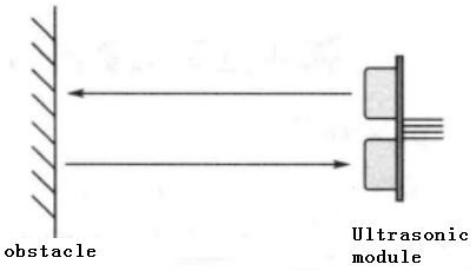
Introduction of Ultrasonic module

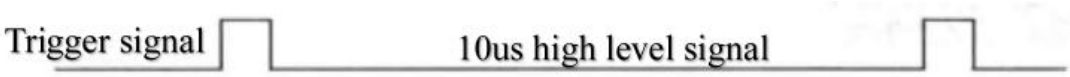
1.Working principle

The ultrasonic module is a sensor that uses ultrasonic characteristics to detect the distance. It has two ultrasonic probes for transmitting and receiving ultrasonic waves. The range of measurement is 3-450 cm.



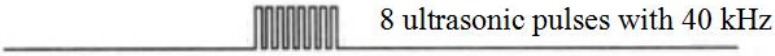
3-1 Ultrasonic emission and reception schematic

(1) You need to input a high level signal of at least 10us to the Trig pin to trigger the ranging function of the ultrasonic module.



3-2 Ultrasonic module sends trigger signal

(2) After the ranging function is triggered, the module will automatically send out 8 ultrasonic pulses with 40 kHz and automatically detect whether there is a signal return. This step is done internally by the module.



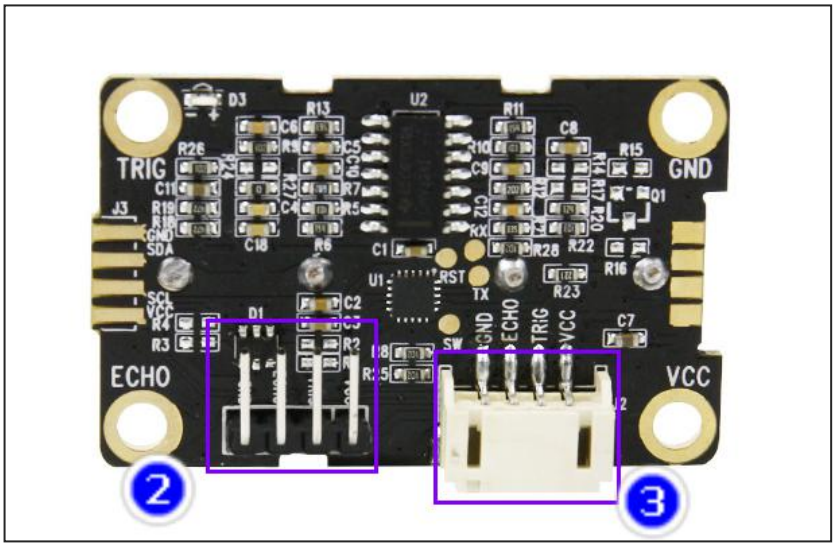
(3) When the module detects an echo signal, the ECHO pin will output a high level.

The high level duration is the time from when the ultrasonic wave is sent to when it returns. You can calculate the distance by using the time function to calculate the high level duration. **Formula: Distance = High level duration * Speed of sound(340M/S)/2.**

2.Practical application

2.1 Range finder, test the distance of the bottom of the well.
2.2 Electric toothbrush, using ultrasonic to clean the teeth.
2.3 Medical ultrasonic flaw detector, etc.

3.About module



3.1 Ultrasonic module possess 4 Alligator clip port, Corresponding to GND, VCC, ECHO and TRIG. **The TRIG pin is the signal transmit pin and the ECHO pin is the signal receive pin.**

3.2 4 pin .

3.3 PH2.0 cable interface.

Working Voltage: 3.3V/5V