

EDIT

Full-Screen Editor for TRS-80 BASIC

**southern
software**

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EDIT/CIM
EDIT/CMD
IMPORT/CMD
RELOCATE/CMD



Full-Screen BASIC Editor for TRS-80 (Models I or III) or Video Genie

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INSTALLATION

From Disk:

- 1) Put the product disk into drive 0.
- 2) Press the RESET button, i.e. BOOT the system.
- 3) The COPYRIGHT notice will appear. If this fails, check that you are using the correct disk for your system - Mod I (including Video Genie) or Mod III.
- 4) A menu will also be displayed:

 "D" selects the Disk-Overlay version of the Editor.
 "I" selects the In-Core version.
- 5) For the in-core version you will be prompted to supply a relocation address. Allow 3584 bytes from the top of your memory. Alternatively, ENTER alone will automatically relocate to the highest address suitable for your system (and will use slightly less than 3584 bytes).
- 6) Remove the product disk and replace it by your own system disk. Use a TRSDOS disk for preference. The installation process will work on some other DOS's, but not all. You can CONVERT or COPY the installed file from TRSDOS to another DOS, if used.
- 7) Press ENTER. (Do not REBOOT!)
- 8) The system will now appear to REBOOT. If you have an AUTO command in effect, this will be displayed on the screen but it will NOT have been executed.
- 9) For the Disk-Overlay version you will now be prompted to reinsert the product disk, and then the system disk. For the In-Core version, a DUMP command will be displayed. If either of these fail to appear on your system, then use TRSDOS.
- 10) The end result of this sequence will be to place a file called EDIT/CMD on your system disk. Use this copy directly, or COPY it to a data disk, or another DOS, if necessary.

The Disk-Overlay version is the easier to use, but it will run only on TRSDOS, LDOS, or smal-LDOS. The In-Core version of the Editor runs permanently in memory, and in consequence is faster to invoke than the overlay version. It will run on all DOS'es, or even on Level2. However you must provide adequate space for it in PROTECTED memory. The installation process will ask you to enter the address at which you want the Editor to run. When you enter Disk BASIC you must set MEMORY SIZE to this value (or lower if you have other programs in protected memory). For the Disk-Overlay version, just enter Disk BASIC in the normal way.

To use either version type

CMD"I","EDIT"

when in Disk BASIC. This loads EDIT into memory and branches to its first location, "activating" it. For the Disk-Overlay version it also enters full-screen edit mode. For a subsequent invocation of the Disk-Overlay version, or for the first invocation of the In-Core version, type /EDIT.

From Tape:

Refer to the separate sheet, RELOC, for instructions on loading and relocating the tape supplied. You need to allocate 3584 bytes of memory in protected storage for the Editor. If you have no other machine code programs in protected memory then answer the "MEMORY SIZE?" question as follows:

Machine Size	MEMORY SIZE answer
16K	29184
32K	45568
48K	61952

Use LEVEL II (not Disk BASIC) to load the tape initially, and to relocate the Editor to the appropriate target address for your machine. Then you can dump a 3584-byte core-image file either on tape (using TBUG, or Southern Software's TSAVE) or on disk using the TRSDOS DUMP command. If you load the Editor directly from this dumped copy in the future, remember to leave enough protected memory for it under LEVEL II or DOS.

To use the Editor you must first activate it by branching to its first location:

```
SYSTEM (enter)
x? /aaaaa (enter)      where aaaaa is your chosen starting address of the Editor
READY
```

From now on the Editor can be invoked by the command:

/EDIT

CAUTIONS:

- 1) The Editor uses a variable amount of stack space during editing, as a buffer to hold the currently modified line, and as workspace. This can be as much as 500-600 bytes. So a program that only just fits in unprotected memory may cause an OM (Cut-of-Memory) when edited.
- 2) When you modify a program all BASIC variables are cleared and all files are closed. If you use EDIT to examine a program compiled under one of the ACCELs, clearing the variables in this way will mean the program will no longer run unless recompiled.
- 3) For NEWDOS80 or DOSPLUS precede the /EDIT by a blank.

FUNCTIONS PROVIDED BY THE EDITOR.

The rest of this documentation applies to all versions of the Editor. After the special initial load and activation, you invoke the program in all cases by:

`/EDIT` or `/EDIT nnnn` or `/EDIT.`

where nnnn is a line number, ("," stands for "current line number"). For the Disk-Overlay version you can also use nnnn or . on the initial command, e.g. `CMD"I","EDIT 330"`.

