

SAMSUNG

GSM TELEPHONE

SGH-T629

SERVICE *Manual*

GSM TELEPHONE



CONTENTS

1. Safety Precautions
2. General Introduction
3. Specification
4. Product Function
5. Circuit Description
6. Test Command & Test Procedure
7. Array course control
8. Exploded View and its Parts list
9. MAIN Electrical Parts List
10. Flow Chart of Troubleshooting and Circuit Diagrams
11. PCB Diagrams
12. Block Diagrams
13. Reference data

**SAMSUNG
ELECTRONICS**



Contents

1. Safety Precautions

- 1-1. Repair Precaution1-1
- 1-2. ESD(Electrostatically Sensitive Devices) Precaution1-2

2. General Introduction

3. Specification

- 3-1. GSM General Specification3-1
- 3-2. GSM TX Power class3-2
- 3-3. EDGE TX Power Level3-3

4. Product Function

- 4-1. Main Function4-1

5. Circuit Description

6. TEST Command & Test Procedure

- 6-1. Calibration Equipment6-1
- 6-2. Calibration Program6-1
- 6-3. TX Power Tune up procedure6-2

7. Array course control

- 7-1. Downloading Binary Files7-2
- 7-2. Pre-requisite for Downloading7-2
- 7-3. S/W Downloader Program7-3
- 7-4. How to Download7-5

8. Exploded View and its Parts list

- 8-1. Cellular phone Exploded View8-1
 - 8-2. Cellular phone parts list8-2
 - 8-3. Disassembly8-4
 - 8-4. Assembly8-7
-

Contents

9. MAIM Electrical parts list

10. Flow Chart of Troubleshooting and Circuit Diagrams

10-1. Baseband	
10-1-1. Power on	10-1
10-1-2. Initial	10-3
10-1-3. Sim Part	10-4
10-1-4. Charging Part	10-5
10-1-5. Microphone Part	10-7
10-1-6. Speaker Part	10-9
10-1-7. Camera Part	10-13
10-2. RF	
10-2-1. GSM850/EGSM900 RX	10-15
10-2-2. PCS RX	10-16
10-2-3. DCS RX	10-17
10-2-4. GSM850/EGSM900 TX	10-18
10-2-5. DCS/PCS TX	10-19
10-2-6. BLUETOOTH	10-20

11. PCB Diagrams

12. Block Diagrams

12-1. RF Solution Block Diagram	12-1
12-2. Base Band Solution Block Diagram	12-2

13. Reference data

1. Safety Precautions

1-1. Repair Precaution

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

1-2. ESD(Electrostatically Sensitive Devices) Precaution

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

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

2. General Introduction

The SGH-T629 Quad Band phone functions as digital phone working in GSM (Global System for Mobile communications)850,EGSM900, DCS1800 and PCS(PersonalCommunication System)1900 modes.

<Specification>

- Dimension : 99 x 51 x 13.9 mm (with Standard Battery)
- Weight : 99g (with Standard Battery)
- LCD : LCD 262K TFT Color LCD (176 x 220) 2.1"
- R/F band : GSM850 / EGSM 900 / DCS1800 / PCS1900
- Vocoder : EFR + FR + HR + AMR
- Antenna : Fixed type
- SIM : 3 Voltage operation
- BLUETOOTH : VER 1.2

<GPRS/EGPRS Factor>

- MS Class : Class B
- GPRS Phase : GSM Phase II+
- Multi-slot : GPRS/EGPRS Class 10 (2 Up-link, 4 Down-link, 5 Sum)
- SMG : SMG #31
- Coding scheme : CS1 - CS4(GPRS), MCS5 - MCS9(EGPRS) support
- Power class : GSM850 - Class 4 (2W)
EGSM900 - Class 4 (2W)
DCS1800 - Class 1 (1W)
PCS1900 - Class 1 (1W)
- WAP 2.0 Browser
- SIM AT(Application Toolkit)
- 40 Polyphonic Ringtone

< Basic Package >

- Handset + Standard Battery + Ear Microphone + User Guide

< Option Item >

- Travel Adapter
- Bluetooth Headset
- Bluetooth Hands Free Kit
- Car Charger/Adapter

3. Specification

3-1. GSM General Specification

		GSM850	EGSM900	DCS1800	PCS1900
Freq. Band[MHz] Uplink/Downlink		824~849 869~894	880~915 925~960	1710~1785 1805~1880	1850~1910 1930~1990
ARFCN range		128~251	0~124& 975~1023	512~885	512~810
Tx/Rx spacing		45 MHz	45 MHz	95 MHz	80 MHz
Mod. Bit rate/ Bit Period	GPRS	270.833 Kbps 3.692 us	270.833 Kbps 3.692 us	270.833 Kbps 3.692 us	270.833 Kbps 3.692 us
	EDGE	812.5 Kbps 3.692 us	812.5 Kbps 3.692 us	812.5 Kbps 3.692 us	812.5 Kbps 3.692 us
Time Slot Period/Frame Period		576.9 us 4.615 ms	576.9 us 4.615 ms	576.9 us 4.615 ms	576.9 us 4.615 ms
Modulation	GPRS	0.3 GMSK	0.3 GMSK	0.3 GMSK	0.3 GMSK
	EDGE	8 PSK	8 PSK	8 PSK	8 PSK
MS Power	GPRS	33 dBm~5 dBm	33 dBm~5 dBm	30 dBm~0 dBm	30 dBm~0 dBm
	EDGE	27~5 dBm	27~5 dBm	26~0 dBm	26~0 dBm
Power Level	GPRS	5~19(class4)	5~19(class4)	0~15(class1)	0~15(class1)
	EDGE	8~19(class E2)	8~19(class E2)	2~15(class E2)	2~15(class E2)
Sensitivity		-102 dBm	-102 dBm	-100 dBm	-102 dBm
TDMA Mux		8	8	8	8
Cell Radius		35 Km	35 Km	2 Km	2 Km

3-2. GSM TX power class

TX Power control level	GSM850	TX Power control level	EGSM900	TX Power control level	DCS1800	TX Power control level	PCS1900
5	33±2 dBm	5	33±2 dBm	0	30±3 dBm	0	30±3 dBm
6	31±2 dBm	6	31±2 dBm	1	28±3 dBm	1	28±3 dBm
7	29±2 dBm	7	29±2 dBm	2	26±3 dBm	2	26±3 dBm
8	27±2 dBm	8	27±2 dBm	3	24±3 dBm	3	24±3 dBm
9	25±2 dBm	9	25±2 dBm	4	22±3 dBm	4	22±3 dBm
10	23±2 dBm	10	23±2 dBm	5	20±3 dBm	5	20±3 dBm
11	21±2 dBm	11	21±2 dBm	6	18±3 dBm	6	18±3 dBm
12	19±2 dBm	12	19±2 dBm	7	16±3 dBm	7	16±3 dBm
13	17±2 dBm	13	17±2 dBm	8	14±3 dBm	8	14±3 dBm
14	15±2 dBm	14	15±2 dBm	9	12±4 dBm	9	12±4 dBm
15	13±2 dBm	15	13±2 dBm	10	10±4 dBm	10	10±4 dBm
16	11±2 dBm	16	11±2 dBm	11	8±4 dBm	11	8±4 dBm
17	9±2 dBm	17	9±2 dBm	12	6±4 dBm	12	6±4 dBm
18	7±2 dBm	18	7±2 dBm	13	4±4 dBm	13	4±4 dBm
19	5±2 dBm	19	5±2 dBm	14	2±5 dBm	14	2±5 dBm
				15	0±5 dBm	15	0±5 dBm

3-3. EDGE TX Power Level

TX Power control level	GSM850	TX Power control level	EGSM900	TX Power control level	DCS1800	TX Power control level	PCS1900
8	27±3 dBm	8	27±3 dBm	2	26±3 dBm	2	26±3 dBm
9	25±3 dBm	9	25±3 dBm	3	24±3 dBm	3	24±3 dBm
10	23±3 dBm	10	23±3 dBm	4	22±3 dBm	4	22±3 dBm
11	21±3 dBm	11	21±3 dBm	5	20±3 dBm	5	20±3 dBm
12	19±3 dBm	12	19±3 dBm	6	18±3 dBm	6	18±3 dBm
13	17±3 dBm	13	17±3 dBm	7	16±3 dBm	7	16±3 dBm
14	15±3 dBm	14	15±3 dBm	8	14±3 dBm	8	14±3 dBm
15	13±3 dBm	15	13±3 dBm	9	12±4 dBm	9	12±4 dBm
16	11±5 dBm	16	11±5 dBm	10	10±4 dBm	10	10±4 dBm
17	9±5 dBm	17	9±5 dBm	11	8±4 dBm	11	8±4 dBm
18	7±5 dBm	18	7±5 dBm	12	6±4 dBm	12	6±4 dBm
19	5±5 dBm	19	5±5 dBm	13	4±4 dBm	13	4±4 dBm
				14	2±5 dBm	14	2±5 dBm
				15	0±5 dBm	15	0±5 dBm

4. Product Function

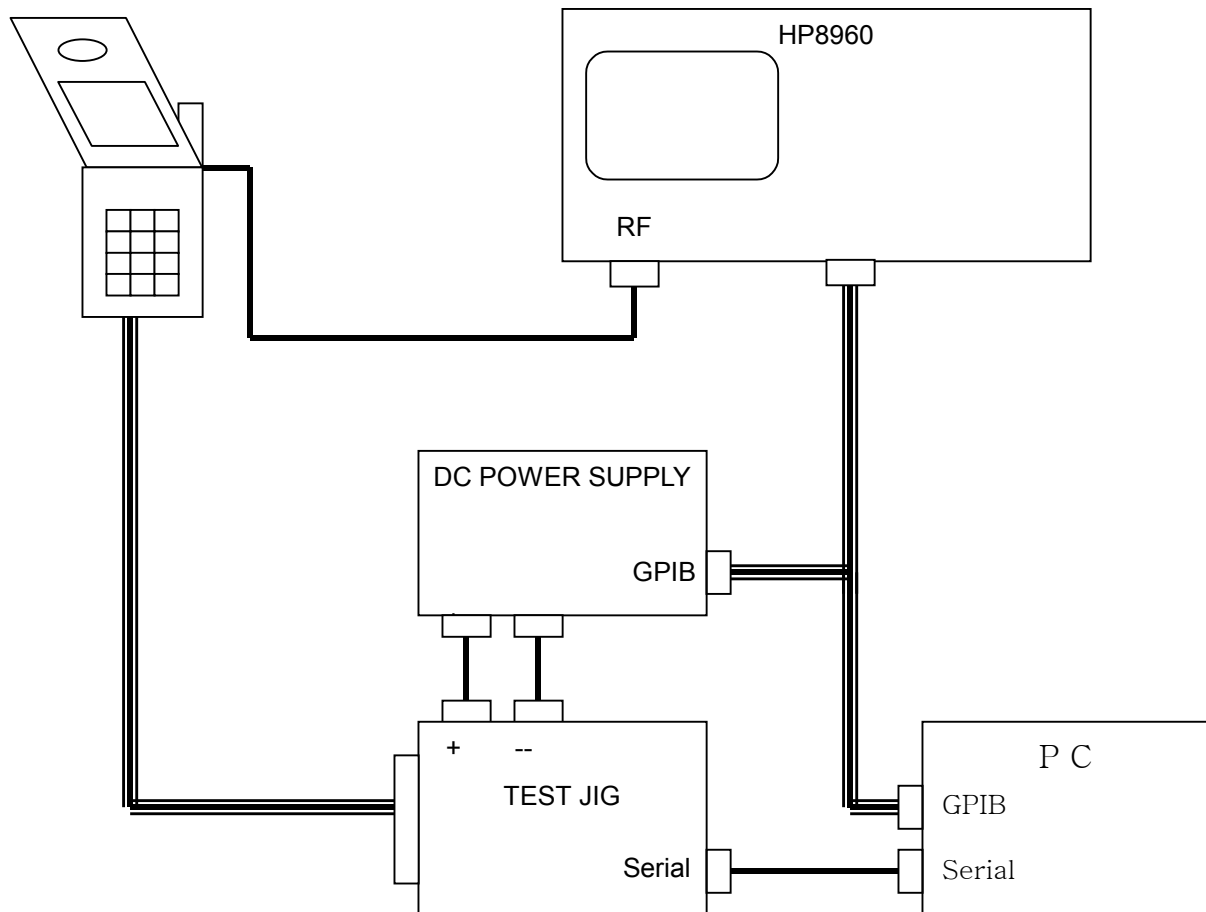
Main Function

- 1.3 Megapixel Camera and Camcorder
- Bluetooth® Wireless Technology
- Instant Messaging capability
- Voice Recognition capability
- Multimedia capability
- Fun & Apps feature provides myfile, music player, games, alarms,calendar, task list, calculator, world time, unit conversion, timer, and stopwatch.

6. Test Command & Test Procedure

6-1. Calibration Equipment

- HP 8960
- DC Power Supply
- Test Jig
- Configuration



6-2. Calibration Program

- Samsung internal software

6-3. Tx Power Tune up Procedure

- GMSK

1) Procedure:

- a. Calibration equipment HP8960 and the cell phone are connected through RF cable.
- b. Target power (required power level according to the specification which should be set by calibration program) is set to equipment as power level (ex: GSM 5 level is 32.5 dBm).
- c. Activate phone in Tx_Mode_Only.
- d. HP8960 equipment measures transmitted power through rf test cable from the phone and reports measured level to calibration program.
- e. The program compares measured power with the target power.
- f. The calibration program decides power code which is defined in advance in the program and writes the codes to the flash memory in the phone.

2) Target value is defined according to the value of GSM specification.
See the TX power level definition table below.

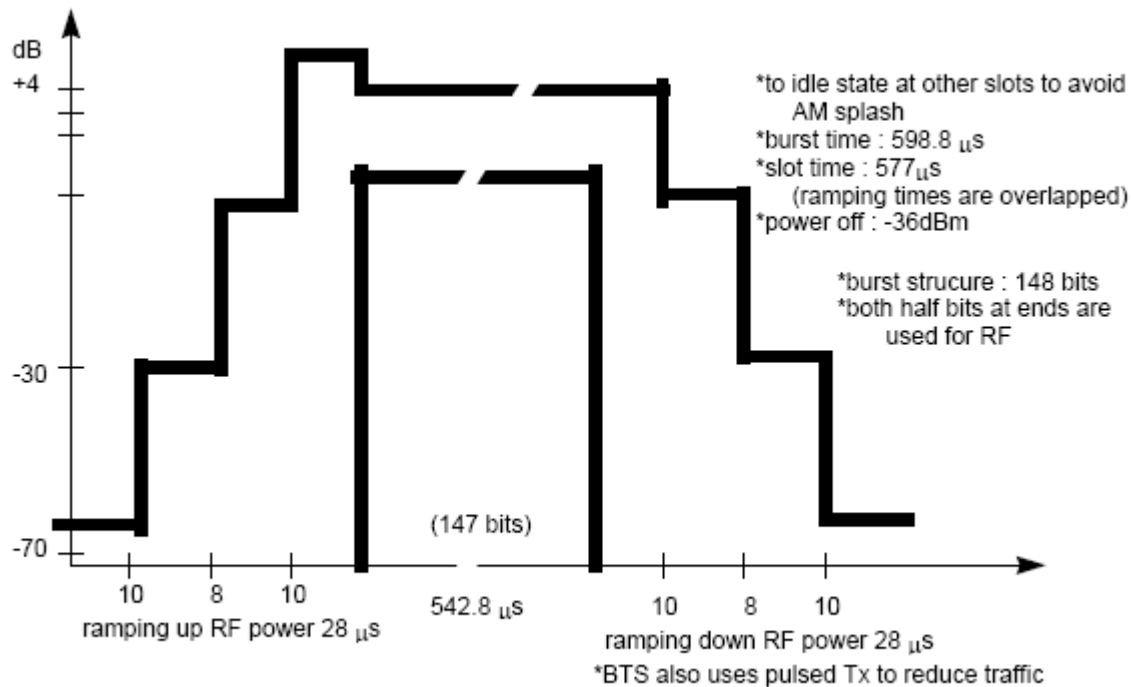
3) Target values of the peak level of the phone are set normally in conducted mode

- GSM850 5 level : 32.5dBm
- EGSM900 5 level : 32.5dBm
- DCS 0 level : 29.5dBm
- PCS 0 level : 29.5dBm (Tolerance : -2dB ~ +1dB)

4) Accuracy

All the TX level from the phone after tuned-up satisfy the GSM specification

5) TX ramp mask specification applied to the calibration program :



- 8PSK

1) Procedure:

- Calibration equipment HP8960 and the cell phone are connected through RF cable.
- Target power (required power level according to the specification which should be set by calibration program) is set to equipment as power level (ex: GSM 8 level is 27 dBm).
- Activate phone in Cont_8psk_Tx_Mode_Only.
- HP8960 equipment measures transmitted power through rf test cable from the phone and reports measured level to calibration program.
- The program compares measured power with the target power.
- The calibration program decides power code which is defined in advance in the program and writes the codes to the flash memory in the phone.

2) Target value is defined according to the value of EGPRS specification.

See the TX power level definition table below.

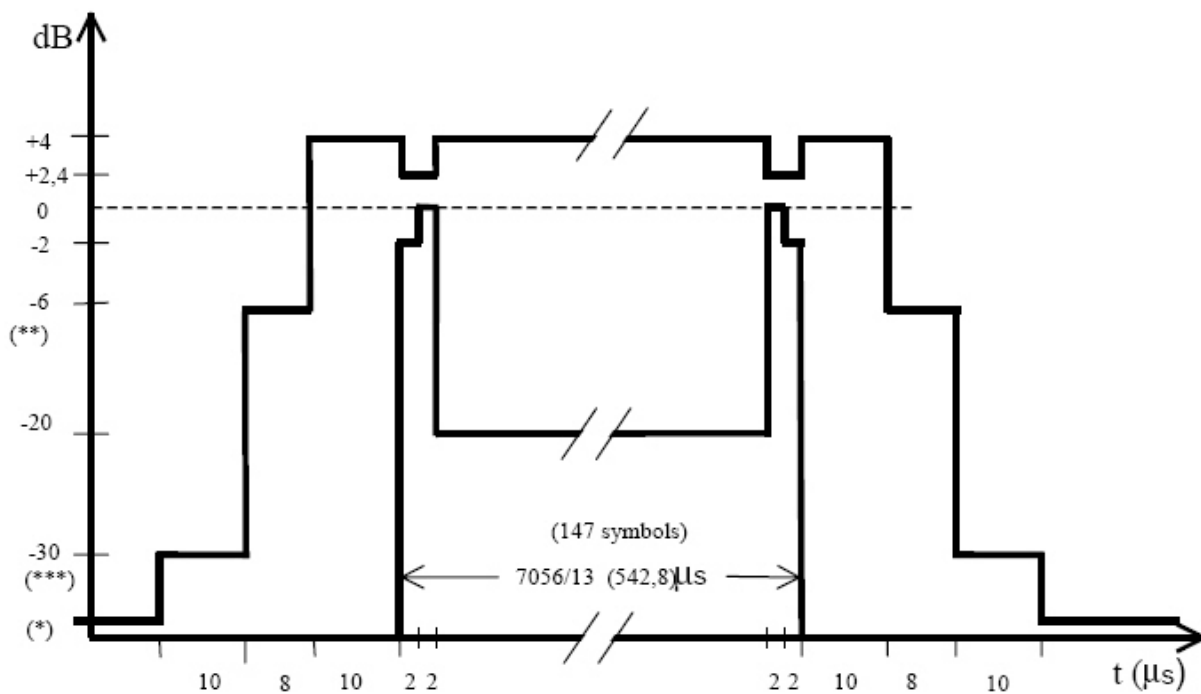
3) Target values of the peak level of the phone are set normally in conducted mode

- GSM850 8 level : 27dBm
- EGSM900 8 level : 27dBm
- DCS 2 level : 26dBm
- PCS 2 level : 26dBm (Tolerance : -2dB ~ +1dB)

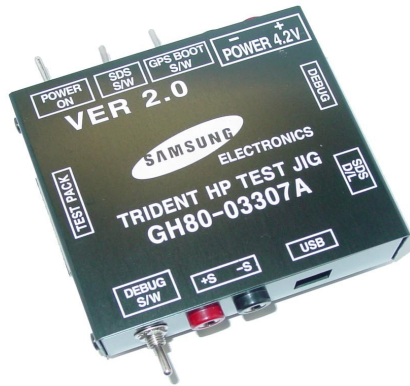
4) Accuracy

All the TX level from the phone after tuned-up satisfy the EGPRS specification

5) TX ramp mask specification applied to the calibration program :



7. Array course control



Test Jig (GH80-03307A)



Test Cable (GH39-00478A)



RF Test Cable (GH39-00397A)

Software Downloading

7-1. Downloading Binary Files

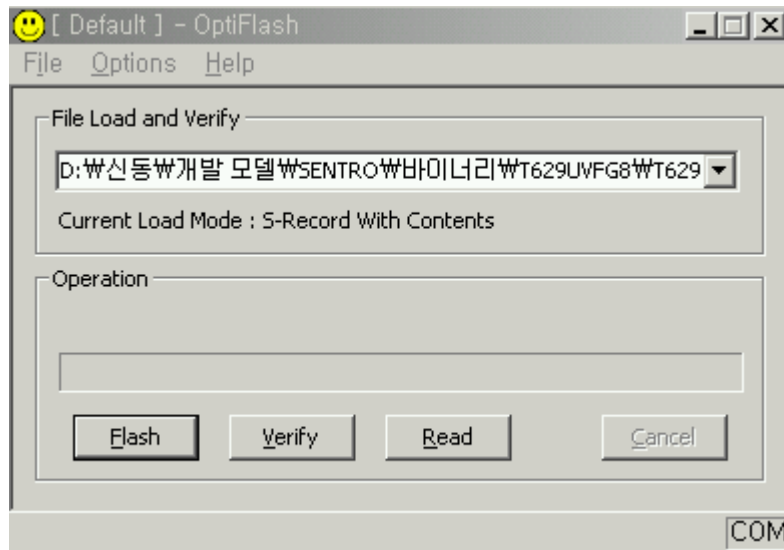
- Two binary files for downloading T629.
 - T629XXYY.s3 : Main source code binary.

7-2. Pre-requisite for Downloading

- Downloader Program([OptiFlash.exe](#))
- T629 Mobile Phone
- Data Cable
- Binary files

7-3. S/W Downloader Program

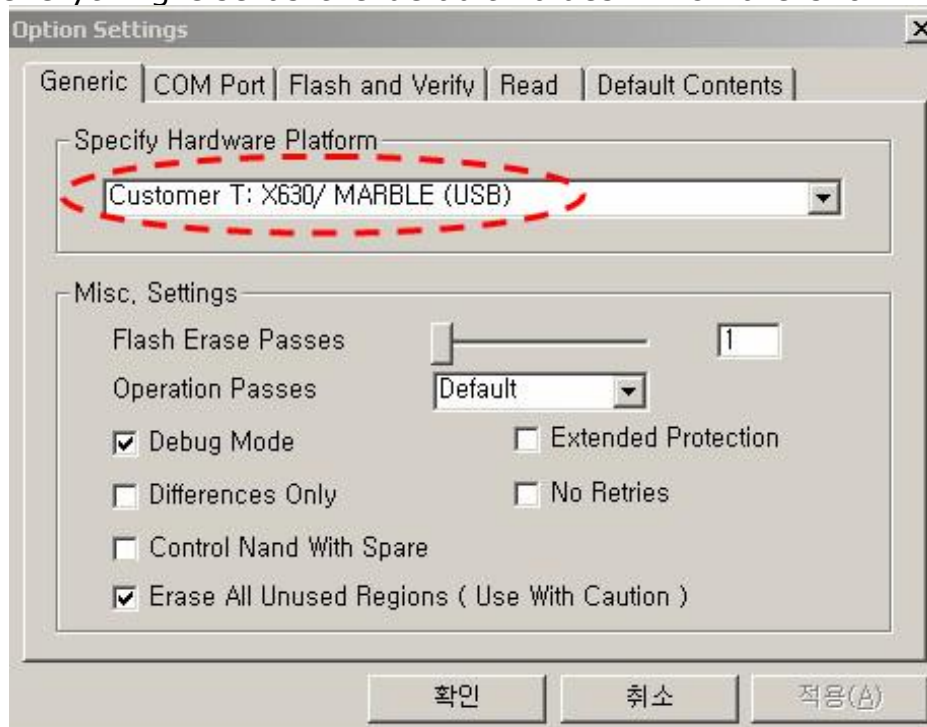
1. Load the binary download program by executing the **"OptiFlash.exe"**



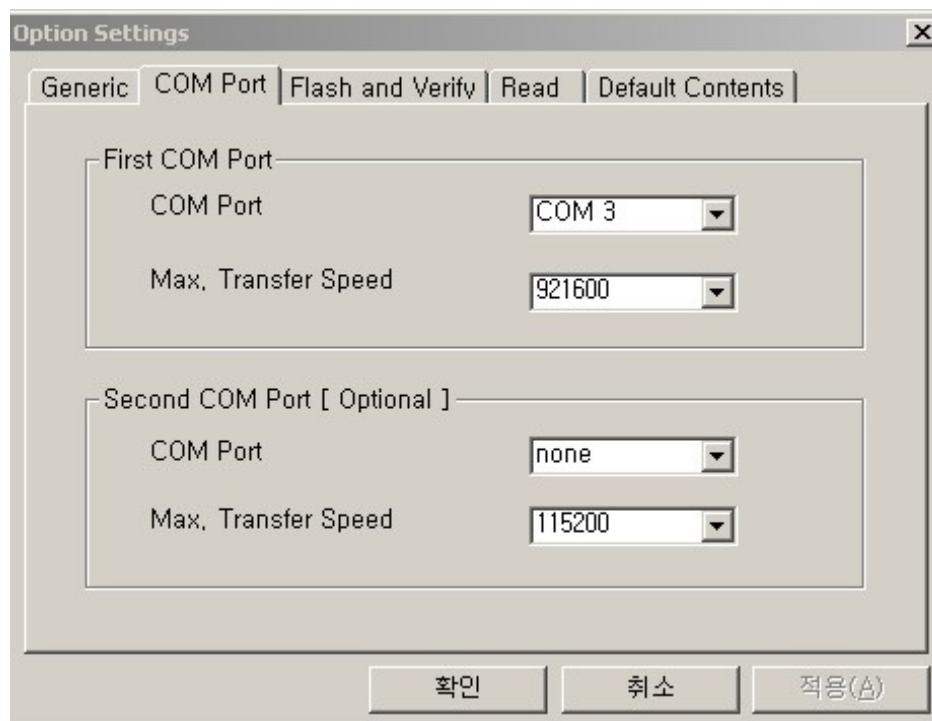
2. Select the **"Options" -> "Settings" -> "Generic" -> "Specify hardware platform"**.

