

REFERENCES

- [1] WiMAX Forum, Krishna Ramadas and Raj Jain, "WiMAX System Evaluation Methodology" version 2.1 July 2008.
- [2] Jean Philippe Javaudin, Jeremy Laine, Olivier Seller," On Inter-Cell Interference in OFDMA wireless systems" 13th European Signal Processing Conference, sept- 2005, 978-160-4238-21-1.
- [3] J. G. Proakis, M. Salehi, and G. Bauch, Contemporary Communication Systems Using MATLAB 2nd ed., Brooks Cole, 2004.
- [4] H. Sari, G. Karam and I. Jeanclaude, "Transmission Techniques for Digital Terrestrial TV Broadcasting", IEEE Communications Magazine, Volume: 33, Issue: 2, Feb 1995.
- [5] J.M. Cioffi, G.P. Dudevoir, M. Vedat Eyuboglu, G.D. Forney, "MMSE Decision-Feedback Equalizers and Coding - Part I: Equalization results", in IEEE Transactions on Communications, Volume: 43, Issue: 10.
- [6] J.M. Cioffi, G.P. Dudevoir, M. Vedat Eyuboglu, G.D. Forney, "MMSE Decision-Feedback Equalizers and Coding - Part II: Coding results", in IEEE Transactions on Communications, Volume: 43, Issue: 10.
- [7] M. R. Nakhai, "Multicarrier transmission," in IET Signal Processing @ IEEE Volume: 2, Issue-1.
- [8] Ibars, C& Bar-Ness, "Inter-Carrier Interference Cancellation for OFDM Systems with Macro Diversity and Multiple Frequency Offsets" in Wireless Personal Communications (2003)-Springer, Volume: 26, Issue 4.

- [9] D. Falconer, S.L.Ariyavisitakul, A. Benyamin-Seeyar, B. Eidson “Frequency domain equalization for single-carrier broadband wireless systems” in IEEE Communications Magazine, Volume: 40, Issue: 4, Apr 2002.
- [10] Le-Nam Tran, Een-Kee Hong, Huaping Liu”A frequency domain equalization algorithm for fast time-varying fading channels” in Journal of Communications and Networks, Volume: 11, Issue: 5, Oct. 2009
- [11] Chin-Liang Wang, Yu-Chih Huang and Po-Chung Shen “An Intercarrier Interference Suppression Technique Using Time-Domain Windowing for OFDM Systems” in 63rd IEEE vehicular Technology Conference. 2006.
- [12] H. Bolcskei, P.Duhamel, R. Hleiss “Design of pulse shaping OFDM/OQAM systems for high data-rate transmission over wireless channels” IEEE International Conference on Communications,1999 . 10.1109/ICC.1999.768001
- [13] H. Bolcskei, P.Duhamel ; R. Hleiss” Design of pulse shaping OFDM/OQAM systems for high data-rate transmission over wireless channels” Communications, 1999. IEEE- 10.1109/ICC.1999.768001.
- [14] D. Schafhuber, G.Matz, F.Hlawatsch “Pulse-shaping OFDM/BFDM systems for time-varying channels: ISI/ICI analysis, optimal pulse design, and efficient implementation” in The 13th IEEE International Symposium on Personal, Indoor and Mobile Radio Communications, 2002. 10.1109/PIMRC.2002.1045180.
- [15] Alireza Seyedi, Gary J. Saulnier.” General ICI Self-Cancellation Scheme for OFDM Systems” in IEEE Transactions on Vehicular Technology, Volume 54, issue. 1, January 2005.
- [16] T. Pollet, M. V. Bladel, and M. Moeneclaey, “BER sensitivity of OFDM systems to carrier frequency offset and Wiener phases noise,” in IEEE Transactions on Communications, Volume 43, issue 234, 1995.

