

SAMSUNG

SAMSUNG Anycall SGH-Z500

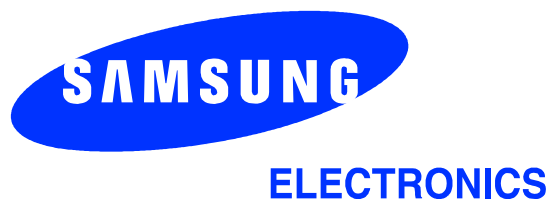
SERVICE *Manual*

SAMSUNG Anycall

CONTENTS



1. Specification
2. Circuit Description
3. Exploded Views and Parts List
4. Electrical Parts List
5. Block Diagrams
6. PCB Diagrams
7. Flow Chart of Troubleshooting



1. SGH-Z500 Specification

1. GSM General Specification

	EGSM 900	DCS1800	PCS1900	W-CDMA
Freq. Band[MHz] Uplink/Downlink	880~915 925~960	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 Slot length : 0.667ms
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

2. GSM TX power class

TX Power control level	GSM900	TX Power control level	DCS1800	TX Power control level	PCS1900
5	33±2 dBm	0	30±3 dBm	0	30±3 dBm
6	31±2 dBm	1	28±3 dBm	1	28±3 dBm
7	29±2 dBm	2	26±3 dBm	2	26±3 dBm
8	27±2 dBm	3	24±3 dBm	3	24±3 dBm
9	25±2 dBm	4	22±3 dBm	4	22±3 dBm
10	23±2 dBm	5	20±3 dBm	5	20±3 dBm
11	21±2 dBm	6	18±3 dBm	6	18±3 dBm
12	19±2 dBm	7	16±3 dBm	7	16±3 dBm
13	17±2 dBm	8	14±3 dBm	8	14±3 dBm
14	15±2 dBm	9	12±4 dBm	9	12±4 dBm
15	13±2 dBm	10	10±4 dBm	10	10±4 dBm
16	11±3 dBm	11	8±4dBm	11	8±4dBm
17	9±3dBm	12	6±4 dBm	12	6±4 dBm
18	7±3 dBm	13	4±4 dBm	13	4±4 dBm
19	5±3 dBm	14	2±5 dBm	14	2±5 dBm
		15	0±5 dBm	15	0±5 dBm

2. SGH-Z500 Circuit Description

1. SGH-Z500 RF Circuit Description

1. Antenna Switch Module (U101)

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 (F101) For filtering the frequency band between 925 ~ 960 MHz.
- DCS Rx FILTER (U103) For filtering the frequency band 1805 and 1880 MHz.
- DCS Rx FILTER (F102) For filtering the frequency band 1930 and 1990 MHz.
- WCDMA Rx FILTER (F201) For filtering the frequency band 2110 and 2170 MHz.
- WCDMA Tx FILTER (F202) For filtering the frequency band 1920 and 1980 MHz.

3. VCTCXO (OSC201)

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

4. Duplexer (F203)

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

5. UMTS PAM (U201)

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 (U105)

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 (U104)

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 (OSC202)

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. RFL6200 (U202)

The RFL6200 includes an LNA circuit optimized for UMTS-2100 operation. The LNA is separated from all other receive functions contained within the RFR6200 receiver IC to improve mixer LO to RF isolation ? a critical parameter in the Zero-IF architecture.

10. RFR6200 (U203)

The RFR6200 provides the Zero-IF receiver signal path, from RF to analog baseband, for UMTS-2100 applications. The RFR6200 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.

11. RTR6250 (U102)

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:

2. Baseband Circuit description of SGH-Z500

1. PM6650

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 IC.

1.2. Keypad Backlight

The Keypad backlight driver output is at pin 23 (KYPD_BACKLIGHT_DRV) and is designed to drive parallel connected LEDs directly. 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 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(OLED color 65K LCD). Chip select signals in the U302, MAIN_LCD_CS can enable main LCD and SUB_LCD_CS can enable small LCD. CAM_PWR_ON signal enables white LED of main LCD. MAIN_LCD_RESET signal initiates the reset process of the main LCD. SUB_LCD_RESET signal initiates the Reset process of the small LCD.

16-bit data lines(D2(0)~D(15)) transfers data and commands to LCD. Data and commands use "RS" signal.

If this signal is high, Inputs to LCD are commands. If it is low, Inputs to LCD are data. The signal which informs the input or output state to LCD, is required. But this system is not necessary this signal.

Power signals for LCD are "VBATT_LCD". "SPKP_RCVP" and "SPKP_RCVN" from U603 are used for audio speaker. And "MOTOR_EN" from U302 enables the motor.

2-2. Key

This is consisted of key interface pins among U302, KEYSENSE_N(0:4). These signals compose the matrix. Result of matrix informs the key status to key interface in the U302. Power on/off key is seperated from the matrix. The key LED use the "VBATT" supply voltage. "KEY_LED" signal enables LEDs with current control. "HALL_SW" informs the status of folder (open or closed) to the. This uses the hall effect IC, A3212ELH.

2-3. EMI ESD Filter

This system uses the EMI ESD filter, GMF05LC to protect noise from IF CONNECTOR part.

2-4. IF connector

It is 24-pin connector. They are designed to use VBATT, CF, UART1_TX, UART1_RX, UART1_RFR, UART1_CTS, JIG_ON, RTCK, TCK, TDI, TDO, TMS and GND. They connected to power supply IC, microprocessor and signal processor IC.

3. Audio

EAR1OP and EAR1ON from U302 are connected to the main speaker. AUXOP and AUXON are connected to the Digital AMP. MIC1P and MIC1N are connected to the main MIC. And MIC2P and MIC2N 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

The signals in the MSM6250 enable two memories. They use only one volt supply voltage, VDD_LP from the PM6650. This system uses SEC's memory, KBE00F005M-F411. It is consisted of 1G 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]. ROM_CS and RAM_CS signals is chip select.

6. Camera

The camera module consists of Mega pixel and VGA pixel. The Mega camera is a highly integrated CMOS color image sensor implemented by Hynix COMS sensor process realizing high sensitivity and wide dynamic range.

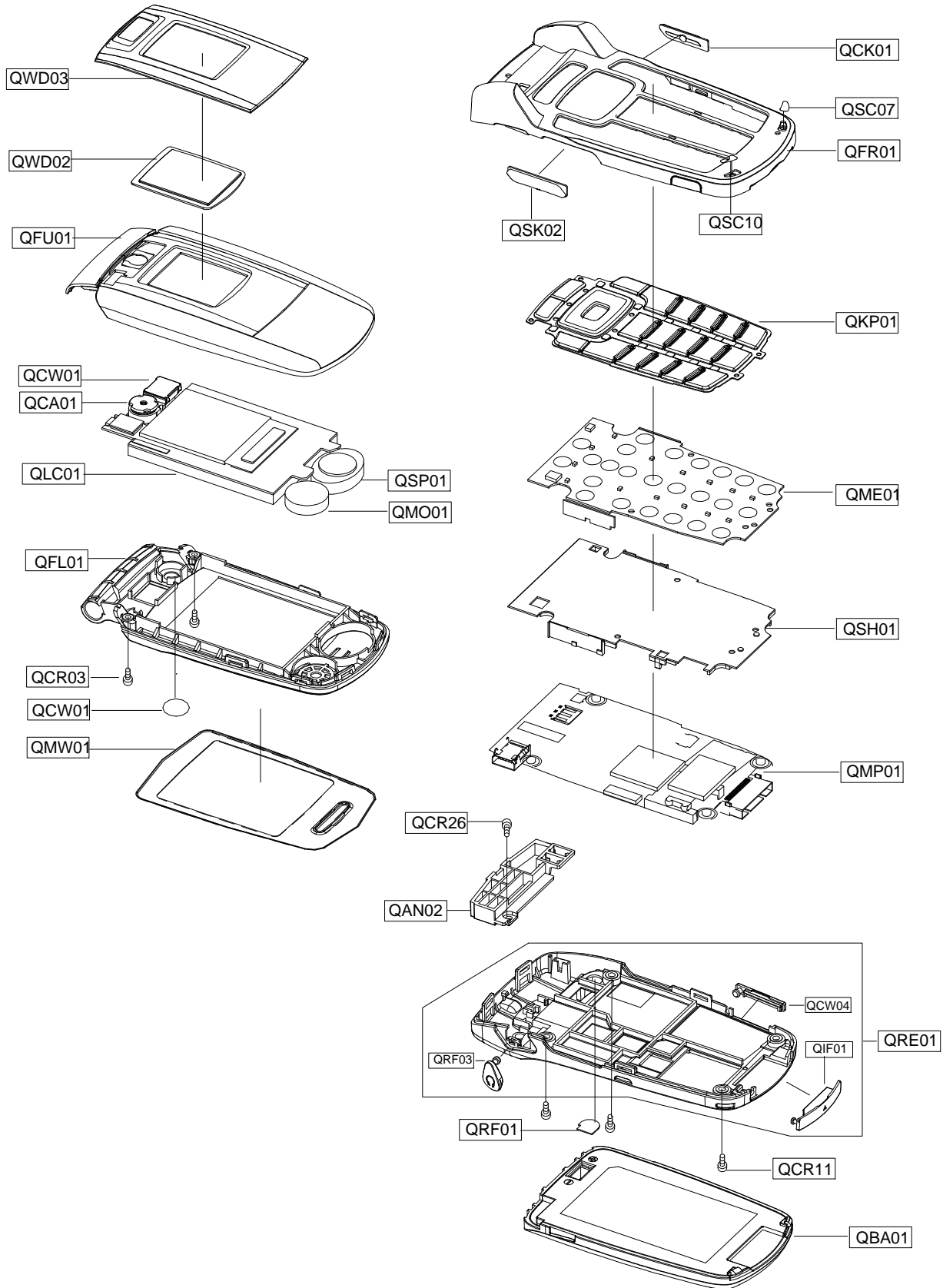
Total pixel array size is 1184H x 914V, and 1170H x 880V pixels are active. The VGA camera is a highly integrated CMOS color image sensor implemented by Hynix COMS sensor process realizing high sensitivity and wide dynamic range. Total pixel array size is 656H x 492V, and 656H x 488V pixels are active.

7. Irda

This system uses IRDA module, HSDL_3208, Agilent's. This has signals, "IRA_DOWN"(enagle signal), "RXD0"(Input data) and "TXD0"(output data). These signals are connected to U302(MSN6200). It uses two power signals. "VDD_LP" is used for circuit and "VBATT" is used for LED.

3. SGH-Z500 Exploded View and Parts List

1. Cellular phone Exploded View

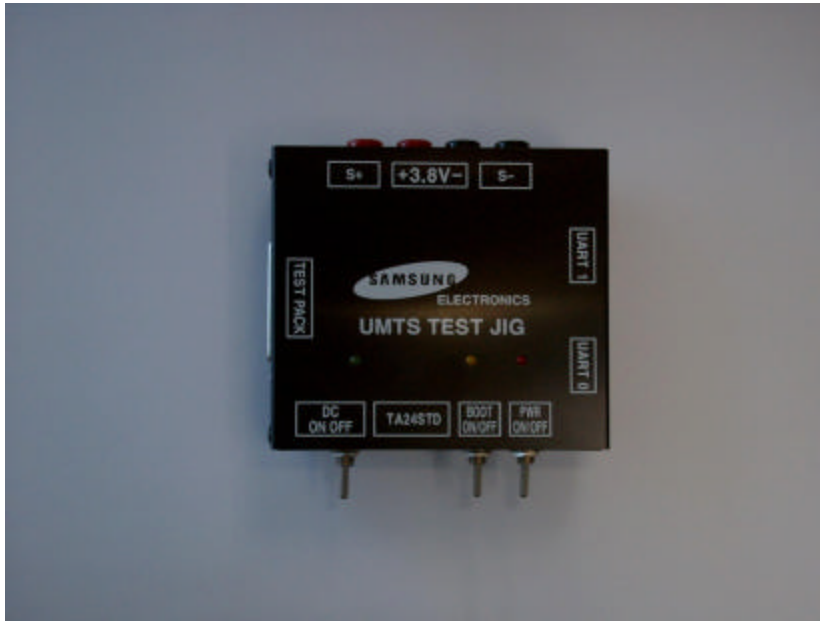


2. Cellular phone Parts list

Location NO.		Description	SEC CODE
QCK01		CAMERA KEY	GH75-02915B
QSK02		SIDE KEY	GH75-02914A
QSC07		RMO-SCREW CAP(R)	GH73-01891A
QSC10		RMO-SCREW CAP(L)	GH73-01890A
QFR01		FRONT CASE	GH75-06679A
QKP01		KEYPAD	GH75-06680A
QME01		UNIT KEYPAD	GH59-02137A
QSH01		MEC-SHIELD BRAKET	GH75-07057A
QMP01		PBA MAIN	GH92-02098A
QCR26		SCREW MACHINE	6001-001850
QAN02		INTENNA	GH42-00554A
QRE01		REAR CASE	GH75-06688A
	QCW04	T FLASH COVER	GH72-20529A
	QIF01	IF COVER	GH72-20530A
	QRF03	EAR COVER	GH72-20528A
QRF01		RF SHEET	GH74-14930A
QCR11		SCREW-MACHINE	6001-001654
QBA01		BATTERY	GH43-01740A
QWD03		DECO SUB WINDOW	GH70-00473A
QWD02		SUB WINDOW LCD	GH72-20933A
QFU01		FOLDER UPPER	GH75-06682A
QCW01		MEC-WINDOW VGA CAMERA	GH75-06687A
QCA01		UNIT CAMERA	GH59-02041A
QLC01		LCD	GH07-00675A
QSP01		SPEAKER	3001-001751
QMO01		MOTOR DC	GH31-00154A
QFL01		FOLDER LOWER	GH75-06683A
QCR03		SCREW MACHINE	6001-001811
QMW01		MAIN WINDOW	GH75-02919B

Description	SEC CODE
BAG PE;LDPE,T0.05,W80,L180,TRP,-,-	6902-000634
CBF INTERFACE-SGHZ110 TEST CAB;SGH-Z	GH39-00337E
CBF INTERFACE-SGHZ110 TEST CAB;SGH-Z	GH39-00337G
CBF INTERFACE-PC DATA CABLE;SGH-Z500	GH39-00395A
CHARGER-TCH;TCH137ESE,SGH-X910,AC/DC	GH44-00701A
S/W CD-EASY STUDIO CD;SGH-Z500,SGH-Z	GH46-00145A
UNIT-EARPHONE;SGH-X910,AEP277SSE,-,E	GH59-01392A
LABEL(P)-WATER SOAK;SCH-X110,NORGE,1	GH68-02026A
MANUAL-SVR CARD;SGH-R210S,XEP,PORTUG	GH68-02552A
MANUAL-USE;SGH-Z500,TMN,PORTUGUESE,P	GH68-06925A
MANUAL-WESEE CARD;SGH-E720,SEC,ENGLIS	GH68-07013A
LABEL(R)-MAIN(EU);SGH-Z500,EU,POLYES	GH68-07210A
BOX(P)-UNIT(EU);SGH-Z500,SC240G,-,20	GH69-02772A
CUSHION-CASE(OPEN);SGH-Z500,PULP,T0.	GH69-03001A
MPR-WINDOW BOHO TAPE;SCH-A8800,VINYL	GH74-00152B
MPR-WINDOW DUMMY VINYL;SPH-X7500,VIN	GH74-02725A
MPR-SPONGE ANTENNA;SGH-E700,PORON,12	GH74-05930B
MPR-FRONT FILTER;SGH-E700,BUZICPO,16	GH74-05962A
MPR-BOHO FOLDER UPPER;SGH-E700,3M 41	GH74-05964A
MPR-BOHO UPPER;SGH-E700,#950,68.3X37	GH74-05967A
MPR-BOHO UPPER;SGH-E700,sta electric	GH74-05967B
MPR-VINYL MAIN LCD;SGH-E700,STA ELEC	GH74-05968A
MPR-BOHO VINYL IF;SGH-E720,#950,85X1	GH74-13606A
MPR-BOHO VINYL REAR;SGH-E720,SP-600,	GH74-14335A
MEC-HANGER;SGH-Z500,TMN,STRAP,-,BLK,	GH75-03673H

3. Test Jig (GH80-03305A)



3-1. RF Test Cable
(GH39-00105A)



3-2. Test Cable
(GH39-00210A)



3-3. Serial Cable



3-4. Power Supply Cable



3-5. DATA CABLE
(GH39-00395A)



3-6. TC
(GH44-00482A)



4. SGH-Z500 Electrical Parts List

Design LOC	Description	SEC CODE
	PCB-SGHZ500,PCB	GH41-00806A
AN1	ANTENNA-CHIP	4202-001043
BACKUP401	BATTERY-LI (2ND)	4302-001177
C101	C-CER,CHIP	2203-006093
C102	C-CER,CHIP	2203-000438
C106	C-CER,CHIP	2203-001072
C107	C-CER,CHIP	2203-000885
C110	C-CER,CHIP	2203-000812
C111	C-CER,CHIP	2203-000233
C112	C-CER,CHIP	2203-006093
C113	C-CER,CHIP	2203-000812
C114	C-CER,CHIP	2203-000233
C115	C-CER,CHIP	2203-000233
C116	C-CER,CHIP	2203-000233
C117	C-FILM,SMD-PPS	2301-001512
C118	C-CER,CHIP	2203-000233
C119	C-CER,CHIP	2203-005061
C120	C-CER,CHIP	2203-000836
C121	C-CER,CHIP	2203-000628
C122	C-CER,CHIP	2203-005061
C123	C-CER,CHIP	2203-000233
C124	C-CER,CHIP	2203-000854
C125	C-CER,CHIP	2203-005061
C126	C-CER,CHIP	2203-000812
C127	C-CER,CHIP	2203-000812
C128	C-CER,CHIP	2203-005061
C129	C-CER,CHIP	2203-000233
C130	C-CER,CHIP	2203-000438
C131	C-CER,CHIP	2203-006093
C132	C-CER,CHIP	2203-000854
C133	C-CER,CHIP	2203-005061
C134	C-CER,CHIP	2203-000812
C135	C-CER,CHIP	2203-006093
C136	C-CER,CHIP	2203-000995
C137	C-CER,CHIP	2203-000812
C139	C-CER,CHIP	2203-000854
C140	C-CER,CHIP	2203-006093

Design LOC	Description	SEC CODE
C141	C-CER,CHIP	2203-000854
C142	C-CER,CHIP	2203-000254
C143	C-CER,CHIP	2203-000359
C145	C-CER,CHIP	2203-005061
C146	C-CER,CHIP	2203-000359
C147	C-CER,CHIP	2203-001385
C149	C-CER,CHIP	2203-000438
C150	C-CER,CHIP	2203-006208
C151	C-TA,CHIP	2404-001274
C152	C-CER,CHIP	2203-000311
C153	C-FILM,SMD	2301-001736
C154	C-CER,CHIP	2203-005482
C155	C-CER,CHIP	2203-000995
C156	C-CER,CHIP	2203-006137
C157	C-CER,CHIP	2203-006201
C158	C-CER,CHIP	2203-006201
C161	C-CER,CHIP	2203-000812
C164	C-CER,CHIP	2203-006201
C165	C-CER,CHIP	2203-006093
C166	C-CER,CHIP	2203-000386
C167	C-CER,CHIP	2203-005482
C168	C-CER,CHIP	2203-005482
C169	C-CER,CHIP	2203-005482
C170	R-CHIP	2007-007008
C172	C-CER,CHIP	2203-000386
C173	C-CER,CHIP	2203-005482
C174	C-CER,CHIP	2203-005503
C175	C-CER,CHIP	2203-002443
C176	C-CER,CHIP	2203-005234
C177	C-CER,CHIP	2203-000359
C178	C-CER,CHIP	2203-000359
C181	C-CER,CHIP	2203-000995
C182	C-CER,CHIP	2203-000995
C184	C-CER,CHIP	2203-000438
C201	C-CER,CHIP	2203-000233
C202	C-CER,CHIP	2203-000885
C203	C-CER,CHIP	2203-006324

Design LOC	Description	SEC CODE
C205	C-CER,CHIP	2203-000233
C206	C-CER,CHIP	2203-005482
C207	C-CER,CHIP	2203-000278
C208	C-CER,CHIP	2203-000233
C209	C-CER,CHIP	2203-000330
C210	C-CER,CHIP	2203-000330
C211	C-CER,CHIP	2203-001178
C212	C-CER,CHIP	2203-000995
C213	C-CER,CHIP	2203-000330
C216	C-CER,CHIP	2203-000330
C221	C-CER,CHIP	2203-005234
C222	C-CER,CHIP	2203-001383
C224	C-CER,CHIP	2203-000233
C225	C-CER,CHIP	2203-005482
C226	C-CER,CHIP	2203-000278
C227	C-CER,CHIP	2203-000233
C228	C-CER,CHIP	2203-005482
C229	C-CER,CHIP	2203-000233
C230	C-CER,CHIP	2203-000254
C231	C-CER,CHIP	2203-005288
C232	C-CER,CHIP	2203-000438
C233	C-CER,CHIP	2203-005482
C234	C-CER,CHIP	2203-000254
C235	C-CER,CHIP	2203-005482
C236	C-CER,CHIP	2203-000438
C237	C-CER,CHIP	2203-005288
C238	C-CER,CHIP	2203-005482
C239	C-CER,CHIP	2203-000233
C242	C-CER,CHIP	2203-000679
C243	C-CER,CHIP	2203-006208
C244	C-CER,CHIP	2203-005482
C245	C-CER,CHIP	2203-000233
C246	C-CER,CHIP	2203-006208
C247	C-CER,CHIP	2203-000386
C248	C-CER,CHIP	2203-005482
C249	C-CER,CHIP	2203-000330
C250	C-CER,CHIP	2203-005482

