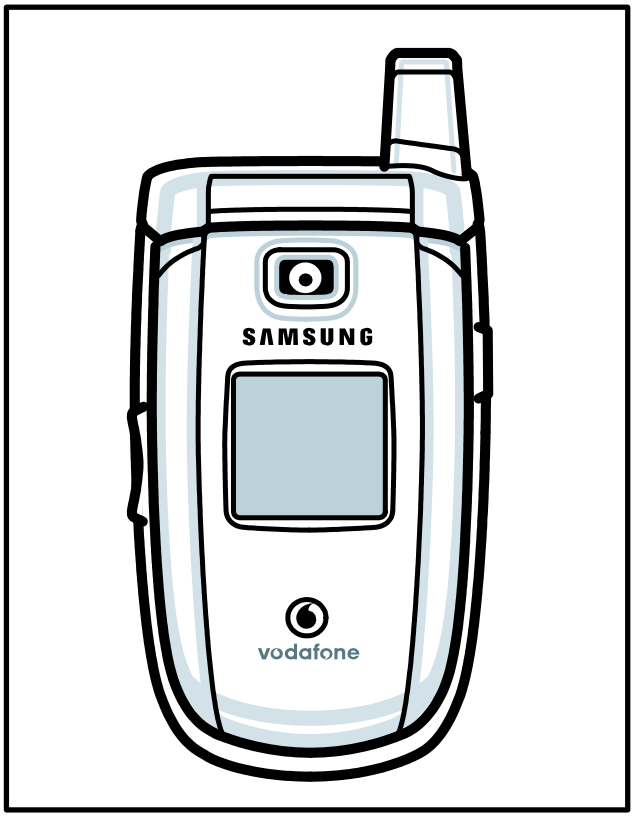
SAMSUNG

UMTS TELEPHONE
SGH-ZV10

SERVICE Manual

UMTS TELEPHONE



CONTENTS

SAMSUNG
ELECTRONICS

Code No.: GH68-08595A
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-ZV10 RF Circuit Description

- Antenna Switch Module (RFS103)

The antenna switch module allows multiple operating bands and modes to share the same antenna. A common antenna connects to one of seven 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.

- Filter

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

· GSM Rx FILTER (F100) → For filtering the frequency band between 925 ~ 960 MHz.
· DCS Rx FILTER (F101) → For filtering the frequency band 1805 and 1880 MHz.
· PCS Rx FILTER (F102) → For filtering the frequency band 1930 and 1990 MHz.
· WCDMA Rx FILTER (F200) → For filtering the frequency band 2110 and 2170 MHz.
· WCDMA Tx FILTER (F201) → For filtering the frequency band 1920 and 1980 MHz.

- VCTCXO (TCX200)

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

- Duplexer (F203)

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

- WCDMA PAM (PAM201)

This is a key component in the transmitter chain and must complement the RTR6200 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.

- GSM/DCS PAM (PAM102)

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.

- GSM/DCS Dual Tx VCO (VCO101)

The dual Tx VCO outputs, one for EGSM and one for DCS, 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.

- Dual VCO (VCO201)

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

- S1M8691X (U200)

The S1M8691X includes an LNA circuit optimized for UMTS-2100 operation. The LNA is separated from all other receive functions contained within the S1M8691X receiver IC to improve mixer LO to RF isolation a critical parameter in the Zero-IF architecture.

- S1M8621X (U615)

The S1M8621X provides the Zero-IF receiver signal path, from RF to analog baseband, for UMTS-2100 applications. The S1M8621X 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.

- RTR6250 (U101)

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, DCS Rx and Tx and UMTS Rx

4) Transceiver LO generation and distribution circuits
- EGSM-900 Rx and Tx
- DCS-1800 Rx and Tx
- PCS-1900 Rx and Tx
- UMTS-2100 Tx

2-2. Baseband Circuit description of SGH-ZV10

2-2-1. PM6650

- 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 seven LDO support for 1.375V, 1.8V, 2.6V, 2.85V, 3.0V, 3.3V while a self-resetting, electronically fused switch supplies power to external accessories. Ancillary support functions, such as RTC module and RTC charger, Clock Buffer, aid in reducing both board area and system complexity.
SBI BUS serial interface provides access to control and configuration registers. This interface gives full control of the MSM6250 and enables system designers to maximize both standby and talk times.
Supervisory functions. including a reset generator, an input voltage monitor, and a ADC Conertte support reliable system design. These functions work together to ensure proper system behavior during start-up or in the event of a fault condition(low microprocessor voltage, insufficient battery energy, or excessive die temperature).

- 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.

2-2-2. Connector

- LCD Connector

LCD is consisted of main LCD(color 260K TFT LCD) and small LCD(color 65K LCD). Main LCD has 1.8", 176x220 resolution and sub LCD has 1.07", 96x96 resolution. Sub LCD uses STR to improve reflection performance. Chip select signals in MSM6250, MLCD_CS_N can enable main LCD and SLCD_CS_N can enable small LCD. MLCD_BL_EN enables white LED of main LCD. MLCD_RESET signal initiates the reset process of the main LCD. SLCD_RESET signal initiates the Reset process of the small LCD.

- Key

This is consisted of key interface pins among U301, KEY_N(0:4). These signals compose the matrix. Result of matrix informs the key status to key interface in the U301. Power on/off key is seperated from the matrix. The key LED use the "VREG_KEY_LED" supply voltage. "HALL_SW" informs the status of folder (open or closed) to the.

- EMI ESD Filter

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

- IF connetor

It is 24-pin connector. They are designed to use VBATT, VF, MSM_TDI, MSM_TDO, MSM_TCK, MSM_TMS, MSM_TRST, MSM_RTCK, RFR, CTS, JIG_ON, USB_VBUS, RXD, TXD, BOOT_SW and GND. They connected to power supply IC, microprocessor and signal processor IC.

2-2-3. Audio

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.

2-2-4. Memory

The signals in the MSM6250 enable two memories. They use volt supply voltage, VREG_MSMP, VREG_MSME 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.

2-2-5. Camera

The camera module consists of VGA pixel of system LSI(Samsung Techwin), 1/5.8" VGA CMOS image sensor with an embedded image signal processor. Pixel size is 4.0 um and effective resolution is 640(H) x 480(V).

2-2-6. Irda

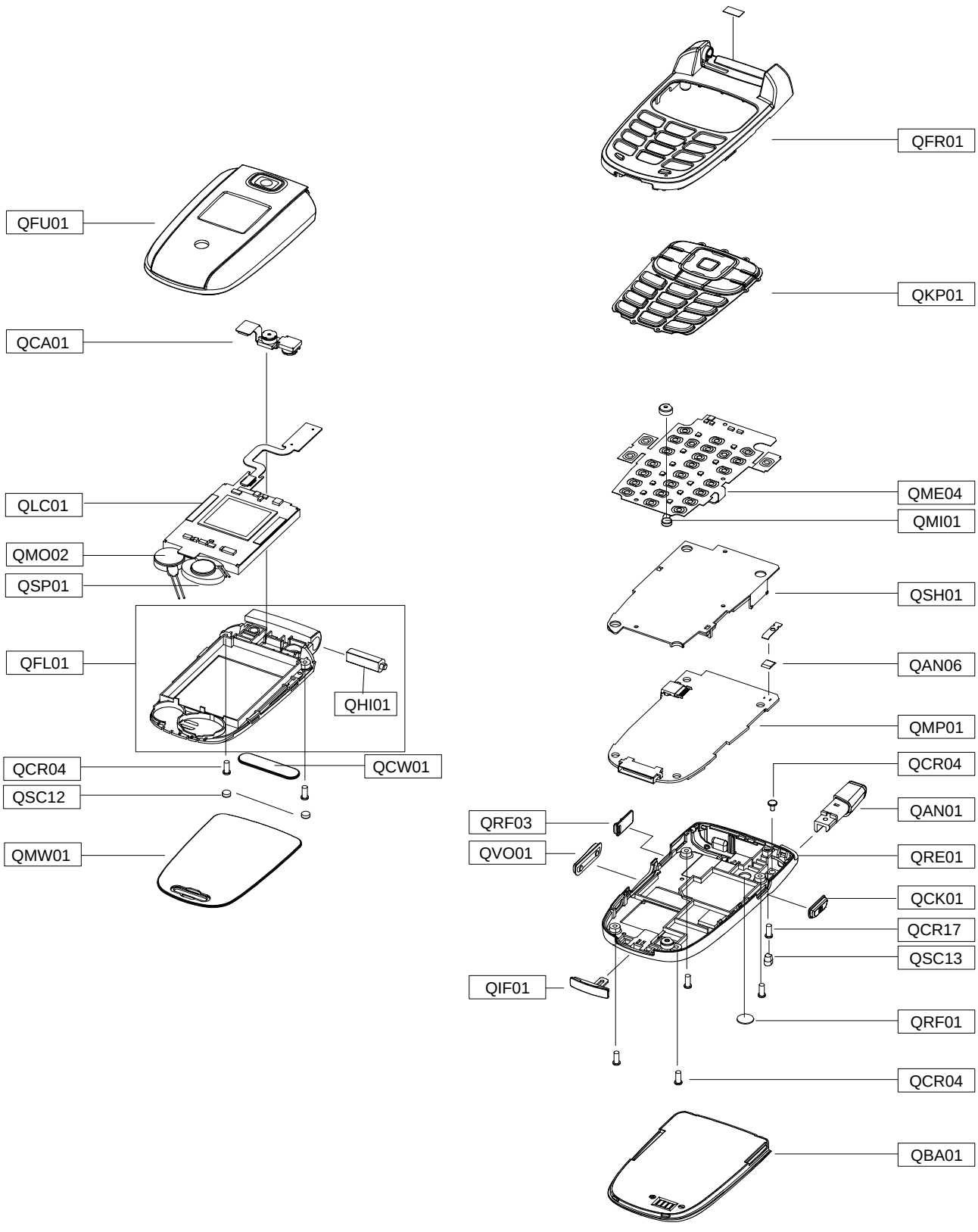
This system uses IRDA module, HSDL_32085, Agilent's. It uses two power signals, "VREG_MSMP" for circuit and "VBATT" for LED.

2-2-7. Bluetooth

This system uses Bluetooth module, LBDA245AN0, Murata's. Chip solution is of Broadcom, BCM2004. It uses a power signal, "VREG_BT". This system uses Blue-Q interface in that module has RF circuit and base band bluetooth part is in MSM6250.

3. Exploded View and Parts List

3-1. Exploded View



3-2. Parts List

Location No		Description	Sec Code
QAN01		ANTENNA-SGHZV10;NSB0402-SS307SVSR,SG	GH42-00634A
QAN06		RMO-RUB ANTENNA CONTACT;SGH-ZV10,CR	GH73-05409A
QBA01		BATTERY-1000M,GRY,EU,M;BST532ABE/STD	GH43-02070A
QCA01		UNIT-CAMERA;SGH-ZV10,IC02044AA,-,EU,	GH59-02378A
QCK01		PMO-KEY CAMERA;SGH-ZV10,ABS+URETHANE	GH72-23959A
QCR04		SCREW-MACHINE;PH,+,-,M1.4,L4,ZPC(BLK	6001-001479
QCR17		SCREW-MACHINE;PH,+,M1.4,L5,ZPC(BLK),	6001-001645
QCW01		MEC-CAMERA WINDOW;SGH-ZV10,EU,-,-,-,	GH75-07700A
QFR01		MEC-FRONT COVER;SGH-ZV10,EU,-,-,-,-,	GH75-07696A
QIF01		PMO-IF COVER;SGH-ZV10,PC G31573B+URE	GH72-23960A
QKP01		MEC-KEYPAD;SGH-ZV10,EU,-,-,-,-,BLK,-	GH75-07701A
QLC01		LCD-LCD MODULE;LTD180QC-F0B,SGH-ZV10	GH07-00753A
QME04		UNIT-KEY PAD;SGH-ZV10,EDTGZV10K,-,EU	GH59-02304A
QMI01		MICROPHONE-ASSY-6.25MM;2,130~500uA,-	GH30-00177F
QMO02		MOTOR-DC;12000rpm,0g.cm,3V,90mA	3101-001370
QMP01		PBA MAIN-SGHZV10 MAIN;SGH-ZV10,VODAF	GH92-02376A
QMW01		MEC-MAIN WINDOW;SGH-ZV10,EU,-,-,-,-,	GH75-07699A
QRE01		MEC-REAR COVER;SGH-ZV10,EU,-,-,-,-,B	GH75-07702A
QRF01		MPR-SHEET RF CAP;SGH-ZV10,PC SHEET,P	GH74-16864A
QRF03		PMO-EAR COVER;SGH-ZV10,PC G31573B,SI	GH72-23957A
QSC13		RMO-REAR SCREW CAP;SGH-ZV10,SI RUBBE	GH73-05169A
QSH01		NDC-SHIELD CAN;-,SGH-ZV10,ZN DIE-CAS	GH71-05366A
QSP01		SPEAKER;0.7W,8ohm,89dB+-2dB,780Hz,18	3001-001823
QVO01		MEC-KEY VOLUME;SGH-ZV10,EU,-,-,-,-,S	GH75-08212A
QFU01		MEC-FOLDER UPPER;SGH-ZV10,EU,-,-,-,-	GH75-07697A
QFL01		MEC-FOLDER LOWER;SGH-ZV10,EU,-,-,-,-	GH75-07698A
	QHI01	MEC-HINGE;SGH-X460,-,-,-,-,-,SIL,-	GH75-04948A

Description	Sec Code
BAG PE;LDPE,T0.05,W80,L180,TRP,-,-	6902-000634
CBF INTERFACE-DATA LINK CABLE;SGH-Z1	GH39-00421A
CHARGER-SGHZ500 TC;TCH137EBE,SGH-Z50	GH44-01007A
S/W CD-PC STUDIO A TYPE;SGH-ZV10,SGH	GH46-00172A
UNIT-EARPHONE;SGH-C230,EM-SS550E-STB	GH59-02166A
LABEL(P)-WATER SOAK;COMM,NORGE,100G,	GH68-02026A
MANUAL-WEEE CARD;COMM,SEC,ENGLISH,UN	GH68-07013A
LABEL(R)-MAIN(EU);SGH-ZV10,SAM,POLYE	GH68-08100A
MANUAL-USER;SGH-ZV10,VD2,GERMAN,GERM	GH68-08158A
MANUAL-QSG;SGH-ZV10,VD2,GERMAN,GERM,	GH68-08196A
CUSHION-LOWER CASE;SGH-Z107,PULP,T0.	GH69-02401A
BOX(P)-MENUAL BOX(UMTS);SGH-Z107V,SI	GH69-02540C
CUSHION-CASE(UP);SGH-ZV10,PULP,T0.8,	GH69-03238A
BOX(P)-SGHZV10(UMTS);SGH-ZV10,SC350+	GH69-03251A
PMO-BATTER LOCKER;SGH-ZV10,PC G31573	GH72-23954A
RMO-FOLDER SCREW CAP;SGH-ZV10,SI RUB	GH73-05168A
MPR-BOHO VINYL IF;SGH-E720,#950,85X1	GH74-13606A
MPR-PORON MOTOR;SGH-ZV10,SRS,P10XT0.	GH74-16844A
MPR-BOHO VINYL WIN/MAIN;SGH-ZV10,ST-	GH74-16857A
MPR-BOHO VINYL M/WIN 2;SGH-ZV10,ST-1	GH74-16858A
MPR-BOHO VINYL W/S OUT 3;SGH-ZV10,ST	GH74-16865A
MPR-GASKET LCD;SGH-ZV10,CFPWX290,3X2	GH74-17511A
MEC-HANGER;SGH-Z500,TMN,STRAP,-,BLK,	GH75-03673H
AS-METAL DOME F/K;SGH-ZV10,METAL DOM	GH81-02414A
AS-METAL DOME H/K;SGH-ZV10,METAL DOM	GH81-02415A
AS-METAL DOME V/K;SGH-ZV10,METAL DOM	GH81-02416A

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

3-3-1. RF Test Cable (GH39-00283A)

3-3-2. Test Cable (GH39-00337E)

3-3-3. Serial Cable

3-3-4. Power Supply Cable

3-3-5. DATA CABLE (GH39-00279A)

3-3-6. TC (GH44-00701A)

