

Ultrasonic ranging

Overview



This is the experimental use of ultrasonic module (HCSR04) test distance. Ultrasonic module is generally used in the robot.

Specification




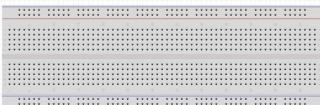

Please view "HCSR04.pdf"

Path: \Public_materials\Datasheet\ HCSR04.pdf

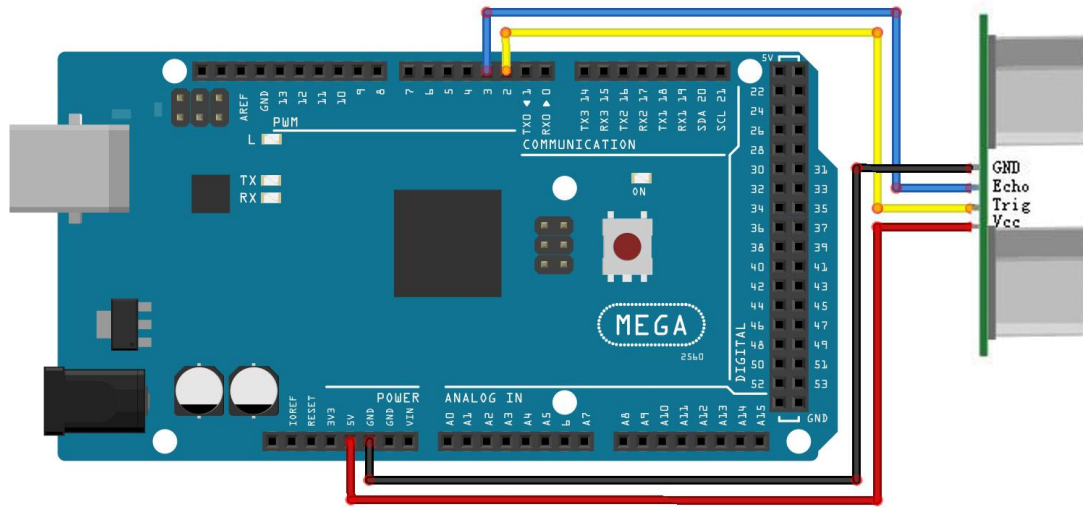
Pin definition

| | |
|---------|---------|
| HC SR04 | Arduino |
| Vcc | -> VCC |
| Trig | -> D2 |
| Echo | -> D3 |
| Gnd | -> GND |

Hardware required

| Material diagram | Material name | Number |
|---|---------------|---------|
|  | HCSR04 | 1 |
|  | USB Cable | 1 |
|  | MEGA 2560 | 1 |
|  | Breadboard | 1 |
|  | Jumper wires | Several |

