Required material:

- Aladdin XT PLUS2 modchip

I don't know if lookalike hardware will work, I only tested on those cheap Aladdin XT you can still buy

- Soldering Iron
- Lattice JTAG programmer or compatible hardware (ex. FT2232 boards). Must be able to supply 3.3V.

To build your own, please look at the pdf schematic files supplied in the same archive.

- Files to program the CPLD and SST flash chip.

Optionnal required material:

- 1MB LPC flash chip in PLCC32 package format

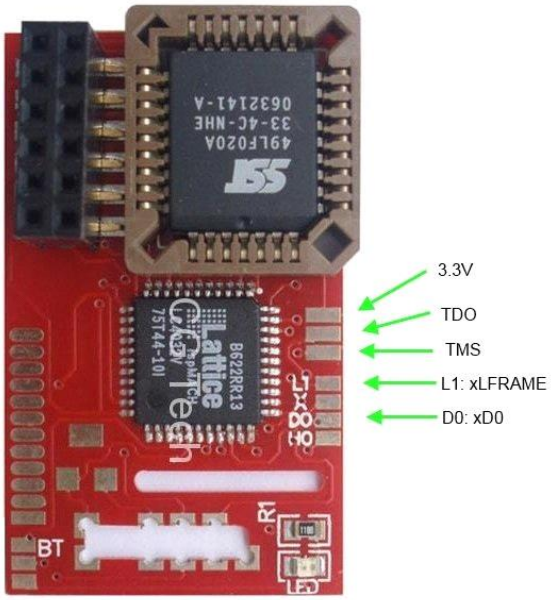
SST49LF080A is recommended. Required for mods that require 1MB flash chip, including Aladdin XBlast.

- SPST switch

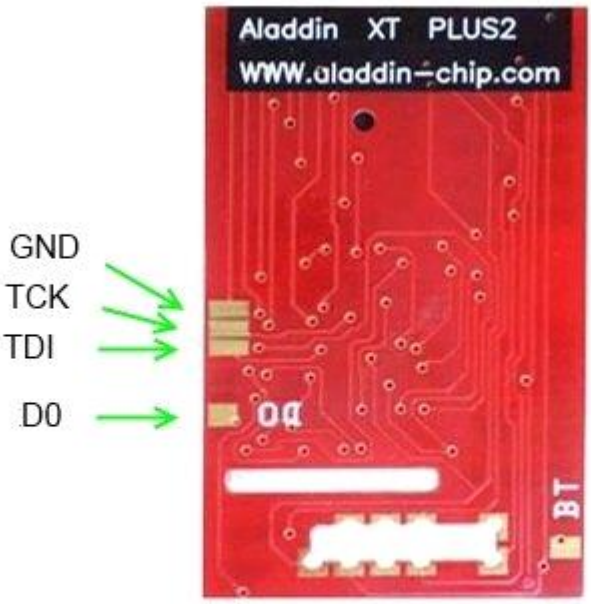
SPDT, DPDT, etc. will also work. Switch is only to be used with "Non-XBlast" mods.

