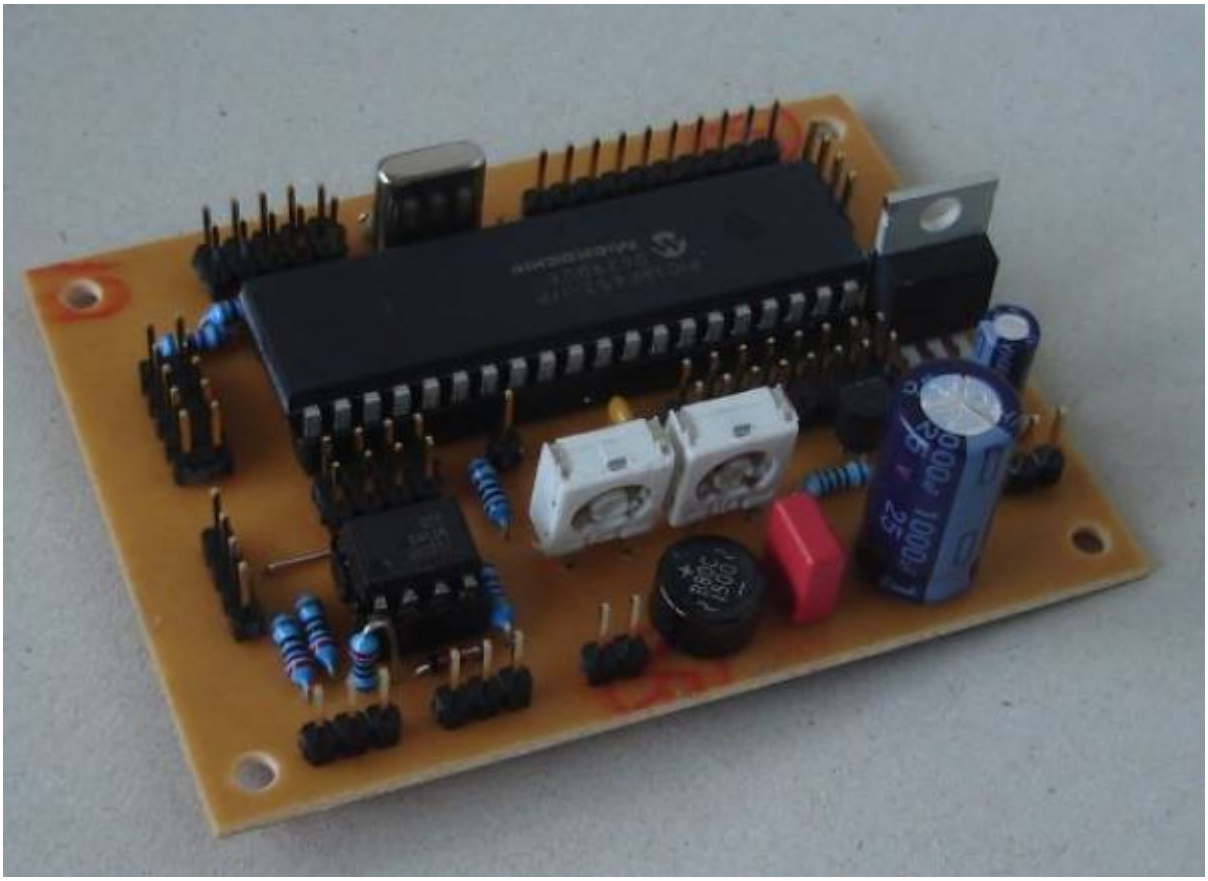
# MBHP Core8 Module

The **MBHP Core Module is the heart and brain of every MIDIbox**. It holds the **PIC microcontroller** which runs **MIOS and your MIDIbox application**. It handles MIDI communication, it drives an LCD (or two), and it connects to all the other modules.

Main part of this module is the PIC18F452, a microcontroller manufactured by Microchip. It is clocked at 40 MHz (externaly with a 10 MHz crystal) and offers enough performance to handle analog and digital modules with latencies below 1ms.



The PIC is a **“system on chip” (SoC)**, this means, it contains not only a CPU, but also an **integrated 32k flash program memory, 1536 bytes data memory, 256 bytes data EEPROM, and a lot of usefull peripherals like AD-converter and UART (for MIDI)**. The low prices and worldwide availability for hobbyists makes it a good choice.

In distance to other (more modern) microcontrollers, the PIC is easy to program, requires no external memories, is almost non-destroyable and comes in a handy DIP package, so that also electronic beginners can work with this chip without the danger of damaging small SMD pins within some seconds with their soldering iron.

## Parts

- Core Board Parts List

# PIC Microcontrollers

The Core Module can be equipped with following microcontrollers:

- PIC18F4620 *required for MIDIbox SEQ V3, possible future default*
- PIC18F4685 *required for MIDIbox SID V2 due to the CAN peripheral*

# Multiple Cores

There are different possibilities to have multiple Cores.

- MIDIbox Link uCApps *Linking multiple Cores via MIDI (a special configured MIDI forwarding pipe)*
- MBNet uCApps *The new MIDIbox Network utilizing the CAN (Controller Area Network) Interface on the brandnew PIC18F4685 microcontrollers*

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