

NextZX0S Editor features (Updated 30 Jan 2020)

This document describes the changes in the editor and menu system between the version of the +3e currently available from the +3e website (+3e v1.43) and the cased machines launch version of NextZX0S (v2.04).

This should be read in conjunction with the other documents:

- NextBASIC file-related commands and features
- NextBASIC new commands and features
- NextZX0S and esxDOS APIs
- NextZX0S Unimplemented features

A list of updates made to this document is now provided at the end.

Additional editing functions

The NextBASIC editor is enhanced from the original +3e v1.43 editor as follows:

1. The current mode is now reflected in the cursor colour (flashes alternately with white):

- normal text entry: blue (as previously)
- CAPS lock on: cyan
- GRAPHICS mode: magenta
- EXTEND mode: green
- error marker: red (as previously)

2. Extended mode symbols shown in red below the keys (ie ~ | \ [] { }) can be entered either by entering EXTEND mode and then pressing SYMBOL-SHIFT plus the key, OR by just pressing SYMBOL-SHIFT plus the key in normal/CAPS modes.

The exception is the copyright symbol, which can either be entered in EXTEND mode by pressing SYMBOL-SHIFT plus P, or in normal/CAPS mode by pressing SYMBOL-SHIFT plus Q.

3. The following additional editing keys are available (EXTEND, key means press and release the EXTEND key (to enter EXTEND mode) and then press the key):

- **EXTEND,EDIT** - Switch between full/lower screen editor (same as choosing Screen from the edit menu)
- **EXTEND,CURSOR LEFT** - Move to start of BASIC line
- **EXTEND,CURSOR RIGHT** - Move to end of BASIC line
- **EXTEND,CURSOR UP** - Move up 10 screen lines
- **EXTEND,CURSOR DOWN** - Move down 10 screen lines
- **EXTEND,GRAPHICS** - Move to start of program
- **EXTEND,CAPS LOCK** - Move to end of program
- **TRUE VIDEO** - Move left one word
- **INVERSE VIDEO** - Move right one word
- **EXTEND,TRUE VIDEO** - Delete word left
- **EXTEND,INVERSE VIDEO** - Delete word right
- **EXTEND,DELETE** - Delete character right
- **EXTEND,9** - Delete to start of BASIC line
- **EXTEND,0** - Delete to end of BASIC line

Additional Menu Features

All menus now display the amount of RAM available to the Spectrum in the bottom-right corner (this is expected to be 768K for standard 1MB Nexts and 1792K for fully-expanded 2MB Nexts).

The current clock speed is displayed in the menu title bar, and defaults to the standard 3.5MHz at boot. It can be altered whilst in the menus by pressing the left and right cursor keys to reduce/increase the speed respectively.

If a real-time clock module is present (and has been correctly set using the **.DATE** and **.TIME** dot commands), then the current date and time are shown in a footer at the bottom of the menu.

Main Menu

The main menu now contains the following items:

- Browser
- Command Line
- NextBASIC
- Calculator
- More...

Leading to a second page with:

- Tape Loader
- CP/M
- ROM Cart 48K
- ROM Cart 128K
- 48K BASIC

Of these, *NextBASIC*, *Calculator* and *48 BASIC* are the same as the old +3 *BASIC*, *Calculator* and *48 BASIC* options.

Tape Loader

This will start loading from cassette. If a .TAP file has been attached to the tape input (using the **.tapein** dot command), then this will be loaded.

Five new options have also been added. The *Browser* is described in a later section. The other three new options are:

Command Line

This is the same as the *NextBASIC* option except that any currently-resident BASIC program is not listed (and can't be directly edited, although you can still RUN the program, enter new lines, or delete them by just entering the line number). The main purpose is for using disk-related commands such as **CAT** so that the output can be seen without being continually replaced by the program listing.

CP/M

This will re-map drives to files in the **C:/NEXTZXOS** directory named CPM-A.P3D etc (or, if not present, DRV-A.P3D etc) and then attempt to load the **CP/M** operating system from drive A:. Therefore, **C:/NEXTZXOS/CPM-A.P3D** must contain all the necessary **CP/M** system files for the ZX Spectrum Next. (It is intended that this drive image will be made available for download or distributed on the SD card).

ROM Cart 48K and ROM Cart 128K

These will boot any ROM cartridge present in an Interface 2 (or clones such as the RAM Turbo, Kempston Pro and modern equivalents such as the Dandanator). All the originally-released cartridges should be booted using the 48K option. Some modern equivalents (such as the Dandanator and Paul Farrow's ZXC4 cartridges) can support 128K snapshots or software, and the 128K option can be used to boot these with the Spectrum's 128K paging registers enabled.

The NextBASIC Editor

The *NextBASIC* editor option operates largely as previously, but can now operate in the usual 32-column mode (with colour-coded cursors as noted earlier) or in 64-column or 85-column modes.

