

Song Meter Firmware Release Notes

Version 1.5.1

Max File Size

The maximum file size for any one recording has been reduced to 2GB from 4GB. This was done because some host operating systems do not support FAT files larger than or equal to 2GB and will therefore be unable to open these recordings. When using the “simple” recording schedule mode, recordings larger than 2GB will be split into multiple files. When using the “advanced” recording schedule mode, recordings larger than 2GB will be truncated to 2GB. The size of the recording can be calculated by taking the duration in seconds, times the sample rate, times 2 if stereo, times 2 bytes per sample. $2\text{GB} = 2^{31} = 2,147,483,648$.

Bug Fix on Calculating Free Space

There was an unlikely possibility that Song Meter could start a recording on the flash card in slot A when there was not quite enough free space remaining. If this occurs, the recording is aborted and, depending on the recording schedule, Song Meter might also fail to switch over to slot B for subsequent recordings.

Version 1.5.0

Audio Compression

Song Meter can now compress audio files to increase storage capacity. By default, compression is turned off and the audio files are stored as uncompressed “.WAV” files. If compression is turned on (from the settings menu), Song Meter will instead store audio files in our proprietary Wildlife Acoustics Audio Compression (WAAC) file format “.WAC” files.

The WAAC format is a lossless audio compression format designed to provide efficient compression for typical open microphone field recordings. On average, “.WAC” files will be half the size of uncompressed “.WAV” files. Actual compression rates will vary depending on the sounds picked up by the microphones.

The processing power required is minimal so as to have little impact on battery life (for high sample rates, an additional 10mA of current may be required).

“.WAC” files can be read by our Song Scope software. Additionally, we provide a free cross-platform “.WAC” to “.WAV” (wac2wav) conversion program available from our website at:

<http://www.wildlifeacoustics.com/downloads/>

Version 1.4.0

Solar Tracking

Added support for recording relative to sunrise and sunset. Song Meter now calculates the time of sunrise and sunset for a given date and location such that recordings can be timed relative to actual sunrise and sunset times.

The following three parameters are added to the settings menu after the “Prefix” parameter:

Settings:	
- <u>Timezone</u>	UTC - 4
-Latitude	42.36 N
-Longitude	71.01 W

Timezone

Specify the local time zone used to set the clock in hours relative to UTC (Universal Time Coordinated).

Latitude

Specify the latitude north or south of the equator in degrees.

Longitude

Specify the longitude east or west of Greenwich in degrees.

Song Meter Firmware Release Notes

Version 1.4.0

In order to see Song Meter's calculated sunrise and sunset times, you can press the "Change Time Button" after specifying the timezone, latitude and longitude parameters. The display will show the current time as well as the sunrise and sunset times corresponding to the current date.

```
Set clock:
2008-Feb-12 13:33:25
    Sunrise 06:02
    Sunset 18:06
```

Two new advanced recording commands are provided to reference sunrise and sunset as follows:

AT SRIS-hh:mm:ss

The "At Sunrise" command is used to cause Song Meter to wait until the specified amount of time before the next occurring sunrise.

AT SSET-hh:mm:ss

The "At Sunset" command is used to cause Song Meter to wait until the specified amount of time before the next occurring sunset.

For example, the following advanced program sequence could be used to record for one hour beginning 15 minutes before each sunrise, and for one hour beginning 15 minutes after each sunset:

```
01 AT SRIS-00:15:00
02 RECORD 01:00:00
03 AT SSET-00:00:00
04 PAUSE 00:15:00
05 RECORD 01:00:00
06 GOTO LINE 01 0X
```

Version 1.3.0

Manual Recording

Added support for manual recording. In addition to recording on a schedule, the Song Meter can also start a recording when awake by pushing the “Up” and “Down” buttons simultaneously. Recording will be made to the flash card in Slot A if there is room, otherwise it will be made to the flash card in Slot B. The recording will stop when the selected flash card is full, or one of the mode buttons is pressed.

Fix Large File Bugs

Fixed a bug in which the display of time remaining for recordings exceeding 9 hours could be corrupted. Also fixed a bug to correctly limit recordings to the maximum file size of 4GB.

Version 1.2.0

Mono Channel Select

Added support for choosing either left or right channel inputs when making mono recordings. Previous releases supported mono recordings using only the left channel. With this change, the three possible channel selections are “Stereo”, “Mono-L” and “Mono-R” indicating stereo two-channel recording, mono one-channel recording on the left channel, and mono one-channel recording on the right channel, respectively.

Inactivity Time-out

Added a 5-minute inactivity time-out. When the Song Meter is awake and not recording (i.e. waiting for programming or configuration), the Song Meter will automatically exit and begin the recording schedule if no button is pressed for a period of 5 minutes.

Fix End-Of-Year Bug

A bug was discovered in which Song Meter would fail a few days before the end of the year e.g. December 29. The bug resulted in a corrupted filename being used and halting the recording schedule.

Song Meter Firmware Release Notes

Version 1.1.1

Fix Flash Card Corruption

A possible source of flash card corruption was identified and corrected.

Version 1.1.1

Fix Internal Bus Timing

Corrected internal bus timing introduced with the speed improvements in version 1.1.0. No adverse problems had been reported with the prior release, but this correction should improve long-term reliability.

Version 1.1.0

Long File Name Support

In version 1.0, Song Meter only supported 8.3 style filenames and used the format *MMDDhmm.WAV* for recording files.

In version 1.1.0, Song Meter now supports long filenames and uses the format *Prefix_YYYYMMDD_hhmmss.wav* for recording files.

The new format provides one-second granularity (instead of minutes as before) such that recordings may start less than one minute apart and still have distinct filenames.

In addition, a user-defined prefix (see below) can be specified to uniquely identify recordings made from a particular Song Meter. This is intended as a label that can be used to indicate the location and/or project of particular recordings when multiple Song Meters are deployed at the same time.

File Name Prefix

As described above, you may now specify a file name prefix to be used in the recording file names to uniquely identify recordings made by a particular Song Meter.

To set the prefix, go to the settings menu and select the new Prefix option. You can then use the up and down buttons to choose a character (capital letters, numbers and hyphens). Then press select to lock in the selected character and advance to the next character position. Press select one more

time to mark the end of the prefix label. The prefix may be up to 12 characters long.

Faster Recording Set-up and Finish Times

Song Meter is now able to prepare to record and finish a recording about 12 seconds faster than before (6 seconds on each end of the recording).

Song Meter will now wake up about 30 seconds before the next scheduled recording instead of 60 seconds as before to conserve even more power.