

UNIPLEX

Business Software

Uniplex II Plus

USER GUIDE

Vol 2

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Use This Information When Reordering

Software	:	9.00
Language Version	:	American/British English
Operating System	:	Unix
Product Name	:	II Plus User Guide
Product Code	:	D900IIPGD

Additional Information

Document Revision	:	3.1 (mxw) February 27, 2000
WWW Version	:	IIPlus-2V900-P.pdf (vol 2 - print) IIPlus-2V900-V.pdf (vol 2 - view)

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About this Guide**◆ About this Guide**

The five volume Uniplex V9 user guide set supersedes the V8.00 user guides plus the **V8.10 User Guide Supplement**. Additional supplementary and technical documentation is provided on-line with the software. The printed manuals include:

Guide Name	Contents
UBS Installation Guide & Supplemental Release Notes	Installation/upgrade directions plus platform-specific release notes.
Uniplex II Plus User Guide Volume 1	Introduction, filing, Word Processor, and Sketch Pad.
Uniplex II Plus User Guide Volume 2	File Manager, printing, and Spreadsheet.
Uniplex II Plus User Guide Volume 3	Database Forms, Database Query, Key Recorder, integration, menu maps, desk maps, ring menus, glossary, and topic index.
Advanced Office System User Guide (Volume 4)	Electronic Mail, Time Manager, Card Index, Personal Organizer, Report Writer, Formfill, printing, integration, menu maps, desk maps, glossary, and topic index.
Advanced Graphics System User Guide (Volume 5)	Presentation Graphics, Presentation Editor, printing, integration, menu maps, desk maps, clip art, glossary, and topic index.



About this Guide

◇ Version Information

Some of the material in these guides will not apply to users of Uniplex releases prior to V9.00. Please contact your Uniplex supplier or Uniplex directly for information about upgrading to the current release. Users upgrading from V8.00 or earlier should consult the **File Manager** chapter for information about a new method for carrying out all folder and file-related operations.

◇ Useful Shortcut Keys

These shortcut keystrokes can be used throughout Uniplex:

Cut and Paste		Insert	
mark top left	Esc (line/row	Ctrl o
mark lower right	Esc)	character	Ctrl e
paste insert	Esc *i	switch insert/overtyp	Esc i
paste overlay	Esc *o		
Delete		Quick Movements	
line/row	Ctrl x	top of screen/list	Esc Ctrl t
work/cell	Ctrl w	next screen/page	Ctrl d
character	Ctrl c	previous screen/page	Ctrl u
		start of line	Esc <-
		end of line	Esc ->
External Windows		Quit without Saving	Esc q
access Desk popup	F9 or Esc xd		
access Utility popup	F12 or Esc xu	Save Work	
switch processes	Esc xs	save and continue	Esc w
list processes	Esc xp	save and exit	Esc e
		save to new file	Esc sx
Format Paragraph	Ctrl fp	Undo Last Command	Esc u
Hard Return	Esc Return	Enter £ Sign	Esc % #
Help	Esc h	F10	Esc 0
F1...F9	Esc 1...9	F20 (X/Open prefix)	Esc Esc 0
F11...F19	Esc Esc 1...9		



◇ **The Uniplex User Guide Set**

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Chapter 4: Sketch Pad

Volume 2

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Chapter 5
File Manager

File Manager

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◆ About File Manager

File Manager is an application that can help you to organize your files and folders.

You can carry out all your file management tasks using an easy, intuitive File Manager. File Manager also provides an *indexing* facility allowing you to record information (*attributes*) about your files. You can then search for specific files using these attributes.

Although File Manager is an application in its own right, it also provides valuable services to other applications. File Manager may start in one of three modes: *Main Mode*, *Select Mode*, or *Create Mode*. Uniplex starts File Manager in whichever mode is appropriate to your task. For example:

- o If you select **File Manager** from any Uniplex menu or from the pop-up UTIL menu, File Manager opens in Main Mode. This allows you to carry out all your file management tasks.
- o If you press ↓ in the **Edit a Document** screen to list your files, File Manager opens in Select File Mode. This allows you to move around the file system and choose the document you want to edit.

Similarly, if you press ↓ in the **Change Folder** screen to choose a different folder, File Manager opens in Select Folder Mode. This allows you to open the folder you want to work in.

You should refer to the Help system's index topic *Work in Select Mode* for details on the differences between working in Select Mode and working in Main Mode. In particular, note that when working in Select Mode, you cannot invoke any new applications from the File Manager menus.

- o If you are saving a new document in the Word Processor and press ↓ at the **Enter document name** prompt, File Manager opens in Create File Mode. You create the new file by completing a simple screen.



About File Manager

File Manager is simple to use and only the basic operations are described here. Use the on-line help system, described in *Get Help* for complete details.

✎ *If you are using Uniplex Windows, you should also refer to the Uniplex Windows-specific help for details on how to use the mouse in File Manager. To access Uniplex Windows-specific help, from the Uniplex Main Menu, click on **H - Help**.*

◇ Folders and Files

Whenever you create a file or document (a word processor file), it is held in a folder. As you add files, you can add more folders to help you organize your work. This helps you to easily locate the file you require. For example, all your word processor files can be held in a folder specially created for such files.

✎ *The term **file** is used throughout this chapter to mean a word processor document or any other data file.*

When you start File Manager, you will see that the screen is divided into two: a list of folders is shown on the left, and a list of the current folder's contents is shown on the right. This division gives immediate access to all file and folder tasks and also provides a comprehensive view of your file and folder structure.

File Names and Titles

File names help you to recognize existing files. File names are usually quite short and may not be at all descriptive. You can now give your files titles which can be much more meaningful. For example, the file name **memo.wp** tells you only that the file is a memorandum written with the word processor. Whereas, the title **Administration memo to Personnel** tells you much more about the file's contents. As long as you provide titles for your files, you no longer need to use file names; Uniplex automatically assigns a unique file name based on the title.

◇ The Index System

File Manager provides a powerful *index system* which allows you to extend operating system file information (size, owner, time last modified, etc.) by letting you define additional details to help locate and manage files. You can enter file titles, specify their file types, and assign keywords to help locate specific data.

You can index files and folders as you create them and also by amending some of their *properties*. File Manager lets you enter details about a file when you create it. Many of these details are maintained in the index system. You are not limited to Unix file name restrictions; you can store comprehensive information about files and easily locate them, wherever they are on the system.

File Manager accesses the index whenever it needs to find information about the file system. For example, if you choose to display the File Manager contents by title instead of by name, File Manager scans the index to find these titles.

Depending on which tasks you are carrying out, there may be interaction between File Manager and the index. For example, when moving around the file system, File Manager repeatedly accesses the index in order to display the file names of the current folder. You may find that this continual access slows down your computer and you may prefer to switch off the index system. Certain File Manager features are then unavailable (*i.e.*, index searches and the display of folders and files by title). For details on switching the index system on and off, see the later section *Set Preferences*.

The operations described in the remainder of this chapter assume that your index system is on. If this is not the case, some descriptions may not apply.

↘ *For more details about the index system, see the Help system's index topic **When Files are Indexed**.*

About File Manager

◇ What You Can Do in File Manager

The following list summarizes the tasks you can carry out using File Manager. Many of the more common actions are described in the remainder of this chapter. For complete details on any task, press **F10 (Esc h)** to access context-sensitive help at any point.

- **Browse Files.** Open files for browsing.
- **Open Files.** Open files for editing. Non-Uniplex Word Processor files can be automatically converted when opened.
- **Create New Files and Folders.** Create needed files and folders.
 - You can give an item an extended title as well as a file name for later viewing.
 - You can add *keywords* describing the file's content for later searching.
- **Move, Copy, Print, Delete, Search, Convert Files.** Select single or multiple files for any of these actions.
- **Mail and Rename Files.** Select individual files for these actions.
- **Rename, Delete, Search Folders.** Select individual folders for any of these actions.
- **View File and Folder Properties.** Display and change information about files and folders.
- **Set Preferences.** Customize some File Manager details. For example, you can choose the sort order for your files and folders and also choose whether to group folders first.
- **Access Uniplex Applications.** Choose an application to run.

◆ Get Help

In addition to the standard Uniplex help, File Manager provides its own on-line help system. Depending on what you are currently doing, you can display either a list of main help topics or context-sensitive help.

To display a list of help topics from File Manager:

Press **F2** to move to the menu bar and choose **Help → Topics....**

✎ *For details about moving around the menu system, see the later section *Use the Menus*.*

To access context-sensitive help at any time:

Press **F10 (Esc h)**.

Uniplex displays either a list of topics or a help page from the current help section.

Within each help screen, some text may be highlighted. This is *active* text. Selecting active text allows you to display help on that topic. Selecting topics and jumping between active text is described in the following subsections.

You can leave help at any time and return to your task by pressing **F4 (Esc q)**.

Get Help◇ **Move around the Help System**

The number of screens in the current help section is shown in the help title bar. You move around the help screens as follows:

Move To	Press
Next page of current help section	F1 (Ctrl + d)
Previous page of current help section	F2 (Ctrl + u)
Approximately half a screen down	F7
Approximately half a screen up	F8
Previously displayed screen	F3

↘ *If you are at the start or end of a help section, pressing **F1** or **F2** moves to the next or previous help section in sequence, if any.*

Where a help screen contains active text, the cursor automatically moves to the first occurrence. You can jump between any active text as follows:

Move To	Press
Next occurrence of active text	↓, → or Tab
Previous occurrence of active text	↑, ← or Ctrl + g

When you are ready to display the help linked to the active text, press **Return**. One of the following happens:

- o Where the active text was grouped in a **See also** list, a full-size help screen opens.
- o Where the active text was within the body of the help screen, a pop-up opens on the current help screen detailing help for the chosen text. Closing the pop-up, by pressing **F4 (Esc q)**, returns you to your help screen.

◇ Use the Help Index

When using help, you can display an alphabetic index of all help sections.

- 1 From the current help screen, press **F5** to display the index.
- 2 Highlight the name of the help section you want by pressing ↑, ↓, ← or →.

Alternatively, type the first few letters of the help section to move to the required entry.

✎ *You can move to the top or bottom of the index by pressing **F5** or **F6** respectively.*

- 3 When you have found the help section you want, press **Return**.

Uniplex displays the associated help screen.

◇ Access the On-line Documentation

Uniplex supplies a number of on-line manuals and quick reference documents. These are:

- o Technical Guide
- o Device Configuration Guide
- o Form-Building Tools Guide
- o Release Notes
- o Shortcut Keys Keystrip (landscape)
- o Quick Reference Pages (portrait)
- o Quick Reference Pages (landscape)
- o Additional Peripherals Pack Documentation



Get Help

To access an on-line document:

- 1 Press **F2** to move to the menu bar and choose:

Help → **On-line Documentation...**

Uniplex displays the On-line Documentation screen and prompts you to select the name of the document you are interested in and what action to take with the document. Complete the screen as follows:

Field	Action
Document	Press any key to open a pop-up list of available documents and select a document name.
Action	Press Spacebar to scroll to either: Read with Word Processor or Print .

- 2 Press **F1 (Esc e)** to confirm.

If you chose to read the document, Uniplex starts the Word Processor and displays the first page of the document.

If you chose to print the document, Uniplex displays the Print Screen. You can choose the page range to print and the printer to use, but you should not alter the print style since all the on-line documents are *Pre-Styled*. For details about Pre-Styled documents, see the **Printing** chapter.

✍ *Put the command **.SNDUPON** at the top of the first page to print double-sided on a duplex printer.*

After reading and/or printing an on-line document, Uniplex returns to the On-line Documentation screen.

- 3 To return to File Manager, press **F4 (Esc q)**.

Start File Manager

◇ The File Manager Screen

The left side of the screen is the *Tree list* showing your folders; the right side is the *Folder list* showing the contents of one of these folders, known as the current folder. The name of the current folder is shown on the top left of the screen.

↘ *In the Folder list, a / character at the end of a name signifies a subfolder.*

By default, whenever you start File Manager in Main Mode, it opens the folder you are currently working in. This will probably be your home folder and will also be the current folder until you open another folder.

If you prefer, you can specify another folder to always open when you start File Manager in Main Mode. You can choose to: open your home folder, return to the last-used folder, or even open another folder of your choice. You do this by setting your preferences as described later.

When you access File Manager in any other mode, it always opens the folder you are currently working in.

Only one list can be *active* at any given time; the active list is the one containing the highlight bar. Usually, any file or folder action is carried out in the active list. However, if you select multiple files in the Folder list, any action affects these files regardless of which list is active. When the Folder list is active, File Manager identifies the current folder in the Tree list by showing an angled bracket (>) against its name.

↘ *Selecting multiple files is described in Select Files and Folders.*

◇ Move around File Manager

When you want to choose a file or folder for an action, you first move to the item you require. The following table describes how to move the highlight between the two lists and also how to move through the active list.

Movement	Action
Between the Tree list and Folder list.	Press ←, → or Tab .
Up and down the active list.	↑ and ↓. You can also use all the usual cursor- movement key sequences such as Ctrl + u to move up one screen, and Ctrl + d to move down on screen.
To a particular item in the Folder list.	Type the first few letters of the item to move to.
✎ <i>You cannot move to an item which starts with a dot by typing the dot character; you can, however, move to such an item using Goto (described next).</i>	
To a particular text pattern in either list (Goto).	Press Esc f (find), type the text to find and press Return .
To the next matching text pattern.	Press Esc n (next) to find the next matching entry.

As you move through the Tree list, the Folder list automatically updates to show the contents of the current folder.



Start File Manager

While moving around File Manager, you will probably encounter the following two messages in the Folder list:

- o **** No access to parent folder ****: Indicates that the parent folder has been excluded by your System Administrator. You will not be able to move above the current folder into its parent folder.
- o **** No access to this folder ****: Indicates that you do not have the appropriate access permissions to view a folder's contents.

For more details about these folders, see the Help system's index topic *Restricted Folders*.

◇ Change the View

You can change the view of File Manager to display the Tree list, the Folder list, or to display both lists. For example, if you want to see as much information about files as possible on your screen, choose **Folder Only**.

To determine which type of list to display, use the following commands on the View menu:

Display	Action
Both the Tree list and Folder list.	Tree + Folder
Only the folder names.	Tree Only
Only the contents of folders.	Folder Only

You can also choose which file details are displayed in File Manager. For example, you may want to see when a file was last changed. For details on how to do this, and also how to change other File Manager attributes, see *Set Preferences*.

◇ Select Files and Folders

You first identify the folder or files in a list on which to act by highlighting the folder's name or one or more file names.

- ✎ *Selected files show a reverse video asterisk to the left of their names.*

Press **SPACEBAR** on each file name to select multiple files. Cancel a file by pressing **SPACEBAR** on the name a second time.

- ✎ *Select all files in the current folder by pressing **Esc +**; deselect all selected files by pressing **Esc -**.*

The total number of selected files is shown at the bottom of the current Folder list.

- ✎ *Some actions, such as **Rename**, can only be carried out on one file at a time. If you select multiple files and choose such an action, a warning is given.*

◇ Use the Menus

Most File Manager actions can be accessed from the menus at the top of the screen. There are four drop-down menus, each contains items relating to its title.

- ✎ *Check the Uniplex Windows-specific help file for details of how to access the menus with the mouse.*

To use the menus:

Press **F2** (or *l*).

Uniplex highlights the name of the first menu, **File**, and lists its actions.



Start File Manager

The following sections describe the menu conventions used and how to move around and choose actions from any of them. These are the conventions:

Convention	Explanation
-------------------	--------------------

-->	Another menu (a cascading menu) appears.
...	A pop-up or new screen appears requesting confirmation or information.

Move around the menus as follows:

Movement	Action
Up and down the current menu.	Press ↑ and ↓
To the next menu or cascading menu if --> is shown.	Press →
To the previous menu or close the current cascading menu.	Press ←
Directly to an action by name.	Type the initial letter(s) of the action.

To choose an action from a menu highlight the action you want and press **RETURN**.

Start File Manager

◇ View Subfolders

You can view the subfolders in a folder from the Tree list by *expanding* the folder or you can *collapse* an expanded folder to no longer view the subfolders. You can only expand one level at a time and must repeat the procedure for each lower level.

Home Folder (/home/mxw/Sales)

File View Applications Help

S E L E C T F I L E

Home Folder	../
├ France	Current/
├ Germany	1998/
├ Sales ←First Level	1998/
│ └ Current	1999/
│ └ 1998 ←Second Level	diary/
│ └ 1999	forecast.ss
│ └ diary	forecast_graphics.gr
└ contacts.dbs	forecast.wp
└ contacts.frm	

F1=Select F2=Menu (/) F4=Quit F5=Open

Expand a Folder. Highlight the folder name in the Tree list and press **F5** or **+**. You can also press **RETURN**. The names of any immediate subfolders are added to the list.

Collapse a Folder. Highlight the folder name in the Tree list and press **F6** or **-**. Any subfolders beneath the selected folder are closed.

Move to Parent. You can move from the top level folder to its parent folder if you have access to it. Highlight the top level folder name and press **.** (period) or highlight **../** and press **F5** or **.** (period).

Start File Manager

◇ Make a Folder a Main Branch

You can make any folder the main branch of the tree. This removes any higher-level folders from view and moves the chosen folder to the top of the tree, making it the current folder.

To make a folder the main branch of the tree:

Highlight the folder's name and then either press . (period), or choose **View** → **Make Main Branch**.

These illustrations show a fairly complex tree, both in its original state and after making **TIMESHEET** the main branch of the tree:

```

Home Folder
├── Sales
│   ├── Current
│   ├── 1998
│   ├── 1999
│   └── diary
├── TIMESHEET
│   ├── January
│   ├── February
│   ├── March
│   └── April
└── ** Page 1 of 2 **

```

Before Choosing Main Branch

```

TIMESHEET
├── January
├── February
├── March
├── April
├── May
├── June
├── July
├── August
├── September
├── October
└── ** Page 1 of 2 **

```

After Choosing Main Branch

✎ Pressing . on the top item in either list (that is, the first item on page one of a list) moves you to the parent folder, providing that you have access to it.

◇ Open Folders

In the Folder list, you can open any subfolder by highlighting its name and pressing **F5** (or **Return**). The folder becomes the current folder and its contents are shown in the Folder list.

↘ *You can identify which items are folders by the / character at the end of their names.*

Often however, the files you want to work with will be in a different folder from any currently shown. In File Manager, you can easily open a folder to view and work with the files you want.

To open a folder:

- 1 Choose **View** → **Open Folder...**
- 2 In the Open Folder pop-up, press any key to display a predefined list of folders from which you can select.

↘ *If you do not have the appropriate software license installed, you will not be able to select some of the folder names; as you move through the list, by pressing ↓, the highlight skips any such folder names.*
- 3 Choose the name of the folder to open, or, if the list includes **Named Folder**, you can choose this to open a folder by its name.

If you choose **Named Folder**, Uniplex prompts you for the name of the folder to open. Press **Tab** to move to the **Enter folder name** field and type in the folder name, including its full path.



Start File Manager

4 Press **F1 (Esc e)**.

One of the following happens:

- If the folder name is already visible in the Tree list, it becomes the current folder.
- If the folder is a subfolder of a folder in the Tree list, the tree is expanded to show it.
- Otherwise, the new folder name replaces the existing tree.

◇ Update the Screen

You can update the File Manager screen to show any newly created items and remove any outdated items.

For example, if you are displaying the contents of a folder and someone creates a new file in that folder, you can update the view to display the new file name.

Choose **View** → **Refresh**.

◆ Set Preferences

You can change some of the File Manager characteristics to better suit the way you work. Preferences can be changed on an ad hoc basis. You should familiarize yourself with these preferences and change them as often as you need to suit your way of working. To change File Manager preferences:

- 1 Choose **View** → **Preferences...** to display the Preferences screen:

P R E F E R E N C E S		
FILE ORDERING		
Sort by:	[Name_____]	
Group folders first:	[Yes]	
GENERAL		
Startup folder:	[_____]	
Display owner names as:	[Login name_____]	
Use Index:	[Yes]	
DISPLAY DETAILS		
Name and/or title:	[Name_____]	[Name_____]
Last modification:	[No_____]	[No_____]
Size (characters):	[No_]	[No_]
Hidden files:	[No_]	[No_]
Indexed files:	[Not marked___]	[Not marked___]
F1=Enter		
F4=Quit		

- 2 Choose the settings you prefer and then press **F1 (Esc e)**.

The following table briefly describes these preferences. Press any key in each field to display a list of choices for that field. For more details, press **F10 (Esc h)** while using the Preferences screen.

Set Preferences

Field	Explanation
Sort By	How to order the File Manager lists and any Search Results screen.
Group Folders First	Whether to place folders at the top of the Folder list, thereby separating them from files.
Startup Folder	The folder to open each time you start File Manager in a working session. If left blank, the folder you were in when you started File Manager opens.
Display Owner Names As	How to display the names of file owners.
Use Index	Whether or not to use the index system. When set to Yes , new files and folders are immediately indexed, index entries are kept up to date, and you also have access to the Search Index facility.
Name and/or Title	The type of file name details to display.
Last Modification	Whether to display the last modification date and time of files.
Size (characters)	Whether to display the file size.
Hidden Files	Whether to display files whose names start with a dot.
Indexed Files	Whether to indicate which files and folders in the Folder list have index entries.

◆ Work with Files and Folders

You use File Manager to carry out all your file- and folder-related tasks. These include creating and deleting files and folders, and searching for files which have similar characteristics.

◇ Open Files

To open a file:

In the Folder list, highlight the file you want to open and then press **F5**.

Uniplex starts the appropriate application and opens the file.

- ✎ *If the file is a non-Uniplex Word Processor file, Uniplex asks if you want to view a converted copy of the file in the Word Processor. To view the file, press F1.*

◇ Create Files and Folders

In addition to creating a file while using an application, you can use the File menu in File Manager to create files and folders.

When you create a file or folder, you complete the associated screen by supplying certain details which you want stored with the item. These details, or attributes, are stored in an index entry. You can later search for indexed files using these attributes.

However, since many of these attributes are stored in the index system, the majority of the fields in the Create screens are only available to you if your index system is switched on.

- ✎ *Before you create a file or folder, first move to its parent folder: this saves you having to type in the full pathname for the item.*

Work with Files and Folders
Create a File

To create a file:

- 1 Choose **File** → **New** → **File...**

The Create File screen appears. As well as providing a name for the file, you can enter additional details which you can later use to help find a specific file.

- 2 Complete the fields you require and then press **F1 (Esc e)**.

The following table briefly describes these fields. For more details, press **F10 (Esc h)** while using the Create File screen.

Field	Description
Title	<p>Enter a short description of the file. You can view files by title instead of by name by specifying this in your <i>preferences</i>.</p> <p>✎ <i>You must type either a title or a name for the file.</i></p>
Template	<p>Choose the template name to create a file based on a template. The parent folder template name is automatically shown here, if present.</p> <p>✎ <i>This field is not present if you accessed the Create File screen from within an application.</i></p>
Name	<p>Type a name for the file. A name is automatically generated based on the title, if entered.</p>
Folder	<p>The pathname of the current folder. To create the file in another folder, type in that folder's pathname or press F5 to use File Manager to select the appropriate folder.</p>

Work with Files and Folders

Field	Description
Type	If you have chosen a template, this field shows the file type of that template. If you are creating the file from within an application, the type is set to that of the application. You can choose the type of file you are creating from a pop-up list.
Keywords	You can enter keywords about the file which you can later use to help you find this file (providing that the index system is switched on). Keywords always appear in uppercase.
Permissions	Shows the default access permissions for the new file which can be changed, if necessary, using the File Properties screen.

Create a Folder

To create a folder:

- 1 Choose **File** → **New** → **Folder...** to display the Create Folder screen.
- 2 Complete the fields you require and then press **F1 (Esc e)**.

The following table briefly describes these fields. For more details, press **F10 (Esc h)** while using the Create Folder screen.

Field	Description
Title	Enter a short description of the folder. You can view folders by title instead of by name by specifying this in your <i>preferences</i> .  <i>Type either a title or a name for the folder.</i>
Template	You can choose a template on which to base all new files in this folder.

Work with Files and Folders

Field	Description
Name	Type a name for the folder. If you do not type a name, but you have typed a title, Uniplex automatically generates a name based on that title.
Folder	Shows the pathname of the current folder. To create the new folder elsewhere, type in its full pathname or press F5 to use File Manager to select the appropriate folder.
Type	This is an information field showing UNIX DIRECTORY and is used to identify the type of item you are working with.
Auto-index	Controls the indexing of files and subfolders in this folder. You can choose to: automatically index all your files, all files and subfolders, or not index any files.
Permissions	Shows the default access permissions for the new folder which can be changed, if necessary, using the Folder Properties screen.

◇ Move and Copy Files

✎ If you **Move** or **Copy** an indexed file, make sure that your index system is switched on before doing so. Otherwise, the resulting file becomes **NOT INDEXED** and any title or keywords you may have associated with the file are lost.

To move and copy single or multiple files from one folder to another:

- 1 Select the file(s) to move or copy.
 - 2 From the **File** → **Actions** menu, choose **Move** or **Copy**.
 - 3 In the associated pop-up, type in the name of the destination folder (or file name, if appropriate) for the file. You can use File Manager to navigate your way through the file system by pressing **F5**.
 - 4 Press **F1 (Esc e)** to confirm.
- ✎ You cannot move folders, however, you can **Rename** them (see the next subsection).

◇ Rename Files and Folders

To change the name of a file or folder within its parent folder:

- 1 Select the file or folder to rename.
- 2 Choose **File** → **Rename...**
- 3 In the Rename File pop-up, type in the new name for the item.
- 4 Press **F1 (Esc e)** to confirm.

◇ Delete Files and Folders

You can delete single or multiple files, but only single, empty folders. To delete a file or folder:

- 1 Select the file(s) or folder to delete.
- 2 Choose **File** → **Delete...**, or press **Ctrl + x**.
- 3 Press **Y** to confirm deletion.

If the selected file is a template, Uniplex prompts you to confirm a second time; press **Y** to continue.

◇ Restore Files from the Trashcan

Files you delete are held in your Trashcan for a period of time determined by your System Administrator. We suggest, however, that you check the contents of your Trashcan periodically and delete any items which are no longer required. This will help save space on your computer.

You can restore any file still in the Trashcan as follows:

- 1 Choose **View** → **Open Folder...**
- 2 In the **Select folder to open** field, choose **Trashcan** and press **F1 (Esc e)**.

File Manager displays the contents of your Trashcan.

- 3 Select the file(s) to restore and then use **File** → **Action** → **Move** to move them back.

⚡ *Since you can only delete empty folders, you cannot restore them.*

◇ Browse Files

You can *browse* any Uniplex file before carrying out a further action. The file opens in a simple word processor; you cannot make any changes to the file, but you can read its contents. This may be useful, for example, to check the version of a file before you delete it.

↘ *If you browse a non-text file, Uniplex shows the contents of the file as best as it can. You can, however, choose **Open** to view a converted copy of the file in the Uniplex Word Processor.*

To browse a file:

- 1 Select the file to browse. You can select more than one file for browsing and move from one to another.
- 2 Choose **File** → **Browse** to display the first selected file in the Browser.

Use the ring and softkey menus to:

- Move up and down the current file.
 - Move to the next or previous file.
 - Open the file for editing in its application.
 - Print the current file via the Print Form.
 - Move the current file to a new location.
- 3 When you have finished browsing files, press **F4 (Esc q)** to return to File Manager.
- ↘ *For more details about browsing, press **F10 (Esc h)** while the Browser is displayed.*

Work with Files and Folders

◇ **Print Files**

You can print single or multiple files that are either Uniplex Word Processor files or text files.

To print a file:

- 1 Select the file(s) to print.
- 2 Choose **File** → **Actions** → **Print...** to display the Print Form.
- 3 Complete the Print Form and then press **F1 (Esc e)**.

↘ See the **Printing** chapter for Print form details.

◇ **Mail Files**

You can mail any individual file from the File Manager. Send multiple files from Mail by using File Manager to select each one.

To mail a file:

- 1 Select the file to mail.
- 2 Choose **File** → **Actions** → **Mail...**

Uniplex starts your mail system and displays the Send Form. The selected file is attached to the message.

- 3 Complete the Send Form as appropriate, write an accompanying message if required, and then press **F1 (Esc e)**.

↘ See the **Electronic Mail** chapter in the *Advanced Office System User Guide* for details on completing the Send form.

◇ Convert Files

Uniplex provides a wide variety of import and export filters that allow conversion of the text from documents, spreadsheets, and databases to and from the Uniplex Word Processor. The UBS Document Access module must be installed to access this feature as an add-on to the File Manager functionality. You can convert single files and groups of files. Uniplex attempts to determine the *source* format of each file; you must specify the file's *target* format.

- ✎ *The source format is the format of the original file and the target format is the format to which the file is to be converted.*

To convert a file:

- 1 Select the file(s) to convert.
- 2 Choose **File** → **Actions** → **Convert...** to display the Convert File pop-up:

CONVERT FILE	
From	
File:	Test-File.doc
Format:	[<Automatic Format Detection>_____]
To:	[_____]
With format:	[UNIPLEX II PLUS_____]

The pop-up shows the name of the first (or only) selected file.

Work with Files and Folders

3 Complete the fields as follows:

Field	Description
From Format	Leave this set to Automatic Format Detection for Uniplex to determine the source file format. You will be prompted to specify a format if Uniplex cannot determine one. Alternatively, use SPACEBAR to scroll through the format options or press any key to display a list of the available formats.
To	Leave blank to overwrite the source file with the converted file or specify the target file name (you can include a full path to store the target file in a different folder). Press F5 to start File Manager in Select Folder mode if you need help choosing a folder. You must then type in the target file name.
With Format	Use SPACEBAR to scroll through the format options or press any key to display a list of the available formats and select the target format.

4 Press **F1** to begin the conversion.

This will complete if you are converting a single file. You are prompted to choose whether to convert each file separately or to convert all files in batch if you are converting multiple files and you left the **To** field blank:

- Press **F1** to begin the multiple file conversion. You will be prompted to confirm the format and destination between the conversion of each file.
- Press **F2** to convert the files in batch using the initial parameters specified.

◇ View File and Folder Properties

You can view the properties of a file, template or folder and make changes to some of the details.

When you create a file or folder, any attributes you assign, such as the title and keywords, are used to create an index entry. Using the Find command, you can use these attributes to help you locate any indexed file. Other properties are taken directly from the Unix file system and cannot be searched on, they can, however, be viewed and changed.

To view the properties for a file, template or folder:

- 1 Highlight the name of the item whose properties you want to view.
- 2 Choose **File** → **Properties...** to display the associated Properties screen.
 - ✎ *If the index system is switched off, you can only change the file's access permissions. If, however, you are not the owner of the file, you cannot make any changes to the file's properties.*
- 3 Change the information if required and then press **F1 (Esc e)** to save the changes. Or, if you have not made any changes, press **F4 (Esc q)** to quit and return to File Manager.

Files and folders have a similar set of properties. The following table briefly describes those properties that you can edit. The remaining fields only provide information about the file or folder, and cannot be changed.

For more details, press **F10 (Esc h)** while using the Properties screen.

Work with Files and Folders

Field	Description
Title	Shows any title text previously supplied.
Type	<p>For file properties: If the file is indexed, shows the file type previously specified. If the file is not in the index system, this shows NOT INDEXED.</p> <p>You can let Uniplex determine its file type automatically by pressing F6.</p> <p>For folder properties: If the folder is indexed, shows UNIX DIRECTORY; you cannot change this. If the folder is not in the index system, this shows NOT INDEXED.</p>
Keywords	(Only present for files.) Shows any keywords previously supplied. Keywords are always shown in uppercase.
Auto-index	(Only present for folders.) Shows which types of files in this folder will be automatically indexed, if specified.
Permissions	Shows the access permissions for the item.
Created from Template	(Only present for files and templates.) Shows the name of the template used when creating the file, if one was specified.
Default Template	(Only present for folders.) Shows the name of the default template for all files created in this folder, if specified.

◇ Find Files

If you know that a particular file is in the file system, but you can't remember where, you can use the Find commands to search for it.

In addition to the *Goto* command, which finds an item in the active list, File Manager provides three more-powerful methods to help you find a file. You can:

- o Search for a file using attributes in the index. You define a file's attributes either when you create the file or by editing its properties.

Whenever you search for files using the index, any files which match the criteria are displayed in the Search Results screen. You can work with the files in the Search Results screen in much the same way as you work with files in File Manager. For more details, press **F10 (Esc h)** while using the Search Results screen, and then select *The Search Results Screen* topic.

- o Search for a file by name, specifying a folder in which to start the search.
- o Search for a file by its content, specifying which files or folder to search.

Use the Find Options

To search for a file using the Find options:

- 1 Choose **File** → **Find**.
- 2 From the **Find** options, choose one of the following:

Search Index... to find a file using the index.

By Name... to find a file by its name.

By Content... to find a file by any text it contains.

The appropriate screen opens.



Work with Files and Folders

3 Complete the fields you require and then press **F1 (Esc e)**.

✎ *For details about Goto, see the earlier section Move around File Manager.*

There are various wildcards and search operators that you can use within each of the search screens. For details on each Find option and the use of wildcards and search operators, press **F10 (Esc h)** while using any search screen.

◆ Use Templates

Templates are preformatted versions of common files. Uniplex provides a number of templates, mainly for the Word Processor and Spreadsheet. These templates are available to everyone and can be used as the basis of a new file. Your System Administrator may have designed further templates to suit the needs of your particular site.

There are two types of template: *system* and *personal*. *System templates* can be used by anyone; *personal templates* are usually only accessible to the person who created them.

When you create a file from File Manager, you can choose to base the file on an existing template. In addition, you can set a default template for an existing folder which can then be used for new files in that folder. For details, see the subsection *View File and Folder Properties* in the earlier section *Work with Files and Folders*.

◇ System Templates

You can base any file on a system template. When creating a file from a template, the new file has your own default file permissions, not those of the template file.

The default system-template area contains various Word Processor, Spreadsheet, Personal Organizer, and Report Writer templates. Although you can access the system templates, it is usually only the System Administrator who can edit existing templates or create new ones.

When you want to use a system template, use the browser or open the file to make sure it contains the type of details you want.

Use Templates

◇ Display Templates in File Manager

Templates are simply files contained in a certain folder (or one of its subfolders) known as a *template area*.

To open a template area:

- 1 Choose **View** → **Open Folder...**
- 2 Choose the appropriate folder in the **Select folder to open** field:
 - **Personal Templates**
 - **Personal Organizer Templates**
 - **Report Writer Templates**
 - **Spreadsheet Templates**
 - **Word Processor Templates**

and press **F1 (Esc e)**.

File Manager displays the appropriate template area.

◇ Create Templates

You create and edit templates in the same way as any other file. You can create the template either when using File Manager or when creating a file from an application.

You create a template simply by saving it in your personal template area.

- ✎ *You can use the **View** → **Open Folder** command to move to your personal template area, and then save your file in that area.*

◆ Start Applications

You can always use the pop-up DESK (**F9**) and UTIL (**F12**) menus to access other applications. File Manager allows access to all the main Uniplex applications from its Applications menu.

Press **F2** to move to the menus and then use the arrow keys to move to the **Applications** menu.

✎ *When you start an application from File Manager, File Manager continues to run in the background; you can process switch between the application and File Manager.*

In addition to the options to start a particular application, the **System** and **Switch To** options each give access to two further options:

Option	Description
Shell Command	Run a Unix command. Type the appropriate command at the system prompt, for example, exit , to return to File Manager.
Administration	Loads the Uniplex System Administration menu.
Last Application	Switches to the last Uniplex process you accessed.
Select from List	Displays a list of all active Uniplex processes. Choose a process to switch to.

For more details on the **Switch To** options, see the section *External Windows* in the *Integration* chapter.

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Chapter 6

Printing

Printing

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Printing

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◆ Overview

You can use Uniplex to print out copies of your documents and files on a wide range of printers, using different fonts, character sets, and typefaces to enhance the appearance of documents. You can:

- o Print a document or file immediately, using Easi-Print.
- o Print using a variety of styles.
- o Print draft and quality versions of documents.
- o Print using different printers attached to the computer system.
- o Print the whole document or a range of pages.
- o Print multiple copies of a document.
- o Print using fixed or proportionally spaced characters.
- o Print text and graphics on the same page.
- o Print on different sizes of paper.
- o Print page-by-page.
- o Print to the screen first to check formatting.
- o View and cancel print requests.

Uniplex has a variety of print *styles* which let you produce printed documents to meet your individual requirements. The most commonly used styles are *Fixed-Pitch* and *Quality*.



Overview

Fixed-Pitch printing is intended for documents you want to print quickly and that do not require any special formatting. Quality printing is intended for documents that require special formatting, for example proportional spacing. In addition, you can define your own print styles. See *Print Styles*.

The style that the author intended for printing is recorded in the file when using a Pre-Styled document. See *Pre-Styled Documents*.

✎ *The Pre-Styled document is taken as the printing default, superseding the user's default style, which in turn, supercedes the system default.*

Uniplex makes it easy for you to produce printed copies of documents or files. You can print using either of two methods:

- o **Use Easi-Print**

Using Easi-Print, you need only specify the document or file name to print. Uniplex prints the document or file on a default printer in a default style.

- o **Complete a Print Form**

You complete a Print form to change the printing defaults. You can also specify the *style* and printer you want to use. See below for more details. In addition, you can specify various aspects of the final printed document format.

◇ Access Printing

You can access the Uniplex printing facilities in a variety of different ways.

