WILDLIFE ACOUSTICS

Song Meter Mini 2 User Guide

12/29/2025

1 | About the Song Meter Mini 2

The Wildlife Acoustics® Song Meter Mini 2 is a bioacoustics recorder designed for recording birds, amphibians, terrestrial mammals and other wildlife that vocalize within the typical range of human hearing.

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

The Song Meter Mini 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 Configurator app also allows you to create and manage configuration files, which can be used to program any Song Meter Mini 2 with settings you can determine ahead of your deployment. This makes it easy to maintain consistent settings across multiple recorders or multiple deployments in any given project.

The Song Meter Mini 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 sound analysis software.

1.1 | Battery Configuration Versions

The Song Meter Mini 2 can be purchased with one of two options for battery power:

- The **Song Meter Mini 2 AA** can run on either four or eight AA batteries. Alkaline batteries provide the most consistent performance, but other battery chemistries can be used. See Types of AA Batteries for more information.

- The **Song Meter Mini 2 Li-ion** can run on between one and six 18650 lithium-ion (Li-ion) batteries. See Lithium-Ion Battery Requirements for details on choosing compatible batteries.

Note:

These are two separate versions of the Song Meter Mini 2. Neither version can be converted or reconfigured to use the other type of battery.

The type of battery used significantly affects deployment time. As a general rule, 18650 lithium-ion batteries hold significantly more energy than AA batteries, and they are, by definition, rechargeable. Using six, high-quality 18650 lithium-ion batteries will enable the longest possible deployments with the Song Meter Mini 2.

Other than the differences in battery compatibility, the AA and Li-ion versions of the Song Meter Mini 2 are identical in functionality.

Important:

Lithium-ion batteries are not to be confused with **Energizer® Ultimate Lithium™** (lithium/iron disulfide) batteries.

18650 lithium-ion batteries are larger and put out a much higher voltage than all types of AA batteries. 18650 lithium-ion batteries therefore cannot be used interchangeably with any AA battery.

For specifications regarding batteries and deployment times, see: Batteries and Power.

1.2 | Comparing the Song Meter Mini and Song Meter Mini 2

The Song Meter Mini 2 builds on the first-generation Song Meter Mini by taking into account the feedback we have received from users running all types of deployments since the original product's launch in 2020.

The first- and second-generation recorders share much in common, and users coming from the original Song Meter Mini will find the new Song Meter Mini 2 to be very familiar. 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.

1.2.1 | Improved Enclosure

The Song Meter Mini 2's enclosure has been completely redesigned. It is now more robust and easier to use.

While the first-generation Song Meter Mini's enclosure was comprised of a separate base and lid, the enclosure of the Song Meter Mini 2 is joined by a permanent hinge, and the new, lockable latch can be more easily operated with one hand. The latch can be locked close using an appropriately sized padlock, without requiring an additional security bracket.

Note:

The optional Security Bracket accessory for the first-generation Song Meter Mini is not compatible with the Song Meter Mini 2. Instead, the enclosure itself can be locked shut using a padlock.

The seal around the edges of the enclosure has been improved, and the enclosure (excluding acoustic stub mics) meets IP67 standards. This means it can withstand temporary submersion in water up to a depth of one meter without water intrusion. Note that installed acoustic stub mics can be damaged by underwater submersion, but they are protected against rain.

The back of the Song Meter Mini 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 Mini 2 Hardware.

1.2.2 | Battery Configuration

The original Song Meter Mini had one built-in AA battery tray, allowing the use of four AA batteries by default. The optional Lithium-ion Lid accessory replaced the standard lid with a compartment for up to six 18650 lithium-ion batteries, installed in pairs.

The Song Meter Mini 2 now comes in two entirely separate versions, **AA** and **Li-ion**, each with a permanently installed battery tray for its respective battery type. See Battery Configuration Versions for more detail.

Note:

The Song Meter Mini 2 is not compatible with the Lithium-ion Lid accessory for the first generation Song Meter Mini.

AA Batteries

The Song Meter Mini 2 AA can be used with either four or eight AA batteries. With eight AA batteries installed, you can record for twice as long as the original Song Meter Mini could with AA batteries. Ribbons built into the AA battery trays allow you to remove batteries much more easily.

Important:

AA batteries in the Song Meter Mini 2 AA are wired in two parallel sets of four batteries. This means that the recorder's **Status** screen will show the same voltage reading whether four or eight brand-new batteries are installed. The voltage reading on a recorder with eight batteries will decline at half the speed compared to a recorder with four batteries.

Lithium-Ion Batteries

The Song Meter Mini 2 Li-ion can be used with any number of 18650 batteries between one and six. Unlike the first-generation Song Meter Mini's Lithium-ion Lid accessory, 18650 batteries do not need to be installed in pairs.

Important:

The original Song Meter Mini's Lithium-Ion Lid used pairs of 18650 batteries in parallel with other pairs of batteries. The new Song Meter Mini 2 Li-ion uses individual 18650 batteries in parallel with each other. This means that the voltage reading on the Song Meter Mini 2 Li-ion's **Status** screen is half that of the original Song Meter Mini, despite having the same possible deployment time.

For example, with six fully charged 18650 batteries, a first-generation Song Meter Mini will display a voltage of 8.4 V, while a Song Meter Mini 2 will display a voltage of 4.2 V. Both recorders have the same total energy available despite the difference in voltage reading.

1.2.3 | Configuration and Firmware Files are Cross-Compatible

The Song Meter Mini and Song Meter Mini 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 Mini can be imported into a Song Meter Mini 2, and vice-versa. This provides a simple way to maintain consistent settings across a mixed fleet of recorders.

Note:

Configuration files that include the use of an optional second microphone cannot be completely imported into a recorder that does not have the second microphone installed. Relevant settings will be altered to only use the available microphone.

2 | Product Safety Information

2.1 | 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.

Always check that your batteries are installed correctly, even if the Song Meter Mini 2 powers on. It is possible for the recorder to briefly power on with some AA batteries installed in the wrong orientation.

Figure 1. Correct AA Battery Installation
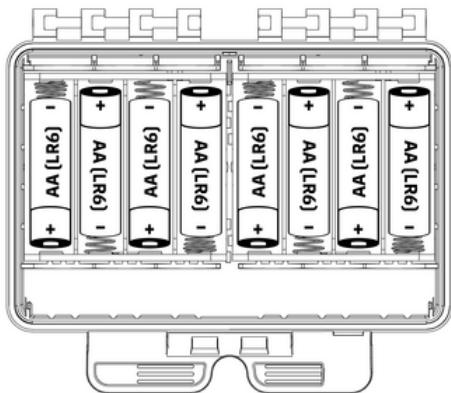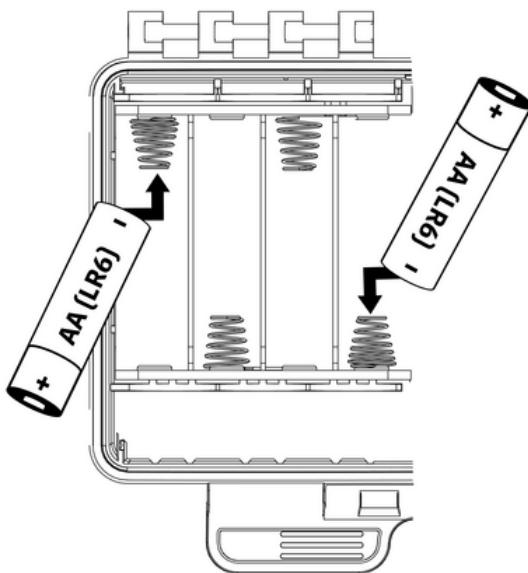
2.2 | 18650 Li-ion Battery Safety

⚠ Warning
Lithium-ion battery fires 18650 lithium-ion (Li-ion) batteries may combust if used incorrectly. Use only protected batteries. Pay attention to the polarity symbols (+ and -) on the battery tray. Ensure that each battery is installed correctly. Do not mix charged batteries with drained batteries.

Figure 1. Correct Li-ion Battery Installation
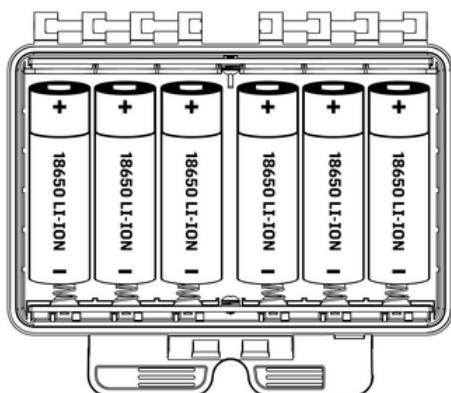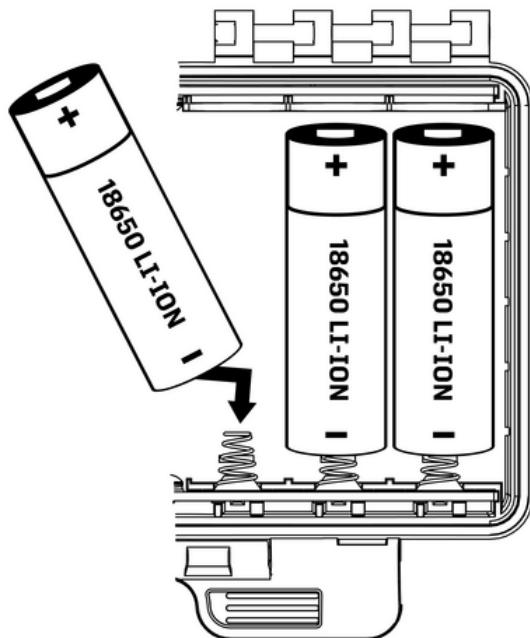
2.3 | Safe Disposal

The Song Meter Mini 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 Mini 2.

3 | Song Meter Mini 2 Quickstart Guide

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

For a video demonstration of these steps and additional, introductory information about the Song Meter Mini 2, see our video tutorials at https://www.wildlifeacoustics.com/resources/video-tutorials/song-meter-mini-2.

1. Unlatch and open the lid on the Song Meter Mini 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 brand-new or freshly charged batteries, making sure the negative, flat end of the battery contacts the battery tray spring.

The AA version accepts four or eight AA batteries.

The Li-ion version accepts between one and six 18650 batteries.

For additional safety information regarding batteries, see AA Battery Compartment.

3. **Insert an SD Card** into the recorder's SD Card slot.

   For additional information regarding SD cards, see SD Card Compatibility.

4. To **turn the recorder on**, slide the **ON/OFF** switch to **ON**.
5. **Install the Song Meter Configurator app** from the Apple App Store or Google Play Store onto your mobile device.

   For detailed instructions on installing apps, see Install the Song Meter Configurator App.

6. **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.

7. **Open the Song Meter Configurator app**.

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

8. **Press and hold** the **PAIR/STATUS** button on the Song Meter Mini 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, a **Pair** icon will be displayed next to the Song Meter Mini 2.

9. **Tap the Pair icon** in the app.

   The icon will turn green, indicating successful pairing.

   Two pop-up messages will appear, asking if you want to set the recorder's time zone and location to your mobile device's time zone and location.

10. **Tap Yes on both prompts** to match the recorder's time zone and location to your mobile device.
11. **Tap the Configure icon** for the paired Song Meter Mini 2 in the **Recorders** screen.

    The **Configuration Editor** screen will open.

12. **Select a preset recording schedule** from the dropdown menu and make any desired settings changes.
13. **Tap the < (back) button** to return to the **Recorders** screen.
14. **Tap Unpair** .

The Song Meter Mini 2 will now begin running the schedule you selected.

Any changes made in the **Configuration Editor** screen are immediately loaded and saved into the Song Meter Mini 2. There is no need to manually save changes.

If the Song Meter Mini 2 is unpaired or powered off, it will remember any changes made from within the **Configuration Editor** screen.

4 | Hardware Overview

4.1 | External Features

4.1.1 | Durable, Weatherproof Enclosure

The Song Meter Mini 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. Note that installed acoustic stub mics can be damaged by underwater submersion, though they are protected against rain.

A reusable **humidity regulation packet** (hidden inside the enclosure) and a **moisture vent** regulate humidity and pressure inside the enclosure. The vent is protected internally by a membrane that blocks liquid water while allowing water vapor to exit the enclosure.

Figure 1. Front-Left View

1. The **Enclosure Latch** snaps into place to keep the enclosure sealed.

2. 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.

3. One **Acoustic Microphone** is factory-installed. A foam **Windscreen** reduces recorded wind noise and contributes to weather protection. See Microphones.

4. The **Enclosure Hinge** keeps the lid and body of the recorder permanently attached.

Figure 2. Front-Right View

1. A **Padlock Loop** allows the enclosure to be locked closed. See Lock Compatibility for padlock size recommendations.

2. 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.

3. A **Microphone Port** can accommodate a second acoustic microphone. When no second microphone is installed, the port is occupied by a plastic hex bolt. See Optional Acoustic Microphone Port.

4. 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.

5. A weatherproof **Humidity Vent** regulates humidity and pressure inside the enclosure.

Figure 3. Rear View

1. The upper and lower **Mounting Tabs** can accommodate bolts or screws with a maximum thread diameter of 3/16 in. (4.6 mm). They 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.

4.1.2 | Versatile Mounting Options

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

- **Mounting Tabs** at the top and bottom of the enclosure's back can accommodate bolts or screws up to 3/16 in. (4.6 mm) in diameter. They 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 **Tripod Mount** on the back of the enclosure fits a 1/4"-20 bolt, enabling compatibility with many mounting accessories designed for trail cameras.

  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 Mini 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.

4.1.3 | Lock Compatibility

The enclosure of the Song Meter Mini 2 is designed to support two layers of security:

Cable Lock Compatibility

A cable lock can be threaded through the two **Mounting Loops** along the top of the Song Meter Mini 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**.

Padlock Compatibility

A padlock can be inserted through the **Padlock Loop** to keep the enclosure latch closed.

The internal diameter of the **Padlock Loop** is 0.268 in. (6.81 mm). We recommend a padlock with a **shackle diameter of 0.25 in. (6.35 mm)** . This size does allow some movement of the latch, but not enough to compromise the IP67 weatherproof rating of the Song Meter Mini 2 enclosure.

Note:

Do not use a padlock with a shackle thinner than 0.25 in. (6.35 mm). A thinner shackle will allow the latch to be undone partially or completely, allowing water to get in, or allowing the enclosure to be fully opened.

Note that damage to any part of the Song Meter Mini 2 's plastic enclosure can compromise the effectiveness of these security features. If your recorder has been damaged, contact Wildlife Acoustics Support to arrange a repair.

4.1.4 | Optional Acoustic Microphone Port

The Song Meter Mini 2 has a port for an optional, second acoustic microphone. This allows for recording two channels of audio at once and provides redundancy in case one microphone is damaged.

The optional, second microphone can be installed on the right edge of the recorder. When the optional microphone is not installed, a plastic bolt and rubber gasket are used to seal the port.

For instructions on installing the optional acoustic microphone, see Install a Second Microphone.

