Foreword

This tutorial is written with noobs in mind (that's not a flame, everyone's been one at one point), so I've tried to cover every aspect of installing a modchip, thus reducing the risk that the forums are flooded with the same questions over and over again.

I must add that the wire install is not covered in this tutorial for various reasons. One being that I (the author, tehsoul), have never done one, another that it's simply easier and faster to do a pinheader installation.

On another note; if you have an old v1.0 Xbox, it's likely that your LPC holes are filled with solder, and need to be desoldered in order to perform a pinheader installation. Because I have no experience in this field, I'll just add a quote from the original installation tutorial over at http://www.teamxecuter.com/x3/tutorials/x3pin1015.htm

> *nly old machines have solder in these holes (v1.0) the newer machines are all unfilled (v1.1 - v1.6). If you wish to remove solder from any filled holes - simply add flux, put some fresh solder on each hole and heat it up a little them simply use some solder braid to remove.*
>
> *The entire process takes less than 5 minutes. You can read this desolder tutorial as a reference - http://www.aaroncake.net/electronics/desolder.htm*

Although installs in v1.6 boxes differ from installs in previous xbox models, both are covered.
v1.6 users should follow the whole tutorial, while others (with v1.0 through v1.5) should ignore the areas in grey backgrounds.
Experienced users can also skip the opening up and putting back together chapters, since that's pretty straightforward for people who've done this before.

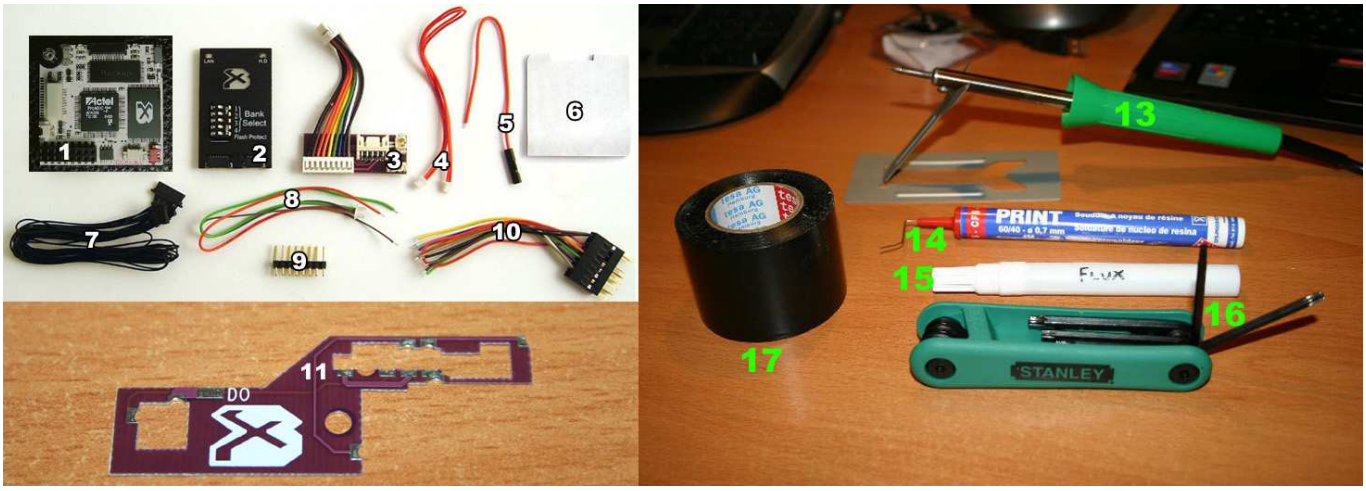
I really hope there's people who are helped with this tutorial.
May your quest as Xbox-modder/gamer/pirate (errr, backer-upper!) be joyous and succesful
I know mine has been so far (thanks to teamx and xbmc \o/)
If you have any questions about my tutorial, want to add something, or want my paypal to donate random amounts of money, you may send me a private message on the Team Xecuter forums, located at http://www.teamxecuter.com/forums/)

Should you ever encounter any problems during the installation, regarding issues you can't find in the tutorial, take a look at the forums. Use the search button FIRST, and THEN make a new thread about your problem, if you were unable to find an answer after a thorough search. Alternatively, you can pop in at #teamxecuter on efnet (irc), but the forums might be a better idea.

Good luck!

1. Installation Checklist

Before you storm into your xbox like a raging bull in mating season, make sure that you got everything you need at your disposal. If this is your first time modding an xbox, take a seat at a spacious table, organize everything on it, and check if you have all of the following:



1. Xecuter3 CE Modchip
2. Xecuter3 Front Switch
3. Reset/Eject Adaptor
4. Reset/Eject Cable
5. Alt. 5V Connector (v1.6 install only)
6. Sticky Pad (wires install only, not covered here)
7. Switch Connector
8. D0/LAN/HDD wire
9. Pinheader
10. Wire harness (wires install only, not covered here)
11. 1.6 Rebuild PCB (v1.6 install only)
12. XBOX (not shown)
13. Soldering iron (max. 30Watt, with small sharp tip. Smaller equals more control!)
14. Solder (resin core recommended, and the thinner the better)
15. Flux (optional)
16. Torx 10 + Torx 20 screwdrivers
17. Electrical Tape

Note: parts 2 and 7 are only needed if you want to use the external X3 Switch, which is not mandatory (contrary to what other chip manufacturers have you believe)

2. Opening up + disassembling your XBOX

Turn over your xbox.

- You'll see 4 protective feet, one in each corner of the bottom surface. Pry them off using a small knife. Careful though! Them little wankers can jump off pretty far if you don't watch out! Hold down one side of the foot while lifting the other side up with the small knife. Once it's lifted far enough, grab it with two fingers and just pull it. Repeat until you've done all 4 of them and give them to mom for safe keeping.

Next up is uncovering two 'hidden' screws. One is the silvery shiny one, the other one has your xbox's serial number and barcode on it. Sure, you COULD pull them off in one fluid motion to expose the screwhole underneath. However, if you're a care-freak like me, try the following method;

- Rub over the silver sticker with your pointing finger, applying a bit of pressure. You should be able to feel where the screwhole exactly is. When you reach that area, push it somewhat harder. When you lift your finger afterwards, you'll see a round imprint in the sticker. Now go to dad's workplace and get yourself a little Stanley knife *(you know, one of them small, sharp fuckers).* Cut around the little imprint you made in the sticker, et voila! Your torx20 screw is exposed while still enjoying the illusion of an original xbox WITH shiny silver sticker! YAY!

- Now, apply the same method on the sticker with your serial number and barcode on it to uncover the second hidden screw.