Choose hardware platform for the downloader file setting.

Set the everything else as the default values which are shown below



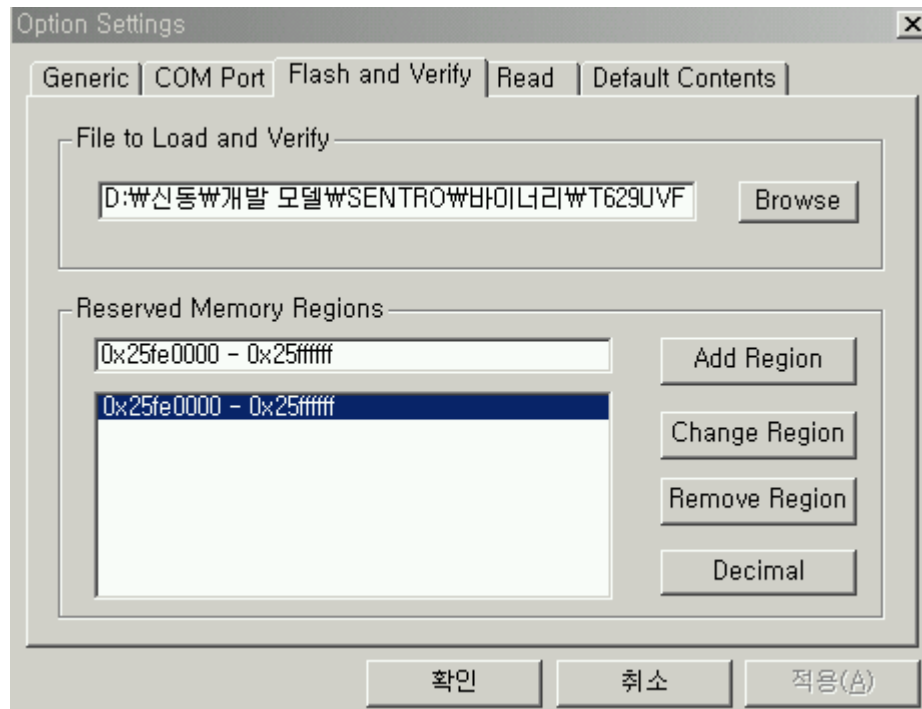
3. Select the **COM port** when the download cable is connected



Up to 64 ports are supported. Additionally you can select the maximum transfer speed OptiFlash will use to communicate with the phone. However, OptiFlash will use a slower speed if either the PC's or the phone's serial hardware is incapable of handling the selected speed.

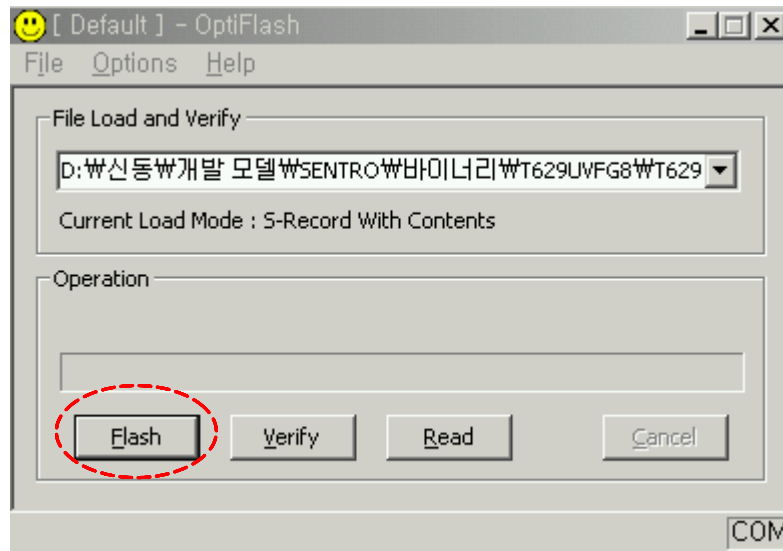
4. Select the **"Flash&Verify"** -> **"Browse"**

Set the directory path and choose the latest s/w binary, for example "T629XXYY.s3", for the downloader binary setting.



5. Click "**OK**" button then press "**Flash**".♪
(Before pressing 'Flash' button, push the button '*****' and '**END**' at the **same time**. Then press 'Flash'.)♪

Downloader will upload the binary file as below for the downloading. ♪



6. When downloading is finished successfully, there is a "All is well" message. ♪
7. After finishing downloading, Certain memory resets should be done to guarantee the normal performance.♪
8. Confirm the downloaded version name and etc. :♪

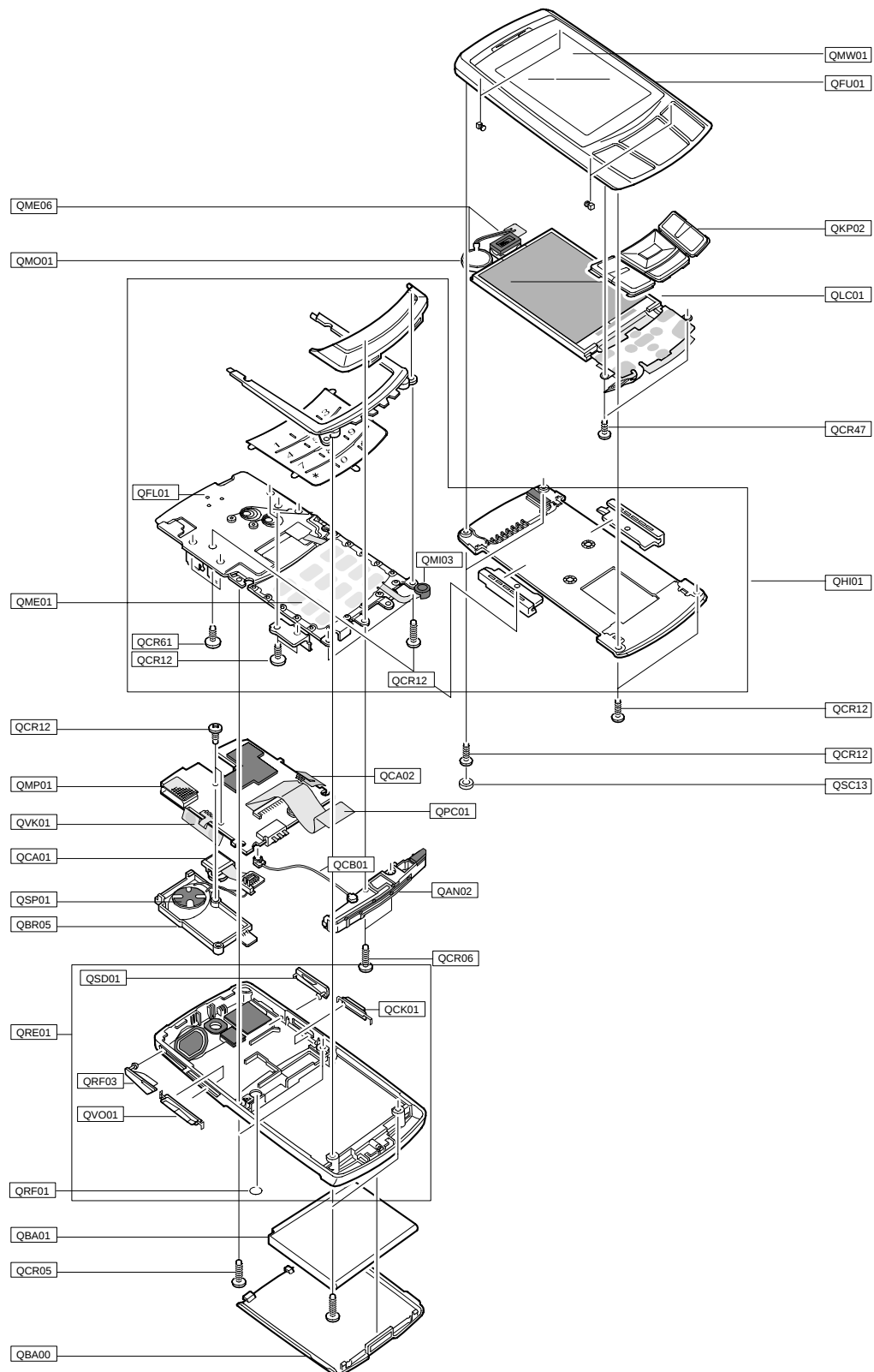
***#1234#**♪

Full Reset : ♪

***2767*3855#**

8. Exploded View and its Partslist

8-1. Cellular phone Exploded View



8-2. Cellular phone Parts list

QAN02		INTENNA-SGHT629	GH42-00905A
QBA00		PMO-BATT COVER V2	GH72-30724A
QBA01		INNER BATTERY PACK-880MAH,BLK,	GH43-02479A
QBR05		PMO-SPK BRK	GH72-30727A
QCA01		UNIT-CAMERA	GH59-03332A
QCA02		UNIT-SIDE KEY(CAM)	GH59-03208A
QCB01		CBF COAXIAL CABLE-SGHT629 U.FL	GH39-00620A
QCR05		SCREW-MACHINE	6001-001478
QCR06		SCREW-MACHINE	6001-001155
QCR12		SCREW-MACHINE	6001-001530
QCR12		SCREW-MACHINE	6001-001530
QCR47		SCREW-MACHINE	6001-001695
QFU01		ASSY-CASE-SLIDE UPPER	GH98-01315A
QKP02		ASSY-KEY-KEYPAD SUB	GH98-01311A
QLC01		ELA UNIT-SGHT629 LCD MODULE	GH96-02217A
QME01		UNIT-EL KEY PBA(NAVI)	GH59-03212A
QMP01		PBA MAIN-SGHT629	GH92-02692A
QMW01		ASSY ACCE-MAIN WINDOW	GH98-01313A
QPC01		MEA-SLIDE FPCB KIT	GH97-06321A
QRF01		MPR-TAPE CAP RF JACK	GH74-24292A
QSC13		RMO-LOWER SCREW CAP	GH73-07334A
QSP01		SPEAKER	3001-001977
QVK01		UNIT-SIDE KEY(VOL)	GH59-03207A
QME06		UNIT-SPK MOTOR FPCB	GH59-03210A
	QMO01	MOTOR DC-SGHZ130	GH31-00154C
QHI01		ASSY-HINGE-HINGE	GH98-01314A
	QFL01	ASSY CASE-SLIDE LOWER	GH98-01670A
	QCR12	SCREW-MACHINE	6001-001530
	QCR61	SCREW-MACHINE	6001-002008
	QCR12	SCREW-MACHINE	6001-001530
	QMI03	RMO-MIC HOLDER	GH73-07806A
QRE01		ASSY-CASE-REAR COVER	GH98-01316A
	QCK01	ASSY MEC-CAMERA KEY	GH75-09051B
	QRF03	PMO-EAR JACK COVER V2	GH72-31064B
	QSD01	PMO-MICRO SD COVER V2	GH72-30728A
	QVO01	PMO-VOLUME KEY	GH72-28074B

Description	SEC CODE
PLUG-CONVERSION	3721-001064
BAG PE	6902-000297
ADAPTOR-SGHE690,SIL,USA	GH44-01363B
UNIT-EARPHONE	GH59-02766A
LABEL(R)-WATER SOAK T_MOBILE	GH68-05914A
LABEL(R)-WATER SOAK T_MOBILE	GH68-05914A
LABEL(R)-MAIN(TMB)	GH68-12125A
MANUAL USERS-MYFAVES POSTER CA	GH68-13037A
MANUAL USERS-TMO NAB CARD	GH68-13930A
CUSHION-CASE UPPER	GH69-03386A
BOX(P)-UNIT MAIN(TMB)	GH69-04259A
CUSHION-CASE UPPER	GH69-04336A
IPR-FUNCTION KEY SUPPORT	GH70-01350A
PMO-CASE ANTENNA	GH72-30725A
RMO-RUBBER FRONT HOOK PCB	GH73-07651A
RMO-RUBBER BGA	GH73-07753A
RMO-RUBBER BATT CONN	GH73-08047A
MPR-REMOVE TAPE LCD	GH74-13804A
MPR-TAPE REMOVE LCD	GH74-18286A
MPR-SPONGE FPCB	GH74-21333A
MPR-TAPE FPCB A	GH74-21341A
MPR-VINYL BOHO MAIN WIN	GH74-21347A
MPR-TAPE MAIN WINDOW	GH74-24270A
MPR-TAPE FRONT	GH74-24274A
MPR-TAPE FPCB	GH74-25504A
MPR-TAPE MAIN LDI	GH74-25701A
MPR-TAPE MAIN FPCB CONDUCTIVE1	GH74-25702A
MPR-TAPE MAIN FPCB CONDUCTIVE2	GH74-25703A
MPR-TAPE LED FPCB INSULATION	GH74-25723A
MPR-VINYL BOHO M/WIN	GH74-26607A
MPR-SPONGE SPK BRK	GH74-26732A
MPR-SPONGE MOTOR FPCB B	GH74-26734A
MPR-TAPE LCD CONN	GH74-27482A
MPR-TAPE DDK CONN	GH74-27483A
AS-RECEIVER FPCB	GH81-05870A
PAA ETC-SGHT629 TMO	GH99-18010A
PAA ETC-MANUAL LIT BUNDLE(TM30	GH99-18981A

9. MAIN Electrical Parts List

SEC CODE	Desin LOC	Discription	STATUS
0403-001411	ZD505	DIODE-ZENER	SA
0403-001427	ZD301	DIODE-ZENER	SA
0403-001511	ZD100	DIODE-ZENER	SA
0403-001511	ZD101	DIODE-ZENER	SA
0403-001547	ZD502	DIODE-ZENER	SA
0406-001190	ZD500	DIODE-TVS	SA
0406-001190	ZD504	DIODE-TVS	SA
0406-001201	ZD506	DIODE-TVS	SA
0406-001201	ZD507	DIODE-TVS	SA
0406-001210	ZD201	DIODE-TVS	SA
0406-001210	ZD202	DIODE-TVS	SA
0407-000115	D301	DIODE-ARRAY	SA
0504-000168	Q100	TR-DIGITAL	SA
0801-002529	U100	IC-CMOS LOGIC	SA
0801-002958	U206	IC-CMOS LOGIC	SA
0801-002958	U400	IC-CMOS LOGIC	SA
0801-002975	U304	IC-CMOS LOGIC	SA
0801-002975	U308	IC-CMOS LOGIC	SA
0801-002993	U401	IC-CMOS LOGIC	SA
1001-001319	U501	IC-AUDIO SWITCH	SA
1002-001441	UCD500	IC-D/A CONVERTER	SA
1003-001716	U108	IC-EL DRIVER	SA
1009-001018	Q200	IC-HALL EFFECT S/W	SA
1108-000068	UME201	IC-MCP	SA
1201-002240	U500	IC-AUDIO AMP	SA
1201-002267	PAM400	IC-POWER AMP	SA
1203-003340	Q500	IC-POSI.FIXED REG.	SA
1203-003432	Q401	IC-POSI.FIXED REG.	SA
1203-003523	Q400	IC-POSI.FIXED REG.	SA
1203-003612	U107	IC-DC/DC CONVERTER	SA
1203-003616	U106	IC-DC/DC CONVERTER	SA
1203-003663	U103	IC-BATTERY	SA
1203-003708	U301	IC-DC/DC CONVERTER	SA
1203-003737	U105	IC-POSI.FIXED REG.	SA
1203-003737	U305	IC-POSI.FIXED REG.	SA
1203-003767	U306	IC-POSI.FIXED REG.	SA
1203-003787	U307	IC-POSI.FIXED REG.	SA

SEC CODE	Desin LOC	Discription	STATUS
1203-003789	U204	IC-POWER SUPERVISOR	SA
1203-004119	U101	IC-POWER SUPERVISOR	SA
1205-002272	U202	IC-TRANSCEIVER	SA
1205-002568	Q201	IC-SWITCH	SA
1205-002652	U402	IC-TRANSCEIVER	SA
1404-001165	U102	THERMISTOR-NTC	SA
1405-001082	V300	VARISTOR	SA
1405-001082	V301	VARISTOR	SA
1405-001082	V302	VARISTOR	SA
1405-001082	V303	VARISTOR	SA
1405-001082	V304	VARISTOR	SA
1405-001082	V305	VARISTOR	SA
1405-001082	V306	VARISTOR	SA
1405-001082	V307	VARISTOR	SA
1405-001082	V308	VARISTOR	SA
1405-001082	V309	VARISTOR	SA
1405-001082	V310	VARISTOR	SA
1405-001082	V311	VARISTOR	SA
1405-001082	V312	VARISTOR	SA
1405-001082	V313	VARISTOR	SA
1405-001082	V501	VARISTOR	SA
1405-001082	V502	VARISTOR	SA
1405-001082	V503	VARISTOR	SA
1405-001082	V504	VARISTOR	SA
1405-001082	V505	VARISTOR	SA
1405-001082	V506	VARISTOR	SA
1405-001093	V500	VARISTOR	SA
1405-001138	V201	VARISTOR	SA
1405-001138	V202	VARISTOR	SA
2007-000137	R525	R-CHIP	SA
2007-000138	R113	R-CHIP	SA
2007-000138	R119	R-CHIP	SA
2007-000138	R401	R-CHIP	SA
2007-000138	R405	R-CHIP	SA
2007-000138	R406	R-CHIP	SA
2007-000138	R526	R-CHIP	SA
2007-000139	R425	R-CHIP	SA

SEC CODE	Desin LOC	Discription	STATUS
2007-000139	R427	R-CHIP	SA
2007-000140	R513	R-CHIP	SA
2007-000140	R532	R-CHIP	SA
2007-000140	R533	R-CHIP	SA
2007-000140	R535	R-CHIP	SA
2007-000141	R102	R-CHIP	SA
2007-000141	R410	R-CHIP	SA
2007-000143	R413	R-CHIP	SA
2007-000148	R100	R-CHIP	SA
2007-000148	R109	R-CHIP	SA
2007-000148	R408	R-CHIP	SA
2007-000148	R409	R-CHIP	SA
2007-000148	R527	R-CHIP	SA
2007-000157	R101	R-CHIP	SA
2007-000157	R317	R-CHIP	SA
2007-000157	R318	R-CHIP	SA
2007-000159	R117	R-CHIP	SA
2007-000162	R115	R-CHIP	SA
2007-000164	R213	R-CHIP	SA
2007-000170	R315	R-CHIP	SA
2007-000170	R538	R-CHIP	SA
2007-000170	R539	R-CHIP	SA
2007-000171	R205	R-CHIP	SA
2007-000171	R407	R-CHIP	SA
2007-000171	R414	R-CHIP	SA
2007-000171	R537	R-CHIP	SA
2007-000172	R200	R-CHIP	SA
2007-000172	R202	R-CHIP	SA
2007-000172	R400	R-CHIP	SA
2007-000172	R504	R-CHIP	SA
2007-000690	R116	R-CHIP	SA
2007-000758	R402	R-CHIP	SA
2007-000775	R103	R-CHIP	SA
2007-000831	R118	R-CHIP	SA
2007-000831	R505	R-CHIP	SA
2007-000831	R507	R-CHIP	SA
2007-000831	R510	R-CHIP	SA

SEC CODE	Desin LOC	Discription	STATUS
2007-000982	R105	R-CHIP	SA
2007-001217	R416	R-CHIP	SA
2007-001288	R431	R-CHIP	SA
2007-001288	R437	R-CHIP	SA
2007-001290	R310	R-CHIP	SA
2007-001290	R423	R-CHIP	SA
2007-001292	R422	R-CHIP	SA
2007-001298	R411	R-CHIP	SA
2007-001298	R412	R-CHIP	SA
2007-002797	R404	R-CHIP	SA
2007-003006	R424	R-CHIP	SA
2007-003006	R428	R-CHIP	SA
2007-003006	R430	R-CHIP	SA
2007-003010	R501	R-CHIP	SA
2007-003010	R503	R-CHIP	SA
2007-007008	R435	R-CHIP	SA
2007-007008	R436	R-CHIP	SA
2007-007008	R438	R-CHIP	SA
2007-007008	R439	R-CHIP	SA
2007-007107	R500	R-CHIP	SA
2007-007107	R509	R-CHIP	SA
2007-007107	R512	R-CHIP	SA
2007-007107	R518	R-CHIP	SA
2007-007142	R502	R-CHIP	SA
2007-007142	R506	R-CHIP	SA
2007-007142	R514	R-CHIP	SA
2007-007142	R517	R-CHIP	SA
2007-007189	R432	R-CHIP	SA
2007-007307	R429	R-CHIP	SA
2007-007311	R104	R-CHIP	SA
2007-007316	R108	R-CHIP	SA
2007-007318	R426	R-CHIP	SA
2007-007318	R522	R-CHIP	SA
2007-007321	R530	R-CHIP	SA
2007-007321	R531	R-CHIP	SA
2007-007405	R433	R-CHIP	SA
2007-007405	R434	R-CHIP	SA

SEC CODE	Desin LOC	Discription	STATUS
2007-007528	R508	R-CHIP	SA
2007-007528	R511	R-CHIP	SA
2007-007528	R515	R-CHIP	SA
2007-007528	R516	R-CHIP	SA
2007-007586	R421	R-CHIP	SA
2007-007588	R524	R-CHIP	SA
2007-007592	R106	R-CHIP	SA
2007-008051	R415	R-CHIP	SA
2007-008054	R521	R-CHIP	SA
2007-008055	R107	R-CHIP	SA
2007-008055	R110	R-CHIP	SA
2007-008055	R111	R-CHIP	SA
2007-008055	R114	R-CHIP	SA
2007-008055	R206	R-CHIP	SA
2007-008055	R529	R-CHIP	SA
2007-008419	R534	R-CHIP	SA
2007-008419	R536	R-CHIP	SA
2007-008420	R214	R-CHIP	SA
2007-008420	R215	R-CHIP	SA
2007-008478	R212	R-CHIP	SA
2007-008483	R209	R-CHIP	SA
2007-008483	R211	R-CHIP	SA
2007-008483	R216	R-CHIP	SA
2007-008483	R217	R-CHIP	SA
2007-008483	R218	R-CHIP	SA
2007-008483	R220	R-CHIP	SA
2007-008483	R316	R-CHIP	SA
2007-008483	R319	R-CHIP	SA
2007-008483	R403	R-CHIP	SA
2007-008483	R528	R-CHIP	SA
2007-008486	R219	R-CHIP	SA
2007-008516	R203	R-CHIP	SA
2007-008516	R519	R-CHIP	SA
2007-008516	R520	R-CHIP	SA
2007-008531	R312	R-CHIP	SA
2007-008542	R208	R-CHIP	SA
2007-008542	R210	R-CHIP	SA

SEC CODE	Desin LOC	Discription	STATUS
2007-008542	R221	R-CHIP	SA
2007-008542	R320	R-CHIP	SA
2007-008588	R301	R-CHIP	SA
2007-008588	R302	R-CHIP	SA
2007-009166	R314	R-CHIP	SA
2203-000138	C448	C-CER,CHIP	SA
2203-000233	C113	C-CER,CHIP	SA
2203-000233	C451	C-CER,CHIP	SA
2203-000254	C121	C-CER,CHIP	SA
2203-000254	C209	C-CER,CHIP	SA
2203-000254	C211	C-CER,CHIP	SA
2203-000254	C212	C-CER,CHIP	SA
2203-000254	C213	C-CER,CHIP	SA
2203-000254	C404	C-CER,CHIP	SA
2203-000254	C405	C-CER,CHIP	SA
2203-000254	C406	C-CER,CHIP	SA
2203-000254	C417	C-CER,CHIP	SA
2203-000254	C430	C-CER,CHIP	SA
2203-000254	C431	C-CER,CHIP	SA
2203-000254	C449	C-CER,CHIP	SA
2203-000278	C410	C-CER,CHIP	SA
2203-000330	C107	C-CER,CHIP	SA
2203-000330	C219	C-CER,CHIP	SA
2203-000330	C220	C-CER,CHIP	SA
2203-000386	C425	C-CER,CHIP	SA
2203-000438	C403	C-CER,CHIP	SA
2203-000438	C439	C-CER,CHIP	SA
2203-000438	C502	C-CER,CHIP	SA
2203-000438	C505	C-CER,CHIP	SA
2203-000489	C433	C-CER,CHIP	SA
2203-000550	C302	C-CER,CHIP	SA
2203-000550	C303	C-CER,CHIP	SA
2203-000628	C435	C-CER,CHIP	SA
2203-000628	C452	C-CER,CHIP	SA
2203-000628	C503	C-CER,CHIP	SA
2203-000628	C528	C-CER,CHIP	SA
2203-000654	C432	C-CER,CHIP	SA

