

ATTACHMENT K – PARTS LIST / TUNE UP PROCEDURES

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PARTS LIST

No	Descriptions	COUNT	Part Number	Part Name
1	Diode	4	1SV279-TPH3	D380 D381 D401
				D402
2	Diode	9	SMF05.TB	ZD160 ZD161 ZD162
				ZD163 ZD180 ZD181
				ZD200 ZD210 ZD220
3	Diode	1	DAN202UT106	D240
4	Diode	1	RN731V	D301
5	Diode	1	BAR63-02W-E6327	D302
6	Transistor	1	2SA1576FRT106	Q483
7	Transistor	2	2SC4081BRT106	Q121 Q301
8	Transistor	1	MMBT2907A	Q220
9	Transistor	2	2SA1774R-TL	Q110 Q111
10	Transistor	1	AT-32032-TR1	Q445
11	Transistor	3	MMBT2222AWT1	Q222 Q240 Q241
12	Transistor	1	DTC114EE/TR	Q221
13	Transistor	1	DTC144EE/TR	Q122
14	Transistor	1	SI3443DV-T1	Q120
15	Transistor	1	FDG6323L	Q441
16	Transistor	2	UMC5NTL	Q380 Q390
17	Gate	2	TC7S32FU	U112 U113
18	Gate	2	TC7S04FU(TE85L)	U111 U150
19	Switch	2	MAX4599EXT-T	Q444 U402
20	EEPROM	1	AT24C256-10UI-2.7-T.R	U210
21	Memory	1	LRS1349	U110
22	OP Amp.	2	LMV821M7	U481 U482
23	PAM	1	RM912	U443
24	Drive Amp.	1	MGA-72543-TR1	U442
25	LNA	1	RF2361TR13	U310
26	OP Amp.	1	TC75W56FU-TE12L	U230
27	Regulator	2	MIC5205-3.0BM5/TR	U390 U491
28	Reset IC	1	LP3470IM5X-2.63	U121
29	Regulator	1	TPS76928DBVR	U120
30	Regulator	2	TPS76930DBVR	U250 U391
31	IFR3000	1	IFR3000-48BCCF-TR	U340
32	IFT3000	1	IFT3000-48BCCF-TR	U401
33	CODEC	1	TWL1103PBSR	U200
34	MSM3000	1	MSM3000-196PBGA-MT	U100
35	Up Converter	1	RF2638TR13	U441
36	Down Converter	1	RF2466TR13	U330
37	PLL	1	LMX2332LSLBTMX	U370
38	Thermistor	1	NTH5G1M33B103I04TH	TH401
39	Resistor(1005 size)	2	2K.5%	R180 R181 R182
				R183 R184 R185
				R186 R187 R188
				R190 R191 R192

40	Resistor(1005 size)	0	100,5%	R140 R142 R143
				R145 R146 R147
				R148 R280 R281
				R443
41	Resistor(1005 size)	8	1K,5%	R221 R240 R330
				R341 R377 R447
				R449 R482
42	Resistor(1005 size)	3	2.2K,5%	R123 R231 R260
43	Resistor(1005 size)	4	4.7K,5%	R127 R154 R155
				R391
44	Resistor(1005 size)	2	8.2K,5%	R403 R407
45	Resistor(1005 size)	7	10K,5%	R106 R200 R375
				R376 R409 R410
				R450
46	Resistor(1005 size)	1	12K,5%	R446
47	Resistor(1005 size)	4	20K,5%	R153 R158 R159
				R222
48	Resistor(1005 size)	1	22K,5%	R264
49	Resistor(1005 size)	2	47K,5%	R121 R453
50	Resistor(1005 size)	2	56K,5%	R152 R458
51	Resistor(1005 size)	1	100K,5%	R102 R103 R104
				R109 R122 R124
				R125 R126 R128
				R141 R189 R201
				R202 R232 R233
				R445 R451 R452
				R455 R460 R489
52	Resistor(1005 size)	1	120K,5%	R263
53	Resistor(1005 size)	1	470K,5%	R149
54	Resistor(1005 size)	1	1M,5%	R344
55	Resistor(1005 size)	2	10,5%	R380 R381
56	Resistor(1005 size)	3	22,5%	R350 R370 R444
57	Resistor(1005 size)	1	220K,5%	R230
58	Resistor(1005 size)	1	33K,5%	R342
59	Resistor(1005 size)	2	470,5%	R144 R160 R161
				R162 R163 R164
				R165 R166 R167
				R168 R169 R170
60	Resistor(1005 size)	1	750,5%	R105
61	Resistor(1005 size)	2	18,5%	R360 R362
62	Resistor(1005 size)	2	36,5%	R224 R225
63	Resistor(1005 size)	1	51,5%	R448
64	Resistor(1005 size)	2	200,5%	R361 R371
65	Resistor(1005 size)	1	910,5%	R373
66	Resistor(1005 size)	2	3.3K,5%	R157 R223
67	Resistor(1005 size)	3	510,5%	R301 R402 R404
68	Resistor(1005 size)	2	430,5%	R311 R378

