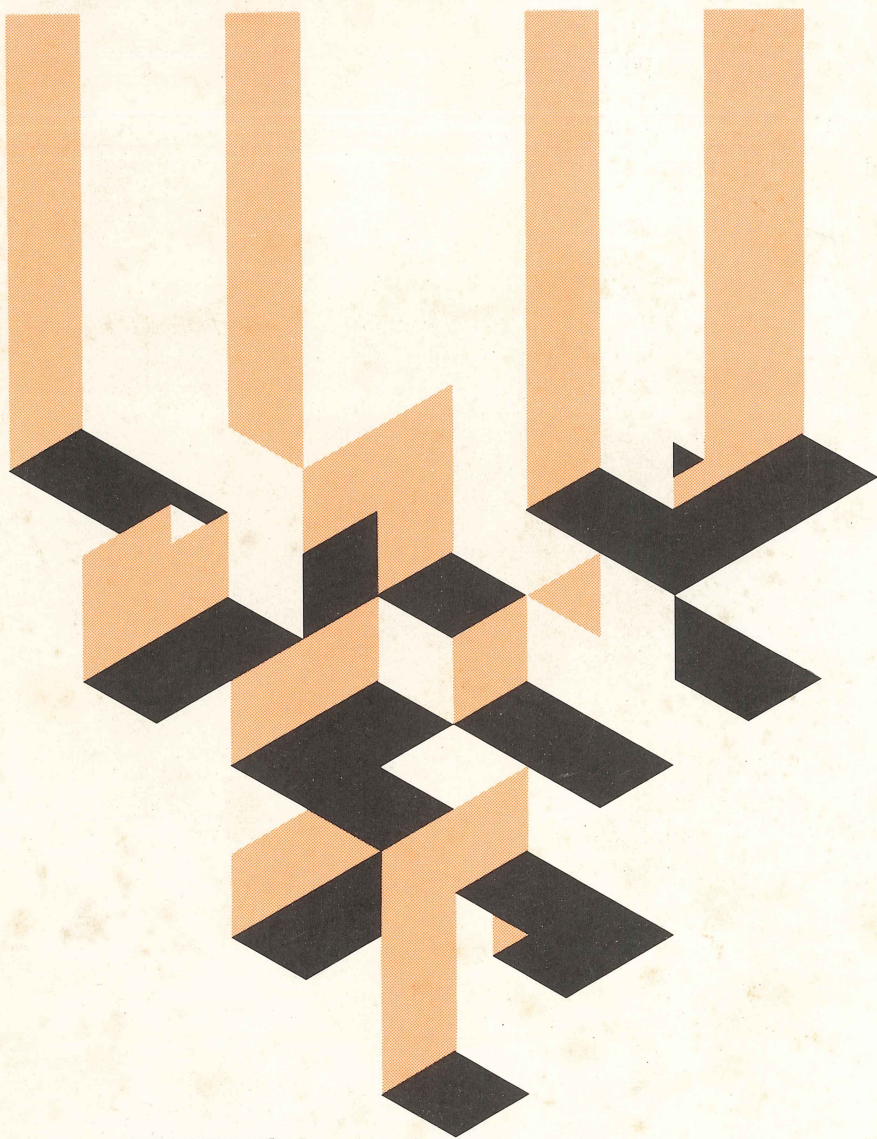


# Videotex



**microbee**



# Videotex

A Videotex terminal emulator for the microbee.

Written by Craig Southeren

Edited by Fran Stewart

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# **Part 1**

## **Introducing Videotex**





## *Introducing Videotex*

### 1. An Introduction to microbee Videotex.

The *microbee* Videotex terminal emulator is a low cost hardware and software package that allows you to access Telecom's VIATEL and other videotex services. Included among its features are full graphic or text screen prints on any *microbee* dot matrix printer, the ability to save up to twenty stored screens in memory at one time, as well as a fast and complete display of the screens. The *microbee* Videotex terminal emulator gives a full width display, with no superfluous spaces.

This manual describes the features of videotex software, versions 1.34 (disk version) and 2.34 (ROM version), and supersedes all previous manuals.

This version supports software downloading, as well as the creation of Wordstar compatible files from videotex screens. Subsequent releases may support such features as local screen editing, as well as a full offline display of videotex screens.

#### 1.1. What is VIATEL?

VIATEL is Telecom's information service that may be accessed by a computer terminal, via the telephone network. Based on readily available videotex technology, the whole VIATEL concept was pioneered by the PRESTEL system in the United Kingdom. The great advantage of VIATEL, over most other computer-based information services, is that anyone who has access to a telephone line and a VIATEL terminal can access the information on VIATEL, from anywhere in Australia, at any time of the day or night.

## *Introducing Videotex*

The information contained within VIATEL is stored in pages, with each page being forty characters wide and twenty-four characters high. Full colour and flashing text are also supported. Graphics are also possible, thus pictures, graphs and logos may be displayed with a very high degree of legibility.

The main method of page selection is by making "route" choices. These choices are made by selecting a key from zero to nine which is displayed on the screen as being related to a particular topic. When a key is pressed, the screen associated with that topic is displayed. Of course, the new screen could well give you another choice of topics. At the very least, it will allow you to return to the screen from which you have just come.

As each page on VIATEL has a unique number, you can go to any page by entering its number directly. This can save a great deal of time, as the only other way to get to a frame is by making route choices.

What makes VIATEL different from a newspaper, for instance, is that it allows two-way communication. Using VIATEL, it is possible to make airline bookings, order pamphlets, and send messages or Telexes to other VIATEL users.

### **1.2. What information is available on VIATEL?**

Even though VIATEL is run by Telecom, it is not the only company with information on display. The concept of VIATEL sees the system encompassing many different companies and individuals, all providing information for display. In this way, a diverse range of services and information become available to subscribers, and thus the participating companies are more likely to have their products seen.

## *Introducing Videotex*

Examples of information and services currently available on VIATEL include:

- 1) Home banking by the Commonwealth Bank. Westpac and the State Bank are expected to follow soon.
- 2) Up to date stock market and commodities information.
- 3) Accurate airline timetables and prices, with reservation and booking services also available.
- 4) Adventure-style games, as well as puzzles, and even a chess club!
- 5) The ability to send a message to any VIATEL subscriber, regardless of geographic location, for 5c. Also, the ability to send a Telex within Australia, at a cost of only \$1.75. International Telex capability, receipt of telexes, as well as links with Telecom's other data services, such as Telememo and Teletex, are expected to follow.

### 1.3. How much does VIATEL cost?

Apart from the cost of fitting the VIATEL adapter to your *microbee*, charges are also made by Telecom, for the 'phone call to connect to the VIATEL computer and for the amount of time spent talking to it. The 'phone call costs 16c per call, regardless of the location of the caller. Connect time costs 8c per minute (Monday to Friday, 8 a.m. to 6 p.m.) or 5c per minute (at all other times).

There is also a subscription charge levied per month. Business users pay \$12.50 a month, while

## *Introducing Videotex*

residential users are charged only \$2.50. Please note that these charges are billed directly to the VIATEL account owner - they are not charged to the account of the owner of the telephone line that is used.

Service providers on VIATEL also have the option of charging you for looking at a screen of information. These charges are the exception, rather than the rule, as most screens are presented free of charge. Those that are not free are usually only one or two cents, although some of the business and stock market pages can cost ten, twenty or even fifty cents.

Don't worry too much about screen charges, as Telecom's regulations state that you must be warned if a route choice will lead to a screen for which you will be charged. Also, all screens have their price clearly marked.

### 1.4. What do I need to access VIATEL?

If you already own a *microbee*, you will need the appropriate VIATEL software for your machine. There are two different versions of this software - one for ROM-based machines, in the form of a pre-programmed EPROM, and another on disk for disk-based systems.

Unlike previous versions of the videotex software, the current release (versions 1.34 and 2.34) does not need a hardware modification to access VIATEL. However, without the additional circuitry, the full width screen is not possible, though this is the only difference. The software used for machines with and without the extra hardware is identical. If you are unsure whether to have the modification made, your nearest *microbee* centre or dealer can show you the difference between a modified and an unmodified machine.

## *Introducing Videotex*

If you are buying a new *microbee*, you will have the adapter fitted before you receive the machine.

As well as the software, you will need a modem, which is a device that allows your *microbee* to 'talk' to the VIATEL computers over the 'phone lines. To access VIATEL, you will need a modem capable of 1200/75 baud operation. All modems sold by Microbee Systems have this capability. If you already own a 'Beemodem', and are unsure whether it can be used to access VIATEL, your nearest *microbee* centre or dealer will be able to advise you.

The *microbee* Videotex software has the capability to print out screens on a dot matrix printer, so, depending upon your needs, you will need a printer to produce a 'hard copy' of the more important screens.

Finally, you will need a VIATEL account from Telecom. This account gives you access to VIATEL and allows Telecom to bill you. You cannot access VIATEL without an account.

When you get your VIATEL account from Telecom, you will be provided with three system codes. Firstly, you will get a ten digit customer identification number (usually abbreviated to 'customer ID'). This number identifies you to the VIATEL computer, and must be entered every time you 'log on' to VIATEL. With this number, you will also get a 4 character password. This password is also needed every time you log on to VIATEL, and provides a level of security for your VIATEL account.

