Arduino Distance Measuring Transducer Sensor
Model:AJ-SR04M
User Manual

Operating Mode:

After connecting the ultrasonic ranging module with 3-5.5V power supply, the module has five working modes:

Mode 1: Common Pulse Width Square Wave (Minimum Power Consumption 2.5mA)

Mode 2: Low Power Pulse Width Square Wave (Minimum Power Consumption 40uA)

Mode 3: Automatic Serial Port (Minimum Power Consumption 2.5mA)

Mode 4: Serial Port Trigger (Minimum Power Consumption 20uA)

Mode 5: ASCII Code output (Minimum Power Consumption 20uA)

Module Output Format Description:

* The method of switching mode. In case of power failure, the mode can be changed by changing the resistance value of R19 above the module.
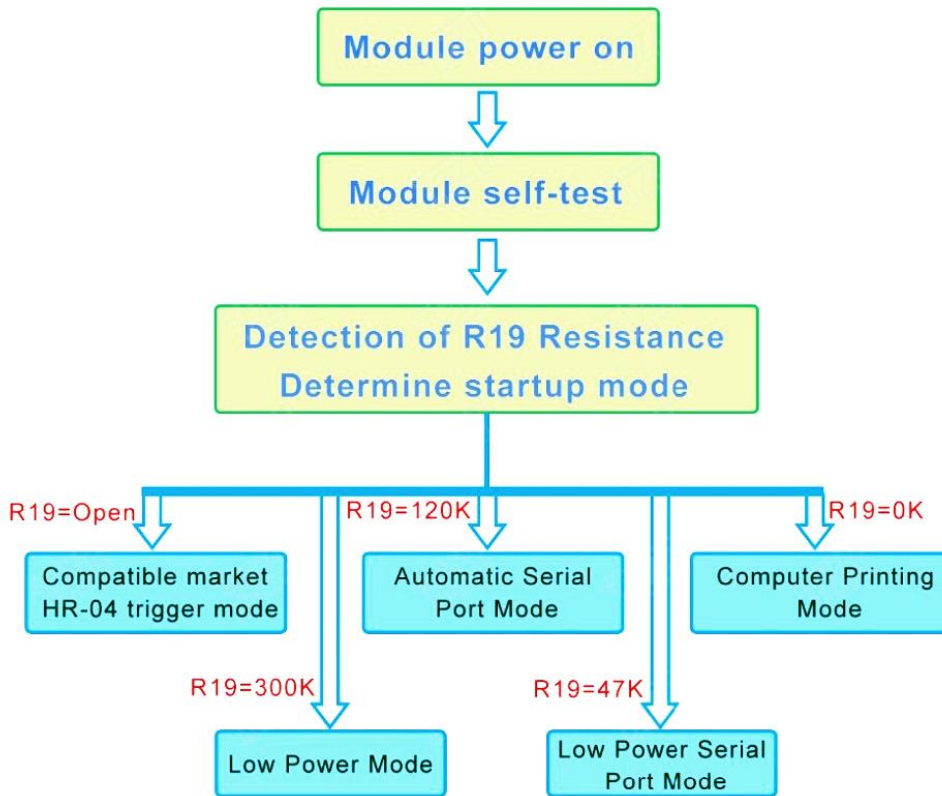
* Patterns Selection Method:

  1. Compatible market HR-04 trigger mode

  2. Low Power Mode

  3. Automatic Serial Port Mode

  4. Low Power Serial Port Mode
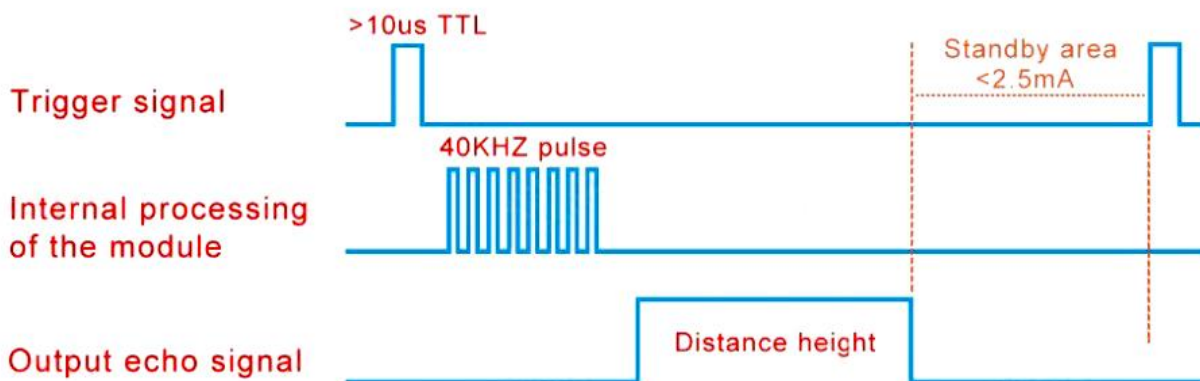
  5. Computer Printing Mode
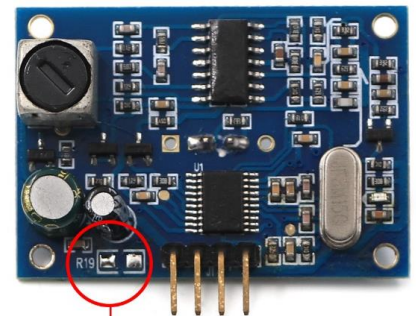
Replacement of R19 Change Mode

Pattern	Mode Corresponds	Standby Current	Low Power Current	Blind Area	The Furthest Distance
Compatible market HR-04 trigger mode	Open circuit	<2mA	---------	20cm	8m
Low Power mode	300KΩ	<2mA	<40µA	20cm	8m
Automatic Serial Port Mode	120KΩ	<2mA	---------	20cm	8m
Low Power Serial Port Mode	47KΩ	<2mA	<20µA	20cm	8m
Computer Printing Mode	0KΩ	<2mA	<20µA	20cm	8m

Module Startup Flow Chart:

```
                    ┌──────────────────────┐
                    │   Module power on     │
                    └──────────┬───────────┘
                               ⇩
                    ┌──────────────────────┐
                    │   Module self-test    │
                    └──────────┬───────────┘
                               ⇩
            ┌──────────────────────────────────────┐
            │  Detection of R19 Resistance          │
            │  Determine startup mode               │
            └──────────────────────────────────────┘
```

R19=Open → Compatible market HR-04 trigger mode

R19=120K → Automatic Serial Port Mode

R19=0K → Computer Printing Mode

R19=300K → Low Power Mode

R19=47K → Low Power Serial Port Mode

Mode 1: Standby current < 2.0mA, working current 30mA

Trigger signal — >10us TTL — Standby area <2.5mA

Internal processing of the module — 40KHZ pulse

Output echo signal — Distance height

Mode 2: Low power consumption<40uA,working current 30mA

Trigger signal — >1ms TTL — Low power region <40uA

Internal processing of the module — 40KHZ pulse

Output echo signal — Distance height

Standby area<2.5mA
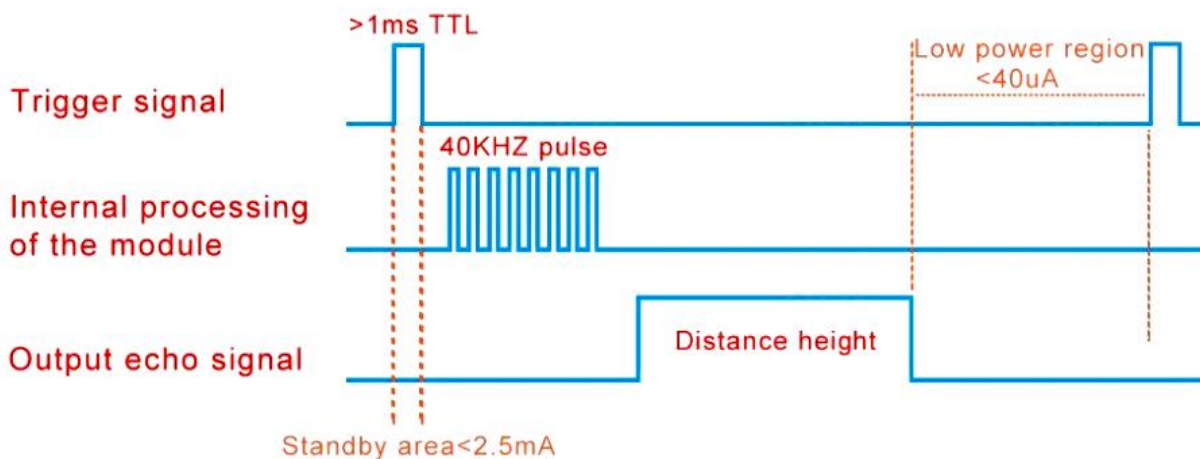
Mode 3:Serial port automatic mode, average current 5mA

