

**SAMSUNG**

# GSM TELEPHONE

## SGH-D780

# ***SERVICE*** *Manual*

### GSM TELEPHONE



### CONTENTS

1. Safety Precautions
2. Specification
3. Product Function
4. Array course control
5. Exploded View and Parts List
6. Main Electrical Parts List
7. Block Diagrams
8. PCB Diagrams
9. Flow Chart of Troubleshooting
10. Reference data
11. Disassembly and Assembly Instructions
12. Schematic Diagrams

**SAMSUNG  
ELECTRONICS**



GSPN (Global Service Partner Network)

Country	Web Site
North America	<a href="http://service.samsungportal.com">service.samsungportal.com</a>
Latin America	<a href="http://latin.samsungportal.com">latin.samsungportal.com</a>
CIS	<a href="http://cis.samsungportal.com">cis.samsungportal.com</a>
Europe	<a href="http://europe.samsungportal.com">europe.samsungportal.com</a>
China	<a href="http://china.samsungportal.com">china.samsungportal.com</a>
Asia	<a href="http://asia.samsungportal.com">asia.samsungportal.com</a>
Mideast & Africa	<a href="http://mea.samsungportal.com">mea.samsungportal.com</a>

---

# 1. Safety Precautions

---

## 1-1. Repair Precaution

- Repair in Shield Box, during detailed tuning.  
Take specially care of tuning or test, because specificity 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. Specification

---

### 2-1. GSM General Specification

	<b>GSM900 Phase 1</b>	<b>EGSM 900 Phase 2</b>	<b>DCS1800 Phase 1</b>	<b>PCS1900</b>
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~5dBm	33dBm~5dBm	30dBm~0dBm	30dBm~0dBm
Power Class	5pcl ~ 19pcl	5pcl ~ 19pcl	0pcl ~ 15pcl	0pcl ~ 15pcl
Sensitivity	-102dBm	-102dBm	-100dBm	-100dBm
TDMA Mux	8	8	8	8
Cell Radius	35Km	35Km	2Km	

**\*PCS1900 only in Master**

## 2-2. GSM TX power class

TX Power control level	GSM900 GSM850	TX Power control level	DCS1800	TX Power control level	PCS1900
5	33±2 dBm	0	30±2 dBm	0	30±2 dBm
6	31±3 dBm	1	28±3 dBm	1	28±3 dBm
7	29±3 dBm	2	26±3 dBm	2	26±3 dBm
8	27±3 dBm	3	24±3 dBm	3	24±3 dBm
9	25±3 dBm	4	22±3 dBm	4	22±3 dBm
10	23±3 dBm	5	20±3 dBm	5	20±3 dBm
11	21±3 dBm	6	18±3 dBm	6	18±3 dBm
12	19±3 dBm	7	16±3 dBm	7	16±3 dBm
13	17±3 dBm	8	14±3 dBm	8	14±3 dBm
14	15±3 dBm	9	12±4 dBm	9	12±4 dBm
15	13±3 dBm	10	10±4 dBm	10	10±4 dBm
16	11±5 dBm	11	8±4dBm	11	8±4dBm
17	9±5 dBm	12	6±4 dBm	12	6±4 dBm
18	7±5 dBm	13	4±4 dBm	13	4±4 dBm
19	5±5 dBm	14	2±5 dBm	14	2±5 dBm
		15	0±5 dBm	15	0±5 dBm

