



GSM TELEPHONE

GT-E1252

SERVICE *Manual*

GSM TELEPHONE

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Notice :

All functionality, features, specifications and other product information provided in this document including, but not limited to, the benefits, design, pricing, components, performance, availability, and capabilities of the product are subject to change without notice or obligation. Samsung reserves the right to make changes to this document and the product described herein, at anytime, without obligation on Samsung to provide notification of such change.

1. Safety Precautions

1-1. Repair Precaution

- Repair in Shield Box, during detailed tuning. Take specially care of tuning or test, because specipicty of cellular phone is sensitive for surrounding interference(RF noise).
- Be careful to use a kind of magnetic object or tool, because performance of parts is damaged by the influence of magnetic force.
- Surely use a standard screwdriver when you disassemble this product, otherwise screw will be worn away.
- Use a thicken twisted wire when you measure level.
A thicken twisted wire has low resistance, therefore error of measurement is few.
- Repair after separate Test Pack and Set because for short danger (for example an overcurrent and furious flames of parts etc) when you repair board in condition of connecting Test Pack and tuning on.
- Take specially care of soldering, because Land of PCB is small and weak in heat.
- Surely tune on/off while using AC power plug, because a repair of battery charger is dangerous when tuning ON/OFF PBA and Connector after disassembling charger.
- Don't use as you pleases after change other material than replacement registered on SEC System. Otherwise engineer in charge isn't charged with problem that you don't keep this rules.

1-2. ESD(Electrostatically Sensitive Devices) Precaution

Several semiconductor may be damaged easily by static electricity. Such parts are called by ESD (Electrostatically Sensitive Devices), for example IC,BGA chip etc. Read Precaution below.

You can prevent from ESD damage by static electricity.

- Remove static electricity remained your body before you touch semiconductor or parts with semiconductor. There are ways that you touch an earthed place or wear static electricity prevention string on wrist.
- Use earthed soldering steel when you connect or disconnect ESD.
- Use soldering removing tool to break static electricity. , otherwise ESD will be damaged by static electricity.
- Don't unpack until you set up ESD on product. Because most of ESD are packed by box and aluminum plate to have conductive power,they are prevented from static electricity.
- You must maintain electric contact between ESD and place due to be set up until ESD is connected completely to the proper place or a circuit board.

2. Specification

2-1. GSM General Specification

	EGSM 900	DCS1800
Freq. Band[MHz] Uplink/Downlink	880~915 925~960	1710~1785 1805~1880
ARFCN range	0~124 & 975~1023	512~885
Tx/Rx spacing	45MHz	95MHz
Mod. Bit rate/ Bit Period	270.833kbps 3.692us	270.833kbps 3.692us
Time Slot Period/Frame Period	576.9us 4.615ms	576.9us 4.615ms
Modulation	0.3GMSK	0.3GMSK
MS Power	33dBm~5dBm	30dBm~0dBm
Power Class	4 (max +33dBm)	1 (max +30dBm)
Sensitivity	-102dBm	-100dBm
TDMA Mux	8	8
Cell Radius	35Km	2Km

2-2. GSM Tx Power Class

TX Power control level	GSM900
5	32.5±2 dBm
6	31±2 dBm
7	29±2 dBm
8	27±2 dBm
9	25±2 dBm
10	23±2 dBm
11	21±2 dBm
12	19±2 dBm
13	17±2 dBm
14	15±2 dBm
15	13±2 dBm
16	11±3 dBm
17	9±3 dBm
18	7±3 dBm
19	5±3 dBm

TX Power control level	DCS1800
0	29.5±3 dBm
1	28±3 dBm
2	26±3 dBm
3	24±3 dBm
4	22±3 dBm
5	20±3 dBm
6	18±3 dBm
7	16±3 dBm
8	14±3 dBm
9	12±4 dBm
10	10±4 dBm
11	8±4 dBm
12	6±4 dBm
13	4±4 dBm
14	2±5 dBm
15	0±5 dBm

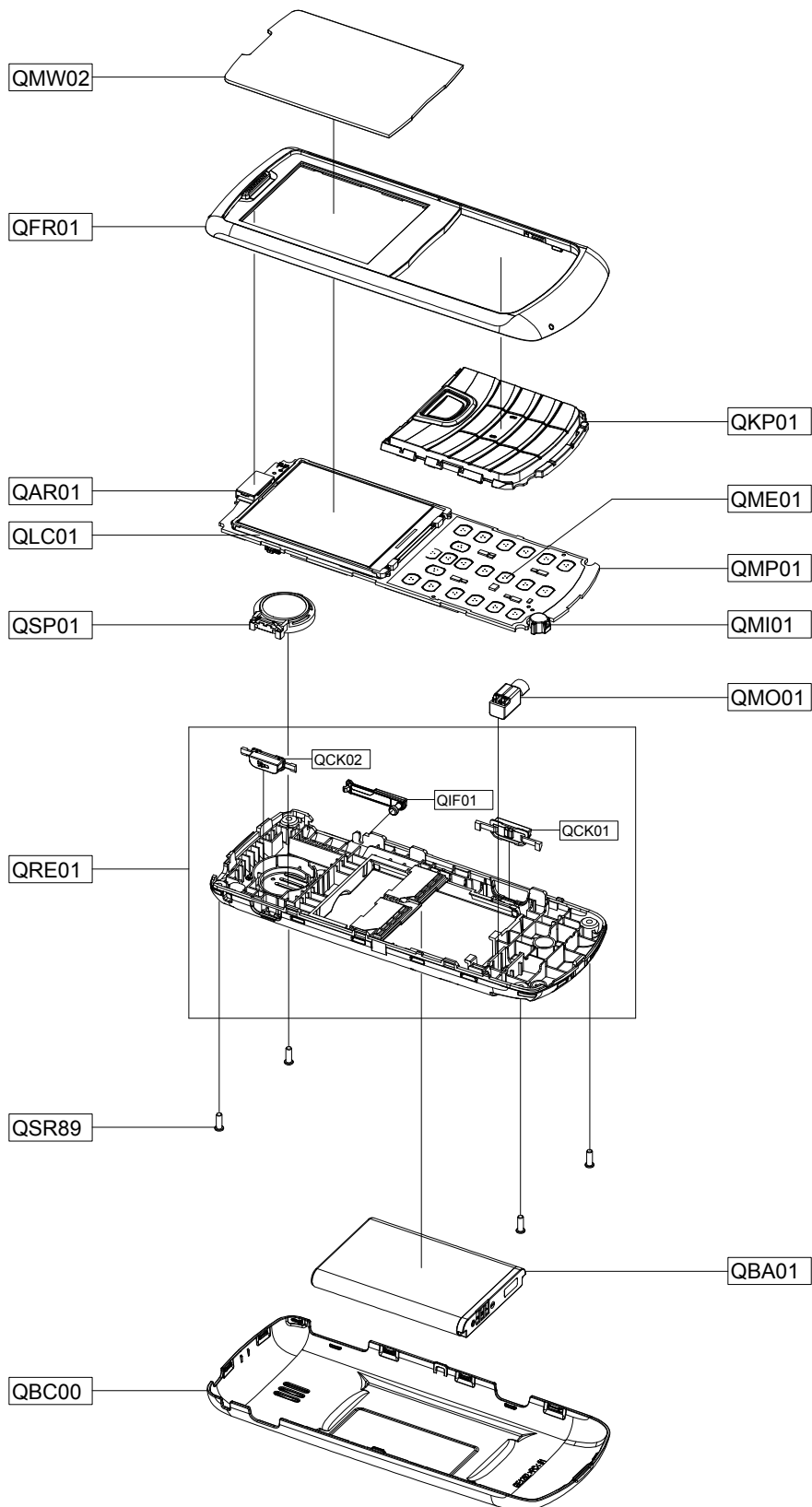
3. Operation Instruction and Installation

Main Function

- GSM 900/1800
- 2.0" QQVGA 65K TFT (WINTEK)
- 40 Poly Ringtones
- Battery 1000mAh
- GSM Dual Band
- Band : 900 / 1800
- BB : PNX 4852 (STE)
- Dual SIM Function
- Mobile Prayer
- SOS Message
- India calendar
- Call time limit

4. Exploded View and Parts List

4-1. Cellular phone Exploded View



4-2. Cellular phone Parts list

Design LOC		Description	SEC CODE
QSP01		SPEAKER	3001-002543
QAR01		AUDIO-RECEIVER	3009-001511
QCR89		SCREW-TAPPING	6002-001428
QMI01		MICROPHONE-ASSY-GT_E1252	GH30-00693A
QMO01		MOTOR DC-SCH-S369	GH31-00392A
QBA01		INNER BATTERY PACK-1000MAH,BLK,ENG,EU	GH43-03184A
QME01		DOME SHEET-GT-E1252	GH59-09891A
QMW02		PCT WINDOW-GTE1252	GH72-60726A
QMP01		A/S ASSY-PBA MAIN (INU)	GH82-05146A
QLC01		ASSY LCD-2.01" QQVGA GT_E1252	GH96-04903A
QFR01		ASSY CASE-FRONT	GH98-17627A
QBC00		ASSY COVER-BATT	GH98-17629A
QKP01		ASSY KEYPAD-GTE1252(INDA)	GH98-17632A
QRE01		ASSY CASE-REAR	GH98-17633A
	QIF01	ASSY COVER-IF	GH98-17628A
	QCK02	ASSY KEY-TORCH	GH98-17630A
	QCK01	ASSY KEY-SIM SW	GH98-17631A

5. MAIN Electrical Parts List

Design LOC	SEC CODE	Description
ZD200	0403-001688	USFZ5.6V-RTK/H
ZD304	0406-001223	PG05DBTFC
ZD300,ZD301,ZD302	0406-001254	UCLAMP0501P
ZD308,ZD309	0406-001254	UCLAMP0501P
ZD303	0406-001286	PESD5V0L5UV
ZD305,ZD306	0406-001288	PESD5V0S1UL
ZD307	0406-001361	PESD5V0U5BV
D200	0407-001002	DAN222TL
U201	0505-002664	TPCF8304
LED301,LED302,LED303	0601-002846	19-217UTD/S759/TR8
LED304	0601-002846	19-217UTD/S759/TR8
LED300	0601-002890	99-216UMC/3842S3K/TR8
U302	1001-001635	FSA2259UMX
TR100	1003-001440	MDC3105LT1
U200	1003-002367	ET4555Y
UME200	1108-000370	K5N5629ATB-BQ12
PAM100	1201-002931	RF7168
U301	1203-005512	MIC5365-3.3YMT
U102	1203-006272	AHK3293A
U103	1204-003208	AR1210
UCP200	1205-003945	PNX4852
TH200	1404-001221	NCP15WB473J04RC
R311	2007-000138	RC1005J101CS
R301	2007-000139	RC1005J221CS
R300,R305,R312,R313	2007-000141	RC1005J222CS
C137,C138	2007-000143	RC1005J472CS
R102	2007-000147	RC1005J822CS
R200,R201,R323	2007-000148	RC1005J103CS
R123,R318	2007-000157	RC1005J473CS
R238,R241,R242,R302	2007-000172	RC1005J100CS
R306,R307,R310	2007-000172	RC1005J100CS
R308,R309	2007-000173	RC1005J220CS

Design LOC	SEC CODE	Description
R317	2007-000932	RC1005J471CS
R316	2007-001119	RC1005J681CS
R314,R315	2007-001156	RC1005J751CS
R104	2007-001288	MCR01MZP5J180
R235,R236,R237,R239	2007-001298	RC1005J510CS
R240,R303,R304	2007-001298	RC1005J510CS
R209	2007-001301	MCR01MZP5J680
R120,R121,R211	2007-001333	MCR01MZP5J183
R103	2007-002970	MCR01MZP5J560
R122	2007-003025	RMC16S-6R8J-TP
R105,R106	2007-007008	RC1005J301CS
R205	2007-007698	RK73H1ETP5101F
R203	2007-010071	MCR10EZHFRLR100
C215,C313,C319,C322	2203-000386	GRP1555C1H150J
C224,C228	2203-000425	GRP1555C1H180J
C106,C231	2203-000438	GRP155R71H102K
C308,C309,C310	2203-000585	GRP155R71H221KD01E
C327	2203-000627	GRM1555C1H220J
C302	2203-000679	GRP1555C1H270J
C143	2203-000696	GRP1555C1H2R0C
C111,C113,C121,C122	2203-000812	GRP1555C1H330J
C225,C320,C321	2203-000812	GRP1555C1H330J
C105,C234,C236	2203-000995	GRP1555C1H470J
C324,C325	2203-001072	GRP1555C1H560JD01E
C200,C238,C240	2203-002709	C1005Y5V1C104ZT
C108,C112,C114,C119	2203-005281	GRP1555C1H1R5BZ01E
C142	2203-005281	GRP1555C1H1R5BZ01E
C223	2203-005344	GRM155R71E223KA61D
C101,C109,C136,C203	2203-006048	GRM155R71A104K
C204,C205,C226,C235	2203-006048	GRM155R71A104K
C237,C244,C301,C303	2203-006048	GRM155R71A104K
C315,C317,C329	2203-006048	GRM155R71A104K

Design LOC	SEC CODE	Description
C207,C208	2203-006208	CM105X5R475M06AT
C102,C103	2203-006257	GRM155R60J474KE19E
C110,C326	2203-006361	GRM21BR61A106K
C201,C202,C206,C209	2203-006399	GRM155R60J105KE19D
C210,C211,C212,C241	2203-006399	GRM155R60J105KE19D
C245	2203-006399	GRM155R60J105KE19D
C120,C230,C239,C243	2203-006562	CV05X5R105K10AH
C311,C312,C323	2203-006562	CV05X5R105K10AH
C213,C214,C227	2203-006824	CV105X5R475K10AT
C222	2203-007425	CL10A225KA5LNNC
TA301	2404-001377	F980J226MMA
L107	2703-002170	CIH05T6N8JNC
L122	2703-002200	CIH05T18NJNC
L108	2703-002204	CIH05T22NJNC
L314,L315	2703-002267	CIH05T4N7SNC
L104,L307,L309	2703-002269	CIH05T56NJNC
L124	2703-002880	LQG15HS2N0S02D
L201	2703-003184	CIG22W4R7MNE
L300	2703-003476	LQG15HSR27J02D
OSC201	2801-003856	MC-146(32.768KHz,20ppm)
OSC200	2801-004769	CXC6X260000GHVRP70
F100	2904-001879	SFR942PY002
L200	3301-001158	BLM18PG300SN1D
L202	3301-001534	BLM15AG121SN1D
L306,L308	3301-001729	BLM15AG102SN1D
L301,L302,L303,L304	3301-001885	BLM15HD182SN1D
L305	3301-001885	BLM15HD182SN1D
L123	3301-001970	BLM15BA330SN1
TAC301,TAC302	3404-001152	LS10N2-T
RFS100	3705-001731	KMS-560-002-BEF
SIM201,SIM202	3709-001488	5000-6P-1.5S
IFC300	3710-002683	HY20-AB0310

Design LOC	SEC CODE	Description
BTC200	3711-007534	BTS237-019-RP
SC100,SC101,SC102	GH70-03276A	ONBOARD-CLIP-4
SC103,SC105,SC106	GH70-03276A	ONBOARD-CLIP-4
SC107,SC108,SC109	GH70-03276A	ONBOARD-CLIP-4
R244	GH80-03320A	PB-SHORT-1005
R233	GH80-03321A	PB-SHORT-0603

Please consult the GSPN website (Samsung Portal) for the most recent version of the product's part list.

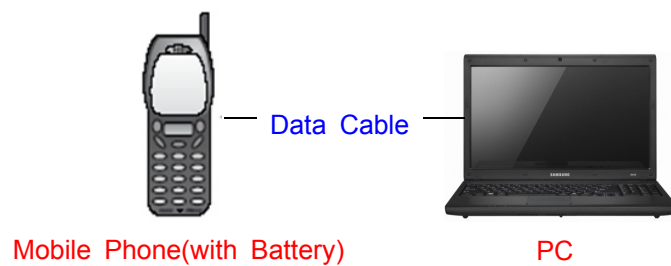
6. Level 1 Repair

6-1. Software Download

6-1-1. Pre-requisite for Download

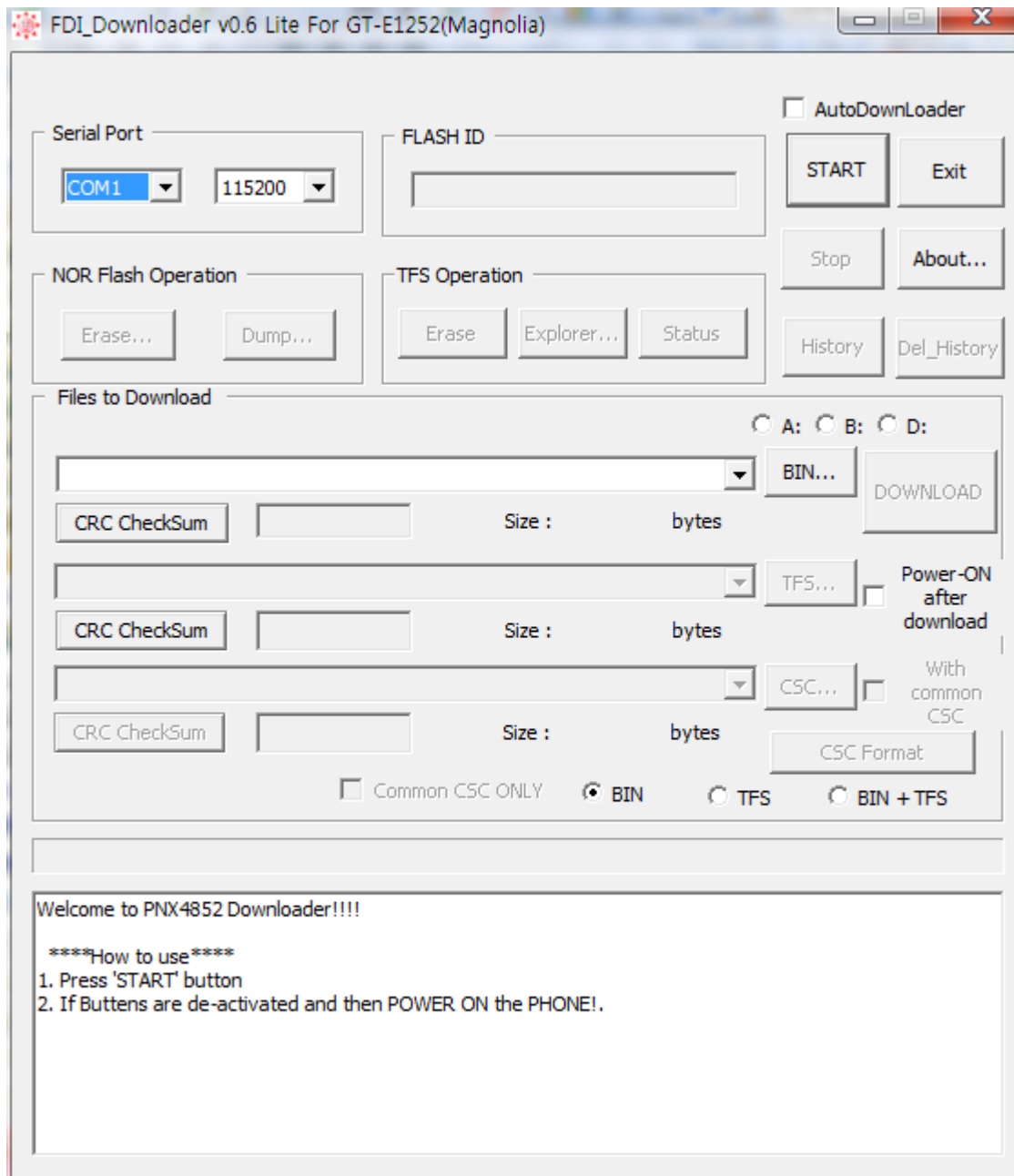
- ⇒ Downloader Program ([FDI_Downloader v0.6 Lite For GT-E1252\(Magnolia\).exe](#))
- ⇒ GT-E1252 Mobile Phone
- ⇒ JIG BOX (GH99-36900A)
- ⇒ RF Test Cable (GH39-00985A)
- ⇒ JIG Cable (GH39-01313A)
- ⇒ Adapter (GH99-38251A)
- ⇒ Binary files

