

GET 68

Grifo® Editor Terminal - 68 family
Rel. 3.3 and above

GENERAL FEATURES

GET11 (grifo® Editor Terminal 68 family) is designed for use with software and firmware tools like **KAT-Ce 68**, which are executed on the following cards: **GPC® 68** etc. With **GET 68** the Users can edit a program, transfer program from P.C. to target card, transfer program from target card to P.C. and test program directly on board. It has two main possibilities: to edit application programs developed by User and to manage an intelligent terminal emulation mode. Deeping this last feature, **GET 68** manages all console function, as a simple terminal, and moreover it uses P.C. mass memory device (hard disk, floppy disk, etc.) for saving operation of target card application programs.

SYSTEM REQUIREMENTS

In this chapter are described the minimum hardware and software resources, necessary to execute correctly **GET68.EXE** program:

- Personal Computer:** IBM or compatible.
- RAM memory:** 640 KBytes at least.
- MS-DOS:** Version 3.3 or higher.
- Monitor:** Colour or Black and White
- Mass storage devices:** One floppy disk drive (hard disk drive is recommend) managed by MS DOS.
- Serial line:** One RS 232 line (COM 1÷4) following V24 specifications.
- Mouse:** Microsoft compatible with its software driver installed.

DELIVERED DISK

In this chapter there is a brief description of the **GET68** disk contents:

GET11.EXE -> It is an editor and intelligent terminal emulation program that must be executed on P.C.

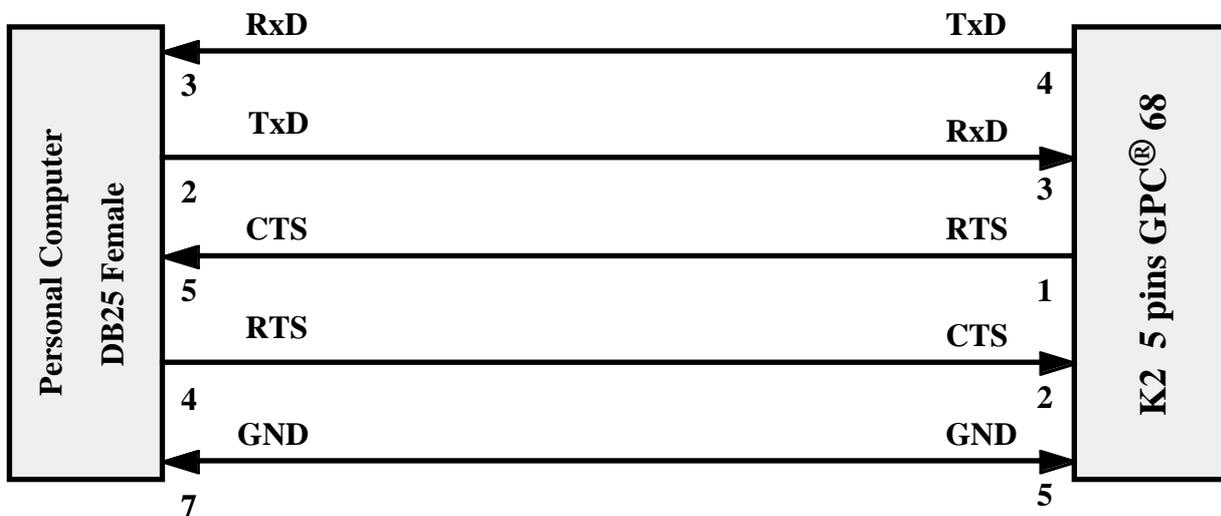
G11HELP.HLP -> On line help resource file, used by **GET68.EXE**.

It is also available a set of demonstration programs that show how to use the on board resources, or how to realize general purpose applications.

SERIAL COMMUNICATION CABLE

If the User is going to use the board's console serial line to develop and debug the application software, then the console device must be connected properly.

