SAMSUNG

GSM TELEPHONE

SGH-E750

SERVICE Manual

GSM TELEPHONE

CONTENTS

SAMSUNG ELECTRONICS

Code No.: GH68-08355A
BASIC.

1. Specification

1-1. GSM General Specification

	GSM900 Phase 1	EGSM 900 Phase 2	DCS1800 Phase 1	PCS1900
Freq. Band[MHz] Uplink/Downlink	890~915 935~960	880~915 925~960	1710~1785 1805~1880	1850~1910 1930~1990
ARFCN range	1~124	0~124 & 975~1023	512~885	512~810
Tx/Rx spacing	45MHz	45MHz	95MHz	80MHz
Mod. Bit rate / Bit Period	270.833kbps 3.692us	270.833kbps 3.692us	270.833kbps 3.692us	270.833kbps 3.692us
Time Slot Period / Frame Period	576.9us 4.615ms	576.9us 4.615ms	576.9us 4.615ms	576.9us 4.615ms
Modulation	0.3GMSK	0.3GMSK	0.3GMSK	0.3GMSK
MS Power	33dBm~13dBm	33dBm~5dBm	30dBm~0dBm	30dBm~0dBm
Power Class	5pcl ~ 15pcl	5pcl ~ 19pcl	0pcl ~ 15pcl	0pcl ~ 15pcl
Sensitivity	-102dBm	-102dBm	-100dBm	-100dBm
TDMA Mux	8	8	8	8
Cell Radius	35Km	35Km	2Km	-

1-2. GSM TX power class

TX Power control level	GSM900
5	33±3 dBm
6	31±3 dBm
7	29±3 dBm
8	27±3 dBm
9	25±3 dBm
10	23±3 dBm
11	21±3 dBm
12	19±3 dBm
13	17±3 dBm
14	15±3 dBm
15	13±3 dBm
16	11±5 dBm
17	9±5 dBm
18	7±5 dBm
19	5±5 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	PCS1900
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-E750 RF Circuit Description

2-1-1. RX PART

- FEM(MODULE100) → Switching Tx, Rx path for GSM900, DCS1800 and PCS1900 by logic controlling.

- FEM Control Logic (MODULE100) → Truth Table

	VC1	VC2	VC3
Tx Mode (GSM900)	H	L	L
Tx Mode (DCS1800/1900)	L	H	L(H)
Rx Mode (GSM900)	L	L	L
Rx Mode (DCS1800)	L	L	L
Rx Mode (PCS1900)	L	L	H

- VC-TCXO-2146C6(26MHz) (OSC100)

  This module generates the 26MHz reference clock to drive the logic and RF.
  It is turned on when the supply voltage is applied.
  After buffering a reference clock of 26MHz is supplied to the other parts of the system through the transceiver pin VCXOOUT1.

- Transceiver (U100)

  This chip is a RF transceiver IC for GSM850/900, DCS1800, and PCS1900 Quad band cellular system, and incorporates GPRS transceiver capability, and integrates most of the low power silicon functions of a transceiver.
  It incorporates triple RF LNAs, direct conversion mixers which are IQ demodulator, an auto offset calibrated programmable gain amplifier with baseband filter for IQ chains, RF synthesizer, a I/Q modulator, offset PLL, IF synthesizer, and the circuits which are needed polar loop architecture for the transmitter.

2-1-2. TX PART

Transmitter of the transceiver is capable of GMSK and 8-PSK modulation, providing support for conventional GSM and GPRS. The modulated signal out of the transceiver is fed into Power Amplifer Module(U101). PAM output signal is radiated to the air through FEM(MODULE1) and antenna.

2-2. Baseband Circuit description of SGH-E750

2-2-1. PCF50603 (U405)

- Power Management

Eight low-dropout regulators designed specifically for GSM applications power the terminal and help ensure optimal system performance and long battery life. A programmable boost converter provides support for 1.8V, 3.0V SIMs, while a self-resetting, electronically fused switch supplies power to external accessories.

Ancillary support functions, such as RTC module and High Voltage Charge pump, Clock generator, aid in reducing both board area and system complexity.

I2C BUS serial interface provides access to control and configuration registers. This interface gives a microprocessor full control of the PCF50603 and enables system designers to maximize both standby and talk times.

Supervisory functions. including a reset generator, an input voltage monitor, and a temperature sensor, 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).

- Backlight Brightness Modulator

The Backlight Brightness Modulator (BBM) contains a programmable Pulse-width modulator (PWM) and FET to modulate the intensity of a series of LED's or to control a DC/DC converter that drives LCD backlight.

- Clock Generator

The Clock Generator (CG) generates all clocks for internal and external usage. The 32.768 kHz crystal oscillator provides an accurate low clock frequency for the PCF50603 and other circuitry.

2-2-2. LCD Connector

LCD is consisted of main MAIN LCD, SUB LCD

Chip select signals in the U305, LCD_CS, can enable LCD. BACKLIGHT signal enables white LED of main LCD. These signal is from U400.

16-bit data lines(LD(0)~LD(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. So "L_WR" signal is used to write data or commands to LCD. Power signals for LCD are "VDD_IO_HIGH".

2-2-3. Key

This is consisted of key interface pins KEY_ROW(0:4) and KEY_COL(0:4) in PCF5213EL1. These signals compose the matrix. Result of matrix informs the key status to key interface in the PCF5213EL1. Power on/off key is seperated from the matrix. So power on/off signal is connected with PCF50603 to enable PCF50603. Key LED is consisted of six white LEDs for sub key and eight white LEDs for main key.

Main and Sub key LED use the 3.3V LDO for a supply voltage. KEY_LED_ON signal enables eight white LED.

2-2-4. EMI ESD Filter

This system uses the EMI ESD filter, U500 to protect noise from IF CONNECTOR part.

2-2-5. IF connetor

It is 18-pin connector. They are designed to use VBAT, V_EXT_CHARGE, USB_D+, +VBUS, USB_D-, TXD1, RXD1, AUX_ON, EXT1, EXT2 and GND. They connected to power supply IC, microprocessor and signal processor IC.

2-2-6. Battery Charge Management

A complete constant-current/constant-voltage linear charger for single cell lithium-ion batteries.

If TA connected to phone, "V_EXT_CHARGE" enable charger IC and supply current to battery.

When fault condition caused, "CHG_ON" signal level change low to high and charger IC stop charging process.

2-2-7. Audio

HFR_P and HFR_N from PCF5213EL1 are connected to the main speaker via analog switches. MIC_P and MIC_N are connected to the main MIC as well. YMU765 is a synthesizer LSI for mobile phones. This LSI has a built-in speaker amplifier for outputting sounds that are used by mobile phones in addition to game sounds and ringing melodies that are replayed by a synthesizer.

There is Stereophonic analog output for Headphone.

2-2-8. Memory

This system uses Samsung's memory, KBJ10KB00A. The KBJ10KB00A. is a Multi Chip Package Memory whichcombines 256Mbit Synchronous Burst Multi Bank NOR Flash Memory and 1Gbit NAND Flash and 128Mbit Synchronous Burst U tRAM.

It has 16 bit data line, HD[1~16] which is connected to PCF5213 and MV3315DOQ, also has 24 bit address lines, HA[1~24]. There are 3 chip select signals, CS0n_FLASH, CS4n_NAND, and CS1n_RAM.

In the Wrting process, WEn is fallen to low and it enables writing process to operate. During reading process, OEn is fallen to low and it enables reading process to operate. Each chip select signals in the PCF5213EL1 choose different memories.

2-2-9. PCF5213EL1

The PCF5213EL1 is mainly composed of embeded DSP and ARM core. The DSP subsystem includes the Saturn DSP core with embedded RAM and ROM, and a set of peripherals. It has 24kx16 bits PRAM, 104k*16 bits, 32k*16 XYRAM and 63k*16 XYROM in the DSP.

The ARM946E-S consists of an ARM9E-S processor core, 8 kbyte instruction cache and 8 kbyte data cache, tghtly-coupled ITCM(Instruction Tightly Coupled Memory) and DTCM(Data Tightly Coupled Memory) memories, a memory protection unit, and an AMBA(Advanced Microcontroller Bus Architecture) AHB(Advanced High-performance Bus) bus interface with a write buffer.

HD(0:15), data lines and HA(0:23), address lines are connected to KBJ10KB00M (memory), MV319DNQ (image dsp) and YMU765 (melody IC). It has 64 kbyte SC RAM (0.5 Mbit) and 32 kbyte SC program ROM for bootstrap loader in the ARM core.

HD(0:15), data lines and HA(0:23), address lines are connected to memory and YMU765 to communicate.
MV319DNQ(Camera DSP Chip) controls the communication between ARM core and DSP core.
OEn, WEn control the access of memory. KROW, and KCOL recognize the key string input status.
It has J-TAG control pins (TDI/TDO/TCK) for ARM and DSP core. J-SEL signal controls different access to ARM and DSP core.
ADC(Analog to Digital Convertor) receives the condition of temperature, battery type and battery voltage.

2-2-10. TOH2600DGI4KRA(26MHz)

This system uses the 26MHz TCXO, VC-TCXO-214C6.AFC control signal form PCF5213EL1 controls requency from 26MHz x-tal. It generates the clock frequency. This clock is connected to PCF5213EL1, YMU765 and MV3315DOQ.

2-2-11. Camera DSP(MV3315DOQ)

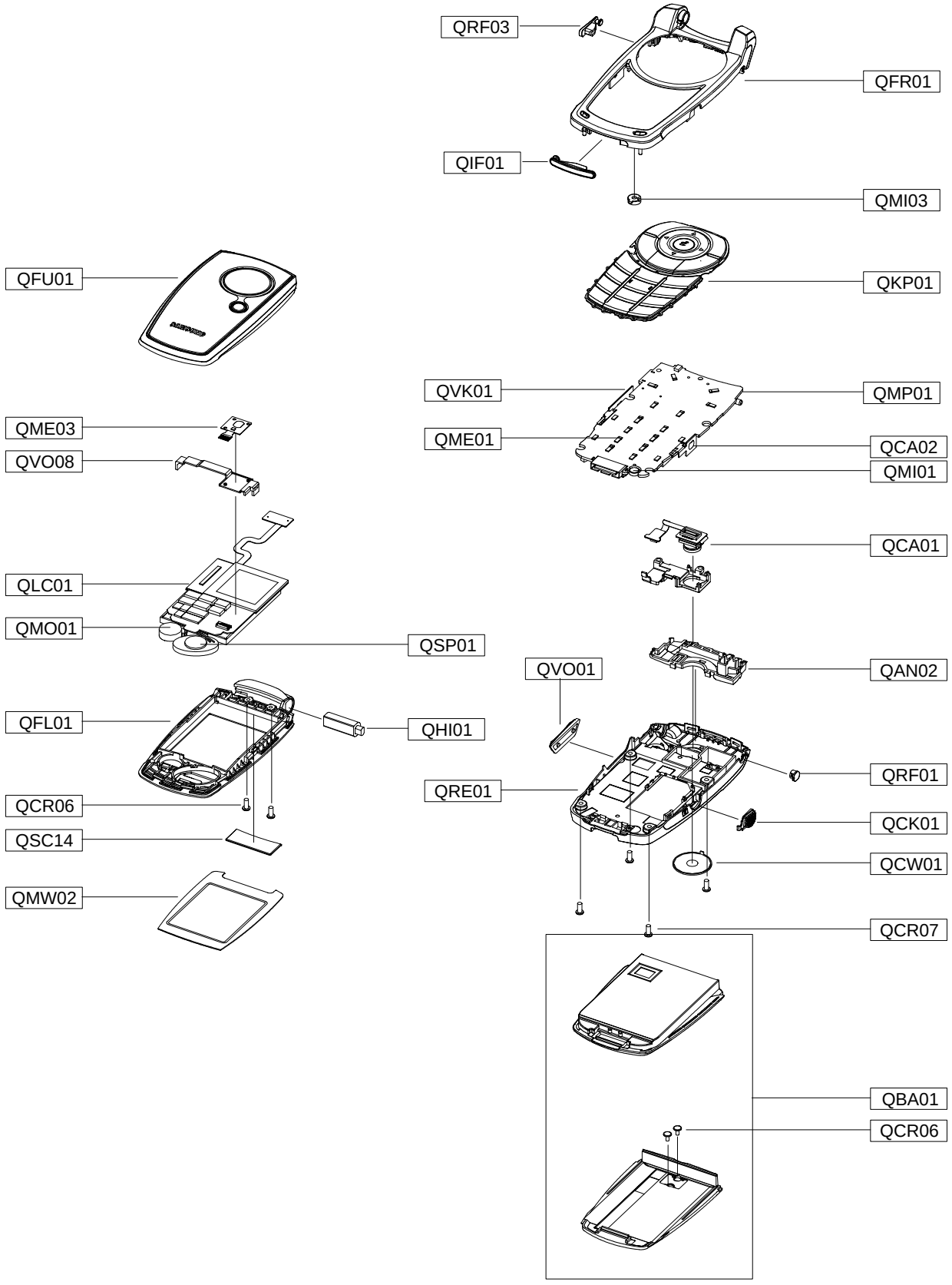
MV3315DOQ provides rich video functions up to 30-frame display with minimized tasks in the handset main processor as well as hardware based real-time JPEG compression and decompression. MV3315DOQ directly transmits and previews the RGB data to the LCD graphic memory by processing the sensor output data according to the handset's command. It can save the raw RGB data up to VGA resoultion into its image buffer and allows the host processor to download with scalable sized compressed data.
It utilizes 16 bit data bus for communication with the main processor, including bus interface types.

2-2-12. KXP74

KXP74 is Tri-axis Orthogonal accelerometers and inclinometers.
The KXP74 utilizes an onboard Serial Peripheral Interface (SPI) for digital communication.
PCF5213EL1 apply KXP74 for G- button and game

3. Exploded View and Parts List

3-1. Exploded View



3-2. Parts List

Location No		Description	Sec Code
QAN02		INTENNA-SGHE750;IGT-0061,SGH-E750,18	GH42-00633A
QBA01		BATTERY-1000MAH,SIL,EU,M;BST4468SE,S	GH43-01986A
QCA01		UNIT-CAMERA;SPH-E750,MOMFH342G1A,-,E	GH59-02258A
QCA02		UNIT-CAMERA KEY;SGH-E750,-,-,EU,5V,1	GH59-02232A
QCK01		MEC-CAMERA KEY;SGH-E750,EU,-,-,-,-,W	GH75-08044A
QCR06		SCREW-MACHINE;PH(PI2.5),+,M1.4,L3.5,	6001-001155
QCR07		SCREW-MACHINE;CH,+,M1.7,L4,ZPC(BLK),	6001-001691
QFU01		MEC-FOLDER UPPER;SGH-E750,EU,-,-,-,-	GH75-07644A
QKP01		MEC-KEYPAD(SER);SGH-E750,SER,-,-,-,-	GH75-07651A
QLC01		LCD-SGHE750 MODULE;UF-17E107-A,SGH-E	GH07-00760A
QME01		UNIT-METAL DOME;SGH-E750,-,-,EU,3.5V	GH59-02331A
QME03		UNIT-KEY FPCB;SGH-E750,YWCE750,-,EU,	GH59-02280A
QMI01		MICROPHONE-ASSY-SGHE750;2,130~500uA,	GH30-00207A
QMO01		MOTOR DC-SGHZ130;DMJBRK20NZ,SGH-Z130	GH31-00153J
QMP01		PBA MAIN-SGHE750;SGH-E750,XET,EU,PBA	GH92-02273A
QMW02		PCT-MAIN WINDOW;SGH-E750,ACRYL,TRP,-	GH72-22356A
QRF01		PMO-RF COVER;SGH-E750,URETHANE+PC(K2	GH72-22324A
QSC14		PMO-FOLDER SCREW COVER;SGH-E750,POLY	GH72-24658A
QSP01		SPEAKER;0.8W,8ohm,89B±2dB,800Hz,19.	3001-001795
QVK01		UNIT-VOLUME KEY;SGH-E750,-,-,EU,5V,1	GH59-02231A
QVO01		MEC-VOLUME KEY;SGH-E750,EU,-,-,-,-,W	GH75-07962A
QVO08		NDC-KEY MODE BRACKET;-,SGH-E750,ZN D	GH71-05082A
QFR01		MEC-FRONT COVER;SGH-E750,EU,-,-,-,-,	GH75-07641A
	QIF01	PMO-IF COVER;SGH-E750,URETHANE+PC(K2	GH72-22315A
	QRF03	PMO-EAR COVER;SGH-E750,URETHANE+PC(K	GH72-22316A
	QMI03	RMO-MIC HOLDER;SGH-E750,SLICON RUBBE	GH73-05134A
QFL01		MEC-FOLDER LOWER;SGH-E750,EU,-,-,-,-	GH75-07643A
	QHI01	MEC-HINGE;SCH-S400,SKT,-,-,-,-,-,-	GH75-07998A
QRE01		MEC-REAR COVER;SGH-E750,EU,-,-,-,-,B	GH75-07642A
	QCW01	MEC-CAMERA DECO;SGH-E750,EU,-,-,-,-,	GH75-07646A

Description	Sec Code
BAG PE;LDPE,T0.05,W80,L180,TRP,-,-	6902-000634
CBF INTERFACE-DATA LINK CABLE;SGH-D5	GH39-00371A
ADAPTOR-SGHD500 BLK;TAD137EBE,SGH-D5	GH44-00954A
S/W CD-PC LINK CD;SGH-D500,SGH-D500,	GH46-00127A
UNIT-EARPHONE;SGH-C230,EM-SS550E-STB	GH59-02166A
SPRING ETC-HINGE;SCH-S400,STS,4.7,-,	GH61-00174A
LABEL(P)-WATER SOAK;COMM,NORGE,100G,	GH68-02026A
MANUAL-SFC;COMM,SAMSUNG,RUSSIAN,RUSS	GH68-04336A
MANUAL-USER;SGH-E750,SER,RUSSIAN,RUS	GH68-07660A
LABEL(R)-MAIN(SER);SGH-E750,SER,POLY	GH68-07759B
CUSHION-CASE MAIN;SGH-E750,PULP,T0.5	GH69-03134A
PMO-BATTER LOCKER;SGH-E750,PC(K2261)	GH72-22322A
MPR-BOHO VINYL LENZ PR;SGH-E630,3M 4	GH74-10815A
MPR-BOHO VINYL LCD CONN;SGH-E730,#95	GH74-15350A
MPR-FOLDER SHEET;SGH-E750,PC SHEET,5	GH74-16514A
MPR-SHEET FPC MODE KEY;SGH-E750,PC S	GH74-16523A
MPR-BOHO VINYL M/WIN ADD;SGH-E750,3M	GH74-16525A
MPR-BOHO VINYL MAIN WIN;SGH-E750,ST-	GH74-16526A

3-3. Test Jig (GH80-03306A)

3-3-1. USB JIG Cable

3-3-2. RF Test Cable (GH39-00283A)

3-3-3. Test Cable (GH39-00337A)

3-3-4. Serial Cable (CSA LL64151-A)

3-3-5. Power Supply Cable

3-3-6. DATA CABLE (GH39-00331A]

3-3-7. TA (GH44-00482A)

