Qualification

To replace the Newton™ Backlight-Foil, you need skill in modifying electronics and mechanics.

We want to inform, that replacing the foil without enought skill will demage your device in an irreparable manner.

Non-Warranty

If you replace the foil by yourself backlight4you is not liable to any damage of the foil or your device. We guarantee for the quality and lifecycle of the foil.

This manual neither entitles not implies any right of a claim for compensation. It is merely a recommendation

Needed Tools and Materials

- Cross-Screwdriver Philips Size 1
- Cross-Screwdriver Philips Size 0
- Srewdriver max. 1mm
- Knife
- Insulating Tape
- Pliers for electronics
- Elektronics edge cutter
- Soldering Iron
- Solder (S-Sn60Pb38Cu2 recommended)
- SMD-de-solder knifes (or SMD de-solder tool)
- Soldering iron for SMD (or low-power soldering iron with very small tip)

backlight4you | Hauptstr. 25 | D-79725 Laufenburg | info@backlight4you.com | http://www.backlight4you.com

Step 1

Remove the following parts before you continue:

- (Rechargeable-) Battery-Pack
- Stylus
- Memoy- and Dummy-Cards
- Display-Lid

Put your Newton™ face down on a soft surface to avoid scraches on the display.

Step 2

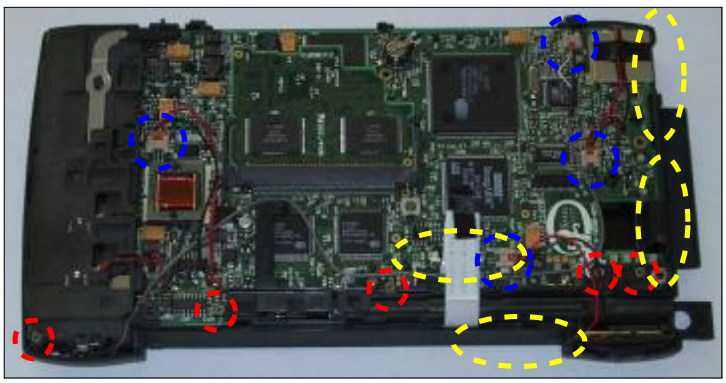
Remove all screws marked with **red** circles.
Lift off the bottom cover. Start at the PCMCIA-Slots.

Both parts of the cover are held together with little plastic clips. You'll find a few very tight clips in the area where to stylus-holder is located.

Tilt the lower housing diagonally upward away. A harder resistance in this place is normal.

Step 3

Remove all components, marked **yellow**.



To remove the white ribbon-cable, you hve to open the connector by using a little screwdriver.
Do not twist or bend that cable - it's the connection between the logic-board and the display.

Pull all **blue** marked plugs out of their sockets (carefully!) . The **grey** wire (connects the microphone) is held in little plastic-clips. To remove the wire, press carefully (with your screwdriver) on the clips while pulling out the wire.
They otherwise loose their adhesive which keeps them in place.

⚠ Do not pull the wires! They otherwise can remove itself in the most unfavorable case out of the plug.
Remember the positions of the plugs and mark the positions if neccessary.

Remove the screws (**red**) which keep the top part of the battery-box in place and attach the stylus-holder.

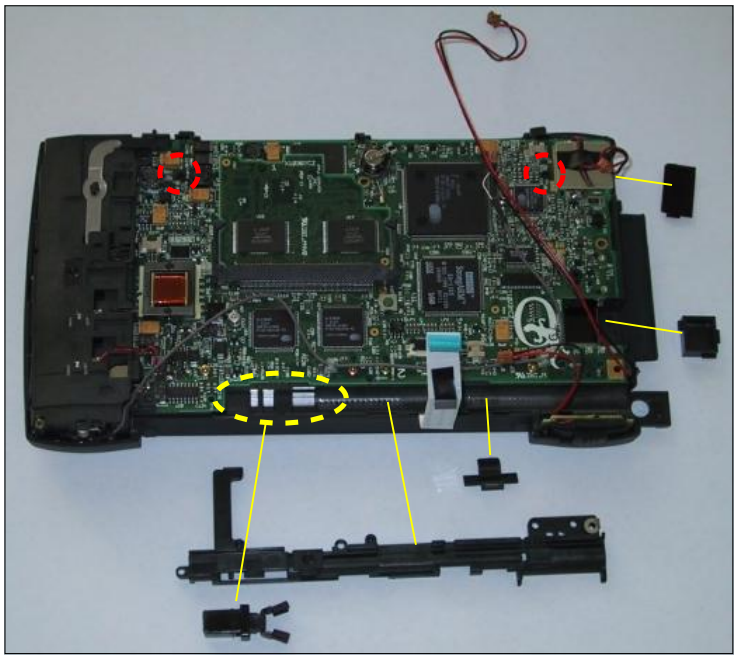
Step 4

Remove the sylus-holder and the black stylus-clip (marked in yellow).

