

# KeyWarrior Table Editor

The editor allows to create tables to download into KeyWarrior chips with the KeyWarriorFlex program. For convenience it also allows to directly download the table into a connected KeyWarrior.

The table file contains a header which selects the type of the table.

```
;=====
; KeyWarrior Commander Combo
; 16x8 Matrix
; Created: 27 Sep 2005 13:44:37
; Modified: 12 Oct 2005 08:56:50
;=====
```

## Do not change this header!

The first line tells the chip the table is intended for.

Valid entries are “KeyWarrior Flex”, “KeyWarrior Operator”, “KeyWarrior Commander”, “KeyWarrior RF” and “KeyWarrior Cell”. For all KeyWarriors except KeyWarrior Cell “Combo” can be added to indicate that mouse buttons can be entered into the table.

The second line tells the matrix size in “column x line” format.

Possible values are “8x8”, “16x8” and “20x12”. Commander does not allow “8x8” whereas Cell only allows “8x8”.

The “Modified:” line is changed each time the file is edited.

Since the editor keeps the formatting of the text file, pre-formatted empty table files are provided for the various chips. New files created by the editor are in simple 8 column format without comments or labels. You can edit the files with a simple text editor like Notepad to add comments and labels of your own.

For old tables which do not contain the header yet a dialog asks for the table type to assign.

## How to use the editor

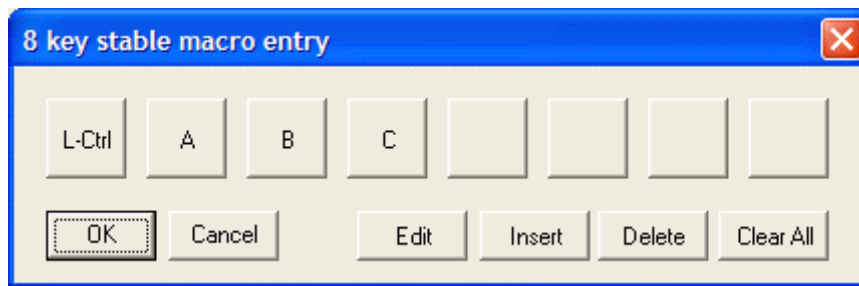
The program locally switches to “English (US)” layout for your keyboard. This is due to the fact that the USB keyboard usages and the Windows Virtual Keycodes are defined in terms of this layout and the translation to country specific keys is done in the OS.

The precise operation of the editor depends on the chip type of the table to edit. The basic function is identical though. You select the button you want to assign with a mouse click. No keyboard shortcuts of any kind are possible because all keys have to be assignable to a button. Now press the keyboard key you want to assign.

For the Combo tables a second click with any mouse button instead of pressing a key assigns this mouse button.

Flex tables contain only one key per button so any new assignment overwrites the previous one.

Operator tables allow a sequence up to eight keys per button. Subsequent key assignments therefore add to this sequence of keys. The second mouse click assigns for “Operator Combo” if the button is empty. For non-combo or already assigned buttons it brings up the sequence editor dialog where you can edit the sequence in detail.



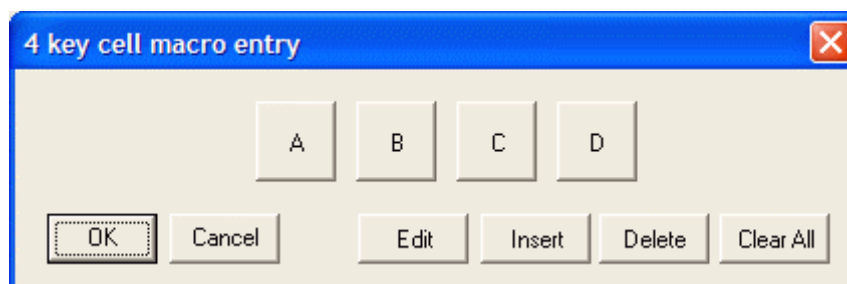
The use of this dialog should be obvious (the Edit button is explained later).

“stable” means that the keys are sent by the KeyWarrior device as if pressed simultaneously. It also means that first key downs and then key ups are sent. This puts some restrictions on the allowed key sequence like only different keys. The modifier keys are a bit problematic because Windows does not cleanly handle them.

The dialog does not test for any of the restrictions so please test your assignments with real hardware.