- [17] T. S. Rappaport, "Wireless Communications: Principles and Practice", 2nd ed. USA: Prentice Hall PTR, 2002, pp. 192-210.
- [18] J. Laine, "Interference estimation in a multi-cellular OFDMA environment", Thesis-Royal Institute of Technology, Stockholm, Sweden, ISSN 1400—9137.
- [19] J. Olivier and C. Xiao, "Joint optimization of FIR pre-filter and channel estimate for sequence estimation," in IEEE Transactions on Communications, Volume 50, pp. 1401-1404, Sept.2002.
- [20] N. Al-Dhahir, S.N. Diggavi, "Maximum throughput loss of noisy ISI channels due to narrow-band interference" in IEEE Communications Letters , Volume 5, issue 2, August 2002.
- [21] P. Hoherer, S. Kaiser, and P. Robertson, "Two-dimensional pilot-symbol-aided channel estimation by wiener filtering," in IEEE International Conference on Acoustics, Speech, and Signal Processing, Volume. 3, pp. 1845, Apr 1997.
- [22] Yao Liang, Weiou Zhou, Li He, "Research and Implementation for 2D-MMSE Channel estimation" in 12th International Conference on Signal Processing (ICSP), 2014.IEEE- ISBN 978-1-4799-2186-7.
- [23] Xiaolin Hou, Shubo Li, Changchuan Yin, "Two dimensional recursive least square adaptive channel estimation for OFDM systems" in Wireless Communications, Networking and Mobile Computing. IEEE-ISBN 0-7803-9335-X.
- [24] Radio Sky Journal. Available: <http://www.radiosky.com/journal0901.html>
- [25] A. J. Coulson, "Bit Error Rate Performance of OFDM in Narrowband Interference with Excision Filtering", in IEEE Transactions on Wireless Communications, vol. 5, pp. 2484-2492, 2006.

- [26] J. G. Proakis and M. Salehi, Communication Systems Engineering, 2nd edition, New Jersey: Prentice Hall, 2002.
- [27] R. V. Nee and R. Prasad, OFDM for Wireless Multimedia Communications, Boston: Artech House, 2000.
- [28] Wang Xiu-fang, Hou Zhen long, "Design and Implement of FFT Processor for OFDMA System Using FPGA", in IEEE- 2010 2nd International Conference on Mechanical and Electronics Engineering (ICMEE 2010) - 978-1-4244-7481-3.
- [29] W.Y. Zou, Y. Wu, "COFDM, an Overview", IEEE Transactions on Broadcasting, Volume 41, issue 1, 1995.
- [30] R.V.Nee and R. Prasad, "OFDM for Wireless Multimedia Communications", Boston: Artech House, 2000.
- [31] R.E. Ziemer, W.H. Tranter, and D.R. Fannin, "Signals and Systems: Continuous and Discrete", 4th Edition, New Jersey: Prentice-Hall, 1998.
- [32] Levent Sevgi, " Numerical Fourier Transforms: DFT and FFT ", in IEEE Antennas and Propagation Magazine, Volume 49, issue 3, June 2007.
- [33] T.Muller, K. Bruninghaus, H. Rohling, "Performance of coherent OFDM-CDMA for broadband mobile communications", Wireless Personal Communications, Volume 2, issue 4-Springer.
- [34] H.Rohling, R.Grunheid, "Performance comparison of different multiple access schemes for the downlink of an OFDM communication system", in 47th IEEE Vehicular Technology Conference. ISBN- 0-7803-3659-3

- [35] P.Vandenabeele, L.Van der perre, M.G.E. Engels, B. Gyselinckx, H.J. De Man., “A combined OFDM/SDMA approach”, IEEE Journal on Selected Areas in Communications, Volume 18, issue 11, Nov-2000.
- [36] M.Morelli, C.C. Jay Kuo, M.-O. Pun, “Synchronization techniques for orthogonal frequency division multiple access (OFDMA)” in a tutorial review, Proceedings of the IEEE, Volume 95, issue 7.
- [37] IEEE 802.20 WG, Mobile broadband wireless access systems ‘Five criteria’: Vehicular mobility, IEEE 802.20 PD-03, November 13, 2002.
- [38] Broadband Radio Access Networks (BRAN), Inventory of Broadband Radio Technologies and Techniques, Eur.Telemun. Standards Inst. (ETSI), Sophia Antipolis, France, ref. DTR/BRAN 030 001, 1998.
- [39] L. Wei, C. Schlegel, Synchronization requirements for multiuser OFDM on satellite mobile and two path Rayleigh fading channels, IEEE Transactions on Communications, Volume 43, 887–895, 1995.
- [40] 3GPP, TR25.814(V7.1.0), “Physical layers aspects for Evolved UTRA,” October 2006.
- [41] H. Yin, S. Alamouti, “OFDMA: A broadband wireless access technology”, Sarnoff Symposium, IEEE, ISBN- 978-1-4244-0002-7.
- [42] W.Y. Zou, Y. Wu, "COFDM, an Overview", IEEE Transactions on Broadcasting, Volume 41, issue 1, 1995.