4. Electrical Parts List

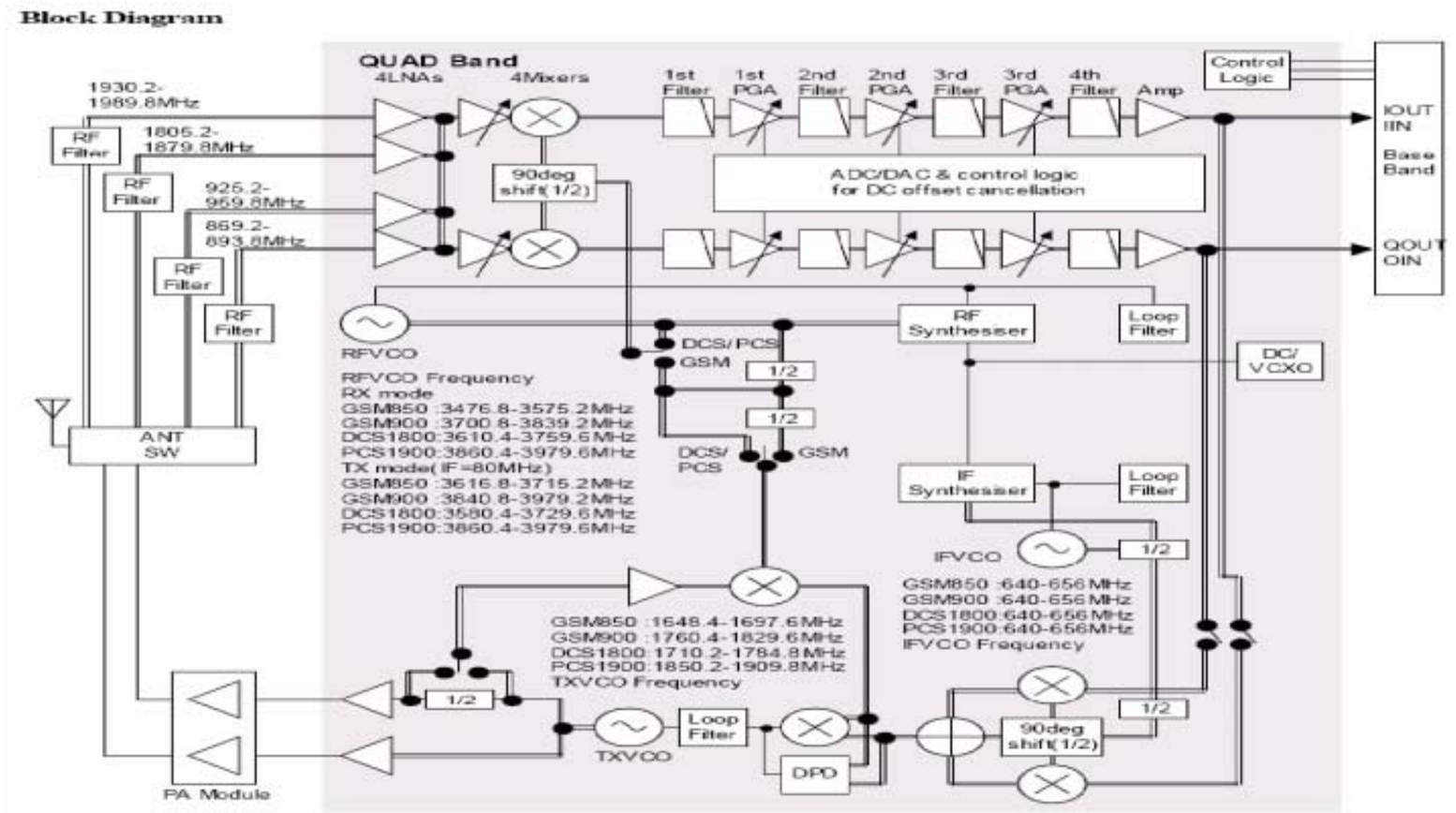
Design LOC	Description	SEC CODE
ANT102	ANTENNA-CHIP	4202-001066
C100,C102,C103,C111	C-CERAMIC,CHIP	2203-000812
C101,C108,C112	C-CERAMIC,CHIP	2203-001259
C104,C105,C114	C-CERAMIC,CHIP	2203-002668
C106,C107,C113,C115	C-CERAMIC,CHIP	2203-005288
C116	C-TA,CHIP	2404-001348
C117	C-CERAMIC,CHIP	2203-006190
C118,C119,C131,C133	C-CERAMIC,CHIP	2203-005482
C120,C204,C416	C-CERAMIC,CHIP	2203-000812
C121,C143	C-CERAMIC,CHIP	2203-000654
C122,C126	C-TA,CHIP	2404-001374
C123,C127,C132,C147	C-CERAMIC,CHIP	2203-000628
C124,C128,C135,C201	C-CERAMIC,CHIP	2203-000254
C125,C426	C-CERAMIC,CHIP	2203-000585
C134,C136,C303	C-CERAMIC,CHIP	2203-000438
C137,C140,C413	C-CERAMIC,CHIP	2203-000233
C138	C-CERAMIC,CHIP	2203-000679
C139,C202,C203,C205	C-CERAMIC,CHIP	2203-005482
C141	C-CERAMIC,CHIP	2203-000870
C144	C-CERAMIC,CHIP	2203-006399
C148,C404,C412,C414	C-CERAMIC,CHIP	2203-000628
C200,C306,C402,C403	C-CERAMIC,CHIP	2203-006208
C206,C207,C208,C209	C-CERAMIC,CHIP	2203-005482
C210,C704,C705,C706	C-CERAMIC,CHIP	2203-005682
C211,C212,C213,C214	C-CERAMIC,CHIP	2203-005482
C216,C301,C302,C305	C-CERAMIC,CHIP	2203-005482
C300,C620	C-CERAMIC,CHIP	2203-000254
C304	C-CERAMIC,CHIP	2203-000725
C307,C308,C311,C313	C-CERAMIC,CHIP	2203-005482
C309	C-CERAMIC,CHIP	2203-000550
C315,C317,C318,C320	C-CERAMIC,CHIP	2203-005482
C327,C328,C329	C-CERAMIC,CHIP	2203-005481
C334,C400,C401,C408	C-CERAMIC,CHIP	2203-006562
C405	C-CERAMIC,CHIP	2203-006090
C409,C418,C501,C502	C-CERAMIC,CHIP	2203-006562
C410,C422,C505,C603	C-CERAMIC,CHIP	2203-005482
C411,C420,C421,C429	C-CERAMIC,CHIP	2203-006257
C415,C506,C509	C-TA,CHIP	2404-001268
C423,C427,C428,C717	C-CERAMIC,CHIP	2203-006208
C430	C-CERAMIC,CHIP	2203-006257
C503,C507,C716	C-CERAMIC,CHIP	2203-006093
C510,C614	C-CERAMIC,CHIP	2203-000628
C600,C609	C-TA,CHIP	2404-001402
C601,C604,C607	C-CERAMIC,CHIP	2203-000278
C602,C608	C-CERAMIC,CHIP	2203-000995
C606,C611,C615,C701	C-CERAMIC,CHIP	2203-005482
C616,C617	C-CERAMIC,CHIP	2203-000854
C619	C-CERAMIC,CHIP	2203-006137
C700	C-CERAMIC,CHIP	2203-002443
C702	C-CERAMIC,CHIP	2203-006562

Design LOC	Description	SEC CODE
C707,C708,C709,C710	C-CERAMIC,CHIP	2203-005682
C711,C718,C719,C720	C-CERAMIC,CHIP	2203-005682
C712,C713	C-CERAMIC,CHIP	2203-006423
C714,C715	C-CERAMIC,CHIP	2203-005065
C721,C722,C723,C724	C-CERAMIC,CHIP	2203-005682
C725,C726,C727,C728	C-CERAMIC,CHIP	2203-005682
C729	C-CERAMIC,CHIP	2203-005682
CN100	CONNECTOR-COAXIAL	3705-001242
CN500	CONNECTOR-SOCKET	3710-001994
CN501	CONNECTOR-HEADER	3711-005781
CN601	JACK-PHONE	3722-002010
CN700	CONNECTOR-HEADER	3711-005938
CN704	CONNECTOR-HEADER	3711-005818
D500	DIODE-ZENER	0403-001427
F101	FILTER-EMI SMD	2901-001254
L101	INDUCTOR-SMD	2703-002170
L103	INDUCTOR-SMD	2703-002314
L104,L105,L109,L110	INDUCTOR-SMD	2703-002365
L106	INDUCTOR-SMD	2703-002281
L107	INDUCTOR-SMD	2703-002596
L108	INDUCTOR-SMD	2703-002208
L111	INDUCTOR-SMD	2703-001752
L400	CORE-FERRITE BEAD	3301-001120
L401	INDUCTOR-SMD	2703-002840
L402,R103,R113,R118	R-CHIP	2007-000171
L700	CORE-FERRITE BEAD	3301-001534
L701	CORE-FERRITE BEAD	3301-001342
LED700,LED701,LED702	LED	0601-002055
LED703,LED704,LED705	LED	0601-002055
LED706,LED707,LED708	LED	0601-002055
LED709,LED710,LED711	LED	0601-002055
LED712,LED713,LED715	LED	0601-002055
LED717,LED718,LED719	LED	0601-002055
LED720,LED721,LED722	LED	0601-002055
LED723	LED	0601-002055
MODULE1	FILTER	2911-000007
OSC100	OSCILLATOR-VCTCXO	2809-001281
OSC400	CRYSTAL-UNIT	2801-004373
Q100,Q101,Q102,Q103	TR-DIGITAL	0504-001151
Q500	TR-DIGITAL	0504-001151
Q700	;SI1902DL	0505-001469
R100,R101,R102,R104	R-CHIP	2007-000162
R105	R-CHIP	2007-000173
R108,R200,R307,R505	R-CHIP	2007-000148
R110,R117	R-CHIP	2007-000138
R120,R126,R127,R135	R-CHIP	2007-000171
R121,R125	R-CHIP	2007-007014
R122,R124,R128,R131	R-CHIP	2007-000170
R123	R-CHIP	2007-001303
R201,R208,R300,R308	R-CHIP	2007-000171

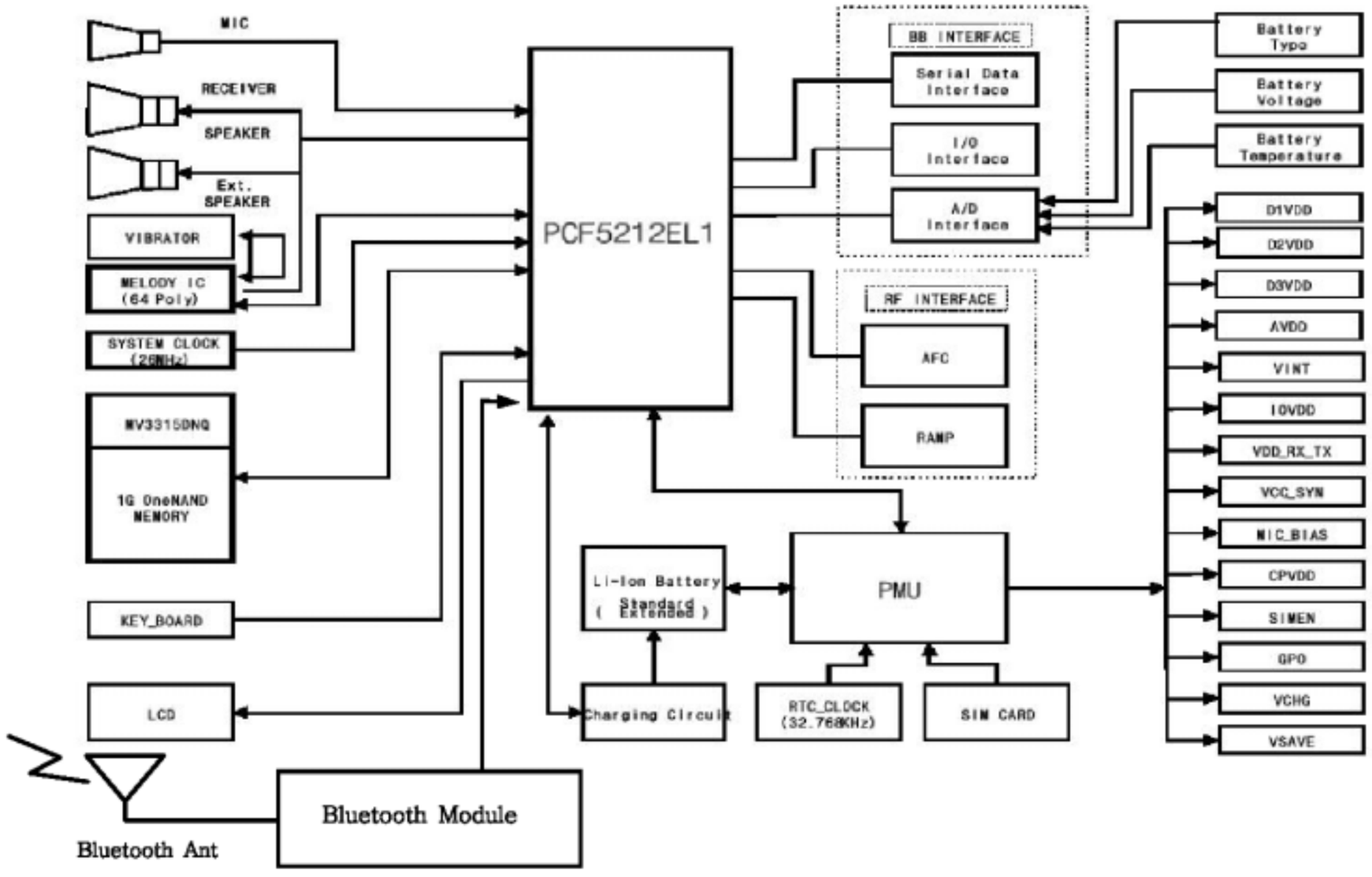
Design LOC	Description	SEC CODE
R203,R204,R600,R603	R-CHIP	2007-000242
R205	R-NETWORK	2011-001394
R206	R-CHIP	2007-000143
R301	R-CHIP	2007-001325
R303,R306,R404,R501	R-CHIP	2007-000162
R309,R318,R403,R407	R-CHIP	2007-000171
R400	R-CHIP	2007-007592
R401,R512	R-CHIP	2007-007334
R402	R-CHIP	2007-007100
R408,R518,R519,R520	R-CHIP	2007-000171
R409,R604,R608	R-CHIP	2007-002796
R500,R502	R-CHIP	2007-000758
R503,R504,R609,R700	R-CHIP	2007-000162
R506	R-CHIP	2007-000152
R507	C-CERAMIC,CHIP	2203-005061
R508,R509	R-CHIP	2007-000170
R510,R611	R-CHIP	2007-007573
R511	R-CHIP	2007-000137
R513	R-CHIP	2007-008275
R514	R-CHIP	2007-007489
R515,R516	R-CHIP	2007-000172
R602,R606,R725	R-CHIP	2007-000148
R605,R607	R-CHIP	2007-000242
R610	R-CHIP	2007-001339
R612	R-CHIP	2007-007480
R701,R702,R703,R704	R-CHIP	2007-002970
R705,R706,R707,R708	R-CHIP	2007-002970
R709,R710,R711,R712	R-CHIP	2007-002970
R713,R714,R727,R729	R-CHIP	2007-002970
R717	R-CHIP	2007-000162
R721,R722	R-CHIP	2007-007317
R730	R-CHIP	2007-000171
R731,R732,R733,R734	R-CHIP	2007-002970
R790,R791	R-CHIP	2007-002970
SIM400	CONNECTOR-CARD EDGE	3709-001384
U100	IC	1205-002709
U101	IC	1201-002223
U103,U303	IC	0801-002237
U200	IC	1205-002647
U300	COMP-SMD	GH13-00030A
U301	MEMORY	1108-000022
U302	IC	1204-002138
U304	IC	1209-001618
U306	IC	0801-002882
U400	IC	1203-003767
U401	IC	1203-002837
U402	IC	1203-003787
U404	BATTERY	4302-001177
U405	IC	1203-003568
U500	DIODE-TVS	0406-001188

Design LOC	Description	SEC CODE
U501,U700	IC	1203-003737
U502	FILTER-EMI SMD	2901-001315
U503	IC	1203-003742
U600	IC	1001-001333
U603	IC	1202-001068
U701	IC	1009-001010
U702	IC	1203-003046
U703	RF-MODULE	4709-001374
V300,V301,V302,V303	VARISTOR	1405-001082
V400,V701,V702,V703	VARISTOR	1405-001082
V500	THERMISTOR	1404-001221
V704,V705	VARISTOR	1405-001082
ZD500	DIODE-ZENER	0403-001547
ZD600,ZD601	DIODE-TVS	0406-001208
ZD701,ZD702,ZD703	DIODE-TVS	0406-001203

