

SAMSUNG

CDMA TELEPHONE

SCH-E159

SERVICE *Manual*

CDMA TELEPHONE



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1. SCH-E159 Specification

1-1. General

ITEM	CDMA
Tx Freq. range	824 ~ 849MHz
Rx Freq. range	869 ~ 894MHz
Channel Bandwidth	1.23MHz
Channel Spacing	30kHz
Number of Channel	832
Duplex Separation	45MHz
Type of Emission	40K0F8W, 40K0F1D
In/Output Impedance	50 ohm
Tx Intermediate Freq.	Not Used(Zero IF)
Rx Intermediate Freq.	Not Used(Zero IF)
Tx Local Freq.	1738.08 ~ 1787.94MHz
Rx Local Freq	1738.08 ~ 1787.94MHz
TCXO freq.	19.2MHz
Freq. Stability	(F _{RX} - 45MHz)±300Hz
Operating Temperature	-30°C ~ +50°C
Supply Voltage	3.75 volts
Size and Weight	DIMENSION : 91.5(H) X 48.8(W) X 29.3(D) mm WEIGHT : 125.3g (1000mA Battery)

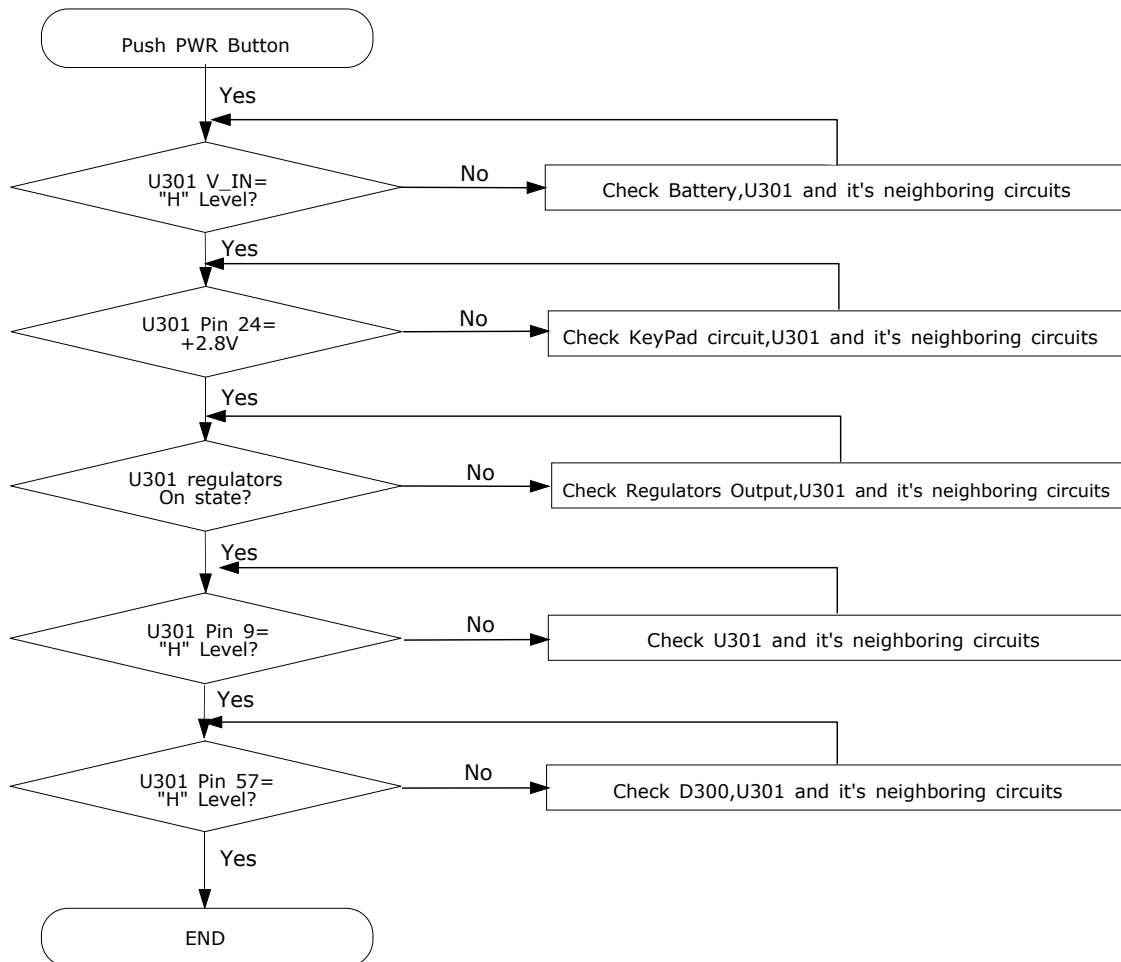
1-2. CDMA Mode

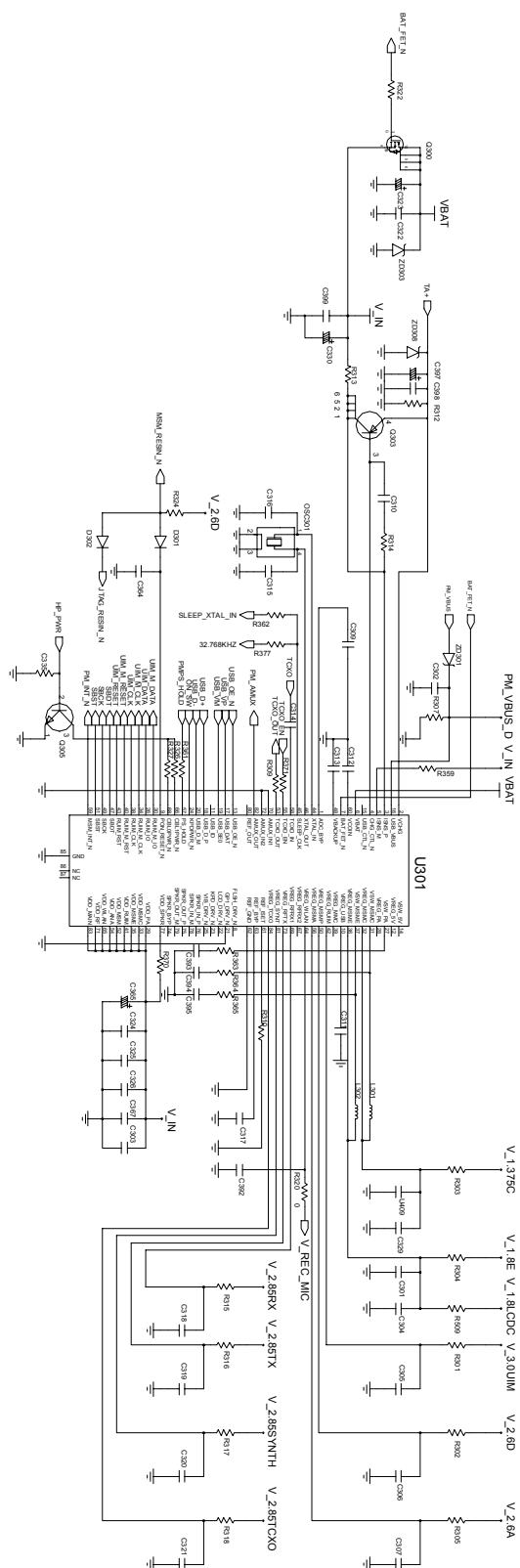
Waveform Quality	0.944 or more
Time Reference	$\pm 1\mu\text{S}$ or less
Rx Sensitivity and Dynamic Range	-104dBm, FER=0.5% or less -25dBm, FER=0.5% or less
Maximum TX Output Power	24.5dB(282mW)
TX Frequency Deviation	$\pm 300\text{Hz}$ or less
Occupied Band Width	1.23MHz
TX Conducted Spurious Emission	900kHz : -42dBc / 30kHz below 1.98MHz : -54dBc / 30kHz below
Minimum TX Power Control	below -50dBm
Open Loop Power Control	-25dBm: -57.0dBm ~ -38.5dBm -65dBm: -17.5dBm ~ +1.5dBm -104dBm: +18.0dBm ~ +30.0dBm
Standby Output Power	below -61dBm
Closed Loop TX Power Control Range	Test1: $\pm 24\text{dB}$ or more Test2: 0mS ~ 2.5mS Test3: $\pm 24\text{dB}$ or more Test4: $\pm 24\text{dB}$ or more Test5: $\pm 24\text{dB}$ or more

