MICROBOX II

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I would like share my experiences on the successful construction of a single board computer running the FLEX operating system.

I have been using a 6809 computer at work. It's used as a development system to write and debug programs to download to single board controllers. It has performed well and I have enjoyed using the FLEX operating system.

I decided I would like a FLEX based system at home to do some study on high level languages such as PL9 etc. Because of the cost I decided against a SS50 based system at home.

I started looking at the advertisements for single board computer kits. This would be something I could build up gradually and not break the bank.

After looking in various magazines I found a single board FLEX system which I considered to be the best value for money and having the most innovative features. This was the ** MICROBOX II from MICRO CONCEPTS 8 Skillicorne Mews, Queens Road, Cheltenham, GL50 2NJ, UK.

The MICROBOX II is based on a MC6809E microprocessor running at 2Mhz. It is equipped with 64K of ram plus another 128K of ram which can be assigned as graphics memory or as a ram disk. It supports two 5.25 DSDD 40 or 80 track disk drives, an eprom disk of 64K as well as the previously mentioned ram disk.

The eprom disk is a small daughter board with four 27128's mounted on it . The utilities disk provided the software to burn the eprom's on board.

The i/o comprises two RS-232 ports, a centronics printer port and an expansion buss. It has a battery backed up real time clock and also has great graphics potential which MICRO CONCEPTS demonstrate on the utilities disk. The MICROBOX II uses the NEC7220 graphics chip for the video generation. There is provision for three modes of displayed text (1) 108*24 chars. (2) 128*72 chars. (3) 84*24 chars. (The 128*72 mode needs a good monitor to do it justice.)

I decided to get the startup kit comprising a double sided p.c board 12" * 9.5", an eprom board, a monitor rom and a utilities disk.

I posted away my overseas bank draft and hoped for the best. In just twelve days I received a note from our Customs Dept. indicating that they were holding a parcel for me. After sorting out the red tape and paying the duty (2%) and sales tax (20%) I was allowed to take the kit home.

The kit was complete and included a stack of documentation and construction notes including an English supplier list for all the parts needed to complete the computer.

Now came the interesting part of tracking down the suppliers of the parts in Australia. (Rather than base their design on a particular family of integrated circuits, MICROCEPTS seem to have selected chips to give the most efficient solution to the function required.) After many phone calls I located all of the parts needed, at the time (early 1985) the NEC7220 and WD1770 disk controller chip were only just being imported into Australia.

I installed all of the ic's into sockets and fitted all the connectors, etc. I had previously decided to mount the board in an Apple lookalike case. I cut the rear section out of the case and fitted an aluminum panel into which I fitted all the i/o connectors. I also made the eprom disk accessible through this panel. An Apple type power supply was used to power the computer.

To test the computer I adapted the Apple keyboard connector to suit the MICROBOX II. The next major expense was a pair of 40 track DSDD disk drives which I mounted into a separate case with a power supply.

After much checking I applied power and was pleasantly surprised to see the MON09 prompt. I borrowed a FLEX disk from work and tried to boot up FLEX. Up came the +++ (magic), full of confidence I tried CAT, up came a catalog of the disk. How about EDIT------ nothing, the cursor disappeared.

Off went a letter to the U.K., back in twelve days was a letter suggesting I should be using TSC FLEX and not SWTPc FLEX. After obtaining TSC FLEX all was well, everything worked perfectly including programs like PL9 and stylograph, well almost, have you tried to find curly brackets on an Apple keyboard.

I replaced the Apple keyboard with a real full ASCII keyboard which completed the construction of the computer. The construction of the kit was a great learning process and I was pleased with the support provided by MICRO CONCEPTS in promptly answering all of my questions.

I believe that the single board computer kits offer enthusiasts with an economical entry into computers based on the FLEX operating system as well as giving the constructor more satisfaction and experience than they would receive by buying a ready made computer.

Hopefully their availability will increase the numbers of FLEX users and give the software writers more incentive to write programs for the 6809.

** Note: a more recent and current address is:

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