<u>The LC4032V programming modification procedure is as follow:</u>

1. Solder leads on the 6 programming pads(JTAG) of the Aladdin XT. (3.3V, GND, TDI, TDO, TCK, TMS)

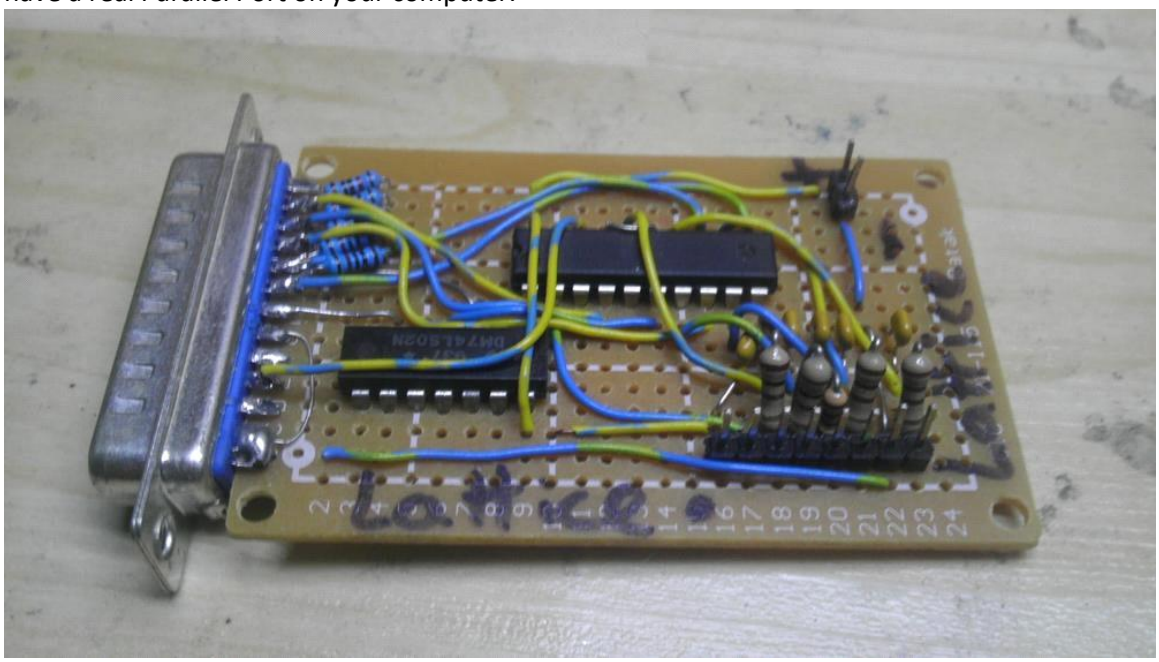


xD0: Same functionnality as stock Aladdin XT. 1.6(b) xboxes should try and use xLFRAME first and only fall back to using xD0 in case xLFRAME isn't working consistently.
xLFRAME: 1.6(b) onboard bios disable signal. Properly releases LFRAME. If this doesn't work consistently on your console, revert to xD0 or shorten your wire/check soldering.
3.3V/TDO/TMS: JTAG signals to program CPLD.

