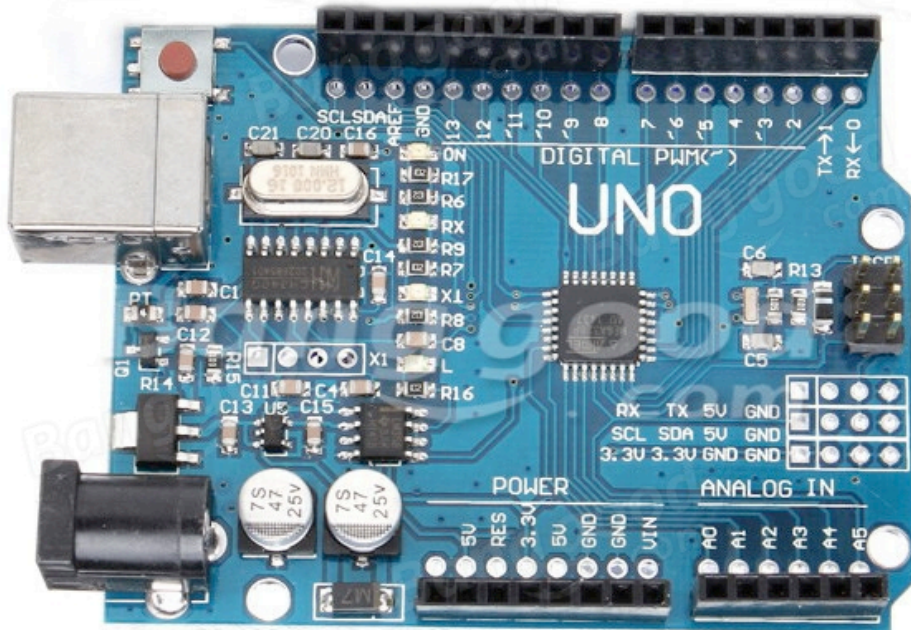


Arduino Kit

Contents:

- UNO R3 ATmega328P Development Board
- Keypad Shield Blue Backlight LCD 1602 Board
- Digital Multi-function Shield Expansion Board
- 3.3-5V Passive Speaker Module
- Sound Detection Sensor Module Electret Microphone LM393 Chip
- Full Colour RGB SMD LED Module 5050 Full Color Pwm
- HC-SR04 Ultrasonic Ranging Sensor Ultrasonic Module
- Infrared Obstacle Avoidance Sensor
- DS18B20 Digital Temperature Sensor Module
- HMC5883L Digital Compass Module
- 6DOF MPU-6050 3 Axis Gyro Accelerometer Sensor Module
- 433MHz Wireless Tx and Rx Modules
- Servo motor

UNO R3 ATmega328P Development Board



Features:

- Digital I / O: 0 - 13
- Analogue I / O: 0 - 5
- Support ISP download function
- Input voltage: DC 5V ~ 9V (Can power over USB)
- Output voltage: DC 5V / 3.3V
- Using Atmel Atmega328 microprocessor controller

How to use:

1. Download the IDE arduino <http://arduino.cc/en/Main/Software>
2. Download the USB chip driver <http://www.5v.ru/zip/ch341ser.zip>
3. Plug in UNO development board, the driver will be installed automatically
4. Run Arduino software
 - a. Select the UNO hardware platform from menu
 - b. Select the COM port from menu
6. Open project, compile and send it to board.

Digital Multi-function Shield Expansion Board



Outputs:

- 4 digit 7-segment LED display module driven using two serial, 8-bit shift registers (74HC595) (Arduino pins D4 (latch), D7 (clk), D8 (data))
- 4 x surface mount LEDs (Arduino pins D10 - D13)
- Piezo Audio buzzer (Arduino pin D3)

Inputs:

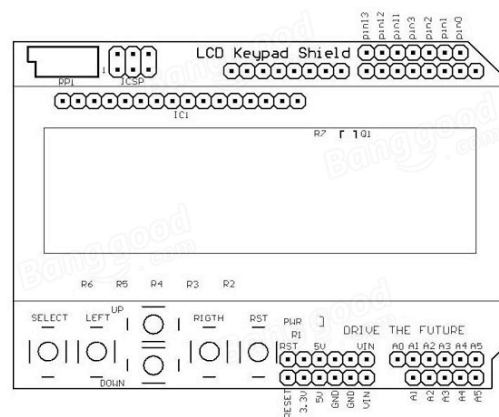
- 3 independent buttons, (Arduino pin A1 - A3)
- 10K adjustable potentiometer (Arduino pin A0)

