



MEDIATEK

Factory Test SOP for MT2503 Device V1.0

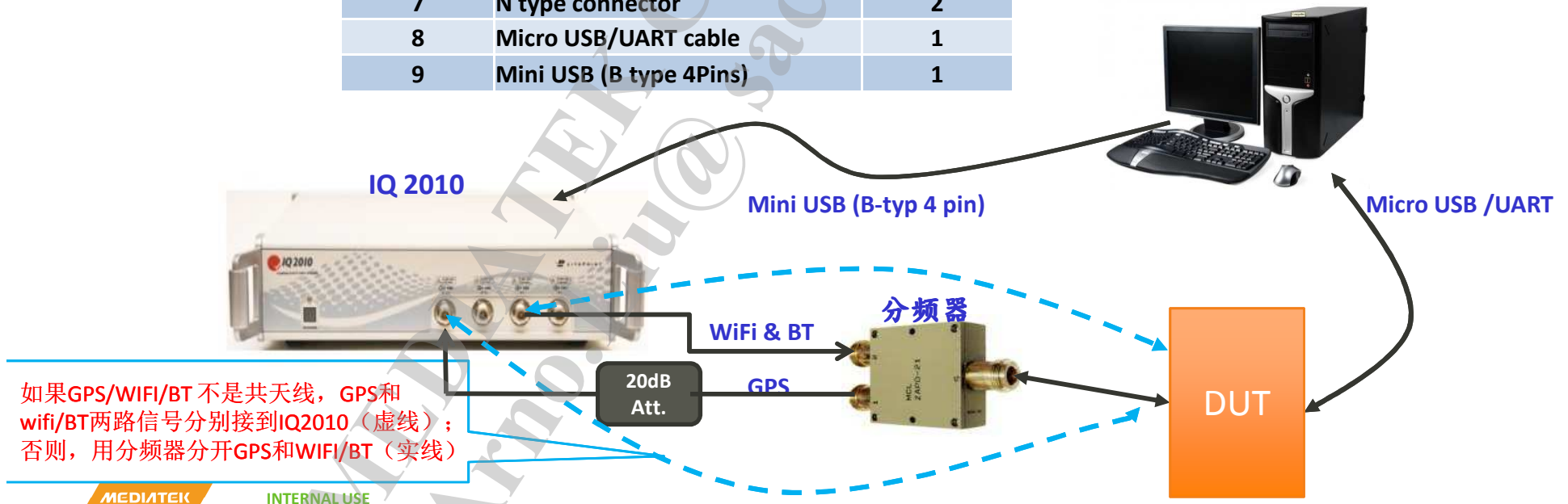
Agenda

- Customer With Test Equipment
 - ✓ WCN_ATE_TOOL
 - ✓ ATA_TOOL
- Customer Without Test Equipment
 - ✓ ATA_TOOL

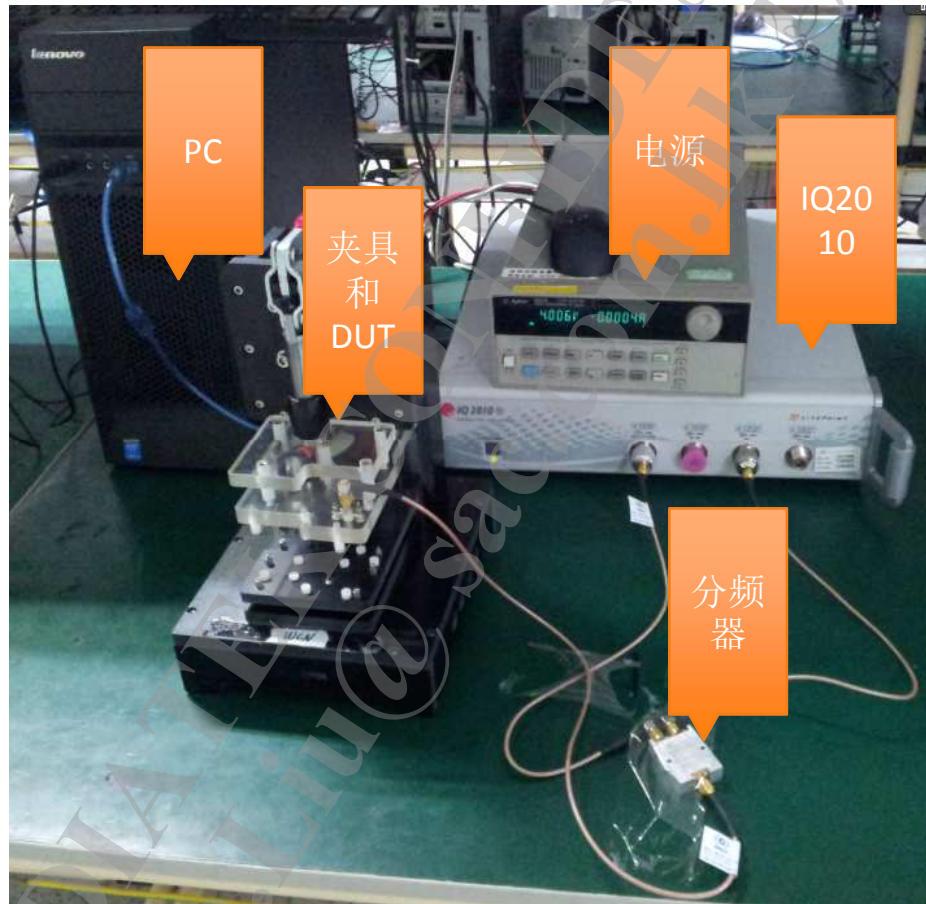
MT2503 WiFi/BT/GPS PCBA Conductive Test

- ❑ MT2503 Device MP line PCBA test using WCN_ATE_TOOL
 - a. Test item : MT2503+5931 PCBA WiFi/BT/GPS **Conductive test**
 - b. Test Setup : Refer to following test setup.
 - c. Test accessory （factory can supply）

