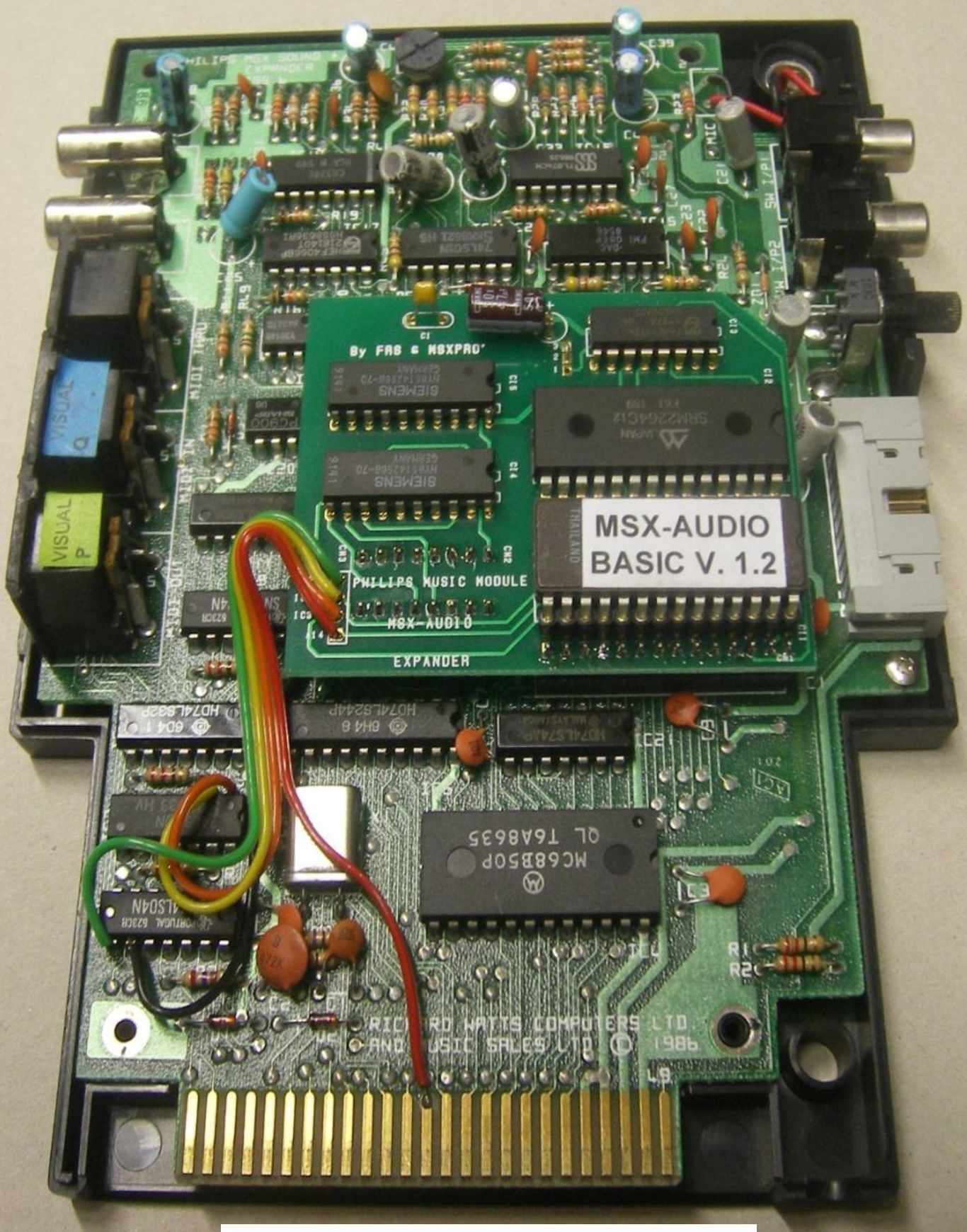
Philips Music Module Expander

A re-creation of the MSX Audio Expander by FRS and MSXPró



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Background

Back in 2005 Brazilian MSX users Fábio Ricardo Schmidlin (FRS) and Luciano Sturaro (MSXPró) released an expander PCB for the Philips Music Module. This board came with and adjusted Panasonic MSX Audio ROM and with 256KB sample memory. A while ago FRS published his schematics so other MSX users could recreate his upgrade PCB. Because nobody took this challenge while there was still demand SuperSoniqs jumped in. It took us some months to gather all the necessary parts, order the PCB's and then find a partner to assemble the upgrade boards. After some setbacks we finally succeeded. We would like to thank FRS and MSXPró for their great work. They can be reached through www.MSXpro.com. Please check our site for news and information about our products. Our place on the web can be found at supersoniqs.com. We hope you have great fun with this upgrade!