**\*PCS1900 only in Master**

## 2-3. GSM EDGE TX power class

Only in Master

TX Power control level	GSM900 GSM850	TX Power control level	DCS1800	TX Power control level	PCS1900
8	27±3 dBm	2	26 -4/+3 dBm	2	26 -4/+3 dBm
9	25±3 dBm	3	24±3 dBm	3	24±3 dBm
10	23±3 dBm	4	22±3 dBm	4	22±3 dBm
11	21±3 dBm	5	20±3 dBm	5	20±3 dBm
12	19±3 dBm	6	18±3 dBm	6	18±3 dBm
13	17±3 dBm	7	16±3 dBm	7	16±3 dBm
14	15±3 dBm	8	12±3 dBm	8	12±3 dBm
15	13±3 dBm	9	10±3 dBm	9	10±3 dBm
16	11±5 dBm	10	14±3 dBm	10	14±3 dBm
17	9±5 dBm	11	12±4 dBm	11	12±4 dBm
18	7±5 dBm	12	10±4 dBm	12	10±4 dBm
19	5±5 dBm	13	8±4dBm	13	8±4dBm
		14	6±4 dBm	14	6±4 dBm
		15	4±4 dBm	15	4±4 dBm





---

### 3. Operation Instruction and Installation

---

#### Main Function

- Bar Design Intenna
- Dual Standby
- 2M CMOS Camera
- Bluetooth V.2.0
- Stereo Bluetooth Headset
- Mobile Tracker & SOS Messaging
- 2.1" QVGA 262K TFT Display
- EXT. Memory
- SMS / MMS / E-Mail
- WAP 2.0 / Java MIDP 2.0
- MP3, AAC, MP4, 3GPP Decoding
- Video Recording and Messaging
- GSM/GPRS/EDGE Class 10
- Band(Master : GSM900, 1800, 1900/ Slave : GSM900, 1800)
- FM radio
- Speaker Phone



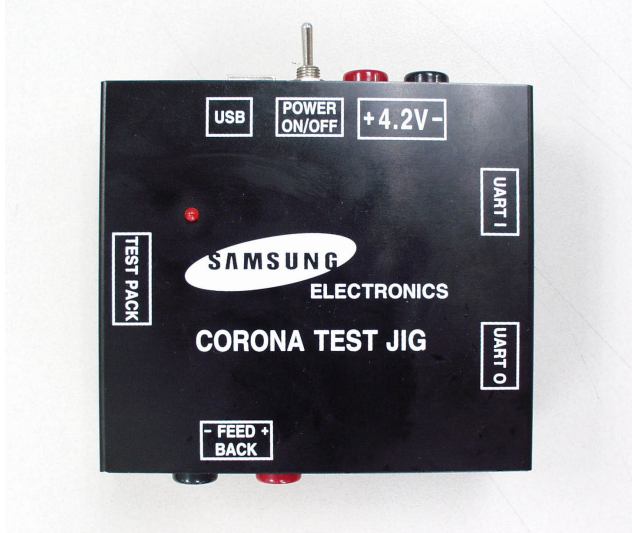
---

## 4. Array course control

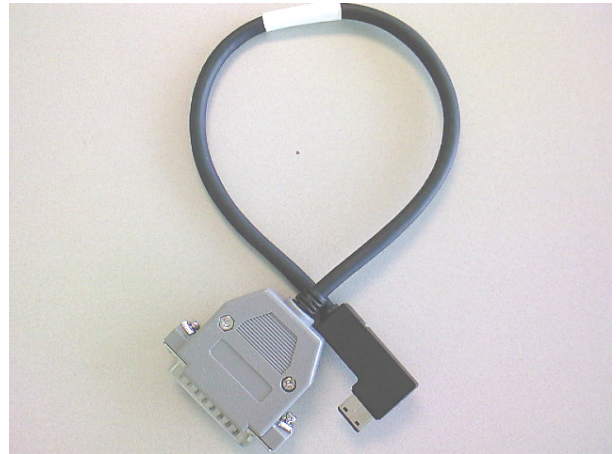
---

### 4-1. Software Adjustments

Test Jig (GH80-03306A)



Test Cable (GH39-00838A)



Test Cable (GH39-00397A)



Test Cable (GH39-00877A)



