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Maximite Update
With the passing of Steve Jobs, the history of Apple Computer was shown at numerous places on the web and the Apple 1 computer was shown in multiple pictures.The Apple 1 was a $666.66 assembled circuit board that you added a keyboard and monitor to make it work and programmed it in BASIC. This just proves to me that the world is round because we've come full circle back to that similiar type of computer with the Maximite (although much more modern and more powerful) which is a circuit board you add a keyboard and monitor and program in interpreted BASIC.

Now a new player in the Maximite game is Olimex who have made development boards for many years. I talked about their Pinguino module in my last newsletter.They will be introducing a whole series of PIC32 based

boards that are designed to accept the MMBasic Interpreter that is at the heart of any Maximite computer. They call them the DuinoMite modules because they have headers that match the Arduino style shields.

The biggest version of Duinomite modules is seen below and is called the DuinoMite-Mega. It's not released yet so I don't know the official released price but dontronics.com shows it listed for just under $50 (without the box). Notice the Arduino style connectors at the center. It also has the standard Maximite expansion header (though with a slightly unique pin-out that is different than the original Maximite), UEXT expansion header and all the keyboard, USB, VGA, composite video, audio, sd card and RS232 connectors. This could be the ultimate Maximite. You can see more of it at olimex.com.
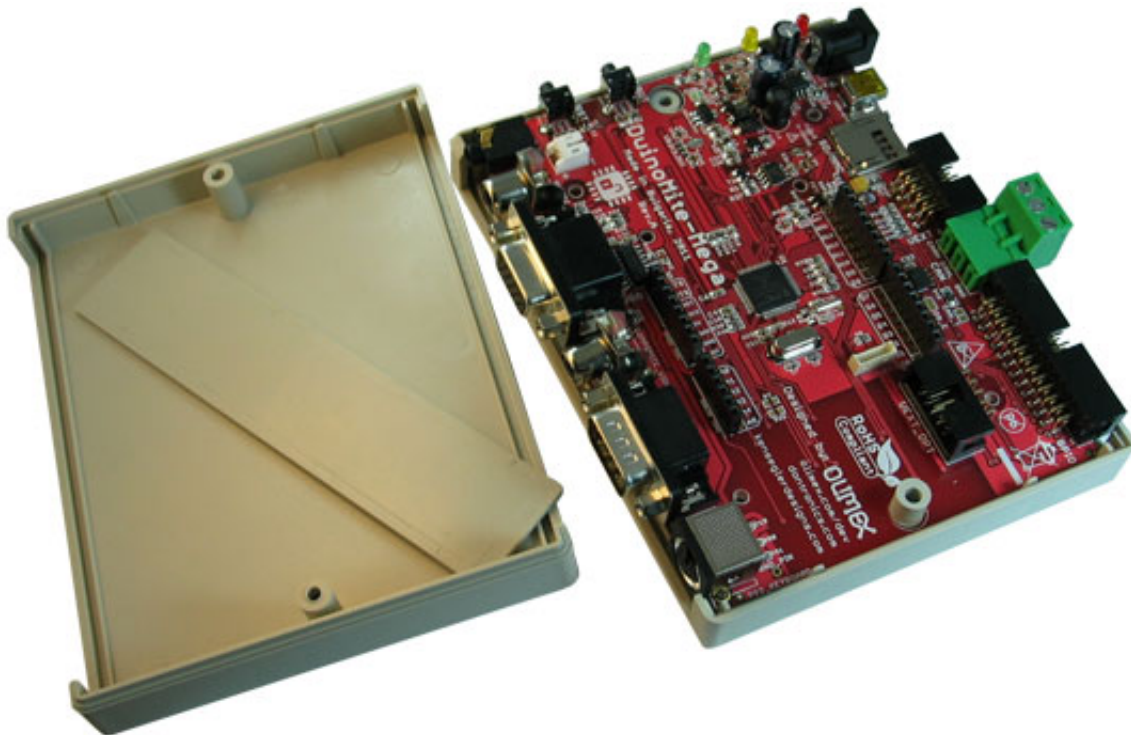
I can actually take some credit for the Arduino style connectors. Early in the Maximite forum discussions I pushed the idea of adding an expansion board to the Maximite so people could easily plug in an Arduino style shield. A series of discussions went from there with some not even knowing what an Arduino was. In the end though it was decided that bringing that capability to Maximite was a good idea and Olimex incorporated it right into their Maximite.

