

**CHIPS Newsletter Vol 11**

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Topic

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Conclusion

This month I give you an early introduction to a new development module and then go back in time to look at the first PICKit programmer that got it all started. I'll show you some Microchip.com shortcuts and then show an improved clone PICKit 2 programmer. Let's get started.

CHIPINO Breadboard Module

I've been told the original idea the CHIPAXE.com guys had for supporting Arduino style shields was an adapter board for their existing CHIPAXE28 module (concept sketch shown in Figure 1). This was quickly thrown out as the height of the CHIPAXE module was too tall and would hit on the bottom of any shield being stacked on top.

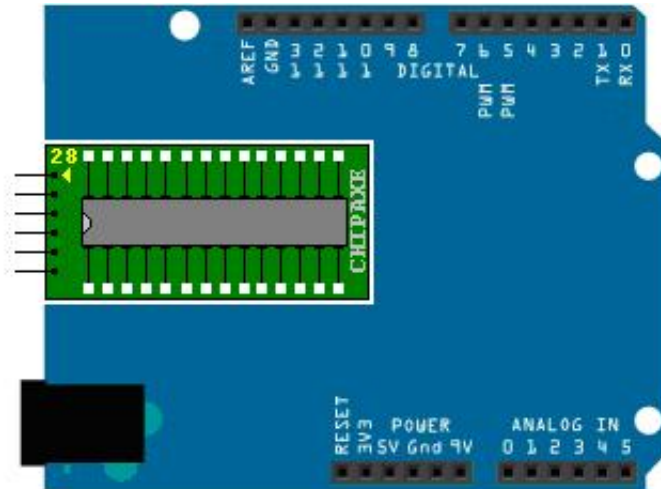


Figure 1: CHIPAXE adapter board sketch

But for people who prefer to build their circuits on breadboards, like me, who didn't necessarily need to use an Arduino style shield the CHIPAXE modules were perfect. But in the process of writing my Beginner's Guide to Embedded C Programming Volume 3, I decided to focus on the CHIPINO hardware setup for the Simple C library created in the book. This setup includes a 28 pin PIC16F886, 16 Mhz oscillator and 10k pull-up resistor. The projects in the book are all built on a breadboard and it soon got frustrating trying to fit all the circuitry on the small breadboard included on the CHIPINO Proto-Shield. I asked if there was a way to get a CHIPAXE style module with the CHIPINO features and the CHIPAXE guys delivered in time for me to switch my book around to use this new module. It's the CHIPINO Breadboard Module shown in Figure 2. It's very similar to the CHIPAXE28 module but has the resonator, 10k pullup and the pins are labeled to match the CHIPINO/Arduino pins.



Figure 2: CHIPINO Breadboard Module

This module works great with the LED, Switch, Relay and other breadboard modules offered at chipaxe.com and can plug directly into a larger breadboard which I use in the book. It's not officially released yet so I don't know the pricing. I actually find this module far more useful than the CHIPINO but if you like to use shields, then you will soon have both options.

Microchip Shortcuts

I use many different shortcuts when visiting the Microchip.com website. I started to write them down and hope to post them on my elproducts.com website in the future. Here are a few I use often:

MPLAB software:

www.microchip.com/MPLAB

PICkit 2 Page

www.microchip.com/pickit2

PICkit 3

www.microchip.com/pickit3

PICkit 1

www.microchip.com/pickit1

Microchip Development Tool Selector

www.microchip.com/dts

Microchip Application Notes

www.microchip.com/appnotes

Microchip Webinars

www.microchip.com/webinar

PICkit 1

I listed the PICkit 1 link in the previous section. This references the original PICkit programmer that you can still buy today (Figure 3). It's very limited in the number of chips it supports but for someone just getting started; it's not a bad setup. The PICkit 1 started out life as a 2003 application note number AN258. It describes how the programmer works and all the schematics so you could actually build your own. This design was updated and improved to become the PICkit 2 so the PICkit 1 was quickly

dropped from new product support. Therefore it has a short list of parts it supports but for the beginner or even someone developing an electronics class, this board is actually quite handy.

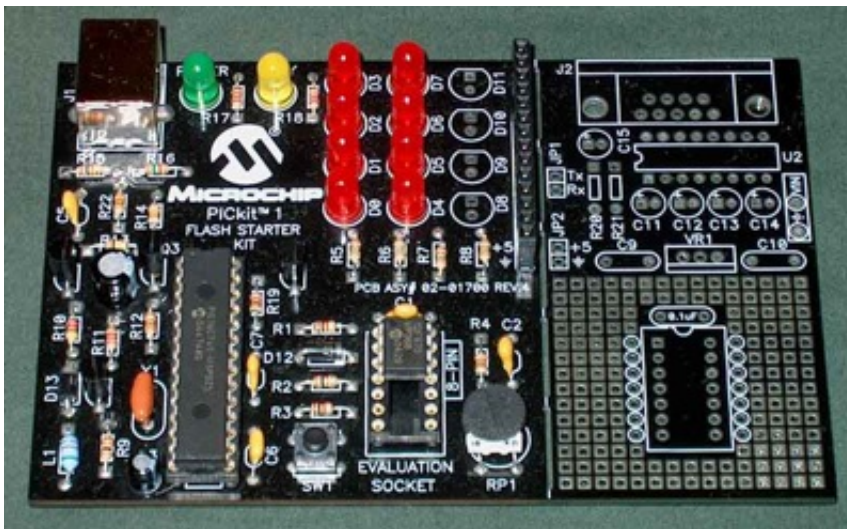


Figure 3: PICkit 1 Development Board

The programming socket is 14 pins so it supports 8-pin and 14-pin PICs but only some of them. There are also different PC control software options for this programmer that have been developed over the years. MPLAB supports it for most of the smaller baseline parts.

The board also has a breakaway board for creating a project. I like this because you can teach someone to program with the left side and then teach them to solder with the right and have them build a unique project they can take home. The project board has an RS232 circuit laid out so making a PC connected device is quite easy when used with a USB to RS232 cable (or the USB to RS232 module I mentioned in last months newsletter). The student can break the board away and solder it up. After that they have a PIC programmer and a separate project board to show what they accomplished. You get this board, an eight pin PIC12F675, USB cable and CDs with software all for \$36.00 plus shipping. That is about the same price as a PICkit 2 programmer alone so not a bad price for the beginner.

PICKit 2 Clone 3v/5v Programmer

I've also tested a new clone programmer soon to be carried by CHIPAXE.com that offers both 3v and 5v output voltage. The programmer improves on the previous version they included with their products by adding a 6th connector pin. Now if you need lower voltage operation or want to have that extra pin for the debug capability, this programmer has it. I prefer the actual PICKit 2 but I must say this clone is a good one.



Figure 4: 3v/5v Clone Programmer

Conclusion

I'm always looking for lower cost ways to program Microchip PICs. When I started using PICs the lowest cost programmer cost over \$200. Eventually people created their own designs and sold them for less at their websites. EBAY has always has a bunch of different choices. The cost of a PICKit programmer has made it so affordable, it's logical to just choose Microchip but if you find a great programmer that's cheap, email me. If you have any questions or comments regarding this newsletter send them to me at chuck@elproducts.com.

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