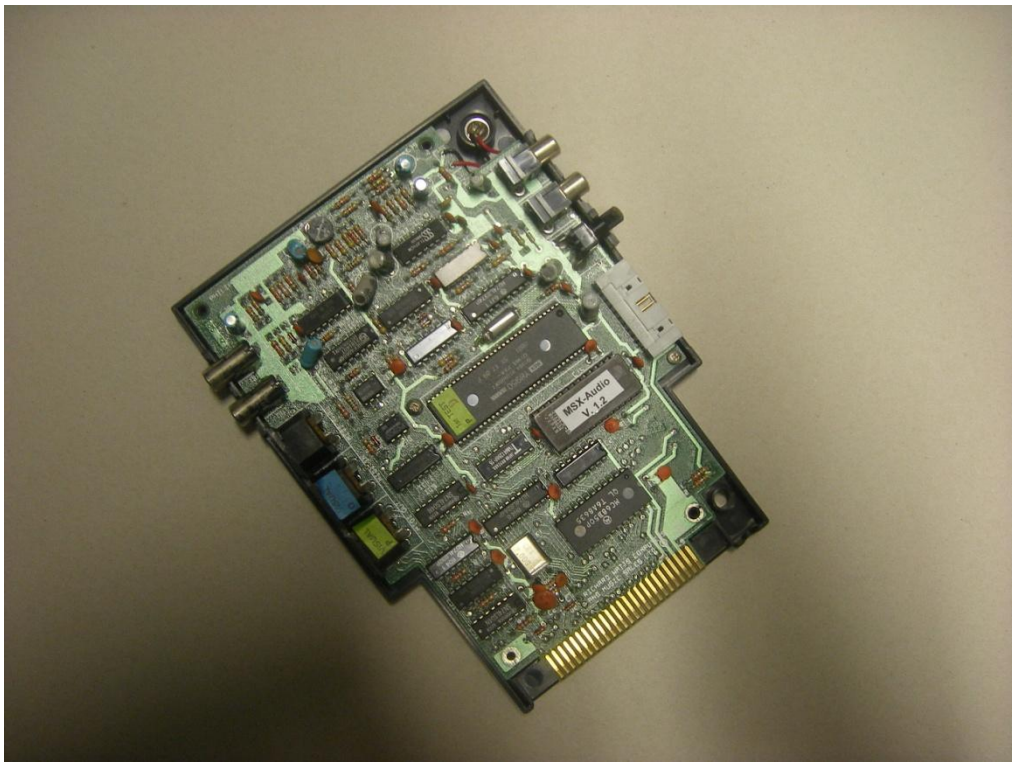
About this document

This document describes how to mount the recreated MSX Audio Extension Expander for the NMS 1205 Philips Music Module in a few easy steps. This manual assumes that you have some basic skills when it comes to handling and soldering electronic parts. If you don't know how to solder electronics or you are not sure about your skills, please contact Bas Kornalijnslijper (www.bas-ditta.info) to do the upgrade for you, or find someone in your network that can. SuperSoniqs cannot be held responsible for damage to your Philips Music Module when you do the upgrade yourself. Also keep in mind that the Philips Music Module is a 25 year old device and making adjustments to such old electronics need the greatest care possible.

Mounting the Upgrade PCB

Step 1 - Removing the cover

First step is to remove the cover of the Philips Music Module and unscrew the PCB from the back of the front panel.