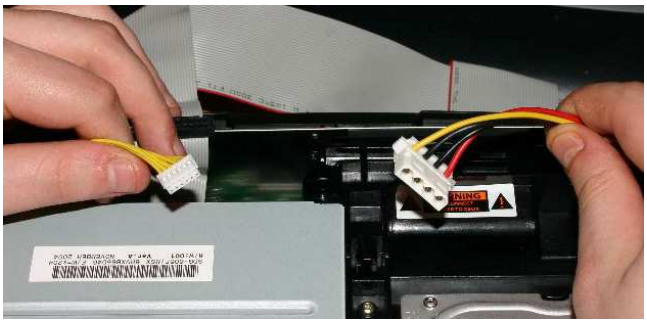
Unscrew the 6 screws, and the result of your hard work so far should look like this:



- Take out all the screws.
  (give these to mom for safekeeping as well)
- Turn over your xbox again, the power/reset buttons and DVD-Rom drive faced towards yourself.
- Grab your box from the side and gently lift the top off *(see picture on the right)* →



- On the left you should see your DVD-Rom drive, on the right your harddrive.
- Unplug the yellow power connector to the DVD-Rom drive.
  (a good tactic is to 'wiggle' them out, instead of plain pulling it)
- Do the same for your harddrive powercable.



- Unplug your two IDE connectors.
  (the flat grey cable)
- The powercable to the harddrive you pulled out in the previous step is wired through a plastic gutter. Wriggle it out of there.



- Unscrew screws 1, 2 and 3.
  (as shown on the picture to the right)
- Take out the harddrive enclosure.
  *(you **did** wriggle out the powercable, yes?)*
- Take out the DVD-Rom enclosure.
  *(you **must** do this **after** you've taken out the harddisk)*



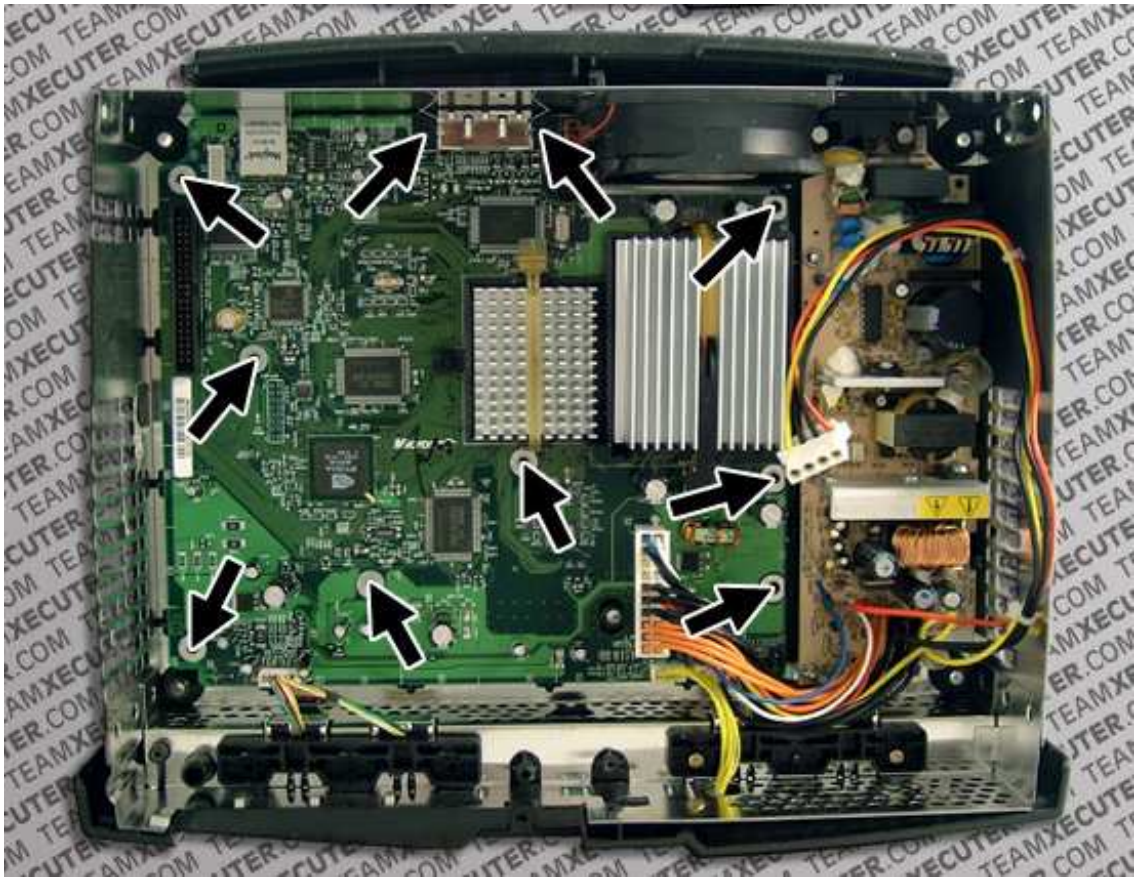
1. Fan powercable
2. DVD-Rom powercable
3. IDE cable connection
4. Controllerport 1+2 connection
5. Main power cable
6. Reset/Eject cable
7. Controllerport 3+4 connection

Unplug all these connectors and
Put all of them out of the way

(use caution! The main power cable might be bitchy to pull out, but keep it gentle.btw this goes for all connectors!)



Remove the screws highlighted with arrows in the picture shown



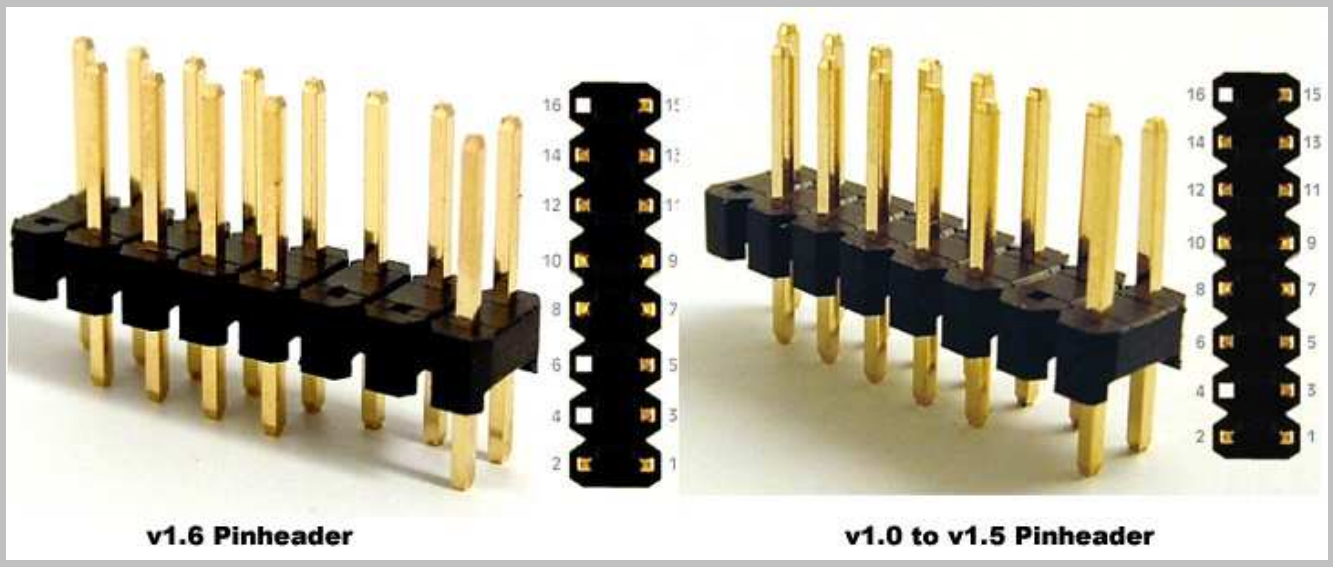
(Picture courtesy of TeamXecuter's X3 v1.6 installation guide. Non v1.6 boxes may differ slightly)