Trigger signal has no effect

Trigger signal

Internal processing of the module

40KHZ Pulse — Send once at 120 ms interval — 40KHZ Pulse

Output echo signal

Serial data output
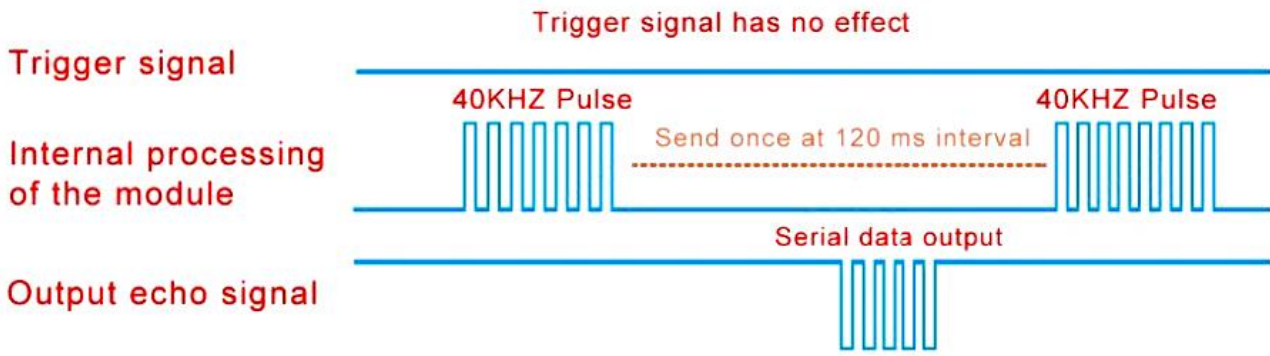
Mode 4: Serial low power mode,low power<20uA,standby 2mA

0X01 trigger — 0X01 trigger

Trigger signal

Low power region <20uA

Internal processing of the module

40KHZ Pulse

Output echo signal
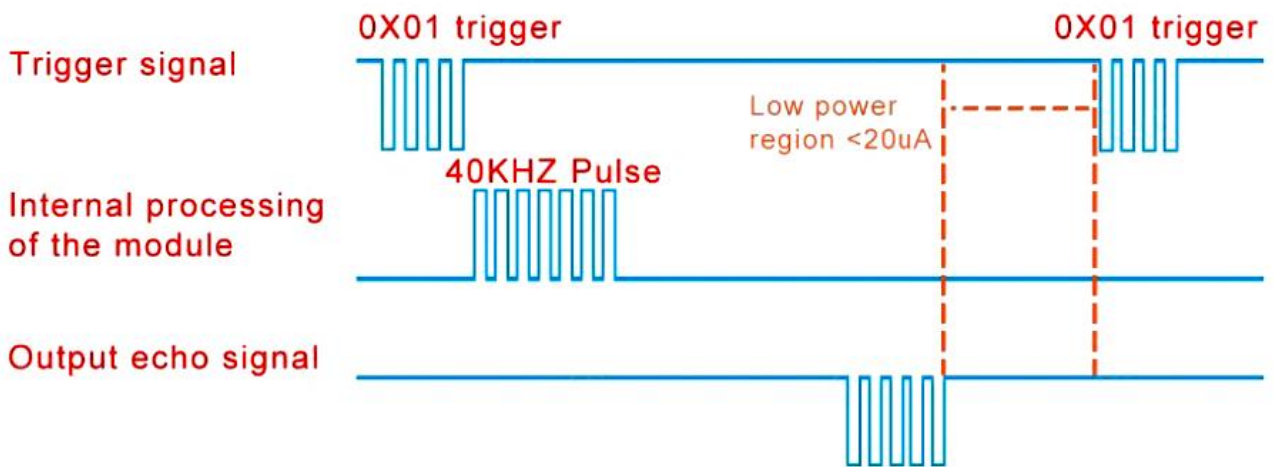
Mode 5: Serial low power mode, standby < 20uA, working 30mA

