# Factory tune-up procedures

## 4.1. Tool requirement

FlashTool: for Download software;
BirdTestSys for MTK : RF Calibration tool and RF test tool and AntennaTest tool;
CIT.exe : Functional test tool;
IMEI Tools;

## 4.2. Test Equipment List

- GSM tester:Agt8960 or CMU200
- Power Supply:Agt3632A or Agt3631 or Agt66311
- PC with: USB port
- GPIB card
- the circuit board for exchanging UsbPort for SerialPort

test equipment setup illustration
PC Station must install GPIB driver and the diver of exchanging UsbPort for SerialPort.

## 4.3. Tuning procedure

### 4.3.1. Introduction

This section describes the procedure to align transmitter power, receiver gain and frequency accuracy.

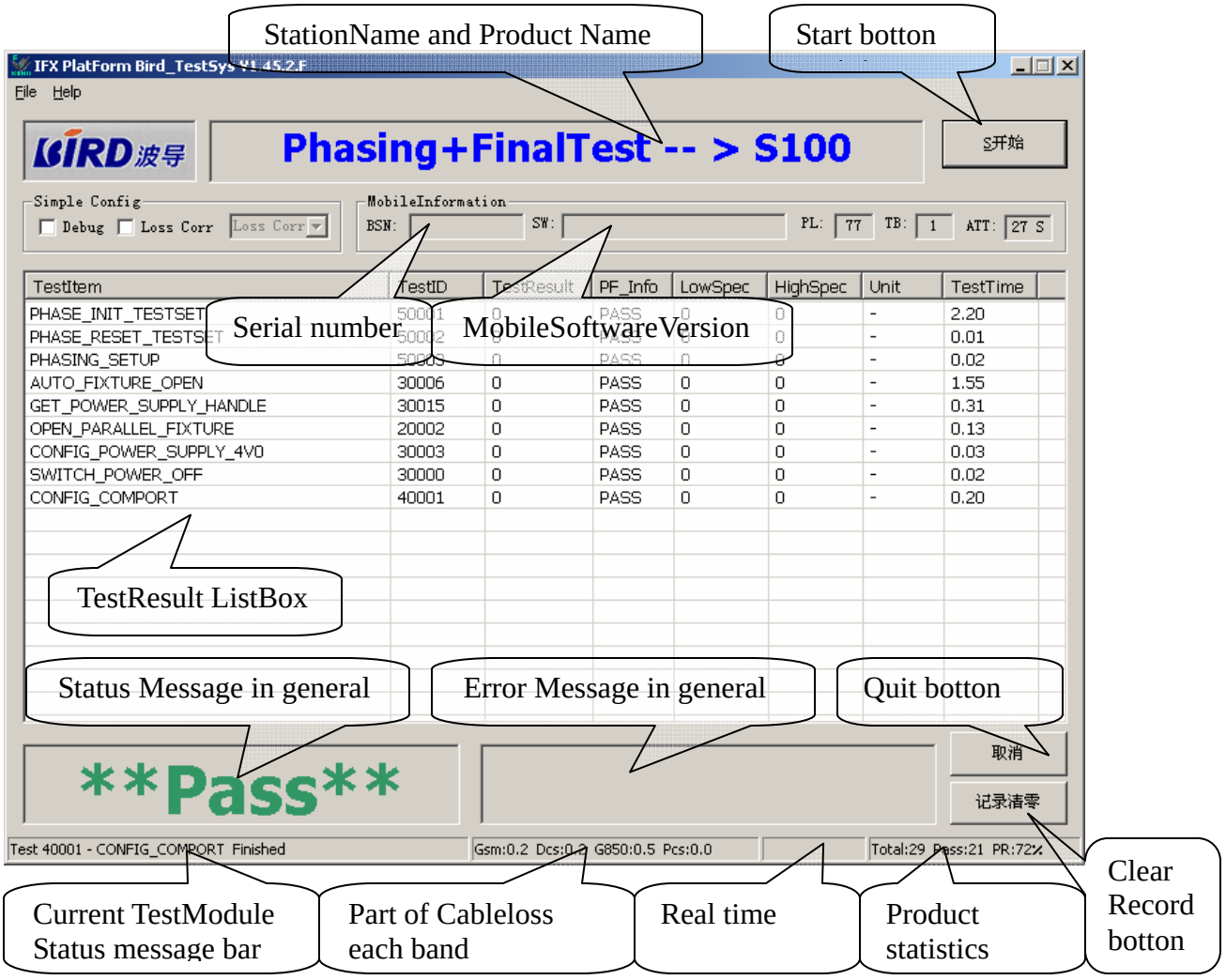
### 4.3.2. Pre-tunning preparation

There are some preparation must be done before operate a calibration process.
Make sure whether GPIB driver and the diver of exchanging UsbPort for SerialPort are installed.
Make sure whether the physical address of Testset is 14 or not, because we usually setup the address to 14 for Testset in the CalibrationTool.