To access Printing from the main menu:

- o Pick and point the Printing option from the main menu.

Uniplex displays the Print Menu.

To access Printing while working in any Uniplex application:

- 1 Press **ESC xu** or **F12** to access the Utilities Desk.

Uniplex displays the popup Utilities Desk menu.

- 2 Pick and point the Next page option.

Uniplex displays the Print Desk.

- 3 Pick and point the Print option you require.

To access Printing while working with the Word Processor:

- 1 Press **F2** to display the command menu.

Uniplex displays the main command menu with the first option highlighted.

- 2 Pick and point the **P**rint option.

Uniplex displays the Print ring menu.

- 3 Pick and point the print option you require.

Print◆ **Print**

You can print any document or file you have created, even if you created it outside of Uniplex.

If you want to print out a document or file immediately, using the default style and printer, use Easi-Print. Easi-Print is described in the section that follows.

If you want to print out a document and use a style other than the default style, or make modifications to the style, you complete the Print Form. See *Print Using Print Form*.

◇ **Easi-Print**

To print a document or file immediately using your default printer and style:

- 1 Pick and point the Printing option.

Uniplex displays the Print Menu.

- 2 Pick and point the Easi-Print option.

Uniplex prompts for a document name.

- 3 Enter the document name and press RETURN. Press the down arrow to display a pick and point list of all documents.

Uniplex prints the document using the default printer and style.

See *Print Defaults* for details of how to change these. See *Print Styles* for details of how to define the type of printing you require.

◇ Print Using Print Form

Use the Print form if you want to print a document using a different style or printer than the defaults or if you want to specify additional criteria like number of copies or the range of pages to print:

- 1 Pick and point the Printing option.

Uniplex displays the Print Menu.

- 2 Pick and point the Print Using Form option.

The name of the document you want to print is requested.

- 3 Enter the name of the document you want to print and press RETURN (include the full path if not in the current folder). The Print form displays:

ENTER DETAILS P R I N T S C R E E N Page 1/3

Name of document	[chapter1.1_____]
Printer	[EPSON LASER_____]
Style	[Quality_____]
Print from page number	[1___] to page number [9999] Page numbers: [As printed_]
Number of copies	[1___]
Left hand margin indent	[0___]

(Use DOWNARROW to access advanced printing options)

F1=Enter F2=Redraw F3>Edit F4=Quit F5=Expand F6>Record



Print

- 4 Complete the Print form by using the arrow keys to move between fields and SPACEBAR to select options. Press any character key to display a pick and point list of available options.

Field	Explanation
Name of Document	This field should contain the name of the document you want to print.
Printer	Select a printer name.
Style	Select a Print Style. See <i>Print Styles</i> for details of how to specify these format parameters.
Print from Page Number	Enter the start and end pages to print a page range.
Page Numbers	Define the page range details:
As Printed	Print the numbered pages of the document as determined by change page number (.PN) commands. This is the same as the physical pages if there are no .PN commands.
Physical	Print the physical pages of the document, taking no account of .PN commands. Printing pages 1-3 of a document whose numbering starts at page 20 effectively prints pages 20-22.
WP (approximate)	Print the viewed pages of the document following the page breaks shown when editing on screen.
Number of Copies	The number of copies to print.

Field	Explanation
Left Hand Margin Indent	The number of spaces for the left hand margin indent. The whole page is offset by this number of spaces.

- 5 If you want to specify further characteristics for the print, press the down arrow to display the next part of the form. Otherwise, press **ESC e** to print the document.

ENTER DETAILS P R I N T S C R E E N Page 2/3

Print to screen first	[No__]
Prompt after each page	[No__]
Print alternate pages	[No__]
Print from section	[0___] to section number [9999]
Use printer's copy facility if available	[Yes_]

(Use DOWNARROW to access additional printing options)

F1=Enter F2=Redraw F3>Edit F4=Quit F5=Expand F6>Record

- 6 If you have displayed the next part of the form, complete this form as follows:

Field	Option/Explanation
Print to Screen First	Yes Display print format on screen before printing.
	No Print directly.



Print

Field	Option/Explanation
Prompt after Each Page	Yes Request OK before printing each page (for manual paper feeding).
	No Print continuously.
Print Alternate Pages	Yes Print only alternate pages (manual double-sided printing).
	No Print all pages.
Print from Section Number	Enter the start and end sections to print (the document must contain print time commands for sections).
Use Printer's Copy Facility if Available	Yes Send a single copy of the document to the printer and allow it to handle multiple copy printing.
	No Send print images of each copy.

7 Press **ESC e** to print the document when you have specified all your requirements. Press the down arrow to display the next part of the form to override the paper size and margins defined in the print style.

8 The first field of page three of the Print form displays:

`Use style from Pre-Styled document`

This will use the style settings that are recorded within the document if the document is Pre-Styled. Press SPACEBAR to scroll the entry if you do not wish to use the print style defined in the document format details:

`Use current print style`

The system will use the style from the first page of the form (also used if the document is not Pre-Styled). You can override the paper sizes and margins in this style by scrolling to:

Override the current print style

ENTER DETAILS P R I N T S C R E E N Page 3/3

This screen is used to override the layout specified for the style that you have chosen

[Use style from Pre-Styled document_____]

Paper size	[8x11_____]
Header margin	[0_]
Footer margin	[0_]
Left margin	[0_]
Right margin	[0_]
Gutter margin	[0_]

F1=Enter F2=Redraw F3>Edit F4=Quit F5=Expand F6>Record

9 Now complete the form as follows:

Field	Explanation
Paper Size	Select a paper size.
Header Margin	Number of lines for the header margin.
Footer Margin	Number of lines for the footer margin.
Left Margin	Number of characters for the left margin.



Print

Field	Explanation
Right Margin	Number of characters for the right margin.
Gutter Margin	Number of characters to be added on alternate right and left margins for binding.

✎ *It is only useful to change the page size and margins if you are using a style which allows reformatting (i.e., Quality).*

10 Press **ESC e** to print the document.

✎ *Be sure to specify EXACTLY the same print options when you generate an index or table of contents.*

◇ **Document Preview Mode**

You can view a document on the screen as it will be printed (including all print time and ruler commands). This is a useful check that all formatting commands are correct. To print the current document to your display:

- 1 Edit the document using the Word Processor.
- 2 Press **F2** or choose these options from the command menu:

Print → Display

For Pre-Styled documents, the Print to Display pop-up opens in which you can specify how to display the document:

Print to Display	
Printer Style	[From Document]
Printer Class	[Default_____]
Remember Choice	[Yes]

- 3 Complete the pop-up as follows. To change an entry, press any key to display a list of choices and choose the one you require.

Field	Explanation
Printer Style	From Document. Displays the document using the print style defined in its format details.
	Default. Displays the document using your default print style.
Printer Class	Default. Displays the document using your default printer setup.
	From Document. Displays the document using the printer in its document format details, if available, or else your default printer.
Remember Choice	Yes. Remembers the chosen print style and printer whenever you re-invoke Print to Screen.
	No. Redisplays this pop-up for you to confirm the print style and printer settings each time you re-invoke Print to Screen.

✍ **Remember Choice** is for the current document only. When you open another document and choose *Print to Display*, the print style and printer settings return to their defaults.

- 4 When the pop-up is complete, press **F1 (Esc e)**.

Uniplex displays the formatted document on the screen. You can move around the display, search for a character or text string, and toggle between the original and the display versions. See the following subsections for details.

- 5 To close the print to screen document, choose **Quit** from the command menu. Alternatively, press **F4 (Esc q)** twice.

**Print****Move around the Screen**

You can move around the displayed document using the Word Processor cursor-movement keys.

To move into the displayed document:

Press **↑**.

The cursor moves into the print to screen document. You can move around the document but you cannot make any changes.

You can toggle between the print to screen document and the Word Processor document using **Esc xe**.

To return to the print to screen command menu:

From the print to screen document, press **F2**.

You can also move around the print to screen document using the following command menu actions:

- | | |
|----------------------|---|
| Down | Displays the next screen of the current page. |
| Up | Displays the previous screen of the current page. |
| Next_Page | Displays the next page of the document. |
| Previous_Page | Displays the previous page of the document. |
| Edit_Mode | Moves from the print to screen document to the Word Processor document. |

To return to the print to screen document, without taking account of any changes made in the document, choose:

Print → **Return_to_Display**

Use Goto and Find

Using the **Find** command menu option, you can go straight to a specific page, go to the start or end of the document, or find a character or text string within the document, up to a maximum of 42 characters. To go to a specific place in the document:

- 1 From the command menu, choose **Find**.
- 2 From the Find submenu, choose the appropriate option:

Start Moves to the first line of your document.

End Moves to the last line of your document.

Page Goes to the page number you specify.

To find a specific piece of text:

- 1 From the command menu, choose **Find**.
- 2 From the Find submenu, choose the appropriate option.

Forwards Searches forwards through your document.

Backwards Searches backwards through your document.

Next Searches for the next occurrence of a previously-defined search.

If you chose **Forwards** or **Backwards**, Uniplex prompts for the text you want to search for.

- 3 If prompted, type your search string and press **Return**. Uniplex finds the first occurrence of the text, if any.
- 4 To find the next occurrence of text, choose **Next** from the command menu, or press **Esc n**.



Print

◇ View and Cancel Print Requests

When you send files and documents to a printer, Uniplex adds them to a *print queue*. You can view the print queue for any printer to which you have access and you can cancel the printing of any file or document which you have requested. To view a print queue:

- 1 From the Uniplex Main Menu, choose **Printing**.
- 2 From the Print Menu, choose **Show Print Requests**.

Uniplex displays the Print Requests form. This form shows your default printer name and a pop-up list of all available printers.

- 3 Highlight the printer name whose print queue you want to view and press **F1 (Esc e)**.

Uniplex displays a status report for that printer. The format of this listing is entirely machine-specific. Check your Unix operating system manual for details of your specific print queue format. The following listing is for a Linux system.

Select print request to cancel and press RETURN; Esq q to exit

```

sales1 is ready and printing
Rank  Owner  Job  Files                Total ...
active mxw   0  (standard input)    13123 ...
1st   mxw   1  (standard input)    130662 ..
2nd   mxw   2  (standard input)    46009 ...

Print request(s) at 18:16:01 for: Sales Laser Portrait

```

- 4 If you want to cancel a print job, highlight the job's details and press **Return**.



You will receive a machine-specific response. Again, consult your Unix operating system manual for details. Press **F4 (Esc q)** to return to the Print Menu if you do not want to cancel any print jobs and you have finished viewing the print queue.

◇ **Set Print Defaults**

The Set Print Defaults form now lets you set print defaults per application. Then, when you use Easi-Print, Uniplex uses the default settings as set for that application.

To set print defaults:

- 1 From the Uniplex Main Menu, choose **Printing**. Then, from the Print Menu, choose **Set Print Defaults**.
- 2 Complete the **Default printer**, **Default print style**, and **Application** fields as appropriate for each application.
- 3 Press **F1 (Esc e)**.



Print Styles

◆ Print Styles

Uniplex is delivered with a variety of print styles which have been designed to meet a wide range of needs. In addition, your System Administrator may have set up additional print styles to suit the requirements of your department or organization.

Each print style defines the way that Uniplex prints out your document or file. For example, it specifies the printer you will use, the size of paper, the typeface, and the layout of your document on the page. In addition to these basic requirements, each style also defines the more complex aspects of producing printed documents of a professional quality.

Normally, you only need to know the name of the style that prints out documents to meet your needs. If you have specific requirements that are not met by the styles on your system, you can define your own styles. See *Create Print Style*.

Normally, Uniplex provides the following print styles:

Print Style	Explanation
Quality	Prints documents proportionally spaced or with multiple fonts. Reformats, justifies, and scales the text to fit the page width.
Semi-Quality	Prints documents proportionally spaced or with multiple fonts. Justifies and scales the text to fit the page width, but does not reformat.
No-Reformat	Prints documents proportionally spaced or with multiple fonts. Does not justify, scale the text to fit the page width, or reformat.
Draft	Prints documents fixed pitch, does not reformat or justify the text. Disables printing of high resolution graphics.

Print Style	Explanation
Fixed-Pitch	Prints documents fixed pitch, does not reformat, but does justify the text.
Spreadsheet	Prints spreadsheets in landscape mode. Does not reformat or justify.
Non-Uniplex	Prints documents that were not created using Uniplex. Does not reformat or justify the text.
Quality-5x8 or Quality-A5	Same as Quality, but the text is scaled to fit a 5 by 8 or A5 page size (5 by 8 is a standard American page size, A5 is a standard European page size).
Semi-Qual-5x8 or Semi-Qual-A5	Same as Semi-Quality, but the text is scaled to fit a 5 by 8 or A5 page size (5 by 8 is a standard American page size, A5 is a standard European page size).

Each style also defines margins and other controls for the print job.

◇ Pre-Styled Documents

Uniplex documents can include information about the style that the author intended it to be printed with. These Pre-Styled documents contain the name of the Style, and the Printer that the creator wished recorded, as well as a default ruler. For more detail see the Word Processor chapter.

When printing a Pre-Styled document using **EasiPrint**, Uniplex prints on your default printer using the print style in the document format details.

When printing a Pre-Styled document using the Print Form, by default, Uniplex will use the print style in the document format details. You can, however, override this and print using any other print style.



Print Styles

◇ Non-Pre-Styled Documents

When you print, you specify the style you require in one of the following ways:

- o **Easi-Print.** The default print settings determine how to print the document. These define the printer and the print style. See *Setting Print Defaults*.
- o **Print Form.** You can define precisely how you want the document printed including the printer to use, the number of copies, and the style.

◇ Create Print Style

Uniplex provides styles to use when printing a document and you can create your own. These can define simple requirements like header and footer margins or specify more complex functions.

Create a new print style as follows:

- 1 Pick and point the Printing option.

Uniplex displays the Print Menu.
- 2 Pick and point the Create Print Style option.

Uniplex displays the Create Print Style form.
- 3 Complete the form with your requirements as described below. Press **ESC e** when you have completed the form.

Print Style Form

The Print Style form sets all aspects of printing. You select one of the Uniplex-supplied styles as a model and then refine it to meet your needs. The form is divided into two screens which allow you to define basic aspects of the style. The first screen covers paper size and margins while the second screen provides settings for printers with twin bin feeders. This defines the majority of new print styles.

However, you can further refine the print style using the Alter Print Style option. See *Alter Print Style*.

ENTER DETAILS CREATE A PRINT STYLE Page 1/2

Style name	[_____]
Availability	[Personal print style_____]
Style model	[Quality full reformat_____]
Paper size	[8x11_____]
Header margin	[0_]
Footer margin	[0_]
Left margin	[0_]
Right margin	[0_]
Gutter margin	[0_]

For further options, cursor down

F1=Enter F2=Redraw F3>Edit F4=Quit F5=Expand F6>Record

Complete the Print Style form as follows:

Field	Explanation
Style Name	Enter the name you want to give the new style. You must give the style a new name that does not already exist.
Availability	Scroll the entry to one of the following: Network Wide Print Style. Make the style available to all users on two or more networked systems.

**Print Styles**

Field	Explanation
	<p>System Wide Print Style. Make the style available to everyone on your system.</p> <p>Personal Print Style. Make the style only available to you.</p> <p>It is recommended that you create print styles for your personal use. You can copy the style if other users need it. See <i>Copy a Style</i>.</p>
Style Model	Pick an existing style as a model for the new style. See <i>Print Styles</i> .
Paper Size	Scroll to a paper size setting: <ul style="list-style-type: none">8 x 11 American letter (8.5" x 11").8 x 14 American legal (8.5" x 14").5 x 8 5.5" x 8.5".A4 European letter size.A5 European half-letter size.Wallet Personal organizer size.
Header Margin	Lines for the header margin.
Footer Margin	Lines for the footer margin.
Left Margin	Characters for the left margin.
Right Margin	Characters for the right margin.
Gutter Margin	Characters for the gutter margin.

Press the down arrow to display the next screen if you want to define the settings for twin bin feeders.

ENTER DETAILS CREATE A PRINT STYLE Page 2/2

For those printers that have twin bin paper feeders you may define a style that prints different header and footer margins for the first page(s).	
First page(s) from bin 2	[no_] No. of pages [1]
First header margin	[0_]
First footer margin	[0_]

You may further fine tune your style definition This will not be necessary in nearly all cases.	
Alter definitions	[no_]

F1=Enter F2=Redraw F3>Edit F4=Quit F5=Expand F6>Record

Complete this screen as follows:

Field	Option/Explanation
First Page(s) from Bin 2	Yes Print first page(s) from second bin. No. of Pages. Specify 1-9 pages to be printed from the second bin.
	No Do not use second bin.
First Header Margin	Number of lines for the initial header margin.
First Footer Margin	Number of lines for the initial footer margin.
Alter Definitions	Go to the Alter Print Style form.



Print Styles

◇ Alter Print Style

These steps apply to the second phase of creating a new print style or as a separate task.

✎ *A Pre-Styled document saves the full style details and will not change if that style is altered.*

```
ENTER DETAILS  A L T E R  A  P R I N T  S T Y L E  Page 1/4
```

```
Style name      Quality
```

Style name	Quality
PAGE LAYOUT	
Paper size	[8x11_____]
Header margin	[4_]
Footer margin	[3_]
Left margin	[8_]
Right margin	[4_]
Gutter margin	[0_]
First page(s) from bin 2	[no__] No. of pages [1]
First header margin	[0_]
First footer margin	[0_]

Cursor down for more options

```
F1=Enter F2=Redraw F3>Edit F4=Quit F5=Expand F6>Record
```

To alter a print style as a separate task:

- 1 Pick and point the Printing option.

Uniplex displays the Print Menu.

- 2 Pick and point the Alter Print Style option.

- 3 Uniplex prompts for the name of the print style you want to alter.

- 4 Enter the name of the print style you want to alter.

Uniplex displays the Alter Print Style form. This is also the form you see if you select the Alter Definitions option from the second page of the Create a Print Style form.

The first screen of this form contains the paper size and margin settings. Unless you want to change these, press the down arrow to display the Formatting page.

ENTER DETAILS CREATE A PRINT STYLE Page 2/4

GENERAL FORMATTING OPTIONS	
Draft mode	[no__]
Disable high resolution graphics	[no__]
Allow overlaying of text & graphics	[no__]
Default font	[default_____]
Auto-hyphenate at print time	[no__]

Cursor down for more options

F1=Enter F2=Redraw F3>Edit F4=Quit F5=Expand F6>Record

Complete this form as follows:

Field	Option/Explanation
Draft Mode	Yes Print fixed pitch.
	No Print proportionally spaced.
Disable High-Resolution Graphics	Yes Do not print high-resolution graphics present in the document.
	No Print high-resolution graphics.



Print Styles

Field	Option/Explanation
Allow Overlaying of Text and Graphics	Yes Combine text and graphics. See <i>Graphics</i> .
	No Do not combine text and graphics.
Default Font	Leave as <i>default</i> to use the default font or enter a new default font name.
Auto Hyphenation	Yes Allow automatic hyphenation of documents at print time.
	No Disable automatic hyphenation of documents at print time.

Press the down arrow to display the next screen if you want to change the reformatting controls.

ENTER DETAILS CREATE A PRINT STYLE Page 3/4

REFORMATTING CONTROLS	
Reformat at print time	[yes_]
or just justify at print time	[no__]
Force WP page breaks	[no__]
Automatically scale doc to page size	[yes_]
or scale doc to width of widest ruler	[no__]
or set character pitch size	[0__]
Check for widows and Orphans	[yes_]
Disable guesswork of tabs	[no__]
Disable expansion of tabs	[yes_]

Cursor down for more options

F1=Enter F2=Redraw F3>Edit F4=Quit F5=Expand F6>Record



Complete this screen as follows:

Field	Option/Explanation	
Reformat at Print Time	Yes	Reformat the text according to the rulers in the document.
	No	Do not reformat the text.
Or Just Justify at Print Time	Yes	Do not reformat, but justify text, according to the rulers in the document.
	No	Do not reformat and do not justify.
Force WP Page Breaks	Yes	Break pages at the WP page breaks specified in the document.
	No	Ignore the WP page breaks specified in the document.
Automatically Scale Doc to Page Size	Yes	Scale the width of text to the width of the paper.
	No	Keep the width at the size defined by the ruler (1 dot is equal to 1/10 of an inch.)
Or Scale Doc to Width of Widest Ruler	Yes	Scale the width of text to the width of the widest ruler (where 1 dot is equal to 1/10 of an inch.)
	No	Do not scale the text to the width of the widest ruler.
Or Set Character Pitch Size	Set a character pitch value (the default is 10 and this only applies if the two previous fields are both set to no).	



Print Styles

Field	Option/Explanation	
Check for Widows and Orphans	Yes	Make sure that lines of text at the bottom or top of pages are moved to the top or bottom of preceding or following pages.
	No	Do not check for movement of lines at the top and bottom of pages.
Disable Guesswork of Tabs	Yes	Do not assume four or more spaces is a tab.
	No	Assume four or more spaces is a tab.
Disable Expansion of Tabs	Yes	Do not expand tab characters (Unix documents already have their tab characters expanded).
	No	Expand tab characters (external documents may need their tabs expanded to format correctly).

Press the down arrow to display the next screen if you want to specify how multicolumn text is treated.

ENTER DETAILS A L T E R A P R I N T S T Y L E Page 4/4

<p>MULTI COLUMN CONTROL</p> <p>Align blank lines across multi columns</p>	<p>[yes_]</p>
---	---------------

F1=Enter F2=Redraw F3>Edit F4=Quit F5=Expand F6>Record

Complete this screen as follows:

Field	Option/Explanation	
Align Blank Lines Across Multi Columns	No	Do not align blank lines (text that aligns on screen will not necessarily align in the printed document).
	Yes	Align blank lines (text in the printed document will align).

*✎ This parameter maintains alignment of multicolumn text between the screen and the printed page. A blank line that spans multiple columns of text on the screen will be maintained by adding an extra blank line to one of the columns if the reformatted, printed text so requires and this parameter was set to **yes**.*

◇ Copy Print Style

You can make copies of print styles. This is useful if you want to create a style that is similar to one that already exists, or if you want to make a personal style, a system-wide style.

To copy a print style:

- 1 Pick and point the Printing option from the main menu.
Uniplex displays the Print menu.
- 2 Pick and point the Copy Print Style option.
Uniplex prompts for a print style to copy from.
- 3 Scroll the field so it displays the name of the print style you want to copy.
- 4 Enter the new name of the style. You must enter the name of a style that does not already exist.



Print Styles

- 5 Scroll the Availability field so it displays either:

`Personal print style`

or

`System-wide print style`

- 6 Press **ESC e**.

Uniplex copies the style. Use the Alter Style option to modify it.

◇ Delete Print Style

You can delete a print style once it is no longer used. To do this:

- 1 Pick and point the Printing option from the main menu.

Uniplex displays the Print menu.

- 2 Pick and point the Delete Print Style option.

Uniplex prompts for the name of the style you want to delete.

- 3 Press the SPACEBAR to scroll the name to the style you want to delete.

Press **ESC e** to delete the style.

◆ **Print Defaults**

The System Administrator sets a print default for each user which defines an Easi-Print printer and print style. You can change the print defaults and set a default for each Uniplex application. See the sections below for details of displaying and changing print defaults.

◇ **Show Print Defaults**

You can display your print defaults as follows:

- 1 Pick and point the Printing option.

Uniplex displays the Print Menu.

- 2 Pick and point the Show Print Defaults option.

Uniplex displays your default printer name and style.

◇ **Set Print Defaults**

You can change your print defaults as follows:

- 1 Pick and point the Printing option.

Uniplex displays the Print Menu.

- 2 Pick and point the Set Print Defaults option.

Uniplex displays the Print Defaults form.

- 3 Complete the Print Defaults form by scrolling to select a default printer and style, then select the application to which these defaults will apply.

Prepare Documents for Quality Printing

◆ Prepare Documents for Quality Printing

Use the Quality print style to print with proportional spacing if the document contains multiple fonts or if you want to print the same text on different paper sizes. This section discusses the guidelines needed to ensure that documents printed with the Quality style print as expected.

◇ Glossary of Terms

Proportional Printing

Laser and ink jet printers use *proportionally spaced* printing to vary the size of each character for a typeset appearance. You can recognise text that has been printed proportionally spaced, because the characters are of different sizes and there is less white space within a line of text.

Font

A font is a general name describing the characteristics of printed characters. These characteristics can be summarized as follows:

Term	Explanation
Pitch	The number of characters per inch.
Point	A measurement unit (72 per inch).
Symbol Set	Such as French, English, or Math.
Stroke Weight	Such as bold, normal, or light.
Style	Such as italic or upright.
Typeface	The character set name (<i>i.e.</i> , Courier, Times Roman, Helvetica).



Landscape

Text is printed along the length of the paper:

In landscape mode, text is printed along the length of the paper.

Portrait

Text is printed across the width of the paper:

In portrait mode, text is printed along the width of the paper.



Prepare Documents for Quality Printing

Reformat

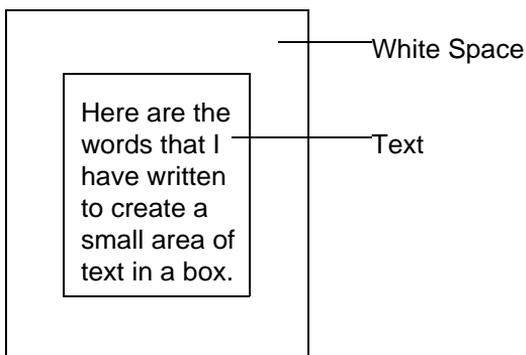
The method of reordering text at print time to produce a finished document. This is essential for proportional spacing, right justification, or mixed fonts. You must prepare the document by setting ruler width, defining format changes, and setting page length. See *Create Special Effects when Printing*.

◇ **Set Ruler Width**

Maintain the right ruler character in the the same column throughout the document to ensure that the right-hand margin stays constant. You can move the left ruler character to change the start position of text, but you must include leading dots from the furthest left column to that first character:

.....L.....T.....T.....T.....T.....R

The ruler represents the width of the text as it will be printed on the paper. You can define the white space to leave around the body of the text in a print style.



You can use any width of ruler, Uniplex reformats the text to fit the paper size you specify. However, to get an idea of how the printed document will appear, it is recommended you use a ruler width appropriate to the planned paper size plus left and right margins. Uni-

Prepare Documents for Quality Printing

plex interprets leading or trailing dots on the ruler as part of the total text width.

◇ Set Format Changes

Uniplex reformats the text at print time according to the rulers specified in the document when you print using the Quality print style.

You must include rulers for each format change. For example, consider how the following text will appear on the screen:

```
L.....T.....T.....T.....T.....T.....T.....J
Even a simple document appears more professional when printed
using proportional spacing. For example, you often have a
wider choice of fonts available to you when printing with
proportional spacing. Uniplex is:
```

- o Easy to use but very powerful. Your documents can be printed to a very high standard and can include multiple fonts and graphics.

Uniplex prints this text as follows because there is no ruler to indicate the change in format for the second paragraph:

```
Even a simple document appears more professional when printed
using proportional spacing. For example, you often have a wider
choice of fonts available to you when printing with proportional
spacing. Uniplex is:
```

- o Easy to use but very powerful. Your documents can be printed to a very high standard and can include multiple fonts and fonts and graphics.

You should include a ruler for each change of format:

```
L.....T.....T.....T.....T.....T.....T.....J
Even a simple document appears more professional when printed
using proportional spacing. For example, you often have a
wider choice of fonts available to you when printing with
proportional spacing. Uniplex is:
```



Prepare Documents for Quality Printing

H.L.....T.....T.....T.....T.....T.....T.....J
 o Easy to use but very powerful. Your documents can be printed to a very high standard and can include multiple fonts and graphics.

Uniplex will print this text as follows:

Even a simple document appears more professional when printed using proportional spacing. For example, you often have a wider choice of fonts available to you when printing with proportional spacing. Uniplex is:

- o Easy to use but very powerful. Your documents can be printed to a very high standard and can include multiple fonts and graphics.

You must ensure that a ruler is present for each change of format before reformatting a proportionally printed document.

◇ Set Page Length

Most printers only print on standard sized paper (*i.e.*, A4, 8.5" x 11", A5, or 11" x 8.5"). However, you can print documents at different paper sizes, and then cut the paper to required size.

When you use the Quality print style, there is no need to decide what paper size you want the document when preparing the document. At print time, Uniplex reformats the document to fit the page size you select.

However, when preparing the document, you may want to see approximately where your page breaks will occur. To do this, set the page length using the .PL command. See the Word Processor chapter for details of this command.

Different paper sizes are as follows:

- o 60 lines for 8.5" x 11" paper.
- o 46 lines for 11" x 8.5" paper.

Prepare Documents for Quality Printing

- o 62 lines for A4 paper.
- o 43 lines for A5 paper.

Increase the page length (for example, to 62 lines for 8.5" x 11" paper) if you are going to print the document proportionally spaced using a small font. Decrease the page length (for example, to 50 lines for 8.5" x 11" paper) if you are going to print the document proportionally spaced using a large font.

- ✎ *The amount of lines Uniplex can fit on a page depends on your printer and cartridge configuration. These recommended page lengths are provided as guidelines only.*



Create Special Effects when Printing

◆ Create Special Effects when Printing

There are a number of special effects you can create when printing. These enhance the appearance and usefulness of printed documents.

Printing provides the following special effects:

- o Multiple Fonts
- o Variable Line Spacing
- o Center a Block of Text
- o Align Text to Right Margin
- o Multiple Columns
- o Multiple Word Hangs
- o Include Graphic Characters
- o Special Header/Footer Effects
- o Special Footnote Effects
- o Overlay Text on Graphics

The following sections explain each of these.

Create Special Effects when Printing

◇ Use Different Fonts

You can specify different fonts for text, just as you specify different effects, for example bold. See the Word Processor chapter for details of effecting text.

The following table shows the effects you can select from within the word processor and the corresponding effect Uniplex will use to print the effected text:

Effect Options In Word Processor	Corresponding Effect Uniplex Will Print
A	Bold font
B	Bold font
C	<u>Underline all</u>
D	<u>Underline Text</u>
E	<u>Bold & underline</u>
G	Small font
H	Large font
I	<i>Italic font</i>
J	Super ^{script}
K	Sub _{script}
M	<u>Double underline</u>
N	<u>Double underline text</u>
O	PS-Small font
P	PS-Normal font
Q	FX-Small font
R	FX-Normal font
S	Normal font
T	Shaded overstrike (shaded overstrike)
U	Strikeout slash (strikeout slash)
V	Strikeout dash (strikeout dash)
X Index leader effect
[- r r [f f] Graphics font



Create Special Effects when Printing

A font is made up of a *typeface*, a *style*, and a *point size*, where:

- o Typeface is a particular letter design, for example *courier*.
- o Style is a particular print effect, for example **bold**.
- o Point size is the size of characters, for example **14 point**.

Using Uniplex you can specify a font containing a mixture of any of these three characteristics for any piece of text in your document.

Different fonts take up different amounts of space. This means the line and page breaks can be very different to those in the document as it appears on the screen. Be aware of this when using different fonts.

For example, if you decide to print text in a font using a very large point size, your line breaks and page breaks will change. For example, here is a paragraph of text printed using a small fixed-pitch point size:

Even a simple document appears more professional when printed using proportional spacing. For example, you often have a wider choice of fonts available to you when printing with proportional spacing.

Here is the same paragraph of text printed using a large point size:

Even a simple document appears more professional when printed using proportional spacing. For example, you often have a wider choice of fonts available to you when printing with proportional spacing.

Create Special Effects when Printing

Here is the same paragraph of text printed using a small point size:

Even a simple document appears more professional when printed using proportional spacing. For example, you often have a wider choice of fonts available to you when printing with proportional spacing.

Notice the difference in line breaks between the three example paragraphs. This may cause your page breaks to change in the printed document. Be aware of this effect of reformatting when using different fonts and point sizes within a document.

Change Font

To use a different font:

- 1 Move your cursor to the line immediately above the first line of text you want to affect.
- 2 Press **F2** to display the main command menu.
- 3 Select the following options in turn from the command menu:

Layout → **Effect** → **Font-Select**

Uniplex displays the Font Selection form, with your current font characteristics entered by default. For example:

Font Selection	
Typeface	[Helvetica_____]
Style	[Normal]
Point Size	[10___]



Create Special Effects when Printing

- 4 Complete the form by using the arrow keys to move between fields and SPACEBAR to select options. Press any character key to display a pick and point list of available options.

Field	Entry
Typeface	Select the typeface you require.
Style	<p>Normal Prints text in normal style.</p> <p>Bold Prints text in bold.</p> <p>Italic Prints text in <i>italic</i>.</p>
Point Size	Enter the point size in the range 2-128 with up to one decimal place.

You can use a different font without the command menu:

- 1 Move the cursor to the far left of the line immediately above the first line of text to affect.
- 2 Enter `.FN style,typeface,point size` and press RETURN.

A change font command appears at the cursor position.

Style, typeface, and point size are variable entries but the comma separators are mandatory. For example, you can specify a new point size without changing the current style or typeface:

`.FN ,,point size`

Change the print style and point size, but not the typeface:

`.FN style,,point size`

Create Special Effects when Printing

- 5 When the form is as you require press **ESC e**.

Uniplex enters a change font command at your current cursor position. For example:

```
Font: Bold, Helvetica, 12
```

All text following this command is printed in this font, or, depending on your printing capabilities as near as possible to the chosen font. Uniplex prints the text in this font until a further change font command is found.

Reset Font

You can easily reset the default font at the end of any section where the font has been changed. To reset the default font:

- 1 Move your cursor to the line immediately below the last line of text you want to effect.
- 2 Press **F2** to display the command menu.
- 3 Select the following options in turn from the command menu:

Layout → Effect → Reset-Font

Uniplex enters a change font command in your document to reset the following text to your default font.

In addition, you can improve the appearance of printed text if you specify different line spacing according to the chosen font. See *Set Line Spacing*.

Create Special Effects when Printing

◇ Set Line Spacing

You can set the line spacing for use in a document. The default is 6 lines per inch and a line space of 1 (single line spacing). Depending on the capabilities of your printer, you can change the height of line spaces in increments of 0.1 (1/60th of an inch). The command `.SP[n]` is used to change the line spacing where *n* is a value in proportion to the default number of lines per inch.

For example, if the default line spacing is six lines per inch, the command `.SP1.5` would give a one and one-half line spacing or four lines per inch while the command `.SP2` would give double line spacing or three lines per inch. The line spacing is set to the height of the current font if it is set to **0** or if no value is specified.

✍ *The `.SP` command will set the line spacing relative to the text point size. A Pre-Styled document recalculates line spacing every time a `.FN` command resets the font size. The `.SP` value can be made absolute by appending an 'a' to it, for example, `.SP1.5a`. For more detail see **Set Line Spacing** in the Word Processing chapter.*

This command is important with very large or very small fonts if the document is NOT Pre-Styled or if it uses absolute line spacing. You might specify a different line space height in the following situations:

- **Large Font.** Standard line spacing may make the text appear too close together. Specify `.SP1.5` to adjust the line spacing to the height of the font.
- **Small Font.** Standard line spacing may make text lines appear too far apart. Specify `.SP0.75` to adjust the line spacing to the height of the font.
- **1.5 Line Spacing.** Occasionally you may want to highlight a text segment by having it printed with one and a half line spacing. Specify `.SP1.5` to produce this.

Create Special Effects when Printing

- o **Double Line Spacing.** You can emphasize text even more by having Uniplex print it in double line spacing. Specify **.SP2** to produce double line spacing.

◇ Center Text

There are two ways of centering text when using Uniplex.

Center Text around a Point

You can center text around any point on the ruler:

- 1 Position the C character on the ruler at the position where you want the text centered.
- 2 Type in the text and press **CTRL f**. Press **c**.

For example:

```
L.....T.....C.....T.....T.....R
  Algebra For Turnips
```

This text will be centered around the C on the current ruler at print time.

Center Text between the Margins

You can center entire paragraphs or pages of text with the ruler character M. In this case you do not have to use the editing function to center the text at edit time. The centering is done at print time. Center text between margins as follows:

- 1 Create a ruler with a left margin (L) and specify the right margin ruler character as M.
- 2 Type in the text you want centered beneath this ruler.

Uniplex centers the text between the L and M markers at print time.



Create Special Effects when Printing

For example:

```
L.....T.....T.....T.....T.....T.....T.....T.....M
      This text will be centered at print time.
```

The text will be centered between the margins at print time.

◇ Align Text to the Right Margin

You can align text to the right margin using Uniplex. This means that the text is right justified and the left ruler is ragged. To right align text specify A instead of R as the right margin. At print time Uniplex will right align the text, for example:

```
L...T.....T.....T.....T.....T.....T.....T.....T.....A
      This text has been justified at the
      right margin but not at the left
      to create an unusual effect.
```

◇ Tabbed Text

If you use the TAB key to tab text, Uniplex does not print it tabbed unless one of the following conditions is met:

- o The text is preceded by four or more white spaces.
- o You precede the text with an embedded tab character. Press **ESC TAB** to enter the embedded tab character.
 - ✎ *You may need to ask your System Administrator to set up the sequence to enter an embedded tab character.*

This means if you print documents proportionally spaced, they will not necessarily be tabbed if you have just used the TAB key. Continue to use the T markers on the ruler to mark the position for the tab, but make sure one of the above conditions is met. Even in a simple document, such as a company memo, you may need to align two lists of information.

