

ATTACHMENT L – TUNE UP PROCEDURE / PARTS LIST

5. Test Commands & Test Procedure List

Test Command Table

To change the phone from normal mode to test mode, you should enter the following keys :

Press [6 5 4 8 # 0 * 4 5 6 8 0]

Command No	Command SW Name	Description
001	T_SUSPEND_I	enter to test menu
002	T_RESTART_I	escape from test menu
003	T_SAVE_VAL_I	Save values in e2prom only in auto test
004	T_GET_MODE_I	Get mode CDMA/FM AUTO TEST
005	T_SET_MODE_I	Set mode CDMA/FM AUTO TEST
006	T_WRITE_NV_I	Write the EEPROM item
007	T_CARRIERON_I	turn on the carrier
008	T_CARRIEROFF_I	turn off the carrier
009	T_LOADSYN_I	load the synthesizer for locking
010	T_PWRLEVEL_I	change RF power level
011	T_RXMUTE_I	mute rx audio
012	T_RXUNMUTE_I	unmute rx audio
013	T_TXMUTE_I	mute tx audio
014	T_TXUNMUTE_I	unmute tx audio
015	T_VOC_ESEC_I	Echo Cancellor
016	T_STON_I	turn on ST
017	T_STOFF_I	turn off ST
018	T_LCD_CONTRAST_I	LCD Contrast
020	T_TEST_SYS_I	DBDM Roam add Test System
021	T_SNDPINFO_I	Send Product information 8 character
022	T_SNDNAM_I	Send NAM Information
023	T_SNDVERSION_I	Send Software Version
024	T_SNDESN_I	Send ESN
025	T_BACKLIGHT_ON_I	Backlight on
026	T_BACKLIGHT_OFF_I	Backlight off
027	T_LAMP_ON_I	LAMP on
028	T_LAMP_OFF_I	LAMP off
029	T_REBUILD_I	Rebuilding EEPROM
030	T_PLINE_I	Product lile information
031	T_AUTOANSWER_I	Auto Answer
032	T_SATON_I	turn on SAT
033	T_SATOFF_I	turn off SAT
034	T_CDATA_I	continuously send TX Control data
035	T_VOLUME_UP_I	Electric Volume Up
036	T_VOLUME_DOWN_I	Electric Volume Down
037	T_FM_TEST_I	fm test command
038	T_PCS_CH_FLATNESS_BP_ON_I	PCS chnnel flatness BP ON
039	T_TXRAS_ADJ_BP_ON_I	RX RAS TABLE ADJUST
040	T_RXRAS_FLAT_AUTO_I	adj TXRAS from 8924C
041	T_RXRAS_FLATNESS_I	adj TX FLATNESS from 8924C
042	T_DTMFON_I	turn on DTMF
043	T_DTMFOFF_I	turn off DTMF
044	T_COMPANDORON_I	turn on compandor
045	T_COMPANDOROF_I	turn off compandor