## 4-2. Software Downloading

### 4-2-1. Pre-requisite for Downloading

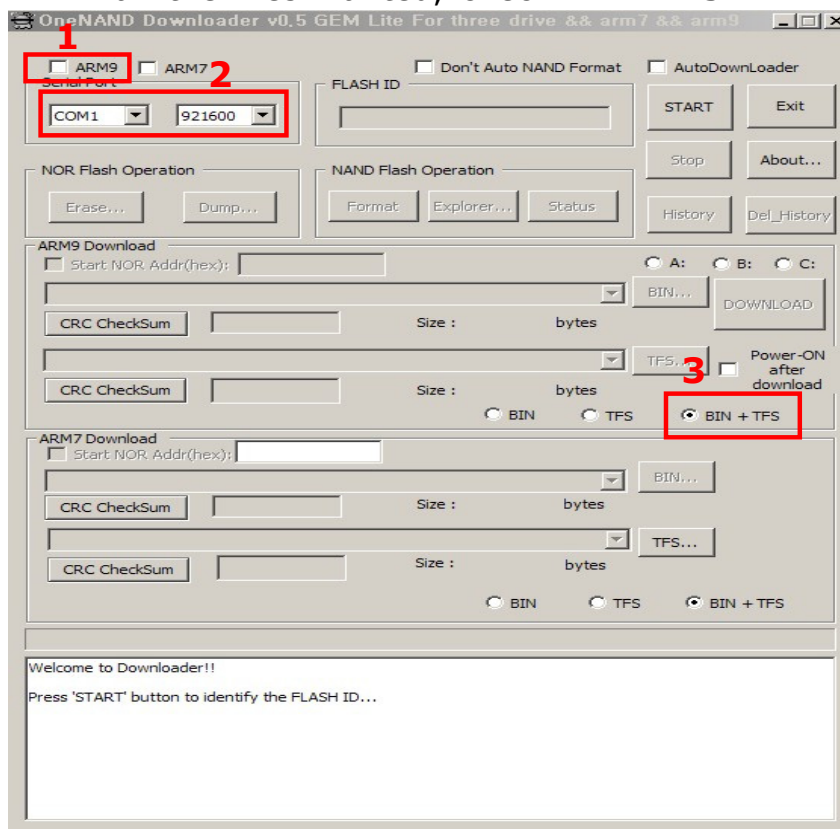
- Downloader Program([OneNAND\\_Downloader\\_v0.5\\_GEM\\_Lite\\_For\\_three\\_drive\\_arm7\\_arm9.exe](#))
- D780 Mobile Phone
- Data Cable
- Binary file, TFS file

### 4-2-2. S/W Downloader Program

■ Load the binary download program by executing the

["OneNAND\\_Downloader\\_v0.5\\_GEM\\_Lite\\_For\\_three\\_drive\\_arm7\\_arm9.exe"](#)