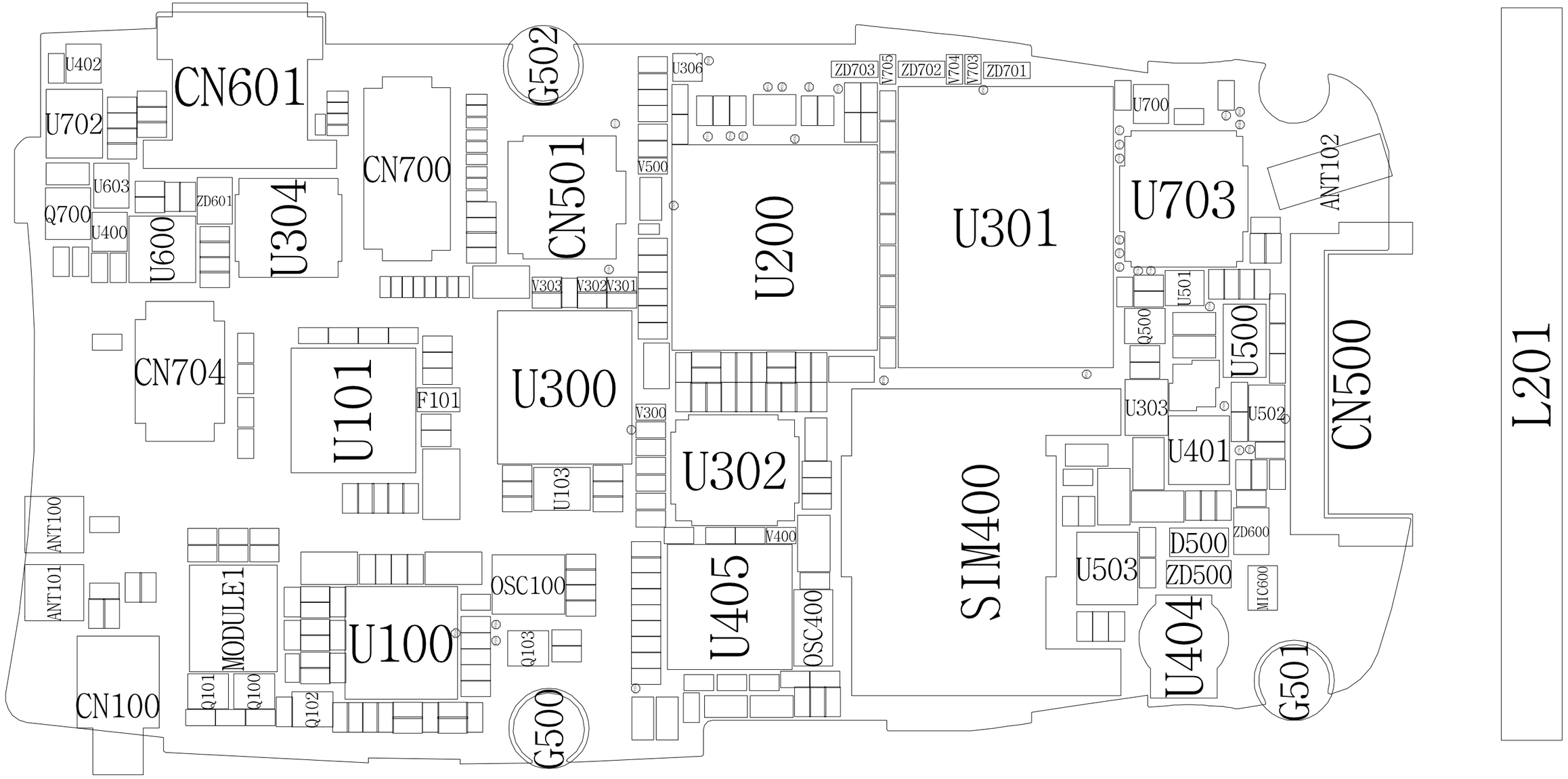
5-1. RF Solution Block Diagram



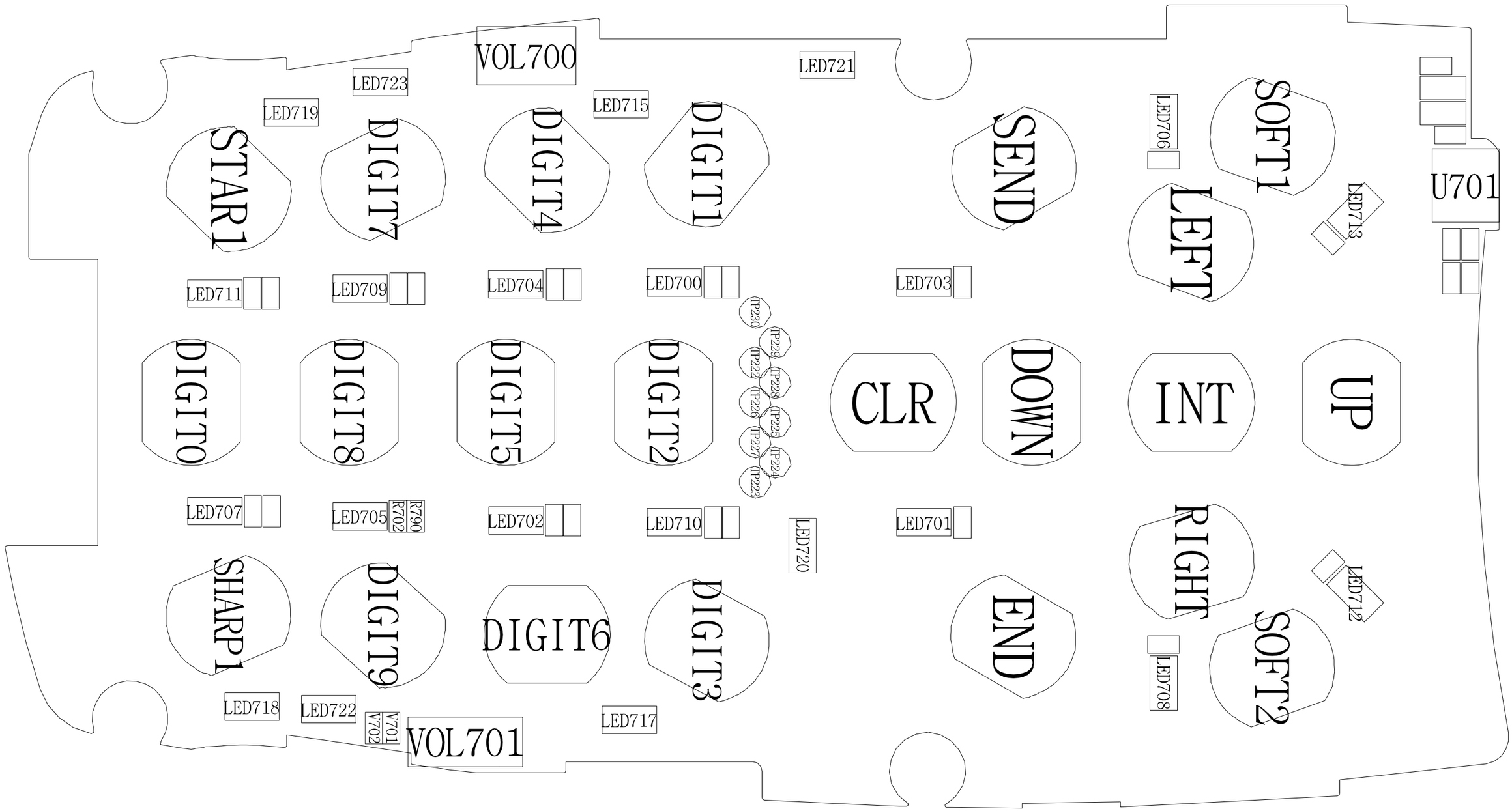
5-2. Base Band Solution Block Diagram



6-1. PCB Top Diagram

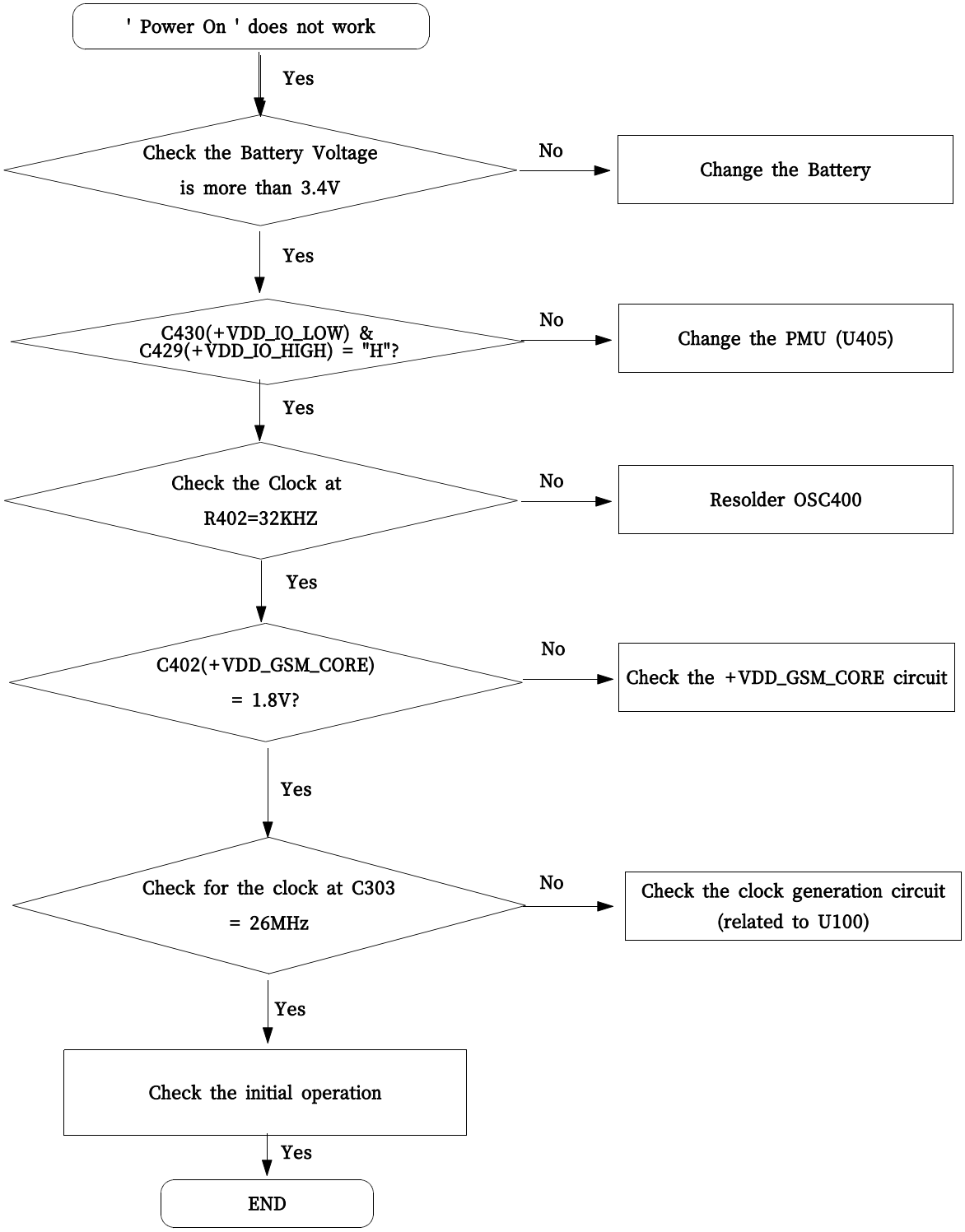


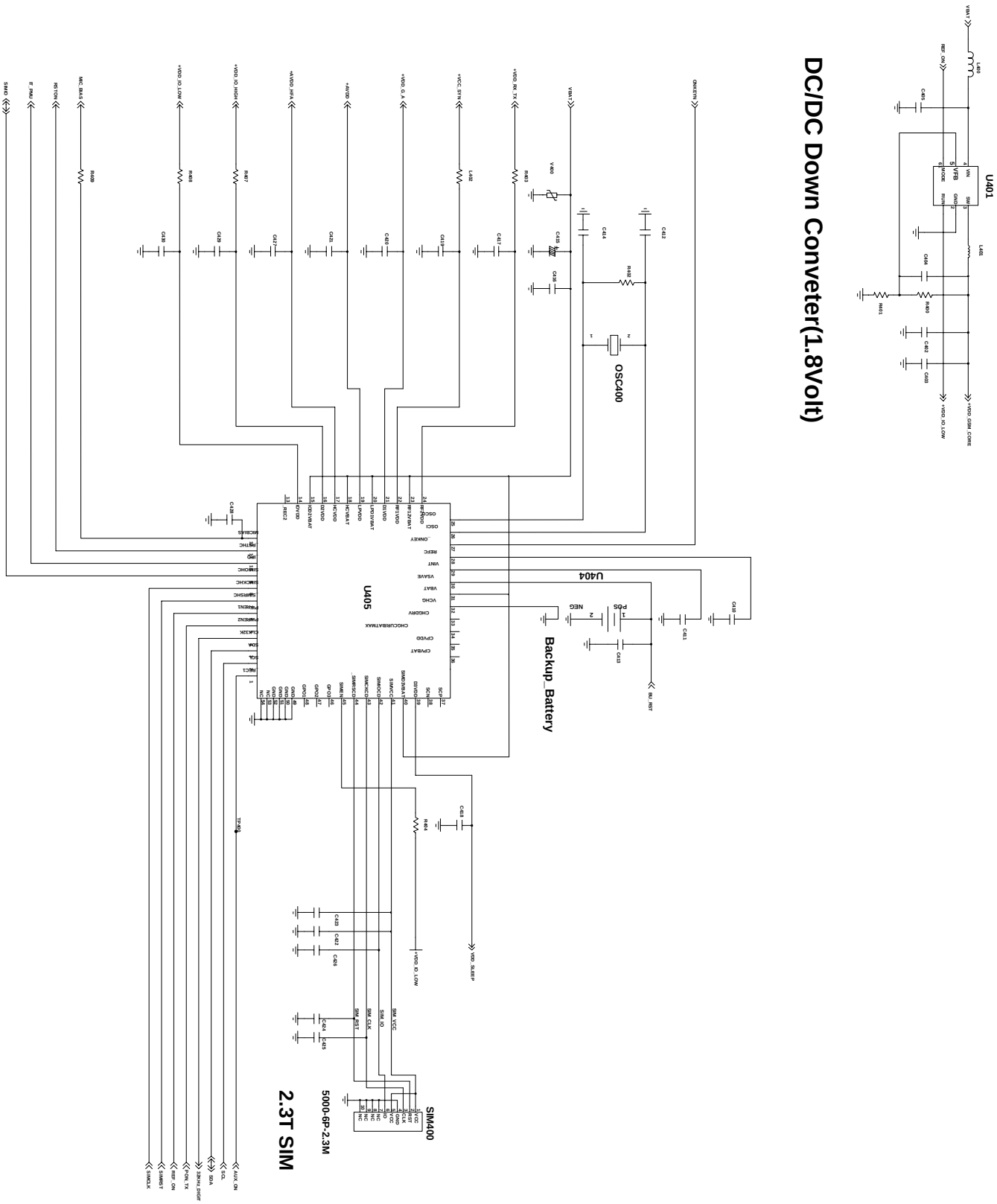
6-2. PCB Bottom Diagram

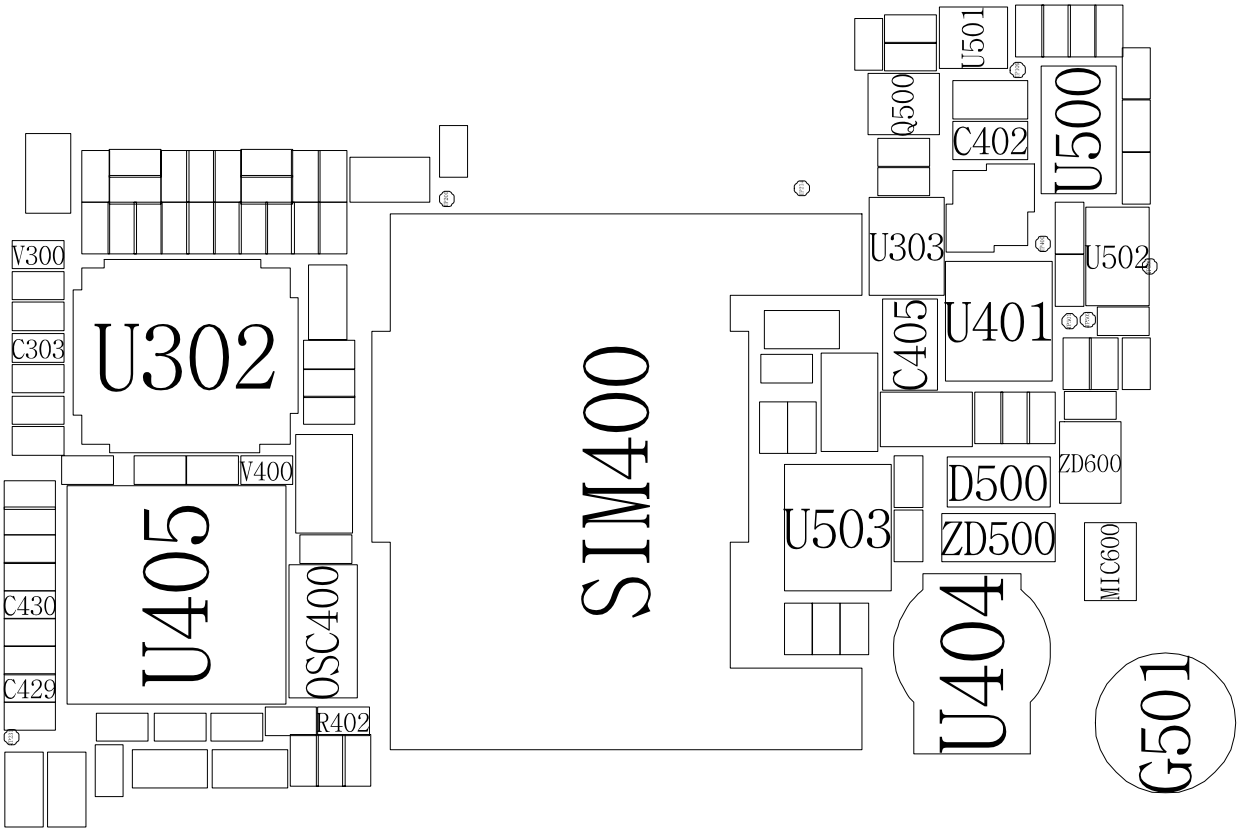


7. Flow Chart of Troubleshooting

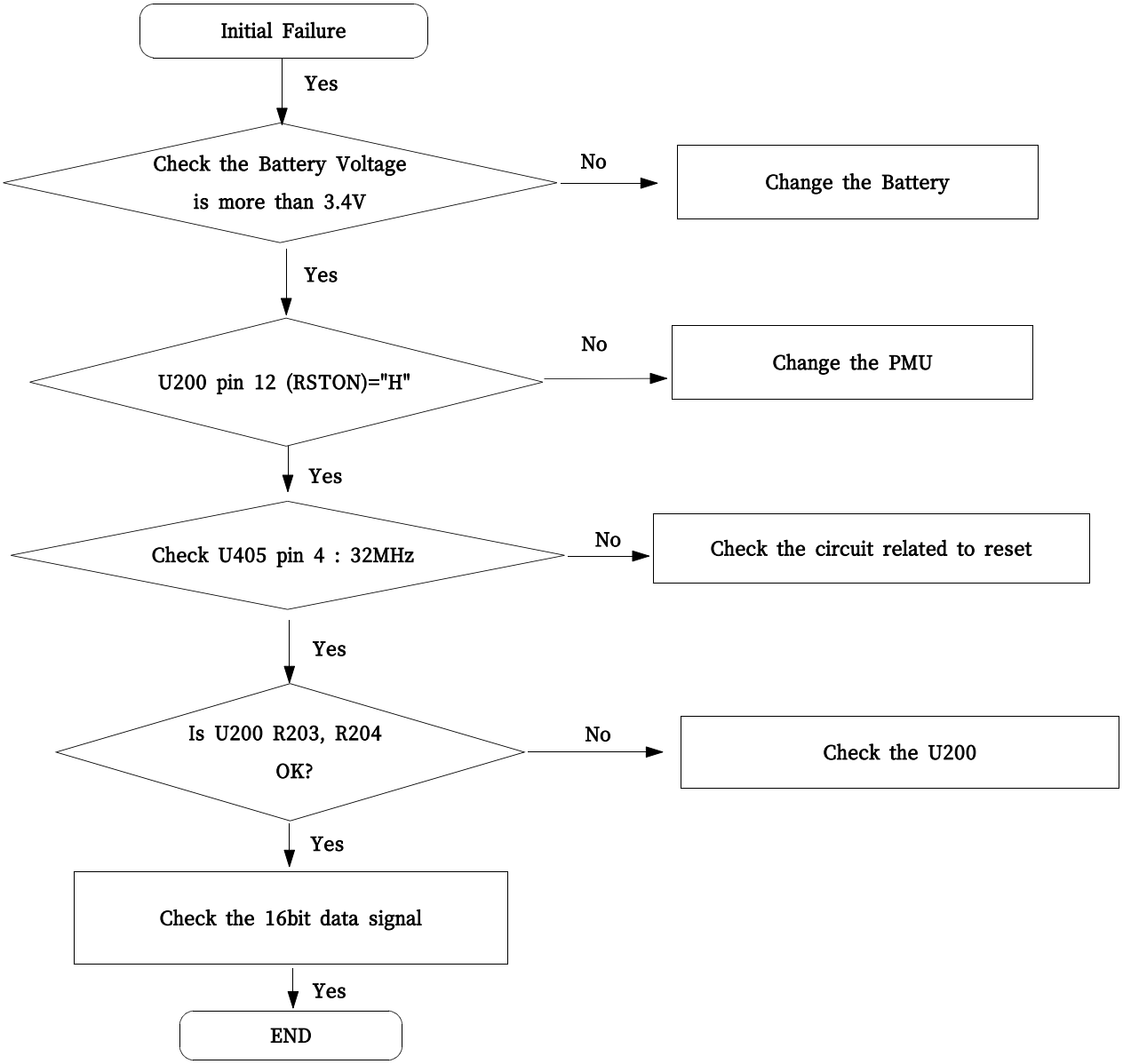
