Minitel/MAC

Minitel, VT100 and TTY terminal emulator for the Apple Macintosh

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The following documents MINITEL SERVICES COMPANY's Minitel terminal emulator (Minitel/MAC). This software allows your Macintosh computer to imitate a Minitel, VT100 or TTY terminal.

1.0 Hardware and Operating System Requirements

Minitel/MAC requires the following hardware/software configuration:

- Mac 512KE, Mac Plus, Mac SE, Mac II, Mac IIx or Mac IIcx computer with ROM version 117 or higher (128K ROM)
- System version 3.2 or higher
- A hard disk drive is not required

Minitel/MAC uses the following Macintosh features that are not supported by the 64K ROMs.

i) RAM serial driver
ii) Zoom windows
iii) List manager
iv) The TextEdit procedures TEPinScroll and TEAutoView.

2.0 Installing Minitel/MAC

If you plan to run Minitel/MAC from a floppy disk, no installation has to be done. If you want to run Minitel/MAC from a hard drive, drag all of the files on the distribution diskette to a folder on your hard drive.

3.0 How to run Minitel/MAC

To run Minitel/MAC put the distribution diskette in any floppy drive, then double click on the ICON labelled 'mt.cfg' (this starts Minitel/MAC using the configuration file 'mt.cfg'). If you create other configuration files (using the FILE menu) you will also be able to start Minitel/MAC by double clicking on those configuration files. See Appendix A for more details on starting Minitel/MAC.

Once the Minitel/MAC has started:

i) Review the HELP menus.

ii) Use the OPTION menu to make configuration changes for your system. In particular the modem type, telephone #, and user id/password options should be set. If you have a color MAC, or a MAC that displays multiple grey scales, you should also click the color radio button in the terminal options dialog.

If you don't have a User Id/password yet, don't enter a User Id or password in the User Id/password dialog. The first time that you access the Minitel network you will be assigned a User Id and password. At that time you can go back and enter this information.

iii) Click the LOGON button at the right side of the terminal window to automatically logon to the Minitel network.

3.1 The Minitel Function Keys

A real Minitel terminal has nine special keys (called function keys) that are not on the MAC keyboard. The nine special keys are labelled INDEX, CANCEL, PREVIOUS, REPEAT, GUIDE, CORRECTION, NEXT, SEND and LOCAL/LINE. Since these keys are not available on the MAC keyboard, buttons at the right side of the terminal window are used as replacements. The Minitel special keys also have replacements on the MAC keyboard. For example if a service asks you to press the SEND key you can either click the SEND button or press the ENTER key. The following table shows the mapping of the Minitel function keys to their equivalents on the MAC keyboard.

English Minitel Key Labeling	MAC Key Equivalent(s)	French Minitel Key Labeling
INDEX	[command][I] or [home]	SOMMAIRE
CANCEL	[clear]	ANNULATION
PREVIOUS	[command][-] or [page up]	RETOUR
REPEAT	[command][R]	REPETITION
GUIDE	[command][G]	GUIDE
CORRECTION	[delete]	CORRECTION
NEXT	[command][+] or [page down]	SUITE
SEND	[return]	ENVOI
LOCAL LINE	[command][L]	CONNEXION FIN

From within Minitel/MAC you can select 'Function Key Table...' from the HELP menu to get a table showing the above Minitel function key mapping. Most of the buttons also show their keyboard equivalents. See Appendix D for the complete mapping of the Minitel keyboard to the MAC keyboard.

Of the Minitel function keys the most commonly used ones are SEND which is used like ENTER (or Return) on a normal terminal, CORRECTION which allows you to correct your typing errors (I use this one a lot) and GUIDE which is used to request help from the service you are using. See Appendix G for a more complete description of the uses of the Minitel function keys.

As shown in the above table Minitel/MAC uses the return key and the delete key to emulate the minitel SEND and CORRECTION keys respectively. Occasionally when using Minitel/MAC it is necessary to send a real return or a real delete. This is necessary for example when issuing commands to your modem or a network. Commands to your modem must be followed by a real return and not a minitel SEND. Corrections to errors in modem commands must be made with a delete and not a minitel CORRECTION. The following table shows the key combinations that are used to replace the return and delete keys within Minitel/MAC.

To Send	Use
Real return	[option][return] (i.e. hold down the option key then press return)
Real delete	[option][delete] (i.e. hold down the option key then press delete)

3.2 Using Minitel/MAC

Minitel/MAC has some advantages over a real Minitel. These are described in this section.

3.2.1 Auto-Logon

At the lower right side of the terminal window you will find the following two buttons which control your link with the Minitel network.

Button	Use	Keyboard equivalent
LOGON	Logon to Network	[command][D]
CHNG SRV	Change Service	[command][2]

The LOGON button automatically connects you to the Minitel network. Once you have connected to the Minitel Network you can select a service using the menus.

When you are finished using a service you can click the CHNG SRV button to return you to the menu so that you can select another service.

When you have finished using the Minitel services you can select "Quit & Drop Line" from the File menu to disconnect you from the Minitel network and exit from Minitel/MAC.

3.2.2 Stopwatch timer

An on-screen stopwatch timer is provided to help you keep track of the length of time that you have been connected to a service.

The timer displays the elapsed time since you started Minitel/MAC. The button labelled 'R' beside the time display can be used to reset the timer zero.

3.2.3 Screen clicking

Clicking on a word (or number) on the screen causes that word and a SEND key to be transmitted to the service that you are using. This is useful when a menu is displayed on the screen. When a menu is displayed on the screen, click on the menu option that you want to select and Minitel/MAC will send that option followed by a SEND key to the service. For example suppose that the service you are using displays the following menu.

1. Email
2. Chat
3. Games

.
.
.

10. Other options

Enter # and [SEND] to select an option

If you want to select option three (games) just click on the '3' and Minitel/MAC will send the '3' followed by a SEND key.

When you click on the '3' it is highlighted. The highlighted area lets you know what will be sent when you release the mouse button. If you decide that you don't want that option just move the cursor off of the highlighted area before releasing the mouse button. Clicking a word on the screen behaves just like clicking an on-screen button.

If you had clicked on option '10' both the '1' and the '0' would have been highlighted. Minitel/MAC always selects the entire word surrounding the character that you click on. For the purposes of a selection a word is defined as a sequence of alphanumeric characters (alphanumeric refers to the letters 'A' thru 'Z' and 'a' thru 'z' and the digits '0' thru '9'). In other words when you click on an alphanumeric chararacter Minitel/MAC selects all alphanumeric characters to the left and right of that character. If you click on a non-alphanumeric character, only that character is selected.

Another common type of menu, requires you to enter a string of characters to select an option. For example.

EMAI Electronic Mail
CHAT Online conversation
GAME Play electronic games
.
.
.
OTHE Other options

Enter option followed by [SEND]

In the above example click on the word 'GAME' to play games. After you release the mouse button Minitel/MAC will send the word 'GAME' followed by a SEND key.

To prevent Minitel/MAC from sending a SEND key after sending the selection, hold down the SHIFT key prior to clicking on the word. In some situations you will not want Minitel/MAC to send a SEND key

after the string. For example assume that the above menu included the following extra line at the bottom.

Enter option followed by "?" and [SEND] for Help

In this case, to get help on games, hold down the SHIFT key, click on the word GAME, release the shift key, then click on the question mark character. This causes the word GAME to be sent, followed by a question mark, followed by a SEND key.

Another feature is that if you click on a word that is the name of a Minitel function key, Minitel/MAC will send the value of the function key rather than the word and a SEND key. For example you will often see prompts like the following at the bottom of screens.

Press [PREVIOUS] for previous page
Press [NEXT] for next page
Press [INDEX] to return to menu
Press [GUIDE] for help

In this case the service wants you to press a Minitel function key rather than type in a response. In the above example, click on the word NEXT to go to the next page. Minitel/MAC recognizes this word as the name of a Minitel function key and will send the value for the function key NEXT rather than the word 'NEXT'.

Minitel/MAC recognizes the following function key names.

INDEX	SOMMAIRE
CANCEL	ANNULATION
PREVIOUS	RETOUR
REPEAT	REPETITION
GUIDE	
CORRECTION	
NEXT	SUITE
SEND	ENVOI

The function key names are recognized even if they are in lower case or in mixed case (i.e. some letters of name in upper case and other in lower case). Note that the LOCAL/LINE key is not supported so don't click on the string LOCAL/LINE unless you want the words LOCAL or LINE to be sent.

If you click on a Minitel function key name and the function key name is preceeded by an asterisk, Minitel/MAC will send the asterisk followed by the value of the function key. Preceeding asterisks are used in some services to modify the meaning of a function key (see Appendix G, "Use of the Minitel Function Keys" for more details). Minitel/MAC will find the asterisk even if there are one or more spaces between the asterisk and the function key name.

Occasionally you will want to click on a string that does not match Minitel/MACs definition of a word, for example 'GAME 1'. There is a space between the word GAME and the number one, so if you click on the word GAME only GAME is selected, if you click on the '1', only the '1' is selected. In this case you can use the command key (apple key). Holding down the command key prior to clicking the mouse button tells Minitel/MAC that you want to manually show it where the word starts and ends. To select the word 'GAME 1', hold down the command key, click on the letter 'G' of the word 'GAME' (the letter 'G' will be selected), continue holding down the mouse button and move the mouse to the right (as you move the mouse to the right the characters 'AME 1' will become highlighted). Once you have selected everything, release the mouse button and the string 'GAME 1' followed by a SEND key will be sent. You can use the command and shift keys together to manually select a string and not have the SEND key added at the end. Manually selecting a function key name, such as SEND or a word, such as 'GAME', is the same as automatically selecting them.

4.0 Menus (Commands)

The Minitel/MAC menu bar contains the following titles.

Apple Menu	(see section 4.1)
File	(see section 4.2)
Edit	(see section 4.3)
Options	(see section 4.4)
PF Keys	(see section 4.5)
Help	(see section 4.6)

4.1 Apple Menu

As well as containing a list of available desk accessories this menu also contains the command 'About Minitel/MAC...'. Selecting this

command causes a dialog box containing the application version and copyright notice to be displayed.

