

Spectrum: Sinclair ZX Interface 2

Categoría : Fichas accesorios

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Una de las más notables carencias del [Spectrum](#) original era la imposibilidad de utilizar joysticks con . Por este motivo Sinclair lanzó, en septiembre de 1983, el ZX Interface 2.



Este interface proporciona conectores para dos mandos tipo Atari (conector D-SUB 9). Para controlar los joysticks se optó por un sistema propietario, denominado protocolo Sinclair (el más utilizado para el Spectrum, junto con el Kempston). El protocolo Sinclair traduce las acciones sobre los joysticks en pulsaciones de las teclas numéricas (1 a 5 para el primer joystick y 6 a 0 para el

segundo).

Además el Interface II tiene una ranura superior en el que insertar cartuchos. Dichos cartuchos contienen una ROM de 16K que sustituye a la ROM original del ordenador, evitando así las lentas cargas de cassette. Este sistema no tuvo, sin embargo, demasiado éxito y sólo se comercializaron 10 cartuchos. Todos ellos juegos de 16K ya existentes, y todos ellos extremadamente difíciles de encontrar hoy en día:

->Planetoids ->Space Raiders ->Backgammon ->Pssst ->Cookie ->Jetpac ->Tranz am ->Hungry Horace ->Horace and the Spiders ->Chess

Existe además un cartucho denominado [test cartridge](#). En principio fue utilizado internamente en Sinclair para probar los equipos, aunque posiblemente más tarde se proporcionaran algunos a distribuidores o servicios técnicos. Nunca fue comercializado, y es todavía a menos común que los diez juegos mencionados.



Los 10 cartuchos comercializados, y el "test cartridge"

Por último, en la parte trasera del Interface II hay un slot que permite conectar la impresora ZX Printer.

Modelos posteriores de Spectrum (el [+2](#) y [+3](#)) incluían de serie dos puertos de juegos compatibles con el protocolo Sinclair.

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ZX INTERFACE 2 MANUAL



Introduction
The Sinclair ZX Interface 2 allows you to connect two joysticks and a ROM software cartridge to your ZX Spectrum. You may use Interface 2 with any or all of the other ZX Spectrum peripherals.

Connection

Interface 2
You should connect all peripherals to your ZX Spectrum using the joystick 2 to go to the joystick 1 port. It is to connect all the peripherals and to go to the joystick 1 port. The ZX Interface 2 will accept only 8 or 16 pin ROMs in its expansion port. Any other software peripheral should therefore be connected to the joystick 2 and the joystick 1 port. Connect the ZX Interface 2 to the expansion port of your Spectrum or peripheral by pushing it firmly home. There is a small locking tab in the edge connector plug which fits a slot in the socket and prevents being removed.

Your Spectrum power supply unit is capable of driving the Spectrum, Interface 1, Interface 2, ZX Printer, and eight Microdrives at the same time.

Joysticks
You can connect any standard joystick fitted with a 9-way D plug to your ZX Interface 2. The 9-way D plug is widely used in the computer industry.
You may use either coin or flip joysticks. To connect them, remove the plastic covers from the joystick sockets on the left of the Interface 2. There is no need to protect the sockets as you can not easily fit them, so you cannot ever replace them.
The socket with the double row of pins is a universal for joystick 1, although some programs may treat the other socket as joystick 1. There is no harm in plugging an 8 pin joystick into the 9 pin socket for joystick 1.
ROM software cartridge
ROM software cartridges are inserted into the top of the flap on the right hand side of your Interface 2. This flap protects the socket while the ROM cartridge is plugged in. A cartridge should be plugged in with its flap open, with the flap on it - facing towards the computer. When pulling cartridges in or taking them out, take care to steady the Interface 2.
IMPORTANT - Never insert or remove ROM cartridges when the computer is switched on.

ROM software cartridges have the advantage that they do not require loading; the program does not occupy any RAM. A warning message of cartridges is available from Sinclair Research.

When you switch on the computer, it will enter the state to run the program in ROM. Cartridges and you should follow the instructions which are either in the program, or in the accompanying documentation. The markings themselves are reasonably robust, but you should check them as there is a possibility when they are not visible.

Joystick programming
Sinclair Research have designed the ZX Spectrum to use the joystick 2 to go to the joystick 1 port.

However, you can make your own programs to use the joystick 1 to go to the joystick 2 port. The two joysticks appear to be identical, but the joystick 1 is connected to the joystick 2 port.

Key	Joystick 2	Key	Joystick 1
1	Left	1	Left
2	Right	2	Right
3	Down	3	Down
4	Up	4	Up
5	Fire	5	Fire

They can be read from BASIC using INKEY\$, but this function will only read one key. It would not recognise Left and Right Joysticks, for example.

The alternative - and more versatile - way of reading the joystick is to use the IN function.

IN 61420 reads joystick 1
Left 1 bit
Down 2 bit
Up 3 bit
Right 4 bit

IN 60405 reads joystick 2
Left 1 bit
Down 2 bit
Up 3 bit
Right 4 bit

The BASIC program shows how to use the IN function.

This program shows a status on the screen as joystick 1 is moved. Pressing the fire button stops the program, but you can also use the joystick 2. The program is starting at line 100, read the joystick pointer you can adapt it for use in your own programs.

```

100 LET p=0:LET q=0
200 GOTO 100
300 IF p=1 THEN PLOT x,y
400 GOTO 100
500 LET p=0:LET q=0
600 IF p=1 THEN LET p=p-1
700 IF q=1 THEN LET q=q-1
800 IF p=1 THEN LET p=p+1
900 IF q=1 THEN LET q=q+1
1000 IF p=1 THEN LET p=p-1
1100 IF q=1 THEN LET q=q-1
1200 IF p=1 THEN LET p=p+1
1300 IF q=1 THEN LET q=q+1
1400 GOTO 100

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