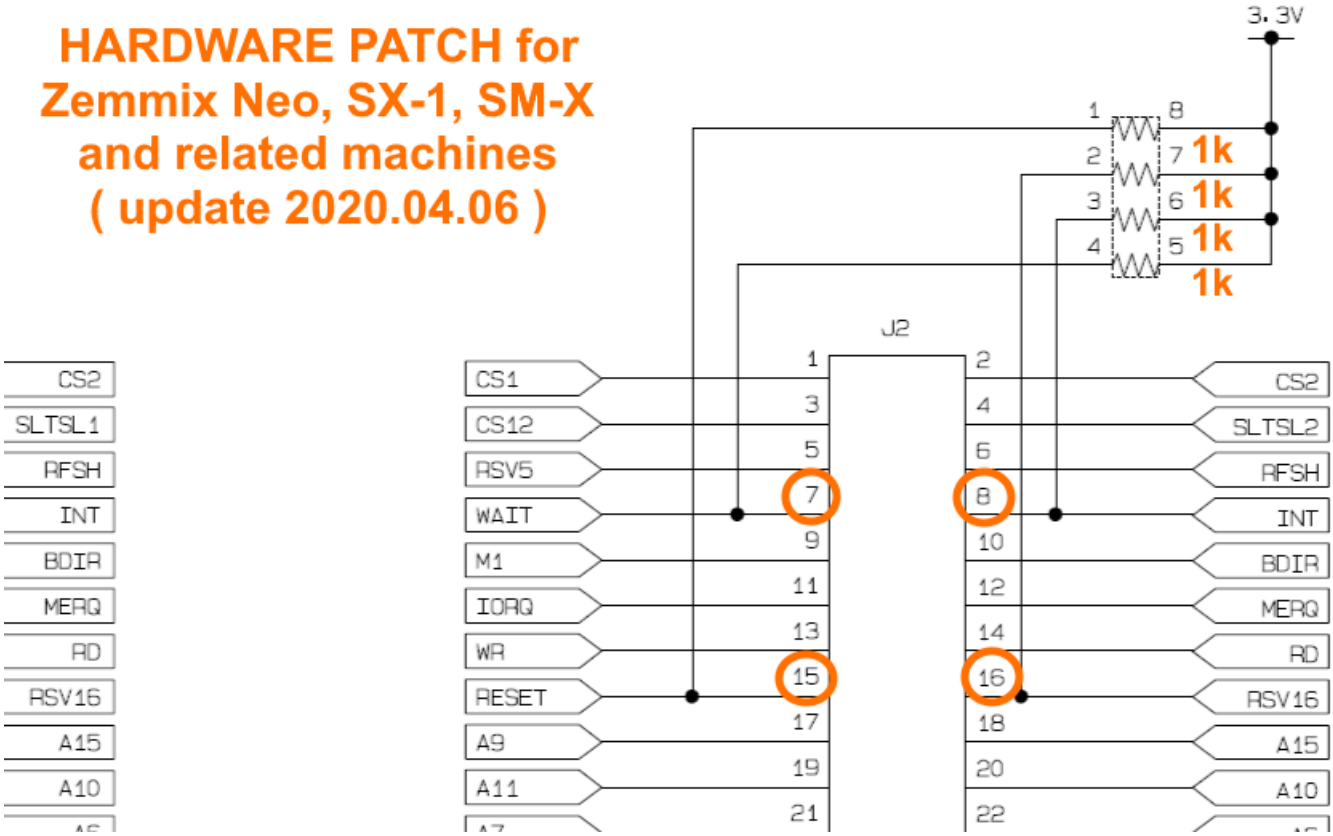
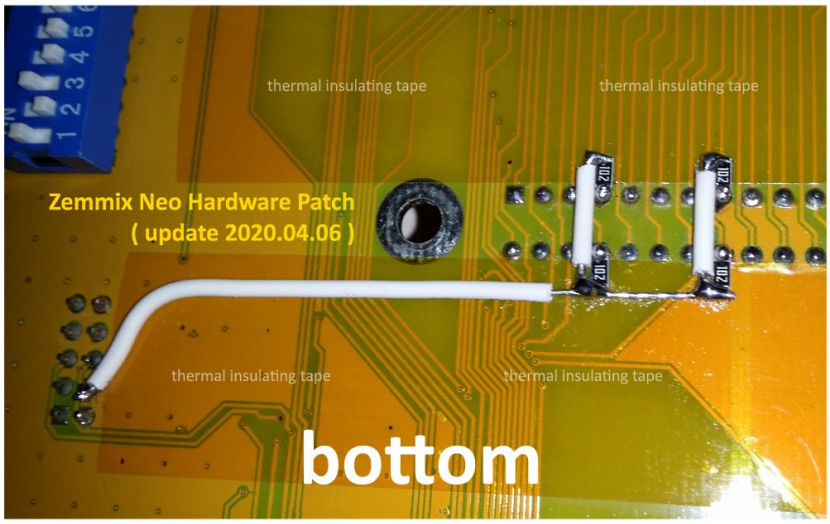
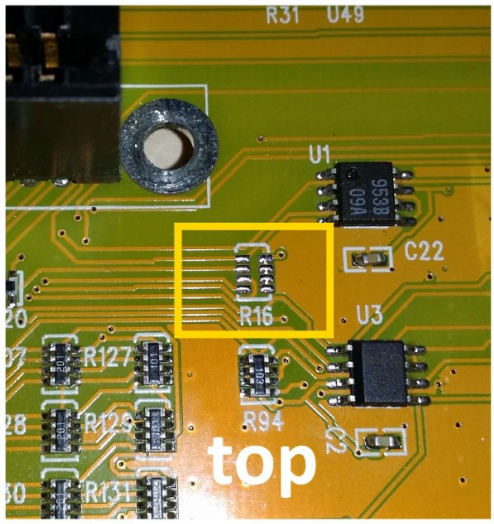
HARDWARE PATCH for Zemmix Neo, SX-1, SM-X and related machines (update 2020.04.06)