4.2 File Menu

The File menu contains the following commands.

```
------------------
New Config
Open Config...          #O
------------------
Close Config            #W
Save Config             #S
Save Config As...
Revert to Saved Config
------------------
Print Screen...         #P
Save Screen...          #S
Load Screen...
Session Capture...
------------------
Run Script...
------------------
Quit                    #E
Quit & Drop Line        #Q
------------------
```

4.2.1 Configuration file commands

The first six commands on the file menu (New, Open, Close, Save, Save As, and Revert to Saved) are used for manipulating configuration files. Configuration files are used to save all of your option and PF Key settings between sessions. A single configuration file, named 'mt.cfg', is provided with Minitel/MAC. It is possible to have more than one configuration file. This is useful if you routinely access more than one service and you need to have different configuration parameters for each. Only one configuration can be active at a time. When a configuration file is active a window appears on the screen with the name of the configuration in the menu bar.

The Close command is used to close the currently active configuration. If any changes have been made to the configuration (via the Options or PF Keys menus), Minitel/MAC will ask you if you want to save your changes to disk prior to closing. The Quit command automatically closes the active configuration (if there is one). You must close the currently active configuration before you can load a

new one. Another way to activate the Close command is to click the 'Close box' at the upper left hand corner of the terminal window. Issuing the Close command when a desk accessory is active causes the currently active desk accessory to be closed.

The Save command saves any changes that you have made to the current configuration (via commands from the Options and PF Keys menus) to disk. Changes made to the configuration are only active for the current session, they must be saved to disk to make them permanent. It is not necessary to use the Save command as Minitel/MAC will automatically ask you if you want your changes saved prior to quitting. The save command is useful in situations where you are worried that a power failure will cause you to lose your changes.

To create a new configuration either the New command or the Save As command can be used.

To create a new configuration with the New command close the current configuration with the Close command, then issue the New command (by selecting New from the File menu). New causes a new configuration to be created containing default values for all of the option settings. The window for the new configuration will appear on the screen with a title of 'Untitled'. Prior to saving this configuration Minitel/MAC will ask you for the name that you want it saved as.

The Save As command creates a copy of the currently active configuration under a different name. A handy way to create new configuration files is to modify the currently active configuration using commands on the Options and PF Key menus, then use the Save As command to save the modified configuration to a new file.

To change configurations use the Close command to close the current configuration, then use the Open command to open a new one. The Open command prompts you for the name of the configuration to be used.

The Revert to Saved command can be used to revert the currently active configuration back to the state it was in when you last saved it to disk. This is handy if you want to make some temporary changes to the current configuration (such as change the terminal type to Black and White), perform some processing (such as printing), then revert back to the original settings.

4.2.2 Saving, Restoring & Printing the screen

4.2.2.1 Minitel emulation

The Print Screen command is used to send the contents of the terminal window to the printer. Printing can also be done off line by saving the screen to a disk file when on line (with the Save Screen command), loading it back again when off line (with the Load Screen command), then printing the screen with the Print command. Color printing is currently not supported. Prior to printing you must set the Terminal type to Black&White (using the Terminal command on the Options menu, or the B&W button at the lower right hand side of the terminal window). Also if you have a color Macintosh you must set the number of colors in the Control Panel (i.e. the Control Panel desk accessory on the Apple Menu) to two prior to printing.

The Save Screen command saves the current contents of the terminal window to a disk file. Before saving the screen Minitel/MAC prompts you for the name of the file in which you want the screen saved. The format in which the screen is saved depends on the 'Screen Save Format' option that you have set. The screen save format options are Minitel/MAC, MacPaint and TEXT. You set the screen save option using the Terminal command on the Options menu. The Minitel/MAC format is the only one that can be loaded back in once it is saved. Files created in this format are compatible with those created by the 'Save Minitel Page(s)..' command of the MACTELL 3 communication package (file type VTEX). Files saved in the MacPaint format (file type 'PNTG') can be loaded and manipulated by Apple's MacPaint application. To save a file in MacPaint format the terminal type must be set to B&W and the number of screen colors must be set to two (same restrictions as printing). Files created in the TEXT format can be loaded and manipulated by a text editor or word processor (file type TEXT).

The Load Screen command is used to load screens saved with the Save Screen command. Only files saved in the Minitel/MAC format can be loaded. It is possible to save screens when on line in the Minitel/MAC format, load them again when off line, then save them in another format such as MacPaint or TEXT. Occasionally screens that you save will not look correct or may be scrambled when you load them. If this happens try using the Terminal command (on the

Options menu) to switch the screen mode from PAGE to SCROLL (or vice versa) and then reload the screen.

4.2.2.2 TTY emulation

During TTY emulation only the TEXT format is available for saving screens. The Save Screen and Print Screen commands cause all data in the terminal buffer to be sent to a file and the printer respectively. The terminal buffer includes all data on and off the screen that can be viewed by using the scroll bars at the right side and bottom of the screen (default is up to 12,000 characters). A subset of the terminal buffer can be printed/saved by selecting the subset with the mouse prior to issuing the Print Screen or Save Screen command.

The are no restrictions on the number of screen colors or terminal settings when printing or saving screens when in the TTY emulation mode.

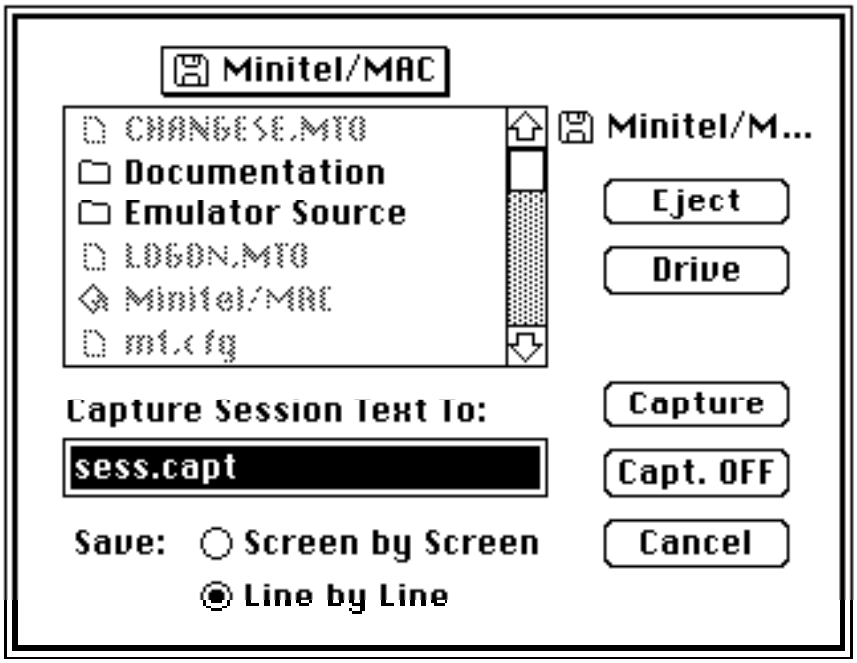
4.2.2.3 VT100 emulation

Currently saving and printing the screen is not supported during VT100 emulation.

4.2.3 Session Capture

The 'Session Capture' command allows you to capture the text portion of an online session to disk. This session capture capablility works for all terminal emulations.(i.e. Minitel, VT100 and TTY).

The 'Session Capture' command causes the following dialog to appear:



To start capturing your session, enter a file name in the 'Capture Session Text To:' text box, use the radio buttons to select a capture technique (explained below), then click the 'Capture' button.

If capture is already on, you can change the capture file name and/or capture technique and then click the 'Capture' button to continue capturing.

If capture is already on and you want to turn it off, click the 'Capt. OFF' button.

Whenever the session is being captured (i.e. capture is on) a check mark appears to the left of the 'Session Capture...' command on the file menu.

The following two capture techniques are available:

4.2.3.1 Line by Line

When using the 'Line by Line' technique Minitel/MAC will write out all text that has been received for the current row of the screen whenever it receives text that is destined for a different row. With this technique you are guaranteed that all received text will be written to the capture file, but you are not guaranteed that the text

will appear in the capture file in the same order that it appears on the screen. For example if a service writes a line of text to row three of the screen and then writes a second line to row one of the screen, then row three will appear in the capture file before row one.

During TTY emulation the 'Line by Line' technique is always used no matter what option you select.

4.2.3.2 Screen by Screen

When using the 'Screen by Screen' capture technique Minitel/MAC writes out all data on the current screen whenever it receives the start of a new screen (i.e. when it receives a clear screen or scroll command). This technique guarantees that text will be written to the capture file in the same order and placement that it appears on the screen, but does not guarantee that all received text will be saved to the capture file. For example in most CHAT services the screen is divided into three sections, a list of users, a received message area, and an area where you type in messages that you are sending. While you are chatting individual sections are rewritten with new data, but the screen is never cleared. Since the entire screen is rarely cleared very little will be written to the capture file. In cases like this you are better off using the 'Line by Line' capture technique.

Which is the best capture technique to use?

Finding out which is the best capture technique to use is a matter of experimentation. You are best off starting with the 'Line by Line' technique since this guarantees that all text will be captured. If when using the 'Line by Line' technique you find that the lines are out of order, try the 'Screen by Screen' technique. In some services the 'Line by Line' technique will be better, while in others the 'Screen by Screen' technique will be better. In fact even within the same service different capture techniques may work better a different times. Luckily, Minitel/Mac allows you to change capture techniques while capturing.

4.2.4 Quit command

The Quit command is used to exit from Minitel/MAC (return to the finder). The Quit command does not drop the line, so use it only when you want to temporarily exit from Minitel/MAC. Remember you are billed by how long the line is active, so if you forget to

reactivate Minitel/MAC later to drop the line you could end up paying quite a large bill[1].

If there is an active configuration and it has been changed, Minitel/MAC will ask you if you want to save the changes to that configuration. Clicking CANCEL here will cancel the quit command (also no save will be done).