4. Electrical Parts List

SEC CODE	Description	Design LOC
AN101	COMP-SMD	4202-001048
BAT500	BATTERY	4302-001177
C100,C103,C118,C127	C-CERAMIC,CHIP	2203-000254
C101,C104,C108,C109	C-CERAMIC,CHIP	2203-000812
C102,C116,C141,C151	C-CERAMIC,CHIP	2203-000438
C105,C110,C112,C115	C-CERAMIC,CHIP	2203-005482
C111,C117,C122,C126	C-CERAMIC,CHIP	2203-000812
C113,C203,C244	C-CERAMIC,CHIP	2203-000885
C114,C123,C129,C610	C-CERAMIC,CHIP	2203-000854
C119,C200,C206,C217	C-CERAMIC,CHIP	2203-000233
C120,C124,C144,C238	C-CERAMIC,CHIP	2203-000995
C121,C128,C138,C139	C-CERAMIC,CHIP	2203-005482
C125,C222,C225	C-CERAMIC,CHIP	2203-005288
C130	C-CERAMIC,CHIP	2203-000725
C132,C137,C140,C146	C-CERAMIC,CHIP	2203-000812
C133	C-CERAMIC,CHIP	2203-000836
C134,C142,C215,C216	C-CERAMIC,CHIP	2203-002668
C145,C426	C-CERAMIC,CHIP	2203-006141
C147,C229,C505,C517	C-CERAMIC,CHIP	2203-006208
C148,C201,C218,C220	C-CERAMIC,CHIP	2203-005482
C149,C150,C156,C168	C-CERAMIC,CHIP	2203-000254
C152	C-CERAMIC,CHIP	2203-000311
C153,TA720	C-TA,CHIP	2404-001274
C154,C341	C-CERAMIC,CHIP	2203-005480
C159,C210,C248,C340	C-CERAMIC,CHIP	2203-000812
C160	C-CERAMIC,CHIP	2203-005503
C161	C-CERAMIC,CHIP	2203-002443
C162	C-CERAMIC,CHIP	2203-005234
C163,C165,C617,C644	C-CERAMIC,CHIP	2203-000386
C169,C235,C239,C337	C-CERAMIC,CHIP	2203-000254
TA204,C236,TA411	C-TA,CHIP	2404-001225
C205,C207,C211	C-CERAMIC,CHIP	2203-000330
C208,C209,C645,C646	C-CERAMIC,CHIP	2203-000278
C221,C227,C231,C234	C-CERAMIC,CHIP	2203-000233
C224,C226,C230,C233	C-CERAMIC,CHIP	2203-005482
C228,C242	C-CERAMIC,CHIP	2203-000679
C237,C406	C-CERAMIC,CHIP	2203-006257
C240,C424,C428,C540	C-CERAMIC,CHIP	2203-005482
C241,C421,C689,C697	C-CERAMIC,CHIP	2203-000438
C243	C-CERAMIC,CHIP	2203-000940
C247,C339,C423	C-CERAMIC,CHIP	2203-000233
C300,C320,C330,C353	C-CERAMIC,CHIP	2203-006093
C301,C302,C303,C304	C-CERAMIC,CHIP	2203-006194
C305,C308,C309,C404	C-CERAMIC,CHIP	2203-005806
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C310,C311,C312,C313	C-CERAMIC,CHIP	2203-006423
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SEC CODE	Description	Design LOC
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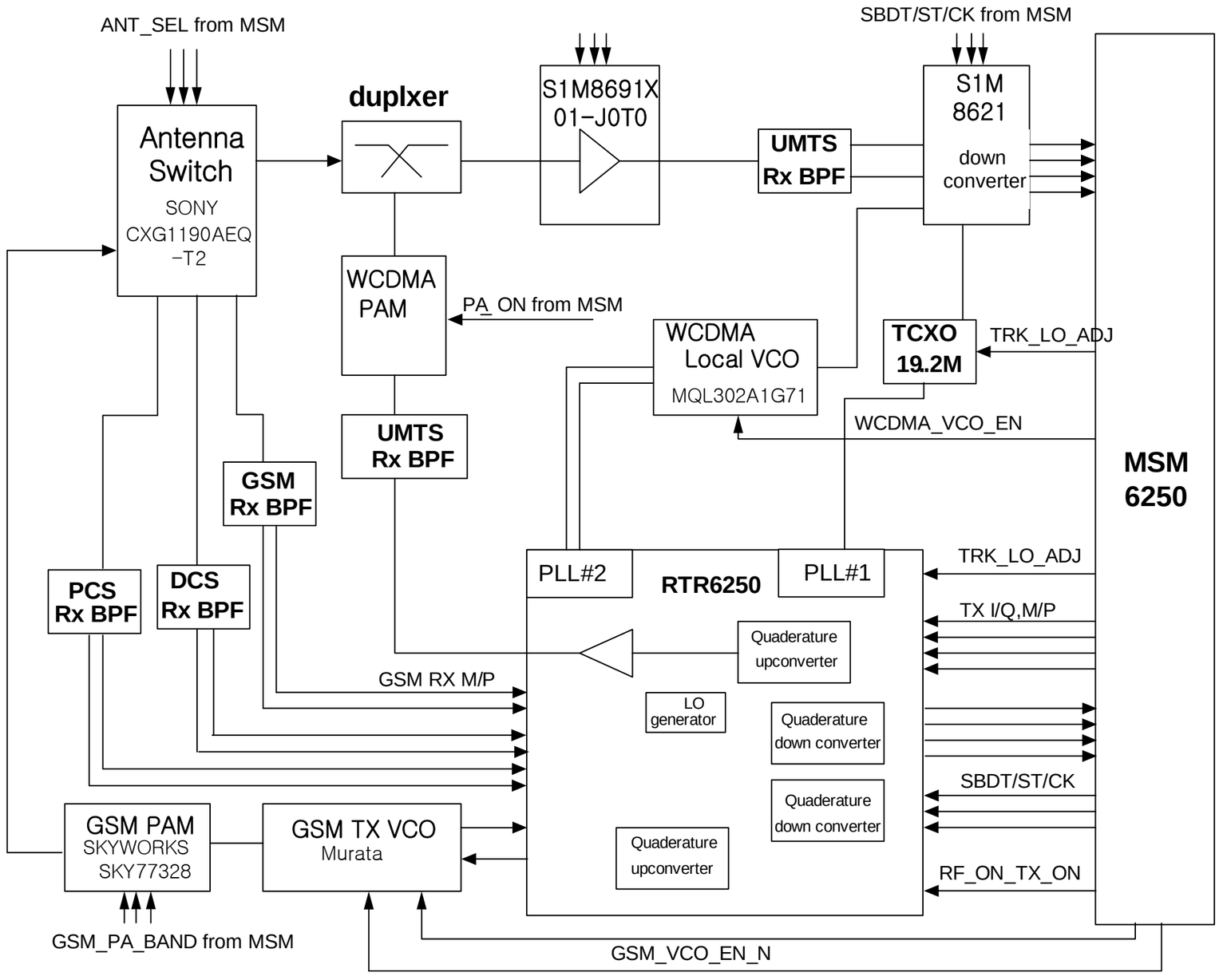
C336	C-CERAMIC,CHIP	2203-000489
C338,C342,C420,C422	C-CERAMIC,CHIP	2203-000254
C346,C348,C350,C352	C-CERAMIC,CHIP	2203-006423
C347,C351	C-CERAMIC,CHIP	2203-006091
C354,C520,C524,C527	C-CERAMIC,CHIP	2203-006201
C355,C400,C401,C402	C-CERAMIC,CHIP	2203-006423
C409,C410,C417,C427	C-CERAMIC,CHIP	2203-006324
C412,C413,C416,C419	C-CERAMIC,CHIP	2203-006423
C415,C536,C537,C541	C-CERAMIC,CHIP	2203-005806
C418	C-CERAMIC,CHIP	2203-006053
TA425	C-TA,CHIP	2404-001394
C429	C-TA,CHIP	2404-001386
C500,C501	C-CERAMIC,CHIP	2203-005138
C502,C506,C511,C514	C-CERAMIC,CHIP	2203-006423
C508,C516,C530,C532	C-CERAMIC,CHIP	2203-006093
C509	C-CERAMIC,CHIP	2203-005736
C515,C549,C550,C551	C-CERAMIC,CHIP	2203-006423
C518,C522,C523,C546	C-CERAMIC,CHIP	2203-006208
C521,C526,C529,C531	C-CERAMIC,CHIP	2203-006344
C528,C577	C-CERAMIC,CHIP	2203-006201
C533	C-CERAMIC,CHIP	2203-006344
C538,C539,C544,C703	C-CERAMIC,CHIP	2203-000812
C542,C543,C672	C-CERAMIC,CHIP	2203-005806
TA545	C-TA,CHIP	2404-001281
C547,C548,C657,C673	C-CERAMIC,CHIP	2203-006208
C552,C553,C554,C562	C-CERAMIC,CHIP	2203-006423
C563,C628,C658,C674	C-CERAMIC,CHIP	2203-006423
C572	C-CERAMIC,CHIP	2203-006324
C573,C574	C-CERAMIC,CHIP	2203-000425
C578,C602,C603,C604	C-CERAMIC,CHIP	2203-006093
C606,C608,C688,C725	C-CERAMIC,CHIP	2203-006093
TA607,TA615,TA690,TA691	C-TA,CHIP	2404-001348
C616,C635,C639,C643	C-CERAMIC,CHIP	2203-003054
C621,C625,C626,C629	C-CERAMIC,CHIP	2203-000854
TA624,TA726	C-TA,CHIP	2404-001381
C630,C633,C650,C651	C-CERAMIC,CHIP	2203-000854
C637,C638,C647,C648	C-CERAMIC,CHIP	2203-006137
TA641,TA642	C-TA,CHIP	2404-001352
C655,C656,C665,C666	C-CERAMIC,CHIP	2203-000854
C662,C671	C-CERAMIC,CHIP	2203-006190
C667,C687,C730,C731	C-CERAMIC,CHIP	2203-000854
C675,C686,C694,C696	C-CERAMIC,CHIP	2203-006423
C692	C-CERAMIC,CHIP	2203-006137
TA693,TA750,TA751	C-TA,CHIP	2404-001339
C695	C-CERAMIC,CHIP	2203-000654
C698,C699	C-CERAMIC,CHIP	2203-005481
C702	C-CERAMIC,CHIP	2203-006399
C704,C706,C707	C-CERAMIC,CHIP	2203-005482

SEC CODE	Description	Design LOC
C721	C-CERAMIC,CHIP	2203-006556
C729	C-CERAMIC,CHIP	2203-000812
C733	C-CERAMIC,CHIP	2203-006423
C736	C-CERAMIC,CHIP	2203-000386
ANT100	CONNECTOR-COAXIAL	3705-001358
SIM500	CONNECTOR-CARD EDGE	3709-001355
EAR600	JACK-PHONE	3722-002175
CN701	CONNECTOR-HEADER	3711-005777
CN704	CONNECTOR-HEADER	3711-005296
IFC705	CONNECTOR-SOCKET	3710-002120
BTC706	CONNECTOR-HEADER	3711-005829
D501	DIODE-ARRAY	0407-001002
F100	FILTER-SAW	2904-001550
F101	FILTER-SAW	2904-001570
F102	FILTER-SAW	2904-001571
F200	FILTER-SAW	2904-001439
F201	FILTER-SAW	2904-001438
F203	FILTER	2910-000004
F204,F621,F622,F623	FILTER-EMI SMD	2901-001326
L101,R131,R213,R214	R-CHIP	2007-000171
L102,L108,L112,L113	INDUCTOR-SMD	2703-002203
L103,L125,L126,L200	INDUCTOR-SMD	2703-002314
L105	INDUCTOR-SMD	2703-001723
L107,L109	INDUCTOR-SMD	2703-002208
L110,L400,L600,L701	CORE-FERRITE BEAD	3301-001534
L111,L114,L115,L117	INDUCTOR-SMD	2703-001229
L116,L119,L121,L123	INDUCTOR-SMD	2703-002176
L118,L204	INDUCTOR-SMD	2703-002268
L120	INDUCTOR-SMD	2703-002199
L128	INDUCTOR-SMD	2703-002369
L129	INDUCTOR-SMD	2703-002203
L130	INDUCTOR-SMD	2703-001178
L201	INDUCTOR-SMD	2703-002198
L202	INDUCTOR-SMD	2703-002205
L203	INDUCTOR-SMD	2703-002267
L205	INDUCTOR-SMD	2703-001750
L206,L209,L210	CORE-FERRITE BEAD	3301-001729
L207,L208,L211	INDUCTOR-SMD	2703-002368
L501,L502	INDUCTOR-SMD	2703-002653
L601,L602	CORE-FERRITE BEAD	3301-001630
L703,L706,L707	CORE-FERRITE BEAD	3301-001534
L708	CORE-FERRITE BEAD	3301-001756
IRD400	PHOTO-IRDA	0604-001261
MIS201	RF-MODULE	4709-001370
VCO101	OSCILLATOR-VCO	2806-001360
TCX200	OSCILLATOR-VCTCXO	2809-001280
VCO201	COMP-SMD	2806-001367
OSC501	CRYSTAL-UNIT	2801-004373
R100	R-CHIP	2007-007491
R101,R126,R127,R130	R-CHIP	2007-000138

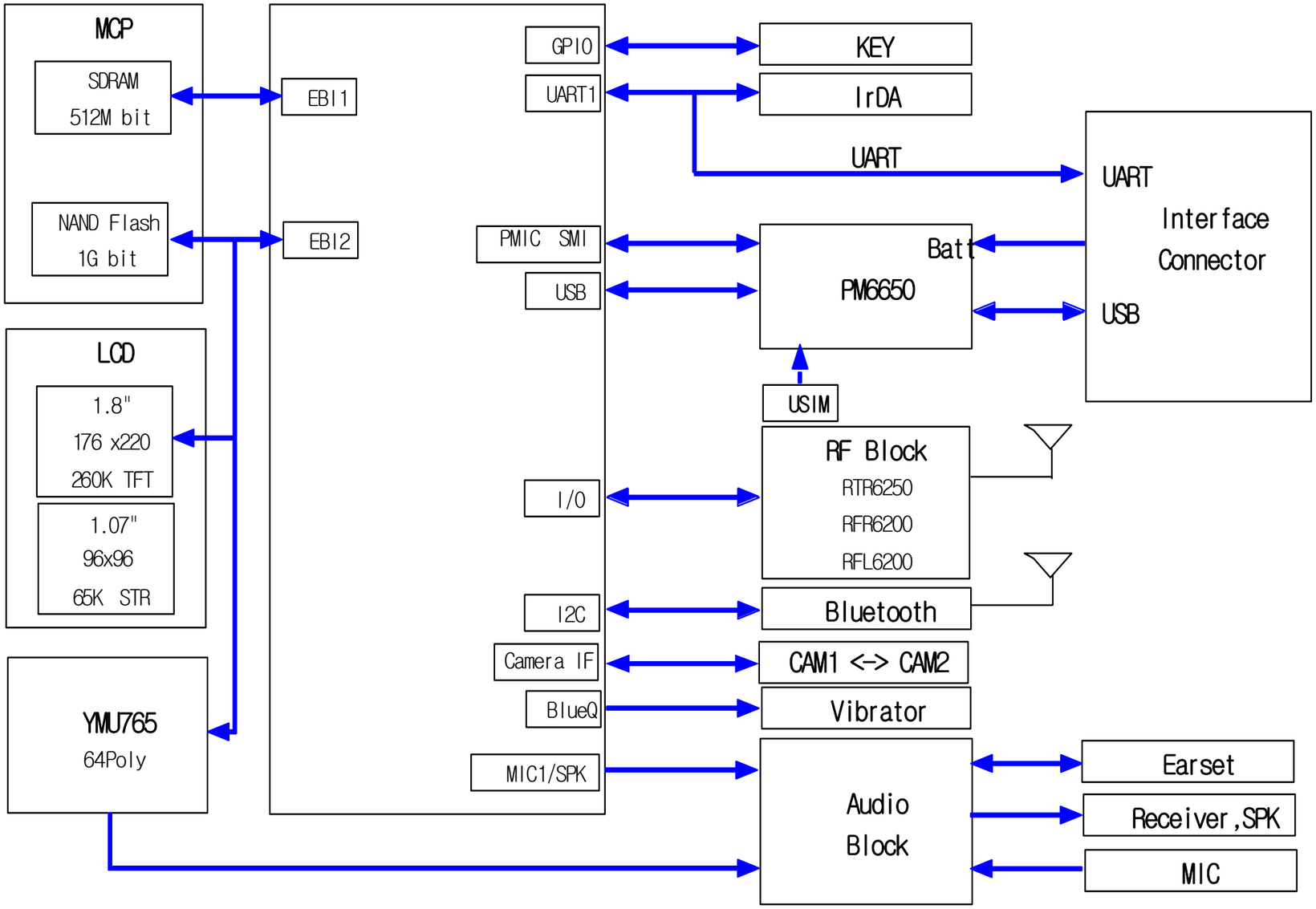
SEC CODE	Description	Design LOC
R102,R312	R-CHIP	2007-000140
R105,R108,R110,R203	R-CHIP	2007-007318
R106,R112,R212	R-CHIP	2007-000172
R107,R633	R-CHIP	2007-007316
R111	R-CHIP	2007-000145
R114,R128,R129	R-CHIP	2007-001217
R115,R116	R-CHIP	2007-001291
R117,R123	R-CHIP	2007-001301
R118,R119,R120,R121	R-CHIP	2007-001307
R122	R-CHIP	2007-003112
R124	R-CHIP	2007-000147
R125,R330	R-CHIP	2007-007142
R200	R-CHIP	2007-008137
R201	R-CHIP	2007-000173
R202,R210,R211	R-CHIP	2007-000138
R204	R-CHIP	2007-000141
R206,R208,R315	R-CHIP	2007-007314
R209,R505	R-CHIP	2007-001298
R216	R-CHIP	2007-007001
R217	R-CHIP	2007-000146
R303,R405,R507,R510	R-CHIP	2007-000171
R307,R309,R344,R424	R-CHIP	2007-008542
R310	R-CHIP	2007-007135
R313	R-CHIP	2007-000137
R314,R602,R603,R614	R-CHIP	2007-007318
R327,R332,R720,R723	R-CHIP	2007-000148
R328,R331,R620	R-CHIP	2007-001339
R339,R650	R-CHIP	2007-000566
R341,R342	R-CHIP	2007-008588
R345,R346,R347,R348	R-CHIP	2007-007014
R349	R-CHIP	2007-007014
R403,R419	R-CHIP	2007-000162
R410,R503	R-CHIP	2007-008516
R411,R700	R-CHIP	2007-008055
R413,R511,R617	R-CHIP	2007-007107
R415	R-CHIP	2007-001313
R418	R-CHIP	2007-007141
R420,R421,R422,R423	R-CHIP	2007-001305
R500,R501	R-CHIP	2007-003015
R504	R-CHIP	2007-008483
R506	R-CHIP	2007-007468
R508	R-CHIP	2007-000151
R514,R634,R711,R712	R-CHIP	2007-000171
R519	R-CHIP	2007-007139
R604,R605,R610,R612	R-CHIP	2007-007137
R615	R-CHIP	2007-007318
R616,R618	R-CHIP	2007-007334
R623,R625	R-CHIP	2007-007311
R643	R-CHIP	2007-000159
R644,R645	R-CHIP	2007-000775

SEC CODE	Description	Design LOC
R646,R647	R-CHIP	2007-007529
R657,R702	R-CHIP	2007-008542
R701,R703,R746	R-CHIP	2007-008419
R704	R-CHIP	2007-008045
R713,R714,R715,R716	R-CHIP	2007-000171
R717,R718,R724,R747	R-CHIP	2007-000171
R721,R722	R-CHIP	2007-003001
R745	R-CHIP	2007-000148
R748,R749	R-CHIP	2007-000171
TH300	THERMISTOR	1404-001196
U101	IC	1205-002645
PAM102	IC	1201-002218
RFS103	IC	1205-002724
U104	NPR-CONTACT ANT	GH71-01063A
U200	IC	1205-002600
U201	IC	1201-002219
U300,U731	IC	1205-002568
UCP301	IC	1205-002527
U302	IC	1203-003105
UME400	COMP-SMD	1108-000041
U401,U603	IC	1001-001231
U403	IC	0801-002345
U405	IC	1001-001261
U407	FILTER-EMI SMD	2901-001283
U408	RF-MODULE	4709-001363
U409	IC	1203-003728
U410	COMP-SMD	0505-002010
U500	IC	1203-003335
U601	IC	1202-001036
U604,U605,U619,U620	COMP-SMD	1001-001261
U607	IC	1204-002138
U609	IC	1201-002195
U610	IC	1201-002240
U615	COMP-SMD	1205-002766
U616,ZD500,ZD702	DIODE-TVS	0406-001200
F624,F625,F626,F627	FILTER-EMI SMD	2901-001326
F628	FILTER-EMI SMD	2901-001326
X300	RESONATOR-CERAMIC	2802-001182
ZD406	DIODE-ZENER	0403-001387
ZD600,ZD601,ZD709	DIODE-TVS	0406-001197
ZD710,ZD712,ZD717	DIODE-TVS	0406-001197
ZD718,ZD719	DIODE-TVS	0406-001197
ZD720	DIODE-ZENER	0403-001427
ZD721	DIODE-ZENER	0403-001411
AN1	ANT	4202-001071

