

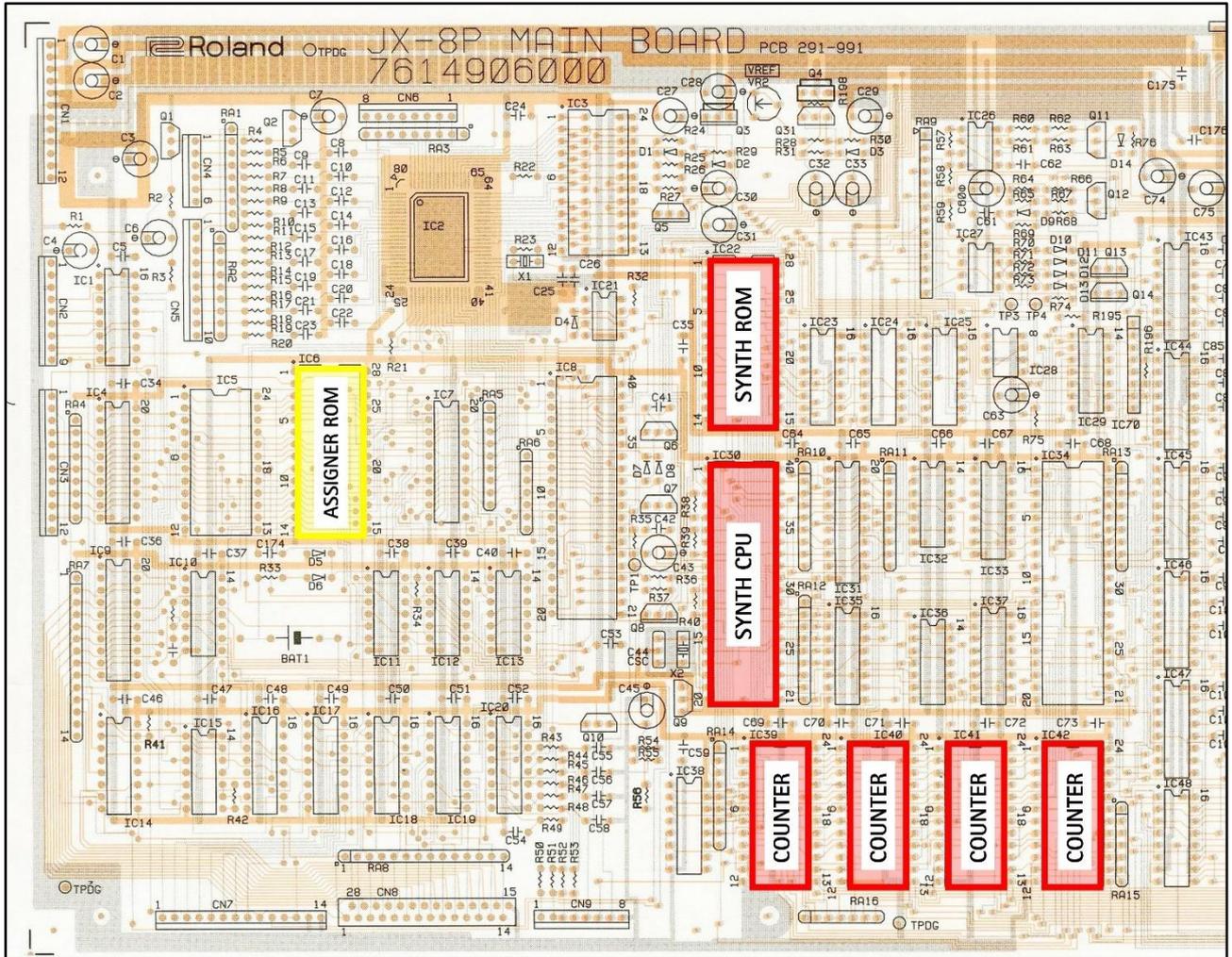
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1. Introduction

The Vecoven PWM kit provides the Roland JX-8P with a Pulse Width Modulation feature for its oscillators. Whilst requiring surgery to the main board, the installation is significantly easier than that for the JX-10 (a new PWM kit for the JX-10 will soon be available).

No wiring is necessary however 6 ICs must be removed. Only one of those might be socketed and therefore a total of up to 164 pins need to be de-soldered.



In summary, installation requires:

- IC 22** Remove Synth ROM, replace with new v6 ROM.
- IC 30** Desolder Synth CPU, replace with socket and new DS80C320 CPU.
- IC 39 – 42** Desolder counter ICs, replace with Vecoven JX Counter board.

IC 6 Remove Assigner ROM, replace with new v6 ROM *

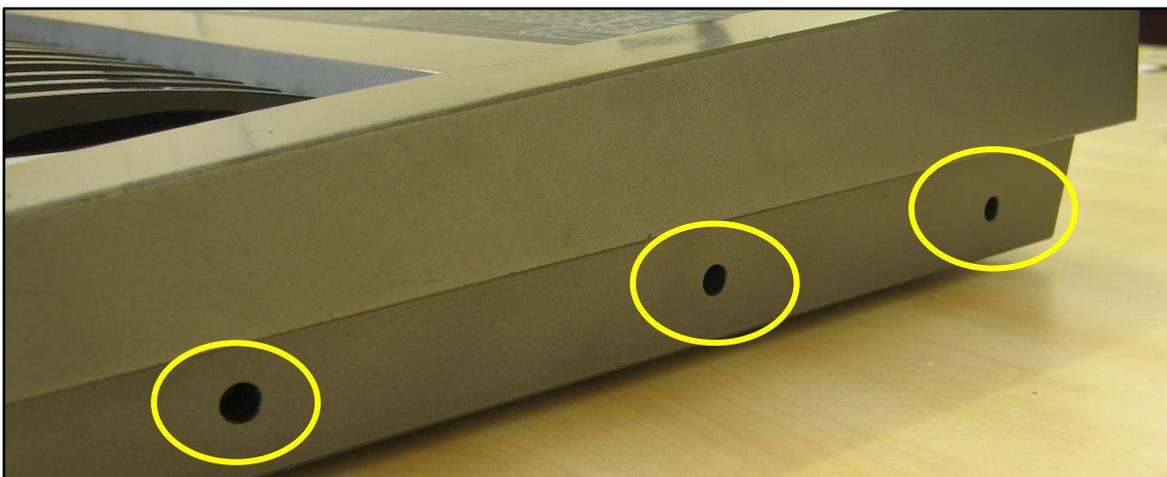
* If Vecoven assigner ROM (v5) has already been installed, re-flash with v6 firmware.