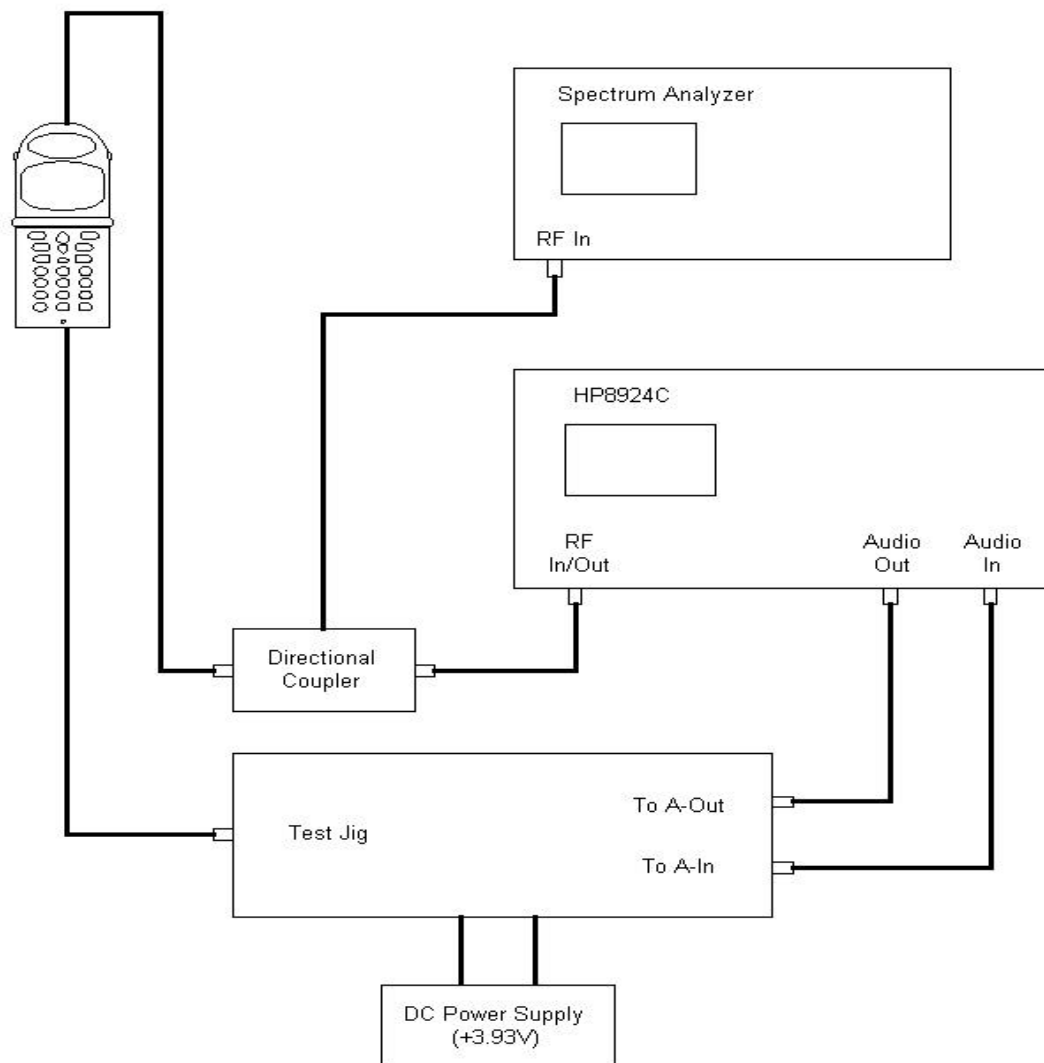
Command No	Command SW Name	Description
046	T_FM_VCLINE_I	Enetr FM voice state
047	T_FM_AUD_GAIN_I	FM audio gain
048	T_VIBRATOR_ON_I	activate a vibrator
049	T_VIBRATOR_OFF_I	inactivate a vibrator
050	T_BATT_TYPE_I	Battery Type
051	T_CDMA_TEST_I	cdma test command
052	T_HW_VERSION_I	HW version
053	T_SET_PDM1_I	SET PDM1
054	T_SET_PDM2_I	SET PDM2
055	T_EXT_AUDIO_I	External Audio Path On/Of
056	T_ALLPATH_I	tune on the all audio path
057	T_MIC_ON_I	mute MIC Path
058	T_MIC_OFF_I	Unmute MIC Path
059	T_SIO_MODE_I	SIO Mode
060	T_FM_TX_GAIN_I	FM Tx Audio Gain Control
061	T_FM_RX_GAIN_I	FM Rx Audio Gain Control
062	T_DTMF_VOL_TX_I	FM Tx DTMF Gain Control
063	T_TX_LIMITER_I	FM Tx Limiter Gain Control
064	T_FM_SAT_LEVEL_I	FM Tx SAT level Control
065	T_FM_FREQ_SGAIN_I	FM Tx Master Gain Control
066	T_FM_ST_GAIN_I	FM Tx ST Gain Control
067	T_READ_BATT_I	Saved Low battery value read
068	T_VBATT1_I	set the low battey position in the standby
069	T_VBATT2_I	set the low battey position in the talking
070	T_WRITE_BATT_I	write a BATT
071	T_CDMA_TXADJ_I	sets tx_agc_adj for cdma mode
072	T_FM_TXADJ_I	sets tx_agc_adj for fm mode
073	T_SET_PA_R_I	sets PA R1,R0 range bits
074	T_TXRAS_ADJ_I	TX RAS TABLE ADJUST (16 POINT)
075	T_READ_RSSI_I	read a RSSI
076	T_WRITE_RSSI_I	write a RSSI
077	T_READ_TEMP_I	read a TEMP
078	T_RXRAS_AUTO_I	adj RXRAS from 8924C
079	T_BUZZER_ON_I	Buzzer on
080	T_BUZZER_OFF_I	Buzzer off
081	T_VOC_PCMLPON_I	turn on to play a PCM LOOP BACK
082	T_VOC_PCMLPOFF_I	turn off to play a PCM LOOP BACK
083	T_BYPASS_ON_I	turn on the bypass mode
084	T_BYPASS_OFF_I	turn off the bypass mode
085	T_SPEAKER_ON_I	turn on the speaker path
086	T_SPEAKER_OFF_I	turn off the speaker path
087	T_FM_LOOP_TEST_I	FM loop back
088	T_TRK_ADJ_I	TRK LOCAL ADJUST
089	T_CDTRK_ADJ_I	CDMA TRK LOCAL ADJUST
090	T_HW_CHANFLAT_I	HW Chanflat
091	T_SW_CHANFLAT_I	SW Chanflat
092	T_FM_TX_PWR_I	setting the volume for Power Level 2-7
093	T_CH_FLATNESS_I	Tx Pwr : 23dBm
094	T_RXRAS_ADJ_I	RX RAS adj = RXRAS offset array

Command No	Command SW Name	Description
095	T_DATASVC_ON_I	DATASVC ON
096	T_DATASVC_OFF_I	DATASVC OFF
097	T_PCS_CH_FLATNESS_I	PCS channel flatness
098	T_PCS_CH_MAX_MIN_I	Edge Channel Max/Min Power Code
099	T_SND_GAIN_I	SND Gain
100	T_MIC_GAIN_I	MIC Gain
101	T_CDMA_EAR_GAIN_I	CODEC Default Gain
102	T_VOC_CDMA_UNITY_GAIN_I	VOCODER CDMA Gain
103	T_BELL_TEST_I	SOUND TEST
104	T_PDA_DIAG_I	PDA DIAG
105	T_REDIRECTION_TEST_I	REDIRECTION TEST
106	T_DEL_ALL_VMEMO_DIAL_I	DEL_ALL VMEMO DIAL
107	T_MAX_I	Compensated value for Most PWR = NULL!

List of Equipment

- DC Power Supply
- Test Jig
- Test Cable
- CDMA Mobile Station Test Set HP8924C, HP83236A, CMD-80, etc
- Spectrum Analyzer(include CDMA Test Mode) HP8596E

