

512 kb Memory extra in NMS 8250, 8255 and 8280

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For it we will need the following chips:

12 RAMs 41464
1 74LS670 or 74LS170
1 74LS139
1 74LS125

First we must open the computer and to locate the RAM-chips, they are in a group of 4 (IC-133, IC-134, IC-135 and IC-136). Once located, we must cut pin 16 of each one of them, and bend them sideways. After that solder three 41464 RAM-chips on top of them, just like a building, leaving pin 16 always disconnected, shortened to 2 mm and bended sideways.

The following step is to solder 74LS670, 74LS125 and 74LS139, on top of their respective brothers on the mainboard of the MSX (74LS670, IC-131, IC-146 respectively). We must solder those pins that are colored black in figure 2, bend the other pins sideways and shorten them to 2 mm.

Next we solder cables from pins 16 of each floor of RAMs, 2 by 2 as indicated in figure 1. These cables (8 altogether), will be connected (in ANY order) to the 74LS139 to do the RAM-selection.

Then we make a connection from 74LS139 pin 13 to pin 7 of the original (lowest) 74LS670. Complete the connections as indicated in figure 2.

The signals D3 and D4 can be obtained from the EPROM of the bios, from pins 15 and 16 to be precise.

The signal called STROBE, can be obtained from pin 2 of IC 74ls32.

The additional 384 kb is now built in. Check, check and double-check everything very carefully. Check for errors in the wiring, short-circuits, and for little drops of solder. If everything looks OK than you can close your computer, and put the power back on. If it starts like normal, you probably succeeded. Check with a memory-test-programm to be 100% sure.

Figure 1

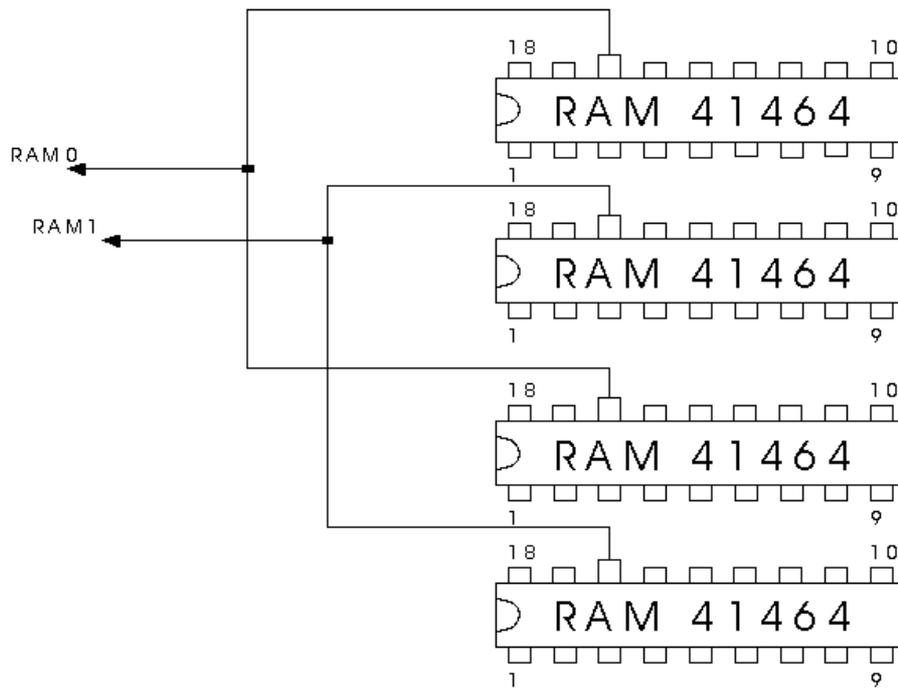


Figure 2

