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Advanced Operations

Tonto personal information centre

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Contents

This manual is divided into sections, which are introduced below.

The quickest way to locate information on a particular topic is to use the comprehensive index at the back of the manual.

1 Introduction

Describes the scope of Advanced Operations and the general method for using them.

Advanced Operations enable you to alter a range of parameters that underlie the operation of the TONTO. This manual explains what these parameters are, and how to change them. Most of the parameters define information that is set up in your TONTO when it is delivered, and you can start using it straight away with these values. It is unlikely that you will want to amend the parameters frequently.

The current value of each parameter is held in the TONTO's permanent store. Values in the permanent store are retained even when the TONTO is not switched on. Any changes you make to the parameters will apply from the time they are made.

Using this manual

This manual is organised to make it easy for you to use Advanced Operations. Sections 2, 3 and 4 correspond to the three Configurator programs, which perform most of the operations and are contained on the BASIC cartridge described overleaf. Section 5 describes other operations that you select from the Housekeeping Menu.

This arrangement means that information about the telephone and printer is spread over more than one section. Specifically:

Telephone: Line configuration (including some charging information) is in section 2 (page 27).

Charge bands and charge rates are in section 3 (page 31).

Clearing call-failed records is in section 5 (page 50).

Printer: Image Printing is in section 2 (page 19).

Printer configuration is in section 4 (page 39).

Paper, quality of print and colour options are in section 5 (page 47).

The manual assumes that you are familiar with the Handbook, and have a copy available to refer to.

The BASIC cartridge

With the exception of the Housekeeping operations, all the parameters described in this manual are changed using the Configurator programs. These are stored on a single microdrive cartridge, labelled BASIC (with a numeric suffix defining the version of the programs on the cartridge). The cartridge also contains the interpreter for BASIC, which is the language the programs are written in.

Housekeeping operations

Section 5 describes some other Advanced Operations that are performed via the Housekeeping Menu, and do not require the BASIC cartridge. They concern printing options and the redialling of telephone numbers; refer directly to section 5 (page 47) for more information.

PRELIMINARIES

Before you run any of the Configurator programs, you need to empty the TONTO's main store. It is also a good idea to make a copy of the TONTO's permanent store. The reasons for these preliminaries and what you have to do are now explained.

Emptying the main store

The Configurator programs use a lot of space in the TONTO's main store (that is, that part of the TONTO's store that is lost if power to the TONTO is switched off or fails). Before loading the BASIC cartridge, you should therefore empty this store. To find out what is currently held in the store, use the Store Report, which you can obtain by this menu sequence:

- Top Level Menu
- Housekeeping
- Store Report

You should then delete all databases and user applications from the store, using the methods described in the Handbook. You may want to copy them onto a save file first, using the Data Record facility, also described in the Handbook.

Copying the permanent store

The permanent store is that part of the TONTO's store that is not lost if power is switched off or fails. It is there that the parameter values described in this manual are recorded.

Before you run any of the Configurator programs, you should save the contents of the TONTO's permanent store onto a microdrive cartridge, using the Data Record facility. Then, if you or the TONTO run into serious problems while you are

updating parameter values, you can reinstate the save file copy of the permanent store from the cartridge, and begin the amendment process again. Alternatively, you could reset the permanent store to the default settings, as described on page 8; however, this method will not incorporate any changes you had made since the TONTO was delivered.

You can copy the permanent store using this menu sequence:

- Top Level Menu
- Housekeeping
- Save permanent store

To load a save file into permanent store, select the Load permanent store option from the Housekeeping Menu (illustrated on page 47). If you load the permanent store in this way at any time, any values where the current store and file versions differ are updated with the value on the file.

Saving and loading permanent store also provide a practical way of setting up a number of TONTOs with the same parameter values. If you configure one TONTO and then copy its permanent store into a save file, you can load that file directly into other TONTOs. Then all the TONTOs will have the same parameter values, but you will not have had to run the Configurator programs separately for each one.

LOADING THE CONFIGURATOR PROGRAMS

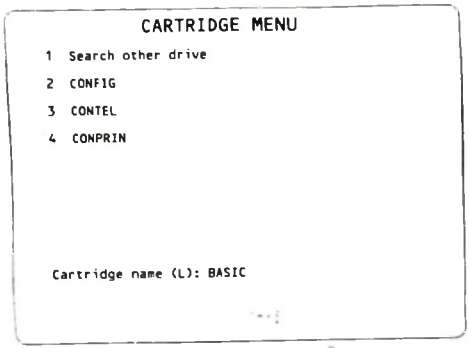
To use the Configurator programs, follow these steps:

1 Insert the BASIC cartridge in one of the drives.

2 Press the START key; this gives you a display of the Top Level Menu (illustrated on page 12).

3 Select the Applications Menu by pressing the 4 key on the main keyboard.

4 Select the Cartridge Menu to list the programs on the BASIC cartridge: press the 1 key once if the cartridge is in the left hand drive or twice if it is in the right hand drive. The Cartridge Menu is then displayed, as illustrated overleaf. Note that the programs may be in a different order on your screen.



- CONFIG lets you alter a range of general TONTO parameters (see section 2)
- CONTEL lets you alter the preset values for inland and overseas telephone charging (see section 3)
- CONPRIN lets you set details of your printer's operation (see section 4)

5 Select the program you want to run, using the option numbers shown in your screen if they are different from those above. (Option 1 gives you a list of the programs on the cartridge, if any, loaded in the other drive.)

RUNNING THE CONFIGURATOR PROGRAMS

You run the Configurator programs in the usual way on the TONTO, by making selections from menu screens. Selecting the options corresponding to CONFIG, CONTEL and CONPRIN from the Cartridge Menu will give you the first screens illustrated in sections 2, 3 and 4 respectively. These screens either allow you to change parameters directly, or lead you to other screens that allow you to make changes.

One standard feature of BASIC that you should be aware of when you are using the Configurator programs is that they stop running if you press the CTRL key and the space bar simultaneously. If you do this by accident, you can recover

by typing RUN and then pressing the ENTER key. The initial screen for the program you were running is then shown and you can continue from there.

Changing parameter values

When you have a display containing the name of the parameter whose value you want to change, highlight its current value.

You can move the highlighting using the upward and downward cursor moving keys (↑ and ↓). These move the highlighting to the item immediately above or below the currently highlighted item. If you press ↓ when the last item on the screen is highlighted, the highlighting moves to the first item; similarly, if you press ↑ when the first item on the screen is highlighted, the highlighting moves to the last item.

The TAB and B/TAB keys can be used as alternatives to the ↓ and ↑ keys respectively.

For each item listed in a screen, there is either a value or an indication that you must select a separate screen or program for the parameter values. The value of each parameter is in one of two categories:

1 There may be a number of predetermined values. For example, one parameter defines which microdrive to search, and it can be set to one of the values LEFT, RIGHT and BOTH.

You can display these possible values by pressing f1. The first time you press it, one of them appears in the highlighted box; the next time you press f1, another value appears. You can repeat this process, displaying all the possible values, until the first one is displayed again. When the value that you want appears, leave it displayed.

It is recorded by the TONTO and used until it is replaced by another value.

2 You may have to type some information, for example the name of an application. In this case, press f1 when the appropriate item is highlighted. The box then clears and this message is displayed:

Type new value and press ENTER

The characters you type are displayed in the empty box as you type them. If you make a mistake (for example, typing an incorrect character) you can use the editing

keys (INS, DEL and CTRL/DEL) to amend your input before you press the ENTER key.

