

Using the PICKit2 Programmer

N. Macias July 2012

The PICKit2 programmer is an alternative to the MPLAB ICD2 described in the labs. One advantage of this programmer is that it does not require external power: it's powered from the USB cable. Another advantage is that you can often leave the programmer connected while testing your circuit: no need to keep moving your chip back and forth between the programmer and the breadboard.

Connecting the PICKit2 Programmer to your PIC microprocessor

Connecting the programmer requires only 5 wires. Position 1 on the programmer can be identified by the triangle pointing to it.

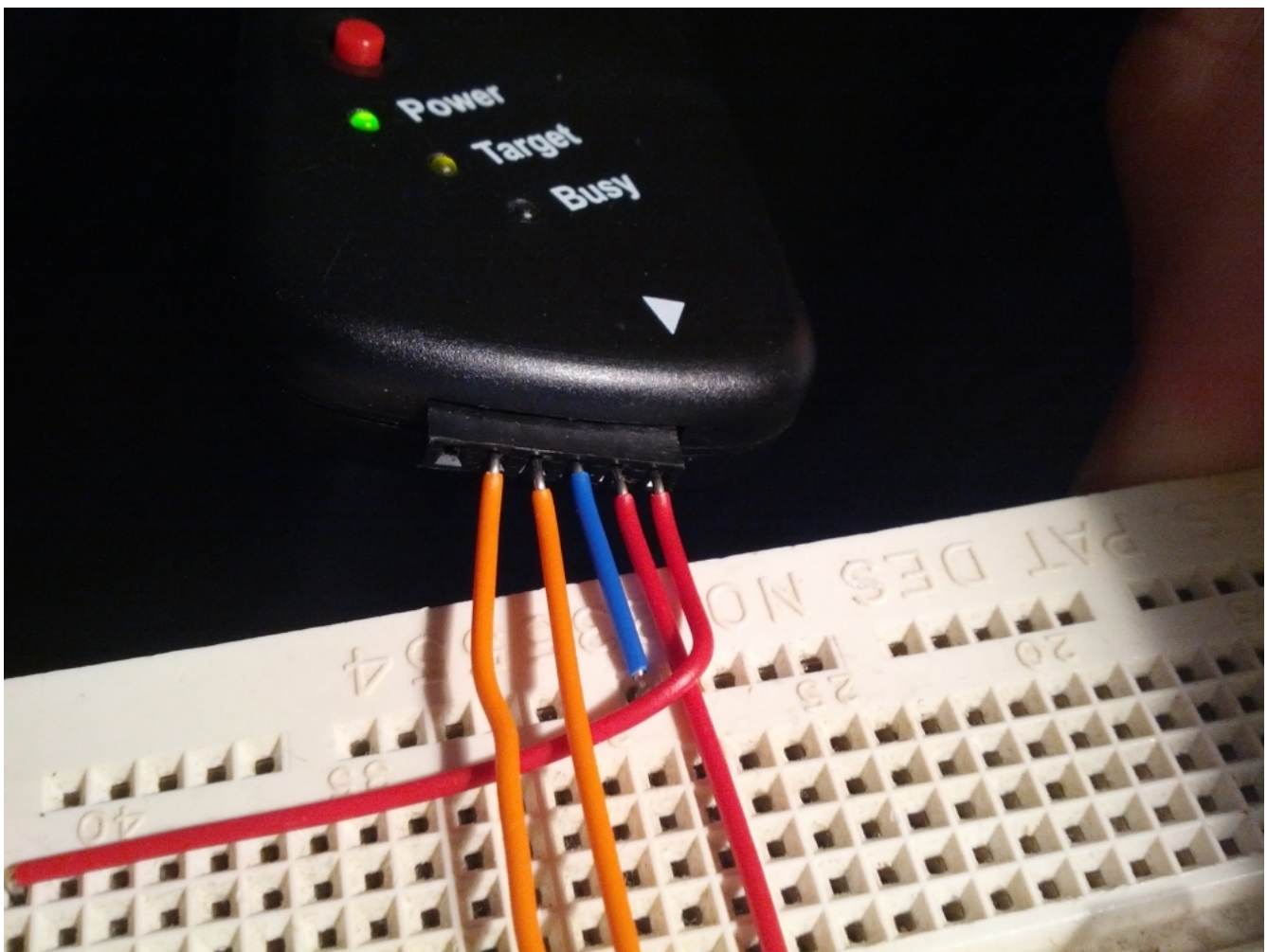


Figure 1. Connecting to the PICKit2 Programmer
Pin 1 is the rightmost red wire. Pin 6 is on the left and is not connected.

