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BB9300 Service Manual

1. Main Functions:

- **-Audio Play/Video Recording**
- **-Master /SLAVE GSM 900/1800MHz**
- **-MMS/WAP**
- **-Bluetooth 1.2**

2. Main Selling Points

- **-BT communication**
- **-FM supporting**
- **-GPRS Class 12**
- **-Support MP3, MP4**

3. Other Functions

- **-Slide-Rotating**

4. Spec

- **-SIZE 75X70X15mm**
- **2.4" TFT 26K**

TABLE OF CONTENTS

The purpose of this document is to help service workshop technicians to service products. This service

manual must be used only by authorized service suppliers. The content of it is confidential. Please note that provides other guidance documents for service suppliers. Follow these regularly and comply with the given instructions. While every effort has been made to ensure the accuracy of this document, some errors may exist. Please keep in mind also that this documentation is continuously being updated and modified, so always watch out for the newest version.

CAUTIONS

Please refer to the phone's user's guide for instructions relating to operation, care, and maintenance, which include important safety information.

1. **Servicing and alignment must be undertaken by qualified personnel only.**
2. **Ensure all work is carried out at an anti-static workstation and that an anti-static wrist strap is worn.**
3. **Use only approved components as specified in the parts list.**
4. **Ensure all components, modules, screws, and insulators are correctly re-fitted after servicing and alignment**
5. **Ensure all cables and wires are repositioned correctly**

Electrostatic discharge can easily damage the sensitive components of electronic products. Therefore, every service supplier must observe the precautions which mentioned above.

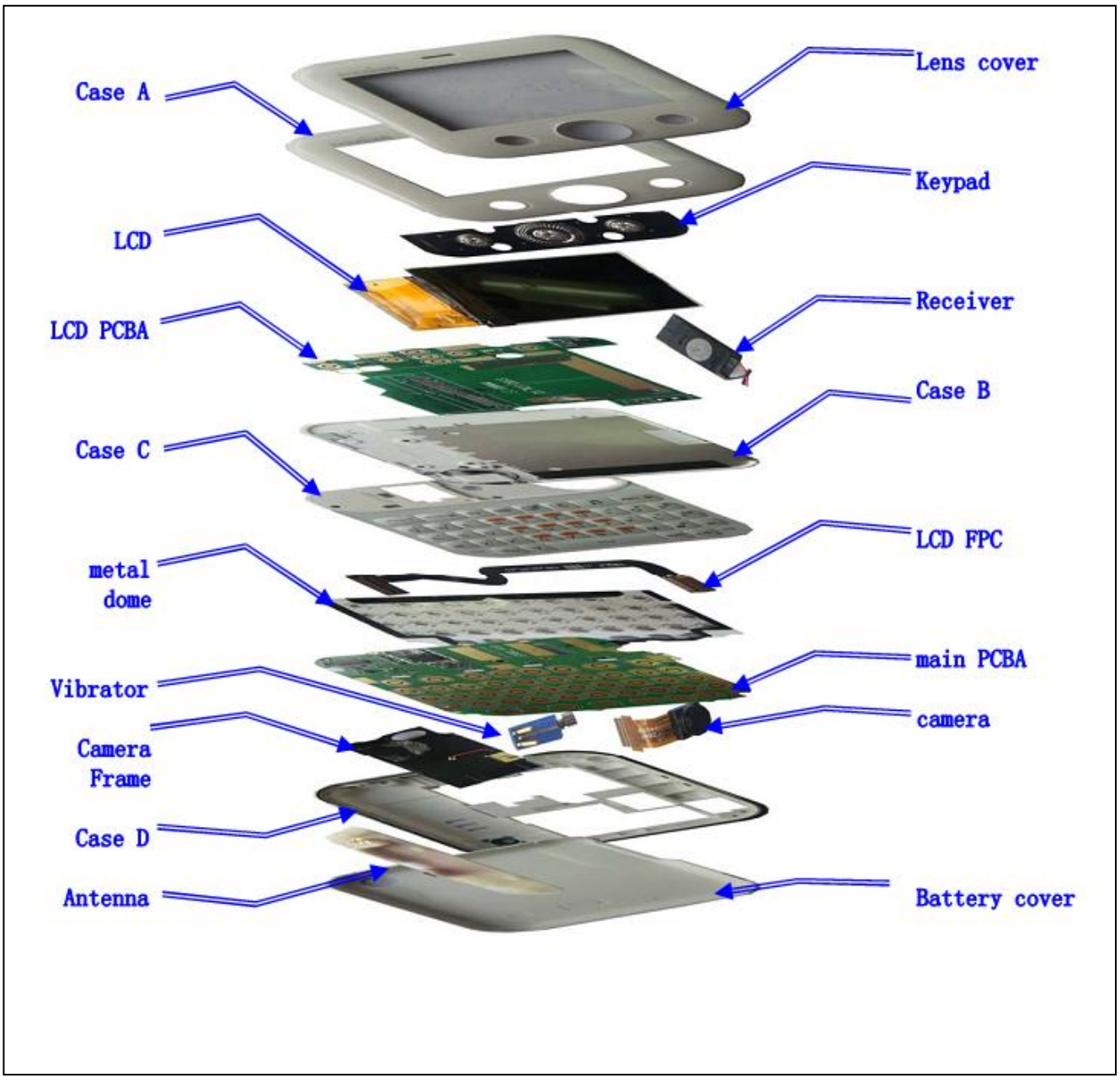
GENERAL REPAIR INFORMATION

1. **Make sure your testing equipment is functioning properly before beginning repair work.**
2. **Before starting repairs you must observe ESD precautions such as being in your ESD protected area and connecting your wristband.**
3. **Use gloves to avoid corrosion and fingerprints.**
4. **Cover windows and displays with a protective film to avoid dust and scratches.**
5. **Use a lint-free cloth to clean the LCD.**
6. **When cleaning the pads use a soft cloth\ESD brush and isopropanol. Do not use a glass fiber pencil: this scratches the surface and will corrosion.**
7. **Non-faulty mechanical parts(except shielding lids and bent parts or soldered components). May be reused if they are not soldered.**
8. **When removing the shielding lids make sure to replace them with new ones, otherwise the high-frequency leakage can affect the device.**
9. **Always use the original spare parts.**
10. **Check the soldering joints of the parts concerned with regard to the fault symptom. And resolder them if necessary.**
11. **Remove excess soldering flux after repair.**
12. **Observe the torque requirements when assembling the unit.**
13. **please aware that some malfunctions may be software related and solved by an update**

Chapter 1

EXPLODED VIEW AND COMPONENT DISPOSAL

EXPLODED DIAGRAM



DISASSEMBLY AND ASSEMBLY

SERVICE TOOLS

Iron

850 heater

Oscillograph

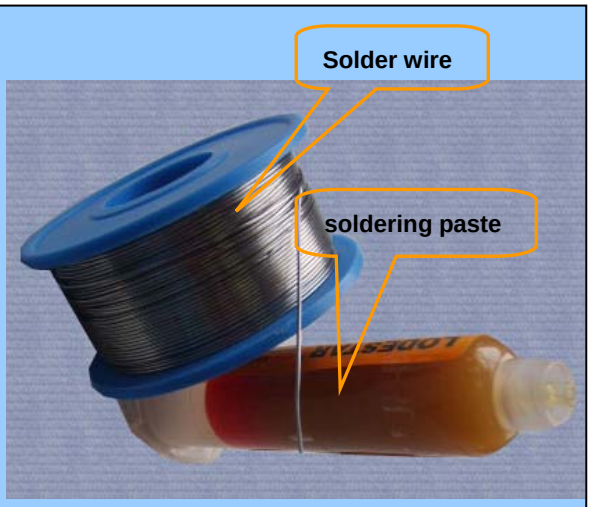
Voltage regulator

Multimeter

Constant temperature heater

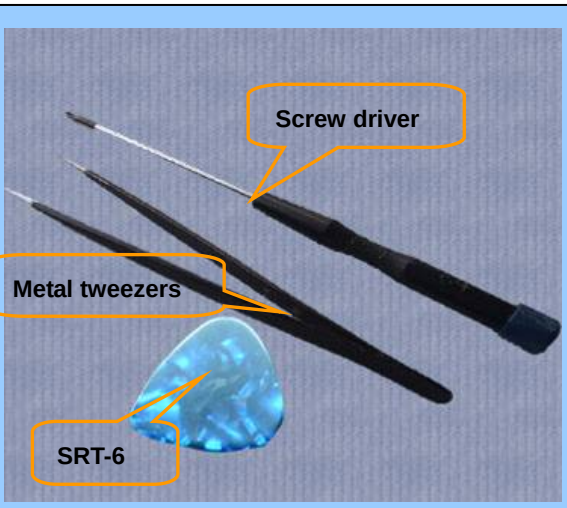
Computer and software download cable

Microscope

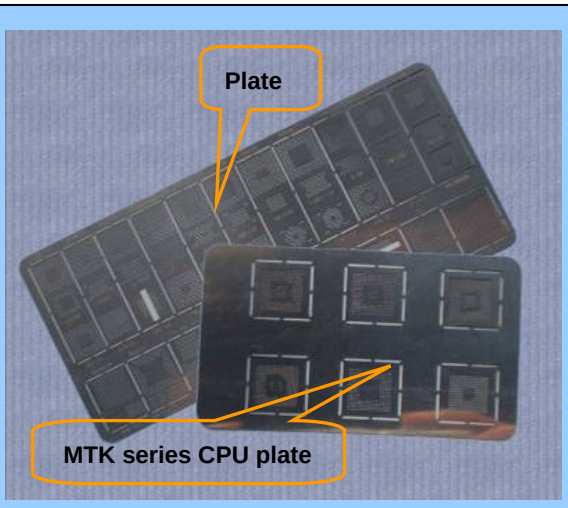


Solder wire, soldering paste

Wrist grounding strap, Antistatic gloves



Metal tweezers, Screw driver, SRT-6



Plates

DISASSEMBLY

Take out the battery cover.

Remove 4 screws with screw driver.

