

Interfacing the Osborne 1 to the Hydrolab 8000 and
to Simon Fraser University's MTS Service

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Osborne Support Document #1

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The Osborne-1 microcomputer is a totally portable computer system. Using the 12 volt power supply it can be taken anywhere. The interfaces described in this document allow the transfer of data captured by the Hydrolab 8000 to be transferred from the memory unit to an Osborne disk file in the field. These data files can later be transferred to the mainframe computer at SPU for further processing.

The interfaces described in this document are somewhat complicated. It is hoped that by the time that it is made freely available it will be completely transparent to the person who is attempting to make the data transfers. Throughout the text I have placed sections which are not of direct interest to the user of this document but are effectively notes to myself. These are indicated by *'s in the first column of the text like

*

* This a sample note

*

The equipment necessary for transferring from the Hydrolab system to the Osborne is as follows:

1. Hydrolab 8000 memory unit
2. 8000-5200 connect cable
3. Hydrolab 5200 DMU with 12v power supply

4. Male - Male RS232 connect cable

*

* This cable needs to be of a special type.

* The cable to be used is identified by the label "DMU-OSBORNE".

* This cable was specially made to serve as this particular

* interface. Wires 2&3 are crossed allowing the two DCE

* devices to talk to each other. Wire pairs 4&5 and 6&20 are

* looped to each other to allow the communication to occur

* correctly. Wire 7 is connected to both 25 pin connectors.

* All other wires have been eliminated.

*

5. Osborne Computer with 12v power supply

6. Disk labelled HYDRCLAE LINK #.

*

* This is a double density disk with a total of 185K.

* It is unlikely that you will need more than this at anyone

* time.

*

7. Formatted disk (not always necessary).

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The equipment should be connected in the following manner (***) Make sure you don't connect the memory unit until instructed ***).



TRANSFER INSTRUCTIONS

1. Make the connections as shown in the above figure.

*** Make sure the blue modem plug has been removed from the modem plug on the front of the Osborne ***

*

* This is necessary since the Osborne uses both the modem plug
* and the RS232 use a common interface. If the plug is left in
* the DMU will respond to instructions but the Osborne will look
* for the return message at the modem plug.

*

2. Power up the Osborne.

3. Power up the DMU and check that both test lamps light and then go off. If this fails you have a serious problem with which you need help. DO NOT PROCEED.

4. Place the disk labelled HYDROLAB LINK in drive A and press the "RETURN" key.

5. The Microlink command menu should appear on the screen. Follow the next steps precisely.

6. Hit the "RETURN" key.

7. Respond to the question with B"RETURN". This set the correct parity to 7 bit even parity.

8. Type 7 "RETURN". This removes the linefeed from the carriage return.

9. Type 3 "RETURN". This sets the receive buffer on.

10. Type 1 "RETURN" This place you in conversational mode. You are now acting as a terminal.

11. Hit the "RETURN" key. This tells the DMU that you are there. The DMU should respond with an "*".
12. NOW connect the memory unit to the DMU.
13. Type "R" followed by a "RETURN". This must be a capital letter R. This initiates the recovery of the data in the data logger. Answer the questions that are asked. This information is being stored so the answers you give will be useful in identifying the data on the file.
14. When the recovery is complete you may wish to empty the memory. To do this type in E followed by a "RETURN".
15. Hit the "ESCAPE" key. The computer will respond with a ":"
16. Type in "5.filename". This will store the data in the named file. CP/M file names are mandatory. (e.g. TEST.DAT)

*

- * If the file name exists you will get an error message. Try
- * another name.

*

OSBORNE TO SFU COMMUNICATIONS

Transfer of files to MTS is really very simple. That is provided you have the proper telephone jack available (RJ11). This is the new standard phone jack that exists in most homes. We also have one in the Terminal Room. Connect the Osborne to the RJ11 using the two ended telephone cord. Place the AMCALL disk in drive A and the data disk in drive B, after powering up the Osborne. Type in a "RETURN".

*

* Make sure that the blue modem plug has been installed.

* It won't work without it in place.

*

The AMCALL program automatically starts operation. Follow the following steps.

1. Press the "space" bar.
2. Press the "F" key. This is to change the file you are sending from DEFAULT.FIL to the one you are sending from disk B. Thus the name you will be entering will be "B:filename".
3. Press the "RETURN" key.
4. Press the "O" to originate a call.
5. The program will now ask for a phone number. The number to use is 6044204900. If you are using the terminal room jack use 94204900. Autodialing is supported on letters S to V.
6. Follow the number by a carriage return "RETURN".

7. The microcomputer will automatically dial this number.
8. It will follow with a message to the effect that the carrier has been detected.

9. You must now sign on to the remote computer as you normally would from another terminal with the terminal type "CRT".

Now the problem is to move the contents of the file you have specified from the Osborne to a file on the mainframe.

1. Create a file to place the data in by CREATE FILE.
2. Make the file active as a sink for input by:

```
Copy *msource* FILE
```

3. Hit ESC T. (Hold down the ESC key and touch the "T".)
4. This will move the file contents to the MTS file. The micro will let you know when it is finished by:

```
*** FILE TRANSFER COMPLETED ***
```

Respond to the >prompt by \$endfile. This closes the MTS file.

5. You may wish to verify that the file has made it. This can be done by typing in:

```
"LIST FILE"
```

where "FILE" is the name of the MTS file.

6. This ends the transfer, however, it is a good idea to send more than one copy to file to ensure that you have a 'good' copy on the mainframe. It is also a good idea to not erase your data from your disk file prematurely.
7. While you are linked to the mainframe you might send a copy of the data file to the printer by "COPY FILE *PRINT*". This will

allow you to have a hard copy of the contents of that file and it will be useful for checking the data.

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* Osborne RS232 Port Characteristics

*

* 25 pin female

* 1. asynchronous

* 2. communications by BICS

* 3. memory mapped 6850 ACHA

* 4. Data Terminal Equipment (DTE Device)

*

* Pin out

* #		Logical	EIA	To	From
1	Frame ground	GND	AA	-	-
2	Transmit Data	TX	BA		->
3	Recieve Data	RX	BB	<-	
4	Request to Send	RTS	CA		->
5	Clear to Send	CTS	CB	<-	
6	Data Set Ready	DSR	CC	<-	
7	Signal Ground	SG	AB	-	-
8	Data Carrier Detect	DCD	CD	<-	
20	Data Terminal Ready	DTR	CD		->

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* DMU recieves a standard 300 baud device RS232

* Full Duplex, 300 baud, 7-bit ASCII one start, one stop, one even parity bit.

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****NOTICE****

This procedure and this support document is in developement. Be extremely careful. Everything works as described. If you have problems use extreme caution until you are more familiar with it.

Acknowledgement

Special thanks to Richard Chycoski of the Simon Fraser University Computing Center for his assistance with the preparation of the special cable needed to interface the Osborne and the Hydrolab.

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