Remarking that the board's console serial line is always called "line A", the connection between the Personal Computer and the board must be "reversed" (DTE<->DCE) like the ones described here below:



SERIAL CONNECTION BETWEEN P.C. AND BOARD THROUGH 25 PINS D CONNECTOR



SERIAL CONNECTION BETWEEN P.C. AND BOARD THROUGH 6 PINS PLUG CONNECTOR

To make the connection phase faster and to eliminate the need to build a communication cable, **grifo®** can supply serial communication cables tested and ready for use, for any kind of target card and P.C.

HOW TO START

In this chapter are described the necessary operations that the User must perform to manage correctly the **GET 68** program. In detail here is reported the correct sequence of operations if the Personal Computer is used as development system. In this chapter the information reported in the previous chapter "SYSTEM REQUIREMENTS" are referred.

- 1) Read carefully all received documentation, on paper and on disk.
- 2) Configure the target card to work correctly (power supply connection, memory configuration, jumpers setting, etc.).
- 3) Connect P.C. and target card through the serial cable described in the chapter "SERIAL COMMUNICATION CABLE".
- 4) Turn on Personal Computer.
- 5) Make a new work directory on P.C. hard disk, with Your favourite name. If Your P.C. is not provided with hard disk, please make a copy of delivered disk, place original disk in a safe place and use the obtained copy, jumping to step 8.
- 6) Copy all the necessary files (programs and examples) from delivered disk to the new created directory, following the information of chapter "DELIVERED DISK".
- 7) Change actual directory into the work directory created at step 5.

- 8) Install **GET68.EXE** program (using the installation program **GET68.EXE /I**) by filling the requested data in the dialog box that appear. In **GET68.EXE /I** window some dialog boxes require and show the default COM port, the default baud rate, the default video mode and the Company and User name. For further information, please refer to chapter "INSTALLATION".
- 9) Run **GET68** program and wait the representation of an information window.
- 10) Close the information window by pressing "ENTER" key and after select the option "Terminal" from "Options" (pres ALT+T) menu. A clean window appears with cursor positioned on the top left corner and the following status line on the lower monitor row:

F10 Menu | TERM. EMUL. for KAT-Ce - GRIFO° Tel. +39-051-892052

- 11) Supply the target card; then press the keys Alt+F6 to synchronize the KAT-Ce with the **GET68**. Wait for about one second, up to the completion of such operation, then the following message will be displayed:

Synchronization with KAT-Ce done - Press any key

- 12) Press a key, the KAT-Ce startup message will appear:

```
**** KAT-Ce X.X Version X.XX-X ****
```

```
<Miscellaneous informations>
```

```
E(ditor      M(onitor      A(ssemble    T(ext
P(ascal      X(ecute       R(un         Q(uit
```

- 13) Work with KAT-Ce as described on its manual; to return to GET11 environment press "ALT+T" keys, while to return to MS-DOS operating system, press "Alt+X" keys.

In the previous options description, the letters that activate the options in a fast way are written with a bold style; this fast selection is performed simply by opening menu and pressing the letter, without using the arrow keys. The indication "Key" is referred to the key, or keys combination, that select the option immediately, even without opening the menu.

GET68: EDITOR AND TERMINAL EMULATION PROGRAM

GET 68 is an easy to use program provided with high level User interface including on line help, menus, colour identification, dialog boxes, function keys, mouse management, etc.

The User must always remember that the P.C. executing GET 68 program is an indispensable system only during application program debug phase, in fact target card can work alone with its serial line connected to any other device.

To execute program, the User must type:

GET68<cr>

directly from MS DOS prompt.

When the program starts, it sets the P.C. hardware and shows an information window. This window contains: program version number, **grifo**® information (address, phone, etc.) and the User information defined during installation. Pressing "ENTER" key or clicking with mouse on "OK" button, the presentation window disappears and the main window is shown on the P.C. monitor; the main window has six menus with many options described in the following chapter.