Prize up the antenna by pick

Prize up SIM buckle

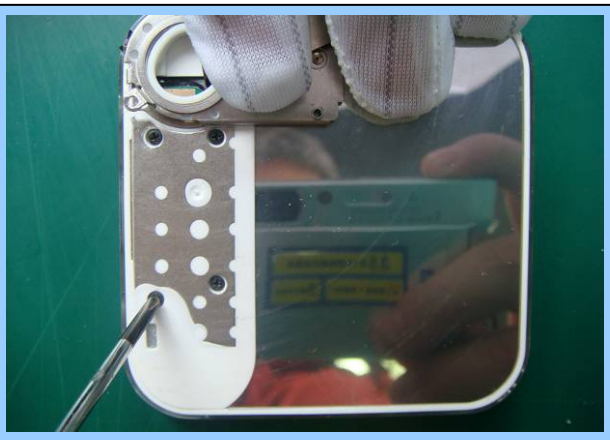
Prize up D cover with pick

Remove 2 screws with tweezer

(7) Take down FPC connector with pick

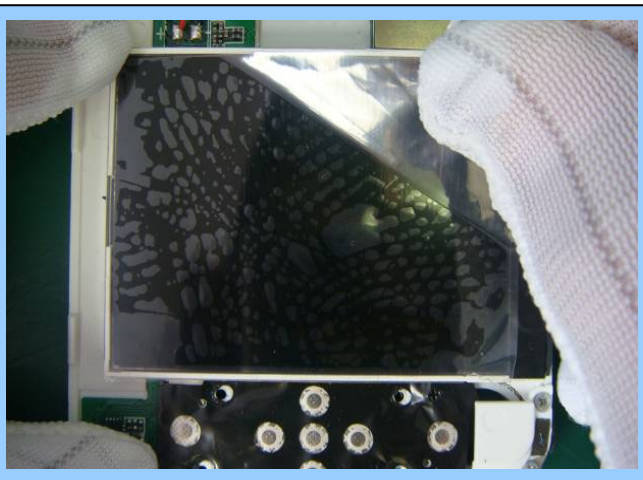
(8) Take off PCBA by tweezer

(9)Take out C cover with hands

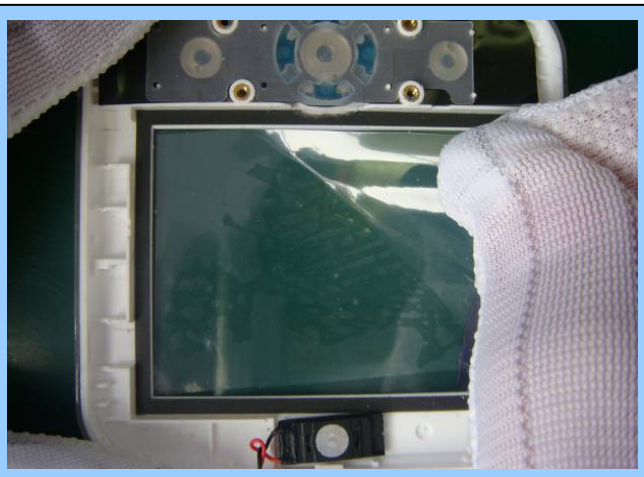


(10) Take off 4 screws by tweezer

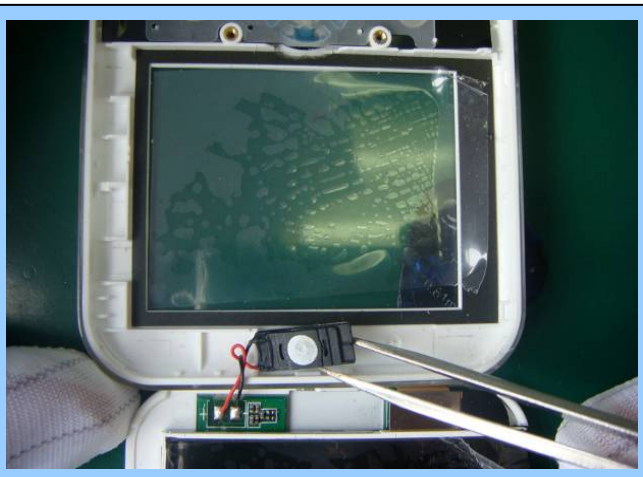
(11) Prize up B cover with tweezer



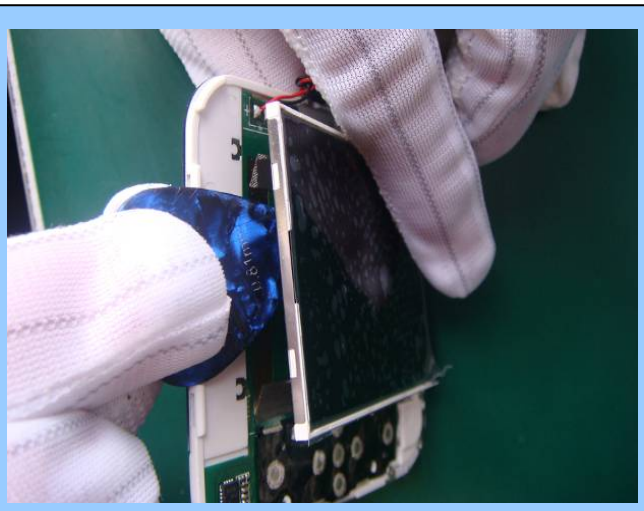
(12) Stick LCD film



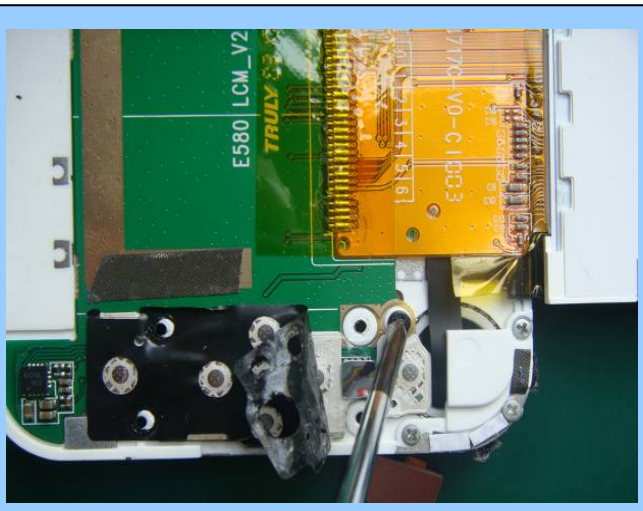
⑬ stick lens protection film



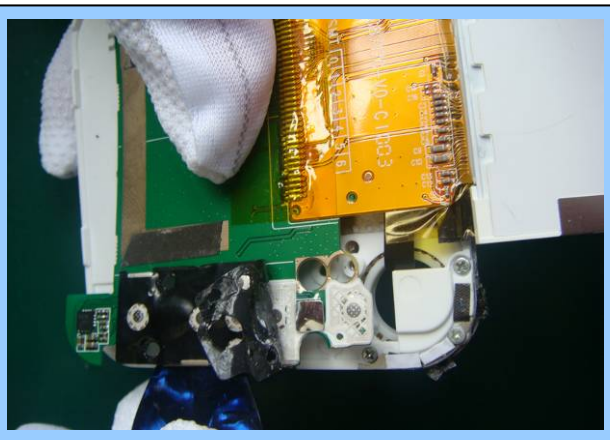
⑭ Take off receiver by tweezer



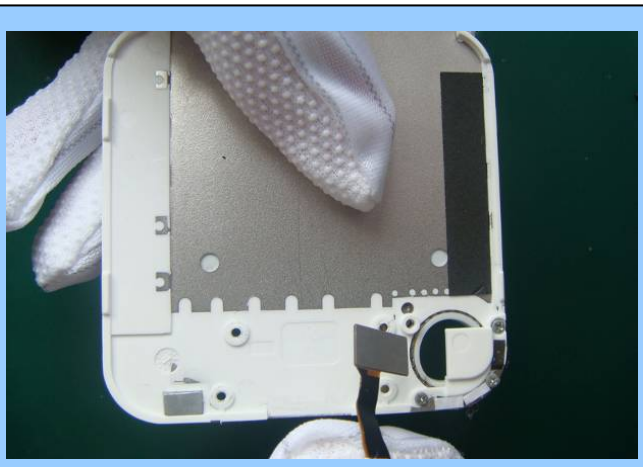
⑮ Separate LCD with pick



⑯ Take off the screw with tweezer



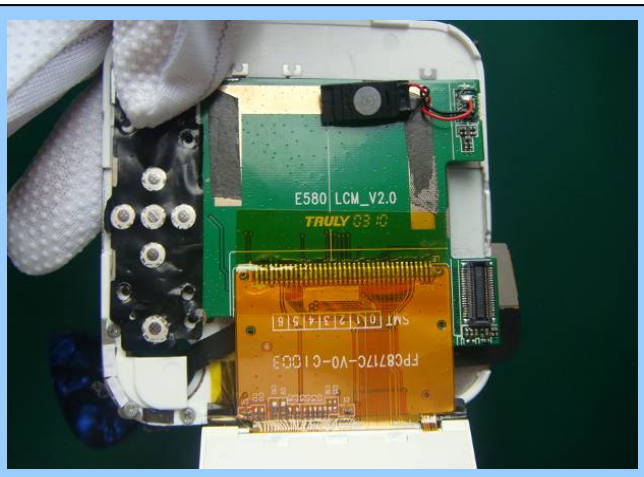
⑰ separate LCD PCBA with tweezer



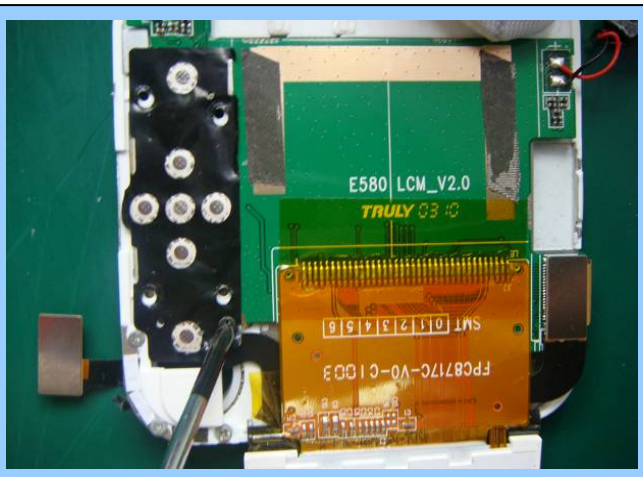
⑱ Take off FPC

Finish

ASSEMBLY



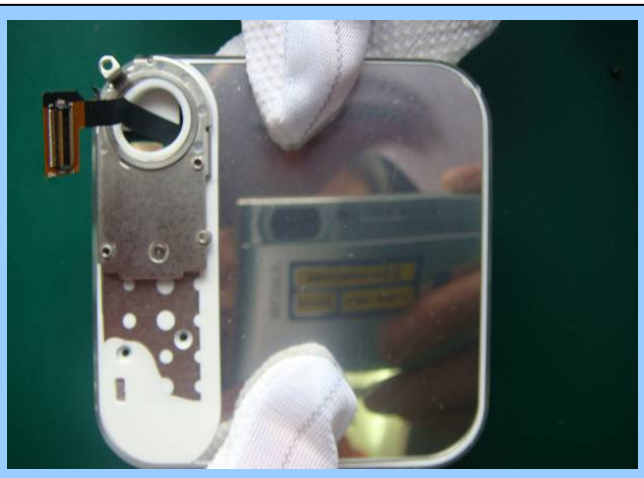
(1) Place LCD PCBA in A cover



(2) Lock the screw

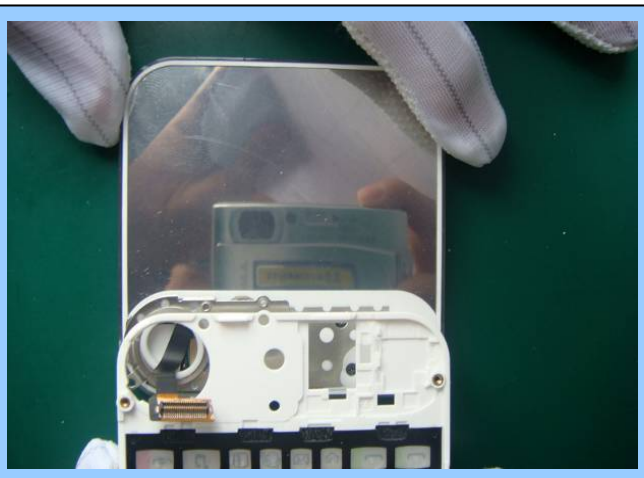
(3) Install LCD

(4)Install receiver with tweezer



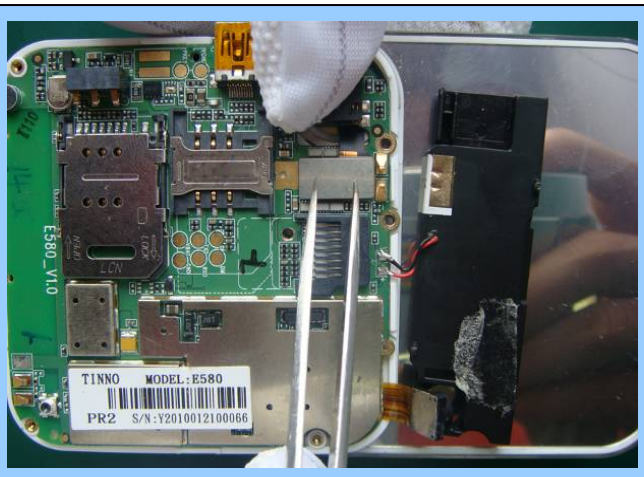
(5) install B cover

(6) Lock the screws with tweezer



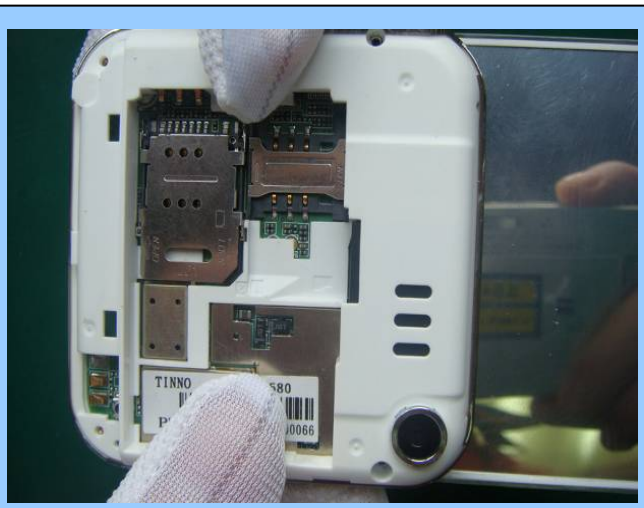
(7) Install cover C

(8) Place main PCBA in C cover



(9) Tighten the FPC connector

(10) Lock 3 screws with tweezer



(11)Connect FPC with PCBA board

(12) Install the antenna

⑬ Lock 4 screws

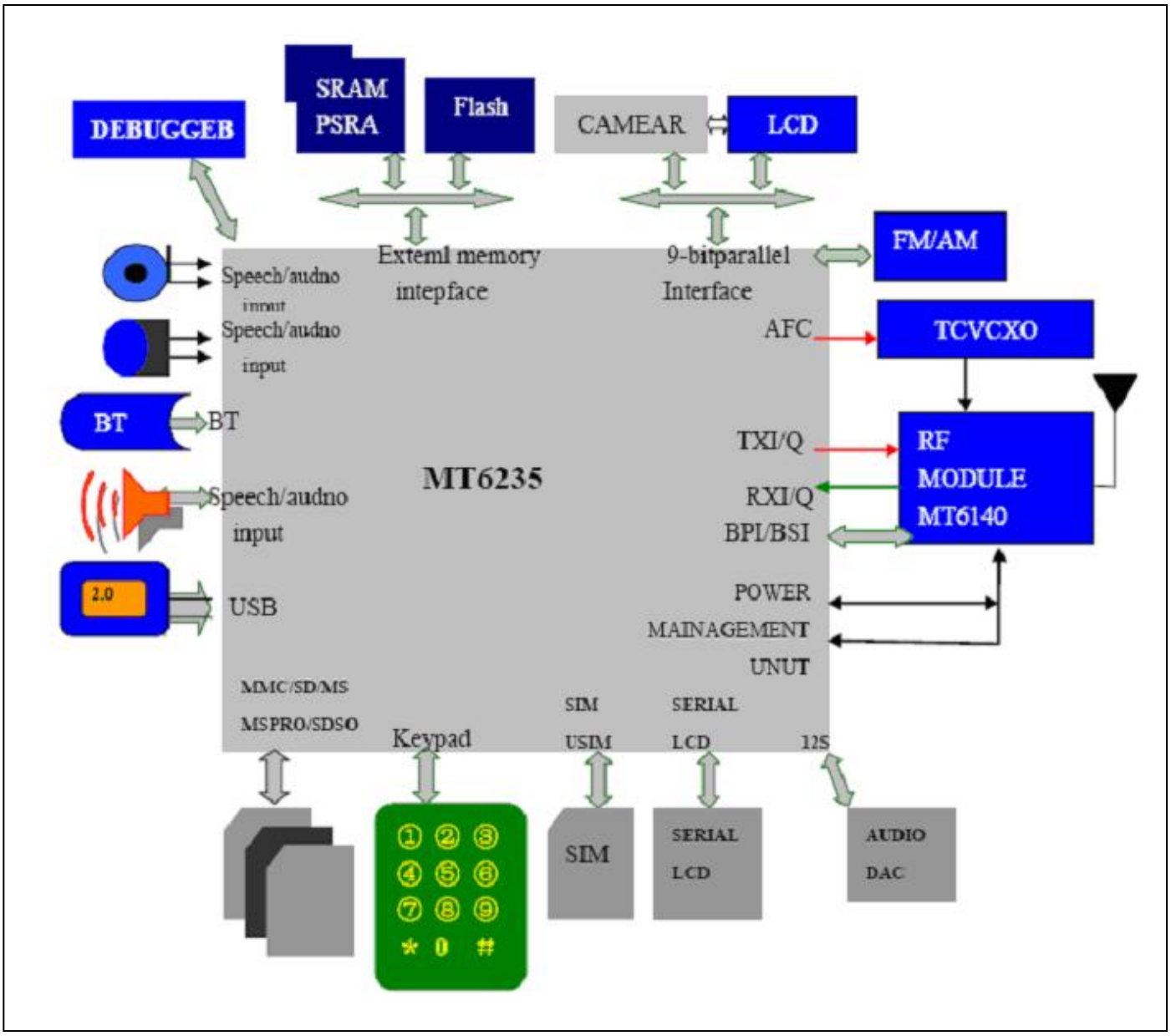
⑭ Button the battery cover

Finish

Chapter 2

SYSTEM BLOCK DIAGRAM

CPU (MT6235)



Chapter 3

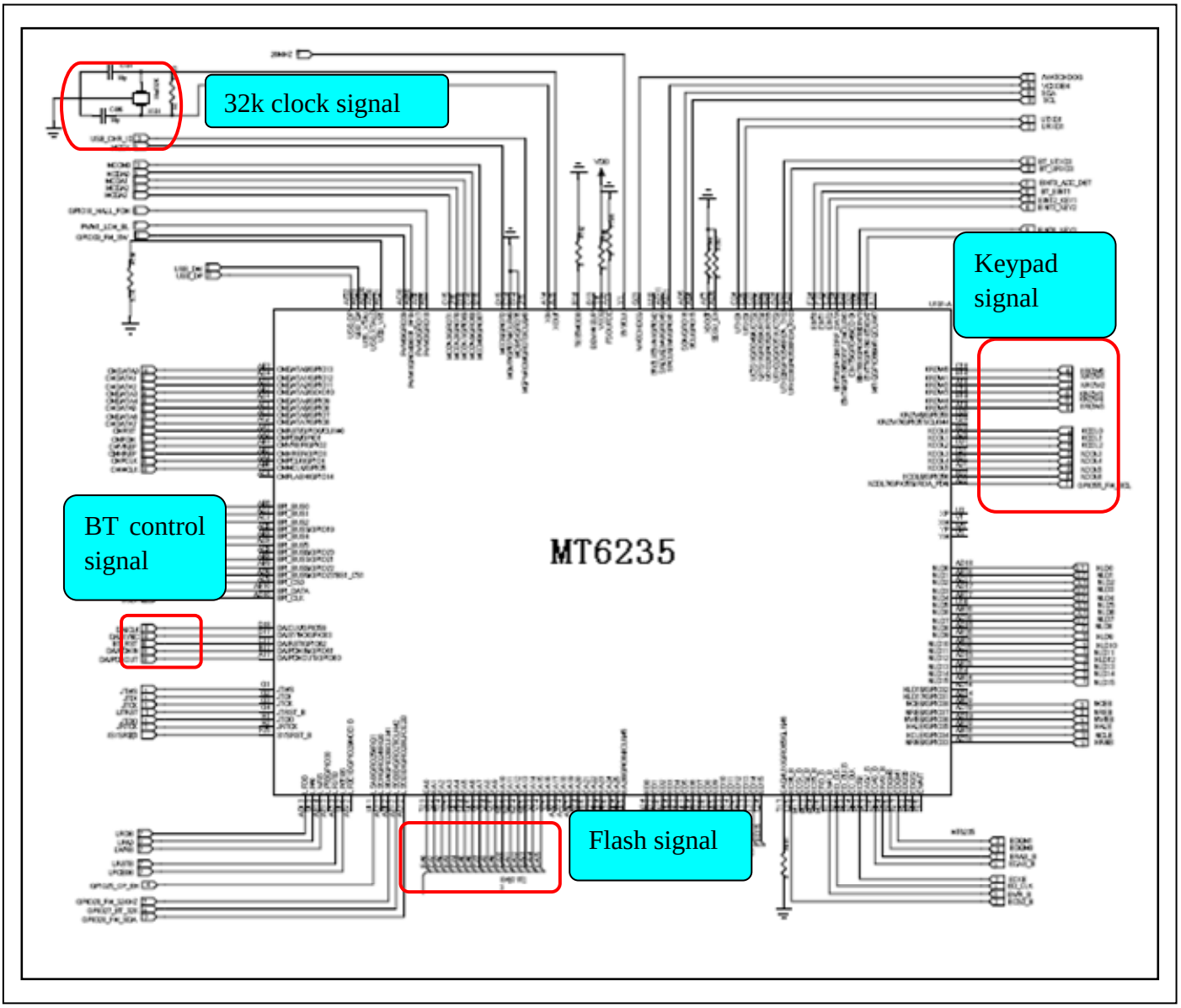
INSTRUCTION OF THE UNIT CIRCUIT

1. Instruction of the important ICs :

CPU is MT6235 which is the kernel IC of whole main circuit. It also integrates subsystems of channel coder and decoder, cross and de-cross, encryption and decryption. It takes charge of process of voice and every parts of mobile, such as charge, liberation, LED etc. And it includes WATCHDOG to improve system stability.

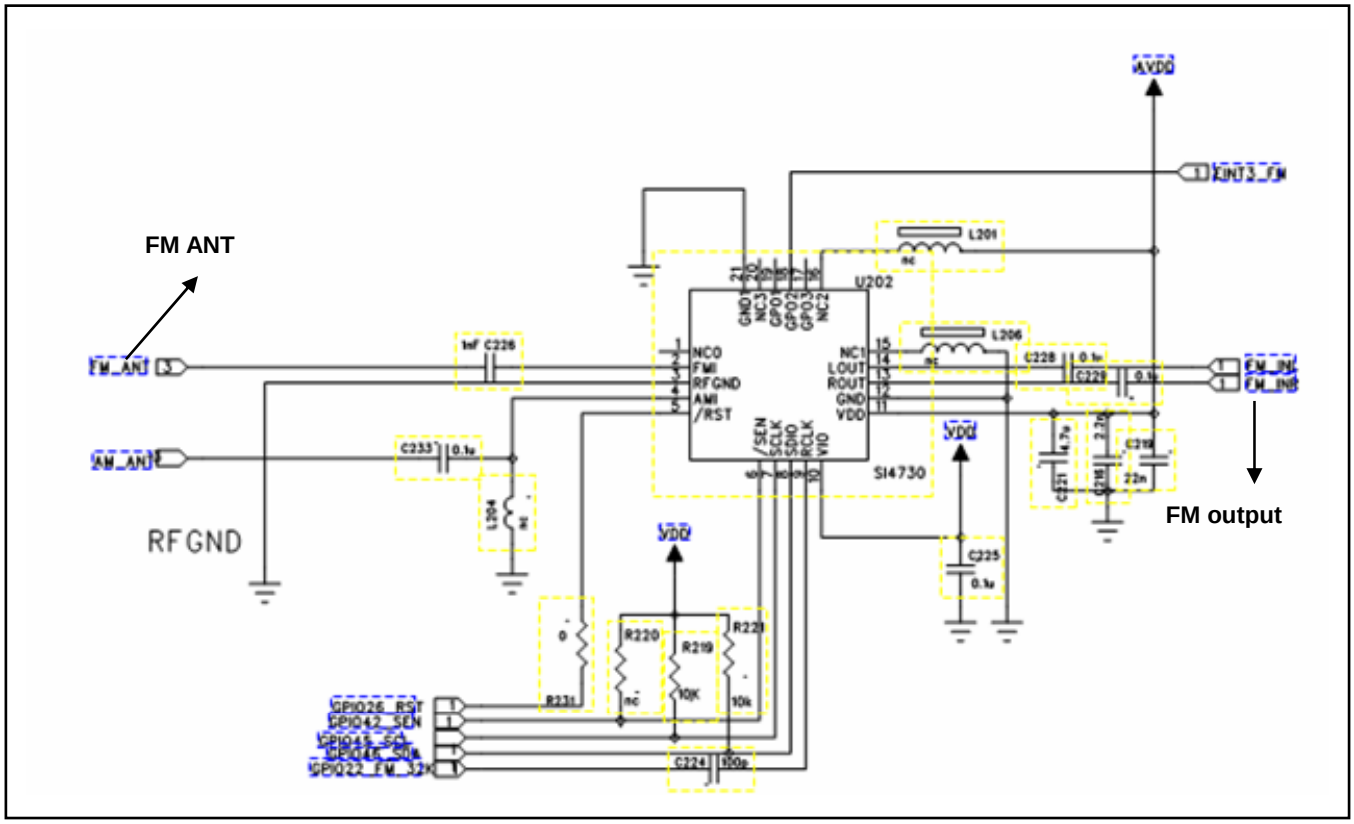
MT6235 is a new generation high-end chip made by MEDIATEK, with a QFN 11.5mm*11.5mm, up to 261pins, 0.47pitch. MT6235 baseband chip has GSM/GPRS capability, also integrates audio and video function. MT6253 provides not only high-quality GPRS Class 12 MODEM, high-rate data transmission service, but also multi-media applications, like 0.3M pixels camera, mp3, mp4 etc

MT6235 CPU



FM circuit

U204 is FM receiving module. FM_ANT is used to receive the radio signal from the antenna, FM_VCC is the 2.8Vpower supply, FM32KHz is the reference clock, GPIO26 and GPIO31 is control signal from the baseband CPU.



