

Title of the project	:	Automatic Periodic School Bell using Dallas RTC and I2C
Domain	:	Embedded Systems Design
Software	:	Embedded C, Keil, Proload
Microcontroller	:	AT89S8252
Power Supply	:	+5V, 500mA Regulated Power Supply +12V, 500mA Regulated Power Supply
Display	:	16 X 2 LCD
RTC	:	DS 1307
Crystal	:	12MHz for MCU, 32.768KHz for RTC
Input	:	Switches
Technical support	:	M/S Wine Yard Technologies
Phone	:	040-65178887, www.WineYardTechnologies.com

ABSTRACT

Manual operation of school bell / college bell creates lot of disturbances caused by human errors. If the bell operator forgets to ring the bell for a specific period, or delayed to ring the bell, it creates disturbances for entire the institution. All the classes on that day will be completely disturbed. This problem is more present if the bell operator is on leave. Automatic Periodic College Bell is the only solution to avoid all these problems.

The Project AT89S8252 Microcontroller Based Automatic Periodic College Bell with RTC DS1307 Interfacing is an interesting project which uses AT89S8252 microcontroller as its brain. This project is very useful in schools, colleges and educational / academic institutions for automation of periodic class bell. This bell rings only at preprogrammed timings. As the DS1307 Real Time Clock chip is used, entire the calendar can be programmed into the microcontroller. User can program the bell to ring the bell from morning to evening and not to ring in after school hours and on Sundays and Second Saturdays.

Micro Switches is provided for entering the required timings. This switches made this project user friendly. 16X2 LCD display is provided to display the alarm times and current time. DS1307 is interfaced to the microcontroller for real timing performance. A 3V battery can be connected to DS1307 to avoid time disturbances caused by power failures.

AT89S8252 has inbuilt flash EPROM. Data stored remains in the memory even after power failure, as the memory ensures reading of the latest saved settings by the micro controller. It can retain data for more than ten years.

This project uses regulated 5V, 500mA power supply. Unregulated 12V DC is used for relay. 7805 three terminal voltage regulator is used for voltage regulation. Bridge type full wave rectifier is used to rectify the ac out put of secondary of 230/12V step down transformer.

Block Diagram

