# AJANTHA STUDENTS SCIENCE PROJECT

# Product Catalog

## Robotic Kits / Accessories & DIY Hobby Kits

Specialist in high performance Robotics kits & Sensors.

High quality DC Gear Motor / Servo Motor / Bo Series Motor & Toy Motors.

Wide range of wireless devices.

Microcontroller development boards for beginners & researchers.

Importer & dealers of sensors, Electronic components, DIY hobby kits, Robotic kits & accessories.

# AJANTHA STUDENTS SCIENCE PROJECT

## About Us:

Ajantha based in Chenni, India, we endeavor to build and sustain the standards in the electronic world with our proficient skills and undying commitment to progress and advance. It was started in 1987 with a view of providing the best products and solutions for our customers. We import & stock wide range of electronic components viz. different kinds of Motors, Sensors, Robotic kits etc. We are the authorized distributors for Helishun Relays (China), Heimann Sensor (Germany), Magnesensor Technology (USA), Digi (USA), Sparkfun Electronics (USA), U.P.S.I (France) and Smartec Sensor (Netherland) in India. Our products are procured from leading manufactures across Hong Kong, China, Singapore and USA. With these components we provide low cost solutions to students, industries & R&D institutes. Because of our rich experience in this field, we have decided to start selling products

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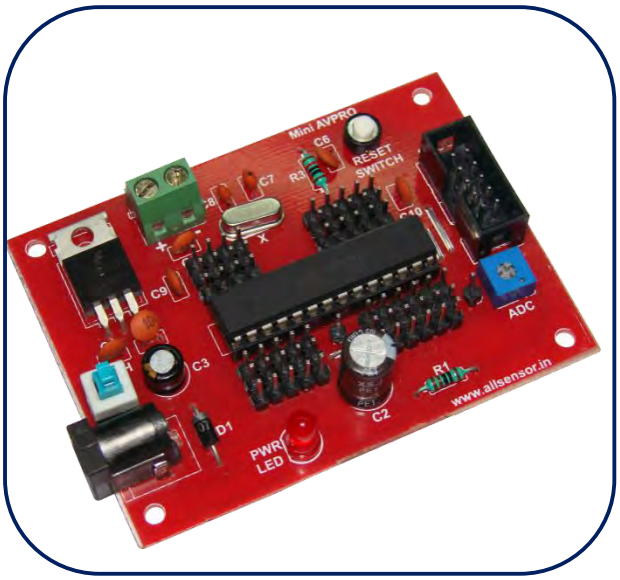
# AJANTHA STUDENTS SCIENCE PROJECT

## Microcontroller Dev. Board and Accessories




### MINI AVPro BOARD

MiniAVProis a versatile AVR microcontroller based breakout board. This board is compatible with famous AVR microcontroller ATmega8, ATmega168, ATmega328

Features:

- Operating voltage: 5V
- Input voltage: 7V~12V
- Easy to use FRC interface for Programming.
- All pins are accessible by Berg connectors.
- Multiple Vcc and Gnd lines for powering external circuits and interfacing sensors.


### AVPro

AVPro is an ideal platform to build and execute numerous projects on Atmel's ATMEGA16 microcontroller. All the pins of the controller are user accessible for performing their own customize project.

### Specifications:

- Supply Voltage: 7 to 12 Volt DC.
- On-board 5 volt regulator.
- Multiple 5 volt supply line for powering external circuit or sensors.
- Power-ON and reset switches.
- FRC header for programming pin interface.
- Onboard potentiometer for testing ADC feature.

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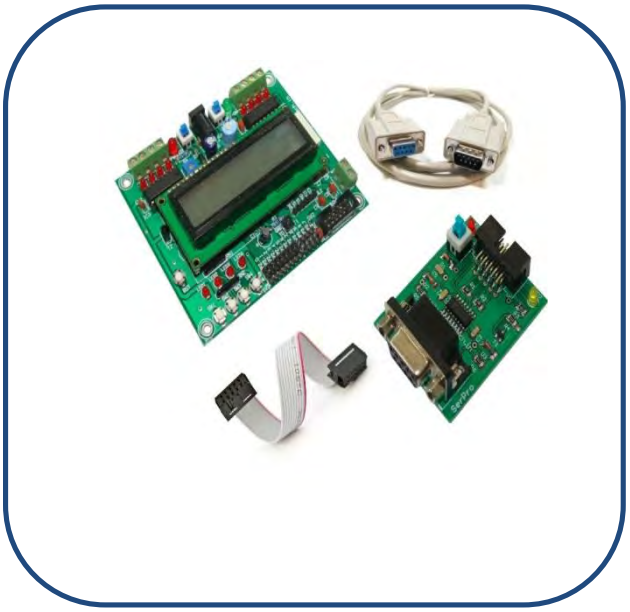
## AVRon16

Low cost, versatile atmega16 development board for beginners and researchers.

### Specifications:

Supply power:7V to 15V DC
Powerful Atmega16 microcontroller
Onboard Features

1. Two L293D motor driver
2. Four general purpose switches and LED
3. LCD Connector
4. 5 volt regulator
5. Sensor interface
6. Programing interface
7. Power & motor enable switches with visual indicators
8. Potentiometer for ADC testing
9. Buzzer
10. LED indicators for motor output tracking



## AVRon16 + Serial ISP Programmer

Low cost, versatile atmega16 development board with serial ISP programmer and accessories.

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## AVRon16 + USB Programmer

Low cost, versatile atmega16 development board with USB programmer and accessories.

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## AVR Development Board

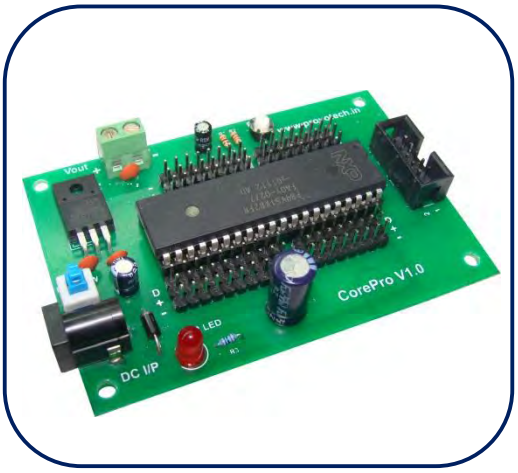
Features:

Supply Voltage: 7V to 12V DC
Powerful Atmega16/32 microcontroller supports

On board features:

DC Motor driver
Stepper Motor Driver
Four general purpose LED and Switch
16*2 LCD
Two seven-segment LED
5 Voltage Regulator
Sensor interface port (PORTA)
Programming interface
POT for ADC
POT for LCD Contrast
Buzzer
Relay
MAX 232 with DB9 (serial connector)
XBee interface provision
4*4 Keypad Matrix interface provision
Break-out of I2C, SPI, Display, Motor, Switch, LED, XBee

# AJANTHA STUDENTS SCIENCE PROJECT




## CorePro

CorePro is an ideal platform to build and execute numerous projects on P89V51RD2 microcontroller. All the pins of the controller are user accessible for performing their own customize project.

### Specifications:

Supply Voltage: 7 to 12 Volt DC.
Onboard 5 volt regulator.
Multiple 5 volt supply line for powering external circuit or sensors.
Power-ON and reset switches.
FRC header for programming pin interface.

## Core51

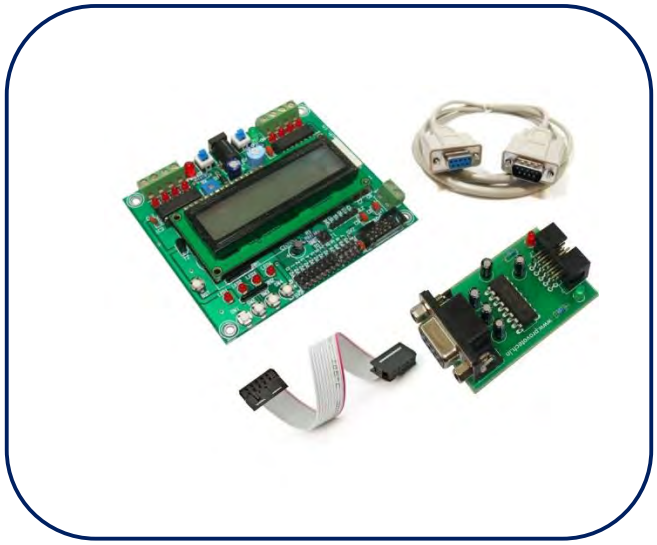
Low cost,versatile 89V51RD2 development board for beginners and researchers.

### Specifications:

Supply power:7V to 15V DC
Powerful 89V51RD2 microcontroller
Onboard Features

1. Two L293D motor driver
2. Four switches and LED
3. LCD Connector
4. 5 volt regulator
5. Sensor interface
6. Programing interface
7. Power & motor enable switches with visual indicators
8. Buzzer
9. LED indicators for motor output tracking

# AJANTHA STUDENTS SCIENCE PROJECT



## Core51 + Serial Programmer

Low cost,versatile 89V51RD2 development board with serial programmer and accessories.

## Core51 + USB Programmer

Low cost,versatile 89V51RD2 development board with USB programmer and accessories.

# AJANTHA STUDENTS SCIENCE PROJECT

## P89v51RD2 Development Board

This is an ideal platform to build and execute numerous projects on P89V51RD2 microcontroller.

Features:

Supply Voltage: 7V to 12V DC

On board features:

- DC Motor driver
- Stepper Motor Driver
- Four general purpose LED and Switch
- 16*2 LCD
- Two seven-segment LED
- 5 Voltage Regulator
- Sensor interface port.
- Programming interface
- POT for ADC
- POT for LCD Contrast
- Buzzer
- Relay
- MAX 232 with DB9 (serial connector)
- XBee interface provision
- 4*4 Keypad Matrix interface provision
- ADC 0804
- EPROM(24C04)
- Break-out of I2C, SPI, Display, Motor, Switch, LED, XBee

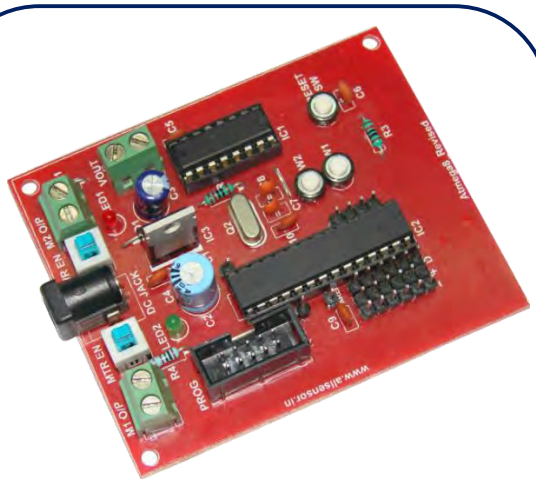
# AJANTHA STUDENTS SCIENCE PROJECT

## 89S52 Breakout board

Low cost AT89S52 breakout board best suited for interfacing multiple sensors & performing I /O operations.

Features:

Operating voltage: 5V.
Input voltage: 7V - 12V.
Easy to use FRC interface for Programming.
All pins are accessible by Berg connectors.
Multiple Vcc and Gnd lines for powering external circuits and interfacing sensors.
Two LEDs & switches for i/o operations.



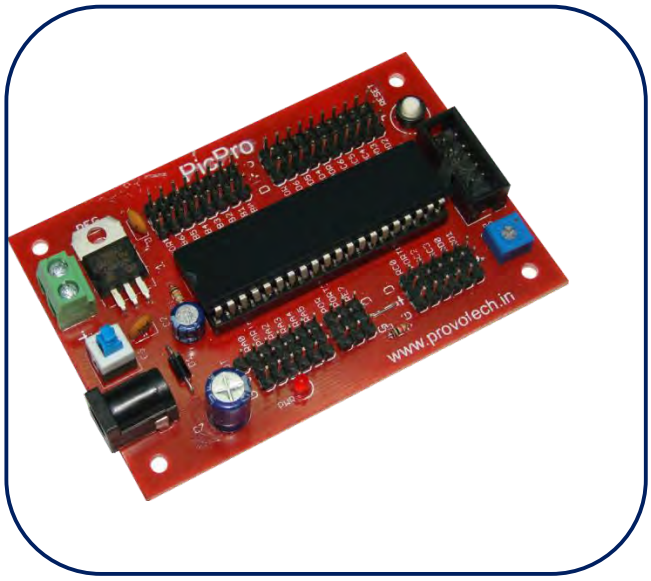
## Atmega8+ Motor Driver Board

This is the low cost ATmega8 Development board with onboard motor driver circuitry.