- Diagram of Connection:

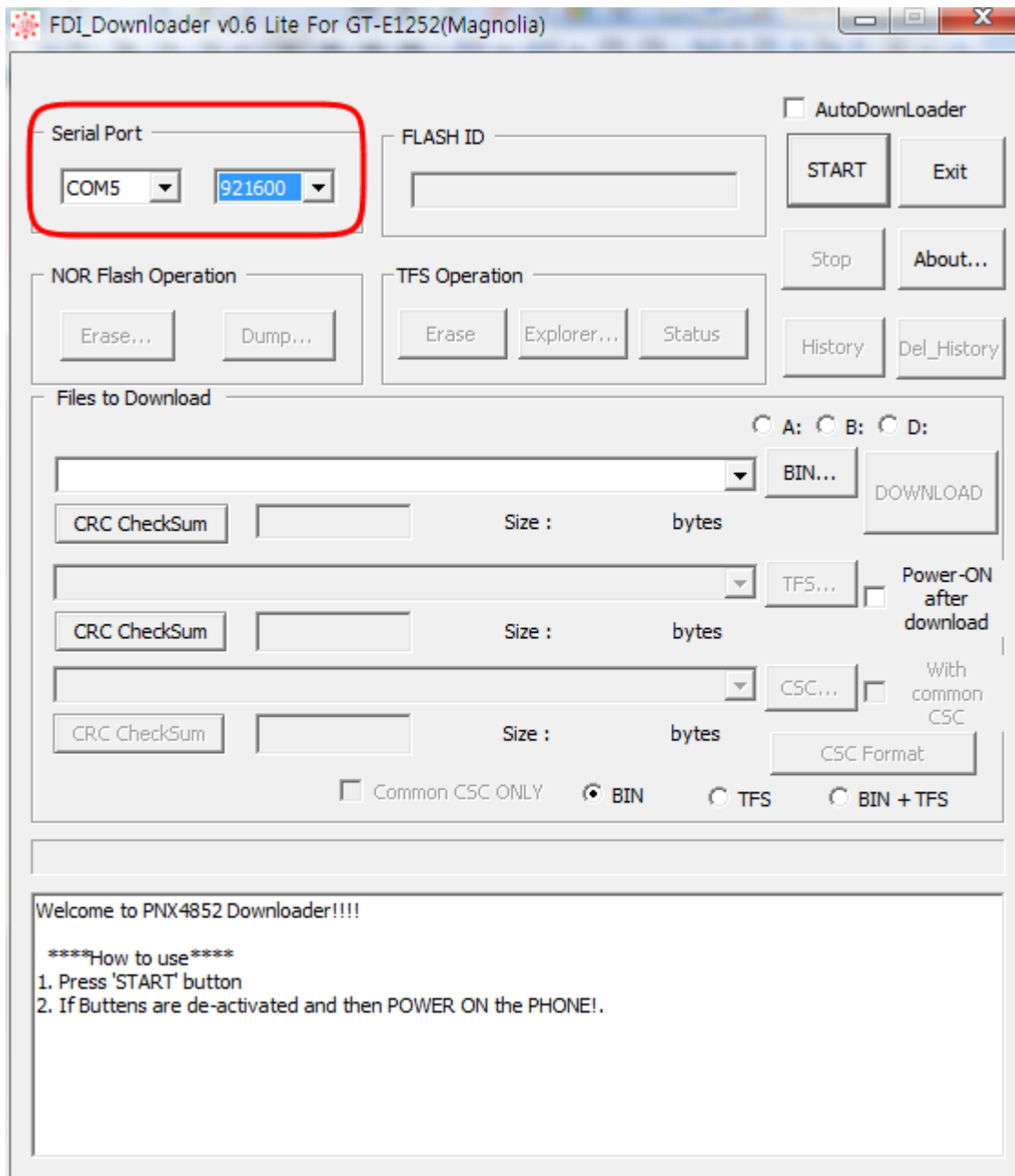


6-1-2. S/W Download Process

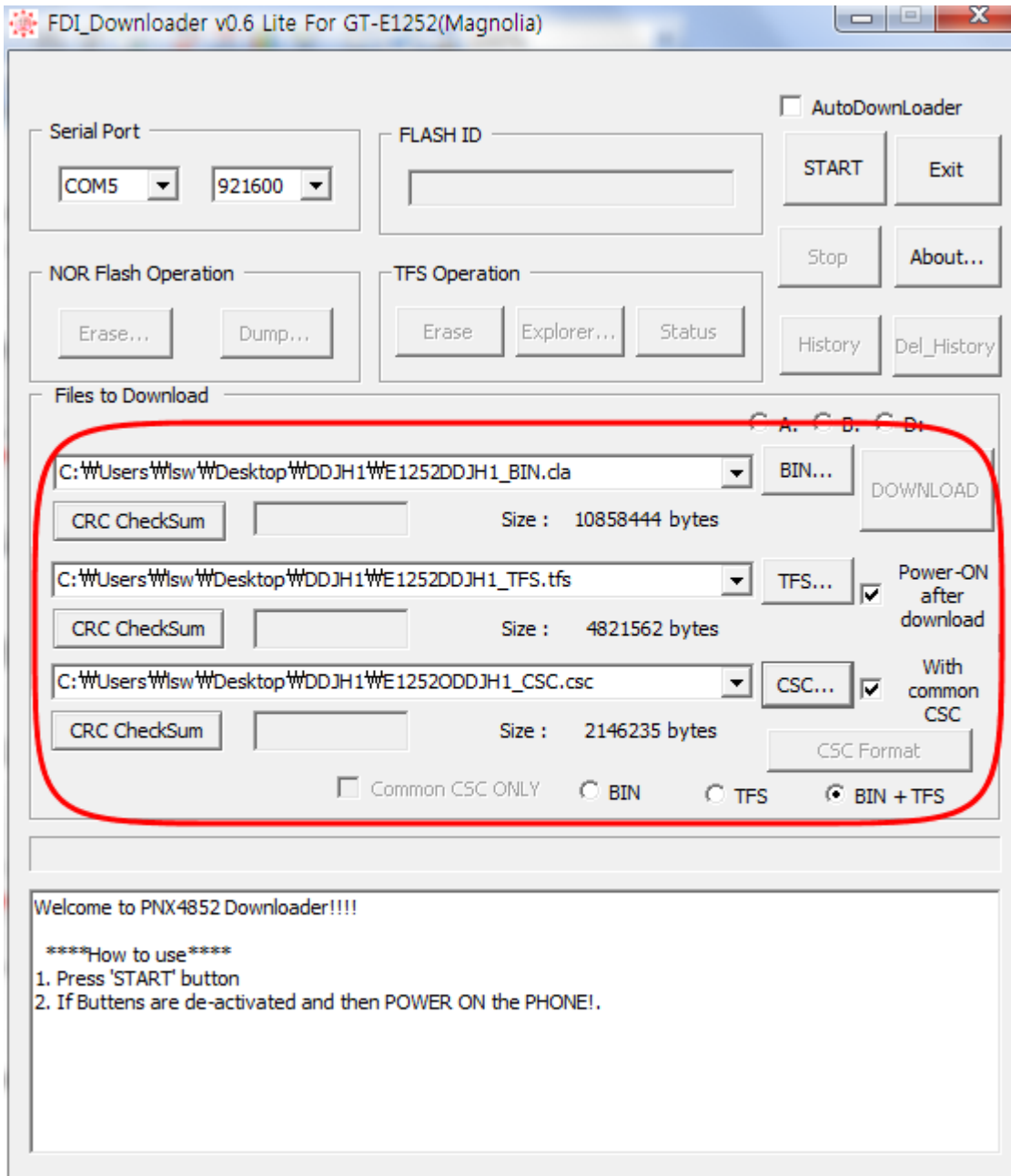
1. Load the binary download program by executing the
"FDI_Downloader v0.6 Lite For GT-E1252(Magnolia).exe"



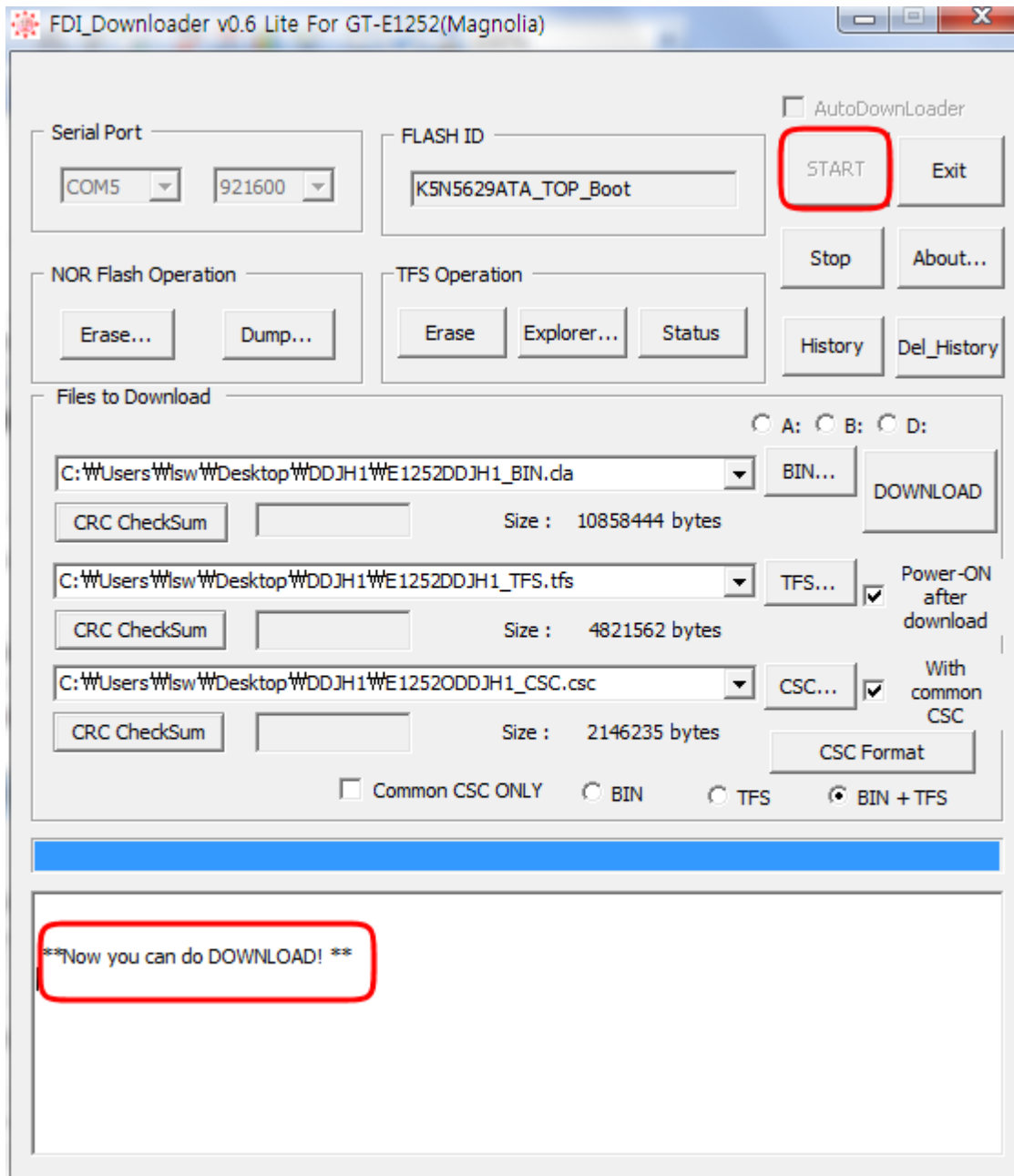
2. Select the Port, Baud Rate and Mode.



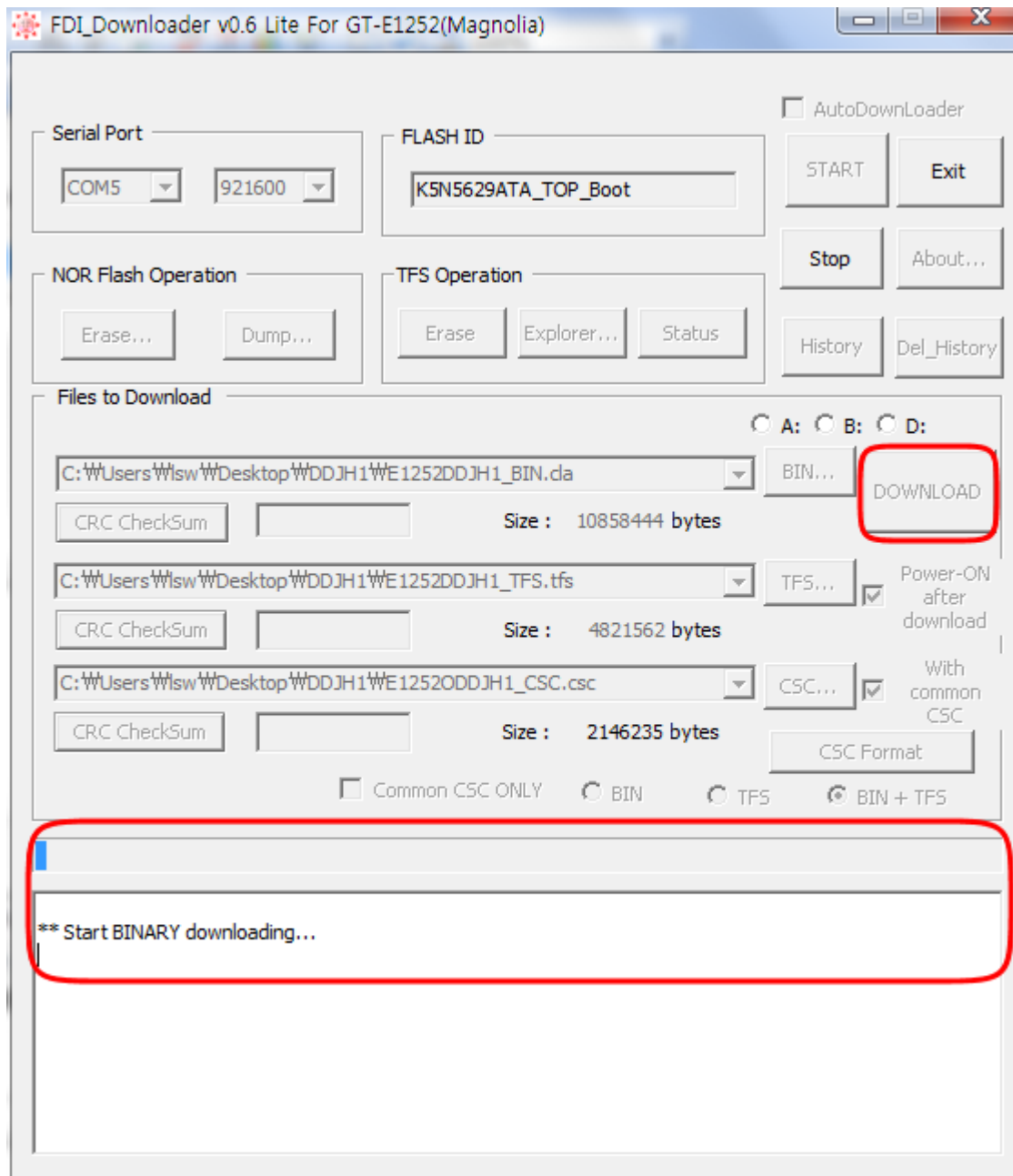
3. Select the binary, TFS, CSC files what you want to download



4. Press the "Start" button and connect the Handset.
Press "End Key" of the phone for a while
And then, you can see the sentence "Now you can do DOWNLOAD!"



5. Press the "Download" button.
Now download program will start binary downloading.



6. After download, Confirm the downloaded version name and etc. :

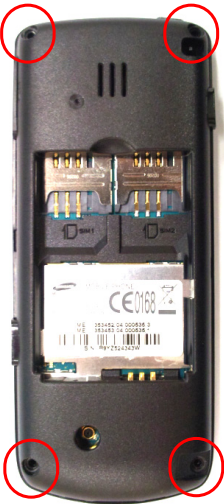
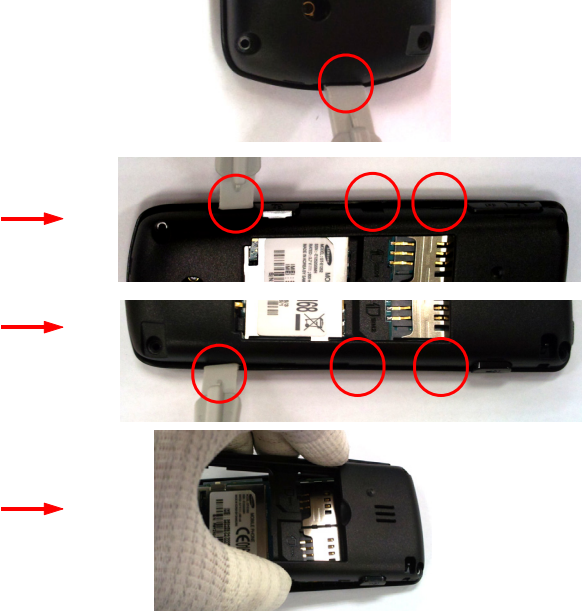


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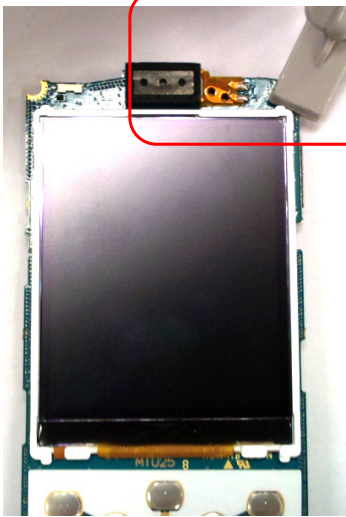
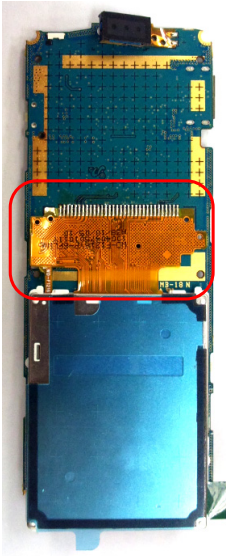
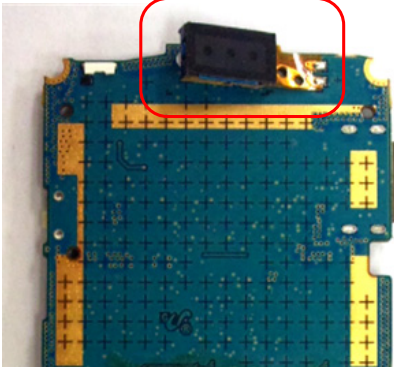
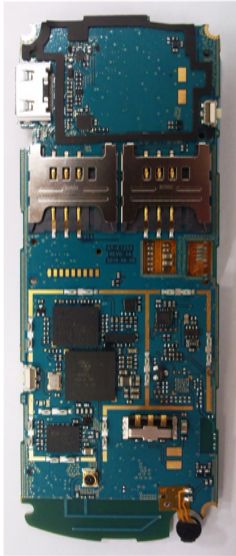
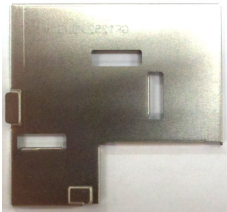
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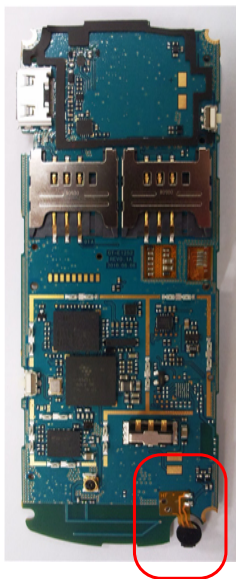
***2767*3855#**

7. Level 2 Repair

7-1. Disassembly

	
<p>1. Unscrew 4 points at the REAR case.</p>	<p>2. Disassemble the REAR as below sequence.</p>
	
<p>3. Disassemble the PBA. Be careful with hooks.</p>	<p>4. Separate the PBA from the FRONT.</p>

