Tune up procedure

Tune up procedure shall be over the power range or at specific operating power levels.

1. It must provide an operational voltage (3.5~ 4.2V DC) to turn on the device and on one certain channel in service mode by means of company proprietary software.

2. The Base station simulator measures the WWAN device specific RF characteristics.

3. The maximum gains of each individual device are adjusted and measured until the target value met.

- **For GSM 850 band:**
    PCL = 5, PWR = 32.5 ± 0.5 dBm
- **For GPRS 850 band (1slot):**
    PCL = 5, PWR = 32.5 ± 0.5 dBm
- **For GPRS 850 band (2slot):**
    PCL = 5, PWR = 31.5 ± 0.5 dBm
- **For GPRS 850 band (3slot):**
    PCL = 8, PWR = 30.0 ± 0.5 dBm
- **For GPRS 850 band (4slot):**
    PCL = 8, PWR = 29.5 ± 0.5dBm
- **For EDGE 850 band (1slot):**
    PCL = 5, PWR = 27.0 ± 0.5 dBm
- **For EDGE 850 band (2slot):**
    PCL = 5, PWR = 26.0 ± 0.5 dBm
- **For EDGE 850 band (3slot):**
    PCL = 8, PWR = 23.5 ± 0.5 dBm
- **For EDGE 850 band (4slot):**
    PCL = 8, PWR = 22.0 ± 0.5dBm

- **For PCS 1900 band :**
    PCL = 0, PWR = 29.5 ± 0.5 dBm
- **For GPRS 1900 band (1slot):**
    PCL = 0, PWR =29.5 ± 0.5 dBm
- **For GPRS 1900 band (2slot):**
    PCL = 0, PWR =28.5 ± 0.5dBm
- **For GPRS 1900 band (3slot):**
    PCL = 0, PWR =27.0 ± 0.5 dBm
- **For GPRS 1900 band (4slot):**
    PCL = 2, PWR = 26.0 ± 0.5 dBm

- **For EDGE 1900 band (1slot):**
  PCL = 0, PWR =25.5 ± 0.5 dBm
- **For EDGE 1900 band (2slot):**
  PCL = 0, PWR =24.5 ± 0.5dBm
- **For EDGE 1900 band (3slot):**
  PCL = 0, PWR =22.5 ± 0.5 dBm
- **For EDGE 1900 band (4slot):**
  PCL = 2, PWR = 21.5 ± 0.5 dBm

- **For WCDMA 850 band (Class 3):**
  PWR = 23.0 ± 0.5dBm
- **For WCDMA 1900 band (Class 3):**
  PWR = 23.0 ± 0.5 dBm
- **HSDPA :data speeds = 7.2 Mbps**
- **HSUPA: data rates   = 5.76 Mbps**

- **For Wi-Fi:**
  802.11b   PWR = 15dBm ±1dBm
  802.11g   PWR = 13dBm ±1dBm
  802.11n(20MHz)   PWR = 11dBm ±1dBm
  802.11n(40MHz)   PWR = 11dBm ±1dBm

- **For Bluetooth:**
  PWR = 1dBm ±1dBm

Then these appropriate gain settings are stored in each device individually. The user has no possibility to change these settings later on, and during manufacturing each device will be individual calibrated in this range. The measurement is done in a fully calibrated setup, which is based on the base station simulator. Furthermore, the highest power level is verified afterwards in a call measurement on three channels (low, middle and high).

At last you can also help to update the NV by Qualcomm NV tools.