Features:

Operating voltage: 5V.
Input voltage: 7V - 12V.
Inbuilt voltage regulation & protection circuitry.
Power & motor enable switch.
Inbuilt motor driver circuitry using L293D motor driver.
PTR connectors for motor connections.

# AJANTHA STUDENTS SCIENCE PROJECT



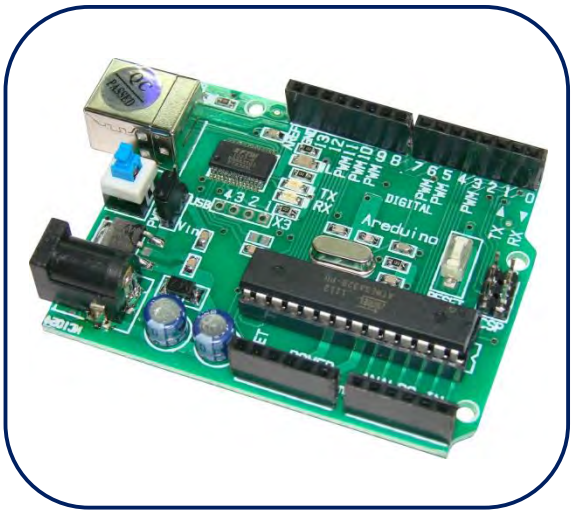

## PIC PRO

PIC PRO is an ideal platform to build and execute numerous projects on PIC microcontroller. All the pins of the controller are user accessible for performing your own customize projects

**Features:**

- Supply power: 7V to 12V DC.
- Supports major 40 pins PIC series microcontroller.
- Multiple 5 volt and ground lines for powering external circuits and sensor.
- FRC header for programming pin interface.
- Onboard potentiometer for testing ADC feature.

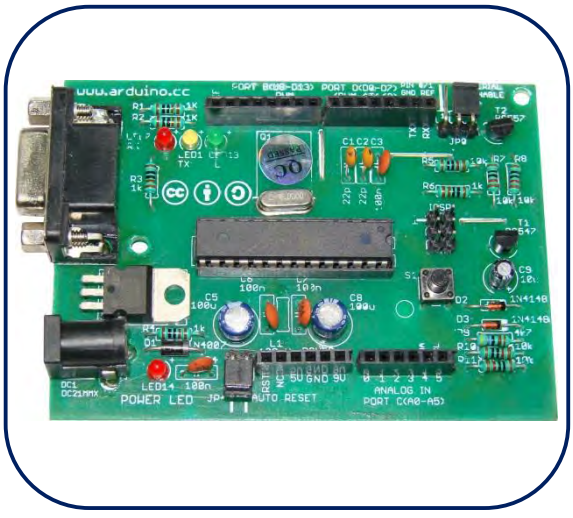
# AJANTHA STUDENTS SCIENCE PROJECT



## Arduino USB Board

The Arduino USB board is a microcontroller board based on the ATmega328. It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz crystal oscillator, a USB connection, a power jack, an ICSP header, and a reset button. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with a AC-to-DC adapter or battery to get started.

NOTE: Customize board is available with atmega8, atmega168 or atmega328.




## Arduino Serial Board

The Arduino Serial board is a microcontroller board based on the ATmega168. It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz crystal oscillator, a DB9 connection, a power jack, an ICSP header, and a reset button. It contains everything needed to support the microcontroller; simply connect it to a computer with a Serial cable and power it with an AC-to-DC adapter or battery to get started.

NOTE: Customize board is available with atmega8, atmega168 or atmega328.

# AJANTHA STUDENTS SCIENCE PROJECT

## IO Shield

Arduino IO shield come up with on board motor driver, Buzzer, Indication LEDs and joystick. This board can be directly attached to Arduino UNO, Duemilanove.

### Features:

- Two LEDs for indication
- Motor Driver to drive two bidirectional DC motors
- Sensor interface pins
- Two switches for controlling application
- Joystick for controlling bot
- Buzzer with driver circuit
- Motor Input/Output connection

## Arduino USB + IO Shield

Arduino IO PRO shield come up with onboard motor driver, Buzzer, Indication leds and joystick. It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz crystal oscillator, a USB connection, a power jack, an ICSP header and a reset button.

### Features:

- Two LEDs for indication
- Motor Driver to drive two bidirectional DC motors
- Sensor interface pins
- Two switches for controlling application
- Joystick for controlling bot
- Buzzer with driver circuit

NOTE: Customize board is available with atmega8, atmega328 or atmega168.

# AJANTHA STUDENTS SCIENCE PROJECT

## Colour LCD Shield

The Colour LCD Shield provides an easy method of connecting the popular 128 X 128 graphics LCD to your Arduino. The board comes as shown with the 128 x 128 mini colour LCD, as well as a backlight driver circuit (boosts to 7V), and there is mini 5 way joystick which gives you gaming experience.

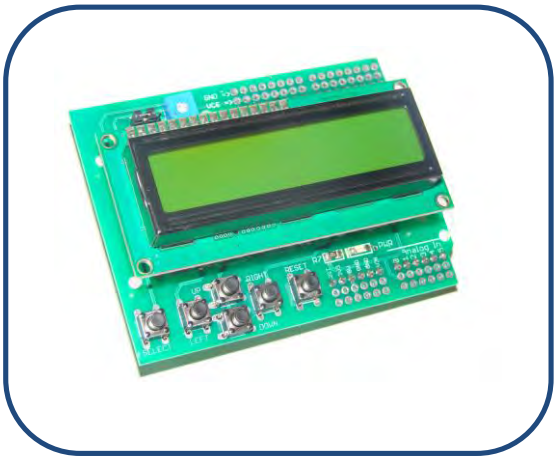
Features:

- Low-cost LCD display graphics user interface solution.
- 128 x 128 resolutions.
- Easy to connect to Arduino board.
- Uses SPI protocol for communication.
- On board joystick with 4 primary direction with click button.

## Arduino USB + Colour LCD Shield

The Arduino Colour LCD Shield provides an easy method of connecting the popular 128 X 128 graphics LCD to your Arduino. The board comes as shown with the 128 x 128 mini colour LCD, as well as a backlight driver circuit (boosts to 7V), and there is mini 4 way joystick with centre click switch, which gives u gaming experience. This shield can be directly attached to Arduino UNO/Duemilanove. It connects to the computer with a standard USB cable and contains everything else you need to program and use the shield. It contains everything needed to support the microcontroller.

# AJANTHA STUDENTS SCIENCE PROJECT

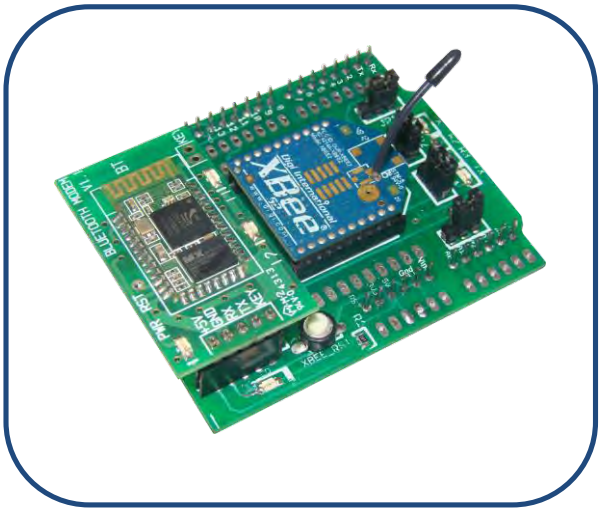


## LCD KEYPAD SHIELD

This is a very popular LCD Keypad shield for Arduino board. It includes a 16x2 LCD display connector and 6 momentary push buttons. Pins 4, 5, 6, 7, 8 and 9 are used to interface with the LCD. Analog Pin 0 is used to read the push buttons. The LCD shield supports contrast adjustment and backlight on/off and control functions. It also expands analog and digital pins for easy sensor reading and display. VCC and GND rails are provided for easy sensor interfacing.

Features:

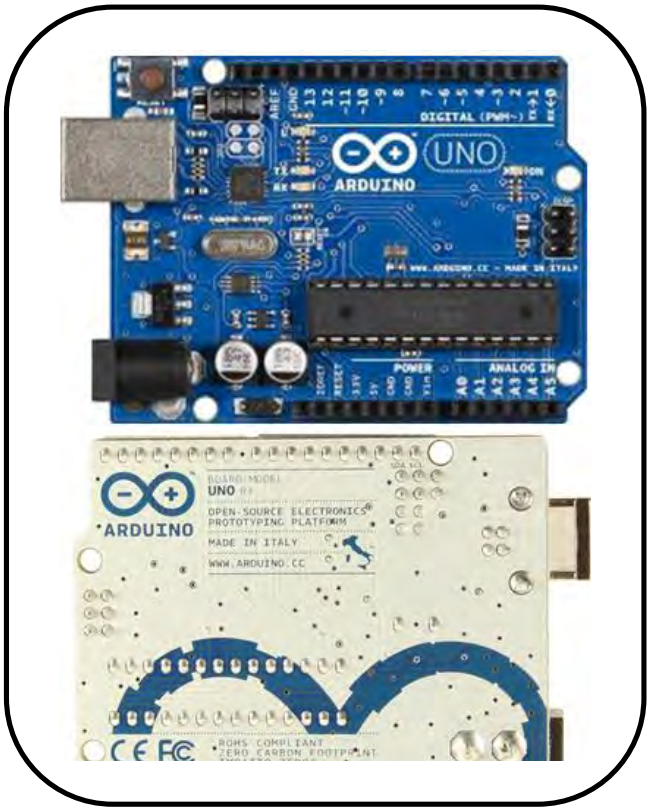
- Operating Voltage: 5V
- 6 Push buttons.
- Supports contrast adjustment and backlight on/off and control functions.
- Expanded Analog and Digital Pinout.
- Expanded VCC and GND rails for easy sensor interfacing.



## XBEE SD CARD SHIELD

The Xbee/SD shield allows an Arduino board to communicate wirelessly using a wireless module (either Xbee or Bluetooth).
Easy interfacing with UART protocol, jumper setting for serial and software serial,as well as for bluetooth and Xbee.
Included on board a Micro SD card slot,using the SD Library to access the card.

# AJANTHA STUDENTS SCIENCE PROJECT

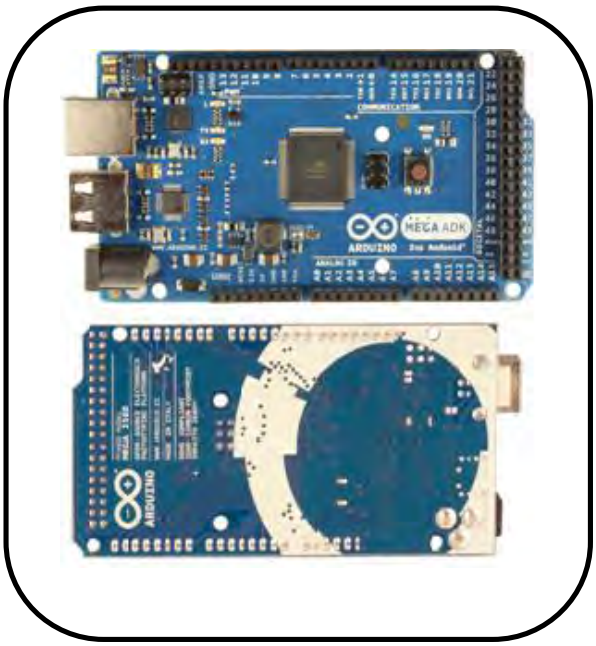



## Arduino UNO

The Arduino Uno is a microcontroller board based on the ATmega328. It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz ceramic resonator, a USB connection, a power jack, an ICSP header, and a reset button. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with a AC-to-DC adapter or battery to get started.

