SAMSUNG

UMTS TELEPHONE
SGH-Z540

SERVICE Manual

UMTS TELEPHONE

CONTENTS

SAMSUNG
ELECTRONICS

Code No.: GH68-09641A
BASIC.

1. Specification

1-1. GSM General Specification

	EGSM900	DCS1800	PCS1900	W-CDMA
Freq. Band[MHz] Uplink/Downlink	890~915 935~960	1710~1785 1805~1880	1850~1910 1930~1990	1920~1980 2110~2170
ARFCN range	0~124 & 975~1023	512~885	512~810	UL:9612~9888 DL:10562~10838
Tx/Rx spacing	45MHz	95MHz	80MHz	190MHz
Mod. Bit rate/ Bit Period	270.833kbps 3.692us	270.833kbps 3.692us	270.833kbps 3.692us	3.84Mcps
Time Slot Period/Frame Period	576.9us 4.615ms	576.9us 4.615ms	576.9us 4.615ms	Frame length : 10ms
Modulation	0.3GMSK	0.3GMSK	0.3GMSK	QPSK HQPSK
MS Power	33dBm~5dBm	30dBm~0dBm	30dBm~0dBm	24dBm ~ - 50dBm
Power Class	4 (max +33dBm)	1 (max +30dBm)	1 (max +30dBm)	3 (max +24dBm)
Sensitivity	-102dBm	-100dBm	-100dBm	-106.7dBm
TDMA Mux	8	8	8	
Cell Radius	35Km	2Km	2Km	2Km

1-2. GSM TX power class

TX Power control level	GSM900
5	33±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±3dBm
18	7±3 dBm
19	5±3 dBm

TX Power control level	DCS1800
0	30±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±4dBm
12	6±4 dBm
13	4±4 dBm
14	2±5 dBm
15	0±5 dBm

TX Power control level	PCS1800
0	30±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±4dBm
12	6±4 dBm
13	4±4 dBm
14	2±5 dBm
15	0±5 dBm

2. Circuit Description

2-1. SGH-Z540 RF Circuit Description

1. Antenna Switch Module (U702)

The antenna switch module allows multiple operating bands and modes to share the same antenna. A common antenna connects to one of five paths: 1) UMTS-2100 Rx/Tx, 2) EGSM-900 Rx, 3) EGSM-900 Tx, 4) DCS-1800 Rx, and 5) DCS-1800 Tx. 6) PCS-1900 Tx, 7) PCS-1900 Rx, UMTS operation requires simultaneous reception and transmission.

2. Filter

To convert Electromagnetic Field Wave to Acoustic Wave and then pass the specific frequency band.

- GSM Rx FILTER (F702) → For filtering the frequency band between 925 ~ 960 MHz.
- DCS Rx FILTER (F701) → For filtering the frequency band 1805 and 1880 MHz.
- PCS Rx FILTER (F700) → For filtering the frequency band 1930 and 1990 MHz.
- WCDMA Rx FILTER (F800) → For filtering the frequency band 2110 and 2170 MHz.
- WCDMA Tx FILTER (F802) → For filtering the frequency band 1920 and 1980 MHz.

3. VCTCXO

To generate the 19.2MHz reference clock to drive the logic and RF.

4. Duplexer (TCX800)

A duplexer splits a single operating band into receive and transmit paths.

5. UMTS PAM (U800)

This is a key component in the transmitter chain and must complement the RTR6250 IC precisely; jointly they dominate the UMTS transmitter performance characteristics. Parameters such as gain, output power level, ACLR, harmonics, Rx-band noise, and power supply current are critical.

6. GSM/DCS/PCS PAM (U701)

The PAM is a key component in any transmitter chain and must complement the rest of the transmitter precisely. For GSM,DCS,PCS operation, the closed-loop transmit power control functions add even more requirements relative to the UMTS PA. In addition to gain control and switching requirements, the usual RF parameters such as gain, output power level, several output spectrum requirements, and power supply current are critical.

7. GSM/DCS/PCS I Tx VCO (OSC700)

The Tx VCO outputs for EGSM, DCS, PCS drive a resistive network that splits the active signal into two signals: 1) the input to the active PAM – this is the low loss path, and 2) the OPLL feedback signal.

8. RF VCO

The single-band UHF VCO is a key component within its phase-locked loop; VCO performance directly impacts PLL and transceiver performance. UMTS Rx LO signal is generated from this VCO's output.

9. RFR6250 (U801)

The RFR6250 provides the Zero-IF receiver signal path, from RF to analog baseband, for UMTS-2100 applications. The RFR6250 accepts its UMTS input signal from the handset RF front-end design. The UMTS input is configured differentially to optimize second-order inter-modulation and common mode rejection performance, and implements MSM-controlled gain adjustments to extend the receiver dynamic range.

10. RTR6250 (UCD700)

The RTR6250 supports multi-band, multi-mode phones with two receiver signal paths and three transmitter signal paths:

1) Receiver paths

- EGSM-900
- DCS-1800
- PCS-1900

2) Transmitter paths

- EGSM-900 (using OPLL technique)
- DCS-1800 (using OPLL technique)
- PCS-1900
- UMTS-2100

Numerous secondary functions are integrated on-chip as well:

3) Phase-locked loop circuits

- PLL#1 and an on-chip VCO supports UMTS Tx
- PLL#2 and an external VCO supports EGSM Rx and Tx, DCS Rx and Tx, and UMTS Rx

4) Transceiver LO generation and distribution circuits

- EGSM-900 Rx and Tx
- DCS-1800 Rx and Tx
- UMTS-2100 Tx

2-2. SGH-Z540 Baseband Circuit description

1. PM6650-2 (PAM200)

1.1. Power Management

Ten low-dropout regulators designed specifically for GSM applications power the terminal and help ensure optimal system performance and long battery life. It provides LDOs support for 1.375V, 1.8V, 2.6V, 2.85V, 3.3V.
IC-level interfaces include the three-line serial bus interface(SBI) used by the MSM6250 device to control and status the PM6650-2 IC.

1.2. Keypad Backlight

The Keypad backlight driver output is at pin 23 (KEY_EL_DRV) and is designed to drive EL on KEY FPCB. Its output current level is SBI-programmable and meets the performance specified below.
Input parameters are not specified since they are internal.

1.3. TCXO Controller and Buffers

The PM6650-2 IC includes circuits for controlling the TCXO warm-up and buffering its signal for distribution throughout the handset. Performance specifications are presented below.

2. Connector

2-1. LCD Connector

LCD is consisted of main LCD(color 262K TFT LCD) and small LCD(color 65K TFT LCD). Chip select signals in the HDC400, MAIN_LCD_CS can enable main LCD and SUB_EL_CS can enable small LCD. nRESET_LCD signal initiates the reset process of the main LCD and sub LCD. 16-bit data lines(D2(0)~D(15)) transfers data and commands to LCD.
Power signals for LCD are "VBATT_LCD". "EAR1O_P,N" and "SPK_R,K" from UCP100 are used for audio speaker. And "VCC_MOTOR_3.3V" from U402 enables the motor.

2-2. Key

This is consisted of key interface pins among UCP100, KEYSENSE_N(0:3). These signals compose the matrix. Result of matrix informs the key status to key interface in the UCP100. Power on/off key is seperated from the matrix. The EL key PAD use the "VREG_MSMP_2.6V" voltage. "HALL_SW" informs the status of folder (open or closed) to the. This uses the hall effect IC, EM-1681-FT

2-3. EMI ESD Filter

This system uses the EMI ESD filter, ECLAMP2378P to protect noise from IF CONNECTOR part.

2-4. IF connetor

It is 20-pin connector. They are designed to use VBATT, UART1_TX, UART1_RX, EARMIC_P/N, EAR_R/L, EAR_SW, JACK_INT, ADC_BOOTSW, JIG_ON, USB_D+/-. They connected to power supply IC, microprocessor and signal processor IC.

3. Audio

EAR1O_P and EAR1O_N from UCP100 are connected to the main speaker. AUXO_P and AUXO_N are connected to the Digital AMP. MIC1_P and MIC1_N are connected to the main MIC. And MIC2_P and MIC2_N are connected to the Earphone.

YMU765 has a built-in amplifier, and thus, is an ideal device for outputting sounds that are used by mobile phones in addition to game sounds and ringing melodies that are replayed by a synthesizer.

The synthesizer section adopts "stereophonic hybrid synthesizer system" that are given advantages of both FM synthesizers and Wave Table synthesizers to allow simultaneous generation of up to 32 FM voices and 32 Wave Table voices. Furthermore, YMU765 has a built-in hardware sequencer that helps to realize complex play without heavily loading the host CPU. And this device also has a built-in circuit for controlling vibrators and LEDs synchronizing with play of music. The consumed electric current can be stopped to the minimum by power down mode when not operating.

The hardware sequence built in this device allows playing of the complex music without giving excessive load to the CPU of the portable telephones. Moreover, the registers of the FM synthesizer can be operated directly for real time sound generation, allowing, for example, utilization of various sound effects when using the game software installed in the portable telephone.

4. Memory (UME300)

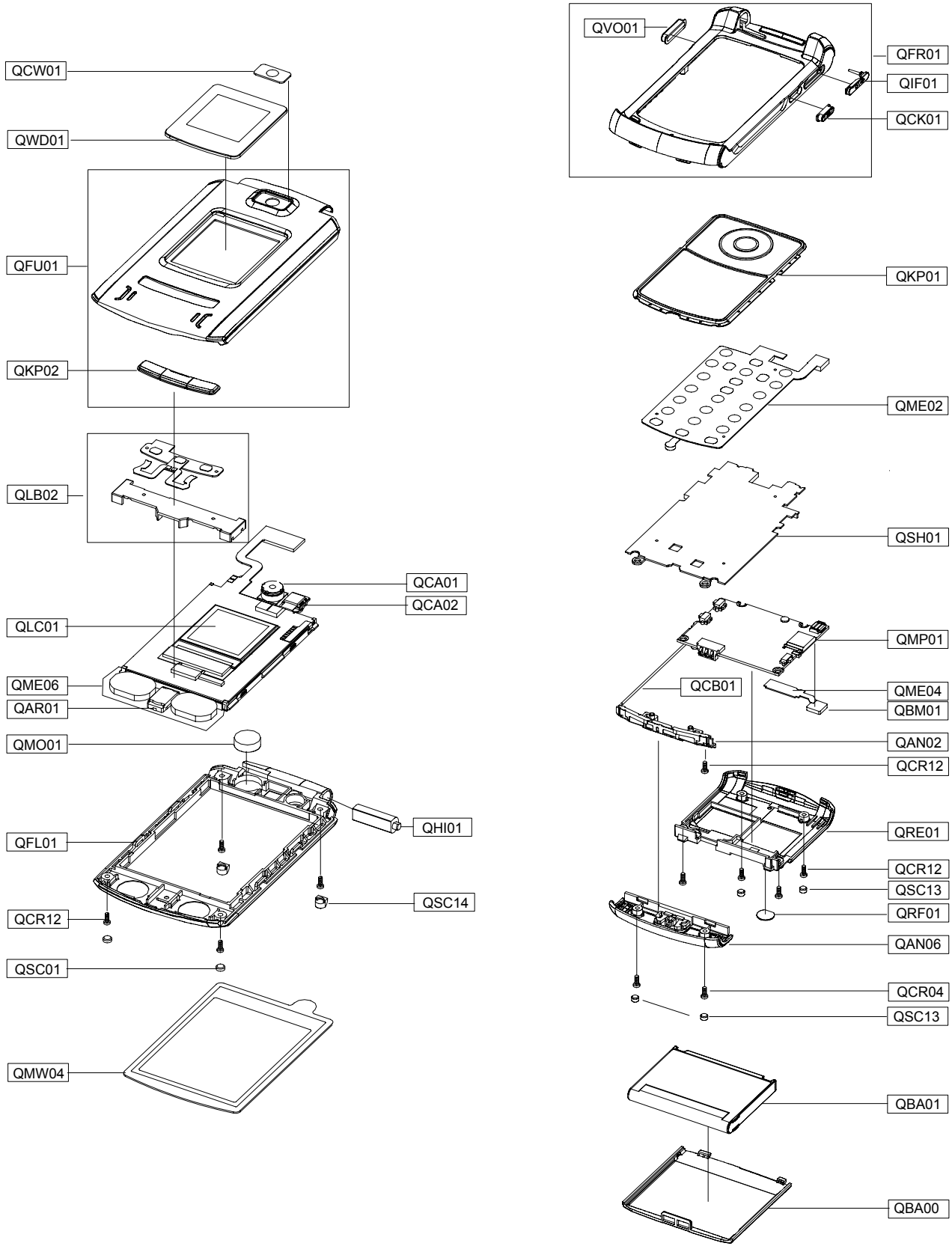
The signals in the MSM6250 enable two memories. They use VREG_MSME_1.8V and VREG_MSMP_2.6V from the PM6650. This system uses SEC's memory, KBE00S005M-D411. It is consisted of 2G bits flash NAND memory and 512M bits SDRAM memory. It has 16 bit data line, D1[0~15] which is connected to MSM6250. It has 22 bit address lines, A[1~22]. SDRAM_CS and NANDFLASH_CS signals is chip select.

5. Camera

The camera module consists of 1.3 Mega pixel and VGA pixel. The 1.3 Mega camera is a highly integrated CMOS color image sensor implemented by Micron COMS sensor process realizing high sensitivity and wide dynamic range. Total active pixel is 1280H x 1024V. The VGA camera is a highly integrated CMOS color image sensor implemented by Micron COMS sensor process realizing high sensitivity and wide dynamic range. Total active pixel is 656H x 488V.

3. Exploded View and Parts List

3-1. Exploded View



3-2. Parts List

Location NO.		Description	SEC CODE
QAN02		INTENNA-SGHZ540	GH42-00723A
QAN06		MEC-CASE INTENNA FOLDER	GH75-08620A
QAR01		AUDIO-RECEIVER	3009-001173
QBA00		PMO-CASE BATTERY FOLDER	GH72-26922A
QBA01		BATTERY-880MAH,BLK,MAIN	GH43-02253A
QCA01		UNIT-MEGA CAMERA	GH59-02709A
QCA02		UNIT-VGA CAMERA	GH59-02710A
QCB01		CBF COAXIAL CABLE	GH39-00403A
QCR04		SCREW-MACHINE	6001-001479
QCR12		SCREW-MACHINE	6001-001530
QCW01		PCT-COVER CAMERA WINDOW	GH72-28463A
QKP01		MEC-KEYPAD(OMN/BLK)	GH75-09169A
QLB02		NDC-BRACKET MP3 KEY	GH71-05913A
QLC01		LCD-SGHZ540 MODULE	GH07-00822A
QME02		UNIT-KEY PAD	GH59-02667A
QME06		UNIT-SPK FPCB	GH59-02671A
QMO01		MOTOR DC-SGHZ540	GH31-00218A
QMP01		PBA MAIN-SGHZ540	GH92-02496A
QMW04		MEC-COVER MAIN WIN(VODA)	GH75-09036A
QRE01		MEC-REAR COVER	GH75-08621A
QRF01		MPR-TAPE RF HOLE	GH74-20208A
QWD01		PCT-COVER SUB WINDOW	GH72-28461A
QSC01		RMO-CAP FOLDER TOP	GH73-05894A
QSC13		RMO-COVER REAR	GH73-05901A
QSC14		RMO-COVER FOLDER BOT	GH73-05895A
QSH01		MEC-BRACKET SHIELD	GH75-09118A
QBM01		ELA ETC-Z540 BLUETOOTH MODUL	GH96-02136A
	QME04	UNIT-BTFPCB	GH59-02750A
QFU01		MEC-FOLDER UPPER	GH75-08617A
	QKP02	MEC-KEY FOLD(MP3)	GH75-09034A
QFL01		MEC-FOLDER LOWER	GH75-08618A
	QHI01	MEC-HINGE	GH75-04334D
QFR01		MEC-CASE FRONT FOLDER	GH75-08619A
	QCK01	PMO-CAMERA KEY	GH72-26932A
	QIF01	PMO-COVER IF	GH72-26917A
	QVO01	PMO-VOLUME KEY	GH72-26931A

Description	SEC CODE
BAG PE	6902-000378
BAG PE	6902-000634
CBF INTERFACE-DATA LINK CABLE	GH39-00444A
ADAPTOR-SGHD800 TA(EU)	GH44-01060A
S/W CD-PC STUDIO	GH46-00198A
UNIT-EARPHONE	GH59-02499A
SPRING ETC-BATT LOCKER	GH61-00120A
LABEL(P)-IMEI	GH68-01335D
LABEL(P)-WATER SOAK	GH68-02026A
LABEL(R)-MAIN(EU)	GH68-08783A
MANUAL USERS-VODA ITALIAN	GH68-08843A
BOX(P)-UNIT(EU NEW)	GH69-02908A
BOX(P)-SLIP CASE(EU)	GH69-03488A
CUSHION-CASE(1-2)	GH69-03556A
MPR-BOHO VINYL LCD CONN	GH74-15350A
MPR-TAPE MAIN WINDOW	GH74-20193A
MPR-TAPE LCD MASKING 1	GH74-20203A
MPR-TAPE LCD MASKING 2	GH74-20204A
MPR-TAPE INTENNA CABLE	GH74-20205A
MPR-TAPE FPCB BLUE	GH74-20434A
CONE	GH74-20459A
MPR-VINYL BOHO LCD MAIN	GH74-20460A
MPR-VINYL BOHO F/L(S)	GH74-20460B
MPR-VINYL BOHO LCD SUB	GH74-20461B
MPR-VINYL BOHO MP3 KEY	GH74-20790A
MPR-VINYL BOHO MP3 KEY	GH74-20790A
MPR-TAPE BLUE SHIELD	GH74-20844A
MPR-CUSHION MP3 KEY	GH74-21083A
MPR-CUSHION MOTOR	GH74-21084A
MPR-TAPE MIC MASK	GH74-21217A
MPR-VINYL BOHO SIDE KEY	GH74-21328A
MPR-SPONGE UPPER	GH74-21434A
MEC-HANGER(BLK)	GH75-08867E

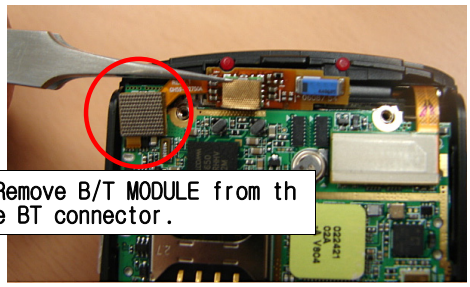
3-3. Disassembling Manual

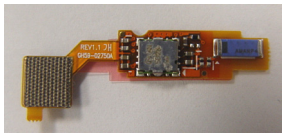
1

1) After remove screw cap with tweezers, Unscrew.
2) Remove REAR and INTENNA COVER.
3) Unscrew from the INTENNA.

1) When you use tweezers, Be careful a damage of component.

2

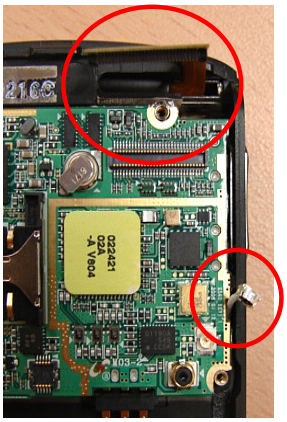


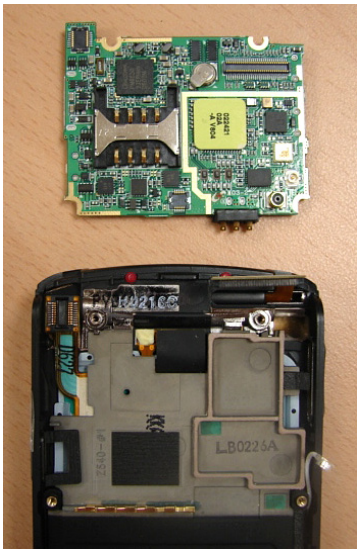


1) Remove B/T MODULE from the BT connector.
2) Remove B/T MODULE from attached to Front with tweezers.

1) When you remove the B/T MODULE, Be careful crack and damage of the BT MODULE.

3

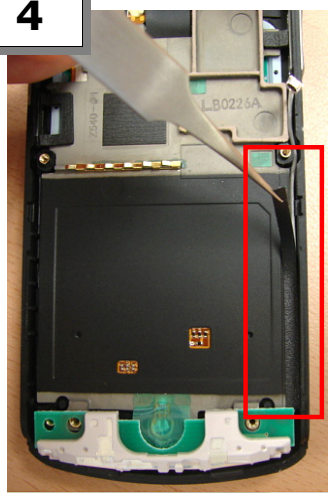




1) Remove LCD Connector and INTENNA Connector from the PBA.
2) Remove PBA from the FRONT ASS'Y.

1) Pay attention to tear of the FPCB.
2) Pay attention to damage of the wire.

4



1) Remove INTENNA WIRE Tape with tweezers.
2) Remove INTENNA and INTENNA WIRE.

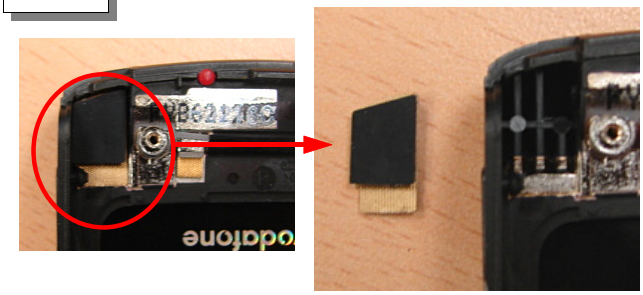
1) When you remove the tape, pay attention to damage of the INTENNA WIRE.
2) Be careful handling INTENNA. (Don't touch intenna pattern.)

5

1) Remove SHIELD CAN and KEY PAD from the FOLDER ASS"Y.

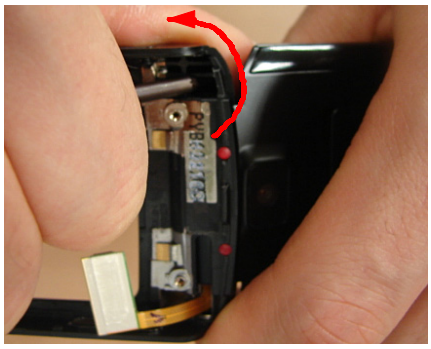
1) Disjoint KEYPAD and SHIELD CAN together.

6



1) Remove conduction Tape and Rubber from the FOLDER ASS'Y with tweezers.

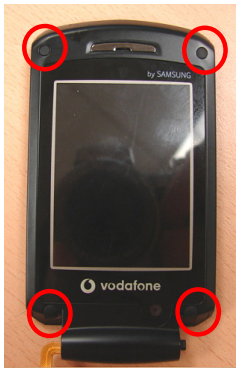
7



1) Using a disassemble stick, Disjoint the Folder like the Photo.

1) When you disjoint the Folder, pay attention to damage of the LCD F-PCB.
2) When you use a disassemble stick, Be careful a damage of component.

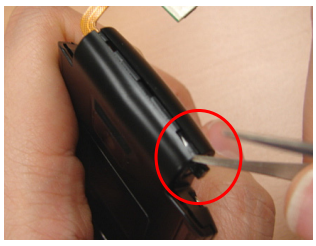
8



1) After remove screw cap with tweezers, Unscrew.

1) When you use a screwdriver, Be careful a damage of component.

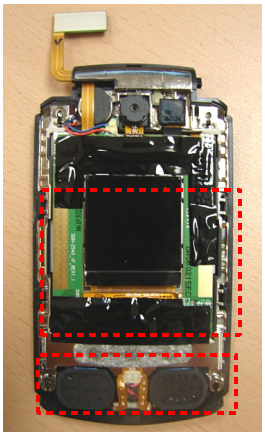
9



1) Disjoint the Folder of the Bottom with tweezers.
2) Using a disassemble stick, disjoint the Folder of the Side.

1) When disjointing UPPER, pay attention to damage of the wire.

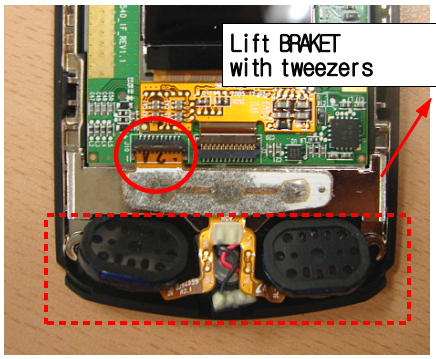
10



1) Remove the LCD PROTECTION TAPE with tweezers

1) Pay attention to a finger mark and dust of the LCD.
2) When you use tweezers, Be careful a damage of component.

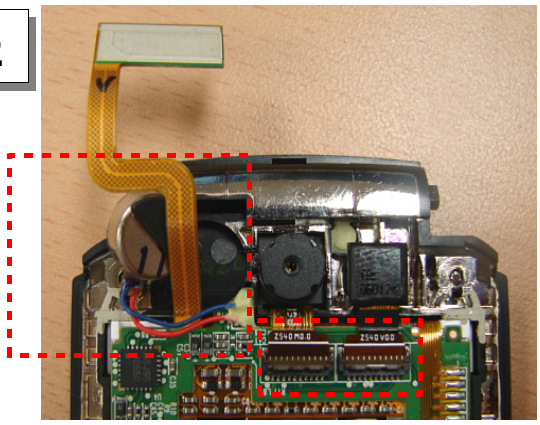
11



1) Take off the SPK and the RECEIVER from the LOWER with tweezers.
2) Open the ACTUATOR around the SPK ASS'Y connector.
3) After lifting BRAKET with tweezers,remove the SPK ASS'Y.

1) When you take off the SPK and the RECEIVER, pay attention to damage of the SPK and the RECEIVER.
2) When disjointing SPK ASS'Y, pay attention to damage of the F-PCB.

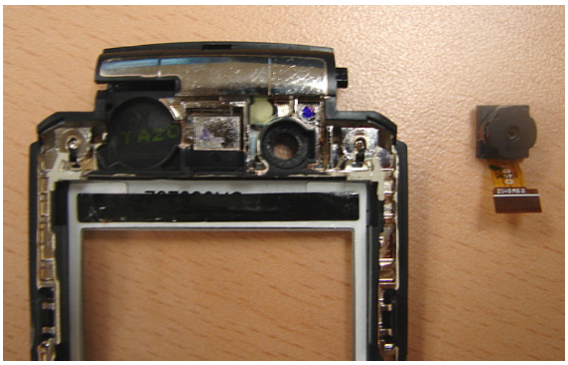
12



1) Take off the MOTOR from the LOWER with tweezers.
2) Open the ACTUATOR around the CAMERA connector.

1) When you take off MOTOR, pay attention to damage of LCD F-PCB and MOTOR WIRE.
2) pay attention to damage of CAMERA F-PCB .

13

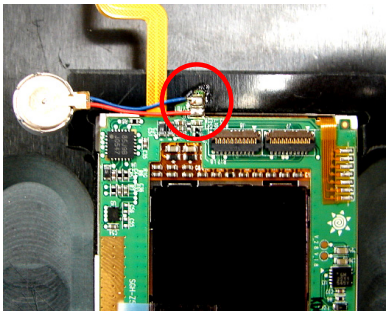


1) Take off the LCD from the LOWER .
2) Take off the MEGA CAMERA from the LOWER.

