VT100.net

MICRO SCRIBE

USER MANUAL

1. Introduction

The MICROSCRIBE text editor model is a multifunction terminal operating in one of two modes (TERMINAL OR EDIT) selected by the user in response to a menu. This menu is displayed when the terminal is switched on:

```
SELECT, EDIT, DELETE, SEND, RECEIVE OR TERMINAL MODE

PRESS E, D, S, R OR T -
```

Press T to select TERMINAL mode. This mode is used when the MICROSCRIBE is on-line. As each key on the keyboard is pressed the character is transmitted from the RS232 interface. The message store can help to save time and typing by remembering up to 10 pre-programmed phrases. The display has a capacity of 48 lines × 40 characters, of which 2 lines are shown on the display window and the rest are held in memory. The ◀ and ▶ keys move the window through the display memory line by line. The cursor is indicated as an underline. Text coming from the computer always enters the display at the cursor position. If the cursor is not visible hold the SFT key down and press ▶. This will home the display window to the line holding the cursor. It is necessary to set up the terminal to be compatible with the equipment to which it is connected (computer, printer modem etc). When in terminal mode the terminal setting may be viewed by holding down the SFT key and pressing ST. Section 3.1 of this manual details the procedure to change the setting. Press ST again to revert to terminal mode.

To return to the menu hold down the CTL key and press 5.

Press E to select EDIT mode. This mode is used for composing or editing text off-line. The terminal need not be connected to any other device and even if connected to a computer etc will neither send nor receive data while in edit mode. The internal memory will store up to 9 documents of any length (up to the maximum capacity of the terminal) and in any order. The document is selected by pressing a number from 1 to 9. The text may now be typed in. The scroll keys (▶ and ◀) move the window and the cursor through the document line by line. CTL ◀ moves the cursor to the left character by character and CTL ▶ moves the cursor right character by character. SFT ◀ takes the user to the beginning of the document and SFT ▶ takes the user to the end of the document Other editing facilities available are: delete and insert character, delete document and a search feature (see section 4).

Text is not formatted in memory.

This means that words occuring at the end of the displayed line may be broken to appear partly on the top line and partly on the bottom line. This is taken care of during transmission according to the line length required and will result in left justified text when used for example with a printer. This method of operation optimises the memory space available and automatically ensures that paragraphs are formed correctly after inserted text. When the document is complete press CTL 5 to return to the menu.

It is also possible to receive data from the RS232 interface and store it in memory as a document. Documents can be individually transmitted from the RS232 interface and separately deleted.

2. Powering-up

The power on-off switch is located at the rear of the terminal on the R.H. side. The unit is ON when the switch is towards the charger socket.

When power is switched on the menu should appear in the display. If there is no display, plug in the A.C. Adaptor to charge the battery. The Microscribe may be operated normally while charging.

2.1 Battery Low Warning

Low battery voltage causes a staged shutdown of the terminal, indicated by 3 messages:

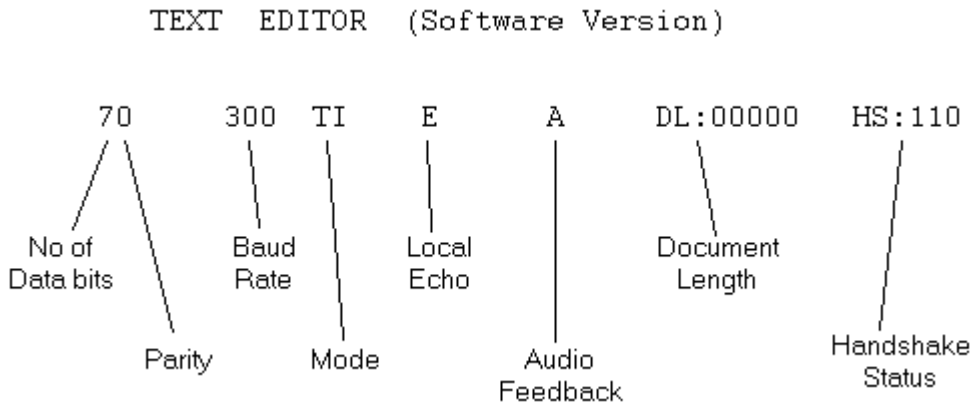
1. BATTERY LOW - PLEASE CHARGE
2. BATTERY LEVEL CRITICAL CHARGE IMMEDIATELY
3. BATTERY LEVEL UNUSEABLE SYSTEM SHUTDOWN

At stage C the terminal will cease to function until it is recharged. If the battery condition is low when the terminal is switched on operation is inhibited immediately.