The picture schows the positions of the components, which were removed in **step 3** (yellow lines).

Remove the **red** marked screws next. Note, the different types of screws. Note the different lenght and thread of the used screws (they will damage the Newton™ if screwed into the wrong hole).

Open the battery-box by carefully using a knife. Start at the side with the opening for the battery.



Step 5

Remove the spring for the battery-pack.

⚠ The spring is really strong, be careful.

The plastic-parts wich hold the spring in place are very fragile. There‘s no way to put the spring back if the holder is damaged.

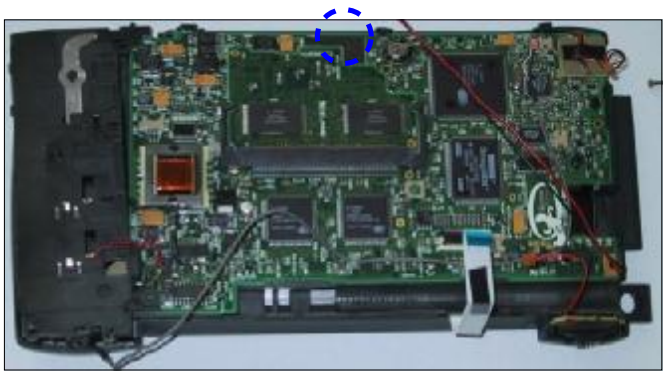
Step 6

The Logic-Board is held with the **blue** marked latch, shown in the upper area of the image.

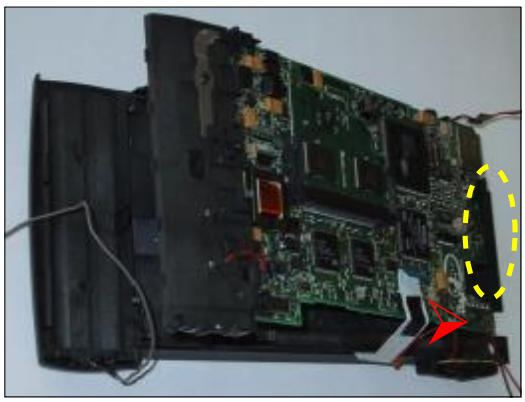
Lift the board starting at the battery-holder while loosen the latch carefully.

Make sure that the PCMCIA-Kard Slots lift also.

Don't remove the board now. This is done in the next step.



Step 7



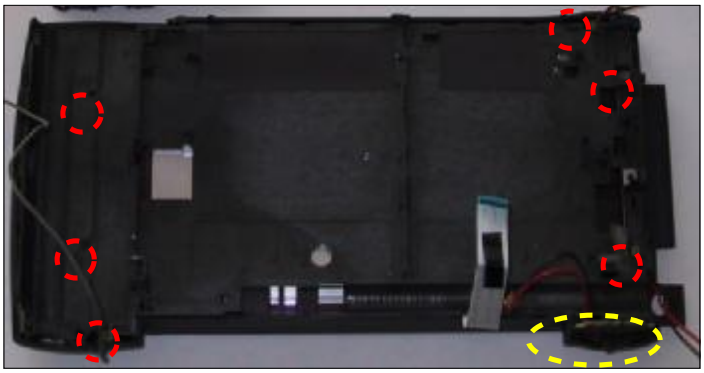
There's a lot of carefulness needed in this step. You have to seperate the connection between logic-board and digitizer.

The connector (marked with **red** arrow) is an the other side of the board, right below the Interconnect-Port (Port is marked **yellow** in this picture).
Lift the board up a bit an put a finger on the Flat-Cable for the digitizer. Under some circumstances the cable seems to be pasted to the board.

⚠ Do not touch the Contacts neither on the cable nor on the board. The Stylus-Recognition will be irreparably damaged in this case.

After this work is done, the board can be completely removed.

