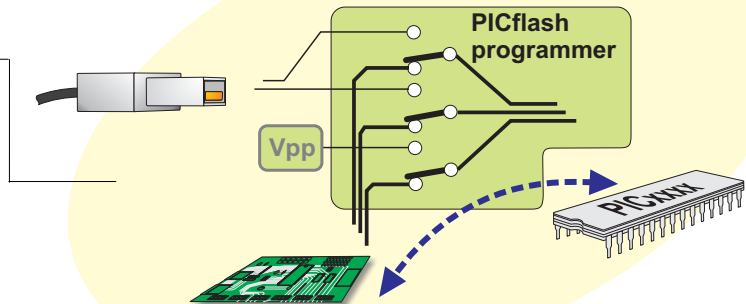


ABOUT PICflash PROGRAMMER

With complementary software, *PICflash programmer* represents a great tool for all those working with PIC microcontrollers. The microcontroller connects to the *PICflash programmer* via 5 lines, two of which are +5V and GND and others are PGC, PGD and MCLR (PGC - program clock and PGD - program data). The position of these pins vary, depending on microcontroller's type. Unlike programmers whose operation is based on bootloads (and which need to give away part of their memory to a bootloader program) *PICflash* programs the microcontroller externally so that the entire memory is available for the programmer.

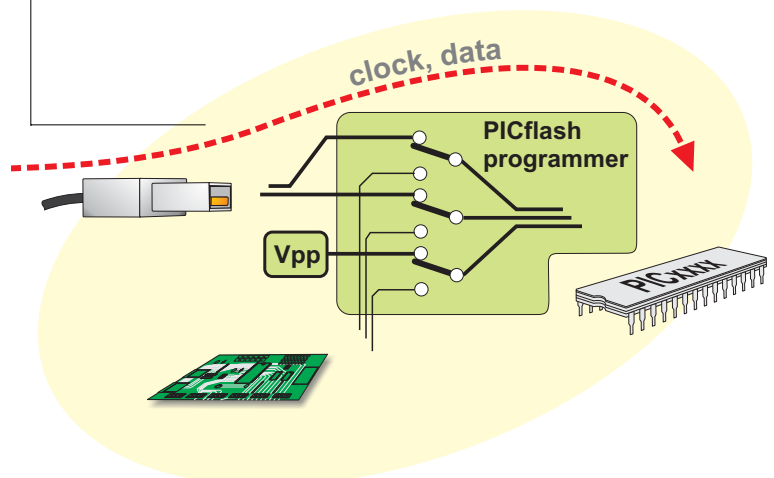
Programmer is inactive

All lines from Microcontroller which are multiplexed by the programmer (PGC, PGD, and MCLR) are connected to the board peripherals.



Programmer is active

By clicking the option WRITE, programmer transfers PGC, PGD and MCLR pins from the rest of the electronics on the board and thus allows programming of microcontroller on the printed circuit board. Right after the programming, these lines are returned, so that the PIC on board does not "see" the programmer any more. With this method, presence of the programmer does not affect the working of device, which is of the utmost importance.



PICflash

programmer by MikroElektronika

USB In System
Programmer for
Microchip PIC
microcontrollers

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If the target board have its own power supply it can be used for powering the *PICflash* programmer. In that case you must open *PICflash* programmer and take off the jumper for power selection. When the jumper is on, target board is powered through programmer's USB connector so any other power supply on the target board must be disconnected.



This picture shows the position of jumper when the target board and *PICflash* programmer are powered trough USB connector.



This picture shows the position of jumper when *PICflash* programmer is powered by the target board (target board have its own power supply).

