DBASIC for FHL Color FLEX

(Optional at a cost of $40.00)

DBASIC is a command for the Frank Hogg Laboratories implementation of FLEX for the Radio Shack TRS-80 Color Computer. It will not work with other versions of FLEX. It allows the use of the standard Disk Extended Color Basic under FLEX. All disk input and output operations are done through FLEX and are completely compatible with the normal FLEX utilities. This means that files and programs written to disk by DBASIC may be manipulated by FLEX editors, sort/merge, etc. It also means that these files are not compatible with standard Disk Color Basic files. However, the cassette files are compatible.

All of the BASIC language components described in the Radio Shack manuals are implemented, with the following exceptions:

1. Random files are not supported. Since you cannot open a random file, all of the commands that require a random file such as FIELD, LSET, RSET etc. will be of no use.

2. BACKUP, COPY, and DSKINI are not implemented and will give syntax errors. Use the equivalent FLEX utilities instead.

3. DIR is implemented differently. The output of DIR gives filename, extension, file size in sectors, and creation date. The two columns which give file type information under standard Color Basic are missing under DBASIC. That information is not stored in a FLEX directory. You must determine the file type by the extension. The file size is given in sectors, not granules.

4. FREE returns the number of free sectors, not granules.

5. DRIVE affects FLEX's default working drive. If you change it while in DBASIC, it will remain changed when you return to FLEX. Likewise, when DBASIC is started up, its default drive is the FLEX working drive.

6. VERIFY affects FLEX's verify flag. This should normally always be left ON.

7. LOC will return the current relative sector number of a file. This is not of great value for a sequential file.

8. LOF will return the file size of a file in sectors.

9. A new BASIC command called FLEX has been implemented. FLEX will terminate DBASIC and return to FLEX.

10. DSKI$ and DSKO$ are completely implemented. DSKO$ should not be used unless you a very familiar with the structure of a FLEX disk. You can crash a FLEX disk if you do not maintain the linkage bytes in every sector. See the PROGRAMMERS section of the FHL Color FLEX manual.

11. The disk driver entry point at $C004 (DSKCON) for machine language programs is not implemented. Calls to this routine will return with no action. Assembly Language subroutines called from DBASIC should not do disk I/O, even with calls to the FLEX FMS drivers. There is a conflict in the use of interrupts between BASIC and the FHL FLEX v5.0 disk drivers which will cause a system crash.

FILE NAMES AND DBASIC

DBASIC uses the same file name syntax as regular Radio Shack Disk Basic. This differs slightly from the way file names are specified under FLEX. In particular, under DBASIC the drive number, if specified, must be separated from the rest of the file name by a colon (:). Both DBASIC and regular R.S. Disk Basic accept either a period or a slash as the separator between the filename and extension.

Valid file specifications:

"PROGRAM"	Default drive and extension
"PROGRAM/BAS"	Default drive number.
"PROGRAM.BAS"	Period as separator is OK.
"1:PROGRAM.BAS"	Drive number specified.
"0:PROGRAM/BAS"	The way Radio Shack likes it.

Invalid file specification:

"1.PROGRAM.BAS"	DBASIC will not accept a period after the drive number.

FILE TYPES AND DBASIC

Standard Disk Extended Color Basic maintains two bytes in the directory entry of each file. The first byte is a number from 0 to 3 depending on whether the file is a BASIC program, BASIC data file, machine language file, or an editor source file. The second byte says whether the file is ASCII or Binary. Standard Disk Basic checks these file types whenever you use a file.

There are no equivalent bytes in the directory of a standard FLEX disk. Therefore, DBASIC neither checks nor sets the file types, and it is possible to LOAD a file which is not a program. You must be careful.

The default extension for a basic program is .BAS whether it is saved as a binary (tokenized) file or an ASCII file. An ASCII file is created by adding ",A" to the save command (see the SAVE command in your Color Computer Disk System manual). It is impossible to tell the difference from the directory unless you name them with unique extensions. A suggested method which is compatible in name only with other FLEX BASICS is to name the binary files .BAC.

The LOAD command determines whether a file is ASCII or binary by examining the first byte of the file, and will load either one. Binary (tokenized) BASIC programs load faster but cannot be processed by standard FLEX utilities.

INSTALLING DBASIC ON YOUR FLEX SYSTEM

DBASIC consists of two binary disk files, DBASIC.CMD and DBASIC.SYS. Both files must be present on the same disk to run. If you have purchased DBASIC along with FHL FLEX, both files should be on your system disk. If you have purchased it separately, copy both files to your system disk.

EXECUTING DBASIC

To execute DBASIC just type DBASIC at the +++ prompt from FLEX. If, for some reason you have DBASIC on another drive than your current system drive, you must of course specify the drive number in the standard FLEX fashion.

DBASIC may only be run from a non-32x16 Hi-res mode with MEMEND unchanged. The error message is "CANNOT BE RUN FROM THIS MODE."

HOW IT WORKS

DBASIC moves the code of the BASIC interpreter from ROM memory to the upper half of RAM, relocating some of it to avoid destroying FLEX. Only portions of the Disk Basic ROM are copied due to space limitations. It then reads in the changes necessary to run under FLEX in the new location. These changes are contained in the DBASIC.SYS file. DBASIC does not contain any of the original BASIC code which is copyrighted by TANDY and MICROSOFT.

SAVING DBASIC

Some of you may ask "How can I save the combination of the ROM code with DBASIC.SYS as a single binary file?" The answer is: You shouldn't and it won't do any good anyway. It would take longer to load than the present method. And, most importantly, it wouldn't work. There is no time when all of the code necessary for DBASIC to work exists in memory at the same time.

RTF - Radio Shack to FLEX copy program

RTF was written in DBASIC and will copy files from a Radio Shack disk to a FLEX disk. The program will work with single drive systems if you answer the prompts with the same drive number (0 in this case). In addition it will give a RS directory or a FLEX directory of a disk.

Although RTF will copy any RS disk file, a machine language file will be of little use when copied. This is because RTF does not mocify the file to make it loadable with FLEX. There is a difference in the way RS and FLEX store ML code on the disk. RTF just does a byte for byte copy and this is the problem. Perhaps it is something better done after the file has been copied to a FLEX disk. However, all other files will copy and work ok, even BASIC BIN files.

RUN "0:RTF"

and then just answer the prompts.

Note: RTF will only copy ASCII files properly.

Also Note: LOADM requires a transfer address, even if not needed by the program. This is not a problem with files saved with SAVEM, but with files generated with an assembler.