Item	Instrument	Qt'y
1	PC	1
2	LitePoint IQ2010	1
3	Splitter	1
4	RF Cable	3
5	Murata Carkit	1
6	20dB Attenuator	1
7	N type connector	2
8	Micro USB/UART cable	1
9	Mini USB (B type 4Pins)	1

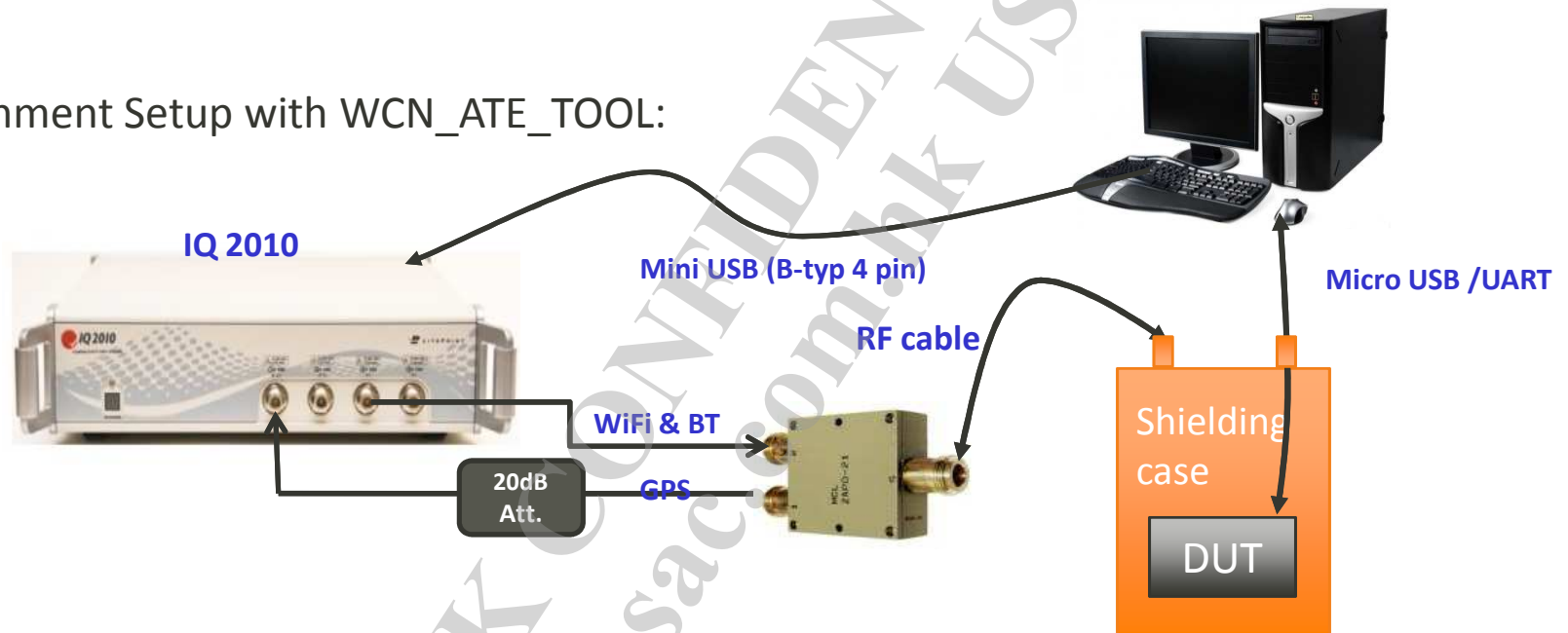


Reality Conductive Test Environment Setup



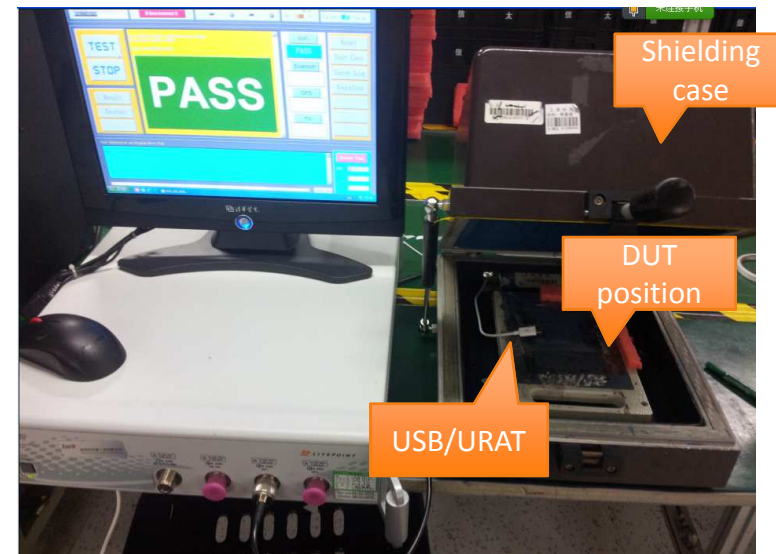
MT2503 WiFi/BT/GPS PCBA Wireless Test

Environment Setup with WCN_ATE_TOOL:

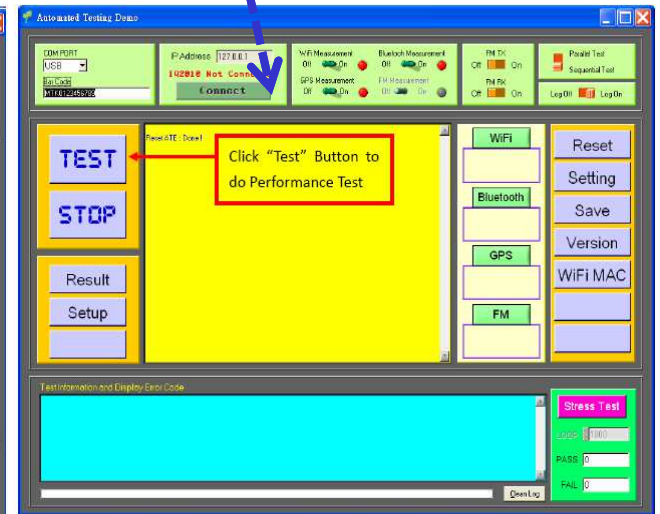
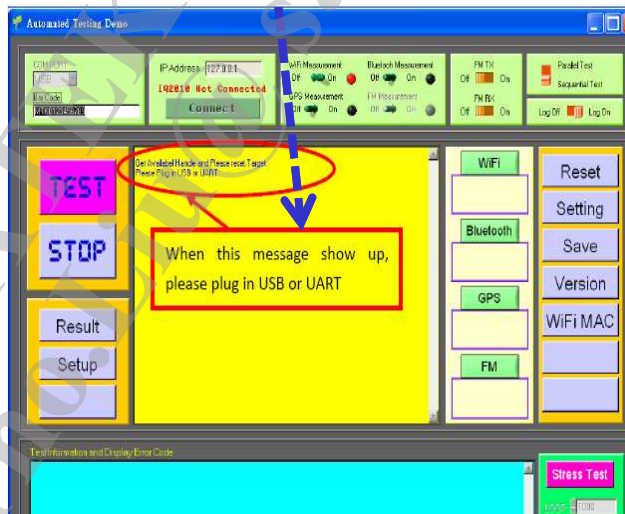
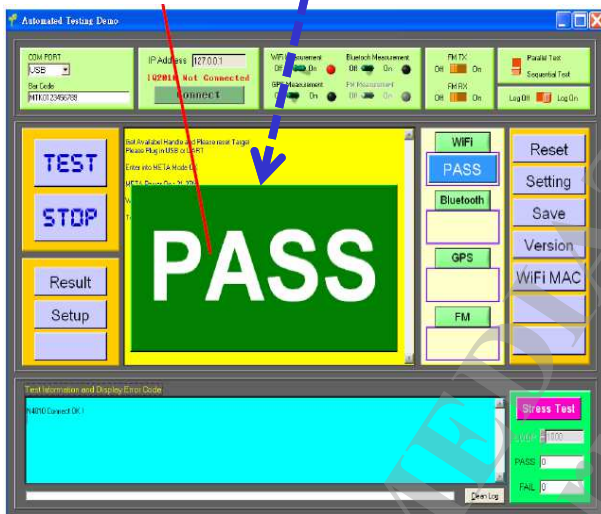
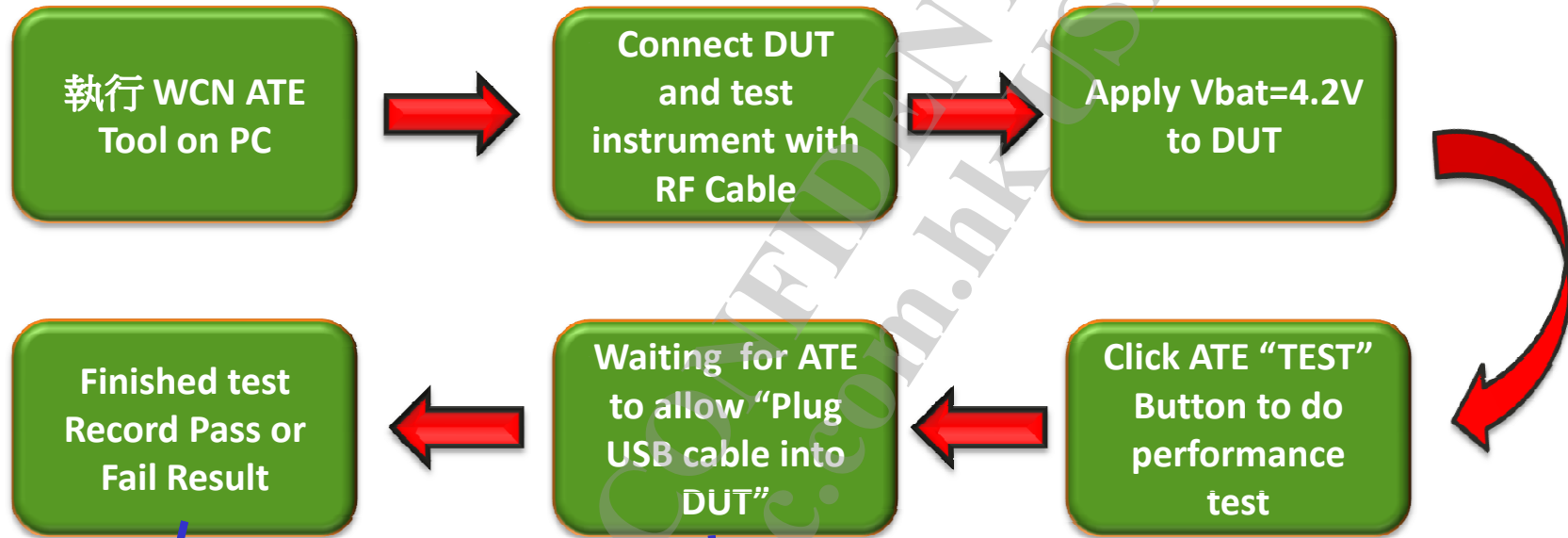