You can move between the Configurator programs by highlighting the appropriate SEPARATE PROGRAM box on the main screen for the program you are using, and pressing f1. If your current display is not one of the main screens, press f7 first.

Resetting permanent store

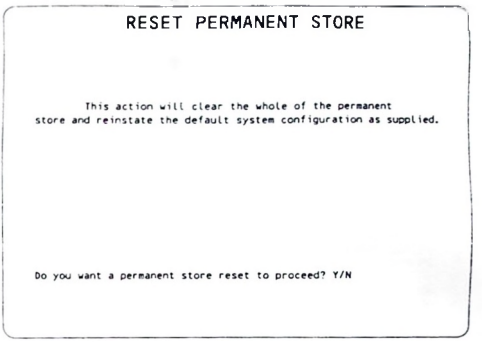
You can reset the contents of the permanent store to the values it contained when it was delivered. For example, you may want to do this if you get a message that the permanent store is full. To reset the permanent store:

1 Display the Main System Configuration screen (illustrated on page 11). How you do this depends on your current display:

Current display	Action
Cartridge Menu	Select the CONFIG option
A screen selected from the Main System Configuration screen	Press f7
The Telephone Charge Bands and Rates screen or the Printer Configuration screen	Highlight the MAIN SYSTEM CONFIGURATION box, and press f1
A screen selected from the Telephone Charge Bands and Rates or the Printer Configuration screens	- Press f7 to return to the main screen for the program - Highlight the MAIN SYSTEM CONFIGURATION box - Press f1

2 Press f3. This gives you the Reset Permanent Store screen, shown opposite.

3 Press Y to confirm that you want to reset the permanent store.



After this procedure, the permanent store contains the default values listed in this manual for all the parameters described in sections 2, 3, 4 and 5.

DELETING THE CONFIGURATOR PROGRAMS

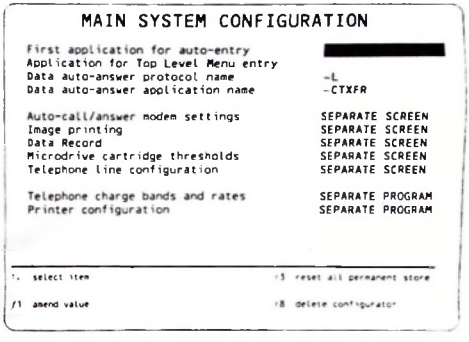
When you have finished using the Configurator programs, you can proceed in either of these ways:

- Press f8. The effect of this is to delete the Configurator programs from the store and to display the Top Level Menu. If you then want to use the programs again, you will have to start from the beginning.

- Press START. In this case, the Top Level Menu is also displayed, but the Configurator programs are not deleted from the store. You can then do something else (for example, use the Calculator) and return to the Configurator programs by pressing RESUME. If you want to delete the Configurator programs from the store without going back to them, use the Store Report facility (see the Handbook).

Covers a wide range of parameters used by the TONTO, explaining what they mean, when and how to amend them, and what their alternative values are.

If you select CONFIG in response to the Cartridge Menu (see page 6) the Main System Configuration Menu is displayed.



This menu lists some parameters that you can change directly using this screen and others that use separate displays. In addition, you can move from this menu to the Telephone Charge Bands and Rates and the Printer Configuration menus (see pages 31 and 39 respectively), by highlighting the corresponding SEPARATE PROGRAM box and pressing f1. You can move from these menus to the Main System Configuration screen in the same way.

This section describes the meaning and possible values of each parameter on the screen above and those on the separate screens listed. It also indicates the circumstances when you would want to make changes to the parameter values.

FIRST APPLICATION FOR AUTO-ENTRY

You can set up the TONTO so that a particular application starts running every time you switch on the TONTO. Then, after you have switched on and the Initialisation screen has been shown briefly, the application starts (instead of the

Top Level Menu being displayed). You may find you are always using a particular application first when you start to use the TONTO and would like it to start automatically instead of going through a menu sequence each time.

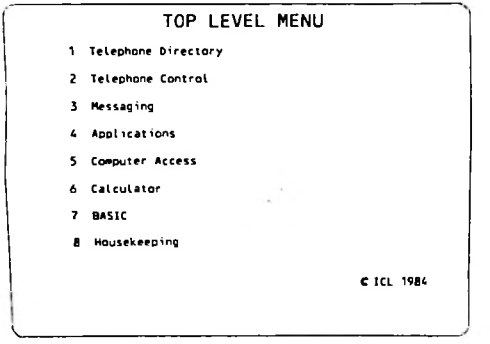
You specify the name of this first application using this parameter. Provided the application is available, it will be auto-entered in this way the next time you switch the TONTO on. You can also use this parameter to change to a different application to be auto-entered.

Value: Up to 22 characters; the first character must be a letter, and the others must be letters or digits. The system does not check that the name you type is valid; if it is invalid, the application will not be found, and the Top Level Menu will be displayed after the Initialisation screen

Default: None; no application is set up for auto-entry

APPLICATION FOR TOP LEVEL MENU ENTRY

The standard Top Level Menu, displayed when you press the START key, is illustrated below. It is the starting point for using the TONTO, and offers eight options.



You can use this parameter to name an application to appear as a ninth option on the Top Level Menu. For example, you may find it useful to add an application that you use frequently, so that you don't have to go through a series of menus every time you want to run it.

Note that an application named in this parameter must be in a capsule or a Rompack, and not on a cartridge.

When you have supplied a name for this parameter, the application appears on the Top Level Menu when the capsule or Rompack containing it is plugged in, but not when it is not plugged in.

Value: Up to 22 characters; the first character must be a letter, and the others must be letters or digits

Default: None; the Top Level Menu appears without item 9

DATA AUTO-ANSWER PROTOCOL NAME

You can set up the TONTO to Auto-answer data calls using this menu sequence:

- Top Level Menu
- Telephone Control Menu
- Auto-answer Control
- View voice responses/Set Auto-answer

Pressing f5 then switches data Auto-answering on and off. Full details are in the Handbook.

Data communication between computers is controlled by a set of rules known as a protocol. Many different protocols are used in data communication, but in all cases, the same protocol must be used by the transmitting computer and the receiving computer.

The TONTO has a default protocol (see below), but you can specify a different one if you want to, using this parameter. If you do this, you may need to change some of the Auto-call/answer modem settings (see page 16); alternatively, the parameter settings may be built into the protocol.

A protocol name defined in this parameter must be the name of a program that is loaded in a capsule, a Rompack or a microdrive cartridge when you need to use it. A new protocol will be applied from the next time the TONTO Auto-answers a

data call, provided the program is loaded. If it isn't, the TONTO will not Auto-answer data calls; the protocol does not default to T-Link unless the other protocol name is deleted.

Value: Up to 12 characters; the system does not check that the name is valid, nor that a program of that name is loaded

Default: ~L. This is the program name of T-Link (also known as the Microcom Networking Protocol, MNP™), which is a widely accepted protocol designed to provide reliable data communication between personal computers across the telephone network. It is the standard protocol for the TONTO

DATA AUTO-ANSWER APPLICATION NAME

The data Auto-answer protocol specified above routes the data contained in an Auto-answered call into an application in the receiving TONTO. The purpose of the Data auto-answer application name parameter is to define a default application which will handle Auto-answered data calls if the protocol does not route the call to a specific application. If you enter an application name using this parameter, it will be used on the next relevant occasion, provided the application is then in a currently loaded capsule or microdrive.

Note that only applications that can use the communications protocol set up for the TONTO (see the Data auto-answer protocol name parameter above) can be started in this way. You can find this out from the application's documentation.