Put the screws somewhere safe, and GENTLY lift up the motherboard from the case.
There may be some tilting involved, especially around the back area of the box.

3. Soldering the pinheader + D0/HDD/LAN to your motherboard

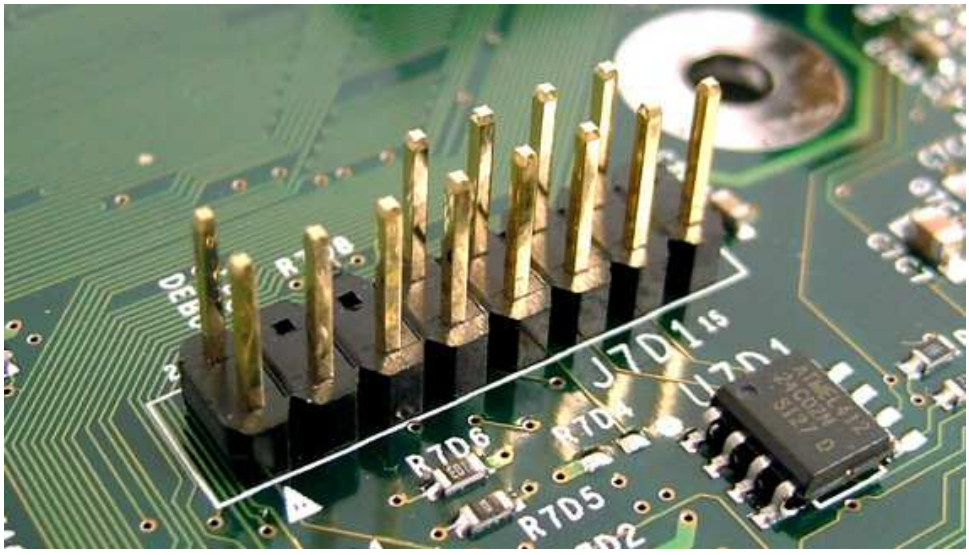
ONLY FOR v1.6 XBOXES – MODIFYING THE PINHEADER

The following picture illustrates the difference between a pinheader used on a v1.6 and one for lower versions (Notice Pin 6 missing in the v1.6 pinheader)



Preferably, use a pair of tweezers to pull Pin 6 out. Alternatively, if you don't happen to have one lying around, you can the blade of a small knife to push the pin out (*the flat side, of course, we're not making pin-sushi*). Careful though, it's easy to screw up other pins in this process.

Align the pinheader in the same manner as the next picture (longest side of the pins up);



Note:The pinheader as shown in the picture above is for v1.6.
Non-v1.6 users, don't panic, yours is supposed to have an extra pin.

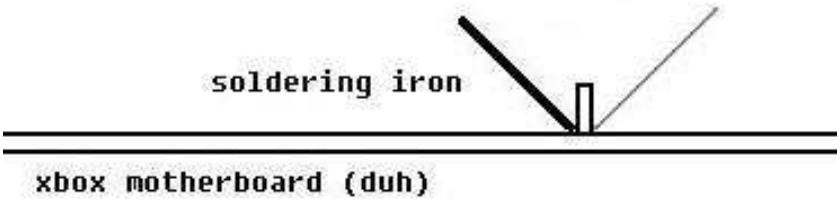
Before you continue, take time to double check that all your pins have the same length. If this isn't the case, some pins might have bad connections to the motherboard. Tape up the pinheader with the electrical tape (*number 17 on the parts list*).

Okay, it's showtime baby. Plug in that soldering iron and let it heat up for a few minutes. Put on some chilly ambient music. Drink some tea. Smoke a cigarette *(if you don't smoke this might be a good time to pick that up).*
If you are an inexperienced solderer *(is that spelled right?)*, you might want to review the next few points.

- A PCB (Printed Circuit Board, like your Xbox's motherboard) is a delicate piece of technology. Like humans, it doesn't do well with high temperatures for very long times, therefore, my personal guideline is: **DON't leave your soldering iron on for any longer then 2-3 seconds**. If you neglect to follow this simple rule, you're bound to screw up. You'll burn your motherboard, lift a trace, whatever. Believe me, you DON'T want to learn this the hard way.
- You don't want to be touched with filthy hands, neither does your electronical equipment. Make sure your soldering iron tip is always clean (*use a damp cloth to cleanse regularly*)
- Your solder joints should be shiny and clean
- Your soldering iron is supposed to touch the materials that need to be soldered, not the solder itself. You heat up both materials, and add solder (*touch*) to them, NEVER directly to the iron.
- Soldering joints are not "blobs" of metal. They should be metallic joints between 2 metallic materials; no more, no less. Make sure you don't add too much solder; you can always add some later if needed, removing (*de-soldering*) is a lot trickier.
- Make sure both your arms have enough support, you don't want to be shaking all over the place.
- Read http://www.epemag.com/solderfaq/pictures.htm

Mkay. A little less conversation, a little more action. Flip over your xbox motherboard (make sure you taped your pinheader firmly, so the pins show their full length)
Dive right on in!

