IIITD

TRL : 7

TATDC: Trainer and Tester for Digital Circuits

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Docket : IoT-2

Patent : Filed

Description

The Trainer and Tester for Digital Circuits (TATDC) is an innovative project that leverages advanced technology to provide a comprehensive solution for digital circuit experimentation. The technology behind TATDC represents an improvement over the existing state-of-the-art by addressing the limitations of current Digital Circuits Experimentation kits. Notably, no known kit performs all three tasks – digital circuit testing, IC testing, and voltage measurements – within the specified budget and space constraints. The improved form factor and convenience in lab experiments make TATDC a cutting-edge solution for digital circuit laboratories, offering quick and efficient debugging capabilities.

Features

- Form factor, cost-effective, portable, easy to use, low power requirement
- A single kit functions as a lab instrument capable of acting as a digital trainer kit, digital IC tester, and voltmeter — enhancing convenience in electronics laboratories
- A robust multifunctional DC trainer kit which is cost and space effective.
- The inventors are not aware of any such kit which can perform all three tasks altogether within the developed budget frame and space. The form factor is improved. The convenience in using the kit in an lab experiment is much higher now as students don't need to switch over to instruments.
- There are a lot of applications when it comes to an electronics laboratory for the purpose of digital circuit testing, IC testing, and voltage measurements in the circuit, however extensive in the digital circuit laboratory and quick debugging of digital circuits.

Applications

- Fully automated process eliminates the need for manual sketching by automating the facial image retrieval process
- Efficient suspect search in databases, quickly scanning large databases to identify suspects based on minimal input features

- Enhances efficiency in criminal investigations, enabling swift suspect identification and significantly accelerating the investigation process.
- Versatile applications extend beyond criminal investigations, including finding missing persons, creating and refining facial images, and utilizing finer details of facial features for improved accuracy in various contexts.

Use-cases

- **Students:** Individuals studying electronics and electrical engineering in colleges and universities who require hands-on experience with digital circuits.
- **Educators:** Teachers and professors who need a practical teaching tool for demonstrating digital circuit concepts and conducting lab sessions.
- **Researchers:** Professionals engaged in electronics research and development who require reliable testing and validation tools for their projects.
- **Engineers:** Design and testing engineers working in various industries who need to prototype and test digital circuits and integrated circuits (ICs).
- **Manufacturing Technicians:** Personnel in manufacturing settings responsible for quality assurance and testing of electronic components.
- **Hobbyists:** Electronics enthusiasts and makers who enjoy building and testing their own circuits and projects.
- **Technical Trainers:** Professionals in technical training centers who instruct individuals on digital electronics and circuit testing methodologies.
- **Competition Participants:** Students and professionals participating in robotics or electronics competitions who need portable and efficient testing solutions.

Theme

Technological specifications

- Embedded Systems
- Microcontrollers
- IoT (Internet of Things)
- Digital Signal Processing (DSP)
- Automation Technology
- Software Development
- Circuit Simulation Tools
- User Interface Design
- Data Analysis Tools

Domain

- Education (Colleges, Universities, Schools)
- Research & Development
- Electronics Manufacturing
- Telecommunications

- Semiconductor Industry
- Automation & Robotics
- Automotive Electronics

Theme

- IoT(Internet of Things)

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