3. Terminal Mode

3.1 Status of Terminal

The terminal must be set up to correspond to the computer, modem or printer being used. The current setting may be viewed by holding SFT down and pressing ST. The display will change to indicate the current status:



1. No of Data Bits

   Fixed at 7.

   8 Bit operation may be implemented by setting the parity bit to Set or Reset.

2. Parity

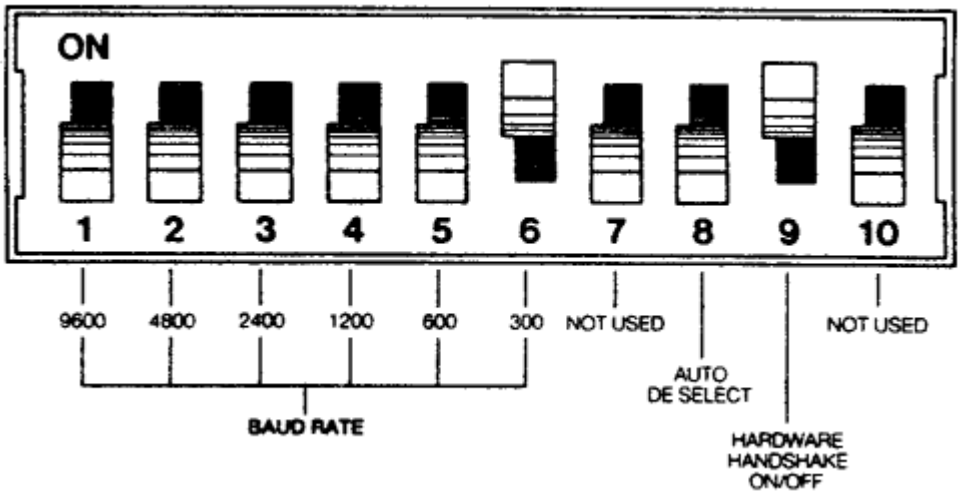
   - R: Parity Reset (Parity bit always low)
   - S: Parity Set (Parity bit always high)
   - E: Even Parity

- O: Odd Parity

To change the Parity setting press the 0 (Parity) key until the required setting is displayed. The terminal will store this parity setting.

3. Baud Rate

The Baud Rate is readoff switches 1- 6 on the DIL switch on power up. The Baud Rate status display is up-dated each time STATUS is interrogated.



4. Operational Mode

In terminal mode there is a choice of display format.

- Mode T0: Engineering Mode
- Mode T1: Executive Mode (for normal operation)
- Mode T2: CR/LF Suppression Mode

To change the mode press the 1 (Mode) key until the required setting is displayed. The terminal will store this setting.

Mode 0

Mode 0 is intended for engineering use to assist in the fault-finding of data streams. Control characters are displayed as a control symbol CL followed by the corresponding alphabetic letter, except for:

1. Cursor return, control M, is displayed as CR.
2. Line feed, control J, is displayed as LF.
3. ESCAPE is displayed as EC.
4. DELETE is displayed as ¥.

Mode 1

Mode 1 is intended for executive use. Text enters at the left hand side of the display and as more characters are received the display fills from

left to right. Non printing characters are not displayed, and the terminal responds to control codes as detailed in Section 3.7, and escape sequences as detailed in Sections 3.4 and 3.8.

Mode 2

Mode 2 makes the most use of the display window by interpreting Carriage Return/Line Feed commands (and all other control characters) as a space.

NB For NORMAL operation MODE 1 should be selected.

5. Local Echo

    - Blank: Normal communication mode
    - E: Local echo mode.

    To change the mode press the 2 (Local Echo) key until the required setting is reached.

6. Audio Feedback

    - A: Audio On (Simulates keyclick)
    - Blank: Audio Off (Keyclick disabled)

    To switch the internal sounder on or off press 4 (Audio FB) until the required status is reached. This does not affect the Bell function.

7. Document Length

    In Edit mode this number is the length of the document in characters.

8. Handshake Status

    - 1 = Enabled (Communication on)
    - 0 = Disabled (Communication off)

3.2 RS232C Connections

The MICROSCRIBE is fitted with a 9 way D type Female connector for RS232C communications. A 9 way D type Male connector should be connected:

PIN 1 Protected Ground (100 ohms to Pin 7).
PIN 2 TXD (OUTPUT) Transmit Data.
PIN 3 RXD (INPUT) Receive Data.

