

SPECTRUM

DOS 1.0

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BY

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SPECTRUM DOS 1.0
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*** * * S P E C T R U M D O S 1 . 0 * * ***
by Bob Colin

The program that you now have in your possession represents an advancement over the shortcomings of a standard Color Computer operating system. It fixes a number of routines inside the CoCo's ROMs, adds twenty-four (24) NEW commands, and gives the user a sharp resolution, high density screen of thirty-two (32), fifty-one (51) and sixty-four (64) characters per line.

The first thing that you should do is check that the original diskette is write protected. If it is NOT, put a tab over the diskette's notch. Now make a backup of this master and place the original in a safe place.

The following procedure will use the COPY of Spectrum DOS (and optionally another formatted diskette for output) and modify the disk file (ie. CHANGE and REWRITE system files). These steps are necessary to insure that the program will execute properly on your computer because of the many variations of internal and external CoCo configurations.

Place a COPY of the Spectrum DOS master in drive 0 and type RUN"SETUP/BAS and hit <ENTER>. After the logo is printed, the SETUP dialog will begin. Answer all questions with either a value or the default value by hitting the <ENTER> key. Defaults are set to the RADIO SHACK standard, which is for a single-sided drive with 35 tracks, a disk seek rate of 30 ms, 600 baud printer rate, a 'READY' prompt and a greater than sign (>) cursor.

How many drives in system >

Look around and count all the disk drives that are connected to your computer and enter that number. The default is one.

Default tracks for each drive >

RADIO SHACK drives will only handle about 36 or 37 tracks on a good day, so it is best to keep them at 35. Now, if you have a 40 track drive, you can Take full advantage of that extra storage space. The syntax for this response is the number of tracks separated by a comma for the number of drives that you have. EXAMPLE – for a four (4) drive system – 40,40,35,35 would set drives 0 and 1 to 40 tracks and drives 2 and 3 to 35 tracks. A two drive system could be – 35,40 for drive 0 at 35 tracks and drive 1 at 40 tracks.

Double side drive 0 >

Double side drive 1 >

If your drives are double-sided and you want to exercise this option, answer the question with a 'Y', otherwise just hit <ENTER>. If you double-side drive 0, remember that you will lose drive 2 and if you double-side drive 1, you will lose drive 3.

Default seek rate for each drive >

This response has the same syntax as the question for the number of tracks for each drive. It is the seek rate for each drive separated by a comma for the number of drives that you have. Many manufacturers (MPI, RADIO SHACK, SHUGART, TANDON, TEAC, etc...) have different disk drive capabilities. Check the drive specifications for the unit(s) you have in the chart below and enter the number(s) corresponding to the proper millisecond seek rate.

30 milliseconds = 23	20 milliseconds = 22
12 milliseconds = 21	6 milliseconds = 20

If you're not sure of the correct rate, just hit <ENTER> and it will stay at the normal or default speed of 30ms. (Note – If you have TEAC drives they will only work at 30ms and RADIO SHACK's will only go to 20ms)

Enter printer baud rate >

Once again, if you want the normal (600 baud) rate then just hit <ENTER> else enter the number you want:

300 baud = 180	600 baud = 87	1200 baud = 41
1200 baud = 18	4800 baud = 6	9600 baud = 1

Enter new prompt >

You can enter anything you want (up to 10 characters) for your own prompt. Don't be afraid to experiment with this. You can have the system come out with your name or anything else. If you get tired of it, just rerun this program and change it. The default is 'READY'.

Enter new cursor type >

Here just type in the character you want for a new cursor. You can use any printable character from a letter, symbol or number. It will be inverted on the screen at all times in the text mode and be normal for the hires screen. The default is the greater than sign (>).

After all the questions have been answered, you will be instructed:

To save a copy of this modified version place a
diskette in drive 0 and press
<ENTER>

Place the COPY disk in drive 0 or another formatted diskette in and hit <ENTER>. The program SPECTDOS/BIN will be saved with all its modifications and be correct and ready to run every time.

An alternative way to use Spectrum DOS is to set it up the way you want it and then burn it into an EPROM. This way there is no need to load it in every time and the program will be there waiting for you whenever you turn on the computer.