Reality Setup:

1. Shielding case 有内置宽频段天线，RF cable只需要连接到case 后端的射频接口；
2. USB/UART 透过shielding case 后端的管道连接到case 内部的DUT；
3. 测试前，先利用精机多次测试得到插损补偿数值和测试机摆放方位，后续测试过程中，尽量保持DUT和精机的方位一致。



WiFi/BT/GPS ATE Test Flow

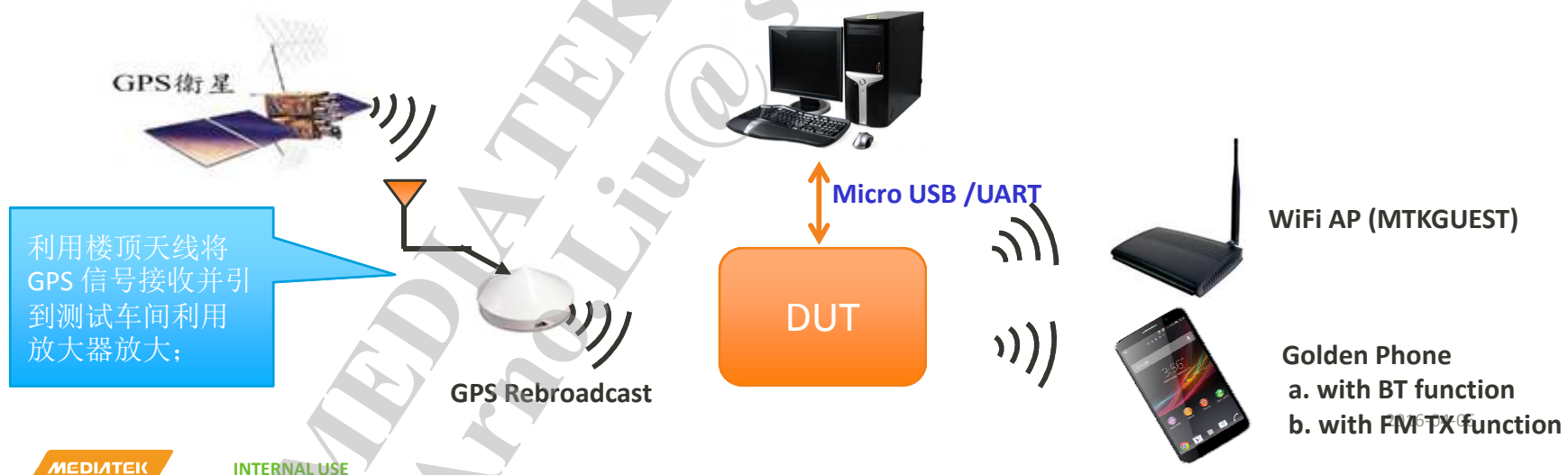


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INTERNAL USE

ATA Test

- Customer also can use ATA tool replacing of WCN_ATE_TOOL for Wireless Test
- ATA Tool coverage:
 - ✓ BT Scan BT Devices;
 - ✓ WiFi Scan APs;
 - ✓ GPS Research Satellites and Get Location.