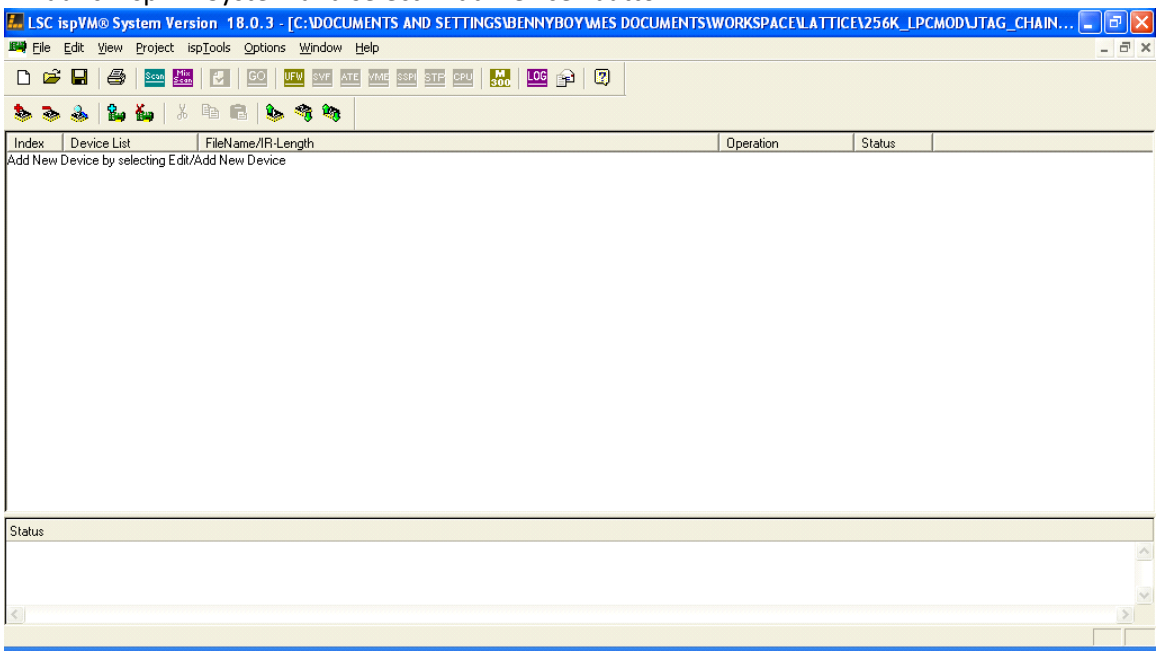


xD0/BT: Same signals as xD0 and BT on modchip's topside.
GND/TCK/TDI: JTAG signals to program CPLD

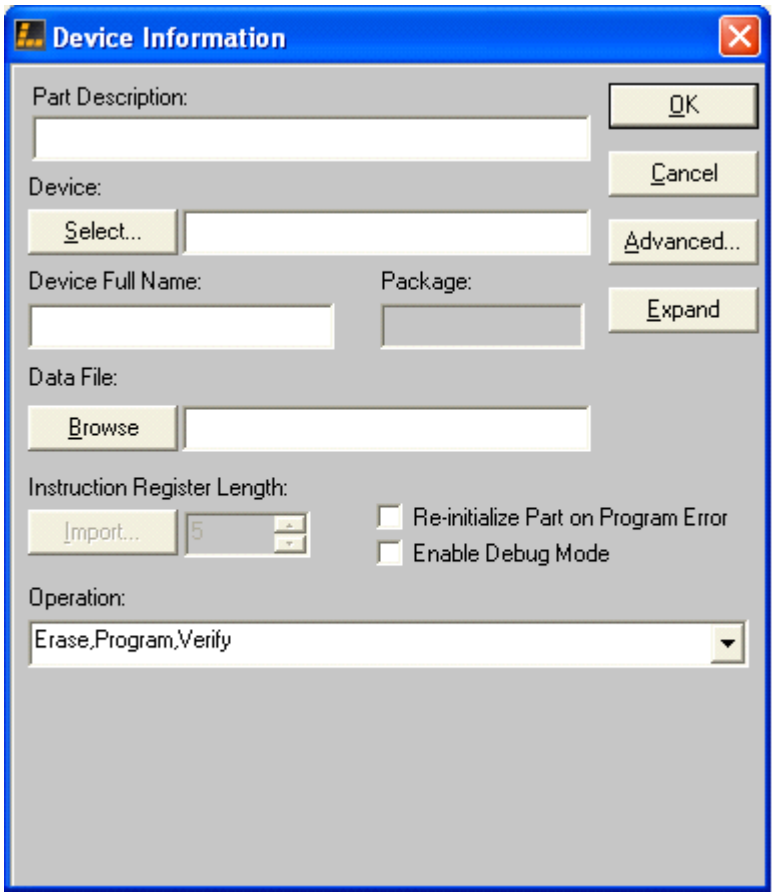
2. Connect the Aladdin XT to the JTAG programmer. Here's the one I built. Works great if you have a real Parallel Port on your computer:



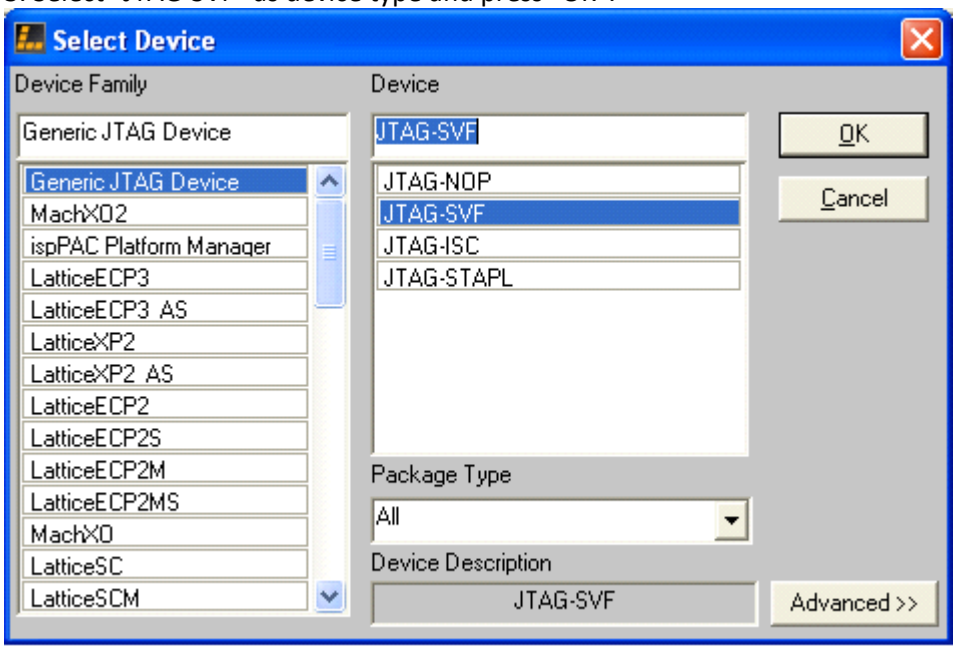
3.Use ispVM or urJTAG to program the CPLD with the supplied SVF file.
-Procedure is as follow:
1. Launch ispVM System and select "Add Device" button



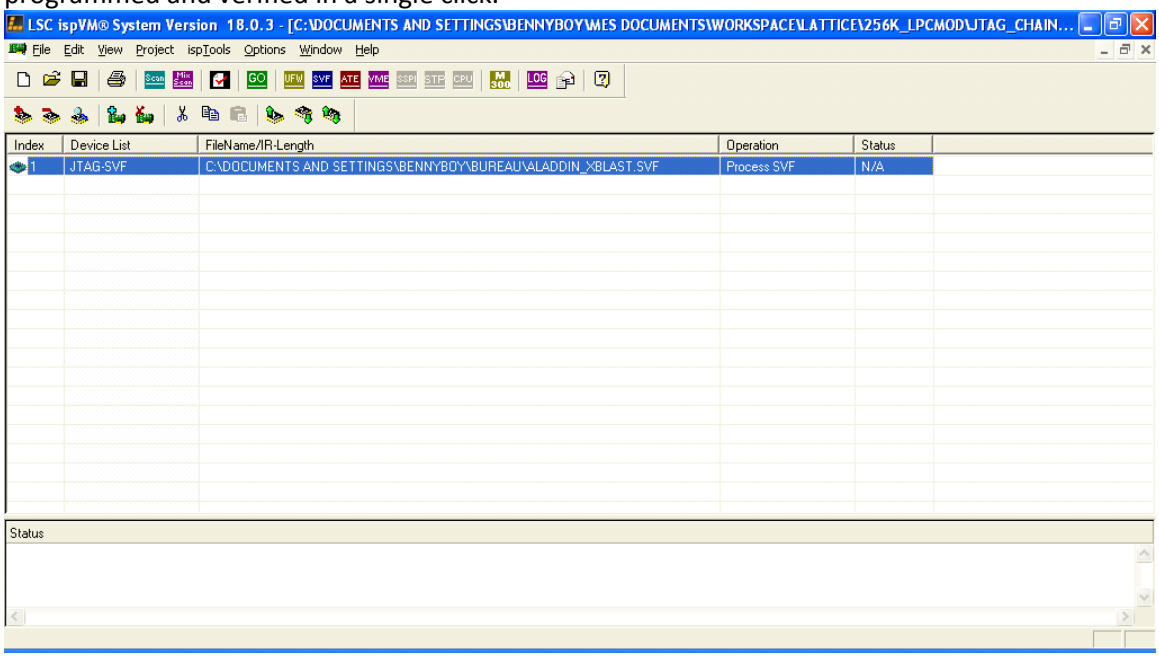
2. Press the "Select..." button under "Device".