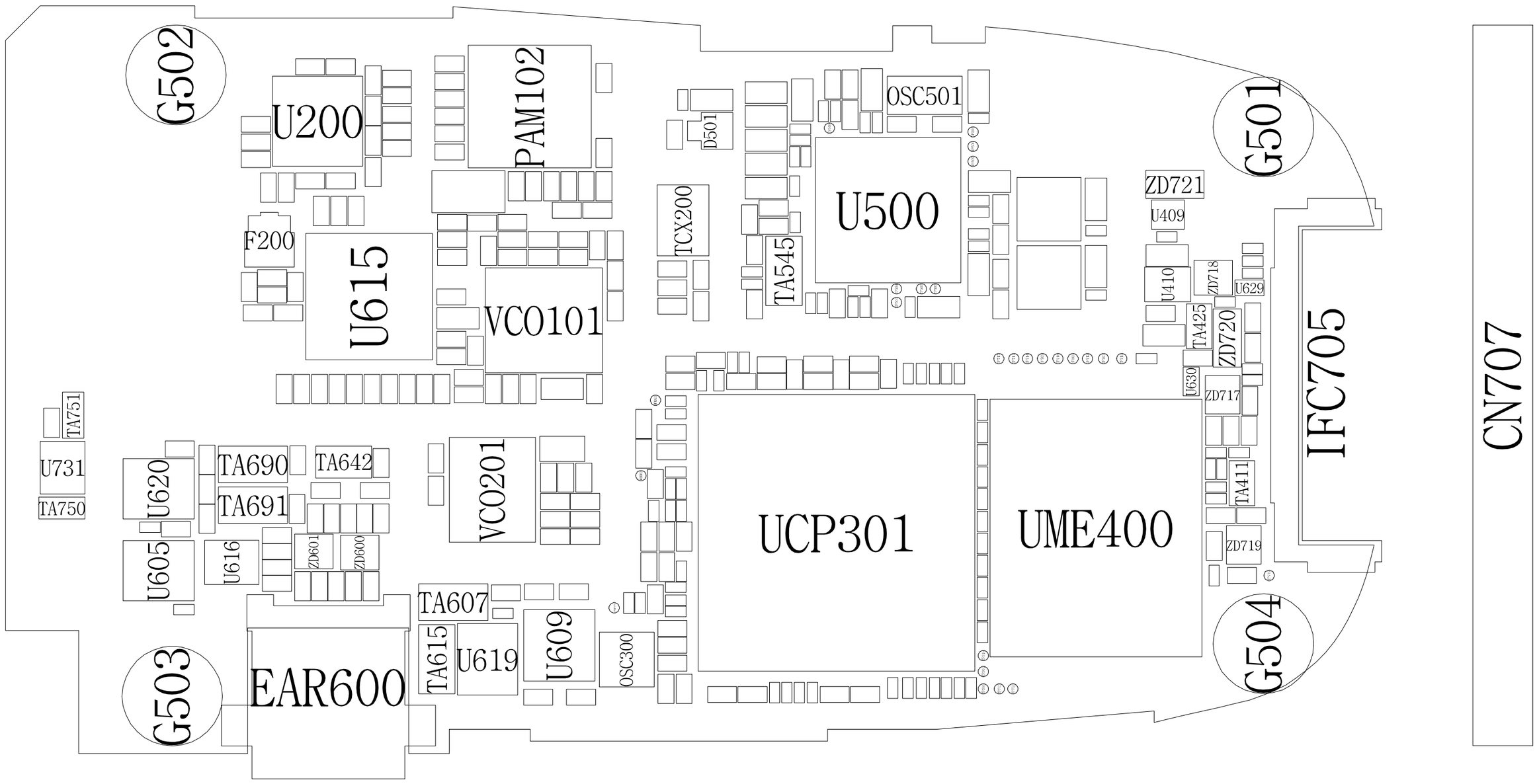
5-1. RF Solution Block Diagram



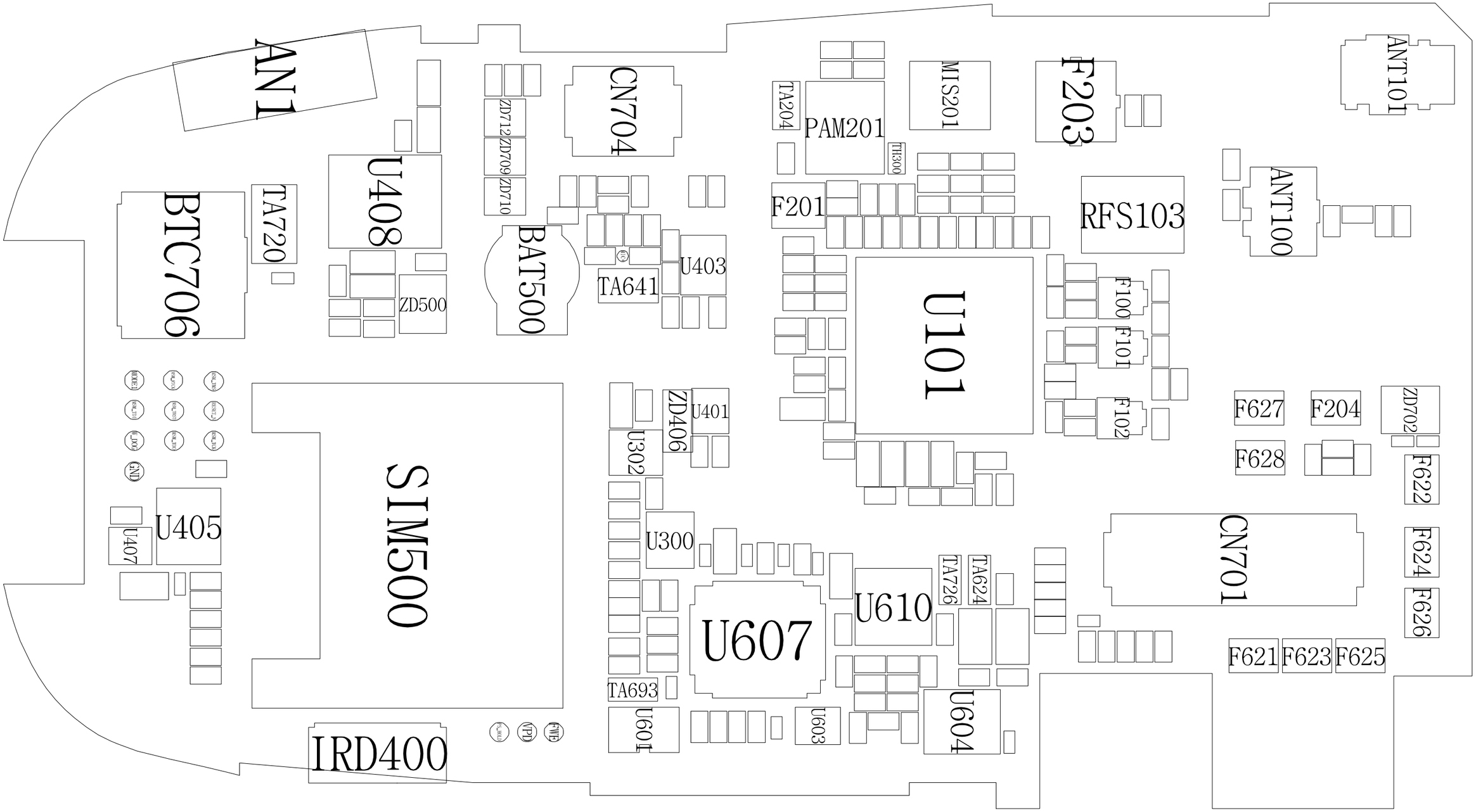
5-2. Base Band Solution Block Diagram



6-1. PCB Top Diagram

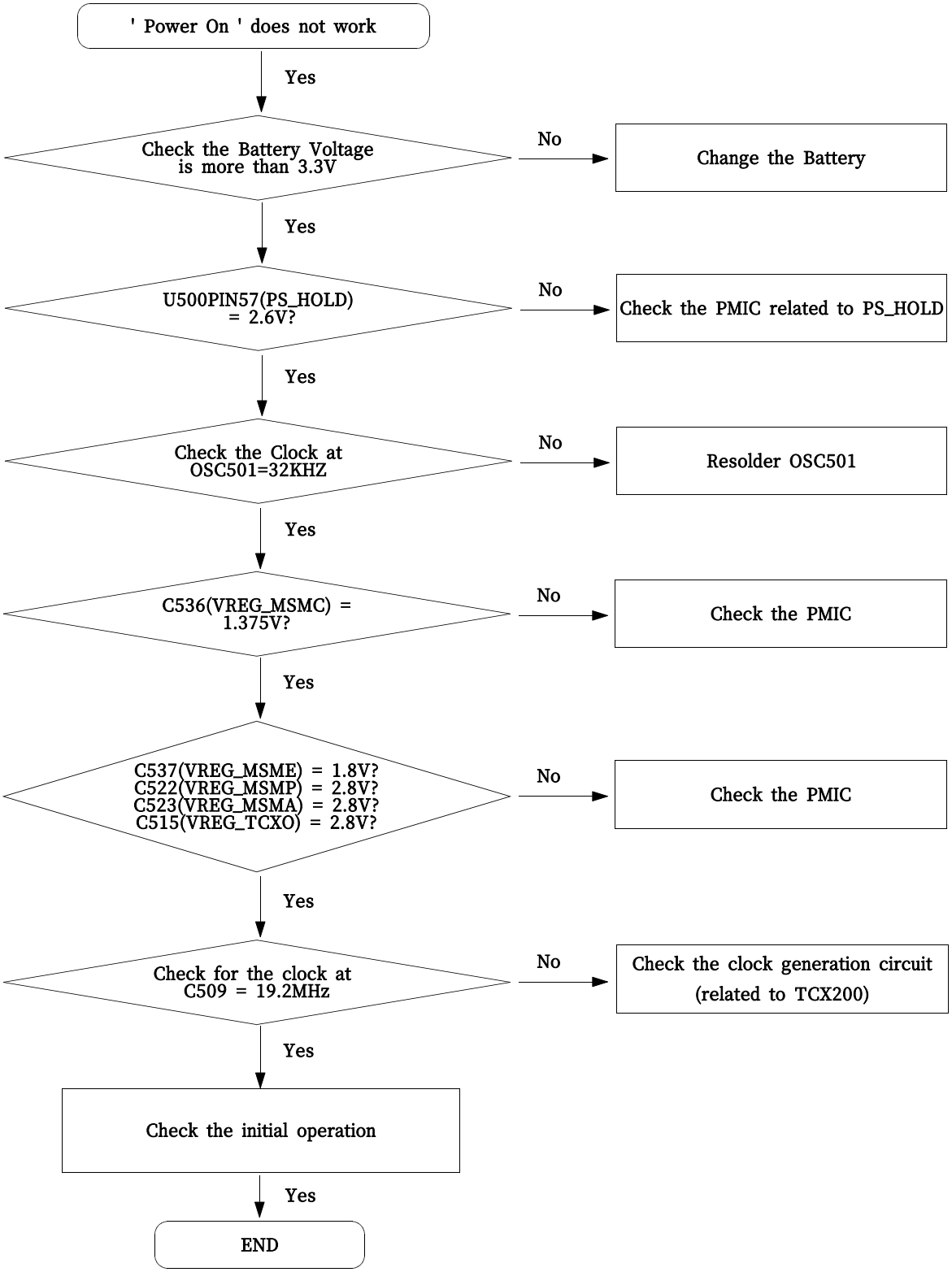


6-2. PCB Bottom Diagram



7. Flow Chart of Troubleshooting

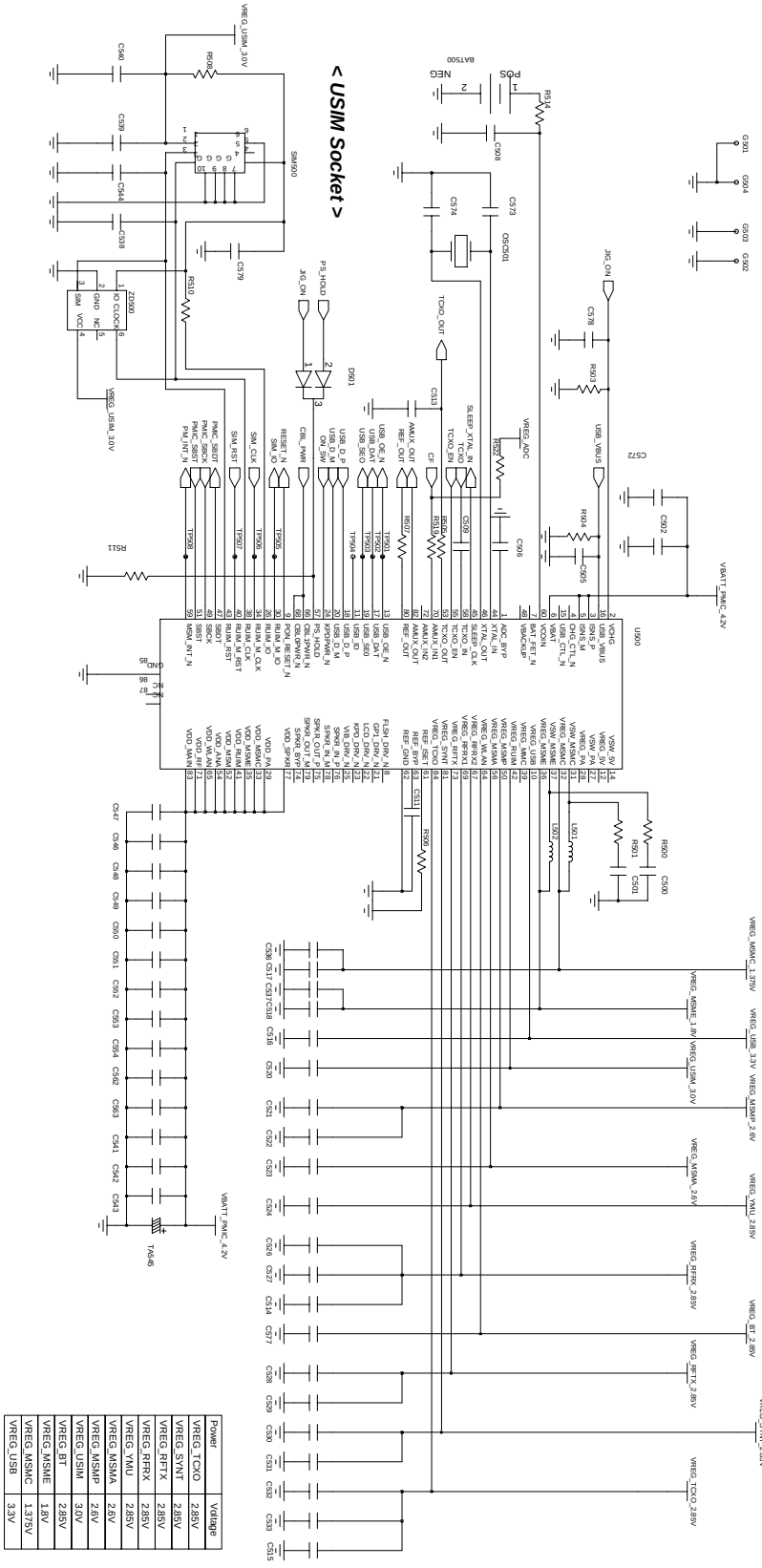
7-1. Power On



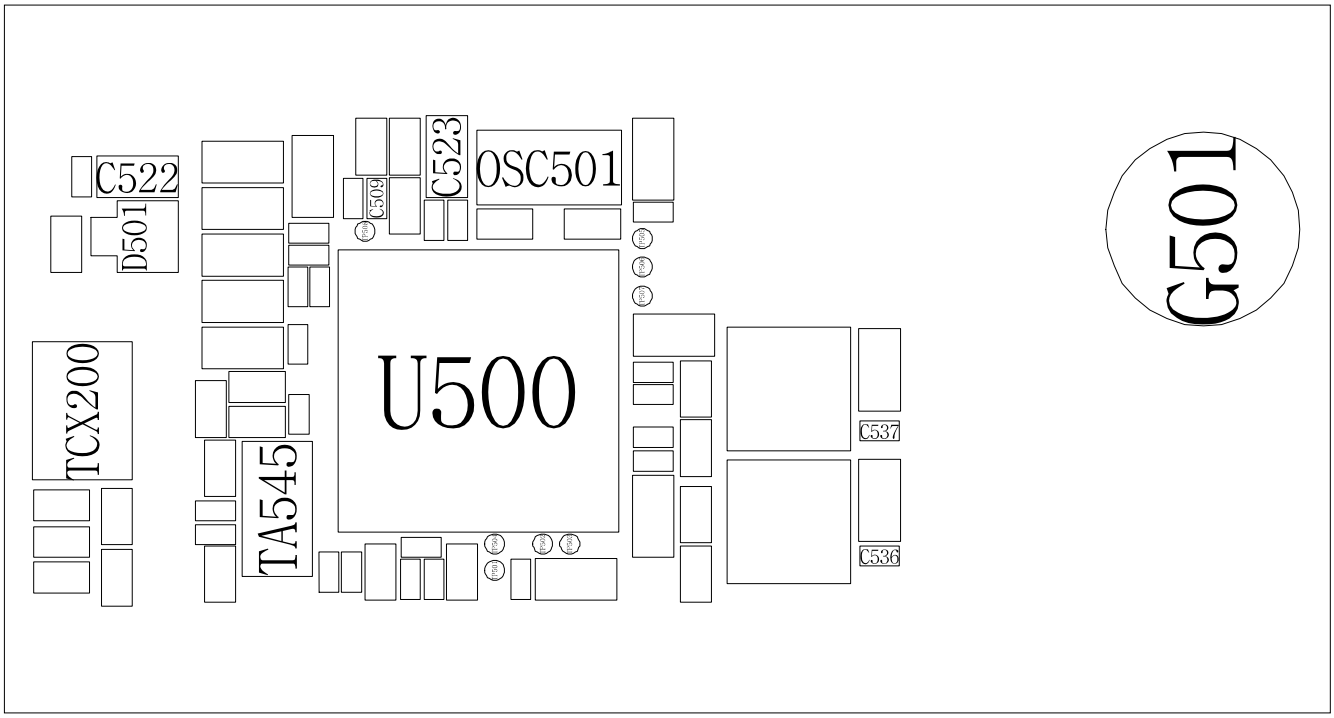
Power On

<PMIC>

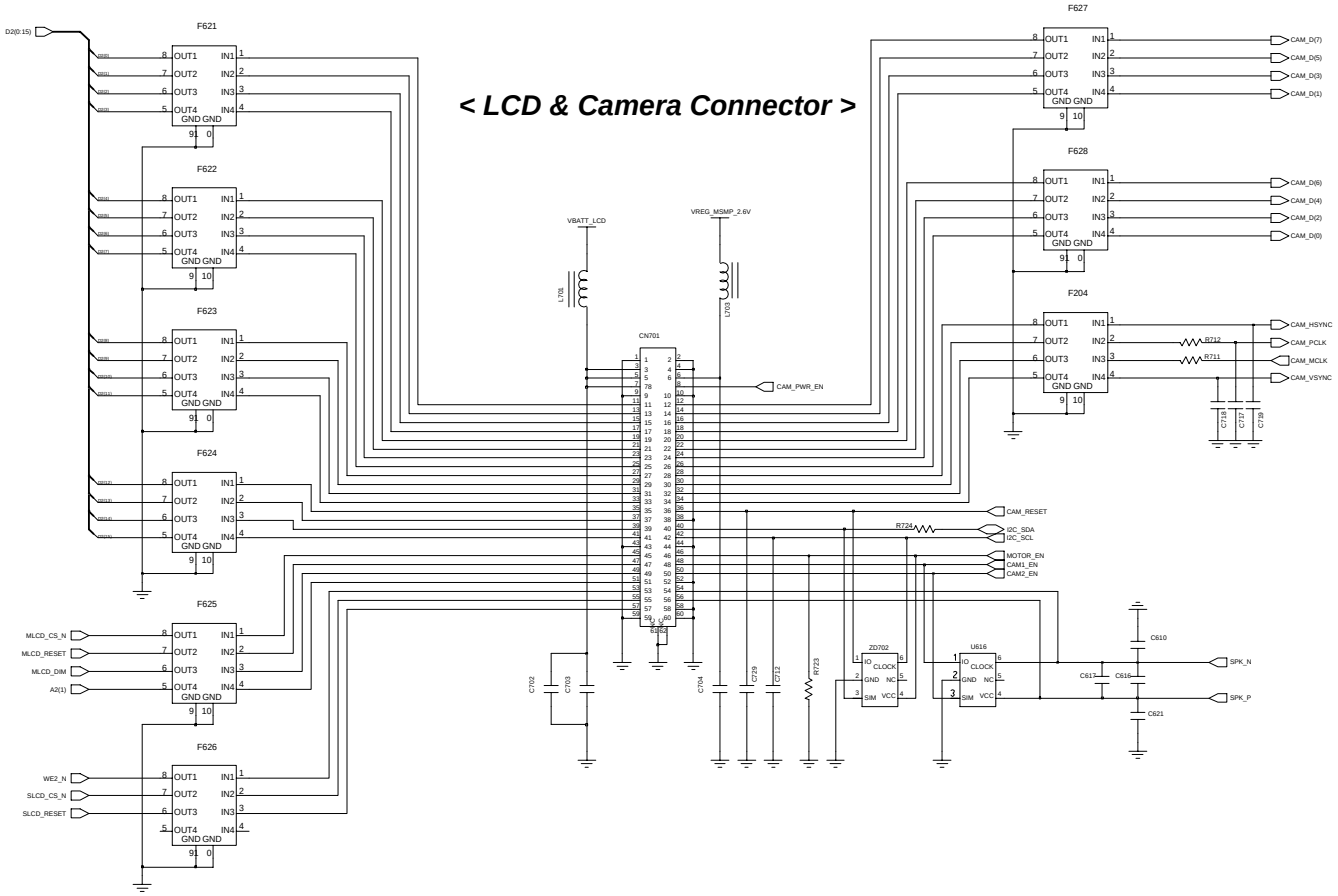
< Power Management IC >

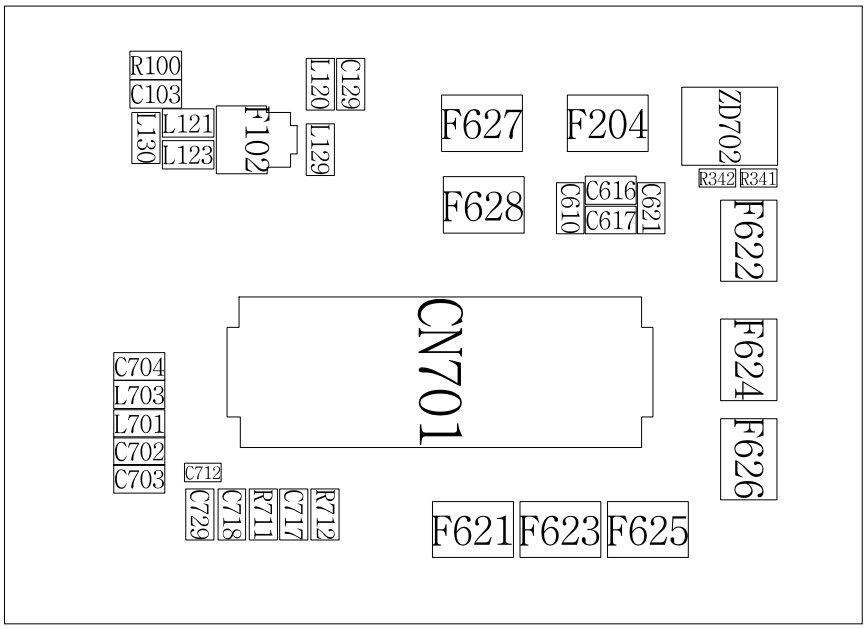


Power	Voltage
VREG_TCXO	2.85V
VREG_SYNT	2.85V
VREG_RFTX	2.85V
VREG_RFRX	2.85V
VREG_YMU	2.85V
VREG_MSMA	2.6V
VREG_MSMP	2.6V
VREG_USIM	3.0V
VREG_BT	2.85V
VREG_MSME	1.8V
VREG_MSMC	1.375V
VREG_USB	3.3V