Create Special Effects when Printing

For example:

```
L.T.....T...T.....T.....T.....R
TO:           All

FROM:         Mary Jo Iodine

SUBJECT:      Softball Game

DATE:         06/20/98
```

Always ensure that you leave at least four spaces between lists as shown here or use hard tabs as described above. This ensures that the text will be aligned correctly when it is printed. If text is tabbed inside the margins, Uniplex does not reformat the text on that line. For example, it does not change the wrapping of words or change the line breaks. Any tabbed text inside the margins will suspend the reformat mode for that line.

◇ Decimal Tabs

If you want to use decimal tabs, make sure that the position where you want the numbers to be aligned meets the tab conditions described above or you can use the decimal ruler character (#) to align lists of numbers. See the Word Processor chapter for information on how to use the (#) ruler character.

◇ Hang the First Line Outside the Left Margin

You can specify that a fixed amount of the first line of each paragraph is hung outside the left margin:

- 1 Enter the ruler character | at the position on your ruler at which you want to hang the first line of each paragraph.
- 2 Enter the left margin marker (L) where you want the main body of the text to begin after the first line has been hung.



Create Special Effects when Printing

- Enter the text you want hung under the I marker, then continue entering the text. When the cursor reaches the right margin, it moves under the L marker on the next line and aligns the remaining lines of the paragraph with this marker, for example:

```
I.....L...T.....T.....T.....T.....T.....T.....T....R
Example - As you can see by this example, the first line of
          this paragraph begins further to the left of the
          page than the rest of the paragraph.
```

The reason for this is that the special ruler character I informs Uniplex to do just that. Whenever I begin a new paragraph, Uniplex repeats the instruction until I specify a new ruler.

◇ Hang the First Line Outside the Left Margin within Columns

You can also hang the first line of a paragraph of text outside the main body of text within a multicolumn ruler. If you hang text within multicolumn rulers include the column separator (|) to separate the columns, for example:

```
I.....L...T.....R.|.I.....L.....T....R
Tulip Red - Tulips originate   Envy Green - When someone is
                   from Holland.           said to be "Green
                   The red tulip is         with Envy", it is
                   the most                 not meant
                   popular.                literally!
```

◇ Graphics

You can include graphics in a proportionally spaced document. Uniplex will draw graphics using the full capabilities of the printer including graphical boxes and shaded areas, the Line Draw character set, or the standard character set (using +, |, -, etc.), as available. The text inside a graphic is reformatted to fit in it if the graphic's edges lie outside the margins of the ruler.

Create Special Effects when Printing

To include graphics in a proportionally spaced document:

- 1 Enter text as usual within the left and right margins.
- 2 Position the left and right sides of the graphic box outside the margins of the ruler:

...L.....T.....T.....T.....T.....R...

This is text printed within a box. PS prints the box and the text correctly, if the box is positioned this way.

The dots on the ruler preceding and following the left and right margin markers indicate the amount of space to indent the text within the box. Uniplex reformats the text within the left and right ruler margins and prints the box around the text:

This is the text printed within a box.
PS prints the box and the text correctly,
if the box is positioned this way.

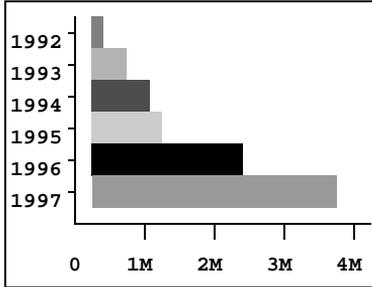
✎ *Draw your box after entering the text it will contain.*

Uniplex will not stretch or shrink a graphic if its edges lie inside the ruler margins. This is particularly useful if the box contains information that should not be adjusted such as a bar graph or flowchart.

Create Special Effects when Printing

For example:

L.....T.....T.....T.....T.....J



◇ Special Layouts for Headers and Footers

You can use certain dot commands and rulers in headers and footers. These commands are local to the particular header and footer and do not affect the surrounding text. The following dot commands are permitted within headers and footers:

.FN(select font)

.SP(set line spacing)

For example:

```

Page Heading
Set Font BOLD
L.....T.....T.....T.....T.....T.....T.....T.....M

Annual Report
1997
Private and confidential

<-End Header->
Page Footer
Set Font ITALIC
#
<-End Footer->

```

Create Special Effects when Printing

The header will appear in a bold font. The use of the "M" character on the ruler ensures that the header will be centered when it is printed. The footer will also be centered and printed in an italic font. These dot commands and rulers will only act on the header and footer and will not affect text on the rest of the page.

◇ Special Layouts for Footnotes

Certain dot commands and rulers can be used in footnotes. These commands are local to the particular footnote and do not affect the surrounding text. The dot commands are:

.SP (set line spacing)

.FN (change the default font)

.PA (break footnote now)

.PM# (break footnote now, if less than # lines remain)

For example:

```
Start Footnote
Use Default Line Spacing for Font
Set Font SMALL
```

```
This is a footnote
<-End Footnote->
```

◇ Format Text in Multiple Columns

You do not need to follow any special formatting guidelines for multicolumn text if both columns use the same size font and the screen view doesn't need to match the printed result. However, you must use double rulers if you have different size fonts within the columns and want the screen view to match the printout. Different fonts take up different space when printed, but all appear the same on a character terminal.



Create Special Effects when Printing

Double Rulers

The first ruler indicates the document format at print time; the second how the text has to be entered on the screen to accommodate this.

For example, you are preparing a document containing two columns of equal width. The first column will be printed in the small font, the second in the normal font. You want to see the first column displayed on the screen as it will print out on paper. The first ruler tells Uniplex to print two columns of equal width:

```
L.....J. | .L.....J
```

The first column is going to contain text in the small font. If this text is two-thirds the size of the normal text, then the first column will need to be half as big again as the second column to be able to accommodate 50% more characters per line. The second ruler appears as follows:

```
L.....J. | .L.....J
```

The rulers in the document look like this:

```
L.....J. | .L.....J.....
L.....J. | .L.....J
```

The document will be correctly formatted in two columns of equal width when printed.

✍ *See the Word Processor chapter for more details on using double rulers*

Create Special Effects when Printing

◇ Define the Exact Position of Text when Printed

It may be important to know exactly where text is positioned when printed. Normally Uniplex automatically places text on the page. You should use the guidelines in the previous section if you are preparing a document in multiple columns and want it displayed on screen as it will print out on paper. You can assume that each position on the ruler occupies 1/10 of an inch when using a fixed pitch font. This is helpful if you are trying to relate text on the screen with the printed document, for example:

L.....T.....T.....T.....T.....T.....T.....J

This ruler contains 60 character positions and will occupy 6 inches.

.....L.....T.....T.....T.....T.....T.....T.....J

This ruler contains a 5 character (1/2 inch) margin. The text contains 55 character positions, or 5 1/2 inches. You can use this guideline with any document to assess the relation between text on the screen and the finished document.

◇ Overlay Text onto Graphics

You can overlay text onto graphics. Create two rulers, one immediately after the other. The first ruler indicates that the graphics box will be centered between the ruler margins at print time. The box will not be shrunk or extended because it is inside the ruler margins.

The second ruler has the left margin offset beyond the previous right margin. Text in this offset area is stretched and shrunk to fit the paper at print time, causing it to be moved back over and superimposed over the graphics box.

- ✎ *Overlaying a filled area has different effects on different printers. Refer to the User Guide supplied with your printer for information on its capabilities and switch settings.*

Create Special Effects when Printing

For example:

```
...L.....M...
.....L.....M...
```



Uniplex

- ✎ *You can only print overlaid graphics and text using a print style that allows it. The Quality and Semi-Quality print styles do not allow you to overlay text and graphics unless you change their parameters. See the earlier section Print Styles for details.*

◇ Hard Return

You can ensure that lines are not reformatted using the hard return character, for example:

```
James P. Verzog~
Verzog Components, Inc.~
1772 Scott Avenue~
Los Angeles, CA 90232~
```

The hard return character displayed on screen to show the end of paragraph varies from terminal to terminal. Hard return characters *may* be entered whenever you press RETURN. You might wish to switch on Hard Return mode to enable this feature:

- 1 Press **ESC op**.
- 2 Move your cursor to the *Hard returns* line.
- 3 Press **SPACEBAR** to toggle from *No* to *Yes*.
- 4 Press **F1** or **ESC e**.

◆ Troubleshooting

You may find that when you print a document proportionally spaced, unexpected results occur. Some common problems and solutions to them are detailed below.

Tabbed Text Does Not Align

You have specified to reformat or proportionally space on the print form, but have not entered tabs correctly. Reprint the document and turn off reformat and proportional spacing or see the earlier section *Tabbed Text* and correct the tabs.

Lines Created with Character Symbols Not Scaled Correctly

Uniplex cannot scale lines created with characters unless they are effected (either as bold or created with the underscore effect). Use graphics characters or effect the lines with bold.

Small Font Is Spaced too far Apart

You have created the text in a small font, but have not adjusted the line spacing. Change the line spacing since the default spacing is intended for the normal font. Conversely, if you change the document to be Pre-Styled, then the line spacing will be automatically recalculated whenever a .FN command changes the font size. See *Set Line Spacing*.

Large Font Is Spaced too Close Together

You have created the text in a large font, but have not adjusted the line spacing. Change the line spacing since the default line spacing is intended for the normal font. Conversely, if you change the document to be Pre-Styled, then the line spacing will be automatically recalculated whenever a .FN command changes the font size. See *Set Line Spacing*.



Troubleshooting

Text Prints in the Wrong Font

You have used the .FN command and mistyped the font name or the printer does not support the font you have requested. Check that you have typed the font name correctly and that the printer supports the requested font.

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◆ Overview

The Uniplex Spreadsheet is a powerful tool that helps you to analyze and manipulate data. You can use the spreadsheet to perform a wide range of tasks from simple *what if* calculations to major accounting, engineering, or mathematical tasks.

You may need to use the Spreadsheet for a number of different reasons including:

o **Make a Simple Calculation**

For example, you can calculate how much interest you will earn on an investment, at a fixed interest rate over a specific period.

o **Create a Spreadsheet for Regular Use**

For example, your organization sells a number of products. Every six months, you review the retail price of the products and increase them based on increases to production costs and the cost of raw materials. You could create a spreadsheet to calculate the percentage increase and re-use it every six months.

o **Use an Existing Spreadsheet**

For example, you represent an insurance company. To insure a client's car, a number of different aspects must be considered; type of car, age of person, and how long they have been driving. The accounts department creates a spreadsheet to calculate premiums. You work on telephone sales and use this spreadsheet to provide quick quotes over the phone.



Overview

The Spreadsheet is based on the traditional financial spreadsheet. It is a grid made up from columns and rows. Within the grid you enter the data, formulas, and text.

The advantages that the Uniplex spreadsheet provide are:

- o The spreadsheet has 1,024 rows and 256 columns, allowing you to manipulate large amounts of data.
 - ✎ *You can configure the spreadsheet to any number of rows and columns, up to a maximum of 10,000 rows and 10,000 columns. See your System Administrator for details.*
- o The spreadsheet provides a wide range of functions, including trigonometric, statistical and financial.
- o Since Uniplex integrates a number of applications you can exchange data between other applications and the spreadsheet.
- o Once created, you can re-use a spreadsheet to calculate different sets of data.
- o The calculation is much quicker than if done manually.

The Spreadsheet now offers a new feature which allows you to define a series of rows and columns to be used as fixed cell titles which repeat on every page of a document. See *Create Spreadsheet Borders*.

◇ Access the Spreadsheet

You can access the spreadsheet from the Main Menu, or from any Uniplex application.

To access the Spreadsheet from the Main Menu:

- o Pick and point the Spreadsheet option on the Main Menu.

Uniplex displays the Spreadsheet menu as follows:

```

      S P R E A D S H E E T      10/09/99 10:00

TASKS                                UTILITIES

1 - Create a Spreadsheet              P - Printing
2 - Work with Existing Spreadsheet    C - Change Folder
                                       F - File Manager

                                       H - Help
                                       Q - Quit

F1=Enter  F2=Redraw  F4=Quit          F8>More
```

To create a new spreadsheet:

- o Pick and point the Create a Spreadsheet option.

To work with an existing spreadsheet:

- o Pick and point the Work with Existing Spreadsheet option.



Overview

To access the spreadsheet from any other application:

- o Press F9 or **ESC xd**

To invoke the Spreadsheet in full screen:

- o Pick and point the Spreadsheet option.

To invoke the Spreadsheet in a window:

- a) Pick and point the Next Page option.
- b) Pick and point the Window Spreadsheet option.

Uniplex invokes the Spreadsheet. You can either create a new spreadsheet or retrieve a spreadsheet to work with. See the section Retrieve Stored Spreadsheets.

◇ Access Help

You can access on-line help at any time while you are using the spreadsheet. You can request help about the tasks you can perform from the menu you are in, or you can request more detailed help from within the spreadsheet itself. In addition, you can request help about specific spreadsheet functions.

To access help about the spreadsheet menu:

- o Pick and point the Help option. Pick and point the Spreadsheet Menu option.

Uniplex displays a help screen, detailing the options available from the menu, and the tasks you can perform.



To access specific help about the spreadsheet:

- 1 Press **ESC h** while you are working in the spreadsheet.

Uniplex displays a popup menu showing the list of help topics available.

- 2 Pick and point the help topic you require.

In some cases, Uniplex displays a further popup menu, from which you can pick and point a help topic.

Uniplex displays one, or several, screens of help about the topic you specified.

To request help about specific spreadsheet functions:

- 1 Enter the function about which you require help. For example, enter:

```
@sum(
```

- 2 Press **ESC h**

Uniplex displays help about the function you entered.

To return to your task:

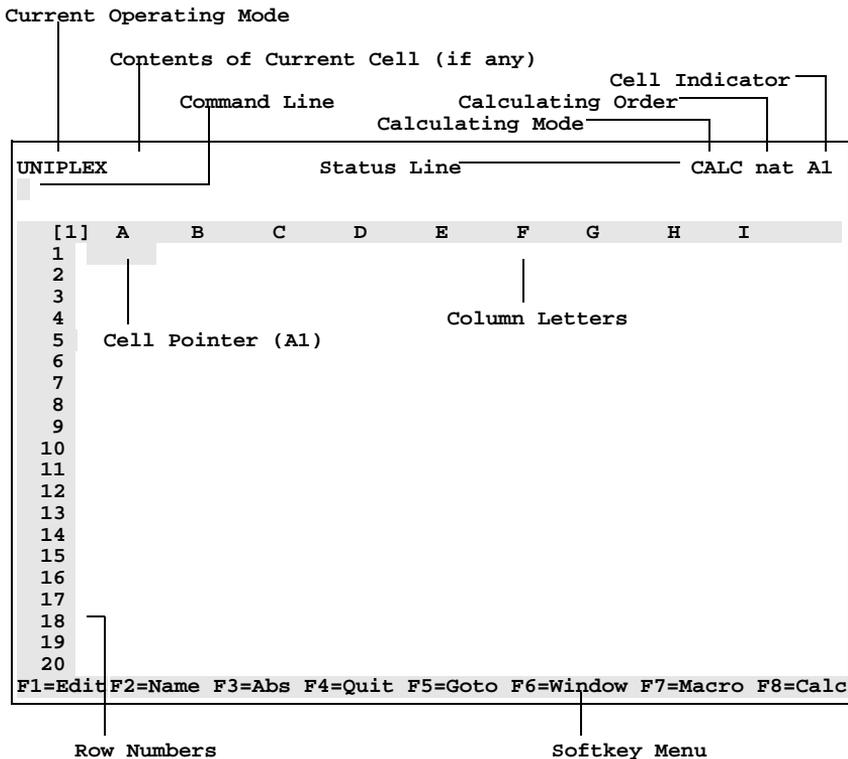
- o Press **ESC q**

Basic Concepts and Skills

◆ Basic Concepts and Skills

◇ The Spreadsheet Screen

The spreadsheet screen appears as follows:



Each of these parts is described below:

Basic Concepts and Skills

Status Line The status line displays general information on the status of the spreadsheet. This can include:

- o **Current Operating Mode**

By default, this displays the name `UNIPLEX`. This indicates the spreadsheet is ready for you to perform a task. This changes to `TEXT` when you enter text, `DATA` when you enter data, `FORMULA` when you enter a formula, and `COMMAND` when you enter a command.

- o **Contents of the Current Cell**

As you move the cell pointer around the spreadsheet, Uniplex displays the cell contents of the current cell.

- o **Cell Indicator**

When you enter an empty worksheet, this displays `A1`. Uniplex always positions the cell pointer in the top left cell when you start a new spreadsheet. As you move the cell pointer around the spreadsheet, Uniplex updates this display. See *Move the Cell Pointer*.

- o **Current Calculating Mode**

By default, this displays `NAT` (natural calculation order). There are a number of ways you can calculate the spreadsheet. Uniplex updates this display to reflect the current mode. See *Calculate the Spreadsheet*.

- ✎ *You can change the display of the status line. See **Set the Display of the Status Line**.*

Basic Concepts and Skills

- Command Line** You enter numbers, text, and formulas on the command line. See *Enter Text, Enter Data, and Enter Formulas*. When you press *I*, Uniplex displays the command menu on this line.
- Column Border and Letters** The column border shows the column letters. Columns run vertically down the screen. Column names use letters of the alphabet in alphabetical order. There are 256 columns. After the first 26 columns, columns are named using pairs of letters. For example, the 27th column across is named AA.
- Row Border and Numbers** The row border shows the row numbers. Rows run horizontally across the screen. Each row is numbered sequentially. There are 1,024 rows.
- Cells** The intersection of a column and a row is a cell. This is the smallest unit of the spreadsheet into which you can enter and store data. The cell address is made up of the column name and the row name. For example, B6.
- Cell Pointer** The cell pointer is normally indicated by the pair of right and left square brackets currently positioned on cell A1. (Your System Administrator can set the cell pointer to other types of display.) It marks your current position in the spreadsheet.

Basic Concepts and Skills**Softkey Menu**

The softkey menu displays the softkeys you can use in the spreadsheet.

- o **F1=Edit.** Use this softkey to edit the contents of a cell.
- o **F2=Name.** This softkey displays named ranges and macros in a popup window. Use arrow keys to move through this list or press the **Return** key to copy the highlighted name into the active cell.
- o **F3=Abs.** Use this softkey to convert cells at both ends of a range to absolute or mixed addresses.
- o **F4=Quit.** Use this softkey to exit the spreadsheet. You are prompted to save the file before exiting.
- o **F5=Goto.** Use this softkey to move around the spreadsheet. You are prompted for the cell destination. In response to the prompt type in on of the following: a column and row number, a column, or a row number.
- o **F6=Window.** Use this softkey to switch between spreadsheet windows. For more information see *Window the Spreadsheet*.
- o **F7=Macro.** Use this softkey to execute a macro.
- o **F8=Calc.** Use this softkey to calculate the spreadsheet.

Basic Concepts and Skills**Move the Cell Pointer**

You can move the cell pointer around the spreadsheet. The movement commands only move the cell pointer, they do not affect any values in the spreadsheet. The following table shows the keys to press to move the cell pointer:

Command	Function
Left Arrow	Move one cell to the left.
Right Arrow	Move one cell to the right.
Up Arrow	Move up one cell.
Down Arrow	Move down one cell.
TAB	Move one screen to the right.
BACKTAB (CTRL g)	Move one screen to the left.
ESC Left Arrow	If current cell is empty, moves to the left until it finds a cell with data. If current cell has data, moves to the left until it finds an empty cell.
ESC Right Arrow	If current cell is empty, moves to the right until it finds a cell with data. If current cell has data, moves to the right until it finds an empty cell.
ESC Up Arrow	If current cell is empty, moves up until it finds a cell with data. If current cell has data, moves up until it finds an empty cell.
ESC Down Arrow	If current cell is empty, moves down until it finds a cell with data. If current cell has data, moves down until it finds an empty cell.

Scroll the Spreadsheet Screen

Since you can only display a small portion of the spreadsheet on the screen at one time, Uniplex can *scroll* the spreadsheet.

Uniplex automatically scrolls the screen when you move the cell pointer beyond the edge of the screen. For example, if you move the cell pointer beyond the bottom of the screen, Uniplex scrolls the spreadsheet up one row.

The cell pointer never disappears; instead the column and row borders change to follow its movement. The spreadsheet screen is like a window to a very large piece of paper; you can only see a small portion of it at any one time. However, you can easily move to and display any part of the spreadsheet.

Use the following commands to scroll the spreadsheet:

Command	Function
ESC ESC Left Arrow or BACKTAB	Scroll the spreadsheet one screenful to the left.
ESC ESC Right Arrow or TAB	Scroll the spreadsheet one screenful to the right.
ESC ESC Up Arrow or CTRL u	Scroll the spreadsheet up one screenful.
ESC ESC Down Arrow or CTRL d	Scroll the spreadsheet down one screenful.

↘ *In addition, you can use Window commands to scroll to other areas of the spreadsheet. See *Window the Spreadsheet*.*



Basic Concepts and Skills



Types of Data

You can enter three types of data in a spreadsheet cell:

o Numbers

A number entry must begin with the characters 0-9, a decimal point (.) or a minus sign (-). Numbers can contain up to 16 significant digits. Uniplex can handle all numbers within the range 10^{-38} to 10^{38} . You can enter numbers in scientific format (*i.e.*, 1.37e6). Do not include spaces or commas when entering numbers. See *Format the Spreadsheet* to change the cell format to display commas. Numbers can contain only one decimal point and cannot exceed 255 characters.

Enter a number by positioning the cell pointer at the cell where you want the number, typing the number, and pressing RETURN or a cursor key. See *Enter Numbers* for details.

o Text

Uniplex treats any entry that is not a number or a formula as text. Text you include in the spreadsheet is often descriptive. It provides the structure and organization of the spreadsheet. Text can contain up to 255 characters, including numbers as long as the first character is alphabetic.

Position the cell pointer at the cell where you want the text and enter the exact text you require. Press RETURN or an arrow key (up, down, or right). See *Enter Text* for details.

o Formulas

A formula is an instruction to calculate. It can contain numbers, operators, cell addresses, and functions. Position the cell pointer at the cell where you want to include the formula, type = and then the formula, and press RETURN. See *Enter Formulas* for details. A formula cannot exceed 255 characters.

◇ Commands

You use the Uniplex command menu to perform tasks with the data in the spreadsheet. For example, you can delete information or move it to another part of the spreadsheet. You can also insert or delete rows or columns or change the column widths.

Uniplex displays the command menu on the command lines of the screen when you type slash (/), for example:

```
Worksheet Range Copy Move File Print Graph Data Integrate Undo Quit  
Global, Insert, Delete, Column, Erase, Titles, Window, Modes, View-cell
```

The Worksheet option is highlighted on the screen. The top line of the menu shows the main menu options. The second line of the menu shows the submenu attached to the highlighted option. The Worksheet submenu is displayed on the second line when you first access the menu.

You can move the highlight along the menu using the left and right arrow keys or SPACEBAR. A submenu or prompt for that option is displayed below as each option is highlighted. You *pick and point* options from the menu, either:

- o Use the arrow keys to move the cursor to the option of your choice, then press RETURN.

or

- o Enter the initial letter of the menu option you require. For example, if you want to use the **Worksheet** options, enter **W**.

See *Spreadsheet Commands* for a description of all commands.

Basic Concepts and Skills

◇ Functions

Uniplex has a set of built-in formulas called *functions*. The functions allow you to perform common calculations more easily than standard formulas. For example, the *sum* function:

```
sum(E1..E10)
```

performs the same function as the formula:

```
E1+E2+E3+E4+E5+E6+E7+E8+E9+E10
```

but is much easier to use. Other functions perform complex calculations efficiently which would otherwise require complicated formulas. Uniplex provides a full range of functions. See *Spreadsheet Functions* for details.

◇ Different Ways of Referring to Cells

There are a number of different ways to refer to a spreadsheet cell:

- o Relative Addressing
- o Absolute Addressing
- o Mixed Addressing
- o Ranges
- o Named Ranges

The following sections describe each of these.

Relative Addressing

The most common way to address any cell, or group of related cells, is by using a letter to indicate the column and a number to indicate the row to which you are referring.

Basic Concepts and Skills

For example:

A1 refers to the cell at the point where column A and row 1 intersect.

A1..C3 refers to the range of cells between column A row 1 and column C row 3.

✎ *Always specify the column part of the address first. You can enter letters either in upper or lower case.*

Uniplex uses cell references to calculate formulas. If the value in a cell changes, the formula is still correctly calculated. Use a relative address to refer to the *position* of a cell in relation to the cell that contains the formula.

Relative addresses are automatically adjusted when a cell is copied. For example, if cell A16 contains the formula `@sum(A1..A10)` and you copy the contents of A16 to B16, then the formula is adjusted to `@sum(B1..B10)`.

Absolute Addressing

Uniplex recognizes formulas that contain references to specific cells even if they, or the cell containing the formula, are moved or copied in the spreadsheet, using an absolute reference. You define an absolute reference by prefixing both the column name and the row name with a \$ sign, for example:

`A2`

If the cell A16 contains the formula, `@sum(A1..A10)` and you copy the contents of A16 to B16, the formula remains the same. Pressing **F3**(Abs) automatically converts relative addresses to absolute addresses when you are entering addresses in formulas and commands.

Basic Concepts and Skills

Mixed Addressing

You can mix absolute and relative references (B\$4 is a mixed address referencing absolute row 4, relative column B). Use a mixed address to make a cell reference both relative and absolute. Either the column name or the row name remains constant. For example, if cell A16 contains the formula `@sum($A1..$A10)` and you copy A16 to B16, the formula remains the same. However, if you copy A16 to A17, the formula becomes `@sum($A2..$A11)`.

Ranges

A range is a group of adjacent cells in the spreadsheet:

[1]	A	B	C	D
1				
2				
3				
4				
5				
6				
7				
8				
9				

This is a range showing column B, rows 4 to 8.

✎ *Do not use blank spaces in range specifications.*

You can enter ranges in three different ways:

- o **Enter the Full Cell Address**

You enter the address of the first cell in the range and the last cell, separating them with one or two periods, for example:

`B4..B8`

Basic Concepts and Skills

Alternatively, you can specify the start cell of the range and only the end column or row, for example:

`B4..8`

`B4..F`

The spreadsheet always displays ranges on the status line in the form `A1..F7`.

o Highlight the Range Using the Cell Pointer

You can only use this method when you are entering a range as part of a formula or when you are prompted to enter a range during a command. Follow these steps:

- a) Begin the formula you want to enter:

`=sum(`

- b) Move the cell pointer to the first point in the range. The current cell address is shown as the first point in the range:

`=sum(C5`

- c) Enter a period (.). The range is extended:

`=sum(C5..C5`

- d) Move the cell pointer to the range end point and press `)`.

As you move the cell pointer, Uniplex highlights the range on the screen. When you press `)` Uniplex enters the cell address of the current cell in the command line:

`=sum(C5..G10)`

- e) Complete the formula by pressing RETURN.



Basic Concepts and Skills

o Refer to a Range Using a Name

You can name a range, and use the name to refer to the range. You can give a range a name that reflects the contents of the range. For example, if a row of entries contains the sales figures for each month, you can name the range, **sales**. See *Name Areas of the Spreadsheet* for details.

Define Ranges within Commands

A default range is automatically entered when you use commands which require you to define a range:

```
Enter range to copy FROM: A1..A1
```

Uniplex automatically enters the current cell as both the start and end point of the range. To change the beginning point of the range:

o Press the DELETE key.

Uniplex moves the cursor to the beginning point of the range.

Before pressing the DELETE key, Uniplex displays:

```
Enter range to copy FROM: A1..A1
```

After pressing the DELETE key, Uniplex displays:

```
Enter range to copy FROM: A1
```

You can now change the cell address to the one you require or press DELETE again to quit from the prompt.

To extend the range:

- o Press period (.)

Uniplex extends the range.

Before pressing period (.) and after pressing DELETE, Uniplex displays:

```
Enter range to copy FROM: A1
```

After pressing period (.), Uniplex displays:

```
Enter range to copy FROM: A1..A1
```

You can change the end point of the range in one of two ways.

- o Move the cell pointer to the cell you require to define the end of the range and press RETURN. Uniplex highlights the range you selected and enters the new cell address:

```
Enter range to copy FROM: A1..G10
```

- o Type in the cell address of the end point of the range.

To reselect the last range entered:

- o Press the SPACEBAR.

To quit from the screen prompt:

- o Press the DELETE key.

Uniplex returns you to the previous prompt or submenu.



Basic Concepts and Skills

Use Absolute and Mixed Addressing in Ranges

When Uniplex enters a range in a command, it uses relative addressing by default. You can change the address to an absolute or a mixed address:

- o Type in the absolute or mixed address of the cells at both ends of the range, prefacing the column, the row, or both with a dollar (\$) sign. See *Absolute Addressing and Mixed Addressing* for details.

or

- o Select the range you want by highlighting the cells, then:
 - a) Press **F3 (Abs)**

Uniplex automatically converts the addresses of the cells at both ends of the range to absolute addresses:

`A1..G10`

- b) To convert the range to mixed addresses, press **F3** again. Uniplex displays the address with absolute columns and relative rows:

`$A1..G10`

- c) Press **F3** again to convert the addresses to absolute rows and relative columns:

`A$1..G$10`

You can press **F3** repeatedly to scroll through these options until the addressing form of your choice is displayed.

- d) Press RETURN.



Worked Example

◆ Worked Example

This section provides details on how to build an example spreadsheet. It describes each step in detail. You create a spreadsheet to provide a profit analysis for the Joyride Bikes organization. When completed, the spreadsheet appears as follows:

Joyride Motorbikes: Profit Analysis: 1998 Jan - June							
	Jan	Feb	Mar	Apr	May	June	Total
Sales	\$140000	\$150000	\$160000	\$240000	\$180000	\$190000	\$1060000
Costs							
Wages	\$3500	\$4000	\$4000	\$3500	\$3500	\$4000	\$22500
Int.	\$2800	\$2950	\$2950	\$2850	\$2900	\$2900	\$17350
Rent	\$800	\$800	\$800	\$800	\$800	\$800	\$4800
Stock	\$50000	\$60000	\$65000	\$50000	\$65000	\$50000	\$340000
Total	\$57100	\$67750	\$72750	\$57150	\$72200	\$57700	\$384650
Avg Sales:	\$176,666.67			Max Sales:	\$240,000.00		
Avg Expenses:	\$64,108.33			Max Expenses:	\$72,750.00		
Overall Profit:				\$675,350.00			



Worked Example

The following steps describe how to create this spreadsheet and help you become familiar with some of the more commonly used features of the spreadsheet.

1 Display the Spreadsheet Screen

To access the Spreadsheet:

- a) Pick and point the Spreadsheet option from the main Uniplex menu.

Uniplex displays the Spreadsheet menu:

```
      S P R E A D S H E E T      10/10/99 10:00

TASKS                                UTILITIES

1 - Create a Spreadsheet              P - Printing
2 - Work with Existing Spreadsheet    C - Change Folder
                                       F - File Manager

                                       H - Help
                                       Q - Quit
```

- b) Pick and point the Create a Spreadsheet option from the Spreadsheet menu.

Uniplex displays a blank spreadsheet. See *The Spreadsheet Screen* for a description of each part of the screen.

2 Move the Cell Pointer with Arrow Keys

You use the arrow keys to move the cell pointer. Move the cell pointer as follows:

- a) Press the down arrow key.

Uniplex moves the cell pointer down one cell to A2. The cell indicator changes at the top of the screen to **A2**.

- b) Press the right arrow key.

Uniplex moves the cell pointer one cell to the right to cell B2. The cell indicator shows **B2**.

- c) Press the left arrow key twice.

Uniplex moves the cell pointer to A2. The second time you press the left arrow key, Uniplex does not move the cell pointer. This is because you have reached the left edge of the spreadsheet and cannot move any further in this direction.

- d) Press **CTRL d**.

Uniplex scrolls the screen, so that the cell pointer is still visible. Whenever you move to a cell outside the currently displayed cells, Uniplex scrolls the screen to keep the cell pointer visible. The cell pointer never disappears; instead the column and row headings change to follow its movements.

- e) Press **CTRL u**.

Uniplex moves the cell pointer back to A2.



Worked Example

3 Move the Cell Pointer with the Goto Softkey

Instead of using the arrow keys, you can move to a cell using the Goto softkey. This is useful for moving to cells that are several screenfuls or widths from your current position.

- a) Press **F5** (Goto)

Uniplex prompts for a cell to move to.

- b) Enter **J10** and press RETURN.

Uniplex scrolls the screen so that the cursor is displayed on **J10**.

To return to your original position, press **ESC left arrow**, then **ESC up arrow**.

Uniplex displays A1 at the top left of the screen, and positions the cell pointer on it.

4 Enter Text

You are now going to begin to build a spreadsheet. Your first task is to enter the text. By entering the text first, you provide the structure for your spreadsheet.

This spreadsheet provides a profit analysis for Joyride Bikes for the first six months of 1998. It shows the total outgoing expenses and the total sales. In addition, it shows average monthly sales and expenses, with the overall profit.

Enter the title for the spreadsheet as follows:

- a) Make sure the cell pointer is still positioned on A1.

Worked Example

b) Enter:

Joyride Motorbikes: Profit Analysis: 1998 Jan - June

As soon as you start to enter the text, Uniplex recognizes that you are not entering a number, or a formula, and displays **TEXT** on the status line.

c) Check you have typed the title correctly. If you have made any mistakes, use the DELETE key to go back to the mistake, and re-enter the title.

✎ You cannot use the arrow keys at this point to move the cursor on the command line.

d) Press RETURN.

Uniplex places the title in the spreadsheet. Although the data is stored in A1, Uniplex displays it across columns A to G.

Follow these steps each time you enter text.

Enter the titles for each row of data as follows:

- a) Press the down arrow four times, so that the cell pointer is positioned at A5.
- b) Make the following entries:

Entry	Cell	Press
Sales	A5	Down Arrow twice
Costs	A7	Down Arrow twice
Wages	A9	Down Arrow twice
Int.	A11	Down Arrow twice
Rent	A13	Down Arrow twice
Stock	A15	Down Arrow twice
Total	A17	RETURN



Worked Example

Your spreadsheet should now appear as follows:

	A	B	C	D	E	F	G
1	Joyride Motorbikes: Profit Analysis: 1998 Jan - June						
2							
3							
4							
5	Sales						
6							
7	Costs						
8							
9	Wages						
10							
11	Int.						
12							
13	Rent						
14							
15	Stock						
16							
17	Total						

Enter the text for the column headers as follows:

- Use the arrow keys to move the cell pointer to B3.
- Make the following entries:

Entry	Cell	Press
Jan	B3	Right Arrow
Feb	C3	Right Arrow
Mar	D3	Right Arrow
Apr	E3	Right Arrow
May	F3	Right Arrow
June	G3	Right Arrow
Total	H3	RETURN

Worked Example

Your spreadsheet should now appear as follows:

	A	B	C	D	E	F	G	H
1	Joyride Motorbikes: Profit Analysis: 1998 Jan - June							
2								
3		Jan	Feb	Mar	Apr	May	June	Total
4								
5	Sales							
6								
7	Costs							
8								
9	Wages							
10								
11	Int.							
12								
13	Rent							
14								
15	Stock							
16								
17	Total							

At the bottom of the spreadsheet, you want to show the average and maximum monthly sales and expenses, together with the overall profit. Enter the text for these as follows:

- Use the arrow keys to move to cell A20.
- Enter **Avg Sales:**. Press the down arrow.
- In A21, enter **Avg Expenses:**. Press RETURN. Use the arrow keys to move to E20.
- Enter **Max Sales:** and press RETURN. Press the **down arrow**.
- In E21, enter **Max Expenses:** and press RETURN. Use the arrow keys to move to B23.
- Enter **Overall Profit:**.



Worked Example

You have now entered all the text for your spreadsheet and the last few rows should appear as follows:

	A	B	C	D	E	F	G	
20		Avg Sales:			Max Sales:			
21		Avg Expenses:			Max Expenses:			
22								
23		Overall Profit:						

5 Enter the Data for the Spreadsheet

Since you have created the structure for your spreadsheet, you can now enter the numbers.

Enter the numbers as follows:

- a) Use the arrow keys to move to B5.
- b) Enter:

140000

Press the **right arrow** key.

When you enter the 1 of 140000, Uniplex displays **DATA** in the status line. Notice that Uniplex right justifies numeric entries. Enter the data for sales as follows:

Entry	Cell	Press
150000	C5	Right Arrow
160000	D5	Right Arrow
240000	E5	Right Arrow
180000	F5	Right Arrow
190000	G5	Down Arrow

Use the arrow keys to move to B9.

Worked Example

Enter the data for Wages as follows:

Entry	Cell	Press
3500	B9	Right Arrow
4000	C9	Right Arrow
4000	D9	Right Arrow
3500	E9	Right Arrow
3500	F9	Right Arrow
4000	G9	Down Arrow

Use the arrow keys to move to B11. Enter the data for Int. (loan interest charges) as follows:

Entry	Cell	Press
2800	B11	Right Arrow
2950	C11	Right Arrow
2950	D11	Right Arrow
2850	E11	Right Arrow
2900	F11	Right Arrow
2900	G11	RETURN

Since the rent is the same each month, you can make this entry once and then copy it across the other columns:

- a) Move to B13.
- b) Enter **800**. Press RETURN.
- c) Press */*.

Uniplex displays the command menu.

