

## **Abstract**

A remote-controlled digital electronics trainer device has been designed and implemented based on ATmega328 QFN microcontroller, logic gate integrated circuits (ICs) and an infrared (IR) detector. On the board face are light emitting diodes (LEDs) that indicate logic state of various logic inputs and outputs. A remote transmitter completes the set up and is used to send infrared signals to the receiver. This prototype presents a novel approach of designing teaching aids to help reach a larger number of learners when demonstrating certain concepts during learning sessions. The wireless control integration in the device enables a technologist or a lecturer to demonstrate to learners how logic gates respond to logic inputs by a press of button on the transmitter. Various combinations of inputs have been tested and it's been found that the board has a maximum power consumption of 1.85W. It's expected to solve the challenge of having many learners and less teaching aids especially in developing countries. The design procedure, implementation, testing and verification of the device is discussed in this paper.