https://www.msx.org/news/en/hardware-issue-on-zemmix-neo-and-related-machines

2020.08.19 Hardware Patch for OCM machines “aka BUSDIR_n patch”

Thanks to the help of HRA! KdL have finally fixed a new hardware bug affecting all 1chipMSX, Zemmix Neo, SX-1, SM-X and related machines produced to date.
In the last few months MRC power user KdL had received some reports from ToughkidCST and Marcel Delorme explaining the presence of anomalies with the combination of some external cartridges.
Two days ago KdL had discovered how to reactivate those cartridges but only today he had confirmation of this discovery from the investigations of HRA!

THE ISSUE:

- In OCM machines we have a short circuit between pin-10 (BUSDIR_n) of the two external slots that continues towards the FPGA. This type of connection confuses some cartridges.
- While the Panasonic FS-A1ST and Canon V-20 service manuals confirmed that the BUSDIR signal is not used.

THE FIX:

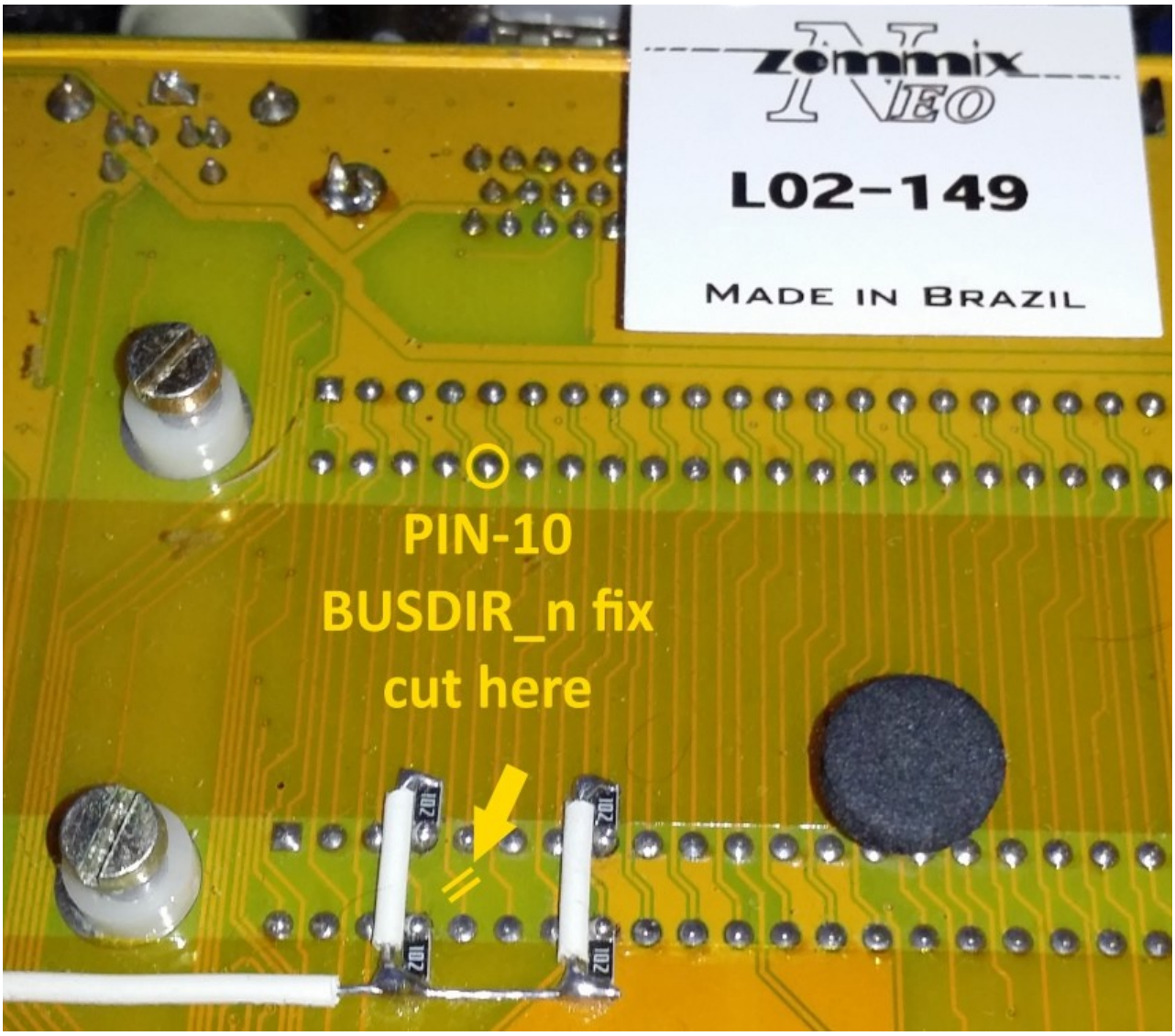
- Pin-10 (BUSDIR_n) of the external slots must be isolated.

HOW TO DO:

- Method 1 - Cut the track that connects pin-10 of Slot-1 and Slot-2 leaving unchanged the connection to the FPGA already internally isolated by the firmware.
- Method 2 - Desolder pin-10 of slot-2 from the PCB and insulate it with the sheath of an electric wire and a drop of hot glue.
- Method 3 - Place non conducting tape over pin 10 of those cartridges that are not working properly, such as MoonSound and Darky.

We hope you enjoy this new solution and have fun with your devices.

https://www.msx.org/news/en/hardware-patch-20200819-for-ocm-machines-aka-busdir-n-patch