1) When you remove the LCD, pay attention to damage of LCD F-PCB,LCD component, finger mark, dust.
2) When you remove the CAMERA, pay attention to damage of CAMERA F-PCB and CAMERA.

3-4. Assembling Manual

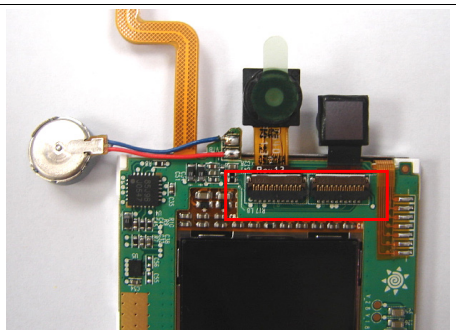
1



1) Solder the MOTOR WIRE after positioning it on the MOTOR PAD.

1) Take care of soldering correct.
2) Don't touch the LCD component and LCD DATA LINE with a hot iron carefully.

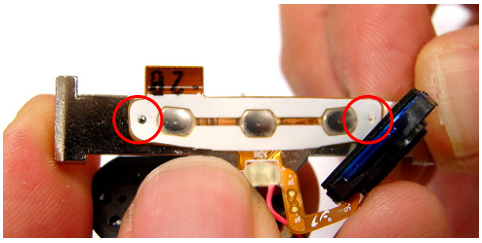
2

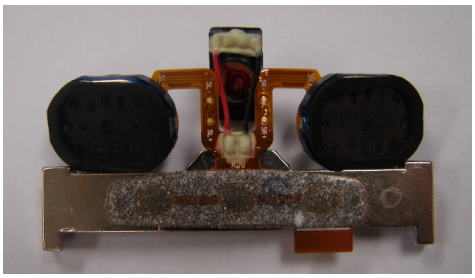


1) Insert MEGA CAMERA F-PCB in the Connector.
2) Insert SUB CAMERA F-PCB in the Connector.

1) Insert CAMERA F-PCB in the Connector.
(By Silk Base Line)
2) Be careful F-PCB CRACK.

3

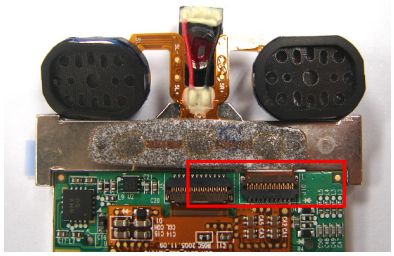


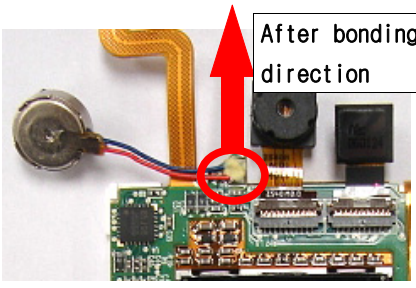


1) Take off SPK ASS'Y's tape, .
2) Press the SPK ASS'Y의 KEY DOME with a hand.
3) Attach the sponge on the MP3 KEY DOME correctly.

1) Attach KEY PCB on the a rising correctly.
2) Be careful the sponge of dust.

4



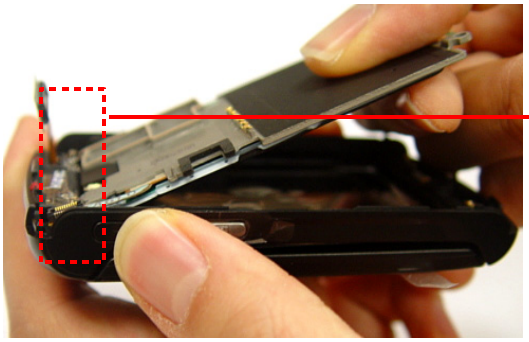


After bonding, handling the dust direction

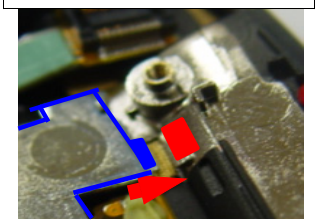
1) Insert SPK ASS'Y F-PCB F-PCB in the Connector.
2) Bond the solder part with receiver wire of the end.

1) Insert SPK ASS'Y F-PCB in the Connector. (By Silk Base Line)
2) Do not bond too much and control the amount of bond not to be high.

5



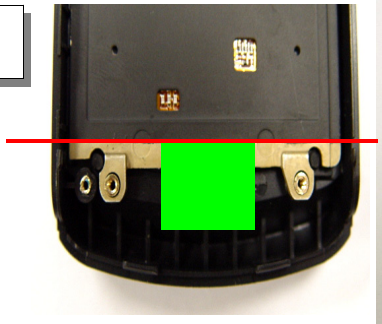
Insert the Blue marked part of the SHIELD CAN under the Red marked of the FRONT HOOK.

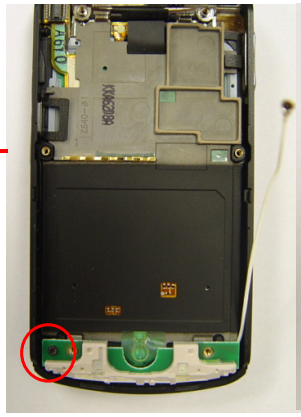


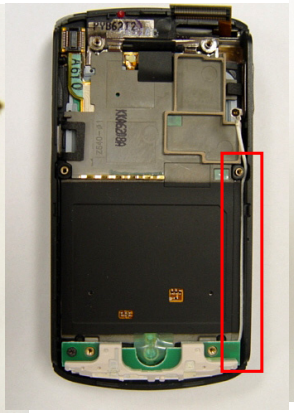
가.Insert the top of the SHIELD CAN obliquely.(45°)
→ When inserting, check the condition of the KEY PAD Basefilm .
나.Combine the bottom hole of the SHIELD CAN and FRONT SCREW boss.
다.After Combining, check the KEY GAP of the PAD.

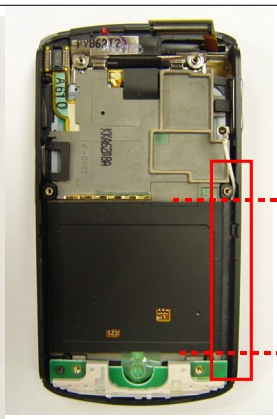
1) After Combining FRONT and SHIELD CAN, open the FOLDER and check the KEY PAD of the GAP.

6





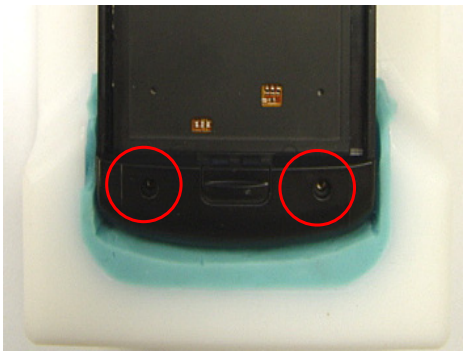




1) Adhere the Mic insulation TAPE to SHIELD CAN along metallized SHIELD CAN.
2) After put the ANT on the FRONT, screw ANT.
3) Put the ANT CABLE through the passage of FRONT.
4) Don't keep being shown the Ant Cable after adhering Ant TAPE.

1) Attach tape by Guide line.

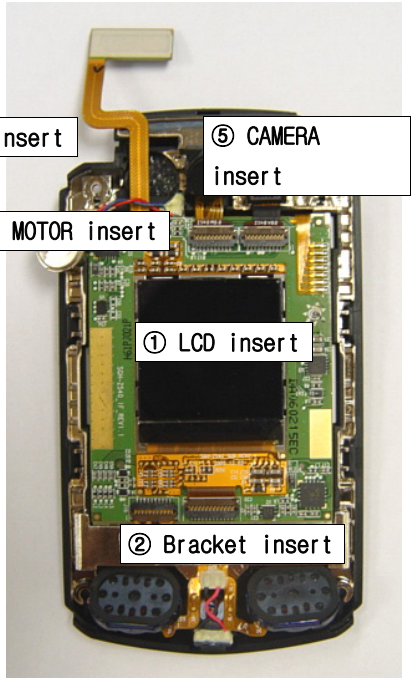
7



1) Connect ANT cover with FRONT
2) Screw down
3) Insert Screw cap at two points

1) Take care so that ANT cover do not interfere with Ant wire.
2) On screwing down, be careful not to scratch

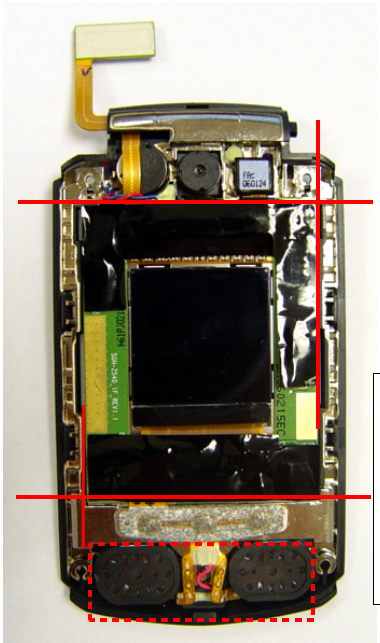
8



1) Insert LCD and SPK ASS'Y bracket.
2) Twist twice MOTOR wire and insert MOTOR.
3) insert LCD FPCB into F/LOWER hole.
4) Insert VGA CAMERA.
5) Attach a semocircular Poron sponge on the MOTOR with a pinset.

1) On inserting LCD, be careful for foreign substance.
2) Take care that MOTOR wire do not interfere with screw boss.
3) Notice that FPCB should not be cracked on inserting CAMERA.

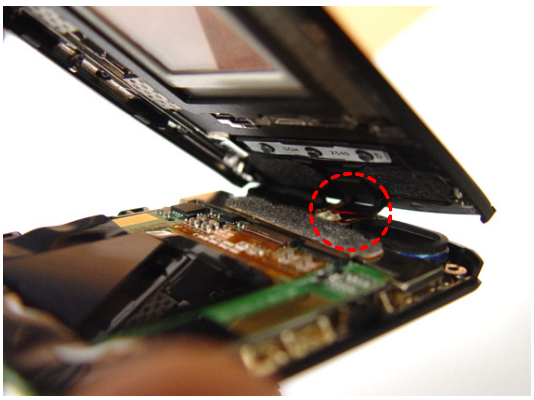
9

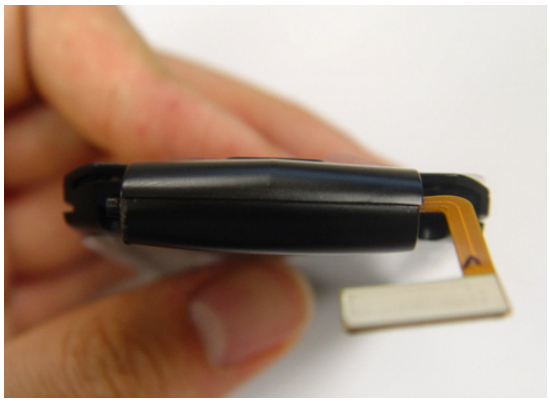


1) Attach a black insulation tape on LCD upper covering parts
2) Push and insert a receiver into LOWER receiver inserting position rightly.
3) Insert SPK into LOWER SPK position.
4) Attach a black insulation tape on LCD lower covering parts.
5) Push a receiver wire for wire to avoid putting on F-PCB.

1) Attach insulation tapes covering parts perfectly at the right position.
→Check tape position with red lines.

10





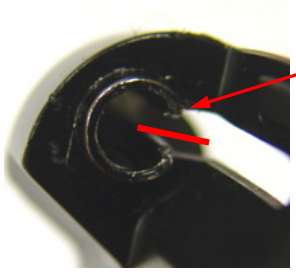
1) Firstly, connect UPPER end hook with LOWER end hook.
2) Be care for foreign substance and connect Lower hooks.
3) Connect side hooks.

1) Notice that foreign substances do not go in.

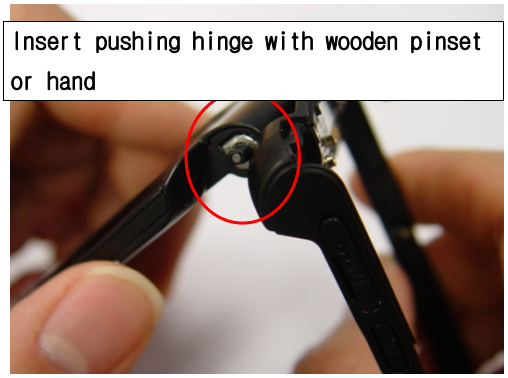
11

1) Screw down at four points.
2) Insert screw cap at four points.

12

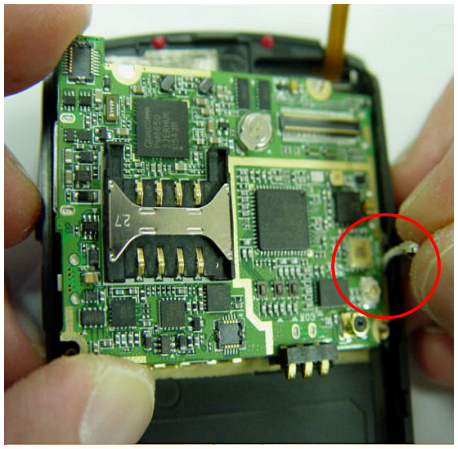


Insert pushing hinge with wooden pinset or hand



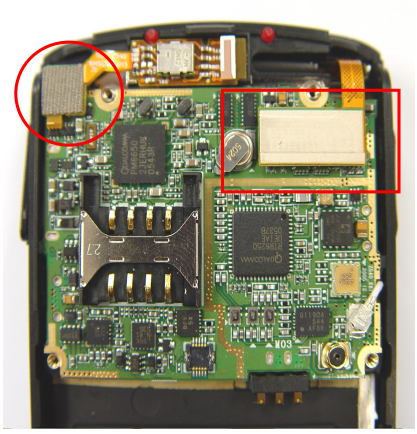
1) Insert FOLDER into FRONT passing hole.
2) After inserting hinge dummy, assemble pushing hinge on the other part with wooden pinset or hand.
3) Check folder connection by repeating open and close two or three times.

13



1) Insert PBA into FRONT ASS'Y.
2) When inserting PBA, put ANT wire at PBA hole near the screw boss hole and connect with connector.

14



1) Connect LCD F-PCB connector.
2) Connect B/T Module.

1) Be careful not to damage ANT wire.
2) Ensure space so that ANT Wire can not be damaged when connecting FRONT with REAR.

15

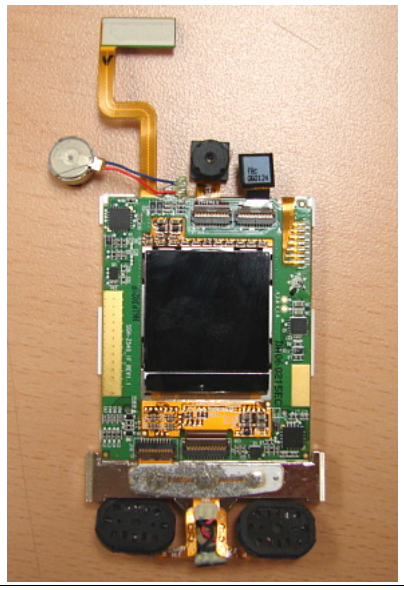
1) After aligning REAR upper hook part with FRONT upper hook part, cover REAR and assemble.
→ Check the hook connection by pushing the upper part of REAR

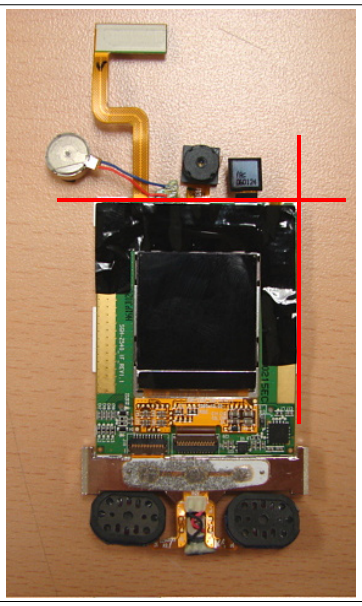
16

1) Screw down 4 points.

3-5. LCD KIT assembling Manual

1

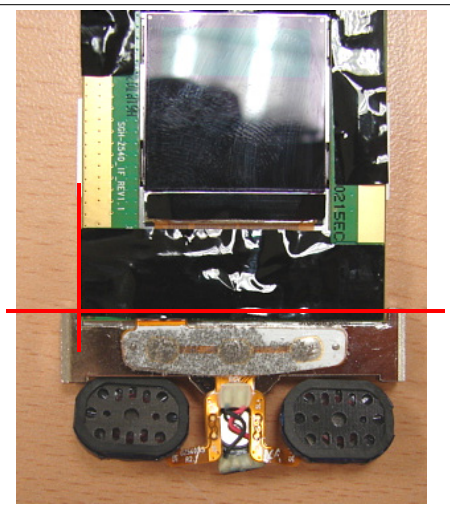




1) Attach the black insulation tape on the LCD upper to cover parts completely.
→ Attach tape according to red lines.

Discription	SEC CODE	SEC Design	quantity
TAPE LCD MASKING 1	GH74-20203A	39.7 x 31.6 x 0.08T	1
-	-	-	-

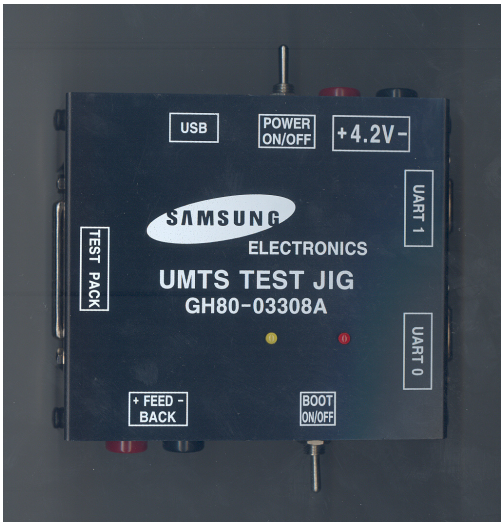
2



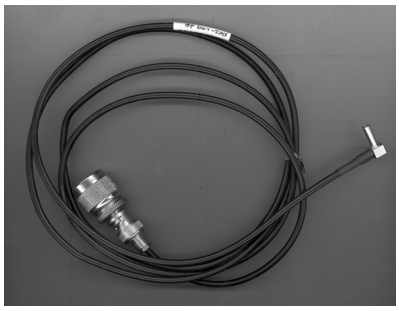
1) Attach the black insulation tape on the LCD lower to cover parts completely.
→ Attach tape according to red lines.

Discription	SEC CODE	SEC Design	quantity
TAPE LCD MASKING 2	GH74-20204A	39.7 x 11.62 x 0.08T	1
-	-	-	-

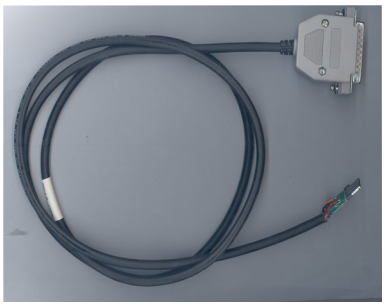
3-6. Test Jig (GH80-03308A)



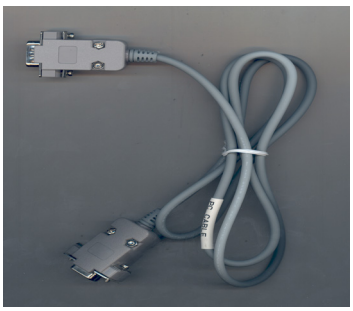
3-6-1. RF Test Cable (GH39-00397A)



3-6-2. Test Cable



3-6-3. Serial Cable



3-6-4. Power Supply Cable

3-6-5. DATA CABLE

3-6-6. TA

4. Electrical Parts List

DESIGN LOC	DESCRIPTION	SEC CODE	STATUS
AN1	ANTENNA-CHIP	4202-001101	SA
ANT700	CONNECTOR-COAXIAL	3705-001358	SA
BAT201	BATTERY-LI(2ND)	4302-001130	SA
BTC501	CONNECTOR-BATTERY	3711-006003	SA
C100	C-CER,CHIP	2203-006423	SA
C101	C-CER,CHIP	2203-006423	SA
C102	C-CER,CHIP	2203-006423	SA
C103	C-CER,CHIP	2203-006423	SA
C104	C-CER,CHIP	2203-006423	SA
C105	C-CER,CHIP	2203-006423	SA
C106	C-CER,CHIP	2203-006423	SA
C107	C-CER,CHIP	2203-006423	SA
C108	C-CER,CHIP	2203-006423	SA
C109	C-CER,CHIP	2203-006423	SA
C110	C-CER,CHIP	2203-006423	SA
C111	C-CER,CHIP	2203-006423	SA
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C113	C-CER,CHIP	2203-006423	SA
C114	C-CER,CHIP	2203-006562	SA
C116	C-CER,CHIP	2203-006423	SA
C117	C-CER,CHIP	2203-006423	SA
C118	C-CER,CHIP	2203-006423	SA
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C136	C-CER,CHIP	2203-006668	SA
C137	C-CER,CHIP	2203-005682	SA
C138	C-CER,CHIP	2203-006194	SA
C139	C-CER,CHIP	2203-006423	SA
C140	C-CER,CHIP	2203-006047	SA
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C142	C-CER,CHIP	2203-006423	SA
C143	C-CER,CHIP	2203-006423	SA
C144	C-CER,CHIP	2203-006617	SA
C145	C-CER,CHIP	2203-006423	SA
C146	C-CER,CHIP	2203-006423	SA
C147	C-CER,CHIP	2203-006617	SA

DESIGN LOC	DESCRIPTION	SEC CODE	STATUS
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C160	C-CER,CHIP	2203-000438	SA
C168	C-CER,CHIP	2203-000995	SA
C170	C-CER,CHIP	2203-000995	SA
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C219	C-CER,CHIP	2203-006305	SA
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C228	C-CER,CHIP	2203-005731	SA
C229	C-CER,CHIP	2203-005731	SA
C232	C-CER,CHIP	2203-006423	SA
C234	C-CER,CHIP	2203-001153	SA
C235	C-CER,CHIP	2203-005682	SA
C236	C-CER,CHIP	2203-005682	SA
C237	C-CER,CHIP	2203-006708	SA
C238	C-CER,CHIP	2203-006708	SA
C239	C-CER,CHIP	2203-006708	SA
C240	C-CER,CHIP	2203-006423	SA
C241	C-CER,CHIP	2203-006423	SA
C242	C-CER,CHIP	2203-006423	SA
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C248	C-CER,CHIP	2203-006562	SA

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C600	C-CER,CHIP	2203-006305	SA
C601	C-CER,CHIP	2203-005682	SA
C602	C-CER,CHIP	2203-006208	SA
C603	C-CER,CHIP	2203-005482	SA

DESIGN LOC	DESCRIPTION	SEC CODE	STATUS
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C608	C-CER,CHIP	2203-003054	SA
C611	C-CER,CHIP	2203-000386	SA
C615	C-CER,CHIP	2203-003054	SA
C616	C-CER,CHIP	2203-003054	SA
C617	C-CER,CHIP	2203-003054	SA
C618	C-CER,CHIP	2203-006648	SA
C619	C-CER,CHIP	2203-006562	SA
C620	C-CER,CHIP	2203-006562	SA
C621	C-CER,CHIP	2203-000386	SA
C622	C-CER,CHIP	2203-005682	SA
C623	C-CER,CHIP	2203-005682	SA
C624	C-CER,CHIP	2203-005482	SA
C625	C-CER,CHIP	2203-005482	SA
C626	C-CER,CHIP	2203-000438	SA
C627	C-CER,CHIP	2203-006208	SA
C628	C-CER,CHIP	2203-006562	SA
C629	C-CER,CHIP	2203-006562	SA
C630	C-CER,CHIP	2203-006562	SA
C631	C-CER,CHIP	2203-000812	SA
C632	C-CER,CHIP	2203-006648	SA
C634	C-CER,CHIP	2203-006208	SA
C635	C-CER,CHIP	2203-001259	SA
C637	C-CER,CHIP	2203-006324	SA
C638	C-CER,CHIP	2203-003054	SA
C640	C-CER,CHIP	2203-006648	SA
C641	C-CER,CHIP	2203-000812	SA
C642	C-CER,CHIP	2203-006562	SA
C643	C-CER,CHIP	2203-005683	SA
C644	C-CER,CHIP	2203-006423	SA
C645	C-CER,CHIP	2203-005682	SA
C646	C-CER,CHIP	2203-005682	SA
C702	C-CER,CHIP	2203-001072	SA
C703	C-CER,CHIP	2203-000885	SA
C704	C-CER,CHIP	2203-006562	SA
C705	C-CER,CHIP	2203-005806	SA
C706	C-CER,CHIP	2203-005682	SA
C707	C-CER,CHIP	2203-005736	SA
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C709	C-CER,CHIP	2203-005682	SA
C710	C-CER,CHIP	2203-005736	SA
C711	C-CER,CHIP	2203-005736	SA
C712	C-FILM,SMD-PPS	2301-001512	SA
C713	C-CER,CHIP	2203-006423	SA
C714	C-CER,CHIP	2203-000836	SA
C715	C-CER,CHIP	2203-005725	SA
C716	C-CER,CHIP	2203-006423	SA
C717	C-CER,CHIP	2203-006423	SA
C718	C-CER,CHIP	2203-005682	SA

DESIGN LOC	DESCRIPTION	SEC CODE	STATUS
C719	C-CER,CHIP	2203-005682	SA
C720	C-CER,CHIP	2203-006423	SA
C721	C-CER,CHIP	2203-000438	SA
C722	C-CER,CHIP	2203-000233	SA
C723	C-CER,CHIP	2203-000233	SA
C724	C-CER,CHIP	2203-000233	SA
C725	C-CER,CHIP	2203-000233	SA
C726	C-CER,CHIP	2203-006562	SA
C727	C-CER,CHIP	2203-000330	SA
C728	C-CER,CHIP	2203-006423	SA
C729	C-CER,CHIP	2203-005682	SA
C730	C-CER,CHIP	2203-006562	SA
C731	C-CER,CHIP	2203-000995	SA
C732	C-CER,CHIP	2203-005682	SA
C733	C-CER,CHIP	2203-000854	SA
C734	C-CER,CHIP	2203-006562	SA
C735	C-CER,CHIP	2203-000854	SA
C736	C-CER,CHIP	2203-006194	SA
C737	C-CER,CHIP	2203-006423	SA
C740	C-CER,CHIP	2203-000359	SA
C741	C-CER,CHIP	2203-000359	SA
C742	C-CER,CHIP	2203-000359	SA
C743	C-CER,CHIP	2203-000359	SA
C745	C-CER,CHIP	2203-006556	SA
C746	C-CER,CHIP	2203-005736	SA
C747	C-CER,CHIP	2203-005503	SA
C748	C-CER,CHIP	2203-002443	SA
C749	C-CER,CHIP	2203-005234	SA
C750	C-CER,CHIP	2203-006423	SA
C751	C-CER,CHIP	2203-006423	SA
C752	C-CER,CHIP	2203-005806	SA
C753	C-CER,CHIP	2203-006208	SA
C754	C-CER,CHIP	2203-005736	SA
C755	C-CER,CHIP	2203-000311	SA
C756	C-FILM,SMD	2301-001736	SA
C757	C-CER,CHIP	2203-006137	SA
C758	C-CER,CHIP	2203-000812	SA
C759	C-CER,CHIP	2203-005682	SA
C760	C-CER,CHIP	2203-005682	SA
C801	C-CER,CHIP	2203-000330	SA
C803	C-CER,CHIP	2203-005806	SA
C805	C-CER,CHIP	2203-000330	SA
C806	C-CER,CHIP	2203-000330	SA
C807	R-CHIP	2007-000171	SA
C809	C-CER,CHIP	2203-000330	SA
C810	C-CER,CHIP	2203-000995	SA
C812	C-CER,CHIP	2203-001383	SA
C816	C-CER,CHIP	2203-006423	SA
C817	C-CER,CHIP	2203-005736	SA
C818	C-CER,CHIP	2203-000254	SA

