Microcomputer Spreadsheets

The arrival of VisiCalc, the first truly commercial spreadsheet program for personal computers, has been considered one of the key factors in the sudden explosion of PC popularity in corporations. By providing program facilities similar to that of an automated accounting spreadsheet, VisiCalc offered professionals a way to harness computing power to aid in the management and decision process.

Since those first days of spreadsheet application, dozens of new products have appeared. Data Decisions surveyed 40 spreadsheet vendors, representing 46 products to produce this summary of key spreadsheet offerings and their features.

MICROCOMPUTER SPREADSHEET OUTLINE

COMPANY • PRODUCT	IBM	Apple	Other	Row-Column Limit	Total Cell Limit	Virtual Spreadsheet Memory	Command Line	Menu	Function Key	Tutorial	Windows	Named Cells	Absolute & Relative Reference	Logical Operators	Statistical Operators	Financial Operators	Print By Range	Save By Range	Foreign File Support	Database	Graphics	Word Processing
Access Technology • 20/20	•		•	•				•		•		•	•	•	•		•	•	•	•	•	•
American Planning Corp • Electronic Spreadsheet	•		•		•	•		•		•			•		•				•		•	
Amtech • Cope	•		•			•		•				•	•	•	•	•	•	•	•		•	
Apple • LisaCalc		•		•				•		•		•			•	•	•		•		•	
ArtSci, Inc • MagiCalc		•		•		•			•				•	•	•	•	•	•				
Boeing Computer Services Co • BusCalc	•		•	•		•		•		•		•		•	•	•	•	•	•		•	
BOS National, Inc • BOS/Plannner	•		•	•		•		•	•	•		•	•	•		•	•	•				
BRI Systems, Inc • OptiPlan	•		•	•		•	•					•			•	•	•		•	•		
Chang Laboratories • GraphPlan	•		•		•	•		•								•	•		•		•	
Chang Laboratories • MicroPlan	•		•		•			•		•						•	•	•	•			
Comshare • Planner Calc			•	•			•			•		•	•	•		•	•					
Comshare • Target Financial Modeling	•	•	•	•			•			•				•	•	•	•	•				
Context Management Systems • Context MBA	•		•	•		•	•			•		•	•	•	•	•	•	•	•	•	•	•
Cromemco, Inc • CalcMaster			•	•			•	•					•		•							
Digital Marketing Corp • Plan80	•		•		•			•		•			•	•	•	•	•	•			•	
Executec Corp • ExecuModel	•		•	•				•		•		•	•	•	•	•	•	•	•	•	•	
Ferox Microsystems • Encore	•		•		•	•		•	•	•			•	•	•	•	•	•	•	•	•	•
Grid Systems, Inc • GridPlan	•		•	•					•	•			•		•	•	•	•	•	•	•	•
Hourglass Systems • NovaCalc	•		•	•				•						•		•	•	•				
Horizon Software Systems • Horizon Spreadsheet			•	•			•			•					•	•	•	•				•
Information Unlimited Software • EasyPlanner	•		•	•					•	•			•	•		•	•					•
IT Software • Calc-IT	•		•	•				•		•		•	•	•	•	•	•	•			•	•
LifeBoat Associates • UniCalc	•		•	•			•						•									
Lotus Development Corp • Lotus 1-2-3	•		•	•				•					•	•	•	•	•	•			•	
Lupfer & Long • Spread	•		•	•		•	•			•			•	•	•	•	•	•				
MicroPro International Corp • CalcStar	•		•	•		•	•			•				•	•		•	•				
MicroPro International Corp • PlanStar	•		•		•	•		•		•			•		•	•	•	•			•	•
MicroSoft • MultiPlan	•	•	•	•				•		•			•	•	•	•	•	•				
Norell Data Systems • EasyCalc	•			•					•				•		•	•	•	•				
Peachtree Software, Inc • PeachCalc	•		•	•				•	•	•			•	•	•	•	•	•			•	•

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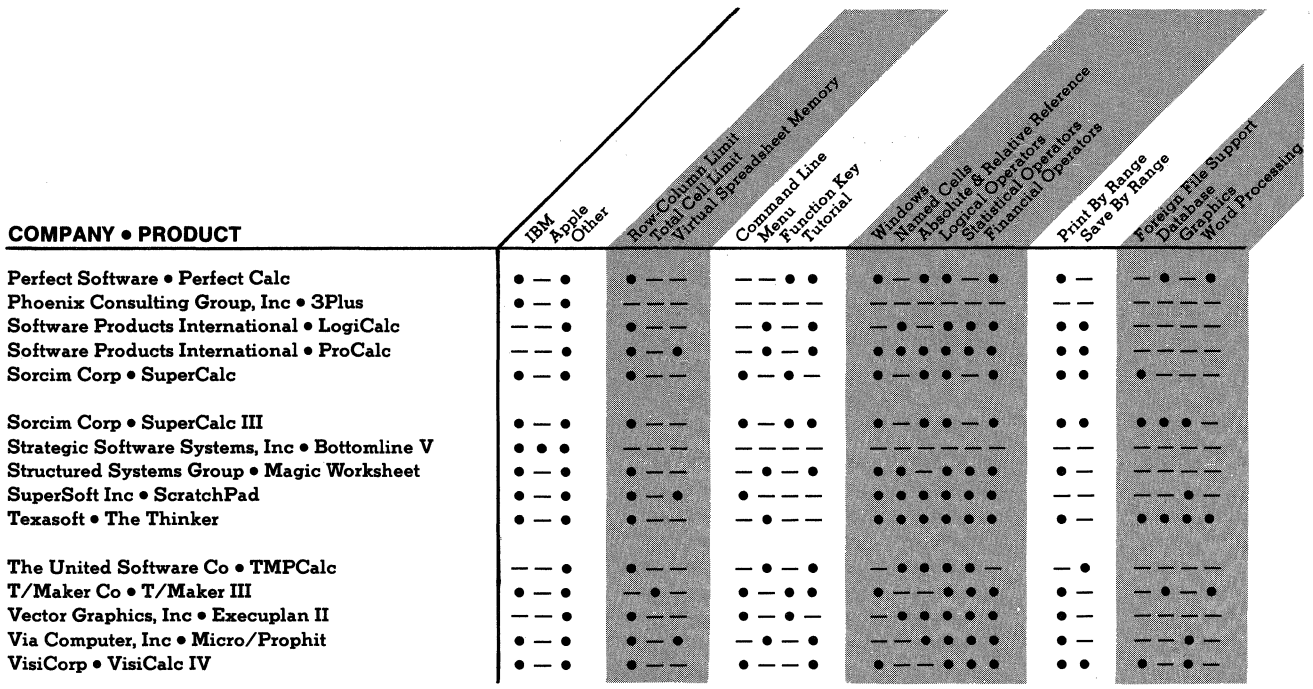

MICROCOMPUTER SPREADSHEET PROGRAM FEATURES

In its simplest form, a spreadsheet program is a large computerized "form" which is divided into rows and columns. The intersection of a row and column is a place where user data may be placed, and is commonly called a "cell." Cells are referenced by row and column coordinates.

Cells may contain text, defining the headings of a column for example, numeric data entered by the user such as monthly sales figures, or formulas to calculate the cell value based on the value of other cells. The "total sales" figure which represents the sum of all monthly sales is an example of this simple formula.

Early spreadsheet programs provided little more than the basic formula summaries, table lookups, and multiplication and division. Sometimes simple statistical functions such as average values were also available. In more recent products, advanced formula features offer such complex functions as standard deviation, internal rate of return, or net present value. These new formula features make the application of the programs to complex statistical or financial problems easier, and make the modern spreadsheet an almost perfect generalized tool for the analysis of numeric or financial data.

Other advances in spreadsheet features make the products easier to learn and to use. Menu structures, which permit the user to select options from a list of descriptions rather than a cryptic string of letters, make it possible for users to spend less time leafing through manuals, and HELP functions reduce this reference even further. The ability to "name" or label cells makes it possible to construct a formula which, for example, multiplies prices by a discount level through use of meaningful names like "DISC" and not references to cells like "CC141". As a result of these changes, more and more users are finding that spreadsheet programs can be the answer to many problems which were originally thought to require special packages or even custom programming.

There are many variations on the basic spreadsheet program. Some add features such as graphics or database processing, while others provide enhanced statistical and financial functions. The selection of an ideal spreadsheet for business use requires matching the features of the product against probable needs—a difficult task in a large company. Another strategy is to choose the product with the best balance of features and ease of use.

In the following section, spreadsheet programs are summarized based on the key characteristics for business applications. The material is organized to permit easy identification of key data, with key facts marked with dots (•).

Overview • provides a brief description in capsule form of the spreadsheet; comparison to other popular, well-known spreadsheets may be made here; unique features may also be indicated in this section.

Date of First Shipment • month and year the product was initially delivered.

Product Type • many spreadsheet programs perform other functions as well; this heading defines the major functions of the product; spreadsheet processing, graphics generation, database, communication, etc.

Hardware/Software Required • this describes the hardware and software required for execution; if the configuration required is unusual, that fact will be highlighted • the following items are indicated: computers supported • operating systems supported • special hardware requirements • minimum configuration.

