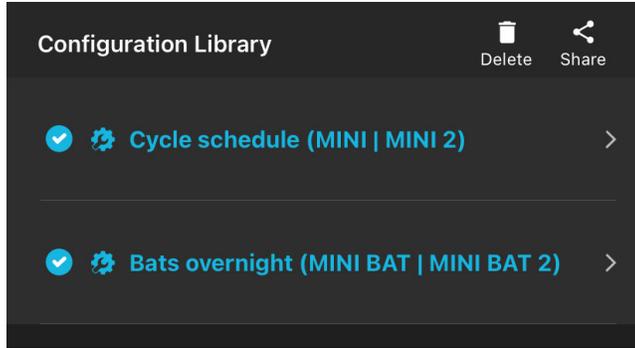
1. In the **Configuration Library** screen, tap on the selection circle to the left of any configuration to select it.



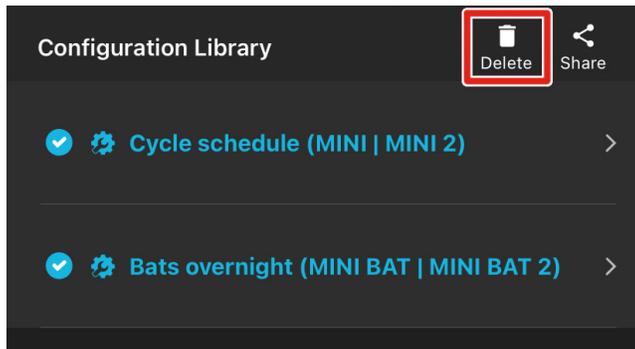
Selected configurations have the selection circle icon filled in with a check mark.



2. Repeat 1 ([on page 42](#)) to select multiple configurations, if desired.



3. Tap the **Delete** icon in the upper right of the screen.



A message will ask if you're sure you want to delete the configuration.

4. Tap **DELETE**.

Share a Saved Configuration File

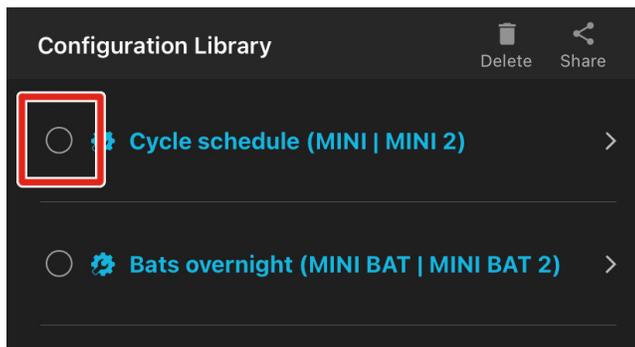
About this task

A configuration file can be shared to other iOS/Android devices or a computer. The configuration file has the file name suffix `.miniconfig`.

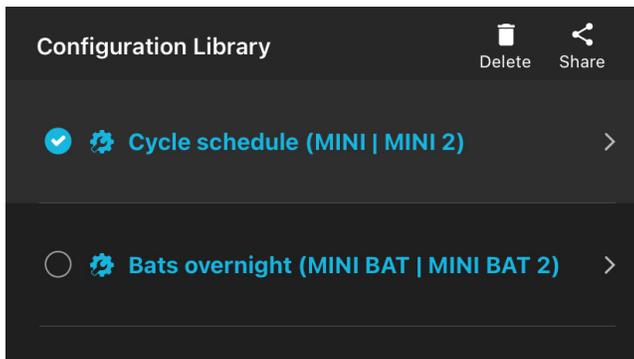
Shared configuration files can be transferred to an SD card directly from a mobile device with a file manager and SD card reader, or they can be sent to a computer for transfer to an SD card. The card can then be used to transfer the configuration directly to a recorder (see [Load a Configuration File from an SD Card \(on page 35\)](#)).

Procedure

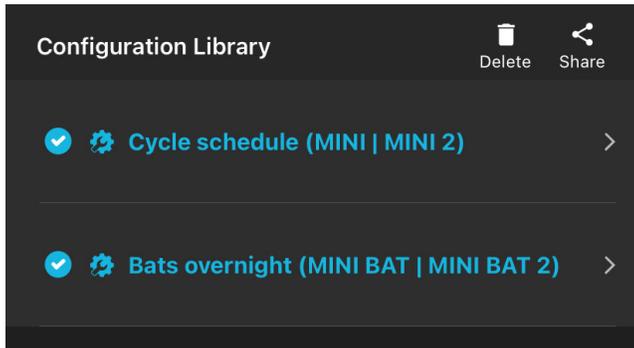
1. In the **Configuration Library** screen, tap on the selection circle to the left of any configuration to select it.



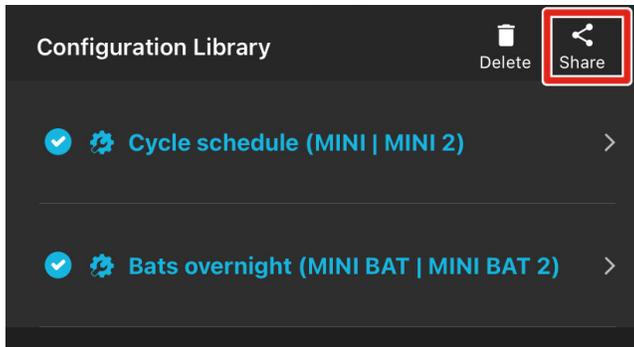
Selected configurations have the selection circle icon filled in with a check mark.



2. Repeat 1 *(on page 43)* to select multiple configurations, if desired.



3. Tap the **Share** icon at the top right of the screen.



The iOS or Android interface for sharing files between applications will open.

4. From the operating system's file-sharing interface, select the desired method for sharing the file. For example, you can send the configuration file as an email attachment or use your device's file manager to save the configuration file to an SD card.

Configuration Files on the SD Card

Configuration files can be exported from the Song Meter Micro 2 to its SD card or loaded from the SD card.

There are multiple ways to save a configuration file to an SD card:

- If your mobile device can use an SD card reader, you can export a configuration file from the Song Meter Configurator app's **Configuration Library** to your mobile device's file browser to save it to the SD card.
See [Share a Saved Configuration File \(on page 43\)](#) for an example of exporting a configuration file to a separate app on your device.
- If you export a configuration file to a desktop or laptop computer (via email or a cloud storage app, for example), you can use your computer to save the configuration file to the SD card.
See [Share a Saved Configuration File \(on page 43\)](#) for an example of exporting a configuration file to an email application.

It is also possible to import a configuration file from a microSD card to a paired Song Meter Micro 2. This allows you to use a single microSD card to program multiple recorders with identical settings.

- To load a configuration file from an SD card to a paired Song Meter Micro 2 using the Song Meter Configurator app, see [Load a Configuration to a Paired Recorder from an SD Card \(on page 35\)](#).

Settings Reference

This section provides a detailed description of each of the Song Meter Micro 2's available settings. The organization of this section mimics the organization of settings within the Song Meter Configurator app.

Sample Rate

- **Options:** 8,000; 12,000; 16,000; 22,050; 24,000; 32,000; 44,100; 48,000; 96,000; 192,000; or 256,000 Hz.
- **Default:** 24,000 Hz.

Determines the number of samples per second used to make a recording during a recording period. Higher sample rates take up more SD card space for a given recording length, but they allow you to record a broader frequency range of sound (subject to the sensitivity of the microphone).

Choose a sample rate at least double the highest frequency you want to record. For example, a sample rate of 24,000 Hz will capture sounds up to 12,000 Hz.

Maximum Recording Length

- **Options:** 1 minute to 60 minutes in 1-minute increments.
- **Default:** 60 minutes.

Specifies the maximum length of individual recordings within a schedule. Long recording periods will be broken up into sections defined by this length. For example, if a recording schedule is set to record 24 hours per day, and the maximum record length is set to 60 minutes, the recorder will create twenty-four, 60-minute files per day.

Gain

- **Options:** 6, 12, 18, or 24 dB.
- **Default:** 18 dB.

Gain can be added to the microphone signal to increase the recorded signal's amplitude.

Test recordings should be made to make sure desired signals are being recorded with enough gain, but not so much as to cause clipping distortion. If a test recording shows clipping distortion, lower the gain setting. If a test recording shows a faint signal, raise the gain setting.

Delay Start

The **Delay Start** setting allows you to program the recorder to not begin running its schedule until 12:00 AM at the start of the selected date, specified by year, month, and day.

For example, imagine you want the Song Meter Micro 2 to record only the winter season, but it would be much easier to reach the deployment site in the fall, before the first snowfall. This setting ensures the recorder will not waste valuable SD card space and battery life until the specified date.

If the **Delay Start** date is enabled, but you power on the Song Meter Micro 2 on or after the specified date, it will begin running its schedule immediately.

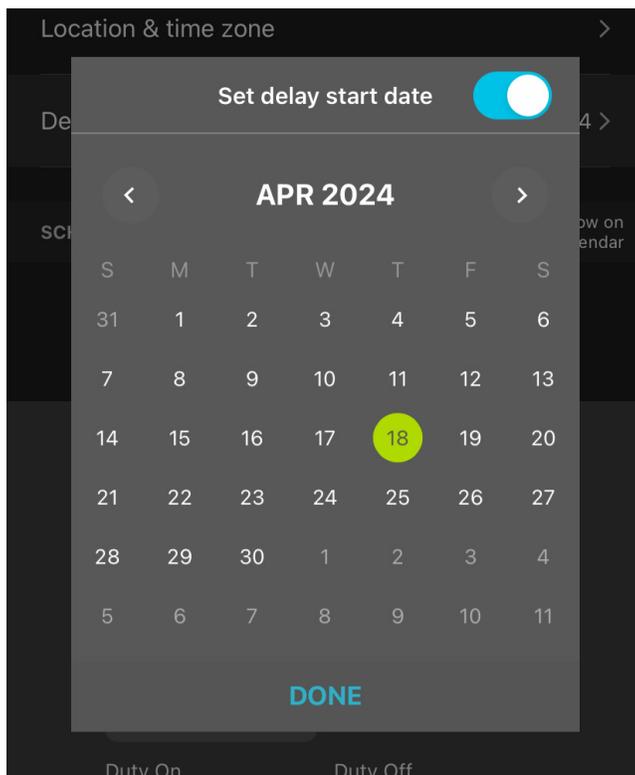
Configure Delay Start

About this task

The **Delay Start** setting can be configured directly on a paired recorder or when editing a configuration file in the **Configuration Library**.

Procedure

1. Open the **Configuration Editor**.
2. Tap on the **Delay Start** entry to open a calendar interface.



3. Tap the **Set delay start date** toggle switch to enable or disable the **Delay Start** setting.
When the toggle is enabled, the calendar is active.
4. Navigate between months using the left and right arrows below the **Set delay start date** toggle.

5. Select a date by tapping the corresponding entry on the calendar. The selected date is highlighted with a green circle.
6. Tap **DONE** to save your **Delay Start** setting.

Send Bluetooth Beacons?



Note:

Send Bluetooth Beacons? can only be configured directly on a paired recorder, not via a configuration file. See [Configure a Paired Recorder Directly \(on page 32\)](#).

- **Options:** On or Off.
- **Default:** On.

By default, a recorder that is powered on will send continuous Bluetooth beacons so the Song Meter Configurator app can detect the recorder and receive its current status.

If **Send Bluetooth Beacons?** is disabled, the Song Meter Configurator app will not automatically detect the recorder, and its current status will not be automatically updated. The recorder must then be manually paired with the Song Meter Configurator app in order for the current status to be updated in the app.

Disabling **Send Bluetooth Beacons?** will not affect the recording functions of the Song Meter Micro 2 recorder.



Tip:

In most cases, we recommend keeping this setting enabled. Enabling Bluetooth beacons has no significant effect on the Song Meter Micro 2's battery life. Bluetooth beacons allow you to check the recorder's status when you are unable to access it directly, and they can help you locate a recorder after a long deployment.

Design a Custom Schedule

This section describes how the schedule system works and how you can design a custom schedule to fit your needs. It starts with the simplest and most common use cases and progress towards more advanced schedules.

In [Schedules and Schedule Blocks \(on page 48\)](#), this section will start with the most basic element of any schedule: a schedule block. Just understanding this opens up many possible use cases, as many common types of schedules can be created using one schedule block comprised of a few simple commands.

[Schedules Using Sunrise and Sunset \(on page 50\)](#) introduces the ability to build schedules relative to sunset and sunrise as the lengths of day and night shift throughout a deployment.

[Schedules with Multiple Blocks \(on page 51\)](#) covers essential information about how multiple blocks behave in a single schedule.

[Date Range and Day Duty Cycle \(on page 51\)](#) describes how to program specific blocks within a schedule to run only during a specified date range and/or to cycle between running and not running on set intervals across multiple days.

Lastly, [Schedule Block Examples \(on page 52\)](#) shows schedule blocks for common use cases. You can use these examples by themselves, or incorporate them into a more complex schedule along with other schedule blocks.

Schedules and Schedule Blocks

A schedule for the Song Meter Micro 2 can be made up of up to ten schedule blocks. If a schedule block were just a single recording period, having only ten would be severely limiting. For instance, let's say you want to capture a short snapshot of a soundscape over the course of each day by recording five minutes at the start of every hour. If a schedule block only provided one recording period, you would need to tediously punch in separate start and end dates, and then you would run out before you even recorded half of your snapshots!

Luckily, this type of schedule can be programmed with just one schedule block:

Example: Record Five Minutes Every Hour

The screenshot shows a configuration screen for a schedule block. At the top, there is a '1' and a '+' icon, followed by the text 'Add Date Range'. Below this is a horizontal line. The 'START TIME' section has 'Hours' and 'Minutes' labels, with a 'Time' dropdown and a '+' sign, and two spinners set to '00' and '00'. The 'DUTY CYCLE' section has a 'Cycle' dropdown. The 'Duty On' and 'Duty Off' sections each have 'Hours' and 'Minutes' labels, with spinners set to '00' and '05' for 'Duty On', and '00' and '55' for 'Duty Off'. The 'END TIME' section has 'Hours' and 'Minutes' labels, with a 'Time' dropdown and a '+' sign, and two spinners set to '00' and '00'. At the bottom right, there is a '+' icon and the text 'Add'.

For accessibility and ease of reading on multiple screen sizes, further examples will only present schedules as plain text. The text below mimics the commands shown in the screenshot above.

- **START TIME: Time** 00:00
- **DUTY CYCLE: Cycle**
 - **Duty On:** 00:05
 - **Duty Off:** 00:55
- **END TIME: Time** 00:00

With five simple commands, this one schedule block has told the Song Meter Micro 2 to record five minutes at the start of each hour. The following sections expand on how each component works.



Note:

This example does not use the optional **Date Range** feature. This means that, as soon as the recorder starts its schedule, this schedule block will perform the same thing every day. We'll cover the capabilities of **Date Range** in a later section.

Start Time and End Time

- **START TIME: Time** 00:00
- ...
- **END TIME: Time** 00:00

The **START TIME** and **END TIME** commands are best understood in relation to each other. Everything the schedule block does occurs after the **START TIME** and continues until it reaches the **END TIME**. This is the case even when the **START TIME** and **END TIME** share the same value, as they do here. The schedule block will begin every time it reaches 00:00 (12:00 AM on the 12-hour clock) and it will do whatever you program it to do until it reaches the next 00:00. Each midnight, the recorder will simultaneously end one cycle of this schedule block and start a new one.

This same logic means that a single schedule block can span two calendar dates:

- **START TIME: Time** 17:00
- ...
- **END TIME: Time** 05:00

In this example, the schedule block will start running every time the clock hits 17:00 (5:00 PM) and will end the next time the clock hits 05:00 (5:00 AM), which will be the next day.

While this may seem obvious, understanding this now is important for when we later introduce **START TIMES** and **END TIMES** set relative to sunrise and sunset.



Note:

When you start your deployment for the first time, the Song Meter Micro 2 will pick up in the middle of any schedule block that should be occurring at that time. The recorder does not need to wait for the next occurrence of the **START TIME** when it turns on.

Duty Cycle

In the engineering world, "duty cycle" describes a pattern of repeating activity and inactivity. This could be a pattern of "on" and "off" signals in a computer that alternate millions of times per second, or it could be a schedule whereby a manufacturing machine is run for three hours every day.

In Song Meter schedules, a duty cycle tells the recorder to alternate between recording and sleeping, at fixed time intervals, in between the **START TIME** and **END TIME**.

When **DUTY CYCLE** is enabled by selecting **Cycle**, the schedule block will begin at the **START TIME** by recording, then it will pause, then it will record, then it will pause, repeating this until the **END TIME** is reached.

Returning to our "Record 5 minutes every hour" example, the **DUTY CYCLE** section of the schedule block is:

- **DUTY CYCLE: Cycle**
 - **Duty On:** 00:05
 - **Duty Off:** 00:55

At the **START TIME**, the recorder begins at the **Duty On** phase by recording for five minutes. Then, it runs the **Duty Off** phase by sleeping for 55 minutes. It will alternate between five minutes of recording and 55 minutes of sleeping for as many time as it takes to reach the **END TIME**.

The **END TIME** will immediately end the schedule block in the middle of either the **Duty On** or **Duty Off** phase. If the time span between the **START TIME** and **END TIME** is short enough, it is possible to end a schedule block before the recorder can complete a single cycle.

Schedules Using Sunrise and Sunset

We saw in [Schedules and Schedule Blocks \(on page 48\)](#) that the **START TIME** and **END TIME** of a schedule block can be defined as fixed times on the clock each day. We can also define the **START TIME** and **END TIME** relative to sunrise and sunset, which the Song Meter Micro 2 calculates each day based on its latitude, longitude, and time zone settings.

This means that, if your goal is to record the dawn chorus each day, the Song Meter Micro 2 can time its recording period to follow sunrise as it shifts earlier and later in the day over the span of weeks and months. This opens up a wide range of useful possibilities for bioacoustics applications.

Let's look at a variation of a typical schedule one might use for recording nocturnal animals.

Example: Record Overnight, Plus Some Padding

- **START TIME: Set - 01:30**
- **DUTY CYCLE: Always**
- **END TIME: Rise + 00:45**

The above example is more concise than the one shown in [Schedules and Schedule Blocks \(on page 48\)](#), as it does not make use of the **DUTY CYCLE** feature. This schedule block begins 1 hour and 30 minutes before sunset, it ends 45 minutes after sunrise, and it runs uninterrupted for the time in between.

Let's break down the three commands.

Start Time: Offset from Sunset

The first command in this block is:

- **START TIME: Set - 01:30**

Set means the **START TIME** is defined relative to the time of sunset on a given day. The negative sign, -, means the block starts earlier than sunset, and the offset, **01:30**, means it starts 1 hour and 30 minutes prior to sunset.

If you want the schedule block to start exactly at sunset, you should set the offset to **00:00**. The value of the positive or negative sign does not matter in that case.

Duty Cycle: Always

Setting the **DUTY CYCLE** to **Always** means the schedule block runs from the **START TIME** to the **END TIME** with no pauses in between.

When **Always** is selected, the **Duty On** and **Duty Off** commands are not used.

End Time: Offset from Sunrise

The last command in this block is:

- **END TIME: Rise + 00:45**

The structure of the **END TIME** command is the same as for the **START TIME** command. Selecting **Rise** means we're defining the **END TIME** for this schedule block relative to the time of sunrise on each day. The positive sign, +, means we want to specify a time after sunrise occurs. **00:45** specifies 45 minutes after sunrise.

Schedules with Multiple Blocks

In [Schedules and Schedule Blocks \(on page 48\)](#) and [Schedules Using Sunrise and Sunset \(on page 50\)](#), we have seen that a single schedule block provides quite a bit of flexibility. Its start and end times can dynamically adjust to follow sunrise and sunset times, and the **DUTY CYCLE** feature can create patterns of alternating on/off cycles.

As mentioned before, a single schedule can be made of up to 10 schedule blocks. Here's what you need to know about using multiple blocks:

Ordering of Blocks

Within a schedule, it does not matter which block is positioned at the top of the list and which is at the bottom. The order does not mean one block is prioritized over another.