69	Resistor(1005 size)	1	62.5%	R457
70	Resistor(1005 size)	1	62K,5%	R406
71	Resistor(1005 size)	1	3.9K,5%	R220
72	Resistor(1005 size)	3	100K,1%	R401 R420 R490
73	Resistor(1005 size)	1	300,1%	R412
74	Resistor(1005 size)	1	4.7K,1%	R415
75	Resistor(1005 size)	1	1.2K,1%	R418
76	Resistor(1005 size)	1	47K,1%	R408
77	Resistor(1005 size)	1	33K,1%	R416
78	Resistor(1005 size)	1	12K,1%	R411
79	Resistor(1005 size)	1	1K,1%	R456
80	Resistor(1005 size)	2	200K,1%	R481 R484
81	Resistor(1005 size)	1	1.5K,1%	R454
82	Resistor(1005 size)	1	91K,1%	R419
83	Resistor(1005 size)	1	1.8K,1%	R414 R454
84	Resistor(1005 size)	4	0.5%	R100 R150 R151
				R253 R261 R262
				R270 R273 R310
				R343 R372 R374
				R405 R459
85	Resistor(1005 size)	1	9.1K,1%	R417
86	Capacitor(1005 size)	3	C101J,100PF,50V	C128 C140 C142
				C145 C146 C147
				C148 C160 C161
				C162 C163 C164
				C165 C317 C334
				C335 C345 C346
				C359 C369 C377
				C378 C379 C383
				C384 C454 C455
				C459 C472 C474
				C479 C494 C496
87	Capacitor(1005 size)	8	C103K,10NF,16V	C102 C104 C106
				C108 C110 C116
				C126 C154 C155
				C281 C282 C307
				C332 C336 C339
				C341 C343 C349
				C352 C356 C357
				C362 C370 C381
				C395 C398 C402
				C404 C405 C407
				C408 C446 C458
				C470 C471 C473
				C481 C495
88	Capacitor(1005 size)	1	C100D,10PF,50V	C413
89	Capacitor(1005 size)	2	C121J,120PF,50V	C374 C376

90	Capacitor(1005 size)	4	C120J,12PF,50V	C303 C305 C328
				C329
91	Capacitor(1005 size)	5	C151J,150PF,50V	C313 C461 C463
				C464 C484 C467
92	Capacitor(1005 size)	8	C102K,1NF,50V	C131 C302 C304
				C327 C330 C331
				C338 C340 C342
				C403 C406 C409
				C416 C422 C431
				C432 C433 C441
				C442 C443 C444
				C445 C447 C448
				C450 C457 C476
				C483
93	Capacitor(1005 size)	2	C150J,1.5PF,50V	L502 C502
94	Capacitor(1005 size)	2	C222K,2.2NF,50V	C231 C280
95	Capacitor(1005 size)	2	C221K,220PF,50V	C351 C382
96	Capacitor(1005 size)	3	C020C,2PF,50V	C449 C466
97	Capacitor(1005 size)	2	C330J,33PF,50V	C286 C288
98	Capacitor(1005 size)	2	C390J,39PF,50V	C196 C197
99	Capacitor(1005 size)	1	C472K,4.7NF,25V	C373
100	Capacitor(1005 size)	7	C471K,470PF,50V	C143 C144 C290
				C291 C301 C350
				C414
101	Capacitor(1005 size)	4	C470J,47PF,50V	C114 C115 C271
				C272
102	Capacitor(1005 size)	1	C040C,4PF,50V	C321
103	Capacitor(1005 size)	4	C680J,68PF,50V	C180 C181 C182
				C183 C184 C185
				C186 C187 C188
				C189 C190 C191
				C193 C194
103	Capacitor(1005 size)	3	C060D,6PF,50V	C323 C324 C453
104	Capacitor(1005 size)	2	C822K,8.2NF,16V	C158 C159
105	Capacitor(1005 size)	2	C080D,8PF,50V	C325 C326
106	Capacitor(1005 size)	9	C223Z,22NF,25V	C151 C306 C320
				C333 C410 C418
				C420 C421 C482
107	Capacitor(1005 size)	4	C473K,47NF,16V	C308 C365 C475
				C492
108	Capacitor(1005 size)	2	C510J,51PF,50V	C411 C412
109	Capacitor(1005 size)	1	C090C,9PF,50V	C375
110	Capacitor(1005 size)	2	C104Z,100NF,16V	C50 C51 C101 C103
				C105 C107 C109
				C111 C112 C113
				C122 C124 C130
				C157 C192 C201