The 64/85-column options use the *Timex hi-res* screen mode, and so are in monochrome. In these modes, instead of colour-coded cursors, there are new cursor shapes:

- normal text entry: horizontal bar in lower half of character
- CAPS lock on: horizontal bar in upper half of character
- GRAPHICS mode: vertical bar
- EXTEND mode: horizontal stripes
- error marker: rectangular outline

The options menu within *NextBASIC* now has the following options (note that the previously-available *Print* option has been removed):

- NextBASIC
- Command Line
- 32/64/85
- Screen
- Renumber
- Clear
- Exit

The *NextBASIC* and *Command Line* options return to the editor in the appropriate mode.

32/64/85 cycles between the number of text columns available in editing mode (with *Timex hi-res* mode being used for 64 or 85 columns).

Screen switches between having the editing area in the upper/lower screen (as previously).

Renumber rennumbers the entire program starting at line 10 in steps of 10 (note that this cannot be altered by *POKing* system variables, as these no longer exist. Instead the new **LINE..TO** command must be used).

Clear deletes all variables and restores RAMTOP to just below the user-defined graphics (so is normally equivalent to the command **CLEAR 65367**). This is useful when encountering Out of memory errors, to restore the system to a usable state (in particular, if RAMTOP has been set so low that there is no longer enough room to evaluate any BASIC line and therefore a new **CLEAR** command cannot be entered and BASIC lines can't be deleted).

Exit exits the editor and returns to the main menu.

Note that the editor mode is independent of the mode used by BASIC. Therefore, even if you have switched to hi-res mode in the editor, when a BASIC command or program is executed, the mode is changed to whatever was last set by the **LAYER** command (or to standard Spectrum mode if no **LAYER** commands have been issued). When the command/program has finished, the mode will switch back to the

appropriate mode for the editor.

Calculator and Command Line

The options menu in the Calculator mode now has the following options:

- Calculator
- 32/64/85
- Exit

The options menu in the Command Line mode has the following options:

- Command Line
- NextBASIC
- 32/64/85
- Exit

All the options work in the same way as those found in the NextBASIC options menu.

Note that the NextBASIC, Command Line and Calculator modes all use the same setting for 32/64/85 columns, so changing the number of columns in one also affects the others.

Browser

This option allows an easy way to manage and run files from the SD card.

On entry to the Browser, the files and subdirectories in the current directory are listed.

The current file/directory highlight may be moved by using the up/down cursor keys. If there are more files than will fit on a single screen, then using left/right will move one page backwards/forwards respectively. Using down at the bottom of the screen or up at the top of the screen also moves to the next/previous page.

*The currently-selected file/directory is highlighted in **cyan** if the file can be executed or in **yellow** if **NextZXOS** does not support executing that type of file.*

Available keys are:

- **cursor keys**: navigate up/down/back page/forward page
- **SPACE/BREAK**: exit the browser back to the main menu
- **ENTER**: load/execute the currently-selected file (or change to the currently-selected directory)
- **SYMBOL SHIFT+ENTER**: load/execute the currently-selected file with any alternative method found in browser.cfg
- **EDIT**: move back up one directory level (this can also be done by pressing **ENTER** on the special **..** directory)
- **D**: change the current drive to the next available mapped drive
- **M**: allows the SD card to be removed and/or replaced
- **K**: make a new directory
- **R**: rename the currently-highlighted file or directory
- **C**: copy the currently-highlighted file. You can then navigate to a different drive and/or directory and press **P** to paste a copy of the file
- **E**: erase the currently-highlighted file or (empty) directory
- **U**: unmount the current drive (if it was mounted from a .P3D or .DSK image)
- **F**: filter the list of files with a wildcard string (default is *.*)

If the chosen action cannot be performed, the *Browser* will beep and abort the operation.

Alternative file loading/viewing methods may be specified in the browser.cfg file, and selected by holding down **SYMBOL SHIFT** and then pressing **ENTER**. For example, the default browser.cfg has 2 matching lines for .BAS files:

- pressing **ENTER** loads the BASIC program (and runs it if it is auto-starting)
- pressing **SYMBOL SHIFT+ENTER** converts the BASIC program to text and displays it using the .more text viewer (this will be changed to invoke a text editor when one becomes available)

The browser can be used as a quick directory navigation tool (instead of using **CD** commands), since when you exit it with **SPACE** or **BREAK**, the new current directory is the one that was last displayed in the browser.

Browser configuration

The filetypes supported by the *Browser* are defined in the plain text configuration file **C:/NEXTZXOS/BROWSER.CFG** which is loaded every time that the browser is started.

This file contains one line per filetype. The first 1-3 characters are the type to be supported (this must be in capitals). The next character is a colon (:), semi-colon (;) or less-than sign (<). The remainder of the line is a BASIC command (or commands, separated with colons) which is used to execute the file.

Within the list of commands, the vertical bar symbol (|) represents the selected file. It will be replaced directly with the (short) filename, unless preceded by a quote (") character, in which case the LFN (long filename) is used instead. This allows short filenames to be provided to dot commands which cannot cope with LFNs, whilst BASIC commands and most dot commands can be provided with LFNs.

