

Re: universal programmer

Source: <http://sci.tech-archive.net/Archive/sci.electronics.design/2005-12/msg04259.html>

- *From:* "J. David" <jdavid@xxxxxxxx>
 - *Date:* Sat, 24 Dec 2005 12:38:54 -0500
-

"Abstract Dissonance" <Abstract.Dissonance@hotmail.com> wrote in message news:11qoqhlquql4kd3@xxxxxxxxxxxxxxxxxxxxxxxx

> Since I'm trying to get into MCU it seems I will need a programmer to get
> anywhere. From looking online it seems that any "decent" programmer is
> pretty expensive(1k+) and those that are cheap seem to offer very few
> features and few chip support.

>
> I was thinking that it shouldn't be very difficult to program just about
> any chip by using a computer if the computer had "access" to all the pins
> on the chip. From looking at a few data sheets it seems that its very easy
> to program a MCU by simply handling the procedure through the software.

>
> heres a quote of how to program the PIC16C84

>
> The device is placed into a program/verify mode by
> holding the RB6 and RB7 pins low, while raising the
> MCLR pin from VIL to VIH (see PIC16C84 EEPROM
> Memory Programming Specification (DS30189)). RB6
> becomes the programming clock and RB7 becomes
> the programming data. Both RB6 and RB7 are Schmitt
> Trigger inputs in this mode.
> After reset, to place the device into programming/verify
> mode, the program counter (PC) points to location 00h.
> A 6-bit command is then supplied to the device, 14-bits
> of program data is then supplied to or from the device,
> using load or read-type instructions. For complete
> details of serial programming, please refer to the In-Circuit
> Serial Programming Guide (DS30277).
> For ROM devices, both the program memory and Data
> EEPROM memory may be read, but only the Data
> EEPROM memory may be programmed.

>
>
> It seems to me that if most chips follow a very similar method where you
> use a few pins(lets say arbitrary too) to get it into program mode and a
> serial communication on one pin to transfer the code then it would be
> extremely easy to program any of those chips by using a computer(with just
> about any number of pins). Is this the actual case?

Re: universal programmer

- >
- > Lets suppose I have a device that simply lets me access any of the pins on
- > a chip from software.... could I then not use the software to program the
- > chip? If so, is this true of pretty much most of the MCU's and EEPROMS or
- > just a few? If not, what are the reasons why I couldn't do this?
- >
- > Only thing I can think of that could prevent it from being so easy is
- > supplying the proper voltage to the right pin(but this shouldn't be that
- > hard) and getting the right clock into the chip. Other things like having
- > ot have resistors and stuff on certain pins for certain reasons and such
- > would surely scew this method up as then it might become to complicated to
- > do(well, it would be just easier to buy a "universal programmer"). If
- > there are no resistors needed and I can generate the clock from the
- > software in a computer and potentially the voltage(or just allow the
- > voltage to be selectable by the hardware and on what pin it should be on)
- > then I can't see why this would be that difficult. Definately would be
- > much cheaper to do than buying a 1000\$ programmer.
- >
- > Is it safe to say that the generalization of the above procedure for the
- > PIC16C84 applies to almost all other MCU's? And what about those MCU's
- > that cannot be programmed in that way, what makes them so different?
- >
- > Any ideas?
- >
- > Thanks,
- > AD

For myself, using microcontrollers in DIP packages (no SMD) from 8 to 40 pins, I use a 40-pin ZIF socket (where the uC to be programmed is inserted) and also a small 50-pin connector which can be a DB-50.

The first 40 pins of this connector are connected directly to the ZIF socket pins and five other pins are connected to the programmer well known signals, that are: MCLR (or Vpp), Vcc, ground, DATA and CLOCK. These five signals are then hardware-strapped to the appropriate first 40-pins onto a 50-pin plug that fits into the connector for the appropriate uC to be programmed (many share the same programming pinouts).

If different uC with a new programming pinout is released, I just buy a new 50-pin plug and hardware-strap it for the new pinouts, that's all! Take a few minutes and soldering iron.

So far, I could have coped with the many different programming pinouts Microchip (and others) have conceived to make our lives more difficult to program their chips :)

Johnny

.

Re: universal programmer

- *Follow-Ups:*
 - ◆ *Re: universal programmer*
 - ◇ *From:* Abstract Dissonance

- *References:*
 - ◆ *universal programmer*
 - ◇ *From:* Abstract Dissonance

- Prev by Date: *Re: What schematic drawing tool do you use ?*
- Next by Date: *Re: analog multiplier help*
- Previous by thread: *Re: universal programmer*
- Next by thread: *Re: universal programmer*
- Index(es):
 - ◆ *Date*
 - ◆ *Thread*