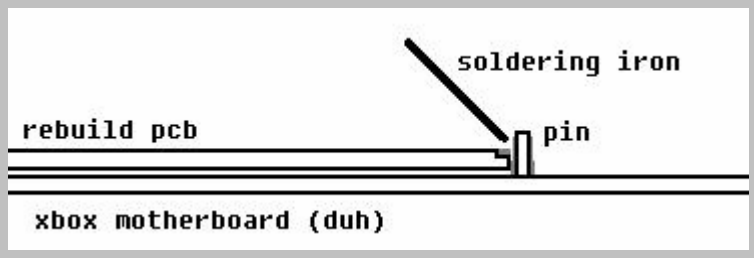
There's a small silver ring around each of your pinheader's pins. Put your soldering iron in a 45degree angle between the pin and the small little ring (touching both). A moment afterwards, add solder to the opposite side, to the silver ring/pin. You'll see that it flows on quite easily on, eh? (and remember what we learned! Don't add too much solder, especially if you need to use the v1.6 rebuild PCB afterwards)
You'll get the grip of this very soon. After two pins, you should have the hang of it.
Use the next picture as a visual aid:



If you've completed all the pins (Please, make sure you've soldered them all. Visually inspect all of the soldering joints), it's time for the next step. v1.6 users, you'll have some extra work (yeah yeah, boo fucking hoo), non v1.6 users, you can skip the next area *(with grey background)*

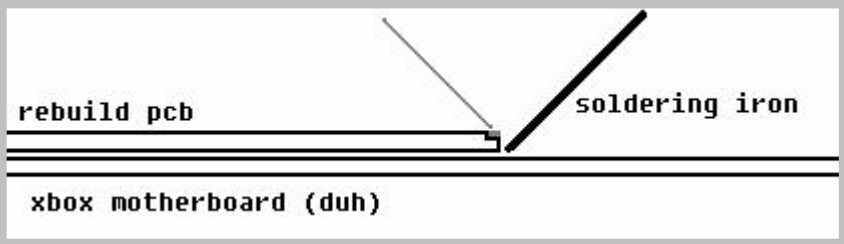
ONLY FOR v1.6 XBOXES – v1.6 LPC REBUILD USING THE REBUILD PCB

It's time for the oh-so-feared, but actually oh-so-easy lpc rebuild, using the 1.6 rebuild PCB (number 11 on the parts list mentioned in chapter 1). presuming that you just soldered all the pins, let's move on take your rebuild pcb and put it over your pins. if you didnt add solder to the pins like a maniac, you should experience no problems with this.
Okay. Now it's time to solder the pcb onto your pinheader (6 solderpoints)...
Take a look at this drawing:



Normally, it should be possible to just put the soldering iron in between for a second, and both parts of solder should flow together. if needed, apply (*a little amount of*) solder.

Now it's time to solder the rebuild pcb to the motherboard... (5 solderpoints; 4 for the rebuild, 1 for d0)
Alright, i cant stress this enough people: dont leave your soldering iron on your motherboard points for long periods of time (2-3 seconds MAX). You **will** screw up if you dont follow this simple rule.
Again, a picture says more then a thousand words...

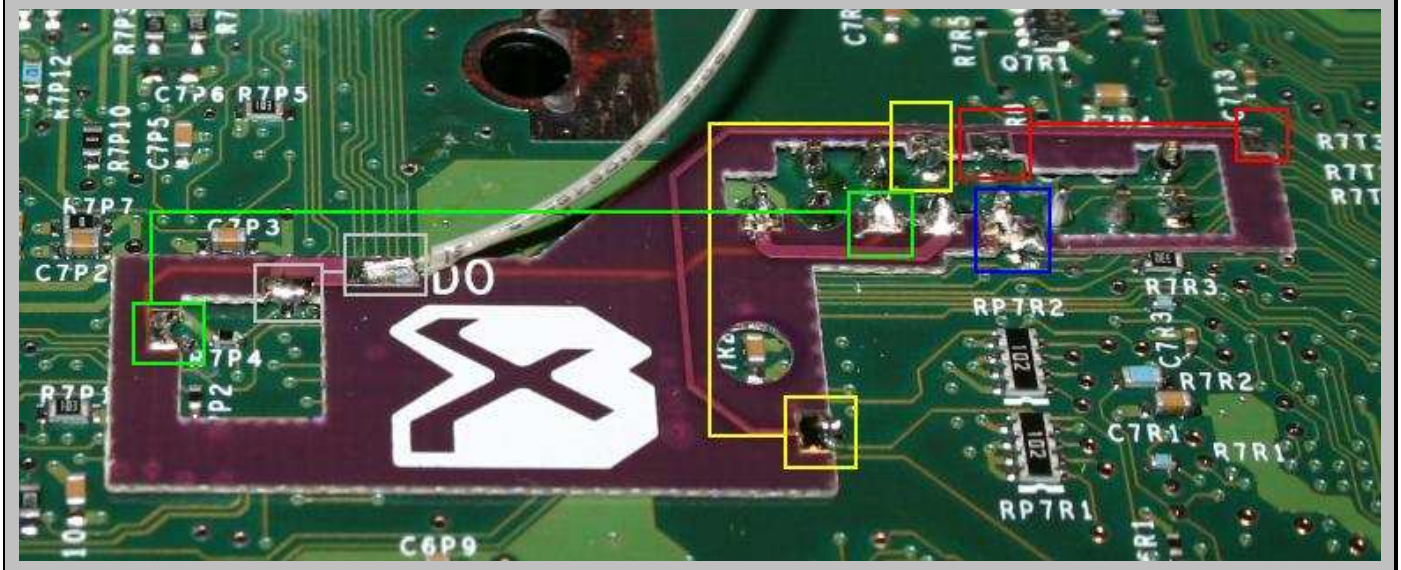


put your soldering iron in a 45degree angle between the pcb and the to-be-soldered point on the motherboard. once the solder on the pcb starts melting, you should add a small amount of solder to the solder on the pcb; it will flow right onto the solderpoint on your motherboard, and you're done

Last but not least, soldering the D0 wire onto your rebuild PCB… Seriously people, some of you really would be great candidates for the Darwin Awards. When you look at the rebuild pcb, what is the thing that stands out the most? In my opinion, it's the BIG solderpad, with in BIG letters printed next to it: "D0". Nevertheless, the same question just keeps popping up on the forums, and the answer is YES, of course you need to solder your gray D0 wire on here *(number 8 on the parts list).*

Please take your time reviewing all the solderpoints, making sure you did them all. At the time of my first X3 installation, i spent 3 hours cursing, resoldering pins and mobo connections, to find out that i forgot one stupid solderpoint :p *(the red one in the top right corner)*

Upon completion, your rebuild pcb should look like this:

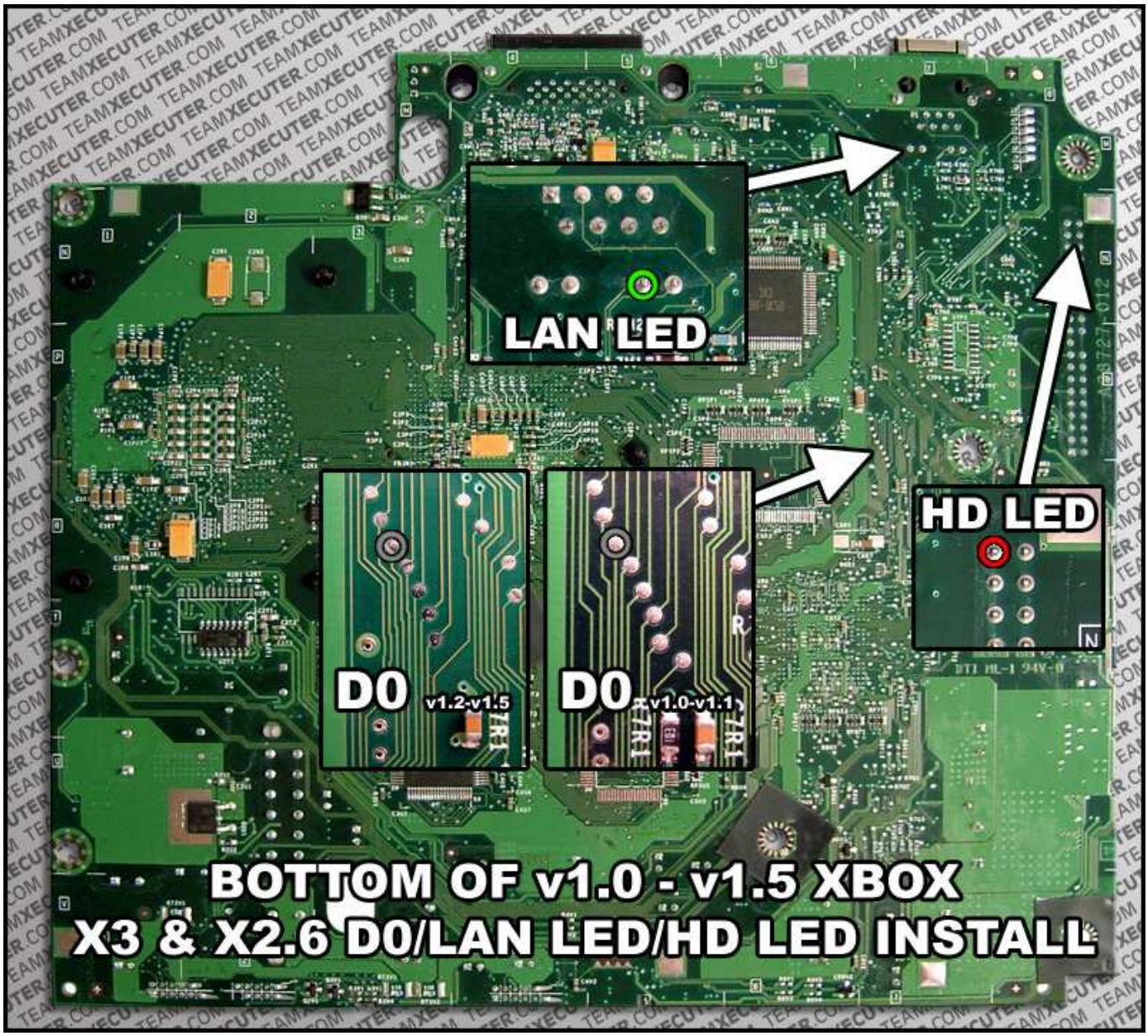


Note: Pin 9 and pin 15 are soldered to the PCB as well, this is to ensure that you get 3.3V to your X3
Don't pay too much attention to this, just make sure they're soldered
(it's the one in between of the blue and green square, and the one 3 pins to the left of it)

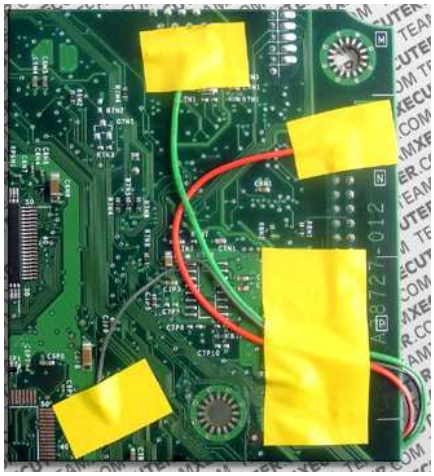
Moving right along. We got three more soldering points to go; the wires from the D0/HDD/LAN adapter. v1.6 users: good news this time, you can skip the D0-point soldering, since you've done that in the lpc rebuild already.

V1.6 USERS CAN SKIP THE NEXT PARAGRAPH
In order to solder the D0 point, make sure which version of xbox you have
(check http://www.x-scene.com/versions.php)
Once you figured that out, check the big picture on the next page to see where you should solder your D0 wire (the grey one).

V1.6 USERS: START READING AGAIN HERE
Next up, two very easy solderpoints; the wires for the LAN and HDD led
Check the pic on the next page for the correct placement, this is the same for all Xboxes, including v1.6
*(these two points are not really needed if you **don't** use an external switch, but you might as well do them anyway… it's very hard to screw this up, and who likes loose wires hanging around in their case)*



We're almost done here.
One last recommended thing is to tape up the D0/LAN/HDD wires up along the side of the Xbox motherboard, just for general safety



Take a deep breath and continue to the next page!