INSTALLATION

Before using **GET68.EXE**, the User must correctly install it. For this reason a configuration program utility has been developed. This program must be executed on P.C. under MS DOS operating system, in the same directory where **GET68.EXE** is saved, typing:

GET68 /I <cr>

When it starts a window appears on the screen, asking for five configuration parameter:

- the default serial line (COM) used on P.C. selectable from 1 to 4;
- the default baud rate used for target card communication selectable from 9.6 to 115.2 KBaud;
- the type of P.C. monitor selectable between color and black & white;
- the User name;
- the Company name;

All these six parameter are requested only during first installation, in fact if **GET68.EXE** is already installed only the first four parameters can be changed; so User and Company name can be set only during the first installation. The other four parameters are used by default for **GET68.EXE** setting and can be changed at any time in a permanent (**G68INST**) or temporary (**GET68**) way and they must be setted according to P.C. and target card features.

During **G68INST.EXE** execution, at any time the User can stop the installation with the button "Abort" , or confirm installation with "Install" button; if "Install" is selected without User and Company name definition, the installation isn't executed.

If **GET68.EXE** is executed without a previous installation, it doesn't start and an error message appears, vice versa it starts showing User and Company name in the information windows.

EDITOR

GET68.EXE program includes a powerful and versatile editor capable of ASCII files management; these ASCII files can be, after a conversion phase (please see paragraph "FILES CONVERSION") directly used by Kat-Ce 68, both for the Pascal compiler and for the Assembly compiler.

It is provided of all standard editor functions and many other functions that facilitate its use in any condition. Moreover **GET 68** editor is a multi window editor where all the function can be used contemporaneously on many ASCII files.

The editor has only one restriction: it can't manage windows or files bigger than 64 KByte; this dimension is rarely necessary in the standard work conditions and in any case it can be overcome by opening and by editing more files and windows.

Here follows a brief description of the commands available through the menu bar (activateable by pressing key **F10**) when **GET 68** is in editor mode:

<i>Option</i>	<i>Key</i>	<i>Function</i>
Menu	F10	Activates the menu bar to let the User select the desired command.

File menu

<i>Option</i>	<i>Key</i>	<i>Function</i>
New	-	Opens a new editor window with the name "Untitled".
Open ...	F3	Opens a selected disk file, loads it in memory and shows it in the current editor window.
Save	F2	Saves current editor window content to a disk file. The disk file name is the same of editor window name.
Save as...	-	Saves current editor window content to a disk file. The disk file name must be input by the User.
Change dir...	Alt+F5	Changes current MS-DOS directory.
Dos shell	-	Exits temporarily from GET 68 and return to MS-DOS operating system. The program remains in memory and can be resumed typing the "EXIT" command.
Exit to DOS	Alt+X	Stops execution of GET 68 and returns definitely the control to MS DOS.

Edit menu

<i>Option</i>	<i>Key</i>	<i>Function</i>
Undo	-	Restores, if possibile, the last executed function.
Cut	Shift+Del	Deletes from current editor window the previous selected text and saves it into the clipboard.
Copy	Ctrl+Ins	Copies from current editor window the previous selected text and saves it into the clipboard.
Paste	Shift+Ins	Copies the clipboard content into the current editor window, starting from current cursor position.
Clear	Ctrl+Del	Deletes from current editor window the previously selected text, without saving it into clipboard.
Show clipboard	-	Shows an editor window with the clipboard content.

Search menu

<i>Option</i>	<i>Key</i>	<i>Function</i>
Find...	-	Searchs for a string inside the text of current editor window.
Replace...	-	Searchs for a string inside the text of current editor window and if found replaces it with the text input by the User.
Search Again	Ctrl+L	Repeats the last executed "Find" or "Replace" action.

Windows menu

<i>Option</i>	<i>Key</i>	<i>Function</i>
Tile	-	Shows all open editor windows disposing them on monitor rappresentation area. The window size are selected to allow rappresentation of all windows.
Cascade	-	Shows all open editor windows disposing them on monitor rappresentation area. The windows are overlapped and only their frame and name are visible.
Size/Move	Ctrl+F5	Resizes and/or moves the current editor window.
Zoom	F5	Sets current editor window size to its maximum value.
Next	F6	The next open window becomes the current editor window.
Previous	Shift+F6	The previous open window becomes the current editor window.
Close	Alt+F3	Closes the current editor window.