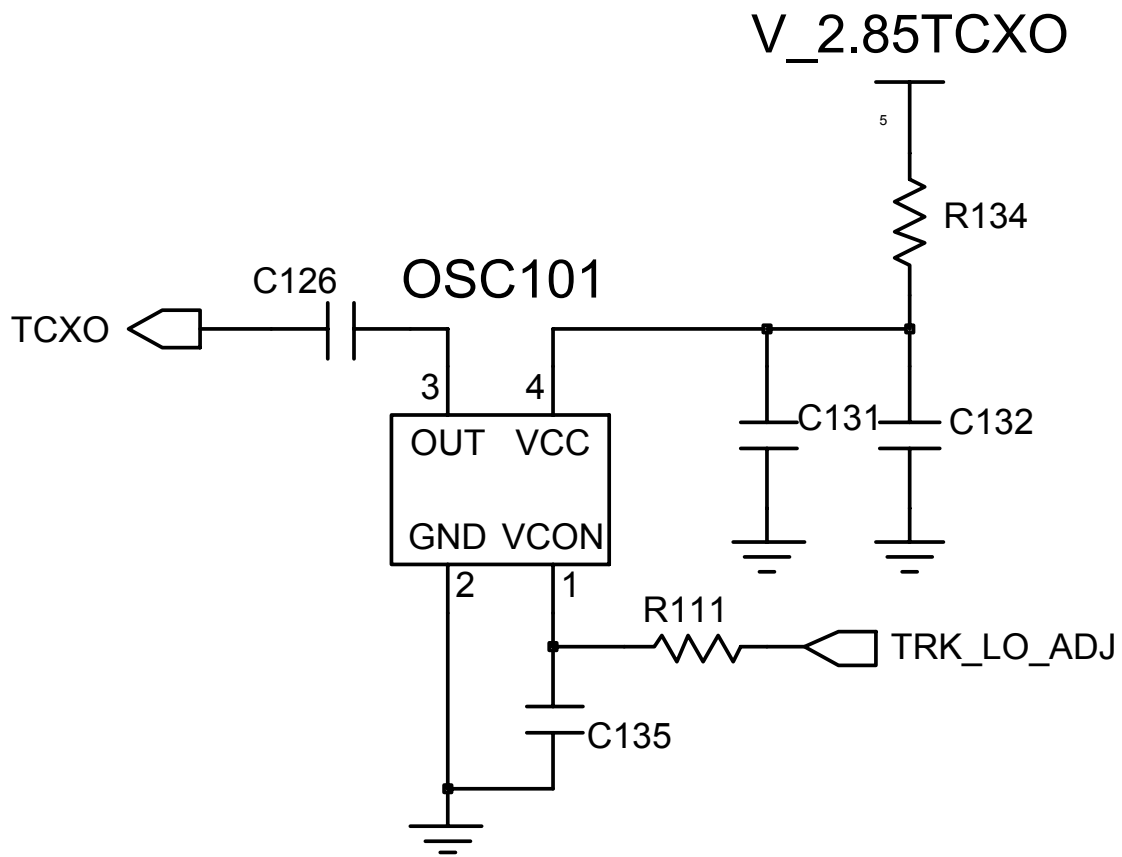
2. SCH-E159 Flow Chart of Troubleshooting and Circuit Diagrams

2-1. LOGIC SECTION

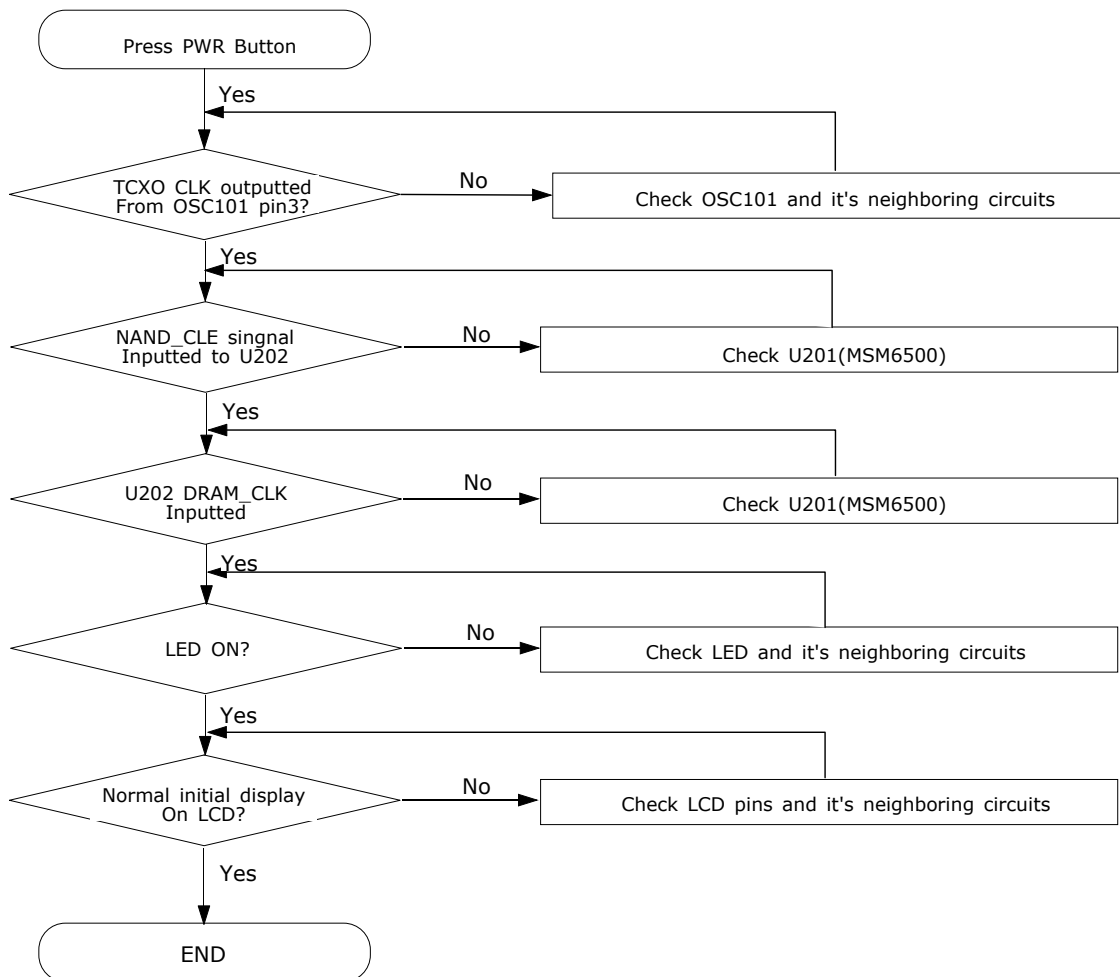
2-1-1 No Power

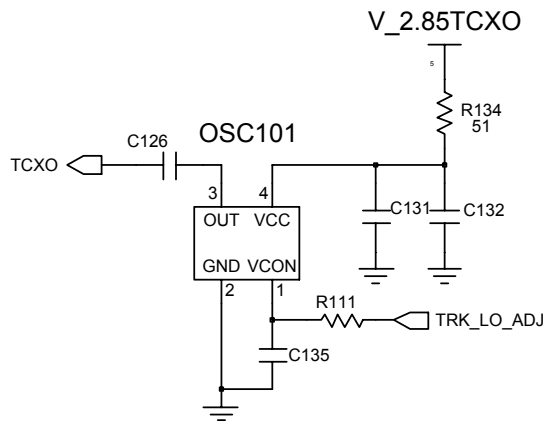
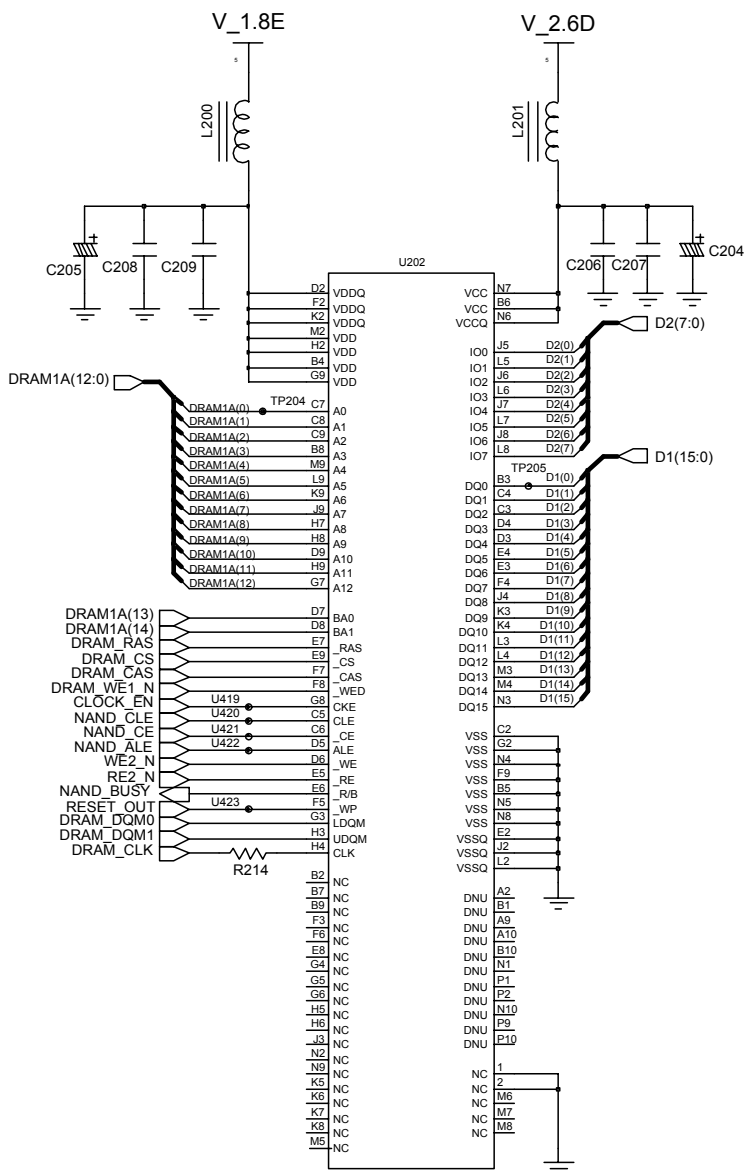


