MSX-2+ for the Sony HB-F700P/D

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⚠ **Warning:**
The most important part in the computer is the printed circuit board (PCB). Parts can be replaced, but not the PCB. Do not try to unsolder the parts, but cut them loose and then remove the solder pins. The use of IC sockets is recommended.

Requisites:

- V9958
- 74LS32
- 27C256 (2 pieces), EPROM A and B
- Diode 1N41481
- Resistor 1 KΩ (2 pieces)
- Heatsink or piece of aluminum profile
- Miniature two-position switch with three contacts (only required for switchable version)
- Thin wire

Preparation:

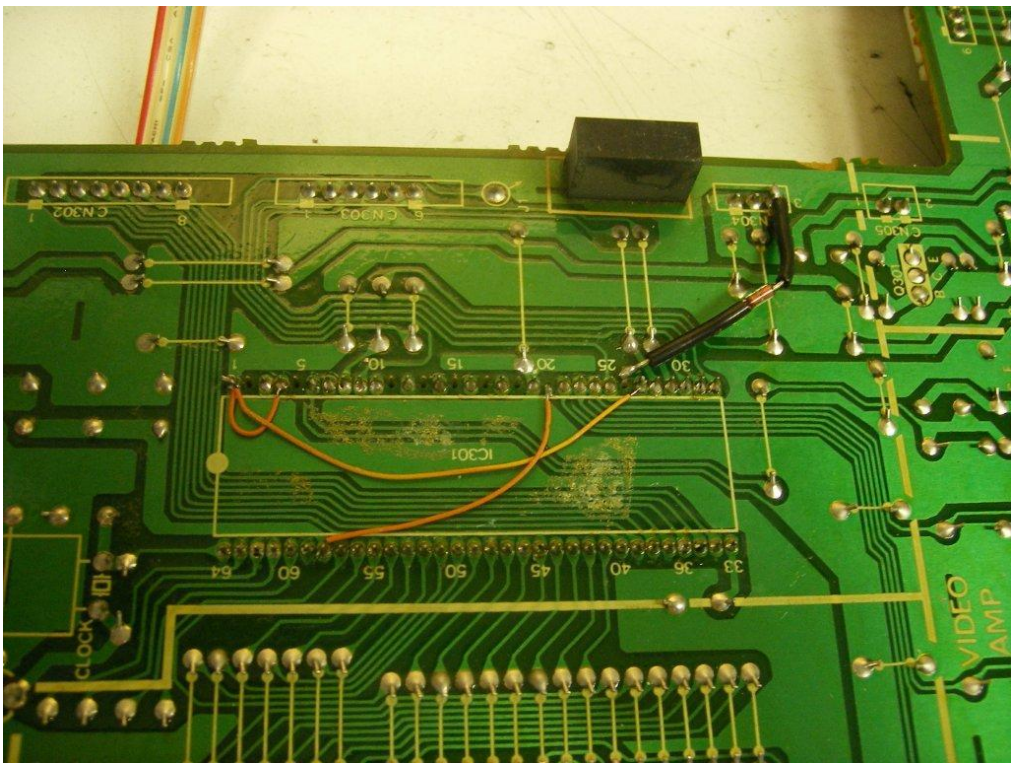
- 74LS32, shorten pins 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12 and 13.
- 74LS32, connect pins 1 and 12.
- 74LS32, connect pins 2, 5, 10 and 13.
- 74LS32, connect pins 4 and 9.
- EPROM A, shorten pin 20.
- EPROM B, shorten pins 20 and 22.
- Remove IC301 (V9938) from the upper PCB.
- Remove the wire bridge above IC5 (27C256) from the lower PCB.
- Cut pins 10, 11 and 12 of IC15 (74LS32) loose. Leave a small part of the pins on the IC so that a wire can be soldered to it.
- Cut pin 9 of IC16 (74LS00) loose. Leave a small part of the pins on the IC so that a wire can be soldered to it.
- Disconnect pin 50 of IC25 (S1985) from the PCB.
- Disconnect pin 54 of IC25 (S1985) from the PCB.
- Replace the Disk-ROM (IC6) with a faster version, if this has not been done before.

