



# Pin Header Installation Guide

Rev 1.1

NEMESIS



# WARNING

**The installation of your Xenium will void your console's warranty and may cause damage to your console if not installed correctly. Please ensure that power is not applied to your XBox during this installation procedure.**

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**NEMESIS**

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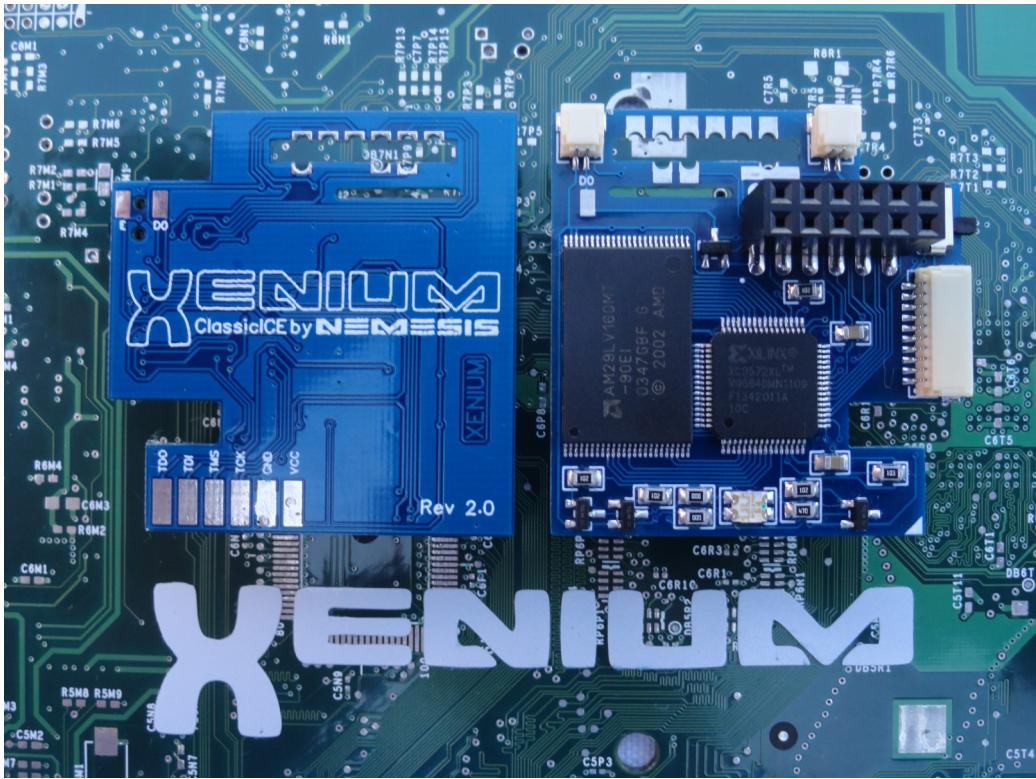
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# Introduction