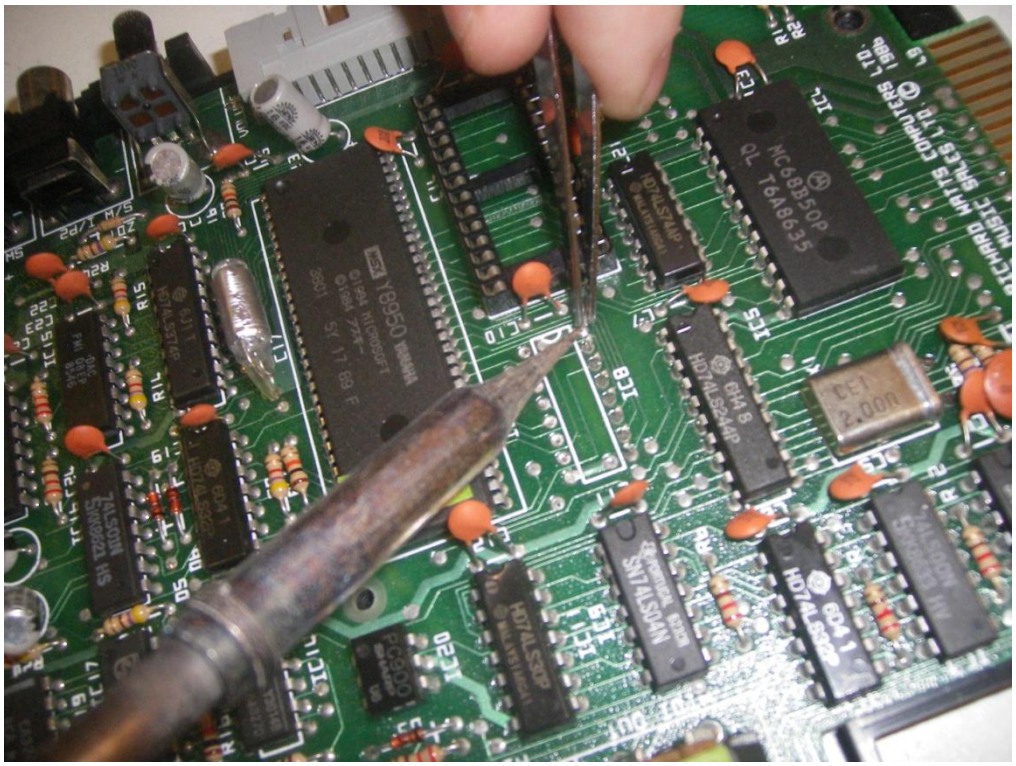


Step 2 - Removing the MSX Audio Bios rom

Next step is to remove the MSX Audio Bios Rom. On the above picture this EPROM is labeled MSX-Audio V1.2, your EPROM probably has another text written on it, or no text at all.

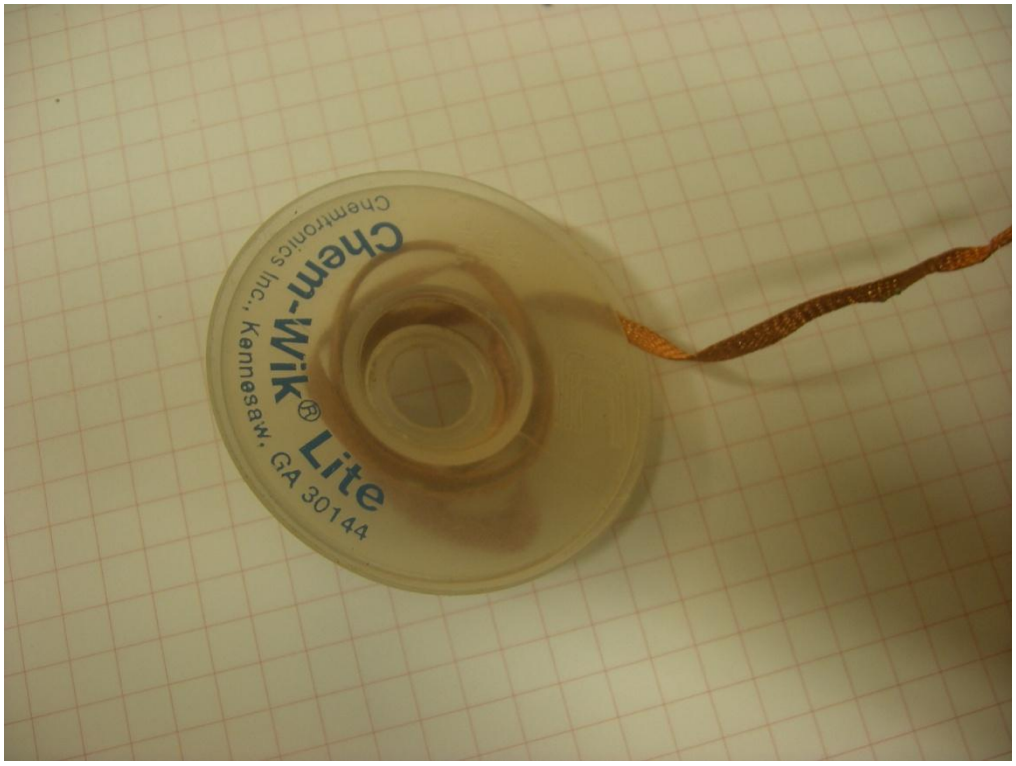
Step 3 - Remove IC8

When you have removed the EPROM, it's time to remove the IC next to it. This IC is labeled 21256P-15. Your IC might have another name, but 21256 should be part of it. The socket number on the PCB is IC8. Please don't be a hero when it comes to removing this IC. Just get yourself a cutter and cut the pins loose from the IC, one by one. Don't try to desolder this IC. The continuous heat of your solder device might irreversibly damage your PCB. And while this IC is replaceable for a few cents, replacing your Music Module with a new one might cost you a lot more ;-)