For the in-core version you must NOT destroy the Editor in storage while it is activated - else BASIC will fail. You can deactivate it by branching to its starting address a second time. If you leave BASIC (using `CMD"S`) while the Editor is activated (or deactivated), you can reenter BASIC and reactivate it, without reloading it. However, be aware that the `SYSTEM` command does not work on Model III under Disk BASIC. Use `DEFUSR` instead.

Activation enables the `/EDIT` command, using the "trap" at address `HEX'41B3'`. Other programs may use this trap and thereby destroy the activation, so that `/EDIT` is diagnosed as a `SYNTAX ERROR`. In this case reactivate by branching to the first location again. For the Disk-Overlay version, re-execute `CMD"I","EDIT"`. Note that use of `ACCEL4` will always deactivate the Editor under `smal-LDOS`, and sometimes also under `TRSDOS` or `LDOS`.

The Display Format

After you use the `/EDIT` command you will see 15 lines of your program, starting from the one you specified on the `/EDIT` command, or at the beginning of the program if you did not specify a line number. The left hand column and right hand column normally contain a vertical bar. The bar is broken to show you where program lines spill over into more than one line on the screen. The bar at the end of the line kinks to show you when you have changed a line. The bar at the left hand end of a line will be changed by the Editor to a different - flashing - character to remind you about things you have done to the line.

The bottom line of the screen is used for messages and commands.

The Cursor

At one place on the screen there will be a flashing blob. This is the full-screen cursor. You can see the character that is under the cursor as it flashes. Normally when you press a key the keyed character is placed where the cursor is (replacing the character that was there). The cursor then moves onto the next position. This is the normal way to change characters.

The four arrow keys on the TRS-80 keyboard enable you to move the cursor without changing the characters that the cursor moves over. The cursor moves one step in the direction of the arrow each time you press the key. Like all other keys, if you hold an arrow key down for a second or so the function of the arrow will be repeated quickly until you release the key. This means you can move the cursor all over the screen easily. So you use the arrow keys to move the cursor to the characters that you want to change.

You can do this even if you cannot see the line you want to change - to get to later lines of your program, you move the cursor down towards the bottom of the screen and keep going! The Editor will automatically bring the later lines of your program into view. Similarly, to see earlier program lines you try to move the cursor off the top of the screen and the lines automatically come into view. This is called "automatic scrolling".

Special Keys - "BREAK", "ENTER", "CLEAR", Arrows and "@"

The "BREAK" key puts you into a special command mode. The commands are described below. Pressing "BREAK" twice (that is pressing BREAK when in special command mode) puts you back into BASIC.

The "ENTER" key commits any changes. You press "CLEAR" if you have changed your mind - this causes the operation to be cancelled. Most commands also have the effect of "ENTER" on operations that have not yet been completed, as does automatic scrolling.

The four arrow keys move the cursor. If you press an arrow key while holding down the SHIFT key, you can type the arrow as a plain character. The Editor does NOT support the special meanings that BASIC applies to the arrow keys (backspace, tab, newline) or to SHIFT/arrow (delete line, 32-char display). The newline key is accepted and placed in the program, but it is shown as a down arrow.

The "@" key has a special meaning to the Editor. If you wish to type a plain "@" then press the "0" (zero) key while holding down the SHIFT key.

The @ Control Key

Like many other products, including the SCRIPSIT text editor, the Southern Software BASIC Editor uses the "@" key like a shift key to give a special meaning to the key you press at the same time. When used in this way the "@" key is called the "control" key. In the rest of this document "@/X" means hold down the "@" key and then press the "X" (for example).

Extended Cursor Control Keys

"@" with numeric keys help you do more things with the cursor:

@/1 - makes the cursor jump back to the beginning of the current line.

@/2 - makes the cursor jump to the beginning of the next line

The following are alternatives to the arrow keys for those keyboards without them. You may also find them convenient if you have a numeric keypad.

@/3 - is the same as the down-arrow; that is it moves the cursor down one line.

@/4 - is the same as "<-"; that is it moves the cursor one character to the left.

@/5 - is the same as "->"; that is it moves the cursor one character to the right.