SEC CODE	Desin LOC	Discription	STATUS
2203-000654	C440	C-CER,CHIP	SA
2203-000679	C428	C-CER,CHIP	SA
2203-000679	C429	C-CER,CHIP	SA
2203-000696	C420	C-CER,CHIP	SA
2203-000696	C422	C-CER,CHIP	SA
2203-000812	C437	C-CER,CHIP	SA
2203-000812	C450	C-CER,CHIP	SA
2203-000812	C453	C-CER,CHIP	SA
2203-000812	C454	C-CER,CHIP	SA
2203-000812	C509	C-CER,CHIP	SA
2203-000812	C510	C-CER,CHIP	SA
2203-000812	C540	C-CER,CHIP	SA
2203-000812	C541	C-CER,CHIP	SA
2203-000836	C415	C-CER,CHIP	SA
2203-000940	C436	C-CER,CHIP	SA
2203-000995	C414	C-CER,CHIP	SA
2203-000995	C442	C-CER,CHIP	SA
2203-001153	C139	C-CER,CHIP	SA
2203-001210	C137	C-CER,CHIP	SA
2203-001405	C125	C-CER,CHIP	SA
2203-001412	C411	C-CER,CHIP	SA
2203-002709	C534	C-CER,CHIP	SA
2203-005138	C418	C-CER,CHIP	SA
2203-005138	C419	C-CER,CHIP	SA
2203-005234	C455	C-CER,CHIP	SA
2203-005444	C426	C-CER,CHIP	SA
2203-005444	C427	C-CER,CHIP	SA
2203-005481	C512	C-CER,CHIP	SA
2203-005481	C516	C-CER,CHIP	SA
2203-005482	C126	C-CER,CHIP	SA
2203-005482	C136	C-CER,CHIP	SA
2203-005482	C218	C-CER,CHIP	SA
2203-005482	C221	C-CER,CHIP	SA
2203-005482	C225	C-CER,CHIP	SA
2203-005482	C229	C-CER,CHIP	SA
2203-005482	C230	C-CER,CHIP	SA
2203-005482	C307	C-CER,CHIP	SA

SEC CODE	Desin LOC	Discription	STATUS
2203-005482	C308	C-CER,CHIP	SA
2203-005482	C315	C-CER,CHIP	SA
2203-005482	C337	C-CER,CHIP	SA
2203-005482	C351	C-CER,CHIP	SA
2203-005482	C360	C-CER,CHIP	SA
2203-005482	C400	C-CER,CHIP	SA
2203-005482	C407	C-CER,CHIP	SA
2203-005482	C409	C-CER,CHIP	SA
2203-005482	C501	C-CER,CHIP	SA
2203-005482	C506	C-CER,CHIP	SA
2203-005482	C507	C-CER,CHIP	SA
2203-005482	C513	C-CER,CHIP	SA
2203-005482	C527	C-CER,CHIP	SA
2203-005682	C102	C-CER,CHIP	SA
2203-005682	C103	C-CER,CHIP	SA
2203-005682	C108	C-CER,CHIP	SA
2203-005682	C111	C-CER,CHIP	SA
2203-005682	C320	C-CER,CHIP	SA
2203-005682	C321	C-CER,CHIP	SA
2203-005682	C322	C-CER,CHIP	SA
2203-005682	C323	C-CER,CHIP	SA
2203-005682	C324	C-CER,CHIP	SA
2203-005682	C325	C-CER,CHIP	SA
2203-005682	C331	C-CER,CHIP	SA
2203-005682	C332	C-CER,CHIP	SA
2203-005682	C335	C-CER,CHIP	SA
2203-005682	C336	C-CER,CHIP	SA
2203-005682	C339	C-CER,CHIP	SA
2203-005682	C342	C-CER,CHIP	SA
2203-005682	C343	C-CER,CHIP	SA
2203-005682	C344	C-CER,CHIP	SA
2203-005682	C345	C-CER,CHIP	SA
2203-005682	C347	C-CER,CHIP	SA
2203-005682	C348	C-CER,CHIP	SA
2203-005682	C349	C-CER,CHIP	SA
2203-005682	C352	C-CER,CHIP	SA
2203-005682	C353	C-CER,CHIP	SA

SEC CODE	Desin LOC	Discription	STATUS
2203-005682	C354	C-CER,CHIP	SA
2203-005682	C355	C-CER,CHIP	SA
2203-005682	C423	C-CER,CHIP	SA
2203-005682	C424	C-CER,CHIP	SA
2203-005682	C536	C-CER,CHIP	SA
2203-005683	C326	C-CER,CHIP	SA
2203-006137	C122	C-CER,CHIP	SA
2203-006137	C416	C-CER,CHIP	SA
2203-006137	C517	C-CER,CHIP	SA
2203-006137	C518	C-CER,CHIP	SA
2203-006137	C537	C-CER,CHIP	SA
2203-006194	C104	C-CER,CHIP	SA
2203-006194	C200	C-CER,CHIP	SA
2203-006194	C201	C-CER,CHIP	SA
2203-006194	C205	C-CER,CHIP	SA
2203-006194	C207	C-CER,CHIP	SA
2203-006194	C217	C-CER,CHIP	SA
2203-006194	C300	C-CER,CHIP	SA
2203-006194	C333	C-CER,CHIP	SA
2203-006208	C117	C-CER,CHIP	SA
2203-006208	C118	C-CER,CHIP	SA
2203-006208	C119	C-CER,CHIP	SA
2203-006208	C402	C-CER,CHIP	SA
2203-006208	C521	C-CER,CHIP	SA
2203-006208	C522	C-CER,CHIP	SA
2203-006257	C132	C-CER,CHIP	SA
2203-006324	C106	C-CER,CHIP	SA
2203-006324	C519	C-CER,CHIP	SA
2203-006348	C124	C-CER,CHIP	SA
2203-006399	C226	C-CER,CHIP	SA
2203-006399	C227	C-CER,CHIP	SA
2203-006399	C228	C-CER,CHIP	SA
2203-006399	C306	C-CER,CHIP	SA
2203-006399	C309	C-CER,CHIP	SA
2203-006399	C310	C-CER,CHIP	SA
2203-006399	C314	C-CER,CHIP	SA
2203-006399	C421	C-CER,CHIP	SA

SEC CODE	Desin LOC	Discription	STATUS
2203-006399	C520	C-CER,CHIP	SA
2203-006423	C100	C-CER,CHIP	SA
2203-006423	C101	C-CER,CHIP	SA
2203-006423	C110	C-CER,CHIP	SA
2203-006423	C202	C-CER,CHIP	SA
2203-006423	C203	C-CER,CHIP	SA
2203-006423	C204	C-CER,CHIP	SA
2203-006423	C206	C-CER,CHIP	SA
2203-006423	C214	C-CER,CHIP	SA
2203-006423	C215	C-CER,CHIP	SA
2203-006423	C216	C-CER,CHIP	SA
2203-006423	C222	C-CER,CHIP	SA
2203-006423	C224	C-CER,CHIP	SA
2203-006423	C318	C-CER,CHIP	SA
2203-006423	C329	C-CER,CHIP	SA
2203-006423	C330	C-CER,CHIP	SA
2203-006423	C350	C-CER,CHIP	SA
2203-006423	C523	C-CER,CHIP	SA
2203-006423	C524	C-CER,CHIP	SA
2203-006423	C525	C-CER,CHIP	SA
2203-006423	C526	C-CER,CHIP	SA
2203-006562	C105	C-CER,CHIP	SA
2203-006562	C109	C-CER,CHIP	SA
2203-006562	C112	C-CER,CHIP	SA
2203-006562	C114	C-CER,CHIP	SA
2203-006562	C115	C-CER,CHIP	SA
2203-006562	C116	C-CER,CHIP	SA
2203-006562	C120	C-CER,CHIP	SA
2203-006562	C123	C-CER,CHIP	SA
2203-006562	C127	C-CER,CHIP	SA
2203-006562	C128	C-CER,CHIP	SA
2203-006562	C133	C-CER,CHIP	SA
2203-006562	C304	C-CER,CHIP	SA
2203-006562	C305	C-CER,CHIP	SA
2203-006562	C311	C-CER,CHIP	SA
2203-006562	C312	C-CER,CHIP	SA
2203-006562	C313	C-CER,CHIP	SA

SEC CODE	Desin LOC	Discription	STATUS
2203-006562	C338	C-CER,CHIP	SA
2203-006562	C340	C-CER,CHIP	SA
2203-006562	C341	C-CER,CHIP	SA
2203-006562	C346	C-CER,CHIP	SA
2203-006562	C358	C-CER,CHIP	SA
2203-006562	C401	C-CER,CHIP	SA
2203-006562	C443	C-CER,CHIP	SA
2203-006562	C446	C-CER,CHIP	SA
2203-006562	C511	C-CER,CHIP	SA
2203-006585	C441	C-CER,CHIP	SA
2203-006585	C504	C-CER,CHIP	SA
2203-006585	C508	C-CER,CHIP	SA
2203-006626	C356	C-CER,CHIP	SA
2203-006638	C413	C-CER,CHIP	SA
2203-006648	C208	C-CER,CHIP	SA
2203-006824	C129	C-CER,CHIP	SA
2203-006824	C130	C-CER,CHIP	SA
2203-006824	C131	C-CER,CHIP	SA
2203-006824	C134	C-CER,CHIP	SA
2203-006838	C357	C-CER,CHIP	SA
2203-006838	C359	C-CER,CHIP	SA
2203-006838	C408	C-CER,CHIP	SA
2203-006838	C438	C-CER,CHIP	SA
2404-001348	C529	C-TA,CHIP	SA
2404-001348	C530	C-TA,CHIP	SA
2404-001352	C434	C-TA,CHIP	SA
2404-001352	C514	C-TA,CHIP	SA
2404-001352	C531	C-TA,CHIP	SA
2404-001352	C532	C-TA,CHIP	SA
2404-001381	C301	C-TA,CHIP	SA
2404-001381	C500	C-TA,CHIP	SA
2404-001381	C538	C-TA,CHIP	SA
2404-001381	C539	C-TA,CHIP	SA
2404-001396	C223	C-TA,CHIP	SA
2404-001406	C535	C-TA,CHIP	SA
2404-001474	C444	C-TA,CHIP	SA
2404-001474	C445	C-TA,CHIP	SA

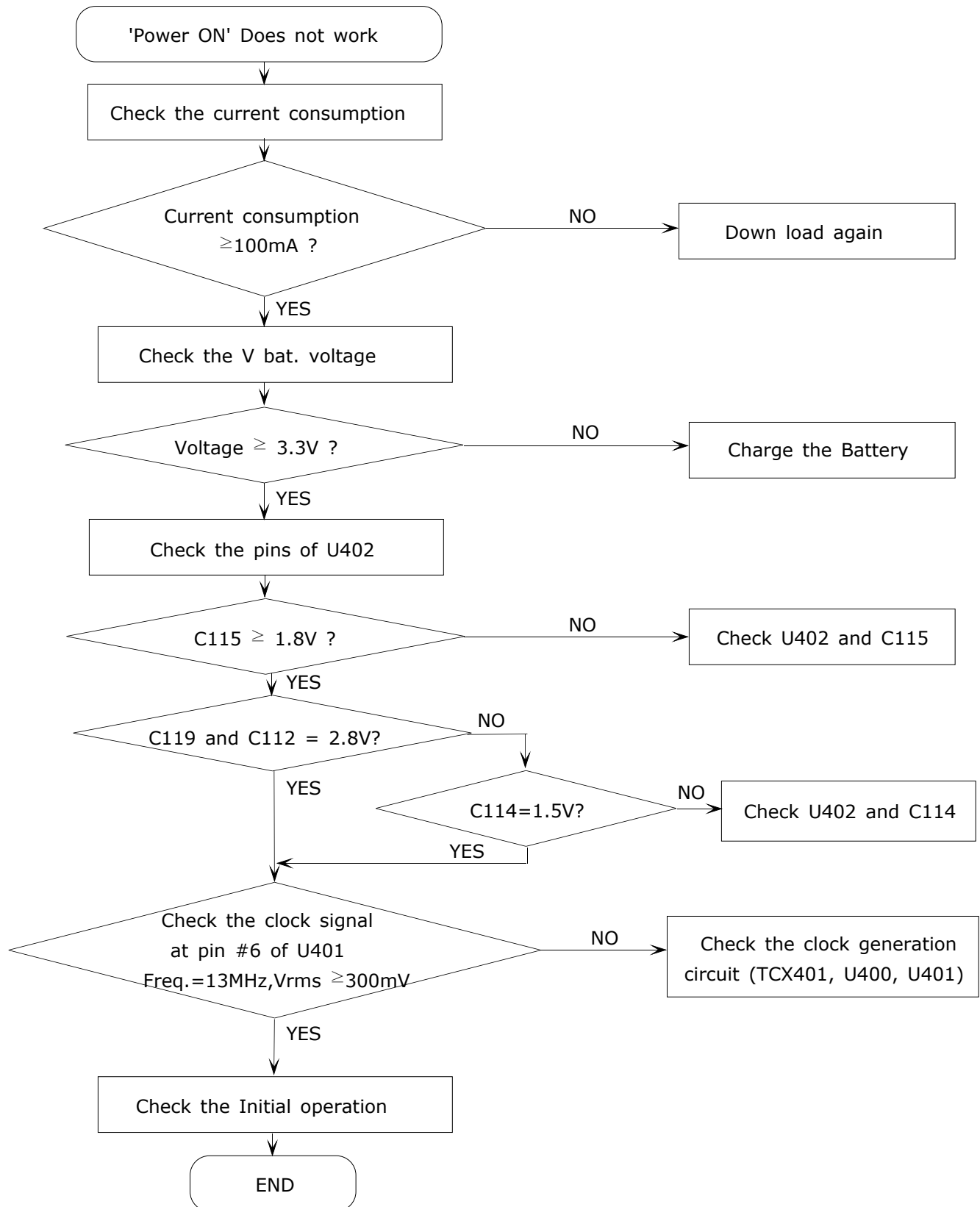
SEC CODE	Desin LOC	Discription	STATUS
2703-001178	L411	INDUCTOR-SMD	SA
2703-001178	L412	INDUCTOR-SMD	SA
2703-001180	L405	INDUCTOR-SMD	SA
2703-001737	L403	INDUCTOR-SMD	SA
2703-001737	L404	INDUCTOR-SMD	SA
2703-002170	L409	INDUCTOR-SMD	SA
2703-002267	L410	INDUCTOR-SMD	SA
2703-002314	L402	INDUCTOR-SMD	SA
2703-002734	L100	INDUCTOR-SMD	SA
2703-002734	L102	INDUCTOR-SMD	SA
2703-002739	L101	INDUCTOR-SMD	SA
2801-004285	OSC301	CRYSTAL-SMD	SA
2801-004466	OSC200	CRYSTAL-SMD	SA
2809-001287	TCX401	OSCILLATOR-VCTCXO	SA
2901-001320	F300	FILTER-EMI/ESD	SA
2901-001320	F301	FILTER-EMI/ESD	SA
2901-001320	F302	FILTER-EMI/ESD	SA
2901-001320	F303	FILTER-EMI/ESD	SA
2901-001320	F304	FILTER-EMI/ESD	SA
2911-000017	CPL400	DUPLEXER-FEM	SA
3301-001158	L501	BEAD-SMD	SA
3301-001158	L502	BEAD-SMD	SA
3301-001659	L400	BEAD-SMD	SA
3301-001659	L500	BEAD-SMD	SA
3301-001729	L200	BEAD-SMD	SA
3301-001729	L301	BEAD-SMD	SA
3705-001225	ANT400	CONNECTOR-COAXIAL	SA
3705-001358	RFS400	CONNECTOR-COAXIAL	SA
3708-002183	SLC300	CONNECTOR-FPC/FFC/PIC	SA
3709-001344	CD200	CONNECTOR-CARD EDGE	SA
3709-001391	SIM100	CONNECTOR-CARD EDGE	SA
3710-002081	CN500	SOCKET-BOARD TO BOARD	SA
3710-002306	IFC500	SOCKET-INTERFACE	SA
3711-005643	HDC300	HEADER-BOARD TO BOARD	SA
3711-005976	HCD300	HEADER-BOARD TO BOARD	SA
3711-006299	BTC500	HEADER-BATTERY	SA
4202-001176	AN400	ANTENNA-CHIP	SA

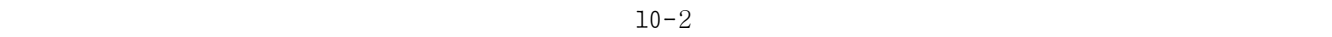
SEC CODE	Desin LOC	Discription	STATUS
4302-001158	BAT100	BATTERY-LI(2ND)	SA
4709-001372	U403	BLUETOOTH MODULE	SA
GH09-00044A	UCP203	IC MICOM	SA
GH13-00038A	U300	IC ASIC-SGHE380	SA

