Instructions on Mass Production Test Tool “GTModuleTest”

GTPV0.1.00.0000.02

2018-04-04

Contents

1 Test System Overview

Mass production test system (GTModuleTest) contains the test board (DBG-04) and program “GTModuleTest” (hereafter referred to as GTP) running on Windows devices.

The table below lists the main test items of mass production test system:

Test item	Description
Raw data test	Whether the raw data obtained from the module complies with the standard. The sub-items include the maximum rawdata & minimum rawdata of entire screen and maximum adjacent deviation, as well as the maximum rawdata & minimum rawdata of touch key, rawdata jitter test and uniformity test
Diffdata jitter test	Used to test the jitter of diffdata. If the jitter is too large, unexpected touch point will be reported
Short circuit test	Whether there is short circuit between Tx and Tx, Rx and Tx, Tx and GND, Rx and Rx, Rx and GND
Rst pin voltage test	Whether RST pin is short-circuited
I2C pin voltage test	Whether the voltage on I2C pin is normal
INT pin voltage test	Whether the voltage on INT pin is normal
Active current test	Check whether the normal operating current complies with the standard or not
OPT pin test	Check whether the OTP pin can function properly or not
Sleep current test	Check whether the current in sleep mode complies with the standard or not
SensorID test	Read SensorID from register and check
Version number test	Check whether the version of chip firmware is correct or not
Configuration test	This test item includes sending configuration test and configuration verification test
Flash test	Check whether Flash can function properly by writing data to and reading data from Flash(write data to the flash first and then read the previously-written data, and check whether the read data matches with the preciously-written one)
Sending special configuration	It is necessary to send the device configuration after the test procedure is completed
Touch key test	Check whether the touch key can function properly
Line-drawing test	Check whether the function of line-drawing is normal

1.1 Requirements on Test Environment

- Operating System: Microsoft Windows XP SP2 or later version; CPU: Celeron 1.2G or above; RAM≥128M
- USB power supply capability ≥500mA, power supply ripple≤100mv

- GTModuleTest test software package and test work order(*.tporder)