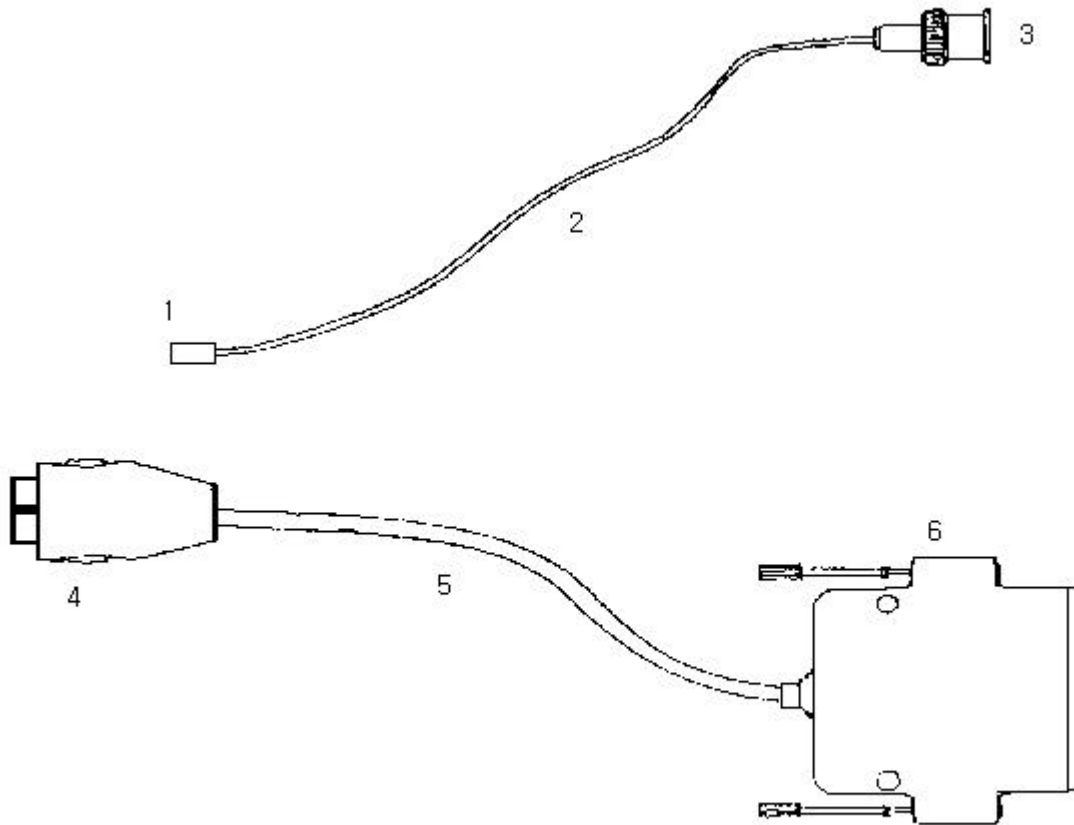
Configuration of Test



CAUTION : The test jig and data cable has a voltage drop of 0.15V at FM Max power output, you'd better set the DC power supply is 3.9V for normal test condition.
(Nominal voltage of battery is 3.9V at cellular phone)

TEST CABLE DESCRIPTION FOR SCH-I300

1. TEST CABLE

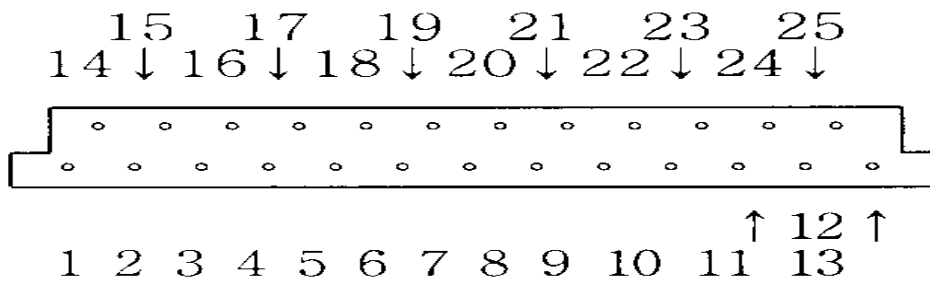


2. TEST CABLE CONNECTIONS

1	MHC 172
2	RF CABLE (1.4dB Loss for CDMA800 and AMPS, 2.1dB Loss for PCS)
3	BNC CONNECTOR (RF)
4	PLUG CONNECT TO SCH-I300
5	DATA CABLE
6	Dsub 25PIN CONNECTOR (DATA)

3. Dsub 25 PIN CONNECTOR PIN DESCRIPTION (TEST CABLE 1, BACK SIDE)

DATA DESCRIPTION	Dsub CONN. PIN NO.	DATA DESCRIPTION	Dsub CONN. PIN NO.
V_F	12,21	DP_RX_DATA	8
DGND	2,4,6,13,19	HP_PWR	9
BATT	15,16,22	RI	10
C_F	3,20	CD	11
TX_AUDIO	5	RTS	14
DP_TX_DATA	7	CTS	17
RX_AUDIO	1	DTR	18



4. CONVERSION TABLE OF FREQUENCY vs CHANNEL

T Y P E	CHANNEL	CONVERSION EQUATION	REMARK
TX FREQUENCY	1 ≤ N ≤ 799 990 ≤ N ≤ 1023	$F = 0.03 \times N + 825.00$ $F = 0.03 \times (N - 1023) + 825.00$	N ; CH NUMBER F ; FREQUENCY
RX FREQUENCY	1 ≤ N ≤ 799 990 ≤ N ≤ 1023	$F = 0.03 \times N + 870.00$ $F = 0.03 \times (N - 1023) + 870.00$	(AMPS/CDMA)
TX FREQUENCY	0 ≤ N ≤ 1199	$F = 0.05 \times N + 1850.00$	N ; CH NUMBER F ; FREQUENCY
RX FREQUENCY	0 ≤ N ≤ 1199	$F = 0.05 \times N + 1930.00$	(PCS)

Change to Test Mode

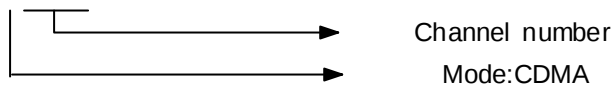
A. To change the phone's state from Normal Mode to Test Mode, You should enter the following keys.

: Press [6 5 4 8 # 0 * 4 5 6 8 0]

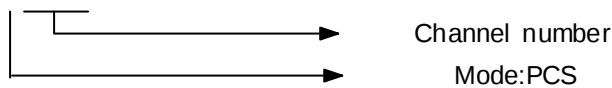
B. The command "0 2 0" is mode and channel change.

"10000" or "10001" : AMPS's Sytem A or Sytem B

" 20383"



" 30600"



and Push the [save] key to save.

C. The command "0 0 1" is Suspend.

D. To finish the Test Mode, You should enter the command "0 0 2".

Channel Selection and Tx Power Output Level Control**1. AMPS(FM)**

A. Enter to Test Mode [6 5 4 8 # 0 * 4 5 6 8 0]

B.The command "0 2 0" is mode and channel change

"10000" or "10001" : AMPS's Sytem A or Sytem B

and Push the [save] key to save.

C. To finish the Test Mode, You should enter the command "0 0 2".

D. "0 0 1" : Suspend.

E. "0 0 7" : Carrier On.

F. "0 0 9 0 3 8 3 'END' " : Set to '0383' channel.

G. "0 9 2 * * * " : Output RF power level is set as power level 2

"* * *" means AGC level and AGC level range is from 0 to 511.