				C202 C205 C206
				C210 C230 C250
				C263 C274 C289
				C311 C315 C316
				C337 C361 C380
				C485
111	Capacitor(1608 size)	8	C105Z,1UF,10V	C220 C273 C275
				C284 C287 C417
				C460 C465
112	Capacitor(1608 size)	1	C104K,100NF,16V	C260
113	Capacitor(1005 size)	1	C010B,1PF,50V	C452
114	Capacitor(1005 size)	1	C050B,5PF,50V	C348
115	Capacitor(1005 size)	2	C030B,3PF,50V	C318 C462 C477
116	Capacitor(1005 size)	6	C333K,33NF,10V	C129 C314 C319
				C322 C366 C371
117	Capacitor(1005 size)	2	C473K,47NF,10V	C451 C456
118	Capacitor(1005 size)	1	C683K,68NF,10V	C363
119	Capacitor(2012 size)	1	4.7UF/6.3V	C372
120	Capacitor(2012 size)	1	470NF/20V	C364
121	Capacitor(2012 size)	2	10UF/6.3V	C127 C200 C252
				C312 C344 C355
				C360 C394 C399
				C493 C501 C506
122	Capacitor(3518 size)	4	33UF/6.3V	C120 C121 C123
				C270
123	Inductor(1608 size)	1	MLF1608DR47KT	L336
124	Inductor(1608 size)	2	MLF1608A1R0KT	L401 L402
125	Inductor(1608 size)	3	MLF1608A2R7KT	L322 L323 L324
126	Inductor(1608 size)	2	LL1608-FHR10J	L303 L371
127	Inductor(1608 size)	1	LL1608-F12NJ	L310
128	Inductor(1608 size)	1	MLF1608DR15KT	L301
129	Inductor(1005 size)	1	LL1005-F8N2K	L444
130	Inductor(1005 size)	1	LL1005-F12NK	L501
131	Inductor(1005 size)	2	LL1005-F12NK	L441
132	Inductor(1005 size)	2	HK1005-6N8K-T	L442 L443
133	Inductor(1005 size)	1	LL1005-FH27NJ	L313
134	Inductor(1005 size)	1	LL1005-FH15NJ	L312
135	Inductor(1608 size)	1	0603CS-56NXJBC	L372
135	Inductor(1005 size)	1	LL1005-FH2N7J	R459
136	Inductor(1005 size)	1	LL1005-FH8N2J	L320
137	Inductor(1005 size)	1	LL1005-FH4N7S	L450
138	Inductor(1005 size)	1	LL1005-FH5N6S	L302
139	Inductor(1608 size)	1	0603CS-27NXGBC	L403
140	Inductor(1608 size)	1	0603CS-R22XJBC	L332
141	Inductor(1608 size)	2	0603CS-R22XJBC	L321 L331
142	Inductor(1005 size)	1	HK1005-8N2J-T	L449
143	Xtal Oscillator	1	MC-146(32.768KHz,20ppm)	X100

145	UHF Oscillator	1	UCVW4X103A	U350
146	VC-TCXO	1	TCO-5812U1(19.68MHZ)	U380
147	RX RF SAW Filter	1	FAR-F5CE-881M50-D233-V	F320
148	Tx RF SAW Filter	1	D836LH	F445
149	Tx RF SAW Filter	1	D836MH	F446
150	AMPS IF SAW Filter	1	MSFB27-85-030K0	F340
151	SAW Duplexer	1	EFSD836MB1Z1	F301
152	Bead	2	BLM11A102SPT	L325 L334
153	Bead	2	BLM11A102SPT	L335 L370
154	Bead	7	ACZ1005M-152-T	F401 F402 F403
				F443 F444 L280
				L281
155	RF Connector	1	MHC-175	J501
156	LCD Connector	1	AXK5F24345J	J100
157	Interface Connector	1	1000-0024-301	J200
158	Ear Jack	1	EPI1-5-A-D1	J210
159	Isolator	1	CE053R836DCA	F448
160	NC	9	NC	R101 R107 R108
				R156 R210 R252
				R312 R324 R331
161	NC	8	NC	C125 C251 C264
				C347 C397 C469
				C477 C486
162	NC	1	NC	C262
163	NC	2	NC	T1 T2
164	TESTPOINT	1	TP	GND HP PWR RXD TX
				V BATT LWR TCK
				TDI TDO TMS
				TRST
165	TESTPOINT	2	TP	ANT1 ANT2
166	TESTPOINT	6	TP	LWR TCK TDI TDO
				TMS TRST
167	Keypad Connector	1	AXK6F24345J	J110
168	Transistor	2	2SK2035	Q442 Q481
169	CDMA IF SAW Filter	1	855845	F330
170	Power Detector	1	AD8314	U445
171	S-RAM	1	LP62S2048-T	U114
172	NC	1	NC	L311
173	NC	1	NC	L445
174	NC	1	NC	L333
175	NC	1	NC	L330

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NAM PROGRAMMING

NAM features can be programmed as follows:

LCD Display	Key in	Function
	menu + 60,000000	-selects NAM programming
NAM program 1:Setup NAM1 2:Setup NAM2	1	-choose 'Setup NAM1'
NAM1 Phone # 1234567890	Phone number OK	-Mobile Identification Number -to change, enter new one. -store it.
NAM1 Directory # 1234567890	Phone number OK	-Mobile Directory Number -to change, enter new one. -store it.
NAM1 Activate PRL Yes	< or > OK	-the roaming list(PRL) is enabled or not -to activate PRL, push the <OK> key to the right -store it.
NAM1 Anlg HomeSID 4369	ID number OK	Analog Home System ID, current status is displayed. -to change, enter new one. -store it.
NAM1 Dgtl HomeSID 4369	ID number OK	CDMA Home System ID, current status is displayed. -to change, enter new one. -store it.
NAM1 More Prog.? No	< or > OK	Basic programming completion display -No: Exit NAM programming -Yes: Continue more NAM programming

NAM program	1	Choose ' General'
1. General		
2. Setup NAM1		
3. Setup NAM2		
General		
ESN		-Electronic Serial Number of the phone is displayed
B0000000	OK	-Press OK , to view next status item.
General		
CAI version		-Common Air Interface version is displayed
3	OK	-Press OK , to view next status item.
General		
VOC Select		
SO_VOICE_08K	< or > OK	- to change Vocoder rate, push the <OK> key to the right - store it
General		
SCM		-Station Class Mark displays the power class, transmission, slotted class, dual mode.
01101010	OK	-Press OK , to view next status item.
General		
Service Code		NAM programming service lock code
000000	6-digit code OK	-to change, enter new code. -store it
General		
Lock Code		Security(Menu+0) Lock Code
0000	4-digit code OK	-to change, enter new code. -store it
General		
Slot Mode		Slot mode operation is enabled or not
Yes	< or > OK	-changes the status. -store it.
General		
Slot Index		Slot Cycle Index. The higher, the longer sleeping time
2	0-7 OK	-to change, enter new one. -store it.
General		
Roundup Timer		Roundup Timer.
No	< or > OK	-to change the status, push the <OK> key to the right -store it.