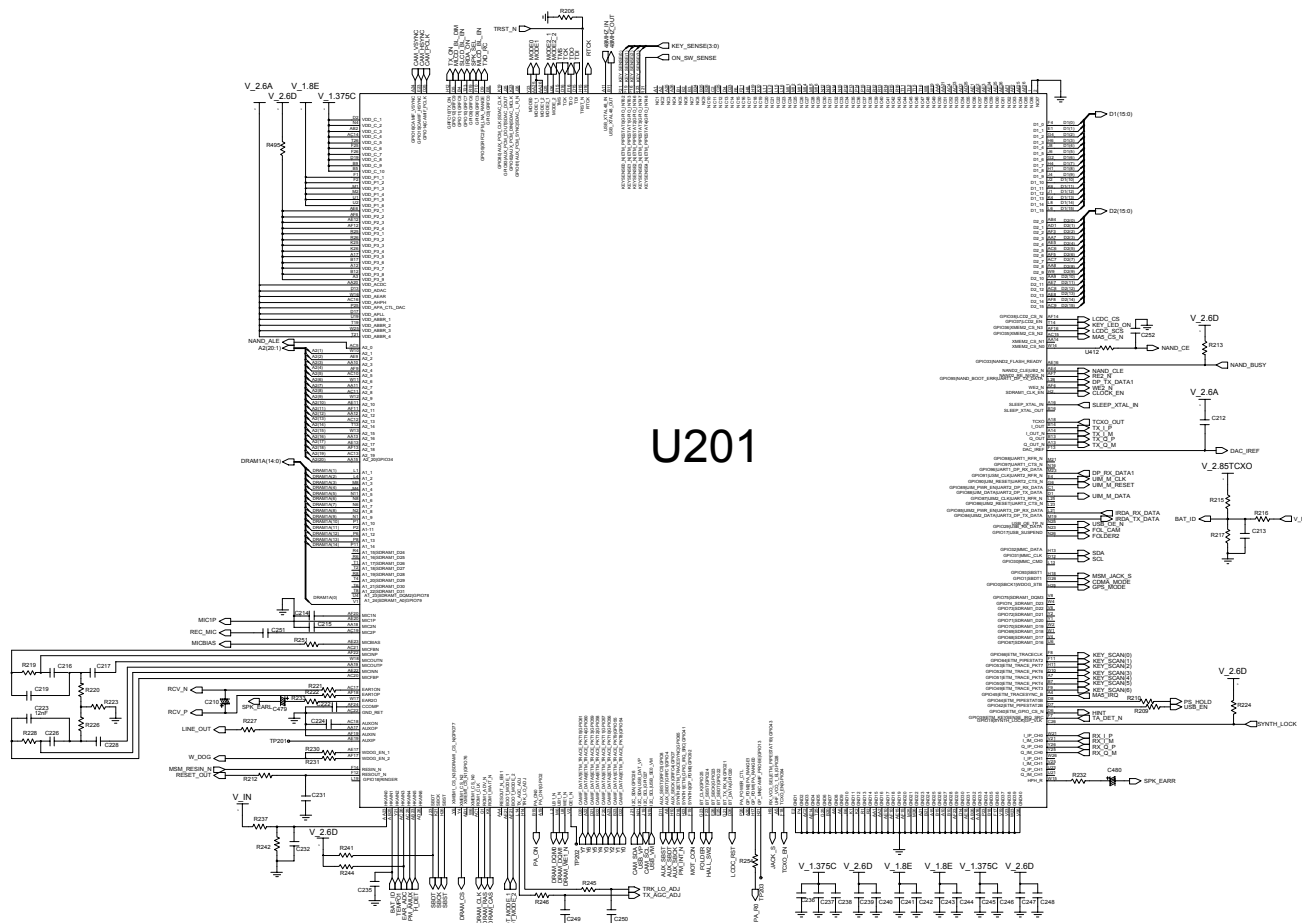




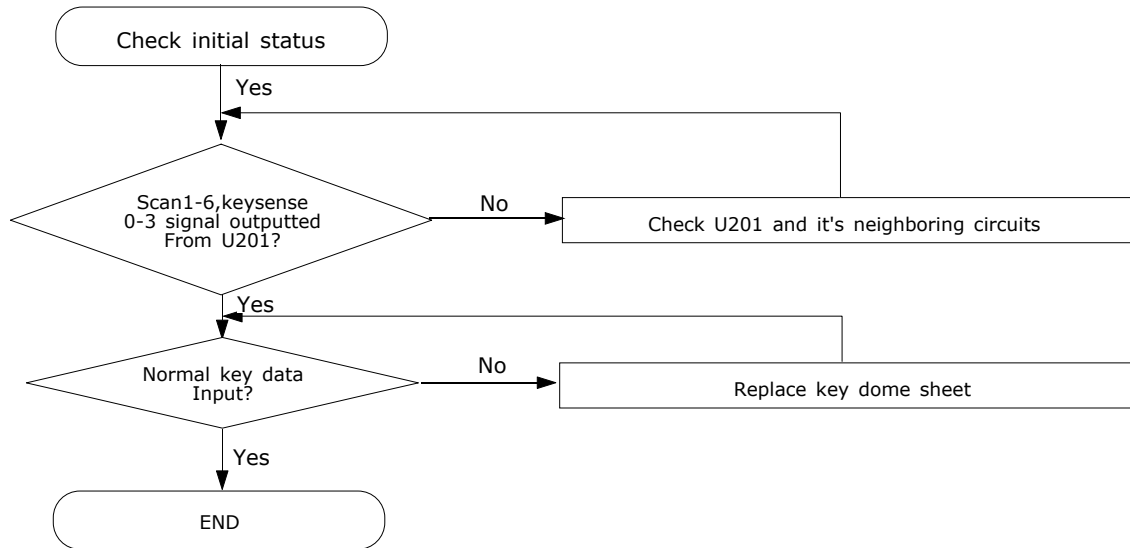
2-1-2 Abnormal initial operation

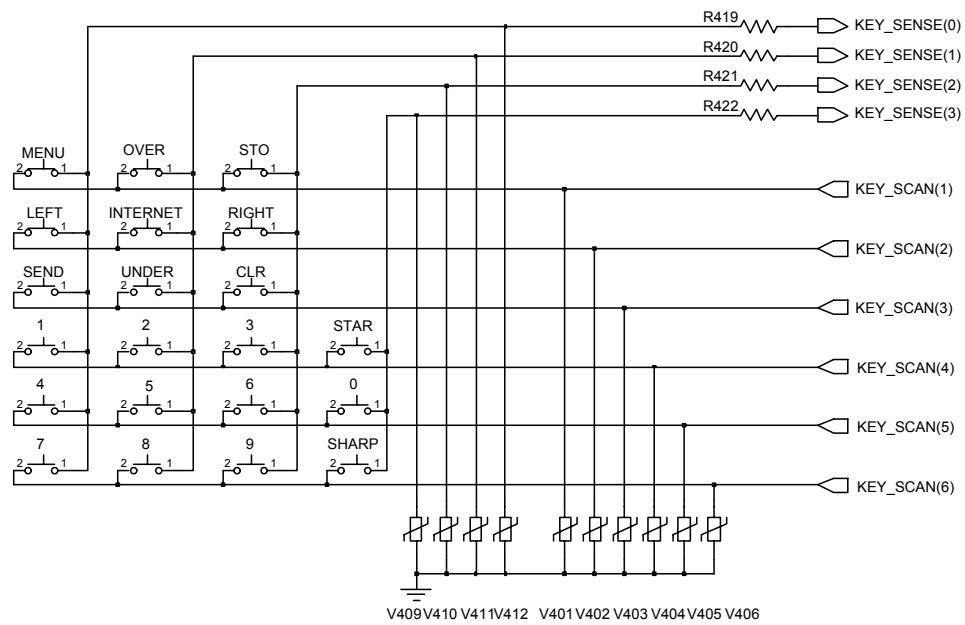




