

## Why does the old version Slim Jr. flicker?

The picture below is a returned flickering Slim Jr. LED. This LED is our original version, (sold before Jan. 1<sup>st</sup>, 2008). The center, where the soldering hole is located, is heavily contaminated. It could be oxidation of the soldering surface or just build-up when contacting the negative pad of the battery. We used Energizer AAAA batteries. The negative contact is rounded, so that it can only contact the center area of the LED pad where the soldering hole located. The contact between the batteries and the LED cannot be good unless the build-up was scratched off. Duracell AAAA battery has a flat negative contact that also contacts the copper pad around the soldering hole, so it may work better than Energizer battery.



## How was the design of Slim Jr. modified to eliminate the flickering?

Because of the small contacting area of the AAAA batteries, the contamination of the batteries will always be an issue.

However we have modified the design of the LED head to eliminate the flickering caused by the contact between the battery and the LED. We added a nickel-plated copper pad on the top of the original contact pad, as shown in the picture below. This flat copper pad allows better contact with the Energizer AAAA. In addition, the nickel-plated surfaces are not easy to be oxidized. This will greatly reduce the maintenance the end user needs to perform. All Slim Jr. sold after Jan. 1<sup>st</sup> 2008 using this new LED head.



## **What to do to the old version Slim Jr. that already flickers**

Please take the following three steps to fix the flickering:

1. Scratch off the oxidized layer on LED contact pad.
2. Wipe clean both contacts of batteries. New batteries may have dust on the contacts.
3. Add a contacting PCB (shown below) between the battery and the LED.

With the contacting PCB, it is not necessary to clean the indented hole in the center of the LED contact pad. However it is necessary to scratch off any contamination on the flat surface to ensure good contact between the contacting PCB and the LED.

Because the contact between the PCB and the LED contact pad are copper-to-copper contact, further oxidization will be eliminated. With the contacting PCB, it works the same as the new LED head.