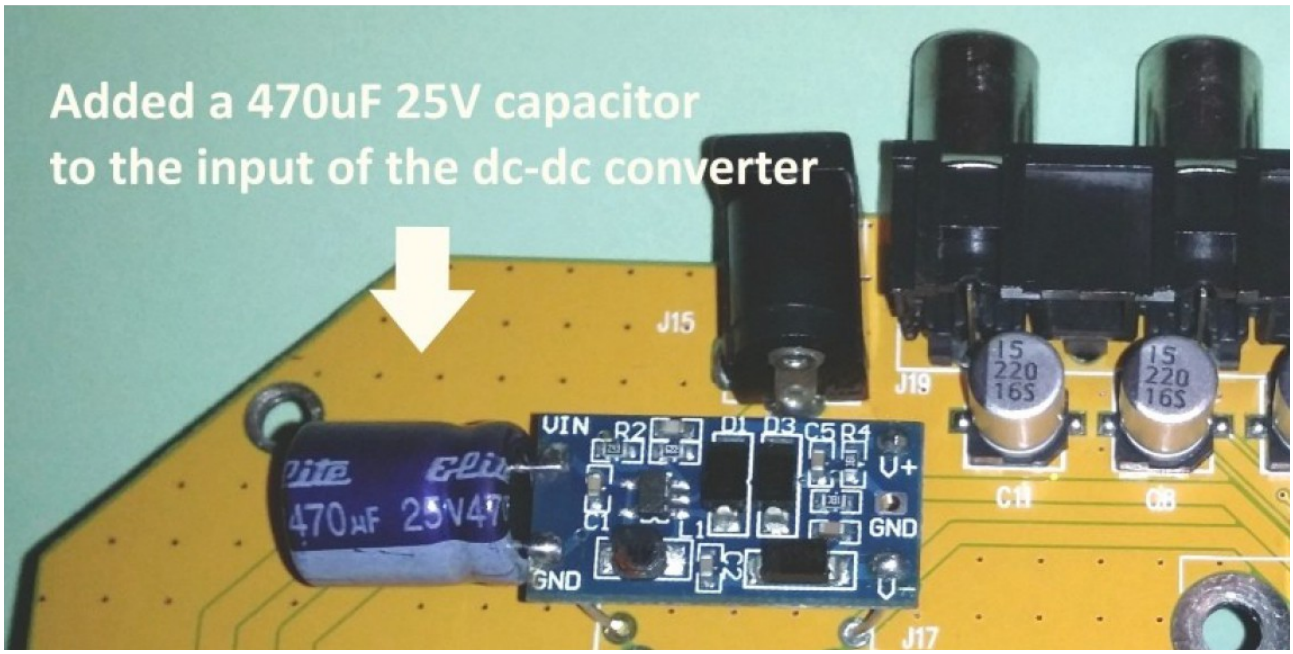


2020.10.16 Hardware patch for Zemmix Neo BR machines

(aka +5V line stability fix)

Based on the wiring diagram of the original 1chipMSX machine, I have implemented this new hardware patch for Zemmix Neo Brazilian which allows to stabilize the +5V input line. This patch can for example remove some annoying video interference on the output of GFX9000 and other similar cartridges. Please be informed that the problem is currently only present on Zemmix Neo Brazilian and not with Zemmix Neo Korean, but this fix can still be used if your hardware is unstable.

