World of Spectrum

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  Adding IDE to your Spectrum +2 A/B (or +3)

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09-01-2013

Zetr0
Sinclair
User

Join Date:
Apr 2009
Location:
Norfolk UK
Posts: 832

📝 **Adding IDE to your Spectrum +2 A/B (or +3)**

Hello my fellow **WoS'ers**

This is a shared thread with www.amibay.com which you can see here

I don't often get to do a Show and Tell as I would like but today is different since I am suffering from insomnia I might as well make
favour!

Before I start I would like to thank and greet the following

Garry Lancaster, Pera Putnik, the people whom maintain the +3e web site and Nuggetreggae for some amazing work in converting g

So would you like to know how to add IDE mass storage on you Spectrum +2AB or +3 ?
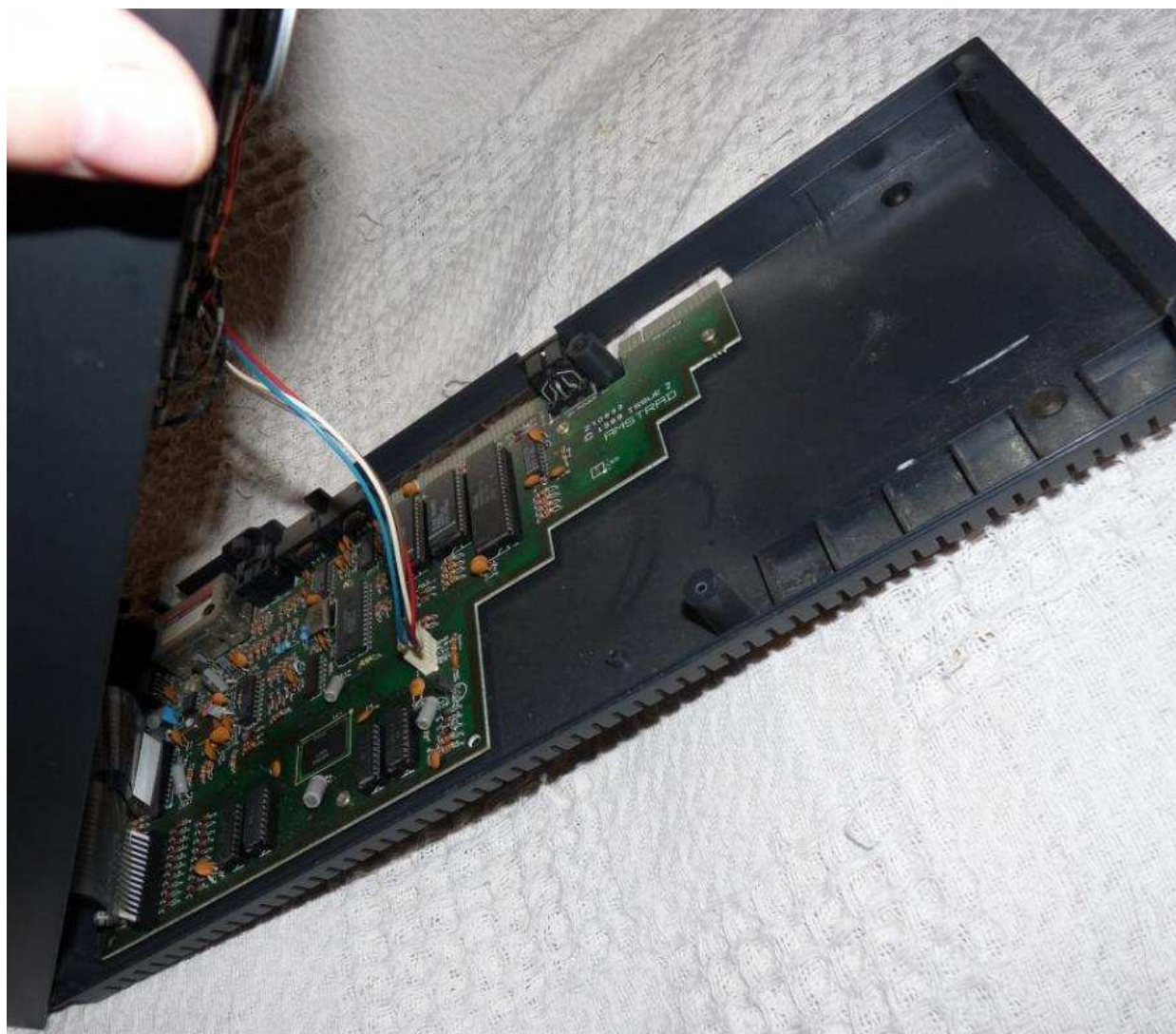
Then let us begin -

Theres +2AB.... awaiting with excitement

Locating the Screw Holes

Gently does it, or you could break the plastic screw holders

Disconnect the Cassette Header

Disconnect the Keyboard Ribbons

Very carefully - dont be to sudden with them

And now we can begin....

(White Lab coats are optional at this stage....)
_____
If I had a hammer....

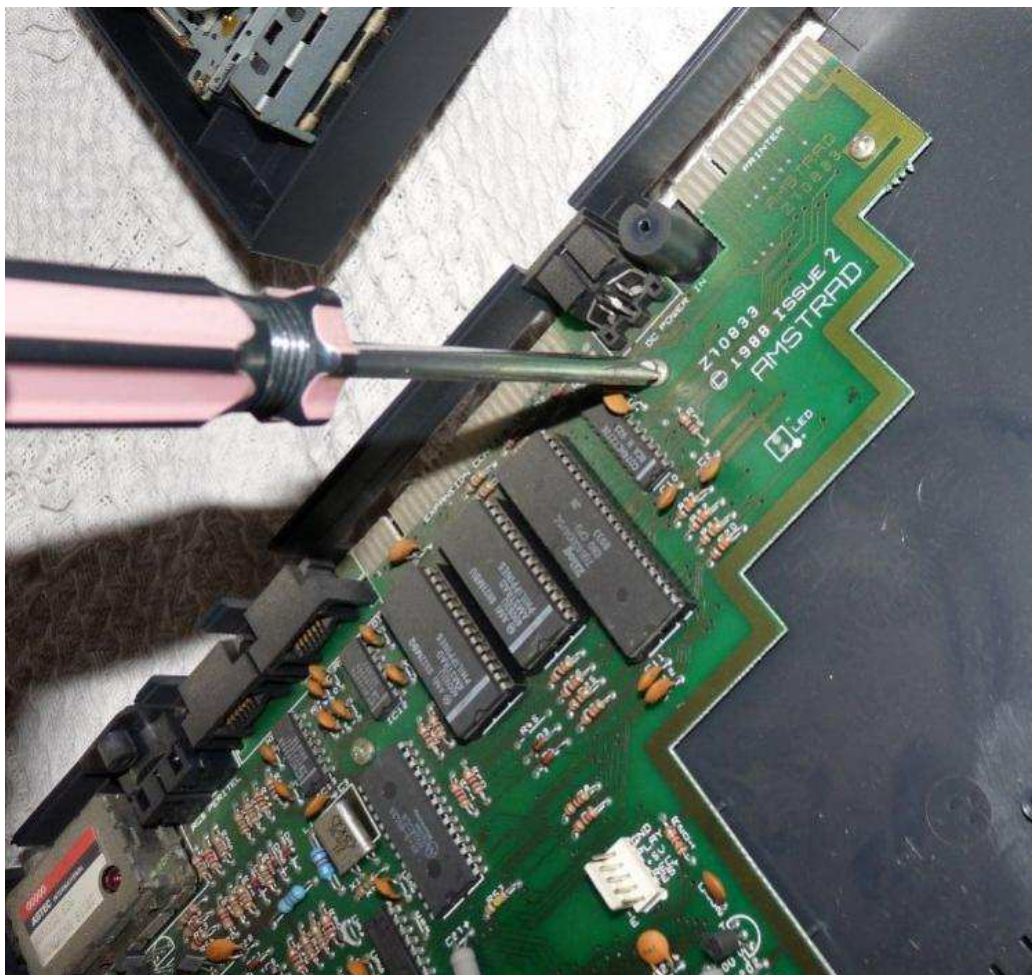*Last edited by Zetr0; 09-01-2013 at 04:05 AM.*
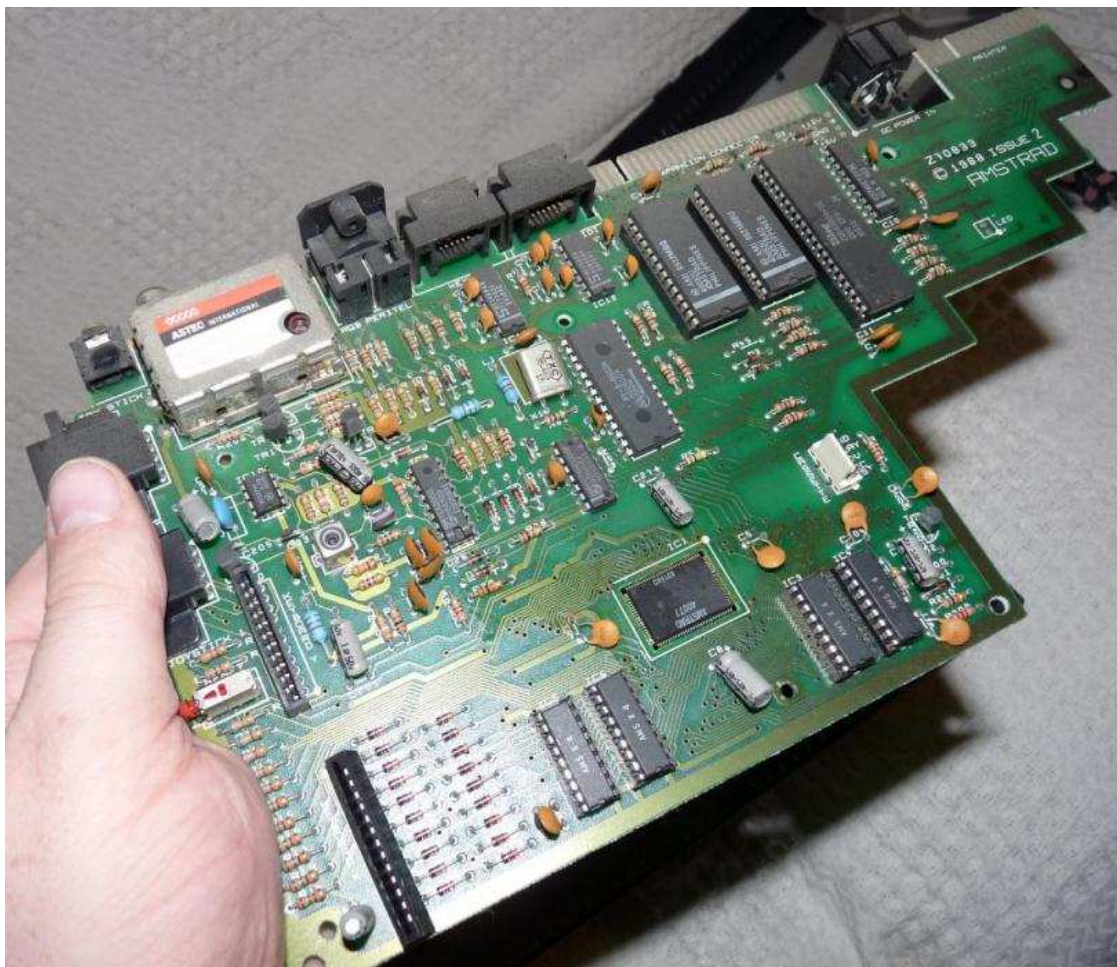

09-01-2013

Zetr0
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Removing the Motherboard and IC's

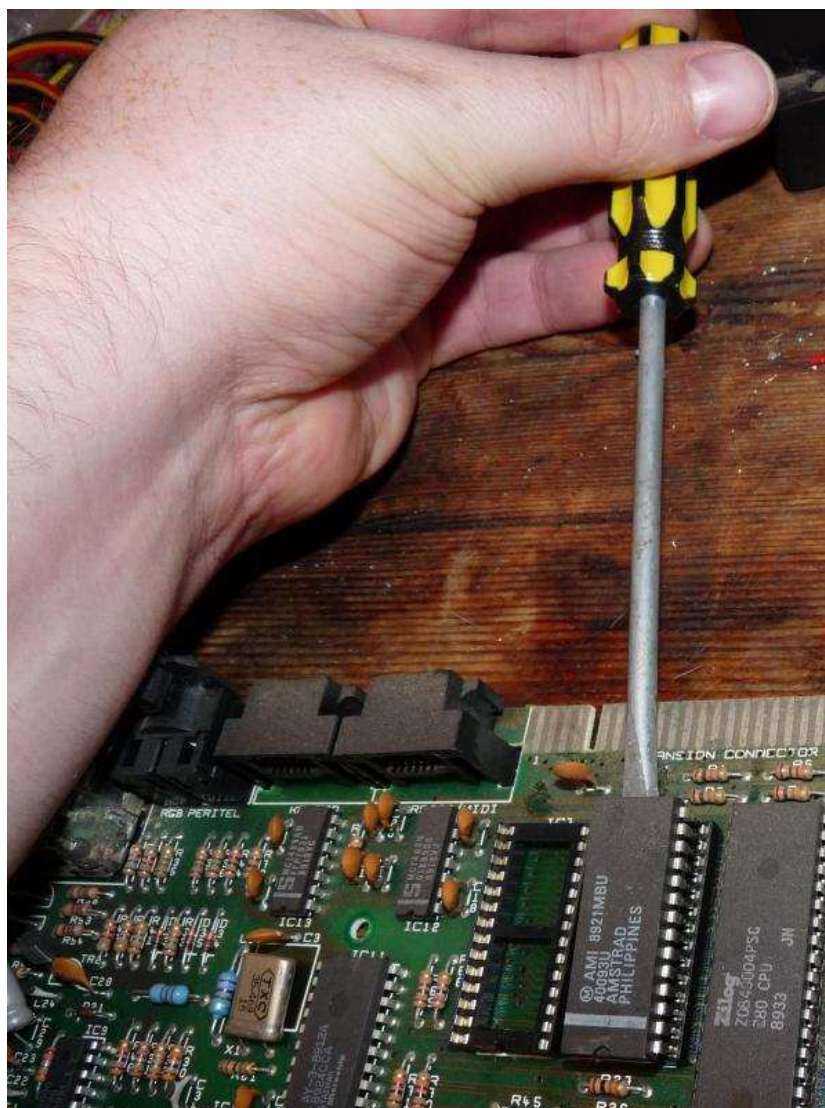*Theres 5 screws and there not that tight*

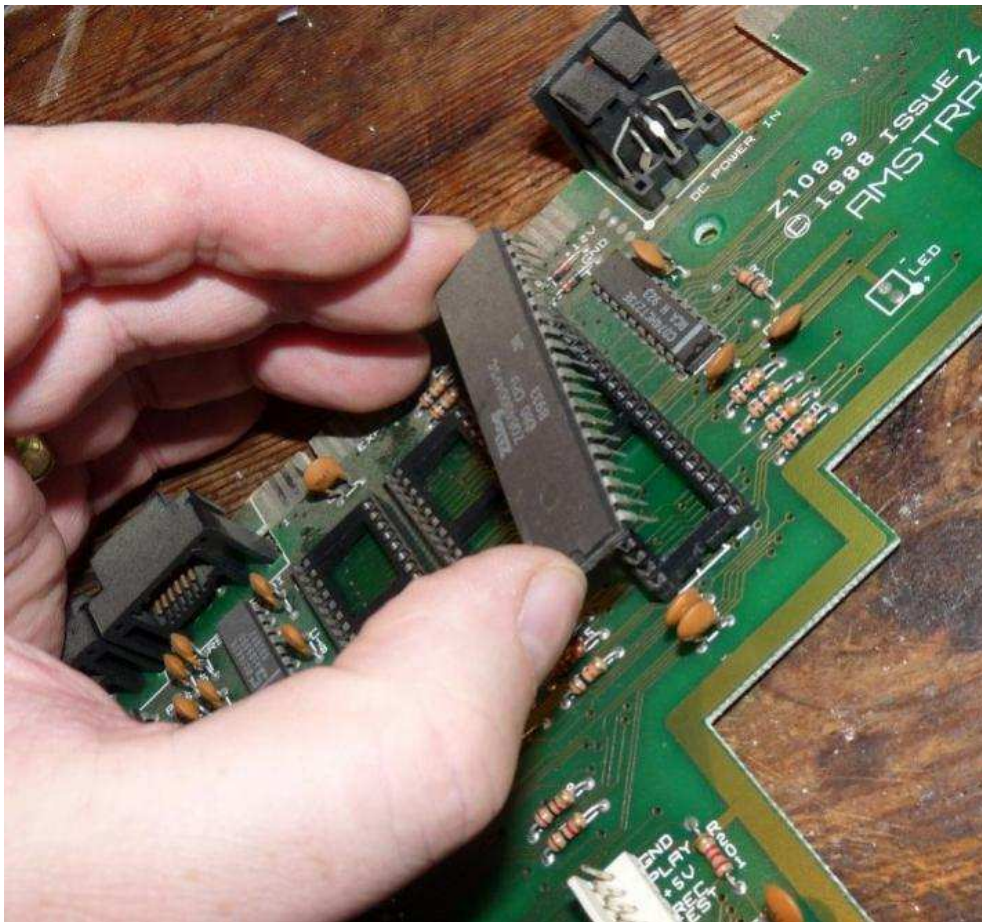*Gently does it and there wont be any problems*

