

Why do LED screens use virtual pixel technology and what is it exactly?

The virtual pixel is a video management feature that allows a 400% increase in image quality. LED display manufacturers use it to show higher quality, more realistic looking images.

Why do LED displays need to increase the image quality in the first place? It's simple: despite their huge size, an LED display usually has many less pixels than the common computer screen. How is that possible? Because on an LED display, the distance between two pixels can be up to 30mm or more. As a result, on a normal computer screen, you have 1024 pixels wide by 768 pixels tall or more, while on a 4'x8' LED display, you only have 160 pixels wide by 80 pixels tall. Big difference!

So how is possible to see anything on an LED display with a resolution of 160 x 80? Easy! With advanced pixel sharing technology. Thanks to virtual pixel technology, we can double the number of pixels in length and in height. Therefore, we can increase the number of pixels perceived by the human eye by four times. The same screen with virtual pixel technology will have a perceived resolution of 320 x 160 pixels. Now that's a better picture quality!

How is that possible? By geometrical/squared virtual pixels. The technology is based on pretty simple geometrical concepts. If two identical shapes are placed next to each other, by taking half of each shape, two identical shapes are created. For example, if you have two identical pixels lying next to each other, by taking half of each pixel, you can create two more pixels identical to the first two, doubling the number of pixels from two to four. Now imagine doubling the width and height in pixels, and that is how the number of virtual pixels is increased by 400%

