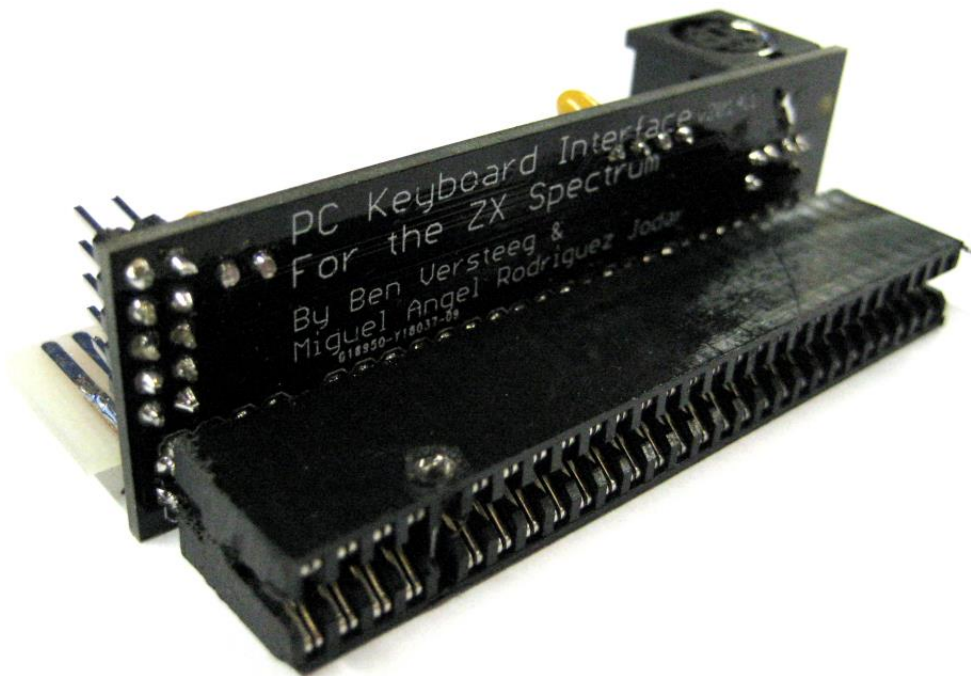


# PC Keyboard Interface

V2014.1

PS/2 Keyboard Interface  
For the Sinclair ZX Spectrum

## ***USER MANUAL***



Developed by Miguel Angel Rodríguez Jòdar - [www.zxprojects.com](http://www.zxprojects.com)  
and Ben Versteeg

Manufactured by Ben Versteeg  
[www.benophetinternet.nl](http://www.benophetinternet.nl)

## Features

The PC Keyboard interface enables you to connect a standard PS/2 style keyboard to your Sinclair ZX Spectrum home computer, to use in place of its own keyboard. This can make for a much more comfortable typing experience - particularly if you are used to the rubber keyboard mat.

The interface is designed with simplicity in mind and plugs into the ZX Spectrum's expansion port.

The built-in keyboard of your ZX Spectrum will be disabled when the PC Keyboard interface is attached: you cannot use the built-in keyboard of the ZX Spectrum and the PC Keyboard Interface at the same time.

## Compatibility

The interface is compatible with the ZX Spectrum 16K / 48K / 48K+ / 128K+ / +2 (grey model).

It is tested successfully with these devices:

- DivMMC EnJOY!
- DivIDE / DivIDE Plus
- Kempston Mouse Turbo
- ZX-MMC+

The PC Keyboard Interface will **NOT** work on a ZX Spectrum +2A / +2B / +3 due to machine limitations. There are also known compatibility issues with the MB02 / MB02+IDE interface.

The interface will work with USB keyboards which support the PS/2 protocol (many do), provided that you have a USB to PS/2 adaptor to enable it to plug into the interface.

Please note that the current version of the firmware (1.3b) only supports US English and Spanish keyboard layouts. Using PC keyboards with a different layout may result in unsuspected characters or behaviour.

## Connecting the PC Keyboard Interface

**POWER OFF YOUR ZX SPECTRUM BEFORE CONNECTING THE INTERFACE!**

The interface simply plugs into the expansion port on the Sinclair ZX Spectrum.

You can have other devices between the ZX Spectrum and the PC Keyboard Interface, provided that they have a through connector, or you can use the through connector of the PC Keyboard Interface to connect other compatible devices.

## Hard Reset for the ZX Spectrum

The PC Keyboard interface has a handy feature: pressing CTRL-ALT-DEL together will reset the ZX Spectrum.