1.2DBG-04 Test Board

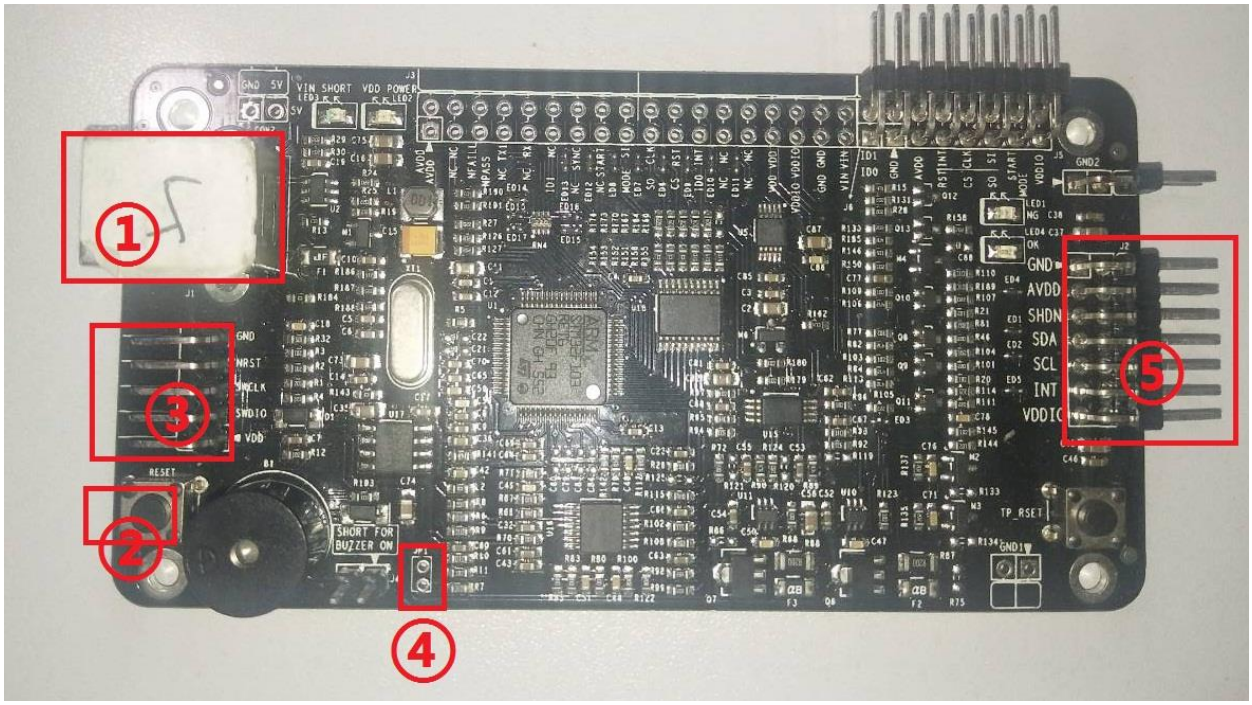

Figure 1.2.1 1

① **USB interface:** used for power supply and data communication between PC and test board;

② **Reset button:** used to reset DBG-04 hardware platform;

③ **Upgrade interface**: used to connect the test board with PC through ULINK2 adapter for firmware upgrade;

④ **Compulsive Upgrade interface**: connects these two pins and the test system will enter upgrade mode compulsively ;

⑤ **Module (host) interface**: the details of the interface are illustrated in the figure below.