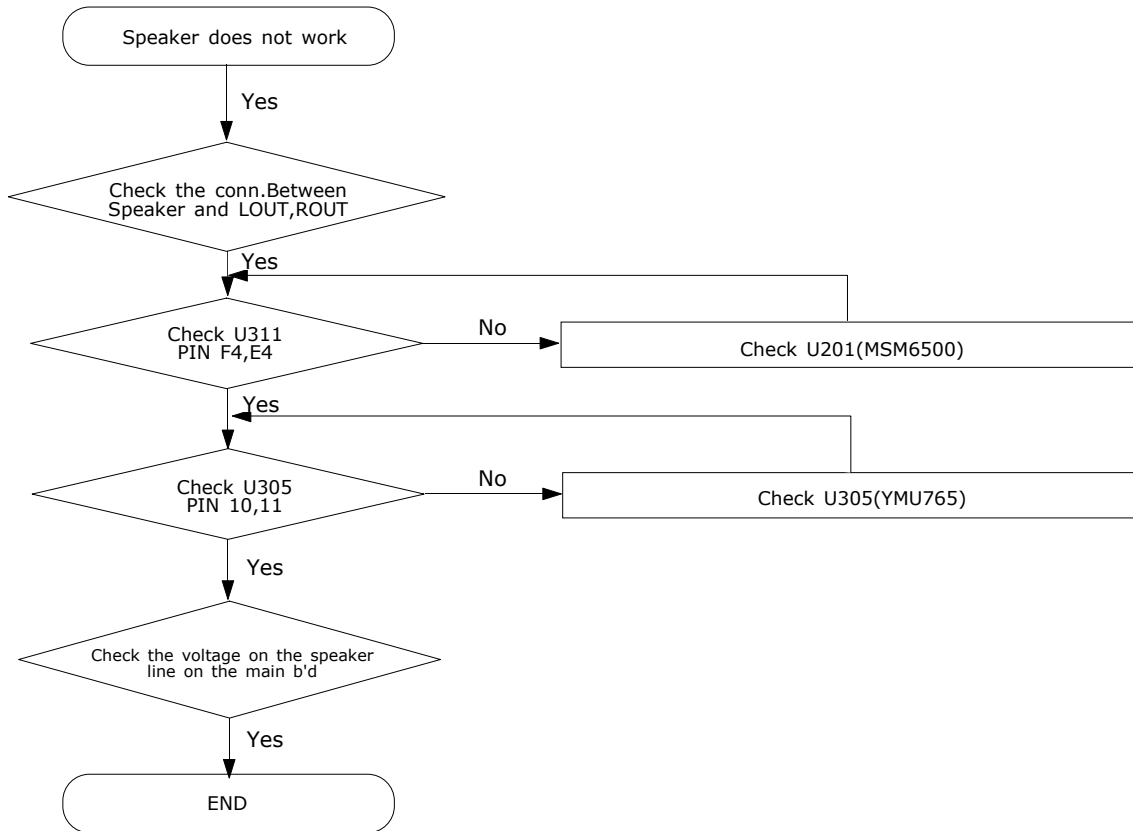


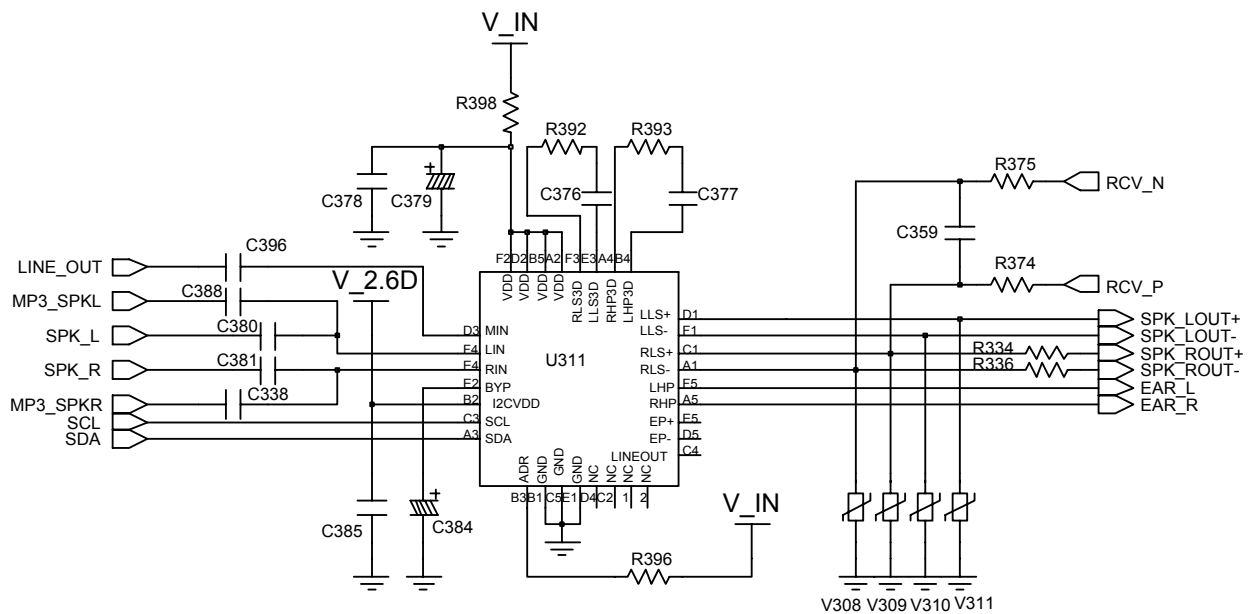
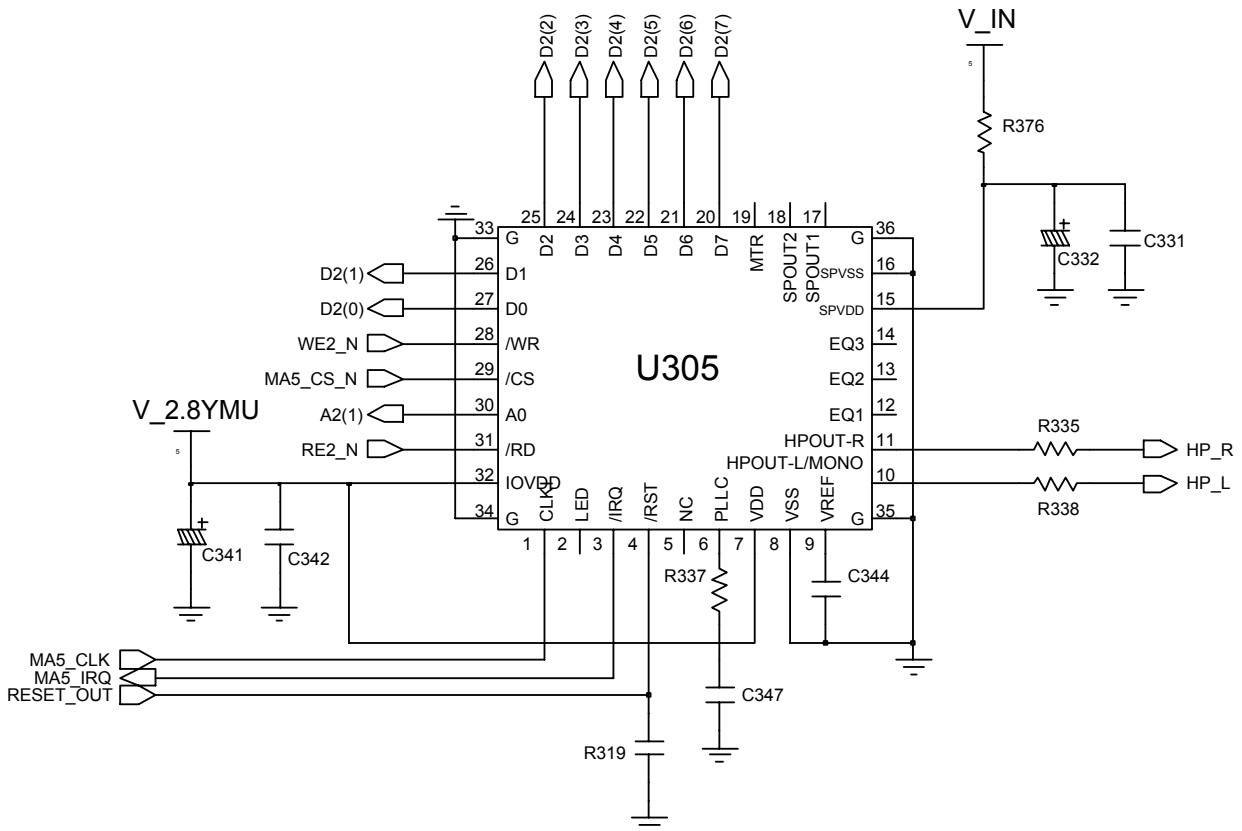
2-1-3 Abnormal Key Data Input