### Features:

Operating voltage: 5 V
Digital I/O pins: 14(of which 6 provide PWM output)
Flash Memory: 32KB(ATmega328)
SRAM: 2KB(ATmega328)
EEPROM: 1KB(ATmega328)




## Arduino Mega 2560

The Arduino Mega 2560 is a microcontroller board based on the ATmega2560.It has 54 digital input/output pins (of which 15 can be used as PWM outputs), 16 analog inputs, 4 UARTs (hardware serial ports), a 16 MHz crystal oscillator, a USB connection, a power jack, an ICSP header, and a reset button. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with a AC-to-DC adapter or battery to get started.

### Features:

Operating voltage: 5 V
Digital I/O Pins: 54 (of which 15 provide PWM output)
Flash Memory: 256KB
SRAM: 8KB
EEPROM: 4KB

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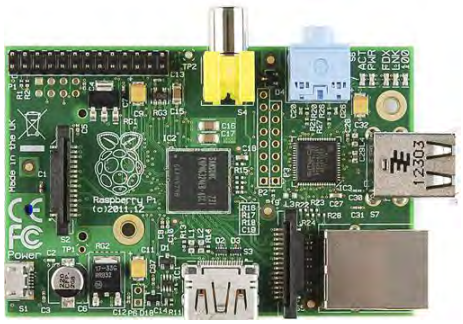
## ARM7 Development board

LPC2148 Pro Development Board is a powerful development platform based on LPC2148 ARM7TDMI microcontroller with 512K on-chip memory. This board is powered by USB port and does not need external power supply. It is ideal for developing embedded applications involving high speed wireless communication (Zigbee / Bluetooth / WiFi), USB based data logging, real time data monitoring and control, interactive control panels etc. The on-chip USB controller provides direct high speed interface to a PC/laptop with speeds up to 12Mb/s.



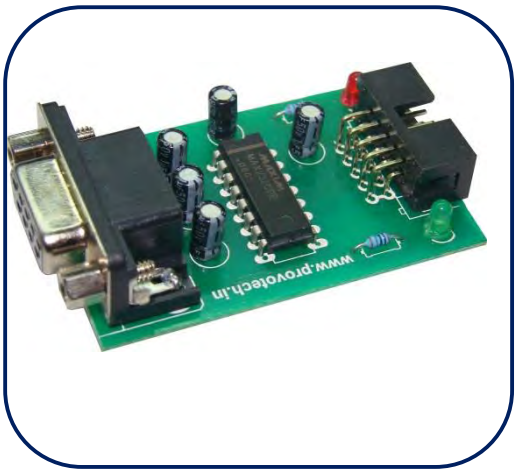
## Raspberry Pi (MODEL-B)

Model-B has two USB 2.0 ports to add keyboards, mouse, external hard drive and many more. Raspberry pi; MODEL-B has a RAM of
512 MB. A micro USB port is used to supply power. We can use a mobile phone charger or a USB charger for this. A great plus point in Model-B is the Ethernet (LAN) adapter which allows you to connect this sweet little thing with internet or for a LAN.

With the HDMI output we can easily connect this to your TV. The expansion header in the Raspberry Pi port will surely draw your attention if you are an electronic geek. These general purpose Input Output pins (GPIOs) allow you to connect this device controllers with various devices such as game etc. The Raspberry Pi has no persistent internal memory. Don't worry, just a simple plan is provided with a SD MMC adapter.

# AJANTHA STUDENTS SCIENCE PROJECT

## Programmers




## RS232 to TTL convertor

This is standard RS232 to TTL logic level convertor for communicating between Computer serial interface and microcontrollers.

### Specifications:

Operating Voltage: 4.5V to 5V DC.
Onboard data transmitter/receiver indicator LEDs.
Compaq design.
Easy to use FRC interface.
Supports all microcontroller families.
Support all standard baud rates.

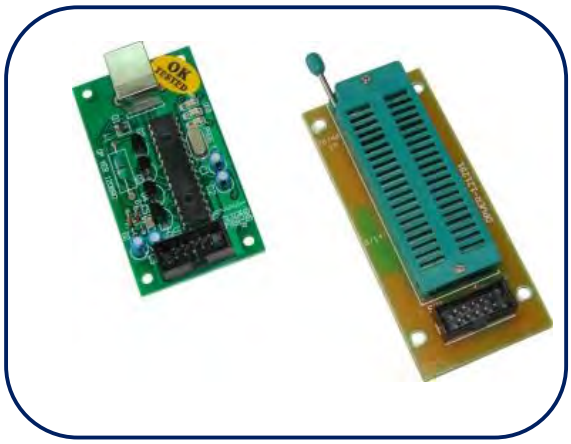
## USB to Serial (BAFO)

This is a simple to use USB to Serial Converter.
This converter is USB powered and needs no external power. It can provide the USB port's 5V power supply to an external circuit. When connected to USB port this converter sets up a virtual serial port which can be used and interfaced just like any normal serial port.

Features :

USB to Serial Converter (DB9) convert your Laptop or PC USB port into Serial (Com) Port.
Best for Laptops without Serial Port.
Supports RS-232 serial interface
Break-out of Rx-Tx-VCC-GND pins.

# AJANTHA STUDENTS SCIENCE PROJECT



## PIC USB

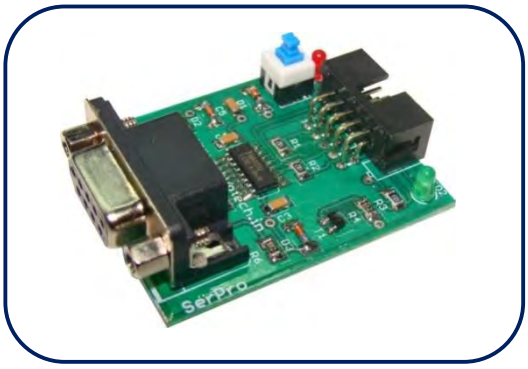
PIC usb programmer is an USB in circuit programmer for Microchip PIC microcontrollers. This easy to use programmer incorporates ZIF sockets for easy IC programming and removal. Power is obtained directly from the USB Port and no external supply is required. This programmer is ideal for use with a laptop or desktop computer in your home or school. The unit comes with easy to use Windows software.

### Specifications:

ZIF sockets for easy IC programming and removal.
No external power supply required.
Target microcontroller can be powered from the board.
Supports a wide range of PIC microcontrollers.
Compaq design.
Easy to use FRC interface.
Support all standard baud rates.

Note: For the list of microcontroller that can be programmed using this PIC programmer please visit our website.

# AJANTHA STUDENTS SCIENCE PROJECT




## SerPro

This is Low cost ISP programmer + Rs232 to TTL convertor for AVR, 89s51 and 89s52 family.

### Specifications:

Operating Voltage: 4.5V to 5V DC.
On-board data transmitter/receiver indicator LEDs.
Compaq design.
Easy to use FRC interface.
On-board switch for ISP/UART selection

## USBProg

Low cost USBASP programmer for AVR, 89s51 and 89s52 Family

### Specifications:

Operating Voltage: 4.5V to 5V DC.
Easy to use FRC interface.
Works under Mac/Linux/windows platform.
Max 5kbps write speed

## USB to UART Converter

This is standard USB to UART Convertor build around high performance, reliable CP2102 USB to UART IC.

Features:

Operating Voltage: 4.5V to 5V DC.
Compaq design.
Easy to use FRC interface.
No external crystal required.
Supports all microcontroller families.
Support all standard baud rates.

# AJANTHA STUDENTS SCIENCE PROJECT


## TOP 853 PROGRAMMER

Features:

Small pocket size: 142 x 103 x 23mm, 250g Wt.
USB powered, 500mA, No AC/DC adapter needed.
Support 5V device only.
Over-current protection on all Pins.
TOP853 uses USB port for communication to the PC.
Use the USB interface, no external power supply needed.
Perfect over-current protection, effective protection against damage and device programmer.
Through USB universal serial port is connected with the PC, transfer rate of 12MHz / s.


## TOP 2008 PROGRAMMER

Features:

Size: 142 x 103 x 23mm
Weight: 250g
Power: < 2.5w (5v/500mA)
5Locking bed: 40-pin imported socket with high quality (replaceable).
Support 2.5V to 6.5V devices.
Current protection function, effectively protects the programmer and devices
Auto detect chip ID
High quality universal ZIF socket
Software supports WindowsXP/Windows7
Portable design
Supports EPROM-ATMEL, EEPROM-TOSHIBA, MPU-PHILLIPS, PLD-VLSI families.

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TOP 2011 PROGRAMMER

The TOP2011 programmer is very reliable, especially design for micro-programmed control unit and over 2000 type of EPROMs. It has a small size and low power loss. TOP2011 communicate with PC through USB port, does not need the external power supply.

Features:

- USB powered, 70mA~500mA, No AC/DC adapter needed.
- Support 2.5V~6.5V device.
- Over-current protection on all Pins.
- 40 pins self-lock sockets.
- Working with Windows XP/Vista/Win7(32-bit).
- Self-detecting the device's manufacturer's name and the type of IC.
- Supports EPROM-ATMEL, EEPROM-TOSHIBA, MPU-PHILLIPS,PLD-VLSI families.

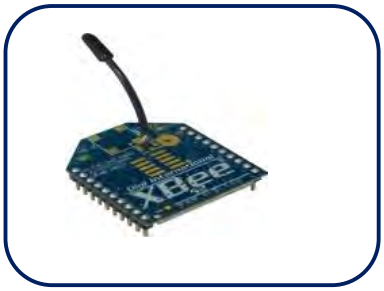
# AJANTHA STUDENTS SCIENCE PROJECT

## TOP 3000 PROGRAMMER

The TOP3000 programmer supports 2.5 ~ 6.5V device.
Powered by your USB interface or the included 5V external power supply.
Fast transmission speed of 12MHz/s via the USB port
Auto detects the device's manufacturer and part number.
Compatible with Notebooks and desktop computers
The in-built connection inspection checks the connection for every pins in the unit.
Current protection function protects both the programmer and connected devices has 48-pin self-lock sockets.
Supports EPROM-ATMEL, EEPROM-TOSHIBA, MPU-PHILLIPS,PLD-VLSI families.

# AJANTHA STUDENTS SCIENCE PROJECT

## Zigbee




### XBee-Series 2

The XBee Series 2 OEM RF Modules were engineered to operate within the ZigBee protocol and support the unique needs of low-cost, low-power wireless sensor networks. The modules require minimal power and provide reliable delivery of data between remote devices.

