

HP 95LX DOS

Introduction

The HP 95LX contains the primary components of ROM-executable MS-DOS 3.22.

More specifically, the HP 95LX contains the DOS Kernel and the command processor, but only a few external commands.

Generally speaking, DOS works the same on the HP 95LX as it would on a standard PC (except for the missing external commands). For this reason, these notes discuss only the *differences* between the operation of MS-DOS 3.22 on the HP 95LX and DOS's operation on a standard PC.

DOS Boot Sequence

On a standard PC, DOS boots off disk and runs from RAM. On the HP 95LX, DOS boots out of ROM and runs from ROM. Thus, on the HP 95LX DOS, RAM requirements are greatly reduced since only DOS data is stored in RAM.

There is no provision on the HP 95LX to boot from disk. However, a disk can contain CONFIG.SYS and AUTOEXEC.BAT files—see below.

DOS Initialization

On a standard PC, DOS makes the boot disk drive the default drive and searches the root directory of that drive for a CONFIG.SYS file.

On the HP 95LX, DOS initialization has been changed to first search for CONFIG.SYS on the A: drive and, if not found, to search on the C: drive. If CONFIG.SYS is found on the A: drive, then that CONFIG.SYS is processed and A: is made the default drive. In this case, any CONFIG.SYS that is on the C: drive will not be processed. If CONFIG.SYS is not found on the A: drive, then C: is made the default drive and any CONFIG.SYS found there will be processed.

The DOS EXEC Function

In ROM-executable MS-DOS 3.22, the EXEC function has been extended to first search a table of ROM-executable programs before searching disk in case the program name has no drive path specified.

On the HP95LX, the table contains the two names COMMAND and \$SYSMGR. The COMMAND program is the DOS command processor and the \$SYSMGR program is the System Manager.

The Default Shell

On standard DOS systems, the default shell is COMMAND.COM. On the HP 95LX, COMMAND.COM is the System Manager.

The System Manager is the program that directs execution of the built-in and special add-on applications. The HP 95LX System Manager does not process any AUTOEXEC.BAT files.

The DOS Command Processor

COMMAND.COM is available in the HP 95LX but is not normally run at initialization time since DOS goes directly to the System Manager shell. There are two ways to access the command processor:

1. Invoke the command processor from within the System Manager program.
2. Change the shell to the command processor by including the line

SHELL=COMMAND /P

in the CONFIG.SYS file and reboot.

This causes DOS to go directly to COMMAND.COM — the System Manager is not invoked, and the built-in application keys will not be active. The commands that are available are the internal command processor commands, any external programs on disk, and the two ROMed program commands listed above.

One use of this method is to get access to DOS in order to perform some custom initialization and then run the System Manager using the \$SYSMGR command.

Disk-Resident External Commands

The HP 95LX contains two external commands, COMMAND.COM and CHKDSK.EXE, which reside in the root directory of the ROM disk.

The COMMAND.COM program is only a stub that invokes the actual command processor residing in ROM. This stub is provided in case some program accesses the command processor by its full name (including extension). As mentioned above, COMMAND (without path or extension) will be executed directly from ROM.

CHKDSK is the standard DOS check disk command.

The HP 95LX also contains DEBUG.EXE in a hidden directory called _SYS. This directory is off the root of the ROM disk. This is the standard DOS DEBUG program.

International Support

MS-DOS 3.22 supports the COUNTRY= configuration parameter and DOS calls that allow tailoring DOS and applications to local language characteristics. Some of this information depends on the PC's character set. DOS 3.22 supports only code page 437 (switchable code pages start with DOS 3.3). Since the HP 95LX uses code page 850, the country-specific information in HP 95LX DOS has been updated to match code page 850.

Note however that the international support that is built into the System Manager does not use these DOS capabilities.