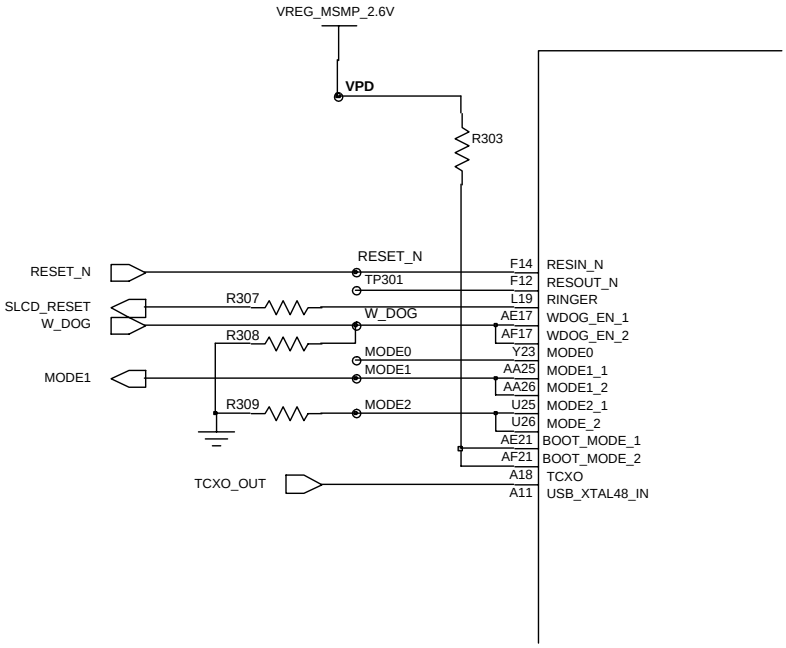


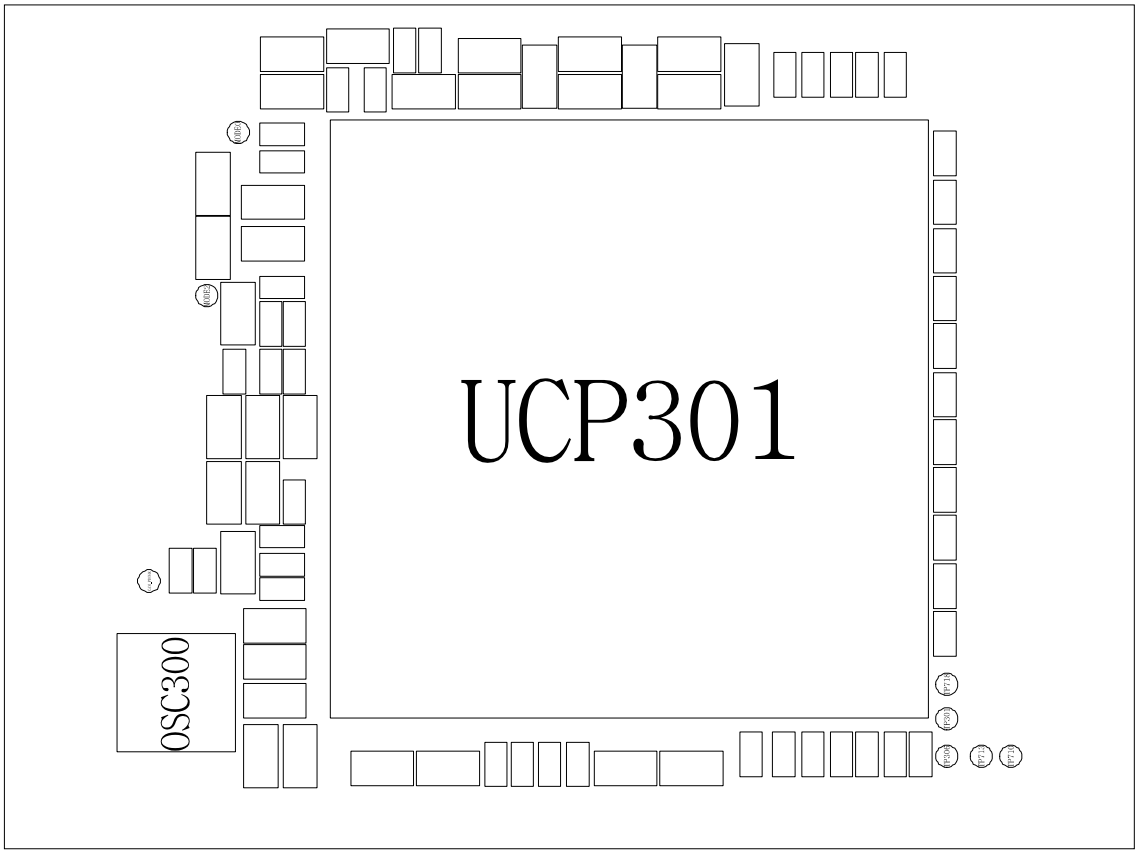
<LCD&Camera Connector>



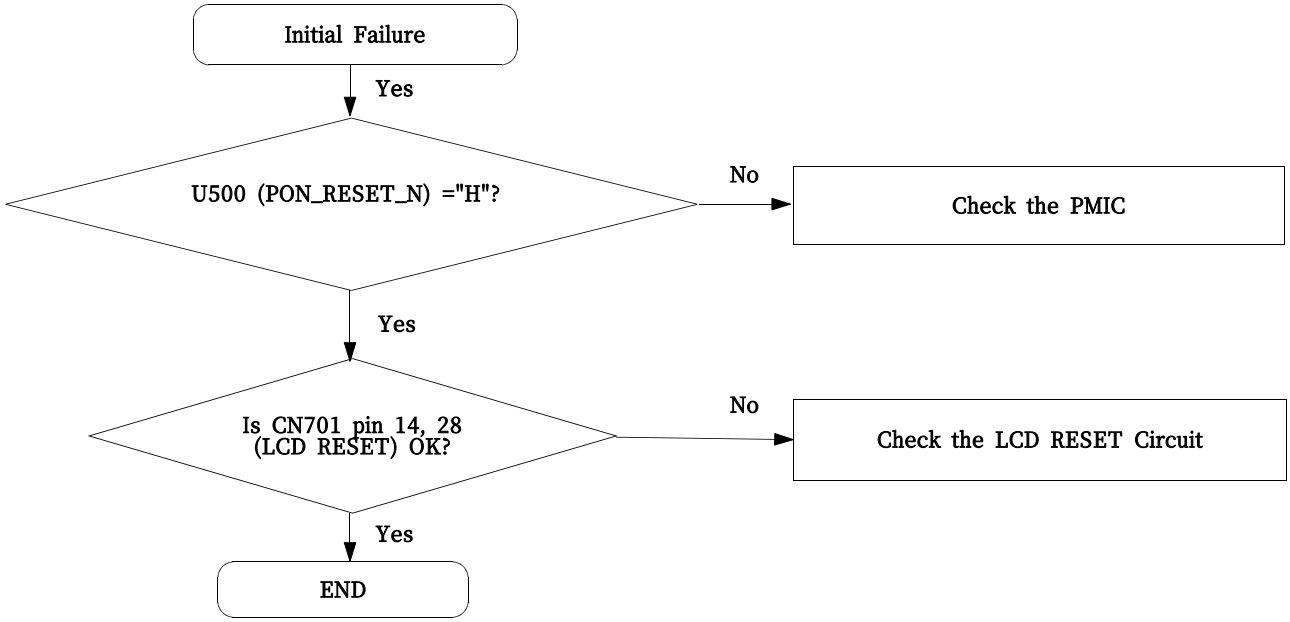


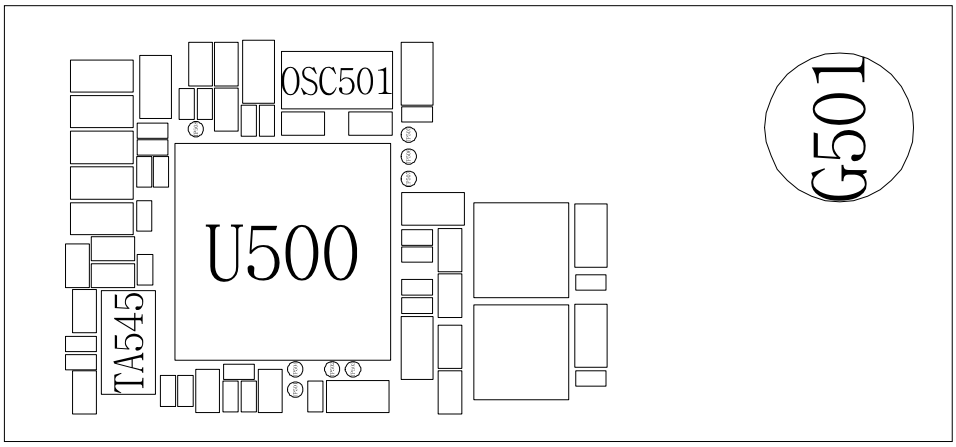
<Modem>

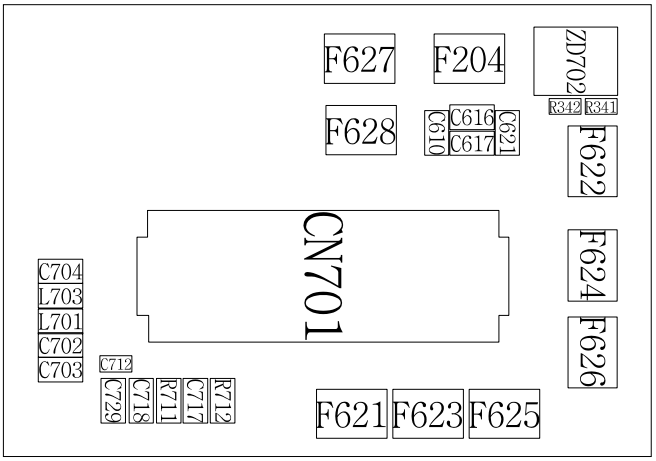




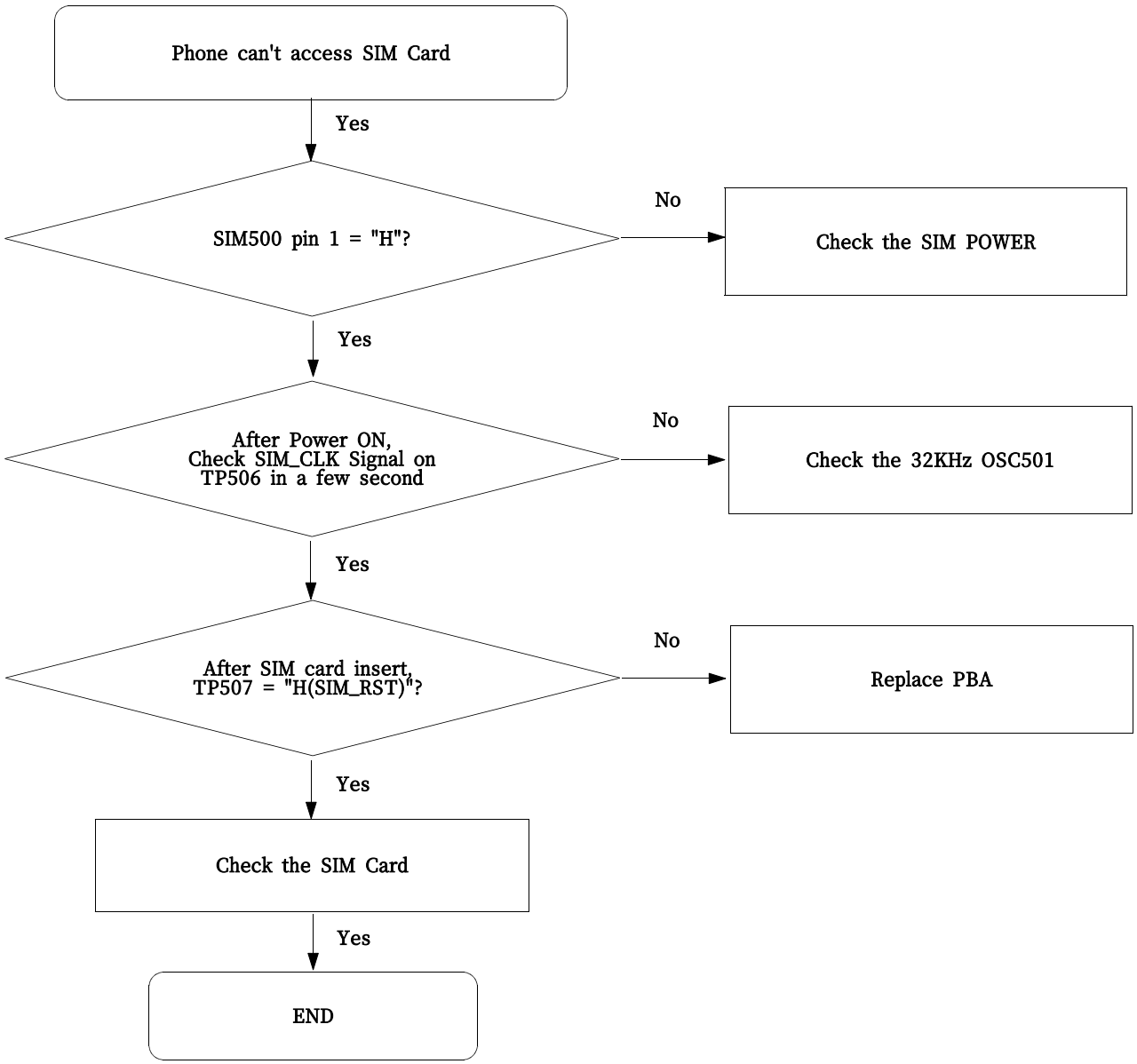
7-2. Initial