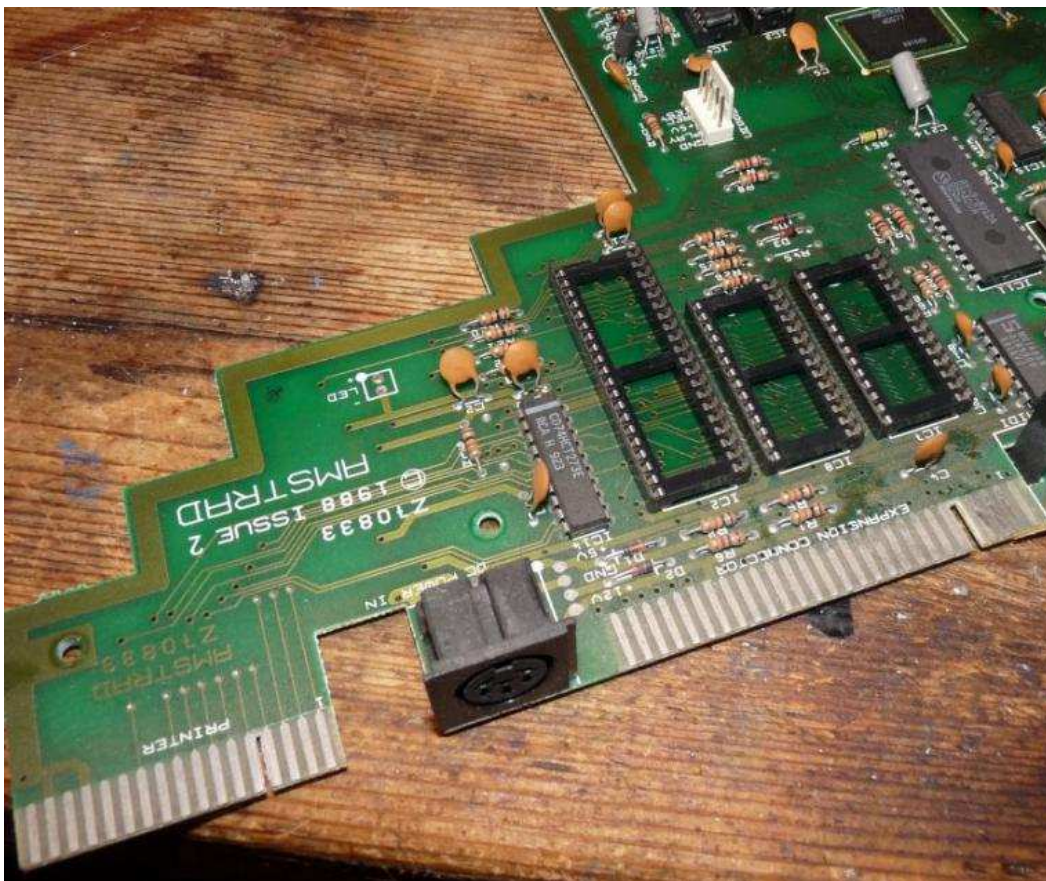*And there she is.... cute and pretty*

Removing the ROM's

Only experienced and danger defying Hackers use screwdrivers to levy IC's from their sockets - **(BE WARNED!)**

A world in a Chip.... a Zilog Z80 chip.... one of the most ubiquitous chips in the known universe!

Its in everything that an Arm or a Motorola isnt.... so check your underwear!

Woah... thats some Dirty Interfaces.... we better get this filth clean!
_____
If I had a hammer....

Quote

09-01-2013   #3

Zetr0
Sinclair
User

Join Date:
Apr 2009
Location:
Norfolk UK
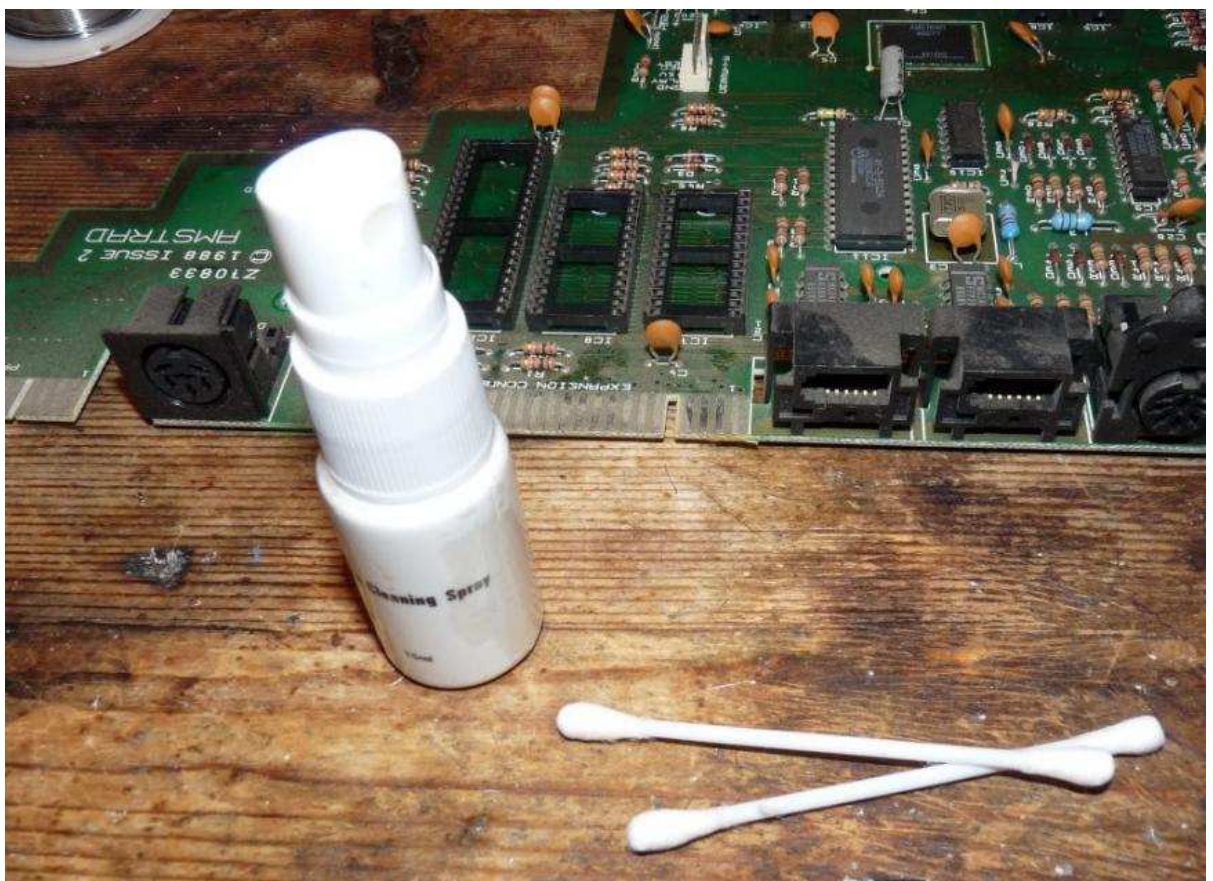Posts: 832

Contact Cleaning

Always read the label....

Then check with Google any words with more than two syllables (best check that first) and any words without vowels
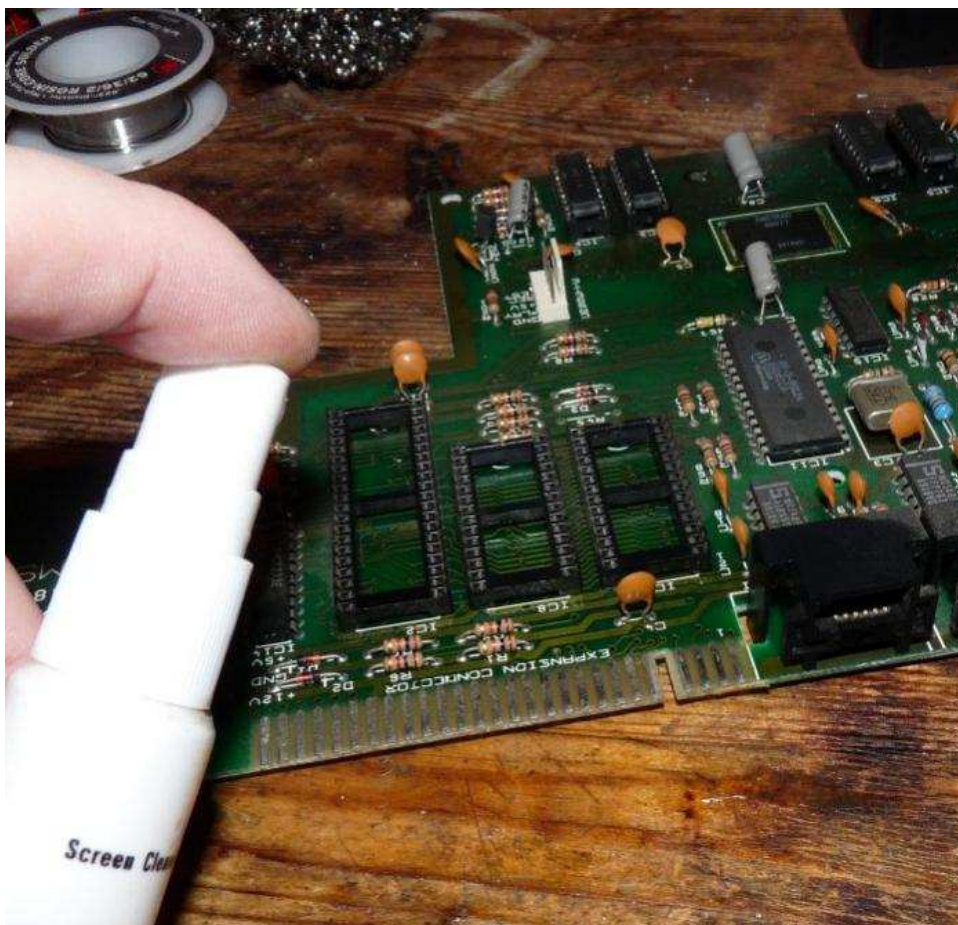

A Big juicy bottle of isopropyl alcohol -

would of preferred a good triple distilled Vodka, alas this will have to do.... just gotta fight the Wino's off first!
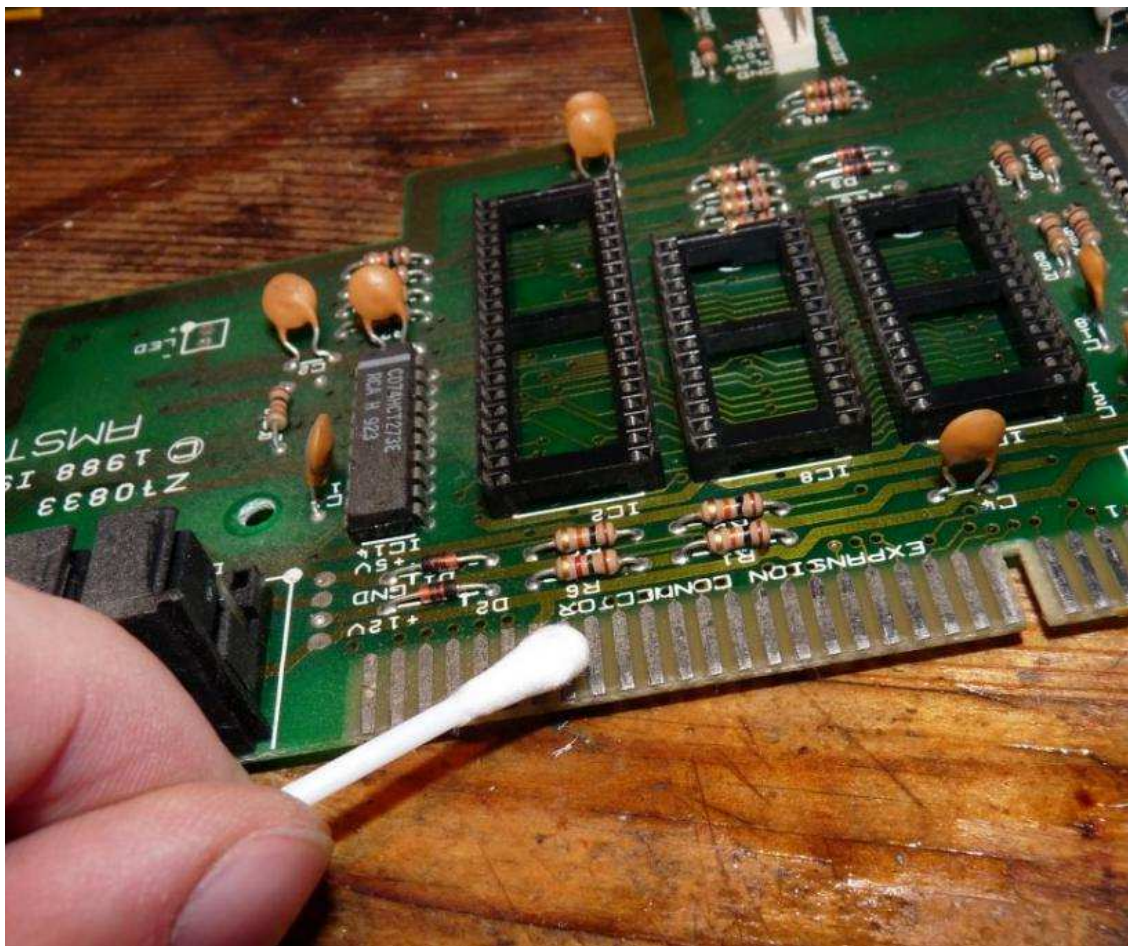
Clever me decided to put some 99.99% IPA into a small spray bottle....

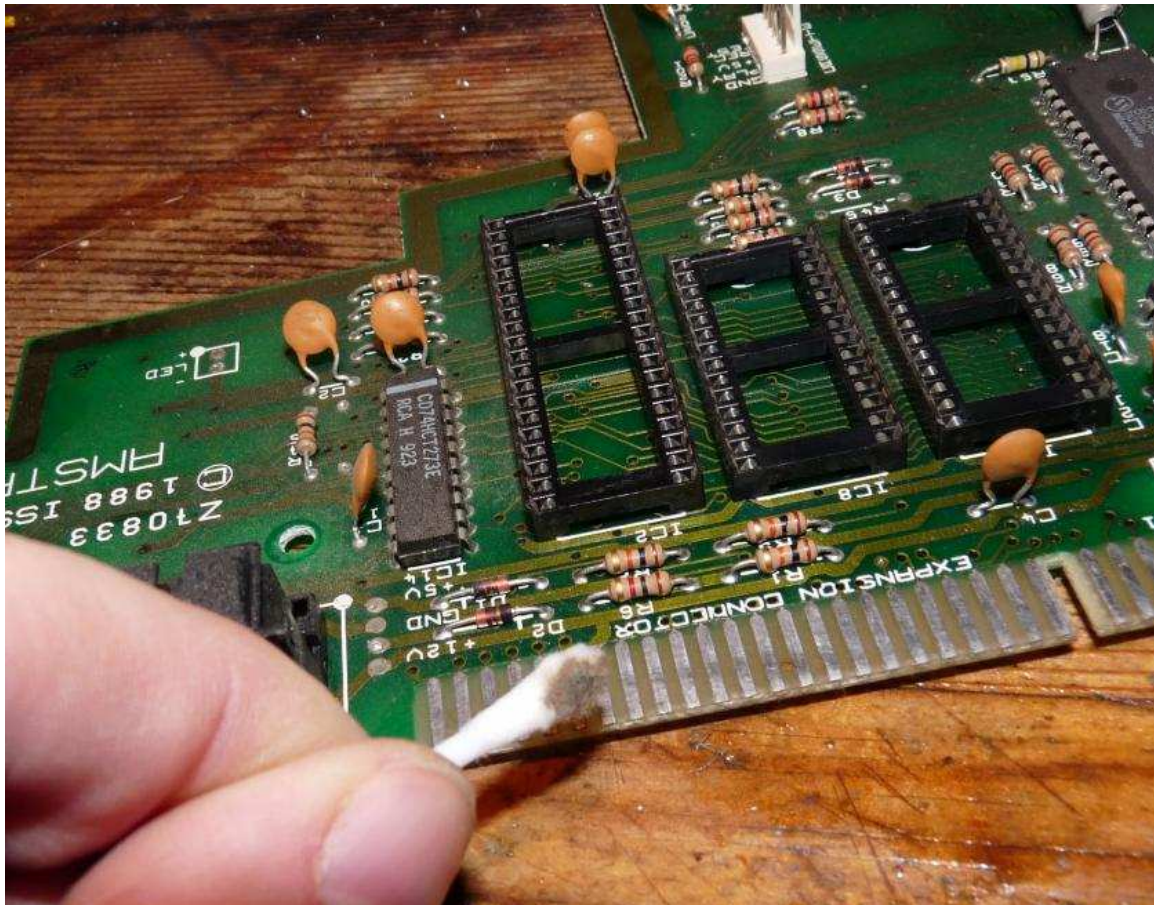*I have clever moments.... just don't tell!!!*

