

Секція:

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LASER SECURITY SYSTEM WITH GSM

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Laser based security system is designed to provide maximum security to a given restricted area where the presence of any person is not desired. If someone tries to pass over the boundary line defined by laser lights, an alarm will be triggered and a SMS to the authorized person will be sent. Proper messages will also be displayed on the LCD. With this obstacle sensor, you can find out your car's distance to another car behind it while backing.

In the kit laser based security system Light Dependent Resistors analog to digital converter (LDR) is used as a laser light sensor. If the laser lights are cut, even for a moment, the intensity of the light on the LDR will decrease.

On this momentary duration the output of the ADC converter will go low and the microcontroller can sense this information quickly. Now the microcontroller will trigger an alarm and will send a SMS or call using GSM. The GSM modem is connected with the controller serially which works on series of commands given by the microcontroller.

This device is shown on picture 1 and includes the following tools:

1. GSM Modem: [GSM modem](#) allows the computer to communicate over the mobile network through calls, SMS and MMS messages. It [consists of a SIM card](#) and operates over a subscription through a mobile network.
2. Arduino Uno (mega) board is a microcontroller this is the heart of the system wherein central processing of data takes place, by receiving the sensor signals, it takes the corresponding course of action by sending commands to the output devices.
3. Jumper Wires to connect sensors to each other and to the board arduino
4. Led for given signal by lighting.
5. LCD monitor for given signal by shown on screen how different messages and to show how to enter your password.
6. Buzz sound given signal sound when a stranger pass the laser light without to enter the password or fingerprint.
7. 1 Breadboard (small board to connect the wires and to save pins on board Arduino).
8. Keypad is a set of buttons arranged in a block, used to enter the password to turn off the system or switch off the laser.
9. Fingerprint in its narrow sense is an impression left by the [friction ridges](#) of a human [finger](#), the recovery of fingerprints from a crime scene is an important method of [forensic science](#). Fingerprints are easily deposited on suitable surfaces by the natural secretions of sweat from the [eccrine glands](#) that are present in epidermal ridges, here we used as a password for our system.
10. It could have a camera for taken picture and send to the owner directly by GSM.
11. Also we can add different sensory systems like motion, smoke, gas, temperature, glass break or door break detectors and fire alarm systems.

Conclusion

- The advantage of this development is the circuit, construction and setup for the Laser Security System is very simple.
- The whole system can be powered from any 12VDC/2A power supply unit/battery.