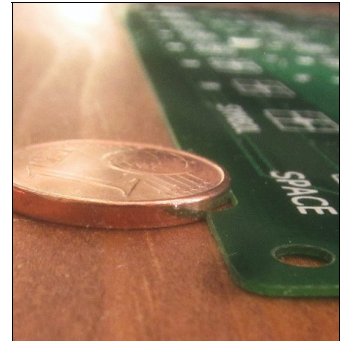
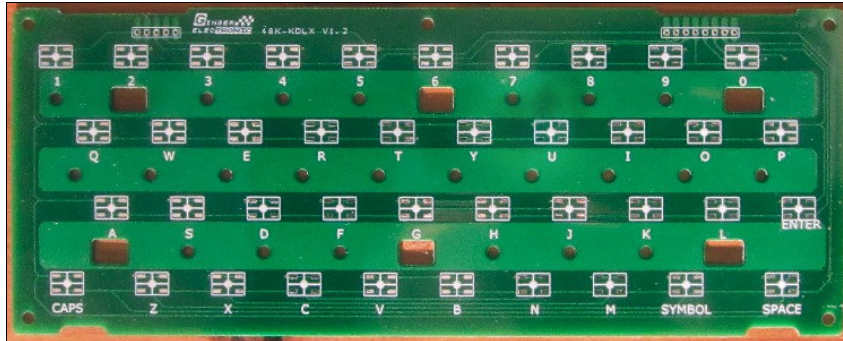


48K-KDLX – V1.2

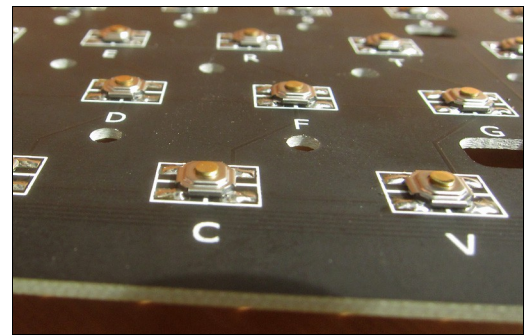
New colour (green) and lower thickness 0.6mm only

48K-KDLX is a replacement keyboard for ZX Spectrum 16k/48k version with rubber keymat. It's main benefit is easy typing with professional SMD tactile switches for a very sensitive keyboard feeling with a perceptible and audible click and long life. The switches are specified with minimum 500.000 clicks.

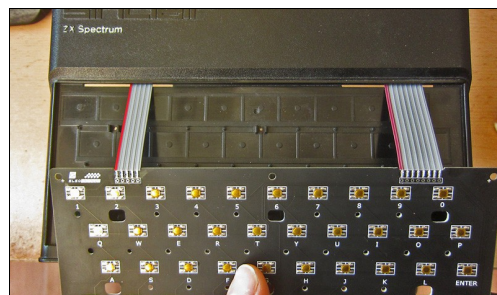
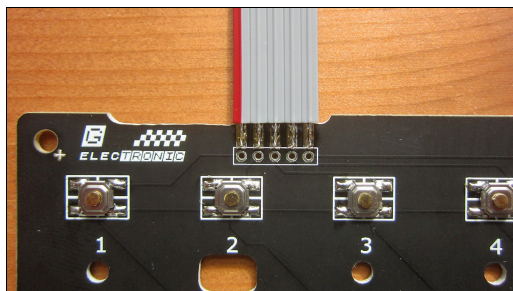


There are 2 versions, the **48K-KDLX-R** for use with the rubber keys on top of the tactile switches and the **48K-KDLX-S** for use as standalone version with a printed cover panel with the ZX Spectrum keyboard layout. Both versions can be used with an original 16k/48k ZX Spectrum or compatible like the „Harlequin“ and both do fit into the plastic cover of the original case – so the standalone version can replace an old or damaged rubber keyboard mat including the faceplate while fixing it inside the top plastic cover. This is an option if the printing on the faceplate or on the rubber mat is not good readable any more.

Recommended switches to use is ALPS SKQGAFE010 (if not included in set). First the 40 switches have to be soldered and the MOLEX flat jumper cables with 5 and 8 wires for the columns and rows. The jumper cables have a rigid core and pass easily in the original MOLEX connectors of the 16k/48k ZX Spectrum main board but will also be flexible enough to take place in the case as seen on the following pictures.

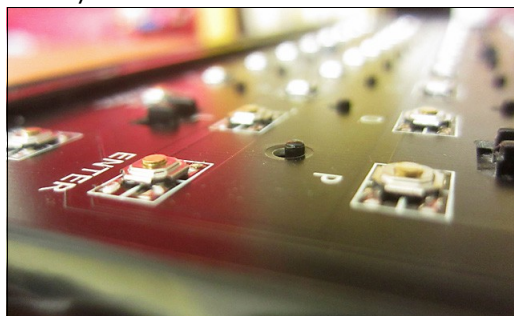


To put the keyboard inside the case you first have to remove the top plastic cover while removing the screws at the bottom side and then remove the faceplate while loosening the 4 metal brackets of the faceplate. Be careful doing this while they can break easily – use a small screw driver and a plier.

