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**Development of Enhanced Ultra Wideband Antenna  
Designs and Rake Receivers for Indoor Wireless  
Systems**

By

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## DECLARATION OF THESIS

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## LIST OF ABBREVIATIONS

2D	Two Dimensional Pattern
3D	Three Dimensional Pattern
ADC	Analogue to Digital Convertor
APA	Affine Projection Algorithm
A-rake	All Rake Receiver
ARR	Adaptive Rake Receiver
ASNR	Average Signal to Noise Ratio
AWGN	Additive White Gaussian Noise
BER	Bit Error Rate
BPSK	Bi- Phase Shift Keying
BW	Bandwidth
ANOVA	Analysis of Variance
CD	Coefficients Details
CDF	Cumulative Distribution Function
CIR	Channel Impulse Response
CM	Channel Model
C-PC	Conventional Partial Combiner
C-SC	Conventional Selective Combiner
CST	Computer Simulation Test
CWT	Continuous Wavelet Transform
D	Directivity
DC	Direct Current
DoD	Department of Defence

DSSS	Direct Sequence Spread spectrum
DFT	Discrete Fourier Transform
DR	Detection Rate
E-plane	Elevation Plane
EGC	Equal Gain Combiner
EX-OR	Explosive OR
FCC	Federal Communications Commissions
FIR	Finite Impulse Response
FHSS	Frequency Hopping Spread Spectrum
FN	False Negative
FP	False Positive
FPGA	Field Programmable Gate Array
FB	Fractional Bandwidth
GPS	Global Position System
H-plane	Azimuth Plane
IR	Impulse Response
IR-UWB	Impulse Response Ultra Wideband
IO	Input / Output
IFI	Inter-Frame Interference
IPI	Inter-Pulse Interference
ISI	Inter-Symbol Interference
IWO	Invasive Weed Optimization
LOS	Line-Of-Sight
LNA	Low-Noise Amplifier
MISO	Multiple In Single Out

MIMO	Multiple In Multiple Out
MAI	Multiple Access Interference
MRC	Maximal Ratio Combining
MMSE	Minimum Mean Square Error
MPC	Multiple Path Component
MS	Microwave Software
MSE	Mean Square Error
MUD	Multiple User Detection
MUI	Multiple User Interference
MUX	Multiplexer
NLOS	Non Line-Of-Sight
OOK	ON OFF Keying
PCB	Printed Circuit Board
PDF	Probability Density Function
PIM	Pulse Interference Modulation
PSM	Pulse Symbol Modulation
PPM	Pulse Position Modulation
PAM	Pulse Amplitude Modulation
P-rake	Partial Rake
PSD	Power Spectral Density
PSK	Phase Shift Keying
PSS-SC	Pulse Sign Separation Selective Combiner
PSS-PC	Pulse Sign Separation Partial Combiner
PU	Partial Update
QPSK	Quadruple Phase Shift Keying