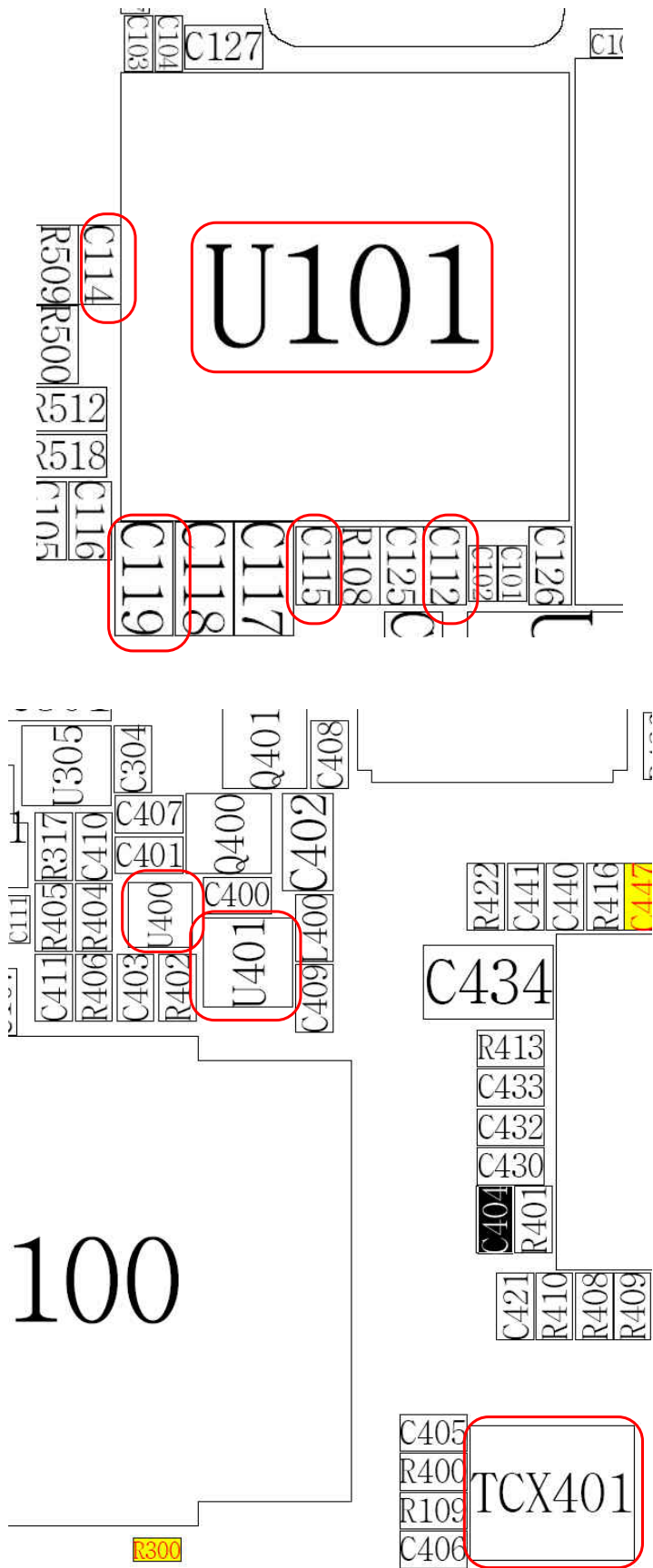
10. Flow Chart of Troubleshooting

10-1.Baseband

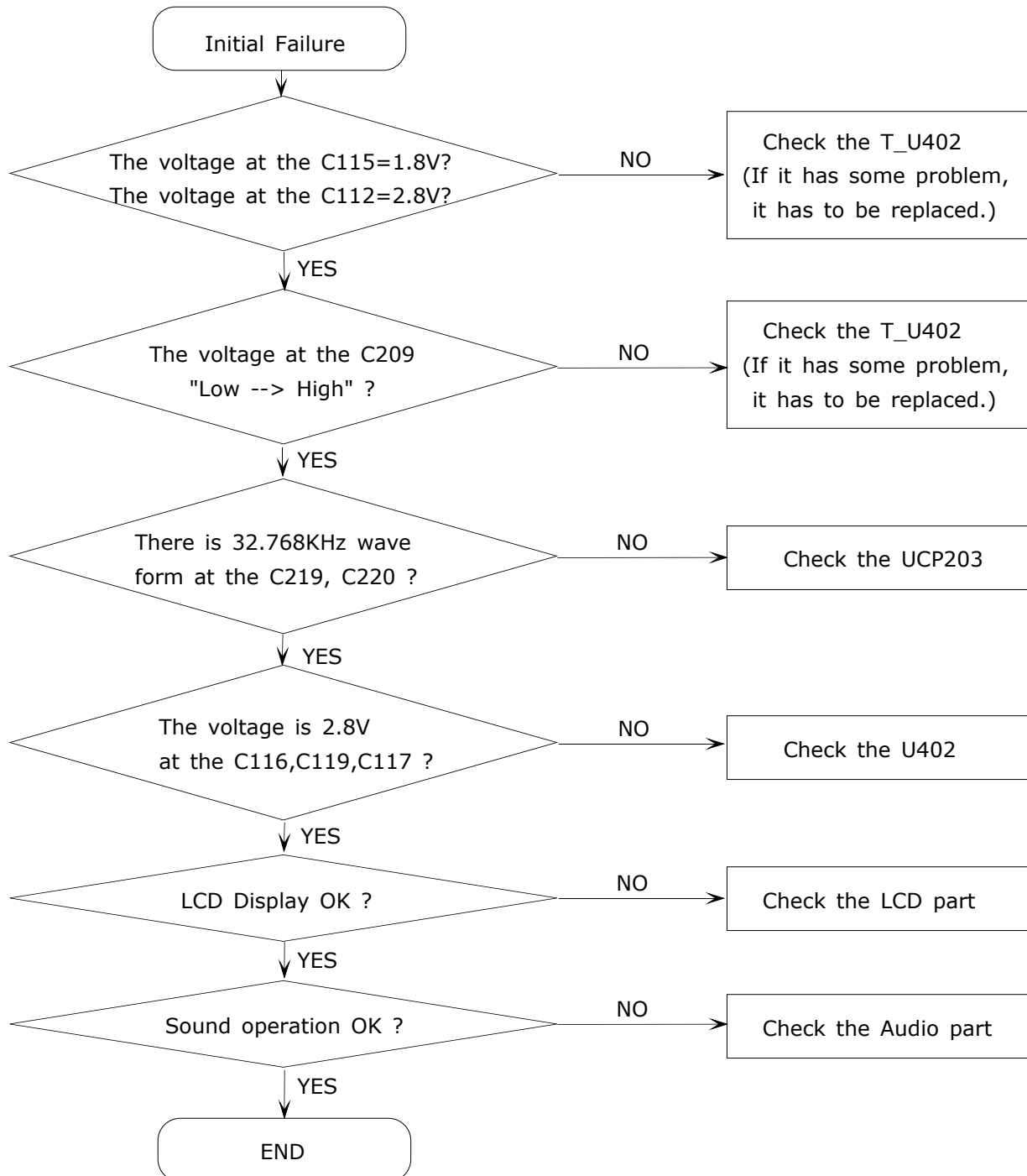
10-1-1. Power ON

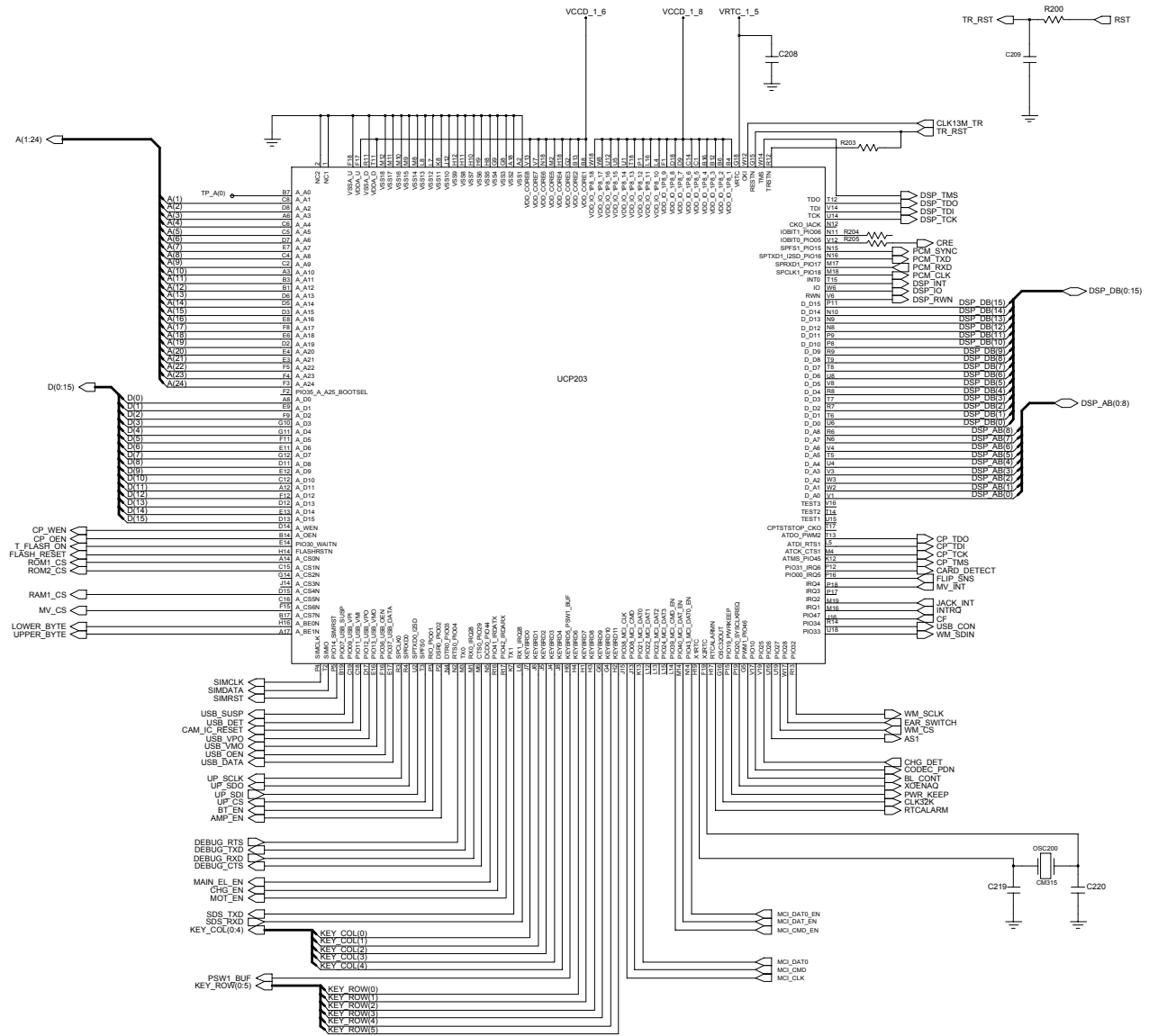


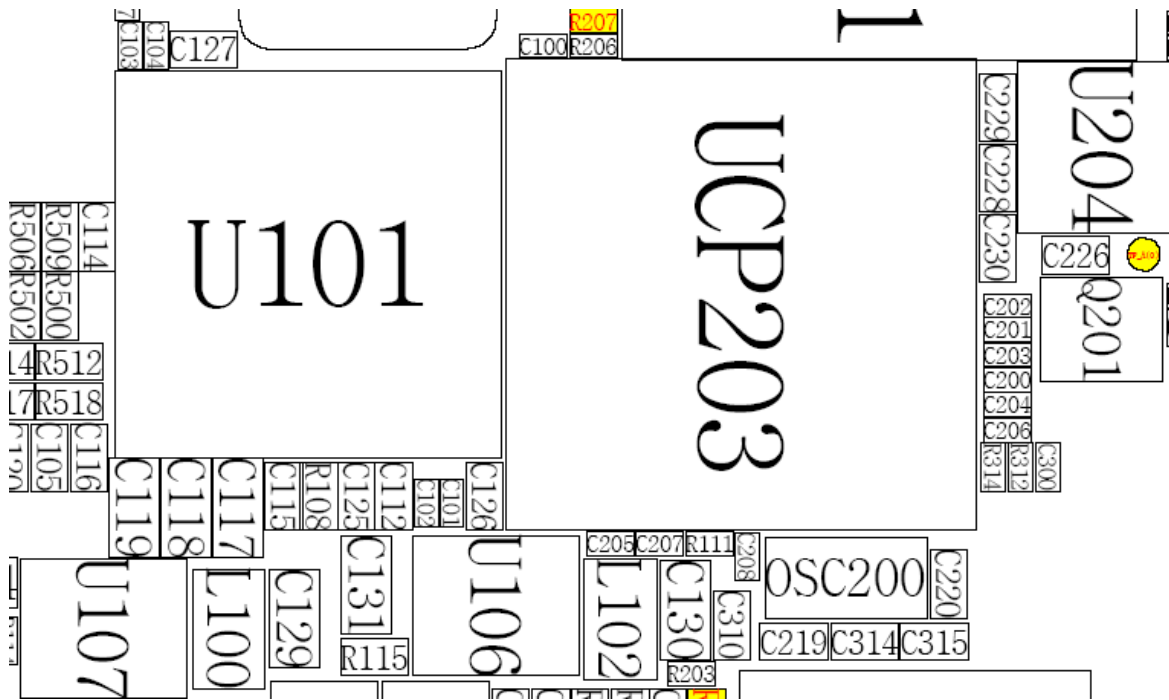


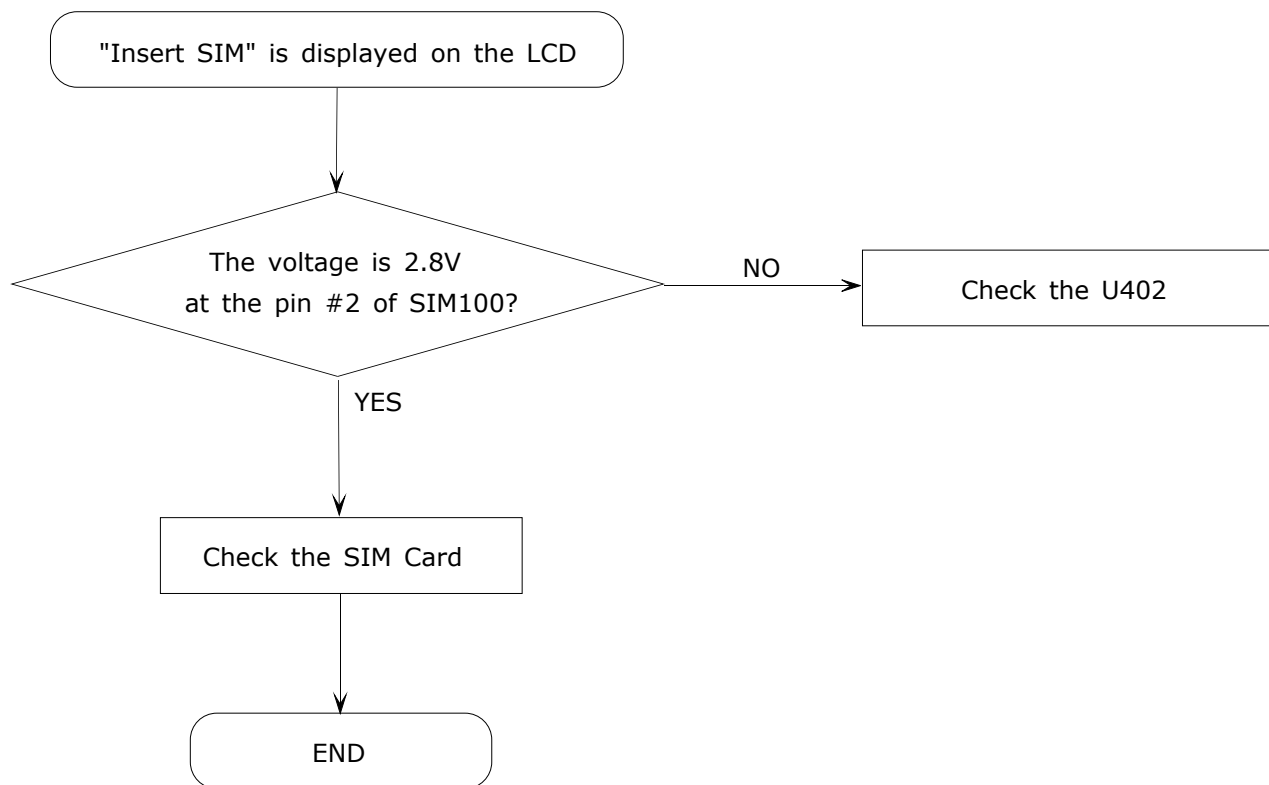


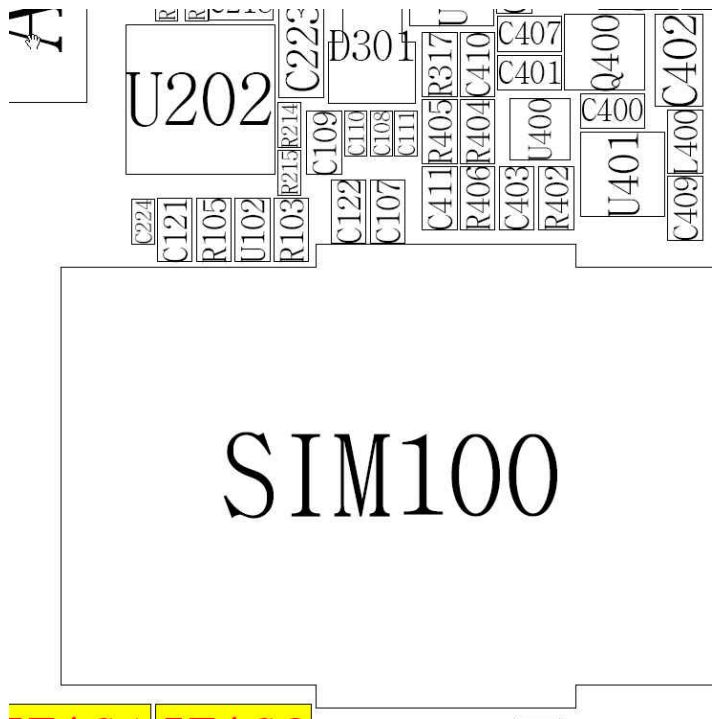
10-1-2. Initial

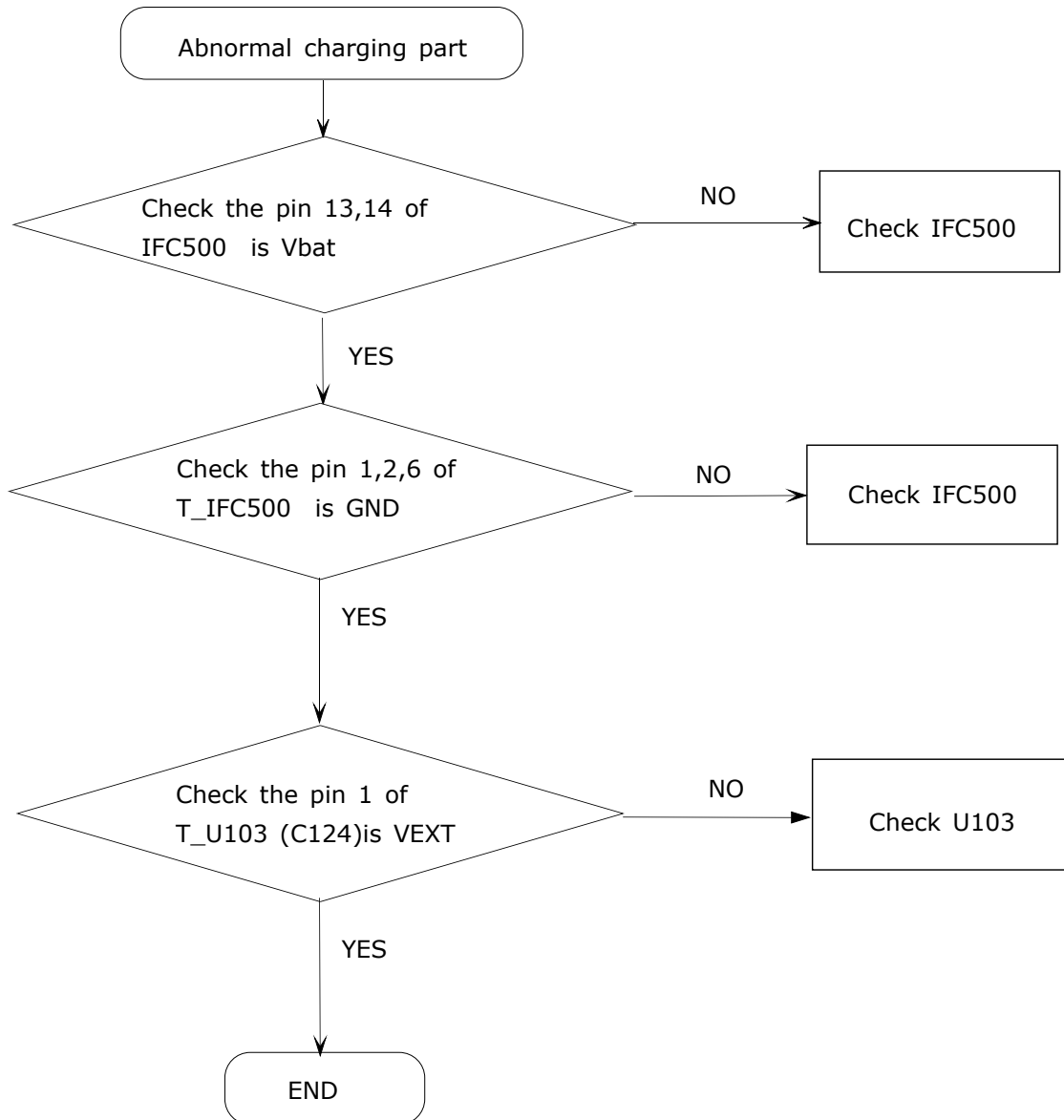


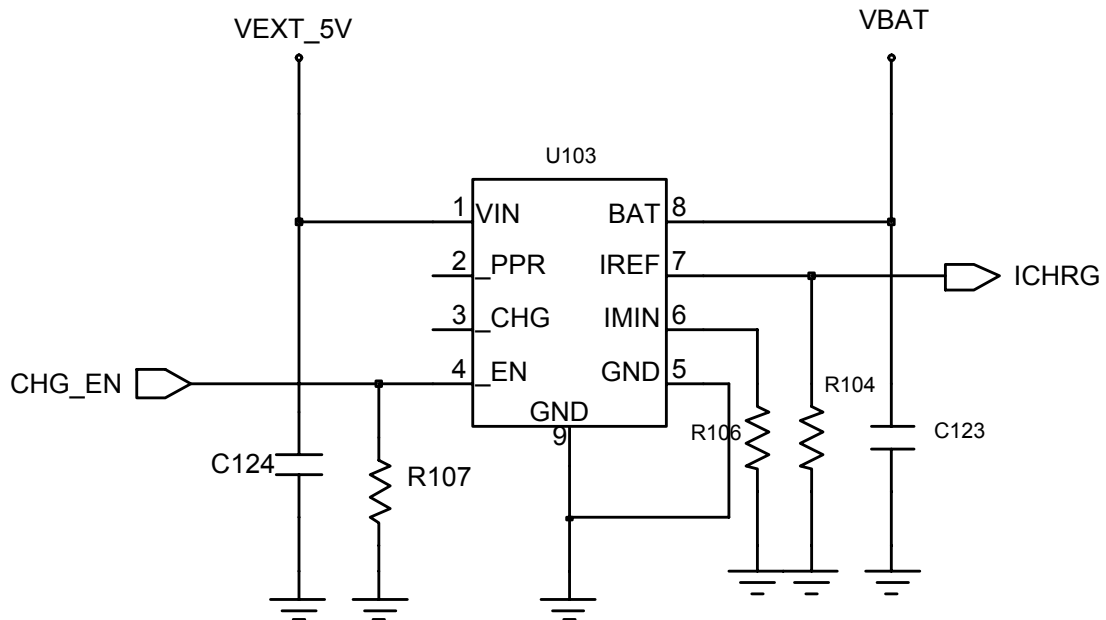
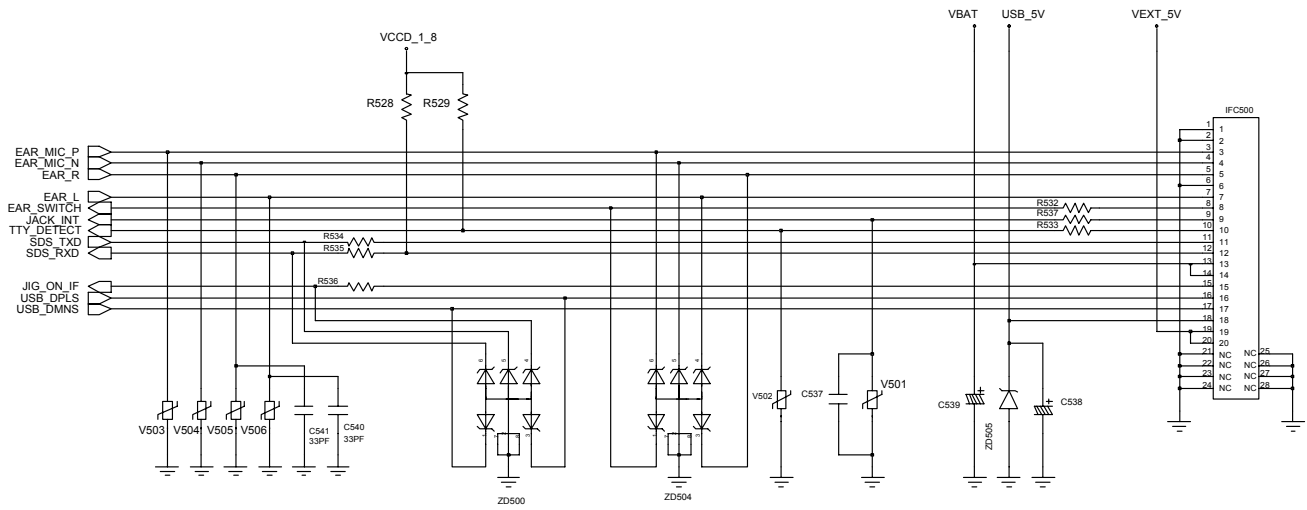