Block Independence

Within a single schedule, each block can have entirely different commands from each other. For example, the first block could have its **START TIME** and **END TIME** set as fixed times on the clock, with no duty cycle, and the second block could reference sunrise and sunset for either or both of its **START TIME** and **END TIME** and use a **DUTY CYCLE**.

Overlapping Blocks

When two schedule blocks have recording periods that overlap, the Song Meter Micro 2 treats the overlapping recording periods as a single, combined recording period.

For example, if block 1 includes a recording period from 13:45 to 14:15, and block 2 includes a recording period from 14:00 to 15:00, the Song Meter Micro 2 will treat the time from 13:45 to 15:00 as one single recording period, only broken up according to the Maximum Recording Length setting.

This is true regardless of whether each block is set to reference fixed times on the clock or sunrise/sunset. This is also true whether each recording period is a single, continuous schedule block or one recording period out of a longer, cyclical schedule block.

Date Range and Day Duty Cycle

By default, every Song Meter Micro 2 schedule block runs every single day, starting from when the recorder is powered on or until the [Delay Start \(on page 46\)](#) date occurs, if applicable.

By enabling the **Date Range** for a schedule block, you can specify a range of dates over which the schedule block should run, and/or you can define a cycle for the block to run for *X* days, then not run for *Y* days, then repeat.

These features can be set **independently for each block** in your schedule. For example, block 1 can be set to run every day, block 2 can be set to only run from July 1st to August 15th, and block 3 can be set to run for three of every seven days from June through September.

The rules for what occurs when multiple recording periods overlap, described in [Schedules with Multiple Blocks \(on page 51\)](#), still apply.

Enable Date Range and Day Duty Cycle

To enable these features for any schedule block, tap the **Add Date Range** icon at the top of the schedule block. To disable these features, tap the **Remove Date Range** icon at the same position.

When these features are enabled, three new sections of the schedule block appear: **START DATE**, **DAY DUTY CYCLE**, and **END DATE**.

START DATE and END DATE

These commands work similarly to the **START TIME** and **END TIME** commands, described in [Schedules and Schedule Blocks \(on page 48\)](#). **START DATE** sets the date when the block should begin running, and **END DATE** sets the date when the block should cease.

These dates can only be defined by month and day, not by year. Once the clock reaches the **START DATE** during any year, the block will run as specified until the next time the **END DATE** occurs, which may be during the same calendar year or the following calendar year.

If a schedule block runs through midnight, like a "sunset to sunrise" block, it will begin running at midnight at the beginning of the **START DATE**, and it will stop running at midnight at the end of the **END DATE**.

If the **END DATE** is set to the same date as the **START DATE**, or if it is set to one day before the **START DATE**, the schedule block will run year-round. This is useful if you want to use the **DAY DUTY CYCLE** feature without limiting the schedule block to a particular date range.

DAY DUTY CYCLE

This command works similarly to the standard **DUTY CYCLE** command described in [Schedules and Schedule Blocks \(on page 48\)](#). When this section is set to **Cycle**, you can define a pattern of alternating between running the schedule block on some days and not running on other days.

For the purpose of these commands, a day is defined as one calendar day, spanning from midnight to midnight. If the schedule block runs through midnight, it will begin at midnight at the start of the first active day and end at midnight at the end of the last active day.

Duty On defines how many days of recording you want to happen during the active phase of the duty cycle. These active days occur consecutively before switching to the inactive phase.

Duty Off defines how many days you want the recorder to skip this schedule block in between active recording days.

Active days and inactive days always occur as consecutive blocks. For example, if **Duty On** is set to three days and **Duty Off** is set to five days, the schedule block will run for three days in a row, then it will skip five days in a row, then it will run for three days in a row, and so on.

During "inactive days" for this schedule block, other blocks in your schedule may still run, depending on their settings. The **START DATE**, **END DATE**, and **DAY DUTY CYCLE** commands only affect the schedule block to which they are applied.

Schedule Block Examples

This section provides recording schedule examples that demonstrate how schedule blocks work. Most of these examples are built into the app and can be selected as starting points for customized schedules.

A schedule specifies the record start and end times, but does not necessarily result in a single file for the entire period.

Long recording periods will be split up into segments whose length is set by the Maximum Recording Length setting.

Record Continuously All Hours of Every Day

The following schedule records continuously all day and night, 24 hours per day:

- **START TIME: Time** 00:00
- **DUTY CYCLE: Always**
- **END TIME: Time** 00:00

Whenever the start and end times are identical and the **DUTY CYCLE** is set to **Always**, the schedule will record continuously.

Record Continuously for Part of Each Day

The following schedule records daily from 4:00 AM to 10:00 AM:

- **START TIME: Time** 04:00
- **DUTY CYCLE: Always**
- **END TIME: Time** 10:00

Record in Five-Minute Segments Every Hour

The following schedule uses the **DUTY CYCLE** and records for five minutes at the beginning of each hour:

- **START TIME: Time** 00:00
- **DUTY CYCLE: Cycle**
 - **Duty On:** 00:05
 - **Duty Off:** 00:55
- **END TIME: Time** 00:00

Record from Sunset to Sunrise

The following schedule starts every day at sunset and records until sunrise on the following day:

- **START TIME: Set +** 00:00
- **DUTY CYCLE: Always**
- **END TIME: Rise +** 00:00

Record in Multiple Blocks Relative to Sunset and Sunrise

The following schedule uses two blocks. The first block defines a period relative to sunrise and the second block defines a period relative to sunset. The combined result records for two hours centered on sunrise and two hours centered on sunset.

- Block 1:
 - **START TIME: Rise -** 01:00
 - **DUTY CYCLE: Always**
 - **END TIME: Rise +** 01:00
- Block 2:
 - **START TIME: Set -** 01:00
 - **DUTY CYCLE: Always**
 - **END TIME: Set +** 01:00

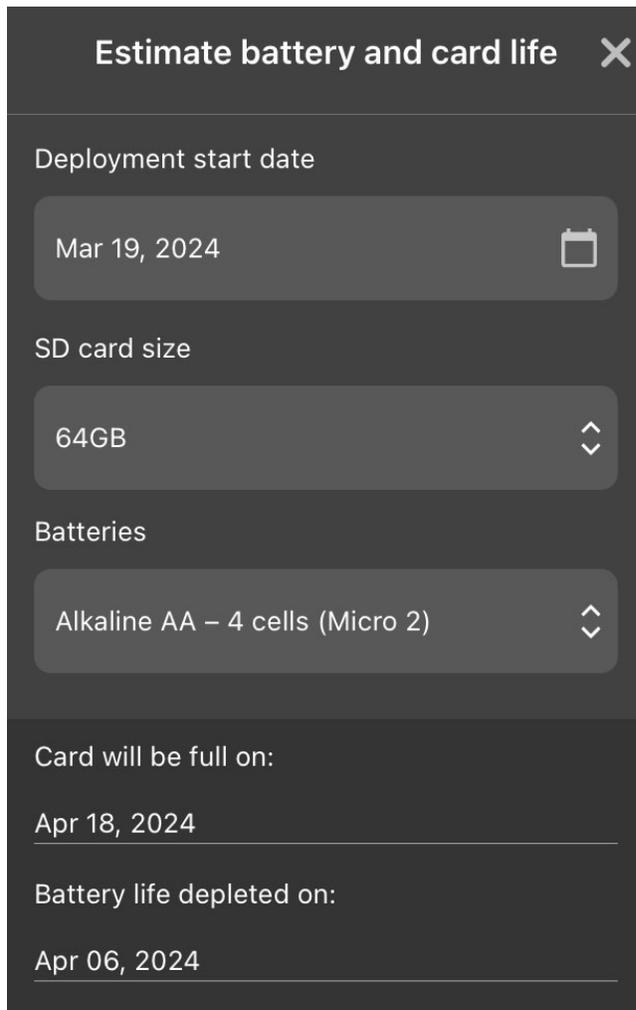
Deployment Length Estimations

The Song Meter Configurator app can estimate the expected run time it will take the Song Meter Micro 2 to run out of battery power or SD card space. There are multiple factors that can affect battery life, so these estimations should be treated as approximate.

Estimate Battery and Card Life Window

From the **Configuration Editor** screen, tap the **Estimate battery and card life** icon to open the **Estimate battery and card life** utility.

This utility estimates battery and SD card life for different battery types and card sizes, using the currently programmed schedule and settings.



The **Estimate battery and card life** window contains the following elements:

X (exit) button

Tap to close the **Estimate battery and card life** window.

Deployment start date interactive calendar

Tap on the text showing the selected start date to open a calendar window and select a new start date.

Changing the expected start date directly affects the estimated end dates for SD card space and battery life. This date only affects the estimation; it does not affect when the recorder will start running its schedule. To specify an initial delay in the recorder's schedule, use the [Delay Start \(on page 46\)](#) setting.

SD card size dropdown

Select the SD card capacity to use for estimating when the card will be completely full.

The options include the most common SD card sizes between 8 GB and 2 TB. If configuring a paired recorder, the **Use Current Card** option bases the estimation on the remaining available space on the installed SD card.

Batteries dropdown

Select type and quantity of batteries to use for estimating when the batteries will die.

If configuring a paired recorder, **Use Current Batteries** measures the voltage of the installed batteries and estimates the remaining available energy.

Card will be full on:

Displays the date on which the card is estimated to be full, based on the recorder configuration and SD card settings listed above.

The SD Card estimation assumes the recorder never runs out of power.

Battery life depleted on:

Displays the date on which the batteries are estimated to lose power, based on the recorder configuration and battery settings listed above.⁴

The Battery Life estimation assumes the recorder never runs out of SD card space.

Factors Affecting Battery Life

Battery life estimations are based on measurements taken with typical SD cards at room temperature. These estimations should be treated as very broad, as many factors can significantly affect power consumption.

Battery Quality

For a single type of battery, different brands and models can vary in their performance.

For AA batteries, the Song Meter Configurator app assumes you are using Energizer, alkaline batteries when it estimates battery percentage and run time. Different brands of AA batteries may not last as long as the app's estimations, even in ideal conditions. Rechargeable NiMH batteries will die significantly more quickly than the app's estimations.

SD Card Power Consumption

SD cards vary significantly in how much power they require. Even SD cards of the same model and size from the same manufacturer can exhibit this variation. The power consumption of an SD card can have a noticeable effect on the power consumption of the Song Meter Micro 2 overall.

Ambient Temperature

Most types of batteries experience diminished performance in cold weather compared to room temperature. The magnitude of this effect is different for various battery chemistries. For example, **alkaline AA batteries can have their performance reduced by 50% or more in freezing temperatures.**

4. For a full table of the power consumption measurements that inform these battery life estimations, see [Power Consumption and Expected Battery Life \(on page 111\)](#).

Factors Affecting SD Card Estimations

When you select a preset SD card size in the **Estimate battery and card life** window, the estimation assumes that all of the card space is completely unused. Reformat the SD card before each deployment to ensure that this is the case (see [Format the SD Card \(on page 27\)](#)).

For acoustic recording, SD card usage is very predictable. Assuming the SD card used during the deployment is freshly formatted and does not encounter an unusual issue, the date at which the card fills up should be very close to the estimation shown on the **Estimate battery and card life** window.

8. Maintaining and Protecting the Song Meter Micro 2

Update the Recorder's Firmware

We regularly publish new firmware versions that improve the functionality of the Song Meter Micro 2. If your recorder is running an outdated version of the firmware, the [Status Screen \(on page 66\)](#) in the Song Meter Configurator app will display a message alerting you to the new version. We recommend making sure your recorder is on the latest firmware at the start of each deployment.

Updating the firmware requires downloading the latest firmware file from our Downloads page at <https://www.wildlifeacoustics.com/account/downloads/sm-micro>. The file must be saved to an SD card. A single SD card can be used to update multiple recorders.

Once the firmware is updated, it is not necessary to keep the firmware file on an SD card installed in the recorder.

Update Firmware Using the Song Meter Configurator App

About this task

When paired with a Song Meter Micro 2, you can use the Song Meter Configurator app to initiate a firmware update.

This procedure loads a configuration file (ending in `.miniconfig`) and/or firmware file (ending in `.smm`), from the SD card to the recorder. If there are both a configuration file and firmware file on the card, the configuration file will be loaded first, and then the firmware update will be loaded.

Procedure

1. Install brand-new or freshly charged batteries into the Song Meter Micro 2.
2. Save the latest firmware file to a microSD card:
 - a. Download the current version firmware file from our Downloads page at <https://www.wildlifeacoustics.com/account/downloads/sm-micro>.
The firmware file name is formatted as `sysmicro-X.Y.smm`.
You must have a user account on [wildlifeacoustics.com](https://www.wildlifeacoustics.com) to access our Downloads page. Only an email address is required to create a user account.
 - b. Connect a microSD card to your computer.
If your computer has a built-in SD card slot, you can use a microSD-to-SD adapter. Otherwise, you can use a USB SD or microSD card reader.
 - c. Copy the firmware file to the top level of the microSD card.
"Top level" means the firmware file must not be inside a folder on the card.
There must be only one firmware file on the card.
 - d. Eject the microSD card from your computer's operating system before physically removing the card.
3. Insert the SD card into the Song Meter Micro 2's SD card slot.
4. In the Song Meter Configurator app, open the **Utilities** menu:
 - a. [Pair the Recorder with the Song Meter Configurator App \(on page 25\)](#).
Configure and **Unpair** icons will appear next to the recorder's name.

- b. Tap the **Configure** icon for the paired Song Meter Micro 2 in the **Recorders** screen.
 - c. Tap the **Utilities** icon in the upper-right corner of the **Configuration Editor**.
5. In the **Utilities** menu, tap **Load firmware or a configuration from card**.
A confirmation message will ask if you are sure you want to proceed.
 6. Tap **PROCEED** to start the update.
*An **Updating...** activity indicator will appear.*
The Song Meter Micro 2 will unpair from the Song Meter Configurator app.
*The app will return to the **Recorders** screen.*
 7. Tap the **Status** icon next to the recorder name to open the **Status** screen.
 8. Confirm that the **FIRMWARE VERSION** listed on the **Status** screen is the latest version.

Update Firmware Using the Physical Controls

About this task

We regularly publish new firmware versions that improve the functionality of the Song Meter Micro 2. If your recorder is running an outdated version of the firmware, the [Status Screen \(on page 66\)](#) will display a message alerting you to the new version. We recommend making sure your recorder is on the latest firmware at the start of each deployment.

Normally, the recommended way to update the Song Meter Micro 2's firmware is via the **Utilities** menu (see [Load a Configuration to a Paired Recorder from an SD Card \(on page 35\)](#)). However, if you are unable to pair with the recorder, the procedure below will allow you to update the recorder's firmware without using the Song Meter Configurator app.

Procedure

1. Set the **On/Off** switch to **Off**.
2. Remove one battery from the battery tray. Leave it removed for **at least two minutes** while you complete the following steps.
3. Save the latest firmware file to a microSD card:
 - a. Download the current version firmware file from our Downloads page at <https://www.wildlifeacoustics.com/account/downloads/sm-micro>.
The firmware file name is formatted as sysmicro-X.Y.smm.
You must have a user account on wildlifeacoustics.com to access our Downloads page. Only an email address is required to create a user account.
 - b. Connect a microSD card to your computer.
If your computer has a built-in SD card slot, you can use a microSD-to-SD adapter. Otherwise, you can use a USB SD or microSD card reader.
 - c. Copy the firmware file to the top level of the microSD card.
"Top level" means the firmware file must not be inside a folder on the card.
There must be only one firmware file on the card.
 - d. Eject the microSD card from your computer's operating system before physically removing the card.
4. Insert the microSD card into the Song Meter Micro 2's microSD card slot.
5. After one battery has been removed for two minutes, proceed to the next steps.

6. Press and hold the **STATUS/PAIR** button. **Keep holding the button** for the following steps:
 - a. Reinsert the missing battery.
 - b. Switch the **On/Off** switch to **On**.
*All three **STATUS** LEDs will light up solid green.*
7. Release the **STATUS/PAIR** button.
*The **STATUS** LEDs will flash various patterns for several seconds, then the LEDs will show solid **Red, Green, Green** from top to bottom.*
8. Press and release the **STATUS/PAIR** button.
*The **STATUS** LEDs will flash red three times, then the firmware upgrade will take place.
 The **STATUS** LEDs will flash green three times to indicate a successful update, then the Song Meter Micro 2 will reboot.*
9. After the recorder reboots, open the **Status** screen to confirm that the new firmware version is listed.

Firmware Compatibility

The Song Meter Mini family of recorders and Song Meter Micro family of recorders require different firmware files.

All recorders in the Song Meter Mini family can be updated using a firmware file with the name format `sys-X.Y.smm`. These include:

- Song Meter Mini 2
- Song Meter Mini Bat 2
- First-generation Song Meter Mini
- First-generation Song Meter Mini Bat

Recorders in the Song Meter Micro family can be updated using a firmware file with the name format `sysmicro-X.Y.smm`. These include:

- Song Meter Micro 2
- First-generation Song Meter Micro

Weatherproofing

The Song Meter Micro 2 is designed to work in all kinds of weather, and will not let in any water under normal circumstances. However, there are a few routine checks that should be done to make sure that your recorder is as weatherproof as it was when you received it.

- Examine the red rubber gasket around the edge of the battery compartment. The gasket should be free of debris and tears.
 Note that DEET, a common ingredient in insect repellent, is known to degrade the plastic used in the Song Meter Micro 2 enclosure. When possible, avoid contact with insect repellent.
 Some plant oils may also soften the recorder's rubber gasket over extended periods of exposure.
- Avoid pointing microphones directly upwards.

Mounting

Avoid putting strain on the Song Meter Micro 2 enclosure by mounting it too tightly. This can distort the enclosure and break the seal, causing a gap that may allow water inside. Note that trees can sometimes grow rapidly enough to cause further strain on equipment that has been mounted on them.

Security



The upper-left and upper-right corners of the Song Meter Micro 2 enclosure feature loops through which a cable lock can be threaded to secure the recorder to a tree or structure. The diameter of the cable must be narrower than 0.420 in. (10.67 mm) to fit through these loops.

9. Song Meter Configurator App Overview

This section provides an overview of the Song Meter Configurator app interface. It describes how to navigate the app and what settings, functions, and information you will find in each part of the app. How to use these components is described in much greater detail in the following sections:

- For instructions on tasks that involve using the Song Meter Configurator app to start a deployment, see [Deploying the Song Meter Micro 2 \(on page 23\)](#).
- For instructions on configuring the settings on a Song Meter Micro 2 using the Song Meter Configurator app, see [Configuring the Song Meter Micro 2 \(on page 30\)](#). This section includes descriptions of all available settings and detailed instructions on designing a custom schedule (see [Design a Custom Schedule \(on page 47\)](#)).
- For instructions on maintaining the recorder, such as updating its firmware and testing the microphone, see [Maintaining and Protecting the Song Meter Micro 2 \(on page 57\)](#).

About the Song Meter Configurator App

The Song Meter Configurator app provides a simple interface for configuring the schedule and settings of the Song Meter Micro 2. It runs on phones and tablets running iOS and Android, and, once installed, it does not require an internet connection. See [Install the Song Meter Configurator App \(on page 24\)](#).



Important:

While you can configure most settings without using the app by loading a `.miniconfig` file from an SD card, **you must use the app to set the recorder's clock**. The recorder will not run its recording schedule if its clock has not been set.

The Song Meter Configurator app communicates with the recorder via Bluetooth connection. By default, the recorder broadcasts periodic status beacons that can be received by the Song Meter Configurator app running on nearby devices, even when the app is not paired with the recorder.

The app can also be paired with one recorder at a time for two-way communication. When paired to a recorder, the Song Meter Configurator app can be used to program the recorder's settings in real time. You can also transfer configuration files between the paired recorder and the app's **Configuration Library**.

Bluetooth Functionality

The Song Meter Micro 2 recorder uses the Bluetooth Low Energy protocol to communicate with the Song Meter Configurator app.



