

Suzhou Huiwen Module Testing Method

This method is suitable for plug&play type modules produced by Huiwen Technology.

MMD1001, 1002, 1003, 1005, 1007, 1008, 1011, 1013, 1015, 2001, 2002 products, the module technical parameters are as follows:

- Supply voltage: 3.3V
- Connection method: pin
- Output mode: UART
- Signal output: digital signal
- Software tools: serial port debugging assistant (such as serial port debugging assistant, SSCOM, etc.)
- Pin spacing: 2.0mm
- Baud rate: 9600

Note: The baud rate of MMD3005 is 38400, and the other parameters are the same as above.

MMD1013S:

- Supply voltage: 5V
- Connection method: terminal
- Output mode: UART

Signal output: digital signal

Software tools: Serial port debugging assistant (such as Friendly Serial Port Debugging Assistant, SSCOM, etc.)

Terminal spacing: 2.54mm

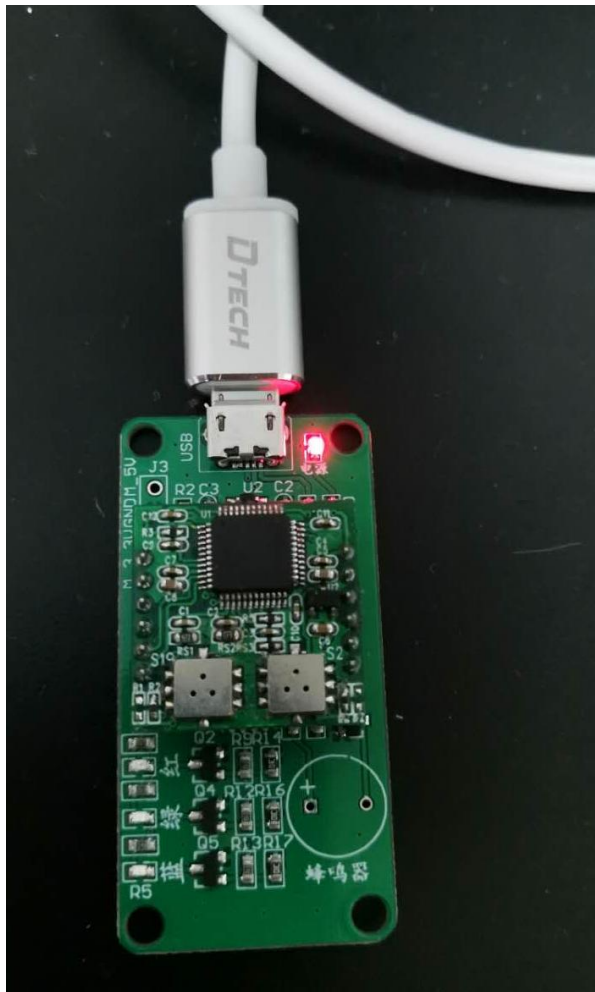
Baud rate: 9600

Instructions:

1. After receiving the module, please check whether the module has cold solder joints, and then choose the connection method

A. If you use the Huiwen test base, please follow the following connection method:

First connect the module to the USB cable, and then power it (you can use the computer USB port, or the power bank USB port, the power supply current must be greater than 100mA)



After the power indicator on the base is on (red light at the connection with the USB cable), plug the module into the test base. The connection method is as follows:



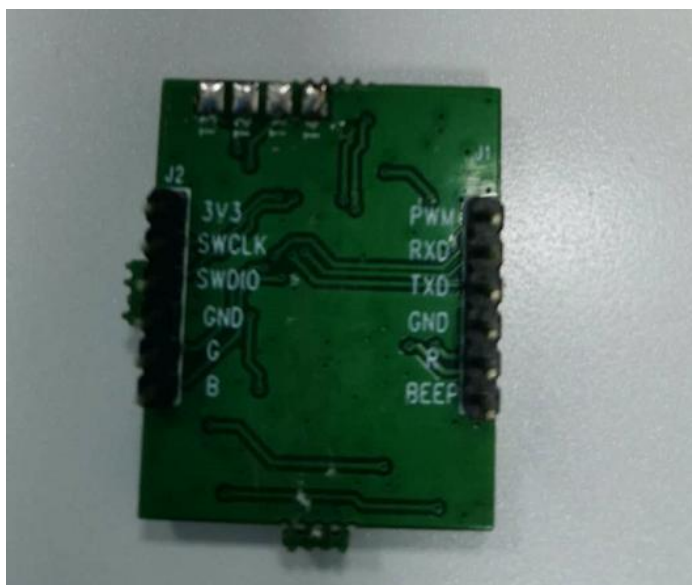
The module's MCU should face upwards, do not connect it in reverse.

