How to program a PIC16F87x or PIC18F452

the term **programming** is used in this context for burning a hex file onto the chip.
See what_is_a_midibox if you don't know the difference between MIOS, the bootstrap loader and a MIOS Application.

For the MIDIbox project it is **not** required to purchase an expensive, “ready-made” programmer in order to get the firmware into the PIC.

Instead you could buy a pre-programmed PIC from SmashTV or Mike, you could ask in the MIDIbox Forum for help, or you could build a PIC programmer by yourself. There are many schematics available on the web. The MBHP_BURNER module is one of such DIY programmers, and it works reliable.

For PIC18F based projects, a PIC programmer is only required to program the MIOS bootloader firmware into the internal flash memory. Once this has been made, you can upload MIOS and applications via MIDI. Details about this process are explained here.

If you want to burn yourself, you need to build the PIC Burner:

- PIC Burner uCApps

If you have to burn PIC16 Chips, see http://www.ucapps.de/mbhp_iic_midi.html for a description of a PIC18→PIC16 Adapter for PIC Burner.

You need PBrenner for the PIC16 and P18 for PIC18's. Both chips can be burned using the PIC Burner Module.

I experienced massive problems by using 2 9V Batteries (steady loss of Voltage, though I used fresh Batteries). 15V Power Adaptors are hard to find, and if you find some, they're quite expensive. So I checked all my 12V-Power Modules and finally found one that produces > 18 V. *It is worth trying and measuring all Power Adaptors you have, because some of them produce actually more Volts than said on the packaging* :)

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