- d) Pick and point the Copy option.

Uniplex prompts for a range to copy from:

Enter range to copy FROM: B13..B13



Worked Example

- e) Since you want to copy the contents of a single cell, press RETURN.

Uniplex prompts for a range to copy to:

Enter range to copy TO: B13

- f) Since you want to copy the contents of a single cell to a range of cells, enter a period (.).

Uniplex enters an end range:

Enter range to copy TO: B13..B13

- g) Press the right arrow key five times so that it is over cell G13.

As you do this, Uniplex highlights the cells you have selected.

- h) When the cell pointer is on cell G13, press RETURN.

Uniplex copies the entry across the columns.

Enter the numbers for Stock (the amount paid out each month for stock) as follows:

- a) Move to B15.
b) Enter the numbers as follows:

Entry	Cell	Press
50000	B15	Right Arrow
60000	C15	Right Arrow
65000	D15	Right Arrow
50000	E15	Right Arrow
65000	F15	Right Arrow
50000	G15	RETURN

Worked Example

You have now completed entering the numbers for your spreadsheet. It should appear as follows:

	A	B	C	D	E	F	G	H
1	Joyride Motorbikes: Profit Analysis: 1998 Jan-June							
2								
3		Jan	Feb	Mar	Apr	May	June	Total
4								
5	Sales	140000	150000	160000	240000	180000	190000	
6								
7	Costs							
8								
9	Wages	3500	4000	4000	3500	3500	4000	
10								
11	Int.	2800	2950	2950	2850	2900	2900	
12								
13	Rent	800	800	800	800	800	800	
14								
15	Stock	50000	60000	65000	50000	65000	50000	
16								
17	Total							
18								
19								
20	Avg Sales:					Max Sales:		
21	Avg Expenses:					Max Expenses:		
22								
23		Overall Profit:						

6 Include Line Delimiters on the Spreadsheet

You can make the spreadsheet easier to look at by adding lines that separate the column labels and numbers.

Add lines to your spreadsheet as follows:

- a) Move to the cell B4. Enter :=

Use the colon (:) to repeat a character across a row.

Immediately after the colon, enter the text you want to repeat across the cell. In this case, the equals (=) sign.



Worked Example

- b) Press RETURN.

Uniplex draws a line of equals signs along this row.

To draw an identical line across row 6:

- a) Move the cell pointer to cell B6
b) Enter := and press RETURN.

Uniplex draws a line of equals signs along this row.

To draw a single line across row 16:

- a) Move the cursor to cell B16.
b) Enter :- then press RETURN.

Uniplex enters a single line across row 16.

7 Enter Formulas for the Spreadsheet

You are now ready to enter the formulas for the spreadsheet.

You want subtotals for each of the rows and columns containing expenditure items. Then you can see the total expenditure for each month and the total expenditure over the six months for each item, for example, on the loan interest (Int.).

Enter the formula as follows:

- a) Move to B17.
b) Press =

Uniplex displays **FORMULA** in the status line. This indicates you are entering a formula.

- c) Enter **sum(**

Worked Example

- d) Use the arrow keys to move the cell pointer to B9. Enter a period (.).

The cell address of the current pointer position is entered. This is helpful when building formulas.

- e) Press down arrow six times to move the cell pointer to B15.

Uniplex highlights the range you have selected.

- f) Press)

The cell pointer returns to B17 and the highlight is removed.

The formula now appears on the command line as:

```
=sum(B9..B15)
```

- g) Press RETURN.

The formula is calculated and the result (57100) is placed in B17.

The same formula is used for each totals cell for each of the month columns and can be copied. Since you created the formula using relative addressing (see *Basic Concepts and Skills*), Uniplex will adjust the cell addressing to the appropriate column. Copy the formula as follows:

- a) Press /

Uniplex displays the command menu.

- b) Pick and point the Copy option.

Uniplex prompts for a range to copy from:

```
Enter range to copy from: B17..B17
```



Worked Example

- c) Press RETURN since you want to copy the contents of a single cell.

Uniplex prompts for a range to copy to.

- d) Overwrite B17 by entering **C17..G17**.

This time you have entered the range directly rather than highlighting it.

- e) Press RETURN.

Uniplex enters the results of the formula in all the cells across the row.

You want the totals of each item of expense over the six months. Enter the formula to calculate these as follows:

- a) Move to H5.
- b) Enter **= sum(B5..G5)** and press RETURN.

You can use the copy command to copy formulas down columns. However, in this case you do not want the formulas in every cell in the column because some of the cells are parts of blank lines. Therefore, you copy both the formula and the blank lines down the column.

- a) Make sure the cursor is on H5. Enter **/**.

Uniplex displays the command menu.

- b) Pick and point the Copy command.

Uniplex prompts for a range to copy from.

- c) Enter **H6** so that the range specification is H5..H6. Press RETURN.

Worked Example

Uniplex prompts for a range to copy to.

- d) Overwrite H5 with **H9..H15**. Press RETURN.

Uniplex copies the formula, followed by an empty cell to each of the remaining total cells in the column.

8 Name Areas of the Spreadsheet

You have created formulas using relative addressing. You can now assign names to cells and ranges of the spreadsheet. You can use these within formulas.

Name areas of your spreadsheet as follows:

- a) Move to H5.

- b) Press */*.

Uniplex displays the command menu.

- c) Pick and point the Range option.

Uniplex displays the Range menu.

The range menu has commands that you perform on a range of cells.

- d) Pick and point the Name option.

Uniplex displays:

Enter range to name: H5..H5

- e) Since you only want to name a single cell, press RETURN.

Uniplex prompts for a name.

- f) Enter **sales_tot**. Press RETURN.

Worked Example

Uniplex assigns the name **sales_tot** to the cell H5.

The cell address at the top left of the status line shows the name **sales_tot** instead of H5.

Create a cell name for cell H17 by repeating the procedure described above, substituting H17 for H5. When Uniplex prompts for a name, enter:

expenses_tot

Create some names for ranges of cells as follows:

- a) Move to cell B17.
- b) Press */*.

Uniplex displays the command menu.

- c) Pick and point the Range option.
- d) Pick and point the Name option.

Uniplex displays:

Range B17..B17

- e) Use the arrow keys to move the cell pointer to cell G17. Press RETURN.

Uniplex prompts for a name.

- f) Enter **expenses**. Press RETURN.

Uniplex assigns the name to the range B17..G17.

To create a name for the range B5..G5, repeat the procedure described above, substituting these cell addresses. When Uniplex prompts for a name, enter **sales**.

9 View the Names Available

You can always see the names that are available by pressing **F2** (Name):

- a) Press **F2**.

Uniplex lists the Names available in a popup menu:

expenses	-	B17..G17
expenses_tot	-	H17
sales	-	B5..G5
sales_tot	-	H5

- b) Press **ESC q** to quit from the popup menu.

10 Create Formulas with Names

Now you have named some areas of your spreadsheet, you can use these names as part of formulas. Create a formula using names as follows:

- a) Move to cell C20. Enter **=avg(**.
- b) Press **F2**.

Uniplex displays the pick and point list of names available.

- c) Pick and point **sales** from the list and press RETURN.

Uniplex places **sales** into the formula.

- d) Complete the formula by entering **)**, then press RETURN.

Create the remaining formulas using names as follows:

- a) Move to cell C21. Enter **=avg(expenses)**. Press RETURN.



Worked Example

- b) Move to cell G20. Enter **=max(sales)**. Press RETURN.
- c) Move to cell G21. Enter **=max(expenses)**. Press RETURN.
- d) Move to cell G23. Enter **=sales_tot-expenses_tot**. Press RETURN.
- e) Move to cell H17. Enter **=sum(B17..G)**. Press RETURN.

You have now entered all the data and formulas for your spreadsheet. It should look like this:

	A	B	C	D	E	F	G	H	I
1	Joyride Motorbikes: Profit Analysis: 1998 Jan - June								
2									
3		Jan	Feb	Mar	Apr	May	June	Total	
4		=====							
5	Sales	140000	150000	160000	240000	180000	190000	1060000	
6		=====							
7	Costs								
8									
9	Wages	3500	4000	4000	3500	3500	4000	22500	
10									
11	Int.	2800	2950	2950	2850	2900	2900	17350	
12									
13	Rent	800	800	800	800	800	800	4800	
14									
15	Stock	50000	60000	65000	50000	65000	50000	340000	
16		-----							
17	Total	57100	67750	72750	57150	72200	57700	384650	
18									
19									
20	Avg Sales:	176666.666667			Max Sales:	240000			
21	Avg Expenses:	64108.333333			Max Expenses:	72750			
22									
23		Overall Profit:			675350				

11 Format the Spreadsheet

As you can see, the spreadsheet looks very crowded and unclear. You can change the format of the spreadsheet so that it is easier to read. You can change the format for the entire spreadsheet or for a selected area of the spreadsheet. For the spreadsheet to be complete, all the values need to be prefaced with a dollar (\$) sign. The profits section of the spreadsheet needs to

Worked Example

be formatted to include 2 decimal places; the remaining section of the spreadsheet is formatted to include no decimal places.

To include a dollar sign in front of all the numeric values:

- a) Press */*.
- b) Pick and point the Worksheet option.
- c) Pick and point the Global option.
- d) Pick and point the Format option.
- e) Pick and point the Money option.
- f) Pick and point the Dollar option.

Uniplex prefaces all numeric values with a dollar (\$) sign.

To set the format to no decimal places throughout the spreadsheet:

- a) Press */*.

Uniplex displays the command menu.

- b) Pick and point the Worksheet option.
- c) Pick and point the Global option.

Uniplex displays the Global menu which has options you can use to perform tasks on the entire spreadsheet.

- d) Pick and point the Format option
- e) Pick and point the Fixed option.

Uniplex prompts for the number of decimal places required.



Worked Example

- f) Enter **0** and press RETURN.

To set the number of decimal places in the average, maximum and overall profit lines:

- a) Press **/**.
- b) Pick and point the Range option.
- c) Pick and point the Format option.

Uniplex prompts for a range to format.

- d) Press **CTRL c** to return to beginning point of the range.
- e) Enter **A20..G23** and press RETURN.
- f) Pick and point the Fixed option.

Uniplex prompts for the number of decimal places.

- g) Enter **2**. Press RETURN.

Uniplex sets the number of decimal places to **2** in average, maximum and overall profit lines.

To include commas in the values in the average, maximum and overall profit lines:

- a) Repeat steps a to e, described immediately above.
- b) Pick and point the **,** (comma) option.

Uniplex includes commas in the values in the average, maximum and overall profit lines.

Worked Example

The spreadsheet is now complete and appears as follows:

	A	B	C	D	E	F	G	H	I
1	Joyride Motorbikes: Profit Analysis: 1998 Jan - June								
2									
3		Jan	Feb	Mar	Apr	May	June	Total	
4		=====							
5	Sales	\$140000	\$150000	\$160000	\$240000	\$180000	\$190000	\$1060000	
6		=====							
7	Costs								
8									
9	Wages	\$3500	\$4000	\$4000	\$3500	\$3500	\$4000	\$22500	
10									
11	Int.	\$2800	\$2950	\$2950	\$2850	\$2900	\$2900	\$17350	
12									
13	Rent	\$800	\$800	\$800	\$800	\$800	\$800	\$4800	
14									
15	Stock	\$50000	\$60000	\$65000	\$50000	\$65000	\$50000	\$340000	
16		-----							
17	Total	\$57100	\$67750	\$72750	\$57150	\$72200	\$57700	\$384650	
18									
19									
20	Avg Sales:	\$176,666.67			Max Sales:		\$240,000.00		
21	Avg Expenses:	\$64,108.33			Max Expenses:		\$72,750.00		
22									
23		Overall Profit: \$675,350.00							

12 Produce a Printed Copy of the Spreadsheet

You can produce a printed copy of your example spreadsheet. This example assumes that you can print in landscape mode. Talk to your System Administrator if you are not sure which printer to use.

Before you print out the copy, set the indent and top margin as follows:

To set the indent:

- a) Press */*.

Uniplex displays the command menu.

- b) Pick and point the Print option.
- c) Pick and point the Set-up option.

**Worked Example**

- d) Pick and point the Page-format option.
- e) Pick and point the Indent option.

Uniplex prompts for the amount of indent you require.

- f) Enter **20** and press RETURN.

To set the top margin:

- a) Pick and point the Set-up option from the Print menu.
- b) Pick and point the Page-format option.
- c) Pick and point the Top option.

Uniplex prompts for the amount of top margin you require.

- d) Enter **6** and press RETURN.

To produce a printed copy of the example spreadsheet:

- o Pick and point the Printer option from the Print menu.

Uniplex sends the spreadsheet to the default printer.

You have now completed the worked example for the spreadsheet. If you want to keep this spreadsheet, press **ESC e** and enter a name for the spreadsheet. Otherwise, press **ESC q** and press * to quit from it.

Uniplex returns you to the Spreadsheet menu. Pick and point Quit to return to the main menu.



Reference

◆ Enter Numbers

Uniplex recognizes any entry that starts with 0 to 9, a minus (-) or a period (.) as a numeric value. Numeric data must contain only the numbers 0 to 9, the decimal point and the minus sign.

You can preface numbers with currency symbols (for example, the dollar \$ sign) or enter a percentage symbol (%) after the number. In addition, you can include commas, or enter numbers in scientific format.

For example, Uniplex recognizes numbers in all of the following formats:

10.2	1,234.5	\$200
3.5e6	15%	

To enter a number into the current cell:

- 1 Position the cell pointer at the cell where you want the number entered.
- 2 Enter the number.
- 3 Press RETURN to place the number in the current cell.

or

Press an arrow key to place the text in the current cell and move the cell pointer one cell in the specified direction.

✎ *The left arrow key works in the same way as the BACK-SPACE key.*

See *Spreadsheet Functions* and *Create Formulas* for details of constructing formulas and using functions.



Enter Dates

◆ Enter Dates

To enter a date into a spreadsheet cell:

- 1 Move the cell pointer to the cell where you want the date.
- 2 Enter the date, using the date format your system is configured to accept. For example:

To enter August 20th 1994, if the date format of your system is:

- o **MM/DD/YY**, type 08/20/94
- o **DD/MM/YY**, type 20/08/94

- 3 Press RETURN to place the date in the current cell.

or

Press an arrow key to place the date in the current cell and move the cell pointer one cell in the specified direction.

⚡ *Uniplex does not accept invalid date entries. For example, 50/01/99.*

As Uniplex stores dates as the number of days since January 1 1900, you can perform advanced calculations using dates. For details, see *Date Functions*.

You can display the date in a variety of formats, for example:

20 August 94
20 August
August 94

For more details on date formats, see *Format the Spreadsheet*.

◆ Create Formulas

You calculate the data in your spreadsheet using formulas. Formulas can contain the standard mathematical functions, operators and the set of functions provided with the spreadsheet. These functions include logical, trigonometric and financial functions.

You enter formulas into cells and reference the data you want by using cell addressing, absolute values or named ranges.

By using formulas, you can perform complex calculations quickly and easily, enabling you to perform *what if* projections simply and efficiently.

By building spreadsheets with formulas, you can re-use the spreadsheets. That is, they are not just applicable to one set of data. So, for example, if you have a weekly calculating task, you can create a formula to carry it out.

You can enter a formula directly on the command line and place the result into a cell. However, the more common way to use formulas is to create a formula in a cell that expresses relationships with other cells.

The following sections describe how to create a formula:

o **Construct a Formula**

This section describes the different components of a formula and how they fit together.

o **Enter a Formula**

This section describes how to enter a formula into a spreadsheet.



Create Formulas

◇ Construct a Formula

You create formulas using standard mathematical rules, and by using the functions provided by the spreadsheet. There are certain syntactical rules to follow when you use each function. These are detailed in the sections that describe each function. Where valid, you can use functions together.

A formula, also known as an expression (expr), is constructed of the following:

o Cell Addresses

These can be single cell addresses, ranges of addresses, or names referring to addresses. See *Enter Addresses in Formulas*.

o Operators

You can use mathematical and logical operators within formulas. Each of these is described below.

o Functions

Uniplex provides a wide range of spreadsheet functions. See *Spreadsheet Functions*.

◇ Enter Addresses in Formulas

Cell addresses in formulas can be relative, absolute or mixed. Use a relative address to refer to the position of a cell in relation to the cell that contains the formula. Use an absolute address to refer to the same cell, no matter where you copy the formula to. Use a mixed address to make a cell reference that is part relative, part absolute; either the column or row remains constant. See *Basic Concepts and Skills* for details of relative, absolute, and mixed addresses.

◇ Mathematical Operators

You can use the following standard mathematical operators within formulas:

Operator	Meaning
(Start Nesting
)	End Nesting
%	Convert to Percent
^	Exponent
+, -	Positive, Negative
*, /	Multiply, Divide
+, -	Add, Subtract
&	Concatenate String

The preceding list is arranged in order of precedence. Operators with the highest order of precedence are at the top. Operators with the same order of precedence are on the same line. Use parentheses to override the order of precedence. Parentheses may be nested up to 20 levels.

For example:

$10-6/2 = 7$ The division of 6 by 2 is carried out before subtracting from 10.

$(10-6)/2 = 2$ The subtraction of 6 from 10 is carried out before dividing by 2.

Create Formulas

You can use the percentage operator to find the percentage of an expression. For example:

$$645 * 110\% = 709.5 \quad \text{The value returned is 110\% of 645.}$$

◇ Logical Operators

You can use the following logical operators within formulas:

Operator	Meaning
==	Equal To
<	Less Than
>	Greater Than
!=	Not Equal
>=	Greater Than or Equal To
<=	Less Than or Equal To

Logical operators have lower precedence than any mathematical operator, but all have equal precedence within their group.

The logical operators build conditional statements that are either true or false. For example, the statement $10 > 4$ is true and will return the value 1. The statement $10 < 4$ is false and will return a value of 0.

You normally use the logical operators with the logical functions, particularly the *if* function.

◇ Functions

Uniplex provides a wide variety of functions including:

- o Logical
- o Trigonometric
- o Mathematical
- o Statistical
- o Financial
- o Date

See *Spreadsheet Functions* for details.

◇ Enter a Formula

To enter a formula in the current cell:

- 1 Position the cell pointer at the cell you want to contain the formula.
- 2 Enter =, +, or @.

If you enter a @ symbol, you must follow it immediately with a Uniplex function. See *Spreadsheet Functions* for details.

Uniplex does not allow you to enter formula if the format matches that of the date string, for example `xx/xx/xx`. However, Uniplex accepts the formula if part of it is bracketed, for example `xx/(xx/xx)`.

When you enter any of these three symbols, Uniplex recognizes that you are defining a formula and displays the following at the top of the screen:

FORMULA

- 3 Enter the formula and press RETURN.

For example:

`=E4+F4`



Create Formulas

Uniplex notes the position of the cell pointer and enters the result of the formula there. The actual formula is stored in the cell.

If you make a mistake when entering the formula, Uniplex automatically places you in EDIT mode when you press RETURN. You can make changes to the formula and re-enter it. See *Edit the Spreadsheet*. Press **ESC q** to exit from EDIT mode.

◆ Spreadsheet Commands

You perform spreadsheet tasks using commands from a command menu. This section describes how to perform the following tasks:

- o Enter Text in the Spreadsheet
- o Create Spreadsheet Borders
- o Calculate the Spreadsheet
- o Copy and Move Data and Formulas
- o Display Spreadsheet Details
- o Edit the Spreadsheet
- o Format the Spreadsheet
- o Name Areas of the Spreadsheet
- o Protect the Contents of Cells
- o Window the Spreadsheet
- o Embed Database Queries in a Spreadsheet
- o Use Uniplex Desk and Desk Utilities
- o Use Operating System Commands
- o Save and Retrieve a Spreadsheet
- o Print a Spreadsheet
- o Quit a Spreadsheet

The sections below describe each of these commands in detail.



Spreadsheet Commands

◇ Access the Command Menu

You invoke all Uniplex spreadsheet commands using the command menu. You can access the command menu at any time while the spreadsheet is waiting for input and UNIPLEX is displayed on the status line.

To access the command menu:

- o Press */*.

Uniplex displays the command menu towards the top of the screen:

```
Worksheet Range Copy Move File Print Graph Data Integrate Undo Quit  
Global, Insert, Delete, Column, Erase, Titles, Window, Modes, View-cell
```

The Worksheet option is highlighted on the screen.

The top line of the menu shows the main menu options.

The second line of the menu shows the submenu attached to the highlighted option. When you first access the menu, the **Worksheet** submenu is displayed on the second line.

You can move the highlight along the menu using the left and right arrow keys. As each option is highlighted, a submenu or prompt for that option is displayed below.

◇ Structure of the Command Menu

The menu groups related commands together to enable you to find the commands you want to use quickly and easily. For example, all the commands to save and retrieve spreadsheets are found in the **File** submenu.

If you want to perform a task on the entire spreadsheet, for example, you want to reformat the spreadsheet in a particular way, the commands are generally found in the **Global** submenu.

Spreadsheet Commands

If you want to perform a task on only a portion of the spreadsheet, for example, you want to reformat one column of the spreadsheet, the commands are generally found in the **Range** submenu.

◇ Select Options from the Command Menu

You *pick and point* options from the menu. Either:

o Use the Arrow Keys

Use the left and right arrow keys to move the highlight over the option of your choice. When the option of your choice is highlighted, press RETURN.

o Enter the Initial Letter of the Option

You can enter the initial letter of the option you require. For example, if you require the Worksheet option, press **W**. You can enter lower or upper case letters.

◇ Use Submenus

Uniplex spreadsheet uses a *hierarchical* menu structure. Each main menu option has a submenu attached to it. Often submenus have additional submenus below them or display a prompt on the screen. Submenus and screen prompts are always displayed on the line below the current menu. This is the menu path, the submenus, and the screen prompts that are displayed for the Fixed option:

```
Worksheet Range Copy Move File Print Graph Data Integrate Undo Quit
|
Global Insert Delete Column Erase Titles Window Modes View-cell
|
Format Column-Width Recalculation Protection Modes
|
Fixed Money Percent , Date Line-up Zero Hide Effect Sci Opt Reset
|
Enter number of decimal places (0-15), or Return to reset:
```



Spreadsheet Commands

This guide uses a consistent format to describe how to select options. For example, to select the Fixed option:

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Worksheet

Global

Format

Fixed

Uniplex prompts for the number of decimal places you require.

◇ **Move between Menus and Submenus**

You can move between different levels and submenus and view the various options available:

- o Press the Delete key to go back to the previous level of menu.

Enter Text in the Spreadsheet

◆ Enter Text in the Spreadsheet

You can enter text on your spreadsheet. For example, you can enter your company name, the name of the spreadsheet, or the names of the days of the week as column titles.

You can:

- o Enter text in any cell. This could be used as an indication of the contents of the adjacent row or column below.
- o Repeat text across the spreadsheet. This is useful for creating lines to separate parts of your spreadsheet.
- o Create titles for your spreadsheet.

Text can provide the structure and organization for a spreadsheet. In addition, text can indicate the purpose of the spreadsheet. The following sections explain how to enter text on a spreadsheet.

◇ Enter Text into Cells

You can enter text into any cell. You can enter text that is longer than the width of an individual cell; for example, if you want to enter a title for a particular area of your spreadsheet.

To enter text into the current cell:

- 1 Position the cell pointer at the cell where you want the text.
- 2 Type in the text you require. For example:

`sales`



Enter Text in the Spreadsheet

When you type in the first letter, Uniplex recognizes that you are entering text and changes the status line to display:

TEXT

- ✎ *If the status line displays **DATA** or **FORMULA** the first character is not being recognized as text. Enter a single (') or double (") quote, or carat (^) in front of the first character to identify it as a text string.*

- 3 Press RETURN to place the text in the current cell.

or

Press the up, down or right arrow key to place the text in the current cell and move the cell pointer one cell in the specified direction.

Uniplex stores the text in the current cell. If the text you have entered is longer than the column width, it is displayed across the row, but stored in the current cell.

- ✎ *You can use the left arrow key in the same way as the BACKSPACE key to edit text you have already entered.*

If you make a mistake while entering text, press **F1** (EDIT) to enter Edit mode. See *Edit the Spreadsheet* for more details.

Enter Text in the Spreadsheet◇ **Repeat Text**

You can repeat text across the spreadsheet using a single command. This is particularly useful for repeating the -, _ or = characters used to separate data from totals in the spreadsheet. To repeat text:

- 1 Move the cell pointer to the point where the repeated text is required.
- 2 Enter `:char{c}{*,n}`

where:

: repeats a character across a cell

char is the character you want to repeat. Often you will want to use the = or - character to create delimiters between sections of data.

c repeats the character across a specified number of columns, leaving gaps between each two columns.

***** is the option to repeat the character across the entire row. If you do not include an *, Uniplex repeats the character across the same width as the row above.

n is the number of times you want the character repeated. If you are using the **c** option, *n* specifies the number of columns you want the character repeated across.

Enter Text in the Spreadsheet

For example, if the cell pointer is positioned as follows and you enter the following in the command line:

:_*					
	A	B	C	D	E
1	1	2	3	4	
2	[]				

Uniplex displays:

:_*					
	A	B	C	D	E
1	1	2	3	4	
2	[-----]	-----	-----	-----	-----

or, if the cell pointer is positioned as follows, and you enter the following:

:_c3					
	A	B	C	D	E
1	1	2	3	4	
2	[]				

Uniplex displays:

:_c3					
	A	B	C	D	E
1	1	2	3	4	
2	[____]	_____			

Enter Text in the Spreadsheet

or, if the cell pointer is positioned as follows, and you enter the following:

:*20					
	A	B	C	D	E
1	[]		
2					

Uniplex displays:

	A	B	C	D	E
1	[*****]	*****			
2					

◇ Align Text

By default, Uniplex aligns text to the left. You can format the text within a cell so that it is right-justified, or centered. You format text using the format commands, or entering prefix characters immediately before the text.

Use the format commands:

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Range
Format

Uniplex prompts for the range you want to align.



Enter Text in the Spreadsheet

- 3 Enter the range you want to align. See *Basic Concepts and Skills*.

- 4 Pick and point the Line-up option.

Uniplex displays the Line-up menu.

- 5 Pick and point Right if you want to right align text, Left if you want to left align text, and Center if you want to center text.

The commands that you select here override any special characters that you may have used to prefix text.

◇ Reset Text Alignment

You can reset text so that it returns to its default alignment, and ob-
eys any special characters you may have used to prefix text.

To reset text alignment:

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Range
Format

Uniplex prompts for the range to format.

- 3 Enter the range you want to format. See *Basic Concepts and Skills*.
- 4 Pick and point the Reset option.

Uniplex resets the range to use all the default formats (except the Fixed format). See *Format the Spreadsheet* for details.

Enter Text in the Spreadsheet**◇ Set Text Alignment Using Prefix Characters**

Character	Function
'	Forces Left Aligned Text
"	Forces Right Aligned Text
^	Forces Centered Text

For example, to center text, enter:

`^Sales`

To right align text, enter:

`"Total`

⚡ *Numbers and certain characters such as, +, -, , @, \$, =, are not recognized as valid leading characters for text strings. Enter a single (') or double (") quote, or carat (^) in front of the first character to identify it as a text string.*

◇ Create Spreadsheet Titles

You can create titles for rows, columns, and for the entire spreadsheet. Row and column titles are fixed; you can see them wherever you move in the spreadsheet. When you print a spreadsheet which has row and column titles, these are printed on every page.



Enter Text in the Spreadsheet

Create Titles for Rows and Columns

You can create a title for a column by entering text into a cell above the column or you can enter a title for a row by entering text into a cell to the left of the row. For example:

	A	B	C	D	E
1		Jan	Feb	Mar	Apr
2	C/R				
3	D/B				

If you enter titles this way, the text scrolls off the screen, just like numeric data. If you want to make sure that titles are always displayed, wherever you are in the worksheet, you can create titles for rows and columns that are positioned outside the grid, thereby not using cells. For example:

	L	M	N	O	P
	Mon	Tues	Wed	Thurs	Fri
6	C/R				
7	D/B				

By default, Uniplex does not display titles outside the grid. Before you create a title outside a grid, switch the title display on:

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Worksheet
Titles

Enter Text in the Spreadsheet

Uniplex displays the Titles menu.

- 3 From the Titles menu, pick and point the following options to show column titles on the screen:

Display
Show-Column

or

Pick and point the following options to show row titles on the screen:

Display
Row-width

Enter the width you require for row titles.

To create a column title outside the grid:

- 1 Pick and point the Column option from the Titles menu.

Uniplex prompts for the column you want to title.

- 2 Enter the letter of the column you want to title.

Uniplex prompts for a title for the column you specified.

- 3 Enter the title for the column you specified.

Uniplex enters a title for the column.

To create a row title outside the grid:

- 1 Pick and point the Row option from the Titles menu.

Uniplex prompts for the row you want to title.

- 2 Enter the number of the row you want to title.



Enter Text in the Spreadsheet

Uniplex prompts for a title for the row.

- 3 Enter the title you require and press RETURN.

Uniplex enters a title for the row.

If you subsequently want to hide the titles for the columns or rows, follow these steps:

- 1 Pick and point the Display option from the Titles menu.
- 2 Pick and point Hide-column to hide column titles or Row-width to hide row titles.

If you selected Row-width, Uniplex prompts for the width of the row.

- 3 If you selected Row-width, enter **0**.

Uniplex hides all the column or row titles. These are still stored with the spreadsheet so if you subsequently want to display them again you can turn them back on.

If you want to print a spreadsheet and include the row and column titles, ensure that the titles are switched on when you print the spreadsheet or when you write the spreadsheet to a file.

Create a Heading for the Spreadsheet

You can have a 1 or 2-line title for your spreadsheet. Uniplex displays it on the two lines immediately above the grid. Therefore, it does not use any space on the actual grid.

By default, Uniplex does not display titles. Therefore you must turn on titles when you want them displayed. Alternatively, you can enter titles without displaying them. When you print the spreadsheet, you can specify that Uniplex prints the header on every page.

Enter Text in the Spreadsheet

To display Spreadsheet Headers:

- 1 Pick and point the Header option from the Titles menu.

Uniplex displays the Header menu.

- 2 Pick and point the Display option.

Uniplex moves the grid display down two lines and displays the default title in the title lines.

To create a heading for the spreadsheet:

- 1 Pick and point the Header option from the Titles menu.

Uniplex displays the Header menu.

- 2 Pick and point the Main Header option.

Uniplex prompts for the text you require for the first line of the header.

- 3 Enter the text you require and press RETURN.

To enter a second line of text in the title area, repeat the process described above, selecting the Sub-Header option rather than Main Header.

If you subsequently decide you do not want the titles displayed on the screen:

- 1 Pick and point the Header option from the Titles menu.

Uniplex displays the Header menu.

- 2 Pick and point the Hide option.



Enter Text in the Spreadsheet

Uniplex removes the header and subheader from the screen. However, Uniplex stores them with the spreadsheet, so you can subsequently turn them back on again.

If you want to enter a new header or subheader, you can overwrite the existing one.

If you want to print a spreadsheet and include the header and subheader, make sure they are displayed on the screen when you print the spreadsheet.

Exit from the Titles Menu

To exit from the Titles menu:

- o Pick and point the Quit option.

Create Spreadsheet Borders

◆ Create Spreadsheet Borders

Instead of creating titles for individual columns and rows, you can create worksheet borders for your spreadsheets. This allows you to type in all the data you require and then make all columns to the left, and all rows above the current cell into titles.

You can create borders even if you already have row and column titles; Uniplex ignores the existing titles and will only redisplay them if you unset the border option and then redisplay the titles.

To create borders for a spreadsheet:

- 1 In the required row and column cells, type the data you want displayed in the borders.

You can enter numbers, text and formulas in these cells.

- 2 Move into the cell immediately below the last row and immediately to the right of the last column to become your borders.

For example:

[1]	A	B	C	D	E
1		Jan	Feb	Mar	Apr
2					
3	Sales				
4					
5	Costs				
6					
7	Wages				
8					
9	Int.				
10					
11	Rent				
12					
13	Stock				
14					
15	TOTAL				



Create Spreadsheet Borders

- From the command menu, choose:

Worksheet

Titles

Borders

The appropriate rows and columns become borders and are marked by asterisks. For example:

[1]	**A**	B	C	D	E
**1*		Jan	Feb	Mar	Apr
**2*					
3	Sales				
4					
5	Costs				
6					
6	Wages				

Each cell within the specified area is protected; you cannot move the cell pointer into these cells. When you move around the spreadsheet, the borders will always be visible. When you print a spreadsheet which has borders, these are printed on every page.

To unset borders for a spreadsheet:

- Move into the cell immediately below the last row, and immediately to the right of the column at which point to unset borders.
- From the command menu, choose:

Worksheet

Titles

Unset_Borders

If you had existing row and column titles and want to redisplay them, switch the title display on, as described above. Also see *Enter Text in the Spreadsheet*.

Create Spreadsheet Borders

◇ Text Commands

As with other Spreadsheet commands, you can also use text commands to set and unset borders:

Task	Command
------	---------

Turn Borders On	t lock
-----------------	--------

Turn Borders Off	t unlock
------------------	----------

◇ Spreadsheet Border Restrictions

If you run a macro that moves the cursor into a bordered area, the cursor is trapped in the border. In extreme cases, a conditional macro may loop because it cannot move to the cell which is tested for the terminating condition. The same problem can occur with cursor commands when processing a *use* command to rebuild a spreadsheet saved with the *list* command.

You can work around this problem by unsetting the borders before running a macro or processing a use file.

Uniplex Windows Users Only. If you have borders set and you resize the spreadsheet window, the borders are unset and you will need to switch them back on.



Calculate the Spreadsheet

◆ Calculate the Spreadsheet

There are a number of different ways to calculate a spreadsheet. The default way is:

- o Automatic Calculation On
- o Entire Spreadsheet
- o Natural Order
- o Maximum Precision for Decimal Places

Normally, Uniplex enters the results of formulas in the current cell immediately after you have entered the formula.

If you have incorrectly entered any formulas in the spreadsheet, Uniplex displays an error message. See *Error Messages* for details.

You can change the way Uniplex calculates the spreadsheet:

- o Specify when you want the calculation to take place. This is useful when you are working with very large spreadsheets.
- o Change the order of calculation. This is useful when working with some iterative spreadsheet models.
- o Specify a particular area of the spreadsheet to calculate.
- o Calculate external functions once only.
- o Change the default precision for decimal places. This is useful when you are making financial calculations.

Calculate the Spreadsheet

The current calculation mode is displayed at the top right of the status line. The following abbreviations are used:

Status Line	Calculation Mode
CALC	Automatic calculation is on.
oneshot	Calculate external functions once only.
nat	Natural order calculation.
row	Row-wise calculation.
col	Column-wise calculation.
range	Calculate specified range only.

The following sections describe each of these.

◇ Specify when to Calculate

Uniplex, by default, automatically calculates the result of formulas and functions as you enter them. However, you can change the calculation mode to manual, so that Uniplex only calculates the result of formulas when you request. This is particularly useful if you are working with a large complex spreadsheet.

You can specify particular areas of the spreadsheet to calculate automatically or manually.

To set manual calculation for the entire spreadsheet:

- 1 Press **/**.

Uniplex displays the command menu.

**Calculate the Spreadsheet**

- 2 Pick and point the following options:

Worksheet
Modes
Recalculate
Manual

When you calculate (by pressing F8, the Calculate softkey), Uniplex only calculates the formulas in the spreadsheet.

To set manual calculation for a particular area:

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Worksheet
Modes
Recalculate
Section

Uniplex prompts for a range to calculate.

- 3 Enter the range of the spreadsheet that you want to calculate manually. See *Basic Concepts and Skills*.
- 4 Press RETURN.
- 5 Press */* and pick and point the following options:

Worksheet
Modes
Recalculate
Manual

Uniplex only calculates formulas in the area you specified when you press **F8** (the Calculate softkey).

Calculate the Spreadsheet

Calculate an area is useful if you are only working in a small part of a large spreadsheet, and you do not want to recalculate the entire spreadsheet.

To reset automatic calculation:

- 1 Press *F*.
- 2 Pick and point the following options:

Worksheet
Modes
Recalculate
Auto

◇ **Change the Order of Calculation**

Uniplex, by default, calculates the spreadsheet in natural order. This means Uniplex calculates formulas in their order of dependency. That is, any formula that relies on the result of another formula is calculated after that formula.

For example, you have the following formulas, A, B and C:

$$A=C+B$$

$$B=C+1$$

$$C=1+2$$

These formulas are calculated in the order C, B, A, since C relies on no other formula's result, B depends on the result of C, and A depends on the result of B and C.

If you use natural order calculation you can have dependency loops. For example:

$$C=A+3$$



Calculate the Spreadsheet

Some models need to loop in this way. These models can be successfully calculated in row-wise or column-wise order. Alternatively, refer to *Logical Functions* which gives details about the self() function. You can use this function to break dependency loops.

You can change the order of calculation as follows:

- o Set row-wise order of calculation:

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Worksheet
Modes
Recalculate
Row

Uniplex sets row-wise order of calculation.

- o Set column-wise order of calculation:

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Worksheet
Modes
Recalculate
Col

Uniplex sets column-wise order of calculation.

When you have set a particular order for calculation, all subsequent calculate commands you issue calculate in that order.

Calculate the Spreadsheet

To set the calculation order back to natural:

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Worksheet
Modes
Recalculate
Natural

Uniplex sets the calculation order back to natural.