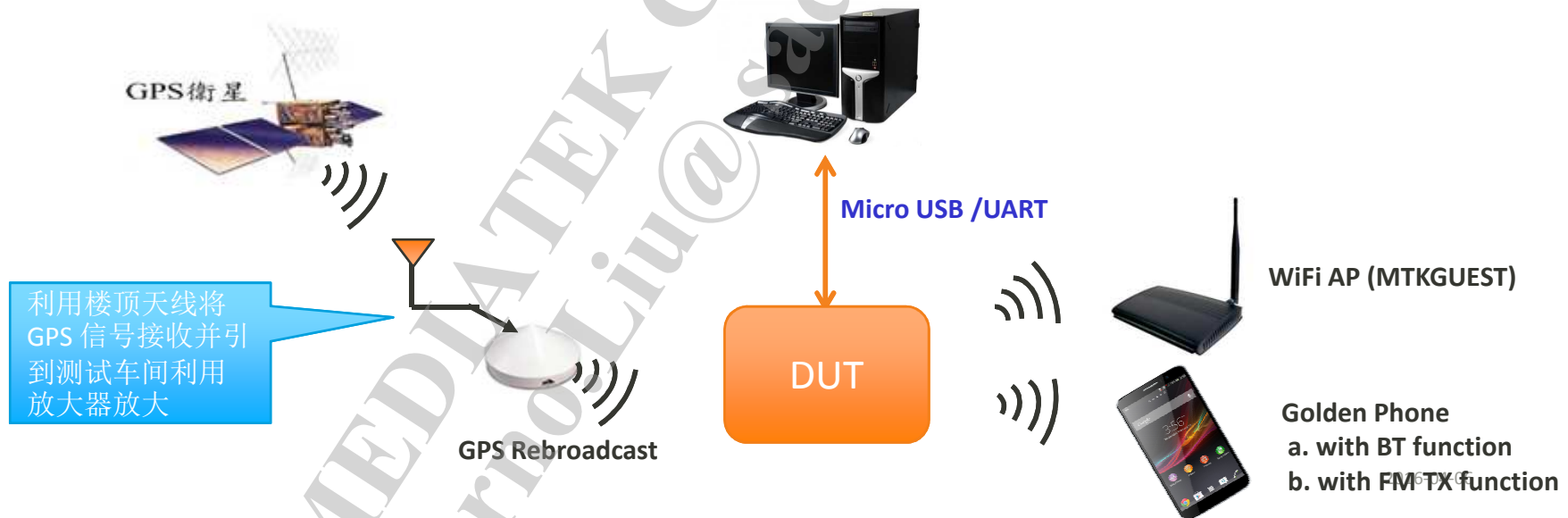


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 - ✓ ATA_TOOL

ATA Test

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Appendix

-- WCN_ATE_TOOL

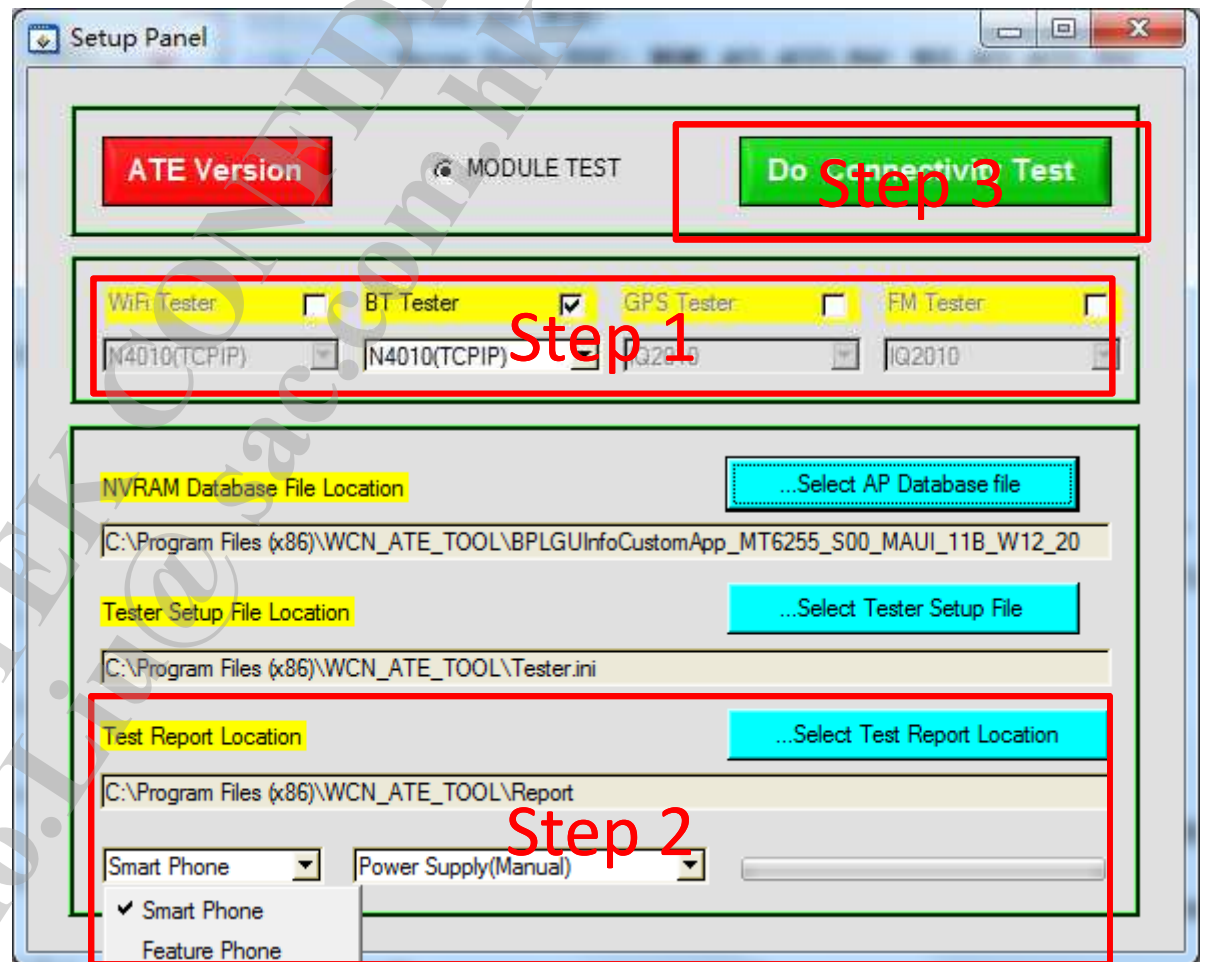
operation guide line

Step 1~3

Step1: Choose test item and test equipment;

Step 2: Choose Report location ; for MT2503, select Feature phone;