PIN 4 RTS (OUTPUT) Request to send (enabled permanently).

PIN 5 CTS (INPUT). A low level on Pin 5 will inhibit transmission of data from the terminal. If hardware handshaking is not required DIL switch 9 can be set ON to ignore the CTS signal.

PIN 6 Battery. Provides a power source from the terminal internal batteries (4.5 to 5.5 vdc).

PIN 7 Ground.

3.3 Display of Received Data

In terminal mode the MICROSCRIBE stores incoming data in 40 characters per line, 48 lines per page format, automatically forming a new line after 40 characters.

On receipt of the 1920th character the cursor is located at position 1 and the LF flag is set.

On receipt of the next character line 1 is cleared and then overwritten. The display RAM, therefore, always holds 1 page of data (or the last 1920 characters received).

If the line being viewed is not the current cursor line, and more data is received by the terminal, the data will be stored in RAM, the cursor will be placed at the end of the data block and the display window will remain at a constant offset from the current cursor line. i.e. data will appear to flow past the display window. To return the display to the current cursor line hold down SFT and press ⏩. To clear the display hold down CTL and press L. If the display does not clear check that either the host computer is echoing back or that the terminal is in LOCAL ECHO (see section 3.1).

Scrolling

The ⏪ and ⏩ keys may be used to scroll or 'search' through the RAM in 40 character increments. These keys auto-repeat if held down at a rate of approximately 10 lines/second. The cursor remains in its position and does not move.

⏪ increments line number to a maximum of 48 then wraps around to line 1.

⏩ decrements line number to a minimum of 1 then wraps around to line 48.

SFT ⏩ homes the display window to the current cursor line.

SFT ⏪ homes the display window to line 1.

While the scroll key is held down (and for 1 second after release), the line number is displayed in the right hand corner 3 character positions of the display, e.g. space 22 (the space being used to improve readability).

To enquire current line number without moving the display window press ST.

This will indicate the line number in the right side of the display for 1 second.

3.4 Direct Cursor Addressing

The MICROSCRIBE responds to direct cursor addressing commands in the form ESC X where X is a binary number. This will place the cursor at position X within the current cursor line.

e.g. ESC CTL @ will place the cursor at position 1 since the binary equivalent of CTL @ is 0.

Range of X

0 - 39 or 40 - 79 locates cursor in current line.

3.5 Message Store

The message store enables short character strings (up to 80 characters long, including control characters) to be permanently stored for transmission at any time using the function (FCT) key.

The message buffer may not be overwritten by received data or accessed by direct cursor address commands. All messages are fully protected by a separate lithium back-up battery and retained during power down. Up to 10 messages may be stored providing the total capacity of 200 characters is not exceeded. When the message buffer is being viewed the terminal is effectively off-line and will not receive incoming data.

1. **Programming a Message into the Store**

   To program a message into the memory press SFT FCT. The display will show MESSAGES IN USE ..... To compose message 0 press 0. The display will clear except for an end-of-text marker at the left side (¥). The message may now be typed in. Control characters are indicated simply by CL. Use the DEL key to delete erroneous entries. Each message should not exceed 80 characters (i.e. 2 lines) including the end-of-text marker. When the message is complete press FCT. The display will show MESSAGES IN USE 0..... to indicate message 0 is in use. Messages may be put into the buffer in any order. Press FCT again to return to normal mode, or any number 0-9 to type in another message.

2. **Displaying a Message**

   To display a message press SFT FCT followed by the message number 0-9.

3. **Editing a Message**

   To edit a message first display it. DEL will then delete characters from the end of the text and typing will insert characters onto the end of the

text.

4. **Transmitting a Message**

   If the terminal is in normal terminal mode, pressing FCT followed by the message number 0-9 will transmit the message.

5. **Memory Overflow**

   If at any time the maximum storage capacity is reached subsequent keying will not be echoed to the display but will cause the internal buzzer to sound.

6. **Clearing the Message Store**

   To clear all messages from memory press SFT ST to enter the STATUS mode, then key FCT. This will be acknowledged by the internal buzzer. The message memory is now clear.

3.6 Break Function

A break function may be achieved by pressing FCT twice.

3.7 Control Codes

The terminal responds to control codes as follows:

1. CURSOR RETURN, CONTROL M
   Causes the cursor and the display window to return to the home position. i.e. LH side of the display RAM.