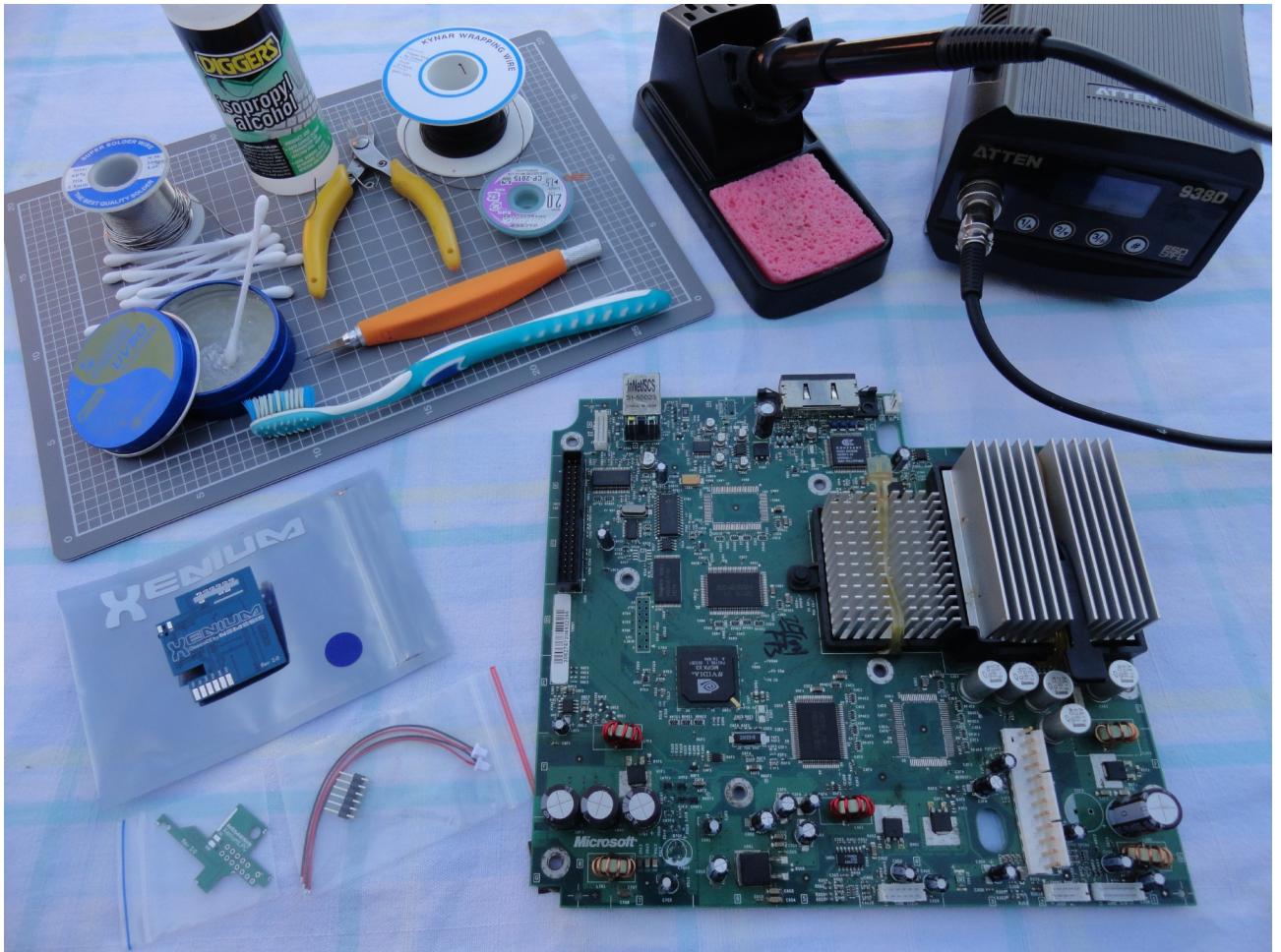


The Xenium has been designed to cater for a variety of installation options including Pin Header, Quick Solder, Hard Wired and Solderless methods.

I highly recommend the "Pin Header" installation method even if you have a version 1.0 console where the LPC through holes are filled in with solder. This method will make your mod-chip completely plug and play, meaning it's possible to install and remove the Xenium and other mod-chips with ease.

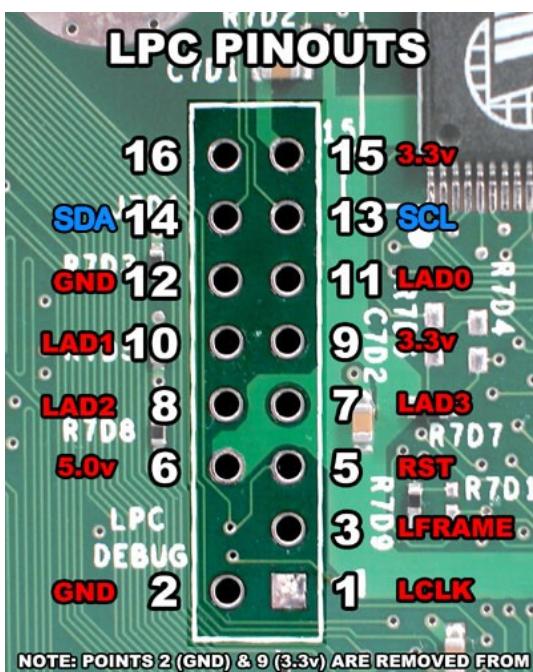
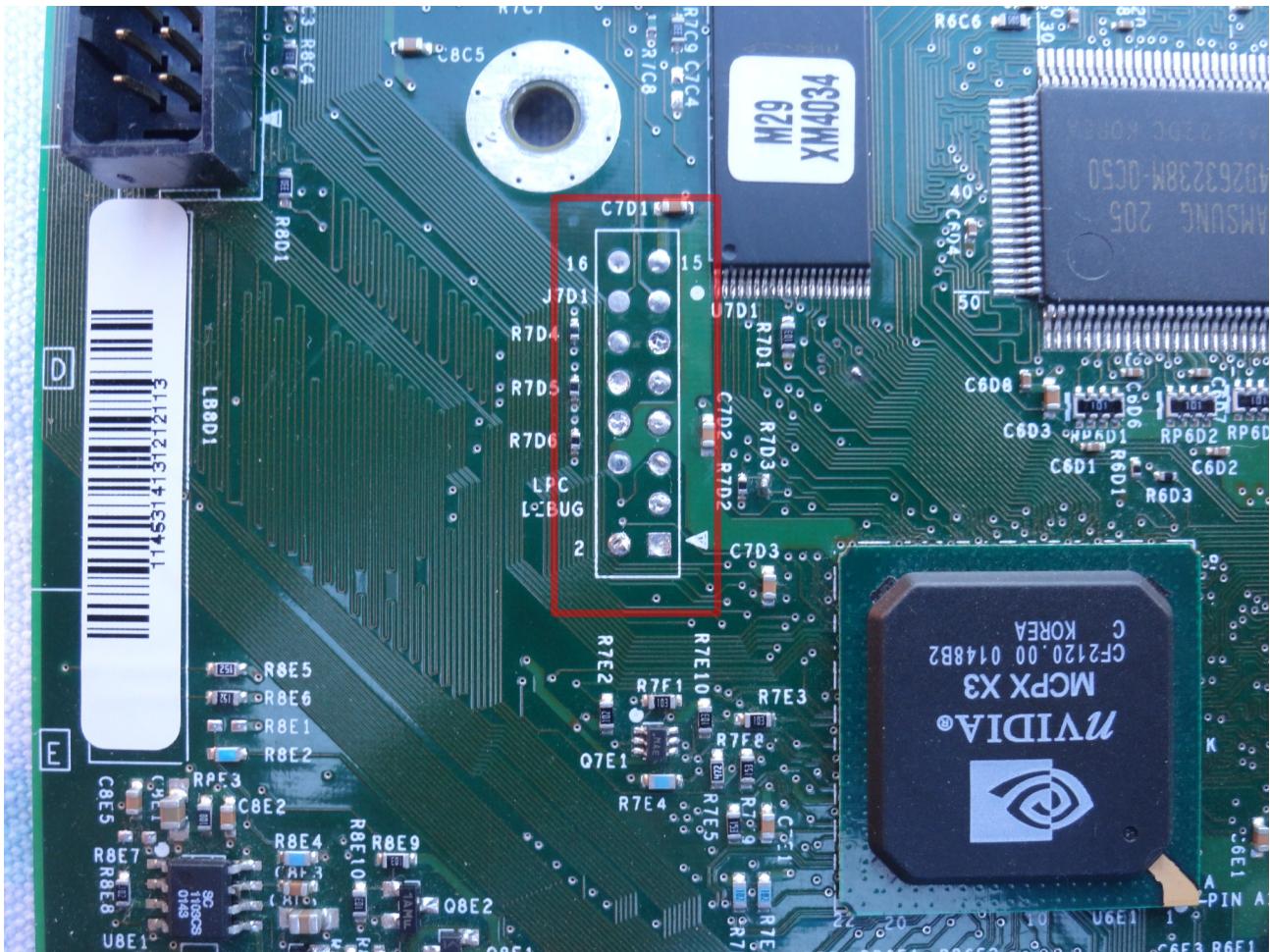
This method has a more professional approach compared and visually appealing compared to the "Quick Solder" installation method.

