

NEC N3306 Tune-Up

REVISION LIST

NO	DATE	CHANGE CONTENTS	CHANGE CAUSE	REV
1	2006.06.05			
2				
3				
4				
5				
6				
7				
8				
9				
10				

Sensitivity Testing:

First part:

Tuning method

Tuning equipment:

CMU200

Cable with accurate compensation

WHITE SIM CARD

Tuning method:

Sensitivity is related to the noise that generated in the transmission path, so we need to eliminate the noise, which affect the sensitivity.

First, sensitivity is related to the component which we choose ,so we must choose the component which is benefit to the sensitivity, than we can test the sensitivity in the signal mode with CMU, if the sensitivity is lower than the standard value , we should find the interference source and eliminate it to improve the sensitivity.

Second part:

Test method

Testing purpose:

To verify the radiated RF performance of typical channel in normal conditions

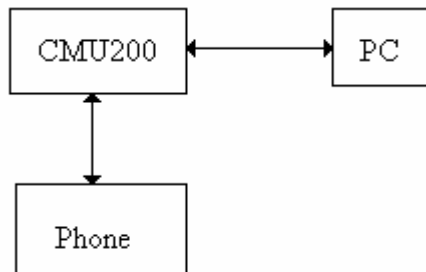
Testing equipment:

Phone	4
Battery	4
Imitate full-anechoic chamber	1
Measurement antenna (HF906)	1
CMU200 or 8960	1

NEC N3306 Tune-Up

Testing method:

1. Set up the system as follows:



2. Open the test software
3. Using the method of the substitute calibration method to calibrate compensation from phone to measurement antenna (because the limitation of the test software, one band can just set the only one compensation. So we set the compensation for each band to its middle channel's calibration value, the setting as follows: GSM900 38dB, DCS1800 42dB)
4. Set measurement channel: GSM900:975, 37,124; DCS1800:512,699,885;
Set power level: GSM900:5,19; DCS1800:1,15;
5. Set measurement item to: frequency error, phrase error (peak value and average square root), and receive sensitivity.
6. Start the test software, after instruction of making a call, locate the phone on the bracket, the height of the it is 1.7 meter, the height of measurement antenna is also 1.7 meter, the distance from EUT to the measurement antenna is 3.8 meter.
7. Put the side which performance is best in radiation mode to the measurement antenna.
8. After the test is over, save the test result.

Judgment Standard:

All the RF parameters should meet the GSM specification.

Highest output power Testing

Tuning equipment:

CMU200

TAT tools with computer

Cable with accurate compensation

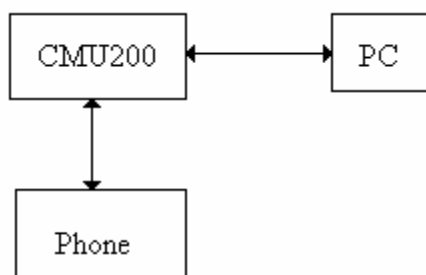
Tuning purpose:

In the GSM900 frequency band, the highest output power is $33\text{dBm} \pm 2\text{ dBm}$; in the DCS1800 and PCS1900 frequency band, the highest output power is $29\text{dBm} \pm 2\text{ dBm}$. The manufacturer tolerance of the highest output power is 2 dBm.

NEC N3306 Tune-Up

Tune method:

1. Set up the system as follows:



2. connect the cell phone with the computer and CMU200, than power on the phone, when we enter the TAT, choose the TX mode, set the compensation of the cable, and adjust the value of the peakpow from the lowest channel to the highest channel (for GSM900 the typical channel is ch975、ch62、ch124, for DCS1800 the typical channel is ch512、ch698、ch885, for PCS1900 the typical channel is ch512、ch661、ch810), make sure the flatness of the output is lower than $\pm 0.2\text{dBm}$.

Radio Table Parameters

Transfer tables

RF level	Power/Level	PeakPow	Ramp1	MinPow	Optimal	TRU	TRD	TRM
32 dBm	05	656	158	0	0	11	-1	0
30.5 dBm	06	608	157	0	0	11	-1	0
29 dBm	07	528	156	0	0	11	-1	0
27 dBm	08	472	155	0	0	10	-1	0
25 dBm	09	424	154	0	0	10	-1	0
23 dBm	10	384	153	0	0	10	-1	0
21 dBm	11	344	152	0	0	10	-1	0
19 dBm	12	316	151	0	0	10	-1	0
17 dBm	13	292	150	0	0	10	-1	0
15 dBm	14	268	149	0	0	10	-1	0
13 dBm	15	248	148	0	0	10	-1	0
11 dBm	16	232	147	0	0	9	0	0
09 dBm	17	216	146	0	0	8	0	0
07 dBm	18	206	145	0	0	7	0	0
05 dBm	19	196	144	0	0	0	0	0

Thresho 6 5 16

Temperature compensation

Measured Temperature 0.00

Temp. Start Stop Temp

Peak power Adjust TRU H0

T=T2 0 0 0

T=T1 0 0 0

Low PCL High PCL

Send to RAM Get from RAM

Send to eepr Get from eepr

Checksum x 4C

Version number d 80

Exprom tag 31323334

Frequency

Tx Chan F1_SGR F2_SGR F3_SGR F4_SGR

Bounds 1010 35 75 100 ar fca

SGR1 SGR2 SGR3 SGR4 SGR5

Peak F1 F2 F3 F4 F5

Power -25 -20 -15 -10 0

Threshold Low PCL 7

High PCL 0

RadioDelay -29 LowBatReductio 0

GetSectionInfo

Voltage Threshold 3.450 V

Start Tx (F6)

Burst select

Mode S1M00 -

Mode S1M10 -

Mode Tch Fixed -

Mode Tch Random -

Mode Tch Patch -

Tx Except PA -

INC Channel 1 Channel 62 (0 to 124)

DEC Channel 1

Update Channel

ISP Reset

RF Level 19

5 10 15 19

Update Level

Modulation

GMSK 8PSK

Frequency Band

GSM650

EGSM DCS

GSM PCS

QUIT (Esc)