

8K Sector copying Modification

Background Information
This describes how to build a modification to make your PD Cable to copy disk protections that use the 8K sectors. These sectors are identified by their sector IDs. There is usually only one sector on the disc, which has a N value of 6. Although this means 8K of data (hence the name), but in reality no more than 41800 (8k) bytes can be used safely, but this still gives an increased storage capacity compared to other formats.

It is perfectly simple to read the data, and format the track. But when data is written it overwrites the GAB and sector ID information and so corrupts the data on the track. It has been found that the disc drive motor remains rotating even after the motor has been switched off with an OUT command, and so extra data is written in this time.

This hardware modification forces the disc motor to be stopped immediately, although this will cause the FDC to report errors. All the data can be written.

To work correctly, this hardware modification needs a software copier which already knows of the modification. One such program is Xerox by STS.

If you have a good knowledge of programming the FDC, then you can write a copier yourself.

In order for the FDC to format the track, you specify the following:

sector size 405

number of sectors per track 601

and in the execution phase of the format command you transfer the following data:

track number, side number, sector id, 406

You will find that this has formatted the track.

In the execution phase of the write data command (which outputs the sector data), you force out 41802 bytes (the extra 2 bytes are needed otherwise the FDC will not write the last word), and then perform the OUT command to stop the motor. Now, the FDC will think an error has occurred, and it will halt the execution phase immediately, (exit will not write out the final gap information), and then start the result phase.

The Modification

This modification has been done on a CPC6128 only. The modification may not work on CPC Plus or a DMI-3 interface. What you need:

- * A CPC6128 old generation.
- * 74LS32 chip (order from any Electronics catalogue)
- * 3 pieces of wire

What you do:

Open up your CPC6128 (undo all the screws on the underside)

Remove the keyboard lead into the main board

Take the 74LS32 and bend all the pins so that the chip lies flat on a table

Solder the three wires to pins labelled "Ready", "Motor On", and "Pin 15 of IC203" shown on the diagram below.

Find another "15" chip on the CPC motherboard, align the chip so that the notch at the end is the same end as the notch on the chip on the motherboard. (Check the chips are the same size).

Now, solder the GND pin onto the GND pin of the chip on the motherboard, and the +5V pin onto the +5V pin on the chip on the motherboard. Locate IC203 (should be near the top-right of the motherboard), and solder the wire from the chip to pin 15 of

IC203.

Locate the Ready pin of the 2nd drive connector and solder a wire from the pad to the pin labelled "Ready" on the diagram below.

Locate the Motor pin of the 2nd drive connector and solder a wire from the pad to the pin labelled "Motor on" on the diagram below.

Locate pin 15 of the IC203, and cut the solder track running from this pin to the 2nd drive connector

The procedure is complete.

Put your CPC together, and connect the keyboard. Turn , and insert a disk. If the disk is catalogued correctly, then the procedure has been successful, but if it reports "Drive A: disc missing" then open it up and check the wiring.

```

Ready    => -1   U   |- <= GND
Motor On  => -1   |   |
Pin 15 of => -1   |   |
IC203     -174LS32 |-
           -1      |-
           -1      |-
           -1      |-
+5V        => -1   |
           -----

```

Cut solder line from pin 15 of IC203
IC203 = 74LS240

Handwritten notes:
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This hardware modification forces the disc motor to be stopped immediately, although this will cause the FDC to report errors, ALL the data can be written.

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If you have a good knowledge of programming the FDC, then you can write a copier yourself.

In order for the FDC to format the track, you specify the following:

sector size 405

number of sectors per track 401

and in the execution phase of the format command you transfer the following data:

track number, side number,
sector id, 406

You will find that this has formatted the track.

In the execution phase of the write data command (which outputs the sector data), you force out 41802 bytes (the extra 2 bytes are needed otherwise the FDC will not write the last word), and then perform the OUT command to stop the motor. Now, the FDC will think an error has occurred, and it will halt the execution phase immediately, (so it will not write out the final gap information), and then start the result phase.

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This modification has been done on a CPC6128 only. The modification may not work on CPC Plus or a DDI-1 interface. What you need:

- * A CPC6128 old generation.
- * 74LS32 chip (order from any Electronics catalogue)
- * 3 pieces of wire

What you do:

Open up your CPC6128 (undo all the screws on the underside)

Remove the keyboard lead into the main board

Take the 74LS32 and bend all the pins so that the chip lies flat on a table

Solder the three wires to pins labelled "Ready", "Motor On", and "Pin 15 of IC203" shown on the diagram below.

Find another "LS" chip on the CPC motherboard, align the chip so that the notch at the end is the same end as the notch on the chip on the motherboard. (Check the chips are the same size).

Now, solder the GND pin onto the GND pin of the chip on the motherboard, and the +5V pin onto the +5V pin on the chip on the motherboard. Locate IC203 (should be near the top-right of the motherboard), and solder the wire from the chip to pin 15 of

IC203.

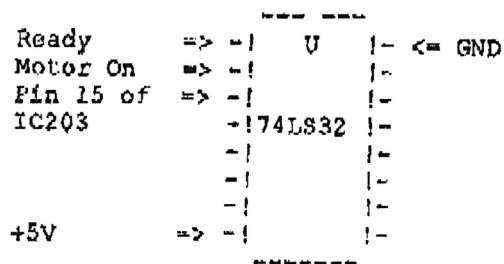
Locate the Ready pin of the 2nd drive connector and solder a wire from the pad to the pin labelled "Ready" on the diagram below.

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Locate pin 15 of the IC203, and cut the solder track running from this pin to the 2nd drive connector

The procedure is complete.

Put your CPC together, and connect the keyboard. Turn , and insert a disk. If the disk is catalogued correctly, then the procedure has been successful, but if it reports "Drive A: disc missing" then open it up and check the wiring.



Cut solder line from pin 15 of IC203
IC203 = 74LS240

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```

      --- ---
Ready    => -!   U   |- <= GND
Motor On => -!       |-
Pin 15 of => -!       |-
IC203     -!74LS32 |-
          -!       |-
          -!       |-
          -!       |-
          -!       |-
+5V       => -!       |-
      -----
```

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