3. Select "JTAG-SVF" as device type and press "OK".



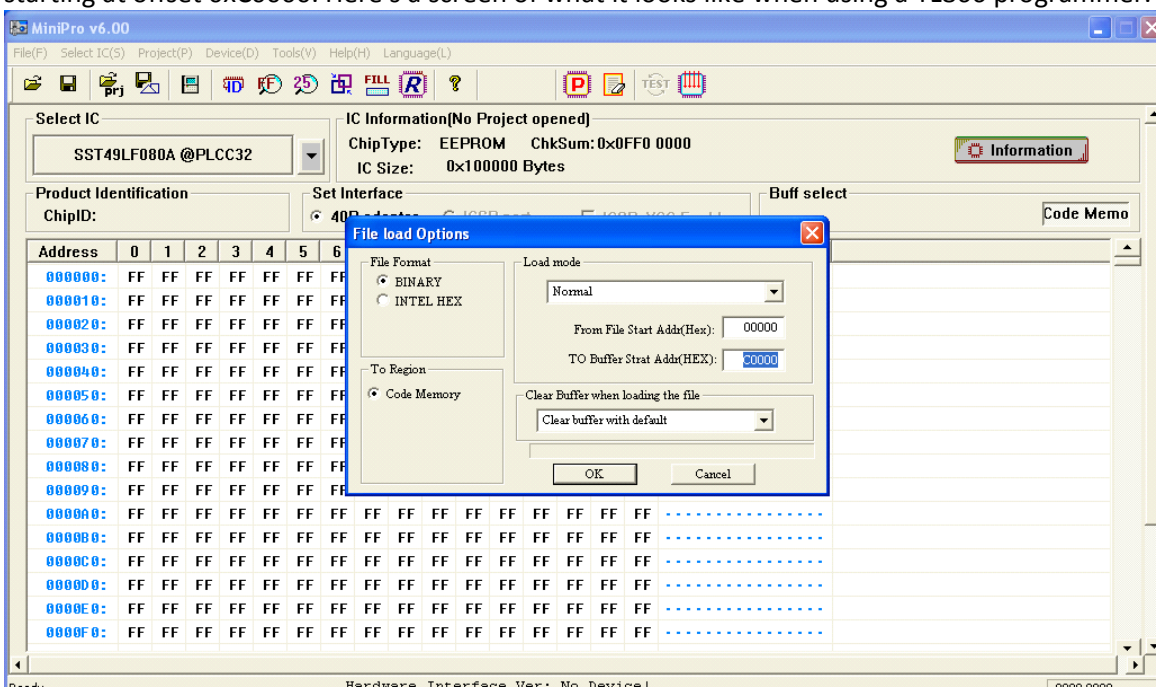
4. Press the "Browse..." button and select "*[desired mod file]*.svf" file
5. Press the "Go" button once the main window looks like the screen below. CPLD will be erased, programmed and verified in a single click.



Flash chip programming(optional)

If the mod you are attempting to perform requires a 1MB flash chip, you should program your new flash chip prior to installing it into the Aladdin XT modchip. For this, you will need an external programmer that connects to your computer. If you don't have an external programmer, you can flash it by hotswapping modchips on your Xbox console.

For Aladdin XBlast modification, you will need to program the SST49LF080A with the bin file of the lastest XBlast OS release. You don't need to fill the whole chip, just flash the 256KB image starting at offset 0xC0000. Here's a screen of what it looks like when using a TL866 programmer.



