

Echo Meter EM3 Release Notes

Version 1.2.7

SD Card Compatibility Improvements

Fixes a problem with some specific models of flash cards causing errors and data corruption.

Version 1.2.6

Fix microphone calibration mode

There was a problem with how the 40kHz spectrum was being measured in calibrate mode. This is now fixed and should reflect the approximate dBVrms of the signal.

Version 1.2.5

Add continuous trigger mode

If the trigger level is set to zero, EM3 will make continuous recordings (i.e. always triggered).

Version 1.2.4

Change bottom line of text to double-height characters

Improve readability of bottom line on display (X-axis scale, time, GPS coordinates) by using larger characters.

Version 1.2.3

Add meta data in WAV files for Kaleidoscope

Insert GPS and other meta data in output WAV files compatible with Kaleidoscope software

Add microphone test mode

If you press the “+” and “-” buttons simultaneously, the upper right corner of the display changes from the listening mode (e.g. “RTE16”) to a 40kHz signal level (-xx.x) in dB. Any other key cancels test mode. When the Echo Meter is placed flat on top of the Wildlife Acoustics calibrator in “CAL” mode such that the microphone end of the EM3 is pressed up against the calibrator buttons and the microphone is centered left-to-right with the calibrator transducer, a reading of -21dB +/- 4dB is typical. Values lower than -25dB may be out of spec.

Version 1.2.1

Additional Flash Card Improvements

Further improvements to the fix in 1.2.0.

Version 1.2.0

Fix Flash Card Compatibility Issues

Some flash cards stall during writes causing lost data during recording. This fix takes advantage of extra memory in the EM3 hardware to buffer data when a flash card stalls and should now work correctly with all Class 4 or higher SDHC flash cards.

Version 1.1.9

Fix Flash Card Corruption Bug

There was a bug that could cause fragmentation and corruption of the flash cards resulting in unusual behavior including corrupted files, incorrect reporting of available card space, and system hangs.

Added Progress Bar to Time Expansion Playback

A progress bar will now be evident on the bottom of the display during the time expansion playback of calls from the history buffer.

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Version 1.1.2

Added Noise Tag

If a recorded file is unlikely to contain bats e.g. appears to only contain noise, then it is tagged with an 'N' tag for noise. The file name will be prefixed with 'N_'.

Fix GPS Time Synchronization

There was a bug in which it was possible for the GPS time synchronization to be off by exactly one second.

Version 1.1.2

Added RTE modes

The Echo Meter EM3 now has 3 different RTE modes that can be configured from the settings screen. The default is "SIG" or signal-activated and is the same as in previous versions. The RTE speaker output is only enabled when some signal is detected sufficient to paint pixels on the spectrographic display. Other modes include "TRG" or trigger - activated when a recording trigger is active (the same behavior as an SM2BAT), and "ON" which is always activated.

Improve Zero Crossing threshold resolution

Zero crossing threshold adjustment "FDADJ" now has double the resolution as before to more closely set the optimum zero crossing threshold.

Correct SD card file-system problems

Numerous issues in handling alignment and fragmentation in the flash cards resulted in cards indicating they were full prematurely, now fixed.

Version 1.1.0

Improved battery life

Corrected battery monitor to avoid shutting down EM3 too early resulting in longer battery life.

Improved Zero Crossing filtering

Added more intelligence to zero crossing analysis to discard noisy zero crossing files.

Battery charger warnings

When plugging in the 9VDC charger while the EM3 is powered up, the display will show various warning messages related to safe battery charging for up to 30 seconds, or until a button is pressed after about 3 seconds, before shutting down during the charge cycle.

Fixed WAC format bug

There was a bug that might cause WAC files to flush improperly at the end of the file resulting in a short burst of noise.

Version 1.0.0

Initial release

This was the first production firmware release for the Echo Meter EM3.