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بالرسالة صفحات لم ترد بالاصل

El-Mansoura University
Faculty of Engineering
Department of
Electronics and Communications
Engineering

Performance Analysis of Code Division Multiple Access (CDMA) Technique in Digital Communication Systems

A Thesis

Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

In

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REFERENCES:

LIST OF ABBREVIATIONS

AM/AM	amplitude modulation to amplitude modulation conversion.
AM/PM	amplitude modulation to phase modulation conversion.
AWGN	additive white gaussian noise.
A-DS/SSMA	asynchronous direct sequence spread spectrum multiple access.
BPF	band pass filter.
BPSK	binary phase-shift-keying.
CDMA	code division multiple access.
DA	demand assign.
DS-CDMA	direct sequence code division multiple access.
DS-SSMA	direct sequence spread spectrum multiple access.
DS-CDMA/ BPSK	direct sequence code division multiple access with binary phase-shift-keying modulation scheme.
DS-CDMA/ QPSK	direct sequence code division multiple access with quaternary phase-shift-keying modulation scheme.
FDMA	frequency division multiple access.
FH	frequency hopping.
FH-CDMA	frequency hopping code division multiple access.
HPA	high power amplifier.
IF	intermediate frequency.
ISI	intersymbol interference.
I & Q	inphase and quadrature symbols respectively.
LNA	low-noise amplifier.
MAI	multiple access interference.
MFSK	m-ary frequency-shift-keying.
NB	narrowband.
PN	pseudeo noise.
QPSK	quaternary phase-shift-keying.
SS	spread spectrun.
SSPA	solid state power amplifier.
SSMA	spread spectrum multiple access.
TDMA	time division multiple access.
TWTA	travelling wave tube amplifier.
PCS	personal communication service.

LIST OF SYMBOLS

A_K	the k^{th} carrier amplitude which is the input to the TWTA.
$A_K^{'}$	the k^{th} carrier amplitude which is the output from the TWTA.
BO	input back-off in dB.
$\hat{b}_K$	the k^{th} bit estimate.
$\hat{b}_K(1)$	the k^{th} bit estimate of the first stage detector.
$\hat{b}_K(2)$	the k^{th} bit estimate from the second stage detector.
E_β	the expectation over the ensemble of independent uniform distributed for β.
$F[.]$	amplitude modulation to amplitude modulation function.
H	the cross-correlation matrix, with elements are h_{11}, h_{12}, ..., h_{KK}.
H^{-1}	the inverse of the cross-correlation matrix with elements h_{inv11}, h_{inv12}, ..., h_{invKK}.
I	identity matrix.
K	the number of users shared the channel.
L	a transformation matrix which depends on the type of detectors
N	the processing gain.
NN	number of data symbols generated in the simulation.
N_{el}	number of data symbols in error for user1.
P_K	power input to the TWTA.
$P_K^{'}$	power output from the TWTA.
r_{ij}	normalized cross-correlation element between the i^{th} and j^{th} user.
$\hat{R}$	input voltage level corresponding to saturation.
R_b	bit rate.
R_c	chip rate.
T_b	bit duration.
T_s	symbol duration.
T_c	chip duration.
w_c	carrier frequency in radian.
Y	sufficient statistics vector.
Y^I	inphase branch of the sufficient statistics vector Y.
Y^Q	quadrature branch of the sufficient statistics vector Y.
η	gaussian noise vector.