# Technical Support Note

Title: Reprogramming Flash Memory in the Seiko DPU-414 Serial Printer (P/N 106430)
using a PC with Binary Files on a Floppy Disk in Drive A
TSN Number: 16
File:S:\Bridge_Analyzers\Customer_Service_Documentation\Technical_Support_Notes\
16 Sieko Printer Re-Flash.docx
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The DPU-414 is an intelligent printer with a built-in microprocessor and flash memory –
and they have been known to lose their program due to unknown circumstances in the
field.  If this happens, the printer suddenly and unexpectedly seems to just feed paper
with no printing on it – (although the printing is there – just very light).

## Symptoms:

1. Very light printing, even when printing DIP Switch settings  (See TSN 14)
2. The power LED does not blink when the external supply is plugged in.

## Confirm Fault Cause – Print DIP Switch Settings:

1. Power off the printer.
2. Disconnect any interface cable and the external power supply.
3. Depress and Hold the ON-LINE Button.
4. Power On the printer with ON-LINE Switch Depressed.
5. See if the printer has very light printing when printing the DIP Switch Settings in this standalone mode.  It should line feed about 6 inches of paper while it tries to print each line.
6. If paper is fed, but no printing appears, power down the printer and plug in the external supply and repeat the process (power up with the ON-LINE switch depressed).  This should result in somewhat darker printing – allowing confirmation of DIP Switch settings per TSN 14.
7. If the DIP Switch settings are correct, but very light - power it down and either reprogram flash as below or return the printer for factory service.

## Repair Action:  (Reprogram the Internal Flash Memory)

1. Unplug the external power supply from the DPU-414 and remove the battery.
2. Have computer ready in DOS mode, Drive A:\> selected as the active drive and the floppy disc with Seiko Binary Initialization Files (BATTER.BIN, ENERGY.BIN, and HEAD.BIN) installed in the floppy Drive A.
3. Plug in DPU-414 (w/o battery), while holding feed and online button both down.
4. Turn on DPU414 with both buttons still pressed and **hold for 30-45 seconds** until both lights blink - then let go of buttons.  (Be patient – 45 Seconds is a long time.)
5. Install a standard parallel cable from computer to the parallel printer port of the DPU-414.  (Next to the Serial Port.)
6. Load the BATTER.BIN file into the printer by typing (in DOS mode – be careful to type the exactly the following command line at the DOS command Prompt):
   DRIVE A:\>**COPY BATTER.BIN LPT1: /B**   {ENTER}
7. Turn off DPU414 and unplug.
8. Plug back in, turn on, (no buttons depressed this time) and load the ENERGY.BIN file into the printer:
   DRIVE A:\>**COPY ENERGY.BIN LPT1: /B**
8. Turn off DPU414 and unplug.
9. Plug back in, turn on, (no buttons depressed again) and load the HEAD.BIN file into the printer:
   DRIVE A:\>**COPY HEAD.BIN LPT1: /B**
10. Turn off DPU-414 and unplug.

## Confirm Repair – Print DIP Switch Settings:

1. Disconnect parallel cable from printer and install the battery pack.
2. Turn the DPU-414 back on and run the confirmation test above to confirm the repair. The DIP Switch Settings should print dark and clear.  (Correct the DIP Switch settings to match those given in TSN 14 if necessary.)
3. Once the DIP Switch Settings and print density settings are confirmed, turn off the DPU-414 and plug the charger in.
4. The Power LED should flash indicating battery is charging – and the printer is now ready for use.

5. Plug in the serial cable between the analyzer and printer, and test the PRINT function on the analyzer.  The printer should now print a dark and full gas readings report.