Design LOC	Description	SEC CODE
C251	C-CER,CHIP	2203-000233
C252	C-CER,CHIP	2203-000679
C254	C-CER,CHIP	2203-001221
C255	C-FILM,SMD-PPS	2301-001419
C256	C-CER,CHIP	2203-000233
C301	C-CER,CHIP	2203-006208
C302	C-CER,CHIP	2203-005061
C303	C-CER,CHIP	2203-005061
C304	C-CER,CHIP	2203-005061
C305	C-CER,CHIP	2203-005061
C306	C-CER,CHIP	2203-000233
C307	C-TA,CHIP	2404-001225
C308	C-CER,CHIP	2203-000254
C309	C-CER,CHIP	2203-000254
C310	C-CER,CHIP	2203-000254
C311	C-CER,CHIP	2203-000254
C313	C-CER,CHIP	2203-005482
C314	C-CER,CHIP	2203-005482
C315	C-CER,CHIP	2203-005482
C316	C-CER,CHIP	2203-005482
C318	C-CER,CHIP	2203-006208
C319	C-CER,CHIP	2203-005061
C320	C-CER,CHIP	2203-005061
C321	C-CER,CHIP	2203-005061
C322	C-CER,CHIP	2203-006208
C323	C-CER,CHIP	2203-005482
C324	C-CER,CHIP	2203-005482
C325	C-CER,CHIP	2203-005482
C326	C-CER,CHIP	2203-006208
C327	C-CER,CHIP	2203-000438
C328	C-CER,CHIP	2203-000438
C329	C-CER,CHIP	2203-000438
C330	C-CER,CHIP	2203-000438
C331	C-CER,CHIP	2203-000438
C332	C-CER,CHIP	2203-000438
C333	C-CER,CHIP	2203-000438
C335	C-CER,CHIP	2203-006208

Design LOC	Description	SEC CODE
C336	C-CER,CHIP	2203-006093
C337	C-CER,CHIP	2203-005482
C339	C-CER,CHIP	2203-000254
C340	C-CER,CHIP	2203-000254
C341	C-CER,CHIP	2203-000254
C342	C-CER,CHIP	2203-000254
C343	C-CER,CHIP	2203-006093
C344	C-CER,CHIP	2203-006093
C345	C-CER,CHIP	2203-000254
C346	C-CER,CHIP	2203-000254
C347	C-CER,CHIP	2203-000254
C349	C-CER,CHIP	2203-006208
C350	C-CER,CHIP	2203-006208
C352	C-CER,CHIP	2203-005482
C353	C-CER,CHIP	2203-005482
C354	C-CER,CHIP	2203-005482
C355	C-CER,CHIP	2203-005482
C356	C-CER,CHIP	2203-005482
C357	C-CER,CHIP	2203-005482
C358	C-CER,CHIP	2203-006093
C359	C-CER,CHIP	2203-000254
C360	C-CER,CHIP	2203-000254
C361	C-CER,CHIP	2203-005482
C362	C-CER,CHIP	2203-005482
C363	C-CER,CHIP	2203-005482
C364	C-CER,CHIP	2203-005482
C365	C-TA,CHIP	2404-001225
C367	C-CER,CHIP	2203-005061
C368	C-CER,CHIP	2203-005482
C369	C-CER,CHIP	2203-000628
C370	C-CER,CHIP	2203-000628
C371	C-CER,CHIP	2203-000489
C373	C-CER,CHIP	2203-000812
C374	C-CER,CHIP	2203-000254
C375	C-CER,CHIP	2203-005480
C376	C-CER,CHIP	2203-000254
C377	C-CER,CHIP	2203-000233

Design LOC	Description	SEC CODE
C378	C-CER,CHIP	2203-005482
C379	C-CER,CHIP	2203-006093
C380	C-CER,CHIP	2203-005482
C381	C-CER,CHIP	2203-006091
C382	C-CER,CHIP	2203-005482
C383	C-CER,CHIP	2203-005482
C384	C-CER,CHIP	2203-006091
C385	C-CER,CHIP	2203-005482
C386	C-TA,CHIP	2404-001386
C387	C-CER,CHIP	2203-006257
C401	C-TA,CHIP	2404-001339
C402	C-CER,CHIP	2203-005138
C403	C-CER,CHIP	2203-000254
C404	C-CER,CHIP	2203-005138
C405	C-CER,CHIP	2203-006093
C406	C-TA,CHIP	2404-001339
C407	C-CER,CHIP	2203-005061
C409	C-CER,CHIP	2203-000425
C410	C-CER,CHIP	2203-005061
C411	C-CER,CHIP	2203-000628
C412	C-CER,CHIP	2203-005061
C413	C-CER,CHIP	2203-000278
C414	C-CER,CHIP	2203-005065
C415	C-CER,CHIP	2203-006208
C416	C-CER,CHIP	2203-000278
C417	C-CER,CHIP	2203-000278
C418	C-CER,CHIP	2203-006201
C419	C-CER,CHIP	2203-000278
C420	C-CER,CHIP	2203-006201
C421	C-CER,CHIP	2203-006201
C422	C-CER,CHIP	2203-006201
C423	C-CER,CHIP	2203-006208
C424	C-CER,CHIP	2203-000278
C425	C-CER,CHIP	2203-006208
C426	C-CER,CHIP	2203-006201
C427	C-CER,CHIP	2203-006208
C428	C-CER,CHIP	2203-006093

Design LOC	Description	SEC CODE
C429	C-CER,CHIP	2203-006208
C430	C-CER,CHIP	2203-006208
C431	C-CER,CHIP	2203-000438
C432	C-CER,CHIP	2203-000438
C435	C-CER,CHIP	2203-000812
C436	C-CER,CHIP	2203-000812
C437	C-CER,CHIP	2203-005061
C438	C-CER,CHIP	2203-000812
C439	C-CER,CHIP	2203-006708
C440	C-CER,CHIP	2203-006708
C441	C-CER,CHIP	2203-006708
C442	C-CER,CHIP	2203-005482
C443	C-CER,CHIP	2203-005482
C444	C-CER,CHIP	2203-005482
C445	C-CER,CHIP	2203-005482
C446	C-CER,CHIP	2203-005482
C447	C-CER,CHIP	2203-005482
C448	C-CER,CHIP	2203-005482
C450	C-TA,CHIP	2404-001274
C451	C-CER,CHIP	2203-005482
C455	C-TA,CHIP	2404-001339
C456	C-TA,CHIP	2404-001339
C457	C-CER,CHIP	2203-000254
C458	C-TA,CHIP	2404-001339
C459	C-CER,CHIP	2203-006208
C460	C-CER,CHIP	2203-006208
C461	C-CER,CHIP	2203-000254
C462	C-TA,CHIP	2404-001339
C463	C-CER,CHIP	2203-006208
C464	C-TA,CHIP	2404-001339
C465	C-CER,CHIP	2203-005061
C466	C-TA,CHIP	2404-001394
C467	C-CER,CHIP	2203-005482
C468	C-CER,CHIP	2203-005065
C469	C-CER,CHIP	2203-006141
C470	C-CER,CHIP	2203-000233
C471	C-TA,CHIP	2404-001394

Design LOC	Description	SEC CODE
C474	C-CER,CHIP	2203-006208
C475	C-CER,CHIP	2203-006201
C476	C-CER,CHIP	2203-006093
C477	C-CER,CHIP	2203-000995
C478	C-CER,CHIP	2203-000940
C479	C-CER,CHIP	2203-000854
C501	C-CER,CHIP	2203-000812
C502	C-CER,CHIP	2203-000278
C503	C-CER,CHIP	2203-000812
C504	C-CER,CHIP	2203-006208
C505	C-CER,CHIP	2203-005482
C506	C-CER,CHIP	2203-000278
C507	C-CER,CHIP	2203-000233
C508	C-CER,CHIP	2203-000812
C511	C-CER,CHIP	2203-006208
C512	C-CER,CHIP	2203-005482
C513	C-CER,CHIP	2203-005482
C514	C-CER,CHIP	2203-000438
C515	C-CER,CHIP	2203-000233
C516	C-CER,CHIP	2203-000812
C517	C-CER,CHIP	2203-000725
C518	C-TA,CHIP	2404-001339
C519	C-CER,CHIP	2203-005482
C520	C-CER,CHIP	2203-000654
C521	C-CER,CHIP	2203-006093
C522	C-CER,CHIP	2203-005061
C523	C-CER,CHIP	2203-006093
C524	C-CER,CHIP	2203-006093
C525	C-CER,CHIP	2203-000995
C526	C-CER,CHIP	2203-005050
C527	C-TA,CHIP	2404-001339
C530	C-CER,CHIP	2203-000278
C531	C-CER,CHIP	2203-000278
C532	C-CER,CHIP	2203-005061
C533	C-CER,CHIP	2203-005061
C534	C-CER,CHIP	2203-006137
C535	C-CER,CHIP	2203-006137

Design LOC	Description	SEC CODE
C536	C-CER,CHIP	2203-000233
C537	C-CER,CHIP	2203-000812
C540	C-CER,CHIP	2203-000278
C541	C-CER,CHIP	2203-000278
C542	C-TA,CHIP	2404-001380
C543	C-TA,CHIP	2404-001380
C544	C-TA,CHIP	2404-001380
C545	C-TA,CHIP	2404-001380
C546	C-TA,CHIP	2404-001339
C547	C-CER,CHIP	2203-005061
C548	C-CER,CHIP	2203-006093
C549	C-CER,CHIP	2203-006093
C550	C-CER,CHIP	2203-006093
C551	C-CER,CHIP	2203-006093
C552	C-CER,CHIP	2203-006093
C553	C-CER,CHIP	2203-006093
C554	C-CER,CHIP	2203-003054
C555	C-CER,CHIP	2203-003054
C556	C-CER,CHIP	2203-003054
C601	C-CER,CHIP	2203-006208
C602	C-CER,CHIP	2203-000812
C603	C-CER,CHIP	2203-005482
C604	C-CER,CHIP	2203-000812
C605	C-TA,CHIP	2404-001305
C606	C-CER,CHIP	2203-000812
C607	C-CER,CHIP	2203-005482
C611	C-CER,CHIP	2203-000812
C612	C-CER,CHIP	2203-006093
C613	C-TA,CHIP	2404-001339
C614	C-CER,CHIP	2203-005482
C615	C-CER,CHIP	2203-000812
C616	C-CER,CHIP	2203-000812
C617	DIODE-TV5	0406-001201
C618	C-CER,CHIP	2203-000812
C619	C-CER,CHIP	2203-000812
C620	C-CER,CHIP	2203-000812
C621	C-CER,CHIP	2203-000812

Design LOC	Description	SEC CODE
C622	C-CER,CHIP	2203-000812
C623	C-CER,CHIP	2203-000812
C624	C-CER,CHIP	2203-000812
C625	C-CER,CHIP	2203-000812
C629	C-CER,CHIP	2203-005482
C631	C-CER,CHIP	2203-006093
C632	C-CER,CHIP	2203-006093
C633	C-CER,CHIP	2203-006093
C634	C-CER,CHIP	2203-005482
C635	C-CER,CHIP	2203-006093
C636	C-CER,CHIP	2203-003054
C647	C-CER,CHIP	2203-003054
CN101	CONNECTOR-COAXIAL	3705-001355
CN302	CONNECTOR-CARD EDGE	3709-001344
CN401	CONNECTOR-CARD EDGE	3709-001298
CN402	CONNECTOR-BATTERY	3711-005829
CN403	CONNECTOR-SOCKET	3710-002113
CN501	JACK-EAR PHONE	3722-002010
CN601	CONNECTOR-HEADER	3711-005296
CN603	CONNECTOR-HEADER	3711-005817
D401	DIODE-SCHOTTKY	0404-001089
D402	DIODE-ZENER	0403-001387
D403	DIODE-ZENER	0403-001387
F101	FILTER-SAW	2904-001550
F102	FILTER-SAW	2904-001571
F201	FILTER-SAW	2904-001439
F202	FILTER-SAW	2904-001438
F203	DUPLEXER-DIELECTRIC	2909-001271
F601	FILTER-EMI SMD	2901-001268
F602	FILTER-EMI SMD	2901-001268
F603	FILTER-EMI SMD	2901-001268
F604	FILTER-EMI SMD	2901-001268
F605	FILTER-EMI SMD	2901-001268
F606	FILTER-EMI SMD	2901-001268
IRD301	PHOTO-IRDA	0604-001261
L101	BEAD-SMD	3301-001341
L102	INDUCTOR-SMD	2703-002267

Design LOC	Description	SEC CODE
L105	INDUCTOR-SMD	2703-002201
L106	INDUCTOR-SMD	2703-002208
L107	INDUCTOR-SMD	2703-002208
L108	INDUCTOR-SMD	2703-002314
L109	INDUCTOR-SMD	2703-002203
L110	INDUCTOR-SMD	2703-002203
L111	INDUCTOR-SMD	2703-002281
L112	INDUCTOR-SMD	2703-002204
L113	INDUCTOR-SMD	2703-002314
L114	INDUCTOR-SMD	2703-002281
L115	INDUCTOR-SMD	2703-001178
L115	INDUCTOR-SMD	2703-002199
L116	INDUCTOR-SMD	2703-002176
L117	INDUCTOR-SMD	2703-002314
L118	INDUCTOR-SMD	2703-002170
L119	INDUCTOR-SMD	2703-002176
L120	INDUCTOR-SMD	2703-002198
L125	INDUCTOR-SMD	2703-002176
L126	INDUCTOR-SMD	2703-002369
L201	INDUCTOR-SMD	2703-002314
L202	INDUCTOR-SMD	2703-002198
L203	INDUCTOR-SMD	2703-002205
L204	INDUCTOR-SMD	2703-002208
L205	INDUCTOR-SMD	2703-002267
L206	INDUCTOR-SMD	2703-002268
L207	BEAD-SMD	3301-001341
L208	INDUCTOR-SMD	2703-002368
L209	INDUCTOR-SMD	2703-002368
L210	BEAD-SMD	3301-001341
L211	BEAD-SMD	3301-001341
L212	INDUCTOR-SMD	2703-002208
L401	INDUCTOR-SMD	2703-002653
L402	INDUCTOR-SMD	2703-002653
L601	BEAD-SMD	3301-001158
OSC201	OSCILLATOR-VCTCXO	2809-001280
OSC202	OSCILLATOR-VCO	2806-001361
OSC301	RESONATOR-CERAMIC	2802-001182

Design LOC	Description	SEC CODE
OSC401	CRYSTAL-SMD	2801-004373
R101	R-CHIP	2007-000140
R102	R-CHIP	2007-000171
R103	R-CHIP	2007-001325
R104	R-CHIP	2007-001325
R105	R-CHIP	2007-000138
R106	R-CHIP	2007-000145
R107	R-CHIP	2007-001325
R108	R-CHIP	2007-001325
R109	R-CHIP	2007-000171
R110	R-CHIP	2007-000172
R111	R-CHIP	2007-000172
R112	R-CHIP	2007-007491
R113	R-CHIP	2007-001291
R114	R-CHIP	2007-001217
R115	R-CHIP	2007-001291
R116	R-CHIP	2007-001295
R119	R-CHIP	2007-001307
R120	R-CHIP	2007-001307
R121	R-CHIP	2007-001307
R122	R-CHIP	2007-001307
R123	R-CHIP	2007-001306
R124	R-CHIP	2007-001301
R125	R-CHIP	2007-000138
R126	R-CHIP	2007-000138
R127	R-CHIP	2007-000157
R128	R-CHIP	2007-001305
R129	R-CHIP	2007-001217
R130	R-CHIP	2007-001217
R131	R-CHIP	2007-001305
R133	R-CHIP	2007-001305
R134	R-CHIP	2007-000138
R135	R-CHIP	2007-001305
R136	R-CHIP	2007-000138
R138	R-CHIP	2007-007142
R139	R-CHIP	2007-000147
R141	R-CHIP	2007-001317

Design LOC	Description	SEC CODE
R201	R-CHIP	2007-007314
R202	R-CHIP	2007-000173
R203	R-CHIP	2007-000138
R204	R-CHIP	2007-007586
R205	R-CHIP	2007-000141
R206	R-CHIP	2007-007491
R207	R-CHIP	2007-000138
R209	R-CHIP	2007-001298
R213	R-CHIP	2007-000138
R214	R-CHIP	2007-001284
R215	R-CHIP	2007-000171
R216	R-CHIP	2007-007588
R217	R-CHIP	2007-001284
R218	R-CHIP	2007-007316
R302	R-CHIP	2007-000171
R303	R-CHIP	2007-000171
R309	R-CHIP	2007-000171
R311	R-CHIP	2007-000148
R314	R-CHIP	2007-000171
R315	R-CHIP	2007-000171
R316	R-CHIP	2007-000171
R317	R-CHIP	2007-000171
R318	R-CHIP	2007-000171
R320	R-CHIP	2007-000171
R322	R-CHIP	2007-000171
R323	R-CHIP	2007-000171
R324	R-CHIP	2007-000171
R326	R-CHIP	2007-000171
R328	R-CHIP	2007-000171
R330	R-CHIP	2007-000171
R331	R-CHIP	2007-007314
R332	R-CHIP	2007-007314
R334	R-CHIP	2007-000140
R335	R-CHIP	2007-000137
R336	R-CHIP	2007-000171
R337	R-CHIP	2007-000171
R338	R-CHIP	2007-007318

Design LOC	Description	SEC CODE
R339	R-CHIP	2007-007135
R341	R-CHIP	2007-007314
R350	R-CHIP	2007-000171
R352	R-CHIP	2007-000171
R354	R-CHIP	2007-000148
R355	R-CHIP	2007-000148
R356	R-CHIP	2007-000148
R357	R-CHIP	2007-000171
R358	R-CHIP	2007-000171
R360	R-CHIP	2007-000166
R361	R-CHIP	2007-000143
R362	R-CHIP	2007-000148
R363	R-CHIP	2007-000143
R364	R-CHIP	2007-000148
R365	R-CHIP	2007-001339
R366	R-CHIP	2007-000148
R367	R-CHIP	2007-001339
R368	R-CHIP	2007-000171
R369	R-CHIP	2007-007307
R370	R-CHIP	2007-000171
R371	R-CHIP	2007-000171
R372	R-CHIP	2007-000171
R374	R-CHIP	2007-000171
R375	R-CHIP	2007-000171
R376	R-CHIP	2007-000168
R381	R-CHIP	2007-007307
R382	R-CHIP	2007-007307
R383	R-CHIP	2007-007307
R384	R-CHIP	2007-000171
R401	R-CHIP	2007-003015
R402	R-CHIP	2007-003015
R403	R-CHIP	2007-000171
R404	R-CHIP	2007-007142
R405	R-CHIP	2007-000157
R406	R-CHIP	2007-001298
R407	R-CHIP	2007-007468
R408	R-CHIP	2007-000171

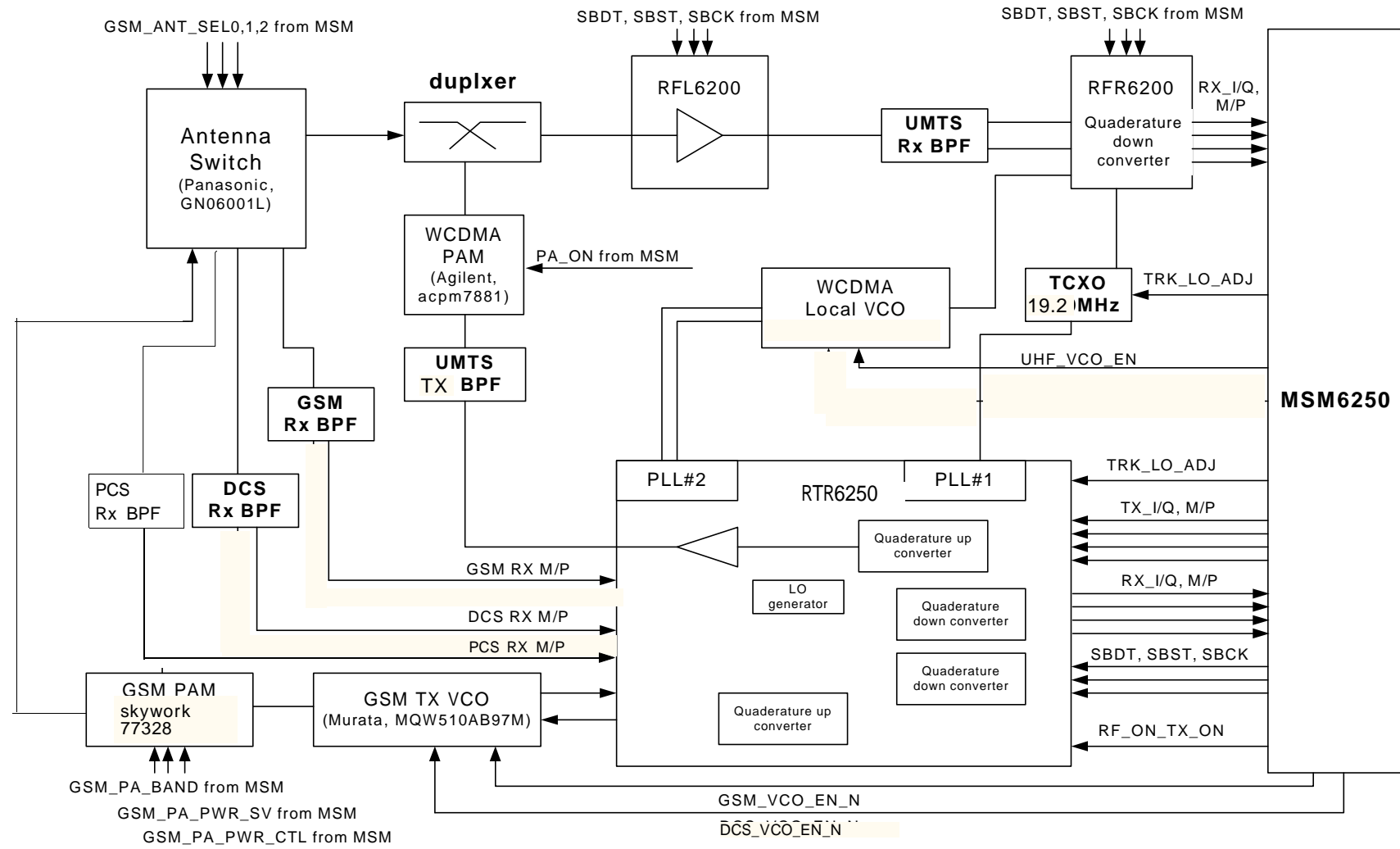
Design LOC	Description	SEC CODE
R410	R-CHIP	2007-001298
R411	R-CHIP	2007-000171
R412	R-CHIP	2007-000151
R413	R-CHIP	2007-001308
R415	R-CHIP	2007-000162
R417	R-CHIP	2007-000171
R418	R-CHIP	2007-000171
R419	R-CHIP	2007-000171
R421	R-CHIP	2007-000173
R422	R-CHIP	2007-000140
R424	R-CHIP	2007-000140
R425	R-CHIP	2007-000140
R426	R-CHIP	2007-000140
R427	R-CHIP	2007-007101
R428	R-CHIP	2007-000173
R429	R-CHIP	2007-000173
R431	R-CHIP	2007-000173
R433	R-CHIP	2007-000173
R434	R-CHIP	2007-000173
R435	R-CHIP	2007-000171
R438	R-CHIP	2007-000140
R440	R-CHIP	2007-000171
R501	R-CHIP	2007-000165
R502	R-CHIP	2007-000162
R503	R-CHIP	2007-000171
R504	R-CHIP	2007-000171
R505	R-CHIP	2007-000171
R506	R-CHIP	2007-000171
R507	R-CHIP	2007-000159
R508	R-CHIP	2007-001339
R513	R-CHIP	2007-001325
R514	R-CHIP	2007-000171
R515	R-CHIP	2007-000171
R516	R-CHIP	2007-000159
R517	R-CHIP	2007-000171
R518	R-CHIP	2007-000171
R519	R-CHIP	2007-000775