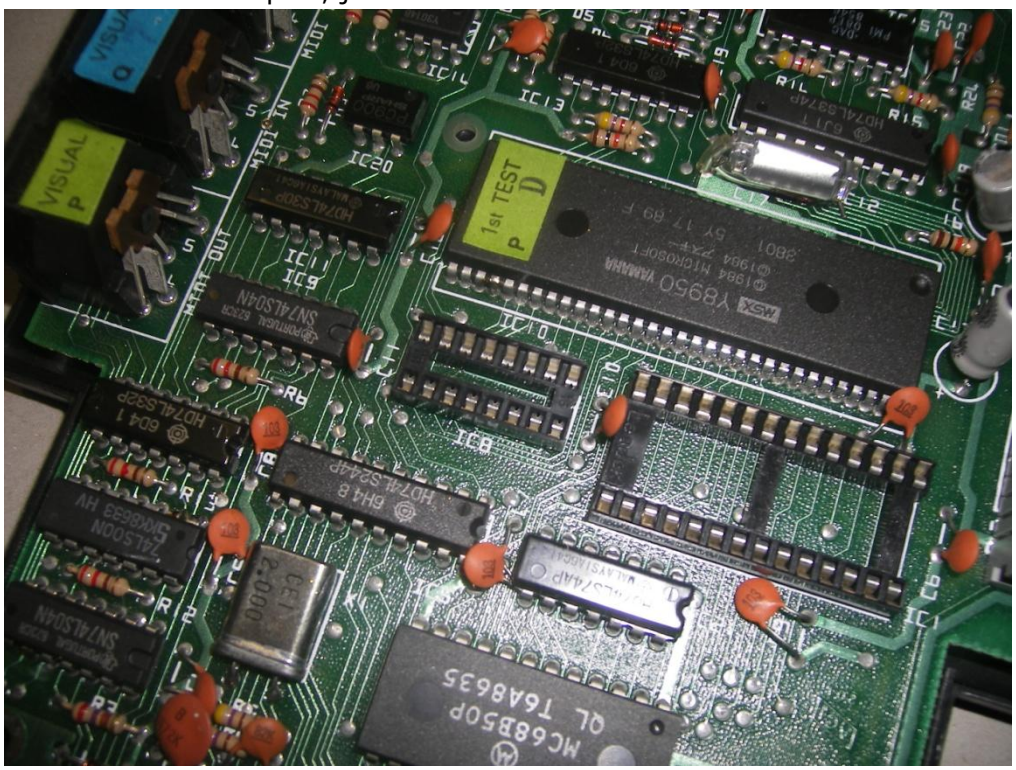
Step 4 - Cleaning the holes of IC8

When you're done cutting, remove the pins one by one with a tweezers and your solder device. Next thing you have to do is to remove the remaining solder tin from the pin holes. You can use a professional desolder device or desoldering braid like Chem-Wik.



Step 5 - Mounting the loose socket at IC8

Now it's time to mount the loose socket from your upgrade kit into the empty IC8 socket. Your socket has 16 pins, just as the IC8 has. Solder the socket on the PCB.