7-1. Power On

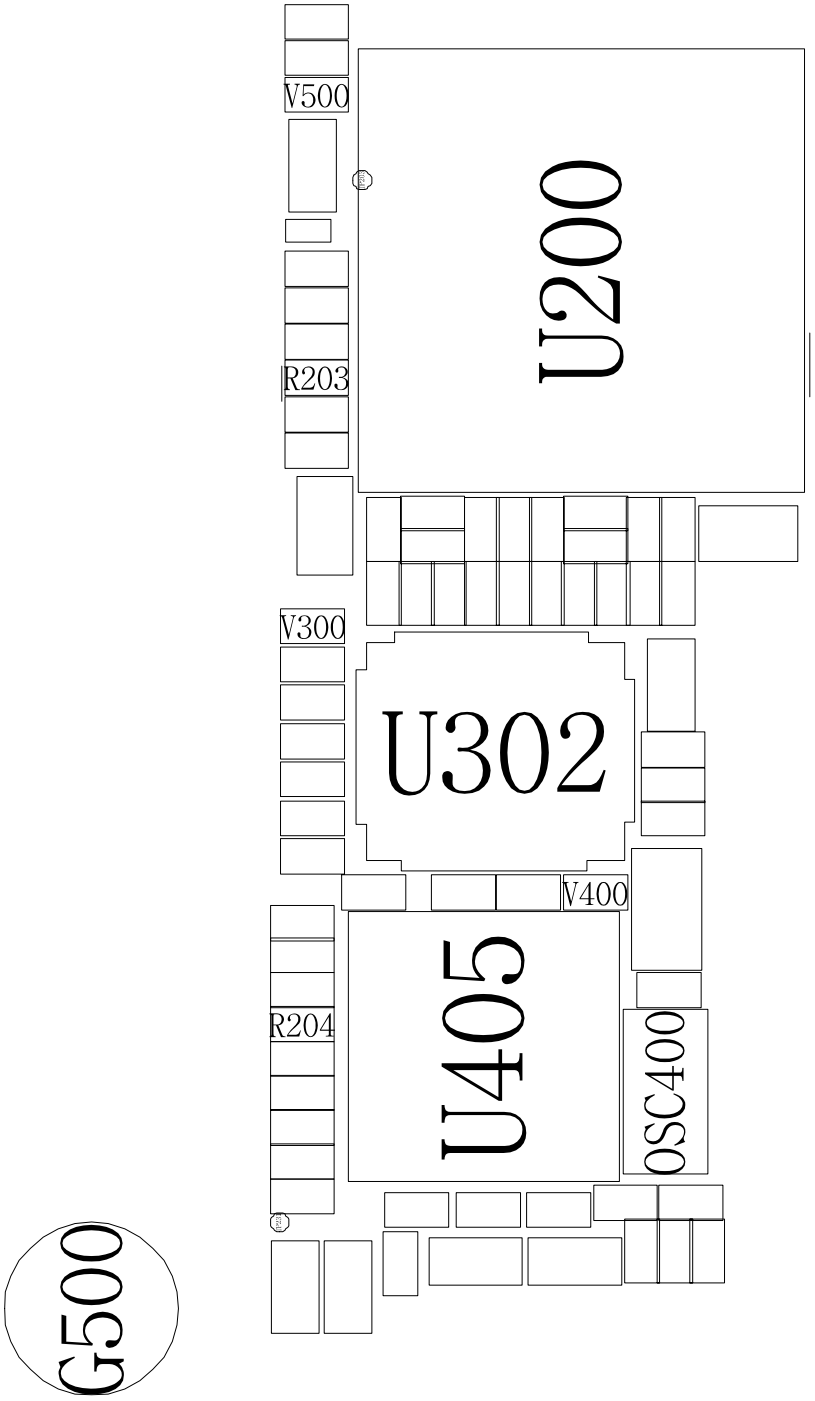




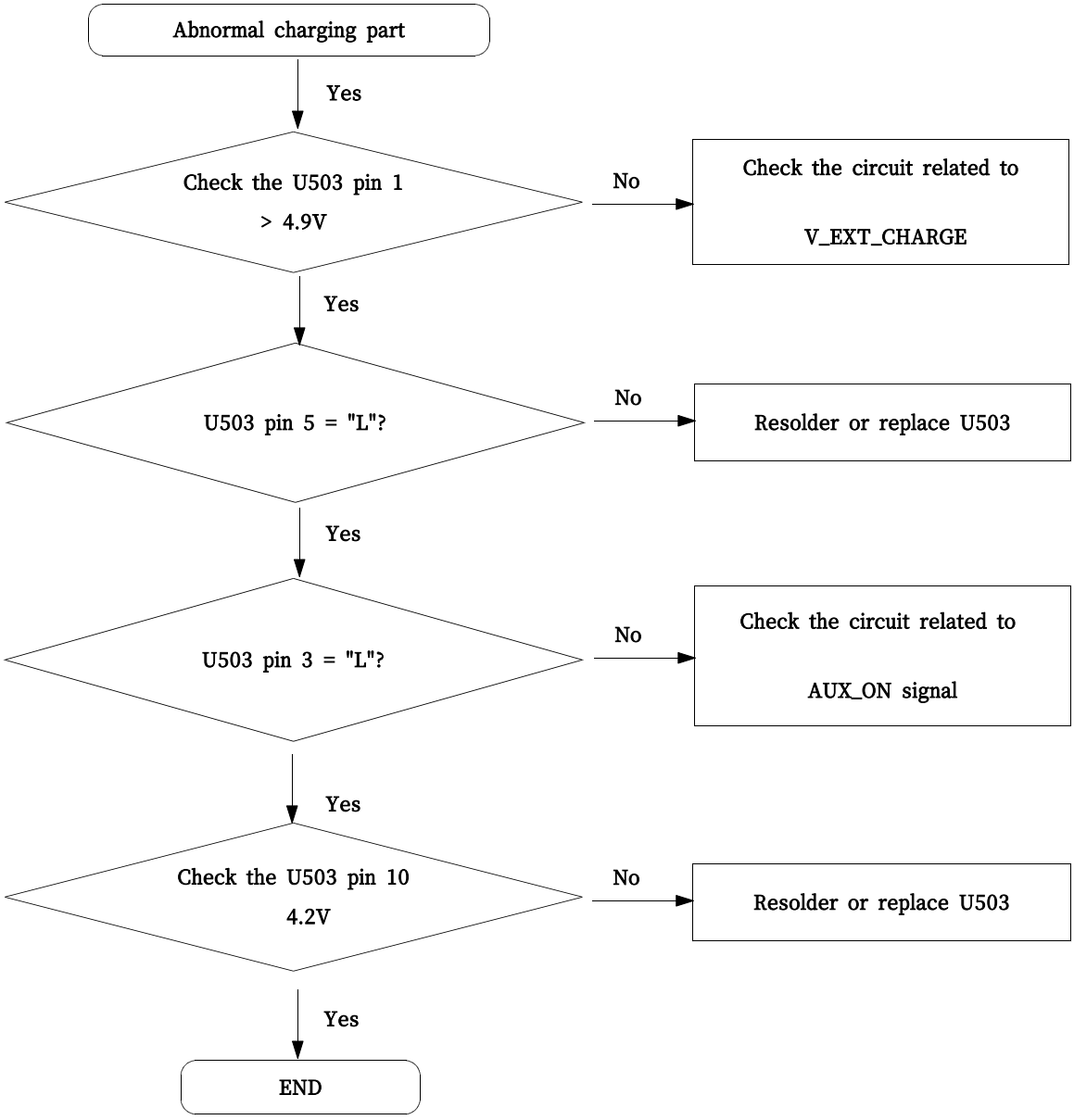


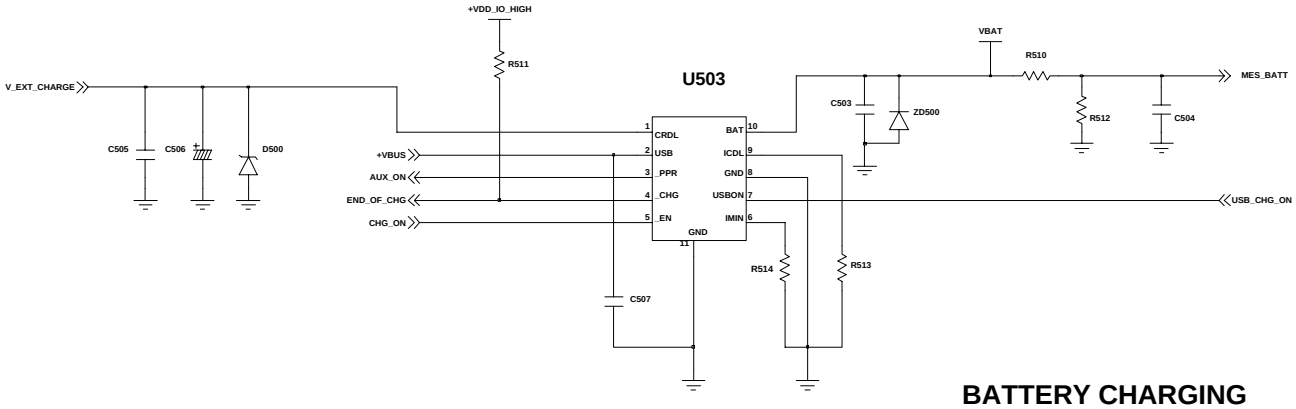
7-2. Initial



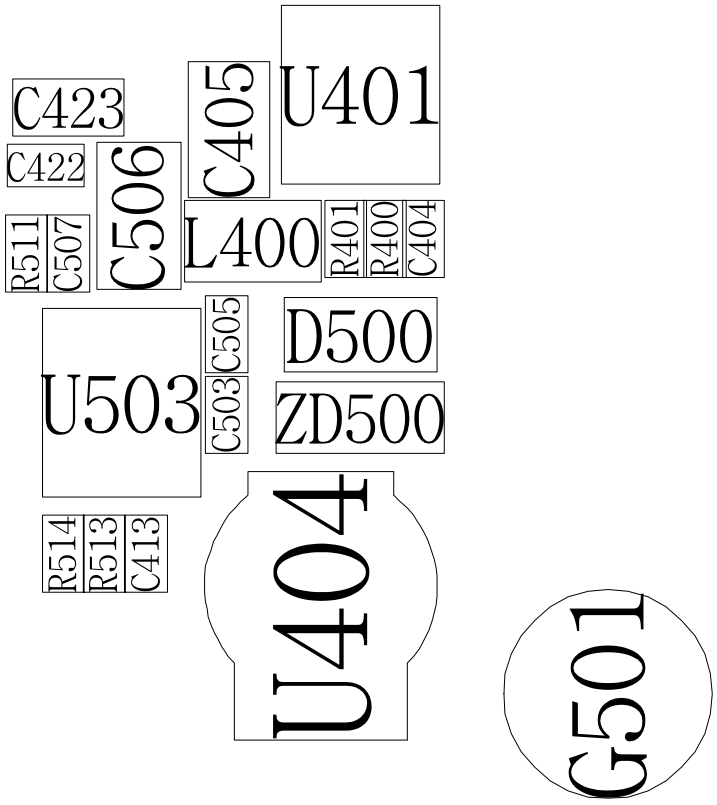


7-3. Charging Part

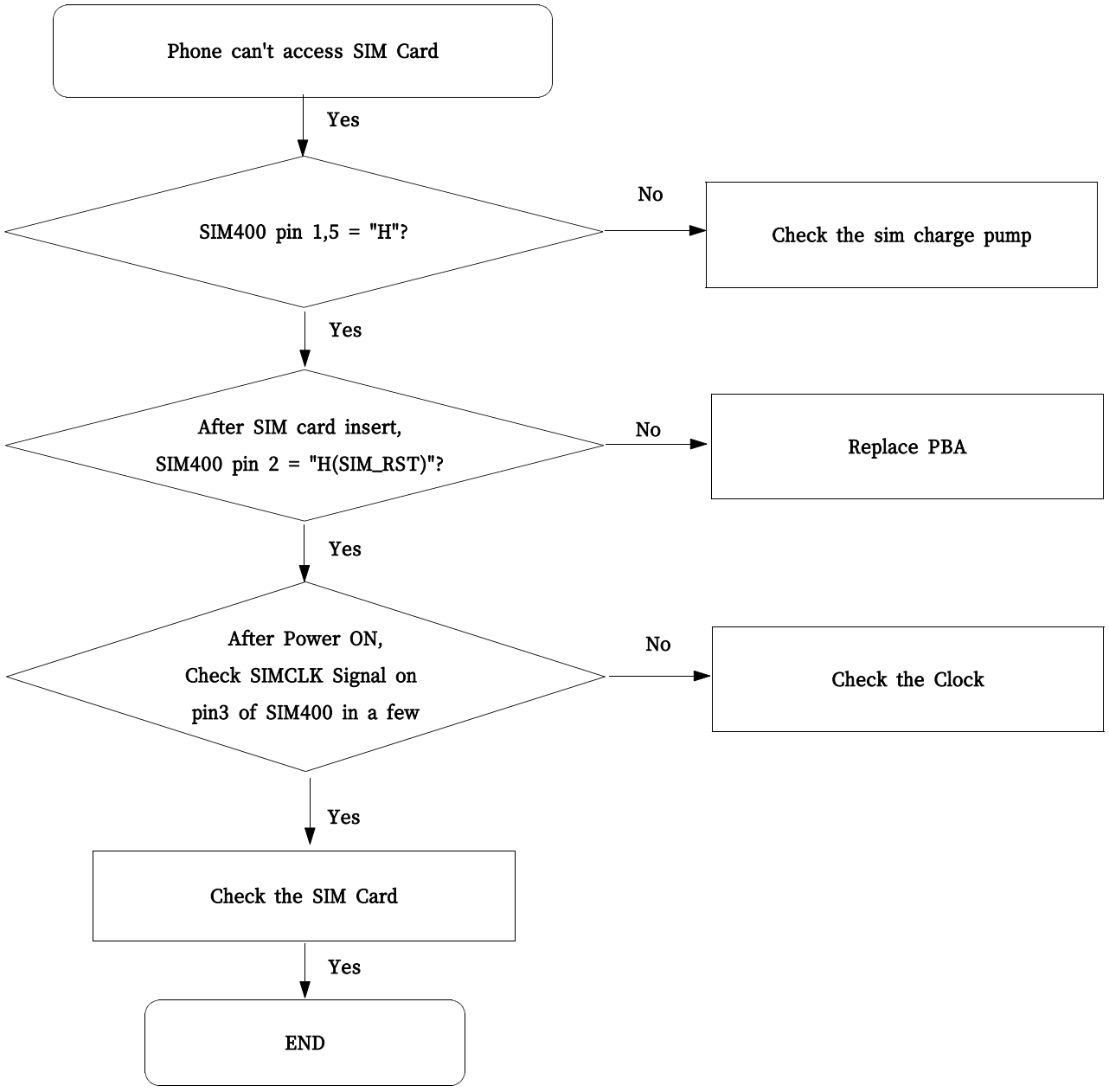


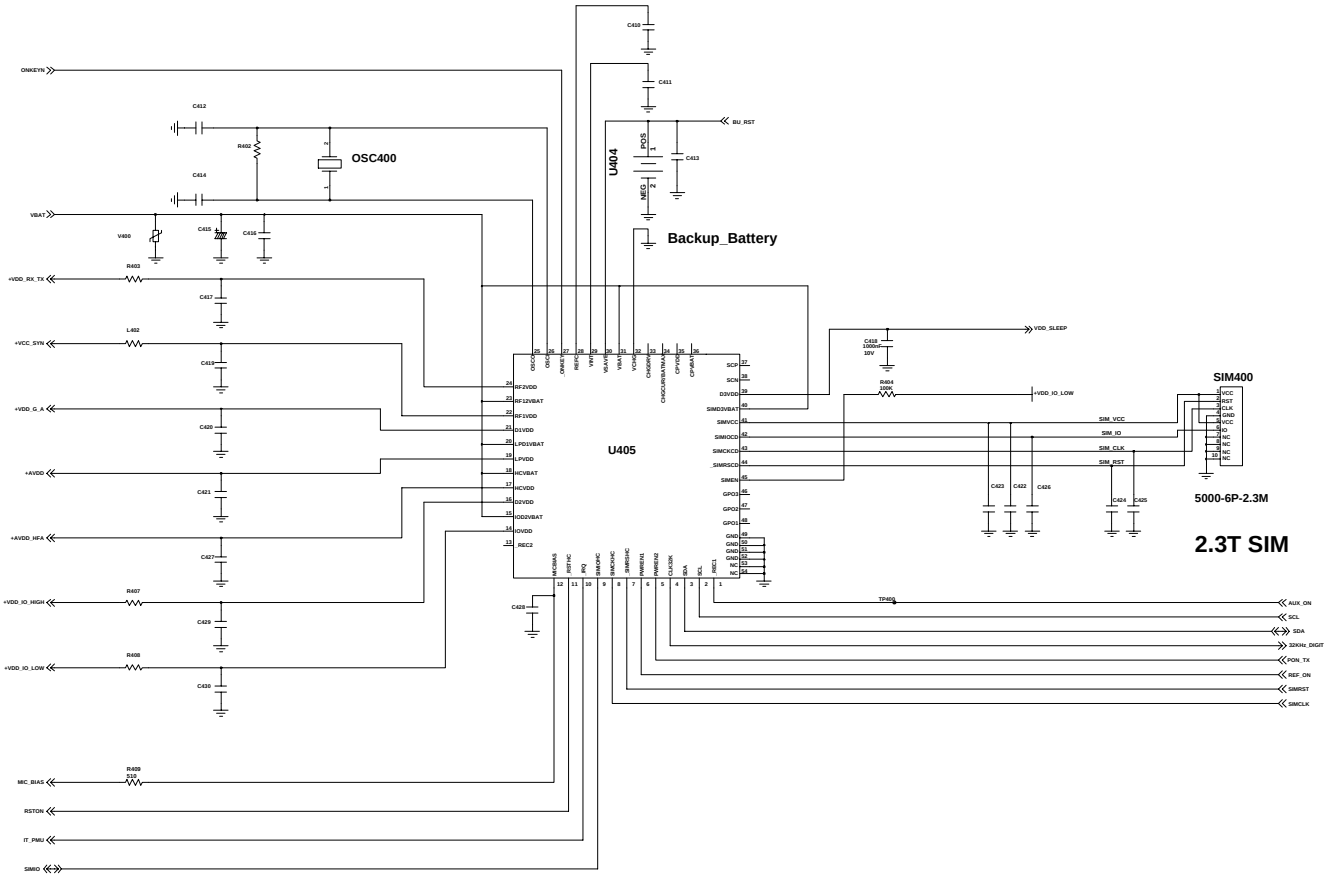


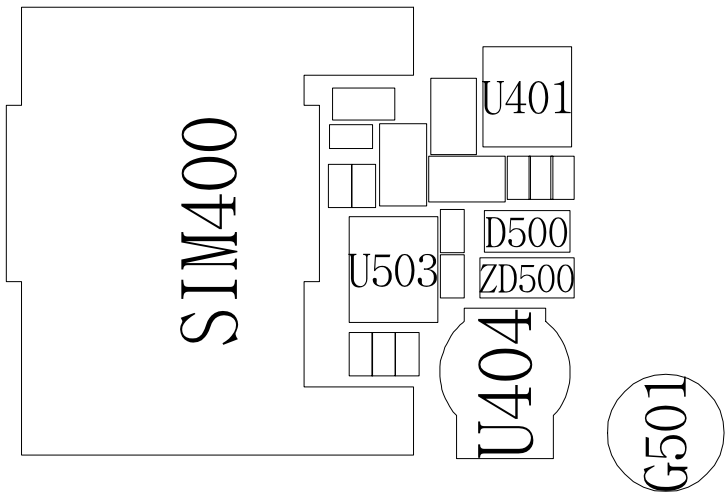
BATTERY CHARGING