DESIGN LOC	DESCRIPTION	SEC CODE	STATUS
C819	C-CER,CHIP	2203-005736	SA
C820	C-CER,CHIP	2203-006423	SA
C821	C-CER,CHIP	2203-005777	SA
C822	C-CER,CHIP	2203-005806	SA
C823	C-CER,CHIP	2203-006423	SA
C825	C-CER,CHIP	2203-006194	SA
C826	C-CER,CHIP	2203-000725	SA
C827	C-CER,CHIP	2203-005736	SA
C828	C-CER,CHIP	2203-006121	SA
C829	C-CER,CHIP	2203-005777	SA
C831	C-CER,CHIP	2203-005806	SA
C832	C-CER,CHIP	2203-006423	SA
C833	C-CER,CHIP	2203-005736	SA
C834	C-CER,CHIP	2203-005736	SA
C835	C-CER,CHIP	2203-006423	SA
C836	C-CER,CHIP	2203-005736	SA
C837	C-CER,CHIP	2203-006423	SA
C838	C-CER,CHIP	2203-006194	SA
C839	C-CER,CHIP	2203-006838	SA
C840	C-CER,CHIP	2203-006423	SA
C841	C-CER,CHIP	2203-005806	SA
C847	C-CER,CHIP	2203-006423	SA
C848	C-CER,CHIP	2203-006423	SA
C849	C-CER,CHIP	2203-006423	SA
C850	C-CER,CHIP	2203-006423	SA
C851	C-CER,CHIP	2203-005057	SA
CON	SOCKET-BOARD TO BOARD	3710-002285	SA
D1	DIODE-ARRAY	0407-001002	SA
D5	DIODE-ZENER	0403-001427	SA
D500	DIODE-ZENER	0403-001427	SA
D501	DIODE-ZENER	0403-001547	SA
D7	DIODE-ARRAY	0407-001002	SA
DUF801	DUPLEXER-SAW	2910-000010	SA
F400	FILTER-EMI/ESD	2901-001348	SA
F401	FILTER-EMI/ESD	2901-001348	SA
F500	BEAD-SMD	3301-001534	SA
F700	FILTER-SAW	2904-001571	SA
F701	FILTER-SAW	2904-001570	SA
F702	FILTER-SAW	2904-001550	SA
F800	FILTER-SAW	2904-001623	SA
F802	FILTER-SAW	2904-001438	SA
F803	FILTER-EMI/ESD	2901-001320	SA
F804	FILTER-EMI/ESD	2901-001320	SA
F805	BEAD-SMD	3301-001534	SA
HDC1	HEADER-BOARD TO BOARD	3711-005550	SA
HDC400	HEADER-BOARD TO BOARD	3711-005367	SA
HDC401	HEADER-BOARD TO BOARD	3711-005456	SA
HDC702	HEADER-BOARD TO BOARD	3711-005976	SA
IFC500	SOCKET-INTERFACE	3710-002306	SA
L200	INDUCTOR-SMD	2703-002840	SA

DESIGN LOC	DESCRIPTION	SEC CODE	STATUS
L201	INDUCTOR-SMD	2703-002840	SA
L400	BEAD-SMD	3301-001158	SA
L401	BEAD-SMD	3301-001534	SA
L402	BEAD-SMD	3301-001534	SA
L403	BEAD-SMD	3301-001534	SA
L700	BEAD-SMD	3301-001534	SA
L701	INDUCTOR-SMD	2703-002201	SA
L702	INDUCTOR-SMD	2703-002870	SA
L703	INDUCTOR-SMD	2703-002314	SA
L704	INDUCTOR-SMD	2703-002207	SA
L705	INDUCTOR-SMD	2703-002198	SA
L706	INDUCTOR-SMD	2703-002207	SA
L707	INDUCTOR-SMD	2703-002203	SA
L708	INDUCTOR-SMD	2703-002207	SA
L709	INDUCTOR-SMD	2703-002870	SA
L710	INDUCTOR-SMD	2703-002268	SA
L711	INDUCTOR-SMD	2703-002207	SA
L712	INDUCTOR-SMD	2703-002198	SA
L713	INDUCTOR-SMD	2703-002208	SA
L714	INDUCTOR-SMD	2703-002203	SA
L715	INDUCTOR-SMD	2703-002208	SA
L716	INDUCTOR-SMD	2703-002203	SA
L800	INDUCTOR-SMD	2703-001737	SA
L801	INDUCTOR-SMD	2703-001747	SA
L802	R-CHIP	2007-000171	SA
L803	INDUCTOR-SMD	2703-002870	SA
L804	INDUCTOR-SMD	2703-001729	SA
L805	INDUCTOR-SMD	2703-001729	SA
L806	INDUCTOR-SMD	2703-002870	SA
L807	INDUCTOR-SMD	2703-002313	SA
L808	INDUCTOR-SMD	2703-002870	SA
OSC100	RESONATOR-CERAMIC	2802-001182	SA
OSC200	CRYSTAL-SMD	2801-004339	SA
OSC700	OSCILLATOR-VCO	2806-001360	SA
PAM200	IC-POWER SUPERVISOR	1203-003877	SA
Q800	TR-DIGITAL	0504-001151	SA
R100	R-CHIP	2007-008542	SA
R101	R-CHIP	2007-008542	SA
R102	R-CHIP	2007-008542	SA
R103	R-CHIP	2007-000171	SA
R104	R-CHIP	2007-008542	SA
R105	R-CHIP	2007-008542	SA
R108	R-CHIP	2007-008419	SA
R109	R-CHIP	2007-008049	SA
R110	R-CHIP	2007-008419	SA
R111	R-CHIP	2007-009112	SNA
R112	R-CHIP	2007-008055	SA
R113	R-CHIP	2007-007314	SA
R121	R-CHIP	2007-008516	SA
R122	R-CHIP	2007-009170	SA

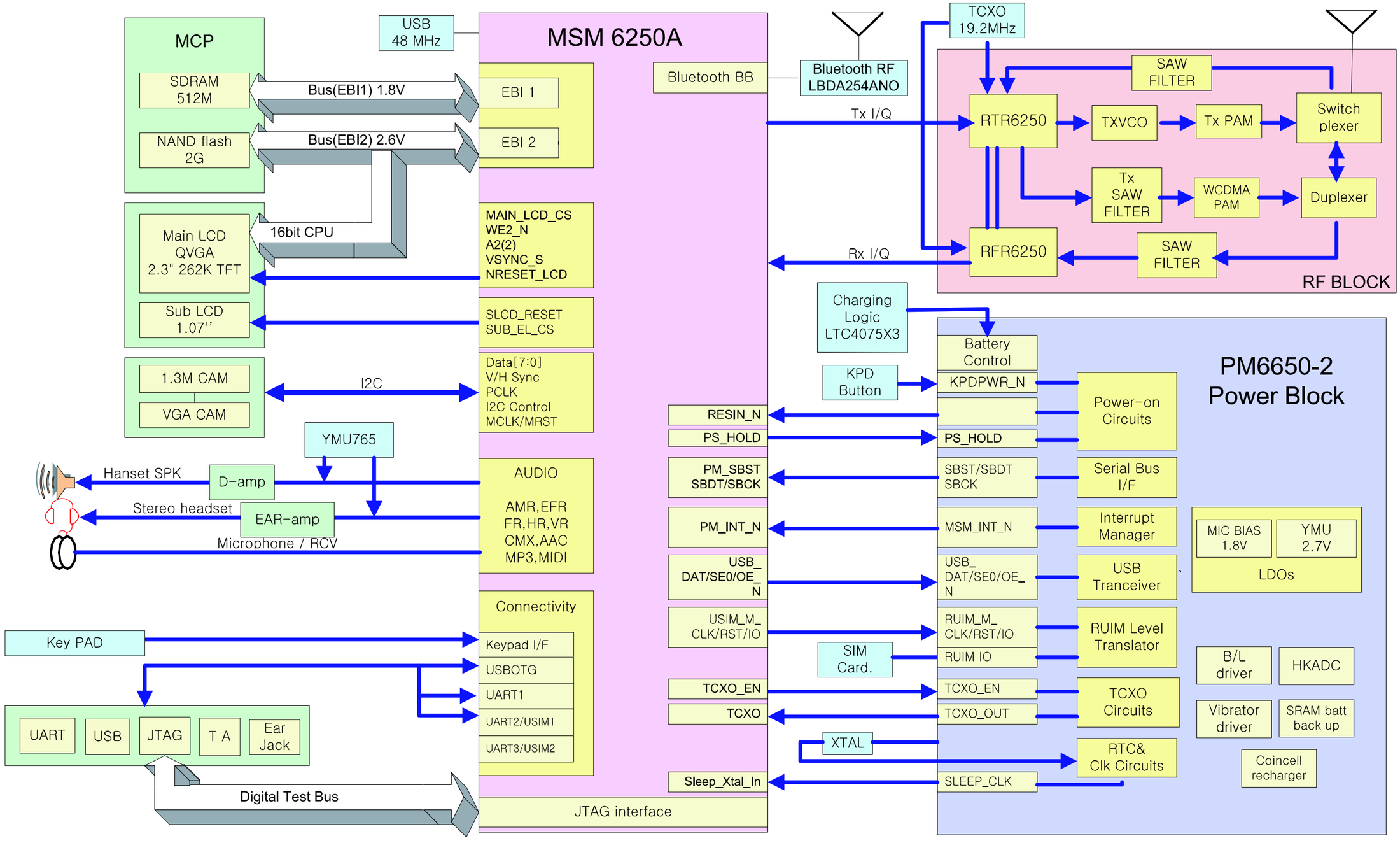
DESIGN LOC	DESCRIPTION	SEC CODE	STATUS
R123	R-CHIP	2007-009170	SA
R124	R-CHIP	2007-008516	SA
R126	R-CHIP	2007-008548	SA
R127	R-CHIP	2007-008516	SA
R127	C-CER,CHIP	2203-002677	SA
R129	R-CHIP	2007-009170	SA
R130	R-CHIP	2007-007741	SA
R131	R-CHIP	2007-008542	SA
R200	R-CHIP	2007-003015	SA
R201	R-CHIP	2007-003015	SA
R202	R-CHIP	2007-008516	SA
R203	R-CHIP	2007-008483	SA
R204	R-CHIP	2007-008806	SA
R205	R-CHIP	2007-007468	SA
R206	R-CHIP	2007-008542	SA
R210	R-CHIP	2007-009157	SA
R211	R-CHIP	2007-007314	SA
R212	R-CHIP	2007-008055	SA
R213	R-CHIP	2007-008055	SA
R214	R-CHIP	2007-008055	SA
R215	R-CHIP	2007-008055	SA
R216	R-CHIP	2007-008055	SA
R217	R-CHIP	2007-007586	SA
R219	R-CHIP	2007-008542	SA
R220	R-CHIP	2007-008051	SA
R221	R-CHIP	2007-008419	SA
R222	R-CHIP	2007-001320	SA
R225	R-CHIP	2007-008542	SA
R226	R-CHIP	2007-008542	SA
R227	R-CHIP	2007-008542	SA
R231	R-CHIP	2007-000168	SA
R233	R-CHIP	2007-000168	SA
R300	R-CHIP	2007-008542	SA
R301	R-CHIP	2007-008542	SA
R302	R-CHIP	2007-008516	SA
R303	R-CHIP	2007-008542	SA
R438	R-CHIP	2007-008055	SA
R500	R-CHIP	2007-008516	SA
R501	R-CHIP	2007-008419	SA
R503	R-CHIP	2007-008419	SA
R504	R-CHIP	2007-008419	SA
R506	R-CHIP	2007-008419	SA
R507	R-CHIP	2007-008419	SA
R600	R-CHIP	2007-000171	SA
R601	R-CHIP	2007-007318	SA
R602	R-CHIP	2007-008542	SA
R603	R-CHIP	2007-001319	SA
R604	R-CHIP	2007-000171	SA
R605	R-CHIP	2007-008542	SA
R607	R-CHIP	2007-001325	SA

DESIGN LOC	DESCRIPTION	SEC CODE	STATUS
R608	R-CHIP	2007-000171	SA
R609	R-CHIP	2007-001319	SA
R610	R-CHIP	2007-007318	SA
R611	C-CER,CHIP	2203-005482	SA
R612	C-CER,CHIP	2203-005482	SA
R613	R-CHIP	2007-007318	SA
R614	R-CHIP	2007-001319	SA
R615	C-CER,CHIP	2203-000812	SA
R616	R-CHIP	2007-000162	SA
R617	R-CHIP	2007-007317	SA
R618	R-CHIP	2007-007107	SA
R619	R-CHIP	2007-007107	SA
R700	R-CHIP	2007-000171	SA
R701	R-CHIP	2007-000140	SA
R702	R-CHIP	2007-001325	SA
R703	R-CHIP	2007-008045	SA
R704	R-CHIP	2007-000145	SA
R705	R-CHIP	2007-000171	SA
R706	R-CHIP	2007-001325	SA
R707	R-CHIP	2007-001325	SA
R708	R-CHIP	2007-001325	SA
R709	R-CHIP	2007-000171	SA
R710	R-CHIP	2007-007798	SA
R711	R-CHIP	2007-007798	SA
R712	R-CHIP	2007-007491	SA
R713	R-CHIP	2007-000171	SA
R714	R-CHIP	2007-000171	SA
R715	R-CHIP	2007-007142	SA
R716	R-CHIP	2007-000147	SA
R717	R-CHIP	2007-007142	SA
R718	R-CHIP	2007-001291	SA
R719	R-CHIP	2007-001217	SA
R720	R-CHIP	2007-001291	SA
R721	R-CHIP	2007-001295	SA
R722	R-CHIP	2007-008057	SA
R723	R-CHIP	2007-008044	SA
R724	R-CHIP	2007-001307	SA
R725	R-CHIP	2007-001307	SA
R726	R-CHIP	2007-001307	SA
R727	R-CHIP	2007-001307	SA
R728	R-CHIP	2007-008045	SA
R729	R-CHIP	2007-000138	SA
R730	R-CHIP	2007-008045	SA
R731	R-CHIP	2007-001217	SA
R732	R-CHIP	2007-001217	SA
R800	R-CHIP	2007-008045	SA
R801	R-CHIP	2007-000171	SA
R802	R-CHIP	2007-007491	SA
R803	R-CHIP	2007-007316	SA
R804	R-CHIP	2007-008213	SA

DESIGN LOC	DESCRIPTION	SEC CODE	STATUS
R807	R-CHIP	2007-008045	SA
R809	R-CHIP	2007-008055	SA
R810	R-CHIP	2007-008516	SA
R815	R-CHIP	2007-000151	SA
R816	R-CHIP	2007-000151	SA
R817	R-CHIP	2007-008542	SA
R830	R-CHIP	2007-001307	SA
RFS701	CONNECTOR-COAXIAL	3705-001225	SA
SIM200	CONNECTOR-CARD EDGE	3709-001358	SA
TA115	C-TA,CHIP	2404-001381	SA
TA126	C-TA,CHIP	2404-001381	SA
TA245	C-TA,CHIP	2404-001381	SA
TA246	C-TA,CHIP	2404-001339	SA
TA401	C-TA,CHIP	2404-001381	SA
TA404	C-TA,CHIP	2404-001381	SA
TA509	C-TA,CHIP	2404-001381	SA
TA744	C-TA,CHIP	2404-001411	SA
TA804	C-TA,CHIP	2404-001381	SA
TA807	C-TA,CHIP	2404-001339	SA
TA808	C-TA,CHIP	2404-001339	SA
TAC1	SWITCH-TACT	3404-001152	SA
TAC2	SWITCH-TACT	3404-001152	SA
TAC3	SWITCH-TACT	3404-001152	SA
TCX800	OSCILLATOR-VCTCXO	2809-001280	SA
TH100	THERMISTOR-NTC	1404-001224	SA
TR200	TR-DIGITAL	0504-000168	SA
TR201	TR-DIGITAL	0504-000168	SA
TR809	FET-SILICON	0505-002078	SA
U103	BLUETOOTH MODULE	4709-001363	SA
U201	IC-POSI.FIXED REG.	1203-003064	SA
U202	IC-VOL. DETECTOR	1203-003728	SA
U203	IC-BATTERY	1203-003823	SA
U204	DIODE-ARRAY	0407-001038	SA
U400	IC-ANALOG SWITCH	1001-001265	SA
U401	IC-ANALOG SWITCH	1001-001265	SA
U402	IC-POSI.FIXED REG.	1203-003754	SA
U500	IC-HALL EFFECT S/W	1009-001020	SA
U501	IC-SWITCH	1205-002784	SA
U600	IC-MELODY	1204-002138	SA
U601	IC-AUDIO AMP	1201-002195	SA
U602	IC-POSI.FIXED REG.	1203-003208	SA
U701	IC-POWER AMP	1201-002218	SA
U702	IC-SWITCH	1205-002724	SA
U800	IC-POWER AMP	1201-002305	SA
U801	IC-RECEIVER	1205-002781	SA
U810	IC-SWITCH	1205-002874	SNA
U813	C-CER,CHIP	2203-006423	SA
U814	C-CER,CHIP	2203-006423	SA
U815	C-CER,CHIP	2203-005683	SA
UCD700	IC-TRANSCEIVER	1205-002645	SA

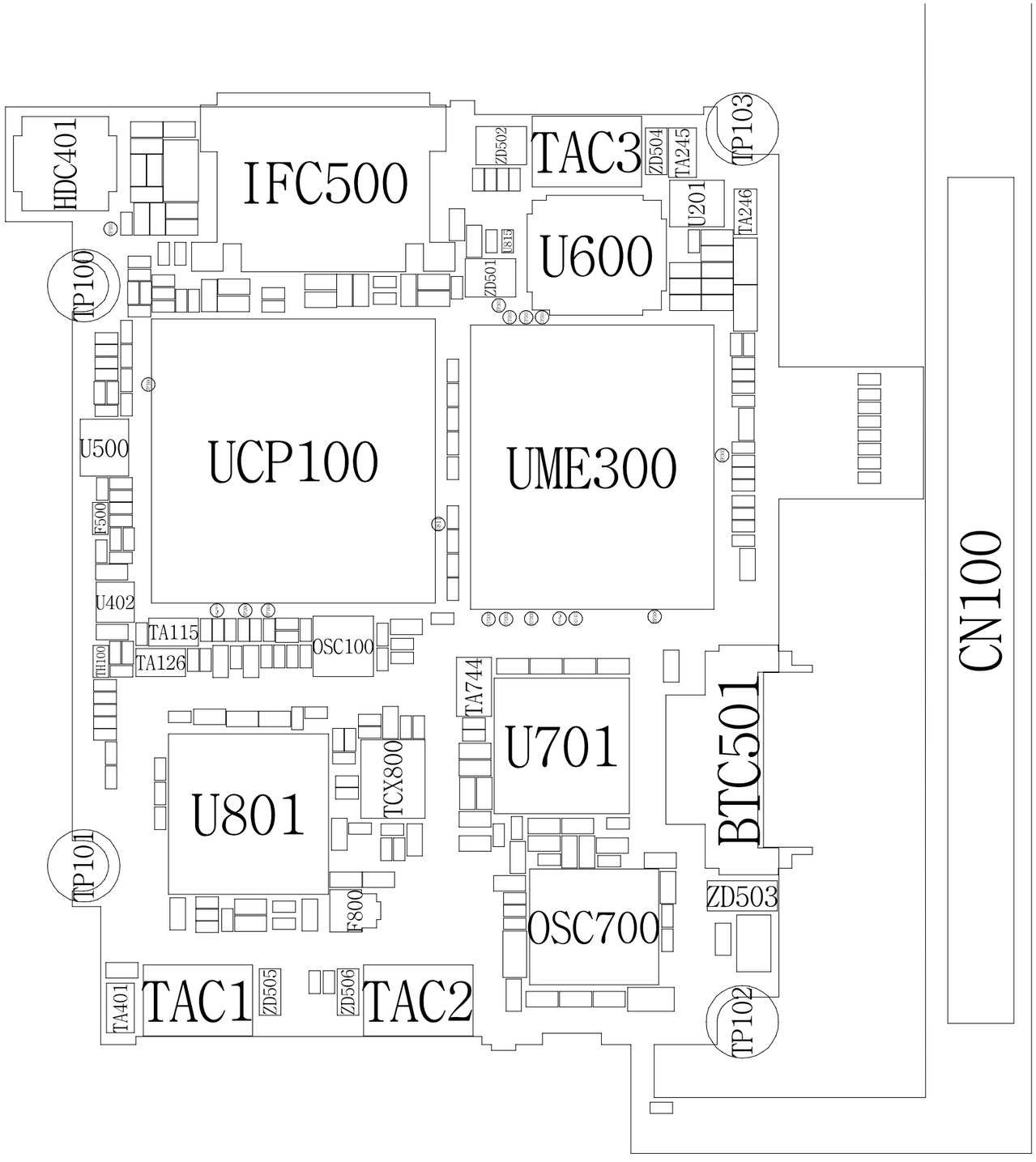
DESIGN LOC	DESCRIPTION	SEC CODE	STATUS
UCP100	IC-MODEM	1205-002780	SA
UME300	IC-MCP	1108-000032	SNA
ZD401	DIODE-TVS	0406-001208	SA
ZD402	DIODE-TVS	0406-001208	SA
ZD403	DIODE-TVS	0406-001203	SA
ZD501	DIODE-TVS	0406-001208	SA
ZD502	DIODE-TVS	0406-001208	SA
ZD503	DIODE-ZENER	0403-001547	SA
ZD504	DIODE-TVS	0406-001203	SA
ZD505	DIODE-TVS	0406-001203	SA
ZD506	DIODE-TVS	0406-001203	SA

