

US-020 Ultrasonic Module

1. Sketch out

This US-020 ultrasonic module can realize 2 ~ 700cm of non-contact ranging function, has 5 V of wide voltage input range, static power consumption is less than 3mA. Their own temperature sensor will revise the ranging and has many communication modes like GPIO, just like watchdog inside, very stable and reliable.

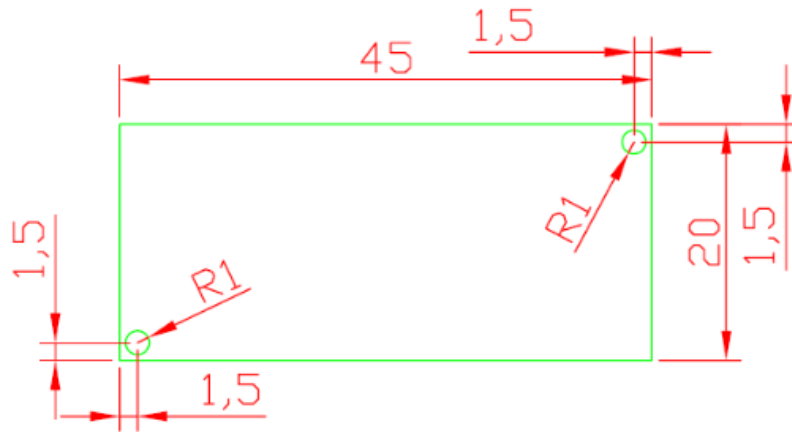
2. Technical parameters

Electric parameter	US-020 Ultrasonic Module
working voltage	DC 5V
quiescent current	3mA
operating temperature	0~70°C
output mode	GPIO
detection angle	<15°
detection range	2cm-700cm
detecting precision	0.3cm+1%

3. Pictures and Size



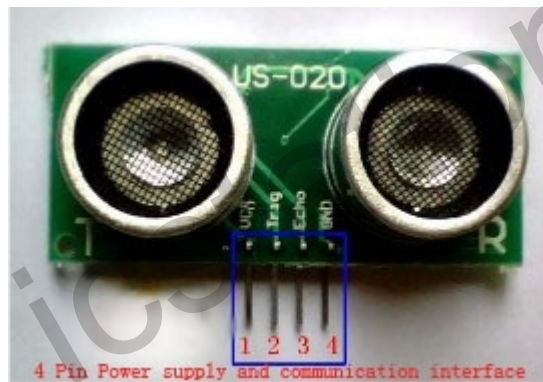
The size of the module:45mm*20mm*1.6mm,there are two Mechanical hole on it.



US-020 dimension figure

4.Interface specifier

This module have an port:4 Pin Power supply and communication interface



Four pins from left to right ,they are defined as follow :

- 1.NO.1 pin:Connected to VCC(DC 5V)
- 2.NO.2 pin: Connected to MCU's Trig port,
3. NO.3 pin: Connected to MCU's Echo port
4. NO.4 pin:Connected to GND

5. Operating principle



US-020 sequence chart

We only need to produce a high level signal over 10us, the module can produce eight 40KHZ Ultrasonic pulses, then check the response signal, when there is a response signal, Echo port will output a signal.

We can calculate the distance through the time Echo keeps high level signal, that is to say $\text{distance} = (\text{time} * 340) / 2$

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