Design LOC	Description	SEC CODE
R520	R-CHIP	2007-007131
R523	R-CHIP	2007-007529
R524	R-CHIP	2007-000171
R526	R-CHIP	2007-007311
R528	R-CHIP	2007-007311
R530	R-CHIP	2007-007529
R531	R-CHIP	2007-000171
R533	R-CHIP	2007-007317
R535	R-CHIP	2007-003001
R536	R-CHIP	2007-003001
R538	R-CHIP	2007-000171
R539	R-CHIP	2007-000171
R540	R-CHIP	2007-007317
R541	R-CHIP	2007-007317
R543	R-CHIP	2007-007317
R544	R-CHIP	2007-000171
R545	R-CHIP	2007-000171
R546	R-CHIP	2007-000171
R601	R-CHIP	2007-000171
R607	R-CHIP	2007-000171
R608	R-CHIP	2007-000171
R609	R-CHIP	2007-000171
R610	R-CHIP	2007-000171
R611	R-CHIP	2007-000171
TH301	THERMISTOR-NTC	1404-001224
U101	IC-SWITCH	1205-002724
U102	IC-TRANSCEIVER	1205-002645
U103	FILTER-SAW	2904-001570
U104	OSCILLATOR-VCO	2806-001360
U105	IC-POWER AMP	1201-002218
U106	BLUETOOTH MODULE	4709-001363
U201	IC-POWER AMP	1201-002219
U202	IC-RF AMP	1201-001984
U203	IC-RECEIVER	1205-002297
U301	IC-MCP	1108-000005
U302	IC-MODEM	1205-002527
U401	IC-POWER SUPERVISOR	1203-003335

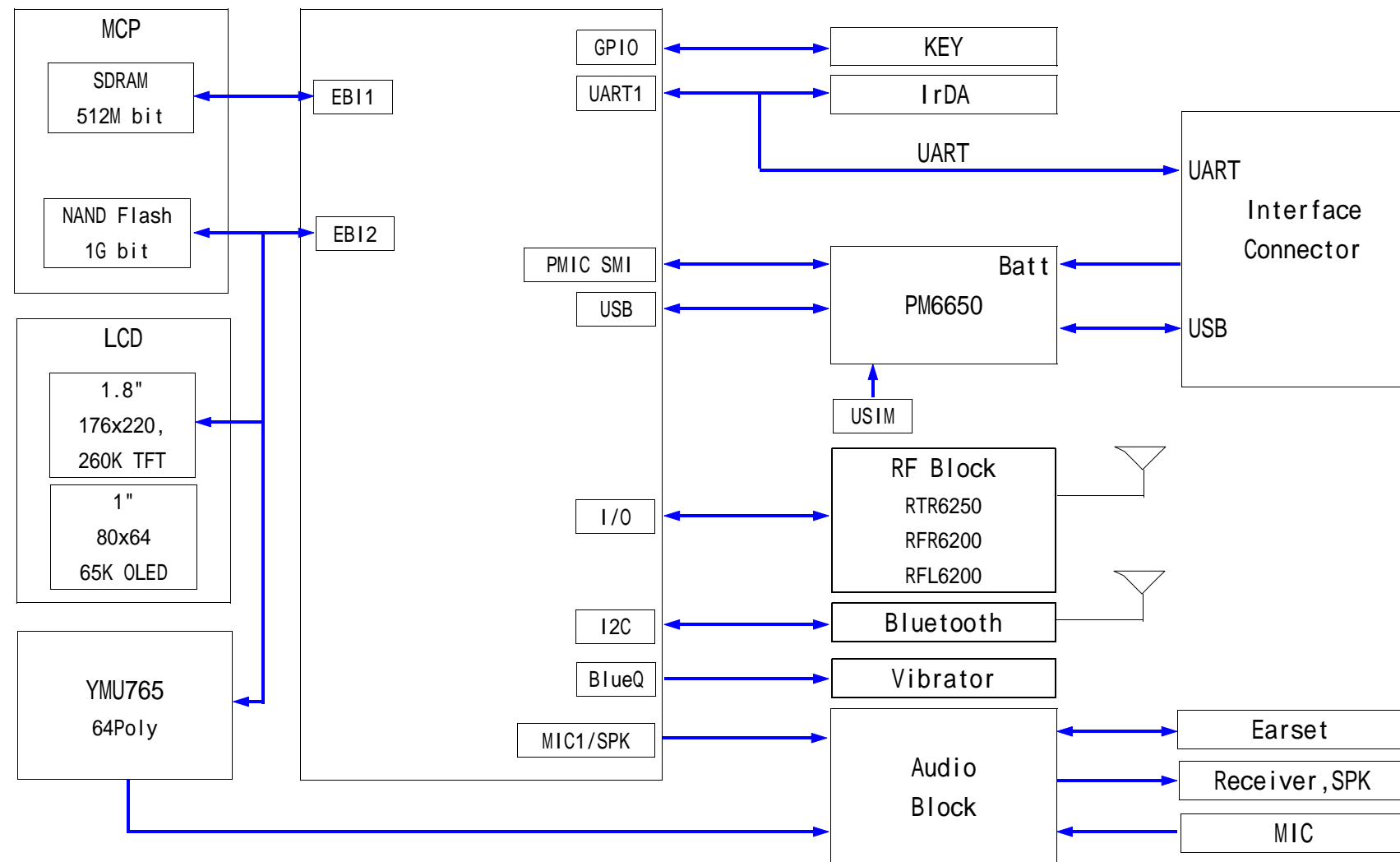
Design LOC	Description	SEC CODE
U402	IC-SWITCH	1205-002568
U403	IC-ANALOG MULTIPLEX	1001-001248
U404	DIODE-ARRAY	0407-001038
U405	IC-POSI.FIXED REG.	1203-002565
U406	DIODE-TVS	0406-001197
U407	IC-MULTI REG.	1203-002861
U408	IC-MULTI REG.	1203-003322
U409	IC-POSI.FIXED REG.	1203-003105
U410	IC-VOL. DETECTOR	1203-003749
U411	FET-SILICON	0505-001889
U501	IC-VOLTAGE COMP.	1202-001068
U502	IC-MELODY	1204-002138
U503	IC-AUDIO AMP	1201-002240
U504	IC-ANALOG MULTIPLEX	1001-001306
U505	IC-ANALOG MULTIPLEX	1001-001306
U506	IC-AUDIO AMP	1201-002195
U614	IC-ANALOG SWITCH	1001-001265
ZD301	DIODE-TVS	0406-001197
ZD401	DIODE-TVS	0406-001197
ZD402	DIODE-TVS	0406-001197
ZD501	DIODE-TVS	0406-001197
ZD502	DIODE-TVS	0406-001197
ZD601	DIODE-TVS	0406-001197
ZD602	DIODE-TVS	0406-001197
ZD603	DIODE-TVS	0406-001197
ZD604	DIODE-TVS	0406-001203

5. SGH-Z500 Block Diagrams

1. RF Solution Block Diagram

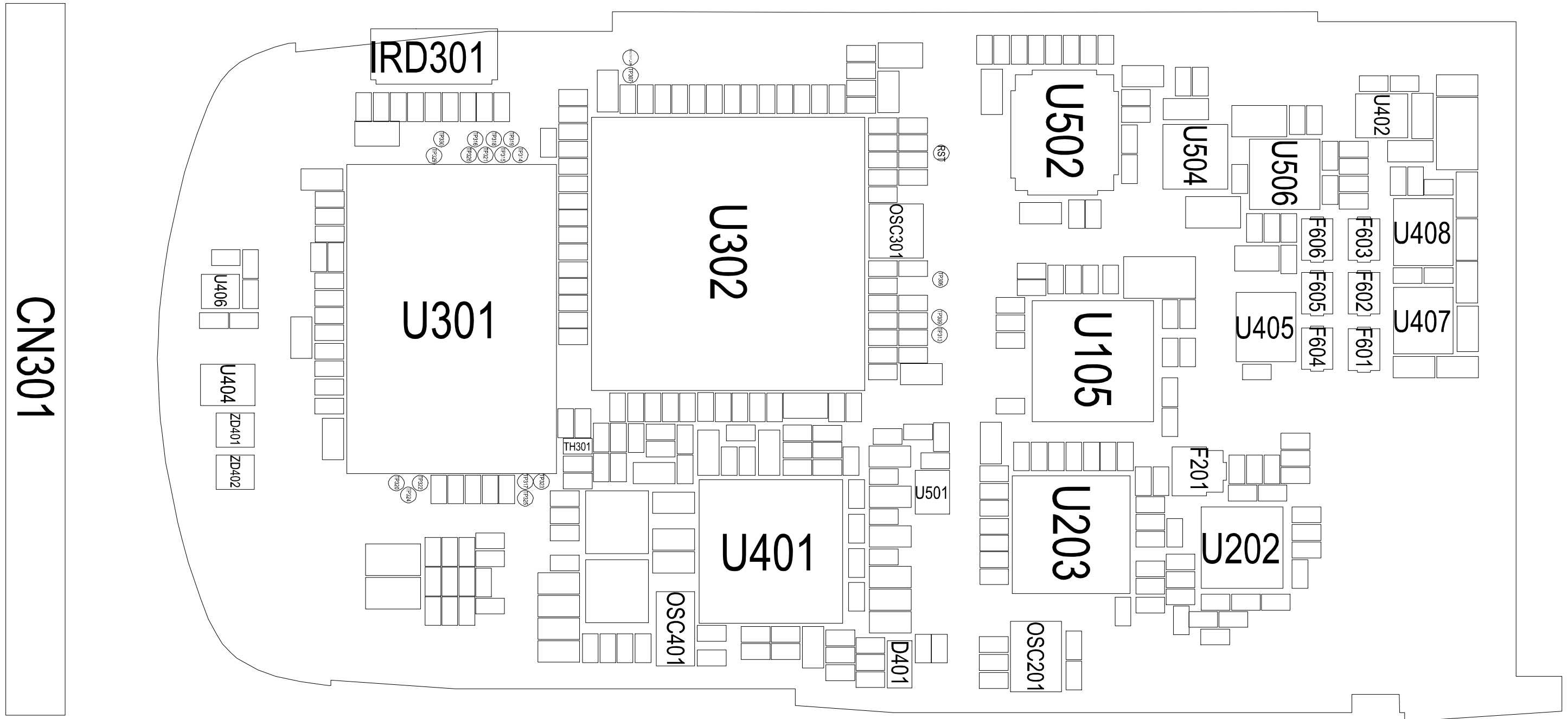


2. Base Band Solution Block Diagram

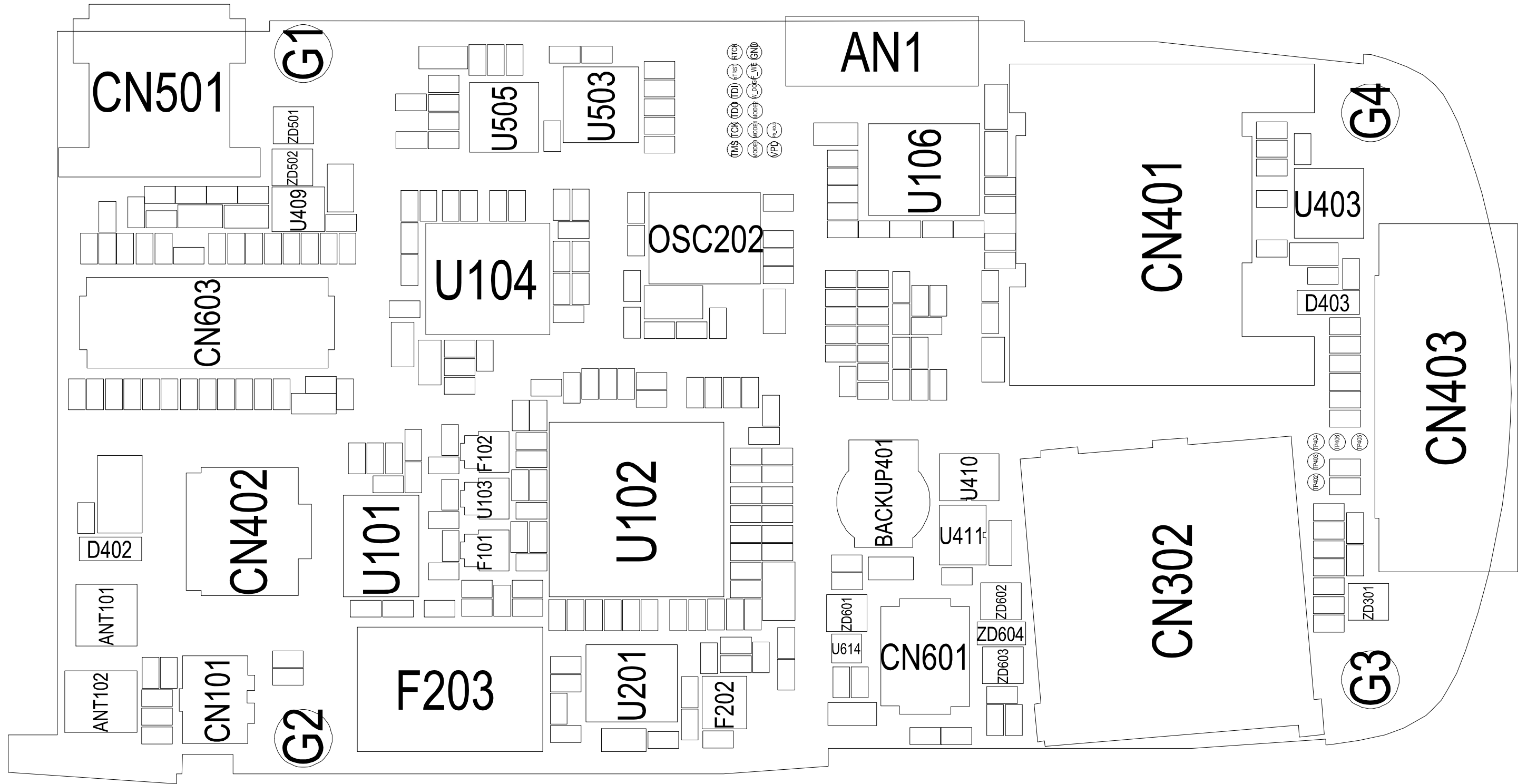


6. SGH-Z500 PCB Diagrams

1. Main PCB Top Diagram

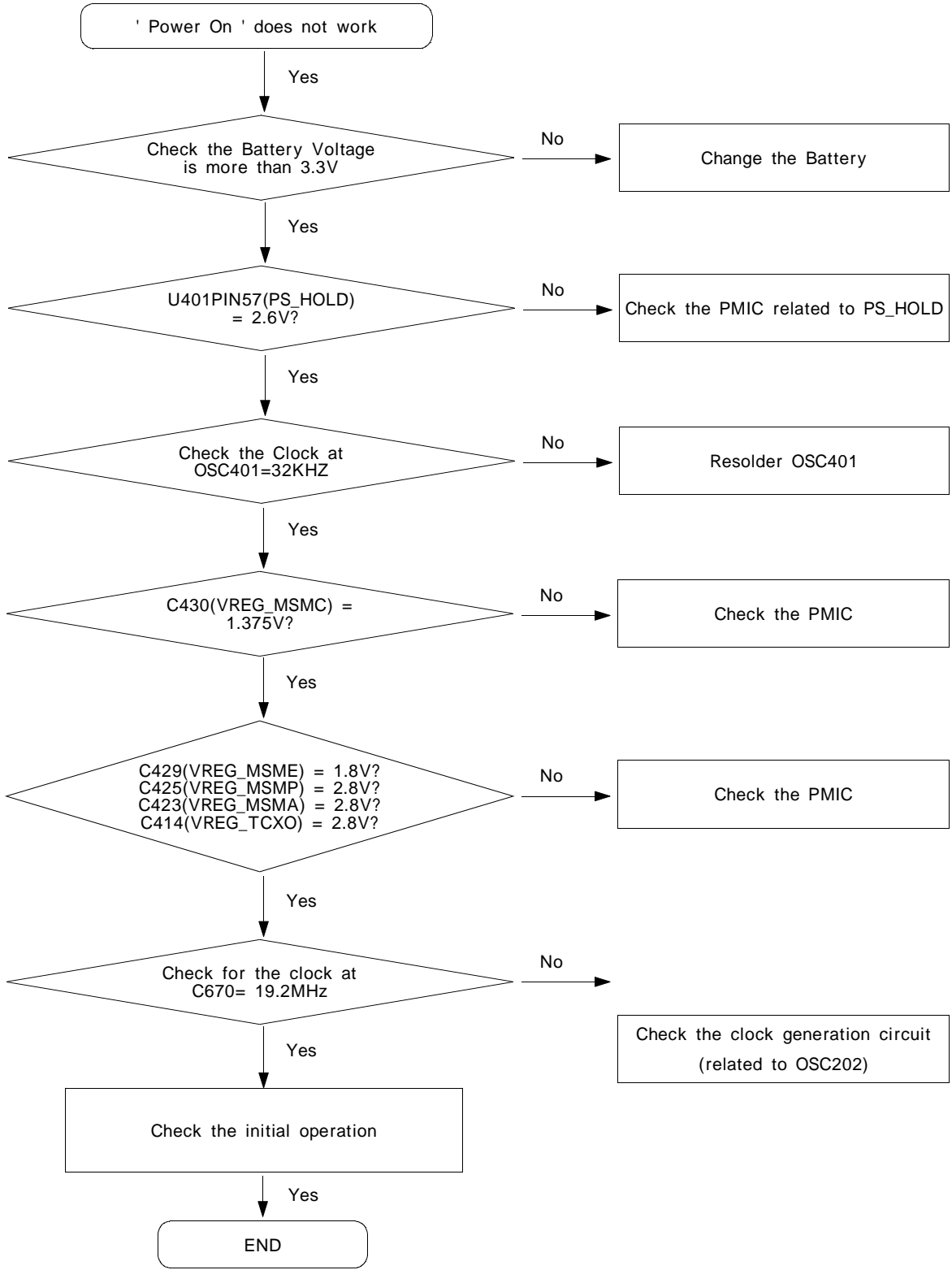


2. Main PCB Bottom Diagram



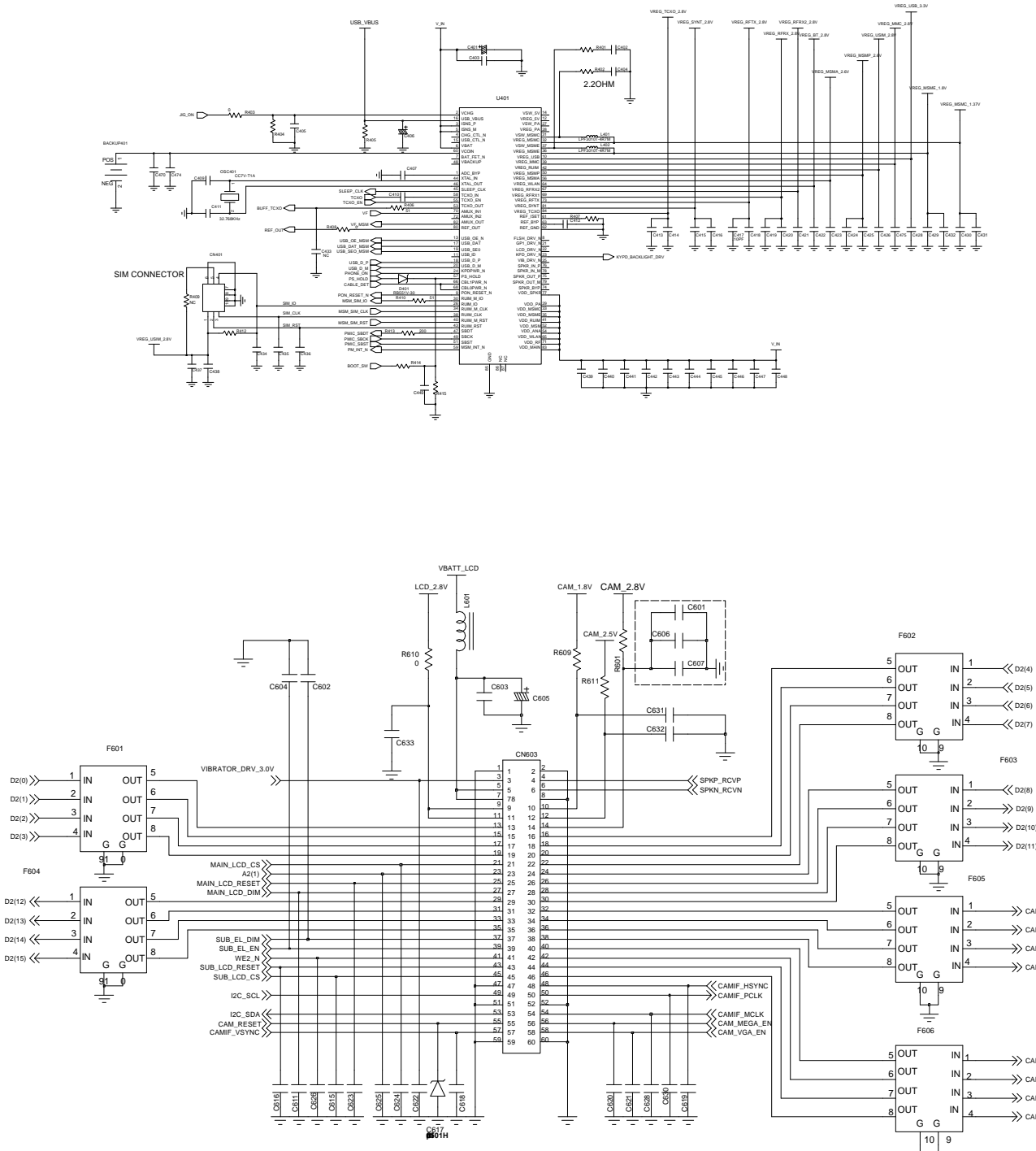
7. SGH-Z500 Flow Chart of Troubleshooting