4.2 | Internal Features

Figure 1. Internal Overview

1. The **Status LED Key** provides a guide for understanding the **STATUS LEDs**. This table can also be found under STATUS LEDs.[1]

2. The **Control Panel** is where you'll find several basic, physical controls. See Control Panel for a detailed image of this section.

3. The **Battery Compartment** holds either AA or 18650 batteries, depending on the recorder version. See Battery Compartment.

4. The **SD Card Slot** holds a full-size SD card with a capacity up to 2 TB for storing recordings and other files.

5. The **Right Microphone Connector** (labeled **Right Mic**) allows you to connect a second, acoustic microphone to the recorder. See Microphones.

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Note that the printed key includes one entry that only applies to the Song Meter Mini Bat 1 and 2 recorders, "Armed: Waiting for a bat trigger."

4.2.1 | Battery Compartment

The lid of the Song Meter Mini 2 holds the recorder's batteries. Depending on the version of the recorder, it holds either AA batteries or 18650 lithium-ion batteries.

4.2.1.1 | AA Battery Compartment

The AA battery compartment holds two plastic battery trays. Each tray holds four AA batteries, and you can power the recorder with four or eight AA batteries in total.

If you use only four AA batteries, all four must be installed in the same tray.

Each tray is equipped with a ribbon. When installing AA batteries, position the ribbon underneath the batteries. Pulling on the ribbon will then let you easily remove the batteries.

For information on the different types of AA batteries, including Energizer® Ultimate Lithium™, see Types of AA Batteries.

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.

If only using four AA batteries, make sure the ribbon attached to the empty battery tray does not interfere with the seal between the lid and base of the recorder enclosure.

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). This applies even when using eight AA batteries. All eight 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 Mini 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.

4.2.1.2 | Lithium-Ion Battery Compartment

The lid of the Li-ion version of the Song Meter Mini 2 holds between one and six lithium-ion 18650 batteries. You can install any number of 18650 batteries in any of the slots, and the recorder will work as intended, but using more batteries provides longer run time. See Lithium-Ion Battery Requirements for more details on choosing appropriate batteries.

If using fewer than six lithium-ion batteries, we recommend inserting batteries starting from the left. Because the plastic cover with the **Status LED Key** contacts the four leftmost batteries when the enclosure is closed, those four battery slots are the most secure. When all six battery slots are filled, or when up to four batteries are installed in the leftmost slots, batteries are least likely to be shaken out of place by a strong impact.

Best Practices for Lithium-Ion Batteries

- Do not allow batteries' electrical contacts to touch each other or any conductive material during transport or storage. Use a non-conductive storage container designed for 18650 batteries to prevent accidental contact.

- Do not mix freshly charged batteries with drained batteries.

- Unlike many rechargeable AA batteries, lithium-ion batteries are shipped with no stored charge. You must charge them before initial use.

- Ensure batteries are oriented with the correct positive/negative polarity.

- Remove batteries before long-term storage to avoid possible damage from battery leakage.

- At the deployment site, make sure batteries were not knocked loose during travel.

Note:

There are strict regulations on shipping and traveling with lithium-ion batteries in many parts of the world. Consult applicable laws before air travel or when planning to ship lithium-ion batteries.

4.2.2 | SD Card Slot

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

To insert an SD card, slide it into the **SD Card 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.

Note:

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

Note:

Be sure the card's write-protection switch is set to the **unlocked** position. The Song Meter Mini 2 recorder will not record to a write-protected card.

4.2.3 | Control Panel

Figure 1. Control Panel

1. The **ON/OFF** switch powers the recorder on or sets it to a low-power, idle state. See ON/OFF Switch.

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.

   b. Press the button briefly to activate the **STATUS** LEDs. See STATUS LEDs.

3. The **FUNCTION/STATUS** LEDs serve two purposes:

      a. When using the **FUNCTION** button, the LEDs provide feedback about the selected function. See Function Button and LEDs.

      b. The LEDs can also provide general status information (see STATUS LEDs).

4. The **FUNCTION** button can be used to select and initiate four functions (see Function Button and LEDs).

4.2.3.1 | 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 Mini 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 Mini 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.

4.2.3.2 | 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 printed inside the enclosure, just above the **STATUS LEDs**.

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

LED Label	LED Activity	Status Meaning
SD Card	Off	No SD card is detected
	Green Blinking	SD Card is active: do not eject
	Green Solid	SD Card is inactive: safe to eject
	Red Blinking	SD Card is full
	Red Solid	Error: SD Card issue

4.2.3.3 | Function Button and LEDs

The physical controls on the Song Meter Mini 2 allow you to perform four utility functions without the Song Meter Configurator app. Instructions on performing these utility functions using the physical controls and using the Song Meter Configurator app can be found elsewhere in this documentation.

Available Functions

There are four **FUNCTION** LEDs:

- **Diags**: This runs an internal diagnostic check, then saves a diagnostics file and a configuration file to the SD card.

  See Export Diagnostics Files for instructions on exporting diagnostic files using the **FUNCTION** button or the Song Meter Configurator app.

  See Diagnostics Files for a description of what diagnostics files are and when they are useful.

- **Load**: This loads a configuration file (ending in .miniconfig) and/or firmware file (ending in .smm) from the SD card to the recorder.

  For detailed instructions on installing a firmware file, see Update the Recorder's Firmware.

  For detailed instructions on loading a configuration file, see Configure a Recorder Using a Configuration File.

  Note:

  Once a configuration file or firmware file is successfully loaded from an SD card, that information is stored on the Song Meter Mini 2's internal memory, and the file is no longer needed on the SD card.

- **Defaults**: This restores the default states of all of the recorder's settings except current date and time.

  See Restore Recorder to Factory Defaults for instructions on restoring default settings using the **FUNCTION** button or the Song Meter Configurator app.

- **Format**: This reformats the SD card, resetting it to a blank state and deleting any existing files from the card.

  This function can also be performed using the Song Meter Configurator app or free desktop software. See Format the SD Card.

  Important:

  It is important to reformat the SD card prior to each deployment. Reformatting the card goes beyond just deleting existing data. It resets the structure of the card and reduces the likelihood of data corruption.

  Reformatting can be done using the Song Meter Mini 2 or using the SD Association's official, free formatting utility for Windows and Mac.

4.2.3.3.1 | Perform a Function Using the FUNCTION Button

1. Tap the **FUNCTION** button multiple times.

   A green LED will cycle through the four positions to highlight the selected function.

2. When the desired function is highlighted, press and hold the **FUNCTION** button for three seconds.
3. When the highlighted LED starts flashing green, let go of the **FUNCTION** button.

If all four LEDs flash green three times, the function ran successfully.

If all four LEDs flash red six times, the function was unsuccessful.

4.3 | Microphones

By default, the Song Meter Mini 2 utilizes a single built-in acoustic microphone. The microphone has a replaceable windscreen.

An additional acoustic microphone can be purchased and added to the Song Meter Mini 2. This enables you to record in stereo (two-channel) or to specify the left or right channel for mono (single-channel) recording.

When two microphones are used, they are labeled "left" and "right" in the Song Meter Configurator app. This corresponds to the user's left and right when viewing the front cover or control panel of the recorder.

4.3.1 | Install a Second Microphone

The Song Meter Mini 2 has a port available for a second, optional microphone, which you can install yourself. To do so, you'll need to remove the plastic hex bolt that occupies the Right Microphone port and install the microphone according to the steps below.

Note:

The optional acoustic microphone is designed for a one-time installation. It is not designed to be repeatedly installed and uninstalled. If the microphone is removed and re-installed multiple times, that could cause the connection wire to break, and the microphone will fail. Once the microphone is installed, it should only be removed if it needs to be replaced.

Note:

You can view a video demonstration of this installation process on our website (see Video Tutorials).

1. Open the lid and place the Song Meter Mini 2 on a flat surface.

2. Use a 3/4" or adjustable hex wrench to gently loosen the bolt from the nut, then use your hand to completely unscrew the bolt.

   If the recorder is laid flat on its back, the internal hex nut will stay in place. The nut is necessary to secure the new microphone.

3. Thread the wire connector for the second microphone through the hole. Do not connect the wire to the circuit board yet.

4. Hand-turn the microphone clockwise to screw it into the internal nut. Make sure the microphone wires are not caught on anything as you turn the microphone.

   Make sure the threads of the microphone align with the threads of the hex nut.

5. When the microphone is finger-tight, tighten the microphone lightly with pliers or a wrench. Do not over-tighten.
6. Connect the plug at the end of the microphone wires to the socket labeled **Right Mic**.

The plug has a key on one face that must align with a slot on the left side of the socket.

7. Route the wires to the right of the SD card to keep them out of the way of the enclosure seal and to avoid electrical noise from the SD card.

   The green plastic covering the front face of the SD card slot contacts the batteries when the lid is closed and holds them in place. Make sure the microphone wires are tucked to the right side of this plastic cover so they are not pinched between the plastic and batteries when you shut the enclosure.

When the microphone is correctly installed, the recorder's **Status** screen will display **RIGHT MICROPHONE: Attached**. For info on how to view the recorder's status screen via the Song Meter Configurator app, see Check the Song Meter Mini 2's Status over Bluetooth.

5 | Deploying the Song Meter Mini 2

5.1 | Deployment Checklists

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

5.1.1 | 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.

1. Install brand-new or freshly charged batteries into the Song Meter Mini 2. **Ensure that each battery is oriented correctly.**
   If one battery is installed backwards, the Song Meter Mini 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 from the Apple App Store or Google Play store.
3. Format the SD Card.
4. Check the **Status** screen for each recorder.
   a. If the **Status** screen displays an alert for an available firmware update, install the update.
   b. Check for SD Card error messages.
5. Pair with the recorder 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.

5.1.2 | Checklist: Starting the Deployment

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

1. Make sure batteries are oriented correctly and were not knocked loose during travel.
   The Song Meter Mini 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 Mini 2 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.
   a. Resolve any SD card error messages you see on the **Status** screen.
4. Unpair from the Song Meter Mini 2.
5. Latch the Song Meter Mini 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 and padlock to secure the recorder and its lid.
   b. If you tie the Song Meter Mini 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.

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

5.1.3 | Checklist: After the Deployment

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

1. Turn the power switch **Off** before removing the SD card.
   Removing the SD card while the Song Meter Mini 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 Mini 2, remove all batteries.
   Batteries can leak corrosive chemicals if left installed in a device for long periods of time.

5.2 | Install the Song Meter Configurator App

The Song Meter Configurator app is available free-of-charge and is necessary to configure the Song Meter Mini 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.

5.2.1 | Install the Song Meter Configurator App on iOS

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.

5.2.2 | Install the Song Meter Configurator App on Android

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.

5.3 | Pair the Recorder with the Song Meter Configurator App

To set the Song Meter Mini 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 Mini 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.

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 Mini 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 Mini 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 Mini 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.

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.

5.3.1 | Unpair from the Recorder

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

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

Related tasks

- Remove Entries from the Recorders Screen

5.4 | 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 Mini 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 Mini 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 Mini 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 for details on common SD card errors.

Note:

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.

5.4.1 | When to Reformat the SD Card

It is important to reformat the SD card prior to each deployment to allow the Song Meter Mini 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 firmware[1] or load a configuration file[2], 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 Mini 2's recordings.

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

[1]

See Update the Recorder's Firmware.

2

See Configuration Files on the SD Card.

5.4.2 | Format the SD Card Using the Song Meter Configurator App

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

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

      Configure and **Unpair** icons will appear next to the recorder's name.

   b. Tap the **Configure** icon for the paired Song Meter Mini 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.

5.4.3 | Format the SD Card Using the Recorder's Physical Controls

You can format an SD card installed in the Song Meter Mini 2 without the Song Meter Configurator app using the recorder's **FUNCTION** button.

1. Install brand-new or freshly charged batteries into the Song Meter Mini 2.
2. Insert the SD Card you wish to format into the Song Meter Mini 2's card slot.
3. Turn on the Song Meter Mini 2.
4. Tap the **FUNCTION** button multiple times.

   A green LED will cycle through the four positions to highlight the selected function.

5. When the **Format** LED is highlighted, press and hold the **FUNCTION** button for three seconds.
6. When the **Format** LED starts flashing green, let go of the **FUNCTION** button.

All four LEDs will flash green three times to indicate the format operation was successful.

If all four LEDs flash red six times, it means the format operation was unsuccessful. Check the recorder's **STATUS** screen in the Song Meter Configurator app for SD Card Error Messages.

5.4.4 | Format the SD Card Using a Computer

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.

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.

5.5 | Begin a Recording Deployment

The Song Meter Mini 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 for a list of best practices to make sure every deployment occurs without issue.

5.6 | Check the Song Meter Mini 2's Status over Bluetooth

By default, the Song Meter Mini 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 Mini 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?).

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 Mini 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 for a description of all information available on this screen.

5. To close the **Status** screen, tap the **< Back** icon.

6 | Configuring the Song Meter Mini 2

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

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

Clock

The Song Meter Mini 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 Mini 2 to resynchronize the clock before recording.

Time Zone

The recorder's **Time Zone** setting determines what local time convention the Song Meter Mini 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 Mini 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 Mini 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 Mini 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 Mini 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.

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

When you pair the Song Meter Mini 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.

1. Pair the Recorder with the Song Meter Configurator App.
2. If the Song Meter Mini 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.

Related tasks

- Manually Set the Recorder's Deployment Location
- Manually Set the Recorder's Time Zone

6.1.2 | Manually Set the Recorder's Deployment Location

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

1. Open the **Configuration Editor**:
   - Pair with the Song Meter Mini 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.

Related tasks

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

6.1.3 | Manually Set the Recorder's Time Zone

When you Pair the Recorder with the Song Meter Configurator App, the app will prompt you to update the Song Meter Mini 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.

1. Open the **Configuration Editor**.

   - To configure a paired recorder directly, see Configure a Paired Recorder Directly.

   - To configure a saved configuration file, see Edit a Saved Configuration File.

2. Tap **Location & time zone** to open the Location & Time Zone Screen.

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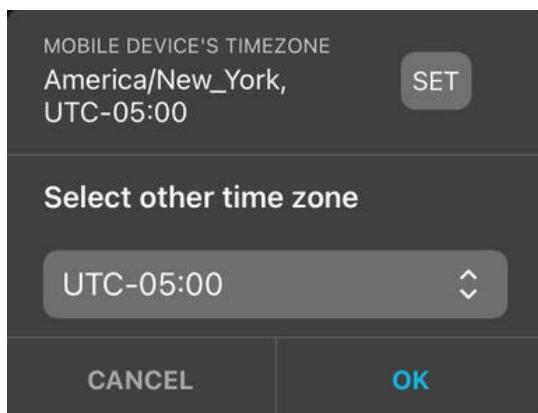
4. Select a time zone using either of these methods:

  ○ 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.

Related tasks

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

6.2 | Configure the Recorder's Settings

There are two ways to configure the settings on the Song Meter Mini 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 Mini 2.

6.2.1 | Configure a Paired Recorder Directly

When the Song Meter Mini 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:

1. In the Song Meter Configurator app, open the **Recorders** screen.
2. Pair the Recorder with the Song Meter Configurator App.

   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 for detailed descriptions of all available settings.

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

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.

6.2.1.1 | Rename a Recorder

Each Song Meter Mini 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.