Theres no Escape from the IPA Spray bottle... all will be covered..... fingers, hands and clothing included!
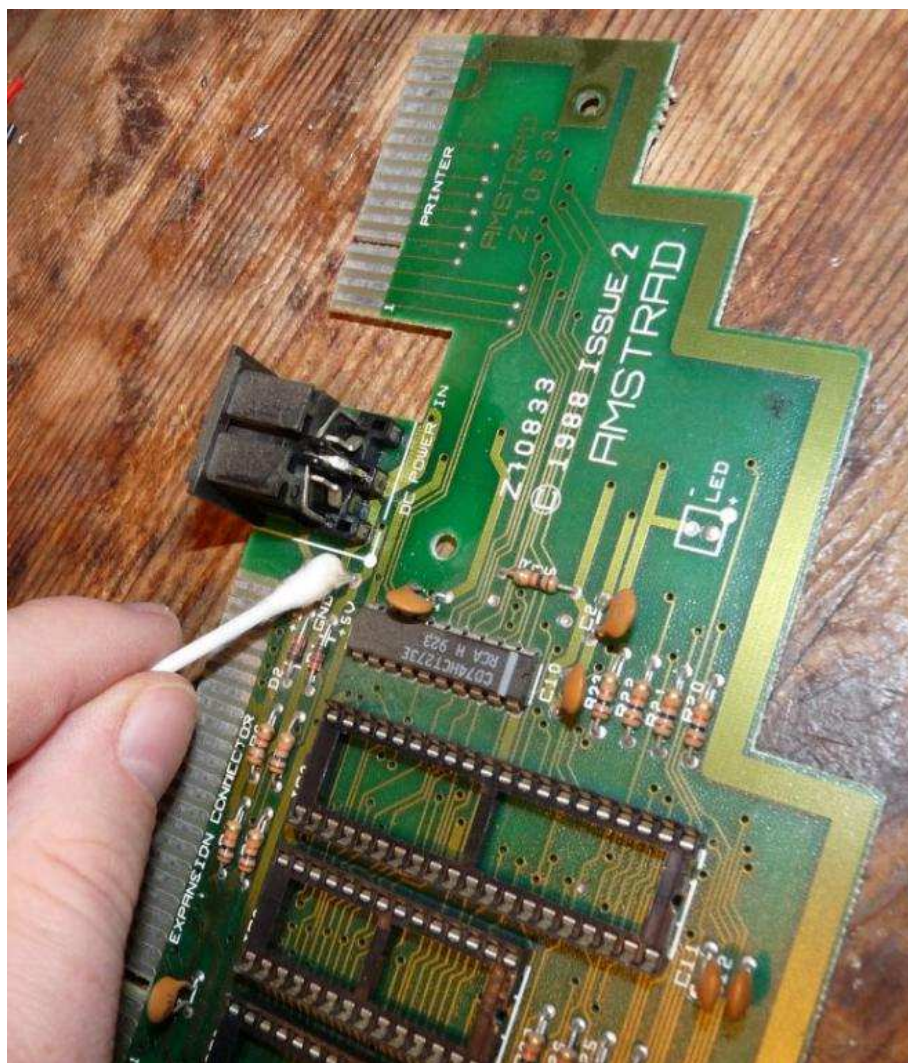
Behold!!

The Cue Tip of extra Cleanlyness +12

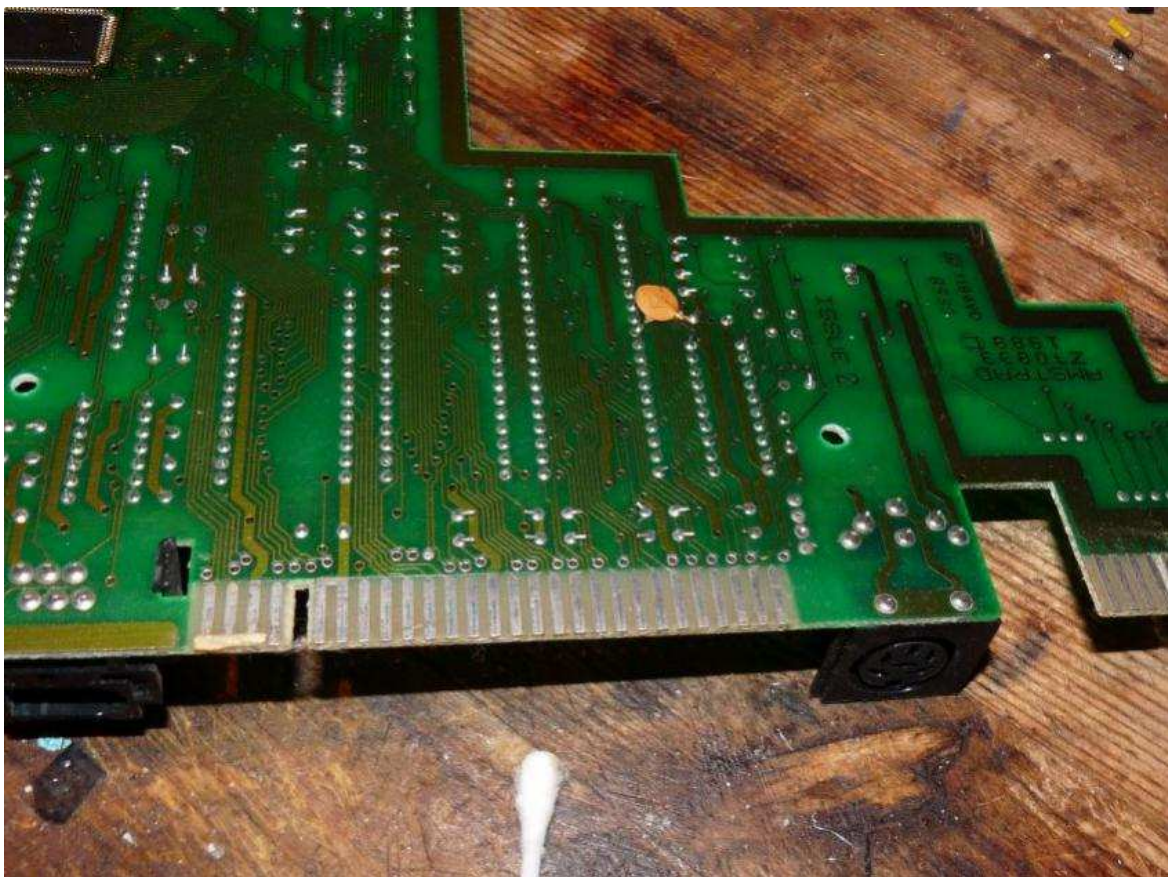*Whoa..... I am sure the great outdoors has less dirt than that!*
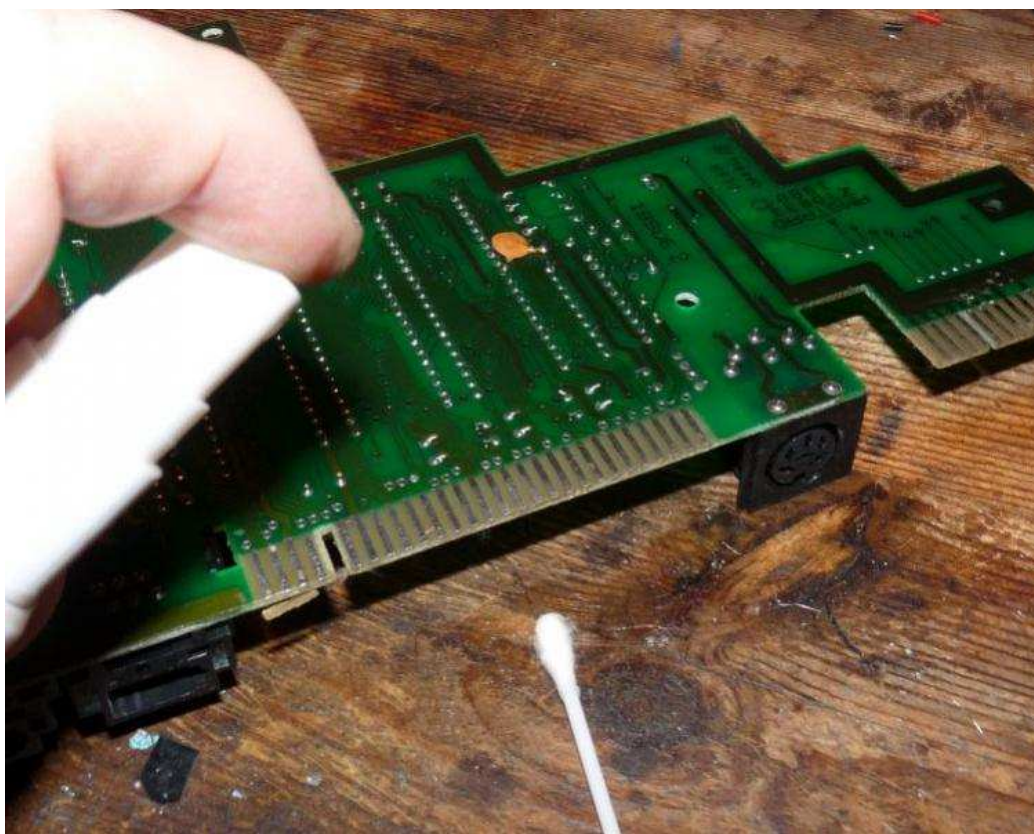
I best watch out for falling fossils!

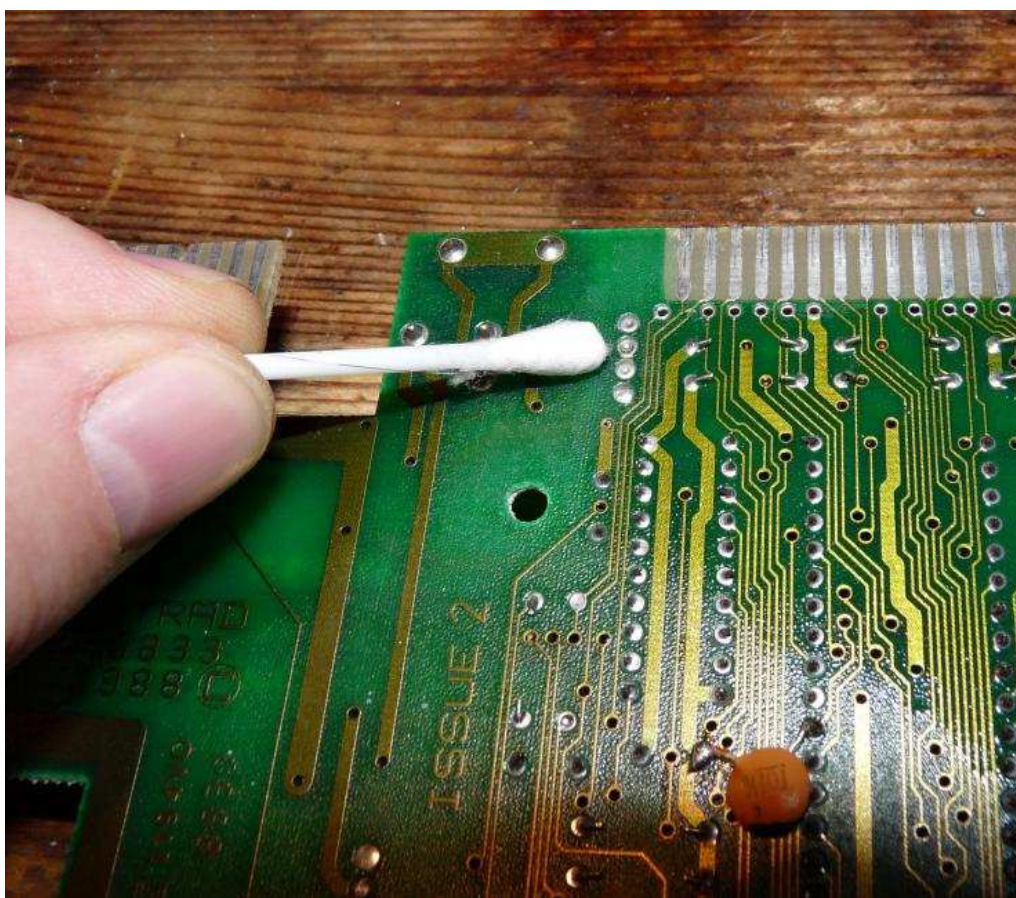*An important area, here is where we will be adding a couple of power rails =D*

The shiney shiney shine of IPA SHINEY!

Yes.... soon the cue tip will ensure proper connection master......

Spray away those years with the Spray Away IPA Way!

Not even these 4 power terminals are safe from the Cleaning cue-tip of Doom!

_____
If I had a hammer....

09-01-2013   #4
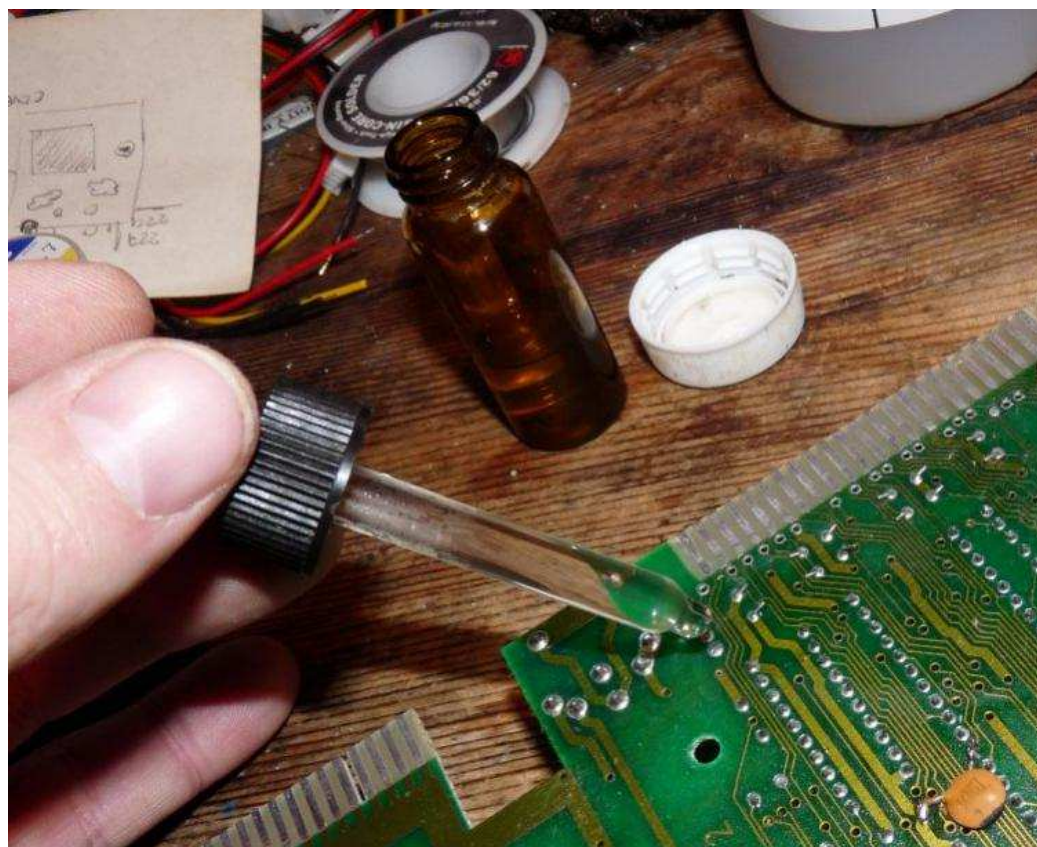
Zetr0
Sinclair User

Join Date: Apr 2009
Location: Norfolk UK
Posts: 832

Adding the Power Rail

The original Flux capacitor!

(my flux droper bottle)

Here I add some flux liquid to the power terminals - I find the underside of the board easier to start from.