2. Accessing the Main Board

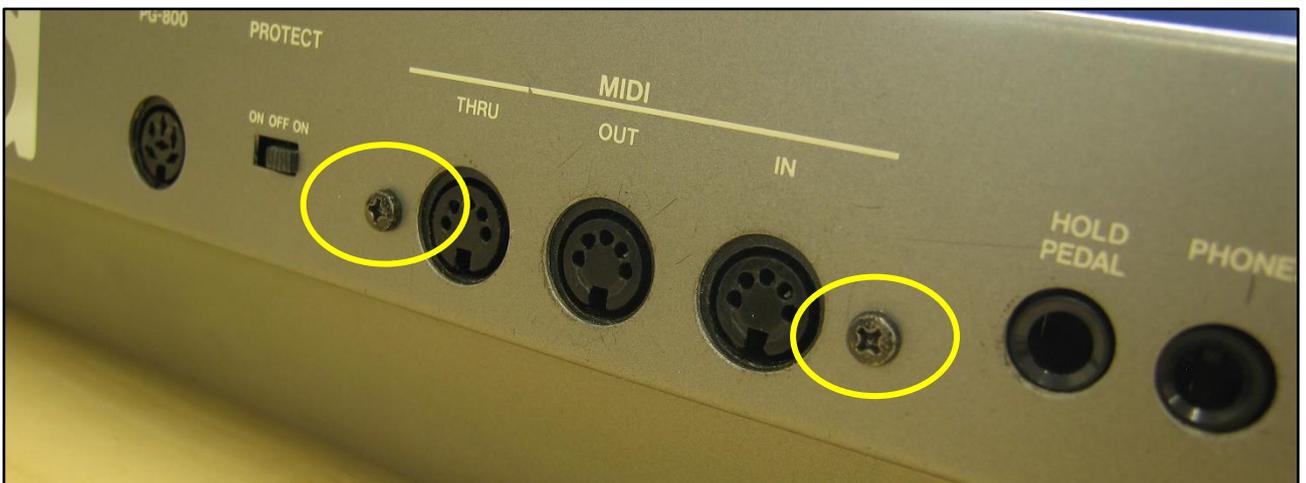
Remove the two screws indicated from the left hand underside of the case.



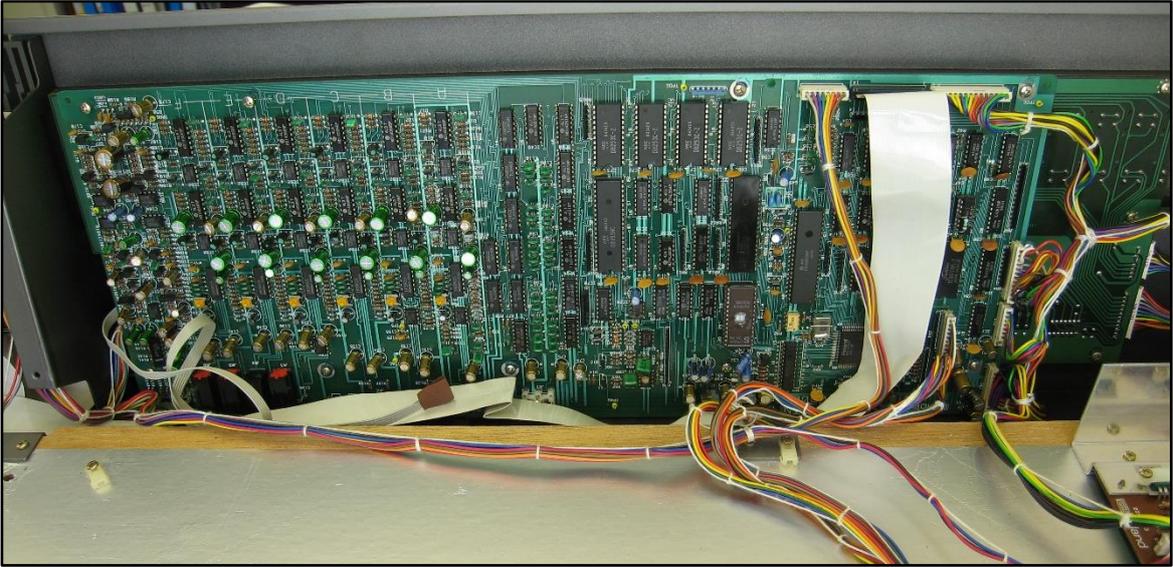
Remove the three screws indicated from both the left and right hand side end cheeks.



Remove the two screws indicated on the rear panel, next to the Midi jacks.