Value: Up to 12 characters; the system does not check that the name is valid, nor that an application of that name is loaded

Default: ~CTXFR. This is the program name of the Messaging application (see Messaging)

AUTO-CALL/ ANSWER MODEM SETTINGS

If you highlight the SEPARATE SCREEN box on the same line as this parameter name on the Main System Configuration screen and press f1, the screen illustrated on page 16 is shown.

A modem is the item of hardware at the interface between a computer and the telephone network. It converts data between the form in which it is used by the computer and the form in which it can be carried by the telephone network (which is audible as a sequence or tones). For example, if data is to be sent from one TONTO to another, the modem at the transmitting end converts the data from digital form, and the

modem at the receiving end converts it back to digital form. This dual nature of the modem's functions is reflected in its name, which is derived from MOdulator/DEModulator.

For two modems to exchange data, they must use exactly the same modem settings.

When a TONTO is used as a terminal to a remote computer, the TONTO's modem settings must match those of the modem on that computer. This matching is achieved by means of profiles, which define the technical aspects of the connection in a Computer Access session. Further information is in the Handbook.

When TONTOs exchange data, as in Messaging, or with a remote computer using the data Auto-answering protocol (see page 13), the modem settings must be defined using the Auto-call/answer modem settings listed on the screen overleaf. However, if the T-Link protocol is in use, only two of the possible combinations can be used. These are listed below.

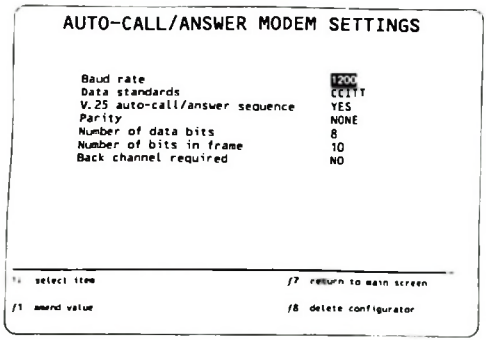
Parameter	Set A	Set B
Baud rate	1200 bps	300 bps
Data standards	CCITT	CCITT
V.25 auto-call/answer sequence	YES	NO
Parity	NONE	NONE
Number of data bits	8	8
Number of bits in frame	10	10
Back channel required	NO	NO

Most users will use Set A, which gives the best performance. Set B, however, is more tolerant of the random noises often heard on telephone lines. If you have difficulty using Set A (probably because you are sending data over noisy lines), change to Set B. Remember that the computers you are communicating with must also change to the same set of values at the same time.

You can display the alternative values for the various parameters shown overleaf using the ↑ and ↓ keys and f1 as described on page 7. The meaning of each of the parameters is described below. If you make any changes, they become

effective the next time the TONTO automatically makes or receives a data call.

Note that the defaults are the Set A values for T-Link.



Baud rate

This parameter defines the speed at which the modem is to transmit and receive data over the telephone line. The word baud (pronounced as in abode) is derived from the name of Emile Baudot, a pioneer in the field of data communication. The baud rate is specified in units of bits per second (bps).

T-Link uses 1200 bps in Set A and 300 bps in Set B. At 1200 bps, the modem can either transmit or receive data, but not both at once; this is called half duplex communication. At 300 bps, the modem can transmit and receive data simultaneously; this is called full duplex communication.

Other protocols may use either of these rates, or a third option, 600 bps half duplex. Protocols using the 600 or 1200 bps half duplex settings may use the back channel (see page 19) specified by the last parameter on the modem settings screen, but T-Link does not use such a channel.

Values: 300, 600, 1200

Default: 1200

Data standards

Various data standards bodies make recommendations about how data should be transferred. These recommendations concern characteristics like baud rates and protocols.

The only standards you can specify for the TONTO are those of the CCITT (International Telegraph and Telephone Consultative Committee). These are in general use in Europe; the V series of standards (for example V.25 in the next parameter) specify different CCITT recommendations.

Value: CCITT

Default: CCITT

V.25 auto-call/answer sequence

This parameter specifies whether you want the CCITT V.25 standard sequence to apply to automatic data calls made and received by your TONTO.

Briefly the sequence is that, when a modem has data to transmit, it sends short bursts of tone (audible as a sequence of pips) to the receiving modem, to indicate that it wishes to make a data call; in between bursts, it listens for a response from the receiving modem. When the receiving modem hears the tones from the sending modem, it sends a continuous tone (audible as a whistle) for two or three seconds. If the sending modem successfully hears the receiver's response, transmission starts after a short pause.

If you set this parameter to NO, the telephone number of your TONTO must not be listed in any directory supplied by British Telecom.

Values: YES (to apply the V.25 sequence), NO

Default: YES

Parity

A parity bit provides a check that data sent is received correctly.

Each character is transmitted as a series of 0s and 1s. If a parity check is required, a parity bit is added to the end of each character. The value of the parity bit depends on the type of check being made. For even parity, the total number of 1s in the character plus the parity bit must be even, whereas for odd parity it must be odd. For example:

Parity	Character code	Parity bit
Even	1011010	0
Odd	1011010	1

Values: NONE, EVEN, ODD

Default: NONE

Number of data bits

The TONTO can transmit data using 7 or 8 bits for each character: this parameter lets you specify which is to apply.

The T-Link protocol uses 8-bit transmission.

Values: 7, 8

Default: 8

Number of bits in frame

Each character is transmitted in a frame, and this parameter defines the number of bits in the frame. A frame is either 10 or 11 bits long, and consists of a start bit, 7 or 8 data bits, a parity bit (if the Parity parameter above is set to EVEN or ODD) and one or two stop bits. The number of stop bits is determined as a residual, deducting the number of bits already used from the frame length; it must be either 1 or 2. For example:

Number of data bits	Frame length	Parity bit?	Number of stop bits
7	10	No	2
8	11	Yes	1

The values you enter for this parameter and the previous two must be compatible; that is, they must result in either one or two stop bits at the end of the frame. The system does not check for this compatibility, so you must ensure that any changes you make result in consistent values.

Values: 10, 11

Default: 10

Back channel required

A back channel is a slow (75 bps) channel that can be used to transmit while the TONTO is receiving data at 600 or 1200

bps. Thus a back channel provides a measure of simultaneous two-way communication, albeit at different speeds.

Note that you cannot use a back channel with T-Link.

Values: YES, NO

Default: NO

IMAGE PRINTING

If you want to print a copy of your current screen, you can do so using the Image Printing facility, described in the Handbook. If your printer can print in colour as well as black and white, you can specify which you want using the method described on page 50.

The Image Printing screen (obtained from the Main System Configuration menu on page 11) lets you define two aspects of the way you want Image Printing instructions to be interpreted:

1 If you are printing the display in black and white, you must specify which colours (or shades of grey for a monochrome monitor) you want to be printed as black, and which are to be left as white.

2 The SHIFT/PRINT and ALT/PRINT keys can be used to define the size of the image printed; you can specify the meaning you want to apply to each of these key combinations.

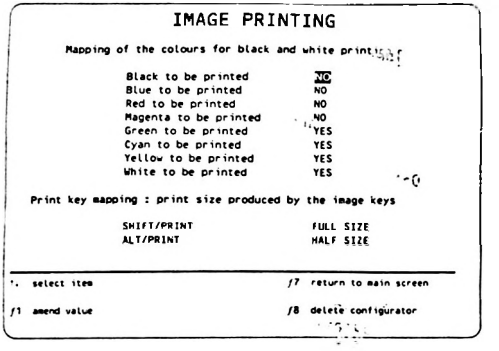
Mapping of the colours for black and white printing

A monochrome monitor can display black, white and six shades of grey. A colour monitor can display black, white and six colours. A black and white printer, however, can only print in black (normally on white paper). The parameters on the screen overleaf let you specify which shades you want to be printed (that is, to appear as black on the printed copy).