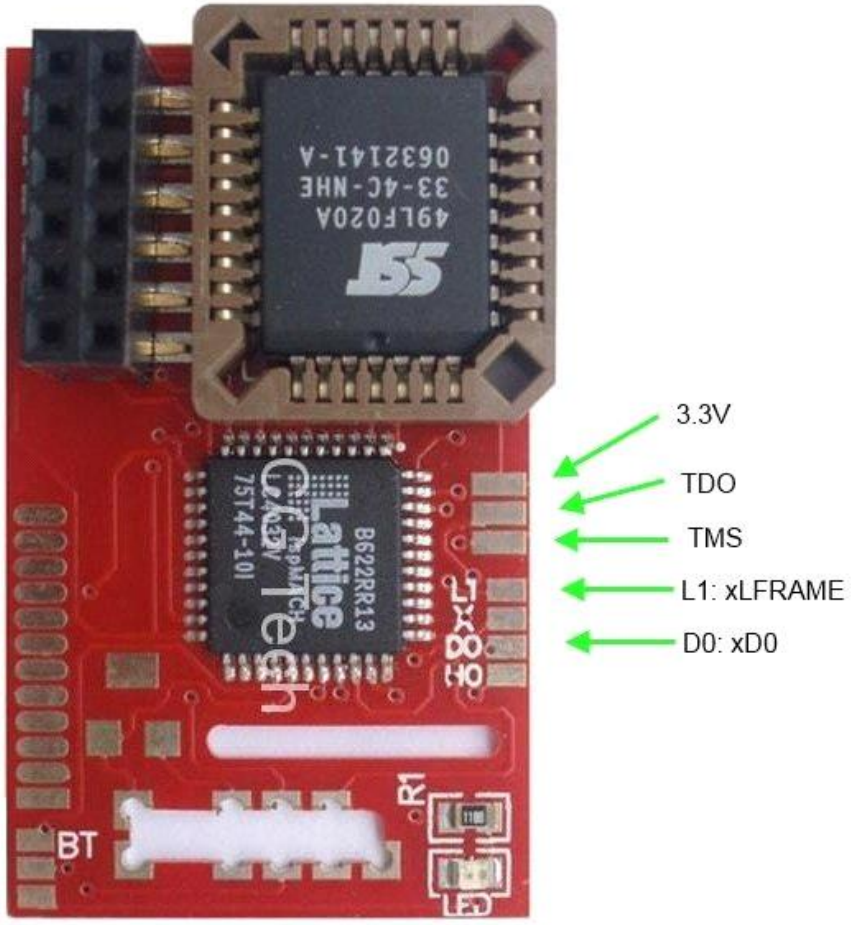
For Non-XBlast modifications that requires a 1MB flash chip, it is recommended you flash the entire 1MB flash space with the desired BIOS, mirrored to bring it's size to 1MB if necessary. You will be able to reflash it later from withing your Xbox using XBlast OS, Evolution-X dash, FlashBIOS, etc.

Install in Xbox

To install, you need to follow the stock Aladdin XT install instruction to some extent.

Remember that if you have a 1.6(b) Xbox console, you should wire your LFRAME(sometimes mislabeled as "D0") motherboard solder point to the "L1" solder pad of your Aladdin XT modchip instead of the "D0" solder pad. 1.0-1.5 Xbox console use same wiring as indicated in stock installation diagram concerning "D0" solder point.

Aladdin XBlast modification require ony that you have the D0/LFRAME wire soldered onto the modchip. No other extra wire is necessary (nor recommended).