The character after the type determines what happens after the list of commands has been executed:

```
:      return to the main menu
<      return to the Browser
;      enter the NextBASIC editor
```

The language code of the current ROM can also be included in commands by using ASCII 96 (backtick on PCs; pound/currency symbol on Spectrums). This will be replaced with "en" (English), "es" (Spanish) etc.

Note that this is a plain text file and commands are written in standard ASCII text, not using Spectrum token codes.

You can use the special wildcard character * to match all remaining characters in the filetype. eg **Z***: matches .z, .z5, .zip etc. To match all remaining files, use *****: on the last line of the configuration file, eg:

```
*:.hexdump |
```

You can also use the special wildcard character ? to match a single character in the filetype. eg **Z?**: matches .z3, .z4, .z5 etc but not .z or .zip.

An example of possible contents for this file is as follows (something similar will be provided on the SD card and/or for download):

```
BAS;load "|"
BAS<cls:.bas2txt "|" ".txt":.more -85 "|" ".txt":erase "|" ".txt"
BMP<.bmpload |
Z80:spectrum "|"
SNA:spectrum "|"
TAP:.tapein |:load "t":load ""
O:spectrum "|"
P:spectrum "|"
TXT<copy "|" to screen$
SCR<load "|" screen$:pause 0
```

Note that 2 lines match files with .BAS types: the first of these is used when **ENTER** is pressed, and the second when **SYMBOL SHIFT+ENTER** is pressed.

.ASSOCIATE

A dot command **.ASSOCIATE** is provided to make it easy for users or software installers to make changes to the browser.cfg file. For usage information, just type **.ASSOCIATE**

Editor-related BASIC commands

The editor colour scheme can be chosen using these standard commands from +3e BASIC:

SPECTRUM INK *n*
SPECTRUM PAPER *n*
SPECTRUM FLASH *n*
SPECTRUM BRIGHT *n*
SPECTRUM ATTR *n*

The colour scheme applies to the standard 32-column editing mode as well as the hi-resolution 64/85 column modes. However, since Timex hi-res only allows 8 different colour schemes, the scheme used is the one with the same **PAPER** colour as standard mode.

The default number of columns in the editor can be chosen using the new command:

SPECTRUM CHR\$ *n*
where *n* is 32, 64 or 85.

As noted in a previous document, there is no "permanence" with commands like these, but they can be included in **C:/NEXTZXOS/AUTOEXEC.BAT** to be executed automatically at startup.

The screensaver behaviour can be controlled with the new command:

SPECTRUM SCREEN\$ *n, t*
Sets the screensaver to type *n* (0=bouncing box, 1=blank screen) with a timeout of *t* minutes (1-127). If *t*=0, then the screensaver is disabled.

The screensaver will activate (after the selected timeout) whenever the machine is waiting for a key to be pressed under the following circumstances:

- In menus, Browser, Calculator, NextBASIC editor or Command Line
- During **INPUT** statements
- During **PAUSE 0** statements
- When **NEXT #n, var** is waiting for a keystroke from K, S or W channels
- Machine-code software using the IDE_BROWSER call, or the IDE_STREAM_IN call (accessing K, S or W channels) or an IDE_BASIC call accessing the previously listed BASIC statements

The screensaver will *not* activate when games are being run (unless they use the API calls listed above), or in 48 BASIC mode.

List of updates

Updates: 30 January 2020

Updated NextZXOS version number referred to, for day zero release (v2.04).

Updates: 28 Nov 2019

Documented the new main menu options (ROM cartridge support).

Updates: 4 Nov 2019

Fixed incorrect mentions of "extensions" in the text; these are properly referred to as "types".

Updates: 3 Aug 2019

Added information on new "Clear" option available from NextZXOS v2.01B in the NextBASIC editor menu.

Updates: 17 July 2019

Added notes about new Browser features in NextZXOS v2.01:

- quoted | in browser.cfg is replaced by an LFN rather than short name
- pressing `SYM SHIFT+ENTER` on a file performs the action for the 2nd matching line in browser.cfg
- `F` key allows listed files to be filtered with a wildcard string

Updates: 11 Sep 2018

Added note about `U` key in Browser.

Added more information about browser.cfg and the `.ASSOCIATE` dot command.

Updates: 6 Aug 2018

Added notes on language code substitution (ASCII 96) in browser.cfg.

Updates: 12 Feb 2018

Removed the **Boot A:** menu option, as disk images will be mountable/bootable from the *Browser*.

Updates: 17 Jan 2018

Added **SPECTRUM SCREENS** *n,t* command (moved from the "NextBASIC additional changes document").

Added note of the RTC display in the menus.

Updates: 30 Nov 2017

Added description of new Browser features: remount, mkdir, rename, copy/paste and erase.

Updates: 25 Nov 2017

Added note that it is now possible to use the wildcard character ? in the Browser configuration file to match a single character in the filetype (with examples).

Updates: 14 Nov 2017

Added note that it is now possible to use the wildcard character * in the Browser configuration file to match remaining characters in the filetype (with examples).