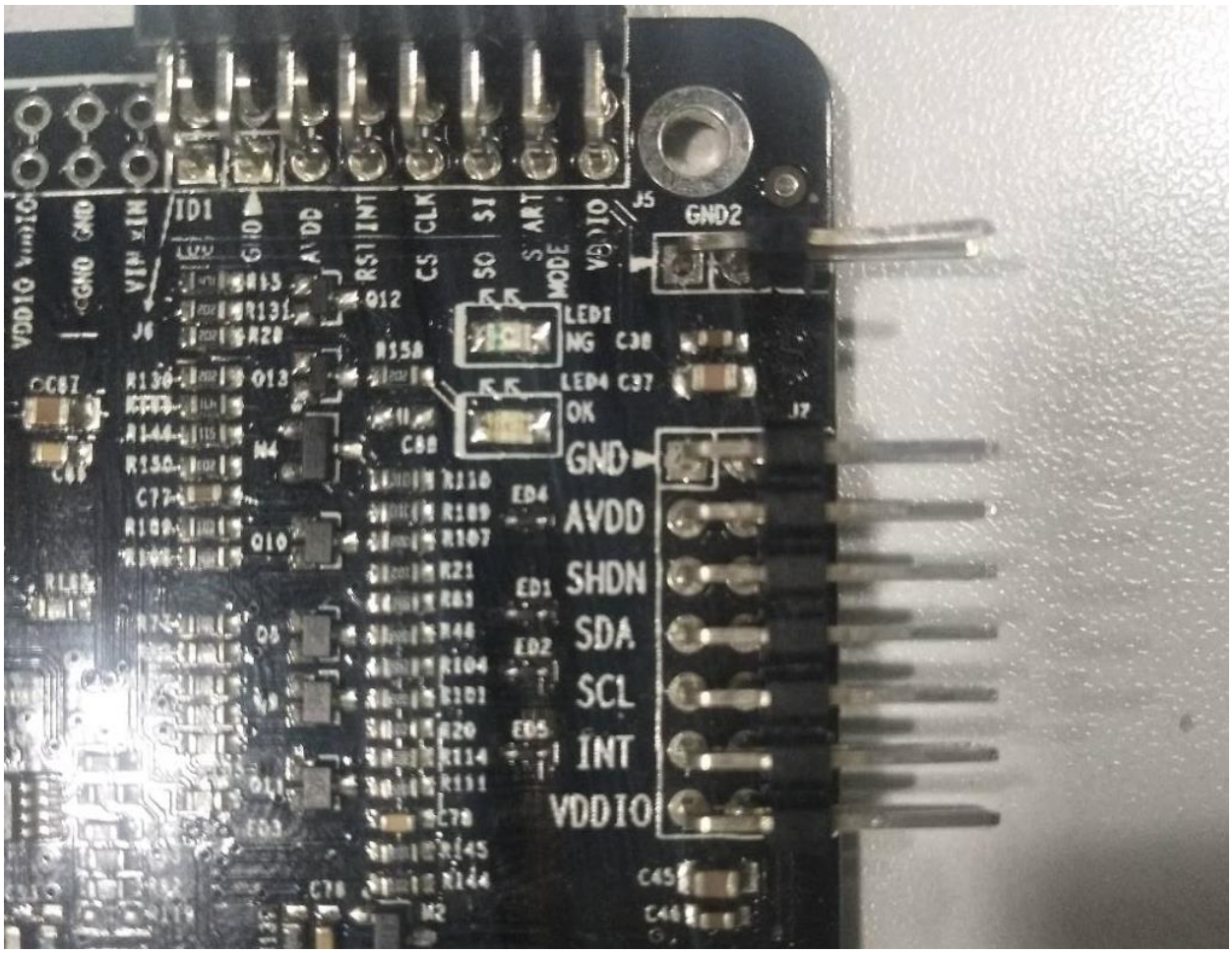

Figure 1.2.1.2 1

GND: system ground, connects with module GND;

AVDD: module power supply, connects with module VDD

SHDN: connects with module Reset pin

SDA\SCL: I2C communication pin, there is a 2K pull up resistor on the test board

INT: interrupt detection pin

VDDIO: chip IO level; generally it is unnecessary to connect this pin; but if the module needs to be connected with external