## Recommended Tools



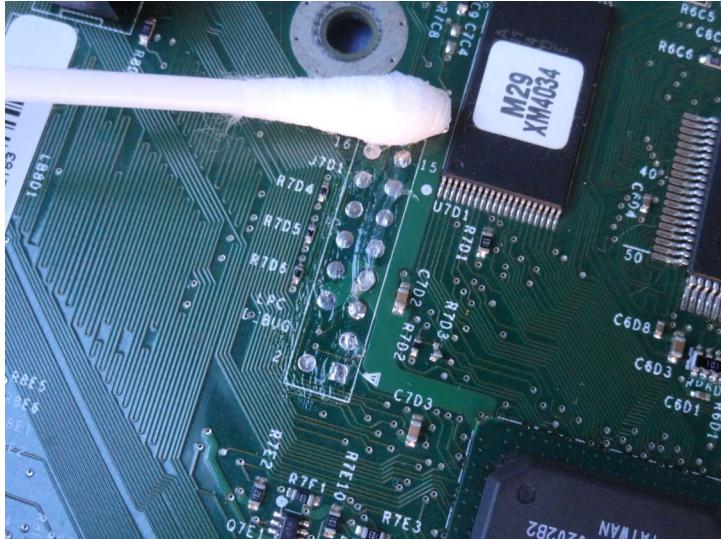
A good soldering iron with temperature control will be a huge benefit. My general rule of thumb is to use 340°C for general soldering, 360°C for desoldering and 400°C for anything that's grounded. I like to use a 1.2mm tip on my iron with 0.8mm solder with 60% lead, be sure to use Flux as it will greatly improve the quality of your work. I recommend desoldering wick as a solder sucker is of no use at this scale. Some isopropyl alcohol, cotton tips and a toothbrush will assist with any cleaning. You may also need a hobby knife to remove the solder mask if you choose the "Quick Solder" method. I would also recommend the use of 30AWG Kynar Wire (aka Wire Wrap) as it is very fine and single core which will make soldering to small points much easier.

# Locating the LPC



It's not difficult to find the LPC as it's located right in between the IDE connector and the NVIDIA south-bridge on all versions.

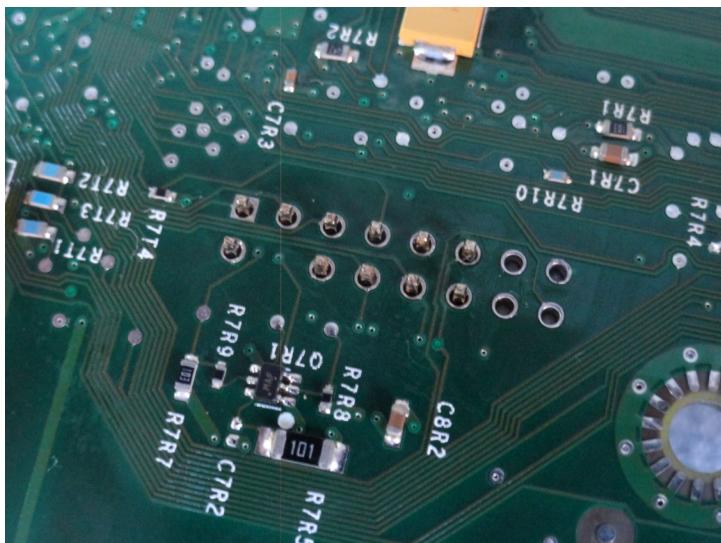
## Desoldering v1.0



Desoldering the LPC on a version 1.0 console is much easier than you might think with the right equipment. Starting on the topside of the motherboard apply Flux to the LPC as shown in the image.

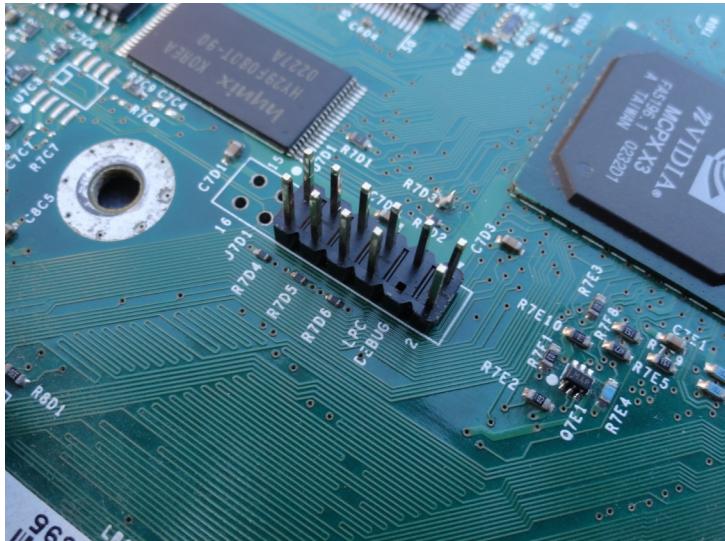


Put the tip of the Wick on top of the through hole and with the soldering iron set to 360°C press down on the Wick. You will notice the solder move up the Wick, when it stops remove the Wick and soldering iron. Cut off the Wick that's soaked in solder and repeat the process.