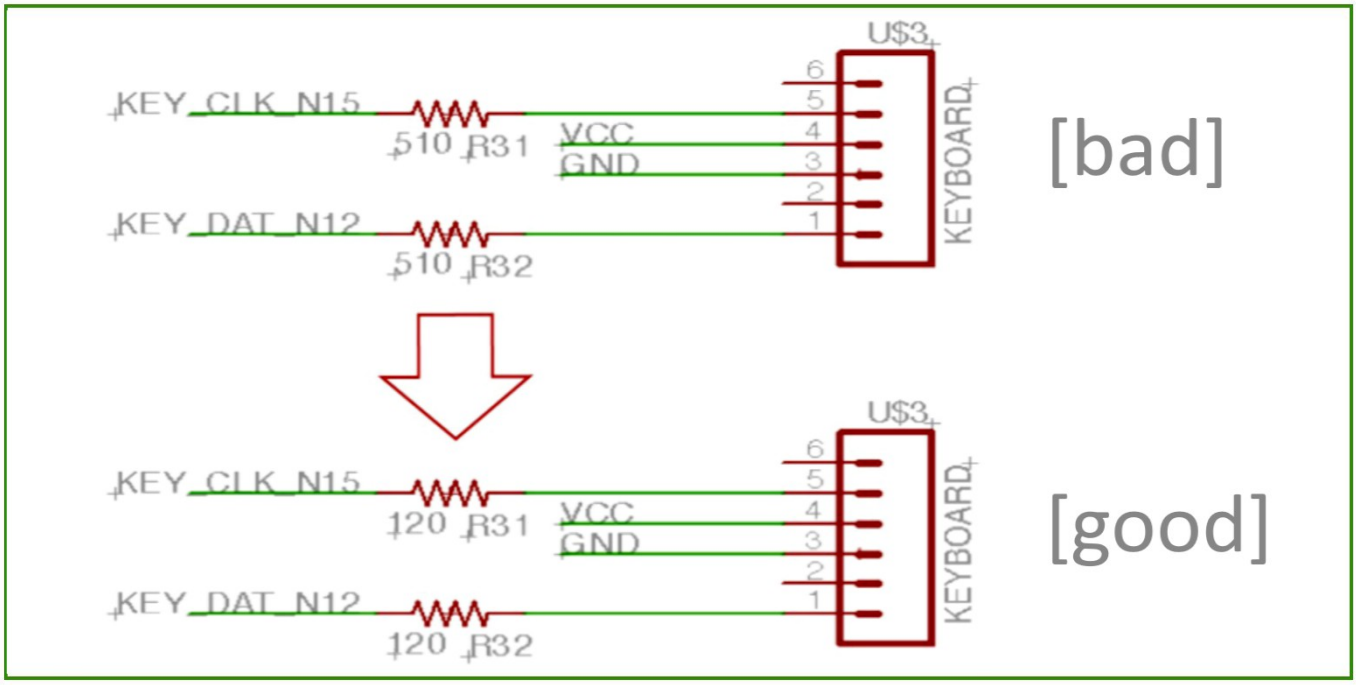
WARNING! Do this at your own risk, you will be solely responsible for any damage to your hardware.



https://www.msx.org/news/en/hardware-patch-20200819-for-ocmmachines-aka-busdir-n-patch#comment-391396

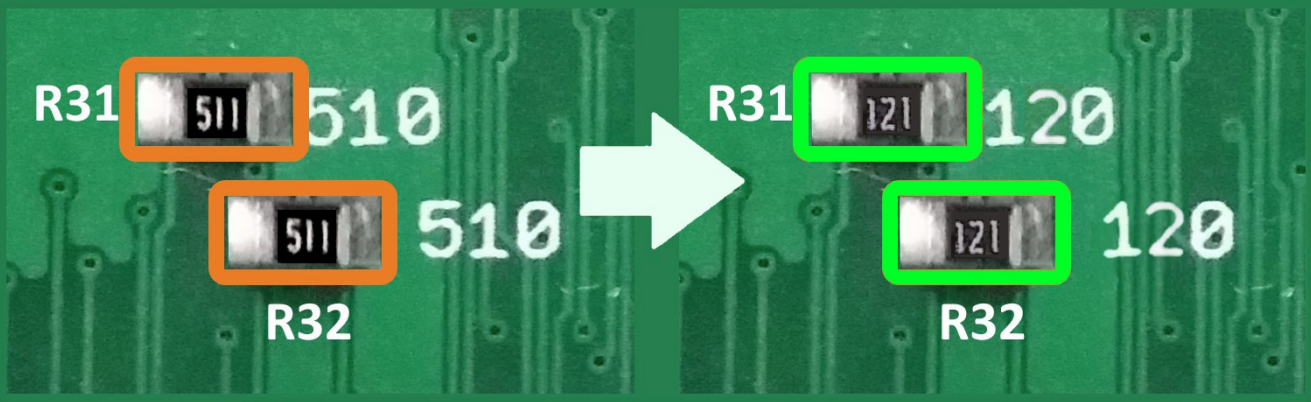
2022.06.02 Hardware Patch for SM-X, SX-2 and related machines

(aka PS/2 keyboard compatibility fix) [Revision 2]



How to do it: replace the resistors R31 and R32 with a value between 120 Ω and 390 Ω.