4.2.5 Quit & Drop Line command

The Quit & Drop Line command is the same as the Quit command except that it drops the line before quitting[2].

4.2.6 Run Script command

The Run Script command allows you to run a script language program created with the MTC compiler (provided with Minitel/MAC). See Appendix E for a complete discription of the Minitel/MAC script language. Scripts can also be run by assigning them to program function keys (see section 4.5).

4.3 Edit Menu

The Edit menu contains the following commands.

Undo	#Z
Cut	#X
Copy	#C
Paste	#V
Clear	
Select All	

[1]You can also drop the line by turning off your modem.
[2]For HAYES modems the line is dropped by first sending three plus signs (+++) to go into local mode and then issuing the ATH command. For other types of modems the line is dropped by dropping the RS232 DTR signal. In Minitel mode a LOCAL LINE key is sent prior to dropping the line to disconnect from the current service. If a LOGOFF_SCRIPT parameter is present in the configuration file a LOCAL LINE key is not sent and the logoff script is run before dropping the line.

The Edit menu is only available when a desk accessory is active and during TTY emulation. See Appendix I (TTY emulation) for a complete description of the edit menu during TTY emulation. The use of the Edit menu when a desk accessory is active depends on the desk accessory.

4.4 Options Menu

The Options menu contains the following commands.

Modem...
Telephone #...
User ID...

Terminal...
Communications...
Modem Config...

Emulate Minitel
Emulate VT100
Emulate TTY

The commands on the options menu are used to set your preferences and to set parameters necessary for the operation of Minitel/MAC.

4.4.1 Modem Command

The Modem command is used to tell Minitel/MAC what type of modem that you have connected to your computer.

If you have an Apple Modem with no auto-dial capability, select one of the 'Universal Apple Modem' options.

If you have a Hayes modem or a modem with a Hayes-compatible 'AT' command set, select one of the Hayes options. The number in the Hayes options indicates the maximum speed of the modem.

If you have a non-Apple modem with no auto dial capability, select option six, 'Manual Dial'.

If you have an auto-dial modem that does not have a Hayes-compatible 'AT' command set, select option seven, 'Other'. If you select 'Other' here, you must use the Modem Config command to tell Minitel/MAC how to use your modem.

Note:

If you select the Manual Dial, Other, or Direct modem options you will have to manually set the speed of the serial interface using the Communications command on the options menu.

4.4.2 Telephone # Command

The Telephone # command is used to tell Minitel/MAC which telephone number to use when dialing a remote system.

To enter a phone # perform the following steps:

i) Scroll through the list provided to find your local access number (or the closest number available). Once you have found the number click on it and the number will be placed in the Telephone # data entry field.

ii) If the number that you selected is a long distance call, click the 'Long distance call' check box, this causes the area code to be prepended to the number.

iii) If you must dial a nine to get an outside line, click the 'Dial 9 for outside line' check box, this causes a '9,' to be prepended to the number. If you have another number such as 8 that you must dial to get an outside line, you can manually change the 9 to an 8. With a Hayes modem the comma causes a temporary delay during dialing. If your phone system does not require a delay after the 9 is dialed, you can manually delete the comma from the string. If you have a modem that is not Hayes compatible, you must change the comma to the delay character that is required for your modem.

iv) If you have touch tone service and you want to take advantage of it to speed up auto-dialing, click the 'Tone tone service' check box, this causes a 'T' to be prepended to the number. The 'T' is the instruction to tell a Hayes modem to use tone dialing. If you have a modem that is not Hayes compatible, do not click this check box.

v) If you have a non-Hayes compatible auto-dial modem that does not accept round brackets or dashes in the number then you must manually delete these characters from the number.

Note:

For steps iii), iv) and v) above, do not perform any manual editing of the telephone number until after you have set the check boxes to the desired values. Clicking the check boxes causes your changes to be deleted.

4.4.3 User Id Command

If you use this command to enter your User Id and password Minitel/MAC will automatically supply them to the network for you during auto-logon. This saves you from manually having to enter them each time you log on or change services.

The User Id and Password that you enter are stored in the configuration file (usually 'mt.cfg'). Be sure not to give anyone a copy of this file. If you are security conscious you may want to enter your User Id only and leave the password field blank. This way Minitel/MAC will automatically supply your User Id during auto-logon, but you must manually enter your password.

4.4.4 Terminal Command

This command allows you to modify parameters that are specific to the type of terminal that you are emulating. The dialog that appears is different depending on whether you are currently emulating a Minitel, VT100 or a TTY terminal.

4.4.4.1 Minitel Emulation

The 'Screen Mode' radio button allows you to set the terminal to either PAGE or SCROLL mode. In SCROLL mode attempting to move the cursor below the bottom line causes the screen to scroll up and moving it above the top line causes the screen to to scroll down. In PAGE mode moving the cursor below the bottom line causes it to move to the top and moving it above the top line causes it to move to the bottom. Normally there is no reason for switching from the default mode of PAGE as the HOST service that is sending data to your terminal will automatically switch the mode as required. Occasionally you may have to manually switch to SCROLL mode to 'Load Screens' that use the scrolling feature of the terminal. See the 'Load Screens' command (section 4.2.2) for more details.

The 'Terminal Type' radio buttons determine whether Minitel/MAC will display its output in color or in black and white (B&W)[3]. If your hardware is capable of displaying at least eight colors or grey levels, set the terminal type to COLOR, otherwise set it to B&W. When the terminal type is set to B&W Minitel/MAC uses different patterns to simulate the eight Minitel colors.

If the Local Echo check box is set Minitel/MAC will echo all characters typed at the keyboard to the screen as well as sending them to the remote system. This option is not normally required.If two copies of everthing that you type appears on the screen, turn this option OFF (i.e. uncheck the box).

Setting the 'X.3 Pad Compatibility' check box causes Minitel/MAC to send a different set of codes when the Minitel function keys are pressed (or clicked). These alternate set of codes are compatible with X.3 pads. Only use this option if specifically required by the service that you are using.

The 'Screen Save Format' radio buttons determine the format in which the screen is saved with the File menu Save Screen command.See section 4.2.2 for more details.

4.4.4.2 VT100 Emulation

Setting the 'Local Echo' check box causes characters typed at the keyboard to be echoed to the screen as well as sent to the remote system. Set this check box if you do not see anything on the screen when entering data at the keyboard. If two copies of everthing that you type appears on the screen, turn this option OFF (i.e. uncheck the box).

The 'Wrap text at right margin' check box determines what will happen when there is an attempt to write data past the right most column of the screen[4]. If this check box is set the cursor will advance to the first column of the next row. If this check box is not set the cursor will stay on the right most column of the row.

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[3]The terminal type can also be switched between B&W and COLOR by using the B&W/COLOR button at the lower right side of the terminal window.
[4]The right most column of the screen is either column 80 or column 132 depending on whether the terminal is is 80 or 132 column mode.

The 'Send Backspace when delete key pressed' check box determines what will be sent when the delete key on the Macintosh keyboard is pressed. If the check box is set Minitel/MAC will send a backspace character (hex 8) when the delete key is pressed and a delete character (hex 7f) when the option key is held down and and the delete key is pressed. If the check box is not set Minitel/MAC will send a delete character when the delete key is pressed and a backspace character when the option key is held down and the delete key is pressed.

The 'Margin Bell' checkbox enables or disables the terminal margin bell. When the 'Margin Bell' checkbox is set and the 'Local Echo' checkbox is set the terminal will beep when you type past column 72 in 80 column mode and column 124 when in 132 column mode.

The 'UK character set' check box causes a British pound symbol (£) to be displayed on the screen in place of the North American pound symbol (#).

The 'Line Feed/New Line mode' check box enables/disables the VT100 feature of the same name. Setting this check box has the following effects:

i) Typing a CR (hex D) at the keyboard causes both a CR and LF (hex A) to be sent to the remote system.

ii) When a LF is received from the remote system both a CR and LF are displayed on the screen.

Use this option only is specifically required by the service that you are using.

The '9 point' and '12 point' radio buttons determine the size of the characters displayed on the screen. The '9 point' characters are smaller and allow 80 columns of information to be displayed on a small screen Macintosh (MAC Plus or SE). If you have a large screen Macintosh (Mac II, IIx, IIcx, etc) you will probably want to use the '12 point' setting in 80 column mode and the '9 point setting in 132 column mode.

The '80 columns' and '132 columns' radio button are used to put the terminal into 80 column mode and 132 column mode respectively. Normally you should leave this setting at the default value of 80

since most services that require 132 column mode will automatically switch you into the required mode and back when needed.

The 'Answerback' field determines the value that is sent when the remote system requests an answerback. Unless the service that you are using requires a specific answerback you can leave the default value in this field.

4.4.4.3 TTY Emulation

Setting the 'Local Echo' check box causes characters typed at the keyboard to be echoed to the screen as well as sent to the remote system. Set this check box if you do not see anything on the screen when entering data at the keyboard. If two copies of everthing that you type appears on the screen, turn this option OFF (i.e. uncheck the box).

Setting the 'Wrap text at right edge of window' check box affects what happens when data is written past the right edge of the window. With this option checked data wraps to the next line on word boundaries. With this option OFF (not checked) data is written past the right edge. In this mode you must use the horizontal scroll bar (the one at the bottom of the window) to see data past the left or right edges of the window.

4.4.5 Communications Command

This command allows you to set the communication parameters used on the serial interface that connects your Macintosh to the modem. You will not normally have to use this command as the defaults on this screen will work for most configurations.

The Speed radio buttons set the speed of the serial interface in bits per second. The first five options in the Modem command dialog automatically set the speed when they are selected. If you select one of the other modem options, you will have to manually set the speed. If you are using a modem such as a Microcom with allows you to set a speed between your computer and modem that is different than the one between your modem and the remote modem, set the speed radio button to the speed between your computer and modem. In this case, if the speed that you select is greater than the maximum speed supported at the phone number that you selected in the Telephone # dialog, the first time you LOGON you will be asked if you

want to reduce the speed to the max supported at that number (click NO).