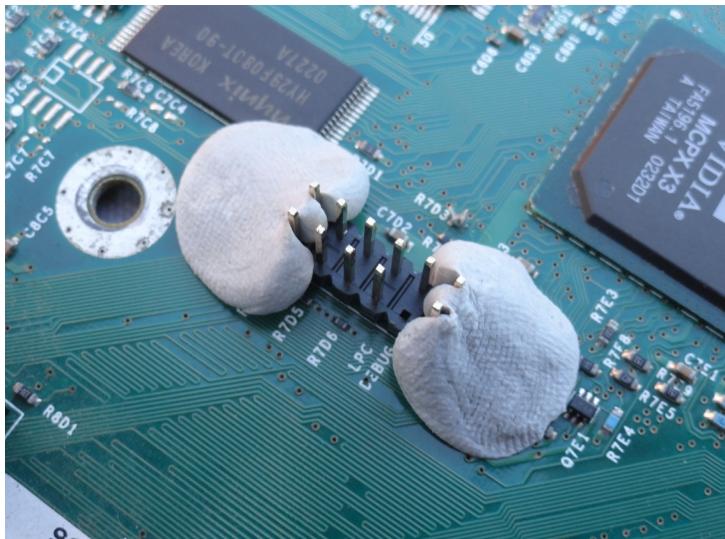


There were three holes including a ground that I couldn't get clean on the first pass. So I repeated the above process from the underside of the motherboard but with my soldering iron set to 400°C. As you can see after cleaning away the residue left behind by the Flux, the through holes on the LPC cleaned up better than I had expected.

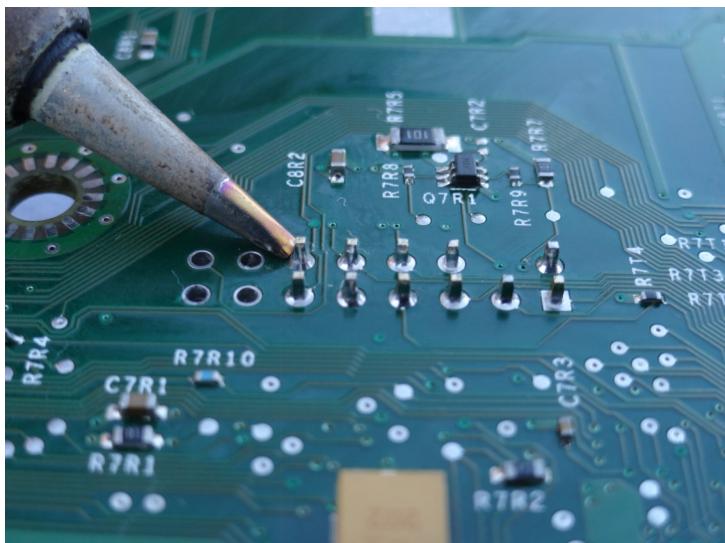
## Soldering the Pin Header



The first thing you need to do before putting the "Pin Header" in place is to remove pin 4 as shown in the image otherwise you won't be able to insert the pin header due there being no through hole for pin 4 on motherboards through versions 1.0 to 1.5 consoles. However there is a through hole on version 1.6 consoles but still must be removed!

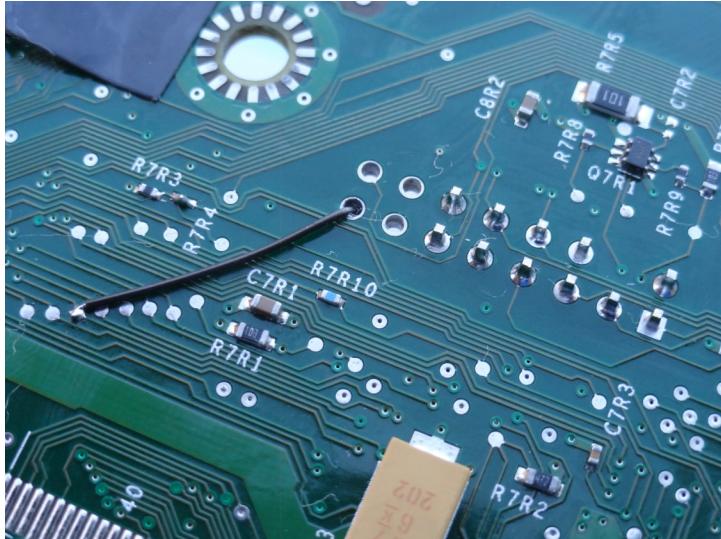


With the Pin Header inserted from the topside of the motherboard as shown in the images use some electrical tape or my favourite "Blu-Tack" to hold the Pin Header in place otherwise your gonna burn your fingers. Apply flux to the LPC on the underside of the motherboard in preparation for soldering.



Making sure your soldering iron tip is clean and having it set somewhere between 340°C and 360°C. Hold the tip against the pin, allow 5 seconds or so for it to heat up and apply solder so it seeps into the hole. Use 400°C for any grounded or stubborn pins, if your going to use a rebuild LPC try and keep the solder level with the motherboard. Flux and Wick will fix any mistakes. Isopropyl alcohol and a toothbrush will help clean the flux residue in between the pins.

