RAILWAY TRACK SECURITY SYSTEM

ABSTRACT:

The project is designed to detect a crack, if any, on the railway track and alert the respective railway department. This is to avoid rail accidents by using latest communication technologies. In this project GSM communication protocols are used to convey the message of crack detection via SMS.

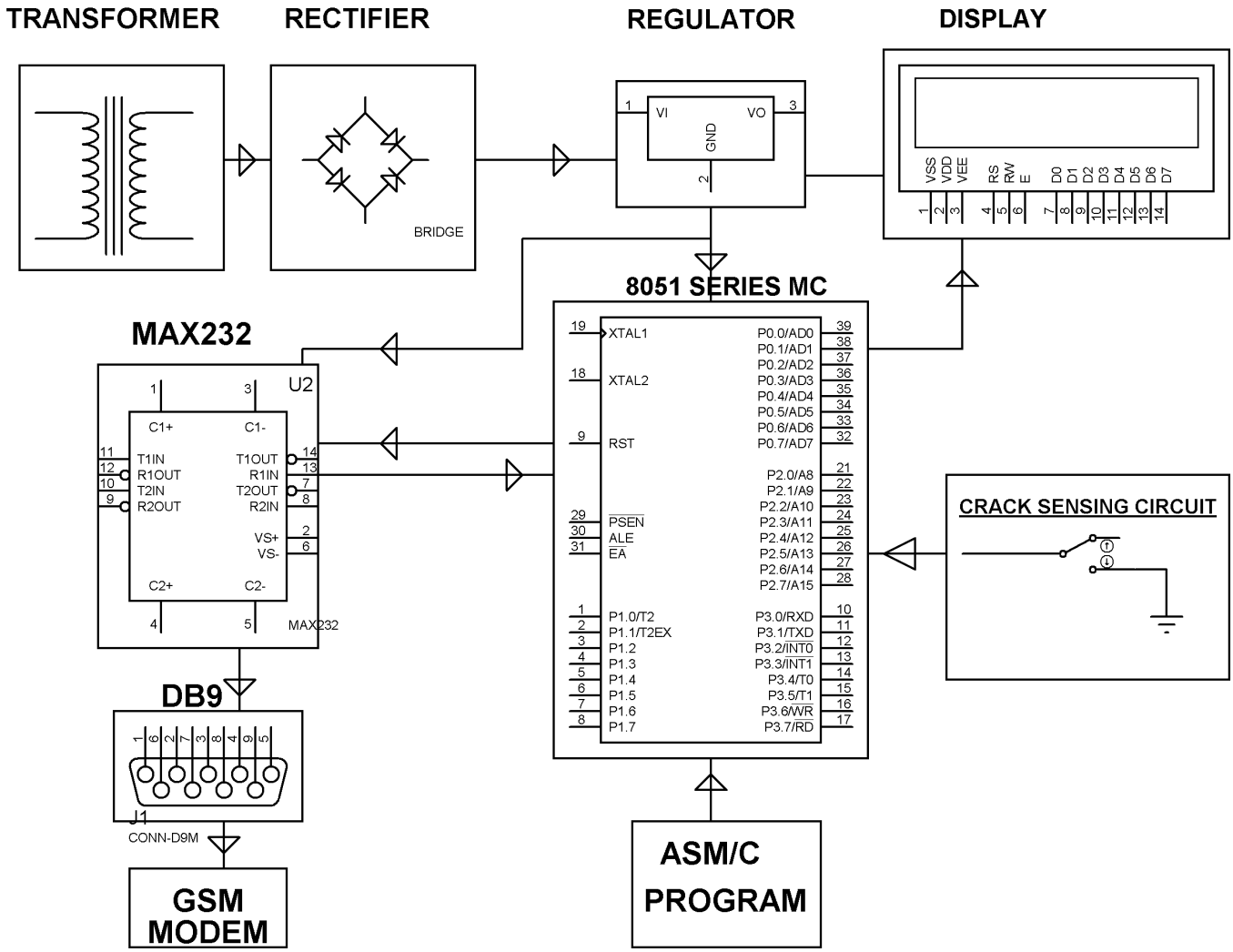
This project uses a microcontroller from 8051 family. The primary objective of this project is to detect the crack in the railway track and alert the nearby station through effective and highly reliable communication mode. To demonstrate this project, two rails forming the part of a track are made using a pair of wire which is connected with a detachable jumper in between each wire/track. Removing the detachable jumper creates a fault in the respective track; otherwise it is generally shorted by the jumper wire to simulate healthy track condition.

Removing the jumpers result in driving transistors delivering a different logic to the controller. The program thereafter takes over to send an SMS through GSM modem interfaced through a level shifter IC to the microcontroller. An LCD is also interfaced to the MC to display the status of GSM and track condition. Thus the proposed model is designed to recognize the cracks in the railway tracks and provides instant information to the concerned railway authorities.