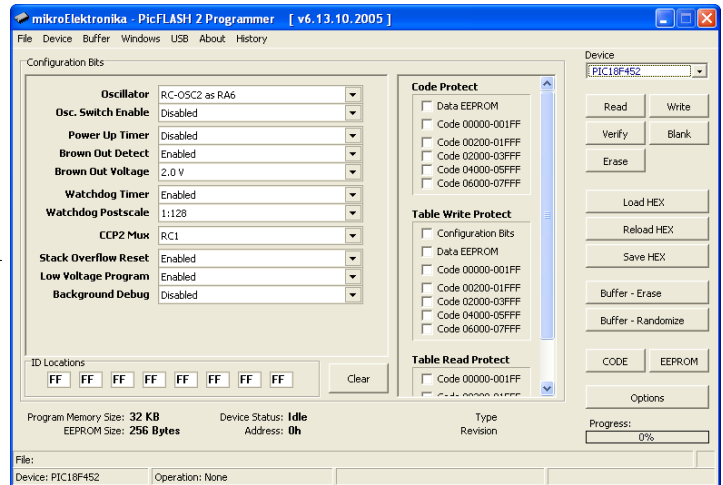
Quickstart Guide

PICflash SOFTWARE

Step 1

Copy the file PICFLASH2.exe from CD to your PC, and run it.

Select the appropriate microcontroller, by clicking the option **Device**. PICflash will automatically make adjustments for working with the specified microcontroller.



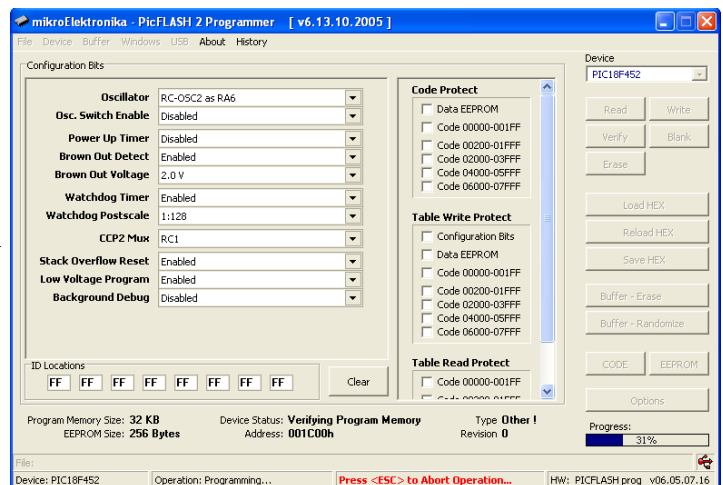
Step 2

Click the option LOAD HEX which opens up the window similar to picture on the right. By double-clicking the file, appropriate HEX file will be loaded into programmer's buffer. PICflash will read all the settings from the HEX file and set up the control bits.



Step 3

Programming the microcontroller starts by clicking the option **Write** in the right corner of the working window.



KEYBOARD SHORTCUTS AND COMMAND LINE PARAMETERS.

Keyboard Shortcuts

Alt-E	Erase
Alt-B	Blank check
Alt-W	Write
Alt-V	Verify
Alt-R	Read
Alt-D	Change MCU
Ctrl-S	Save
Ctrl-O	Open (Load)
Ctrl-R	Reload

Command Line

Alternatively, you can use the PICflash programmer from the command line. It will allow you to use PICflash from some other software, compiler etc. Here are the command line parameters are:

-p	PIC name (for example P16F877A, P18F452...)
-f	Filename (use " as delimiters)
-e	Erase PIC
-b	Blank check
-w	Write to PIC
-v	Verify
-r	Read from PIC