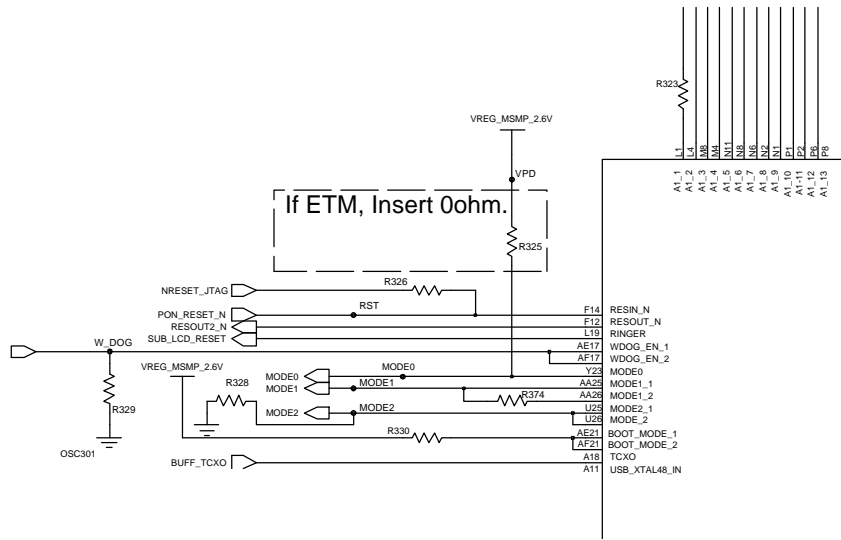
1. Power On

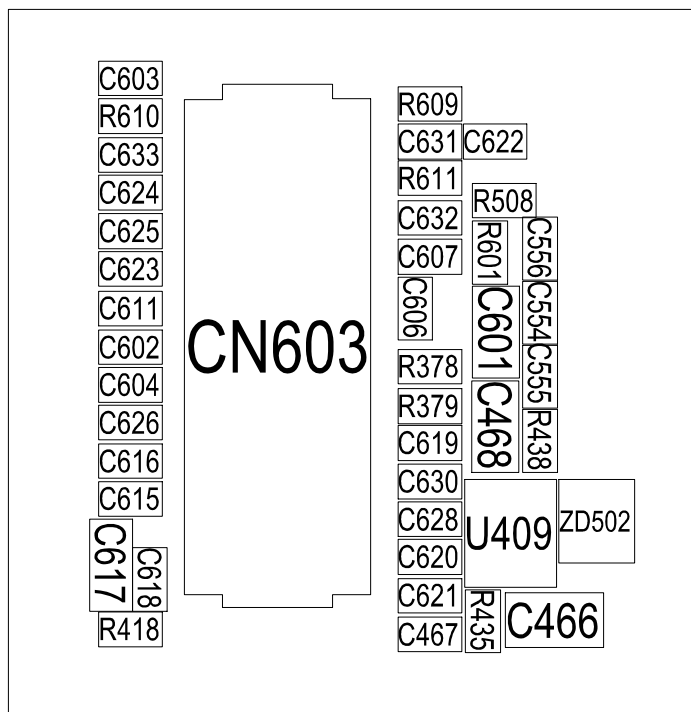
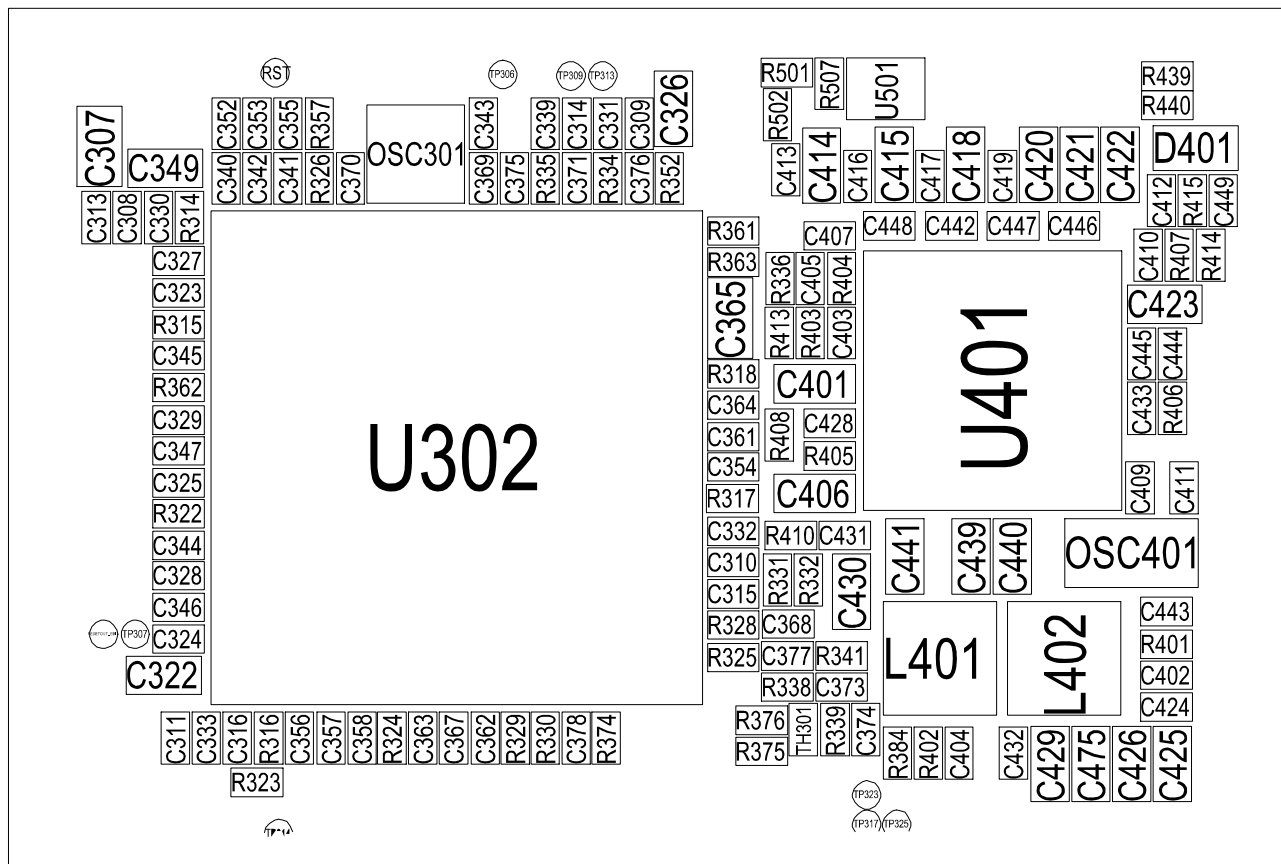


Flow Chart of Troubleshooting

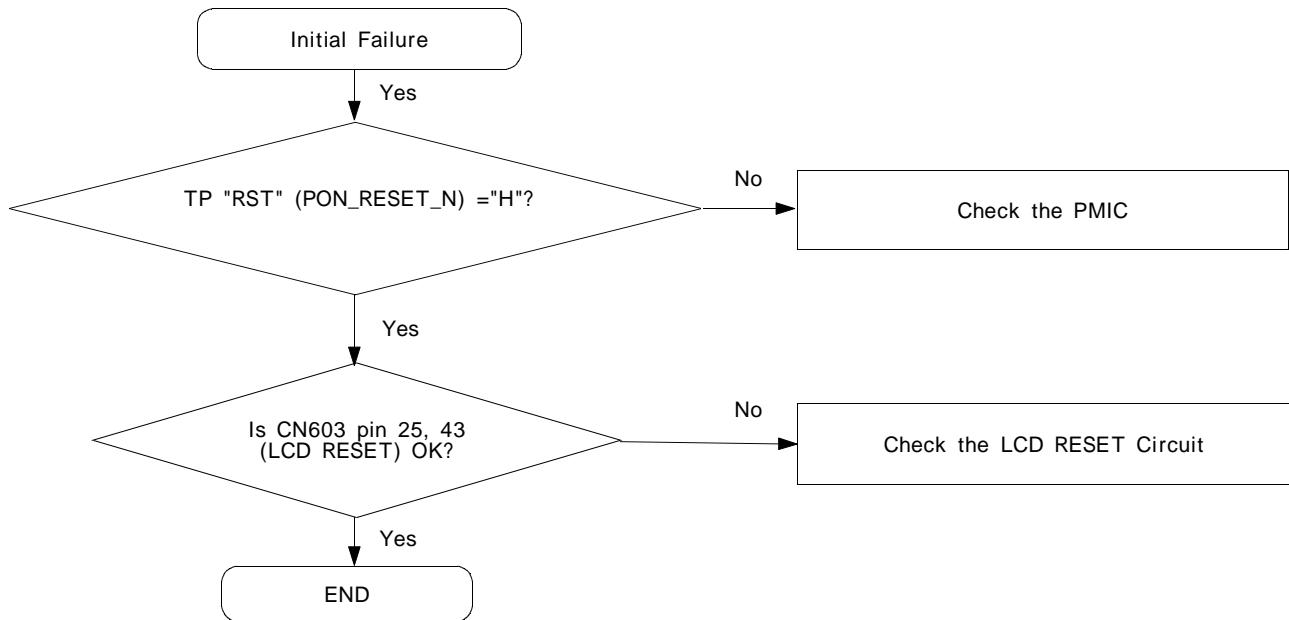
Power On

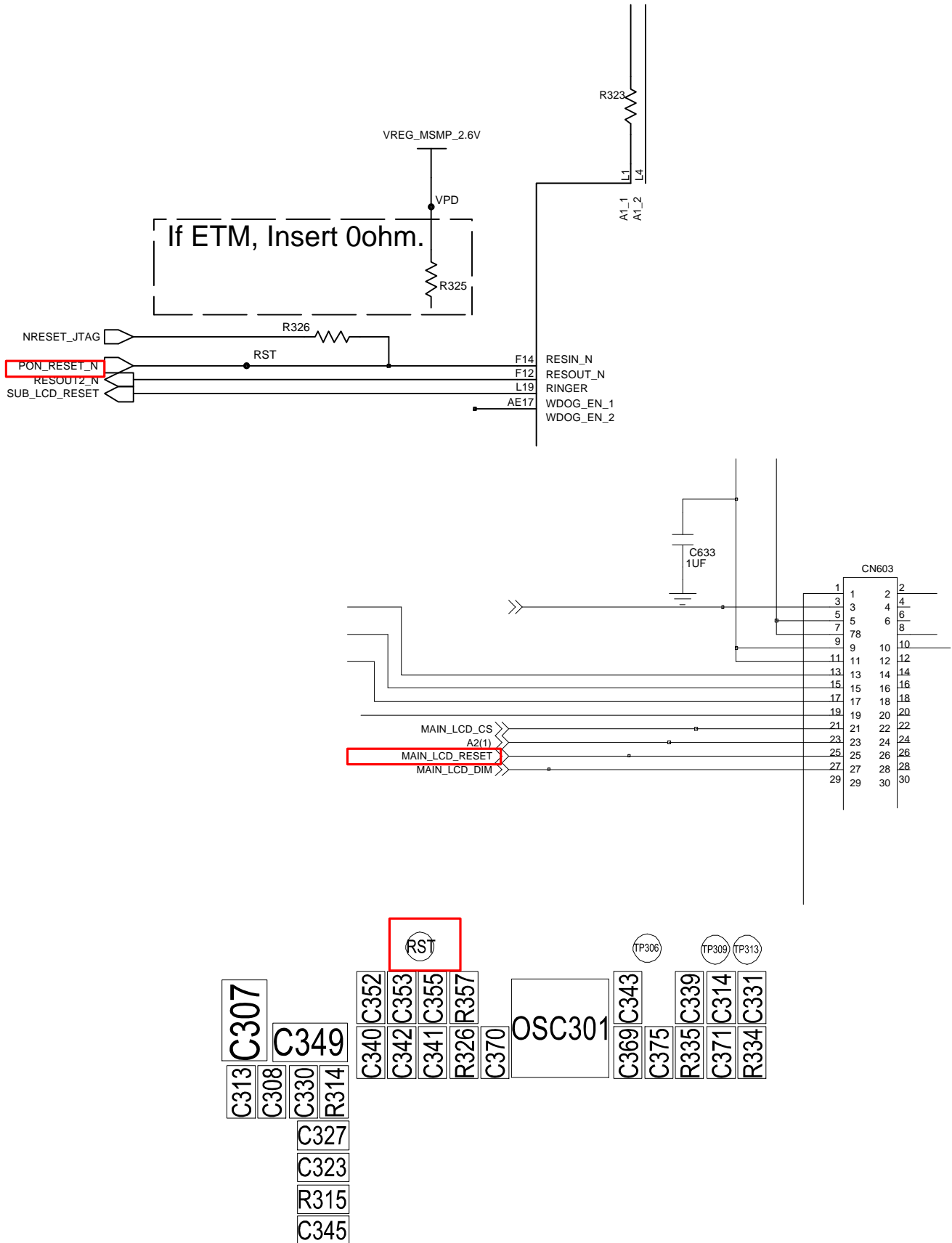




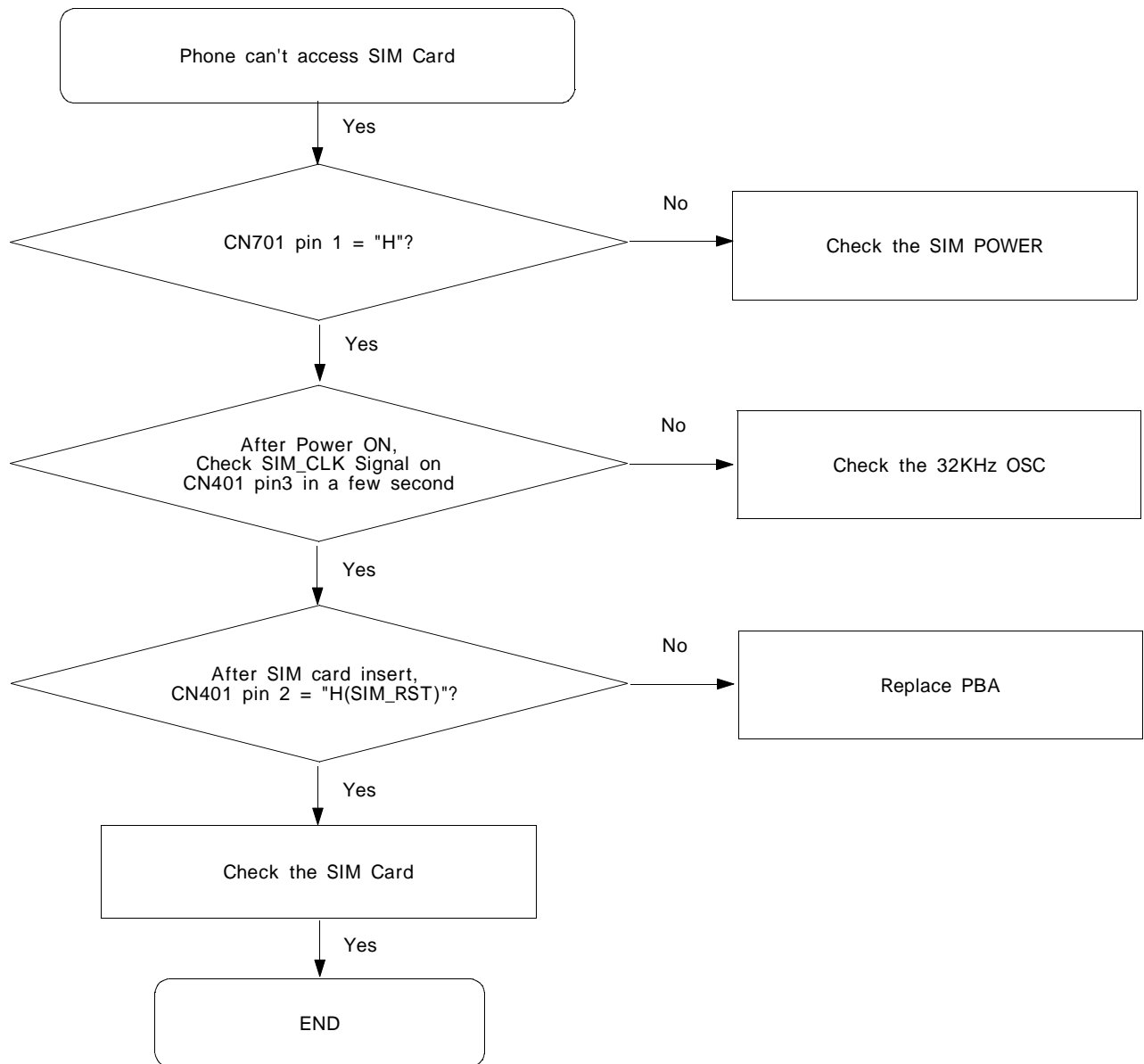


2. Initial

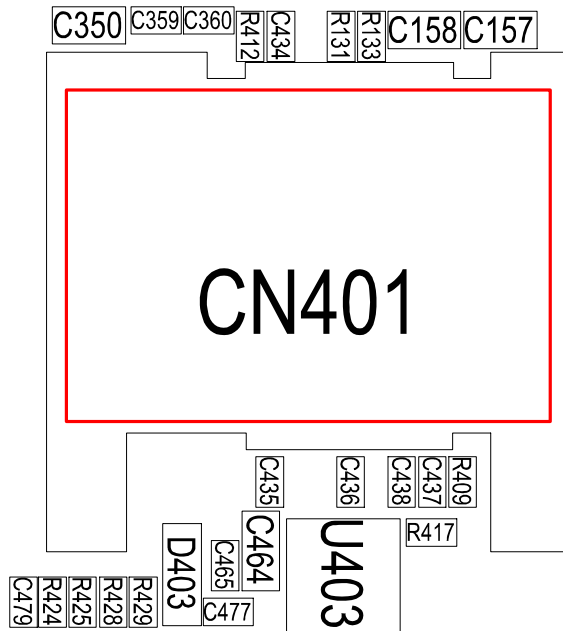
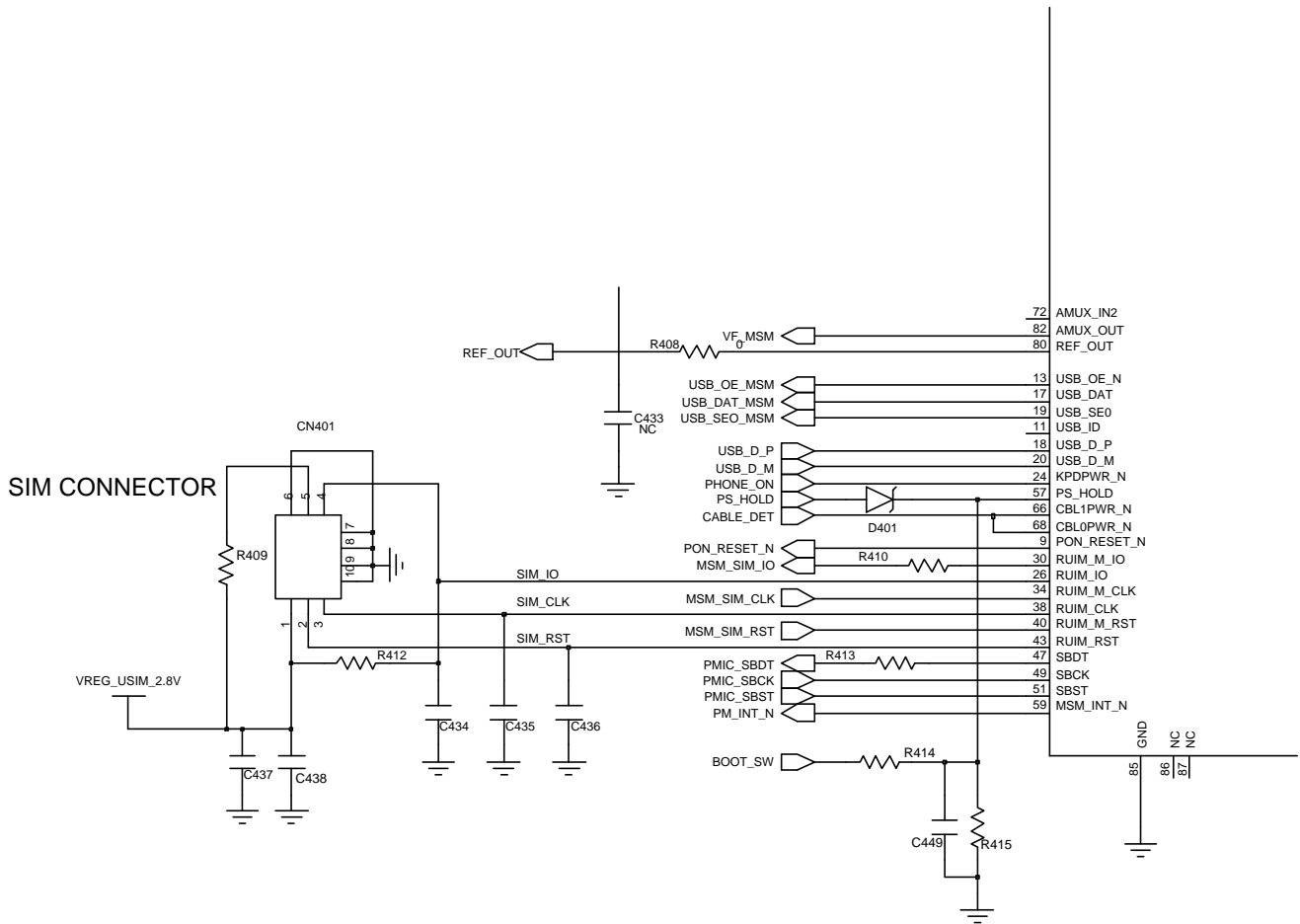