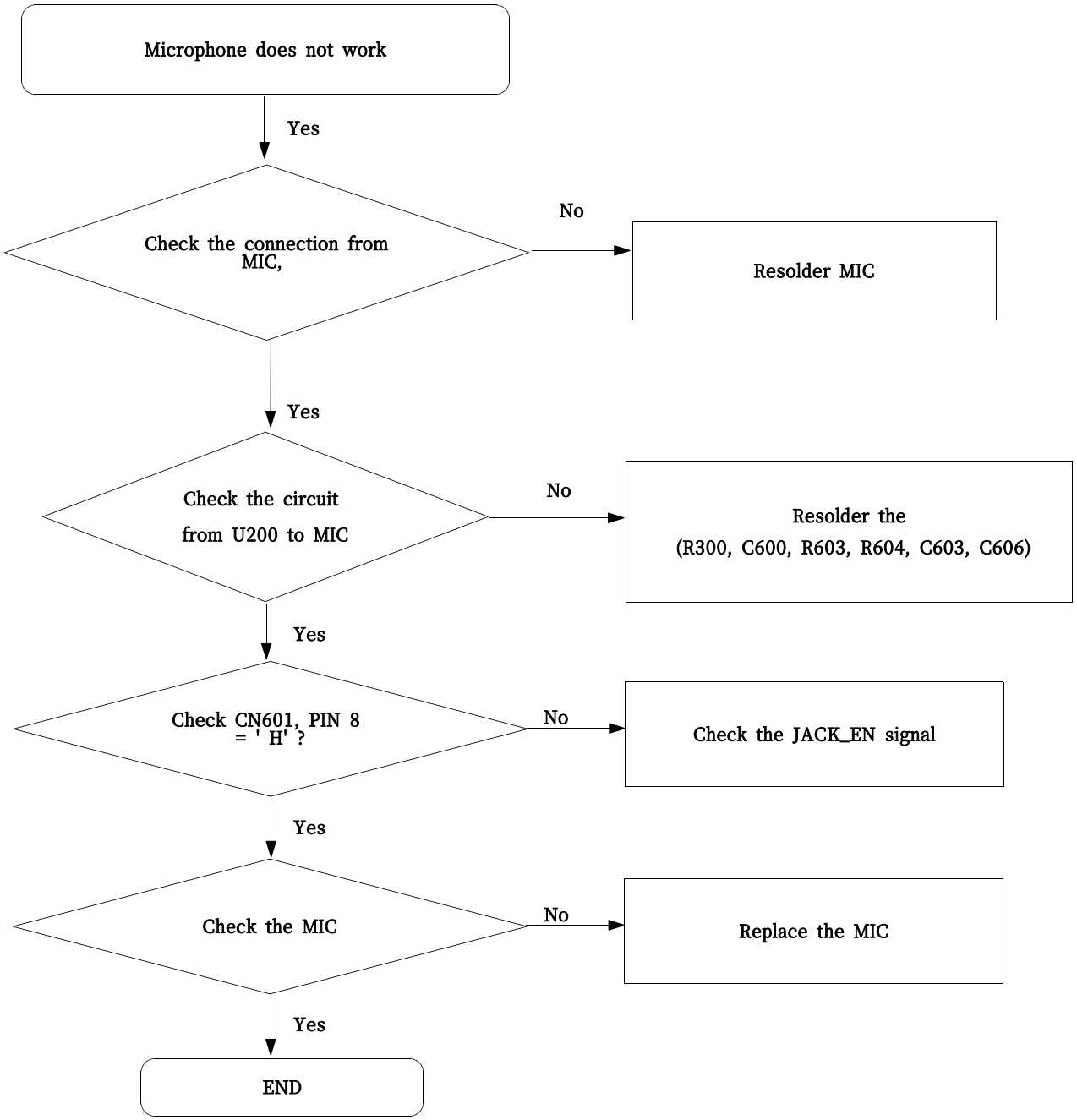
7-4. Sim Part

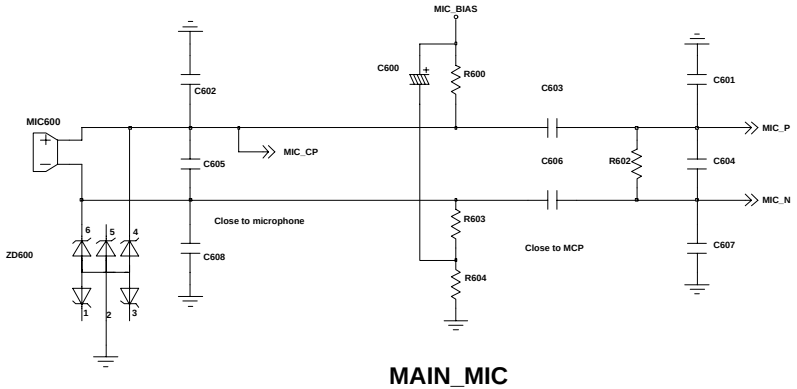




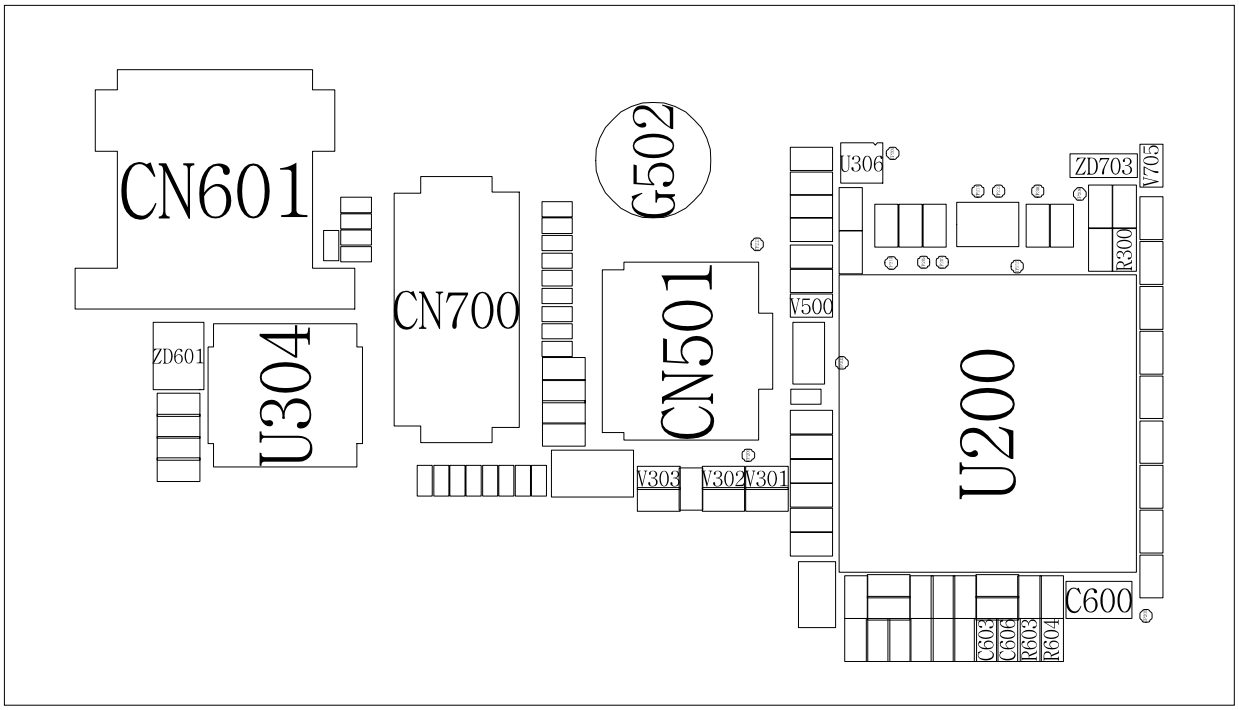


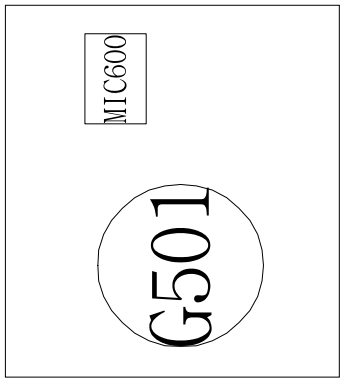
7-5. Microphone Part



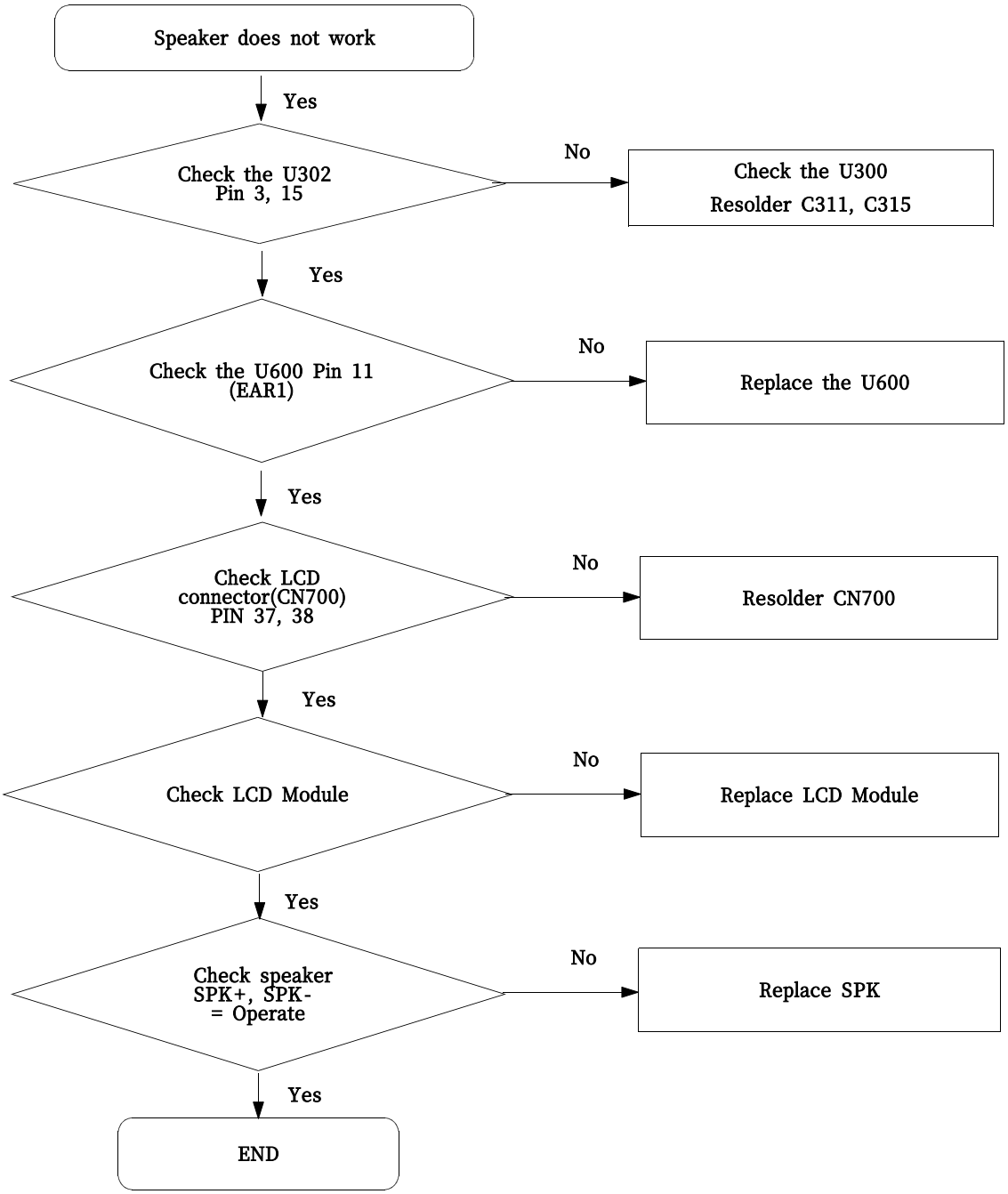


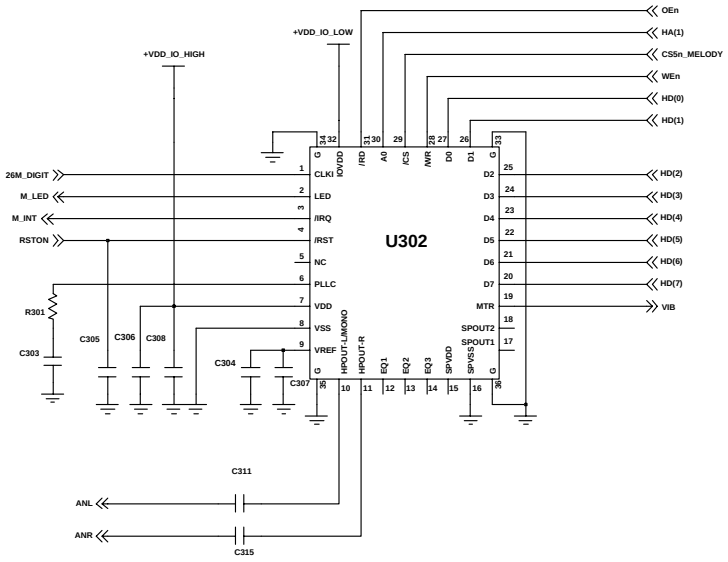
MAIN_MIC

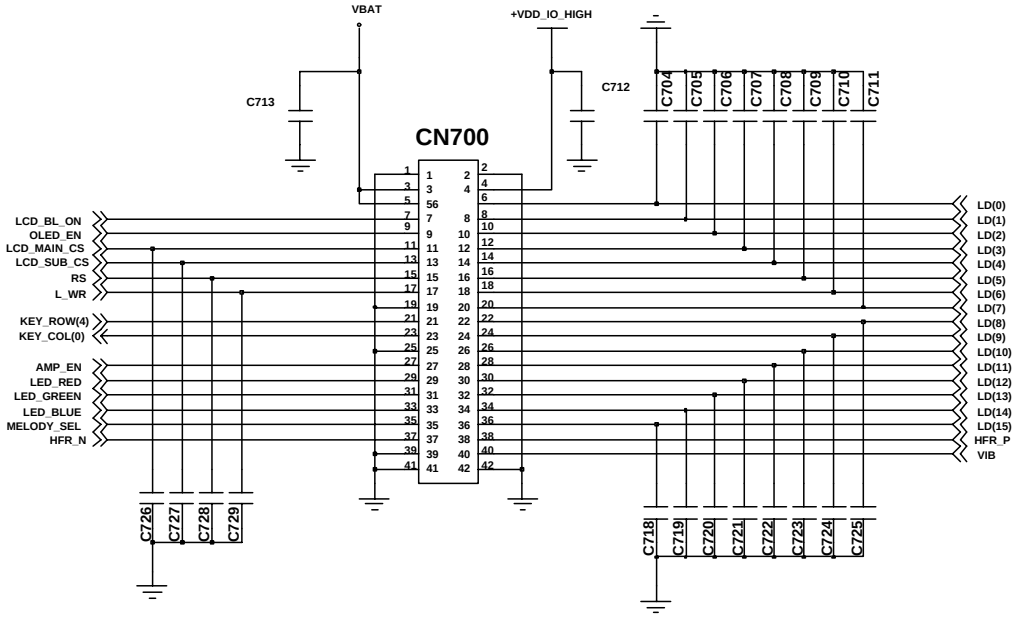


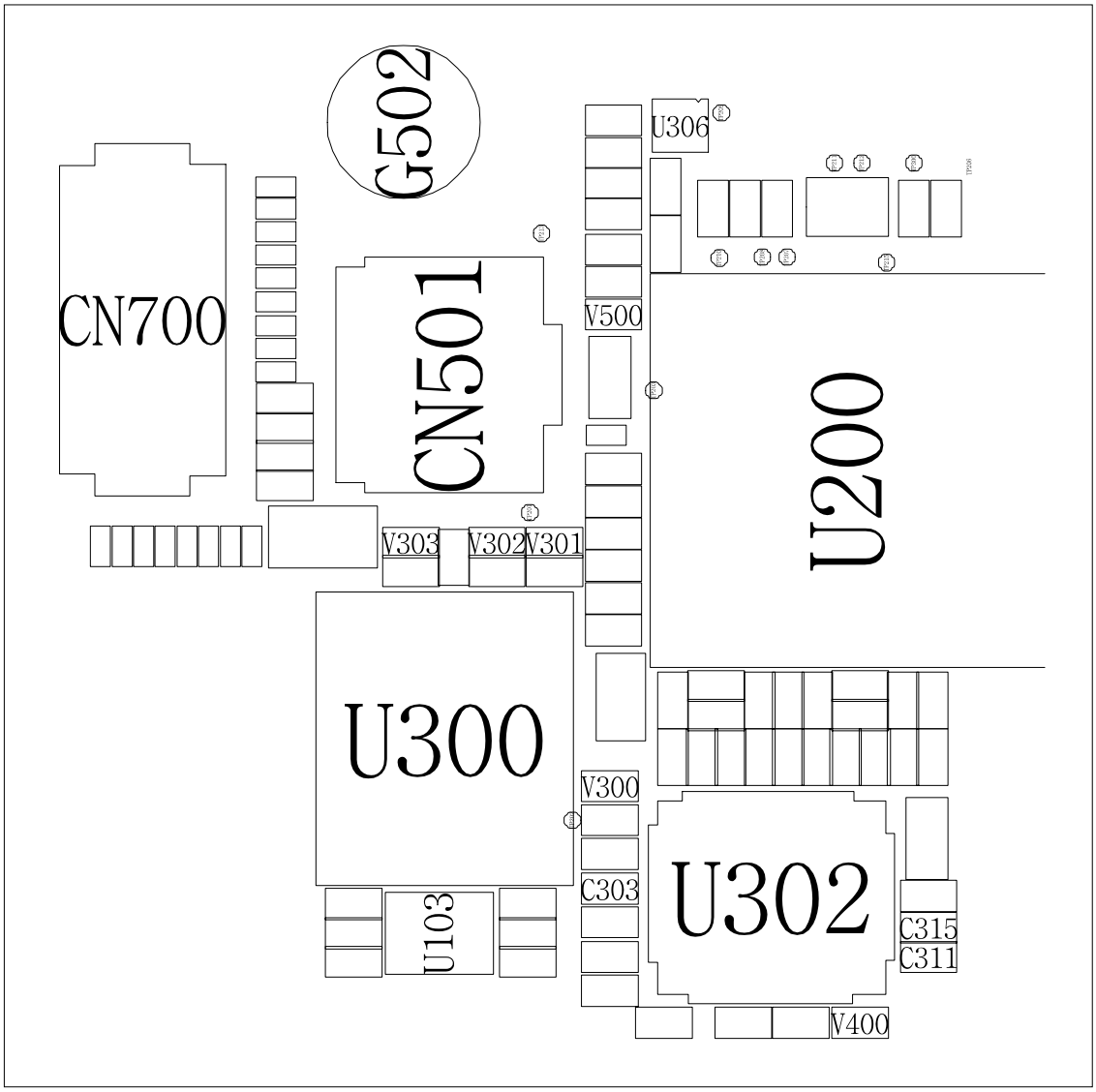


7-6. Speaker Part(Melody)

