Dedication

I dedicated this work to my wife, Faiha,
for her stead fast support, under standing,
and patience

Acknowledgment

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Abstract

Recently, digital data transmission has witnessed considerable importance. This is a result of huge increase in applications where data, voice, video, and multimedia are digitally processed in baseband modulation, however, the pulse wave form (mostly in PCM) is modified in such away as to suite transmission medium and thus often called digital line codes.

A general form of digital line codes are (NRZ-I, NRZ- L, NRZ-S) where explained in this research by using computer board system with electronic circuit design.

Finally describes the program software using C language and flow chart.

المستخلص

هذا البحث يقدم شرح مع تصميم دائرة الكترونية رقمية تفعل بواسطة جهاز الحاسوب باستخدام برنامج كتب بلغة سي لغرض إتمام عملية التشفير الرقمي.

التشفير الرقمي أنواع متعددة ولكل نوع يتم تفعيله برمجياً من خلال الحاسوب وتفعيل الدائرة الالكترونية الرقمية المتصلة بجهاز الحاسوب التي من خلالها يتم معرفة خصائص ومميزات كل نوع من أنواع التشفير الرقمي. مع استعراض بعض من الدوائر الالكترونية الرقمية التي عن طريقها تتم عملية التشفير الرقمي.

يمكن الاستفادة من هذا البحث كوسيلة إيضاح للتشفير الرقمي وطرقه المتنوعة ورؤية نتيجة كل عملية من عمليات التشفير الرقمي.

Table of Contents

List of Tables

List of Figures

Abbreviation

AMI	=	alternate mark innovation
Bi- phase- L	=	Bi- Phase Level
Bi- Phase – M	=	Bi – Phase mark
Bi – Phase – S	=	Bi- Phase Space
CMOS	=	Complimentary maitaloxide silicon
DBi- Phase – M	=	Differential Bi- phase mark level
DBi- Phase – S	=	Differential Bi – Phase Space
DC	=	Direct current
I/O	=	input/ output
IEEE	=	Institute of Electrical and Electronic Engineers
ISI	=	inter symbol interference
LAN	=	Local Area Net work
LPF	=	Low pas filter
NRZ	=	Non- Return – to – zero
NRZ- I	=	Non – Return – to – zero inverse
NRZ – L	=	Non – Return – to- zero level
NRZ- M	=	Non – Return – to – zero mark
NRZ- S	=	Non – Return – to – zero space
RTZ	=	Return – to – zero
PAM	=	Plus Amplitude modulation
PC	=	Personal computer
PCM	=	plus code modulation
TCP	=	try to correct the data
TS	=	Time period of each sample
TTL	=	Transistor – transistor logic

Sudan University of Science & Technology

College of graduate Studies
MSc. Of communication Engineering

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تصميم دائرة التشفير الرقمي

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Chapter One

Introduction

Chapter Two

Type of encoding

Chapter Three

Electronic circuit design

Chapter Four

Software code

Chapter Five

Result & Discussion

Chapter Six

Conclusion & Recommendation

Appendix