- [43] H. Sari, G. Karam, "Orthogonal frequency-division multiple access and its application to CAT-V networks", in European Transactions on Communications, Volume 45, 507–516, 1998.
- [44] T. Wang, J. G. Proakis, and J. R. Zeidler, "Performance analysis of high QAM OFDM system over frequency selective time-varying fading channel", 14th IEEE International Symposium on Personal, Indoor and Mobile Radio Communications, pp. 793-798, 2003.
- [45] R. E. Blahut, "Fast Algorithms for Digital Signal Processing, Reading", MA: Addison-Wesley, 978-0-521-19049-7, 1985.
- [46] R.V.Nee and R. Prasad, "OFDM for Wireless Multimedia Communications", Boston: Artech House, 2000.
- [47] Nabeel Shirazi, Peter M. Athanas, and A. Lynn Abbott, "Implementation of a 2-D Fast Fourier Transform on a FPGA-Based Custom Computing Machine" in 5th International Workshop on Field-Programmable Logic and Applications. ISBN:3-540-60294-1
- [48] IEEE standard for Binary Floating Point Arithmetic. ANSI/IEEE Standard, STD 754-1985, New York, 1985
- [49] IEEE standard for Floating-Point Arithmetic. IEEE STD 754-2008, pages 1–58, 29 2008.
- [50] Martin Langhammer, Bogdan Pasca "Floating-Point DSP Block Architecture for FPGAs", in International Symposium on Field-Programmable Gate Arrays. ISBN- 978-1-4503-3315-3, Pages 117-125.

[51] Mark. A. Erle, Brain J. Hick Mann, Micheal. J. Schulte “Decimal Floating-Point Multiplication” in IEEE Transactions on Computers, Volume: 58, Issue: 7, July 2009.

[52] Hongwei ding, Pingping Shu , Xiaojun Wang and Jun Yang “A Design and Implementation of Decimal Floating-point Multiplication Unit based on SOPC”in 3rd International Conference on Digital Manufacturing & Automation, ISBN-978-0-7695-4772-5

[53] Daisuke Takahashi, “An algorithm for multiple-precision floating point multiplication”. Applied Mathematics and Computation, (Jul. 2005) 291-298. DOI: 10.1016/j.amc.2004.04.034

[54] Mounir Arioua, Said Belkouch “VHDL implementation of an optimized 8-point FFT/IFFT processor in pipeline architecture for OFDM systems” IEEE-2011 International Conference on Multimedia Computing and Systems (ICMCS)-10.1109/ICMCS.2011.5945661

[55] Wei dong Li, "Studies on implementation of lower power FFT processors", no. 1030, Jun. 2003, ISBN 91-7373-692-9.

[56] W. Li and L.Wanhammar, "Complex multiplication reduction in FFT processor", SSoCC'02 Falkenberg Sweden, Mar. 2002.

[57] D.Chikouche, N.Amardjia, R.E.Bekka” An efficient Radix-two Algorithm to Compute the 2D Fourier Transform” 4th WSEAS International Conference on Electronics, Control and Signal Processing, Miami, Florida, USA, 17-19 November, 2005 (pp.267-270).

[58] WANG Xiu-fang, HOU Zhen-long, “Design and Implement of FFT Processor for OFDMA System Using FPGA” -2010 2nd International Conference

on Mechanical and Electronics Engineering (ICMEE 2010)- 978-1-4244-7481-3/\$26.00 © 2010 IEEE

[59] L.P.Thakare & A.Y.Deshmukh," Design Approach Of 64-Point Reconfigurable FFT/IFFT Processor for Asip Architecture". International Journal of Computer Networking, Wireless and Mobile Communications (IJCNWMC) ISSN(P): 2250-1568; ISSN(E): 2278-9448-Aug-2015.

