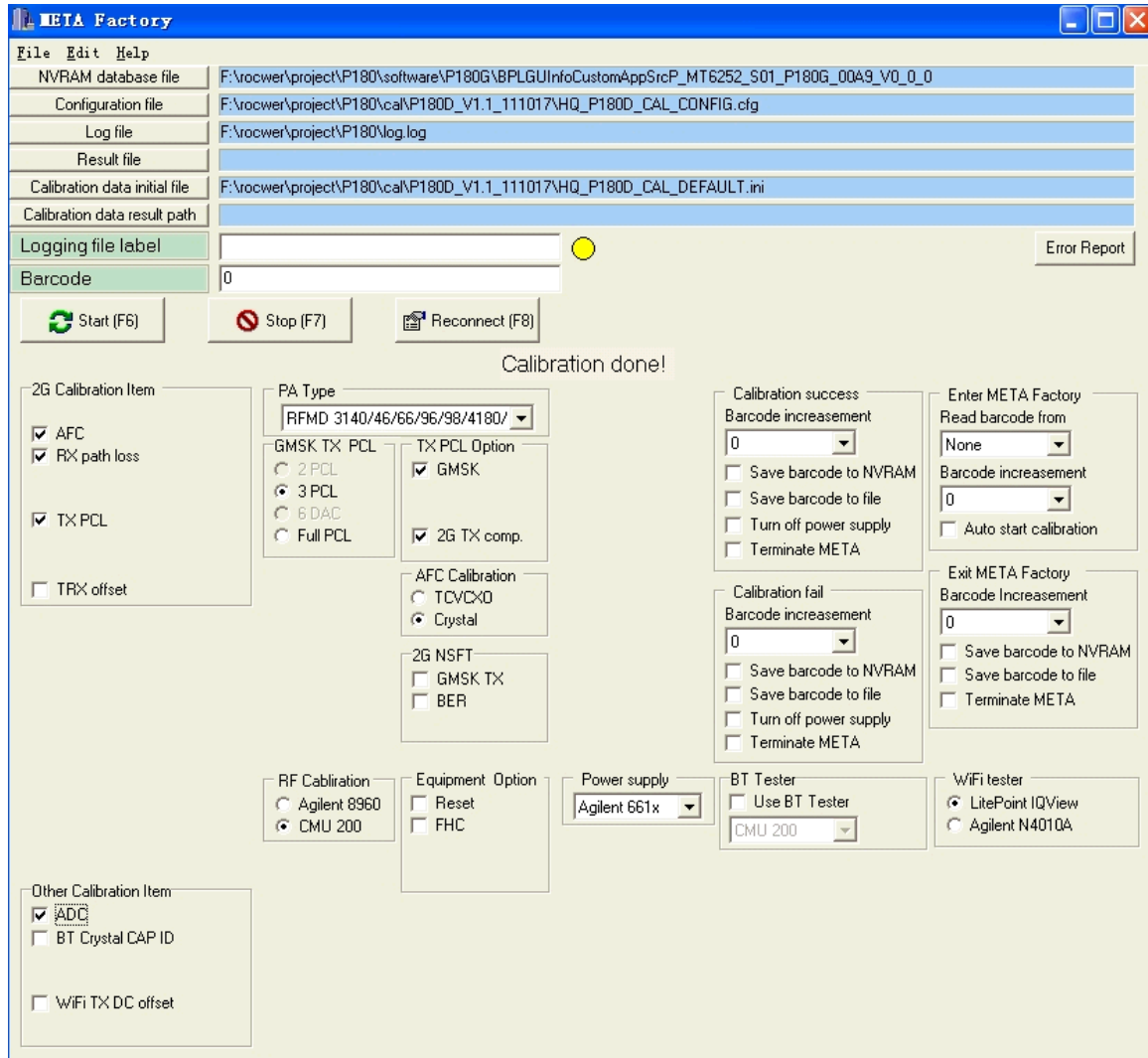# Tune up procedure

1. It must provide an operational voltage (3.6V---4.2V DC) to turn on the phone and on one certain channel in service mode by means of company proprietary software.

2. Base station simulator (Rohde& Schwarz CMU200 or Agilent 8960) measures the 2G phone specific RF characteristics.

I. Connect the CMU200 to the computer Connect the CMU200 and the computer with GPIB cable.

II. Connect the Mobile Phone to the CMU200

Connect the bi-directional RF connector RF 2 of the CMU to the antenna connector of the mobile phone.

