

LASER BASED SECURITY SYSTEM IN RESTRICTED AREAS

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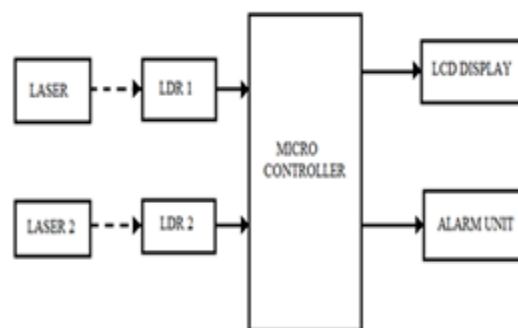
ABSTRACT

The project title “LASER BASED SECURITY SYSTEM IN RESTRICTED AREAS” itself indicates that whenever someone tries to enter in to restricted areas such as museums, borders and no entry places. If anyone enters such areas then the theft will be automatically identified with the help of laser communication and the authorized persons can take proper action. That means the thief is arrested. One such thing is using LDR sensor which is used to detecting the LASER communication. Whenever someone tries to steal the jeweler at the jeweler corner in the shopping mall or someone enters in restricted areas, LASER communication is detected by LDR sensor. If the LDR sensor detects the LASER light then alarm is deactivated. The alarm will be ‘on’ for indicating that someone is entered.

INTRODUCTION

The project title “LASER BASED SECURITY SYSTEM IN RESTRICTED AREAS” itself indicates that whenever someone tries to enter in to restricted areas such as museums, borders and no entry places. If anyone enters such areas then the theft will be automatically identified with the help of laser communication and the authorized persons can take proper action. One such thing is using LDR sensor which is used to detecting the LASER communication. Whenever someone tries to steal the jeweler at the jeweler corner in the shopping mall or someone enters in

restricted areas, LASER communication is detected by LDR sensor. If the LDR sensor detects the LASER light then alarm is deactivated. The alarm will be ‘on’ for indicating that someone is entered.



AT89C51 MICROCONTROLLER

Microcontroller is a general-purpose device, which integrates a number of the



components of a microprocessor system on to single chip. It has inbuilt CPU, memory and peripherals to make it as a mini computer. A microcontroller combines on to the same microchip:

- The CPU cores
- Memory (both ROM and RAM)
- Some parallel digital i/o

Microcontrollers will combine other devices such as:

- A timer module to allow the microcontroller to perform tasks for certain time periods.
- A serial I/O port to allow data to flow between the controller and other devices such as a PIC or another microcontroller.
- An ADC to allow the microcontroller to accept analogue input data for processing. Microcontrollers are:

- Smaller in size
- Consumes less power
- Inexpensive

Micro controller is a stand-alone unit, which can perform functions on its own without any requirement for additional hardware like I/O ports and external memory.

The heart of the microcontroller is the CPU core. In the past, this has traditionally been based on 8-bit microprocessor unit. For

example, Motorola uses a basic 6800 microprocessor core in their 6805/6808 microcontroller devices.

In the recent years, microcontrollers have been developed around specifically designed CPU cores, for example the microchip PIC range of microcontrollers.

AT89C51 is the 40 pins, 8-bit Microcontroller manufactured by Atmel group. It is the flash type reprogrammable memory. Advantage of this flash memory is we can erase the program with in few minutes. It has 4kb on chip ROM and 128 bytes internal RAM and 32 I/O pin as arranged as port 0 to port 3 each has 8-bit. port 0 contain 8 data line(D0-D7) as well as low order address line (A0-A7).

Port 2 contain higher order address line (A8-A15). Port 3 contains special purpose register such as serial input receiver register SBUF, interrupt INT0, INT1 and timers T0, T1 many of the pins have multi functions which can be used as general purpose I/O pins (or) Special purpose function can be decided by the programmer itself.

Many microcontroller applications require the counting of external events, such as the frequency of a pulse train, or the generation or precise internal time delays between computer actions. Both of these tasks can be



accomplished using software techniques, but software loops for counting or timing keep the processor occupied so that other, perhaps more important, functions are not done. To relieve the processor of this burden, two 16-bit up counters, named T0 and T1, are provided for the general use of the programmer. Each counter may be programmed to count internal clock pulses, acting as a timer, or programmed to count external pulses as a counter.

The counters are divided into two-8-bit registers called the timer low (TL0, TL1) and high (TH0, TH1) bytes. All counter action is controlled by bit states in the timer mode control register (TMOD), the timer/counter control register (TCON), and certain program instructions.

HARDWARE REQUIREMENTS

A resistor is a passive two-terminal electrical component that implements electrical resistance as a circuit element. In electronic circuits, resistors are used to reduce current flow, adjust signal levels, to divide voltages, bias active elements, and terminate transmission lines, among other uses. High-power resistors that can dissipate many watts of electrical power as heat may be used as part of motor controls, in power distribution systems, or as test loads for

generators. Fixed resistors have resistances that only change slightly with temperature, time or operating voltage. Variable resistors can be used to adjust circuit elements (such as a volume control or a lamp dimmer), or as sensing devices for heat, light, humidity or chemical activity.

This describes the basic characteristics of KEMET capacitors. There are some of the basics of all capacitors and then of the major types sold under the KEMET brands: solid tantalum and monolithic ceramic. For all practical purposes, consider only the parallel-plate capacitor: two conductors or electrodes separated by a dielectric material of uniform thickness. The conductors can be any material which will conduct electricity easily.

A push button is a simple switch mechanism to control some aspect of a machine or a process. Buttons are typically made out of hard material, usually plastic or metal. The surface is usually flat or shaped to accommodate the human finger or hand, so as easily to be depressed or pushed. Buttons are more often biased switches, although many un-biased buttons (due to their physical nature) still require a spring to return to their un-pushed state. Terms for the “pushing” of

a button include pressing, depressing, mashing, slapping and hitting.

Light-emitting diodes (LEDs) are promising lighting sources for general lighting applications with the promise of being more than ten times as efficient as incandescent lighting. Such characteristic combined with their long operating life and reliability has made them becoming a potential choice for next generation of lighting systems. To ensure proper operation and to control the light intensity, LEDs need an efficient driver, normally implemented by power electronics-based conversion stages, to match the LED characteristics with the AC grid voltage and to generate a controllable, high-quality light. Luminous flux is an attribute of visual perception in which a source appears to radiate or reflect light. Luminous flux is measured in lumen and is the light power measured multiplied with the $V-\lambda$ scaling function which compensates for the human eye's sensitivity to different wavelengths. The luminous flux of LEDs is largely governed by the current flowing through the device.

RESULT AND CONCLUSION

The proposed system helps in avoiding robbery, thefts and crime. It also introduces a smart approach to detect the intruder.

Avoiding thieves results in the safety of our financial assets and thereby this system provides us protection against all. This system is low cost and robust. This security system can be used in different commercial buildings mainly banks. This highly reactive approach has low computational requirement; therefore, it is well suited to surveillance, industrial application and smart environment. This system hopefully will be the helping hand for society