Command Entry • this section defines the way in which commands are entered and the direct command reference available • the following information is included: keyboard overlay or template • online Help via "Help key" • command summary card or chart.

Spreadsheet Size • the limitation to spreadsheet size can be critical to a business, and all products are not equal in this area; size limitations may be designed limits on row and column numbers, cell number limits, or memory size restrictions • maximum rows x columns • memory available for spreadsheet in minimum configuration system is stated.

Features • spreadsheet programs permit the entry of data or

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formulas into cells, and permit the loading, saving, and printing of the spreadsheet; additional features improve the ease of use and facilitate the application of the product to more complex business problems • the following topics are indicated: method of command entry • method of cursor movement • multiple window support • cell labeling or naming • absolute and relative references • Boolean logical operations • financial operations • statistical operations • support for graphing spreadsheets • loading multiple spreadsheets • saving spreadsheets • recalculation control and forward or circular references • support of foreign or standard file formats • tutorial or teaching aids supplied.

Price • retail price of product.

The following feature highlights may require some additional explanation.

Multiple Window Support • Some products permit the user to define several display "windows" which can be pointed to different parts of the spreadsheet. These may serve to keep critical data such as column headings in view, or may permit entry/analysis of data which is widely separated. Windows are usually horizontal or vertical divisions of the display, but some products permit rectangular or even irregular-shaped windows.

Cell Naming or Labeling • Giving a cell a name permits reference to it without having to remember its coordinates. This is useful for often-referenced values such as "DISC" for discount rate.

Absolute or Relative References • Many spreadsheet formulas are intended to calculate a value based on the sum of the cells in the same row or column. If these formulas can reference the cells in a relative way ("total the three cells above"), the formula can be copied to other places and remain valid. Other times, absolute references to a cell are needed: "multiply the total by the value in cell AA41." A good product will support both types.

Boolean, Statistical & Financial Function Support • Many complex operations cannot be simulated using conventional arithmetic operations, or would require excessive time and skill for the simulation. Spreadsheet programs normally contain a number of imbedded functions which perform those operations and which may be used in formulas. Thus, @STD may calculate the standard deviation of a row or group of entries.

Worksheet Loading, Saving & Printing • Worksheets can sometimes be loaded and saved partially rather than completely, making it easier to manipulate portions of them. Further aid is sometimes provided by the way in which the product combines multiple-loaded worksheets. Some products will support having 2 worksheets loaded together which do not conflict in cell usage. Others will even combine the values of cells which do match from the multiple worksheets to form a single cell. Printing worksheets in sections may be necessary for large worksheets, but it is useful in other circumstances when only a section of the values contained are required for review.

Recalculation, Forward Reference & Circular Reference • When data is entered into a cell in a worksheet, the formulas in other cells may reference the new value and thus may require part or all of the worksheet to be recalculated. The order in which this recalculation takes place is important. For example, let us suppose a formula in column D row 4 references a cell in column B row 6. This in turn contains a formula adding column A rows 1 and 2. When a value is entered into A2, the spreadsheet program must recalculate the values of the other 2 cells. If it recalculates by COLUMN (all of column A, then B, etc), it will encounter the B6 formula before the D4 formula and the values will be correct. If it calculates by ROW, it will find D4 first and will thus use an old value for B6. This is called a forward reference. Another type of reference is a circular reference, where the value of a cell depends on itself in some way. Some packages will support or warn of forward or circular references, and others will permit the user to specify the direction of recalculation to suit the style of the spreadsheet.

MICROCOMPUTER SPREADSHEET LISTINGS

■ ACCESS TECHNOLOGY

6 Pleasant Street, South Natick, MA 01760 • 617-655-9191.

☐ 20/20

Overview • a spreadsheet program designed for use within corporations, 20/20 offers 42 special functions, 25 for data manipulation and scientific calculations.

Date of First Shipment • May 1984.

Product Type • spreadsheet program; business graphics program; communication program; text processor; database program.

Hardware/Software Required • most PC-DOS/MS-DOS computer systems including the IBM PC (2nd quarter 1984) and DEC Rainbow • 192K bytes of RAM required.

Command Entry • command structure similar to Lotus 1-2-3 • English word commands which can be selected by pointing the cursor or entering the first letter • users may build command files or custom menus.

Spreadsheet Size • 1000 x 1000 spreadsheet • 50K bytes available for spreadsheet on minimum system.

Features • cursor movement controlled by cursor pad; Four windows supported in quadrant style; cells may be named and referenced by name; formula references to cells may be absolute or relative • relational tests are supported in formulas Boolean AND, OR are not supported; statistical standard deviation, average, LOG, MEAN, and linear regression-covariant supported; IRR, depreciation, percentage, NPV, PV, FV supported; integrated graphics with up to 10 graphs in windows • printing range may be selected from spreadsheet; loaded data may be combined with existing spreadsheet data including arithmetic combination of colliding cells; files may be saved by range; recalculation sequence may be row or column as specified by the user • warning issues for forward references; facilities to import Lotus, VisiCalc, and most database files, as well as ASCII text files; communication, graphics, text processing, project scheduling, and database features • tutorial manual and disk supplied; graphs and spreadsheets may be shown at the same time; Version of product exists for popular minicomputers and mainframes; Support for model movement between supporting systems via communication.

Price • $500

■ AMERICAN PLANNING CORPORATION

4600 Drake Street #423, Alexandria, VA 22304 • 703-751-2574.

☐ Electronic Spreadsheet

Overview • a special spreadsheet program for governmental work and not generally commercially available, the product offers special features for very large users.

Date of First Shipment • 1978.

Product Type • spreadsheet program; report generator; basic language extensions possible.

Hardware/Software Required • North Star; IBM PC, PC/XT with PC-DOS or CP/M-86; Eagle • most PC-compatible systems with MS-DOS; • requires 64K bytes of RAM and hard disk storage.

Command Entry • menu-driven command structure with free-form formula input.

Spreadsheet Size • 3 dimensional spreadsheet is 10,000 cells in each dimension; uses virtual memory structure so disk storage limits practical spreadsheet if disk space is available.

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Features • menu structure for entering commands; cursor pad used to move cell pointer; no support for multiple windows; cells may be given names and referenced by name; absolute cell reference or names used in formulas; full support for relational and Boolean operators; no statistical functions supported; no financial functions supported • external graphics processing may be supported; printed reports may be in spreadsheet form or may be formatted with a report writer similar to RPG; loaded spreadsheet data will overlay other data only if collision of cells occurs; menu selection of recalculation sequence options; warning of circular or forward references in formulas; import of foreign files must be handled via BASIC interface; full audit trail of changes supported; tutorial manual included; handles largest applications.

Price • $1,500.

■ AMTECH

788 Myrtle Street, Raswell, GA 30075 • 404-993-7270.

☐ Cope

Overview • a program designed for the serious financial analyst whose requirements include more modeling and goal seeking than traditional row-column addition.

Date of First Shipment • May 1981.

Product Type • spreadsheet program; linkage to external word processor, database program, graphics package, etc.

Hardware/Software Required • any PC-DOS/MS-DOS computer; CP/M 8-bit systems; 64K bytes of RAM and one disk required on CP/M; 128K bytes of RAM and dual double-sided disks required for 16-bit systems.

Command Entry • menu command structure with explanations on command action.

Spreadsheet Size • variable, unlimited spreadsheet size; virtual memory structure makes spreadsheet size independent of computer memory.

Features • menu-driven command structure; cursor pad controls cell pointer location; two windows may be defined based on row or column split of screen; cells may be given names and the names may be used in formulas; both relative and absolute references to cells supported; relational operators supported; Boolean AND, OR supported; statistical functions include trend analysis, linear and non-linear regression analysis, curve fitting, average, mean, sum, minimum, and maximum; financial functions include PV, FV, NPV, IRR, annuity, amortization, mortgage, etc • link to graphics package supported; data loaded from a file can supplement or combine with existing data • printed data may be selected by range from the spreadsheet; data may be saved to disk based on a defined range; recalculation is done under user control; user is warned of circular, invalid, or questionable references in formulas • ASCII and .DIF files may be imported for use; tutorial manual and diskette included; primarily a modeling tool for goal-seeking, engineering analysis; report writer feature for special format reports.

Price • $395.

■ APPLE COMPUTERS, INC

10260 Bradley Drive, Cupertino, CA 95014 • 408-966-1010.

☐ LisaCalc

Overview • if you have a Lisa, and if you want to do spreadsheet work, this one's for you; the spreadsheet program interfaces with LisaGraph.

Date of First Shipment • June 1983.

Product Type • spreadsheet program; optional graphics program (LisaGraph) not included.

Hardware/Software Required • Apple Lisa; 380K bytes of RAM; 5M byte profile hard disk.

Command Entry • menu-driven command entry based on mouse technology; extensive on-screen help facilities.

Spreadsheet Size • 255x255; no information on memory availability on minimum configuration supplied.

Features • cursor pad or mouse may be used to move cell pointer; up to 25 windows of any rectangular shape may be defined; cannot name cells for use in formulas; users can enter formula data using both absolute and relative cell references • relational and Boolean operators supported; statistical functions include average, rounding; financial functions include NPV, IRR, depreciation, percentage; optional graphics via LisaGraph • data may be printed by range; entire worksheet must be saved; specific rows, columns, or cells may be protected from overlay during data loading; automatic recalculation with manual override; does not support foreign file format; manual and on-screen tutorial provided; custom report generation.