Make sure whether the physical address of PowerSupply is 5 or not, because we usually setup the address to 5 for powersupply in the CalibrationTool.

### 4.3.3. General View

1. Run tool: double click the tool name—"BirdTestSys for MTK.exe"

Fig4-1. The AutoCalibration tool "BirdTestSys for IFX" main view.




ConfigFile：there are four config files in the folder “Config”, they are necessary and enough config file; as below:
LocalConfig.cfg：In this file,you can select testset type and powersupply type,and can setup their physical address; etc.
TestConfig.cfg：in this file , you can setup product name, and setup the product’s TestSequence for each station.
TestItem.cfg：the parameters config of all test modules. But this file has been encrypted.
TestPlan.cfg：TestSequence file for each station and each product.

### 4.3.4. ParameterConfig Dialog

On this panel, you can select testset type / powersupply type, and their physical address; sametime, you can also setting up serial communication port and Tx/Rx loss etc.

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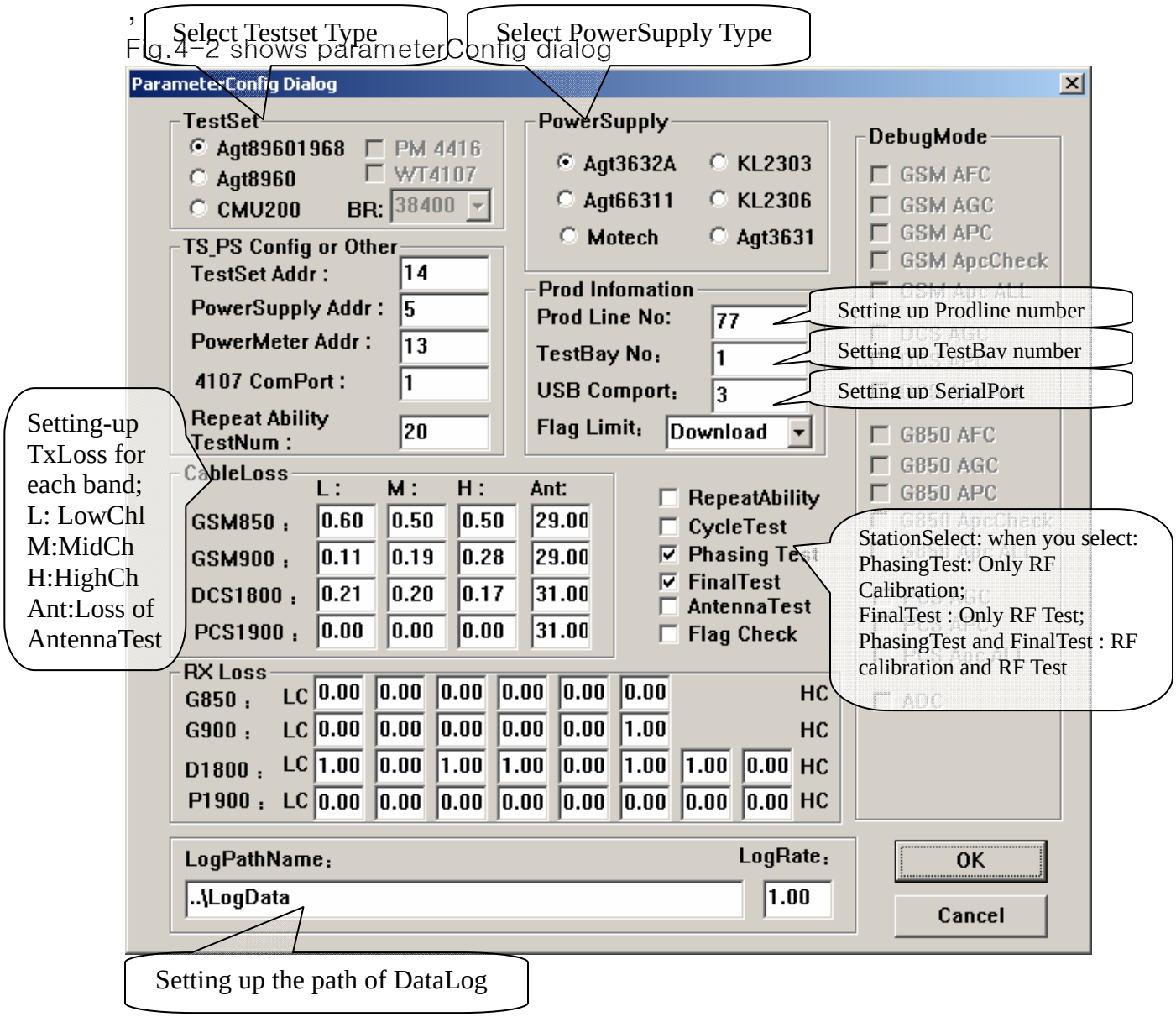
Fig.4-2 shows parameterConfig dialog