2-1-4. Audio

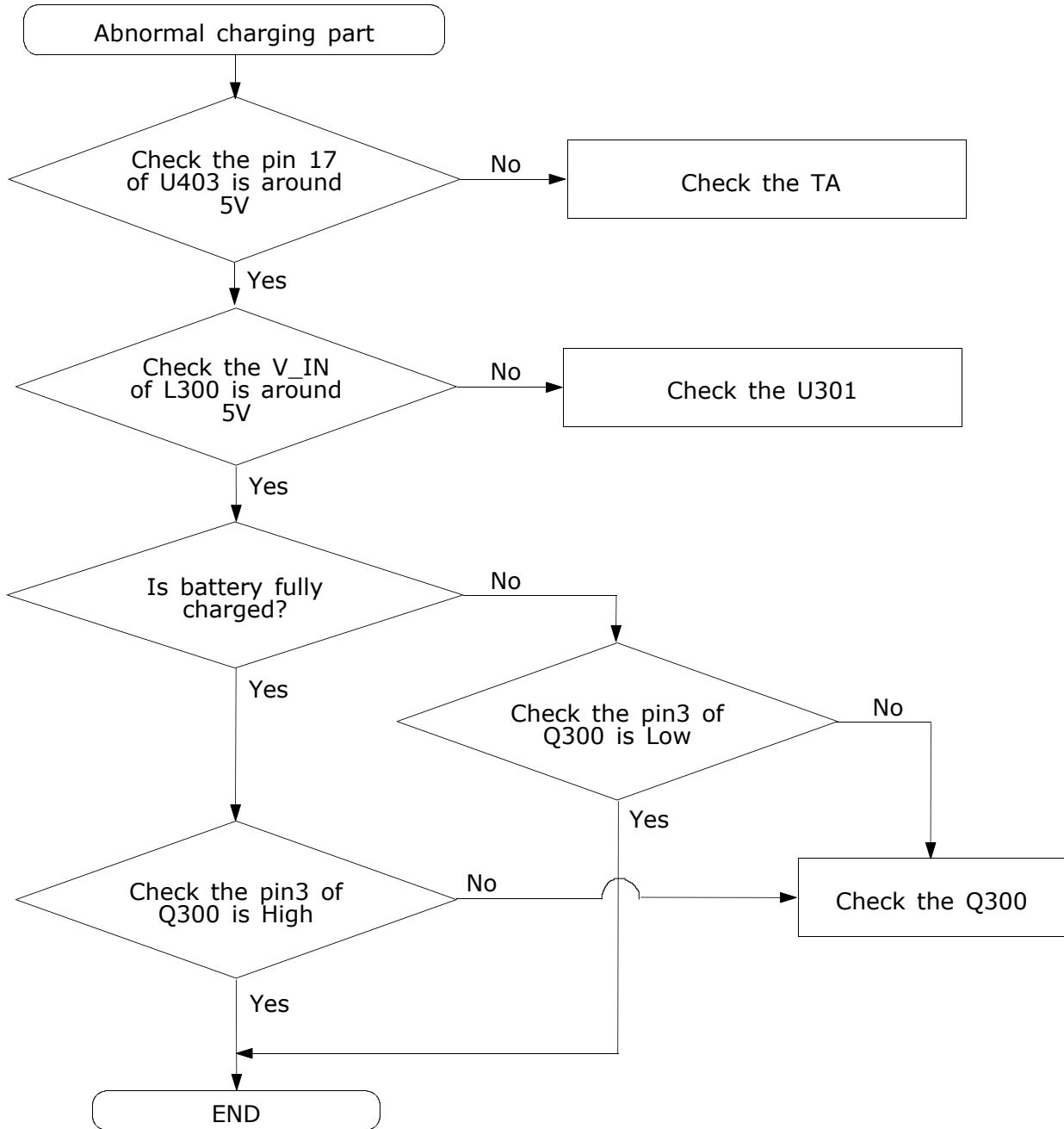




2-1-5. Charging

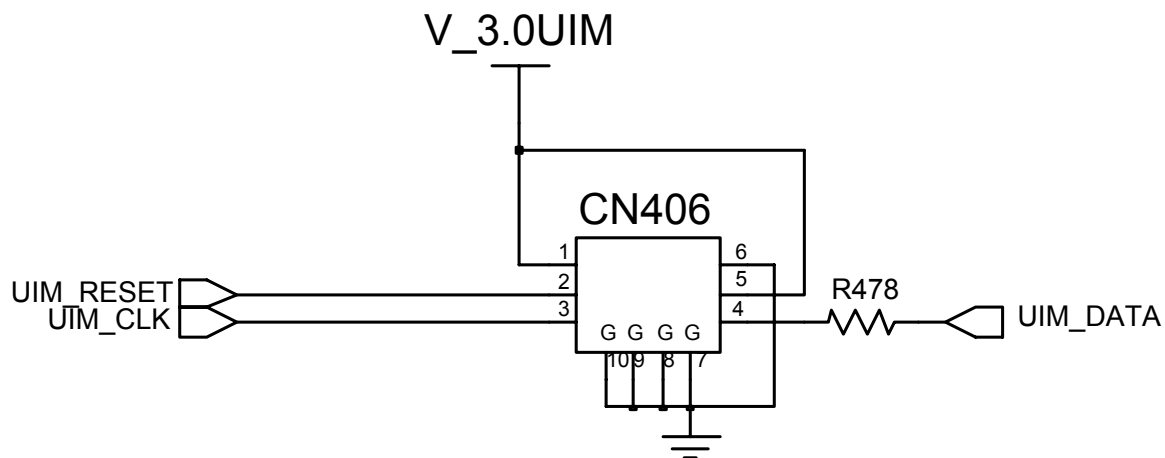
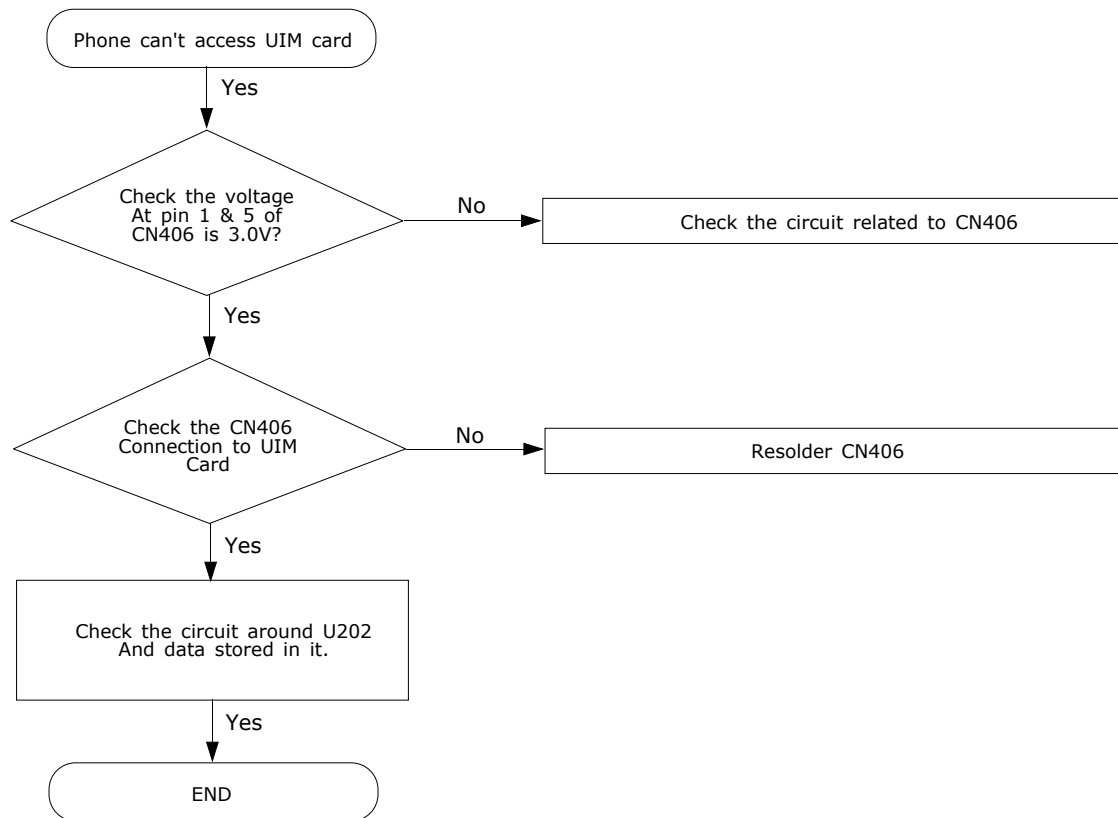
* Test after connecting with Battery

: All 3 terminals in battery should be connected to the phone by using jump-wires.