The Parity, Data Bits and Stop Bits radio buttons set the remaining parameters on the serial interface. Most teletel (Minitel) services require even parity, 7 data bits and 1 stop bit. If these settings do not work (i.e. data is garbled), check with your service provider to find out which settings are required.

The Connector radio buttons allow you to specify to which of the Macintosh serial ports your modem is connected. In the vast majority of cases you should connect your modem to the modem port.

Use the Flowcontrol radio button to set the flowcontrol as required by the service and modem that you are using. When accessing TTY services XON/XOFF flowcontrol is often used to keep you from losing data. CTS/RTS protocol is often required to keep you from losing data with modems that perform error correction or data compression (such as the Microcom). A flowcontrol setting of XON/XOFF is ignored during Minitel emulation mode (i.e. setting the flowcontrol to XON/XOFF in Minitel mode is the same as a flowcontrol setting of NONE).

4.4.6 Modem Config Command

The Modem Config command is only necessary if you selected a modem type of Other in the modem dialog. It may also be necessary if you selected one of the Hayes modem options and you have a Hayes compatible modem that is not completely compatible with a real Hayes modem (such as a Microcom in Hayes mode).

The following sections describe each of the fields in the modem configuration dialog.

Modem Initialization String

This is the string that must be sent to your modem to prepare it for a dial command. This string can also be used for a command to set the modem to a particular configuration. Entering a value in this field is optional. An example value for the Hayes modem is 'ATE1^M' [5] (turn on local echo in command mode).

[5]The '^M' in this example is a digraph meaning 'control M'. This particular digraph represents a carriage return (CR). See Appendix F (Entering Control Characters) for a complete description of how to represent control characters in strings.

Modem Response

Enter the string that the modem will send back in response to the modem init string. Entering a value in response to this prompt is optional. For the Hayes modem the response would be '^M^JOK^M^J' (i.e. CR LF OK CR LF).

Modem Dial Prefix

This is the string that must precede the telephone number in a modem dial command. When issuing a dial request to the modem Minitel/MAC first sends the modem dial prefix, followed by the telephone number, followed by the modem dial suffix. For the Hayes modem the modem dial prefix is 'ATD'.

Modem Dial Suffix

This is the string that follows the telephone number in a modem dial command. When issuing a dial request to the modem Minitel/MAC first sends the modem dial prefix, followed by the telephone number, followed by the modem dial suffix. For the Hayes modem the modem dial suffix is '^M' (CR).

Success Responses

In response to this prompt you must enter all of the possible strings that the modem can send back to indicate a successful dial attempt. If you do not enter any success responses then Minitel/MAC will check for either an OFF to ON transition of carrier or a user command to determine success. The following list shows all possible success responses for the Hayes modem.

^M^JCONNECT^M^J
^M^JCONNECT 1200^M^J
^M^JCONNECT 600^M^J
^M^JCONNECT 2400^M^J

Up to eight modem success responses can be entered.

Failure Responses

A failure response is a string sent by the modem to indicate that a dial attempt has failed. The following list shows all possible failure responses for the Hayes modem.

^M^JNO CARRIER^M^J
^M^JBUSY^M^J
^M^JNO ANSWER^M^J
^M^JERROR^M^J
^M^JNO DIALTONE^M^J

Up to eight modem failure responses can be entered. Entering failure responses is not required but the advantage of using them is that the dial command will be able to detect a failure immediately rather than waiting for a timeout. A dial attempt will fail when a failure response is received, a timeout occurs or the user presses the ESC key or [command][.] during a dial attempt.

4.4.7 Minitel Emulation Command

If not already emulating a Minitel terminal this command causes Minitel/MAC to start emulating a Minitel terminal.

4.4.8 VT100 Emulation Command

If not already emulating a VT100 terminal this command causes Minitel/MAC to start emulating a VT100 terminal.

4.4.9 TTY Emulation Command

If not already emulating a TTY terminal this command causes Minitel/MAC to start emulating a TTY terminal.

4.5 PK Keys Menu

The PF Keys menu contains the following commands.

PF1 - #D
PF2 - #2
PF3 - #3
PF4 - #4
PF5 - #5
PF6 - #6
PF7 - #7
PF8 - #8
PF9 - #9

Minitel/MAC29 12/31/22
PF0 - #0

Modify...

The program function keys are used to extend the functionality of Minitel/MAC by adding your own commands.

A program function key can be used to execute a script language program (see Appendix E for instructions on writing your own script language programs) or to cause a pre-defined series of characters to be sent to the remote system as if they were typed at the keyboard.

The Modify command is used to modify the values of the program function keys. The Modify dialog allows you to enter a value for each of the ten program function keys. A pair of radio buttons for each key allows you to specify whether the value of that key represents a string to be sent to the remote system or the name of a file containing a script language program to be run.

The following special script file names (including the angle brackets) can also be assigned to program function keys.

<DROPLINE/QUIT>	This value causes Minitel/MAC to drop the line then exit to the Finder.
<DROPLINE>	This value causes Minitel/MAC to drop the line. Same as the above value except Minitel/MAC does not exit to the finder.
<QUIT>	This value cause Minitel/MAC to exit to the finder without dropping the line.

During Minitel emulation the program function keys PF1, PF2 and PF4 are set (in the default configuration file 'mt.cfg') to perform the following functions.

PF1 LOGON TO NETWORK
Automatically dial and log on to the network. This is normally the first command that you will issue after starting Minitel/MAC.

PF2 CHANGE SERVICE
When connected to a service this command can be used to return you to the service menu so that you can select a new service.

PF4 NETWORK LOGON
If you have an auto dial modem that does not work with PF1, you can manually instruct your modem to dial and then issue this command to logon to the network.

The remaining program function keys are unassigned and can be used to add your own commands to Minitel/MAC. During TTY emulation all ten program function keys are available to add new commands to Minitel/MAC.

During Minitel emulation the program function keys PF1 and PF2 can also be started by the buttons (LOGON and CHANGSE respectively) at the lower right side of the terminal window.

It is possible for the PF1, PF2 and PF4 commands to fail for a number of reasons, including, a bad communication line, a service not available, or network failure. See Appendix H (Error Messages) for a list of possible errors and instructions on how to recover in case of an error.

4.6 Help Menu

The help menu contains the following commands.

Read Me First...
Function Key Table... #H

Getting Started...
When Quitting...

The commands on the help menu explain the basics of using Minitel/MAC for people who don't have time to read the manual (obviously you're not one of them).

The Read Me First command provides a brief explanation of the Minitel function keys for those who are not familiar with a real Minitel terminal.

The Function Key Table command displays a table showing the keyboard equivalent and the French Name of each of nine Minitel function keys. In some services the Minitel function keys are known by their French names.

The Getting Started command gives you a list of the minimum number of things that you must do to setup Minitel/MAC.

The When Quitting command provides brief explanation of the commands for quitting from Minitel/MAC.

The help menu is not available during TTY or VT100 emulation.

APPENDIX A Starting Minitel/MAC

During startup Minitel/MAC reads the contents of a configuration file to determine hardware specific information and obtain function key and terminal settings (See Appendix C for a complete description of the configuration file). If you start Minitel/MAC by double clicking on the Minitel/MAC icon, the configuration file 'MT.CFG' will be used by default. In this case if the file 'MT.CFG' is not found in the same folder as the Minitel/MAC icon, a new configuration file with the name 'MT.CFG' is automatically created.

It is possible to have more than one configuration file. This is useful if you routinely access more than one service and you need to have different configuration parameters for each. For instructions on creating a new configuration file refer to section 4.2.1 (Configuration file commands) of this manual.

To start Minitel/MAC with a configuration file other than 'MT.CFG' double click on the icon for that configuration file.

Minitel/MAC can also be started by double clicking on the icon of a script program. In this case the script program will be run immediately after Minitel/MAC has started.

If you want to start Minitel/MAC with a configuration file other than 'MT.CFG' and also run a script program, select both the script program and configuration file icons, then double click on either one of them.

APPENDIX B Files that are distributed with Minitel/MAC

The following files are distributed with Minitel/MAC.

MINITEL	The Minitel/MAC Minitel terminal emulator
Minitel/MAC Manual	The file that you are now reading.
PHONE.DAT	Minitel Services Company telephone access listing (used by the Telephone # command).
mtc	Script Language Compiler
LOGON.MTO	Script language program to dial and logon to the Minitel Services Company network (needed by the Minitel/MAC PF1 command)
logon.mt	Source code for the above program
CHANGESE.MTO	Script language program which causes a disconnect from the current service and returns you to the menu so that you can select a new service (needed by the Minitel/MAC PF2 command)
changese.mt	Source code for the above program
NETLOGON.MTO	Script language program to that logs on to the Minitel service network (needed by the Minitel/MAC PF1, PF2 and PF4 commands)
netlogon.mt	Source code for the above program
mt.cfg	Default configuration file

APPENDIX C Configuration parameters

This section describes the parameters in the Minitel/MAC configuration files. Configuration files have a file type of 'TEXT' and a creator of 'MTRM'. The configuration files contain one parameter per line. Lines are separated by carriage return characters (hex d). All lines have the following format.

parameter_name=parameter_value

The equal sign (hex 3D) separates the parameter name from its value. Control characters can be specified in the parameter value by using a circumflex (^) followed by another character. For example ^M (control M) can be used to specify a carriage return. Two circumflexes in a row can be used to specify a circumflex. See Appendix F for a detailed discussion on entering control characters in strings. The configuration lines are stored in the data fork of the file.

The following table describes all of the configuration parameters that are implemented in this version of Minitel/MAC.

