

Originally taken from:

<https://electropeak.com/learn/interfacing-us-100-ultrasonic-distance-sensor-with-arduino/>

Interfacing US-100 Ultrasonic Distance Sensor with Arduino

US-100 Distance Sensor Features

The US-100 is an ultrasonic transmitter and receiver module used to measure distance. The sensor operation is very simple. You only need to measure the return time of ultrasonic waves in order to measure the distance. Then you can divide this time by 2 and multiplied by the sound speed. The sensor measuring range is about 2 to 450 cm.

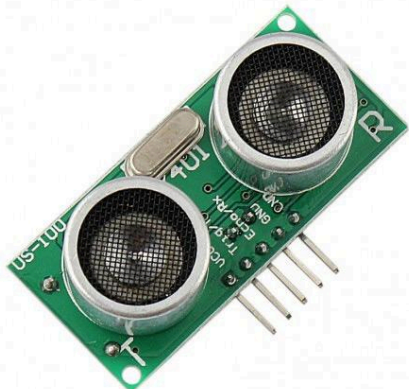
Note:

The US-100 module has 2 different communication protocol.

Method 1: use serial communication

Method 2: use Trigger and Echo (similar to SRF04 and SRF05 modules)

If the jumper is connected on the back of the board, communication protocol is serial, otherwise, Method 2 is enabled.

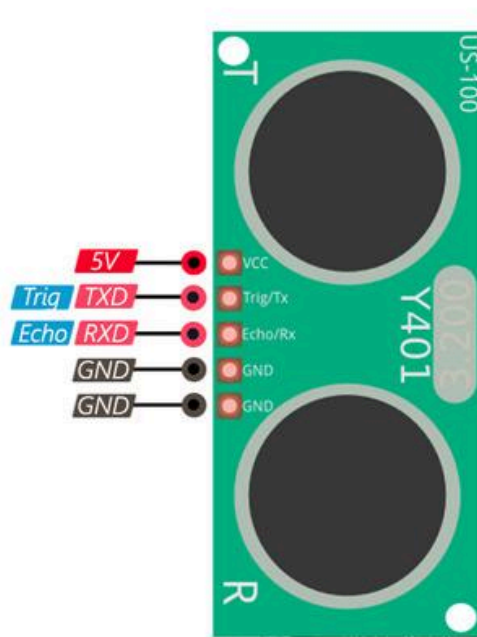


US-100 Ultrasonic Distance Sensor Pinout

This sensor has 5 pins:

- **5V:** Module power supply – 3.3-5 V
- **GND:** Ground
- **Trig/Tx:** A 10 microseconds pulse is required for ultrasonic transmitter to start working. This pin can also be used as a transmitter (TX) in serial communication.
- **Echo/Rx:** Shows the waves travel time as pulses. This base can also be used as a receiver (RX) in serial communication.

You can see the pinout of this module in the image bellow.