Your connections should be as follows:

PICKit2	PIC uP	Comments
1	4	If you remove the programmer, this pin needs to be wired HIGH as usual
2	14	This is Vdd
3	5	GND
4	13	Programming Data
5	12	Programming Clock
6	NC	Don't connect this to anything

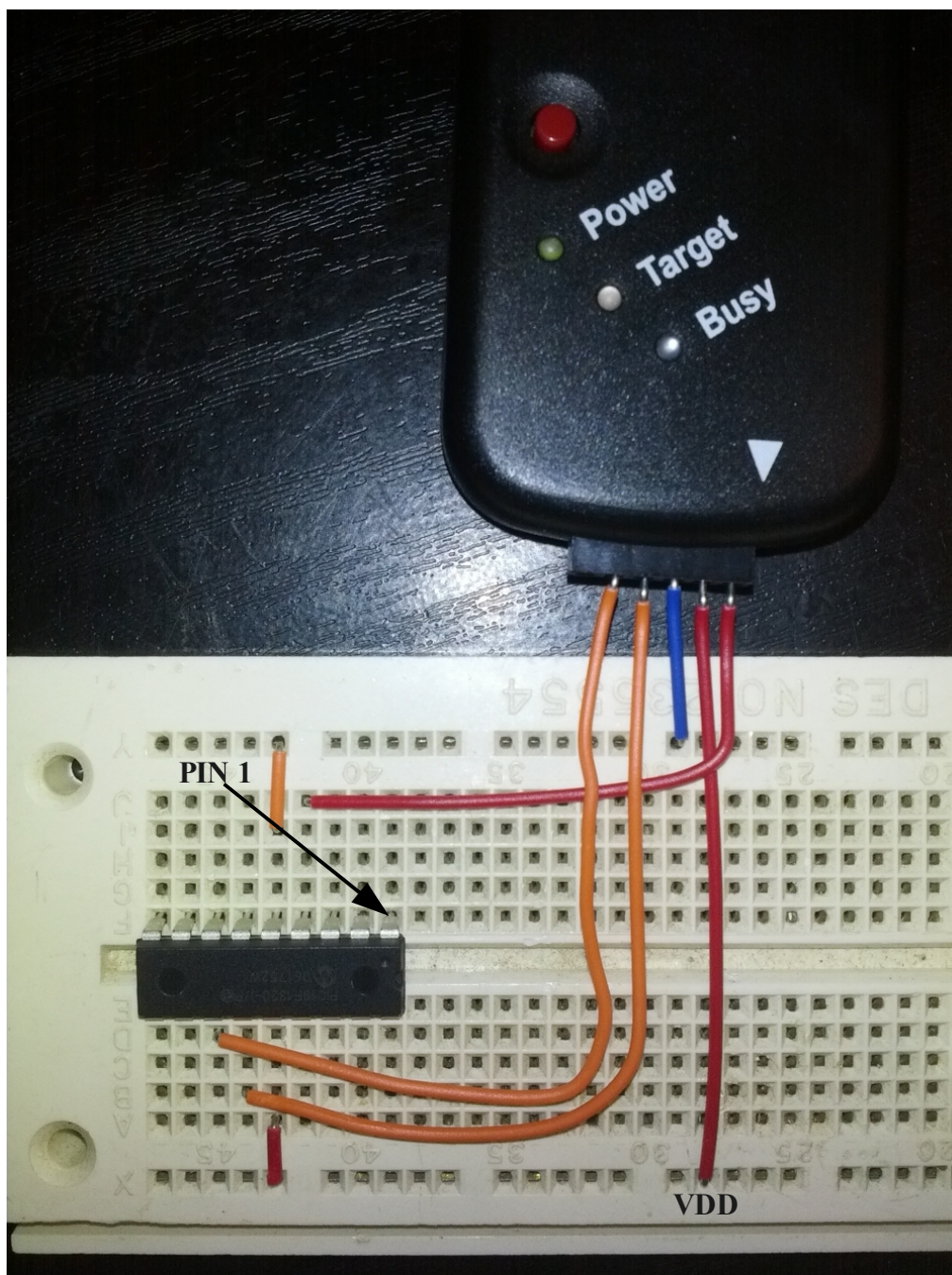


Figure 2. Connections between PICKit2 programmer and the PIC microprocessor
Pin 2 on the programmer delivers power (VDD), pin 3 ground. Pin 6 is not connected.