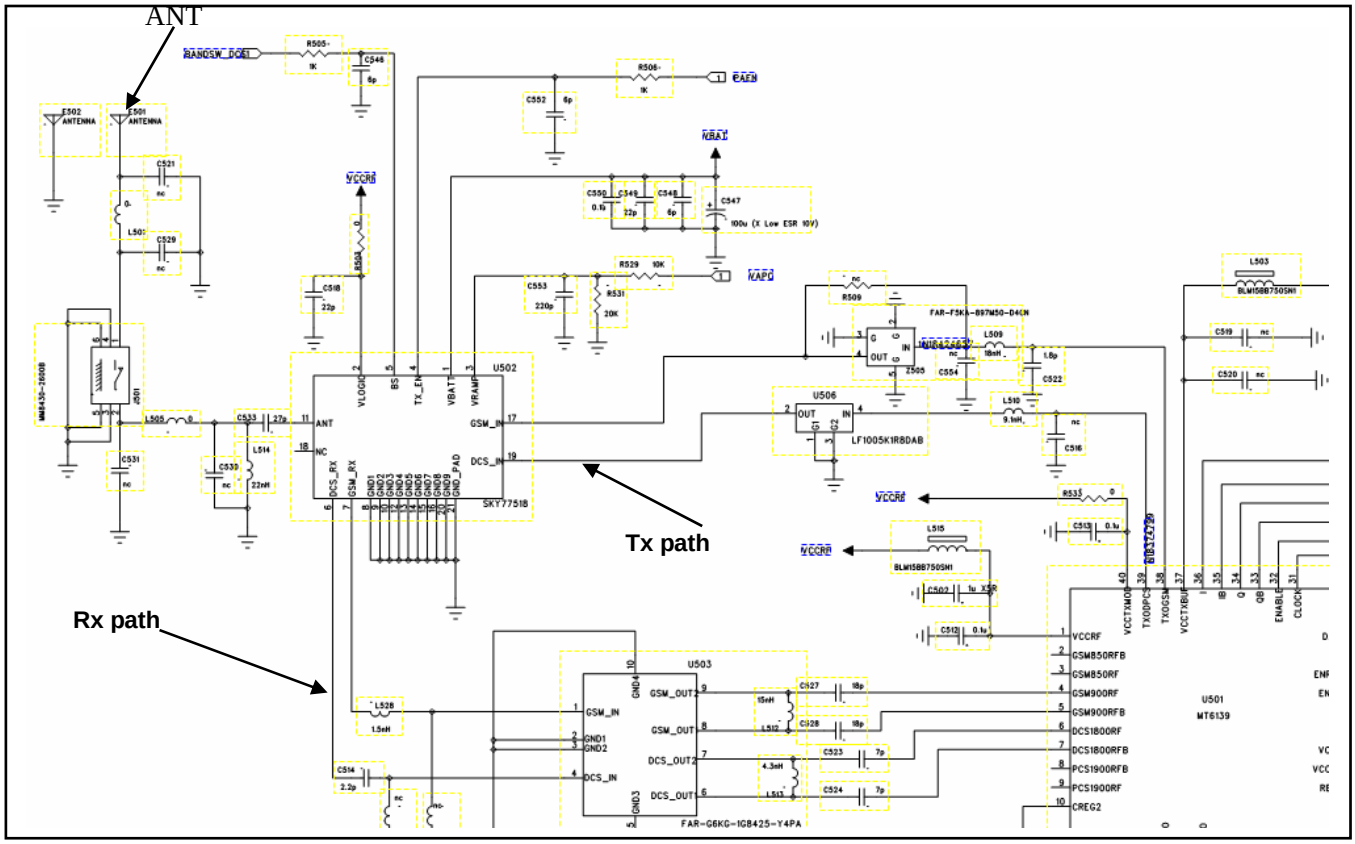
RF circuit

RF part generally means the analog RF and IF process system ,including Antenna system、TX path、RX path、Analog modem and Frequency Synthesizer .

RF Circuit deals with the RX and TX of wireless signal, with responsibility for the bidirectional transmission of speech and data between the MS and BS through the air interface. In detail RX part accomplishes the AGC amplifying, mix and demodulation of RF weak signal received from BS, The final signal output from RX part is the analog baseband I/Q signal. The final RX I/Q will be sent to Baseband Circuit for later disposal. On the other hand TX part deals with the signal modulation, up-conversion mix and power amplifying of analog I/Q signal received from baseband, generating burst which meets the GSM specification. And then the bursts are transmitted to Base station through the antenna. The signal interface between

RF Circuit and Baseband is analog baseband I/Q signal. The performance of RF Circuit can directly affects the signal transmission quality of the mobile phone.

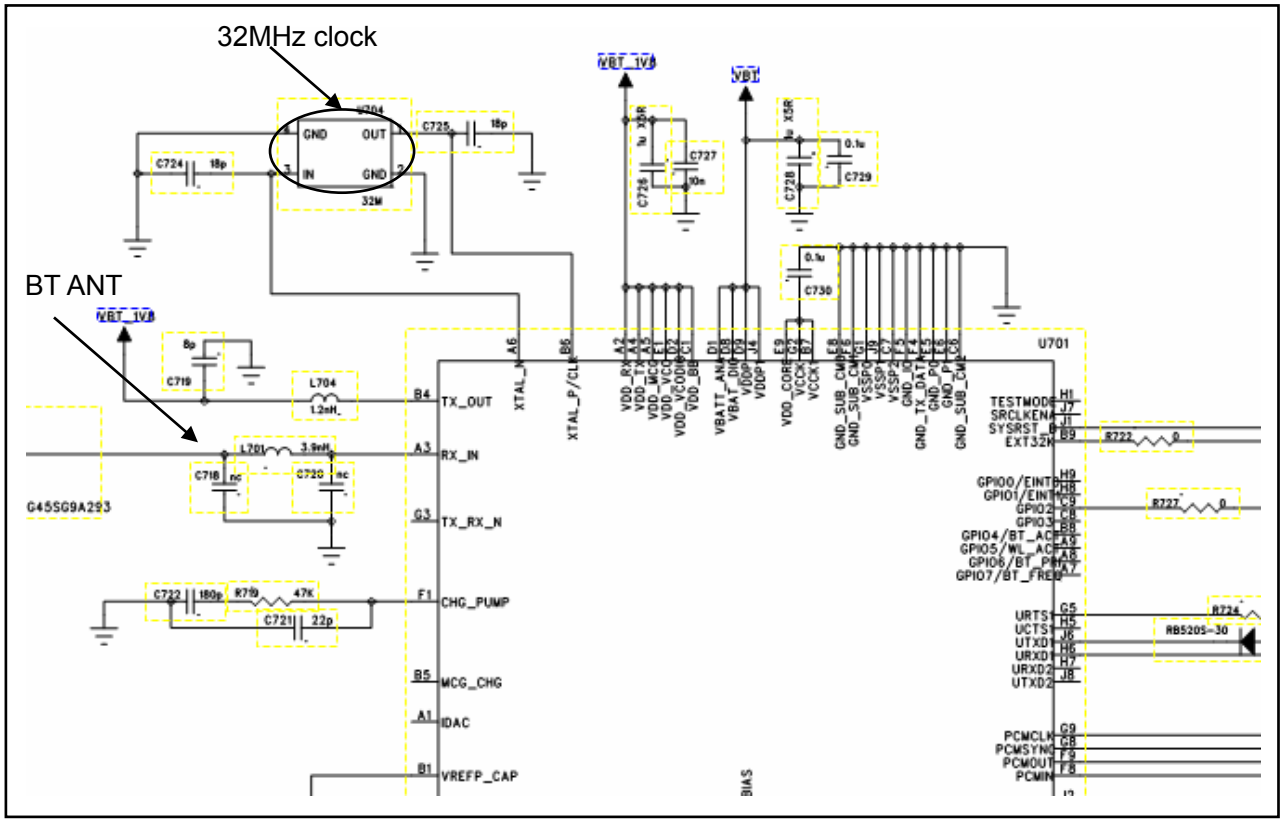
RF PA adopts RF7161 chip, RF7161 is a high-power dual-mode amplifier module with internal power control. RPF88150B is used in the stage when GSM / GPRS dual-mode mobile phones amplify transmission array, the working frequency is from 824MHz to 915MHz and 1710MHz to 1910MHz. There is a input pin to realize the selection of frequency band. 6mm * 6mm chip package.



BT circuit

Bluetooth IC processor is MT6612BN/A..

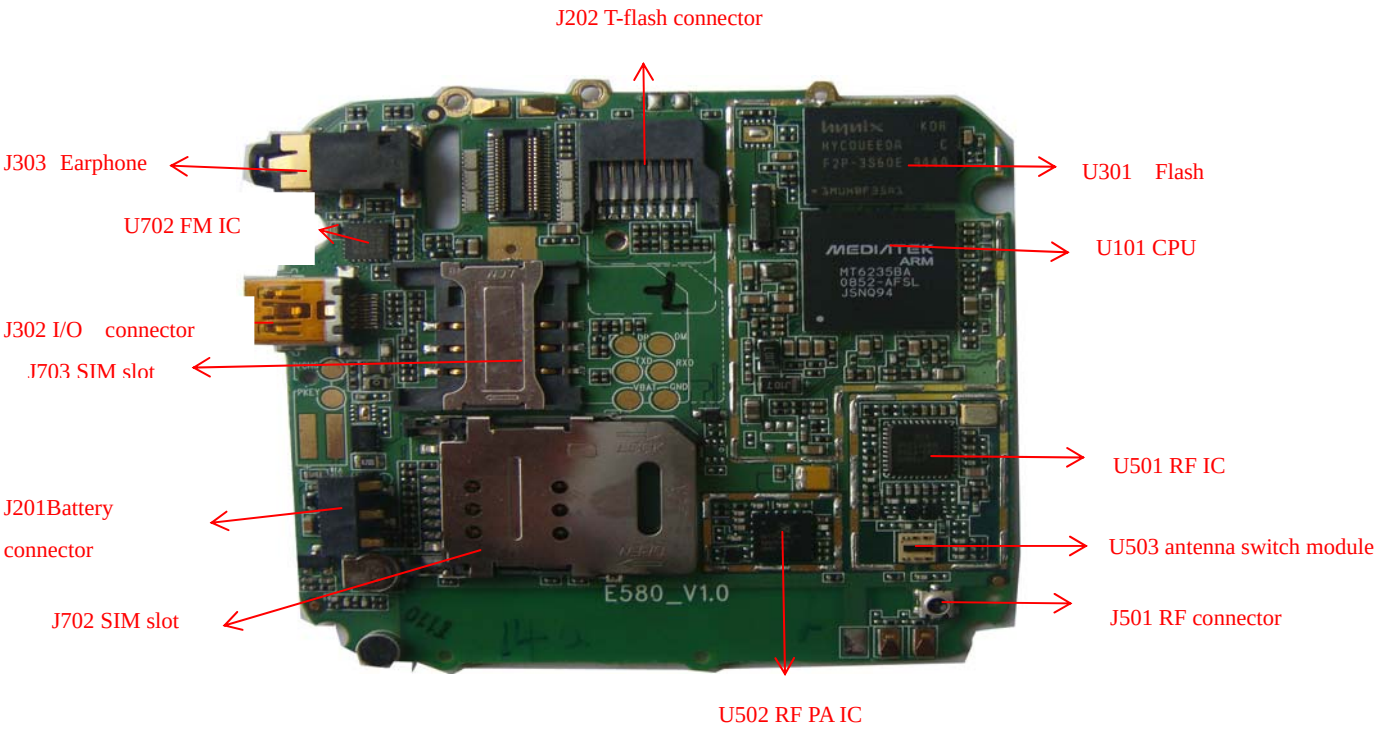
MT6612 is 5mm x 5mm 40-lead (0.5mm pitch) QFN, a high-integrated Bluetooth IC, including rich function and strong disposal capability, and high performance transceiver.