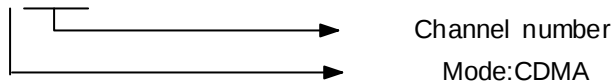
H. "0 1 0 2" : RF Power level control, 2(0~7) means power level .

2. CDMA

A. Enter to Test Mode [6 5 4 8 # 0 * 4 5 6 8 0]

B. The command "0 2 0" is mode and channel change

"20383"



Push the [save] key to save.

C. "0 0 1" : Suspend.

D. To finish the Test Mode, You should enter the command "0 0 2".

E. "0 0 9 0 3 8 3 'END' " : Set to '0383' channel.

F. "0 0 7" : Carrier On.

G. "0 3 4" : Spread spectrum to 1.23MHz band width.

H. "0 7 4 * * * " : Adjust RF power level.

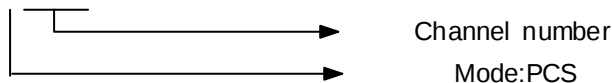
"* * *" means AGC level and AGC level range is from 000 to 511.

3. PCS

A. Enter to Test Mode [6 5 4 8 # 0 * 4 5 6 8 0]

B. The command "0 2 0" is mode and channel change

"30600"



Push the [save] key to save.

C. "0 0 1" : Suspend.

D. To finish the Test Mode, You should enter the command "0 0 2".

E. "0 0 9 0 6 0 0 'END' " : Set to '0600' channel.

F. "0 0 7" : Carrier On.

G. "0 3 4" : Spread spectrum to 1.23MHz band width.

H. "0 7 4 * * * " : Adjust RF power level.

"* * *" means AGC level and AGC level range is from 000 to 511.

1. AMPS(FM)

TEST ITEMS	PROCEDURE														
1. PREPARATION	Set test equipments up. [6 5 4 8 # 0 * 4 5 6 8 0] : Enter the Test Mode "0 0 1" : Suspend Confirm that the phone is in the "AMPS Mode". (If not AMPS Mode, Use Test Command "020", "10000" or "10001" and Enter "0 0 2" to restart) If a wrong key would be selected, press "END", and then enter new command. To exit the Test Mode at any time, just press "0 0 2".														
2. RF POWER	"0 0 1" : Suspend. "0 0 9 0 3 8 3 'END' " : Set channel to 383. "0 0 7" : Carrier On. "0 1 0 2" : RF Power level selection, "2" means one of the power levels (0~7). Measurement of the Power Output Levels <table> <tr> <th>Level</th><th>RF Power</th></tr> <tr> <td>0 ~ 2</td><td>+ 28 dBm +2/-4 dB</td></tr> <tr> <td>3</td><td>+ 24 dBm +2/-4 dB</td></tr> <tr> <td>4</td><td>+ 20 dBm +2/-4 dB</td></tr> <tr> <td>5</td><td>+ 16 dBm +2/-4 dB</td></tr> <tr> <td>6</td><td>+ 12 dBm +2/-4 dB</td></tr> <tr> <td>7</td><td>+ 8 dBm +2/-4 dB</td></tr> </table> Note 1 : In case of using the antenna cable, compensation for the cable loss should be added (about 1.4dB). Note 2 : To prevent phones from being damaged, they must be measured only by calibrated test equipments. Warning ! Adjustments without calibrated equipments can cause phones to be heated excessively and would void the warranty.	Level	RF Power	0 ~ 2	+ 28 dBm +2/-4 dB	3	+ 24 dBm +2/-4 dB	4	+ 20 dBm +2/-4 dB	5	+ 16 dBm +2/-4 dB	6	+ 12 dBm +2/-4 dB	7	+ 8 dBm +2/-4 dB
Level	RF Power														
0 ~ 2	+ 28 dBm +2/-4 dB														
3	+ 24 dBm +2/-4 dB														
4	+ 20 dBm +2/-4 dB														
5	+ 16 dBm +2/-4 dB														
6	+ 12 dBm +2/-4 dB														
7	+ 8 dBm +2/-4 dB														
3. TX FREQUENCY	"0 0 1" : Suspend. "0 0 7" : Carrier On. "0 0 9 0 3 8 3 'END' " : Set channel to 383. Measure the TX frequency : 836.49 MHz $\pm$2.5ppm.														

TEST ITEMS	PROCEDURE								
4. VOICE DEVIATION	"0 0 1" : Suspend. "0 0 7" : Carrier On. "0 0 9 0 3 8 3 'END' " : Set channel to 383. "0 1 0 2 'END' " : RF Power level selection. "0 1 4" : TX Audio unmute. Set the audio generator output to 0.8kHz, 8.8Vrms. Measure the Tx voice deviation by using the HPF of 300Hz and the LPF of 3kHz (spec : less than +12kHz).								
5. ST DEVIATION	"0 0 1" : Suspend. "0 0 7" : Carrier On. "0 0 9 0 3 8 3 'END' " : Set channel to 383. "0 1 0 2 'END' " : RF Power level selection. "0 1 6" : ST on. Measure the Tx ST deviation by using the HPF of 50Hz and the LPF of 15kHz (spec : 8kHz $\pm$10%). De-emphasis : off and Dectector : RMS*SQRT2 "0 1 7" : ST off.								
6. SAT DEVIATION	"0 0 1" : Suspend. "0 0 7" : Carrier On "0 0 9 0 3 8 3 'END' " : Set channel to 383. "0 1 0 2 'END' " : RF Power level selection. "0 3 2" : SAT on. Set the equipment as following. <table> <tr> <td>RF frequency</td><td>: 881.49MHz</td></tr> <tr> <td>Input RF level</td><td>: -80dBm</td></tr> <tr> <td>Modulation frequency</td><td>: 6kHz</td></tr> <tr> <td>Frequency deviation</td><td>: 2kHz</td></tr> </table> Measure the Tx SAT deviation by using the filter of <20Hz and the LPF of 15kHz (spec : 2kHz $\pm$10%). De-emphasis : off and Dectector : RMS*SQRT2 "0 3 3" : SAT off.	RF frequency	: 881.49MHz	Input RF level	: -80dBm	Modulation frequency	: 6kHz	Frequency deviation	: 2kHz
RF frequency	: 881.49MHz								
Input RF level	: -80dBm								
Modulation frequency	: 6kHz								
Frequency deviation	: 2kHz								

