

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قال تعالى:

(لَكَيْلًا تَأْسَوْا عَلَىٰ مَا فَاتَكُمْ وَلَا تَفْرَحُوا بِمَا آتَاكُمْ وَاللَّهُ لَا يُحِبُّ كُلَّ مُخْتَالٍ فَخُورٍ)

صدق الله العظيم

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Dedication

To :

My parents,

Friends

&

My Country Sudan

Acknowledgements

I want to thank all those who helped me in accomplishing this thesis, specially my supervisor Dr. Abd Elrasool Gabbar for guidance and supervision, thanks to my parents for support and understanding for the long time of off duty working on the thesis.

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Before all thanks to Allah, "He who has taught us what we don't know"

Abstract

This thesis is about development of Closed circuit television (CCTV) which places an important role in building operations and the protection of property and people. The main function of the CCTV system is to allow remote viewing (typically from several cameras back to one location within the same building) and surveillance. It is typically part of an overall integrated package operated by security personnel that includes access control, alarms, intrusion detection, and communications. A typical CCTV system will include, cameras, a transmission medium (i.e. coaxial, fiber-optic, twisted-pair), video switcher, multiplexer, display monitors and DVR. The CCTV systems are widespread all over the world, especially at the airports, hospitals and banks.

The thesis cover all the parts of the CCTV system, giving a detailed information, and at last including a practical control circuit with a program in C language controlling a camera through the parallel port of a PC.

تجريد

يصف هذا البحث تطوير الدائرة التلفزيونية المغلقة والتي تقوم بدور مهم في إدارة عمليات المباني وحماية الثروة والناس. المهمة الأساسية لنظام الدوائر التلفزيونية المغلقة هي السماح بالرؤية عن بعد والمراقبة (تكون الرؤية من عدة كاميرات في زوايا مختلفة وتدار من منطقة واحدة للمبنى).

تكون الدائرة التلفزيونية المغلقة جزءاً من مجموعة متكاملة تدار بواسطة رجال الأمن . تحوي المجموعة التحكم في الدخول والإنذار وكشف الاقتحام والاتصالات.

عادة يتكون نظام الدائرة التلفزيونية المغلقة من الكاميرات ، الأوساط الناقلة (الكابل المحوري ، كابل الألياف الضوئية ، كابل الأزواج المجدولة) مفتاح التداخل الإلكتروني ، شاشة العرض والمسجل التلفزيوني الثنائي .

أنظمة الدوائر التلفزيونية المغلقة انتشرت حول العالم وخصوصاً في المطارات والمستشفيات والبنوك .

يقوم هذا البحث بتغطية كل أجزاء نظام الدوائر التلفزيونية المغلقة بالتفصيل ويحتوي البحث علي جزء عملي لدائرة تحكم مع برنامج بلغة السي وذلك خلال البوابة المتوازية لجهاز الحاسوب .

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List of Abbreviations

No.	Abbrev.	Meaning
1.	CCTV	Closed Circuit Television
2.	C-mount	Cine Mount
3.	CS-mount	Cine Short Mount
4.	CCD	Charge Coupled Device
5.	FOV	Field of View
6.	DSP	Digital Signal Processing
7.	S/N	Signal to Noise
8.	CMOS	Complementary - Metal Oxide Semiconductor
9.	AGC	Automatic Gain Control
10.	DVD	Digital Video Disc
11.	PTZ	Pan, Tilt, Zoom
12.	NTSC	National Television System Committee
13.	SECAM	Sequential Color with Memory
14.	PAL	Phase Alternation Line
15.	PVC	Polyvinyl chloride
16.	RF	Radio Frequency
17.	A/D	Analogue to Digital
18.	VCR	Video Cassette Recorder
19.	DVR	Digital Video Recorder
20.	VHS	Video Home System
21.	LAN	Local Area Network
22.	DSL	Digital Subscriber Line
23.	SPP	Standard Parallel Port

No.	Abbrev.	Meaning
24.	EPP	Enhanced Parallel Port
25.	LPT	Line Printer Terminal
26.	IC	Integrated Circuit
27.	LED	light-Emitting Diode
28.	EMF	Electric Magnetic Field