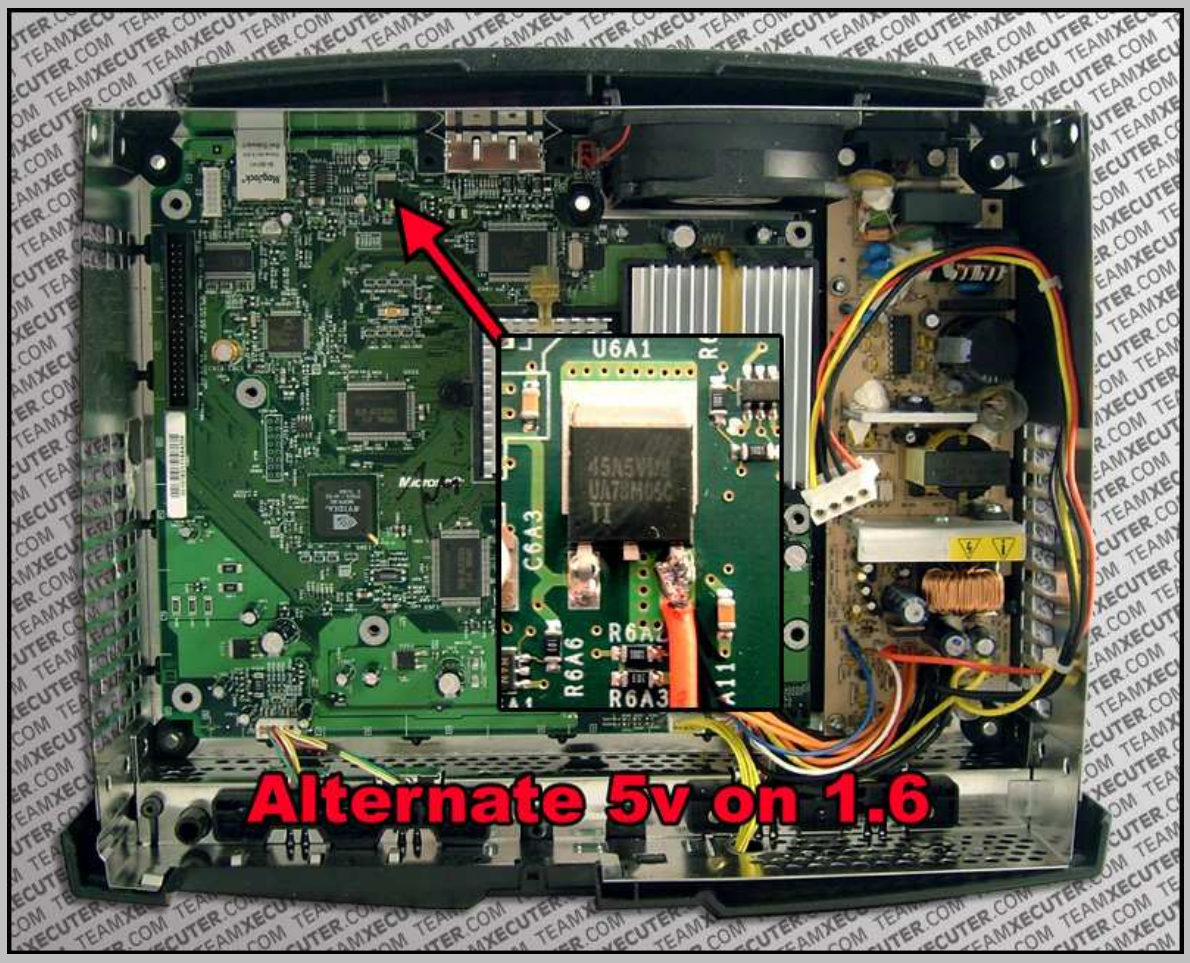
4. Doing some minor adjustments

Don't worry, if you've reached this point (and done all the previous instructions correctly), you're almost done! From this point on, everything is pretty straightforward.

Flip over the xbox motherboard.

ONLY FOR v1.6 XBOXES – GETTING AN ALTERNATE 5V SOURCE FOR THE X3

Remember the pin we removed from the pinheader? (Pin 6) Well, in earlier Xbox models, that was the pin supplying 5V to the chip, through the pinheader. Unfortunately for us, M$ decided they want to do things different in their v1.6 revision, so we have to find an alternate 5V powersource.

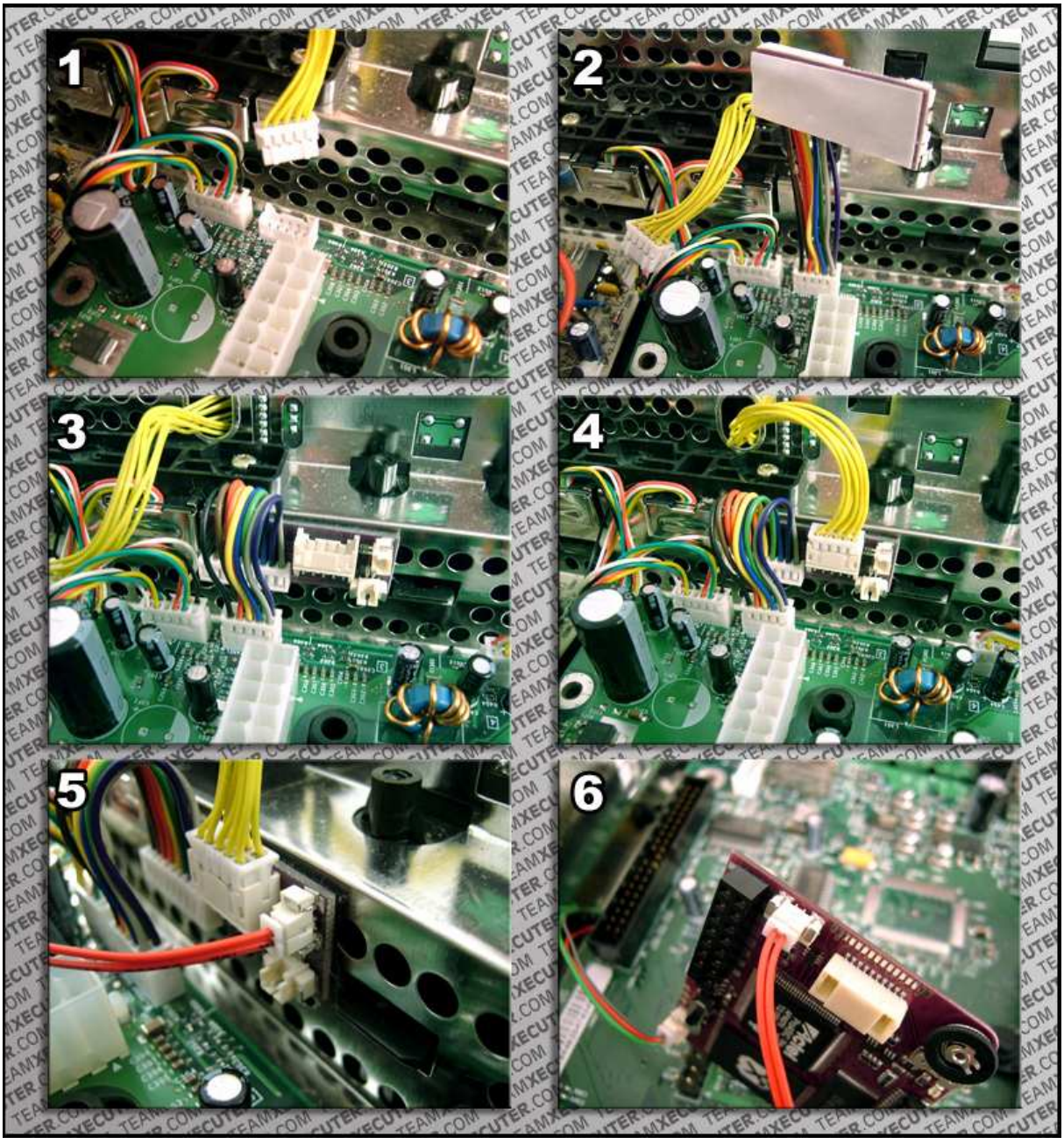


Solder the wire side of the Alt. 5V Connector *(Number 5 on the parts list)* to the illustrated point above