C.1 Modem Paramters

Parameter Name	Type	Description
MODEM	int	Describes the type of modem. Valid values are: 0 = HAYES300 2 = HAYES1200 4 = HAYES2400 6 = MANUAL 7 = DIRECT 8 = OTHER 9 = APPLE 300 10 = APPLE 1200
MODEM_INIT	char	Command that must be sent to initialize the modem (if any)
MODEM_RESPONSE	char	String that the modem sends in response to the initialization command.
MODEM_DIAL_PREFIX	char	String that must prefix the telephone number in a dial command
MODEM_DIAL_SUFFIX	char	String that must follow the telephone

		number in a dial command
MODEM_SUCCESS	char	Specifies a successful response to a modem dial request. There can be more than one of these parameters present if there is more than one success response (maximum of ten).
MODEM_FAILURE	char	Specifies a failure response to a modem dial request. There can be more than one of these parameters present if there is more than one failure response (maximum of ten).

C.2 User Information

Parameter Name	Type	Description
PHONE	char	Telephone number of nearest Minitel Services Company node (used when dialing)
LONGPHONE	char	Original version of the telephone # as it appears in the file PHONE.DAT
MAXSPEED	int	The maximum line speed supported at the telephone # in LONGPHONE. When dialing, the current line speed is checked to see if it exceeds MAXSPEED, if so, you are asked if you want to reduce the speed.
USERID	char	Network User ID
PASSWORD	char	Network password
LOGOFF_SCRIPT	char	Name of a script language program to be run whenever the line is dropped (prior to dropping the line).
SERVICE	char	Network service

C.3 Communication Parameters

Parameter Name	Type	Description
COMMPORT	int	Serial interface to use for communications (0=Printer port, 1=Modem port)
SPEED	int	Communications speed in bits per second (one of 300, 1200, 2400, 4800, 9600, 19200)
PARITY	char	Parity (one of O,E,N,S = ODD, EVEN, NONE, SPACE respectively)
DATABITS	int	Data Bits (either 7 or 8)
STOPBITS	int	Stop Bits (either 1 or 2)
BREAK_LEN	int	Duration of BREAK signal in milliseconds (used by the Command 'B' and Option 'B' commands)
CARRIER_DETECTABLE	int	This parameter informs Minitel/MAC if the presence of carrier is detectable by looking at the state of the RS232 CD pin. In the current version of Minitel/MAC the carrier is never detectable (0=carrier not detectable, non_zero=carrier detectable). This flag affects whether or not the 'C', 'L' connection indicator is displayed on the screen.
FLOWCONTROL	int	This parameter can have one of the following values. 0 = NONE 1 = XON/XOFF 2 = CTS/RTS hardware protocol (a setting of XON/XOFF is ignored during Minitel emulation)

C.4 Display Parameters

Parameter Name	Type	Description
DISPLAY_ADAPTOR	int	How to display output on the screen (0 = Black & White with dithering, 1 = Color)

C.5 Program Function Keys

Parameter Name	Type	Description
PF1	char	Setting of program function key 1
PF2	char	Setting of program function key 2
PF3	char	Setting of program function key 3
PF4	char	Setting of program function key 4
PF5	char	Setting of program function key 5
PF6	char	Setting of program function key 6
PF7	char	Setting of program function key 7
PF8	char	Setting of program function key 8
PF9	char	Setting of program function key 9
PF10	char	Setting of program function key 10

Each program function key value is either blank or has the following format.

Positions	Meaning
1	Type of value stored in the key. Must be one of the following. M - A MACRO (script language program) to be run S - A string to be sent
2	A single dash character ('-', hex 2D). This is just a separator to make the line readable.
3-	Function key value. Key Type: Meaning of value M: Name of file containing a the script language program to be run when this key is

pressed.

S — String to be sent to the remote system when this key is pressed. Control characters can be specified in this string by using a circumflex (^) followed by another character (See Appendix F).

e.g.
To assign a HAYES dial command to program function key five the following line could be added to the configuration file.

```
PF5=S-ATDP438-8304^M
^    ^ ^           ^
|    | |           |
|    | |           The ^M specifies a carriage return
|    |  Program function key value
|    Program function key type
Names the program function key to be set
```

The following special values can also be assigned to program function keys.

M-<DROPLINE/QUIT>	This value causes Minitel/MAC to drop the line then exit to the Finder.
M-<DROPLINE>	This value causes Minitel/MAC to drop the line. Same as the above value except Minitel/MAC does not exit to the Finder.
M-<QUIT>	This value causes Minitel/MAC to exit to the Finder without dropping the line.

C.6 Terminal Parameters

Parameter Name	Type	Description
EMULATION	int	Type of emulation to perform (0=TTY, 1=MINITEL, 2=VT100).
ASCIIMODE	int	Type of emulation to switch to when a Teletel to Ascii switch is requested by the remote system (0=TTY, 1=MINITEL, 2=VT100).
LOCAL_ECHO	int	Local echo on or off (0=OFF,

		non_zero=ON).
PAGE_MODE	int	Page or scroll mode flag (0=SCROLL MODE, non-zero=PAGE MODE).
X3_MODE	int	X.3 pad compatibility mode enabled flag (0=OFF, non_zero=ON).
MTSAVEMODE	int	The format in which screens are saved with the Save Screen command during Minitel emulation (0=Minitel/MAC, 1=MacPaint, 2=TEXT).
TEXTWRAP	int	Wrap text at right edge of window during TTY emulation (0=don't wrap text, non_zero=wrap text).
TTYBUFCHARS	int	The maximum number of characters to keep in the terminal buffer at one time during TTY emulation (default 12,000)
TTYBUFDEL	int	The number of characters to delete from the TTY terminal buffer whenever TTYBUFCHARS is exceeded (default 6000)
TTYFONTTYPE	char	The name of the font to use on the screen during TTY terminal emulation. For best results this should be a fixed width font. The default font type is 'VT100'.
TTYFONTSIZE	int	The font size to use during TTY emulation. The default is 9 (meaning 9 point)
VTANSWERBACK	char	During VT100 emulation this is the string that Minitel/MAC will send to the remote system when an answerback is requested.
VTBSDELETE	int	During VT100 emulation this flag determines what will be sent when the delete key is pressed on the MAC keyboard (0=delete, non-zero=backspace).

VTFONTSIZE	int	During VT100 emulation this is the size of the font that will be used for the characters on the screen (9=9 point, 12=12point).
VTLINEWRAP	int	VT100 line wrap mode flag (0=no line wrap, non-zero=line wrap).
VTMARGINBELL	int	VT100 margin bell flag (0=disable bell, non-zero=enable bell).
VTUKSET	int	VT100 UK character set flag (0=use North American character set, non-zero=use UK character set).
VTWIDESCREEN	int	VT100 screen width flag (0=80 column mode, non-zero=132 column mode).
VT_LF_NL	int	VT100 Line Feed/New Line mode flag (0=OFF, non-zero=ON).

APPENDIX D Keyboard Mapping

The following describes the mapping of the Minitel keyboard to the Macintosh keyboard.

Single Codes

Code Sent (in hex)	Character	Minitel Key(s)	MAC Key(s)
00	NUL	Ctrl'	Ctrl @
01	SOH	Ctrl A	
02	STX	Ctrl B	
03	ETX	Ctrl C	
04	EOT	Ctrl D	
05	ENQ	Ctrl E	
06	ACK	Ctrl F	
07	BEL	Ctrl G	
08	BS	Ctrl H	
09	HT	Ctrl I	
0A	LF	Ctrl J or Ctrl: Ctrl J	
0B	VT	Ctrl K or Ctrl; Ctrl K	
0C	FF	Ctrl L	
0D	CR	Ctrl M or Enter Ctrl M	
0E	SO	Ctrl N	
0F	SI	Ctrl O	
10	DLE	Ctrl P	
11	Cursor ON	Ctrl Q	
12	REP	Ctrl R	
13	SEP	Ctrl S	
14	Cursor OFF	Ctrl T	
15	NACK	Ctrl U	
16	SYN	Ctrl V	
17	ETB	Ctrl W	
18	CAN	Ctrl X	
19	SS2	Ctrl Y	
1A	SUB	Ctrl Z	
1B	ESC	Esc	Esc or Ctrl [
1C	FS	Ctrl ,	Ctrl | or Ctrl \
1D	SS3	Ctrl -	Ctrl } or Ctrl]
1E	RS	Ctrl .	Ctrl ^
1F	US	Ctrl ?	Ctrl _
20	Space	Spacebar	Spacebar
21	!	SK 1	**

22	"	SK 2	**
23	#	# or SK 3	**
24	$	SK 4	**
25	%	SK 5	**
26	&	SK 6	**
27	'	'or SK 7	**
28	(	SK 8	**
29	)	SK 9	**
2A	*	* or SK :	**
2B	+	SK ;	**
2C	,	,	**
2D	-	-	**
2E	.	.	**
2F	Box with diagonal line	SK ?	/
30	0	0	
31	1	1	
32	2	2	
33	3	3	
34	4	4	
35	5	5	
36	6	6	
37	7	7	
38	8	8	
39	9	9	
3A	:	:	
3B	;	;	
3C	<	SK ,	**
3D	=	SK -	**
3E	>	SK .	**
3F	?	?	**
40	@	SK '	**
41	A	A	Shift A
42	B	B	Shift B
43	C	C	Shift C
44	D	D	Shift D
45	E	E	Shift E
46	F	F	Shift F
47	G	G	Shift G
48	H	H	Shift H
49	I	I	Shift I
4A	J	J	Shift J
4B	K	K	Shift K
4C	L	L	Shift L
4D	M	M	Shift M
4E	N	N	Shift N
4F	O	O	Shift O

