POCKET REFERENCE

# VISICALC®

## FOR THE TRS-80® MODEL 4

Program Created and Written by
**Software Arts Products Corp.**

Manufactured for

**Radio Shack®**

A DIVISION OF TANDY CORPORATION

VISICORP™

Exclusive Distributor

34911-3310 8/83

# A VISICALC® SCREEN

Recalculation Order Indicator: If R, across rows. If C, down columns. If ! is present, sheet is being recalculated.

Memory Indicator: How many K memory available. If OM, out of room.

Left-aligned Format (/FL)

General Format (/FG)

Repeating Label (/-)

Value

Graph Format (/F*)

Integer Format (/FI)

Right-aligned Format (/FR)

# USE OF KEYS

## MOVING THE CURSOR

| | |
|---|---|
| → ← ↑ ↓ | Move the cursor in the designated direction. Used in value entry and some commands to point to an entry position that will be selected when [ENTER] or a colon is pressed. Move edit cue in Edit Command (see /E). |
| ; | Moves cursor between windows (see /W). |
| >coord | Go To Command. Cursor moves to designated coordinate. |
| [F1] | Moves cursor to upper-left corner of worksheet. |

## CALCULATING

| | |
|---|---|
| + | Addition |
| – | Subtraction |
| * | Multiplication |
| / | Division |
| [CLEAR] ; | Exponentiation |
| # | If the coordinate is immediately to left of edit cue, replaces coordinate with that location's current value. Otherwise places current value of cursor location on edit line. |
| ! | When the edit line is clear, forces recalculation of entire sheet. When formula is on the edit line, replaces formula on edit line with its current value. |

## EDITING

| | |
|---|---|
| [F2] | Deletes character to left of edit cue on edit line. If edit cue is at beginning of edit line, cancels command entry and clears prompt line. |
| [CTRL]-C | Cancels command, clearing edit line and prompt line; stops printing or disk storage operation in progress. |
| [F3] | Invokes Edit Command during entry on the edit line (see /E). |

# LABELS

Start with any letter or ". The initial quotation mark does not appear on the edit line. Defines the entry as a label with the numeric value of zero. Labels are left-aligned in the entry position. Correct typing errors while entering with [F2] or [F3].

# VALUES

Start with a digit (0 through 9), plus (+), minus (−), open parenthesis, period (.), number sign (#), or at sign (@). In General format, program shifts between conventional and scientific notation as required to display the calculated value to the greatest precision. If column is too narrow to display the number in scientific notation, greater-than signs (>) fill the entry position.

## VALUE REFERENCES

Entry position coordinate used as element in a formula. Value references are allowed wherever numbers are allowed. To start a value entry with a value reference, begin with +.

## FILE NAMES

A file name can be given in the VisiCalc program by:

- Typing the entire file name for the file.
- Scrolling the name from the current directory with the ➡.
- Typing a drive designator (e.g., :1) and pressing [ENTER], then scrolling file names with the ➡.

A file name may be edited before pressing [ENTER] by:

- Using the [F2] key to delete single characters.
- Typing additional characters to add to the name.
- Using [F3] to edit the file name.

# FUNCTIONS

Provide common formulas for use in values. Each function begins with @ followed by the name of the function; most functions also require an expression in parentheses (the argument). An argument includes the values (formulas and numbers) upon which the function calculates.

The arguments may be:

| | |
|---|---|
| *v* | Any valid VisiCalc value. |
| *l* | Any logical value. |
| *list* | Any combination of values and ranges separated by commas. |
| *range* | A portion of a row or column specified by its beginning coordinate, a period (displayed as an ellipsis), and its final coordinate. |
| @ABS(*v*) | Absolute value of *v*. |
| @AVERAGE(*list*) | Average of the non-blank entries in *list*. Maximum of 255 entries in *list*. |
| @COUNT(*list*) | Number of non-blank entries in *list*. Maximum of 255 entries in *list*. |
| @EXP(*v*) | Natural exponent of *v*. |
| @INT(*v*) | Integer portion of *v*. |
| @LN(*v*) | Natural logarithm of *v*. |
| @LOG10(*v*) | Base 10 logarithm of *v*. |
| @MAX(*list*) | Maximum value in list. |
| @MIN(*list*) | Minimum value in list. |
| @NPV *(dr, range)* | Net present value of the cash *flow in range*, discounted at the rate specified in the expression *dr* (discount rate). |
| @SQRT(*v*) | Square root of *v*. |
| @SUM(*list*) | Sum of the values in *list*. |