Mounting (upper PCB):

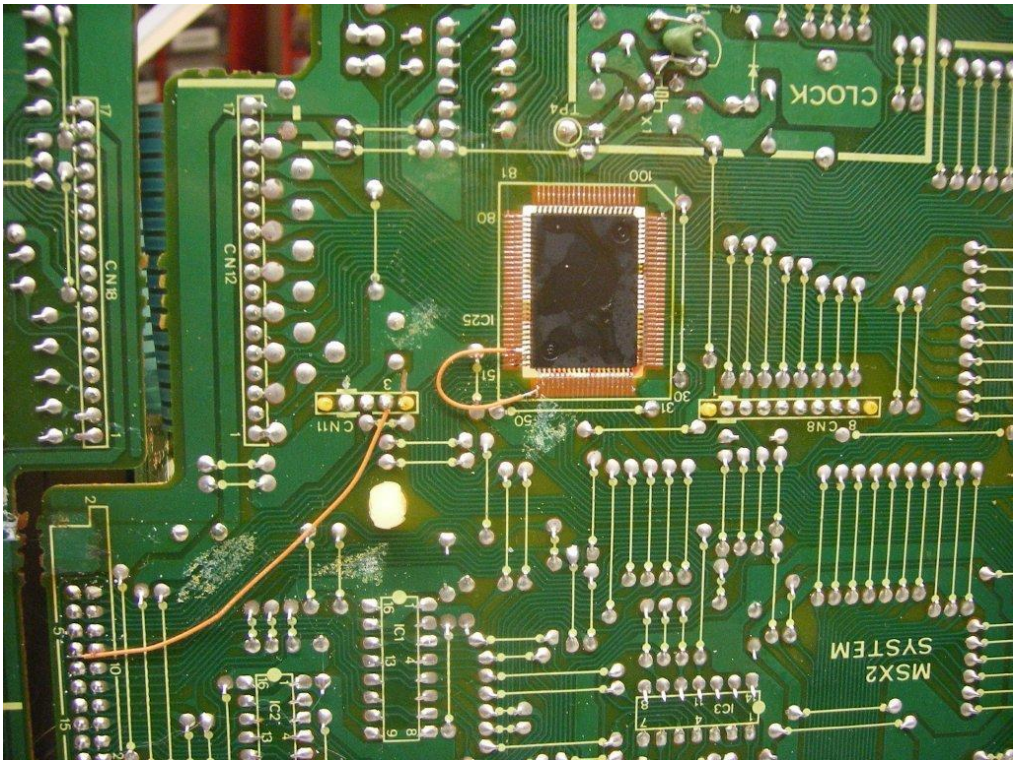
- Place the V9958 in the empty socket of IC301.
- Isolate pin 3 of CN304. This can easily be done by interrupting a PCB trace.
- Connect IC301 (V9958) pin 26 and CN304 pin 3 using the diode (1N41481).
- Connect pins 1, 4 and 27 of IC301 (V9958).
- Connect pins 21 en 58 of IC301 (V9958).

Mounting (lower PCB):