Price • $295.

■ ARTSCI, INC

5547 Satusma Avenue, North Hollywood, CA 91601 • 213-985-2922.

☐ MagiCalc

Overview • an inexpensive and quick package with interesting features such as the ability to make individual cells invisible.

Date of First Shipment • March 1983.

Product Type • spreadsheet program; integrated spreadsheet, word processor to be announced 2nd quarter 1984.

Hardware/Software Required • Apple II series with DOS, ProDos; 64K bytes of RAM required.

Command Entry • commands are entered via function keys.

Spreadsheet Size • 512K bytes maximum; 70x70 cells; approximately 30K bytes available for spreadsheet on minimum configuration; virtual memory structure.

Features • key-oriented command structure; cursor pad moves cell pointer; no multiple window support • naming of cells supported; absolute or relative cell reference supported; relational operators supported in formulas; mean, average statistical functions; financial functions include PV, IRR, depreciation, percentage • compatible with VisiCalc graphics; printing by cell range is supported; loaded data will overlay all data in memory; data may be saved to disk by range; user is warned of forward or invalid references in formulas; VisiCalc file structure supported • individual columns may be up to 80 characters wide; cells or columns may be made invisible to protect data • high computation speed.

Price • $149.95.

■ BOEING COMPUTER SERVICES CO

2800 160th Avenue SE, Bellevue, WA 98009 • 206-763-5636.

☐ BusCalc

Overview • a UCSD p-System product which features 3-dimensional spreadsheets and virtual memory storage.

Date of First Shipment • October 1982.

Product Type • spreadsheet program; graphic generator program; other products may be packaged with BusCalc but are not integral.

Hardware/Software Required • UCSD p-System and MS-DOS versions available; configuration varies with computer type; most systems require 64K bytes of RAM and 2 disk drives; MS-DOS version requires 128K bytes of RAM.

Command Entry • menu-driven command entry with online tutorial.

Spreadsheet Size • maximum size 500x500x500; virtual memory structure permits large spreadsheets based on available disk storage • p-System version has 32K bytes of RAM available for spreadsheet in minimum system configurations, MS-DOS version has 64K bytes.

Features • menu command structure; cursor keypad used to move

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cell pointer; modified form of window structure permits freezing a series of rows or columns on the screen while the rest can be moved; no support for cell naming; both absolute and relative cell references supported; relational operators supported • mean, average, rate of growth functions available; financial functions include principle, monthly pay, depreciation, IRR, PV; graphics generator included; printing of a range of cells is supported; loaded data can supplement data already in memory • cells may be protected from overlay during loading; files may be saved by range; recalculation of the spreadsheet may be automatic or manual but sequence is not controllable; no warning is given for circular or forward references; importing data from an ASCII text file is supported • three-dimensional structure • procedure file commands permit saving sequences of commands for invocation as a group; protected cells are shown in reverse video.

Price • $300.

■ BOS NATIONAL, INC

2560 Royal Lane, Dallas, TX 75229 • 214-484-2717.

☐ BOS/Planner

Overview • really more a financial planner than a spreadsheet program, BOS/Planner runs on nearly anything.

Date of First Shipment • October 1983.

Product Type • financial planning/spreadsheet program; interface to traditional accounting systems.

Hardware/Software Required • IBM PC with PC-DOS; DEC PDP-11 series; IBM Series/1; most Motorola 68000 systems; 100 different operating systems supported; BOS-5 operating system supported • BOS operating system requires 64K bytes of RAM and 2 disk drives; other operating system configurations vary; 128 to 256K bytes of RAM is typical.

Command Entry • menu selection of major operating modes; function key selection of actions within mode.

Spreadsheet Size • up to 10,000 lines, 60 columns supported; virtual memory structure makes spreadsheet size limit disk capacity rather than memory.

Features • major operating modes are menu selected; function keys control actions within mode; cursor pad moves cell pointer • two different windows supported; dividing the screen by row or column; cells may be given names and referenced by name; both relative and absolute references supplied; relational operators supported; no Boolean operators; no imbedded statistical function support; financial functions include NPV, IRR, Depreciation, tax table search • no graphics support; data may be printed by selected range; data may be loaded into an existing spreadsheet and will affect only cells which collide; data may be saved to disk by range; user has no control over recalculation of spreadsheet; forward references are detected and user is warned • no facility for importation of foreign files except from BOS general ledger • tutorial manual and reference with sample data provided; primarily a financial planning tool for integration with general ledger.

Price • $550 for single-user systems; $900 for multiuser systems.

■ BRI SYSTEMS, INC

1660 South Albion Street, Suite 419, Denver, CO 80222 • 303-759-9086.

☐ OptiPlan

Overview • a CP/M product with virtual memory capability now available in MS-DOS form.

Date of First Shipment • January 1984.

Product Type • spreadsheet program; interactive database program.

Hardware/Software Required • 8-bit CP/M systems; CP/M-86 systems; MS-DOS/PC-DOS system version available March 1, 1984 • CP/M systems require 64K bytes of RAM; MS-DOS version requires 128K bytes of RAM; hard disk required.

Command Entry • command-line entry of commands based on prompts and online help.

Spreadsheet Size • 702x999 spreadsheet supported; virtual memory structure makes size limited by disk storage rather than memory; approximately 15K bytes of RAM available to users on minimum system, but spreadsheet size not affected.

Features • commands are entered with online prompting and help; cursor pad may be used to move cell pointer, but user may customize interface • three windows of any shape may be defined • no cell naming facilities; absolute references to cells only; relational operators supported; Boolean AND, OR supported; statistical support for average and STD; financial support includes NPV, PV, depreciation; string graphing only • print ranges may be fully specified and print formatting is also supported; files loaded over an existing worksheet in memory will overlay the first worksheet; users may control the range of data to be recalculated and whether the calculation is manual or automatic; files of the .DIF format may be loaded; interactive with database program • extensive documentation provided; print format is very flexible—not limited to standard spreadsheet image • 3-dimensional capability; database interface.

Price • $295.

■ CHANG LABORATORIES

5300 Stevens Creek Boulevard, Suite 200, San Jose, CA • 408-246-8020.

☐ GraphPlan

Overview • an unconventional spreadsheet which maintains a very strict row/column structure and has very detailed help for command entry.

Date of First Shipment • information not available.

Product Type • spreadsheet program; graphics program.

Hardware/Software Required • 8-bit CP/M systems such as TeleVideo 803 and North Star Advantage; Epson QX-10; IBM PC, PC/XT with PC-DOS • most PC-compatible systems with MS-DOS • CP/M-86 systems such as TI Professional, DEC Rainbow, NEC APC, NCR Personal Computer, Televideo 1603 • 8-bit systems require 64K bytes of RAM • 16-bit systems require 128K bytes of RAM.

Command Entry • menus on right side of screen show command names and associated selection numbers, which are keyed by user.

Spreadsheet Size • 1000 cells; virtual memory structure makes spreadsheet size independent of memory.

Features • row and column labels are not part of traditional spreadsheet form; commands and formula functions are selected from a menu of valid actions based on keying of an associated numeric code; cursor keypad is used to move cell pointer; no support for multiple windows; no support for cell names; absolute references to cells used • no support for logical/relational operators; statistical functions include LOG, SIGMA, EXP, MEAN, STD; no financial functions • graphic capabilities included; users may select range of cells to be printed; data loaded from disk will overlay any data already in the spreadsheet; no support for foreign file formats • tutorial examples of commands interspersed in manual; one-key graphing command with changes in spreadsheet changing graph immediately • many formulas operate on entire rows and columns; formula commands are selected from command menu.

Price • $395.

☐ Microplan

Overview • a worksheet program designed especially for the row/column orientation of accounting activities, with built-in financial functions.

Date of First Shipment • 1983.

Product Type • spreadsheet program.

Hardware/Software Required • IBM PC, PC/XT • most PC-

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compatible systems • CP/M 8-bit systems • requires 64K bytes of RAM and one disk drive.

Command Entry • commands are selected from a numerically ordered list of functions based on the numeric code.

Spreadsheet Size • 1000 cell limit, based on any combination of rows or columns.

Features • all commands and formula actions are selected from a master menu by keying a numeric code; row/column orientation means that many functions operate on entire rows or columns at once; cursor pad may be used to move cell pointer; no multiple window support; no use of cell names • absolute references to cells are used in formulas • no Boolean or relational operators; statistical functions include mean, STD, DELTA, SIGMA, percent growth, exponential, variance; financial functions include depreciation, loan amortization, discount CF, ratios, tax rates, bond schedules • print ranges can be fully specified; optional consolidation module makes combining of several files/spreadsheets possible; files may be saved by range; recalculation may be controlled through the use of set recalculation ranges; link module allows .DIF files, ASCII text files, and mainframe files to be imported • tutorial manual provided; includes many built-in financial and statistical forms; row/column structure reduces formula time when traditional operations are being performed • report generator for custom formats.

Price • $495.

■ COMSHARE

1935 Cliff Valley Way, Suite 200, Atlanta, GA 30329 • 404-634-9539.

☐ PlannerCalc

Overview • one of the least expensive spreadsheet programs available for 8-bit CP/M computers.

