

SUMMARY

- AJ-SR04M-T-X ultrasonic ranging module is designed by using a waterproof stripline probe integrated with transceiver and receiver and non-contact ultrasonic detection technology. In the range of 20 cm to 800 cm, the product can accurately detect the distance between plane objects, and in the range of 20 cm to 250 cm, it can accurately measure people.

BASIC WORKING PRINCIPLE

- 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)

CHARACTERISTICS

- Small size, easy to use
- Low power consumption < 20uA when choosing low power mode first
- Operating Voltage Width 3-5.5V
- High measurement accuracy, best resolution 1 mm accuracy
- Strong anti-interference
- Integrative sealed waterproof stripline probe, suitable for wet and harsh measuring field

APPLICATION

- Intelligent car ranging, obstacle avoidance
- Object Distance Measurement and Human Height Measurement
- Intelligent traffic control, parking space control
- Teaching and Research, Security and Industrial Control
- Artificial Intelligence, Aircraft Height Measurement, etc.

ELECTRICAL PARAMETERS

Module	AJ-SR04M ultrasonic module
Working voltage	DC 3-5.5V
Working current	40mA Duration less than 50us
Standby current	2mA
Low power current	Mode 2 current is 40 uA, mode 4 and 5 current is 20 uA
Working frequency	40KHz
Furthest range	8m
Recent range	20cm
Measuring Angle	75 degrees
Input trigger signal	2:Trig/RX Trigger/Serial Receiver/Switch Enablation 2:Echo/TX Pulse Width Output/Serial Output/Switch Output
Output echo signal	Output TTL, Serial Port 5 Mode Selection
Serial port output format	9600 n 8 1
Resolution	About 2mm
Working temperature	-20 ~ 75°C
Storage temperature	-40 ~ 80°C
Status Indicator	LED Indicating Status, One Flash/Switch Output Status
Size	41.3*28.5*23mm

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:

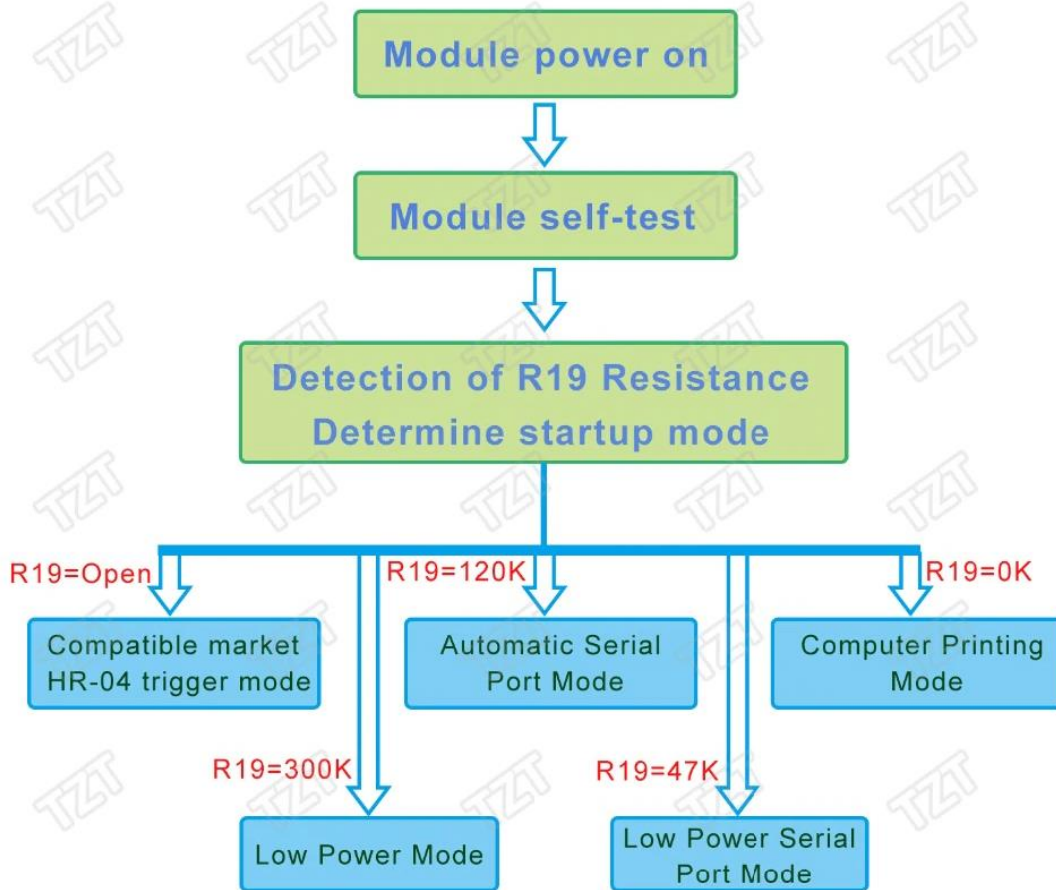
- ▶ 1. Compatible market HR-04 trigger mode
- ▶ 2. Low Power Mode
- ▶ 3. Automatic Serial Port Mode
- ▶ 4. Low Power Serial Port Mode
- ▶ 5. Computer Printing Mode

