

HOW DOES THAT WORK?

HDTV



Large HDTV screen on the Samsung stand at the Consumer Electronics Show 2013

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The first television pictures broadcast by the BBC in 1936 consisted of blurry images made up of 240 lines. Progress was made over the decades, and, by the 1960s, national broadcasters converted from black and white to colour and 625 lines became the standard resolution in Europe.

High Definition (HD) TV grew out of the limitations of transferring the standard 625-line images to the large screen. Modern-day HDTV has its roots in the 20 years of analogue research conducted by NHK, the Japanese national broadcaster which led to the first digital broadcasts in 2003.

Two rival 1080-line systems are available today that deliver about two megapixels per frame: the 'progressive' system, 1080p, where each line is drawn individually to make up a picture and 'interlaced', and 1080i, where the image is split into fields of odd- and even-numbered lines that are scanned separately. The latter is the most common format used worldwide by the BBC and UK networks, YouTube and other streaming services online.

There is also 720-line HDTV widely available, which has one megapixel per frame. Numbers don't count for everything with HDTV, as a 720-line set with excellent picture processing can outperform a 1080-line TV with poor picture processing.

Digital manipulation of pixels to display images now allows virtually limitless flexibility in display size, format and data compression. The market is rapidly evolving and there is now an 8-megapixel generation of HDTV displays available. Known as Ultra-HD it has four times the standard HD image quality and is comparable to digital cinema pictures.