Date of First Shipment • March 1982.

Product Type • spreadsheet program.

Hardware/Software Required • any 8-bit CP/M computer system • 64K bytes of RAM required.

Command Entry • English-like command language; command file permits command storage and execution.

Spreadsheet Size • 512x128 • 12K bytes of RAM available to spreadsheet in minimum configuration.

Features • command syntax is designed to be English-like; split screen, dual window capability for any rectangular shape; cells may be given and referenced by names; both absolute and relative cell references permitted • relational operations supported; no statistical function support; PV financial functions supported • print ranges can be fully specified; loading one spreadsheet over another will overlay only colliding cells; recalculation of forward references is handled by the program • circular references result in warning • tutorial manual.

Price • $99.

☐ Target Financial Modeling

Overview • a more advanced spreadsheet program designed to retain a simple command structure and yet provide improved statistical and financial functionality.

Date of First Shipment • May 1982.

Product Type • spreadsheet program.

Hardware/Software Required • most CP/M-80 8-bit systems; • most CP/M-86 16-bit systems • IBM PC, PC/XT with PC-DOS; most PC-compatible systems with MS-DOS; Apple, with CP/M card; TI Professional • Wang Professional • 8-bit systems require 64K bytes of RAM • 16-bit systems require 128K bytes of RAM; 1 disk drive required.

Command Entry • single command line with English/BASIC syntax ("SALES = $500").

Spreadsheet Size • 1000x5000 cell spreadsheet • no information on minimum configuration limitations available.

Features • command syntax similar to English or BASIC; cell pointer is moved by cursor keys; no multiple window support; no cell naming support; both absolute and relative references supported • all Boolean and mathematical functions supported; average, maximum, minimum functions supported; financial support includeds IRR, NPV • disk copy of worksheet may be consolidated with another in memory; printing can be controlled by range and may be formatted in ways other than worksheet form; data may be saved to disk by range; total control over recalculation; user warned of forward or invalid references • tutorial section in manual; column/line financial model orientation.

Price • $325.

■ CONTEXT MANAGEMENT SYSTEMS

23838 Hawthorne Boulevard, Torrance, CA 90505 • 213-378-8277.

☐ Context MBA

Overview • an integrated product written in the UCSD p-System, known for full functional support but slow processing.

Date of First Shipment • June 1982.

Product Type • spreadsheet program; word processor; data management system; forms/report generator; business graphics system; Telecommunication program.

Hardware/Software Required • UCSD Pascal p-System used • IBM PC, PC/XT, DEC Rainbow, NEC APC, HP 150 supported • MS-DOS version contemplated • requires 256K bytes of RAM, 2 disk drives; color graphics board required.

Command Entry: • command line used for entry of commands; function key support for some operations.

Spreadsheet Size • 95 columns, 999 rows in spreadsheet; no information available on memory available to minimum system; virtual spreadsheet used.

Features • command line input structure; cursor pad used for cell pointer movement; 4 windows of any size supported • cell naming and reference supported; both absolute and relative cell references supported • full Boolean logic and relationals supported • statistical functions include STD, variance, average, count; financial functions supported include PV, IRR, modified IRR; graphics support is integral to the product • users may specify the range of data to be printed; data may be loaded from a file into any part of the spreadsheet; data may be saved by range • user has full control over the order of recalculation in the worksheet; user is warned of forward or invalid references • MS-DOS version of program will support .DIF and .VC files, but p-System version does not; full integration of decision support functions • tutorial manual and diskette.

Price • $695.

■ CROMEMCO, INC

280 Bernardo Avenue, P.O. Box 7400, Mountain View, CA 94039 • 415-964-7400.

☐ CalcMaster

Overview • a spreadsheet designed for use on Cromemco's own computers, its biggest asset is support for Cromemco's special hardware and software features.

Date of First Shipment • 1981.

Product Type • spreadsheet program.

Hardware/Software Required • Cromemco systems, using CDOS operating system.

Command Entry • command line with limited menu selection facility.

Spreadsheet Size • 13 columns x 101 rows x 10 pages; no information on memory utilization or availability on minimum configuration supplied.

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Features • command line structure; cursor pad used to move cell pointer; no support for multiple windows; cells may be named and the names used in formulas • relational operators supported • no financial or statistical functions supported; no graphics support; no ability to select a range of cells for printing • loaded data will overlay all cells in the worksheet; recalculation is done on a per-page basis, automatically or at user command • no warnings for forward, circular, or invalid references; no support for foreign file formats; definition file permits application of formulas to rows at a time • limited three-dimensional support through pages.

Price • $295.

■ DIGITAL MARKETING CORPORATION

2363 Boulevard Circle #8, Walnut Creek, CA 94595 • 800-826-2222.

☐ Plan80

Overview • a financial modeling package with a unique integration with word processing files.

Date of First Shipment • April 1981.

Product Type • financial modeling/spreadsheet • limited screen-only graphics.

Hardware/Software Required • IBM PC, PC/XT with PC-DOS; most PC-compatible systems with MS-DOS; CP/M 8 or 16-bit systems • 56K bytes of RAM required on 8-bit systems; • 128K bytes of RAM required on 16-bit systems; 2 disk drives required.

Command Entry • menu command entry with explanations of commands.

Spreadsheet Size • 6000 cell spreadsheet size limitation on 128K byte systems, 3000 cells on 64K byte systems.

Features • menu-driven command structure with explanations of commands; cursor pad controls movement of cell pointer; no multiple window support at this time; cells may be given names which can be referenced in formulas; both absolute and relative cell reference supported • full support for logical and relational operators; statistical support for mean, STD; financial support includes PV, IRR, depreciation • limited, on-screen graphics; print ranges can be fully specified; loaded data will affect only cells where the worksheet already has data; data may be saved to disk by range; user has control of recalculation; users will be warned about invalid references in formulas • model is created with an external word processor for handling • tutorial manual and diskette included • report generating capability for flexible formatting; financial modeling package.

Price • $295.

■ EXECUTEC CORPORATION

12300 Park Central Drive, Dallas, TX 75251 • 214-239-8080.

☐ ExecuModel

Overview • an integrated system which includes word processing and database support.

Date of First Shipment • July 1981.

Product Type • spreadsheet program; word processor; database program; graphics facility planned for 2nd quarter 1984.

Hardware/Software Required • IBM PC, PC/XT with PC-DOS; most PC-compatible systems with MS-DOS • 192K bytes of RAM required.

Command Entry • menu command structure permits entry from a summary or typing of command; Help facility.

Spreadsheet Size • 255x64 spreadsheet • 64K bytes of RAM available to spreadsheet on minimum configuration.

Features • command menu with ability to key command name directly; Help facility • cursor pad controls movement of cell pointer; two windows supported, dividing screen horizontally or vertically; no cell naming support; cell references may be absolute or relative • relational operator support; statistical functions include average, mean, and standard deviation; financial functions include depreciation, percentage, NPV, and counting; ExecuPlot graphing capability to be released 2nd quarter 1984 • print ranges may be specified; data may be saved to a file by range; loaded data will overlay existing spreadsheet data only where the cells collide; colliding data may be combined arithmetically; automatic recalculation with user option to force recalculation • user is warned of invalid references; most .DIF file data may be imported • interactive word processing and database functions supported • tutorial manual and diskette; flexible report generator; up to 6 spreadsheets may be merged; database support permits reading directly into spreadsheet.

Price • $495 integrated with ExecuWriter and ExecuFile.

■ FEROX MICROSYSTEMS

1701 North Ft. Meyer Drive, 6th floor, Arlington, VA 22209 • 703-841-0800.

☐ Encore

Overview • more a full modeling language than a typical spreadsheet program, Encore offers extensive functional support.

Date of First Shipment • August 1983.

Product Type • financial modeling language/spreadsheet system; graphic system; limited database and word processing system.

Hardware/Software Required • UCSD p-System based; compatible with IBM PC, PC/XT; most PC-compatible systems will run Encore.

Command Entry • both function keys and menus are used for command entry.

Spreadsheet Size • 32,000 cells; 230x140 structure • virtual memory system so memory does not affect spreadsheet size.

Features • dual-mode menu/function key command structure; cursor pad controls cell pointer movement; no multiple window support; cells may be given and referenced by name; both absolute and relative cell reference supported • full support for relational operators; statistical functions include mean, standard deviation; financial support includes NPV, IRR, loan functions, balloon compound interest, variable rate filtering, depreciation, tax tables; users may define their own functions via command file; graphics support is included • data may be printed by range; data loaded from disk may be used to fill in additional area in a worksheet or be combined with existing values; data may be saved by range; forward references are prevented because the package is procedural in structure • any DOS or UCSD file may be imported; limited database support; limited word processing support • Online tutorial and manual; full report generator; graphic editing capability • users may create menus and commands.

Price • $695.

■ GRID SYSTEMS, INC

2535 Garcia Avenue, Mountain View, CA 94043 • 415-961-4800.

☐ GridPlan

Overview • bundled with word processing, database, and graphing facilities, the product is designed to work with the Grid Compass portable.

Date of First Shipment • October 1982.

Product Type • spreadsheet; sold integrated with word processing, database, and graphics support.