Replacement of R19 Change Mode

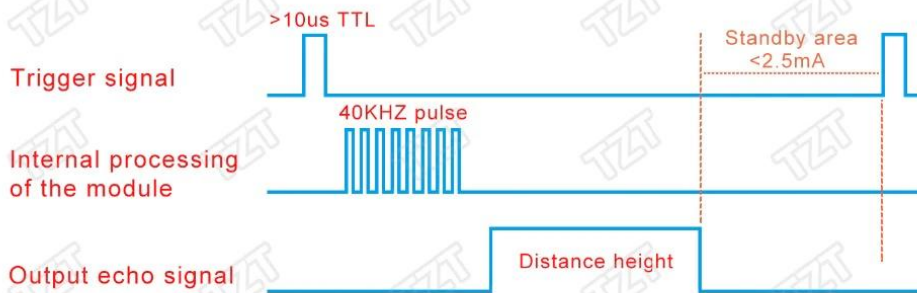


Pattern	Mode Corresponds	Standby Current	Low Power Current	Blind Area	The Furthest Distance
Compatible market HR-04 trigger mode	open circuit	< 2mA	-----	20cm	8m
Low Power Mode	300KΩ	< 2mA	< 40uA	20cm	8m
Automatic Serial Port Mode	120KΩ	< 2mA	-----	20cm	8m
Low Power Serial Port Mode	47KΩ	< 2mA	< 20uA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

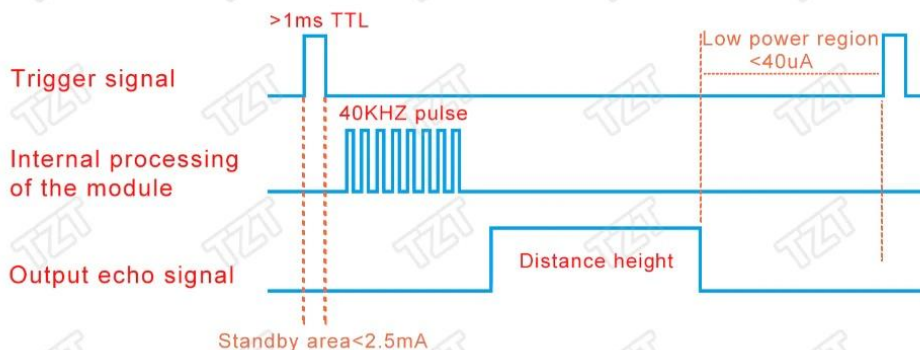
MODULE STARTUP FLOW CHART



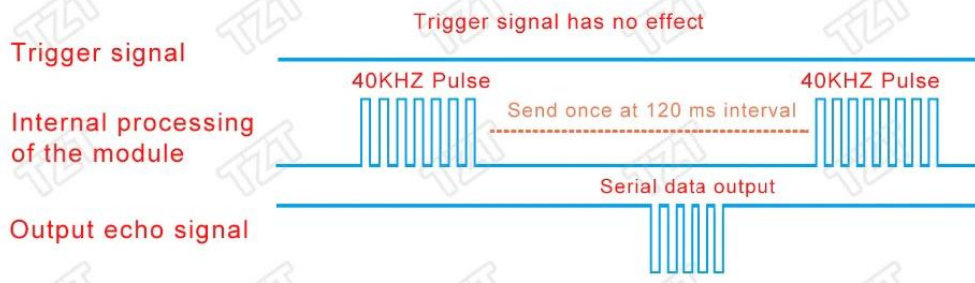
Mode 1: Standby current < 2.0mA, working current 30mA