   In addition, if AUTO NEWLINE is selected the LINE FEED FLAG is set.

2. LINE FEED, CONTROL J
   Causes no immediate action but sets a software line feed flag. This causes the cursor and window to home and the display is cleared on the next character. Unless it is a cursor return or line feed.

3. BACKSPACE, CONTROL H
   Causes the cursor to move left one location.

4. CURSOR ADVANCE, CONTROL I
   Causes the cursor to move right one location.

5. BELL, CONTROL G
   Causes the internal buzzer to sound.

6. FORM FEED, CONTROL L
   Immediately causes the cursor and window to home and the display is cleared. (Clears all 48 lines of RAM receive buffer).

3.8 Special Character Display

There is a group of 32 characters available which are displayed in response to commands in the form ESC xx, where xx is a binary number between 80 and 111. For example ESC d will display ⌗. (See special graphics table - Appendix 1).

3.9 XON/XOFF

The terminal has a 40 character FIFO input buffer. XOFF is given when this buffer fills to 30 characters. XON is given when the buffer empties to 29 characters.

The MICROSCRIBE will also respond to XON, XOFF from the host.

3.10 Auto Newline Select/Deselect

DIL SWITCH 8

- ON: Deselected
- OFF: Selected

When selected AUTO NEWLINE causes a line feed to the display on receipt of a carriage return character.

4. Text Editor Mode

The principal text editing functions available are:

- EDIT - either compose a new document or edit an existing document.
- RECEIVE a document via the RS232 interface.
- TRANSMIT a document via the RS232 interface.
- DELETE a document.

There can be up to 9 documents numbered 1-9. Each document may be of any length (providing that the total memory capacity is not exceeded), can be created in any order and may include any of the 128 ASCII characters except DELETE (code 7F). To optimise storage capacity the text is not formatted in memory. If required "soft" carriage-returns and end of page pauses are inserted into the data during transmission. At the user's discretion any line length up to 255 characters or page length up to 255 lines may be selected.

Alternatively the data may be transmitted as a continuous file by setting the line length to zero.

4.1 Edit

From the main menu press E to select Edit. The display then shows the current documents in use by number (1 to 9), Any unused document is signified by ".". After selection of the required document number the new

text may be typed in or existing documents viewed and edited.

To scroll through an existing document there are 2 scroll keys.

▶▶ for forward scroll

◀◀ for backward scroll

Used when the SFT key is held down these scroll keys move the cursor and display directly to the beginning or end of the document.

Used when the CTL key is held down the scroll keys move the cursor backwards and forwards character by character.

Text is entered by typing normally. An erroneous key depression may be corrected by pressing DEL which will delete the last character and move the cursor backwards one position.

CR is carriage return and should be used only at the end of a paragraph or to insert empty lines. The display will automatically start a new line each 40 characters. Sometimes words will appear partly on the top display line and partly on the bottom display line. Do not attempt to correct this by using CR as the document is re-formatted during transmission to produce left-justified text with each line containing only complete words.

LF is line feed and should be used only when the following text is required to be to the right of the last character in the previous line.

To insert text move the cursor to the required position and type. The new characters are automatically inserted and the paragraph will automatically form correctly.

To delete text move the cursor to the beginning of the text to be deleted, hold down CTL and press DEL (hold down for repeated deletions).

To overwrite text move the cursor to the beginning of the text to be overwritten, delete the existing text as before, and type in the new characters. To return to main menu hold down CTL and press S.

4.1.1 Memory Availability Display

After each 256 characters entered an audible tone is given and a number appears in the top right corner of the display. This indicates the number of characters of free memory remaining. The current status can also be interrogated at any time by pressing ST.

4.1.2 Current Document Length

Pressing SFT ST while in Edit mode will cause the display to indicate the current terminal status. The current document length is shown after the letters DL:. Press ST to return to the document.

4.1.3 Search Facility

Pressing CTL 6 while in edit mode will invoke the search facility. This can be used to locate any character sequence up to 10 characters long. When selected the search feature asks for the character sequence (or "string") that requires to be located, and then CR. As soon as CR is pressed the current document being edited is searched from the cursor position forward. If the string is located the display will show this part of document with the cursor resting under the first character.

4.1.4 Speed Insertion Facility

Any phrases stored in the message buffer may be copied to the text by pressing FCT followed by the message number 0 to 9. Also the message buffer may be accessed while in edit mode in the normal way (holding down SFT and pressing FCT - see section 3.5 of this manual for more information).