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.

1. Pair the Recorder with the Song Meter Configurator App.

    Configure and **Unpair** icons will appear next to the recorder's name.

2. Tap the **Configure** icon for the paired Song Meter Mini 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.

The edited recorder name is immediately saved.

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

6.2.1.1.1 | Recorder Name Requirements

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

- Capital, unaccented, Roman letters

- Numbers

- Hyphens

- Underscores[1]

[1]

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

6.2.2 | Configure a Recorder Using a Configuration File

This section describes how to configure a Song Meter Mini 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. That section includes instructions on creating, editing, and sharing configuration files.

6.2.2.1 | Load a Configuration from the Configuration Library to a Paired Recorder

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 Mini or Song Meter Mini 2 recorders.

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

1. Make sure the configuration file you want to load is saved in the **Configuration Library**.

   See Configuration Library Screen for methods on creating or importing a configuration file into the app.

2. Pair the Recorder with the Song Meter Configurator App.
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.
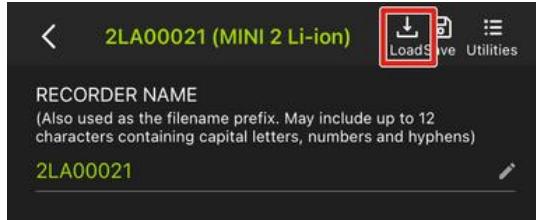
   A **Load Configuration** window will appear.

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**.

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

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

6.2.2.2 | 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 Mini 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.

6.2.2.2.1 | Load a Configuration to a Paired Recorder from an SD Card

This is one of multiple ways to apply a configuration file to a Song Meter Mini 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.

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 Mini 2's settings are configured, it is no longer necessary to keep the configuration file on the SD card.

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 for instructions on saving configuration files directly from a Song Meter Mini 2 or by using a computer.

2. Insert the SD card into the Song Meter Mini 2.
3. Install brand-new or freshly charged batteries into the Song Meter Mini 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.

      Configure and **Unpair** icons will appear next to the recorder's name.

    b. Tap the **Configure** icon for the paired Song Meter Mini 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.

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

6.2.2.2.2 | Load a Configuration File from an SD Card Using the Physical Controls

The following procedure loads a configuration file (ending in .miniconfig into a recorder using only the physical controls on the Song Meter Mini 2 hardware. For a full list of methods for programming a recorder's settings, see Configure the Recorder's Settings.

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

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 for instructions on saving configuration files directly from a Song Meter Mini 2 or by using a computer.

2. Install brand-new or freshly charged batteries into the Song Meter Mini 2.

    Partially drained batteries can cause the load process to fail.

3. Set the recorder's **ON/OFF** switch to **ON**.
4. Press the **FUNCTION** button twice to highlight the **Load** function LED.
5. Press and hold the **FUNCTION** button, then let go when the **Load** LED begins blinking.

When the process is complete, all four LEDs will blink green three times to indicate the recorder has loaded the configuration file.

If the configuration load operation is not successful, all four LEDs will blink red six times. If this happens, check that the configuration file was exported from a recorder of the same model and that it is saved to the top level of the SD card.

6.3 | Manage Configuration Files

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

6.3.1 | 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.

- 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.

- To import a configuration file from another app, such as an email or cloud storage app, see Import a Configuration File from Another App.

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.

- To delete a configuration file from the **Configuration Library**, see Delete a Saved Configuration File.

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.

- To import a configuration file from an outside source to the **Configuration Library**, see Import a Configuration File from Another App.

6.3.1.1 | Create a Configuration File in the Configuration Library Screen

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).
10. When you are done making changes to the configuration, tap the configuration's name at the top of the screen.

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

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

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**.

1. Pair the Recorder with the Song Meter Configurator App.
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.
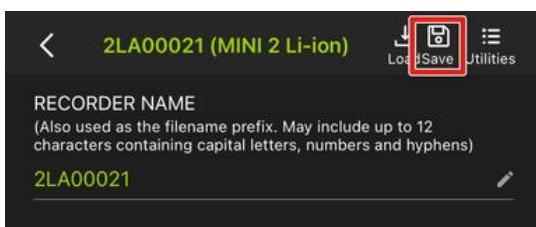
A **Configuration Name** window appears. An editable text box is prepopulated with the paired recorder's **Recorder Name**.

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.

6.3.1.3 | 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.

6.3.1.3.1 | iOS: Import from Mail

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.

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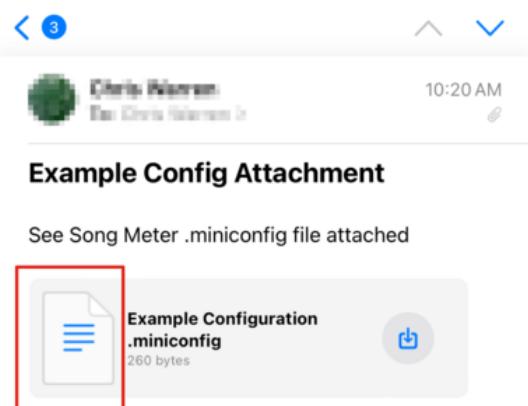
Because the iOS Mail app cannot interpret a .miniconfig file, the body of the preview window will display a short string of nonsensical text.

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

Example Configuration.miniconfig ⌄   Done

SMMSыя^s@ŕm@и,Ђ−7(Ђ
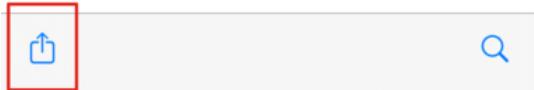
This opens the iOS interface for sharing files between apps.

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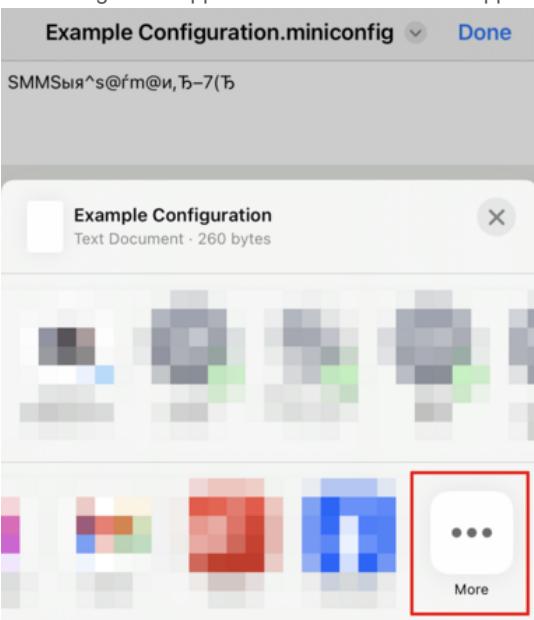
This will bring up an **Apps** list.

6. From the **Apps** list, tap the **Song Meter** app.
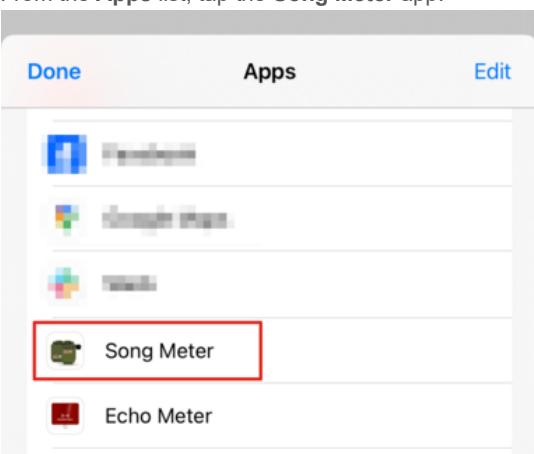
The Configuration file will be imported and visible in the **Configuration Library**.
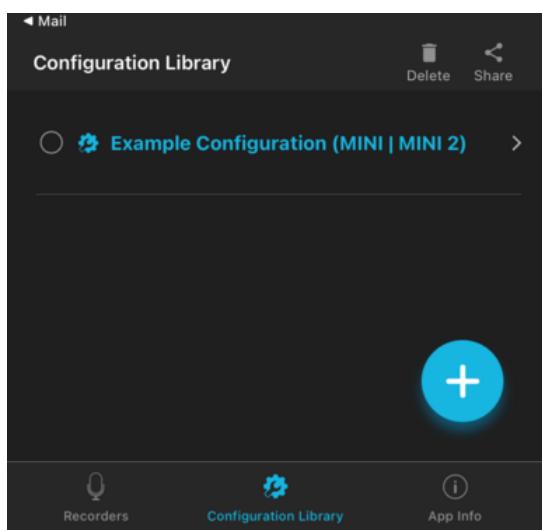
6.3.1.3.2 | Android: Import from Gmail

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.

1. Open the Gmail app.
2. Open the message containing the .miniconfig file attachment.
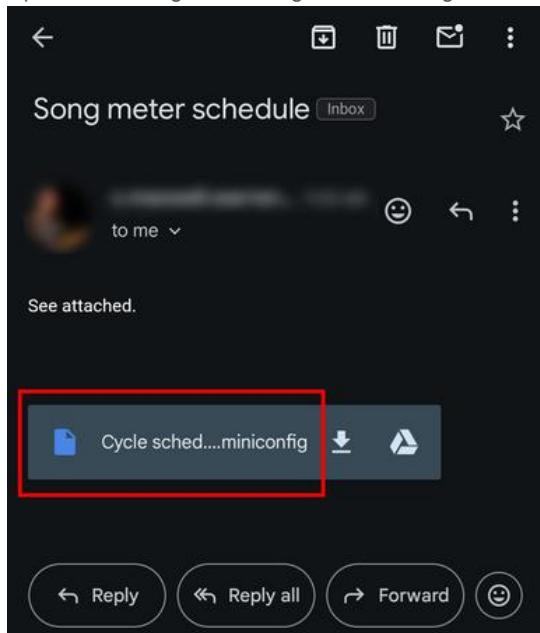
3. Tap on the attachment name. Do not tap on the **Download** or **Google Drive** icons.

The Configuration file will be imported and visible in the **Configuration Library**.
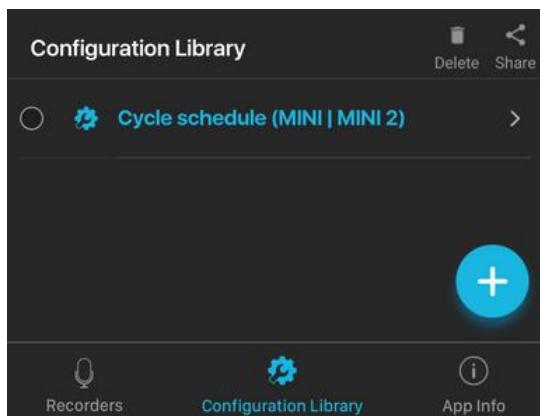
6.3.1.4 | Edit a Saved Configuration File

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.

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).

    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.

6.3.1.5 | Delete a Saved Configuration File

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

1. In the **Configuration Library** screen, tap on the selection circle to the left of any configuration to select it.
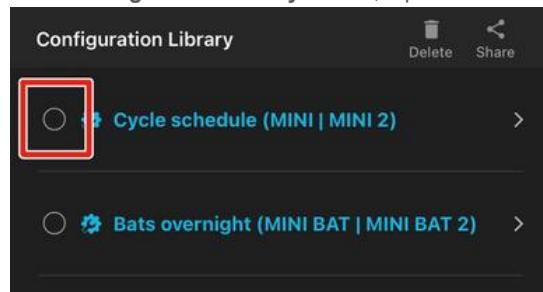
    Selected configurations have the selection circle icon filled in with a check mark.
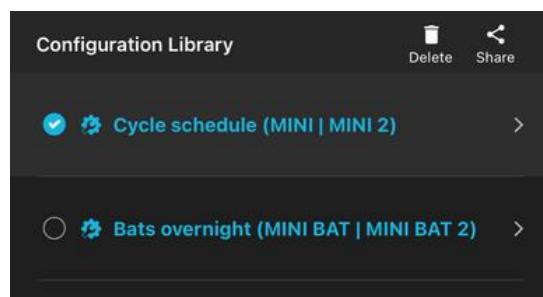
2. Repeat 1 to select multiple configurations, if desired.
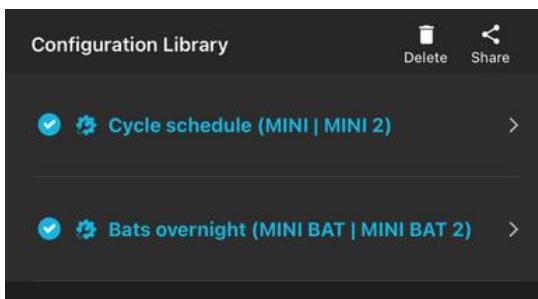
3. Tap the **Delete** icon in the upper right of the screen.
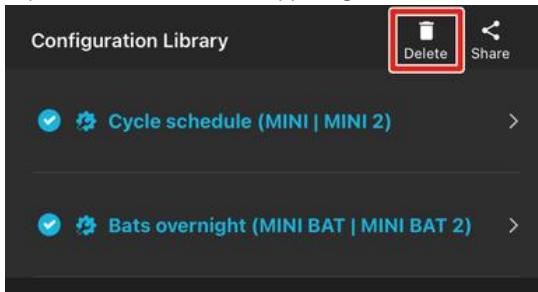
A message will ask if you're sure you want to delete the configuration.

4. Tap **DELETE**.

6.3.1.6 | Share a Saved Configuration File

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).

1. In the **Configuration Library** screen, tap on the selection circle to the left of any configuration to select it.
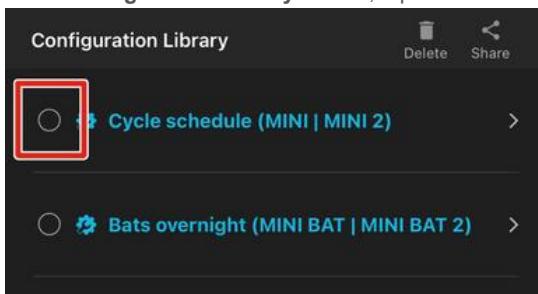
Selected configurations have the selection circle icon filled in with a check mark.
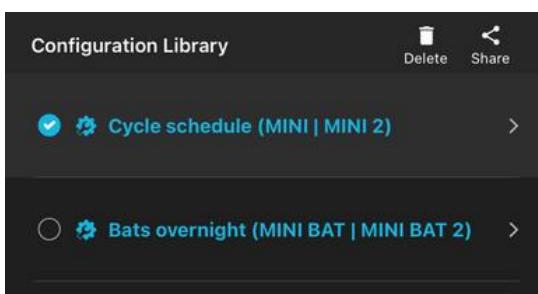
2. Repeat 1 to select multiple configurations, if desired.
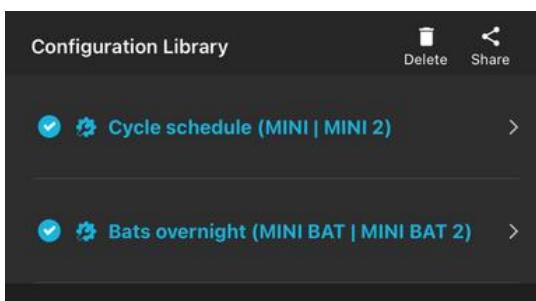
3. Tap the **Share** icon at the top right of the screen.
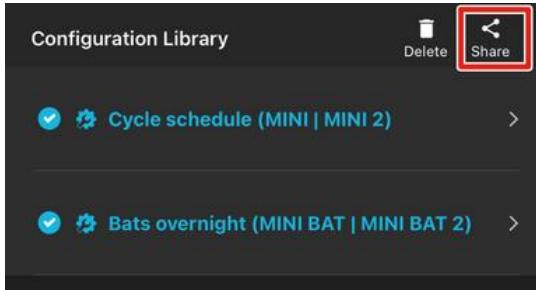
The iOS or Android interface for sharing files between applications will open.

