بسم الله الرحمن الرحيم

شبكة المعلومـــــات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

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Mansoura University
Faculty of Engineering
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EFFECT OF INTERFERENCE BETWEEN ELECTRICAL DISTRIBUTION NETWORKS AND POWER LINE CARRIER COMMUNICATION SYSTEMS

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A Thesis Submitted in Partial Fulfillment for the Requirements of the Degree of Master of Science in Engineering
IN
Electrical Power Engineering

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2003

B 1-0-0

Mansoura University
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Electrical Power & Machine Dept.

Thesis Title:

EFFECT OF INTERFERENCE BETWEEN ELECTRICAL DISTRIBUTION NETWORKS AND POWER LINE CARRIER COMMUNICATION SYSTEMS

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ACKNOWLEDGEMENT

It is my pleasure to express my deepest gratitude to my supervisors ***Prof. Dr. Ibrahim Ibrahim Ibrahim Mansy and Dr. Magdi Mohamed El- Saadawi*** for their full supervision of this thesis. I would like to greatly acknowledgement their guidance, sincere help, assistance encouragement, and invaluable suggestions through the supervision of this thesis.

Special thanks to my family, they have always been encouraging me to continue and finish the work.

Khaled Mohamed Khaled

Mansoura 2003

LIST OF FIGURES

Figure Number	Description	Page
Figure 2.1	Structure of the electric energy supply system and relevant data flow	13
Figure 2.2	Low reflection transition between ground cable and overhead line	18
Figure 2.3	Schematic structure of three-wire cable with concentric outer conductor	19
Figure 2.4	Equivalent circuit and phasor diagram of a dielectric	21
Figure 2.5	Characteristic impedance depending on the frequency for cable type NYCY70SM/35.	23
Figure 2.6	Attenuation depending on the frequency for cable type NYCY70SM/35 at length of 1 Km	24
Figure 2.7	Schematic representation of the structure of four-wire cable without concentric outer conductor	24
Figure 2.8	Strip line model of the four-sector cable without concentric outer conductor	25
Figure 2.9	Uses of different cable types in topology of a typical residential district supply	27
Figure 2.10	Characteristic impedance values of the most commonly used four sector cables	28
Figure 2.11	Attenuation per km for the most common four sector cables	28
Figure 2.12	Transmitter side coupling	29
Figure 3.2	Receiver side coupling	30
Figure 3.1	A PLC channel model	35
Figure 3.2	Signal propagation over the power line local loop access network	36
Figure 3.3	Basic structure for the echo model definition	37
Figure 3.4	Sample network for echo model validation	37
Figure 3.5	Multi path signal propagation; cable with one tap	38
Figure 3.6	Variation of weighting factor with: (a) Number of echo-paths. (b) Path length	40
Figure 3.7	Two branches network	41
Figure 3.8	Modules of the studied two branches network	42
Figure 3.9	Simulation results of the proposed method	46
Figure 3.10	The simulation results of the echo model approach	49
Figure 3.11	Channel response of the sample network	52
Figure 3.12	Measured channel response of the sample network	53
Figure 3.13	Channel I frequency response (0 -20 MHz)	56
Figure 3.14	Channel I CENELEC frequency response (3-148.5 kHz)	56
Figure 3.15	Channel II frequency response (0- 20 MHz)	58
Figure 3.16	Channel II CENELEC frequency response (3-148.5 kHz)	58
Figure 3.17	III frequency Channel response (0 - 20MHz)	60
Figure 3.18	Channel III CENELEC frequency response (3-148.5 KHz)	60
Figure 3.19	Channel IV frequency response (0 - 20MHz)	62
Figure 3.20	Channel IV CENELEC frequency response (3-148.5 kHz)	62
Figure 4.1	Graphical representation of typical power disturbances	68
Figure 4.2	Frequency ranges and PLC signal level limits specified in EN 50065	71
Figure 4.3	Classification of noise in PLC distribution networks	72
Figure 4.4	24-hour noise in a 24-hour period of time in a building	73
Figure 4.5	Standard deviation of the measured noise	74
Figure 4.6	The simulated noise power using MATLAB	80
Figure 4.7	Repeated noise during A.C cycle	81
Figure 4.8	Noise variance at an operating frequency of 3 kHz	82

