



# JGH ROM for ZX Spectrum

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[JGHROM.zip](#) 65K This is a modified version of the ZX Spectrum ROM that I wrote in 1984-1985. I v0.76 12-Jun-2012 hand-assembled it and poked the values into an image in memory before blowing it to EPROM. The source code consisted of lots of pieces of paper! In 2003 I typed up all the scraps of paper into proper source code and fixed a couple of outstanding bugs.

## Bugs fixed

The standard bugs are fixed: NMI (now vectors via &5C80) - CHR\$8 - CHR\$9 - INKEY\$#0 - CLOSE# - SCREEN\$ - scroll?/press a key - "x"+STR\$y - -65536 - Divide bit34 - SKIP\_CONS writing to ROM - scrolling writing to ROM - dec\_to\_fp inaccuracy - colours select screen - INPUT uses stream 1 - STR\$ and INKEY\$#n preserve colours.

## Modifications

Spaces removed from token table - Out of range colour/border/tab/At ignored - "Nonsense in BASIC" is now "Mistake" - Character token entry - Starts with CAPS set, SHIFT toggles CAPS state - white on black

## Extensions

- "P" channel ZX Printer routines replaced with Centronics port on 251
- "C" channel writes raw data to Centronics port
- CALL <address>
- Port 253/249 checked for ASCII keyboard input
- CAT[#n] to catalogue tape
- SAVE s\$ CODE start,length[,extra[,reload[,type]]]
- OPEN# can select any non-Interface 1 channel
- Hex input with &xxxx
- Hex output with PRINT~ and STR\$~
- Standard entry block to extra routines
- Machine code can be run from tape or microdrive with \*filename or RUN s\$
- CHR\$12 performs a CLS
- Standard error message if RST &08 out of range with no Interface 1 present.

## Additions in version 0.76

STR\$ and INKEY\$#n preserves ATTRT/MASKT/PFLAG ([ref](#)), SCANHEX has better parameters so \*commands can call it directly. CLS sends CHR\$12 to stream 2.

```
10 REM Demo program
20:
30 SAVE "file"CODE &8000,128,&
5B00,&5B00,3
40 OPEN#3,"C"
50 CAT
60 RUN "MDUMP "+STR$ ~addr
70 CALL &5B00

B0.2:PR."Hello world"K
```

## Additions in version 0.75

Low level hex output code correctly outputs "0" when printing zero with no leading characters.

## Additions in version 0.74

Running machine code from tape searches silently. Running checks if exec=&FFFF and enters at the load address instead.

## Additions in version 0.73

Machine code can now be run from microdrive! On RESET, if the Interface 1 is present, drive 1 is selected, otherwise tape is selected. CHR\$12 performs a CLS. RST &08 traps out of range errors.

## Additions in version 0.72

OPEN# wasn't stepping over Interface 1 channels properly. NEW was losing channel "C" and Interface 1 wasn't closing #4 properly. Added [Geoff Wearmouth](#)'s bugfixes so colours select the screen and INPUT uses stream 1.

## Additions in version 0.71

Added [Geoff Wearmouth](#)'s bugfix for DEC\_TO\_FP which improves accuracy of decimal values. Scrolling no longer tries to write to ROM. New channel "C" and channel "P" check for BREAK.

## Additions in version 0.70

In version 0.60 if the line PRINT INK 2 is entered the tokeniser incorrectly converts this to PRINT IN K 2. This can be worked around by entering INK 2<ENTER> then adding the PRINT command. Thanks to [Phillip Kendall](#) for pointing this out.

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Some of the files can be browsed here:

<a href="#">Docs/txt</a>	15K Documentation, including details of how to call the extra routines from user programs.
<a href="#">Patch/src</a>	40K Source code, written in BBC BASIC Z80 assembler.
<a href="#">Patch/lst</a>	74K Assembly listing of version 0.76 of the patch code.
<a href="#">ROMInfo</a>	2K Initial documentation from back in 1985.
<a href="#">JGHSpec</a>	16K ROM image patched to use on <a href="#">Speculator</a> .

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Last update: 12-Jun-2012