	
5. Disassemble the LCD Module. Be careful not to damage LCD FPCB and LCD	6. Disassemble the LCD FPCB. Be careful not to damage LCD FPCB and LCD
	 
7. Disassemble the Reciver. Be careful not to damage LCD FPCB and LCD	8. Disassemble the SHIELD CAN.

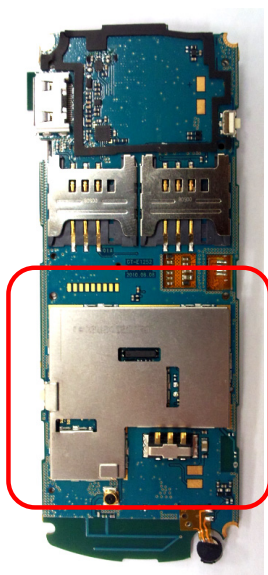


9. Disassemble the MIC.
Be careful not to damage MIC FPCB

10. Separate the KEYPAD from the FRONT.

7-2. Assembly

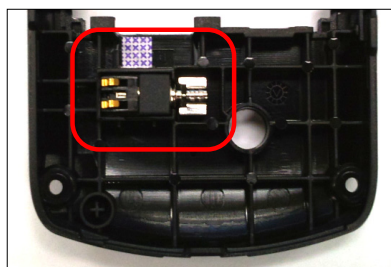
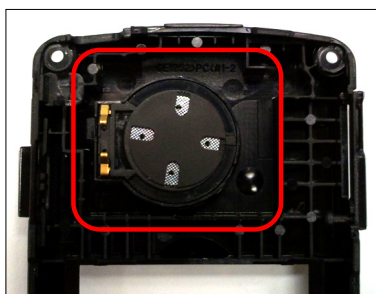
	<p>CAUTION</p> <p>Check F-PCB to MAIN PCB soldering tightly. (If there is a gap between F-PCB and Main board will makes faulty)</p>  <p>Be careful not to make Flux on the Main Board (Use the cover of Soldering Jig)</p>
<p>1. Soldering 2 points of MIC FPCB pad with PBA.</p>	<p>2. Soldering FPCB of the LCD MODULE. Be careful not to make a gap between LCD FPCB and Main Board. Height of solder should not over 0.2mm.</p>
	
<p>3. Soldering 2 points of RCV FPCB pad with PBA.</p>	<p>4. Combine LCD to Main Board. Don't push the panel of LCD while combine the LCD</p>



5. Assemble the SHIELD CAN.



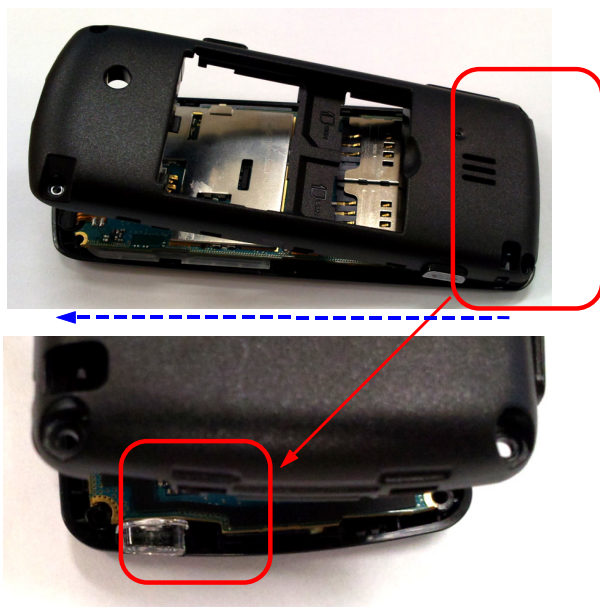
6. INSERT KEYPAD to FRONT.



7. INSERT SPEAKER, MOTOR to REAR.
When insert MOTOR, use PUSHING JIG.
CHECK SPEAKER, MOTOR insert tightly.



8. INSERT PBA TO FRONT.



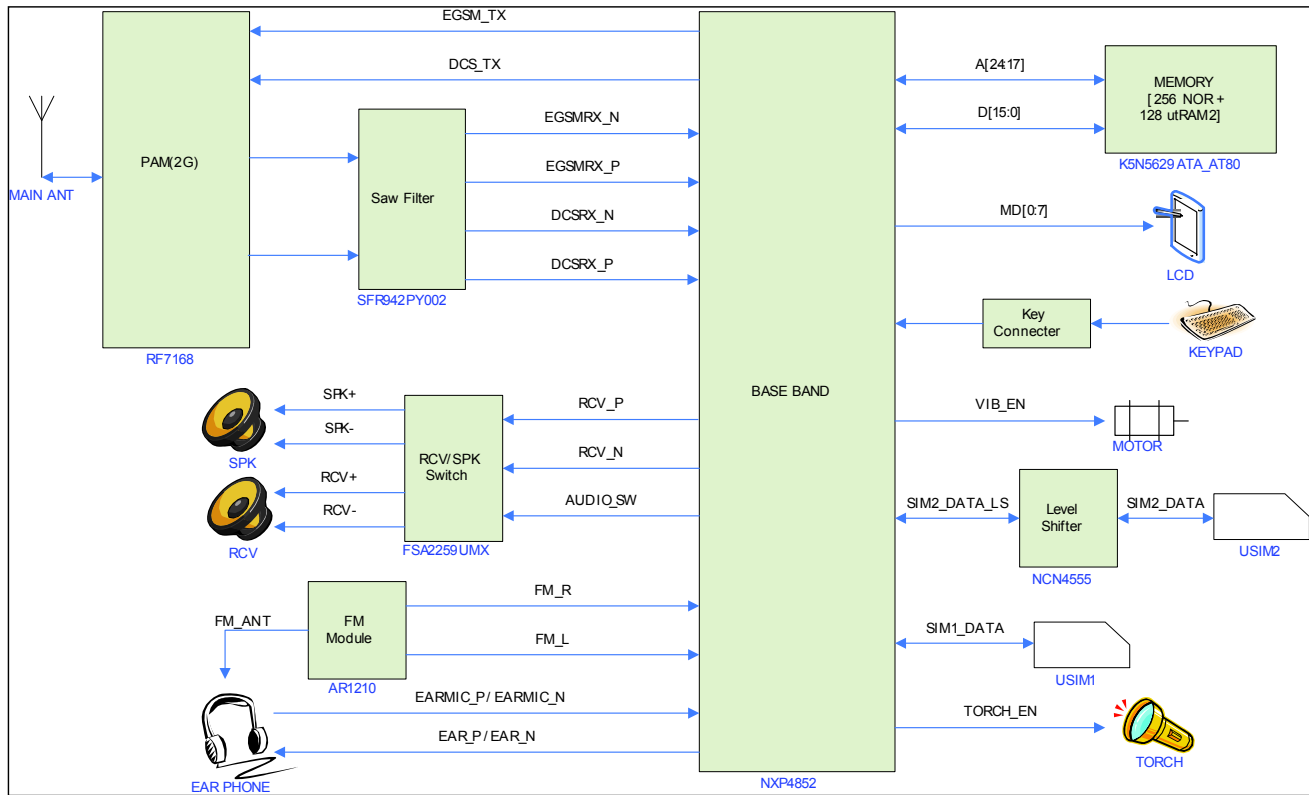
9. COMBINE REAR FROM TOP TO BOTTOM.



10. Screw 4 points at the REAR case.
Torque : 1.4~1.6

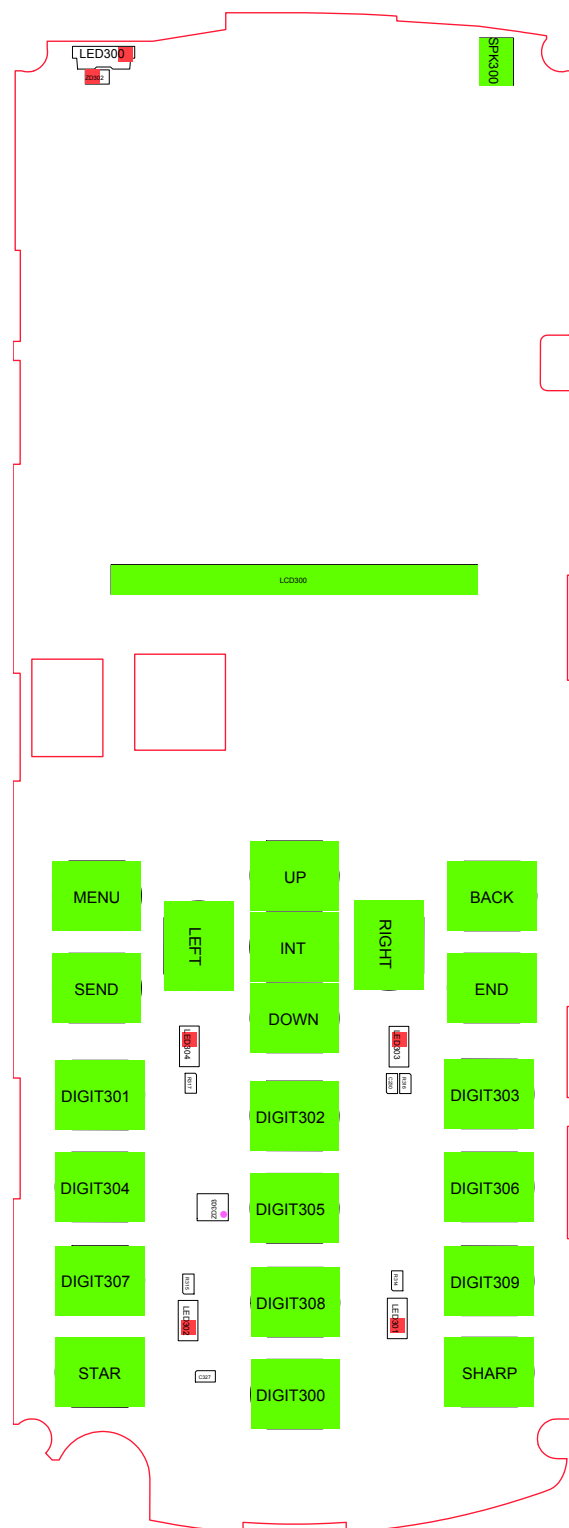
8. Level 3 Repair

8-1. Block Diagram

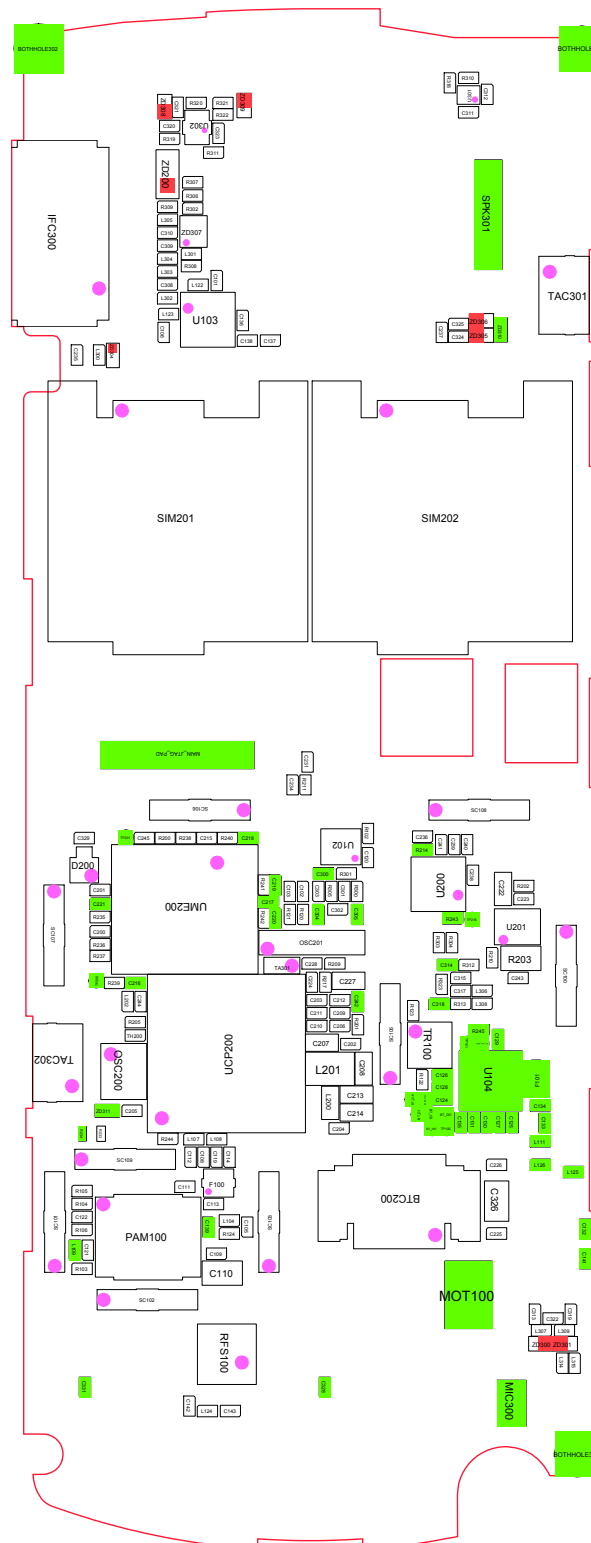


8-2. PCB Diagrams

8-2-1. Top



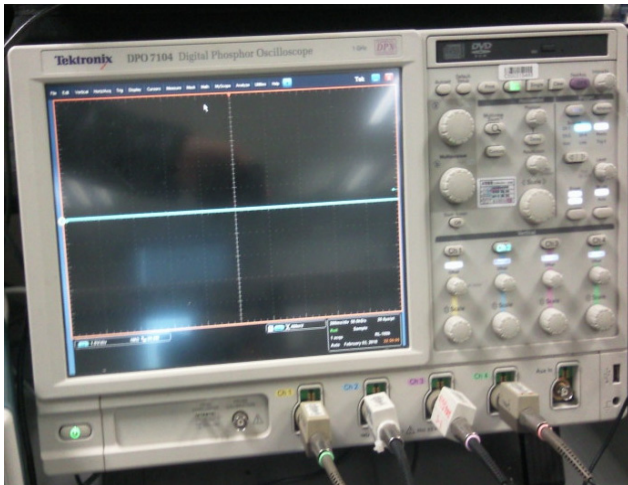
8-2-1. Bottom



8-3. Flow Chart of Troubleshooting

※ presetting methods for checking TP

- GND & TP(exp. Vbatt=C108, C109, C212,C308) using Oscilloscope
- look over the coming out signal.



← Oscilloscope

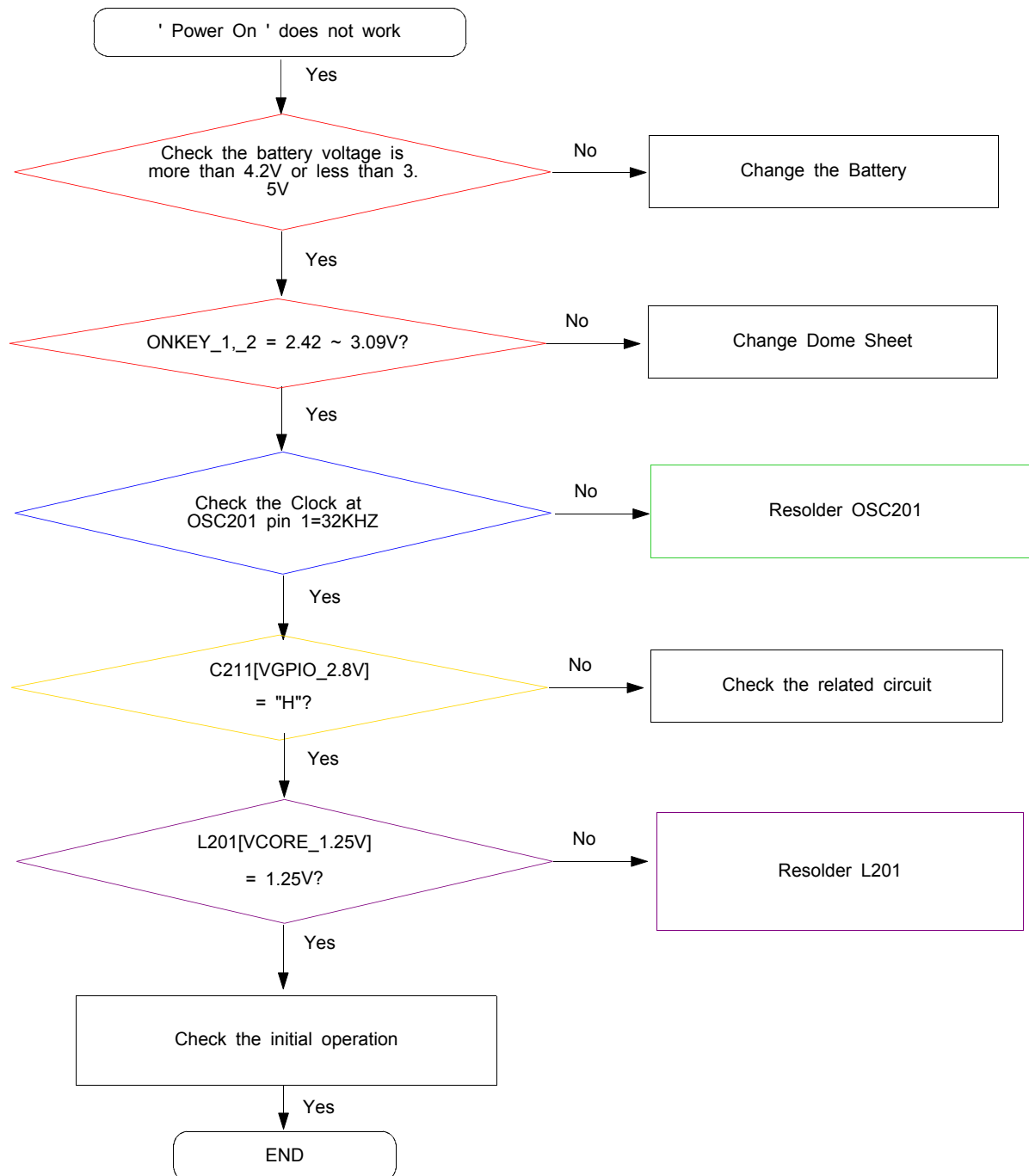


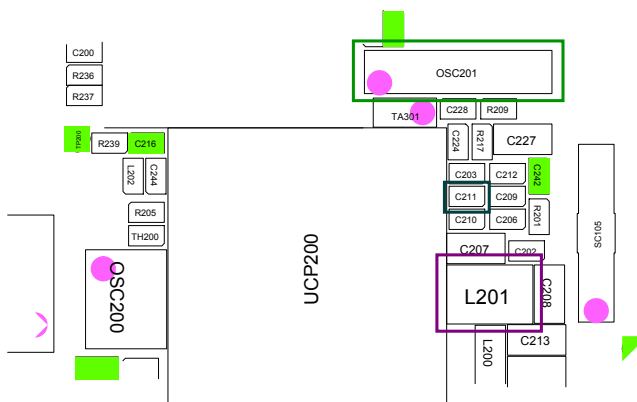
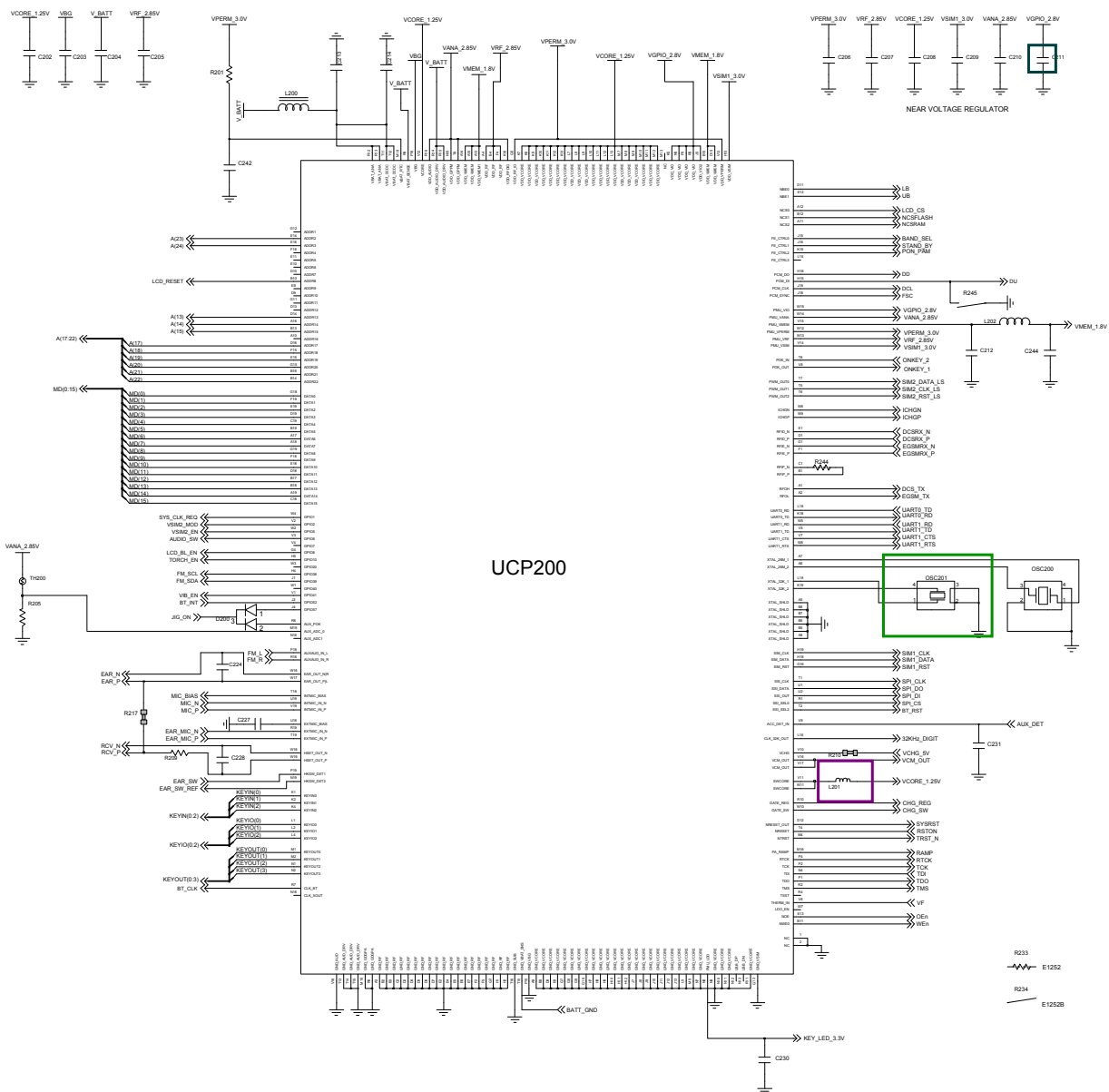
← Multi-meter