TEST ITEMS	PROCEDURE
7. WBD DEVIATION	"0 0 1" : Suspend. "0 0 7" : Carrier On "0 0 9 0 3 8 3 'END' " : Set channel to 383. "0 1 0 2 'END' " : RF Power level selection. "0 3 4" : WBD on. Measure the WBD deviation by using the filter of <20Hz and the filter of >99kHz (spec : 8kHz $\pm$ 10%). De-emphasis : 750us and Dectector : PK+
8. RX AUDIO	"0 0 1" : Suspend. "0 0 7" : Carrier On "0 0 9 0 3 8 3 'END' " : Set channel to 383. "0 1 2" : RX Audio unmute. Set the equipment as following. RF frequency : 881.49MHz Input RF level : -80dBm Modulation frequency : 1kHz Frequency deviation : $\pm$ 8kHz Measure audio AC level.

2. CDMA

TEST ITEMS	PROCEDURE
1. PREPARANCE	Set test equipments up. [6 5 4 8 # 0 * 4 5 6 8 0] : Enter the Test Mode "0 0 1" : Suspend Confirm that the phone is in the "CDMA Mode". (If not CDMA Mode, Use Test Command "020""2XXXX" and Push the [save] Key to "OK", and enter "0 0 2" to restart) If you select a wrong key, press "END", then enter new command. To exit the Test Mode at any time, just press [0 0 2].
2. FREQUENCY ACCURACY	"0 0 1" : Suspend. "0 0 9 0 3 8 3 'END' " : Set channel to 383. "0 0 7" : Carrier On. "0 3 4" : Spread spectrum. "0 7 4 3 0 0 'END' " : Set AGC level. Measure the TX frequency : 836.49MHz±300Hz.
3. OCCUPIED CDMA BANDWIDTH	"0 0 1" : Suspend. "0 0 9 0 3 8 3 'END' " : Set channel to 383. "0 0 7" : Carrier On. "0 3 4" : Spread spectrum. "0 7 4 X X X 'END' " : Enter AGC Code(XXX) to adjust RF Output Power. Measure the bandwidth (spec: 1.23MHz).
4. LIMITATIONS ON EMISSIONS	"0 0 1" : Suspend. "0 0 9 0 3 8 3 'END' " : Set channel to 383. "0 0 7" : Carrier On. "0 3 4" : Spread spectrum. "0 7 4 X X X 'END' " : Enter AGC Code(XXX) to adjust RF Output Power. Measure the spurious at $F_c \pm 900\text{kHz}$, $F_c \pm 1.98\text{MHz}$, $2F_c$, $3F_c$, $1/2F_c$. spec: $F_c \pm 900\text{kHz}$ below 42dBc/30kHz $F_c \pm 1.98\text{MHz}$ below 54dBc/30kHz Outside Receive Band 43+10log (PY) PY: Mean Output Power in watts
5. GATED POWER & TIME	Set the service option 2. Set the data rate Eighth (1200bps). Registering: HHP → HP8924C. Call : HP8924C → HHP. Measure the Gated Power & Time. spec : Gated Power - at least 20dB Gated Time - Rising Time : below 6μs Falling Time : below 6μs Burst Time : below 1.25ms

3. PCS

TEST ITEMS	PROCEDURE
1. PREPARANCE	Set test equipments up. [6 5 4 8 # 0 * 4 5 6 8 0] : Enter the Test Mode "0 0 1" : Suspend Confirm that the phone is in the "PCS Mode". (If not PCS Mode, Use Test Command "020""3XXXX" and Push the [save] Key to "OK", and enter "0 0 2" to restart) If you select a wrong key, press "END", then enter new command. To exit the Test Mode at any time, just press [0 0 2].
2. FREQUENCY ACCURACY	"0 0 1" : Suspend. "0 0 9 0 6 0 0 'END' " : Set channel to 600. "0 0 7" : Carrier On. "0 3 4" : Spread spectrum. "0 7 4 3 0 0 'END' " : Set AGC level. Measure the TX frequency : 1880.00MHz $\pm$ 300Hz.
3. OCCUPIED CDMA BANDWIDTH	"0 0 1" : Suspend. "0 0 9 0 6 0 0 'END' " : Set channel to 600. "0 0 7" : Carrier On. "0 3 4" : Spread spectrum. "0 7 4 X X X 'END' " : Enter AGC Code(XXX) to adjust RF Output Power. Measure the bandwidth (spec: 1.23MHz).
4. LIMITATIONS ON EMISSIONS	"0 0 1" : Suspend. "0 0 9 0 6 0 0 'END' " : Set channel to 600. "0 0 7" : Carrier On. "0 3 4" : Spread spectrum. "0 7 4 X X X 'END' " : Enter AGC Code(XXX) to adjust RF Output Power. Measure the spurious at $F_c \pm 1.25\text{MHz}$ spec: $F_c \pm 1.25\text{MHz}$ below 42dBc/30kHz
5. GATED POWER & TIME	Set the service option 2. Set the data rate Eighth (1200bps). Registering: HHP $\rightarrow$ HP8924C. Call : HP8924C $\rightarrow$ HHP. Measure the Gated Power & Time. spec : Gated Power - at least 20dB Gated Time - Rising Time : below 6μS Falling Time : below 6μS Burst Time : below 1.247mS

