EZ-KEYS 6000 DOCS
updated 5/25/96
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INTRODUCTION
EZ-KEYS 6000 is a completely rewritten version of my EZ-KEYS PLUS utility published by Asgard in l988. EZ-KEYS PLUS was a macro program designed to function in the Extended BASIC environment. EZ-KEYS 6000 brings the same macro capabilities to the TI-WRITER environment.

EZ-KEYS 6000 requires a Horizon RAM disk with the RAMBO modification. RAMBO is built into the HRD 4000 series; it can be added to the earlier cards. EZ-KEYS 6000 requires one 8K RAMBO page. All of EZ-KEYS 6000's code is contained in the >6000 to >7FFF RAMBO space inside the Horizon card; there is no loss of memory for files when using the TI-WRITER editor.

The primary function of EZ-KEYS 6000 is
to bring the power of "macros" or "hot keys" to TI-WRITER. Each key on the keyboard can be set up to feed a series of keystrokes to the editor. Besides letters and numbers, a macro definition can include the enter key and any function or control key. You can even chain or embed macros so that one macro definition can branch to another!

In addition to its macro capabilities, you can set EZ-KEYS 6000 to save the text you are working on at regular intervals. This can help prevent losing your text file if your computer locks up.

REQUIRED EQUIPMENT
The following equipment is required to use EZ-KEYS 6000.

- TI-99/4A set up to run TI-WRITER (or FUNNELWEB, RAG WRITER, etc.)
- Horizon RAM Disk with RAMBO modification
- TI Extended BASIC (Only needed when loading or saving EZ-KEYS 6000)

EZ-KEYS 6000 has not been tested with the Geneve, 80 column cards, or with replacement keyboards such as the RAVE 99 unit.

FILES INCLUDED WITH EZ-KEYS 6000
- EZK6000 - Extended BASIC program for loading and saving EZ-KEYS 6000
- EZKDOCS - Documents for EZ-KEYS 6000

LOADING AND SAVING EZ-KEYS 6000
EZ-KEYS 6000 consists of one segment of code that loads into a page of RAMBO from >6000 to >7FFF. Before loading EZ-KEYS 6000 be sure your RAMBO is configured so that at least one 8K page is available for use. When the RAM used for ramdisks is less than the total RAM available, the remainder is automatically allocated for RAMBO.

Then:
Select Extended BASIC. Type: RUN "DSKn.EZK6000"<enter>.
When the program runs select the "Load" option.

The number of pages available in RAMBO will be reported. Enter the page you want to load EZ-KEYS 6000 into. Next enter the screen colors desired for TI-WRITER mode and for EZKEYS mode. The color change is the only indication of which mode you are in, so be sure the difference is obvious, such as white/blue for TI-WRITER mode and black/red for EZ-KEYS 6000 mode. Next you are asked to press the "hotkey". This lets you choose the key that will toggle between TI-WRITER mode and EZ-KEYS mode. This should be a key that is not used by the TI-WRITER editor such as <Fctn^M>. Press <Enter> if you want the <Fctn>+<Ctrl> combination to be the hotkey. The ASCII of the hotkey is reported on the screen. After selecting the hotkey you can press <enter> to go on, or any other key to "bail out" and rerun the program.

You won't have to load EZ-KEYS 6000 every time you use it. The program and any macro definitions remain in the battery backed RAM of the Horizon card, ready to be activated when needed.

Despite the battery backed RAM, any data stored on the HRD can be lost. It is recommended that you save any macro definitions you develop onto a floppy disk.

To save EZ-KEYS 6000 and your macro definitions, first select Extended BASIC. Then type: RUN "DSKn.EZK6000"<enter>. When the program runs select the "Save" option. The number of pages available in RAMBO will be reported. Enter the page into which EZ-KEYS 6000 was previously loaded. EZ-KEYS 6000 and your macro definitions will be embedded in the XB loader/saver program. SAVE this XB program to a backup disk. This program is identical to the EZK6000 program except that your macro definitions are part of it. If you need to reload EZ-KEYS 6000 in the future simply use this program that you saved instead of the original EZK6000 file. (If you use a filename other than EZK6000 remember to use that filename when reloading the program).

Extended BASIC is only used for loading and saving EZ-KEYS 6000. Once the program is loaded or saved XB is not required. If you add memory chips or reconfigure the amount of RAMBO in the card you should reload EZ-KEYS 6000.

USING EZ-KEYS 6000
EZ-KEYS 6000 works by substituting a modified keyscan routine for the normal keyscan routine. You need to modify the ED file of Funnelweb so the keyscan is performed by BL @@>601C instead of BL @@>000E. Use a sector editor to search for 06A0000E. Change this to 06A0601C.