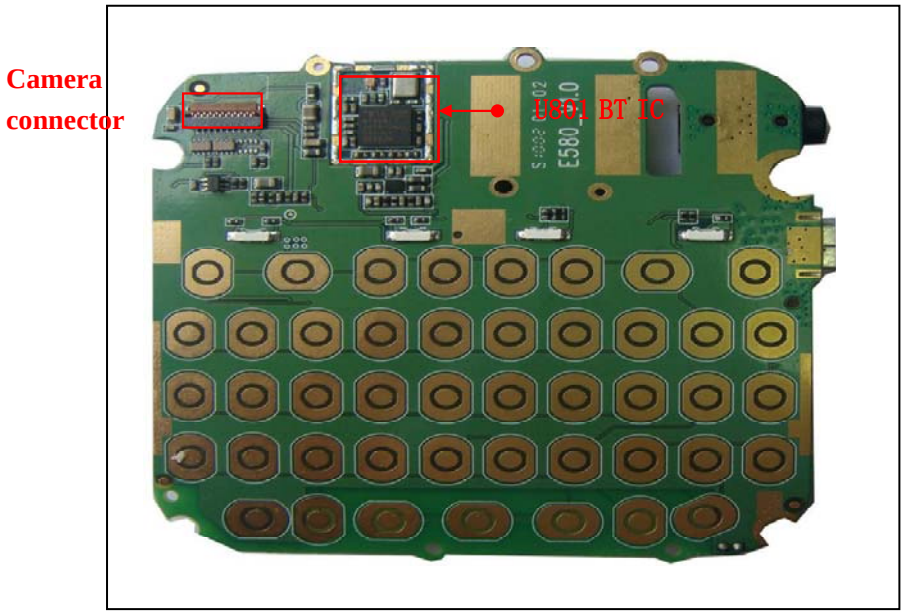
Chapter4

ACTUALL BOARD

SIDE A



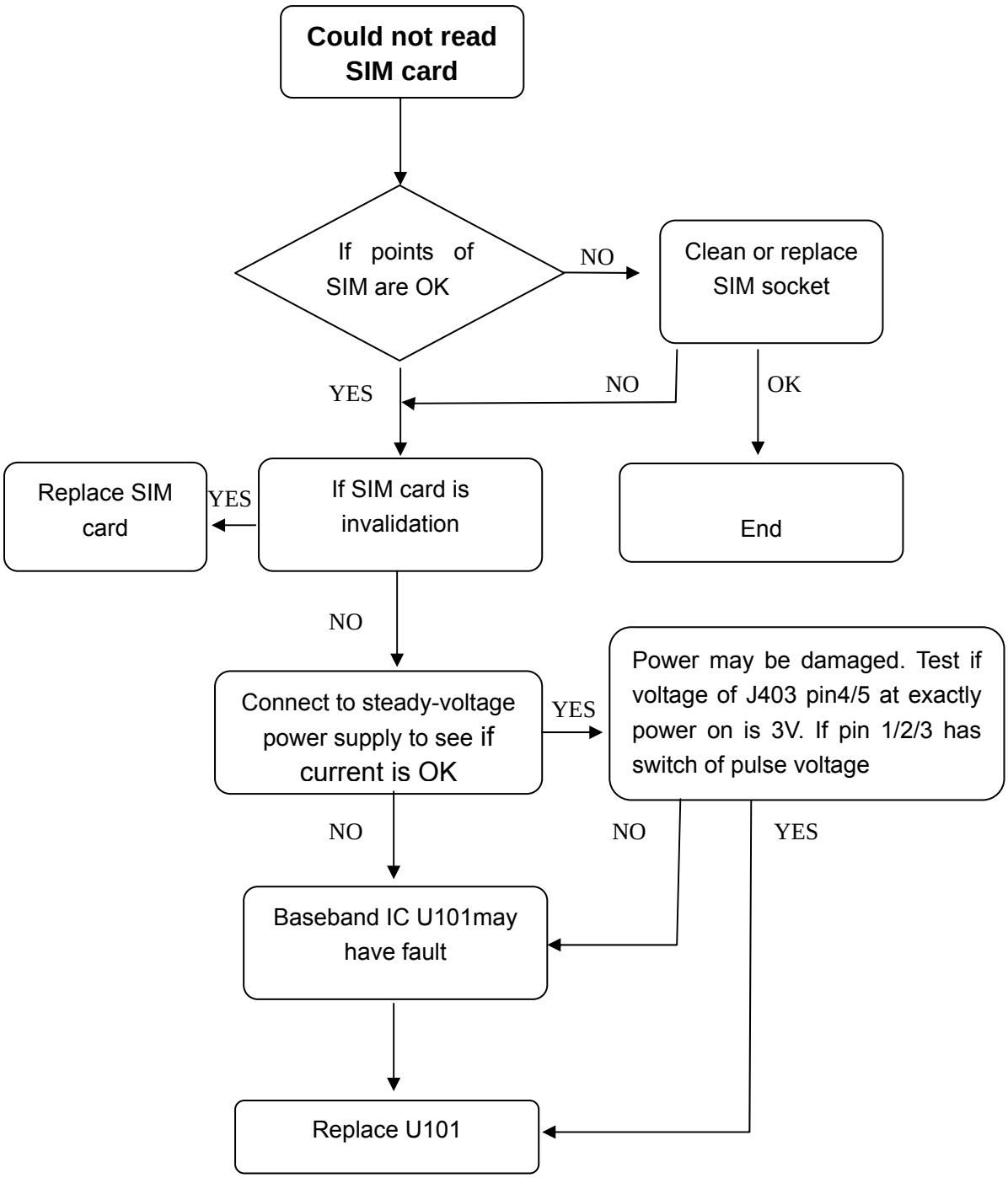
SIDE B



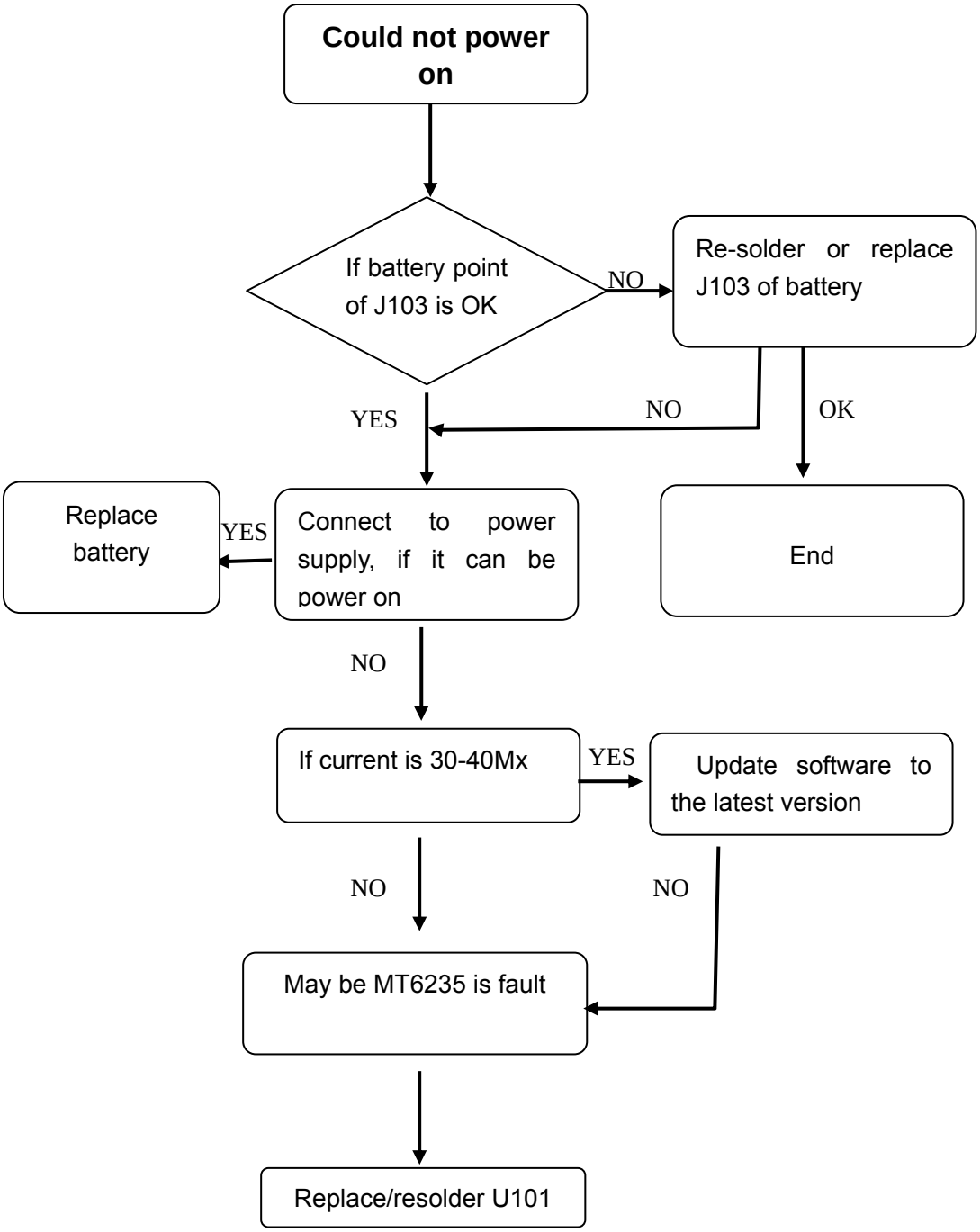
Chapter5

TROUBLE SHOOTING

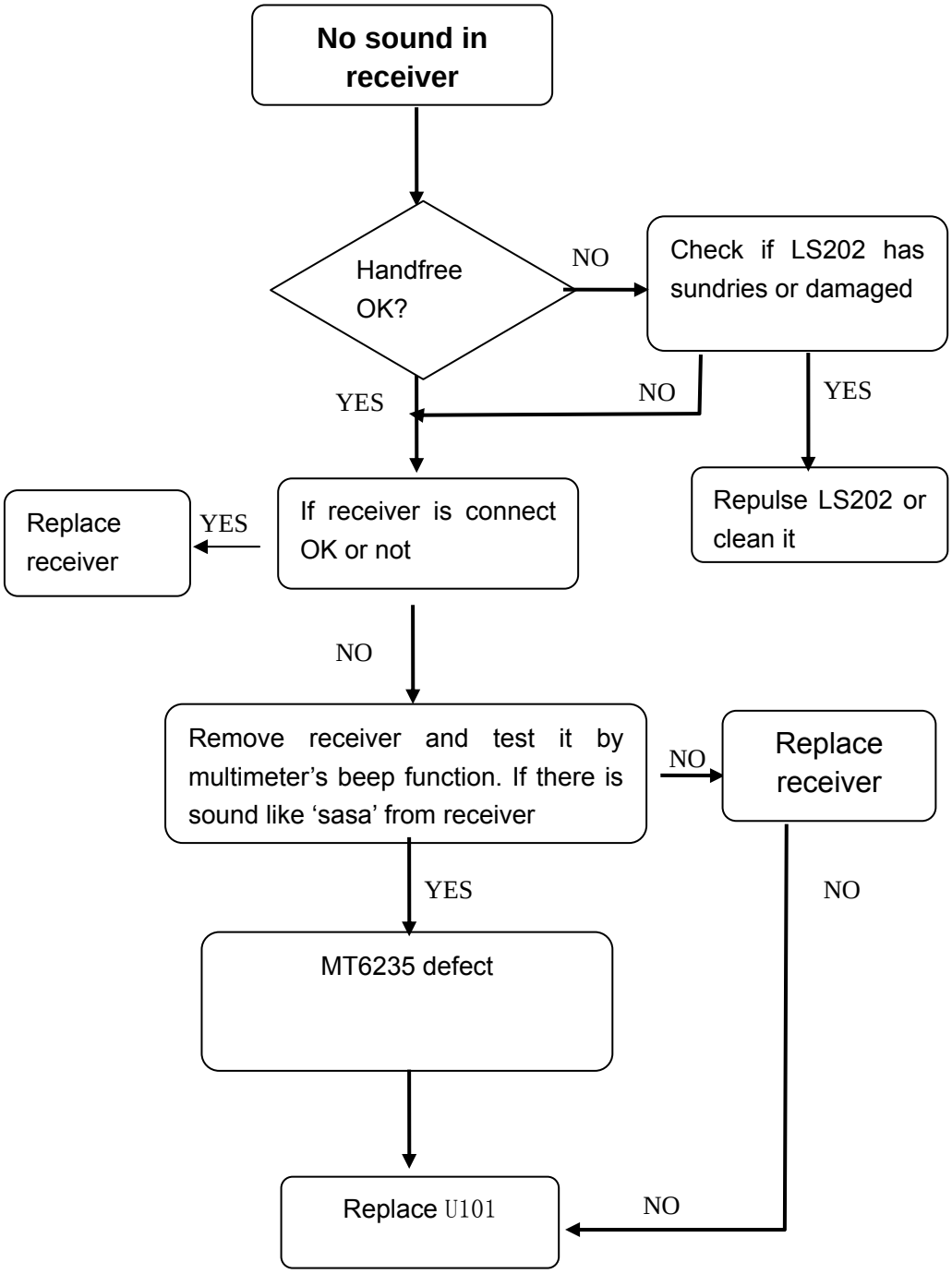
Test flowchart of SIM card



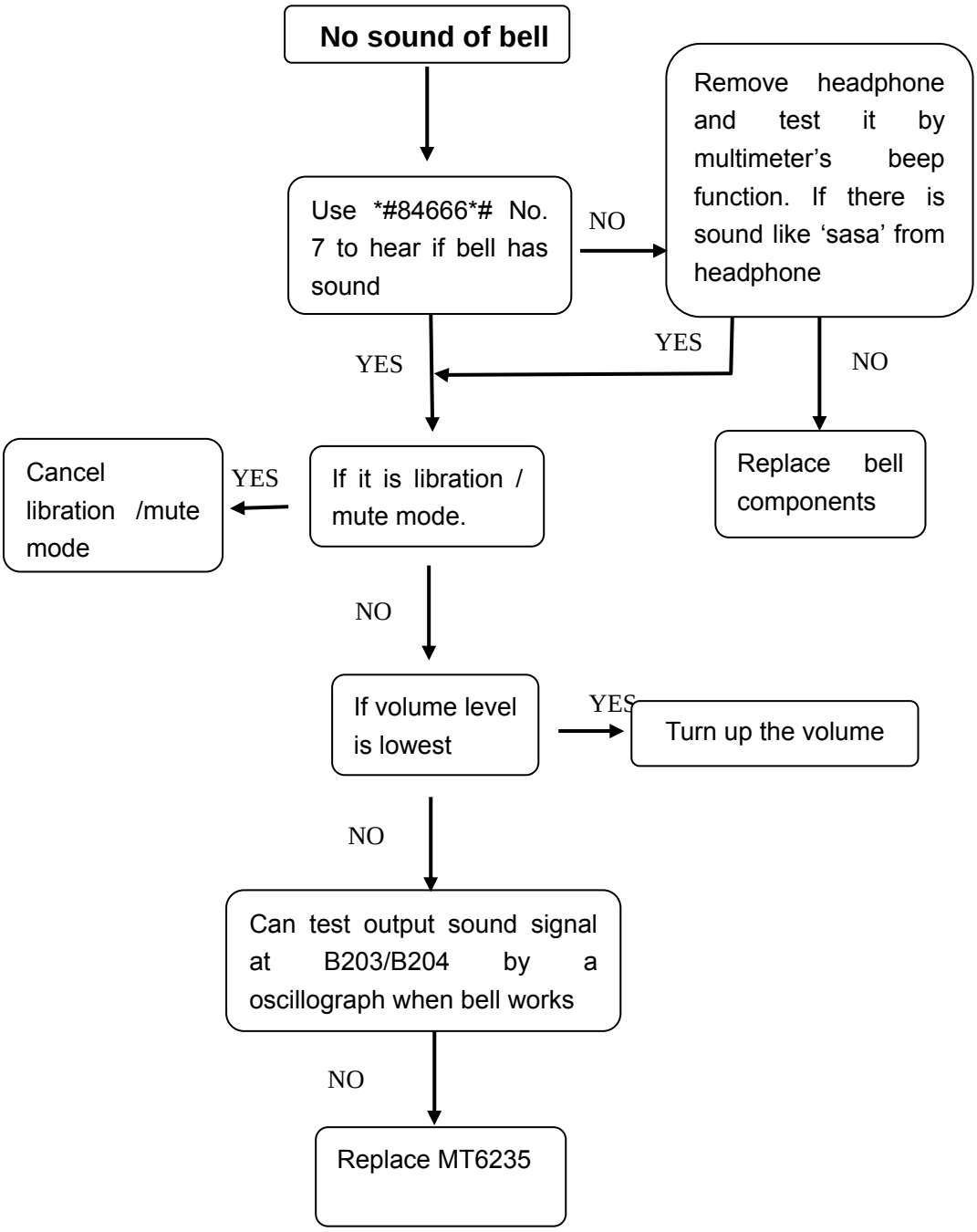
Test flowchart of can not power on (for master)



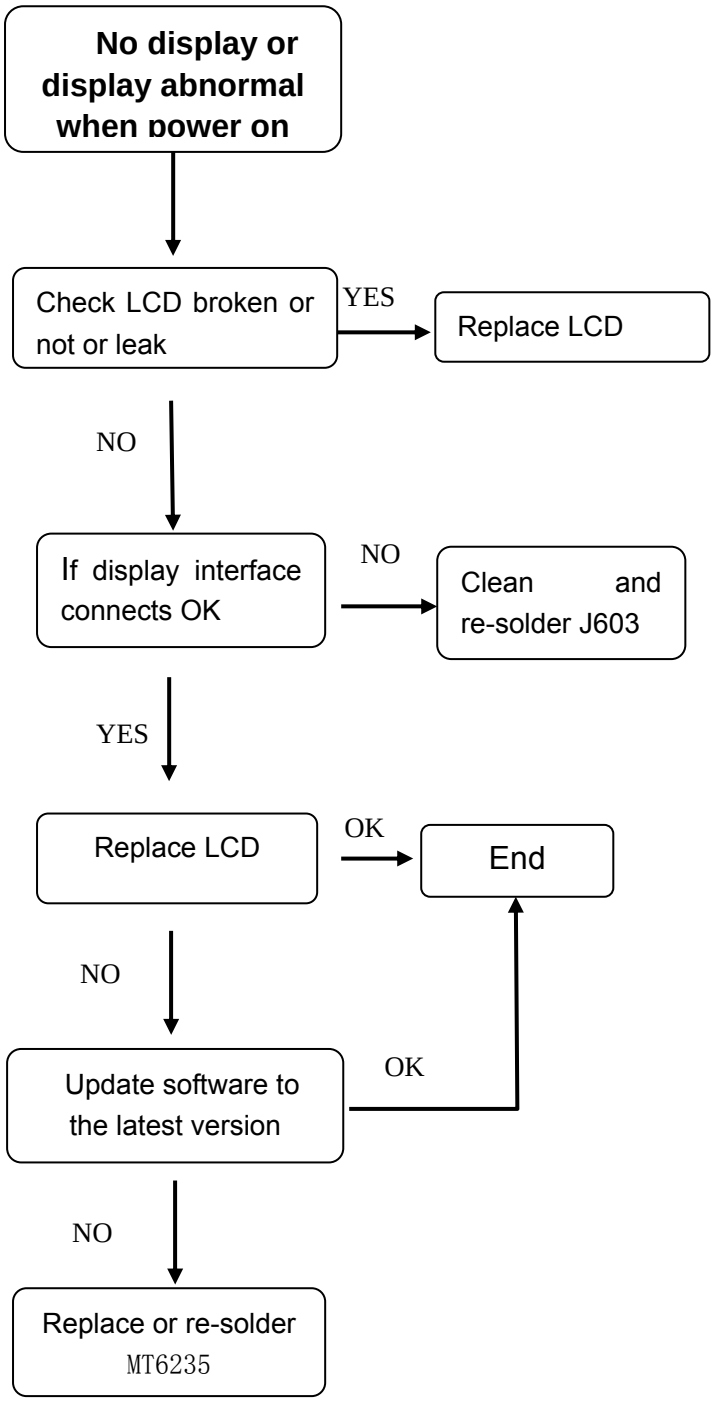
The test flowchart of receiver



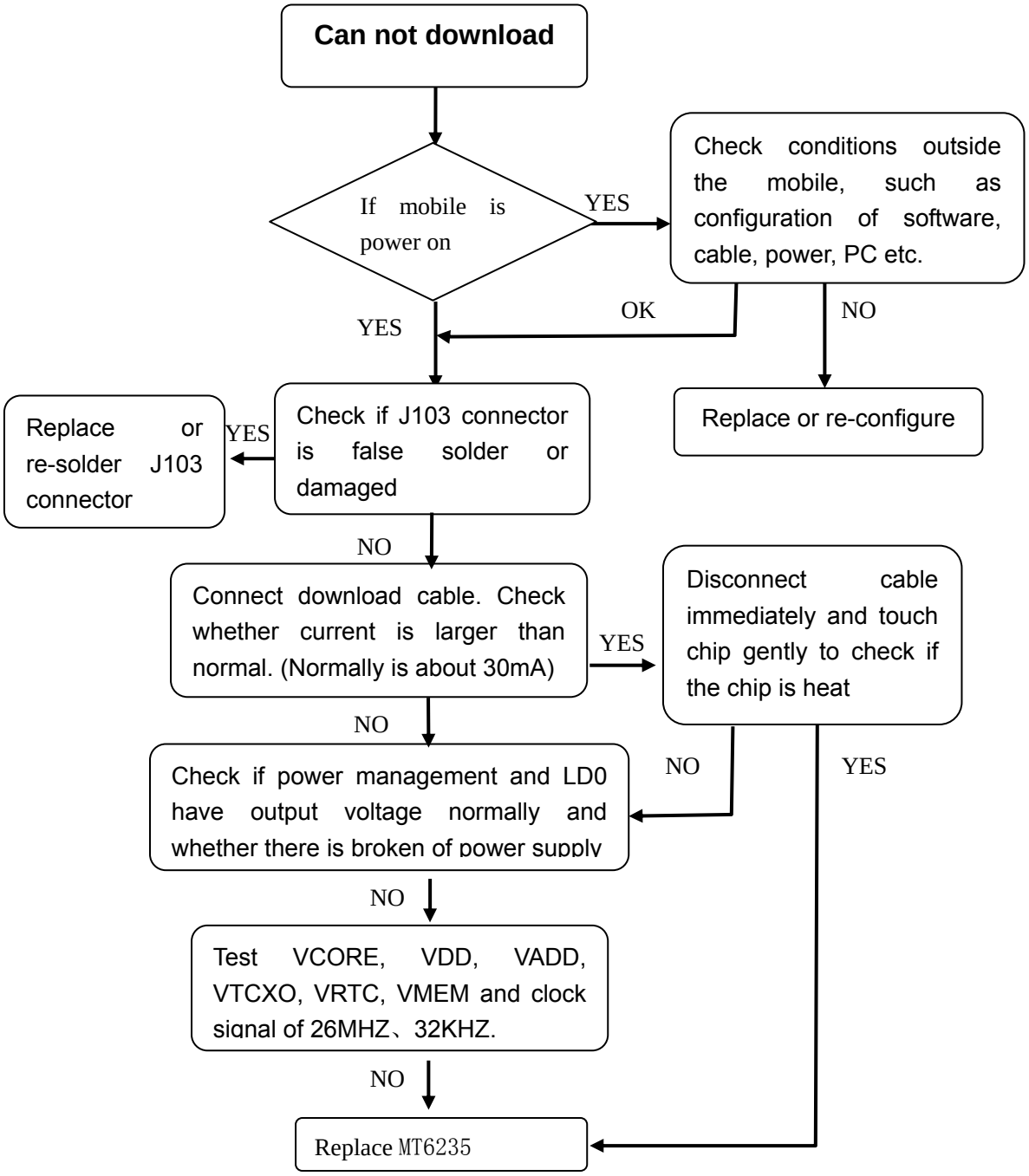
Test flowchart of incoming call with no ring.



Test flowchart of no display or display abnormally.



Test flowchart of download failed

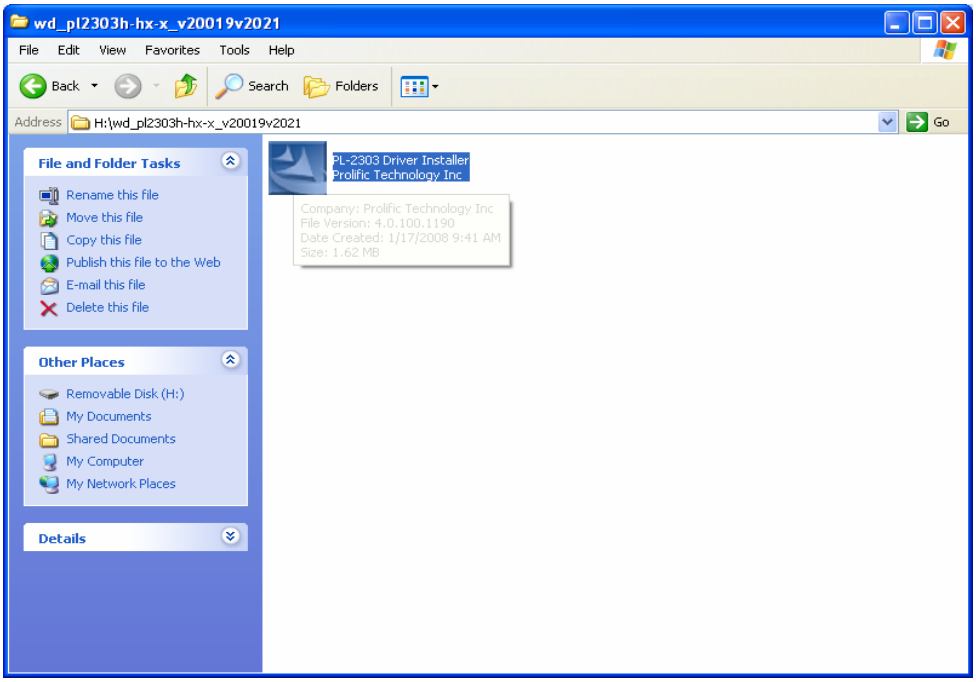


Chapter6

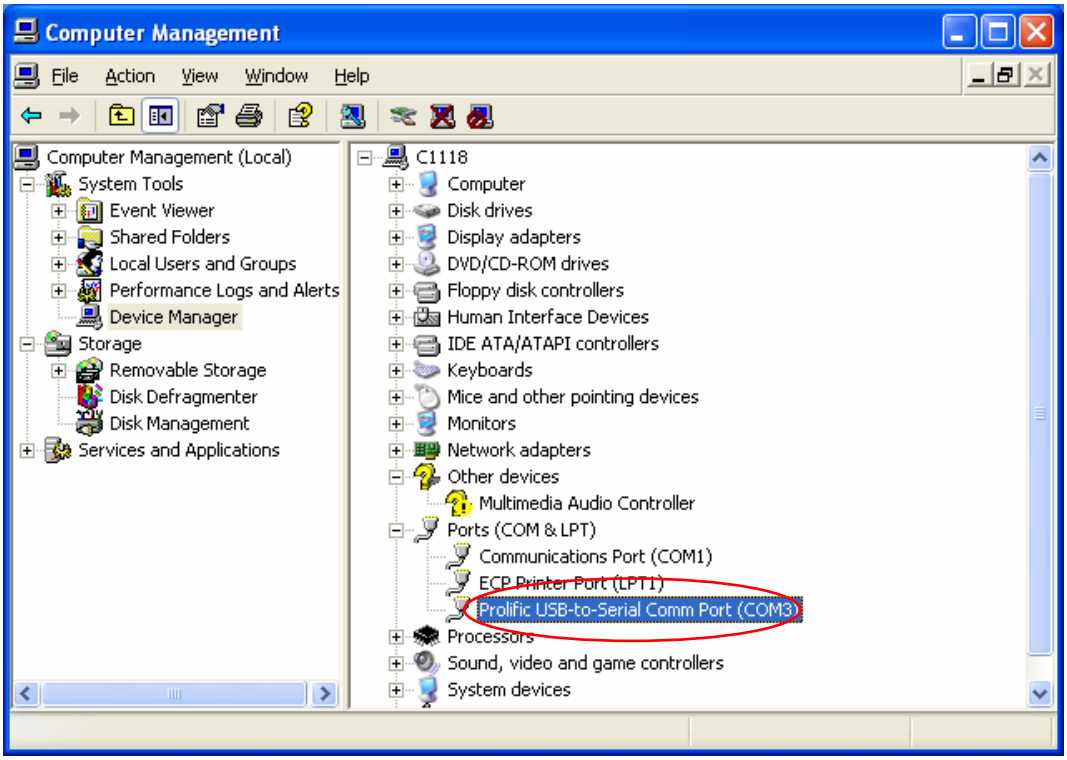
Instruction of SW update

1. Install the USB driver 

without the USB cable plugged into the computer.



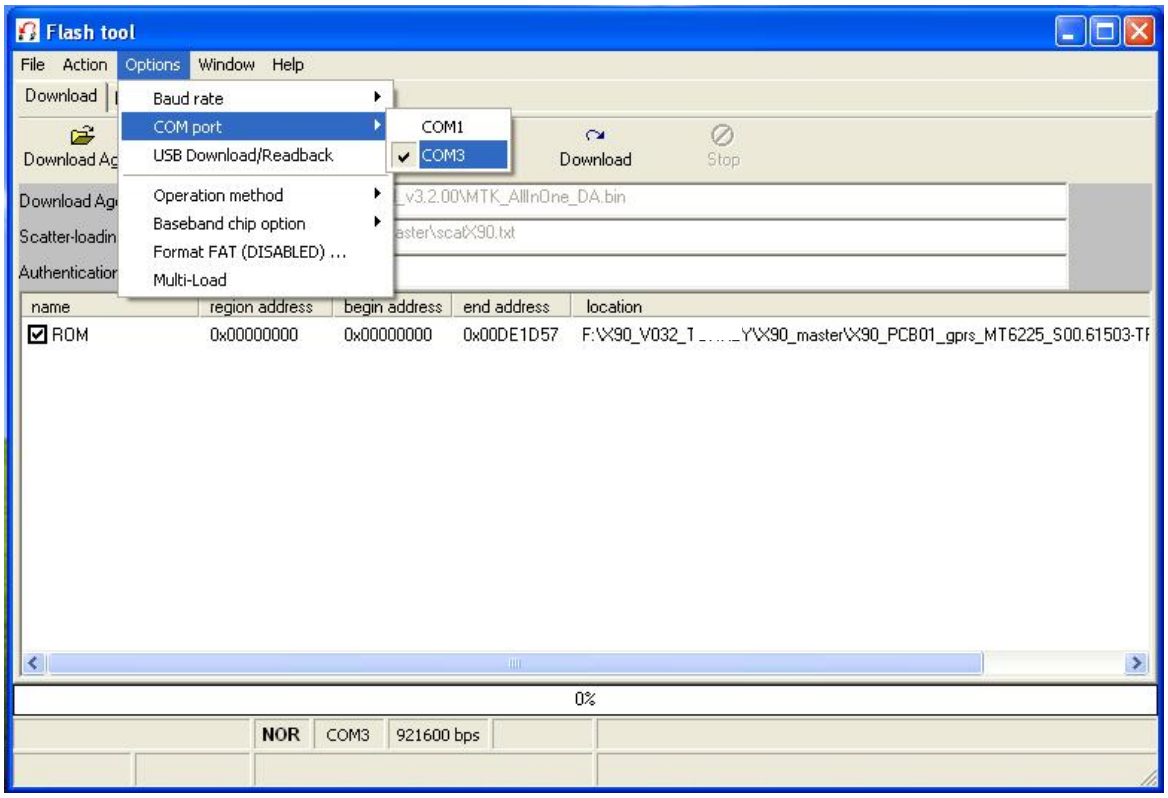
2. After it is ok, plug the cable then check the device manager as the picture below:



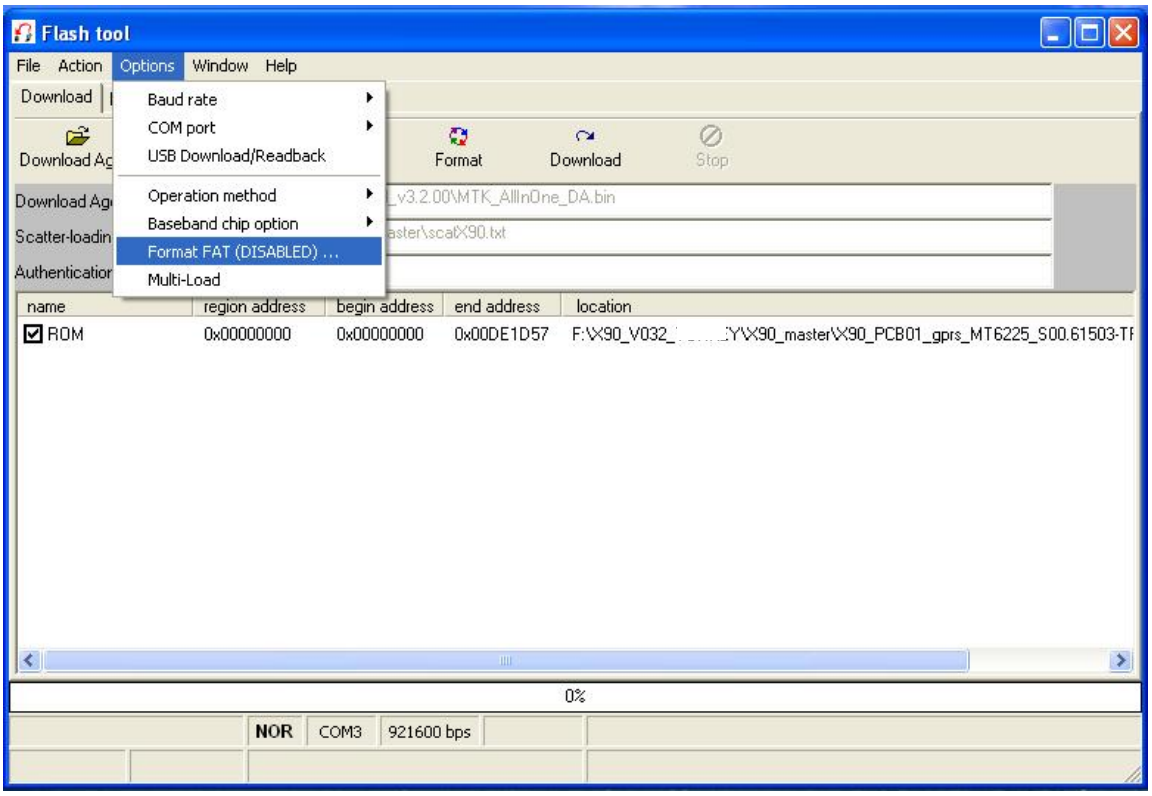
3. Open SW updating platform FlashTool_v3.0848.00

Double click the icon 

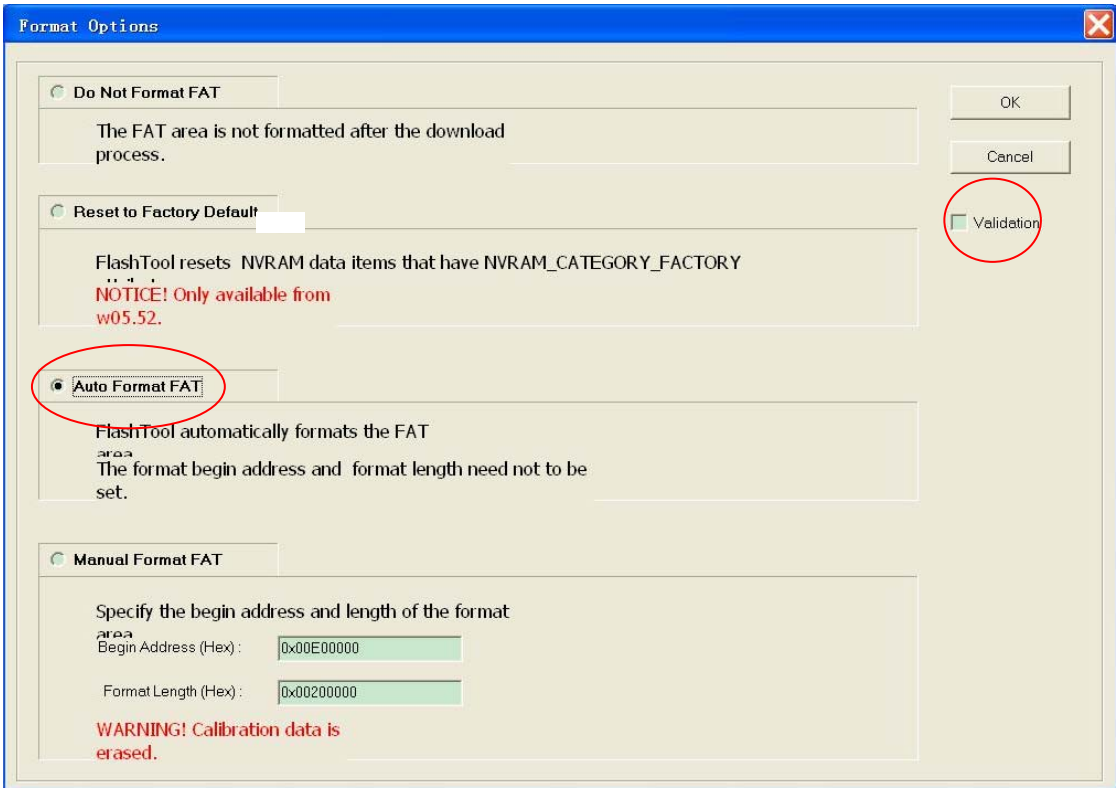
FlashTool. Choose the port which the cable be connected to the computer.



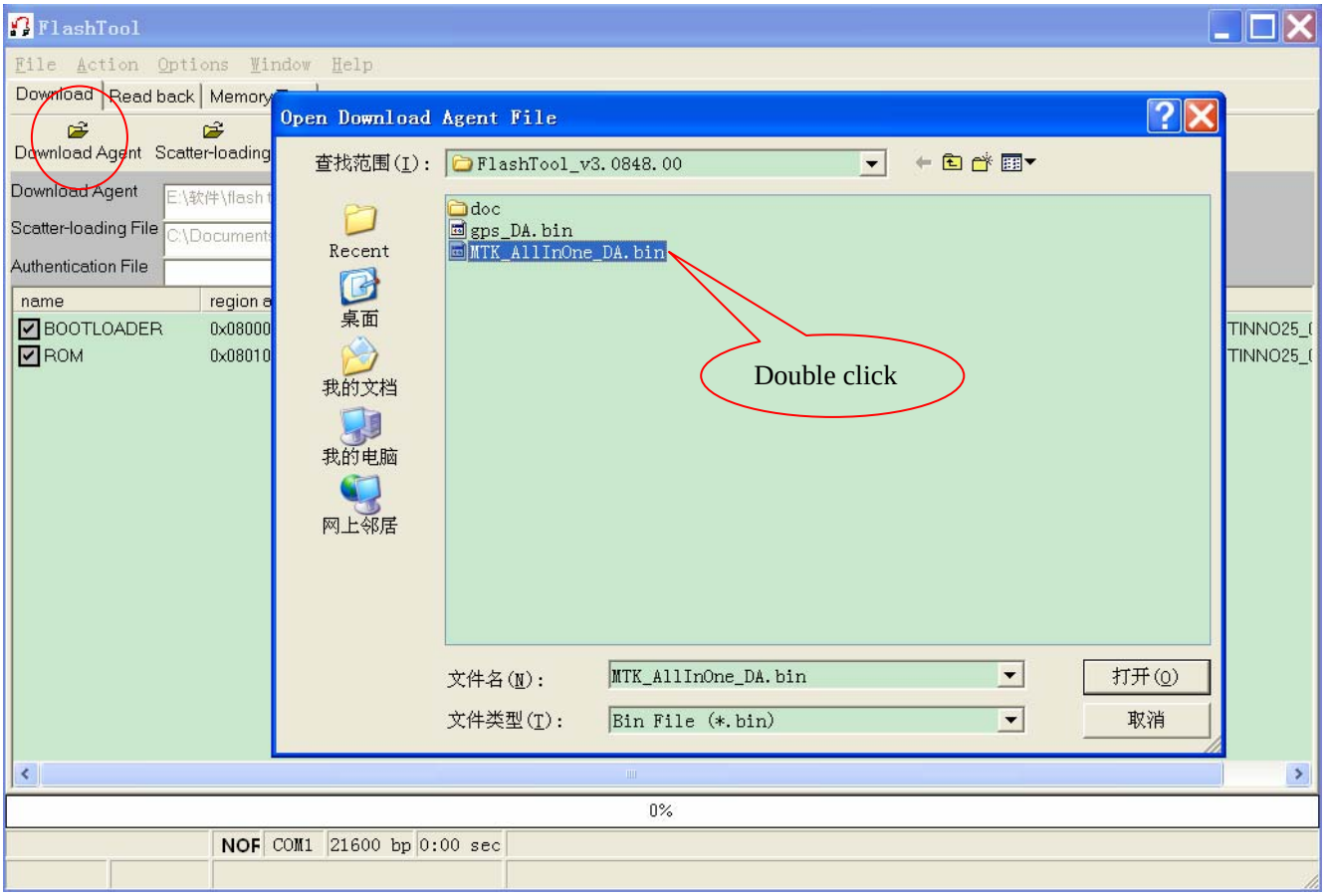
4. Select Format FAT (DISABLED).



5. Choose “Auto Format FAT”, and don’t select “Validation”.

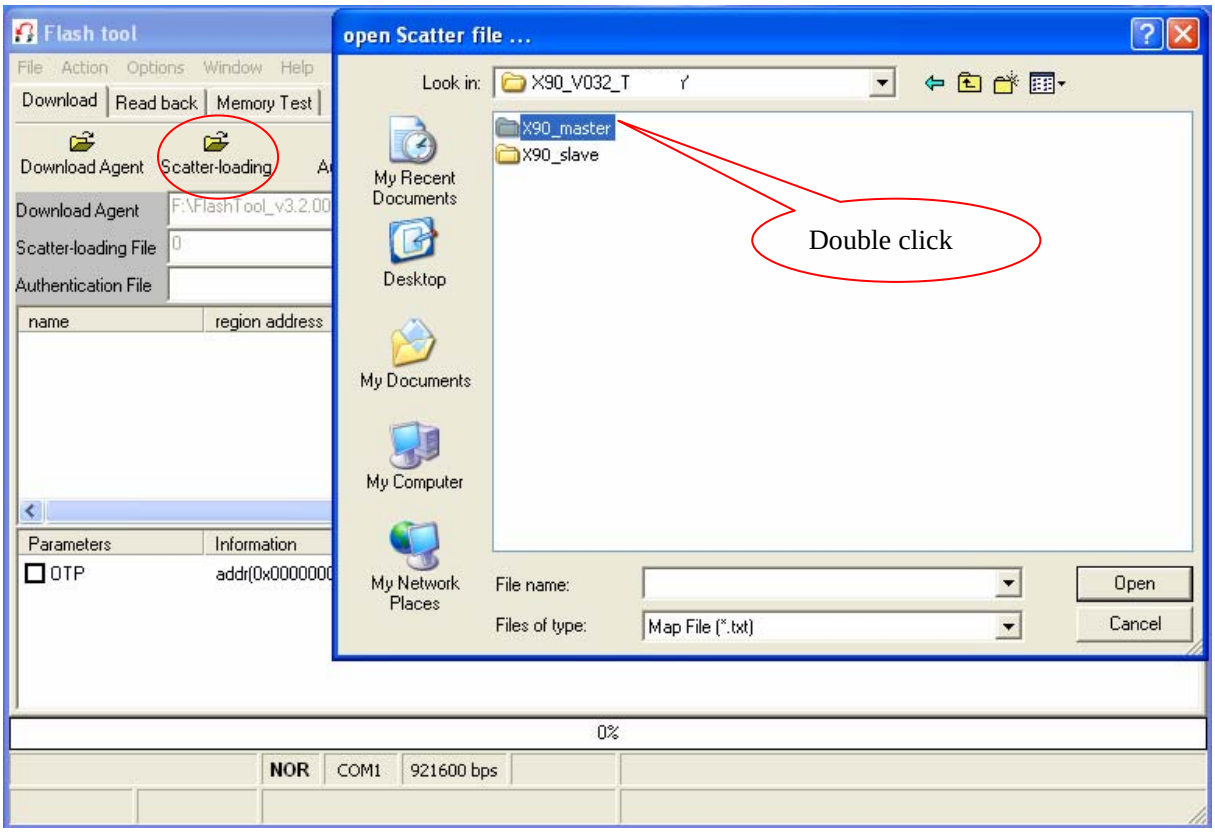


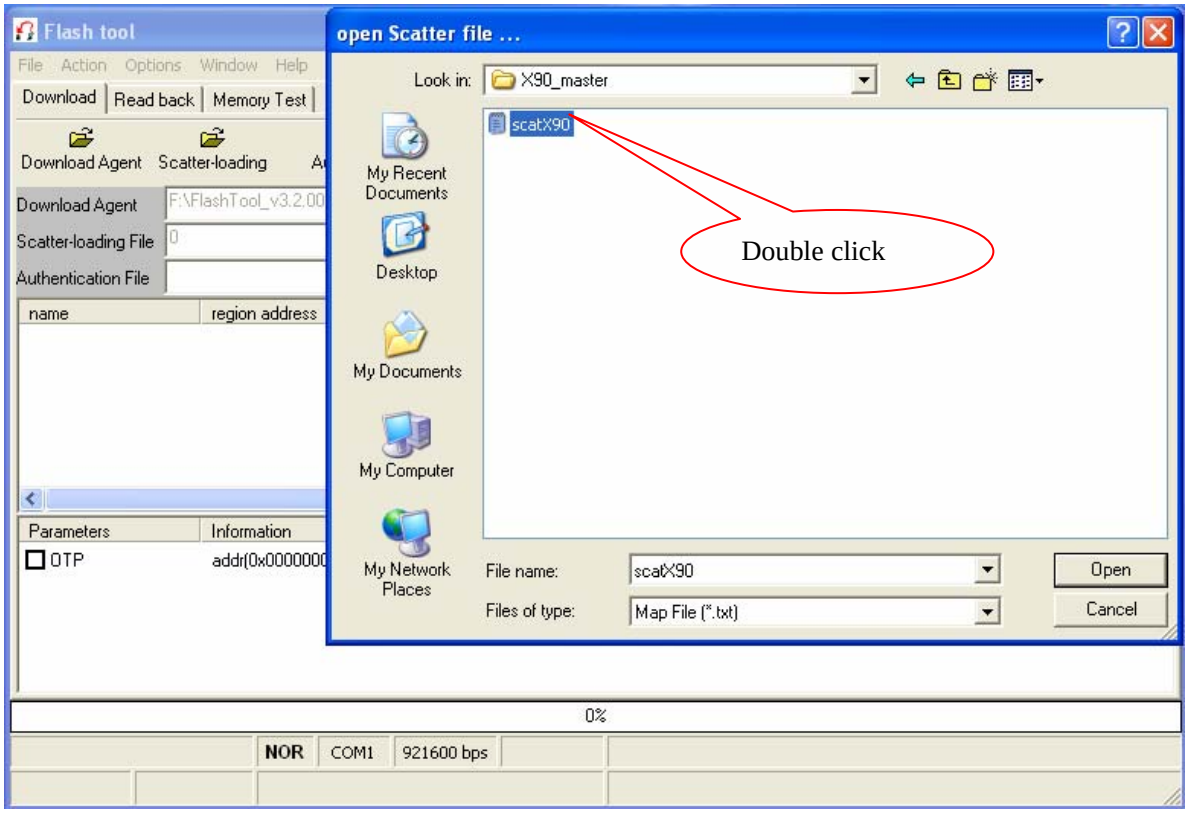
6. Click “Download Agent” to transfer “MTK_AllInOne_DA.bin” file.



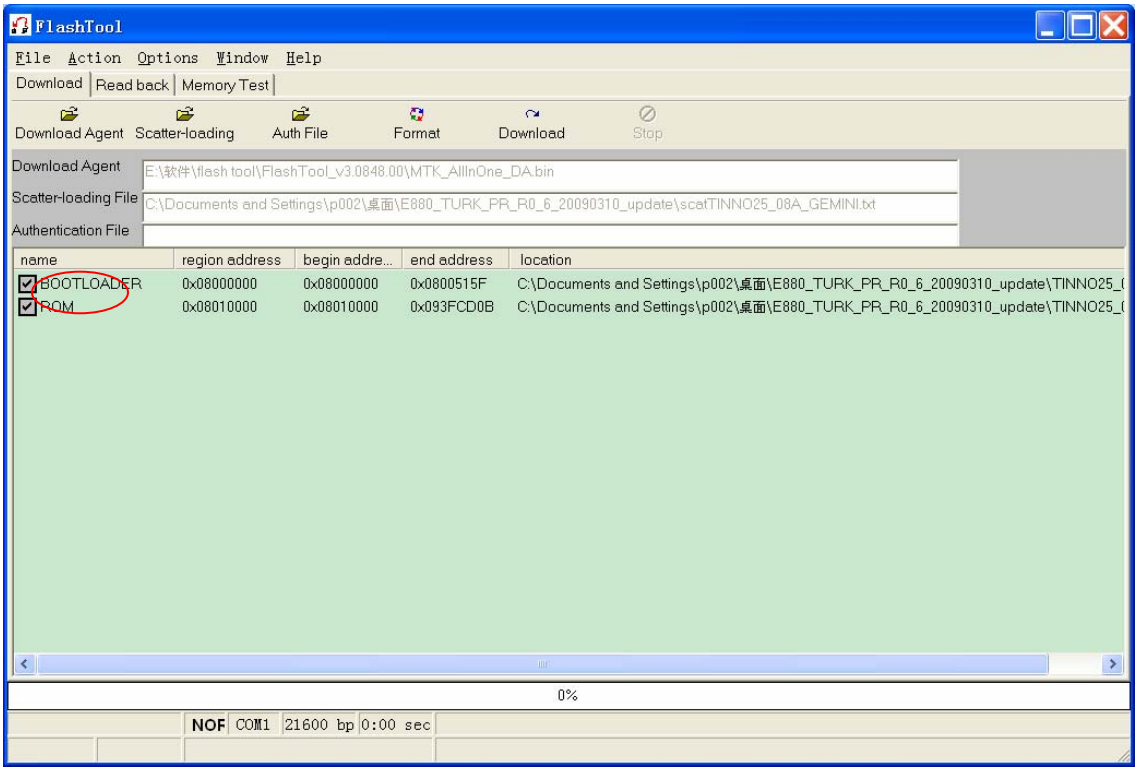
7. Update with the update cable. (The actually file name please refer to your software)

(1) As showed bellow, click “Scatter-loading” to transfer “****.txt” file in the folder of the new software.

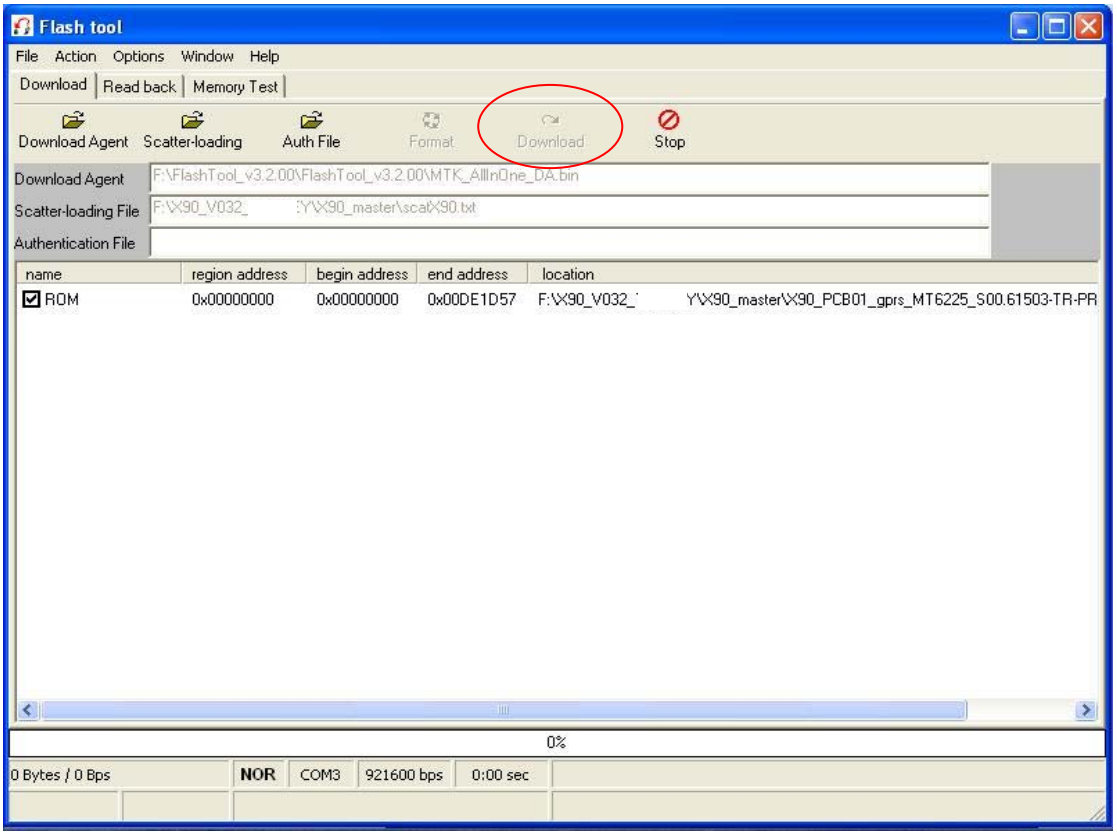




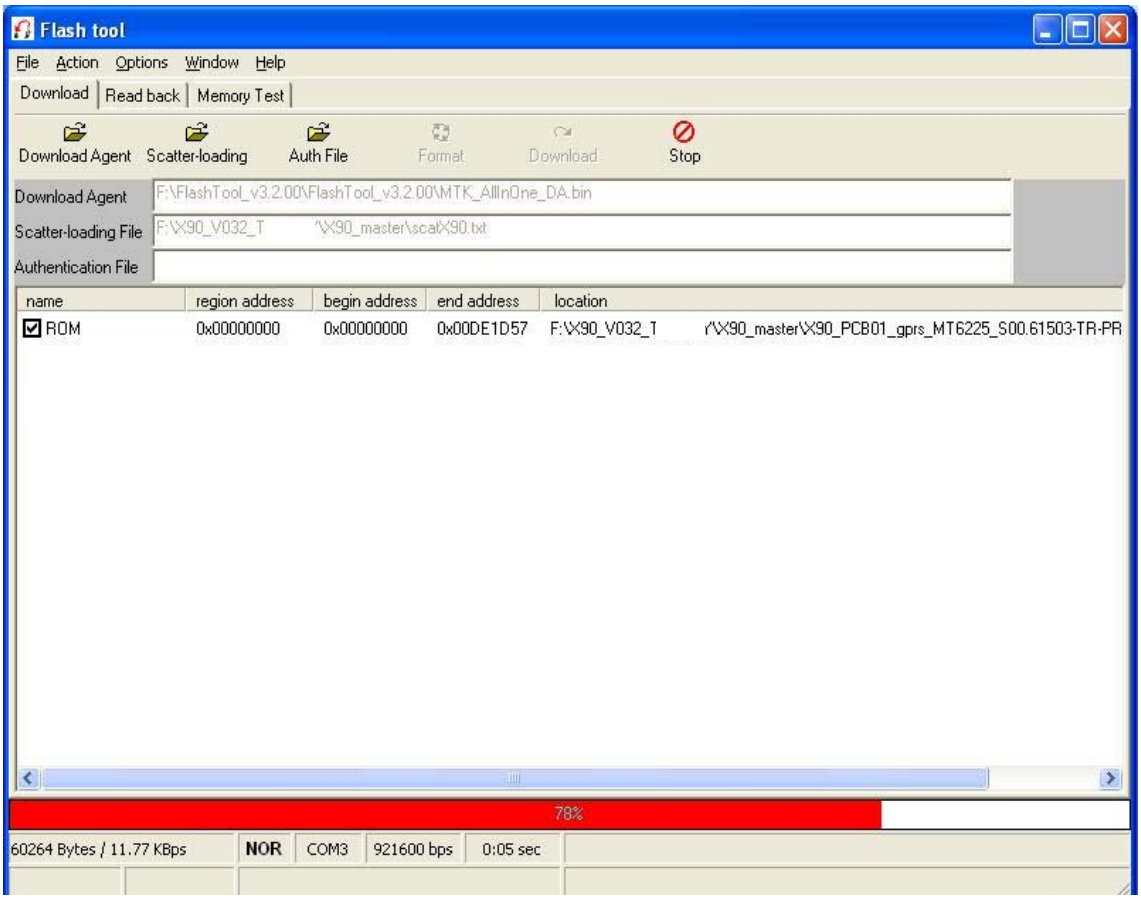
(2) Here, ROM/Boot files can be selected automatically. Don't need to choose.



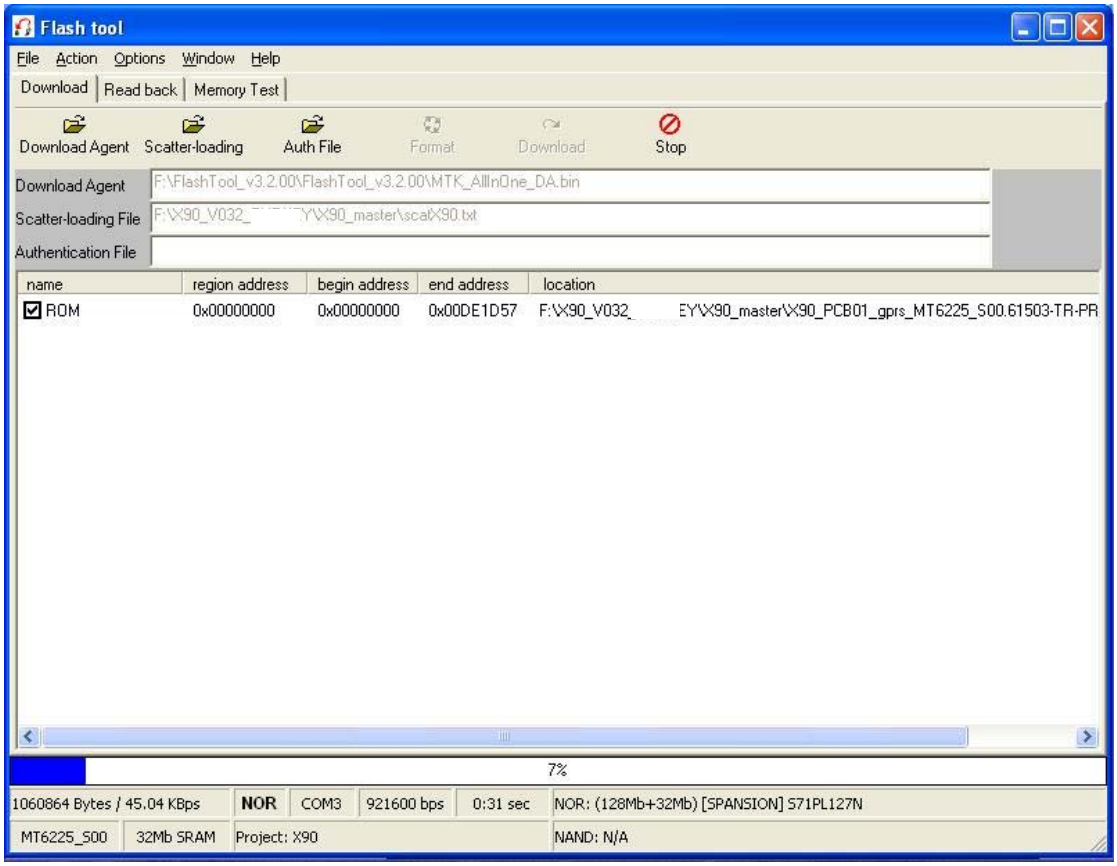
(3) Making sure the phone is powered off and the battery is taken out. Click "download", then link the cable for the master to the phone, insert the battery and keep pressing the power-on button for a while, soon the red progressing bar will occur. Blue progressing bar appears after the blue one. Then an icon occurs to show the finish of downloading.



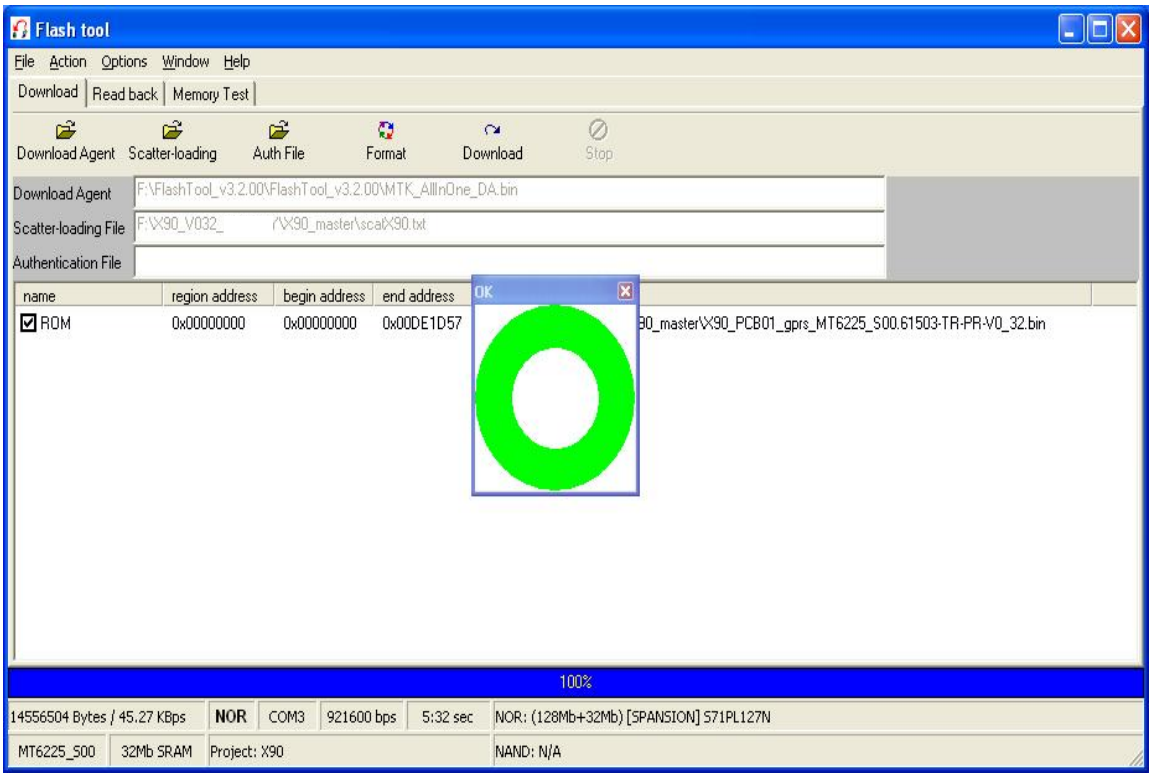
(4) As showed the phone is checked.



(5) As showed the software is written in.



(6) This icon shows the finish of the downloading.



Chapter7

FUNCTION TEST

Press “#84666*#” to check these items in stand by mode:

1. Version: to check the version of the software

2. Echo Loop: blow to the mic, the receiver will have a sound

3. Key: press relevant keys appear in the screen

5. Libration: The cellphone will librate

6. Lond SPK: there will be a sound from the speaker

7. Ring: press start there will be some music from the speaker

8. LED: press confirm button to check if LED is normal

9. LCD: LCD will Auto Display

11. Receiver: there will be a sound from the receiver

Camera ->Menu -> Camera-> to test if the camera is available or not

Chapter8

PARAMETER SETTING INSTRUCTION

China mobile as an example, other countries please inquire the local operator

1. WAP parameter setting instruction

1) Data Account Process: Menu→Services→Data Account

GSM Data: Account Name: (default)
Number: 17266
User Name: WAP
Password: WAP
Line Type: ISDN
Speed: 9.6 Kbps
DNS: 010.000.000.172

GPRS: Account Name: (default)
APN: cnwap
User Name: WAP
Password: WAP
Auth. Type: (default)

2) WAP setting process: Menu→Services→WAP→Settings→Edit Profile

Edit Profile: Rename Profile: Optional
Homepage: http://monternet.com
Data Account: GSM/GPRS
Connection Type: HTTP (Proxy Address: 010.000.000.172)
Username: Optional
Password: Optional

After setting as above, the WAP is ready.