7. PARTS LIST

No	Descriptions	Count	Part Number	Part Name
1	Diode	2	BAT54AW	D800 D820
2	Diode	1	HSMS-282C-TR	D400
3	Diode	4	1SV279-TPH3	D103 D104 D106 D107
4	Diode	11	SMF05.TB	D108 D109 D110 D200 D204 D701 D702 D703 D704 D705 D706
5	Diode	3	DAN202UT106	D100 D101 D102
6	Diode	4	DA221TL	D206 D207 D821 D822
7	Diode	1	BAR63-03W	D301
8	Diode	1	BAR63-02W-E6327	D105
9	Diode	3	HSMP-389F-TR	D302 D303 D401
10	Transistor	2	2SC4081BRT106	Q203 Q302
11	Transistor	1	MMBT2222AWT1	Q104
12	Transistor	1	BFP520	Q301
13	Transistor	4	DTC114EE/TR	Q105 Q202 Q801 Q802
14	Transistor	4	DTC144EE/TR	Q101 Q103 Q201 Q803
15	Transistor	1	DTA144EE/TR	Q204
16	Transistor	1	DTA114EE-TL	Q303
17	Transistor	1	2SK2685ZT	U304
18	Transistor	1	SI3443DV-T1	U224
19	Transistor	7	FDC6329L	U215 U225 U227 U229 U305 U418 U419
20	Transistor	1	FDN340P	Q808
21	Transistor	2	FDC6306P	U417 U801
22	Transistor	4	UMC5NTL	Q305 U111 U415 U416
23	Transistor	1	SML-310LT-T86	LED101
24	Transistor	1	TC7S14FU(TE85L)	U969
25	Transistor	2	MC74VHC1G08DFT1	U105 U504
26	Transistor	4	TC7S08FUTE85L	U106 U107 U809 U821
27	Transistor	1	TC7S32FU	U805
28	Transistor	2	TC7W74FU	U700 U970
29	Transistor	3	TC7S04FU(TE85L)	U110 U203 U804
30	Transistor	1	TC7S66FU(TE85L)	U211
31	Transistor	3	TC7SH32FU(TE85L)	U503 U520 U810
32	Transistor	1	SW395TR	U303
33	Transistor	6	MAX4599EXT-T	U216 U725 U808 U812 U814 U816
34	Transistor	1	X84256BI-2.5	U204
35	Transistor	1	KM68U4100CLZI-10L	U901
36	Transistor	1	IDT71V30VL90TF	U602
37	Transistor	1	AM29DL164CB90WCI	U902
38	Transistor	1	GT28F320C3BA110	U601

39	Transistor	2	LMV821M7	U420 U421
40	Transistor	1	RM912	U413
41	Transistor	1	LM4890MM	U217
42	Transistor	1	TC75W56FU - TE12L	U240
43	Transistor	3	MIC5205 - 3.3BM5	U226 U802 U807
44	Transistor	1	MIC5205BM5	U820
45	Transistor	1	MAX809REUR - T	U219
46	Transistor	1	RN5VD27CA - TR	U500
47	Transistor	2	MAX1676EUB - T	U800 U840
48	Transistor	4	ILC7082AIM5 - 30	U214 U220 U223 U228
49	Transistor	1	IFR3000 - 48TQFP - MT	U108
50	Transistor	1	IFT3000 - 48TQFP - MT	U109
51	Transistor	1	MRFIC0954R2	U414
52	Transistor	1	MRFIC1854R2	U403
53	Transistor	1	MSM3000C196PBGA	U101
54	Transistor	1	CMY212B	U301
55	Thermistor	1	NTH5G36B103J01TE	TH101
56	Resistor	23	100,5%	R100 R115 R118 R127 R137 R138 R139 R146 R169 R174 R175 R179 R180 R321 R332 R337 R611 R826 R808 R815 R819 R823 R122
57	Resistor	18	1K,5%	R123 R193 R207 R230 R231 R274 R500 R501 R504 R514 R614 R707 R708 R761 R802 R807 R853 U923
58	Resistor	9	2.2K,5%	R23 R202 R236 R294 R299 R343 R432 R436 R447
59	Resistor	6	4.7K,5%	R15 R116 R120 R185 R269 R817
60	Resistor	3	5.1K,5%	R323 R324 R435
61	Resistor	3	6.8K,5%	C218 R200 R229
62	Resistor	1	8.2K,5%	R19
63	Resistor	24	10K,5%	R25 R126 R128 R130 R140 R145 R149 R154 R163 R166 R173 R176 R189 R198 R240 R246 R297 R430 R441 R448 R512 R725 R927 R928
64	Resistor	1	18K,5%	R318
65	Resistor	4	20K,5%	R124 R129 R152 R155

66	Resistor	8	22K,5%	R150 R151 R157 R158 R239 R248 R255 R902
67	Resistor	1	30K,5%	R182
68	Resistor	5	47K,5%	R11 R12 R215 R256 R727
69	Resistor	8	56K,5%	R28 R201 R208 R280 R295 R344 R431 R443
70	Resistor	3	68K,5%	R241 R252 R271
71	Resistor	20	100K,5%	R21 R40 R184 R196 R203 R238 R258 R276 R281 R283 R285 R288 R601 R724 R801 R806 R816 R818 R926 R939
72	Resistor	5	200K,5%	R211 R221 R222 R291 R762
73	Resistor	1	300K,5%	R852
74	Resistor	4	470K,5%	R289 R811 R813 R814
75	Resistor	3	510K,5%	R760 R812 R855
76	Resistor	1	1M,5%	R810
77	Resistor	3	10,5%	R134 R172 R338
78	Resistor	11	22,5%	R320 R612 R613 R709 R710 R711 R713 R714 R715 R716 R717
79	Resistor	1	47,5%	R339
80	Resistor	1	1.5K,5%	R342
81	Resistor	1	470,5%	R144
82	Resistor	2	560K,5%	R186 R191
83	Resistor	1	680,5%	R117
84	Resistor	1	750,5%	R14
85	Resistor	2	82,5%	R325 R326
86	Resistor	1	30,5%	R726
87	Resistor	1	36,5%	R412
88	Resistor	1	20,5%	R316
89	Resistor	1	150,5%	R114
90	Resistor	2	200,5%	R800 R862
91	Resistor	1	330,5%	R171
92	Resistor	2	1.2K,5%	R1 R729
93	Resistor	2	1.8K,5%	R164 R420
94	Resistor	1	3.3K,5%	R712
95	Resistor	2	510,5%	R156 R159
96	Resistor	1	18,5%	R904
97	Resistor	2	3.9K,5%	R340 R437
98	Resistor	1	300,1%	R167
99	Resistor	1	680,5%	R911
100	Resistor	1	9.1K,5%	R442