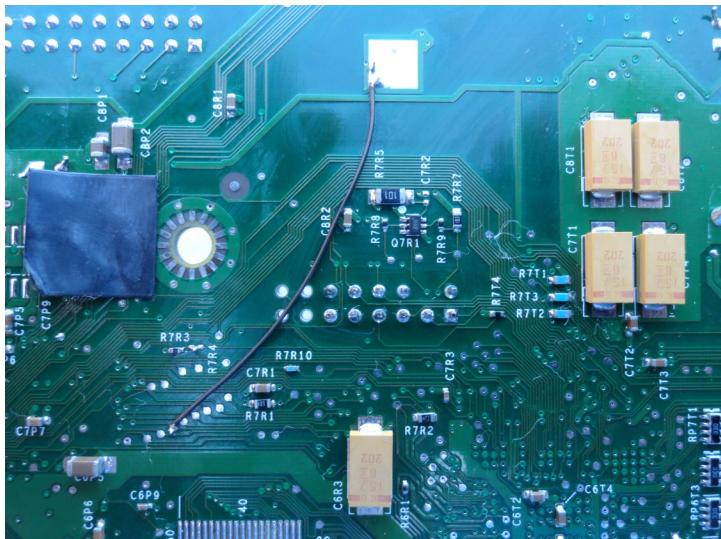
## Wiring for v1.0 to v1.5



Since this is a "Pin Header" install I recommend the D0 on the underside of the motherboard which also allows for a variety of installation options.

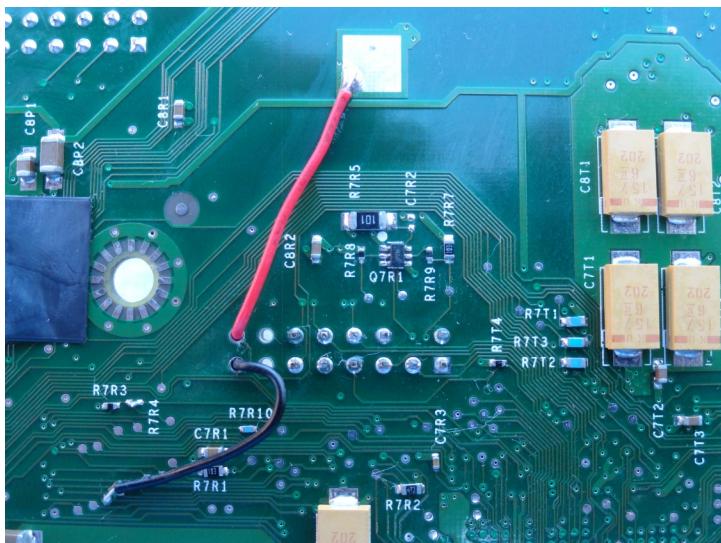
### Option 1:

Using Kynar Wire solder one end to the D0 and run the wire through a vacant hole in the LPC and connect to the mod-chip's D0 pad.



### Option 2:

Alternatively you could just ground the D0 wire as shown in the image. The downside is if you want to boot the BIOS on the TSOP after removing the mod-chip this wire will need to be cut otherwise the console will not boot up.



### Option 3:

Using the included 2 wire connector supplied with the Xenium mod-chip.

Typically ground is "black" but in this situation it's the "red" wire and D0 is the "black" wire. The wires are already tipped and can be soldered as shown in the image with the aid of flux. Try to do this quickly or turn down the soldering iron, you might melt the insulation covering the wire's.

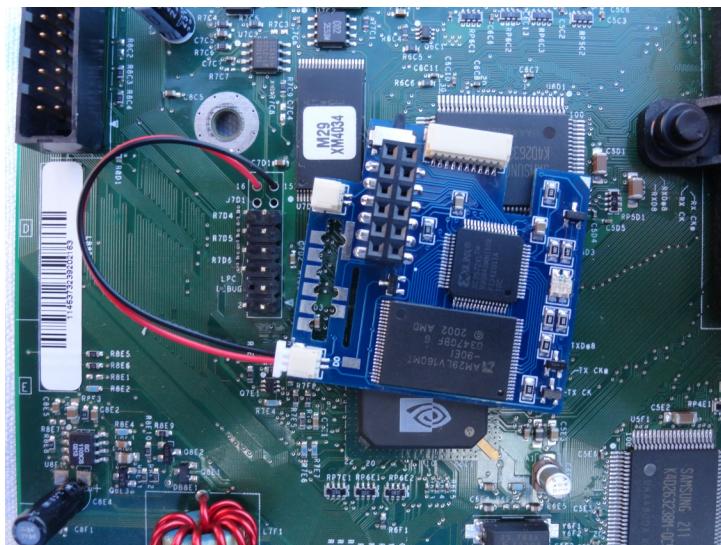
## PCB for v1.0 to v1.5



Alternatively the XeniumLPC for version 1.0 to 1.5 consoles could be used. The only advantage of using this was to have access to larger pads for a safer way to connect the wires. In hindsight I probably could have added connectivity to GND and VCC for v1.5 consoles. The D0 trace leading to pin 4 can't be utilised with any version of console. I miss interpreted the design of the Xenium as D0 through pin 4 was primary for solderless adaptors.