When you click main dialog "File-ConfigParameters", the ParameterConfig Dialog will view as you see.

## 4.3.7. Assign a Config file

1. Due to different model of handset, the setting of the config file may be different. To
select a config file.

(1) We put all config files of different model of handset on same server. And each model has batch program itself.

(2) Ddue to different model of handset, you can execute its' corresponding

batch program. After executing, all config files of corresponding model of handset have been installed to the correct directory.
(3) After that, we must calibration the Cableloss for each station with GoldenMobile. Each model of handset, we need to make golden mobile .

### 4.3.8. Run calibration

1. To run a calibration, you click the Startbotton . In the whole process, ApcPhasing , AgcPhasing , AfcPhasing and AdcPhasing is necessary and enough testmodule.
ApcPhasing means: Calibration of all Tx powerLevel each RF band ;
AgcPhasing means: agc(RxLevel) calibration each RF band.
AfcPhasing means: calibration of FrequencyError.
AdcPhasing means: adc calibration.

### 4.3.9. Power value target

We assures that the max. limit for power as manufactured will never exceed the max power listed below.

| Target valur | Max power output | Tolerance |
|---|---|---|
| 850MHz | 32.5dBm | +/-1dB |
| 1900MHz | 29.5dBm | +/-1dB |

Every kind of parameter that test need, is all from the procedure to proceed something to install automatically.

# Output Power

**1. BAND PCS1900**
**Power Level Target Unit Tolerance**

**2. BAND GSM850**
**Power Level Target Unit Tolerance**

## 1. BAND PCS1900

| Power level | Power Peak value | limit |
|---|---|---|
| | dBm | normal |
| 0 | 30 | +/-2 dB*) |
| 1 | 28 | +/-3 dB |
| 2 | 26 | +/-3 dB |
| 3 | 24 | +/-3 dB*) |
| 4 | 22 | +/-3 dB |
| 5 | 20 | +/-3 dB |
| 6 | 18 | +/-3 dB |
| 7 | 16 | +/-3 dB |
| 8 | 14 | +/-3 dB |
| 9 | 12 | +/-4 dB |
| 10 | 10 | +/-4 dB |
| 11 | 8 | +/-4 dB |
| 12 | 6 | +/-4 dB |
| 13 | 4 | +/-4 dB |
| 14 | 2 | +/-5 dB |
| 15 | 0 | +/-5 dB |

## 2. BAND GSM850
**Power Level Target Unit Tolerance**

| Power level | Power Peak value | limit |
|---|---|---|
| | **dBm** | **normal** |
| 5 | 33 | +/-2 dB*) |
| 6 | 31 | +/-3 dB |
| 7 | 29 | +/-3 dB) |
| 8 | 27 | +/-3 dB |
| 9 | 25 | +/-3 dB |
| 10 | 23 | +/-3 dB |
| 11 | 21 | +/-3 dB |
| 12 | 19 | +/-3 dB |
| 13 | 17 | +/-3 dB |
| 14 | 15 | +/-3 dB |
| 15 | 13 | +/-3 dB |
| 16 | 11 | +/-5 dB |
| 17 | 9 | +/-5 dB |
| 18 | 7 | +/-5 dB |
| 19 | 5 | +/-5 dB |