

Dear Frob Customer,

Enclosed you will find the version 1.3 update to the basic Frob software package. This software has been both improved and expanded over the original package. Commands have been added to the AMON-FMON team as well and some bugs have been fixed. An entire new screen has been added to the EXPLORER. Also we have put together a document that helps beginning VCS programmers to understand how things work inside the VCS. The version 1.3 software includes the improvements made in 1.2, so the 1.2 update document is still valid.

The AMON-FMON software had some bugs that prevented break points from working properly. This problem has been resolved and the basic disassembly function of AMON has been made faster.

Some users are having difficulty understanding what changes in AMON when they do not use FMON. Here are some pointers that may help. First, always remember that when AMON does something to the program code it is working with a shadow of the 4 Kbyte Frob memory. This shadow is at 8000 hex in the Apple main memory. It can access this shadow with or without FMON. However, when AMON is asked to go get the value of a RAM location inside the VCS it must in turn ask FMON to go get the value. If FMON is not there then the value cannot be returned.

AMON is meant to be used with FMON in all but the late stages of a development. In the late stages one usually needs the page of memory taken up by FMON, but at that point the game only needs some values found to be put in tables.

Because AMON uses a shadow it is ok to run the test game in the VCS while modifying the code. In fact, this is the easiest way to use the system. For example, if you have loaded your program and you just want to change some parameters to see how it looks you do not need FMON at all. You would just load the program at the start of AMON (or with the FILE command later), make the change, and then use the S command to start it. If while looking at the result you decide you need to make more changes, just do it. The changes will go into the shadow while the Frob still holds what you are seeing on the screen. When you have made all the changes you want for the moment just give the S command again and AMON will transfer the shadow to the Frob.

When using break points it is important to remember that the break point will be done with a jump instruction to FMON. This means that you must not place a break point over a one or two byte instruction if the next instruction is the target of a branch, jsr or jump instruction. To do so would be to risk your program branching into the middle of the break point jump instruction, which almost certainly will not do what you want it to do.

If you are waiting for a break point and you decide it will not be reached, you can recover by resetting the VCS, sending a control-C to AMON, then GOTO 500 and give the command RESTORE. This will get you talking to FMON again.

The EXPLORER program has been greatly expanded for version 1.3. To use the new mode just put a 40 hex into the enable register at the top of the screen. This selects the high resolution graphics experiments of the second screen. These experiments show how to do absolute horizontal positioning and other techniques. We strongly recommend you read the source code for the EXPLORER to see how these experiments work.

You should be able to add experiments to the EXPLORER yourself. If you do so you will need to rename the result of your assembly from EXPLORER.OBJ0 to EXPLORER.OBJ and be sure the start address (F000 hex) is stored at FFC-FFD. An easy way to do this is to overlay the old EXPLORER.OBJ file by the following commands to the Apple DOS:

```
BLOAD EXPLORER.OBJ,A$8000
BLOAD EXPLORER.OBJ0,A$8000
BSAVE EXPLORER.OBJ,A$8000,L$1000
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After this set of commands the EXPLOR program will be able to find your new experiments. It is a good idea to save the original EXPLORER and EXPLORER.OBJ somewhere in case you need to get back to them.

We at Frobco hope that the improvements to our product make your game development easier for you and more interesting. We do ask that you assist us in this effort by returning your version 1.1 or 1.2 disks to us if 1.3 is not your first software set.

Thank you very much for your help and your understanding!!!

The VCS toolmakers at Frobco  
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