

4051 Applications Library Newsletter

TEKTRONIX, INC.

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4051 Graphic System Software

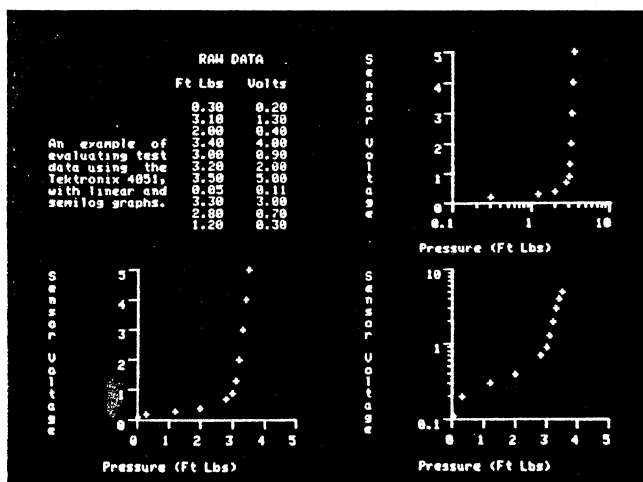
By C.M. Ceranowski

Tektronix has recently introduced several new software packages that will expand the functions and versatility of the 4051 Graphic System. These software packages are identified as follows:

4050A07 GRAPH PLOT is a software package that utilizes a hierarchy of program menus consisting of four-letter mnemonic commands. The Management Section, for example, lets you input, edit, change, and store data in column form (the most simple graph consists of one column of data along the x-axis plotted against another column of data on the y-axis).

Once data is prepared and edited, you can then focus on the Presentation Section and define the desired type of presentation—plot, table, and/or text—and specify appropriate parameters.

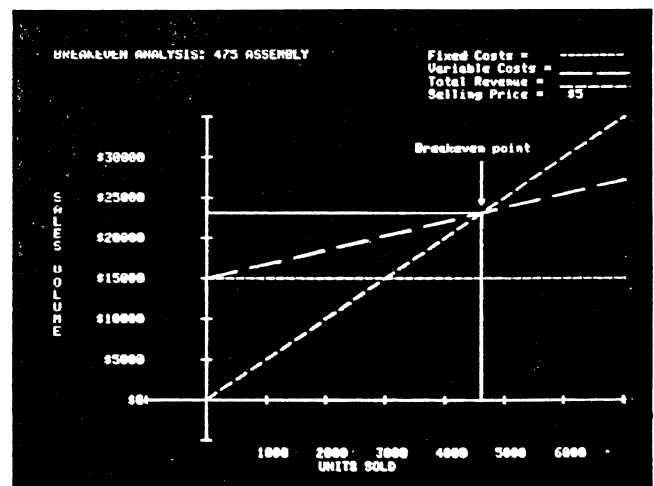
By constructing presentations and storing them on tape, you can combine up to 10 plots, tables, and/or text blocks into a "page" of presentations. Several plots may also be displayed on a single graph.



4050A07 GRAPH PLOT

4050A08 GENERAL UTILITIES PROGRAMS is a collection of 15 separate programs that perform distinct operations on the 4051 Graphic System. Included in the programs is a BASIC Editor providing editing for any ASCII file using features such as search and replace, search and delete, and search and list; a system of naming tape headers; and a program allowing a user to make formatting listings of BASIC programs on a line printer.

4050A09 BUSINESS PLANNING AND ANALYSIS is a business consultant software package that analyzes business decision variables, helps cash flow, generates reports, keeps accurate records without ever complaining about extra fringe benefits.



4050A09 BUSINESS PLANNING AND ANALYSIS

All programs in this software package are interactive and are structured for optimum use, for example:

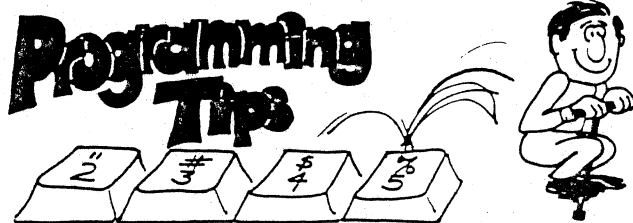
A General Financial Section that includes eight separate alternatives for use of cash with predictions of probable results in terms of income.