Note:

The process for pairing the Song Meter Micro 2 with the Song Meter Configurator app is not the same as the process you might use for pairing common Bluetooth accessories, like headphones. See [Pair the Recorder with the Song Meter Configurator App \(on page 25\)](#) for pairing instructions.

By default, when the Song Meter Micro 2 recorder is powered on, it generates a Bluetooth status beacon once every few seconds. If the recorder is within Bluetooth range of the mobile device, the Song Meter Configurator app will automatically detect the Bluetooth status beacon and the recorder will be detected and displayed in the **Recorders** screen of the app.

It is possible to disable the recorder's Bluetooth status beacons from the **Configuration Editor** screen (see [Send Bluetooth Beacons? \(on page 47\)](#)). If Bluetooth beacons are disabled, the recorder will not be detected by the app unless the **PAIR/STATUS** button on the recorder is pressed and held for three seconds.



Note:

The usable range of a Bluetooth signal varies from phone to phone and tablet to tablet, but it is usually under 30 feet, assuming a clear line of sight between the Song Meter Micro 2 and the phone or tablet.

Use Without Cellular Service

An internet connection is required to install the Song Meter Configurator app from the Apple App store or Google Play store. **Once the app is installed, an internet connection is not required** for any of the core functions of the app. You can manage and program your recorders using only local, Bluetooth communication.

Note on GPS and Location Data

The Song Meter Configurator can use your device's real-time location to automatically save deployment location to the Song Meter Micro 2 during pairing. Location data can also be entered manually in the [Location & Time Zone Screen \(on page 74\)](#). This location is saved to each audio file for later reference.

Most cellular-enabled devices, such as smartphones and some tablets with paid cellular plans, are equipped with a GPS antenna that receives information broadcast from GPS satellites orbiting Earth. This GPS data does not travel through the cellular network, so **a smartphone can receive location information from GPS even when not in range of a cellular tower**. The map data shown on the **Location & time zone** screen may not be visible without an internet connection, but the device's location coordinates do not rely on the Internet.

Most non-cellular-enabled devices, like tablets without a paid cellular plan, **do not have a GPS antenna**. These devices may be able to track approximate location data from nearby Wi-Fi routers, but this is generally not as precise as GPS location data, and it only works within about 50 meters of the nearest Wi-Fi router. A dedicated GPS receiver can be paired with a tablet via Bluetooth to provide more precise location data that can be used to set the Song Meter Micro 2's saved deployment location.

Supported Operating Systems

The Song Meter Configurator app is available for Android and iOS devices.

For Android devices, download and install the Android version from the Google Play store. The Configurator app requires Android version 8.0 or later in order to run.

For iOS devices, download and install the iOS version from the Apple App Store. The Configurator app requires iOS version 12.0 or later.



Note:

The Song Meter Configurator app cannot be installed if your device is running an older operating system than the minimum supported version.

Supported Languages

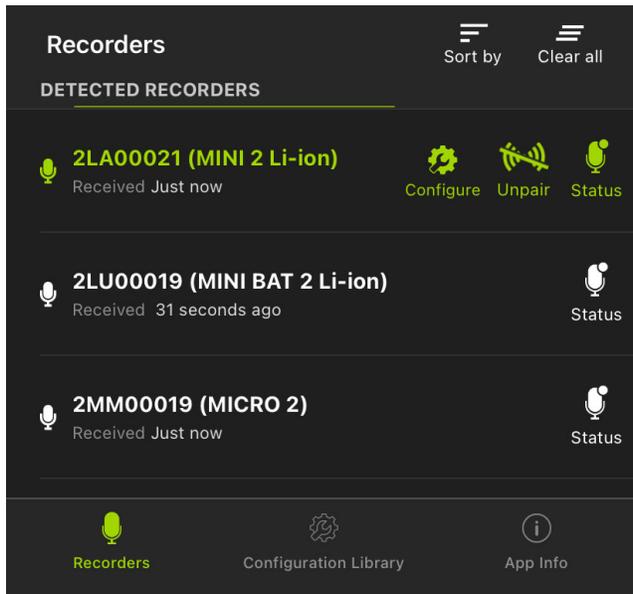
The Song Meter Configurator app is available in the following languages:

- English
- French
- Spanish
- Portuguese
- Chinese

- German
- Japanese

The display language of the Song Meter Configurator app will follow the Android or iOS system language setting. To manually set the language of the app, see [App Information Screen \(on page 86\)](#).

Recorders Screen



The **Recorders** screen lists each recorder within Bluetooth range and detected by the Song Meter Configurator app. Previously detected recorders that are out of Bluetooth range or powered off will remain in the list until removed.

The **Recorders** screen is also where you pair with a recorder in order to configure it. See [Pair the Recorder with the Song Meter Configurator App \(on page 25\)](#) for instructions on this procedure.

If a recorder is within range and powered on, but it does not show in the **Recorders** screen list, check whether the **Send Bluetooth Beacons?** utility is enabled for that recorder (see [Send Bluetooth Beacons? \(on page 47\)](#)).

Access the Recorders Screen

The **Recorders** screen is the first screen displayed when you open the Song Meter Configurator app. You can access the **Recorders** screen from the **Configuration Library** and **App Info** screens by tapping the **Recorders** icon in the navigation bar at the bottom of the screen.

Recorders Screen: Top Menu Bar

The top menu bar of the **Recorders** screen includes the following buttons, listed from left to right:

Sort by

Tap this icon to open a **Sort Recorders** menu with options to sort the recorders by one of two options. The currently used sort option is indicated by an upwards or downwards arrow. To toggle the sorting between ascending and descending, tap **Sort by**, then tap the currently used sorting option once more.

The available sorting options are:

By last time detected

Tap to sort entries in the **Recorders** list by how long ago each recorder's status was updated. When the sorting option is marked with an upwards arrow, recorders with more recently detected status updates are listed first.

By recorder name

Tap to sort recorders by their **RECORDER NAMES** in alphabetical or reverse-alphabetical order.

See [Configuration Editor Screen \(on page 71\)](#) for instructions on editing the **RECORDER NAME**.

Clear all

Tap this icon to clear all entries from the **Recorders** screen. Nearby recorders that are currently broadcasting Bluetooth beacons will repopulate the **Recorders** list within several seconds.

Detected Recorders List

The entries for **unpaired** recorders are represented by white text and icons, and they include the following information:

RECORDER NAME

The default value of a recorder's name is its serial number, but this can be changed to a custom value (see [Configuration Editor Screen \(on page 71\)](#)).

Received

This text lists when the Song Meter Configurator app last received a status update from the recorder. This text will read **Received Just now** for the first ten seconds after an update. After ten seconds, it will display a duration in seconds, minutes, hours, or days.

Status

Tap this icon to open the **Status** screen for the recorder, which displays the information the app most recently received from the recorder. See [Status Screen \(on page 66\)](#) for a breakdown of all information included on the **Status** screen.

The entry for a **paired** recorder is represented by green text and icons. It includes the same information as **unpaired** recorder entries, plus two additional icons. The Song Meter Configurator can only be paired with one recorder at a time.

Configure

Tap to open the **Configuration Editor** screen, where you can alter the settings of the paired recorder and perform many other functions. See [Configuration Editor Screen \(on page 71\)](#) for more information.

Unpair

Tap to unpair the Song Meter Configurator app from the Song Meter Micro 2. You must unpair from the currently paired recorder before you can pair with another.

For instructions on pairing with a recorder, see [Pair the Recorder with the Song Meter Configurator App \(on page 25\)](#).

Lower Navigation Bar

The navigation bar at the bottom of the **Recorders** screen shows icons for the **Recorders**, **Configuration Library**, and **App Info** screens. **Recorders** is highlighted in green to indicate the current screen. Tap on the **Configuration Library** or **App Info** icons to navigate to those respective screens.

See [Configuration Library Screen \(on page 84\)](#) and [App Information Screen \(on page 86\)](#).

Remove Entries from the Recorders Screen

You remove saved entries from recorders that are no longer nearby to declutter the **Recorders** screen.

About this task

Removing a recorder entry also deletes saved status information from the last time the recorder was nearby.

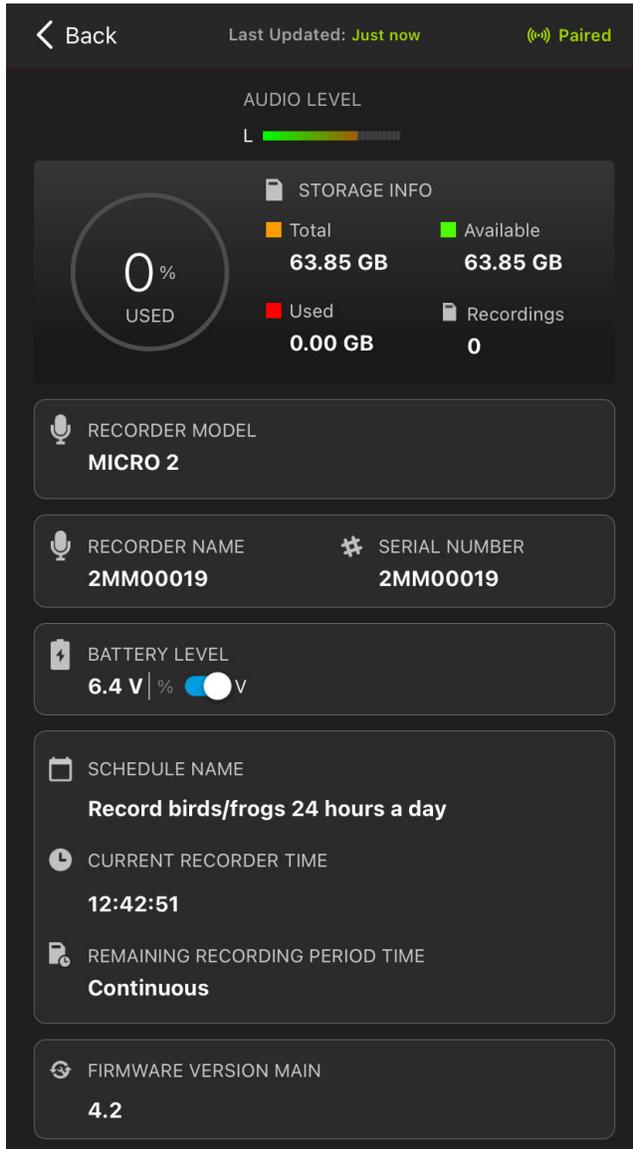
Procedure

- To remove all unpaired recorders, select **Clear all**.
- To remove a single recorder, swipe left on the recorder's entry to reveal a **Trash** button. Tap the **Trash** button or swipe all the way to the left edge of the screen.

Results

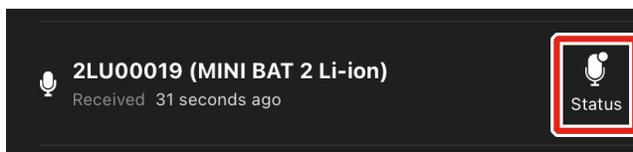
If any deleted recorders are nearby, powered on, and broadcasting Bluetooth beacons, they will reappear in the **Recorders** screen.

Status Screen



The **Status** screen displays all of the status information broadcast from a Song Meter Micro 2 and received by the Song Meter Configurator app. It shows information about the recorder's SD card, batteries, schedule settings, microphones, and firmware version.

To access the **Status** screen for a recorder, navigate to the [Recorders Screen \(on page 63\)](#), then tap the **Status** icon listed to the right of the recorder's name.



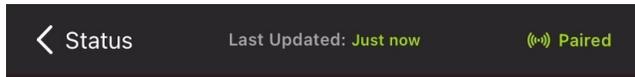
When a Song Meter Micro 2 is within Bluetooth range and either broadcasting Bluetooth beacons or paired with the app, its status will update in the app once every few seconds. The last-received status information for

a recorder is retained by the app when the app is closed, the mobile device or recorder are turned off, or the recorder moves out of Bluetooth range.

While a Song Meter Micro 2 is paired with the Song Meter Configurator app on one mobile device, it will not broadcast Bluetooth beacons for other mobile devices to receive. Only the paired mobile device will receive real-time status updates.

The **Status** screen displays the following information and interface elements, listed in order from top to bottom, left to right:

Top-Most Info Bar



< Status (back icon)

Tap this icon to exit the **Status** screen and return to the **Recorders** screen.

Last Updated

This text indicates when the Song Meter Configurator app last received status information from the selected recorder.

Paired/Unpaired

This text indicates whether the recorder is paired with the app or not.

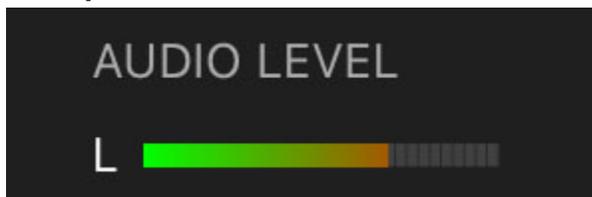
New Firmware Alert



If the app detects that the recorder is running an older firmware version than the latest available, a message will be displayed below the top-most info bar. This message includes a link to instructions on updating the firmware as well as release notes for the latest available firmware version.

To close this alert, tap **DISMISS**.

Microphone Level Panel



This panel is only visible when the recorder is paired with the app. It displays a real-time representation of the microphone's incoming signal level.

AUDIO LEVEL

This meter displays a real-time representation of the volume of sound being picked up by the Song Meter Micro 2's microphone.

The meter will only be responsive if the recorder is currently running a recording period.

Storage Info Panel



Error Message Readout

If there is a problem with the SD card, an error message will be displayed underneath the **STORAGE INFO** text. See [SD Card Error Messages \(on page 100\)](#) for descriptions of common error messages.

Storage Percentage Used

This circular graph and percentage text indicate what proportion of the available space on the SD Card has been used.

Total

In gigabytes, shows how much total space, used and available, is present on the SD card.

Available

In gigabytes, shows how much space is unused and available for recording storage on the SD card.

Used

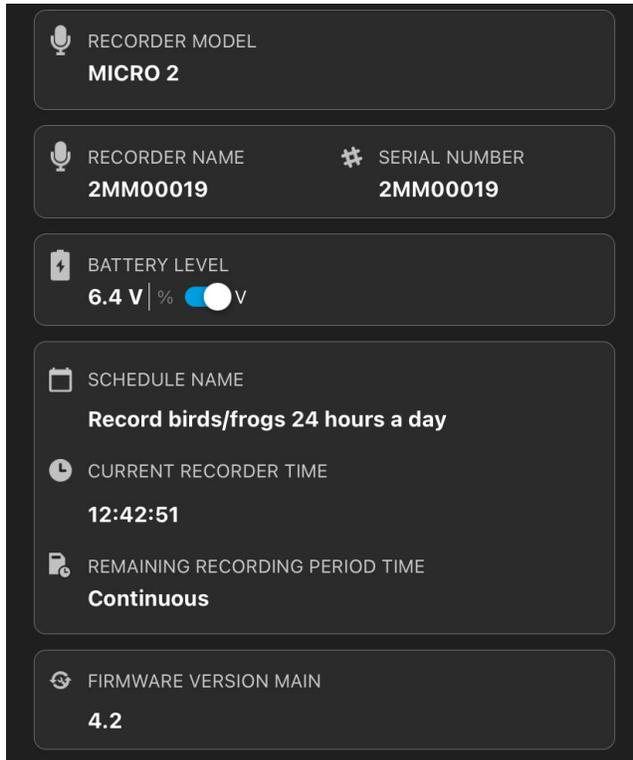
In gigabytes, shows how much space on the SD card is occupied by recordings or other data.⁵

Recordings

Number of separate recording files saved to the SD card since the recorder was last powered on. This number will reset to zero when the recorder powers off or when the SD card is reformatted.

5. If the contents of an SD card were "Moved to trash" using a computer, that space may still be shown as **Used** in the **Status** screen. Formatting the SD card will make all of the card's space available. See [Format the SD Card \(on page 27\)](#).

Other Info Panels



RECORDER MODEL

Displays the model name of the recorder.

RECORDER NAME

Displays the name of the recorder. By default, the name is the recorder's serial number, but it can be customized in the [Configuration Editor Screen \(on page 71\)](#).

SERIAL NUMBER

Displays the serial number of the recorder.

The same serial number is also printed on the right side of the recorder's enclosure.

BATTERY LEVEL

Displays the state of the recorder's batteries.

The **V/%** toggle switch determines whether the battery level is displayed as a Voltage reading or an estimation of the remaining battery life percentage.⁶

SCHEDULE NAME

If the recorder is running one of the preset schedules, selected from the **Configuration Editor** screen, the name of the schedule will be displayed here. If the recorder is running a custom schedule, **Custom Schedule** will be displayed here.

6. For AA batteries, the battery life percentage is estimated based on the typical behavior of alkaline AA batteries. **The battery life percentage estimate is not accurate for NiMH batteries or Energizer Ultimate Lithium batteries.**

CURRENT RECORDER TIME

Displays the time of the recorder's internal clock.

If the app is not currently receiving status updates from the recorder, the time of the last received status update is shown instead.

START TIME OF NEXT RECORDING

If the Song Meter Micro 2 is not currently recording, this displays the time of the recorder's next scheduled recording period.

This text will only display if an SD card is installed with enough available space for the next recording period.

REMAINING RECORDING PERIOD TIME

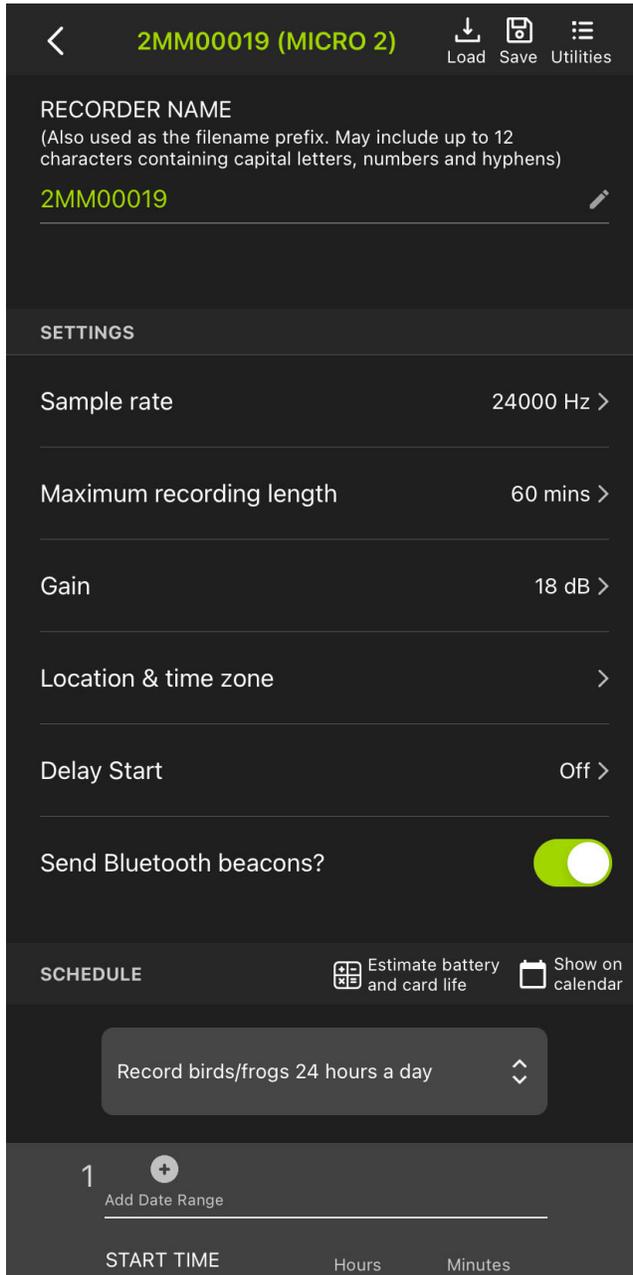
If the Song Meter Micro 2 is running a preset schedule and is currently recording, this the amount of time remaining in the current recording period. If the recorder is running a 24-hour schedule, this will read **Continuous**.

This information is not displayed for recorders running custom schedules.