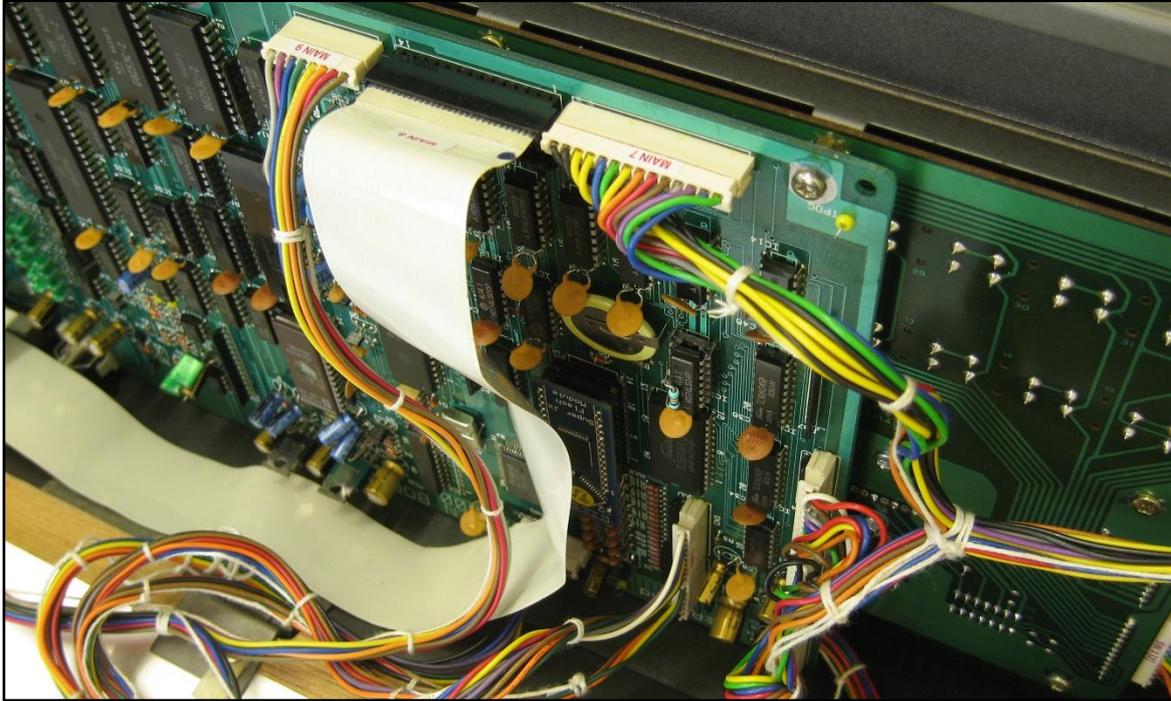


Carefully lift the front panel.

