How to Update the Flash on Your Eggtimer Classic

 Occasionally, we publish updates to the Eggtimer Classic software. Typically, this is to fix (hopefully) minor bugs, or to add new features that have been suggested to us. The Eggtimer Classic's software can be updated using the same serial cable that you use for downloading and programming your Eggtimer Classic… it's a standard USB-TTL serial cable. The one that we sell for use with the Eggtimer uses a Prolific PL2303 chip, but cables (or dongles with a cable) using the USB-serial chips by FTDI (FT232RL) or Silicon Labs (CP2102) will also work if you match up the data lines. Updates are easy, and it takes about 1-2 minutes.

Caveat: Currently, we only support updates from Microsoft Windows PCs. Sorry Apple/Linux fans… it's because Win-AVR only runs on Windows. You MAY get it to work on an Apple/Linux hypervisor, but that's way out of our league…

IMPORTANT NOTE: DO NOT try to perform a firmware update with any loads attached to the deployment outputs!   Although the chance of them firing during an update is virtually zero, it's very bad safety practice to have any pyrotechnic loads connected to an altimeter when the rocket is not being prepped for flight.

1) Download and install Win-AVR. You will need a current version of the Win-AVR program for your Windows PC. You can get it by clicking on the link on the Eggtimer support page under Knowledge Base. This only needs to be installed once, for all Eggtimer devices using the Atmel processors (Eggtimer Classic, Eggtimer TRS, Eggfinder LCD receiver, Eggtimer Voice Module).

2) Plug the USB-Serial cable into your PC.

3) Note that COM port that you use. You can find it in Device Manager under Ports, the USB-Serial cable will show up as "USB Serial Port" or something like that.   We STRONGLY recommend that you change the port in Device Manager to COM2; Windows will probably complain when you go to do that, but that's because it pre-allocates COM1-COM4, not because you actually have anything on that com port. Note that we have found that Win-AVR will not work properly with com ports greater than COM4, so set it to COM2 unless you have a really good reason for doing otherwise.

4) Download the update package, then unzip it to C:\eggtimer. You should see two files extracted, one called "Eggtimer_v_m.hex" and "Eggtimer_v_m.bat" (where v is the major version and m is the minor version), for example EGGTIMER_1_53.BAT and EGGTIMER_1_53.HEX.

5) Start a Command prompt on your PC, either by selecting Command from Start/Accessories or by typing "cmd" in the Run dialogue box.

6) Type "CD \eggtimer" to change to the folder where the firmware was extracted.

7) If your COM port was COM2, you can skip this step. Otherwise, open the .bat file with Notepad, look at the line that starts with "avrdude ". If the COM port number does not match your USB-serial cable's COM port, change it. For example, if the COM port that you got in Device Manager was COM3, change COM2 to COM3. Be careful not to change anything else on the line, or the update script won't work. Close Notepad, saving the file when prompted. If you mess up, you can always extract the zip file again, so don't be too nervous.

8) Connect your Serial Cable to your Eggtimer Classic's serial header as follows (the colors are for the Prolific cable that we sell, if you have another cable make sure you match up the PIN functions, NOT the colors). GND on Cable (BLACK) -- GND pin on 3-pin header TX on Cable (WHITE) -- RX pin on 3-pin header RX on Cable (GREEN) – TX pin on 3-pin header

9) Get a small paperclip or piece of wire (like a cut-off resistor lead) and short the two pads marked "RST", located just to the left of the 3-pin serial connector. DO NOT push the paperclip in very far… it only needs to go in far enough to short the pads. Turn on your Eggtimer Classic, if the RST pins are shorted you shouldn't hear the startup beep tone; if you do, check your jumper.

*** READ THE NEXT STEPS CAREFULLY **BEFORE** CONTINUING ***

10) Type "Eggtimer_x_xxx.bat", replacing the "x"s by the version number (i.e. "Eggtimer_1_53.bat"). You will see some heading stuff, then it will display a line starting with "avrdude: Send: 0…" repeatedly at about two second intervals.

11) After you start the .bat file, IMMEDIATELY remove the shorting jumper that you placed across the RST pads. If it "takes", you will start to see a progress bar scroll across your screen. This means that it's uploading, this is good. After about a minute or so it will stop and the window will close, your Eggtimer Classic will reset, and it will go into the normal operational mode (you'll hear a long beep). Connect your terminal program using the serial cable, and confirm that the version on the display matches the uploaded software version. If it does, you're done!

Sometimes the update won't "take" on the first try. If that happens, repeat steps 9 through 11. The timing can be a little tricky sometimes, the key thing is that you need to keep the Reset shorted until you see the first "avrdude: Send: 0…" message. If you release it too early, the bootloader won't see the communications prompt from AVRDude to upload the program; if you release it too late, the bootloader won't know that an upload is in progress and will ignore it.

If for some reason it halts in the middle of the update, this may appear to "brick" your Eggtimer Classic, i.e. it will appear to be dead when you power it up. Since the bootloader can't be erased by the update, however, all you need to do to get it back is to redo the update. Trust us, it works… we've rescued many "dead" devices by simply reflashing them.

If you have any problems updating your Eggtimer Classic, drop us a line at support@eggtimerrocketry.com … we'll get back to you as soon as possible.