FIRMWARE VERSION

Displays the recorder's installed firmware version.

Configuration Editor Screen



The **Configuration Editor** screen is the interface for editing all of the Song Meter Micro 2's settings. When the Song Meter Configurator app is paired with a recorder, you can edit the recorder's settings directly, updating the recorder immediately with each setting change.

Alternatively, you can create a saved configuration in the Song Meter Configurator app's **Configuration Library**, and this configuration can be loaded onto multiple recorders, shared with a colleague, or saved for later use.

Whether you are directly editing the settings of a paired recorder or editing a configuration in the **Configuration Library**, the **Configuration Editor** interface is mostly identical, with only a few differences.

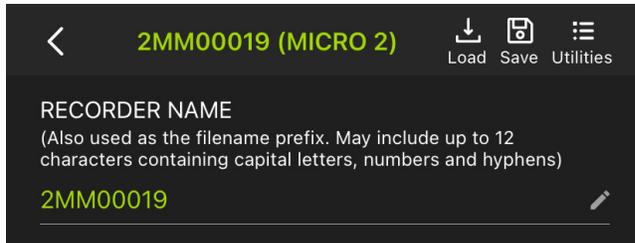
**Note:**

This section only covers the interface elements that are specific to the **Paired** and **Library Configuration Editor** screens.

For a full description of each available setting, see [Settings Reference \(on page 45\)](#).

For a full description of how the schedule system works, see [Design a Custom Schedule \(on page 47\)](#).

Paired Configuration Editor



When you directly configure a paired recorder, the **Configuration Editor** has several unique features that are not available when editing a configuration in the **Configuration Library**.

Top-Most Info Bar

< (back), Recorder Name, and Recorder Model

This text displays the paired recorder's name and model. Tap on this text to return to the **Recorders** screen.

Load

Tap to load a configuration from the app's **Configuration Library**, updating all of the paired recorder's settings to match.

See [Load a Configuration from the Configuration Library to a Paired Recorder \(on page 34\)](#) for full instructions.

Save

Tap to save a copy of the paired recorder's settings to the **Configuration Library** with a custom Configuration Name.

See [Save a Configuration File from a Paired Recorder to the Configuration Library \(on page 37\)](#) for full instructions.

Utilities

Tap to access various utility functions. See [Utilities Menu \(on page 73\)](#) for descriptions of all available utility functions.

Recorder Name Panel

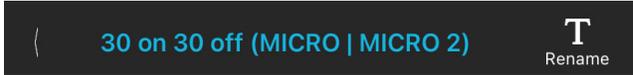
The **RECORDER NAME** displays the current recorder name as an editable text field. Tap on the recorder name or on the pencil icon to edit the recorder name. The default value of the **RECORDER NAME** is the recorder's serial number.

The **RECORDER NAME** is saved as the prefix of every audio file name for easy file organization. It is also saved to the metadata of each .wav audio file in the "WA|Song Meter|Prefix" field.

Send Bluetooth Beacons?

The **Send Bluetooth Beacons?** setting can only be edited directly on a paired recorder. See [Send Bluetooth Beacons? \(on page 47\)](#) for details on this setting.

Library Configuration Editor



When you are editing a configuration saved in the **Configuration Library**, the top-most info bar of the **Configuration Editor** displays the following:

< (back), Configuration Name, and Recorder Model

Tap the < icon or any of the text displayed here to return to the **Configuration Library**.

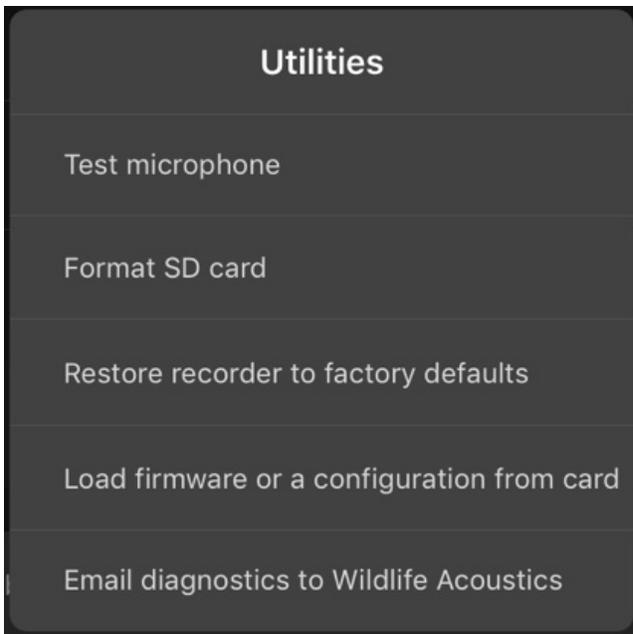
This text displays the name of the configuration currently being edited as well as the compatible recorder models for the configuration. A configuration can only be used of recorders of a single model, on both the first and second generations.

Rename

Tap to open a **Configuration Name** window, where you can enter a new name for the saved configuration.

Note that the **Send Bluetooth Beacons?** setting cannot be edited from the **Configuration Library**. This setting can only be edited on a paired recorder. See [Send Bluetooth Beacons? \(on page 47\)](#) for details on this setting.

Utilities Menu



When configuring a paired Song Meter Micro 2, the **Utilities** menu provides easy access to several useful functions.

To access the **Utilities** menu, tap the **Utilities** icon at the top right of the **Configuration Editor** screen when configuring a paired recorder.

The **Utilities** menu brings up the following utilities:

Test microphone

Tap to open an interface for testing the Song Meter Micro 2's microphones with a reference signal generator.

See [Testing the Internal Microphone \(on page 104\)](#) for detailed test instructions.

Format SD card

Tap to format the Song Meter Micro 2's SD card, erasing all contents and resetting the card to an initialized state.

See [Format the SD Card \(on page 27\)](#) for instructions on multiple methods of formatting the SD card.

Restore recorder to factory defaults

Tap to restore the Song Meter Micro 2's default settings.

See [Restore Recorder to Factory Defaults \(on page 102\)](#) for full instructions.

Load firmware or a configuration from card

Tap to update the Song Meter Micro 2's firmware or its settings from a file on its SD card.

See [Update the Recorder's Firmware \(on page 57\)](#) for firmware update instructions.

See [Configuration Files on the SD Card \(on page 44\)](#) for details on working with configuration files on the SD card.

Email diagnostics to Wildlife Acoustics

Tap to generate a new email, addressed to the Wildlife Acoustics Support team, with a diagnostics file exported from the Song Meter Micro 2.

See [Export Diagnostics Files \(on page 103\)](#) for more information and alternative ways to export diagnostics files.

Location & Time Zone Screen

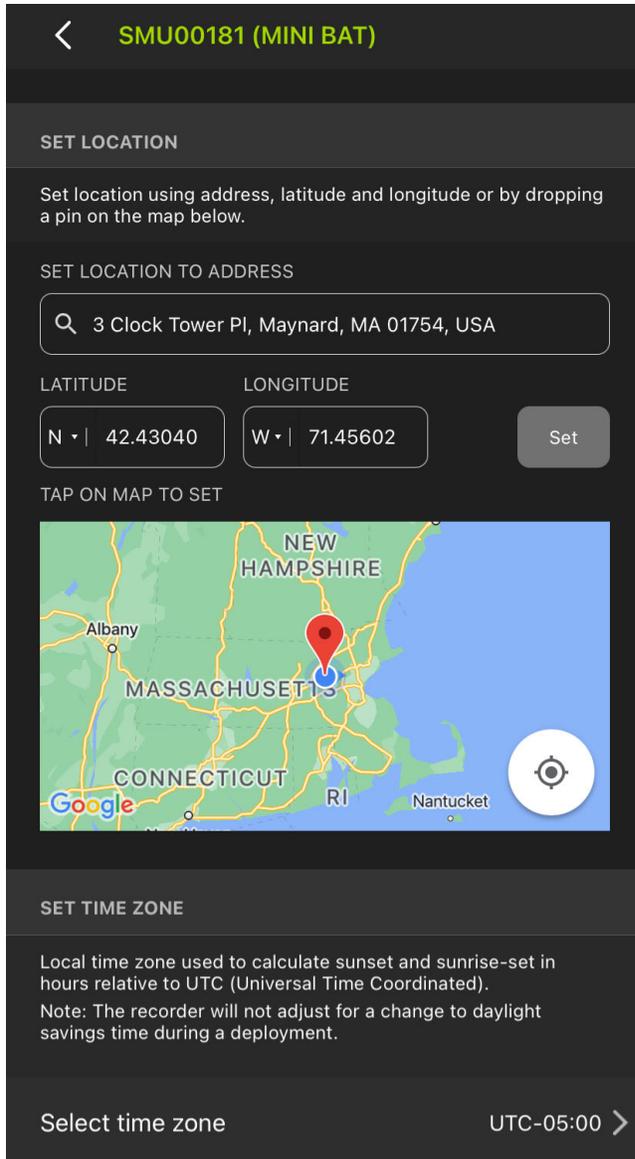
The Song Meter Micro 2 deployment location and time zone can be set in the **Location & Time Zone** screen, accessed from the **Configuration Editor** screen.

Location and time zone information are embedded in the metadata of files created by the Song Meter Micro 2 recorder (see [SD Card Contents \(on page 93\)](#)).

The saved location settings must match the recorder's actual deployment location to within approximately 0.25 degrees if sunrise or sunset times are to be used in a recording schedule.

The time zone setting must match the time zone convention you want the recorder to follow. Note that in regions that practice daylight savings time, the time zone conventions are different for standard and daylight time.

Deployment location and time zone can be set automatically when the Song Meter Micro 2 recorder is first paired with the Song Meter Configurator app (see [Pair the Recorder with the Song Meter Configurator App \(on page 25\)](#)).



Enter and Exit the Location & Time Zone Screen

The **Location & Time Zone** screen can be accessed from the **Configuration Editor** either when configuring a paired recorder or when editing a configuration in the **Configuration Library**. In the **Configuration Editor**, under the **SETTINGS** heading, tap **Location & time zone**.

To exit the **Location & Time Zone** screen, tap the < (back) icon at the top-left corner of the screen.

Map

If the mobile device is connected to the Internet, or if the nearby area is saved in Google Maps™ as an offline map, this panel will display an interactive map. The location saved to the paired Song Meter Micro 2 or to the configuration is indicated by a red pin, and the mobile device's current location is indicated by a blue dot. A light-blue halo around the blue dot indicates the level of precision for the mobile device's detected location.



Note:

Map data for specific regions can be saved to your mobile device for offline use using the Google Maps app. For full instructions, refer to this [Google support article](#).



Note:

Many tablets that do not have cellular connectivity also lack a built-in GPS antenna. Without a GPS antenna, a tablet can detect its approximate location from nearby Wi-Fi routers, but this data is not very precise, and it is only available when Wi-Fi routers are nearby.

A tablet paired with a dedicated GPS unit like the Garmin® GLO™ 2 can access more precise location data.

The map on the **Location & Time Zone** screen is based on the Google Maps interface. Many gestures used for navigating the map mimic those used in the Google Maps app.

- **Touch and drag with one finger** to pan across the map in any direction.
- **Double-tap with one finger** to zoom in on the tapped location.
- **Pinch with two fingers** to zoom in and out by spreading two fingers apart or bringing them together.
- **Tap once with one finger** to save the tapped location as the deployment location, marked with a red pin.
- **Tap the Crosshairs icon** to center the map view on your mobile device's location.

Schedule Editor Interface

The **Schedule Editor** occupies the lower half of the [Configuration Editor Screen \(on page 71\)](#).

This section and the following subsections will describe the interface of the **Schedule Editor** and the basic functions of each element of the editing interface. For more information on how schedules work and how to design a custom schedule yourself, see [Design a Custom Schedule \(on page 47\)](#).

The screenshot displays the 'SCHEDULE' editor interface. At the top, there are two icons: 'Estimate battery and card life' and 'Show on calendar'. Below these is a 'Custom Schedule' dropdown menu. The main configuration area is divided into several sections:

- 1 Remove Date Range:** A section with a minus icon and a horizontal line.
- START DATE:** Includes 'Month' (04) and 'Day' (18) dropdowns.
- START TIME:** Includes 'Time' dropdown, a plus sign, and 'Hours' (00) and 'Minutes' (00) dropdowns.
- DUTY CYCLE:** Includes a 'Cycle' dropdown.
- Duty On / Duty Off:** Includes 'Hours' and 'Minutes' dropdowns for both 'Duty On' (00:15) and 'Duty Off' (00:45).
- END TIME:** Includes 'Time' dropdown, a plus sign, and 'Hours' (00) and 'Minutes' (00) dropdowns.
- DAY DUTY CYCLE:** Includes a 'Cycle' dropdown.
- Duty On / Duty Off (Day):** Includes 'Day' dropdowns for both 'Duty On' (01) and 'Duty Off' (01).

Schedule Editor: Upper Elements

Estimate battery and card life

Tap to open the [Estimate Battery and Card Life Window \(on page 54\)](#).

Show on Calendar

Tap to open the [Schedule Calendar \(on page 81\)](#) for the active schedule.

Preset Schedules

Tap to select one of the [Preset Schedules \(on page 78\)](#). **Doing so will overwrite the existing schedule.**

Preset Schedules

The Song Meter Configurator app includes preset schedules for several common recording schedules. You can use these as-is, or you can use them as a starting point for a custom schedule.⁷

Preset schedules are:

- Record birds/frogs 24 hours a day
- Record birds/frogs for 30 minutes of every hour.
- Record birds/frogs for 5 minutes of every hour
- Record birds/frogs from sunrise to sunset
- Record birds/frogs 2 hours around sunrise and 2 hours around sunset.

Select a Preset Schedule

About this task

A preset schedule can be applied directly to a paired recorder or set as part of a configuration file.

Procedure

1. Open the **Configuration Editor** to configure a paired recorder or edit a configuration file.
See [Configuration Editor Screen \(on page 71\)](#).
2. Under the **SCHEDULE** heading, tap the dropdown menu that displays the current schedule's name.
If the current schedule matches one of the preset schedules, that preset's name will be displayed. Otherwise, the name **Custom Schedule** is displayed.
3. In the dropdown menu, tap the desired schedule to select it, or tap outside of the menu to cancel any changes.

Results

If configuring a paired recorder, selecting a preset schedule will immediately apply it to the recorder.

If editing a configuration file, the selected preset is immediately applied to the configuration file.

Schedule Block Elements

Each schedule can be composed of up to 10 schedule blocks, listed vertically below the **Preset Schedules** dropdown menu. Each schedule block includes the elements listed below. Note that the functions of these elements and how they can be used are described in much greater detail in [Design a Custom Schedule \(on page 47\)](#).

Add Date Range / Remove Date Range

Tap to add or remove the **START DATE**, **DAY DUTY CYCLE**, and **END DATE** features from the schedule block. When these features are disabled, the schedule block will run each day.

START DATE: Month and Day

When **Date Range** is active, these dropdowns determine the date when the schedule block begins running.

7. See [Design a Custom Schedule \(on page 47\)](#) for details on how the schedule system works and how to make modifications to a schedule.

START TIME Section

These controls determine when, during a 24-hour period, the schedule block starts running.

Time / Rise / Set

When **Time** is selected, the schedule block will start at a fixed time on the clock each day.

When **Rise** or **Set** is selected, the schedule block will start at a fixed offset relative to sunrise or sunset, respectively.

+ / -

Not active when **Time** is selected.

When **Rise** or **Set** is selected:

- + specifies an offset **after** sunrise or sunset.
- - specifies an offset **before** sunrise or sunset.

Hours and Minutes

When **Time** is selected, these dropdowns define the fixed time when the schedule block begins running, using the 24-hour clock system.

When **Rise** or **Set** is selected, these dropdowns define the length of the offset before or after sunrise or sunset.

DUTY CYCLE Section

Always / Cycle

Tap to select whether the schedule block runs continuously between its start and end times or follows a duty cycle.

Duty On: Hours and Minutes

When **Cycle** is selected, these dropdowns define the length of the active portion of the duty cycle.

Duty Off: Hours and Minutes

When **Cycle** is selected, these dropdowns define the length of the inactive portion of the duty cycle.

END TIME Section

These controls determine when, during a 24-hour period, the schedule block stops running.

Time / Rise / Set

When **Time** is selected, the schedule block will end at a fixed time on the clock each day.

When **Rise** or **Set** is selected, the schedule block will end at a fixed offset relative to sunrise or sunset, respectively.

+ / -

Not active when **Time** is selected.

When **Rise** or **Set** is selected:

- + specifies an offset **after** sunrise or sunset.
- - specifies an offset **before** sunrise or sunset.

Hours and Minutes

When **Time** is selected, these dropdowns define the fixed time when the schedule block stops running, using the 24-hour clock system.

When **Rise** or **Set** is selected, these dropdowns define the length of the offset before or after sunrise or sunset.

DAY DUTY CYCLE Section

These controls are only visible when a **Date Range** is enabled for a given schedule block.

Always / Cycle

Tap to select whether the schedule block runs every day between the **START DATE** and **END DATE** or whether it follows a duty cycle to determine on which days to run.

Duty On: Days

When **Cycle** is selected, this determines the length, in days, of the active portion **DAY DUTY CYCLE**.

Duty Off

When **Cycle** is selected, this determines the length, in days, of the inactive portion **DAY DUTY CYCLE**.

END DATE: Month and Day

When **Date Range** is active, these dropdowns determine the date when the schedule block stops running.

Add and Delete Block Buttons

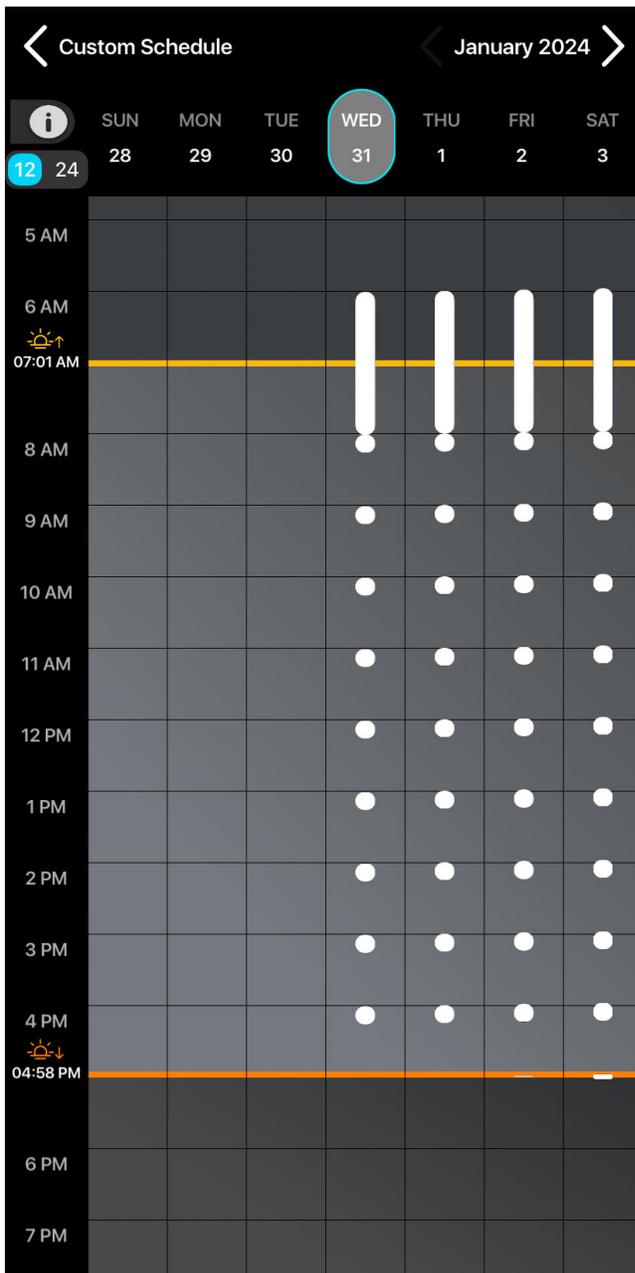
Add

Located at the bottom-right of the bottom-most schedule block. Tap to insert a new block into the schedule, up to a maximum of ten.

