SLOGGER

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Switched Joystick Interface User Guide

For the Acorn Electron with
ROMBOX+ or Acorn PLUS 1

DISCLAIMER

Slogger Ltd can accept no liability whatsoever for any loss or damage caused by the use of the Joystick Interface. Each unit is tested and proven working at the factory before despatch. Slogger Ltd therefore reserves the right to charge a reasonable fee for any testing or returning of this unit.

INTRODUCTION

The Slogger switched joystick interface has been produced to make the use of joysticks available to a wider range of programs than ever before. With the software supplied, the joystick can be made to emulate the keyboard to the extent that the use may define which direction on the joystick corresponds to which key on the keyboard. In this way, the joystick may be used on a game where a joystick option is not normally possible.

The interface immediately emulates the analogue port of the Acorn PLUS 1, although the fine control may be lost due to the digital nature of the joystick.

The type of joystick required for this interface is known as an Atari-type 9 pin joystick. These are inexpensive to buy because of the large numbers which have been sold for other computers with which they are compatible.

GETTING STARTED

The joystick package should contain:

This instruction leaflet
One joystick interface cartridge

If the cartridge is missing, then do not proceed.

SETTING UP

To set up the system, Slogger's ELECTRON EXPANSION 2.02 ROM (or later) must first be inserted into the ROMBOX+ or PLUS 1.

INSTALLING THE CARTRIDGE INTERFACE

The cartridge interface must be plugged into the front cartridge slot of either the ROMBOX+ or PLUS 1. The label should face towards the front of the computer when correctly installed. Once installed, the following test, with a Joystick inserted, should be performed.

```
10 PRINT ~?&FCE0 AND 31
20 GOTO 10
RUN
```

Then, by moving the joystick in each of the four directions, the following values should be returned:

UP	1
DOWN	2
LEFT	4
RIGHT	8
FIRE	10

To maintain compatibility with other devices, the interface is 'movable' in memory. All interfaces for the Electron are mapped into the computer's memory so that if a particular address is read from or written to then access is gained to that particular interface. This rule also applies to the joystick interface. As shipped, the joystick interface is located at the address &FCE0 in memory. This means that if &FCE0 is read from, a number will be obtained which gives information about how the joystick is being held. However, if there is another interface which is also mapped into &FCE0, the computer does not know which is referenced and so neither interface would work.

A pair of switches within the interface allow it to reside at any one of four locations within memory. If you find it necessary to alter the setting from &FCE0 then you will find two shorting switches on the component side of the printed circuit board within the cartridge case. Each is made up of three pins and a black sleeve. Both switches are labelled with letters to identify which setting the switch is at. Below is a table of switch settings and their corresponding addresses:

Left switch	Right switch	Address
A	C	&FCC0
A	D	&FCD0
B	C	&FCE0
B	D	&FCF0

USER APPLICATIONS

The joystick may be used to control a user program by reading directly from the address at which the interface is located. The number read from the port gives information about all of the directions, and also the fire button status. The interpretations of the bits in the byte read from the port are as follows:

Bit 7	Unused	(ignore)
Bit 6	Unused	(ignore)
Bit 5	Unused	(ignore)
Bit 4	Fire button	=1 if fire pressed
Bit 3	Down	=1 if joystick down
Bit 2	Up	=1 if joystick up
Bit 1	Right	=1 if joystick right
Bit 0	Left	=1 if joystick left

So, for example, if the fire button is pressed and the joystick is left, then the value read from the interface would be:

	1 1 1 1 0 0 0 1	in binary
or	241	in decimal

To maintain compatibility with the second processor, it is recommended that OSBYTE 146 be used to read the interface. On entry, A contains &92 (146) and X contains the offset (low byte of the interface address). On exit, Y contains the value read from the interface.