VP SPREADSHEET

XEROX

VP Series Reference Library
Version 1.0

This publication could contain technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of this publication.

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1. VP Spreadsheet overview

The VP Spreadsheet software allows 6085 Professional Computer System and 8010 Information System users to create an electronic worksheet that facilitates the manipulation of tabular numerical data. With VP Spreadsheet software, users can easily create and manipulate data for reports such as budgets, sales forecasts, and financial statements.

Related information

The materials in the following paragraphs provide information related to the VP Spreadsheet application.

VP Series reference library

- Xerox ViewPoint
- VP Document Editor

VP Series training guides

- Xerox ViewPoint
- VP Document Editor
- VP Spreadsheet

Hardware/software requirements

The following are the hardware and software requirements for the VP Spreadsheet package:

- A 6085 Professional Computer System, or an 8010 Information System
- 768 KB of memory
- Xerox ViewPoint software
- NetCom, RemoteCom, or StandAlone software
- VP Document Editor software
- VP Spreadsheet software

Note: VP Document Editor software is required to transfer the contents of a spreadsheet to a table. VP Local Draft Printing software is required if you wish to print the contents of a spreadsheet on a local printer. VP NetCom or RemoteCom software is required if you wish to print on a remote printer.

VP Spreadsheet software and all prerequisite software must be installed, product factored, and running on the workstation. Before using the software, open the application loader icon and verify that the appropriate software is loaded and running.

The sub-tab titled "Application Loader" in the VP Series reference library contains additional information on the application loader.

VP Spreadsheet overview

The VP Spreadsheet package has the same capabilities as many stand-alone spreadsheet packages currently offered. At the same time, some of those capabilities are enhanced by taking advantage of the workstation's user interface.

For example, the spreadsheet program appears as a separate spreadsheet icon. Opening the icon into its window format automatically starts the spreadsheet software. Spreadsheet windows can be split into two windows so that different parts of the same spreadsheet can be seen simultaneously. Or, multiple windows can be opened at once, allowing the user to work between spreadsheets, without using special commands. A user can also have spreadsheet windows and document windows open at the same time. Closing the spreadsheet automatically stores the data involved.

Common with the emphasis on avoiding the need to remember complex code keys, the workstation automatically reprograms its top row of function keys and displays new meanings for them (such as cursor keys) whenever there is a selection in the spreadsheet window.

Also, the user has the option of asking the system to temporarily change the meaning of the standard keyboard. The virtual spreadsheet keyboard includes special function keys, cursor keys, and a 10-key pad (on the 6085) for numerical input.

In addition, it is possible to change the keyboard to any of the available alternate language keyboards, ranging from Russian to Greek. This allows spreadsheet labels to be entered in any of the supported languages.

Spreadsheet icons can be mailed, printed, or filed in the same manner as any other workstation data icon. Printing of specified cells, rows, and columns is also available.

Major spreadsheet features are discussed in the following paragraphs.

Spreadsheet icon

Unlike many other popular personal computing spreadsheet applications, the 6085 spreadsheet program appears to the user as an icon (Figure 1-1). Before a spreadsheet can be created, the user must copy a blank spreadsheet icon from the basic icons divider of the desktop directory.

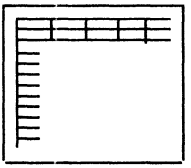


Figure 1-1 **Spreadsheet icon**

Spreadsheet window

Opening the spreadsheet icon into its window format automatically prepares the spreadsheet for use. The spreadsheet window (Figure 1-2) consists of a matrix of columns and rows.

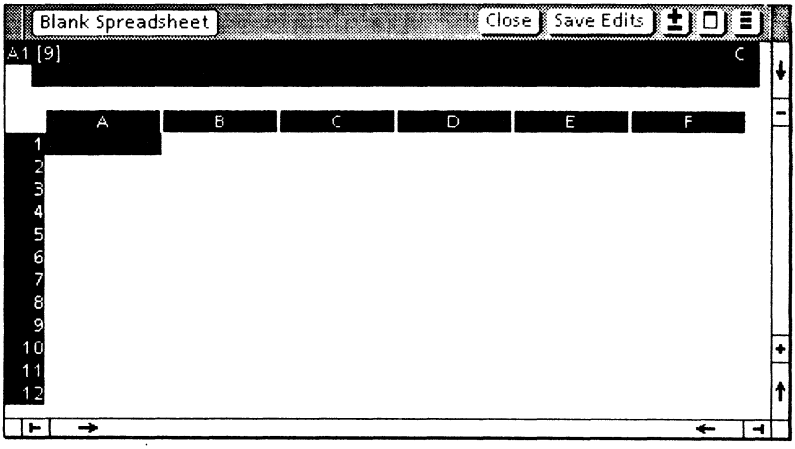


Figure 1-2 **Spreadsheet window**

The 6085 spreadsheet can have up to 255 rows, with up to 63 columns in each row. Columns are labeled with letters across the top, while rows are numbered down the lefthand side.

The intersection of a row and column is called a *cell*. A single spreadsheet can have a maximum of 16,065 cells. Text or numerical data can be typed in the cells.

A cell must be selected before data can be typed in it. A cell can be selected in a number of ways:

- By selecting the desired cell with the mouse
- By using <NEXT> to move the selection to the next cell (with the ability to specify in which direction the cell progression occurs)

- By using the GOTO command, which scrolls to and highlights a cell at specified coordinates

- By using special cursor keys found in two locations, on the top row of virtual function keys and on a virtual spreadsheet keyboard

The spreadsheet window also provides a *status line*, *prompt line*, and *entry line*, which are visible at all times in an open spreadsheet. The status line displays the address of the active cell, or the cell in which the cursor resides, and the current contents of the cell. The prompt line displays prompts or information to complete the command sequences. The entry line is the line at which commands or numbers can be entered.