0X01 trigger — 0X01 trigger

Trigger signal

Low power region <20uA

Internal processing of the module

40KHZ Pulse

Output echo signal

Ø23.4

20

Ø18.6

2500

2.54
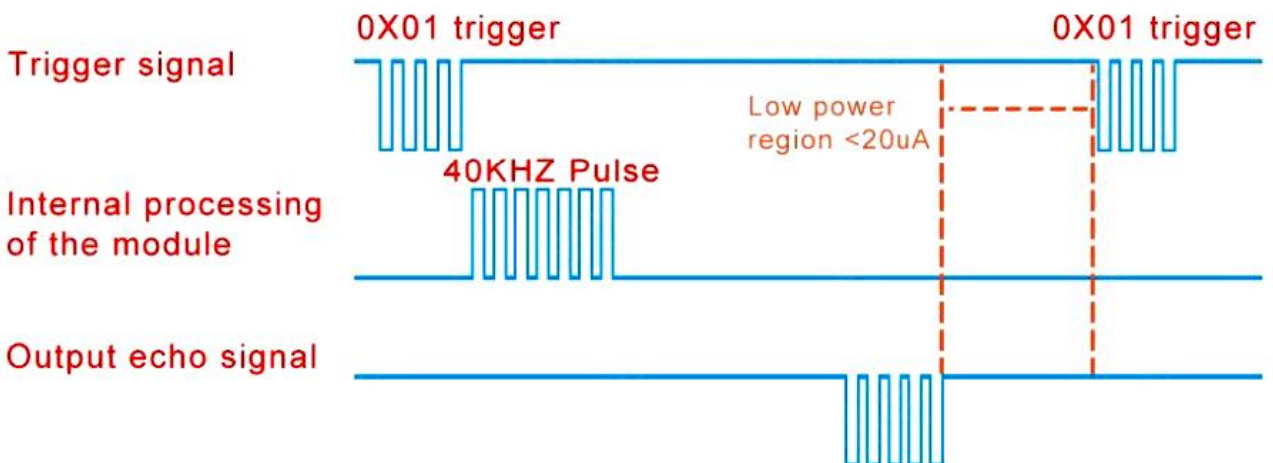
Size of Strip Line Ultrasound Transducer

(Ø23.4)

Ø23.4

Ø17
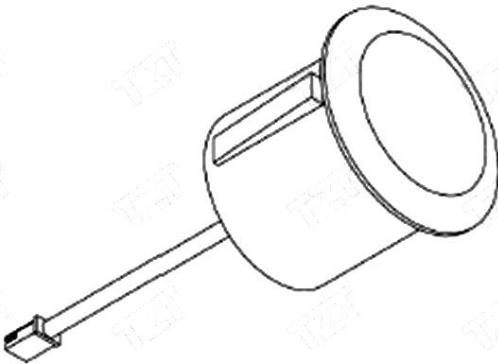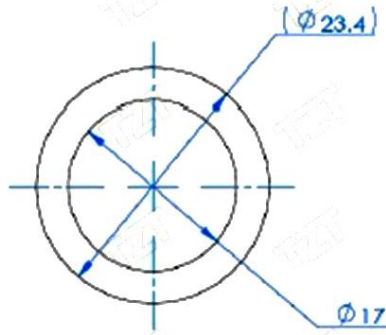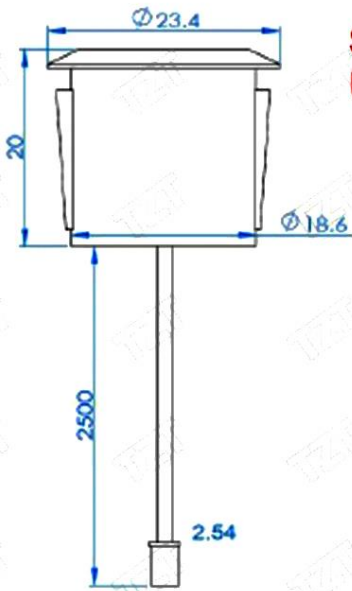
Strip control motherboard size

9.5

1.2

6

41.3

36

34.3

24

28.5

4x Ø2.3

41.3

36

34.3

28.5

24

AJ-SR04M

4x Ø2.3