Step 8

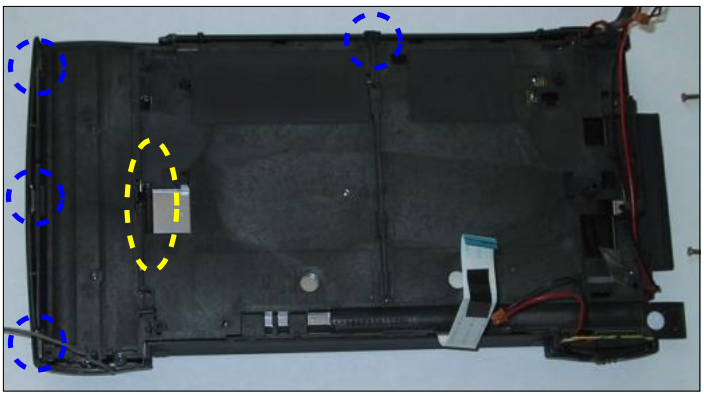


Remove all **red** marked screws. They hold the plastik-frame around the display and the upper housing in place.

To loosen the very small screw in the battery-holder you have to use the very small screwdriver.

⚠ Try to keep the power switch in place. You'll have some extra work to put it back to the correct position.

Step 9



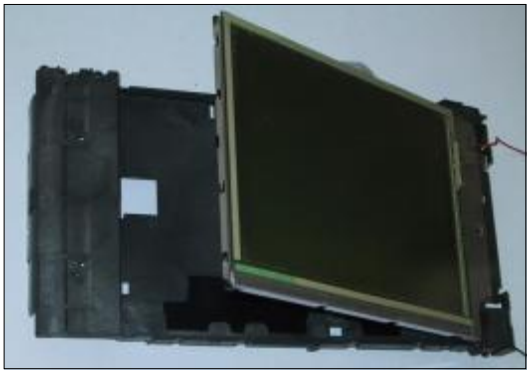
The display-frame is hold by little plastic-latches, one at the top of the image and three on the left side, marked **blue**.
The marked spots on the left are only important when you go all steps backward.

Lift off the display-frame, starting at the stylus-holder.

⚠ Be careful to not harm the display-cable!

The **yellow** marks are important in **Step 11**.

Step 10



The display is now only hold by the yellow marked handle in **Step 9**.

⚠ Don't press the handle with too much power. It brakes very fast.

Put the handle to the left (according to the shown image) and lift up the display by pushing it up with a finger (use the quadratic opening).

⚠ Be careful with the Digitizer-Cable. The shape of the cable makes it very fragible. If you lift up the display without care you can accidentially tear the cable.

Step 11

The cable for the backlight-foil are located at the yellow marked position. There's a little notch. Pull out the cables carefully before going to the next sub-step.

Pull out the foil.

⚠ Do not touch or bend the green circuit board. Do not open the latches which hold the board in place.
The conncction to the display can be damaged in a manner wich cannot be fixed or corrected easily.

The **blue** markings are only interesting in Step 14 when you put the foil back in place.

Step 12

Cut the cables short above the original foil

Solder the cables to the new foil.

⚠ The EL-sheet will be damaged if soldered too hot or too long . Be careful!

Tin one of the two wires; keep the tin fluid an make the connection with the connector of the relacement foil.

The connector is made of very thin copper which will heat up very fast. A delay time of max. ½ sec. is enough. A longer time will result in a damaged foil.

Go on with the second wire the same way. Don't care about the color of these wires - it's not needed because the foil is driven by alternating current (ac).

Use some insulating tape to protect the contacts against short circiuts.

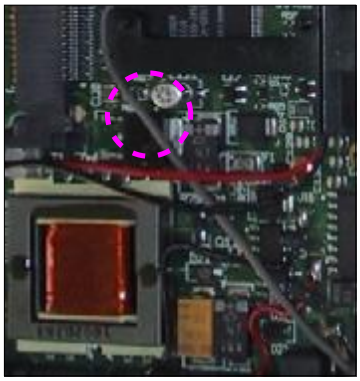
Step 13

Put the foil back behind the display. Remember the **blue** marked latches from **Step 12**. The foil must fit behind them!

⚠ If there's some dust between foil and display you'll have to clean the area first. Otherwise you'll see dark spots if the backlight is activated.

Put the wires back into the notch, shown in **Step 12** (yellow).

Step 14



Replace the capacitor which is marked **magenta** with the one included in the replacement kit.

⚠ Only if the capacitor is replaced, the foil will be driven with the same frequency as the original one.

By replacing the capacitor you'll reduce the risk to get a flickering effects with moving images on the display in some envorinments (depending on the used lighting-technology)

Another effect is, that the foil will shine britghter with the new capacitor.

The correct position of the capacitor: The shape of the capacitor-foot and the printed shape on the board must match!

Step 15

Mount your Newton™ by doing the above steps in backward order. Take a look on placing the cables to the correct positions to not squeeze or sheer them between the housing-parts.