Modification Turns

EDITORS NOTE: The modification to PCjrs described in this article has been teste d and we found that it enables a PCjr to run a variety of programs in 16 colors that would only operate in 4 colors on an unmodified jr.Although our tests and c ontacts with others who have performed this modification indicate that there are no adverse effects, we feel we should warn jr users who plan to do this that we will not be responsible for any problems that might result. This modification r equires some experience with a soldering ironand some skill, although it is basi cally not difficult. If you want to do it, but feel you do not have enough exper ience, an electronics repair shop should be able to do it for you inexpensively.

The following software will run in 16 colors on a PCjr with this modific ation: Battle Chess, Flight Simulator 3, Deluxe Paint2, Deskmate Software (Radio Shack), Tetris,Grand Prix Circuit, Rackem Billiards, Sorceror Lord Leisure Suit Larry II, Kings Quest IV, Police Quest II. Many of these programs will run on a n unmodified PCjr in 4 colors, or in 16 colors with a patch (See Disk #56 in the Software Store). But if you want to avoid using patches and enjoy the luxury of simply selecting the Tandy 1000 option when software asks you what computer you are using, then this modification may be for you. In general, software that pre viously showed horizontal black stripes on your PCjr monitor should operate well after this modification.

Theoretically, there should be SOME differences between the performance of a PCjr with this modification and that of a Tandy 1000 because the Tandy 1000 hasa CGA card installed, whereas the PCjr has its own variety of graphics, but wecould find no problems with it after several months of operation by several di fferent people who performed the modification.

Our thanks to Tony Cooper who provided the original instructions for per forming this modification.

Steps:

1. Cut trace from pin 2 74LS157 (ZM31) to pin 9 74LS273 (ZM30)

2. Piggy Back a 74S86 onto (ZM33) 74LS04. Pins 7 & 14 are the only 2 that need to be soldered to the 74LS04. All other pins on the 74S86 should be lift ed level so as not to touch the 74LS04. BE SURE TO PROPERLY ALIGN THE CHIPS PIN TO PIN... THAT IS PIN 1 TO 1, etc...

3. Add the 3 wires shown in the diagram above:
   a) pin 3 of 74LS157 to pin 1 of 74S86
   b) pin 9 of 74LS273 to pin 2 of 74S86
   c) pin 2 of 74LS157 to pin 3 of 74S86

4. Hint: When adding the wires, solder to the chip legs, not the board trac es. It is much easier to add/remove if this technique is used.

5. Be careful when replace the disk drive. Wires and cables can easily be damaged.

6. The 74S86 is the correct chip to use. Do not try using another type of 7 486 chip for this modification.

7. Use a 32K video buffer. Specify either Pcjrmem /c or /e. If you use Jr config, use the v32 switch and s1.

TANDY MOD PRECAUTIONS

If you aren't VERY careful when performing the PCjr to Tandy 1000 Modification, you may ruin your systems board or other components. Here are suggested precautions:

* Make sure to unplug all equipment from wall outlets. ALL!

* Make sure that the installer is grounded before touching the PCjr or the Tandy Mod chip. Use a grounding wrist strap.

* Lift your feet from the floor and keep them up. Example: Put them on the rungs of a chair, or kneel on a chair.

* Keep your fingers off the 64 pin expansion buss pins on the right side of the computer.

* Remove the internal memory board, disk controller card, disk drive and power supply. Touch these internal cards only by the EDGES.

* If you have a socketed 8088 chip, remove it and set it aside. Remember to replace it when the mod is complete.

* Use only a low wattage soldering iron - 20 watts maximum.

* Be sure that you are working in the correct area of the motherboard as per the orientation illustration.

* Be sure to replace everything you removed.