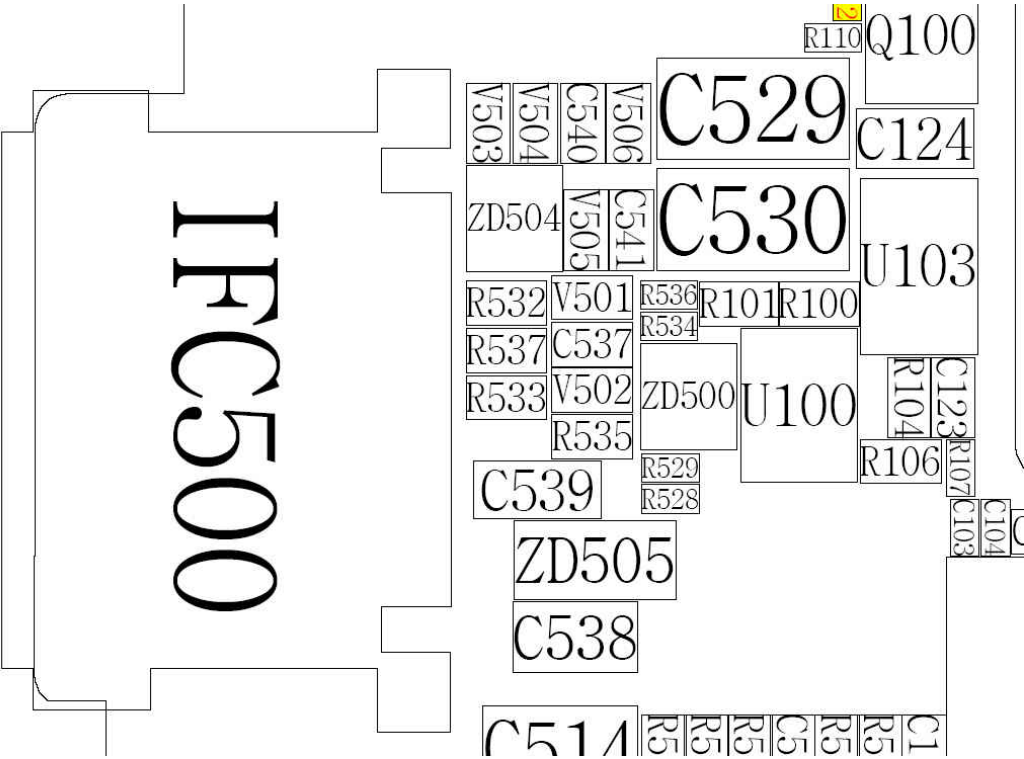


10-1-3. Sim Part

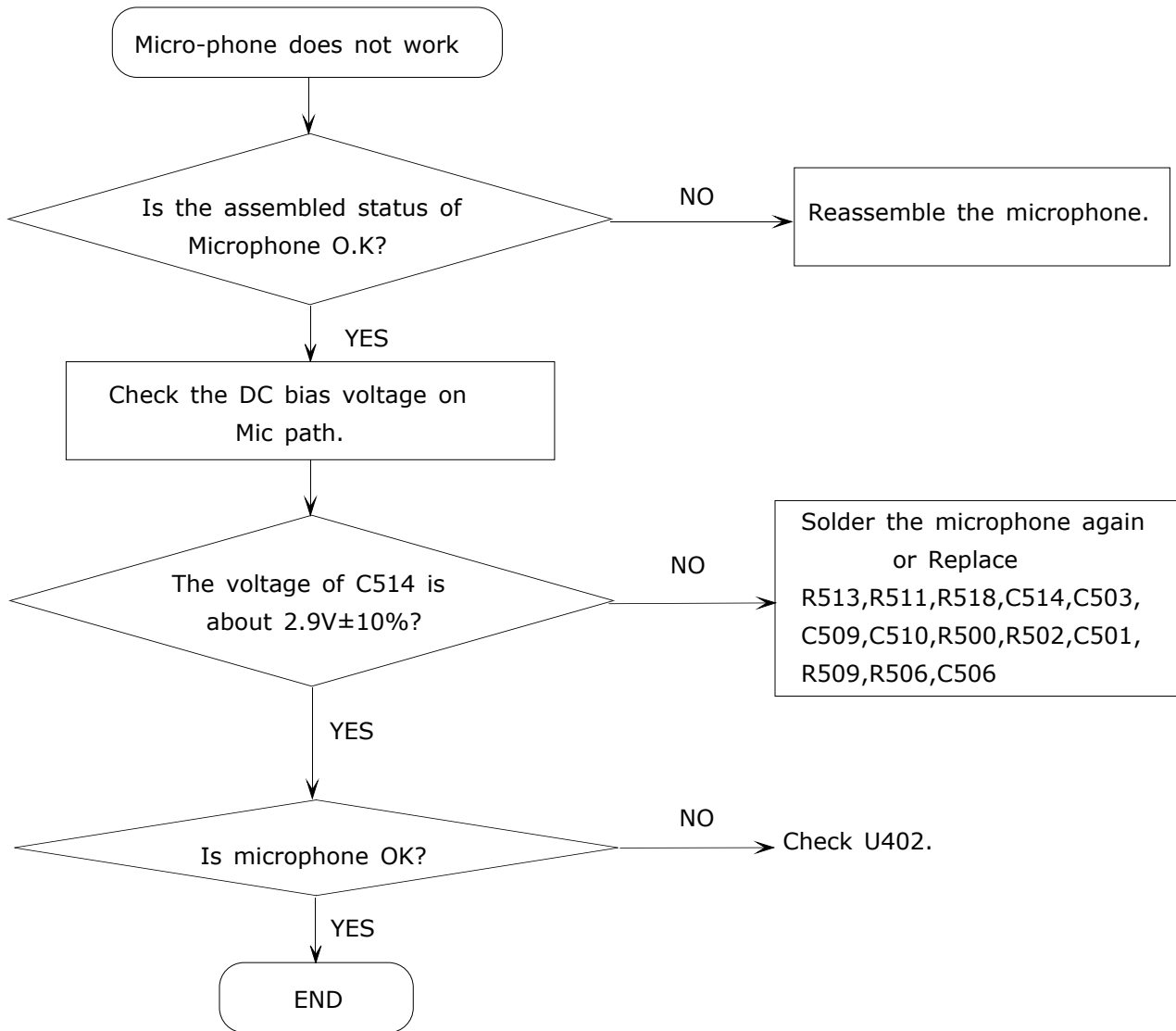


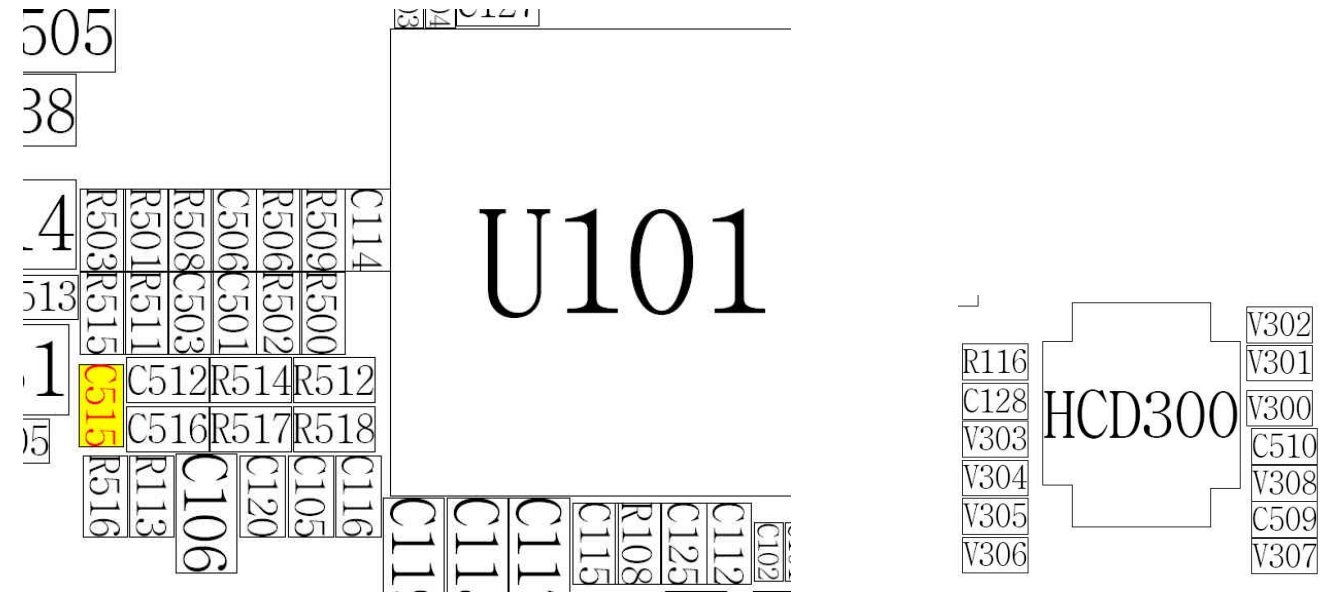
10-1-4 Charging Part





10-1-5. Microphone Part

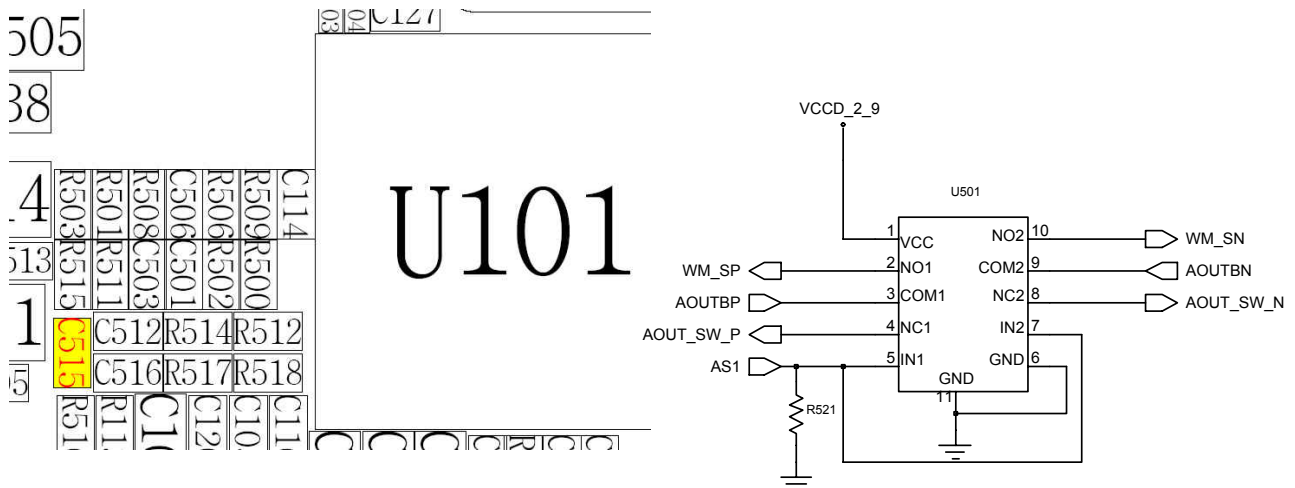
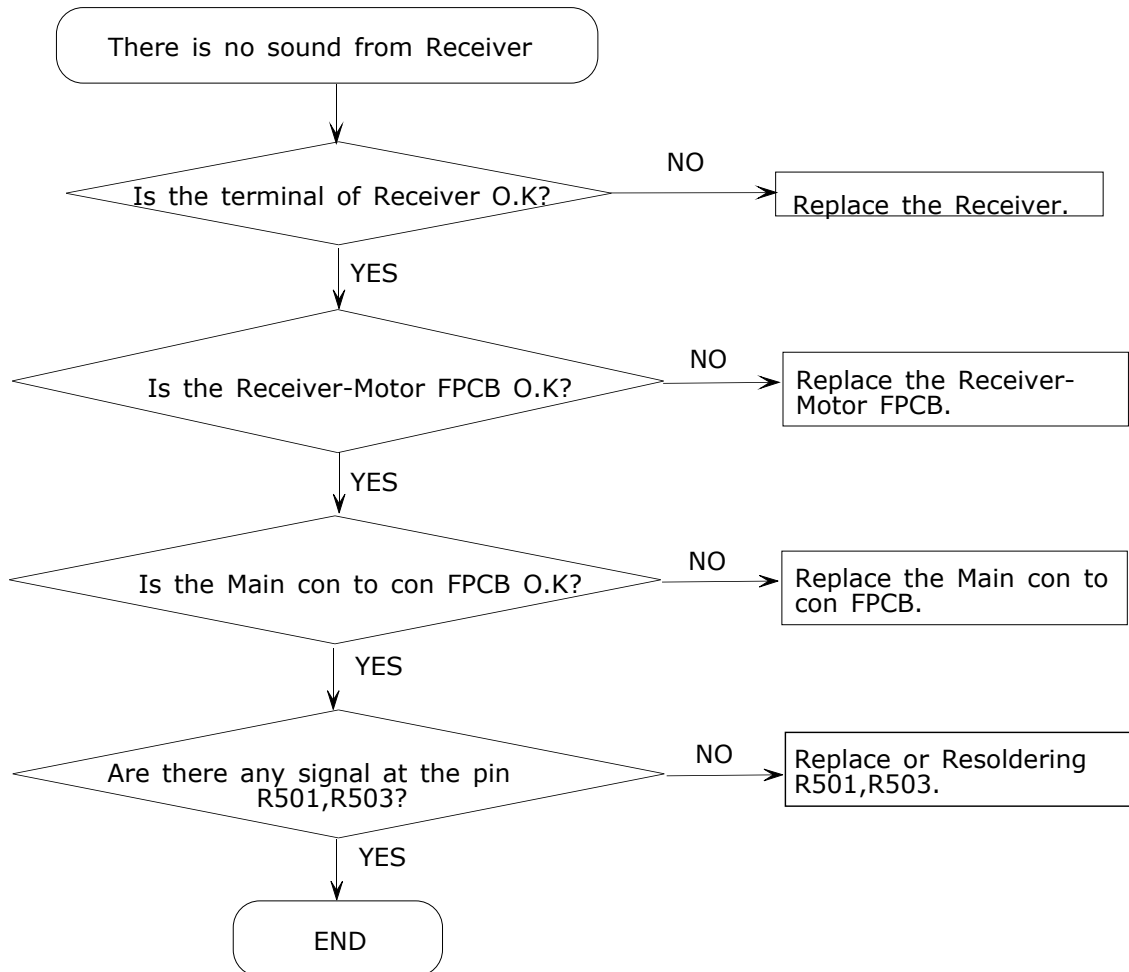


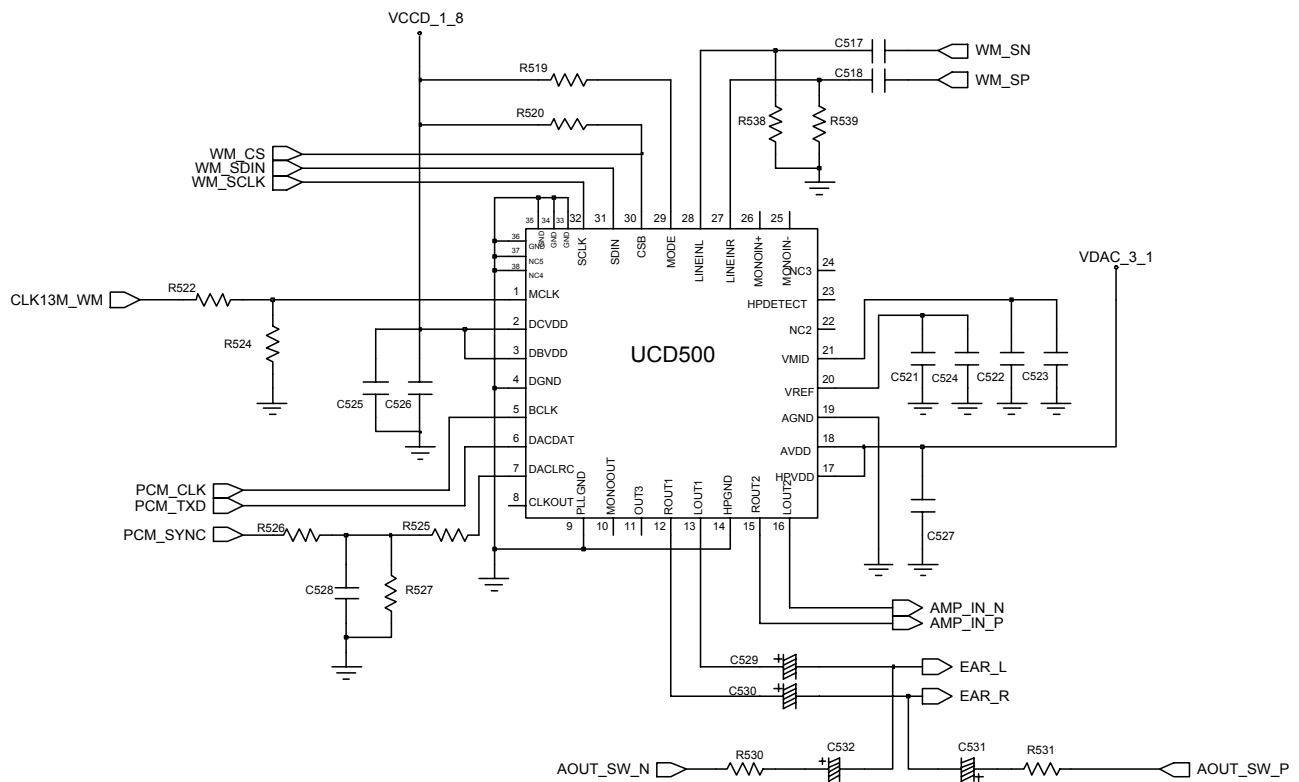
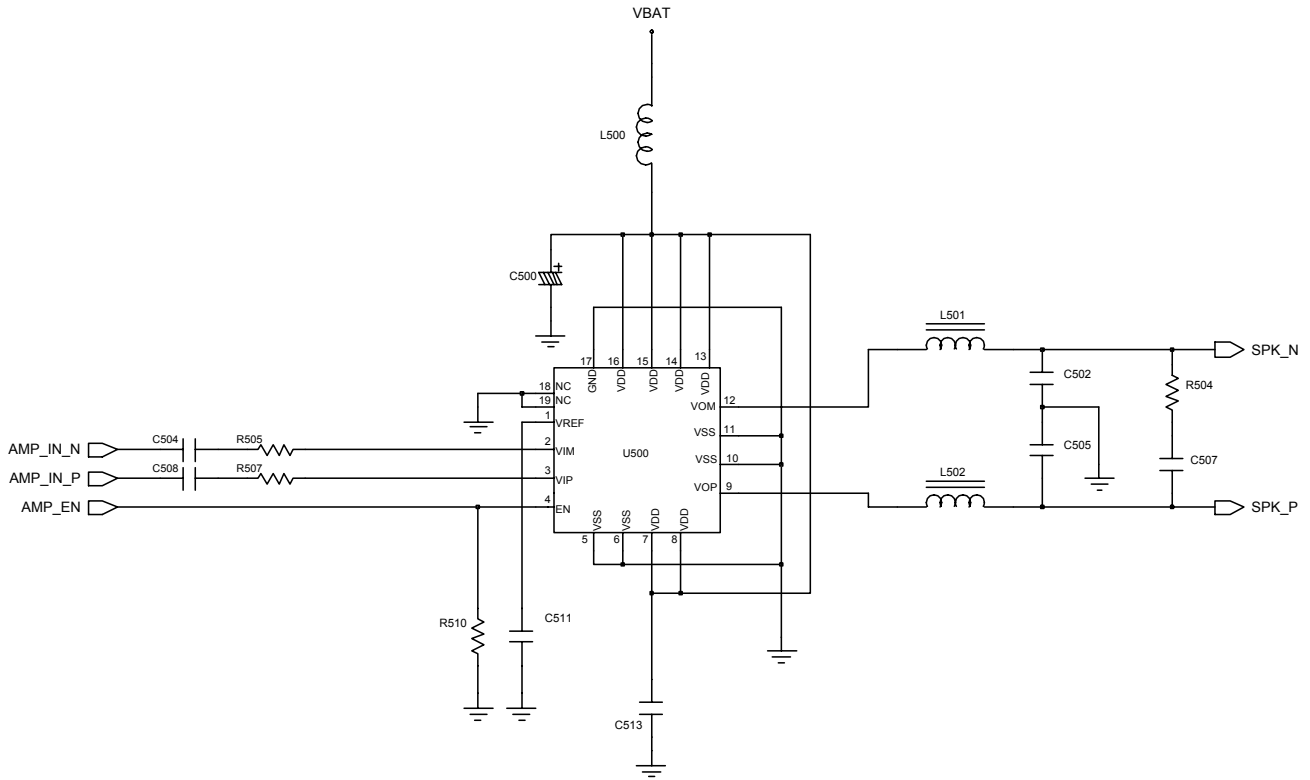