Having made this change it is absolutely essential that the page of RAMBO containing EZ-KEYS 6000 is turned on whenever Funnelweb is loaded. On this disk there is a program named 1FW. Have your menu program run 1FW instead of FW. This turns on page 1 of RAMBO, then loads FW from disk 4. You can modify 1FW to load FW from a different disk. Use a sector editor to look for DSK4.FW and change the drive number or filename as desired. Use only two characters for the filename. (This is a little crude, Bill, but it works).

Once TI-WRITER editor is loaded you press the hotkey to toggle between the TI-WRITER mode and the EZ-KEYS mode. As noted above, the only indication of which mode you are in is the screen colors.

In the TI-WRITER mode the computer functions in the normal manner, except that pressing the hotkey will select the EZ-KEYS mode.

In the EZ-KEYS mode there are three possible courses of action:.
1 - Press the hotkey to return to the TI-WRITER mode.
2 - Press <Fctn^5> to go to the macro editor.
3 - Press any other key to feed the macro definition for that key to the TI-WRITER editor. You can press the hotkey at any time to interrupt macro execution.

RAMBO should be turned off before turning off the computer. This will avoid any possible corruption of EZ-KEYS 6000. You can do this with <Fctn =) to "quit" to the master title screen or the menu program.

WHAT ARE MACROS?

Simply put, a "macro" is nothing more than a sequence of keystrokes. This sequence is called a "macro definition". It can range in length from one keystroke to as many as 955 keystrokes. A macro definition can be assigned to the key of your choice. If you press that key when in the EZ-KEYS mode, EZ-KEYS 6000 will send the macro definition one keystroke at a time to TI-WRITER. When you use a macro, the results are exactly the same as if you had actually pressed each key contained in the macro definition. Macros can be used any time you are using the TI-WRITER editor.

A macro definition can be assigned to any key except for the space bar, the <Enter> key, <Fctn^5> and the "hotkey". Using a hotkey to toggle to the EZ-KEYS mode means that virtually every key can contain a macro definition - there are 162 different keys that can be defined. Any keystroke can be included in a macro definition. Additionally, one macro definition can branch to another through the process called chaining or embedding.

As a rule, any repetitive operation requiring more than one keystroke can usually be simplified with the appropriate macro definition.

USING THE MACRO EDITOR

The Macro Editor is used to create a new macro definition or modify an existing one. With it you can define, test and perfect a macro in a matter of minutes. It is always available; you don't have to load a separate program to define a macro.

To use the Macro Editor press the hotkey to select the EZ-KEYS mode. Then press <Fctn 5> to call up the editor. A list of the currently defined keys is displayed. To edit any key, you simply press the key. The screen clears and the key you're editing appears in the upper left corner. The cursor appears at the end of the macro definition. If no definition is displayed then that key is currently not defined.

At this point you can enter or edit a macro definition. The keystrokes that make up a macro definition should be arranged in the same order that you want them sent to the TI-WRITER editor. Remember that EZ-KEYS 6000 simply sends keystrokes to the TI-WRITER editor. TI-WRITER decides what to do with those keystrokes.

Keys with an ASCII from 32 to 127 can be directly entered. These keys include all the alphanumeric keys plus the Fctn keys ~[]_?'"|{}\`.

The following Fctn keys are available for editing:
- Fctn S - cursor left one space.
- Fctn D - cursor right one space.
- Fctn D - cursor right one space.
- Fctn X - cursor down one line.
- Fctn 1 - delete one character.
- Fctn 2 - insert mode.
- Fctn 3 - erase characters from cursor to end.

To include the Enter key in your macro definition, simply press Enter. A small cr will be placed in the macro definition. (In this manual a <.- will be substituted for the cr) Spaces can also be included, but trailing spaces will be removed from the definition.

Including Fctn or Ctrl keys in your macro definition is a two step process. First press <Ctrl C> or <Ctrl F> to indicate a Ctrl or Fctn key. A highlited "C" or "F" appears on the screen. (Letters highlited by the macro editor will be underlined in this manual.) Then press just the key. For example, if you want your macro to send the computer to the command mode (i.e. <Fctn 9>) first press <Ctrl F> and then press 9. F _9 appears on the screen.

Be sure to use capital letters after the F _or C _symbols. In other words,

F _A is right and
F _a is wrong.

C._5 is right and
C._% is wrong.

EZ-KEYS 6000 stops macro execution whenever it encounters a bad key combination.