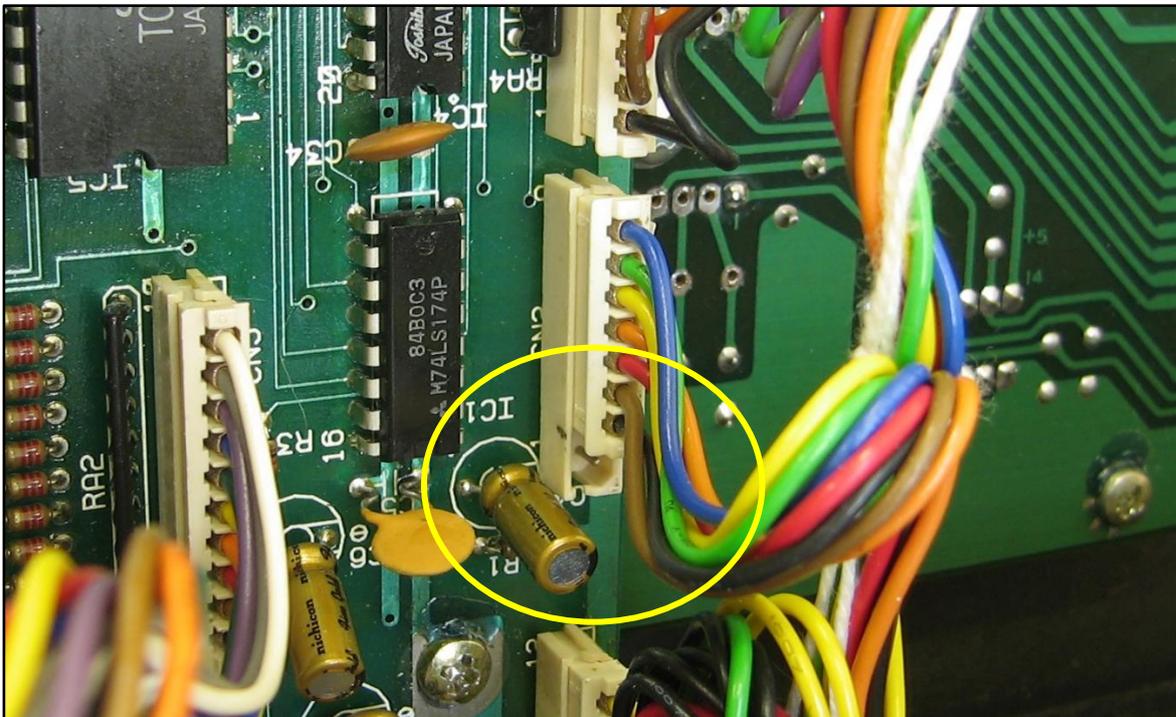


3. Removing the Main Board

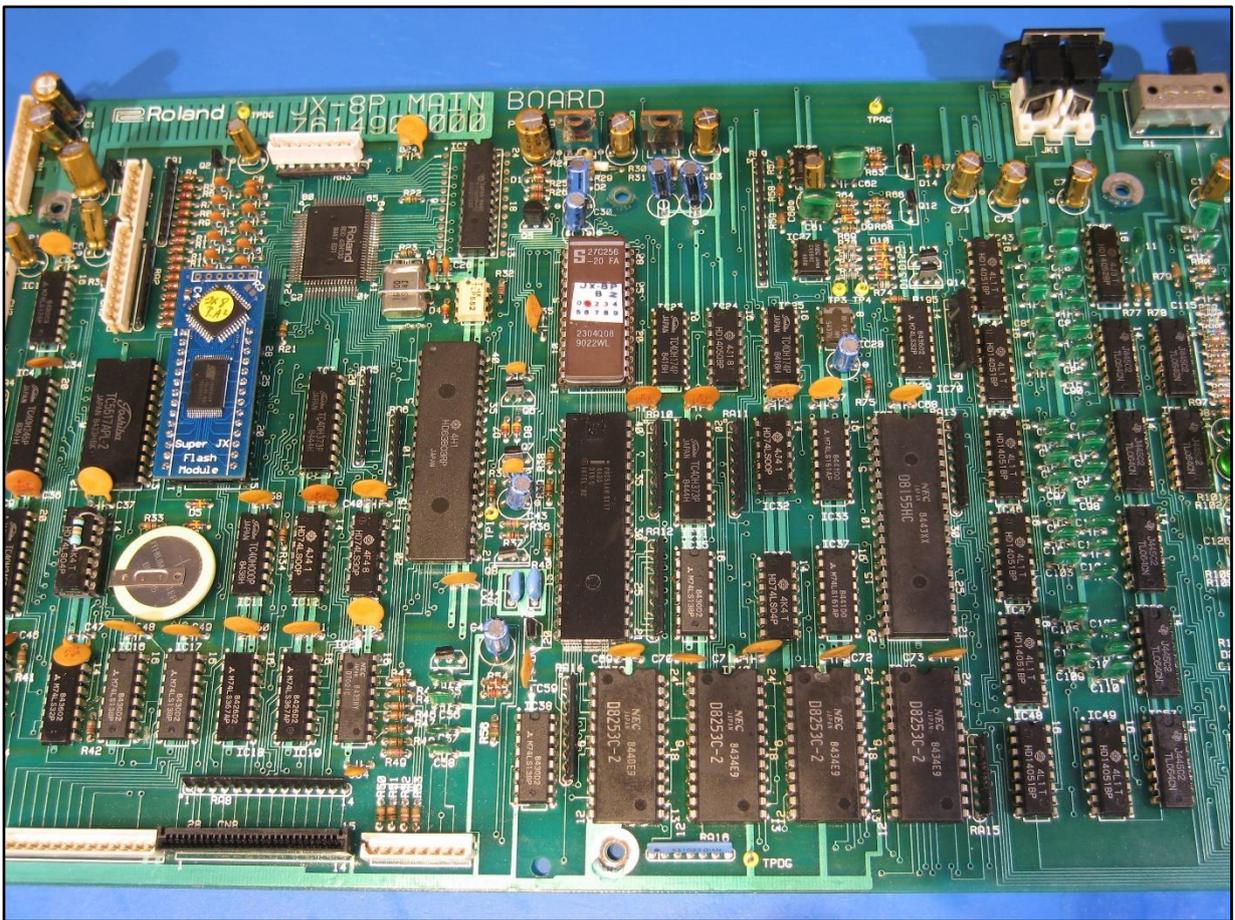
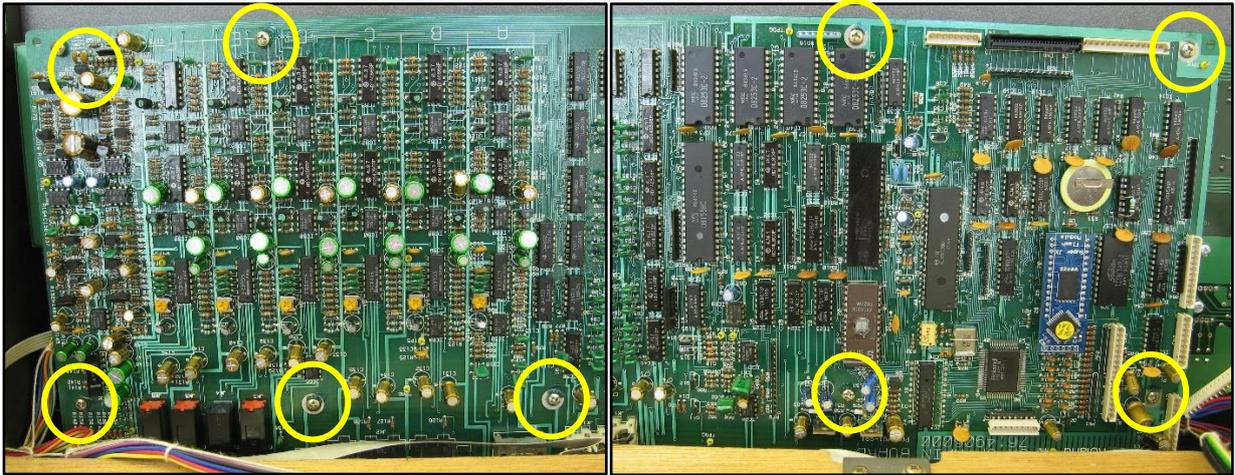
Carefully unplug all cables from the main board. It is highly recommended that they be labelled at this stage.



Note the orientation of CN2 in particular as there are unused pins in the socket on the board.



Remove the nine screws indicated and carefully lift the main board out and place on an appropriate, electrostatically protected work surface.



NOTE:

Task Order

There is no set order to the following tasks. The order set out in this guide is merely how this particular installation was completed.

De-soldering / Use of Sockets

A very high quality de-soldering tool was used to perform the installation described in this guide and is strongly recommended. However it is recognised that the installer will use their own skills, methods and equipment to carry out the tasks as well as decide upon the use of sockets.