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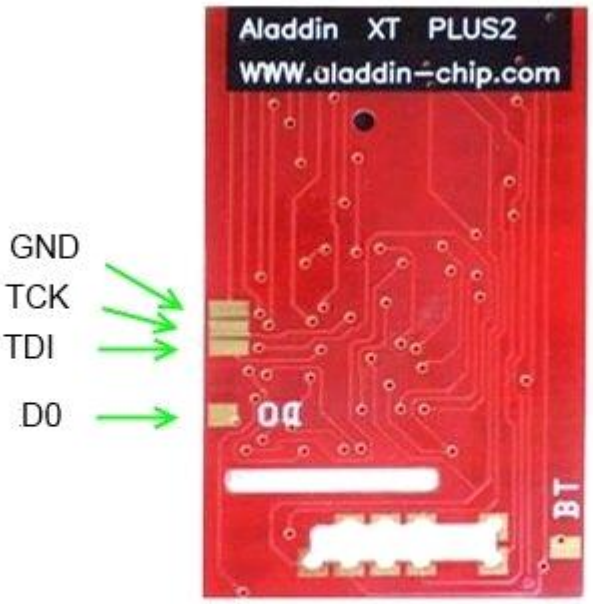
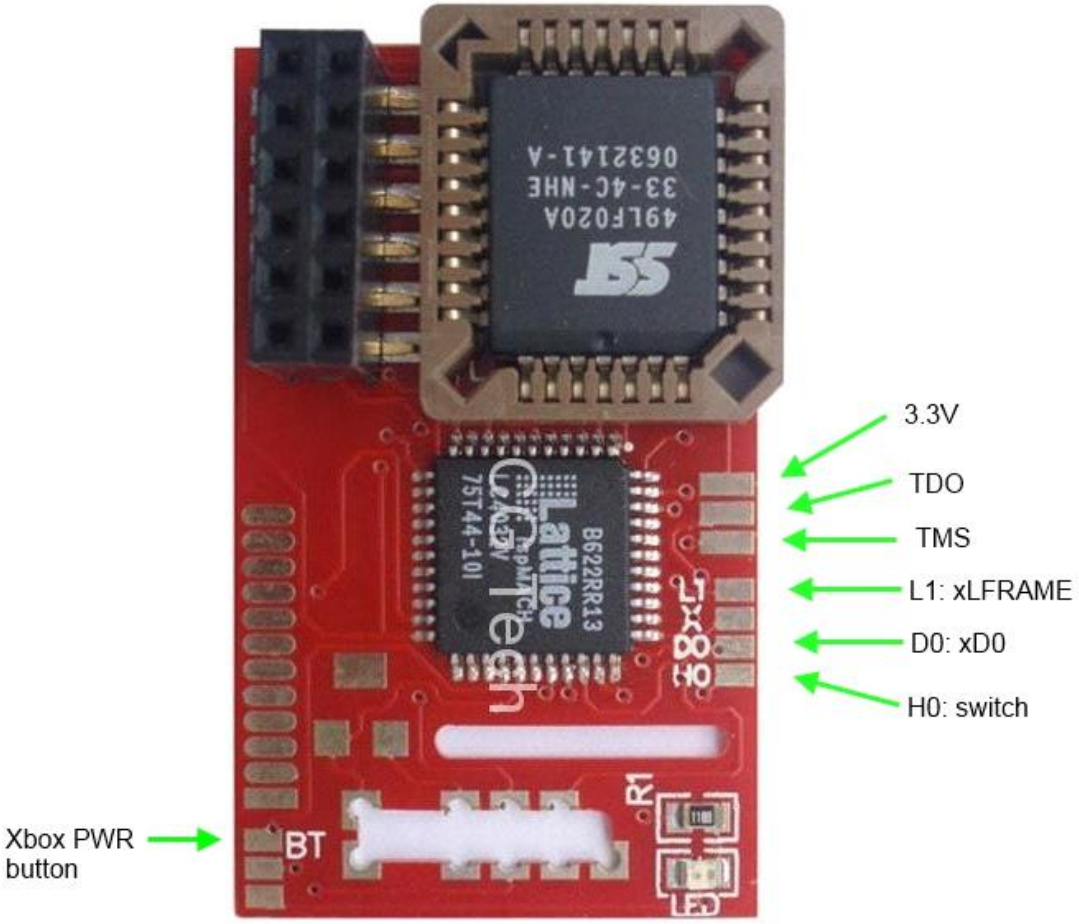
xLFRAME: 1.6(b) onboard bios disable signal. Properly releases LFRAME. If this doesn't work consistently on your console, revert to xD0 or shorten your wire/check soldering.
3.3V/TDO/TMS: JTAG signals to program CPLD.