10-1-6. Audio Part

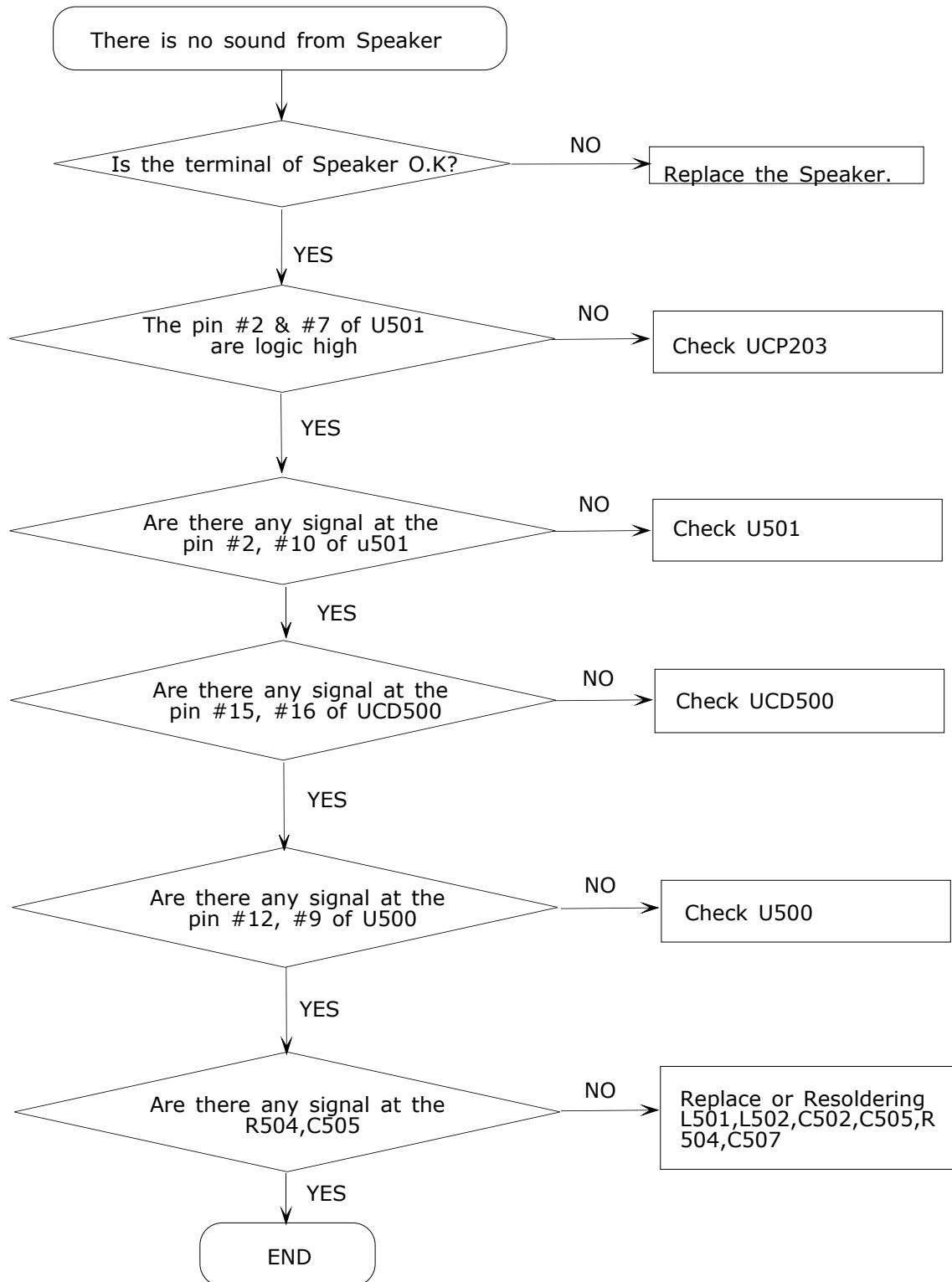
1) When you are calling

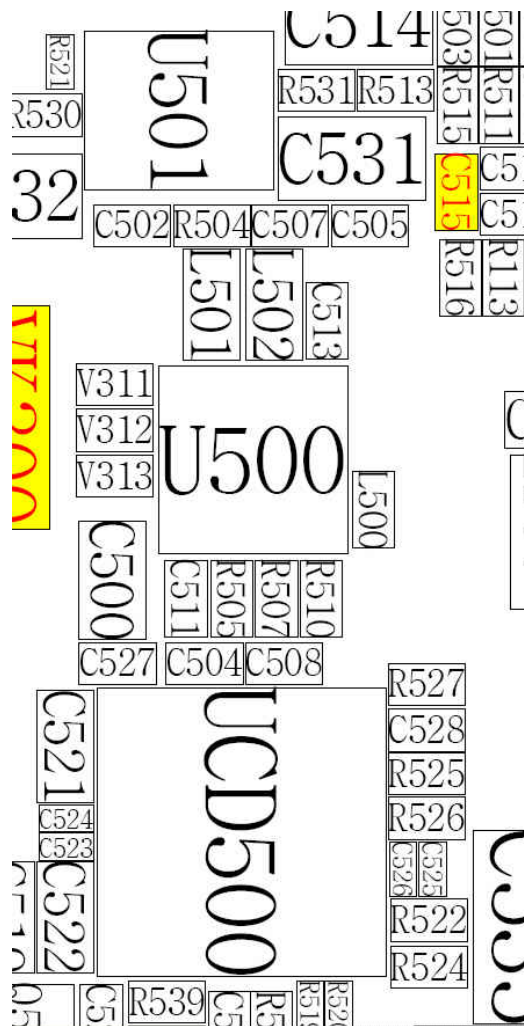
- Receiver

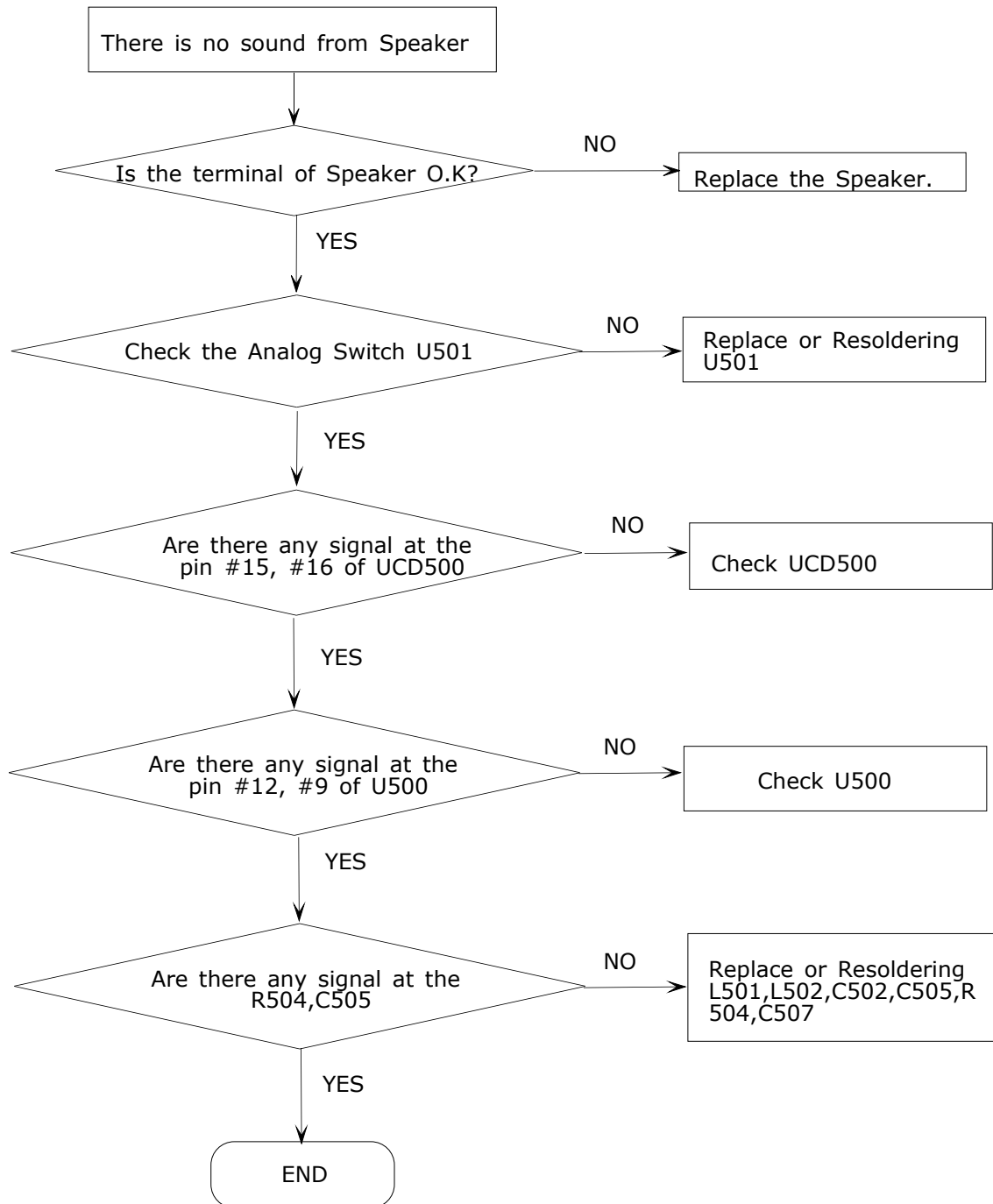


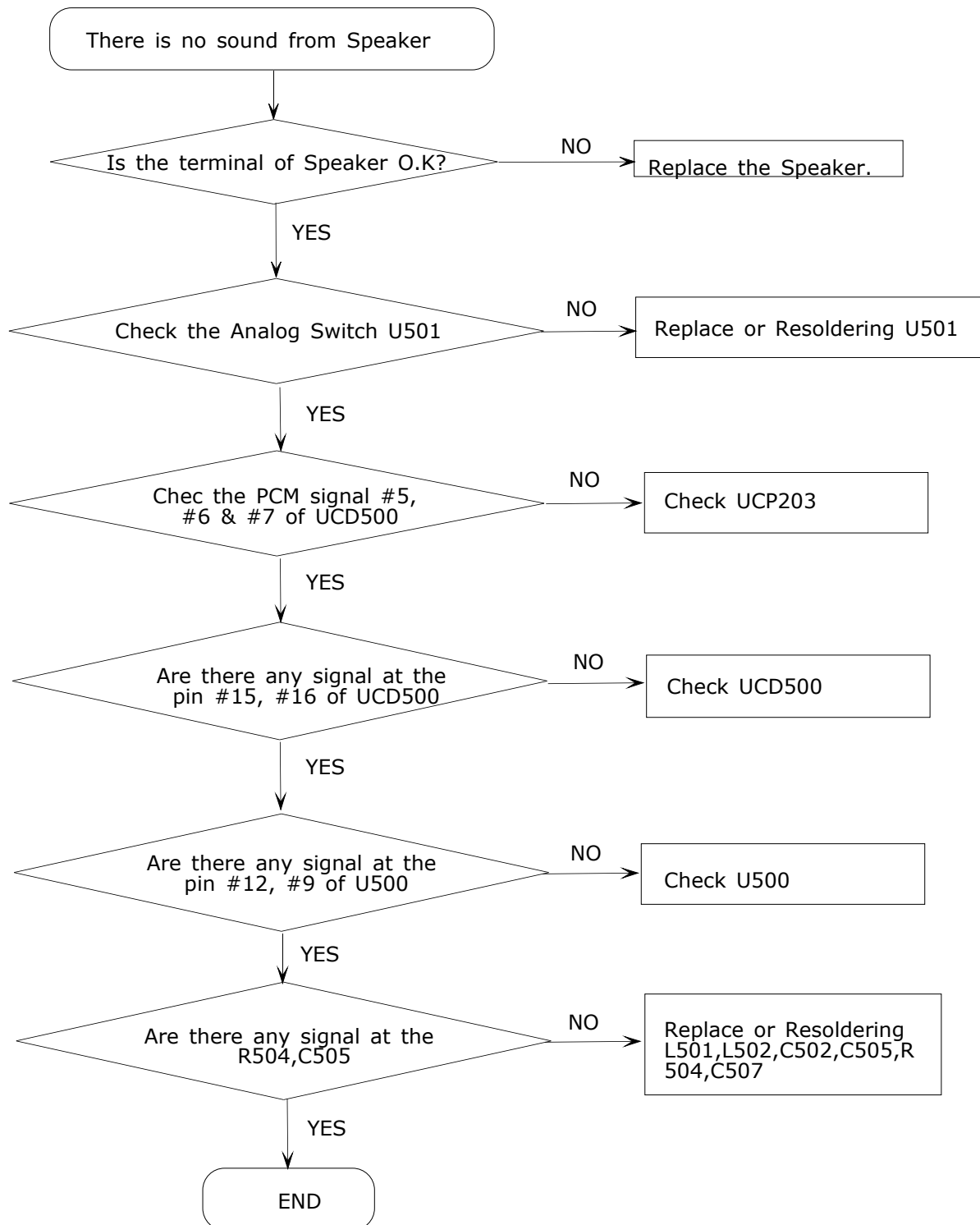


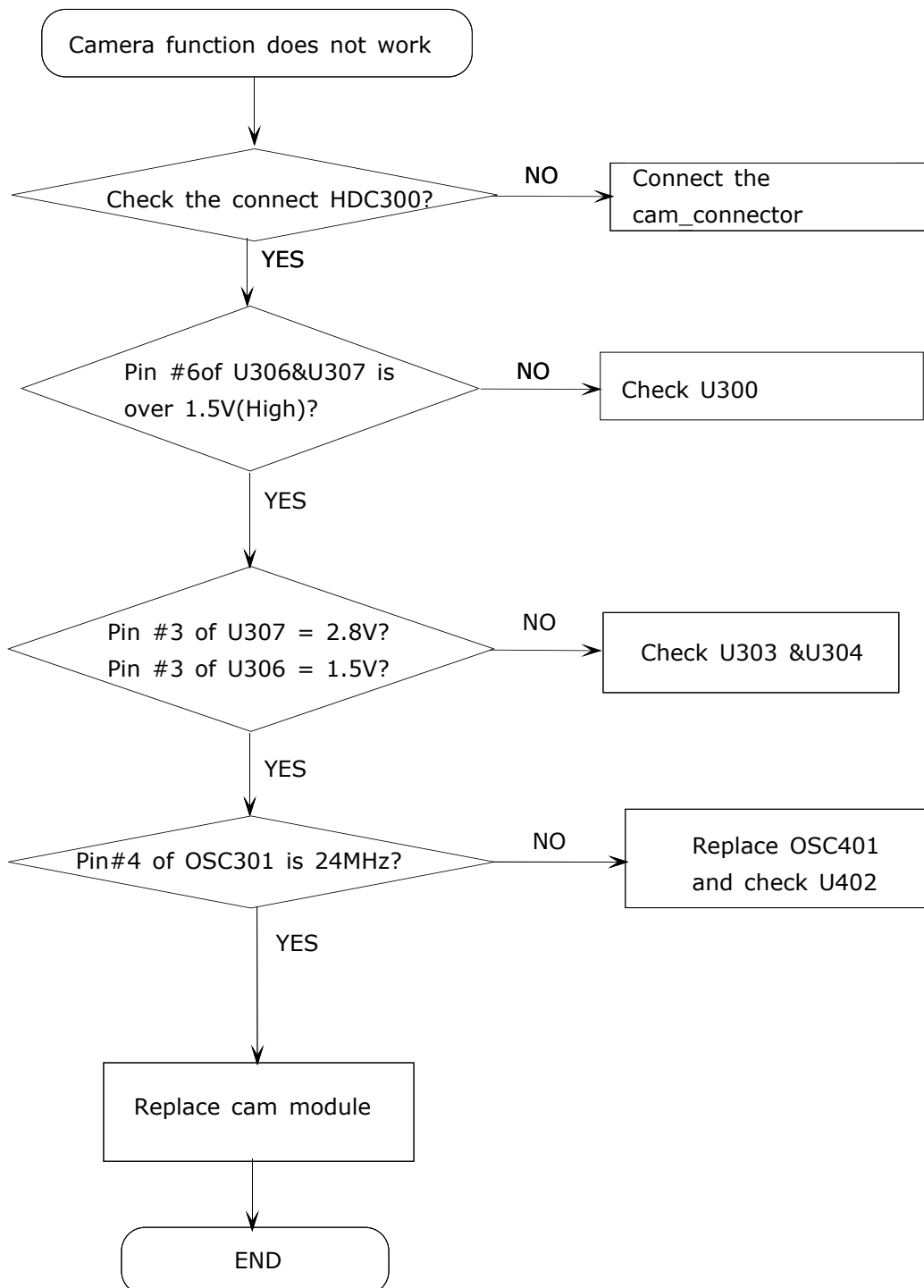
- Speaker

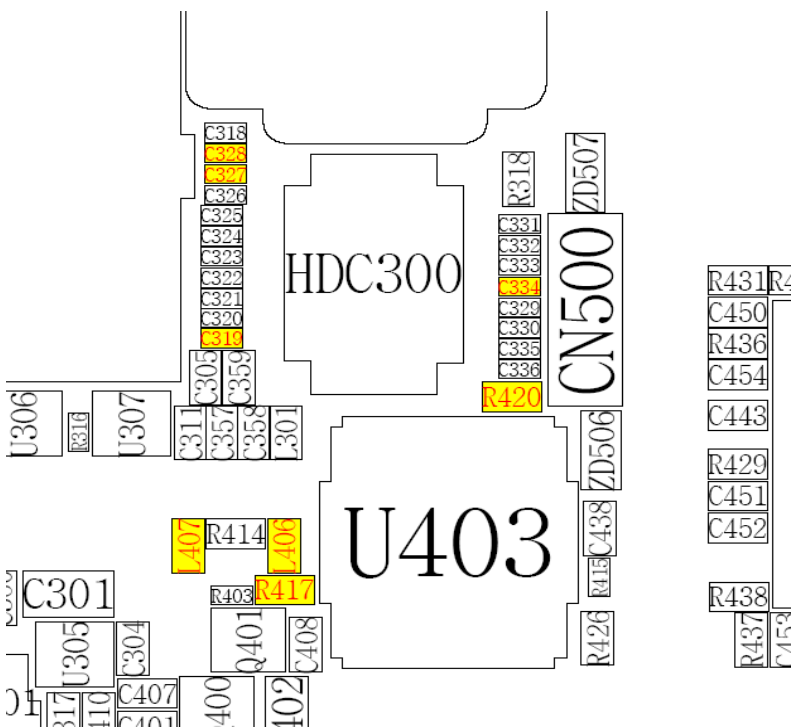
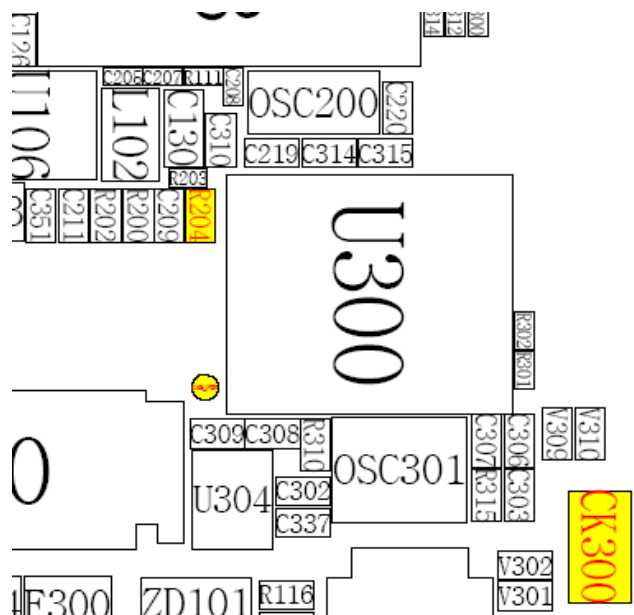


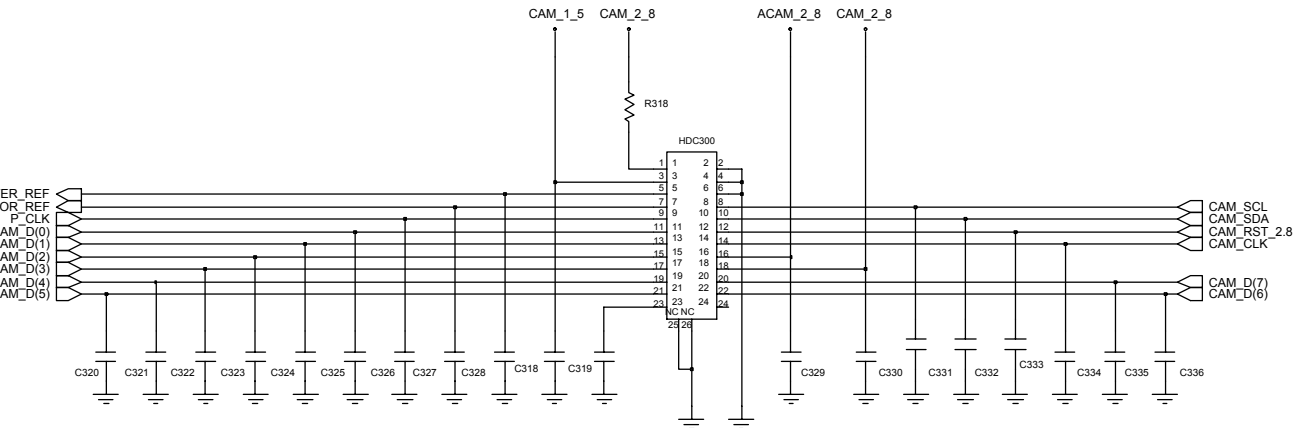


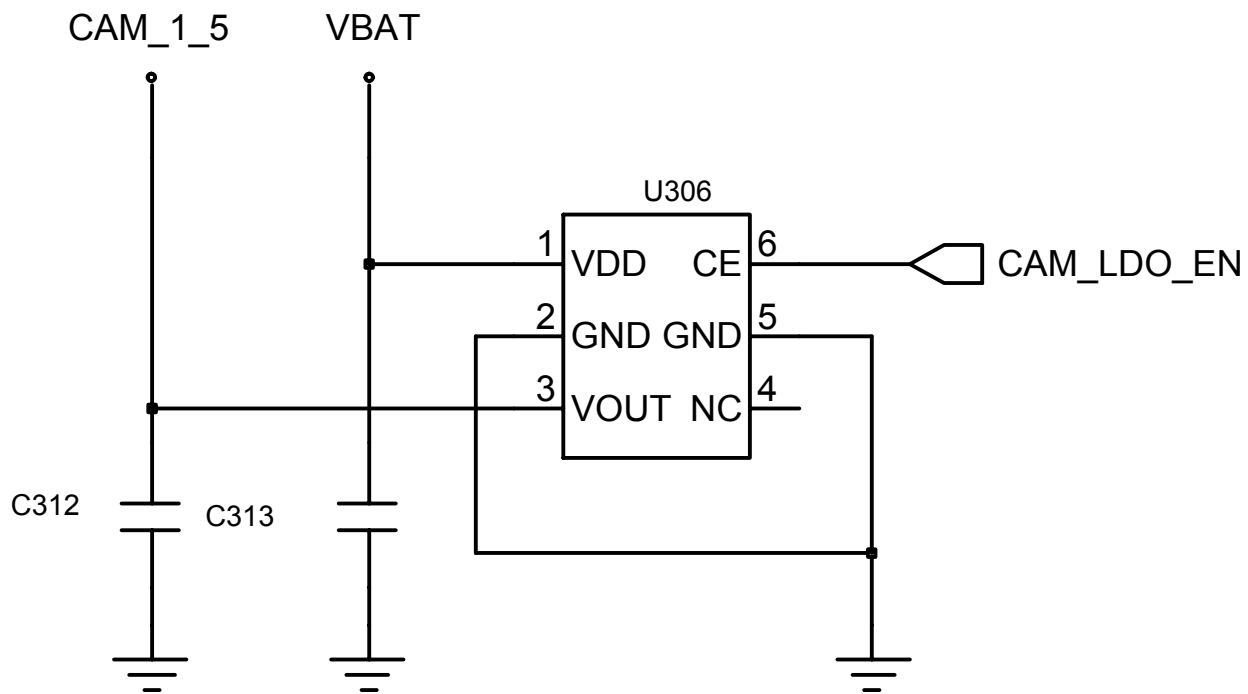
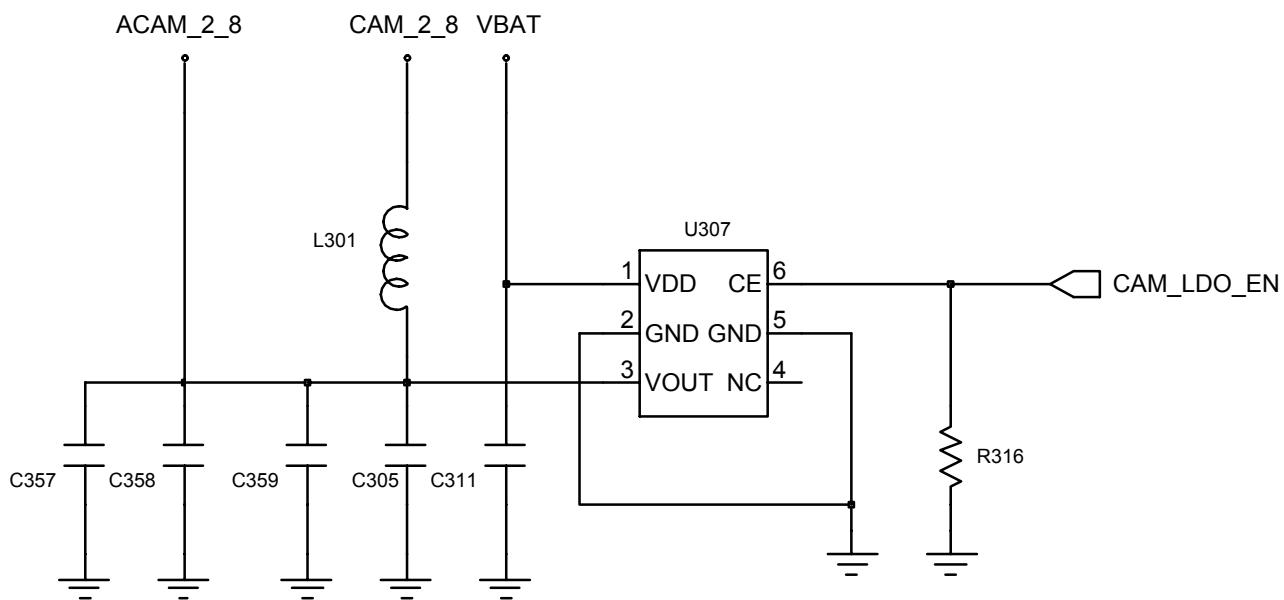
2) MP3 is not O.K.

3) Melody is not O.K.

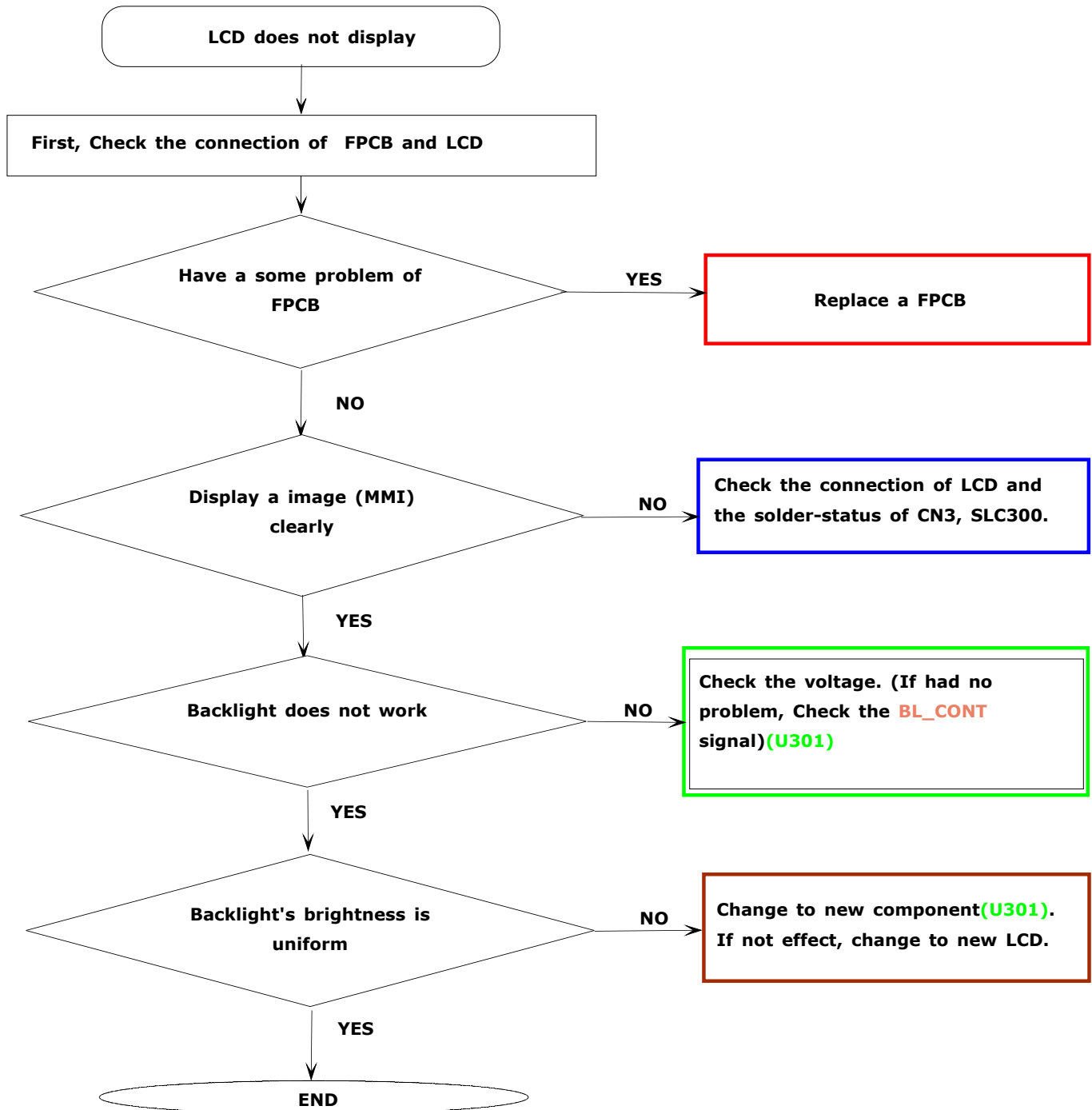
10-1-7. Camera Part

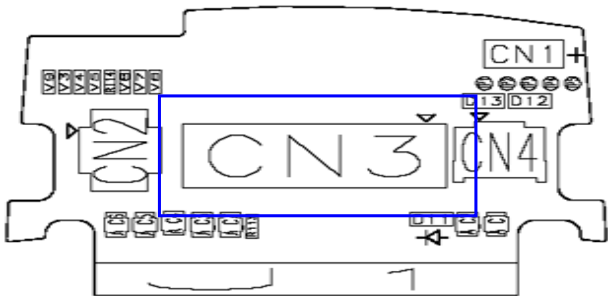
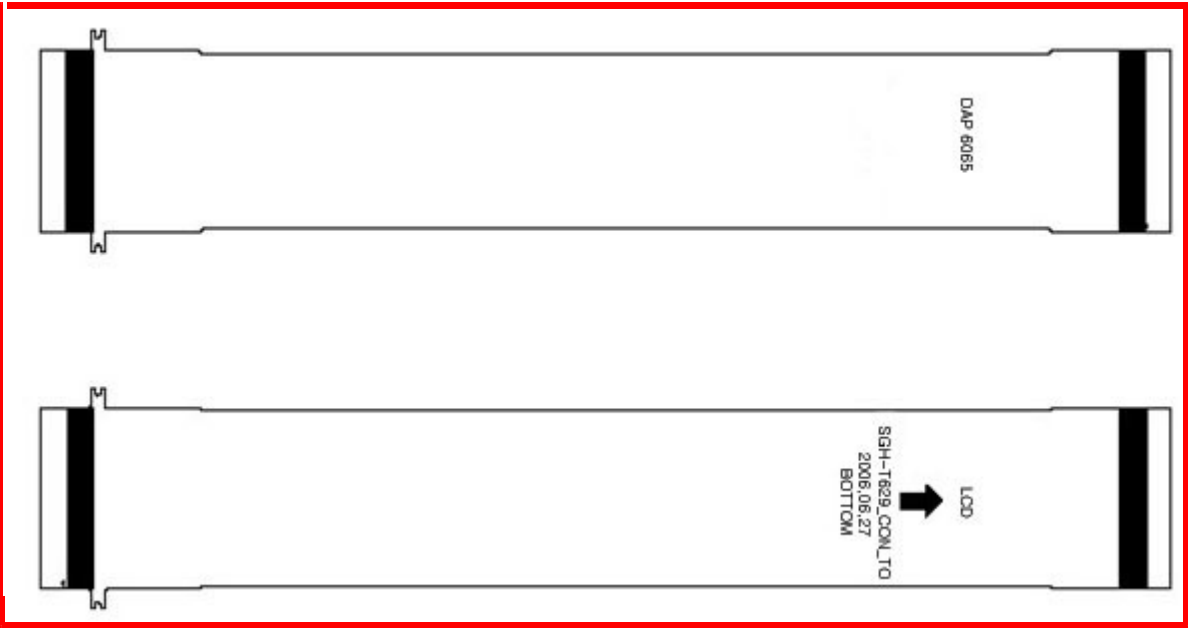