Examples

1. **picflash2.exe -w -pPIC16F877A -v -f"C:\somefile.hex"**

This will program the PIC using C:\somefile.hex and it will verify the write

2. **picflash2.exe -r -pPIC16F877A**

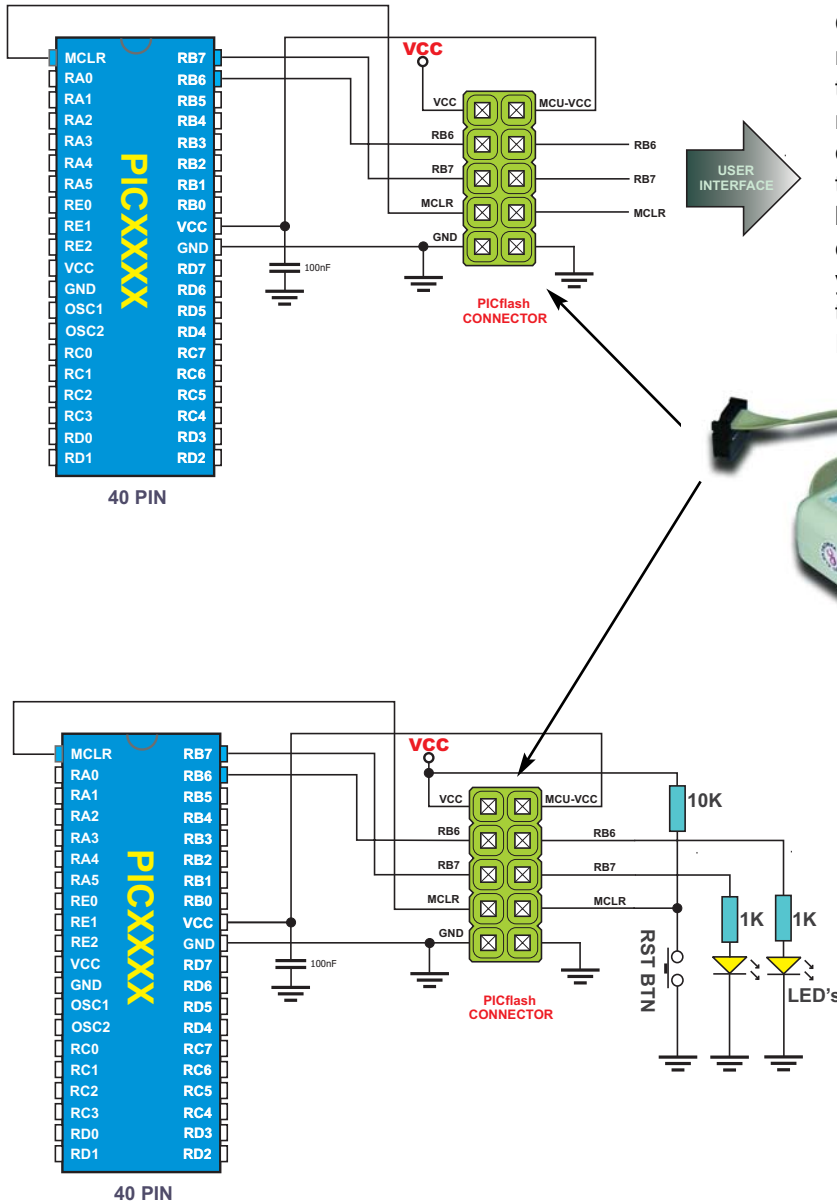
This will read the PIC contents into on screen buffer

3. **picflash2.exe -e -pPIC16F877A**

This will erase the PIC

Quickstart Guide

EXTERNAL PICflash PROGRAMMER CONNECTION SCHEMATICS



One of the possibilities for connecting PICflash to a microcontroller is by using an IDC10 connector as shown on the picture on the left. All you have to do is to put one 2x5 connector between microcontroller and other parts of the board. Once you plug in the PICflash connector you will be able to program PIC In System.



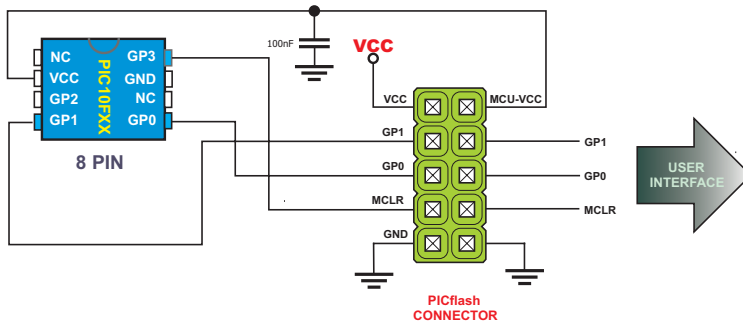
The picture on the left shows how to connect 2 LEDs on RB6 and RB7 pins. On the same picture MCLR pin was connected to the standard reset circuit.