Using the workstation's desktop capabilities, the user can open as many spreadsheet windows as desired.

Split windows

Spreadsheets up to full screen size can be displayed.

In addition to the size of the window, there are three features that affect how the data is seen:

- The window can be split horizontally, so that two non-contiguous sections of columns are displayed.

- The window can be split vertically, so that two non-contiguous sections of rows are displayed.

- The titles for rows and/or columns can be made to stay in place while the rows or columns of data are scrolled.

Spreadsheet virtual keyboard

The spreadsheet virtual keyboard (Figure 1-3) is used for entering various spreadsheet commands, such as home and GOTO.

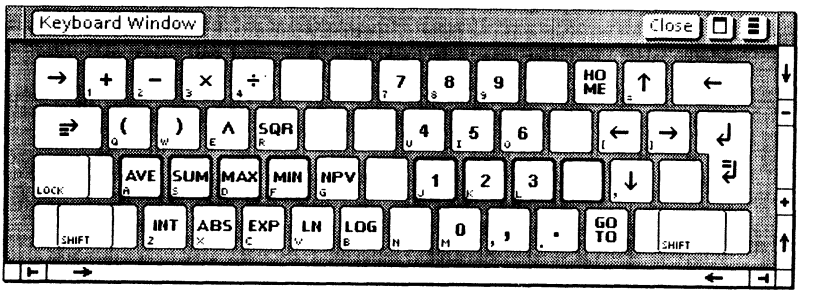


Figure 1-3 **Spreadsheet virtual keyboard**

The spreadsheet virtual keyboard is displayed by selecting inside the spreadsheet, pressing the function key corresponding to <KBD>, and then pressing the function key corresponding to <SHOW>.

Editing features

Spreadsheets can be edited on several different levels. Information in individual cells can be edited by deleting the current contents and retyping them by using a special edit function. Text in the status area can be edited by using the select-adjust method. Additionally, whole columns or rows can be moved or

deleted. All computation rules are automatically adjusted when a column or row is moved or deleted.

The contents of an entire spreadsheet can also be cleared with a single command. In addition, a replicate command exists to copy information stored for a cell or range of cells from one area to another. This command is particularly useful for copying complex formulas.

Formulas and computations

The strength of any spreadsheet is its ability to apply formulas to its numerical data. The functions and operators available for writing formulas used in spreadsheets are as follows:

- Arithmetic
- Trigonometric
- Boolean
- Logical
- IF statements
- Look-ups
- Other tasks, such as averaging, finding the minimum net present value, and so on.

Table 1-1 summarizes these functions and operators. A complete list of functions and operators can be found in Appendix A.

Table 1-1 **Spreadsheet categories and commands**

Operators/ Functions	Description
Arithmetic	Addition, subtraction, multiplication, division, powers, exponents, absolute value, integers, natural logarithm, base 10 logarithm, square roots
Trigonometric	Sine, cosine, tangent, arc sine, arc cosine, arc tangent
Logical functions	AND, OR, NOT, IF
Logical operators	Equal to, not equal to, less than, less than or equal to, greater than, greater than or equal to
Miscellaneous	Pi, net present value, count number of entries, maximum value, minimum value, sum, average, lookup, choose from a list of values

Report formatting

At some point, users may want to take portions of the spreadsheet's cells and use them to create reports. This software integration technique is accomplished by selecting [MAKE TABLE] in the document auxiliary menu.

[MAKE TABLE] is a special command that causes specified rows and columns to be copied into a system-created document containing a table with the same number of rows and columns. This document and the table within it can then be edited and formatted the same as any other document. It can also be sent directly to a printer.

For user productivity, the table resulting from this spreadsheet operation could be used in conjunction with VP Data-Driven Graphics software to define an automatically drawn bar, line, or pie chart. The resulting table could also be used to set up and input to a record file, using VP List Manager software. Figure 1-4 summarizes the spreadsheet information flow.

To increase information integration, any VisiCalc ® spreadsheet can be converted for use on the workstation. Likewise, any spreadsheet created on the workstation can be converted to VisiCalc format. This is accomplished with VP File Conversion software.

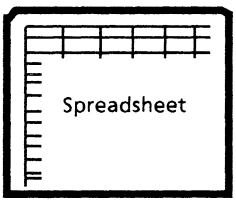
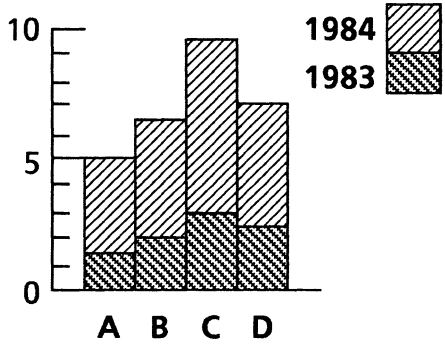


Table in document

Year	1983	1984
A	1.5	3.5
B	2.0	4.5
C	3.0	6.5
D	2.5	4.5

Table-Driven Graph



Input to Record File

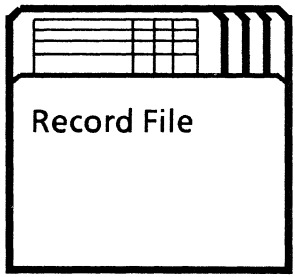


Figure 1-4 **Spreadsheet information flow**

Statistics and facts

- Integrating spreadsheet data into a document requires a special [MAKE DOCUMENT] operation.

- Cells are not protected. Data stored in cells can be deleted by using the /B (blank) or /C (clear) commands, by deleting rows or columns, or by editing.