*I always recommend to use a good NO CLEAN and NON CORROSIVE flux....*

If you wonder why I capitalize these words... I suggest imagining the consequence of putting your PCB / Motherboard in industrial strength super concentrated Acid.... Or any Handy nearby A500+ that still has its battery =)
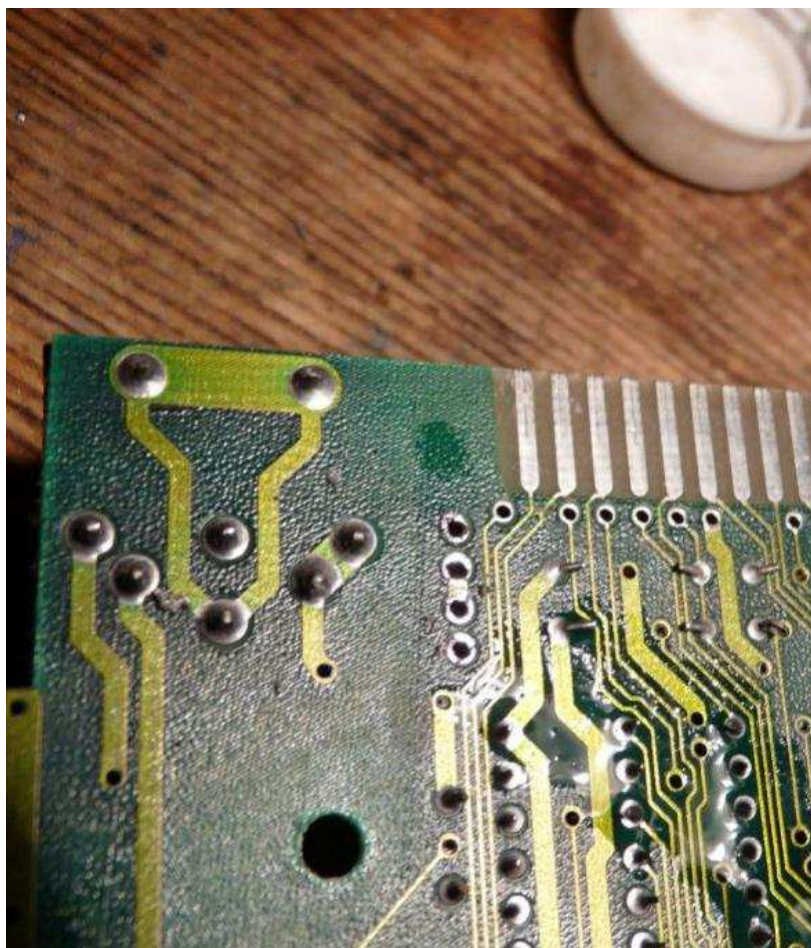
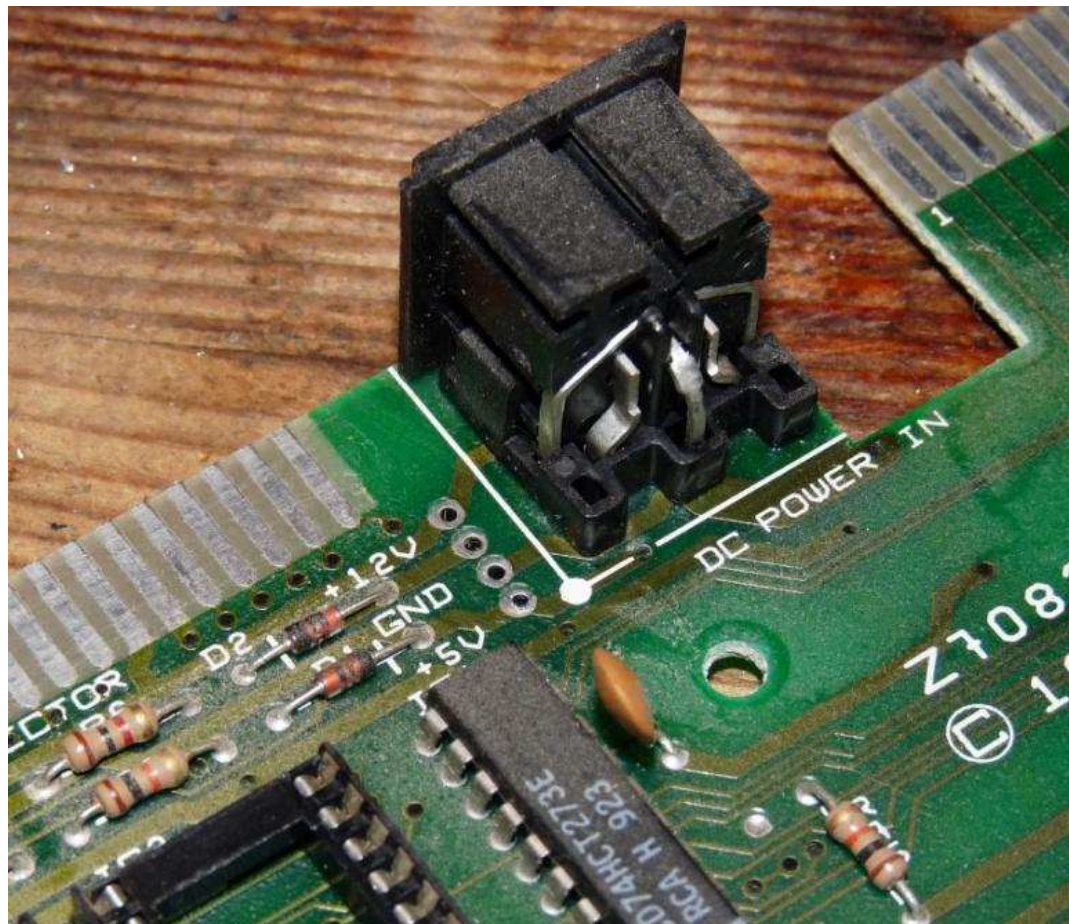*This is the heating part of the heat and suck protocol!*

And Pump.... suck those terminals right up
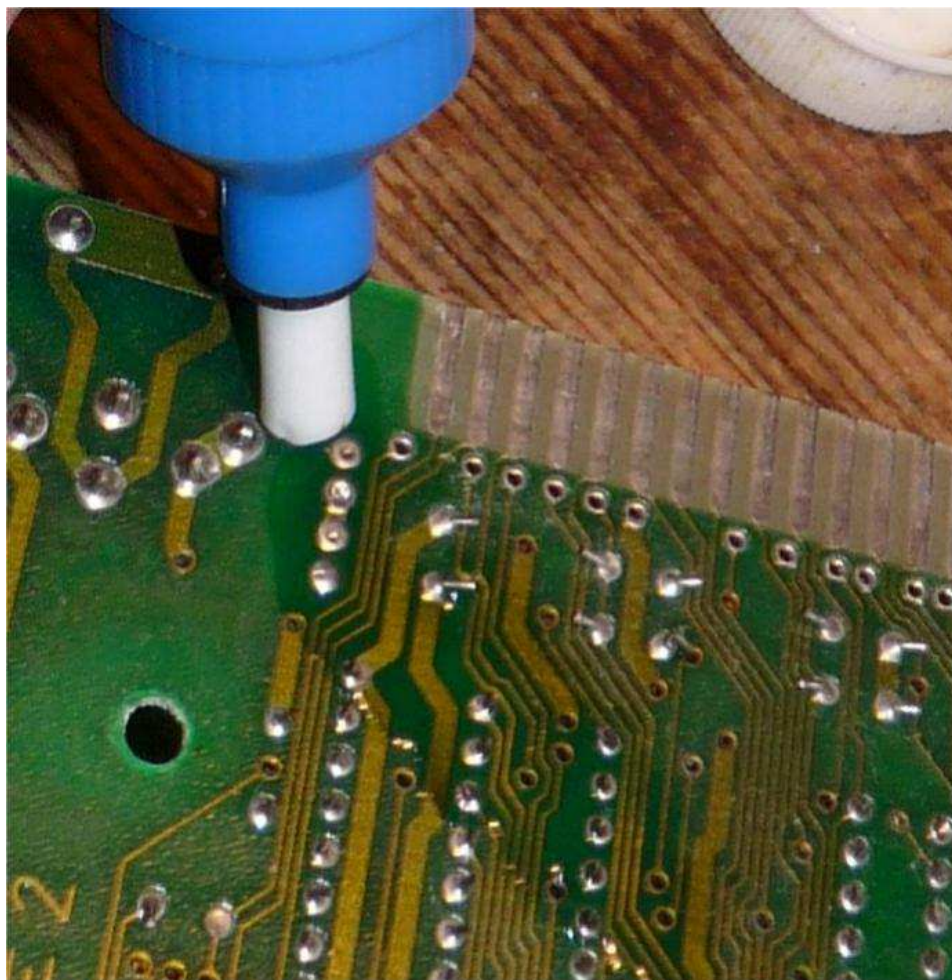
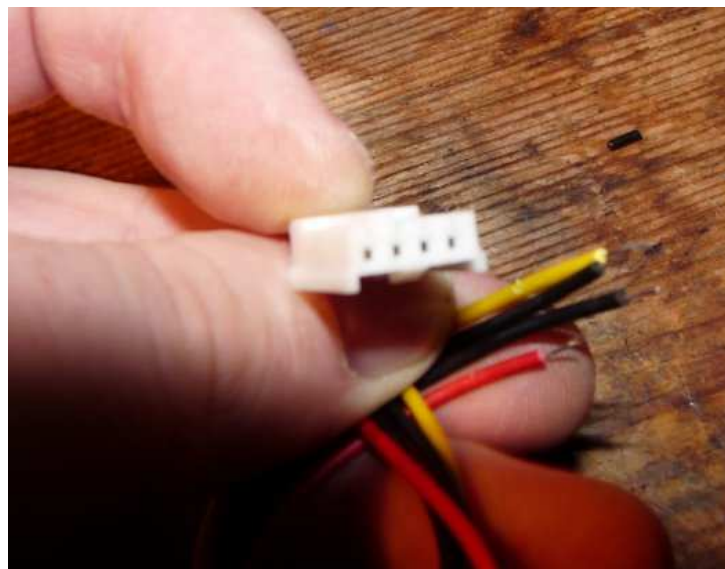*An even closer shot of the power terminals..... see I spoil you lot.....*

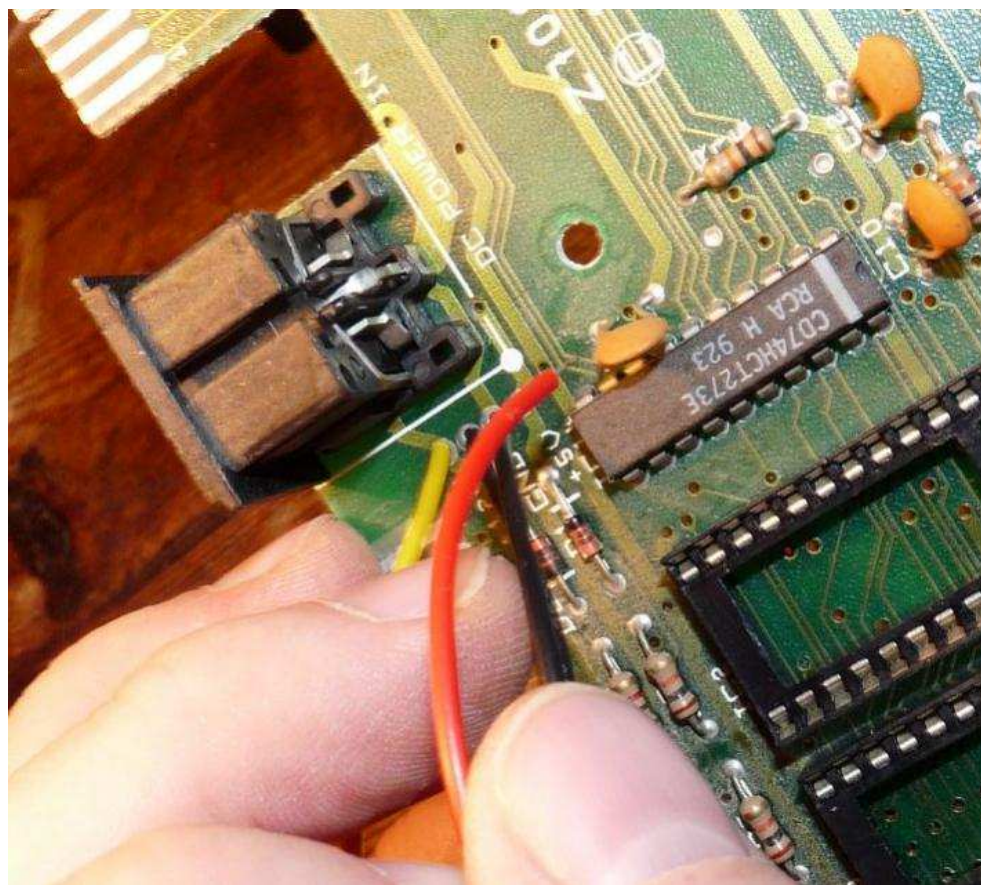*Excelent I can see through to the other side....*

En' Voila

Holy terminals of much need power rails note the +12v (top) and +5v (bottom) silk masking
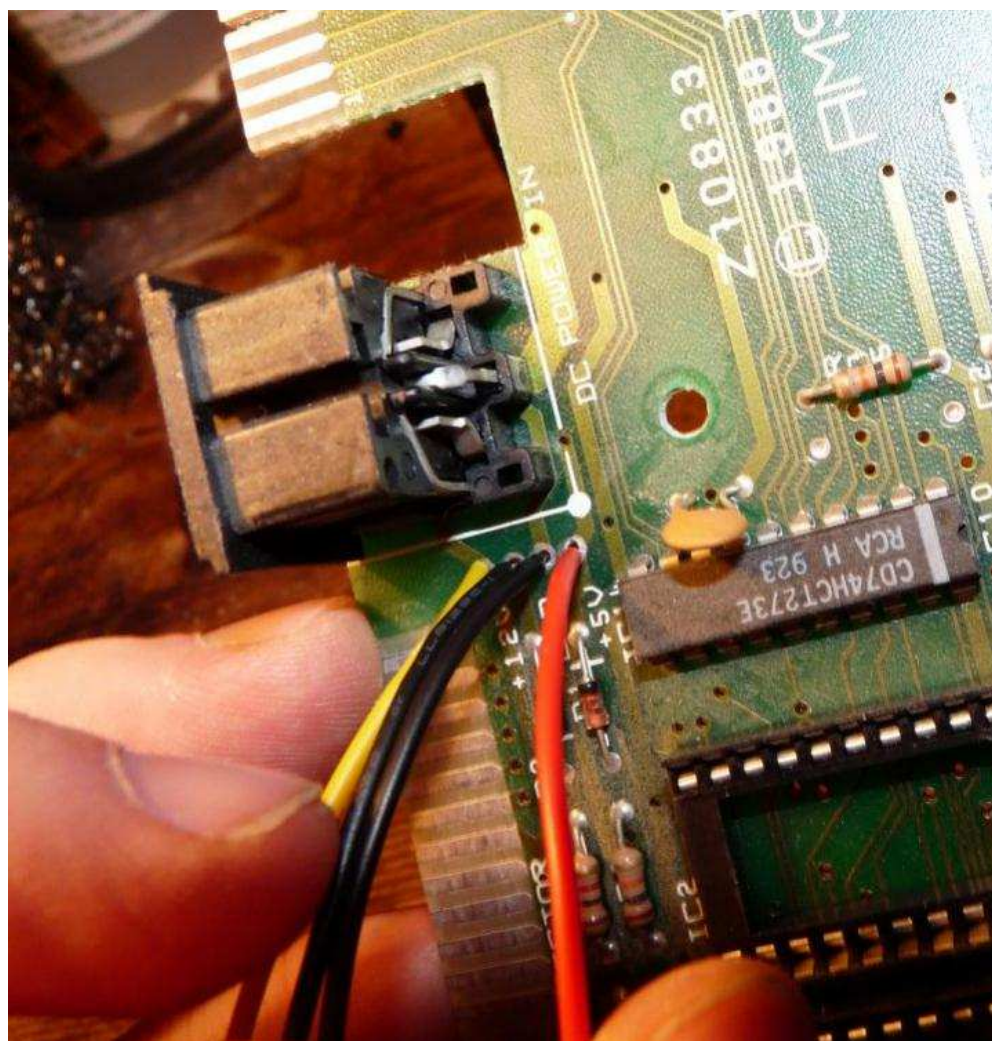

Ahhh the classic 4 pin Floppy Power Molex..... How I love thee!