PICflash

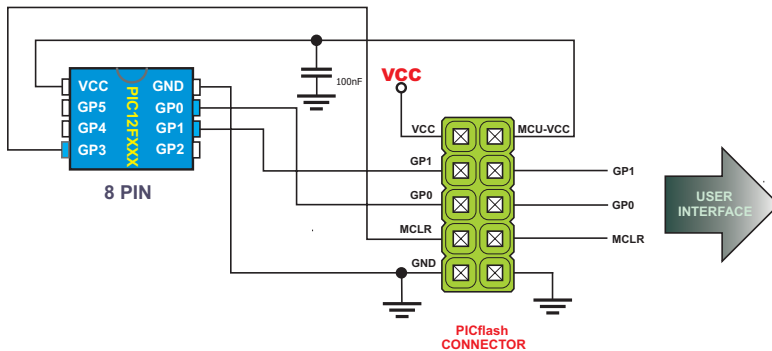
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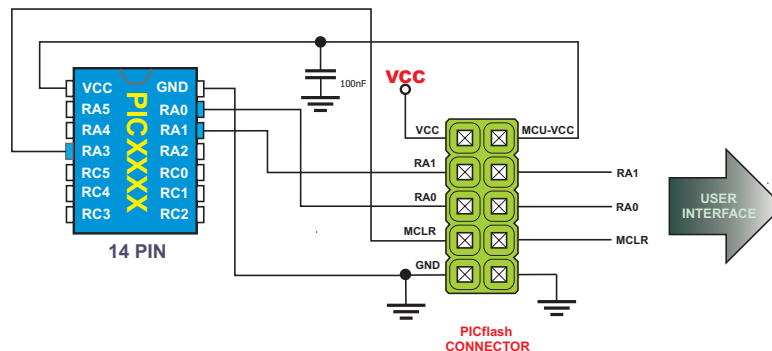
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Connection schematics for 8 pin 10F PIC Microcontrollers. Some of the examples of 10F family are :
PIC10F200, 2002, 2004, 206...

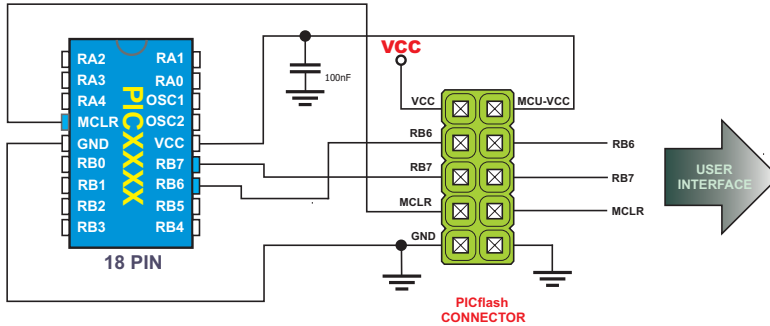


Connection schematics for 8 pin 12F PIC Microcontrollers. Some of the examples of 12F family are :
PIC12F508, 509, 629, 635, 675, 683...

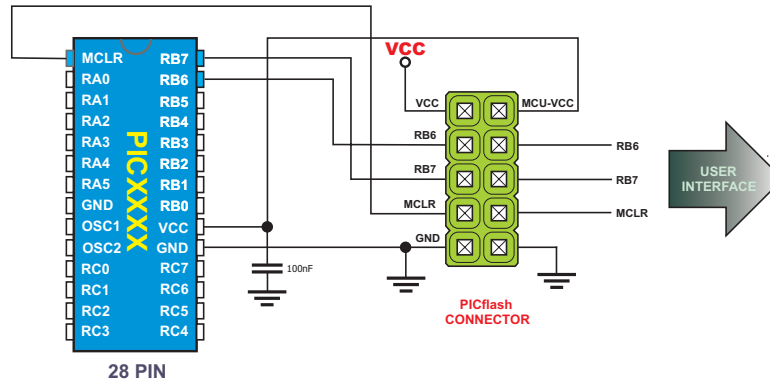


Connection schematics for 14 pin 16F PIC Microcontrollers. Some of the examples are :
PIC16F676, 684, 688...