Connection diagram

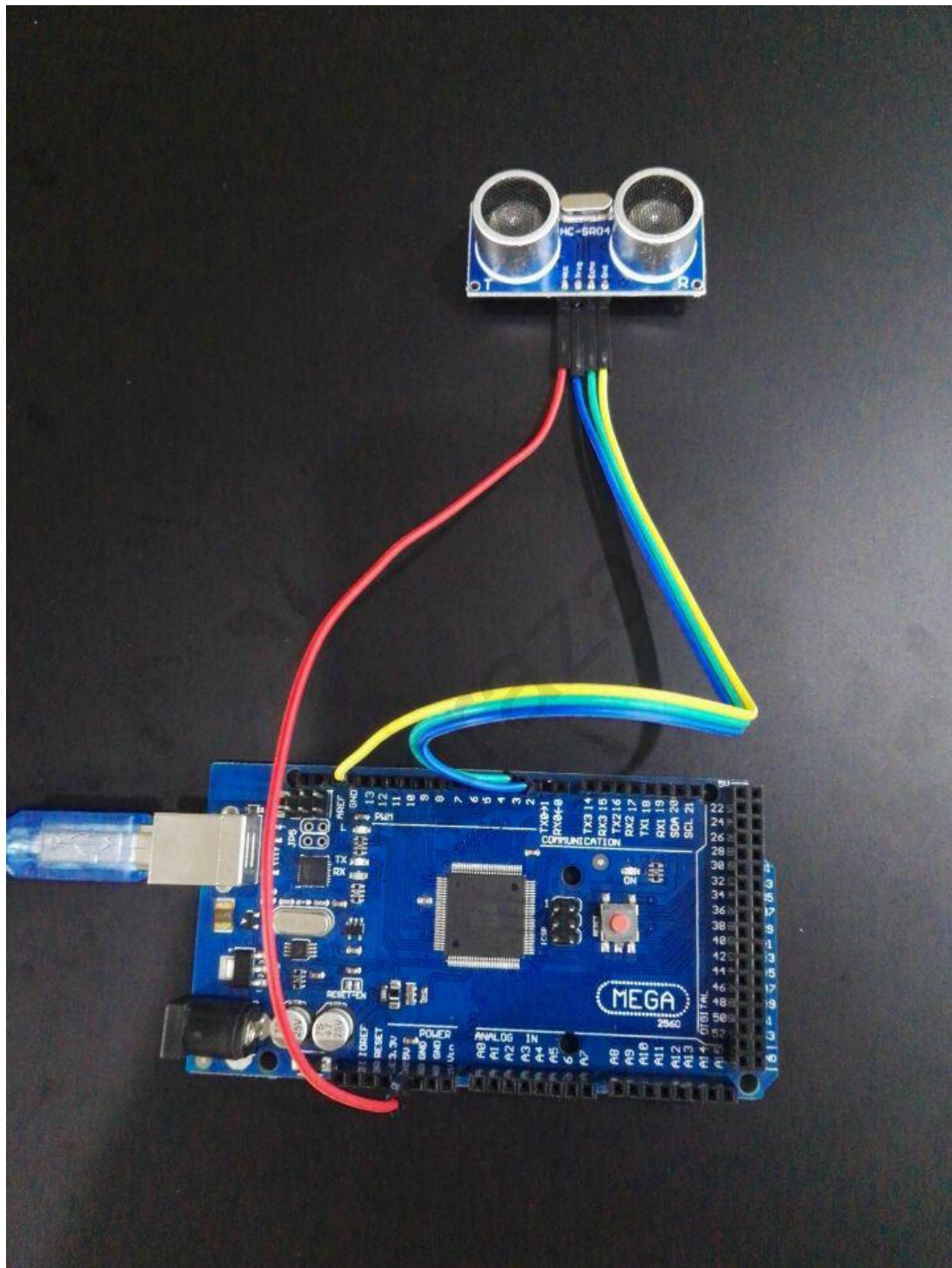


Sample code

Note: sample code under the **Sample code** folder

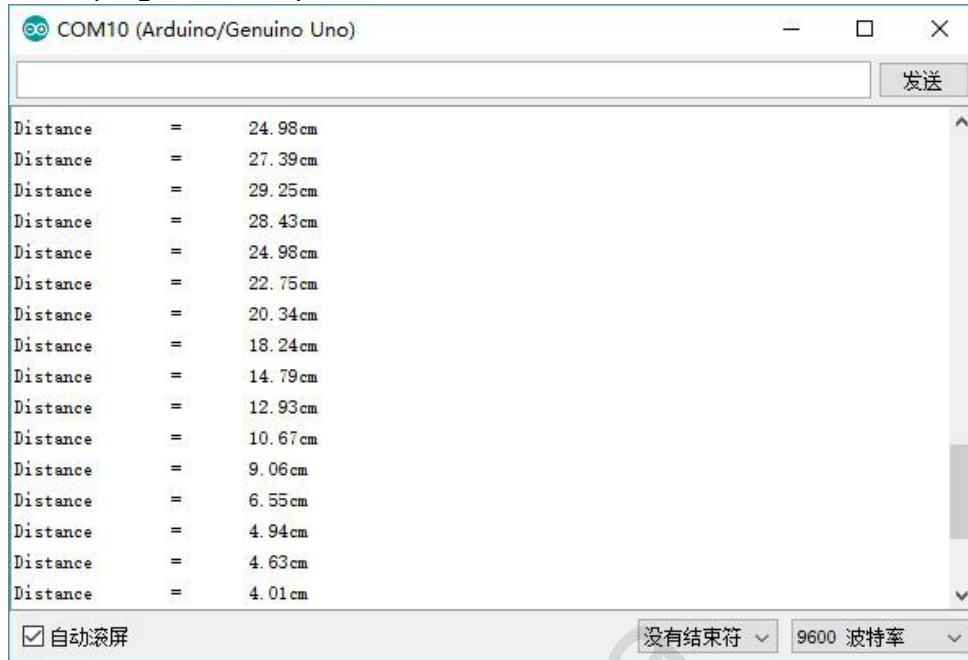
```
const int TrigPin = 2;
const int EchoPin = 3;
float cm;
void setup()
{
    Serial.begin(9600);
    pinMode(TrigPin, OUTPUT);
    pinMode(EchoPin, INPUT);
}
void loop()
{
    digitalWrite(TrigPin, LOW);
    delayMicroseconds(2);
    digitalWrite(TrigPin, HIGH);
    delayMicroseconds(10);
    digitalWrite(TrigPin, LOW);
    cm = pulseIn(EchoPin, HIGH) / 58.0; //The echo time is converted into cm
    cm = (int(cm * 100.0)) / 100.0;    //Keep two decimal places
    Serial.print("Distance\t=\t");
    Serial.print(cm);
    Serial.print("cm");
    Serial.println();
    delay(1000);
}
```

Example picture



Result

Upload the program then open the monitor, we can see the data as below:



Language reference

Tips : click on the following name to jump to the web page.

If you fail to open, use the Adobe reader to open this document.

[delayMicroseconds\(\)](#)

Application effect

Open the serial port monitor, and you will see the data returned by the ultrasonic module.

* About Smraza:

* We are a leading manufacturer of electronic components for Arduino and Raspberry Pi.

* Official website: <http://www.smraza.com/>

* We have a professional engineering team dedicated to providing tutorials and support to help you get started.

* If you have any technical questions, please feel free to contact our support staff via email at support@smraza.com

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