101	Resistor	4	100K,1%	R143 R327 R328 R445
102	Resistor	2	300,1%	R413 R414
103	Resistor	1	39K,1%	R162
104	Resistor	1	1.2K,1%	R161
105	Resistor	1	27K,1%	R701
106	Resistor	1	240,5%	R439
107	Resistor	10	10K,1%	R3 R24 R27 R153 R160 R178 R287 R292 R298 R341
108	Resistor	2	3.3,5%	R723 R822
109	Resistor	2	33K,1%	R273 R444
110	Resistor	1	12K,1%	R177
111	Resistor	1	3.3K,1%	R859
112	Resistor	3	200K,1%	R703 R850 R865
113	Resistor	1	7.5K,1%	R751
114	Resistor	1	154K,1%	R434
115	Resistor	1	150K,1%	R860
116	Resistor	1	11.3K,1%	R4
117	Resistor	1	91K,1%	R858
118	Resistor	1	330K,1%	R864
119	Resistor	3	1.8K,1%	R131 R329 R331
120	Resistor	72	0,5%	L421 R2 R13 R17 R112 R119 R121 R133 R142 R147 R183 R188 R190 R192 R194 R195 R212 R223 R228 R233 R259 R260 R261 R275 R286 R293 R296 R322 R330 R333 R334 R335 R336 R400 R417 R422 R424 R425 R440 R450 R520 R522 R523 R525 R527 R702 R718 R719 R728 R732 R750 R780 R803 R851 R854 R861 R900 R901 R909 R915 R919 R921 R922 R929 R930 R931 R933 R937 R940 R941 U975 R932
121	Capacitor	32	C101J,100PF,50V	C10 C132 C142 C179 C182 C193 C211 C212 C214 C215 C240 C341 C342 C345 C356 C393

				C394 C395 C413 C437 C439 C446 C449 C451 C452 C461 C464 C466 C504 C828 C943 C944
122	Capacitor	53	C103K,10NF,16V	C100 C112 C113 C116 C118 C120 C122 C124 C126 C128 C130 C131 C136 C153 C154 C160 C183 C185 C190 C235 C254 C256 C260 C264 C269 C318 C328 C331 C344 C354 C365 C375 C378 C384 C399 C411 C416 C420 C436 C438 C440 C447 C448 C454 C462 C465 C469 C470 C473 C474 C503 C704 C935 C30
123	Capacitor	2	C100D,10PF,50V	C825 C880
124	Capacitor	2	C120J,12PF,50V	C347 C358
125	Capacitor	2	11PF,50V	C137 C145
126	Capacitor	5	C150J,15PF,50V	C324 C426 C443 C460 C321
127	Capacitor	2	C180J,18PF,50V	C143 C421
128	Capacitor	68	C102K,1NF,50V	C32 C114 C115 C117 C119 C121 C123 C133 C134 C135 C139 C140 C144 C155 C156 C157 C158 C161 C162 C176 C194 C261 C266 C301 C313 C327 C333 C336 C337 C338 C339 C340 C343 C346 C352 C355 C359 C360 C362 C363 C364 C379 C381 C398 C414 C423 C427 C428 C429 C434 C441 C457 C706 C707 C708 C709 C712 C713 C714 C715 C801 C806 C808 C816

				C819 C933 C940 L302
129	Capacitor	3	C010C,1PF,50V	C330 C334 C467
130	Capacitor	1	C222K,2.2NF,50V	C138
131	Capacitor	2	C221K,220PF,50V	C247 C366
132	Capacitor	1	C220J,22PF,50V	C15
133	Capacitor	2	C270J,27PF,50V	C188 C189
134	Capacitor	1	7PF,50V	C367
135	Capacitor	4	C330J,33PF,50V	C415 C435 U973 U974
136	Capacitor	1	C390J,39PF,50V	C361
137	Capacitor	3	C030C,3PF,50V	C316 C422
138	Capacitor	2	C472K,4.7NF,25V	C171 C172
139	Capacitor	6	C471K,470PF,50V	C147 C150 C168 C174 C178 C180
140	Capacitor	10	C470J,47PF,50V	C111 C224 C225 C226 C227 C353 C412 C417 C450 C475
141	Capacitor	1	C040C,4PF,50V	C419
142	Capacitor	1	C681K,680PF,50V	C200
143	Capacitor	2	C060D,6PF,50V	C506 C507
144	Capacitor	4	C822K,8.2NF,16V	C164 C165 C166 C167
145	Capacitor	3	C080D,8PF,50V	C169 C326 C314
146	Capacitor	2	C473K,47NF,16V	C148 C163
147	Capacitor	1	1NF,50V	C368
148	Capacitor	1	C050C,5PF,50V	C373
149	Capacitor	7	C561K,560PF,50V	C257 C263 C270 C271 C388 C472 C477
150	Capacitor	2	C510J,51PF,50V	C430 C432
151	Capacitor	2	C620J,62PF,50V	C159 C173
152	Capacitor	1	C090C,9PF,50V	C170
153	Capacitor	3	C4R7C,4.7PF,50V	C431 C433 C463 C34
154	Capacitor	1	C6R8C,6.8PF,50V	C351
155	Capacitor	67	C104Z,100NF,16V	C25 C125 C127 C129 C149 C152 C186 C187 C216 C219 C221 C222 C229 C230 C234 C237 C242 C243 C244 C250 C332 C369 C370 C372 C376 C377 C387 C396 C425 C456 C502 C508 C509 C510 C511 C512 C513 C601 C602 C603 C604 C605 C606 C607 C608 C700