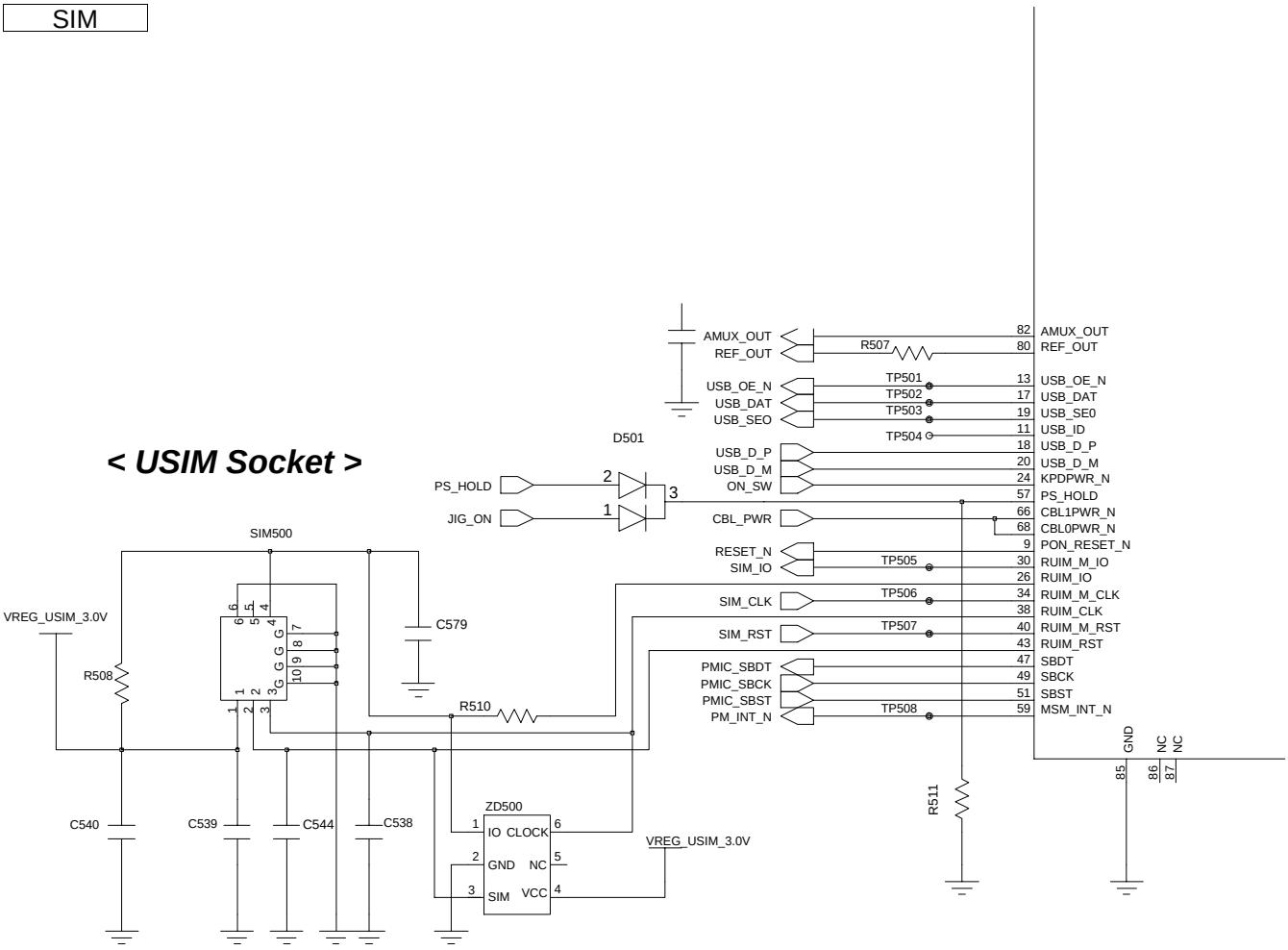


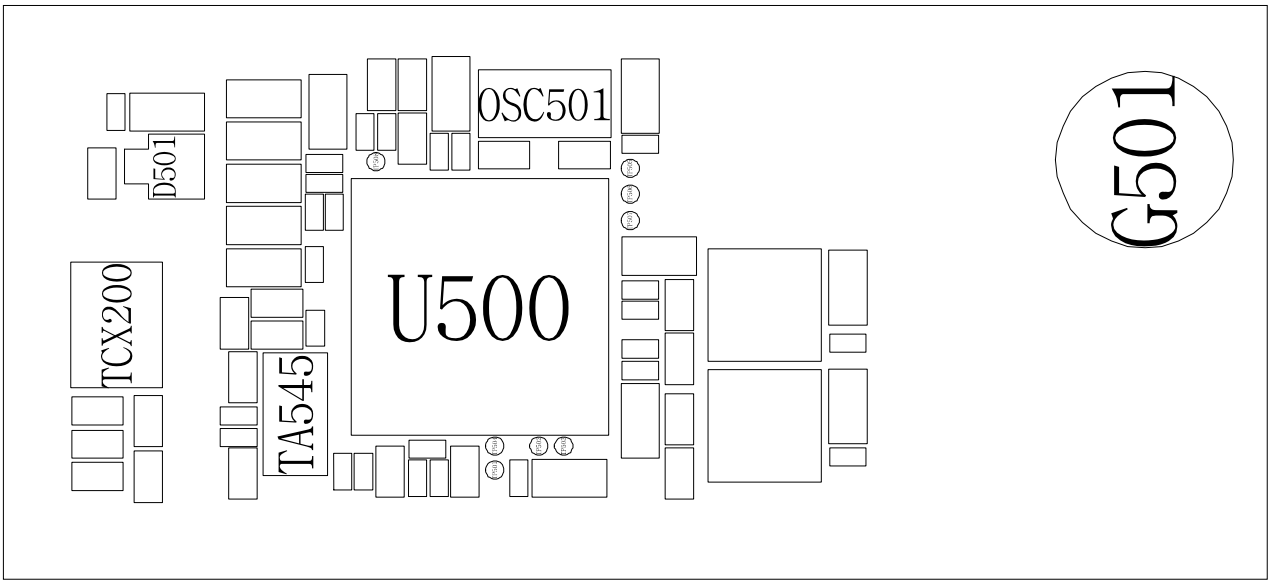


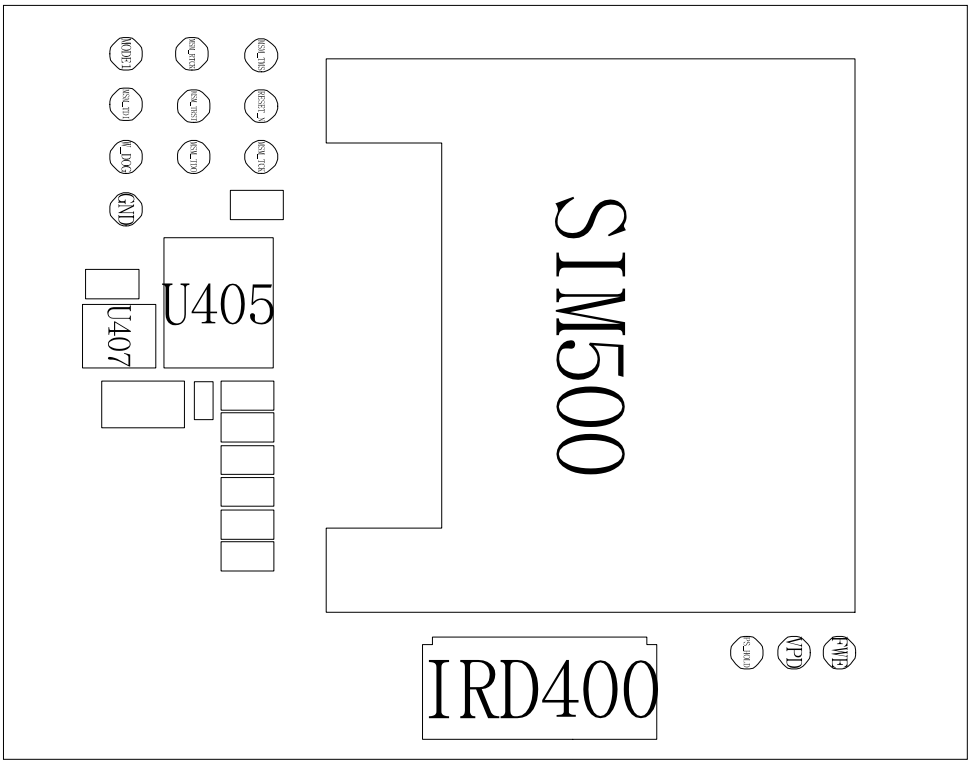
7-3. Sim Part



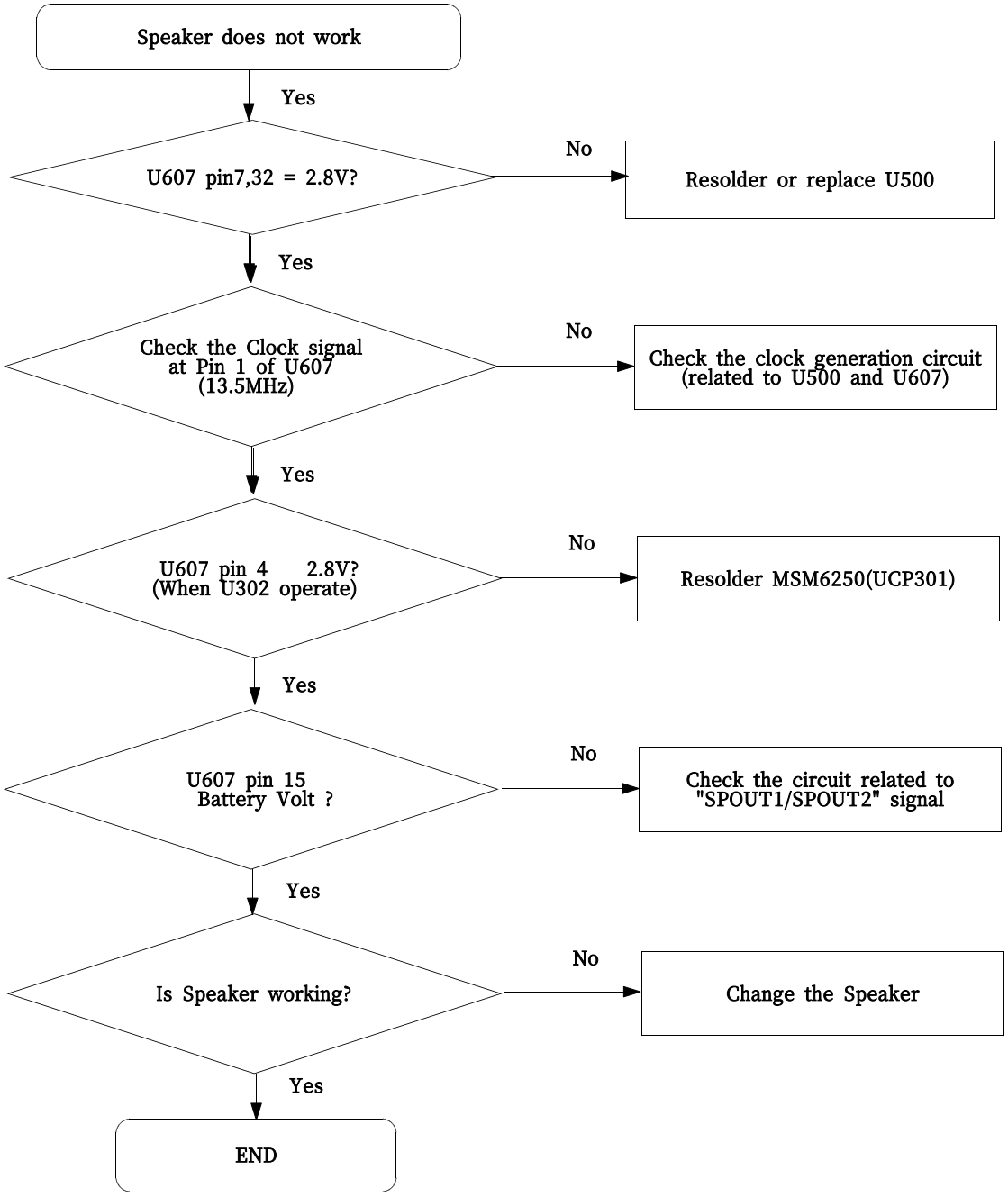
SIM





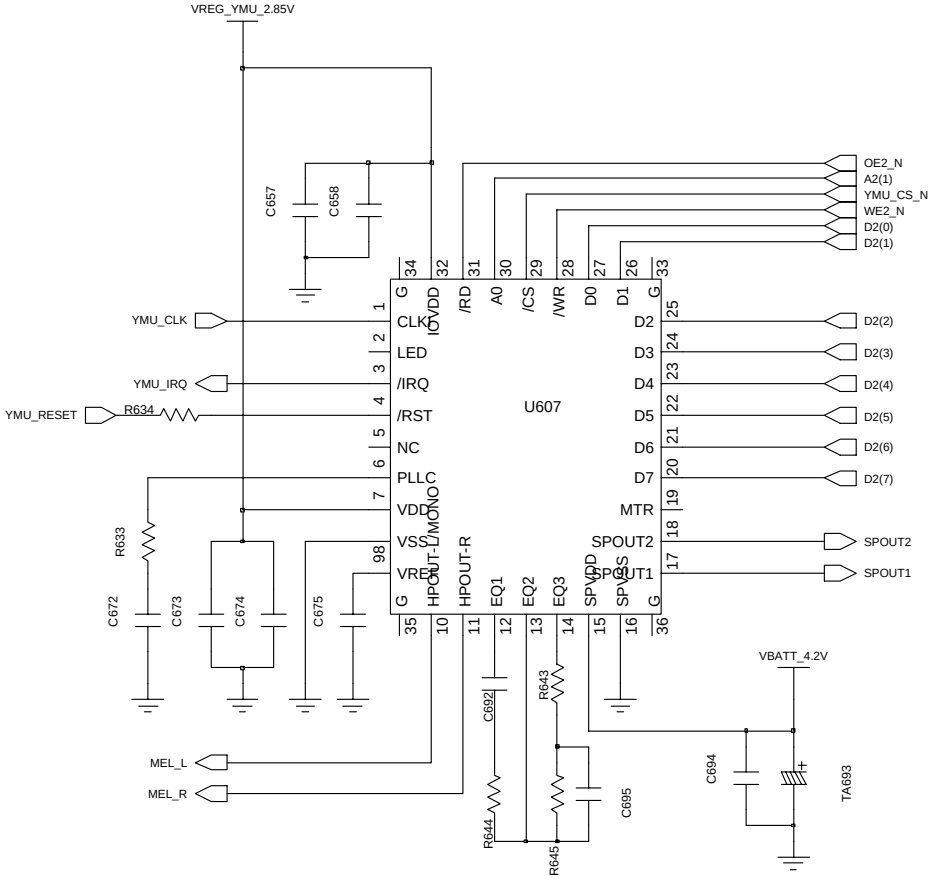


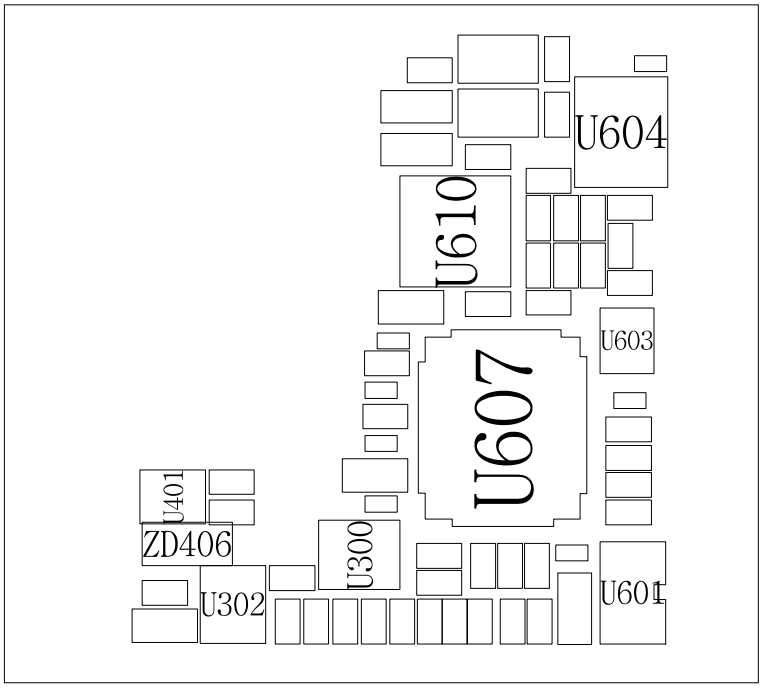
7-4. Speaker Part(Melody)