2. MMS parameter setting instruction (Premise is WAP is valid)

Setting process: Menu→Messages→MMS→Message Settings→Server Profile→Edit profile

Edit Profile: Rename Profile: Same as WAP Profile name
Homepage: http://mmsc.monternet.com
Data Account: Same as WAP Data Account
Connection Type: Same as WAP Data Account
Username: Optional
Password: Optional

After setting as above, the MMS is ready.

3. Email parameter setting instruction (Premise is WAP is valid)

1) GPRS setting process: Menu→Services→Data Account→GPRS

Edit Profile: Account Name: Optional
APN: cmnet

2) Email Profile setting process: Menu→Messages→Email→Email Profile

A. Outgoing server: stmp.126.com (depend on the user's Email website)

E-Mail Address: Full E-Mail Address of the user's

Password: Password of the use's E-Mail

B. Incoming server: pop3.126.com (depend on the user's Email website)

E-Mail Address: Full E-Mail Address of the user's

Password: Password of the use's E-Mail

After setting as above, the MMS is ready.

Chapter9

CATCHER INSTRUCTION

General: The figures in this document help to understanding, and they may not be exactly the same as showed in your computer. Contact us please when you have any queries.

1 Install the USB driver if not yet.

1.1 Run the USB driver 

without the upgrade cable plugged into the computer.

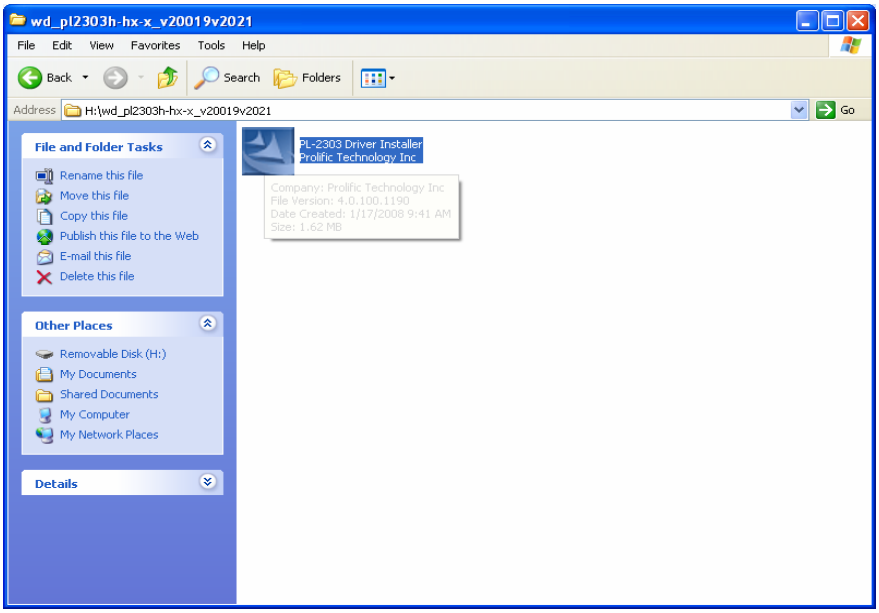


Figure 1

1.2 After the installation is completed, plug the upgrade cable into the computer's USB connector, and then check the device manager as in figure 2:

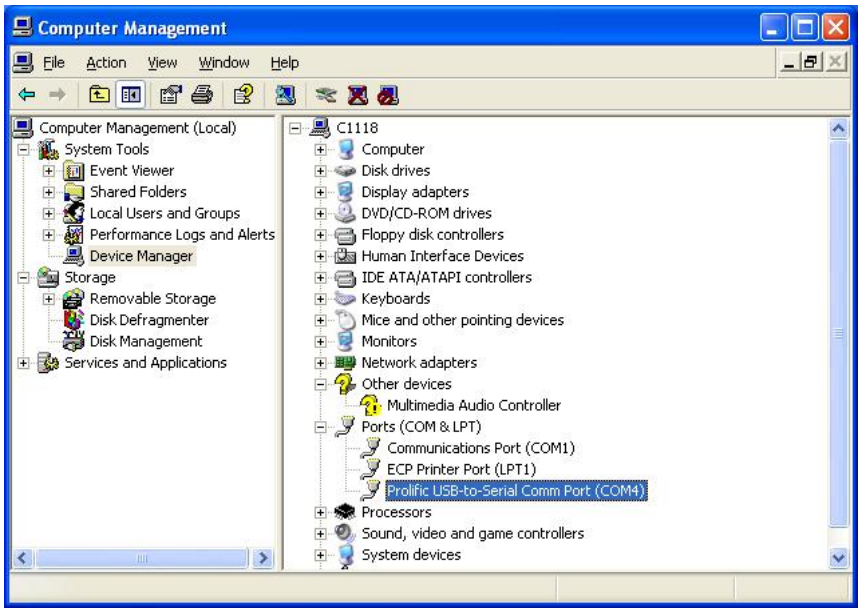


Figure 2

2 set the phone to prepare for using Catcher.

Open the phone and input "*#84666364*#" to enter the setting screen. In sequence enter DEVICE, UART, and TST config. Choose UART1 and Clink done, and then the phone restarts. After the phone restarts, power it off.

3 choose the Database of the phone's software.

3.1 run "Catcher.exe", choose Config →.Set Database Path. The figures (figure 3, figure 4, and figure 5) occur in sequence as below.

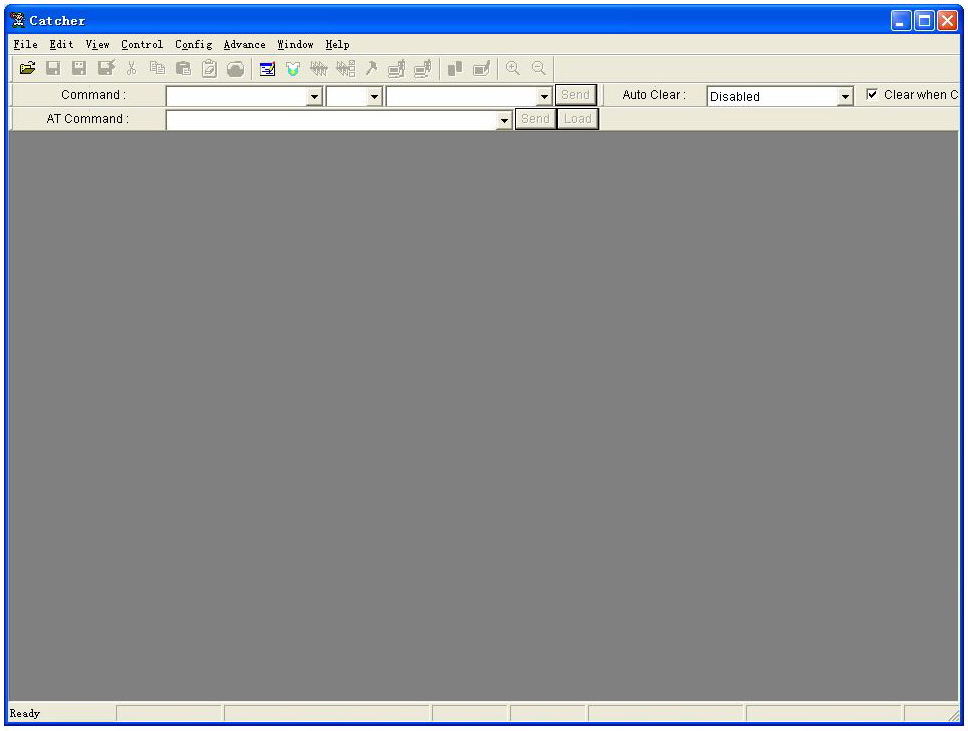


Figure 3

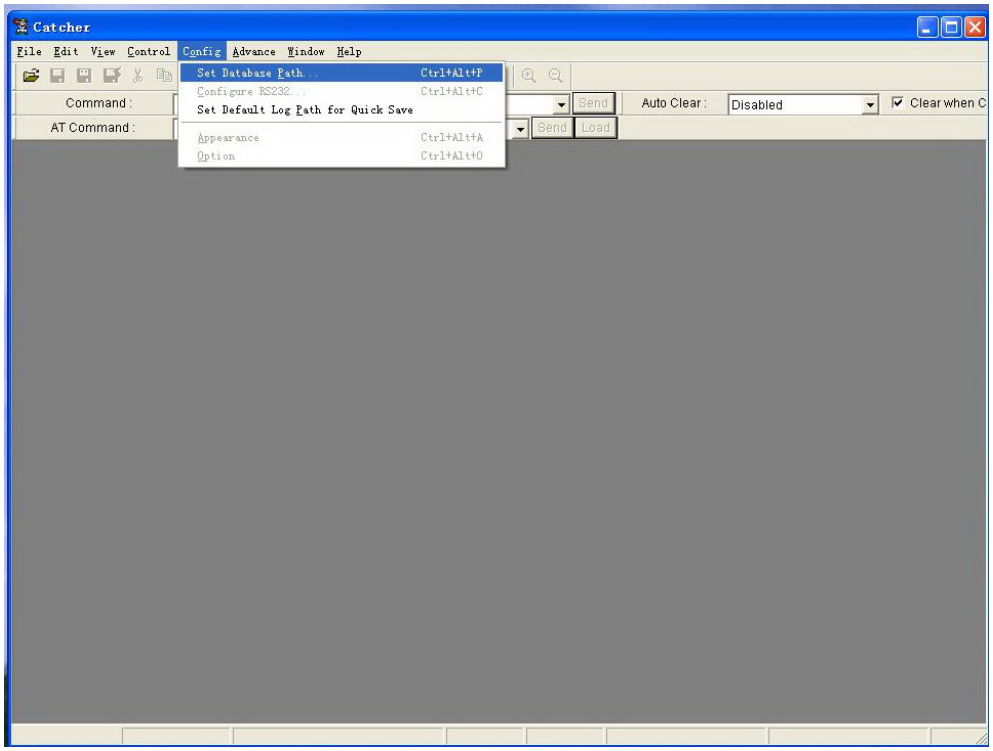


Figure 4

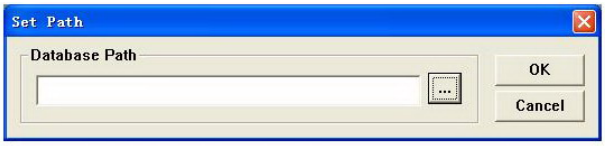


Figure 5

3.2 Clink the button "..." in figure 5 to choose the Database file of the master phone or slave phone (for example "BPLGUInfoCustomSrcP_MT6226M_S01_X6+_FLP_06_12_V3_2-TN-MP-5B-QN" file). Refer to figure 6 showed as below:

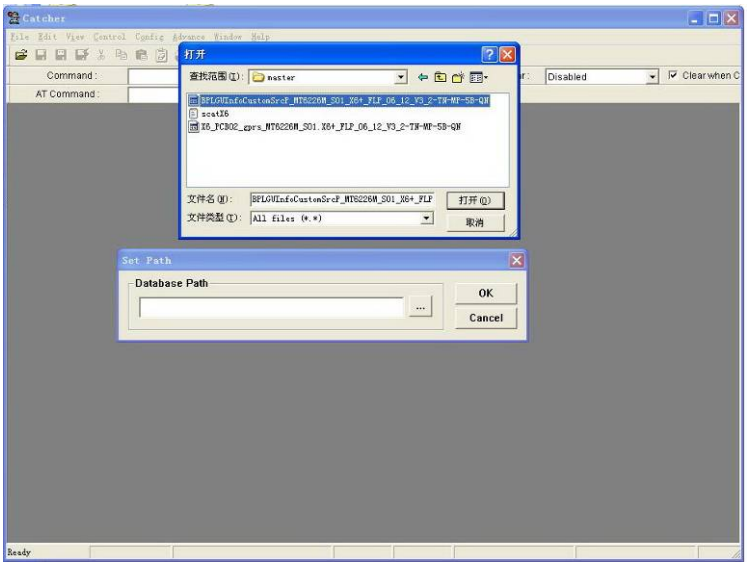


Figure 6

When you examine the master phone's problems, choose the master phone software's database file, and when the slave phone's problems, the slave phone's database file.

The database in the phone must be exactly the same as the chose database for Catcher, or the figure 14 will occur when the Catcher work.

4 enter Logging mode and choose the right COM

4.1 clink the "Logging code" button in the red note in figure 7. Then figure 8 occurs.

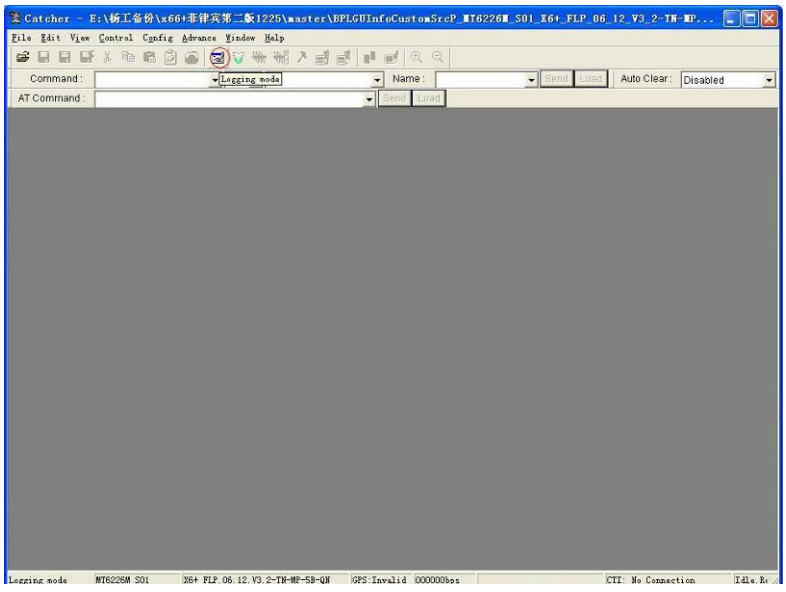


Figure 7

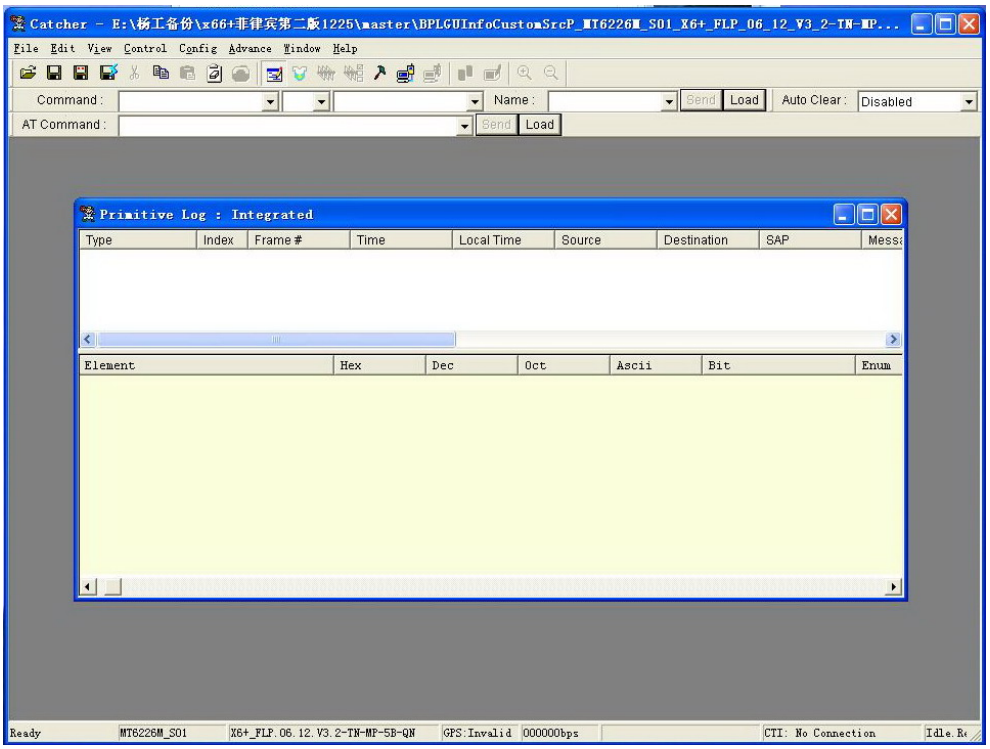


Figure 8

4.2 clink button “Configure RS232” in figure 9, then figure 10 occurs, choose the right COM in Port option, and clink OK.

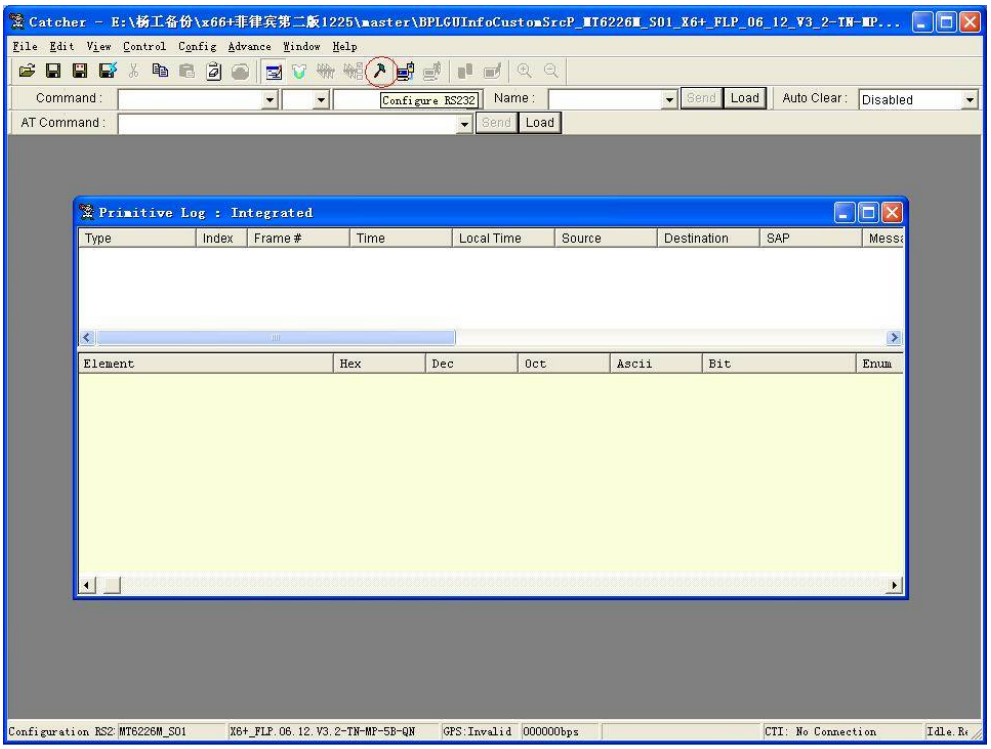


Figure 9

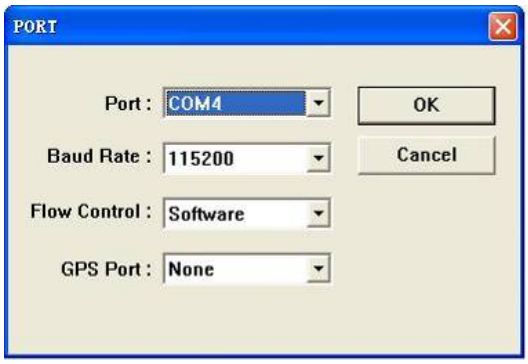


Figure 10

5 use the Catcher to record debug information

5.1 clink the button “connect” in figure 11, clink the button “Default Filter” in figure12, select “Field Trial” button in figure 13, and then clink “set” in Figure13.

