

ABSTRACT

Railroad detection equipment that is being developed by the Telecommunication and Electricity Signal Center PT. Indonesian Railroad Region 2 Operation Bandung (Balai Yasa SINTEL PT. KAI DaOp 2 Bandung) uses the GY-521 sensor module, Arduino Nano, relay, and DC / DC adapter as its components. With these components as constituents, the train detection device can be classified as a good digital computing device that needs good electromagnetic compatibility (EMC).

Electromagnetic interference (EMI) can occur in a railroad detection device without EMC compatible design of component layout on the printed circuit board (PCB). Electromagnetic interference can produce interference with digital signals that are used in processing so that they can cause errors in reading. By designing the PCB layout of a train detection device with EMC consideration, potentially occurring electromagnetic interference can be muted until the voltage signal interference is not more than 500 mV.

With this research, it is expected that the railroad detection equipment being developed by Balai Yasa SINTEL PT. KAI DaOp 2 Bandung can work well without a voltage signal interference of more than 500 mV. With no signal voltage disturbances of more than 500 mV, sensor reading errors can be avoided and improve the working accuracy of the train detection device.

Keywords : *Grounding, EMI, EMC, voltage noise.*