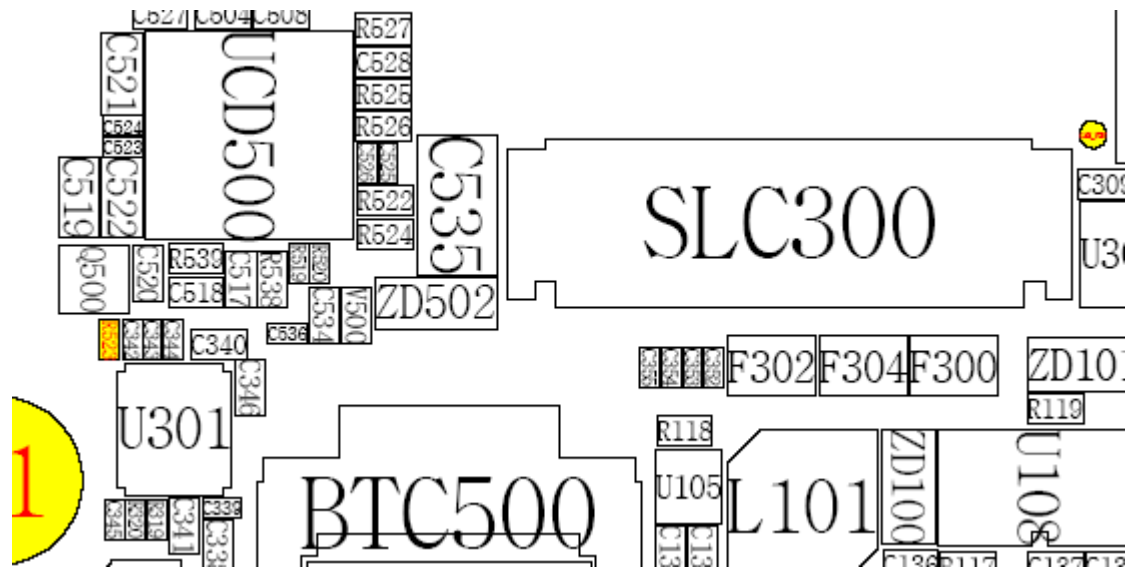


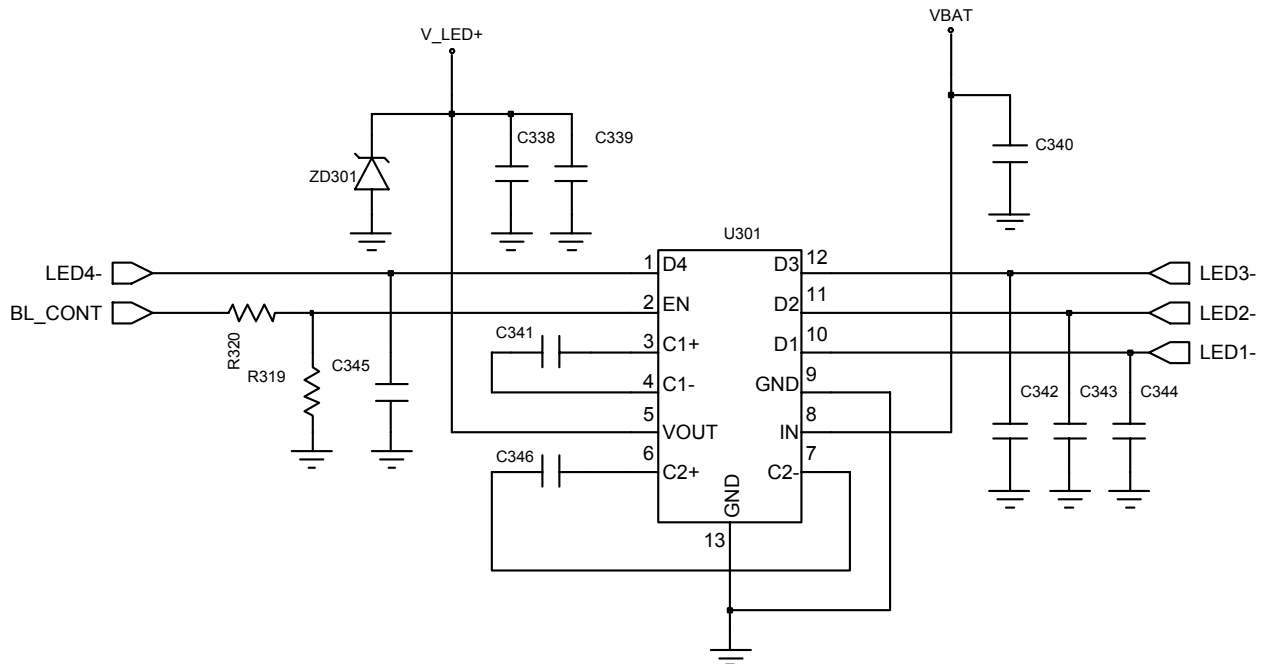
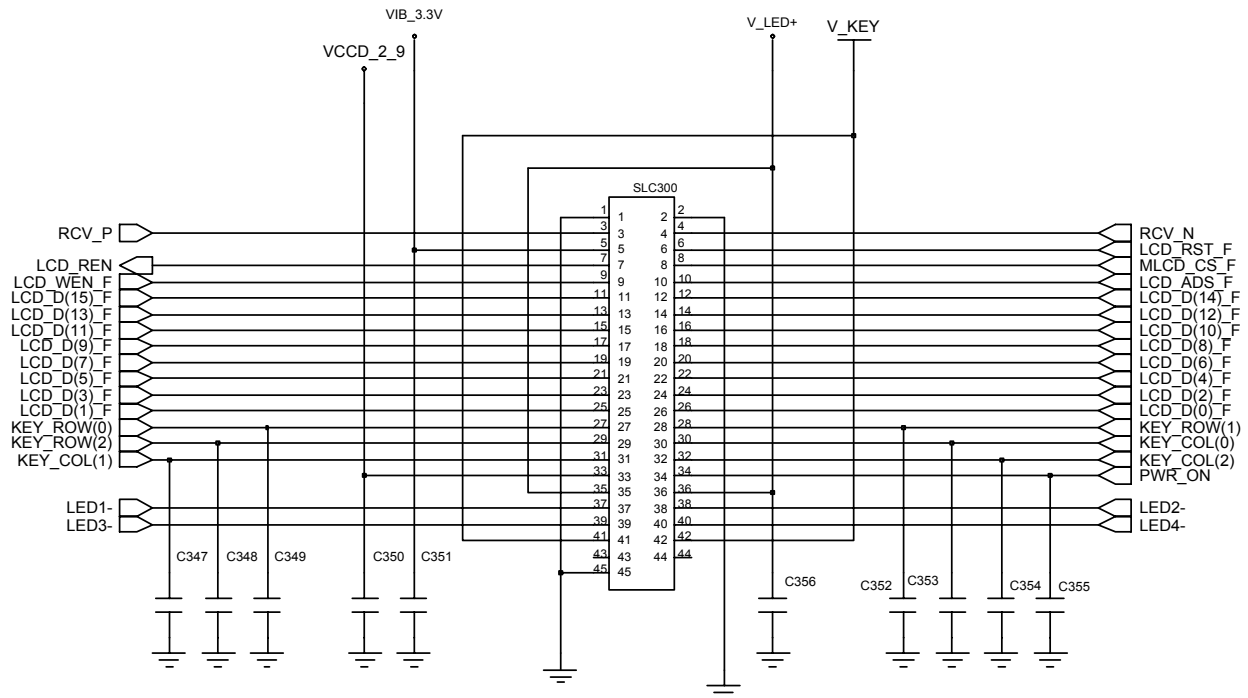


10-1-8. LCD Display



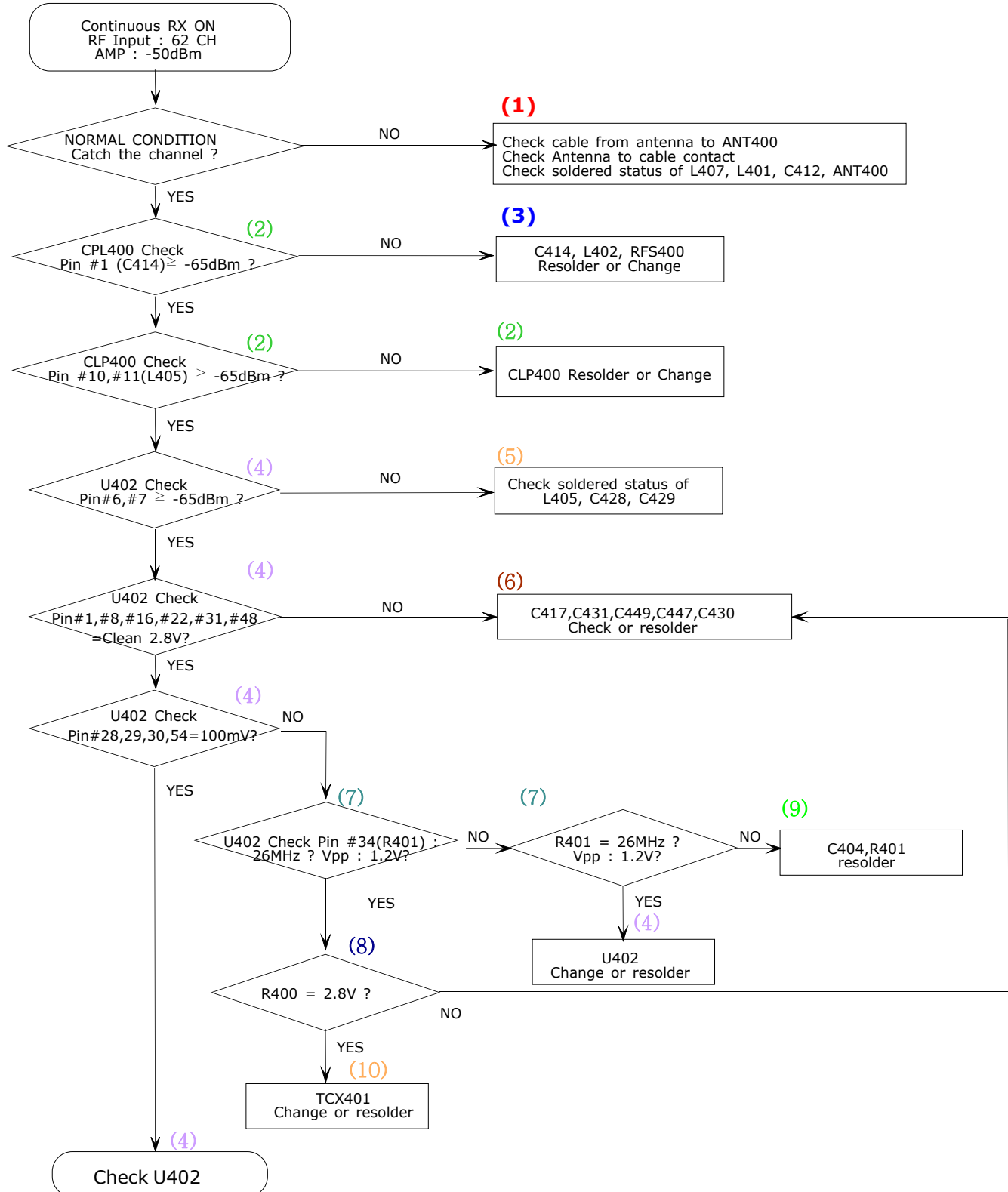


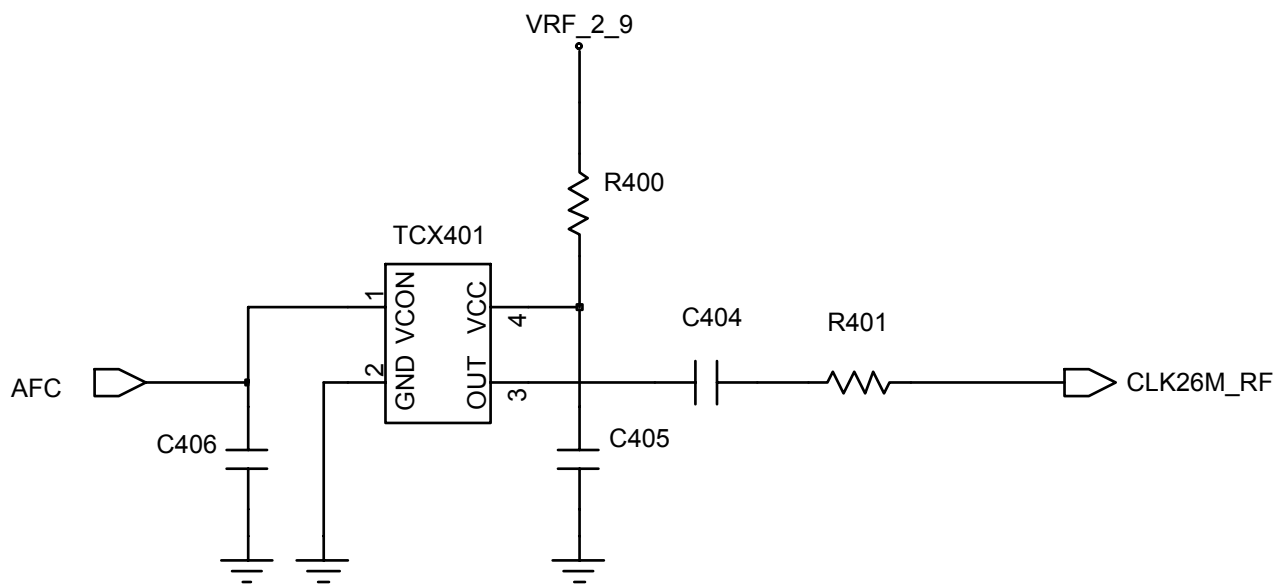
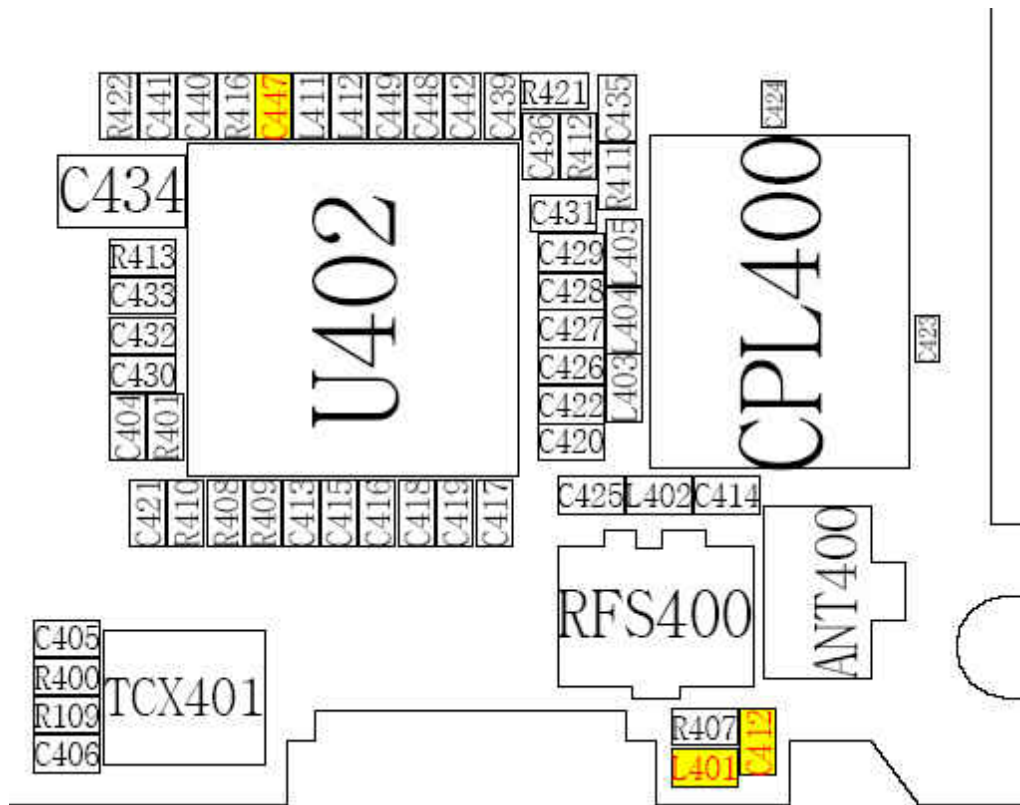