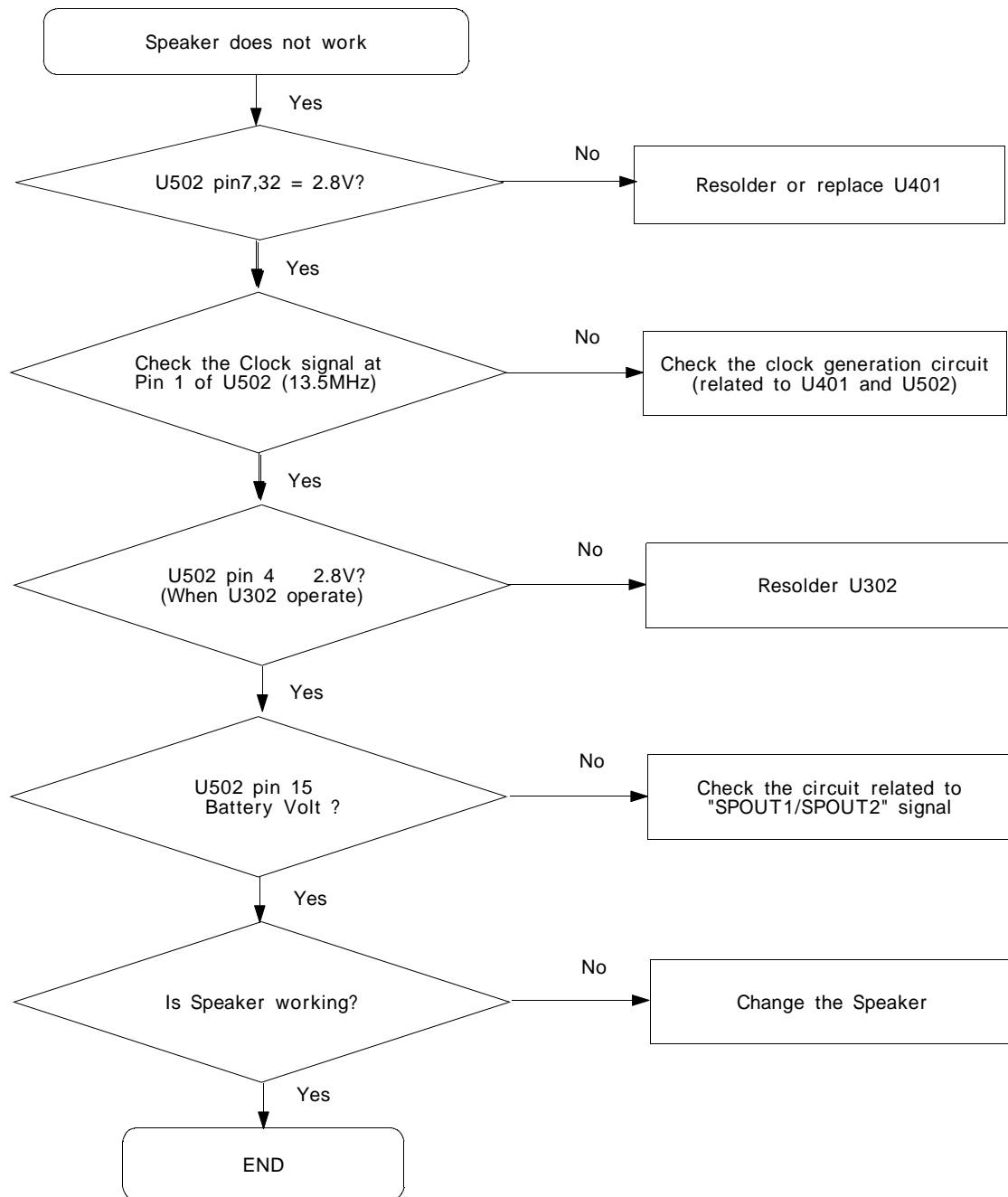
3. Sim Part



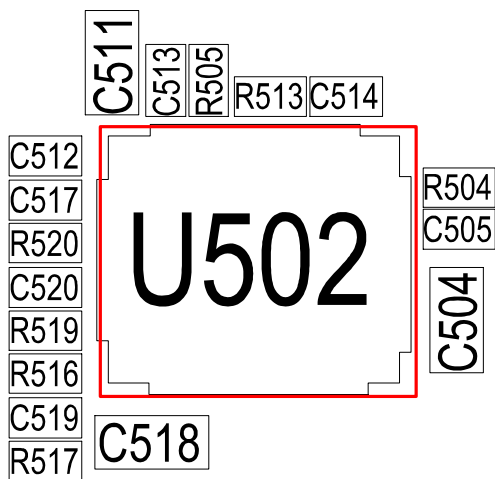
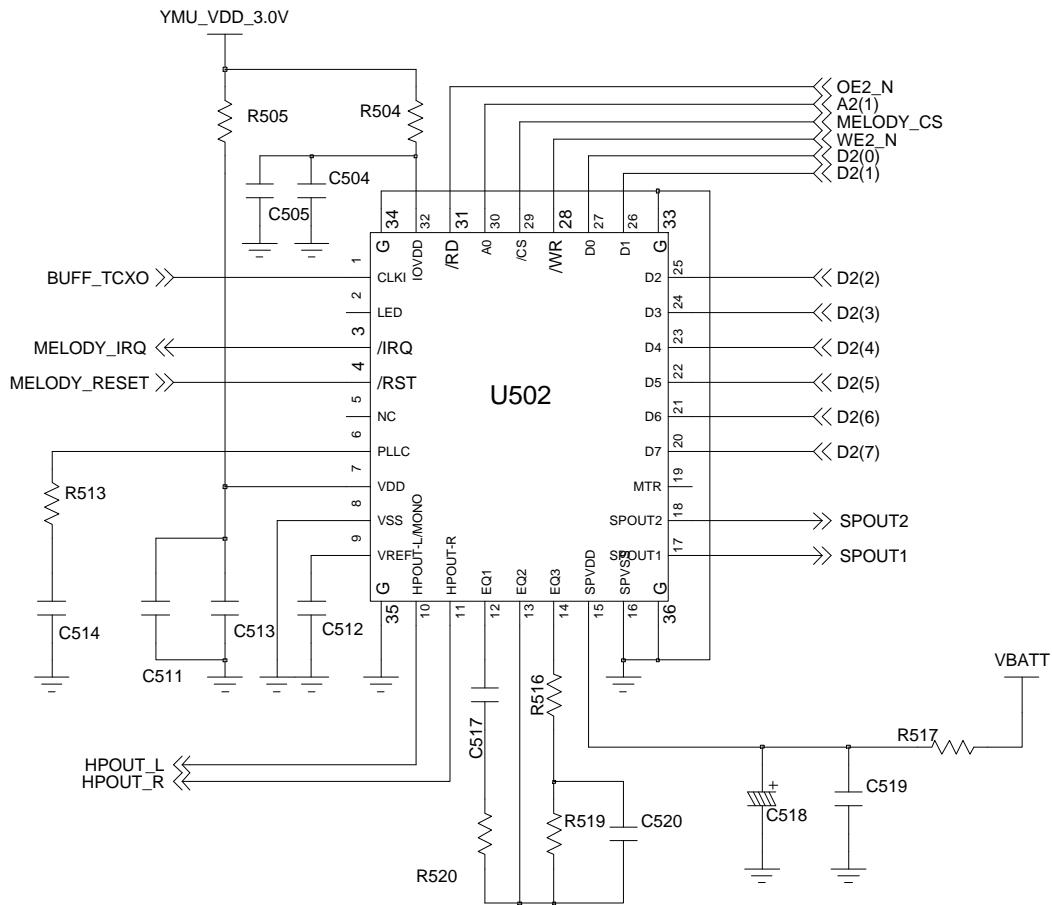
SIM



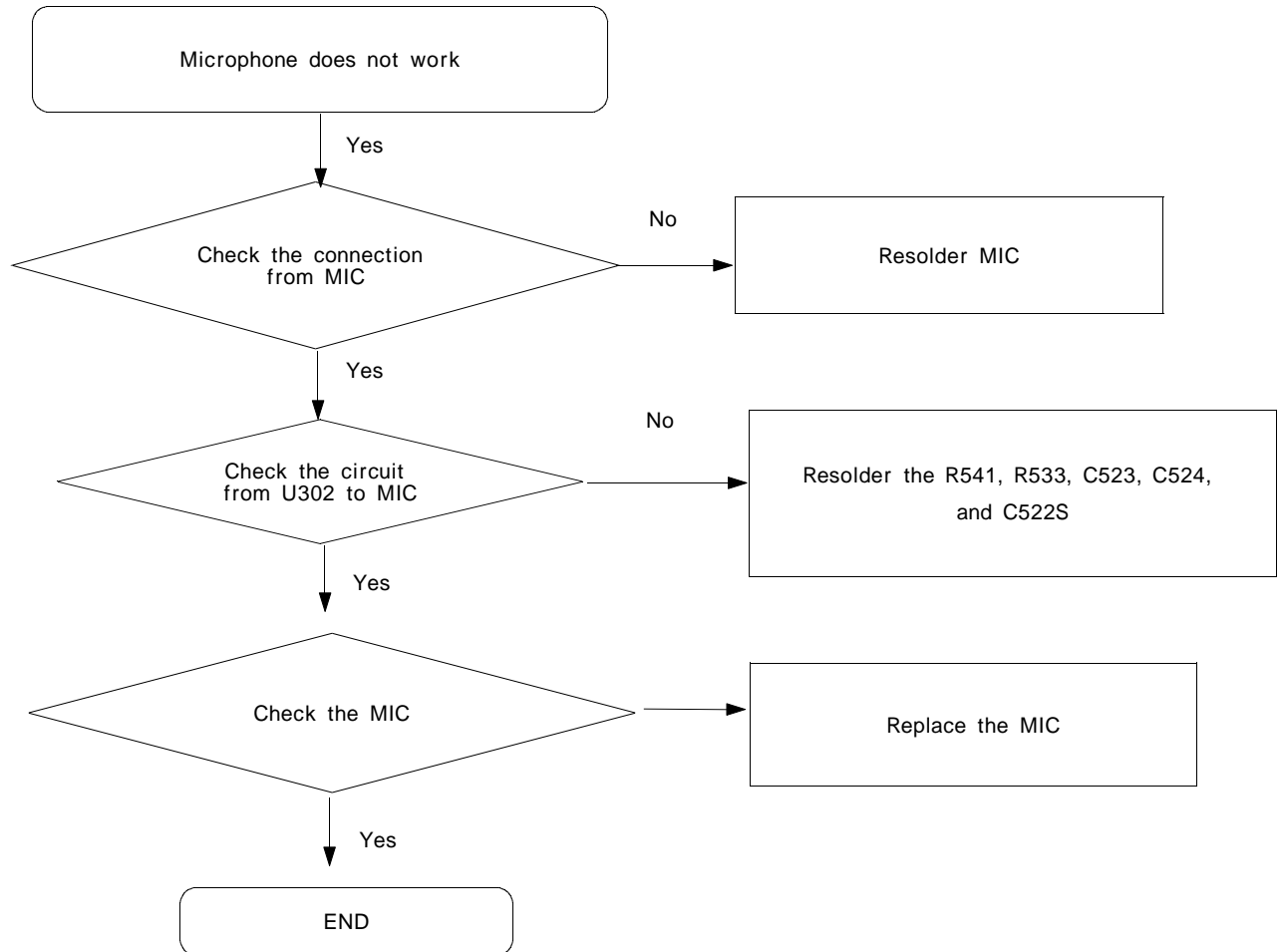
4. Speaker Part (Melody)



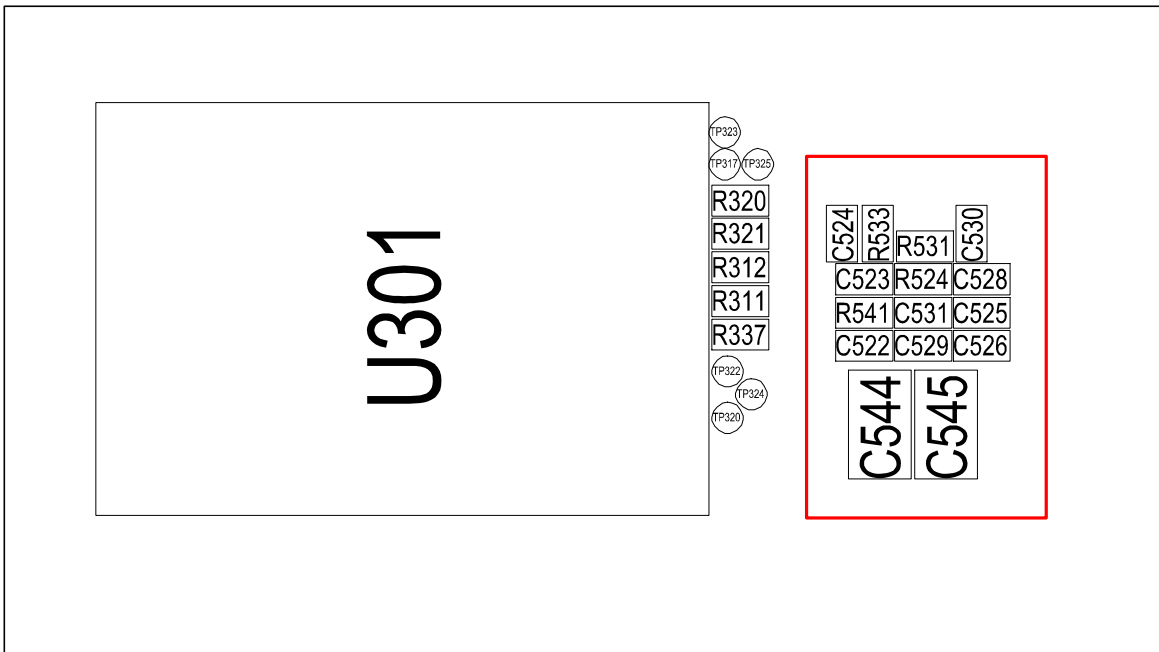
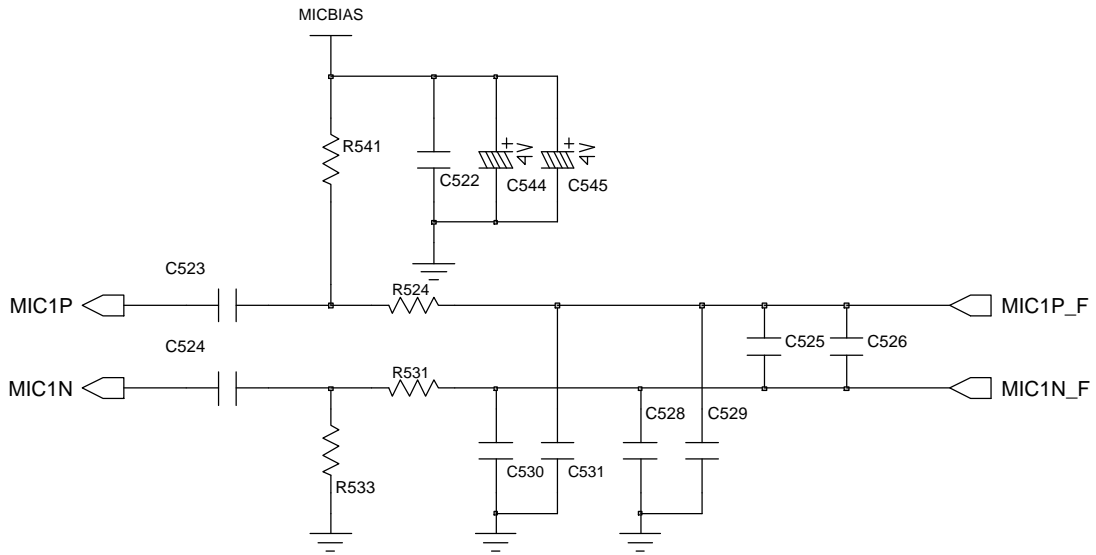
Speaker



