

Switch Value Output of TFmini

1 Introduction

For the performance and considerations of TFmini, please refer to the corresponding specifications and manual. This manual is only a reference for modifying the TFmini to a switch value signal output. The switch value here is the active signal (step signal) 0 or 1. **The corresponding voltage of 0 is 0V and that of 1 is 3.3V.**

2 Line Sequence

The TFmini has four connection lines, which are 5V power line, GND, receive line (RXD), and transmit line (TXD). The switch value signal is given by the transmit line (TXD) and forms a reference voltage with GND.

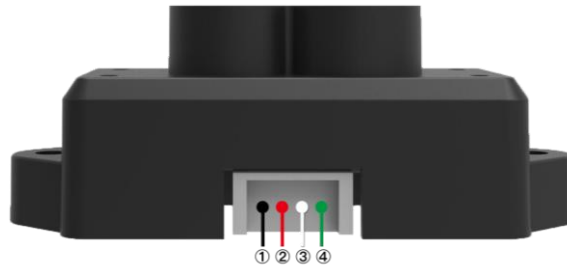


Table1: The Function and Connection Description of each pin

编号	颜色	引脚	功能	对应连接项
①	black	GND	Power supply	Ground
②	red	+5V	Power supply	Positive
③	wihte	RXD	Receiving	
④	green	TXD	Transmitting	High and low level detection

TFmini has a 30cm long connecting wire with a GH1.25-4P (Molex51021-0400) connector. The connecting wire can be extended as needs. To ensure effective data transmission, the length of connecting wire should be short than 1m.

3 Judgment Logic and Signal Output of TFmini Switch Value





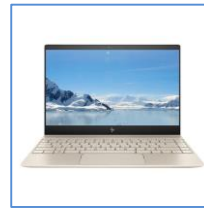

Assuming that the TFmini detection threshold is 2m. When the measurement value of TFmini is less than 2m, in other words, there is an object within 2m in front of TFmini, the TXD output is high level (3.3V); and when the measurement value of TFmini is beyond 2m, the TXD output is low level (0V).

Ps: The level is relative to GND. Please pay attention to be common-ground before measuring.

4 Modification of the Switch Value Threshold

The measurement threshold can be modified by the TFmini through serial commands. The steps are as follows.

4.1 Required Tools of Product Test

					
TFmini	cables	TTL - USB	USB cables	computer	Serial assistant

4.2 Test Procedures



Fig.2 Correct Connection

Connect “TFmini”, “TTL - USB board” and “USB cable” as shown in Figure 2. Make sure there is no loose connection. Then connect “USB cable” with “PC”.

Please download " serial assistant " to send commands to radar.

Open the serial assistant, the interface is as follows:



Fig.3 Serial assistant

In the serial assistant, debugging commands can be input to adjust the threshold of radar. Before sending commands, you must check the "HEX", and then click Send.

4.3 Commands Configuration and Description

The configuration instructions is 42 57 02 00 XX YY 01 03; Where XX represents the lower 8 bits of the threshold HEX, YY represents the high 8 bits of the threshold, and the threshold unit is millimeter (mm).

Examples:

Assume that the threshold of TFmini is set to 2m, that is, if an object is detected within 2m, the output is high level(3.3V); if there is no object, the output is low level(0V);

①The data for converting 2m into millimeters is 2000mm;

②D0 07; Convert 2000 to HEX number to 07 D0; in the form of the lower 8 bits first, it is D0 07;

③so the command is 42 57 02 00 D0 07 01 03

Note: Do not send other commands that are not declared; the commands must strictly conform to the order format of 42 57 02 00 XX YY 01 03, except that XX YY can be changed to the corresponding distance value, and the other cannot be changed.

Another: modify the command to other distance thresholds

1.5m: 42 57 02 00 DC 05 01 03

3m: 42 57 02 00 B8 0B 01 03

4m: 42 57 02 00 A0 0F 01 03

5m: 42 57 02 00 88 13 01 03