Enhanced FLEX Disk Driver for SWTPC 6800

This folder contains the files for an improved disk driver for 6800 FLEX 2.0 and 3.0 running on the SWTPC 6800. The driver supports the original DC-x disk controllers from SWTPC as well as the FD-2 from Peripheral Technologies. The following improvements are provided versus the original FLEX drivers:

- 20% to 50% faster disk operations

- Support for double sided drives

- Support for fast stepping drives

- Honors head load timing when switching between drives

- Honors motor start-up time and overlays this timeout with any initial seek operation to improve efficiency

- Honors side select timing

- Honors trim erase timing

- Single driver works for both FLEX 2.0 and 3.0

The speed improvement was achieved by turning on the E bit only when necessary in read/write commands to the 1771 controller. This, in turn, allows FLEX to work within its designed sector interleave instead of slipping a full revolution with every sector I/O.

To format a double-sided disk, a new version of NEWDISK is provided. This NEWDISK also writes a double-sided compatible FLEX boot loader to track zero. Double sided operation requires the SWTPC DC-3 or DC-4 disk controller, or the Peripheral Technologies FD-2 controller.

The step rate for seeking (as defined for the 1771) is stored at $BEB3 in the disk driver. The default value is $03 which gives a 40ms step interval (30ms with 2797). A value of $00 can be placed here for a 12ms/6ms step interval. The STEPFAST utility does this and can be placed in the STARTUP.TXT file if desired.

Trying the New Disk Driver

You can upload the enhanced FLEX system file (FLEX2-ED.SYS or FLEX3-ED.SYS) to an existing FLEX disk using the PCGET utility. You can also use PCGET to retrieve the updated NEWDISK utility and STEPFAST command if desired. Find PCGET and further instructions in the "FLEX 2.0 and 3.0 File Transfer" folder.

Alternatively, the enhanced driver and support files are already incorporated into the bootable FLEX disk images (FLEX2-xx.DSK and FLEX3-xx.DSK) in the "FLEX 2.0 and 3.0 Disk Images" folder. Disk images can be written to a floppy disk in the target machine using the PC2FLOP utility. You can find this utility and further instructions in the "Disk Image Transfer" folder.