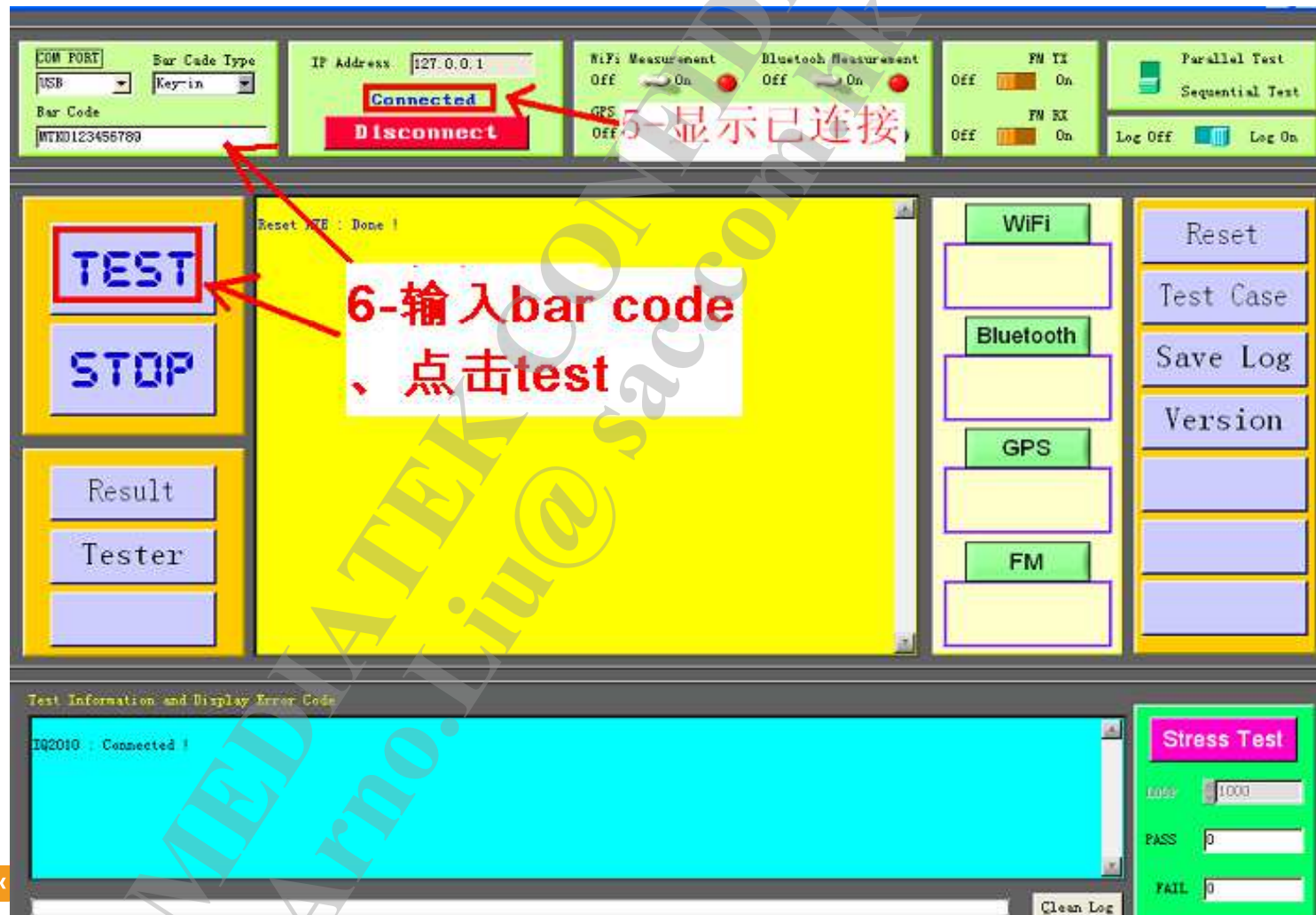
Step3: Key “Do connectivity test” to enter test interface.