Options menu

<i>Option</i>	<i>Key</i>	<i>Function</i>
Terminal	Alt+T	Activates the intelligent terminal emulation mode. For further information, please refer to chapter "TERMINAL EMULATION".
Serial Port...	-	Changes P.C. serial line and baud rate, not permanently.
Video	-	Selects P.C. monitor colour between colour and black & white, not permanently.
Help	F1	Activates the on line Help window of GET 68 .
Help Language..	-	Selects the language for the on line Help window.
Information...	-	Shows the information window about GET 68 program.

Utility menu

Contains the following sub-menu:

Submenu Convert program

<i>Option</i>	<i>Key</i>	<i>Function</i>
ASCII to KAT-Ce...	F7	Converts a file from ASCII to KAT-Ce manageable format.
Convert ASCII again	Shift+F7	Performs a new conversion ASCII->KAT-Ce with the last parameters.
KAT-Ce to ASCII...	F8	Converts a file from KAT-Ce format to GET 68 editable ASCII.
Convert ASCII again	Shift+F8	Performs a new conversion KAT-Ce->ASCII with the last parameters.

In the previous options description, the letters that activate the options in a fast way are written with a bold style; this fast selection is performed simply by opening menu and pressing the letter, without using the arrow keys. The indication "*Key*" is referred to the key, or keys combination, that select the option immediately, even without opening the menu.

The indications "... " following the name of some options, means that the option needs other data requested by a specific dialog box (files name, string to find, directory to select, etc.). When a mouse is available, the options selection is really faster and more comfortable, in fact the User has nothing to press on P.C. keyboard.

A further description of **GET 68** options and menus functionalities is not reported in this manual because such subject is explained by the on line Help, that can be recalled in any moment pressing the **F1** key.

TERMINAL EMULATION

The intelligent terminal emulation mode is compliant to the standard **ADDS Viewpoint** and manages all the console functions like a simple terminal, in addition to this it is possible to use the mass storage devices of the P.C. to download programs to the target card or to save on hard disk a program resident in the memory of the target card itself.

Communication with the target card is managed through one of the serial ports on the P.C. (COM) as explained in the paragraph "SERIAL COMMUNICATION CABLE".

When the option "Terminal" in menu "Options" is selected, the current serial line and the current baud rate are used by the emulator that shows the terminal emulation window.

Current serial port and current baud rate are the values set by the option "Serial port" in menu "Options", which at the beginning of the execution are the same input by the User during the installation of **GET68.EXE**.

All the characters sent by the target card are interpreted by the **ADDS Viewpoint** protocol, the characters considered printable are displayed in the terminal emulation window, while the keys pressed on the P.C. keyboard are sent to the target card through a specific logic protocol that manages also the file transmission.

The intelligent terminal emulation program works in a completely asynchronous way as regards to the target card running Kat-Ce; so there is no turn-on or turn-off sequence to be executed.

NOTE

From the MS DOS prompt, it is possible to run **GET 68** and enter directly in intelligent terminal emulation mode; the syntax to use is:

GET68 /T <cr>

Terminal Emulation Commands:

During the terminal emulation is available a set of commands, through the menu bar (that can be activated pressing **F10**), that help the User to use firmware running on the target card; here follows its list with a brief description:

<i>Option</i>	<i>Key</i>	<i>Function</i>
Menu	F10	Activates the menu bar to select a command.

File menu

<i>Option</i>	<i>Key</i>	<i>Function</i>
Change dir...	Alt+F5	Changes current MS-DOS directory.
Dos shell	-	Exits temporarily from GET 68 and return to MS-DOS operating system. The program remains in memory and can be resumed typing the "EXIT" command.
Exit to DOS	Alt+X	Stops execution of GET 68 and returns definitely to MS DOS.