- If only the cell selection has changed since the last time [SAVE EDITS] was selected, the new cell selection is not saved when the spreadsheet is closed. If [SAVE EDITS] is selected right before the spreadsheet is closed, however, the new selection is saved.

- [SAVE EDITS] in the spreadsheet's header menu should be selected periodically to update the contents of the spreadsheet during an editing session. The command ensures that the spreadsheet has been updated with the latest edits.

- When [CLOSE] is selected, it causes the backing file to be updated if the user has made any changes since the last time [SAVE EDITS] was selected.

- Since the user specifies the column widths that should be displayed, the software does not adjust the column widths so that all of a particular entry is visible. If an entry is longer than the current column width, not all of it is displayed. This is particularly noticeable when [SHOW FORMULAS] is selected.

- <STOP> can be used to abort commands that have not been invoked by pressing <RETURN>. For example, if the user presses <STOP> while typing a command, the entry line is cleared and control is returned to the top command level.

- Moving a column to the right places it in the column to the immediate left of the destination

column. For example, moving column B to column G results in column B moving to column F. Moving a column to the left of the destination column correctly places it in the desired position.

- There is no facility for defining decimal places, with one exception: money format results in two decimal places.

- If the /- (repeating label) command is used to replicate a character across a cell, all the replicated characters may not print when a table is created and the document is sent to the printer.

- If the /GF$ (money format) command is applied to a spreadsheet, all the values are set to money format. If the /GFL (left justification) command is then applied, the spreadsheet is left justified, but the money format is not retained.

2. Actions and procedures

The actions and procedures contained in this chapter provide the information necessary to use VP Spreadsheet software.

Copying a blank spreadsheet icon

Before you can use the spreadsheet software, you must copy a blank spreadsheet icon from the basic icons divider of the desktop directory and store it on a desktop.

To copy a blank spreadsheet icon:

1. Open the directory icon.
2. Open the workstation divider.
3. Open the basic icons divider.
4. Select the blank spreadsheet icon and press <COPY>.
5. Move the cursor to an empty spot on your desktop and click one of the mouse buttons.
6. Select [CLOSE ALL] in the directory menu to close the directory.

Setting spreadsheet properties

The spreadsheet property sheet is used to name the spreadsheet and display the mailing cover sheet when the spreadsheet window is opened.

To set spreadsheet properties:

1. Select the spreadsheet icon and press <PROP'S>.
2. Select the icon label and press <DELETE> to delete the icon name and enter a new one.
3. Select [DONE] when you are finished setting spreadsheet properties.

Spreadsheet data entry and editing

Before a spreadsheet can be edited, a cell must be selected. There are a number of ways to select a cell, but the simplest way is to position the pointer in a cell and click the left mouse button. After the cell is selected, text or numerical data can be typed.

To select and edit cells:

1. Open the spreadsheet icon.
2. Position the pointer in the cell you wish to edit.
3. Click the left mouse button. The selected cell is highlighted and its address is now displayed on the status line (the top line in the upper lefthand corner of the spreadsheet).
4. Type the text or numerical data. If a label is entered, "Label" is displayed on the prompt line (beneath the status line). If a number or formula is entered, "Value" is displayed on the prompt line.

5. Press the return key (the key with two arrows pointing left on the righthand side of the keyboard). Pressing the return key enters the data you typed into the cell. Nothing is actually entered until it is pressed. <NEXT> and the cursor keys can also be used to enter data. They are discussed in the following procedures.

   Note: If a typing mistake is made and you want to erase the last entry, press the backspace key or press <STOP>. The backspace key erases one character at a time. You can also use the mouse to select data on the entry line and then edit the text.

Selecting cells with the cursor keys

In addition to selecting cells with the mouse, you can also select cells with the cursor keys. When a cell is selected, a row of virtual spreadsheet function keys appears at the bottom of the spreadsheet. The cursor keys are the four arrow keys on the righthand side. They are used to move the cursor in the direction of the arrow.

To use the cursor keys, position the pointer in a cell and click the left mouse button. When the virtual spreadsheet function keys appear, press the key that corresponds to the cursor movement you need. When an arrow key is pressed, the cursor moves in the direction of the arrow.

Selecting cells and entering data using <NEXT>

<NEXT> can be used to select cells and enter data that has been typed in a cell. If <NEXT> is pressed after data is typed into a cell, the data is entered and the cursor moves in the same direction as the last movement. For example, suppose the cursor resides in cell A2, that a selection is made in cell A3, and then data is typed in that cell. When <NEXT> is pressed, the data is entered (as if the return key were pressed) and the cursor moves to cell A4 (since the direction of the last movement was made downward from cell A2). If <NEXT > is pressed again, the cursor moves to cell A5, and so on. The cursor continues to move down from cell to cell each time <NEXT> is pressed, until a selection is made in another direction.

Displaying the spreadsheet virtual keyboard

The spreadsheet virtual keyboard is used to enter some spreadsheet commands.

To display the spreadsheet virtual keyboard, open the spreadsheet and select any cell. (The spreadsheet virtual keyboard appears at the bottom of the screen and the virtual keys take effect, instead of the workstation's standard keyboard.) Press the function key corresponding to <KBD>, and then press the function key corresponding to <SHOW>.

Note: If you press only the function key that corresponds to <SHOW>, the current keyboard is displayed. The current keyboard is not set to the spreadsheet virtual keyboard until the function key corresponding to <KBD> is pressed.

To return to the standard English keyboard, hold down <SHIFT> and press the function key corresponding to <KBD>.

Erasing spreadsheet contents

After data is entered in a spreadsheet, you may want to delete or erase the data. This procedure details how to erase the contents of single cell or an entire spreadsheet.