Delete

Located at the bottom-right of each schedule block, provided more than one block is present. Tap to remove the block from the schedule, down to a minimum of one.

Schedule Calendar



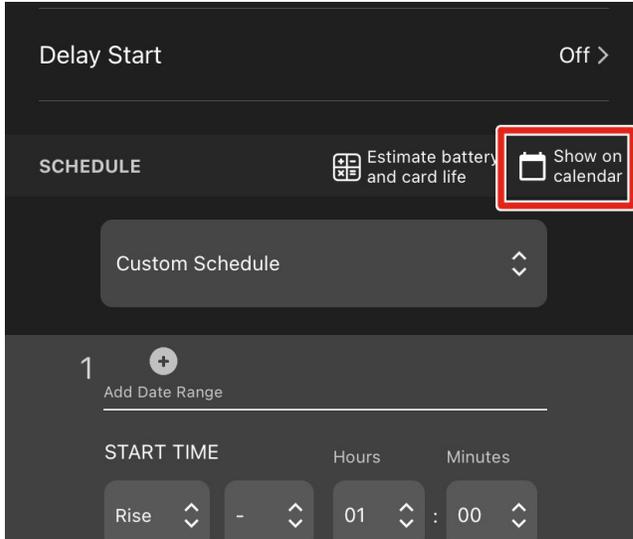
The **Schedule Calendar** provides a visual representation of your recording schedule. It shows when your recorder will be active during any given day. This is especially useful for complex schedules comprised of multiple schedule blocks. By looking at the **Schedule Calendar**, you can:

- Confirm that the schedule shown on the calendar matches your intended schedule.
- Check whether any recording periods from multiple blocks overlap with each other.
- See how changes in sunrise and sunset during the course of a deployment will affect your schedule.
- Confirm that schedule blocks with date ranges or day duty cycles are active on the expected dates.

To learn more about recording periods and how to construct a recording schedule, see [Design a Custom Schedule \(on page 47\)](#).

Enter and Exit the Schedule Calendar

To access the **Schedule Calendar** from the **Configuration Editor** screen, tap **Show on calendar**.

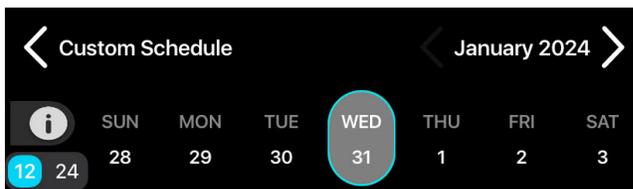


There are two methods to exit the **Schedule Calendar**:

- Tap the < icon or the **Schedule Name** in the top-left corner of the screen.
- Touch the left edge of the screen with one finger and swipe right.

Navigate and Select Dates

The calendar displays one week of dates at a time, from Sunday to Saturday, arranged horizontally. The currently displayed dates are listed across the top of the calendar panel. A single **Selected Date** is highlighted in light gray with a blue border. The **Month and Year** of the **Selected Date** are displayed in the upper right of the calendar screen.



To **navigate between months**, tap the < and > buttons on either side of the **Month and Year** text.

To **navigate between weeks**, use one finger to touch anywhere in the main panel of the calendar and swipe left or right.

To change the **Selected Date**, tap on the day name or date number of the desired date above the calendar's main panel. The **Selected Date** determines the values of sunrise and sunset times displayed in the calendar (see [Sunrise and Sunset Times \(on page 83\)](#)).

Scroll and Zoom the Calendar

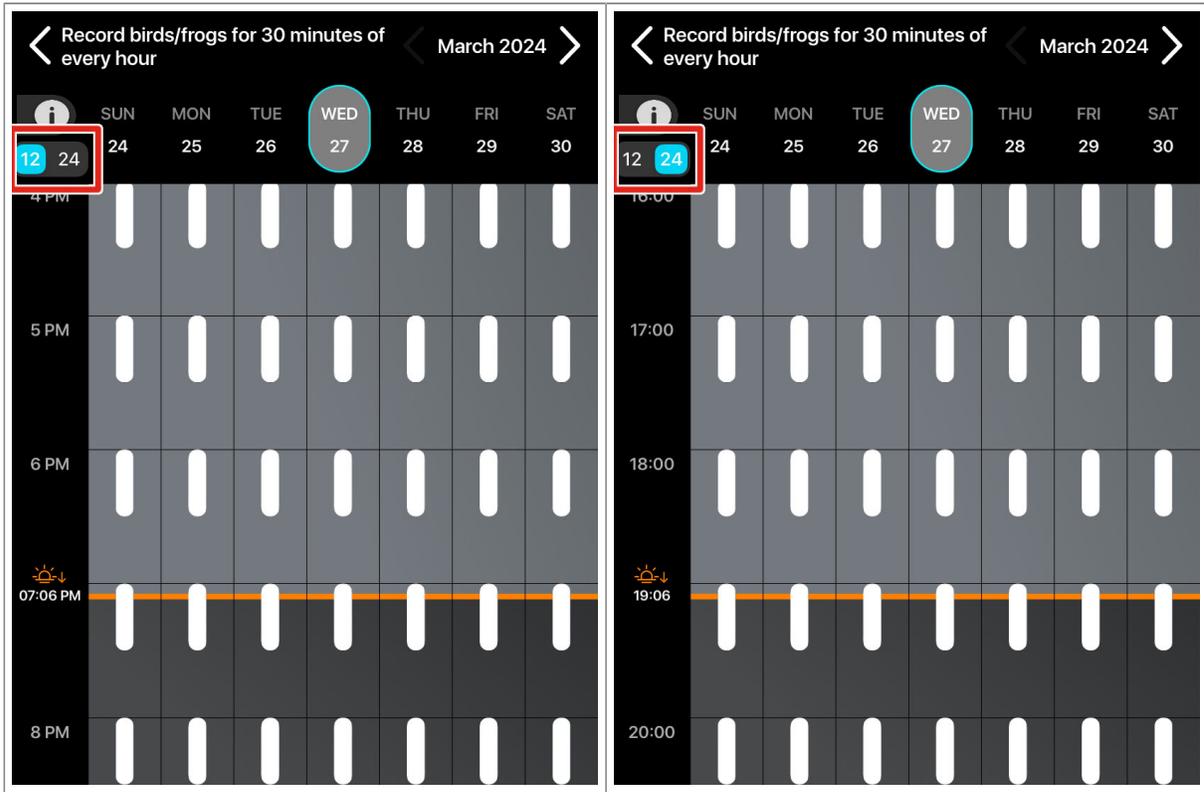
Time of day is visually segmented into one-hour blocks in the calendar's main panel. Each block is labeled by hour in the vertical axis to the left of the calendar's main panel.

To scroll through time of day, use one finger to touch the main calendar panel and drag up or down.

To adjust the vertical zoom level, touch the calendar panel with two fingers, arranged vertically, and move your fingers together or away from each other.

Set 12-Hour or 24-Hour Time Convention

To change whether the time labels on the vertical axis use 12-hour or 24-hour clock conventions, tap the **12/24** toggle switch above the time axis.



12-hour convention (left) and 24-hour convention (right).

Sunrise and Sunset Times

The **Schedule Calendar** displays calculated sunrise and sunset times for the **Selected Date** along the vertical axis. Sunrise is indicated by a yellow line and a  icon. Sunset is indicated by an orange line and a  icon.

While the lines indicating sunrise and sunset are drawn across the entire displayed week, the precisely calculated times are based only on the **Selected Date** (see [Navigate and Select Dates \(on page 82\)](#)).



Note:

Sunrise and sunset are calculated for each date based on the recorder's saved deployment location and time zone. If the sunrise and sunset times shown on the calendar for the current date do not match reality, check the [Location & Time Zone Screen \(on page 74\)](#) to confirm the following:

- The saved location is accurate to within 0.250 degrees latitude and longitude.
- The saved time zone matches your current local time zone.

Note that the Song Meter Micro 2 will not adjust for changes between Daylight and Standard time without pairing with the Song Meter Configurator app.

Recording Periods on the Calendar

Acoustic recording periods are shown on the **Schedule Calendar** as white, rounded rectangles.

To view a legend that shows what each color means in the **Schedule Calendar**, tap the  icon to the upper left of the main calendar panel.

Recording periods that overlap with each other are shown as a single, combined recording period. This reflects that the Song Meter Micro 2 combines overlapping recording periods into one, longer recording period.

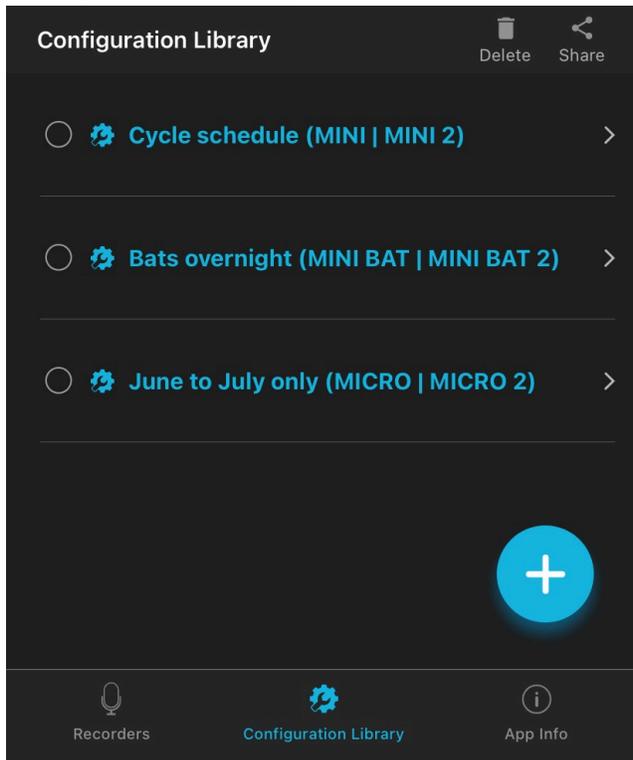
Configuration Library Screen

The **Configuration Library** screen can be accessed by tapping the **Configuration Library** icon at the bottom center of the **Recorders** screen or **App Info** screen.

The **Configuration Library** allows you to store, edit, and share configuration files. Configuration files store a nearly full collection of settings for a Song Meter Micro 2. Configuration files provide a way to consistently apply the same settings to multiple recorders or across multiple deployments. See [Manage Configuration Files \(on page 36\)](#) for more information.⁸

8. The **Recorder Name** and **Send Bluetooth Beacons?** settings cannot be set using a configuration file. To alter these settings, you must [Configure a Paired Recorder Directly \(on page 32\)](#).

Configuration Library Interface



The top-most info bar on the **Configuration Library** screen includes two buttons:

Delete

After selecting one or multiple configurations from the list, tap this button to delete them. See [Delete a Saved Configuration File \(on page 42\)](#).

Share

After selecting one or multiple configurations from the list, tap this button to share the configuration file using another app on your device. See [Share a Saved Configuration File \(on page 43\)](#).

The entry for each configuration includes the following elements:

Selection bubble

Tap this bubble, on the left side of each list entry, to select the configuration for deletion or sharing. You can select multiple configurations at once.

Configuration name and model

This text displays the name for each configuration as well as the Song Meter models with which it can be used.

Tap on this text to edit the configuration. See [Edit a Saved Configuration File \(on page 41\)](#)

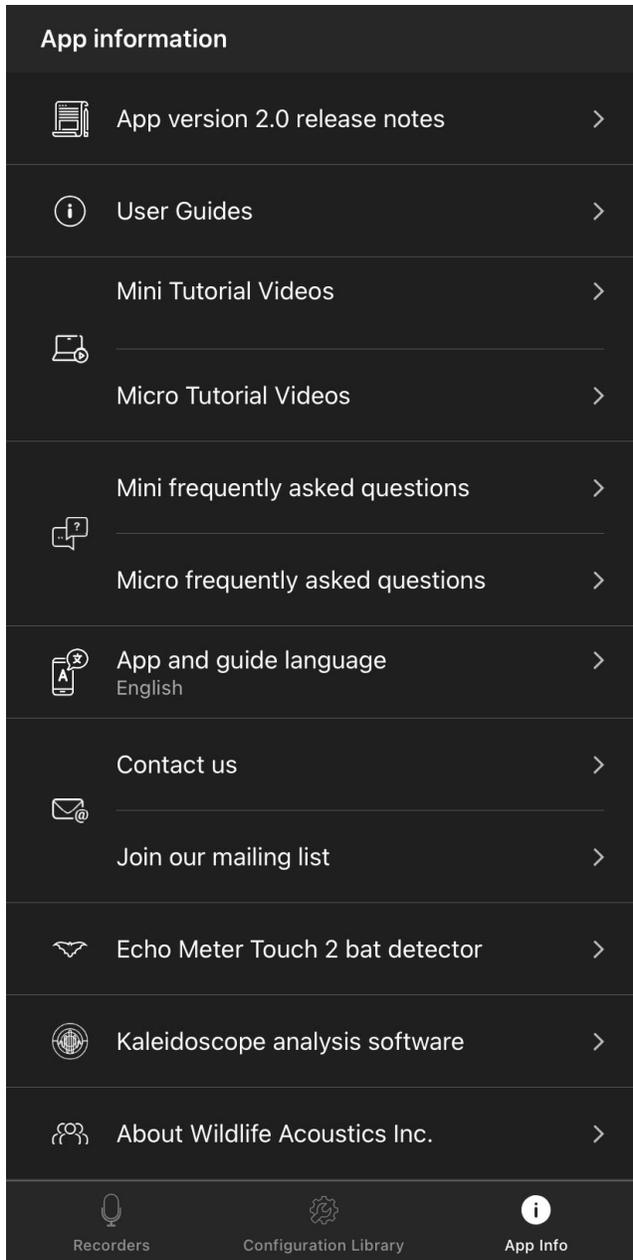
In the bottom-right corner of the **Configuration Library** window is one additional button:

+ (Add Configuration)

Tap this icon to create a new configuration from scratch. See [Create a Configuration File in the Configuration Library Screen \(on page 36\)](#).

Below the interface for the **Configuration Library** itself are buttons for accessing the [Recorders Screen \(on page 63\)](#) and [App Information Screen \(on page 86\)](#).

App Information Screen



The **App Information** screen is accessed by tapping the **App Info** button at the bottom right of the **Recorders** or **Configuration Library** screens. It contains:

- Information about the current version of the app.
- Links to user guides, tutorial videos, and frequently asked questions for Wildlife Acoustics recorders.
- Language settings for the Song Meter Configurator app.

- Contact info for Wildlife Acoustics.
- Information about other Wildlife Acoustics products.

App Version Number and Release Notes

The current version of the Song Meter Configurator app is listed. Tapping this entry opens a screen with release notes for the installed app version.

User Guides, Tutorial Videos, and Frequently Asked Questions

User guides for all versions of the Song Meter Mini and Song Meter Micro families of recorders can be accessed from within the app. These user guides are included in the app installation and can therefore be accessed without an internet connection.

The entries for Tutorial Videos and Frequently Asked Questions will open a web browser window on your device to show the corresponding pages on our website. See [Video Tutorials \(on page 107\)](#) and [Frequently Asked Questions \(on page 107\)](#).

Viewing these pages requires an internet connection.

App and Guide Language

Tap this item to change the language used by the Song Meter Configurator app and built-in user guides. By default, the app will use the language system setting of the iOS or Android device if a translation exists for that language. A manual selection from this menu will override the default setting.

The Song Meter Configurator app is available in the following languages:

- English
- French
- Spanish
- Portuguese
- Chinese
- German
- Japanese

Other Links

Contact Us

Tap this item to generate a blank email addressed to Wildlife Acoustics Support, <mailto:support2025@wildlifeacoustics.com>. Sending an email requires an active internet connection.

You can also contact Wildlife Acoustics Support through the Support Contact Form on our website at <https://www.wildlifeacoustics.com/support>.

Join Our Mailing List

Opens your web browser to a page where you can join our [Email List](#). Join our email list to get notified about upcoming training opportunities, important technical service bulletins, webinars, our quarterly grant program, and product updates.

Echo Meter Touch 2 Bat Detector

Opens your web browser to the product page for the Echo Meter® Touch 2, a device that allows you to hear and record bat echolocations in real-time using your smartphone or tablet.

(Compatible with Android and iOS devices that have a USB-C port. Available in two versions: PRO and Standard.)

Kaleidoscope Pro Sound Analysis Software

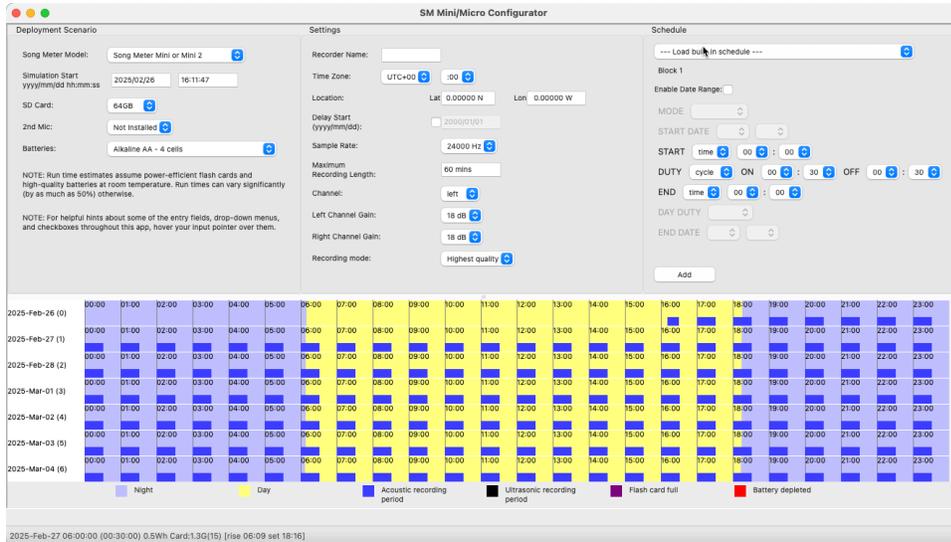
Opens your web browser to the product page for Kaleidoscope Pro, our desktop audio analysis software.

About Wildlife Acoustics, Inc.

Displays a short info page about us.

10. Song Meter Desktop Configurator Overview

The desktop configurator allows you to create configuration files and view the settings associated with previous recordings.



The desktop configurator is available for free and compatible with computers running Windows, MacOS, and Red Hat Enterprise Linux. It has the same capabilities as the Song Meter Configurator mobile app for creating configuration files and estimating battery life and SD card usage.

Additionally, you can open a .wav file recorded using a Song Meter Micro 2 to view the settings and schedule the recorder was using at the time. You can then modify or export those settings as a configuration file to help recreate a previous deployment.

Video Tutorial

The following video covers the full process of using the desktop configurator to configure a Song Meter:

<https://player.vimeo.com/video/1024131427>

Install the Song Meter Desktop Configurator

The desktop configurator can be downloaded from the Wildlife Acoustics website for free.

Install the Song Meter Desktop Configurator on macOS

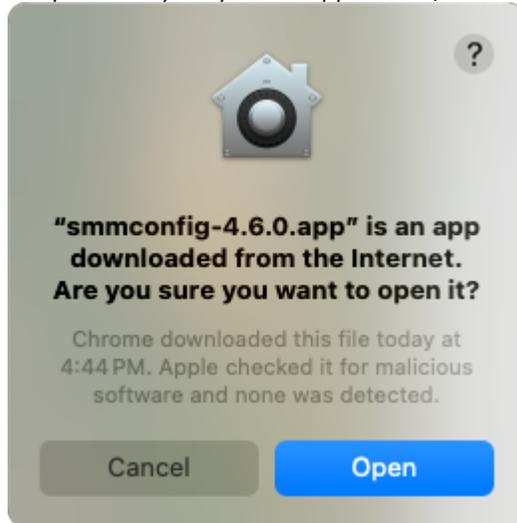
The latest version of the desktop configurator is compatible with MacOS Catalina (10.15) and later.

