

ADMISSION IMPOSSIBLE ROOM

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ABSTRACT

The Admission Impossible Room implements a security system with a door access system and a four-level presence detection. The door access system includes numeric password keypad inputs and door lock control. Inside the room, the four levels of security include the temperature, laser and sound sensors and camera surveillance with motion detection.

The keypad input circuit uses two keypads, one outside the room and the other inside, a buffer and a not gate that is used to select which keypad is ready to accept an input. The temperature sensor uses an LM 35, an amplifier circuit and an Analog-to-Digital Converter (ADC). The laser sensor is implemented using a light-dependent resistor (LDR), an NE555, a laser light source and mirrors. The sound detector circuit is essentially composed of a mic element, an amplifier circuit, and a comparator. The camera surveillance with motion detection module is the last of the four-level presence detection. This is implemented using a Logitech USB webcam.

The main code controlling the door access system and the three sensors is written in Turbo C, while the camera surveillance code, which uses the motion detection function of the webcam, is in Visual Basic 6.0.