

RC-Spreadsheet Version 1

Introduction

The basic unit of a spreadsheet is a cell. This contains one item of information which can be a text label, numerical, or an expression to be evaluated (See f1 - Entry). The spreadsheet consists of a block of cells, n1 rows x n2 columns, which are initially unrelated but may become related by the entries made in them. For compatibility with the RC-Database a row of cells may be referred to as a record and a column of cells as a field. The number of rows is determined by the number of columns, their size and available memory. The spreadsheet is loaded and saved to the disc as a single block.

Using the Program

1. It is recommended that before using the disc you make a backup copy on a blank, formatted disc as described in your DFS manual. Set the disc option with *OPT4,3
2. Getting started : If using a 6502 second processor - FIRST enter the processor. If using Shadow RAM not selected by a MODE Command then select your Shadow RAM.

To Run the Spreadsheet:

- a) SHIFT/BREAK - Press SHIFT, press BREAK, release BREAK, release SHIFT (May not work in Drive1)
 - b) Type *EXEC !BOOT
Version E/B1 - Shadow Modes 0 and 3 may be selected with 128 and 131 respectively.
3. On entering the Spreadsheet and obtaining the first list of SELECTIONs in "Files" you may insert a separate DATA disc, either a new formatted disc for a new file or an existing data disc (with ADFS, select Disc (D), and type MOUNT before continuing). On exiting the Sheet, when in "Files", you should Insert/Mount the program disc.
 4. Errors:
 - a) Any open files are CLOSED, the error reported and the program re-RUN.
 - b) Otherwise, reset with BREAK and restart the program as 2(a) or 2(b).
 5. After reading the instructions it should be possible to use the Spreadsheet by following the Instructions given in the Header or on the Main Screen. File SS-TEST is provided for you to practice the various options in the spreadsheet, this should be used in Mode 3 - Second Processor, Mode 131 - Shadow RAM, Modes 11 or 17 - Archimedes.
 6. On entering the Spreadsheet you are automatically put into "Files". Select the required DRIVE and DIRECTORY (See below for Disc Operations). Subsequently selection of the various options of the spreadsheet is by the FUNCTION KEYS (f1 - f9, & f0 or f10), COPY, DELETE, and keyboard responses to the Menu's and Prompts. The current position in the Sheet is indicated by the cursor, which is positioned at the left of the cell.

The Header

This shows :

- a) Instructions.
- b) Date & Time (Archimedes).
- c) At - the code for the current cell. This is ALWAYS five digits, 3 for the row (AAA - ZZZ, 1 - 17576), and two for the column (01 - 64).
- d) Filename.
- e) Maximum number of rows for the number of columns and memory.
- f) Highest row used.
- g) (Number of columns.
- h) Current Window file filename.
- i) Current Directory name (Archimedes).
- j) Spreadsheet option in use. Move around the Sheet with f4+f5 and cursor keys. From the edges of the screen the next screen is shown.

Files - Disc Operations

1. Disc operations are selected with D.
2. Type in the required disc command as specified in your manual.

IMPORTANT:

Use ONLY DFS commands which do not affect the computer memory. COPY, DIRCOPY, COMPACT and related commands must not be used. You must exit the program to carry out these types of commands.

Files - Opening NEW Files

1. Insert your DATA disc (with ADFS, select disc (D), then type MOUNT).
2. Before opening the file, select the disc DRIVE and DIRECTORY required if not 0 and \$ (with ADFS new directories must be first created with CDIR).
3. Entering the Filename - this is limited to 7 (DFS) or 10 (ADFS) characters. If you are not in the required Directory the name can include the directory, eg. D.fname, but the directory is included in the total length allowed. For ADFS the directory MUST be previously created with CDIR.

Archimedes version - Files have an initial default size of 32000 bytes. As the number of rows grows, if this size is exceeded then if there are other files on the disc and the file cannot be extended you will get a DFS error. The file should then be Copied onto another formatted disc - either blank, or with the program files.

4. Record Structure:

- a) Number of Fields - Version 1, max. = 64.
- b) Field titles - max. length of 15 characters.
- c) Field length - Database, max. = 254, Spreadsheet, max. = 74 characters.

For Database compatibility, this should be planned on paper before entering in the program. It cannot be changed at a later date (current version). The number of characters allowed are : 1 line - 79, 2 lines - 159, 3 lines - 239. In the Database, this length includes the length of the field title used + 3 for the colon spacer. For a spreadsheet it is recommended that all the columns have the same size. A size of 21 (or 14) should be suitable for most entries.