You can move the highlighting up and down, using the ↑ and ↓ keys, and display the alternative values by pressing f1.

If you select the YES value for a particular colour, those parts of the screen that appear in that colour will be printed in black. Those colours with a NO value will not be printed, and will be left blank on the printed copy.

Note that the default values below give the reverse of the appearance of the screen; for example, the background on the



screen is black whereas on the printed copy it is white. This makes for easy reading of both screen and paper copies.

Values: YES, NO

Defaults: Monochrome	Colour monitor	Value
Black	Black	NO
Shades of grey	Blue	NO
	Red	NO
	Magenta	NO
	Green	YES
	Cyan	YES
	Yellow	YES
White	White	YES

Print key mapping

You can specify that the image you print is to be in various sizes (illustrated in the Handbook) by using two key combinations, SHIFT/PRINT and ALT/PRINT. You can use the lower part of the Image Printing screen to define how you want these keys to be interpreted. For example instead of the default arrangement, you may want SHIFT/PRINT to mean that screens are to printed in half size and ALT/PRINT to mean half height.

If you highlight the box corresponding to the keys you want to define and press f1, the alternatives will be displayed in turn, in the usual way. Leave the value you want to apply when it is displayed.

Values: FULL SIZE, HALF SIZE, HALF HEIGHT

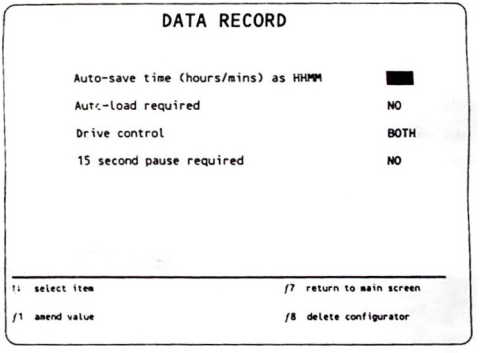
Defaults: SHIFT/PRINT: FULL SIZE

ALT/PRINT: HALF SIZE

DATA RECORD

Data Record provides the Save and Load options on the Housekeeping Menu (illustrated on page 47). Using these options, you can copy the databases in the TONTO's store onto a microdrive cartridge, and load them back into store when you want them again. Full details of how to use Data Record are in the Handbook.

Selecting the Data Record option on the Main System Configuration Menu gives you the display below. The four parameters on this screen allow you to define aspects of how Data Record is to operate.



Auto-save time

You can specify a time at which, every day, all databases are to be copied onto a save file on a cartridge.

The Handbook gives advice on selecting a cartridge for Data Record. As for non-automatic saving, if you use a cartridge containing save files that does not have enough space to hold the databases for a particular save, the Data Record facility destroys the oldest (or only) save file on the cartridge, to try to make room for the new save file.

Auto-save is only successful if these conditions are met at the time given:

- A cartridge is loaded, but not being used.
- If you have the Drive control parameter opposite set to LEFT or RIGHT, the cartridge must be in the corresponding drive.

If these conditions are not met, you hear an error tone and this message is displayed on the noticeboard:

Save: failed

If you want to save the databases after a failure to do so automatically, you must do it manually, using the Save store option from the Housekeeping Menu.

Values: Four digits, containing a time on the 24 hour clock, in HHMM format. For no automatic daily saving of databases, just press the ENTER key

Default: None

Auto-load required

This parameter lets you specify that the most recent save file is to be loaded from a cartridge into the TONTO store each time power to the TONTO is switched on. Again, an appropriate cartridge must be in a microdrive allowed by the Drive control parameter (described opposite) at the time. In this way, you can automatically start a new session with the store containing the same databases as when you saved it at the end of your previous session. If you request auto-load using this parameter, it will be effective the next time you switch on the TONTO.

Values: YES (for auto-load), NO

Default: NO

Drive control

This parameter lets you specify that Data Record is to look only in the left or only in the right microdrive, when it is looking for a save file to load into store or for space to save a new file. If you do this, you can then use the other drive for cartridges containing general data or program files, knowing that they are secure from having save files written to them.

If you set the parameter to BOTH and there are cartridges in both drives, Data Record chooses which cartridge to use in this way:

- If only one cartridge has enough space, it chooses that one.
- Where both cartridges have enough space:
  - If neither already has a save file, it chooses the one in the left hand drive
  - If one has a save file, it chooses the one without a save file
  - If they both have a save file, it chooses the one that does not have the latest save file
- Where neither cartridge has enough space (and destroying an old save file doesn't clear enough), it displays this message:

  Save: no file space

If you change this parameter, it will become effective the next time you load or save store.

Values: LEFT, RIGHT, BOTH

Default: BOTH

15 second pause required

To give you time to change cartridges before a save or load begins, you can set this parameter to ask for a 15 second delay between requesting a save or load, and the Data Record facility starting to search the currently loaded cartridges. If you set this parameter to YES, a pause will be made next time you use Data Record and every subsequent time until you cancel the request.

During the pause, one of these messages is displayed, as appropriate:

Save: waiting

Load: waiting

Values: YES, NO

Default: NO

MICRODRIVE CARTRIDGE THRESHOLDS

Microdrive cartridges cannot be expected to last indefinitely, and may develop faults towards the end of their normal life span. The information given in the Microdrive Cartridge Thresholds screen (illustrated on page 26, and obtained from the Main System Configuration menu on page 11) is used to set up certain failure levels for cartridges. Then, when you use the Cartridge Report facility, it will warn you if these levels have been reached. Full details of this facility are in the Handbook.

```
                CARTRIDGE REPORT
Cartridge name  AJS001              Drive  R


Free space: 109 (512 byte) blocks

CARTRIDGE OK
Expected life left = 90%


File list required  (Y/N)
```

If you want a report on a particular cartridge, insert it in one of the drives, and use this menu sequence:

- Top Level Menu

- Housekeeping Menu

- Microdrive Utilities

- Display Cartridge Details

Then complete the screen and press f1. The Cartridge Report will give you information on the cartridge, including:

- Whether it is in good condition; if it is, this message appears (as on the screen opposite):

  CARTRIDGE OK

- How much of its expected life remains.

The Microdrive Cartridge Thresholds screen lists various parameters which you can supply to let the system assess the cartridge's condition. In this way, the system can warn you when a cartridge reaches the condition you set for it. If you don't set these thresholds using the Microdrive Cartridge Thresholds screen, default values for the failure levels are applied. If the current values are not suitable for you, use the methods described on page 7 to change the values on the screen ; for example you may find that your cartridges are lasting longer on average than the default value, and you do not therefore wish to be warned that their life is running out as early as the time given. Any changes you make will be applied next time you ask for a Cartridge Report, and for all subsequent reports until you change the thresholds again.

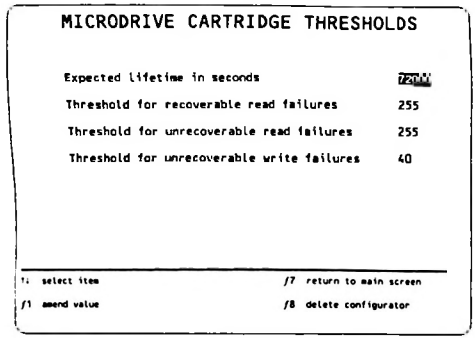
The threshold for each type of failure is the number of times that failure can occur before you want to be warned that the cartridge is not in good condition; in the case of the cartridge's lifetime, it is the number of seconds spent spinning in its expected life. When any of these thresholds is reached one of these messages is given in place of CARTRIDGE OK on the Cartridge Report:

- CARTRIDGE REPLACEMENT RECOMMENDED

  This message means that the cartridge has exceeded its expected lifetime.