Hardware/Software Required • Grid Compass computer with MS-DOS; IBM PC or PC/XT with PC-DOS • requires 256K bytes of RAM.

Command Entry • function key command entry.

Spreadsheet Size • 256x256 spreadsheet; • approximately 30K bytes of memory available for spreadsheets on the minimum configuration.

Features • designed for use on the Grid Compass portable;

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function key command entry; 16 views of the same spreadsheet supported; no cell naming facilities; both absolute and relative cell references supported • full support for relational operators; Boolean AND, OR, NOT supported; statistical average function supported, financial functions are NPV, IRR; graphics facilities are bundled with product • cell ranges may be specified for printing; data may be loaded into an existing spreadsheet to overwrite or to extend that worksheet; values in colliding cells may be combined; data may be saved to disk by range; user has complete control over recalculation and may recalculate to resolve forward references; no warning of invalid reference is given • program is provided to translate .DIF and .VC files to internal format • integral word processing, database, and plotting/graphing support • tutorial diskette and manual.

Price • $940, bundled with word processor, database, and graphics.

■ HOURGLASS SYSTEMS

P.O. Box 312, Glen Ellyn, IL 60137 • 312-690-1855.

☐ NovaCalc

Overview • the all-time champion for lowest cost spreadsheet program, it even runs on the IBM PC.

Date of First Shipment • 1982.

Product Type • spreadsheet program.

Hardware/Software Required • CP/M 8-bit computers; IBM PC, PC/XT with PC-DOS; most PC-compatible systems with MS-DOS • memory requirements vary but are approximately 64K bytes of RAM; DOS 2.X may require 128K bytes of RAM.

Command Entry • menu prompts or via command name entry.

Spreadsheet Size • 20 columns x 40 rows; fixed spreadsheet size.

Features • menu entry of commands; no multiple window support; no cell name support; both absolute and relative cell references • no logical/relational operators supported; statistical support includes AVE, MEAN, STD, VAR; financial support includes PV, NPV, IRR, depreciation, compound growth; no graphics support • print ranges may be specified; loaded data will overlay only colliding cells; values in colliding cells may be combined; data may be saved by range; user may force recalculation at any time; no warning on invalid or forward references • no support for foreign file formats • no special tutorial features.

Price • $29.95.

■ HORIZON SOFTWARE SYSTEMS

185 Berry Street, Suite 4821, San Francisco, CA 94107 • 415-543-1199.

☐ Horizon Spreadsheet

Overview • an OEM product which is used by several popular computer manufacturers, the product is very similar to VisiCalc.

Date of First Shipment • May 1983.

Product Type • spreadsheet program.

Hardware/Software Required: • Altos 8600; DEC VAX; DEC PDP-11 • most UNIX, XENIX, IDRIS, Coherent, VENIX systems • PC version in development.

Command Entry • command line and mnemonic single-character commands; VisiCalc structure.

Spreadsheet Size • 256x256 • 128K bytes of memory required for spreadsheet on most systems.

Features • VisiCalc emulator; uses cursor pad for cell pointer movement if available; no multiple window support; no cell naming support; absolute cell references only • relational functions supported; statistical support includes average, count, sum, maximum, minimum; financial functions include IRR, NPV; no graphics support • data loaded from file will overlay worksheet; data may be printed or saved by range; no user control over recalculation and no warnings of invalid references • tutorial availability varies with product source • virtual memory structure; integrated with word processor in some implementations.

Price • $245 for most microcomputers.

■ INFORMATION UNLIMITED SOFTWARE

2410 Marinship Way, Sausalito, CA 94965 • 415-331-6700.

☐ EasyPlanner

Overview • a spreadsheet program which integrates with a word processor and permits limited user programming of functions.

Date of First Shipment • information not available.

Product Type • spreadsheet program; separate, integrated word processor.

Hardware/Software Required • IBM PC, PC/XT with PC-DOS; most PC-compatible systems with MS-DOS • 96K bytes of RAM required for DOS 1.X; 128K bytes of RAM required for DOS 2.X.

Command Entry • function key command entry.

Spreadsheet Size • 255x255 spreadsheet limit; 50K bytes of RAM available for spreadsheet on minimum configuration.

Features • function key command structure; cursor pad controls movement of cell pointer; no multiple window support; no support for cell naming; both absolute and relative cell references supported • Boolean and relational operators supported; no built-in statistical functions; financial functions for PV, IRR; no graphics support • print ranges may be specified; loaded data will overlay the entire worksheet; no range specification permitted on saving data to disk; automatic recalculation with user ability to force recalculation on command; warns of invalid references; no support for importation of foreign files • tutorial manual; integrated with EasyWriter II (optional); users can generate formula/function commands • report format is versatile and not limited to spreadsheet image.

Price • $250.

■ IT SOFTWARE

P.O. Box 2392, Princeton, NJ 08540 • 609-799-2600.

☐ Calc-IT

Overview • a three-dimensional spreadsheet product which has an execute language for user customization.

Date of First Shipment • November 1983.

Product Type • spreadsheet program; optional interface to database, word processor.

Hardware/Software Required • IBM PC, PC/XT with PC-DOS; most PC-compatible systems with MS-DOS • 128K bytes of RAM required.

Command Entry • menu-driven command entry.

Spreadsheet Size • 255x255, with 255 pages; spreadsheet requires 64K bytes of RAM.

Features • menu-driven command structure; cursor pad used for cell pointer movement; up to 4 windows may be supported in any rectangular shape; cells may be named and referenced by name; data must be entered in absolute cell reference form but may be copied relative to its new location • relational operators supported; statistical operations include mean, average, sum, and standard deviation; financial operations include PV, NPV, IRR, and mortgage rate calculation; bar charts and line graphics may be produced in limited form • print ranges for printed data may be specified; loaded data will overlay previous work; range may be specified for saving to disk; recalculation is automatic or on command; no control over recalculation direction; warning of forward or circular references supported; no support for importation of foreign files • tutorial manual and diskette.

Price • $400.

■ LIFEBOAT ASSOCIATES

1651 Third Avenue, New York, NY 10028 • 212-860-0300.

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☐ UniCalc

Overview • a simple spreadsheet program distributed by Lifeboat Associates and of uncertain ancestry.

Date of First Shipment • March 1983.

Product Type • spreadsheet program.

Hardware/Software Required • 8-bit CP/M systems; 16-bit MS-DOS/PC-DOS systems such as IBM PC; CP/M-86 systems; • 8-bit systems require 64K bytes of RAM; 16-bit systems require 128K bytes of RAM • 1 disk drive required.

Command Entry • command line entry of commands.

Spreadsheet Size • 255 rows x 64 columns; memory availability on minimum configuration not supplied.

Features • command line entry of commands; cell pointer movement depends on computer system; no window support; cells may be given names for reference; absolute cell reference only; basic calculation support in formulas only • no graphic capabilities; printing and saving of ranges of data not supported • loading a file overlays the entire worksheet; no user control over recalculation; no warning of invalid references; no support for foreign files • no product integration • no special tutorial manual.

Price • $99.

■ LOTUS DEVELOPMENT CORPORATION

161 First Street, Cambridge, MA 02142 • 617-492-7171.

☐ Lotus 1-2-3

Overview • generally acknowledged to be the best overall spreadsheet program on the market, Lotus also has a useful database feature.

Date of First Shipment • January 1983.

Product Type • spreadsheet program; database program; graphics program.

Hardware/Software Required • IBM PC or PC/XT with PC-DOS; Compaq, TI Professional, Victor 9000, Zenith Z-100, Hyperion, DEC Rainbow, HP-150, Tandy 2000 with MS-DOS • may not operate on PC-compatible systems if PC version is used • 192K bytes of RAM required.

Command Entry • command menu permits selection by typing the first letter or positioning the cursor to point to command; explanations of commands given in status line; Help function available.

Spreadsheet Size • 256 columns x 2048 rows • Lotus 1-2-3 itself uses 120K bytes of RAM.

Features • easy command structure with menu and explanation; users may enter commands by letter rather than by pointing in menu; macro command facility supported; cursor pad is used to move cell pointer; multiple window support to be available in SYMPHONY product (extra) • cells may be given names for reference; both absolute and relative cell addressing supported • full relational and Boolean logic operators supported; statistical support includes count, number, sum, average, minimum, maximum, standard deviation, variance; financial functions include IRR, PV, FV, NPV, payment; graphics support is integral • data can be printed by range; loaded data may be relocated if collision with existing data would occur, or may be combined arithmetically; data may be saved to disk by range; automatic recalculation or user command may force recalculation; circular references are flagged to user • both .DIF and .VC files may be used, as well as dBase II files • graphics, database support integral; screen graphics can be shown by pressing a function key; print graphics require that graph file be saved for printing.

Price • $495.

■ LUPFER & LONG

P. O. Box A-57, Hanover, NH 03755 • 603-643-4503.

☐ Spread

Overview • a product which advertised mainframe power from a micro, Spread is a modeling language with strong file consolidation capabilities.

Date of First Shipment • 1978.

Product Type • modeling language/spreadsheet program.

Hardware/Software Required • IBM PC, PC/XT with PC-DOS; Wang Professional; HP-150; Prime PC.

Command Entry • models are built using command line entry; Function key control may be used during data entry.

Spreadsheet Size • 999 columns with unlimited rows; virtual memory structure.

