

Transmitter Specification

GSM580&GSM900

Transmitter output power: 33 ± 2 dBm

Phase Error(RMS): $\leq 5^\circ$ degree

Phase Error(Peak): -20° to $+20^\circ$ degree

Frequency Error: < 0.1 ppm Hz

Reference Sensitivity Level (ClassII RBER $\leq 2\%$): ≤ -104 dBm

DCS1800&PCS1900

Transmitter output power: 30 ± 2 dBm

Phase Error(RMS): $\leq 5^\circ$ degree

Phase Error(Peak): -20° to $+20^\circ$ degree

Frequency Error: < 0.1 ppm Hz

Reference Sensitivity Level (ClassII RBER $\leq 2\%$): ≤ -102 dBm

WCDMA

Maximum output power: 21~25 dBm

Minimum output power: ≤ -50 dBm

Frequency Error: $< \pm 0.1$

Occupied Bandwidth: < 5 MHz

EVM: $\leq 17.5\%$

Reference sensitivity level : -106.7, $< 0.1\%$

CDMA

Maximum RF Output Power: 23~30 dBm

Minimum Controlled Output Power: < -50 dBm

Time Reference: $< \pm 1 \mu s$

Waveform Quality: 0.944

Reference sensitivity level: -106, $< 0.5\%$

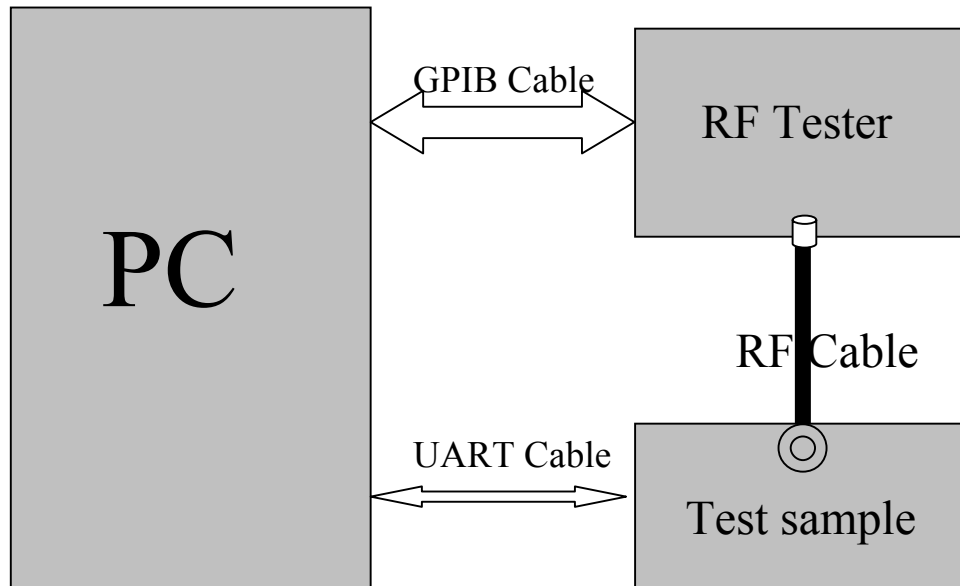


Figure 1

1 Adjustment of RF Output Power:

(1) The equipment setup as shown in Figure 1.

(2) Operation of PC adjusts equipment.

(3) Use RF Engineering Tools at PC side.

Select GSM850 Band:

- 1) Set GSM850 Band.
- 2) Set ARFCN: 190
- 3) TX ON.
- 4) Adjust the power to 32.4dBm (+1.0dB/-1.0dB, Power control level: PCL=5) by PA DAC value.
- 5) Repeat 4) for 15 times, and adjust the power level to 30.5, 28.8, 27, 25, 23, 21, 19, 17, 15, 13, 11, 9, 7, 5.
- 6) Make 16 Ramp-Up/Ramp-Down data from the adjustment value of (5) and (6).

7) Data of 5) and 6) is written to flash memory.

Select PCS1900 Band:

- 1) Set PCS Band.
- 2) Set ARFCN: 661.
- 3) TX ON.
- 4) Adjust the power to 29.0 dBm (+2.0dB/-2.0dB, Power control level: PCL=0) by PA DAC value.
- 5) Repeat 4) for 15 times, and adjust the power level to 27.5, 26, 24, 22, 20, 18, 16, 14, 12, 10, 8, 6, 4, 2, 0.
- 6) Make 16 Ramp-Up/Ramp-Down data from the adjustment value of (5) and (6).
- 7) Data of 5) and 6) is written to flash memory.

2 Adjustment of oscillation frequency of VCXO:

(1) The equipment setup as shown in Figure 1.

(2) Use Crystal AFC Control Tools to Set CapID and AFC DAC value.

(3) Set Band=GSM850, Set ARFCN=190, Set PCL=12.

- 1) Set AFC DAC=4096, fixed. (Check that $V_{afc}=1.4V$).
- 2) Set CapID=0, and verify that frequency error $\gg 10KHz$.
- 3) Set CapID=63, and verify that frequency error $\ll -10KHz$.
- 4) If the above 3 items are verified, then change CapID value to make frequency error be closed to 0 Hz as possible, record this CapID value.
- 5) Set CapID value got from step 4), then change AFC DAC value to make frequency error be closed to 0 Hz as possible, record this AFC DAC value.
- 6) Download the CapID value and AFC DAC value to flash memory.

3 Adjustment of RX Sensitivity:

(1) Select GSM850 Band:

- 1) Set BCCH level: -85dBm; ARFCN: 128.
- 2) Test sample make a call to connect RF Tester..
- 3) Set TCH level: -106dBm.
- 4) Measure BER II error at TCH ARFCN: 128, 190, 251.
- 5) Tune up the RX matching circuit to make sure $BER II < 2\%$ at each ARFCN.

(2) Select PCS Band:

- 1) Set BCCH level:-85dBm;ARFCN:512.
- 2) Test sample make a call to connect RF Tester..
- 3) Set TCH level:-106dBm.
- 4) Measure BER II error at TCH ARFCN:512, 661, 810.
- 5) Tune up the RX matching circuit to make sure BER II < 2% at each ARFCN.