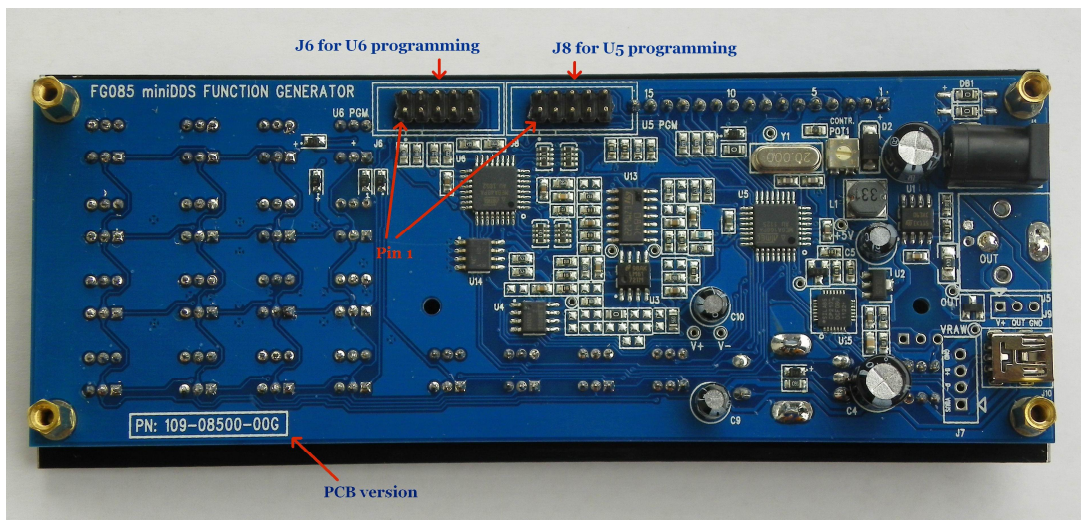


Steps for 085 firmware upgrade by programmer

1. Identify programming ports (see below)



2. Obtain programmer

It is important to obtain a programmer which has pinouts matching the programming header on board. Refer to 085 manual and programmer manual for details. The following steps assume that JYE Tech's 07302 programmer is used. This programmer pinouts match J6 and J8 on 085 board.

3. Choose and Install host application

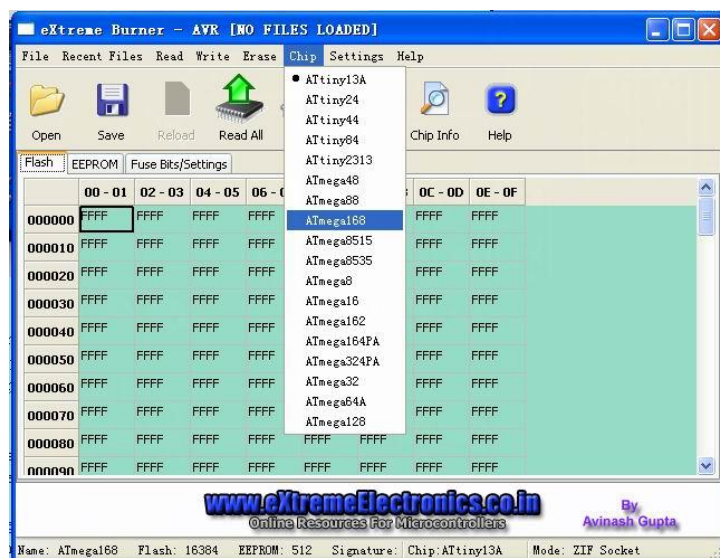
To use the programmer a host application running on PC is required. There are many such applications available on the internet. Here we use eXtreme Burner as an example. This software can be downloaded at :

<http://extremeelectronics.co.in/software/extreme-burner-avr-1-3-beta-test/>

Install eXtreme Burner and run it.

