ORICOMMS

INTRODUCTION

Oricomms is a basic communications software package for the
Oric computers written in 100% machine code. It offers the
facilities required to communicate with Bulletin Boards
(BBs) and also includes a simple 'Chat Mode' for
user-to-user communications.

Oricomms has been designed to be used with the Oric Modem
Interface (RS232). It also works with the Oric Modem, but to
make full use of the facilities an additional simple
(300/300 baud), or a more sophisticated (multi-baud rate)
modem can be connected. Details of how to do this are given
later.

This manual assumes the reader has some knowledge of
communications terminology. For further information about
this subject see the suggested books at the end of the
manual.

LOADING THE PROGRAM

On cassette, there are two copies of the program at fast
speed and one in slow. Loading is achieved as usual by
typing:-

CLOAD"ORICOMMS" (,S) [RETURN]

On disc simply type:-

!COMMS [RETURN]

There are two versions of the program; one for the V1.0 ROM
and one for the V1.1 ROM. Ensure you have the correct
version before loading!

USING THE PROGRAM

1. Initialisation

Once loaded Oricomms presents you with the formatting screen. This allows you to select the format which the computer will use to transmit data and translate received data. It also allows you to select either terminal or user-to-user mode.

(a) Baud Rate

There are three choices of baud rate selectable; two of these can be used with the Oric Modem, 1200/75 and 1200/1200. The third rate, 300/300, can only be used with a modem which provides for this baud rate.

1200/75 and 300/300 are the most commonly used rates for Bulletin Boards, and are almost always full-duplex.

1200/1200 is usually used for user-to-user communications and is nearly always half-duplex, since full-duplex 1200 baud modems are very expensive. (However if you have one this software will let you use it!). 300/300 baud modems are also used.

(b) Parity

Parity is a simple means of checking the integrity of incoming data. Most BBs use no parity, but all the possible options are provided here, just in case! If you set incorrect parity then incoming data is likely to be scrambled.

(c) Stop Bits

Either one or two stop bits can be selected. As with parity, it is important that you set the correct number otherwise incoming data will be scrambled! N.B. If parity is enabled and the word length is 8 bits,and if two stop bits are selected on screen, only one stop bit is actually used. This is normal and should not cause any practical difficulties since the only time you are likely to select this is during U2U, in which case both Orics should be formatted the same by prior arrangement.

(d) Word Length

This program offers selection of either 7 or 8 bit data word lengths. The Oric RS232 interface is actually capable of operating with 5 and 6 bit word lengths also, but these have no practical use in normal computer

communications. (5 bits are used for RTTY).

Most BB's operate with 8 bit word length, but since ASCII characters use only the lower 7 bits then for textual transmissions it does not make much difference which is used. You should ensure you have selected the correct one though.

(e) Mode

If contacting a BB then select 'Terminal' mode. This is full-duplex operation and can be selected with any of the baud rates (although they may not work depending upon the modem's capabilities).

If communicating with another computer user then select 'U2U' mode. This is half-duplex operation (i.e. one direction at a time) with automatic switching between both computers. Since a modem capable of full-duplex operation can be operated at half-duplex (but not vice-versa) then this can be selected for any of the baud rates. If 1200/75 is selected then the modem at the other end must be operating at 75/1200.

2. Going on-line

Once the formatting is complete then pressing 'SPACE' will connect you with the distant computer. (Providing you have first dialled it and can hear the continuous tone). If your modem has a local test setting then this can be selected and 'SPACE' pressed before dialling the computer.

(a) Terminal Mode

Having pressed 'SPACE' the screen will scroll up. When the message 'Terminal Emulation.....' appears you are ready to transmit and receive. N.B. Many BBs expect to receive two or three CRs before they will begin transmission of their welcome screen.

In this mode there is no local echo, i.e. characters that you type only appear on the screen if there is a distant terminal echoing them back. This is normal practice for BBs.

This software also filters out any incoming 'ESCAPE' characters, to prevent unwanted screen corruption. However 'CONTROL' characters are not filtered, so a bad line can still cause some problems, but CTRL characters are used in BB communications so it is necessary to keep these in.

Other options are:-

'CTRL-S' - This will usually make a BB pause during its
transmission. It is the flow control protocol XOFF;

'CTRL-Q' - This will ask a BB to start transmitting
again after it has received a XOFF signal. This is the
flow control protocol XON;

'CTRL-T' - as usual toggles CAPS on/off;

'ESC' - returns you to the formatting screen so that you
can alter the parity or stop bits etc. WITHOUT dropping
the phone line;

'CTRL-Z' - drops the telephone line and returns you to
the formatting screen. This is used when you leave a BB
or in emergencies! N.B. BBs do not take kindly to people
who drop out like this without good reason. There is a
proper procedure for signing-off before this key is
pressed.