← Checking the TP(test point) using Multi-meter

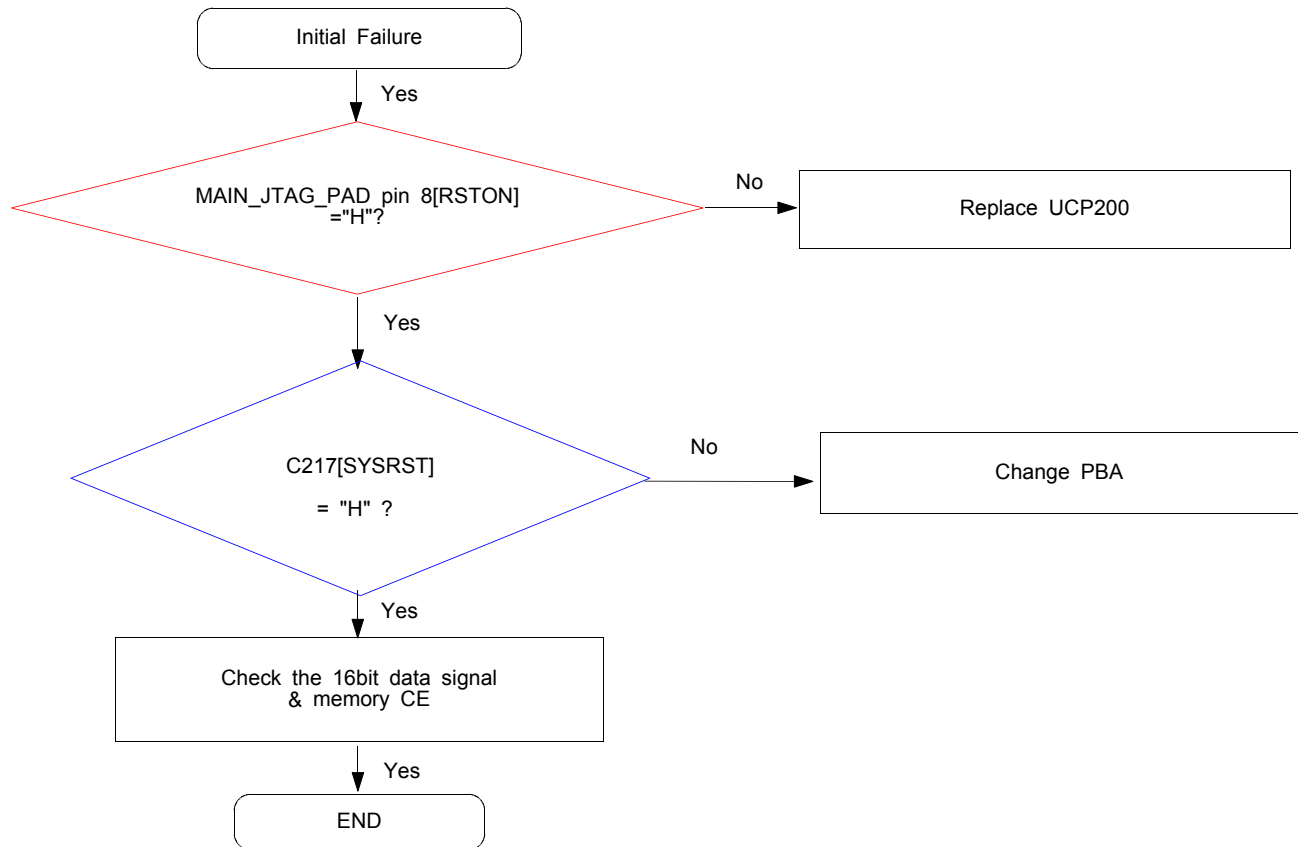
- EX) to look up the TP, shunt Cap. - if checking the GND, you can listen "beep"
if checking the Signal, you can't listen it.