To use this system inside an EPROM, first go through the SETUP procedure to modify the program the way you want it. Save a copy to disk and then EXEC the program. Once the program is in place POKE&HD98B,&H7E, POKE&HD98C,&HD9, POKE&HD98D,&H9F. Then do a SAVEM "RSDOS+/BIN",&HC000, &HDFFF,&HC000. This will save the whole disk ROM to disk and then it can be burnt into an EPROM.

On the EPROMs, you should try to use one that has a chip speed of at least 350ns. This is so the high speed poke will work properly. After the program is burnt in, exchange the chip inside your disk controller and then every time you power up, you will be in SPECTRUM DOS.

And now for the bad news. If you burn an EPROM you will lose a few of the commands. This is because of the size of the EPROM. If you are lucky enough to be able to find a 128K EPROM and figure out a way to put it inside your controller, then you will not lose anything. If you find a way, you will need to do one more POKE. POKE&HDFB5,&H39. Then save the whole thing by typing SAVEM "DOS",&HC000,&HEFFF,&HC000. The commands that you do lose (with a normal EPROM) are HELP, FLIP, HIRES and FLEX.

NEW COMMANDS:

- DOS – Works just like the one in 1.1 Disk BASIC
- ERROR – Similar to an ON ERROR GOTO trapping routine
- FLEX – Boot up FLEX without the need of running a special boot loader
- RUNM – Single statement LOAD and EXEC of a machine language program
- PPEEK – Prints the 16 bit value of a specified memory location
- PPOKE – Stores a 16 bit value in a specified memory location
- AUTO – Automatically generate line numbers when inputting a BASIC program
- INVERT – After this command, output to text screen will be inverted
- NORMAL – Returns the text screen back to a normal state (non-inverted)
- WAIT – A memory saving timer routine
- LMOVE – Copy and delete BASIC lines of code
- RATE – Sets the drive seek rate for any or all drives
- TRACKS – Sets the number of tracks for any or all drives
- HELP – Lists out all of the NEW commands on a hires screen
- HDIR – Sends out the Disk Directory to the screen or printer
- HIRES – Gives you the choice of 32,51 or 64 characters per line
- OLD – Restore a program that has been erased by a NEW
- FKEY – Define up to 9 programmable keys
- LCOPY – Duplicate a BASIC line of code
- BREAK – Disable the BREAK key
- MEMO – A full text screen editor and screen dump to the printer
- FLIP – Invert the entire text screen
- EXIT – Return from the hires screen to normal text screen
- ECHO – All output sent to the screen will also be sent to the printer

NEW FEATURES:

- 35/40 TRACK DRIVES CAN BE ADDED TO THE SYSTEM
- AUTO DISK SEARCH (all attached drives are searched for a program)
- ONE BUTTON TEXT SCREEN DUMP
- ONE BUTTON LOADING OF A BASIC PROGRAM (BOOT/BAS)
- LOWER CASE READABLE (commands can be in lower case)
- AUTO KEY REPEAT
- NEW CURSOR (can be any printable character)
- NEW PROMPT (can be anything you want)
- RESET PROTECTED

COMMANDS THAT HAVE BEEN FIXED:

- DIR – Prints two directory entries at a time side by side then the number of free grans
- DSKINI – Prints messages to let you know what it is doing

HI-RESOLUTION SCREEN:

- 32, 51 OR 64 CHARACTERS PER LINE
 - TRUE UPPER AND LOWER CASE LETTERS
 - PRINT@ WORKS IN ANY CHARACTER DENSITY
 - THE CLEAR KEY AND CLS COMMAND WORK PROPERLY
-
- Pressing the SHIFT-RIGHT ARROW key will cause a full text screen dump to print.
 - Pressing the SHIFT-DOWN ARROW key will automatically load and run the BASIC program, named BOOT/BAS.

HIRESdensity number

Now you have access to any of the three high density character screens. The number typed behind the command will be the number of characters per line (eg. HIRES51). The choices available are 32,51 and 64. The PRINT@ statement functions with the same syntax as normal but you can use a bigger number. In the HIRES64 mode you just double the normal PRINT@ value. The CLEAR key and CLS command work as normal and you can switch between screens at will and now worry about losing and data or programs.

EXIT

Return to the normal text screen from any hires screen or terminate the ECHO mode.

