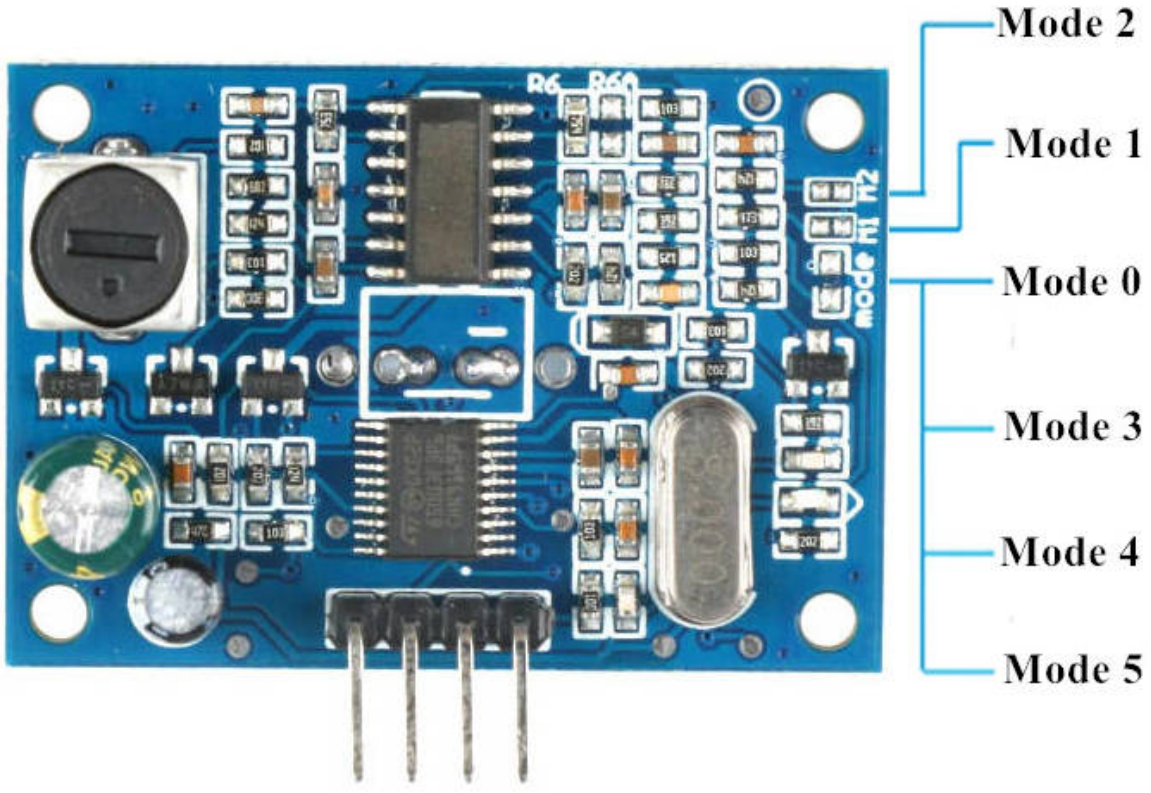
Product introduction:
The new version of SR04T-V3.0 recently released solves the problem of blind data jumps and improves the stability of the product. JSN-SR0T4-V3.0 ultrasonic ranging module can provide 21cm-600cm non-contact distance sensing Function, ranging accuracy can be as high as 3mm; the module consists of an ultrasonic sensor and control circuit integrated with transceiver. The usage of mode one is compatible with our HC-SR04 module.

