

Computer Courses Offered

Beginning this fall, St. John's University, Jamaica, N.Y., is offering a series of intensive short courses on low-cost personal computing. Each course provides a well-rounded body of information on successful implementation and use of small computer systems. Information on both hardware and software design as well as numerous applications of personal computing in education, recreation, business, etc. is also included. No computer expertise is required.

The first course will meet Tuesdays, 6-8 p.m., September 27-October 18. The cost is \$20. The following list is a partial course outline.

1. OVERVIEW OF PERSONAL COMPUTING: What is a personal computer (PC)? PC systems analysis.
2. DESIGN OF MICROCOMPUTER-BASED SYSTEMS: General and functional systems design, hardware design (interfacing CPU, memory, peripherals, etc.) software development (assembly and high-level languages).
3. IMPLEMENTATION OF PC SYSTEMS: How to acquire PC hardware and software, how to develop PC applications, analysis of the "buy or make" decision.
4. PC APPLICATIONS: Microcomputer-based information and business systems, personal man-computer problem-solving and decision-making systems, a low-cost PC-based investment decision system, and the PC as the user's intelligent problem-solving assistant.
5. THE PC INDUSTRY: Effect of the PC revolution on the computer and information industry, new business opportunities in personal computing.
6. LOOK INTO THE FUTURE
For further information contact:
Dean Patrick Basilice
Evening Division
St. John's University
Jamaica, NY 11439
(212/969-8000, Ext. 101)

Altair 680b Requires Phase 2 Clock Mod

By Ron Scales

The Altair 680b main board supplies 02 clock to the system bus through CMOS 4050 buffer. This buffer allows multiple board operation without overloading the MPU 02 clock. It has a propagation delay of approximately 100ns on the high to low transition, which is the clocking edge of 02. This causes only one problem in the Altair 680b.

When using a Turnkey 680b with a parallel port of the Universal I/O card, control of the 6820 PIA is impossible because of the falling edge of the 02 clock signals on the Data lines. The regular front panel provides enough load to delay the address and data signals for proper timing relationships. But the Turnkey front panel has no effect upon the address and data lines, so the falling edge of the 02 clock occurs too late relative to the Data-bus signals.

To fix this problem, cut pin 4 of I.C. PP where it goes into the PC board. Then lift it up out of the way and jumper the pad 4 to pad 5 on the PC board. This connects the MPU 02 to the bus and removes any delay caused by the CMOS 4050 IC. This modification works with all versions of the Altair 680b computer and all combinations of plug-in PC boards for the 680b.

Correction

FOR SALE:

Altair 8800

Unused, fully assembled and factory tested. \$450 or best offer. Call Dave (evenings): (515)-279-3683.

P-7440 Programmer

Unused, fully assembled. Contact: Steve Jacobus, 5 Ruppell's Road, Clinton, NJ 08809

Altair 680b

Partially built, \$395.

TV Terminal III

Includes computer and manual cursor, screen read, UART serial interface, 2K memory, power supply, ASCII keyboard, audio cassette interface and enclosure. \$300.

Cartrivision Color VTR

Includes cabinet and removable test rack. \$325.

Video Monitor

\$75

Console

Heath Kit Station Console Model SB-I. \$70.

Altair 8800

Barely used, 8K memory, serial I/O, cassette interface, includes documentation. \$1395.

Contact: Norm Nason,
8608 Lvueline Ave., Canoga
Park, CA 91306, (213)-341-
1275

Classified Ads

The following lines should be added to the program "Circuit Analysis Applications Expanded to Run with Altair BASIC" (p. 14 + June, CN). These corrections were provided by Doug Jones, 2271 North Mill North East, Pa. 16428.

```
501 ON TT GOTO 520, 510,  
540, 560, 1460 IF PR AND  
1024 THEN GOSUB 2550,  
2140 PRINT "GM. BRANCH";  
CL(I)+1; "TO BRANCH";  
RW(I)+1: GOTO 2170
```

As a result of the above modifications, the output of the sample program will be slightly different. The "Equivalent Current Vector" (p. 21) will be the second item of output.

There will also be an extra line of output under "Branch Currents" (p. 20).

```
Branches 5-6 4.53E-03  
4.446E-03
```

The last item in the "Branch Currents" line 1-4 will be 7.34E-05.

With these corrections the program will run on an Altair 8800 a or b. However, the following additional changes must be made for the program to operate properly on an Altair 680.

Using the Text Editor, remove all constants. These must be replaced with their numeric equivalents.

```
Example: Line 80 K3=3:  
K4=4: K5=5 etc.
```

Replace K3 with 3, K4 with 4 etc. These changes must be made throughout the entire program, with the exception of line 60; it is part of a string and should not be altered.

CONTINUED