This should offer lots of add-on features as there are numerous Arduino Shields available. There are also a few expansion boards for the Maximite's 26 pin header. Olimex added their UEXT 10-pin connector to this board as well and they have several expansion boards for that. It will be interesting to see how people use this new style computer. The MM-BASIC language

continues to expand as well so stay tuned for more on this subject.

I feel this little board could become very popular with both old time programmers and kids just starting out. What a great way to bridge that gap. Having the plug and play capability of the expansion boards plus the fact you don't need a computer to use it, makes this a complete development system for the beginning or experienced programmer. Best of all the design is open source so people can build there own with ease if they want.

PBP3 BASIC Compiler
Speaking of BASIC, microEngineering Labs (melabs.com) recently released a new version of their PICBASIC Pro compiler. They call it PBP3.

PBP3 comes in a Gold version that supports all PICs just like the previous PBP. It also comes in a reduced cost Silver version which just supports mainly the 12F/16F parts. Finally they offer an experimenter version that only supports the PIC16F886, PIC18F25K22, 18F2550 and 18F25J20. This version is only $49.95 and these are very powerful and popular parts to build projects with. In fact the 16F886 is the same chip used in my "Beginner's Guide to Embedded C Programming - Volume 3". I've

been thinking about updating my first book "Programming PIC Microcontrollers with PICBASIC and this low cost compiler is a great option. One of the complaints from that book is people had to spend $99 for PICBASIC or $250 for PICBASIC PRO just to do the projects in the book. Now I can update it and use a far less expensive compiler.
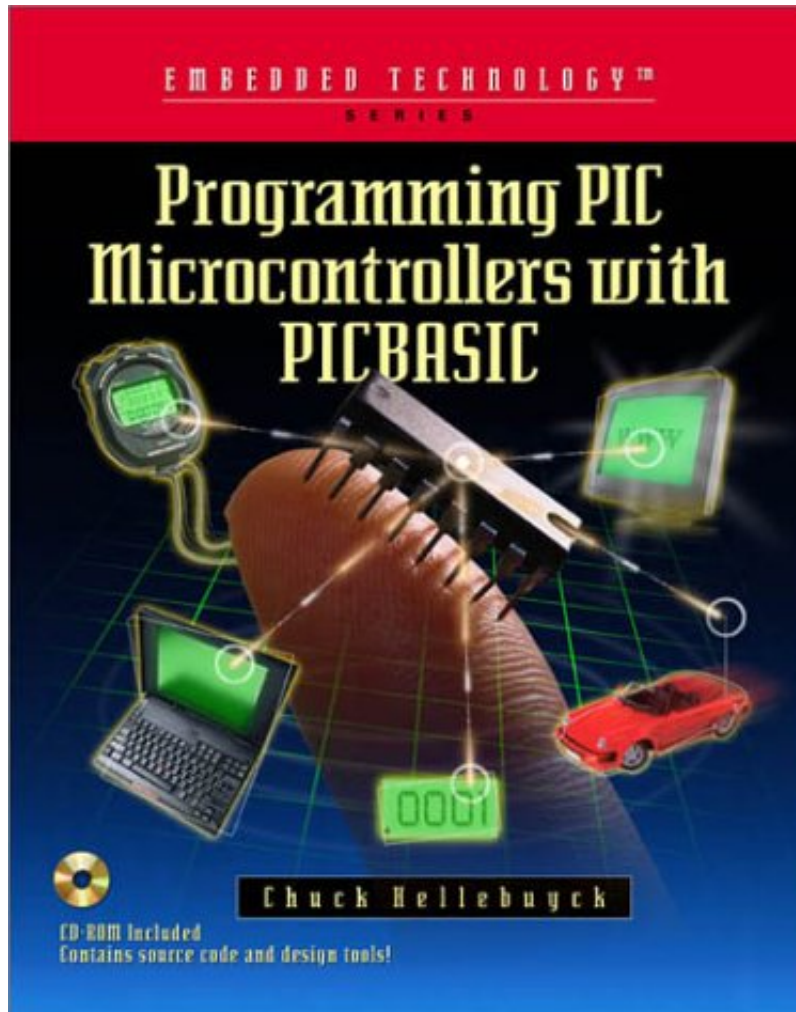
HI-TECH 9.83

HI-TECH compiler has been upgraded to version 9.83. I believe this just includes some bug fixes and some part updates. This also doesn't match well with the code in my books as they changed register names. I covered this in a past newsletter but many email from readers proved it may need to be sent again so here it is again for anybody upgrading to a version newer than 9.80.

