HPGRAFIK Program description

The program "HPGRAFIK" provides diagrams for evaluation and manipulation of standard MESSZEIT/HPGRAFIK files on the HP-9000 series computers with the operating system HP BASIC or HP-UX and the HP BASIC language or on PCs with the HP BASIC emulation program HTB.

The graphic display of files can take place on:

- Internal display screen (black and white or colour)

- Additional colour display screen

- Local printer (e.g. Think jet, laser jet) as screen copy

- Network printer

- Local HPGL plotter

- Network (SRM) HPGL plotter

Manipulating files.

Files can be changed in various ways (manipulated):

- Simple arithmetic operations (Shifting, Compressing, Stretching, Logarithmic, Absolute value etc.)

- Linking several files (addition, subtraction, Multiplication, division)

- Averaging, smoothing, integration, deviation

- Curve fitting with pairs of files.
etc.

New files can be created with HPGRAFIK through:

- Manual input of pair lists

- Digitisation of paper results with a tablet

- Computation of function values.

OPERATION:

Load the program (LOAD "HPGRAFIK" or

LOAD" /MESSPROGRAMME/HPGRAFIK ")

RUN

Enter the hard drive and path for data (terminate with function key "END")

EVALUATION of stored measurement results

A menu with the following options appears:

(1) Selection of individual MET files (INTEGER files):

Old MET measurements to be plotted can read in tabular form.

(2) Environment (mass storage, directories, printer etc.):

The storage device and path for read and write operations can be changed and tables of contents as well as file headers of stored files can be displayed. The printer for text and diagrams and the display for diagrams can be selected.

(3) Diagram of files:

 Standard files can be loaded from storage and plotted. Several curves can be displayed on a diagram.

The X and Y-axes can be scaled automatically or manually . The latter is especially useful for cutout enlargements, logarithmic representation or for several curves on one diagram.

Operation:

After pressing <RETURN>:

Question: Read new file in (J/N [Y/N])?
When "N" is entered (or F6) the file already loaded is retained.
When inserting "J [Y]" (or F7) a new file is requested:

Question: Table of contents (J/N [Y/N]), directory change (W), Menu (M), Abort (A)?
J [Y] = List table of contents
N = No table of contents

Question: Type of file (DAT, ASC, DUX, MET, MES, import)

DAT = HP binary file (standard)

ASC = HP ASCII file

DUX = HP-UX ASCII file

MET = old transient recorder file

MES = old HP9845 data

Question: Number of the file (abort with "- 1")
Input: Number without or with decimal point
(standard file names consist of the prefix DAT, DUX, ASC… and a number, e.g. DAT123.1)

IMP = import of a non- standard file (ASCII) (e.g. ASCII table, EXCEL CSV file) Question: File name

Input: complete file name or call IMPORT menu for ASCII files

W (or F5) = selection menu / hard drive and path

M (or F7) = file selection menu listing, Files can be marked with the arrow keys (or scroll wheel). The file is selected with <RETURN> or F8. The F1 help key gives a 2-line file description for standard files, F8 goes back from the help..

".." = back to the higher directory

"/XYZ" = select next directory

If the selected file is not standard (DAT, DUX, …), it is treated as an ASCII file that can be imported (ASCII import menu)

A (or F6) = abort file reading, old file retained

The file is loaded into main memory. Use "Mess-Anwendung" [Measuring application] menu (measuring type) for help

"Grafik-Einstellungen" [diagram attributes] menu

1) Output device

0 = screen (send to printer) 1 = send to local plotter, 2 = send to second screen (external interface) 5 = send to HPGL file, 6 - 9 send to network plotters

2) Borders of the diagram,

AUTO = X and Y automatically scaled, FEST [MANUAL] = X and Y scaling taken from 3) and 7)

3) X axis

LIN = linear scaling, borders in 5), 6); LIN_AUTO = automatic X scaling; LOG = Logarithmic scaling, borders in 5), 6); LOG_AUTO = automatic logarithmic X scaling; POLAR = X axis in polar coordinates (0 - 360 degrees)