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Hardware Components

Arduino Uno R3

US-100 Ultrasonic Distance Sensor Module

Male to Female jumper wire

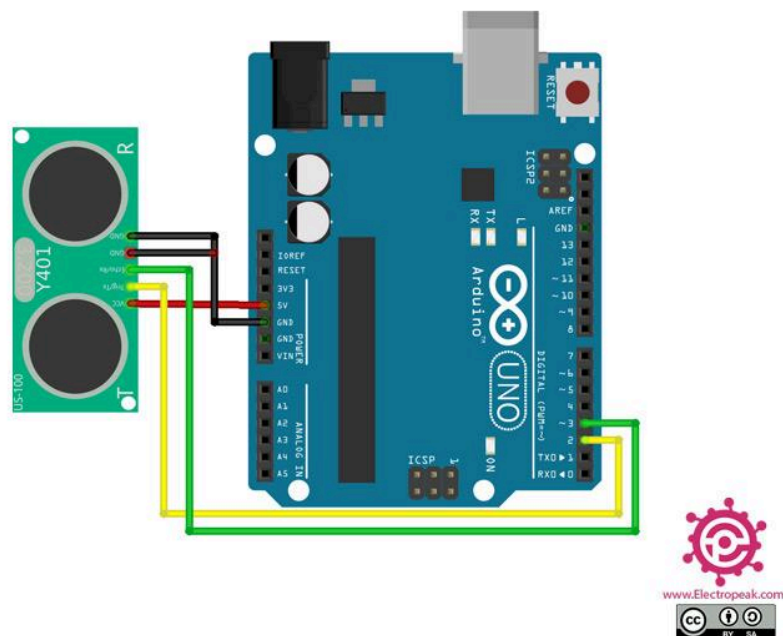
Software Apps

Arduino IDE

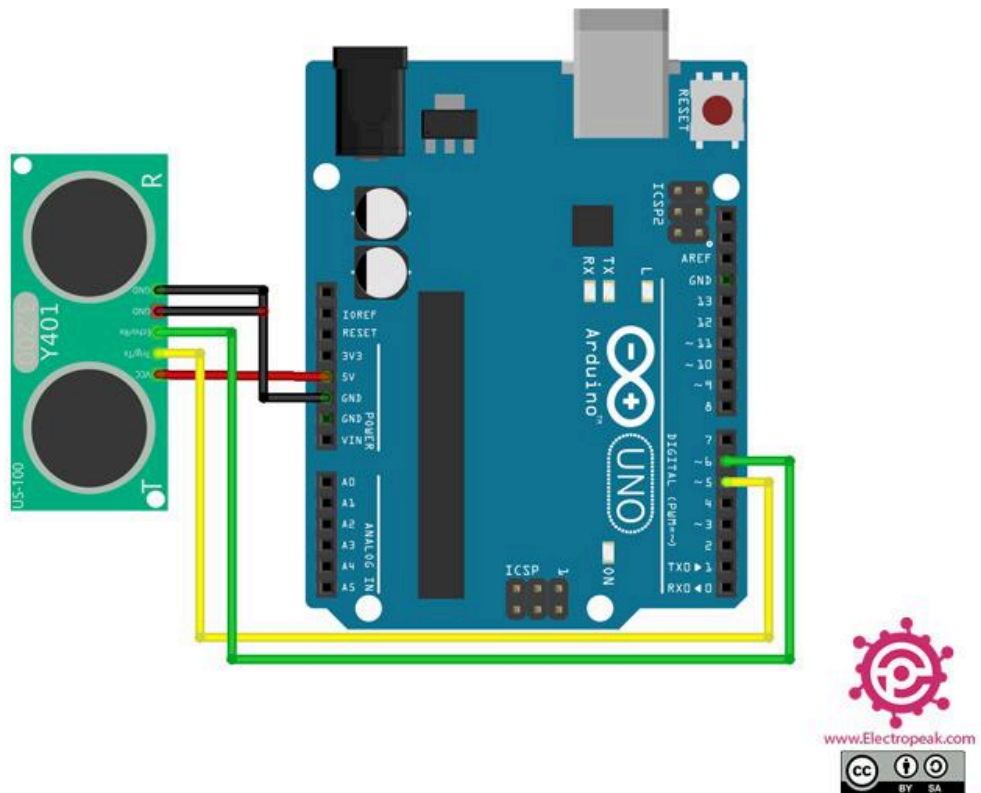
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Step 1: Circuit

If you want to use serial communication, connect the module to the Arduino as follows.



If you want to use Trigger and Echo pins, connect the module to the Arduino as follows.