So much so that I snipped and tinned the leads =)

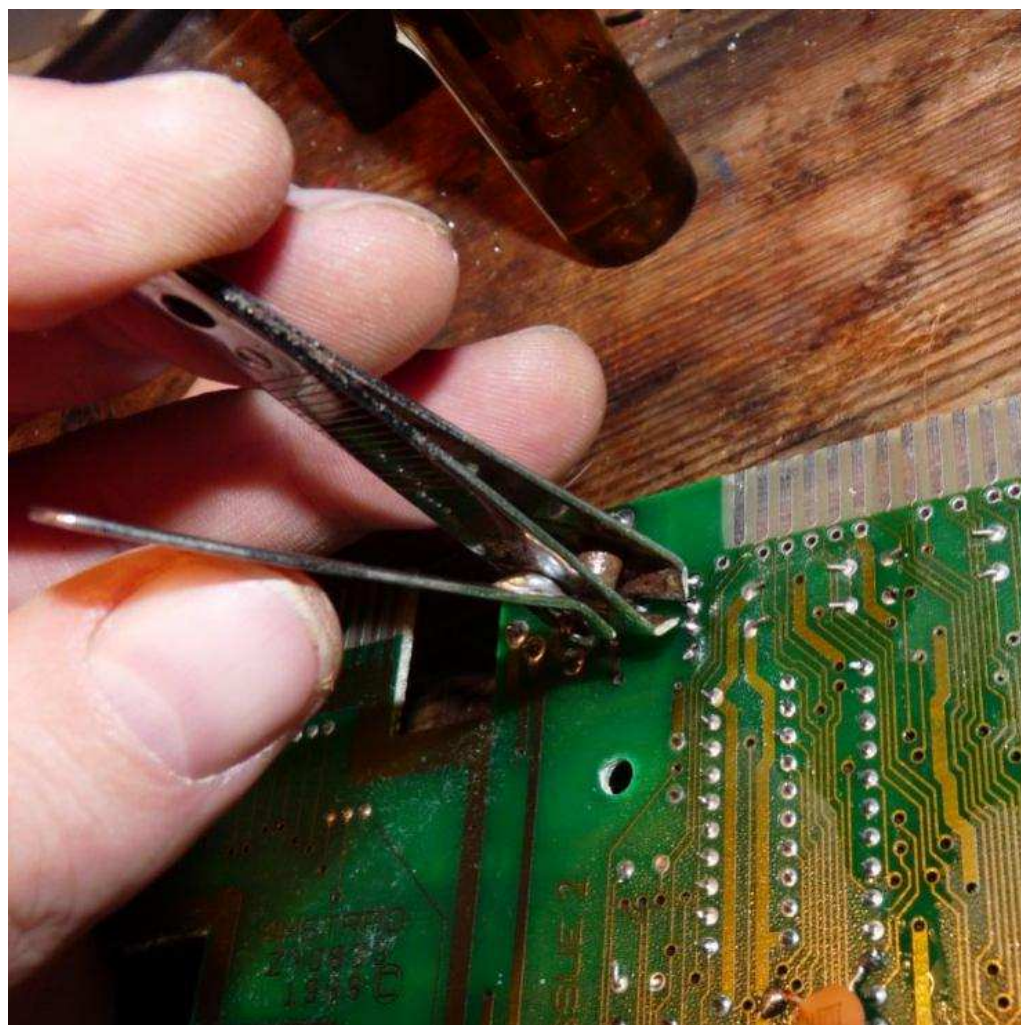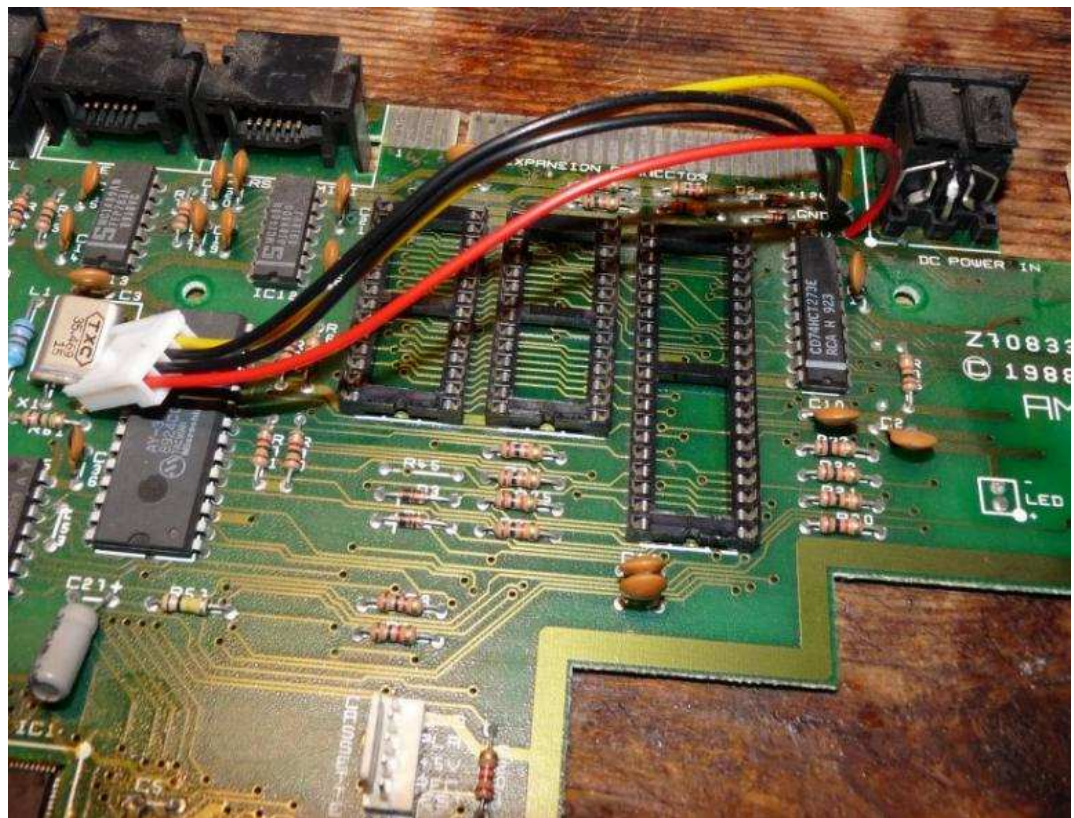*Lets get the colour code right.... red = +5v, yellow = +12v and black = Ground*

And this is how you fit the new power rail

(Power soldering .... all four at the same time gets you bonus points and a new trophy unlock!)

Yes... the most handiest tool in the tool box....

Nail clippers.... they take a smidge of practice.... but once you have the nack..... you can use these for almost anything!

And There you have it.... a new power rail... waiting to be used.....

Please note that on the +2AB theres not much +12v juice... so ensure the device you plumb up to it doesn't use it (or less than 0.3amps)

And since I am on my soap box, remember to keep kids inside..... and playing video games.... its the only way they will learn!
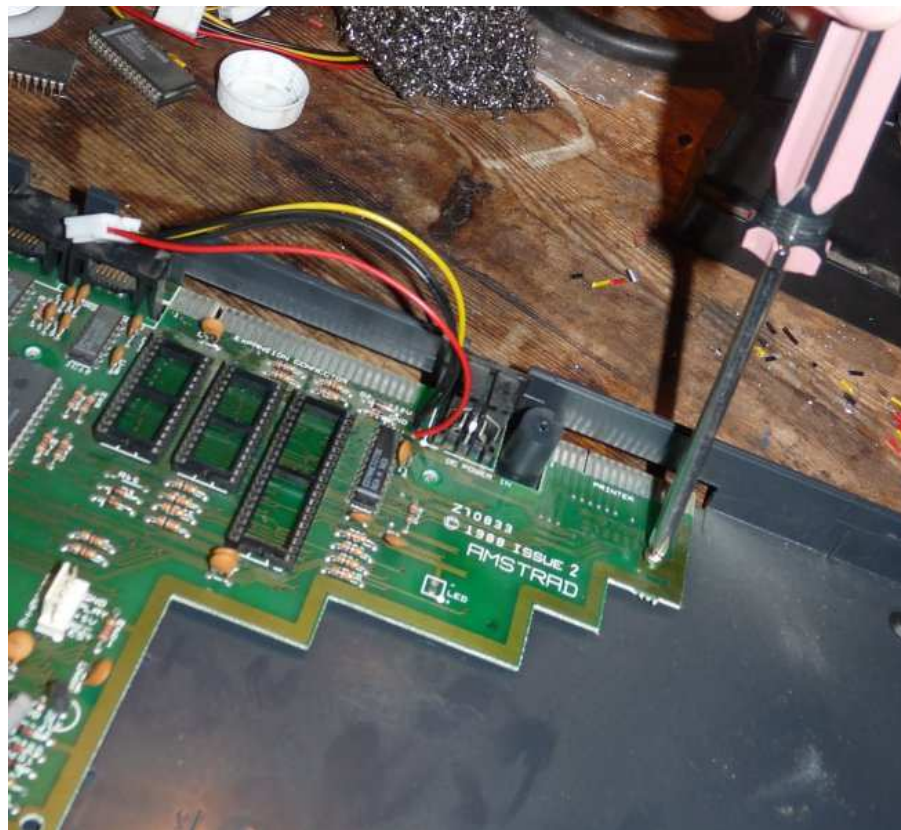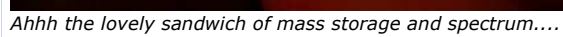

The magic Posi-driver (aka Philips) as it majestically screws the motherboard once again back into the tray.

The hard part is over!
_____
If I had a hammer....

09-01-2013

Zetr0
Sinclair
User

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Apr 2009
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Norfolk UK
Posts: 832

IDE Adapter Bundle

Ahh a box of golden delight!

We have a generic CF to 40 pin IDE adapter snuggled up to a Sandisk 256MB CF Card that is getting a cuddle from 15CM's of deliciou cable that is be wooed by a smart looking Z80 to IDE adapter that also chatting up a couple of +3e ROM chips!

The CPU is installed into the IDE Adapter (pay close attention to the orientation as well how clean my fingers are!)

Ahhh the lovely sandwich of mass storage and spectrum....
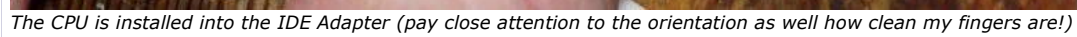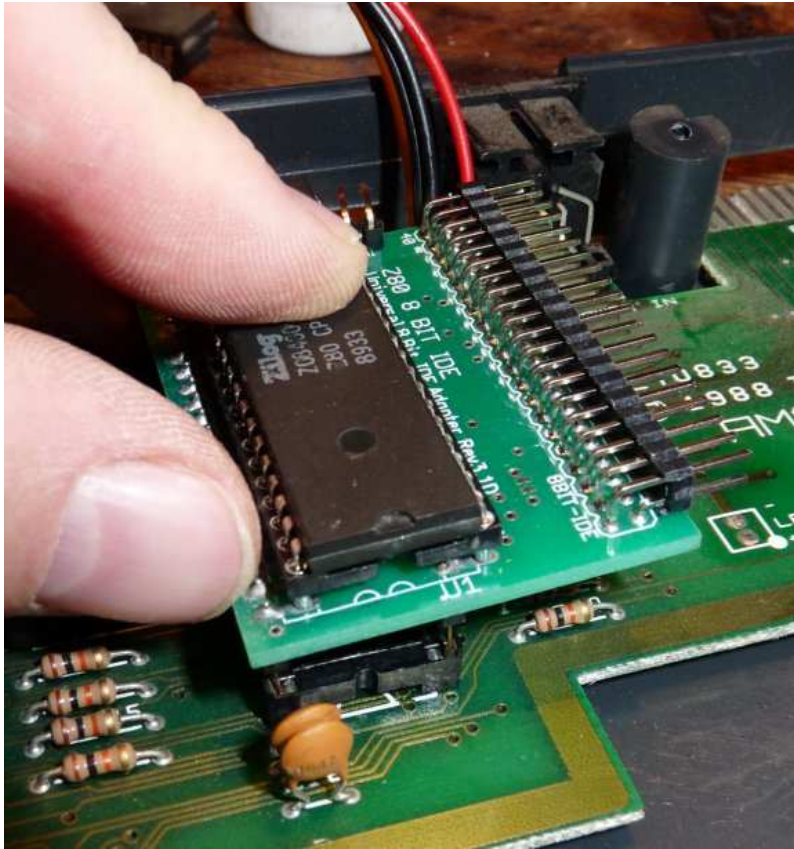
Ensure that none of those pesky ceramic caps get in the way of a good board mating with the Adapter - again note the direction as v my thumb nail is!)
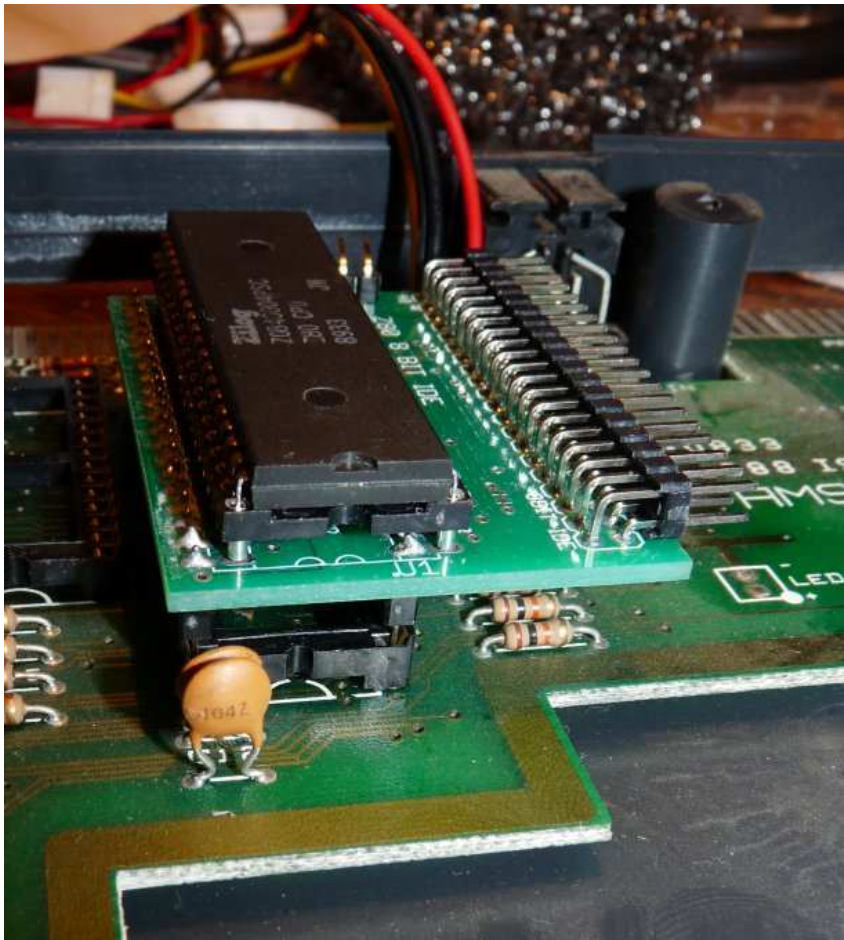
Dadaaaaa!!!!

Looks great.... you have done a good job so far!

With a bit of sneakyness you can pull the power rail underneath the IDE adapter and using a ceramic capacitor lock it into place.

Like a BOSS!
_____
If I had a hammer....

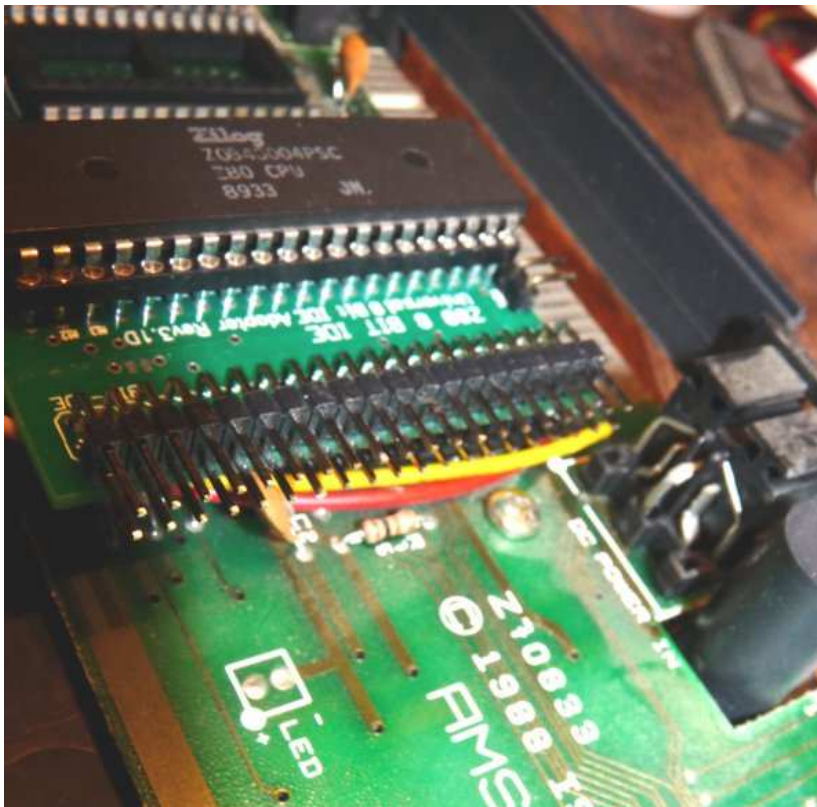09-01-2013   #**6**
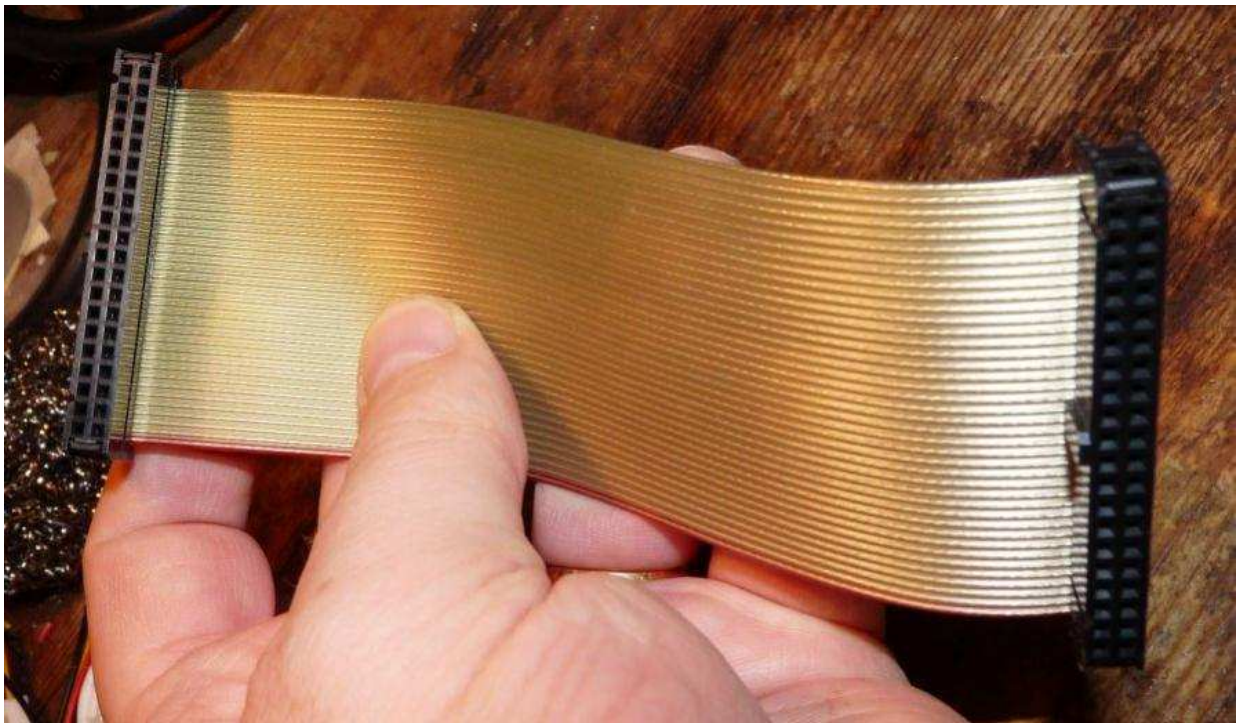
Zetr0
Sinclair
User

IDE Cable and Device Connect

Join Date:
Apr 2009
Location:
Norfolk UK
Posts: 832

Ahhh a golden beauty of an IDE cable.... its Halogen Free btw... I spare no expense!

