

A Novel Search Pattern for Motion Estimation in High Efficiency Video Coding

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Abstract : High Efficiency Video Coding (HEVC) or H.265 Standard fulfills the demand of high resolution video storage and transmission since it achieves high compression ratio. However, it requires a huge amount of calculation. Since Motion Estimation (ME) block composes about 80 % of calculation load of HEVC, there are a lot of researches to reduce the computation cost. In this paper, we propose a new algorithm to lower the number of Motion Estimation's searching points. The number of computing points in search pattern is down from 77 for Diamond Pattern and 81 for Square Pattern to only 31. Meanwhile, the Peak Signal to Noise Ratio (PSNR) and bit rate are almost equal to those of conventional patterns. The motion estimation time of new algorithm reduces by at 68.23%, 65.83% compared to the recommended search pattern of diamond pattern, square pattern, respectively.

Keywords : motion estimation, wide diamond, search pattern, H.265, test zone search, HM software

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