◇ **Specify the Area of the Spreadsheet to Calculate**

Uniplex, by default, calculates the entire spreadsheet. However, you can calculate specific areas of the spreadsheet, as follows:

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Worksheet
Modes
Recalculate
Section

Uniplex prompts for a range.

- 3 Enter the range you want to set auto or manual calculation for.
See *Basic Concepts and Skills*.



Calculate the Spreadsheet

◇ Calculate External Functions Only

You can calculate only the external functions. For example, functions that execute operating system commands like *sh* or functions that access data from the database using *pipe*.

When you calculate external functions in this way, and if you subsequently recalculate the spreadsheet, *Uniplex does not recalculate external functions unless they have no current value, that is, they are newly entered formulas.*

It is useful to calculate external functions in this way since they can take longer to calculate than standard calculations.

To calculate external functions only:

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Worksheet
Modes
Recalculate
Oneshot

Uniplex calculates all the formulas that include external functions. For example *sh*, *rsh*, *pipe* and *link*. It will only calculate them if they have no current value, that is they are newly entered formulas.

Calculate the Spreadsheet**◇ Set Rounding Precision for Calculations**

You can set the rounding precision for calculations. For example, you can set the number of decimal places to 2. This is particularly useful for financial calculations, since it avoids rounding errors.

To set the rounding precision:

- 1 Press **/**.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Worksheet
Modes
Recalculate
Precision

- 3 Pick and point **L**imit if you want to set a new level of precision or **M**oney if you want to set the level of precision to two decimal places. This is useful if you want to avoid rounding errors in financial calculations.

If you are setting a new level of precision, Uniplex prompts for the number of decimal places of precision you require.

- 4 Enter the number of decimal places you require.

Uniplex sets the rounding precision to the number of decimal places you specify.



Calculate the Spreadsheet

Reset the Precision Level

If you want to return to the full level of precision for calculations, follow these steps:

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Worksheet
Modes
Recalculate
Precision
Full

Uniplex resets the precision level to maximum precision.

◇ Specify the Number of Iterations

On occasions, you may want to calculate the spreadsheet repeatedly, for example if you have a model which calculates forecasted sales growth over a number of years. To do this:

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Worksheet
Modes
Recalculate
Iterate

Uniplex prompts for the number of iterations you require.

Calculate the Spreadsheet

- 3 Enter a number between 1 and 100.

Uniplex repeats the calculation the specified number of times.

Press **CTRL ** to abandon an iterative calculation.

See the next section for how to set the initial value for an iterative calculation.

Set the Initial Value for Iterative Calculations

You use the Initialize command to set the initial value of a formula in a cell before beginning a series of iterative calculations.

- 1 Move the cursor to the appropriate formula.

- 2 Press **/**.

Uniplex displays the command menu.

- 3 Pick and point the following options:

Data
Initialize

Uniplex prompts for the cell to initialize.

- 4 Press RETURN to accept the current cell or enter the address of a different cell.

Uniplex prompts for an initial value for the cell.

- 5 Enter the initial value for the cell and press RETURN.

You can now perform a repeated calculation using this value as the starting point.



Calculate the Spreadsheet



Error Messages

When you calculate formulas that contain mistakes, Uniplex displays the following message:

Warning: error in expression evaluation at *cell*

where *cell* is the cell containing the formula that caused the error. In addition, Uniplex places one of the following error codes in the cell to indicate the type of error. If there is more than one error in the calculation, the error message refers to the first error that occurred.

E_VAL You have entered an invalid value or expression for a function. For example:

`log(-1)`

E_DIVO You have entered a formula that attempts an invalid division. For example:

`1/0`

E_RANGE You have entered a formula that attempts to reference cells off the edge of the spreadsheet screen. For example, using the *index* function.

E_EXT You have entered an external function incorrectly. For example, using *pipe* to access a database that does not exist, or the database query command is incorrect.

E_TYPE You have used the wrong parameter type for the function. For example, a numeric value with a string manipulation function, or text with a trigonometric function.

Calculate the Spreadsheet

E_MEM	There is insufficient memory (fatal). Save your spreadsheet if possible and consult your System Administrator.
E_FPX	There is a floating point exception error on the computer.
E_NULL	The formula references an empty cell. For example, using <i>index</i> .
E_DEL	The formula references a cell or range of cells that you have previously deleted.
ERR	Formula refers to a cell containing an error value. This error can be fixed by fixing the error in the cell it refers to.
NA	Special marker for a value that is not available. See the function NA in the section, Functions, later in this chapter.

✎ *For information on error value handling, see functions ERR, NA, iserr(), and isna() in **Special Functions**.*

Copy and Move Data and Formulas

◆ Copy and Move Data and Formulas

You can copy and move data (text and values) and formulas around the spreadsheet.

When you copy a formula, the relative cell references within the formula adjust to reflect their new location. Copying values (the result of formulas) and text, copies the cell information directly to a new location.

You can:

- o Copy the contents of a single cell to another cell.
- o Copy the contents of a single cell to a range of cells.
- o Copy the contents of a range of cells to another range.
- o Move a single cell or a range of cells.
- o Cut and paste areas of the spreadsheet.

The following sections explain these methods.

◇ Copy the Text and Formulas in Cells

You can copy the text in one cell to another cell or range of cells; or you can copy the text in a range of cells to another range of cells.

You can also copy a formula across a range of cells; this adjusts all relative addresses accordingly.

For details on copying the value in a cell or range of cells see *Copy the Values in Cells*.

- 1 Move the cell pointer to the cell, or the start cell of a range of cells, you want to copy.
- 2 Press *I*.

Copy and Move Data and Formulas

Uniplex displays the command menu.

- 3 Pick and point the **C**opy command.

Uniplex prompts for the range to copy from.

Uniplex takes the current cell as the beginning and end points of the range.

There are three ways of specifying the cell(s) to be copied:

- o **Copy the contents of a single cell to another cell:**

- a) Press RETURN.

Uniplex prompts for a range to copy to.

- b) Move the cell pointer to the cell where you want the copied contents to be placed. Press RETURN.

- o **Copy the contents of a single cell to a range of cells:**

- a) Press RETURN.

- b) Move the cell pointer to the first cell of the target range and enter a period (.).

Uniplex extends the range.

- c) Move the cell pointer to the end point of the range you want to copy to. Press RETURN.

- o **Copy the contents of a range of cells to another range:**

- a) Move the cell pointer to the end cell of the range you want to copy and press RETURN.

Copy and Move Data and Formulas

- 3 Pick and point the following options:

Range

Value

Uniplex prompts for the range to copy.

- 4 To specify the cell(s) to copy:

- o To copy the value in a single cell to another single cell, press RETURN.
- o To copy the value of a range of cells to another range of cells, move the cell pointer to the end cell of the range you want to copy and press RETURN.

Uniplex prompts for the area to paste to.

- 5 Select one of the following methods to specify the cell address:

- o Move the cell pointer to the start cell of the range you want to paste to.
- o Type in the start cell address of the area to paste to.

- 6 Press RETURN.

Uniplex copies the range or cell to the area specified.

If in the previous step you typed in a cell address that is not displayed in your current window or view of the spreadsheet, Uniplex places the cell pointer in the area you copied to. If the paste area is in view, then the cell pointer remains in the cut area.



Copy and Move Data and Formulas

◇ Move the Contents of Cells

You can move text and formulas to another location in the spreadsheet, and you can move a single cell or a range of cells. Uniplex moves the range with the same structure.

Uniplex adjusts all references in the spreadsheet that refer to the area being moved.

Unlike the Copy command, the Move command removes the original area containing the data.

To move text and formulas:

- 1 Move the cell pointer to the start cell of the range you want to move.
- 2 Press */*.

Uniplex displays the command menu.

- 3 Pick and point the **M**ove option.

Uniplex prompts for the range to move from. The current cell is taken as the start and end points of the range.

- 4 Move the cell pointer to the end point of the range you want to move, then press RETURN.

As you move the cell pointer, Uniplex highlights the range.

If you want to move the contents of a single cell, press RETURN without moving the cell pointer.

Uniplex prompts for a cell to move to. For example:

Enter cell to move TO: C3

Copy and Move Data and Formulas

- 5 Move the cell pointer to the cell for the beginning point of the range (or the single cell). Press RETURN.

Uniplex adjusts the cell reference. For example:

Enter cell to move TO: G10

Uniplex moves the cell or range of cells, beginning at the cell you specify.

◇ Copy and Move the Contents of Cells Using Cut and Paste

You can use the Uniplex cut and paste facility to copy and move the contents of cells.

Using cut and paste you can copy data from the spreadsheet and use it with other Uniplex applications, for example in Word Processor documents or in the database.

If you are copying or moving data within the same spreadsheet, use the Move or Copy commands described in the previous sections. Use Cut and Paste to transfer information from other spreadsheets or other applications.

To copy or move the contents of cells using Cut and Paste:

- 1 Move the cell pointer to the top left cell of the area containing the data you want to copy or move. Press **ESC** (.
- 2 Move the cell pointer to the bottom right cell of the area containing the data you want to copy or move. Press **ESC**).

Marking an area in this way is the equivalent of selecting the area to move or copy FROM.



Copy and Move Data and Formulas

Uniplex displays:

Enter **B=Blank**, **L=Leave**, **R=Remove**, **A=Append**, **W=Write**

Enter one of the following:

- l** To place the area you have selected in the clipboard, and leave the area in the spreadsheet. Use this command if you want to paste, move, or copy the area.
- b or r** To place the area you have selected in the clipboard, and delete the area from the spreadsheet. Do not use the blank or remove options if you want to use paste, move or copy.
- a** To *append* the area you have selected to the current cut and paste buffer.
- w** To *write* the area to a document (Uniplex prompts you for a document name). The cut and paste buffer remains unchanged.

Uniplex copies the contents of the cells in this area into the clipboard or the document you specified.

Paste the selected area to another part of the spreadsheet:

- o Move the cell pointer to the top left cell of the area you want to copy or move the data to. Press **ESC ***.

This is the equivalent of selecting the cell to move or copy TO.

Copy and Move Data and Formulas

Uniplex displays:

Enter **O=Overlay**, **C=Copy**, **M=Move**

Enter one of the following:

- o** Places the contents of the previously marked area into the spreadsheet, starting at this cell. Formulas and formats are not copied.
- c** Copies the contents of the previously marked area into the spreadsheet, starting at this cell. Relative addresses are adjusted if the data contains formulas.
- m** Copies the contents of the previously marked area into the spreadsheet, starting at this cell. Relative addresses are adjusted if the data contains formulas. The contents of the original area is removed.

◇ **Cut and Paste Commands**

Alternatively, you can move data using cut and paste commands, rather than the key sequences. Use the following commands to specify the area to cut:

- 1 Press **/**.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Integrate
Cut-Paste
Cut

- 3 Enter the range to cut. See *Basic Concepts and Skills*.



Copy and Move Data and Formulas

- 4 Press RETURN.

Uniplex places the area you specified in a clipboard.

To paste in the area you have cut:

- 1 Position the cursor at the position where you want the data pasted.

- 2 Press */*.

Uniplex displays the command menu

- 3 Pick and point the following options:

Integrate
Cut-Paste
Paste

Uniplex prompts for the cell to paste in.

- 4 Enter the address of the cell where you want the data pasted. If you are pasting in a range of cells, enter the starting point of the range.

Uniplex pastes in the cell or the range of cells, starting at the position you specify.

You may want to paste the contents of a series of rows down a column, or the contents of a column across a row. To do this:

- 1 Select the area you want to cut. See the previous section.

- 2 Press */*.

Uniplex displays the command menu.



Copy and Move Data and Formulas

- 3 Pick and point the following options:

Integrate
Cut-Paste
Range Paste

Uniplex prompts for the range where you want the area pasted.

- 4 Enter the range. See *Basic Concepts and Skills*.

Uniplex pastes in the range in the area you specified.

Add Data to the Spreadsheet

You can add data from a clipboard to existing values in the spreadsheet. This is useful if, for example, you want to transfer information from other spreadsheets to achieve monthly or yearly totals.

To add data to the spreadsheet

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Integrate
Cut-Paste
Add

Uniplex adds the values in the clipboard to the existing values in the spreadsheet.



Copy and Move Data and Formulas

Subtract Data

In the same way as you can add data, you can subtract the data in the clipboard from the existing values in the spreadsheet:

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Integrate
Cut-Paste
Subtract

Uniplex subtracts the data in the clipboard from the existing values in the spreadsheet.

Paste Text into the Spreadsheet

Normally, if you paste text from the word processor into the spreadsheet, Uniplex reformats the text so that it is displayed in a series of cells. If you want a block of text to appear formatted as you originally prepared it with the word processor, use the Text option as follows:

- 1 Prepare the text using the Uniplex word processor. Enter any rulers or formatting commands that you require.
- 2 Use the Uniplex cut and paste commands to place the text in a clipboard. See the **Integration** chapter for details.
- 3 Move the cursor to the position in the spreadsheet where you require the text to be positioned.
- 4 Press */*.

Uniplex displays the command menu.



Copy and Move Data and Formulas

- 5 Pick and point the following options:

Integrate
Cut-Paste
Text

Uniplex places the text in the spreadsheet, formatted as it was originally written.

Select a Clipboard

When using cut and paste you can select a clipboard to use, other than the default clipboard as follows:

- 1 Press **/**.

Uniplex displays the command menu.

- 2 Pick and point the following menu options:

Integrate
Cut-Paste
Board-Number

Uniplex prompts for a clipboard number.

- 3 Enter the number of the clipboard you want to use and press RETURN.



Display Spreadsheet Details

◆ Display Spreadsheet Details

You can also display the details of a cell, such as the formula it contains and what type of information the cell contains.

◇ View Spreadsheet Details

To view information about the entire spreadsheet:

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Worksheet

Modes

General

Uniplex displays the information, for example:

Worksheet Settings		09/09/99	11:35
<MODES>		<PRINTING>	
Status:	ON	Printer:	docapple
View:	ON	Style:	Spreadsheet
Scroll:	LINE	Range:	ALL
Undo:	ON	Font:	FX-NORMAL
Cursor:	ON	Page width:	112
Calc:	AUTO	length:	42
range:	ALL	spacing:	1
order:	NATURAL	indent:	0
precision:	FULL	top indent:	0
oneshot:	OFF	<CELL STATS>	
<FILES>		Max row:	1024 Max col: IV
Save:	test.ss	Last row:	28 Last col: K
	(create in PSF format)	Numeric:	3 Char: 2
Database:	NONE	Formula:	5 Total: 10



Display Spreadsheet Details

The fields contain the following information:

Field	Options/Explanation
MODES	
Status	ON Status line showing modes and position is displayed.
	OFF Status line is not displayed.
View	ON Formulas are shown on status line.
	OFF Formulas are not shown.
Scroll	SCREEN Screen scrolls one page at a time.
	LINE Screen scrolls one line at a time.
Undo	ON Undo mode is enabled.
	OFF Undo mode is disabled.
Cursor	ON Cursor position is displayed on the status line.
	OFF Cursor position is not displayed.
Calc	AUTO Recalculates every time worksheet changes.
	MANUAL Recalculates only when specifically requested.
range	ALL Recalculates entire sheet.
	A1..Z99 Recalculates a range of cells.



Display Spreadsheet Details

Field	Options/Explanation
MODES (continued)	
order	NATURAL Calculations are processed in order of dependency.
	BY COLUMN Calculations run down columns then across rows.
	BY ROW Calculations run across rows then down columns.
precision	FULL Calculations are made using full floating point accuracy.
	<i>n</i> Calculations are rounded to <i>n</i> decimal places.
oneshot	ON External functions and database links will not be recalculated.
	OFF External functions and database links are recalculated each time.
PRINTING	
Printer	Current default printer.
Style	Current default print style.
Range	ALL Print entire spreadsheet.
	A1..Z99 Print only the specified range.
Font	The default font is <i>font</i> .



Display Spreadsheet Details

Field	Options/Explanation	
PRINTING (continued)		
Page	width	Printed page width.
	length	Printed page length.
	spacing	Printed line spacing.
	indent	Left indent.
	top indent	Lines for top indent.
FILES		
Save	NONE	Spreadsheet is not saved.
	<i>filename</i>	The name of the spreadsheet save file (PSF or OLD format).
Database	NONE	No database name is set.
	<i>database</i>	The database <i>database</i> is being used for external database links.
CELL STATS		
	Max row	Last available row.
	Last row	Last currently used row.
	Numeric	Cells with a numeric value.
	Formula	Cells with a formula.
	Max col	Last available column.
	Last col	Last currently used column.
	Char	Cells with a character value.
	Total	Total of all cells used.

3 Press RETURN to continue.



Display Spreadsheet Details

◇ View Cell Details

To view information about an individual cell.

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Worksheet

View-cell

- 3 Enter the cell address or move the cell pointer to the cell and press RETURN.

Uniplex displays the cell information, for example:

Detail of Cell at: B24	Name: NONE
Type: FORMULA	Protected: OFF
Value: 285	ColWidth: 6
Formula: @sum(A1..B7)	
Format: 2 dec	Justified: DEFAULT

Press -> to scroll formula; Press RETURN to continue

The fields contain the following information:

Field	Description
-------	-------------

Type	Indicates the cell type: NUMERIC, STRING (text) or FORMULA.
-------------	---

Value	Displays the value or text in the cell. This value is shown unformatted and may differ slightly from that shown in the spreadsheet.
--------------	---

Protected	Shows if the cell is protected or not.
------------------	--

Display Spreadsheet Details

Field	Description																				
Formula	If the cell contains a formula it is shown here. If the formula is too wide to display fully, use the arrow keys to scroll the display.																				
Format	Shows the formatting attributes of the cell: <table border="1" data-bbox="353 394 970 872"> <thead> <tr> <th>Cell Format</th> <th>Shown As</th> </tr> </thead> <tbody> <tr> <td>Date</td> <td>Shows the date format (e.g., MM-DD-YY).</td> </tr> <tr> <td>Percent</td> <td>%</td> </tr> <tr> <td>Dollar</td> <td>\$</td> </tr> <tr> <td>Sterling</td> <td>£</td> </tr> <tr> <td>Fixed Decimal Places</td> <td>n dec</td> </tr> <tr> <td>Scientific/Exponential</td> <td>EXP</td> </tr> <tr> <td>Comma</td> <td>, (or . as appropriate)</td> </tr> <tr> <td>Text Effect</td> <td>A for bold, etc.</td> </tr> <tr> <td>Other User Formats</td> <td>F is displayed if <i>Currency</i> is set to Francs; () is displayed if <i>Bracket Negative</i> is set, etc.</td> </tr> </tbody> </table> <p>Multiple cell formats are displayed by listing the symbols. For example, percentage with two decimal places in large font (H) is shown as % 2 dec H. Use the arrow keys to scroll the display if necessary.</p>	Cell Format	Shown As	Date	Shows the date format (e.g., MM-DD-YY).	Percent	%	Dollar	\$	Sterling	£	Fixed Decimal Places	n dec	Scientific/Exponential	EXP	Comma	, (or . as appropriate)	Text Effect	A for bold, etc.	Other User Formats	F is displayed if <i>Currency</i> is set to Francs; () is displayed if <i>Bracket Negative</i> is set, etc.
Cell Format	Shown As																				
Date	Shows the date format (e.g., MM-DD-YY).																				
Percent	%																				
Dollar	\$																				
Sterling	£																				
Fixed Decimal Places	n dec																				
Scientific/Exponential	EXP																				
Comma	, (or . as appropriate)																				
Text Effect	A for bold, etc.																				
Other User Formats	F is displayed if <i>Currency</i> is set to Francs; () is displayed if <i>Bracket Negative</i> is set, etc.																				
ColWidth	Shows the width of the cell.																				
Justified	Displays the cell justification. For example, DEFAULT, LEFT, RIGHT or CENTER.																				

Press RETURN to continue.



Edit the Spreadsheet

◆ Edit the Spreadsheet

You can edit any part of the spreadsheet. That is:

- o Contents of Cells
- o Command Line Commands
- o Spreadsheet Title/Column and Row Titles

You can use the following standard Uniplex editing commands to edit within the spreadsheet:

Task	Command	Mode/Setup
Insert Character	CTRL e	Edit Mode
Delete Character to Left	DEL or RUBOUT CTRL c	Keyboard Mapping Dependent Input Mode
Delete Current Character	CTRL c	Edit Mode
Delete Line	CTRL x	Input Mode
Undo Edit	CTRL r	Edit Mode
Delete Cell	CTRL w	Input or Edit Mode
Undo Last Command	ESC u	Input or Edit Mode

↘ *For more details on undo see **Undo Commands**.*

Edit the Spreadsheet

The following sections explain how to edit different parts of the spreadsheet and how to:

- o Insert Empty Rows and Columns
- o Delete the Contents of a Cell
- o Delete Rows and Columns
- o Delete an Area
- o Delete Wherever You Move the Cell Pointer
- o Sort the Contents of Cells

◇ Edit the Contents of a Cell

You can edit the contents of a cell, whether it contains a formula, text or data.

To edit the contents of a cell:

- 1 Position the cell pointer at the cell and press **F1** (EDIT). The cell contents is placed on the command line with the cursor on its first character. **EDIT** displays in the status line.
- 2 Use the edit commands listed above to edit the cell contents:
 - ✎ *Numbers and certain characters such as, +, -, , @, \$, =, are not recognized as valid leading characters for text strings. Enter a single (') or double (") quote, or carat (^) in front of the first character to identify it as a text string.*
- 3 Press RETURN when you have finished editing.

Uniplex places the edited contents back into the cell. Uniplex automatically places you in EDIT mode if you enter a formula or function incorrectly.



Edit the Spreadsheet

◇ Manipulate Rows and Columns

You can insert empty rows and columns into the spreadsheet. Uniplex moves the rows below down or elbows adjacent columns to the right. You can insert rows and columns in one of two ways; using commands or using key sequences:

Insert Rows and Columns Using Commands

To insert one or more rows:

- 1 Position the cell pointer on the row immediately below where you want the new row or rows inserted.
- 2 Press *I*.

Uniplex displays the command menu.

- 3 Pick and point the following options:

Worksheet
Insert
Row

Uniplex prompts for the range of rows to insert, using the current row as the starting point of the range.

- 4 Enter the end point of the range. For example, if you want to insert one row, press RETURN. If you want to insert six rows, increment the end point of the range by five.
- 5 Press RETURN.

Uniplex inserts the number of rows you specified above the current row.

To insert one or more columns:

- 1 Place the cell pointer on the column immediately to the left of the column where you want inserted columns to be placed.
- 2 Press *I*.
- 3 Pick and point the following options:

Worksheet
Insert
Column

Uniplex prompts for the column insert range you require.

- 4 Enter the end point of the range you require inserted. For example, if you want to insert one column, press RETURN. If you want to insert six columns, increment the end point of the range by five.
- 5 Press RETURN.

Uniplex inserts the number of columns you specified to the right of the current cell pointer position.

Delete Rows and Columns Using Commands

You can delete rows and columns in the spreadsheet. Uniplex moves rows up to fill the gap, or pulls adjacent columns across from the right. You cannot restore rows or columns that you delete by mistake.

To delete rows from the spreadsheet:

- 1 Position the cell pointer on the row you want to delete. If you want to delete a range of rows, position the cell pointer on the first row of the range.

**Edit the Spreadsheet**

- 2 Press **/**.

Uniplex displays the command menu.

- 3 Pick and point the following options:

Worksheet
Delete
Row

Uniplex prompts for the range of rows to delete.

- 4 Press RETURN to delete the current row. Enter the end point of a range of rows to delete that range. The specified rows are deleted. Affected calculations and references are adjusted.

To delete columns from the spreadsheet:

- 1 Position the cell pointer on the column you want to delete. If you want to delete a range of columns, position the cell pointer on the first column of the range.

- 2 Press **/**.

Uniplex displays the command menu.

- 3 Pick and point the following options:

Worksheet
Delete
Column

Uniplex prompts for the range of columns to delete.

- 4 Press RETURN to delete the current column. Enter the end point of a range of columns to delete that range. The specified columns are deleted. Affected calculations and references are adjusted.



Hide or Display Columns

You can hide any column in the spreadsheet you specify as follows:

- 1 Press **/**.

Uniplex displays the command menu

- 2 Pick and point the following options:

Worksheet
Column
Hide

Uniplex prompts for the range of columns to hide.

- 4 Press **RETURN** to hide the current column. Enter the start and end points of a range of columns and press **RETURN** to hide it. The specified columns are hidden and any remaining columns shifted to the left. Column letters are not affected.

Redisplay hidden columns as follows:

- 1 Press **/**.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Worksheet
Column
Display

Uniplex prompts for the range of columns to display.

- 3 Enter the column letter, or range of columns you want to display and press **RETURN**. Uniplex displays the specified columns.



Edit the Spreadsheet

Delete Cell Contents

To delete the contents of a single cell:

- 1 Move the cell pointer to the cell you want to delete.
- 2 Press SPACEBAR, followed by an arrow key, or RETURN.

Alternatively:

- o Press **CTRL w**.

You can delete any data, text or formulas in the area you specify as follows:

- 1 Position the cell pointer on the starting point of the area you want to delete.
- 2 Press **/**.

Uniplex displays the command menu.

- 3 Pick and point the following options:

Range
Erase

Uniplex prompts for a range to erase or kill.

- 4 Enter the cell addresses of the range you want to erase. See *Basic Concepts and Skills*.

Uniplex erases the area you specified.

Insert and Delete Using Keystrokes

In addition to using the commands outlined above, you can insert and delete rows and individual cells using keystrokes. Use the following keystrokes within the spreadsheet:

Task	Keystroke
Insert Row	CTRL o
Delete Row	CTRL x
Delete Cell	CTRL w

◇ Sort Data in the Spreadsheet

You can sort any range of data within the spreadsheet. You can sort data by row or column. You can sort data using the Uniplex default settings, or you can specify the display order of the results how they are to be collated and, if sorting more than one column or row, which *field* (row or column) will have priority over another.

When you sort a range of data you can specify:

- o Whether to sort by *row* or *column*.
- o The order to display the result in. This can be either, *ascending* (the default), for example, 1 2 3 4 5, or *descending*, for example 5 4 3 2 1.
- o The sequence in which to collate the sort. This can be either, *numeric*, for example, 1 2 3 4 5, or *alphabetic*, for example, a b c d e f.

Uniplex also has a *format-dependent* collating sequence (the default). When you select this option Uniplex sorts each column or row depending on the type of data it contains. For example, text is sorted alphabetically, and dates, entered in date format, are sorted according to their numeric equivalent.



Edit the Spreadsheet

If you sort a column or row containing a mix of numeric and literal data, using the format-dependent sequence, each two values within the sort are compared on their data type. For example, two literal values are compared alphabetically, two numeric values are compared numerically and two values of different type will be compared alphabetically.

Sorting mixed data produces a confused result, so it is best to specify your collating sequence (see *Change the Collating Sequence* for details).

- o Which row or column has priority (is a *major field*) when sorting more than one row or column.

If you specify major fields when sorting data, you can also specify a different order and collating sequence for each major field.

When you sort a range of data in a spreadsheet, the sort is based on the current values in the selected range and the result of the sort is overlaid on the original data.

If the data that you sort contains any references to data in any part of the spreadsheet, Uniplex updates the references as necessary, even if the affected data is not included in the sort.

For example, in the following spreadsheet, cell B2 contains the formula =B1*.015 and cell B8 contains the formula =B1+B2.

	A	B
1	Salaries	264600
2	Bonus	3969
3	Car Fleet	98321
4	Expenses	8798
5		
6	Total	375688
7		
8	Total Salaries	268569

Edit the Spreadsheet

If you sort the range A1 to B4 in ascending order, by row, specifying column B as a major field you will get the following result, overlaid on the existing data:

	A	B
1	Bonus	3969
2	Expenses	8798
3	Car Fleet	98321
4	Salaries	264600
5		
6	Total	375688
7		
8	Basic Salaries	268569

As Uniplex sorts formulas as well as values, the formula previously contained in cell B2 is now contained in B1. Uniplex has also altered the addresses within the formulas, so that B1 contains the formula $=B4*0.015$.

Any references to these cells outside the sorted range will also be updated. For example, after the above sort cell B8 now contains the formula $=B4+B1$.

Sort Data Using the Default Settings

When you sort a range of data using the Uniplex default settings, Uniplex sorts them in ascending order using the format-dependent collating sequence.

To sort data using the default Uniplex settings:

- 1 Press */*.

Uniplex displays the command menu.



Edit the Spreadsheet

- 2 Select the following options:

Data
Sort
Range

Uniplex prompts for a range to sort.

- 3 Enter the cell addresses of the range you want to sort.
- 4 Press RETURN.
- 5 Uniplex displays the following submenu:

```
Rows Columns
```

- 6 If you want to sort data within your range by row, select the **R**ows option.

If you want to sort data within your range by column, select the **C**olumns option.

Uniplex displays the following submenu:

```
Field Ascending Descending Collating-Sequence Go Quit
```

- 7 Select the **G**o option.

Uniplex sorts the data according to the default criteria, overlays the result on its current position, and updates any cell references that are necessary.

Change the Sort Order

You can choose the result of your sort to be displayed in two different orders:

- o Ascending
- o Descending

When you change the order of your sort, this becomes the default order for your current sort only. You can override the order for specific rows or columns by changing the order after specifying a major field. See *Specify Major Fields*.

To change the sort order:

- 1 Select the area you want to sort (see the previous section). Uniplex displays the following submenu:

```
Field Ascending Descending Collating-Sequence Go Quit
```

- 2 Select either the **A**scending or **D**escending options.

Uniplex makes this the default order for your current sort.

Change the Collating Sequence

You can choose to sort your data in three different ways:

- o **Dictionary**

This collates your data alphabetically.

- o **Numeric**

This collates your data numerically.



Edit the Spreadsheet

o Format-Dependent

This collates your data numerically or alphabetically depending on the type of data in the column.

If you want to sort a row or column which contains both numeric and literal data, you should specify the numeric or alphabetic collating sequence and not use the format-dependent sequence. If you specify a numeric sequence all literal data is interpreted as equal to zero. If you specify an alphabetical sequence all numeric data is interpreted as its literal equivalent.

When you change the collating sequence of your sort, this becomes the default sequence for your current sort only. You can override the sequence for specific rows or columns by changing the sequence after specifying a major field. See *Specify Major Fields*.

To change the collating sequence:

- 1 After selecting the area you want to sort (see *Sort Data Using the Default Settings*). Uniplex displays the following submenu:

```
Field Ascending Descending Collating-Sequence Go Quit
```

- 2 Select the **C**ollating-Sequence option. Uniplex displays the following submenu:

```
Dictionary Numeric Format-Dependent
```

- 3 Select the option you require. Uniplex makes this the default collating sequence for your current sort.

Specify Major Fields

When you sort data contained in more than one row or column in a spreadsheet, you can specify which row or column has priority over another. Each of the rows or columns you specify is called a *major field*.

For example, column A lists the employees in a particular department, column B lists their respective salaries and column C lists their last bonus:

	A	B	C
1	Simon	10000	5000
2	Harry	12000	2000
3	Fred	9000	3000
4	John	10000	4000

If you select column A as a major field and sort the above range in ascending alphabetic order Uniplex displays the following:

	A	B	C
1	Fred	9000	3000
2	Harry	12000	2000
3	John	10000	4000
4	Simon	10000	5000



Edit the Spreadsheet

Alternatively, you can select column B as the major field and sort the range in descending numeric order to produce the following:

	A	B	C
1	Harry	12000	2000
2	John	10000	4000
3	Simon	10000	5000
4	Fred	9000	3000

If you have a column or row containing identical figures or words, you can specify a second major field on which to base your sort. For example if you sort the above range in descending numeric order, specifying column B as the first major field and column C as the second major field, Uniplex produces the following:

	A	B	C
1	Harry	12000	2000
2	Simon	10000	5000
3	John	10000	4000
4	Fred	9000	3000

You can specify up to five major fields.

To select a major field:

- 1 Select the area you want to sort and any default order or collating sequence for your current sort.

Uniplex displays the following **Sort** submenu.

Field Ascending Descending Collating-Sequence Go Quit

- 2 Select the **F**ield option.

Uniplex prompts for the column or row to be used as a major field.

- 3 Select the column or row you require to be a major field.
- 4 If you do not want to specify a different sort order or collating sequence for the field, repeat the above steps for each major field you require.

After selecting each major field you can specify a different sort order or collating sequence for each field. This overrides any defaults you have previously set, but only for the major field you specify.

To change the sort order or collating sequence for a major field:

- 1 Select your major field.
- 2 Select your sort order and/or collating sequence (see *Change the Sort Order* and *Change the Collating Sequence* for details).
- 3 Repeat this sequence for each major field.

Sort the Range

After specifying the criteria for your sort, you can sort your range of data. To do this:

- 1 Select **G**o from the following **S**ort submenu:

```
Field Ascending Descending Collating-Sequence Go Quit
```

Uniplex sorts the data according to the criteria you have specified, overlays the result on the current position of the data, and updates any cell references that are necessary.



Edit the Spreadsheet

Abandon the Sort

If you want to abandon the sort process, either:

- o Pick and point the Quit option from any of the sort submenus.

or

- o Press **CTRL ** during the sort. The sort stops at the next cell and displays the result to that point.

◇ Enter a Range of Numbers

The Fill command enters an incremental range of numbers, for example, to enter the days of the month down one column. To use Fill:

- 1 Press **/**. Uniplex displays the command menu.
- 2 Pick and point the following options:

Data
Fill

Uniplex prompts for an area of the spreadsheet.

- 3 Enter the range. See *Basic Concepts and Skills*.
 - 4 Enter the start value. Uniplex prompts for the step value.
 - 5 Enter the amount you want the value to increase by in each cell. Press RETURN. Uniplex fills the range with increasing numbers, using the start value and interval you specified.
- ✎ *To repeat the same number in all the cells, use an increment of 0.*

◆ Undo Commands

If you enter a spreadsheet command by mistake, you can *undo* the last operation or command. For example, if you delete a row by mistake, you can retrieve it by undoing the delete command.

You can undo the effect of any command, including inserting, deleting, and formatting. Uniplex only undoes the effect of the last command you performed. For the undo to be effective you must use it immediately after the command you want to undo.

To undo the last operation or command:

- 1 Press **/**.

Uniplex displays the command menu.

- 2 Pick and point the **Undo** option.

Uniplex undoes the effect of your last command.

Alternatively, you can undo the last operation or command by pressing **ESC u**.

You can also undo the previous Undo command. So, for example, repeating Undo lets you toggle between the original state and the undone state.

If a macro or list file was the last command run, then only the last command within the macro or file is undone, not the entire operation.

When entering data into a series of cells, only the last changed data cell is restored by an Undo.



Format the Spreadsheet

◆ Format the Spreadsheet

You can set the display format for any area of the spreadsheet. The format affects how the contents of the cells are displayed and does not affect the value, text or formulas they contain.

You can use the standard Uniplex effects, for example, bold, underline, underscore or double strike. In addition, you can specify how numbers are displayed, for example, with a leading \$ or with a set number of decimal places.

You can format the entire spreadsheet in a particular way, or format a specified area of the spreadsheet.

You can format the spreadsheet in the following ways:

- o Change the Column Width
- o Fix Decimal Places
- o Use Money Formats
- o Include Commas in Numbers
- o Change Date Formats
- o Set Display Effects

The following sections explain how to do each of these.

Format the Spreadsheet**◇ Specify an Area of the Spreadsheet to Format**

You can format the entire spreadsheet, or select an area to format in a particular way.

To format the entire spreadsheet:

- 1 Press **/**.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Worksheet
Global
Format

Uniplex displays the format menu:

Fixed Money Percent , Date Line-up Zero Hide Effect Sci Opt Reset

- 3 Pick and point the option you require. Details of the format options are given in the sections that follow.

To format a portion of the spreadsheet:

- 1 Press **/**.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Range
Format

Uniplex prompts for the range you want to format.

Format the Spreadsheet

- 3 Enter the range you want to format. See *Basic Concepts and Skills*. Uniplex displays the Format menu:

Fixed Money Percent , Date Line-up Zero Hide Effect Sci Opt Reset

- 4 Pick and point the option you require. Details of the format options are given in the sections that follow.

◇ Format Options

The default format of cell contents is without display effects. A change to the display format does not alter the underlying data. The default display of numbers is right-justified, floating point with up to six significant decimal places shown.

✎ *Uniplex stores numbers internally with 16 significant digits.*

The table below lists the format options that are available, and the affect each option has on the appearance of the spreadsheet.

Option	Effect
Fixed	Uniplex prompts for the number of decimal places. Enter the number of decimal places you require and press RETURN. To reset a format to floating, press RETURN without entering any number for fixed display.
Money	Uniplex displays a submenu showing the choice of currency available. Pick and point the menu option you require. Uniplex prefaces all values with the appropriate symbol to specify the format you selected. For example, if you format with the Dollar option, all values are preface with a dollar (\$) symbol.

Format the Spreadsheet

Option	Effect
Percent	Uniplex places a percent (%) symbol after all values and multiplies the value by 100 for display. For example, 0.1 is displayed as 10%.
, (comma)	Uniplex includes commas in the values to indicate thousands. For example, 10,005.
Date	<p>Uniplex displays the following submenu:</p> <p>1. (DD-MMM-YY) 2. (DD-MMM) 3. (MMM-YY) 4. (Long Int'1) 5. (Short Int'1)</p> <p>Pick and point the date format you require. Uniplex converts all values in the selected area to the format you specify. For example, if you select format 1, 8/8/94 is displayed as 08-August-94.</p> <p>✎ <i>If you edit (F1) the date, the status line shows the date in the input format for your system.</i></p>
Line-up	<p>Uniplex displays the following submenu:</p> <p>Left Right Center</p> <p>Pick and point the format you require. Uniplex aligns all data to the left, right or center.</p>
Zero	Uniplex displays any cells containing formulas with a result of zero as empty cells.