4. Replace the Synth ROM

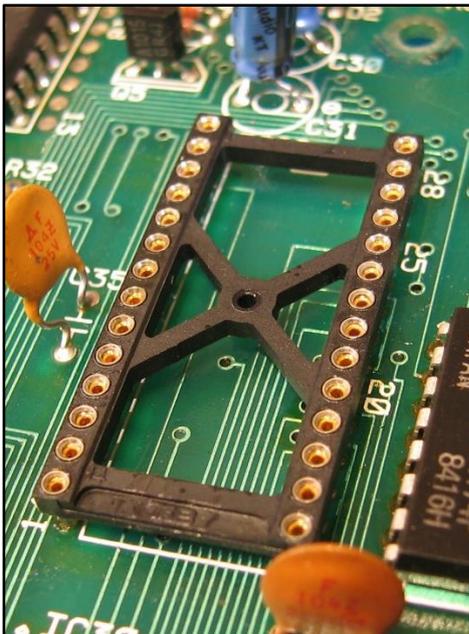
Remove the existing Synth ROM, IC22.



On v2 main boards it is likely to be socketed however on v3 main boards it is likely to be soldered directly to the board. If this is the case, carefully de-solder the 28 pins and remove the IC.

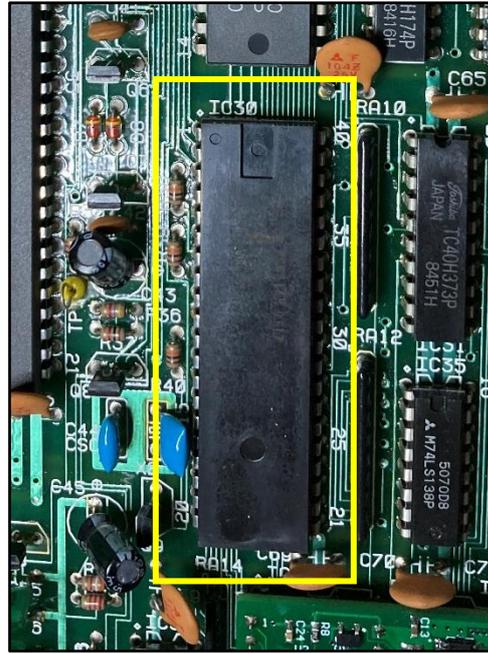
For those boards without one, it is recommended that a high quality socket is soldered in place. Such a socket may have been included in the PWM kit if requested.

Carefully insert the new v6 Synth ROM into the socket ensuring correct orientation.



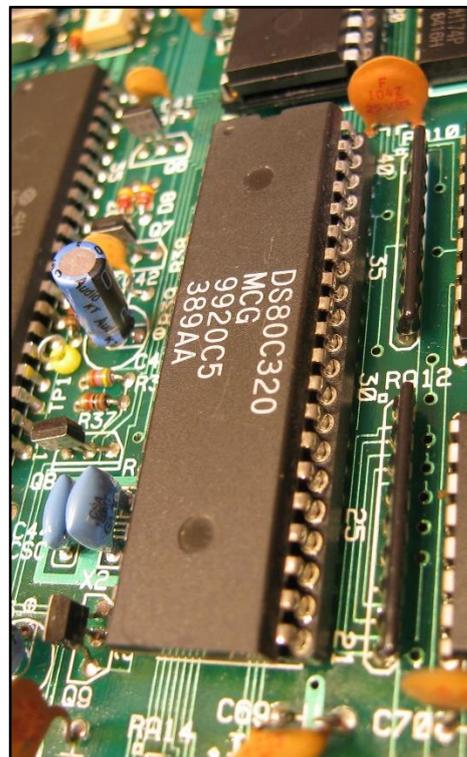
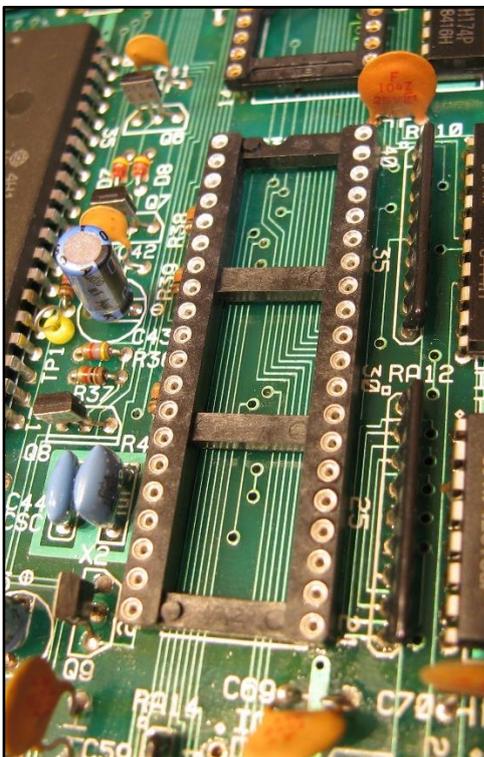
5. Replace the Synth CPU

Carefully de-solder the 40 pins of the existing Synth CPU, IC30.



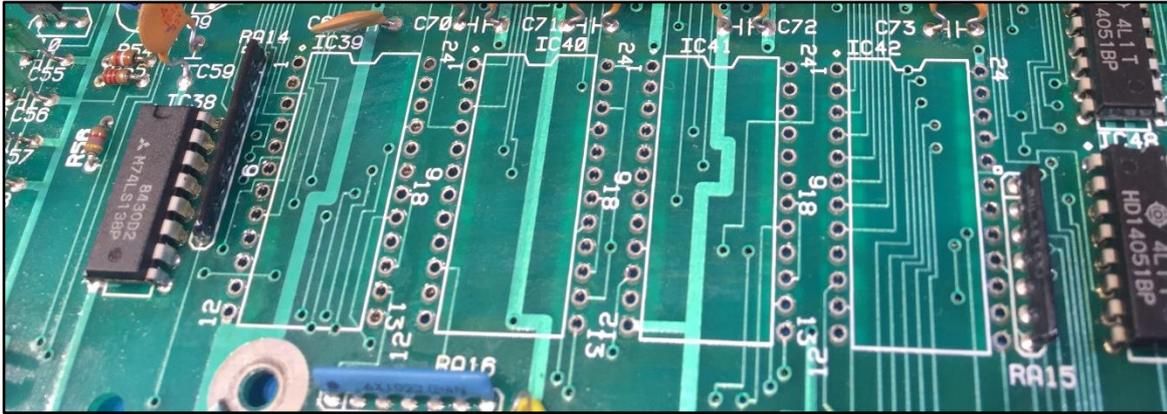
It is recommended that a high quality socket is soldered in place. Such a socket may have been included in the PWM kit if requested.