The third number provided by Telecom is your VIATEL mailbox number. Based upon your telephone number, this number identifies you to other users of VIATEL, and allows them to send messages to you.



## **Part 2**

**Using microbee Videotex software**





## 2. Using microbee Videotex.

You will have received your *microbee* Videotex adapter in one of two forms. In most cases, it will already be fitted to your *microbee*, either as a factory-fitted option on a new machine, or fully installed by staff at a *microbee* centre or by a dealer. In this case, you have no further setting up to do, and you can proceed directly to the section on setting up your *microbee* for VIATEL.

The second form in which you may have received your adapter is as a kit. In this case, you will have to install the adapter board before you will be able to use VIATEL. The chapter entitled "Installing your VIATEL kit" describes how to do this. Please note that fitting this board requires a fair degree of technical "know-how". If you have any doubts about your ability to do this, please consult a qualified technician or ask at any *microbee* centre or dealer.

### 2.1. Setting up your microbee for VIATEL.

Those of you already familiar with the *microbee* and the Beemodem will be able to skip this section. For those who are not familiar with this, read on.

As has been said before, to access VIATEL, you need a modem capable of operating at 1200/75 baud. This manual will assume that you have a Microbee Systems "Beemodem", as we imagine that this will be the most common type used with the *microbee*.

Connect your "Beemodem" to your *microbee* by plugging the 25 way plug of the modem into the matching socket on the back of the 'bee. Ensure that the modem is set to the "ORIGINATE" mode, and that

## *Using microbee Videotex*

it is switched to operate at 1200/75 baud. Also, until you are ready to dial the number, make sure that the "PHONE/MODEM" switch is in the "PHONE" position, and that the attached telephone is hung up. Your *microbee* is now ready to access VIATEL.

### 2.2. Running the microbee VIATEL software.

The *microbee* Videotex terminal software is a machine language program of 6k in length. It is supplied in two different forms, for ROM and disk based machines. An explanation of both is provided below.

#### 2.2.1. ROM software.

If you have a ROM-based machine, such as a PC85, the videotex software resides in a 2764 EPROM, which must be installed into a "PAK" location. In most cases, it will be fitted in PAK number 4. In this case, it can be executed by typing "PAK 4" from Microworld BASIC, or you can select the VIATEL ROM from the directory. Owners of Premium series PC85s will also be able to run the VIATEL ROM, by pressing <V> from the main menu.

#### 2.2.2. Disk software.

In the case of a disk based machine, the videotex software is contained in the file 'VTEX.COM'. This file is not copy protected, and should be copied onto a new disk for use, with the original disk being kept in a safe place. This original disk should NOT be used for everyday accessing of VIATEL. To run this program on a 128k *microbee*, position the cursor over the directory entry, 'VTEX.COM', and press the <CR> key.

## Using microbee Videotex

At this point, many people will probably be champing at the bit to get onto VIATEL. For those of you who can't wait, the section entitled 'Logging on to VIATEL' will relieve your anxiety. For those with more patience, or less daring, read the section explaining each of the main menu commands before continuing.

### 2.3. The Main Menu.

When you run the videotex software, the main menu will be displayed. This menu shows all of the commands that are available to you for manipulating stored videotex screens. It is from this menu that the commands are entered - it is not where VIATEL is accessed. To access VIATEL, a different mode must be entered, which is done by entering a command from this menu.

# VIDEOTEX

Microbee Videotex Terminal Emulator  
Version 2.34 by Craig Southeren  
(C) 1986 for Microbee Systems

<ID> (cust.ID)	<VTEX> or <V>
<STORE> (1-20)	<SHOW> (1-20) or 1-20
<EXIT> or <X>	<U>, <D>, <L> or <R>
<GRAPHIC> (1-20)	<TEXT> (1-20)
<CLEAR> (1-20)	<B> or <S>
<DIAL> (number)	<HANGUP>
<SDL>	<SOFT> (F)
<VERIFY>	

Command ?

Fig. 2-1 ROM videotex Main Menu.

## Using microbee Videotex

Each command that can be used from the main menu is shown on the screen contained within "<" and ">" characters. Also shown are the possible items that can or must follow the command for correct operation. The main menus for the ROM and disk-based versions of the videotex software are different, and copies of each are shown below. Note that the disk version contains more commands than the ROM-based, as the disk version allows saving of screens to disk, which is not possible on a ROM system.

# VIDEOTEX

microbee Videotex Terminal Emulator  
Version 1.34 by Craig Southern  
(C) 1986 for Microbee Systems

```
<ID> {cust.ID}      <YTEX> or <Y>
<STORE> {1-20}     <SHOW> {1-20} or 1-20
<CLEAR> {1-20}     <B> or <S>
<EXIT> or <X>      <U>,<D>,<L> or <R>
<SAVE> filename    <LOAD> filename
<GRAPHIC> {1-20}   <TEXT> {1-20}
<DIR> {drive}      <WS> 1-20 filename
<SDL>
<SEND> filename    <ONLINE>
<DIAL> number      <HANGUP>
```

Command ?

Fig. 2-2 Disk videotex Main Menu.

## 2.4. Executing a Command.

To execute a particular command, type it on the keyboard and it will appear after the "Command ?" prompt in the bottom half of the screen. The commands may be in upper or lower case, and the <BACKSPACE> or <DEL> keys can be used to move the cursor backwards to correct mistakes. The <BREAK> key, or the <CTRL-X> key combination, can be used to erase an instruction that had been entered on the command line.

## *Using microbee Videotex*

When the command is entered, press the <CR> key and the command will be executed. If an error was made in the command line, the bell will sound and (where possible) an arrow, on the line below, will indicate where the error occurred. Note that if more than one command per line is entered, only the first will be executed.

### **2.4.1. Resetting your microbee.**

If, on a ROM machine, you press the <RESET> key while you are using the videotex software, the main menu will be redisplayed, and no changes will be made to stored screens or to other information. If you were accessing VIATEL at the time of the RESET, the screen that is normally saved, when you enter the menu, will be lost.

If you turn off a ROM-based machine without exiting from the videotex software, when you power up again, the software will automatically run. Also, provided that your battery backup is working, your customer ID number (if stored) will be intact, as will any stored screens.

If you press <RESET>, on a disk machine, while you are using the videotex software, the normal disk boot up procedure will be followed, usually resulting in a return to CP/M. Note that, on a disk machine, it is possible to exit to CP/M and perform any file functions, and still be able to return to the VIATEL program, without losing contact with the VIATEL computer. You will, however, lose any stored screens that you had in memory at the time.

## 2.5. VIATEL Terminal Emulator Commands.

There are eleven commands which are common to both the ROM and disk versions of the *microbee* videotex terminal software. We shall look at these commands first.

### 2.5.1. Exiting the software - EXIT/X.

The "EXIT" command causes the *microbee* to exit the videotex emulator program, and return to either the CP/M operating system (on a disk system) or to BASIC (on a ROM system). When this is done, all information stored by the videotex emulator will be destroyed.

If a software file is held in memory when the "EXIT" command is used, an escape from the videotex software will not be allowed. The "CLEAR" command must be used to erase any downloaded software files before the exit will be allowed.

The "EXIT" command can be abbreviated to an "X". Don't forget to press <CR> after the command.

### 2.5.2. Entering terminal mode - VTEX/V.

Entering the "VTEX" command causes the *microbee* to enter the terminal emulator mode. It is in this mode that you access VIATEL and make choices for information. To exit this mode, press the <CTRL> and <ESC> keys simultaneously, and the main menu will reappear on the screen.

When you move from the terminal mode to the main menu, the screen you were looking at is stored

## Using *microbee Videotex*

in memory. Some of the other commands (explained later) allow you to store this screen to memory and hence to disk. When you re-enter the terminal mode from the main menu, the original screen will be re-displayed.

Please note that once you have 'logged on' to VIATEL, you will be charged up until you hang up, even if you are in the main menu and not looking at a VIATEL page. This also applies if you exit to CP/M or BASIC.

The "VTEX" command may also be abbreviated to "V <CR>".

### 2.5.3. Moving through VIATEL - DEL/BREAK.

At this point, note that the <DEL> and <BREAK> keys are assigned special meanings while in the VIATEL terminal mode. VIATEL requires a "#" and a "\*" key (called hash and star), and since the *microbee* does not have keys dedicated to these functions, the <DEL> key has been assigned as the "\*" key, and the <BREAK> key has been assigned as the "#" key. As a result, the <DEL> key cannot be used to backspace the cursor from within terminal mode - only the <BACKSPACE> key will do this.

### 2.5.4. Storing screens - STORE.

The "STORE" command allows the screen, that was being displayed when the user exited terminal mode (see the "VIATEL" command), to be stored into one of twenty internal screen "memories". A number, which must immediately follow the "STORE" command, specifies which memory this is. The memories are numbered from 1 to 20. Thus, the example below stores the screen, that was last examined in terminal mode, into screen memory number fourteen:

STORE 14

Care should be exercised when STOREing screens to ensure that you do not overwrite one screen, that is currently held in memory, with another, more recent screen. If there is a downloaded software file in memory, the STORE command will not be executed. Instead, an error message will be printed.