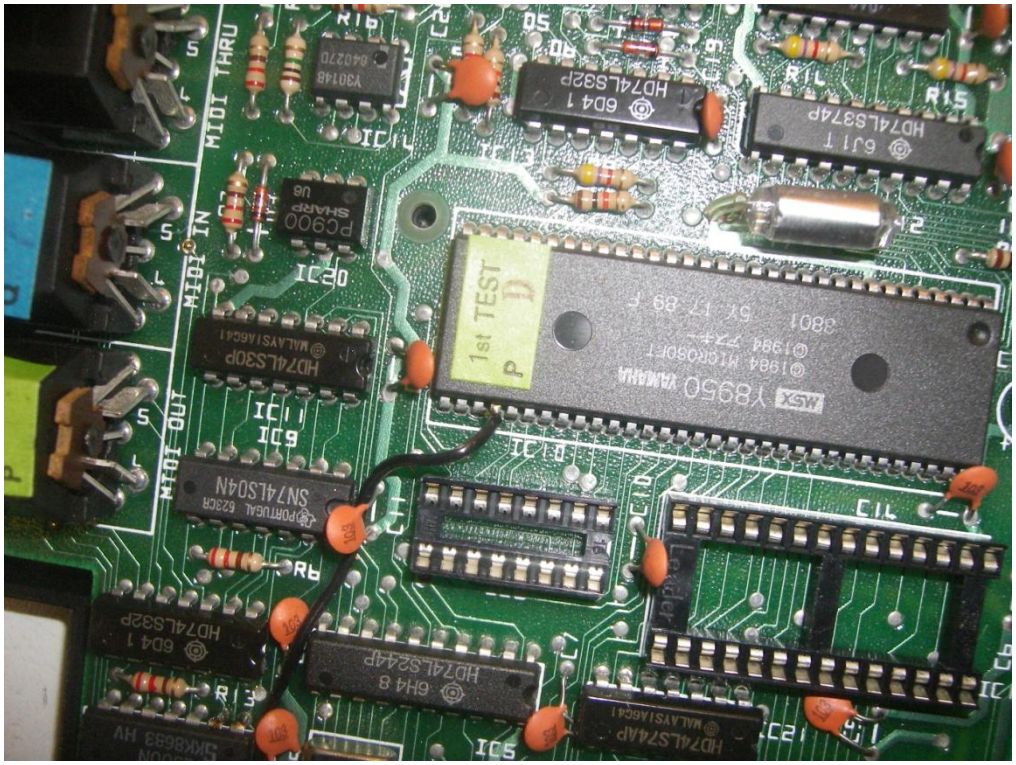


Step 6 - Screw the PCB back to the casing

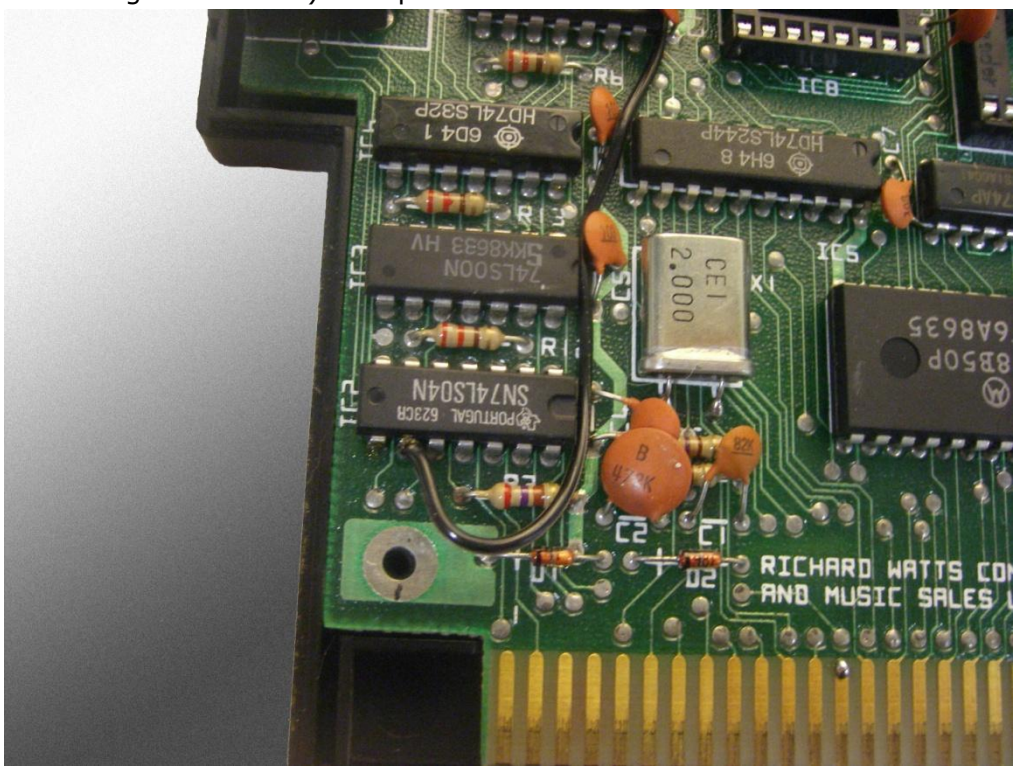
It's best to screw the PCB back to the casing afterwards, because one screw hole will be covered with the upgrade PCB later on.

Step 7 - Mounting the loose wire

In your upgrade package there is also a loose black wire. You have to solder one end of this wire to PIN 36 of IC10 where the Y8950 music chip is. Please see the picture below for details:

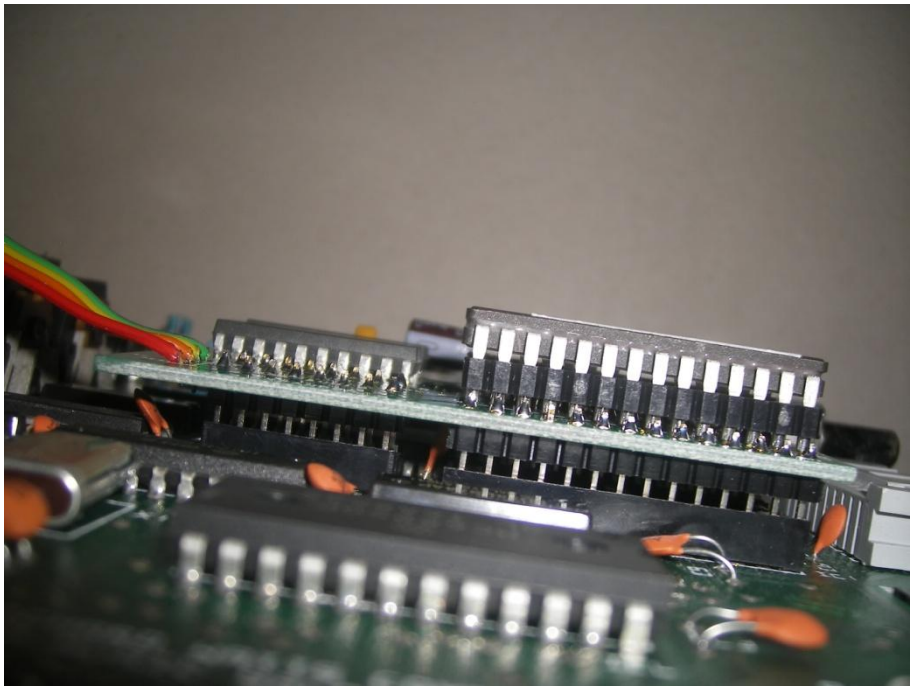


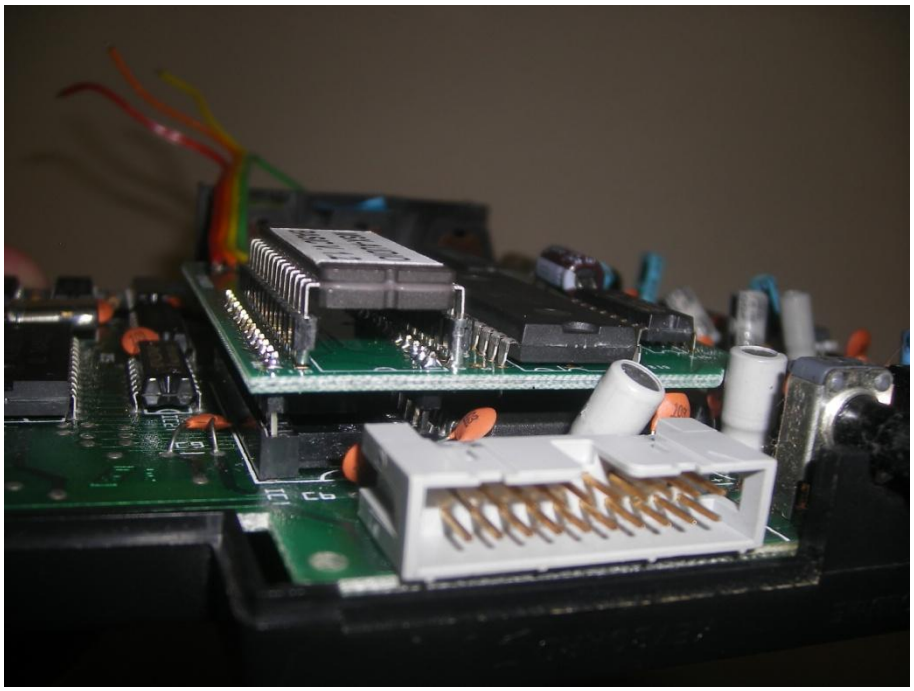
The other end of the wire needs to be connected to PIN 9 of IC2 (the IC will read something like 74LS04). See picture below.



Step 8 - Inserting the upgrade PCB

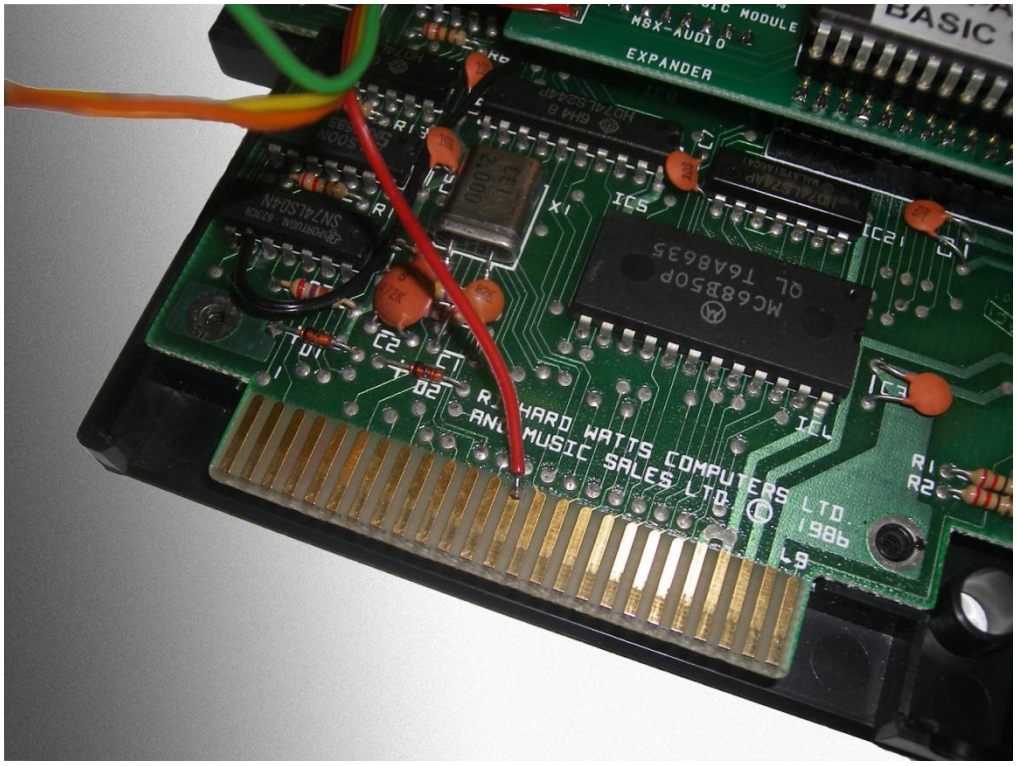
Now it's time to take the upgrade PCB from your package and mount it on the Philips Music Module PCB. This is easy to do. The extended pins on the bottom of the upgrade PCB fit almost perfectly in the empty Bios socket and in the 16 pin socket you have mounted yourself next to the Bios socket. Please note that the upgrade board can not be inserted completely in the sockets below. There will always remain some space of about 2mm between the upgrade board and the socket on the Philips PCB. Be careful when inserting the upgrade board. Press gently when inserting and switch sides so now and then when pressing to avoid damage to the pins. Please look at the pictures below how the result should look like.





