

# Microcontroller Lab

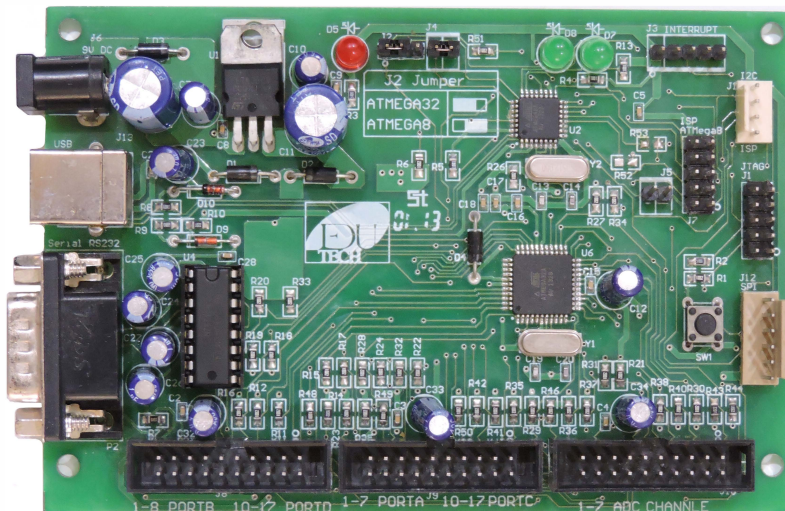
Edutech offers a comprehensive lab setup for microcontroller lab featuring AVR microcontroller

## Description

This Basic Microcontroller Lab program is specially designed keeping in mind the curriculum requirements. This lab offers 8 bit platforms thus enabling the students to have a complete experience to work with AVR microcontroller. This lab also includes different development tools in the form of IDEs. The pluggable GPIO interfacing kit offered in this lab setup can be interfaced with different target CPU boards thus mastering the art of programming and interfacing. The documentation provided includes lesson plans, manuals and workbooks with complete procedures of operations and experimentation.

## Educational Practice Board for AVR ATmega32

**Functional Description** The Educational Practice Board for AVR ATmega32 is High-performance, Low-power AVR 8-bit Microcontroller target board for those who want to start up with AVR micro controllers. The board provides USB based flashing option enabling the users to download the test programs to the flash memory using USB. The board also provides all the GPIO lines on 20-pin connectors. Wide variety of interfacing kits can be interfaced with this board thus making it useful for curriculum project activities.



- **Features**
- High-performance, Low-power AVR 8-bit Microcontroller
- General Purpose study card to learn, test and apply AVR ATmega32
- On-board In-circuit programming facility eliminating the need of a separate programmer.
- Flash programming using on board USB
- Dual power options: DC input and USB
- 32 K on chip Flash program memory
- Two 20 pin connector for GPIO interfacing
- One 20 pin header for 7 channels 10 bit ADC interfacing
- USART connector
- External interrupt connector
- On-board I2C, SPI, USB, UART connectors

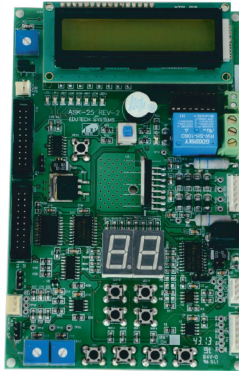
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## All-in-one General Purpose Board

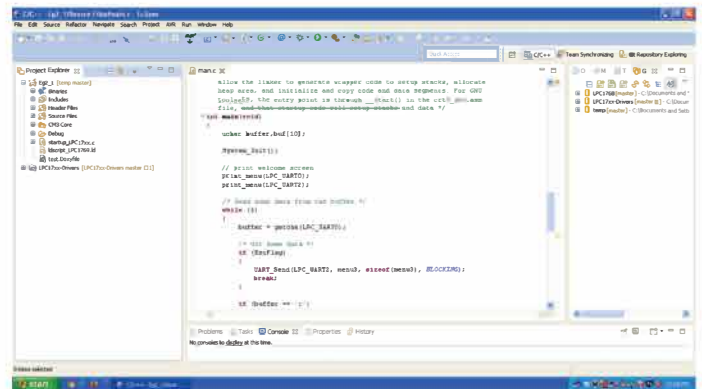
The All-in-one GPIO board is specially designed to suit the experimentation on different GPIO devices with the micro controllers.

### Features:

- On board display options include 8 LED, 16x2 character LCD, 2 digit 7-segment display
- Switches include 4 general purpose keys and 2X2 matrix keyboard
- I2C and SPI based EEPROMs for protocol demonstration experiments
- Stepper motor interface with built-in H-bridge driver IC
- DC motor interface with DC motor
- Relay output
- Facility to provide 2 channel ADC input using potentiometer and unity gain amplifier for protection



## Eclipse based Integrated Development Environment (IDE) Tool:



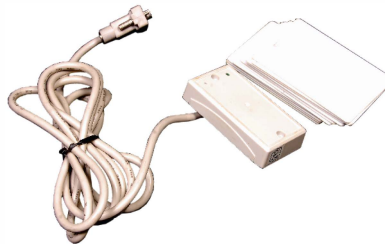
The general purpose Eclipse based IDE is a easy to use development platform which can be used for windows as well as Linux environment.

This IDE tool supports different microcontroller platforms like 8051, PIC, AVR, ARM7.

## Project Interfacing Kits



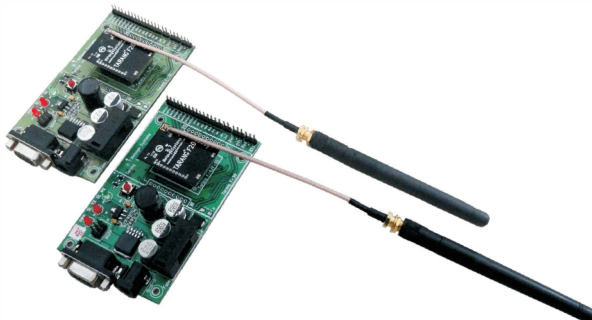
**Thermal printer:**



**RFID**



**Finger Print Sensor**



**ZigBee Interfacing Kit**



**GSM Modem Interfacing Kit**

\*Images are for reference only