Note that STOREing a screen does not stop it from being re-displayed upon re-entry to terminal mode.

### 2.5.5. Displaying a stored screen - SHOW.

Once a screen has been copied into memory using the STORE command, it can be displayed using the "SHOW" command. To do this, enter "SHOW", followed by the number of the memory whose contents you wish to see. If the specified memory does not contain a STOREd screen, the *microbee* will "beep" and the error message, "Not valid data", will be displayed on the bottom line of the menu screen. Once again, the memory number is in the range of one to twenty.

Assuming that a "SHOW" command does specify a memory containing a valid screen, the screen will be displayed. The *microbee* will then wait for any key to be pressed before returning to the main menu. The contents of all screen memories which contain valid information can be displayed by entering a command of the form "SHOW ALL". This will show each screen memory, starting at number 1, for about 2 seconds and then continue to the next. When screen number 20 is reached, screen 1 will be the next shown. This process will continue indefinitely, until a key is pressed on the keyboard. If no memories contain information, an error message will be displayed.



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If you wish to see which memories contain valid data, and which do not, enter the command "SHOW" without a screen number. This will cause the status of the twenty screen memories to be displayed on the bottom line of the main menu. The status is displayed as a row of 20 digits, as shown below:

12345678901234567890

Each of these digits represents a screen memory, with the first indicating memory 1 and the last indicating memory 20. If any of the memories contains a valid screen, the digit representing it will be replaced by a solid block.

For example, if memories four and sixteen contained valid screens, the command "SHOW" would produce:

123■56789012345■7890

The "SHOW" command can be abbreviated to the number of the memory to be displayed. For example, to display memory nineteen, enter:

19 <CR>

Once again, if a downloaded software file is held in memory, the SHOW command will not be executed and an error message will be displayed.

### 2.5.6. Clearing screens from memory - CLEAR.

Sometimes it may be desirable to clear a screen memory of stored data. The "CLEAR" command can be used for this purpose, by entering "CLEAR", followed by the number of the memory to erase.

This command also performs a more drastic function. If the command "CLEAR" is entered by itself, all screens and any software files that are held in memory will be destroyed. This is the only way to clear a software file from memory.

### 2.5.7. Graphic screen dumps - GRAPHIC.

One of the features that makes the *microbee* terminal emulator different from a normal videotex terminal is the ability to 'screen dump' screens. The "GRAPHIC" command allows you to do a full graphic screen dump of any screen onto a *microbee* DP-80 or DP-100 printer. This is done by typing "GRAPHIC", followed by the number of the screen memory to print out.

If "GRAPHIC" is entered without a memory number, the screen last displayed in terminal mode will be printed. Please note that the graphic print takes about three minutes to complete, depending upon the speed of your printer. Unless you are very rich, it is recommended that you do not do graphic dumps of screens while you are still connected VIATEL. Rather, store the screen into a memory, disconnect from VIATEL, and then print it out.

Also remember that the screen to be dumped is displayed, on your screen, while the dump takes place. The dump can be stopped at any time by pressing the <ESC> key. When it is finished, or if

## Using microbee Videotex

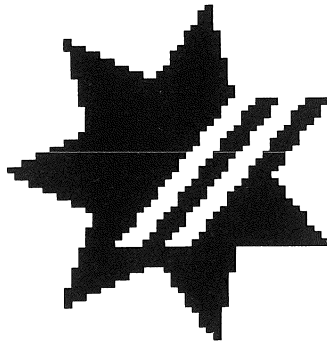
it is stopped, control is passed back to the main menu.

On a ROM based system, a check is made to ensure that a parallel printer is installed before printing commences. If no such printer is installed, an error message will be generated and the dump will be aborted. No such check is possible on a disk system.

As in the case of the SHOW and STORE commands, no graphics printout is possible if a software file is held in memory. A typical, graphic, screen dump is shown below.

National Australia Bank 880a 0c

---



- 1 Corporate Services
- 2 Business Services
- 3 Personal Services
- 8 Disclaimer
- 9 Contact Us
- 0 Viatel

Welcome To  
National Australia Bank Limited

Fig. 2-3 A Graphic screen dump.

### 2.5.8. Text screen dumps - TEXT.

In cases where it is not the graphic content of a screen that is important, but rather the text content, there is a much faster way of printing the information. The "TEXT" command can be used in the same way as the "GRAPHIC" command, except that it prints only the characters contained in the screen, and none of the graphics characters. The advantage of this command is that the whole dump takes about four to five seconds; the disadvantage is that the graphic content is lost.

Shown below is a typical text screen dump. Note the difference between this dump and the previous one.

```
National Australia Bank 888a                8c  
  
1 Corporate  
  Services  
2 Business  
  Services  
3 Personal  
  Services  
  
8 Disclaimer  
9 Contact Us  
0 Viatel
```

Fig. 2-4 A Text screen dump.

### 2.5.9. Changing the screen position - U/D/L/R.

Some users will find, upon entering the videotex software, that the screen image is not in the centre of the screen. To correct this, the "U", "D", "L" and "R" commands can be used to move the picture, one character position at a time, up, down, left or right respectively.

Owners of disk systems can put screen movement commands into their "CUSTOMER.ID" files, to allow automatic movement of the screen upon entry to the videotex software (see the section on the "CUSTOMER.ID" file for more information). Owners of ROM systems must enter the commands each time they execute the videotex software.

### 2.5.10. Changing the screen size - B/S.

As mentioned before, a hardware modification is not needed to use the *microbee* videotex software. A *microbee* without the extra circuitry will display everything in 40 columns of characters in the middle of the screen. As some people, who have the VIATEL hardware fitted, may prefer this screen format, the "B" and "S" commands have been added to allow the selection of "big" and "small" screen formats respectively.

A machine without the videotex hardware automatically enters "small" mode. Any attempt to execute the "B" command on such a machine will result in an error message being displayed. For owners of disk systems, "B" or "S" commands may be inserted into the "CUSTOMER.ID" file (refer to the relevant section).

### 2.5.11. Automatic ID number entry - ID.

Every time you log on to VIATEL, you have two security codes to enter. The first is a ten digit customer identity number, which identifies a user to the VIATEL computer. The second is a four digit password. It can become rather tiresome, and possibly incur mistakes, having to enter the first number every time. To avoid this, the VIATEL specification allows for automatic entering of the ID number, for greater accuracy and faster log on times.

To take advantage of this, the *microbee* videotex emulator has a command whereby you can enter your customer ID number into the computer for automatic transmission at log on time. The "ID" command implements this function, and is used by typing "ID", followed by the ID number. For example, the following command enters the ID number 1234567890:

```
ID 1234567890
```

At any time, the ID number that has been stored internally (if any) can be displayed by executing the "ID" command with no number following. In this case, the stored ID number will be displayed on the bottom line of the menu screen.

Where there are several people using the same *microbee* as a communal VIATEL terminal, it may be desirable to clear the internally stored ID number after use. A command of the form shown below will clear this number:

```
ID ???????????
```

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Owners of disk systems should also read the section on the "CUSTOMER.ID" file, to gain information on automatic entry of the customer ID number.

### **2.6. Special disk Videotex commands.**

The following commands are unique to the disk version of the videotex terminal emulator. Before explaining the commands in depth, a few definitions are in order. Where a filename is expected as part of a command, the drive specification may be given as part of the filename, as per the CP/M convention. The example below refers to a file called FRED.DOC on the "B" drive:

```
B:FRED.DOC
```

The drive name may be any character from "A" to "P", although if you use the name of a drive that does not exist on your system, there is a good chance that you will be unceremoniously dumped back into CP/M, with the resultant loss of any screens that were held in memory.

If a drive name is not given, the default drive will be used. The default drive is the currently logged drive and may be changed by entering the new drive name, followed by a ":", at the "Command ?" prompt.

#### **2.6.1. Saving screen memories to disk - SAVE.**

The "SAVE" command is used to save the twenty screen memories, that are held in the *microbee*, into a disk file. The command is used by typing "SAVE", followed by the name of the file. Note that there is no need to specify a file extension, as a ".VTL"

## *Using microbee Videotex*

extension will be assumed, and even if it is supplied, it will be ignored. The example below will save the current memories into a file called "FOOBAH.VTL" on the "A" drive.

```
SAVE A:FOOBAH
```

If an attempt is made to create a file with a name that already exists, the current file will be overwritten by the new one.

### **2.6.2. Loading screen files into memory - LOAD.**

The "LOAD" command is used to load in a file that has been previously created using the "SAVE" command. The format of the command is identical to the "SAVE" command, with the file name following the "LOAD" command, and a ".VTL" file extension assumed.

If an attempt is made to load a file that does not exist, an error message will be printed and a "beep" will sound.

### **2.6.3. Listing the directory of a disk - DIR.**

Occasionally, it is convenient to find the names of the screen files on a drive, in order to choose one to load, or to avoid duplicating an "already used" filename when you are SAVEing. To do this, the "DIR" (for directory) command can be used.

When used without a drive specification, the "DIR" command will produce a list of all files on the current drive which have a ".VTL" extension. If no files can be found, an appropriate error message will be generated.



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The "DIR" command can also be used with a drive specification, in the range of "A" to "P", which will provide a directory of the specified drive.

