

JPEG2000 – A More Vivid Picture!



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JPEG2000 – A More Vivid Picture

JPEG2000 is an image compression standard, developed by the Joint Photographic Experts Group (JPEG), that provides a feature set vital to many high end and emerging imaging applications.

JPEG2000 provides high compression with image quality superior to all existing standard encoding techniques, with the ability to compress an image 200 times with better resulting quality than current JPEG images compressed only five times. This high compression and quality performance is due to the adaptation of wavelet transforms. Wavelet transforms are mathematical formulas that represent complex structures in the image, thereby compressing an extremely large amount of image data into a relatively small amount of compressed data. This compression technique allows applications to save compressed images with higher compression ratios and better image quality as compared to any other.

JPEG2000 also strives to overcome the worst effects of current JPEG compression, which processes images in 8 x 8-pixel blocks, leaving coarsely spaced artifacts that spoil fine details – the images overleaf demonstrate this clearly. This type of compression effect is commonly referred to as block artifacts.

The quality of images produced by the Baxall Vivid range of DVRs is, therefore, superior to those produced by any current competitor. With Wavelet transforms, the compression effect is more graceful and produces an image with compression that appears as a soft focus.

This should be a primary selling point when taking Vivid to market and alone should provide the pull through required getting the product moving in the marketplace. As an industry standard the quality of JPEG2000 compression is irrefutable and there are several paper published to back this up.

Feature	Benefit
JPEG2000 Industry Standard	As an industry standard it is easier to justify its usage and defend its position as a compression technique when used as evidence
Reduced Artefacts	Artefacts are the blurring of parts of the video image when compression is applied with JPEG2000 the visible artefacts are greatly reduced.
Smaller File sizes	Because the images are far superior on a like for like basis it is possible to reduce file sizes even further and still have comparable image quality thereby reducing the file size and subsequently the size of disk storage needed to achieve the same time period.
Evidential Quality	With JPEG2000 images having less artifacts it is highly likely that distinctive features such as scars or tattoos will still be visible there by making this product more likely to produce convictions over the competition.

JPEG2000 – The Proof!

The images below are both recorded images stored at 6Kb file size. The image on the left was taken using JPEG2000 compression on Baxall Vivid while the image on the right was taken using JPEG compression on a Digital Recorder from another leading manufacturer.

Note how much clearer the image quality is from the Baxall Vivid with smoother transitions between different shades of light compared to the JPEG image on the right where the light changes are 'blocky' and artefacts have been introduced.



In the images on the left and right below, also stored at only 6Kb file size, the JPEG2000 image recorded using Baxall Vivid, on the left, captures the number plate of the vehicle whereas in the JPEG image recorded using a competitor's DVR, on the right, the number plate is not clear and would not be able to be used to identify the vehicle. The image in the middle was taken using Baxall Vivid at 60kb file size.



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