4.2 Delete

From the main menu press D to select Delete. The display then shows the current documents by number. The document to be deleted can then be selected. Once that document has been deleted the MICROSCRIBE prompts for any further deletions. If it is not required to delete further documents then 0 or CTL 5 will return the user to the main menu.

4.3 Receive

From the main menu press R to select Receive. After selection of the required document number all data received via the keyboard or RS232 port will be stored. Keyboard entries will be transmitted. When all data has been received use CTL 5 to return to the main menu.

4.4 Transmit

From the main menu press S to send a document from the RS232 port. Once the document has been selected the line and page sizes can be set up.

The terminal will ignore any data received during a transmissiion.

4.4.1 Line Length

The display indicates the current line length and allows the selection of any length from 0 to 255 characters. If a line length of 0 is chosen the document is transmitted as a continuous file. Any other length will cause carriage return commands to be inserted into the text during transmission. If a word at the end of the line exceeds the preset line length a carriage return is forced before the word resulting in left-justified text with a ragged right edge, but with each line being made up of only complete words.

4.4.2 Page Length

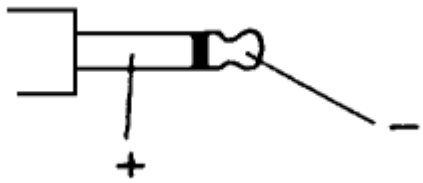
The display indicates the current page length and allows the selection of any length from 0 to 255 lines. When a document is transmitted the terminal will pause at each page boundary for a keyboard response.

4.4.3 Abandoning the Transmission

Any key depression during transmission will abandon transmission and return the terminal to the main menu.

5. Battery Charging

All MICROSCRIBE 'C' models are internally fitted with 4 size AA (0.5 Ah) nickel-cadmium rechargable batteries which require charging via the 'charge' socket at the rear of the terminal. Any 9vdc power supply at 50mA (such as RS 591-073) will provide a full charge in approximately 16 hours but should not be left permanently connected to the instrument.



Charger Plug wiring

For continuous charging it is necessary to reduce the charge current to 25 mA by the use of a series resistor or reduce the charge voltage to 7.5 v.d.c.

6. Power Consumption

To achieve long battery life the MICROSCRIBE conserves power by operating in a sleep/wake mode which is transparent to the user. Power consumption and operational life are therefore dependent on the duty cycle. The current consumption is typically:

- SLEEP MODE: 3.2 mA
- WAKE MODE: 65 mA

The terminal is normally asleep but will wake up momentarily in response to the keyboard or RS232 port.

The MICROSCRIBE Terminal is designed and manufactured in the U.K. by:

TERMINAL TECHNOLOGY LTD
MAESGLAS INDUSTRIAL ESTATE
NEWPORT
GWENT NPT 2NN

TEL : (0633) 841381

Appendix 1. Special Character Table

ESC	80	(P)		96	(`)
	81	(Q)		97	(a)
	82	(R)		98	(b)
	83	(S)		99	(c)
	84	(T)		100	(d)
	85	(U)		101	(e)
	86	(V)		102	(f)
	87	(W)		103	(g)
	88	(X)		104	(h)
	89	(Y)		105	(i)
	90	(Z)		106	(j)
	91	([)		107	(k)
	92	(<-)		108	(l)
	93	(])		109	(m)
	94	(^)		110	(n)
	95	(_)		111	(o)

EDIT COMMAND SUMMARY

Cursor Movement

▶▶	Cursor forward line by line.
◀◀	Cursor back line by line.
CTL ▶▶	Cursor forward character by character.
CTL ◀◀	Cursor back character by character.
SFT ▶▶	Go direct to the end of the document.
SFT ◀◀	Go direct to the beginning of the document.
Delete Character	
DEL	Delete the character to the left of the cursor.
CTL DEL	Delete the character at the cursor position.
Insert Character	Move the cursor to the required location in text, and type the characters to be inserted.
Overwrite	Move the cursor to the required location in text, use CTL DEL to delete the wrong character(s) and then type in the correct text.
Search	CTL 6 invokes the search feature. The text is searched from the cursor position forward to the end of the document. If the phrase is located the cursor is repositioned under the first character. CTL 5: Return to menu.

Credits: Thanks to Phil Casemore for contributing this manual and to CMoS for performing the OCR.