**Format the Spreadsheet**

Option	Effect
Hide	Uniplex does not display the contents of these cells.
Effect	Uniplex displays the following submenu: <code>Bold Cont-underline Text-underline</code> <code>Underline-bold Italic Large</code> Pick and point the option you require.
Sci	Uniplex displays values in scientific format. For example: <code>3.5e+06</code>
Opt	Uniplex displays the following submenu: <code>Dec_align Bracket_neg Highlight_neg</code> Pick and point the D ec-align option if you want values of 0, 1, or 2 decimal places to be aligned under the decimal point. Pick and point the B racket_neg option if you want negative values to be enclosed in brackets. Pick and point the H ighlight_neg option if you want negative values to be highlighted.

Format the Spreadsheet**◇ Reset Formats**

You can reset formats to the default setting by following these steps:

- 1 Press *F*.

Uniplex displays the command menu.

- 2 Pick and point either the **Worksheet Global Format** option or the **Range Format** option. See *Specify an Area of the Spreadsheet to Format*.
- 3 Pick and point the Reset option.

Uniplex resets the format to the default format. See the next section for details of how to reset the number of decimal places.

Reset the Number of Decimal Places

To reset a fixed number of decimal places to a floating amount, follow these steps:

- 1 Pick and point the Fixed option from the Format menu.

Uniplex prompts for the number of decimal places.

- 2 Press RETURN without entering any decimal places.

◇ Change the Column Width

In addition to changing the format of the spreadsheet as described above, you can also change the width of the columns. You can change the column width throughout the spreadsheet, or in a specified area.

**Format the Spreadsheet**

To change the column width throughout the spreadsheet:

- 1 Press */*. Uniplex displays the command menu.
- 2 Pick and point the following options:

Worksheet
Global
Column-Width

Uniplex prompts for the column width.

- 3 Enter the column-width you require. Press RETURN. Uniplex changes the column-width to the width you require, throughout the spreadsheet.

✎ *The maximum spreadsheet column-width is 240, and only a 70 column-width cell is displayed.*

To change the column width in a specified area of the spreadsheet:

- 1 Press */*. Uniplex displays the command menu.
- 2 Pick and point the following options:

Worksheet
Column
Set Width

Uniplex prompts for a range for the width change.

- 3 Enter the range for the area where you want to change the column width. See *Basic Concepts and Skills*. Uniplex prompts for a column width.
- 4 Enter the column width you require. Press RETURN. Uniplex changes the column width in the area you specified.

Name Areas of the Spreadsheet

◆ Name Areas of the Spreadsheet

You can assign a name to any cell or a set of cells. You can subsequently use the name in any command in place of the usual column or row addressing. This is useful for a number of reasons including:

- o It lets you identify areas of your spreadsheet by meaningful names rather than complicated addresses. For example if an area in your spreadsheet calculates your total expenses for a month, you could call it expenses.
- o If you have a number of named ranges in your spreadsheet, you can make calculations based on the result of each area, by just using the names. This can make the calculations easier for you to express. For example to find the monthly profit:

= sales - expenditure - tax + royalties

- o It provides a quick way of addressing a particular row, column or range. You can move names, and insert or delete rows and columns so that names are modified like relative addresses. You cannot copy names.

To name areas of the spreadsheet:

- 1 Press *F*.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Range

Name

Uniplex prompts for the range you want to name.

- 3 Enter the range you want to name. See *Basic Concepts and Skills*. Uniplex prompts for a name for the range.



Name Areas of the Spreadsheet

- 4 Enter a name. Uniplex names the range using the name you entered.

◇ Remove Names

You can remove any names you have entered as follows:

- 1 Press *I*.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Range

Remove-name

Uniplex prompts for a range from which to remove the name.

- 3 Enter the name, or the range from which you want to remove the name. Press **F2** (the Name softkey) to see a pick and point list of current names. See *View and Use Names*. Uniplex removes the name you specified.

◇ View and Use Names

You can display all names associated with the current spreadsheet, together with the location they refer to. When they are displayed, you can pick and point a name and place it in the command line. This is useful if you want to enter a name as part of a formula.

Display and use names as follows:

- 1 Press **F2** (the Name softkey)

Uniplex displays the names in a popup menu, together with the cell addresses they refer to.

Name Areas of the Spreadsheet

- 2 Pick and point the name you require. Uniplex loads the name into the command line.
- 3 To exit the list without selecting a name, press **ESC q**.

If you want to use a name as part of a formula:

- 1 Enter the first part of the formula. For example:

```
@sum(
```

- 2 Press **F2**. Uniplex displays a pick and point list of all the available names.
- 3 Pick and point the name you require. Uniplex loads in the name to the command line. For example:

```
@sum(salaries
```

- 4 Complete the formula. For example:

```
@sum(salaries)
```

- 5 Press RETURN.

You can also use this method to enter names as part of a command.



Protect the Contents of Cells

◆ Protect the Contents of Cells

You can protect the contents of cells. If you protect a cell, you cannot overwrite it with move, copy, data entry or editing commands. When you move the cell pointer over a protected cell, Uniplex displays `LOCK` in the top right corner of the status line.

↘ *Before Uniplex can protect the cells you specify, you must enable the global protection option. See **Work with Protected Spreadsheets** for details.*

To protect an area of the spreadsheet:

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Range
Protect

Uniplex prompts for a range to lock.

- 3 Enter the range you want to lock. See *Basic Concepts and Skills*.

Uniplex locks the area you specified.

You cannot lock empty cells. If you try to overwrite a locked cell, Uniplex displays:

```
sorry, point is locked at cell
```

To list all protected cells on a spreadsheet, list the spreadsheet to a file and edit the file. See *Save Spreadsheets*.

Protect the Contents of Cells

To lock the entire spreadsheet:

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Worksheet
Global
Protection
Protect-all

Uniplex protects all non-empty cells in the spreadsheet.

To switch off the protection of the contents of a range of cells:

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Range
Unprotect

Uniplex prompts for a range to unprotect.

- 3 Enter the range in which protection will be switched off. See *Basic Concepts and Skills*. The area specified is unprotected.

To switch off protection for the entire spreadsheet:

- 1 Press */*.

Uniplex displays the command menu.

**Protect the Contents of Cells**

- 2 Pick and point the following options:

Worksheet
Global
Protection
Unprotect-all

Uniplex unprotects all protected cells in the spreadsheet.

◇ Work with Protected Spreadsheets

If you have protected cells in the spreadsheet, you can override the protection temporarily so you can add new information:

- 1 Press **/**. Uniplex displays the command menu.
- 2 Pick and point the following options:

Worksheet
Global
Protection
Disable

Add the new information.

To reprotect the spreadsheet:

- 1 Press **/**. Uniplex displays the command menu.
- 2 Pick and point the following options:

Worksheet
Global
Protection
Enable

Uniplex reprotects any cells that were previously protected.

Window the Spreadsheet

◆ Window the Spreadsheet

By default, your spreadsheet has 1024 rows and 256 columns. You cannot display all these rows and columns on a standard screen. However, you can create multiple windows to view and use a spreadsheet. It is useful to create multiple windows if you are working on a large spreadsheet. You can simultaneously display different parts of the spreadsheet in different windows on the screen.

You can use up to nine windows on your screen. You can move between the windows. In addition, you can link windows so that they scroll in synchronization. You can split your screen into windows horizontally or vertically. Uniplex provides a number of commands for use with windows:

- o Open a Window
- o Move the Cell Pointer between Windows
- o Swap the Contents of Windows
- o Unsplit Windows
- o Link and Unlink Windows

The following sections describe each of these.



Window the Spreadsheet

◇ Open a Window

You can split the screen into windows horizontally or vertically. For example, this screen is split horizontally along row 5. The number at the top left of the window is the window number.

[1]	A	B	C	D	E	F
1						
2						
3						
4						
[2]	A	B	C	D	E	F
1						
2						
3						
4						
5						

This screen is further split at column D in window 2:

[1]	A	B	C	D	E	F		
1								
2								
3								
4								
[2]	A	B	C	[3]	A	B	C	D
1				1				
2								
3								
4								
5								

To split the screen horizontally:

- 1 Move to the row you want to split the screen below.
- 2 Make sure there is at least one row above and below the row you want to split displayed on the screen.

Window the Spreadsheet

- 3 Press **/**.

Uniplex displays the command menu.

- 4 Pick and point the following options:

Worksheet
Window
Horizontal

Uniplex splits the screen and displays the window number at the top of the window.

Alternatively, you can enter commands using key sequences:

- o Press **ESC y**. Press **o**.

Uniplex splits the screen horizontally.

To split the screen vertically:

- 1 Move to the column where you want to split the screen.
- 2 Make sure there is at least one column either side of the column displayed on the screen.
- 3 Press **/**.

Uniplex displays the command menu.

- 4 Pick and point the following options:

Worksheet
Window
Vertical

Uniplex splits the screen and displays the window number at the top of the window.



Window the Spreadsheet

When you have multiple windows, you can switch row and columns on or off on a window to window basis.

◇ Move Between Windows

You can easily move the cell pointer between windows.

To move the cell pointer to the next window:

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Worksheet

Window

Next

Uniplex moves the cell pointer to the next window.

Alternatively, press **F6** (Windows).

To move the cell pointer to another specific window:

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Worksheet

Window

Switch

Uniplex prompts for a window to switch to.

Window the Spreadsheet

- 3 Enter the number of the window (shown at the top left of the window) to which you want to move and press RETURN. The cell pointer moves to the specified window.

◇ Link Windows

You can link windowed portions of the screen so that they move in synchronization with the current window. This is useful for viewing the totals of a large table at the same time as modifying the data. Once linked, any movement of the current window will cause the same relative movement of any linked windows. Linking can act on rows only, columns only, or on rows and columns.

If you link on rows, Uniplex synchronizes row movement, this links movement of the cell pointer up or down. If you link on columns, this links movement of the cell pointer left or right. To link windows:

- 1 Press **I**.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Worksheet
Window
Link

Uniplex displays the following submenu:

Both Row Column Number All

- 3 Pick and point **Both** if you want to link rows and columns, **Row** for Rows, **Columns** for Columns and **All** to link all the windows together. Pick and point **Number** if you are using more than two windows and you want to link two specific windows.

or

Press **ESC y**. Enter **I** to link all windows.



Window the Spreadsheet

◇ Unlink Windows

You can unlink windows that were previously synchronized with the Link windows command. To do this:

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Worksheet
Window
Unlink

Uniplex clears any synchronized movement. Windows move independently until otherwise specified.

◇ Join Windows

You can join two windows into one as long as the result is a single rectangular window. To do this:

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Worksheet
Window
Join

Uniplex prompts for the first window you want to join.

- 3 Enter the number of the first window you want to join. Uniplex prompts for the second window you want to join.



Window the Spreadsheet

- 4 Enter the number of the second window you want to join. Uniplex joins the two windows you specified. If Uniplex cannot form a singular rectangular window out of the two windows it ignores the command.

◇ **Reset Spreadsheet Windowing**

After splitting the screen into windows, you can return to the default setting of using a single full screen window.

To do this:

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Worksheet

Window

Reset

The spreadsheet displays as a single, full-screen window.



Set the Display of the Status Line

◆ Set the Display of the Status Line

You can work in the spreadsheet with or without the status line, or parts of the status line, displayed. You can set the display of the following:

- o Status Line
- o Current Cell Pointer Position
- o Contents of the Current Cell

The advantage of working with the status line information is:

- o All the information on your current cursor location, calculation mode and general operating modes is always available on the top line of the spreadsheet.

The advantage of working without the status line information is:

- o Certain operations such as scrolling will generally be performed faster, because the spreadsheet does not have to keep updating your row and column counter.

The default is to work with the status information switched on.

The following sections explain how to set the display of each of these.

Set the Display of the Status Line

◇ Set the Complete Status Line Display

To turn the complete status line display off and on:

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following menu options:

Worksheet

Modes

Stat-line

If the status line is on, Uniplex turns it off. If the status line is off, Uniplex turns it on.

◇ Set the Cell Pointer Position Display

To turn only the cell pointer position display on and off:

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following menu options:

Worksheets

Modes

Cursor

If the cell pointer position is displayed, it is turned off. If the cell pointer position is not displayed, it is turned on.

**Set the Display of the Status Line**◇ **Set the Current Cell Contents Display**

To turn the current cell contents display on and off:

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following menu options:

Worksheet

Modes

View

If the current cell contents is displayed, Uniplex turns it off. If the current cell contents is not displayed, Uniplex turns it on.

Embed Database Queries in a Spreadsheet

◆ Embed Database Queries in a Spreadsheet

You can embed Database Query commands in a spreadsheet. When the spreadsheet is calculated, the database is queried and the results are returned into the spreadsheet. Refer to the chapter, **Database Query**, for complete details of the Database Query language. To use the database with the spreadsheet:

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Integrate
Database

Uniplex displays the database menu.

◇ Specify the Database to Query

Before you begin to perform any tasks with the database, you must specify the database you want to use. To do this:

- 1 Pick and point the Name option from the database menu.

Uniplex prompts for the database you want to query.

- 2 Enter the name of the database you want to query.

All tasks you perform with the database use the database you specify here.



Embed Database Queries in a Spreadsheet

◇ Enter the Results of a Database Query

You can enter the results of any database query into the current cell of the spreadsheet. To do this:

- 1 Specify the database you want to use. See the previous section for details.
- 2 Pick and point the Paste option from the database menu. Uniplex prompts for a database query statement. For complete details of database query syntax, see the **Database Query** chapter.
- 3 Enter the database query you require. For example:

```
select * from branch
```

- 4 Uniplex enters the result of the query into the current cell of the spreadsheet.

◇ Link a Spreadsheet Cell to the Database

You can use the Link command to link a specified cell in the spreadsheet to the database you specified. The Link command automatically sets up the pipe function. See the **Database Query** chapter for more details.

To link a spreadsheet cell to the database:

- 1 Pick and point the Link option from the database menu.

Uniplex defines the pipe function on the command line. For example:

```
=pipe("select
```

- 2 Enter the database query you require or press **ESC h** for help.

Embed Database Queries in a Spreadsheet

◇ Access Database Forms or Database Query

You can access Database Forms or Database Query directly from the spreadsheet. You can then cut and paste information from the database into the spreadsheet, using the Uniplex cut and paste commands.

To access Database Forms:

- o Pick and point the **F**orms option from the database menu.

Uniplex displays the Database Forms menu. See the **Database Forms** chapter for more information.

To access Database Query:

- o Pick and point the **Q**sql option from the database menu.

Uniplex displays the Database Query screen. See the **Data-base Query** chapter for more information.



Use Uniplex Desk and Desk Utilities

◆ Use Uniplex Desk and Desk Utilities

You can access Uniplex desk or desk utilities at any time while you are using the Spreadsheet. For example, you can refer to the clock, or list the files that are available. See the **Getting to Know Uniplex** chapter for more details.

To access the desk, either:

- o Press **ESC xd** for the desk options, or **ESC xu** for the utilities desk.

Uniplex displays the desk options you specified.

- o Use the command menu as follows:

- 1 Press **/**.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Integrate

Uniplex displays the Integrate menu.

- 3 Pick and point **1.Desk** for the desk options or **2.Util** for the Utilities desk.

Uniplex displays the popup desk you specified.

Use Operating System Commands

◆ Use Operating System Commands

You can run an operating system command from within the spreadsheet. If you want, you can return the result of the command into a spreadsheet cell.

To run an operating system command, not entering the result in the spreadsheet:

- 1 Press **/**.

Uniplex displays the command menu.

- 2 Pick and point the following options:

Integrate
Unix

Uniplex prompts for the operating system command you require.

- 3 Enter the operating system command you require.

Uniplex performs the operating system task you specified, then returns you to the spreadsheet.

To enter an operating system command, reading the result into the current cell:

- 1 Press **/**.

Uniplex displays the command menu.



Use Operating System Commands

- 2 Pick and point the following options:

Integrate
Read-Unix

Uniplex prompts for the operating system command you require.

- 3 Enter the operating system command. For example:

```
who am i
```

Uniplex enters the result of the command in the current cell.

◆ Save Spreadsheets

You can save spreadsheets in three ways:

- o Save a spreadsheet in a special format which makes it fast to retrieve.

The spreadsheet saves files in a *Portable Save File (PSF)* format, allowing them to be used by machines of different architectures. This is the default way of saving a spreadsheet.

- ✎ *Files originally saved with versions of Uniplex prior to 7.02 were in a different format. If you edit one of these files, it will now be saved in PSF format.*

You can check the format of a file as described in *Display Spreadsheet Details*. When displaying these details, the <FILES> area shows format details for the file.

In addition to manually saving a spreadsheet, you have the option of having it automatically saved while you edit it. The auto-save option in the word processor is also used to control auto-saving in the spreadsheet. Thus, if autosaving is enabled in the word processor, spreadsheets also are autosaved. See *Set Autosave* in the **Word Processing** chapter for details about enabling autosave.

You can also recover an autosaved spreadsheet. For more detail, see *Recover Autosaved Document* in the **Word Processing** chapter or *Restoring Files from the Trashcan* in the **File Manager** chapter.

- o Save all the commands used to build a spreadsheet.

This format is independent of the type of computer you are using and can be read by older versions of Uniplex. Spreadsheets saved in this format can also be easier for non-Uniplex applications to read. For details, see *Save the Commands used to Build a Spreadsheet*.



Save Spreadsheets

- o Use cut and paste commands to place a copy of the spreadsheet data in a word processing document. You can subsequently edit this document, incorporate it into another document, or print it.

This method is useful if you want to include spreadsheets in documents such as reports. For details, see *Save the Spreadsheet to a Word Processing Document*.

When saving a spreadsheet, you can:

- o Select the type of information you want to save. That is, you can select either data, or formulas, or all information.
- o Select specific areas of the spreadsheet you want to save.

The following sections describe each method of saving a spreadsheet.

◇ Save a Spreadsheet

You can save your current spreadsheet in a special packed format (PSF). The file cannot be edited using the Uniplex Word Processor but, because it is packed, is fast to retrieve into the spreadsheet. This is the default way of saving a spreadsheet. For details of retrieving a spreadsheet saved this way, see *Retrieve a Saved Spreadsheet*.

You can save the spreadsheet using one of the following methods:

- o To save the spreadsheet using commands:

- 1 Press *I*.

Uniplex displays the command menu.

Save Spreadsheets

- 2 Pick and point the following options:

File
Save

Uniplex prompts for a filename for your spreadsheet.

- 3 Enter a filename for your spreadsheet, and press RETURN.

Uniplex displays a message to tell you when the file has been successfully saved.

- o To save the spreadsheet using keystrokes:

Press **ESC e** to save and exit the spreadsheet.

Uniplex prompts for a filename. Enter a name and press RETURN or press **DOWNARROW** to create the file using File Manager. For details, see the **File Manager** chapter.

or Press **ESC w** to save the file and continue editing it.

or Press **ESC s**.

Uniplex displays:

(E) Save and Exit (F) Save and Continue (X) Save to Named File

Enter the letter for the option you want to use.

◇ **Autosave a Spreadsheet**

When editing a spreadsheet using Uniplex you can save it automatically at regular intervals using the *autosave* feature of the Uniplex Word Processor. If you have autosave enabled in the word processor, then your spreadsheets will also be autosaved. You will not see a reference to spreadsheets when setting options in the word processor, however, the intervals you specify there will work the same

Save Spreadsheets

in the spreadsheet. For more detail on enabling **autosave**, see *Set Autosave* in the **Word Processing** chapter.

Recover an Autosaved Spreadsheet

If your system crashes, you can recover the spreadsheet you were last working on, if you have autosave enabled in the word processor, by using the File Manager to restore files from the Trashcan.

To recover an autosaved spreadsheet still in the Trashcan:

- 1 Open the File Manager.
- 2 Choose **View** → **Open Folder...**
- 3 In the **Select folder to open** field, choose **Trashcan** and press **F1 (Esc e)**.

File Manager displays the contents of your Trashcan.

- 4 Select the file(s) to restore and then use **File** → **Action** → **Move** to move them back.

You can now edit the recovered spreadsheet as you require. For more details see *Restoring Files from the Trashcan* in the **File Manager** chapter.

- ✎ *The autosaved spreadsheet you recover may not be a completely up-to-date version of the spreadsheet you were editing, as it is only a copy of the spreadsheet as it was at the last time it was autosaved.*

◇ Save the Commands Used to Build a Spreadsheet

You can list all the commands you have entered to create a spreadsheet in a document, one per line. Commands kept in this way are stored in exactly the same way as they were entered into the spreadsheet from the keyboard. You can edit this document using the word processor.

To save the commands to build a spreadsheet:

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following options:

File

List

Uniplex displays the List submenu.

All Data Formulas Graphs Specify-range

You can store all the commands used to build a spreadsheet, or you can store a selected group of commands.



Save Spreadsheets

The following table describes the function of each of these options:

Option	Function
All	Stores all the data, text and formulas entered in the spreadsheet.
Data	Stores only data values.
Formulas	Stores formulas only.
Graphs	Stores graphs only.
Specify-range	Uniplex prompts for a range to store.

- 3 Pick and point the option from the submenu that meets your requirements.

Uniplex prompts for a filename for your spreadsheet.

- 4 Enter a filename for your spreadsheet and press RETURN.

Uniplex saves all the commands used to build the spreadsheet. The commands are stored in *ucalc* format. See *Text Commands* for details.

Store a Range of Cells

You can choose to store a range of cells. You can choose to save all the formulas and values, or only the values.

To do this:

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following options:

File
Xtract

Uniplex displays the Xtract submenu:

Formulas Values

- 3 Pick and point **Formulas** if you want to save formulas and values. **Values** if you want to save values only.

Uniplex prompts you to enter the range of the spreadsheet you want to save.

- 4 Enter the range of the spreadsheet you want to save. See *Basic Concepts and Skills*.

Uniplex saves the portion of the spreadsheet you specified.

◇ **Save the Spreadsheet to a Word Processing Document**

You can place a copy of the spreadsheet in a word processing document. You can subsequently print the spreadsheet, edit it using the word processor, or incorporate it into other word processing documents.

- 1 Press **/**.
- 2 Pick and point the following options:

Print
File

Uniplex prompts for a filename to print into.

- 3 Enter a filename and press RETURN.



Retrieve Stored Spreadsheets

◆ Retrieve Stored Spreadsheets

Retrieve a saved spreadsheet in these ways:

- **Retrieve a Saved Spreadsheet.** Open a spreadsheet that was saved with the *Save* command.
- **Retrieve a Selected Area of the Spreadsheet.** Combine data from several spreadsheets to build a consolidation.
- **Rebuild a Spreadsheet.** Reconstruct a spreadsheet whose components were saved using the *List* command.
- ✍ *You can select either text, numbers, formulas, or all information when retrieving a spreadsheet and you can specify specific areas to be retrieved.*

◇ Retrieve a Saved Spreadsheet

The *Save* command may be used in three ways:

- **Retrieve.** Erase the current spreadsheet and replace it with the saved one.
- **Combine.** Place a specified range from the saved spreadsheet into the current one. This procedure may be used to consolidate data from multiple spreadsheets.
- **Use.** Rebuild a spreadsheet saved with the *List* command.

◇ Use the Retrieve Command

The *Retrieve* command can access any spreadsheet that was saved with the *Save* command:

- 1 Press *I*. Uniplex displays the command menu.

Retrieve Stored Spreadsheets

- Pick and point the following options:

File
Retrieve

Uniplex prompts for the name of a saved file.

- Enter the name of a file that you stored using the Save command. Uniplex erases the current spreadsheet and displays the spreadsheet you specified.

◇ Retrieve a Selected Area of the Spreadsheet

The *Combine* command retrieves a selected area or a specified type of data. It can also add or subtract data to an existing spreadsheet:

- Press */*. Uniplex displays the command menu.
- Pick and point the following options:

File
Combine

Uniplex displays the Combine submenu:

Copy Data-copy Add Subtract Lock-copy

Each option functions as follows:

Option	Function
Copy	Copy the data and formulas of a specified spreadsheet or range into the existing spreadsheet.
Data-copy	Copy only the data of a specified spreadsheet or range into the existing spreadsheet.

**Retrieve Stored Spreadsheets**

Option	Function
Add	Add the values from a specified spreadsheet into the existing spreadsheet. This may be used to consolidate several spreadsheets such as combining several sets of monthly sales into a quarterly report.
Subtract	Subtract the values of a specified spreadsheet from the existing spreadsheet.
Lock-copy	Overwrite the data in the existing spreadsheet with the data from matching cells of a specified spreadsheet. All locks in the existing spreadsheet are honored.

- 3 Select the option you require.

Uniplex prompts:

Entire-File Specific-Range

- 4 Pick and point Entire-File if you want to copy or add the whole of a specified spreadsheet. Pick and point Specific-Range if you want to copy or add a section of the spreadsheet.

If you selected Specific-Range, enter the range of the spreadsheet you want to copy or add. See *Basic Concepts and Skills*. Uniplex prompts for the name of the spreadsheet you want to add or copy.

- 5 Enter the name of the spreadsheet you want to add or copy. Uniplex combines the spreadsheet you specified in your current spreadsheet.

**◇ Rebuild a Spreadsheet**

The *Use* command rebuilds a spreadsheet using the components saved with the *List* command:

- 1 Press *I*. Uniplex displays the command menu.
- 2 Pick and point the following options:

File

Use

Uniplex prompts for the name of a file.

- 3 Enter the name of a file stored with the List command.



Print the Spreadsheet

◆ Print the Spreadsheet

Printed spreadsheets can be formatted to meet specific needs:

- Specify the area of the spreadsheet to be printed.
- Set the length and width of the page.
- Specify the number of columns on each printed page.
- Print the spreadsheet using a large or a small font.
- Print the spreadsheet using single or double line spacing.

The commands that specify print requirements are stored with the spreadsheet so that its appearance is the same each time it is printed. Change these commands to alter the printout. The spreadsheet is printed in Landscape mode with the following defaults if none of the print commands is selected:

Print Setting	Default Setting
Width	112 characters (Landscape Mode)
Length	42 lines
Font Size	Normal
Indent	0
Top Margin	0
Line Spacing	Single
Range	Entire File
Bar	Off

↘ *If these defaults do not suit your specific needs, talk your System Administrator about changing them.*

◇ Useful Page Sizes

The following guidelines indicate the amount of text that will fit on standard page sizes. Standard paper in Landscape mode on a laser printer:

Normal Font Width: 112 characters Length: 42 lines

Compressed Font Width: 170 characters Length: 56 lines

Standard paper in Portrait mode on a laser printer:

Normal Font Width: 78 characters Length: 62 lines

Compressed Font Width: 116 characters Length: 82 lines

✍ *The use of titles reduces the page length by two lines.*

◇ Specify the Area of the Spreadsheet to Print

You can choose to print the entire spreadsheet, or you can specify a portion of the spreadsheet to print:

- 1 Press */*. Uniplex displays the command menu.
- 2 Pick and point the following options:

**Print
Setup**

Uniplex displays the Setup menu.

If you want to print only a portion of the spreadsheet:

- a) Pick and point the Specific-range option from the Setup menu. Uniplex prompts for a range to print.
- b) Enter the range you want to print. See *Basic Concepts and Skills*. When you print this spreadsheet, Uniplex always



Print the Spreadsheet

prints only the portion you specified here, until you select alternative settings.

If you want to print the entire spreadsheet:

- o Pick and point the Entire-file option. Uniplex prints the entire spreadsheet by default. Use this option if you have previously specified to print only a portion of the spreadsheet.

◇ Set the Page Length and Width

When you produce a printed copy of a large spreadsheet, Uniplex divides it into pages. The places where Uniplex divides the spreadsheet by default are shown by a series of dashes (-----) in the row border or an exclamation mark (!) in the column border. Uniplex starts a new page immediately below the row page marker, or immediately to the right of the column page marker.

You can set the page length and width of the printed copy you produce. To change either of these:

- 1 Press */*. Uniplex displays the command menu.
- 2 Pick and point the following options:

Print
Setup
Page-format

- 3 Pick and point Length if you want to alter the page length. Pick and point Width if you want to alter the page width. Uniplex prompts for either a page width or length for your printed copy.
- 4 Enter the width in characters, or the length in lines, then press RETURN. Uniplex sets your page length or width to the size you specified.

◇ Force Page Breaks

In addition to specifying the length of a page, you can force page breaks so that information is split across pages in a meaningful way. To force a page break:

- 1 Move the cell pointer to the desired row.
- 2 Press **CTRL o**.

A blank line opens directly above the cell pointer.
- 3 Move the cell pointer to the new blank row.
- 4 Enter **.PA** in column A of the new row. A page break is forced at the position specified. Page breaks are displayed as a series of dots across the screen.

◇ Specify the Number of Columns on a Page

Page width may be specified by the number of columns desired instead of by the number of characters. For example, if you have a calendar series you can specify that each printed page include twelve columns. To do this:

- 1 Press **/**. Uniplex displays the command menu.
- 2 Pick and point the following options:

Print
Setup
Page-format
Cols

Uniplex prompts for the number of columns you want to include on each page.



Print the Spreadsheet

- 3 Enter the number of columns you want to include on each page and press RETURN.

Uniplex displays a page break symbol (!) along the column letter border, towards the top of the screen.

◇ Arrange the Spreadsheet Evenly

You can use the Indent and Top-Margin options to ensure that the spreadsheet is arranged attractively on the page. This is particularly useful if you are printing out a spreadsheet in Landscape mode, or if you are using a small font.

The Indent option allows you to specify the amount of left margin you require; the Top-Margin option lets you control the amount of space you have at the top of the page.

To change either the amount of indent or the top margin:

- 1 Press /. Uniplex displays the command menu.
- 2 Pick and point the following options:

Print
Setup
Page-format

- 3 Pick and point the Indent option if you want to change the left margin. Pick and point the Top option if you want to change the top margin. Uniplex prompts for the amount of margin required.
- 4 Enter the amount of margin you require and press RETURN.

◇ Specify Line Spacing

You can choose whether to have your spreadsheet printed in double or single line spacing:

- 1 Press **/**. Uniplex displays the command menu.
- 2 Pick and point the following options:

Print
Setup
Page-format

- 3 Pick and point **Dbl** if you want to print out your spreadsheet with double-spaced lines. Pick and point **Single** if you want to print out your spreadsheet with single-spaced lines.

◇ Include Headers and Titles

The printed spreadsheet may include a header plus column and row titles if these features are switched on when the spreadsheet is printed. See *Create Spreadsheet Titles* for the procedure to switch titles on.

◇ Include a Separator between Titles

You can include a line to separate the spreadsheet titles from the data of the spreadsheet. To do this:

- 1 Press **/**. Uniplex displays the command menu.
- 2 Pick and point the following options:

Print
Setup
Page-format
Bar

A bar separates the spreadsheet titles from the data.



Print the Spreadsheet

◇ Choose the Printing Font

The default print style for a spreadsheet is the normal font. This may be changed to a small font to include more data on the page or changed back to the default font:

- 1 Press */*. Uniplex displays the command menu.
- 2 Pick and point the following options:

Print
Setup

- 3 Pick and point **C**ompressed if you want to work with a small font, or **N**ormal if you want to return to the default font.

◇ Print a Spreadsheet without Format Controls

A spreadsheet may be printed without entering any formatting controls if dot commands have been used within the document to ensure correct pagination and other formatting.

To print out a spreadsheet without formatting controls:

- 1 Press */*. Uniplex displays the command menu.
- 2 Pick and point the following options:

Print
Setup
Page-format
Raw

The spreadsheet prints without any formatting controls.

See *Reset all Print Defaults* to reset the format controls after using the Raw command.

◇ **Reset all Print Defaults**

After defining the way you want a spreadsheet printed, you can reset the print settings to the Uniplex defaults:

- 1 Press */*. Uniplex displays the command menu.
- 2 Pick and point the following options:

Print
Setup
Reset

Uniplex resets all the print defaults.

◇ **Produce a Printed Copy**

When you have specified how you want a printed copy to look using the options described above, you are ready to produce a printed copy of the spreadsheet.

You can choose to print out the spreadsheet directly, or to write the spreadsheet to a file. If you choose to write the spreadsheet to a file, you can then transfer it to other Uniplex applications to work on. For example, you can transfer it to the Word Processor and add some explanatory text. To print out the spreadsheet directly:

- 1 Press */*. Uniplex displays the command menu.
- 2 Select from the following:
 - o To use the default spreadsheet style and printer:

Print
Print

**Print the Spreadsheet**

- o To specify printing details using the Print form:

Print
Use_Form

Uniplex displays the Print Screen.

See the **Printing** chapter for details on completing the form.

To write the spreadsheet to a file:

- 1 Press */*. Uniplex displays the command menu.
- 2 Pick and point the following options:

Print
File

Enter a filename to print to. Uniplex writes the spreadsheet to a file. You can print the file using the usual Uniplex print facilities. See the **Printing** chapter for more details.

◆ Leave the Spreadsheet

You can quit the spreadsheet in one of the following ways:

- o Clear the current spreadsheet and start a new one.
- o Quit the spreadsheet without saving the current spreadsheet.
- o Reset all numeric values to zero.

The following sections explain each of these methods:

◇ Clear the Current Spreadsheet

You can clear the spreadsheet of all data, text, formulas and formats. All values will be lost unless you have previously saved the spreadsheet.

To clear the current spreadsheet:

- 1 Press */*. Uniplex displays the command menu.
- 2 Pick and point the following options:

Worksheet

Erase

- 3 Pick and point Yes to erase the Spreadsheet. Otherwise, pick and point No to abandon the operation.

The advantage of this command is that you can start again with a new spreadsheet, without having to exit and then re-enter the spreadsheet.



Leave the Spreadsheet

◇ Quit the Spreadsheet

You can quit the spreadsheet as follows:

- 1 Press **/**. Uniplex displays the command menu.
- 2 Pick and point the Quit option.
- 3 Pick and point **Yes** to confirm you want to quit, or **No** to remain in the spreadsheet.

Alternatively:

- o Press **ESC q**. Press * to confirm.

All values will be lost unless you have previously saved the spreadsheet with the *save* or *list* command.

◇ Set all Numeric Values to Zero

You can reset all numeric values in the current spreadsheet to zero, as follows:

- 1 Press **/**. Uniplex displays the command menu.
- 2 Pick and point the following options:

Data
Zero

Uniplex prompts you to press * to confirm you want to zero all the values. Otherwise, press RETURN to continue. All numeric values will be lost unless you have previously saved the spreadsheet using *save* or *list*.

Text, formats and formulas are not affected by this command, but all numeric data is reset to zero. This is particularly useful when resetting an existing spreadsheet template, prior to entering new data.

Create Graphs from the Spreadsheet

◆ Create Graphs from the Spreadsheet

In the commercial world, information is one of an organization's most important assets. When that information is passed on, it is vital that it is well-presented, timely and accurate. You can only absorb written information and tables of data at a certain rate. You can absorb visual data much quicker. Graphs let you display large quantities of information clearly and simply. They also allow trends and analysis to be strikingly illustrated.

You can create graphs for many different areas of communication. For example:

- o **Reports.** You can include graphs in any Uniplex report or document.
- o **Presentations.** You can produce slides from graphs and include them in presentations.

Traditionally, producing meaningful graphs was not only time-consuming but required an understanding of mathematics and graphic design. Anyone can create graphs using Uniplex Spreadsheet Graphics.

Spreadsheet Graphics let you create a range of graphs and charts using any type of terminal. Uniplex uses the effects available on your terminal to enhance the appearance of the graph.

You can generate a graph from any data and then link this data dynamically to the graph. This means that any later change in the data is reflected in the graph.

You can transfer graphs to word processing documents. In addition, you can mail graphs using Electronic Mail.

✎ *Electronic Mail is part of Uniplex Advanced Office System. See your System Administrator for details of this product.*



Create Graphs from the Spreadsheet

You draw graphs from within the Spreadsheet. You can either use cut and paste to provide the data for the graph or you can enter the data directly into the spreadsheet.

◇ Draw a Graph

To use the Spreadsheet Graph options:

- 1 Press *I*.

Uniplex displays the command menu.

- 2 Pick and point the **G**raph option.

Uniplex displays the **G**raph menu:

`Draw Range Place Link Options Xpand Goto Erase Template Quit`

The remainder of this section explains how to use each of the options on this menu. To draw a graph you do the following:

- 1 Select the range of data you want to graph. See *Select a Data Range*.
- 2 Mark the graph position on your spreadsheet. See *Mark the Graph Position*.
- 3 Draw a graph. See *Plot a Graph*.

You can alter the way a graph is displayed by making entries in a popup form. You complete the form with your requirements and then plot the graph.

Create Graphs from the Spreadsheet

Select a Data Range

You can graph any continuous area of numbers in the spreadsheet. By default Uniplex assumes you only want to include numbers in the data range. If you want to include text, such as labels for the axis in a graph, see *Modify Graphs*. You enter a data range for a graph as follows:

- 1 Move the cursor to the top left of the area you want to graph.
- 2 Pick and point **Range** from the **Graph** menu.

Uniplex prompts for a range to graph.
- 3 Enter the range you want to graph. See *Basic Concepts and Skills*.
- 4 Pick and point **Row labels**, **Col labels**, **Both**, or press RETURN for none.