The Spreadsheet does not use the field titles of a database file and has a single space inserted automatically between field displays. Titles/labels may be inserted into cells in a spreadsheet as text at appropriate points in the sheet.

Field lengths should be kept to a minimum to allow for as many cells (records) as possible to be stored in memory. However, it is important to allow for the size of all potential future entries. Space can be used more efficiently by appropriate use of abbreviations (particularly in the Database). The record information is stored in a block of memory which can hold up to 30 fields of title length 15, 40 of average length 10, 64 of average length 6.

Files - Opening EXISTING / OLD Files

1. This may be a previously created Spreadsheet file, or compatible Database file (Field size up to 74). If using a DATA disc, put it in the required drive (with ADFS, MOUNT it).

NOTE: A database file may be too big to fit in memory. The required part of the file may be saved from the Database, f6.

2. Before opening the file select the disc DRIVE and DIRECTORY required if not 0 and \$. Then open the file with RETURN.

Files - General

1. After opening a NEW / OLD file you are automatically entered into the Sheet.
2. On exiting the Sheet with ESCAPE if any alterations have been made to the Sheet (with f1-Entries, f6-Replication, or DELETE) it will automatically be Saved. It is recommended that you make a temporary copy of the file under a different filename (using COPY) before making any alterations, or keep a BACKUP disc.

f1 - Making Entries

1. At the keyboard or with the Cursor+COPY keys to copy entries displayed on the screen.
2. A number, or Text - As required for a label/heading, with trailing spaces for positioning.
3. Expressions for evaluation - Start with ">".
 - a) The contents of a cell are referred to with "!" e.g. >!AAA01 means evaluate the contents of cell AAA01.

NOTES:

- Cells referred to should contain a number or expression. If not, zero is used by default, for some operations, e.g. Division, this will give an ERROR.
 - References to cells MUST ALWAYS be by the FULL five digit location code.
- b) A range of cells is indicated by "[". A range is a series of cell row or cell column values to be added together.
- e.g. >[!AAA01!AAF01 for rows 1 to 6, column 1
>[!AAA01!AAA06 for columns 1 to 6, row 1

IMPORTANT:

The cells in a range or the contents of cells referred to by these cells MUST NOT contain reference to any other range.

- c) Operations - The expression may contain operators which will work on the other parts of the expression whether numerical or a cell reference.

The operators are :

+ ≡ addition	- ≡ subtraction	* ≡ multiplication	/ ≡ division
^ ≡ to power	EXP ≡ e to power	E ≡ multiply by 10 to power	SQR ≡ square root
ABS ≡ modulus	INT ≡ integer of	MOD ≡ integer remainder	DIV ≡ integer division
PI ≡ 3.14159265	LN ≡ natural log	LOG ≡ common log	
AND	EOR	OR	()
Trigonometrical Functions			
COS	TAN	SIN	Etc.

You must consult your Manual for the priority, syntax and a full explanation of these operators.

f2 - Values

This key is a text/cell value toggle key. In value mode the values of the cells on screen are displayed. Labels are displayed as text. For a screen with many complex expressions or ranges to evaluate this may take several seconds. To save time it is recommended that you move around the Sheet in Text mode, not Value mode. In text mode the width of the screen column may be less than the text in the cell to display - the rightmost characters will be truncated for display - don't panic.

f3 - SIZE + FIELDS

1. The current file column / field titles and sizes can be viewed.
2. The screen column size can be set to a particular value to show more/fewer columns on screen. This will change the default settings for Window0. A size of 14 will fit in a standard range evaluation : >[!AAA01!AAA11.
3. Disc Operations can be performed (See Files)

f4 - Screen Down

Moves the visible part of the sheet down by the height of the window.

f5 - Screen Right

Moves the visible part of the sheet right by the width of the window.

f6 - Replication

1. For copying a single entry from one cell to another in the same row or column. If in the same screen this is more simply carried out with f1 and cursor + COPY keys.
2. For copying a single entry from one cell to a range of cells either by row or by column.
3. For copying a single entry from one cell to a range of cells relatively. This is for when the start cell contains a reference to another cell. This reference can be adjusted in the range either by row for a row range or by column for a column range. If the cell contains more than one reference you will be prompted at each.

