

## THE SAM COMMUNICATIONS INTERFACE

When connected to the SAM Coupé computer, this interface allows you to attach parallel (centronics) or serial (RS232) external devices. The communications interface should allow any commercially-available printer to work with the Coupé, but note that other communications devices - modems, for example - are unlikely to work unless they have been designed specifically to be compatible with the Coupé.

### Connection

With the power to the computer off, connect the communications interface to the expansion port at the back of the Coupé. The serial number on the interface should be face downwards.

There are two sockets at the back of the communications interface. The larger 26-pin socket is for parallel/centronics connections, and a standard BBC-type printer cable should be used to connect the external device to the interface. The smaller 9-pin D-type socket is for serial/RS232 connections; it's IBM PC-AT compatible as shown in the connection diagram on page 4. Cables are usually provided with the external devices you purchase. But in case of any difficulty, please contact MGT on 0792 - 791100.

Both the parallel and the serial sockets can be in use at the same time. Note though, that if you wish to connect another external interface to the expansion connector - an external drive interface, for example - you'll need the SAM Card Cage, due for release later in 1990.

### Using a Parallel Printer

If your printer is Epson FX80 compatible - and most of them are these days - then you probably won't have to do anything. Just connect your printer to the parallel port (with all power off), and go. Follow the instructions in the main Coupé manual to LLIST or LPRINT - and try the spectacular screen-dumps using FLASH!

(If you're contemplating buying a printer, make sure you get one which is Epson FX80 compatible. Ask your dealer for guidance: most manufacturers make budget-priced printers to this standard.)

You may find that the printer wants to output everything on the same line, or that it jumps a line between each one that it prints. This is because printer manufacturers sometimes set automatic line-feed to ON, sometimes to OFF at the factory. You can correct the problem either by changing the dip-switch settings on your printer as instructed in the printer manual, or by changing one of the Coupé's system variables.

The key system variables are listed at the back of the main Coupé manual. You'll see that system variable (SVAR) 15 is concerned with printer automatic line feeds. If your printer is overprinting (in other words, not sending an automatic line feed), type in the instruction:

```
POKE SVAR 15,10          (RETURN)
```

If, on the other hand, your printer is sending an extra line, type:

```
POKE SVAR 15,0          (RETURN)
```

These settings will remain in operation until you reset or turn off the computer, or until you send the instruction NEW.

### Using the Serial/RS232 Port

Connect your external device to the communications interface with all power off.

Turn the power on, install the DOS (if you're using a disk drive) and type:

```
DEVICE T                  (RETURN)
```

Press (F7) and then PLAY on the cassette recorder with the Communications Software cassette loaded. This will load the Basic loader and autorun the program. You'll see a number of settings displayed on screen with the option to change the settings. A little bit of background here....

Data can be transmitted between RS232/serial devices and the computer at varying rates, known as the baud rate. The documentation for the external device you are using should state the baud rate that needs to be set, and may also define criteria for stop bits and data bits. (Don't worry about definitions here; all that's important is that you set up the computer to receive and transmit data at the appropriate rates.)

When you first load in the program, you'll see that the baud rate is set to 9600 baud, stop bits are set at 1 bit, and data bits are set at 8 bits. If these are the settings that your external device requires, select option 1 - "Initialise using current data". But if you need to change the settings, select option 2 - "Edit serial parameters". You'll then be able to modify the settings for baud rate, stop bits and data bits.

When you've made the modifications, you then need to follow up by selecting option 1 - "Initialise using current driver" - which will re-initialise the driver.

Option 3 - "Back up comms software" - allows you to save a copy of the selections you have made. This will be particularly useful if you have two communications devices, each requiring different settings. By making a back-up, you will be able to load the driver which is suitable for the device straight away, instead of modifying the settings each time you use the device.

If you back up to disk, you are asked to enter a file-name, which will become the file-name in the disk directory. The filename you enter should only be 5 characters long - and the computer will automatically add a file-name extension - .BAS. The files saved are:

```
CSETUP.BAS      - Configuration program
CCODE.CDE      - Machine code driver
(file-name).BAS - Autorun file with name
```

In Basic instructions, the serial port is referred to as "b". Thus, when the driver is installed, you can input and output data to the serial port by:

```
LLIST          List a program
LPRINT a$     Print a$

OPEN #7;"b"    Open stream 7 and output to serial
PRINT #7;a$    port

OPEN #7;"b"    Open stream 7 and input from stream 7
INPUT #7;a$
LET a$ = INKEY$ #7
```

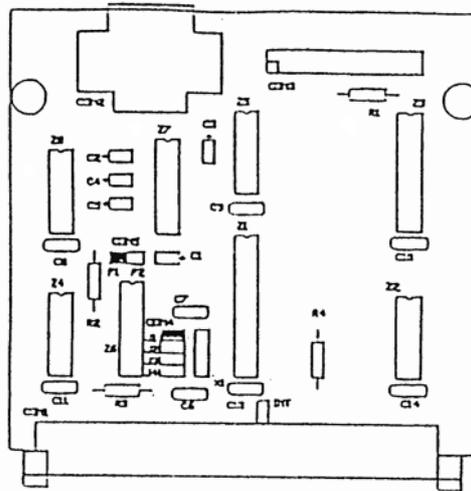
#### **NOTES:**

1) Using the communications interface, you are not permitted to output to devices simultaneously; nor can you input to two devices simultaneously. However, it is permitted to input data from one device and to output it to another simultaneously. For example, you could input from a modem and output to a parallel printer using the instructions:

```
5 GOSUB 100
10 CLOSE #6
20 OPEN #6;"b"
30 LET a$=INKEY$ #6
40 IF a$=" " THEN GOTO 30
50 LPRINT a$
60 GOTO 30

100 REM Set output to parallel
110 LET BCHAN=DPEEK SVAR 591+25
120 DPOKE BCHAN,&0181
130 RETURN
```

2) The comms driver is installed in the highest page of memory available. If the DOS is installed, it will be placed in the page below the DOS.