Interfaces: (can be used for anything)

- 4 x servo drivers (Arduino pins D5, D6, D9, A5)
- APC220 female header (on top left edge of board)
 - Pin 1: GND
 - Pin 2: +5V
 - Pin 3: NC
 - Pin 4: Arduino pin D1 (Tx)
 - Pin 5: Arduino pin D0 (Rx)
 - Pin 6: NC
 - Pin 7: NC
- U4-R-2 and U5-18b20-LM35 male header (in middle of board)
 - Pin 1 'U4': Arduino Pin D2
 - Pin 2 'R': GND
 - Pin 3 '2': +5V
 - Pin 4: GND
 - Pin 5: Arduino Pin A4
 - Pin 6 (far right): +5V

NOTE: Before applying power to your Arduino board check that, no part of the underside of this shield is in contact with the USB connector of the host board.

Keypad Shield Blue Backlight LCD 1602 Board



Features:

- This is a basic 16 character by 2 line black-on-green display.
- Utilizes the extremely common HD44780 parallel interface chipset.
- Interface code is freely available.
- Blue Backlight with white words.
- Uses 4 Bit Arduino LCD Library.

NOTE: use the blue trimpot to adjust contrast

Pinout:

- LCD RS pin to digital pin 8
- LCD Enable pin to digital pin 9
- LCD D4 pin to digital pin 4
- LCD D5 pin to digital pin 5
- LCD D6 pin to digital pin 6
- LCD D7 pin to digital pin 7
- LCD BL pin to digital pin 10
- KEY pin to analog pin 0

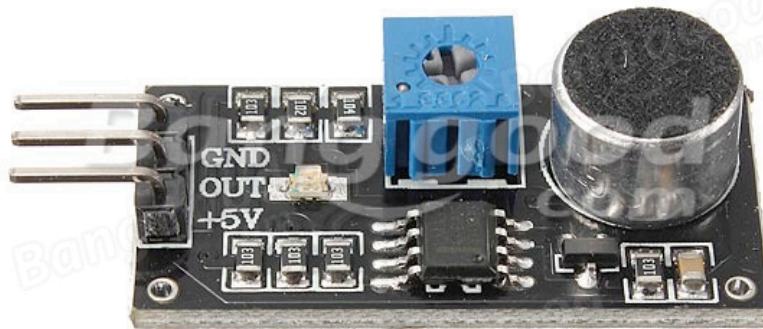
3.3-5V Passive Speaker Module



Features:

- Working Voltage: 3.3-5V
- Drive the I/O pin with a sine wave - can use pulse width modulation (PWM)

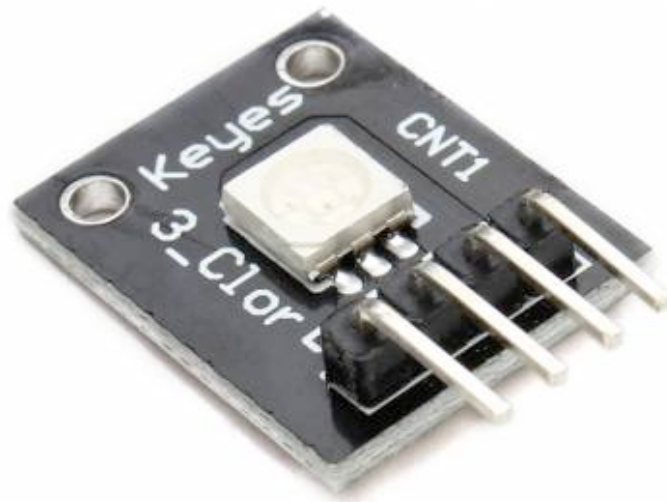
Sound Detection Sensor Module LM393 Chip Electret Microphone



Features:

- Operating voltage 4 – 6V

Full Colour RGB SMD LED Module 5050 Full Color Pwm



Pinout:

- R – red intensity 0-5V
- G – green intensity 0-5V
- R – blue intensity 0-5V
- I – ground 0V

Note: this does not have current limiting resistors and can burn out if powered on for too long.