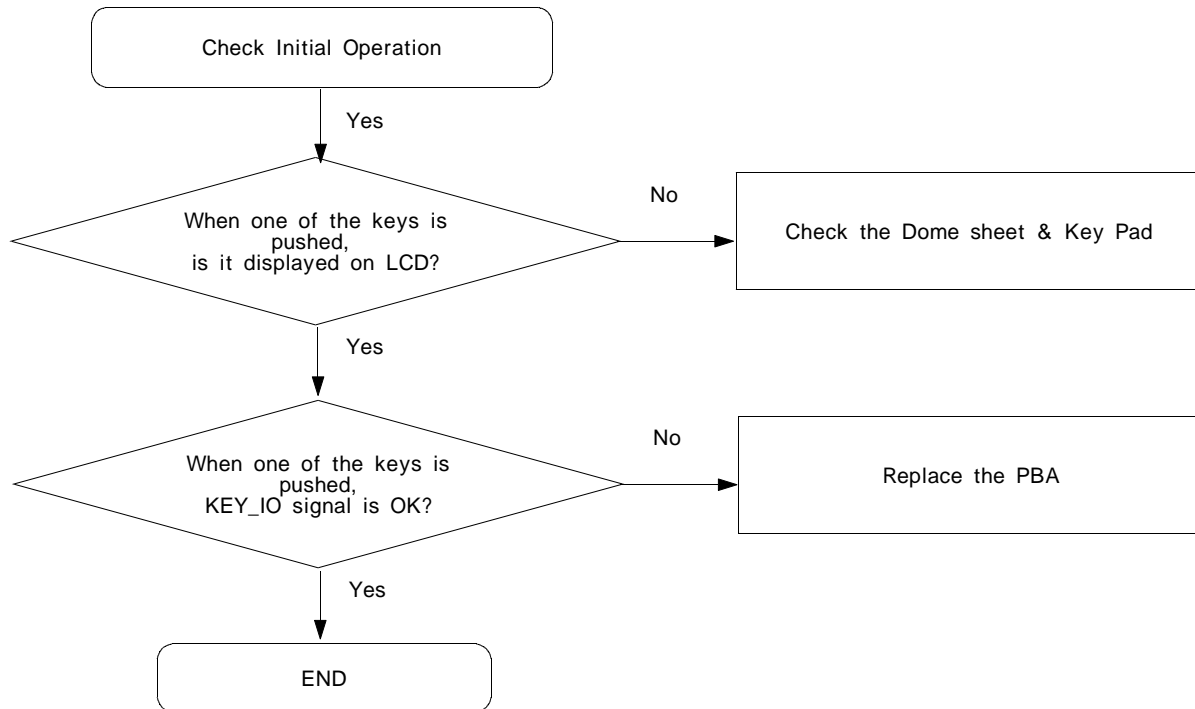
5. Microphone Part

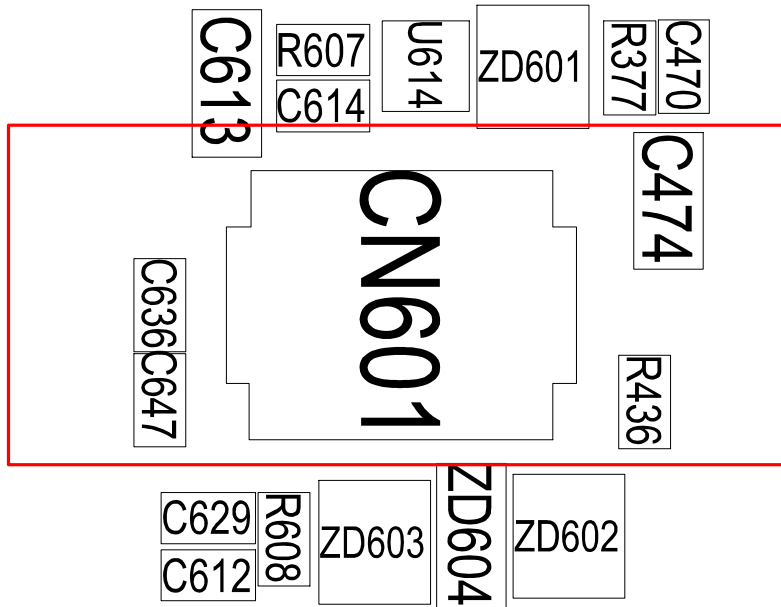
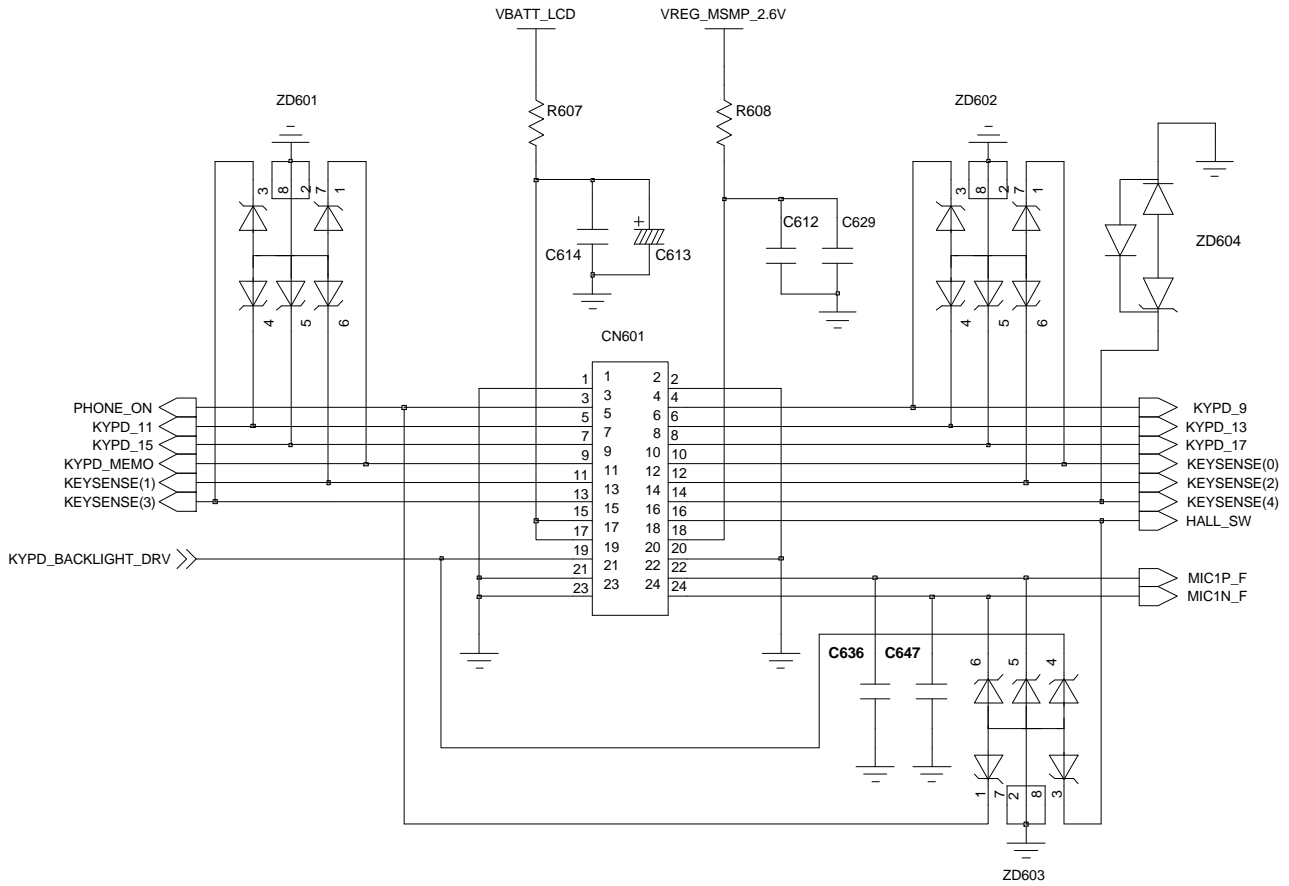


Microphone

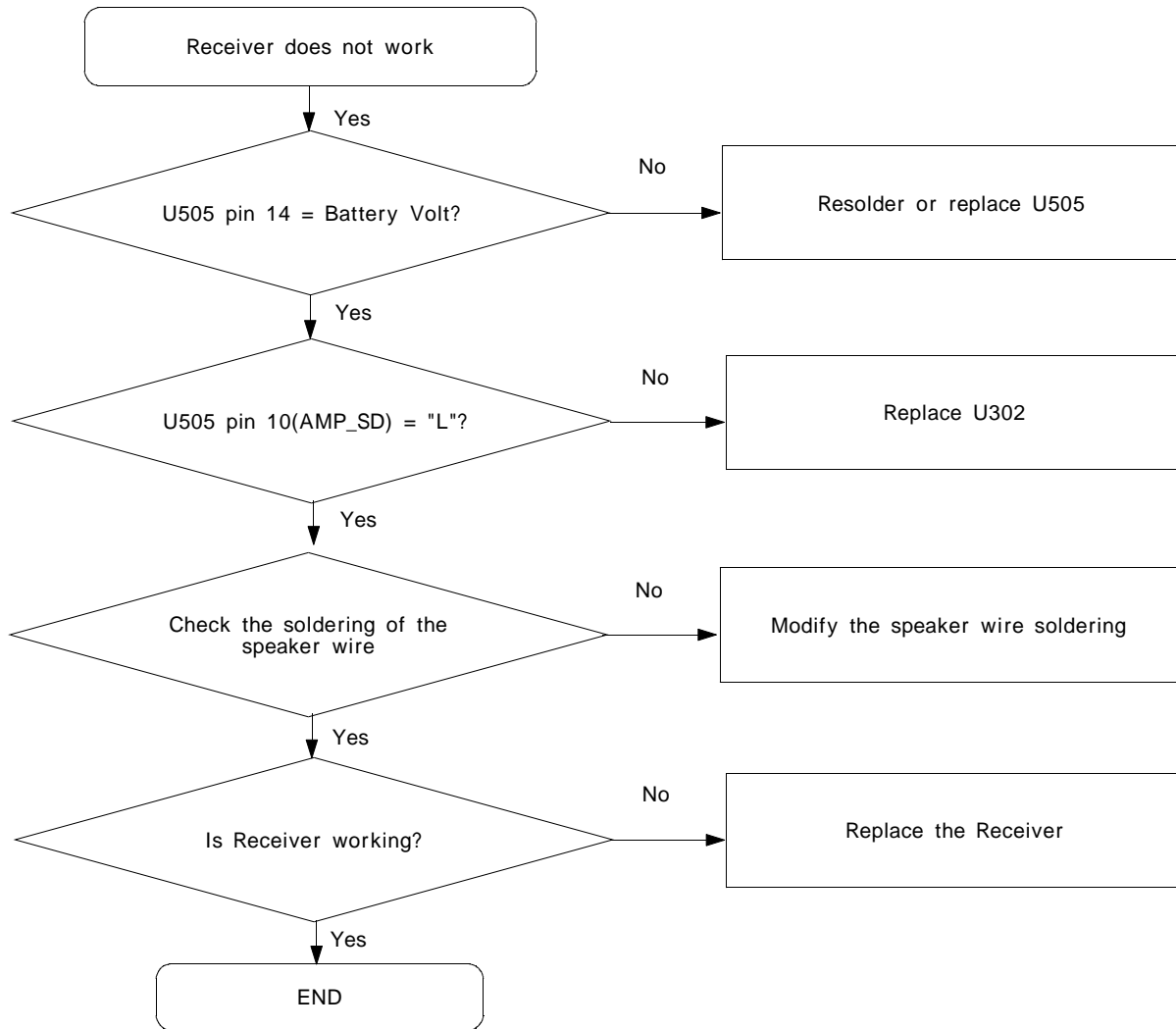


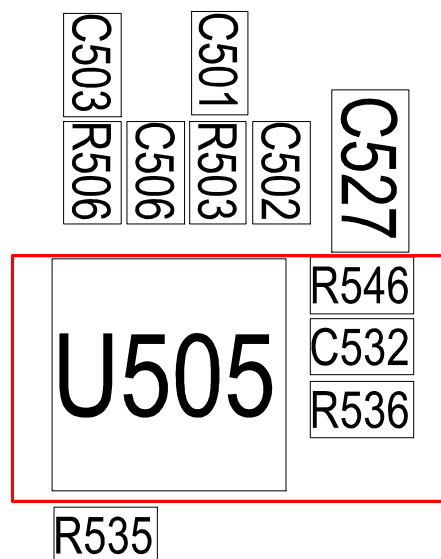
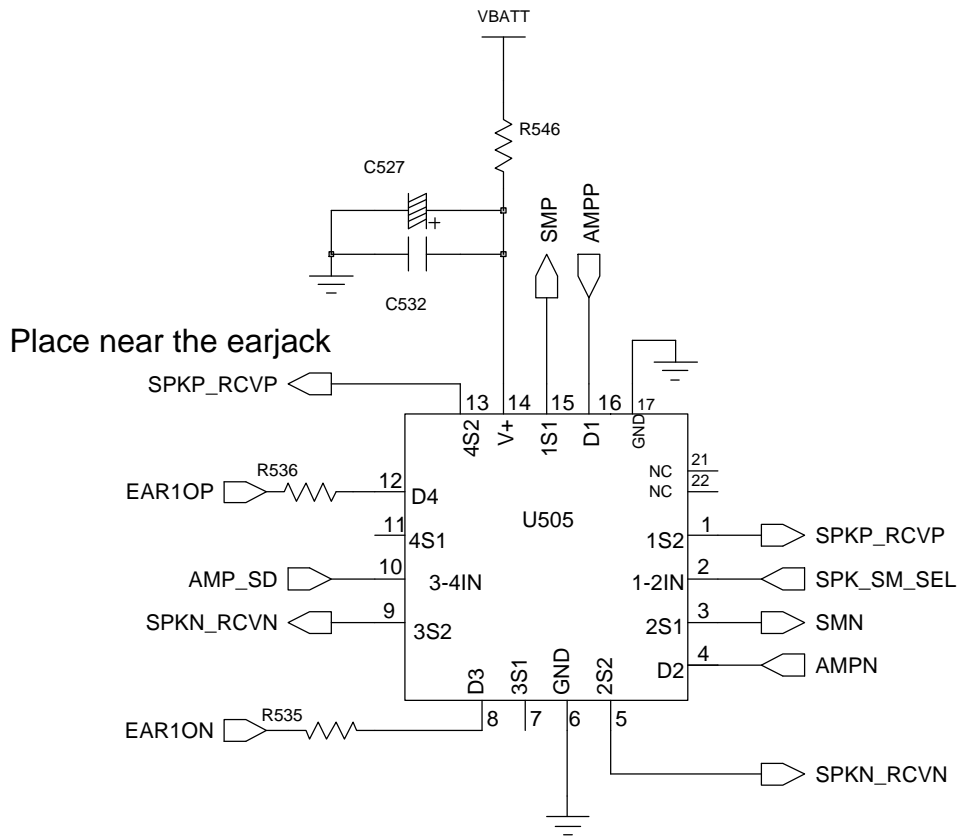
6. Key Data Input



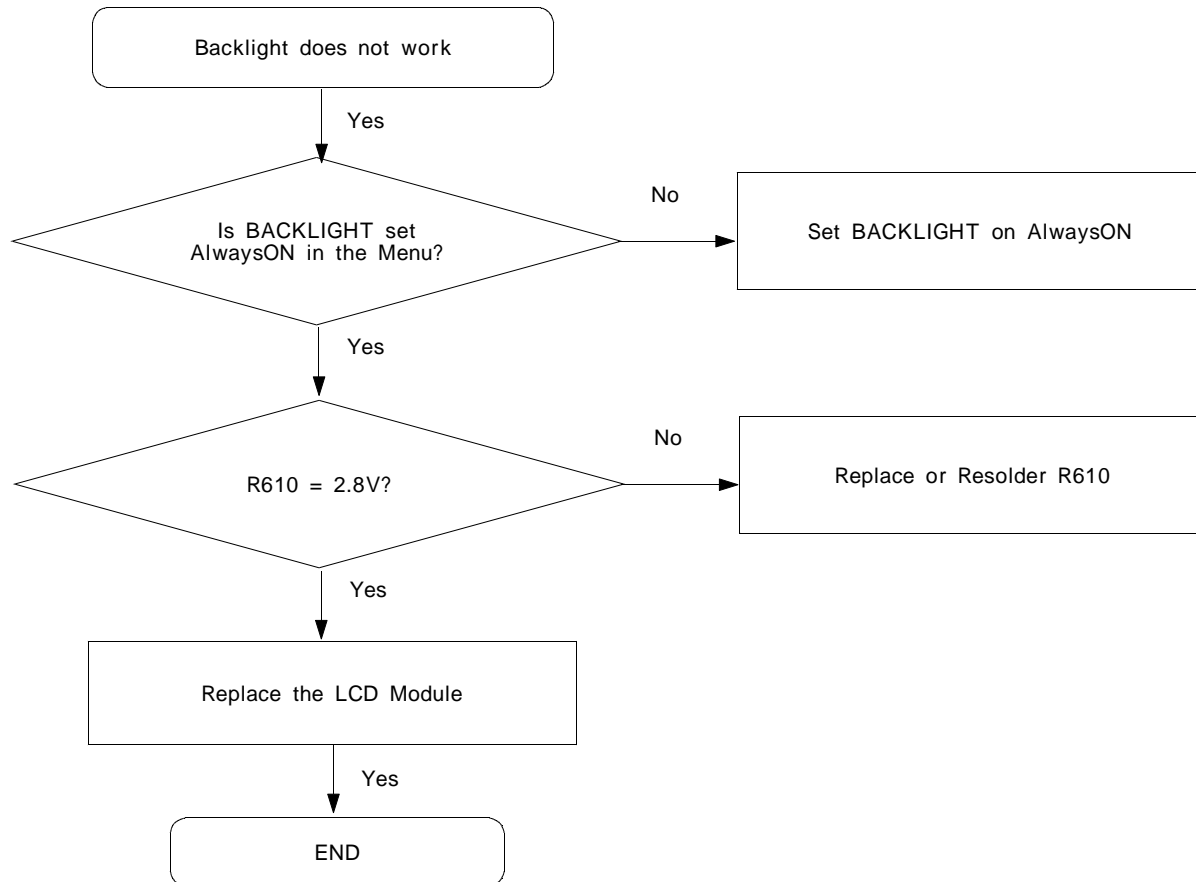


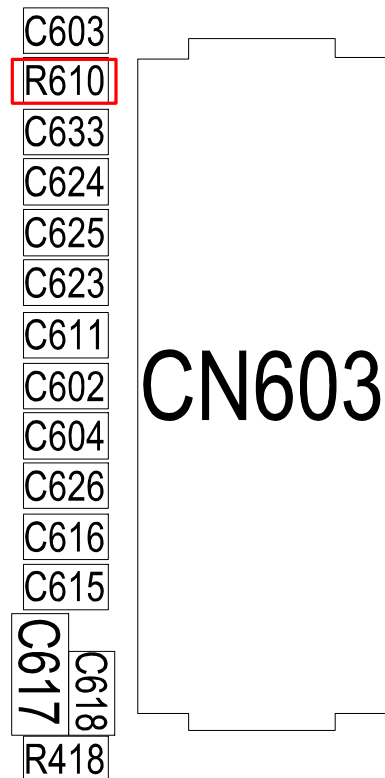
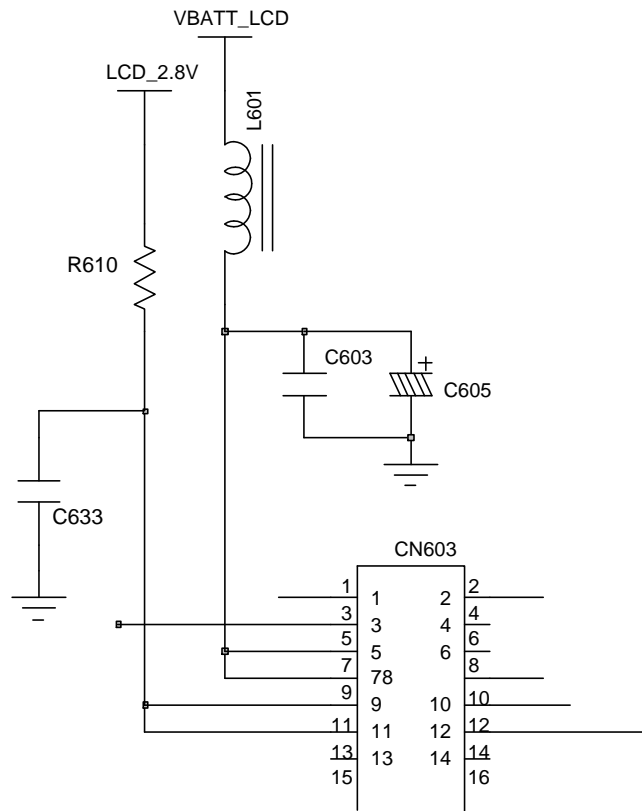
7. Receiver Part



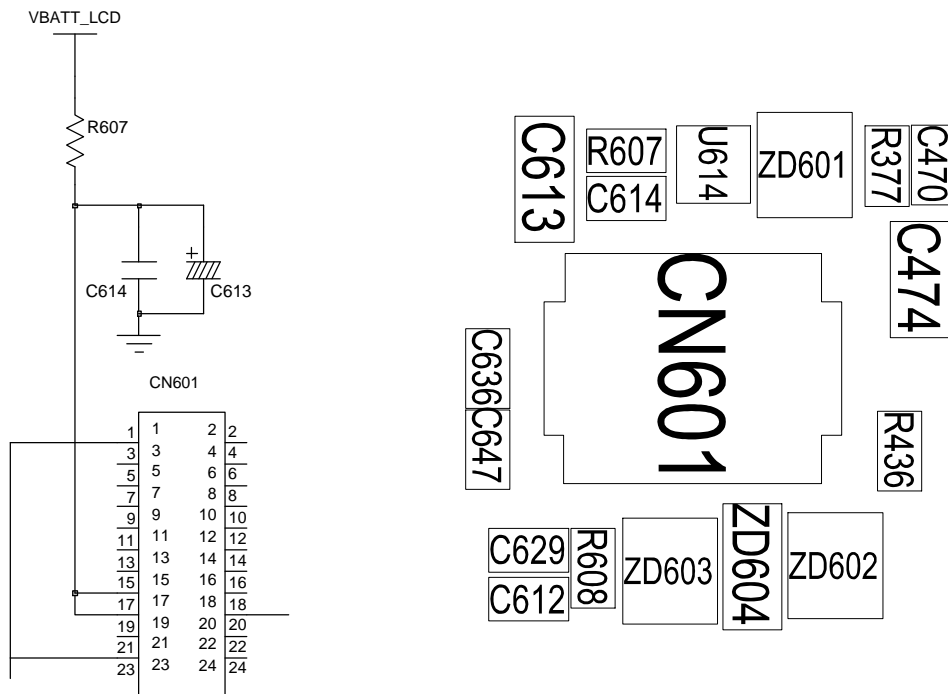
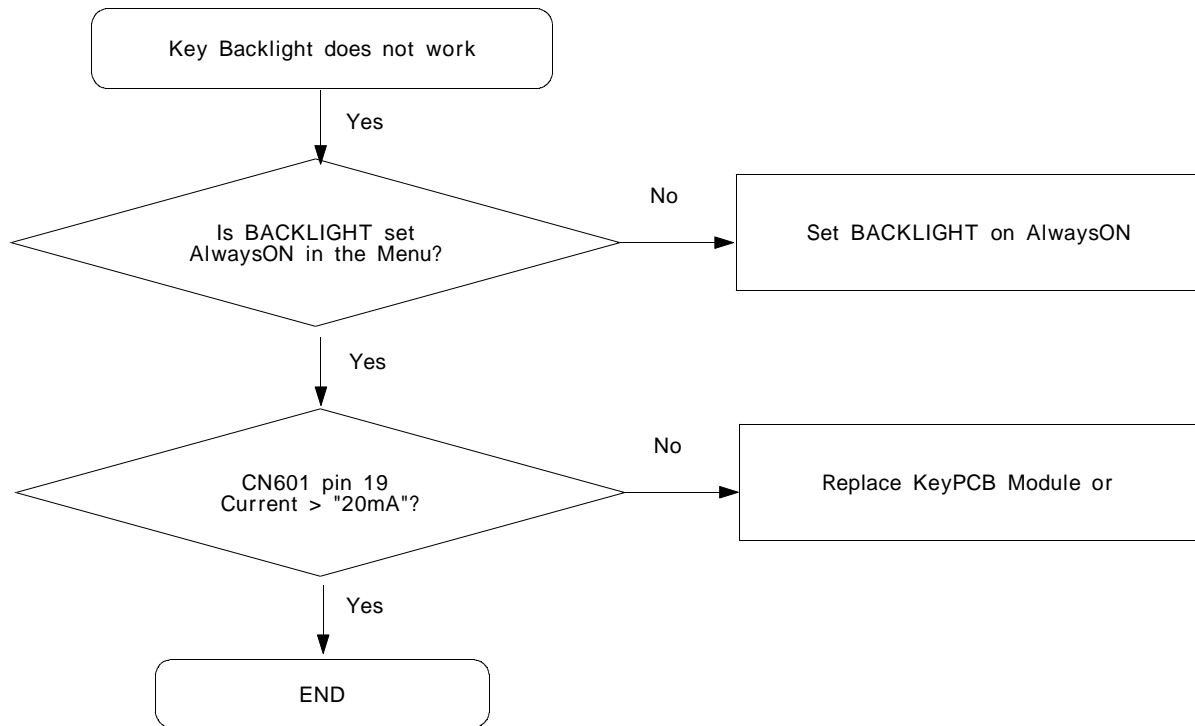


