[9.17] Speed up the keyboard

(This tip is Francesco's submission to ticalc.org. I haven't tried it yet, so proceed at your own risk. I have made very minor editing changes. If you make even the most trivial mistake with this procedure, you may well completely hang up your calculator. You've been warned.)

Speed up the keyboard TI-89 / TI-92 Plus; mini how-to
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Introduction

There are some TSR programs that speed up the keyboard of TI89/TI92+, but they have some problems:

• they have some bugs
• sometimes are old and not fully compatible with HW2
• they always need HW2Patch or h220xtsr, even if there isn't written in their docs!
• they need a little amount of memory
• some kernels will uninstall them without freeing the memory used.

For all these reasons I have thought to follow an alternative and, IMHO, simpler way: to change the values directly in the ROM! The steps I have followed are very simple.

The steps

Launch your favorite hex editor (for example I have used UltraEdit).

Open the ROM file *.89u/*.9xu. Go to the address

TI-89 2.05:	2CC9A and 2CC9B
TI-89 2.04:	3330D and 3330E
TI-89 2.03:	94153 and 94154
TI-89 2.01:	96CD6 and 96CD7
TI-92 Plus 2.05:	2CA80 and 2CA81
TI-92 Pluse 2.01:	965DC and 965DD

The numbers 01 and 50 should be at these addresses. Change 01 to 00 and 50 to 64.

Go to the address

TI-89 2.05:	2CCBD
TI-89 2.04:	33330
TI-89 2.03:	94176
TI-89 2.01:	96CF9
TI-92 Plus 2.05:	2CAA3
TI-92 Plus 2.01:	965FF

The number 24 should be at this address. Change it to 14. Save the file.

Send the modified ROM to the calculator with TIBReceiver (You can find it on www.ticalc.org, read carefully its doc!) Note that you cannot use the last version of TI GraphLink to send a modified ROM, you must use another program, for example, I have used TilP.

Turn the calculator off, then on. Now the keys should be faster

All done! Simple! To be sure you have done the correct changes, before sending the ROM to the calculator, use VTI to verify the modified ROM, try also to turn off and on the emulated calculator.

Technical explanation

(If you want to know more read this paragraph)

A TSR program that speeds up the keyboard installs itself as a replacement of the trap #4: in this way every time the calculator is turned off and on, the new trap replaces the default values set by the AMS. I have searched in all the ROMs the addresses of these instructions: move.w #$150,something and move.w #$24,something. Then I have modified the values $150 and $24 with the ones set by the program Fast Keyboard.

Credits

Thanks to:

Jeff Flanigan for the program Fast Keyboard that has given me the idea
Kevin Kofler for his explanation on the problem of the TSRs on HW2

Disclaimer

Although this method has been tested, it is still remotely possible that it may do crash or hang your calculator. I am not responsible for any damage done to your calculator.

Support

Send me any suggestion, any ideas at bremen79@infinito.it and also tell me what you think of it.
www.genie.it/utenti/bremen79

(Credit to Francesco Orabona)