Manuscript ID : 00000-62326

Source ID : 00000004

International Journal of Electronics and Communication Engineering and Technology

Volume 4, Issue 2, March- April 2013, Pages 225-228, Page Count - 4

COSINE MODULATED FILTER-BANK TRANSMULTIPLEXER USING KAISER WINDOW

Saurabh Khandelwal [1] Narendra Singh [2] Hemdutt Joshi [3] Sandeep Kumar Arya [4]

[1] Electronics and communication, Jaypee University of Engineering and Technology, Guna, India.
[2] Electronics and communication, Jaypee University of Engineering and Technology, Guna, India.
[3] Electronics and communication, Jaypee University of Engineering and Technology, Guna, India.
[4] Electronics and communication, Jaypee University of Engineering and Technology, Guna, India.

Abstract

This paper presents the design of near perfect reconstruction (NPR) cosine modulated filter-bank (CMFB) transmultiplexer using Kaiser Window approach. Cosine modulation is used to design the synthesis an analysis sections of the transmultiplexer. The prototype filter is designed by using high side-lobe fall off rate (SLFOR) Kaiser window functions. A bisection optimization algorithm has been used, and without optimization algorithm used. The use of optimization algorithm is reduce the effect of ISI (inter symbol interference) and ICI (inter carrier interference).

Author Keywords

OFDM, ICI, ISI, Kaiser Window SLFOR

ISSN Print: 0976-6464
ISSN Online: 0976-6472
Source Type: Journals
Document Type: Journal Article
Publication Language: English
DOI:
Abbreviated Journal Title: IJECET
Access Type: Open Access
Publisher Name: IAEME Publication
Resource Licence: CC BY-NC
Major Subject: Physical Sciences
Subject Area classification: Engineering and Technology
Subject area: Electronics Engineering
Source: SCOPEDATABASE

Reference

References (6)

1. M.G.Bellanger, J.L.Daguet
TDM-FDM transmultiplexer: Digital polyphase and FFT

(1974) IEEE Transaction on Communication, Volume 22, Issue 9, Page No 1199-1205,
DOI: https://doi.org/10.1109/TCOM.1974.1092391
Article Link: https://ieeexplore.ieee.org/document/1092391

2. R.K.Soni A.Jain, R.Saxena

An improved and simplified design of pseudo Transmultiplexer using Blackman window family

(2010) Digital Signal Processing, Volume 20, Issue 3, Page No 743–749,
DOI: https://doi.org/10.1016/j.dsp.2009.08.016
Article Link: https://dl.acm.org/doi/abs/10.1016/j.dsp.2009.08.016

3. R.Prasad, N.R.Van
   OFDM for wireless multimedia communications

   (2000)

4. F. Cruz-Roldan and M. Monteagudo
   Efficient implementation of nearly-perfect reconstruction cosine-modulated filter banks

   (2004) IEEE Transactions on Signal Processing, Volume 52, Issue 9, Page No 2661-2664,
   DOI: https://doi.org/10.1109/TSP.2004.831913
   Article Link: https://ieeexplore.ieee.org/document/1323272

5. R.K.Soni, A.Jain, R.Saxena
   An optimized transmultiplexer using combinational window functions

   (2011) Signal, Image and Video Processing, Volume 5, Issue 3, Page No 389-397,

6. K.Muralibabu, Dr.K.Ramanaidu, Dr.S.Padmanabhan and Dr.T.K.Shanthi
   A NOVEL PAPR REDUCTION SCHEME USING DISCRETE COSINE TRANSFORM BASED ON SUBCARRIER GROUPING IN OFDM SYSTEM

   (2012) International Journal of Electronics and Communication Engineering and Technology, Volume 3, Issue 3, Page No 251-257,
   Article Link: https://iaeme.com/MasterAdmin/Journal_uploads/IJECET/VOLUME_3_ISSUE_3/IJECET_03_03_029.pdf