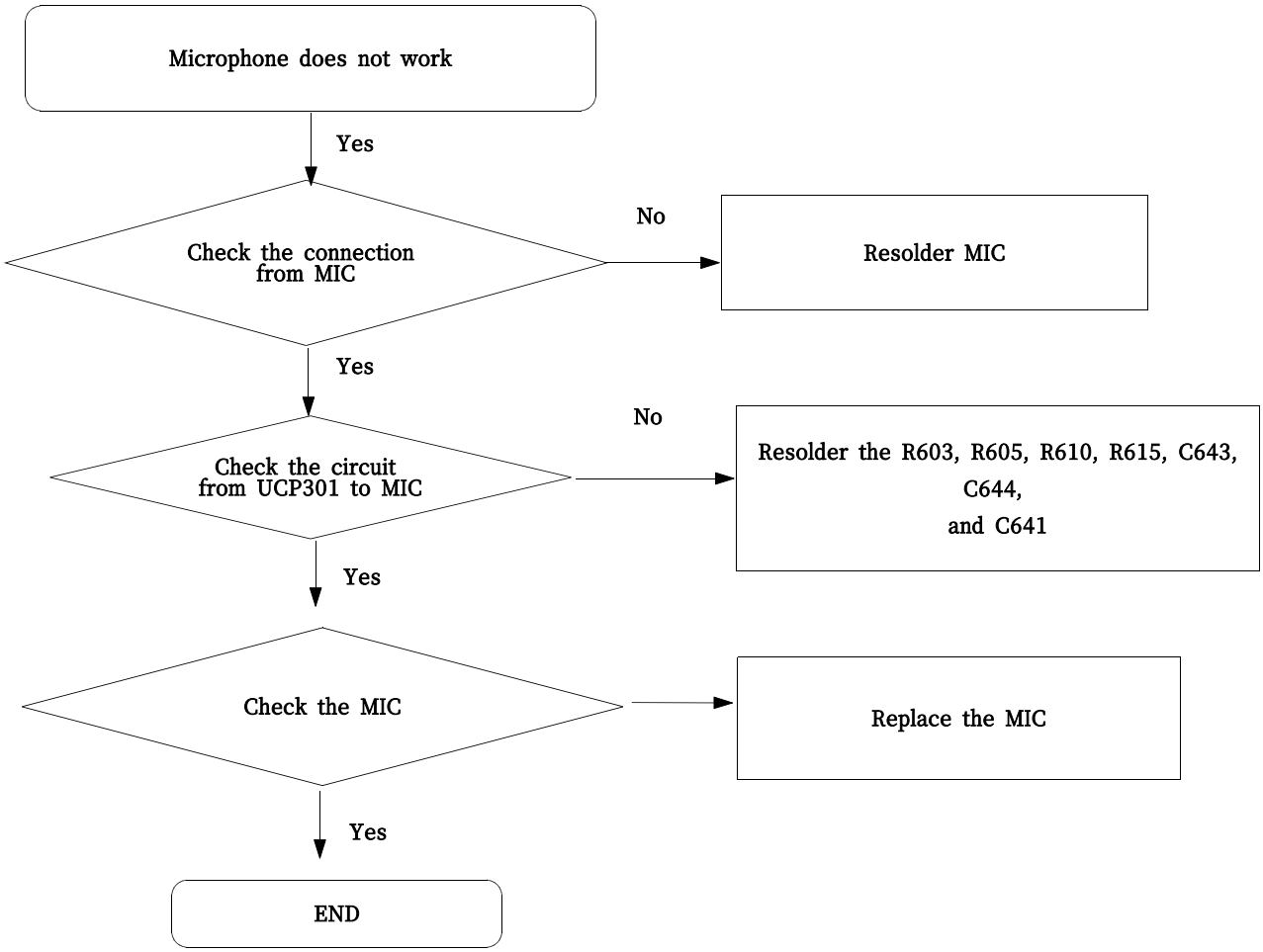
Speaker

< Melody IC >



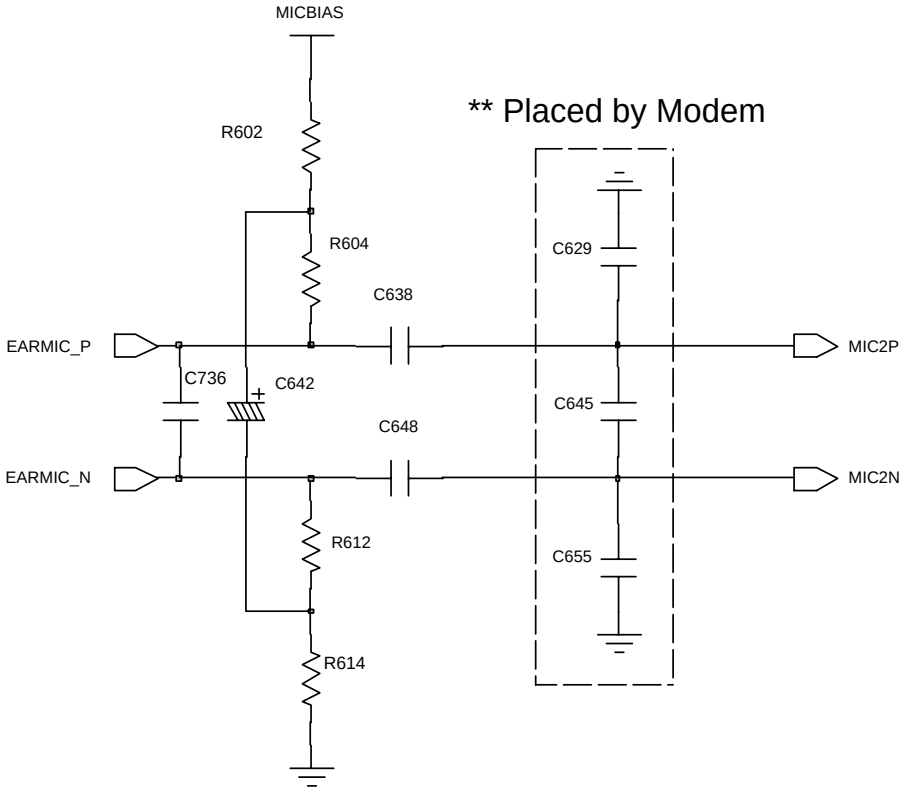


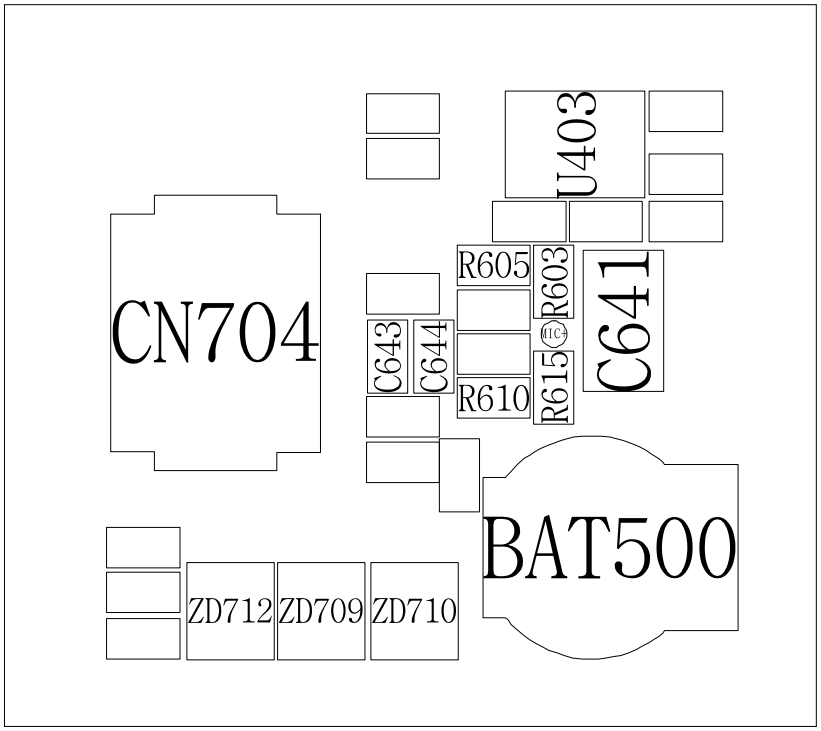
7-5. Microphone Part



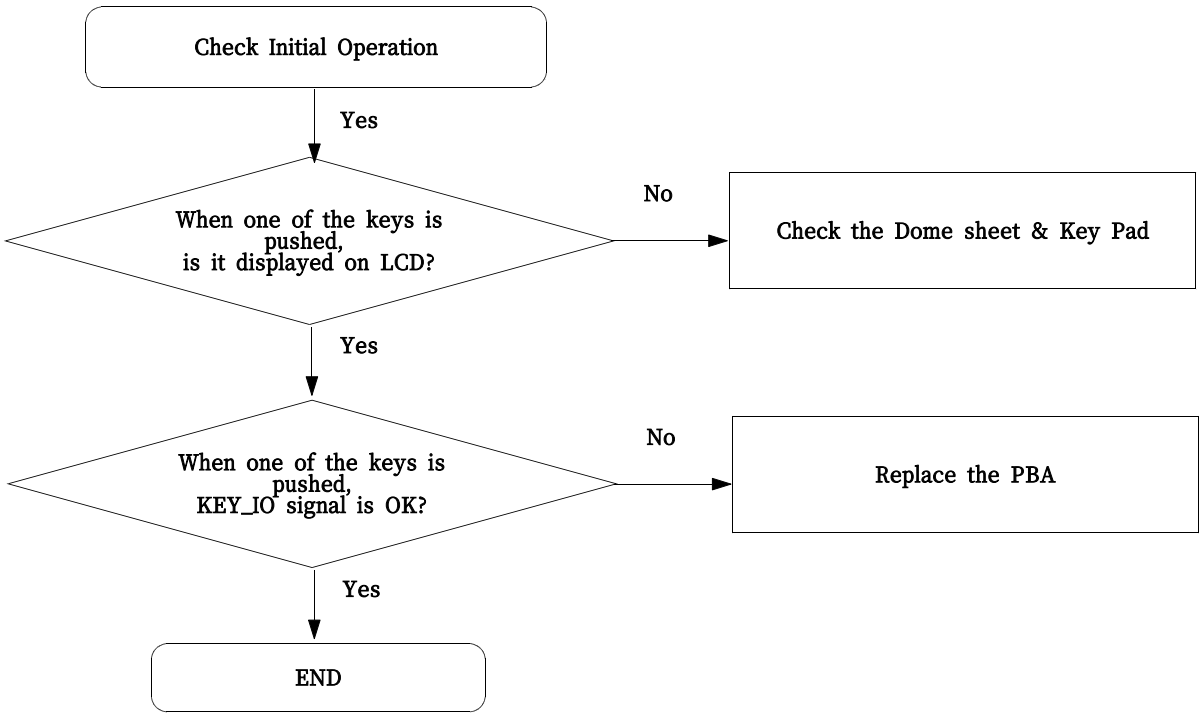
Microphone

< Earphone Mic Path >

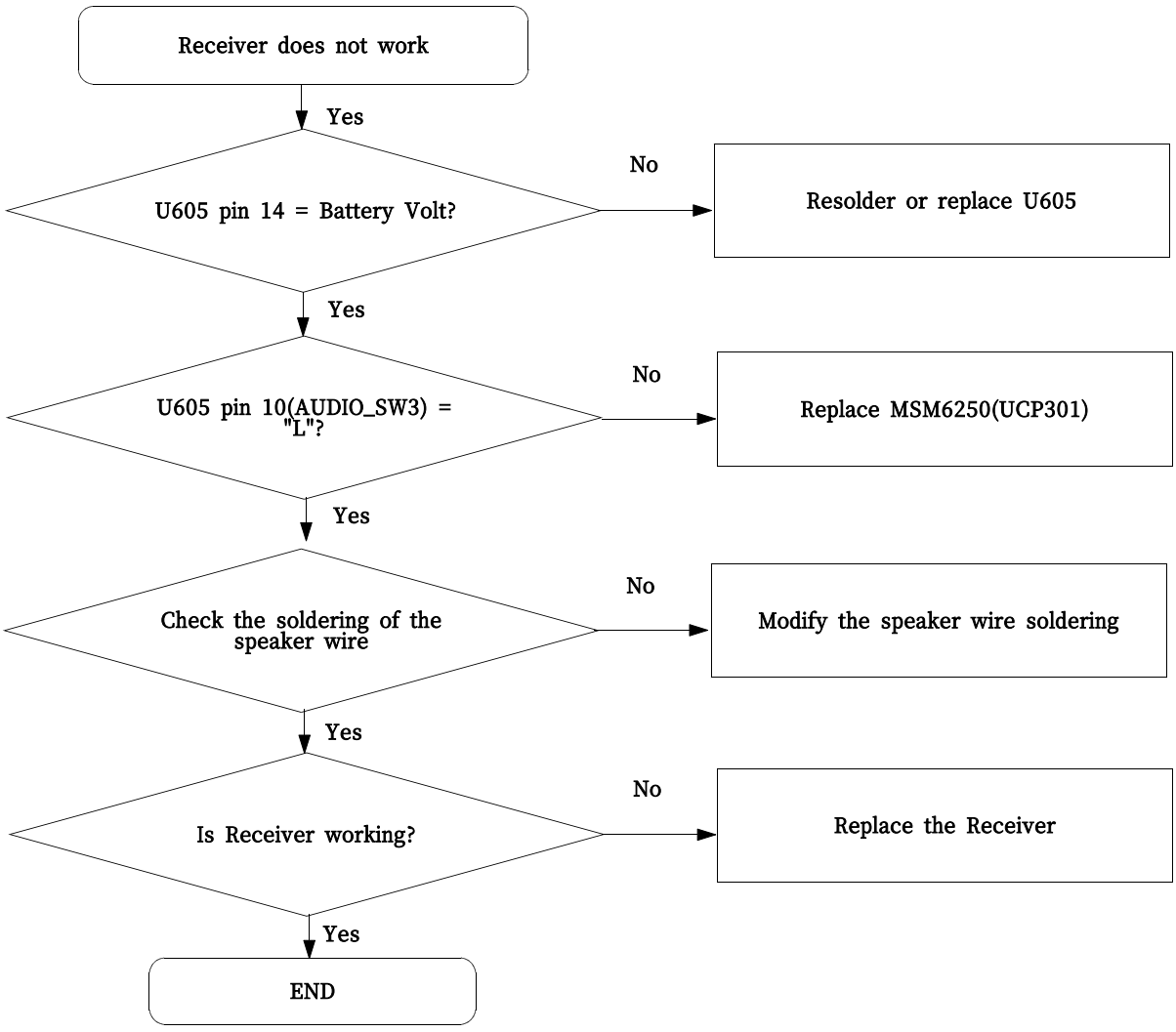


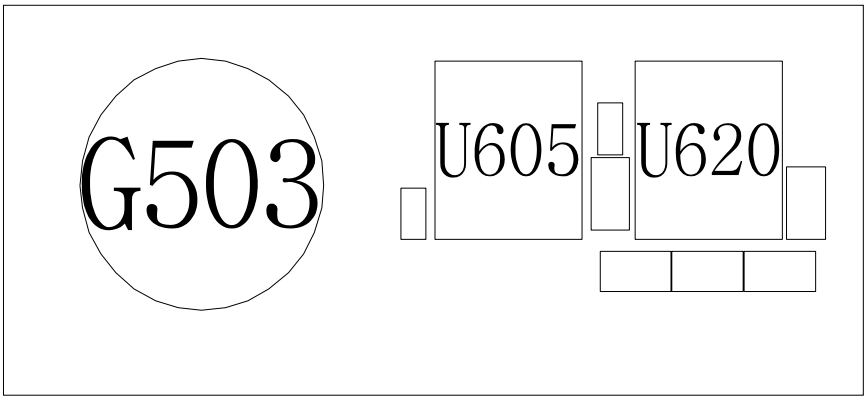


7-6. Key Data Input

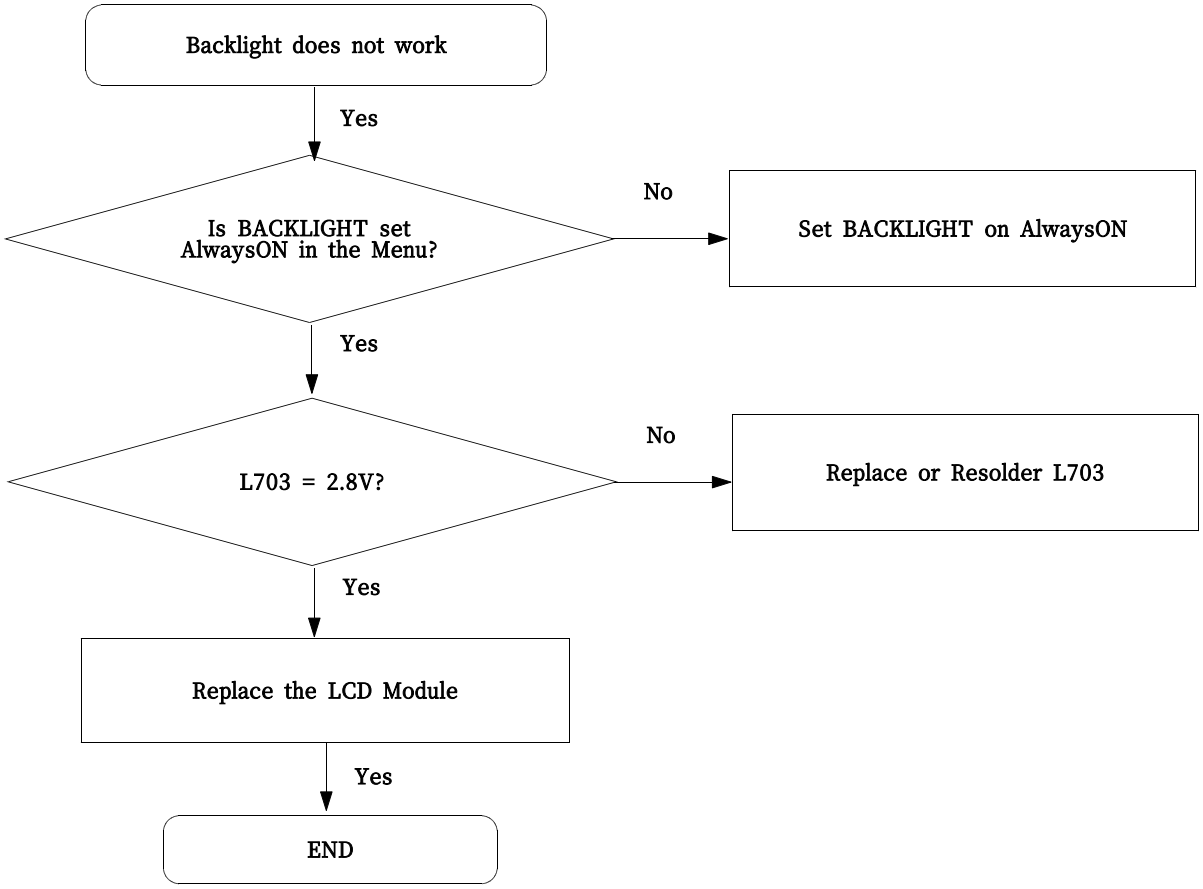


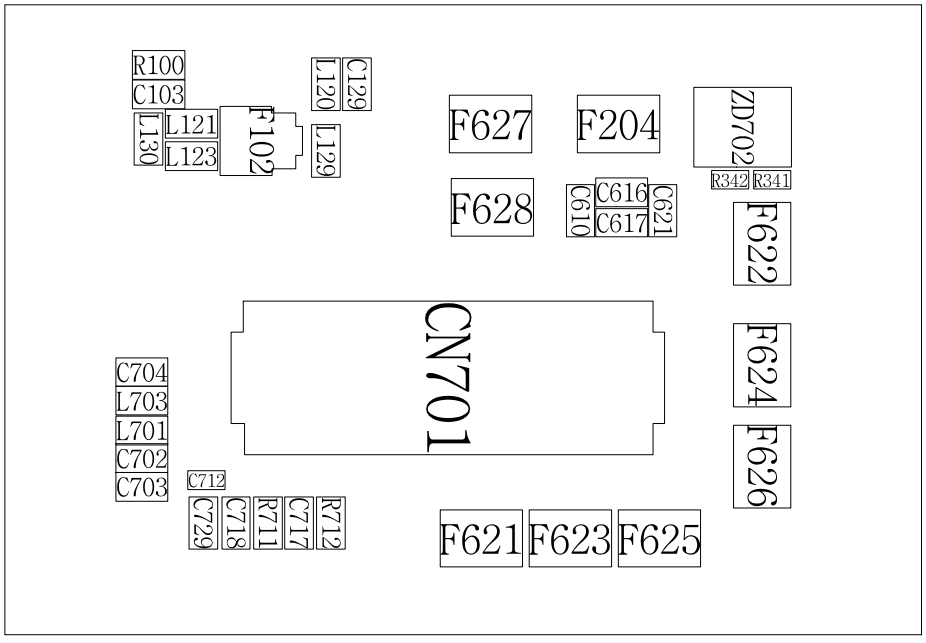
7-7. Receiver Part



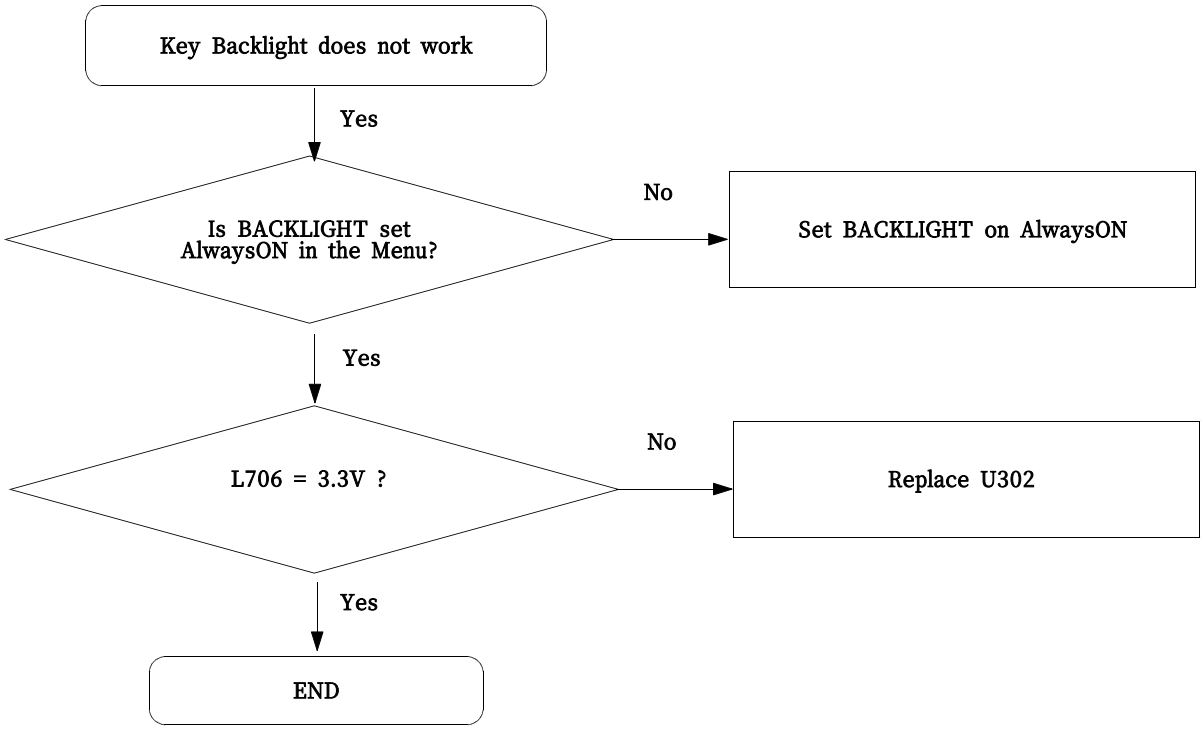


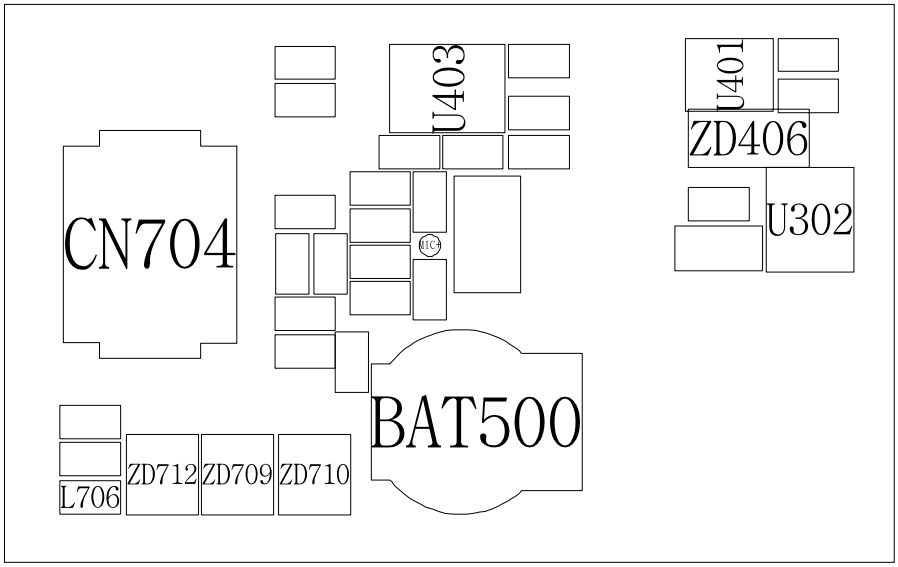
7-8. Back Light (for Color Main LCD)



