Orthogonal Frequency Division Multiplexing (OFDM) is mainly designed to overcome the effects of multipath reception, by dividing the wideband channel into many narrowband sub-channels. To avoid ISI due to multipath, successive OFDM symbols are separated by guard band. This makes the OFDM system resistant to multi-path effects. This paper describes a real-time implementation of a half-duplex OFDM system using Matlab software Simulink, DSP processor TMS320C6713 and Code Composer Studio. In this approach, Matlab and Simulink are effectively used to develop an OFDM system including transmitter, receiver and an AWGN channel. The graphical environment of Simulink enables the creation of sophisticated algorithms and the Real Time Workshop converts the Simulink model into C code which is ready to be downloaded onto the DSP processor.

References

- The MathWorks, Inc., Simulink Getting started guide, Revised for Simulink 8. 4

Index Terms

Computer Science

Circuits And Systems
Keywords
Fft  Fdm  Ifft  Ofdm  Qam  Simulink