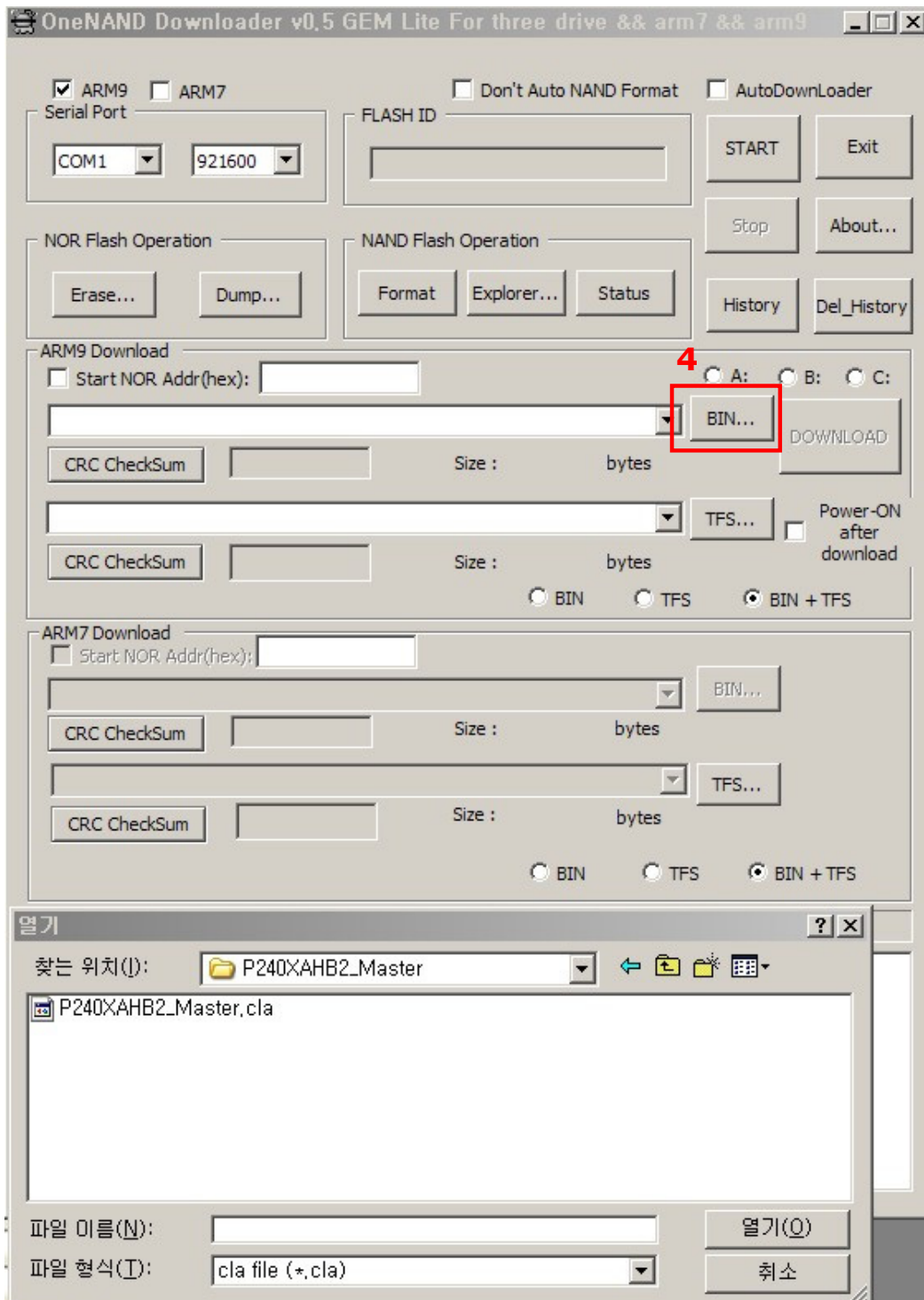
1. Select the download mode you want.
  - if Master mode wanted, check ARM9
  - if Slave mode wanted, check ARM7
2. Select the connected serial port and the rate of speed
3. Select the check box, the mode you want to download.
  - if the binary file wanted, check only 'BIN'
  - if the tfs file wanted, check only 'TFS'
  - if all the files wanted, check 'BIN+TFS'



#### 4. Select the file(s) what you want to download

-if you select ARM9, select the file "D780ooooo\_Master.ooo"

-if you select ARM7, select the file "D780ooooo\_Slave.ooo"