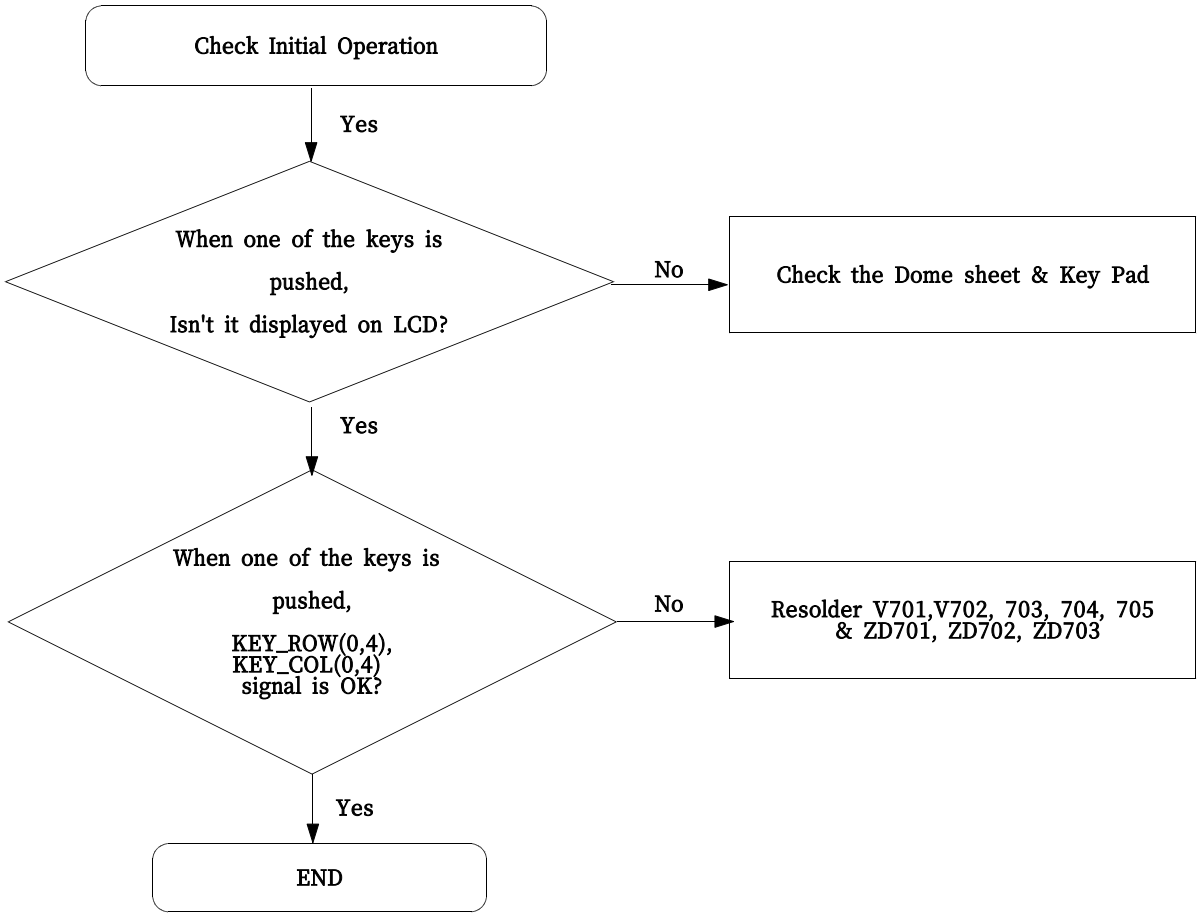


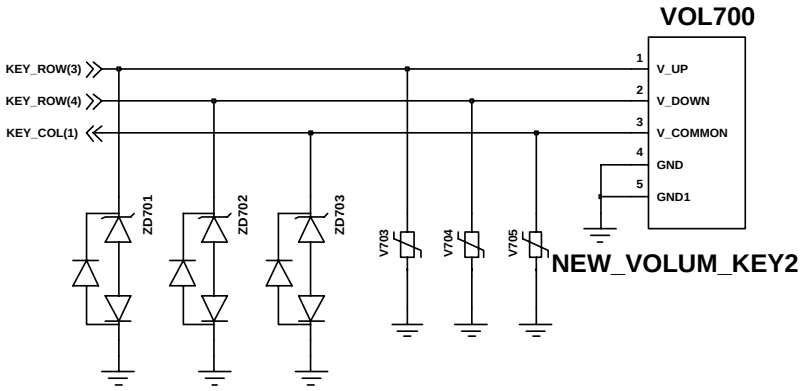




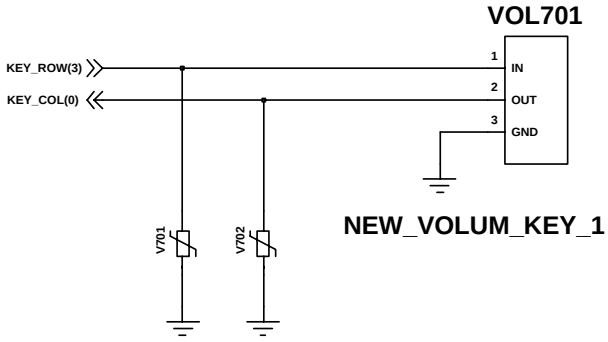


7-7. Key Data Input

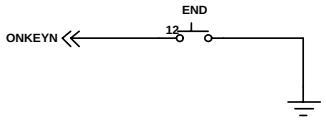




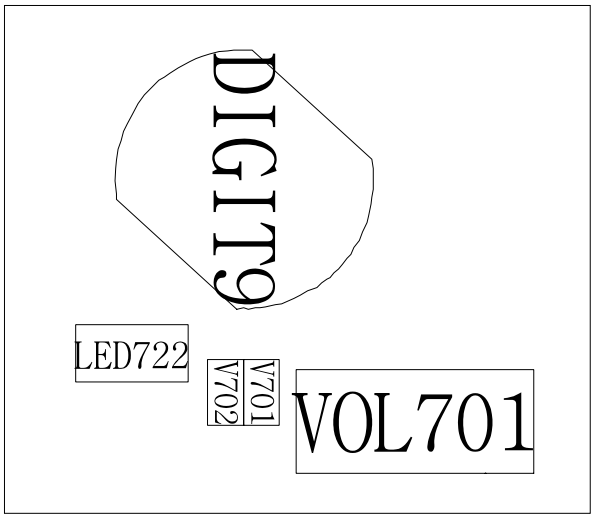
VOLUME_KEY

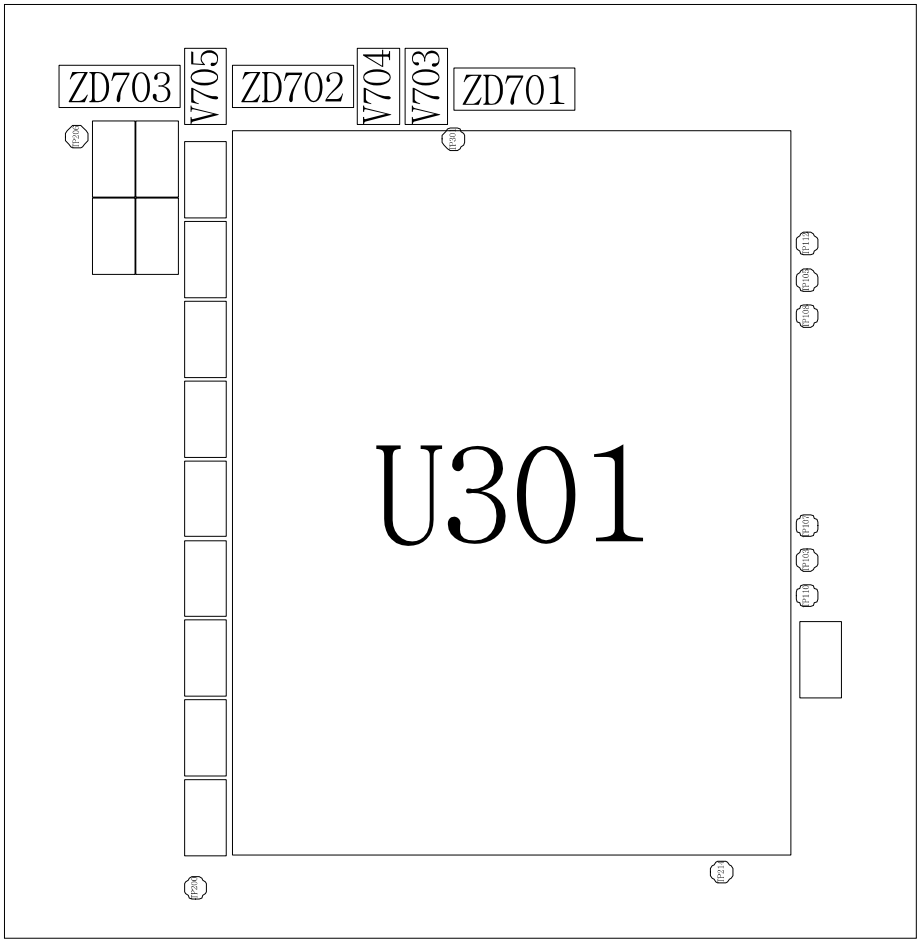


CAMERA_KEY

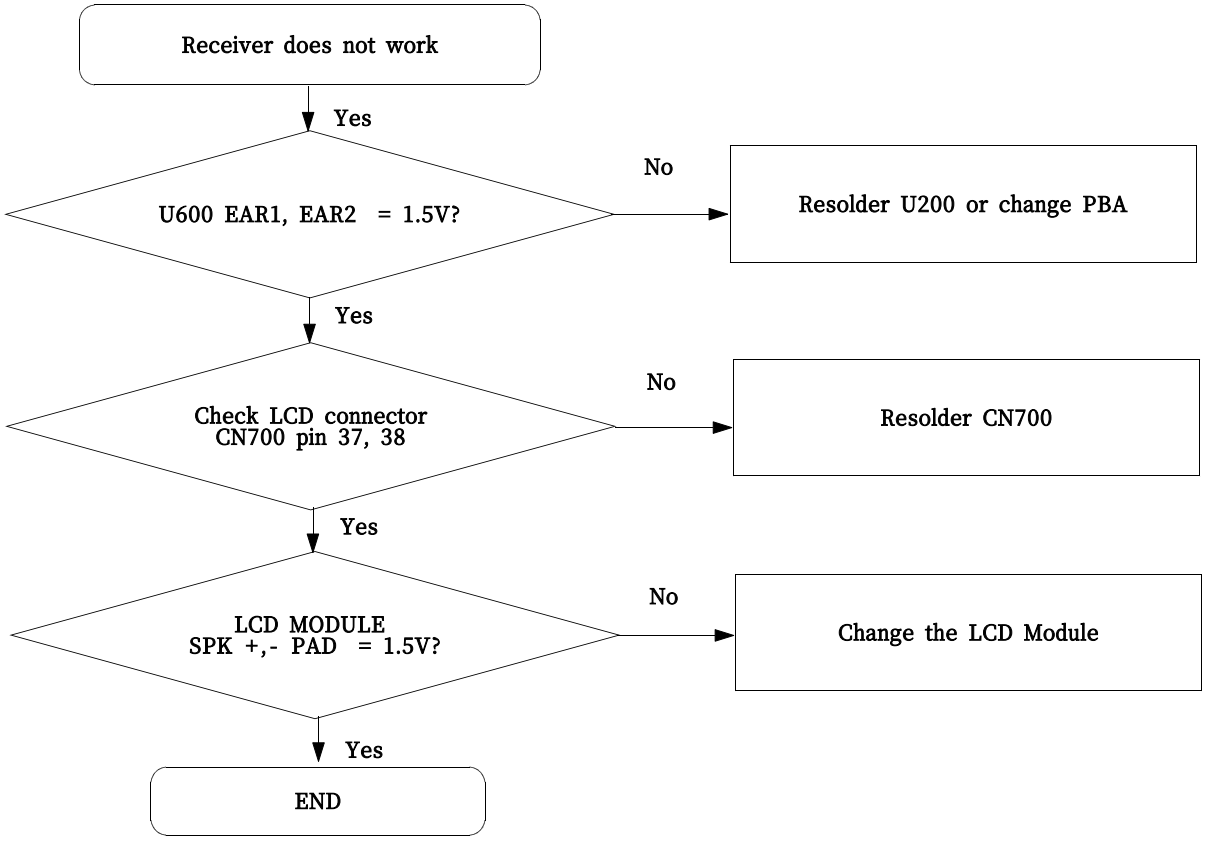


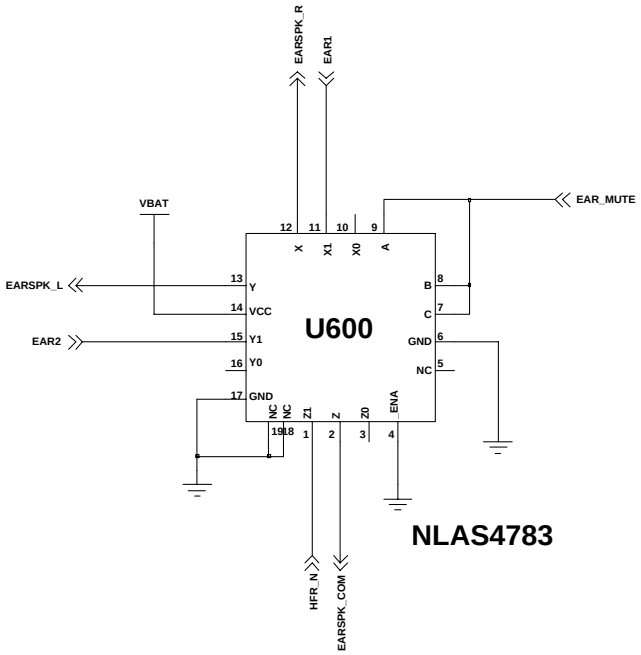
End_Key

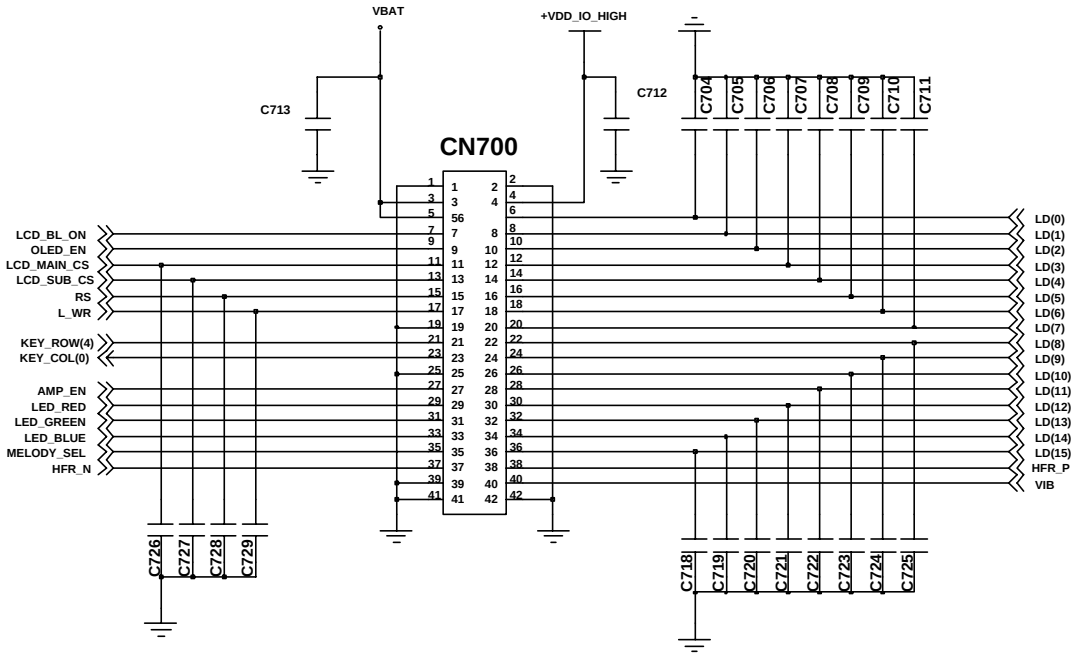


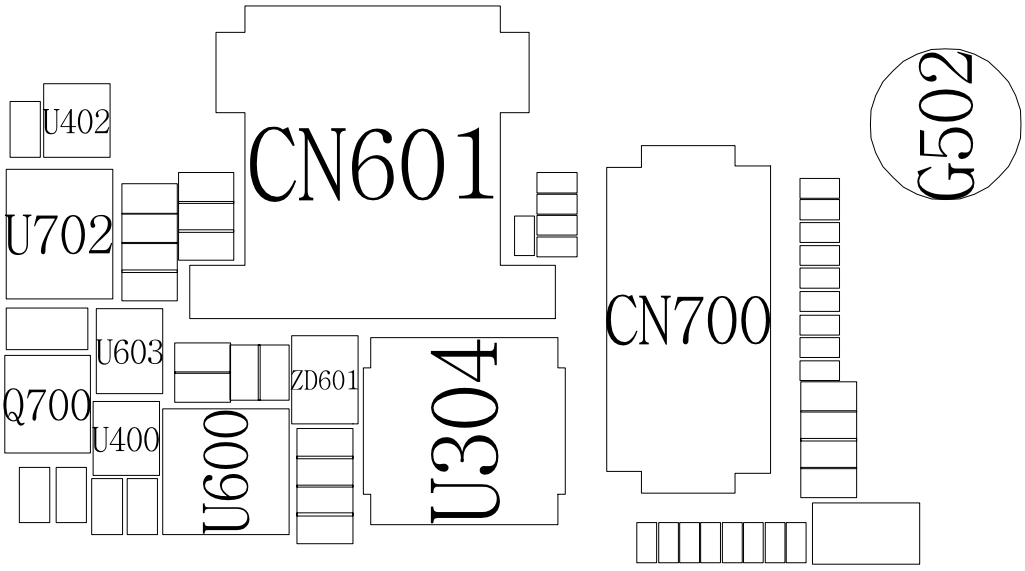


7-8. Receiver Part

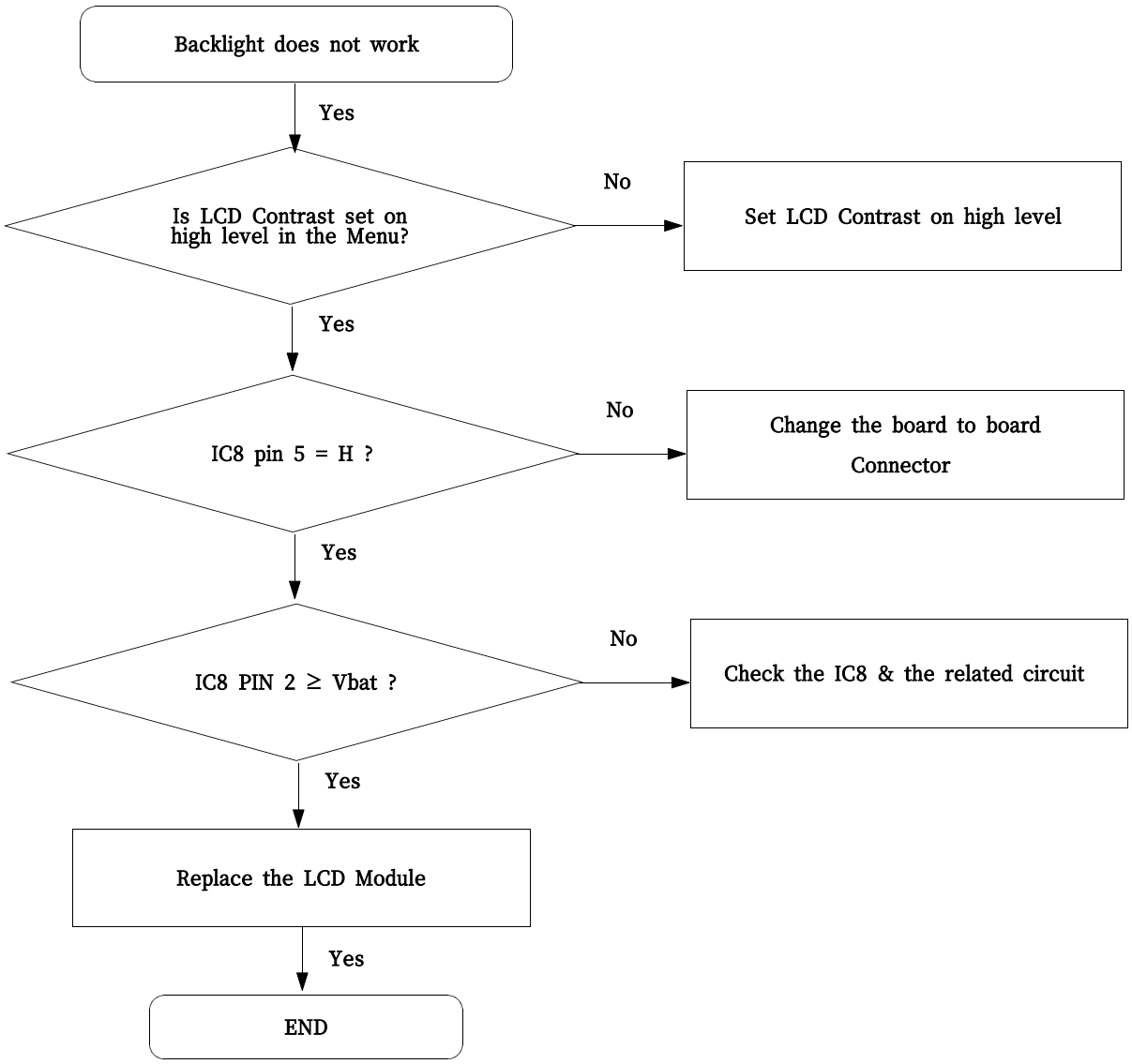


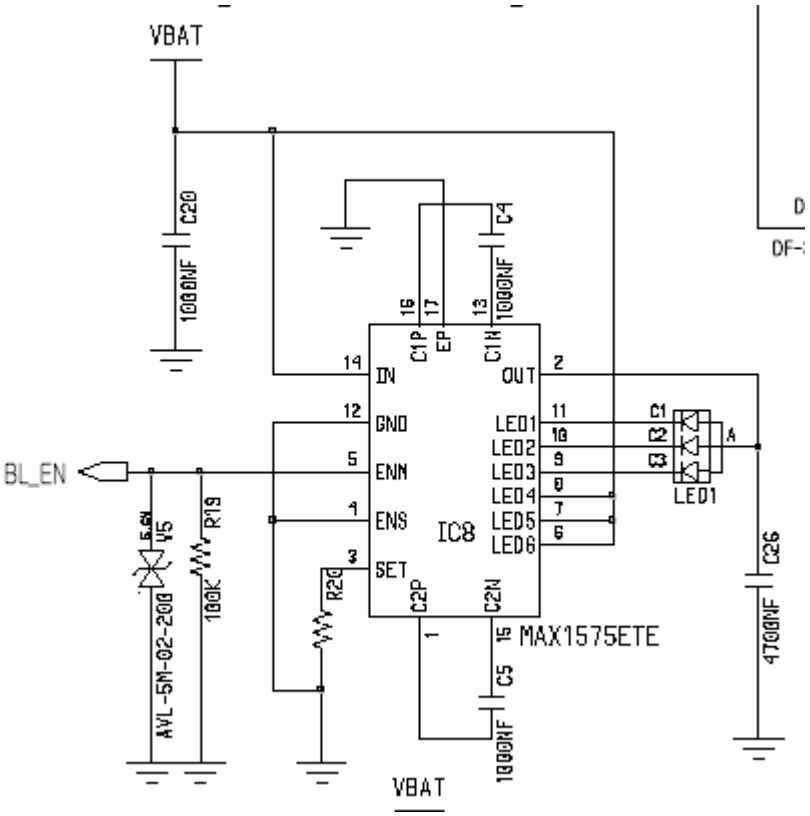


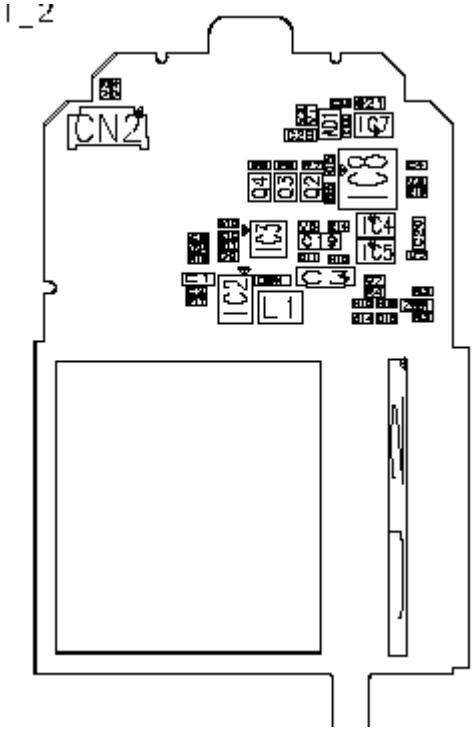




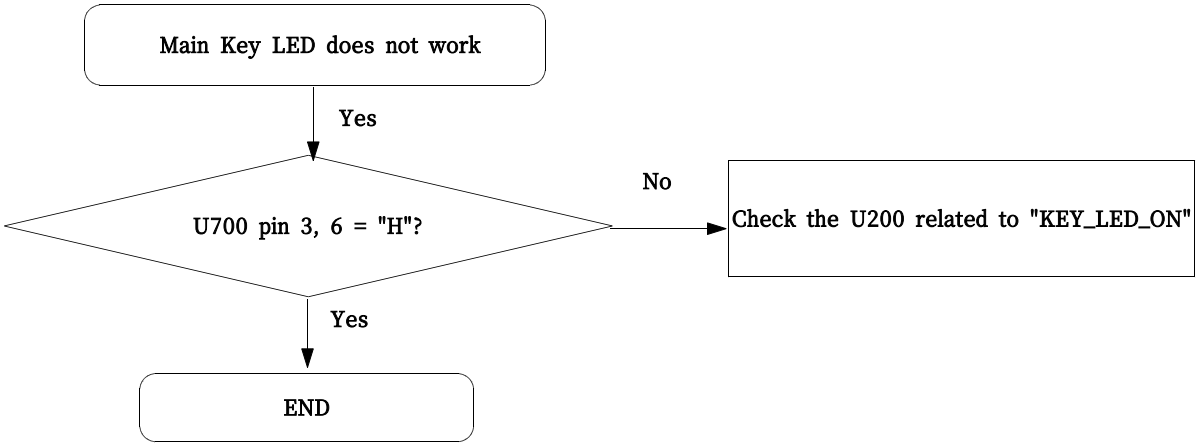
7-9. Back Light (for Color Main LCD)