In a spreadsheet, the slash is used to tell the program that you want to enter a command. After the slash is typed, a list of available commands appears on the status line. In this procedure, the /B (blank) and /C (clear) commands are used.

To delete data in a single cell:

1. Select the cell in which you wish to delete data
2. Type / (the list of available commands appears on the prompt line)
3. Type B
4. Press the return key

To erase the entire contents of a spreadsheet:

1. Select a cell
2. Type /
3. Type C
4. Type y (to confirm that you want to erase the entire spreadsheet contents)

Editing text on the entry line

Data typed on the entry line of the spreadsheet can be edited. The entry line is the line beneath the prompt line (where "label" or "value" appears) on which the typed text or numbers appear before they are actually entered into the spreadsheet.

To edit the entry line:

1. Select the text on the entry line. "Edit" appears on the prompt line. Position the pointer over the first character and click the left mouse button, then position the pointer over the last character and click the right mouse button. Then press <DELETE>.

2 Position the pointer at the left of the first character to add data to the beginning of the entry line. The caret appears to the right of the selected character, and new data can be entered. Otherwise, select a character on the entry line; the caret appears to the right of it and new data can be entered there.

3. Press the return key or <NEXT> to enter the value or label in the cell.

Entering spreadsheet functions and formulas

Just as / designates a command, @ designates a function and + designates a formula. In spreadsheets, @ must precede all function names. It is only necessary to use + when a formula begins with an alphanumeric character.

To enter a function:

1. Select a cell
2. Type @
3. Enter the function name (and argument if required)
4. Press the return key

To enter a formula that begins with an alphanumeric character:

1. Select a cell
2. Type +
3. Enter the formula
4. Press the return key

Setting spreadsheets to manual calculation

The first time a blank spreadsheet is opened, the calculation order is set to automatic calculation. This means that values are automatically recalculated when new data is entered. If it is not necessary to automatically recalculate values when new data is entered, use the /GRM command.

Note: When the calculation order is set to manual in spreadsheets that contain numerous cell references, it may be necessary to do more than one recalculation to get the correct values into all cells.

To set a spreadsheet to manual calculation:

1. Type / (causes a list of available commands to be displayed)

2. Type G [causes the global C (column width), O (order), R (recalculation), and F (format) options to be displayed]

3. Type R [causes the A (automatic) and M (manual) options to be displayed]

4. Type M for manual calculation

Replicating numbers and formulas

The /R (replicate) command allows you to either copy a number or label from a single cell into another cell or range of cells, or a whole range of numbers or labels into a range of cells.

Replicate is executed in three stages. In the first stage, you specify the source range, which is the range of cells you want copied. In the second stage, you specify the target range, which is the range of the cells into which you want to copy the source range. In the third stage, you tell the program how to treat any cell references that appear in the formula. Cell references

are a way of telling the spreadsheet program whether the cell addresses are absolute or relative.

The following are procedures for replicating numbers and formulas.

To replicate a single number:

1. Select the cell that contains the value you wish to replicate

2. Type / (causes a list of available commands to be displayed)

3. Type R

   The prompt line now reads: Replicate: Source Range or ENTER. The entry line displays the address of the selected cell and an ellipsis, which indicates a range. The program is now waiting for the source range to be typed.

3. Press the return key

   When only one cell is being replicated, the program automatically enters the rest of the source range when the return key is pressed. The prompt line now reads: Replicate: Target Range. The program is waiting for the range of cells into which the source range will be copied to be entered.

4. Enter the target range. Remember to put a period between the range of cells (for example, A1.E1). The period specifies the range

   Note: The mouse can be used to select cell addresses, but the ellipsis must be entered manually.

To replicate formulas (with cell addresses only):

1. Select the cell that contains the formula to be replicated

2. Type /R

3. Enter the source range (the range of cells to be replicated)

4. Press the return key

5. Enter the target range (remember to put a period between the range of cells)

6. Press the return key

   The prompt line now reads: Replicate: N-No change, R-Relative. The program is referring to the first cell reference contained in the formula. "No change" means the same cell address will be repeated in the formula each time it is copied. "Relative" means the cell address will change, relative to the position in each row. You must indicate whether you want the cell address to remain constant or to change by typing "N" or "R." The prompt appears for each cell reference in the formula.

Scrolling spreadsheets

The <←>, <↑>, <↓>, and <→> spreadsheet cursor keys are used to scroll a spreadsheet.

To scroll a spreadsheet, select any cell and press the appropriate function key that corresponds to the cursor key. Continue pressing the cursor key to scroll to the desired position. Cells are selected in the direction indicated by the cursor key until you reach the edge of the spreadsheet.

Inserting and deleting rows and columns

The /IC (insert blank column) and /IR (insert blank row) commands are used to insert a blank column or row into a spreadsheet. Similarly, the /DC (delete column) and /DR (delete row) commands allow you to delete rows and columns.

To insert rows and columns:

1. Select a cell within the row or column at the location at which the blank row or column should appear

   The spreadsheet program inserts a blank row by moving rows down and columns to the right. If a cell is selected within row 3, for example, and /IR is typed, row 3 becomes row 4 and a blank row is inserted at row 3. The same principle applies to inserting columns. If a cell is selected within column C, for example, and /IC is typed, a blank column is entered at column C and the data previously in column C is moved to column D.

2. Type /I

   The prompt reads: Insert: R(ow) or C(olumn)

3. Type R or C

   Depending on which command was typed, a blank row or column is inserted.

Note: The same procedure is used for deleting rows and columns. Type /DC or /DR.