Procedure

1. Go to <https://www.wildlifeacoustics.com> and go to **My Account > Downloads > Song Meter Micro Family > Mini Micro Configurator Software (1st and 2nd generations) > View.**
2. Select the **Download Version** compatible with your operating system and select **Download.**

Operating System	Configurator Version
macOS Catalina (10.15) or later	Latest available
macOS Mojave (10.14) or earlier	3.7.0

3. Open the downloaded .zip file and move the unpacked `smmconfig-X.Y.Z.app` file to your Applications folder.
4. Open the `smmconfig-X.Y.Z.app` file.
The first time you open the application, macOS may ask for confirmation before opening.



Install the Song Meter Desktop Configurator on Windows

The Song Meter Desktop Configurator is compatible with 32- and 64-bit Windows systems.

Before you begin

Installing the Desktop Configurator normally requires administrator privileges. Ask your IT department for assistance if you do not have the necessary privileges on your computer.

Procedure

1. Go to <https://www.wildlifeacoustics.com> and go to **My Account > Downloads > Song Meter Micro Family > Mini Micro Configurator Software (1st and 2nd generations) > Pick OS > View**.
2. Select **Download**.
3. Open the downloaded installer, `SongMeterMiniMicroConfiguratorInstaller-X.Y.Z.exe`.
4. Follow the instructions to install the software for all users on your computer.
5. Go to the installation directory you selected and open the **smmconfig** application.

Install the Song Meter Desktop Configurator on Red Hat Enterprise Linux

The Song Meter Desktop Configurator is supported for RHEL 9 and later.

About this task

The version of the Song Meter Desktop Configurator built for RHEL may work on other distributions of Linux, but Wildlife Acoustics does not guarantee compatibility with other distributions and cannot provide support for issues related to compatibility with other distributions.

Procedure

1. Go to <https://www.wildlifeacoustics.com> and go to **My Account > Downloads > Song Meter Micro Family > Mini Micro Configurator Software (1st and 2nd generations) > Pick OS > View**.
2. Select **Download**.
3. Open the downloaded file, `smmconfig-X.Y.Z.x86_64.rpm` follow your system's installation instructions.

Create a Configuration File Using the Desktop Configurator

A configuration file can be saved to an SD card or sent to a mobile device with the configurator mobile app to program one or more Song Meter Micro 2 recorders.

Procedure

1. In the **Deployment Scenario** panel, select the **Song Meter Model** you want to program. The **Song Meter Model** determines which settings are available to you. The other **Deployment Scenario** settings only affect the configurator's battery and SD card estimations; they are not included in the configuration file you will create.
 2. Configure the **Settings** and **Schedule** panels. These settings offer the same options as the Song Meter Configurator mobile app. For descriptions of these settings, see [Settings Reference \(on page 45\)](#) and [Design a Custom Schedule \(on page 47\)](#).
 3. Adjust the **Deployment Scenario** settings and check the estimated runtime. On the calendar, dark blue blocks indicate acoustic recording periods. When the blocks turn purple or red, it indicates that the recorder is predicted to run out of SD card space or battery life, respectively.
 - a. Set the **Simulation Start** date to when you plan to deploy the recorder. Runtime will be calculated starting from that point, taking into account the **Delay Start** command if you configured it.
 - b. Make sure **Batteries** is set to 4 cells.
-  **Important:** The configurator makes several major assumptions when estimating battery life. If the batteries you use or the conditions of your deployment do not match these assumptions, your real battery runtime may be significantly shorter than estimated. For more information, see [Factors Affecting Battery Life \(on page 55\)](#).
- c. Select an **SD Card** size to see how it will affect your deployment. Selecting the largest possible SD card will reveal when the recorder is expected to deplete its batteries without the limiting factor of storage space.
4. Select **File > Save...** to save the configuration file.

What to do next

You can save the resulting `.miniconfig` file to an SD card, then load it onto the Song Meter Micro 2 (see [Load a Configuration File from an SD Card \(on page 35\)](#)).

Alternatively, you can send the file to a mobile device (using email or a cloud storage service, for example) and import it into the mobile configurator app's **Configuration Library** (see [Import a Configuration File from Another App \(on page 38\)](#)).

Related information

[Import a Configuration File from Another App \(on page 38\)](#)

[Load a Configuration File from an SD Card \(on page 35\)](#)

Generate a Configuration File from a Recording

Using the desktop configurator, you can view the settings and schedule used to record a full-spectrum Song Meter recording.

About this task

Full-spectrum .wav recordings produced by the Song Meter Micro 2 and other Song Meters contain metadata describing how the recorder was configured when the recording was made. You can use a past recording to create a new configuration file with matching settings.

Keep in mind the following limitations:

- The Song Meter Mini/Micro Configurator can only open recordings from first- and second-generation Song Meter Micro, Song Meter Mini, and Song Meter Mini Bat recorders. Separate desktop configurators are available for other models.
- Editing a recording using software other than Wildlife Acoustics Kaleidoscope may remove the required metadata from the recording, preventing you from viewing the associated schedule and settings.

Procedure

1. In the desktop configurator, select **File > Open...** and select a .wav file recorded by a Song Meter Micro 2.
2. Edit the settings and schedule, if desired.
3. Select **File > Save...** to save a configuration file.

What to do next

You can save the resulting .miniconfig file to an SD card, then load it onto the Song Meter Micro 2 (see [Load a Configuration File from an SD Card \(on page 35\)](#)).

Alternatively, you can send the file to a mobile device (using email or a cloud storage service, for example) and import it into the mobile configurator app's **Configuration Library** (see [Import a Configuration File from Another App \(on page 38\)](#)).

Related information

[Import a Configuration File from Another App \(on page 38\)](#)

[Load a Configuration File from an SD Card \(on page 35\)](#)

11. SD Card Contents

This section describes what kinds of files the Song Meter Micro 2 saves to its SD card, how they are organized, and what kinds of information they contain.

SD Card Volume Name

Beginning in firmware version 4.4, formatting an SD card using the Song Meter Micro 2 renames the card to the first 11 characters of the recorder name.

A card can still be used even if it has a different name. If you reformat the card using the SD Association's [formatting tool](#), you can assign a custom name during the formatting process, or you can use your computer to rename the card after formatting.

File Name Conventions

Files saved by the Song Meter Micro 2 use file names that identify which recorder produced each file and when the file was saved.

Recorder Name

Audio files, summary files, diagnostics files, and exported configuration files begin with the Recorder Name. By default, the Recorder Name is the recorder's serial number, but this can be changed in the **Configuration Editor** when paired with a recorder.

Date and Time

The names of audio files and diagnostics files include the date and time of day when each file was produced, according to the time zone that was set on the recorder for that deployment. For audio files, this marks the date and time of day when the audio file began. The format used is `YYYYMMDD_hhmmss`.

For example, an audio file named `WALDEN_20240601_140505.wav` was saved by a recorder with the name WALDEN, and it began recording on June 1, 2024 at 14:05:05, or five seconds after 2:05 PM.

SD Card Organization

The Song Meter Micro 2 saves all non-audio files to the top level of the SD card, meaning they are not placed into a folder within the card. These non-audio files include:

- **Summary file** (`[RECORDER_NAME]_Summary.txt`).
- **Diagnostics files** (`[RECORDER_NAME]_[DATE]_[TIME].minidiags`).

All audio files are saved to a folder named `Data`.

Audio Files

This section covers the types of audio recordings the Song Meter Micro 2 saves to its SD card and what metadata is included in those recordings.

Full-Spectrum Recording Files

Acoustic recordings are saved as `.wav` files. This is an uncompressed audio format that is widely supported across many kinds of audio playback and analysis software. We refer to this kind of audio recording as

full-spectrum to distinguish it from more limited and specialized forms of recorded audio data that are sometimes used when recording ultrasound.

Full-spectrum files record audio of all frequencies up to half the sample rate. Most commonplace audio files, like music or voice recordings, are full-spectrum files. If you open a full-spectrum file in Kaleidoscope Pro or another spectrogram viewer, you can see all components of the audio file across the recorded frequency spectrum.

WAV File Metadata

Metadata is additional information embedded into each recording alongside the recorded audio. The Song Meter Micro 2 saves metadata in the open [GUANO format](#). Software that supports the GUANO format can view these metadata fields. Kaleidoscope Pro Sound Analysis Software can display these fields with or without a paid license. See [GUANO Metadata Fields \(on page 94\)](#) for a list of metadata fields included in this format.

Additional Metadata

Full-spectrum `.wav` files include additional metadata not shown in the GUANO fields. If you open a `.wav` recording from a Song Meter Micro 2 in the desktop Mini/Micro configurator, the program will display all of the settings and schedule parameters that were programmed on the recorder that produced the recording.

Compressing Full-Spectrum WAV Files

Using the Kaleidoscope Pro Sound Analysis Software, you can compress the size of `.wav` files using a special format called W4V. W4V is a compression format developed by Wildlife Acoustics specifically for bioacoustics recordings. It is designed to reduce file size without changing any vital content of the recording that might be used for species identification or similar analysis tasks. Depending on the compression settings, file sizes can be reduced by 50-75%. W4V-compressed files are saved with a `.w4v` extension.

The drawback of this format is that the noise floor of the recording is increased. Depending on the background noise level of the original recording, this increased noise floor may have not a practical effect on your analysis or even be discernible. However, it is not recommended for applications involving precision measurement of ambient noise levels.

Kaleidoscope Pro can be used with or without a paid license to convert in both directions between `.wav` and `.w4v` files. Note that the increased noise levels produced by W4V compression will remain if the file is converted back to `.wav` format.

GUANO Metadata Fields

Full-spectrum `.wav` files saved by the Song Meter Micro 2 include the following GUANO fields:

- **Firmware version:** Firmware version installed on the recorder at the time of recording.
- **Length:** Duration of the audio file in seconds.
- **Loc Position:** Latitude and longitude saved to the recorder at the time of recording.
- **Make:** Manufacturer of the recorder (Wildlife Acoustics, Inc.).
- **Model:** Model name of the recorder.
- **Original Filename:** File name of the recording as originally saved to the SD card by the Song Meter Micro 2. This metadata field will remain even if the file name is later edited.
- **Samplerate:** Sample rate of the recording in hertz (see [Sample Rate \(on page 45\)](#)).
- **Serial:** Serial number of the recorder.

- **Temperature Int:** Reading from the recorder's internal temperature sensor in degrees Celsius at the time of the recording.
- **Timestamp:** Date and time at which the recording started. This field also saves the UTC offset that had been set in the recorder's [Location & Time Zone Screen \(on page 74\)](#).
- **WA|Song Meter|Audio settings:** Array of audio settings used by the recorder:
 - **rate** : Duplicate of the **Samplerate** metadata value.
 - **gain**: Gain setting used by the recorder, in decibels. See [Gain \(on page 45\)](#).
- **WA|Song Meter|Prefix:** The custom Recorder Name for the Song Meter Micro 2.

Summary File

Whenever the Song Meter Micro 2 runs a recording schedule, it records a running log of basic status information to a summary text file on its SD card. This file's name is formatted as [REORDER NAME]_Summary.txt.

A new line is written to the summary file for every minute the Song Meter Micro 2 is awake and recording. Each line of text is broken up by commas into data fields, with column headers listed in the first line of the file. The summary file can be converted into a Comma Separated Values (.csv) file and imported into a spreadsheet processor.



Tip:

Throughout a summary file, you may see the header row (normally the first row in the file) repeat. Each instance of the header row indicates that the recorder powered on and began running its schedule. This can occur if the recorder is manually turned off and on again, if the batteries momentarily fail as they reach the end of their life, or if the recorder reboots in response to some other problem.

Summary File Columns

The summary file includes the following data, organized into columns separated by commas:

DATE

Indicates the date when each line was written to the summary file.

TIME

Indicates the time of day when each line was written to the summary file.

LAT

Indicates the numerical value of the latitude coordinate saved in the recorder's [Location & Time Zone Screen \(on page 74\)](#).

NS

Indicates whether the latitude coordinate is north or south of the equator.

A value of **N** indicates a northern latitude, and a value of **S** indicates a southern latitude.

LON

Indicates the numerical value of the longitude coordinate saved in the recorder's [Location & Time Zone Screen \(on page 74\)](#).

EW

Indicates whether the longitude coordinate is east or west of the prime meridian.

A value of **E** indicates an eastern longitude, and a value of **W** indicates a western longitude.

POWER(V)

Indicates the measured voltage of the Song Meter Micro 2's batteries, in volts.

#FILES

Indicates the number of full-spectrum .wav files that finished recording during the preceding minute.

Diagnostics Files

Diagnostics file are named with the format [RECORDER NAME]_[DATE]_[TIME].minidiags. These files save a copy of the recorder's settings, as well as additional status information and a record of what the recorder was doing before the diagnostics file was generated.

Most of this information is only visible using special tools support staff and engineers at Wildlife Acoustics use during troubleshooting, but you can view the settings that were used by the recorder by opening a .minidiags file in the desktop [Mini / Micro Configurator Software](#).

Diagnostics files can be saved to the recorder's SD card or generated by the Song Meter Configurator app under a few different circumstances.

Manual Diagnostics Generation

It is possible to export a diagnostics file from the Song Meter Configurator app directly to an outgoing email, without saving the file to the SD card. See [Email Diagnostics File to Wildlife Acoustics \(on page 103\)](#) for full instructions.

It is generally not necessary to manually export a diagnostics file unless a Wildlife Acoustics Support representative requests one. For some kinds of troubleshooting, a diagnostics file can help identify certain issues, but a diagnostics file is generally only useful once support understands the broader context around any issues you may be seeing.

Automatic Diagnostics Generation

If the Song Meter Micro 2 experiences a sudden reboot, it will save a diagnostics file to the SD card as soon as it powers on. The date and time in the file name of the .minidiags file indicate the time when the file was generated.

Reboots and the diagnostics files they produce can sometimes indicate a persistent issue with the Song Meter Micro 2. However, there are several mundane and common causes for automatic diagnostics files that do not necessarily indicate a persistent issue with your recorder, including:

- **Manual force-reboot**

If you pull the batteries from the recorder without switching the **ON/OFF** switch to **OFF**, then quickly reinsert them, the Song Meter Micro 2 will interpret this as an unexpected reboot and generate a diagnostics file.

- **Dying batteries**

If the batteries are used to the full extent of their lifespans, they may reach a point where they are just barely keeping the Song Meter Micro 2 powered on. At this point, small fluctuations in power draw can cause the battery voltage to drop, causing the recorder to power off unexpectedly.

The Song Meter Micro 2 will attempt to shut itself down cleanly before the batteries reach this point, but that shutdown is based on the typical behavior of 18650 Li-ion batteries and alkaline AA batteries. If you use alternative battery types, like NiMH or lithium iron disulfide AA batteries, the recorder will be more likely to generate diagnostics files at the very end of the batteries' life.

Analyzing Your Recordings

The recordings produced by the Song Meter Micro 2 are compatible with Wildlife Acoustics' Kaleidoscope Pro Sound Analysis Software and with a broad range of other audio analysis, processing, and editing software.



Kaleidoscope Lite

Kaleidoscope Lite is the free version of our professional sound analysis software, Kaleidoscope Pro. In Kaleidoscope Lite, you can perform many useful functions with your recordings.

- Separate distinct sounds from periods of silence. Generate a table of sound occurrences and add notes on each sound entry.
- Visualize your recordings as spectrograms.
- Listen to your recordings with options for altered playback pitch and bandpass filtering.
- Convert recordings between formats.

Kaleidoscope Lite and Kaleidoscope Pro are the same piece of software, which can be downloaded for free from our website: <https://www.wildlifeacoustics.com/account/downloads/sm-micro>. By default, only the Kaleidoscope Lite features are enabled, and you can use the software for as long as you would like. You can find video tutorials on the features available in Kaleidoscope Lite on our [website](#).

Kaleidoscope Pro

Kaleidoscope Pro Sound Analysis Software allows you to quickly sort, label, and identify bird songs, frog calls, bat echolocations, and more from weeks, months, or even years of recordings. Whether you are conducting species inventory, presence/absence surveys, endangered species detection or habitat health monitoring, Kaleidoscope Pro significantly minimizes the time it takes to find what you're looking for. Download it from our website's [Downloads page](#) and request a two-week trial of the full set of features from the [Kaleidoscope Pro Trial page](#).

Third-Party Software

The Song Meter Micro 2 creates standard .wav files that can be opened with most audio editing and analysis applications. The audio application must be able to support the sample rate of the recorded file.

12. Troubleshooting

The following is a list of symptoms for common problems and instructions for resolving them. If the suggested steps do not solve the problem, please contact Wildlife Acoustics Support for further assistance (see [Contact Wildlife Acoustics Support \(on page 107\)](#)).

Recorder Not Turning On

About this task

If your Song Meter Micro 2 appears to be unresponsive, there are a few things you should check to confirm the cause and try some common solutions:

Procedure

1. Check that all installed batteries are brand-new or freshly charged and properly installed.

The AA battery tray can have a very tight fit. It is possible for a battery to be held in place by the tray without contacting the positive contact. Ensure each battery is in contact with both the spring on the negative end and the metal contact on the positive end.

2. Check that the **ON/OFF** switch is in the **ON** position.
3. Press the **STATUS** button and check if any of the **STATUS** LEDs light up.

If any of the LEDs light up in response to your button presses, then the recorder is receiving power. Attempt to pair the recorder with the Song Meter Configurator app (see [Pair the Recorder with the Song Meter Configurator App \(on page 25\)](#)). If your recorder is not displayed in the app's **Recorders** screen, see [App Not Receiving Status Updates \(on page 98\)](#).

If none of the **FUNCTION** LEDs light up at all, your Song Meter Micro 2 may need repair. Contact Wildlife Acoustics Support for further assistance (see [Contact Wildlife Acoustics Support \(on page 107\)](#)).

App Not Receiving Status Updates

About this task

If your Song Meter Micro 2 does not appear in the Song Meter Configurator app's **Recorders** screen, or if the app is not receiving status updates from the recorder several times per minute, there are several possible causes to check.

Procedure

1. Confirm that the Song Meter Micro 2 is powered on and that pressing the **STATUS** button causes one or more of the **STATUS** LEDs to light up.

See [Recorder Not Turning On \(on page 98\)](#) for more information.

If the installed batteries are mostly drained, it is possible for the recorder to have enough power to show LED activity, but not enough power to communicate over Bluetooth.

Make sure all installed batteries are in good condition.

2. **Enable Bluetooth** in your mobile device's settings.
On iOS or Android, open the **Settings** app and select the **Bluetooth** page to turn Bluetooth on or off.
3. If using an Android device, ensure that Location is turned on in your device's settings.
See this [Google support article](#) for instructions on how to turn on Location.
4. Make sure the Song Meter Configurator app has been granted all requested permissions.
On some devices, GPS and Bluetooth connections are handled by the same hardware component, so the Song Meter app must have access to Location permissions in order to use Bluetooth.

Option	Description
On iOS:	<ol style="list-style-type: none"> a. Open the Settings app. b. Tap the Song Meter entry to open the settings page for the Song Meter app. Permissions can be toggled from this page.
On Android:	<ol style="list-style-type: none"> a. Open the Settings app. b. Tap Apps. c. Tap on the Song Meter app entry. d. Tap Permissions. e. Enable all permissions on this page.

5. If you are able to pair with the recorder, check whether the **Send Bluetooth beacons?** setting is enabled. If this setting is disabled, the Song Meter Micro 2 will not update its status in the Song Meter Configurator app unless the recorder and app are paired.

If the recorder does appear in the **Recorders** screen with an up-to-date status, but you are unable to pair with and configure the recorder, see [Unable to Pair App with Recorder \(on page 99\)](#).

If the recorder still does not appear in the **Recorders** screen, or if the app does not receive updated status information from the recorder, your Song Meter Micro 2 may need repair. Contact Wildlife Acoustics Support for further troubleshooting assistance and to arrange a repair if necessary (see [Contact Wildlife Acoustics Support \(on page 107\)](#)).

Unable to Pair App with Recorder

About this task

If you are unable to pair the Song Meter Configurator app with the Song Meter Micro 2, first check the following:

Procedure

1. Confirm that the Song Meter Micro 2 is powered on and that pressing the **STATUS** button causes one or more of the **STATUS** LEDs to light up.