The power supply consists of a step down transformer 230/12V, which steps down the voltage to 12V AC. This is converted to DC using a Bridge rectifier. The ripples are removed

using a capacitive filter and it is then regulated to +5V using a voltage regulator 7805 which is required for the operation of the microcontroller and other components.

BLOCK DIAGRAM:



HARDWARE REQUIREMENTS:

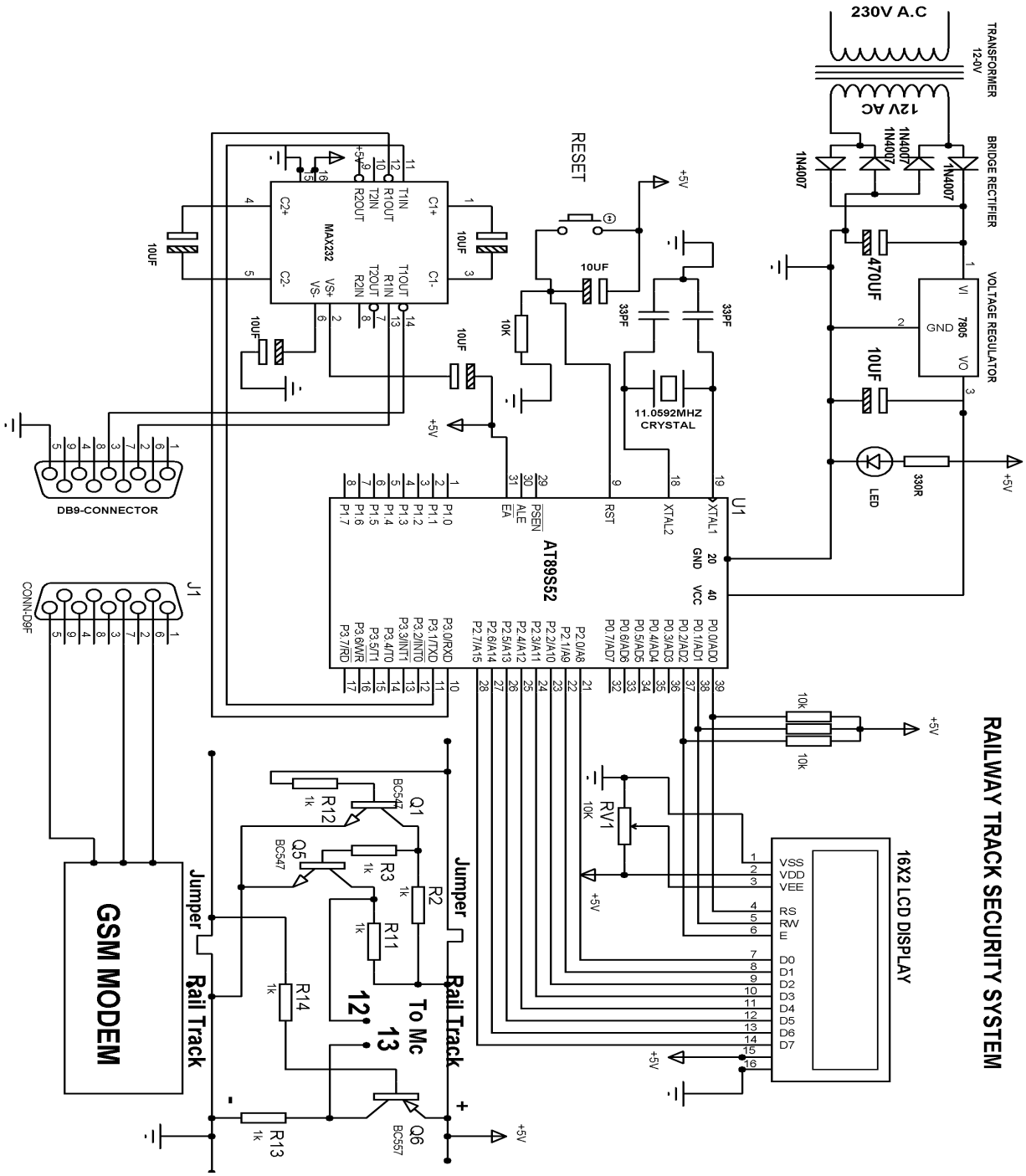
Transformer, Diode, Rectifier, 8051 series Microcontroller, GSM Modem, Level Shifter IC.