- CARTRIDGE FAULTY - IMMEDIATE COPY AND WITHDRAWAL RECOMMENDED

  This message means that one of the failure thresholds



has been reached.

In both cases you should copy and replace the cartridge, using the methods described in the Handbook.

Expected lifetime in seconds

This parameter estimates the length of the cartridge's life, in terms of the time (in seconds) that it is actually spinning. The default value is equivalent to 20 hours.

Value: A number containing up to six digits

Default: 72000

Threshold for recoverable read failures

A recoverable read failure occurs when the system tries to read data on a cartridge and fails, but succeeds on a subsequent attempt. Each cartridge records the number of times such a failure occurs, and when the number reaches the threshold value, a Cartridge Report on the cartridge indicates that it is faulty.

Value: A number containing up to six digits

Default: 255

Threshold for unrecoverable read failures

An unrecoverable read failure occurs when the system tries to read data on a cartridge and fails repeatedly. As for recoverable read failures, each cartridge keeps a record of the number of these failures that it has had, and if the threshold value is reached a Cartridge Report indicates that it is faulty.

Value: A number containing up to four digits

Default: 255

Threshold for unrecoverable write failures

An unrecoverable write failure occurs when the system tries to write data to a cartridge and fails repeatedly. As for recoverable read failures, each cartridge keeps a record of the number of these failures it has had, and if the threshold value is reached a Cartridge Report indicates that it is faulty.

Note that write failures are more serious than read failures, and have a much lower default value than the other two failure thresholds.

Value: A number containing up to two digits

Default: 40

TELEPHONE LINE CONFIGURATION

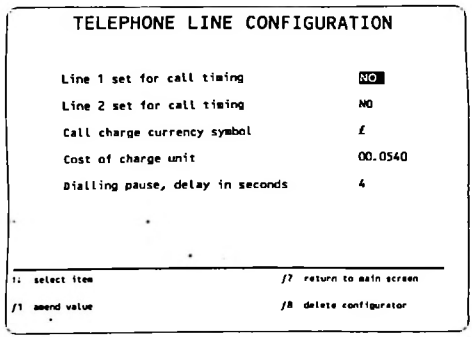
The screen overleaf is obtained from the menu on page 11. It lets you specify additional information about how the telephone lines are to operate. The first four entries concern the timing and charging of telephone calls; the fifth concerns the length of the access pause. Any changes apply from the next time you make a telephone call.

Line 1/2 set for call timing

These parameters specify whether you want to be prompted to time calls on lines 1 and 2. If you enter YES for either line, this message is displayed on the noticeboard each time you start a call on that line:

TIMING IS REQD

You can then either press TIMING (SHIFT/numberpad 8), supply a charge band and press ENTER, or ignore the prompt. Full details of how to time calls are in the Handbook. The costs of timed calls are included in the Telephone Charge Band Totals screen, illustrated on page 29.



Values: YES, NO (for each line separately)

Default: NO (for both lines)

Call charge currency symbol

This parameter lets you specify the symbol you want to be used to represent the currency unit when the TONTO displays telephone charges, as in the Telephone Charge Band Totals screen.

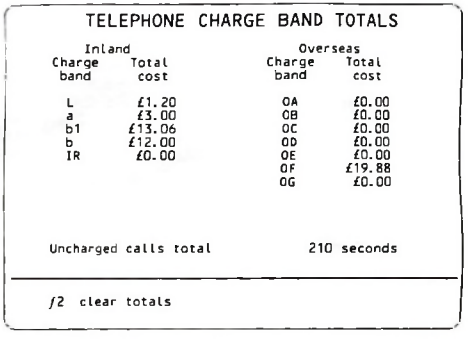
Values: Any single printable character

Default: £

Cost of charge unit

This parameter specifies the cost of one telephone charge unit. It is used, in conjunction with the telephone charge band and charge rate screens in section 3, to calculate the costs of telephone calls for display in the Telephone Charge Band Totals screen.

The units you express the cost of the charge unit in must be the same as the Call charge currency symbol above. Thus, for example, if the currency symbol is £, you must give the charge unit cost in £, not in pence (see the default value).



Note that the default cost includes VAT. If you want to set the charge unit cost to exclude VAT, the value corresponding to the default value is 0.0470.

Value: Up to 6.5535, in the units of the charge currency symbol

Default: 0.0540 (equivalent to 5.40 pence per unit, including VAT, which is the unit cost that came into use in the UK on 1 November 1984)

Dialling pause, delay in seconds

The Handbook describes how to enter telephone numbers in the TONTO Telephone Directories. You may need to enter a pause in the dialling sequence, for example to allow time for operations in telephone exchanges, or to get an outside line if you do this by dialling an access digit. Various symbols can be used to indicate the pause when the number is entered in the telephone directory, and this parameter defines the length of the pause to be made when the TONTO encounters such a symbol in a telephone number.

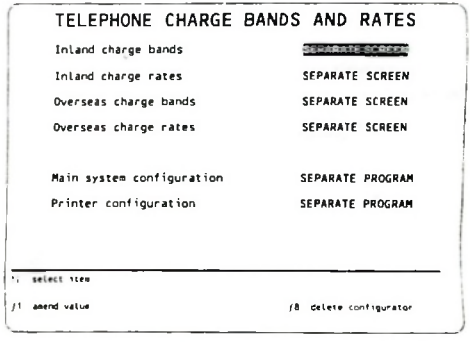
Value: A number between 1 and 14 inclusive, representing the delay in seconds

Default: 4

3 Telephone charge bands and rates

Describes how to set up the TONTO for new telephone charges or for a system of telephone charging outside the United Kingdom.

The main Telephone Charge Bands and Rates screen is illustrated below. It is displayed if you select the CONTEL option from the Cartridge Menu (see page 6), or if you select the corresponding SEPARATE PROGRAM box from the Main System Configuration or Printer Configuration screens (see pages 11 and 39 respectively).



Each option on the menu leads to another screen, listing the current values for each parameter. To display one of these screens, highlight the field corresponding to the screen you want and press f1 in the usual way (see page 7).

TONTOs are supplied set up with the UK telephone charging structure current at the date of their production. The examples illustrated in this section show the structure in use in November 1984. You can check on the current structure by obtaining a copy of the British Telecom leaflet Telephone Costs and Charges.

The charging information is used to calculate the costs of inland and overseas calls for which timing has been requested. How to request call timing is described in the

Handbook. You can display the cost of the calls incurred by this menu sequence:

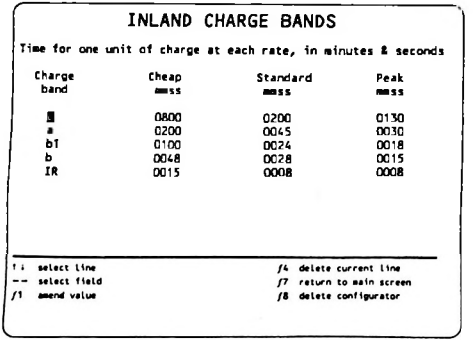
- Top Level Menu
- Telephone Control
- View Charge Band Totals

This gives you the Telephone Charge Band Totals screen, which is illustrated on page 29. Further information is in the Handbook.

You can use the screens illustrated in the rest of this section to incorporate changes in charge bands or charge rates, or to set up the TONTO for telephone charging systems outside the UK.