5. Block Diagrams

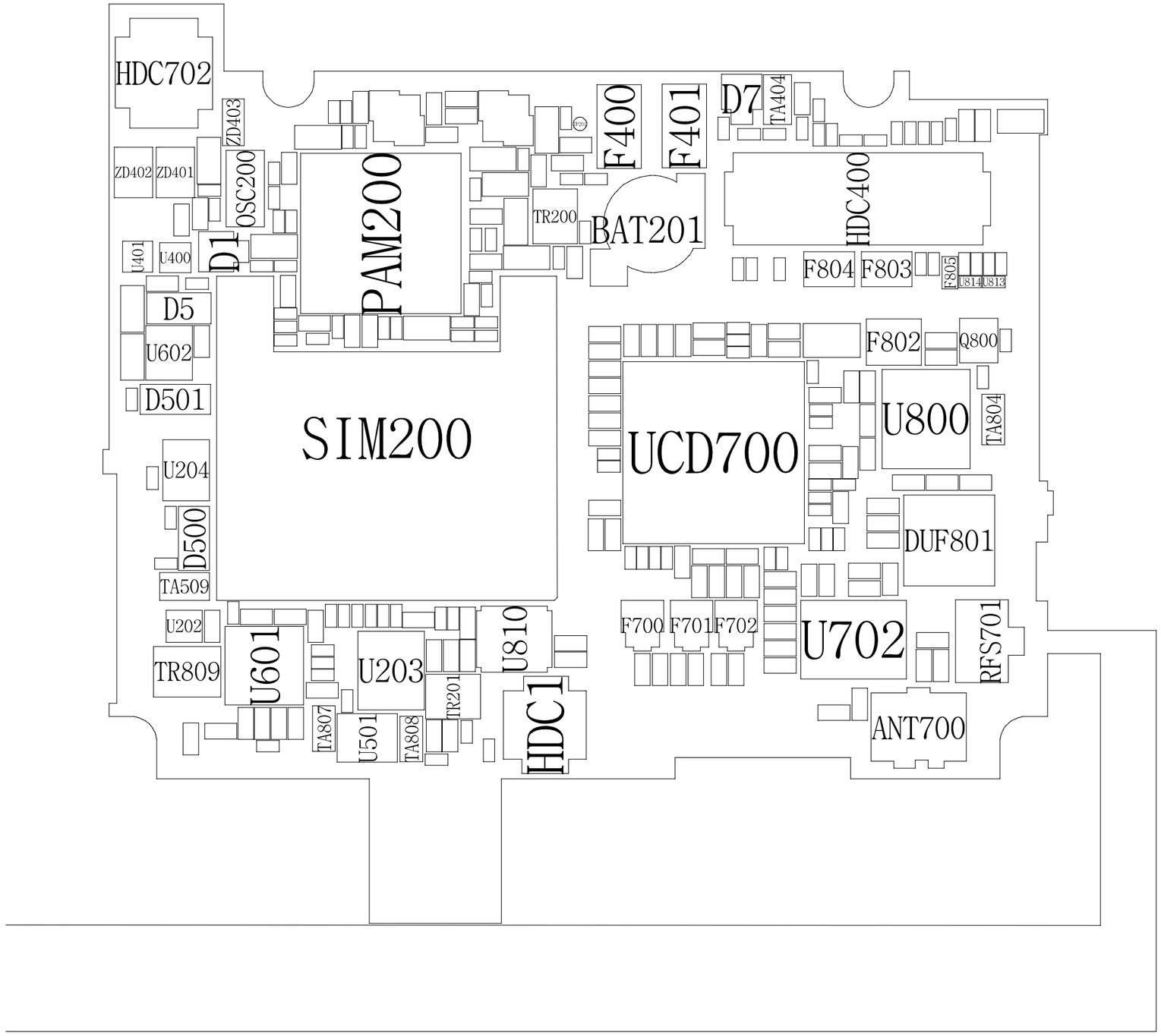


6. PCB Diagrams

6-1. PCB Top Diagram

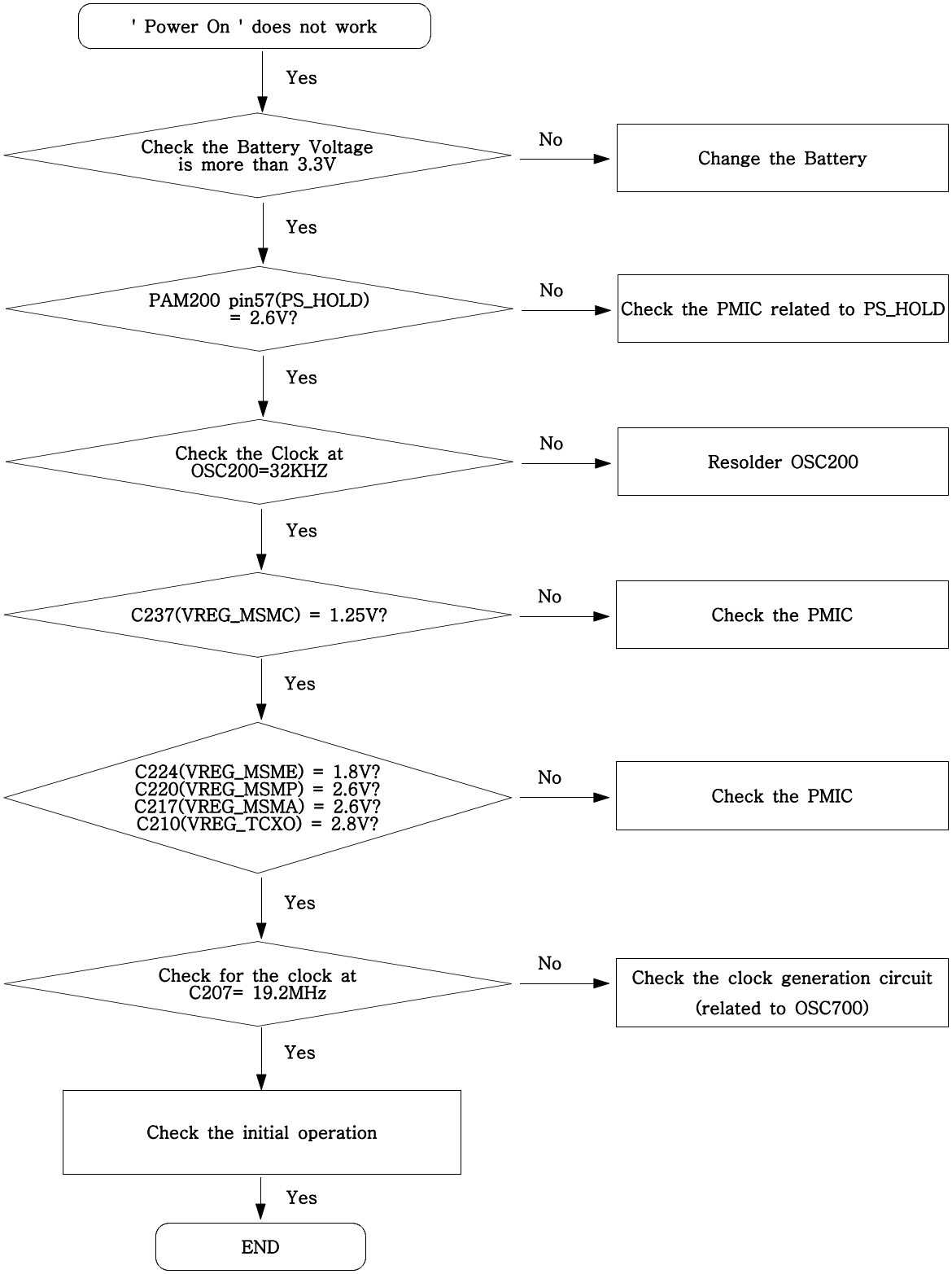


6-2. PCB Bottom Diagram

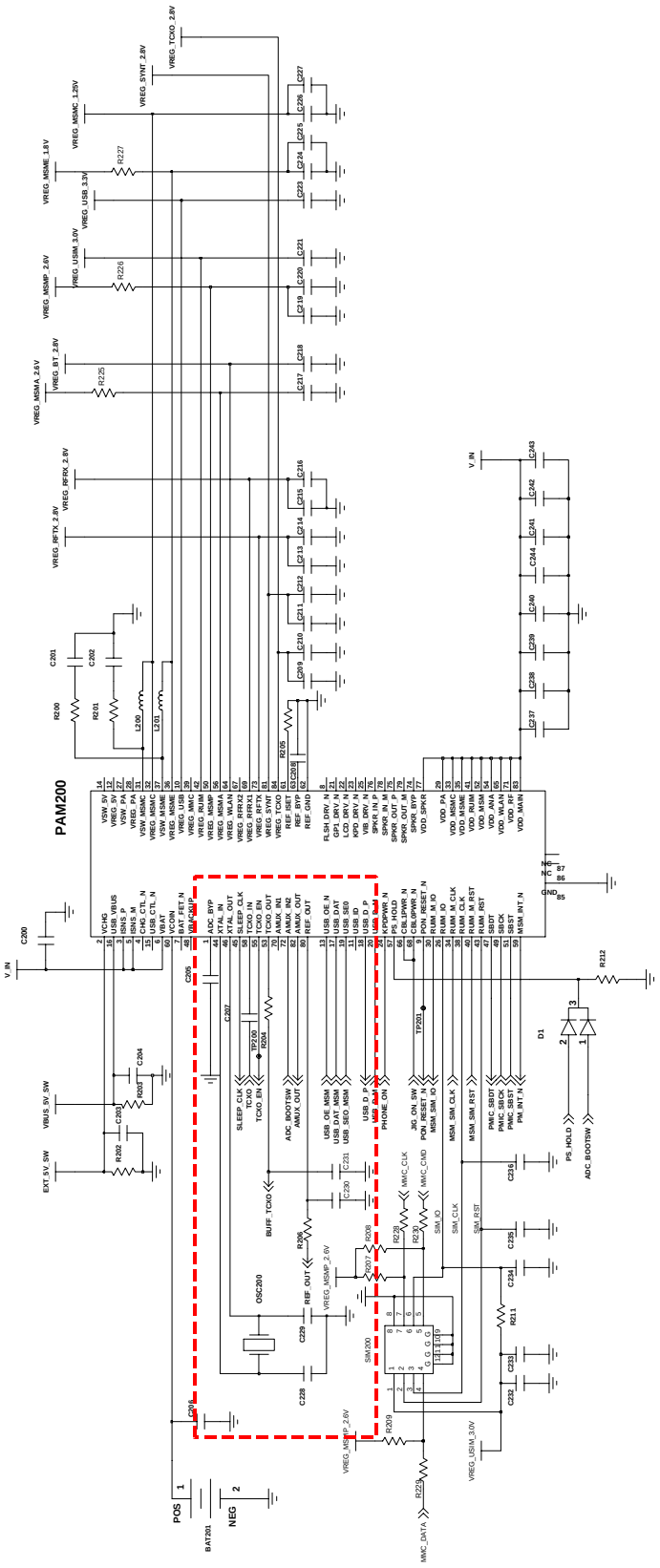


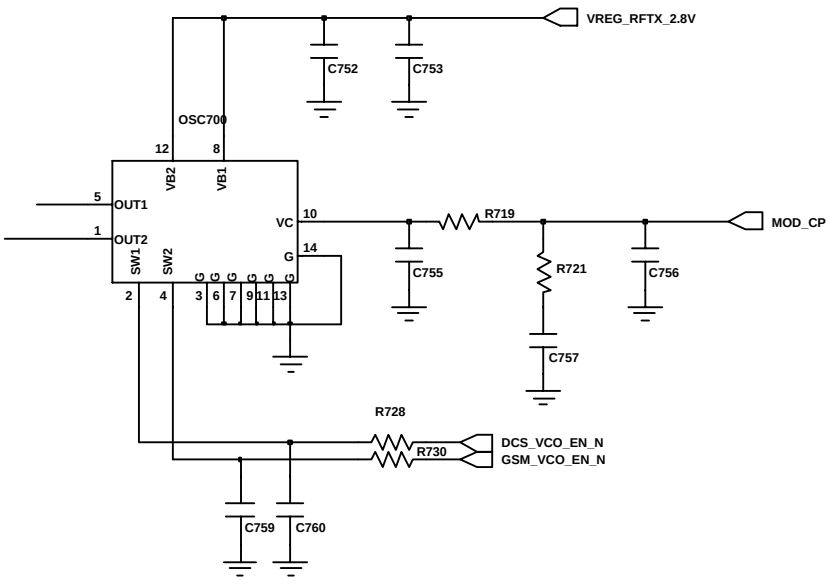
7. Flow Chart of Troubleshooting

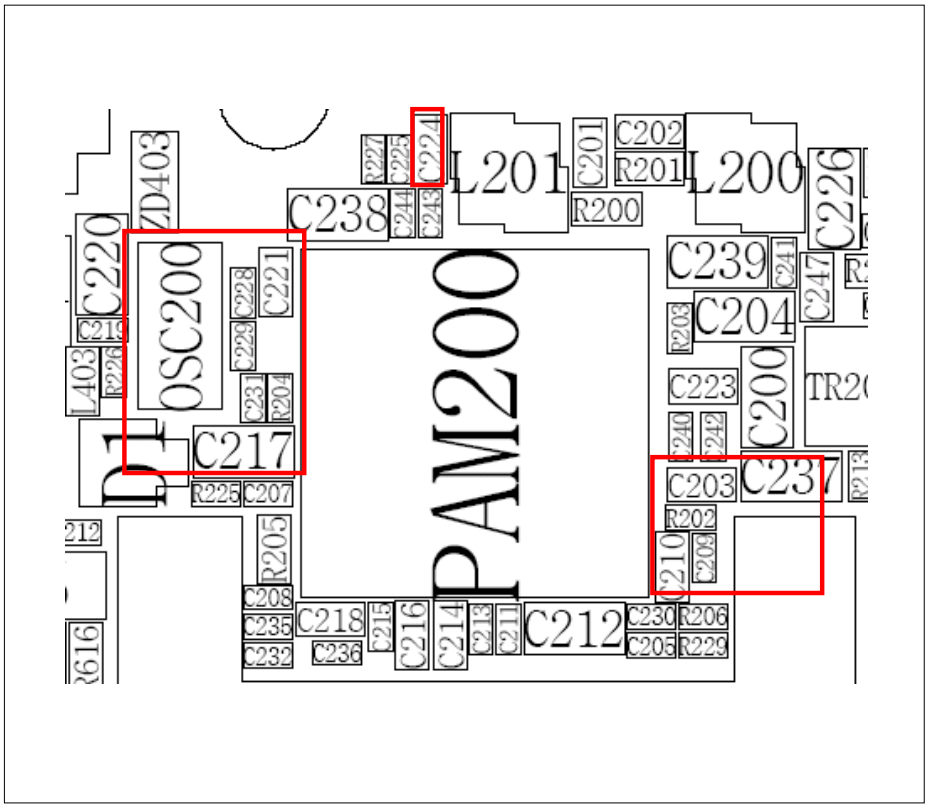
7-1. Power On

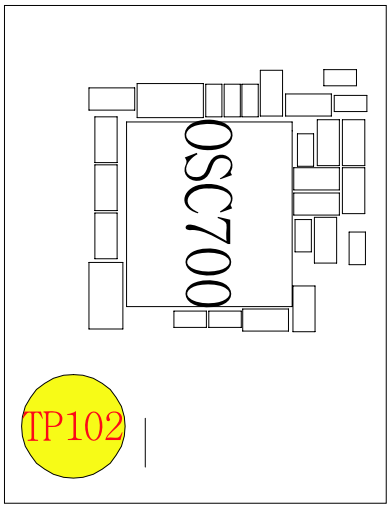


Power On

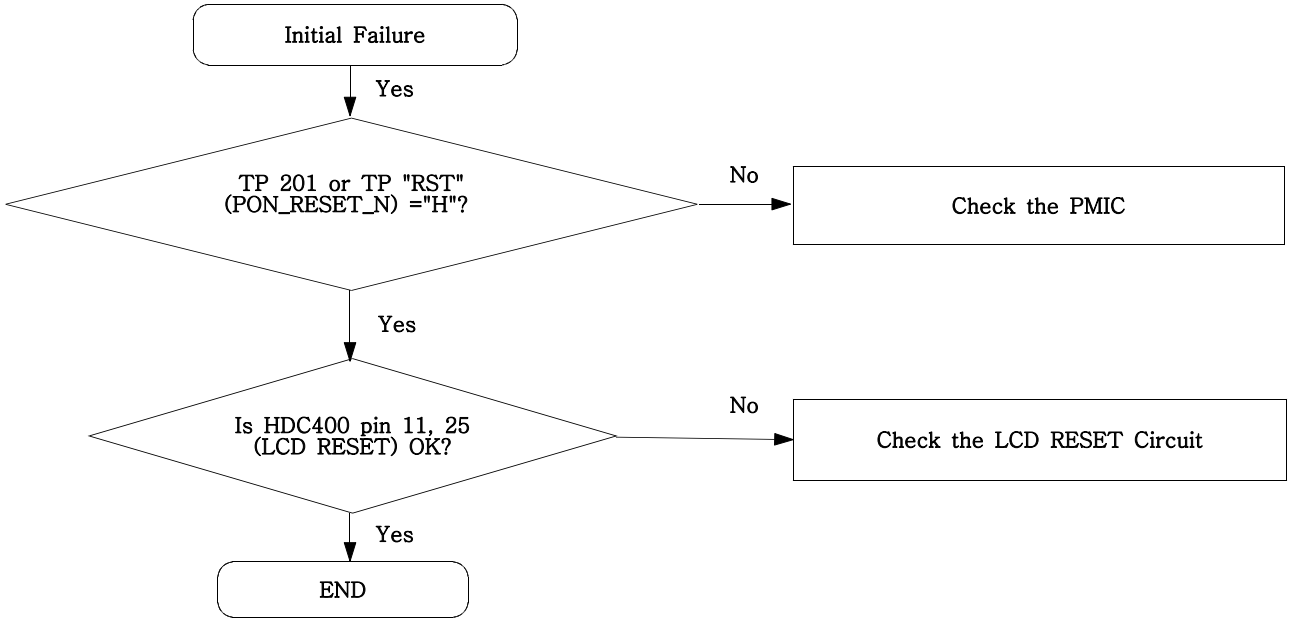