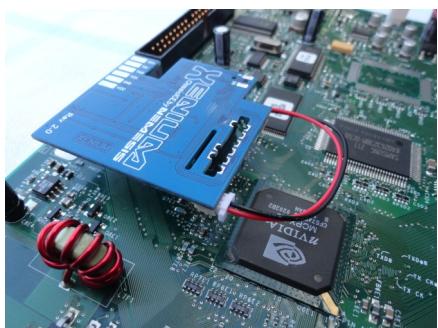
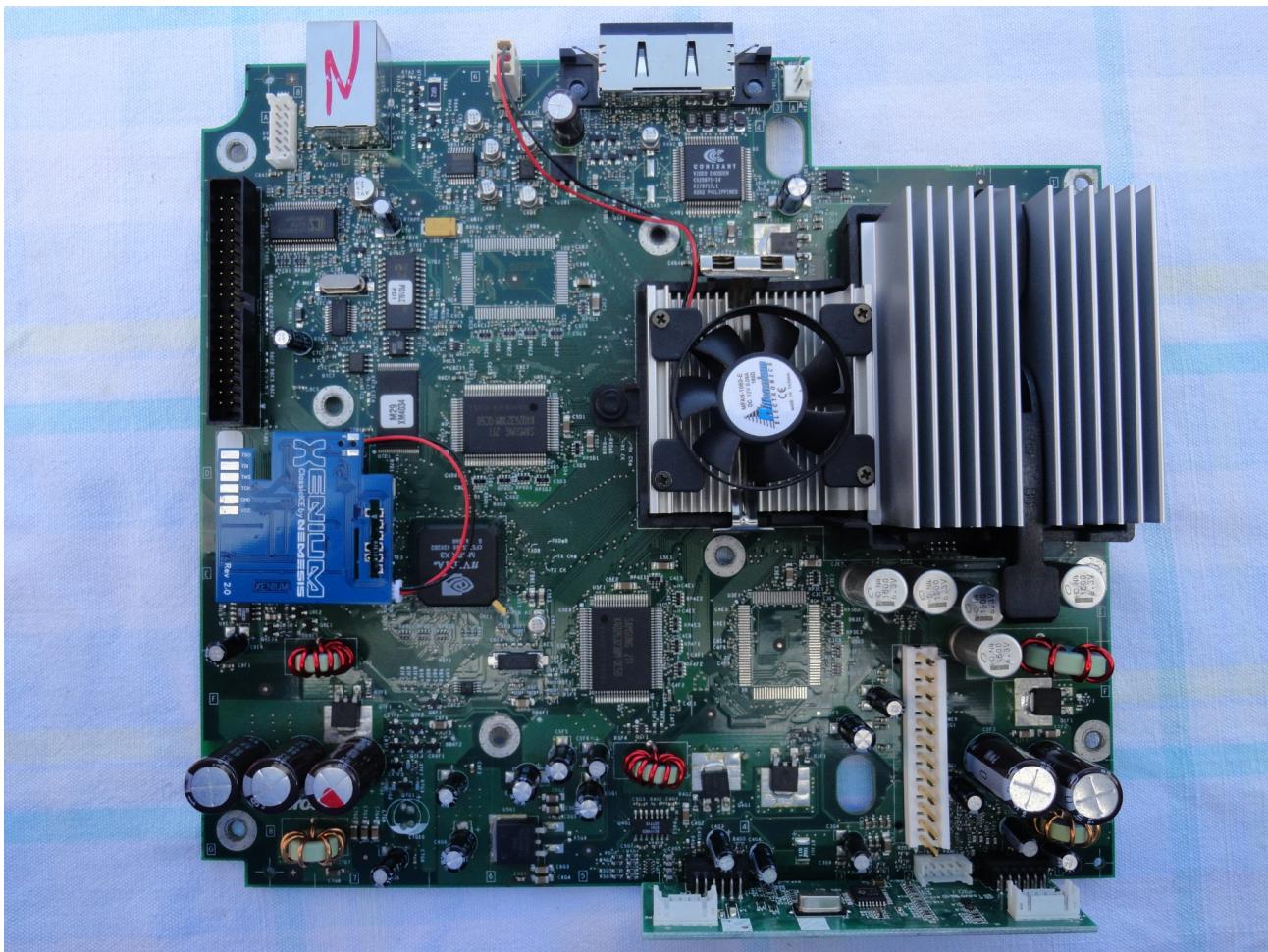


Even without serving much purpose it does look good when installed. It's not necessary to solder every pin, just the ground marked with the white dot. I did the opposite pin to hold it in place better and made a nice bead over the D0 on the motherboard.



While using the included 2 wire connector supplied with the Xenium mod-chip, insert them through pins 15 and 16 on the topside of the motherboard before soldering them to the underside as shown in the images. Now you're ready to plug in your Xenium.