Infrared Obstacle Avoidance Sensor



Features:

- Working voltage of 3.3 V to 5 V.
- Detection range adjustable through the potentiometer from 2 to 80 cm
- Detection alert: green LED turns on, and digital output goes low

HC-SR04 Ultrasonic Ranging Sensor Ultrasonic Module



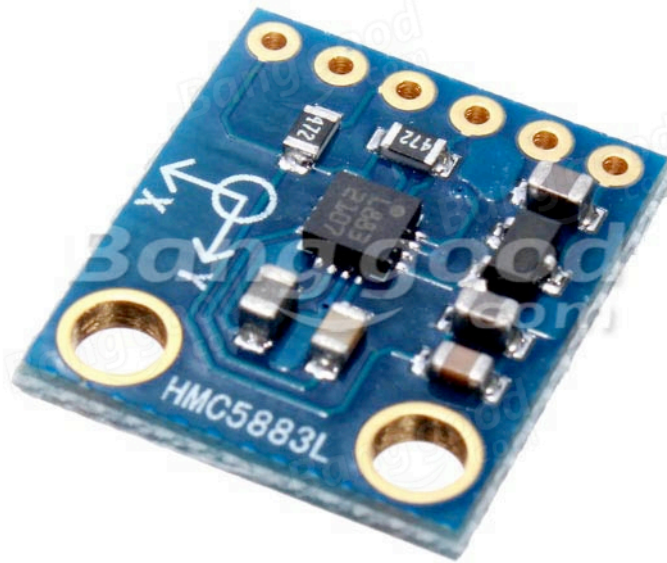
Features:

- Working Voltage : 5V(DC)
- Output Signal (echo): frequency signal - TTL PWL
- Input Signal (Trigger): 10us TTL impulse
- Sensor Angle: Not more than 15 degrees
- Detection Distance: 2cm-450cm
- High Precision: Up to 0.3cm

Usage:

- Connect the GND pin before the VCC pin – or else it may function incorrectly
- Apply high level signal to the trigger input of at least 10us
- The module sends eight 40khz square wave and detect returning echoes
- If echoes are detected the output goes high, and remains high based on the distance detected. Distance =(high level time * sound velocity (340m/s)/2

Digital Compass Three Axis Magneto Resistive Sensor Module



Features:

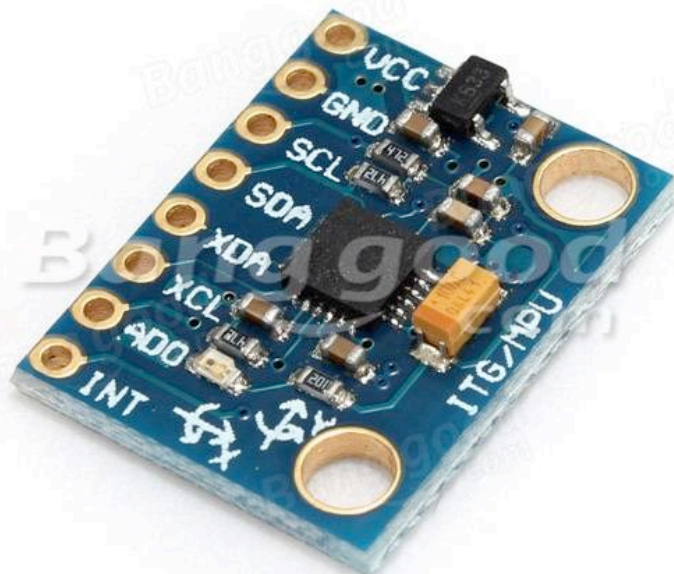
Supply voltage: 3.3V or 5V

Digital output: IIC digital output,

Pinout: VCC, GND, SDA, SCL line can read data via IIC interface.

Precision: 1-2 degrees,

6DOF MPU-6050 3 Axis Gyro Accelerometer Sensor Module



Features:

- three-axis gyroscope + triaxial accelerometer
- 16-bit data output
- Power supply :3-5v
- Communication: IIC communication protocol standard
- Gyro Range: ± 250 500 1000 2000 $^{\circ} / s$
- Acceleration range: ± 2 ± 4 ± 8 $\pm 16g$

433MHz Wireless Tx & Rx Modules



Receiver module:

- Product Model: XD-RF-5V
- Operating voltage: DC5V
- Receiving frequency: 433.92MHZ
- Receiver sensitivity: -105DB

RF Transmitter:

- Product Model: XD-FST
- Range :20-200 meters (depends on voltage and antenna)
- Operating voltage :3.5-12V
- Operating mode: AM
- Transfer rate: 4KB / S
- Transmitting power: 10mW
- Transmitting frequency: 433M
- Pinout: (DATA; VCC; GND)