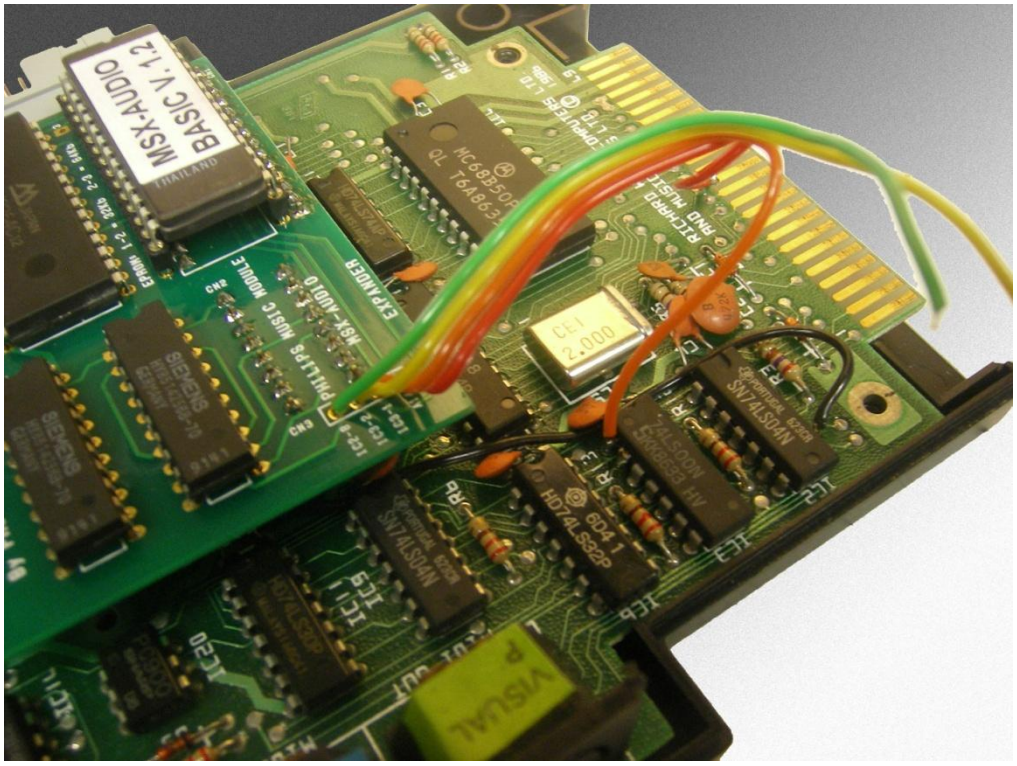
Step 9 - Connecting the Red wire

The upgrade board also comes with four wires that needs to be attached to the music module. The first one that needs to be mounted is the red wire. The red wire needs to be connected to PIN 25 of the slot connector.