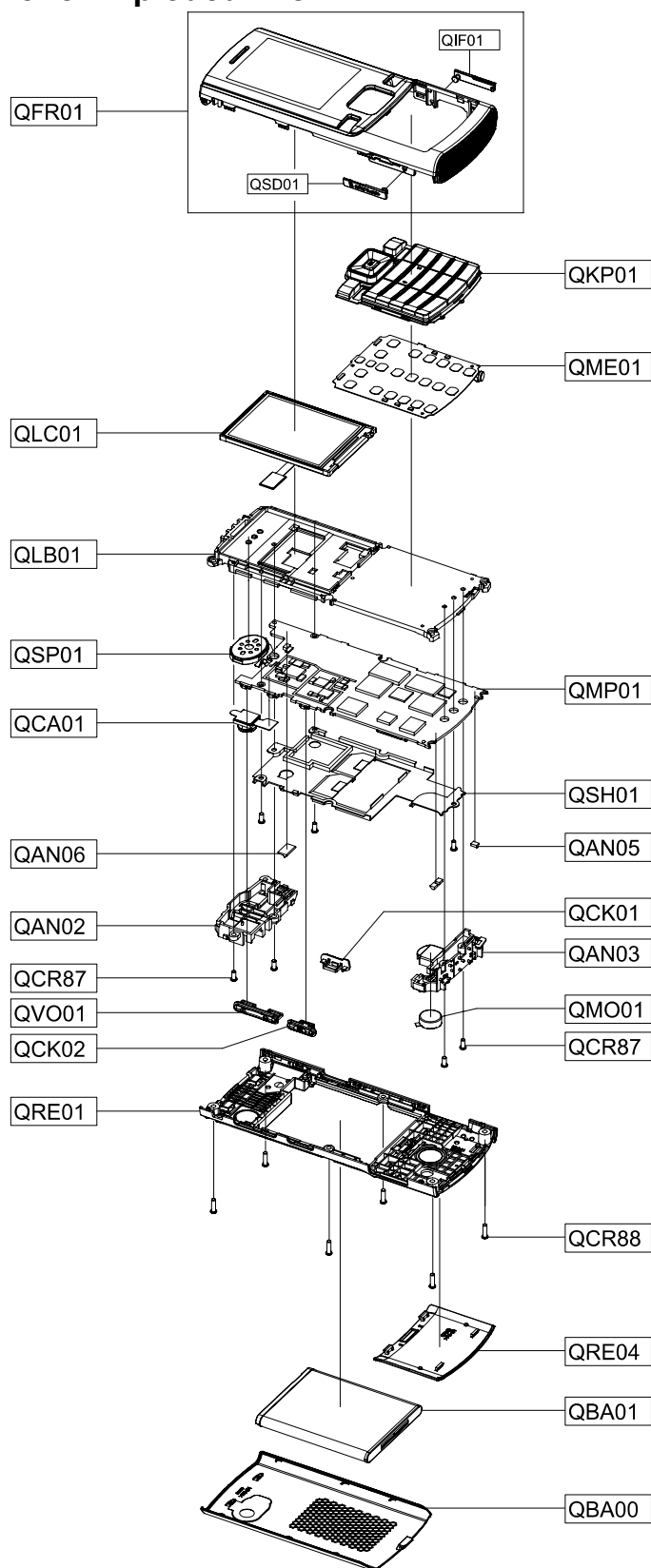


---

## 5. Exploded View and Parts List

---

### 5-1. Cellular phone Exploded View



## 5-2. Cellular phone Parts List

Design LOC		Description	SEC CODE
QAN02		ANTENNA-SGHP240 UPPER	GH42-01546A
QAN03		ANTENNA-SGHP240 LOWER	GH42-01545A
QAN05		ASSY RUBBER-ANTENNA	GH98-01592A
QAN06		ASSY RUBBER-ANTENNA CONTACT	GH98-04988A
QBA00		ASSY COVER-BATTERY	GH98-07965A
QBA01		INNER BATTERY PACK-1200MAH,BLK	GH43-02986A
QCA01		CAMERA MODULE-SGH P240	GH59-05590A
QCK01		PMO KEY-CAMERA	GH72-47114A
QCK02		PMO KEY-SWITCH	GH72-47115A
QCR87		SCREW-TAPPING	6002-001412
QCR87		SCREW-TAPPING	6002-001412
QCR88		SCREW-TAPPING	6002-001409
QKP01		ASSY KEYPAD-(SER/SIL)	GH98-07966A
QLB01		ASSY BRACKET-LCD	GH98-08200A
QLC01		LCD-SGH P240MODULE	GH07-01270A
QME01		KEY FPCB-MAIN KEY PBA(P240)	GH59-05594A
QMO01		MOTOR DC-SGH P240	GH31-00434A
QMP01		PBA MAIN-SGH_D780	GH92-04611A
QRE01		ASSY CASE-REAR	GH98-07964A
QRE04		ASSY DECO-REAR	GH98-08374A
QSH01		ASSY BRACKET-SHIELD V2	GH98-08314A
QSP01		SPEAKER	3001-002350
QVO01		PMO KEY-VOLUME	GH72-47113A
QFR01		ASSY CASE-FRONT	GH98-07963A
	QIF01	PMO COVER-IF	GH72-47091A
	QSD01	PMO COVER-SD	GH72-47092A



---

## 6. MAIN Electrical Parts List

---

SEC Code	Design LOC	Description	STATUS
0403-001547	D611	DIODE-ZENER	SA
0406-001203	D500	DIODE-TVS	SA
0406-001231	D501	DIODE-TVS	SA
0406-001231	D502	DIODE-TVS	SA
0406-001231	D509	DIODE-TVS	SA
0406-001231	D601	DIODE-TVS	SA