(I should tell you now there is a difference in each end of the connector)

Now IDC is very stiff stuff... as Black adder would say its made with stiffest stuff that McStiffy of Stiffwood could find on his stiffest shelf of stiffest things!

So to make it more manoeuvrable we need to pleat the wire... to do this we simply put a nick into the plastic after every forth wire
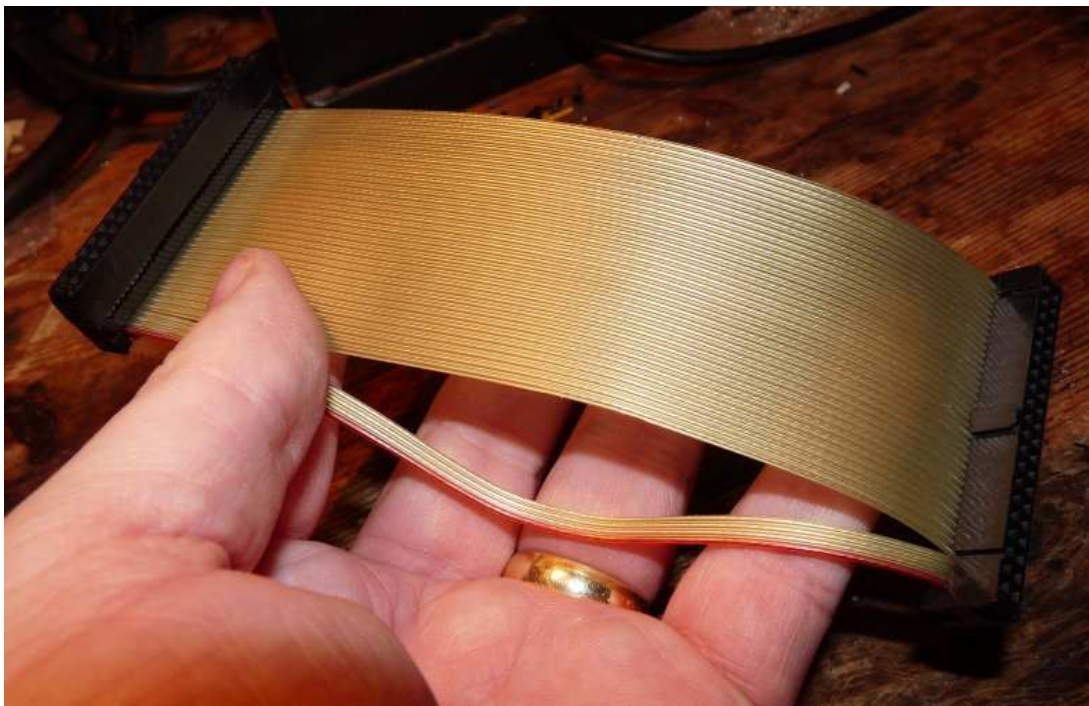
Continue on with the pleat by gently pushing the small nick that separates like so.....
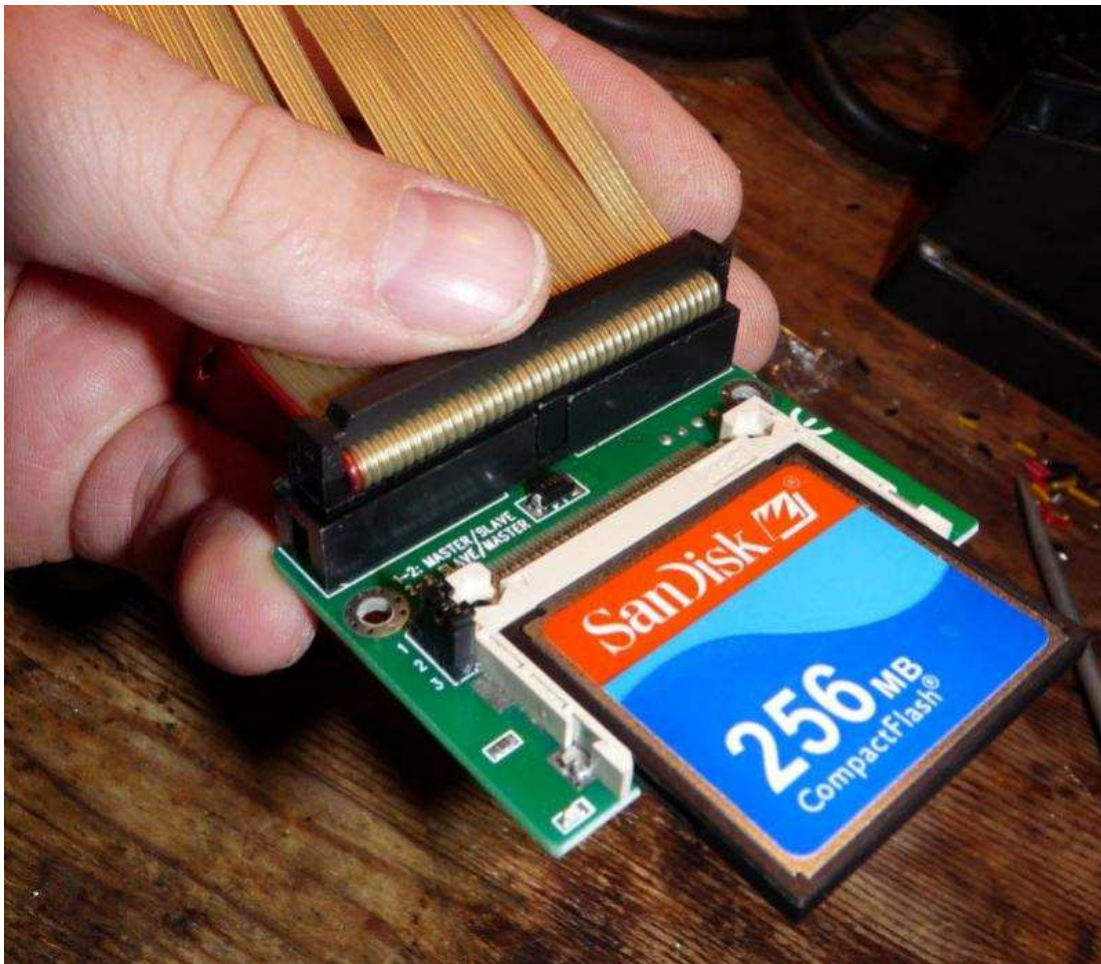
now do this..... another 9 times!!!

And here is one I pleated earlier!

we get to braid it next or dreadlocks which ever!

Its like Christmas!!!

Plugged in the IDE cable - notice the IDE connector has an extra roll - this is to denote the Device Side of the IDE cable.

As you can also see I plugged in a very handsome SanDisk 256MB CF Card!

And here is the HOST end of the IDE cable... see the difference?

Next time I will use different colours!

_____
If I had a hammer....
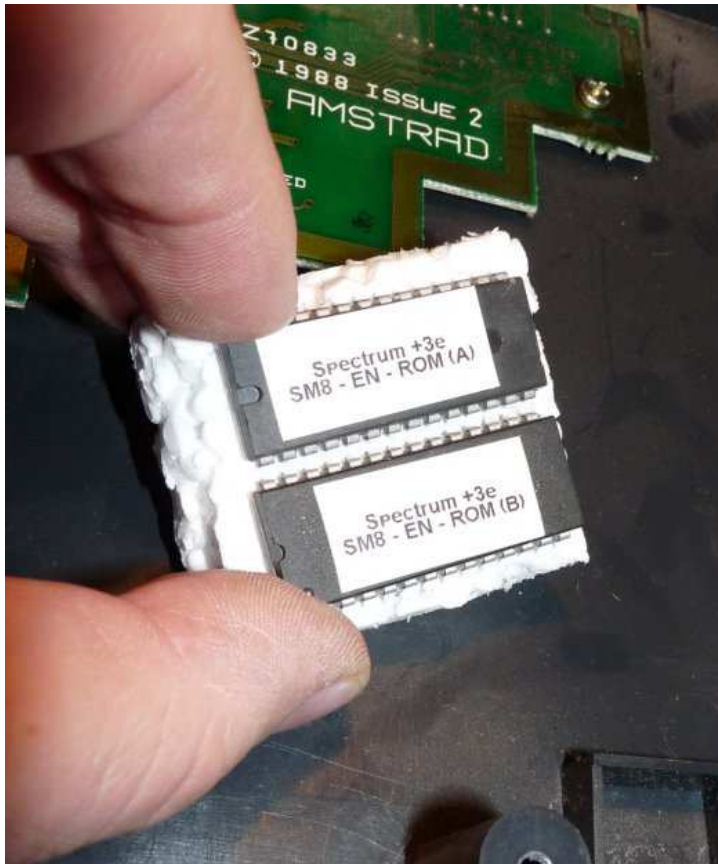
Quote

09-01-2013

Zetr0
Sinclair
User

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Apr 2009
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Norfolk UK
Posts: 832

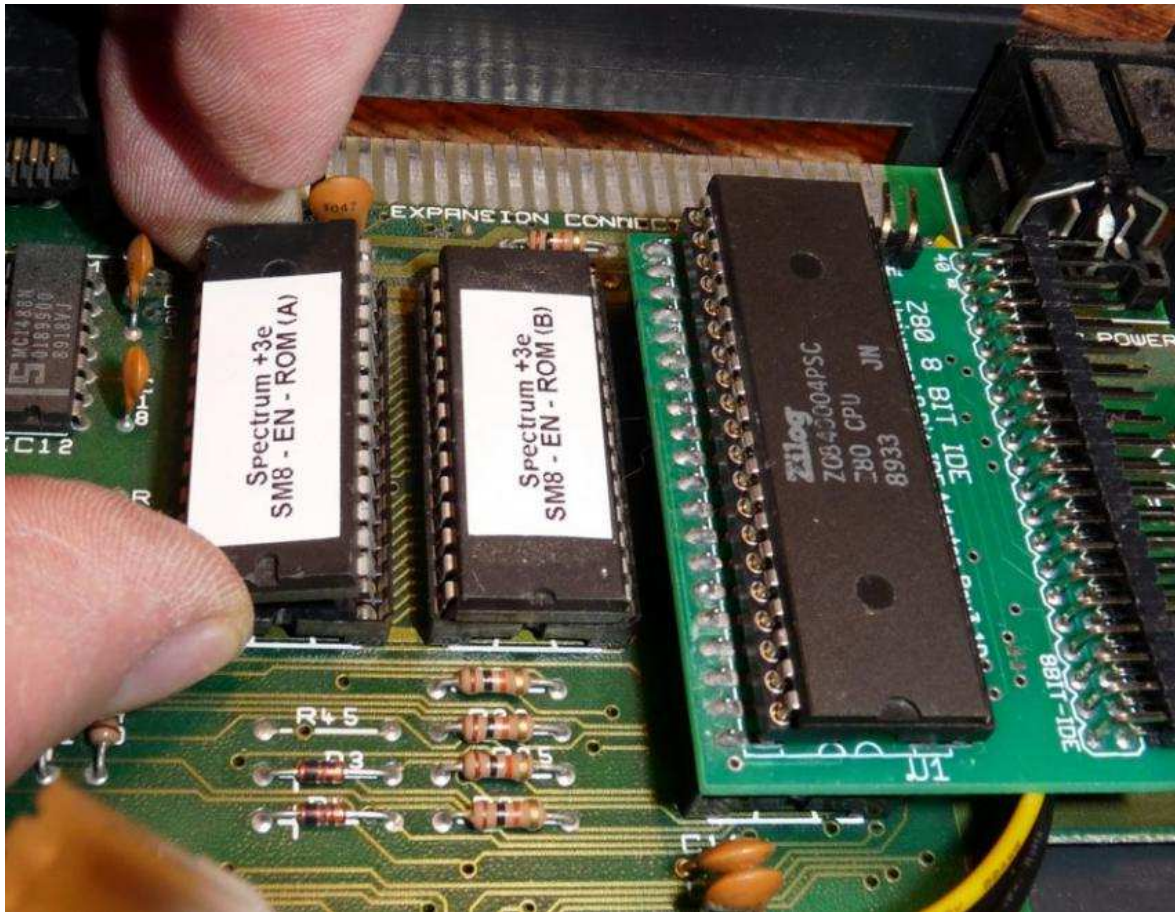**+3e ROM installation and HOST connect**

Ahhh the magic that makes the... err... magic happen!