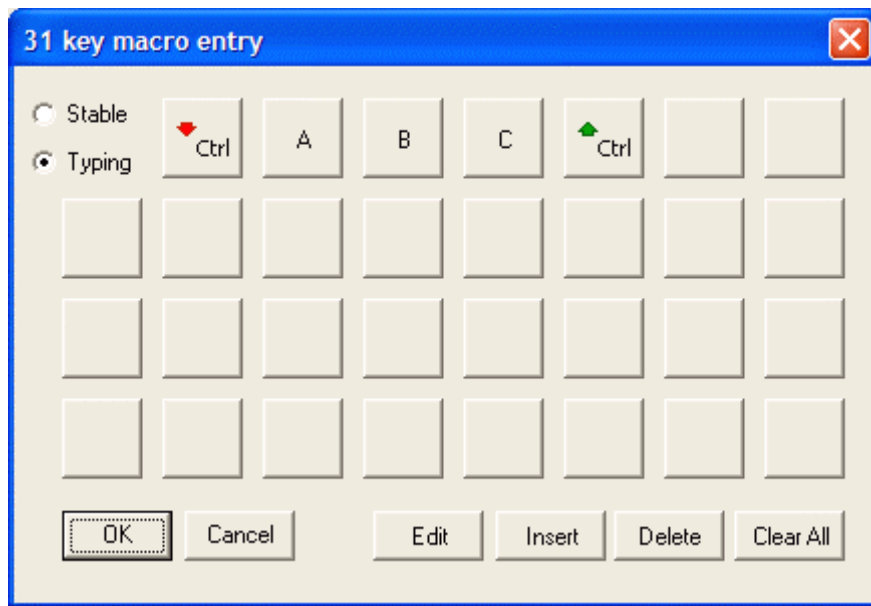
The playback of the sequence in the above picture would be “L-Ctrl down, A down, B down, C down, C up, B up, A up, L-Ctrl up”.

Most of the buttons of the KeyWarrior Cell are Operator buttons. Only the two last lines are Cell buttons. They have four key assignments. The first key is generated when pressed without a FN key down. The other three are cycled through if the FN1 key is down and the key is pressed repeatedly. This like the keys of a cellular phone.



The cell buttons should always be assigned fully, ie four keys or none at all. The dialog does not test that.

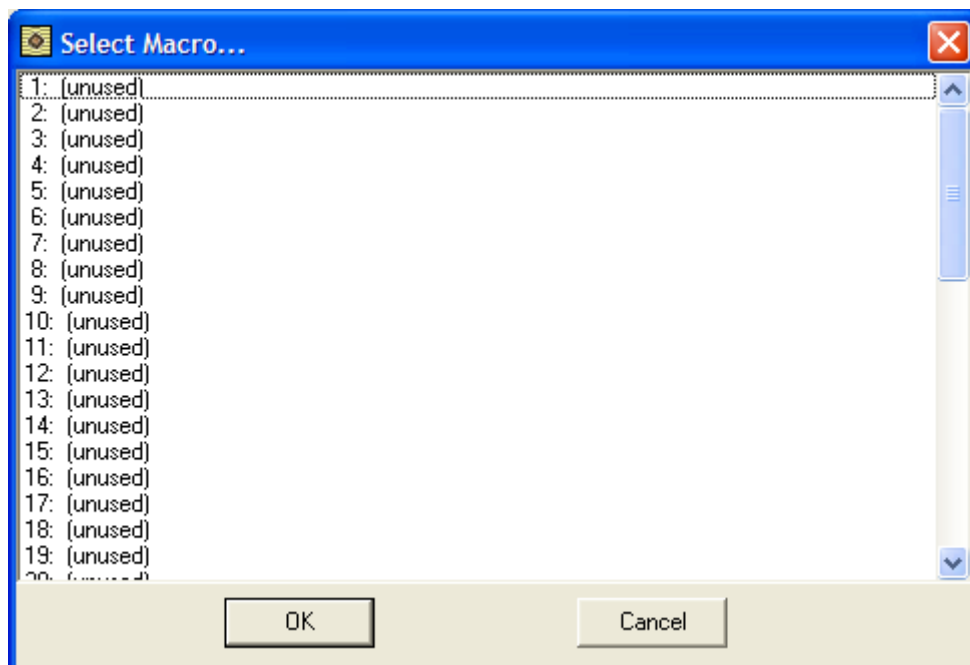
The Commander and RF controllers allow to assign 48 macros (47 for RF) of up to 31 keys to a button.



The main difference to the sequence for Operators is that the macro can be a “typing” macro. If set to “typing” the macro is played back by the KeyWarrior device in a sequence of separate key down and key up events. The modifier keys Shift, Ctrl, Alt and Win are represented by separate KeyUp and KeyDown entries as indicated in the above picture.

