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Abstract
In this thesis, a high-speed wireless transceiver is designed in modules. Designs of the transceiver are based on the Wireless LAN Specification of IEEE 802.11b. Development procedures include system analysis, RF front-end and baseband circuits designs and implementations. Integrating the implemented transceiver with MAC that is implement by DSP scheme, we can have a high-speed wireless data transmission system. This system can be utilized to transmit data wirelessly in practice. Due to the modulization design method, this system provides a test platform for the individual IC design module in the future.

In this thesis, the transceiver system analyses are carried out first. By employing SystemView simulation software, the system is then simulated. Based on these analyses and simulation results, the transceiver is developed by using the WLAN chip sets produced by Intersil. The design of the VCO and Loop filter used in the transceiver are expressed in details. For the purpose of test, some TRL Calibration fixtures are also made.
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