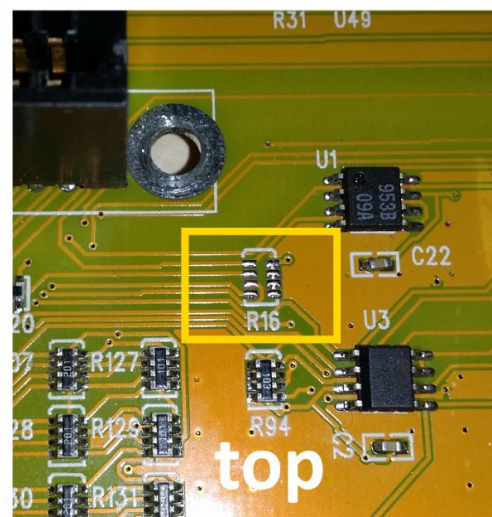
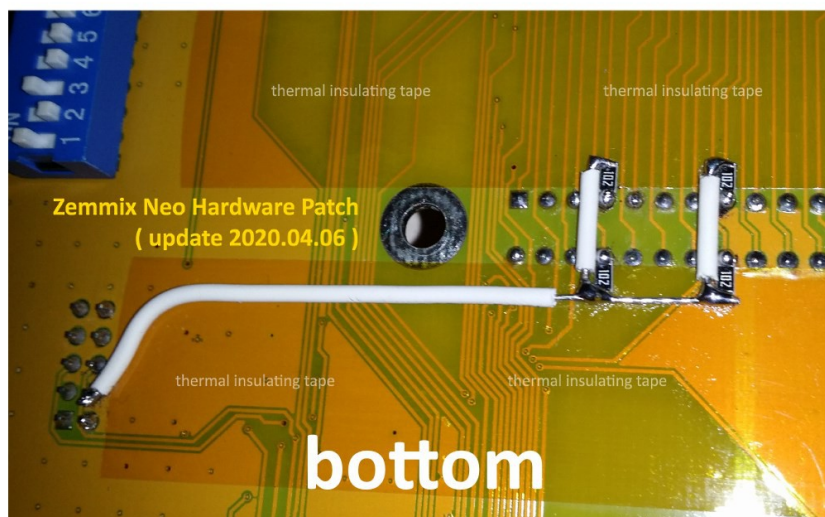
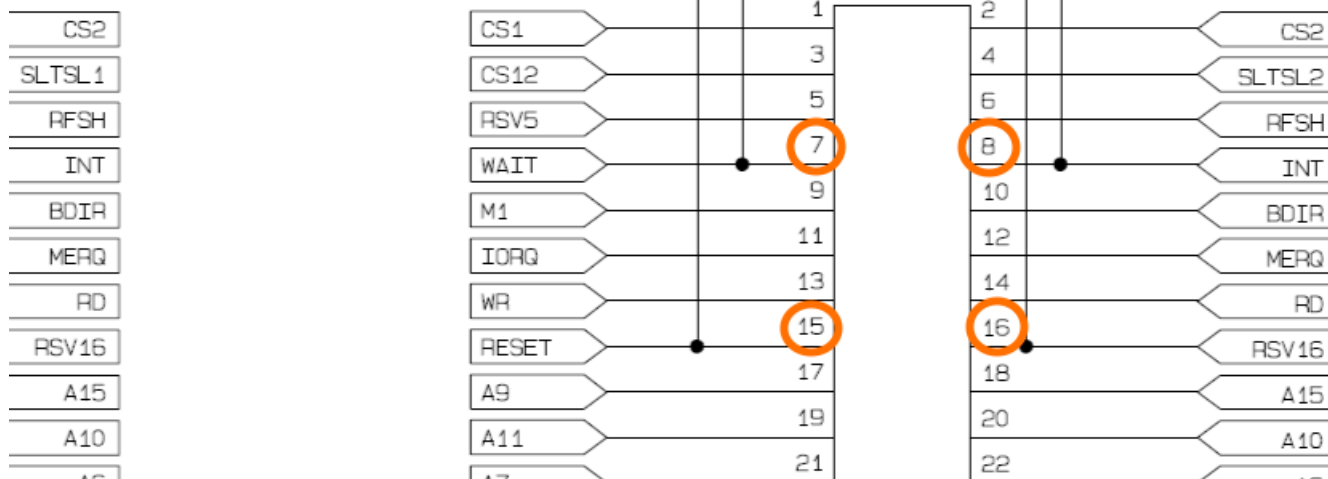