A Business Decisions Analysis Section that deals with analysis of probable results in cash

return of several alternative business decisions. Other business tools in this section include Breakeven Point and Profitability Analysis, Economic Order Quantities, and Bid Profit Maximization.

Report Generation that provides the user with an income statement and/or balance sheet each forecasted over a four-quarter period as well as a recordkeeping and sorted report generation to provide a means for changing, updating, and printing out data kept in record form.

Tektronix will continue to develop additional software packages for the 4051 Graphic System.



Alternative to If Statements

By Will Gallant

Set $X=1, 4$ or 5 depending on value of Y . As long as only one logical comparison is true any number of tests may be performed. $X=(Y=A) * 1 + (Y>A) * 4 + (Y<A) * 5$

Membership in Application Library Growing

Interest in the new Tektronix 4051 Applications Library is running high with Membership Cards coming in every day.

Special packets containing specific information on membership privileges, submittal and order forms are now being mailed to members for their immediate participation.

Non-members, who are now receiving the Applications Library Newsletter, are urged to submit their Membership Card as soon as possible. A maximum of only three issues of the newsletter will be sent to non-members without conversion to full-member status.

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4051 APPLICATIONS LIBRARY ABSTRACTS

Documentation and program listings of these programs may be ordered for \$15.00 each. Programs will be put on tape for an additional \$2.00 handling charge per program and a \$26.00 charge for the tape cartridge. (The program material contained herein is supplied without warranty or representation of any kind. Tektronix, Inc., assumes no responsibility and shall have no liability, consequential or otherwise, of any kind arising from the use of this program material or any part thereof.)

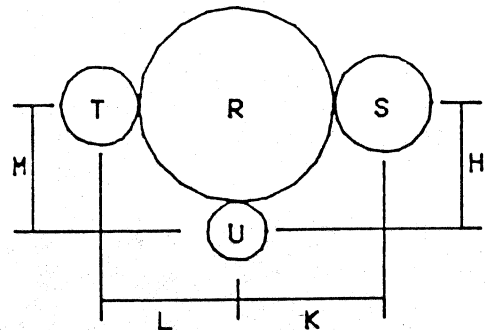
Please use the Applications Library Order Form.

• ENGINEERING MECHANICAL ENGINEERING

ABSTRACT NUMBER: 51/00-1601/0

TITLE: *Bastard Gear Calculations*
AUTHOR: LeRoy Nollette
MEMORY REQUIREMENT: 24K
PERIPHERALS: 4662 Optional

ABSTRACT: A bastard gear may be used to drive three other gears simultaneously, which can be of equal or unequal radii. Given the radii $S, T,$ and $U,$ and the distances $K, H, L,$ and M (see figure below), the program calculates the size (radius R) and location (distances X and Y) of the bastard gear. The program also plots resulting gear system.



• UTILITY GENERAL

ABSTRACT NUMBER: 51/00-8003/0

TITLE: *Sort & List Program Variables*
AUTHOR: Dan Taylor
MEMORY REQUIREMENT: Minimum Configuration
PERIPHERALS: None

ABSTRACT: This program reads a BASIC program from tape and produces an alphabetized table of the variables used in that program. The BASIC program may be stored on multiple tape files, as long as the files are sequential on tape.

ABSTRACT NUMBER: 51/00-8004/0

TITLE: *Cross-Reference & List Program Variables*
AUTHOR: Dan Taylor
MEMORY REQUIREMENT: 16K
PERIPHERALS: A Printer is Optional

ABSTRACT: This program reads a BASIC program from tape and produces an alphabetized table of the variables used in the program, the same as 51/00-8003/0 does. It also produces a cross-reference for each variable used which shows the BASIC line numbers where that variable is used and indicates if a value is assigned to that variable in that line of code. The BASIC program may be stored on multiple tape files.

ABSTRACT NUMBER: 51/00-8005/0

TITLE: *Flowchart Program for 4051 Basic Programs*
AUTHOR: Han Klinkspoor
MEMORY REQUIREMENT: 32K
PERIPHERALS: None

ABSTRACT: This program will flowchart any 4051 BASIC program from a tape file. It does this job in the following way:

In the first pass, a map of the branches is made to enable "look ahead" in the second pass.