Its the +3e ROM's \o/\O/\o/ YAY \o/\O/\o/

+3e ROM installation and HOST connect

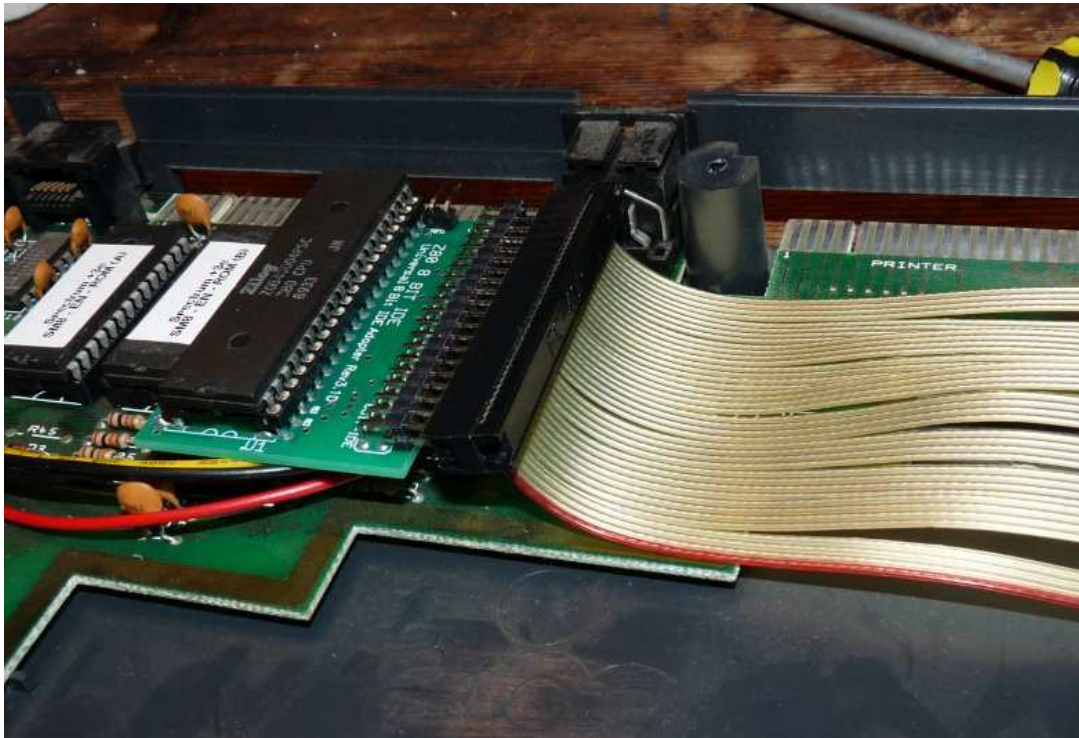*Here is how and where fit ROM (B) - all nice and cosy next to the dapper looking IDE adapter* 😊
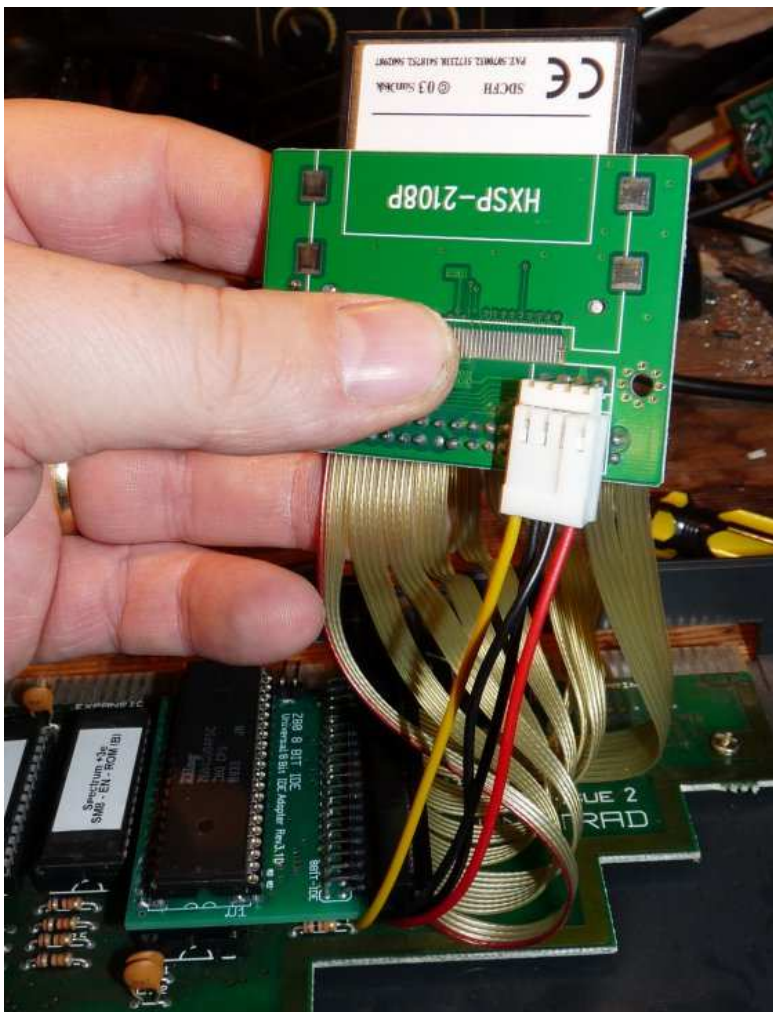

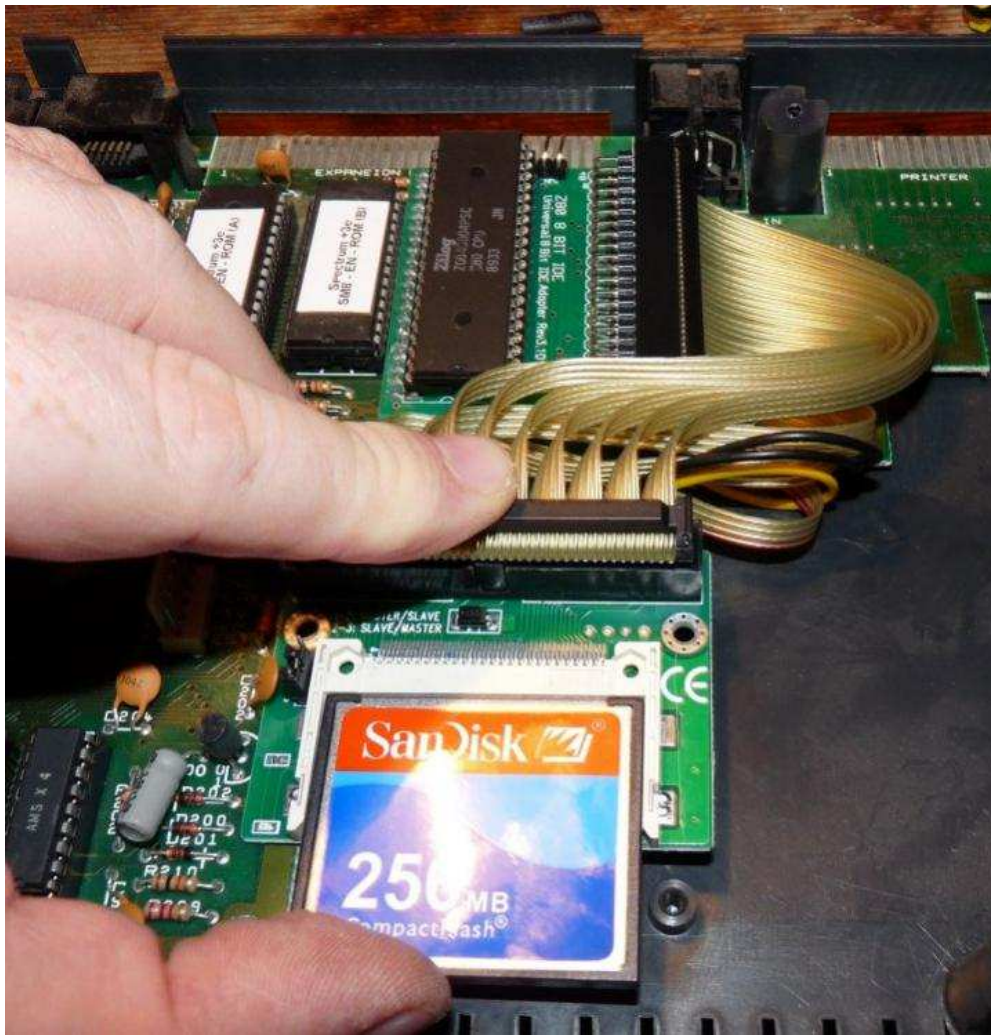*And here is where you install ROM (A) - right next to ROM (B) in fact....*
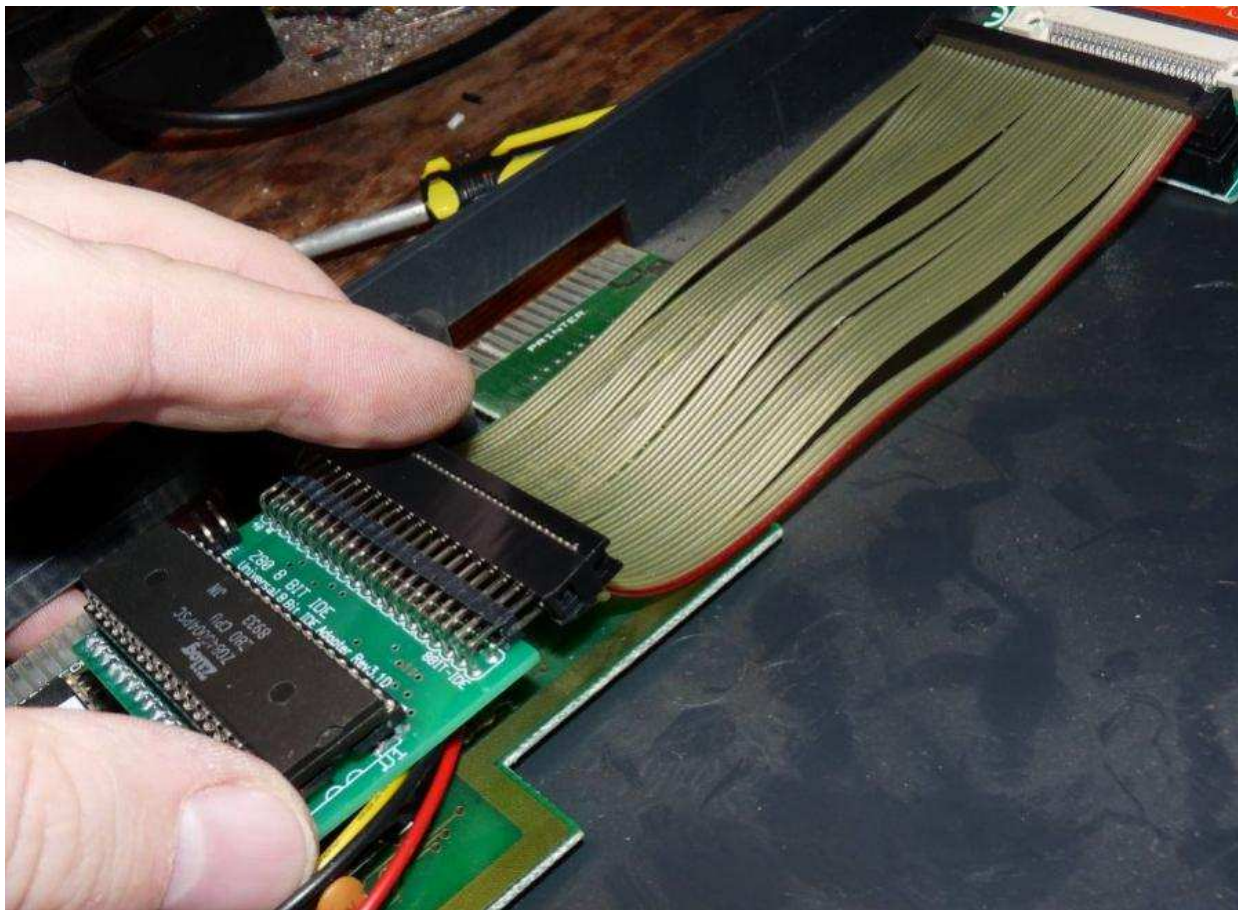
Connecting the IDE to the HOST

Ahhh gently (but firmly) does it! Note the orientation of pin 1 (Red Strip Wire)

Add the Power to the CF Adapter

Gently (but firmly) Bend the IDE wire into the right position... see how it curls.... beautiful isn't it?

_____

If I had a hammer....

Quote

09-01-2013

Zetr0
Sinclair
User

Fixing the IDE device and Reassemble

The easiest way to ensure the Device stays in place (without damaging your precious Sinclair joy is to use Hot-Glue...

Since I have a hot-air gun, I cut pieces and place them where I want them (saves all that messy dripping mess) - you can get a hobl
hot-air gun that would do the job perfectly for very little cost.

Join Date:
Apr 2009
Location:
Norfolk UK
Posts: 832
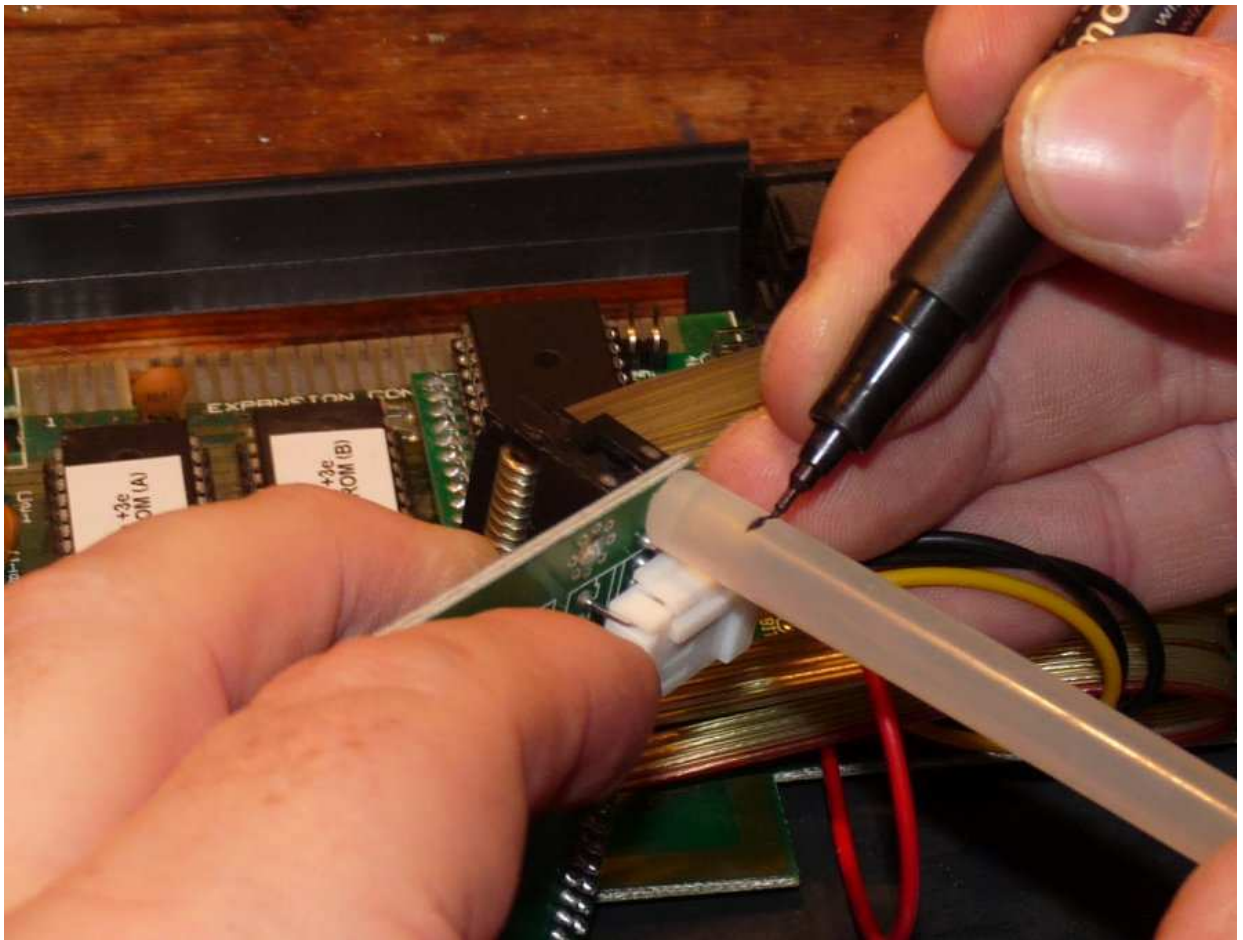
measuring out the size needed for the hot-glue pieces.