### **2.6.4. Sending messages - SEND.**

To save time, and therefore money, it is sometimes convenient to compose long messages while you are not using VIATEL, and then to send them down as quickly as possible once you are on the system. The "SEND" command allows this by enabling the contents of a text file, created by Wordstar or Wordbee, to be sent down to VIATEL as though you were typing it in.

To use this command, type "SEND", followed by the name of the file whose contents you wish to transmit. Please note that both a name and an extension can be specified. Once the <CR> key is pressed, the videotex software will enter terminal mode and the characters in the file will appear as though they were being typed in. Pressing any key at any time will stop the sending process and leave the computer in terminal mode.

There are several special features about the contents of the file being sent that should be noted. Firstly, all carriage returns will be ignored, as these are usually not relevant to VIATEL. Secondly, the "\*" and "#" characters can be inserted to produce the characters that the <DEL> and <BREAK> keys produce, thus page changes and data field entry can be done.

### 2.6.5. Saving screens in WordStar format - WS.

The "WS" command allows you to save any stored screen into a file that can be accessed by Wordstar (or a similar editor). This command accepts two parameters - the first being the number of the screen that is to be used and the second being the name of the file into which the screen is to be saved. For example, to save screen 15 into a file called "PRICES.WS", the following command should be used:

```
WS 15 PRICES.WS
```

If the specified file already exists, it will be overwritten.

### 2.7. Auto-Dial Modem Commands.

There are three commands on the main menu that are reserved for controlling an Advanced Beemodem. These commands are detailed here.

#### 2.7.1. Putting the modem online - ONLINE.

This command puts the modem into the "receiver off-hook" state. If the modem was already online, it will hangup and then return to the online mode.

#### 2.7.2. Hanging-up the modem - HANGUP.

To terminate a modem session, the "HANGUP" command can be used. This places the modem in the "receiver on-hook" state.

### 2.7.3. Dialling from the keyboard - DIAL.

This command allows the user to dial a number and "log on" to VIATEL automatically. Please note that the customer ID number must be entered correctly at the main menu (or by reading a "CUSTOMER.ID" file) to obtain correct operation of this command.

Entering the command without a parameter will cause the modem to be put into the online state, and to dial the VIATEL number "01955". If an alternate number, which can be specified after the "DIAL" command, is entered, it will be dialled instead.

As the number is being dialled, each digit will be displayed on the bottom line of the screen. The dialling process may be aborted at this stage by depressing any key and keeping it depressed until the message, "Hanging up...", appears in the bottom left hand corner of the screen.

When the number has been dialled, the main menu will be replaced by the display on the following page.

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**Waiting for VIATEL connection  
Press <RETURN> to go to terminal mode  
or any other key to hang up phone  
and return to menu**

Fig. 2-5 The Auto-log on display.

At this point, you have several options. As shown on the screen, you can press the <CR> key and continue on to the terminal mode, bypassing the automatic log on procedure. Pressing any other key will cause the log on sequence to be terminated and control will return to the main menu.

If all goes correctly, the log on screen should be replaced by the VIATEL password entry screen after about 30 seconds. If this does not happen, one of the following may occur:

- 1) The computer may return to the main menu after about 2 minutes. This means that it could not get a response from VIATEL, which was probably caused by the VIATEL number being busy. In this case, try again. If the same occurs again, try logging on to VIATEL manually.
- 2) The *microbee* will appear to "hang" after getting to the log on screen. This is probably

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caused by the customer ID number not being long enough, and so VIATEL is still waiting for the rest of the number. If this happens, return to the main menu by pressing any key other than <CR> and enter the customer ID number correctly.

### 2.8. Software Downloading Commands.

One of the new features, which has been added in this version of the *microbee* Videotex software, is the capability of downloading software that has been stored on VIATEL, using the Telesoftware Downloading Standard, as set down by Telecom. This is the format used by all existing providers of telesoftware, which are presently on VIATEL, and is the one that Microbee Systems will be supporting in the future.

For software downloading, there are two commands used with the disk version of VIATEL and three with the ROM version. These are explained below.

#### 2.8.1. Downloading Software - SDL.

This command is used to download a software file into memory. Follow the sequence below:

- 1) Proceed to the page of the telesoftware file where you are instructed to start the downloading process. Then, return to the *microbee* Videotex software main menu by pressing <CTRL-ESC>.
- 2) Enter the command, "SDL", and the following screen will appear.

## Using *microbee Videotex*

Software download in progress

Press <ESC> to abort load

Filename : COLBAR B

\*\*\*\*

File downloaded

Press any key for menu

Fig. 2-6 Software Downloading screen.

- 3) After about 3 seconds, the name of the file, that is being downloaded, will be displayed. If an attempt is made, on a ROM based system, to download a file that is not intended for a *microbee*, an error message will be displayed at this point. The <ESC> key may be pressed to abort the download at any time.
- 4) As the file loads, "\*" characters will appear. When loading is complete, a message will appear.

If you press any key, you will be returned to the main menu. At this stage, you have the downloaded software in memory. To save it to disk or tape, see the "SOFT" command.

### 2.8.2. Saving downloaded software - SOFT.

The "SOFT" command is used to save a downloaded software file to tape or disk. In the case of a disk system, the command used by itself will save the file to disk, using the filename that was downloaded with the file. Another filename can be used instead, by entering it after the "SOFT" command.

On a ROM system, the file may be saved to tape using the downloaded name only. To do this, insert a cassette tape into the recorder and start the recording procedure at the desired position. When you wish to start saving the file, type the command, "SOFT". After pressing <CR>, the file will be saved.

If an "F" is entered after the "SOFT" command, the file will be saved at 1200 baud, regardless of the speed defined by the downloaded software.

---

Please remeber that the "CLEAR" command will erase any file that is presently in memory.

### 2.8.3. Verifying saved software - VERIFY.

The verify command is available only on ROM systems and allows verification of a downloaded file after it has been saved on tape. Assuming that the "SDL" and "SOFT" commands have been used to put the file onto tape, entering the command "VERIFY" and then replaying the tape will cause the *microbee* to check the contents of the tape against that still in memory. If a mismatch is detected, an error message will be displayed.

## 2.9. The 'Customer.id' file.

As an additional feature, the disk based videotex software is capable of loading in the customer ID number automatically, from a file, upon entry to the program. It does this by searching the default drive, and then the "A" drive, for a file called "CUSTOMER.ID". This text file, which can be created by Wordstar or Wordbee, can contain the customer ID number as ten digits. If this file is found, the videotex software will display the screen below, immediately after entry.

```
CUSTOMER.ID file found
Press any key to continue
```

Fig. 2-7 "CUSTOMER ID found" screen.

Once this screen is displayed, pressing any key will cause the main menu to be displayed. An ID entered in this way can be subsequently displayed or overwritten, as per a normally entered ID number.

The "CUSTOMER.ID" file may also contain screen movement and size commands. These commands take the form of the letters "U", "D", "L", "R", "B" or "S" before the customer ID number. Each of these letters



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moves the screen in one of the four directions, i.e., up, down, left or right, big or small respectively. An example of a file that moves the screen four character positions to the left, changes the screen to small format and then enters the ID number, 1234567890, is shown below:

```
LLLLS1234567890
```

Spaces or carriage returns in the file are ignored, except any in the ID number. The following examples are all legal, and all have the same effect:

```
l l l l  
1234567890
```

or:

```
L  
L  
L  
L1234567890
```

or even:

```
lL lL 1234567890
```

However, the following example is not allowed because of the space in the ID number:

```
LLLL 12345 67890
```

Various pieces of VIATEL literature refer to accessing a certain screen and being able to change the ID number that is stored in the terminal being used. This is mentioned on the initial "log on"

## Using *microbee* Videotex

screen. Although this is the case with certain VIATEL terminals, the *microbee* Videotex terminal emulator software does not have this capability.

### 2.10. Logging On to VIATEL.

"Logging on" refers to the process of getting your *microbee* and the VIATEL computer talking to each other. Detailed below are the steps that you must follow.

Firstly, set up your modem and *microbee* as detailed in the section on "Setting up your *microbee* for VIATEL", and enter the videotex software main menu. Once you are in this menu, type "VTEX", or "V", and then press <CR> to enter terminal mode. Having done this, your *microbee* is ready to access VIATEL.

#### 2.10.1. Dialling.

To connect to VIATEL, lift the receiver of the telephone that's attached to your modem, and wait for the dial tone. Once the dial tone is heard, dial the number 01955. This number is the same for all regions of Australia. The 'phone will ring up to three times before answering, but note that, occasionally, it will not ring at all and will answer immediately. If it does not answer within four to five rings, hang up the telephone and try again.

When the other end does answer, there will be approximately one second of silence, followed by a high pitched whistle. This tone is called the "carrier". It is at this point that you should switch your modem from "PHONE" to "MODEM", and then hang up the receiver. Note that, once the switch is in the "MODEM" position, hanging the 'phone up does

not disconnect the line.