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.

6.3.2 | Configuration Files on the SD Card

Configuration files can be exported from the Song Meter Mini 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 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 for an example of exporting a configuration file to an email application.

- To export a recorder's settings as a configuration file directly to an SD card, see Export Diagnostics File to an SD Card Using the Recorder's Physical Controls.

There are also multiple ways to import a configuration file from an SD card to a Song Meter Mini 2. These methods allow you to use a single SD card to program multiple recorders with identical settings.

- To load a configuration file from an SD card to a paired Song Meter Mini 2 using the Song Meter Configurator app, see Load a Configuration to a Paired Recorder from an SD Card.

- To load a configuration file from an SD card using only the physical controls on the Song Meter Mini 2 hardware, see Load a Configuration File from an SD Card Using the Physical Controls.

6.3.2.1 | Export Configuration and Diagnostic Files to an SD Card Using the Physical Controls

Using only the buttons on the main panel of the Song Meter Mini 2 hardware, it is possible to export two useful files:

- **Configuration File**: [RECORDER NAME].miniconfig

  This is a file containing all of the recorder's settings. It can be loaded into another recorder of the same model to duplicate all settings from one recorder to another. This is particularly useful if you want a large fleet of recorders to all run the same schedule.

  See Load a Configuration File from an SD Card Using the Physical Controls for instructions on loading a .miniconfig file using only the hardware controls, and see Load a Configuration to a Paired Recorder from an SD Card to load a .miniconfig file from an SD card using the Song Meter Configurator app.

  .miniconfig files can also be transferred between a recorder and the Song Meter Configurator app without the use of an SD card. See Configuration Editor Screen and Configuration Library Screen for more information.

- **Diagnostics File**: [RECORDER NAME]_[DATE]_[TIME].minidiags

  This is a file containing all of the recorder settings, plus hardware diagnostics information that can be used by Wildlife Acoustics Support for diagnosing certain kinds of issues. They can be created manually, as shown below, or automatically when the Song Meter Mini 2 experiences an unexpected reboot.

  Note:

  Diagnostics files that have been generated automatically do not necessarily indicate a serious issue with the recorder. See Diagnostics Files for a description of common causes for automatic diagnostics files that are not related to hardware malfunction.

To export a Configuration file and Diagnostics file using only the buttons on the Song Meter Mini 2 hardware:

1. Install new or fully charged batteries, and set the **ON/OFF** switch to **ON**.
2. Press the **FUNCTION** button once.

   The **Diags** LED will be highlighted green, and the three other LEDs will be unlit.

3. Press and hold the **FUNCTION** button for three seconds.
4. When the **Diags** LED starts flashing green, let go of the **FUNCTION** button.

All four LEDs will flash green three times to indicate that the .minidiags and .miniconfig files have been saved to the SD card.

If all four LEDs flash red six times, it means an error prevented the recorder from saving these two files. If this happens, check that the SD card has available space and displays no error messages on the recorder's **Status** screen (see Status Screen).

6.4 | Settings Reference

This section provides a detailed description of each of the Song Meter Mini 2's available settings. The organization of this section mimics the organization of settings within the Song Meter Configurator app. For example, all settings found in the **Acoustic Settings** screen are described under Acoustic Settings Screen.

6.4.1 | Acoustic Settings Screen

The parameters on the **ACOUSTIC SETTINGS** screen affect how the Song Meter Mini 2 records audio during its recording schedule.

To make changes to any setting on this page, tap on the setting label. A new window will appear to let you select the available options for that setting.

To exit the **ACOUSTIC SETTINGS** screen, tap the **<** icon at the top left, or tap the text displaying the recorder's name and model.
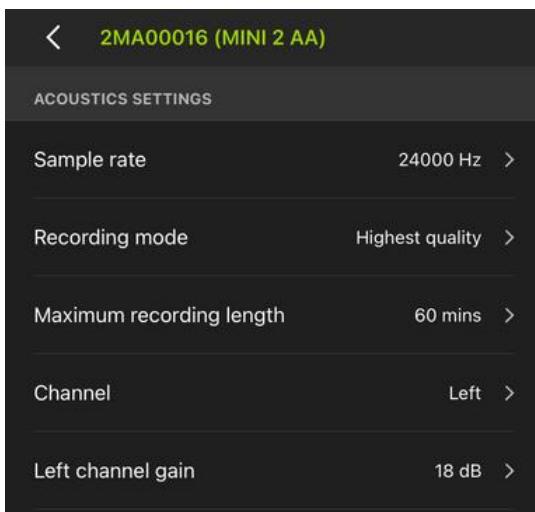
6.4.1.1 | Sample Rate

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

6.4.1.2 | Recording Mode

- **Options**: Highest Quality, Low-Power.

- **Default**: Highest Quality.

Note:

The **Recording Mode** setting was introduced in firmware 4.1 for the first- and second-generation Song Meter Mini and Song Meter Mini Bat recorders. Prior to this firmware version, the **Highest quality** mode was the only mode used.

The **Recording Mode** setting enables you to make a trade-off between audio quality and longer battery life.

Low-Power Mode Battery Life Benefits

The battery life benefits from opting for **Low-Power** mode depend on the sample rate and number of channels you have selected. Generally speaking, lower sample rates benefit more than higher sample rates, but there is significant variation from one sample rate to the next. At the default sample rate of 24 kHz, the battery life benefit is approximately 30% in mono and 13% in stereo. See Acoustic Recording Power Consumption for a table of power consumption measurements taken at each sample rate, with Highest Quality and Low-Power modes.

Low-Power Mode Effects on Audio Quality

In **Low-Power** mode, the Song Meter Mini 2 's anti-alias filter is less effective. The anti-alias filter removes frequencies that are too high for the selected sample rate to record. Sounds that are higher in frequency than half of the sample rate are not recorded accurately. They instead are "folded down" and appear as upside-down artifacts in the recorded audio when viewed in a spectrogram. In both recording modes on the Song Meter Mini 2, aliasing is possible, as the anti-alias filter takes effect gradually as frequency increases. In Low-power mode, aliasing artifacts will be louder by 3 to 12 dB.

In many situations, when using the default sample rate of 24 kHz, this may not present a significant or even noticeable problem. There are relatively few sound sources in nature above 12 kHz. Echolocating animals like bats are the most obvious exception, but some species of droning insects may present a more severe problem.

If you are recording in an environment with significant high-frequency sound sources, like droning insects or high levels of bat activity, we recommend using the default, **Highest Quality** mode.

6.4.1.3 | 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.

6.4.1.4 | Channel

- **Options**: Left, Right, or Stereo.

- **Default**: Stereo.

If a second microphone is connected to the Song Meter Mini 2, there is an option to record one or two channels of audio.

For single channel recording, either microphone can be selected. If stereo is selected, both microphones will record. If the Song Meter Mini 2 only has a single microphone detected, this option is not available for selection.

6.4.1.5 | Left Channel Gain/Right Channel 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.

If there are two microphones connected to the Song Meter Mini 2, there are separate gain controls for each microphone.

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.

6.4.2 | 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 Mini 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 Mini 2 on or after the specified date, it will begin running its schedule immediately.

6.4.2.1 | Configure Delay Start

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

1. Open the **Configuration Editor**.
2. Tap on the **Delay Start** entry to open a calendar interface.
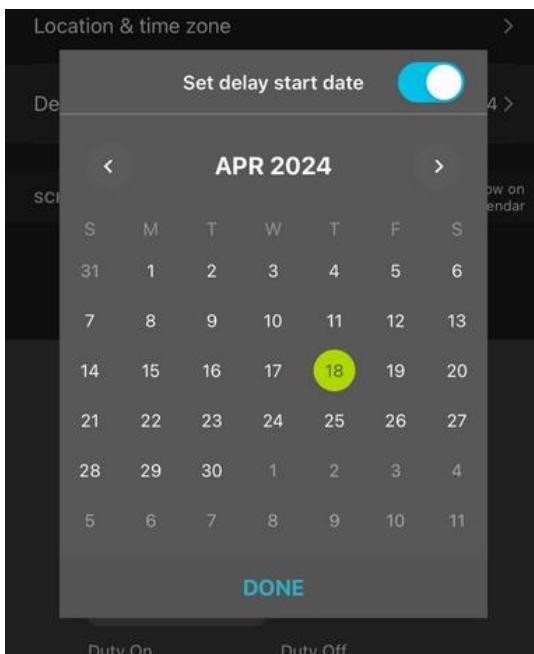
3. Tap the **Set delay start date** toggle switch to enable or disable the **Delay Start** setting.

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.

6.4.3 | 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.

- **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 Mini 2 recorder.

Tip:

In most cases, we recommend keeping this setting enabled. Enabling Bluetooth beacons has no significant effect on the Song Meter Mini 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.

6.5 | 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, 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 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 covers essential information about how multiple blocks behave in a single schedule.

Date Range and Day Duty Cycle 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 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.

6.5.1 | Schedules and Schedule Blocks

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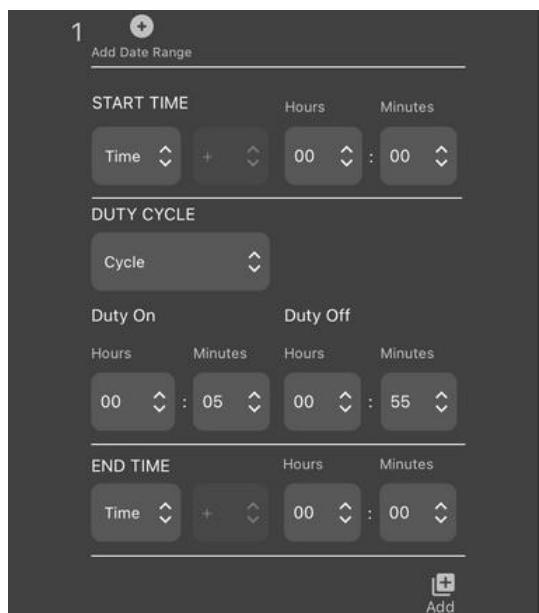
For accessibility and ease of reading on multiple screen sizes, further examples will only present schedules as plain text. The text below mimics the commands shown in the screenshot above.

- **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 Mini 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 Mini 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.

6.5.2 | Schedules Using Sunrise and Sunset

We saw in Schedules and Schedule Blocks 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 Mini 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 Mini 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, 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.

6.5.3 | Schedules with Multiple Blocks

In Schedules and Schedule Blocks and Schedules Using Sunrise and Sunset, 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 Mini 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 Mini 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.

6.5.4 | Date Range and Day Duty Cycle

By default, every Song Meter Mini 2 schedule block runs every single day, starting from when the recorder is powered on or until the Delay Start 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, 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. **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. 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.

6.5.5 | 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

6.6 | Deployment Length Estimations

The Song Meter Configurator app can estimate the expected run time it will take the Song Meter Mini 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.

6.6.1 | 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.
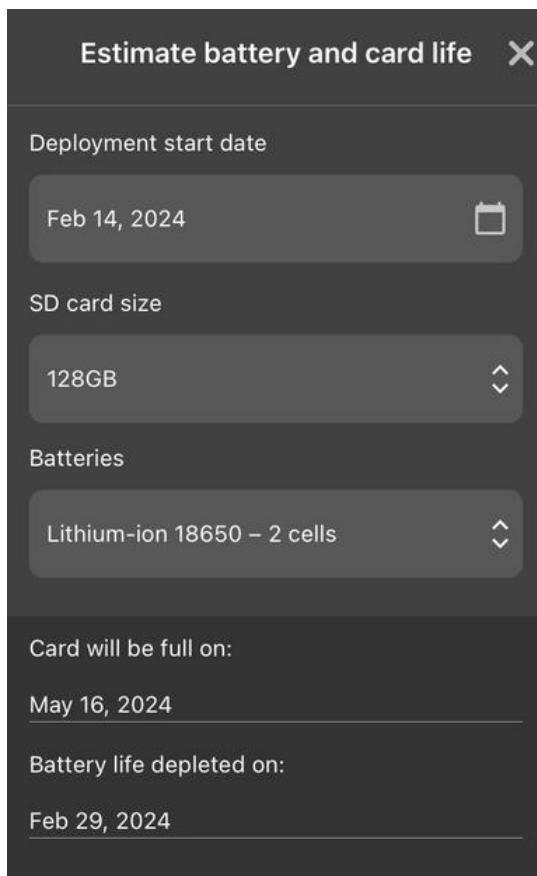
The **Estimate battery and card life** window contains the following elements:

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 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.

Number of Batteries Currently Installed dropdown
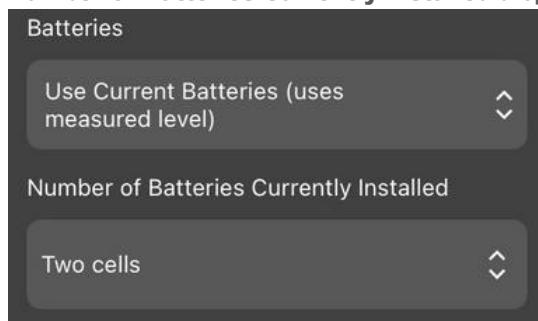
If **Use Current Batteries** is selected, use this dropdown to specify how many alkaline AA batteries or 18650 lithium-ion batteries are installed.

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.[1]

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

[1]

For a full table of the power consumption measurements that inform these battery life estimations, see Power Consumption and Expected Battery Life.

6.6.2 | 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.

For 18650 lithium-ion batteries, the Song Meter Configurator app assumes you are using Wildlife Acoustics branded batteries we sell in the United States. These batteries have a manufacturer-stated capacity of 3500 mAh per battery. Batteries with the same stated capacity from a reputable manufacturer should perform similarly to Wildlife Acoustics branded batteries.

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 affect on the power consumption of the Song Meter Mini 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**.

6.6.3 | 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).

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.

7 | Maintaining and Protecting the Song Meter Mini 2

7.1 | Update the Recorder's Firmware

We regularly publish new firmware versions that improve the functionality of the Song Meter Mini 2. If your recorder is running an outdated version of the firmware, the Status Screen 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/song-meter-mini-family. 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.

7.1.1 | Update Firmware Using the Song Meter Configurator App

When paired with a Song Meter Mini 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.

1. Install brand-new or freshly charged batteries into the Song Meter Mini 2.
2. Save the latest firmware file to an SD card:
   a. Download the current version firmware file from our Downloads page at https://www.wildlifeacoustics.com/account/downloads/song-meter-mini-family.