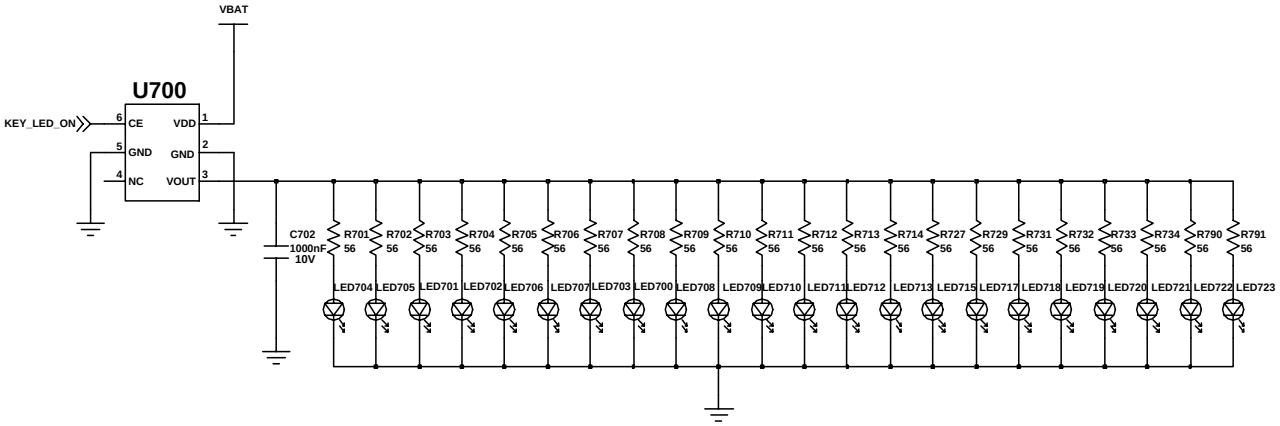


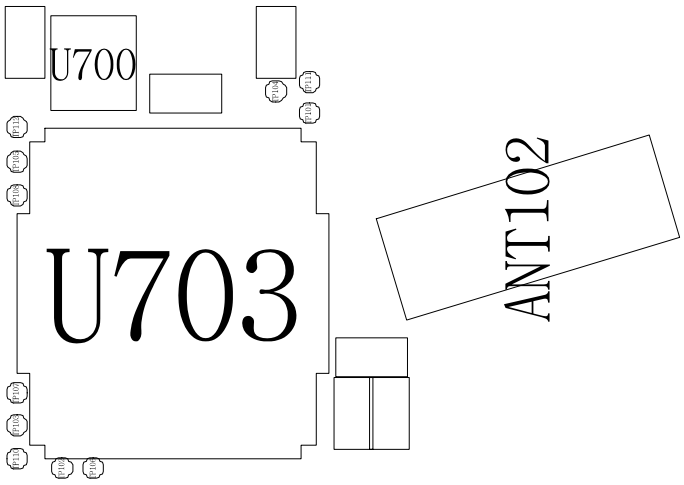




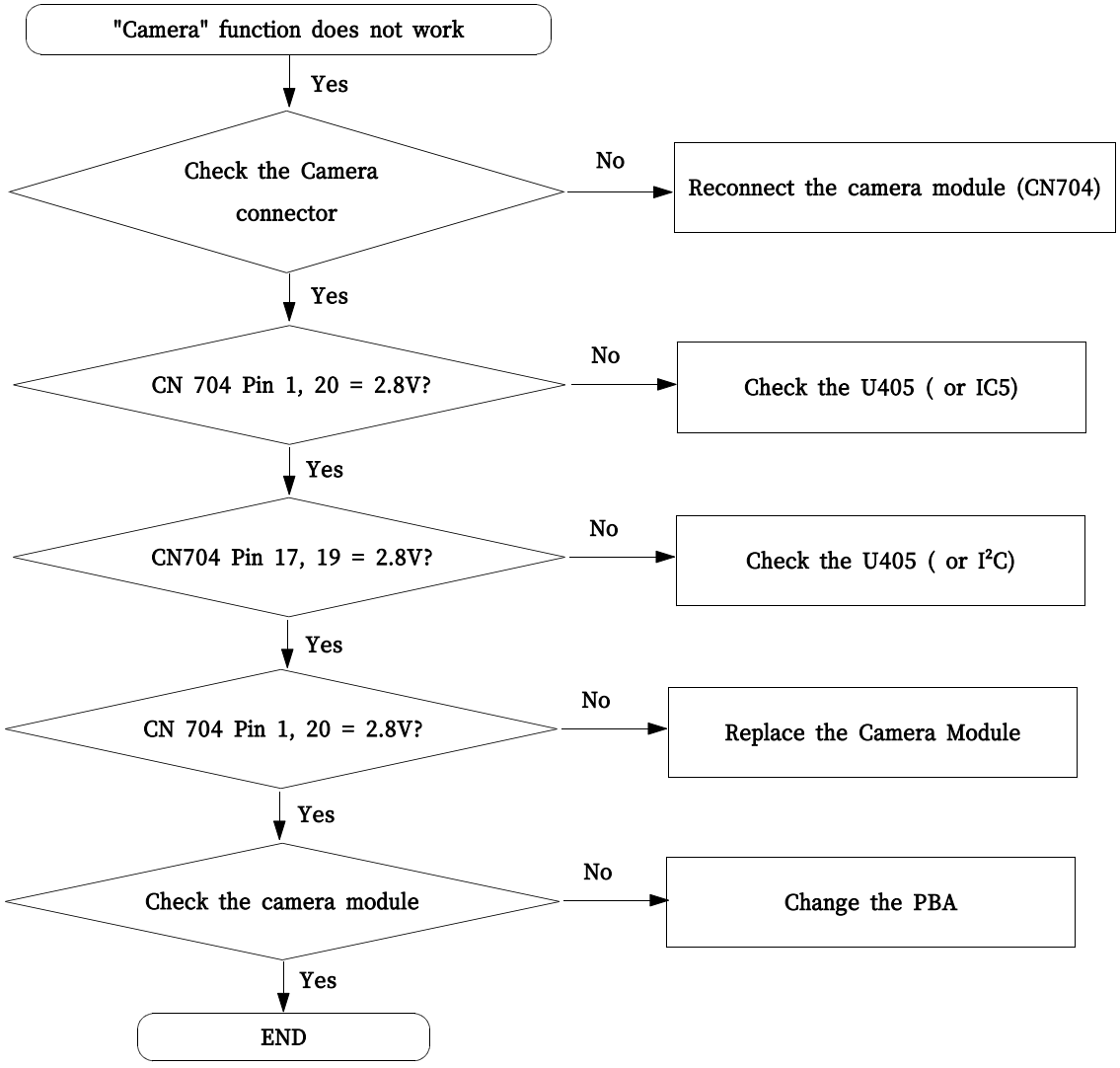
7-10. Key Back Light

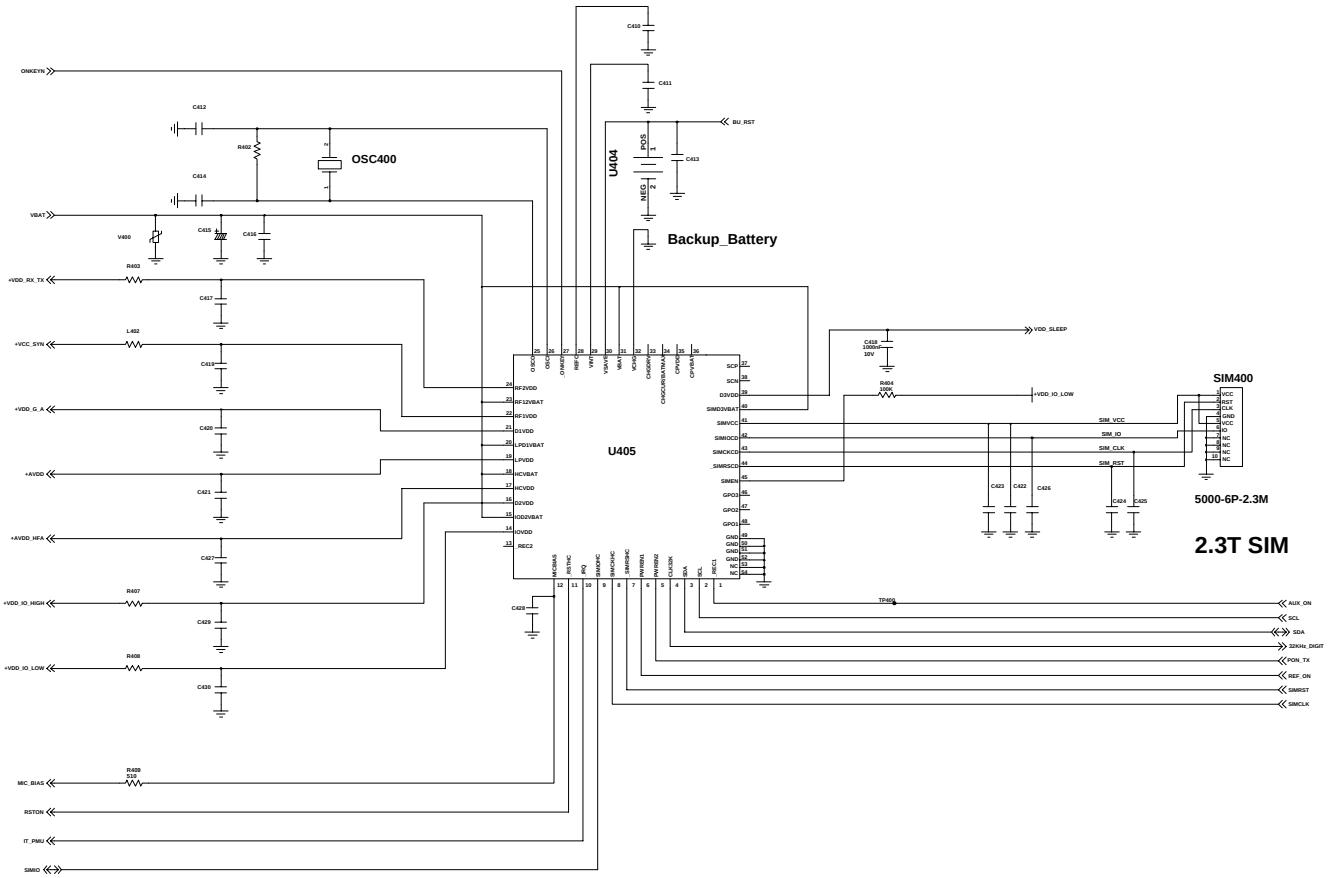


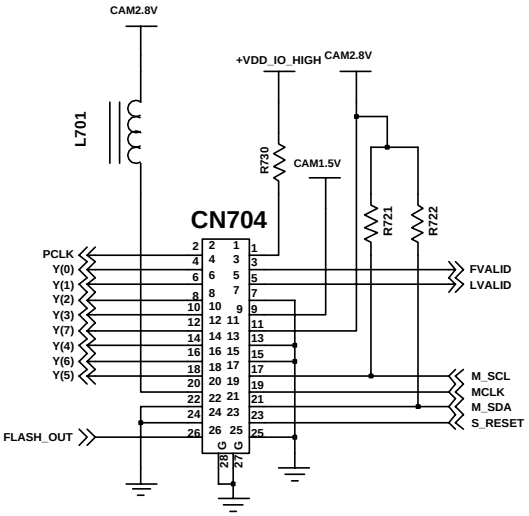




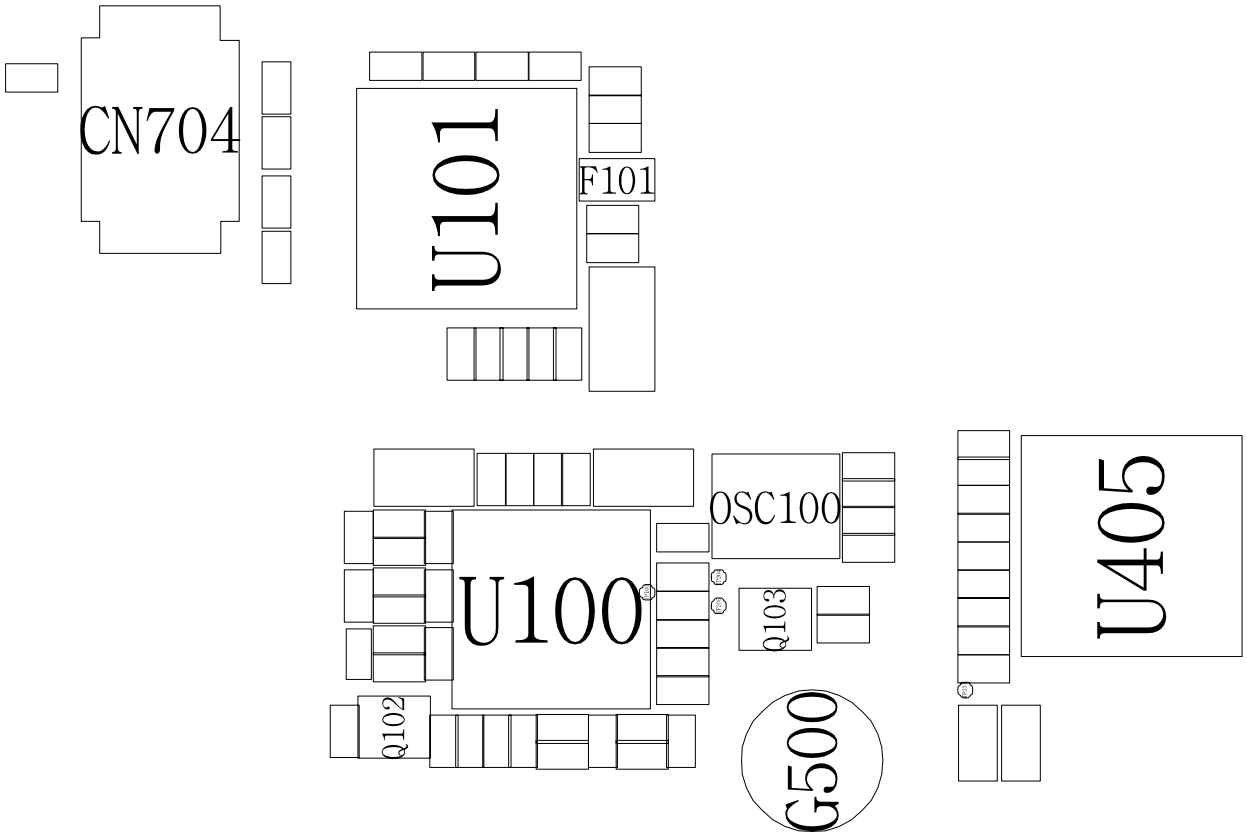
7-11. Camera part



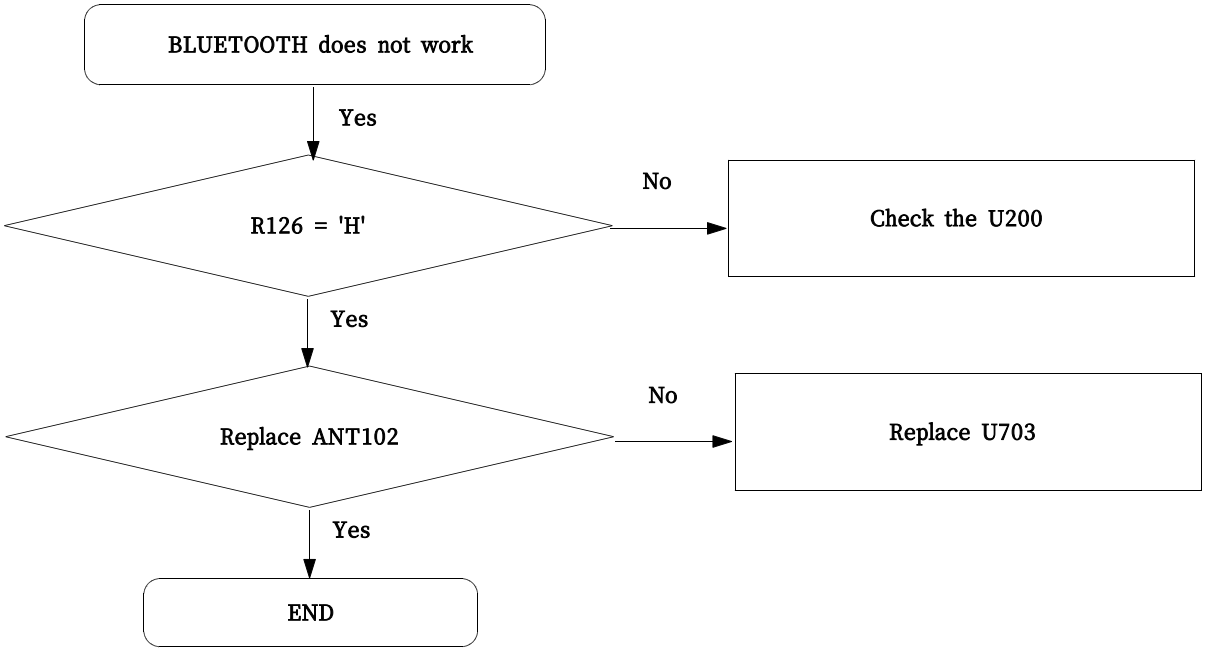


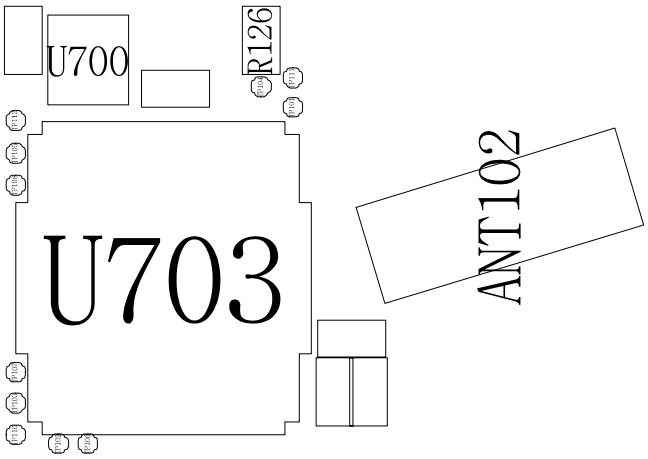


1.3M 1/4 LSI Senser(0.9T)