## TRIGONOMETRIC FUNCTIONS

All angles are in radians.

| | |
|---|---|
| @SIN(*v*) | Sine of *v*. |
| @COS(*v*) | Cosine of *v*. |
| @TAN(*v*) | Tangent of *v*. |
| @ASIN(*v*) | Arcsine of *v*. |
| @ACOS(*v*) | Arccosine of *v*. |
| @ATAN(*v*) | Arctangent of *v*. |

## SEARCH FUNCTIONS

| | |
|---|---|
| @CHOOSE *(v, list)* | Returns the *v*th element of *list*. If *v* is 0 or greater than the number of elements in *list*, NA is returned. |
| @LOOKUP *(v, range)* | Compares *v* to the successive values in *range* and returns the corresponding value from the column or row immediately to the right or below the entries in *range*. |

## FUNCTIONS WITHOUT ARGUMENTS

| | |
|---|---|
| @ERROR | Makes all expressions referencing the value display ERROR. |
| @FALSE | Logical value FALSE. |
| @NA | Makes all expressions referencing the value display NA. |
| @PI | 3.1415926536. |
| @TRUE | Logical value TRUE. |

## LOGIC FUNCTIONS

| | |
|---|---|
| @AND(*list*) | TRUE if all values in *list* are TRUE, otherwise FALSE. |
| @OR(*list*) | TRUE if any value in *list* is TRUE, otherwise FALSE. |
| @NOT (*l*) | TRUE if *l* is FALSE, FALSE if *l* is TRUE. |
| @IF(*l, v1, v2*) | *v1* if *l* is TRUE, *v2* if *l* is FALSE. |
| @ISERROR(*v*) | TRUE if *v* is ERROR, otherwise FALSE. |
| @ISNA(*v*) | TRUE if *v* is NA, otherwise FALSE. |

## LOGICAL OPERATORS

| | |
|---|---|
| <, >, = <= <> | Compares two numeric values and results in either the logical value TRUE or FALSE. |

| | | |
|---|---|---|
| /B | Blank | Erases the highlighted entry position. [ENTER] or arrow key completes command. |
| /C | Clear | Clears the worksheet, restores the General format and single window. Y completes command, any other key cancels. |
| /D | Delete | Deletes the entire row (/DR) or column (/DC) on which the cursor rests. |
| /E | Edit | Allows editing of entry position contents. Places the contents of the highlighted entry position on the edit line. The left and right arrow keys (↑ and ←) move the edit cue over the characters without changing them. Delete to the left of the edit cue with the [F2] key. Enter to the left of the edit cue by typing characters. [F3] invokes the Edit Command while entering values, labels, and file names. |
| /F | Format | Sets local format for the highlighted entry position but does not affect contents in memory. Remains until changed or the worksheet is cleared. |
| /FD | Default | Resets to the global format. |
| /FG | General | Maximum precision. |
| /FI | | Integer. |
| /FL | | Left-aligned. |
| /FR | | Right-aligned. |
| /F$ | | Dollars-and-cents (two decimal places). |
| /F* | Graph | Replaces value with asterisks equal to its integer value. |
| /G | Global | Affects entire window or sheet. |
| /GC | Column | Sets column width of all columns to specified number (3 to 77). [ENTER] completes command. |
| /GO | Order of Recalculation | Specifies whether the worksheet is to be recalculated down the columns (/GOC) or across the rows (/GOR). |
| /GR | Recalculation priority | Sets recalculation to automatic (/GRA) or manual (/GRM). Typing ! causes recalculation. |

