

Design of PCB for controller of Bolometer electronics

Abstract

PCBs play an important role in providing electrical interconnections between electronic components, rigid support to hold components, and a compact package that can be integrated into an end product. They are the main component in an electronic device that is responsible for functioning of circuit. PCB layout directly impacts signal integrity, ensuring signals travel through the board without distortion or interference.

Controller has been designed to remotely control parameters of bolometer signal conditioning unit. The project aims to design the PCB of controller in compact form factor where most of the digital and interface components used will be in smd package. The card will be introduced into the bolometer signal conditioning chassis and will be tested during plasma experiment.

PCB designing will be done in Ki-Cad , an open source software suite for electronic design automation (EDA). The project will be implemented in four steps:

1. Understanding the design specifications
2. Schematic design
3. Component placement
4. Routing and output generation

The project will enable the student to get acquainted with digital circuit design and the ability to implement the design into the PCB as per the requirement gathered from specification.

Academic Project Requirements:

1) Required No. of student(s) for academic project: 1

2) Name of course with branch/discipline: B.E./B.Tech. Electronics and Instrumentation Engineering

3) Academic Project duration:

(a) Total academic project duration: 7 Weeks

(b) Student's presence at IPR for academic project work: 5 Full working Days per week

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