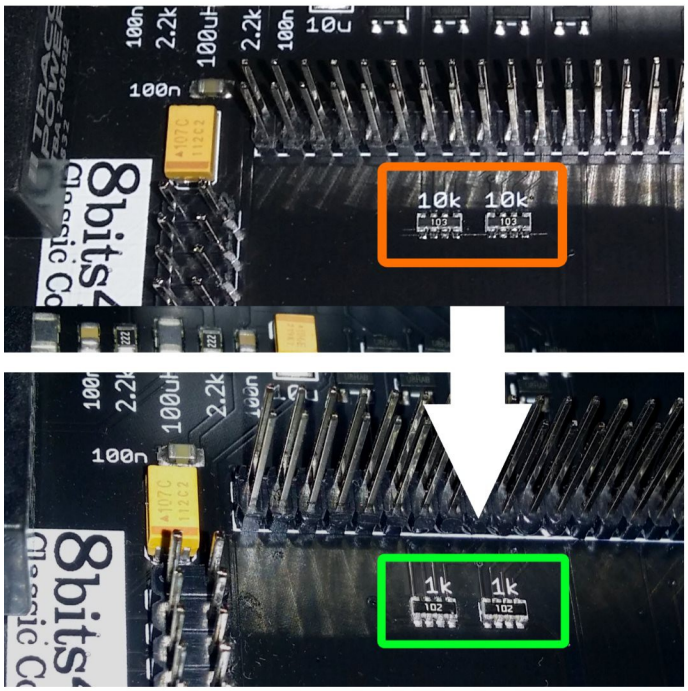
A value of 120 Ω is recommended to ensure maximum compatibility.



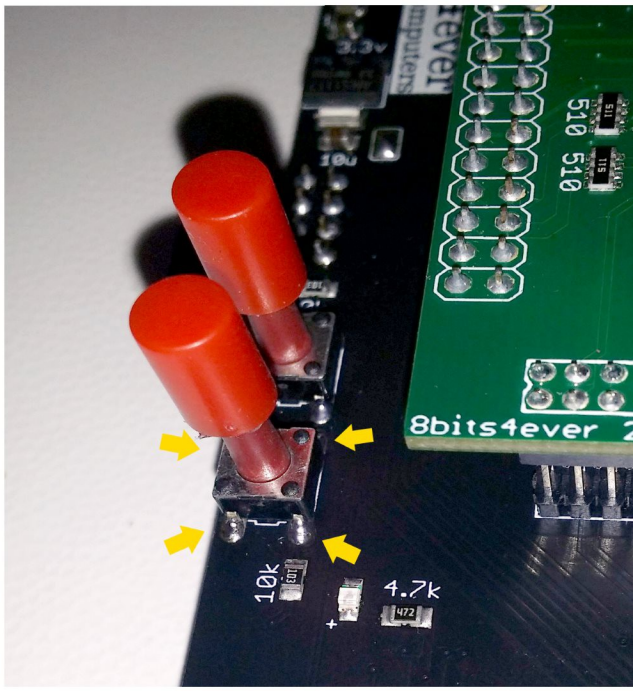
This is an optional fix. If your keyboard is NOT working properly you can apply this hardware patch or purchase another keyboard.

2022.06.08 Hardware Patches for SX-2 machine only

- External Data Bus 10MHz fix



- Strengthened Reset Button



- The first hardware patch (photo left) solves a compatibility issue with the 10 MHz data bus and consists of replacing the 10K resistor arrays with equivalent 1K ones. To verify proper operation, run the following commands: CPUSPEED /7 and then SAVEROM TEST.ROM /S without inserting the cartridges into the slots. If slots 1 and 2 appear listed on the screen, it means that the change was not performed correctly. Otherwise, everything is fine.

- The second hardware patch (photo right) solves a stability issue with the reset button. You only need to solder the button to the top of the pcb to fix any malfunctions. To perform a test, you need to press the reset button for a long time and move your finger in a circle. If the machine restarts, it means the soldering is incomplete. If the screen remains black, it means the soldering is fine.