KEMPSTON JOYSTICK INTERFACE

INSTRUCTIONS

(IMPORTANT: Ensure that the power supply is disconnected before attempting to plug in the interface or removing it).

The interface fits onto the Spectrum's edge connector at the rear of the computer. The interface has a 23 way connector so it can be used behind the ZX printer if required. Make sure that the small key on the interface lines up with the slot on the Spectrum edge connector. **Do not attempt to plug in the interface if the key is missing, otherwise permanent damage may occur.**

The joystick itself plugs into the 9-way D connector on the interface which can be only fit one way round.

The joystick is port mapped to address 31 and information can be read and passed into a BASIC program by using the instruction IN 31. The function of the joystick can be tested by the following BASIC program.

```
10 PRINT IN 31;:GO TO 10
```

Running the above program with the joystick in the central position should result in 0's appearing on the screen. There are a total of eight possible positions that the joystick can be in and these should give the following numbers.

```
          UP
      10   8   9
LEFT   2   0   1  RIGHT   Pressing either fire buttons adds 16 to these numbers
       6   4   5
         DOWN
```

Any BASIC program that uses the cursor keys for movement can be modified to work with the joystick providing the relevant part of the keyboard reading routine can be located. The examples below should help you to do this.

CURSOR INSTRUCTION	JOYSTICK INSTRUCTION
IF INKEY$ = "5"	(left) IF IN 31 = 2
IF INKEY$ = "6"	(down) IF IN 31 = 4
IF INKEY$ = "7"	(up) IF IN 31 = 8
IF INKEY$ = "8"	(right) IF IN 31 = 1

If the program contains a line to detect a fire button, eg IF INKEY$ = "0" replace this by IF IN 31 = 16. Three conversion tapes are available which allow leading games to be used with the joystick and are priced at £4.95 each.

1 FLIGHT SIMULATOR (Sinclair) Early version
MERGE this with flight sim:

```
9010 RESTORE 9100: FOR i=58540 TO 58592
9020 READ a:POKE i,a
9030 NEXT i
9040 POKE 42923,195: POKE 42924,172:POKE 42925,228
9050 RUN
9100 DATA 17,158,167,14,254,33,164,167
9110 DATA 126,35,183,40,7,71,237,120,18
9120 DATA 19,24,244,1,31,255,237.120
9130 DATA 33,161,167,203,71,40,2,203,150
9140 DATA 203,95,40,2,203,158,20,3,87,40,2
9150 DATA 203,166,203,79,200,43,203,166,201
```

Enter the opposite program, and SAVE “FLIGHT+”.

In Use
Load Flight Simulator in normal way. When it has all finished, BREAK when 1-2-3? prompt appears. Then MERGE “FLIGHT+” and PLAY above tape. Then RUN 9010. The keyboard will still work but additionally so will the joystick.

2 FLIGHT SIMULATOR (Sinclair) Later version

```
1 INK 1: PAPER 1: BORDER 1: CLEAR 32767: LOAD”” SCREEN$: LOAD”” CODE

10 FOR N=60454 to 60480: READ A: POKE N,A: NEXT N
20 POKE 40821, 78
30 POKE 40835, 70
40 POKE 40767, 38
50 POKE 40768, 236
60 RANDOMIZE USR 51094
70 DATA 205, 34, 159, 175, 219, 31, 33, 142, 112, 71, 230, 15
80 DATA 174, 119, 35, 35, 35, 120, 203, 63, 203, 230
90 DATA 4, 174, 119, 201
```

The above program can be used to play Flight Simulation with a Kempston Joystick and Interface.

The program should be typed in and saved, on a separate tape to the original program by SAVE “Flight”.

To play Flight Simulation type LOAD “Flight”, using the tape with this new program, RUN it and play the original tape of the Psion game. The program will now LOAD as normal but the Kempston Joystick can be used as well as the keyboard controls. The fire button toggles the map on and off.

3 MAZEMAN (Abersoft)
Load MAZEMAN and then break into the program during the first part of the demonstration program. Type in the following POKES:-

```
POKE 29946,1
POKE 29947,31
POKE 29948,0
```

POKE 29949,237
POKE 29950,120
POKE 29957,0
POKE 29959,2
POKE 29963,4
POKE 29967,8
POKE 29971,1

The modified game can now be saved by typing:-
RUN 9999
MAZEMAN will now work with the Kempston Joystick.

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