NAM program		3	choose 'Setup NAM2'
1. General			
2. Setup NAM1			
3. Setup NAM2			
NAM2 Digital			
IMSI_MCC	000	number	IMSI Mobile Country Code, current code is displayed.
		OK	-to change, enter new one.
			-store it.
NAM2 Digital			
IMSI_MNC	00	number	IMSI Mobile Network Code, current code is displayed.
		OK	-to change, enter new one.
			-store it.
NAM2 Digital			
Phone #	1234567890	Phone number	-Phone number
		OK	-to change, enter new one.
			-store it.
NAM2 Digital			
Directory #	1234567890	Phone number	-directory number
		OK	-to change, enter new one.
			-store it.
NAM2 Digital			
Pchn Sys A	283	Preferred Channel	-Primary CDMA Channel for System A
		OK	-to change, enter new one.
			-store it.
NAM2 Digital			
Pchn Sys B	384	Preferred Channel	-Primary CDMA Channel for System B
		OK	-to change, enter new one.
			-store it.
NAM2 Digital			
Schn Sys A	691	Preferred Channel	-Secondary CDMA Channel for System A
		OK	-to change, enter new one.
			-store it.
NAM2 Digital			
Pchn Sys B	777	Preferred Channel	-Secondary CDMA Channel for System B
		OK	-to change, enter new one.
			-store it.
NAM2 Digital			
Home SID 01	1	Phone number	1st CDMA Home system ID, current status is displayed
		OK	-to change, enter new one.
			-store it.
NAM2 Digital			
Home NID 01	65535	Phone number	1st CDMA Home Network ID, current status is displayed
		OK	-to change, enter new one.
			-store it.
NAM2 Digital			
Home SID 02	1	Phone number	2nd CDMA Home system ID, current status is displayed
		OK	-to change, enter new one.
			-store it.

NAM2 Digital Home NID 02	65535	Phone number OK	2nd CDMA Home Network ID, current status is displayed -to change, enter new one. -store it.
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----- repeated to SID 20 & NID 20-----

NAM2 Digital Lockout SID01	0	ID number OK	1st lockout system ID,current status is displayed. -to change, enter new one. -store it.
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NAM2 Digital Lockout SID02	0	ID number OK	2nd lockout system ID,current status is displayed. -to change, enter new one. -store it.
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----- repeated to Lockout SID10-----

NAM2 Digital CDMA Home SID	Yes	< or > OK	Autonomous registration status indicator -changes the status, push the <OK> key to the right -store it.
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NAM2 Digital CDMA fSID	Yes	< or > OK	Autonomous registration status indicator -changes the system, push the <OK> key to the right -store it.
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NAM2 Digital CDMA fNID	Yes	< or > OK	Autonomous registration status indicator -changes the system, push the <OK> key to the right -store it.
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NAM2 Digital ACCOLC	6	class number OK	CDMA Access Overload Class, current status is displayed. -to change, enter new one. -store it.
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NAM2 Analog Phone #	1234567890	Phone number OK	-Phone number -to change, enter new one. -store it.
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NAM2 Analog Home SID	1	Phone number OK	Analog Home system ID, current status is displayed -to change, enter new one. -store it.
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NAM2 Analog Auto Reg	Yes	< or > OK	Autonomous registration status indicator -changes the status, push the <OK> key to the right -store it.
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NAM2 Analog ACCOLC	6	class number OK	Analog Access Overload Class, current status is displayed. -to change, enter new one. -store it.
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- during the NAM programing if you want to return the previous item, push the <OK> key to the top side
 - during the NAM programing if you want to return the previous state , push the <CLR> key twice
 - after finishing the NAM programing, press <END> key to exit the NAM programing mode

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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 [*759#813580]