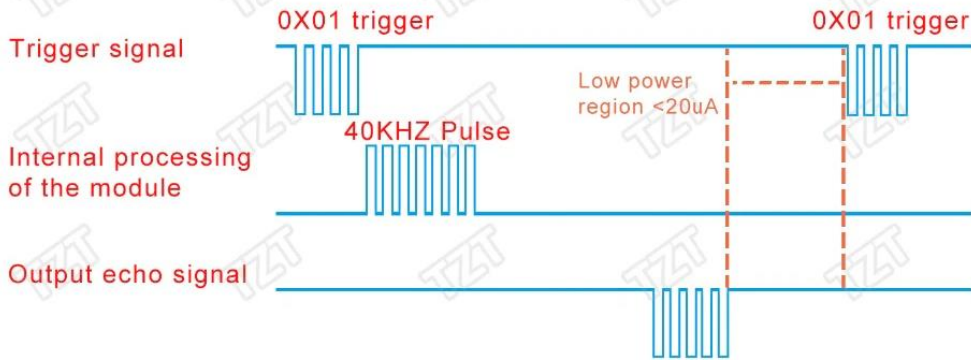
Mode 2: Low power consumption < 40uA, working current 30mA



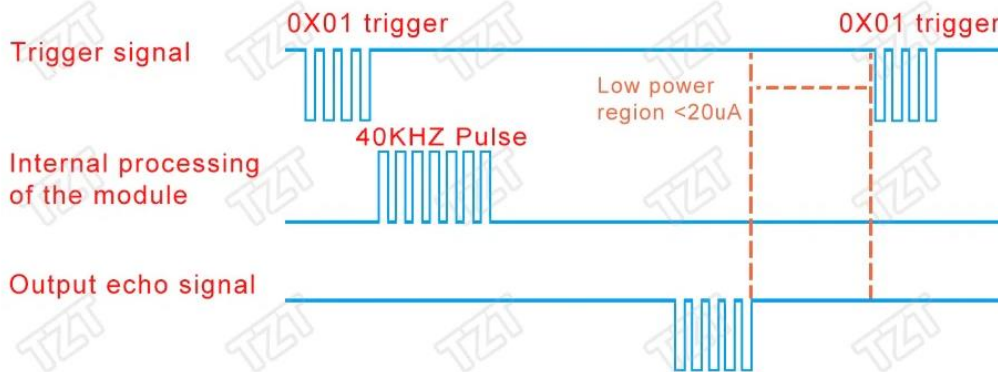
Mode 3: Serial port automatic mode, average current 5mA



Mode 4: Serial low power mode, low power <math><20\mu\text{A}</math>, standby 2mA

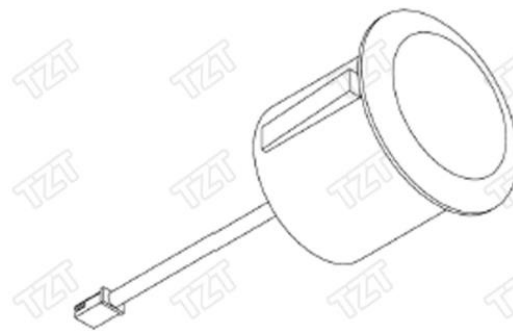
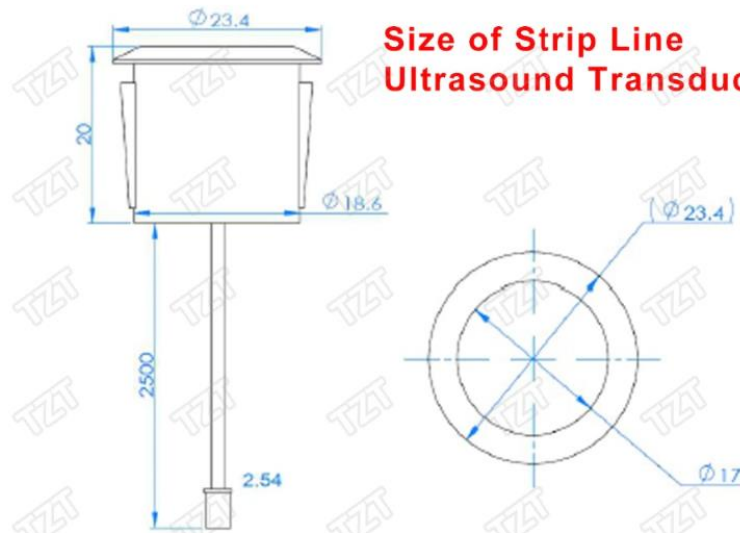


Mode 5: Serial low power mode, standby <math><20\mu\text{A}</math>, working 30mA



SIZE CHART

Size of Strip Line Ultrasound Transducer



Strip control motherboard size