Figure 4.9	Noise variance at an operating frequency of 100 kHz	82
Figure 4.10	Noise variance at different carrier frequencies	83
Figure 4.11	Hand mixer noise occuring on power line	84
Figure 4.12	Electric drill noise occuring on power line	85
Figure 4.13	Electric drill noise occuring on power line	85
Figure 4.14	Plot of fluorescent lamp noise in time domain	86
Figure 4.15	Simulation of proposed noise filter effect	86
Figure 5.1	Methods of narrow band modulation	90
Figure 5.2	Diagram of PSK operation	92
Figure 5.3	Diagram of FSK operation	93
Figure 5.4	typical phase locked loop receiver	94
Figure 5.5a	Simulation results for the comparison between FSK and PSK, for a phase error change from 0 to 0.6 with step 0.1	97
Figure 5.5b	Simulation results for the comparison between FSK and PSK, for a phase error change from 0.7 to 1 with step 0.1	98
Figure 5.6	A channel with low phase delay	99
Figure 5.7	A channel with high phase delay	99
Figure 6.1	Open systems interconnection layer model (OSI 7 layer model)	102
Figure 6.2	Three layer model	104
Figure 6.3	PLC access network	106
Figure 6.4	PLC network structure	107
Figure 6.5	Logical PLC bus network structure	107
Figure 6.6	OFDM channels structure	109
Figure 6.7	Reservation protocols	112
Figure 6.8	The PLC simulation model	113
Figure 6.9	The average network utilization for the two types of reservation protocols	115
Figure 6.10	The mean access delay	117
Figure 6.11	Average relative data throughput for network users	118
Figure 7.1	Implementation of a suggested PLC system	121
Figure 7.2	Instrument transformers	122
Figure 7.3	Transducers	123
Figure 7.4	Remote terminal unit	124
Figure 7.5	Communication Switch	124
Figure 7.6	Meter	125
Figure 7.7	Digital Fault Recorder	126
Figure 7.8	SEL-351R Recloser Control	126
Figure 7.9	Time Synchronization Source	127
Figure 7.10	Protocol Gateway	127
Figure 7.11	Programmable Logic Controller Right Cabinet, PC and Accessories Left Cabinet	128
Figure 7.12	SEL-351 Relay	128
Figure 7.13	SEL-2030 Communications Processor	129
Figure 7.14	Two line radial distribution network- Manual isolation switches	131
Figure 7.15	Automatic isolation switches	131
Figure 7.16	Distribution Automation on international drive	133
Figure 7.17	Operating diagram for international drive power line carrier SCADA communication system	136

LIST OF TABLES

Table number	Description	Page
Table 2-1	Values of peak to minimum load ratio	15
Table 2-2	Typical low voltage line parameters	16
Table 3-1	Signal propagation paths of the sample network	39
Table 3-2	Simulation results of the studied network	40
Table 3-3	Signal propagation paths of module (a)	43
Table 3-4	Signal propagation paths of module (b)	44
Table 3-5	Total weighting factor and total path lengths of a two branches network	45
Table 3-6	Simulation results of modules (a), and (b)	46
Table 3-7	Signal propagation paths of the two branches network	48
Table 3-8	The weighting factor of a two branches network using the echo model approach	48
Table 3-9	Parameters of the PLC channel model	51
Table 3-10	Parameters of Reference channel I	55
Table 3-11	Parameters of reference channel II	57
Table 3-12	Parameters of reference channel III	59
Table 3-13	Parameters of reference channel IV	61
Table 4-1	Classification of impulsive noise	77
Table 4-2	An example of noise parameters	79