HI-TECH Version 9.81+
Microchip recently updated the HI-TECH C compiler for 10F, 12F and 16 parts to version 9.81 and in this update they made a change that affects all the code in my Beginner's Guide to Embedded C books. They made a change to the register names to match the data sheet exactly. These definitions

are contained in the various header files for the different microchip PICs. This is a good move overall but for those using programs written for the previous versions, 9.80 and earlier, this causes many errors to appear when the project is compiled. This has resulted in many emails back to me regarding this exact issue as my books were written to use 9.80 or earlier. There is a simple fix thankfully. By adding the one line below at the top of the program (it has to be the first line) all the original header files are used instead of the new definition files. If you have experienced this issue, this is the fix.

#define _LEGACY_HEADERS

For example here is how its used in a program from my book Beginner's Guide to Embedded C.

```
#define _LEGACY_HEADERS          // Define required for compiler version 9.81 and later
#include <htc.h>                  // Include HITECH CC header file

//Internal clock, Watchdog off, MCLR off, Code Unprotected
__CONFIG (INTIO & WDTDIS & PWRTDIS & MCLRDIS & BORDIS & UNPROTECT & IESODIS &
FCMDIS );

main()
{
ANSEL =      0;                    // Intialize A/D ports off
CM1CON0 = 0;                       // Initialize Comparator 1 off
CM2CON0 = 0;                       // Initialize Comparator 2 off
PORTC = 0x00;                      //Clear PortC port
TRISC = 0x00;                      //All PortC I/O outputs
while(1==1)                        //loop forever
{
        RC0 = 1;                   // Turn on RC0 LED
}           //End while
}           //end main
```

If you don't like this method, there are other options to fix this as well using MPLAB setup screens spelled out in the readme file included with the HI-TECH installation. Some have chose these alternative methods. One person even re-wrote the header files back to the original names. It's been interesting how different this was approached by my readers. It also shows there isn't one right way to solve a software issue.

You can always get the same version of MPLAB, with HI-TECH installation included, that I use in my books at the MPLAB archive site.

MPLAB Archive

What is Errata
Every microcontroller has bugs just like any software release and any warranty issue on a new car. These bugs are called errata and you can download the errata for Microchip PICs on the microchip.com website. There will usually be a description of the issue and then a work-around in software if one exists. I for years never worried about errata but its when I get into a situation where I cannot figure out why my code doesn't work that it occurs to me to check errata. Save yourself the pain I put myself through everytime and check the errata ahead of time.
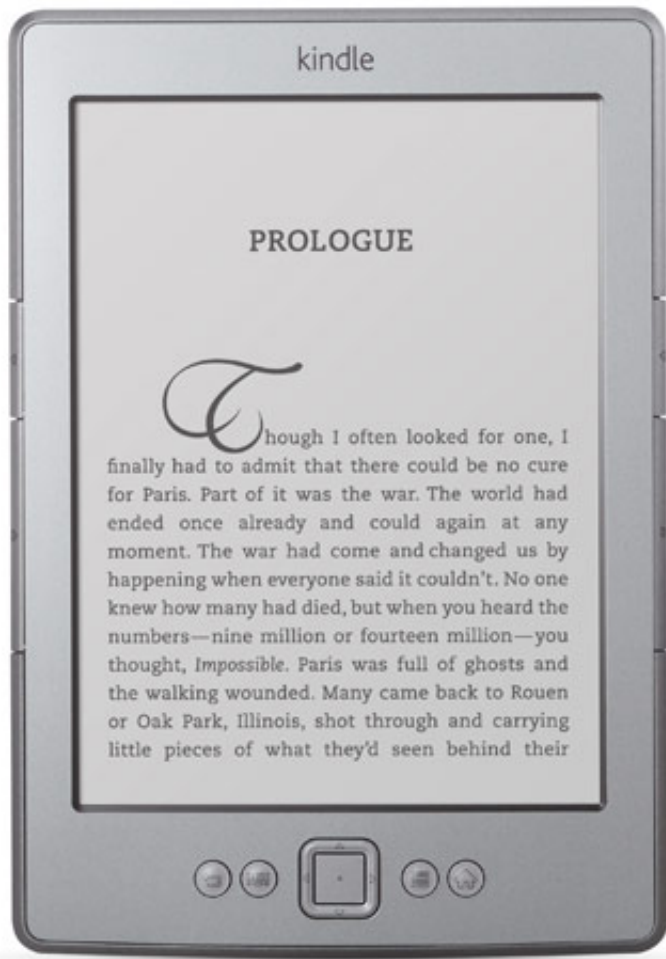
The errata sheet is a separate document from the data sheet and it typically