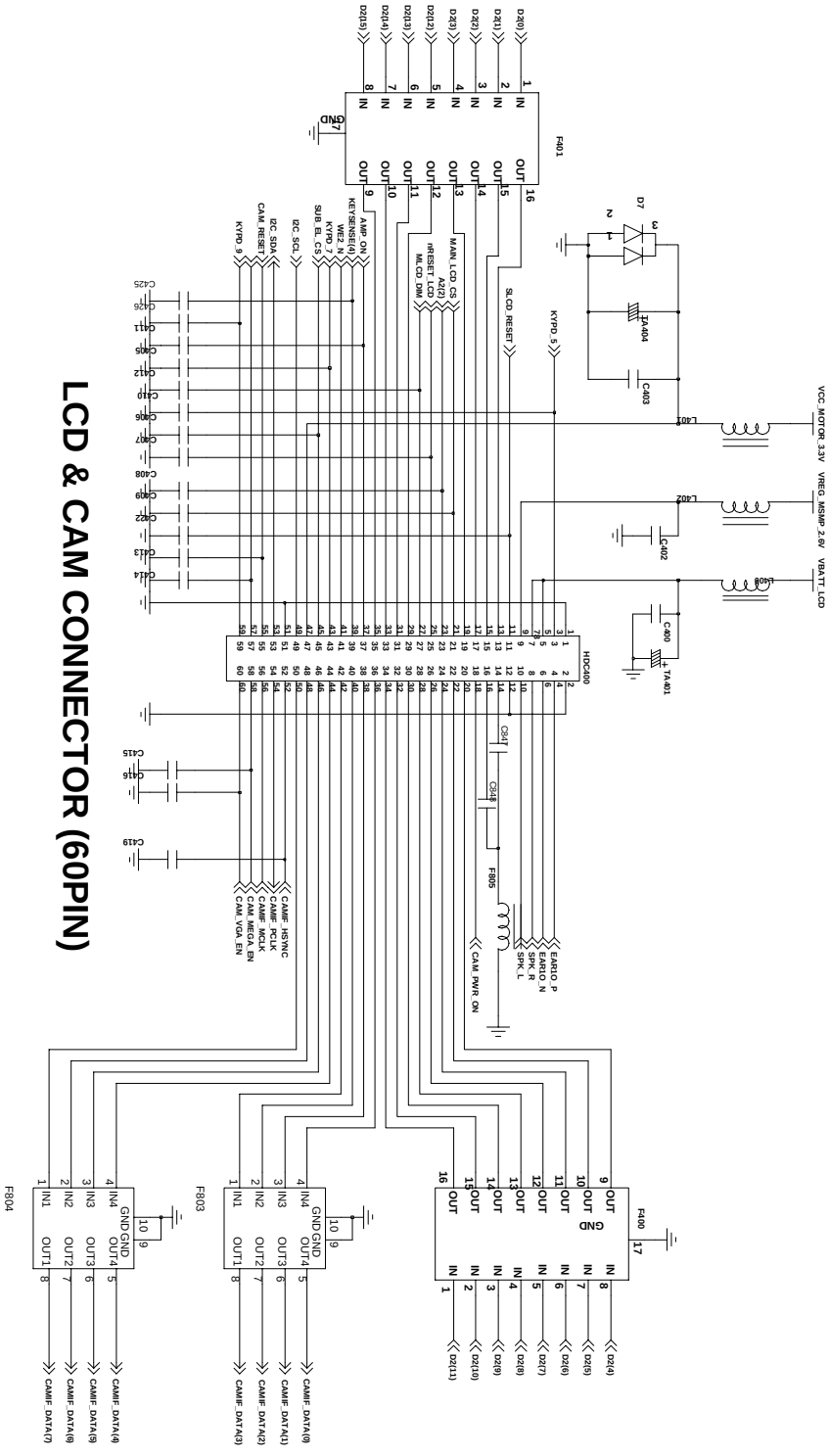


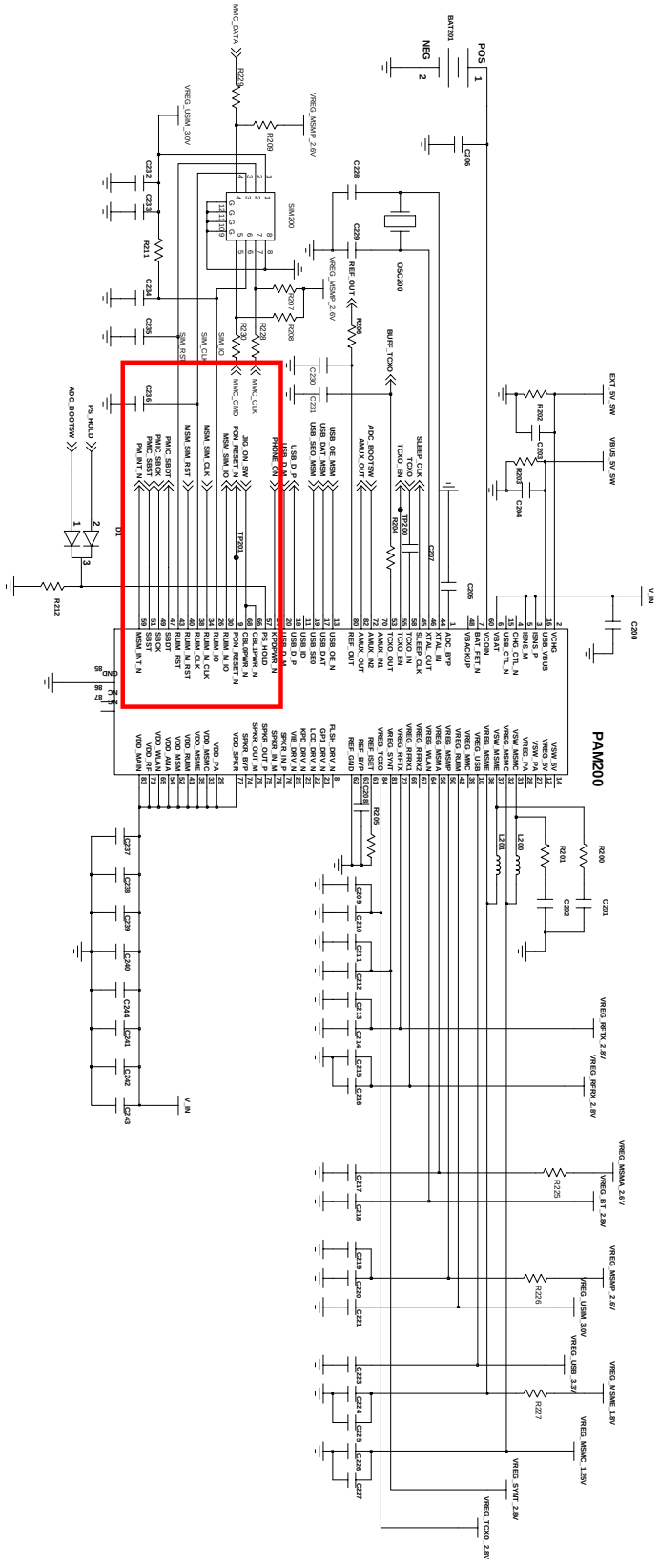


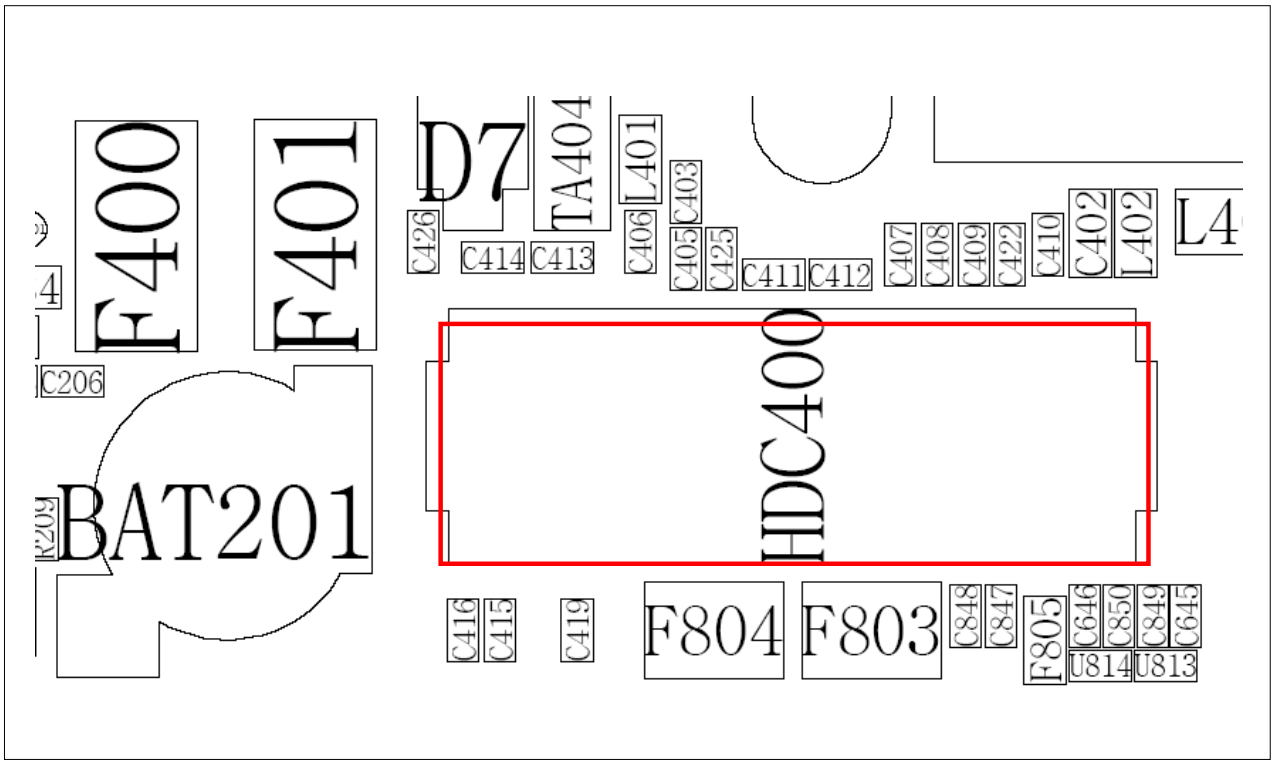


7-2. Initial

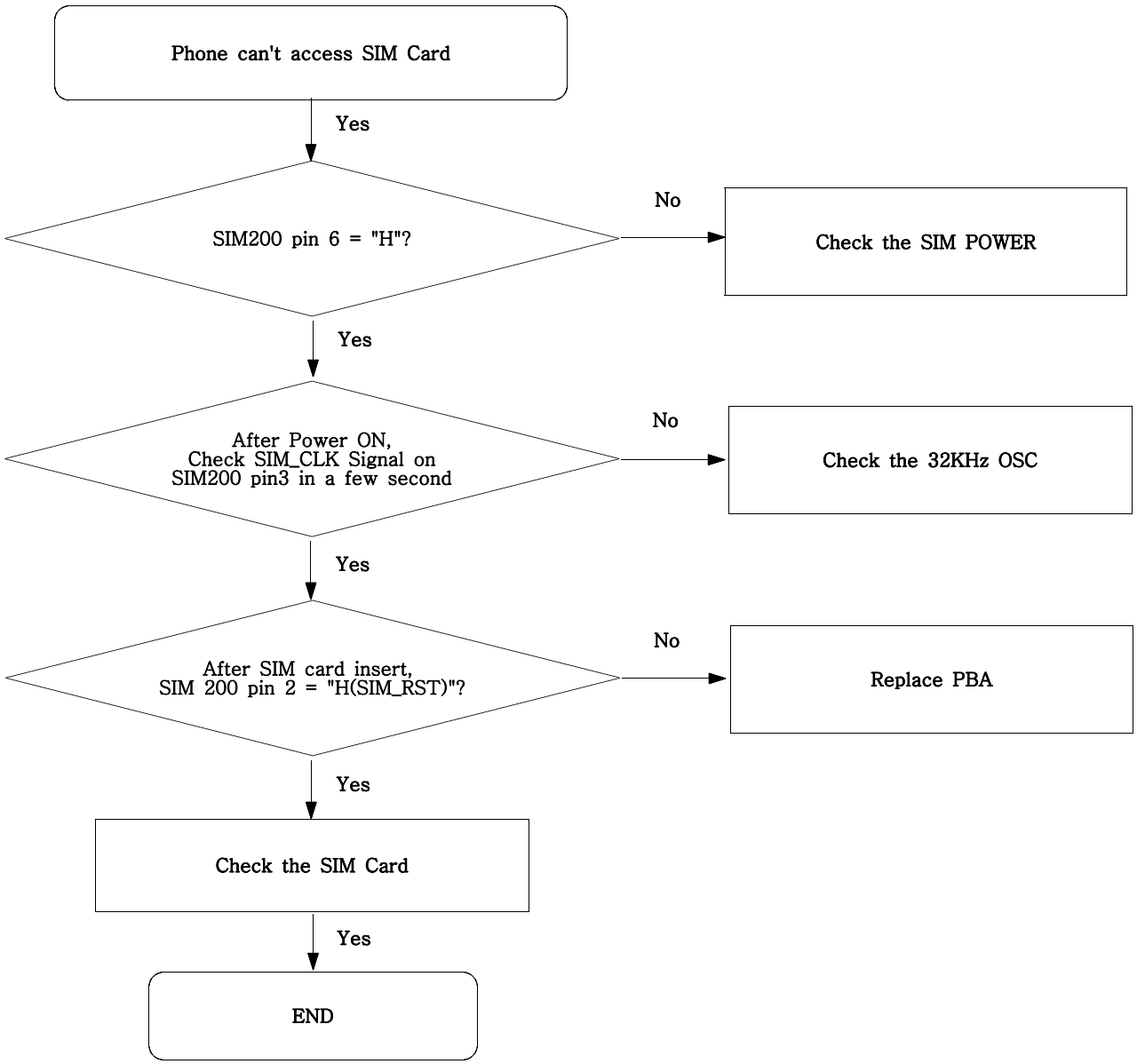


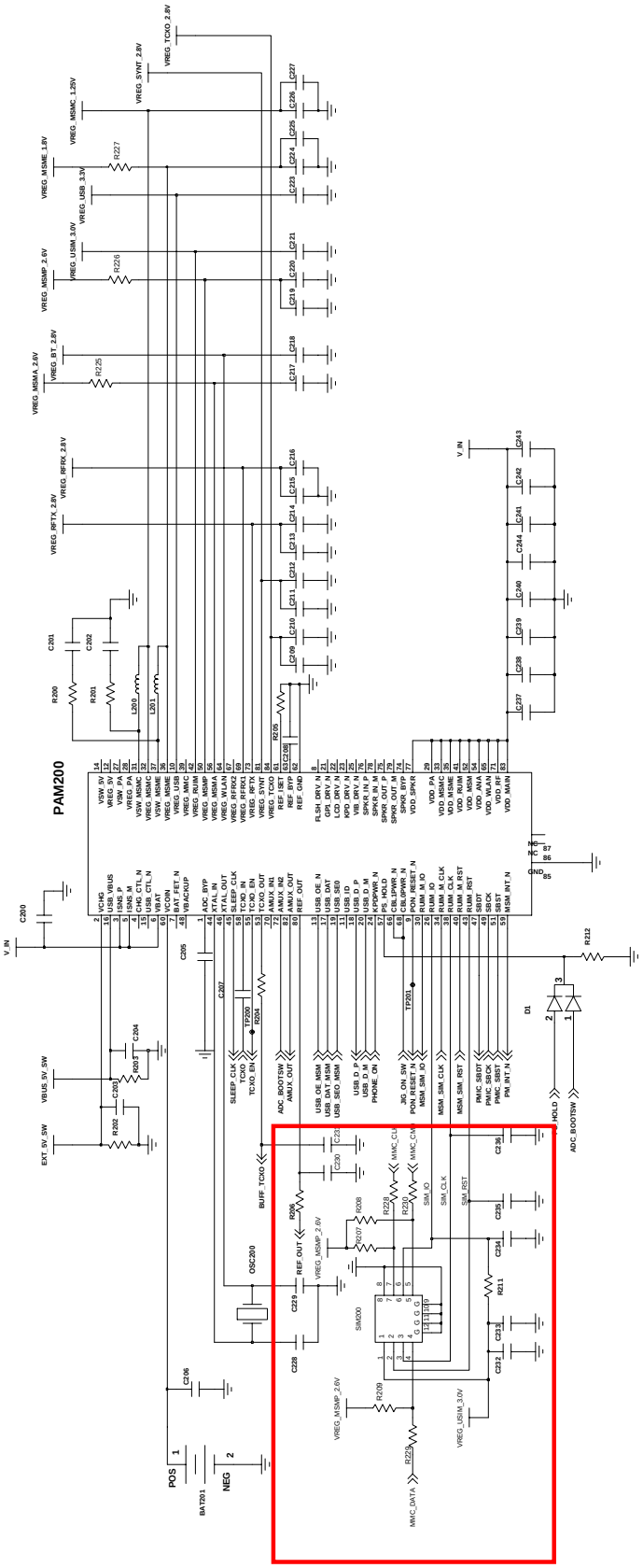


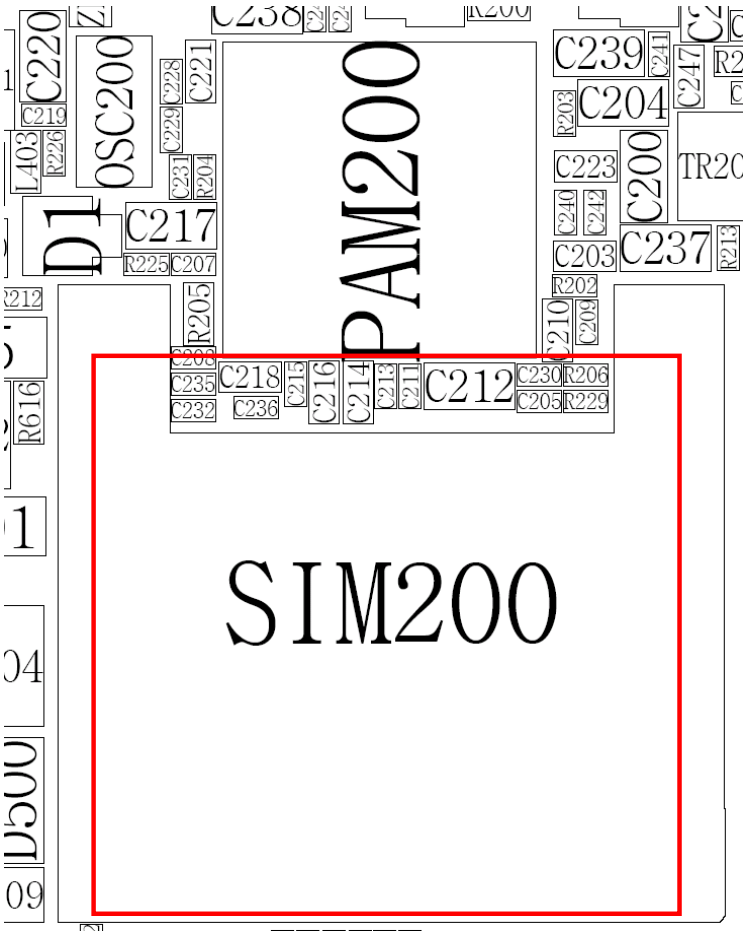




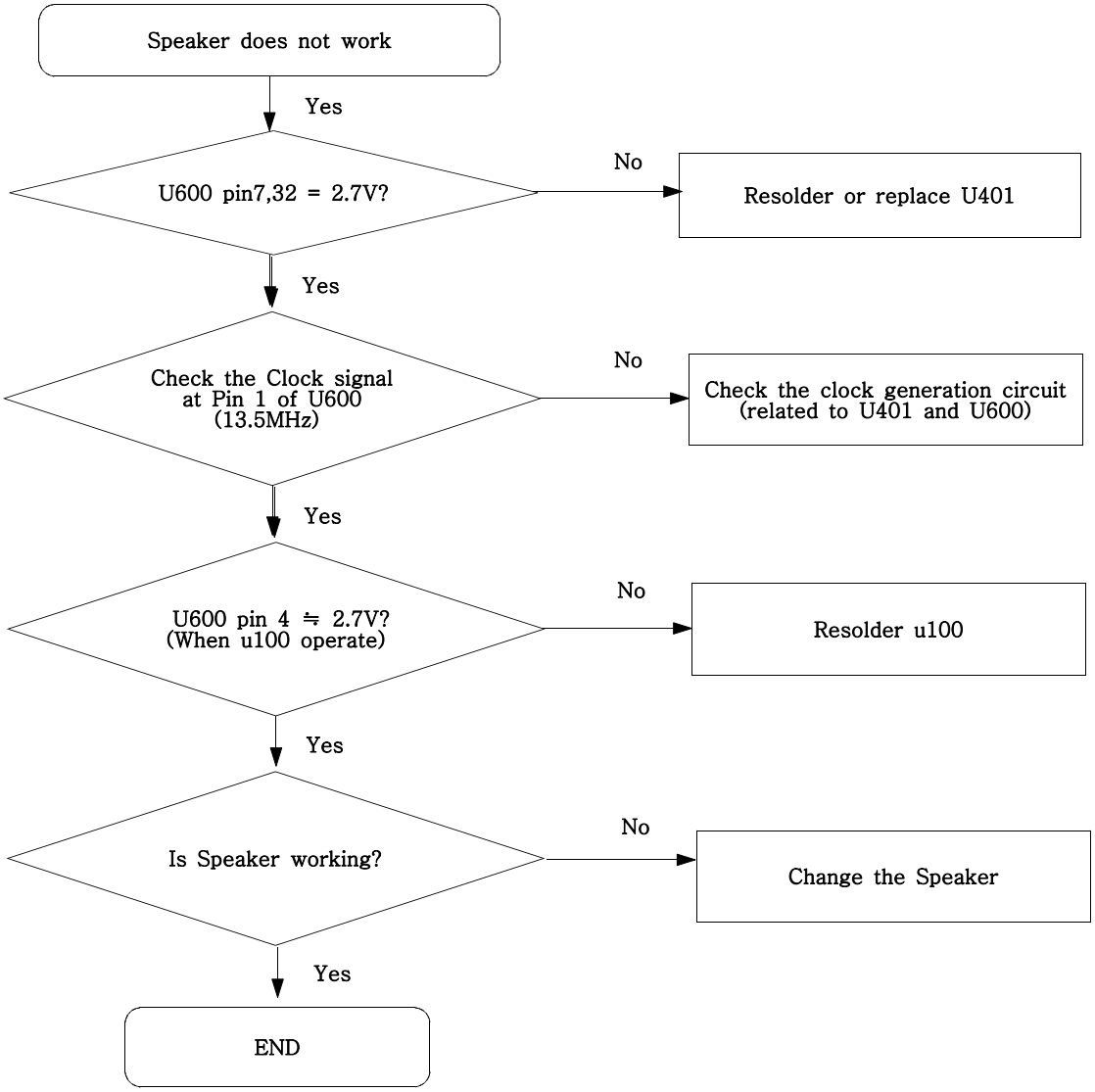
7-3. Sim Part



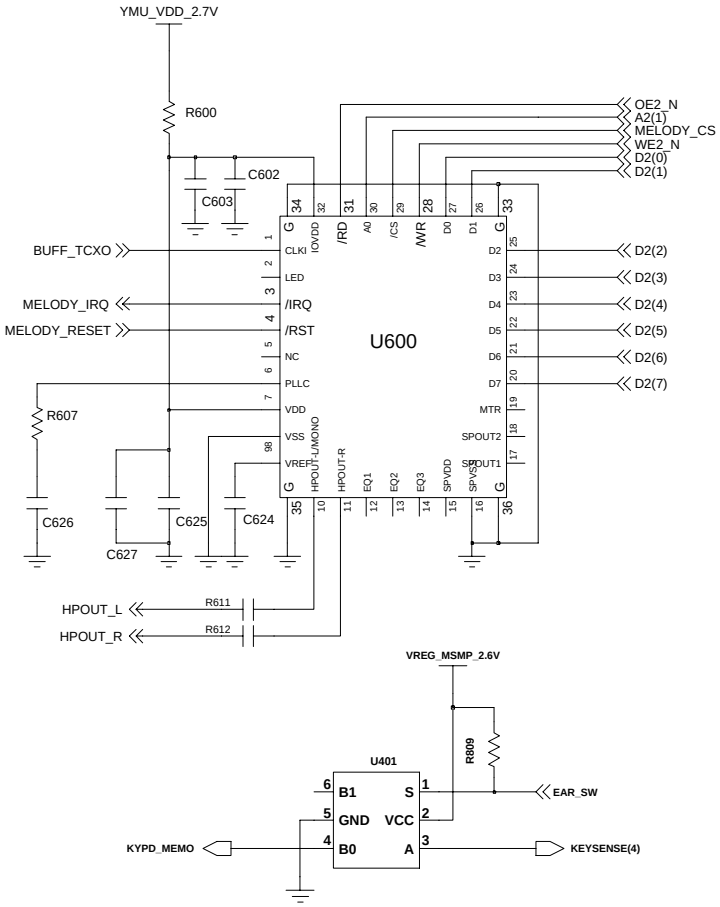


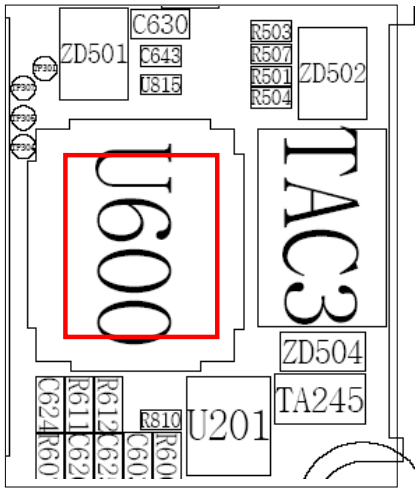


7-4. Speaker Part(Melody)