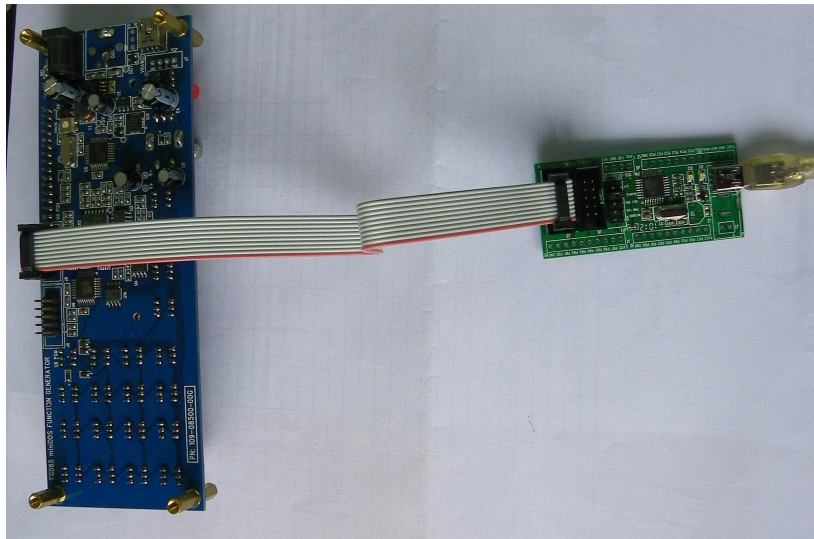
4. Select chip

Choose chip to be programmed from the menu item "Chip" (see below). You selection must be match with actual chip on board. For 085 pick ATmega168 for U5 and ATmega48 for U6.



5. Connect programmer to 085

Connect 085 board to programmer with a 10-core ribbon cable. Make sure the red edge of ribbon cable align to pin 1 of the headers at both ends. See photo below.



6. Power up and testing

The 07302 programmer is capable to power target board (which is 085 in our case) but the capacity is limited since the source is from USB. We strongly recommend to have target powered by its own source. To ensure this remove all jumpers on JP1 of 07302. Only keep the one at location labeled “Slow clk”.



Ensure connection is correct and then power 085 up. Connect programmer to an USB port of PC. Now we test if everything is ok.

Under menu item “Read” click on “Fuse bits and Lock bits” (see capture below).

If it reports successful than that means the chip on board is now accessible. We can proceed to the next step for real programming. Otherwise there might be something wrong with the board,

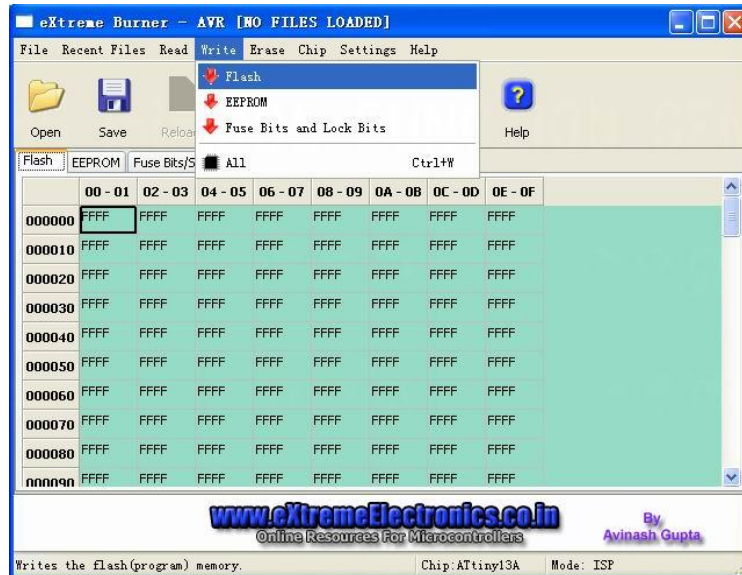
connection, programmer, or software.

7. Load firmware hex file

Load the new firmware HEX file into buffer by click on menu File->Open flash. You can see the contents of flash buffer are updated.

8. Programming

Under menu item “Write” click on “Flash” (see capture below). This will write the hex file into chip. If it reports successful then you are done.



Important Note:

Do not touch the fuse bits unless you are 100% sure what you are doing. Otherwise you may lock the chip. In that case you will need to remove the chip to unlock it with a high voltage programmer or replace the chip.