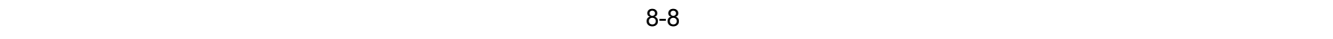
8-3-1. Power On



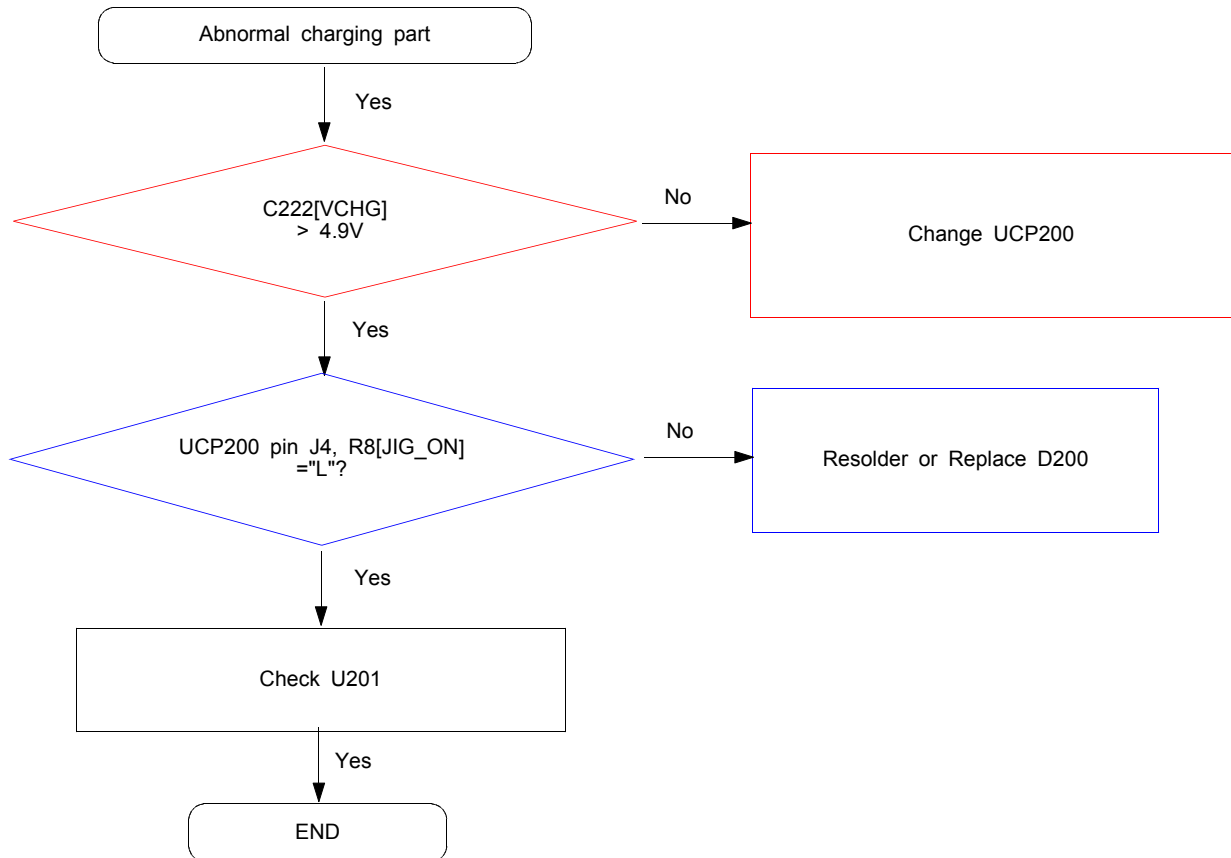


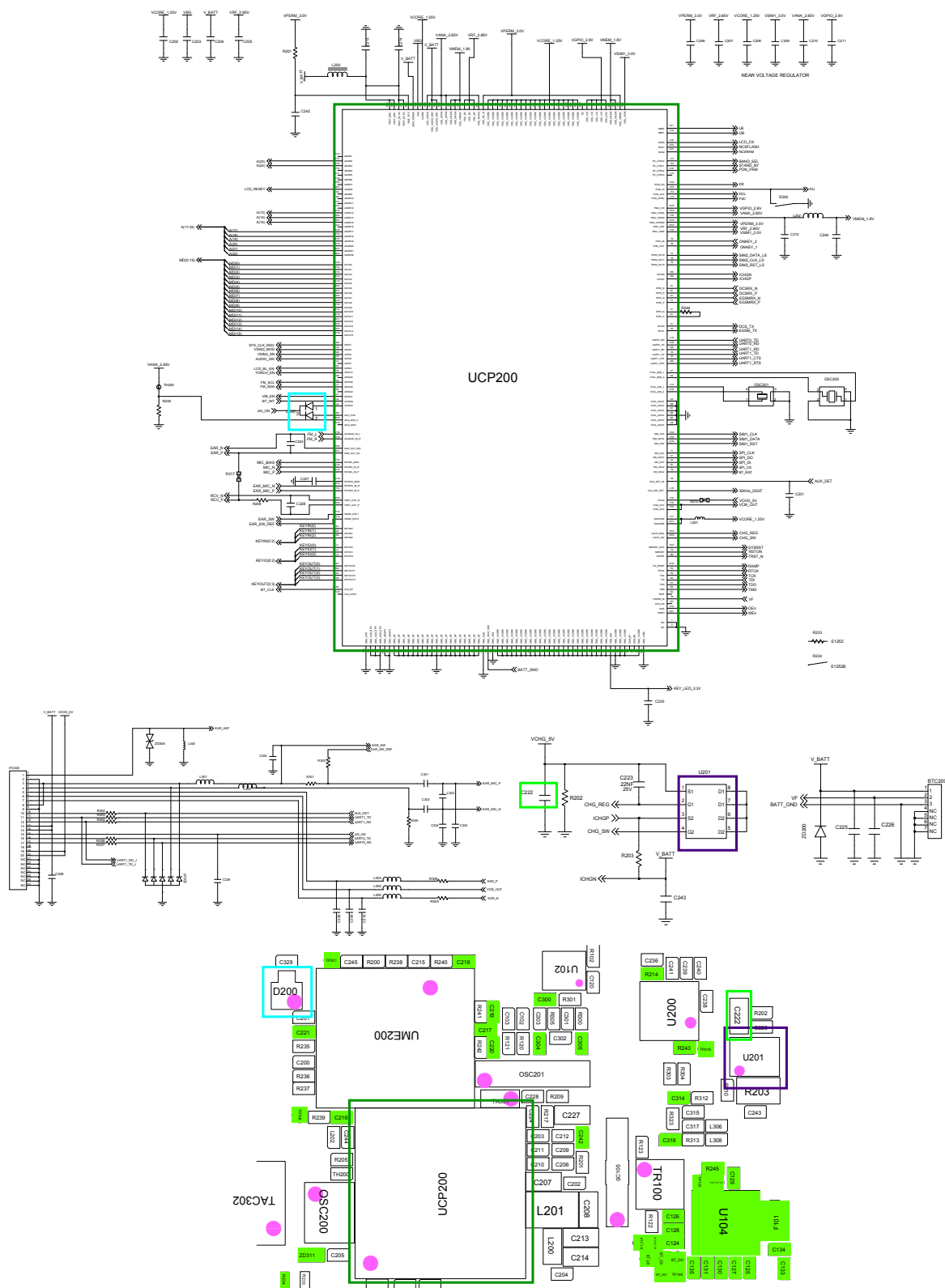
8-3-2. Initial



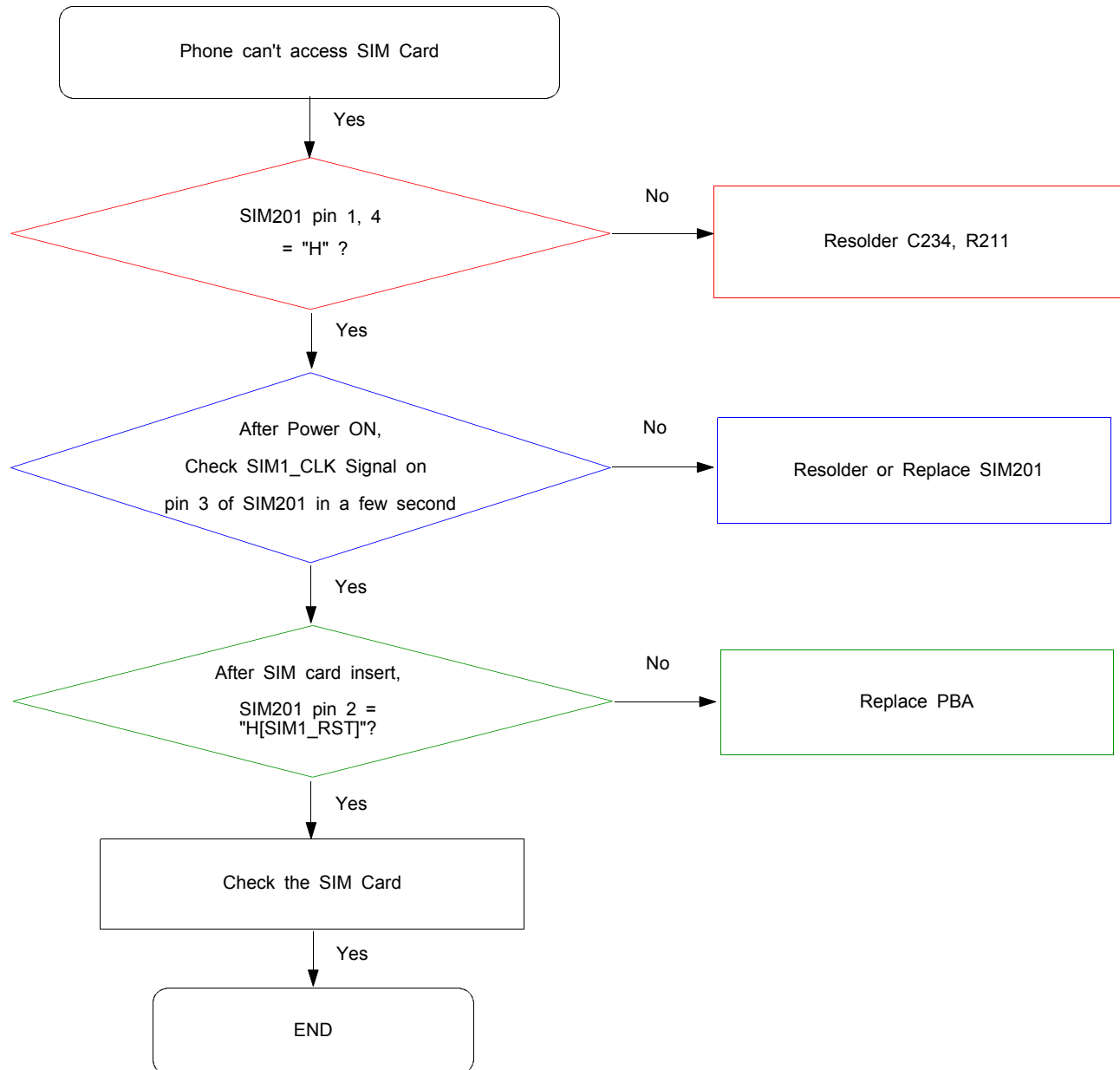


8-3-3. Charging Part

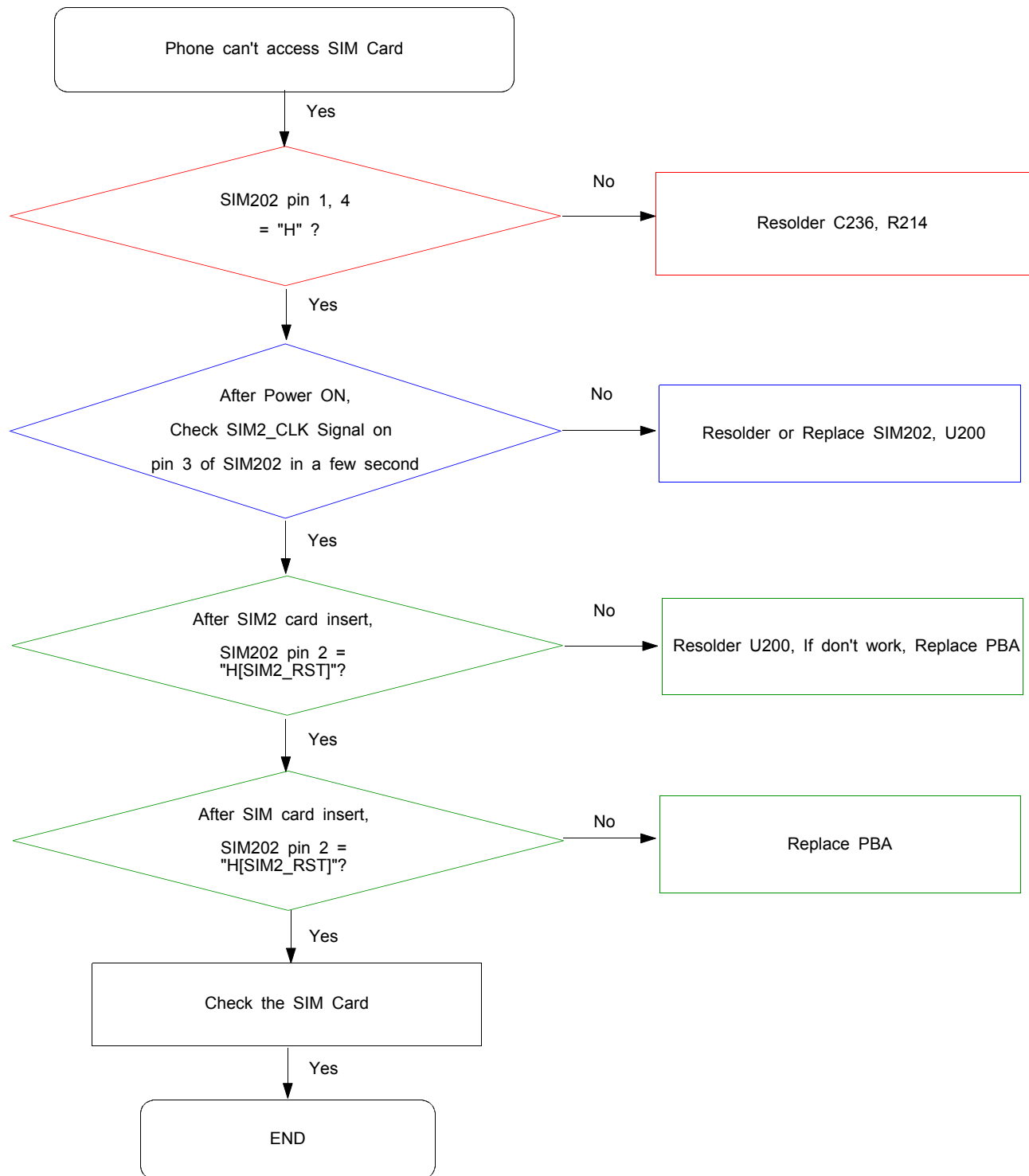




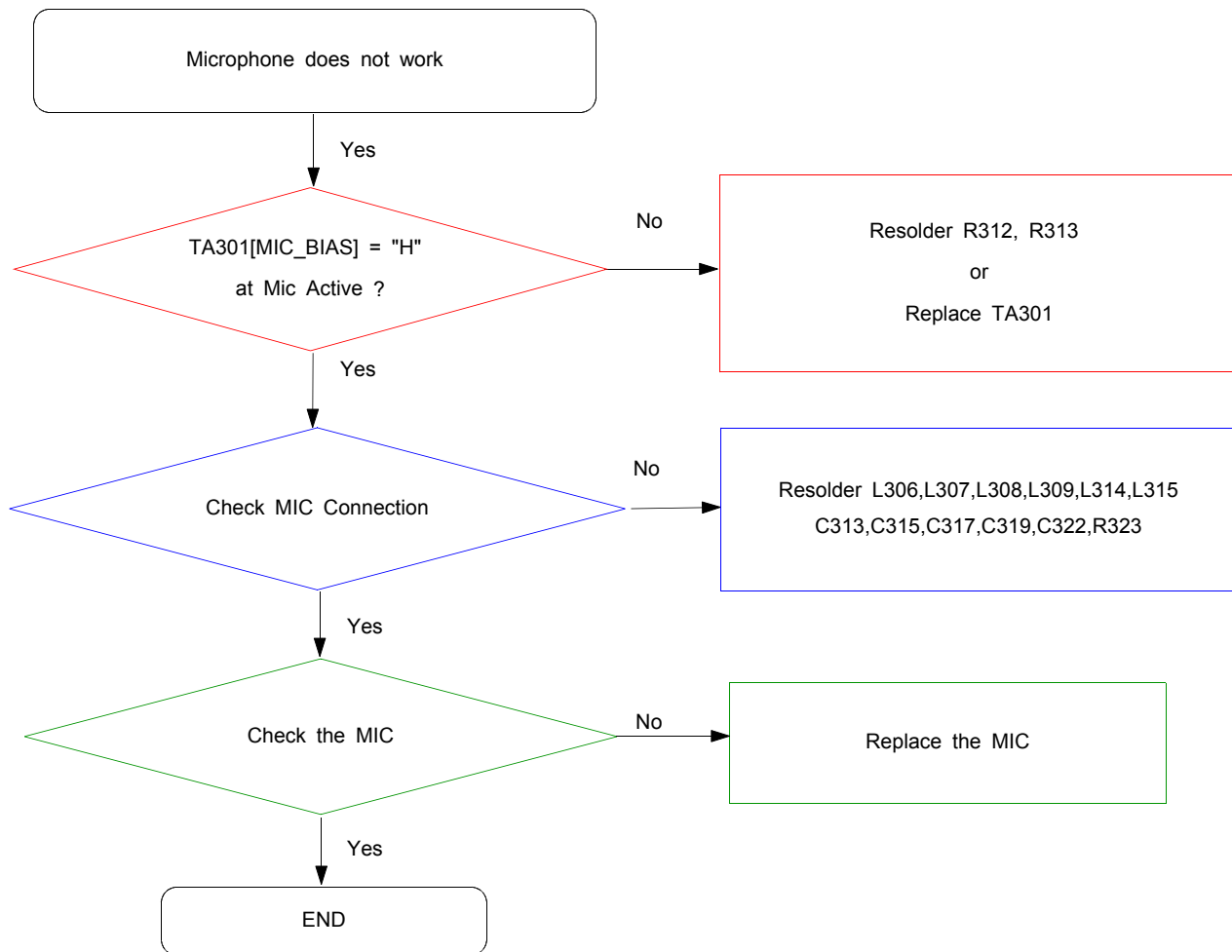
8-3-4. Sim 1 Part

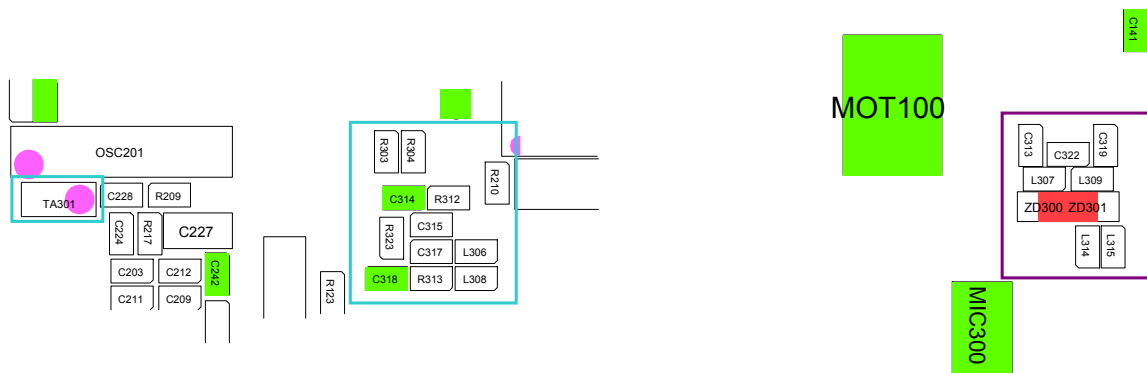
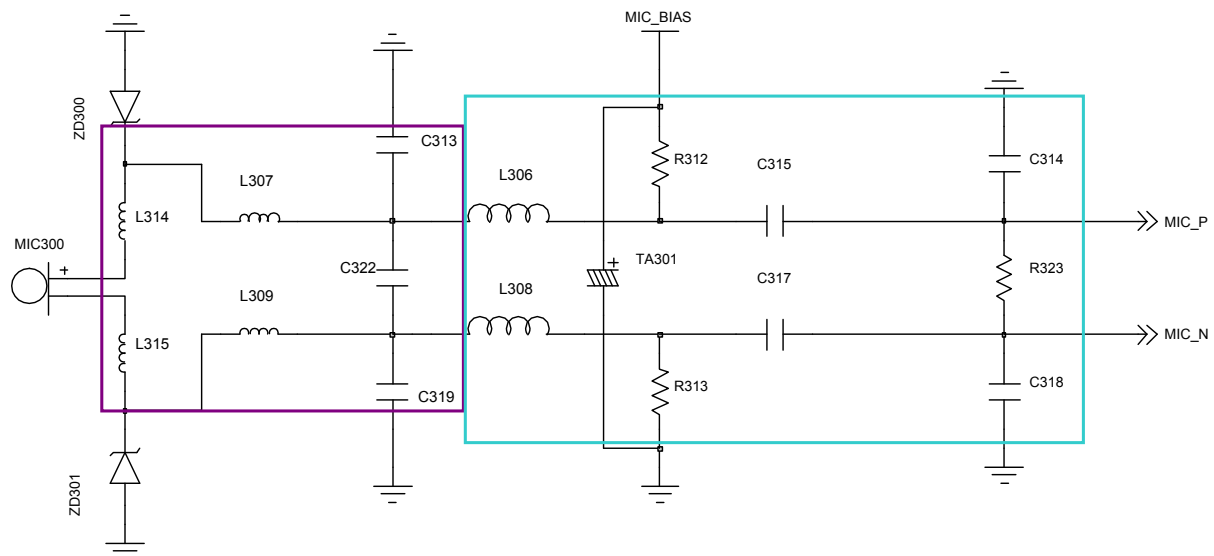
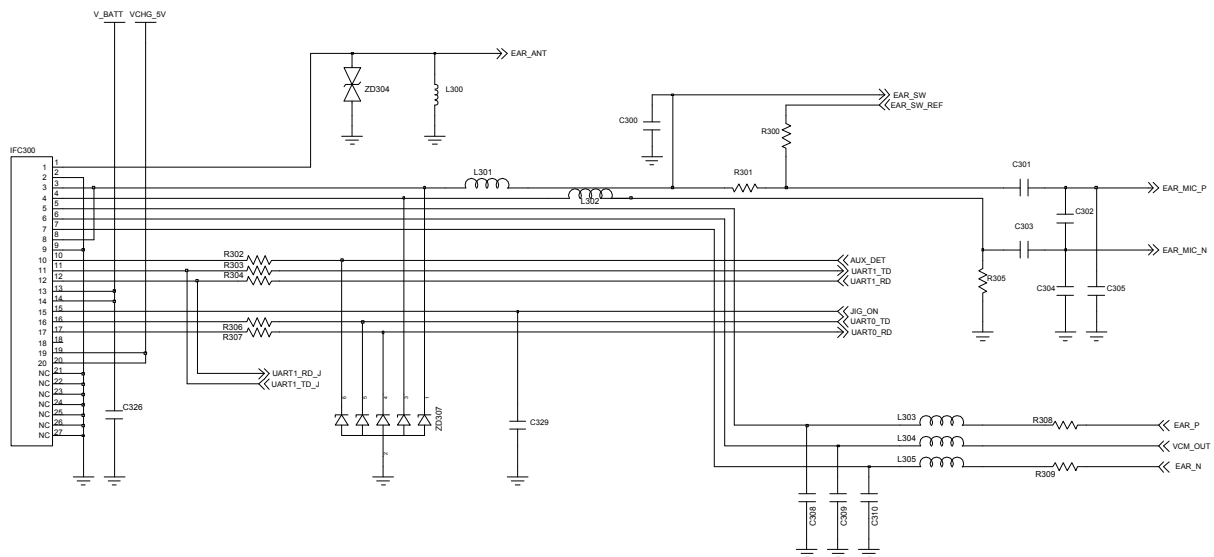


8-3-5. Sim 2 Part

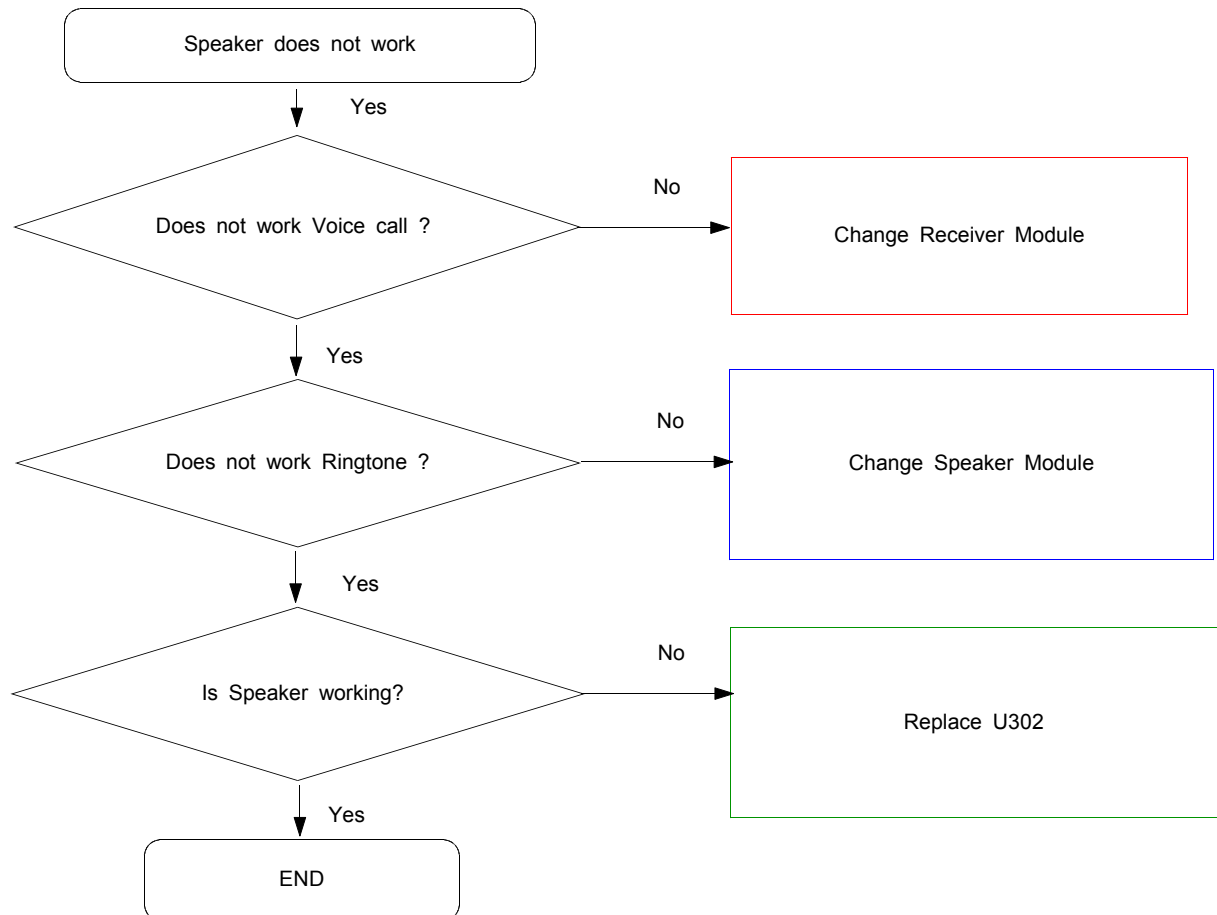


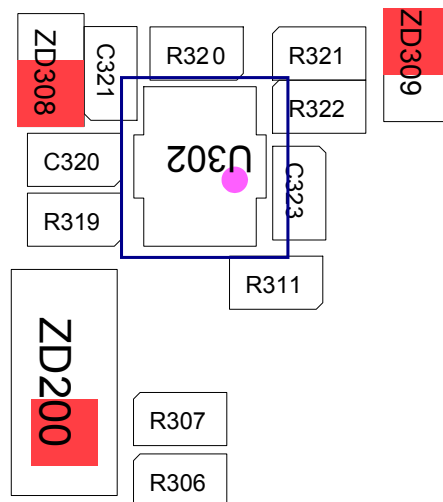
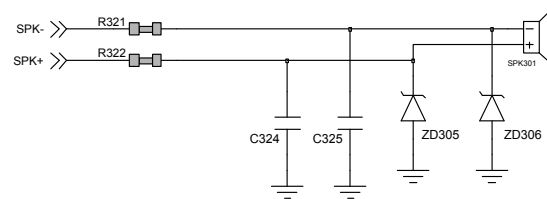
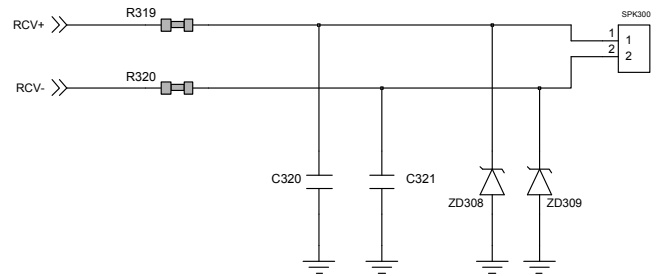
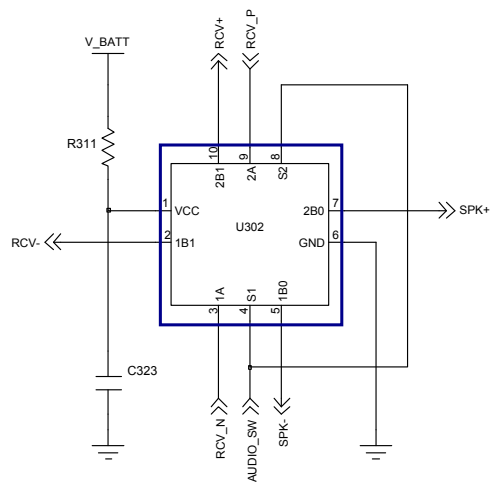
8-3-6. Microphone Part



