

1-50Mhz Frequency counter

This document describes the construction of small frequency counter with a cheap PIC microcontroller and a few seven-segment LED digits. The main features of the frequency counter are:

- frequency range 1 Hz ... 50 MHz
- five digits resolution (display for example x.xxxx kHz, x.xxxx MHz, or xx.xxx MHz)
- automatic range switching with different gate times
- optional addition or subtraction of a frequency offset (programmable)
- very low component count: a PIC 16F628, 5 7-segment LED displays, a 20MHz crystal and a few resistors
- optional (configurable) power-saving mode which automatically turns the display off if the frequency didn't change significantly within 15 seconds
- USB 5V power supply can be used.

main schematic:

