Factory Test SOP for MT2503 Device
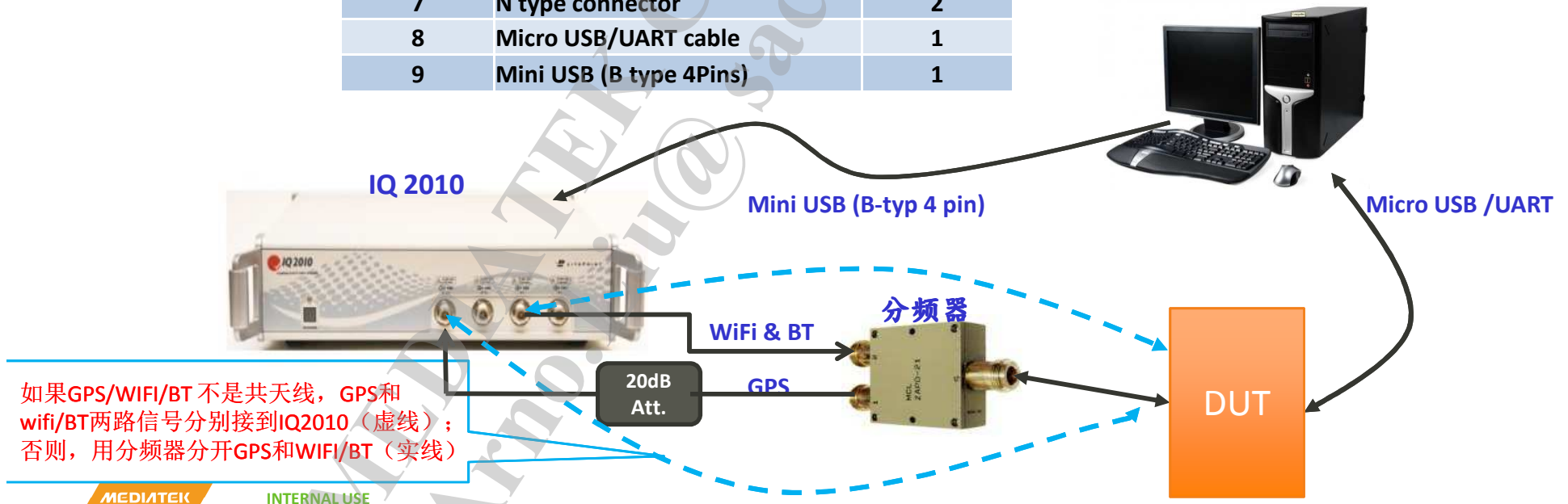# V1.0

Agenda

- **Customer With Test Equipment**
  - ✓ WCN_ATE_TOOL
  - ✓ ATA_TOOL

- **Customer Without Test Equipment**
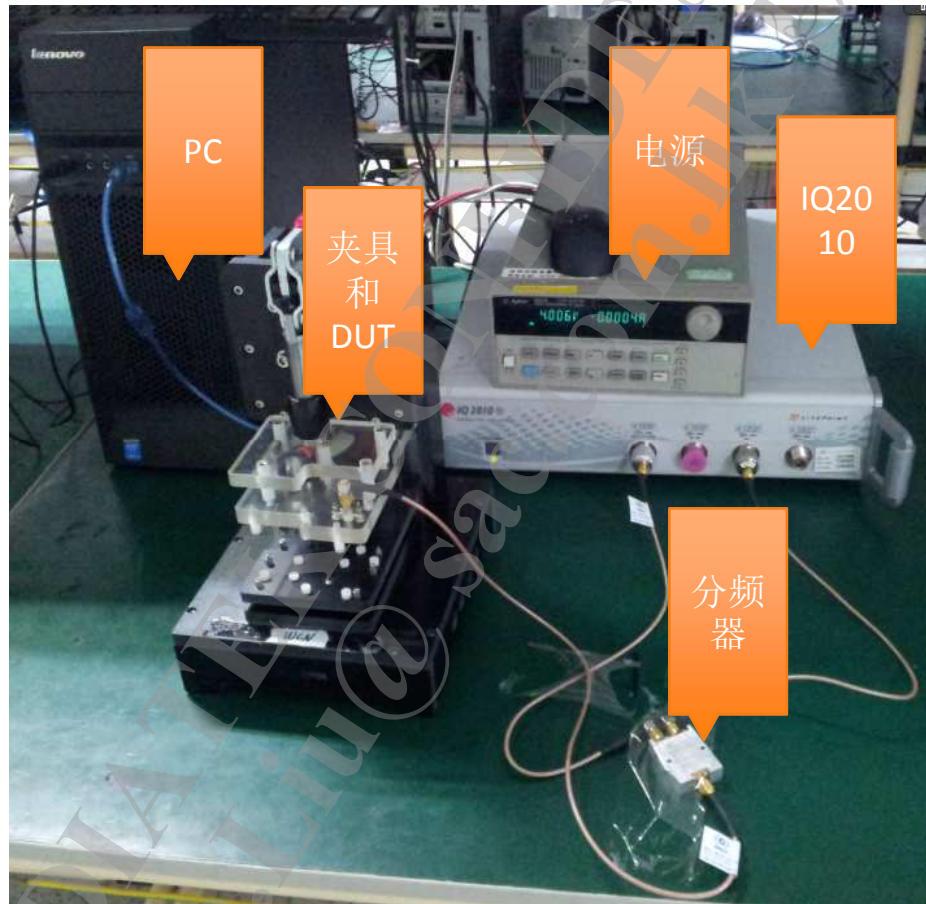 - ✓ ATA_TOOL

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

IQ 2010

Mini USB (B-typ 4 pin)

Micro USB /UART

分频器

WiFi & BT

20dB Att.

GPS

DUT

如果GPS/WIFI/BT 不是共天线，GPS和
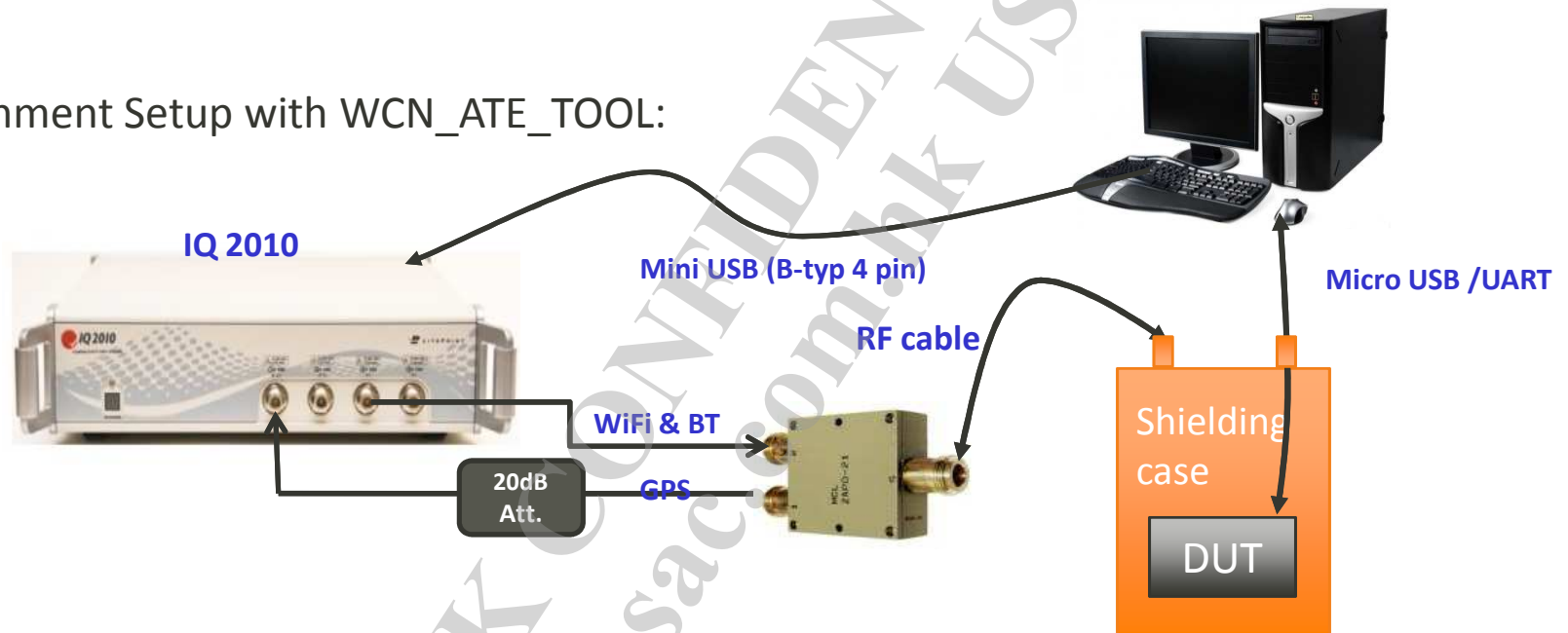wifi/BT两路信号分别接到IQ2010（虚线）；
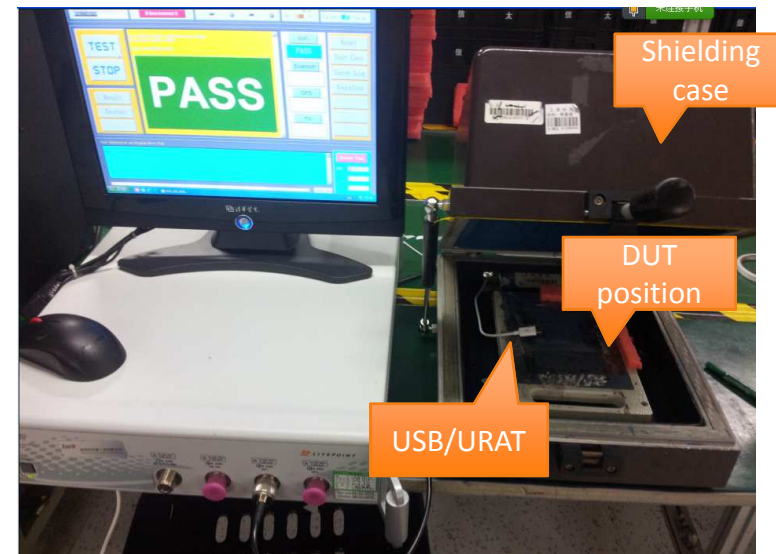否则，用分频器分开GPS和WIFI/BT（实线）

Reality Conductive Test Environment Setup

MT2503 WiFi/BT/GPS PCBA Wireless Test

Environment Setup with WCN_ATE_TOOL:

IQ 2010

Mini USB (B-typ 4 pin)

Micro USB /UART

RF cable

WiFi & BT
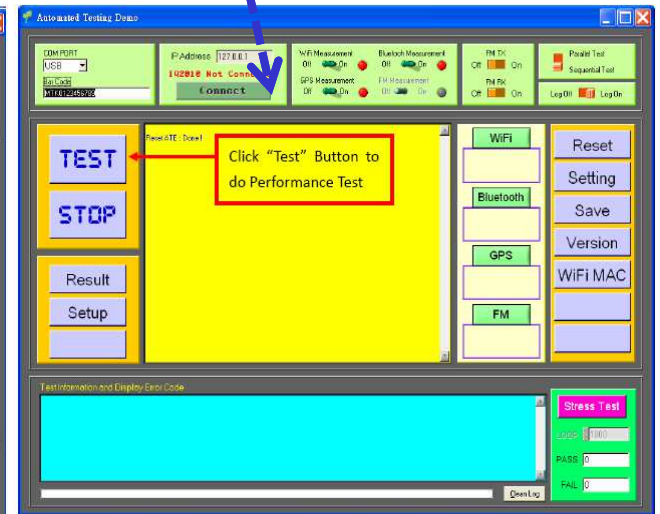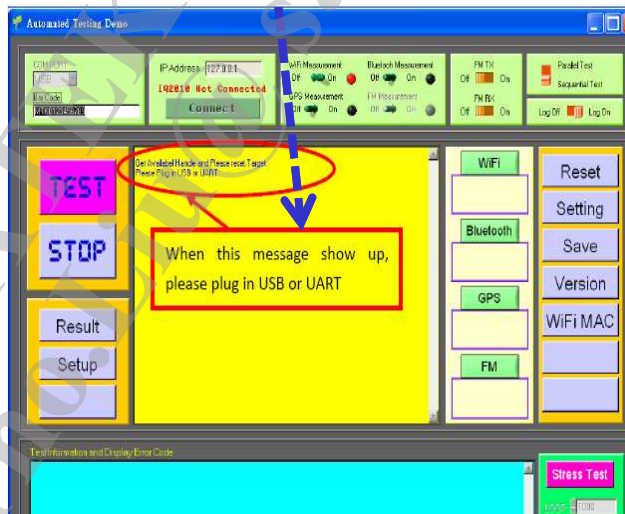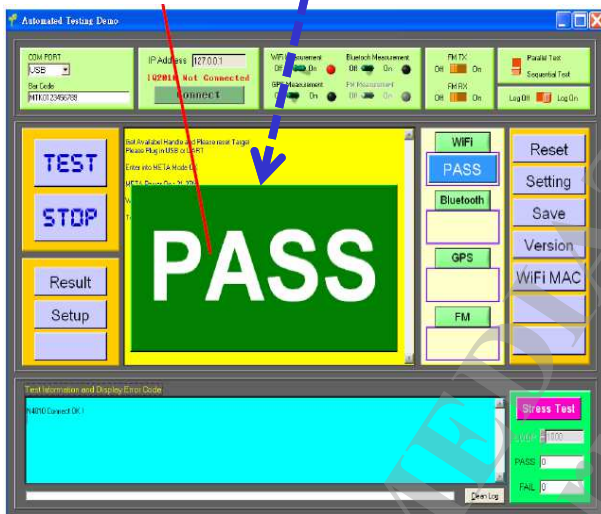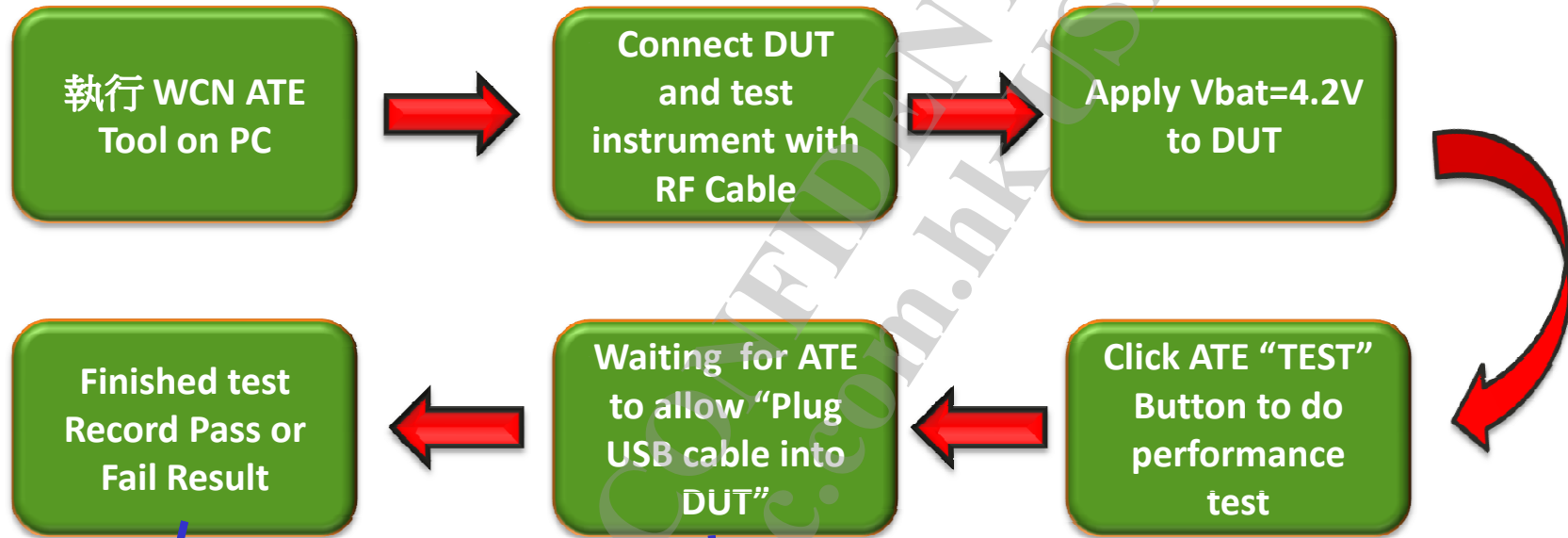
GPS

20dB Att.

Shielding case

DUT

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；**
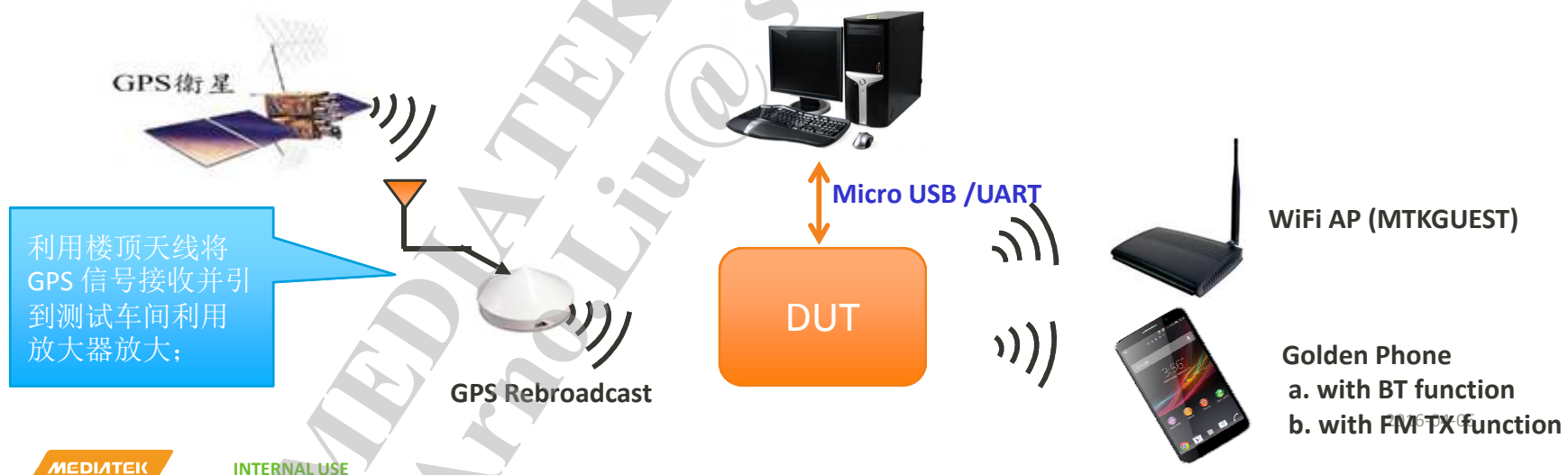3. **测试前，先利用精机多次测试得到插损补偿数值和测试机摆放方位，后续测试过程中，尽量保持DUT和精机的方位一致。**

PASS
TEST
STOP

Shielding case

DUT position

USB/URAT

WiFi/BT/GPS ATE Test Flow

執行 WCN ATE Tool on PC → Connect DUT and test instrument with RF Cable → Apply Vbat=4.2V to DUT

Finished test Record Pass or Fail Result ← Waiting for ATE to allow "Plug USB cable into DUT" ← Click ATE "TEST" Button to do performance test

PASS

When this message show up, please plug in USB or UART

Click "Test" Button to do Performance Test

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.

GPS 衛星

利用楼顶天线将 GPS 信号接收并引到测试车间利用放大器放大；

GPS Rebroadcast

Micro USB /UART

DUT

WiFi AP (MTKGUEST)

Golden Phone
a. with BT function
b. with FM TX function

MEDIATEK   INTERNAL USE

Agenda

- **Customer With Test Equipment**
  - ✓ WCN_ATE_TOOL
  - ✓ ATA_TOOL

- **Customer Without Test Equipment**
  - ✓ ATA_TOOL

ATA Test

- Customer also can use ATA tool for Wireless Test

- ATA Tool coverage:
  - ✓ BT Scan BT Devices；
  - ✓ WIFi Scan APs;
  - ✓ GPS Research Satellites and Get Location.

GPS 衛 星

利用楼顶天线将
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GPS Rebroadcast

Micro USB /UART

DUT

WiFi AP (MTKGUEST)

Golden Phone
 a. with BT function
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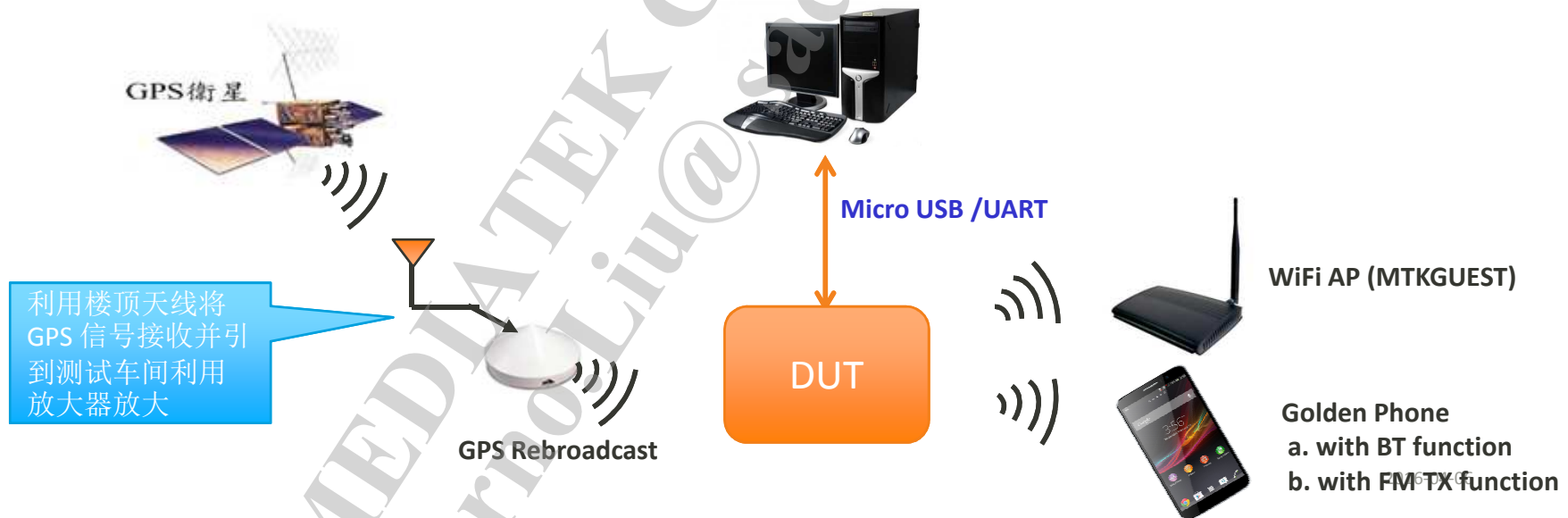
Appendix
-- WCN_ATE_TOOL operation guide line

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.
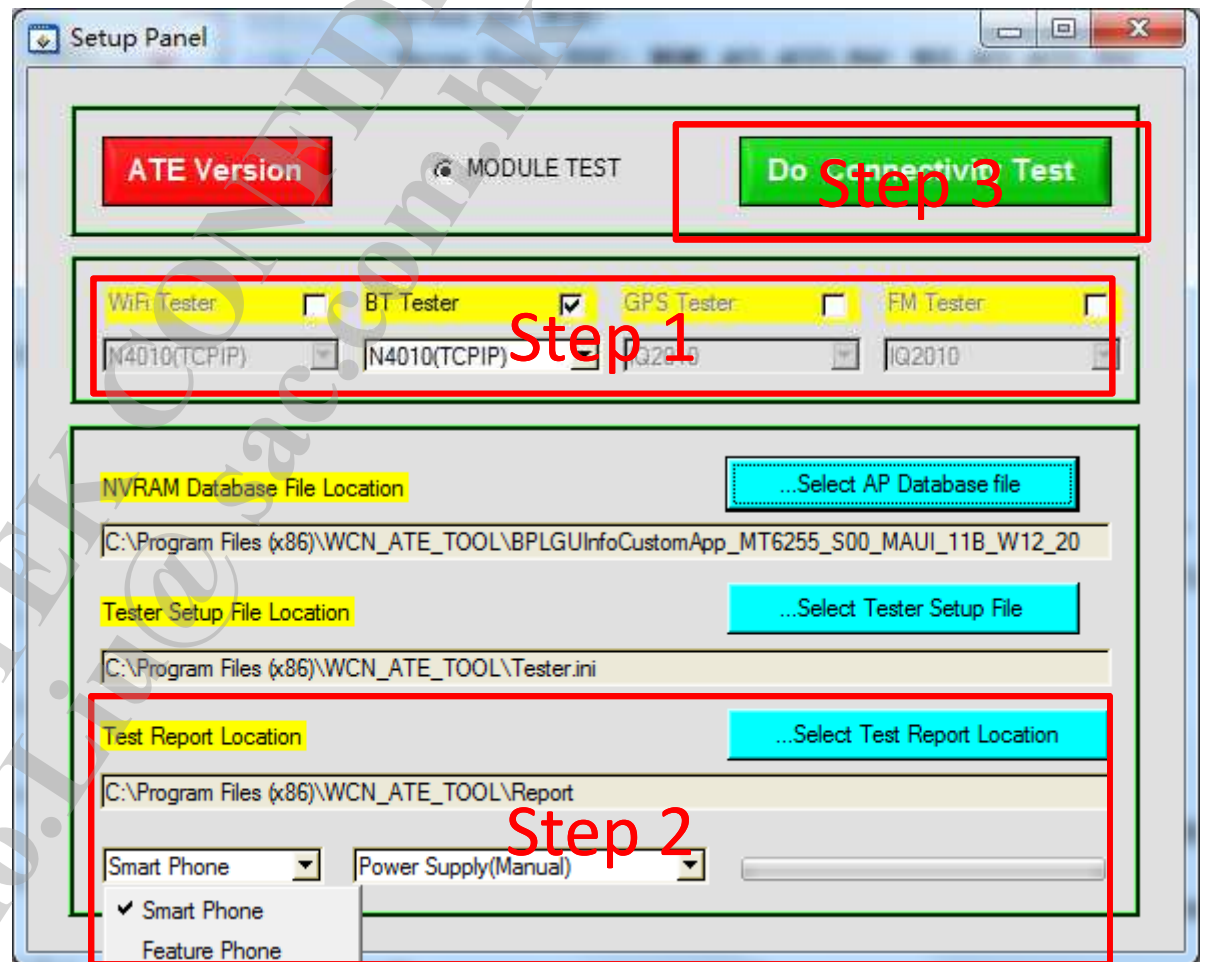
Step 4 选择USB 口或者UART

Step 5 and Step 6
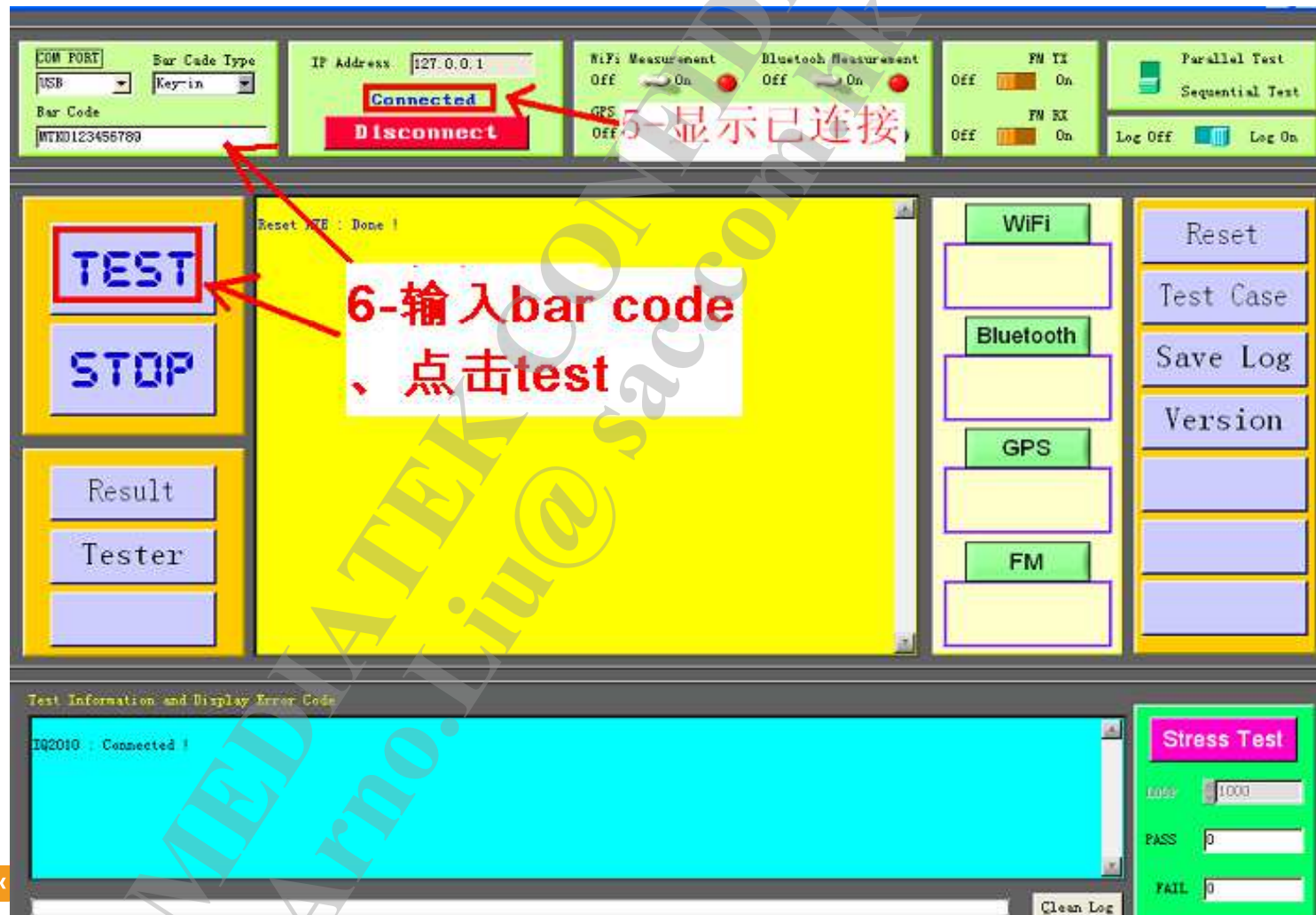
Step 7: 点击Test 后，压上夹具
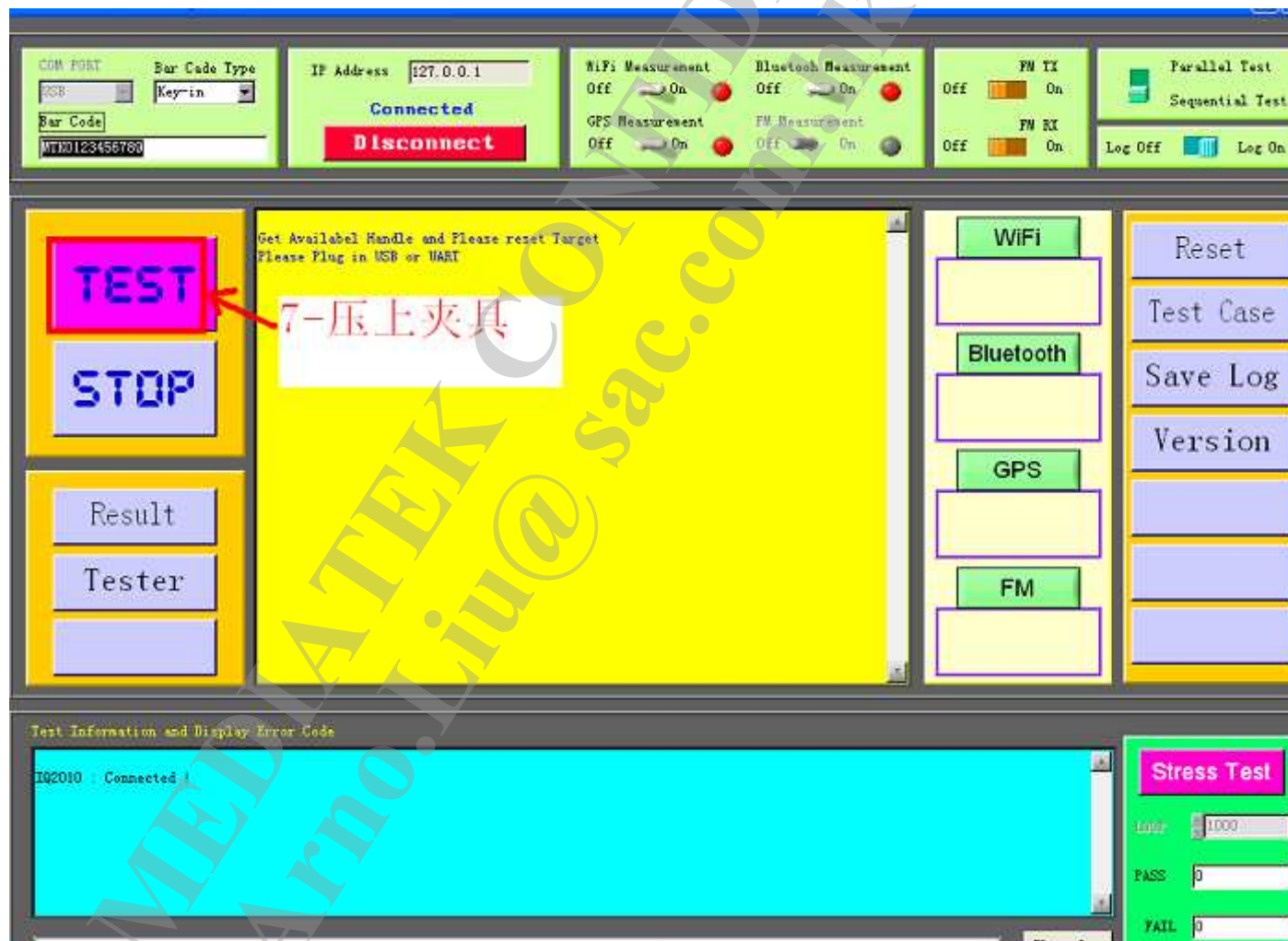
Step 8 testing
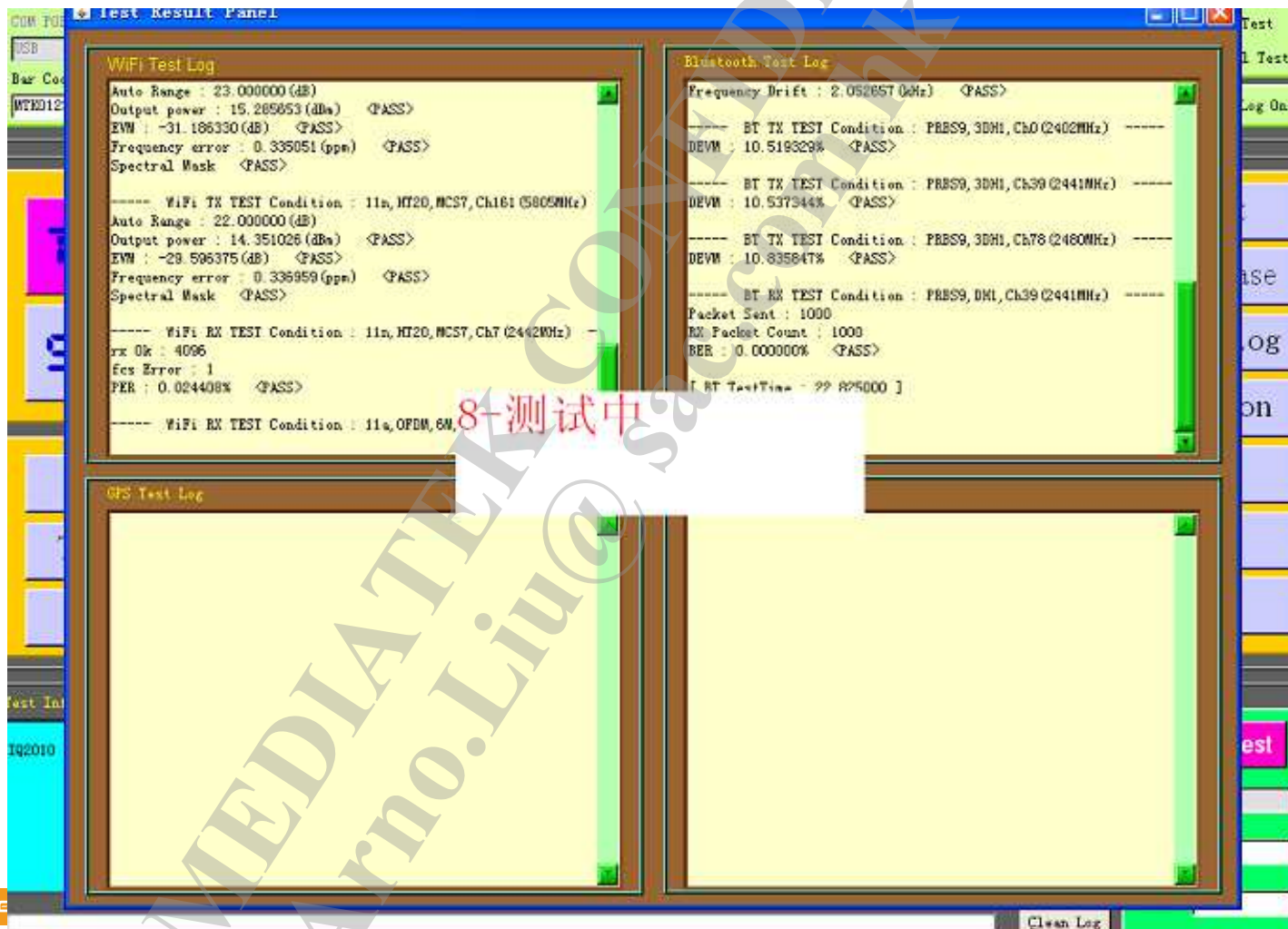
Step 9 Test over

If Enter meta fail, please return to Step 6

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
```

```
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
```

Retry=3:
Test 3 times if fail

Enable=1:
test this case

Loss=5:
插损补偿

Appendix
-- ATA_TOOL operation guide line

ATA tool test interface

ATA tool Setting interface

安装ATA tool后在安装目录下有Document 详细介绍 tool

END

2016-04-06