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Author Chin-nan Hsieh
Author's Email Address No Public.
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Abstract
The Ultra-wideband (UWB) communication technology, with low power and high-speed information transmission ability, can be adapted to indoor-wireless digital network for the fast and convenient network service between the portable electronic equipment, such as PDA, digital camera, audio-visual equipment, mobile phone, notebook, and the other electronic mobile-equipment. By high-speed transmission, those equipments can exchange a large number of digital information and files through wireless communication network.
UWB communications can include the impulse radio and the multiband system. For the multiband system, the direct sequence CDMA or the multi-band OFDM may be adopted as the transmission technology.
In this thesis, RF circuit design, simulation, fabrication, and experimental measurement of the front-end for the UWB MB/OFDM system are presented. The RF front-end includes the first state low noise amplifier (LNA), the band-pass filter (BPF) and a mixer for 3~5GHz application. The measurement data is input to a Matlab program, developed by us, to analyze the influences of the 3~5 GHz RF circuit on the UWB-OFDM signals. These simulation results are very useful for the RF circuit/ system designers in UWB-OFDM system.
Advisory Committee Fu-lin Lin - advisor

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