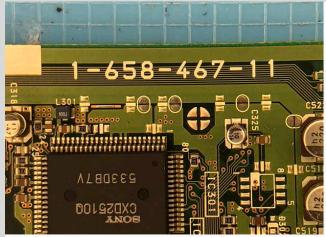# xStation

Installation Guide

xStation ODE installation guide for EARLY PU-8 Playstation 1 motherboards

The EARLY PU-8 mainboards can be found in:
- some early SCPH-100X consoles

Why the mainboard called "EARLY", and is there an "LATE"?
Literally, yes! The PU-8 came in two major flavors (EARLY and LATE). You can check which mainboard you have by looking for these marks:

1. Mainboard labels
- EARLY mainboards are labeled PU-8-**11**/**12**
- LATE mainboards are labeled PU-8-**21**/**22**/**23** or **41**

EARLY PU-8
labeled as: X-XXX-XXX-11

LATE PU-8
labeled as: X-XXX-XXX-23

2. The GPU and especially the VRAM area on the top side of the mainboard is different, see picture below
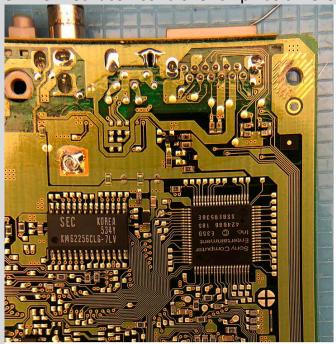

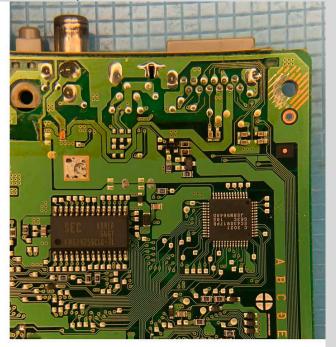EARLY PU-8
2 VRAM blocks near the GPU

LATE PU-8
1 big VRAM block near the GPU

3. The Mechacon controller chip has different sizes, see picture below
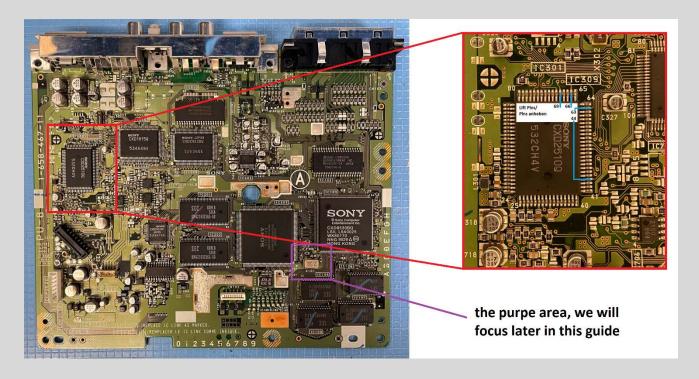

EARLY PU-8
big Mechacon controller chip
(on the right)

LATE PU-8
smaller Mechacon controller chip
(on the right)

When you are sure that you have a EARLY PU-8 you can follow this guide.

1. You have to disassemble the Playstation 1 completely to get to the mainboard. **PLEASE REMOVE ALL CABLES FROM THE POWER SUPPLY. MAKE SURE THAT THE POWER CORD IS DISCONNECTED!**

2. Search for IC309 - IC309 is labeled CXD2510Q. You will find it in the upper left corner. See picture below

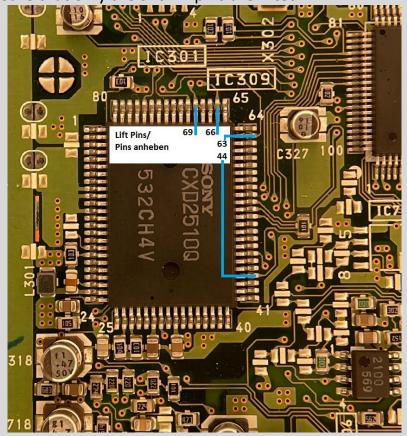the purpe area, we will focus later in this guide

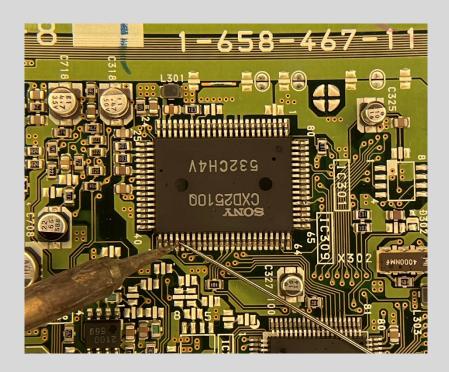**(Remember the purple area as well. We will get to it later in this guide. For now we'll focus on the red area.)**

3. IC309 (CXD2510Q) needs to have the following pins lifted:
44, 63, 66 and 69.
Please make sure that only the shown pins are lifted.

