AIN SHAMS UNIVERSITY
FACULTY OF ENGINEERING
ELECTRONICS AND COMMUNICATIONS ENGINEERING DEPARTMENT
CAIRO - EGYPT

Enhancement of OFCDMA Systems Performance Using MIMO Techniques

A Thesis

Submitted in Partial Fulfillment of the Requirement for
the Doctor of Philosophy Degree in Electrical Engineering

Submitted By

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Abbreviations

3GPP	3rd generation partnership project
3G	Third generation
4G	Fourth generation
5G	Fifth generation

A

ATM	Asynchronous transfer mode
AWGN	Additive white gaussian noise
ARQ	automatic repeat request

B

BS	Base station
BER	Bit error rate
BoD	Bandwidth on demand
BPSK	Binary phase shift keying
BLAST	Bell Labs' Layered Space-Time

C

CDMA	Code division multiple access
CC	Complete complementary
CSI-R	Channel State Information at the Receiver
CRC	Cyclic redundancy check
CPM	Continuous phase modulation
CP	Cyclic prefix
C-plane	Control plane

D

DFT	Discrete fourier transform
DSSS	Direct sequence spread spectrum
DSCH	Downlink shared channel
DAB	Digital audio broadcasting
DVB	Digital video broadcasting
DS-CDMA	Direct sequence-CDMA
DECT	Digital enhanced cordless telephone

E

EDGE	Enhanced data rate for GSM evolution
EU-DCH	Enhanced uplink-downlink channel
EUL	Enhanced uplink
EGC	Equal gain combining