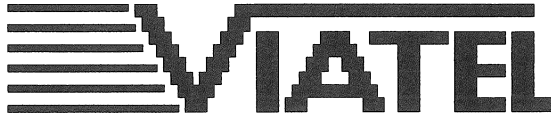
If you do not switch from "PHONE" to "MODEM" at this point, you will hear the whistle at a lower frequency after approximately three seconds. If you fail to switch to "MODEM" within five to six seconds after the tone change, the VIATEL computer will disconnect, and you will have to hang up and dial again.

Once you have switched to "MODEM", the carrier detect light on your modem should light, indicating that communication has been established between your *microbee* and the VIATEL computer. The characters "COM" should appear on the screen at this point. If any other sequence of characters appears, for example, "MOM" or "OCC", refer to the section 'What to do if I can't log on'. Don't worry if several "garbage" characters appear at this point - they are caused by the clicks and squeaks of switching telephone lines. If you do not receive anything intelligible, or if you are unable to receive the tones, refer to the section "What to do if I can't log on".

### 2.10.2. Entering an ID number.

Once the "COM" message has appeared, it should only be one or two seconds before it is replaced by the following screen.

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Please enter below your Customer Identity (Key \*\* if you make a mistake)

You may program this Identity into your set by going to PAGE 924 (after receiving the 'Welcome to Viatel' frame)

### CUSTOMER IDENTITY

Fig. 2-8 Customer ID entry screen.

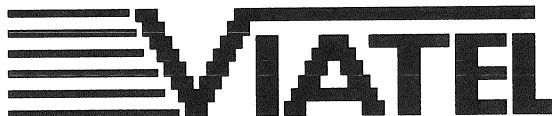
As can be seen, this screen is asking for entry of your customer identity number, which is the ten digit number that was supplied by Telecom when you received your VIATEL account. This number should be typed in, one digit at a time. For each digit entered, a "\_" character should appear. If you make a mistake, pressing the <DEL> key twice will clear the numbers entered thus far.

As the number is only ten digits long, VIATEL will attempt to use the number to log you in after the entry of the tenth digit. If you have entered an incorrect number, a message will appear on the bottom line indicating this, and you will be able to try again. You have a maximum of three chances, after which an engineering test frame will appear, and you will be disconnected from VIATEL.

If you have entered your customer ID number using the "ID" command, the customer ID screen will not appear fully. Instead, the top four or five lines will appear, after which the screen will be cleared and the password screen will appear.

### 2.10.3. Entering a password.

After the successful entry of your customer ID number, you will be asked for entry of your password. Once again, for each digit you type, a " \_ " character will appear. If you make a mistake while entering your password, you can press <DEL> twice, to clear the incorrect entry. The password will be checked after the fourth character has been entered. If it is not correct, you will be given two more chances to enter it correctly. The password screen is shown below.



Please enter your PERSONAL PASSWORD  
(Key \*\* if you make a mistake)

Fig. 2-9 Password entry screen.

After the password has been entered, the screen will clear and the first page of the VIATEL service will appear, containing your name, the date and the exact time. If this is not your first time on VIATEL, the time and date of you last access will also be shown. This screen should be similar to the one below.

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LOCAL CALL FEE : 16c  
FRI 31 JAN 1986 14:59  
GOOD AFTERNOON  
Microbee Systems Serv Provider  
NEW MESSAGES FOR YOU KEY 1

\_\_\_\_\_ W E L C O M E T O \_\_\_\_\_  
  
\_\_\_\_\_ VIATEL \_\_\_\_\_

You last used VIATEL on FRI 31 JAN 1986  
at 14:52 Viatel Computer

\_\_\_\_\_ Press # for Main Index

Fig. 2-10 VIATEL Log On screen.

## **Part 3**

# **Using VIATEL**

1944

1945

1946

1947



### 3. Using VIATEL.

VIATEL is very easy to use. Most of the circumstances that you will encounter within VIATEL will require the use of only twelve different keys, ten of which are the numbers one through to nine, and the number zero. The other two keys warrant special mention.

#### 3.1. The <DEL> and <BREAK> keys.

The VIATEL computer requires the use of two special codes which do not normally exist on a *microbee* keyboard. These two codes are represented by the "\*" and "#" characters, and are called "star" and "hash" respectively. The code for the star character is generated by the <DEL> key, while the code for the hash character is generated by the <BREAK> key.

The star character is used as a special indicator, to inform VIATEL that you wish to send a special command. Usually, this command displays a VIATEL page by its number, although it can also be used in certain places as a backspace key (see the section on 'Logging on to VIATEL' for an example).

There are two main uses for the hash code. Firstly, it can be used to enter some data for processing by VIATEL in special screens called "response frames". It is also used to "enter" a page number that was specified using the star key. In this mode, its use is similar to that of a <CR> key, as used by a normal computer. Under VIATEL, the <CR> key is used for a very different purpose, which will be explained later.

The hash key can also be used for moving between certain VIATEL pages. Some pages can only be

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accessed by going to a particular frame, and then using the hash key to change frames.

### 3.2. VIATEL screen layout.

Before covering the operational aspects of VIATEL, it is important that you know and understand the layout of a VIATEL screen. Shown below, is a typical VIATEL screen with the important areas marked.

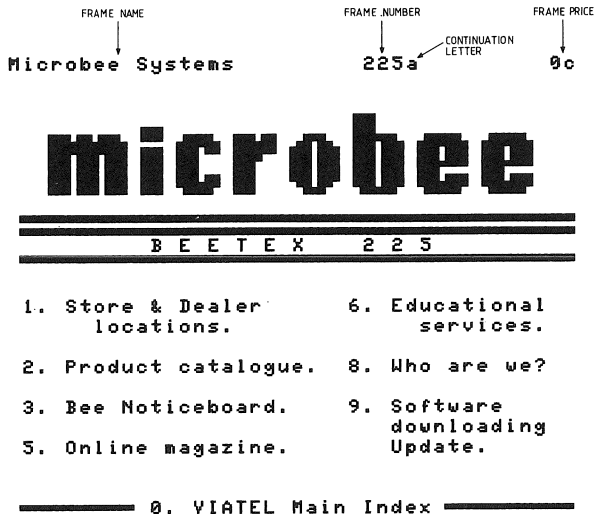


Fig. 3-1 A typical VIATEL screen.

### 3.3. VIATEL screen format.

There are 24 lines, with each being 40 characters wide. The top and bottom lines are reserved for use by the VIATEL computer, with the top line containing the name of the page, the page number, and the price of the page. In this case, the page owner is xxxxxxxxxx, and the page number is 12345a, with the "a" indicating that this is the first screen of this page. A page may consist

## Using VIATEL

of up to 26 "continuation screens", each having the same page number, but with a different letter of the alphabet as the suffix. Normally, however, only the "a" page exists. A continuation page can only be accessed from the continuation page which precedes it, i.e., page 1234c can only be accessed from page 1234b, which can only be accessed from page 1234a. An example of a continuation page is shown later.

### 3.4. Page pricing system.

The page price is colour coded, so that you can tell at a glance the approximate price that you paid for displaying a particular screen. The coding is as follows:

0 -	29c	Green
30 -	99c	Yellow
100 -	499c	Red

This colour system is enforced by Telecom, as is the system of warning people if a particular route choice will involve moving to a page that involves a charge. The bottom line of the screen is used for VIATEL commands, for example, page movement.

To begin using VIATEL, follow the sequence in 'Logging On to VIATEL' to get to the first VIATEL page, which is similar to that shown in figure 2-10. As is indicated on the bottom line, pressing the hash key (the <BREAK> key) will display the main VIATEL index. If you do this, you should see a screen similar to figure 3-2 shown below. This screen is page number one, and is literally the first page on VIATEL.



## Using VIATEL

### 3.6. Single digit routing.

Option number seven of the Main index indicates the alphabetical subject and service provider index. By pressing the <7> key, you will access the following screen.

```
VIATEL 13a 0c
┌────────────────────────────────────────────────────────────────────────────────┐
│                                ALPHABETIC INDEXES                                │
├────────────────────────────────────────────────────────────────────────────────┤
│                                SUBJECTS                                         │
│ 11 A    17 G    24 M    31 S                                         │
│ 12 B    18 H    25 N    32 T                                         │
│ 13 C    19 I    26 O    33 U KEY 7                                         │
│ 14 D    21 J    27 P    34 Y for                                         │
│ 15 E    22 K    28 Q    35 W Tour                                         │
│ 16 F    23 L    29 R                                         │
│                                SERVICE PROVIDERS                                │
│ 41 A    47 G    57 P    64 Y                                         │
│ 42 B    48 H    58 Q    65 W                                         │
│ 43 C    49 I    59 R    67 Y                                         │
│ 44 D    54 M    61 S                                         KEY 8 │
│ 45 E    55 N    62 T                                         for  │
│ 46 F    56 O    63 U                                         Tour  │
│                                Key 9 for new Service Providers                    │
│                                0 MAIN INDEX                                     │
└────────────────────────────────────────────────────────────────────────────────┘
```

Fig. 3-3 Alphabetical Subject and Service Provider Index on VIATEL.

### 3.7. Alphabetical index page.

This screen contains an index of all of the service providers, plus all of the topics contained in VIATEL, in alphabetical order. It is, therefore, a very important screen. If you want some information, just remember the page number - thirteen.