Now put your motherboard back in the case.
Screw all the motherboard screws back in. *(Hopefully you won't have to remove them again)*

Next: installing the Power/Eject No Solder adaptor *(Number 3 on the parts list)*

1.Unplug the yellow *(brown in some 1.6b boxes)* cable that to the Xbox's Power/Eject buttons.
2. Plug in the Power/Eject No Solder Adapter
3. Remove the backing tape and fix to the Xbox chassis
4. Plug the Yellow cable into the adapter
5. Plug in the X3 Power/Eject cable (Item 4 on parts list)
6. Connect the X3 Power/Eject cable to the X3 as illustrated



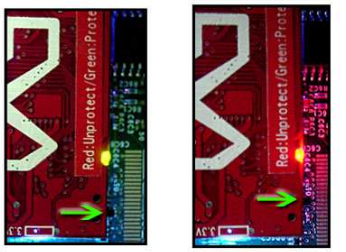
(picture will be replaced with new pics of the X3CE installation in next manual revision)



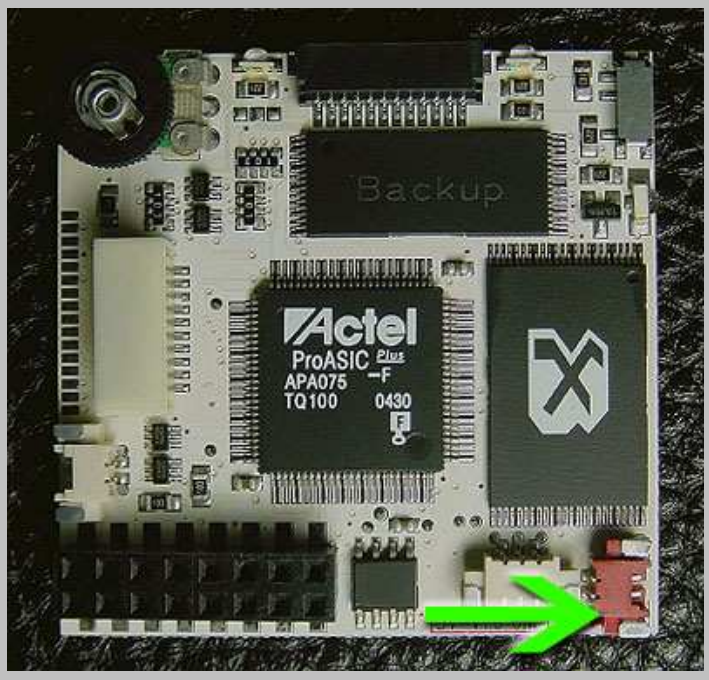
Now it's time to bring in the "*holy grail*", the "*big kahuna*", the "*mothership*"; the X3CE modchip.
Put it with the pinheader connector to the bottom, and align so that the side saying 'Red: Unprotect / Green: Protect' faces the back of your xbox *(where your powercable is)*

First thing on our todo list is to connect the D0/LAN/HDD adapter to the chip *(the three wires coming from the underside of your motherboard; red, green and grey)*

Also check that the hardware flashprotection is off (*set to Unprotect*)
This is to ensure that you'll be able to flash your bios with a new one
Use the picture to the right as a visual reference for this
(if you don't know what I'm talking about, it's explained in the last chapter)



ONLY FOR v1.6 XBOXES – CONNECTING THE ALT5V WIRE TO THE X3CE



In one of the previous grey boxes, you've soldered the red Alternate 5V wire
(Number 5 on the parts list)

Take the connector-side of that wire and plug it into the Alt. 5V connection point on your X3CE chip
(as shown in the picture above)

Get your screwdriver (torx10) out again, we're going to fit the external X3 switch
(if you chose to use it, of course, if not, you can skip this page)

1. Unscrew 2 Torx 10 screws from the gamepad port1+2.

2. Take care in removing from the Xbox chassis

3. This is the gap where we are going to thread the switch cable

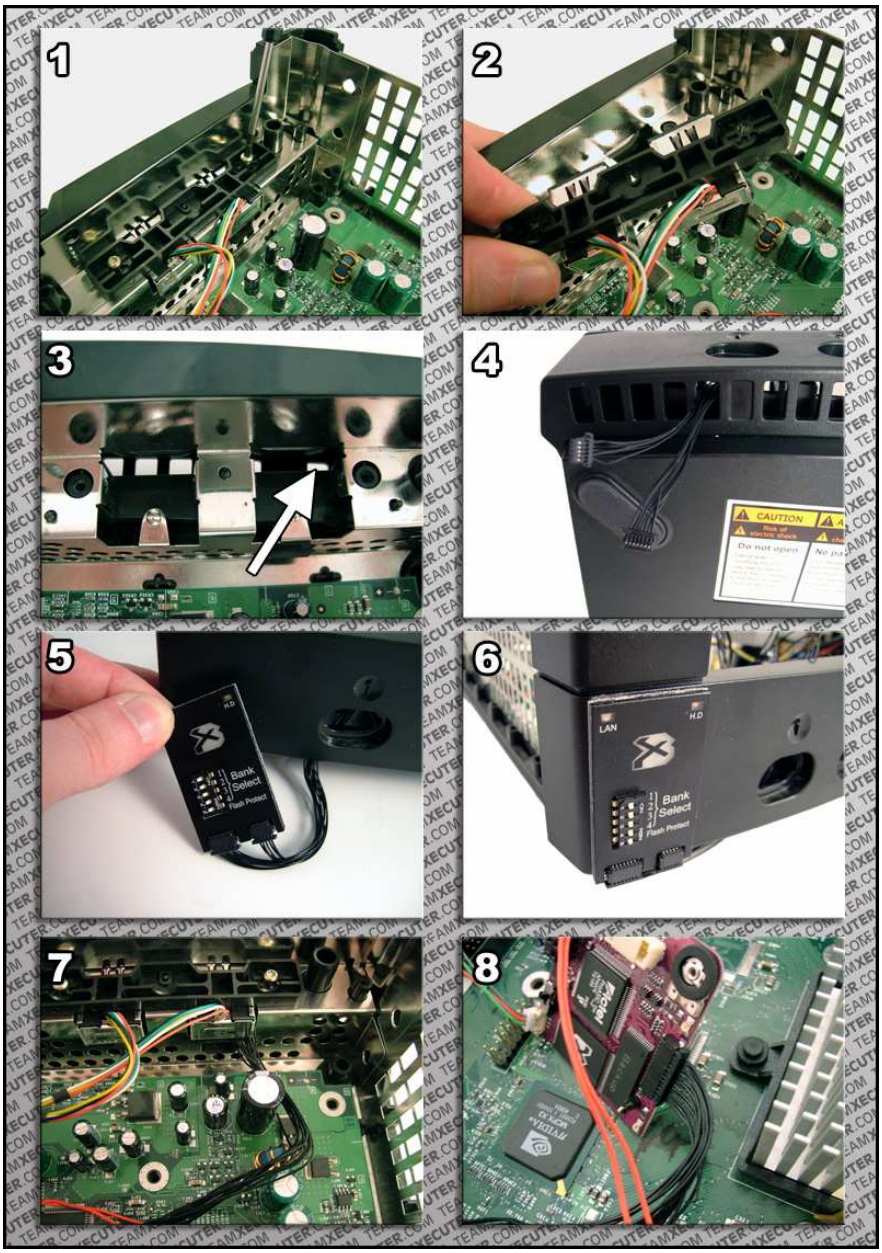
4. Take your time in thread the cable - do one socket at a time it can be a little fiddly