[60] N.Y.C.Chang, T.S.Chang "Combined frame memory architecture for motion compensation in video decoding" IEEE International Symposium on Circuits and Systems, 2005. ISCAS 2005. 10.1109/ISCAS.2005.1464960

[61] Hung-Cheng Su, Tsung-Han Wu" Temporal multithreading architecture design for a Java processor" 2014 IEEE International Symposium on Circuits and Systems (ISCAS) , 10.1109/ISCAS.2014.6865606.

[62] Tadao Nakagawa, Hideyuki Nosaka, "A Direct Digital Synthesizer with Interpolation Circuits" in IEEE Journal of Solid-State Circuits, Volume 32, issue. 5, May 1999.

[63] T.Nakagawa and T.Tsukahara, "A low phase noise C-band frequency synthesizer using a new fractional- PLL with programmable fractionality," in IEEE Transactions on Microwave Theory Technology, Volume 44, pp. 344–346, Feb. 1996.

[64] H.T.Nicholas, III, and H.Samueli, "A 150-MHz direct digital frequency synthesizer in 1.25- m CMOS with 90-dBc spurious performance," in IEEE J. Solid-State Circuits, Volume 26, pp. 1959–1969, Dec. 1991.

[65] K. Ishii, H. Ichino, M. Togashi, Y. Kobayashi, and C. Yamaguchi, "Very-high-speed Si bipolar static frequency dividers with T-type flip-flops,"in IEEE Journal on Solid-State Circuits, Volume 30, pp. 19–24, Jan. 1995.

[66] Jan Barowski, Sven Dortmund, “Evaluation of radio channel LOS/NLOS transitions in indoor and outdoor fading measurements-2013 European Microwave Conference (EuMC), 978-2-87487-031-6.

[67] A.J. Rustako, Noach Amitay,” Radio Propagation At Microwave Frequencies For Line-Of-Sight Microcellular Mobile And Personal Communications” in IEEE Transactions on Vehicular Technology, Volume 40, issue. 1.

[68] Daniela Naufel Schettino ; Fernando J. S. Moreira ; Cssio G. Rego ” Efficient Ray Tracing for Radio Channel Characterization of Urban Scenarios” IEEE Transactions on Magnetics Volume: 43, Issue: 4, April 2007.

[69] Swati Sharma, Harjit Singh “Comparison of Different Digital Modulation Techniques in LTE System using OFDM AWGN Channel: A Review” in International Journal of Computer Applications (0975 – 8887) Volume 143, issue 3, June 2016.

[70] Charles U. Ndubiuba, Oluyinka Oni and Augustus E. Ibhaze, “Comparative Analysis of Digital Modulation Techniques in LTE 4G Systems”, in Journal of Wireless Networking and Communications, Volume 5, issue 2, 60-66, 2015.

[71] Won Mee Jang, B.R.Vojcic,” Joint transmitter-reciever optimization in synchronous multi user communications over multi path channels” in IEEE Transactions on Communications, Volume 46, Issue 2, Feb 1998.

[72] Y. Hase,” Fade/non-fade duration characteristics of land mobile satellite communication link” in Global Telecommunications Conference, IEEE-10.1109/GLOCOM.1990.116489

[73] T. S. Rappaport, Wireless Communications principles and practice. New Jersy: Prentice-Hall of India private Ltd, second ed., 2002.