Options menu

<i>Option</i>	<i>Key</i>	<i>Function</i>
Editor	Alt+T	Activates the internal editor.
Reset Terminal	Ctrl+Home	Clears the intelligent terminal emulation window and resets the serial communication to the target card.
Serial Port...	-	Changes P.C. serial line and baud rate, not permanently.
Video	-	Selects P.C. monitor colour between colour and black & white, not permanently.
Help	F1	Activates the on line Help window of GET 68 .
Help Language..	-	Selects the language for the on line Help window.
Information...	-	Shows the information window about GET 68 program.

Utility menu

<i>Option</i>	<i>Key</i>	<i>Function</i>
Synchronization..	Alt+F6	Synchronizes GET68 with KAT-Ce, must be done after each power on of GPC® 68 .

Utility menu contains the following sub menu:

Sub Menu Convert program

<i>Option</i>	<i>Key</i>	<i>Function</i>
ASCII to KAT-Ce...	F7	Converts a file from ASCII to KAT-Ce manageable format.
Convert ASCII again	Shift+F7	Performs a new conversion ASCII->KAT-Ce with the last parameters.
KAT-Ce to ASCII...	F8	Converts a file from KAT-Ce format to GET 68 editable ASCII.
Convert ASCII again	Shift+F8	Performs a new conversion KAT-Ce->ASCII with the last parameters.

In the previous options description, the letters that activate the options in a fast way are written with a bold style; this fast selection is performed simply by opening menu and pressing the letter, without using the arrow keys. The indication "Key" is referred to the key, or keys combination, that select the option immediately, even without opening the menu. The indications "... " following the name of some options, means that the option needs other data requested by a specific dialog box (files name, string to find, directory to select, etc.).

A further description of **GET 68** options and menus functionalities is not reported in this manual because such subject is explained by the on line Help, that can be recalled in any moment pressing the **F1** key.

NOTE

Whenever **GPC® 68** is supplied it is essential to synchronize KAT-Ce with **GET68**, so the specific command **Alt+F6** must be used. This operation is essential also to return in terminal mode after exiting by the command **Q**(uit of KAT-Ce.

Viceversa, synchronization is not essential whenever the **GPC® 68** board is reset, or when switching into the editor and then back to the terminal emulation mode, by the command matched to the keys **Alt+T**.

Terminal emulation control sequences:

GET 68 terminal emulation mode, recognizes some terminal command sequences, when received from selected serial line. These sequences are listed in the following table:

COMMAND	BYTE	ASCII CODE
HOME	01	SOH
CURSOR LEFT	08	BS
CURSOR RIGHT	06	ACK
CURSOR DOWN	10	LF
CURSOR UP	26	SUB
CARRIAGE RETURN	13	CR
Cursor Absolute Positioning	17 10 row column	DC1 LF ASCII(row) ASCII(column)

GET 68 CONTROL SEQUENCES TABLE 1

COMMAND	BYTE(S)	ASCII CODE
CLEAR PAGE	12	FF
CLEAR LINE	25	EM
CLEAR END OF LINE	29	GS
CLEAR END OF PAGE	11	VT
Turn off cursor	03	ETX
Cursor "Underline" not blinking	02	STX
Cursor "Block" blinking	04	EOT
Normal brightness	22	SYN
High brightness	24	CAN
Reverse	23	ETB
Check for key pressed	18	DC2
Wait for a character from keyboard	19	DC3
Printer initialization	17 2	DC1 STX
Send byte to printer	17 1 byte	DC1 SOH ASCII(byte)
BELL	07	BEL
Break serial connection to GET68	14	SO

GET 68 CONTROL SEQUENCES TABLE 2

The values of row and column may vary respectively in the ranges 0÷23 and 0÷79 and must be given plus an offset of 32. So, for example, if the User wants to position the cursor at row 10, column 20, then he/she must send the sequence:

17,10,10,20

About the command **check for key pressed**; it allows to know if a key on the terminal has been pressed, in fact whenever the ASCII DC2 is sent, the answer will be a byte whose value has the following meaning:

0 -> No key pressed
 1 -> A key has been pressed

The command **Wait for a character from keyboard**, allows to receive from the serial port the code of the eventual key pressed, or makes the terminal stand by a key whose code will be sent to the serial port as soon as available. This function suspends the terminal until a key is pressed.