(b) U2U Mode

Once 'SPACE' has been pressed the computer checks to see
whether the other computer is in receive or transmit
mode. This takes a few seconds. One of the two users can
select transmit mode by pressing the 'down arrow' key
after pressing 'SPACE', but before the screen has
scrolled up. If nobody selects transmit, the two
computers will decide for themselves!

When the screen has scrolled up and the 'RECEIVE....' or
'TRANSMIT....' message is shown, together with the 'User
to User' message, then whoever is in transmit mode can
begin typing. N.B. If transmit mode selection was made
by use of the arrow key please allow about 7 seconds for
the receiving terminal to latch-on and scroll up. This
delay only occurs at the start of U2U mode.

When the transmitting terminal wishes to signal 'end of
message' they should press 'RETURN'. This will switch
the status of each terminal over, and thus the
transmitter will now be in receive mode, as shown by the
message on the screen's status line.

In this mode there is local echo of your key presses so
that you can see what you are typing without being
connected to another computer. This means you can select
things like CAPS before going on-line. If you toggle
CAPS etc. whilst on-line in U2U mode you will not affect
the receiving terminal, since CONTROL characters are

filtered out before transmission.

The options are:-

'Down Arrow' - this should be pressed immediately after pressing 'SPACE' by the computer which is to transmit first. The other computer will automatically go into receive mode;

'RETURN' - this is pressed by the person transmitting at the end of their message. It causes automatic switch-over between the two users as to transmit and receive;

'CTRL-Z' - as in Terminal Mode this causes the line to be dropped, and for you to be returned to the formatting screen.

N.B. If you press the RESET button under the Oric this will have the same effect as pressing ESC in terminal mode. It will also reset the screen attributes - useful if they have been corrupted by scrambled incoming data.

CONNECTING OTHER MODEMS

It is quite easy to connect modems other than the ORIC Modem to the Oric modem interface, once you know the pin-out of the 7-pin DIN connector. This is shown below:-
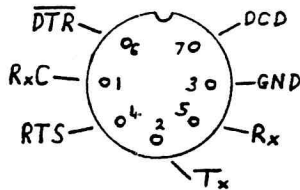
The Oric Modem Interface DIN connector pin-out.

The connections are all quite straightforward except for $\overline{DTR}$ and RxC.

GND is the signal ground and should be connected to the GND pin of the modem.

Tx is the transmitted data pin, and should be connected to the transmit data pin of the modem.

Rx is the receive data pin, and should be connected to the receive data pin of the modem.

DCD is data carrier detect, and should be connected to DCD on the modem.

RTS is ready-to-send, and should be connected to RTS on the modem. This is the handshaking line.

$\overline{DTR}$ is the inverted version of DTR and is used within the Oric Modem to switch the line on or off. Unless it is first inverted it cannot be used in a conventional RS232 connection. DTR is not necessary for handshaking anyway since RTS is provided.

RxC is the serial interface Receiver clock input. The clock pulses for this are normally provided from within the Oric Modem. However it is only necessary to provide an input to this if different receive and transmit baud rates are being used, e.g.1200/75. If the Tx and Rx baud rates are the same then the Tx Clock built into the interface provides for both. This means that if a different modem is to be used for all purposes then a circuit to provide this Rx clock must be built and connected. An example of such a circuit which provides the clock signal for 1200 baud receive is shown below:-
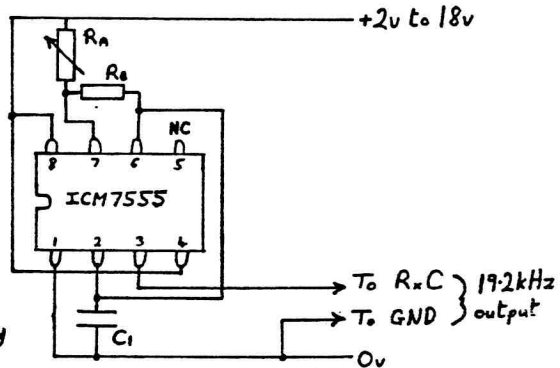
Parts :-

C_1 - InF Polystyrene
R_A - 4.7k Preset
R_B - 4.7k $\frac{1}{4}$W
Supply - 9v Battery
or Oric 5v Bus.

Setting Up :-
Adjust R_A to about half-way
until Receiving accurately.

RS232 Receiver Clock circuit

FURTHER READING

These books you may find of use or interest. They are generally available, and modestly priced.

The New Hacker's Handbook by Hugo Cornwall Published by Century Communications.

The Hacker's Handbook as above .. if you can get hold of a copy!

An Introduction To Computer Communications by R.A.Penfold published by BABANI.