INLAND CHARGE BANDS

This screen displays the inland charge bands currently in use on the TONTO, and the time bought for one charge unit at each charge band (see the Cost of charge unit parameter, on page 28) at each charge rate (Cheap, Standard and Peak, see page 33).



You select the value you want to amend by first using the ↑ and ↓ keys to highlight the relevant charge band line, and then using the ← and → keys to move it to the specific item.

Details of the charge bands applying to calls from your particular exchange to any other are given in the British Telecom Telephone Dialling Codes booklet for your exchange.

You can add more charge bands to this screen, up to a maximum of ten. To do this:

1 Highlight the charge band column in the empty line at the bottom of the charge bands you already have displayed.

2 Press f1. This message is displayed:

Type new value and press ENTER

3 Type the values for your new charge band, and press the ENTER key.

You can amend details of an existing charge band by highlighting the value you want to change, pressing f1 and typing the new value.

To delete a charge band, highlight any item on the line corresponding to the charge band you want to delete, and press f4. The entry is then deleted, and any entries below it are moved up by one line.

The changes you make are effective immediately.

Values: Charge band: one or two letters or digits. If you enter one character, it must be in the first character position in the box

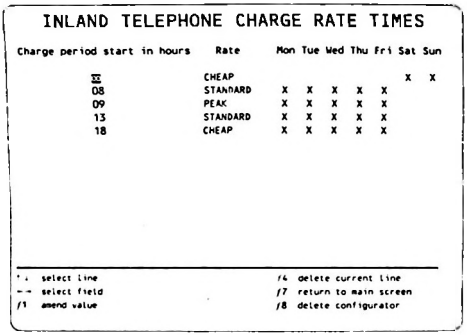
Times: Each consists of four digits, giving the time in mmss format. Maximum values are 99 minutes and 59 seconds

Defaults: Charge bands } As illustrated on the
Times } screen on page 32

INLAND TELEPHONE CHARGE RATE TIMES

This screen defines the time periods when different rates of telephone charging apply. In the UK there are three rates, called (in ascending order of cost per minute) Cheap, Standard and Peak. The screen specifies the starting time of each new charge rate period, for each day of the week.

You select the value you want to amend using the ↑ and ↓ keys to move the highlighted box up and down, and then use the ← and → keys to move to the individual item on the line.



Charge period start in hours

This column defines the start of each charge period, in ascending order of hours. If you want to change a start time, move the highlighted area to the appropriate box and press f1. The value is then removed and you can type in your new one.

You can record the start time of up to 14 periods using this screen. If you want to add a new period, highlight the empty line below your current rates and type the new charge rate. If you enter a new time but do not supply values for the Rate and day columns, the Rate for the period is set to Standard, and all the day columns to spaces. If a new entry results in the start period times being out of ascending order, the times will be rearranged in sequence when you have finished amending the screen.

If you want to delete a charge period, highlight the corresponding line and press f4. The line is then removed and all lines below it moved up.

Values: A number in the range 00 to 23

Defaults: As on the screen above

Rate

This column specifies the rate to apply to the charge period starting at the time on the same line. There are three rates: Peak, Standard and Cheap.

If you want to change a rate, highlight the appropriate field, using the arrow keys. Each time you then press f1, the rate rotates between the three values. When the one you want to apply is displayed, move on to another field or, if you don't want to make any further changes to this screen, press f7.

Values: Peak, Standard, Cheap

Default: As on the screen opposite. The default for a new period is Standard

Mon, Tue etc.

These columns indicate the days on which the charge rate period defined in the two left hand columns applies. A value of X means that the rate applies until another start time with an X is reached; a value of space means that the charge rate period does not apply.

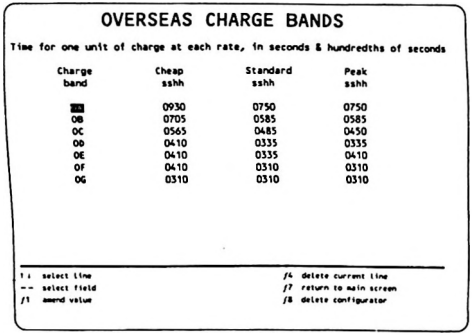
Thus, for example, Standard rate applies on Monday from 0800 until 0900, when Peak rate starts; Cheap rate starts at 1800 on Friday and continues for the rest of Friday, all day Saturday and Sunday, and Monday morning until 0800.

Values: X, space

Defaults: As on the screen opposite. The default for a new period is space

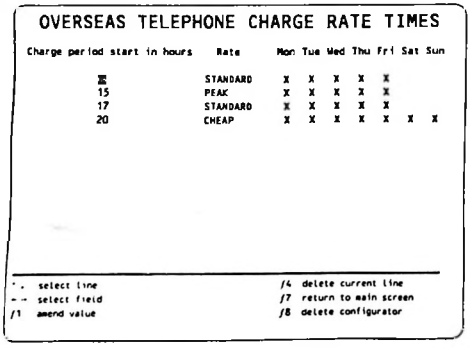
OVERSEAS CHARGE BANDS

This screen (illustrated overleaf) shows the overseas charge bands. You use it in the same way as the Inland Charge Bands screen, except that the times are in units of seconds and hundredths of seconds. The charge bands listed as OA to OG represent the British Telecom overseas charge bands A to G respectively.



Full details of the countries that the various international charge bands apply to (when dialled from the UK) are in your Telephone Dialling Codes booklet.

OVERSEAS TELEPHONE CHARGE RATE

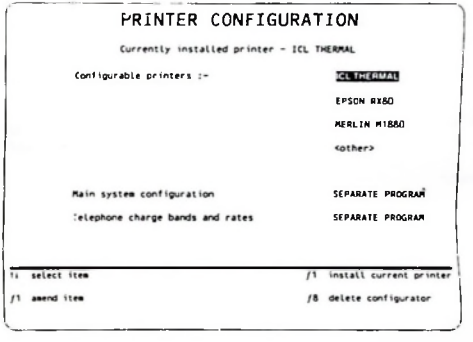


This screen defines the time periods when the different charge rates apply. The example opposite illustrates the default charge rate periods.

You use the screen in the same way to the corresponding inland screen (see page 34).

Explains what you have to do to set up the TONTO to use any suitable model of printer.

When you attach a printer to the TONTO, you need to give the TONTO certain details about it, so that the TONTO software will operate in a way that is compatible with the printer you are using. The starting point for the procedure to do this is the Printer Configuration screen, which is displayed if you select the CONPRIN option from the Cartridge Menu (see page 6), or if you select the corresponding SEPARATE PROGRAM box from the Main System Configuration or Telephone Charge Bands and Rate screens (see pages 11 and 31 respectively).



Configuring the TONTO for a particular printer is a once-and-for-all activity, unless you change printer models. If you disconnect your printer and connect another one of the same type, you do not need to reconfigure for the new printer.

Note that you can set the type of paper, the print quality and the colour options for each document you print, using the Printing Options screen, illustrated on page 49.

CONFIGURING STANDARD PRINTERS

There are three standard printers for the TONTO:

- The ICL Thermal Printer
- The Epson RX80
- The Merlin M1880

The TONTO software contains details of the configuration parameters for these three printers, and you can configure any of them very simply. Using the screen above, highlight the name of the printer you are going to configure (using the ↑ and ↓ keys); then press f2. A message:

ACCESSING PERMANENT STORE

is then displayed for a few seconds. After this, the Printer Configuration screen is displayed again, with the printer's name in the Currently Installed Printer box. The printer's parameters are then set up in the TONTO, and you can start using it.