Features:
1. Small size and easy to use
2. Low voltage and low power consumption
3. High measurement accuracy
4. Strong anti-interference
5. Integrated closed waterproof probe with wire, suitable for wet and harsh measurement occasions

Product parameters:
Working voltage: DC 3.0V-5.5V
Working current: less than 8mA
Probe frequency: 40kHz
The longest range: 600cm
Recent range: 20cm
Long range accuracy: ±1cm
Resolution: 1mm
Mileage angle: 75 degrees
Input trigger signal: 1. TTL pulse above 10uS; 2. Serial port sending command 0X55
Output echo signal Output pulse width level signal, or TTL

Wiring:
3-5.5V (power +)
Trig (Control) RX
Echo (output) TX
GND (power-)
Working temperature: -20-+70 degree

Function description: 6 modes



Mode 0: Mode floating = trigger pulse width output (factory default mode)
Mode 1: M1 short connection is automatic serial output
Mode 2: M2 short connection is serial port controlled output
Mode 3: Mode welding 200K = automatic distance pulse width output
Mode 4: Mode welding 360K = low power pulse width mode output
Mode 5: Mode welding 470K = switch mode output

Mode 1: Mode=open means no welding. The mode is explained as follows

Basic working principle:
(1) Adopt IO port TRIG to trigger ranging. Present a high level signal of at least 10us.

(2) The module automatically sends eight 40khz square waves and automatically detects whether a signal returns;

(3) When a signal returns, a high level is output through the IO port ECH0. The duration of the high level is the time from the transmission of the ultrasonic wave to the return. Test distance height = (high level time *

speed of sound (348M/S))/2.
(4) After the module is triggered for ranging, if the echo cannot be received (the reason exceeds the measured range or the probe does not face the measured object), the ECHO port will automatically become low after 40MS, marking this time The measurement ends, regardless of success.

Mode 2: Mode=47K (or directly short M1 bit) UART automatic output

The UART automatic output mode outputs the measured distance value (hexadecimal number) according to the UART communication format.
This mode does not require an external trigger signal. The module can automatically measure every 100ms. The TX pin outputs the measured distance value after each measurement is completed.

Serial output format for the TTL level, that: 100MS module for the cycle of automatic output distance value, the unit is mm. Serial baud rate: 9600, n, 8,1.
After the module is powered on, it will enter the working mode directly, and the range will be carried out every 100ms within the module and one frame will be output from the pin TX, including four 8-bit data.
The frame format is: 0XFF + H_DATA + L_DATA + SUM
1.0XFF: for a frame to start the data, used to judge;
2.H_DATA: the upper 8 bits of the distance data;
3.L_DATA: the lower 8 bits of the distance data;
4.SUM: data and, for the effect of its 0XFF + H_DATA + L_DATA = SUM (only low 8)

Note: H_DATA and L_DATA synthesize 16-bit data, that is, the distance in millimeters
E.G:
Product response FF 07 A1 A7
Where the check code SUM = A7 = (0x07 + 0xA1 + 0Xff) & 0x00ff
0x07 is the high data of the distance;
0xA1 is the lower data of the distance;
Distance value is 0x07A1; converted to decimal for 1953; unit: mm

Mode 3: Mode=120K (or short M2 bit directly) UART controlled output

The UART controlled output method outputs the measured distance value (hexadecimal number) according to the UART communication format. In this method, the trigger command oX55 signal needs to be added to the RX
pin. The module measures once every time the command is received. The foot outputs the measured distance value. The command trigger cycle should be greater than 60ms.

Mode 4: Mode=200K high level (PWM) pulse width automatic output

Under the pulse width PWM automatic output, the module automatically measures at a period of 200ms, and outputs a pulse width high level corresponding to the distance after the measurement. Calculating distance mode reference mode 1.

Mode 5: Mode=360K low power consumption (PWM) high level pulse width controlled output

In low-power mode, the module's shut-down dog is disabled. This module is suitable for battery-powered users. The static power consumption is less than 70UA. The working distance measurement method is the same as

mode 1.

Mode 6: Mode=470K switch output

The module will set a threshold value at the factory, the default is 1.5 meters. The module performs ranging every 200ms. When the detected distance value of the target is less than the set threshold, the Echo pin outputs a high level. The currently detected distance value is greater than the set threshold, and the Echo pin outputs a low power. In order to improve the stability, the factory defaults that the distance detected by the target for two consecutive times is less than the set threshold. Signal, no driving ability. Transistor drive relays should be added during application. If there are special requirements, you need to modify the threshold or other settings, you need to specify when purchasing.