B. Wiring Yourself

Find the I/O port corresponding to the pin on the back of the module, and connect the pins with Dupont wires. You only need to connect the following four pins: 3V3, GND, TXD, and RXD, and then connect the data receiving end.

The same is true for the 5V module. You need to connect the four UART wires behind the

terminal. After setting up the serial port, you can read the data.



2. After wiring is completed, the module that has been placed for a long time is aged. The aging time is as follows:

Placement time	Recommended aging time
3-7 days	3h
7-30 days	12h
More than 30 days	24h

If the storage time is less than 3 days, it is recommended to age for 1 hour first. Modules that are placed without power for less than 1 day can only be aged. Aging needs to be carried out in open air. If it is in a closed space, a longer aging time is required.

After the aged modules are powered on, they need to be preheated in the air for a short time before testing. The preheating time for each module is as follows:

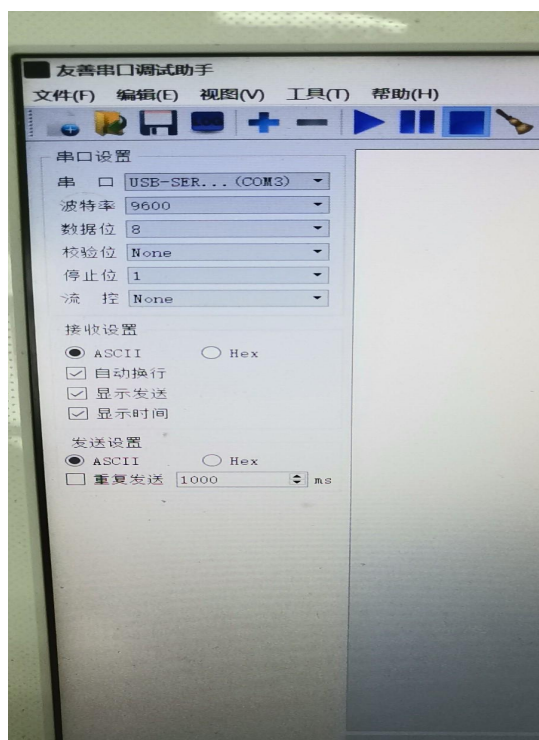
Module Model	Preheat time
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MMD1001/1008/1011	Not less than 3 minutes
MMD1003/1005/1013/2002	Not less than 10 minutes
MMD1002/1007	Not less than 30 minutes

3. After the module is preheated, open the test software to read the data. Take the friendly serial port debugging assistant as an example to set up as follows:

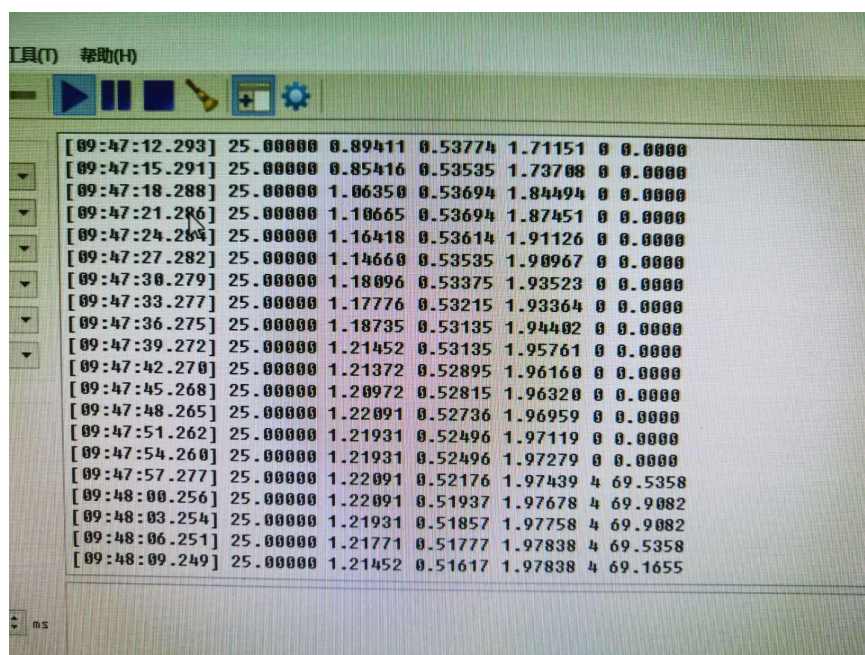
The following figure is for the pin module. Please set the baud rate according to the different modules at the beginning.