@/6 - is the same as the up-arrow; that is it moves the cursor up one line.

@/7 - lets you insert characters.

The first time you press @/7 an "I" appears in the bottom right hand corner of the screen - this means that you are in "insert mode". The next time you press @/7 the "I" disappears and you return to normal mode. ENTER also ends "insert mode".

When in "insert" mode, the character that you type does not replace the character at the cursor position, but rather the existing character and all the rest of the line are moved up to make room for the new character - so the new character is inserted into the line.

@/8 deletes the character that is at the cursor position and moves the rest of the line back to fill the space.

@/9 deletes the rest of the line starting from the cursor position.

Line Commands

"@" with a letter is used mainly for commands that operate on whole lines. The line that is affected is the one containing the cursor.

@/L means lock, and is a Shift Lock which switches you from upper case only to upper/lower case, or back again. To ensure a valid BASIC program, lower case characters persist only inside quoted strings or remarks.

Deleting Lines.

@/D deletes the line containing the cursor. Actually it just causes a "D" to flash at the left hand end of the line. When you next press "ENTER" the line will be deleted. This is a special feature to enable you to change your mind. If you decide not to delete the line (for example, because you selected the wrong line) press "CLEAR" instead of ENTER.

You can also delete a line just by deleting all the characters of the line. If a line is blank when you press "ENTER" (or the line only contains a line number) the line is automatically deleted.

Splitting and Joining Lines.

@/S will split the current line into two lines, at the cursor position, deleting the character under the cursor, which will normally be a ":" statement divider.

@/J will join the line identified by the cursor with the line below, inserting a ":" between them.

Creating New Lines.

The Editor lets you create lines in several different ways - to save typing. But you should be careful how you create line numbers. When the Editor creates a line, it may have the same number as an existing line and/or its number is out of sequence with the lines before and after it. This is essential to allow you to get the benefit of copying and moving lines. When you have created a line with a line number that normal BASIC would not allow the Editor flashes a "#" character at the left hand end of the line. You should change the line number to a valid one by overtyping the existing one.

If you return to BASIC while there is an invalid line number in your program you may get strange effects, but you will not harm your program. Go back to the Southern Software BASIC Editor and correct the error. You can even save and reload such a program in the normal format but NOT with the ASCII option.

The Editor does not duplicate the function of AUTO, and where you have many new lines to add or insert in your program, you may find it more convenient to exit from the Editor and use AUTO.

@/I inserts a new line after the line containing the cursor. If you don't type anything into the new line before the next time you press "ENTER" the new line will disappear again. You cannot use @/I to insert a line at the top of your program - use @/R to repeat the top line and update the first version of it.

@/R replicates the current line. That is it creates an exact copy of the line immediately after it. You use this function to save typing when you need to create a similar line.

@/C copies a line to a specified position. After you press @/C a "C" will flash at the left hand end of the line that contained the cursor. You then move the cursor to the program line where you want the copy of the line placed. Then press @/A if you want the copy placed "after" the line with the cursor, or @/B if you want it placed "before" the line with the cursor. There can be automatic scrolling between pressing the @/C and the @/A or @/B. You can even update lines on the way, or you can use the "find" command (see later) to get you where you want the copy of the line.

The result of the copy command is an exact copy of the original line. You will always have to change the line number of the new line or the original.

@/M moves a line to a new position. You use @/M with @/A or @/B to show where the line is to be moved to - just like @/C.

@/P positions the line according to its line number. @/P is an alternative way to move or copy a line. Instead of copying or moving a line and then changing it and/or its line number, you change the line number, or the line number of a copy created by @/R and then use @/P. The line is then moved to its correct sequential place according to the line number you have given it.

Block Commands

@/Q starts a block command. The line containing the cursor when you press @/Q is the beginning of a block of lines. You then move the cursor to the end of a block of lines (which may cause autoscrolling) and press a key for a line command. The line command then applies to the whole block of lines. In this way you can copy, move, replicate, delete, and position whole blocks of lines.

Also note:

If you change your mind about the beginning of the block, just repeat the @/Q command.

You can specify the end of the block as a line that is before the beginning. The effect is the same.

You can use the "find" command to get you to where you want the end of the block to be.

Block delete happens immediately you press @/D (unlike line delete).

Block position keeps the block of lines together. It repositions the whole block according to the number on the first line of the block.