				C701 C702 C703 C710 C755 C810 C814 C815 C818 C821 C824 C850 C851 C852 C857 C862 C902 C910 C936 U971
156	Capacitor	10	C105Z,1UF,10V	C217 C232 C233 C252 C258 C262 C267 C826 C829 C830 C500
157	Capacitor	1	C1R5B,1.5PF,50V	C418 C312
158	Capacitor	3	C010B,1PF,50V	C317 C471 C932
159	Capacitor	1	C070B,7PF,50V	C350
160	Capacitor	3	C050B,5PF,50V	C329 C444
161	Capacitor	1	C333K,33NF,10V	C151
162	Capacitor	1	C473K,47NF,10V	C476
163	Capacitor	2	C224Z,220NF,10V	C141 C177
164	Capacitor	1	C334Z,330NF,10V	C505
165	Capacitor	5	C475K,4.7UF,6.3V	C236 C253 C259 C268 C478
166	TA Capacitor	2	1UF/16V	C196 C903
167	TA Capacitor	5	4.7UF/6.3V	C424 C445 C807 C827 C831
168	TA Capacitor	2	3.3UF/6.3V	C442 C458
169	TA Capacitor	1	2.2UF/6.3V	C175
170	TA Capacitor	4	33UF/6.3V	C220 C265 C823 C863
171	TA Capacitor	1	22UF/16V	C255
172	TA Capacitor	15	10UF/6.3V	C213 C223 C300 C385 C386 C389 C390 C397 C711 C800 C811 C813 C941 C942 C945
173	TA Capacitor	2	100UF/6.3V	C802 C803
174	Inductor	1	MLF1608DR10KT	L413
175	Inductor	1	MLF1608DR33KT	L345
176	Inductor	1	MLF1608DR47KT	L344
177	Inductor	1	MLF1608DR22KT	L415
178	Inductor	2	MLF1608A1R0KT	L119 L120
179	Inductor	4	MLF1608A1R8KT	L347 L348 L349 L350
180	Inductor	1	LL1608-F4N7K	L380
181	Inductor	1	LL1005-F10NK	L301
182	Inductor	1	LK1608-100K-T	L115
183	Inductor	1	LL1608-FH3N9S	L346
184	Inductor	1	LL1608-FH47NJ	L321
185	Inductor	2	HK1608-68NJ-T	L300 L320
186	Inductor	2	LL1005-F12NK	L336 L398
187	Inductor	1	0603HS-27NTJBC	L121
188	Inductor	1	LL1608-FSR10J	L315
189	Inductor	1	0603CS-R10XJBC	L414

190	Inductor	1	0603CS-33NXJBC	L324
191	Inductor	3	HK1005-6N8K-T	L411 L417 L423
192	Inductor	2	HK1005-5N6K-T	L322 L340
193	Inductor	1	LL1005-FH33NJ	L330
194	Inductor	2	LL1005-FH22NJ	L326 L429
195	Inductor	2	LL1005-FH15NJ	L399 L425
196	Inductor	1	0603CS-27NXGBC	L114
197	Inductor	2	LL1005-FH8N2J	L422 L426
198	Inductor	2	HK1005-3N9K-T	L305
199	Inductor	1	BDS-4020R-100M	L830
200	Inductor	1	LL1005-FH4N7S	L331
201	Inductor	2	LL1005-FH1N0S	L338 L412
202	Inductor	1	LL1005-FH39NJ	L337
203	Inductor	2	LL1005-FH82NJ	L335 L419
204	Inductor	1	LL1005-FH68NJ	L418
205	Inductor	1	LL1608-FSR22J	L334
206	Inductor	2	LQW1608AR18G00T1	L113 L116
207	Inductor	1	HK1005-4N7K-T	L313 L328
208	Inductor	1	HK1005-8N2J-T	L397
209	Inductor	1	HK1608-8N2K-T	L317
210	Inductor	1	HK1005-18NJ-T	L428
211	Xtal Oscillator	1	CC4V-T1 32.768KHz 9pF	OSC102
212	Xtal Oscillator	1	MC-146(32.768KHz,20ppm)	OSC501
213	Xtal Oscillator	1	CSTCW2700MX03	OSC101
214	Transistor	1	VC-TCXO-204C1	U309
215	FILTER	1	FAR-F6CE-1G9600-L2XB	F301
216	FILTER	1	FAR-F6CE-1G7475-L2YAD	F302
217	FILTER	1	FB-G039	F402
218	FILTER	1	SAFC85.380ME35X-TC11	F310
219	FILTER	2	D836LH	F405 F406
220	FILTER	1	D881LH	F306
221	FILTER	1	TMXL011	F303
222	FILTER	1	TMXL972	F308
223	FILTER	1	D967LH	F304
224	FILTER	1	B4138	F401
225	FILTER	1	B7802	F404
226	FILTER	1	DFX1880J1960F	F305
227	FILTER	1	DFX0836H881G	F309
228	Inductor	11	BLM11A102SPT	L111 L112 L117 L118 L201 L316 L325 L352 L354 L424 L430 L420
229	Inductor	2	BLM21P300SPT	L831 L832
230	Inductor	2	ACZ1005M-152-T	L720 L721
231	CONNECTOR	1	MHC-177	J301
232	CONNECTOR	1	AXK5F40335J	CN707
233	CONNECTOR	1	2000-9004-300	CN703
234	CONNECTOR	1	EPJ1-5-A-D1	CN201
235	Inductor	1	SLH-S100C	L353
236	FILTER	1	SLF-080ML	F307
237	Inductor	1	SLH-S170C	L351

238	Transistor	1	PO5252FA	U307
239	Transistor	1	NJG1557	U302
240	Inductor	1	CIL10NR18KNES	L427
241	Transistor	1	ADS7846E/2K5	U703
242	Transistor	1	FDR8308P	U222
243	Transistor	1	K4E641612D - TL50	U603
244	Transistor	1	MC68VZ328ZC16V	U501
245	Transistor	1	ML7041	U212
246	Transistor	1	R3111Q171C	U972
247	Transistor	1	RI23110K	U412
248	Transistor	1	SED1375	U702
249	Switch	1	SKRE6 - 1	SW501
250	Transistor	1	TC7WH240FK	U604
251	Transistor	1	TFDU4201	U815
252	Transistor	4	TN0205AD	Q707 Q804 Q805 U505
253	Transistor	1	R3111Q251C	U811
254	Transistor	1	R3111Q201C	U806
255	CONNECTOR	1	54548 - 2111	CN705
256	CONNECTOR	1	IFCON IMSI	CN706
257	CONNECTOR	1	CON10	CN702
258	Transistor	2	FDN338P	Q106 Q107
259	Transistor	2	FDN337N	Q806 Q807
260	FILTER	1	SI - 5BBL0836M01 - T	F407
261	Inductor	1	LQH1C220K34	L800