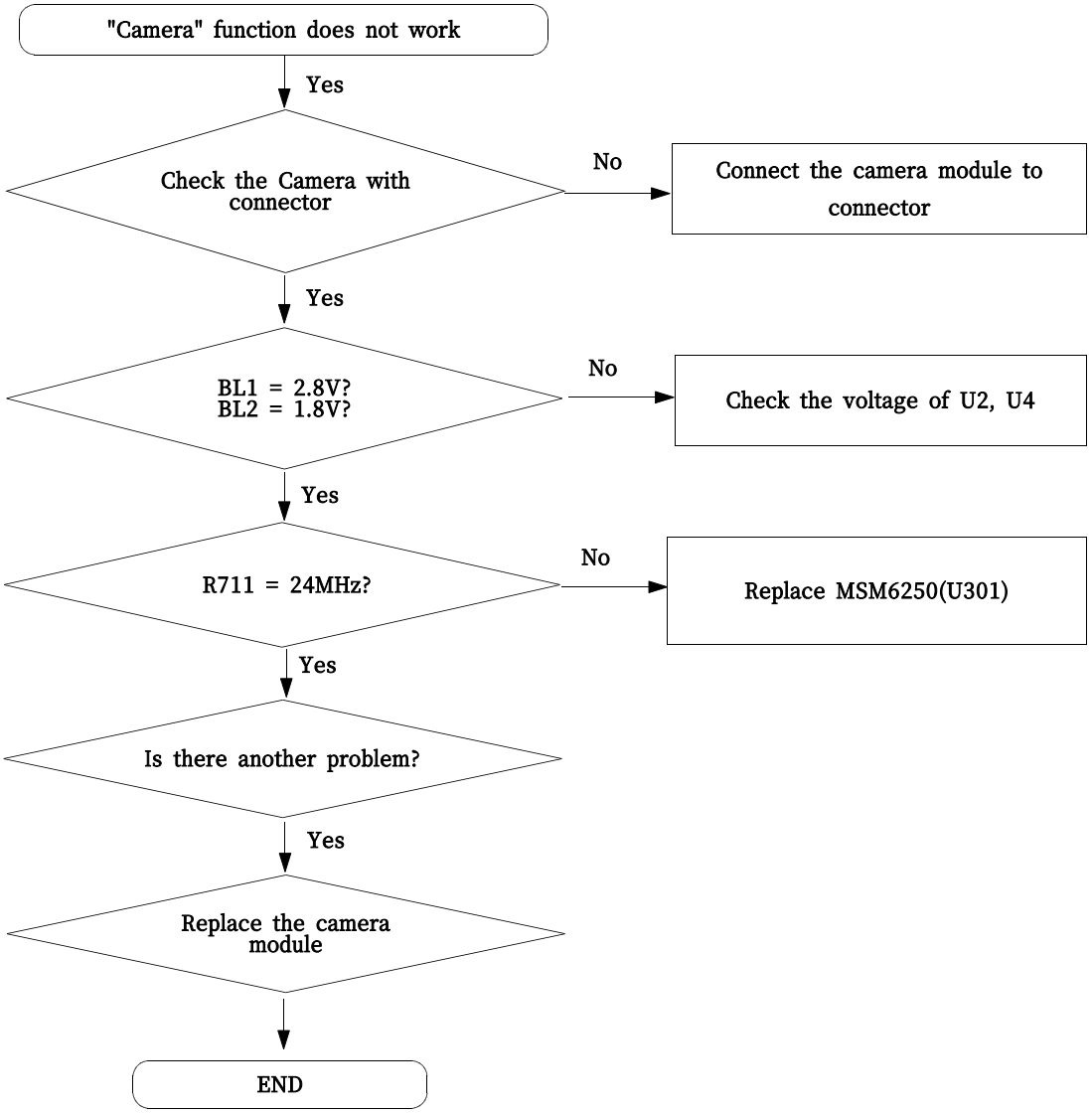


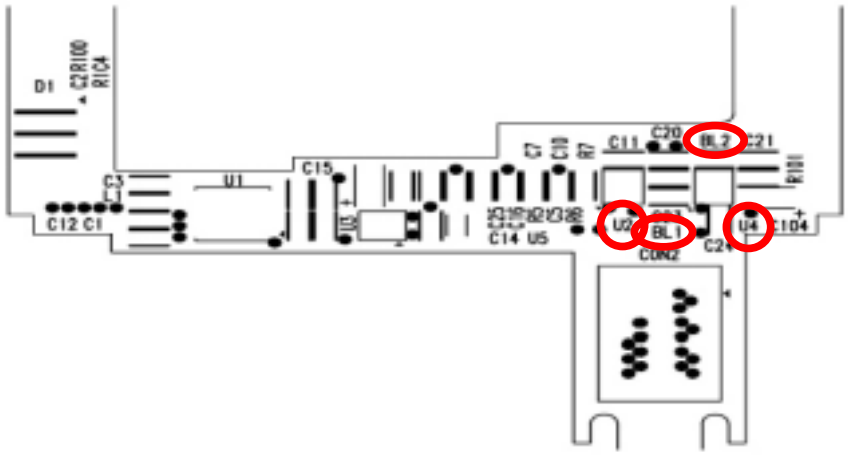
7-9. Key Back Light



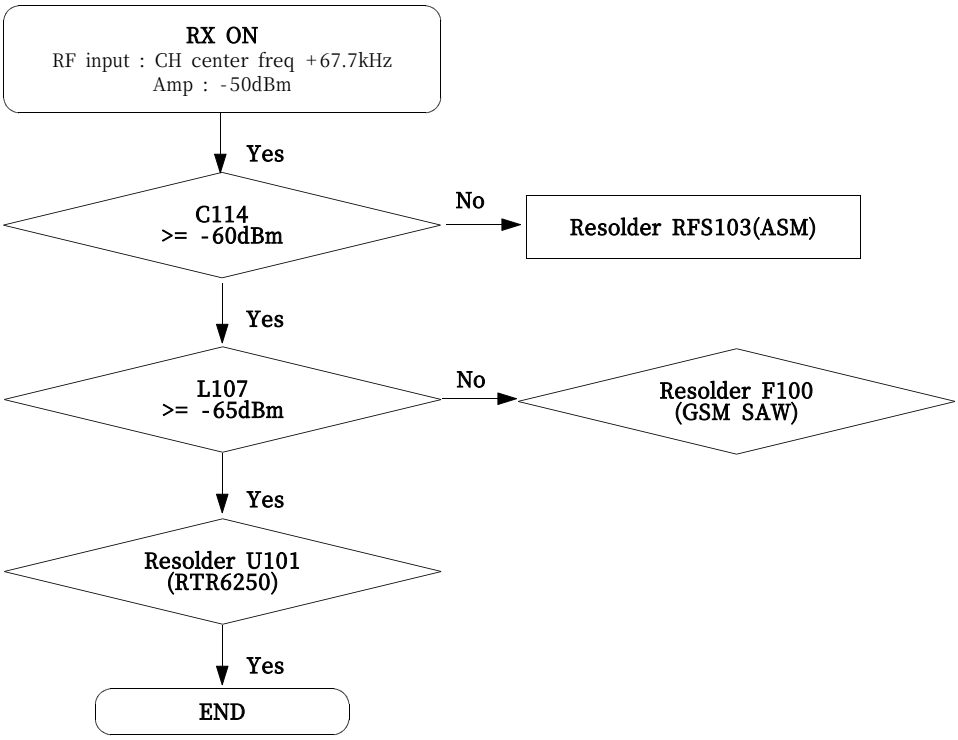


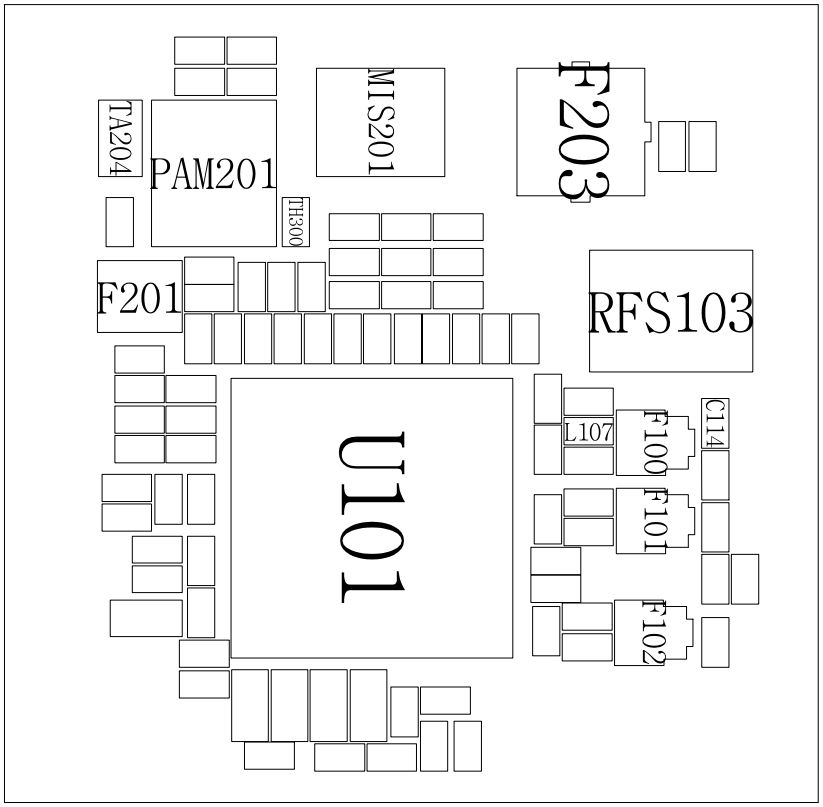
7-10. Camera part



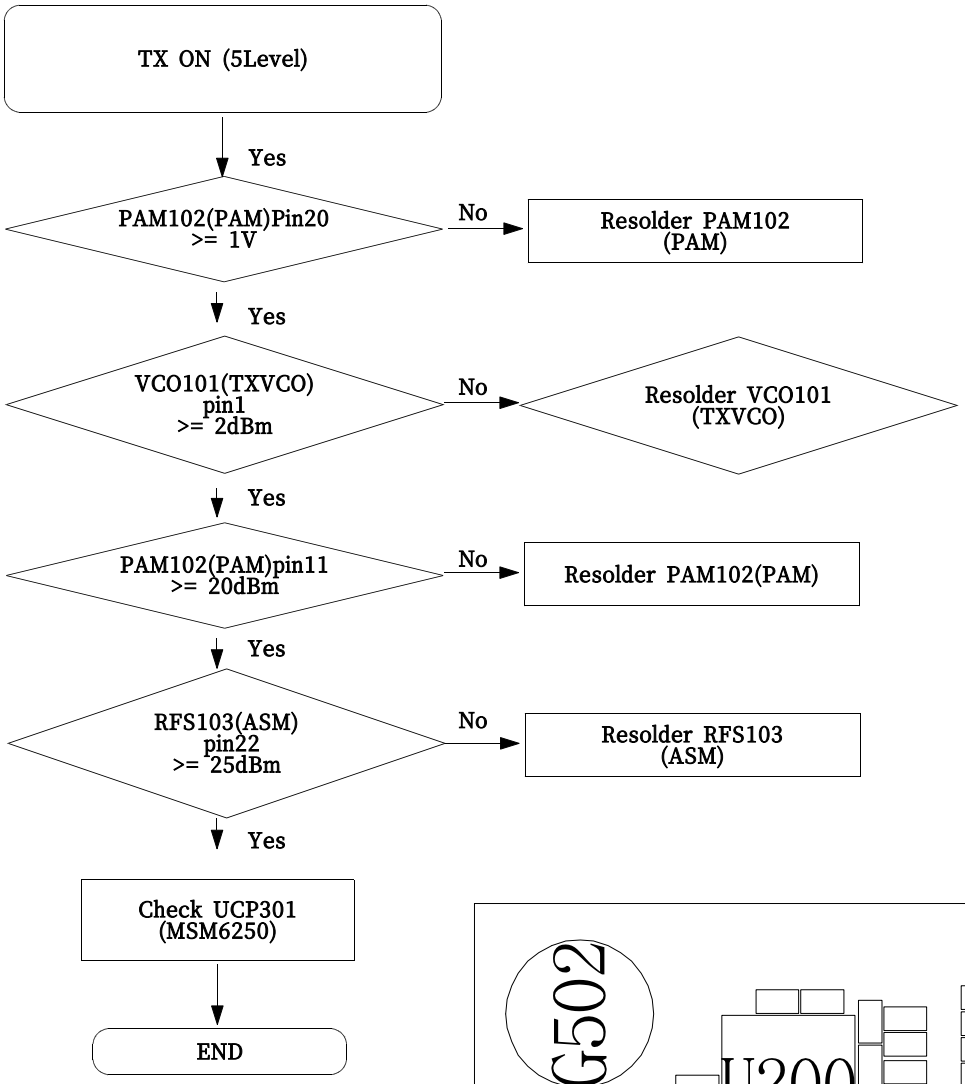


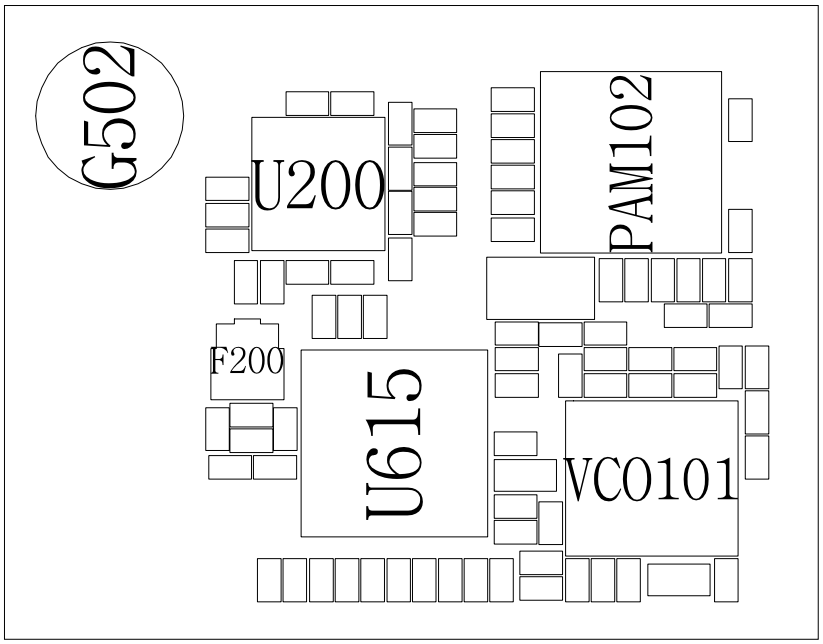
7-11. GSM Receiver



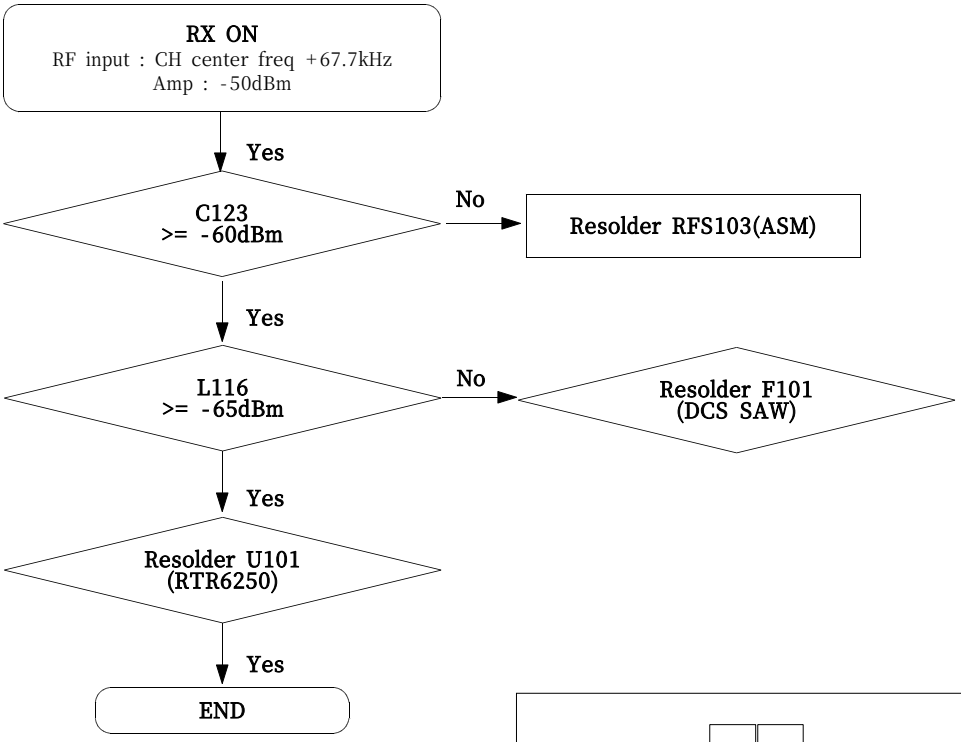


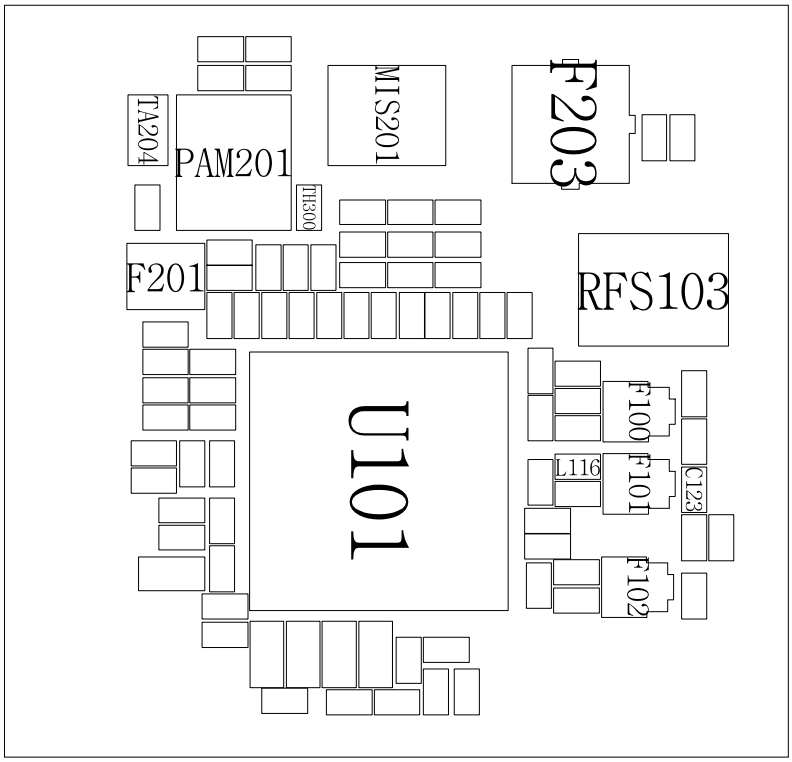
7-12. GSM Transmitter



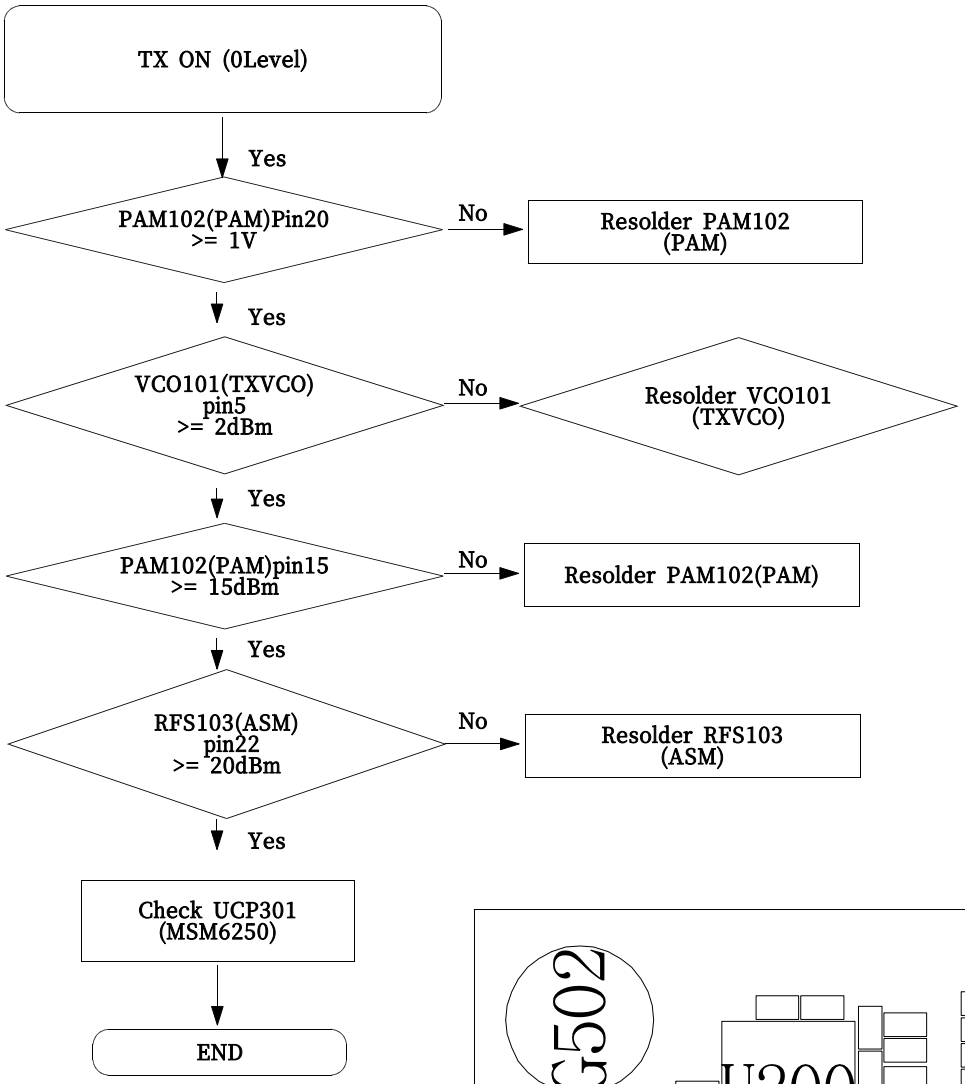


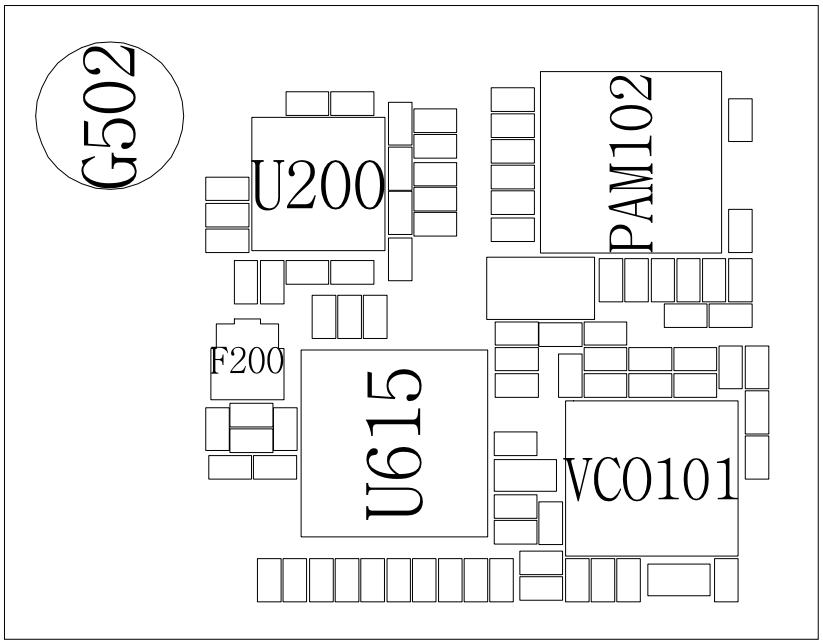
7-13. DCS Receiver



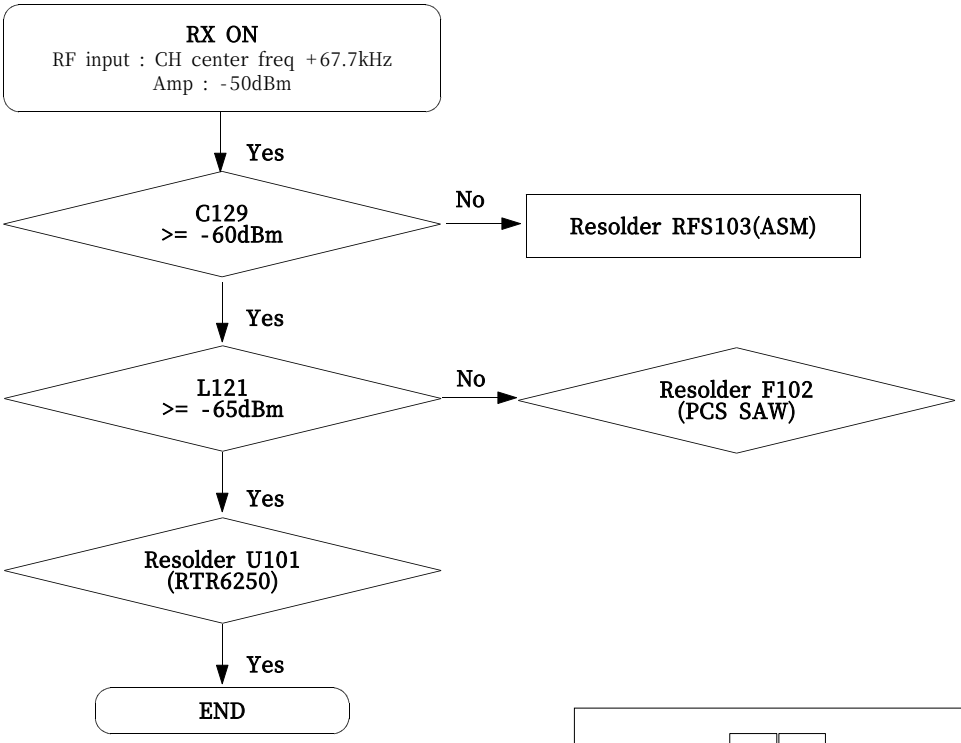