### 3.8. Double digit keying.

As can be seen, this screen offers more than ten entries - there are probably thirty or more. For the double figure selections, you simply type the two digits that comprise the number. For example, number "54" is the choice for service providers beginning with "M". If you press "5", you will get an intermediate screen of choices. This screen is shown below:

```
V I A T E L                     135a                     0c
┌──────────────────────────────────────────────────────────┐
│                    INTERMEDIATE PAGE                    │
│                   Service Providers                      │
│                                                        │
│                    1 J                                  │
│                    2 K                                  │
│                    3 L                                  │
│                    4 M                                  │
│                    5 N                                  │
│                    6 O                                  │
│                    7 P                                  │
│                    8 Q                                  │
│                    9 R                                  │
│                                                        │
└──────────────────────────────────────────────────────────┘
┌                                ───────────┐            ┌
│                                   0 ALPHABETIC INDEX     │
```

Fig. 3-4 An Intermediate screen.

### 3.9. Intermediate pages.

As you can see, option "4" on this intermediate screen gives you the screen of "M" service providers. Thus, pressing <5> and then <4> from the first index would give you the right screen.

From the intermediate page, you can return to the alphabetical index by pressing <0>. Note that this is usually the case on VIATEL screens - <0>

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will normally take you to the screen "above" the one you are looking at.

Once back at the main alphabetical index, press <5> and then <4>, in quick succession. The intermediate page will start to appear, but should only partially appear before it is cleared. If you can press the keys quickly enough, you can jump from page to page without seeing any of them.

Let's assume that we want to go back to the first index screen from the list of "M" service providers. We can simply press <0> to return to the intermediate screen, and then press <0> again to return to the main alphabetical index, or we can be slightly more subtle.

### 3.10. The '\*'# command.

There is another way of returning from the "M" index to the main alphabetical index - by using VIATEL's "screen backspace" facility. This function allows you to go back to the screen that you last looked at. To do this, press "\*" (the <DEL> key), and a green "\*" character should appear on the bottom line of the screen. Next, press "#" (the <BREAK> key). The screen will clear, and the intermediate index screen will re-appear (this being the last screen that you looked at). If the keys are pressed again, the main alphabetical index will be displayed. Note that these were the last two screens that were accessed.

The "\*"#" combination can be used in succession a maximum of three times.

### 3.11. Direct page access.

Let's assume that we want to go to a certain page, and we just happen to know its number, for example, page number 225. This can be done by typing "\*", followed by the page number, and then "#". Try going to page 225 and you will see why that particular page was chosen as an example!!

### 3.12. Special commands.

As well as the "\*#" command, there are several other special commands which would appear to be page movement commands. In fact, they perform other useful functions as shown below. These special commands are:

- \*00#       Redisplay the current screen. If the screen has a charge, you will not be charged again. This command is used when noise has corrupted the screen data.
  
- \*09#       Redisplay the screen data, with any new information that has been added since the last access. You will be charged again for this screen, if it is not a free screen.
  
- \*0#        Access the main VIATEL index.

### 3.13. Response frames.

There are two types of pages on VIATEL - information frames, which you have already used, and response frames. Response frames allow messages to be sent to a particular person. These frames may



## Using VIATEL

contain data that you have entered from your keyboard, or VIATEL may automatically insert certain other items, for example, your name, address or VIATEL number. Response frames are used by service providers to allow you to send messages to them, or to order goods or services.

One of the most important response frames is supplied by Telecom on page 1010. This frame allows you to send a message to any other VIATEL subscriber. Page 1010 is shown on the following page.

```
VIATEL          1010a      0c
RECEIVER'S VIATEL NO:      #
RECEIVER:

DATE: FRI 31 JAN 1986 15:01:45

TO:                                     #

FROM:                                   #
SENDER: Microbee Systems Serv Prov
SENDER'S VIATEL NO: 432427110
```

Fig. 3-4 Main messaging frame on VIATEL (page 1010).

As you can see, VIATEL has already inserted your name at the bottom of the screen, next to "SENDER:", and has also included your mailbox number next to "SENDER'S VIATEL NO:". This is the number that allows other VIATEL subscribers to send a message to you. At the moment, it will be used to send you a message.

After the screen has been displayed, the

## *Using VIATEL*

flashing cursor will be next to the "RECEIVER'S VIATEL NO:" message. As you are going to send a message to yourself, type in your own VIATEL number, as shown on the bottom of the screen. When you have typed in the nine digits, press the hash key. This is the standard way of entering data into a response frame field. The <BACKSPACE> key may be used to move the cursor to the left to correct mistakes before the hash key is pressed.

When hash is pressed, VIATEL will automatically fill the "RECEIVER" field with your name, and the cursor will move to the "TO" field. In this field, type in the name of the person to whom you wish the message to be sent (yourself). Press hash when you have finished, or use <BACKSPACE> to correct mistakes.

If you entered an incorrect mailbox number, you may have received an error message asking you to try again, in which case you can enter the number again. You might also have another person's name, rather than your own, in the "RECEIVER" field. If this is the case, pressing the <CR> key, when the cursor is at the start of the "TO" field, will move the cursor back up to the mailbox number field, to allow the number to be entered again. When you are filling in response frames, using the <CR> key allows you to go back to the previous field, to re-enter the data contained in it.

Once you have completed the "TO" field, and have pressed hash, you will be transferred to the large field, which is to be filled with the message you wish to send. Once again, the <CR> key can be used to return to the "TO" field.

When you have finished entering the message, press the hash key. This will cause the message:

PRESS 1 TO SEND, 2 TO NOT SEND

## Using VIATEL

to appear. At this point, you can either press <1> or <2>, to achieve the desired result, or you can use the <CR> key to go back to edit a field. The hash key can then be used to re-enter the fields so that the response frame can be sent.

If you press <1> or <2>, the message:

PRESS # TO CONTINUE

will appear. Note that if you sent the frame, you will be charged 5c. At this point, you can press hash, to return to the main menu, or you can press <CR>, which will allow you to edit and change fields. For example, you may wish to send the same message to another person, in which case you would need to change the receivers mailbox number field.

A summary of the keys, that are available for use during editing within response frames, is shown below:

# (hash)	Delete everything after the cursor and enter the field, if the cursor is not at the start of the field. If the cursor is at the start of the field, enter the field as it is, deleting everything past the cursor.
BACKSPACE	Move the cursor one position to the left.
TAB	Move the cursor one position to the right.
LINE FEED	Move the cursor down one line.

## *Using VIATEL*

<CTRL-K>            Move the cursor up one line.

<CR>                Move the cursor to the start of the current field, if it is not already there. If it is already there, move it to the previous field.

### **3.14. Logging Off.**

There are two ways in which you can "log off" from VIATEL. The first (and probably the easiest!) is to just switch your modem to "PHONE" mode and hang up the telephone. This will disconnect you from VIATEL at any time.

The other, more graceful way to exit is to go directly to page 90 on VIATEL. This will cause VIATEL to register your request to leave the service, and it will check whether you have any unread messages. If there aren't any, a "Thank you" page will be displayed, and the VIATEL computer will disconnect. At this point, you should hang up your telephone and switch your modem to 'PHONE'.

### **3.15. Receiving messages on VIATEL.**

When you are sent a message from another user of VIATEL, there are a number of ways of retrieving it. Firstly, when you initially log on, you may see a flashing message on the log on screen. This screen is shown below:



NEW MESSAGE FOR YOU

---

# Response Facility

---

Key 1 to view message  
or # to leave Viatel

Fig. 3-6 Log Off message notice screen.

As you can see, keying "#" will follow the normal log off procedure, whereas keying "1" will start the display message sequence.

There is yet a third way to check for messages that have been sent to you, and that is to go to page 103 (\*103#) while accessing VIATEL. This will display the screen below. The available options speak for themselves.

## Using VIATEL

VIATEL	103a	0c
MAILBOX	ELECTRONIC MAIL SERVICE	
1	HOW TO USE MAILBOX step by step	
2	SEND A MESSAGE remember #1010# 5c per message	
3	GREETING CARDS a wide selection 5c per greeting card	
4	STANDARD MESSAGES eg 'Thank You' 5c per message	
5	MAILBOX DIRECTORY Search via Gateway using keywords	
6	TELEX how to use VIATEX	
7	SEND A TELEX remember #8161# \$1.75 per telex	
8	CONTACTING VIATEL	
9	NEW & STORED MESSAGES	
0	Mailbox and Teleservices	

Fig 3-7 Customer Messaging Services page on VIATEL.

Once you have decided to display any new messages that may be waiting for you, the first message will be displayed and the bottom line of the screen will contain the following message:

KEY 1 TO STORE MESSAGE, KEY 2 TO ERASE

As you can see, you can either discard the message (after reading it, of course, or STOREing it using the *microbee* Videotex software) by keying <2>, or you can store it on VIATEL. An individual's storage capacity on VIATEL is limited to three stored messages. If you attempt to store more than this number, you will be asked to read your currently stored messages and to delete some of them.

Assuming that your storage capacity is not used up, or that you choose to erase the message, the bottom line will be replaced with the new line shown below:

## *Using VIATEL*

KEY 1 FOR MORE, 2 FOR MAIN INDEX

Pressing <2>, at this point, will cause you to return to the VIATEL main index, while keying <1> will display any additional messages. If there are no more messages waiting, you will be asked to press "#" to display the VIATEL main index.



