MODIFICATION INSTRUCTIONS FOR SYNFLASH

Do before installation of firmware v2.2 update

Firmware update 2.2 (and above) requires modification of earlier SynFlash units, serial numbers F1V3003 to F1V3050. This modification and update improves operation of SynFlash when progressive frame rates above 30 are used. Firmware 2.2 also corrects a minor bug noticeable with all progressive frame rates.

Modification and firmware upgrade must be done together. Installation of one without the other will result in improper operation.

The remainder of this document describes steps required for modification. You will need skill with a small soldering pencil (25-35 watt recommended), small gauge insulated wire (28 or 30 gauge is best), tools to cut and strip the wire, electronic solder, small hex screwdriver, needle nosed pliers, and a hobby knife or other sharp utensil. A small to medium sized crescent wrench and an ohm meter will also be helpful (though not strictly required).

Disassemble the SynFlash case

1. Remove the battery
2. Remove and save 3 nuts and washers from the 3 toggle switches
3. Remove and save nuts and washers from the BNC terminals (use a small wrench or long nose pliers, taking extreme care to avoid slipping and damaging the label.)
4. Remove 4 screws from the rear of the case

Open the case. Pull the circuit board assembly carefully out of the case. Notice how the front plastic panel fits into ridges in the top case half.

Some units have the round piezo transducer soldered onto the circuit board, while in other units the transducer is glued to the case top. If the buzzer is soldered to the board you may leave it in place. If the buzzer is glued to the case, we recommend that you unsolder the buzzer's three wires. Make notes about which wire is soldered to which contact. You will have to reattach them later.

Once you have access to both sides of the pcb assembly, do the following steps. When cutting traces we recommend that you make 2 cuts close to each other, as shown by the red lines.
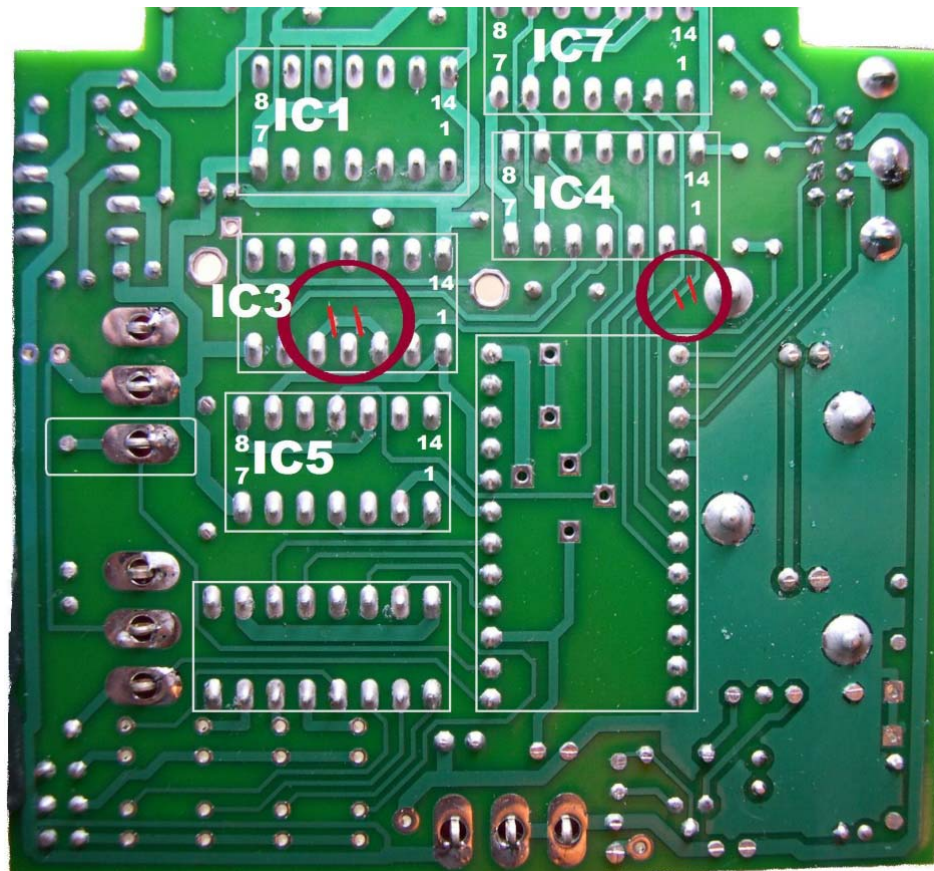
Cut traces on the circuit board