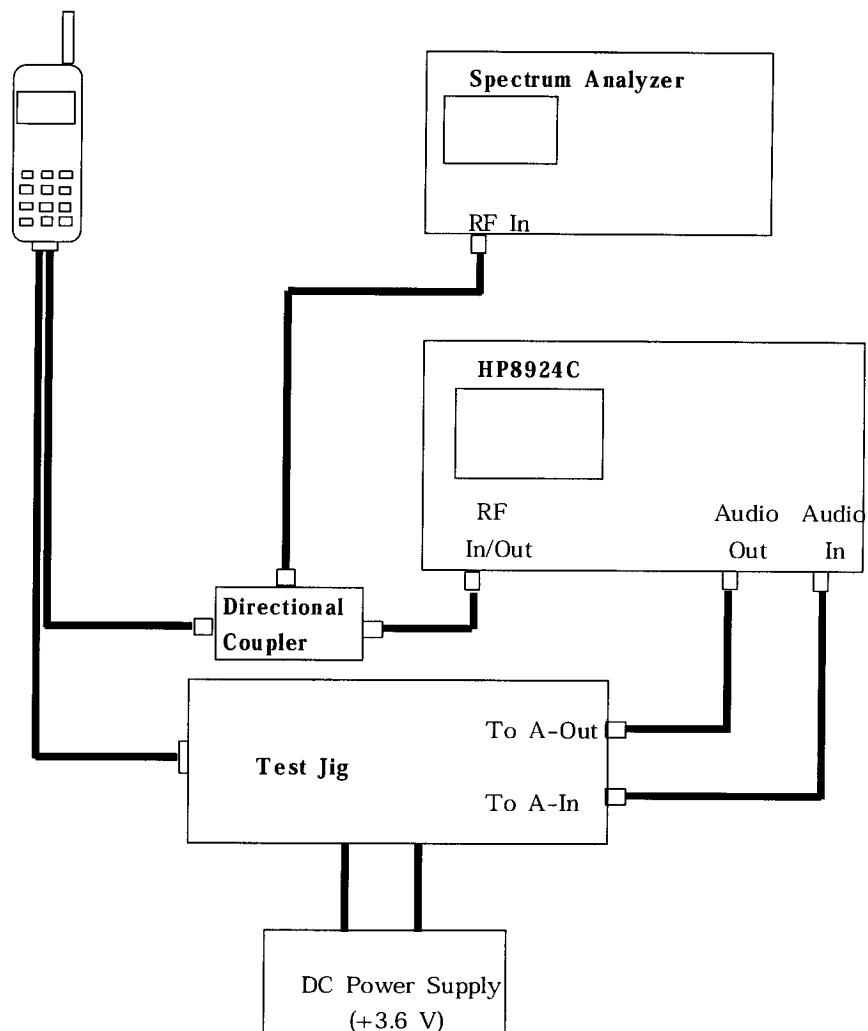
Command No	Command SW Name	Description
01(1F,0,0)	T_SUSPEND_I	Enter the test menu
02(3F,0,0)	T_RESTART_I	Escape from test menu
04(1D,0,1)	T_GET_MODE_I	Get mode CDMA/FM
07(81,0,0)	T_CARRIERON_I	Turn on the carrier
08(82,0,0)	T_CARRIEROFF_I	Turn off the carrier
09(83,4,0)	T_LOADSYN_I	Load the synthesizer for locking
10(84,1,0)	T_PWRLEVEL_I	Change RF power level
11(85,0,0)	T_RXMUTE_I	Mute rx audio
12(86,0,0)	T_RXUNMUTE_I	Unmute rx audio
13(87,0,0)	T_TXMUTE_I	Mute tx audio
14(88,0,0)	T_TXUNMUTE_I	Unmute tx audio
15(89,1,0)	T_VOC_ESEC_I	Echo Canceller On/Off
16(8F,0,0)	T_STON_I	Transmit a continuous Signaling Tone(ST)
17(90,0,0)	T_STOFF_I	Stop transmit a continuous Signaling Tone(ST)
18(92,2,0,63)	T_LCD_CONTRAST_I	Tune LCD contrast
19(93,0,0,0)	T_INDEX_DECR_I	Index dn key
20(9E,3,0,511)	T_LNA_GAIN_WR_I	write LNA gain for IMD test
21(9C,5,0,31175)	T_TEST_SYS_I	set test system & Channel
22(91,96,96)	T_SNDNAM_I ¹⁾	Display & Send NAM Information
23(95,3,4)	T_SNDVERSION_I ¹⁾	Display & Send Software Version
24(9F,7,8)	T_SNDESN_I ¹⁾	Display & return ESN
25(92,0,0)	T_BACKLIGHT_ON_I	Backlight on
26(93,0,0)	T_BACKLIGHT_OFF_I	Backlight off
27(96,0,0)	T_DATASVC_ON_I	Enable CD pin for the data service
28(97,0,0)	T_DATASVC_OFF_I	Disable CD pin for the data service
30(9D,15,0)	T_PLINE_I	Display and return production date
31(00,1,0,1)	T_AUTOANSWER_I	Enable Auto-answer mode
32(A0,1,0)	T_SATON_I ²⁾	Enable the transmission of SAT
33(A1,0,0)	T_SATOFF_I ²⁾	Disable the transmission of SAT
34(A2,0,0)	T_CDATA_I	Continuously send TX Control data
37(A5,3,0,511)	T_CDMA_PDM1_I	set PDM1 value for CDMA TX
38(A6,0,0,0)	T_PA_R0_ON_I	PA_RO ON
39(A7,0,0,0)	T_PA_R0_OFF_I	PA_RO OFF
40(A8,4,0,1023)	T_VOC_CDMA_UNITY_GAIN_I	Vocoder CDMA unity gain
41(A9,3,0,255)	T_VOC_FM_HFRX_UPGAIN_I	Vocoder fm hfrx upgain
42(AA,1,0)	T_DTMFON_I ³⁾	Turn on DTMF
43(AB,0,0)	T_DTMFOFF_I	Turn off DTMF
44(B0,0,0)	T_COMPANDORON_I	Turn on compandor
45(B1,0,0)	T_COMPANDOROF_I	Turn off compandor
46(B2,0,0)	T_FM_VCLINE_I ⁴⁾	Enter FM voice state
47(B3,3,0)	T_FM_AUD_GAIN_I	FM audio gain
48(B4,0,0)	T_VIBRATOR_ON_I	Activate a vibrator
49(B5,0,0)	T_VIBRATOR_OFF_I	Inactivate a vibrator
50(B6,0,4)	T_BATT_TYPE_I	Battery Type