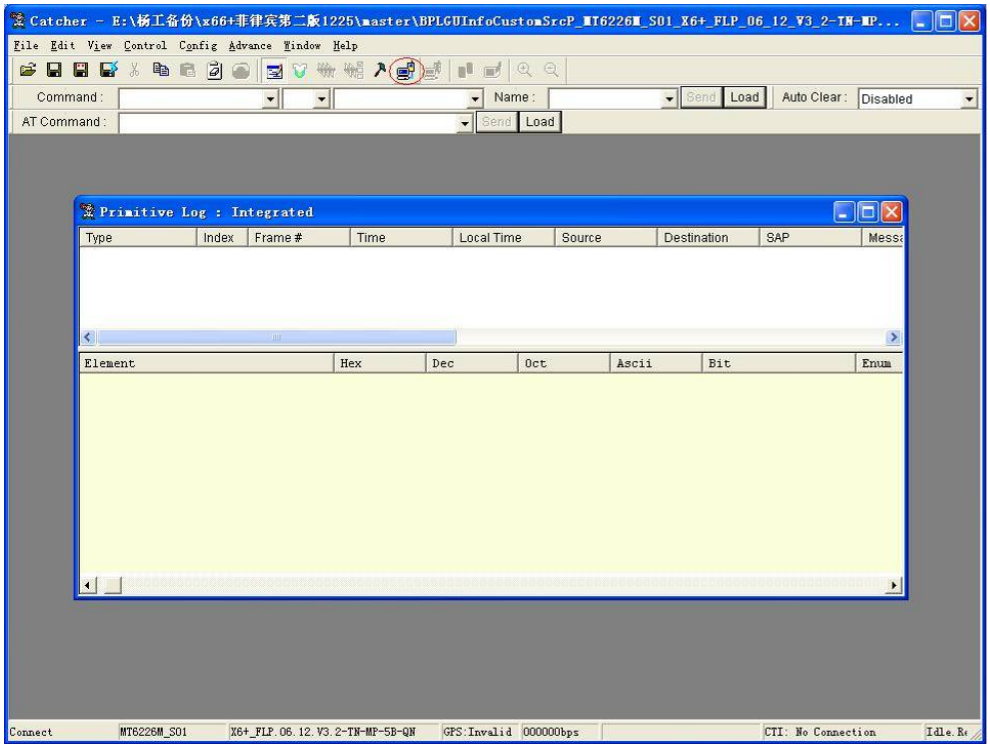


Figure 11

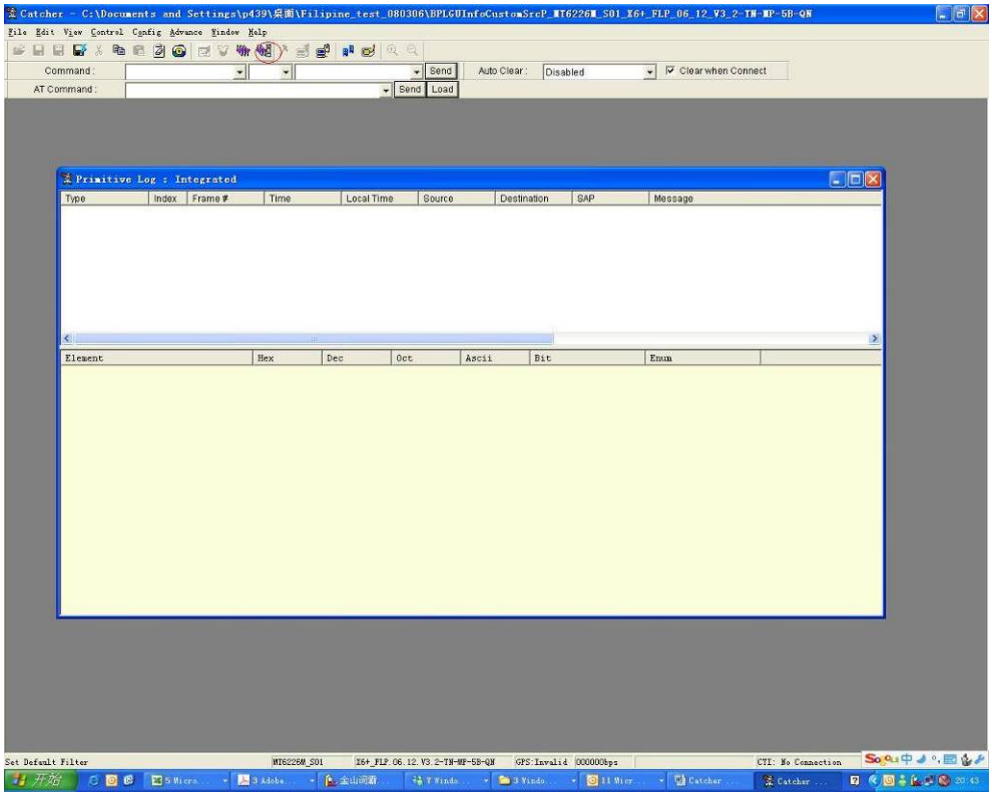


Figure 12

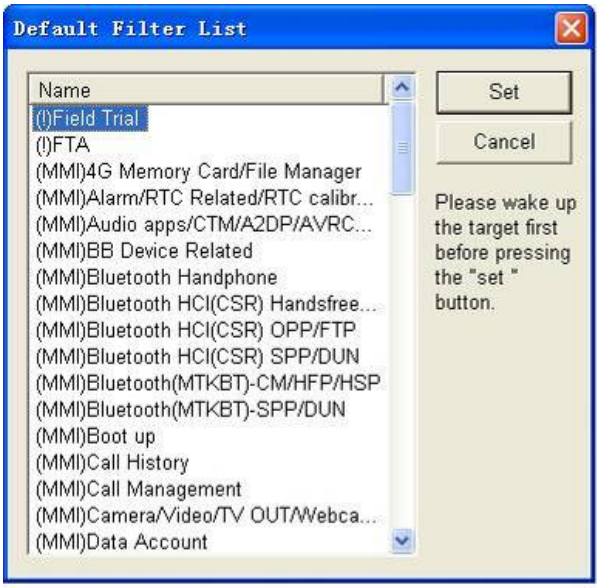


Figure 13

5.2 Clink “Filter” in figure 14, choose some items in figure 15, and then clink ok in figure 15. (Please query us if you need to choose the filter settings)

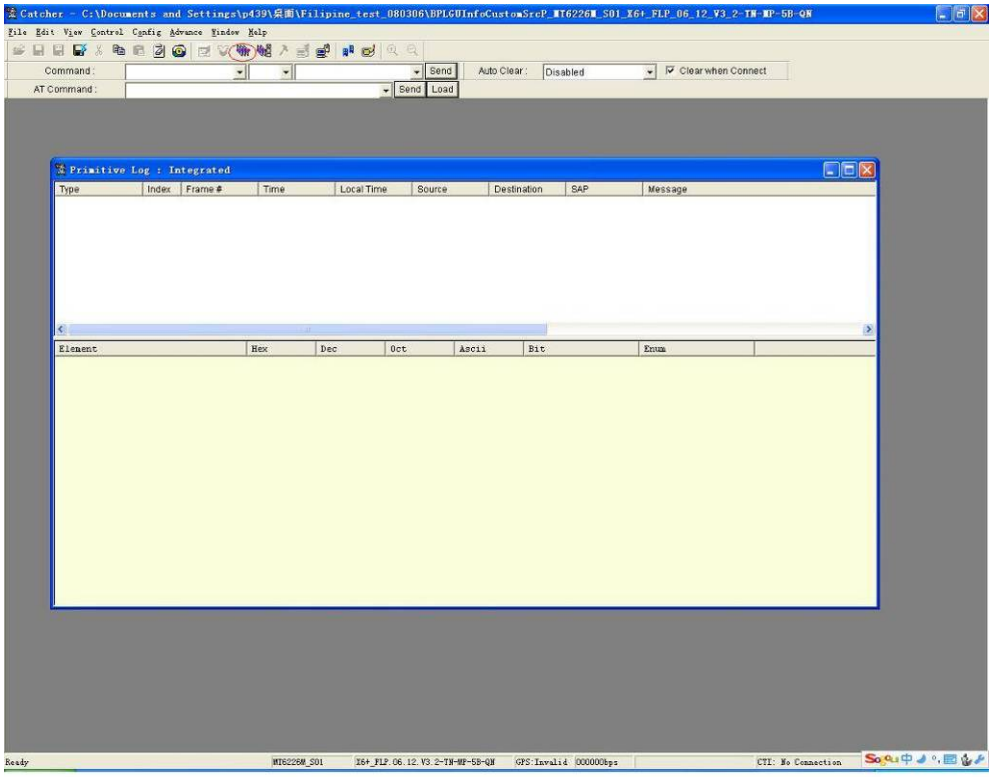


Figure 14

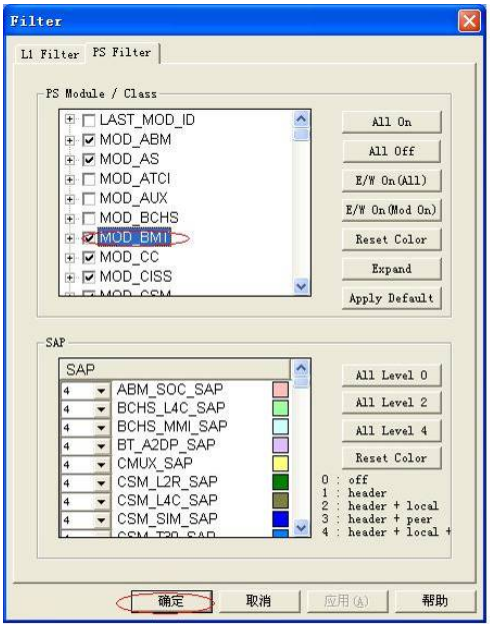


Figure 15

5.2 connect the upgrade cable to the phone and power on the phone. If the database in the phone is not exactly the same as the chose database in Catcher, figure 16 occurs (for example, different software versions and wrong cable connectors lead to the difference between the databases). You have to clink “EXIT” and make the databases the same.

Figure 16

5.3 The catcher records primitive information as showed in figure 17. Clink the button “clear” in figure 18 to clear the useful primitive information. Then the phone user carries on some operations to the phone to make the failures recur. After the wanted failures occur wholly, clink the button “disconnect” in figure 19. You can save the “.clg” file now as showed in figure 20, and name it. The “.clg” file is that needed for analyzing the failures of phone.

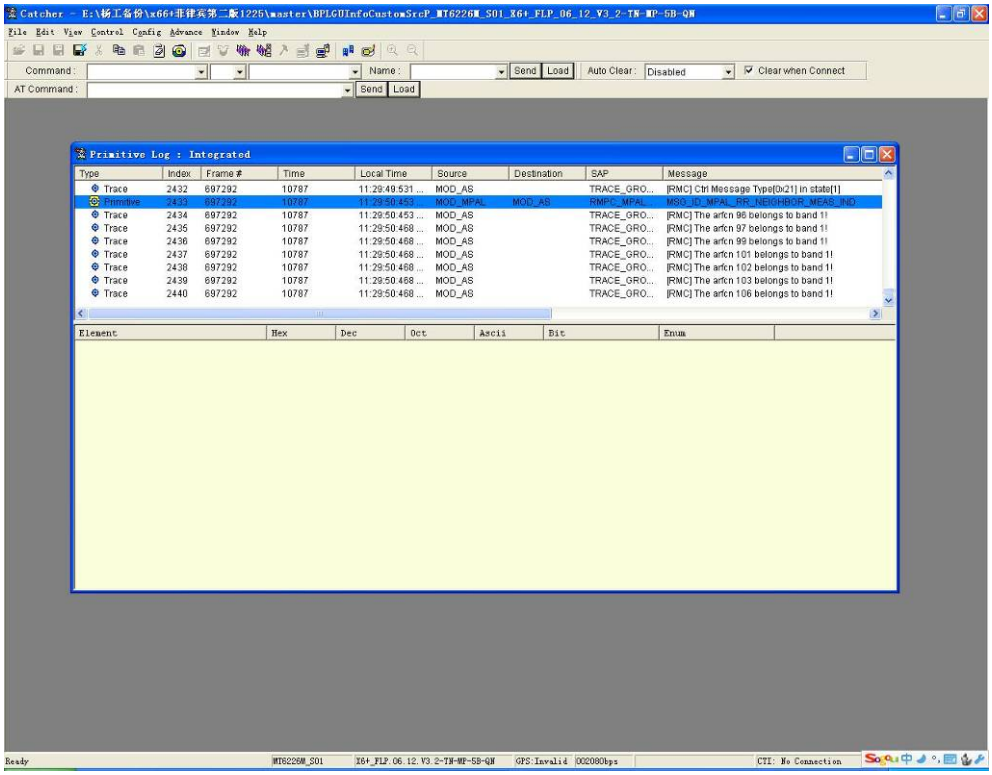


Figure 17

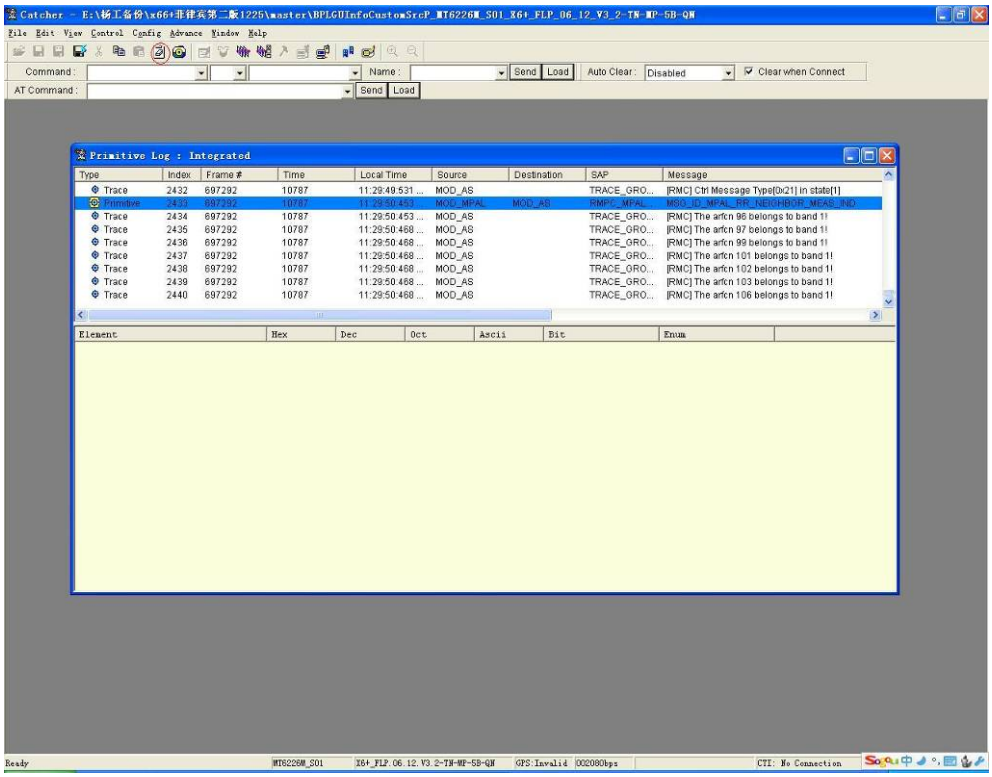


Figure 18

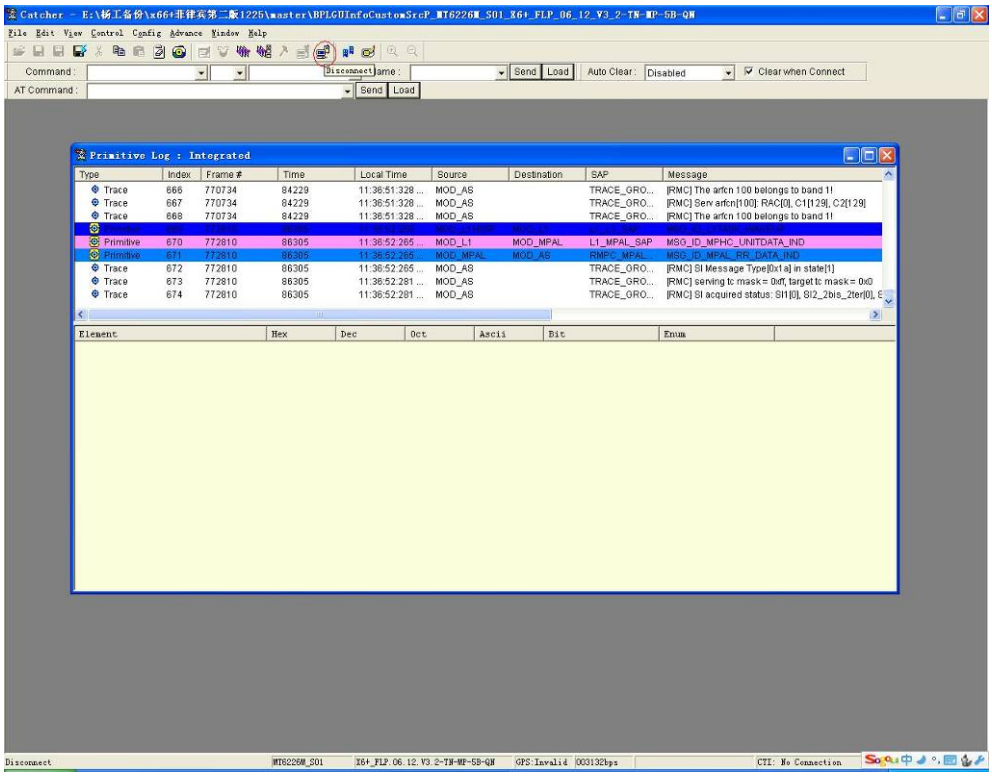


Figure 19

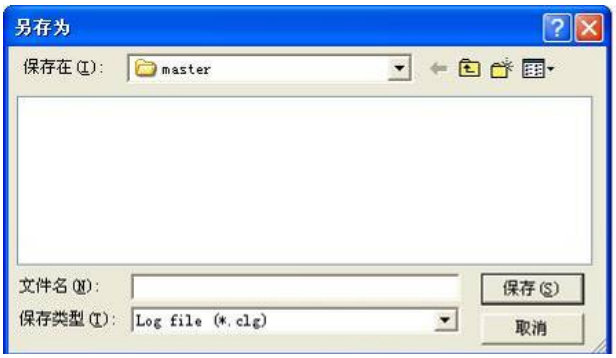


Figure 20