VDDIO, this pin should be connected with the VDDIO pin on ARM board.

2 Software Functions

2.1 Instructions on tool usage

2.1.1. Work Order Selection

Double-click GTPModuleTest.exe and then the interface for work order selection will be displayed first.

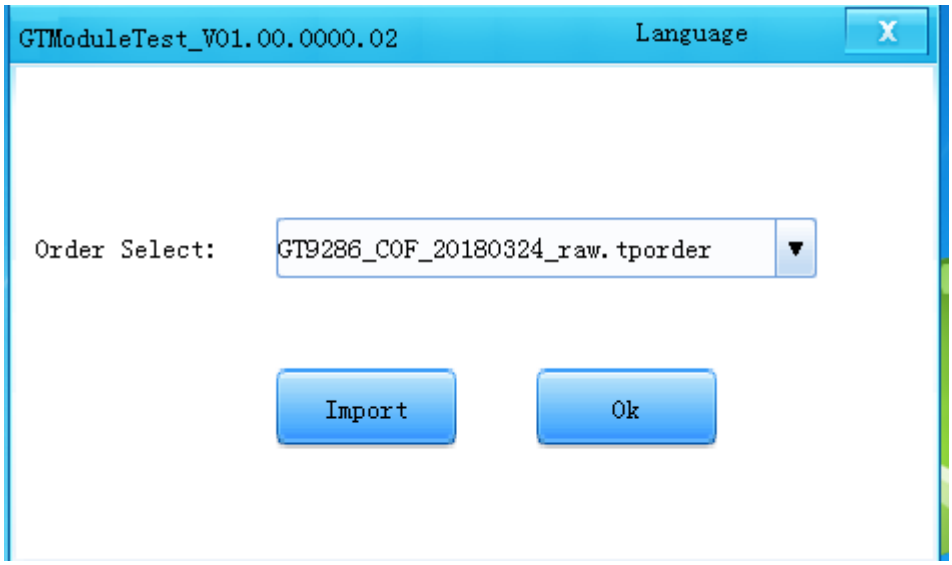

Figure 2.1.1.1. Interface of Work Order Selection

1) Tool version: Tool version is displayed on the top left corner of the interface

