

# Jordan University of Science and Technology

## Modeling and Design of an Infrared-based Identification (IRID) System-Tag and Reader Design

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**Abstract:** Infrared based identification system is a promising alternative for radio frequency identification system in order to provide powerful solutions in many situations, i.e., to overcome radio frequency interference. In this work, an infrared-based identification system is modeled and designed. This model consists of a reader and a tag. The reader will perform particular functions in order to communicate with the tag via a wireless media, i.e., infrared channel. These functions include reading a tag identification number and write an identification number into a tag. The reader in the proposed model will display the received data using a liquid crystal display, allows the user to enter data as well as make control using a keypad, and can be connected to a computer to perform more complex functions. On the other hand, the proposed tag is designed to have some merits, i.e., small size, low power consumption, long lifetime, and low cost. Finally, the reader and the tag provide half-duplex communication using infrared transmitter and receiver.