



IEEE Reference:

**Automation of Time and Attendance using RFID
Systems**

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RFID ATTENDANCE RECORDING SYSTEM

Title of the project	:	RFID Based Attendance Recording System.
Domain	:	Advanced Embedded Systems Design
Software	:	Embedded C, Keil, Proload
Microcontroller	:	AT89S52
Power Supply	:	+5V, 750mA Regulated Power Supply
Display	:	LED 5mm, 16 X 2 LCD
Crystal	:	11.0592MHz
Data Communication	:	Through Serial Communication
Applications	:	Colleges, Companies etc
Developed By	:	M/S Wine Yard Technologies
Phone	:	040-65178887, 40173827
Website	:	www.WineYardTechnologies.com



RFID ATTENDANCE RECORDING SYSTEM

ABSTRACT

RFID is an acronym for Radio Frequency Identification. RFID is one member in the family of Automatic Identification and Data Capture (AIDC) technologies and is a fast and reliable means of identifying just about any material object. This project can be applied in real time applications such as for recording the attendance. This system can be used in big companies, industries, colleges, schools, etc where there are many numbers of candidates available. This system helps us in recording the attendance of a person easily within fraction of seconds. RFID is increasingly used with biometric technologies for security. Primarily, the two main components involved in a Radio Frequency Identification system are the Transponder (tags that are attached to the object) and the Interrogator (RFID reader). Communication between the RFID reader and tags occurs wirelessly and generally doesn't require a line of sight between the devices.

RFID tags are categorized as either active or passive. Active RFID tags are powered by an internal battery and are typically read/write, i.e., tag data can be rewritten and/or modified. An active tag's memory size varies according to application requirements; some systems operate with up to 1MB of memory. Passive RFID tags operate without a separate external power source and obtain operating power generated from the reader. This project uses passive tags. Read-only tags are typically passive and are programmed with a unique set of data (usually 32 to 128 bits) that cannot be modified. The reader has three main functions: energizing, demodulating and decoding. The antenna emits radio signals to activate the tag and to read and write data to it.

In this project, the RFID module reader typically contains a module (transmitter and receiver), a control unit and a coupling element (antenna). This module is interfaced with the micro controller and when the card is brought near to the RFID module it reads the data in the card and displays on the LCD.



If the data in the card is matched with the data in the program memory then it compares with that ID code and displays as “ID FOUND” along with his/her name on the LCD. After it displays it records the time at which the person has entered into the premises using real time clock (RTC) DS-1307. If the data is not matched then it simply displays as “ID NOT FOUND”.

In this project as we are using an RTC, to set the current time there are two switches provided one for entering and the other for incrementing. Then next one more switch is provided for checking the list of the candidates present. For the data not matched it alerts a person through a buzzer. The RFID module indicates a buzzer whenever it reads the data from the RFID card.

The significant advantage of all types of RFID systems is the non contact, non-line-of-sight nature of the technology. Tags can be read through a variety of substances such as snow, fog, ice, paint, crusted grime, and other visually and environmentally challenging conditions, where barcodes or other optically read technologies would be useless. Hence this project can be very much useful and can be implemented in real time applications for recording the attendance.

This project uses regulated 5v, 500mA power supply. 7805, a three terminal voltage regulator is used for voltage regulation. Bridge type full wave rectifier is used to rectify the ac output of secondary of 230/12v step down transformer. The RFID module requires a separate +5v power supply.

