This paper deals with the simulation and application of DVB channel coding on multimedia DSP development board using Nexperia processor. The application provides protection against errors during the transmission of real digital video by the transmission channel model in baseband. Applied codes present FECs protection (forward error correction codes – RS code, convolutional code, interleaving) and the channel model causes defined perturbation and distortion of transmitted data. There are presented flowcharts of developed and applied algorithms, experimental results, and a demonstration of DSP based application applied to real digital video in this paper.