Features • separate model building phase with command line entry; data entry phase uses function keys and cursor key pad for cell movement; separate Help window available, but not data windows; cells may be given names for reference; both absolute and relative cell reference supported • full relational operator support; statistical support includes forecasting, linear regression, and many other projection functions; financial functions include PV, NPV, IRR, amortization, compound interest and growth, average, and carry forward • any rectangular segment of the spreadsheet may be printed • data loaded from disk may replace or be combined with current spreadsheet data; data may be saved by range • non-procedural references make recalculation sequence control unnecessary • no support for other spreadsheet formats, but ASCII text files may be imported • tutorial manual • powerful file consolidation features; audit trails supported; easy visualization of applications for financial professionals.

Price • $500.

■ MICROPRO INTERNATIONAL CORP

33 San Pablo Avenue, San Rafael, CA 94903 • 415-499-1200.

☐ CalcStar

Overview • a CP/M product now available for the IBM PC; CalcStar is now eclipsed by its newer PlanStar rival for most applications.

Date of First Shipment • information not available.

Product Type • spreadsheet program.

Hardware/Software Required • IBM PC, PC/XT with PC-DOS; most PC-compatible systems with MS-DOS; CP/M 8-bit systems; most CP/M-86 systems • 8-bit systems require 64K bytes of RAM; 16-bit systems require 128K bytes of RAM • one disk drive required, 2 recommended.

Command Entry • command line with help screen to provide options.

Spreadsheet Size • 255 rows x 127 columns; 450 to 1300 cell limits on small configurations in 8-bit systems; 20,000 cell virtual structure on 16-bit systems.

Features • Help screen shows command options, which are entered on command line; cursor movement keys are used to move cell pointers where such keys are available; no support for windows; no support for cell naming; both absolute and relative cell references supported • relational operators and Boolean AND, OR supported; statistical functions include linear regression, projection, slope, sum, count, average, minimum, maximum; no financial functions supported; no graphics capabilities • data may be printed or saved to disk by range; data loaded from disk will be merged into existing worksheet data, with colliding cells overlaying the original; optional recalculation by row or column; no warning of forward or circular references; no importation of foreign files • 13 chapters of manual are tutorial in style, and disk samples of worksheets are provided; automatic form entry supported—user is prompted for just the data required.

Price • $195.

☐ PlanStar

Overview • a modeling product which offers significant

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functionality for statistical and financial modeling applications, including a "relationship-oriented" style.

Date of First Shipment • information not available.

Product Type • financial/statistical modeling package/spreadsheet program; graphics support through ChartStar 2Q84; limited database capability.

Hardware/Software Required • IBM PC, PC/XT with PC-DOS; most PC-compatible computers with MS-DOS • 128K bytes of RAM required • 2 single-sided disk drives required, double sided recommended, hard disk preferred.

Command Entry • command line format using English-like words or first letters for entry; Help menus provide command assistance.

Spreadsheet Size • each model or "project" can contain 1000 spreadsheets; each spreadsheet can contain 32,768 cells; virtual memory structure for spreadsheets so disk capacity limits size.

Features • command line process for model creation; model structure is defined prior to entry of data; model relationships are stated in basic English terms understandable to professionals • cursor pad is used for cell movement during data entry; program will locate unfilled cells and prompt for values; multiple windows are not supported; typical method to reference cells would be by name; coordinate methods for cell reference would not normally apply • full support for Boolean and relational operators; statistical functions include sum, average, moving average, straight line and non-linear forecasting; financial functions include inflate, discount, NPV, IRR, amortization, depreciation (three methods), cumulative total; character graphics support is integral, full graphics support through ChartMaster 2Q84 • data may be entered into any position of the spreadsheet and consolidated with existing data through globally defined interrelationship formulas ("sheet1 = sheet2 • sheet3"); data may be saved or printed by range • forward references may cause erroneous values; circular references may be used for iteration if an imbedded test will eventually end the loop • foreign files in .DIF structure or comma-delimited ASCII text are fully supported; spreadsheets may be treated as records in a model calculation • online tutorial with guide, 7 examples on disk, command summary, newsletter, consulting service (fee, optional); full report writer capability • intuitive command syntax.

Price • $695.

■ MICROSOFT

10700 Northrup Way, Bellevue, WA 98004 • 800-426-9400.

☐ Multiplan

Overview • a contender for the best new spreadsheet crown; Multiplan lacks the extra features of Lotus such as database handling, but is less expensive.

Date of First Shipment • August 1982.

Product Type • spreadsheet program.

Hardware/Software Required • Apple; CP/M 8-bit systems; IBM PC, PC/XT with PC-DOS; most PC-compatible systems with MS-DOS • Xenix versions available; also runs Convergent Technologies computers and products OEM'd from CT • 8-bit systems require 64K bytes of RAM and one disk; DOS 1.1 requires 64K bytes of RAM, one disk; DOS 2.0 requires 128K bytes of RAM.

Command Entry • menu of commands with on-screen explanation; commands may be selected by pointing cursor or by letter.

Spreadsheet Size • 255x63 spreadsheet; linkage of sheets supported for larger effective sizes • 50K bytes of memory remains in IBM PC for spreadsheet at minimum configuration • 17K bytes of memory remains in Apple at minimum configuration.

Features • commands are selected from an on-screen menu by pointing or by entry of the first letter; cursor pad is used to move cell pointer; up to 8 windows may be defined, of any rectangular shape; cells may be given names for reference in formulas • relational operators are fully supported; statistical operator support includes mean and standard deviation; financial support includes PV, IRR, and other functions; graphics support to be supplied • loaded data may overlay the existing worksheet or supplement it; worksheets may be linked for expansion of size; ranges of a worksheet may be printed • saving to disk involves the entire worksheet only; forward references are automatically resolved for the user; circular references may be used for iteration but the user is warned of their existence • .VC files supported • tutorial manual supplied • linking of worksheets provides a larger model than integrated packages; entries may be sorted by multiple keys.

Price • $275; $250 for the IBM PC.

■ NORELL DATA SYSTEMS CORP

3400 Wilshire Boulevard, Los Angeles, CA 90010 • 213-257-2026.

☐ EasyCalc

Overview • an inexpensive spreadsheet program with a nice feature—it resolves forward references.

Date of First Shipment • 1982.

Product Type • spreadsheet program.

Hardware/Software Required • IBM PC, PC/XT with PC-DOS; most PC-compatible systems with MS-DOS • 64K bytes of RAM required; one disk required.

Command Entry • function key command entry; Help menu provided.

Spreadsheet Size • 52 columns x 254 rows; approximately 20K bytes memory available for spreadsheet in minimum configurations.

Features • function key command entry with Help screen; cursor pad used to move cell pointer; no multiple window support; cells may be given names for reference; both absolute and relative cell references supported • no logical/Boolean operators supported; statistical support includes maximum, minimum, average, total; financial support includes NPV, depreciation; histogram graphing capabilities, limited in scope • users may select a range of data for printing; data loaded from disk can overlay or supplement existing data; combination of loaded data with existing data in collision cells is supported; users may save data to disk by range • automatic resolution of forward references by second recalculation; no support for foreign file formats • manual is written in tutorial style—no separate tutorial.

Price • $99.95.

■ PEACHTREE SOFTWARE, INC

Division of MSA, 3445 Peachtree Road, Atlanta, GA 30326 • 404-239-3000.

☐ PeachCalc

Overview • a spreadsheet program developed from CP/M roots, PeachCalc is most often seen as part of an integrated set of products called PeachText 5000.

Date of First Shipment • September 1980.

Product Type • spreadsheet program; graphics package; integrated with word processor, spelling checker, database program (optional).

Hardware/Software Required • IBM PC, PC/XT with PC-DOS; CP/M 8-bit systems CP/M 2.0 or higher • 48K bytes of RAM required on 8-bit systems; 64K bytes of RAM required on 16-bit systems • one disk drive required.

Command Entry • menu for commands plus function key selection.

Spreadsheet Size • 254 rows x 63 columns • 31K bytes of memory is available for spreadsheet data on minimum configurations.

Features • command menu with additional function key support; cursor pad controls cell pointer movement; 2 display windows supported, divided horizontally or vertically • no support for cell names; both absolute and relative cell references supported • relational operators supported; statistical functions include

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average, count, maximum, minimum; financial operators include PV, IRR; separate disk for graphics support (included); printing by spreadsheet range supported • loaded data will overlay any data already in memory; data can be saved to disk by range; limited control over recalculation but not sequence of recalculation; user is warned of invalid references; no support for foreign files • tutorial disk and manuals provided • integrated product available which includes word processor, spreadsheet, database, speller, etc.

Price • $150 for PeachCalc alone.

■ PERFECT SOFTWARE

1400 Shaltuck Avenue, Berkeley, CA 94709 • 800-222-4222.

☐ Perfect Calc

Overview • a spreadsheet program with an "association file" which can define up to 6 linked spreadsheets.

Date of First Shipment • November 1983.

Product Type • spreadsheet program; can be integrated with database and word processing (optional).

Hardware/Software Required • CP/M 8-bit systems; IBM PC, PC/XT with PC-DOS; most PC-compatible systems with MS-DOS; supplied bundled with Columbia systems • 8-bit systems require 64K bytes of RAM • 16-bit systems require 128K bytes of RAM • one disk required.