See [Recorder Not Turning On \(on page 98\)](#) for more information.

If the installed batteries are mostly drained, it is possible for the recorder to have enough power to show LED activity, but not enough power to communicate over Bluetooth.

Make sure all installed batteries are in good condition.

2. Confirm that the Song Meter Micro 2 appears in the app's **Recorders** screen and that the app is receiving status updates from the recorder several times per minute.

See [App Not Receiving Status Updates \(on page 98\)](#) if this is not the case.

If the Song Meter Micro 2 is powered on with fresh batteries and sending regular status updates to the Song Meter Configurator app, but the pairing process consistently fails, proceed with the following steps:

3. If using single-use batteries, make sure they are brand new. If using rechargeable batteries, make sure they have been recently charged to full capacity.
4. On the **Recorders** screen, tap the **Status** icon for the recorder to open the **Status** screen.
5. Under the **BATTERY LEVEL** label, set the %/V toggle switch to **V**.

6. Check that the voltage level is sufficiently high. Below are **approximate** voltage readings for new or fully charged batteries of several common types.

- **AA Alkaline:** 6.4 V
- **AA NiMH:** 5.8 V
- **AA Lithium Iron Disulfide:** 6.7 V

If new or fully charged batteries consistently read significantly lower than these values, contact Wildlife Acoustics Support for help diagnosing possible issues with your batteries or the Song Meter Micro 2. See [Contact Wildlife Acoustics Support \(on page 107\)](#).

7. Check the value of the **FIRMWARE VERSION** listed at the bottom of the **Status** screen. Make sure the listed version matches the latest version on [wildlifeacoustics.com](#) (see [Download Firmware Updates \(on page 107\)](#)). If it does not, see [Load a Configuration to a Paired Recorder from an SD Card \(on page 35\)](#).

If you are still unable to pair with your Song Meter Micro 2 after following these steps, your recorder may require repair. Contact Wildlife Acoustics Support for further troubleshooting assistance and to arrange a repair, if necessary (see [Contact Wildlife Acoustics Support \(on page 107\)](#)).

SD Card Error Messages

These error messages might appear on a recorder's **Status** screen, in the **STORAGE INFO** panel.

- **NO SD CARD:** No card is detected.
- **SD CARD FULL:** Card is detected but full.
- **SD CARD ERROR:** Card is detected but not working.
- **SD CARD BAD FORMAT:** Card format is not recognized or is corrupted.
- **SD CARD DIRTY:** Card was interrupted in the middle of recording, and the recorder cannot write to the card until this status is cleared.

See [SD Card Dirty \(on page 101\)](#) below for more details.

General SD Card Troubleshooting Tips

If you encounter any issue with an SD card, backing up any important data and then reformatting the card is what we recommend doing first.

1. If you know the card does not hold any data that you need to save, reformat the card (see [Format the SD Card \(on page 27\)](#)).
Formatting the card erases all data from the card and resets it to a blank state. We recommend formatting the card prior to each deployment to avoid common card errors during recording.
2. If the card may contain data that you need, such as recordings from a deployment that just finished, connect the card to a computer. If you are able to access the data, copy the data to another location (such as your computer's internal drive), and then reformat the card (see [Format the SD Card \(on page 27\)](#)).

Always be sure to properly eject the card from your computer's operating system before physically removing the card from your computer. Failing to eject the card according to these instructions can cause the Song Meter Micro 2 to display error messages.

- On Windows, refer to this [Microsoft support article](#) on safely removing hardware (including SD cards).
- On MacOS, refer to this [Apple support article](#) on ejecting SD cards.

No SD Card

If this error message is displayed, check that the SD card is fully inserted into the Song Meter Micro 2's card slot. To properly engage the slot's spring mechanism, press the card fully into the slot to insert it, then press it again, and the spring will eject the card from the slot.

If the error message persists, try using a different card with the same recorder, or the same card with a different recorder, if you have multiple. Doing so will help determine whether there's an underlying issue with the card or with the Song Meter Micro 2's SD card slot.

SD Card Full

This message means there is not enough available space on the card for the Song Meter Micro 2 to save any more audio files to the card.

If this message is displayed even though the card appears to not be full when viewed from a computer, it may mean the card was not properly formatted since the last time it was used.

If you delete files on your computer by moving them to the Trash or Recycling Bin but do not reformat the card, the structure of the card is still affected by the deleted files, and the Song Meter Micro 2 will be unable to use that space. Formatting the SD card both deletes all files and resets the structure of the card.

SD Card Error

This message could indicate a number of different kinds of card errors. As a first step, refer to the [General SD Card Troubleshooting Tips \(on page 100\)](#). Check to see if a computer also displays an error message when you try to view the contents of the card, as this may indicate an issue with the card itself.

If multiple different SD cards consistently display this error message on one particular Song Meter Micro 2, but not on other recorders or computers, it may indicate a problem with the Song Meter Micro 2 itself. Contact Wildlife Acoustics Support for further assistance diagnosing the issue (see [Contact Wildlife Acoustics Support \(on page 107\)](#)).

SD Card Bad Format

This indicates that the card is not formatted correctly. The Song Meter Micro 2 expects cards to have one of two particular file systems, depending on the size of the card:

- For SDHC cards, which range in size from 4 GB to 32 GB, the file system must be FAT32.
- For SDXC cards, which range in size from 64 GB to 2 TB, the file system must be exFAT.

Whenever the Song Meter Micro 2 formats a card (see [Format the SD Card \(on page 27\)](#)), it applies the file system listed above for the size of the SD card. However, it is possible to apply other file systems to SD cards that don't match these conventions using software formatting tools on a computer.

For example, it is possible to apply FAT32 formatting to a card larger than 32 GB. Doing so is not recommended, and it will cause this error message to appear and prevent the Song Meter Micro 2 from using the card. In some cases, it can even cause errors that persist after the Song Meter Micro 2 attempts to reformat the card.

If an SD card has been formatted to a file system that does not match the conventions listed above, use the SD Association's free [formatting tool](#) to apply a "Quick Format" to the card.

SD Card Dirty

This error message generally appears after the Song Meter Micro 2 was interrupted in the middle of writing to the SD card. The most common cause of this message, by far, is that the recorder's batteries reached the very end of their lifespan, and the recorder lost power.



Important:

In the vast majority of cases, the "SD Card Dirty" message does not indicate a serious or unusual issue with the SD card or the Song Meter Micro 2, nor does it indicate the loss of data recorded before the error occurred.

Clearing the dirty bit is generally as simple as connecting the card to a MacOS or Windows computer, then ejecting the card before removing it (see [General SD Card Troubleshooting Tips \(on page 100\)](#)). Reformatting the card will also clear the dirty bit, but make sure you back up any data from the card to your computer first!

The SD card being labeled as "dirty" refers to a safety mechanism called a "dirty bit" used by SD cards and other data storage systems. If the Song Meter Micro 2 loses power or its connection to the SD card in the middle of certain operations, the "dirty bit" serves as a marker of that interruption.

Continuing to write data to a card that was interrupted in the middle of this kind of operation could lead to corruption that might affect all data previously saved to the card. When the Song Meter Micro 2 detects that the SD card is marked with a dirty bit, it will cease writing to the card in order to prevent serious data corruption. Any data saved to the card before the dirty bit was raised will be retained.

Restore Recorder to Factory Defaults

The Song Meter Micro 2 can be reset to its factory default settings. This does not reset the recorder's internal clock, but it does reset its time zone setting to Coordinated Universal Time (UTC).

See [Settings Reference \(on page 45\)](#) for a description of each setting and its default value.

The default location setting is 0° latitude and 0° longitude, and the default time zone is UTC + 00:00, equivalent to Greenwich Mean Time (GMT).

The default schedule is the preset **Record birds/frogs 24 hours a day**.

Restore Factory Defaults Using the Song Meter Configurator App

About this task

To restore factory default settings on a paired recorder using the Song Meter Configurator app:

Procedure

1. Install brand-new or freshly charged batteries into the Song Meter Micro 2.
2. In the Song Meter Configurator app, open the **Utilities** menu:
 - a. [Pair the Recorder with the Song Meter Configurator App \(on page 25\)](#).
Configure and **Unpair** icons will appear next to the recorder's name.
 - b. Tap the **Configure** icon for the paired Song Meter Micro 2 in the **Recorders** screen.
 - c. Tap the **Utilities** icon in the upper-right corner of the **Configuration Editor**.
3. In the **Utilities** menu, tap **Restore factory defaults**.
A confirmation message will ask if you are sure you want to restore default settings.
4. Tap **OK** to confirm.

Results

A **RESETTING** activity indicator will appear, followed by a confirmation message.

Export Diagnostics Files

The Song Meter Micro 2 can generate diagnostics files that record the results of internal tests as well as a log of the recorder's internal processes before the diagnostics file was generated. Diagnostics files are generated automatically when the recorder experiences a reboot, and they can also be generated manually.



Note:

Diagnostics files that have been generated automatically do not necessarily indicate a serious issue with the recorder. See [Diagnostics Files \(on page 96\)](#) for a description of common causes for automatic diagnostics files that are not related to hardware malfunction.

In general, we recommend only sending a diagnostics file to Wildlife Acoustics Support if a support representative requests it. A diagnostics file by itself is not enough to identify issues you may be experiencing with your recorder; your own description of the problem is the best place to start. A support representative may ask to see a diagnostics file once they understand the context of the issue. See [Contact Wildlife Acoustics Support \(on page 107\)](#).

Email Diagnostics File to Wildlife Acoustics

About this task

Using the Song Meter Configurator app, it is possible to generate a diagnostics file from a paired Song Meter Micro 2 and send it Wildlife Acoustics Support via email.



Note:

You must have your mobile device's built-in email application properly configured in order to send a diagnostics file using this method.

Procedure

1. Install brand-new or freshly charged batteries into the Song Meter Micro 2.
2. In the Song Meter Configurator app, open the **Utilities** menu:
 - a. [Pair the Recorder with the Song Meter Configurator App \(on page 25\)](#).
Configure and **Unpair** icons will appear next to the recorder's name.
 - b. Tap the **Configure** icon for the paired Song Meter Micro 2 in the **Recorders** screen.
 - c. Tap the **Utilities** icon in the upper-right corner of the **Configuration Editor**.
3. In the **Utilities** menu, tap **Email diagnostics to Wildlife Acoustics**.
*A **Loading...** activity indicator appears onscreen, and the recorder's **Diags** LED will flash green. This typically lasts over 30 seconds.*
Your mobile device's email interface will generate a new message addressed to <mailto:support2025@wildlifeacoustics.com> with the diagnostics file attached.
4. In the message addressed to Wildlife Acoustics Support, add a message to provide context to the diagnostics file. What problems are you experiencing with the recorder? What troubleshooting steps have you already attempted (see [Troubleshooting \(on page 98\)](#))?
5. If the diagnostics file is related to an ongoing case with Wildlife Acoustics Support, add the **Case Number** to the subject line of the message.
6. Tap **Send**.

Testing the Internal Microphone

In between deployments, we recommend performing a basic test to confirm that the Song Meter Micro 2's built-in microphone is working correctly. Unlike other Song Meter models, the Song Meter Micro 2's microphone is not compatible with typical microphone calibration signal generators, which are usually designed for cylindrical microphones. However, it is possible to perform a basic check of the microphone's sensitivity.



Important:

The Song Meter Micro 2 is **not intended** for recording applications that require consistent, known signal levels. For example, when monitoring the absolute value of ambient noise levels, the accuracy of those measurements depends on knowing the precise sensitivity of the microphone. In this situation, we recommend a recorder whose microphones can be accurately measured using a calibrated signal generator. Other Song Meter models with cylindrical microphones fall into this category.

Test the Internal Microphone Using an Example Recording

About this task

One way to test the internal microphone of the Song Meter Micro 2 is to make a recording of someone speaking, then listen back to the recording on a computer to verify that the voice was recorded reasonably clearly.

Procedure

1. **Insert a microSD card** into the recorder's microSD card slot.
2. [Pair the Recorder with the Song Meter Configurator App \(on page 25\)](#).
***Configure** and **Unpair** icons will appear next to the recorder's name.*
3. Tap the **Configure** icon for the paired Song Meter Micro 2 in the **Recorders** screen.
4. **Change the recorder's settings** to values appropriate for this test.
 - a. Change the **Sample rate** to 44100 Hz or 48000 Hz.
Lower sample rates are unable to record the highest-frequency components of the human voice and can cause the test recording to sound muffled.
 - b. Change the **Gain** setting to 6 dB.
With higher gain settings, speaking close to the microphone at typical volume can result in a distorted recording, making it difficult to gauge microphone condition.
 - c. Select the preset schedule **Record birds/frogs 24 hours a day**.
*Ten seconds after your last settings change, the **Recording** LED will begin blinking green to indicate the Song Meter Micro 2 is recording.*
5. **Make a test recording**.
 - a. When the **Recording** LED begins blinking green, hold the Song Meter Micro 2 approximately one meter from your mouth, with the **MIC** vent facing you.
 - b. In a quiet environment, speak clearly at a normal volume. Just a few words is enough.
 - c. Set the **ON/OFF** switch to **OFF** before removing the microSD card.
6. **Listen to the test recording**.

- a. Connect the microSD card to a computer.
- b. Open the recording in an audio playback program.

Results

The recorded voice should be clear and intelligible.

If the voice sounds distorted, make sure the **Gain** on the Song Meter Micro 2 is set to 6 dB, and that the recorder was held at least one meter from the person's mouth. Sounds that are too close, too loud, or recorded with the **Gain** set too high will create distorted recordings.

If the voice sounds muffled, make sure the **MIC** vent on the front lid is unobstructed, and make sure the **Sample rate** is set to 44100 Hz or 48000 Hz.

Test the Microphone Using a Tone Generator

About this task

This test involves using a device like a computer or smart phone to generate a 1 kHz sine wave. The Song Meter Configurator can provide a numerical readout of the incoming signal level.

These instructions assume you understand basic concepts related to acoustics and recording equipment. Testing the microphone by making a test recording and subjectively assessing the recording quality is sufficient for a basic test (see [Test the Internal Microphone Using an Example Recording \(on page 104\)](#)).



Important:

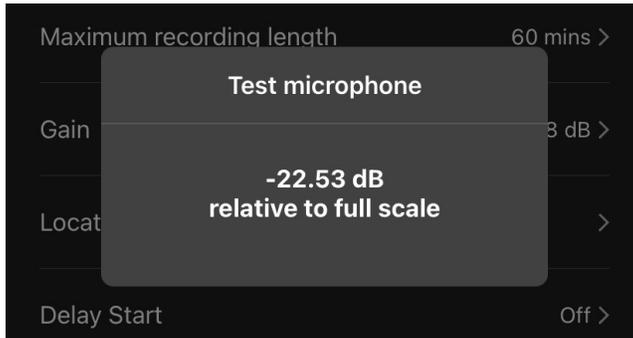
The volume of the computer or smart phone speaker, its distance from the Song Meter Micro 2, and the orientation of each device will all have dramatic effects on the value of this readout. If these factors are not kept consistent, the results of two tests cannot be meaningfully compared to each other.

This test, by itself, cannot serve as an accurate measurement of an individual microphone's sensitivity. **At best**, it can serve to compare the sensitivity of two Song Meter Micro 2 recorders. To perform even a basic comparison, two Song Meter Micro 2 recorders must be tested with a speaker set to the same volume with exactly the same distance and orientation between the recorder and speaker.

Procedure

1. Configure a computer or smart phone to play a 1 kHz sine wave from its speakers.
Make sure all factors that could affect the output level of the sine wave are kept consistent between tests.
2. Position the Song Meter Micro 2 approximately one foot from the speakers.
If testing multiple recorders, place each recorder in the same position with the same orientation for each test.
3. In the Song Meter Configurator app, open the **Utilities** menu:
 - a. [Pair the Recorder with the Song Meter Configurator App \(on page 25\)](#).
Configure and **Unpair** icons will appear next to the recorder's name.
 - b. Tap the **Configure** icon for the paired Song Meter Micro 2 in the **Recorders** screen.
 - c. Tap the **Utilities** icon in the upper-right corner of the **Configuration Editor**.
4. Tap **Test Microphone**.
A **Test Microphone** window will appear.

This window shows a numerical readout of the incoming signal level, bandpass-filtered to 1 kHz, in dBFS.



5. Quiet all nearby sounds except for the device playing the test tone.
6. Play a 1 kHz sine wave.
7. When the **Test Microphone** reading settles, record the measurement.

13. Useful Resources

Download Firmware Updates

We regularly update firmware to fix issues and introduce new features. New firmware versions can be found on our Downloads page at <https://www.wildlifeacoustics.com/account/downloads/sm-micro>.



Note:

You must have a user account on [wildlifeacoustics.com](https://www.wildlifeacoustics.com) to access our Downloads page. Only an email address is required to create a user account.

Desktop Configurator

If you prefer to configure your recorder settings from a desktop or laptop computer, you can download desktop configurator software for free on our Downloads page at <https://www.wildlifeacoustics.com/account/downloads/sm-micro>. You can export a configuration file from the configurator to load into the Song Meter Micro 2 (see [Load a Configuration to a Paired Recorder from an SD Card \(on page 35\)](#)).

Note that the Song Meter Configurator mobile app must be used to update the Song Meter Micro 2's date and time over Bluetooth.

Video Tutorials

Visit our [Video Tutorials](#) page to view tutorial videos for the Song Meter Micro 2.

Frequently Asked Questions

You can find answers to many common questions on our website, under **Resources > Frequently Asked Questions**.

[wildlifeacoustics.com/resources/faqs](https://www.wildlifeacoustics.com/resources/faqs)

Don't Miss Out on Important Updates

We continually add features to the Song Meter Micro 2. Stay up to date with the newest features and receive important technical support bulletins by signing up to our [Email List](#).

Contact Wildlife Acoustics Support

For technical questions, contact Wildlife Acoustics Support using one of the methods below. If contacting us via our website, **please provide as much detail as you can** so we can provide effective help as quickly as possible.

- [wildlifeacoustics.com/contact-us](https://www.wildlifeacoustics.com/contact-us)
- North America (toll-free): +1 (888) 733-0200
- Outside North America (toll charges may apply): +1 (978) 369-5225

14. Specifications

Physical Specifications

Height	4.0 in. (102 mm)
Width	2.8 in. (71 mm)
Depth	1.4 in. (35 mm)
Weight with no batteries	0.26 lb. (118 g)
Weight with max number of batteries (typical)	0.62 lb. (281 g)
Enclosure Material	Polycarbonate
Environmental Specifications	IP67 Rated
Operating Temperature Range	-4°F to 185°F (-20°C to 85°C) Batteries may have a narrower operating temperature range.

Audio and Microphone Specifications

Audio Specifications

Recording Format	16-bit PCM WAV
Sample Rate	8,000; 12,000; 16,000; 22,050; 24,000; 32,000; 44,100; 48,000; 96,000; 192,000; or 256,000 Hz
Record Channels	One
Anti-Alias Filter	-2.5 dB @ 0.4 f_s , -6 dB @ 0.6 f_s

Acoustic Microphone Specifications

- **Directional Characteristic:** Omnidirectional
- **On-Axis Sensitivity:** +12 ± 4 dB FS re: 1 Pa at 1 kHz, measured at 18 dB gain setting

The following charts reflect default gain (+18 dB), 48 kHz sample rate, calibrated sound source one meter from the recorder, perpendicular to microphone axis.