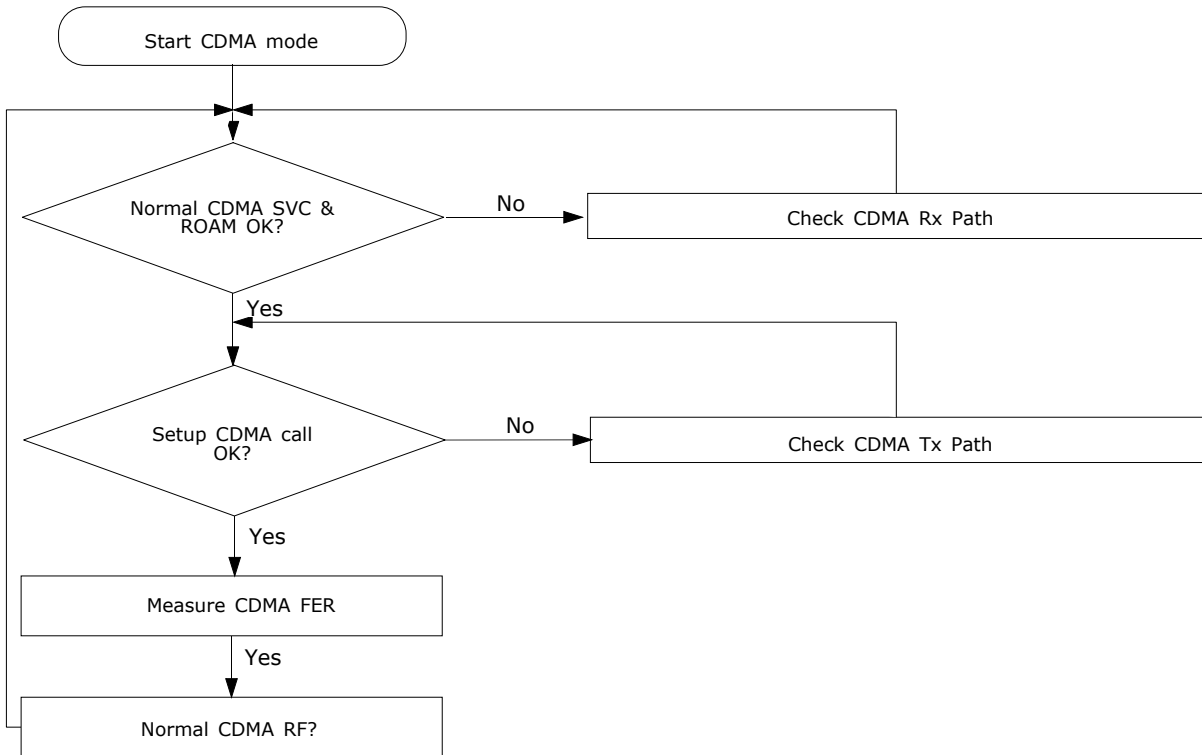


2-1-6. R-UIM

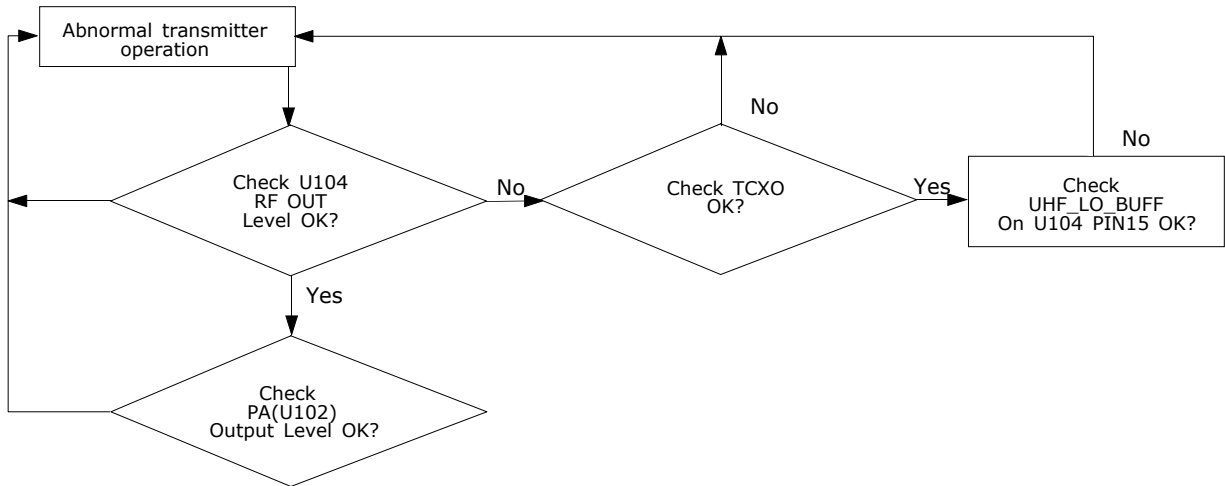
* Test with R-UIM



2-2. Receiver section

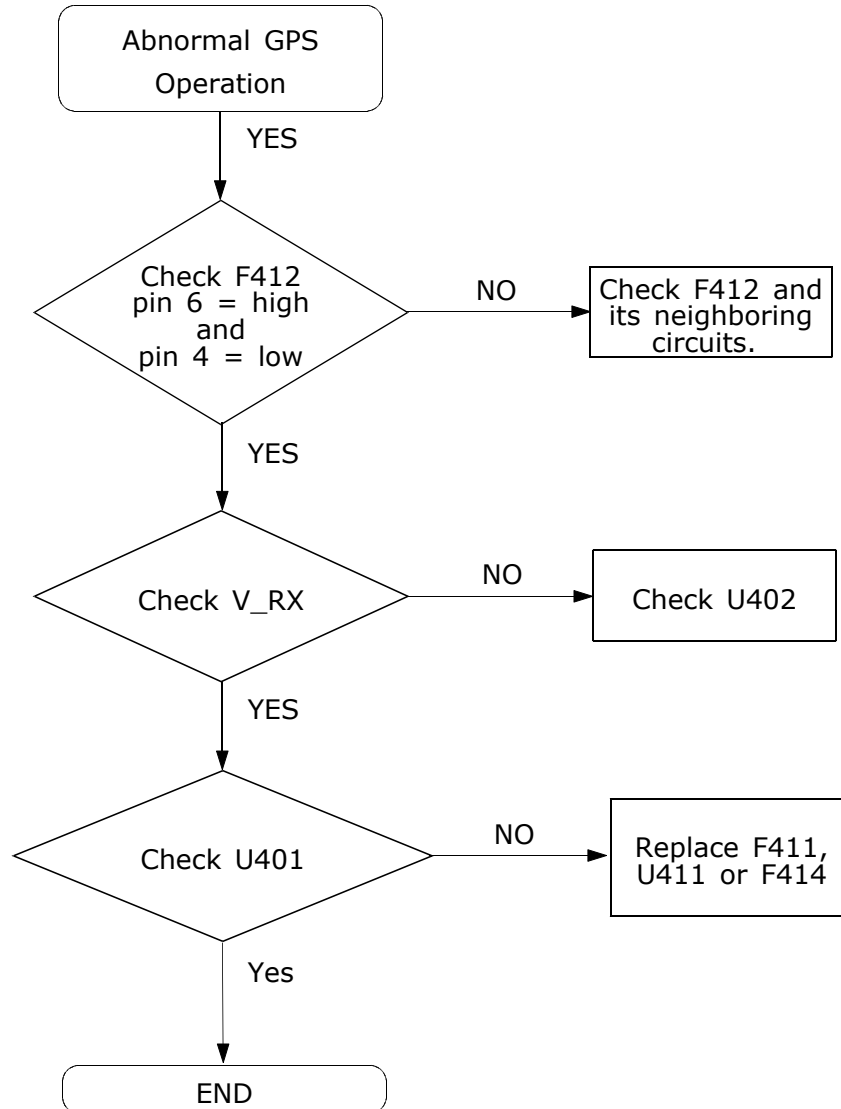


2-3. Transmitter section



2-4. GPS section

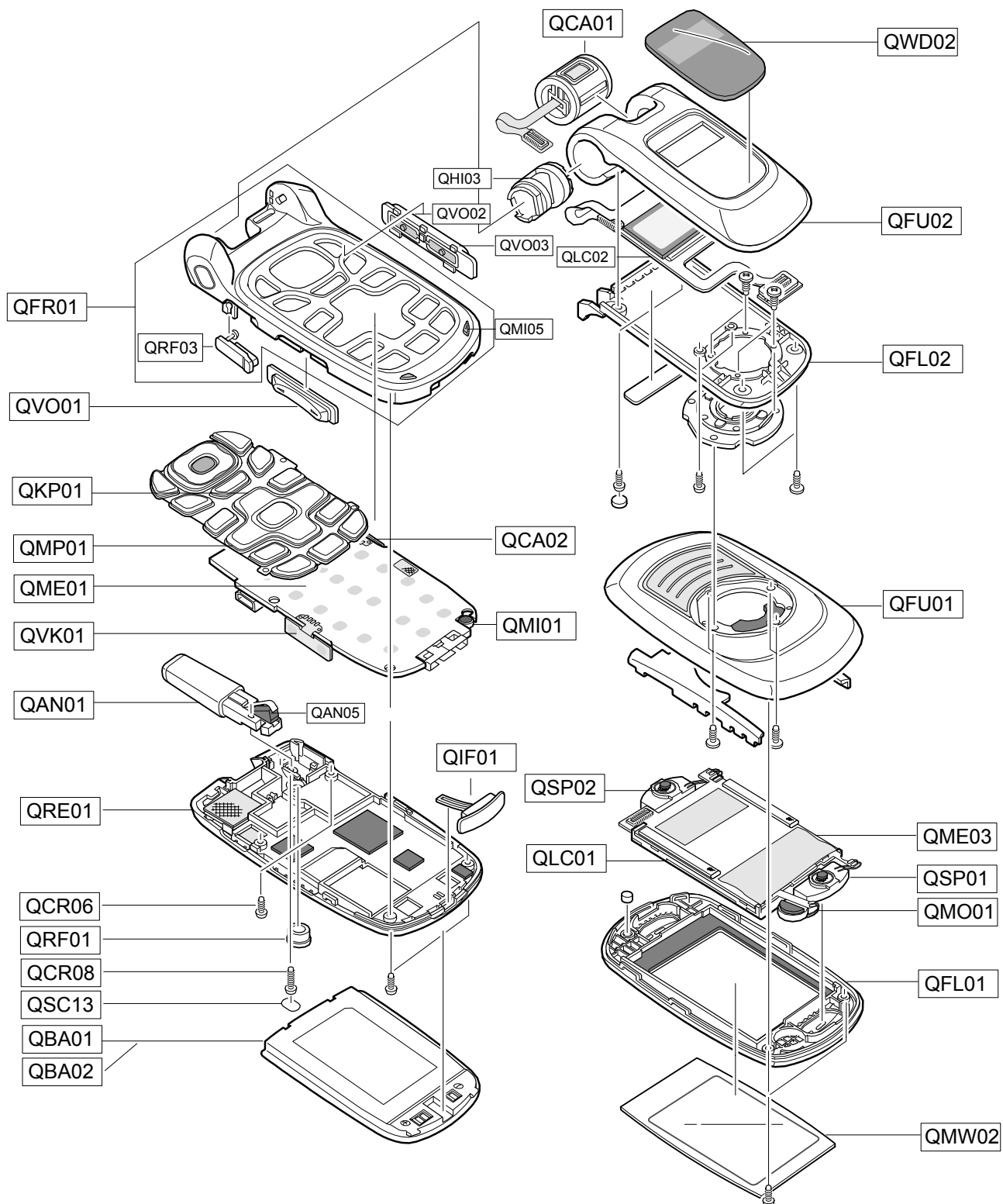
* Test at GPS mode





3. SCH-E159 Exploded View and its Parts list

3-1. Cellular phone Exploded View



3-2. Cellular phone Parts list

Location NO.		Description	SEC CODE	Remark
QWD02		SUB WINDOW	GH72-19502A	
QFU02		F/UPPER TOP	GH75-05402A	
QCA01		UNIT CAMERA	GH59-01650A	
QHI03		HINGE DUMMY	GH75-05201A	
QFL02		FOLDER TOP LOWER	GH75-06307A	
	QCR14	SCREW-MACHINE	6001-001648	
QFU01		FOLDER UPPER	GH75-07013A	
QSP01		SPEAKER	3001-001556	
QSP02		SPEAKER	3001-001616	
QCR35		SCREW-MACHINE	6001-001610	
QCR26		SCREW-MACHINE	6001-001850	
QCR24		SCREW-MACHINE	6001-001892	
QLC01		LCD	GH07-00604A	
QLC02		LCD SUB	GH07-00629A	
QMO01		MOTOR DC	GH31-00133A	
QME03		UNIT MAIN LCD FPCB	GH59-01583A	
QSC01		SCREW CAP	GH73-04589A	
QFL01		F/LOWER	GH75-05400A	
QMW02		MAIN WINDOW	GH72-19503A	
QSP03		MEC-UPPER DUMMY	GH75-05921A	
QFR01		FRONT COVER	GH75-05197A	
	QRF03	EARJACK COVER	GH72-16218A	
QVO02		MEC-KEY SIDE DUMMY	GH75-06305A	
QVO03		MEC-KEY CAM/REC/MP3	GH75-06304A	
QVO01		MEC-VOLUME KEY	GH75-05180A	
QKP01		KEYPAD	GH75-06303A	
QMP01		PBA MAIN	GH92-01953A	
QME01		UNIT-METAL DOME	GH59-01843A	
QVK01		UNIT-VOLUME KEY	GH59-01606A	
QCA02		UNIT-CAMERA KEY FPCB	GH59-01605A	
QMI05		RMO-MIC HOLDER	GH73-03851A	
QMI01		MICROPHONE-ASSY	GH30-00162A	
QAN01		ANTENNA	GH42-00460A	
QAN05		ANTENNA RUBBER	GH73-03777A	
QRE01		REAR COVER	GH75-05918A	
QCR06		SCREW-MACHINE	6001-001155	
QRF01		PMO-RF COVER	GH72-21009A	
QCR08		SCREW-MACHINE	6001-001611	
QSC13		MPR-REAR ANT HOLE SHEET	GH74-11479A	
QBA01		BATTERY	GH43-01606A	
QMI03		MIC HOLDER	GH75-06321A	
QBA02		BATTERY	GH43-01607A	
QIF01		PMO-INTERFACE COVER V2	GH72-19063A	

3-3. Test Jig (GH80-10502C)



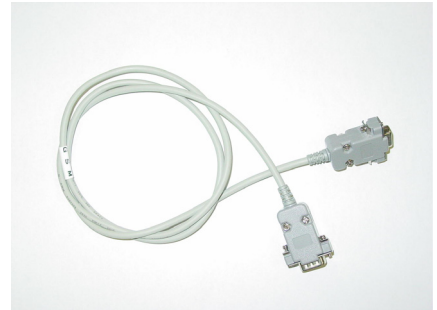
3-3-1. RF Test Cable (GH39-00090A)



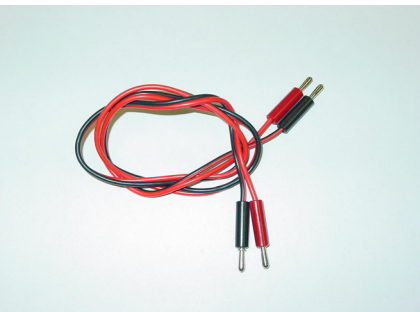
3-3-2. Test Cable (GH39-00122A)



3-3-3. Serial Cable



3-3-4. Power Supply Cable



3-3-5. DATA CABLE (GH39-00231A)



3-3-6. TA (GH44-00483A)



4. SCH-E159 Main Electrical Parts List

Design LOC	SEC Code	Design LOC	SEC Code
D401,D411	0402-001617	R207	2007-007313
ZD303	0403-001387	R131	2007-007315
ZD308,ZD423	0403-001427	R310	2007-007468
ZD301	0404-001110	R103,R112	2007-007491
D301,D302,D400	0404-001172	R237	2007-007529
ZD302	0406-001190	R308	2007-007766
ZD403,ZD411,ZD412	0406-001200	R345	2007-007943
ZD413	0406-001200	R313	2007-008500
D300	0407-001002	R101,R104,R105	2007-008964
Q303	0502-001201	C100,C104,C105,C109	2203-000233
Q305	0504-001012	C116,C120,C121,C122	2203-000233
Q307,Q308	0504-001113	C133,C139,C146,C151	2203-000233
Q300	0505-001165	C162,C171,C173,C174	2203-000233
Q306	0505-001217	C235,C314,C451,C456	2203-000233
LED401,LED402,LED403	0601-001819	C127,C131,C135,C147	2203-000254
LED404,LED405,LED406	0601-001819	C160,C165,C200,C201	2203-000254