Carefully insert the new 80C320 Synth CPU into the socket ensuring correct orientation.



6. Install the Counter Board

Carefully de-solder the four D8253C counter chips, **IC39, IC40, IC41 and IC42**.



PWM Kit Configuration / Counter Board Install Method

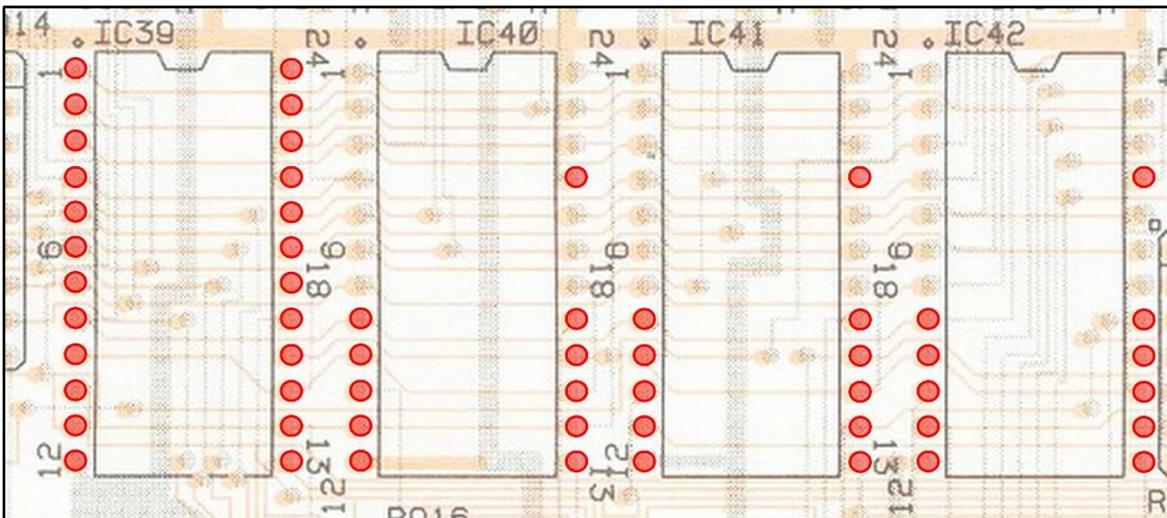
Due to installer preferences and the options available when purchasing the PWM kit, there is no definitive method for the installation of the Counter board.

The description in this guide is based on a high quality, turned pin socket being installed in **IC39** and turned pin SIL header sockets in the appropriate pins of **IC40 - 42**.

It is perfectly reasonable to solder the Counter board directly to the main board.

The installer must carry out this task according to the kit options purchased and their own preferences based on their experience and/or the wish of their customer where appropriate.

The Counter board connects to the main board via the pins indicated below.



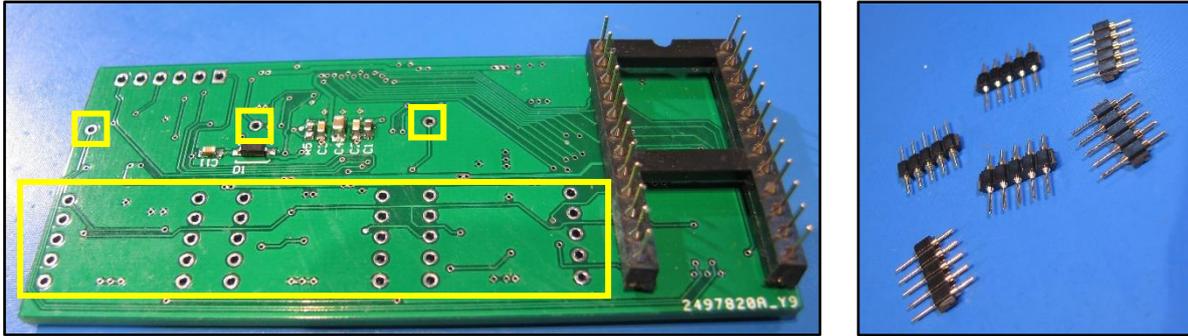
IC39: all pins **IC40 – 42:** pins 8 - 17 and pin 21

The following installation is based on:

A Counter board supplied with SIL headers for all pins relating to IC39 only.

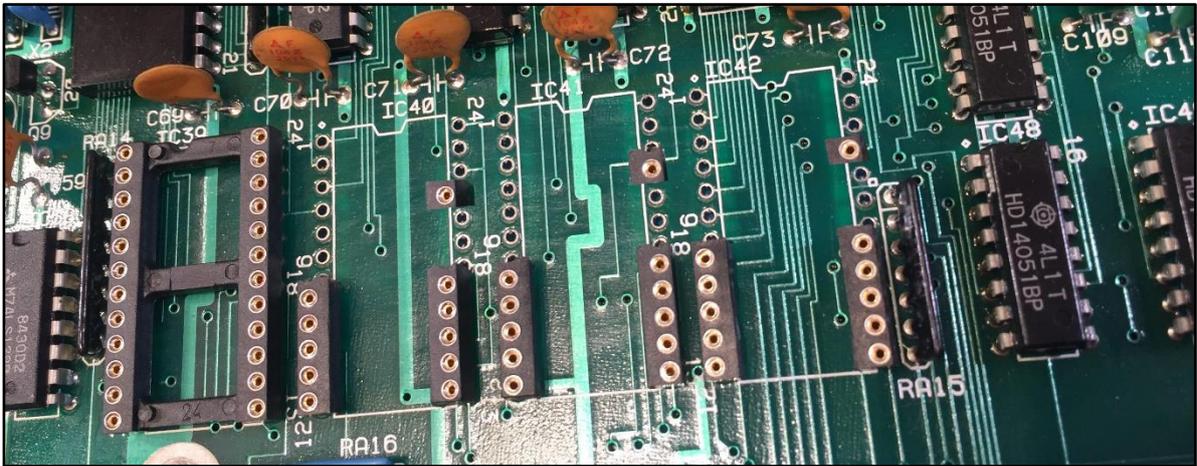
The decision to use sockets on the main board.