Moving rows and columns

The /M command is used to move a row or column to a new location in the spreadsheet. To move rows and columns, select a cell within the row or column you wish to move and type /M. The prompt line reads: Move: From...To. It is asking you to enter the address of the row or column you wish to move the selected row or column to. Type the address of the row or column and press the return key.

The section titled "Statistics and facts" in Chapter 1 contains information on moving columns.

Printing spreadsheet data

Spreadsheet data can be printed three ways:

- By transferring the spreadsheet's contents to a table within a document and copying or moving the document to a printer icon

- By creating a print format document containing spreadsheet contents, and copying or moving the print format document to a printer icon

  Note: If [MAKE PRINT FORMAT DOCUMENT] is selected in the spreadsheet auxiliary menu, an Interpress master is created. This master can only be sent to Xerox network printers.

- By closing the spreadsheet window and moving or copying its icon to a printer icon

The printer icon can represent either a network printer or a local printer. Make sure you have copied a printer icon from your desktop directory before you try to print a spreadsheet.

To copy or move a spreadsheet icon to a printer icon:

1. If the spreadsheet window is open, select [CLOSE] in the spreadsheet window.

2. Select the icon and press <MOVE> or <COPY>. Position the pointer over a printer icon and click the left mouse button.

   Note: The printer option sheet that appears offers specific options for printing spreadsheets as well as generic print options. See step 5 below for details on spreadsheet-specific options.

To transfer the spreadsheet's contents to a table and create a print format document:

1. Position the pointer on the spreadsheet auxiliary menu (the plus sign over minus sign in the upper righthand corner of the spreadsheet).

2. Hold down the left mouse button until the auxiliary menu opens and three options appear: [SHOW FORMULAS], [MAKE TABLE], and [MAKE PRINT FORMAT DOCUMENT].

3. Move the pointer until either [MAKE TABLE] or [MAKE PRINT FORMAT DOCUMENT] is selected.

   Note: [MAKE PRINT FORMAT DOCUMENT] creates an Interpress document for direct printing, while [MAKE TABLE] creates an actual document with the spreadsheet contents in table format. This document can be opened and edited, and the format can be changed.

4. Release the mouse button.

5. If [MAKE TABLE] is selected, enter the numbers and letters of rows and columns to be transferred into the table and the required page size. If [MAKE PRINT FORMAT DOCUMENT] is selected,

select either [SPECIFIED] or [ALL NON-BLANK CELLS] for cells. Then enter the numbers and letters of rows and columns. If [SPECIFIED] is selected, choose the required font size and page size, and change the print format document name.

6. Select [START].

7. Copy the newly created icon to a printer icon representing an Interpress printer.

   The printer option sheet appears, and the desired printer options can be selected (for example, the number of copies to be printed, and the paper size). For additional information on the printer option sheet, refer to the tabs titled "Xerox ViewPoint" and "VP File Conversion" in the VP Series reference libary. Also refer to the tab titled "VP NetCom," "VP RemoteCom," or "VP StandAlone," depending on the type of software configured on your workstation.

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3. Property/option sheets and windows

This chapter describes the property sheets, option sheets, and windows related to VP Spreadsheet software.

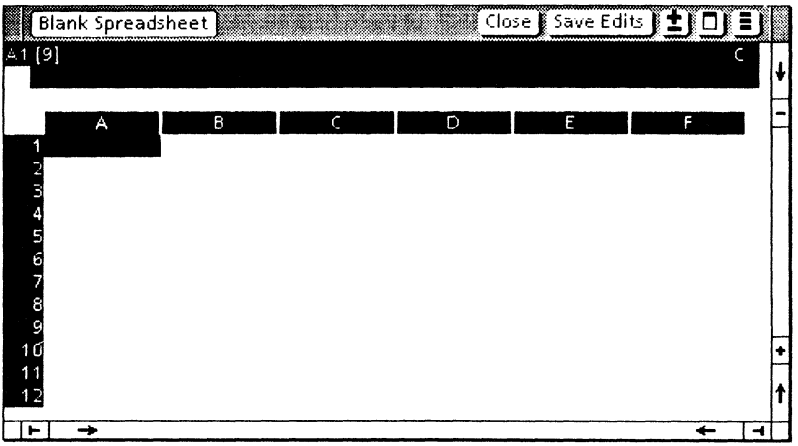

Figure 3-1 **Spreadsheet window**

Spreadsheet window

The layout of the spreadsheet window (Figure 3-1) is a matrix with columns labeled across the top of the spreadsheet and rows numbered down the lefthand side.

The spreadsheet window is displayed by selecting the spreadsheet icon and pressing <OPEN>.

Menu commands

The following is a description of the commands located at the top of the window in the gray area.

[CLOSE]
Closes the window.

[SAVE EDITS]
Causes the spreadsheet backup file to be updated with the current contents of the spreadsheet.

When the desktop pointer is placed over the spreadsheet auxiliary menu symbol and the left mouse button is held down, the following menu items appear:

[MAKE TABLE]
Displays the [MAKE TABLE] option sheet, which is used to create a table from the contents of the spreadsheet.

[MAKE PRINT FORMAT DOCUMENT]
Displays the [MAKE PRINT FORMAT DOCUMENT] option sheet, which is used to create an Interpress master that can be printed directly.

[SHOW FORMULAS]

Displays the actual formula contained in cells rather than the results of applying formulas to values. When [SHOW FORMULAS] is selected, [DON'T SHOW FORMULAS] appears in the menu.

NOTE: When formulas are displayed, the spreadsheet program makes no attempt to adjust column widths so that all of a particular entry is visible. This means that if a formula is longer than the current column width, not all of it is visible. The contents, however, are displayed on the entry line when a cell is selected.