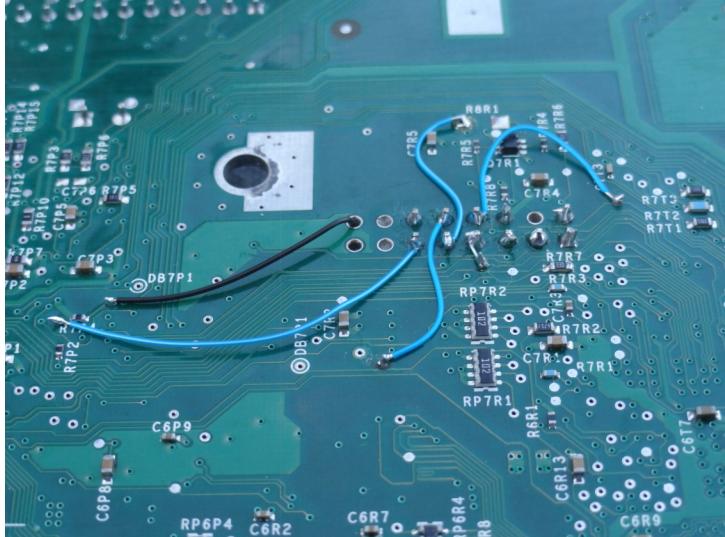
## Xenium Installed on v1.0



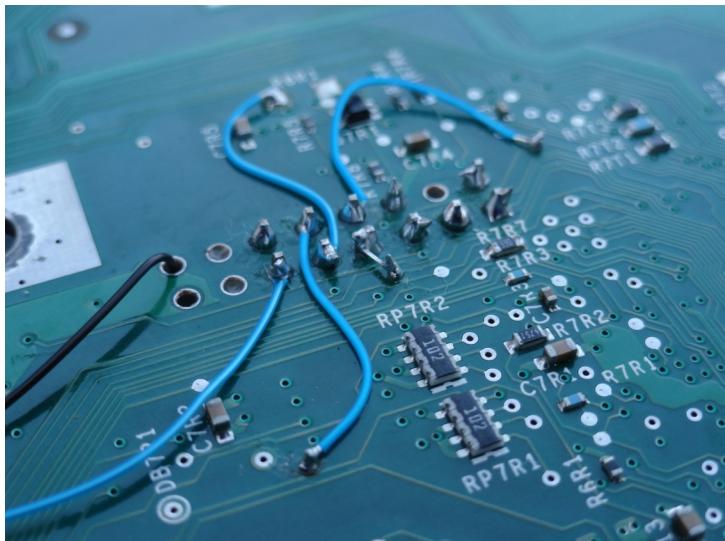
I continued to use the version 1.0 console that I did the desolder on, for the images used within this installation guide. And this is what a "Pin Header" installation should look like on console versions 1.0 through to v1.5...



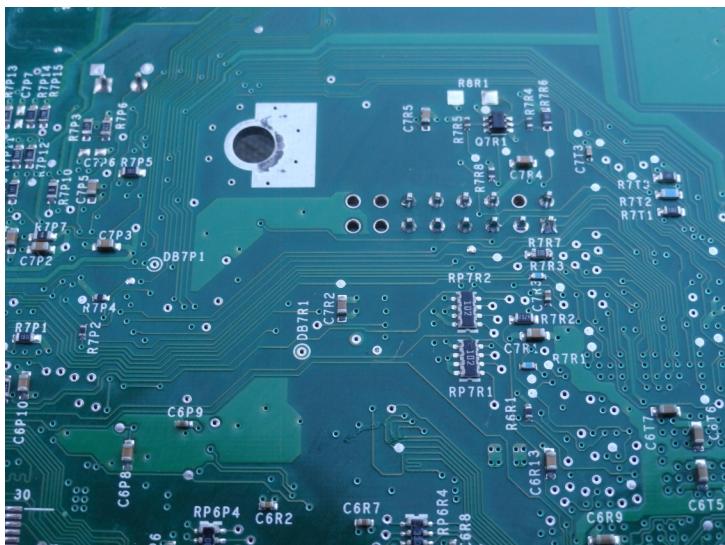
## How not to Solder



Firstly I have to mention that this is how to do the wiring for a LPC rebuild on v1.6 consoles, D0 is represented by the black wire going through a vacant LPC hole to be connected to the mod-chip. So these images can be followed, again I recommend using Kynar wire.



But this is also an example how not to solder, there are a few things going on here including too much solder, not enough heat and no flux being used. The pins with huge blobs of solder didn't have enough heat applied. Even though it's attached to the pin, it might not have seeped through the hole and may not actually be connected to the LPC. The spiky solder is due to a combination of not enough heat and no flux.

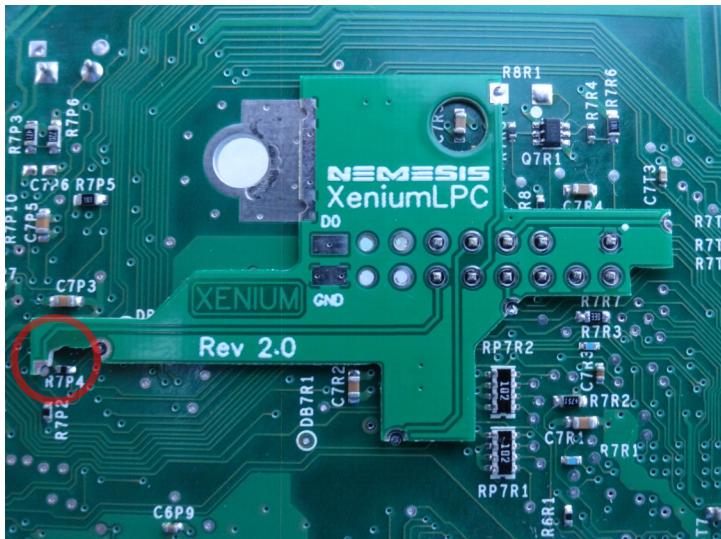


I decided to clean this up and prepare it for a XeniumLPC rebuild for version 1.6 consoles. Started by removing all the wires then applied flux to all the area's that had been soldered. Using wick I went around and desoldered all the pads and removed most of the solder from the Pin Header. I resoldered the Pin Header using flux at 360°C making sure the solder went into the holes.

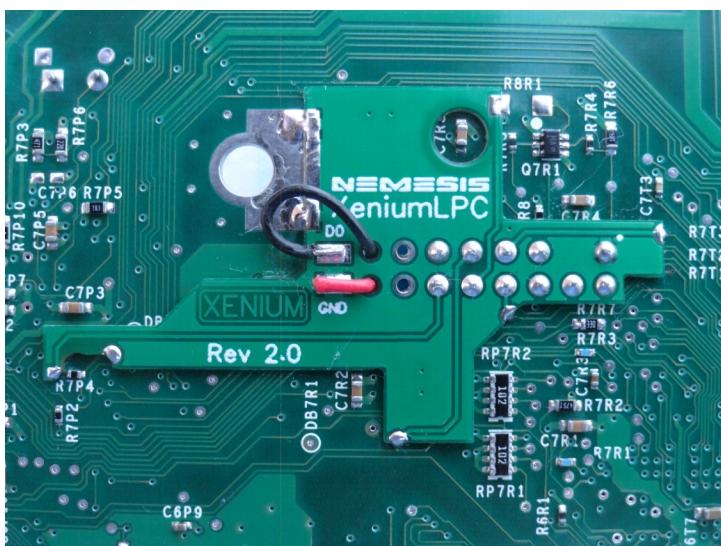
## PCB for v1.6 and v1.6b



I was a little off with one measurement on my XeniumLPC rebuild for v1.6 by about 0.2mm. The work around is to get a nail file and remove a small section of the PCB as shown in the image within the red circle.

