Reading port 31 without a joystick interface connected may not return a constant value.

Example Program

```
100 LET X=15: LET X1=15: LET Y=11: LET Y1=11: REM Set startingposition.
110 PRINT AT Y,X;"0": REM Place an '0' on the screen.
120 LET JOY=IN 31: REM Read the state of the joystick.
130 IF JOY=0 THEN GOTO 120: REM Leave alone if joystick not pressed.
140 IF JOY=4 AND Y<21 THEN LET Y1=Y1+1: REM Check for DOWN.
150 IF JOY=8 AND Y>0 THEN LET Y1=Y1-1: REM Check for UP.
160 IF JOY=1 AND X<31 THEN LET X1=X1+1: REM Check for RIGHT.
170 IF JOY=2 AND X>0 THEN LET X1=X1-1: REM Check for LEFT.
180 PRINT AT Y,X;" ": REM OVER PRINT WITH A SPACE.
190 PRINT AT Y1,X1;"0": REM PUT '0' BACK IN NEW POSITION.
200 LET X=X1: LET Y=Y1: REM Reset old values.
210 GOTO 120: REM Loop round and do it again.
```

Note only four directions are used but the other four could be used by adding more IF JOY... statements. Fire could also be incorporated by checking whether the value JOY is greater than 16 and if it is then the fire button is pressed.

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INSTRUCTIONS FOR

Games Player

■■■■■■ WARNING ■■■■■■

ENSURE THAT YOUR SPECTRUM POWER SUPPLY IS DISCONNECTED WHEN YOU ATTACH OR REMOVE YOUR *GAMES PLAYER* INTERFACE. FAILURE TO DO THIS MAY RESULT IN DAMAGE TO THE INTERFACE OR YOUR SPECTRUM.

INSTRUCTIONS FOR USING YOUR DK'TRONICS GAMES PLAYER

If you are going to be using a joystick with a program then insert it into the port on top of the interface before connecting to the back of your Spectrum. Plug the GAMES PLAYER onto the back of your Spectrum or a through connector like that from other DK'Tronics interfaces or interface 1. Now switch on the Spectrum by inserting the power supply lead.

The GAMES PLAYER can be used with or without a joystick to 'freeze' or slow your games. If you have a joystick then the interface will simulate the Kempston type joystick (IN 31) and allow you to use a vast array of software already available. Once you have set up your computer and interface, load up your Software and enjoy the benefits of a superb joystick interface and you set the speed of play!

HOW TO CONTROL THE SPEED OF YOUR PROGRAMS.

Set the switch into the left position and rotate the knob completely anti-clockwise. The computer will now run any software at normal speed without any slowing down of the computer. Now press the switch to the right position. This now enables you to control the speed. As you turn the knob in a clockwise direction the computer will get slower and slower. When the knob is completely rotated clockwise then the computer will almost stop! In this way you can control the speed of your game as you like it.

If you want to play most of a game at normal speed but need to slow the computer down at a crucial moment, then, with the switch set to the right, rotate the knob to set the speed you require. Then move the switch to the left and play the game at the normal speed. When you need to slow down the game, quickly move the switch to the right and the computer will slow down to the speed you had previously set and you can play the difficult section slowly.

USING THE JOYSTICK IN YOUR OWN PROGRAMS.

The joystick part of the interface can be used as a simple joystick interface in your own programs using the IN 31 command. Set up the joystick and GAMES PLAYER as above, then type in the following short program:

```
10  PRINT IN 31
20  INPUT INKEY$="Y"
30  GOTO 10
```

First you will see a line of noughts and as you move the joystick in the 8 possible directions the number will change. If you press the fire button then yet another number comes up on the screen.

Below is a list numbers which are returned for the tour directions and fire:

```
 0 =  Joystick   ncentral  position.
 1 =  Joystick   right.
 2 =  Joystick   left.
 4 =  Joystick   down.
 8 =  Joystick   up.
16 =  Fire button pressed.
```

the number returned is the sum of the two separate directions. If the button is pressed also then the number returned has 16 added. For example a value of 26 would mean 16 for fire button pressed, 8 for up and 2 for left.

In machine code the individual directions can be sampled separately

```
LD    BC,31     ;(decimal)
IN    A,(C)     ;read value into accumulator
BIT   0,A       ;sample first bit.
JR    NZ,RIGHT  ;if it is set (not 0) then right is pressed.
```

In this mode

```
BIT  0  =  RIGHT
BIT  1  =  LEFT
BIT  2  =  DOWN
BIT  3  =  UP
BIT  4  =  FIRE
```