If you want to display the printer parameters described below for any of the standard printers, highlight the appropriate printer name on the Printing Options screen and press f1. The first Printer Parameters screen (illustrated opposite) is then displayed, with the name of the printer at the head of the screen, and its values for the various parameters. You can obtain the second and third Printer Parameter screens (illustrated on pages 42 and 43) in the way shown on page 41.

CONFIGURING OTHER PRINTERS

If you want to configure the TONTO for a printer that is not one of the three standard printers, highlight the

<other>

box on the Printer Configuration screen and press f1. Three screens then list the parameters needed for the TONTO to configure the printer. They are illustrated on pages 42 and 43.

Use these methods to move between the screens:

From screen 1 to 2 2 to 3 3 to 1	Highlight the value on the bottom line of your current screen and press ↓
From screen 1 to 3 3 to 2 2 to 1	Highlight the value on the top line of your current screen and press ↑

The first item to enter is the Printer name, on screen 1: type the name of your printer here. You can highlight and amend any other items you need to.

The default values shown initially on these screens are those for the ICL Thermal Printer. Thus to configure a particular printer, you only need to change those parameters where your printer differs from the ICL Thermal Printer.

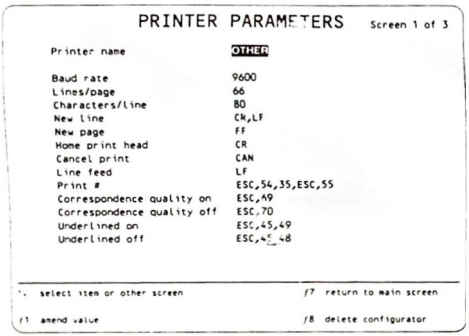
The first parameter on screen 1, the baud rate (see page 16), is the only one on the two screens that has a range of predetermined values. You can display these in the usual way, by highlighting the value and pressing f1 repeatedly. The value shown is set up as it is displayed. The alternative values for the baud rate are:

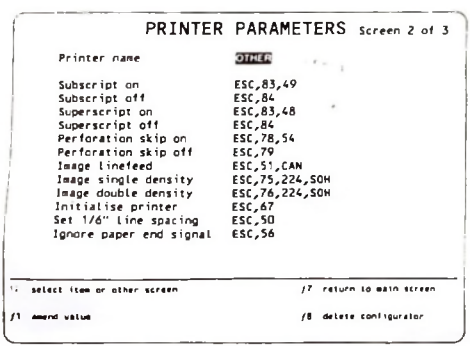
19200, 9600, 4800, 2400, 1200, 600, 300, 75

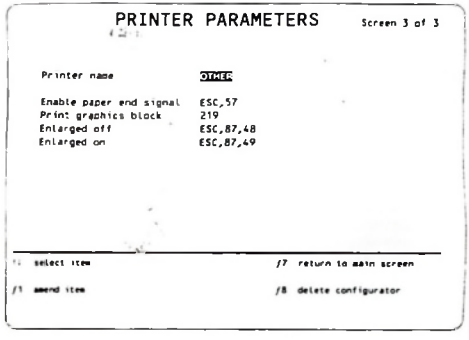
The second and third parameters on screen 1 define the number of lines on a page and the number of characters on a line, respectively.

The other parameters on this and the other screens define control sequences. When a printer is to perform a particular printing operation (such as starting a new line or underlining text), it has to be given an instruction to do this by the TONTO. Such instructions are called control sequences. Different printers expect to be given these instructions in different formats. If you are setting up the TONTO for a printer other than the standard printers, you need to check which control sequences differ from the defaults listed on the screens, and, where they are different, make changes to the Printer Parameter screens accordingly.

The control sequences that apply to your printer should be listed in the manual supplied with the printer. Only the meanings of the various parameters are therefore given overleaf, to help you identify possible different wording in the printer manual.


PRINTER PARAMETERS Screen 1 of 3
Printer name OTHER
Baud rate 9600
Lines/page 66
Characters/line 80
New line CR,LF
New page FF
Home print head CR
Cancel print CAN
Line feed LF
Print # ESC,54,35,ESC,55
Correspondence quality on ESC,49
Correspondence quality off ESC,70
Underlined on ESC,45,49
Underlined off ESC,45,48
↑↓ select item or other screen
/7 return to main screen
/1 amend value
/8 delete configurator


PRINTER PARAMETERS Screen 2 of 3
Printer name OTHER
Subscript on ESC,83,49
Subscript off ESC,84
Superscript on ESC,83,48
Superscript off ESC,84
Perforation skip on ESC,78,54
Perforation skip off ESC,79
Image linefeed ESC,51,CAN
Image single density ESC,75,224,SOH
Image double density ESC,76,224,SOH
Initialise printer ESC,67
Set 1/6" line spacing ESC,50
Ignore paper end signal ESC,56
↑↓ select item or other screen
/7 return to main screen
/1 amend value
/8 delete configurator



Your printer may not use all the control sequences listed. For example, it may not be able to print subscripts or superscripts. In such cases:

1 Highlight the value concerned.

2 Press f1, to clear the box.

3 Press the ENTER key.

To change a parameter value, highlight its current value using the ↑ and ↓ keys, and then press f1. The box then clears for your input and this message is displayed:

Type new value and press ENTER

Type the new value, as a series of elements separated by commas. The character values for each element can be entered in any of these ways:

- The decimal value of an ASCII character
- A single printable character, preceded by an apostrophe or quotation marks
- The mnemonic for an unprintable ASCII value, such as CAN and ESC

When you have typed the new value and pressed the ENTER key, the message above disappears and you can move on to another item.

If you make a mistake when you are typing input, use the DEL key to remove the incorrect characters, and then type replacements. If you move on to another field when there is still an error in your input, this message appears:

Incorrect value. Please re-enter

You must correct the error before you can proceed.

When you have finished entering the parameter values for your printer, press f7 to return to the Printer Configuration screen (see page 39). You can then install the printer configuration you have entered by pressing f2.

If you want to leave the printer configuration program without configuring a printer, press f8 at any stage.

Brief explanations follow of the parameters listed on the screens, to help you find the appropriate value in the manual for your printer:

Parameter	Instruction to:
New line	Move to the first character position of the next line
New page	Move to the first character position on the first line of the next page
Home print head	Move to the first character position on the current line
Cancel print	Clear the print buffer
Line feed	Move the paper up by one line space
Print #	Print the # character
Correspondence quality on	Print in correspondence quality (see page 49)
Correspondence quality off	Print in draft quality (see page 49)
Underlined on	Underline text until the Underlined off instruction occurs

Underlined off	Stop underlining text
Subscript on	Print characters as subscripts until the Subscript off instruction occurs
Subscript off	Stop printing subscripts
Superscript on	Print characters as superscripts until the Superscript off instruction occurs
Superscript off	Stop printing superscripts
Perforation skip on	Skip 1 inch at the bottom of the form, to go over the perforation of continuous stationery (see page 48)
Perforation skip off	Do not skip at the bottom of the form, as for printing on single sheets (see page 48)
Image linefeed	Move up by the amount of space between the rows of dots; used in image printing
Image single density	Print images at a density of 480 dot positions across an 8 inch line
Image double density	Print images at a density of 960 dot positions across an 8 inch line
Initialise printer	General purpose initialise command, issued when starting a new printing operation
Set 1/6" line spacing	Leave standard spacing between each print line
Ignore paper end signal	Switch off printer signal when end of sheet is reached (for single sheet stationery; see page 48)
Enable paper end signal	Switch on paper end signal (see above)
Print graphics block	Print the graphics block symbol
Enlarged on	Print double width characters
Enlarged off	Print single width characters

Describes how to amend the printer options and how to delete call-failed records.