Command No	Command SW Name	Description
53(BA,3,0,255)	T_CARRIER_I	Target Carrier option (Change banner)
54(BB,7,8,0)	T_SNDPINFO_I	Product information
55(AC,1,0)	T_EXT_AUDIO_I	External Audio Path On/Off
56(AD,0,0,0)	T_LOOP_BACK_I	Loop Back Service On
60(BF,3,0)	T_FM_TX_GAIN_I ⁽²⁾⁽³⁾	AMPS Tx Audio Gain Control
61(C0,3,0)	T_FM_RX_GAIN_I ⁽²⁾⁽³⁾	AMPS Rx Audio Gain Control
62(C1,3,0)	T_DTMF_VOL_TX_I ⁽²⁾⁽³⁾	AMPS Tx DTMF Gain Control
63(C2,3,0)	T_TX_LIMITER_I ⁽²⁾⁽³⁾	AMPS Tx Limiter Gain Control
64(C3,3,0)	T_FM_SAT_LEVEL_I ⁽²⁾⁽³⁾	AMPS Tx SAT level Control
65(C4,3,0)	T_FM_FREQ_SGAIN_I ⁽²⁾⁽³⁾	AMPS Tx Master Gain Control
66(C5,3,0)	T_FM_ST_GAIN_I ⁽²⁾⁽³⁾	AMPS Tx ST Gain Control
67(C6,0,6)	T_READ_BATT_I ⁽¹⁾	Saved Low battery value read
68(C8,0,3)	T_VBATT1_I ⁽¹⁾	Set the low battery position in the standby
69(C9,0,3)	T_VBATT2_I ⁽¹⁾	Set the low battery position in the talking
70(CA,3,0)	T_WRITE_BATT_I ⁽²⁾⁽³⁾	write a BATT
71(D1,3,0)	T_CDMA_TXADJ_I ⁽²⁾	Sets tx_agc_adj for CDMA mode
72(D2,3,0)	T_FM_TXADJ_I ⁽²⁾	Sets tx_agc_adj for AMPS mode
73(D3,1,0,3)	T_SET_PA_R_I	Set PA R1, R0 range bits
75(D5,0,3)	T_READ_RSSI_I ⁽¹⁾	Read a RSSI
76(D6,0,3,255)	T_READ_PWR_DET_I	read a POWER DETECTOR
77(D7,0,3)	T_READ_TEMP_I	Read a TEMP
78(D8,0,3,255)	T_RXRAS_AUTO_I	Adjust RXRAS using the HP8924C
79(D9,1,0)	T_BUZZER_ON_I ⁽²⁾	Buzzer on
80(DA,0,0)	T_BUZZER_OFF_I	Buzzer off
81(E3,0,0)	T_VOC_PCMLPON_I	Turn on to play a PCM LOOP BACK
82(E4,0,0)	T_VOC_PCMLPOFF_I	Turn off to play a PCM LOOP BACK
87(E9,0,0)	T_FM_LOOP_TEST_I	FM loop back
88(EA,3,0)	T_TRK_ADJ_I ⁽¹⁾	TRK LOCAL ADJUST
89(EB,3,0)	T_CDTRK_ADJ_I	CDMA TRK LOCAL ADJUST
91(F1,1,1,1)	T_SVC_LED_I	SVC_LED indicator enable or not
92(D4,5,0)	T_TXRAS_ADJ_I	CDMA TX high power RAS table(adjustable)
93(F3,4,0)	T_RXRAS_ADJ_I	CDMA RX RAS table(not adjustable)
94(F4, 4, 0,1023)	T_MAXP_LIMIT_I	Tx MAX Power Limit Adjust
95(F5, 4, 0,1023)	T_SW_CHANFLAT_I	Tx MAX Power Limit Adjust with CH compensation
96(F6,4,0)	T_CH_FLATNESS_I	Adjust TX high power RAS
97(F2,4,0)	T_FM_TX_PWR_I	Adjust FM Power level 2 ~ 7
99(FC,4,0)	T_SND_GAIN_I	Mic/Speaker Gain control

List of Equipment

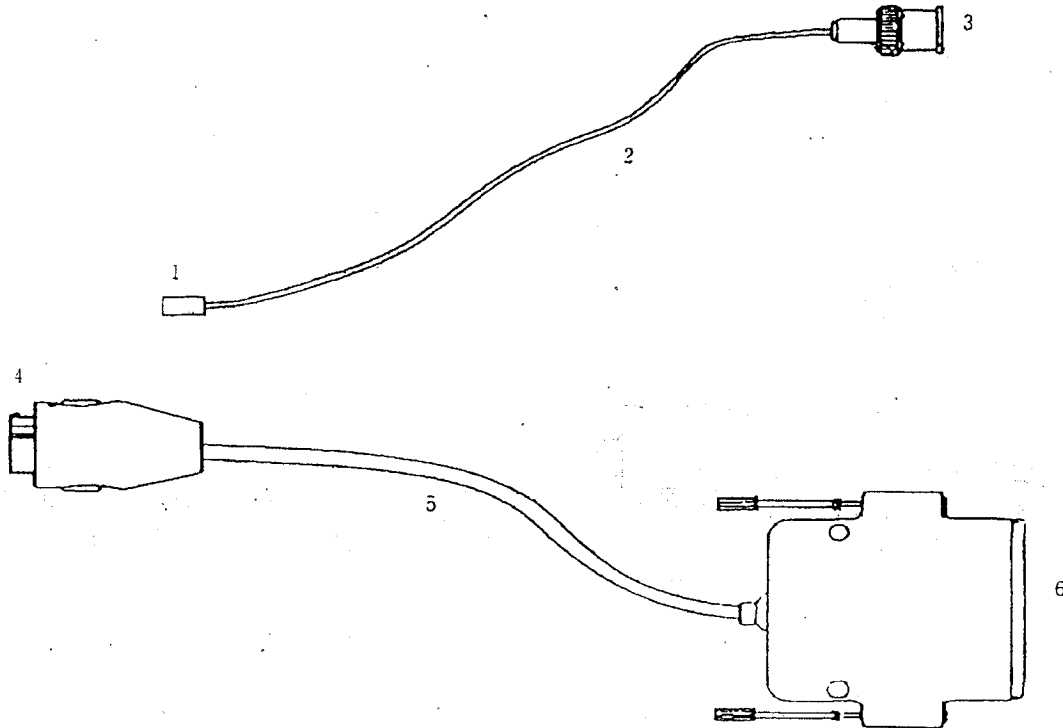
- DC Power Supply
- Test Jig
- Test Cable
- CDMA Mobile Station Test Set HP8924C, HP83236A, CMD-80, etc
- Spectrum Analyzer(include CDMA Test Mode) HP8596E