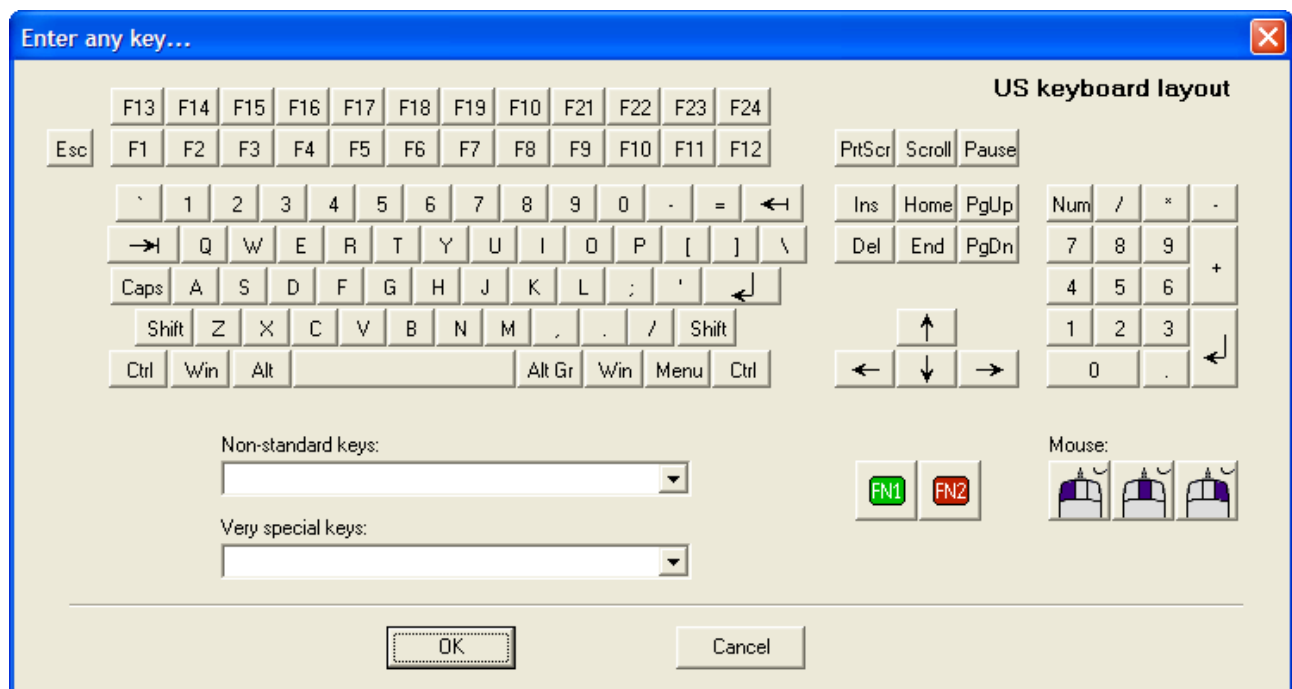
The playback of the sequence in the above picture would be “L-Ctrl down, A down, A up, B down, B up, C down, C up, L-Ctrl up”.

The macro number is assigned automatically the instant you assign more than one key to a button. Alternatively use the menu entry “Set Macro...” to assign a specific macro number to the button.



It is possible to assign the same macro to several buttons. To remove a macro assignment use the “Clear” menu entry. If you edit the macro assigned to more than one button then all buttons carry the changed macro.

The key selection dialog is available via the “Selection dialog...” menu entry or via the “Edit” button mentioned above.



The dialog represents an US keyboard because the USB key codes which are used in the table are based on that keyboard layout. F13 to F24 are not handled by most operating systems so use at your own risk.

The “Non-standard keys” combobox allows to select various keys which are not directly contained in the US keyboard layout.

Especially the keys “<” named “HID\_USAGE\_KEYBOARD\_BACKSLASH2” (to the left of “Y” on German keyboards) and “+” named “HID\_USAGE\_KEYBOARD\_HASHMARK2” (to the left of the Enter key on German keyboards) can be selected here. These are the extra keys of non-US keyboard layouts.

For the Enter keys you have to watch out a bit. There are Enter (HID\_USAGE\_KEYBOARD\_ENTER) and Num-Enter (HID\_USAGE\_KEYPAD\_ENTER). The Return key (HID\_USAGE\_KEYBOARD\_RETURN) is not used in a normal keyboard layout.

The rest of the combobox allows to select various unusual keys defined for USB. Most are not understood by the common operating systems.

The “Very special keys” combobox allows to select the remaining unused USB key codes. They will be used for the multimedia keys in a future revision. Currently the keys are named with their hex value. The values \$B0 to \$DF are used for the macros. The USB key codes in that area are only relevant for scientific calculators and not understood by common operating systems anyway.

The key tables are separated into up to three levels. The special modifier keys FN1 and FN2 are used to switch between the levels. If FN1 is down then the buttons generate the FN1 level assignment and if FN2 is down the assignment of FN2 level.

The number of levels is determined by the matrix size. 8x8 allows FN1 and FN2 levels whereas 16x8 allows only FN1 level. 20x12 only allows the normal level. KeyWarrior Commander and RF allow FN2 level also for 16x8.

The FN1 and FN2 keys are assigned to the buttons via the menu entries “Set FN1” and “Set FN2”. The assignment is always made to all levels! You get a warning if the button is already assigned on another level.

The “Clear” menu entries delete the assignment (including macro assignment) for the current button, the current level or the whole table.

“Preview” shows the text of the generated table file.

“Download” is a dynamic menu. It shows all plugged KeyWarriors. Selecting a menu entry downloads the currently loaded table into the device. The device list is filtered by EEPROM size. KeyWarriors can either have a 256 Byte EEPROM or a 2048 Byte EEPROM. So if you have a table loaded which is bigger than 256 Bytes, no KeyWarrior with small EEPROM is listed. The devices are simply numbered. No effort is taken to identify the KeyWarriors more precisely.

“Change table type...” allows to convert a table to another type. For example a Flex table into an Operator table. Macros are always dropped when converting. The matrix size cannot change on conversion so some conversions (namely into Cell format) are denied. The common conversion from 8x8 non-Commander to 16x8 Commander is automatically accounted for though.