Turned pin SIL headers were soldered to the remaining pins on the Counter board.

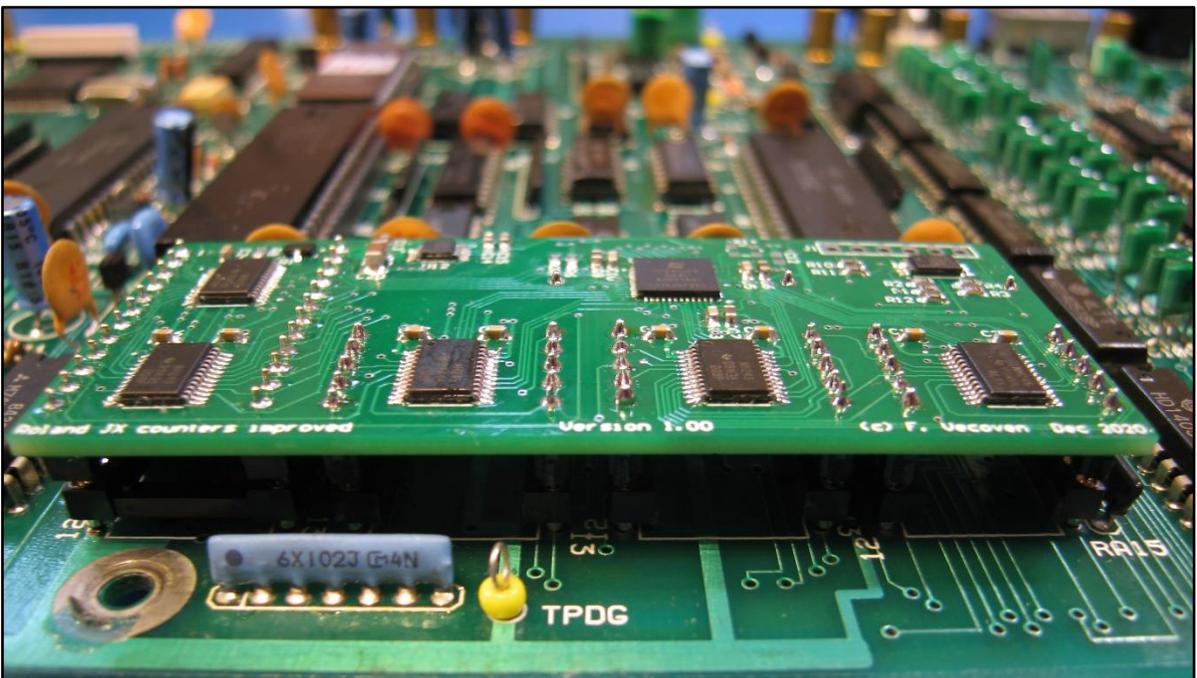


Note that the six pins of J1 are not connected and do not require header pins.

High quality, turned pin socket and SIL header sockets were installed on the main board.



The Counter board was then seated into the sockets very carefully using appropriate pressure applied evenly over the board taking the utmost care not to crack the PCB.



Note from the author:

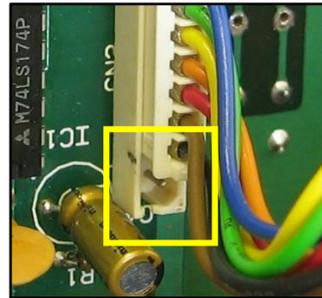
Ensuring all headers and sockets were straight on both main board and Counter board was quite challenging and in my opinion, soldering direct to the main board would be preferable.

Again, installation method depends on purchase options chosen and the installer's own preferences.