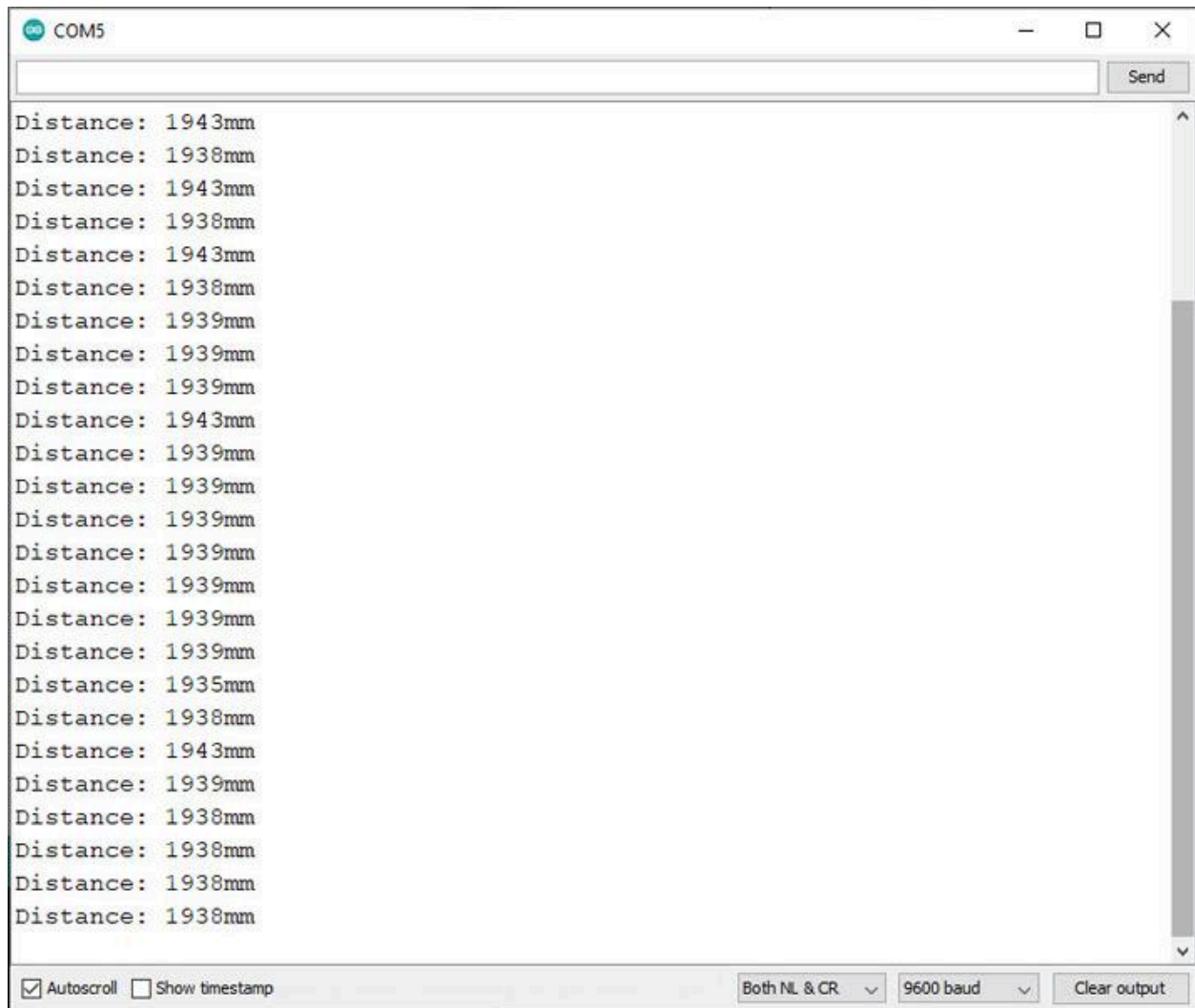


Step 2: Interfacing code with serial communication

Upload the following code to your Arduino. This code displays the readings of the sensor in the serial monitor.

<See coding attached Serial Example>

After running the code, you will see the following image in the serial monitor.



Step 3: Interfacing code with Trigger and Echo

Upload the following code to your Arduino. This code displays the readings of the sensor in the serial monitor.

<See coding attached Trigger and Echo>

After running the code, you will see the following image in the serial monitor.