III. Connect the Mobile Phone to the Computer

① Open the Maui Meta software by double clicking the software icon. The following window will be displayed:
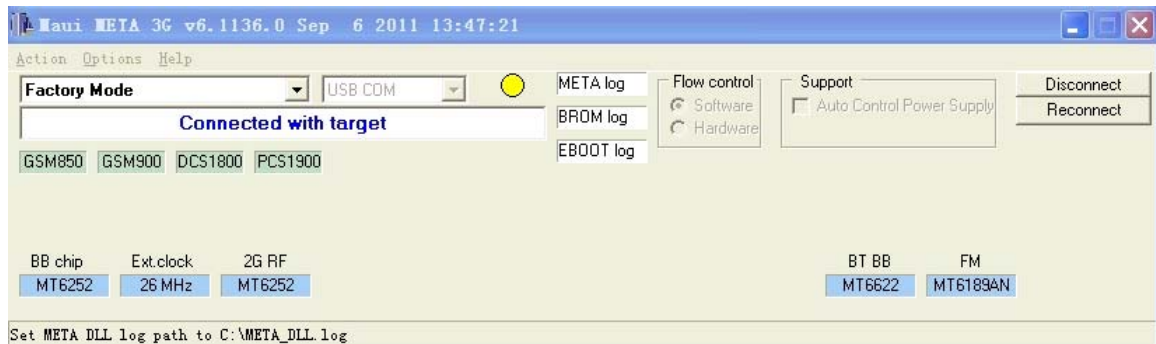
② Connect the 5-pin-connector end of the USB data cable to the computer.

③ Connect the 5-pin-connector end of the USB data cable to the mobile phont. Press the key 'Reconnect'.

④ Press SEND key of the Phone, power on the power supply(default 3.8V),and connect the other of the USB data cable to the Mobile Phone. Then enter Factory Mode. The following window will be displayed:
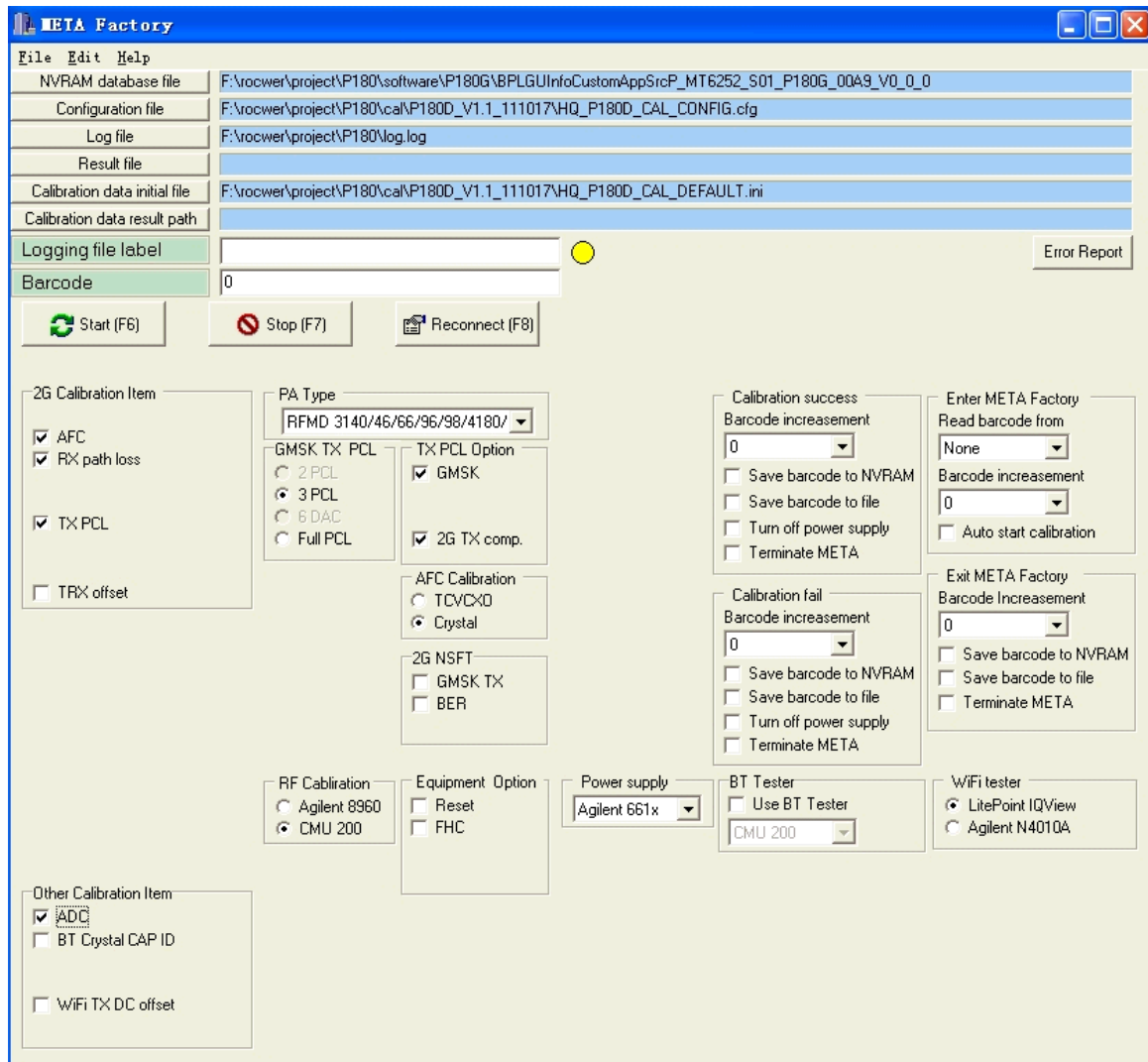
⑤ Select the items of 2G should be calibrated. Click the "Start" button, you will see the following screen:

META Factory

File Edit Help

NVRAM database file	F:\rocwer\project\P180\software\P180G\BPLGUInfoCustomAppSrcP_MT6252_S01_P180G_00A9_V0_0_0
Configuration file	F:\rocwer\project\P180\cal\P180D_V1.1_111017\HQ_P180D_CAL_CONFIG.cfg
Log file	F:\rocwer\project\P180\log.log
Result file	
Calibration data initial file	F:\rocwer\project\P180\cal\P180D_V1.1_111017\HQ_P180D_CAL_DEFAULT.ini
Calibration data result path	
Logging file label	
Barcode	0

Error Report

Start (F6)   Stop (F7)   Reconnect (F8)

Calibration done!

2G Calibration Item
- ☑ AFC
- ☑ RX path loss
- ☑ TX PCL
- ☐ TRX offset

PA Type
RFMD 3140/46/66/96/98/4180/ ▼

GMSK TX PCL
- ○ 2 PCL
- ● 3 PCL
- ○ 6 DAC
- ○ Full PCL

TX PCL Option
- ☑ GMSK
- ☑ 2G TX comp.

AFC Calibration
- ○ TCVCXO
- ● Crystal

2G NSFT
- ☐ GMSK TX
- ☐ BER

Calibration success
Barcode increasement
0 ▼
- ☐ Save barcode to NVRAM
- ☐ Save barcode to file
- ☐ Turn off power supply
- ☐ Terminate META

Calibration fail
Barcode increasement
0 ▼
- ☐ Save barcode to NVRAM
- ☐ Save barcode to file
- ☐ Turn off power supply
- ☐ Terminate META

Enter META Factory
Read barcode from
None ▼
Barcode increasement
0 ▼
- ☐ Auto start calibration

Exit META Factory
Barcode Increasement
0 ▼
- ☐ Save barcode to NVRAM
- ☐ Save barcode to file
- ☐ Terminate META

RF Cabliration
- ○ Agilent 8960
- ● CMU 200

Equipment Option
- ☐ Reset
- ☐ FHC

Power supply
Agilent 661x ▼

BT Tester
- ☐ Use BT Tester
- CMU 200 ▼

WiFi tester
- ● LitePoint IQView
- ○ Agilent N4010A

Other Calibration Item
- ☑ ADC
- ☐ BT Crystal CAP ID
- ☐ WiFi TX DC offset

⑥ Once the button is clicked, the CMU will be checking various parameters automatically(e.g. RSSI, Output Power, AFC,etc.) and set different parameters for the mobile phone accordingly(e.g. Gain, Output power, etc.)

For GSM 850 and GSM900 band：
PCL = 5, PWR = 32.2 ± 1 dBm

For DCS1800 and PCS 1900 band :
PCL = 0, PWR = 29.2 ± 1dBm

If "Calibration Success !"or "Calibration done!" data appears, the mobile phone had been successfully calibrated and everything is properly tuned. This calibration process typically takes less than 5 minutes if all the above steps are followed and the conditions are met.
3. The maximum gain of each individual phone are adjusted until the target value met.

Then this appropriate gain settings are stored in each phone individually.
The user has no possibility to change these settings later on, and during manufacturing each phone will be individual calibrated. The measurement is done in fully calibrated setup, which is based on a Rohde& Schwarz CMU200 or Agilent 8960 base station

simulator. Furthermore, the highest power level is verified afterwards in a call measurement on three channels (low, middle and high).