Command Entry • function keys and control sequences are used for command entry; Help screen available.

Spreadsheet Size • 52 columns x 255 rows; 57K bytes of memory available for spreadsheet on minimum PC configuration.

Features • function-key command structure with some control sequences used and with Help menu; cursor pad moves cell pointer where available; 2 windows are supported, with the split either vertical or horizontal; no support for cell naming; both absolute and relative cell references supported • relational and Boolean operators supported; no statistical functions included; financial support limited to NPV; no graphics capabilities • data may be printed by range; worksheets may be combined through an association file, otherwise loading a second worksheet is treated as a change in context; 2 worksheets may be edited at one time; the entire worksheet must be saved—no range saving is supported • references to uncalculated cells is not permitted; no support for foreign file structures • both tutorial manual and diskette provided • Association file supports linking up to 6 spreadsheets through a main spreadsheet • may be integrated with word processor and database program (optional).

Price • $249.

■ PHOENIX CONSULTING GROUP, INC

P.O. Box 2951, Abilene, TX 79604 • 915-676-8208.

☐ 3Plus

Overview • an adjunct to Lotus 1-2-3 rather than a complete program in itself, 3Plus provides templates for special financial functions.

Date of First Shipment • August 1983.

Product Type • spreadsheet template for Lotus 1-2-3.

Hardware/Software Required • runs only with Lotus 1-2-3; IBM PC or PC/XT; any PC-compatible computer capable of running 1-2-3 • 256K bytes of RAM required.

Command Entry • via Lotus 1-2-3.

Spreadsheet Size • uses Lotus 1-2-3.

Features • provides financial planning and forecasting templates to Lotus 1-2-3; saves users considerable time in developing custom financial and projection spreadsheets.

Price • $289.

■ SOFTWARE PRODUCTS INTERNATIONAL

10343 Roselle Street, Suite A, San Diego, CA 92121 • 619-450-1526.

☐ LogiCalc

Overview • a product for the UCSD p-System and the IBM Displaywriter, LogiCalc offers display writer users some of the advantages of personal computers.

Date of First Shipment • April 1981.

Product Type • spreadsheet program.

Hardware/Software Required • IBM Displaywriter with UCSD p-System • 128K bytes of RAM required.

Command Entry • menu command structure.

Spreadsheet Size • 255x127 spreadsheet; no information on memory availability for spreadsheet supplied.

Features • cursor pad used to move cell pointer; no multiple window support; cells may be given names and referred to by name; absolute cell references only • relational operators and Boolean operators supported; statistical support includes sum, average, maximum, minimum, and linear regression; financial support includes PV, IRR; no graphics support provided • printing may be specified by cell range; data loaded from disk may replace or supplement data already loaded; colliding cells may be combined when data is loaded; data may be saved to disk by range; recalculation may specify a range to recalculate, so forward references may be handled correctly • users are warned of invalid or questionable references; no support for foreign files • tutorial manual provided • global search capability • calculator mode for easy combination of values outside worksheet.

Price • $125.

☐ ProCalc

Overview • an enhanced spreadsheet program for the IBM Displaywriter, ProCalc offers 3-D spreadsheets and virtual memory.

Date of First Shipment • August 1982.

Product Type • financial modeling program/spreadsheet program.

Hardware/Software Required • IBM Displaywriter with UCSD p-System • 128K bytes of RAM required.

Command Entry • menu command structure.

Spreadsheet Size • 132 columns x 216 rows; virtual memory system, so disk storage may limit spreadsheet size.

Features • menu command structure; cursor pad is used to move cell pointer; up to 6 windows supported of any rectangular shape; cells may be given names for reference; both absolute and relative cell references supported • relational and Boolean operators supported; statistical support includes mean, standard deviation, and linear regression; financial support includes IRR, PV, and many more operators • data may be printed or saved by range; users may specify if loaded data is to replace current data, combine with it on a cell-by-cell basis, or extend the current spreadsheet; built-in topological recalculation process eliminates problems with forward references; users are warned of questionable or invalid references; no facility for importation of foreign files • tutorial manual included • 3-dimensional spreadsheet capability.

Price • $350.

■ SORCIM CORP

2310 Lundy Avenue, San Jose, CA 95131 • 408-942-1727.

☐ SuperCalc II

Overview • a VisiCalc lookalike for CP/M systems was the basis for this product, and the MS-DOS version retains most of its features.

Date of First Shipment • May 1983.

Product Type • spreadsheet program.

Hardware/Software Required • IBM PC, PC/XT with PC-DOS; most PC-compatible systems with MS-DOS • 96K bytes of RAM required.

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Command Entry • function key or command letter from command line; similar command entry to VisiCalc.

Spreadsheet Size • 63 columns x 254 rows; no information on minimum memory for spreadsheets available.

Features • VisiCalc-like command structure with function key support; cursor pad used for cell pointer movement; two windows may be defined, dividing display vertically or horizontally • no support for cell naming • both absolute and relative cell reference supported • extensive logical and Boolean operators supported • no statistical operators supported; financial support includes PV and IRR • data may be printed by specified range; data loaded from disk may replace current data or be consolidated with it; data may be saved to disk by range • users can force recalculation to handle forward references; users are warned about circular or forward references • SuperData interchange option supports .DIF or .VC files; on-screen help at all command levels.

Price • $295.

☐ SuperCalc III

Overview • directed at the "new generation" spreadsheet market, SuperCalc III offers graphics support, text editing, and database management.

Date of First Shipment • November 1983.

Product Type • spreadsheet program; graphics program • limited text editing; database management.

Hardware/Software Required • IBM PC, PC/XT with PC-DOS; most PC-compatible systems with MS-DOS • 96K bytes of RAM required.

Command Entry • function key or command letter from command line; similar command entry to VisiCalc.

Spreadsheet Size • 63 columns x 254 rows; no information on minimum memory for spreadsheets available.

Features • VisiCalc-like command structure with function key support; cursor pad used for cell pointer movement; Two windows may be defined, dividing display vertically or horizontally • no support for cell naming; both absolute and relative cell reference supported • extensive logical and Boolean operators supported; no statistical operators supported; financial support includes PV and IRR • data may be printed by specified range; data loaded from disk may replace current data or be consolidated with it; data may be saved to disk by range • users can force recalculation to handle forward references; recalculation may be done by row or column; users are warned about circular or forward references; SuperData interchange option supports .DIF or .VC files • on-screen help at all command levels • integrated graphics and database capability; limited text editing for text data input; "Ten minutes to SuperCalc" manual.

Price • $295.

■ STRATEGIC SOFTWARE SYSTEMS, INC

1300 Dove Street, Suite 200, Newport Beach, CA 92660 • 714-476-2842.

☐ BottomLine V

Overview • a financial planning model template set designed for use by Lotus 1-2-3, Multiplan, VisiCalc, or SuperCalc.

Date of First Shipment • November 1983.

Product Type • financial planning and modeling template set.

Hardware/Software Required • requires a spreadsheet program such as Lotus 1-2-3, Multiplan, VisiCalc, or SuperCalc; CP/M 8-bit systems supported; Apple II series with Apple DOS; Apple III • IBM PC, PC/XT with PC-DOS; most PC-compatible systems with MS-DOS.

Command Entry • dependent on host spreadsheet program.

Spreadsheet Size • 16x256 is used by templates.

Features • provides templates for financial planning functions; P&L supported; balance sheet; full support for financial ratios; Source and use of working capital.

Price • $295.

■ STRUCTURED SYSTEMS GROUP

5204 Claremont Street, Oakland, CA 94618 • 415-547-1567.

☐ Magic WorkSheet

Overview • an inexpensive spreadsheet program for the fact that it supports windows, and can integrate with word processing and accounting functions.

Date of First Shipment • February 1983.

Product Type • spreadsheet program • simple bar graph support • can integrate with word processor, accounting package, and database (optional).

Hardware/Software Required • IBM PC, PC/XT with PC-DOS • most PC-compatible computers with MS-DOS • CP/M 8-bit systems • CP/M-86 systems • MP/M 8 or 16-bit systems • 8-bit systems require 64K bytes of RAM • 16-bit systems require 128K bytes of RAM • one diskette required.

Command Entry • menu display at top of screen • command entry is by keying first letter of command name.

Spreadsheet Size • 64 columns x 255 rows; no information on memory usage for minimum configuration available.

Features • menu-driven command structure; control sequences used to move cell pointer, not cursor pad; two display windows supported • cells may be given names for reference; absolute cell references only • relational and Boolean operators supported; statistical functions include mean, average, standard deviation; financial functions include PV, NPV, IRR; simple bar graph support only • printed data may be selected by range of cells; data loaded from disk overlays existing worksheet entirely; user has control over recalculation • warnings are issued for invalid references; no support for foreign file formats • extensive tutorial on disk and manual • interfaces with optional database and word processor; integrates with separate financial package.

Price • $295.

■ SUPERSOFT, INC

P.O. Box 1628, Champaign, IL 61820 • 217-359-2112.

☐ ScratchPad

Overview • want to talk to your computer? this product at least lets you talk to your spreadsheet.

Date of First Shipment • February 1982.

Product Type • spreadsheet program • optional graphics program.