Mark the Graph Position

You can position your graph on the spreadsheet in one of two ways, using the default size, or defining your own size.

To draw the graph using the default size:

- 1 Pick and point the **Place** option.
- 2 Use the cursor keys to move the cursor to the point where you want the graph displayed.
- 3 Press RETURN

The graph is drawn 16 rows long by 60 columns wide, starting at the point where you positioned the cursor.



Create Graphs from the Spreadsheet

To define the size of the graph:

- 1 Pick and point the **P**lace option.
- 2 Use the cursor keys to highlight the area in which you want the graph drawn.
- 3 Press RETURN.

Uniplex will scale the graph to fit the area you have highlighted.

- ✎ *It is often tidier to erase the old graph before drawing a new one if the selected area replaces an existing graph.*

Plot a Graph

To plot a graph you:

- o Pick and point the **D**raw option from the graph menu.

Uniplex draws a vertical bar chart representing the data range you selected. Uniplex places the graph in the area you marked. See *Mark the Graph Position*.

You can change the way the data table is represented in the graph. See *Modify Graphs*.

- ✎ *To get a high resolution printout of your graph, be sure to save the spreadsheet. Not doing so before printing can result in a character-based printout.*

◇ Link Graphs

Uniplex always draws a graph representing the last data range selected. You can link a data range dynamically to a graph so that when it is updated so is the graph.

Create Graphs from the Spreadsheet

To do this:

- 1 Pick and point the **L**ink option from the graph menu.
- 2 Position the cursor on the cell in the top left corner of the graph you have just drawn.
- 3 Press RETURN. The graph and data range are linked so that the graph is automatically updated whenever the data range is changed.

Multiple Graphs

Linking a graph dynamically to a data range also lets you create multiple graphs. Each time you link, Uniplex stores the current graph in a single cell in the form:

graph(*number*, *area*)

Where *number* is a sequential number assigned to the graph, and *area* is the address of the area containing the data. Uniplex displays this information on the status line but you cannot edit it.

To assign the parameters of a stored graph to those of the graph you are currently working on:

✍ *When drawing two or more linked graphs, be sure to place a graph before it is drawn. Not positioning a graph first can result in the corruption of all graphs.*

- 1 Pick and point the **G**oto option from the **G**raph menu.

Uniplex asks for the number of the stored graph.

- 2 Enter *n* where *n* is the number of the graph. Uniplex moves the cursor to the stored graph and assigns the parameters of the stored graph to your current graph.



Create Graphs from the Spreadsheet

◇ Modify Graphs

By default, Uniplex always draws graphs using a standard graph template. This template defines parameters such as the type of graph, size and scaling. To modify a graph:

- 1 Pick and point **O**ptions.

Uniplex displays the Graph Setup Options form. Complete the form. Press TAB or use the arrow keys to move between the fields. Press any character key to display a pick and point list of the options available in scrollable fields:

Field	Entry
Graph Type	Press the SPACEBAR to scroll the entry in this field to the type of graph you want: <ul style="list-style-type: none"> o Vertical Bar Chart o Horizontal Bar Chart o Stacked Vertical Bar Chart o Stacked Horizontal Bar Chart o Line Graph o Scatter Graph o Vertical Max-min o Horizontal Max-min o Pie Chart o Area Graph o Stacked Area Graph o Histogram

⚡ *Uniplex cannot display a pie chart using spreadsheet graphics. Instead it plots a stacked bar chart.*

3 Dimensions

If you do not want your graph to be shown in three dimensions, press the SPACEBAR to scroll the entry to **NO**.

Create Graphs from the Spreadsheet

Field	Entry
Legend/Key	Select the legend position you require: <ul style="list-style-type: none"> <input type="radio"/> Legend Below <input type="radio"/> Legend Right <input type="radio"/> Legend Above <input type="radio"/> Legend Left <input type="radio"/> Legend Off
Graph Width	If you do not want the default width of 60 characters, enter the width you require.
Length	If you do not want the default length of 16 lines, enter the length you require.
Group By	If you do not want the data plotted by row, press the space bar to scroll the entry to COLUMN .
Display Group Labels	If you want the first column of the data range used as group labels, press the SPACEBAR to scroll to YES .
Display Data Series Labels	If you want the first row of the data range used as data series labels, press the SPACEBAR to scroll to YES .
Set Scale to Range	If you want to set the graph scale, scroll the entry to YES and enter: <p>from The lowest point in the graph scale.</p> <p>to The highest point in the graph scale.</p>
	<i>Groups and Data Series can display data, events, or trends in logical sets. For example, quarterly sales figures (group) for each sales region (data series).</i>



Create Graphs from the Spreadsheet

- 2 When you have completed the form, press **ESC e**.
- 3 To redraw the current graph, using the parameters you have set in the form:

Pick and point the **D**raw option from the **G**raph menu. Uniplex redraws the current graph.

- ✎ *When using column and row labels (Groups and Data Series), the top left hand cell should be left blank.*

◇ Display Graphs on a High Resolution Terminal

Depending on your terminal, Uniplex can display spreadsheet graphs using Uniplex Advanced Graphics and the terminal's high resolution capabilities.

- ✎ *The System Administrator can tell you about Uniplex Advanced Graphics and the capabilities of your terminal.*

To display the current graph in high resolution:

- 1 Pick and point the **X**pand option from the **G**raph menu.

Uniplex clears the screen and draws the current graph.

- 2 Press **ESC q** to return to the spreadsheet.

To display a stored graph in high resolution:

- 1 Move the cursor to the cell at the top left of the graph you want to expand.
- 2 Pick and point **X**pand option from the **G**raph menu. Uniplex clears the screen and draws the stored graph.
- 3 Press **ESC q** to return to the spreadsheet.

Create Graphs from the Spreadsheet

◇ Create a Template to Use with Presentation Graphics

The Template command saves all graph information so that the graph may be enhanced with color, text, and additional drawing features using the Uniplex Advanced Graphics System. To create a template of graphics information:

- 1 Move the cursor to the cell at the top left of the graph.
- 2 Pick and point the **T**emplate option from the **G**raph menu. Uniplex prompts for a filename for the file.
- 3 Enter a filename for the file in which the template will be stored. You can now use the Uniplex Advanced Graphics System to enhance any graphs in the file you have created.

◇ Erase Graphs

You can erase graphs you no longer require. To erase the current graph:

- 1 Pick and point the **E**rase option from the **G**raph menu.
- 2 Pick and point **Y**es to erase the graph, or **N**o to abandon the command.

To erase a stored graph:

- 1 Move the cursor to the cell at the top left of the graph you want to erase.
- 2 Pick and point the **E**rase option from the **G**raph menu.
- 3 Pick and point **Y**es to erase the graph or **N**o to abandon the command.

Create Graphs from the Spreadsheet

To erase a linked graph:

If you have more than one linked graph in a spreadsheet and use the **Graph** menu to erase a graph, it only erases the last graph drawn. You must place your cursor on the desired graph to erase the graph of choice.

◇ Use Groups and Data Series

You can create the graphs shown in *Examples of Spreadsheet Graphics*. Using the data as shown at the top to each example and assuming the data ranges from A1 to D5, the following steps create a vertical bar chart. If you have not already done so, review *Draw a Graph*, *Select a Data Range*, and *Mark the Graph Position*.

- 1 Pick and point the **Range** option from the **Graph** menu.
- 2 Enter the range A1..D5.
- 3 Enter **rc** to set *Spring*, *Summer*, *Autumn*, and *Winter* as your groups and *Manchester*, *London*, and *Glasgow* as your data series, then press RETURN.
 - ◇ *Cell A1 should be empty. Any data in A1 will be ignored when using **rc**, and will not calculate the graph when using **r** or **c** alone.*
- 4 Press RETURN to draw the graph, or pick and point the **Place** option and select a location for the graph, then pick and point the **Draw** option and press RETURN.

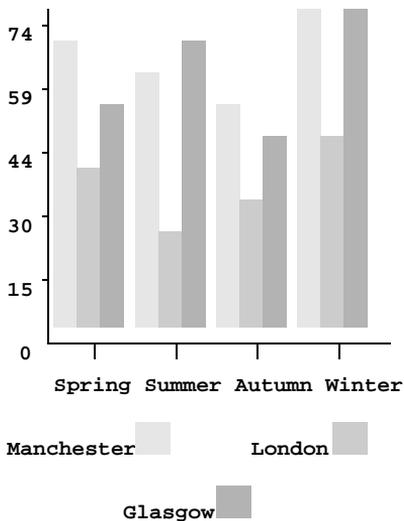
To familiarize yourself with drawing and modifying graphs, create this simple example then experiment with the Options form. See *Modify Graphs* for more detail.

Create Graphs from the Spreadsheet

◇ Examples of Spreadsheet Graphics

The following pages show examples of the types of graphs you can produce.

	Manchester	London	Glasgow
Spring	65	38	51
Summer	58	22	67
Autumn	52	33	43
Winter	74	45	71

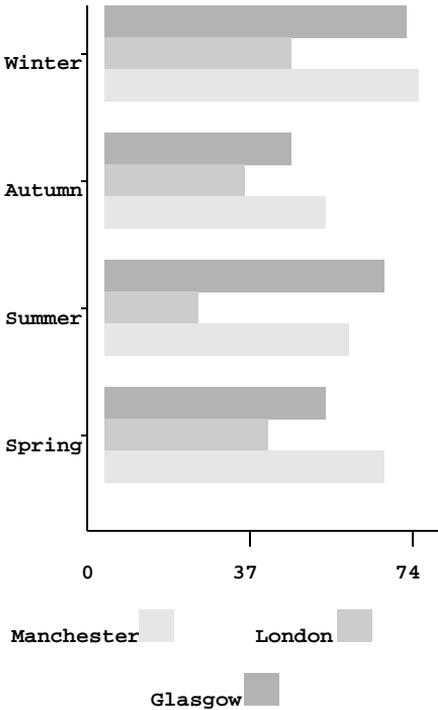


Vertical Bar Chart



Create Graphs from the Spreadsheet

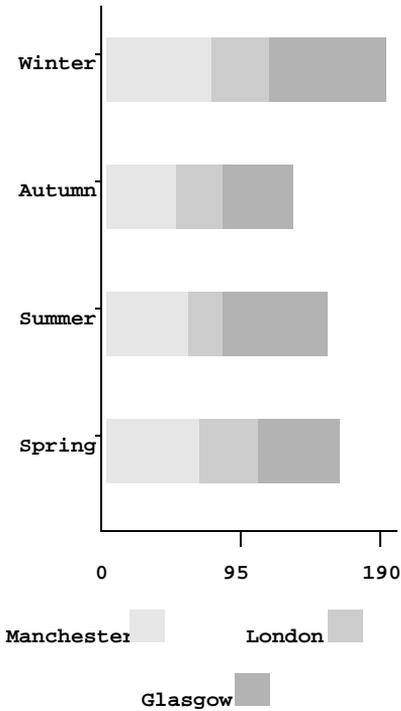
	Manchester	London	Glasgow
Spring	65	38	51
Summer	58	22	67
Autumn	52	33	43
Winter	74	45	71



Horizontal Bar Chart

Create Graphs from the Spreadsheet

	Manchester	London	Glasgow
Spring	65	38	51
Summer	58	22	67
Autumn	52	33	43
Winter	74	45	71

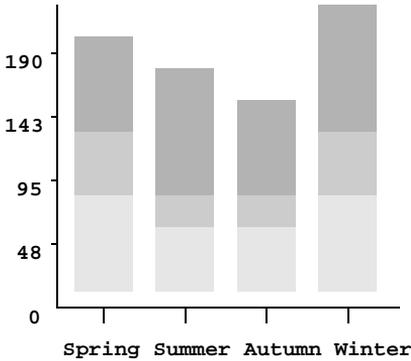


Horizontal Stacked Bar Chart

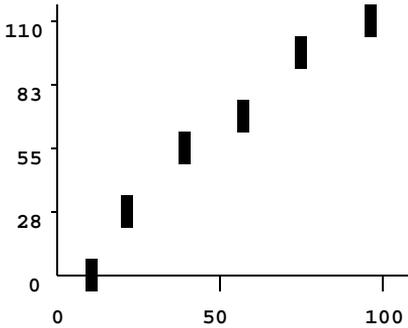


Create Graphs from the Spreadsheet

	Manchester	London	Glasgow
Spring	65	38	51
Summer	58	22	67
Autumn	52	33	43
Winter	74	45	71



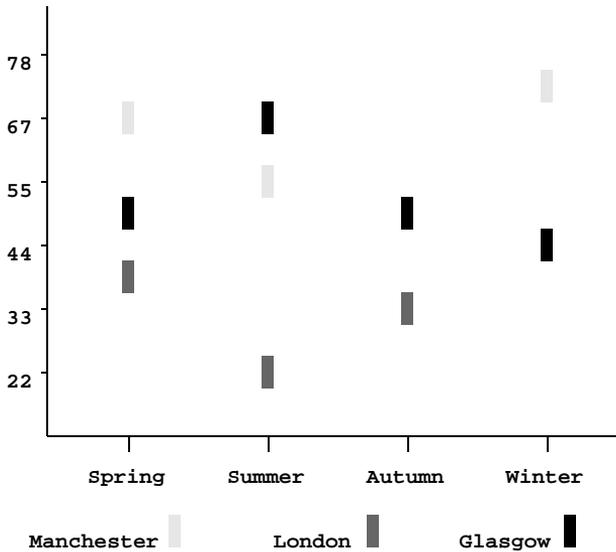
Vertical Stacked Bar Chart



Scatter Graph

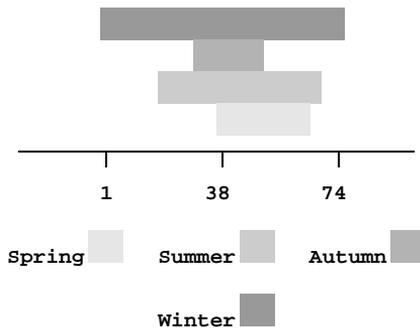
Due to the potentially low resolution of the character format, scatter graph points can overwrite each other, resulting in apparently fewer points on the graph than were submitted.

Create Graphs from the Spreadsheet



Line Graph

- Due to the potentially low resolution of the character format, line graph points can overwrite each other, resulting in apparently fewer points on the graph than were submitted.



Max-Min Bar Chart



Spreadsheet Functions

◆ Spreadsheet Functions

Uniplex provides the following wide range of functions:

- o Statistical
- o Mathematical
- o Financial
- o String Manipulation
- o Date
- o Logical
- o Trigonometric
- o External
- o Special

You can use these functions as part of formulas. See *Create Formulas*.

The following sections describe each function in detail. These sections show the syntax for each function. If you can perform the function on an expression, this is shown as *expr*. *Expr* can be a cell, column, row, range address or it can be another formula.

◇ Statistical Functions

You can use the spreadsheet to provide statistical information using the following statistical functions:

- o **sum** (find the sum of a range of numbers)
- o **max** (find the maximum value in a range)
- o **min** (find the minimum value in a range)
- o **count** (count the number of values in a range)
- o **eval** (evaluate the elements in a list)
- o **avg** (find the average value in a range)
- o **stdev** (find the standard deviation of elements)
- o **abs** (find the sum of absolute values)

Spreadsheet Functions

Find the Sum of a Range of Numbers (sum)

Calculate the sum of an expression as follows:

@sum(*expr*)

For example, if you enter the following in a cell:

```
@sum(12,12)
```

Uniplex enters the result 24 in the cell. You have named the area *salaries* and entered the sum function. Uniplex displays:

UNIPLEX @sum(salaries)		CALC nat A6			
	A	B	C	D	E
1	20000				
2	15000				
3	30000				
4	14500				
5	23000				
6	[121250]				
7					salaries- A1..A5

You can use the where function to apply a condition to statistical functions. The condition is a logical test (for example, is each salary greater than 20000). Uniplex only includes those elements in the expression that meet the test in the sum. For example:

UNIPLEX @sum(where(salaries,X>20000))		CALC nat A6			
	A	B	C	D	E
1	20000				
2	15000				
3	30000				
4	14500				
5	23000				
6	[53000]				
7					salaries- A1..A5
8					



Find the Maximum Value in a Range (max)

Find the maximum value in a range as follows:

@max(*expr*)

For example:

You have named the area salaries and entered the max function in A7. Uniplex displays:

UNIPLEX @max(salaries)		CALC nat A7			
	A	B	C	D	E
1	20000				
2	15000				
3	30000				
4	14500				
5	23000				
7	[30000]				
8					
9					
10					

salaries- A1..A6



Spreadsheet Functions

Find the Minimum Value in a Range (min)

Find the minimum value in a range as follows:

@min(*expr*)

For example:

You have named the area salaries and entered the min function in A7. Uniplex displays:

UNIPLEX @min(salaries)		CALC nat A7			
	A	B	C	D	E
1	20000				
2	15000				
3	30000				
4	14500				
5	23000				
6	18750				
7	[14500]				
8					salaries- A1..A6
9					

Count the Number of Values in a Range (count)

Count the number of non-empty cells in a range as follows:

@count(*expr*)

For example:

You have named the area salaries and entered the count function in A7. Uniplex displays:

UNIPLEX @count(salaries)		CALC nat A7			
	A	B	C	D	E
1	20000				
2	15000				
3	30000				
4	14500				
5	23000				
6	18750				
7	[6]				
8					salaries- A1..A6
9					

In the following example, the where function has been used to apply a condition to this function, (in the same way as with SUM), to find the number of salary payments that are less than or equal to 20000:

UNIPLEX @count(where(salaries,X<=20000))		CALC nat A7			
	A	B	C	D	E
1	20000				
2	15000				
3	30000				
4	14500				
5	23000				
6	18750				
7	[4]				
8					salaries- A1..A6
9					



Spreadsheet Functions

Evaluate the Elements in a List (*eval*)

You use the *eval* function in conjunction with the statistical functions to perform a calculation on each element in a specified value list.

For example:

The range A1..6 contains data, accurate to 6 decimal places, but displayed to 2 decimal places. This often means that the data has been rounded for display purposes. Normally, *sum* will find the true sum of the range, and may therefore give the wrong figure on display. The formula:

```
@sum(eval(A1..6,rnd(X,2)))
```

will round each element in the value list before it is summed. This will give the correct sum for display.

Find the Average Value from a Range (avg)

You can find the average of any range of numbers. The calculation is essentially the same as the sum of the range divided by the count of the number of elements in the range.

Calculate the average value from a range as follows:

@avg(*expr*)

For example:

You have named the area salaries and entered the avg function in A7:

UNIPLEX @avg(salaries)		CALC nat		A7	
	A	B	C	D	E
1	20000				
2	15000				
3	30000				
4	14500				
5	23000				
6	18750				
7	[20208.3]				
8					
9					

salaries- A1..A6



Spreadsheet Functions

Find the Standard Deviation of the Elements in the List (stdev)

Find the standard deviation of the values in a list as follows:

@stdev(*expr*)

For example:

`@stdev(salaries)`

will find the standard deviation of the values in the named area, salaries.

Find the Sum of the Absolute Values in a List (abs)

You can find the sum of the absolute values in a list:

@abs(*expr*)

where *expr* is the list. For example: `@abs(10,-5,-2,3) = 20`

Create a Conditional Statistical Function (where)

You use the where function to apply conditions to statistical functions which work on lists of values. You use the where function in conjunction with the avg, sum, count, max, and min functions. Use the following syntax:

***function*(where(*expr*,*Xexpr*))**

X is substituted for each value in the list and tested by the logical expression.

For example you can to count the number of values in a range that are greater than 3:

`count(where(A1..A6,X>3))`

◇ Mathematical Functions

Uniplex provides the following mathematical functions:

- o **exp** (calculate the exponential)
- o **log** (find the natural log of a value)
- o **log10** (find the base 10 log of a value)
- o **int** (find the integer portion of a sum of numbers)
- o **mod** (find the remainder on division)
- o **div** (find the integer part on division)
- o **root** (find the sum of square roots)

Calculate the Exponential (exp)

The exponential of a number is the value produced when e , the base of the Natural Logarithms, which has an approximate value of 2.718281, is raised to the power of that number.

To raise e to the power *expr*, enter:

@exp(*expr*)

For example, if you enter the following formula in a cell:

@exp(5)

Uniplex calculates the result as:

148.413159

Calculate the sum of exponents of a range as follows:

@exp(A2..6)



Spreadsheet Functions

Find the Natural Log of a Value (log)

Find the natural log of a value as follows:

@log(*expr*)

For example:

`@log(66)`

`@log(A1..G12)`

Find the Base 10 Log of a Value (log10)

Find the base 10 log of a value as follows:

@log10(*expr*)

For example, to find the base 10 log of 66:

`@log10(66)`

Uniplex calculates the result as 1.819544

To find the sum of the log of each value in a range:

`@log10(A1..G12)`

Find the Integer Portion of a Sum of Numbers (int)

Find the integer portion of a sum of numbers as follows:

@int(*expr*)

For example:

`@int(E1)`



Calculate the Remainder (Modulus) on Division (mod)

You can find the integer remainder (modulus) of a division. Uniplex performs the division, but does not return the result of the division, rather the remainder after the division.

Find the modulus on division as follows:

@mod(*number,divisor*)

where *number* is the number to divide and *divisor* is the number to divide by. These can be numbers, cell addresses or named areas.

For example:

You have an amount of money available for advertising as defined by the cell named budget, and each TV advertisement costs an amount defined by the cell named cost, and you want to find out how much money will be left after you have bought the maximum amount of advertisements within the budget:

@mod(budget , cost)

Calculate the Integer Part on Division (div)

You can find the integer part on division. This function produces the same results as using the / (division) operator.

To find the integer part on division:

@div(*expr,expr*)

For example:

If you want to find the number of manuals that can be bought at \$25 and the name budget defines the available budget:

@div(budget , 25)



Spreadsheet Functions

Find the Sum of Square Roots (root)

Find the square root of an expression as follows:

@root(*expr*)

For example:

If you enter the following formula in a cell:

`@root(9)`

Uniplex calculates $9^{0.5} = 3$

◇ Financial Functions

You can use the financial functions to calculate the following:

- o **fv** (equal payment series compound amount)
- o **sink** (equal payment series sinking fund)
- o **spv** (single payment present value)
- o **irr** (rate of return for a series of cash flows)
- o **npv** (net present value of a series of cash flows)
- o **period** (depreciation period)
- o **pmt** (mortgage payments)
- o **pv** (present value of a series of regular payments)
- o **svf** (future value of a single payment investment)
- o **rate** (depreciation rate)

Find the Equal Payment Series Compound Amount (fv)

You can use the *fv* function to find the equal payment series compound amount. That is, it lets you calculate how much a regularly paid investment, at a fixed interest rate, is worth at the end of a fixed period. To use this function:

@fv(amount,rate,periods)

where *amount* is the amount to be regularly invested, *rate* is the interest rate and *period* is the period over which you will invest it. For example, the *pmt* function shows that a \$30,000 mortgage is paid at \$4093 for 25 years.



Spreadsheet Functions

To find what these mortgage payments would yield if paid into an investment scheme for 25 years:

```
@fv(4093,13%,25)
```

Uniplex returns the value \$636950.842453

Find the Equal Payment Series Sinking Fund (sink)

You use the *sink* function to return the equal payment series sinking fund. Sink is the inverse function of the *fv* function. That is, it lets you calculate how much you need to invest regularly over a given period, at a given interest rate to accumulate a given amount. To use this function:

```
@sink(final_amount,rate,periods)
```

Where *final_amount* is the amount you want to accumulate, *rate* is the interest rate and *periods* is the period over which the amount will be regularly invested. For example, if you need \$100,000 in 4 years time and your best investments opportunity yields 14.5% per annum, enter:

```
@sink(100000,14.5%,4)
```

Uniplex returns \$20172.887191

Find the Single Payment Present Value (spv)

You use the *spv* function to find the single payment present value. That is, it lets you calculate the value today of an amount invested at a given interest rate over a given period. Alternatively, it lets you calculate the value today of an amount that will depreciate at a given rate over a given period. To use this function:

```
@spv(amount,rate,periods)
```

Where *amount* is the amount invested, *rate* is the interest or depreciation rate and *period* is the investment term.

Spreadsheet Functions

For example, you expect to sell a piece of equipment for \$1000 dollars in two years time, it will depreciate at 10% per year, to calculate what you should pay for it today, enter:

`@spv(1000,-10%,2)`

Uniplex returns \$1234.567901

✎ *The rate is the rate-per-period, NOT the rate per-annum. For example, to work out the SPV on a 10% pa investment over 18 months, you must do something like: @spv(<amount>, 5%, 3).*

Find the Rate of Return for a Series of Cash Flows (irr)

Use the *irr* function to find the discount rate that equates the present value of expected cash outflows with the present value of expected inflows. That is, *irr* finds the internal rate of return or profit for a future series of even or uneven cash flows on an initial investment to determine the attractiveness of an investment opportunity.

The internal rate of return is built on an iterative process in which you provide an initial guess of the discount rate (anything between 1 and 0 will do) and Uniplex calculates the actual discount rate, equating the present value of the series of cash outflows with the present value of a series of inflows. To use this function:

`@irr(guess, range)`

where *guess* is the initial guess at the discount rate, and *range* is the list of amounts. Uniplex considers the negative numbers as cash outflows and positive numbers as cash inflows. The first cash inflow in a range must be a negative number.

A good starting point for your initial guess is .1 or 10%. The spreadsheet guesses 30 times and only returns an answer if it is within 0.0001% of the correct answer, otherwise it returns E_VAL.



Spreadsheet Functions

For example, you have the opportunity to buy the entire stock of a bankrupt company, for a one-off payment of \$40,000 and expect to make \$20,000 the following year and progressively \$5,000 less per year for the next three years:

UNIPLEX @irr(10%,A1..5)		CALC nat A6			
	A	B	C	D	E
1	-40000				
2	20000				
3	15000				
4	10000				
5	5000				
6	[0.121635]				

Uniplex calculates the rate of return as .122 or 12.2%. If you were loaned the initial amount at 10%, you stand to profit by approximately 2%. Since the loan repayment is constant, you make a profit in the first year and a loss in the fourth year.

Return the Net Present Value of a Series of Cash Flows (npv)

You use the *npv* function to compute the net present value of a stream of cash flows. To use this function:

@npv(*discount_rate*, *range*)

The *discount_rate* is the rate that the spreadsheet uses to calculate the net present value. The *range* is a stream of cash flows to be discounted. The interval between the cash flows must be constant and must agree with the period of the discount rate.

- ✎ *An annual discount rate should be used for cash flows occurring a year apart. If the cash flows occur every month, a monthly discount rate should be used.*



Spreadsheet Functions

For example, you can buy a company for \$200,000 and expect to earn the following amounts over the next five years:

Year 1	50,000
Year 2	60,000
Year 3	70,000
Year 4	80,000
Year 5	30,000

15% is the rate at which you must earn to make the investment worthwhile, so the spreadsheet could appear as follows:

UNIPLEX @npv(15%,A1..5)		CALC nat A6			
	A	B	C	D	E
1	50000				
2	60000				
3	70000				
4	80000				
5	30000				
6	[195528.578884]				

Uniplex returns the result \$195,529, less than your investment of \$200,000. So it looks like this is a bad investment.

Calculate the Depreciation Period (*period*)

You use the *period* function to calculate the depreciation period. That is, it calculates how long it will take for an amount to depreciate to a given amount, at a given depreciation rate. You specify the timescale, the depreciation rate, and the amount it will depreciate to. To calculate the depreciation period:

@period(*start_amount*, *final_amount*, *rate*)

where *start_amount* is the original amount, *final_amount* is the amount you expect it to depreciate to, and *rate* is the depreciation rate you expect.



Spreadsheet Functions

For example, if you bought a car for \$1,000, and you must sell it for \$810 and you expect it to depreciate at 10% per year, you can calculate the number of years before you must sell it as follows:

```
@period(1000,810,-10%)
```

Uniplex calculates that you must sell the car in two years.

Calculate Mortgage Payments (pmt)

You use the *pmt* function to calculate the mortgage payments for a given principal, interest rate and number of periods. This is sometimes known as the equal payment series capital recovery. To use this function:

```
@pmt(principal, interest, period)
```

where *principal* is the amount of the mortgage, *interest* is the interest rate and *period* is the period over which you will make the payments.

For example, if your principal is a mortgage of \$30,000 at an interest rate of 13% over 25 years, calculate the amount per annum as follows:

```
@pmt(30000,13%,25)
```

Uniplex calculates the amount as \$4092.777828 (\$341 per month).

Calculate the Present Value of a Series of Regular Payments (pv)

You use the *pv* function to calculate the present value of an ordinary annuity, given a payment per period, an interest rate and the number of periods.

An ordinary annuity is a series of payments made at regular intervals. Present value is the value today of payments you make or receive later, discounted at a given interest or discount rate.



Spreadsheet Functions

By calculating the present value of an ordinary annuity, you can compare different investment opportunities or potential obligations while taking into account the time value of the money. To use this function:

@pv(amount,rate,periods)

where *amount* is the total amount of the ordinary annuity, *rate* is the interest or discount rate and *periods* is the number of regular payments.

For example, to find the present value of \$4,093 paid annually with 13% interest over 25 years, enter:

@pv(4093,13%,25)

Uniplex calculates that this is worth \$30,001.628517 today.

Calculate the Future Value of a Single Payment Investment (sfv)

You use the *sfv* function to calculate the future value of a single payment investment at a given interest rate and a given period. To use this function:

@sfv(amount,rate,period)

where *amount* is the amount invested, *rate* is the interest rate and *period* is the period over which the money will be invested.

For example, to calculate how much \$1,000 invested at an annual rate of 10% is worth after two years, enter:

@sfv(1000,10%,2) Uniplex calculates it will be worth \$1,210.



Spreadsheet Functions

Calculate the Depreciation Rate (*rate*)

You use the *rate* function to calculate the depreciation rate, with a given initial value, final value and period. To use this function:

@rate(*start_amount*, *final_amount*, *period*)

where *start_amount* is the initial value, *final_amount* is the value at the end of the period and *period* is the period over which the depreciation has taken place.

For example, to calculate the depreciation on a piece of equipment costing \$1,000 two years ago, that was sold today for \$810, enter:

@rate(1000,810,2)

Uniplex calculates that the depreciation rate is 10% (-0.1).

◇ String Manipulation Functions

Uniplex has the following functions for manipulating text:

- o **cmp** (compare two text strings)
- o **len** (find the length of a text string)
- o **str** (convert a number to a text string)
- o **fix** (convert number to a string with a specific number of decimal places)
- o **mid** (extract one text string from another)
- o **val** (convert a text string to a number)
- o **lit** (return a cell address as a string)

Compare Two Text Strings (**cmp**)

Compare two text strings as follows:

@cmp(*str_expr1*,*str_expr2*)

where *str_expr1* returns the first text string and *str_expr2* returns the second text string.

Uniplex returns TRUE (1) if the comparison matches up to the end of the first text string. Otherwise, Uniplex returns FALSE (0). For example, if you enter the following formula into a cell:

```
@cmp("Mar", "March")
```

Uniplex returns: 1



Spreadsheet Functions

If you enter the following formula into a cell:

```
@cmp("Mon", "March")
```

Uniplex returns: 0

When you compare two text strings, you can use the mathematical operator **&** to concatenate strings. See *Create Formulas* for more details.

Find the Length of a Text String (len)

Find the length of a text string as follows:

```
@len(str_expr)
```

str_expr must return a string.

For example, if you enter the following formulas in a cell, to find the number of characters in the surname Cartwright:

```
@len("Cartwright")
```

Uniplex returns: 10

Convert a Number to a Text String (str)

You can convert a number or numeric expression to a text string. Uniplex automatically rounds the number to two decimal places. You can use the resulting text string with other text string functions. Convert a number to a text string as follows:

```
@str(expr)
```

For example, if you enter the following formula in a cell:

```
@str(12)
```

Uniplex returns: 12.00



The result is always left justified in the cell and rounded up to two decimal places.

Convert a Number to a Text String with a Specific Number of Decimal Places (fix)

You can convert a number or numeric string to a text string and round it to the required number of decimal places as follows:

@fix(*expr*,*d_places*)

returns a text string, where *expr* is the numeric value to be converted into a text string, and *d_places* is the number of decimal places you require. For example, if you enter the following formula in a cell:

```
@fix(12,3)
```

Uniplex returns: 12.000

Extract One Text String from Another (mid)

Extract one text string from another as follows:

@mid(*str_expr*,*start_position*,*length*)

where *str_expr* returns a text string, *start_position* is the position to begin the extraction and *length* is the length of the string, for example:

The cell B1, contains an exam mark out of 100, (say 85). To extract the grade achieved:

```
@mid("FFEDDCBBA",B1/10+1,1)
```

In this case the grade would be B.



Spreadsheet Functions

Convert a Text String to a Number (val)

You can convert a text string to a number. This is particularly useful if, for example, you have serial or part numbers and wish to perform mathematical operations on them. Convert a text string to a number as follows:

@val(*str_expr*)

For example:

The cell A1 contains the text Jan 1986. To convert this to a number and increment it by 1:

```
@val(A1)+1
```

Uniplex returns: 1987

Return a Cell Address as a String

You can convert a cell address into a string as follows:

@lit(*cell*)

For example:

```
@lit(A1)
```

This is particularly useful when you use the **link()** function, since it allows a cell address in a string to be adjusted by the Move or Copy command.

For example:

```
link("get", lit(A2), "from sales_figs")
```

◇ Date Functions

Uniplex date functions are a useful way of converting dates to numbers. You can manipulate the numbers and perform calculations on dates. Special date functions are provided to convert numbers back into date form.

Convert Today's Date to a Number (TODAY)

You can convert today's date to an integer. This function returns the number of days from December 31, 1899 to the current date. To convert the date to a number, use:

@TODAY

For example, if the date is 11/18/98, The TODAY function returns 36116. You can format dates converted in this way into any of the Uniplex date formats. See *Format the Spreadsheet*.

Find the Day in the Month from a Number (day)

Calculate the day in the month from an integer number as follows:

@day(expr)

For example, if A1 contains 32464, and you enter the following formula in a cell:

@day(A1)

Uniplex returns: 18 (the 18th day of the month)



Spreadsheet Functions

Find the Month of the Year (month)

Calculate the month number from an integer as follows:

@month(*expr*)

For example, if A1 contains 32464, and you enter the following formula in a cell:

`@month(A1)`

Uniplex returns: 11 (the 11th month of the year)

Find the Current Year from a Number (year)

Calculate the year number from an integer as follows:

@year(*expr*)

For example, if A1 contains 32464, and you enter the following formula in a cell:

`@year(A1)`

Uniplex returns: 1988 (the year)

Convert the Year, Month, and Day to a Number (date)

You can convert the year, month and day to an integer number which is the total number of days from December 1899 to the current day, as follows:

@date(*yr_expr*,*month_expr*,*day_expr*)

yr_expr should return the year, *month_expr* should return the month and *day_expr* the day.

For example, if you enter the following formula in a cell:

```
@date(1998,11,26)
```

When you calculate the spreadsheet, Uniplex returns: 32472

Find the Number of Days in a Month (day_mon)

Find the number of days in a month as follows:

```
@day_mon(expr)
```

For example, if A1 contains 32464 and you enter the following formula in a cell:

```
@day_mon(A1)
```

Uniplex returns: 30 (30 days in the month)

It is useful to use the function to find the same day of the month for a series of months. For example:

If A1 contains TODAY, you can copy the following formula to a series of cells to find the same day of the month for a series of months:

```
A1 + day_mon(A1)
```

Calculate Using Dates

You can make addition and subtraction calculations with dates. For example, you can add 28 days to a date, subtract 3 months or add 3 years. To do this you use the **date_math** function in the following syntax:

```
@date_math(date!cell,n,x)
```



Spreadsheet Functions

where:

date!cell is either a **date**, entered using the Uniplex standard date format (MM/DD/YY) or a **cell** address containing a date.

n is the figure to add or subtract. If you add a figure it should be positive, for example **2** and if you subtract a figure it should be negative, for example **-2**.

x a number specifying whether you are making the calculation on the days(**1**), the months(**2**) or the years(**3**).

For example to subtract three months from the American format date 01/21/89 the entry would be:

@date_math(01/21/89,-3,2)

If this date was contained in the cell A3, the entry would be:

@date_math(A3,-3,2)

In both cases the function would return the answer:

10/21/88

or its equivalent, depending on the date format you are using. If the result of the function is an invalid date, for example April 31, the result is automatically adjusted, to the last valid date in the month. For example if you add one month to March 31 the result will be the April 30, not April 31.

This does not work in reverse; dates are not extended to be the last date of the month.

◇ Logical Functions

The spreadsheet analyzes logical functions as either being true or false. If a logical statement is true, Uniplex returns a value of 1, if a logical statement is false, Uniplex returns a value of 0.

Logical functions are useful because they let you build tests into cells. The primary logical function is IF.

In addition, Uniplex provides the following conditional functions:

- o **TRUE** (truth value 1)
- o **FALSE** (false value 0)
- o **NOT** (logical NOT function)
- o **AND** (logical AND function)
- o **OR** (logical OR function)
- o **empty** (test whether cell is empty)
- o **datacell** (test whether cell contains numeric data)
- o **textcell** (test whether cell contains text)
- o **defcell** (test whether cell contains formulas)

The next section describes how to create a conditional formula, the following sections describe the above conditional functions.