50	P	P	Shift P
51	Q	Q	Shift Q
52	R	R	Shift R
53	S	S	Shift S
54	T	T	Shift T
55	U	U	Shift U
56	V	V	Shift V
57	W	W	Shift W
58	X	X	Shift X
59	Y	Y	Shift Y
5A	Z	Z	Shift Z
5B	[	SK *	**
5C	10 o'clock diagonal line	SK Cancel	\
5D	]	SK #	**
5E	Up Arrow	SK 0	^
5F	Low horizontal line	Ctrl 6	_
60	Middle horizontal line	Ctrl 5	`
61	a	SK A	A
62	b	SK B	B
63	c	SK C	C
64	d	SK D	D
65	e	SK E	E
66	f	SK F	F
67	g	SK G	G
68	h	SK H	H
69	i	SK I	I
6A	j	SK J	J
6B	k	SK K	K
6C	l	SK L	L
6D	m	SK M	M
6E	n	SK N	N
6F	o	SK O	O
70	p	SK P	P
71	q	SK Q	Q
72	r	SK R	R
73	s	SK S	S
74	t	SK T	T
75	u	SK U	U
76	v	SK V	V
77	w	SK W	W
78	x	SK X	X
79	y	SK Y	Y
7A	z	SK Z	Z
7B	Left vertical line	Ctrl 1 or SK	{

		repeat	
7C	Middle vertical line	Ctrl 2	|
7D	Right vertical line	Ctrl 3 or SK send	}
7E	Upper horizontal line	Ctrl 4	~
7F	Filled in Box	Ctrl <--	Ctrl delete

Sequences of two or three codes

Code sent (in hex)	Character	Minitel Key(s)	MAC Key(s)
19,23	British Pound	Ctrl Cancel	option 3
19,27	Section Mark	SK Erase	option .
19,2C	Left Arrow	Ctrl 8	option s
19,2E	Right Arrow	Ctrl 9	option g
19,2F	Down arrow	Ctrl #	option 2
19,30	Degree	Ctrl O	shift option 8
19,31	Plus or minus symbol	Ctrl *	shift option =
19,38	+	Ctrl 7	**
19,41	` (grave accent)	SK Next	option `
19,42	' (accute accent)	SK Previous	option e
19,43	^ (circumflex)	SK Index	option i
19,48	umlaut	SK Guide	option u
19,4B,63	c with cedilla	Ctrl Erase	option c
19,6A	upper case diphthong 'OE'	Ctrl Previous	shift option q
19,7A	lower case diphthong 'oe'	Ctrl Repeat	option q
19,7B	Beta	Ctrl Next	option b

Sequences sent by function keys

Key or Combination of keys	MAC Key	Codes Sent
Send	Enter	13,41
Previous	Command - or page up	13,42
Repeat	Command R	13,43
Guide	Command G	13,44
Cancel	clear or end	13,45
Index	Command I or home	13,46
Correction	delete (non X.3 mode only)	13,47
Next	Command + or page down	13,48
Line/Local	Command L	13,49-Modem
SK Line/Local	(not supported on MAC)	13,49-Socket
Ctrl Line/Local	Command B	Break to modem

Notes:

i) SK refers to the Special key on Minitel and the Shift key on the MAC
ii) Where there is no MAC key specified the MAC key is the same as the Minitel key.
iii) '**' Means to use the Key marked for this purpose on your particular keyboard.
iv) Command refers to the command or apple key on the Macintosh keyboard.
v) Option refers to the option key on the Macintosh keyboard.

APPENDIX E Minitel/MAC Script Language

This section decribes the Minitel/MAC script language.

E.1 Script Language Compiler (MTC)

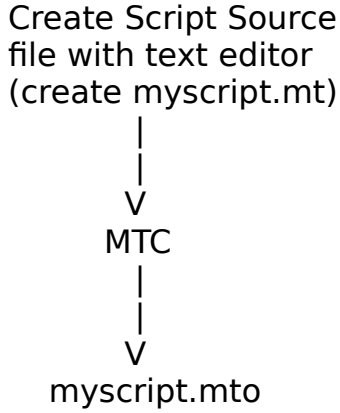
To create a script language program any text editor which creates a TEXT format file can be used. The Minitel/MAC script language is a semi-compiled language. Once a script program has been created it must be compiled by the application 'MTC' (Minitel/MAC Compiler) before it can be executed. MTC checks the source for syntax errors and produces a compiled program as its result. Script source files are expected to have an extension of 'MT'. MTC gives compiled scripts an extension of 'MTO' (Minitel/MAC Object).

To compile a script with MTC double click on the MTC icon then type the name of the file containing the program to be compiled when you see the following prompt.

'Source file name ?'.

It is not necessary to specify the '.MT' extension of the source file name.

If you enter a carriage return only in response to the source file prompt, MTC will prompt you to enter the program source at the terminal. The following diagram illustrates the script creation process.



E.2 Running a Script Language Program

Scripts can be started by assigning them to a program function key then pressing the program function key at run time, by using the Run Script command on the file menu or by double clicking on a script program icon in the Finder. Only one script language program should be specified at program startup. If more than one is specified, only one is run.

While a script language program is running a reverse video 'M' appears on column 40 of the status row. A running script language program can be aborted at any time by pressing the ESC key or by holding down the Command key and pressing the period key ('.').

E.3 Script Language Description

A Minitel/MAC script language program consists of a series of statements. Each statement can be preceeded by a label. A label consists of up to 15 alphanumeric characters (and underscore) followed by a colon. The first character of a label must be alphabetic. Comments can be placed anywhere in a program by enclosing the comment within curly brackets ({}). The END directive must follow the last statement of a script language program (the END directive is a message to the script language compiler (MTC) informing it that it has reached the end of the program).

The following describes all of the script language statements.

E.3.1 DIAL statement

The dial statement causes the modem to dial the Minitel Services Company node using the Phone number and modem information from the Minitel/MAC configuration file. If the dial attempt fails, the script language program is aborted and a failure message is printed on the screen. The DIAL command supports all required modems for the HOST machine. For example on the MAC the DIAL command supports the Apple modems, HAYES modems, MANUAL dial modems, DIRECT modems and any command driven auto dial modem.

The following algorithm details the logic used by the DIAL command:

a) If the modem type is direct, terminate successfully otherwise proceed with step b).

b) If the modem type is manual dial, proceed with step c) otherwise go to step e)

c) Prompt user to dial the number

d) Prompt user for a key;
If the user enters an ESC, terminate with failure
If the user clicks OK, terminate successfully
If the carrier signal goes from low to high while waiting for a key, terminate successfully.

e) If there is a MODEM_INIT parameter in the configuration file, send it and proceed to step f) otherwise proceed to step h).

f) If there is a MODEM_RESPONSE parameter in the configuration file, proceed to step g) otherwise wait till two seconds elapses with no data received from the remote system then proceed to step h).

g) If the modem response is not received within 10 seconds, terminate with failure otherwise proceed to step h).

h) Build a dial command from the MODEM_DIAL_PREFIX, PHONE and the MODEM_DIAL_SUFFIX configuration parameters then send the dial command to the modem.

i) If there are no MODEM_SUCCESS configuration parameters, inform the user that a dial command has been sent and proceed to step d).

j) Wait for any of the MODEM_SUCCESS or MODEM_FAILURE responses to be received.
If 90 seconds go by with none of the success or failure responses received, terminate with failure.
If a success response is received, terminate successfully.
If a failure response is received, proceed to step k).

k) Prompt the user to see if he wants to try another dial attempt.
If 'YES', proceed to step e) otherwise terminate with failure.

E.3.2 BRANCH statement

SYNTAX: BRANCH label

The BRANCH statement causes program execution continue with the statement following the given label rather than the next statement.

```
        statement 1
        statement 2
        BRANCH skip
        statement 3
        statement 4
skip:   statement 5
```

In the above example the statements will be executed in the this order:

```
        statement 1
        statement 2
        statement 5
```

E.3.3 PAUSE statement

SYNTAX: PAUSE tenths_of_second

The PAUSE statement causes the program to halt for the given number of tenths of a second before proceeding with the next statement.

e.g. PAUSE 10 <- pause for 1 second

E.3.4 TYPE statement

SYNTAX: TYPE string

The TYPE statement causes the characters in the given string to be sent to the remote system as though they were typed at the terminal.

The string can consist of any combination of the following.

- a quoted string. The quoted string can contain diagraphs of the form '^letter' to include control characters in the string. For example the digraph ^M is a carriage return. See Appendix F for a complete description of digraphs. See notes at the end of section E.5 for more details on quoted strings.

- a Minitel function key (one of LOCAL_LINE, INDEX, CANCEL, PREVIOUS, REPEAT, GUIDE, CORRECTION, NEXT, SEND)
- a character constant (CR, LF, BS, BELL)
- any of the following configuration parameter names
  PASSWORD
  PHONE
  USERID
  SERVICE

e.g.

TYPE 'AT?' CR	<-	send string AT? followed by a CR
TYPE 'AT^M'	<-	same as above
TYPE 'CHAT' SEND	<-	send the string CHAT followed by the Minitel send key
TYPE USERID CR	<-	send the value of the configuration file USERID parameter followed by a CR (carriage return)

E.3.5 QUIT statement

Terminates execution of the current script program.

E.3.6 DOPF statement

SYNTAX: DOPF number

Causes the named program function key to be executed. This causes the same effect as the user pressing the given function key at the keyboard. Script language programs can invoke other script language programs using function keys.

e.g. DOPF 2 <- execute PF2

E.3.7 MESSAGE statement

SYNTAX: MESSAGE string

This command causes the given string to appear in a dialog on the screen. The dialog has an OK button. After the user clicks the OK button the dialog disappears and the underlying screen is restored. The string containing the message to be printed must have the same format as a string in a TYPE statement.

e.g. MESSAGE 'Logon Procedure has failed'

E.3.8 LOOP statement

SYNTAX:

```
LOOP number
    statements
    AT_END_DO
        statements
ENDLOOP
```

The LOOP statement causes the statements between the LOOP keyword and the AT_END_DO clause to be executed 'number' times. After the last time the statements following the optional AT_END_DO clause are executed. The loop can be terminated prematurely by using the BREAK statement or the BRANCH statement. The BREAK statement causes program execution to continue following the ENDLOOP clause. If the loop is terminated prematurely for any reason, the statements following the AT_END_DO clause are not executed. The BREAK statement is ignored if it is encountered anywhere other than within a LOOP.

e.g.

```
LOOP 3
    type 'hello' CR
    AT_END_DO
        type 'this is the last hello'
ENDLOOP
```

The above example causes the following data to be sent to the remote system.

```
hello
hello
hello
this is the last hello
```

e.g. 2

```
LOOP 2
    TYPE 'I am about to pause for 5 seconds'
    PAUSE 50
ENDLOOP
```

The above example demonstrates a loop statement without an AT_END_DO clause.