      The firmware file name is formatted as sys-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 an SD card to your computer.

      If your computer does not have a built-in SD card slot, use a USB SD card reader or similar accessory.

   c. Copy the firmware file to the top level of the SD 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 SD card from your computer's operating system before physically removing the card.
3. Insert the SD card into the Song Meter Mini 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.

      Configure and **Unpair** icons will appear next to the recorder's name.

   b. Tap the **Configure** icon for the paired Song Meter Mini 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 Mini 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.

7.1.2 | Update Firmware Using the Physical Controls

The procedure below allows you to update a recorder from a firmware file stored on an SD card using only the **FUNCTION** button and LEDs. You can also initiate a firmware update using the Song Meter Configurator app (see Load a Configuration to a Paired Recorder from an SD Card).

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.

1. Save the latest firmware file to an SD card:
   a. Download the current version firmware file from our Downloads page at
      https://www.wildlifeacoustics.com/account/downloads/song-meter-mini-family.

      The firmware file name is formatted as sys-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 an SD card to your computer.

      If your computer does not have a built-in SD card slot, use a USB SD card reader or similar accessory.

   c. Copy the firmware file to the top level of the SD 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 SD card from your computer's operating system before physically removing the card.
2. Install brand-new or freshly charged batteries into the Song Meter Mini 2.
3. Insert the SD card into the Song Meter Mini 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.

      Configure and **Unpair** icons will appear next to the recorder's name.

   b. Tap the **Configure** icon for the paired Song Meter Mini 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 Mini 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.

If the firmware update operation is not successful, all four LEDs will blink red six times. If this happens, reformat the SD card, then repeat the above steps. See Format the SD Card.

7.1.3 | 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

7.2 | Testing Microphone Sensitivity

The Song Meter Configurator app includes a utility that can be used to test the sensitivity of a paired recorder's installed microphones.

It displays real-time measurements of the volume of each microphone's incoming signal in decibels relative to full scale (dBFS). When paired with a calibrated signal generator, this provides a simple and objective measurement of the microphone's sensitivity at one frequency.

See Test the Acoustic Microphone for full testing instructions.

Important:

In order to test a microphone's sensitivity, it is necessary to have a signal generator that produces a sound at a known frequency and amplitude, a fixed distance from the microphone. Without a consistent reference sound source, the **Test Microphone** readout does not provide a useful measurement of microphone sensitivity.

7.2.1 | Test the Acoustic Microphone

The sensitivity of the acoustic microphone can be measured to test its functionality. The **Test microphone** readout measures the volume of the incoming signal from the acoustic microphone with a bandpass filter applied at 1 kHz. This readout is designed for use with a standard microphone calibrator.

A standard microphone calibrator will produce a 1 Pa / 94dB SPL, 1 kHz tone at a fixed distance from the microphone. The calibrator must be compatible with 0.5″ diameter microphones.

Important:

This procedure is only valid for third-party microphone calibrators that emit a calibrated, 1.0 kHz sine wave at a volume of 94 dB SPL.

1. In the Song Meter Configurator app, open the **Utilities** menu:
   a. Pair the Recorder with the Song Meter Configurator App.

   Configure and **Unpair** icons will appear next to the recorder's name.

   b. Tap the **Configure** icon for the paired Song Meter Mini 2 in the **Recorders** screen.
   c. Tap the **Utilities** icon in the upper-right corner of the **Configuration Editor**.
2. In the **Utilities** menu, tap **Test microphone**.
3. Close the lid of the Song Meter Mini 2.
4. Remove the foam windscreen from the acoustic microphone.

5. Connect the calibrator to the acoustic microphone according to the calibrator's instructions.

6. Turn the calibrator on.
7. If the calibrator has the option of multiple test frequencies and amplitudes, select 1 kHz and 94 dB SPL.
8. Observe the amplitude reading in the **Test microphone** window. If the value is higher than -16 dB, the microphone has passed and is ready to use. If the value is lower, the microphone has lost some or all of its sensitivity and should be replaced.

   dBFS readings in the **Test microphone** window are negative numbers, so a "higher" value than -16 dB is one that is closer to 0 dB. For example, a reading of -10 dB would pass, while a reading of -20 dB would fail.
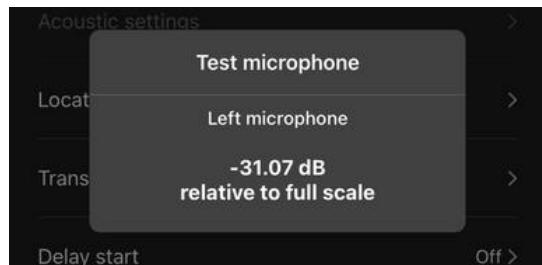
7.3 | Weatherproofing

The Song Meter Mini 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 Mini 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.

- Ensure the bolt covering the optional microphone port on the right side of the recorder is tightened and undamaged.

  Do not over-tighten the optional microphone or cover bolt. Doing so will distort the rubber O-ring gasket and allow water to enter the recorder.

- If using the AA version of the Song Meter Mini 2, ensure that the battery tray ribbons are not pinched between the two halves of the enclosure.

- Ensure that all acoustic microphones have foam windscreens in good condition.

  Windscreens may turn brown with long-term UV exposure, but they can be used until the foam begins to crumble.

- Avoid pointing microphones directly upwards.

7.4 | Mounting

Avoid putting strain on the Song Meter Mini 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.

7.5 | Security

The upper-left and upper-right corners of the Song Meter Mini 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.

To keep the Song Meter Mini 2 enclosure locked closed, a padlock can be inserted in the loop on the right side of the latch. The internal diameter of this padlock loop is 0.268 in. (6.81 mm). We recommend a padlock with a shackle diameter of 0.25 in. (6.35 mm). This size does allow some movement of the latch, but not enough that it compromises the IP67 weatherproof rating of the Song Meter Mini 2 enclosure.

Note:

Do not use a padlock with a shackle thinner than 0.25 in. (6.35 mm). A thinner shackle will allow the latch to be undone partially or completely, allowing water to get in, or allowing the enclosure to be fully opened.

Note that damage to any part of the Song Meter Mini 2 's plastic enclosure can compromise the effectiveness of these security features. If your recorder has been damaged, contact Wildlife Acoustics Support to arrange a repair.

7.6 | Protecting Unused Acoustic Microphones

If you install the optional, second microphone, you may decide not to use it for every deployment. If this is the case, we **do not** recommend removing and reinstalling the microphone each time you change your recording configuration. The connections between the microphone and the Song Meter Mini 2 were not designed with repeated stress in mind, and **repeatedly removing and reinstalling a microphone may damage these connections**.

In most situations, it is fine to leave the optional microphone installed, even if it will not be used for a given deployment. If you wish to provide an extra layer of protection against animals or extreme weather, you can install an optional Stub Mic Cover. The Stub Mic Cover is a black, vinyl cap that fits over the acoustic microphone in place of the foam windscreen.

Figure 1. Stub Mic Cover

8 | 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 Mini 2.

- For instructions on configuring the settings on a Song Meter Mini 2 using the Song Meter Configurator app, see Configuring the Song Meter Mini 2. This section includes descriptions of all available settings and detailed instructions on designing a custom schedule (see Design a Custom Schedule).

- For instructions on maintaining the recorder, such as updating its firmware and testing the microphone, see Maintaining and Protecting the Song Meter Mini 2.

8.1 | 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 Mini 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.

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

Note:

The process for pairing the Song Meter Mini 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 for pairing instructions.

By default, when the Song Meter Mini 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?). 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 Mini 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 Mini 2 during pairing. Location data can also be entered manually in the Location & Time Zone Screen. 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 Mini 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.

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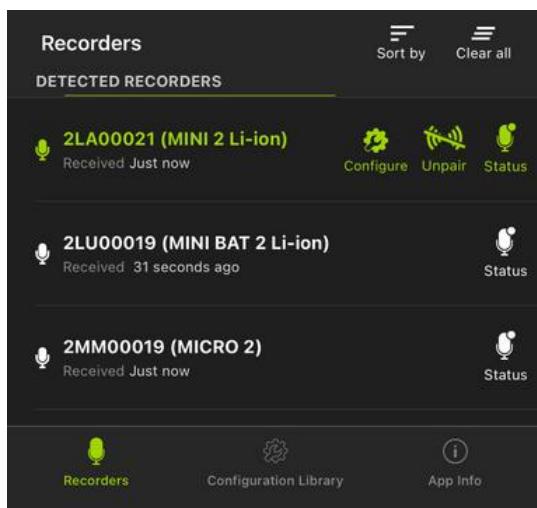
The **Recorders** screen lists each recorder within Bluetooth range and detected by the Song Meter Configurator app. Previously detected recorders that are out of Bluetooth range or powered off will remain in the list until removed.

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 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?).

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 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).

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 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 for more information.

Unpair

Tap to unpair the Song Meter Configurator app from the Song Meter Mini 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.

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 and App Information Screen.

8.2.1 | Remove Entries from the Recorders Screen

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

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

- To remove all unpaired recorders, select **Clear all**.
- To remove a single recorder, swipe left aon 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.

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

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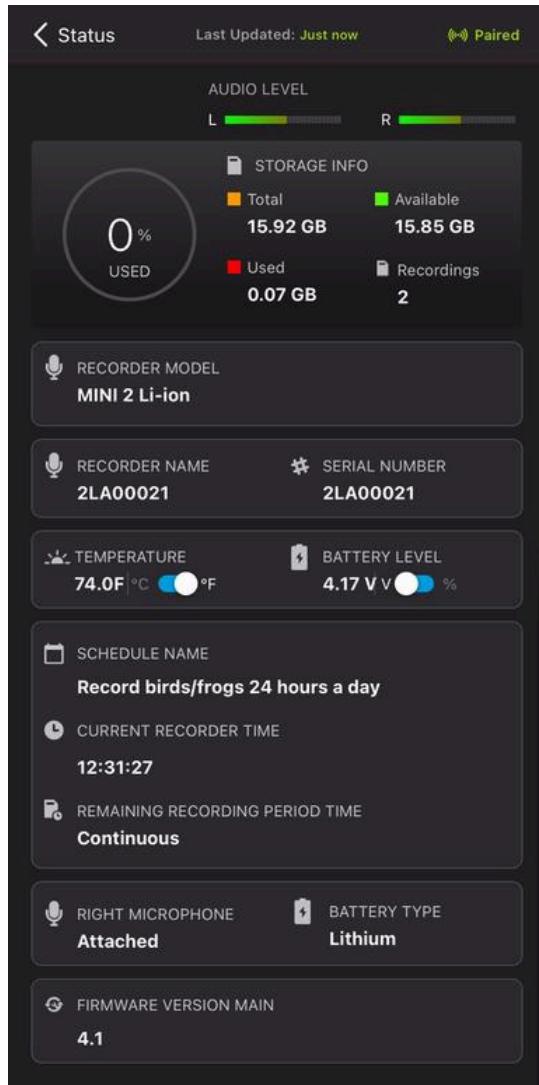
The **Status** screen displays all of the status information broadcast from a Song Meter Mini 2 and received by the Song Meter Configurator app. It shows information about the recorder's SD card, batteries, schedule settings, microphones, and firmware version.

To access the **Status** screen for a recorder, navigate to the Recorders Screen, then tap the **Status** icon listed to the right of the recorder's name.
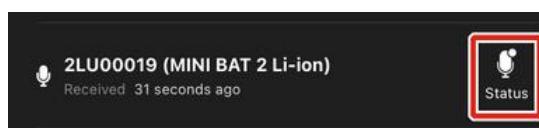
When a Song Meter Mini 2 is within Bluetooth range and either broadcasting Bluetooth beacons or paired with the app, its status will update in the app once every few seconds. The last-received status information for a recorder is retained by the app when the app is

closed, the mobile device or recorder are turned off, or the recorder moves out of Bluetooth range.

While a Song Meter Mini 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
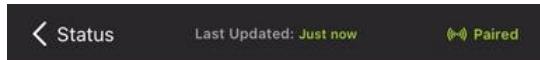
< Status (back icon)

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
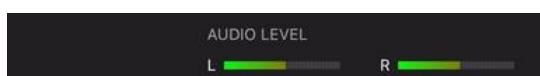
This panel is only visible when the recorder is paired with the app. It displays a real-time representation of the incoming signal level for any currently installed and active microphone.

Note:

If the Song Meter Mini 2 is currently recording only on the left microphone, then the level meter for the right microphone will not respond to sound, even if the right microphone is installed.

AUDIO LEVEL

These meters display real-time representations of the volume of sound being picked up by each active microphone. Each meter is labeled **L** and **R** to indicate the left and right microphones.

The **R** meter will only be displayed if the optional, second microphone is installed.

The meters will only be responsive if the recorder is currently running a recording period, and only the meters for the active microphone(s) will be responsive, according to the recorder's **Channel** setting (see Channel).

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 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.[1]

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.

Other Info Panels
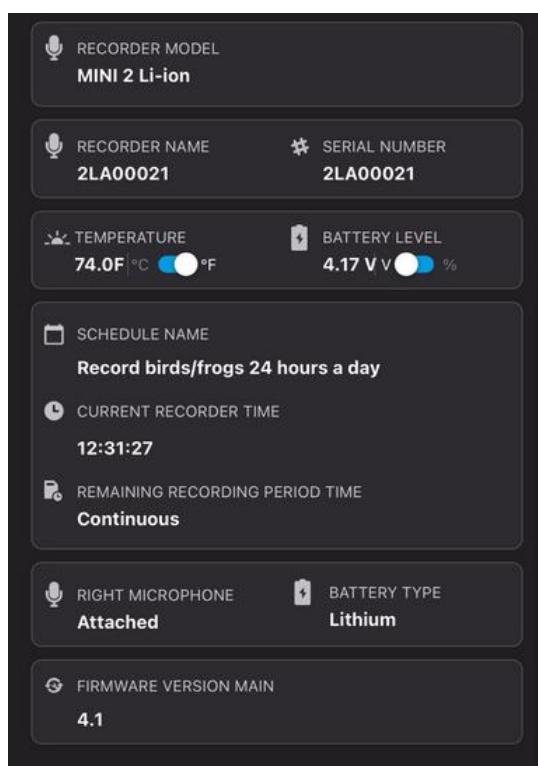
RECORDER MODEL

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.

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.

TEMPERATURE

Displays the temperature reading from the Song Meter Mini 2's internal temperature sensor.

The **°C/°F** toggle switch allows you to set the units of temperature to degrees Celsius or Fahrenheit.

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.[2]

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.

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 Mini 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 Mini 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.

RIGHT MICROPHONE

Displays **Attached** or **Not Attached** to indicate whether a right-hand microphone is installed and detected by the Song Meter Mini 2.

BATTERY TYPE

Indicates which type of battery is powering the recorder.

AA refers to AA batteries of any type, including alkaline, NiMH, and Energizer Ultimate Lithium (Lithium/Iron Disulfide).

Lithium refers to 18650 lithium-ion batteries.

FIRMWARE VERSION

Displays the recorder's installed firmware version.

[1]

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.