8. Back Light (for Color Main LCD)

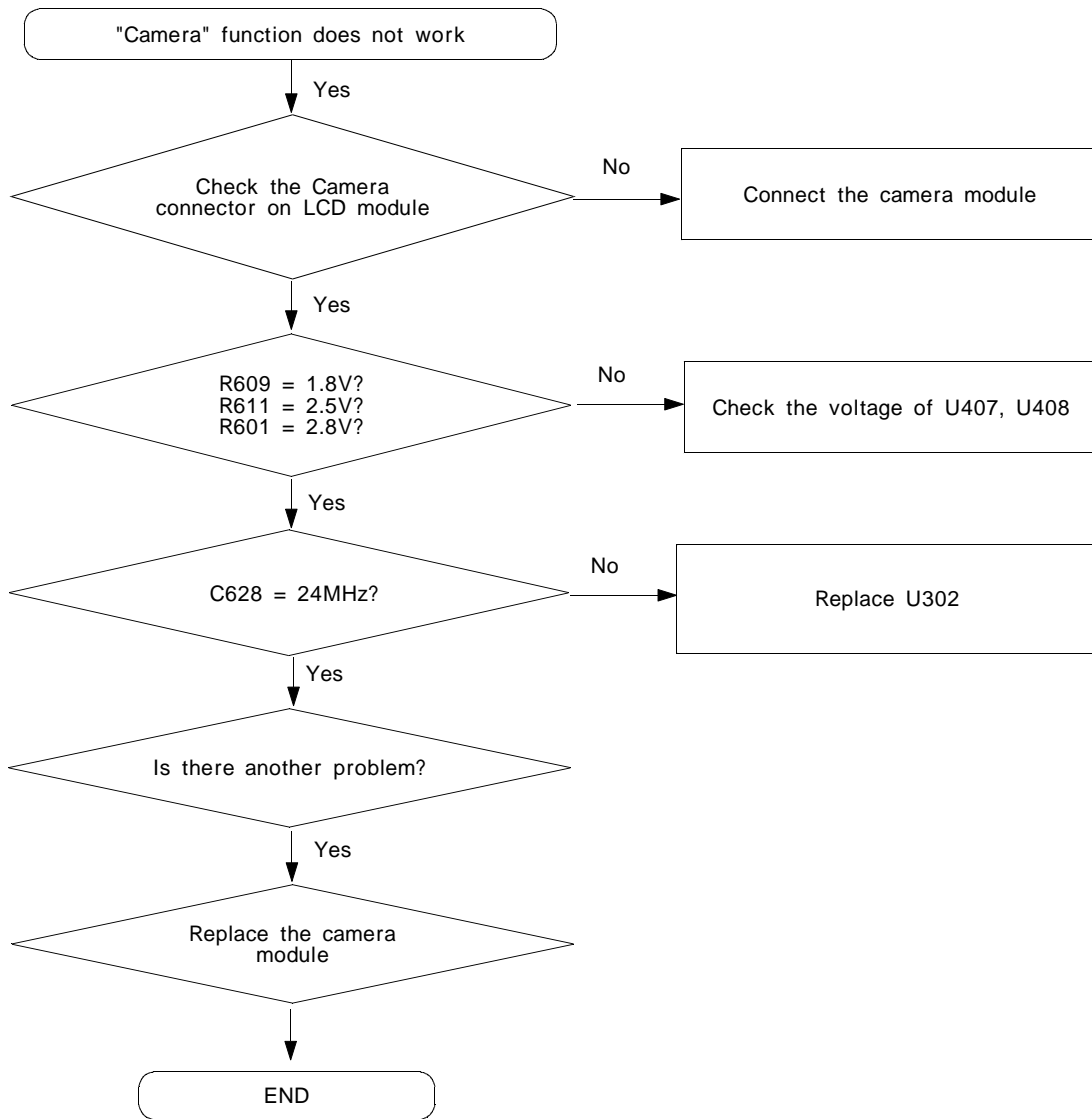


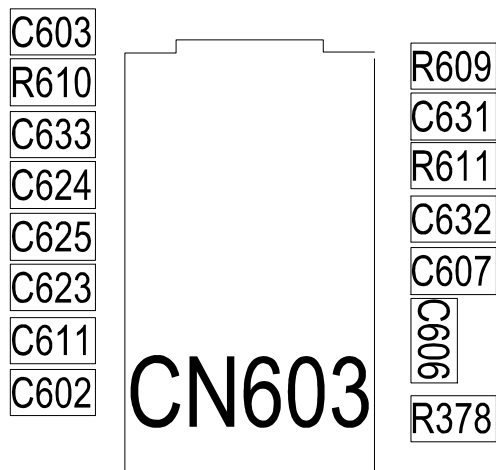
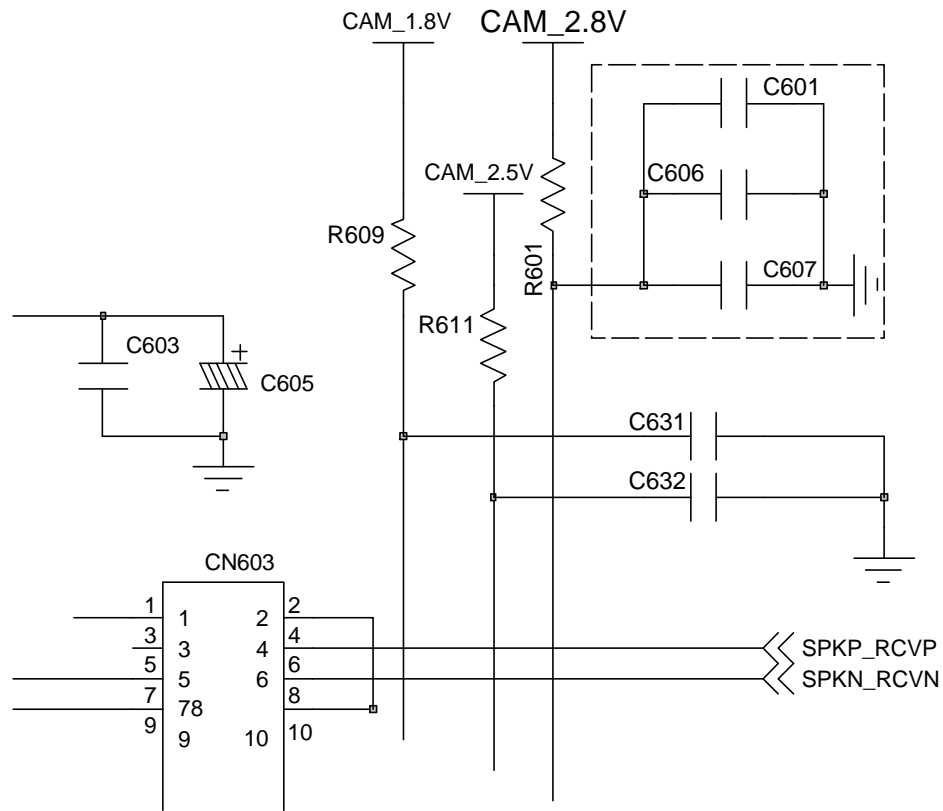


9. Key Back Light

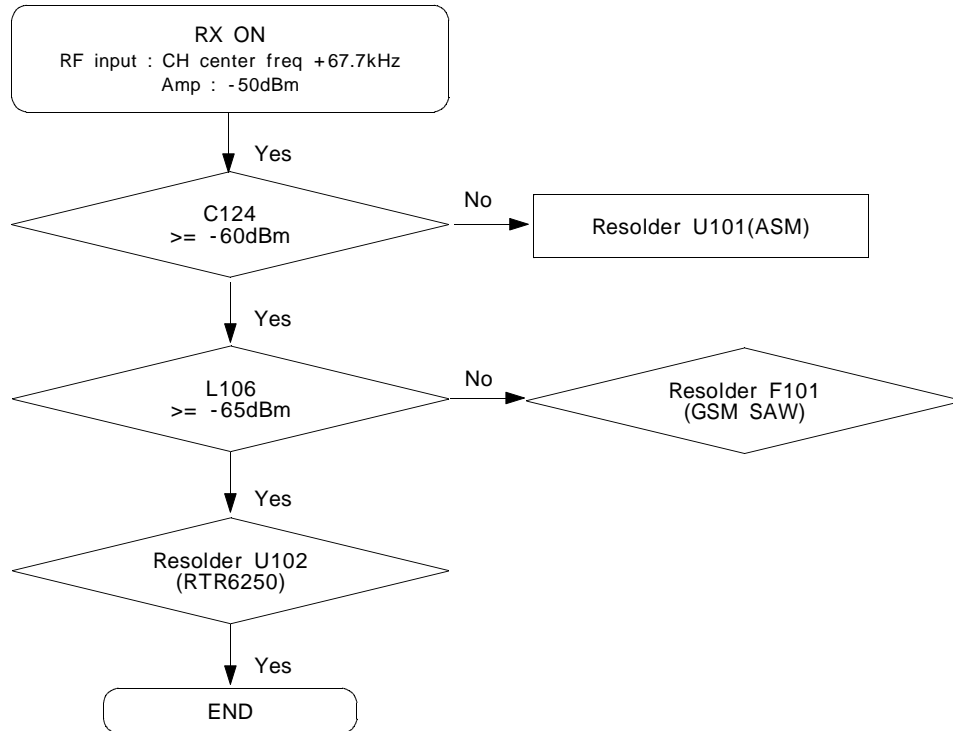


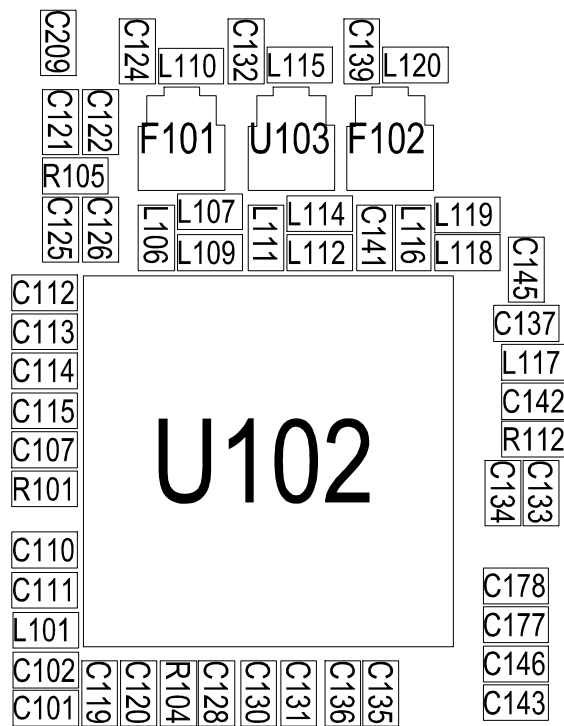
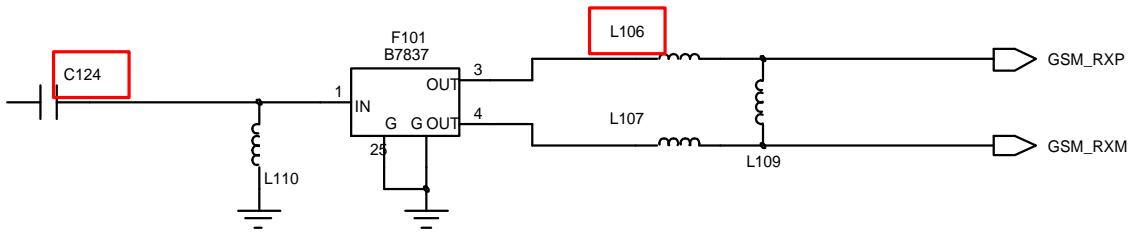
10. Camera part



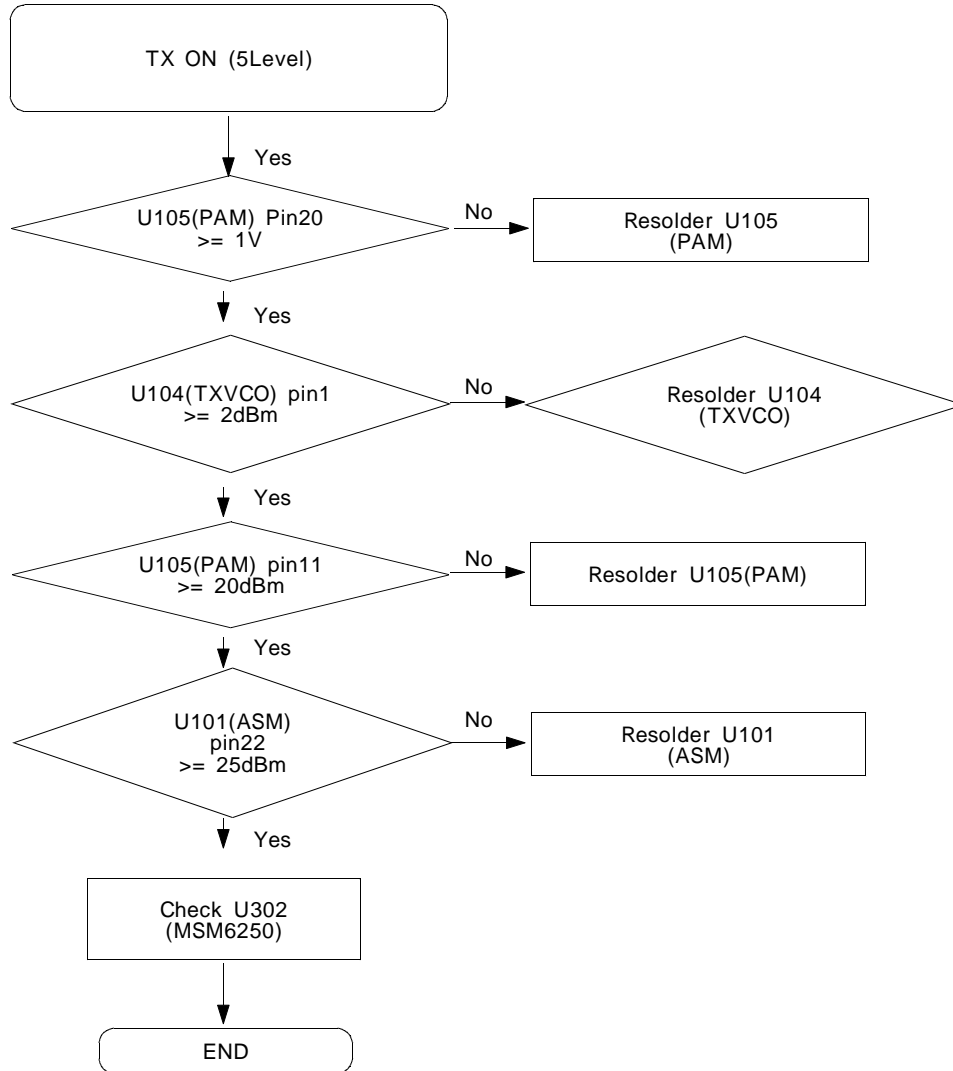


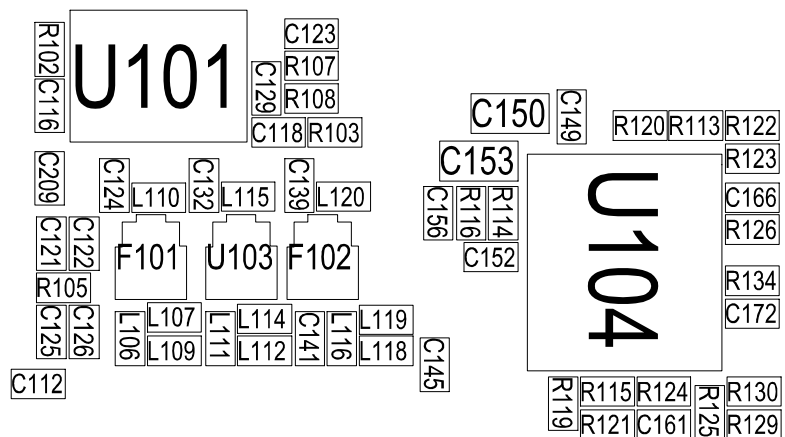
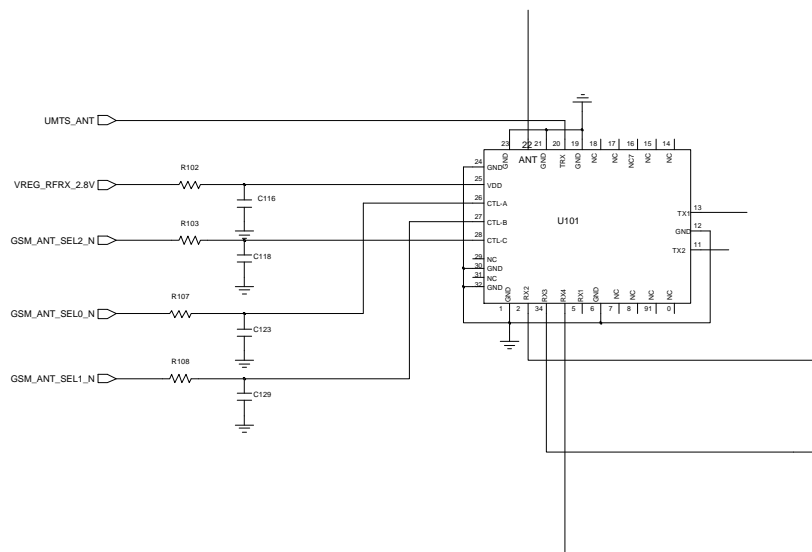
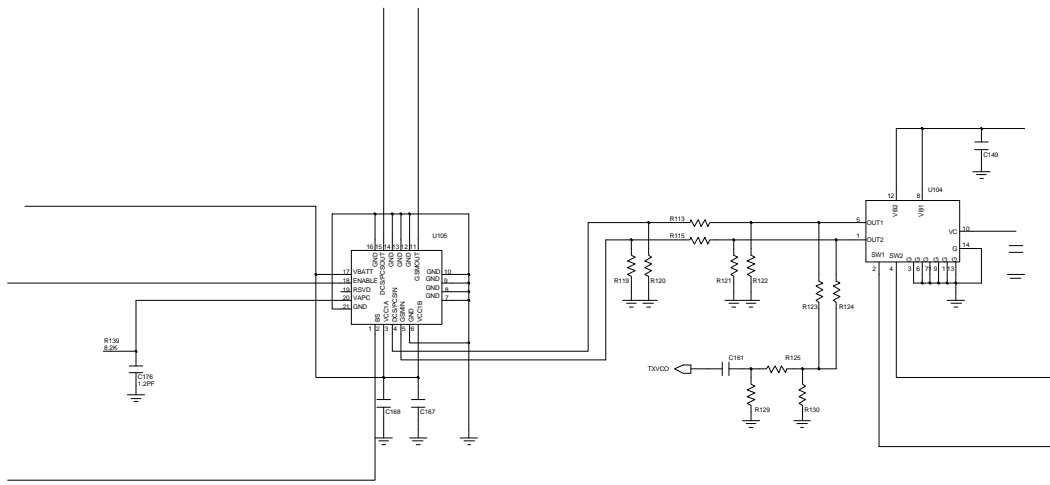
11. GSM Receiver



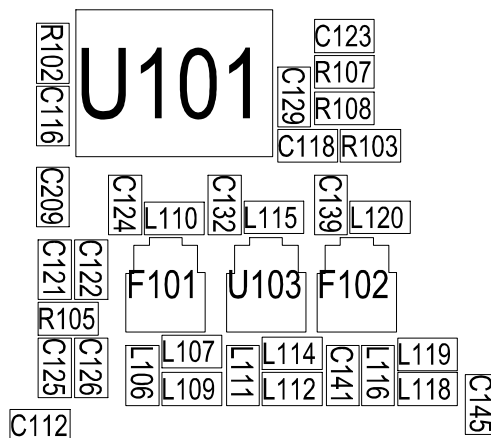
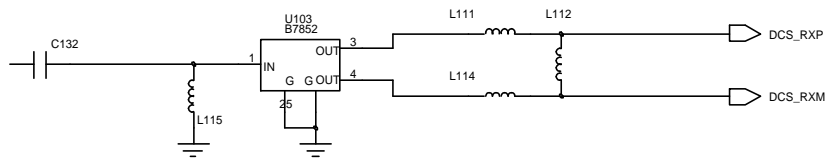
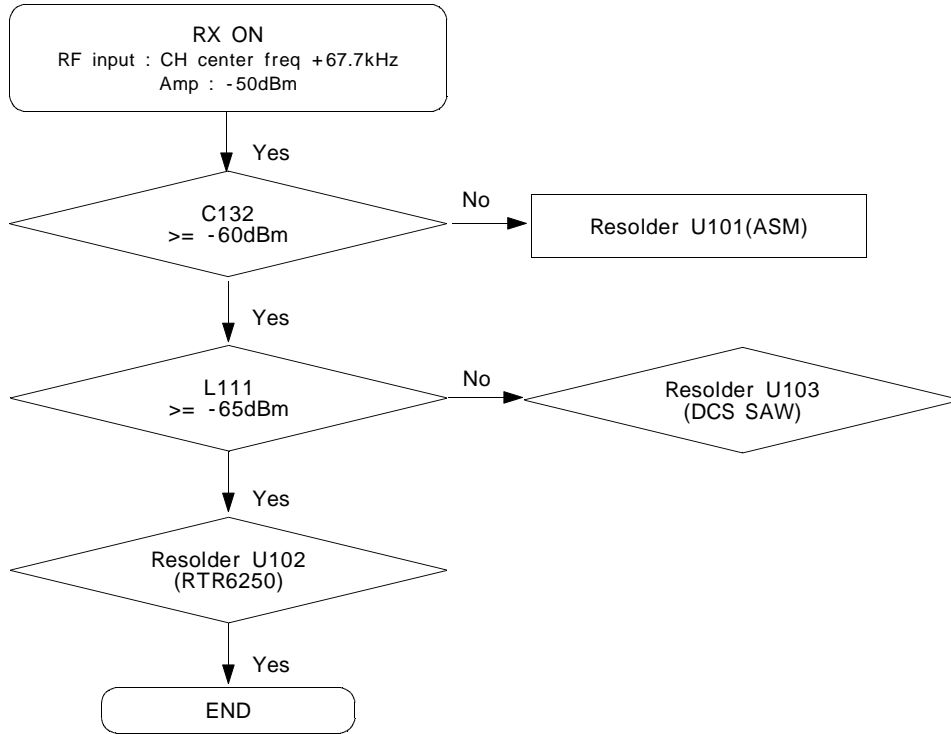