The default output is hexadecimal. Send the hex command AA 00 FB to switch to decimal ASCII code display.



After the setting is completed, click the button above , and then you can read the serial port data. For the specific meaning of each column of serial port data, see the corresponding

data manual. The data successfully read is as shown below:



Time	Voltage	Resistance 1	Resistance 2	Resistance 3	Resistance 4	Resistance 5
[09:47:12.293]	25.00000	0.89411	0.53774	1.71151	0	0.0000
[09:47:15.291]	25.00000	0.85416	0.53535	1.73708	0	0.0000
[09:47:18.288]	25.00000	1.06350	0.53694	1.84494	0	0.0000
[09:47:21.286]	25.00000	1.10665	0.53694	1.87451	0	0.0000
[09:47:24.284]	25.00000	1.16418	0.53614	1.91126	0	0.0000
[09:47:27.282]	25.00000	1.14660	0.53535	1.90967	0	0.0000
[09:47:30.279]	25.00000	1.18096	0.53375	1.93523	0	0.0000
[09:47:33.277]	25.00000	1.17776	0.53215	1.93364	0	0.0000
[09:47:36.275]	25.00000	1.18735	0.53135	1.94402	0	0.0000
[09:47:39.272]	25.00000	1.21452	0.53135	1.95761	0	0.0000
[09:47:42.270]	25.00000	1.21372	0.52895	1.96160	0	0.0000
[09:47:45.268]	25.00000	1.20972	0.52815	1.96320	0	0.0000
[09:47:48.265]	25.00000	1.22091	0.52736	1.96959	0	0.0000
[09:47:51.262]	25.00000	1.21931	0.52496	1.97119	0	0.0000
[09:47:54.260]	25.00000	1.21931	0.52496	1.97279	0	0.0000
[09:47:57.277]	25.00000	1.22091	0.52176	1.97439	4	69.5358
[09:48:00.256]	25.00000	1.22091	0.51937	1.97678	4	69.9082
[09:48:03.254]	25.00000	1.21931	0.51857	1.97758	4	69.9082
[09:48:06.251]	25.00000	1.21771	0.51777	1.97838	4	69.5358
[09:48:09.249]	25.00000	1.21452	0.51617	1.97838	4	69.1655

Module notes:

1. For self-wiring modules, please note that the maximum power supply voltage must not be higher than 3.5V, otherwise the module will be burned, and the minimum voltage must not be lower than 3.2V, otherwise the test data will be inaccurate. The module cannot be connected in reverse, otherwise the module will be burned.
2. When using the module, please avoid silicone adhesives, hairspray, silicone rubber, putty or other volatile silicon compounds in the environment, otherwise the sensor sensitivity will be reduced and unrecoverable.
3. The module should avoid being exposed to high-concentration corrosive gases (such as H₂S, SO₂, Cl₂, HCl, etc.) for a long time, otherwise it will cause corrosion or damage to the heating material and sensor leads, and cause irreversible deterioration of the performance of sensitive materials.

4. Contamination by alkali metals, especially salt water spray, or exposure to halogens such as Freon can also cause performance deterioration.
5. When the module is placed, splashing or immersing it in water and condensation on the sensor surface will cause the sensor's sensitive characteristics to decrease.
6. Long-term placement in high-concentration gases will affect sensor characteristics. If lighter gas is sprayed directly onto the sensor, it will cause great damage to the sensor.
7. Sensor performance will be severely affected by prolonged exposure to extreme conditions such as high humidity, high temperature, or high pollution.
8. Frequent and excessive vibration will cause the internal leads of the sensor to resonate and break. The use of pneumatic screwdrivers/ultrasonic welders during transportation and assembly lines can generate such vibrations.
9. If the sensor is subjected to a strong impact or dropped, its leads may break.