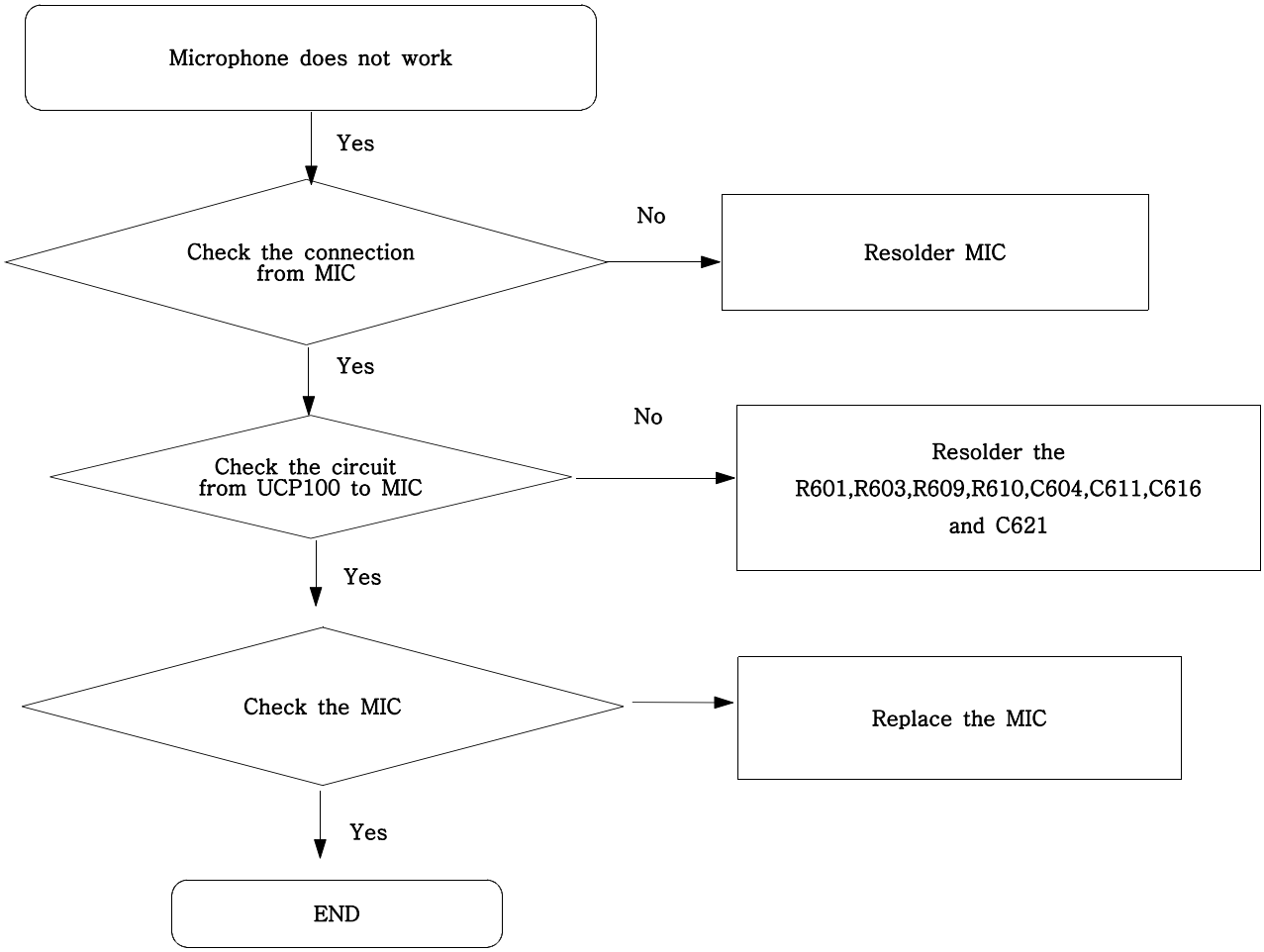


Speaker

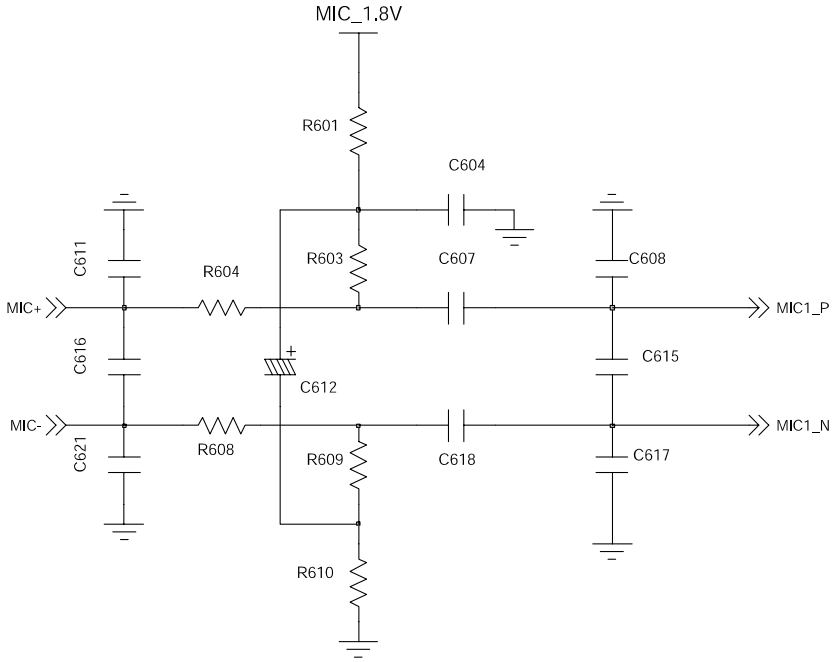




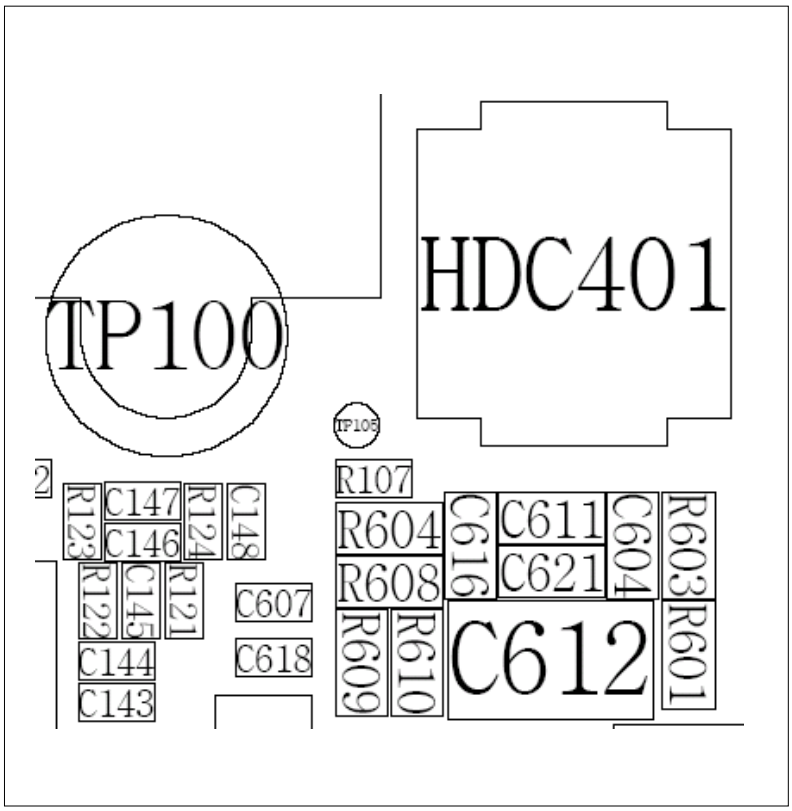
7-5. Microphone Part



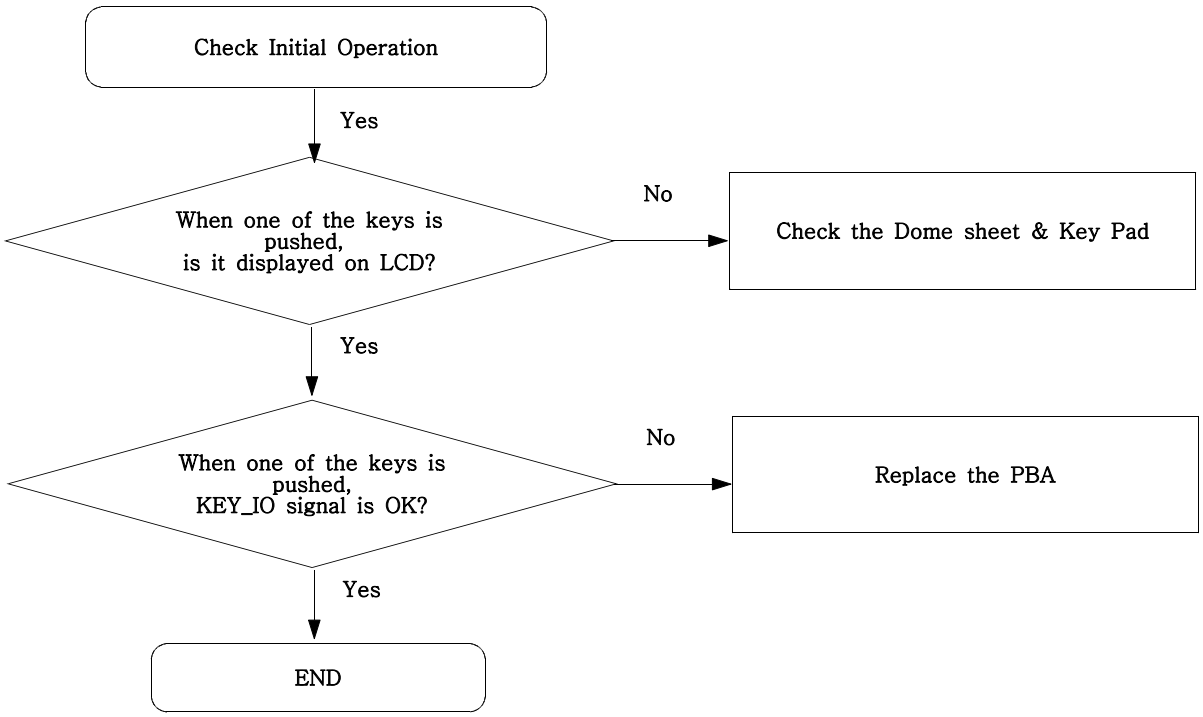
Microphone



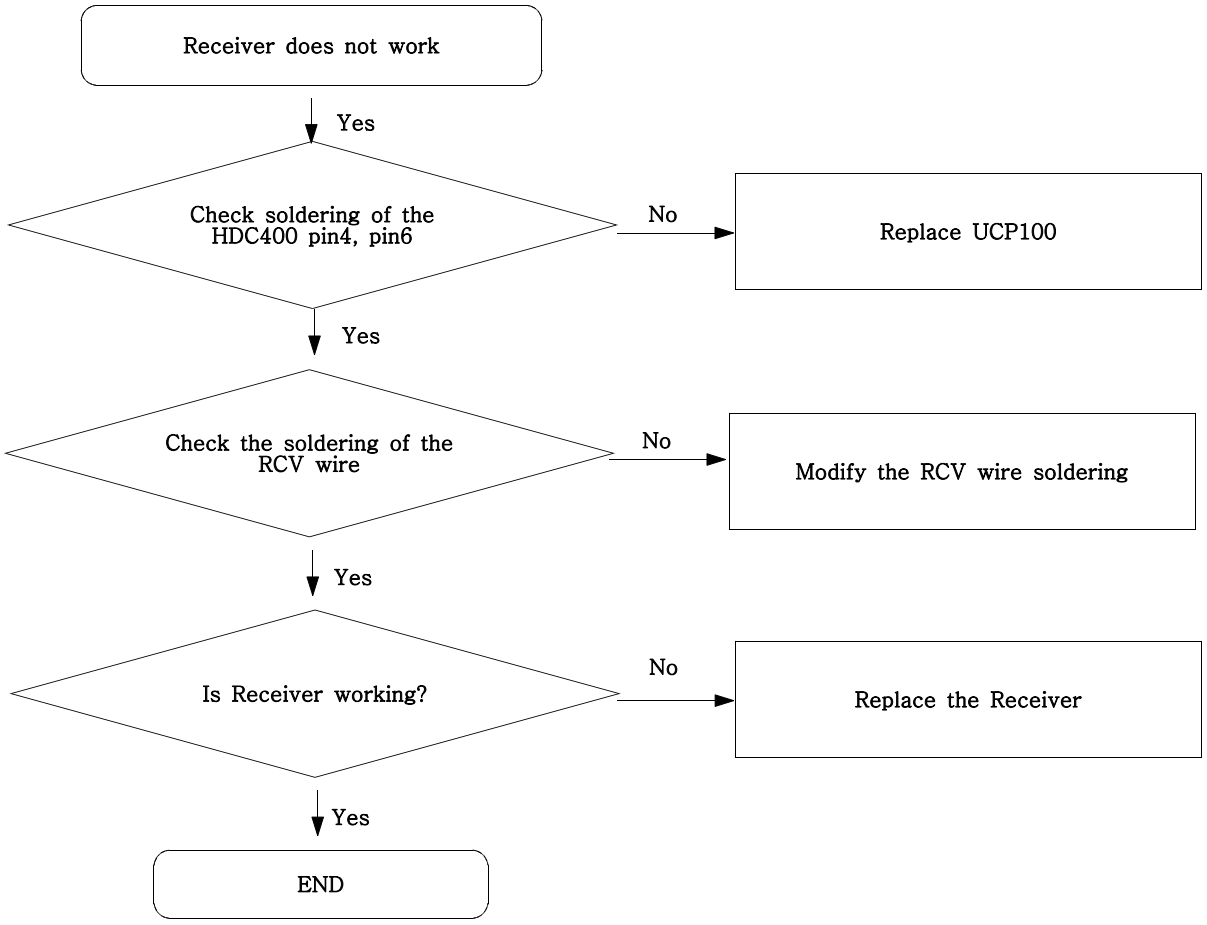
NORMALPATH

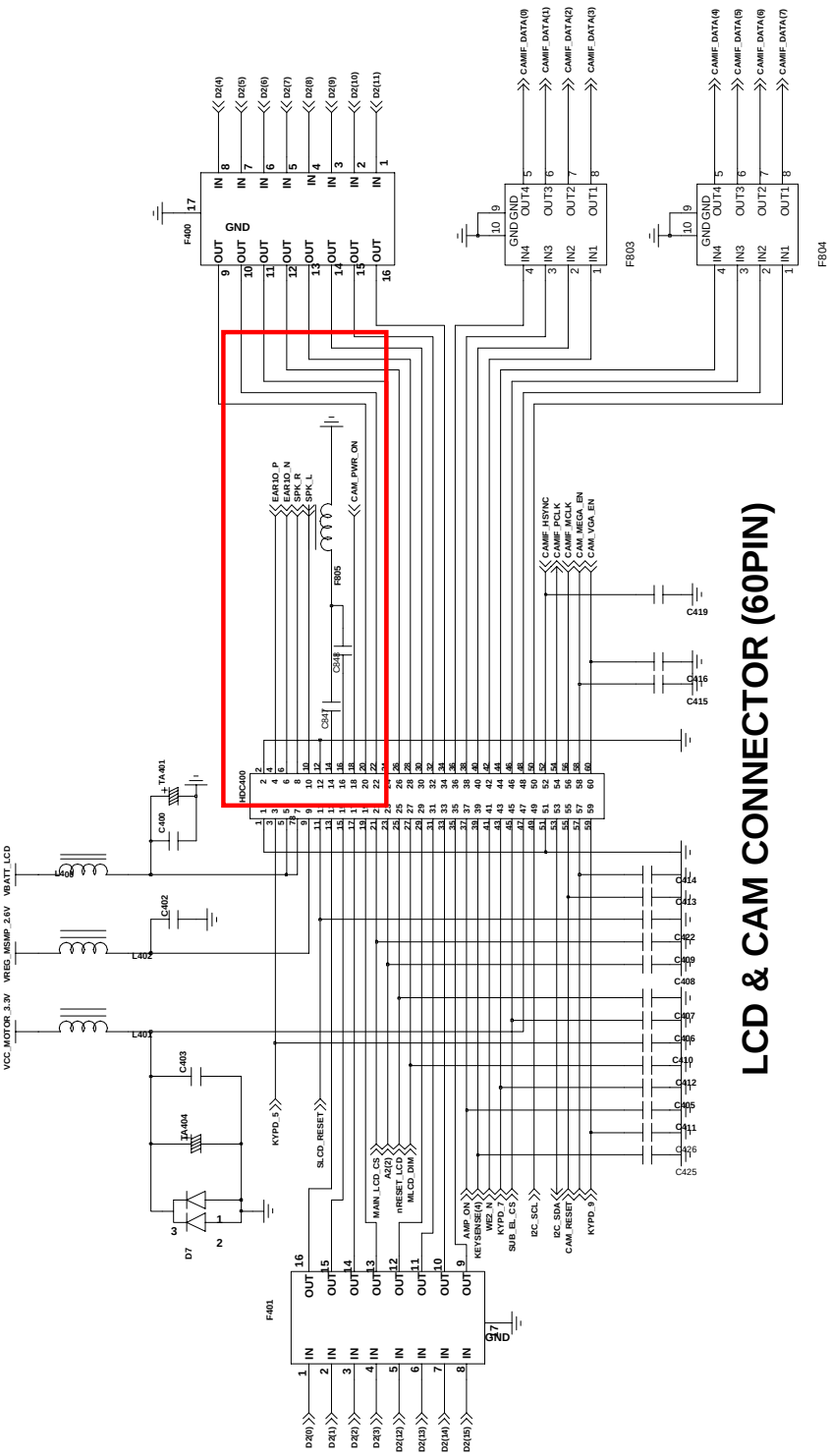


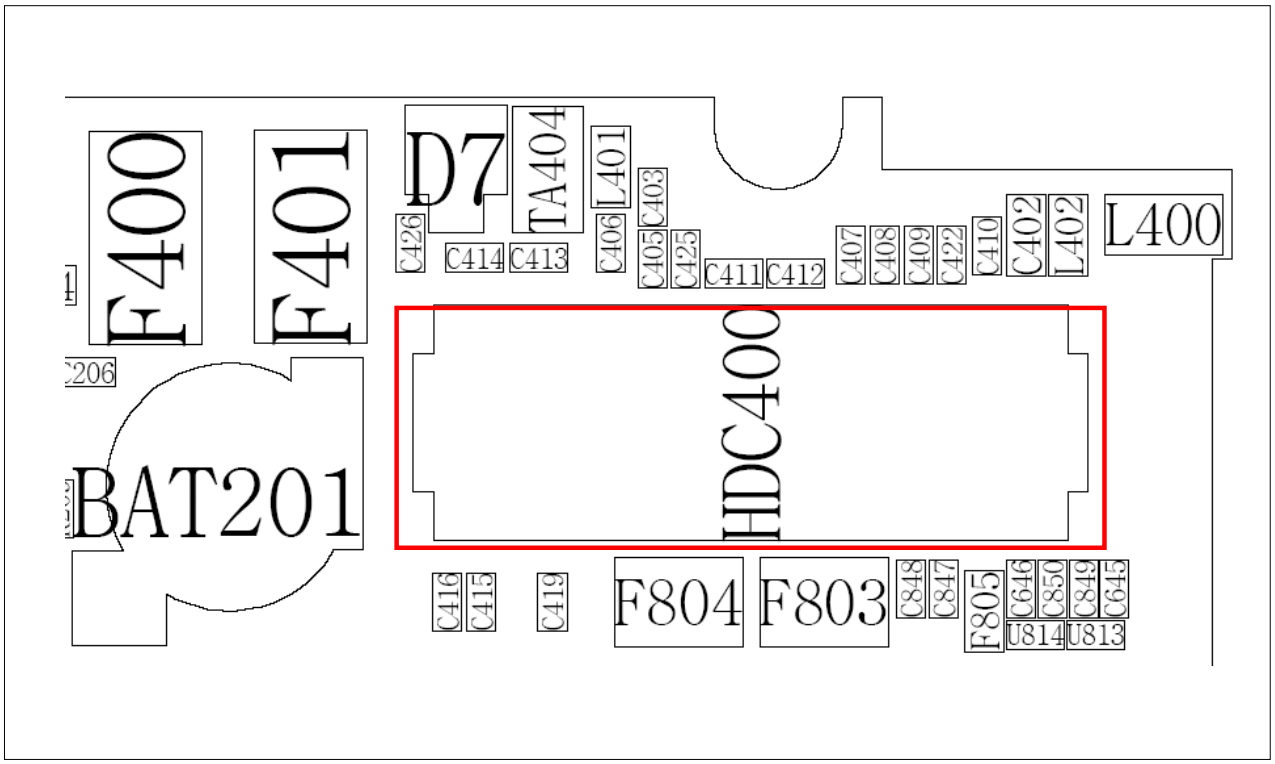
7-6. Key Data Input



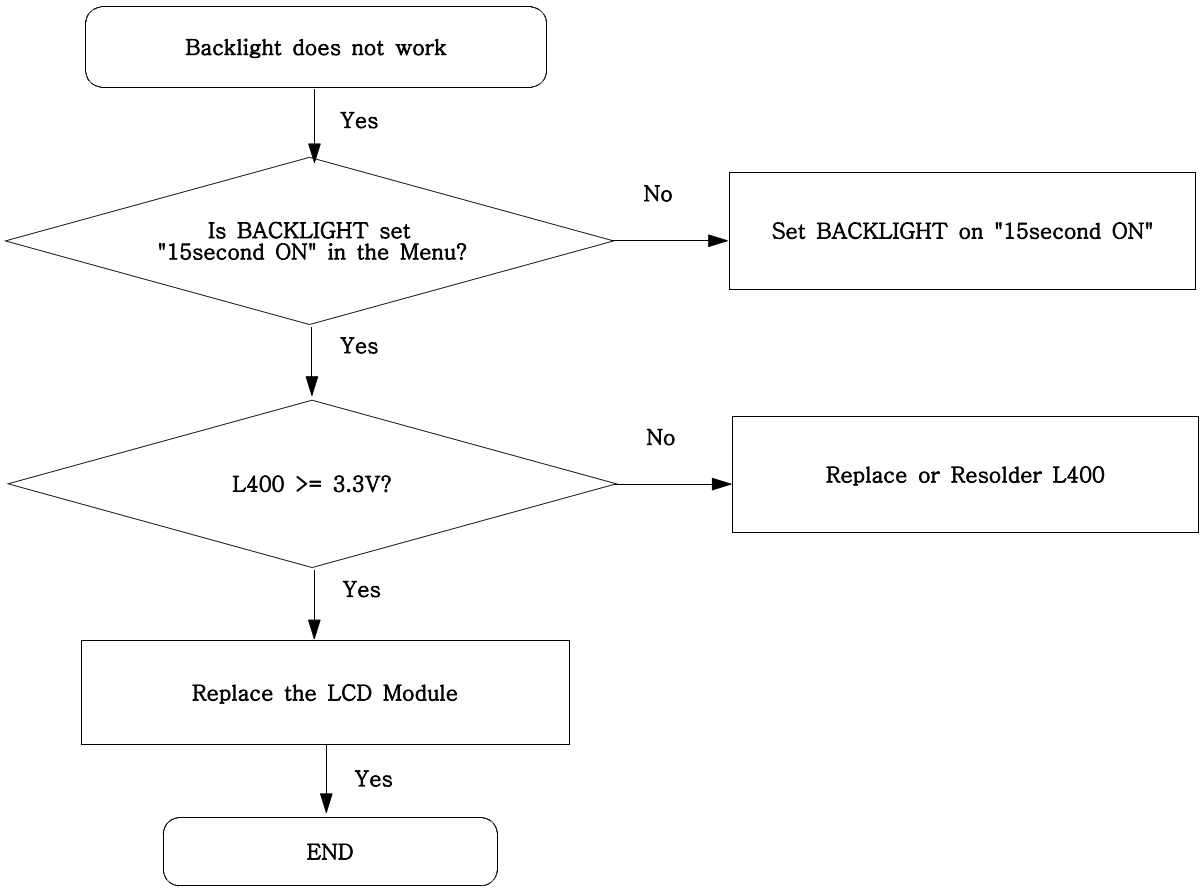
7-7. Receiver Part

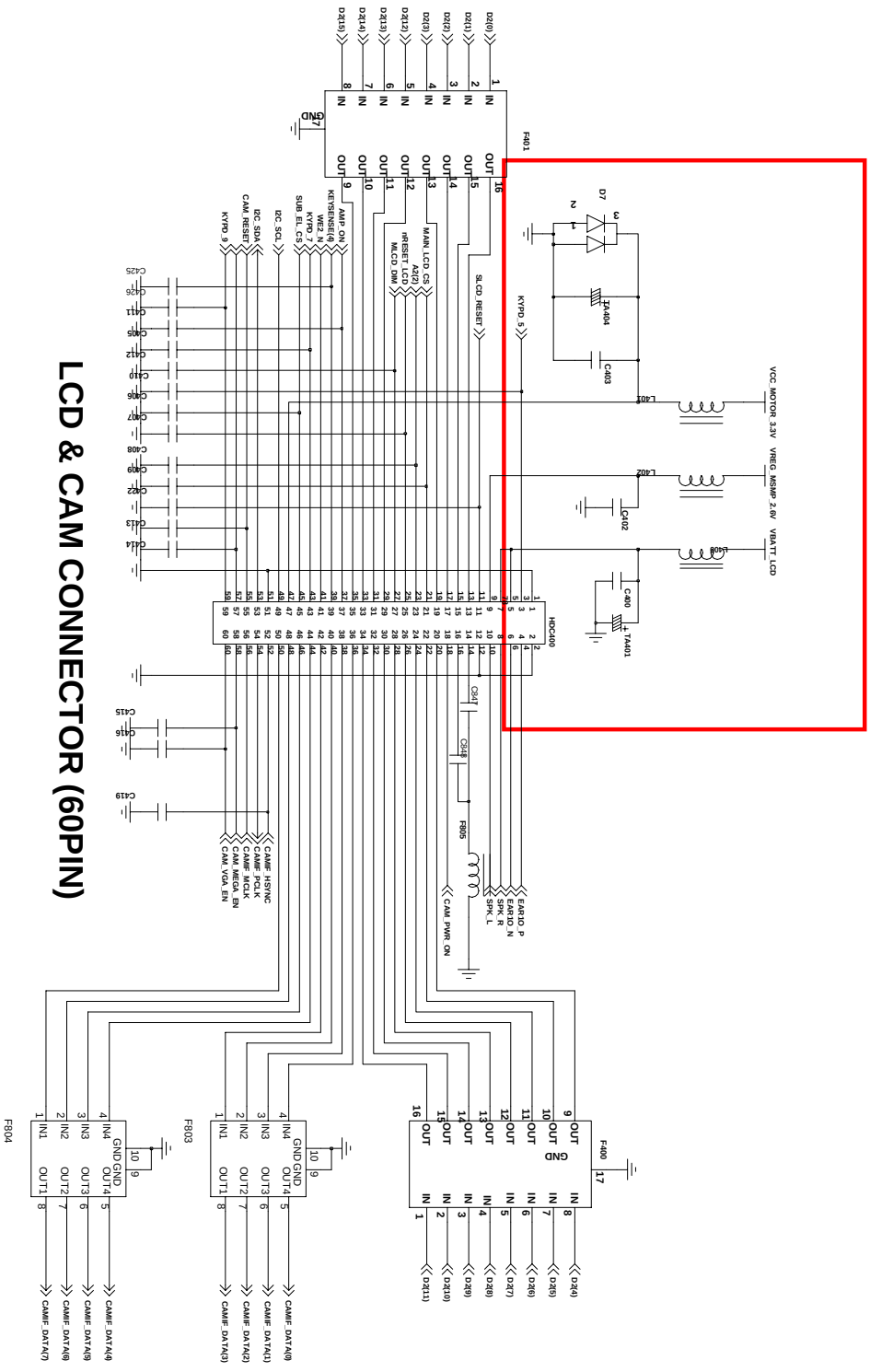


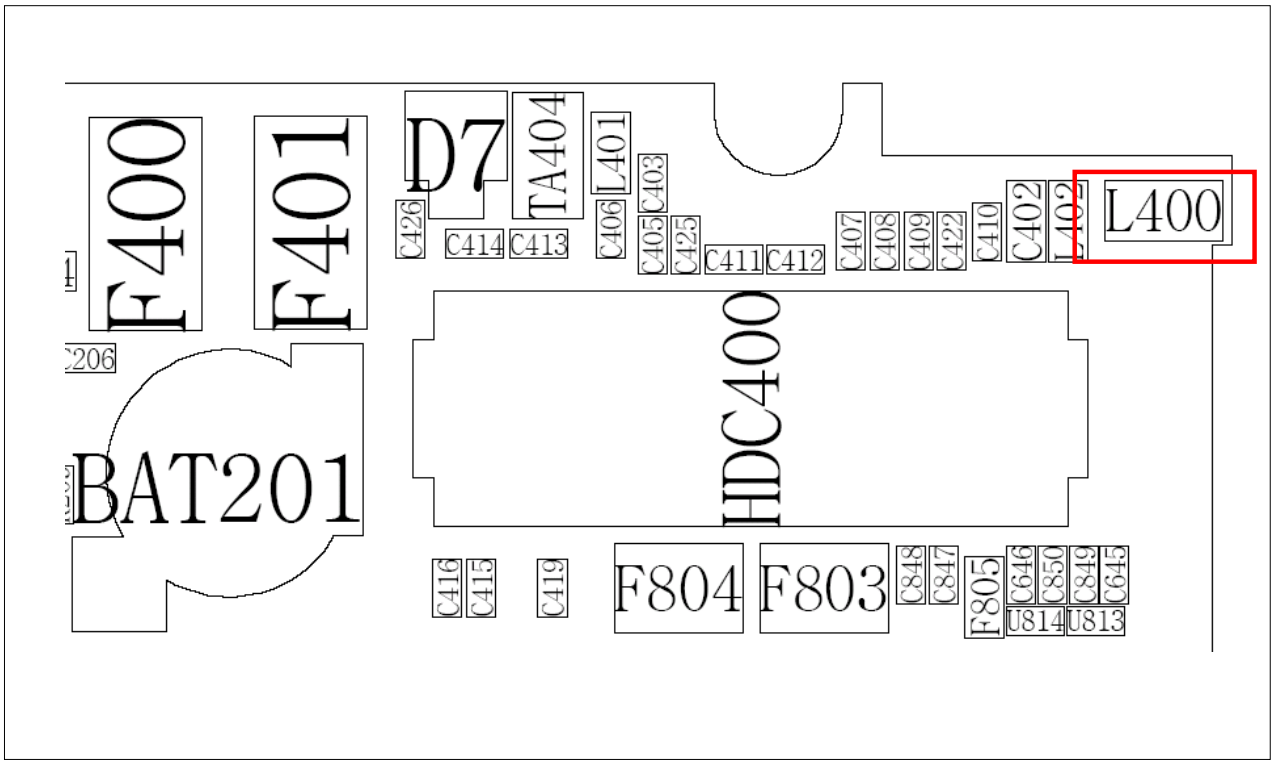




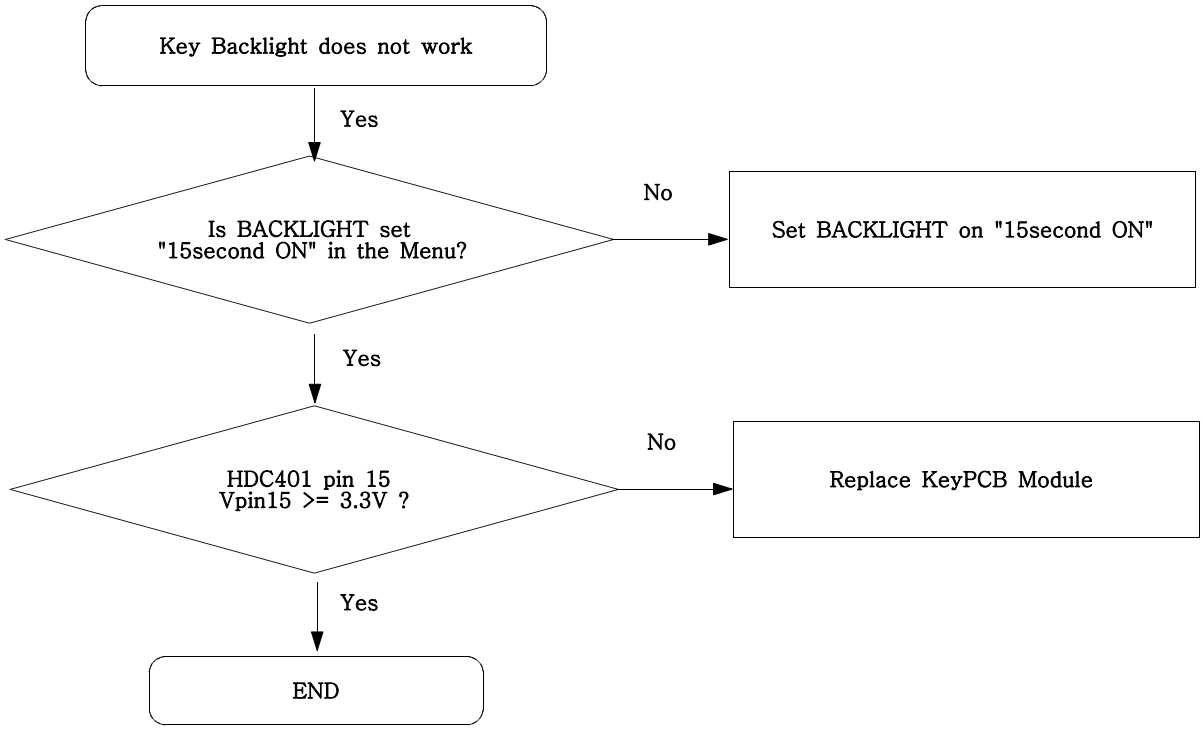
7-8. Back Light (for Color Main LCD)