12. GSM Transmitter

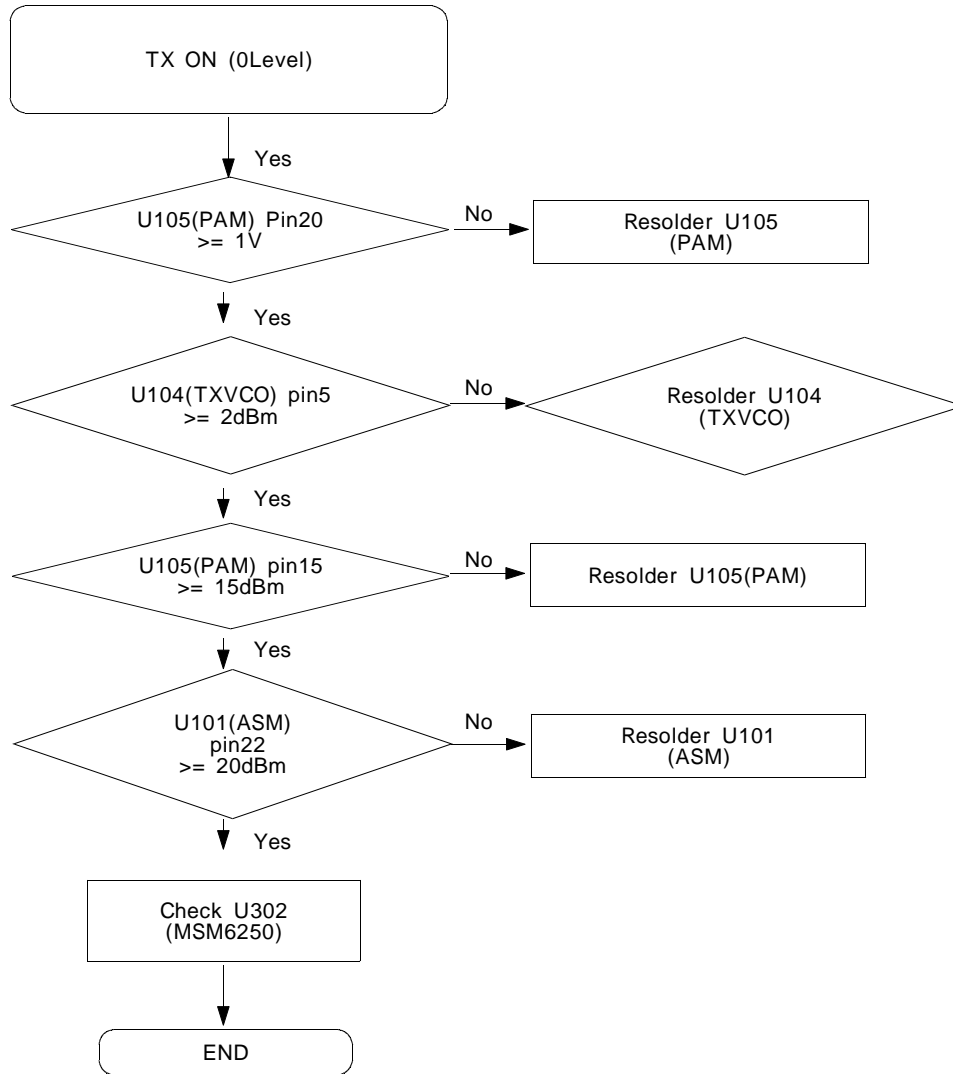


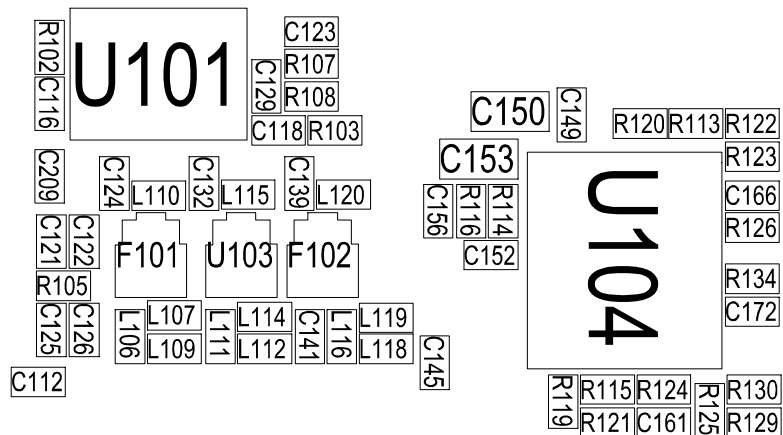
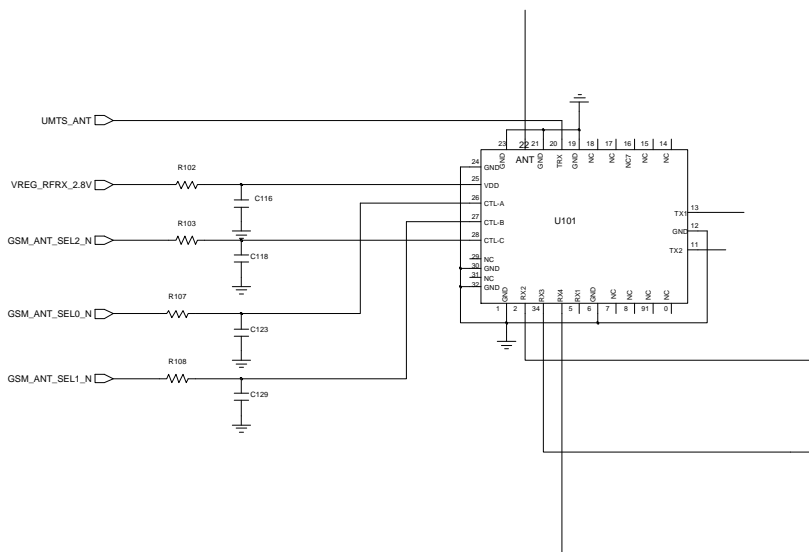
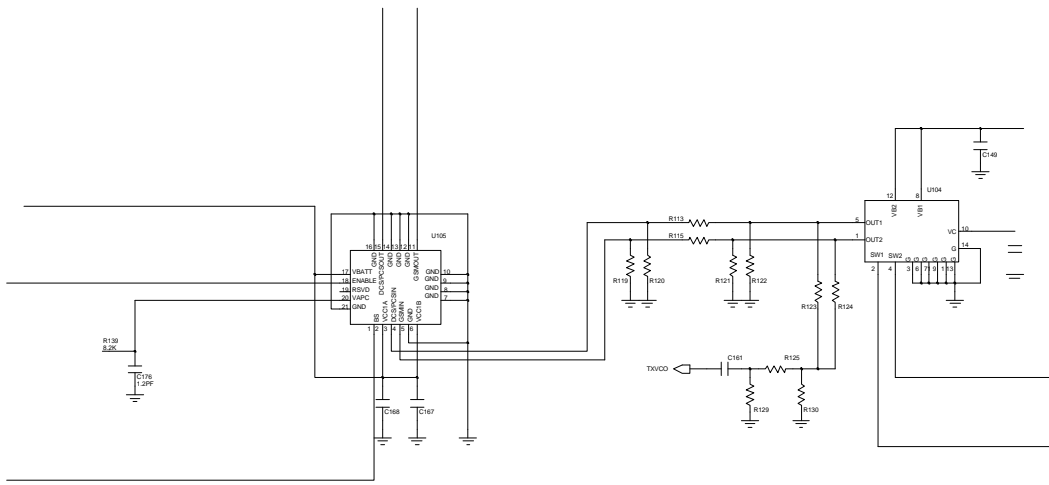


13. DCS Receiver

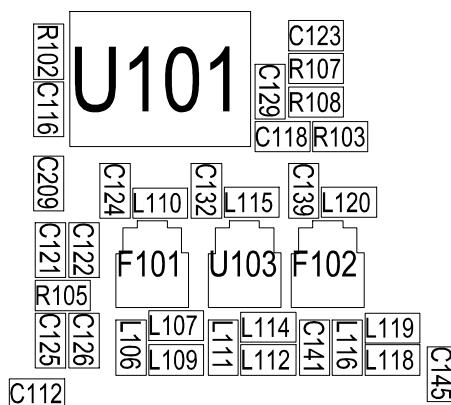
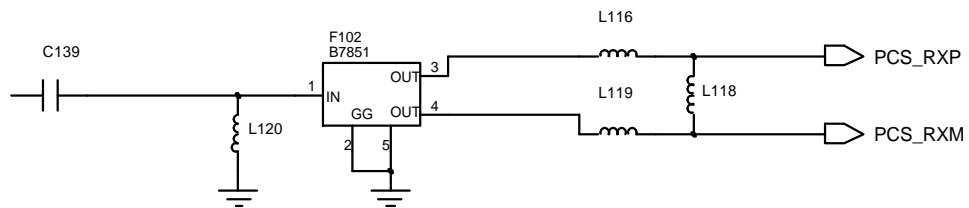
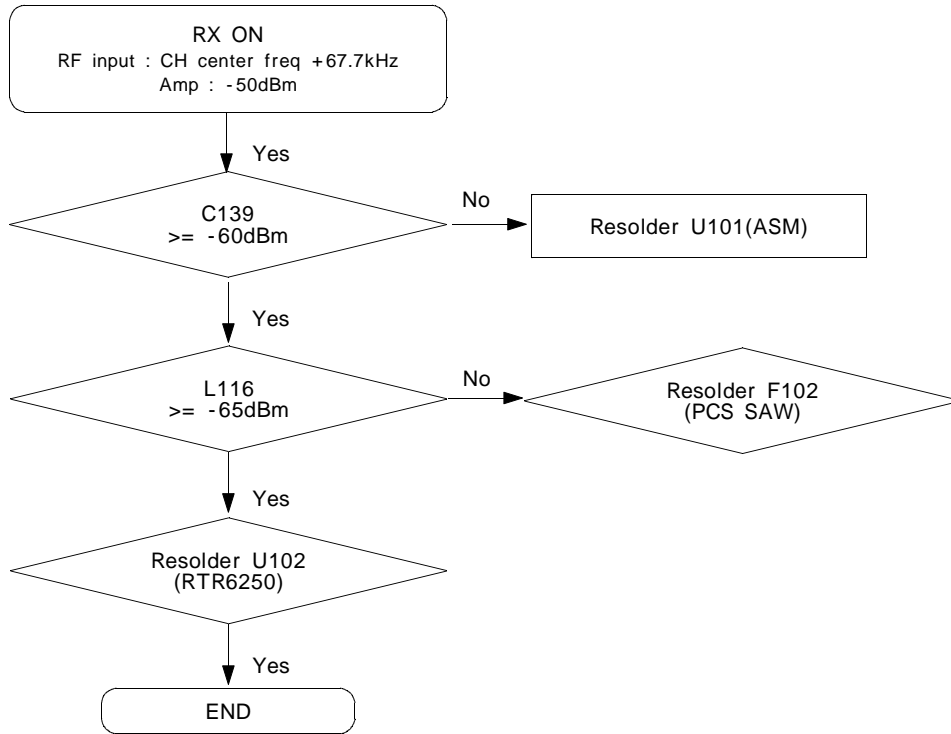


14. DCS Transmitter

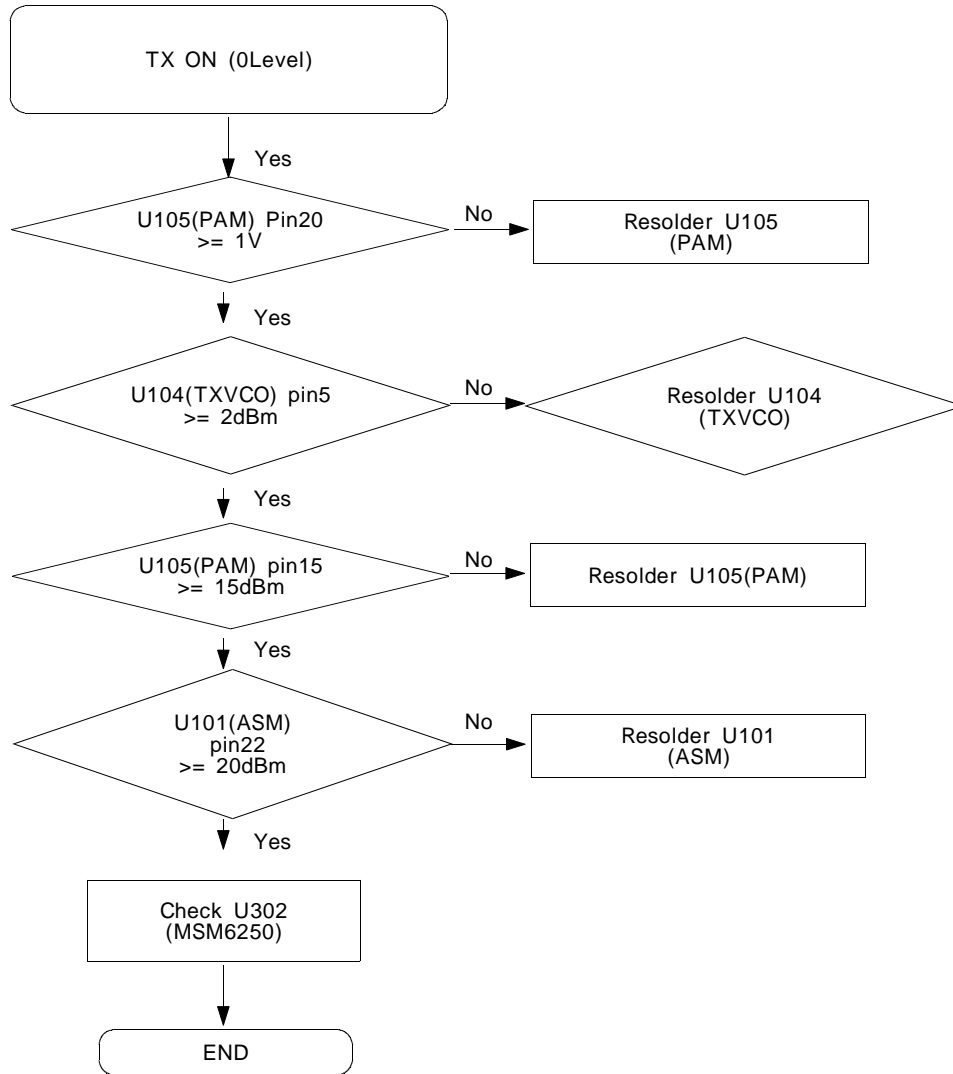




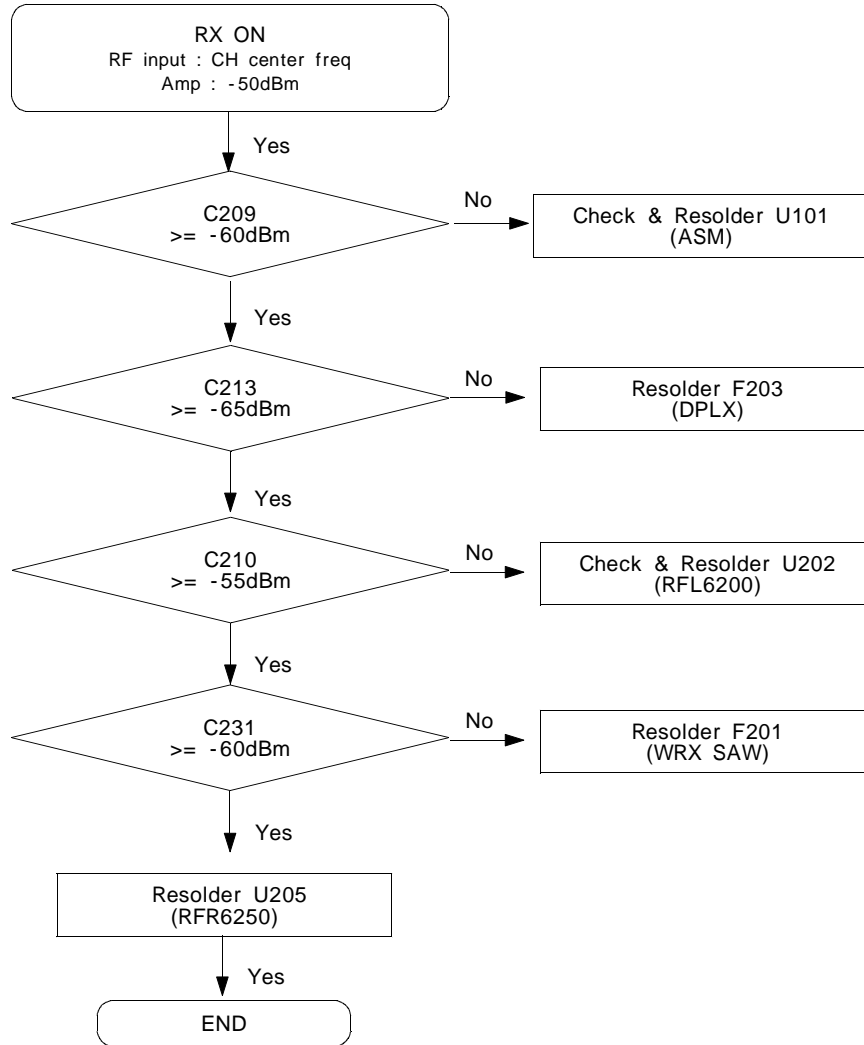
15. PCS Receiver



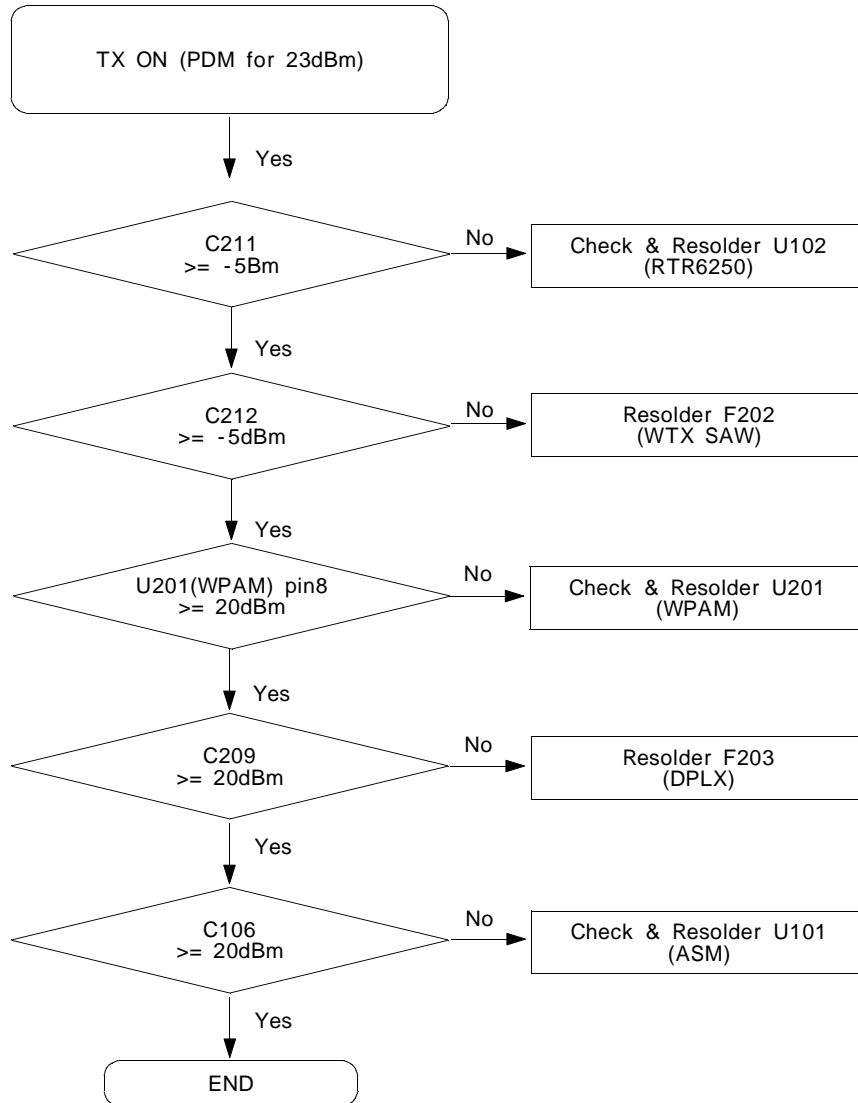
16. PCS Transmitter



17. WCDMA Receiver



18. WCDMA Transmitter



Transmitter