Figure 8. Sensitivity and Noise Floor, Linear Frequency Scale

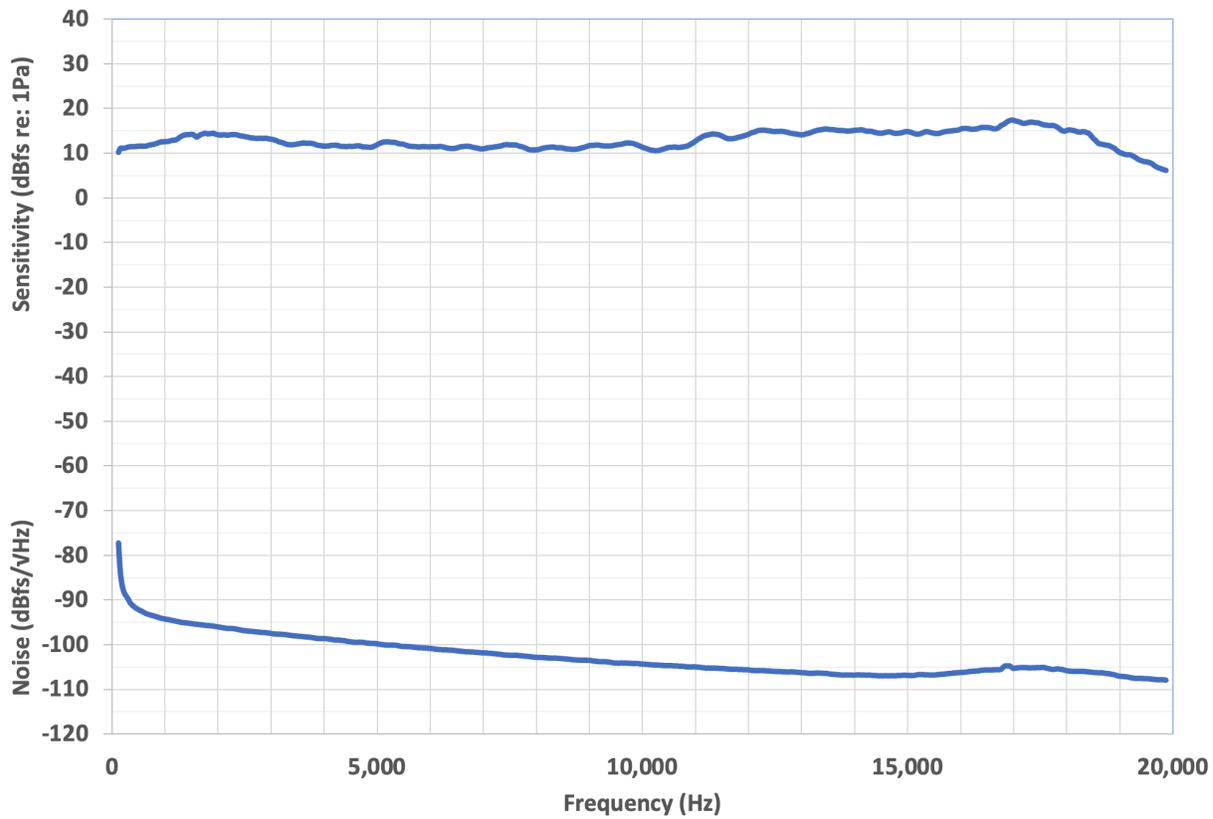
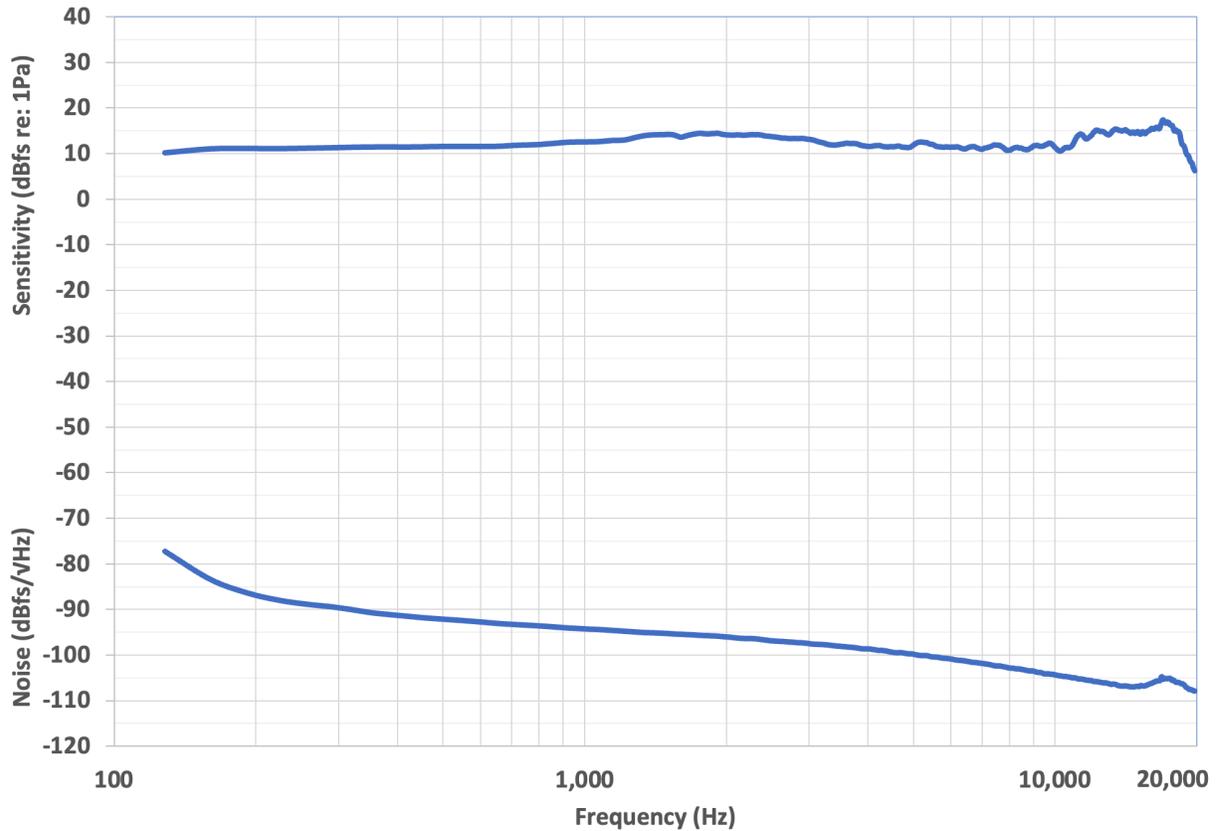


Figure 9. Sensitivity and Noise Floor, Logarithmic Frequency Scale

Batteries and Power

Types of AA Batteries

The Song Meter Micro 2 works with several types of AA batteries, but alkaline batteries provide the most consistent performance.

Alkaline

The most common chemistry for single-use AA batteries. The Song Meter Configurator's battery percentage readout and battery life estimations assume that all AA batteries are alkaline batteries.

Nickel-metal hydride (NiMH)

The most common chemistry for rechargeable AA batteries. If you use NiMH batteries with the Song Meter Micro 2, be aware of the following:

- NiMH batteries will typically last 50-70% as long as alkaline batteries before needing to be recharged. This battery life will decline as the batteries are used and recharged repeatedly.
- The battery percentage readout in the recorder's **Status** screen will read lower than the batteries' actual state of charge.
- Batteries will die much more quickly than the Song Meter Configurator's battery life estimations.

Lithium iron disulfide

A less common chemistry for single-use AA batteries. This chemistry is sold under several brand names, including the following:

- Energizer Ultimate Lithium
- Ansmann® Extreme Lithium
- Ansmann Industrial Lithium

This battery is primarily beneficial for devices that draw much more power than the Song Meter Micro 2, but it can also outperform alkaline batteries in freezing conditions. However, if you use lithium iron disulfide batteries with the Song Meter Micro 2, you should be aware of the following:

- The battery percentage readout in the recorder's **Status** screen will read higher than the batteries' actual state of charge.
- Battery life estimations based on the installed batteries will significantly over-estimate remaining battery life.
- Even dedicated battery testers are unlikely to give reliable measurements of the batteries' remaining life due to the batteries' extremely flat voltage. For this reason, we strongly recommend against reusing any batteries that have been partially used before.
- At the very end of the batteries' life, the recorder may produce **truncated or corrupt recording files, repeated .minidiags files, or it may corrupt its SD card or mark the card as *Dirty*.**

Power Consumption and Expected Battery Life

The tables in this section display measured power consumption for the Song Meter Micro 2 in various recording modes. All measurements were taken using the same SanDisk SD card.



Note:

SD cards can vary significantly in the amount of power they draw. Two cards of the same model from the same manufacturer will likely have different power requirements. These differences will affect the overall battery life of the recorder.

Battery life duration is estimated based on the nominal energy capacity of high-quality, brand-new alkaline AA batteries or freshly-charged Li-ion batteries. Real-world battery capacity can be altered by factors including ambient temperature. Rechargeable batteries lose their capacity with repeated use, and the rate of this loss is affected by the quality of the charger and the rate of recharge.

Inactive Power Consumption

The Song Meter Micro 2 consumes a small amount of power when turned off and when sleeping during an inactive schedule period. This power consumption is only significant during long deployments with very infrequent recording periods.

Table 2. Power Consumption while turned off and sleeping

State	Power Consumption (mW)
Off	0.4
Sleeping	0.5

Acoustic Recording Power Consumption

The power consumption measurements below were taken using a single SanDisk 64 GB Extreme microSD card. Power consumption can vary significantly between cards, even among those with similar labels from a single manufacturer.

Expected battery runtime has been calculated from the typical energy capacity of four alkaline AA batteries.

Table 3. Song Meter Micro 2 Current Consumption and Battery Runtime by Sample Rate

Sample Rate (Hz)	Power Consumption (mW)	Expected Battery Runtime (Hours)
8,000	38	394
12,000	45	330
16,000	55	274
22,050	60	249
24,000	53	283
32,000	67	224
44,100	76	197
48,000	68	220
96,000	96	157

Minimum Battery Voltage

The Song Meter Micro 2 is programmed to shut down just before batteries are expected to fail, but different battery types can cause this behavior to vary.

The programmed voltage cutoff is based on typical behavior of alkaline AA batteries. During real deployments, the Song Meter Micro 2 may lose power at a higher battery voltage based on factors like ambient temperature or varying battery performance.

In particular, lithium iron disulfide batteries will often die at significantly higher voltages due to their flat voltage discharge curve.

Minimum Battery Voltage	3.7 V
--------------------------------	-------

microSD Card Compatibility

microSD Card Capacity Range: 4 GB - 2 TB

The Song Meter Micro 2 supports SDHC and SDXC cards. These two formats encompass microSD cards between 4 GB and 2 TB in capacity. We recommend SanDisk cards as the first choice, but other major brands from a reliable electronics retailer will also work.



Important:

Large, online marketplaces that allow third-party sellers may include listings for counterfeit SD cards, which are likely to have misleading specifications and may lead to data loss.

We recommend buying SD cards from a reputable electronics or photography supply retailer.

**Note:**

Language in the Song Meter Configurator app and in this documentation may use the term "SD card" generically. This refers to both the full-size SD card used by the Song Meter Mini family and the microSD card used by the Song Meter Micro family.

The Song Meter Micro 2 only supports the use of microSD cards.

SD Card Speed

Minimum Speed Class: C4 (4 MB/s)

Modern SD cards and microSD cards are designed to handle the output of video cameras, which may be writing over 100 frames of high-resolution video to the card each second. By those standards, the data throughput requirements for audio recording are tiny, even when recording on two channels or at the high sample rates required for recording bats.

SD cards and microSD cards are marked with speed classes that indicate the card's minimum sustained write speed. The minimum speed class required by the Song Meter Micro 2 is C4, meaning a minimum sustained write speed of 4 MB/s.

The Song Meter Micro 2 gains no benefit from faster cards, though backing up files to your computer may be faster.

SD Card Power Consumption

SD Cards and microSD cards can vary significantly in power consumption, even among cards manufactured by the same company and sold under the same product line. These variations can affect the battery life of the Song Meter Micro 2.

As a general trend, SD Cards with lower speed classes tend to draw less power than faster cards.

Bluetooth Specifications

Supported Bluetooth Technology	Bluetooth Low Energy (BLE) 4.2
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Warranty and Disclosures

Except as specifically provided herein, Wildlife Acoustics makes no warranty of any kind, express or implied, with respect to this product.

Hardware Limited Warranty

Product	Components	Warranty Period
Song Meter Micro 2	All components	1 year

Wildlife Acoustics, Inc. Limited Warranty

HARDWARE

Wildlife Acoustics, Inc. ("WAI") warrants to the original end user ("Customer") that new WAI branded products will be free from defects in workmanship and materials, under normal use. Refer to the Hardware Limited Warranty table at the top of this page for the applicable warranty period from the original date of purchase.

WAI warrants refurbished WAI products, marked and sold as such, for ninety (90) days from the original purchase date.

SOFTWARE

WAI warrants to Customer that any WAI branded software will perform in substantial conformance to their schedule specifications for a period of ninety (90) days from the date of original purchase. WAI warrants the media containing software against failure during the warranty period. WAI makes no warranty or representation that the operation of the software products will be uninterrupted or error free, or that all defects in the software products will be corrected.

EXCLUSIONS

This warranty excludes (1) physical damage to the surface of the product, including cracks or scratches on the outside casing; (2) damage caused by misuse, neglect, improper installation or testing, unauthorized attempts to open, repair, or modify the product, or any other cause beyond the range of the intended use; (3) damage caused by accident, fire, power changes, other hazards, or acts of God; or (4) use of the product with any non-WAI device or service if such device or service causes the problem.

Any third party products, including software, included with WAI products are not covered by this WAI warranty and WAI makes no representations or warranties on behalf of such third parties. Any warranty on such products is from the supplier or licensor of the product.

No warranty is provided by WAI unless the product was purchased from an authorized distributor or authorized reseller.

EXCLUSIVE REMEDIES

Should a covered defect occur during the warranty period and you notify WAI, your sole and exclusive remedy shall be, at sole option and expense of WAI, to repair or replace the product or software. If WAI cannot reasonably repair nor replace then WAI may, in its sole discretion, refund the purchase price paid for the product. Replacement products or parts may be new or reconditioned or comparable versions of the defective item. WAI warrants any replaced or repaired product, part, or software for a period of ninety (90) days from shipment, or through the end of the original warranty, whichever is longer.

OBTAINING WARRANTY SERVICE

Customer should refer to the WAI website at <https://www.wildlifeacoustics.com/support> for information on obtaining warranty service authorization. Methods for obtaining warranty service may vary depending on whether purchases were made from an authorized provider of WAI products or from WAI directly. All requests for warranty service authorization must be made within the applicable warranty period. Dated proof of original purchase will be required. Products or parts shipped by Customer to WAI must be sent postage-paid and packaged appropriately for safe shipment. WAI is not responsible for Customer products received without a warranty service authorization and may be rejected. Repaired or replacement products will be shipped to Customer at WAI expense. All products or parts that are replaced become the property of WAI. WAI shall not be responsible for Customer software, firmware, information, or memory data contained in, stored on, or integrated with any products returned to WAI for repair, whether under warranty or not. The repair and replacement process for products or parts in locations outside of the United States will vary depending on Customer's location.

WARRANTIES EXCLUSIVE

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DISCLAIMER

Some countries, states, or provinces do not allow the exclusion or limitation of implied warranties or the limitation of incidental or consequential damages so the above limitations and exclusions may be limited in their application to you. When implied warranties may not be excluded in their entirety, they will be limited to the duration of the applicable written warranty. This warranty gives you specific legal rights; you may have other rights that may vary depending on local law. Your statutory rights are not affected.

GOVERNING LAW

This Limited Warranty shall be governed by the laws of the Commonwealth of Massachusetts, and by the laws of the United States, excluding their conflicts of laws principles. The United Nations Convention on Contracts for the International Sale of Goods is hereby excluded in its entirety from application to this Limited Warranty.

Declaration of Conformity

According to EN ISO/IEC 17050-1:2010

No: WAI20240402

Manufacturer:

Wildlife Acoustics, Inc.
3 Mill and Main Place, Suite 110

Maynard, MA 01754
United States of America

Declares that the following product:

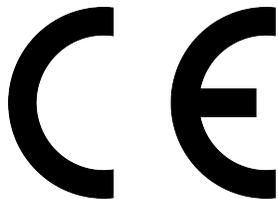
Product Name: Song Meter Micro 2

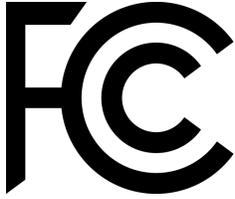
Product Type: Bioacoustics Recorder

Conforms to the appropriate country standards and governing regulations listed below. As the manufacturer, we are fully responsible for the design and production of the above-mentioned equipment.

- **(FCC) Code of Federal Regulations, Title 47, Part 15, Subpart B:** Class B Device (2015): Radio Frequency Devices – Unintentional radiators
- **AS CISPR 11, (2017):** Industrial, scientific and medical (ISM) radio-frequency equipment – electromagnetic disturbance characteristics – limits and methods of measurement, Class B
- **EN 55011, (2016):** Industrial, scientific and medical (ISM) radio-frequency equipment – Electromagnetic disturbance characteristics – Limits and methods of measurement, Class B
- **ICES-003, (2020):** Industry Canada, Interference-Causing Equipment Standard, Digital Apparatus, Class B
- **EN61326-1, (2013):** Electrical Equipment for Measurement, Control and Laboratory use EMC Requirements
- **EN 61000-4-2 (2009):** Electromagnetic compatibility (EMC) Testing and measurement techniques - Electrostatic discharge immunity test
- **IEC 61000-4-3 (2006):** Electromagnetic compatibility (EMC) Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test
- **(FCC) Code of Federal Regulations, Title 47, Part 15.247 (2015):** Radio Frequency Devices – Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz
- **ISED RSS-247, Issue 1 (2017):** Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices
- **ETSI EN 300 328 (2017):** Wideband transmission systems - Data transmission equipment operating in the 2.4GHz band
- **EN 301 489-1 (2017):** ElectroMagnetic Compatibility (EMC) standard for radio equipment and services - Part 1: Common technical requirements
- **EN 301 489-17 (2017):** ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for Broadband Data Transmission Systems
- **EN 62479 (2010):** Assessment of the compliance of low power electronic and electrical equipment with the basic restrictions related to human exposure to electromagnetic fields (10 MHz to 300 GHz)
- **IEC 60529 IPX7 (2019):** Temporary Immersion (excluding acoustic microphones)

Marking appears as follows:





This product was tested in a typical configuration.

A handwritten signature in black ink, appearing to read 'Ian Agranat', with a long, sweeping horizontal line extending to the right.

Ian Agranat
Wildlife Acoustics, Inc.
April 2, 2024

Electromagnetic Interference

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Changes or modifications not expressly approved by Wildlife Acoustics, Inc. could void the user's authority to operate the equipment.

Environmental Testing

The Song Meter Micro 2 was found to meet IP67 standards, with the exclusion of acoustic microphones. This rating means the enclosure can withstand temporary submersion in water up to a depth of one meter without water intrusion.

Tested at operating temperatures of -20°C to +55°C. Testing included 24-hour soaks at both extremes plus six cycles for one hour each.

Tested at operating humidity of 95% relative humidity at +40°C. Testing included one 24-hour soak.

Bluetooth Module Regulatory Compliance

The Bluetooth Low Energy transceiver used in the Song Meter Micro 2 complies with the international regulations listed here.

To request additional information, including certificates of conformity and test reports, [contact Wildlife Acoustics Support](#).

Region	Regulation
United States of America	FCC Part 15.247
Canada	ISED (RSS-247 Issue 1)
Europe	ETSI (EN 300 328), EN 62368-1, EN 301 489-1/17, EN 62479
Australia	AS/NZS 4268, Radio Communications (Electromagnetic Radiation – Human Exposure) Standard 2003 Australia + A1
Japan	MIC, Article 2 paragraph 1 item (19)
South Korea	KC RRA Notice 2015-91 & 2015-95, KN 301 489-1&-17

Prohibition Against Eavesdropping

United States law (Federal Communications Commission Part 15 Section 15.9) states “Except for the operations of law enforcement officers conducted under lawful authority, no person shall use, either directly or indirectly, a device operated pursuant to the provisions of this Part for the purpose of overhearing or recording the private conversations of others unless such use is authorized by all of the parties engaging in the conversation.”

You are responsible for complying with all applicable laws within your jurisdiction

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