E.3.9 WAIT statement

SYNTAX:

```
WAIT tenths
    CASE string 1
      statements
    CASE string 2
      statements
      .
      .
    CASE string N
      statements
    FAILURE
      statements
ENDWAIT
```

The WAIT statement causes the script program to WAIT for data from the remote computer system. If a string named by one of the CASE clauses is received from the remote system, the statements following that CASE clause are executed. If 'tenths' tenths of a second go by with no data received from the remote system, or if the line drops, the statements following the optional FAILURE clause are executed. After the statements following a CASE or FAILURE clause are executed execution continues after the ENDWAIT clause.

The string parameter of the CASE clause must have the same format as a string in a TYPE statement. Multiple strings can be specified by separating them with a comma (,). If there are multiple strings separated by a comma, the statements following the CASE clause are executed if any one of the named strings are received from the remote system.

e.g.

```
TYPE 'ATDP 438-8304' CR
```

```
WAIT 600          { wait up to 60 seconds (600 tenths) }
    CASE 'CONNECT', 'CONNECT 1200', 'CONNECT 2400'
       { the dial attempt has succeed so just continue }
       { with the statement following the ENDWAIT }
    CASE 'NO CARRIER', 'BUSY', 'NO ANSWER'
       MESSAGE 'Dial attempt has failed, try again later'
       QUIT
    CASE 'ERROR', 'NO DIALTONE'
       MESSAGE 'Fatal error during dial attempt'
       QUIT
    FAILURE
       MESSAGE
           'Timeout, line lost or user ESC during Dial Attempt'
       QUIT
ENDWAIT
WAIT 5
    CASE CR LF { wait for rest of modem response }
ENDWAIT
```

In the above example we send a dial request to a HAYES modem and use the WAIT statement to check the result (note that you would not normally have to do this since the above and more can be performed automatically by the DIAL command).

e.g. 2

```
LOOP 10
    TYPE CR
    WAIT 3 CASE '#' BREAK ENDWAIT

    AT_END_DO
       MESSAGE 'PAD not responding with a # prompt.'
       QUIT
ENDLOOP
```

In the above example we send up to 10 carriage returns (one every three tenths of a second) in an attempt to get a '#' prompt from a Minitel Services Company PAD. The WAIT statement waits up to three tenths of a second for a '#', if it fails there is no effect (since there is no FAILURE clause). If the WAIT statement succeeds then the BREAK statement is executed and the LOOP terminates prematurely. If the loop terminates prematurely then the statements following the AT_END_DO clause are not executed. Note that

statements can be split over multiple lines. The above WAIT statement would be more clearly written as;

```
WAIT 3
    CASE '#'
       BREAK
ENDWAIT
```

E.3.10 IF statement

SYNTAX:

```
IF string THEN                    IF string THEN
    statements          OR            statements
ELSE                              ENDIF
    statements
ENDIF
```

The IF statment tests the value of 'string' for a non-null value. If 'string' has a non-null value, the statements between the THEN and ELSE clauses are executed, otherwise the statements between the ELSE and ENDIF clauses are executed. The ELSE clause is optional. If there is no ELSE clause, the statments between the IF and ENDIF clauses are executed if 'string' has a non-null value, otherwise execution continues after the ENDIF clause.

e.g.

```
{ if there is a phone # in the config file then  dial }
if phone then
    message 'Your local access # is ' phone
    dial
else
    message 'No PHONE parameter specified in config file'
endif
```

e.g. 2

```
{ if there is a password in the config file then send it }
if password then
    type password SEND
endif
```

E.4 Script Program Example

The following example is a complete script language program that dials the Minitel Services Company network and requests a service.

```
{ logon.mt - script program to dial the Minitel services company
             network and request a service }

dial        { dial Minitel Services Company network
                  - uses config modem type & number }

{ try up to six times to get a pound sign }
loop 6
      type CR
      wait 3 case '#' break endwait

      at_end_do
            message 'PAD not responding with #'
            quit
endloop

{ perform network logon }
type 'x' CR
wait 50
      case '*'          { success }
      failure
            message 'PAD not responding with *'
            quit
endwait

type '.vmt' CR          { request network service }
end
```

E.5 Detailed Script Language Syntax Definition

The following defines the syntax of all legal script language programs.

```
Program     -> Lines END
Lines -> Lines Line
            -> Line
            -> <empty>
Line        -> Label Statement
```

```
Label       -> <identifier> :
            -> <empty>
Statement   -> WAIT <integer> Waitcases Failcase ENDWAIT
            -> LOOP <integer> Lines Endstmnts ENDLOOP
            -> IF Charexp THEN Lines ElseIf ENDIF
            -> MESSAGE Charexp
            -> DOPF <integer>
            -> DIAL
            -> BRANCH <identifier>
            -> PAUSE <integer>
            -> QUIT
            -> TYPE Charexp
            -> BREAK
Waitcases   -> Waitcases Waitcase
            -> Waitcase
Waitcase    -> CASE Charexplist Lines
Charexplist -> Charexplist , Charexp
            -> Charexp
Failcase    -> FAILURE Lines
            -> <empty>
Endstmnts   -> AT_END_DO Lines
            -> <empty>
ElseIf -> ELSE Lines
            -> <empty>
Charexp     -> Charexp Charterm
            -> Charterm
Charterm    -> Envcharvar
            -> Charconst
            -> Functionkey
            -> <string>
Charconst   -> CR
            -> LF
            -> BS
            -> BELL
Envcharvar -> PF1
            -> PF2
            -> PF3
            -> PF4
            -> PF5
            -> PF6
            -> PF7
            -> PF8
            -> PF9
```

```
                -> PF10
                -> PASSWORD
                -> PHONE
                -> USERID
                -> SERVICE
Functionkey -> LOCAL_LINE
                -> INDEX
                -> CANCEL
                -> PREVIOUS
                -> REPEAT
                -> GUIDE
                -> CORRECTION
                -> NEXT
                -> SEND
```

Notes:

i) <empty> means that the construct is optional.

ii) <identifier> is an identifier of up to 15 alphanumeric characters (and underscore) in length. The first character of an identifier must be alphabetic.

iii) <string> is a character string enclosed in single quotes. Single quotes can be included within the string by putting two of them together. For example to specify the string;

```
that's all folks
```

you would enter

```
'that''s all folks'.
```

iv) <integer> is an integer value in the range -32768 to 32767. Values outside this range will cause undefined results.

v) Comments can appear anywhere in the program except within a token.

Examples:

```
WAIT { this is a legal comment } 10
    CASE 'hello'
```

```
        ENDWAIT

        WAI{ this comment causes an error }T 10
            CASE 'hello'
        ENDWAIT
```

APPENDIX F Entering Control Characters

Control characters can be entered into configuration file parameters, literal strings in script language programs, and in dialogs by using a two character digraph of the form ^x where '^' is the circumflex character (ascii 94) and 'x' is any other character. The sequence ^x causes the control character whose value is the ascii value of the upper case version of the character minus 64 to be entered into the string. For example ^m causes a carriage return to be entered into the string (the ascii value of an upper case 'm' is 77. Seventy-seven minus 64 is equal to 13 which is the ascii value of a carriage return).

The following table lists a number of useful digraphs:

Digraph	Control Character	Ascii Value
^M	CR	13
^J	LF	10
^H	BS	8
^G	BELL	7
^L	FF	12
^I	TAB	9
^[	ESC	27

The following digraph/character combinations can be used to encode Minitel functions keys within a string.

Code	Function Key	Ascii Values
^SA	SEND	19 65
^SB	PREVIOUS	19 66
^SC	REPEAT	19 67
^SD	GUIDE	19 68
^SE	CANCEL	19 69
^SF	INDEX	19 70
^SG	CORRECTION	19 71
^SH	NEXT	19 72
^SI	LOCAL/LINE	19 73

Note that the above function key coding represents the non-X.3 compatible version of the function keys. Within script language programs you should always use the function key names rather than the digraphs, because the function keys names will cause the correct sequence to be sent depending on whether or not you are in X.3 compatible mode.

If you wish to enter a circumflex (^) in a string as itself, you must put two of them in a row. If you enter a sequence in a string of the form ^x in a string and the ascii value of the character x is less than 64, the circumflex (^) is ignored.

APPENDIX G Use of the Minitel Function Keys

The following tables describe the most common meaning of each of the Minitel function keys. Pressing the asterisk key (*) prior to a function key modifies the meaning of a number of the keys.

FUNCTION KEY	MEANING
LOCAL LINE	Causes a disconnection from the current service.
SEND	Validation of character strings or completion of a form.
REPEAT	Causes service to retransmit the previous screen. Used to clear transmission errors.
* REPEAT	Refresh the current display with updates made since the previous request.
INDEX	Return to the index of the service in use.
* INDEX	Access to the index at the highest level in the case of a hierarchical index.
GUIDE	Request HELP from the service.
CORRECTION	Used to erase the last character typed.

The following function keys have slightly different meanings depending on whether you are in a data entry screen or whether you are giving a command to an application.

FUNCTION KEY	MEANING IN A DATA ENTRY SCREEN	MEANING AS A COMMAND TO AN APPLICATION
CANCEL	Deletes the contents of the current field.	Abort current enquiry.
* CANCEL	Delete all fields on the current form and move to the first field.	No Meaning
NEXT	Move to following field.	Move to following page.

PREVIOUS	Move to previous field.	Move to previous page.
* NEXT	Move to following page.	Move to following document.
* PREVIOUS	If there is a previous page, return to the first field of the previous page, otherwise move to the first field of the current page.	Return to the last page or message.

The above tables were adapted from tables in the Intelmatique document titled 'USE OF THE MINITEL FUNCTION KEYS'.

APPENDIX H Error Messages

This appendix lists the most common error messages that can occur and recommends corrective that can be taken for each.

If the suggested corrective action fails for the following group of commands, try exiting Minitel/MAC (with the 'Quit & Drop Line' command), restarting Minitel/MAC, and then using the PF1 command (or click the LOGON button) to restart.