At last, the command **Break serial connection to GET68**, is the same as the command Q(uit of the Kat-Ce main menu.

All the previously described command can be used from within the KAT-C, while for the Pascal there are high level specific commands, like GOTOXY, KEYPRESSED, etc., that manage such functions.

Special keys for terminal emulation:

In the **GET68** intelligent terminal emulation, the special keys of P.C. keyboard are coded (cursor keys, Home, End, Ins, Del, etc.); such keys are sent to the **GPC®68**, through specific codes one or two bytes long, reported in the following table:

KEY	CODES	HEX CODES
Cursor UP	05	05
Cursor DOWN	24	18
Cursor LEFT	19	13
Cursor RIGHT	04	04
Page UP	18	12
Page DOWN	03	03
Home	17, 82	11, 52
End	17, 67	11, 43
Insert	22	16
Delete	07	07

CODES OF GET68 SPECIAL KEYS

FILES CONVERSION

GET68, provides two utilities utility that allow to convert an ASCII file, into the format managed by KAT-Ce or viceversa. Such functions are accessible through the sub menu “**Convert program**” in menu “Utility”, or directly through keys **F7** and **F8**.

Please remember that KAT-Ce can read and write files only in its own formay; so whenever an ASCII program is edited by the **GET68** editor, it must be always converted in KAT-Ce format, in order to be executed on the target card.

Viceversa, when a file is saved on the P.C. mass storage devices through the KAT-Ce commands, it must be always converted in ASCII format, prima di poter essere visualizzato, in order to be displayed and eventually edited by the **GET68**.

Conversion from ASCII to KAT-Ce:

To activate this command it is enough to select **ASCII to KAT-Ce**, or pressing directly the **F7** key. This far it is enough to type the informations about the source ASCII file and the KAT-Ce destination file.

It can be done through the following commands:

ASCII File It allows to select the name of th source ASCII file to be converted.
Complete file name and path is displayed beside the command; if no file has been selected yet then will be displayed the indication "**Not Selected**".

KAT-Ce destination file It allows to change, if neededn the name of the KAT-Ce destination file. The default is the basename of the source file with appended the extension **KPS**.

After such parametrs have been input, the conversion can be started by giving the command “**Convert**”. A window containing the percentual indication of the work already done and a line reporting the status messages is displayed.

The last conversion can be executed again, with the same parameters, through the command “**Convert ASCII again**” of sub menu “Convert program” in menu “Utility”, or directly by pressing the keys **Shift+F7**.

N.B.

Whenever a conversion from ASCII to KAT-Ce is performed , the source program, if changed by **GET68**, must be saved. This is needed because the file is fetched from the disk, so it will not contain the latest unsaved changes.

Conversion from KAT-Ce to ASCII:

To activate this command it is enough to select **KAT-Ce to ASCII**, or pressing directly the **F8** key. This far it is enough to type the informations about the source KAT-Ce file and the ASCII destination file.

It can be done through the following commands:

KAT-Ce File It allows to select the name of the source KAT-Ce file to be converted. Complete file name and path is displayed beside the command; if no file has been selected yet then will be displayed the indication "**Not Selected**".

ASCII destination file It allows to change, if needed, the name of the ASCII destination file. The default is the basename of the source file with appended the extension **PAS**.

After such parameters have been input, the conversion can be started by giving the command "**Convert**". A window containing the percentual indication of the work already done and a line reporting the status messages is displayed.

The last conversion can be executed again, with the same parameters, through the command "**Convert KAT-Ce again**" of sub menu "Convert program" in menu "Utility", or directly by pressing the keys **Shift+F8**.