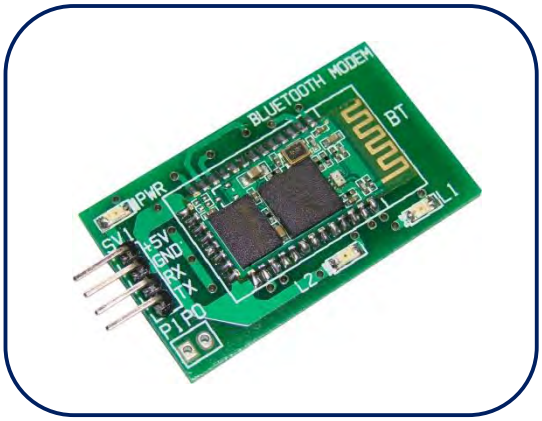
### XBee USB Adapter (CP)

This is a simple to use, USB to serial base unit for the XBee line. This unit works with all XBee modules including the Series 1 and Series 2.5, standard and Pro version

### XBee USB Adapter (FT)

This is a simple to use, USB to serial base unit for the XBee line. This unit works with all XBee modules including the Series 1 and Series 2.5, standard and Pro version

# AJANTHA STUDENTS SCIENCE PROJECT

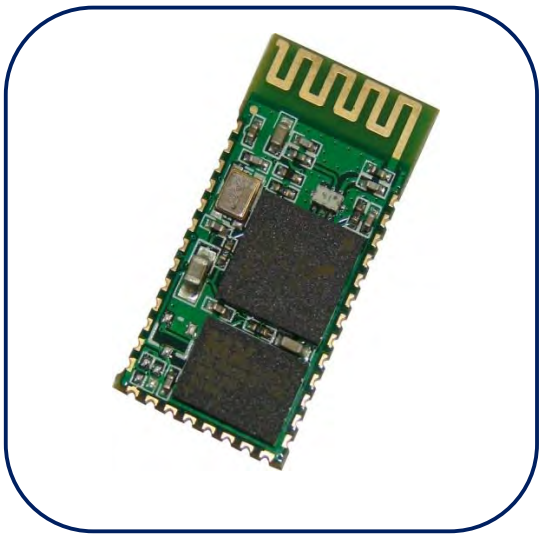



## BLUETOOTH MODEM

Low cost, high performance solution for Bluetooth applications.

### Specifications:

Bluetooth V2.0 protocol standard
Supply power: +5V DC
Direct interface to microcontroller pins(UART)
Power Level: Class2 （+6dBm)
Baud rate:9600bps
Integrated PCB antenna.



## BLUETOOTH MODULE

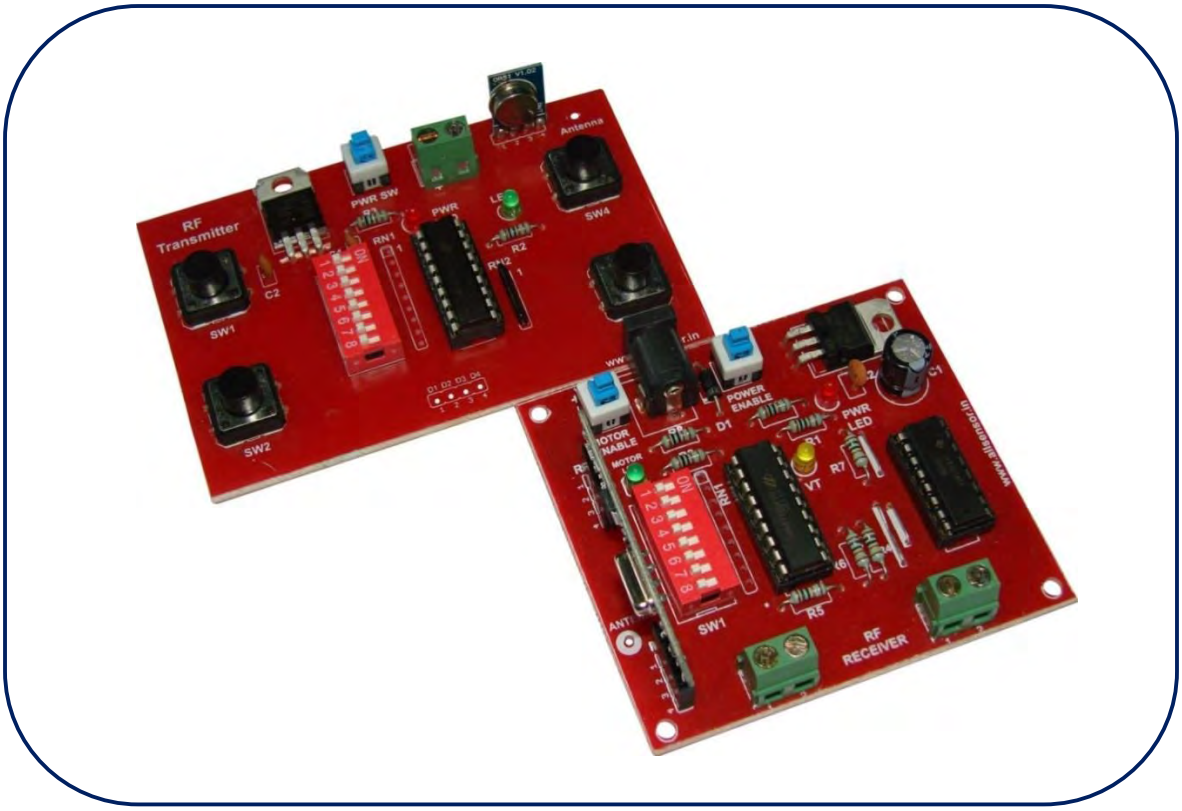
This Bluetooth Module is a drop-in replacement for wired serial connections, transparent usage. You can use it simply for serial port replacement to establish connection between MCU and GPS, PC to your embedded project / Robot etc.

### Specifications:

Operating Voltage: 3.3v
Support Master & Slave Mode
Band: 2.40GHz—2.48GHz (ISM Band)
Serial communications: 9600-115200bps
Power Consumption: in Search mode 35 mA, after connection 8mA
Built-in Chip antenna

# AJANTHA STUDENTS SCIENCE PROJECT

# RF Remote controls




## 4 Channel RF kit

Specifications:

Transmitter:

Supply power: 9-12V DC.
On board 4 tactile switches.
On board 8-pin switch array for address encoding.

Receiver:

Supply Power: DC 9-12V.
Channel: 4 Channel.
Frequency: 315MHz/ 433.92MHz.
On board L293D motor driver.
On board 5V regulated output.
On board 8-pin switch array for address decoding.

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## 2 Channel RF Remote Control

### Specifications:

### Transmitter:

Supply power: inbuilt 12V DC Battery.
Slim design.
Coding: Fix code through soldering

### Receiver:

Supply Power: DC 12V
Channel: 2 Channel
Control voltage and current:10A 240VAC/10A 30VDC
Frequency: 315MHz, 433.92MHz
Control Modes: Momentary, Latched.
Decode: Fixed code by learning

## 4 Channel RF Remote Control

### Specifications:

### Transmitter:

Supply power: inbuilt 12V DC Battery.
Slim design.
Coding: Fix code by learning

### Receiver:

Supply Power: DC 12V
Channel: 4 Channel
Control voltage and current:10A 240VAC/10A 30VDC
Frequency: 315MHz, 433.92MHz
Control Modes: Momentary, latched, Toggle.
Decode: Fixed code by learning.

# AJANTHA STUDENTS SCIENCE PROJECT

## 8 Channel RF Remote Control

### Specifications:

### Transmitter:

Supply power: inbuilt 12V DC Battery.
Slim design.
Coding: Fix code by learning

### Receiver:

Supply Power: DC 12V
Channel: 8 Channel
Control voltage and current:10A 240VAC/10A 30VDC
Frequency: 315MHz, 433.92MHz
Control Modes: Momentary, latched, Toggle.
Decode: Fixed code by learning.

## 12 Channel RF Remote

### Specifications:

### Transmitter:

Supply power: inbuilt 12V DC Battery.
Slim design.
Coding: Fix code by learning

### Receiver:

Supply Power: DC 12V
Channel: 12 Channel
Control voltage and current:10A 240VAC/10A 30VDC
Frequency: 315MHz, 433.92MHz
Control Modes: Momentary, latched, Toggle.
Decode: Fixed code by learning.

# AJANTHA STUDENTS SCIENCE PROJECT

# Robotic Sensor Modules


## Sound Sensor

Operating Voltage: 4.5V to 5V DC.
High sensitivity condenser microphone for sensing.
Onboard visual indicator (LED).
Digital output (Active high).
Output HIGH duration can be adjusted upto 3 seconds.
Compaq design and easily mountable.
Simple 3 PIN header interface.

## Bump Sensor

Operating Voltage: 4.5V to 5V DC.
Robust limit switch for detection.
Onboard visual indicator (LED).
Digital output (Active high).
Compaq design and easily mountable.
Simple 3 PIN header interface.

## Line Sensor

Operating Voltage: 4.5V to 5V DC.
High sensitivity IR receiver.
Onboard visual indicator (LED).
Digital output.
Detection range: 10mm to 50mm.
Compaq design and easily mountable.
Simple 3 PIN header interface.
Sensitivity adjustment through the potentiometer.

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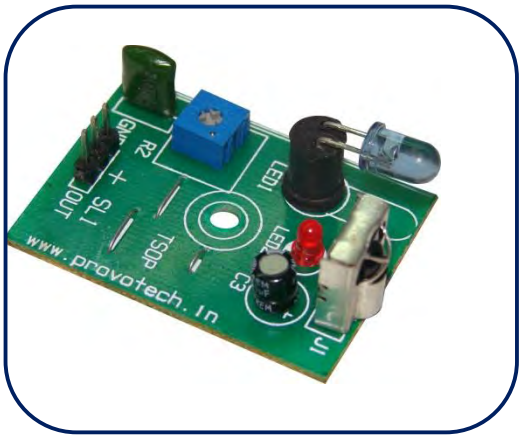
## Proximity Sensor




This sensor is ideal for detecting the obstacle in robot surrounding by means of no-contact proximity detection.

### Specifications:

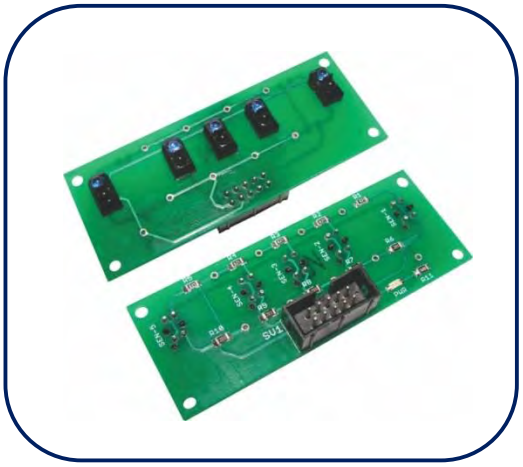
Operating Voltage: 4.5V to 5V DC.
TSOP sensor for detection.
Onboard visual indicator (LED) for object detection.
Digital output (Active high when obstacle detected).
Compaq design and easily mountable.
Simple 3 PIN header interface.
Immune to ambient light.

## Fire sensor


### Specifications:

Operating Voltage: +4.5V to +5V DC.
Onboard visual indicators (LEDs) for ALARM
Digital output.
Compaq design and easily mountable.
Sensitivity adjustment through the onboard potentiometer.

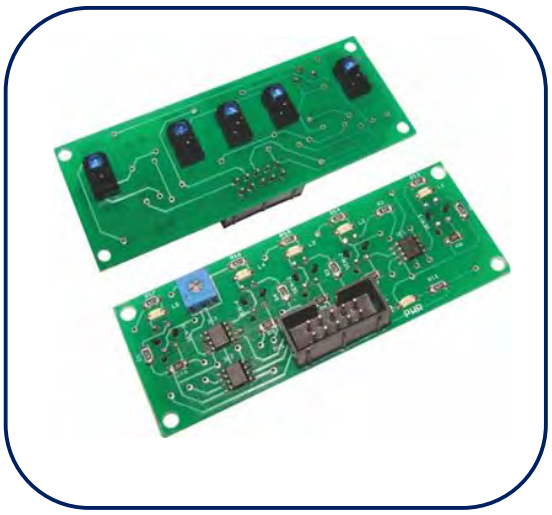
## Line Sensor Array: Analog



### Specifications:

Operating Voltage: +4.5V to +5V DC.
5 High sensitivity TCRT5000 IR reflectance sensors.
On board power indicator LED.
Analog output.
Detection range: 2mm to 22mm.
Compaq design and easily mountable.
Simple 10-PIN FRC interface.

