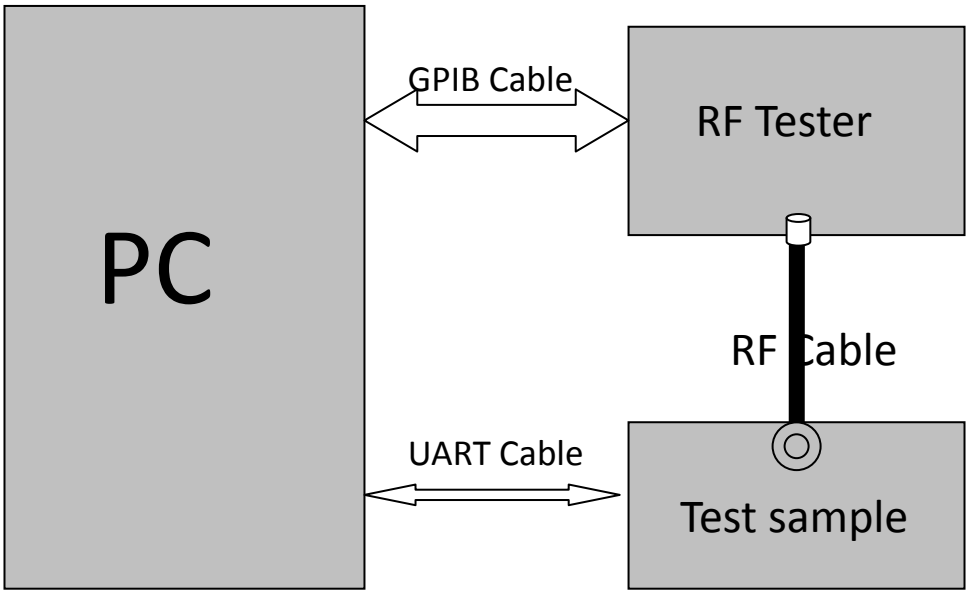
TUNE UP PROCEDURE

The General Information of the Device

FCC ID	2AB5CMINI5130
Model Name	mini5130, Q5130,5130,5130C,5130+
Brand Name	sami, sxera
Hardware Version	L6012
Software Version	N/A
Voltage	DC3.7V
Current	300mAH
Frequency Band	☒GSM 850☒PCS1900 (U.S. Bands) ☒GSM 900 ☒DCS 1800 (Non-U.S. Bands)
GSM Talking AVG. Output Power	GSM 850 :31.63dBm+1 dB, PCS1900 : 28.53dBm+1 dB
Max.AVG. Output Power(GFSK)	-2.33dBm±3dB
Max. AVG. Output Power(π /4-DQPSK)	-3dBm±3dB
Max. AVG. Output Power(8-DPSK)	-2.6dBm±3dB

The Configuration Block Diagram for Tune UP



The Detailed Procedure Of Tune Up

1 Adjustment of RF Output Power:

1.1 The equipment setup as shown in Figure 1

1.2 Operation of PC adjusts equipment
1.3 Use RF Engineering Tools at PC side
1.3.1 Select GSM850 Band:
1.3.1.1 Set GSM850 Band
1.3.1.2 Set ARFCN: 190
1.3.1.3 TX ON
1.3.1.4 Adjust the power to 33dBm (Power control level: PCL=5) by PA DAC value
1.3.1.5 Repeat 4) for 15 times,and adjust the power level to 32,31, 29, 27, 25, 23, 21, 19, 17, 15, 13, 11, 9,7, 5
1.3.1.6 Make 16 Ramp-Up/Ramp-Down data from the adjustment value of (5) and (6).
1.3.1.7 Data of 5) and 6) is written to flash memory.

1.3.2 SelectPCS1900 Band:
1.3.2.1 Set PCS Band
1.3.2.2 Set ARFCN: 661
1.3.2.3 TX ON
1.3.2.4 Adjust the power to 30dBm (Power control level: PCL=0) by PA DAC value
1.3.2.5 Repeat 4) for 15 times,and adjust the power level to 29,28, 26, 24, 22, 20, 18, 16, 14, 12, 10, 8, 6,4, 2, 0
1.3.2.6 Make 16 Ramp-Up/Ramp-Down data from the adjustment value of (5) and (6)
1.3.2.7 Data of 5) and 6) is written to flash memory.

2 Adjustment of oscillation frequency of VCXO:

2.1 The equipment setup as shown in Figure 1
2.2 Use Crystal AFC Control Tools to Set CapID and AFC DAC value
2.3 Set Band=GSM850,Set ARFCN=190,Set PCL=12
2.3.1 Set AFC DAC=4096,fixed.(Check that Vafc=1.4V)
2.3.2 Set CapID=0, and verify that frequency error >>10KHz
2.3.3 Set CapID=63, and verify that frequency error <<-10KHz
2.3.4 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
2.3.5 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.
2.3.6 Download the CapID value and AFC DAC value to flash memory.

3 Adjustment of RX Sensitivity:

3.1 Select GSM850 Band:
3.1.1 Set BCCH level:-85dBm; ARFCN:128
3.1.2 Test sample make a call to connect RF Tester
3.1.3 Set TCH level:-106dBm
3.1.4 Measure BER Ⅱ error at TCH ARFCN:128, 190，251
3.1.5 Tune up the RX matching circuit to make sure BER Ⅱ<2% at each ARFCN.

3.2 Select PCS Band:
3.2.1 Set BCCH level:-85dBm;ARFCN:512
3.2.2 Test sample make a call to connect RF Tester
3.2.3 Set TCH level:-106dBm
3.2.4 Measure BER Ⅱ error at TCH ARFCN:512, 661, 810
3.2.5 Tune up the RX matching Circuit to make sure BER Ⅱ<2% at each ARFCN.