2) Language switch: Different languages can be switched through the language switch button, and it is necessary to restart the tool after language switching

3) Exit: Exit from the program

4) Work order selected: All tporder files under \Tp_System\Order directory are included in the drop-down box. Different work order file can be selected by clicking the drop-down box

5) Work order import: work order can be imported from other local folders

6) Ok: after selecting the work order, click “ok” to go to the main interface(if click “Import”, there is no need to click “Ok” and the main interface will be displayed directly)

2.1.2. Main interface

The main interface is shown below:

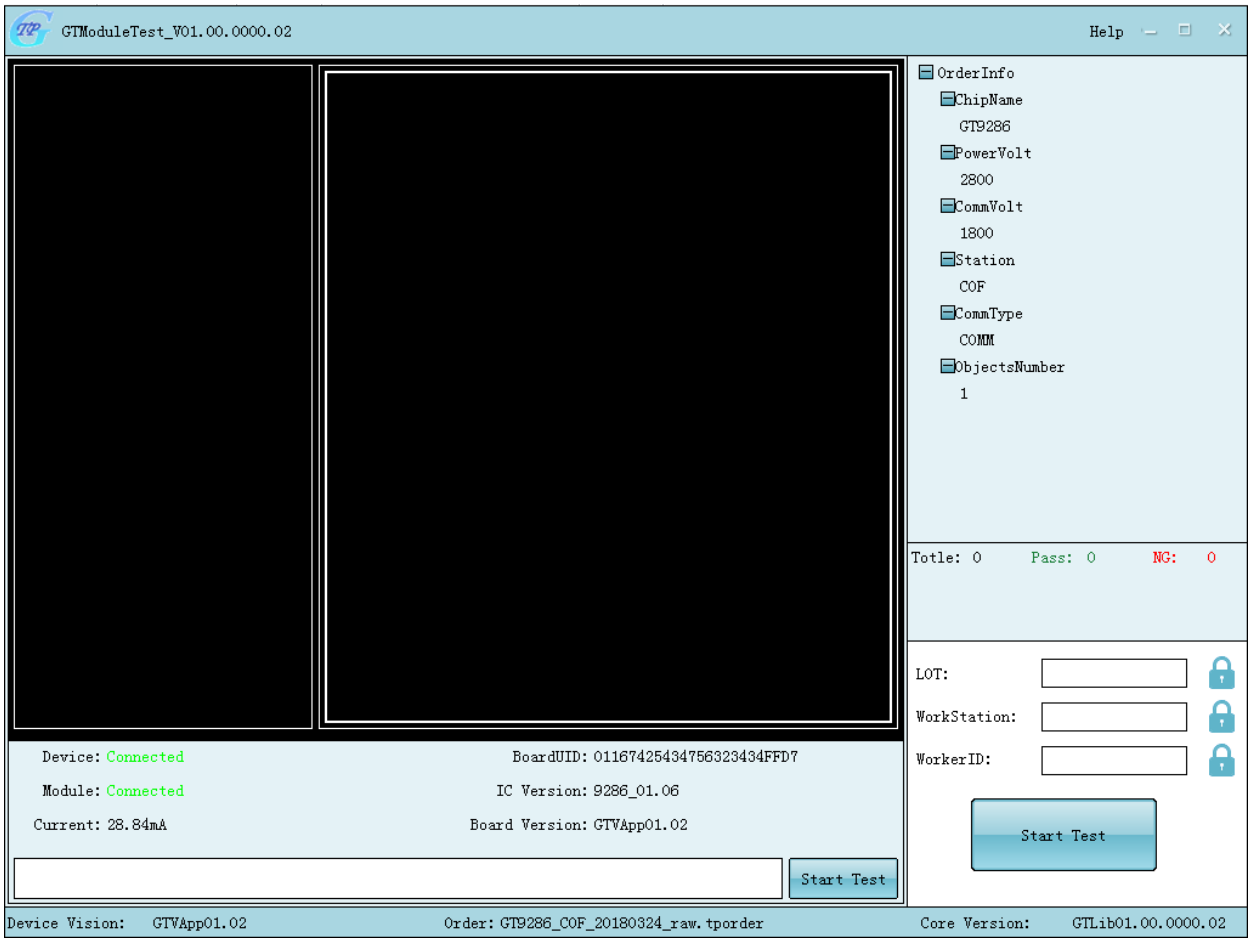

Figure 2.1.2.1. Main interface

1) The tool version is shown on the top left corner

2) Coordinate information is shown in the left black area (on the left of the interface)

3) Coordinate trajectory is shown in the middle black area (in the middle of the interface).

The black areas mentioned in 2) and 3) can be switched to display the coordinate information, test procedures or test results.

4) Configuration information of the work order is displayed on the right of the interface.

5) The information of test board and module (includes test board connection status, board UID, module connection information, IC version, current and APP version of the test board) are displayed under the coordinate demonstration area, that is, the area described in 2) and 3).

6) This area shows the barcode box and “Start Test” button. The barcode can be input only when scan test is

enabled in the work order.

7) Status bar at the bottom, displays the test device version, the version of called core library, and the name of the work order

8) The test statistics (the total test count, successful test count and failed test count) are shown below the work order

9) This area shows the lot, work station and worker ID. The editing of this information can be enabled or disabled by clicking the lock icon on the right.

10) Start the module test. If multiple modules are tested in one test system, it is unnecessary to click this button for several times.

2.1.3. Coordinate Demonstration Area

Lines, dots (dots need to be connected to form lines), points and keys (on the entire screen) can be shown in coordinate demonstration area and the lines, dots (dots need to be connected to form lines), points and keys (on the entire screen) can be switched to be displayed through right-click menu selection.
The numbers shown in the left black area (in the figure below) are the coordinates and the lines shown in the right black area are trajectory of line-drawing.

Figure 2.1.3.1 Coordinate Demonstration Area

2.1.4. Test Records

Right click on the test interface, and then select “Testview” as shown in the figure below to switch to the interface of test records .