| | | |
|---|---|---|
| /GF | Format | Sets display format for all columns not specifically formatted. See /F for format specifications. |
| /I | Insert | Inserts a new blank row (/IR) or column (/IC) at the cursor position. |
| /M | Move | Moves an entire row or column to another position on the sheet. The first coordinate on the edit line designates the row or column to be moved. The final coordinate specifies where the row or column is to be moved. [ENTER] completes command. |
| /P | | See "Printing." |
| /- | Repeating Label | Fills the entry position with the designated character(s). |
| /R | | See "Replicating." |
| /S | | See "Storing." |
| /T | Titles | Fixes rows and columns in place on the screen so they remain in view when the window is scrolled. The position of the cursor determines which column(s) and/or row(s) are to be fixed. The Go To command (>) moves the cursor into a fixed area. |
| /TH | Horizontal | Fixes rows at and above the cursor. |
| /TV | Vertical | Fixes columns at and to the left of the cursor. |
| /TB | Both | Fixes columns and rows. |
| /TN | None | Unfixes all rows and columns. |
| /V | Version | Displays the copyright notice and version number. |
| /W | Window | Splits the screen vertically or horizontally at the current cursor position. The semicolon (;) moves the cursor from one window to the other. Global commands affect only the window containing the cursor. |
| /WH | Horizontal | Splits the screen just above the row with the cursor. |
| /WV | Vertical | Splits the screen just to the left of the column with the cursor. |
| /WS | Synchronized scrolling | Split windows scroll together. |
| /WU | Unsynchronized scrolling | Cancels synchronized scrolling. |

# PRINTING

The Print command sends a contiguous rectangular portion of the worksheet to a printer or to diskette. Formulas are not sent (to print formulas and formats, see /SS). To print all or part of a VisiCalc sheet:

| | |
|---|---|
| 1. | Place the cursor on the upper-left coordinate of the rectangular area to be printed and type /**P**. |
| 2. | Type **F** to send to diskette file. Type **P** to send to a printer. |
| 3. | To send setup strings, type ", the strings, then [ENTER]. The following special characters can be used: |
| [CLEAR]; C *char* | Sends next character as a control character. |
| [CLEAR]; E | Sends the Escape character. |
| [CLEAR]; H*nn* | Sends the single ASCII character defined by the hexadecimal digits nn. |
| [CLEAR]; R | Sends a return character. |
| [CLEAR]; L | Sends a line feed character. |
| [CLEAR]; [CLEAR]; | Sends one caret character (∧). |

The setup strings must be reentered each time the Print command is used. Invalid setup strings sent to the printer give no error indication.

| | |
|---|---|
| 4. | Enter lower-right coordinate of the rectangle to be printed, either by typing it or pointing the cursor to it, and press [ENTER]. |

# REPLICATING

The Replicate command copies the entry contents of the source range (the position(s) to be copied) into the target range (the position(s) to which it will be copied.)

A range is a portion of a row or column specified by its beginning coordinate, a period (shown as ...), and its final coordinate.

A colon separates the source range from the target range and is entered by typing either colon or [ENTER].

| | **Source** | **Target** |
|---|---|---|
| To copy one entry once | coordinate | : coordinate |
| To copy one entry several times | coordinate | : range in one row or column |
| To copy a row or column once | row or column range | : starting coordinate |
| To copy a row several times | row range | : range in one column |
| To copy a column several times | column range | : range in one row |

[ENTER] completes command.

If the source range includes reference to other locations, indicate how each reference is to be treated:

| | | |
|---|---|---|
| N | No Change | Copies the reference as it appears in the source entry. |
| R | Relative | Changes the reference so that it is relative to the target position. |

# STORING

The Storage command writes a file to diskette, reads a saved file from diskette, writes and reads files in the DIF™ format, deletes files from a diskette, initializes diskettes, and quits the VisiCalc program. File names can be displayed from the diskette by pressing the right arrow key when prompted for the file name.

| | | |
|---|---|---|
| /SL | Load | Reads a file previously saved with /SS. The file is loaded over the current sheet. New entries replace old ones. Any entries that are not replaced remain the same. To load a file into an empty worksheet, clear with /C before loading new file. |
| /SS | Save | Saves the information on the worksheet on diskette under the specified file name. To print out formulas and formats, type /**SS: PR**. |
| /SD | Delete file | Deletes the specified file from the diskette. |
| /SQ | Quit | Quits the VisiCalc program, allowing booting of another program diskette. |
| /SE | Execute TRSDOS command | Allows entry of TRSDOS command and returns to the worksheet. |
| /S#S | | Writes the specified area of worksheet to diskette as a file in the DIF™ format. R or [ENTER] saves by rows, C saves by columns. |
| /S#L | | Loads a file in the DIF™ format. R or [ENTER] loads the information by rows, C loads by columns. |

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