

This text is intended as accompaniment to software called Organ-100. The thesis describes the problems paired with real-time digital signal processing on personal computers and gives solution in form of software mixboard supporting variety of digital audio effects working in real-time, support for simultaneous reproduction of sound from 4 independent sources of various formats and microphone support. It also explains the used effects, analyses their characteristics and describes their implementation which works in real-time. The thesis should mainly serve professional DJ's, everyone who is interested in digital audio, digital audio effects or development of software which works with an audio signal. Thesis is completed with all figures. I used the following software to create them: Matlab2007a, Adobe Photoshop 7 and Microsoft Word.