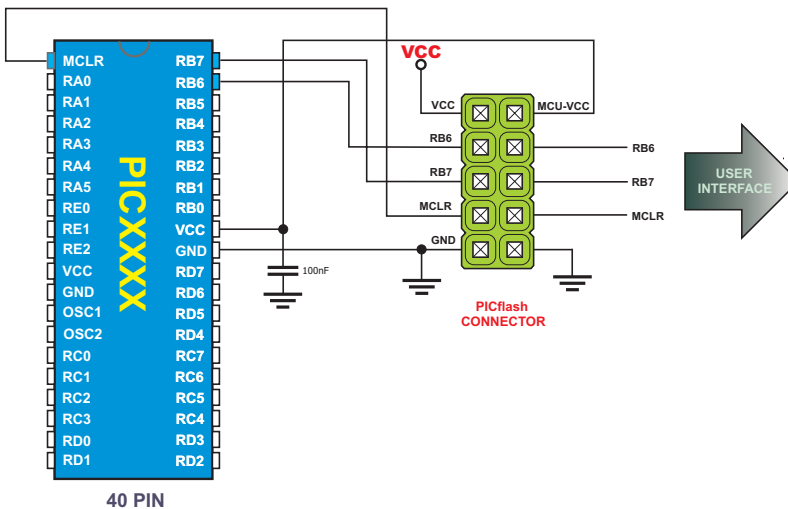
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Connection schematics for
18 pin 16F and 18F PIC
Microcontrollers. Some of
the examples are :
PIC16F84A, 88, 628,
716....
PIC18F1220,1320 ...



Connection schematics for
28 pin 16F and 18F PIC
Microcontrollers. Some of
the examples are :
PIC16F876, 73...
PIC18F252, 248, 2330...



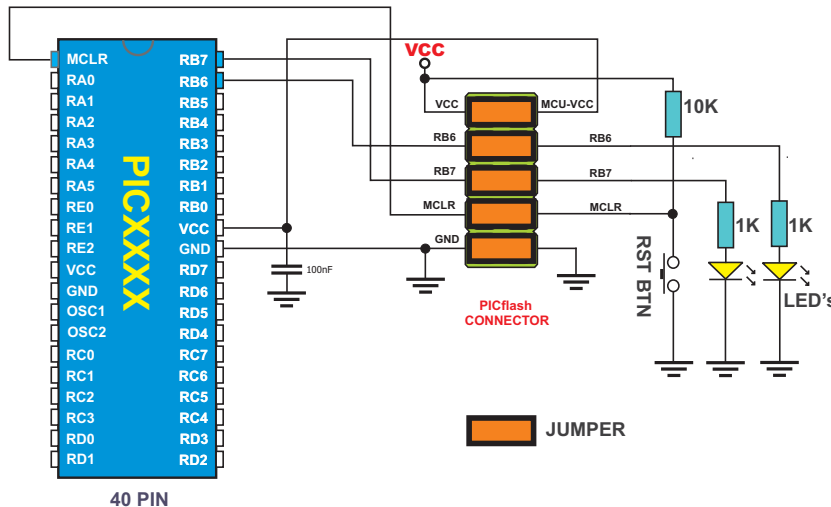
Connection schematics for
40 pin 16F and 18F PIC
Microcontrollers. Some of
the examples are :
PIC16F877A, 77...
PIC18F452, 448, 4520,
4220...

PICflash

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Once the development of a device is finished the jumpers have to be restored for enabling the device to work without PICflash programmer.

These jumpers establish connections from MCLR, RB6 and RB7 to peripherals on the board.

In case of need, the jumpers can be removed and PICflash can be reconnected for reprogramming the chip.

Note:

Target board must not have electrolytic capacitors connected to MCU-VCC line because MCU power supply is controlled by PICflash.



If you are experiencing problems with any of our products or you just want additional information, please let us know. We are committed to meeting your every need.

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