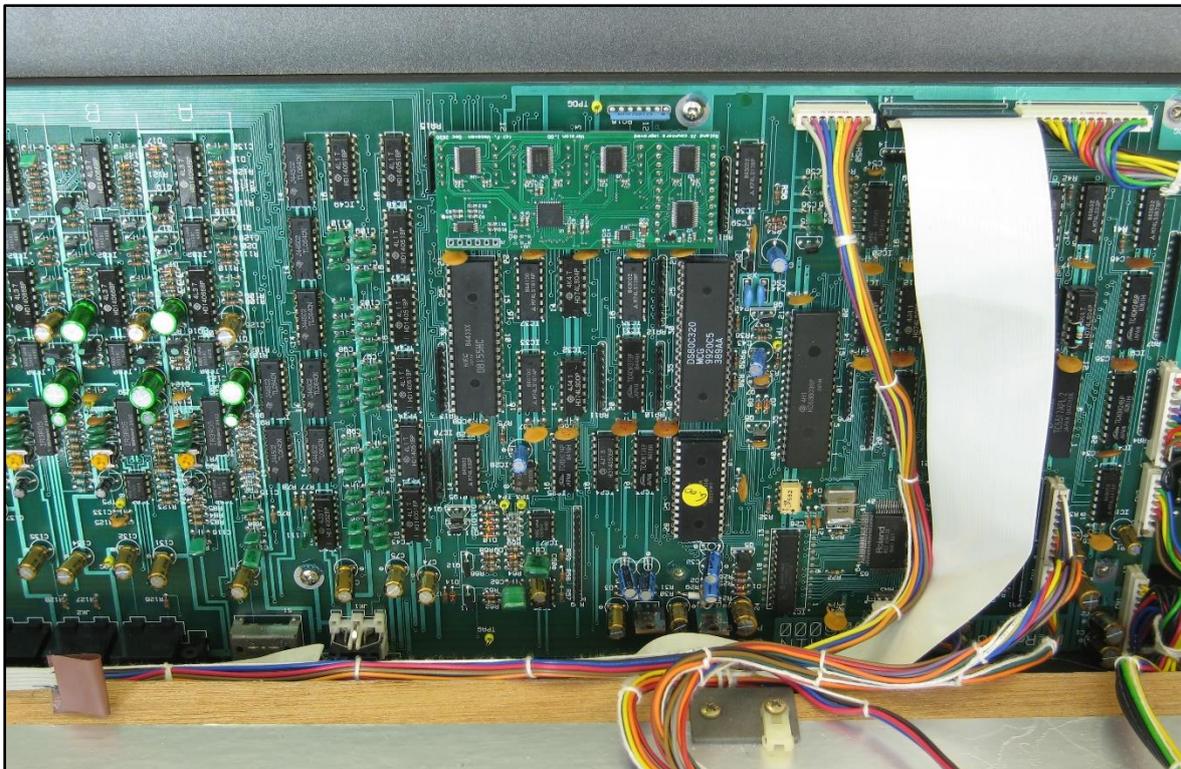
It is highly recommended to check for continuity between all pins on the Counter board and main board particularly when sockets/headers have been used.

If a new Vecoven v5 Flash ROM has already been installed, refit the main board and reconnect all cables.

Confirm **CN2** is connected correctly!



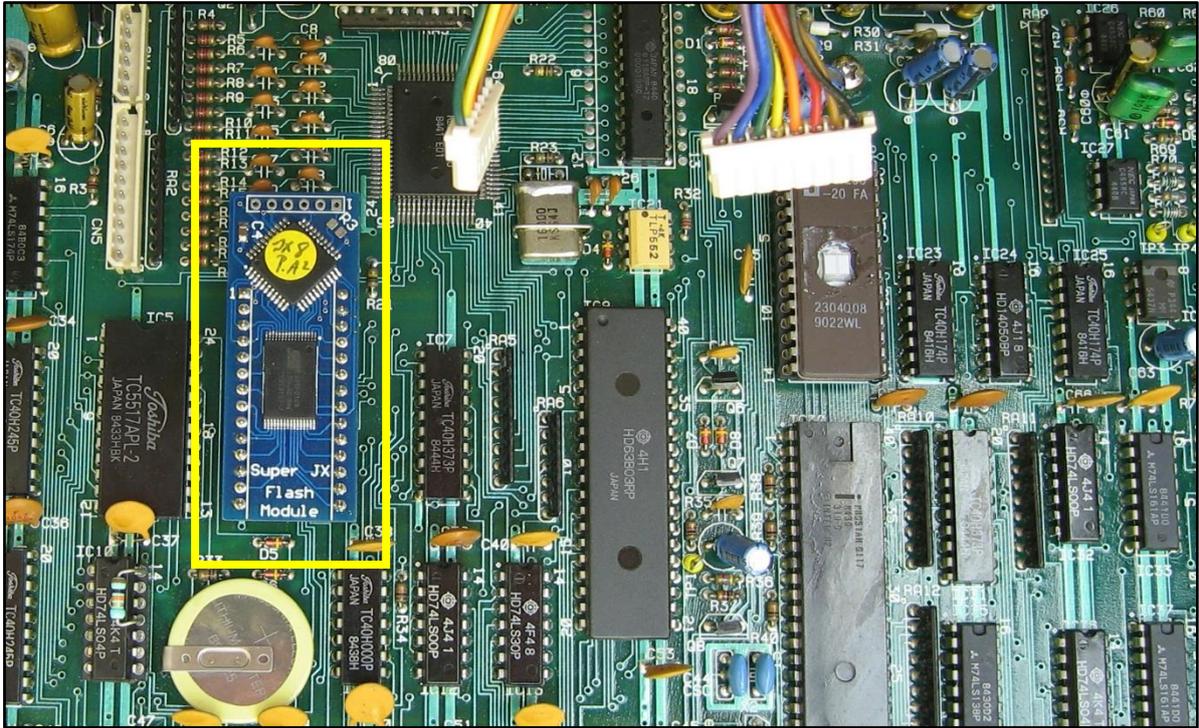
If not, fit the new v6 Flash ROM described in **Section 7**.



Close the lid and power up the JX-8P to check correct operation.

7. Install / update the Flash ROM

If a Vecoven v5 Flash ROM has not already been installed, remove the existing ROM IC6 and replace with the new v6 Flash ROM ensuring correct orientation.



Refit the main board and reconnect all cables. Ensure **CN2** is correct!

Close the lid and power up the JX-8P to check correct operation.

To update the Flash ROM to v6, start the JX-8P in Bootloader mode by pressing '2' whilst powering on.

Check <http://www.vecoven.com> for the latest v6 firmware.

To install, send the .syx file using your preferred sysex utility. Make sure that the delay between sysex messages is set to 200ms. This is required to give enough time for the old CPU of the JX8P to write the received data into the flash module. Refer to your sysex utility documentation for more information.

Note: the update procedure is known to work with MIDI OX on PC and Sysex Librarian on Mac.

Once completed, press "1" to run the new OS just installed.

Refer to the Vecoven JX-8P Flash ROM manual for PWM parameters / operation.