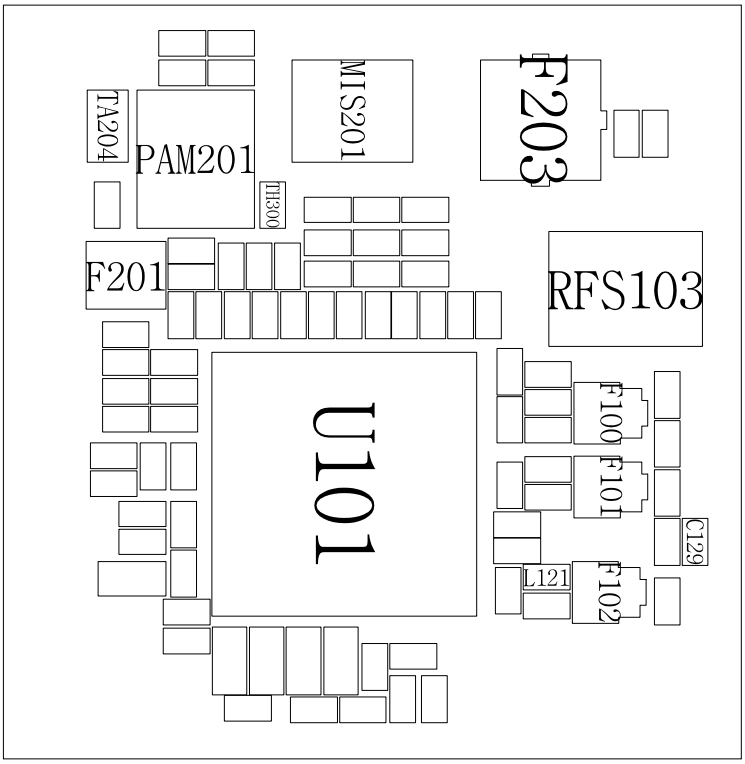
7-14. DCS Transmitter



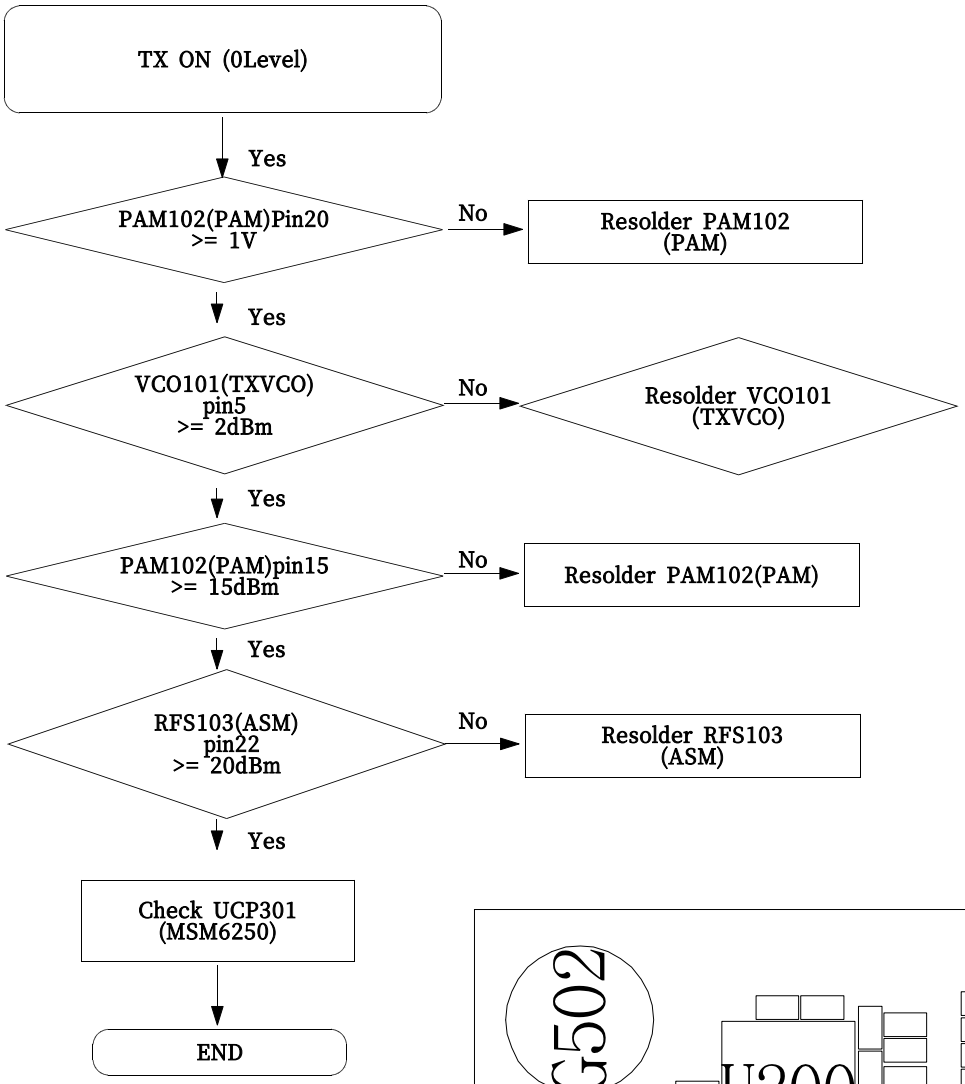


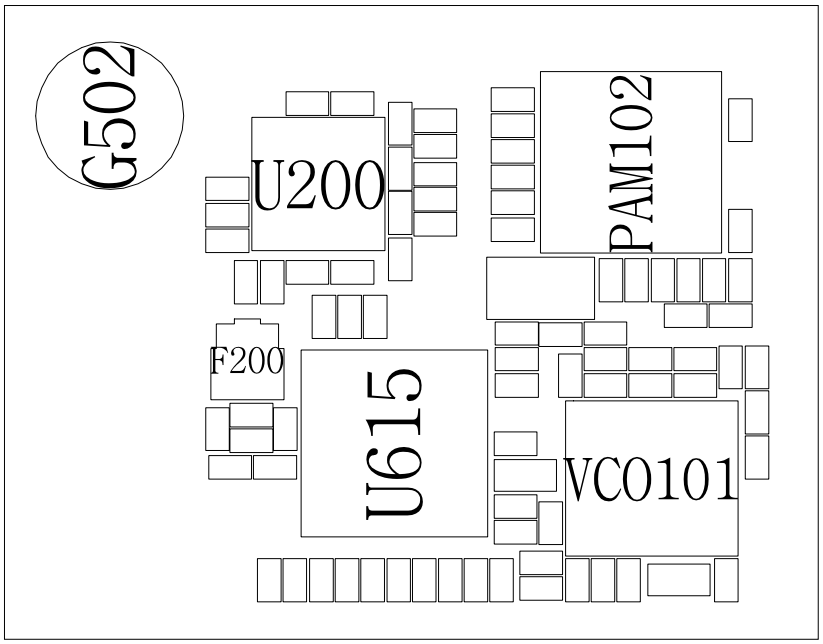
7-15. PCS Receiver



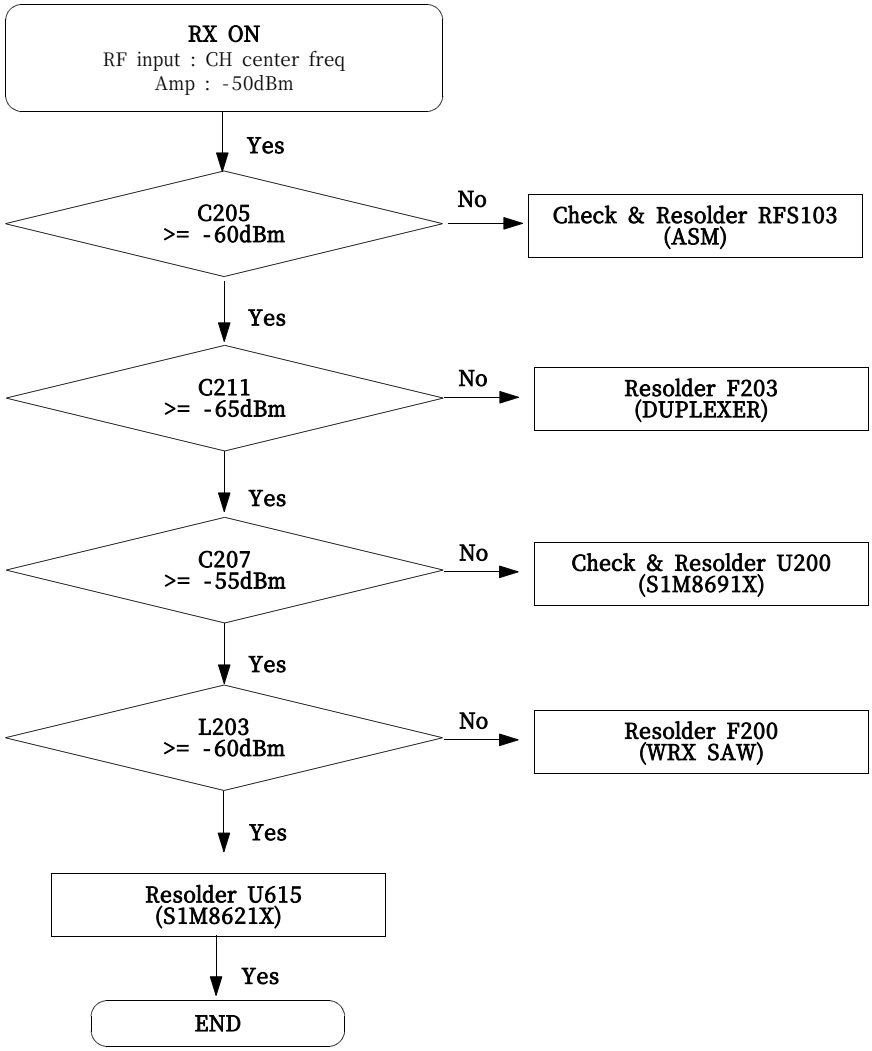


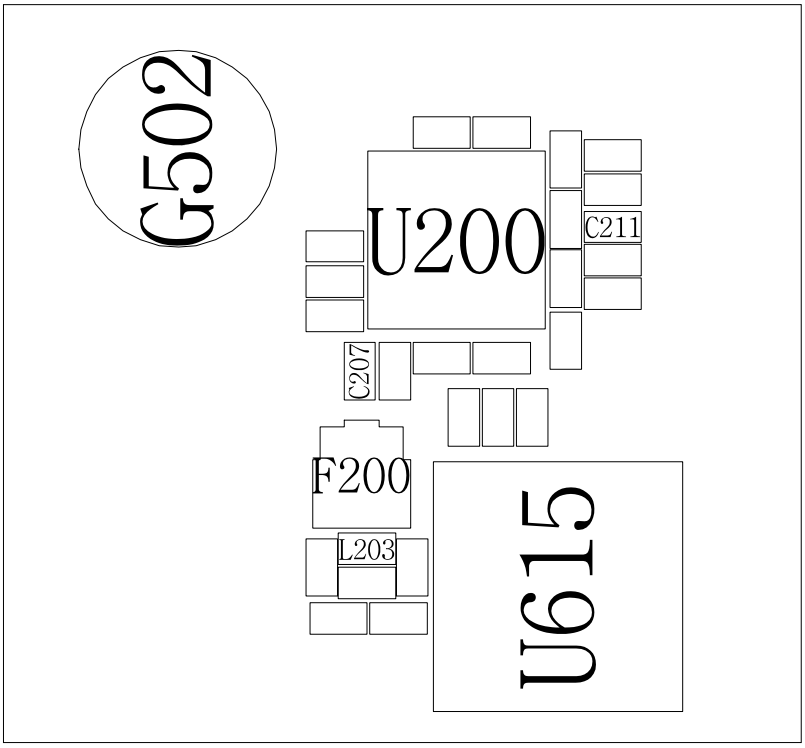
7-16. PCS Transmitter

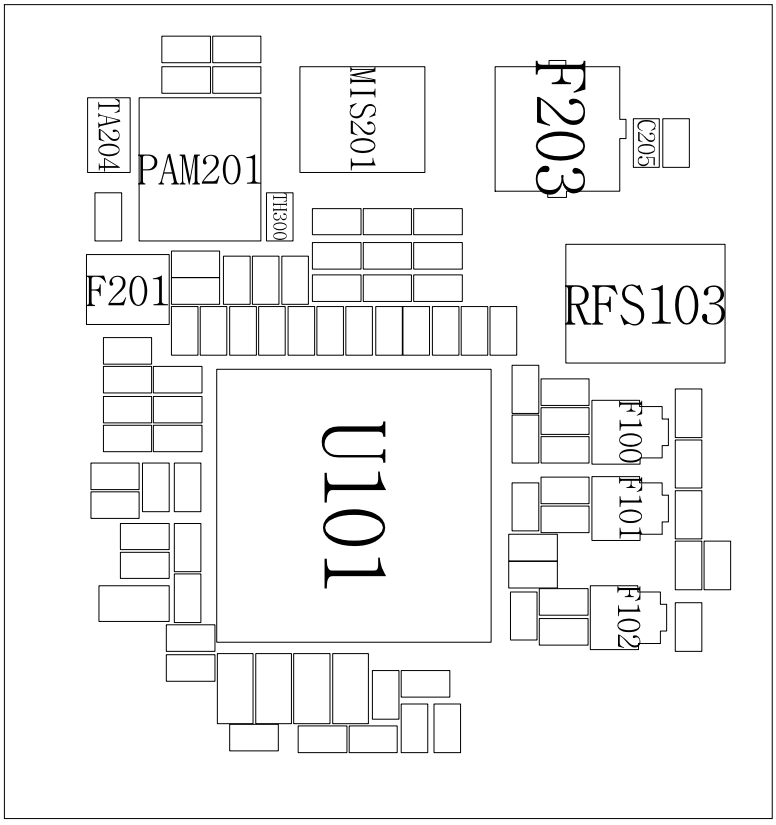




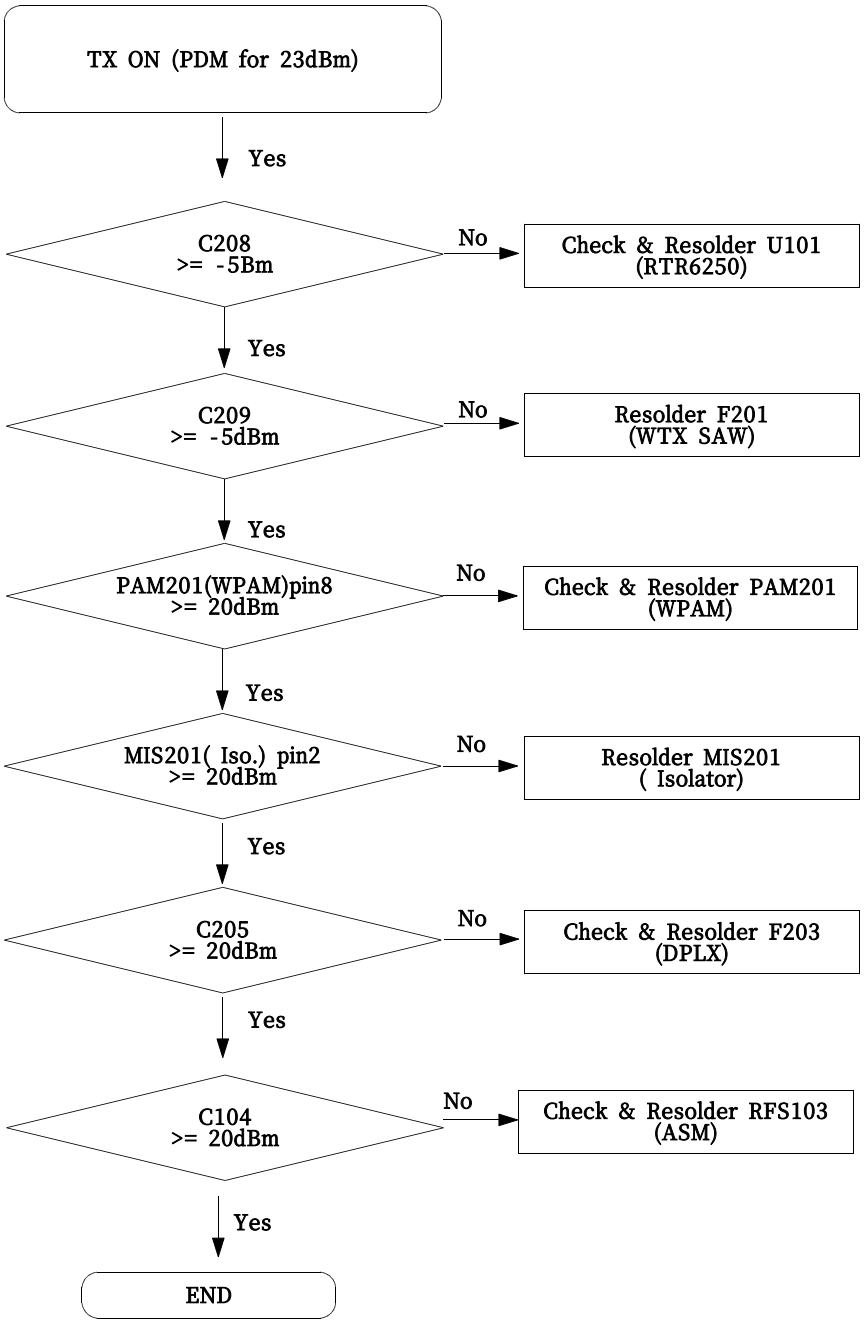
7-17. WCDMA Receiver

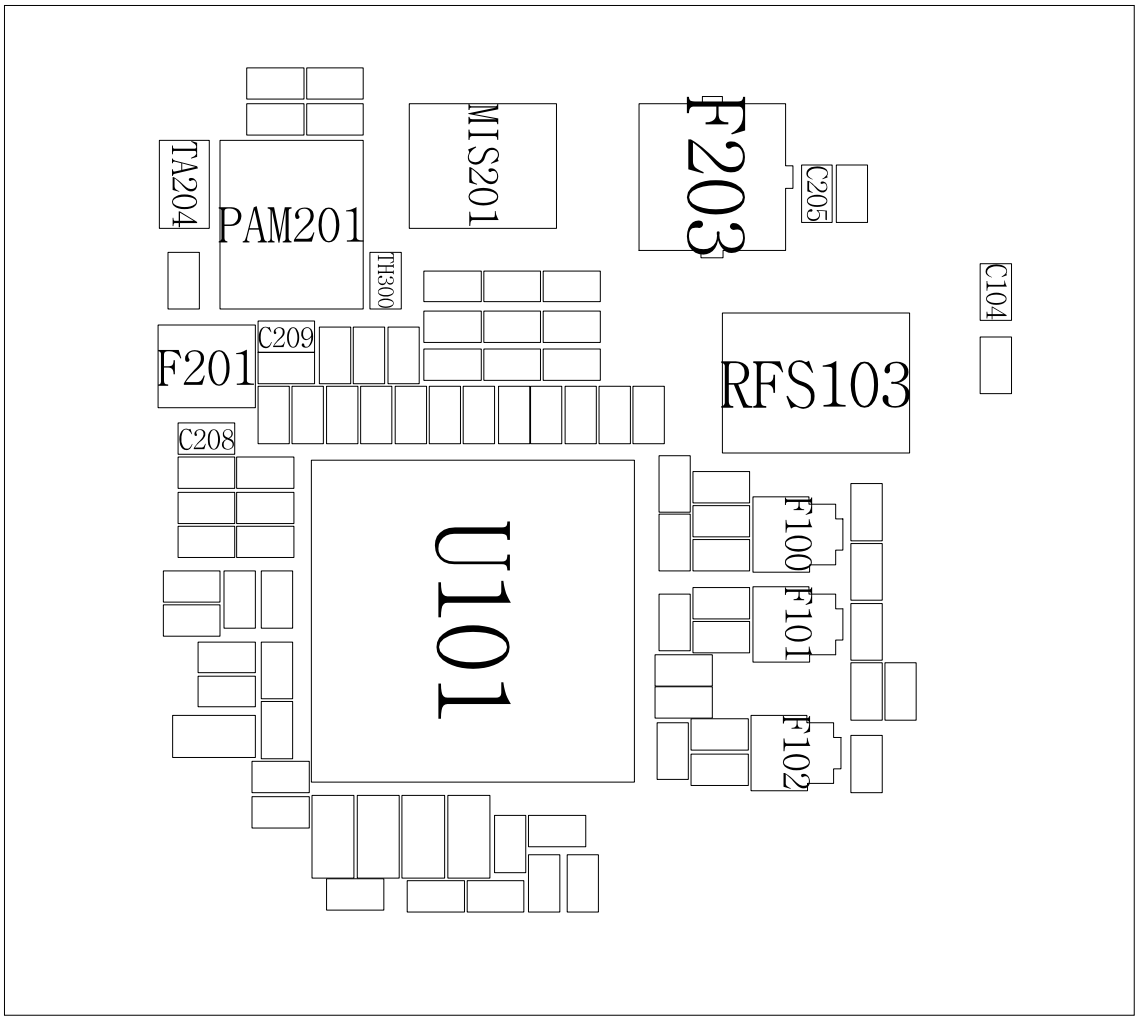




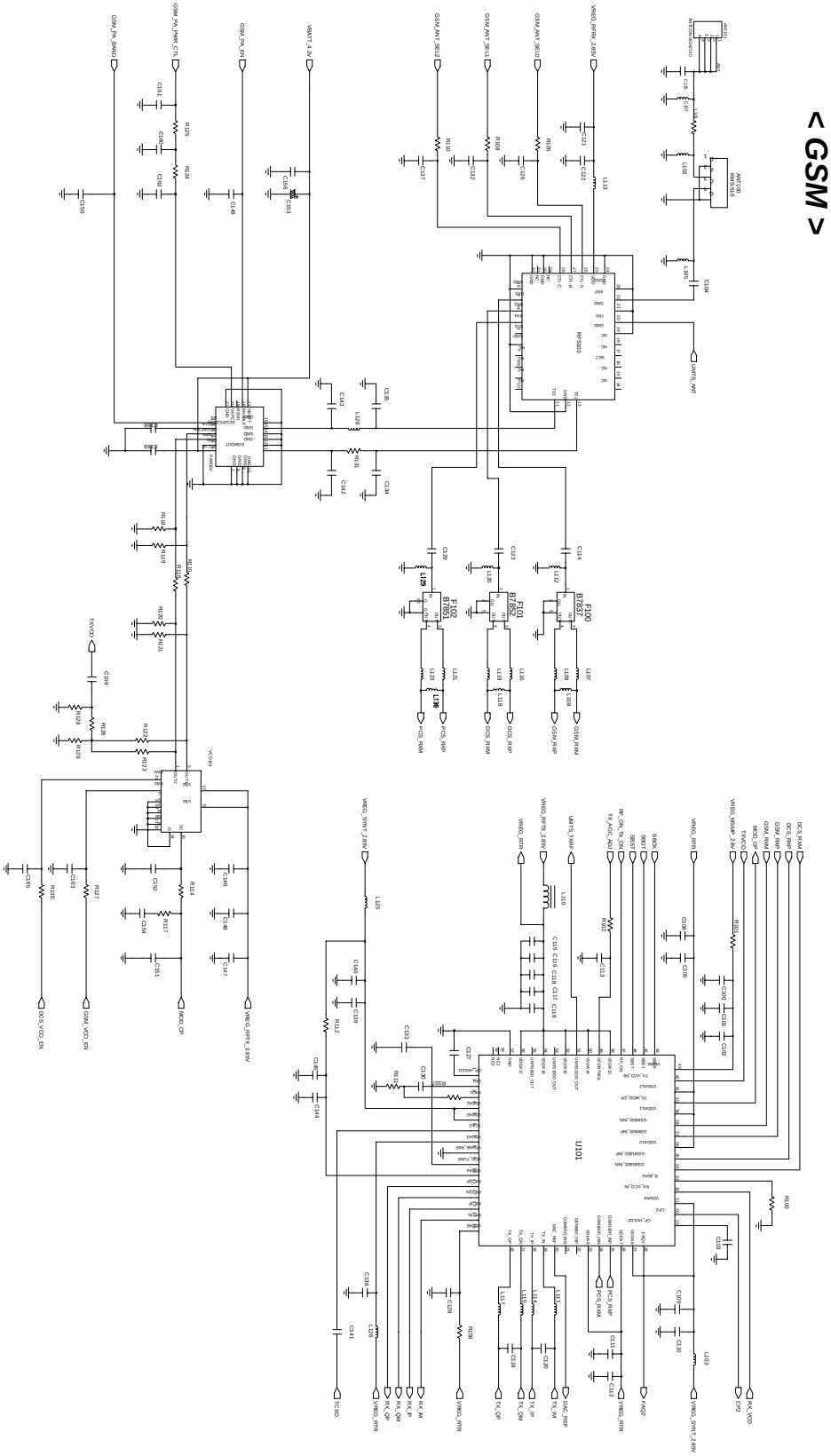


7-18. WCDMA Transmitter





Transmitter



< GSM >

WCDMA Part

< WCDMA >