Special Commands

If you press "BREAK" when in normal mode, you can type a special command in the command area. When in special command mode the "BREAK", "ENTER" and "CLEAR" keys mean the following:

BREAK - ignore any special command, leave the Editor and return to BASIC. Now you can run or save your program.

ENTER - execute the special command and return to normal mode.

CLEAR - you have changed your mind. Return to normal mode ignoring any special command. (If your keyboard does not have a CLEAR key you can use @K as an alternative.)

When entering a special command you can use the normal cursor functions (arrows and @/7, 8, 9) to help you correct mistakes in the special command. The Special Commands are:

nnnnn where nnnnn is a number between 0 and 65520.

This positions the display so that at the middle of the screen is the statement with this number, or the first statement after the number if there is no exact match. In particular, the special command "0" will display the first lines of the program and "65520" will show the last lines.

Fdxxx...d where xxx... stands for up to eight characters, and d is any chosen delimiter.

This means find the first occurrence of the characters xxx... starting from where the cursor was when "BREAK" was pressed. When you press ENTER the cursor is moved to the first such occurrence. The trailing delimiter may be omitted unless you want to search for a string with trailing blanks. Examples of search strings are:

F RETURN **F"RETURN"** **F"RETURN "** **F READ A** **F/A=B /** (includes blanks)

The characters xxx... are remembered by the Editor so that when in normal mode you can press @/F to repeat the find using the same string of characters.

Gdyyy...d where yyy... stands for up to eight characters, and d is any delimiter.

This command is a "global change" command. When you press ENTER the first xxx... (set by the find command) starting from the current cursor position is replaced by yyy... The characters yyy... are remembered by the Editor so that when in normal mode you can change the next xxx... to yyy... by pressing @/G. Thus if you wish to change all occurrences of xxx to yy then use the "F xxx" special command to set the "find" string xxx (and find the first one) and use the "G yy" special command to change the xxx to yy and to set the global change string to yy. Then hold down the @/G keys - the Editor will move through the program changing each xxx to yy.

To change just some of the occurrences of xxx to yy you use the same special commands but then press @/F to find an occurrence of xxx, then press @/G only if you want to change this occurrence to yy, and then press @/F to go on to the next one.

To DELETE occurrences of a string, find it using "F xxx..." and then change it to nothing using the "G" command without any string. Hold @/G down to delete further occurrences.

To INSERT a string xxx... in a number of places set the find string to null using the command "F" without a string, position the cursor to where you want the string inserted first, and use the command "G xxx...", This will insert the xxx... at the cursor position. Then position the cursor to the next place and press @/G, etc.

Summary of Functions.

Invocation	/EDIT	invoke Editor at start of program
	/EDIT nnnnn	invoke Editor at line nnnnn (or next line)
	/EDIT ,	invoke Editor at "current" line
Special Keys	BREAK	c enter special command mode, (twice = return to BASIC)
	ENTER	commit operation and updates, reset modes
	CLEAR	reset changes since last "ENTER" function, cancel operation
	Arrow keys	move cursor one character in the direction of the arrow
	SHIFT/0	types the normal "@" character
	SHIFT/arrow	types the normal arrow character
Control Commands	@/D	bc delete line or block of lines
	@/I	e insert new line
	@/R	eb replicate line or block of lines
	@/C	bc copy line or block of lines
	@/M	bc move line or block of lines
	@/A	e after here (use with @/C and @/M)
	@/B	e before here (use with @/C and @/M)
	@/P	eb position line or block of lines
	@/Q	e c start of block command
	@/F	e repeat find operation
	@/G	e global change operation
	@/L	c change shift lock
	@/S	e split line in two
	@/J	e join two lines to one

Notes: e = automatic "ENTER", b = block command (with @/Q), c = clear will cancel.

Special Commands	nnnnn	display statement nnnnn
	F xxxxxxxx	find next occurrence of xxxxxxxx
	G yyyyyyyy	change xxxxxxxx to yyyyyyyy

Cursor Commands The following table is arranged like the keys on a TRS-80 numeric keypad:

```

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
X  7  X  8  X  9  X
X insert X delete X erase X
X mode X char X rest X
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
X  4  X  5  X  6  X
X <— X —> X up X
X X X X
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
X  1  X  2  X  3  X
X start X next X down X
X of line X line X X
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

```

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