SOFTWARE REQUIREMENTS:

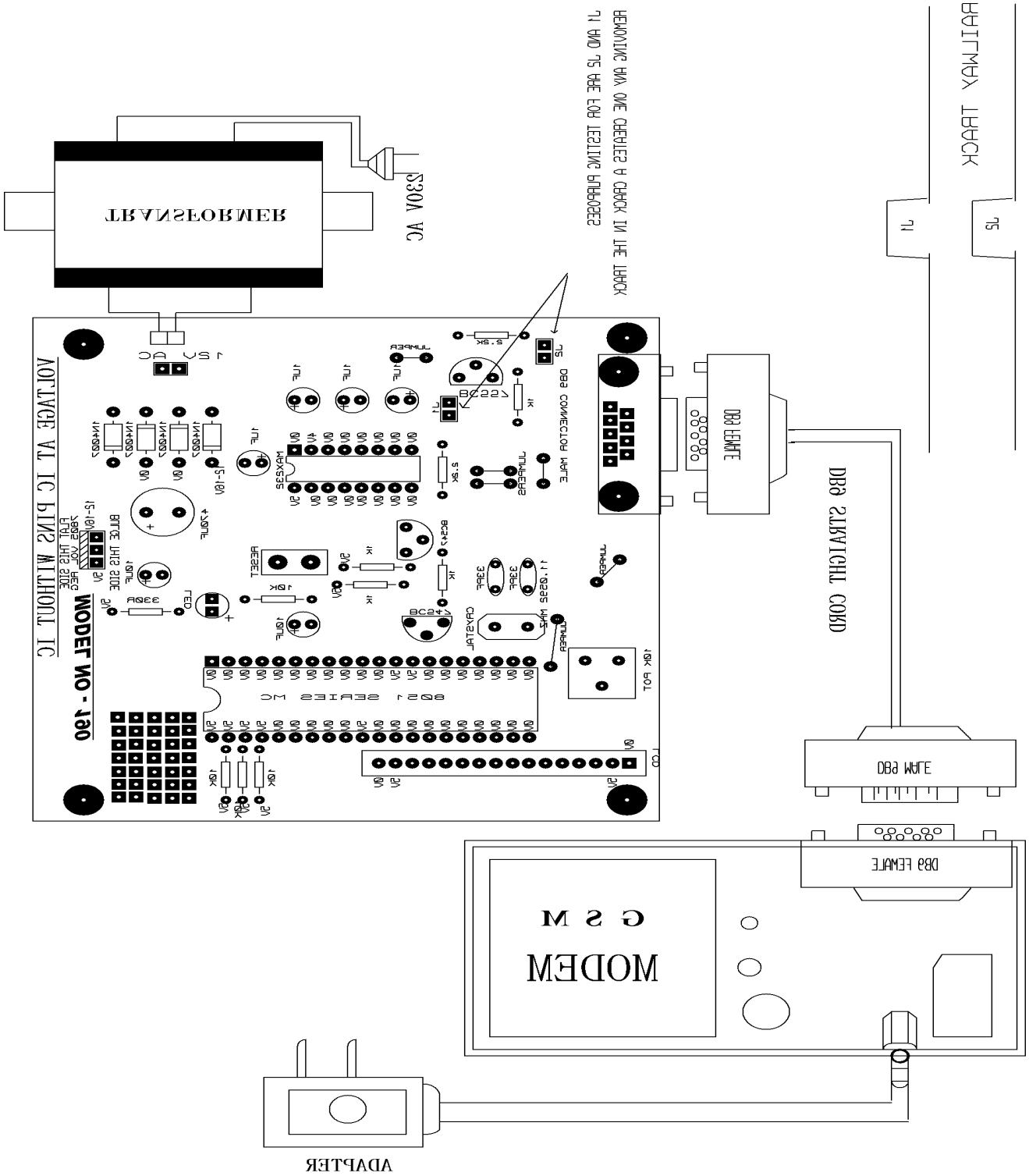
Kiel compiler

Languages: Embedded C and or Assembly

Circuit diagram



PCB artwork



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We will mail you within 24hours from the time you mail us.

Name of the student & phone number
PROJECT NAME
Group member1 Group member 3
Group member 2 Group member 4
Group member 5

College name Branch

Note to make your kit /project

You need basic knowledge & logic of components /soldering /disordering /breadboard circuiting/PCB designing/etching.

1. You can download the projects from our website makeitortakeit.in and get started to build one, we help you with the basics of know & how.
2. You can purchase the complete do it yourself kit & assemble it.
3. At the last moment, If you are short on time /if your project is not giving output!!!!!! Readymade project kit is available.
4. **Training (optional)** available if you want us to help u in your projects, it includes.
    - 7 sessions, (timing mutually decided).
    - hands on training on breadboard circuiting ,soldering,desoldering,pcb making ,how to use instruments
    - Stepwise guidance you build your project right from the scratch **.
    - complete documentation/references(hard & soft copy)
    - Plotting and Implementing Scale Model.
    - Troubleshooting.
    - Programming of Controllers
    - PCB Software tool, Hardware Cutting, Drilling and Etching