Command(s)	Error and Corrective Action
PF1	"Timeout or Line Lost while Dialing" Retry the PF1 command.
PF1	"Modem not responding to init string" Make sure that your modem is connected and powered on, then retry the PF1 command.
PF1	"DIAL Attempt has Failed." "Try Again ?" Click the YES button if you want Minitel/MAC to try again. If you want to quit click the NO button, then issue the 'Quit & Drop Line' command. If you want to try dialing manually, click NO, then enter the dial command. If you get a connection by dialing manually you can use the PF4 command to logon to the network.
PF1, PF2, PF4	"PAD not responding with #" "PAD not responding with *" "Unable to connect to network service" If any of the above errors occur, issue the PF4 command (even if the error occured in a PF1 or PF2 command).
PF1, PF2, PF4	"User ID prompt not received" If this error occurs, exit Minitel/MAC with the 'Quit & Drop Line' command, then start again.

If any of the following errors occur, you must use the finder or use one or more of the commands on the Options menu to take corrective action.

Command(s)	Error and Corrective Action
PF1	"Error: No PHONE param in config file" To use the auto dial feature of Minitel/MAC you must enter a Telephone number using the Telephone # command on the Options menu.
Save, Quit, Save As, Quit & Drop Line	"Error saving config to <xxx>" The above error is displayed when Minitel/MAC is unable to save the configuration to a file. Possible reasons include a full disk or bad disk sectors. To correct the problem try deleting unnecessary files from the disk or move Minitel/MAC onto a different disk.
PFx	"Script <xxx> not found." This error will occur if Minitel/MAC does not find the script language program to be run in the current folder. This can happen if one of the file commands causes the current folder to be changed. After you click OK to acknowlege the message Minitel/MAC will present the standard file open dialog so that you can show it where to find the script.
PFx	"Error reading <xxx>" "Aborting Script - Bad Instruction" "Aborting Script - Bad env var" "Aborting Script - Bad function key" "Aborting Script - Bad char item" If any of the above errors occur, the script program that was running when the error occurred has become corrupted. Try recompiling the script program with MTC.
PFx	"Illegal value in key PFx"

This error occurs if there is a bad definition for the program function key PFx in the configuration file. Possible errors are;

- A character other than an upper case 'M' or 'S' was specified as the first character of the key definition.

- A character other than '-' was specified as the second character of the key definition.

To correct this problem fix the program function key definition in the configuration file or use the Modify command on the PF Key menu and reenter the value for the key.

APPENDIX I TTY Emulation

This section describes the use of the TTY emulation mode of Minitel/MAC.

During TTY emulation up to the last 12,000 characters displayed on the screen are saved. This saved data is called the TTY terminal buffer. Data in this buffer that has scrolled off the screen can be viewed by using the scroll bar at the right side of the terminal window.

Data to the left and right edges of the terminal window can be viewed by using the scroll bar at the bottom edge of the terminal window.

The TTY emulator is always in one of two modes depending on the position of the insertion point. If the insertion point is on the last row of the screen and no selection is active, the TTY emulator is in REMOTE mode. At any other time the TTY emulator is in LOCAL mode.

In REMOTE mode characters typed at the keyboard are sent to the remote system and the editing of data on the screen is handled as on a TTY terminal (i.e. Minitel/MAC behaves as a normal TTY terminal).

In LOCAL mode characters typed at the keyboard only affect the local screen and are NOT sent to the remote system. In this mode the editing of data on the screen is handled as in a MAC word processor or text editor. LOCAL mode allows you to resend previous commands on the screen or edit data on the screen and transmit that data to the remote system.

The following section describes the use of the commands on the edit menu during TTY emulation.

I.1 Undo command

The undo command is not supported during TTY emulation. It is only included to support desk accessories that require this feature.

I.2 Cut command

The Cut command moves the current text selection from the screen to the Minitel/MAC clipboard.

I.3 Copy command

The Copy command copies the current text selection from the screen to the Minitel/MAC clipboard.

I.4 Paste command

Replace the selected text on the screen with the contents of the Minitel/MAC clipboard. If there is no selected text, insert the contents of the Minitel/MAC clipboard onto the screen at the insertion point.

If currently in REMOTE mode the contents of the Minitel/MAC clipboard are also sent to the remote system.

The following technique can be used to submit data or commands on the screen to the remote system:

i) Move to a position in the screen buffer (using the scroll bars) where there is data that you want to send to the remote system

ii) Select the data on the screen with the mouse

iii) Move the selected text to the clipboard with the Copy command

iv) Move back to the end of the screen with the vertical scroll bar

v) Move the insertion point to the last line of the terminal buffer by clicking with the mouse

vi) Use the paste command to send the data to the remote system

A shortcut to the above technique is to follow steps i) and ii) then hit the Enter key. The Enter key automatically performs steps iii) thru vi). If there is no selection active the Enter key just moves you to the end of the screen (i.e. puts you back into REMOTE mode).

I.5 Clear command

The clear command deletes all selected text from the terminal buffer. If there is no text selected, this command has no effect.

I.6 Select All

The Select All command causes all text in the terminal buffer to be selected.

APPENDIX J Modem Switch Settings

This section specifies the switch settings that are recommended for the modems that are supported by Minitel/MAC.

J.1 Hayes 300 and Hayes 1200 external modems

switch:	1	2	3	4	5	6	7	8
setting:	-	-	-	-	-	U	-	D

D = down, U = up, - = don't care

J.2 Hayes 2400 external modem and direct connection

Nothing needs to be set with these modems.

J.3 Manual Dial modems and Other Modems

For best results these modems should be configured so that:

-> DCD tracks the state of the data carrier from the remote modem.
-> An ON to OFF transition of DTR causes the modem to drop the line.

If the modem is command driven it is recommended that you put the commands that configure the modem as above in the modem init string (using the Option menu 'Modem Config' command).

APPENDIX K Version Differences

Differences between Minitel/MAC version 1.0 and 1.10.

1) File transfer capability added during Minitel Emulation (using xxx protocol).
2) A session capture command was added to the File menu. This command works across all emulations and saves the text of the session to a disk file.

Differences between Minitel/MAC version 1.0 and 1.10.

1) The VT100 emulation mode was added.
2) A number of the Minitel mode keyboard assignments were changed to make the emulator compliant with TOG standards.
3) Acknowlegements are now sent to the remote system for the Teletel to Ascii switch and Ascii to Teletel switch.
4) A new configiration parameter (ASCIIMODE) determines whether VT100 emulation or TTY emulation is to be used when the remote service requests a Teletel to Ascii switch.
5) The Minitel emulator now sends X.3 compatible versions of the reset sequence and terminal id request acknowlegements when in X.3 pad compatibility mode.
6) The LOGOFF button was removed from the screen. The 'Quit and Drop Line' command now performs the function of the LOGOFF buttom.
7) A new button has been added that allows you to quickly switch between the black&white and color modes without having to go through the Terminal dialog.

APPENDIX L Differences from a real Minitel

Minitel/MAC emulates the Videotex mode of the Minitel M1B terminal except for the following differences (ascii and mixed modes are not implemented).

1) A Minitel is capable of displaying double high and double size characters with different colors on the top and bottom rows. Minitel/MAC always displays double high/size characters with the same color on both rows using the color of the lower row.

2) None of the CSI formatting functions are implemented. CSI sequences are filtered but are not acted upon.

3) The only software protocol commands and features of the software protocol that have been implemented are;

   - scroll mode on/off (no acknoledgement returned)
   - reset to power on state (acknowledgement returned)
   - ID request (The seqence SOH (01 hex) Cu7 EOT (04 hex) is returned in response to the ID request. The sequence SOH Cuw EOT is returned when Minitel/MAC is in X.3 pad compatibility mode. These are the same as the sequences that are returned by the Telic Alcatel M1B terminal)

   Protocol commands that have not been implemented are filtered out by Minitel/MAC so that they do not appear on the screen.

5) When overwriting a double width character with a single width character a Minitel shifts the double width character to the right one space. This was not implemented in Minitel/MAC.

6) When overwriting the right half of a double width character a Minitel displays the character one space to the right. This is not implemented in Minitel/MAC.

7) Minitel/MAC implements a TTY terminal emulation mode and a VT100 terminal emulation mode. When the remote service requests a switch from Teletel to Ascii mode either the VT100 mode or TTY mode is used depending on the value of the ASCIIMODE configuration file parameter.

8) Keyboard differences noted in Appendix D. The extended keyboard mode is not implemented.

9) The error correction protocol has not been implemented.

10) The screen transparency commands have not been implemented.

APPENDIX M VT100 emulation

The following tables describe the keyboard mapping during Minitel/MAC VT100 terminal emulation.

VT100 Key	Macintosh Key	Alternate MAC Key Combination
PF1	clear (keypad)	Shift Option 1
PF2	= (keypad)	Shift Option 2
PF3	/ (keypad)	Shift Option 3
PF4	* (keypad)	Shift Option 4
left-arrow	*left-arrow*	Option a
right-arrow	*right-arrow*	Option s
up-arrow	*up-arrow*	Option w
down-arrow	*down-arrow*	Option z
BREAK	Option b	
SHIFT BREAK	Shift Option b	
RETURN	return	enter
DELETE	delete	Option delete (if set in VT100 screen dialog)
BKSP	Option delete	delete (if set in VT100 screen dialog)

The mapping of the following keys is specific to the keypad application mode of the VT100. Keys on the VT100 keypad map to keys in the same position on the MAC keypad. Alternates are provided for the older keyboards that do not have the built-in keypad.

VT100 Keypad Key	Macintosh Keypad Key	Alternate MAC Key combination
1	1	Option 1
2	2	Option 2
3	3	Option 3
4	4	Option 4
5	5	Option 5
6	6	Option 6
7	7	Option 7
8	8	Option 8
9	9	Option 9
0	0	Option 0
.	.	Option .
,	-	Option ,
-	+	Option -
ENTER	enter	Option return