This section describes two sets of parameters that you can change from the Housekeeping Menu. If you select option 8 from the Top Level Menu, the screen below is displayed.

The effects of selecting options 9 and 0, Printing options and Clear call-failed records, from this screen are described in this section.

PRINTING OPTIONS

The standard TONTO printers (the ICL Thermal Printer, the Epson RX80 and the Merlin M1880) can handle two different types of stationery and print to two different qualities. In addition, the ICL Thermal Printer can print in colour or black and white.

The Printing Options screen, obtained by selecting option 9 from the Housekeeping menu, allows you to switch between the alternatives. It is illustrated overleaf. These are options you may want to change more frequently than those in the Printer Configuration described in section 4, and using the Housekeeping Menu makes setting the options straightforward.

Type of stationery

You can use either single sheets of paper or continuous stationery.

If you want to print several pages using single sheets, the printer stops printing at the end of each page. This is what you should do:

1 Insert and align the first sheet of paper in the printer.

2 Start printing, using the appropriate instruction for the application you are running.

While the page is being printed, this message appears on the noticeboard:

NEW PAGE? CTRL/PRINT

3 Wait for the printer to finish printing the page.

4 Insert and align another sheet of paper in the printer.

5 Press CTRL/PRINT to start printing the next page.

6 Repeat steps 3 to 5 until you have finished printing your document.

Continuous stationery has the pages joined together, with perforations between them. The printer can go on printing one page after the other, without stopping. Thus it can continue to print pages until it has completed the job you asked it to do.

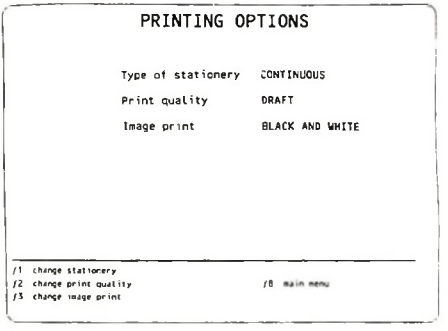
If you press 9 in response to the Housekeeping Menu, the screen opposite is displayed. Press f1 to switch between the two types of stationery: pressing this key once will give the alternative to the option displayed; if you press it twice, the display will go back to the original option. Press f8 to take you back to the Housekeeping Menu.

Values: SINGLE SHEET, CONTINUOUS

Default: CONTINUOUS

Print quality

If your printer allows it (see your printer manual if you are using a non-standard printer), you can choose the quality of printing using the Printing Options screen. Two qualities can be set:



- Draft. This gives readable quality, and is produced quickly.

- Correspondence. This gives a better quality, but takes longer to produce. (In the case of the Epson RX80, correspondence quality is equivalent to using a bold typeface.)

Thus, you may like to use the draft quality for personal or internal documents, and use correspondence quality for letters and memos.

If you want to switch from the quality shown on the Printing Options screen when it is displayed, press f2. Pressing this key again gives the first option. Pressing f8 gives the Housekeeping Menu.

Values: DRAFT, CORRESPONDENCE

Default: DRAFT

Image print

The ICL Thermal Printer can print screen images in colour as well as black and white. You can specify which you want using the Image Print option on the Printing Options screen.

Note that:

1 You can only use colour for Image Printing (that is, to print a copy of your current screen). Ordinary text printing must be in black and white.

2 Before you do any colour printing, you must load a colour ribbon into the printer.

3 If you attempt to do a colour Image Print with a printer that cannot print in colour, the image will be printed in shades of grey.

To switch from one option to the other, press f3. Pressing f8 gives the Housekeeping Menu.

Values: BLACK AND WHITE, COLOUR

Default: BLACK AND WHITE

CLEAR CALL-FAILED RECORDS

Applications on the TONTO can provide facilities for automatically redialling unsuccessful data calls. Data calls may fail for a number of reasons, for example:

- The number dialled is wrong.
- The number dialled is busy.
- The destination computer is out of order.
- The destination computer is not connected to the telephone network.
- The destination computer cannot receive data calls.

In such cases, redialling may not be successful, and a limit is therefore imposed on the number of times a failed number is redialled. This allows a failed call to be redialled up to six times, with at least five minutes between each retry.

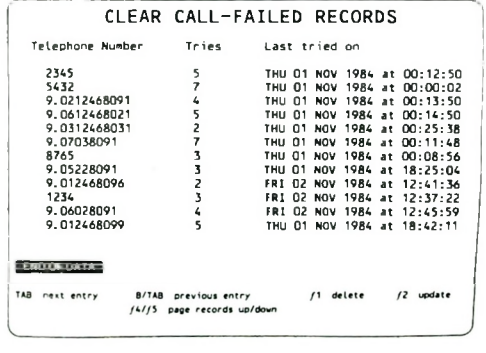
When a data call fails, the telephone number dialled is added to the TONTO's bad numbers list, which records the following:

- Telephone number dialled
- Number of times a call to the number has failed
- The date and time of the last attempt

If a number on this list is redialled and fails again, the number of tries is increased by one. If it is redialled and succeeds, the number is automatically removed from the bad numbers list.

Because the limit on retries is 6, the total number of tries cannot exceed 7. When it reaches 7 for a particular telephone number, that number cannot be redialled automatically, nor can it be removed from the bad numbers list except by the user deleting it explicitly. After it has been removed from the list, it can be dialled again normally; if it fails, the bad numbers list procedure will begin again.

The Clear Call-failed Records screen displays the bad numbers list, and allows you to remove numbers from the list. You should not remove a number from the bad numbers list unless you think that an attempt to send data to it is now likely to succeed. For example, if the number that failed is that of an ordinary telephone instrument (without a modem), it is likely that someone is answering the data call and then hearing the high-pitched modem tone from your TONTO; a data call to this number will never be successful.



You can test for this by making a voice call to the number that failed. If, after the ringing tone, you hear a high-pitched modem tone lasting two or three seconds, then that number is being Auto-answered for data, and you can safely remove it from the bad numbers list. If you want to hear what the modem tone sounds like, make a voice call to a TONTO that you know to be set to Auto-answer data calls (see page 13). Note that the pitch differs slightly for the 1200 and 300 baud rates of transmission.

To obtain the Clear Call-failed Records screen, press 0 in response to the Housekeeping Menu (shown on page 47). If this entry on the Housekeeping Menu is lowlighted, there are no entries in the bad numbers list, and the Clear Call-failed Records screen will not be displayed when you press 0.

Note that the Clear Call-failed records screen may not be absolutely up to date, as the system may update the list while it is being displayed, but does not update the screen.

The screen has one entry highlighted. You can move the highlighting using the TAB and B/TAB keys. If you want to delete a number from the list, highlight the appropriate line and press f1. A message

OK TO DELETE? Y/N

is then displayed. You can then confirm that you want to delete the number from the list by pressing Y; if you have decided not to remove it, press N. After you have pressed Y, the highlighting moves down to the next number.

The bad numbers list may spread over more than one screen. If you want to display numbers earlier in the list than your current screen, press f4; if you want to display numbers below your current screen, press f5. At the end of the list of numbers, this message is given:

END OF DATA

If, after you have made some deletions, you want to see the effect on the screen, you can press f2; this will remove all the numbers you have deleted and which have been displayed in grey on black.

When you have finished using the Clear Call-failed Records screen, press the START key to display the Top Level Menu or the RESUME key to return to an extended application.

A

B

C

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