4. Please be careful not to damage the mainboard when lifting pins. Use a needle or x-acto knife and a fine soldering tip to simply touch the pin and apply some heat, then gently lift it from underneath using the needle or blade.
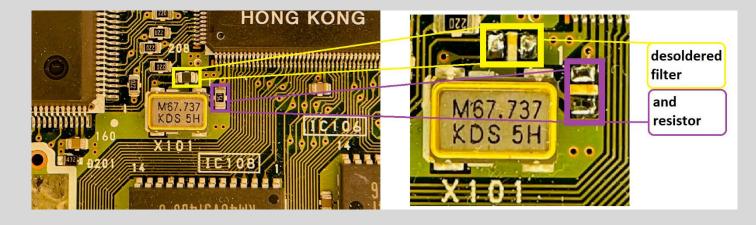
5. Please make sure that you have lifted the pins completely. They should not have contact with the motherboard, nor with each other.
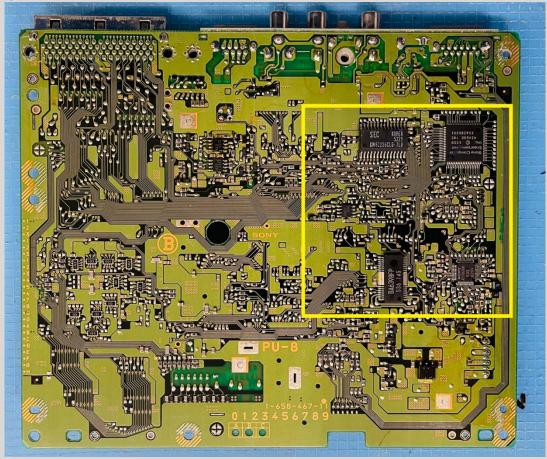

6. Now we'll get to the purple area on the mainboard top side. In this area you can see the 67mhz oscillator. You need to desolder/remove the small resistor and the filter. They are marked in the picture below.
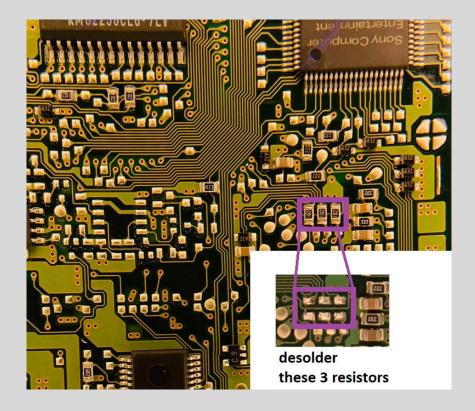
We are now finished with the top side of the mainboard; turn it bottom side up. Here, 3 resistors have to be desoldered and then the Quick Solder Board (QSB) installed.
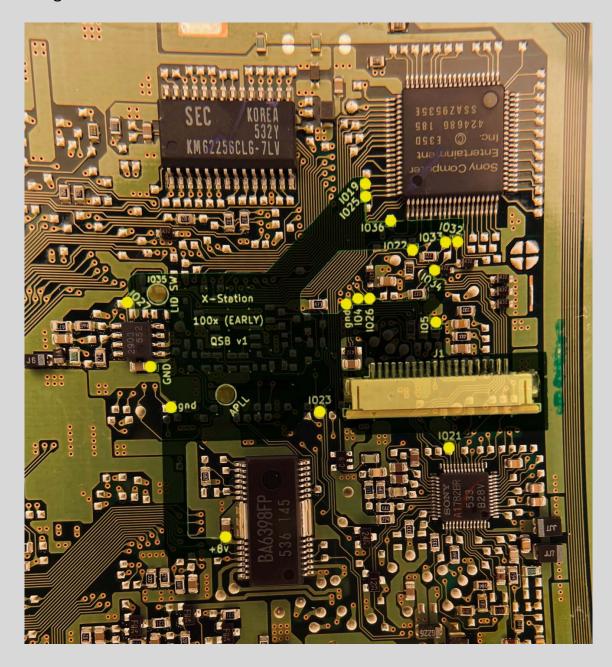