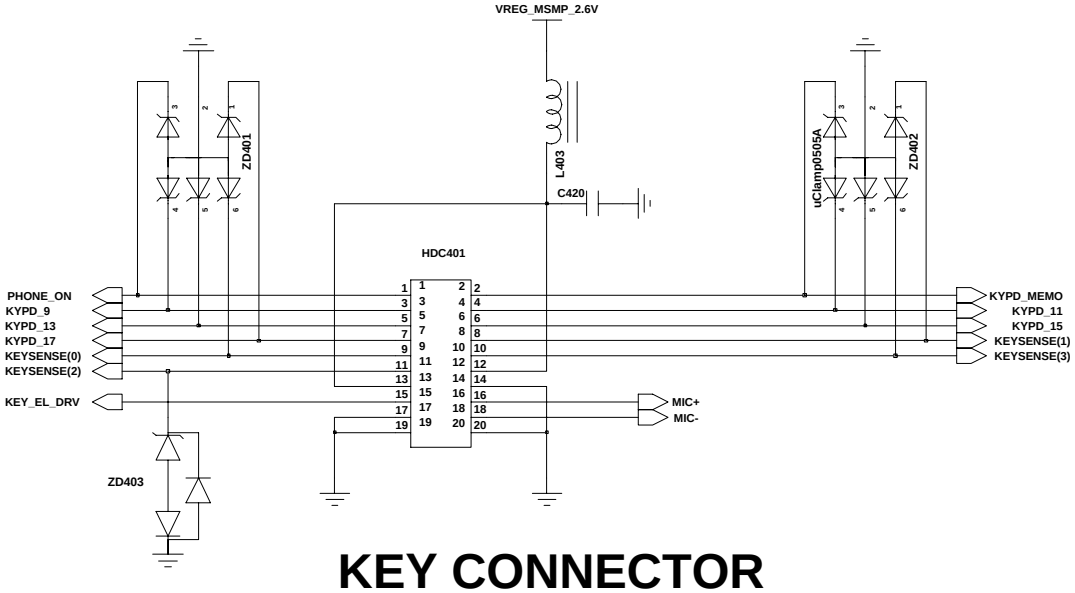




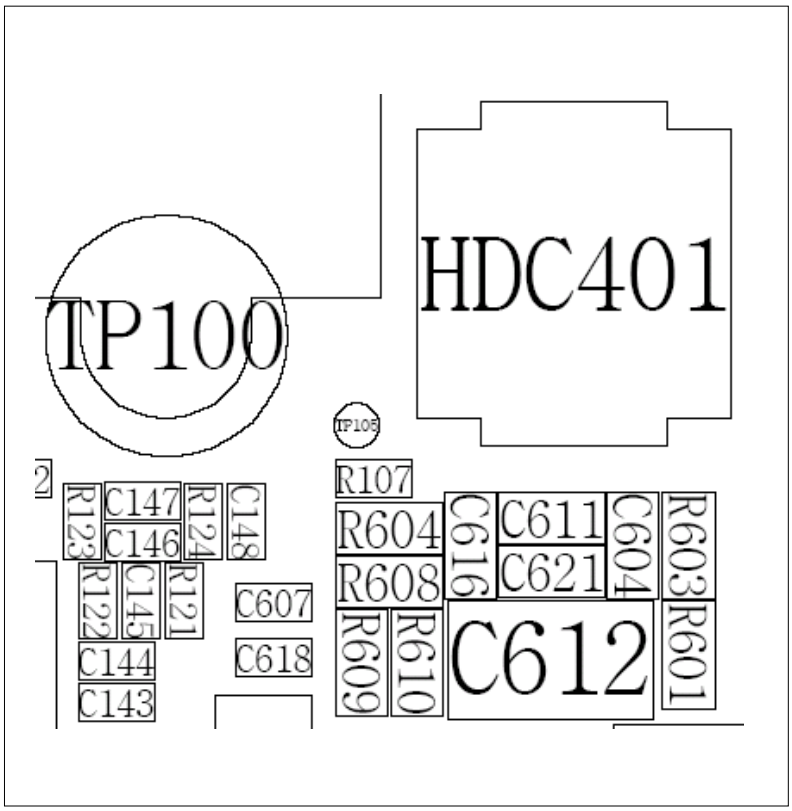


7-9. Key Back Light

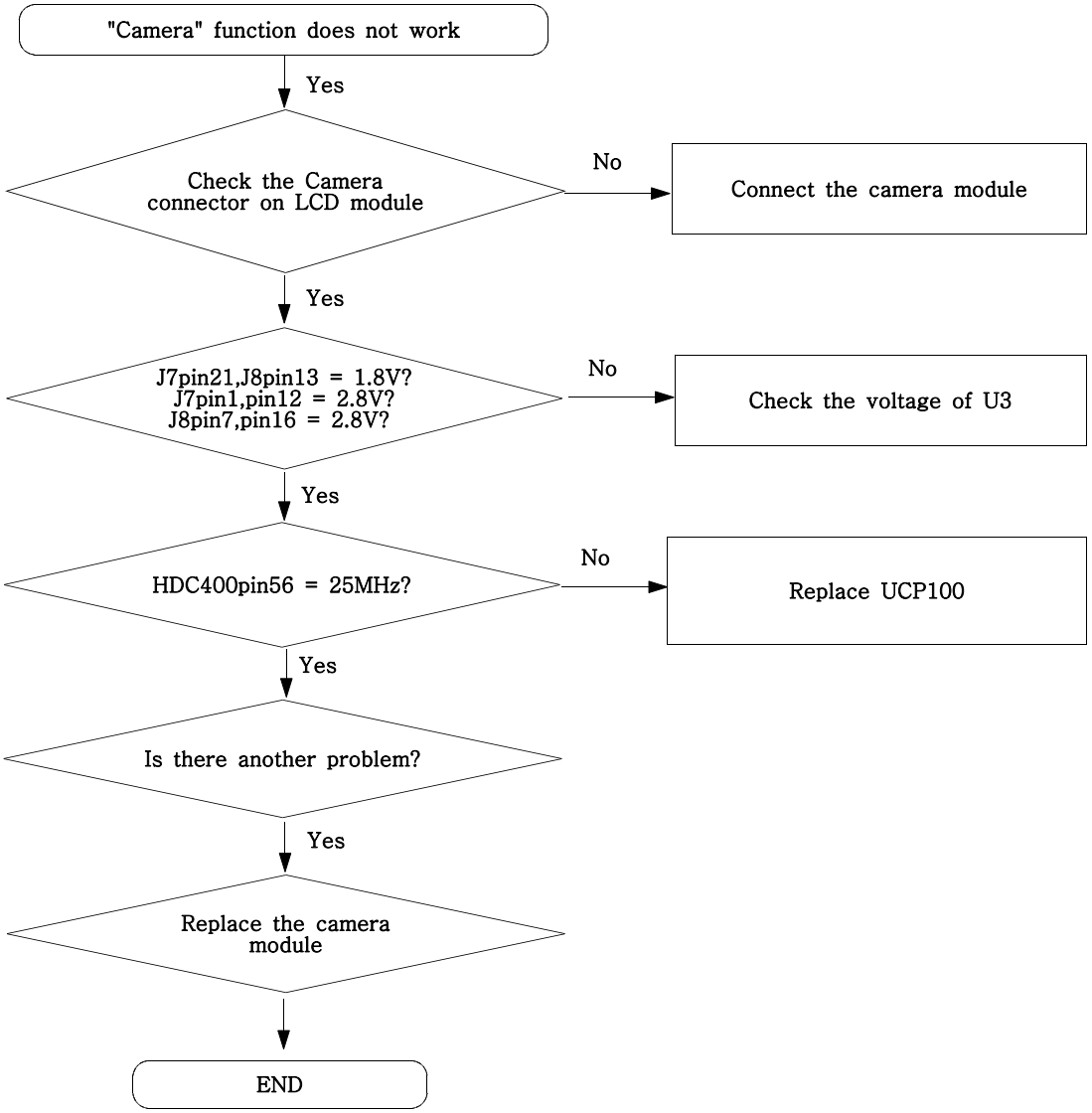


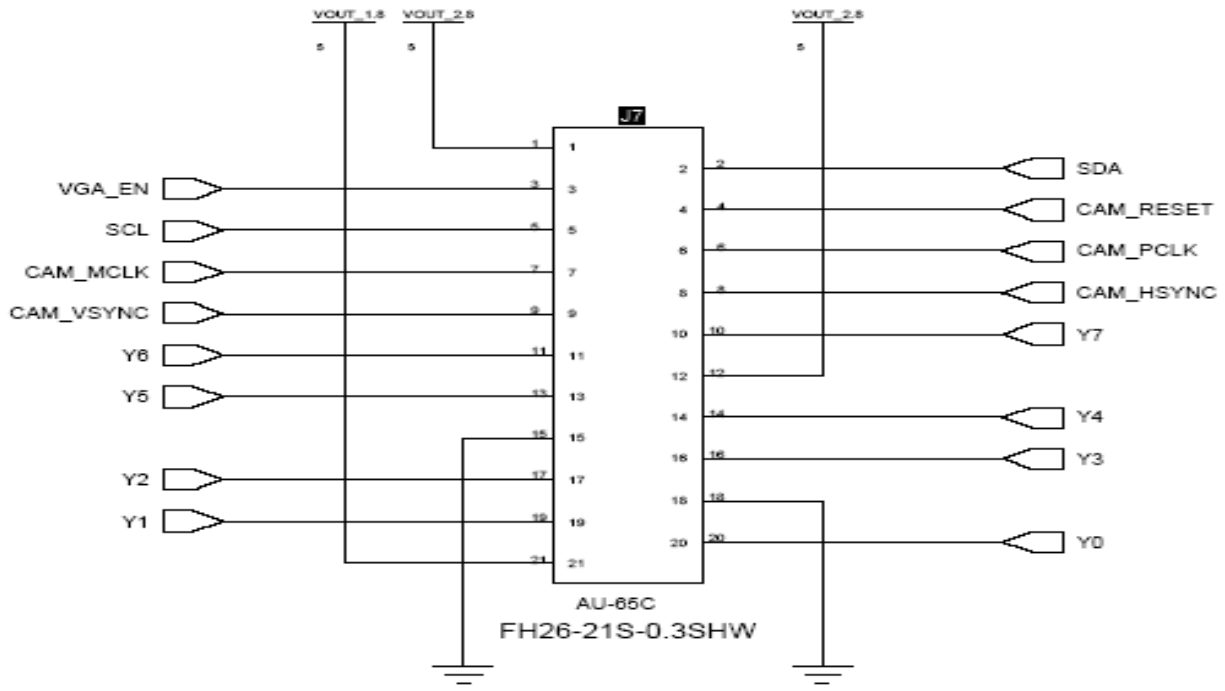


KEY CONNECTOR

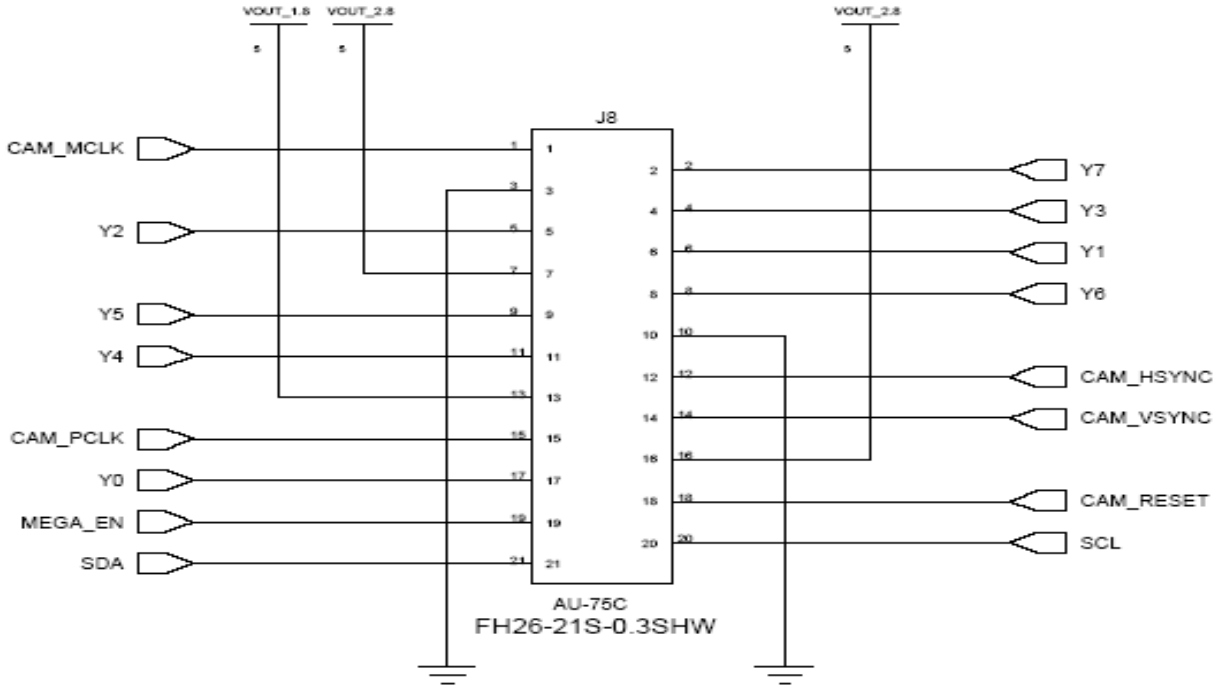


7-10. Camera part



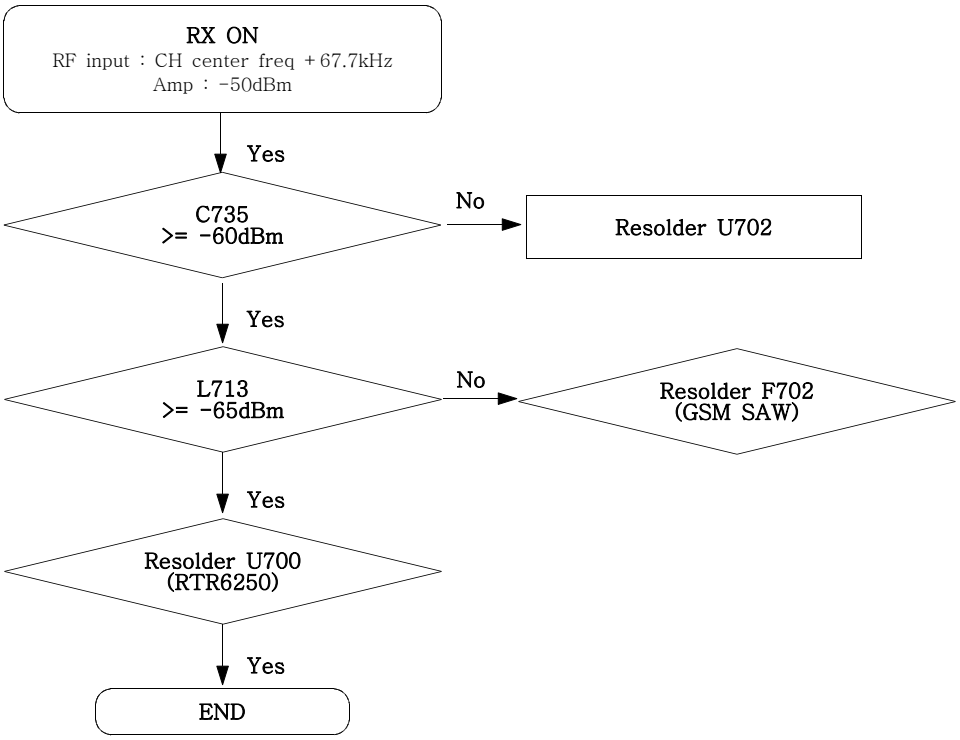


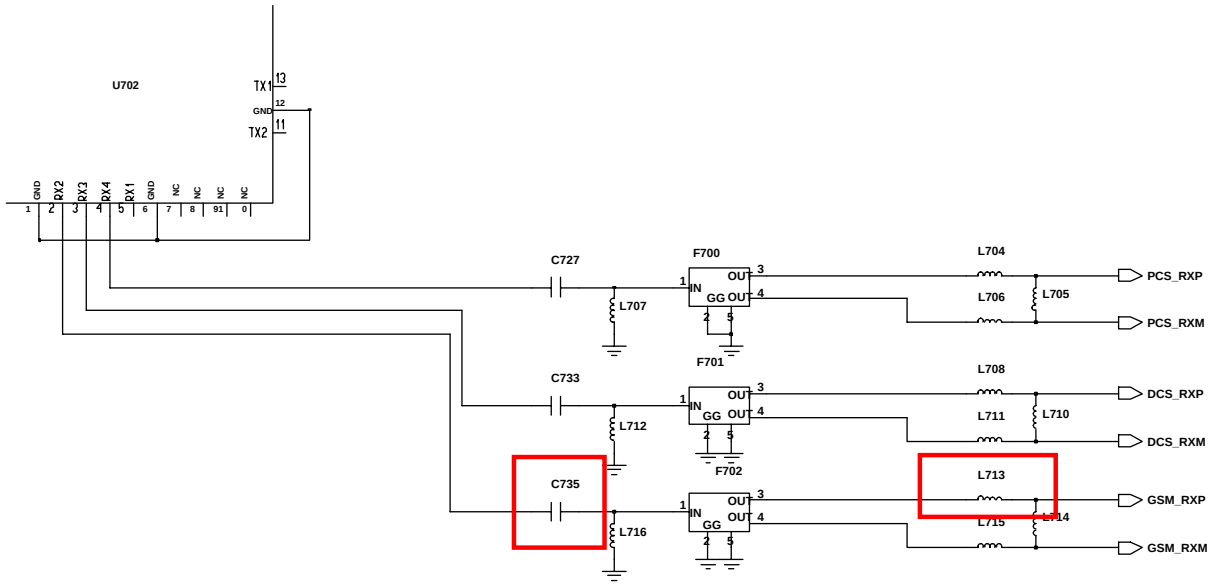
VGA CAMERA CONNECTOR

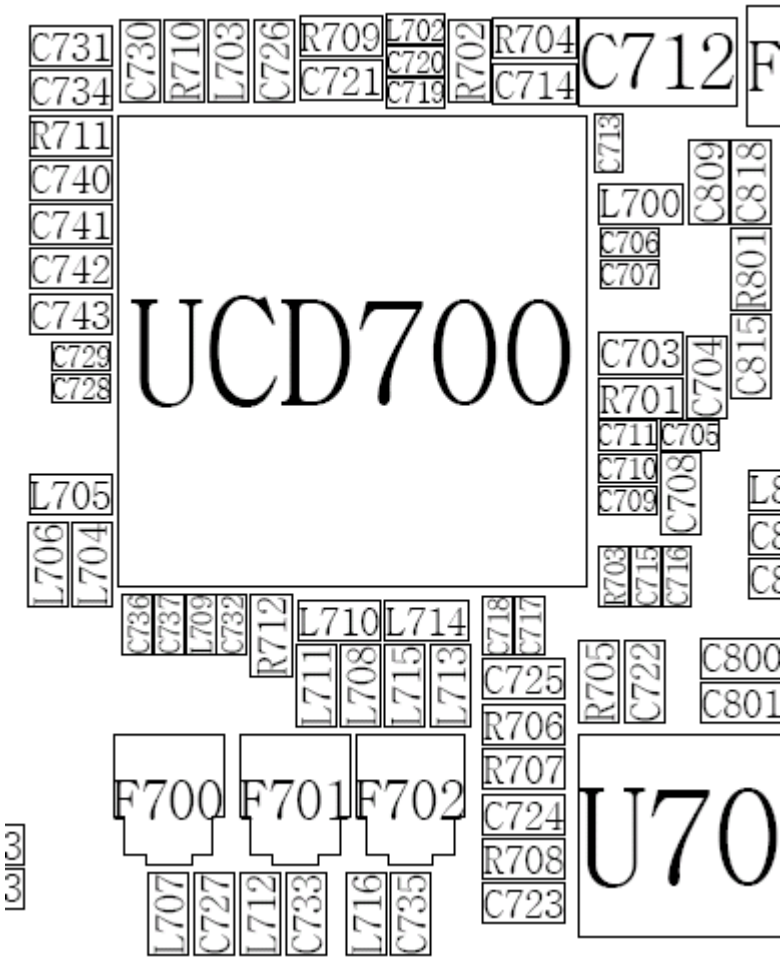


MEGA CAMERA CONNECTOR

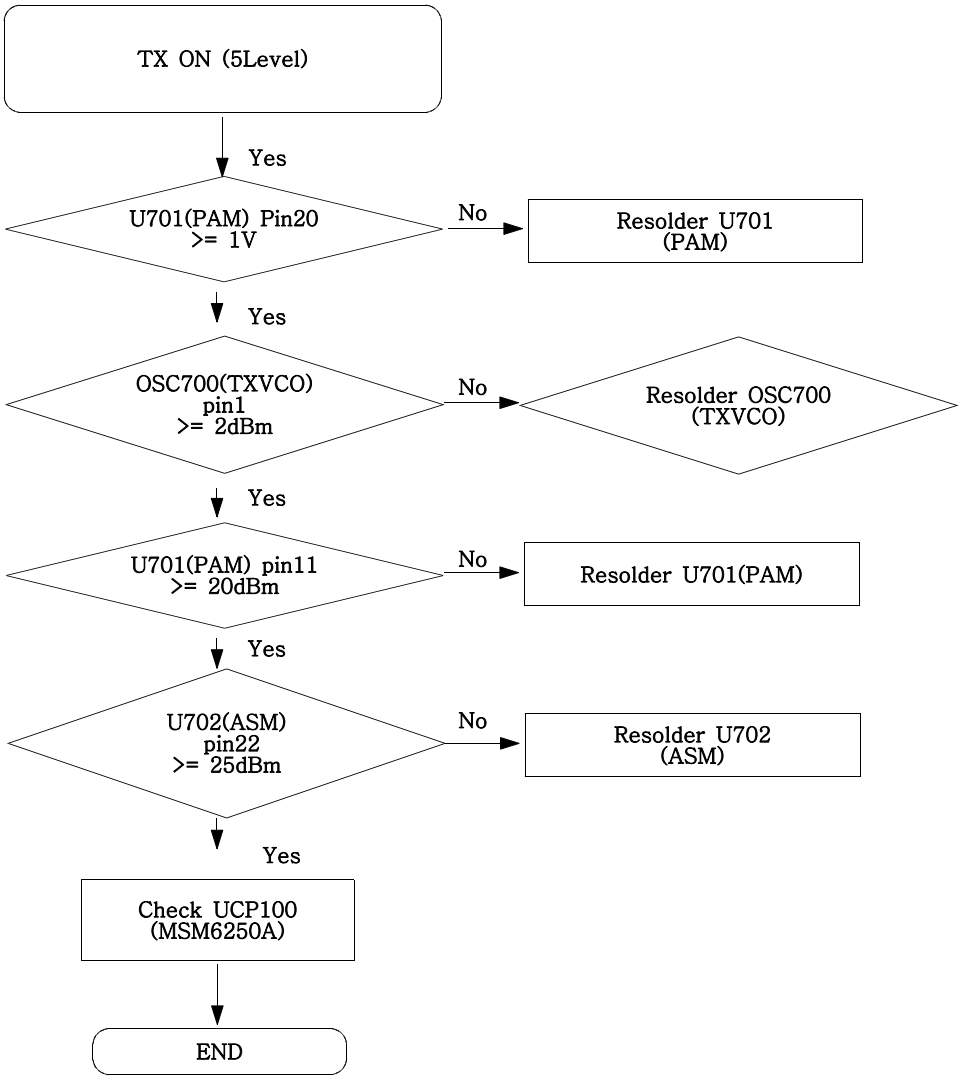
7-11. GSM Receiver



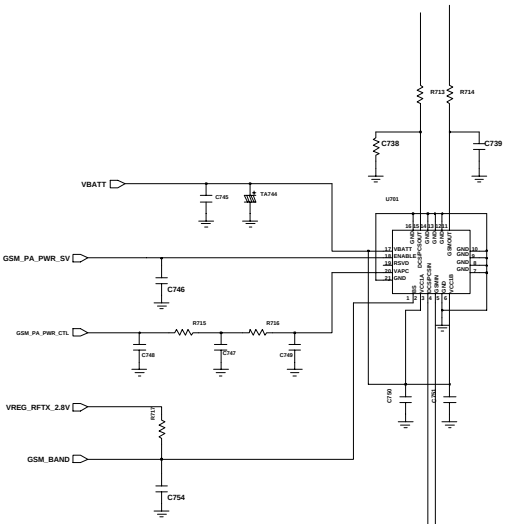




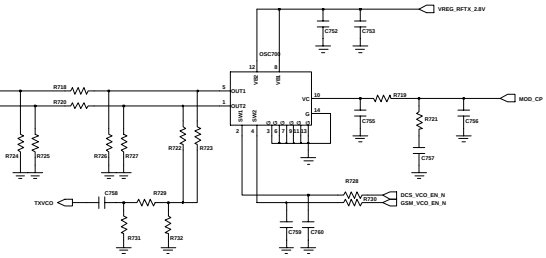
7-12. GSM Transmitter



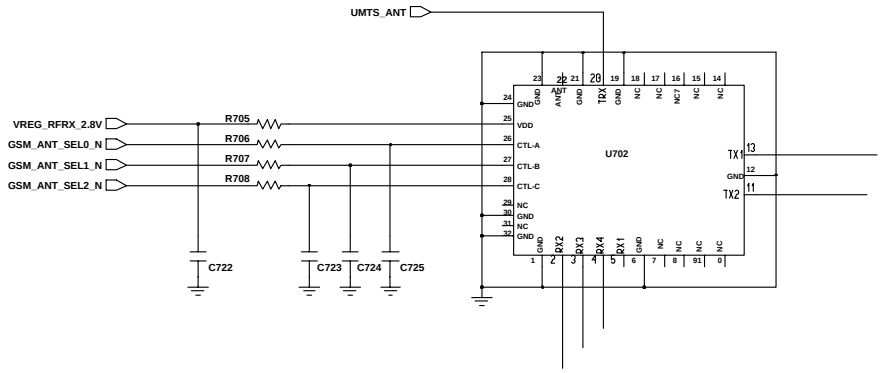
GSM_PAM

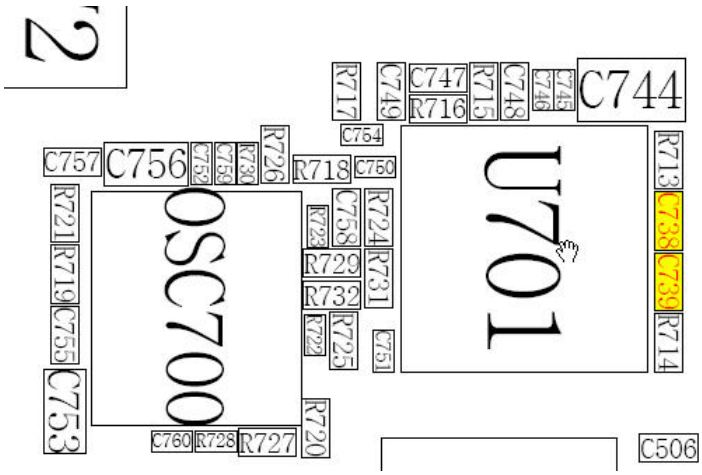


TXVCO

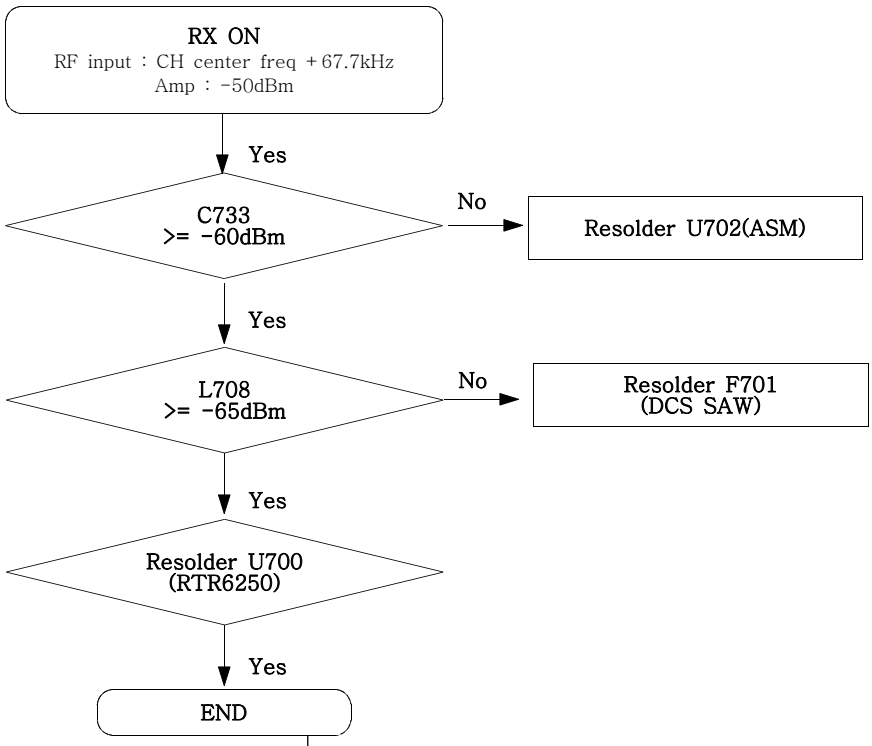