You do not need to press a reset-button or pull out the power lead anymore!

## Keyboard Features

There are obviously some differences between the layout of a PC keyboard and the ZX Spectrum keyboard's layout. To compensate for this, PC keyboard-keys are mapped to key-presses on the ZX Spectrum in a certain way, but this will need some explanation and practise.

The keys on the PC keyboard are mapped to those on the ZX Spectrum so that all of the alphanumeric characters (with or without SHIFT and CAPS LOCK) match those on the ZX Spectrum as far as possible. If your PC keyboard has a numeric keypad, it will also work, and behaves as if numlock is enabled.

The next table details how the non-alphanumeric keys on the PC keyboard are mapped to the ZX Spectrum:

PC Keyboard	ZX Spectrum equivalent
Left CTRL Key	CAPS SHIFT (only for first character pressed)
Right CTRL Key	SYMBOL SHIFT
CAPS LOCK	CAPS LOCK (CAPS SHIFT 2)
ALT / SHIFT	Shifted PC-key symbols (e.g. SHIFT-2 = @)
TAB	→ (CAPS SHIFT 8) - useful for GENS 3
SHIFT TAB	← (CAPS SHIFT 5)
ESC	BREAK (CAPS SHIFT SPACE)
BACKSPACE	DELETE (CAPS SHIFT 0)
CTRL ALT DEL	Hard reset for the ZX Spectrum
Right Windows  -key	Extended Mode (CAPS SHIFT+SYMBOL SHIFT)
Cursor keys	← ↓ ↑ → (CAPS SHIFT 5,6,7 and 8) when Scroll Lock is off
Alt Gr (not right ALT key*)	Graphics mode (CAPS SHIFT 9)
`	£
Ç (Spanish keyboard)	© (CAPS SHIFT+SYMBOL SHIFT P)
F2	Edit mode (CAPS SHIFT 1)
F3 / HOME	Start recording a macro
F4 / END	Finish recording a macro
F5-F10	Play macro

\* Some PC keyboards have a normal ALT-key on the right hand side, others have a ALT-GR key instead of the normal ALT-key.

## Sinclair Joystick Mode

The keyboard can be made to emulate a Sinclair ('port 2') joystick if required. In Sinclair joystick mode, the cursor keys emulate the Sinclair joystick (keys 6,7,8 and 9) and the left ALT key is mapped to the fire-button (the 0 key).

Press the Scroll Lock key to switch the keyboard between normal mode and the Sinclair joystick mode. The Scroll Lock led is illuminated to indicate when the keyboard is running in Sinclair joystick mode.

## Built-in diagnostic tools

There are two diagnostic tools built into the PC Keyboard Interface to test the interface:

1) When you start up the Spectrum, press CTRL-ALT+F12 on the keyboard.

The following sequence should appear on the ZX Spectrum's screen:

```
REM 12345qwertasdfgZXCV67890yuiophjkl*.,.
```

2) When you start up the Spectrum, press CTRL-ALT+F1 on the keyboard.

This starts a comprehensive test-tool.

You can use this tool for example to test whether the keyboard supports pressing several keys at the same time (to get the combinations required for the ZX Spectrum keywords and many games).

## Macros

The PC Keyboard interface contains intelligent logic for recording macros.

A macro is a recorded set of key presses.

You can assign a macro to one of the function keys from F5 to F10.

After recording a macro it's available on those function keys, so that you can then quickly recall them at a later stage.

Even better, the macros are stored in flash memory on the interface, and therefore retain whilst the ZX Spectrum is turned off!

To record a macro:

1. Press F3 (or the HOME key) on your PS/2 keyboard to start recording a macro.
2. Press the function key (F5 to F10) to which you wish to assign the macro.
3. The CAPS LOCK LED will be illuminated so that you know you are in macro recording mode.
4. Carefully type the sequence of keypresses which you wish to record (up to 512 keypress sequences - *a key pressed down and released is 2 sequences*).
5. You can press PAUSE at any time to pause recording - press PAUSE again to continue.
6. Press F4 (or the END key) on your PS/2 keyboard to finish recording the macro.

To play the macro simply press the function key which you assigned.

The CAPS LOCK LED will be illuminated so that you know you are in Macro playback mode.

PAUSE can be used to pause playback mode - press it again to continue.

NOTE: you can only cancel the playback mode by pressing CTRL ALT DEL (to force a hard reset) or by powering down the ZX Spectrum.