7. First we need to desolder the 3 resistors as shown
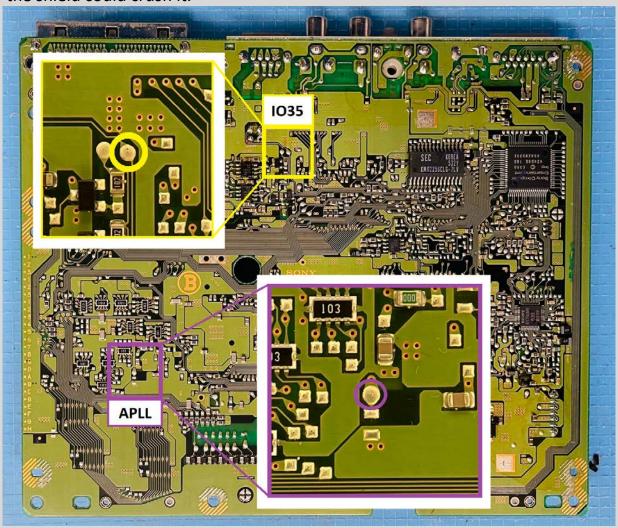

desolder
these 3 resistors

8. Place the QSB on the mainboard as shown, the yellow markings help with the alignment.

9. Connect the APLL (violet) and IO35 (yellow) pad from the QSB to the marked location. Please ensure that the cable does not run over the metal areas where the shield could crush it.
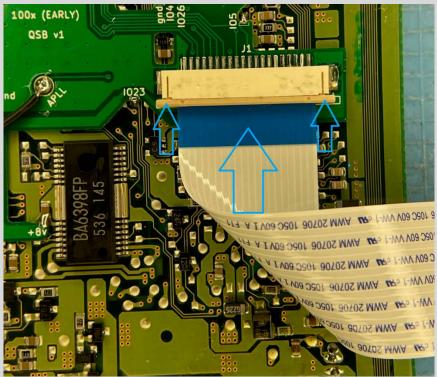

It should look like this:

10. The difficult part is now finished, but the lower part of the console shell still needs to be prepared. Clip off the small plastic pin marked below in red. This is necessary to prevent the flex cable from pinching and taking damage during installation.
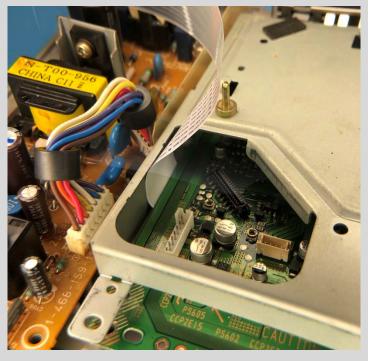
11. Connect the flex cable to the cable holder on the QSB (blue side up) and close the cable holder. When this is done you can fold the flex cable to the right, as shown.

12. To ensure that the cable sits correctly route it through the slot on the top shield.
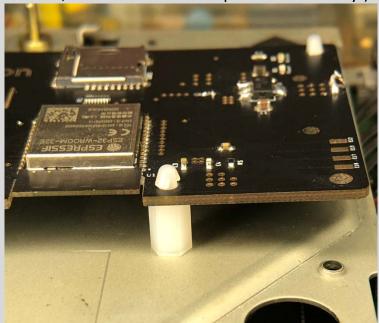
13. Prepare the PCB and push all 3 spacers into the xStation board. If you look at it from above they can be found in:
- the lower middle (right next to the ESP32)
- the upper right corner
- the upper left corner.
(The spacers are a bit too long for installation in a PU-8. We recommend that you shorten them a bit, so that the xStation pcb rests securely.)

14. Now grab the other side from the flex cable and carefully connect it to the cable holder on the xStation. When it is done you have to fold the flexcable a bit. Folding it like this is best:

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15. Mount the xStation on the posts of the original Disc Drive.
It should look like this:

When everything is ready, you have to reassemble the Playstation 1 in reverse order.
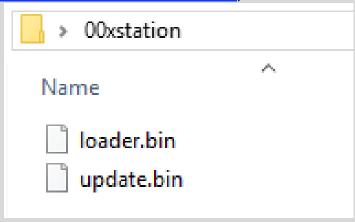
A freshly installed xStation:

Initial Software Steps

1. Format a microSD card to either exFAT or FAT32.

2. Create a folder on your microSD card named "00xstation" (without quotation marks), then download the latest update files and copy the files **update.bin** and **loader.bin** to the 00xstation folder.
(https://github.com/x-station/xstation-releases)

From now on, your Playstation will boot right into the xStation loader!

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