In the second pass, program lines are processed one at a time. The line number is stripped off and the branch table is examined to draw incoming branches, if any.

• MISCELLANEOUS

GRAPHICS

ABSTRACT NUMBER: 51/00-9505/0

TITLE: *3-D Name Plot*
AUTHOR: Michael Poe/Bob Kopitzke
MEMORY REQUIREMENT: 32K
PERIPHERALS: None

ABSTRACT: This program will provide a three dimension plot of a name consisting of any of the twenty-six letters of the English alphabet. Periods, commas and dashes may also be plotted. Names may be plotted in either block letters or as a series of small blocks.

ABSTRACT NUMBER: 51/00-9506/0

TITLE: *Three Dimensional Data Plot Program*
AUTHOR: Michael Poe
MEMORY REQUIREMENT:
PERIPHERALS:

ABSTRACT: This program graphically plots on the screen of the Tektronix 4051 the contents of any $M \times N$ matrix. This matrix is entered and can be corrected with the program. There are 6 different methods of data presentation, two of which are in three dimensional perspective. A default viewpoint is calculated for each 3D plot, but the user may rotate the plot or change the perspective.

ABSTRACT NUMBER: 51/00-9507/0

TITLE: *3-D With Perspective*
AUTHOR: Will Gallant
ORIGINAL DATE: October 28, 1976
MEMORY REQUIREMENT: 10000+ bytes
PERIPHERALS: 4662 Optional

ABSTRACT: This program accepts points in space defined by X, Y, Z coordinates and a table defining their interconnection. A viewpoint in space and nose to screen distance is also requested. Data may be input from tape files or the keyboard. A training example is built-in. The 3-D algorithm was suggested in Principles of Interactive Computer Graphics by Newman and Sproull; McGraw-Hill publishers.

ABSTRACT NUMBER: 51/00-9508/0

TITLE: *Dashed Line for Stepped X and Array Y*
AUTHOR: Bob Ross
MEMORY REQUIREMENT: 1862 Bytes
(1236 bytes with REMs deleted)
PERIPHERALS: 4662 Optional

ABSTRACT: This program is a subroutine to draw a dashed line for a Y array with X values stepped linearly from a starting to an ending value. The dashes are a constant length, regardless of the viewport and window chosen. The dash length and ratio of dash to dash plus space are selectable. It is also possible to constrain the dashed line to start and end on a full dash or full space.

ABSTRACT NUMBER: 51/00-9509/0

TITLE: *Dashed Line For X and Y Arrays*
AUTHOR: Bob Ross
MEMORY REQUIREMENT: 1802 Bytes
(1187 bytes with REMs deleted)
PERIPHERALS: 4662 Optional

ABSTRACT: This program is a subroutine to draw a dashed line for points stored in X and Y arrays. The dashes are a constant length, regardless of the viewport and window used. The dash length and ratio of dash to dash plus space cycle are selectable. It is also possible to constrain the dashed line to start and end on a full dash or full space.

ABSTRACT NUMBER: 51/00-9510/0

TITLE: *Dashed Line for X and Y Entries*
AUTHOR: Bob Ross
MEMORY REQUIREMENT: 1488 Bytes
(916 bytes with REMs deleted)
PERIPHERALS: 4662 Optional

ABSTRACT: This program is a subroutine to draw a dashed line for a sequence of X and Y values. The dashes are a constant length, regardless of the viewport and window chosen. The dash length and ratio of dash to dash plus space are selectable. The line can start with a dash or with a space.

Name Contest

There is still time to submit your ideas for naming this Newsletter. All entries must be submitted no later than December 15, 1976.

First prize is a copy of all the programs in the 4051 Applications Library as of December 15, 1976. Entries should be mailed to:
"Applications Newsletter Name Contest,"
Application Library 60-369
P.O. Box 500
Beaverton Oregon, 97077

Applications Newsletter

The Applications Library Newsletter is designed to provide general information and communications between 4051 users as well as abstracts of programs in the library.

Articles and programming tips should be mailed to:
Tektronix, Inc., Applications Library Newsletter 60-369, P.O. Box 500, Beaverton, Oregon 97077.



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