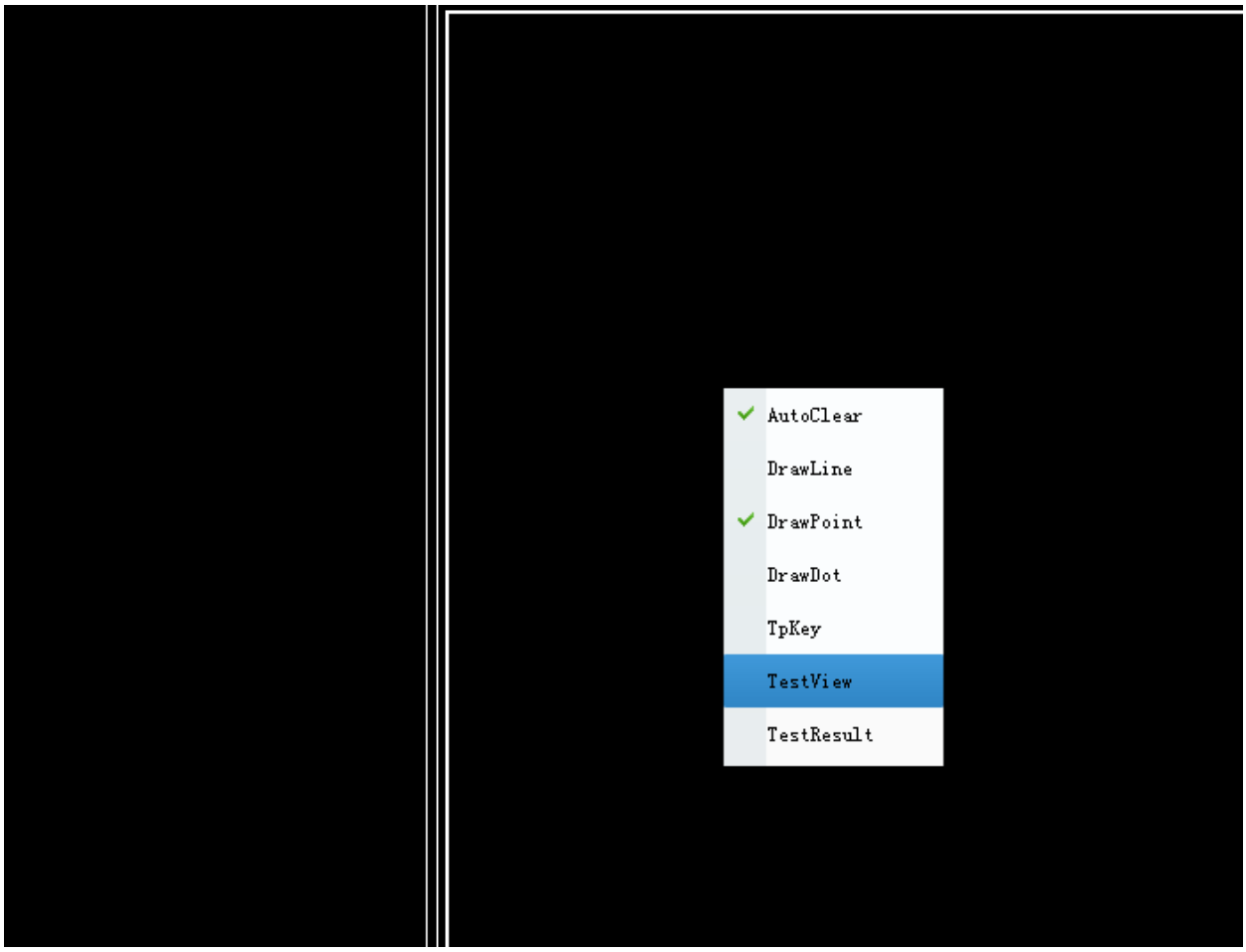

Figure 2.1.4.1 Switch to TestView Interface

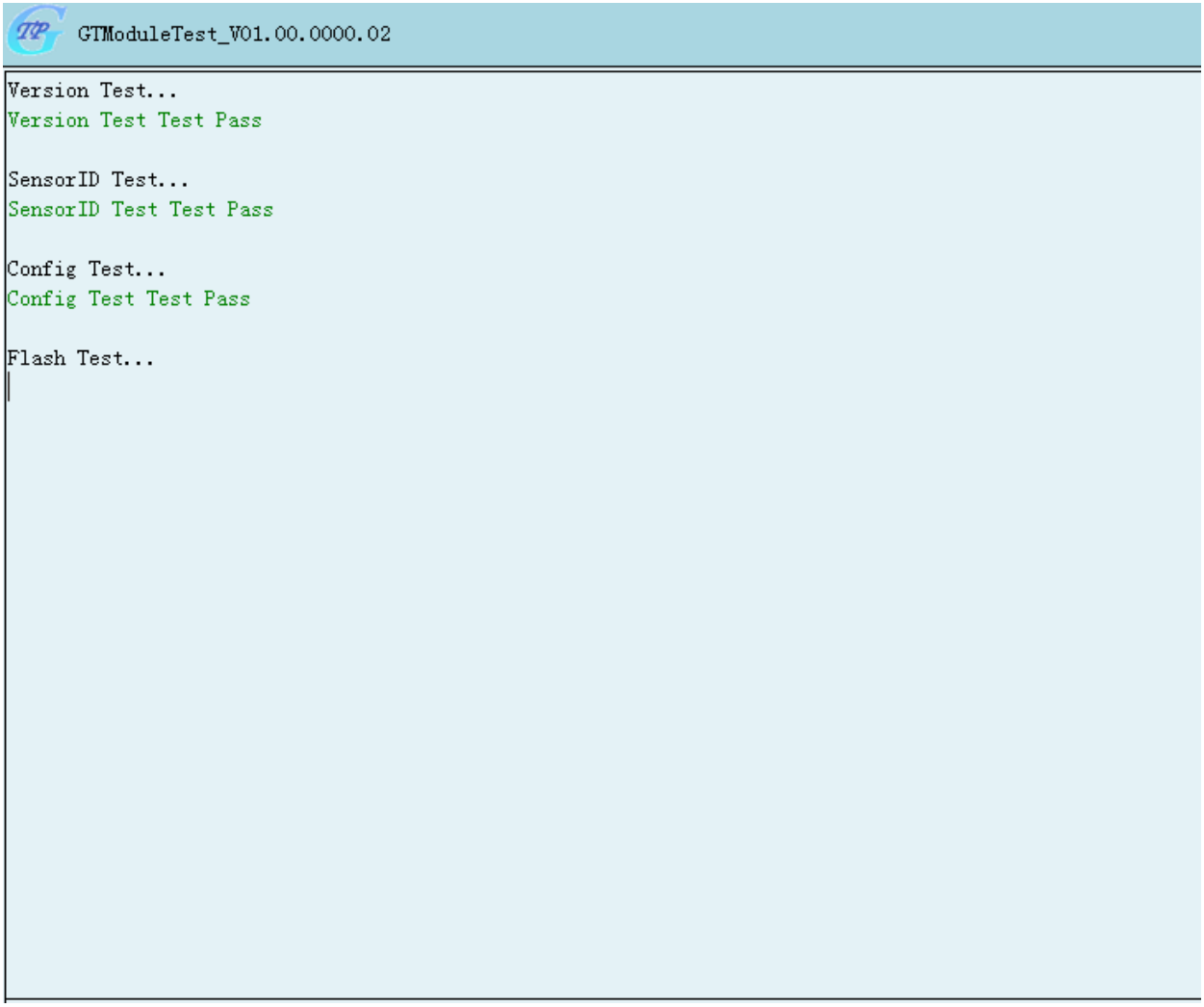

Figure 2.1.4.2.Display Test Records

2.1.5. Test Result

Right click in coordinate demonstration area or test records demonstration area and select “TestResult” in the right-click menu. .

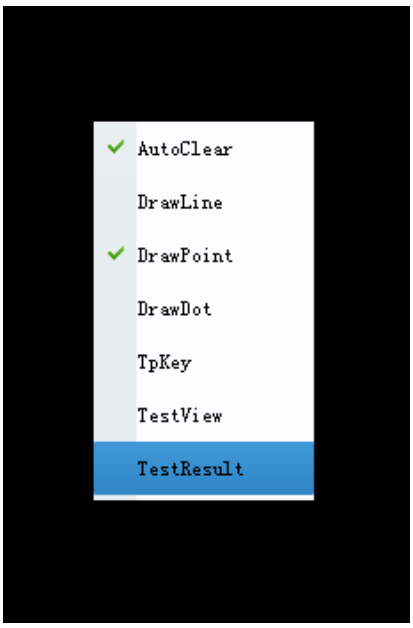

Figure 2.1.5.1 Switch to Test Result Interface

Figure 2.1.5.2. Test Result Interface

The test result will be displayed on this interface. If the test fails, the failed test items, sub-items and error codes will be displayed.

Revision	Date	Description
0.1	2018-04-04	Initial release

3 Contact Information

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