has different rev levels of the microcontroller in it. There will be a device ID chart to indicate which rev level you have. You can find that device ID when you first connect your programmer to the PIC. The MPLAB screen will show you the device ID in the output window. Figure 7-29 of my "Beginner's Guide to Embedded C Programming" shows the rev level of the PIC16F690 I used in the book. That figure is reproduced below.
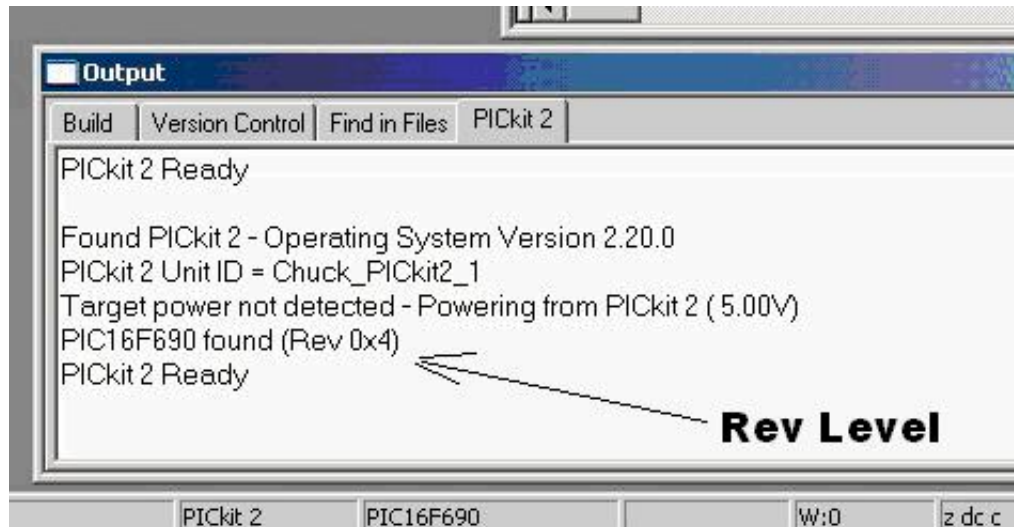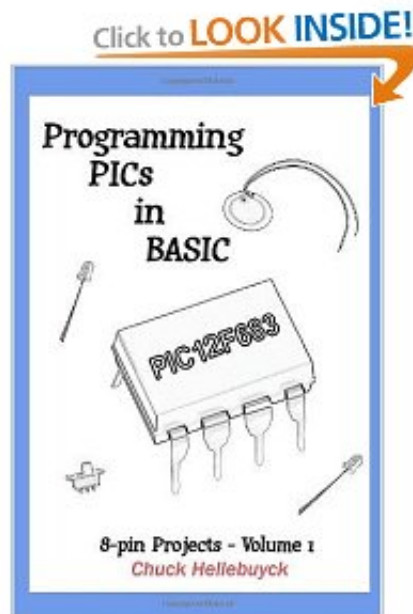

Kindle

Amazon recently released a whole new series of Kindle e-readers and I am really excited about the new Kindle Fire which is more of a Tablet. I'm considering adding more e-books to my line-up due to more requests for them and I prefer to work with Amazon on this. I'm curious how many of you have a Kindle, use the Kindle software on a PC or tablet or plan to buy one of these new Kindles. This will help me understand how many would be interested in my e-books. I have some other ideas for mini e-books and short tips and tricks documents that I just can't do with print books so I'm really getting excited about this. I just can't see paying $500 for an iPad to read a book but a $79 Kindle makes it more reasonable. The $199 Fire also creates another option for low cost video blog delivery. Let me know what you think of Kindle.

PROLOGUE

Though I often looked for one, I finally had to admit that there could be no cure for Paris. Part of it was the war. The world had ended once already and could again at any moment. The war had come and changed us by happening when everyone said it couldn't. No one knew how many had died, but when you heard the numbers—nine million or fourteen million—you thought, *Impossible*. Paris was full of ghosts and the walking wounded. Many came back to Rouen or Oak Park, Illinois, shot through and carrying little pieces of what they'd seen behind their

New Kindle Touch

Kindle Version Available

Conclusion
I've just about had it with this lousy newsletter software included with my website host. It makes it 5 times harder to write a newsletter but easier to sign up users and deliver. I'm looking to move the website soon and a better newsletter editing system is high on the list of needs. It should allow me to get these out quicker. Also if you have ideas for future books or topics email me any feedback, good or bad to chuck@elproducts.com.

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