[2]

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.**

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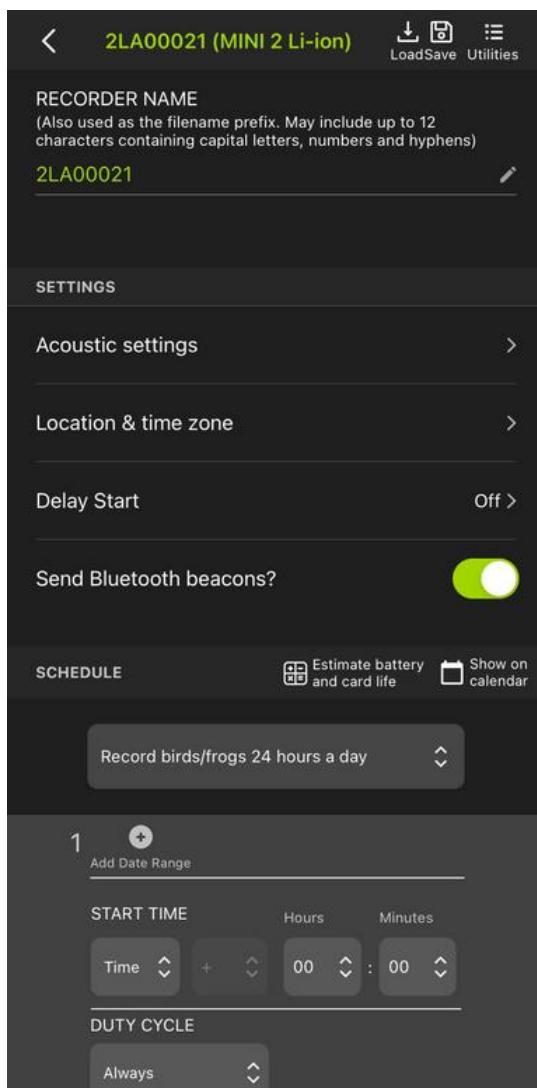
The **Configuration Editor** screen is the interface for editing all of the Song Meter Mini 2's settings. When the Song Meter Configurator app is paired with a recorder, you can edit the recorder's settings directly, updating the recorder immediately with each setting change.

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.

For a full description of how the schedule system works, see Design a Custom Schedule.

8.4.1 | 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 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 for full instructions.

Utilities

Tap to access various utility functions. See Utilities Menu 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? for details on this setting.

8.4.2 | 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? for details on this setting.

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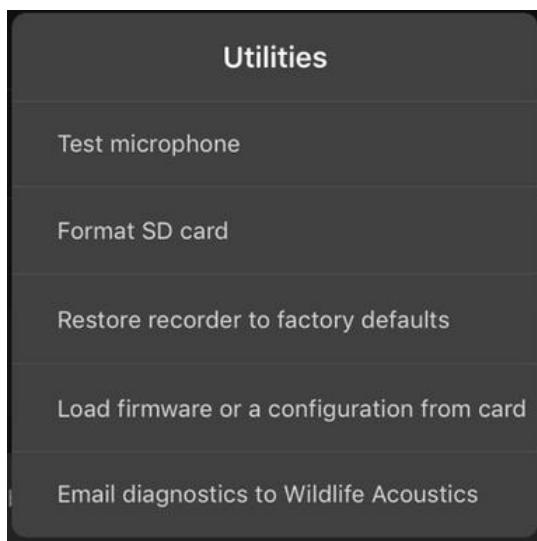
When configuring a paired Song Meter Mini 2, the **Utilities** menu provides easy access to several useful functions.

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 Mini 2's microphones with a reference signal generator.

See Testing Microphone Sensitivity for detailed test instructions.

Format SD card

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

See Format the SD Card for instructions on multiple methods of formatting the SD card.

Restore recorder to factory defaults

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

See Restore Recorder to Factory Defaults for full instructions.

Load firmware or a configuration from card

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

See Update the Recorder's Firmware for firmware update instructions.

See Configuration Files on the SD Card 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 Mini 2.

See Export Diagnostics Files for more information and alternative ways to export diagnostics files.

8.4.4 | Location & Time Zone Screen

The Song Meter Mini 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 Mini 2 recorder (see SD Card Contents).

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 Mini 2 recorder is first paired with the Song Meter Configurator app (see Pair the Recorder with the Song Meter Configurator App).
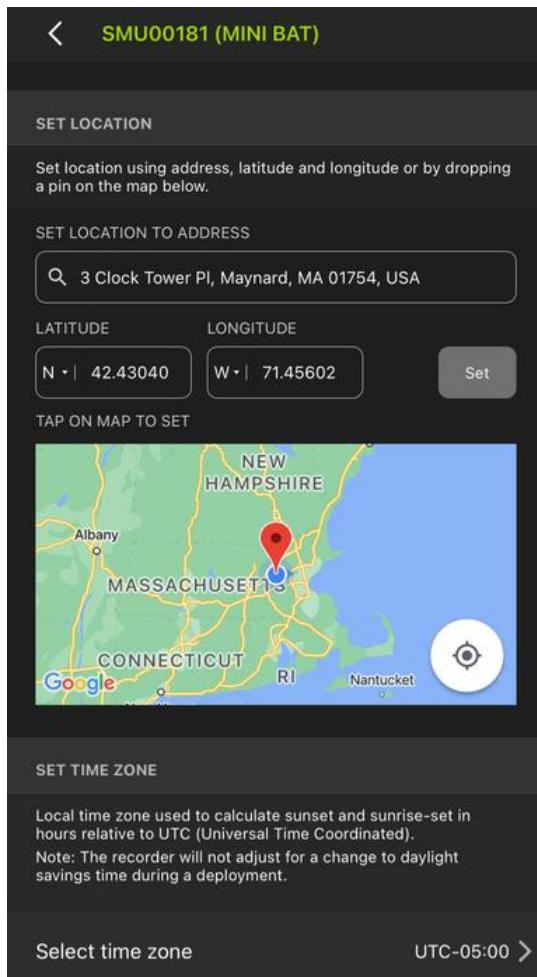
Enter and Exit the Location & Time Zone Screen

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 Mini 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.

8.4.5 | Schedule Editor Interface

The **Schedule Editor** occupies the lower half of the Configuration Editor Screen.

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.
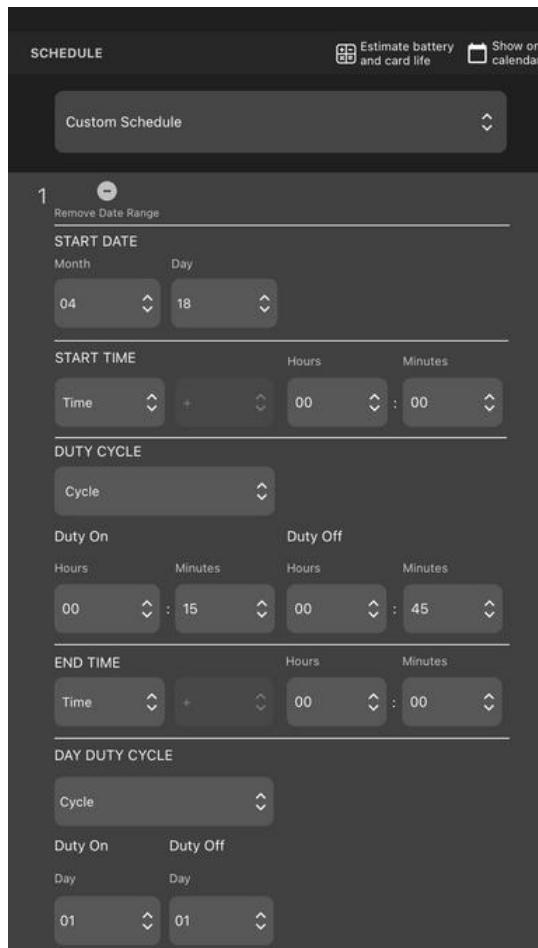
Schedule Editor: Upper Elements

Estimate battery and card life

Tap to open the Estimate Battery and Card Life Window.

Show on Calendar

Tap to open the Schedule Calendar for the active schedule.

Preset Schedules

Tap to select one of the Preset Schedules. **Doing so will overwrite the existing schedule.**

8.4.5.1 | Preset Schedules

The Song Meter Configurator app includes preset schedules for several common recording schedules. You can use these as-is, or you can them as a starting point for a custom schedule.[1]

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.

[1]

See Design a Custom Schedule for details on how the schedule system works and how to make modifications to a schedule.

8.4.5.1.1 | Select a Preset Schedule

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

1. Open the **Configuration Editor** to configure a paired recorder or edit a configuration file.

   See Configuration Editor Screen.

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.

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.

8.4.5.2 | 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.

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.

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.

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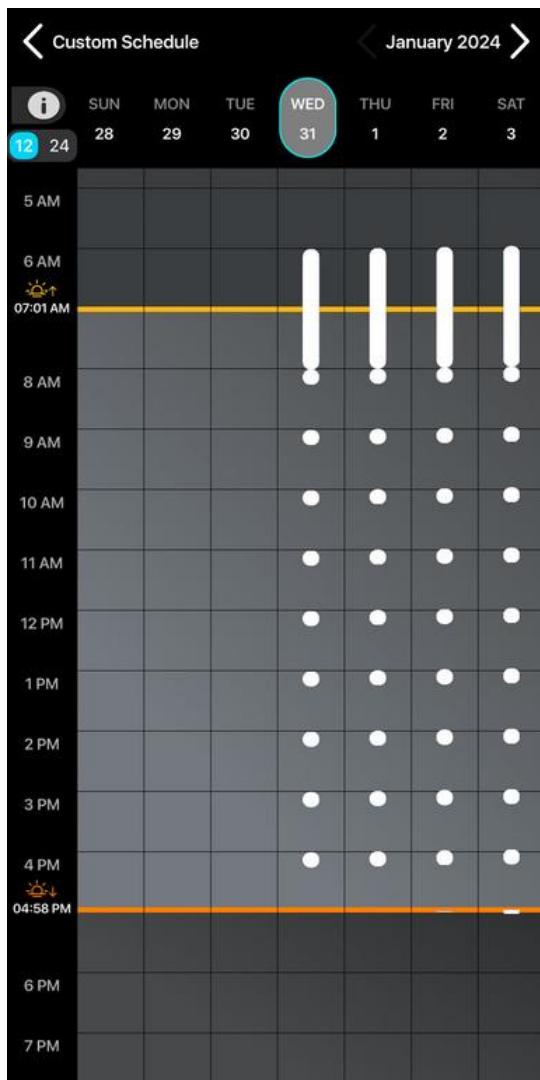
The **Schedule Calendar** provides a visual representation of your recording schedule. It shows when your recorder will be active during any given day. This is especially useful for complex schedules comprised of multiple schedule blocks. By looking at the **Schedule Calendar**, you can:

- 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.

Enter and Exit the Schedule Calendar

To access the **Schedule Calendar** from the **Configuration Editor** screen, tap **Show on calendar**.
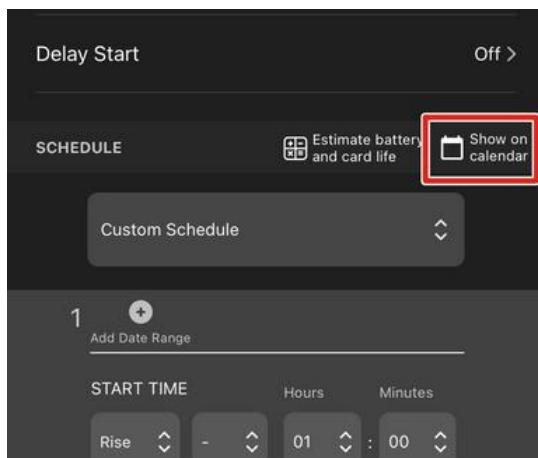
There are two methods to exit the **Schedule Calendar**:

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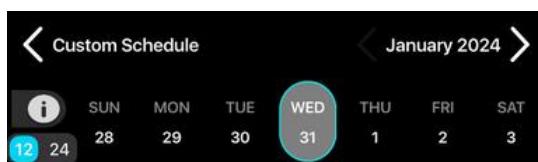
To **navigate between months**, tap the **<** and **>** buttons on either side of the **Month and Year** text.

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).

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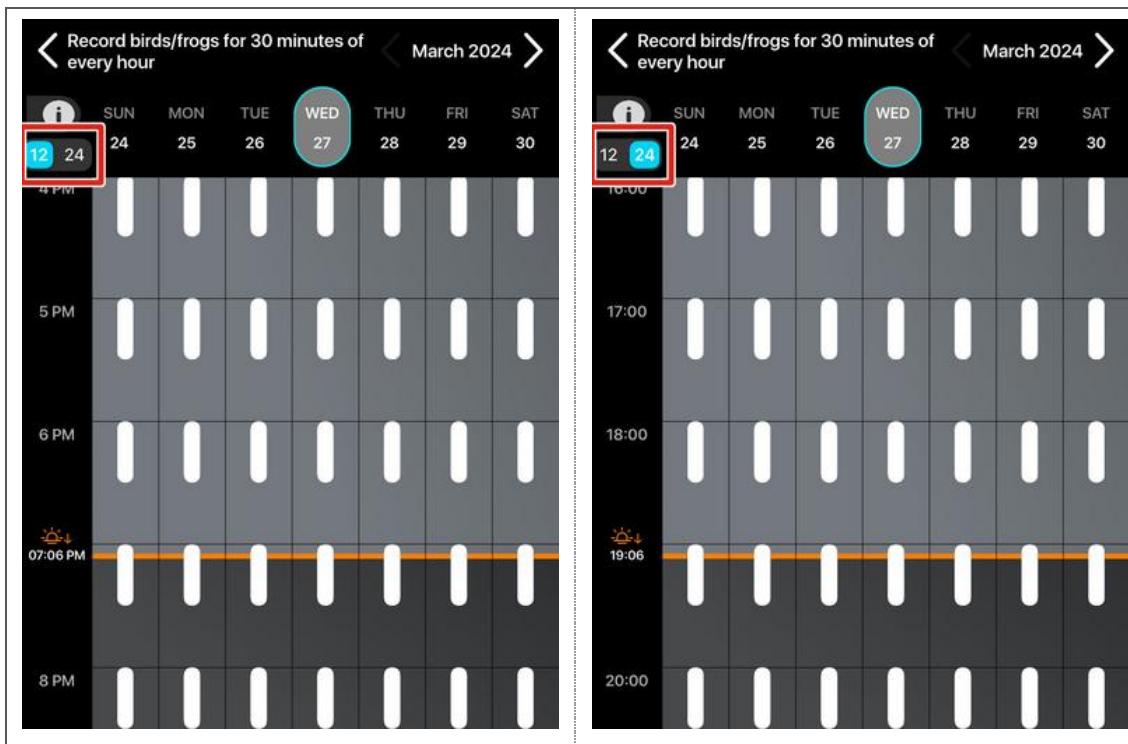
12-hour convention (left) and 24-hour convention (right).

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).

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 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 Mini 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 Mini 2 combines overlapping recording periods into one, longer recording period.