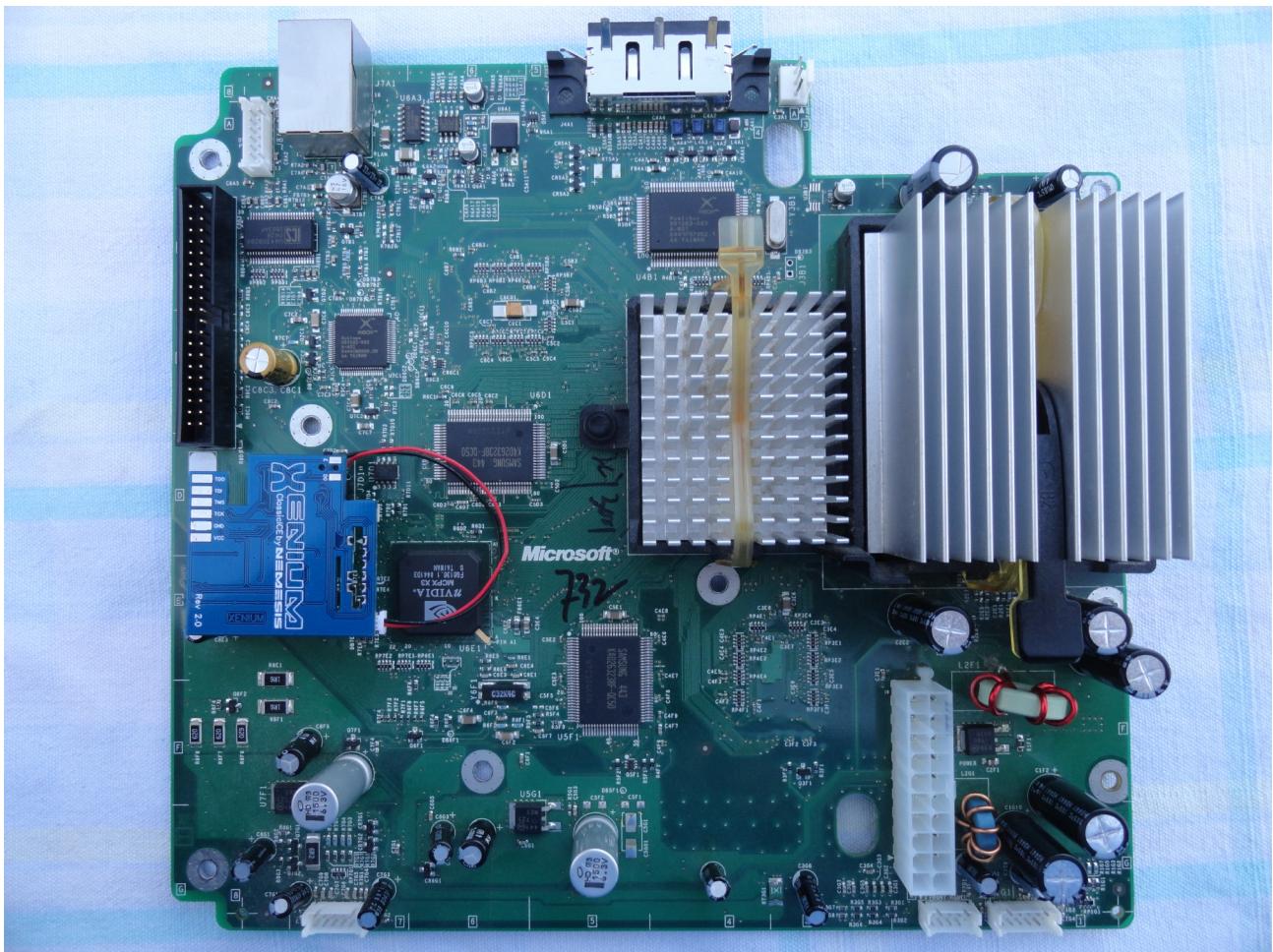


Make sure it completely clears the resistor as shown in this image. These XeniumLPC rebuild PCB's are only 0.6mm thick and can bend out of shape very easily. Not to worry as you can gently bend them flat again.



While using flux and with the soldering iron set to 340°C create nice beads other all the points. Set the iron to 400°C for grounded and stubborn points. Since the DO and GND pads rather close to the vacant LPC holes, I found that if you solder the wires on backwards then pull on the wires carefully so that the wire's bend and remain flush with the PCB, as shown in the image on the left.

## Xenium Installed on v1.6



And finally after having cleaned up the wires and solder from a previous attempt at a LPC rebuild. Then having installed the XeniumLPC for v1.6, this is what a "Pin Header" installation should look like on version 1.6 and 1.6b consoles...



## **Disclaimer**

By purchasing an Xenium you agree that the usage of this product is strictly your responsibility. XeniumMods is not responsible for any damage or loss of data caused during the installation or use of the Xenium.

The Xenium is designed for use as a development tool or as a device to perform certain repairs and is shipped with blank bios banks so that the end user is able to install their own bios. XeniumMods is aware that various hacked bios versions are available that may contain copyrighted code and can be used for piracy. The primary purpose of this device is it encourage users to exploit the full capabilities of their Original Xbox Console.

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