Configuration of Test



TEST CABLE DESCRIPTION FOR SCH-A201 & A205

1. TEST CABLE

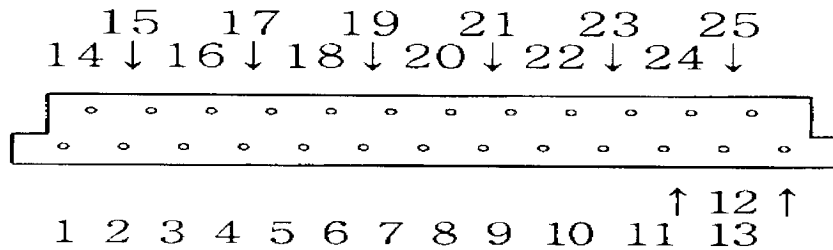


2. TEST CABLE CONNECTIONS

1	MHC 172
2	RF CABLE (1.4 dB Loss for CDMA800 and AMPS)
3	BNC CONNECTOR (RF)
4	PLUG CONNECT TO SCH-A201 & A205
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	$1 \leq N \leq 799$ $990 \leq N \leq 1023$	$F = 0.03 \times N + 825.00$ $F = 0.03 \times (N - 1023) + 825.00$	N ; CH NUMBER F ; FREQUENCY (AMPS/CDMA)
RX FREQUENCY	$1 \leq N \leq 799$ $990 \leq N \leq 1023$	$F = 0.03 \times N + 870.00$ $F = 0.03 \times (N - 1023) + 870.00$	

Change to Test Mode

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

"* 7 5 9 # 8 1 3 5 8 0"

B. The command "0 1" is Suspend.

C. The command "21" is mode and channel change.

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

"20363"



and Push the Navigation key to save.

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

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

A. Enter to Test Mode ("* 7 5 9 # 8 1 3 5 8 0").

B. "0 1" : Suspend.

C.The command "21" is mode and channel change

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

and Push the Navigation key to save.

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

and Enter the Test Mode ("* 7 5 9 # 8 1 3 5 8 0").

"0 1" : Suspend.

E. "4 6" : Vocoder initial to Analog mode.

F. "0 9 0 3 6 3 #" : Set to '0363' channel.

G. "0 7" : Carrier On.

H. The command "73" is ON/OFF of Tx drive Amp. In case of AMPS, set to "1".

I. "9 7 * * *" : Output RF power level is set as power level 2

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

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

2.CDMA

A. Enter to Test Mode ("* 7 5 9 # 8 1 3 5 8 0").

B. "0 1" : Suspend.

C. The command "21" is mode and channel change , press "OK" to save.



D. To finish the Test Mode, You should enter the command "0 2",
and Enter the Test Mode ("* 7 5 9 # 8 1 3 5 8 0").

"0 1" : Suspend.

E. "0 9 0 3 6 3 #" : Set to '0363' channel.

F. "0 7" : Carrier On.

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

H. The command "73" is ON/OFF of Tx drive Amp.

In case of Tx PWR output bellow -6dBm, set to "0".

In case of Tx PWR output above -6dBm, set to "1".

I. "7 1 * * * " : Adjust RF power level.

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

LAMPS(FM)