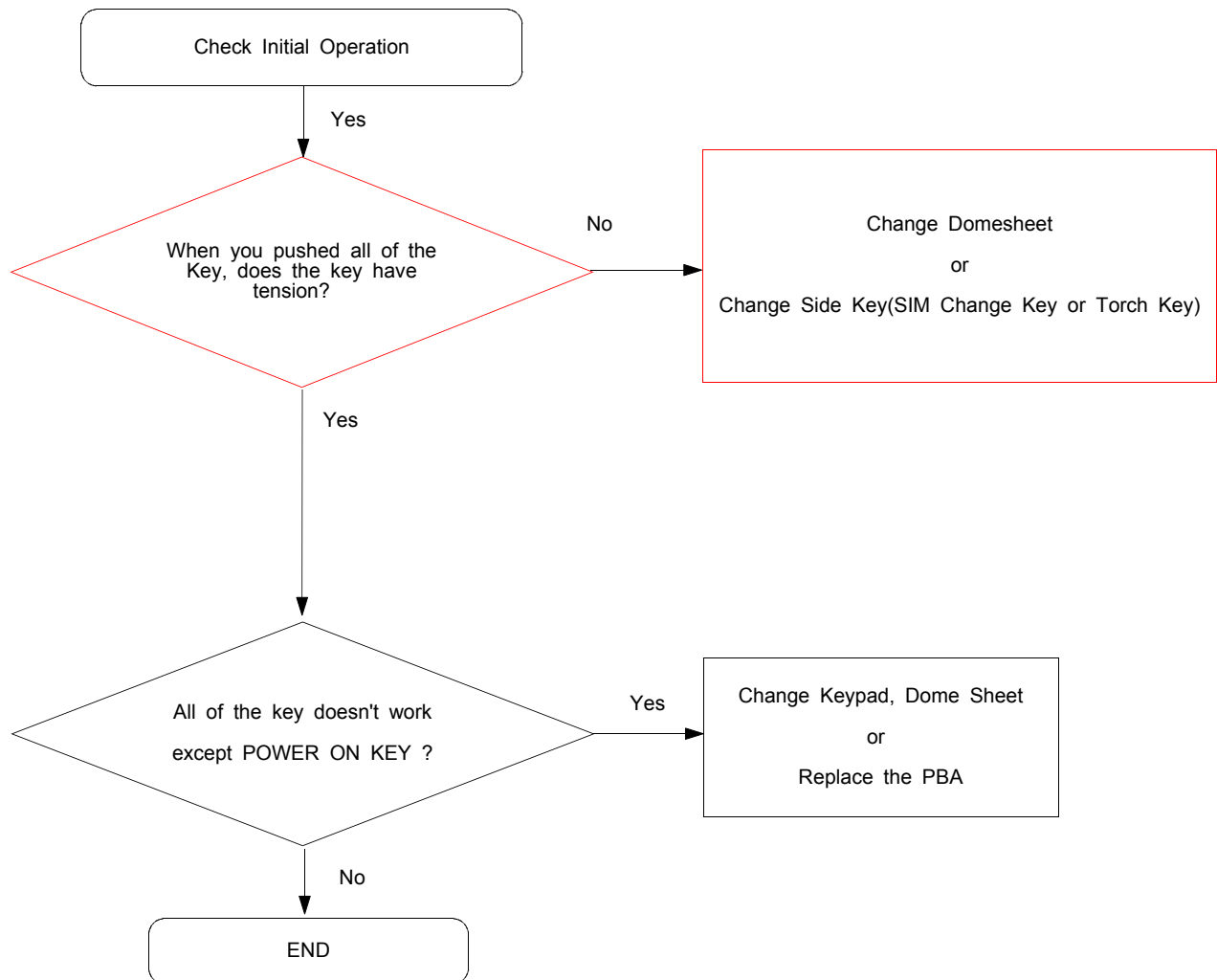


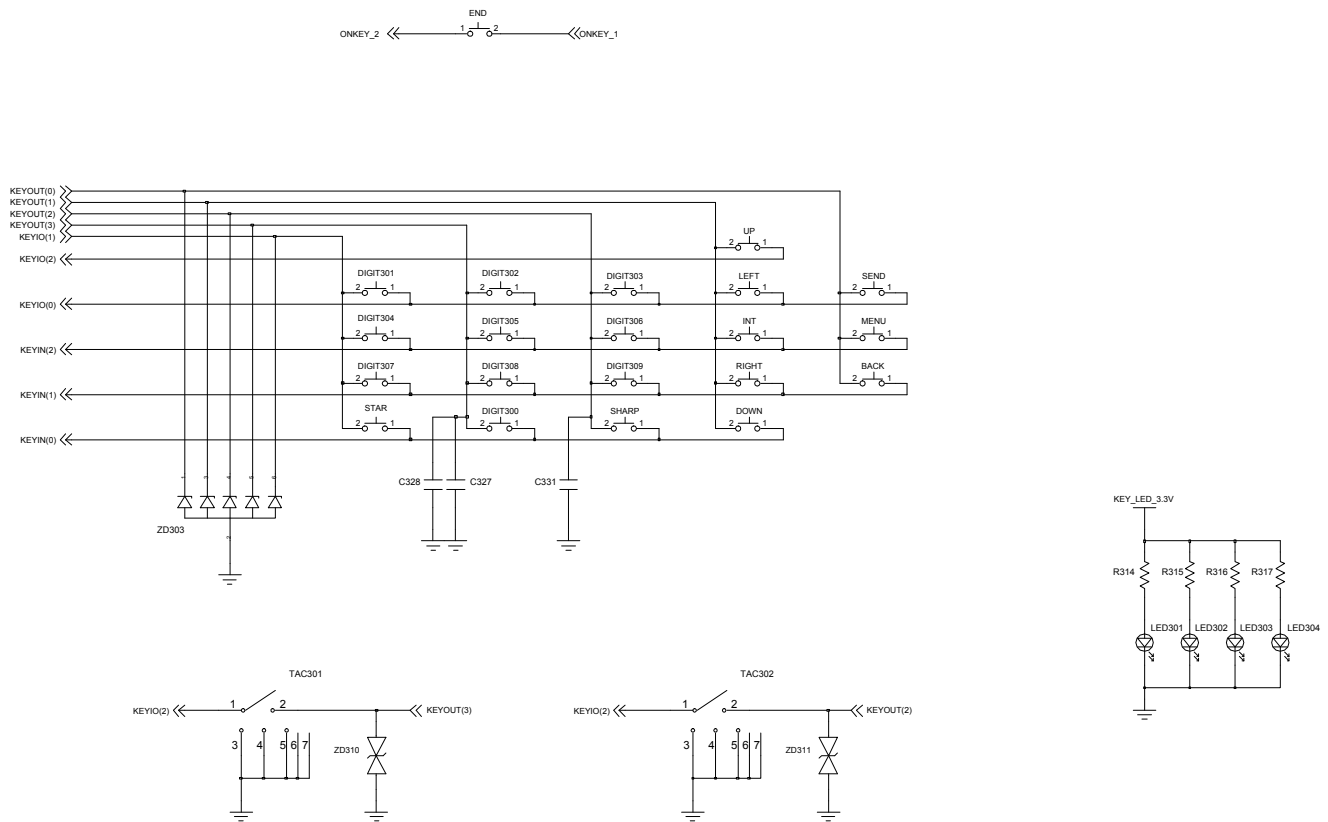
8-3-7. Speaker Part



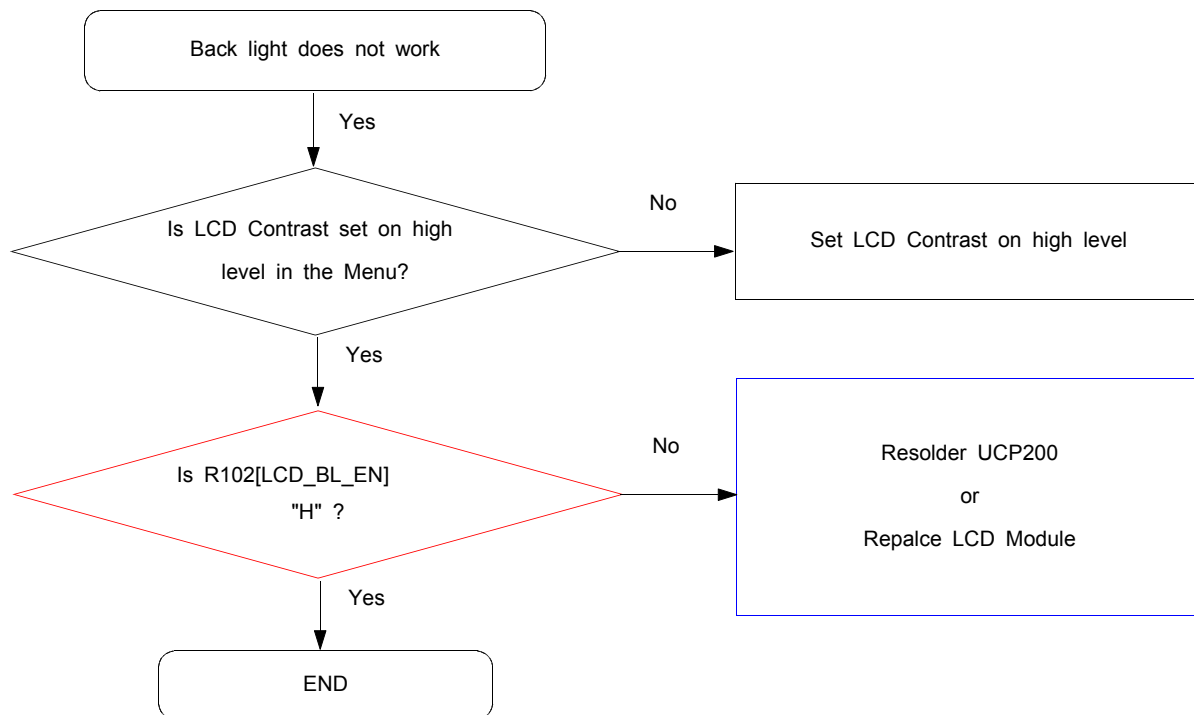


8-3-8. Key Data Input

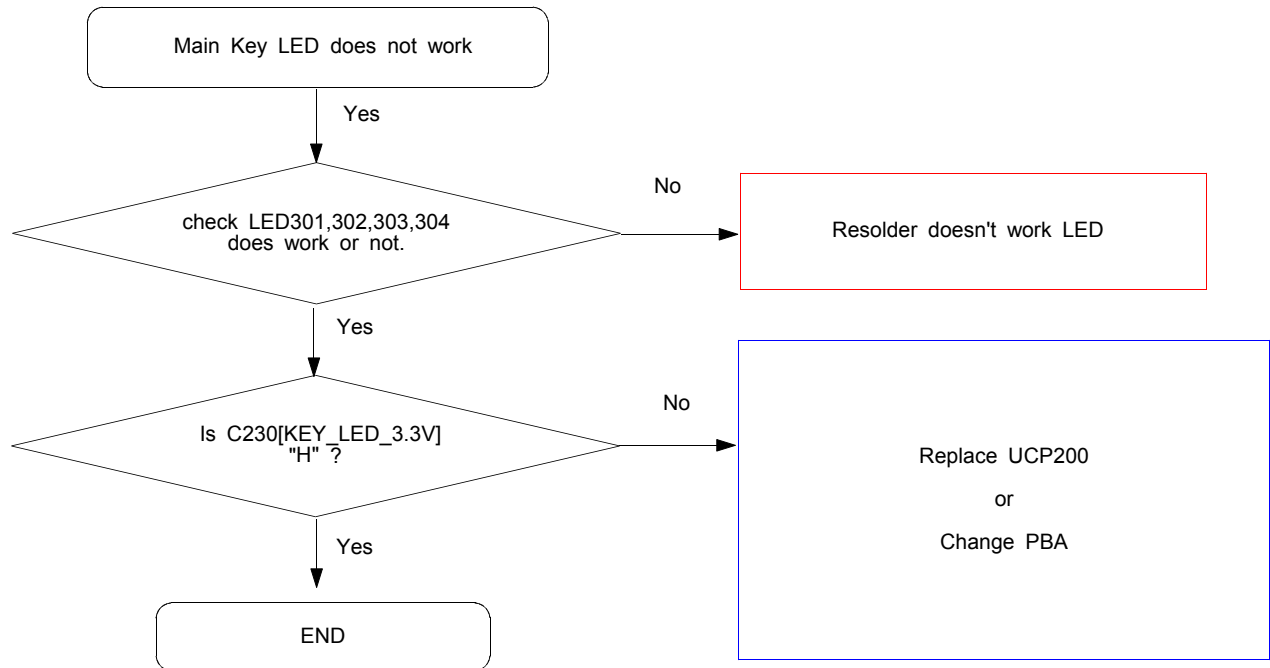


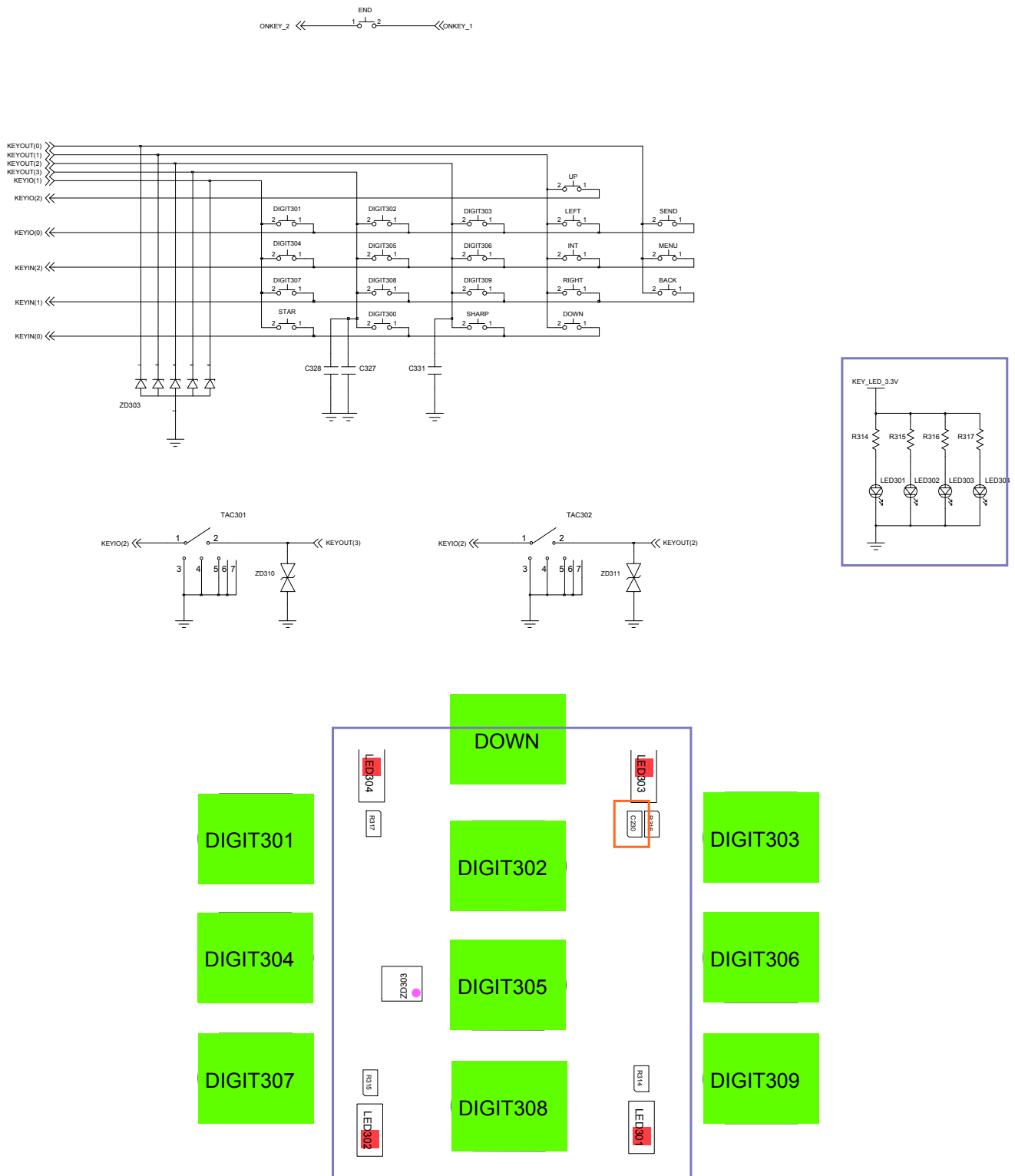


8-3-9. Back Light (for Color Main LCD)



8-3-10. Key Back Light





※ presetting 8960

Call Setup Screen			
Control	Call Setup		Call Params
Operating Mode	OUT Information		BCH Parameters
Active Cell	IMSI:	Multislot Class (GPRS): ----	
	Called Num:	Multislot Class (EGPRS): ----	
Connection Type	Traffic: Channel Downlink Power		TCH Parameters
Auto	Burst 1, 2, 3, 4:	----, ----, ----, ---- dBm	
	Unused Bursts:	---- dBm	
Originate Call	Counters		PTCH Parameters
	Page: 0	OUT IP Tx.	
Paging IMSI	PRACH: 0	Packets: ----	
001012945678901	PRACH: 0	Bytes: ----	
	Missing Burst: 0	OUT IP Rx.	
	Corrupt Burst: 0	Packets: ----	
	Decode Error: 0	Bytes: ----	
Handover Setup	Error Reports		Receiver Control
	Burst Timing Error: ---- T		
Cell Info	BLER (Block Error Rate): ---- % over ---- blocks		
	USF BLER: ---- % over ---- blocks		
	Active Cell	Sys Type: GPRS	
	Idle		
1 of 2	InRef Offset		

< 8960장비 초기화면 >

(Rx setting)

1. Active Cell
: select GSM
2. Connction Type
: select Auto
3. BCH Parameter
: select measuring band (DCS or EGSM)
4. Cell power
: -60dBm

(Tx setting)

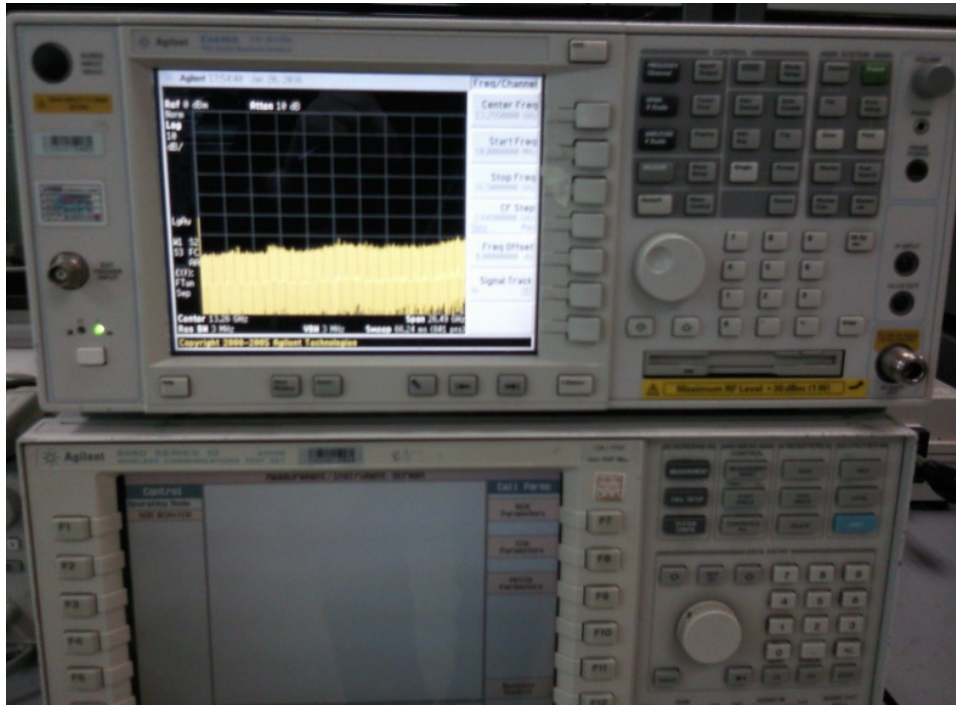
Call Setup Screen		
Control	Call Setup	Call Params
Operating Mode	OUT Information for IMEI D19465000000640	BCH Parameters
Active Cell	IMSI: 001010123456789 Multislot Class (GPRS): ---- Called Num: 112 Multislot Class (EGPRS): ----	
Connection Type	Traffic Channel Downlink Power	TCH Parameters
Auto	Burst 1, 2, 3, 4: -60.00, ----, ----, ---- dbm Unused Bursts: ---- dbm	
End Call	Counters	PDCH Parameters
Paging IMSI	Page: 2 OUT IP Tx, Packets: ---- RACH: 1 Bytes: ---- PRACH: 0 OUT IP Rx, Packets: ---- Missing Burst: 0 Bytes: ---- Corrupt Burst: 0 Decode Error: 0	
Handover Setup	Error Reports	
	Burst Timing Error: 0.50 T BLER (Block Error Rate): ---- Z over ---- blocks USF BLER: ---- Z over ---- blocks	
Cell Info	Active Cell Connected	Receiver Control
1 of 2	[INBET] [Offset]	

< Call이 연결된 화면 >

※ After setting 8960 (EGSM / DCS)