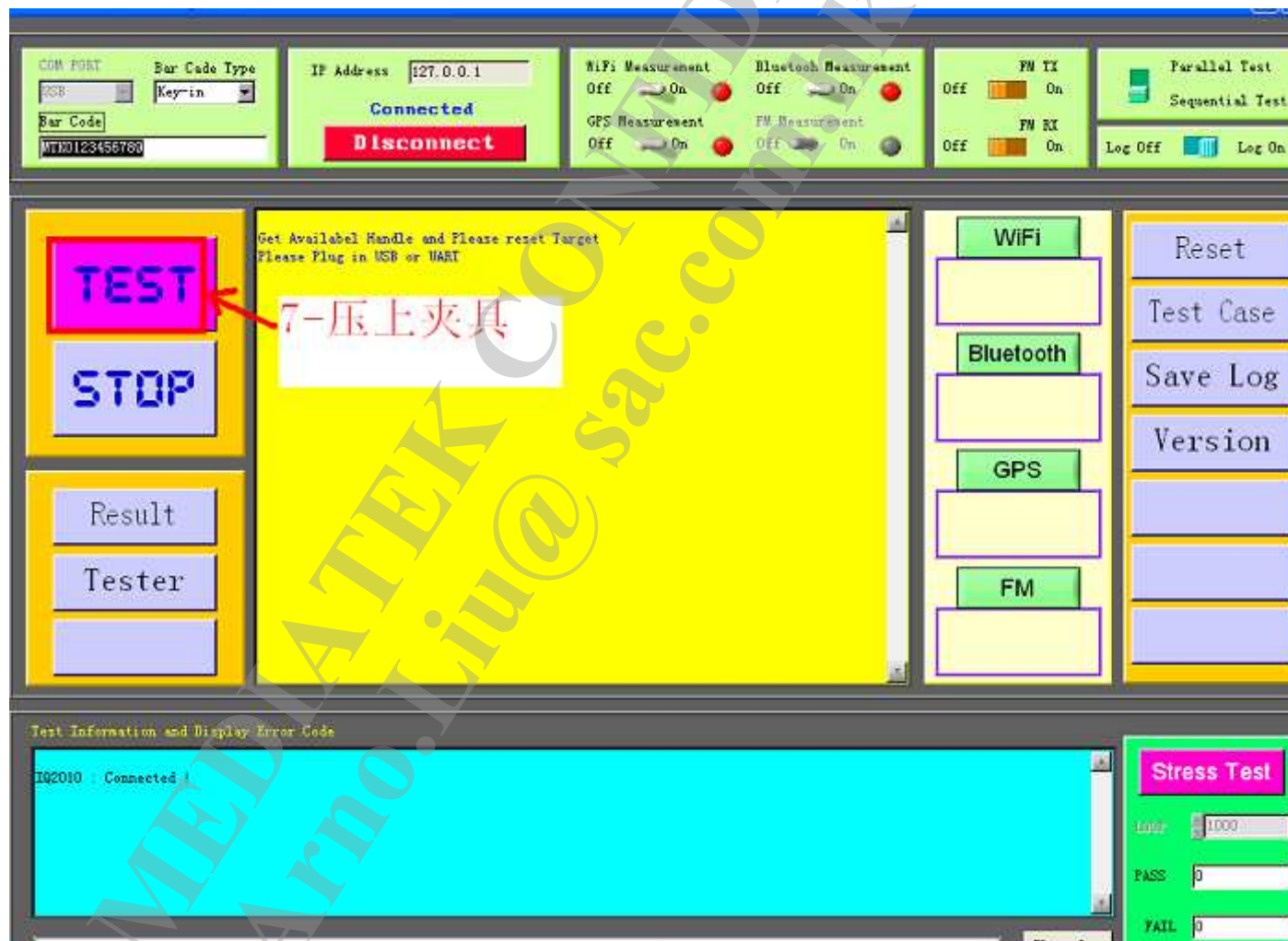
Step 4 选择USB 口或者UART



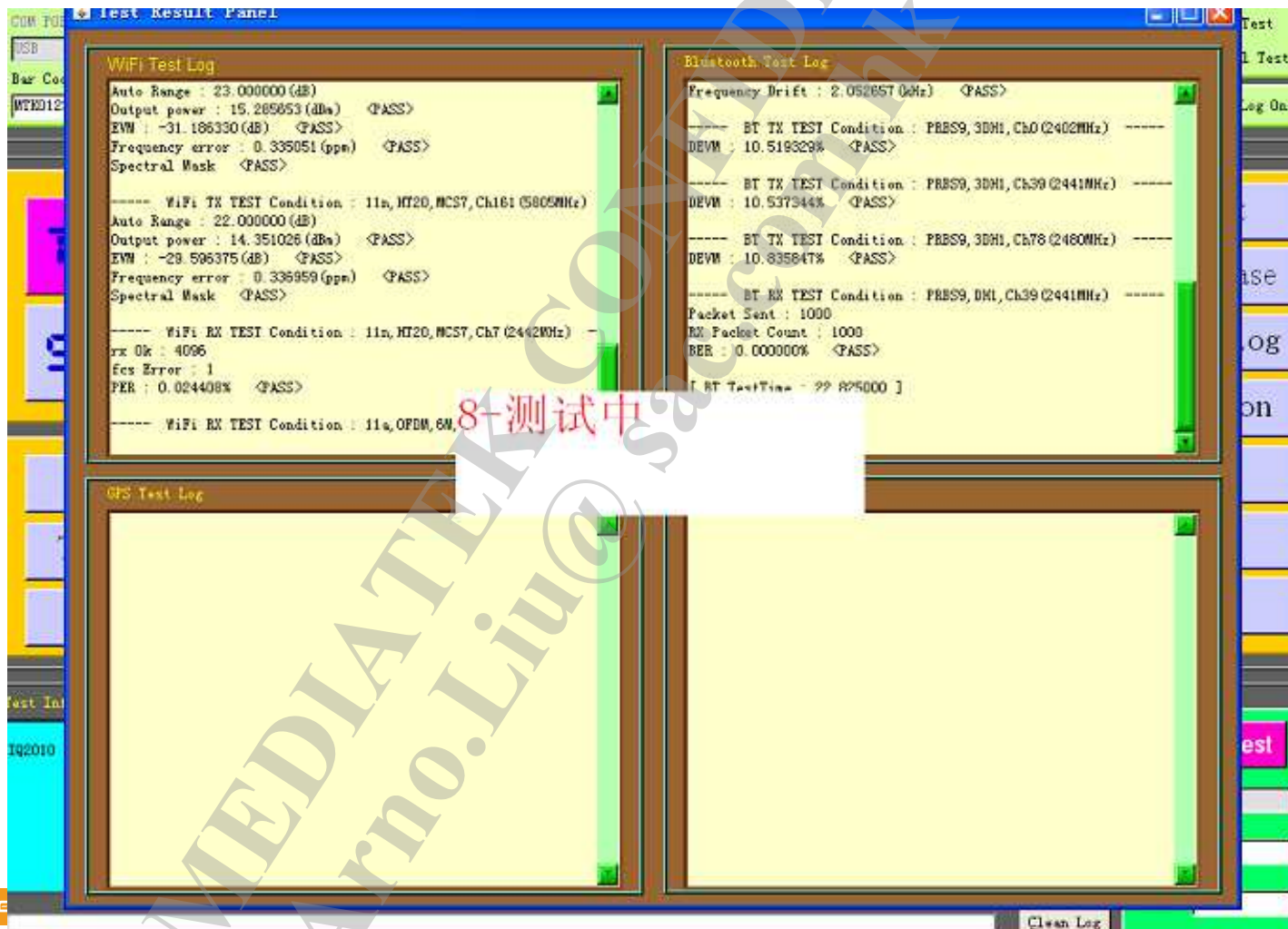
Step 5 and Step 6



Step 7: 点击Test 后，压上夹具



Step 8 testing



Step 9 Test over



If Enter meta fail, please return to Step 6

The screenshot displays a testing software interface with a central yellow area showing a red error message: "Enter Meta Mode Fail". Below this message, a white box contains the text: "无法连接设备、需打开夹具 重复6、7、8、9操作！" (Cannot connect device, need to open the fixture and repeat steps 6, 7, 8, and 9!).

The interface includes several control panels:

- Top Panel:** Contains fields for CON PORT (USB), Bar Code Type (Key-in), IP Address (127.0.0.1), and a "Connected" status. It also has buttons for "Disconnect", "WiFi Measurement", "Bluetooth Measurement", "GPS Measurement", "FM Measurement", "PM TX", "PM RX", "Parallel Test", "Sequential Test", "Log Off", and "Log On".
- Left Panel:** Features buttons for "TEST", "STOP", "Result", and "Tester".
- Right Panel:** Includes buttons for "WIFI", "Bluetooth", "GPS", "FM", "Reset", "Test Case", "Save Log", and "Version".
- Bottom Panel:** Displays "Test Information and Display Error Code" with a list of error messages: "Can not Enter META Mode !". It also includes a "Stress Test" section with a "Count" field (1000), "PASS" (0), and "FAIL" (0) counters, and a "Clean Log" button.