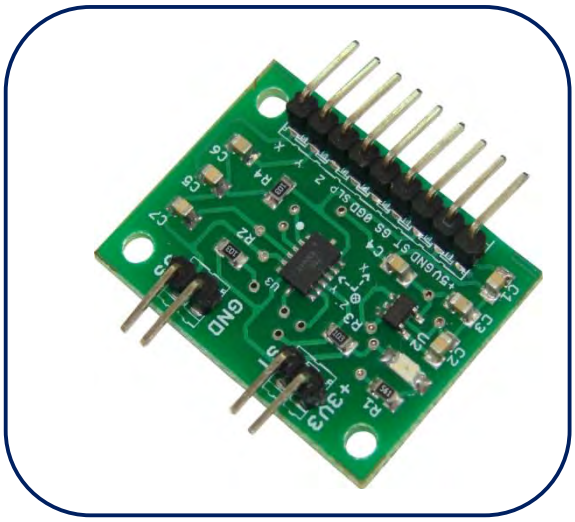
# AJANTHA STUDENTS SCIENCE PROJECT



## Line Sensor Array: Digital

### Specifications:

Operating Voltage: +4.5V to +5V DC.
5 High sensitivity TCRT5000 IR reflectance sensors.
On board visual indicators (LEDs) for each of the 5 sensor output.
On board power indicator LED.
Digital output.
Detection range: 2mm to 22mm.
Compaq design and easily mountable.
Simple 10-PIN FRC interface.
Sensitivity adjustment through the on board potentiometer.



## Analog Accelerometer (10bit)

It is a perfect choice for interfacing with a 5V microcontroller such as the Arduino. This breakout comes with 3 analog outputs for X, Y and Z axis measurements.

### Specifications:

Operating Voltage: 5v
Low Current Consumption: 400 uA
Selectable sensitivity: 1. 5g / 6g
High Sensitivity (800 mV @ 1.5g)
Integral Signal Conditioning with Low Pass Filter
Direct interface to microcontroller ADC Pins
Onboard jumper for sensitivity selection

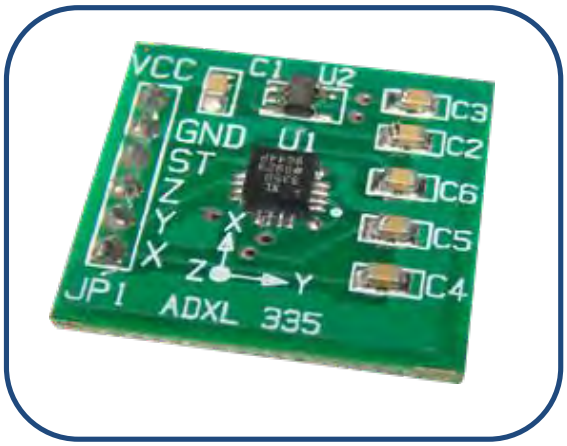
# AJANTHA STUDENTS SCIENCE PROJECT

## Digital Accelerometer (10bit)

Low cost, high performance solution for Bluetooth applications.

### Specifications:

Digital Output (I2C/SPI)
Self-Test for Z-Axis
Low Voltage Operation: 2.4 V – 3.6 V
User Assigned Registers for Offset Calibration
Programmable Threshold Interrupt Output
Level Detection for Motion Recognition (Shock, Vibration, Freefall)
Pulse Detection for Single or Double Pulse Recognition
Sensitivity (64 LSB/g @ 2g and @ 8g in 10-Bit Mode)
Selectable Sensitivity (±2g, ±4g, ±8g) for 8-bit Mode
Robust Design, High Shocks Survivability (5,000g)



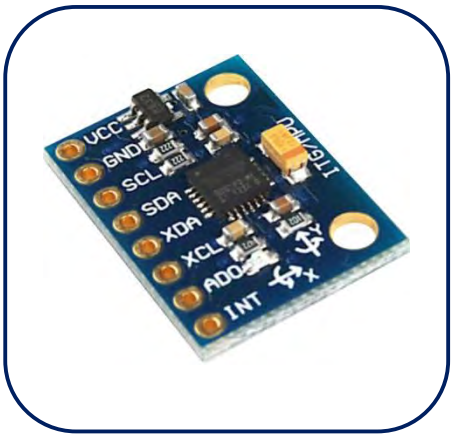

## ADXL 335 Acceleratometer

Breakout board for the 3 axis ADXL335 from Analog Devices.The ADXL335 is a triple axis MEMS accelerometer with extremely low noise and power consumption. The sensor has a full sensing range of +/-3g.

### Specifications:

Operating Voltage: 5v
Low Current Consumption: 400 uA
High Sensitivity
Integral Signal Conditioning with Low Pass Filter
Direct interface to microcontroller ADC Pins

# AJANTHA STUDENTS SCIENCE PROJECT



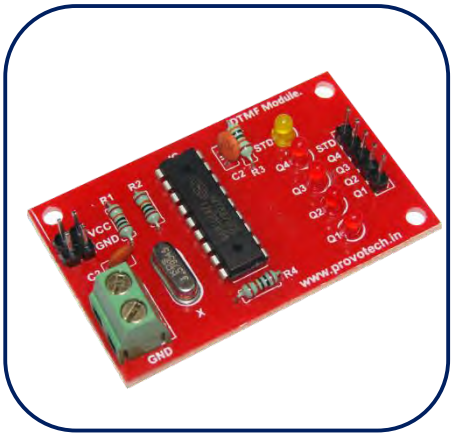

## MPU - 6050 Gyro Sensor

The MPU-6050 sensor contains a MEMS accelerometer and a MEMS gyro in a single chip. It is very accurate, since it contains 16-bits analog to digital conversion hardware for each channel. Therefor it captures the x, y, and z channel at the same time. The MPU-60X0 is the world's first integrated 6-axis Motion Tracking device that combines a 3-axis gyroscope, 3-axis accelerometer, and a Digital Motion Processor™ (DMP) all in a small 4x4x0.9mm package.

Features:

- Digital-output X-, Y-, and Z-Axis angular rate sensors (gyroscopes) with a user-programmable full-scale range of ±250, ±500, ±1000, and ±2000°/sec.
- VDD supply voltage range of 2.375V-3.46V.
- Enhanced bias and sensitivity temperature stability reduces the need for user calibration.
- Digital-output triple-axis accelerometer with a programmable full scale range of ±2g, ±4g, ±8g and ±16g.
- Auxiliary master I2C bus for reading data from

# AJANTHA STUDENTS SCIENCE PROJECT



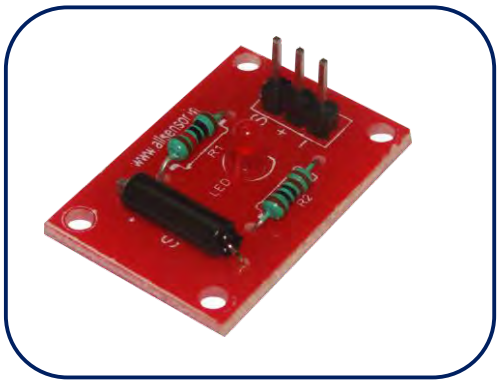

## DTMF Module

This module decodes DTMF signal either from an audio source or phone line to 4 bit binary TTL(5V) level output. It also indicates outputs with LEDs. Can use directly with microcontrollers to develop various DTMF related applications like remote monitoring, remote control, Caller ID, Auto Dialler.

Features :

- Decodes DTMF as 4 bit binary.
- TTL level output for direct connection to microcontrollers.
- Low power 5V DC operation.
- LED indication of outputs.
- Simple to use.

# AJANTHA STUDENTS SCIENCE PROJECT

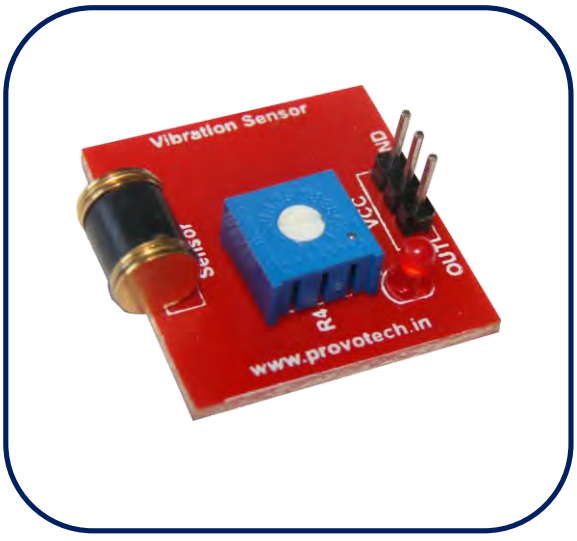


## Tilt Sensor

Tilt sensors allow you to detect orientation or inclination. They are small, inexpensive, low-power and easy-to-use. When the switch is level it is open, and when tilted, the switch closes. A led is provided as indicator which glows when the sensor is inclined.

Features:

- Operating Voltage: 3.3 V – 5 V.
- Output indicator light.
- High sensitivity.



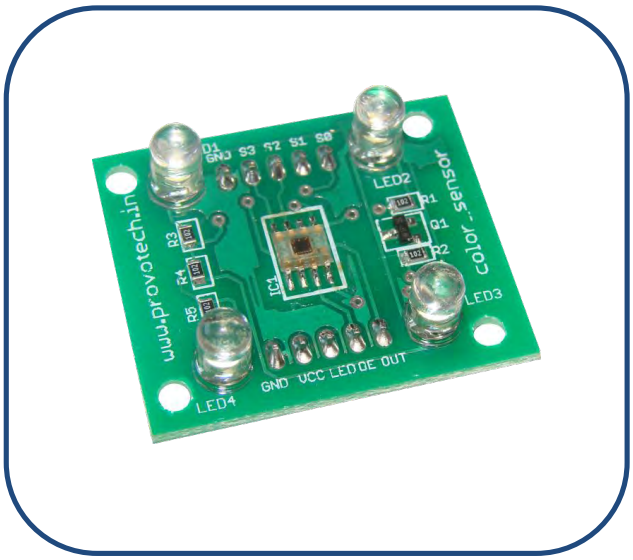

## Vibration Sensor

Vibration sensor allows you to detect vibration. They are small, inexpensive, low-power and easy-to-use.

Features:

- Adjustable sensitivity (fine tuning)
- Vibration detection range is wide non-directional
- Micro Shock detecting
- Low cost circuit
- TTL output

# AJANTHA STUDENTS SCIENCE PROJECT




## Colour Sensor Module

This Colour Sensor is a complete colour detector, including a RGB sensor chip and 4 white LEDs.

It has an array of photo detectors, each with either a red, green, or blue filter, or no filter (clear). The filters of each colour are distributed evenly throughout the array to eliminate location bias among the colours.

Internal to the device is an oscillator which produces a square-wave output whose frequency is proportional to the intensity of the chosen colour.

Applications include test strip reading, sorting by colour, ambient light sensing and calibration, and colour matching, to name just a few.

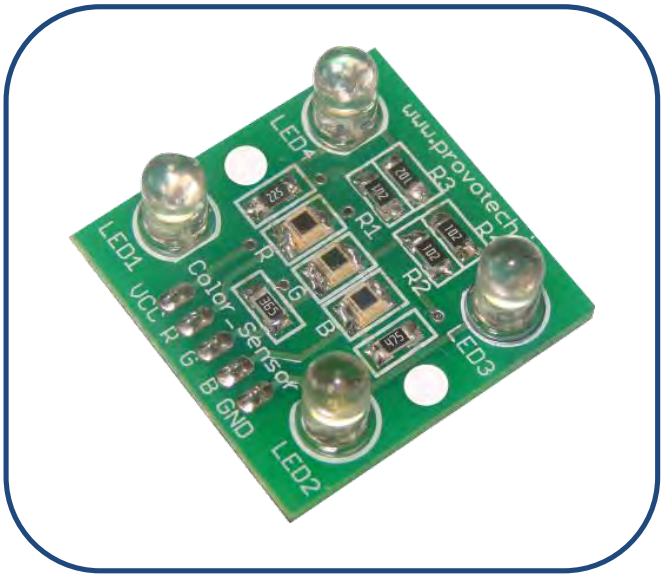
### Specifications

- Single-Supply Operation
- High-Resolution Conversion of Light
- Output in terms of Frequency
- Power Down Feature
- Communicates Directly to Microcontroller

# AJANTHA STUDENTS SCIENCE PROJECT

## COLOUR SENSOR

## ANALOG OUTPUT

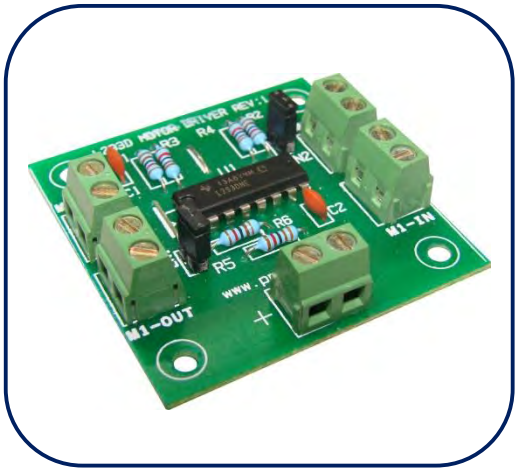



This colour sensor device is sensitive to Red, Green and Blue region spectrum in miniature SMD package. It is the good effective and low cost solution to white color balance, color detection and color management applications.
This color Sensor gives analog output voltage proportional to intensity of Incident/Reflected light color e.g. (Red,Green,Blue), whichever light color's intensity is more that color's output voltage is more as compared to others.

