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Dead Pixel Camouflage

Posted 12.08.05 By will

Discovering a faulty pixel in a swanky plasma screen or LCD television need not mean having to permanently put up with an annoying picture, according to Barco of Belgium. The company has come up with a way to make defective pixels "nearly invisible" by tweaking the properties of healthy ones surrounding them.

Plasma, LCD and OLED screens rely on thousands, or even millions, of active picture cells, typically made from three sub-pixels that emit red, green and blue light. If a sub-pixel is faulty - either too bright or too dark - the overall cell emits the wrong colour.

Barco's idea exploits the fact that, to the human eye, picture cells blur and overlap when a screen is viewed from a normal distance - say a few metres away. The company says algorithms can reliably determine how the eye should perceive an area containing a defective pixel and alter the brightness of the ones around it to compensate.

If, for instance, a red sub-pixel generates too little light, the sub-pixels in surrounding picture cells can be toned down to keep the overall colour balance correct. The reverse can be done if a sub-pixel is too bright. From a normal viewing distance the fault should then become far less noticeable.

Screens can be checked for faults at the factory by mapping the light output with a high resolution camera or scanner. Software in the screen can then be reprogrammed to mask any dodgy spots.

FOOTNOTE: For over 30 years, Barry Fox has trawled the world's weird and wonderful patent applications each week, digging out the most exciting, intriguing and even terrifying new ideas. His column, Invention, is now available exclusively online at New Scientist.

COMMENTS

neat idea for pushing down price of budget LCDs, but i cant see this being a good idea on higher end monitors. if youre paying a load of dosh you dont want sneaky dead pixels.

Posted 12.08.05 15:48:58 By george

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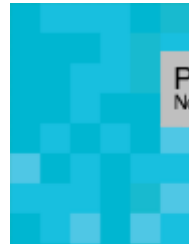
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