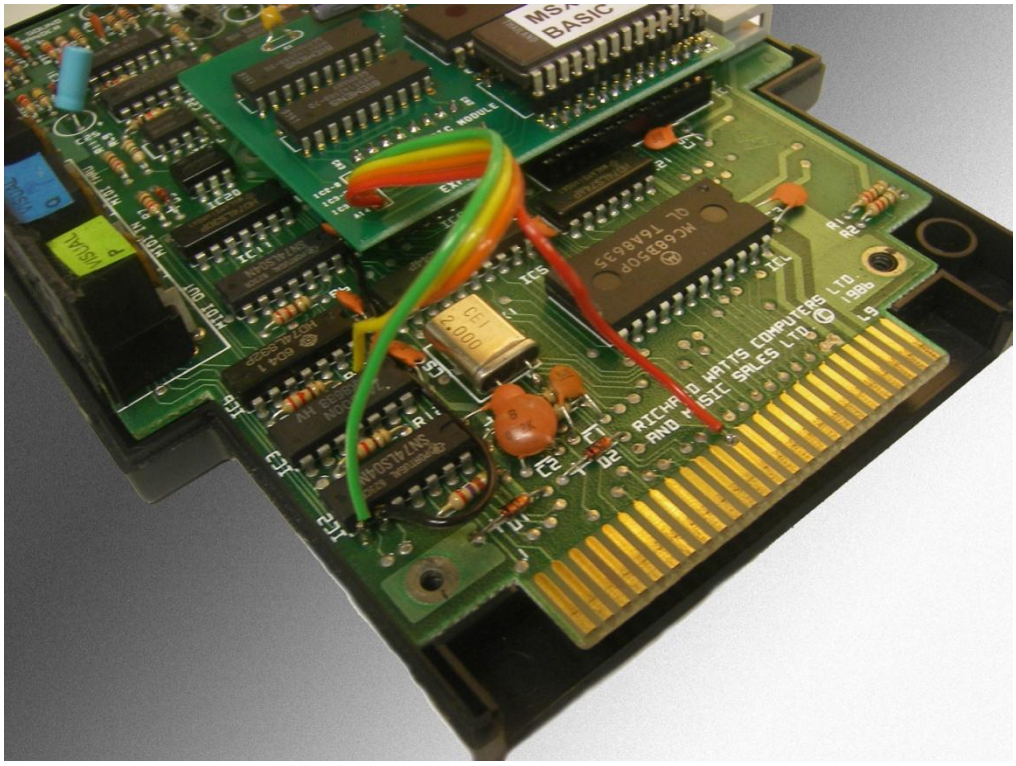
Step 10 - Connecting the Orange wire

The orange colored wire needs to be connected to PIN 1 of IC3 (IC labeled 74LS00 or similar).



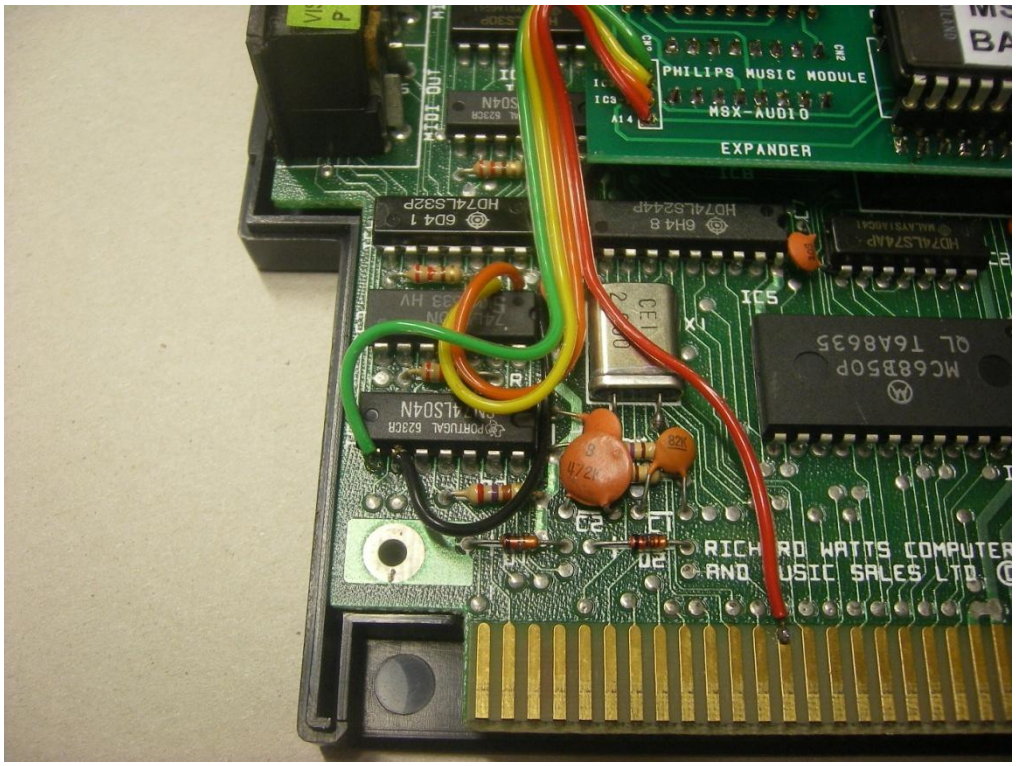
Step 11 - Connecting the Yellow wire

The Yellow wire needs to be connected to PIN 2 of IC3.



Step 12 - Connecting the Green wire

The last step is connecting the green wire to IC2 PIN 8 (labeled 74LS04 or similar).



And you're done! Now it's time to download some test programs to see if your upgrade PCB works as it should.