5. Connect the X3 switch

6. Remove the backing paper and stick to the Xbox as shown

7. Re-connect the gamepad port - take care in making sure the switch cable is sitting nice and flat (*put some electrical tape over the wires to protect from any damage, crushed wires may lead to bad switch functionality*).

8. Connect to the X3CE modchip as illustrated



(picture will be replaced with new pics of the X3CE installation in next manual revision)

5. Putting everything back together

A little recap so far… These are the things that should be connected now:

- D0/HDD/LAN connector
- Power/Eject adaptor
- X3 External switch (optional)
- Alt. 5V connector (v1.6 only)

These are the things you still have to plug in (do this now)

1. Fan powercable
2. DVD-Rom powercable
3. IDE cable connection
4. Controllerport 1+2 connection
5. Main power cable
7. Controllerport 3+4 connection

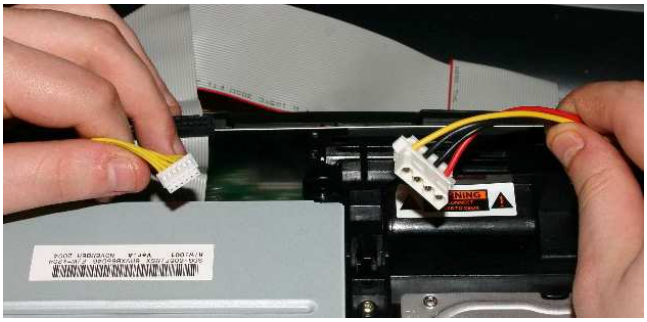


The following is basically reverse order of what we did before, when we opened up and disassembled the box

- Take the DVD-Rom enclosure and put it back into the case (might be trial and error)
- Screw in screws 2 and 3
  (it's easier to do screw 2 with the hdd out)
- Take the harddrive enclosure and put it back into the case, afterwards screw screw 1 back into place.



- Take the powercable for the harddrive and wiggle it back into the plastic gutter
- Plug the yellow powercable to your DVD-Rom drive back in place
- Do the same for your harddrive powercable.



- Plug your two IDE connectors back in. *(the flat grey cable)*
- Right above screw number 1 is small plastic bar; put the IDE cable under there.



- Take the top of your xbox and place it over the case. Be careful! If it doesn't fit 100% the first time, try again and again, until it fits smoothly
- Turn over your xbox



Go to the kitchen and ask mom to give you back the six long torx20 screws you gave her a while ago
Put them in the exposed holes, and screw them in (not TOO tight)



Believe it or not. We're done. Congratulations. Read the next chapter though!

6. Before you rush out to install applications

There's some things you need to know about the X3(CE) modchip and its functionality

First of all… The boot modes



I'm not sure if I should give you any additional information, since the picture is quite self-explanatory. The only things you need to remember are:

- SHORT PUSH: chip enabled
- LONG PUSH: chip disabled (*boots to M$ Dash, use this for Xbox Live usage*)
- PUSH BOTH BUTTONS: boot to a backup Flashbios, in case you ever screw up

When you got the X3CE in your mailbox, it was preflashed with Flashbios. The following is a quote from the flashbios tutorial found at http://www.teamxecuter.com/flashbios/ *(read this for more in-detail info):*

> *FlashBIOS is a utility to update your modchip with any other bios. You cannot play games or run unsigned software with this bios. If you want to run unsigned software you must download a hacked bios like X3 Bios, X2 Bios or Evox Bios. These are illegal and we do not provide direct links. Read this page for info where to find hacked bios's http://www.xbox-scene.com/articles/xbins.php*

Bottom line, you need to flash your X3CE bios with a hacked bios if you want to play backups/run unsigned code like homebrew applications and games.

Your X3CE modchip has 2MB of main flash memory to hold the bios
(a typical X3 bios is 1MB, so you can fit two of them if you want).
If you use an external switch to control your bios banks, print this out and pin it above your bed:

256k Bank	512k Bank	1MB Bank	2MB Bank
Bank 1: on on on on	Bank 12: on on on off	**Bank 1234: on on off off**	Bank 12345678: off off off off"
Bank 2: off on on on	Bank 34: off on on off	(Set to this when flashing	
Bank 3: on off on on	Bank 56: on off on off	first time with FlashBIOS)	
Bank 4: off off on on	Bank 78: off off on off	Bank 5678: off on off off	
Bank 5: on on off on			
Bank 6: off on off on			
Bank 7: on off off on			
Bank 8: off off off on			

'But wait', you might think. 'My switch has 5 dipswitches, not 4!'. Correct sir! The fifth (lowest) switch is for flash protection. If that switch is enabled, you won't be able to flash to your bios memory.
Pretty neat, eh? Foolproof all the way baby.

Anyway, if you succeeded at flashing the bios (I recommend the http flashing, it's a breeze), here's some applications for the xbox that are definitely worth looking at:

- Xbox Media Center *(or XBMC):* very popular media player. Plays just about ehm, everything.
- Avalaunch: Easy to use and versatile "dashboard" *(launcher).*
- Dvd2xbox: Application to backup your games to the hard disk drive.
- XLink Kai: Tunneling software, makes you able to play systemlink games over the web!
- Any emulator: there are tons of emulators for the Xbox platform
  (ranging from ancient Atari 2800, NES to MAME, Nintendo64 or even Playstation1)

You can get all of these applications (*and tons more*) on xbins.
Read http://www.x-scene.com/articles/xbins.php for an introduction to this great software resource.

That's it.
What're you waiting for? Close this PDF and enjoy the wonderful world of your freshly modded xbox.

- tehsoul