Features:

- Good stable analog output with temperature shift
- High sensitivity for Red, Green, and Blue light source
- Works on simple +5V

# AJANTHA STUDENTS SCIENCE PROJECT

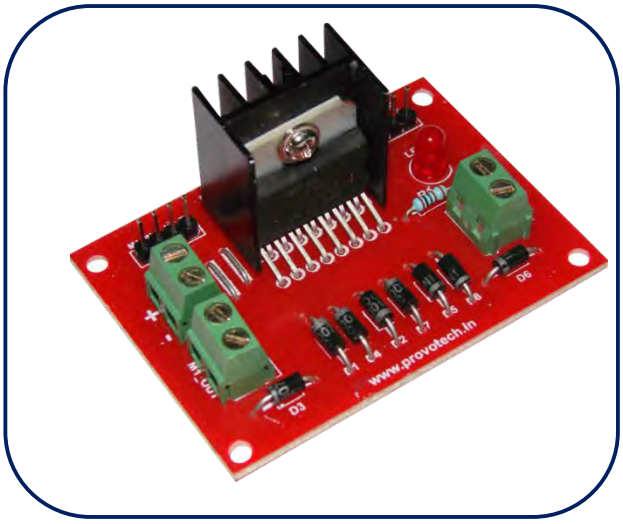



## L293D Motor Driver

This is L293D based H-Bridge motor driver board for driving DC motors and is ideal for robotics applications.

### Specifications:

Operating Voltage: 4.5V to 30V DC.
4 channel output (can drive 2 DC motors directionally).
600mA output current capability per channel.
PTR connectors for easy connections.
User accessible Motor Enable PINs facility.




### L298: Dual Full-Bridge Driver (2 x 2Amp)

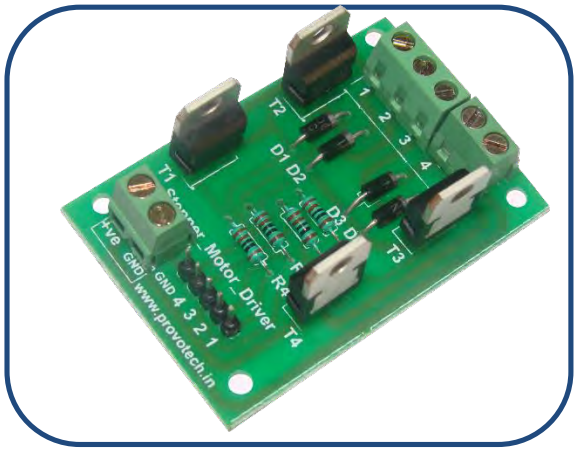
It is a high voltage, high current dual full-bridge driver designed to accept standard TTL logic levels and drive inductive loads such as relays, solenoids, DC and stepper motors.

Two enable inputs are provided to enable or disable the device independently of the input signals. An additional supply input is provided so that the logic works at the lower level.

Features:

Operating supply voltage up to 46V
Total Dc current up to 4amp (each channel can carry up to 2amp)
Low saturation voltage
Over temperature protection
Logical ”0” input voltage up to 1.5 v (high noise immunity)
PTR connector for easy connection

# AJANTHA STUDENTS SCIENCE PROJECT

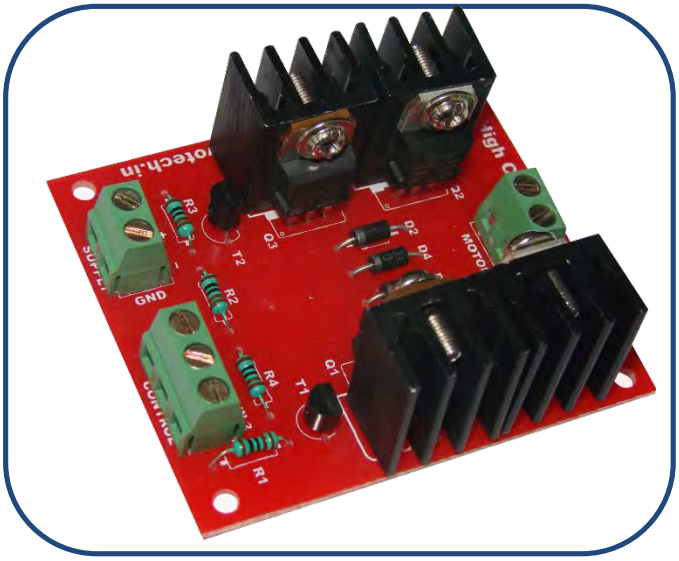



## STEPPER MOTOR DRIVER

If your stepper motor has a high current rating then it's better to TIP122 for driving your stepper motor. The resistors are used for limiting the current and the diodes are used to avoid back EMF.

Features:

- Easy interfacing to Microcontroller
- Motor Supply up-to 50VDC
- PTR connector for interfacing of Motor to Board
- Protection diode




## HIGH CURRENT MOTOR DRIVER

The high-power motor driver is a compact motor driver. Ideal for use with heavy duty motors like wiper, power window motors and more. All you need to add is a micro-controller or other control circuit to turn the H-Bridge on and off.

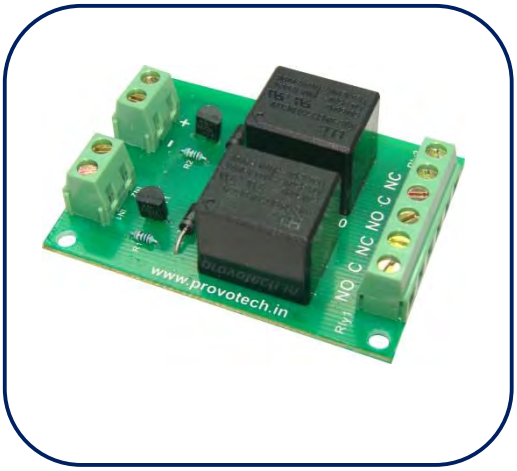
Features:

- The current rating of this board is about 5A ideal for heavy duty motors.
- The maximum input voltage in this board is 24V.
- One motor can be connected into this H-bridge motor driver.
- If you are using two separate supply source for logic and motor supply then you have to match the ground for both the supplies.

# AJANTHA STUDENTS SCIENCE PROJECT

## Relay Boards

### 2 Channel Relay Board

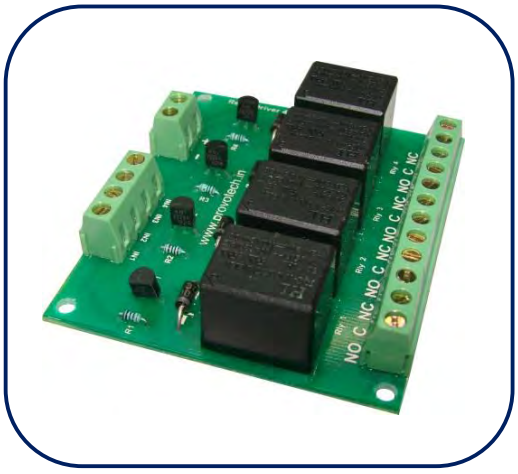



This board is ideal for switching applications like lighting, switching appliances and many more. The board uses heavy duty 12V relays capable of switching up to 7A of load current and the switching can be easily controlled via TTL level signals.

#### Specifications:

Operating Voltage: DC 12 Volts.
2 heavy duty relays( DC 12 V).
Standard 5 Volt (TTL logic) control signal for switching.
Standard high quality PTR connectors for connection.
Compaq design and easy mounting facility.

### 4 Channel Relay Board



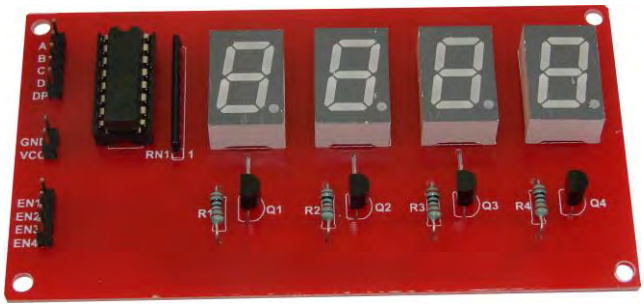

This board is ideal for switching applications like lighting, switching appliances and many more. The board uses heavy duty 12V relays capable of switching upto 7A of load current and the switching can be easily controlled via TTL level signals.

#### Specifications:

Operating Voltage: DC 12 Volts.
4 heavy duty relays( DC 12 V)
Standard 5 Volt (TTL logic) control signal for switching.
Standard high quality PTR connectors for connection.
Compaq design and easy mounting facility.

# AJANTHA STUDENTS SCIENCE PROJECT

## INTERFACING BOARDS



### 7 SEGMENT INTERFACE BOARD

Features:

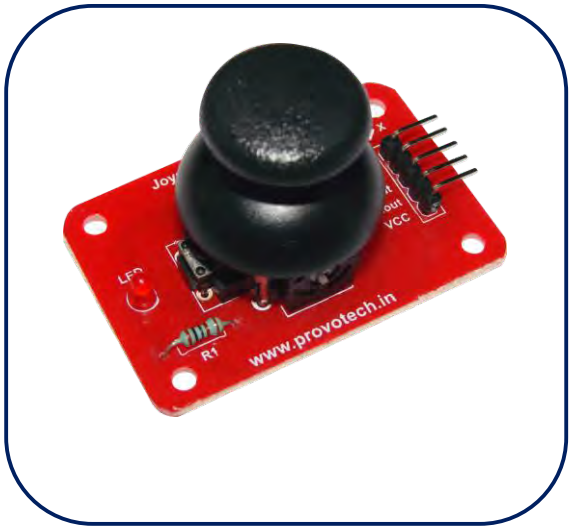
- Multiplexed 7-segment display board.
- Four segment common anode diode
- Input connected to Berg Strip.