### JUMPERS SETTING

#### CON 4 JUMPER

<u>POSITION</u>	<u>FUNCTION</u>
TOP MOST (DEFAULT) (I/O PORT &EC)	MAP SERIAL PORT AS COM1
2ND FROM TOP (I/O PORT &ED)	MAP SERIAL PORT AS COM2
2ND FROM BOTTOM (I/O PORT &EE)	MAP SERIAL PORT AS COM3
BOTTOM MOST (I/O PORT &EF)	MAP SERIAL PORT AS COM4
REMOVED	DISABLE SERIAL PORT

#### CON 5 JUMPER

<u>POSITION</u>	<u>FUNCTION</u>
LEFT (DEFAULT) (I/O PORTS &E8, &E9)	MAP PARALLEL PORT AS LPT1
RIGHT (I/O PORTS &EA, &EB)	MAP PARALLEL PORT AS LPT2
REMOVED	MAP PARALLEL PORT AS BOTH
LPT1 AND LPT2	

#### CON 6 JUMPER

[next to C13]

<u>POSITION</u>	<u>FUNCTION</u>
OPEN	Serial port interrupt feature disabled.
CLOSE (DEFAULT)	Serial port can be configured to interrupt the Z80 CPU.

**Comms Interface PC Mouse modification instructions:**

- Open comms interface by unscrewing the two screws at the back
- remove PCB and turn it upside-down. The serial connector is located at the top-right side, just below the text 'MILES GORDON TECHNOLOGY'
- Solder a short wire (about 3 cm) to connect pins 4 and 7 of the serial connector (see Figure 1).
- Check your soldering for short-circuits and reassemble the comms interface.

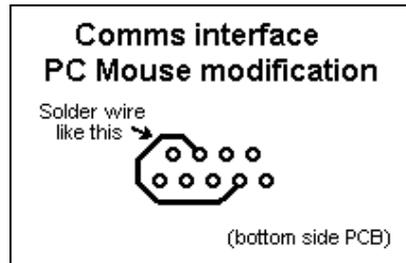
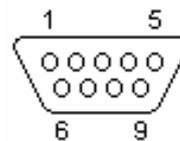
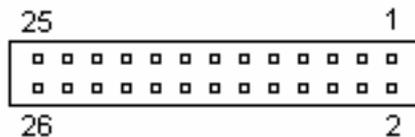
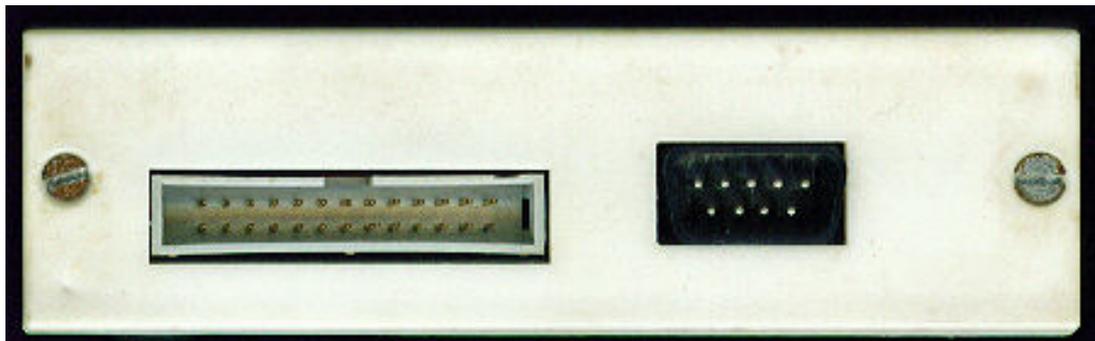


Figure 1

**Pin Outs**



PIN	SIGNAL	TYPE	PIN	SIGNAL	TYPE
1	PRINTER STROBE	OUT	2	RXD	RECIEVE DATA
3	DATA BIT 0	OUT	3	TXD	TRANSMIT DATA
5	DATA BIT 1	OUT	4	DTR	DATA TERM. READY
7	DATA BIT 2	OUT	5	GND	GROUND
9	DATA BIT 3	OUT	8	CTS	CLEAR TO SEND
11	DATA BIT 4	OUT			
13	DATA BIT 5	OUT			
15	DATA BIT 6	OUT			
17	DATA BIT 7	OUT			
21	BUSY	IN			
2-20,23	GROUND PIN NUMBERS	0 V			
19,22,24,25,26	NOT CONNECTED				





```
Serial Communications Driver

RS232 Parameters

Port Addr      236
Baud Rate     9600   Baud
Stop Bits     1      Bit(s)
Data Bits     8      Bit(s)

Driver Options

1. Initialise using current data
2. Edit serial parameters
3. Backup Comms Software
4. Exit to BASIC

Enter Option Number █
```

The initialise program in operation.  
[Running on Sim Coupe]



Port address	Decimal	Hexadecimal
	236	&EC
	237	&ED
	238	&EE
	239	&EF



This pdf was compiled by Steve Parry-Thomas 21 Jan 2005

For Sam Coupe Users everywhere

[www.samcoupe-pro-dos.co.uk](http://www.samcoupe-pro-dos.co.uk)

Thanks to the following for there help with this one.  
Edwin Blink, Simon Owen & Colin Piggot.