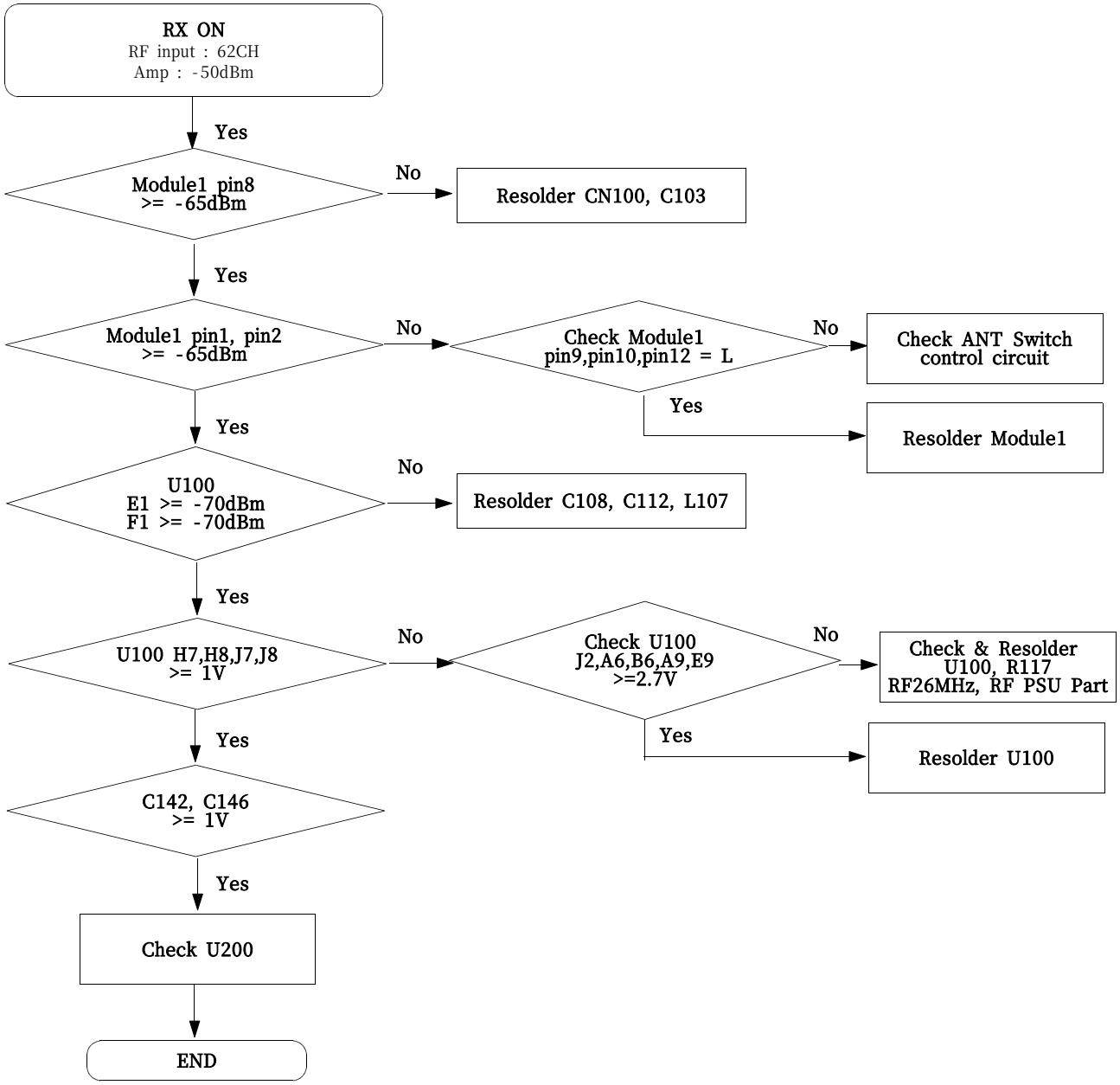


7-13. BLUETOOTH

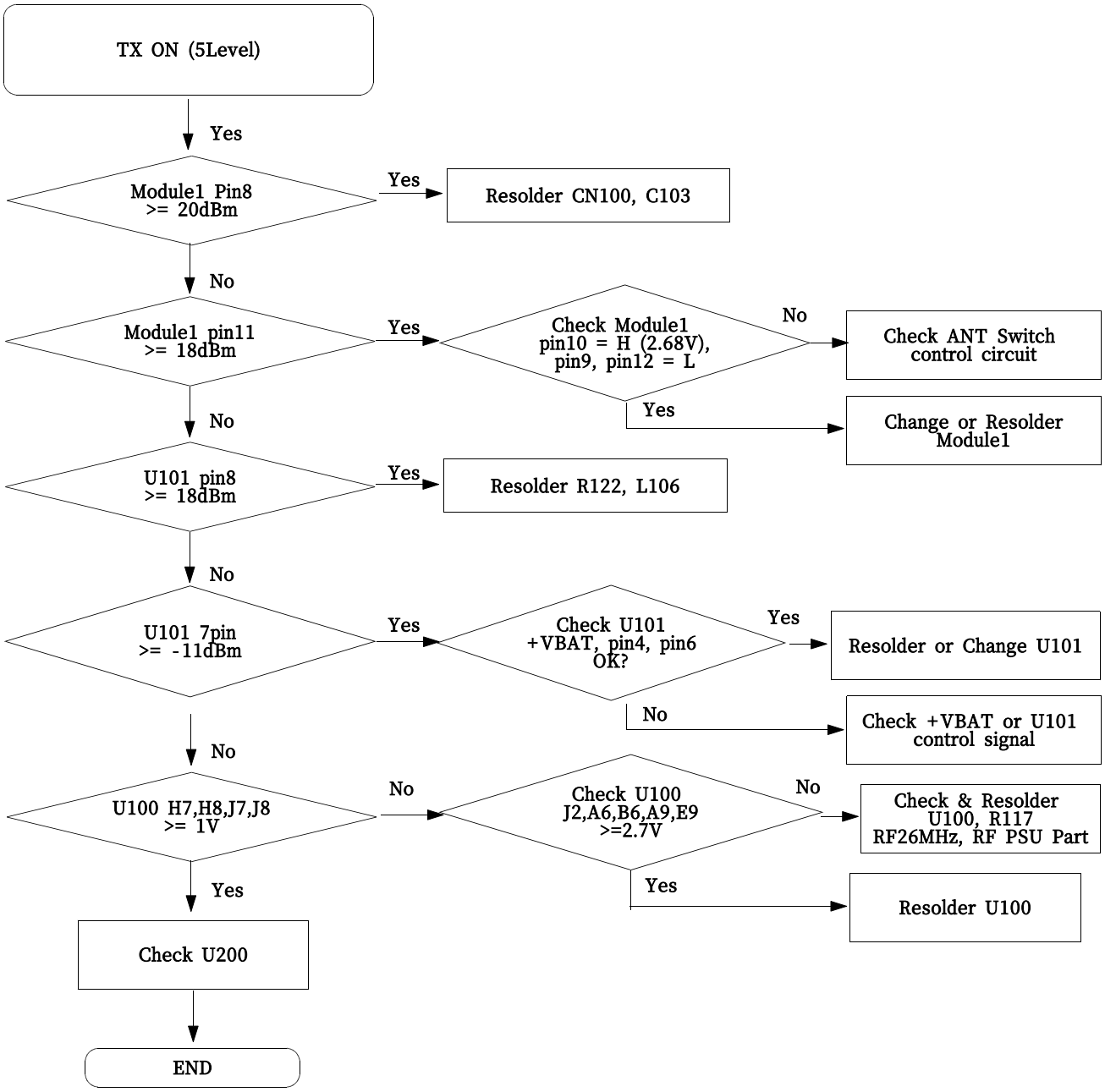




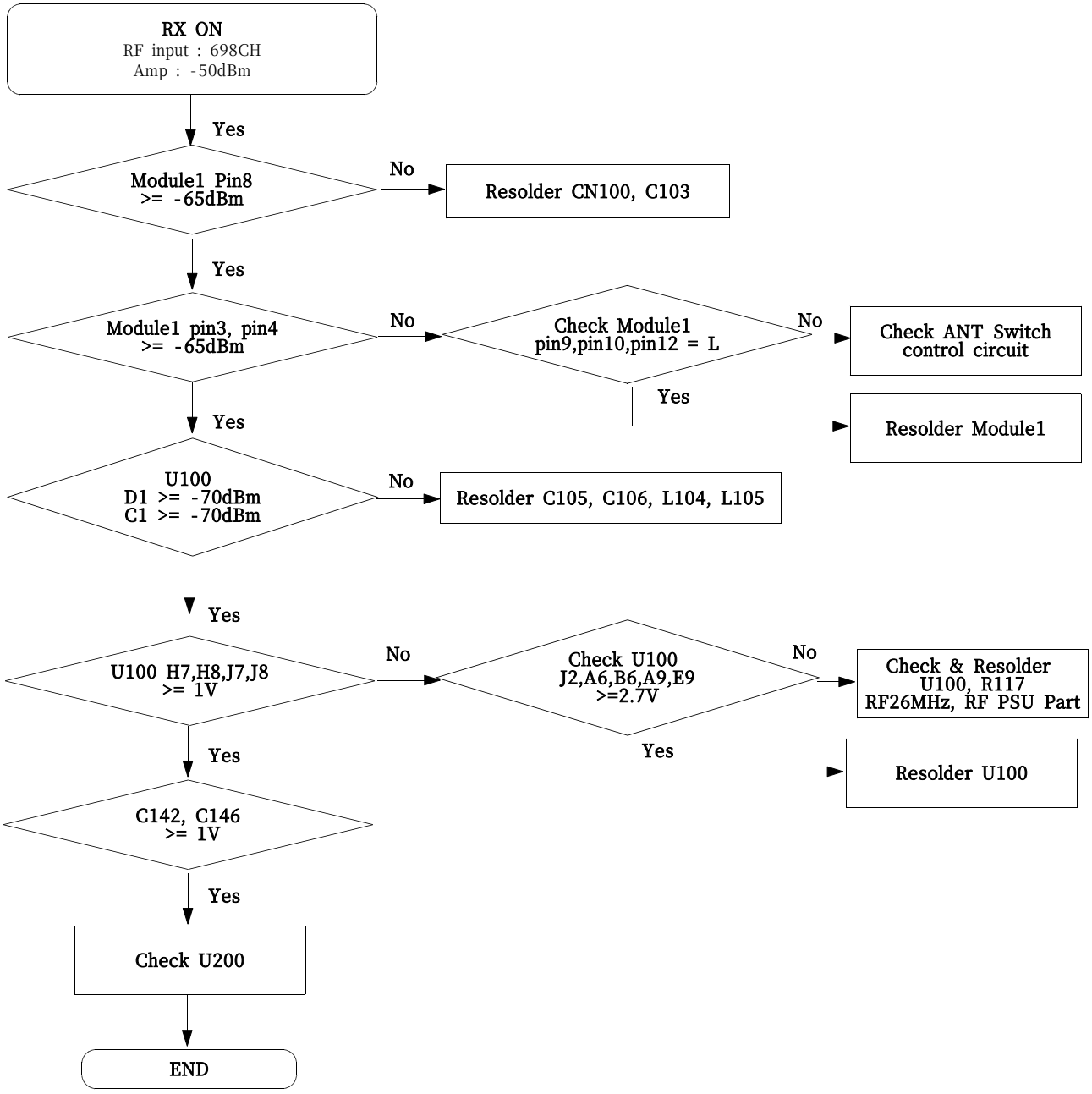
7-13. GSM Receiver



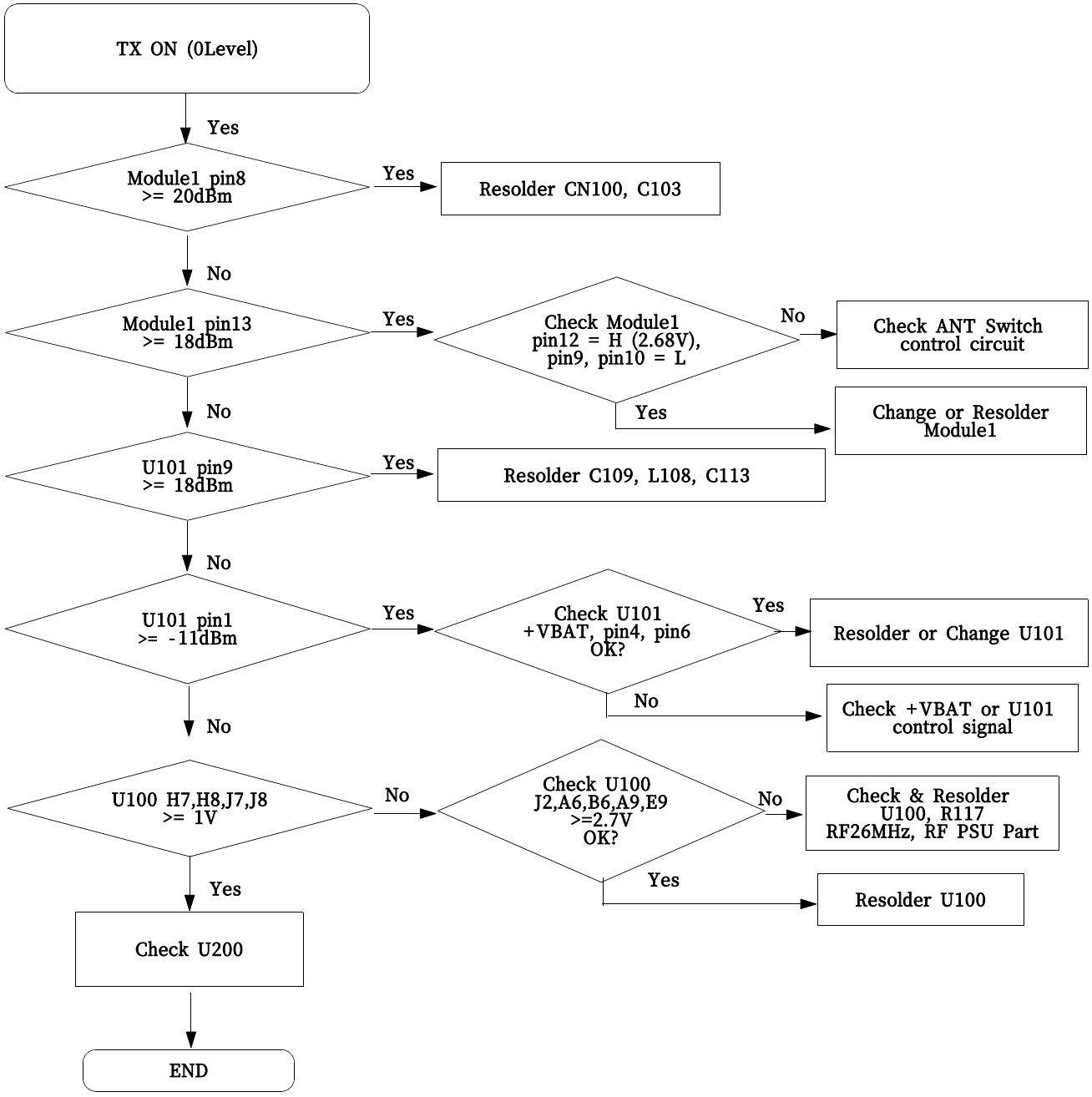
7-14. GSM Transmitter



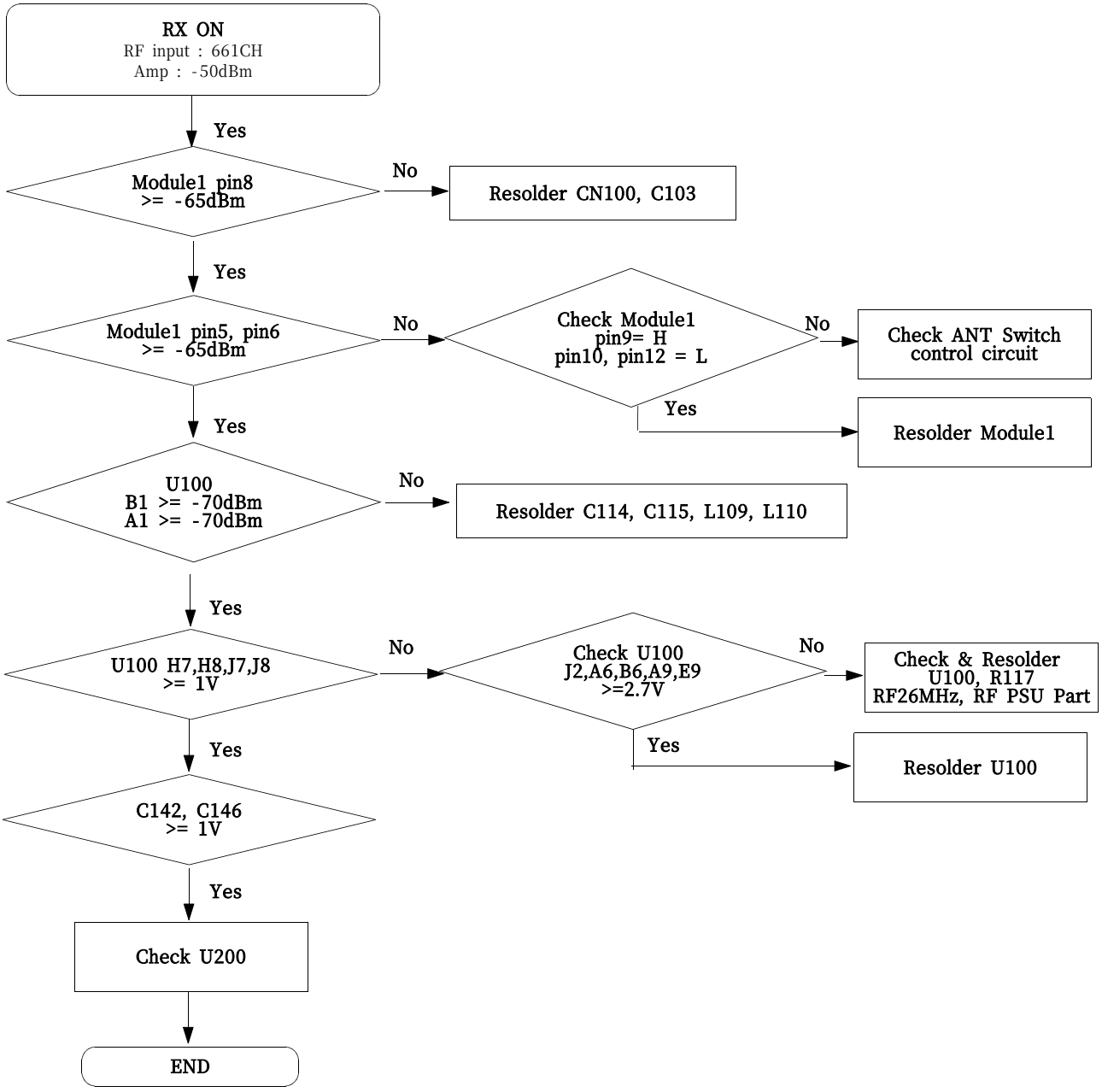
7-15. DCS Receiver



7-16. DCS Transmitter



7-17. PCS Receiver



7-18. PCS Transmitter