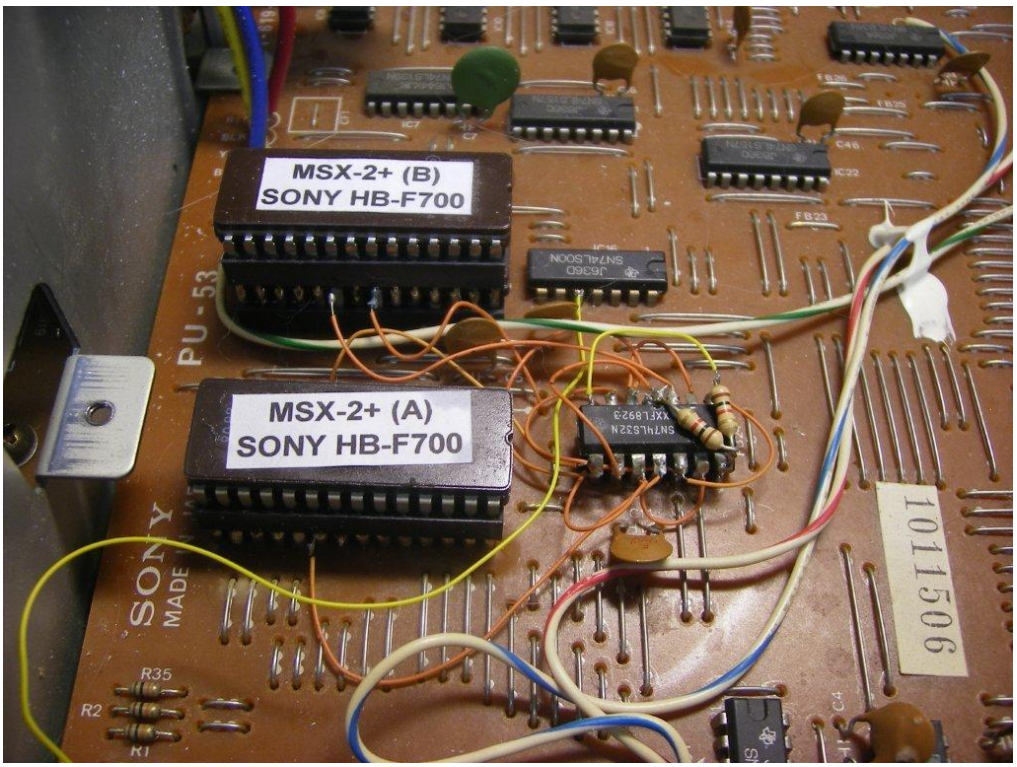
- Solder the remaining pins of EPROM A to the same pins of IC5 (27C256).
- Solder the remaining pins of EPROM B to the same pins of IC6 (27C256).
- Place the 74LS32 with its remaining pins on IC15 (74LS32).
- Solder a 1 KΩ resistor between pin 1 and pin 14 of the 74LS32.
- Solder a 1 KΩ resistor between pin 4 and pin 14 of the 74LS32.
- Connect pin 2 of the 74LS32 to pin 8 of IC15 (74LS32).
- Connect pin 3 of the 74LS32 to pin 20 of EPROM B (27C256).
- Connect pin 6 of the 74LS32 to pin 12 of IC15 (74LS32).
- Connect pin 8 of the 74LS32 to the left print spot of the removed wire bridge above IC5.
- Connect pin 11 of the 74LS32 to pin 20 of EPROM A (27C256).
- Connect pin 22 of EPROM B (27C256) to the right print spot of the removed wire bridge above IC5.
- Connect pin 10 of IC15 (74LS32) pin 10 to the wire bridge near pin 12 of IC15.
- Connect pin 11 of IC15 (74LS32) to pin 9 of IC16 (74LS00).
- Cut the blue wire from pin 3 of CN11 and connect this pin with pin 7 of CN1.
- Connect pin 54 of IC25 (S1985) to the print spot of pin 50.
- Stick a heatsink or piece of aluminum profile onto IC301 (V9958).



The new connections for the V9958.



The new connections for the S1985.



The complete circuit with the corresponding EPROMs.

Making the mode selectable:

The computer can be configured with a fixed MSX-2+ mode or with a switching capability between MSX-2 and MSX-2+. Make the following adjustments, depending on the desired configuration::

- MSX-2+ only: connect pins 1 and 7 of the 74LS32.
- MSX-2 or MSX-2+: mount a switch between pins 1, 4, and 7 of the 74LS32, where pin 7 is the common.