[DON'T SHOW FORMULAS]

Displays the results of applying formulas to cell values rather than the actual formulas. When [DON'T SHOW FORMULAS] is selected, [SHOW FORMULAS] appears in the menu.

Causes the window management commands to appear when the pointer is placed over the window management auxiliary menu and the left mouse button is held down. The sub-tab titled "Windows" in the VP Series reference library contains detailed information on the window management commands.

Causes the window commands that have been placed in the auxiliary menu to appear when the pointer is placed over the menu and the left mouse button is held down. Window commands are placed in the floating item auxiliary menu when the window is not wide enough to accommodate the commands.

Window contents

The following describes the types of information displayed in the spreadsheet window.

Cells

The intersection of a column and row. A single spreadsheet can have a maximum of 16,065 cells. A cell can be used to type text as a label for a column or row, as a place to present data, or as a calculator.

Status Area

The area in the far upper lefthand corner of the spreadsheet. It consists of three lines - the status line, the prompt line, and the entry line.

The status line is the top line. It displays the location or address of the active cell (cell in which the cursor resides). It also shows the contents of the cell and the width of the cell's column.

The prompt line is located right below the status line. It displays relevant information during command sequences.

The entry line is the line directly below the prompt line. The entry line is the line at which commands, numbers, or text can be typed.

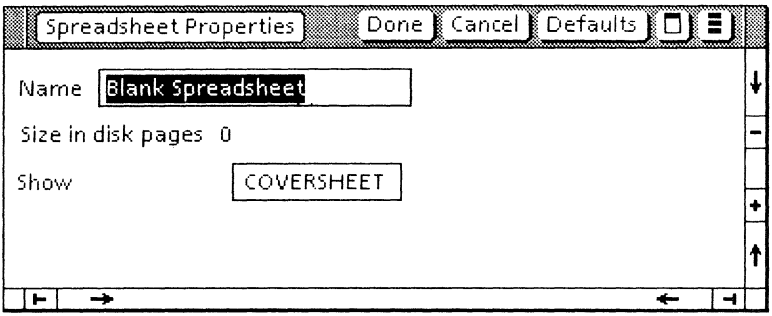

Figure 3-2 **Spreadsheet property sheet**

Spreadsheet property sheet

The spreadsheet property sheet (Figure 3-2) is used to name the spreadsheet icon.

The spreadsheet property sheet is displayed by selecting the spreadsheet icon and pressing <PROP'S>.

Menu commands

The following is a description of the commands located at the top of the property sheet in the gray area.

[DONE]
Closes the property sheet and applies the properties set on it. If any information is incorrect, the property sheet remains open and displays an error message.

[CANCEL]
Closes the property sheet without applying any changes to the properties.

[DEFAULTS]
Resets the properties to the preassigned settings.

Causes the window management commands to appear when the pointer is placed over the window management auxiliary menu and the left mouse button is held down. The sub-tab titled "Windows" in the VP Series reference library contains detailed information on the window management commands.

Causes the window commands that have been placed in the auxiliary menu to appear when the pointer is placed over the menu and the left mouse button is held down. Window commands are placed in the floating item auxiliary menu when the window is not wide enough to accommodate the commands.

Properties

The following is a list of the properties.

Name
Displays the current name of the spreadsheet. The name can be changed by deleting it and typing a new one, or by editing the current one in the usual way.

Size in Disk Pages
Displays the spreadsheet size in disk pages.

(This page intentionally blank)

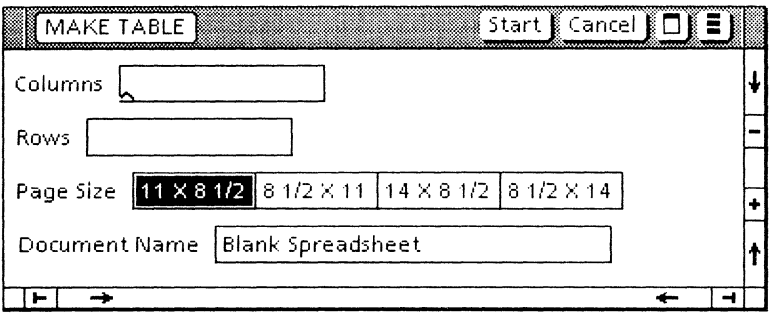

Figure 3-3 **[MAKE TABLE] option sheet**

[MAKE TABLE] option sheet

The [MAKE TABLE] option sheet (Figure 3-3) is used to create a table containing the specified rows and columns of a spreadsheet.

The [MAKE TABLE] option sheet is displayed by selecting [MAKE TABLE] in the spreadsheet auxiliary menu.

Menu commands

The following is a description of the commands located at the top of the option sheet in the gray area.

[START]
Causes the program to create a table containing the specified spreadsheet rows and columns.

[CANCEL]
Closes the option sheet without applying any changes to the properties.

Causes the window management commands to appear when the pointer is placed over the window management auxiliary menu and the left mouse button is held down. The sub-tab titled "Windows" in the VP Series reference library contains detailed information on the window management commands.

Causes the window commands that have been placed in the auxiliary menu to appear when the pointer is placed over the menu and the left mouse button is held down. Window commands are placed in the floating item auxiliary menu when the window is not wide enough to accommodate the commands.

Window contents

The following is a list of the properties.

Columns
Provides space for spreadsheet columns to be entered. Columns are listed by letter, separated by commas, or by range.

Rows
Provides space for spreadsheet rows to be included in a table. Rows are listed by numbers, separated by commas, or by range.

Document Name
Lists the name to be given to the document produced by [MAKE TABLE].