MEMO

Functions like a mini text screen word processor or scratch memo pad. When the command is entered, the screen will clear and an inverted I will appear in the upper left hand corner of the screen. You now have a full screen to type notes, small letters, or happy faces. Full screen editing is possible by moving the non-destructive cursor in four directions with the arrow keys. Just type over the text to make any changes and when you are done, hit the BREAK key and the full screen will be dumped to the printer. If you decide to abort, hit the RESET button.

FKEYnumber

Allows you to program keys 1 thru 9 with functions that are made up of BASIC lines of code. Example: To define key 4, type FKEY4 and hit <ENTER>. A colon will appear and then you can type in a BASIC line (without the line number). Every time you want to perform that function, hit the DOWN ARROW key. An inverse F will appear in the upper left hand corner of the screen, then press the numbered key you want and that line of code will be interpreted. If the number pressed has not been defined, an error will result.

DOS

Provides the same loader function as the command in 1.1 Disk BASIC ROM. Especially useful to OS-9 users. When invoked, the command goes out to track 34 and starts loading in a sector at a time into the DOSBUFFER. It then checks the first two characters at address &H2600. If they are for example OS, it will jump to address &H2602 and EXEC the program that is there.

ERRORstatement number

When placed in a BASIC program, it will trap all errors encountered after the statement and transfer control of the program to the specified line number. ERROR without a number will stop the error trapping.

FLEX

Will load and start execution of any of the popular FLEX systems on the market. It emulates the need for the RS/BOOT setup on your disk.

RUNM"filename/ext"

Performs a LOADM and EXEC of a machine language program un one single step.

PPEEK(address)

Eliminates the hassle of finding a 16 bit number (usually addresses) with one simple statement. Does the same thing as – PRINT (PEEK(xxxx)*256 + PEEK(xxxx-1))

PPOKEaddress,value

Compliment to PPEEK. Will store a 16 bit value into the specified memory address.

AUTOstart number,increment

Automatically generates line numbers when typing in a BASIC program. The first entry is the starting line number and the second is the line increment. To terminate this mode, hit the BREAK key.

INVERT

All Subsequently displayed information on the text screen will be inverted.

NORMAL

Terminates the INVERT function and presents the following text screen output in a standard (non-inverted) form. Professional looking displays can be created by alternating text under INVERT and NORMAL.

WAITvalue

Significantly more efficient than a timing FOR/NEXT loop. Only take two bytes of memory instead of 24 thus saving a lot of space. The delay is about 1 second for each value increment. WAIT5 would be about a 5 second delay.

LMOVEfrom line,to line

Move BASIC lines around to wherever you want them. The first number (from line) will be moved to the second number (to line). The original line will be deleted. LMOVE 100,500 will move line 100 to line 500 and then delete line 100.

LCOPYfrom line, to line

Performs the same function as LMOVE except it does not delete the line that it is copying.

RATExx,xx,xx,xx

Changes the drive seek rate during an online session for any or all drives. See the SETUP procedure for a detailed explanation and required parameters.

TRACKSxx,xx,xx,xx

Sets the number of tracks for any or all drives during a session. Like the RATE command see the SETUP procedure for more information.

HELP

Online assistance in remembering all of the NEW commands that SPECTRUM DOS has added. Type HELP and a single hires screen will display the available commands and their proper syntax.

HDIRdrive number

Performs the same function as the DIR command with the added power of sending the directory to the screen and the printer. To use, follow the same syntax as the normal DIR but add the H and make sure that your printer is on.

FLIP

Will invert the entire text screen. To return to normal, type the command again.

BREAKon/off

Handy if you want to keep a misguided finger from getting into your program. You can control the function of this key by typing the command from the keyboard or by putting it in a line of BASIC code.

ECHO

All output sent to the display will also be sent to the printer. To terminate the command, type EXIT or hit the RESET button.

OLD

This command will restore the pointers to a program that has been erased by a NEW. It will work properly as long as no new line numbers have been typed in or any variables have been reassigned.

- NOTES -

When in the HIRES mode all graphics will work properly, but when using the LINE command, use PRESET instead of PSET.

To avoid audio distortion while using the PLAY command, the internal timing routines must be modified by typing – PPOKE &HD7DB,&H8955

The execution of any 64K machine language programs that rewrite BASIC ROMs to RAM will naturally wipe out sections of this software operating system and require you to reload SPECTRUM DOS when they finish running.

If there are any questions or comments, please contact the author:

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