Locate IC5 and IC3 (just visible under the buzzer). Cut the trace between them as shown.
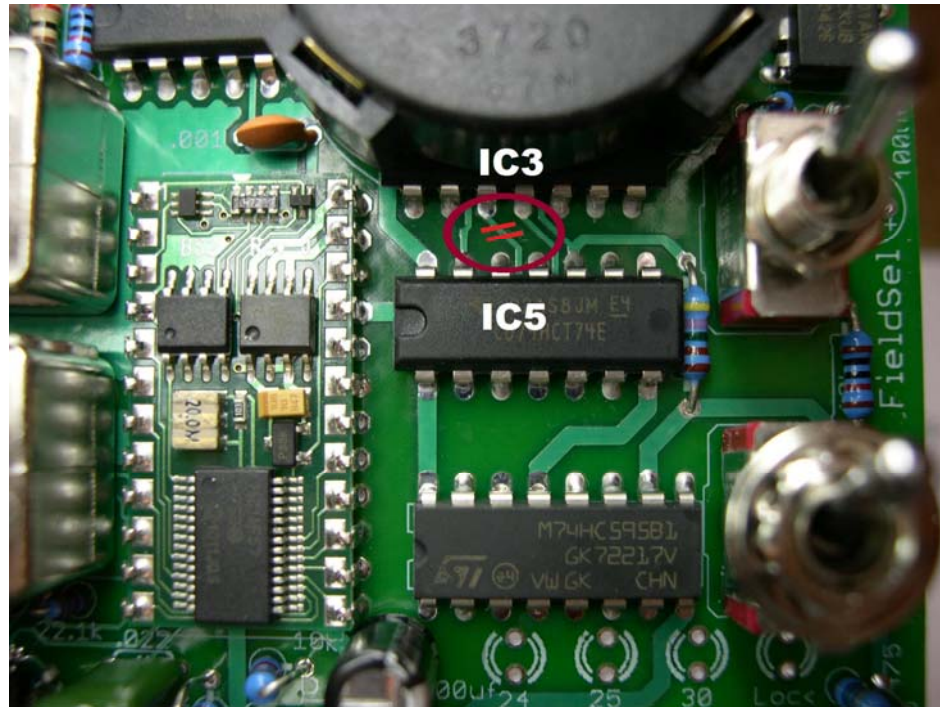
Cut two traces as shown on the bottom side of the board.

One trace connects IC3 pin3 to pin 5. One trace connects IC4 pin 1 to pin 6 of the 24 pin module.

Add jumper wires as directed below

ICs are numbered and located as in the photo on the previous page. Notice that IC pins are numbered from right to left, pin 1 is in the lower right corner, pin 14 is in the upper right corner of each IC. You may wish to refer to the photo of completed modifications as a check of your work. We used red wires to show the muti-point connections