# **Part 4**

## **Technical Information**



## 4. Technical Information.

### 4.1. What to do if you can't Log on.

If, for some reason, you can't get to the VIATEL main index, or if you have trouble once you get there, here are a few tips and suggestions that might help you back onto the right track. Telecom provides a telephone number to use when you are really stuck with a VIATEL problem, although it should only be used as a last resort. The number is only for use during business hours, and is a local call charge anywhere within Australia. The number is:

(008) 033344

However, before ringing Telecom, try to see if you can isolate the problem, using the sections below.

#### 4.1.1. You can't get a dial tone.

If you pick up the 'phone on your modem and you cannot get the dial tone, first check that the "PHONE/MODEM" switch is in the "PHONE" position. If it is, make sure that your 'phone line is working correctly, by disconnecting the modem and trying another telephone that is connected to the same 'phone line. If this is not possible, plug another working 'phone into the same socket as the modem. Make sure that it is not the modem that is stopping the telephone line from functioning.

If the telephone line does not work with a normal 'phone (with the modem disconnected), there is probably something wrong with your line. Contact

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Telecom's Service Difficulties and Faults, if this is the case.

In the event that it appears to be the "Beemodem" that stops the line from working, contact a *microbee* store or dealer.

### **4.1.2. You can't get the VIATEL number to ring.**

If ringing the VIATEL number produces no ring tones, try ringing VIATEL again. If you do not achieve a result after several tries, another number, such as the TELECOM Talking Clock, on 1194, should be rung to ensure that the modem is dialling correctly. If this does not work, try another 'phone, to make sure that the modem is not at fault.

If you can dial other numbers correctly, the VIATEL computer may be temporarily disconnected for service. Normally this does not occur for more than an hour at a time, so if this condition persists, it would seem that the telephone exchange, to which your 'phone is connected, does not have VIATEL access. Telecom assures us that most regions of Australia have this ability, but if you appear to be an exception, contact Telecom on the VIATEL Assistance and Difficulties number.

### **4.1.3. VIATEL doesn't answer.**

If, once the ring tones are heard, the 'phone just keeps ringing with no answer, try ringing the VIATEL number again. If this happens several times, try ringing the number at a later time, as the VIATEL computer may be disconnected for service. If the condition persists, contact the Telecom VIATEL Assistance and Difficulties number.

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If the number answers, but no carrier is heard, try ringing again. If the same thing happens several times, try again later. As above, if the condition persists, ring Telecom.

### 4.1.4. The carrier detect doesn't light.

Once the carrier is heard, the carrier detect light should be lit, after you switch from "PHONE" to "MODEM". If this does not occur, or if, when you do switch over, "COM" or other similar intelligible characters do not appear, check to make sure that the "ORIGINATE/ANSWER" switch is in the "ORIGINATE" position, and that the "300/1200/75" switch is in the "1200/75" position. Note that if these switches are not in the right position, within two to three seconds of the switch over from "PHONE" to "MODEM", the VIATEL computer will most likely hang up. In this case, hangup, redial the number and try again.

If the switches are in the correct position, and the carrier can be clearly heard, the problem most likely lies with the modem or the *microbee*. If possible, ring a friend who also has a modem and see if you can send data to each other using your modems (See the Telcom or "Beemodem" manuals for details on how this is done).

If the modem seems to work correctly with modems other than VIATEL, contact Telecom about difficulties with your telephone line. Users in isolated areas may have problems like this.

If the modem does not work correctly with any other modems, either the modem or the *microbee* is at fault. Please contact a *microbee* shop or dealer for further advice, in this case.

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### 4.1.5. A message other than 'COM' appears.

There are several messages other than "COM" that may be received when communication is established with the VIATEL computer. The possible messages and their meanings are as follows:

COM	Successful contact - VIATEL screens should follow shortly.
MOM	Please wait, as VIATEL is trying to handle your call.
OC	No free circuits to VIATEL are available. Ring back later.
NC	Network congestion. Ring again.
INV	Invalid facility request. Ring again.
NA	Access barred. Ring again.
ERR	Local procedure error. Ring again.
NP	Not obtainable. Ring again.
DER	VIATEL is temporarily out of order. Ring back later.

### 4.1.6. You can receive, but you cannot transmit.

After establishing contact with VIATEL, the page requiring input of the customer identity number

## *Technical Information*

should appear. At this stage, typing any of the number keys should make "\_" characters appear. If this does not happen, it would appear that either the modem or *microbee* is incapable of transmitting. If possible, try the modem with another modem user. If this also indicates that the modem is faulty, contact your nearest *microbee* store or dealer for further information.

### 4.1.7. Garbage on the screen.

Occasionally, you may find that solid blocks will appear in place of characters on screens. Also, characters that are obviously nonsense may be displayed. These are caused by "noise" on the 'phone line, which results in characters being garbled. If these characters appear, try the \*00# command to re-display the screen. If they appear continuously, or so regularly as to make normal operation impossible, disconnect from VIATEL and try logging on again. In most cases this should remedy the problem.

If the problem of noise characters persists, contact Telecom about examining their line equipment.

### 4.2. Inside VTL files.

The files in which the *microbee* VIATEL software stores the screens have a fixed format that some people may find useful. The twenty screens are stored as a contiguous series of records, starting from screen one through to screen 20. Each record is 1024 bytes in length and has the following format:

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Offset in Record	Description
0000h	If this byte equals 0, this screen does not contain any valid data. Otherwise, the data is valid.
0001-0002h	This word contains the length of the screen data. It is stored in standard Z-80 low-high format.
0003-3FFh	Screen data stored as PRESTEL characters.

### 4.3. Using Videotex on a Starnet.

The *microbee* Videotex software is completely compatible with the *microbee* Star Network. In fact, the software was developed on a Hard Disk Star Network Slave Station. The following points should be kept in mind when using the software on a student station:

- 1) If a "Request Write Permission" message is flashed onto the top of the screen, it will appear almost illegible, because the PCG characters that normally contain the inverse character images are used by the VIATEL software to create graphics. Apart from this, it works correctly, and the garbage will disappear when either the <Y> or <N> key is pressed.
- 2) Ultimately, all users on the network will read the same "CUSTOMER.ID" file, unless you are careful. Putting separate files into workspaces may be one solution.



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- 3) As with all applications software on the network, be careful on which drives you try to save data. You may not have write permission.



## **Part 5**

# **Installing your VIATEL kit**

1000

1000

## *Installing your VIATEL kit*

### 5. Fitting the videotex upgrade kit yourself.

Most existing *microbee* machines can be upgraded for videotex operation, providing they are IC models and have a 13.5 MHz crystal (i.e., the CPU runs at 3.375 MHz). Both ROM and disk based machines can be upgraded. The upgrading can be done for you by Microbee Systems technology centres, if you prefer, or you can do it yourself. The information in this section is for those people who wish to fit the upgrade kit themselves.

#### 5.1. Elements of the Upgrade Kit.

The upgrade kit itself consists of two things:

- 1) A small supplementary PC board assembly which connects to the *microbee* mother board, inside the case. This is to allow the *microbee's* video display to be switched over to VIATEL's 40-column format, in response to a software command.
- 2) A "driver" program to make the *microbee* work as a videotex terminal. For ROM-based machines this comes in a plug-in PAK ROM, while for disk-based machines it comes on disk. and is loaded into RAM.

In order to use the upgraded *microbee* to access VIATEL you'll also need a modem which is capable of operating at the 1200/75 baud mixed data rate used by VIATEL. The latest model Beemodems can be switched to this mixed data rate, in addition to the more familiar 300/300 baud rate. Owners of earlier model single-speed Beemodems, who are also hackers, can again add this facility quite cheaply. Details are available from Microbee Systems' technology centres.

## *Installing your VIATEL kit*

The supplementary PC board provides the extra circuitry shown. This allows the *microbee's* video clock signal to be switched under software control between the normal 13.5 MHz frequency and half that figure, or 6.75 MHz. Since the normal frequency produces 80 characters per screen line, half this frequency gives the 40-character wide display needed for VIATEL.

### 5.2. Installing the upgrade PCB.

Connecting the upgrade PCB into the mother board of the *microbee* requires a small amount of delicate surgery, best tackled only by an experienced hacker or technician. If you're not in this category, it might be a good idea to get it done by Microbee Systems or your dealer.

The first step is to open the case and unplug the memory 'core' board from the top of the mother board, placing it carefully aside. Next, remove the remaining screws, which are fastening the mother board into the case, so that you can get at both sides of the board.

## *Installing your VIATEL kit*

### 5.3. Tracks to cut.

To begin the job, cut the following tracks:

- 1) On the component side, cut the track from pin 6 of IC23, at the print-through hole near pin 7 of the same IC.
- 2) On the solder side of the board, again cut the track from pin 6 of IC23, right near the solder pad.
- 3) The next cut will vary between different versions of the mother board. Basically, you need to disconnect the main CPU clock line from pin 10 of IC30 and from pin 13 of IC26, while still leaving these two pins connected to each other. The CPU clock line can be identified thus: it runs on the solder side of the board, from R12 to pin 40 of IC25 and then to a print-through hole near the main reservoir electrolytic capacitor. With ROM based machines, this capacitor is a large 4700 uF unit, while with disk-based machines it is a smaller 470 uF unit. In both cases, it is located at the right-hand end of the PC board, looking from the front on the component side.