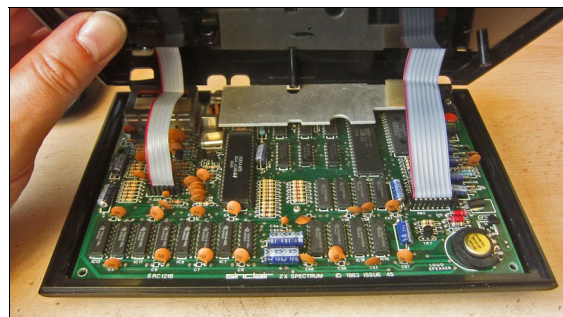
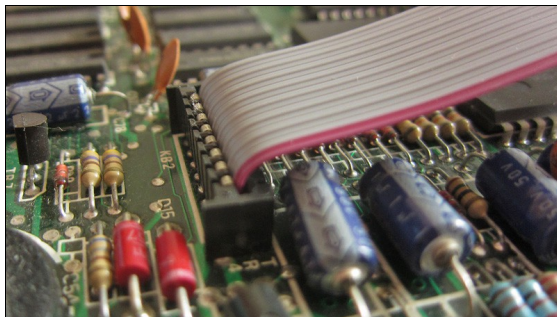
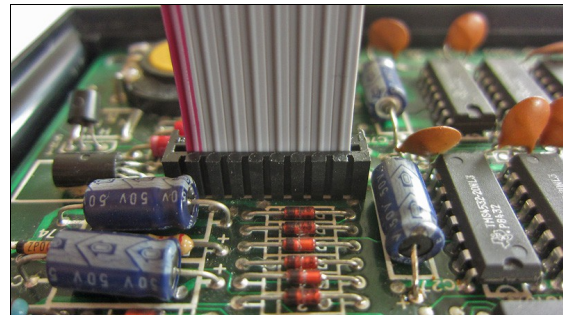
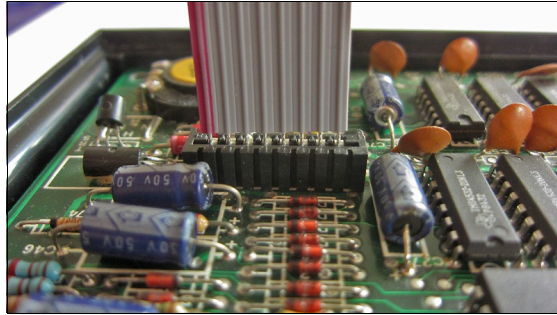


The jumper cables can be fed easily through the holes in the plastic cover and the pcb board does fit into the plastic top cover with all noses fitting through the holes. Next step is placing the rubber mat on top of the keyboard. This should be done carefully and the plastic noses fit into the rubber mat through the holes of the pcb. The rubber mat does have holes for these noses and will keep all buttons in place.

It is recommended to put the metal faceplate back at the end of this process and check the function of the keyboard first. The metal brackets of the faceplate are very sensitive and should not be bended more often than necessary.



The jumper cables should be bended first in a soft curve to fit into the case and then slightly but precisely moved into the connector till they latch. The wires are thick enough to be hold from the MOLEX connector but won't wide their contacts too much – so a classic membrane can be used at a later time again to keep all original and reverse this modification.



All keys should be tested for function, this can be done best way by using a test program, for example the diagnostic ROM of the Harlequin board (Spectrum clone). If not available, the keys can be tested at the input line as well. If there are problems while pressing the keys please check carefully the cable jumpers if they fit good into the MOLEX connectors and if they are really in the middle of the connectors and deep enough.

When all keys work as they should, the metal faceplate can be put back on the rubber mat and fixed while bending the brackets. If the brackets do not move good through case and pcb they can be straighened with a plier (be careful). The faceplate may have a small distance to its old place while the pcb is a bit more thick (0.8mm or 1/30 inches).

Thats it – now your 16k/48k ZX Spectrum has a new neat keyboard with longlife tactile switches with perceptible and audible click.



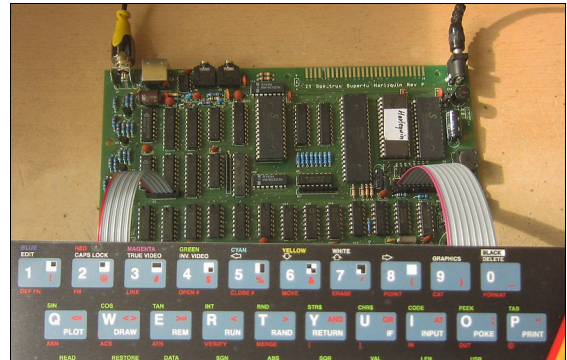
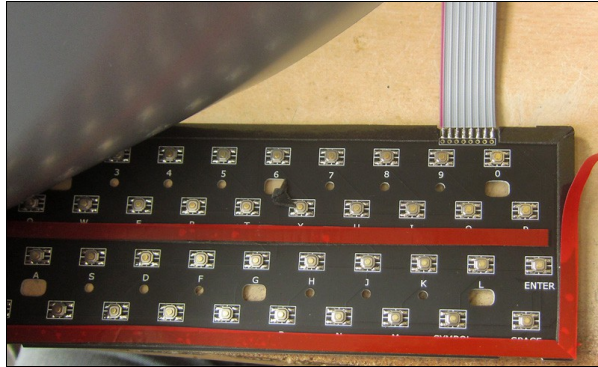
48K-KDLX is a product developed by ginger-electronic.com



48K-KDLX-S (for use with printed cover panel):

The first step is identical to the 48K-KDLX-R version.

After soldering the SMD tactile switches a double faced adhesive tape with 5 - 6 mm width and approx. 1.5 - 2 mm height should be positioned at the board like shown. The middle stripe may not be necessary. The height of the tape should match the height of the switches. The board should be tested first before sticking the cover panel. Best way is to begin at the top border and keep the cover 90 degree angled and adjusted to the middle.



The complete mounted keyboard can be used standalone or can be placed into the plastic cover of the original case while removing rubber mat and faceplate and fix it with a little bit double face tape to hold it in position. This offers a great feeling and fast typing.



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