- [74] Fabrício J. B. Barros, Robson. D. Vieira, G. L. Siqueira “Relationship between Delay Spread and Coherence Bandwidth for UWB Transmission” 0-7803-9342-2/05 © 2005 IEEE
- [75] T.S. Rappaport, “Wireless communication principles and practice”, Prentice-Hall Communication Engineering and Emerging Technologies series. New Jersey, author’s series edition, 1996.
- [76] Lin Cheng, Benjamin Henty, Fan Bai, Daniel D. Stancil “Doppler Spread and Coherence Time of Rural and Highway Vehicle-to-Vehicle Channels at 5.9 GHz”, in Global Telecommunications Conference, 2008.IEEE-10.1109/GLOCOM.2008.ECP.802.
- [77] Laura Bernado, Thomas Zemen” Delay and Doppler Spreads of Non-Stationary Vehicular Channels for Safety Relevant Scenarios” arXiv:1305.3376v1 [cs.NI] 15 May 2013.
- [78] J.E. Mazo, "Exact Matched Filter Bound for Two-Beam Rayleigh Fading," in IEEE Transactions on Communications, Vol. 39, issue 1.
- [79] K. Witrisal ; Yong-Ho Kim ; R. Prasad” Frequency-domain simulation and analysis of the frequency-selective Ricean fading radio channel” The 9th IEEE International Symposium on Personal, Indoor and Mobile Radio Communications, 1998. 10.1109/PIMRC.1998.731354
- [80] Praveen Kumar Reddy, Baswaraj Gadgai, “survey of various adaptive equalizers for wireless communication and its applications” in International Journal of Industrial Electronics and Electrical Engineering, ISSN: 2347-6982
- [81] Alessandro Biagioni, Romano Fantacci, Dania Marabissi, Daniele Tarchi, “Adaptive Subcarrier Allocation Schemes for Wireless OFDMA Systems” in

WiMAX Networks- in IEEE journal on selected areas in communications, Volume 27, issue 2, Feb 2009.

[82] Dongning Guo ; S. Shamai ; S. Verdu Mutual information and minimum mean-square error in Gaussian channels in IEEE Transactions on Information Theory, Volume: 51, Issue: 4, April 2005.

[83] Ms.Manpreet kaur , Ms. Cherry, "Design of an Adaptive Equalizer Using LMS Algorithm" in IOSR Journal of Electronics and Communication Engineering, Volume 9, Issue 1.

[84] Santanu Kumar Sahoo and Mihir Narayan Mohanty, "Effect of BER Performance in RLS Adaptive Equalizer" in International Journal of Advanced Computer Research, Volume 2, Issue-6 December-2012

[85] W. H. Tranter and K. L. Kosbar, "Simulation of Communication Systems", IEEE Communications Magazine, pp. 26-35, July 1994.

[86] www.digilentinc.com/Press/SalesSheet/XUPV5-datasheet-06.pdf

[87] www.xilinx.com/support/documentation/..//xilinx13.../ise_tutorial_ug695.pdf

[88] Dr.Rosula S.J. Reyes, Carlos M.Oppus., Jose Claro N.Monje, B. Fajardo, "FPGA Implementation of a Telecommunication Trainer system" in International Journal of circuits, Systems and Signal Processing , Volume 2, PP(87-95), 2008.

[89] Recommendation, "ITU-R m.1225, guidelines for the evaluation of radio transmission technologies for IMT-2000".pdf

[90] T. Sorensen, P. Mogensen, and F. Frederiksen, "Extension of the ITU channel models for wideband (OFDM) systems", in 62nd IEEE Vehicular Technology Conference, Volume 1, pp. 392-396, sept., 2005.

- [91] http://www.xilinx.com/products/software/chipscope/chipscope_ila_tut.pdf
- [92] www.academia.edu/869282/Testing_FPGA_based_digital_system_using_XILINX_ChipScope_logic_analyzer
- [93] M. K. Lakshmanan and H. Nikookar, "A Review of Wavelets for Digital Wireless Communication" *Wireless Personal Communications*, Volume 37, pp. 387-420, 2006.
- [94] Rainmaker Technologies, Inc." RM wavelet based (WOFDM) PHY proposal for 802.16.3", Technical Report IEEE 802.16.3c-01/12,2001. Available: <http://ieee802.org/16>.
- [95] V. Kumbasar and O. Kucur, "Better wavelet packet tree structures for PAPR reduction in WOFDM systems," *Digital Signal Processing*, Volume. 18, pp. 885-891, 2008.
- [96] Recommendation, \ITU-R m.1225, guidelines for the evaluation of radio transmission technologies for imt-2000," 1997.
- [97] T. Sorensen, P. Mogensen, and F. Frederiksen, \Extension of the ITU channel models for wideband (OFDM) systems," in 62nd Vehicular Technology Conference,2005.
- [98]http://www.xilinx.com/support/documentation/xilinx13/ise_tutorial_ug695.pdf