8.5 | 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 Mini 2. Configuration files provide a way to consistently apply the same settings to multiple recorders or across multiple deployments. See Manage Configuration Files for more information.[1]

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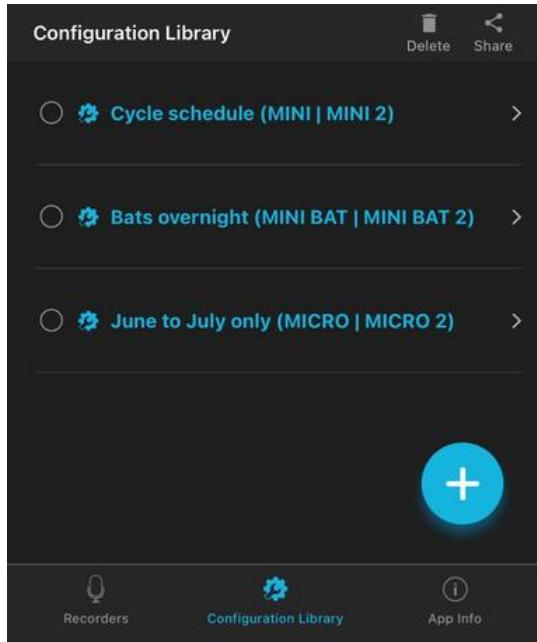
The top-most info bar on the **Configuration Library** screen includes two buttons:

Delete

After selecting one or multiple configurations from the list, tap this button to delete them. See Delete a Saved Configuration File.

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.

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

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.

Below the interface for the **Configuration Library** itself are buttons for accessing the Recorders Screen and App Information Screen.
1

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.

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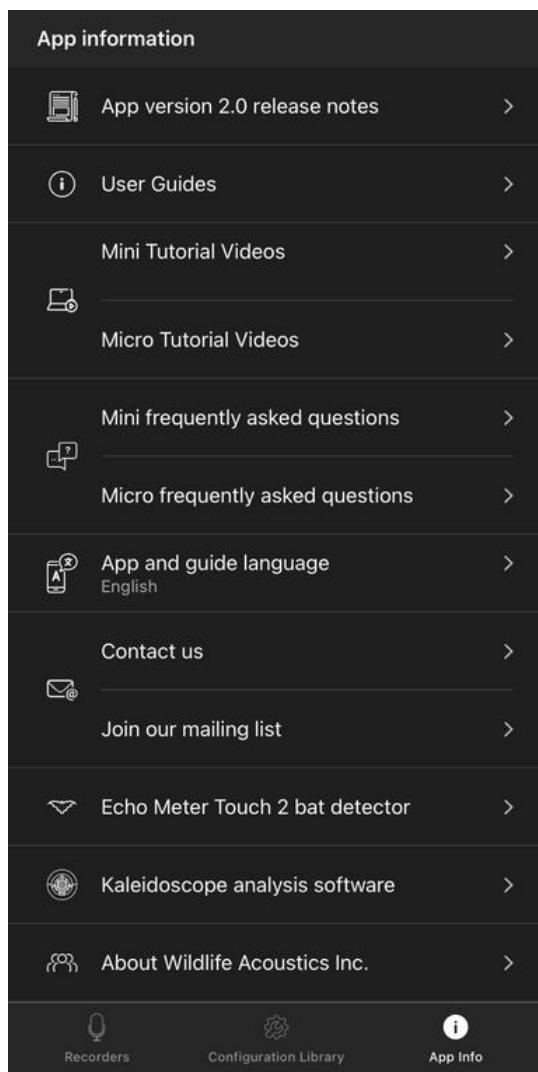
The **App Information** screen is accessed by tapping the **App Info** button at the bottom right of the **Recorders** or **Configuration Library** screens. It contains:

- 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 and Frequently Asked Questions.

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.

9 | 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 Mini 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:

07:22

9.1 | Install the Song Meter Desktop Configurator

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

9.1.1 | Install the Song Meter Desktop Configurator on macOS

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

1. Go to https://www.wildlifeacoustics.com and go to **My Account > Downloads > Song Meter Mini 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.
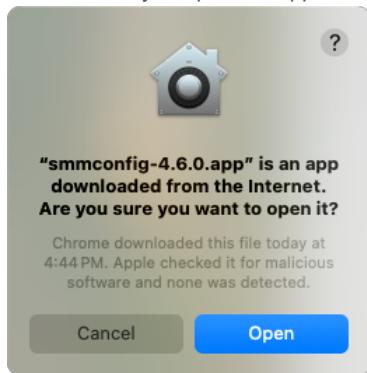
9.1.2 | Install the Song Meter Desktop Configurator on Windows

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

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.

1. Go to https://www.wildlifeacoustics.com and go to **My Account > Downloads > Song Meter Mini 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.

9.1.3 | Install the Song Meter Desktop Configurator on Red Hat Enterprise Linux

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

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.

1. Go to https://www.wildlifeacoustics.com and go to **My Account > Downloads > Song Meter Mini 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.

9.2 | 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 Mini 2 recorders.

1. In the **Deployment Scenario** panel, select the **Song Meter Model** you want to program and select whether the optional **2nd Mic** is installed.
   Song Meter Model and **2nd Mic** determine 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 and Design a Custom Schedule.

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. Select the number and type of **Batteries** you will use.

      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.

   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.

You can save the resulting .miniconfig file to an SD card, then load it onto the Song Meter Mini 2 (see Load a Configuration File from an SD Card).

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).

Related information

- Import a Configuration File from Another App
- Load a Configuration File from an SD Card

9.3 | 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.

Full-spectrum .wav recordings produced by the Song Meter Mini 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.

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

You can save the resulting .miniconfig file to an SD card, then load it onto the Song Meter Mini 2 (see Load a Configuration File from an SD Card).

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).

Related information

- Import a Configuration File from Another App
- Load a Configuration File from an SD Card

10 | SD Card Contents

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

10.1 | SD Card Volume Name

Beginning in firmware version 4.4, formatting an SD card using the Song Meter Mini 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.

10.2 | File Name Conventions

Files saved by the Song Meter Mini 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 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.

10.3 | SD Card Organization

The Song Meter Mini 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).

- **Configuration files** ([RECORDER NAME].miniconfig).

All audio files are saved to a folder named Data.

10.4 | Audio Files

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

10.4.1 | 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.

10.4.1.1 | WAV File Metadata

Metadata is additional information embedded into each recording alongside the recorded audio. The Song Meter Mini 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 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 Mini 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.

10.4.1.2 | 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.

10.4.2 | GUANO Metadata Fields

Full-spectrum .wav files saved by the Song Meter Mini 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 Mini 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).

- **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.

- **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, as set in the recorder's Acoustic Settings Screen.

- **WA|Song Meter|Prefix**: The custom Recorder Name for the Song Meter Mini 2.

10.5 | Summary File

Whenever the Song Meter Mini 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 [RECORDER NAME]_Summary.txt.

A new line is written to the summary file for every minute the Song Meter Mini 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.

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.

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 Mini 2 's batteries, in volts.

TEMP(C)

Indicates the temperature measured by the Song Meter Mini 2 's internal temperature sensor, in degrees Celsius. Because this sensor is located inside the recorder's enclosure, its reading can deviate significantly from the ambient temperature.

#FSFILES

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

#ZCFILES

Used only by the Song Meter Mini Bat and Song Meter Mini Bat 2.

#SCRUBBED

Used only by the Song Meter Mini Bat and Song Meter Mini Bat 2.

10.6 | 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

A diagnostics file can be manually saved to the SD card using the **FUNCTION** on the main panel of the Song Meter Mini 2. See Export Diagnostics File to an SD Card Using the Recorder's Physical Controls for instructions on this procedure.

It is also 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 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 Mini 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 Mini 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 Mini 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 Mini 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 Mini 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.

10.7 | Analyzing Your Recordings

The recordings produced by the Song Meter Mini 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/song-meter-mini-family. 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 Mini 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.

11 | 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).

11.1 | Recorder Not Turning On

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

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

   The AA version of the Song Meter Mini 2 must have either four or eight AA batteries installed. If using only four batteries, they must all be installed in the same battery tray. Splitting four batteries between the two trays will result in no power.

   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 **FUNCTION** button several times, and check if any of the **FUNCTION** 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). If your recorder is not displayed in the app's **Recorders** screen, see App Not Receiving Status Updates.

If none of the **FUNCTION** LEDs light up at all, your Song Meter Mini 2 may need repair. Contact Wildlife Acoustics Support for further assistance (see Contact Wildlife Acoustics Support).

11.2 | App Not Receiving Status Updates

If your Song Meter Mini 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.

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

   See Recorder Not Turning On 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:	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.

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 Mini 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.

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 Mini 2 may need repair. Contact Wildlife Acoustics Support for further troubleshooting assistance and to arrange a repair if necessary (see Contact Wildlife Acoustics Support).

11.3 | Unable to Pair App with Recorder

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

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

See Recorder Not Turning On 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 Mini 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 if this is not the case.

If the Song Meter Mini 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

- **18650 lithium-ion**: 4.2 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 Mini 2. See Contact Wildlife Acoustics Support.

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). If it does not, see Load a Configuration to a Paired Recorder from an SD Card.

If you are still unable to pair with your Song Meter Mini 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).

11.4 | 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 WRITE PROTECTED**: Card's Write Protect switch is enabled.

- **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 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).

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).

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 Mini 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 Mini 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 Mini 2's SD card slot.

SD Card Full

This message means there is not enough available space on the card for the Song Meter Mini 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 Mini 2 will be unable to use that space. Formatting the SD card both deletes all files and resets the structure of the card.

SD Write-Protected

This error message indicates that the SD card has its Write Protect switch enabled. This is a physical switch on the left edge of the card when the front label is facing the viewer. When the switch is in the lower, "locked" position, it activates a switch in the SD card that prevents the connected device from altering the contents of the card. In the case of the Song Meter Mini 2, this means the recorder cannot save any new files to the card, nor can it reformat the card.

If this error appears, check that the card's Write Protect switch is in the unlocked position, and that there is no debris attached to the card or stuck in the card slot that might be falsely triggering the switch inside the card slot.

Note:

The Write Protect switch does not affect the electronics of the card itself. Instead, it works by pressing a contact in the SD card slot when the switch is in the locked position. If any foreign object presses that contact, it is as if the Write Protect switch is set to the locked position.

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. 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 Mini 2, but not on other recorders or computers, it may indicate a problem with the Song Meter Mini 2 itself. Contact Wildlife Acoustics Support for further assistance diagnosing the issue (see Contact Wildlife Acoustics Support).

SD Card Bad Format

This indicates that the card is not formatted correctly. The Song Meter Mini 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 Mini 2 formats a card (see Format the SD Card), 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 Mini 2 from using the card. In some cases, it can even cause errors that persist after the Song Meter Mini 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 Mini 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 Mini 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). 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 Mini 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 Mini 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.

11.5 | Restore Recorder to Factory Defaults

The Song Meter Mini 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 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**.

11.5.1 | Restore Factory Defaults Using the Song Meter Configurator App

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

1. Install brand-new or freshly charged batteries into the Song Meter Mini 2.
2. In the Song Meter Configurator app, open the **Utilities** menu:
   a. Pair the Recorder with the Song Meter Configurator App.

   Configure and **Unpair** icons will appear next to the recorder's name.

   b. Tap the **Configure** icon for the paired Song Meter Mini 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 as if you are sure you want to restore default settings.

4. Tap **OK** to confirm.

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

11.5.2 | Restore Factory Defaults Using the Recorder's Physical Controls

You can restore the Song Meter Mini 2 to factory default settings using the **FUNCTION** button on the recorder's control panel.

1. Install brand-new or freshly charged batteries into the Song Meter Mini 2.
2. Tap the **FUNCTION** button multiple times.

   A green LED will cycle through the four positions to highlight the selected function.

3. When the desired function is highlighted, press and hold the **FUNCTION** button for three seconds.
4. When the highlighted LED starts flashing green, let go of the **FUNCTION** button.

All four LEDs will flash green to indicate that the Song Meter Mini 2 has been reset to factory defaults.

11.6 | Export Diagnostics Files

The Song Meter Mini 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 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.

11.6.1 | Email Diagnostics File to Wildlife Acoustics

Using the Song Meter Configurator app, it is possible to generate a diagnostics file from a paired Song Meter Mini 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.

1. Install brand-new or freshly charged batteries into the Song Meter Mini 2.
2. In the Song Meter Configurator app, open the **Utilities** menu:
   a. Pair the Recorder with the Song Meter Configurator App.

      Configure and **Unpair** icons will appear next to the recorder's name.

   b. Tap the **Configure** icon for the paired Song Meter Mini 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)?
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**.

11.6.2 | Export Diagnostics File to an SD Card Using the Recorder's Physical Controls

This procedure exports two files to the Song Meter Mini 2's SD card:

- **Diagnostics File**: [RECORDER NAME]_[DATE]_[TIME].minidiags

- **Configuration File**: [RECORDER NAME].miniconfig

  This is a file containing all of the recorder's settings. See Manage Configuration Files for more information about how this file can be used.

1. Install new or fully charged batteries, and set the **ON/OFF** switch to **ON**.
2. Press the **FUNCTION** button once.

   The **Diags** LED will be highlighted green, and the three other LEDs will be unlit.

3. Press and hold the **FUNCTION** button for three seconds.
4. When the **Diags** LED starts flashing green, let go of the **FUNCTION** button.

All four LEDs will flash green three times to indicate that the .minidiags and .miniconfig files have been saved to the SD card.

If all four LEDs flash red six times, it means an error prevented the recorder from saving these two files. If this happens, check that the SD card has available space and displays no error messages on the recorder's **Status** screen (see Status Screen).

12 | 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/song-meter-mini-family.

Note:

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.

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/song-meter-mini-family. You can export a configuration file from the configurator to load into the Song Meter Mini 2 (see Load a Configuration to a Paired Recorder from an SD Card).

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

Video Tutorials

Visit our Video Tutorials page to view tutorial videos for the Song Meter Mini 2.

Frequently Asked Questions

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

wildlifeacoustics.com/resources/faqs

Don't Miss Out on Important Updates

We continually add features to the Song Meter Mini 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

- North America (toll-free): +1 (888) 733-0200

- Outside North America (toll charges may apply): +1 (978) 369-5225

13 | Specifications

13.1 | Physical Specifications

Height	4.7 in. (120 mm)
Width (with no right microphone, with left microphone and windscreen)	7.0 in. (177 mm)
Depth	1.6 in. (40 mm)
Weight with no batteries	AA Version: 0.54 lb. (245 g) Li-ion Version: 0.52 lb. (236 g)
Weight with max number of batteries (typical)	AA Version: 0.95 lb. (429 g) Li-ion Version: 1.15 lb. (522 g)
Enclosure Material	Polycarbonate
Environmental Specifications	IP67 Rated, excluding acoustic microphones Built-in reusable humidity control pack
Operating Temperature Range	-4°F to 185°F (-20°C to 85°C) Batteries may have a narrower operating temperature range.