### SERIAL LCD KIT

Features:

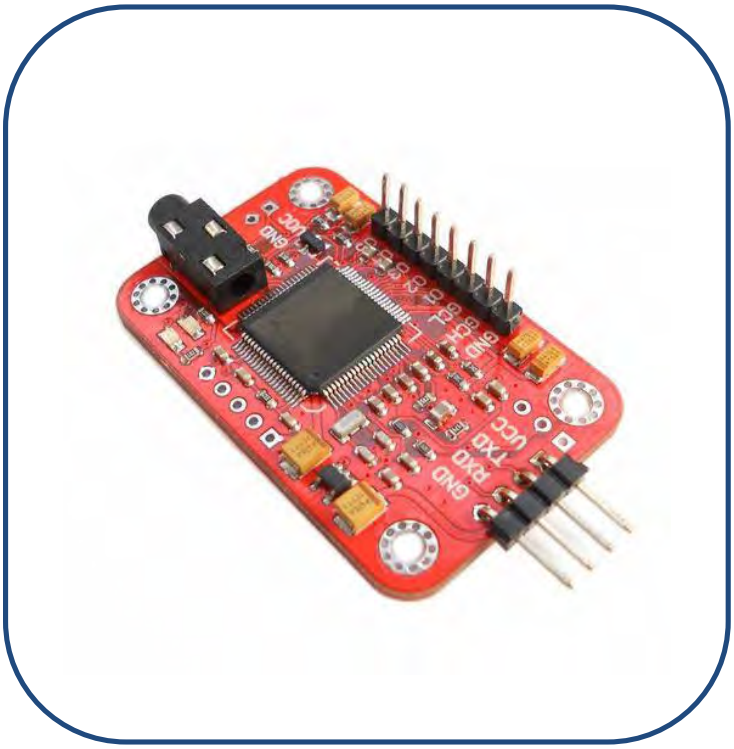
- This kit is designed for Arduino with Atmega328.
- Pre-loaded ATmega8 for interfacing 16x2 LCD using just 3 pins.
- On board potentiometer for LCD contrast adjustment.
- LCD backlight selection for brightness control using PWM signal.
- All standard characters a-z, A-Z, 0-9 are displayable, as well as all punctuation marks and many other miscellaneous symbols.
- Since it's a "Serial LCD Kit" it has a baud rate control feature.
- Support for customized character is only added in its firmware.

# AJANTHA STUDENTS SCIENCE PROJECT




## Joystick Breakout Board

This breakout board makes it easy to mount a thumb joystick. It is an analog joystick - more accurate and sensitive than just 'directional' joysticks. Since its analog, you'll need two analog reading pins on your microcontroller to determine X and Y. Having an extra digital input will let you read the switch. An LED is provided which glows when the switch is pressed. The pack comes in three parts - the joystick itself, a soft-touch rubber 'hat' and a nicely designed breakout board.



## Voice Recognition Module

Features

Voltage:4.5-5.5V
Current:<40Ma
Digital Interface: 5V TTL level UART interface.
Analog Interface: 3.5mm mono-channel microphone connector + microphone pin interface.
Size: 30mm x 47.5mm

# AJANTHA STUDENTS SCIENCE PROJECT


## Ethernet ENC28J60

This is a great module if we want to add an internet connection to our microcontroller projects. The board is based off of the popular ENC28J60 IC and handles most Ethernet network protocol requirements.

ENC28J60-I/SO Ethernet chip module
Network Interface: HanRun HR911105A
Supply Voltage: 3.3 V
Size: 50mm x 33mm x 18mm

# AJANTHA STUDENTS SCIENCE PROJECT

## GAS SENSOR

### MQ-3 Alcohol

This alcohol sensor module is specially designed to detect alcohol vapours in the air

**Specifications:**

Operating Voltage: 4.5V to 5V DC
High sensitivity to alcohol gas
Analog and Digital output available
Onboard visual indicator (LED) for indicating alarm
Simple 4 PIN header interface

### MQ-6 LPG Detector

This is a simple-to-use Liquefied Petroleum Gas (LPG) sensor module, suitable for

**Specifications:**

Operating Voltage: 4.5V to 5V DC
High sensitivity to Propane, Butane and LPG
Good sensitivity to Combustible gas in wide range
Analog and Digital output available
Onboard visual indicator (LED) for indicating alarm

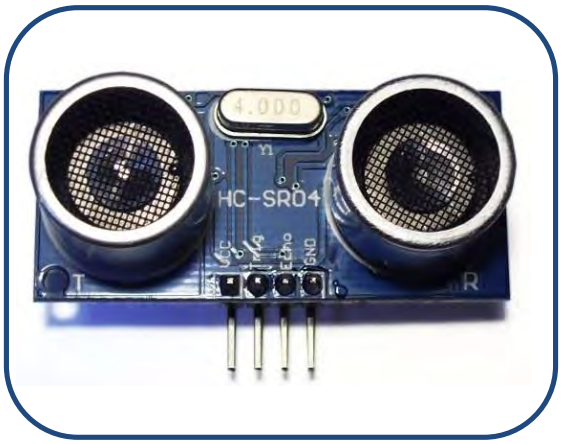
### MQ-2 Flammable Gas Detector

It is use for smoke and flammable gas sensor module which is suitable for sensing smoke

**Specifications:**

Operating Voltage: 4.5V to 5V DC
High sensitivity to Smoke, Propane, Butane and LPG
Good sensitivity to Combustible gas in wide range
Long life and low cost
Compact design and easily mountable

# AJANTHA STUDENTS SCIENCE PROJECT




## Ultrasonic Range finder: HC-SR04

Operating Voltage:  +5V DC.
Operating current : <2mA
Sensing angle: <15°
Range of measurement: 2cm – 500 cm
Accuracy : ± 3cm

## Ultrasonic Range finder: TS106

Operating Voltage: +5V DC.
Operating current : < 15mA
Sensing angle: <15°
Range of measurement: 3cm – 300 cm
Accuracy : ± 2cm


## GH311 Ultrasonic sensor

Operating voltage: 5v
Sensing distance: 2mm to 3M
High Sensitivity, Reliability and Stability
Extreme-Temp resistant, moisture proof, shock & vibration-proof
Sensing angle: < 15·

# AJANTHA STUDENTS SCIENCE PROJECT


WIRELESS CAMERA
Specifications:

TV System:LA,CCIR NTSC/EIA
Resolution:380 TV lines
Scan frequency:PLA/CCIR:50Hz
NTSC/EIA:60Hz
Minimum Illumination:3LUX
Output power:50mW~200mW
Output frequency:900MHz-1200MHz
Power supply:DC +8V~+12V

WIRELESS CAMERS WITHOUT FIFO
**Specifications:**

Small size, low voltage, providing single-chip VGA camera and image processor for all functions.
Users can fully control the image quality, data format and transmission.
Process all image processing functions including gamma curves, white balance, saturation, color and so can SCCB interface programming.

WIRELESS CAMERA WITH FIFO
Specifications:

Low operating voltage for embedded applications.
A great camera module for DIY/comes with high quality lens.
SCCB interface compatible with I2C interface.
With AL422 3M-Bits FIFO.

# AJANTHA STUDENTS SCIENCE PROJECT

# RFID Reader and Tags


## RFID-Reader

Supply Voltage – 9V to 12V DC
Operating current – 50mA
Operating Frequency – 125 KHz
Read Distance – 10cm.
Output format – Serial with DB9 connector provision.

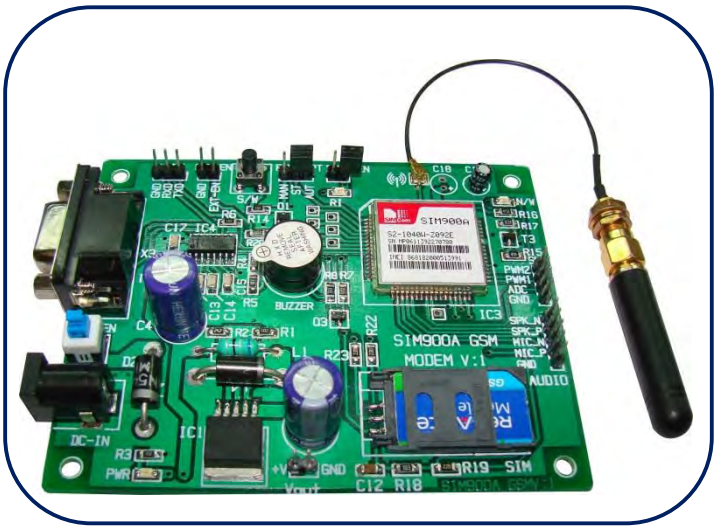
## 125 KHz Passive RFID-cards

RFID tag in clam shell card type. 125Khz EM4001 compatible. Works with RFID reader modules RKI-1512 and RKI-1513. Range about 8-10 cm.


## 125KHZ RFID Module

This is a great little RFID Reader Module similar to the ID models

# AJANTHA STUDENTS SCIENCE PROJECT




## SIM900/900A GSM/GPRS Modem

Dual band (900MHz/1800MHz) GSM/GPRS Modem with very advance SIM900/Sim900A GSM module. The modem follows plug and play operation with on board RS232 interface for communication and follows standard AT command set.

## SIM-300 Module

This GSM Modem can accept any GSM network operator SIM card and act just like a mobile phone with its own unique phone number. It use RS232 port to communicate and develop embedded applications. The modem can either be connected to PC serial port directly or to any microcontroller. It can be used to send and receive SMS or make/receive voice calls. It can also be used in GPRS mode to connect to internet and do many applications for data logging and control. In GPRS mode you can also connect to any remote FTP server and upload files for data logging.

# AJANTHA STUDENTS SCIENCE PROJECT


## SIM 900A Module

SIM900A delivers GSM/GPRS 900/1800MHz performance for voice, SMS, Data, and Fax in a small form factor and with low power consumption. With a tiny configuration of 24mm x 24mm x 3 mm, SIM900A can fit almost all the space requirements in your applications, especially for slim and compact demand of design.

## GPS MODEM

Low cost, high performance solution for GPS applications.

### Specifications:

Supply power: +7V to +12V DC
Direct interface to computer terminal through on board DB9 serial interface.
Direct interface to microcontroller pins(UART).
Baud rate: 9600bps (on request can be customised according to user requirement).

# AJANTHA STUDENTS SCIENCE PROJECT

# Robot Kits

## Line Follower Robot Kit

Comes with ATMega8 motor driver board with programming port so as to modify & develop line following algorithm as per users need.
Modular Design: Precise Laser-Cut Chassis.
Includes Motors, Wheels, Fixtures and everything.
With slight modification & programming, this kit can be used as white line following, black line following or grid solving robot.

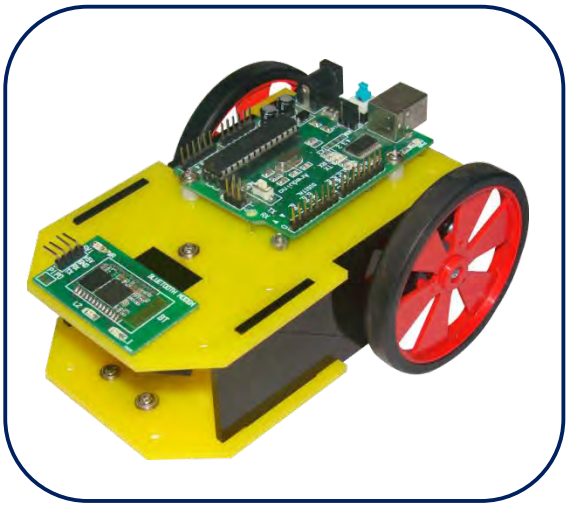
## Obstacle Detector Robot Kit

Comes with ATMega8 motor driver board with programming port so as to modify & develop obstacle avoiding algorithm as per users need.
Modular Design: Precise Laser-Cut Chassis.
Includes Motors, Wheels, Fixtures and everything.
With slight modification & programming, this kit can be used as obstacle avoider, object follower, wall follower etc.

## Sound controlled Robot Kit

Comes with ATMega8 motor driver board with programming port so as to modify & develop sound controlled algorithm as per users need.
Modular Design: Precise Laser-Cut Chassis.
Includes Motors, Wheels, Fixtures and everything.
With slight modification & programming, this kit can be used to develop various applications.