If your motherboard is a 1248-6 revision board, this part of the conversion will be very easy (you will find the board revision number on the solder side near the keyboard). Here all you need to do is remove pin 10 of IC30 and pin 13 of IC26 from the board, and rejoin them with a short length of hookup wire on the component side. This saves cutting any further tracks.

## *Installing your VIATEL kit*

### 5.4. Link to add.

A small link must be added to the solder side of the board. This should run from pin 2 of IC26 to the print-through hole nearest to pin 7 of IC23, connecting pin 2 of IC26 to pin 7 of IC12.

### 5.5. Mounting the Upgrade PC board.

Now you can mount the upgrade PC board and connect it into the circuit. There are various ways to mount the board, depending on whether you have a colour or monochrome *microbee*. With a colour machine, it is probably best to drill a hole in the end of the colour board's heatsink and bolt the extra board there. For monochrome models, the alternatives include fitting a wire wrap socket into the spare IC space on the motherboard and plugging in your adaptor board there, or simply gluing the top of one of the ICs to the bottom of the motherboard itself. Another approach is to drill a small hole in the motherboard near the reservoir capacitor, and bolt the upgrade PCB to the underside of the board using a small insulated spacer.

To connect the upgrade PCB into the main board circuit, use Table 1 as a guide. Note that the leads on the pre-assembled board are colour coded for identification, as shown.



## Installing your VIATEL kit

Table 1: Viatel Adaptor PCB connections

Signal	Colour code	Connect to
13.5 MHZ	Yellow	IC23 pin 6
Reset	Orange	IC33 pin 13
RD-bar	Violet	IC28 pin 18
Port 9-bar	Blue	IC34 pin 11
A8	Green	IC22 pin 12
CPU	Brown	IC25 pin 6 (or TP6)
VCLK	Grey	IC26 pin 2 (or TP5)
+5V	Red	+5V supply line
GND	White	Ground line

### 5.6. Changes to Colour Board Connections.

With colour *microbees*, you also have to change two of the connections to the colour board X5. Here are the changes:

Colour board connection	Previously connected to	Change to:
X5 pin 7	IC25, pin 6	IC26, pin 13
X5 pin 11	IC23, pin 6	IC26, pin 2

### 5.7. Checking the Upgrade Modifications.

The hardware part of your upgrade should now be complete, so check things carefully and put everything back together, with the exception of the *microbee's* case top. Now is a good time to check that your hardware surgery has been successful, before you plug in the new Viatel PAK ROM or try loading in the disk version.

## *Installing your VIATEL kit*

To check the modification, we use a small machine language routine, entered and run using the *microbee's* Monitor program. Firstly, turn on the *microbee's* power and enter the Monitor. In ROM-based machines, you do this by pressing the <M> key, in response to the main menu; in disk-based machines, by holding the <M> key depressed while you press <RESET> for three seconds.

Next use the Monitor's 'A' command to load the following five-byte test routine into a convenient part of RAM (starting at 1000H, for example):

```
3E 01 DB 09 C9
```

Now get the *microbee* to jump to the first address of this routine, using the Monitor's 'G' command. If all is well, the video display should suddenly change to 40-column format. Pressing the <RESET> key should bring it back to normal 80-column mode. Alternatively, you can modify the second byte of the routine so that it becomes:

```
3E 00 DB 09 C9
```

and then run it again. This should again swing things back to 80-column mode.

This extremely short test routine works because of the way that the videotex upgrade circuit works. IC3 is a one-bit latch flip-flop, which controls the actual video clock switching. The simple decoding circuitry effectively places it at the only available I/O port address, port 9. But since there is already an existing *microbee* control latch at this port address, the new latch is written to, using a read instruction. Yes, it is a little confusing, but it works!

To allow the software to feed either a 1 or a 0 into the new latch, and using a read instruction,

## *Installing your VIATEL kit*

pin 2 of IC3 is connected to address line A8. This is to take advantage of the fact that the Z-80 processor feeds the contents of its A register onto the top 8 address lines, when it executes an IN A, port instruction. So, by loading the A register with either 1 or 0 (using either 3E 01 or 3E 00), and then performing an IN A,9 instruction (DB 09) to 'read' from IC3, what actually happens is that either 0 or 1 is loaded into the latch. The test routine ends with a RETURN instruction (C9) to jump back to the Monitor program.

Assuming that the video display format changes back and forth with the test routine, you have almost finished. All that remains is to plug in the Viatel PAK ROM, in the case of a ROM-based machine, put the *microbee's* cover back on and connect it up to the modem (switched to 'Originate' and 1200/75 baud).

Now, you can turn on the power and activate the Viatel driver software by calling it from the PAK ROM or loading it from disk, whichever is appropriate. You're now ready to talk to VIATEL.



## **Part 6**

# **Customising your software**

1911

1911

## 6. Customising your software.

This chapter has been included to allow you to customise your videotex software.

### 6.1. Changing the default 'phone number.

This modification is only possible with disk videotex software (v1.34). The program 'PATCH.COM' has been supplied with the videotex software to allow you to change the default 'phone number that is used when the dial command is invoked. Run 'PATCH' from CP/M by typing:

```
PATCH <CR>
```

You will be required to enter a 'phone number of up to 15 digits in length. When you have entered the new number, press <CR> and your videotex software will be patched. You may change the default 'phone number as many times as you wish, however, you must remember that backups of the software will still have that old 'phone number.

### 6.2. Burning the ID number into ROM.

This section is only relevant to owners of PC85's. Provision has been made in the ROM to allow the burning of a ten digit ID number. This is, however, not as easy as it may seem. You will need a *microbee* EPROM programmer and a 50 way connector soldered to the core board of your PC85 (these connectors are not fitted as standard).

First of all, remove the videotex ROM from the coreboard of your *microbee* (this will be marked

## *Customising Your Software*

'Viatel 2.34' or 'V 2.34'), plug in your EPROM programmer and enter the machine code monitor that is accessible from Telcom's main menu. If you don't know how to use the EPROM programmer, read the manual carefully - it is quite easy to destroy a ROM through incorrect use of the EPROM programmer.

Place the ROM into the EPROM programmer, leaving it switched OFF at this stage. Now, enter the machine code monitor and type:

```
a 1000 <CR>
```

We will enter the ID number into RAM, between locations 1000h - 1009h, and then block move the number into our EPROM.

Your ID must be entered as a string of ASCII characters, so, using the table below, begin to enter the ID number.

ASCII value	HEX value
0	30
1	31
2	32
3	33
4	34
5	35
6	36
7	37
8	38
9	39

If your ID number was:

```
1234567890
```



## Customising Your Software

you would type in:

```
31 32 33 34 35 36 37 38 39 30
```

As you enter the digits, you will see the ASCII value appear under the right hand cursor, while the HEX value will appear under the cursor on the left hand side of the screen.

After you have entered the number, check it again - remember, once you have burnt a number into ROM, you will not be able to change it.

Now to burn the number into ROM. The blank space in your ROM is located at offset 1B17h. Thus, if your EPROM programmer is placed at location C000h in the memory map, you will need to burn location 1000h (RAM) into DB17h (ROM) for 10 bytes. Likewise, if your EPROM programmer is located at position 6000h in the memory map, you will be burning 1000h into 7B17h for 10 bytes.

Let's try it. With the EPROM programmer switched ON and with ROM select switches set, type:

```
m 1000 DB17 10 <CR>
```

The light on your EPROM programmer will now be lit for a few seconds. Once the light has gone off, turn the EPROM burner OFF, remove the ROM and turn your *microbee* OFF. Now re-insert the ROM, turn your *microbee* back on and press <V> from the main menu.

You may now type:

```
ID <CR>
```

## *Customising Your Software*

from the Videotex main menu and your ID number will appear at the bottom right hand corner of the screen. When you next logon to VIATEL, the ID entry screen will appear and then be immediately replaced by the password entry screen.





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\*  
\* Microbee Systems Limited \*  
\* \*  
\* M A N U A L P R O B L E M R E P O R T \*  
\* \*  
\*\*\*\*\*

We're constantly trying to improve our manuals, by making them easier to read, putting in additional useful information, and fixing any errors that may have crept in (we're human!). You can help us do this by letting us know about any problems you encounter, using this form where possible.

Please note that we have a FREEPOST number for our P.O. box at North Ryde. Thus, if you return this form to the address shown below, the envelope will not require a stamp.

1. NAME OF THE MANUAL CONCERNED:

.....

2. WHICH HARDWARE ITEM/SYSTEM/SOFTWARE PROGRAM IS IT FOR?

.....

3. EXACT LOCATION OF PROBLEM IN MANUAL:

Section:..... Chapter: ..... Page: .....

4. WHAT IS THE NATURE OF THE PROBLEM?

Text confusing [] Not enough information [] Error(s) []

5. PLEASE GIVE FURTHER DETAILS IF POSSIBLE:

.....  
.....  
.....  
.....

6. PERSON REPORTING THE PROBLEM:

..... Phone: (....) .....

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