Spreadsheet Functions

Create a Conditional Formula

As well as the other logical functions, you use the IF function to create conditional formulas. You can use the following logical operators with the IF function:

Operator	Meaning
==	Equal To
<	Less Than
>	Greater Than
!=	Not Equal
>=	Greater Than or Equal To
<=	Less Than or Equal To

To create a conditional formula:

@if(*expr,value1,value2*) or **@if(*expr,value1,value2,value3*)**

where *expr* must be a logical statement. It can incorporate logical operators. *Value1*, *value2* and *value3* can be any expression.

The first form of the function returns *value1* if the *expr* is greater than 0, *value2* if the *expr* is less than or equal to 0.

The second form of the function will return *value1* if the *expr* is greater than 0, *value2* if the *expr* is equal to 0 and *value3* if the *expr* is less than 0. For example:

```
if(A1, "PROFIT", "NO CHANGE", "LOSS")
```

Set Up True and False Conditions (TRUE and FALSE)

The TRUE and FALSE functions let you explicitly define whether Uniplex returns the truth value 1 or the false value 0. They are useful for testing logical values when creating complicated conditional functions. To return the truth value 1:

@TRUE

To return the false value 0:

@FALSE

Use Logical NOT (NOT)

The NOT function returns the truth value 1 if the expression is false, and the false value 0 if the expression is true:

@NOT(*expr*)

where *expr* can be any expression. For example:

```
@NOT(SUM(A1:5)>10)
```

Use Logical OR (OR)

You can make a series of tests using the OR logical function. If you use the OR function by itself, Uniplex returns true (1) if any of the tests are true, and false (0) if all of the tests are false. You can use the logical OR function in conjunction with other logical functions to create more complex formulas:

@OR(*expr1*,*expr2*)

For example:

```
@OR(5>4,3>2) OR @OR(5<4,3>2)
```

Uniplex returns 1 in both cases.



Spreadsheet Functions

`@OR(5<4,3<2)`

Uniplex returns 0

Use Logical AND (AND)

You can make a series of tests using the AND logical function. If you use the AND function by itself, Uniplex returns true (1) if all of the tests are true, and false (0) if any of the tests are false. You can use the logical AND function in conjunction with other logical functions to create more complex formulas:

`@AND(expr1,expr2)`

For example:

`@AND(5>4,3>2)`

Uniplex returns 1

`@AND(5<4,3>2)`

Uniplex returns 0

`@AND(5>4,3>2)`

Uniplex returns 1

`@if(AND(C20>C21,G20>G21), "Success", "Failure")`

Using the data in the spreadsheet in the *Worked Example* section of this chapter, Uniplex returns *Success*.

Analyze the Contents of a Cell

There are several spreadsheet functions to analyze the contents of a cell. Depending on whether the test is true or false, Uniplex returns 1 or 0.



You can test whether a cell:

- o Is Empty
- o Contains Data
- o Contains Text
- o Contains a Formula

It is useful to test the cell contents when you are creating macros.

- o To test whether a cell is empty:

@empty(*cell*)

Uniplex tests whether the cell is empty. If it is, Uniplex returns true (1). If it is not, Uniplex returns false (0).

where *cell* is the cell address, for example:

```
@if(empty(E1), "EMPTY", "FULL")
```

- o To test whether a cell contains numeric data:

@datacell(*cell*)

where *cell* is the cell address, for example:

```
@datacell(F44)
```

Uniplex tests whether the cell contains numeric data. If it does, Uniplex returns true (1), if it does not Uniplex returns false (0).



Spreadsheet Functions

- o To test whether a cell contains text, enter:

@textcell(*cell*)

where *cell* is the cell address, for example:

@textcell(Q35)

Uniplex tests whether the cell contains text. If it does, Uniplex returns TRUE (1), if it does not, Uniplex returns FALSE (0).

- o To test whether a cell contains a formula, enter:

@defcell(*cell*)

where *cell* is the cell address, for example:

@defcell(rate)

Uniplex tests whether the cell contains a formula. If it does, Uniplex returns TRUE (1), if it does not, Uniplex returns FALSE (0).

◇ Trigonometric Functions

Uniplex has a complete set of trigonometric functions for solving engineering problems:

- o **@Pi**. Find the Pi constant 3.141593....
- o **@cos(*expr*)**. Find the cosine of an expression.
- o **@sin(*expr*)**. Find the sine of an expression.
- o **@tan(*expr*)**. Find the tangent of an expression.
- o **@acos(*expr*)**. Find the arc cosine of an expression.
- o **@asin(*expr*)**. Find the arc sine of an expression.
- o **@atan(*expr*)**. Find the arc tangent of an expression.
- o **atan2(*expr1*, *expr2*)**. Find the four quadrant arc tangent of two expressions.
- o **@deg(*expr*)**. Convert radians to degrees.
- o **@rad(*expr*)**. Convert degrees to radians.



Spreadsheet Functions



External Functions

Uniplex has a set of external functions for accessing and manipulating information from other Uniplex or operating system applications. The advantages of these functions are:

- o You can link together related spreadsheets. For example, you can get sales totals from a saved spreadsheet and add them into your current spreadsheet.
- o You can link a graph and its related data table so that when you change values in the data table, Uniplex automatically redraws the graph.

External functions take time to calculate. Normally, every time you calculate the spreadsheet all functions and formulas are recalculated. Uniplex has a oneshot facility used to prevent external functions from being continually and unnecessarily recalculated.

If the oneshot command is used, only those functions without a value are calculated, thereby saving valuable time. See *Calculate the Spreadsheet* for more information on how to use this calculation mode.

The spreadsheet provides the following external functions:

- o **link** (link spreadsheets)
- o **graph** (link graphs and their associated data)

Link Spreadsheets (link)

You can link information from saved spreadsheets, saved word processor documents and the default clipboard, into the current spreadsheet. This is similar to getting data from other spreadsheets using spreadsheet commands (as described in *Copy and Move Data and Formulas*). However, when you embed the function within a spreadsheet to get data, Uniplex gets the data each time you calculate the function. This is useful because:

- o If the spreadsheet, word processor document, or clipboard from where you are getting the data is itself being updated, you make sure you are always using the most up-to-date figures.
- o It is a convenient method of quickly including data from other sources.

To link spreadsheets:

@link("data source command")

where *data source command* can be one of the following:

- | | |
|-------------------------------|---|
| get [area] from name | to link data from a saved spreadsheet. Where <i>name</i> is the name of the spreadsheet you want to get data from. |
| input [area] from name | to link data from a saved word processor document. Where <i>name</i> is the name of the document you want to input data from. |
| paste [area] | to link data from the default clipboard. |



Spreadsheet Functions

where *area* can be one of the following:

all	the entire spreadsheet
<i>column</i>	the specified column(s). For example: A OR A..E
<i>row</i>	the specified row(s). For example: 40 OR 40..65
<i>range</i>	the specified range. For example: A1..T20

For example, if you use **link** in conjunction with the **get** command, Uniplex places the results of the get at the current cell location.

For example, a saved spreadsheet (jan.sales) contains January sales figures in the range A1..J1

To place those figures in the current spreadsheet starting at the cell containing the formula, enter:

```
@link("get A1..J1 from jan.sales")
```

You can link a single cell in a similar way. The current spreadsheet is a summary of the year's sales figures. Cell A20 will contain the result of January sales. At present this figure is stored in a spreadsheet called jan.sales in cell I30.

To place the figure in the current spreadsheet, enter:

```
@link("get I30 from jan.sales")
```



Link Graphs and their Associated Data Areas

You can link a graph and its associated data table. Using this function ensures that if values in the data table are changed, when the spreadsheet is recalculated the graph is always automatically updated to reflect the changes in the data table.

To link a graph and its data table:

- 1 Move the cell pointer to the cell where you originally gave the graph command.
- 2 Enter:

@graph

Uniplex will assign a unique number to the graph and link it to the relevant data area.



Spreadsheet Functions

◇ Special Functions

Uniplex provides the following set of special functions:

- o **ROW** (find the current row number)
- o **COL** (find the current column number)
- o **lookup** (find related data from two areas)
- o **rnd** (round a value to specified decimal places)
- o **rand** (return a random integer)
- o **srnd** (return a random, seeding the random number)
- o **rpt** (produce line representation of an expression)
- o **self** (allow a cell to reference itself)
- o **choose** (select values from an expression)
- o **index** (provide indexed reference to cell)
- o **NA** (value not yet available)
- o **isna()** (trap non-available values in formulas)
- o **ERR** (force a cell to have an error value)
- o **iserr()** (trap error values in formulas)



Find the Row and Column Numbers (ROW,COL)

Find the current row number as follows:

@ROW

Find the current column number as follows:

@COL

Find Related Data from Two Areas (lookup)

You can find a value from one area and return the value from the corresponding position in the second area. If the lookup is numeric, Uniplex finds the greatest value less than or equal to the lookup value. If the lookup is for a string, Uniplex matches the first three characters of the strings.

To find related data from two areas:

@lookup(*expr*,*area1*,*area2*)

where *expr* can be any expression, *area1* and *area2* are the two areas to search.

Enter the lookup formula in D4 to find Smith's salary where column A is names and column B is salaries:

UNIPLEX @lookup("Smith",A1..A6,B1..B6)		CALC nat D4			
	A	B	C	D	E
1	James	20000			
2	Jones	35000			
3	Harris	23000			
4	Stevenson	15000		[28000]	
5	Smith	28000			
6	Stuart	17500			
7					
8					

Spreadsheet Functions

To find who earns the maximum salary you enter the formula in D4:

UNIPLEX @lookup(max(B1..3),B1..B6,A1..A6) CALC nat D4					
	A	B	C	D	E
1	James	20000			
2	Jones	35000			
3	Harris	23000			
4	Stevenson	15000		[Jones]	
5	Smith	28000			
6	Stuart	17500			
7					
8					

Round Values to a Specified Number of Decimal Places (rnd)

You can round a value to a set number of decimal places as follows:

@rnd(*expr*, *places*)

where *expr* is any expression and *places* is the number of decimal places.

For example:

@rnd(1.2363,2)

returns the result 1.24

This function is also useful for rounding to the nearest hundred or thousand. For example:

@rnd(13874,-2)

returns the result 13900



Produce Random Integers

You can return a random integer. To use this function:

@rand(*integer*)

where *integer* is the value + 1 of the maximum value you want. That is, Uniplex will return an integer between 0 and the value - 1.

For example:

@rand(10)

returns a value in the range 0-9 inclusive.

If you use the rand function repeatedly within the same spreadsheet, and want to ensure that the integers are truly random, use the srand function before each rand call.

srand bases the value it returns on the system clock. Since the times you call srand change, so will the value it returns change. rand uses the value returned by srand as the basis for the value it returns.

To use the srand function:

@srand(*integer*)

Make sure you enter the srand function in a cell that will be calculated before the cell containing the rand function.

Produce a Line Representation of an Expression (rpt)

The *rpt* function lets you represent data as a horizontal line of characters. To use this function:

@rpt("character",*expr*)



Spreadsheet Functions

Where *character* is the character you want to use and where *expr* is the expression you wanted represented. If you omit the character, the default character hash (#) is used. For example:

```
@rpt(sum(A1..6))
```

represents the sum of the contents of the cells in column A, rows 1 to 6, as a line of hashes.

```
@rpt(" ",sum(A1..6))
```

represents the sum of the contents of the cells in column A, rows 1 to 6 as a line of asterisks.

Allow a Cell to Reference Itself (self)

Normally the spreadsheet does not allow you to enter formulas which reference themselves. The *self* function can be used to allow a cell to reference itself as follows:

@self(*expr*) For example:

```
@self(A1+1)
```

This will increment A1 by 1 each time it is calculated.

Select Values from an Expression (choose)

@choose(*value,expr*)

where *value* is the positional value you require from the expression. The first value in the expression is numbered zero. For example:

```
@choose(A1, B1..B10)
```

Provide an Indexed Reference to a Cell (index)

You use the *index* function to provide an indexed reference to any cell. This is useful for expressing the relationship between data in two tables, where there is no true mathematical relationship.

To index reference a cell:

@index(*cell,expr1,expr2*)

where *cell* is a spreadsheet cell, *expr1* is the row offset to this cell and *expr2* is the column offset from this cell.

Calculate an Incomplete Spreadsheet (NA and isna)

You can use special functions which let you perform an initial calculation on a spreadsheet that you know is incomplete. For example, you want to calculate the total sales for the year, but the December totals from one of your branches are not yet available.

The **NA** function lets you enter a special numeric value in a cell where the real value is not yet available. If the cell is referenced in a formula, the value NA is returned whatever the other values.

You can test to see if a cell contains the value NA using the **isna** function. This enables you to calculate a formula which includes an NA value. For example:

```
@if(@isna(D4),100,sum(D1..D4))
```

This enables you to substitute an estimated figure, or a null value for the unavailable figure, and complete the calculation of the formula.

Error Values (ERR and iserr)

You can force an error value in a cell, and also trap error values when you are making calculations which include a cell which has an error value.



Spreadsheet Functions

Use the **ERR** function to force a cell to have the value ERR. If this cell is referenced in a formula, the value ERR is returned.

This function is particularly useful when you are entering conditional statements. For example:

```
if(C12 > 45000, @ERR, C12)
```

If the result of the formula in C12 is greater than 45000, Uniplex gives the cell the value of ERR. Otherwise, the value of C12 is returned.

Normally, if a cell referenced in a formula has a value of ERR, the formula cannot be calculated. You can use the **iserr** function to trap cells with a value of ERR, giving them a substitute, or a null value. For example:

```
@if(@iserr(A1..A10),0,sum(A1..10))
```

returns zero if there is an error in the range being summed, otherwise returns the sum.

◆ Use Different File Formats

You can use data originally prepared in a variety of different formats and transfer it to the Uniplex spreadsheet. Uniplex can convert data prepared in the following formats:

- o ASCII Text
- o Lotus 1-2-3 Format (Version 2)
- o DIF File Format (Visicalc Data Interchange Format)

In addition, you can convert Uniplex data into the following file formats:

- o ASCII Text
- o DIF File Format

To convert data to Uniplex format:

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following options:

File
Import

Uniplex displays the **Import** menu.

Ascii 123 DIF

- 3 Pick and point the option that meets your requirements.

Uniplex prompts for the name of the file you want to convert.



Use Different File Formats

- 4 Enter the name of the file to convert and press RETURN.

Uniplex converts the file and reads it into the current spreadsheet.

To convert Uniplex spreadsheets to other formats:

- 1 Press */*.

Uniplex displays the command menu.

- 2 Pick and point the following options:

File
Export

Uniplex displays the **E**xport menu.

Ascii **D**IF

- 3 Pick and point the option that meets your requirements.

Uniplex prompts for the filename you want to convert.

- 4 Enter the name of the file to convert and press RETURN.

◆ Emulate Other Spreadsheets

Special commands are used to invoke the spreadsheet with a different *personality* so that its interface becomes similar to other spreadsheets. This is useful if you are familiar with a different spreadsheet package. To invoke a different personality:

- 1 Press *I*. Uniplex displays the command menu.
- 2 Pick and point the following options:

Worksheet
Modes
Interface

Uniplex displays the Interface options:

```
Uniplex issi R1C1 A1
```

- 3 Pick and point the option of your choice:

Option	What It Does
Uniplex	Uniplex Interface. Cell addresses are <i>r1c1</i> style and commands are entered on a command line.
issi	Industry Standard Interface. Cell addresses are <i>A1</i> style and commands are picked from ring menus.
R1C1	Cell addresses are <i>r1c1</i> style and commands are picked from ring menus.
A1	Cell addresses are <i>A1</i> style and commands are picked from ring menus. This option is provided for consistency. It is the same as the <i>issi</i> option.



Use Macros

◆ Use Macros

A macro is a stored series of commands. For example, when you save the commands to build a spreadsheet, this is a simple macro.

In Uniplex there are several ways to create macros. Key Tapes is one method that lets you record a sequence of commands and then play it back as often as you need. This saves time and effort but will only playback exactly the commands you recorded.

A spreadsheet macro is more powerful than a Key Tape because it allows control logic and loop commands, like a simple programming language.

Uniplex spreadsheet macros use the original command language. A summary of this language appears in *Text Commands*. These commands can be entered directly from the keyboard by pressing ; to enter DIRECT mode. An example of a direct command:

```
;f a10..d10 $ bold dec 0
```

This command will format the range of cells A10..D10 in bold print effect with a leading dollar sign and zero decimal places.

Macros can be a convenient method of executing commands because:

- o Macros can perform repetitive tasks such as having to enter the same text often in a spreadsheet.
- o A single macro can execute a series of tasks, for example, generate a standard format and layout for a spreadsheet prior to printing.
- o Macros can make more advanced spreadsheet features available to less experienced users.
- o A complex macro can be run by just two keystrokes.

Macros can be divided into two types:

- o A stored command, (or series of commands). For example, assign a title or format an entire spreadsheet.
- o A stored command, (or series of commands) that is dependent on the results of logical tests performed by the macro. For example, format values in bold only if they are minus numbers.

The following sections explain how to use macros:

- o **Create a Macro.** This section describes the different ways you can create a macro.
- o **Construct a Macro.** This section describes the different components of a macro.
- o **Macro Commands.** This section lists the commands that you can use within macros.
- o **Name a Macro.** This section explains how to name a macro so that it can later be executed by two keystrokes.
- o **Execute a Macro.** This section describes the different ways to execute a macro.
- o **Example Macros.** This section contains a set of example macros and explains their construction and function.

◇ Create a Macro

You can create a macro using any of the commands described in *Macro Commands* plus any logical combination of spreadsheet commands, functions and operators. Instead of using the command menus to make spreadsheet commands, you type in commands on the command line. A complete list of the commands you can use is contained in *Text Commands*.



Use Macros

You can create a macro in one of these ways:

- o Enter the macro into a spreadsheet cell or series of cells.
- o Create the macro in a word processing document. You specify this document when you want to execute the macro.

◇ Construct a Macro

You can build macros that are a series of commands to be executed or you can build macros that are dependent on results of logical tests performed by the macro.

If you want to build macros that depend on results of logical tests, you use the single line *if* command as follows:

(if_expr) command

If the expression is TRUE then the command is executed, otherwise the command is skipped.

If there is no command following *(if_expr)*, a multiple line command is assumed and control passes down to the next line. This permits several commands to be executed as a result of one test. The end of the expression is indicated by *endif*, as follows:

```
(if_expr)
command
command
command
endif
```

The *(if_expr)* mechanism only allows numeric comparisons. To perform string comparisons you must use the *CMP* function in the *(if_expr)*. For example:

```
("a" == "a")           Incorrect
(cmp("a", "a"))      Correct
```

- ✎ *There is no limit on the number of commands to be executed within one (if_expr). However, you cannot nest ifs within one another.*

You can use an optional syntax with (if_expr). The *else* keyword enables you to specify an alternative series of commands to execute, as follows:

```
(if_expr)
command1
command2
command3
else
command4
command5
command6
endif
```

If (if_expr) is true commands 1 - 3 are executed, 4 - 6 are skipped.

If (if_expr) is false commands 1 - 3 are skipped, 4 - 6 are executed.

To add more control to the processing of macros, the *goto* command can be used in conjunction with the (#) comment line to create loops within macros. A loop label starts with a # character, the second character must be alphabetic, otherwise it will be interpreted as a number. A loop label must appear on a line by itself.

A more efficient method to implement simple loops is available by using the repeat command - *rp*.

Macros can be entered into spreadsheet cells one under another. The sequence will be processed until an empty cell, or a cell containing anything other than text, is encountered; then the macro will terminate.



Use Macros

◇ Macro Commands

The following table shows commands you can include in a macro.

Command	Function
<i>command</i>	Any spreadsheet command. For example copy, move, format.
<i>function</i>	Any spreadsheet function. For example, sum, pi, npv.
<i>operator</i>	Any mathematical or logical operator. For example, >=, <=.
if	The logical if command.
else	The logical else command.
endif	The logical endif command.
goto	The goto command.
<i>(If expr)</i>	A condition for a conditional macro.
exit	Exit the macro and return to keyboard control.
rp	Returns to the start of the line and repeats.
{} {CR} {r}	Carriage return.
{U}	Cursor up.
{D}	Cursor down.
{R}	Cursor right.



Command	Function
{L}	Cursor left.
{ROW}	Current row.
{COL}	Current column.
{n}	Equivalent to an Fn command in uniplex.cmd which may be mapped in ucdefs.
{cell}	Returns contents of location.
{@}	Returns contents of current cell.
@	Current cell.
{name}	Returns contents of named cell.
{@U}	Value in the cell above.
{@D}	Value in the cell below.
{@R}	Value in the cell to the right.
{@L}	Value in the cell to the left.
{KB}	Return to keyboard.
{LR}	Substitutes the last range used.
{LP}	Substitutes the last point used.
{FC}	Flush generic command.
{NC}	No confirm, no "*" confirm for next erase or delete or quit command.
{MSG n}	Display message number <i>n</i> from ucalc.msg.

Use Macros

Command	Function
{PRM <i>n</i>}	Displays message number <i>n</i> from ucalc.msg then puts prompt onto the command line ready for {INP} to follow.
{K1}	Accept 1 keystroke before returning to macro.
{MR}	Max row used in current worksheet.
{MC}	Max col used in current row.
{WF}	Current workfile name.
{INP}	Reads user input and substitutes it into the command.
{RNG}	Allows an issi type range entry, highlighting the range area. Start with single cell. For example: A1.
{RNG .}	Range entry. Start with range. For example: A1..A1.
{PNT}	Allows issi type cell entry.
{PNT X}	Allow cell pointer to be moved but don't insert address into command.
{INT}	Reads user input of integer.
{INT <i>n</i>}	Read int, start with value <i>n</i> .
{NUM}	Read user input of a decimal number.
{NUM <i>n</i>}	Read decimal, start with value <i>n</i> .

Command	Function
{SK}	Continue to read characters from the softkeys input stream. Used mainly in the softkey file <code>issi.fn</code> .
{SK #MENU}	Call softkey menu <code>#MENU</code> .
{SK action}	Execute the softkey macro <code>action</code> .
{G}	Drives the expand graph call.

✎ *Macros cannot be nested. If a macro calls a use file, then when the use file ends, control is passed to the keyboard and does not return to the macro. If a macro runs an internal macro (one in the MAPS section of `ucdefs`), afterwards control returns to the keyboard and not to the macro.*

◇ Name a Macro

A macro that resides in the current spreadsheet may be given a special single character name. The name may then be used in conjunction with `F7=MACRO` to run the macro.

It is a good idea to load frequently used macros into named cells outside the normal printing area of your spreadsheet. To name a macro:

1 Move to the cell you want to name, this is the cell containing the first command of the macro.

2 Press `/`. Uniplex displays the command menu.

3 Pick and point

Name

4 Pick and point



Use Macros

Range

Press RETURN to enter the current cell as the range you wish to name. Enter \ or : followed by a single character as the macro name. For example if your macro moves cells you can call it **m** for move.

Enter: **\m**

This creates a named cell, the \ signifies that the name is a name for a macro. Macro names are case dependent so you may create up to 52 named macros. You can press F2=NAMEs to view the names of your macros, all macro names start with a colon (:).

◇ Execute a Macro

You can use a macro you have created in one of two ways:

o From a Word Processor Document

You create the macro by entering it directly into a Word Processor document.

To execute a macro in a Word Processor document:

- 1 Press **/**.
- 2 Pick and point the following options:

File
Use

- 3 Enter the name of the document containing the macro.

o Run a Named Macro

See *Name a Macro* for how to give a macro a one character name.

To execute a named macro in the current spreadsheet:

- 1 Move the cursor to the cell where you want to start to run the macro.
- 2 Press F7=MACRO
- 3 Press the single letter name of the macro you want to execute.

o Run an Unnamed Macro

You can run an unnamed macro by using a direct command and giving the cell address of the first command in the macro:

- o `;macro cell`

where *cell* is the cell containing the first command of the macro.

◇ Example Macros

Example 1

This macro copies cells with minus values, one cell to the left. The spreadsheet initially appears as follows:

	A	B	C	D	E
1				23.00	
2				-56.00	
3				555.00	
4				77.00	
5				-567.00	
6					

The macro command is: `(empty(@))exit{}(@<0)move @>{@L}{}{D}rp`

Use Macros

The result is:

	A	B	C	D	E
1				23.00	
2			-56.00		
3				555.00	
4				77.00	
5			-567.00		
6					

Macro

Explanation

(empty(@))exit{}

If the current cell is empty then the macro will terminate.

(@<0)

This tests whether the current cell is less than 0.

move @>{@L}{}

If the value in the current cell is less than 0, it is moved one cell to the left. {} is used to indicate RETURN.

{D}rp

{D} is cursor down; the entire macro is repeated for the next cell.

Example 2

This macro moves cells with minus values one cell to the left. It performs the same function as the previous example, but shows the use of multiple lines and the goto command.

The macro command is:

```
#LOOP
(@<0)move @>{@L}
DOWN
(NOT(empty(@)))goto LOOP
```

The result is:

	A	B	C	D	E
1				23.00	
2			-56.00		
3				555.00	
4				77.00	
5			-567.00		
6					

Macro	Explanation
#LOOP	A comment line with label LOOP.
(@<0) move @ > {@L}	The current cell is tested; if it is < 0 it is moved one cell to the left.
DOWN	Moves the cursor down one cell.
(NOT(empty(@)))	The current cell is tested, if true is returned, the macro will terminate. If false is returned, control passes to the second part of the (If_expr).
goto LOOP	Instructs Uniplex to return to #LOOP and restart execution.

Example 3

This macro formats negative values in bold print effect. (The spreadsheet is exactly the same as in the previous example.)

The macro command is:

```
{ROW}>5)exit{@<0)format @ bold}{D}rp
```

Use Macros

Macro	Explanation
<code>{ROW}>5)exit{}</code>	When the cursor reaches row 6 the macro will terminate.
<code>(@<0)</code>	If the value in the current cell is < 0.
<code>format @ bold{}</code>	It is formatted in bold effect.
<code>{D}rp</code>	{D} is cursor down, the entire macro is repeated for the next cell.

Example 4

This macro will count up to 20 in the current cell, and index down column B by its own value, entering twice its value into the indexed cell.

```
(@>=20)exit{ }data B{@}=@*2{ }1+@{ }rp
```

Macro	Explanation
<code>(@>=20)exit{}</code>	If the current cell is greater than or equal to 20 the macro terminates, else:
<code>data B{@}=@*2{}</code>	When the current cell contains 3 the value 6 will be put into cell B3.
<code>1+@{ }rp</code>	1 is added to the value in the current cell and the macro is repeated.

Example 5

This macro will generate a Fibonacci sequence down a column. The spreadsheet appears as follows:

	A	B	C	D	E	F
1					1.00	
2					[1.00]	
3						

The macro command is:

```
data {@D}={@U}+@{D}(@<150)rp
```

The result is:

	A	B	C	D	E	F
1					1.00	
2					1.00	
3					2.00	
4					3.00	
5					5.00	
6					8.00	
7					13.00	
8					21.00	
9					34.00	
10					55.00	
11					89.00	
12					144.00	
13					[233.00]	

Macro**Explanation**

a {@D}={@U}+@{D}

The cell below is equal to the cell above + the current cell. {} indicates RETURN, {D} indicates cursor down, only if ...

(@<150)rp

The current cell is < 150.



Text Commands

◆ Text Commands

The Spreadsheet has a set of text commands you can use instead of the command menus. You can use these text commands in the following situations:

- o When you use macros.
- o If you want to build a use file.
- o If you want to use the Ucalc spreadsheet interface.

This section lists the commands you can use. Italicized words represent variables in this section.

Word	Meaning
<i>cell</i>	A single cell in current addressing mode. For example: A1 or r1c1
<i>range</i>	A range in current addressing mode. For example: A1..A10 or c1r1:10
<i>row</i>	A row in the current addressing mode. For example: 1 or r1
<i>col</i>	A column in the current addressing mode. For example: A or c1
<i>n</i>	A number. For example: 10
<i>expr</i>	An expression. For example: 1+2*3

- ↘ *The first word of a command is the keyword. It must be followed by a space. The keyword may often be shortened. For example, title may be shortened to t.*

◇ **Move the Cursor**

Task	Command
Move Cursor Up	UP <i>n</i>
Move Cursor Down	DOWN <i>n</i>
Move Cursor Left	LEFT <i>n</i>
Move Cursor Right	RIGHT <i>n</i>
Move Cell Pointer to a New Cell	w <i>cell</i>

◇ **Enter Text**

Task	Command
Enter First Line of Title	t hdr1= <i>title</i>
Enter Second Line of Title	t hdr2= <i>title</i>
Enter Column Title	t col= <i>title</i> or t col, <i>title</i>
Enter Row Title	t row= <i>title</i> or t row, <i>title</i>
Change Row Title Width	cw title <i>n</i>
Turn Column Titles On/Off	t on:off
Turn Headers On/Off	hdr on:off

◇ **Enter Numbers**

Task	Command
Enter Numbers	d cell = <i>n</i>
Enter Calculation Results in Current Cell	<i>expr</i>
Enter Calculation Results in Other Cell	d cell = <i>expr</i>
Fill Range with Data	d range = start, increment

◇ **Create Formulas**

Task	Command
Enter Formula in Current Cell	= <i>expr</i>
Enter Formula in Other Cell	def cell = <i>expr</i>



Text Commands◇ **Calculate**

Task	Command
Calculate On for Whole Spreadsheet	c on
Calculate Off for Whole Spreadsheet	c off
Calculate in Natural Order	c
Calculate Row-wise	c row
Calculate Column-wise	c col
Set Order Back to Natural	c natural
Calculate Individual Cell	c <i>cell</i>
Calculate Particular Area	c <i>range</i>
Set Automatic Calculation for Particular Area	c <i>range</i> on
Turn Off Automatic Calculation	c <i>range</i> off
Calculate Whole Spreadsheet	c all
Calculate External Functions only when Cell is Empty	c oneshot

◇ **Move between Windows**

Task	Command
Move to Top Left Cell	w
Move to a Particular Cell	w <i>cell</i>
Move Windowful Left	wl
Move Windowful Right	wr
Move Windowful Up	wu
Move Windowful Down	wd
Move to Particular Window	wn
Link Current Window to Window	w link <i>n</i>
Unlink Window <i>n</i>	w unlink <i>n</i>

◇ **Format**

Task	Command
Set Display Format for Individual Cell	<i>f cell format</i>
Set Display Format for a Range of Cells	<i>f range format</i>
Set Display Format for the Whole Spreadsheet	<i>f all format</i>
Remove Formats	<i>f range off</i>
Remove Fixed Decimal	<i>f range dec</i>
Remove all Except Fixed	<i>f range</i>
Set Default Format for all Newly Created Cells	<i>f format</i>

◇ **Display Formats**

Format	Command
Number of Decimal Places	<i>dec n</i>
Integer Only	<i>int</i>
Bold Effect	<i>bold</i>
Doublestrike Effect	<i>double</i>
Underscore Effect	<i>underscore</i>
Underscore Text Effect	<i>ustext</i>
Italic Text Effect	<i>italic</i>
Leading \$	<i>\$</i>
Leading £	<i>£</i>
Trailing Percentage	<i>%</i>
Center Value	<i>center</i>
Left Justify Value	<i>left</i>
Right Justify Value	<i>right</i>
Display in Exponential	<i>sci</i>
Commas as Thousand Markers	<i>,</i>
User Defined Format from Spreadsheet Configuration	<i>n</i>

**Text Commands**◇ **Date Formats**

Task	Command
Change Format of Dates to Another Format	<i>f range datefmt n</i>
Change Format of Dates to Default Format	<i>f range datefmt</i>

◇ **Column Widths**

Task	Command
Change Column Width	<i>cw col n</i>
Change Width for Range of Columns	<i>cw col col n</i>
Change All Column Widths	<i>cw all n</i>
Change Default Column Width	<i>cw n</i>

◇ **Edit**

Task	Command
Edit Cell	<i>ed cell</i>
Edit Last Command	<i>\$\$</i>
Re-execute Last Command	<i>\$</i>
Insert Blank Row	<i>ins row</i>
Insert Blank Column	<i>ins col</i>
Delete a Row	<i>del row</i>
Delete a Row Range	<i>del row:row</i>
Delete a Column	<i>del col</i>
Delete a Column Range	<i>del col:col</i>
Erase Specified Range	<i>k range</i>
Enter Erase Mode	<i>k</i>
Leave Erase Mode	<i>ESC q</i>

◇ **Assign Names to Ranges**

Task	Command
Name a Cell	lab <i>cell</i> = <i>name</i>
Name a Column	lab <i>col</i> = <i>name</i>
Name a Row	lab <i>row</i> = <i>name</i>
Name a Range	lab <i>range</i> = <i>name</i>
Name a Macro	lab <i>cell</i> =: <i>c</i>
Remove a Name	unlab <i>name</i>
Display Current Names	tilde or F2

◇ **Protect the Contents of Cells**

Task	Command
Lock Contents of Cell or Cells	lock <i>range</i>
Lock Entire Worksheet	lock all
Unlock Contents of Cell or Cells	unlock <i>range</i>
Enable Protection	lock on
Disable Protection	lock off

◇ **Use Windows**

Task	Command
Split Screen Horizontally	sprow <i>row</i>
Split Screen Vertically	spcol <i>col</i>
Change Window	w <i>n</i>
Unsplit Two Windows	uns <i>n n</i>

◇ **Access a Database from the Spreadsheet**

Task	Command
Select Database for Use with Spreadsheet	db <i>database_name</i>
Paste Data from the Database	paste db " <i>SQL_statement</i> "

**Text Commands**◇ **Copy and Move**

Task	Command
Copy Values to Target Destination	<i>co range > range</i>
Move Values to Target Destination	<i>m range > cell</i>
Copy Row Title	<i>co title row > row</i>
Move Row Title	<i>m title row > row</i>
Cut Area to Clipboard	<i>cut range</i>
Paste Clipboard	<i>paste</i>
Paste from Clipboard into Range	<i>paste range</i>
Change Clipboard Number	<i>buf n</i>

◇ **Retrieve Stored Spreadsheets**

Task	Command
Retrieve Saved Spreadsheet	<i>get [range] [data] [rules] [+!-!h] from filename</i>
	data retrieves only the data
	rules retrieves data and formulas.
	+/- add to/subtract from data in the current spreadsheet.
	h honors the locks in the current spreadsheet
Rebuild a Spreadsheet Using the Commands Saved with list	<i>use filename</i>

◇ Save Spreadsheets

Task	Command
Save in Default Way	ESC e or save [<i>range</i>] [<i>data</i>] in filename data saves only data, not the results of calculations, or formats.
Save the Commands to Build a Spreadsheet	list [<i>range</i>] [<i>type</i>] in filename <i>type</i> can be: data (lists only numeric data and formats) rules (lists only formulas and for- mats) graph (lists only graph commands for all linked graphs and the current graph setting) dif (list in DIF format) template (list graph template)
Print the Spreadsheet to a Word Processing Document	print [<i>range</i>] [<i>format</i>] in <i>document_name</i> <i>format</i> can be: width <i>n</i> (set width of spreadsheet) length <i>n</i> (set length of spread- sheet) bar (print with underscores under column titles)



Text Commands

Task	Command
Print the Spreadsheet to a Word Processing Document (continued)	ruler (print with a word processing ruler) spacing <i>n</i> (line spacing) on/off <i>n</i> (set print flag) 5 compressed text 6 underlined headers 7 bold row/col titles 9 raw printout opt 1 <i>n</i> set left indent opt 2 <i>n</i> set header margin opt 3 reset print settings

To remember the current print format settings use **set** in place of **print**. A special filename **TMPFILE** can be used to print into a temporary file. The file name is exported into environment variable **Utmpfile**.

 **Graph Commands**

Task	Command
Set Graph Area	g [<i>range</i>] off
Graph an Area	g [<i>range</i>]
Set Data Grouping	g group [<i>r/c</i>]
Get Graph Type	g type <i>name</i>
Include Labels in Data	g lab [<i>r/c</i>]
Set Graph Display Length	g length <i>n</i>
Set Graph Display Width	g width <i>n</i>
Set Graph Display Area	g size <i>range</i>
Link Graph	= graph
Goto a Linked Graph	g <i>n</i>
Erase a Graph	g kill
Expand a Graph	g expand

◇ Miscellaneous Commands

Task	Command
Clear the Current Spreadsheet	new
Initialize Formula Cells with a Value	init <i>range</i> = <i>n</i>
Blank Formula Cells	init <i>range</i>
Set Rounding Precision for Calculations	pre <i>n</i>
Create a Ruler for Spreadsheet Files	ruler
Display Status Line Information	st
Turn Status Display of Cursor Position On/Off	cursor on/off
View Cell Details	view <i>cell</i>
View Spreadsheet Details	view opt[1]
View Filing Options	view opt2
Undo Last Operation/Command	undo
Set all Numeric Values to Zero	zero
Zero a Range	zero <i>range</i>
Execute Operating System Command	! <i>command</i>
Execute Operating System Command without Clearing the Screen	!! <i>command</i>
Process a Range with an Operating System Command	cut <i>range</i> ! " <i>command</i> "
Paste Results from a Unix Command	paste " <i>command</i> "
Use Comments in List Files	#
Change to issi Mode	#issi
Change to A1 Style Addressing	#A1
Change to r1c1 Style	#R1C1
Read Data from File	input from <i>filename</i>
Read Data into a Range	input <i>range</i> from <i>filename</i>
Prompt User for Input to Fill a Range	input <i>range</i>

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