Hardware/Software Required • CP/M 8-bit systems; IBM PC, PC/XT with PC-DOS; most PC-compatible systems with MS-DOS; CP/M-86 computer systems • 48K bytes of RAM required for 8-bit systems; 128K bytes of RAM required for 16-bit systems • voice recognition card required for voice drive.

Command Entry • command line; no explanations of commands on screen.

Spreadsheet Size • 256x256 spreadsheet; virtual memory used for spreadsheet so disk capacity may limit size.

Features • command line input with no on-screen assistance; cursor pad used to move cell pointer on systems where available; unlimited window support divided by row or column • cells may be given names and referenced by name; both absolute and relative cell reference supported • Boolean and relational operators supported; statistical support includes mean, standard deviation; financial support includes PV, FV, IRR, depreciation, regular payments, annuity; graphics support optional • data loaded from disk overlays existing cells where collision of data occurs; recalculation is automatic and may be disabled or forced by user; no facility to control order of recalculation • user is warned of invalid references; no support for foreign files • voice command entry through several voice recognition modules (optional) • demo

Microcomputer Spreadsheets

diskette and tutorial references in manual but no formal tutorial.

Price • $295.

■ TEXASOFT

3415 Westminster Street #100, Dallas, TX 75205 • 214-369-0795.

☐ The Thinker

Overview • an inexpensive product with the ability to consolidate several spreadsheets.

Date of First Shipment • 1982.

Product Type • spreadsheet program.

Hardware/Software Required • IBM PC, PC/XT with PC-DOS; most PC-compatible systems with MS-DOS • 64K bytes of RAM required, 128K bytes may be needed with newer versions of DOS.

Command Entry • menu-driven command structure with on-screen command descriptions.

Spreadsheet Size • 60 columns by unlimited rows using linking, 60 rows x 14 columns if no linking is used • 32K bytes of memory available to spreadsheet on minimum system.

Features • command menu shows command name and explanation; cursor pad moves cell pointer; four windows may be displayed at one time, divided by row or column • cells may be given names for reference; both absolute and relative cell references supported • relational operators plus Boolean AND, OR supported; statistical functions supported; financial functions include IRR, PV, and financial preprogrammed templates; optional graphics support • printing may be done by range of cells; user control over combination of data if one file is loaded into an existing spreadsheet; entire spreadsheet must be saved—no saving by range supported • user has control over recalculation and may block certain cells; user is warned of invalid references; support for .DIF files • optional integration to graphics, database, and word processing package • no separate tutorial.

Price • $75.

■ THE UNITED SOFTWARE CO

2431 East Douglas Street, Wichita, KA 67211 • 316-684-5281.

☐ TMPCalc

Overview • a spreadsheet program for the 6809, the product features fast recalculation.

Date of First Shipment • information not available.

Product Type • spreadsheet program.

Hardware/Software Required • OS-9 operating system; MC6809 microcomputer system • 128K bytes of RAM required.

Command Entry • menu command entry with brief command definition.

Spreadsheet Size • 254x254 spreadsheet • remaining memory displayed on screen during operation.

Features • menu-driven command structure; cursor pad used to move cell pointer; no multiple window support • cells may be given names for reference; both absolute and relative cell references supported • relational and Boolean AND/OR supported; statistical functions include mean, average, standard deviation; no financial functions predefined; no graphics support provided • data loaded from disk will overlay current worksheet data only where a collision occurs; data may be saved to disk by range; dynamic recalculation of spreadsheet cells only updates cells where value changes, eliminating reference direction problems; user is warned of invalid references • no foreign file support • may be integrated with external word processors or database programs (not included) • tutorial manual.

Price • $395.

■ T/MAKER CO

1742 Willow Road, Palo Alto, CA 94304 • 415-326-6103.

☐ T/Maker III

Overview • a spreadsheet based on word processing concepts, the product provides integrated word processing and spreadsheet functionality.

Date of First Shipment • January 1983.

Product Type • spreadsheet program; business graphics program; limited word processing program; limited database capability.

Hardware/Software Required • 8-bit CP/M systems; IBM PC, PC/XT with PC-DOS; most PC-compatible systems with MS-DOS; CP/M-86 systems • 8-bit systems require 64K bytes of RAM • 16-bit systems require 128K bytes of RAM • 2 disk drives required.

Command Entry • English-language command structure with function key support and prompting.

Spreadsheet Size • 10,000 cells; 200 rows x 50 columns typical • CP/M systems have 25K bytes of memory available for spreadsheets • MS-DOS/PC-DOS systems have 44K bytes of memory available.

Features • word processing orientation in entry of commands and data; function key assistance in command entry; cursor pad is used for cell pointer control if available; two windows supported, with horizontal or vertical split; not cell based in structure, so no naming of cells supported • relational and Boolean operators; statistical functions include count, mean, average, cumulative, delta percent maximum, and minimum; financial operations include NPV; limited bar graph production only • data may be printed based on range, and format is flexible; user has control over the combination of multiple spreadsheets when data is loaded • no saving to disk by range supported; recalculation is under user control; no warning is given of invalid references • limited word processing facility; limited data management facility • tutorial and demonstration sample on disk.

Price • $275.

■ VECTOR GRAPHICS, INC

500 North Ventu Park Road, Thousand Oaks, CA 91320 • 805-499-5831.

☐ Execuplan II

Overview • designed for its own computer systems, Vector has made Execuplan II more versatile than usual in report formatting.

Date of First Shipment • November 1980.

Product Type • spreadsheet program; may be integrated with other Vector Graphics products (not included.)

Hardware/Software Required • Vector Graphics computer system; CP/M operating system • 64K bytes of RAM required • one disk required.

Command Entry • command line entry with on-screen Help and limited function key support.

Spreadsheet Size • up to 256x256 as limited by memory; no information on memory utilization provided.

Features • command line structure with on-screen help; 2 function keys defined for command support; cursor pad used for cell pointer control; no support for multiple windows • cells may be given names for reference; both absolute and relative cell references supported • relational and Boolean operators supported; statistical functions include average, sum, standard deviation, round, count, maximum, minimum, and mean; financial functions include NPV, depreciation, percentage • data may be printed by range; data loaded from disk may be relocated anywhere in the spreadsheet; automatic or manual recalculation; program will recalculate twice to resolve forward references; users are warned about invalid references • GET function supports importing data from other spreadsheets but no foreign files may be used • no separate tutorial.

Price • $195.

Microcomputer Spreadsheets

■ VIA COMPUTER, INC

7177 Construction Court, San Diego, CA 92121 • 619-578-5356.

☐ Micro/Prophit

Overview • a financial modeling language developed through experience with the Fortune 500 companies and mainframe timesharing systems.

Date of First Shipment • June 1983.

Product Type • financial and economic modeling language/ spreadsheet program; graphics support.

Hardware/Software Required • IBM PC, PC/XT with PC-DOS; most PC-compatible systems with MS-DOS • 192K bytes of RAM required • 2 disk drives required.

Command Entry • command menu with command explanations.

Spreadsheet Size • 135 columns x 9000 rows; virtual memory support of spreadsheet.

Features • command entry via menu; Models are developed in separate logic file; data entered under model control; no support for multiple windows; line-by-line modeling uses line numbers instead of names for cells; absolute and relative references supported • full relational and Boolean support; statistical functions include moving average, trends, extrapolation, regression, histograms; financial operations include amortization, compound interest, depreciation, PV, IRR; screen graphics for pie, line, and bar charts and HP plotter support • report writer capability makes printing fully user controlled; data entry and reading from disk fully controlled by user so overlay of existing data is not a problem • report file data may be saved selectively but the entire model must be saved in model file; full support for recalculation includes resolution of forward references and circular reference support for iterative modeling • support for foreign files such as .DIF due 3Q84 • tutorial manual and diskette • complex model consolidation supports up to 75 files • special report templates for financial ratios and other modeling tasks.

Price • $695, not generally available directly through retail channels.

■ VISICORP

2895 Zanker Road, San Jose, CA 95134 • 408-946-9000.

☐ VisiCalc IV

Overview • latest in the line of VisiCalc programs, VisiCalc IV retains most of the strengths, and limitations, of its predecessors.

Date of First Shipment • December 1983.

Product Type • spreadsheet program; graphics programs.

Hardware/Software Required • IBM PC, PC/XT with PC-DOS; may run on PC-compatible systems with MS-DOS • 192K bytes of RAM required • two disks recommended.

Command Entry • command line entry with no explanations of commands; macro definition capability for generating command files.

Spreadsheet Size • 63 columns x 254 rows • 35K bytes of memory available to spreadsheet on minimum configuration.

Features • command line entry with no command definitions; cursor pad used for control of cell pointer; two windows provided which may split the screen vertically or horizontally; no support for cell naming; absolute cell references only • relational and Boolean operator support; statistical functions include maximum, minimum, average; financial functions include NPV; graphics capability included; any rectangular segment of a spreadsheet may be printed • data loaded from disk will overlay data in memory; any rectangular segment of the spreadsheet may be saved as a .DIF file; manual recalculation of spreadsheet supported; circular and forward references may be invalid and no warning is issued • supports .DIF file structure • sort capability • users may program function keys • tutorial manual and demonstration files on disk.

Price • $250.

• END