

Abstract

In recent years, due to the rapid development of technology and computers, the demand on the video transmission is growing, High Efficiency Video Coding (HEVC) is a new generation of video compression standard. Video Standards Organization: ISO / IEC organizations MPEG (Motion Picture Experts Group) and ITU-T organizations VCEG (Video Coding Experts Group) composed of Joint Collaborative Team on Video Coding (JCT-VC), in October 2010 to develop the next generation of video compression standard, and to meet international standards in 2013. HEVC is more efficient for video compression, compared with previous standards.

HEVC encoding architecture is divided into three basic units. They are Coding Unit, Prediction Unit, and Transform Unit, in which the TU a tree coding structure, the feature provides a variety of different picture size and conversion, improving coding performance. But its complicated tree structure increases the complexity of the calculations, compared to the previous video coding. The main research is that reduces the time it takes to calculate TU, the number of variance of the residual value before the transformation and quantization of the block, At this stage, decides whether to continue or cut TU, it save the TU operation time. Finally, we will be based on different Quantization Parameters (QPs) parameters and different sequences, test TU original encoding time and use the encoding time, how much percentage reduction. In addition, we will compare the PSNR and Bit-rate differences before and after. According to the experimental results, under some RD distortion, we can find that TU decreases the average unit time by 41.18%, up to 51.82% of the conversion time.