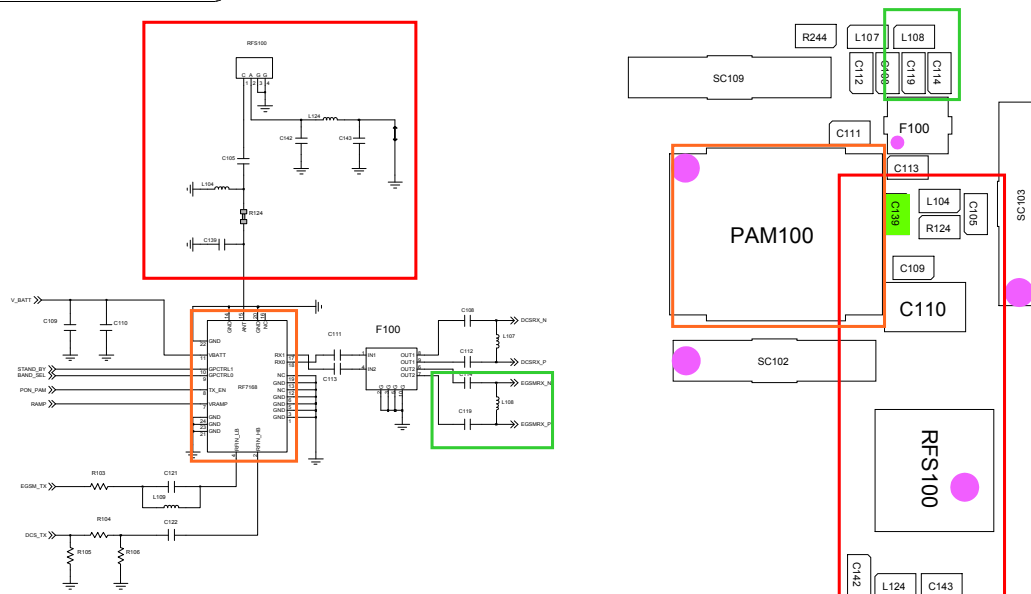
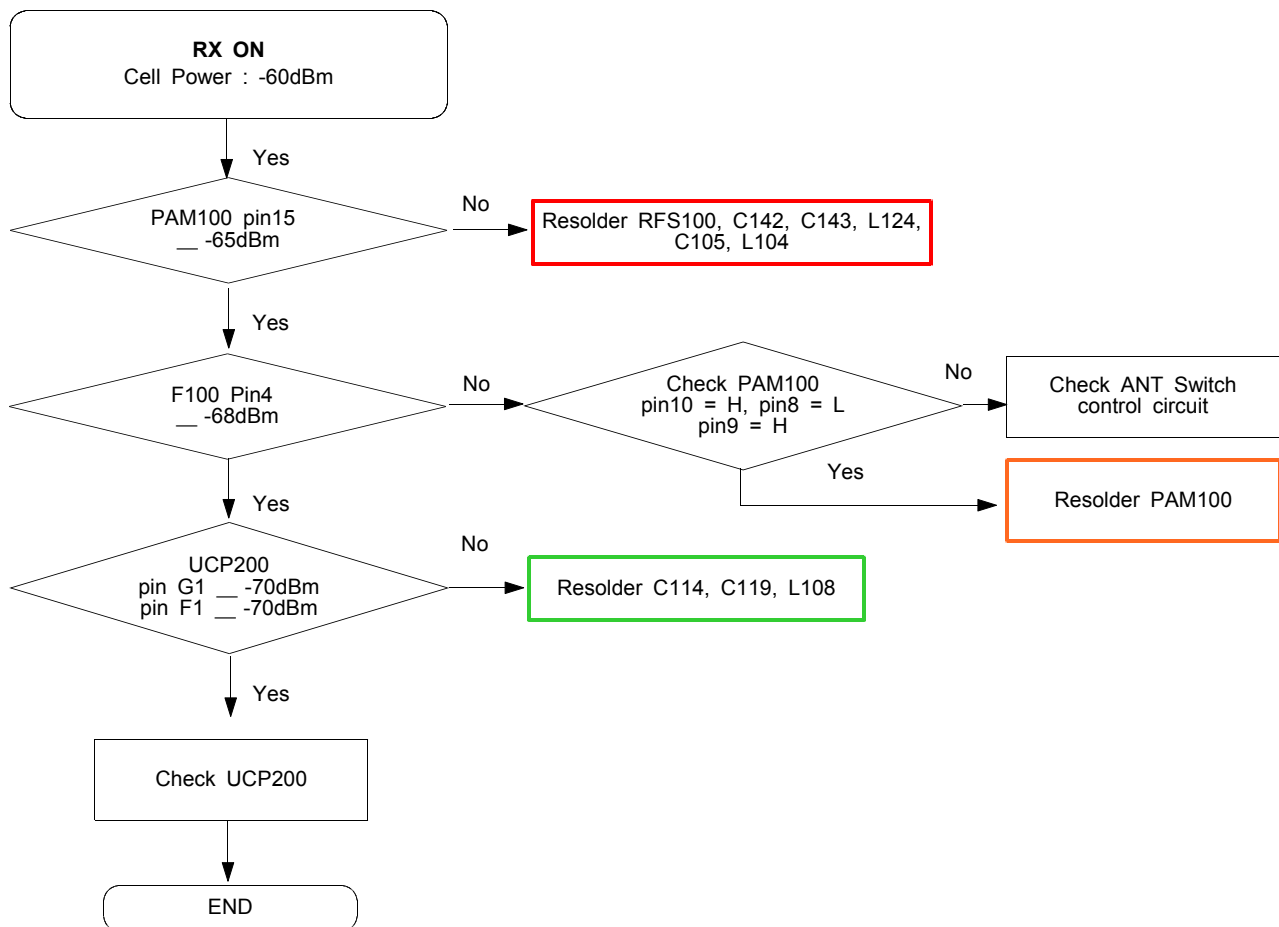
1. After setting, prepare the call setup Display
2. Using an Originate Call, make a call.
3. Confirm the display "connected"
4. start the measuring

✖ 8960 & spectrum analyzer (down & up at picture)

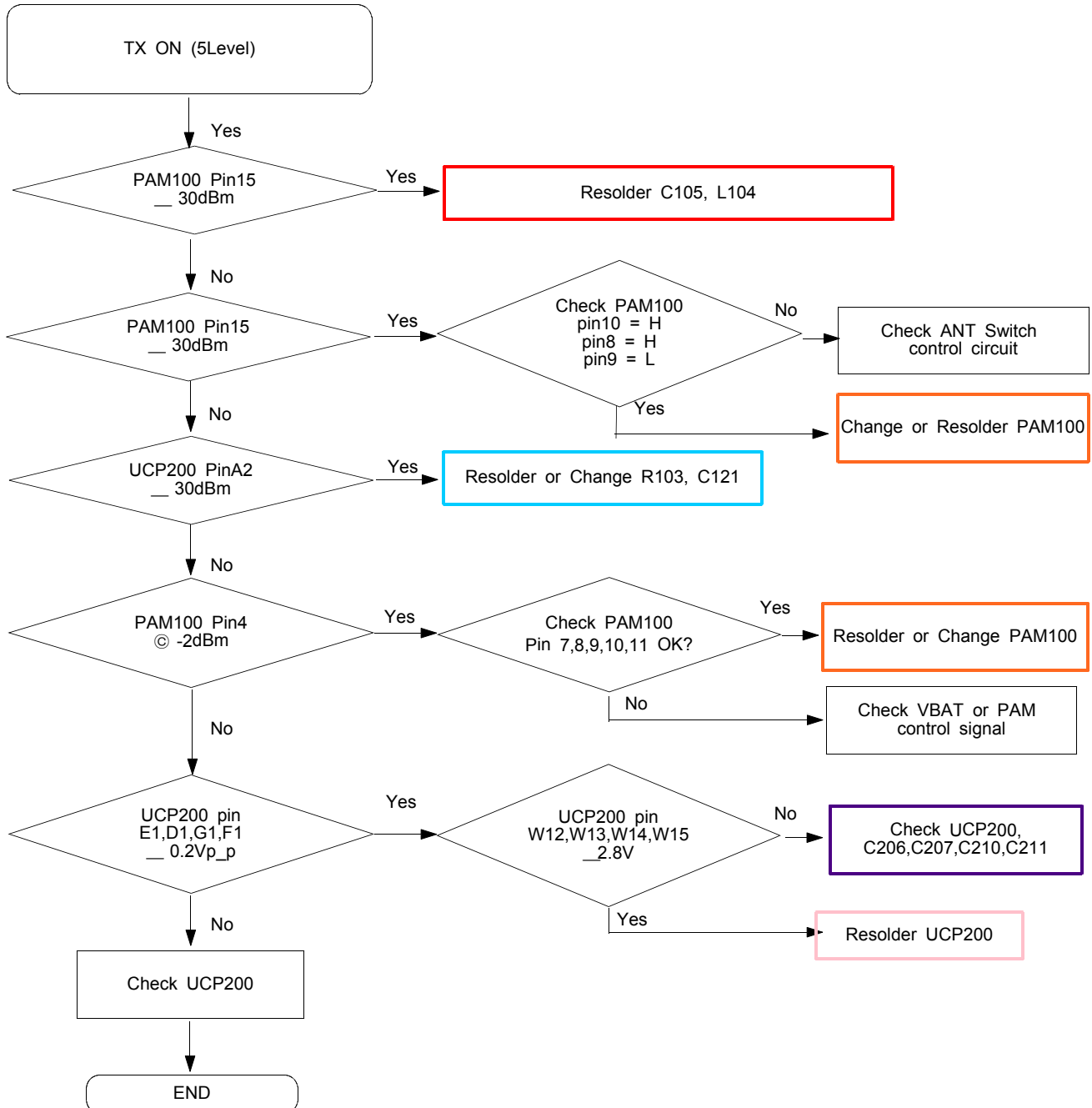


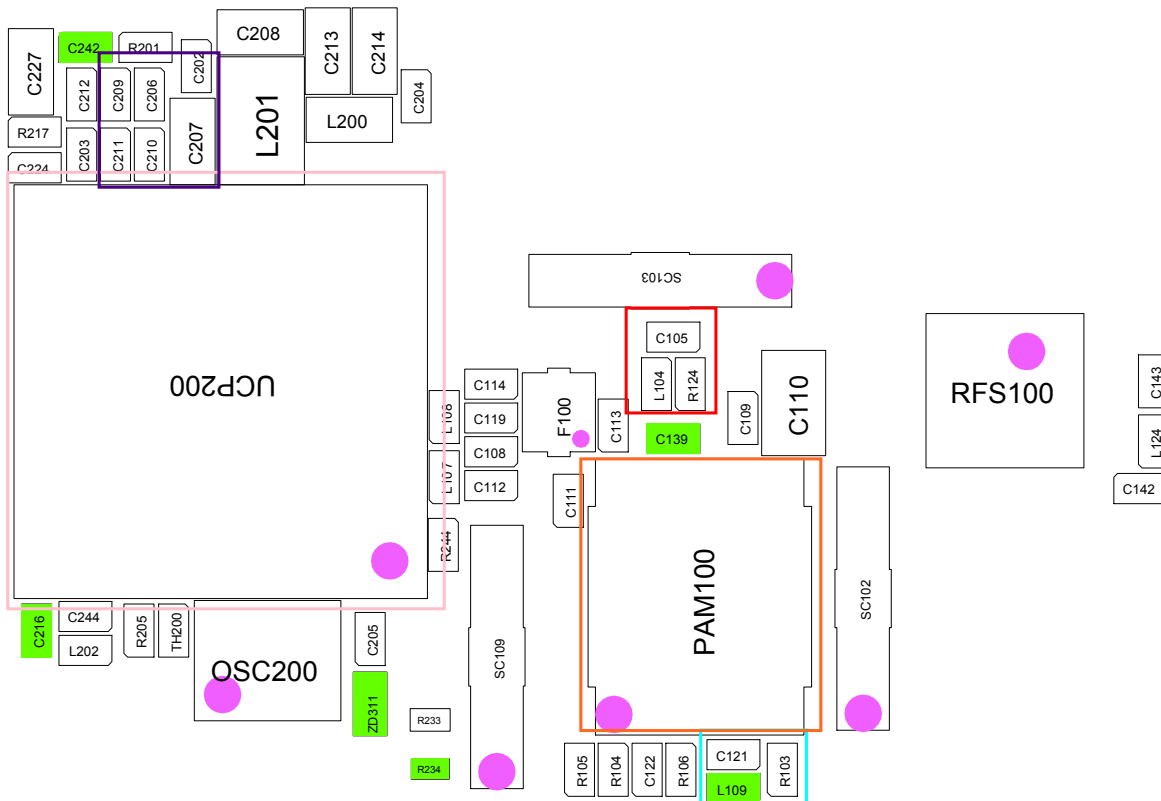
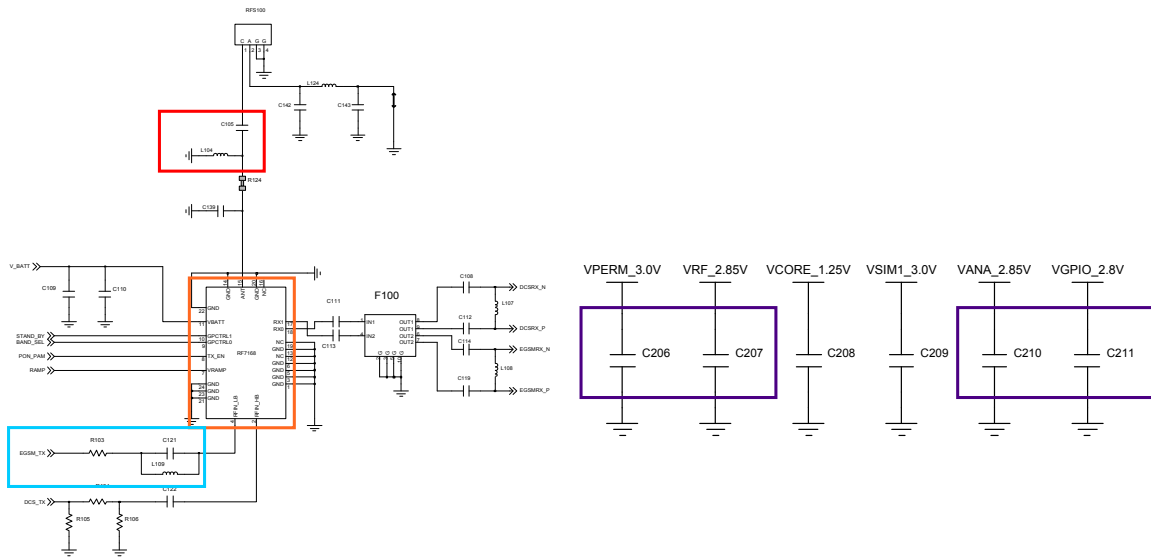
- spectrum analyzer : testing method = the way using an Oscilloscope
- 8960 : connect using RF Cable between 8960 & RF Connector in board.

8-3-12. GSM900 Receiver

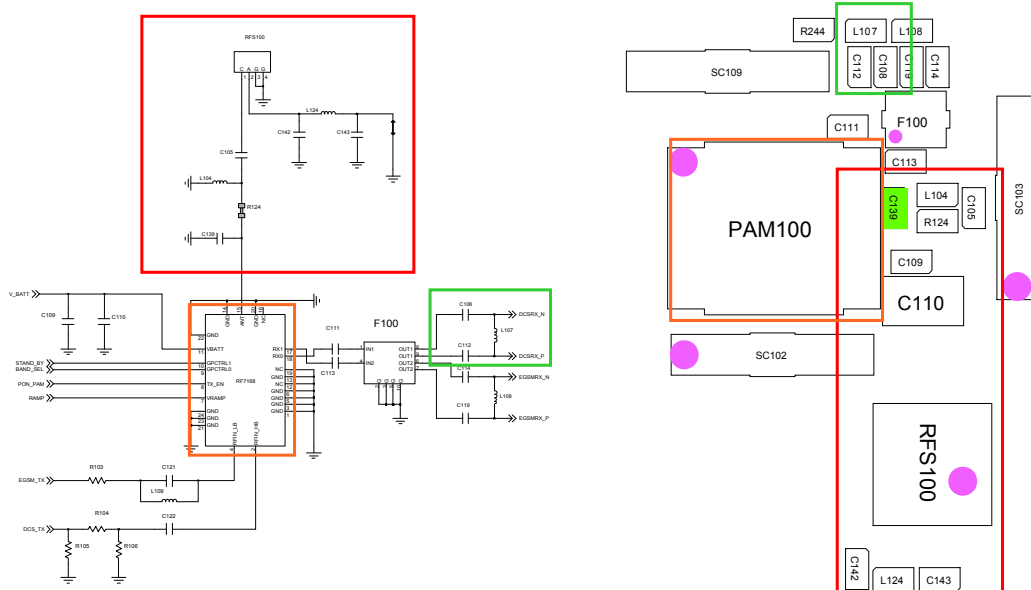
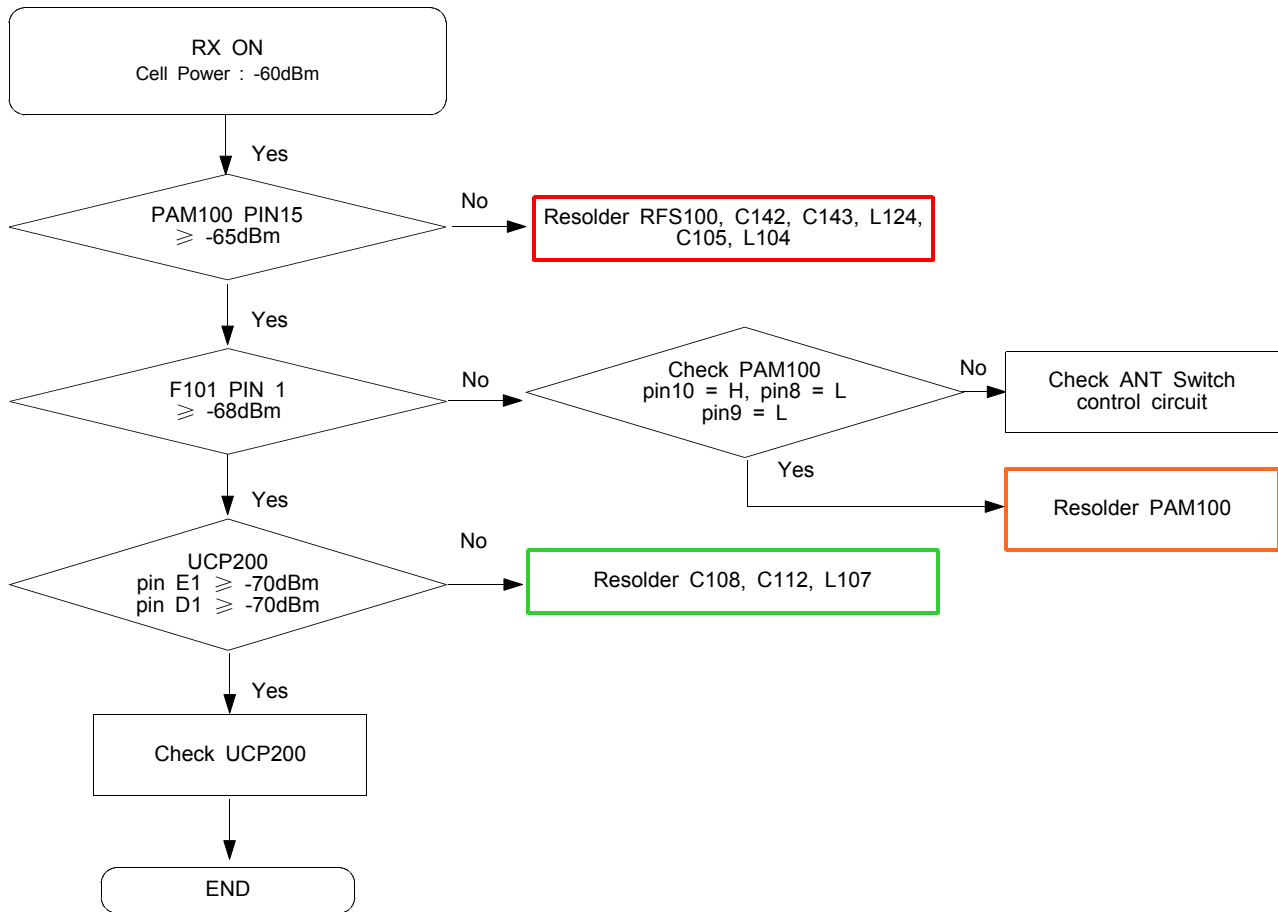