Angry looking hot-glue pieces... or slightly confused?
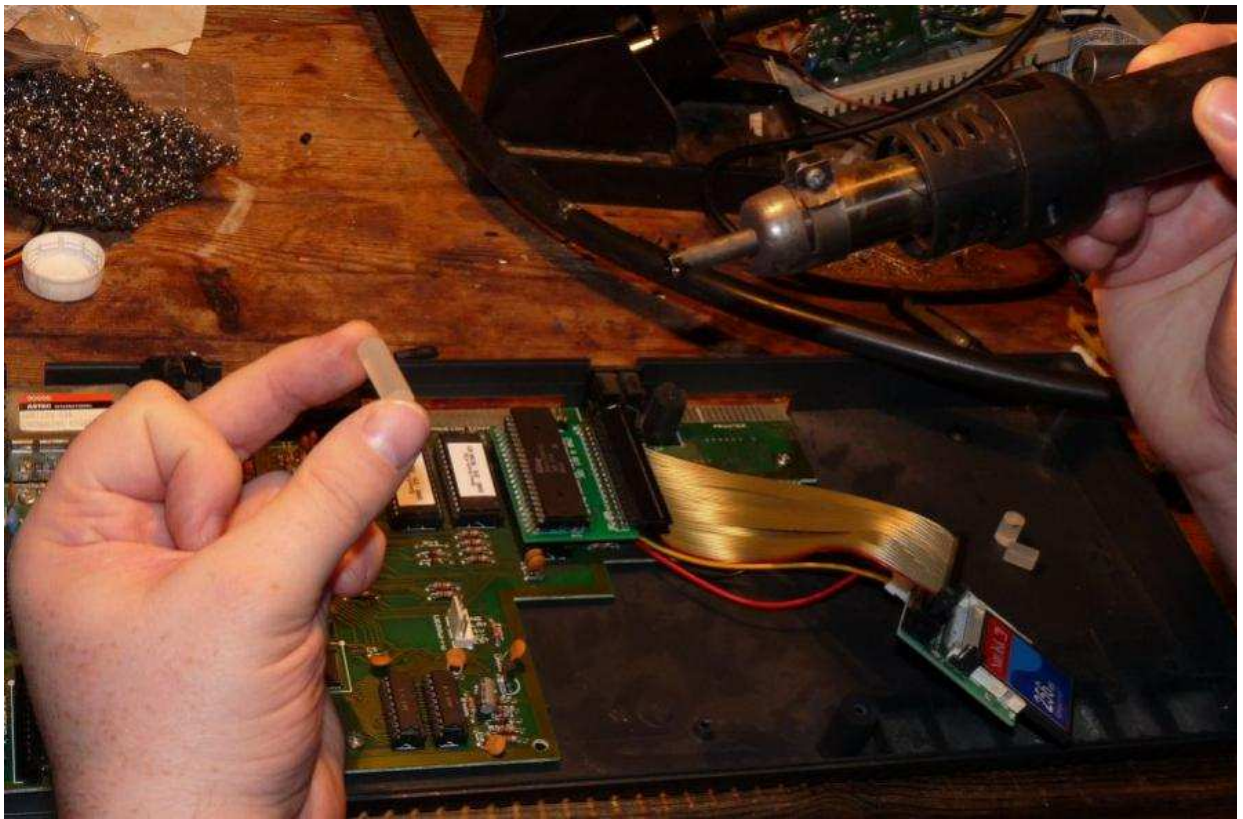
Just melting the larger piece of hot-glue to affix it to the adapter.
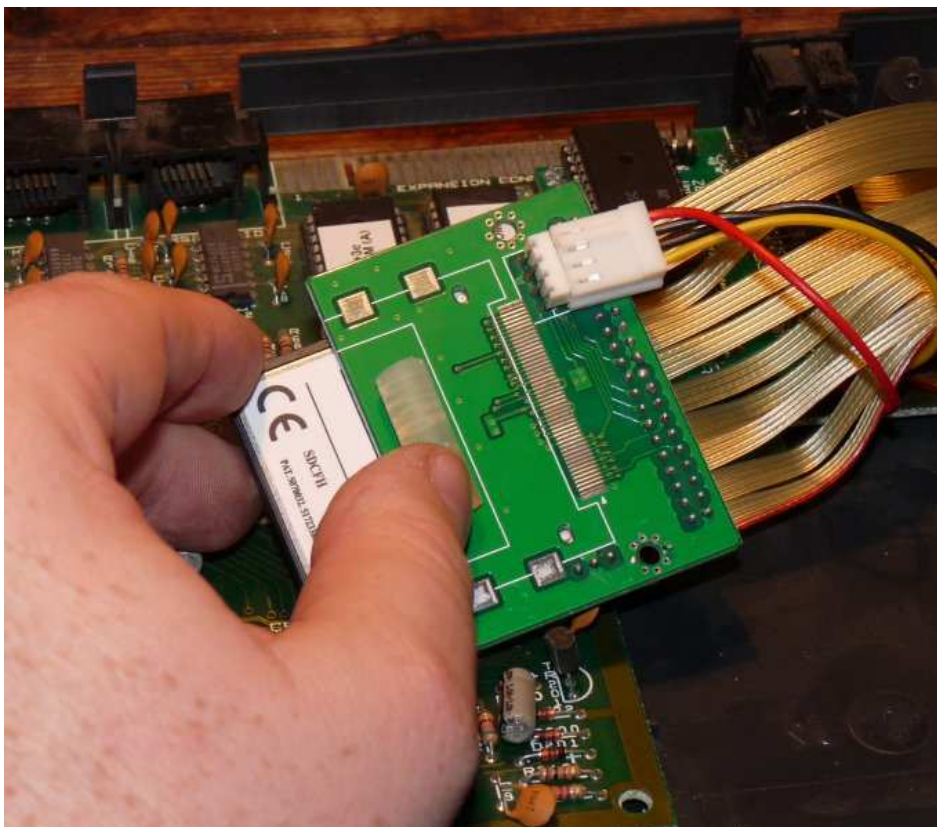
Here I am fixing the larger hot-glue piece at the front of the adapter
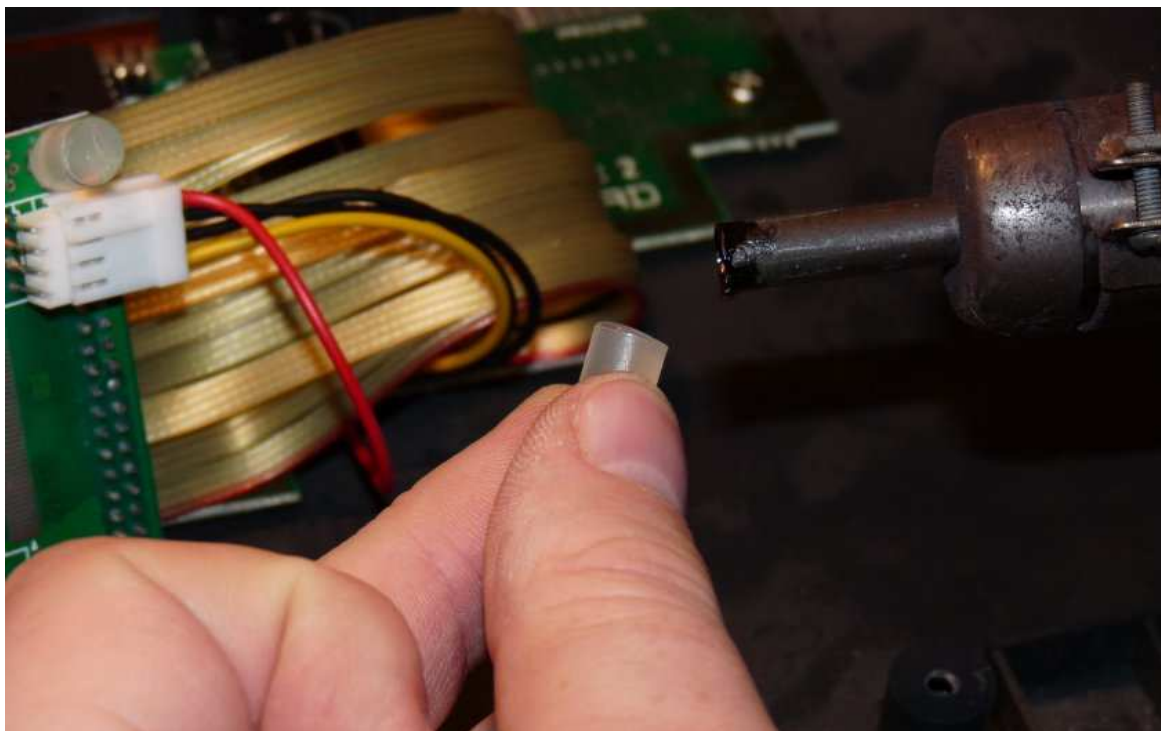
Gently melting hot-glue piece for the other corner
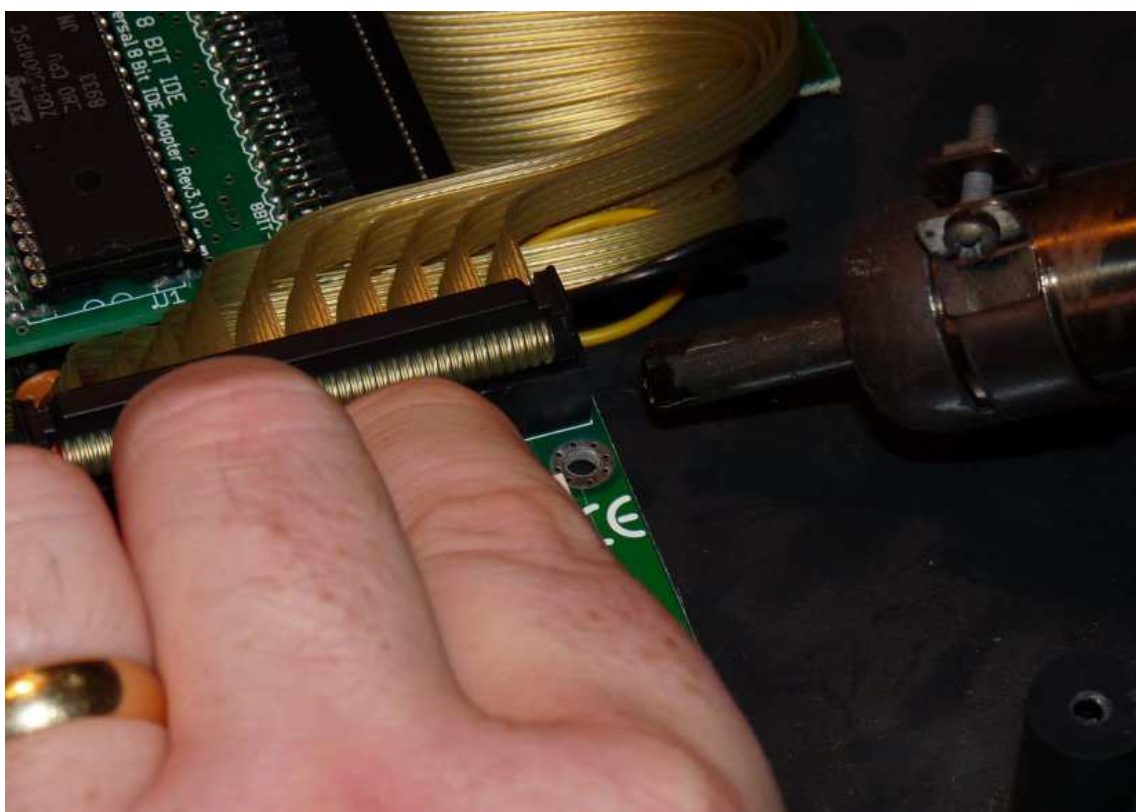
Make sure you get the two corners and get heat to the front as well, spread the heat around so that it evenly melts.
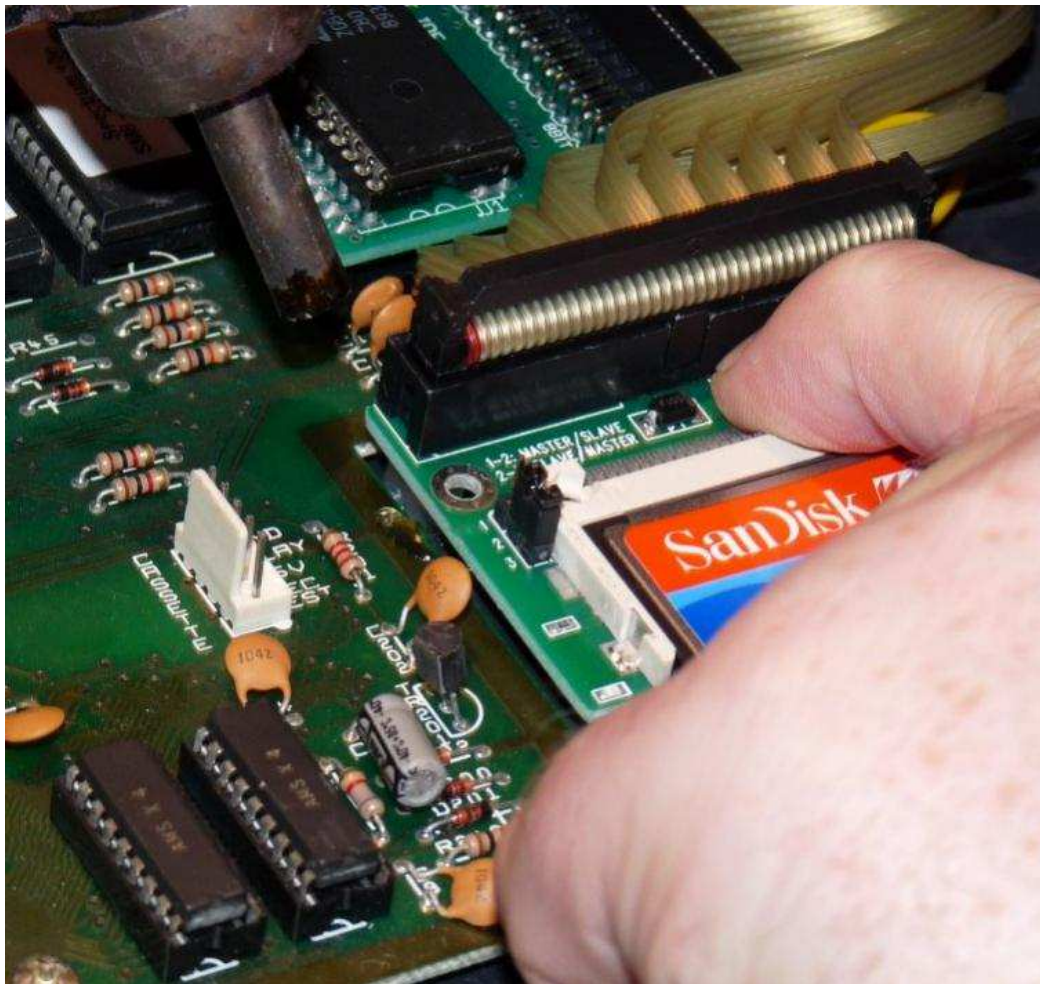
Hot glue can take a while to set..... but once it does!!!

Yep... a wholesome image!

Isnt it pretty worth another shot if you ask me!

And another glorious shot of the adapter and device fitted!

Reassemble
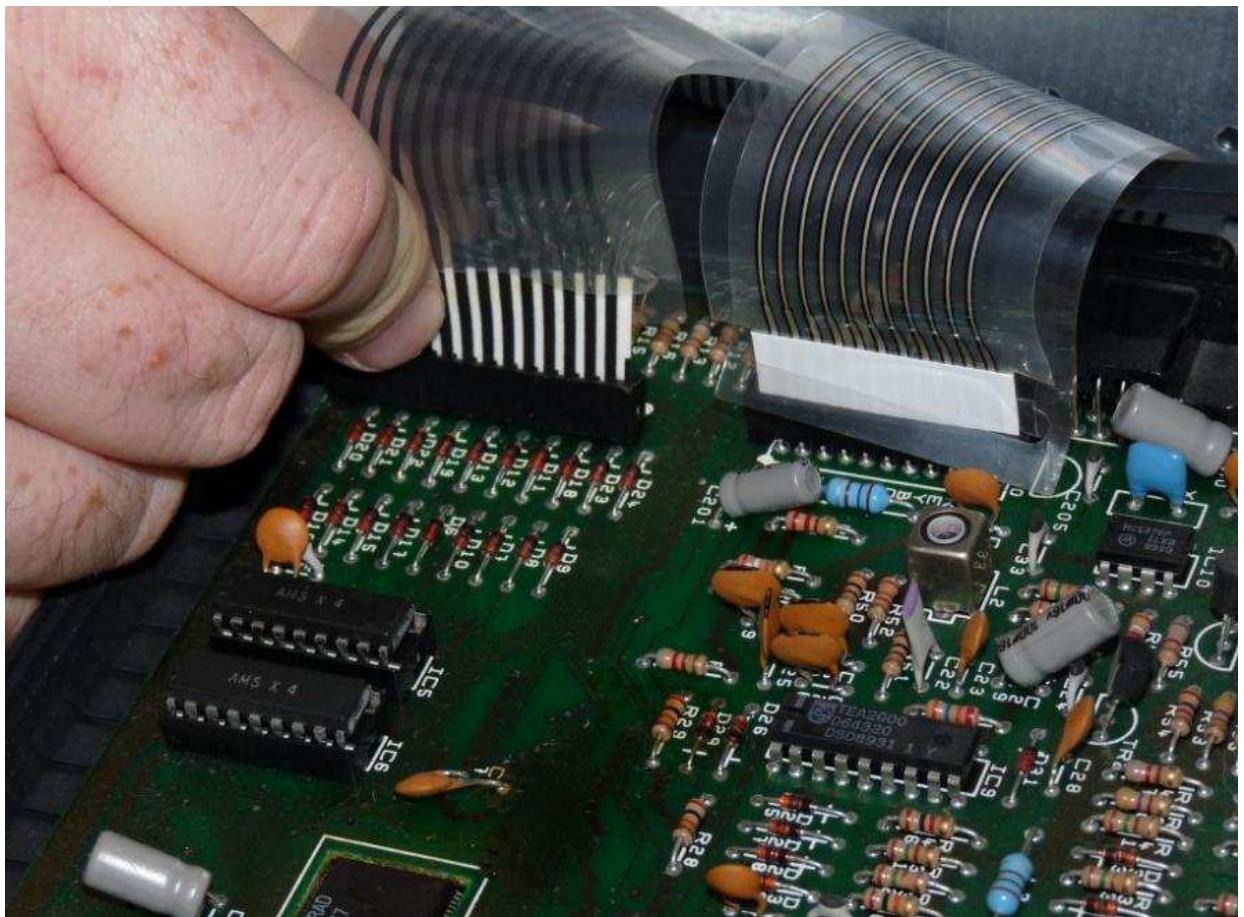
Gently but firmly insert the keyboard tail - I found pinching pressure was enough.

Dont forget to hook-up the cassette tape header..

.... dont you think that little CF card looks right at home there.... One could easily bring it forward and make a CF-Card access port a font of the case... for easy access.

_____
If I had a hammer....

●⚠   Quote

09-01-2013   #**9**

Zetr0
Sinclair
User

Join Date:
Apr 2009
Location:
Norfolk UK
Posts: 832

Conclusion & Testing

Here she is booted up with a 64MB CF card - quick test before screwing her back together.

A splash screen before the Game Launcher loads -

Now If you haven't been to on of these guys events.... then you REALLY ought to try!

Ahh the +3e Game Launcher....

I wrote that =D

Ahhhh Jetpac on the +2AB.... oh yeah!

Next How-To..... Getting Games and Data onto the IDE Device!
_____
If I had a hammer....

📅 09-01-2013 #**10**

jp
Manic Miner

The image links don't seem to be working in this thread for us non AmiBayers 🌍
_____
jp nz

Join Date: Mar 2004
Location: Hamilt[r]on - City of
the Future, New Zealand
Posts: 1,338

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