LED407,LED408,LED409	0601-001819	C207,C208,C212,C231	2203-000254
LED410,LED412,LED414	0601-001819	C237,C239,C241,C243	2203-000254
LED415,LED416,LED417	0601-001819	C245,C247,C249,C372	2203-000254
LED418,LED419,LED420	0601-001819	C375,C391	2203-000254
LED421,LED422	0601-001819	C315,C316	2203-000278
LED411	0604-001277	C466	2203-000425
U411	0801-002345	C102,C107,C114,C126	2203-000438
U407	0904-001946	C137,C347,C356	2203-000438
U309,U313	1001-001261	C166	2203-000489
U101	1001-001262	C129,C134	2203-000585
U204,U205	1009-001018	C167	2203-000628
U202	1109-001307	C463,C464	2203-000679
U102	1201-001894	C148	2203-000885
U107	1201-002112	C405	2203-000940
U311	1201-002126	C101,C125,C128,C130	2203-000995
U103	1203-001895	C149,C153,C155,C157	2203-000995
U314	1203-002857	C234,C253,C473	2203-000995
U302	1203-003169	C164	2203-001033
U304	1203-003322	C124,C252	2203-001072
U301	1203-003335	C152	2203-001259
U305	1204-002138	C357,C471	2203-001405

Design LOC	SEC Code
U201	1205-002521
U105	1205-002544
U104	1205-002545
U106	1209-001577
TH201	1404-001165
U426,V304,V308,V309	1405-001082
V310,V311,V401,V402	1405-001082
V403,V404,V405,V406	1405-001082
V407,V408,V409,V410	1405-001082
V411,V412,V419,V420	1405-001082
V421,V422,V423,V424	1405-001082
ZD421,ZD422	1405-001082
L107	1405-001132
V413,V414,V415,V416	1405-001149
V417,V418,V425,V426	1405-001149
R141	2007-000070
R351	2007-000137
R111,R114,R245,R419	2007-000138
R420,R421,R422,R433	2007-000138
R434,R435,R436,R437	2007-000138
R438,R439,R440,R441	2007-000138
R442	2007-000138
R115,R118,R139,R246	2007-000140
R350,R368,R369,R403	2007-000140
R404,R412,R414,R416	2007-000140
R417,R418	2007-000140
R133,R213	2007-000141
R392,R393,R462,R463	2007-000143
R482	2007-000143
R241	2007-000147
R206,R220,R224,R226	2007-000148
R312,R324,R464	2007-000148
R307,R343	2007-000157
R235,R236,R240,R244	2007-000162
R252,R311,R321,R341	2007-000162
R346,R384,R386,R396	2007-000162
R413,R479,R481,R503	2007-000162

Design LOC	SEC Code
C452,C454,C458,U408	2203-001412
C302	2203-002793
C103,C110,C111,C112	2203-005061
C115,C119,C136,C170	2203-005061
C233,C254,C317,C331	2203-005061
C342,C344,C358,C404	2203-005061
C457,C460,C461,C462	2203-005061
C465,C467	2203-005061
C393,C394,C395	2203-005138
C202,C203	2203-005393
C113,C117	2203-005446
C106	2203-005450
C132,C138,C141,C142	2203-005482
C143,C161,C206,C209	2203-005482
C213,C214,C216,C217	2203-005482
C222,C224,C226,C228	2203-005482
C232,C238,C240,C242	2203-005482
C244,C246,C248,C309	2203-005482
C322,C324,C325,C326	2203-005482
C333,C363,C367,C378	2203-005482
C385,C398,C399,C472	2203-005482
U416,U417,U427,V427	2203-005482
C163,C168	2203-005483
C376,C377	2203-005496
C250,C380,C381	2203-005509
C145	2203-005796
C236,C320,C321,C470	2203-006053
U418	2203-006053
C417	2203-006090
C219,C223	2203-006091
C123,C311,C334,C338	2203-006093
C388,C390,C396	2203-006093
C215,C251	2203-006137
C303,C306,C307,C370	2203-006208
C371,C373,C374,C389	2203-006208
U409	2203-006208
C469	2203-006257