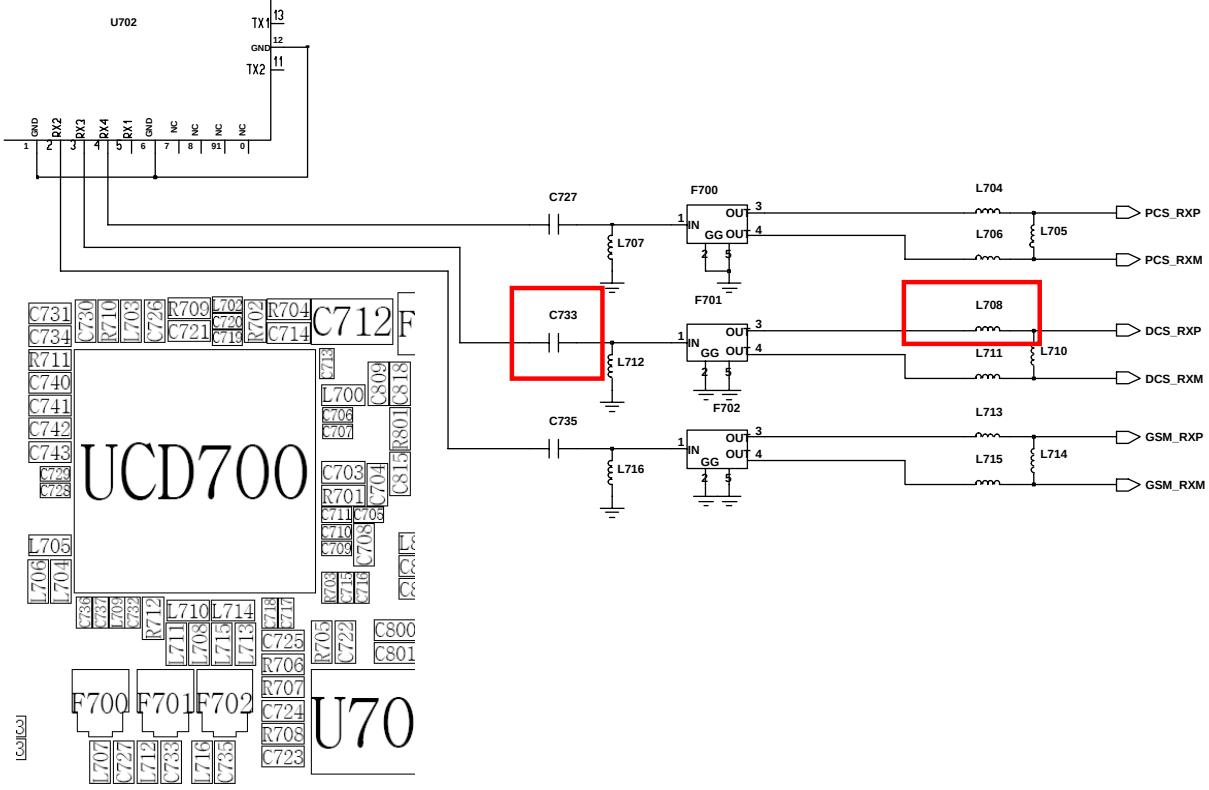
ANT_SWITCH



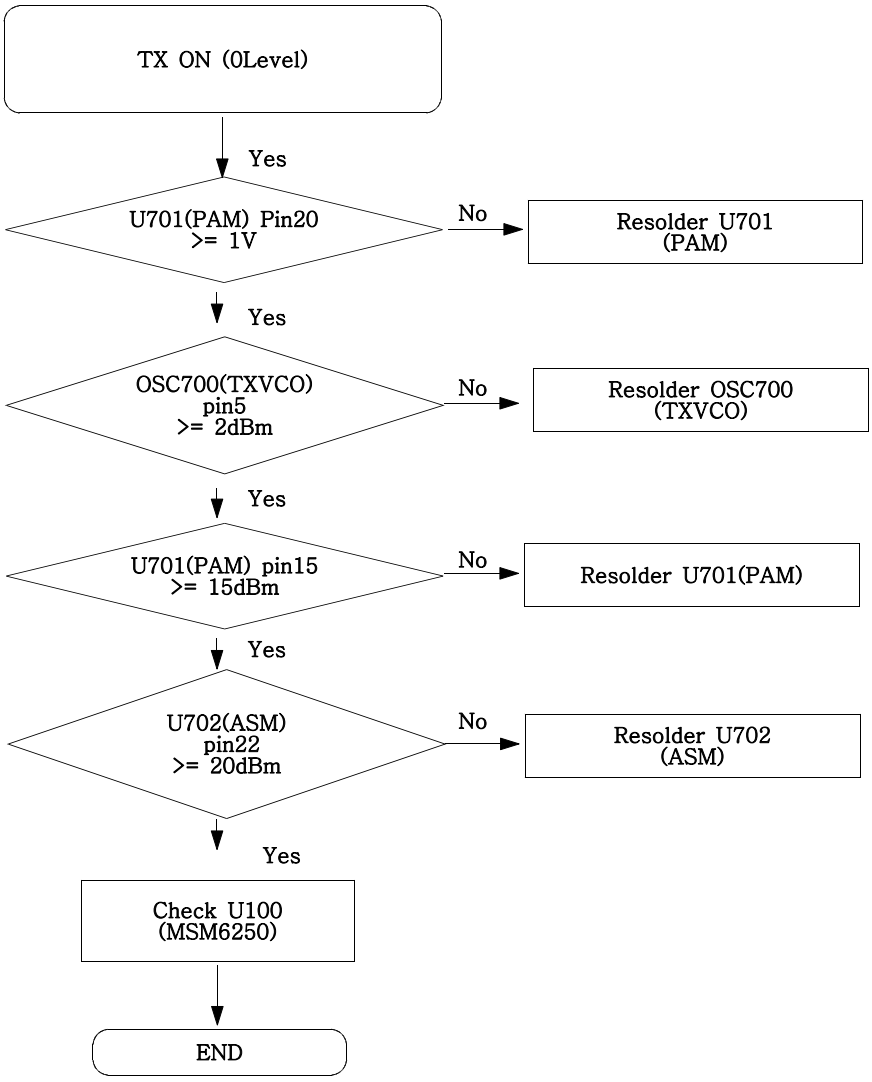


7-13. DCS Receiver





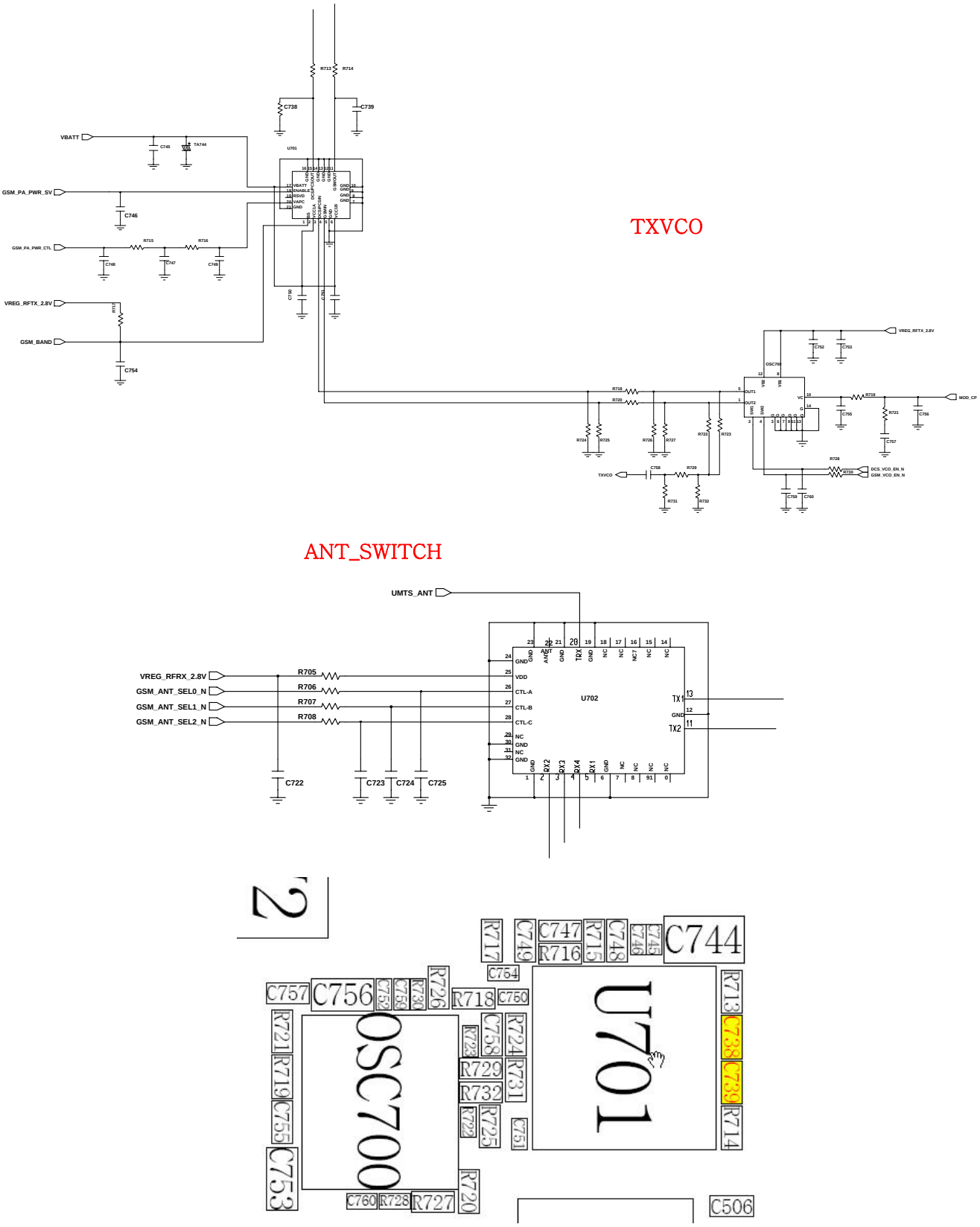
7-14. DCS Transmitter



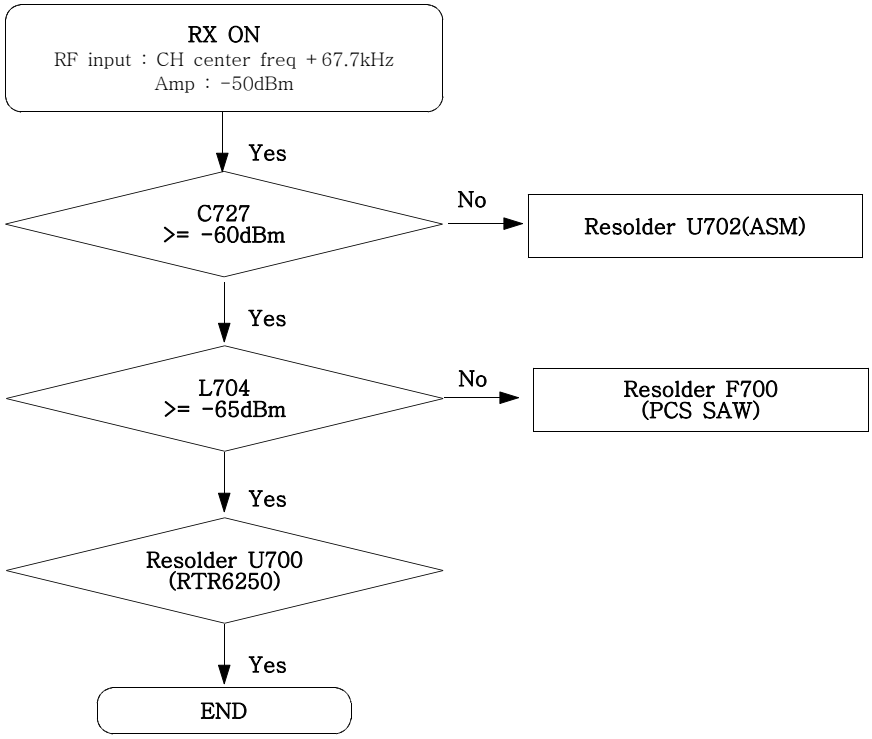
GSM_PAM

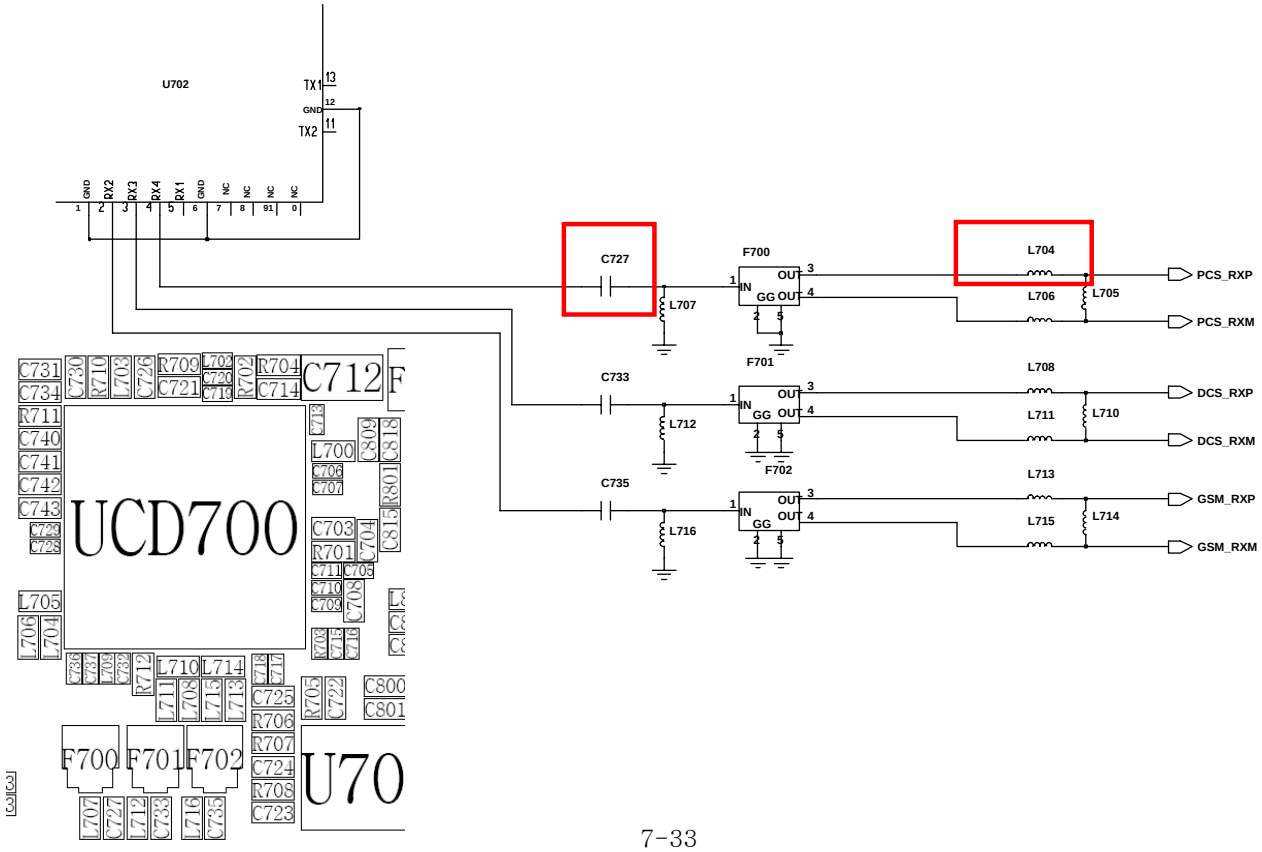
TXVCO

ANT_SWITCH

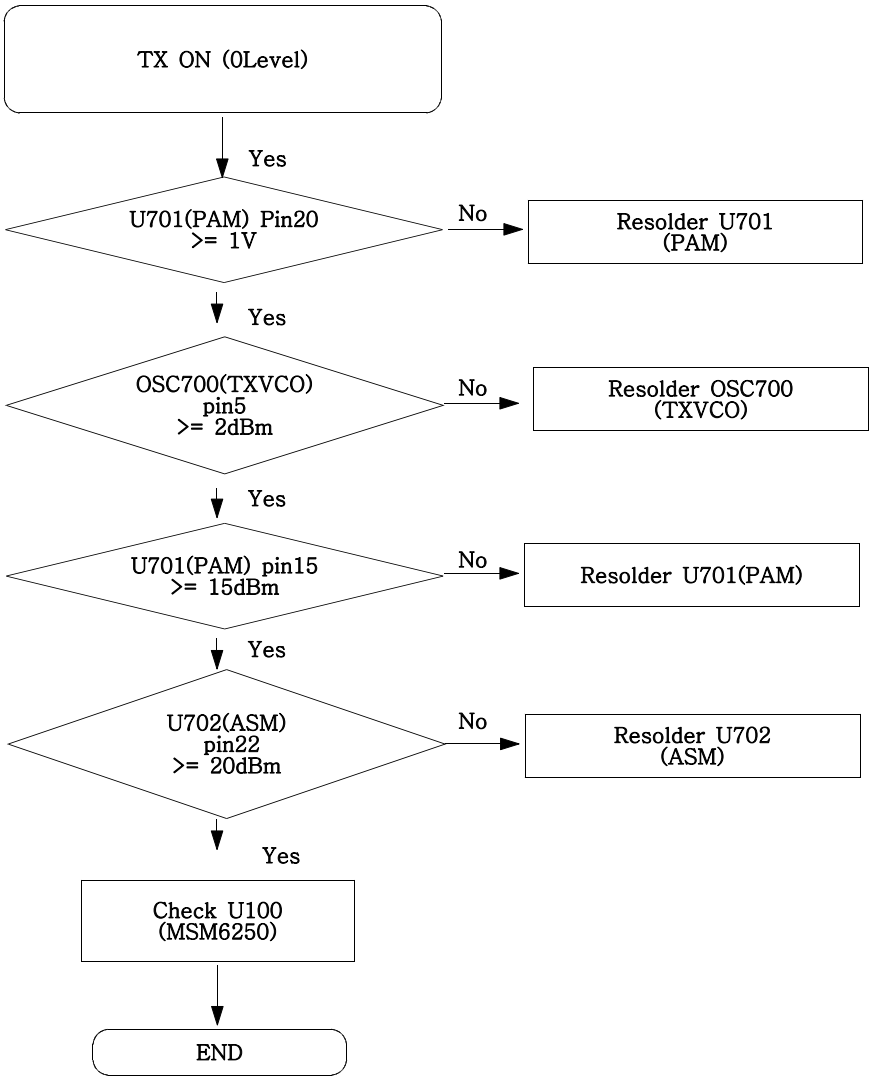


7-15. PCS Receiver

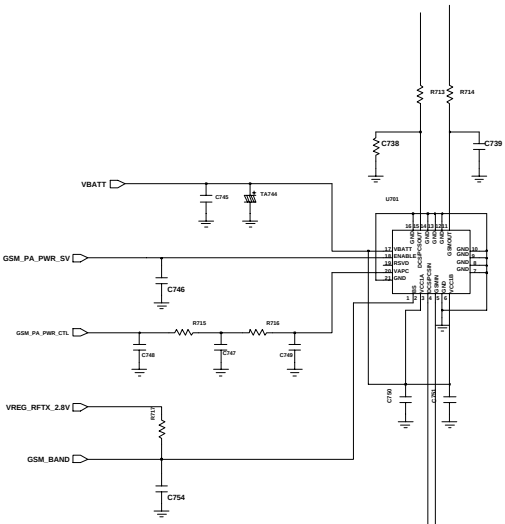




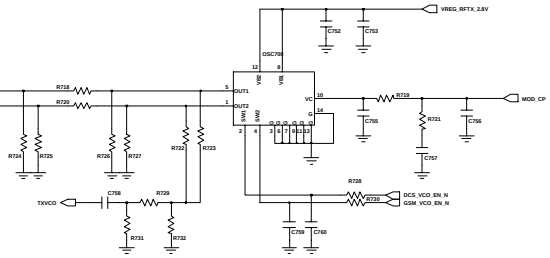
7-16. PCS Transmitter



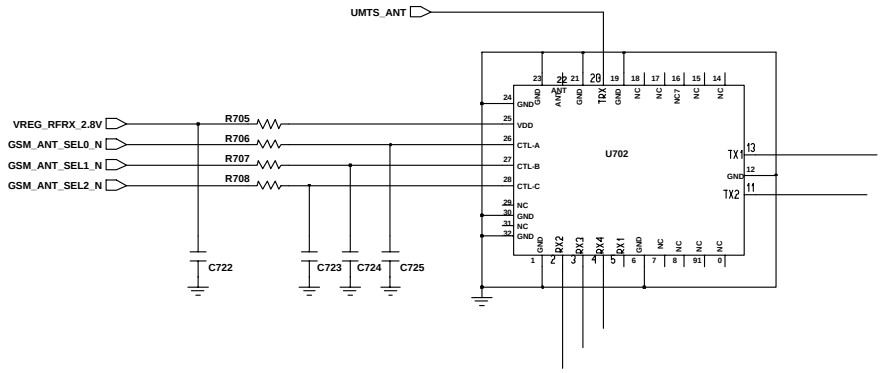
GSM_PAM

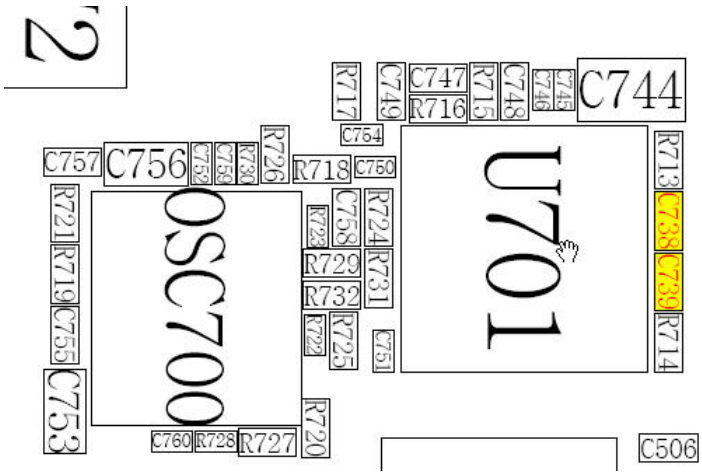


TXVCO

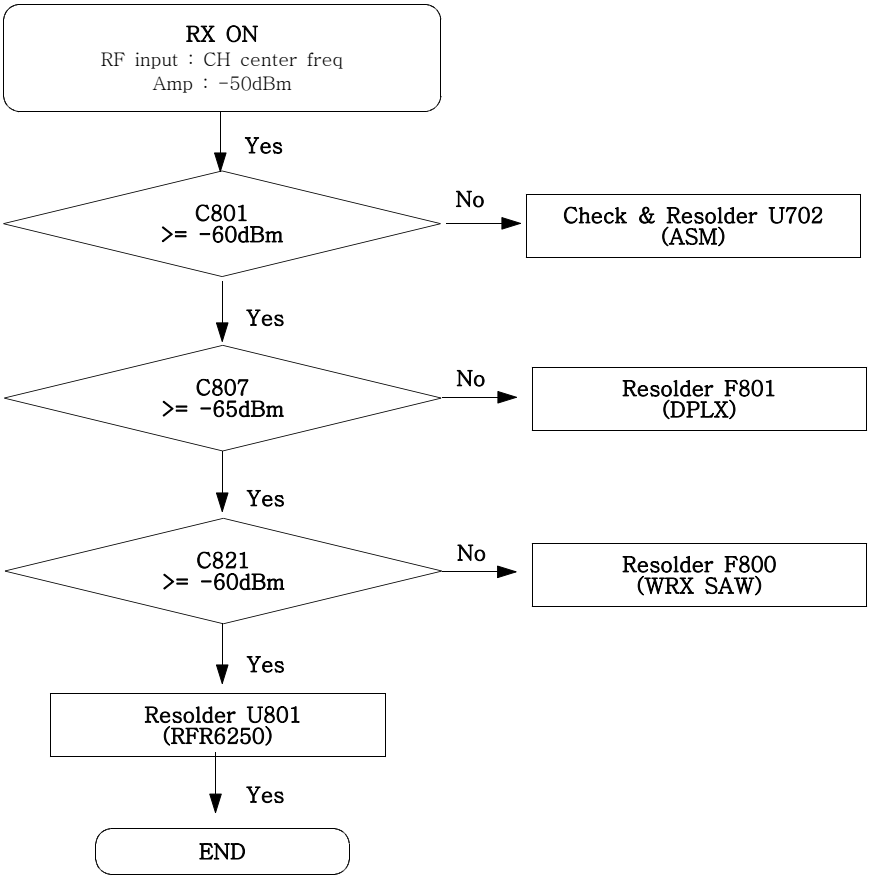


ANT_SWITCH

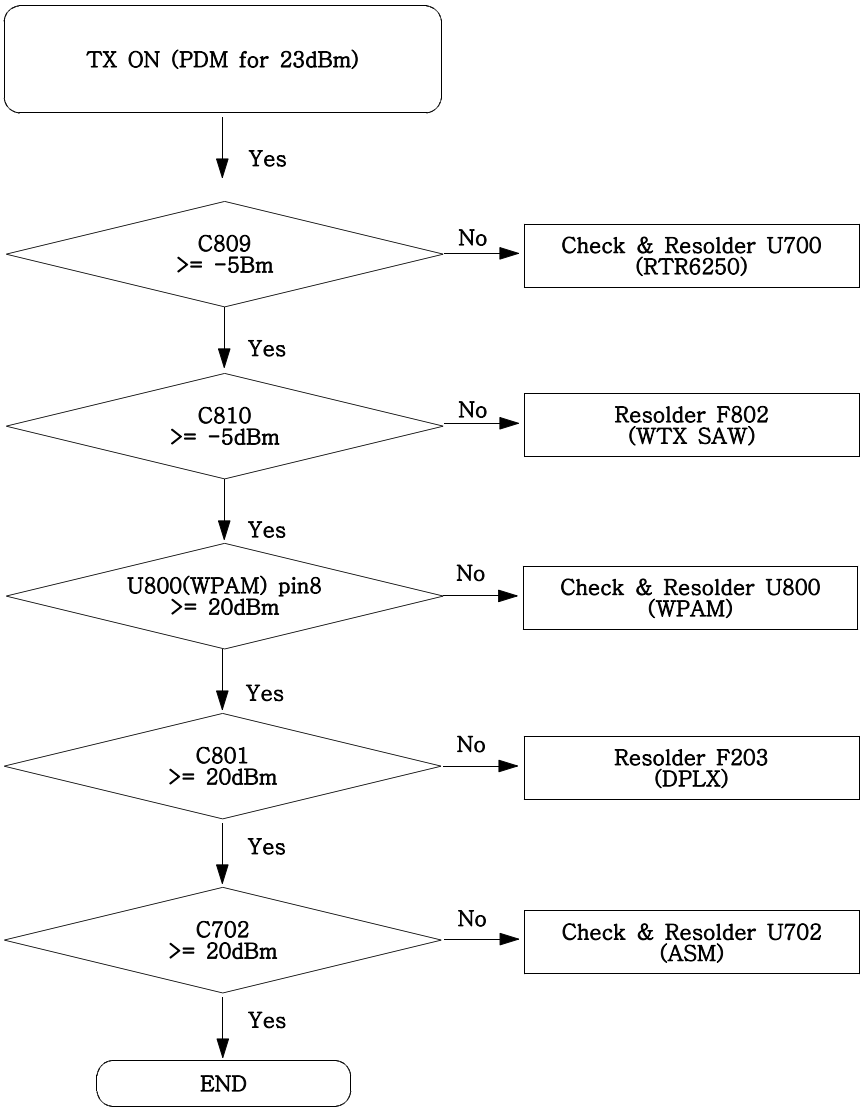




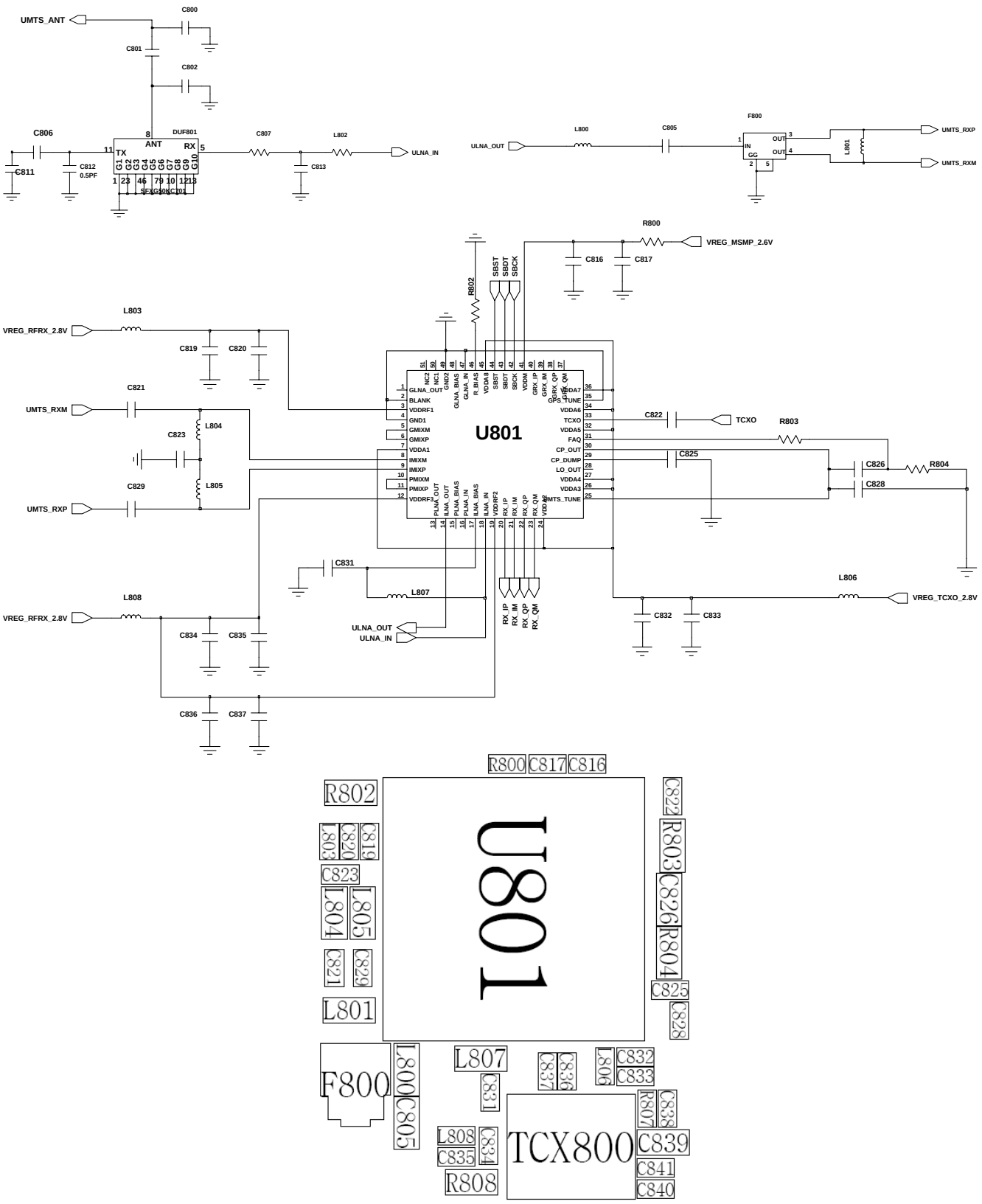
7-17. WCDMA Receiver



7-18. WCDMA Transmitter



WCDMA RX PART



WCDMA TX Part