

What is Temporary Image Retention?

One of the advantages of LCD displays (compared to Plasma) is the fact that LCD do not suffer the problem of permanent burn-in when a static picture is displayed for a long time (for example a company logo that is always present at a particular spot on the screen). But you may have heard that LCD displays also suffer from a similar type of image retention. The image retention that may appear on LCD displays is called Temporary Image Retention, and as the term implies, it is a condition that is not permanent (unlike the image burn-in that is experienced with Plasma and CRT displays).

TIR occurs on LCD displays when ionic contaminants in the panel migrate to the surface (usually caused by electromagnetic interference) and accumulate to areas in the panel where a static image is displayed. This will cause a drop in the drive voltage in that area and the static image remains visible even after the particular image is changed. Once the image is changed, the impurities will, with time, migrate out of the area and the TIR image should disappear. The time it takes for the TIR image to disappear depends on how severe it was in the first place, and in some cases it takes so much time and effort that for all practical purposes it could be called permanent.

The best way to avoid TIR is to first start out with a high quality panel and drive electronics (in other words, a quality display). This will reduce the occurrence and severity of TIR, and would make it easier to remove should it occur. Other steps that can be taken to avoid TIR is to turn off the display when not in use, change the image with a screen saver at intervals (for example a scrolling image), or inserting an all-white and all-black image at some intervals (this can be very quick; 1/60 of a second and would be the best way to address TIR in a 24/7 application). In short, a small effort in software can go a long way in preventing TIR.

Temporary image retention can occur on any LCD display. However, the quality of the panel (MVA technology is the best for reducing TIR occurrence), and the careful selection and placement of the electronics (magnetic interference is a major cause) that drive it have a significant effect on the occurrence of TIR, and of the time and effort required to get rid of TIR once it happens. In other words, once it occurs, TIR is very difficult to remove from some panels, and much easier from others. Toshiba's LCD line utilizes the best available technology to reduce the occurrence of TIR (MVA panels, and low magnetic interference electronics) and our confidence is demonstrated by our 3 year full replacement warranty; the best in the industry.

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