# HARDWARE PATCH for Zemmix Neo, SX-1, SM-X and related machines ( update 2020.04.06 )



## 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:

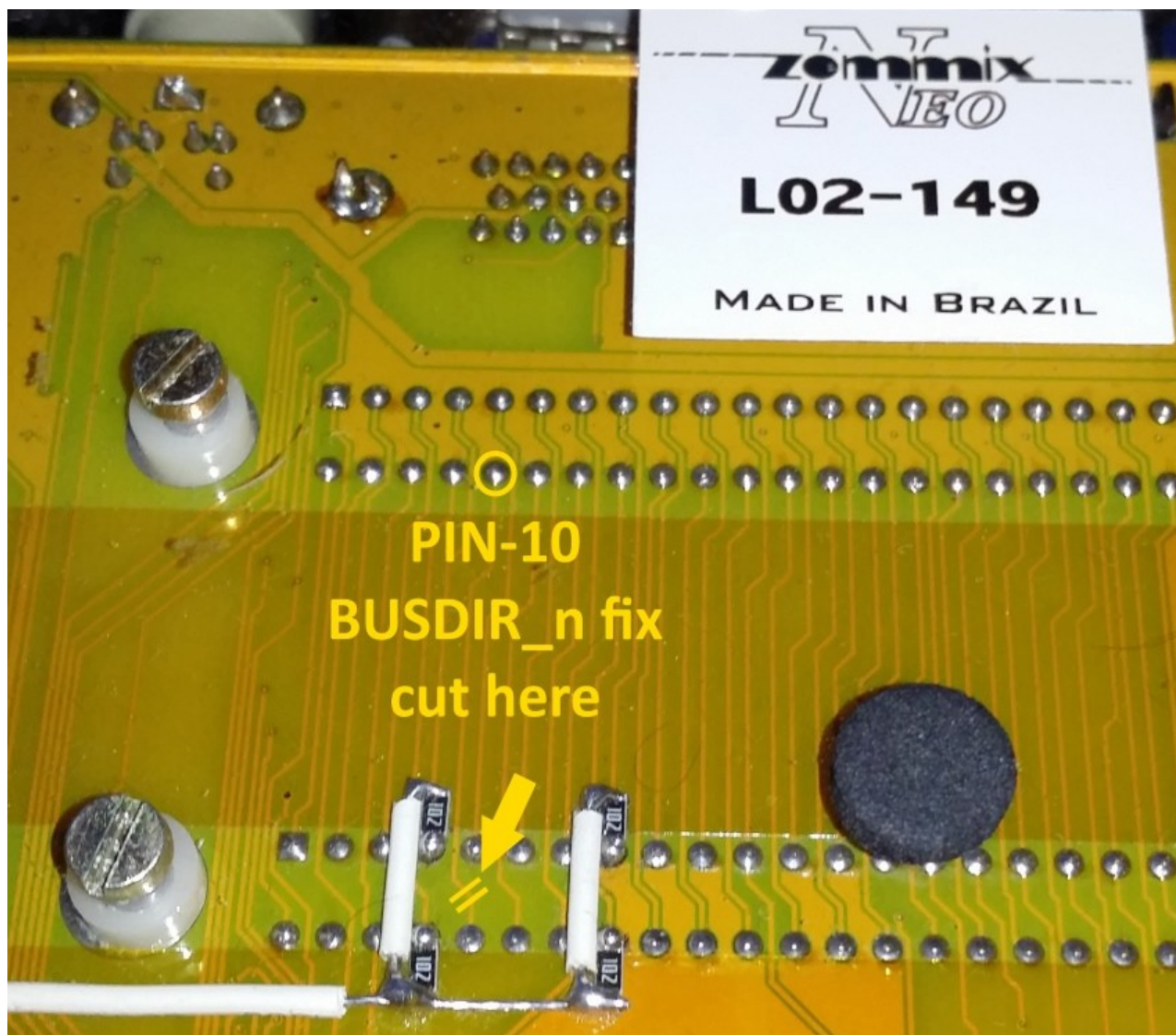
- Pin-10 (BUSDIR\_n) of the external slots must be isolated.

### 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>

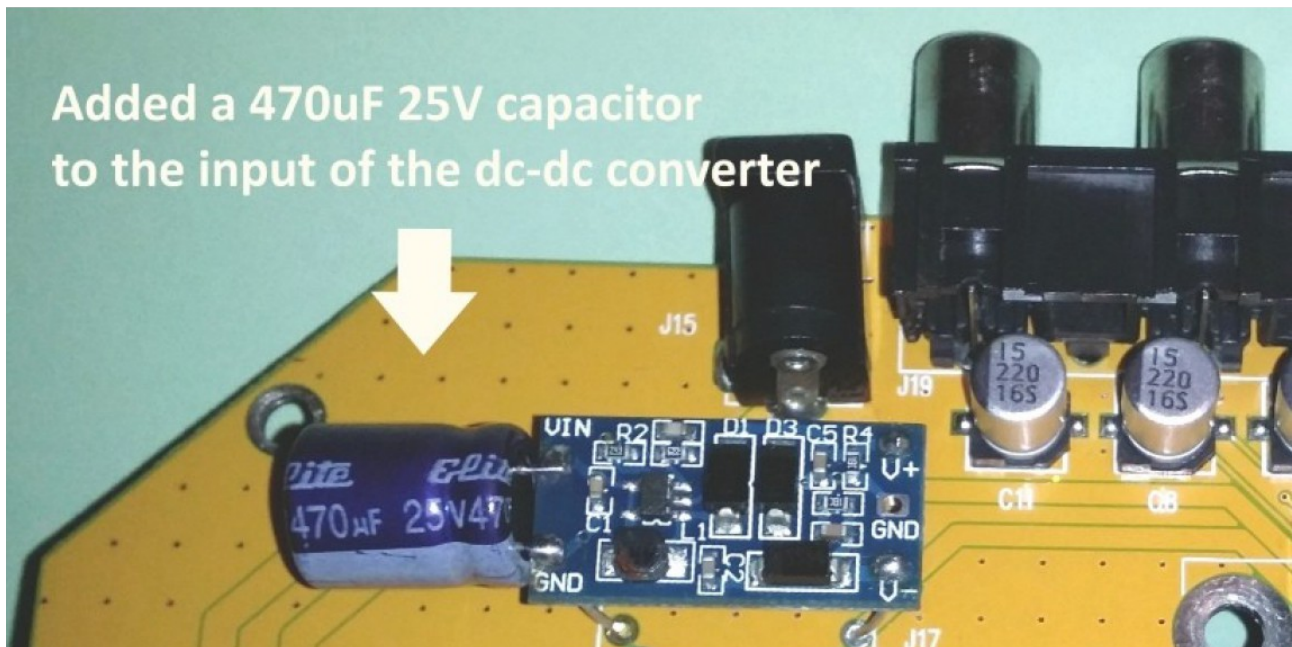




## 2020.10.16 Hardware patch for Zemmix Neo BR machines (aka +5V line stability fix)

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>