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Abstract
New digital communication technology has been being developed in a rapidly progress recently. The OFDM (Orthogonal Frequency Division Multiplexing) is one of the most promising technologies and has been utilized in many new digital communication systems to offer a high transmission data rate. The DAB (Digital Audio Broadcasting) and DVB (Digital Video Broadcasting) are the two well known applications of the OFDM technology, and may replace the conventional analog broadcasting systems gradually in the near future. The DVB system can provide the multimedia service which includes audio, video, pictures, instant messages and files etc.. Therefore, the DVB receiver should have a powerful signal processing ability and a flexibility for new DVB services. In general, the DVB receiver is implemented by hardware and hardly to modify for a given new function. However, the DVB receiver can be more flexible upon any new updated functions by changing its firmware and software if the DVB receiver system is implemented by firmware and software. In this thesis, the DVB receiver system is our research target. We design a USB(Universal Serial Bus) 2.0 high-speed data transfer interface for the DVB receiver system. The Cypress EZ-USB FX2LP IC is the core controller of the USB interface which receives the MPEG-2 TS(Moving Picture Experts Group 2 Transport Stream) stream from DVB tuner and transfers the data to the PC. The MPEG-2 TS video stream is played on the PC where Linux OS is running.
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