The macro definition is what you see on the screen; it is not the keys you had to press to get that information on the screen.

A macro definition can branch to any other macro definition, including itself. This process is called chaining or embedding. EZ-KEYS 6000 requires two or three characters to tell it which key to branch to. First press <Ctrl^B> to make a highlited right arrow appear on the screen. (The nmenomic BRANCH TO KEY will help you remember this one.) Then press the key you want to branch to. For example, assume that <A> is defined and you want to branch to it. First press <Ctrl B> then press <A>. -.>A appears on the screen

If the macro definition you want to branch to is assigned to a Ctrl or Fctn key, then press <Ctrl C> or <Ctrl F> and then the key. For example, assume that <Ctrl 1> is defined and you want to branch to it. First press <Ctrl B> then <Ctrl C> and then <1>. -.>._C._1 appears on the screen

A chained macro is when the branch occurs at the end of the calling macro. TEST-.>._H would be an example. An embedded macro is when the branch occurs before the calling macro has finished executing. TEST-.>._HBACK FROM H is an example of this.

When chaining or embedding macros EZ-KEYS 6000 uses a stack to keep track of its place in the macro definitions.

Although the stack level is handled automatically, you may be interested in details of how it works.

Chaining a macro doesn't change the level in the stack - the new macro merely takes the place of the old one. This means that you can chain macros ad infinitum or even write macros that branch to themselves.

When EZ-KEYS 6000 comes to an embedded macro, the stack goes up one level. When all the keystrokes contained in the embedded macro have been sent to TI-WRITER, EZ-KEYS 6000 will drop back a level and finish executing the calling macro. There are 16 levels on the stack, which means that very complex macro combinations can be developed. It is virtually impossible to run out of stack space unless you use a recursive macro such as the following example, assigned to Ctrl^Z:

C._Z TESTING-.>._C._ZMORE TESTING.

If you run out of space on the stack, EZ-KEYS 6000 will halt macro execution and give you the message "STACK FULL".

Should you attempt to branch to a non-existant combination such as <Ctrl *> or <Fctn m> this causes EZ-KEYS 6000 to halt macro execution.

There is one special action that can be taken when EZ-KEYS 6000 executes a macro definition. It is called"input". You include it in a macro definition by pressing Ctrl I, which places a highlited I on the screen. "Input" causes EZ-KEYS 6000 to stop feeding keystrokes to TI-WRITER so that you can type in some characters. Press ENTER when you're done and macro execution will resume. This can be used for building more versatile macros. The following macro uses input:

Dear I._;<.-How are you?

Once you have finished editing a macro definition, press <Fctn^5> to return to the Macro Editor main screen.

To return to the TI-WRITER environment from the Macro Editor main screen, press <Fctn 5> then the hotkey.

Remember that you can interrupt macro execution at any time by pressing the hotkey.

EZ-KEYS 6000 can be tricked into including trailing spaces. After the trailing spaces include a Fctn key that TI-WRITER ignores, such as <Fctn J>. For example, TEST^^^F._J will include 3 trailing spaces.

At first it can be difficult to know which keystrokes should be included in a macro definition. All you have to do is think about which keys you would have to press if you actually had to press them. The macro definition should contain that same sequence of keysstrokes.

AUTOMATIC SAVING OF THE TEXT FILE
EZ-KEYS 6000 includes a feature that makes it possible to save your text file at regular intervals. This is good insurance against hazards such as a console lockup, a power failure, dislodging the P.E. box connector, etc.

The time interval between autosaves is set from the macro editor main screen. From TI-WRITER mode press the hotkey, then press <Fctn 5>, then press the space bar. At this point you can enter the autosave time interval. This should be a number from 0 to 18. A value of 0 will turn off autosave; any other value specifies the time interval in minutes.

After the specified time interval EZ-KEYS 6000 will automatically execute the macro definitions contained in <Fctn .> and <Fctn ,>, alternating between the two with successive autosaves. These definitions do the following: <Fctn 9> to go the command line; SF<enter> to save file; <Ctrl V> to go to the beginning of the line; then the filename is automatically entered. The macro definitions can easily be changed to save to a different filename.

INTERFACING WITH OTHER PROGRAMS
EZ-KEYS 6000 can be made to work with other programs besides the TI-WRITER editor. Authors of other programs can use the following guidlines to make their programs interface with EZ-KEYS 6000.

The computer must be in the 40 column text mode. The screen must be located starting at >0000. The character set must start at >0800. You need to use a sector editor to change BL @>000E to BL @>601C when keyscan is performed.
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preserved by Tom Wills and William Gaskill on December 13, 2010