13.2 | Audio and Microphone Specifications

13.2.1 | 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; or 96,000 Hz
Record Channels	One channel in stock configuration. Two channels with optional second microphone installed.
Anti-Alias Filter	Highest Quality mode: -5.0 dB @ 0.4 f_s, -12 dB @ 0.6 f_s

13.2.2 | 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 1. Sensitivity and Noise Floor, Linear Frequency Scale
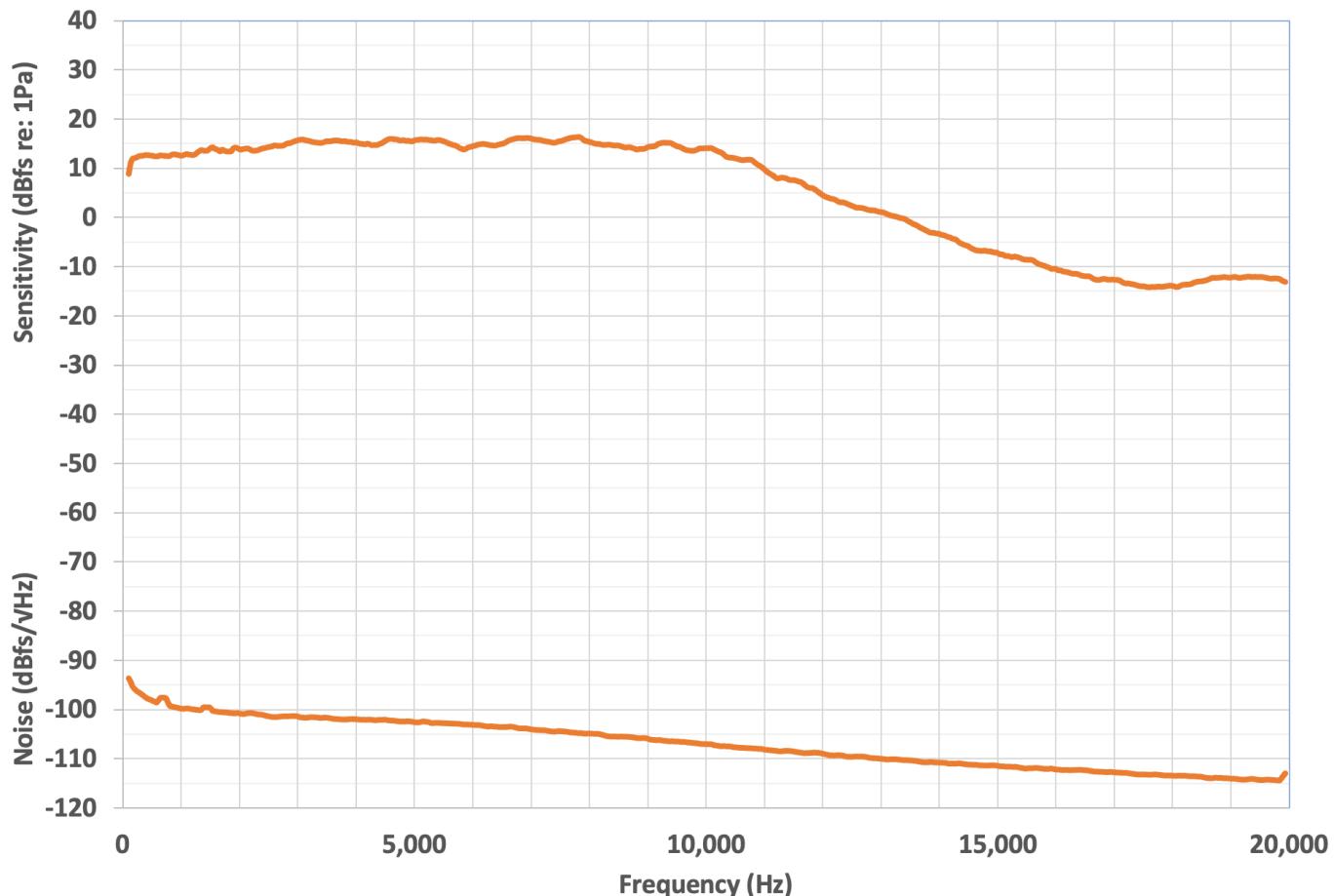
Figure 2. Sensitivity and Noise Floor, Logarithmic Frequency Scale
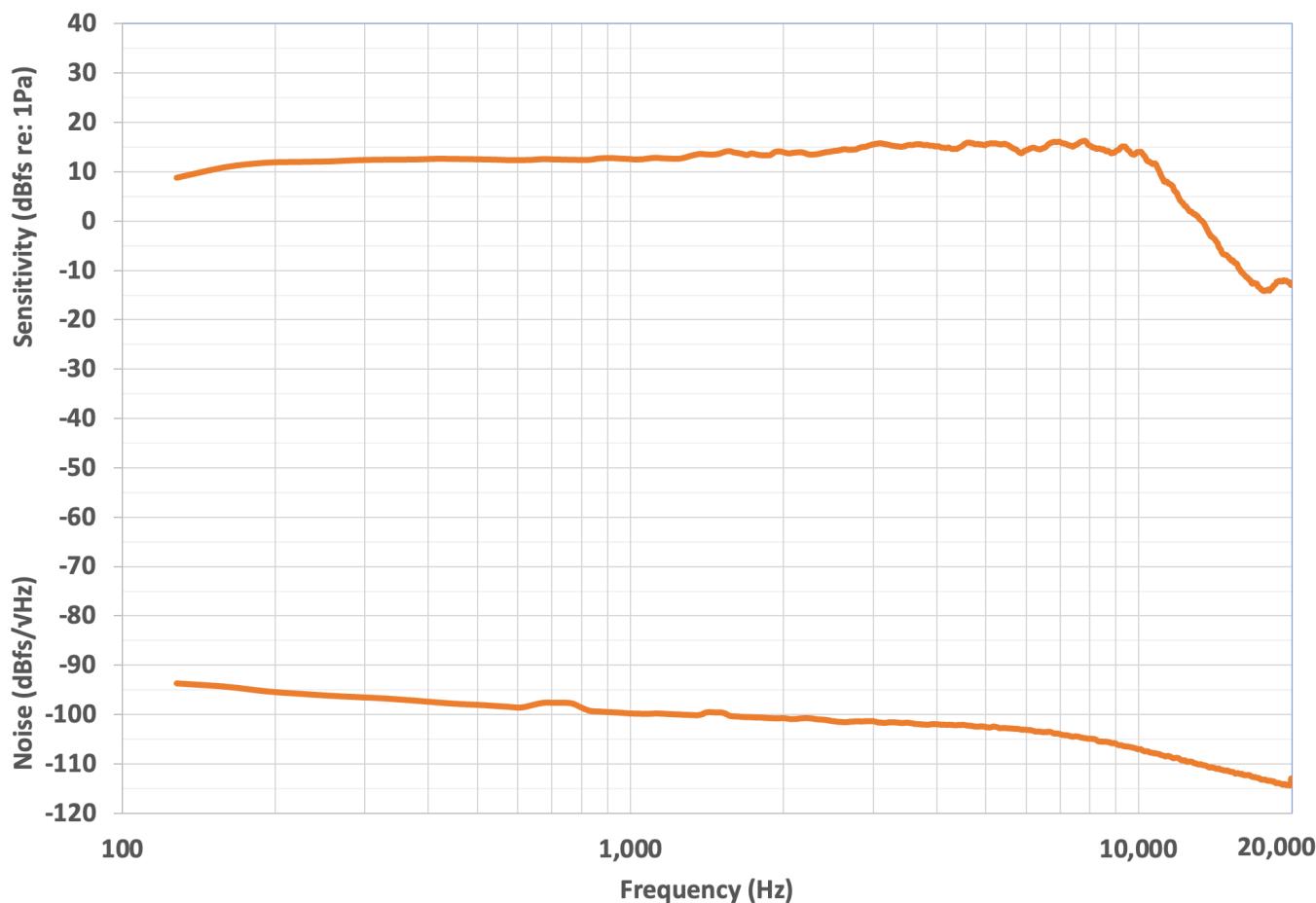
13.3 | Batteries and Power

13.3.1 | Types of AA Batteries

The Song Meter Mini 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 Mini 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 Mini 2, but it can also outperform alkaline batteries in freezing conditions. However, if you use lithium iron disulfide batteries with the Song Meter Mini 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.
- 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***.

13.3.2 | Lithium-Ion Battery Requirements

18650 lithium-ion batteries can vary in size and safety features. It is vital that you choose batteries that are safe and compatible with the Song Meter Mini 2's battery tray.

The redesigned lithium-ion battery compartment in the Song Meter Mini 2 can fit a slightly broader range of lithium-ion batteries than the optional lithium-ion lid accessory for the first-generation Song Meter Mini and Song Meter Mini Bat. Wildlife Acoustics sells high-quality 18650 batteries that are compatible with the first-generation Song Meter Mini and new Song Meter Mini 2 models.

If you do purchase lithium-ion batteries from another source, ensure that they meet the following requirements:

- The batteries must be specified as 18650 lithium-ion batteries.

  "18650" describes the dimensions of the battery. Larger or smaller lithium-ion batteries will not fit in the battery tray.

- **Use protected batteries only**.

  Protected batteries have built-in circuitry that prevents the batteries from over-charging or over-discharging.

  Warning:

  Unprotected lithium-ion cells lack protective circuitry, and they are at greater risk of suffering permanent damage or even igniting.

- Use "button-top" batteries, not "flat-top" batteries.

  The vast majority of protected 18650 batteries are sold as "button-top," meaning the positive contact protrudes from one end of the battery. "Flat-top" batteries without a button may not make full contact with the battery tray.

- The batteries must be between 67.0 and 70.5 mm in length, button included.

  The protection circuit can vary in size across brands, but most protected batteries sold by reputable suppliers fall within this range.

  Note that the Lithium Lid accessory for the first-generation Song Meter Mini has a narrower acceptable size range.

Note:

18650 batteries are available in different charge capacities, measured in milliamp-hours, or mAh. The batteries sold by Wildlife Acoustics have a typical capacity of 3500 mAh (3350 mAh minimum). Therefore, the battery life estimates found in our documentation and in the Song Meter Configurator app assume this capacity when using lithium-ion batteries. Protected 18650 batteries with lower capacity will still work, but they will not last as long as these estimates before needing to be recharged.

13.3.3 | Power Consumption and Expected Battery Life

The tables in this section display measured power consumption for the Song Meter Mini 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.

13.3.3.1 | Inactive Power Consumption

The Song Meter Mini 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 1. Power Consumption while turned off and sleeping

State	Power Consumption (mW)
Off	0.7
Sleeping	2

13.3.3.2 | Acoustic Recording Power Consumption

Power consumption measurements taken using a single SanDisk® 256 GB Extreme 180 MB/s SD card. Power consumption can vary significantly between cards, even among those with similar labels from a single manufacturer.

Table 1. Acoustic Recording Power Consumption by Recording Mode and Sample Rate

Sample Rate (Hz)	Highest Quality Mode, Mono Power (mW)	Highest Quality Mode, Stereo Power (mW)	Low-Power Mode, Mono Power (mW)	Low-Power Mode, Stereo Power (mW)
8,000	66	82	45	54
12,000	69	77	48	60
16,000	78	88	51	67
22,050	71	85	67	73
24,000	74	87	56	77
32,000	85	104	63	84
44,100	82	104	70	102
48,000	84	107	74	96

Sample Rate (Hz)	Highest Quality Mode, Mono Power (mW)	Highest Quality Mode, Stereo Power (mW)	Low-Power Mode, Mono Power (mW)	Low-Power Mode, Stereo Power (mW)
96,000	103	142	93	136

Table 2. Expected Recording Time: Default Acoustic Settings, Mono Channel

Battery Configuration	Highest Quality Mode Recording Time (Hours)	Low-Power Mode Recording Time (Hours)
8x Alkaline AA	420	530
6x Lithium-Ion	1,040	1,330

13.4 | SD Card Compatibility

SD Card Capacity Range: 4 GB - 2 TB

The Song Meter Mini 2 supports SDHC and SDXC cards. These two formats encompass SD 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.

MicroSD cards can be used when installed in a microSD-to-SD adapter. We recommend using an adapter from a major SD card manufacturer.

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.

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 Mini 2 is C4, meaning a minimum sustained write speed of 4 MB/s.

The Song Meter Mini 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 Mini 2.

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

13.5 | Bluetooth Specifications

Supported Bluetooth Technology	Bluetooth Low Energy (BLE) 4.2

14 | Warranty and Disclosures

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

14.1 | Hardware Limited Warranty

Product	Components	Warranty Period
Song Meter Mini 2	All components (excluding foam windscreens)	2 years

14.2 | 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

THE FOREGOING WARRANTIES AND REMEDIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, TERMS OR CONDITIONS, EXPRESS, IMPLIED OR STATUTORY, INCLUDING WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, ACCURACY, CORRESPONDENCE WITH DESCRIPTION, SATISFACTORY QUALITY AND NON-INFRINGEMENT, ALL OF WHICH ARE EXPRESSLY DISCLAIMED BY WAI AND ITS SUPPLIERS.

LIMITATIONS OF LIABILITY

NEITHER WAI NOR ITS SUPPLIERS SHALL BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL, OR PUNITIVE DAMAGES OF ANY KIND, LOSS OF INFORMATION OR DATA, LOSS OF REVENUE, LOSS OF BUSINESS OR OTHER FINANCIAL LOSS ARISING OUT OF OR IN CONNECTION WITH THE SALE OR USE OF THIS PRODUCT, WHETHER BASED IN CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT PRODUCT LIABILITY OR ANY OTHER THEORY, EVEN IF WAI HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES AND EVEN IF ANY LIMITED REMEDY SPECIFIED IN THIS LICENSE AGREEMENT IS DEEMED TO HAVE FAILED OF ITS ESSENTIAL PURPOSE. WAI'S ENTIRE LIABILITY SHALL BE LIMITED TO REPLACEMENT, REPAIR, OR REFUND OF THE PURCHASE PRICE PAID, AT WAI'S OPTION. IN NO EVENT SHALL WAI'S LIABILITY FOR ALL DAMAGES RELATED TO THE PURCHASE OF PRODUCT EXCEED THE AMOUNT PAID FOR THE APPLICABLE PRODUCT. THE FOREGOING LIMITATIONS WILL APPLY EVEN IF THE ABOVE STATED REMEDY FAILS OF ITS ESSENTIAL PURPOSE.

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.

14.3 | Declaration of Conformity

According to EN ISO/IEC 17050-1:2010

No: WAI20231221

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 Mini 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:
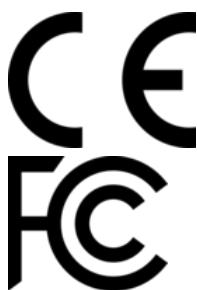
This product was tested in a typical configuration.

Ian Agranat
Wildlife Acoustics, Inc.

December 21, 2023

14.4 | 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.

14.5 | Environmental Testing

The Song Meter Mini 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.

14.6 | Bluetooth Module Regulatory Compliance

The Bluetooth Low Energy transceiver used in the Song Meter Mini 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

14.7 | 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

14.8 | Patents

The Song Meter Mini 2 is covered under the following patents:

- Australia
  - AU 202415116
- Canada
  - CA 233431
- United Kingdom
  - GB 6382875
- Europe
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