_____ From field switch contact (closest to the Mode switch) to IC1 pin 5, and from there to IC4 pin 1

_____ From processor module pin 6 to IC4 pin 13, and from there to IC1 pin 12.

_____ From IC5 pin 3 to IC3 pin 5, from there to IC1 pins 9 and 10 (be careful to not short to the underlying traces)

_____ From IC3 pin 3 to IC1 pin 8

_____ From IC4 pin 12 to to IC1 pin 6

_____ From IC5 pin 11 to IC1 pin 11
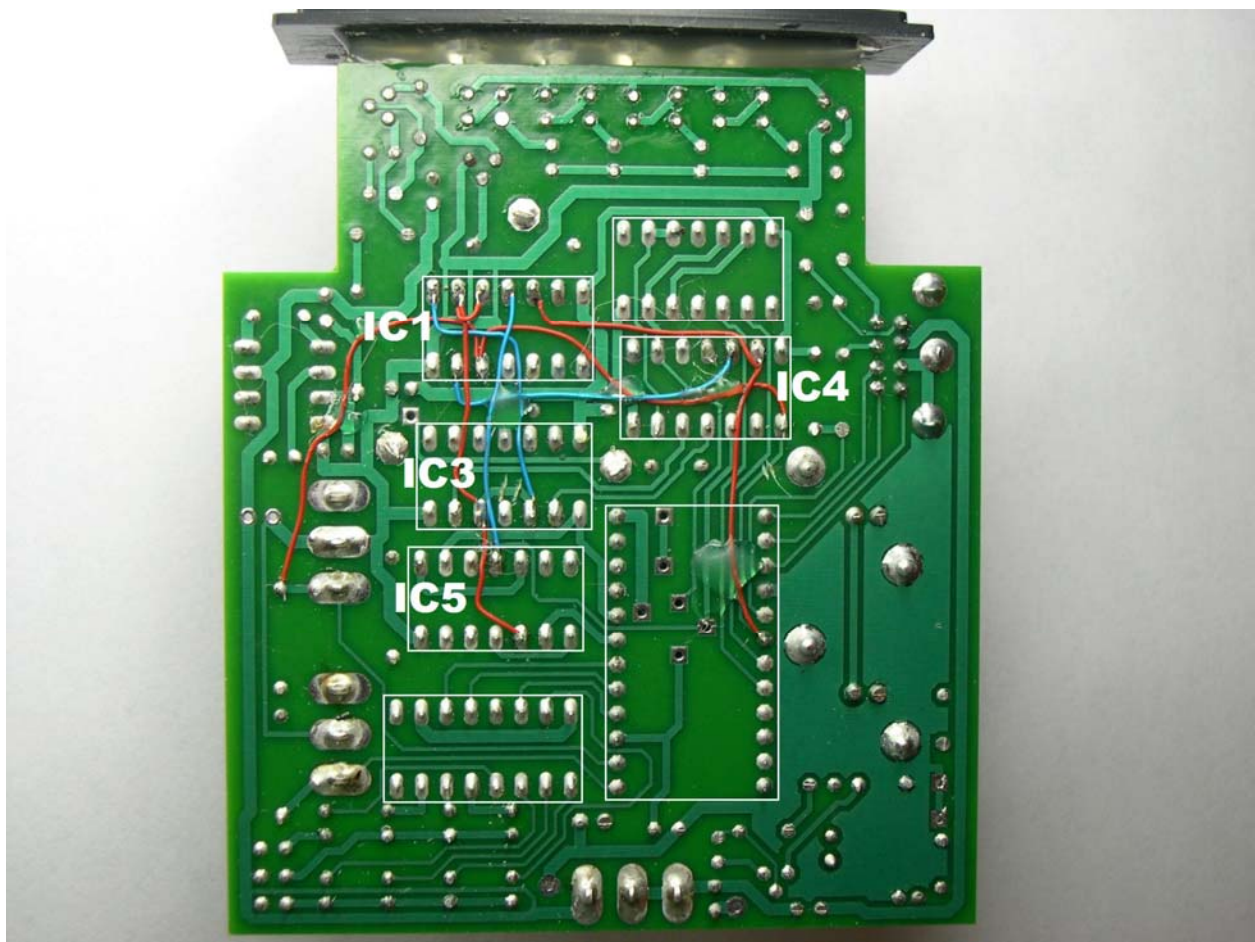
Completed modifications.

Re-assemble SynFlash:

1. If you unsoldered wire to the crystal buzzer, reattach them now.
2. Check that the 8 colored LEDs are standing straight. Assemble the circuit board into the case top, guiding the clear LED panel into ridges in the case. Make sure all colored LEDs protrude.
3. Install nuts and washers to the 3 toggle switches.
4. Install washers and nuts to the BNC terminals and tighten carefully. A small wrench may be helpful.
5. If an ohm meter is handy, check for continuity between BNC shells and each toggle switch. There should be 10 ohms of less. Higher resistance indicates poor contact with the conductive coating inside the case, which may reduce immunity to static discharge. Check for dirt or loose nuts.
6. Install 4 screws through the rear of the case
7. Install fresh 9 volt battery

Use a Windows PC to install new firmware.

A suitable cable was shipped with your SynFlash. A standard Mac-to-PC serial adapter cable will not work because SynFlash uses a non-standard pinout. Refer to the last page in your user manual for details.