(This page intentionally blank)

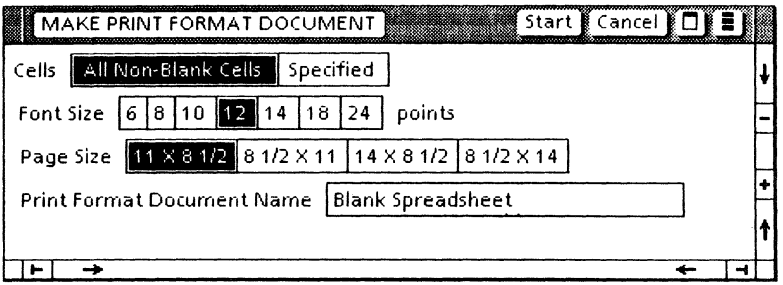

Figure 3-4 **[MAKE PRINT FORMAT DOCUMENT] option sheet**

[MAKE PRINT FORMAT DOCUMENT] option sheet

The [MAKE PRINT FORMAT DOCUMENT] option sheet (Figure 3-4) provides a way to create a copy of the contents of a spreadsheet and place it in a print format document.

The [MAKE PRINT FORMAT DOCUMENT] option sheet is displayed by selecting [MAKE PRINT FORMAT DOCUMENT] in the spreadsheet auxiliary menu.

Menu commands

The following is a description of the commands located at the top of the option sheet in the gray area.

[START]
Causes the program to create a print format document containing the specified spreadsheet rows and columns.

[CANCEL]
Closes the option sheet without applying any changes to the properties.

Causes the window management commands to appear when the pointer is placed over the window management auxiliary menu and the left mouse button is held down. The sub-tab titled "Windows" in the VP Series reference library contains detailed information on the window management commands.

Causes the window commands that have been placed in the auxiliary menu to appear when the pointer is placed over the menu and the left mouse button is held down. Window commands are placed in the floating item auxiliary menu when the window is not wide enough to accommodate the commands.

Properties

The following is a list of the properties.

Cells
Used to specify which cells can be printed. If [ALL NON-BLANK CELLS] is selected, the non-blank portion of the spreadsheet is printed. If [SPECIFIED] is selected, only the rows and columns specified are printed.

Cell Rows
Used to specify the rows to be printed. This option appears only if [SPECIFIED] is selected.

Cell Columns
Used to specify the columns to be printed. This option appears only if [SPECIFIED] is selected.

Font Size
Used to specify the font size for printing.

Page Size
Used to define the page size of the print format document.

Print Format Document Name
Used to name the print format document.

Appendix A: Commands, functions, and operators

This chapter contains a listing of the spreadsheet special characters, commands, functions, and operators.

Special characters

/	Displays the command options in the prompt line of the status area.
"	Specifies a label entry. The right or left double quote can be entered. Labels may contain international text.
.	Separates cell names in a range specification.
>	Initiates the GOTO command (this command can be accessed by means of the special keyboard or virtual function keys).
+	Specifies a formula entry.
!	Forces recalculation of values in a cell.
@	Precedes all function names.

Basic editing commands

/B Erases the value or label within the selected cell.

/C Erases the contents of the entire spreadsheet.

/DC Deletes the column indicated by the selected cell. After deletion, formulas for remaining cells are adjusted accordingly.

/DR Deletes the row indicated by the selected cell. After deletion, formulas for remaining cells are adjusted accordingly.

/E Prepares the selected cell for editing by placing its contents on the entry line.

/V Displays the current version of the software and the copyright notice.

Advanced editing commands

/IC Inserts a blank column before the selected cell.

/IR Inserts a blank row before the selected cell.

/- Repeats a label across the selected cell. After the command is entered, you enter the label you want repeated.

/R Copies the contents of a cell or cells to a range of specified cells. The replicate command prompts you to enter the source range of the cells you want copied. You can copy a single entry or a range of cells. The command then prompts you for the target range, the range of cells you want the cells copied to. If you are replicating a formula containing all addresses, you are then prompted to tell the program whether you want exactly the same formula copied at each of the positions or whether the

formula should be relative to the position of the cell.

/TH Locks specified rows so that they are always displayed when the spreadsheet is scrolled. Very useful for keeping the title displayed when you are working on a large spreadsheet.

/TV Locks specified columns so that they are displayed when the spreadsheet is scrolled. Very useful for keeping the titles displayed when you are working on a large spreadsheet.

/TB Locks both rows and columns so they are always displayed when the spreadsheet is scrolled. Very useful for keeping the titles displayed when you are working on a large spreadsheet.

/TN Unlocks rows and columns previously locked.

/WH Splits the spreadsheet into two horizontal windows at the position of the selected cell. Splits are useful when there is a requirement to view/work on two widely separated sections of a large spreadsheet.

/WV Splits the spreadsheet into two vertical windows above the selected cell.

/W1 Returns the spreadsheet to one window after it has been split.

/WS Allows you to scroll halves of the split spreadsheet simultaneously.

/WU Allows you to scroll halves of a split spreadsheet independently.

Formatting commands

/FC Permits you to change the width of the column containing the selected cell. Standard width is 9 characters on the U.S. workstation and 13 on the extended language workstation.

/FD Sets the format of the selected cell to the default format. In default format, a value is displayed if it fits into the column width. If the cell contains a fraction that does not fit, it is rounded off to a number that can be displayed. If the cell contains a whole number that does not fit, the exponent is displayed (see the definitions of general format and default format in the section titled "Display formats" in this appendix).

/FG Sets the format of the selected cell to the general format (see the definition of general format in the section titled "Display formats" in this appendix).

/FI Sets the format of the selected cell to the integer format (that is, displays whole numbers).

/FL Sets the format of the selected cell to be left aligned.

/FR Sets the format of the selected cell to be right aligned.