8-3-13. GSM900 Transmitter

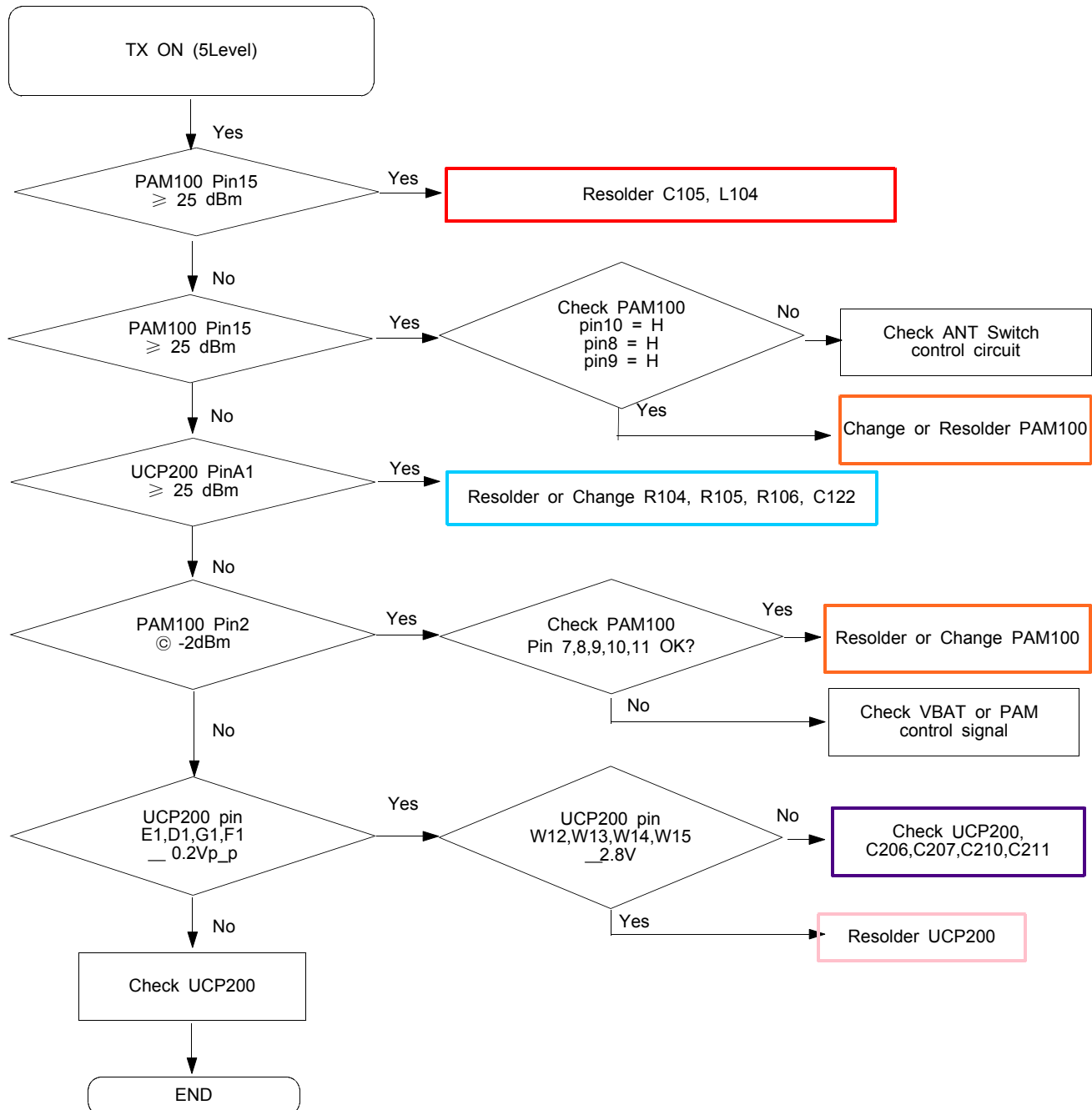


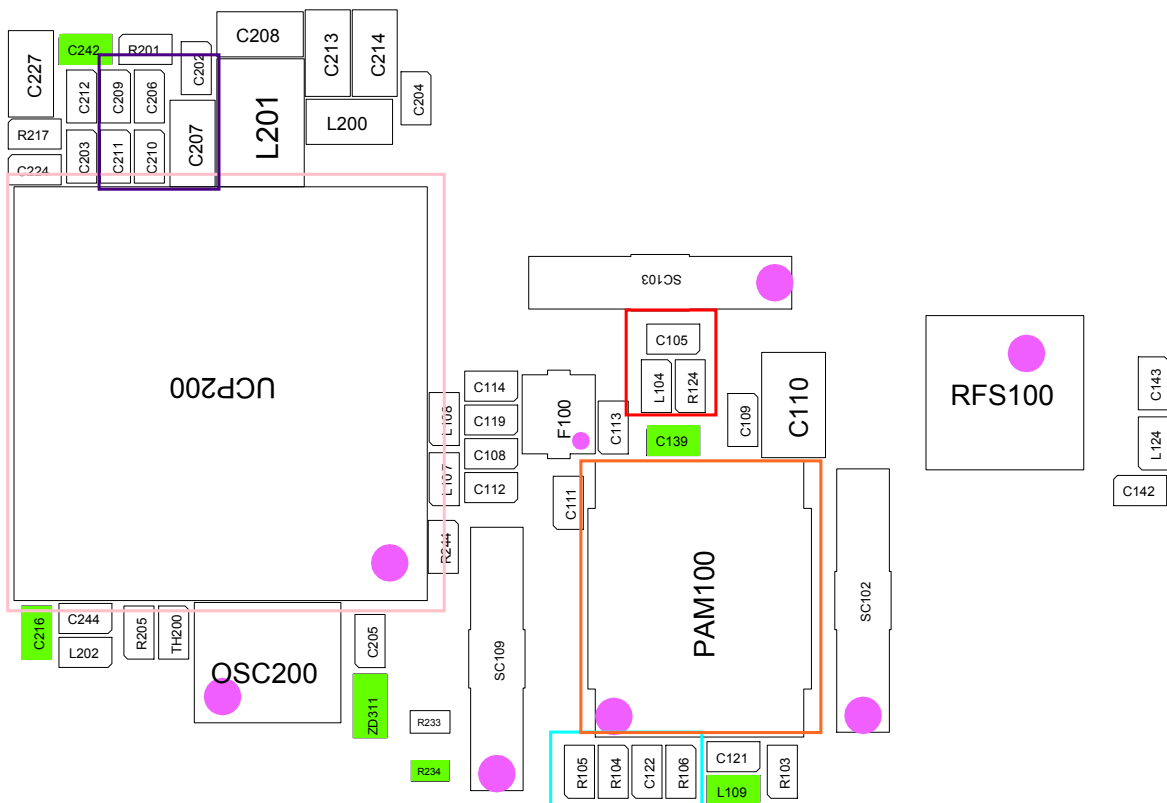
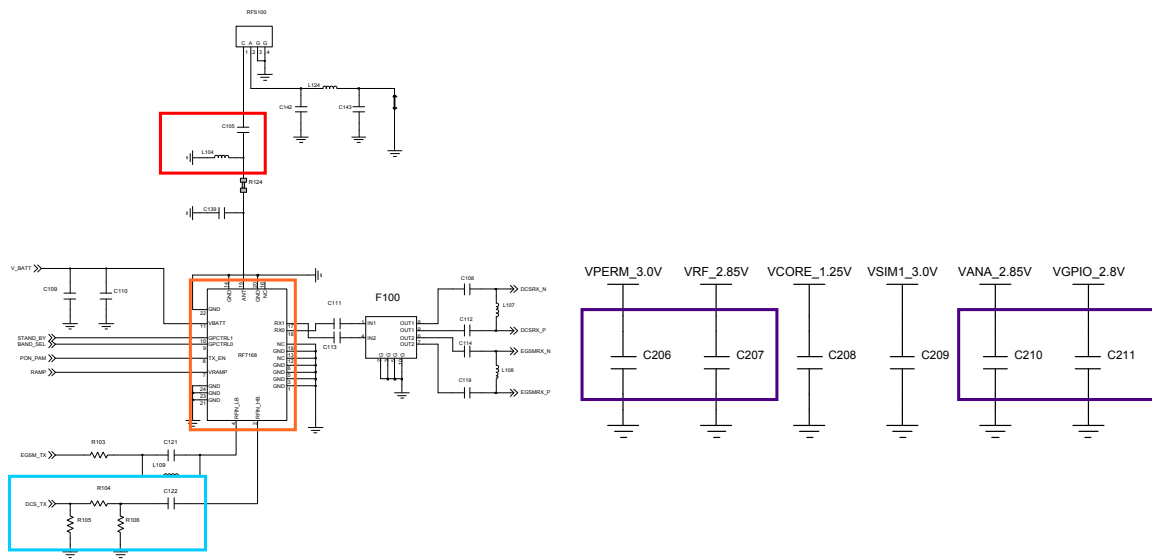


8-3-14. DCS Receiver

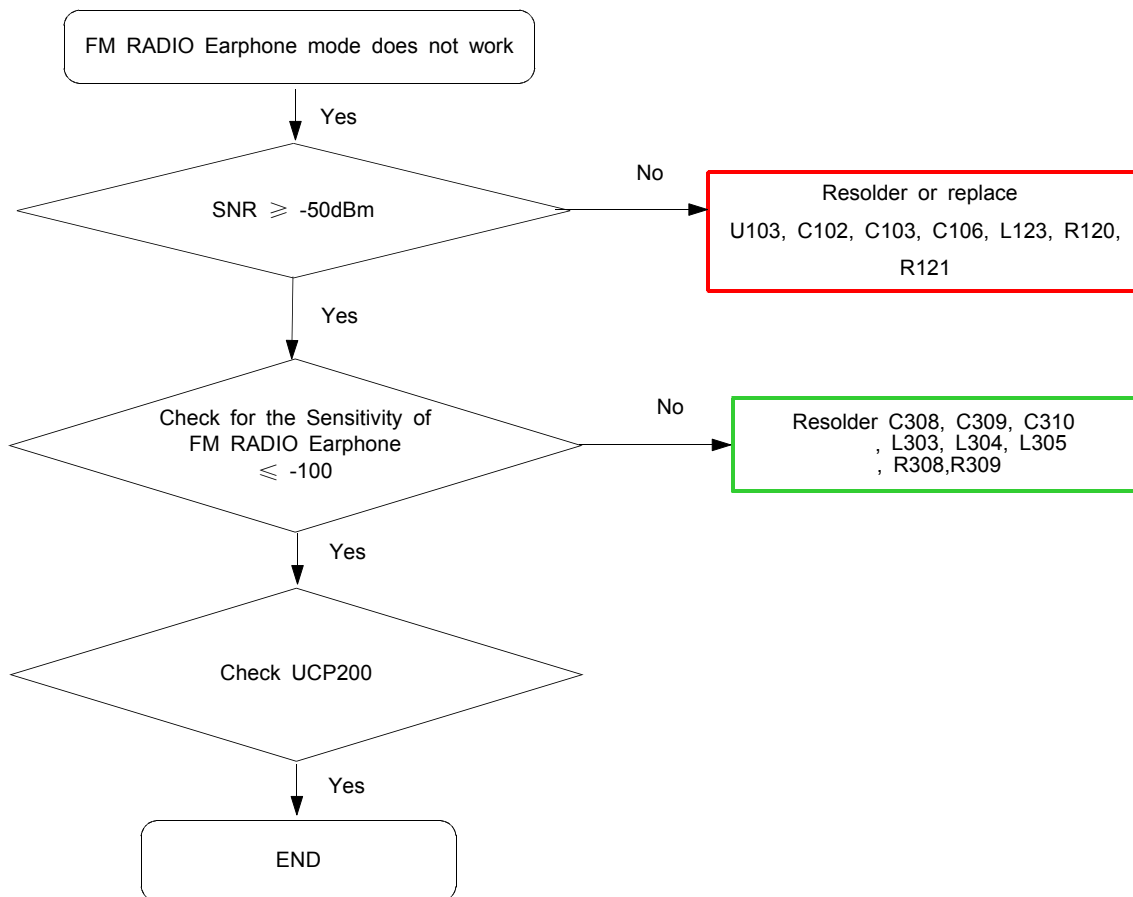


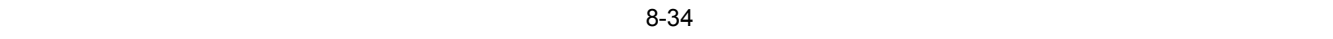
8-3-15. DCS Transmitter





8-3-17. FM RADIO part





8-4. Service Schematics

- NC Point(Top View)

● : NC

UME200

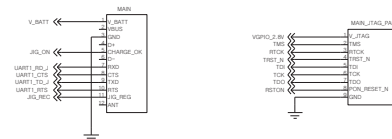
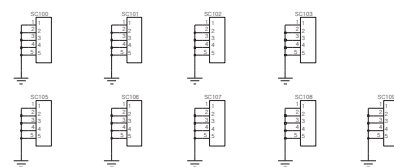
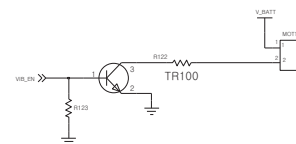
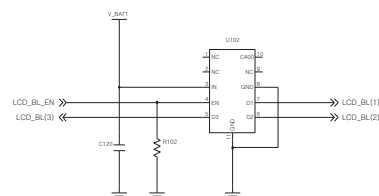
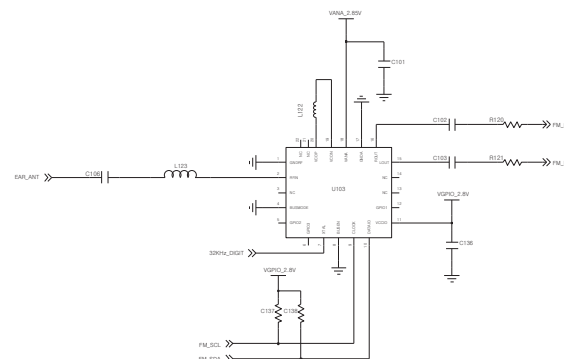
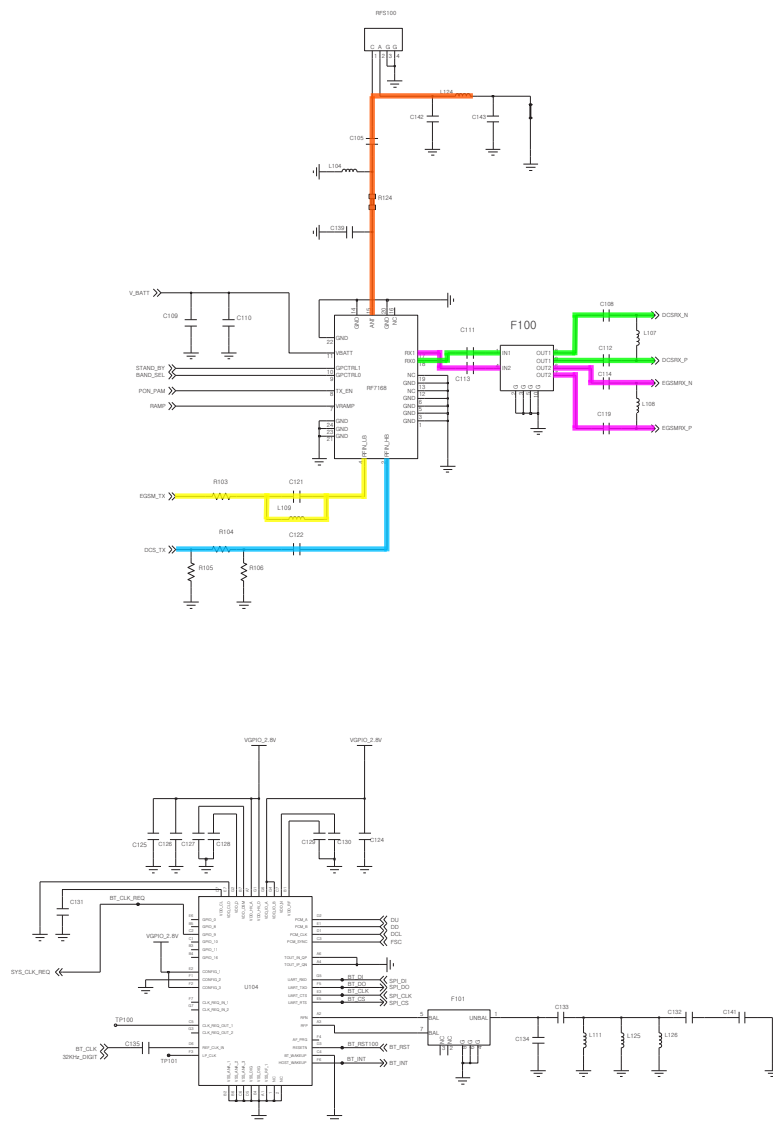
	1	2	3	4	5	6	7	8	9	10	
A	●	●			○	○			○	●	A
B	○	○	○	○	○	○	○	○	○	○	B
C	○	○	○	○	○	○	○	○	○	○	C
D	○	○	○	○	○	○	○	○	○	○	D
E	○	○	○	○	○	○	○	○	○	○	E
F	●	○			○	○			●	●	F
	1	2	3	4	5	6	7	8	9	10	

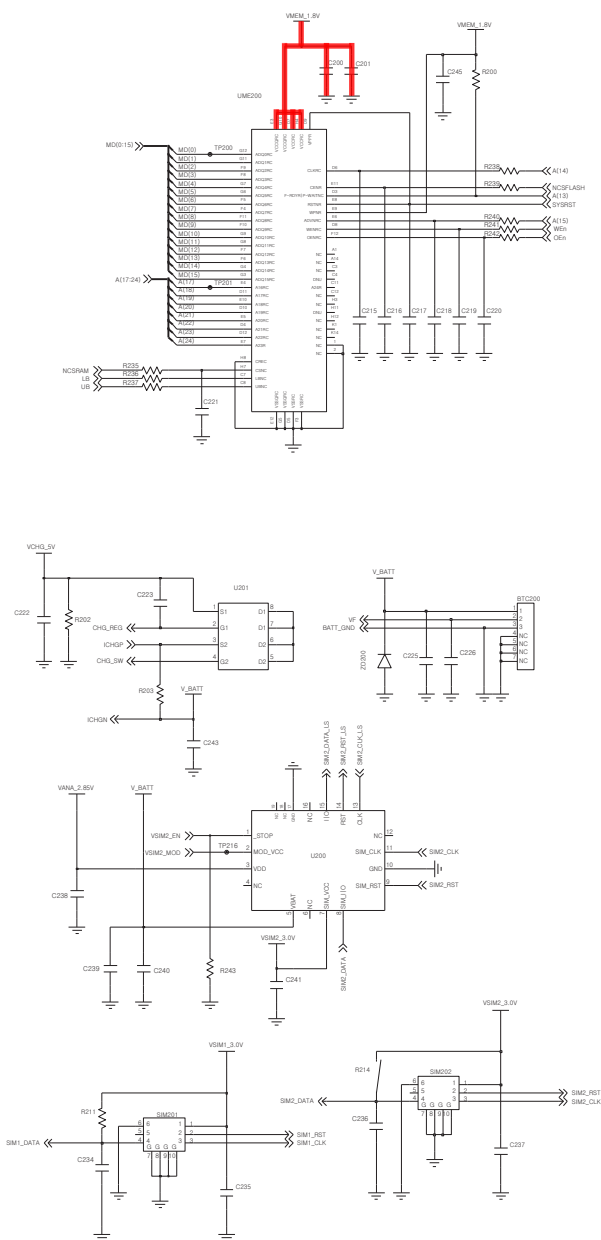
9. Reference Abbreviate

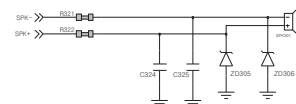
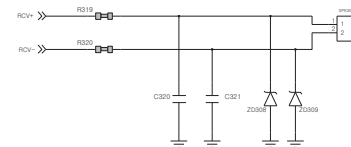
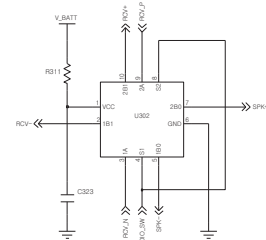
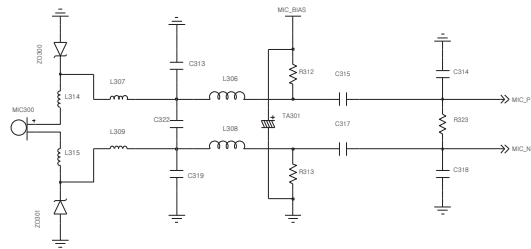
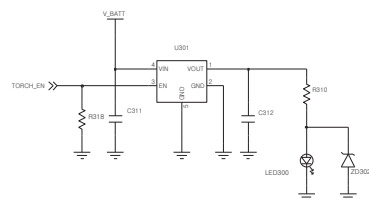
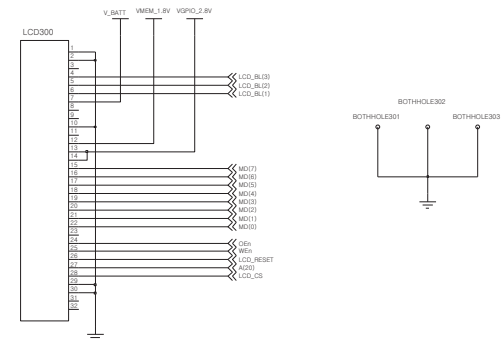
Reference Abbreviate

- **AAC**: Advanced Audio Coding.
- **AVC** : Advanced Video Coding.
- **BER** : Bit Error Rate
- **BPSK**: Binary Phase Shift Keying
- **CA** : Conditional Access
- **CDM** : Code Division Multiplexing
- **C/I** : Carrier to Interference
- **DMB** : Digital Multimedia Broadcasting
- **EN** : European Standard
- **ES** : Elementary Stream
- **ETSI**: European Telecommunications Standards Institute
- **MPEG**: Moving Picture Experts Group
- **PN** : Pseudo-random Noise
- **PS** : Pilot Symbol
- **QPSK**: Quadrature Phase Shift Keying
- **RS** : Reed-Solomon
- **SI** : Service Information
- **TDM** : Time Division Multiplexing
- **TS** : Transport Stream

ANT
GSM RX
DCS RX
GSM TX
DCS TX
POWER ON







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