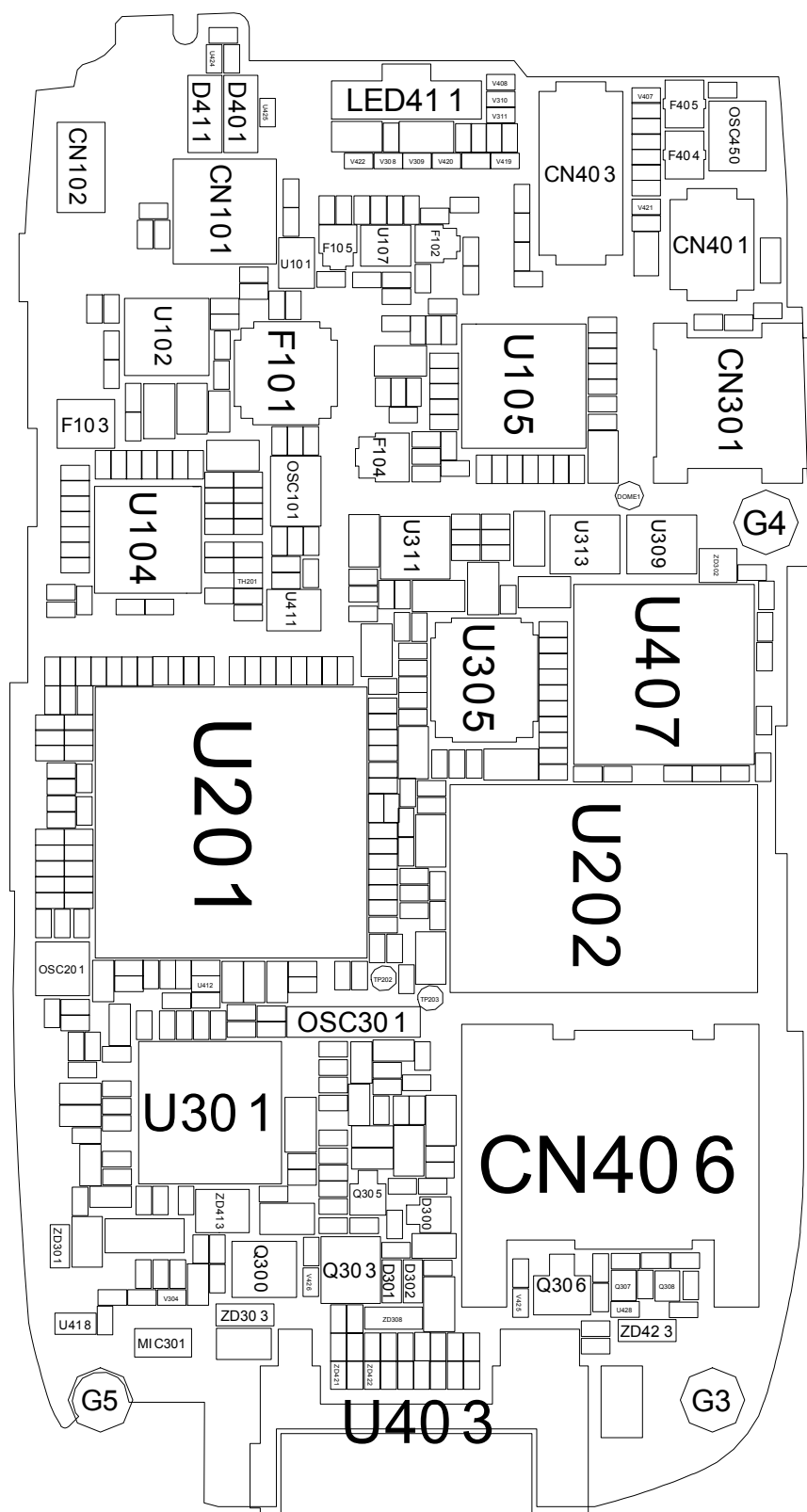
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R223	2007-000169
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R210,R212,R227,R251	2007-000171
R254,R260,R301,R302	2007-000171
R303,R304,R305,R306	2007-000171
R315,R316,R317,R318	2007-000171
R320,R322,R326,R327	2007-000171
R334,R335,R336,R338	2007-000171
R340,R359,R361,R362	2007-000171
R370,R371,R376,R377	2007-000171
R382,R383,R385,R387	2007-000171
R388,R389,R391,R397	2007-000171
R398,R415,R425,R427	2007-000171
R430,R492,R495,R499	2007-000171
R500,R509,U412,U425	2007-000171
U428	2007-000171
R126,R352,R498	2007-000172
R214	2007-000174
R478	2007-000932
R137	2007-001217
R374,R375,R465,R466	2007-001288
R363,R364,R365	2007-001290
R107	2007-001295
R102,R134,R309	2007-001298
R143,R144,R145,R146	2007-001308
R208	2007-001313
R129	2007-001320
R337	2007-001325
R219,R228,R348	2007-001339
R221,R222	2007-002965
R232,R233	2007-003001
R106,R444,R445,R446	2007-003010
R447,R448,R449,R450	2007-003010
R451,R452,R453,R454	2007-003010
R455,R456,R457,R458	2007-003010

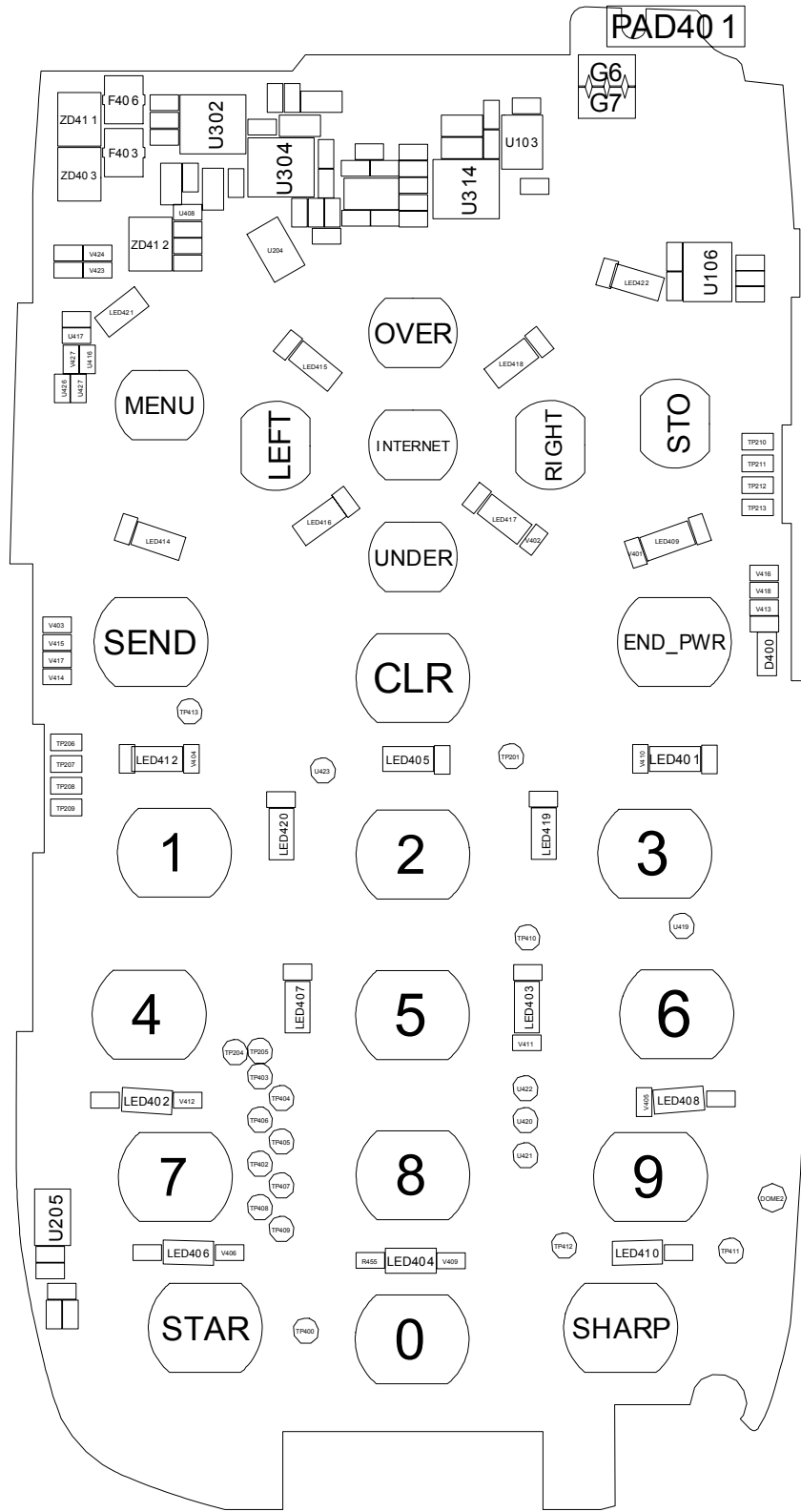
Design LOC	SEC Code
C304,C305,C308,C318	2203-006324
C319,C392	2203-006324
C108,C204,C205,C341	2404-001086
C384	2404-001088
C118,C169	2404-001105
C328	2404-001225
C144,C323,C330,C332	2404-001268
C365,C379,C397,C412	2404-001268
C453	2404-001274
C382,C383	2404-001333
C339	2404-001377
C479,C480	2404-001392
C340	2404-001394
C210	2404-001395
L100	2703-001178
L117	2703-001180
L106	2703-001726
L111	2703-001737
L121	2703-001752
L108,L110	2703-001943
L109	2703-002170
L103	2703-002199
L101	2703-002205
L112,L113	2703-002206
L119	2703-002208
L102	2703-002309
L104,L105,L120	2703-002314
L301,L302	2703-002749
OSC301	2801-003856
OSC201	2802-001182
OSC450	2804-001577
OSC101	2809-001280
F403,F404,F405,F406	2901-001260
F103	2904-001279
F102	2904-001414
F104	2904-001462
F105	2904-001498

Design LOC	SEC Code
R459,R461,R467,R469	2007-003010
R470,R493,R494	2007-003010
C335	2007-007014
R110	2007-007092
R217,R242	2007-007107
R132	2007-007136
R216	2007-007137
R100,R506	2007-007306
R205	2007-007308
R215	2007-007309

Design LOC	SEC Code
F101	2909-001161
L200,L201,L202,L203	3301-001342
CN101	3705-001226
CN406	3709-001298
U403	3710-002115
CN401	3711-005519
CN403	3711-005539
CN301	3722-002082
CN102	GH71-02735A
L400	JTAG-32PIN

5. SCH-E159 PCB Diagrams





6. SCH-E159 Block Diagrams