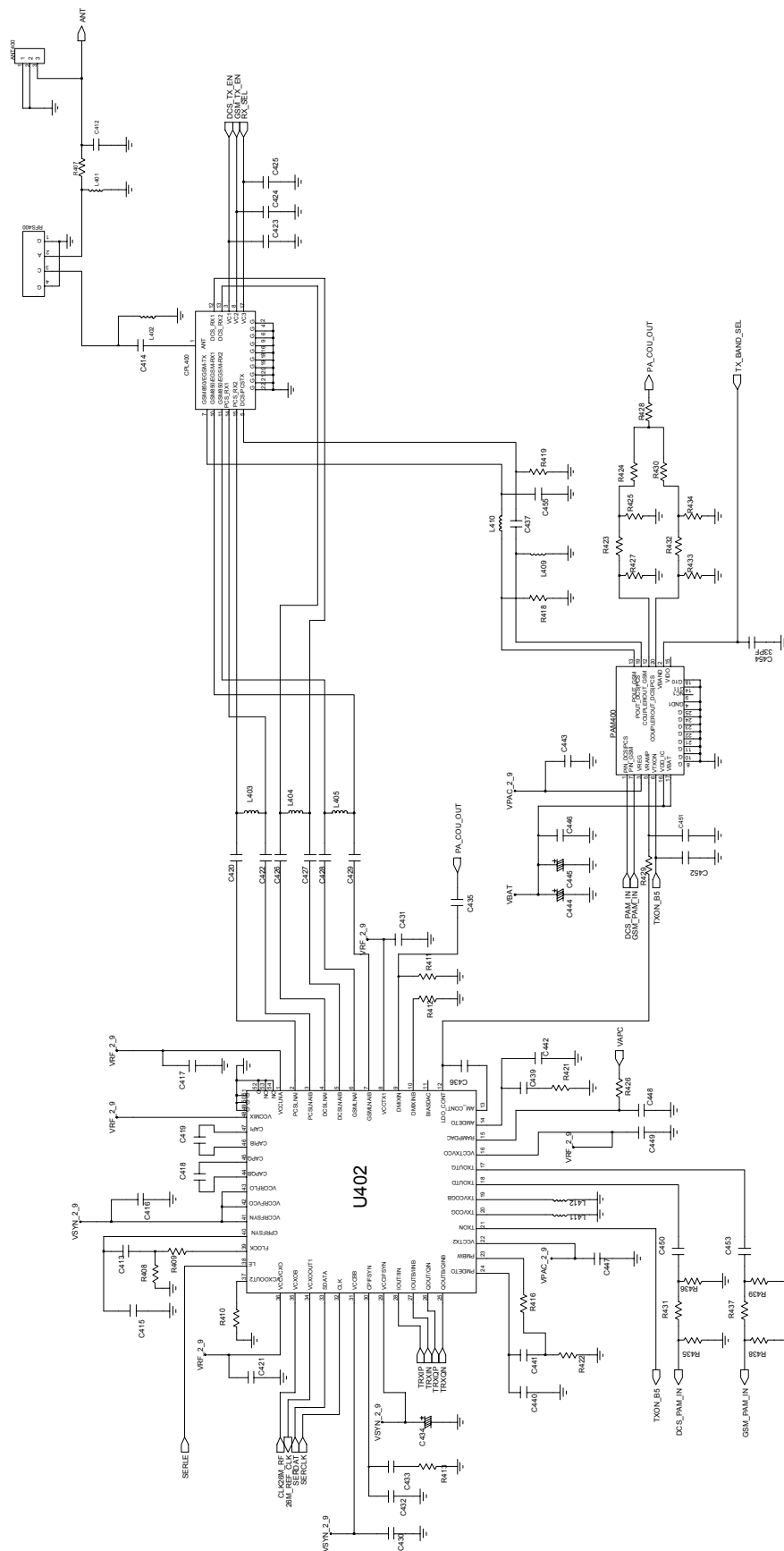


10-2.RF

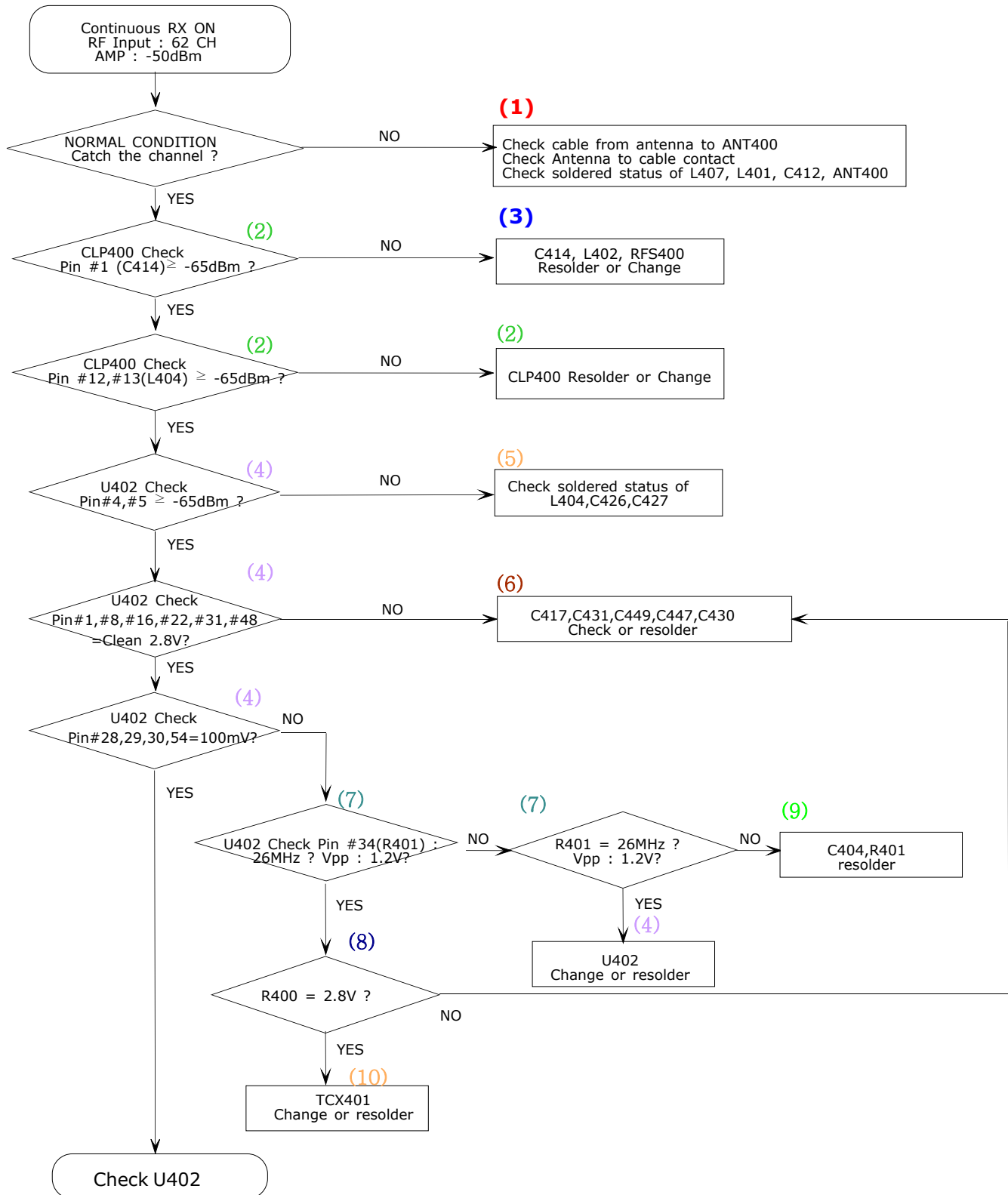
10-2-1. GSM850/GSM900 RX

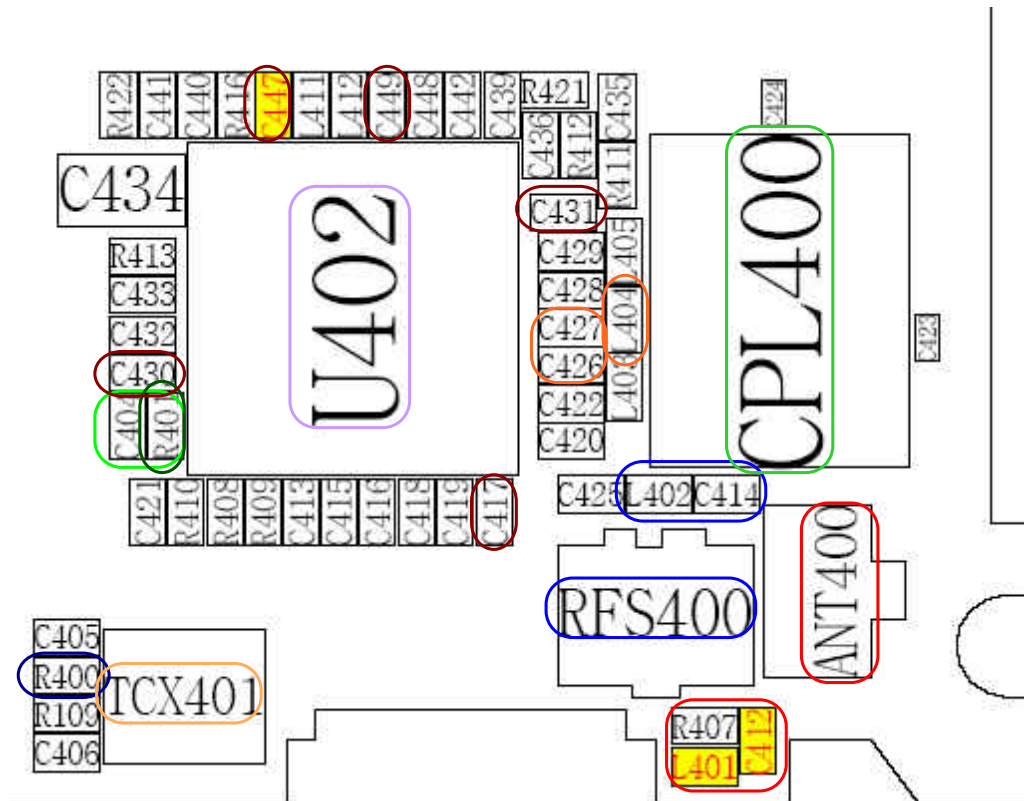




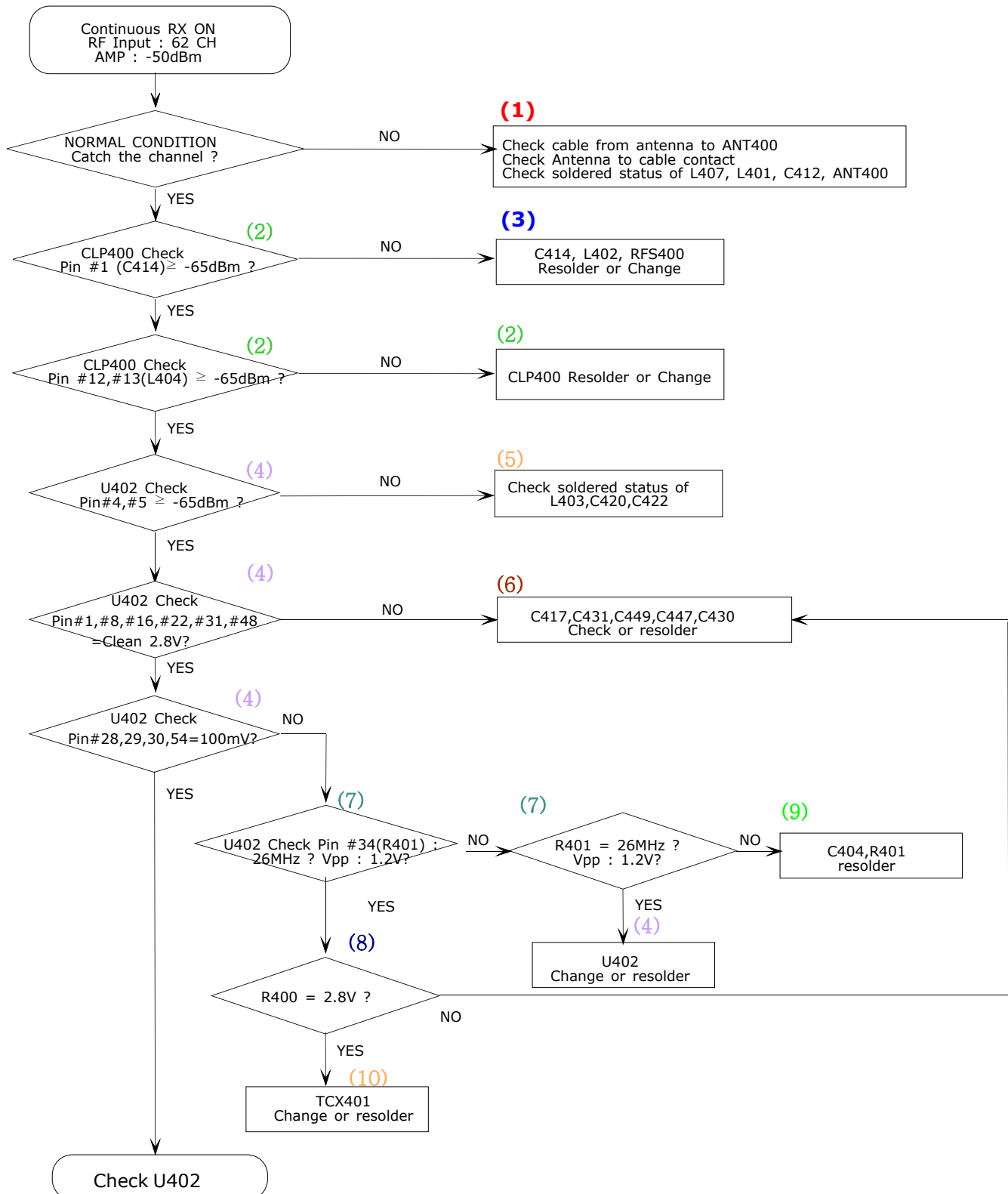


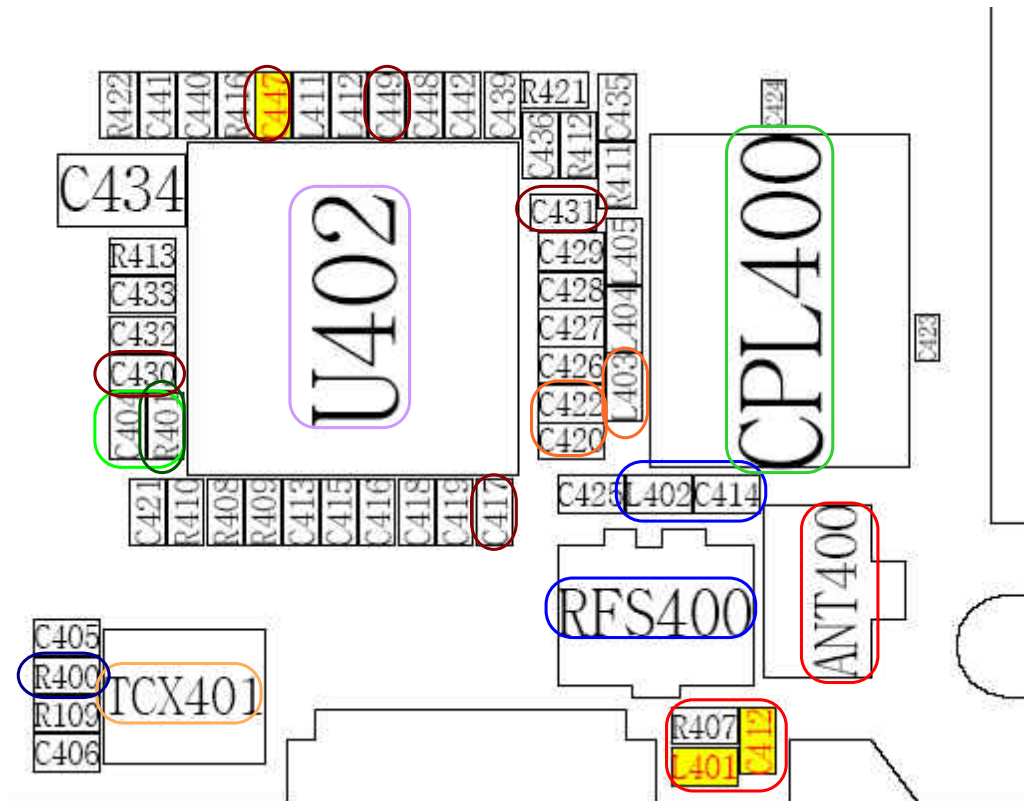
10-2-2. DCS RX

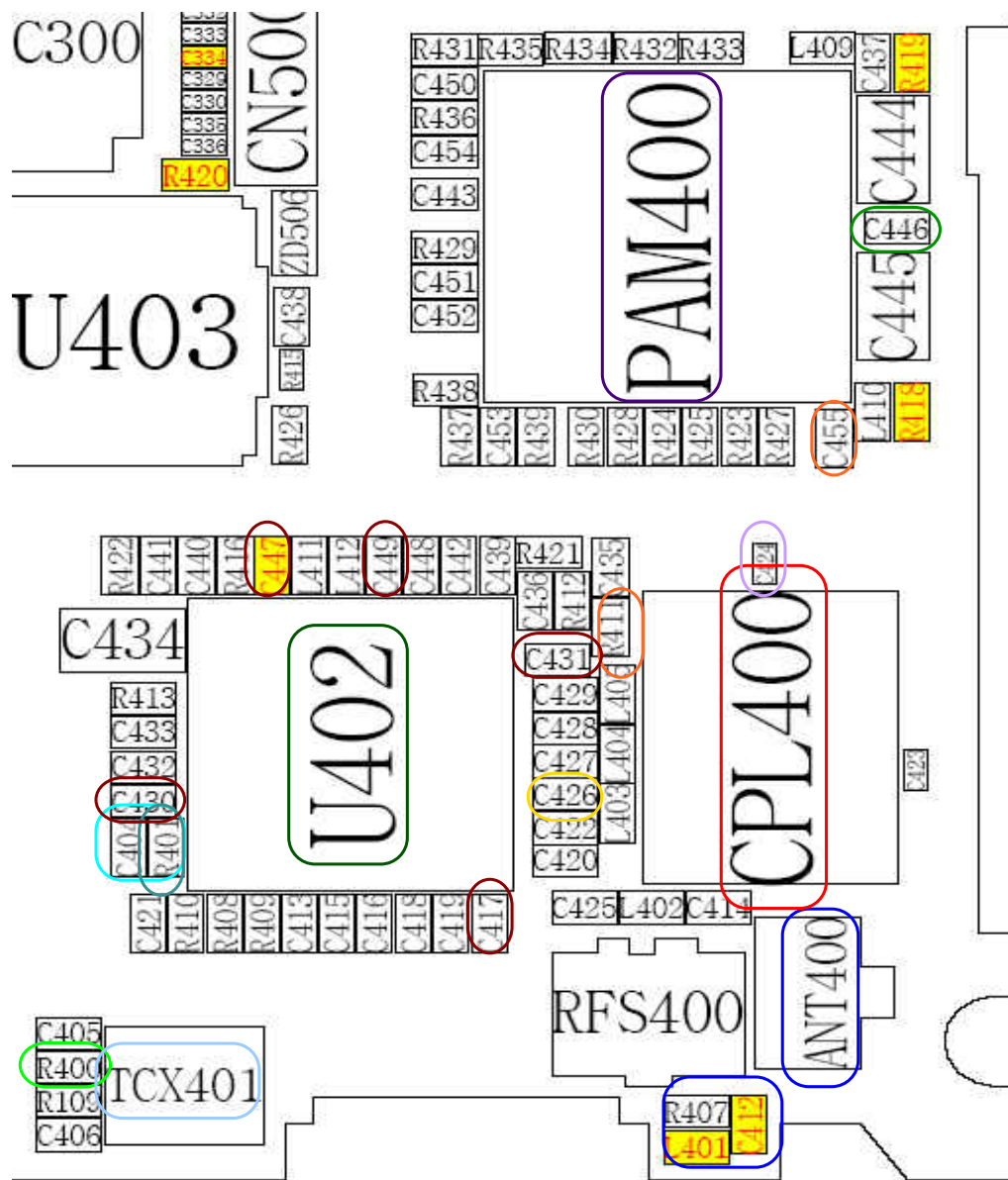


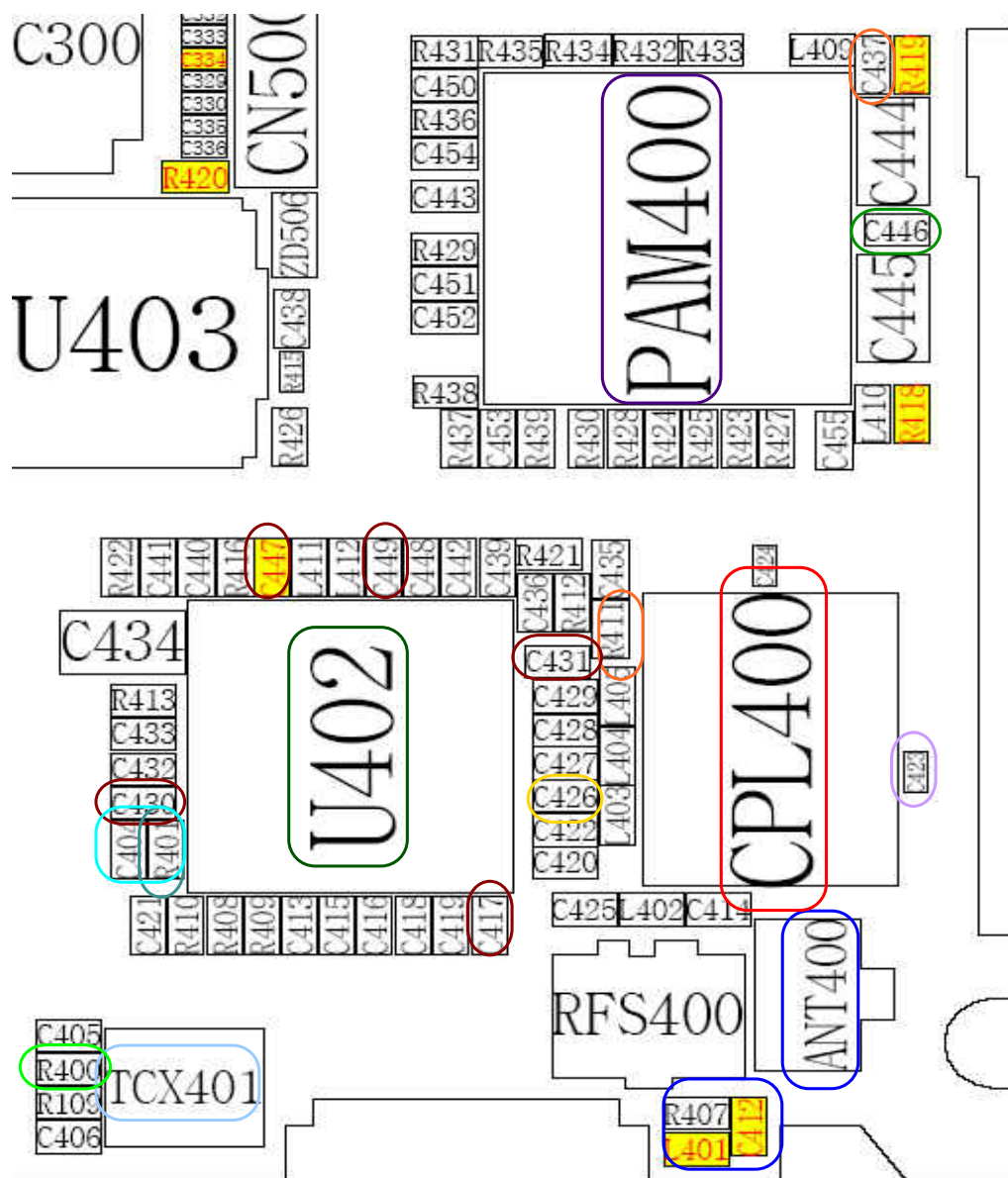


10-2-3. PCS RX

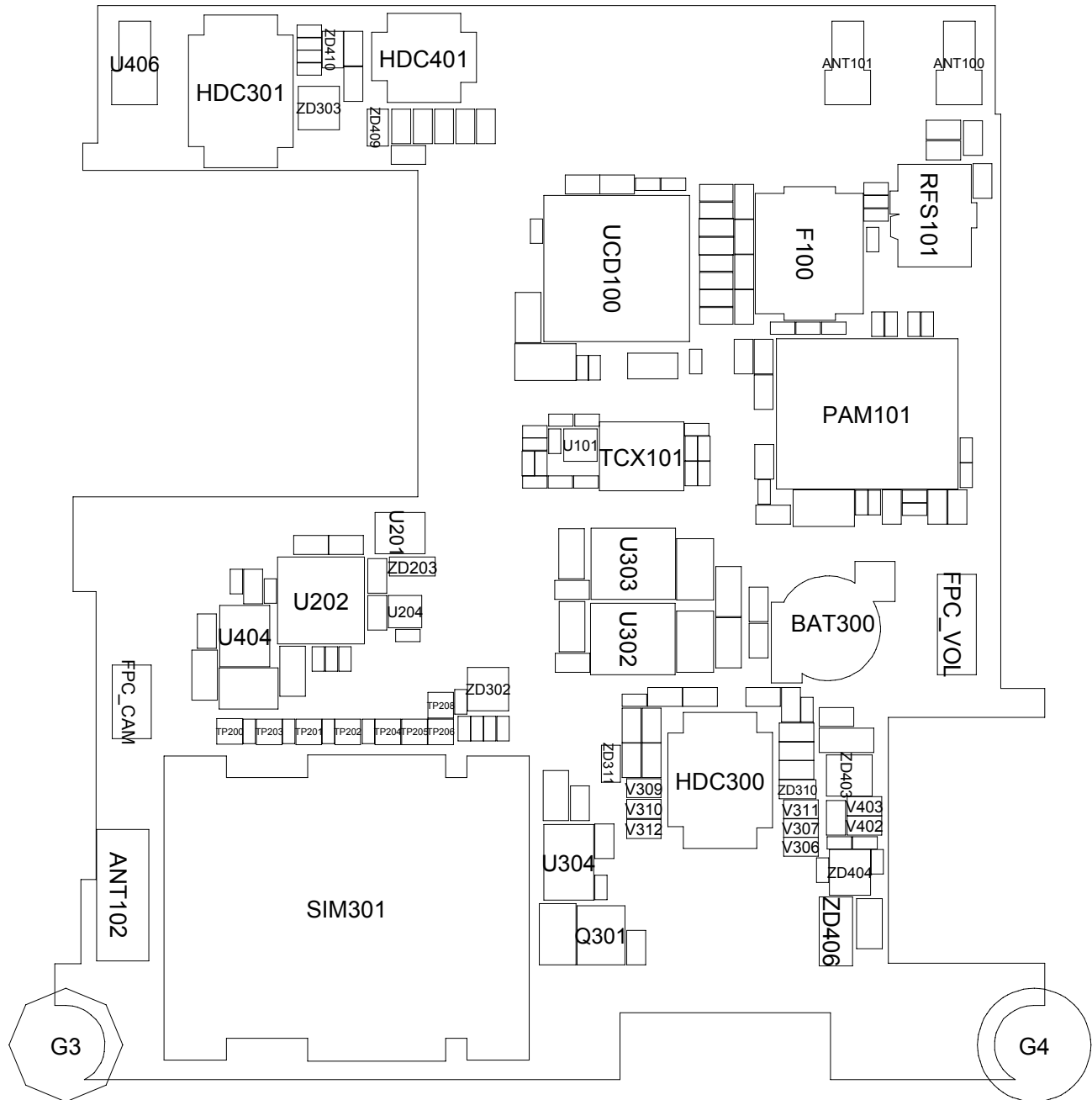


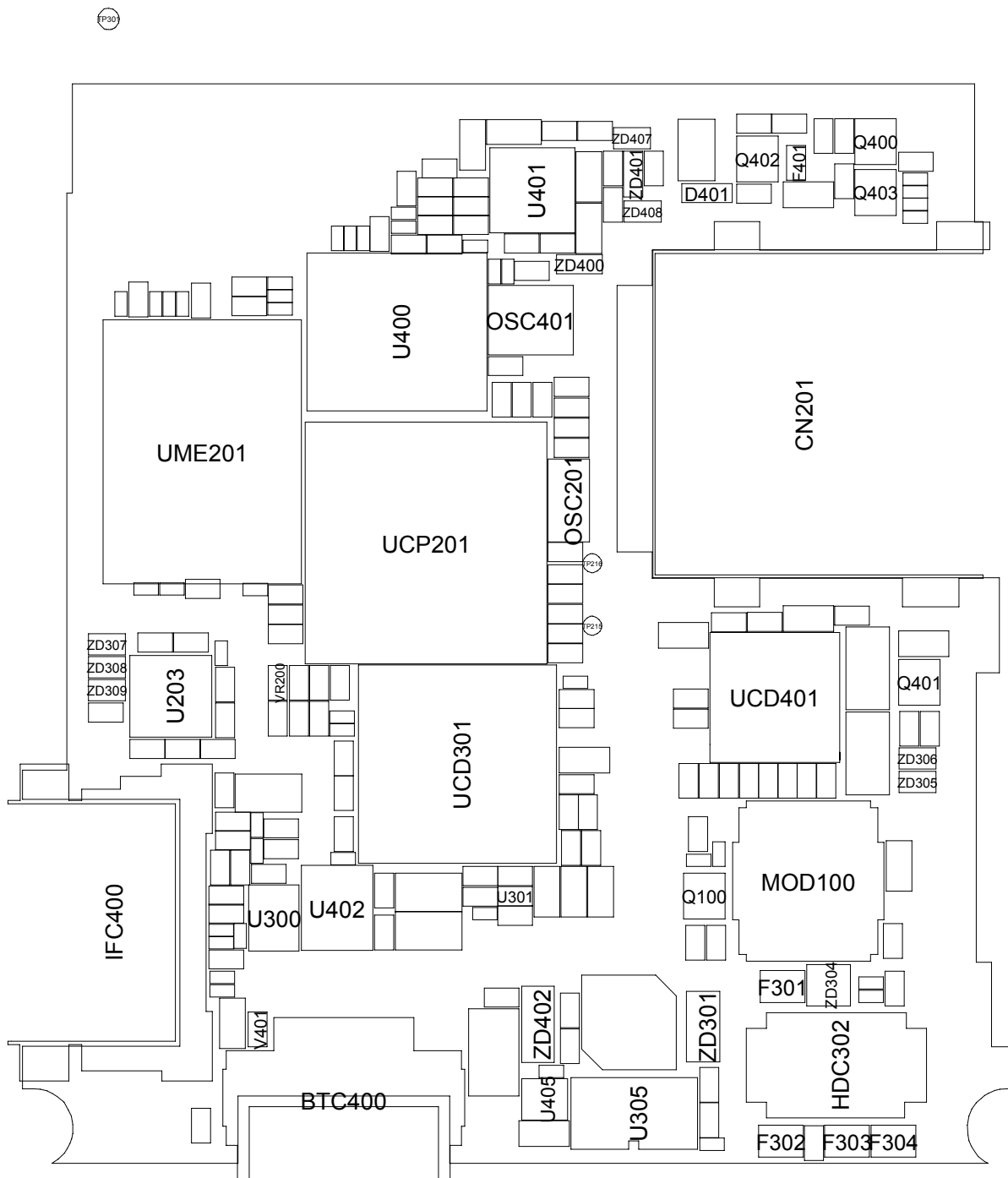




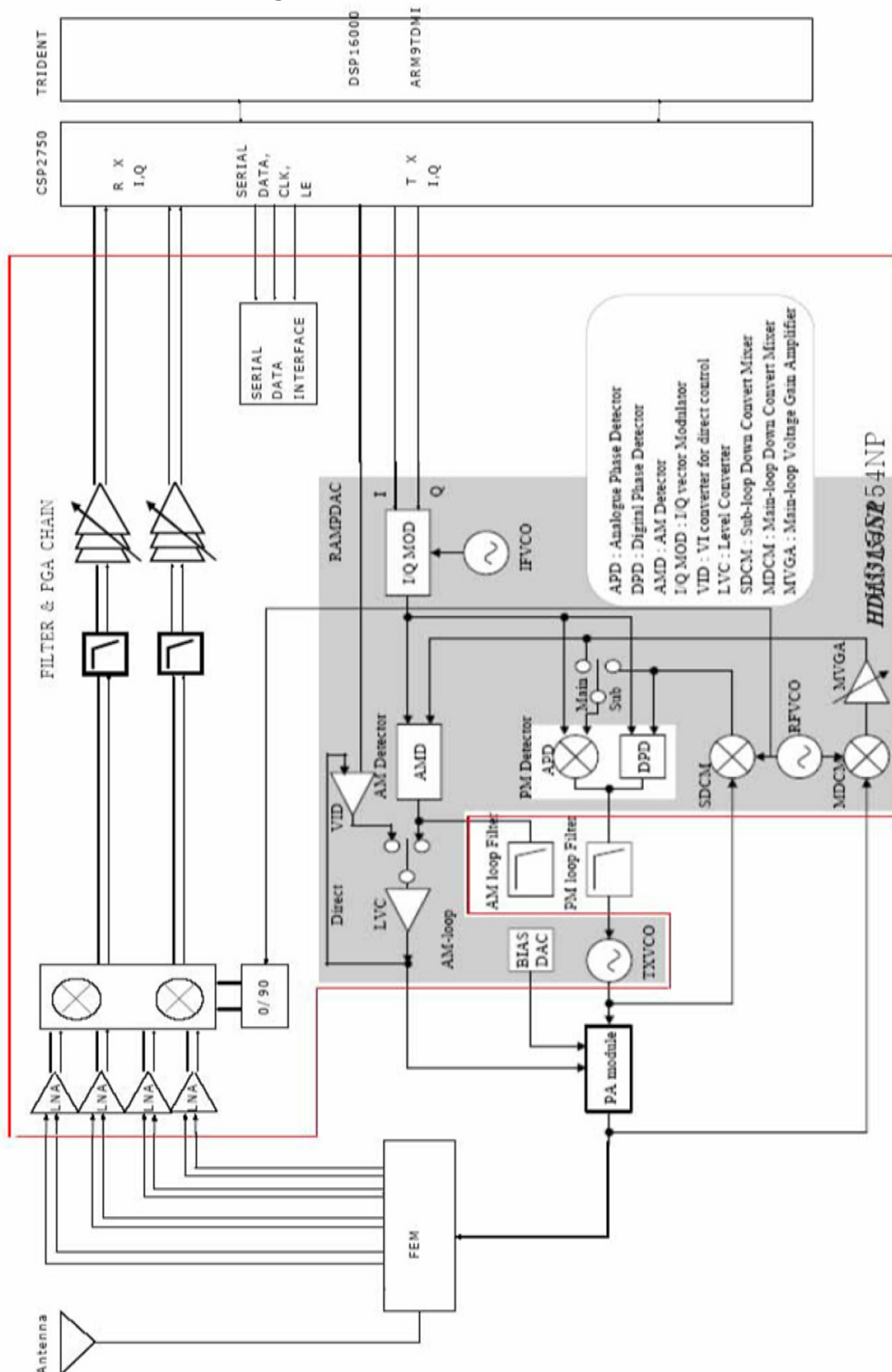


11. PCB Diagrams





12-1. RF Solution Block Diagram





13. Reference data

13-1. Reference Abbreviate

AAC: Advanced Audio Coding.

AVC : Advanced Video Coding.

BER : Bit Error Rate

BPSK: Binary Phase Shift Keying

CA : Conditional Access

CDM : Code Division Multiplexing

C/I : Carrier to Interference

DMB : Digital Multimedia Broadcasting

EN : European Standard

ES : Elementary Stream

ETSI: European Telecommunications Standards Institute

MPEG: Moving Picture Experts Group

PN : Pseudo-random Noise

PS : Pilot Symbol

QPSK: Quadrature Phase Shift Keying

RS : Reed-Solomon

SI : Service Information

TDM : Time Division Multiplexing

TS : Transport Stream