4) X axis legend

5) X (min) smallest X value

6) X (max) largest X value

7) Y axis

LIN = linear scaling, borders in 9), 10); LIN_AUTO = automatic Y scaling; LOG = Logarithmic scaling, borders in 9), 10); LOG_AUTO = automatic logarithmic Y scaling

8) Y axis legend

9) Y (min) smallest Y value

10) Y (max) largest Y value

11) Representation

GITTER [LATTICE] = curve with a lattice diagram; RAHMEN [FRAMEWORK] = curve with framework diagram; ACHSEN [AXES] = curve with X and Y axes

12) Axis legend;

 ENDE [END] = X and Y axis, Y axis legend at the end of the scale; ZENTR [CENTRE] = X and Y axis, Y axis legend in the centre of the scale

13) Line type

1 = line between pairs of points

2 = only points

3 = long dashed line

4 = short dashed line

5 = broken line

6 = dash dot line

7 = broken line with small gaps

8 = double dotted line

9 = line with small final bars

10 = line with large final bars

14) Colour (display/printer-plotter)

 1 = white / black 2 = red / red 3 = yellow / yellow 4 = green / green 5 = cyan / violet 6 = blue / blue 7 = magenta / aqua 8 = black (P3) <0 = delete

15) Symbol to mark a plot

 0 = no symbol 1 = plus sign (+) 2 = Cross (X) 3 = Rectangle 4 = Lozenge 5 = Triangle, point upwards 6 = triangle, point downwards 7 = circle 8, 9 = error bars (only with files having 2 or 3 Y columns)

16) Description at the lower edge of the diagram (first line)

17) Description at the lower edge of the diagram field (second line)

F1 (HELP) for further information about option.

F2 can be used to step forward in the above list of setting, F3 steps backwards. F8 (plus an OK) ends the input for the diagram on the selected device. F6 aborts the whole process

Following the setup of a diagram the following question appears: "Weitere Kurven eintragen (J/N)?" [Register more curves (Y/N)?]

J = repeat the entire process (file load, diagram attitudes, representation), the scaling and legends from the first curve are used as defaults

N = no further curve entry

C = A cursor appears in the diagram window appears with the coordinates of the upper contour shown that can be moved with arrow keys, mouse or mouse wheel.

This is followed by another question: "Papierausgabe (J/N)?" [Output on paper (Y/N)?]. Then another question: "Datei-Beschreibung auf Drucker (J/N)? [File description on printer (Y/N)?]

The diagram screen is switched off and the procedure ended.

(4) Manipulation of data / files:

A menu shows the possibilities available. Data records can be manipulated several times. They can shown graphically and stored using a different name (DATnn).

(5) Treatment of files by special programs:

A special program can convert a file that is already loaded, or a special program can produce a new file.

Normally the special programs are located in the directory /SPEZIALPROG in order of the special program path in the user directory (see (2) environment) addition self-written special programs can be used.

(6) Data communication:

All the local and network files can be copied or transmitted over the RS-232 interface using the F_KOPIE program.

(7) Display or print files in tabular form:

(8) Manual input of data:

 pairs of values can be entered into a standard file using the on screen editor. It can also be used to edit existing files.

Curves drawn on paper can be digitised into an Standard file using a tablet (HPIB or HIL).

(9) Input of functions and computation of function values:

Functions can be stored in standard files.

(10) Text editor for ASCII files

ASCII files can be loaded, edited and stored again using the simple test editor. The line to be edited is in centre of the screen and is in inverted format. The line is selected for editing with "TAB" on a PC keyboard; the "SELECT" key on an HIL keyboard or "SHIFT-RETURN" on a Nimitz keyboard taking the line into the editing line at the lower edge to be edited. It is stored again with the "Return" key.

The text is stored into an ASCII file with F6 or into an HP-UX-ASCII file with Shift F6.