TEST ITEMS	PROCEDURE														
1. PREPARATION	Set test equipments up. "* 7 5 9 # 8 1 3 5 8 0" : Enter the Test Mode "0 1" : Suspend 0 4": Current Mode Check Confirm that the phone is in the AMPS Mode . (If not AMPS Mode, Use Test Command "21", 10000 or "10001" and Enter "0 2 to restart) "4 6" : Initialize Vocoder in Analog mode If a wrong key would be selected, press "#", and then enter new command.														
2. RF POWER	"0 1 : Suspend. "4 6" : Initialize Vocoder in Analog mode. 0 9 0 3 6 3 #: Set channel to 363 . "0 7" : Carrier On. 731 : Drive Amp ON . "10 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>+25.3 dBm +0.2/-4 dB</td></tr><tr><td>3</td><td>+ 22 dBm +2/-4 dB</td></tr><tr><td>4</td><td>+ 18 dBm +2/-4 dB</td></tr><tr><td>5</td><td>+ 14 dBm +2/-4 dB</td></tr><tr><td>6</td><td>+ 10 dBm +2/-4 dB</td></tr><tr><td>7</td><td>+ 6 dBm +2/-4 dB</td></tr></table> "0 8 : Carrier off 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	+25.3 dBm +0.2/-4 dB	3	+ 22 dBm +2/-4 dB	4	+ 18 dBm +2/-4 dB	5	+ 14 dBm +2/-4 dB	6	+ 10 dBm +2/-4 dB	7	+ 6 dBm +2/-4 dB
Level	RF Power														
0 - 2	+25.3 dBm +0.2/-4 dB														
3	+ 22 dBm +2/-4 dB														
4	+ 18 dBm +2/-4 dB														
5	+ 14 dBm +2/-4 dB														
6	+ 10 dBm +2/-4 dB														
7	+ 6 dBm +2/-4 dB														
TX FREQUENCY	"0 1 : Suspend. "4 6" : Initialize Vocoder in Analog mode. "0 9 0 3 6 3 #: Set channel to 363 . "0 7" : Carrier On. "731": Drive Amp ON . Measure the TX frequency : 835.89 MHz $\pm$2.5ppm.														

TEST ITEMS	PROCEDURE
4. VOICE DEVIATION	"0 1" : Suspend. "4 6" : Initialize Vocoder in Analog mode. "0 9 0 3 6 3 #" : Set channel to 363. "0 7" : Carrier On. "731" : Drive Amp "ON". "1 4" : TX Audio unmute. Set the audio generator output to 1kHz, 1.0Vrms. Measure the Tx voice deviation by using the HPF of 20Hz and the LPF of 99kHz (spec : less than $\pm 12\text{kHz}$).
5. ST DEVIATION	"0 1" : Suspend. "4 6" : Initialize Vocoder in Analog mode. "0 9 0 3 6 3 #" : Set channel to 363. "0 7" : Carrier On. "731" : Drive Amp "ON". "1 6" : ST on. Measure the Tx ST deviation by using the HPF of 50Hz (spec : $8\text{kHz} \pm 10\%$). "1 7" : ST off.
6. SAT DEVIATION	"0 1" : Suspend. "4 6" : Initialize Vocoder in Analog mode. "0 9 0 3 6 3 #" : Set channel to 363. "0 7" : Carrier On. "731" : Drive Amp "ON". "3 2" : SAT on. Set the equipment as following. RF frequency : 880.89MHz Input RF level : -80dBm Modulation frequency : 6kHz Frequency deviation : 2kHz Measure the Tx SAT deviation by using the HPF of 50Hz and the LPF of 6kHz (spec : $2\text{kHz} \pm 10\%$). "3 3" : SAT off.

TEST ITEMS	PROCEDURE
7. WBD DEVIATION	"0 1" : Suspend. "4 6" : Initialize Vocoder in Analog mode. "0 9 0 3 6 3 #" : Set channel to 363. "0 7" : Carrier On. "731" : Drive Amp "ON". "3 4" : WBD on. Measure the WBD deviation by using the HPF of 50Hz and the LPF of 20kHz (spec : 8kHz $\pm$ 10%).
8. RX AUDIO	"0 1" : Suspend. "4 6" : Initialize Vocoder in Analog mode. "0 9 0 3 6 3 #" : Set channel to 363. "0 7" : Carrier On. "731" : Drive Amp "ON". "1 2" : RX Audio unmute. Set the equipment as following. RF frequency : 880.89MHz 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. "* 7 5 9 # 8 1 3 5 8 0" : Enter the Test Mode "0 1" : Suspend "0 4" : Current Mode Check Confirm that the phone is in the "CDMA Mode". (If not CDMA Mode, Use Test Command "21""2XXXX" and Push the Navigation Key to "OK", and enter "0 2" to restart) If you select a wrong key, press "#", then enter new command. To exit the Test Mode at any time, just press [0 2].
2. FREQUENCY ACCURACY	"0 1" : Suspend. "0 9 0 3 6 3 #" : Set channel to 363. "0 7" : Carrier On. "7 3" : ON/OFF of Tx drive Amp. In case of Tx PWR output bellow -6dBm, set to "0". In case of Tx PWR output above -6dBm, set to "1". "7 1 3 6 0 #" : Set AGC level. Measure the TX frequency : $835.89\text{MHz} \pm 300\text{Hz}$.
3. OCCUPIED CDMA BANDWIDTH	"0 1" : Suspend. "0 9 0 3 6 3 #" : Set channel to 363. "0 7" : Carrier On. "3 4" : Spread spectrum. "7 3" : ON/OFF of Tx drive Amp. In case of Tx PWR output bellow -6dBm, set to "0". In case of Tx PWR output above -6dBm, set to "1". "7 1 X X X #" : Enter AGC Code(XXX) to adjust RF Output Power. Measure the bandwidth (spec: 1.32MHz).
4. LIMITATIONS ON EMISSIONS	"0 1" : Suspend. "0 9 0 3 6 3 #" : Set channel to 363. "0 7" : Carrier On. "7 3" : ON/OFF of Tx drive Amp. In case of Tx PWR output bellow -6dBm, set to "0". In case of Tx PWR output above -6dBm, set to "1". "3 4" : Spread spectrum. "7 1 X X X #" : 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 $43+10\log(\text{PY})$

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
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