# AJANTHA STUDENTS SCIENCE PROJECT



## Bluetooth Controlled Robot (Arduino)

In this kit Arduino and motor driver board will be interfaced with our Bluetooth module. The Arduino will be programmed to communicate with the Bluetooth so as to perform desired tasks. The controller board will be mounted on a chassis for construction of a wheeled bot. The bot can then be controlled via PC using Bluetooth master dongle or you can use our android app to control the bot using your android phone. Typically application will be controlling motion of robot in forward backward, right and left direction

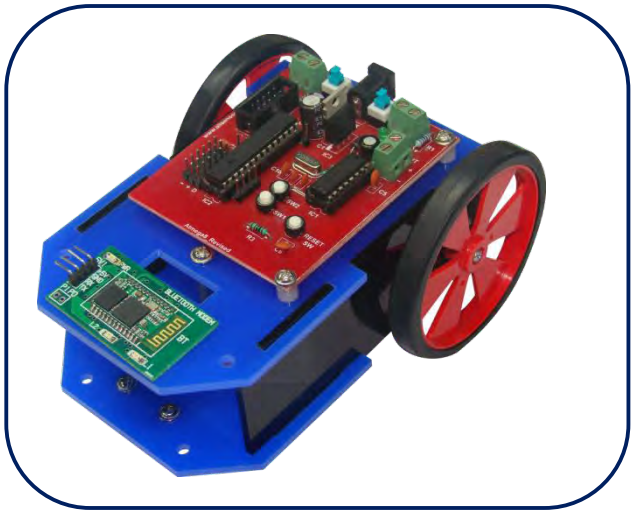
## DTMF Controlled Robot (Arduino)

This kit is based on DTMF technology i.e. Dual Tone Multiple Frequency. DTMF modules decodes DTMF signal either from an audio source or phone line to 4 bit binary TTL(5V) level output. It also indicates outputs with LEDs. This kit contains Arduino and motor driver board interface with DTMF module. Using DTMF, here a robot can be able to control forward,

## IR Remote Controlled Robot

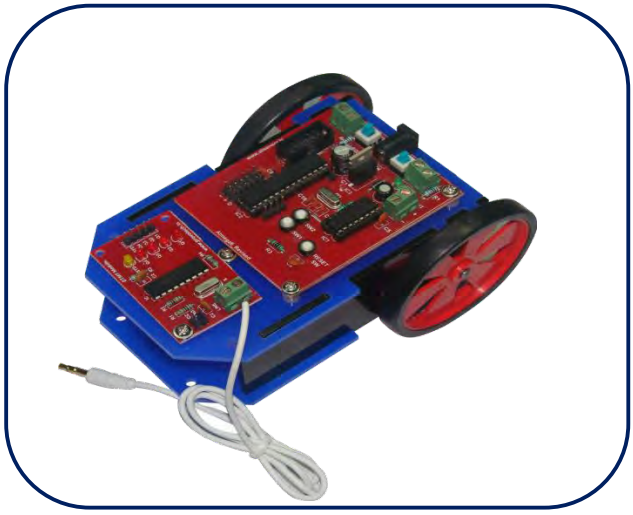
This kit comes with a TSOP sensor and a RF remote control. Every button of the remote has a unique frequency output which can be sensed by the TSOP sensor. Using that unique characteristic a wheeled robot can be controlled to move in different directions.

# AJANTHA STUDENTS SCIENCE PROJECT



## Bluetooth Controlled Robot (Atmega8 + Motor Driver Board)

In this kit Atmega8 motor driver board will be interfaced with our Bluetooth module. The Atmega8 will be programmed to communicate with the Bluetooth so as to perform desired tasks. The controller board will be mounted on a chassis for construction of a wheeled bot. The bot can then be controlled via PC using Bluetooth master dongle or you can use our android app to control the bot using your android phone. Typically application will be controlling motion of robot in forward backward, right and left direction wirelessly via Bluetooth technology.



## DTMF Controlled Robot (Atmega8 + Motor Driver Board)

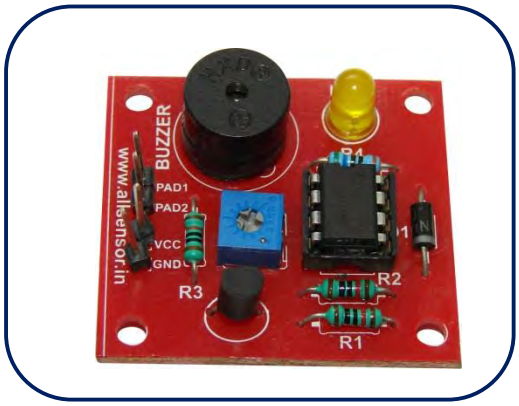
This kit is based on DTMF technology i.e.dual tone multiple frequency. DTMF modules decodes DTMF signal either from an audio source or phone line to 4 bit binary TTL(5V) level output. It also indicates outputs with LEDs. This kit contains Atmega8 motor driver board interface with DTMF module. Using DTMF, here a robot can be able to control forward, backward, right and left.

# AJANTHA STUDENTS SCIENCE PROJECT

## Robotic Arm Kit

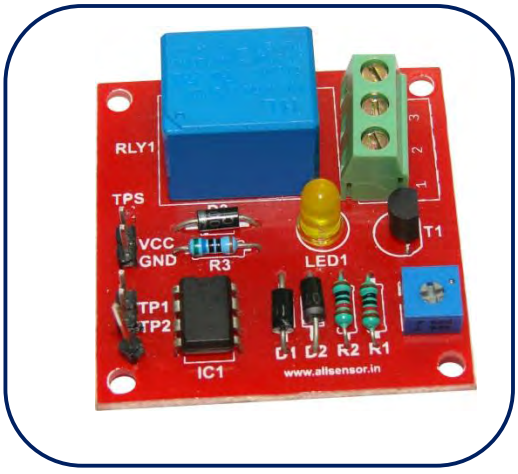
3 Degree of Freedom Robotic Arm: Base rotation, Shoulder, Elbow, Gripper.
Operates from 9-12V DC.
Available with IR Remote and RF Remote.
Also available in Battery operated mode (optional).
Modular Design: Precise Laser-Cut Chassis.
Includes Motors, Remote, Driver board, Fixtures and everything.
CD with high resolution Images, Videos and Video Assembling Manual included with kit.

# AJANTHA STUDENTS SCIENCE PROJECT




## Fire alarm

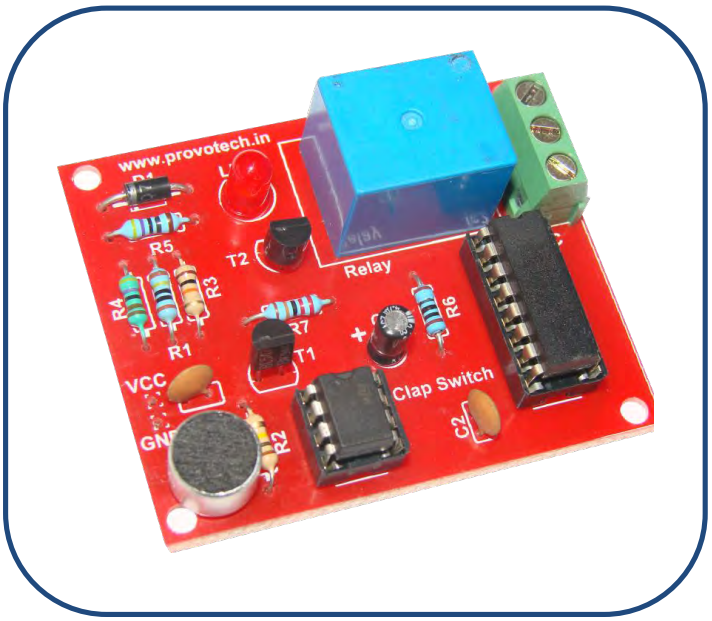
This is an easy to use fire alarm. The circuit uses an NTC as a temperature sensor. As this temperature around NTC increases its resistance decreases. A potentiometer is used to provide a reference voltage. As the temperature around NTC increases, a voltage drop occurs which drives a transistor in turn activating the buzzer & glowing the LED.




## Water level controller

This is an easy to use water level controller. The circuit uses an OPAMP to compare between two electrodes that are used to sense the water level. A 9/12V relay is used to control water level. An on-board LED indicates whether relay is ON/OFF. A potentiometer is used to provide a reference voltage.

# AJANTHA STUDENTS SCIENCE PROJECT




## CLAP SWITCH

It uses an electret condenser microphone as a transducer for converting a clapping sound into an electrical signal. The microphone output is amplified by a transistor and is then sent to the IC555 which performs an ON/OFF switching action when valid claps are detected.

### Features:

- On board LED indication.
- PTR connector for easy interfacing with external devices.
- Operates on single power supply +5V.

# AJANTHA STUDENTS SCIENCE PROJECT

SOLAR PANEL MODULE

These solar panels come in a wide range of specifications ranging from 0.5v to 12v DC with current ranging from 90mA to 450 mA. We can also provide custom made panels as per customer requirement. Using these panels harness the power of sun more efficiently.

RESISTIVE TOUCHSCREEN

Wide range of 4/5 wire resistive touchscreen in different sizes.

# AJANTHA STUDENTS SCIENCE PROJECT

## COMPONENTS

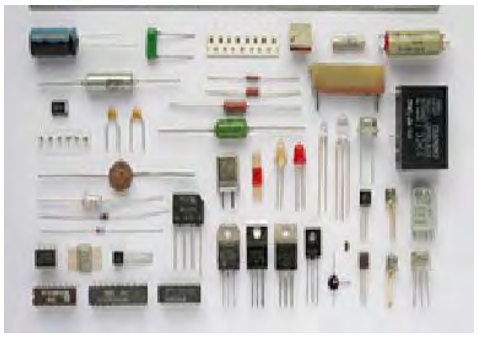

BREAD BOARDS (GL12)

A breadboard (protoboard) is a construction base for prototyping of electronics. The term is commonly used to refer to solderless breadboard (plugboard).

Plastic Body for reduced static, suitable for CMOS devices. Pins are designed for multiple insertions and will withstand heavy use.

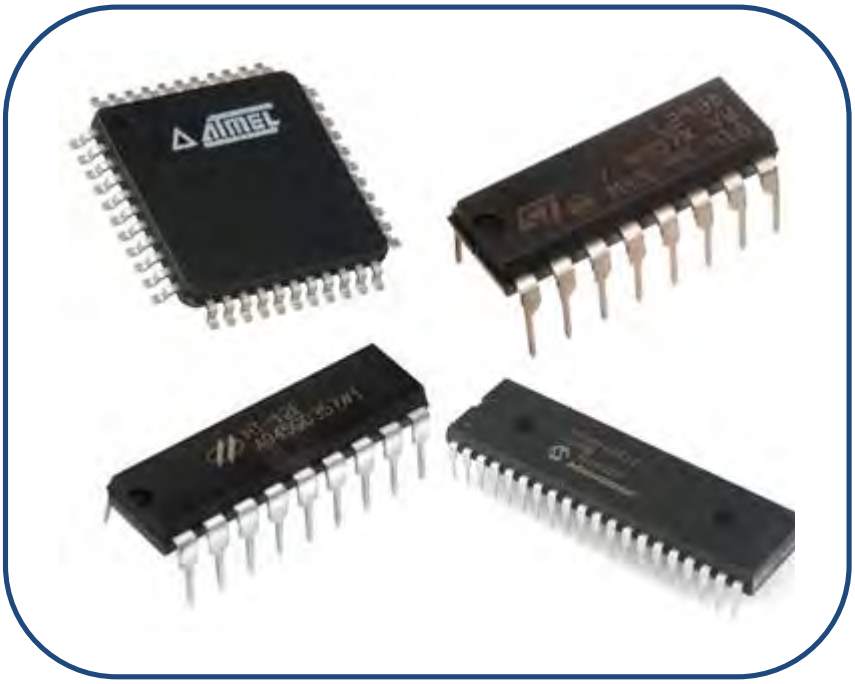
Features

- Quick circuit testing and mock-up
- 840 Contact Points
- Suitable for most IC's, Standard 0.1" Spacing
- Positive and Negative Power Rails on Top and Bottom



We provide a variety of other components including resistors, capacitors, inductors, Potentiometers, LEDs, LCDs(all types),transistors, etc.

# AJANTHA STUDENTS SCIENCE PROJECT



ICs:
Microcontrollers:89s51,89s52,
ATMEGA 8/16/32/128/328

ENCODER/DECODER ICs:
HT12D, HT12E.

MOTOR DRIVER ICs:L293D,L298

WE ALSO PROVIDE VARIOUS OTHER KINDS OF ICs.