For example, look at the file SS-TEST, the section on item prices one screen down. Column 3, Prices+VAT was generated by entering >!AAX02*1.15 in AAX03. This was then replicated from AAX03 to AAY03, range to ABC03, and when prompted relative ?, reply "Y". Cell AAY03 then becomes >!AAY02*1.15 etc. In this example the reference is to a column in the same row, however, it could be to any cell in the sheet.

When prompted, the part of the code allowed to be adjusted relatively is shown by the cursor. Similar operations generated columns 4 and 5 quite simply. The offset added to the From cell for relative replication is the difference between the From start cell and the To start cell, plus the position of the To cell in the range starting at 0.

4. For copying from a range to a range either relatively or not. If relatively you will be prompted at each occurrence of a cell reference in all the cells in the from range.

IMPORTANT: For a column range the To column sizes may not be large enough to accommodate the From cell contents. It is recommended to use a sheet with columns of the same size - See New Files, or make sure that the To columns are large enough.

NOTE: The only way to appreciate the usefulness and the effects of replication is to try out the various possibilities to become familiar with them.

f7 - Windows

1. The windows which are currently ON, from 1-6, will be displayed as set by f8 - Window Edit. You may move from window to window with the Space Bar and Return keys. The display can be scrolled UP by moving the cursor to the bottom of the window, the next row will be displayed at each press of the Down cursor. The UP cursor will reset the window. This allows some flexibility in printing and producing Text files from the screen, and in viewing parts of the sheet which are far apart.

2. On exiting the Windows you may print the screen or produce a text file of the screen.

f8 - Window Edit

1. The existing Window parameters may be saved as a file.
2. A file of Window parameters may be Loaded in, replacing the current set. File WI-TEST is provided for use with SS-TEST.
3. The 7 windows are initially all set to the default Window0 parameters:

Width	Left-M	S-Col	S-Row	Pos	Opt	Set
14	4	1	AAA	0	0	202

These may be Edited except for window0 where S-Col, S-Row, Pos and Opt cannot be edited. Windows (1 to 6) which are ON are shown.

Width is the column width used by the window.

Left-M is the left margin used when printing (f9).

S-Col is the start column.

S-Row is the start row.

Pos is the position of the window, e.g. R2 = right of window 2, this is for your own information and is not used by the program. After entering the position of the edit window you are put into the window which can then be adjusted/moved around the screen with respect to the other windows which are ON. The width of the window must be at least 2 characters wider than the column width setting to allow for the column spacers.

Opt indicates whether the window (1-6) is to be displayed - 0 = OFF, ON = ON.

Set is the setting for the display of numbers, in a 3 character code:

First character:

0 = Integer display, characters 2+3 = significant figures, 01=1, 10=ten, etc.

1 = Exponent display, characters 2+3 as above.

2 = Decimal display, characters 2+3 = decimal places, 01=one, 10=ten, etc.

f9 - PRINT / TEXT-FILE

A single window (0-6) may be saved as a Text file or Printed with the left margin as set in the window parameters. The full window is used, with the option of additional rows.

f10+SHIFT or f0

This acts as a toggle between the column size setting for window0 and the settings for the column sizes when the file was created. The latter always allows the complete cell contents to be displayed as text.

DELETE

1. Individual cells are most easily wiped / reset using f1 and RETURN.
2. A block of selected rows can be reset, or selected columns within a block of rows. The row entries must be inclusive, so to reset a single row the From and To entries should be the same. The entries must use the 3 digit row code - AAA.
3. A blank file with an identical field / column structure to an existing file can be easily created by Saving the file with COPY under a new filename. Return to Files with ESCAPE, Load in the saved file and then Reset all the rows.

COPY

This key will allow you to COPY all or part of the sheet as text or text + numbers or to append files with an identical column structure to the end of the sheet.

1. Copy the entire Sheet under a new Filename (RETURN). The file can be copied as Text, or as Text + Numbers (See 3).
2. Append (A) a file to the end of the Sheet - after the last row in use. This action will SET the automatic file save flag. If the file does not have the same column structure as the resident file, or if there is not enough room for the file, an error message will be given and no action taken.
3. Copy part of the Sheet (Space Bar). A block of selected rows can be copied to form a new file. Row input must use the three digit code and is inclusive. Alternatively the rows can be copied as Text + Numbers.
i.e. Any expression which requires evaluation will be evaluated, and the result will be put into the Sheet and then copied. This facility is particularly useful for producing files for use with the RAYCOMP Graphics Utilities which require numerical input. The resident file is automatically reset to text after the file has been saved.