OTHER DETAILS

1. Make sure you specify PicKit2 as the programmer in MPLAB
2. You can connect one end of your wired directly to the socket on the end of the PicKit programmer. Just carefully insert the wires as shown above.
3. if you're using a pin in your circuit that's associated with programming (e.g. Pin 4), you may need to remove your connection temporarily while programming. This probably only applies to pins 4, 12 and 13.
4. **You need to add a special command to the beginning of your .asm program:**
config wdt=off, lvp=off
This can go anywhere in the beginning of your program. If you don't do this, MPLAB will give you a warning, and will offer to temporarily correct the problem.
5. The programmer powers the chip not just for programming, but also for running it. This seems to work fine for small circuits, such as the LED blinker shown below. For larger circuits that need more power, you may need to remove the microprocessor and put it in a different circuit with an external power supply.
6. You can actually debug your circuit while it's running on the chip. It's slow, but it should work, and can be useful sometimes.

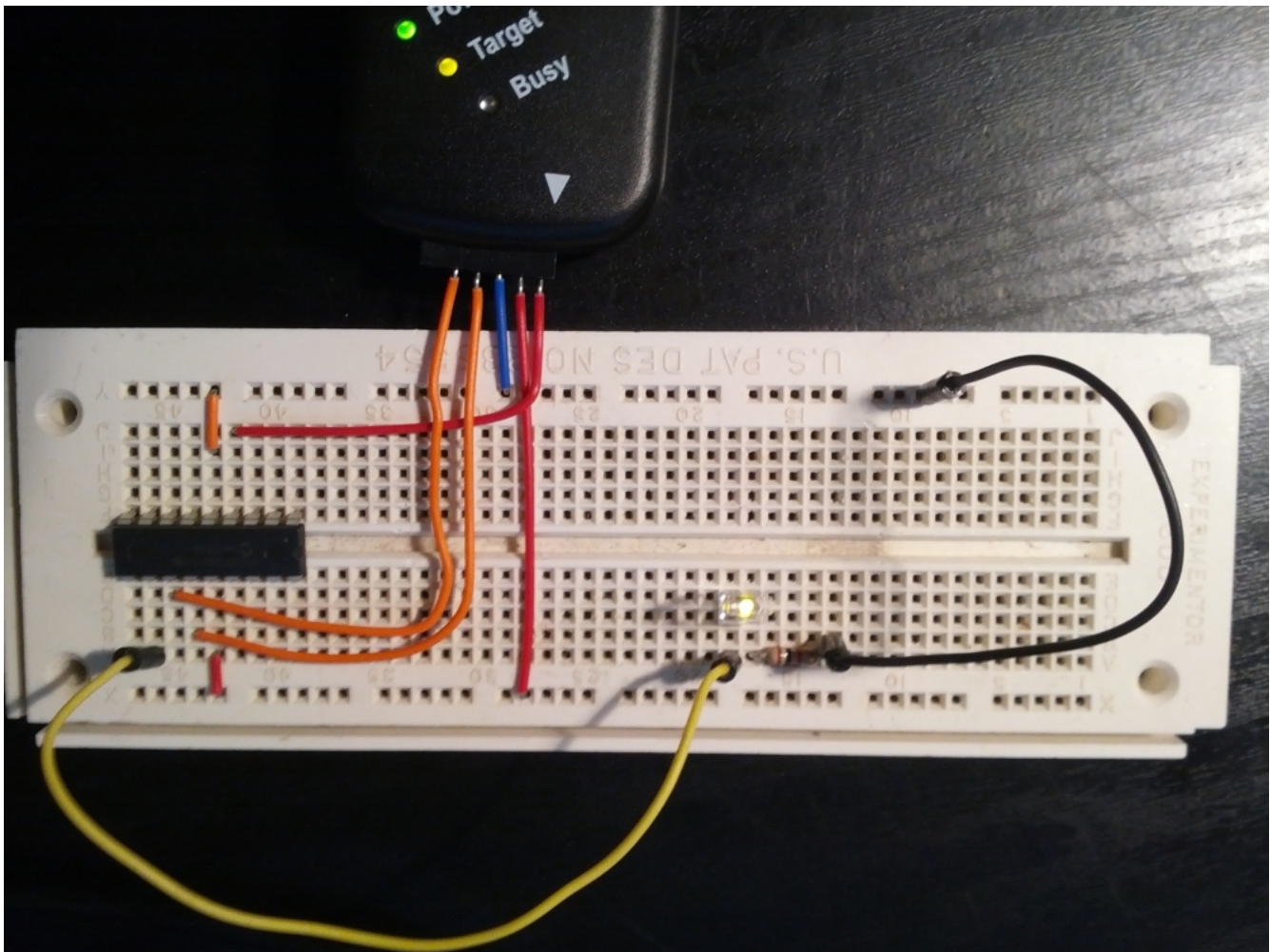


Figure 3. PIC microprocessor, still connected to the PICKit2 programmer, but also executing its program to blink an LED on Pin 11. The LED's ground connection comes from Pin 3 of the programmer.