/F$ Sets the format of the selected cell to the money format. Numbers are always displayed to two decimal places.

/F* Sets the format of the selected cell to graph format. Displays the numerical contents as a series of asterisks.

Global commands

/GC Allows you to change the global column width.

/GFD Sets the global format of the spreadsheet to the default format.

/GFG Sets the global format of the spreadsheet to the general format.

/GFI Sets the global format of the spreadsheet to the integer format.

/GFL Sets the global format of the spreadsheet to be left aligned.

/GFR Sets the global format of the spreadsheet to be right aligned.

/GF$ Sets the global format of the spreadsheet to the money format.

/GF* Sets the global format of the spreadsheet to the graph format.

/GOC Sets the computation order to columns.

/GOR Sets the computation order to rows.

Note: Attention must be paid to the order of calculation, or incorrect answers will result. The default order of calculation is by columns; that is, the recalculation starts in A1, then proceeds to A2, and so forth. Caution must be used if you reference a calculated value to the left of the selected location. For example, if cell A20 references cell F15 (and F15 is a calculated value), A20 will be updated before F15 is recalculated. The solution would be to recalculate twice (type !!), or change the order of calculation to calculate by rows (/GOR).

Sometimes the cells are defined in such a way that it is necessary to recalculate twice.

/GRA Sets the spreadsheet to automatic computation after each cell is edited.

/GRM Sets the spreadsheet to manual computation after each cell is edited.

Arithmetic operators

+ Add (found on standard keyboard and on spreadsheet virtual keyboard).

- Subtract (found on standard keyboard and on virtual keyboard).

* Multiply (found on standard keyboard and on virtual keyboard).

/ Divide (found on standard keyboard and on virtual keyboard).

/\ Power (found on virtual keyboard).

Logical operators

= Equal to

<> Not equal to

<= Less than or equal to

> Greater than

>= Greater than or equal to

Functions

The spreadsheet program provides a number of functions that simplify the writing of formulas. These functions have two things in common. First, they must begin with @, which is a flag that tells the program you are about to enter a function. Second, they must be followed by the function itself, and most (but not all) require an argument or list of arguments, separated by commas. An argument may be a value, expression, or range. A list of spreadsheet functions follows.

Let:

v = Any value

l = Any logical value

range = Row or column, designated by cell name.cell name (in other words, B6.B7)

list = A list of values or ranges, separated by commas

Note: The argument (v) can be a value (a number), a cell location (or range when appropriate), or another function. The arguments are separated by commas.

Arithmetic functions

@ABS (v)	Computes the absolute value of **v**
@EXP (v)	Computes e (= 2.71828...) to the power of **v**
@INT (v)	Returns the integer part of **v** [for example, @Int(v) where v = 4.6 would yield 4]
@LN (v)	Computes the natural logarithm of **v**
@LOG10 (v)	Computes the base 10 logarithm of **v**
@SQRT (v)	Computes the square root of **v**

Trigonometric functions

@SIN(v)	Computes the sine of **v**
@COS(v)	Computes the cosine of **v**
@TAN(v)	Computes the tangent of **v**
@ASIN(v)	Computes the arc sine of **v**
@ACOS(v)	Computes the arc cosine of **v**
@ATAN(v)	Computes the arc tangent of **v**

Logical functions

@AND(list)	False if any of the logical values in **list** are false; otherwise true
@IF(l,v1,v2)	IF **l** THEN **v1** ELSE **v2**
@ISERROR(v)	True if **v** is ERROR; otherwise false

@ISNA(v)	True if **v** is NA; otherwise false
@NOT(l)	True if the logical value is false; if the logical value is false, true is displayed
@OR(list)	True if any of the logical values in **list** are true; otherwise false

Miscellaneous functions

@ERROR	Displays ERROR in selected cell and any cell with a formula that refers to selected cell
@NA	Displays NA in the selected cell and any cell with a formula that refers to that cell
@TRUE	Displays the value TRUE
@FALSE	Displays the value FALSE
@PI	3.141592653898
@NPV(**dr,range**)	Net Present Value. Cash flow specified in **range** and discount rate in **dr**
@COUNT(**list**)	Counts number of entries in **list**
@MAX(**list**)	Provides maximum value in **list**
@MIN(**list**)	Provides minimum value in **list**
@SUM(**list**)	Adds all numbers in **list**
@AVERAGE(**list**)	Finds average value of entries in **list**
@CHOOSE(**v,list**)	Chooses one of a list of values. The letter **v** is the position of the list chosen

@LOOKUP(**v,range**)Looks up **v** in range.

Special keys

←	Moves the cursor to the left one position (accessed through special keyboard)
→	Moves the cursor to the right one position (accessed through special keyboard)
↓	Moves the cursor downward one position (accessed through special keyboard)
↑	Moves the cursor upward one position (accessed through special keyboard)
ENTER	Puts an entry into a cell. (use the return key)
EDIT	Prepares a cell for editing (use virtual function key)
HOME	Moves cursor to cell A1 (found on virtual keyboard). <HOME> is equivalent to GOTO A1

Display formats

Default format includes the following characteristics:

- Numbers are displayed with the greatest precision possible.
- Column width is nine units (and can contain approximately nine characters).
- Numbers are right aligned.
- Labels are left aligned.

General format includes the following characteristics:

- Numbers are displayed with the greatest precision possible.
- Labels are left aligned.

Integer format includes the following characteristic:

- Numbers are displayed rounded to the nearest whole number.

Definitions

- Left aligned - Labels and numbers are aligned on the lefthand letter or number.
- Right aligned - Labels and numbers are aligned on the righthand letter or number.
- Money format - Numbers are rounded to two decimal places.
- Graph format - Displays values as asterisks.