LIST OF VARIABLES

Z_L	Characteristic impedance
P_T	Transmitted power
P_E	Injected power
P_R	Reflected power
γ	Propagation Constant
β	Phase constant
$\alpha(f)$	Attenuation constant
$A(f,l)$	Attenuation (dB)
r	Reflection factor
t	Transmission factor
g_i	Weighting factor of path i
τ_i	Delay time of path i
d_i	Length of path i
$H(f)$	PLC channel transfer function
$a_0, a_1,$ K	The attenuation terms
f_i	Carrier frequency
$n(t)$	Noise function
$\sigma^2(t,f)$	Noise variance
$\sigma^2(t)$	Noise instantaneous power
$a(f)$	Normalized power spectral density of noise
A_i	Amplitude of i^{th} component of noise instantaneous power
θ_i	Phase of i^{th} component of noise instantaneous power
n_i	Impulsiveness of i^{th} component of noise instantaneous power
$s(t)$	The modulated signal
A(t)	Amplitude of the modulated signal
f(t)	Frequency of the modulated signal
$\varphi(t)$	Phase of the modulated signal
d(t)	Change of binary input stream (logic 1, or logic 0)

LIST OF ACRONYMS

PLC	Power Line Carrier
RCS	Ripple Control System
LAN	Local Area Network
PVC	Poly Vinyl Chloride
VPE	Vulcanized Polyethylene
BALUN	Balanced Unbalanced (transformer)
CENELEC	The European Committee for Electromechanical Standardization
PSD	Power Spectral Density
ASK	Amplitude Shift Keying (modulation)
PSK	Phase Shift Keying (modulation)
FSK	Frequency Shift Keying (modulation)
PLL	Phase Locked Loop (receiver)
SNR	Signal to Noise Ratio
ISO	International Standard Organization
OSI	Open System Interconnection
MAC	Media Access Control
LLC	Logical Link Control
CSMA	Carrier Sense Multiple Access
CDCR	Collision Detection and Collision Resolution
CBR	Constant Bit Rate
WAN	Wide Area Network
OFDM	Orthogonal Frequency Division Multiplexing
ARQ	Automatic Repeat Request
DSA	Distribution System Automation
SCADA	Supervisory Control and Data Acquisition
RTU	Remote Terminal Unit
IED	Intelligent Electronic Device
I&C	Instrument and Control

CONTENTS

ACKNOWLEDGMENTS
ABSTRACT
LIST OF FIGURES
LIST OF TABLES
LIST OF VARIABLES
LIST OF ACRONYMS

CHAPTER ONE

INTRODUCTION

1.1 General 1

1.2 Historical Background 2

1.3 Relevance of PLC Telecommunications Technology to Building The Information Society 4

1.4 Why Limited Exploitation so Far? 5

1.5 Literature Review 6

1.6 Objective of the thesis 8

1.7 Summary 9

CHAPTER TWO

TOPOLOGY AND STRUCTURE OF THE ELECTRICAL POWER DISTRIBUTION SYSTEM

2.1 Introduction 12

2.2 Description of Distribution Network 12

2.3 Properties of Lines and Cables in Low-Voltage Distribution Network 14

2.3.1 Properties near power frequency (50 or 60Hz) 14

2.3.2 Properties at higher frequencies 15

2.4 Concept of Power Line Communications 28

CHAPTER THREE

PLC CHANNEL MODEL IN ELECTRICAL DISTRIBUTION NETWORKS

3.1 Introduction 31

3.2 The Echo-Based Transfer Function Approach 33

3.3 Weighting Factor Calculation Methods 36

3.3.1 Evaluation of the weighting factor for a sample network using the echo model approach 37

3.3.2 A proposed methodology to evaluate the weighting factor for complex networks 41

3.3.3 Case study 41

3.3.4 A comparison between the proposed methodology and the echo model Approach 46

3.4 Signal Attenuation 49

3.5 The Channel Model 50

3.5.1 A generalized multi-path signal propagation model of the transfer function 50

3.5.2 The simplified model 51

3.6 Analysis of Channel Response of a Sample Network 52

3.7 PLC Reference Channels for Distribution Networks 54

3.7.1 Reference channel I 55

3.7.2 Reference channel II 57

3.7.3 Reference channel III 59

3.7.4 Reference channel IV 61

3.8 Conclusions 63