A "MEDIATEK" logo is visible in the bottom left corner.

ATE tool Test item setting

可通过tool 安装目录下的BT_TEST.ini, WiFi_Test.ini 和 GPS_Test.ini 修改测试项如补偿loss, 测试端口和测试标准, 测试信道; 修改完后save 并重新开启 tool才能生效。

```
1 [BT Setup]
2 IQ2010 RF port = RF1
3 CMW500 RF port = RF1
4 MT8870A RF port = RF1
5 Auto Range = OFF
6 Retry = 3
7
8 [BT TX TEST Case 1]
9 BT TEST Enable = 1
10 BT TEST Pattern = PRBS9
11 BT TEST Channel = 0, 39, 78
12 BT Packet type = DH1
13 BT Packet length = 27
14 VSA amplitude = 10
15 Delay = 0.3
16 Loss = 5
17 Test Item = Output Power(Spec:1<Power<9dBm),Frequency offset(Spec:+/-75kHz)
18
```

Retry=3:
Test 3 times if fail

Enable=1:
test this case

Loss=5:
插损补偿

```
1 [GPS Setup]
2 CMW500 RF port = RF3
3 MT8870A RF port = RF1
4 Loss = 5
5 Retry = 3
6 Delay = 1
7
8 [GPS SPEC]
9 Phase ratio = 0.85
10 TCXO Clock Drift = 2.5
11 TCXO Clock Drift Rate = 2.5
12 CNR Mean = 40
13 CNR Sigma = 1
14 Update HZ = 1
15 BitSync = 5
16 Acquisition = 10
17 CW CNR = 65
18 CW CNR variation = 5
19 CNR Mode CNR = 40
20 CNR Mode CNR variation = 5
21
22 [GPS TEST Case 1]
23 GPS TEST Enable = 1
24 GPS TEST Mode = GPS CNR Test Mode
25 GPS Svid = 29
```

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Appendix -- ATA_TOOL operation guide line

ATA tool test interface

MainWindow File About Test Type: PCBA

Statistics

Device 1: 2/2, 100%

Test Item	Progress	Status
ADC	<input type="text"/>	0%
Barcode	<input type="text"/>	0%
SW Versi	<input type="text"/>	0%
Earphone	<input type="text"/>	0%
LCM	<input type="text"/>	0%
LED	<input type="text"/>	0%
GPS	<input type="text"/>	0%
CSQ	<input type="text"/>	0%

Test Items

Log

Buttons

Fail Pass Start

Device 2: 0/0, 0%

Test Item	Progress	Status
ADC	<input type="text"/>	0%
Barcode	<input type="text"/>	0%
SW Versi	<input type="text"/>	0%
Earphone	<input type="text"/>	0%
LCM	<input type="text"/>	0%
LED	<input type="text"/>	0%
GPS	<input type="text"/>	0%
CSQ	<input type="text"/>	0%

Fail Pass Start

Device 3: 0/0, 0%

Test Item	Progress	Status
ADC	<input type="text"/>	0%
Barcode	<input type="text"/>	0%
SW Versi	<input type="text"/>	0%
Earphone	<input type="text"/>	0%
LCM	<input type="text"/>	0%
LED	<input type="text"/>	0%
GPS	<input type="text"/>	0%
CSQ	<input type="text"/>	0%

Fail Pass Start

Device 4: 0/0, 0%

Test Item	Progress	Status
ADC	<input type="text"/>	0%
Barcode	<input type="text"/>	0%
SW Versi	<input type="text"/>	0%
Earphone	<input type="text"/>	0%
LCM	<input type="text"/>	0%
LED	<input type="text"/>	0%
GPS	<input type="text"/>	0%
CSQ	<input type="text"/>	0%

Fail Pass Start

ATA tool Setting interface

安装ATA tool后在安装目录下有Document 详细介绍 tool

Port Setting

Test Box Setting

General Setting

Test Items Setting

The screenshot displays the 'Setting' window of the ATA tool, which is divided into several sections for configuring the testing environment and items.

- Port Setting:** This section allows configuration for up to four devices. It includes a dropdown for 'Device Port Type' (set to USB) and a dropdown for 'Device Port Baudrate' (set to 115200). Below, there are four columns for 'Device 1' through 'Device 4', each with input fields for 'Device Port' and 'Test Box Port'.
- Test Box Setting:** This section configures four test boxes. Each box (Test Box 1 to 4) has a table with two rows (1 and 2) and two columns (Voltage and ADC). For example, Test Box 1 has Voltage 3 and ADC 1000 for row 1, and Voltage 4 and ADC 1200 for row 2.
- General Setting:** This section includes a 'Test Type' dropdown (set to PCBA), 'Delay After Boot' (3000), 'Delay After AT Ready' (2000), and checkboxes for 'Stop if Failed' and 'Auto Run'.
- Test Items Setting:** This section contains a list of test items with checkboxes. Items like ADC, CSQ, LCM, SW Version, Barcode, Earphone, LED, T Card, BT, FM, Receiver, IP, Camera, GPS, SIM, Vibrator, Charge, Keypad, Speaker, and WIFI are listed. The 'BT' item is highlighted with a green background.
- BT Setting:** This sub-section is expanded, showing 'BT Address Check Mode' (set to Specified Address) and a 'Specified BT Address' field with the value 'Addr:001e,37,0b460f'.

At the bottom right of the window, there are 'Cancel' and 'Save' buttons.

END