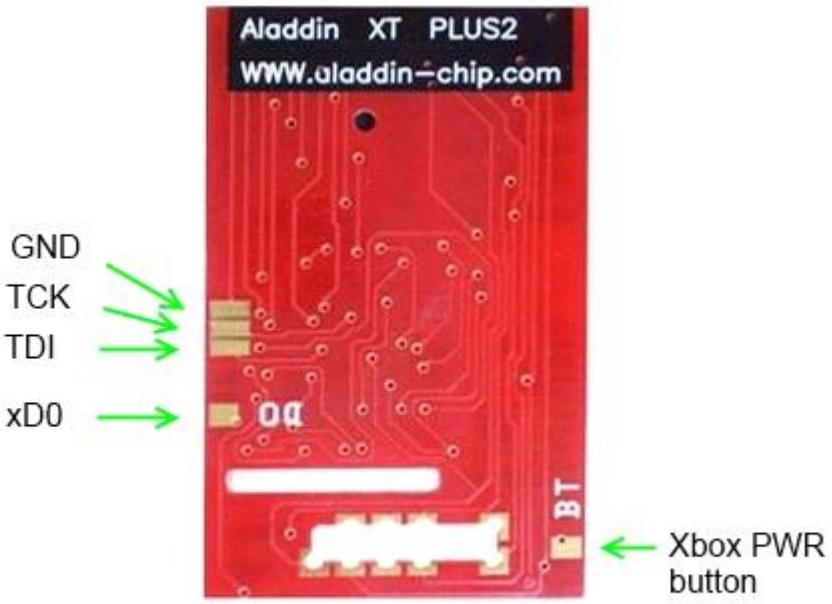


xD0/BT: Same signals as xD0 and BT on modchip's topside.
GND/TCK/TDI: JTAG signals to program CPLD

Non-XBlast modifications variant feature a "Long Press Power Button to disable" feature that requires the installer to follow the Aladdin XT stock install diagram if they wish to enable this feature. If you do not ever want to disable your modchip, you can skip this part of the installation and leave the "BT" solder pad on your Aladdin XT unconnected.



Xbox PWR button : Same functionnality as stock Aladdin XT
xD0: Same functionnality as stock Aladdin XT. 1.6(b) xboxes should try and use xLFRAME first and only fall back to using xD0 in case xLFRAME isn't working consistently.
xLFRAME: 1.6(b) onboard bios disable signal. Properly releases LFRAME. If this doesn't work consistently on your console, revert to xD0 or shorten your wire/check soldering.
switch: Optional. Wire SPST switch between H0 and GND. Without switch, flash protect is disabled and only 2nd flash bank is accessible (depending on your cpld code version).
3.3V/TDO/TMS: JTAG signals to program CPLD.



xD0/BT: Same signals as xD0 and BT on modchip's topside.
GND/TCK/TDI: JTAG signals to program CPLD

Modchip hotswap procedure:

If you don't have an external programmer device to flash your 49LF*** flash chip prior to installing it in your Aladdin XT modchip, you can try the modchip hotswap method. In order to do this, you will need a fully working modchip, your modified Aladdin XT that requires flashing and a partially disassembled Xbox console.

It is recommended that you tie the Xbox's D0 point to ground while doing this procedure. To do this, you can take the wire that goes from the D0 point on your Xbox motherboard and stick the other (insulation removed) end of if either on the metal casing or one of the screws holding the Xbox motherboard.

Boot your Xbox with the working modchip. Navigate to and launch your favorite BIOS flashing program. Recommended programs are XBlast OS or Evolution-X dashboard.

Remove the modchip you used to boot from and carefully but swiftly insert your modified Aladdin XT onto the LPC header. Make sure it is properly aligned as if it's not the case, you might have to restart the whole procedure.

Once the target modchip is inserted, proceed to flashing a BIOS file onto your modified Aladdin XT modchip. XBlast OS and Evolution-X will auto-mirror any BIOS image to fit the entire flash bank.