Comments on Digital Transmission Engineering*

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Introduction

This document provides comments on the textbook John B. Anderson, *Digital Transmission Engineering,* 2nd edition, IEEE/Wiley, ISBN 0-471-69464-9, 2005. It is intended for students of the course SSY121 Introduction to Communication Engineering at Chalmers University of Technology. The document is under development. The lists of errata and acronyms are surely not complete. Let us know if you find mistakes or omissions.

Acronyms

Most acronyms are explained in the Index at the end of the book. The following are not:

acronym	meaning	page
AM	amplitude modulation	4
DC	direct current (or voltage!)	≤ 17
DI	double integral	183
FFT	fast Fourier transform	11
FM	frequency modulation	4
IID	independent, identically distributed	≤ 44
PAM	pulse-amplitude modulation	≤ 96
PCM	pulse-code modulation	4
SNR	signal-to-noise ratio	37
RF	radio frequency	5

*With contributions of Erik Agrell, Kasra Haghighi, and Alex Alvarado. v. 1.26.

Errata

location	reads	should read
p. 21, Example 2.2-2	Fig. 2.1	Fig. 2.1a
p. 25, eq. (2.2-7)	$-1/2 \leq u \leq 1/2$	$-1/2 \leq t \leq 1/2$
p. 55, line 5 from below	90-degree	45-degree
p. 60, eq. (2.6-10)	$p_e \leq$	$p_e =$
pp. 62–63, eq. (2.6-15) and (2.6-17)	$p_e \leq$	$p_e \approx$
p. 74, problem 2-7	T-orthogonal	symmetric, T-orthogonal
p. 80, eq. (3.1-7)	$\sqrt{I^2(t) + Q^2(t) \geq 0}$	$\sqrt{I^2(t) + Q^2(t)}$
p. 87, line 1	$\sqrt{T}\,\mathrm{rect}(t/T)$	$\sqrt{T}\,\mathrm{rect}(fT)$
p. 87, line 6	$NE_s\lvert V(f)\rvert^2$	$(E_s/T)\lvert V(f)\rvert^2$
p. 100, last line before 3.4.2	Fig. 3.10b	Fig. 3.10a
p. 122, line 9 from below	$-T$	$2T$
p. 154, line 5	$\eta(t)$ and $\eta^Q(t)$	$\eta^I(t)$ and $\eta^Q(t)$
p. 215, last 4 lines and p. 216, first 3 lines	$v(t)$ should be replaced by $p(t) = \int v(\tau + t)v(\tau)d\tau$	
p. 137, item #5	Adjacent Channel Interface	Adjacent Channel Interference
p. 226, eq. 4.8-5	i odd	i odd, $i \neq m$
p. 227, Fig. 4.38	The Barker curve should be $(1/7)(0, -1, 0, -1, 0, -1, 0, 7, 0, -1, 0, -1, 0, -1, 0)$	
p. 229, Fig. 4.39	Add "Increase m" at the leftmost arrow and add "Reset m" at the rightmost arrow	
p. 229, Example 4.8-3	$4N^2/2(1.544 \times 10^6)$	$4N^2/(2(1.544 \times 10^6))$
p. 252, line 5 from below	1000 kHz	1 kHz
p. 253, line 4	$+0.272j$	$-0.271j$
p. 261, line 5	fixed L_p	fixed d