0406-001231	D603	DIODE-TVS	SA
0406-001231	D606	DIODE-TVS	SA
0406-001231	D608	DIODE-TVS	SA
0406-001231	D610	DIODE-TVS	SA
0406-001231	D612	DIODE-TVS	SA
0406-001254	ZD400	DIODE-TVS	SA
0406-001254	ZD401	DIODE-TVS	SA
0406-001286	D300	DIODE-TVS	SA
0406-001286	ZD500	DIODE-TVS	SA
0407-001002	D600	DIODE-ARRAY	SA
0505-002111	Q300	FET-SILICON	SA
0505-002111	U900	FET-SILICON	SA
0801-003022	U200	IC-CMOS LOGIC	SA
0801-003055	U303	IC-CMOS LOGIC	SA
1001-001429	U300	IC-ANALOG SWITCH	SA
1001-001429	U301	IC-ANALOG SWITCH	SA
1001-001453	U400	IC-ANALOG SWITCH	SA
1001-001453	U403	IC-ANALOG SWITCH	SA
1001-001453	U404	IC-ANALOG SWITCH	SA
1001-001453	U405	IC-ANALOG SWITCH	SA
1001-001470	U502	IC-ANALOG SWITCH	SA
1001-001470	U101	IC-ANALOG SWITCH	SA
1001-001470	U401	IC-ANALOG SWITCH	SA
1106-001519	UME300	IC-SRAM	SA
1108-000112	UME200	IC-MCP	SA
1108-000152	UME800	IC-MCP	SA
1201-002490	PAM700	IC-POWER AMP	SA
1201-002492	U408	IC-AUDIO AMP	SA
1201-002576	PAM100	IC-POWER AMP	SA
1203-004550	UPL900	IC-POWER SUPERVISOR	SA
1203-004776	U201	IC-POSI.FIXED REG.	SA
1203-004792	U402	IC-POSI.FIXED REG.	SA
1203-004792	U600	IC-POSI.FIXED REG.	SA
1203-004792	U601	IC-POSI.FIXED REG.	SA
1203-004792	U901	IC-POSI.FIXED REG.	SA
1203-004793	U302	IC-POSI.FIXED REG.	SA

SEC Code	Design LOC	Description	STATUS
1203-004960	U500	IC-DC/DC CONVERTER	SA
1203-005072	UPL300	IC-POWER SUPERVISOR	SA
1204-002907	U102	IC-TUNER	SA
1205-003082	UCP200	IC-MODEM	SA
1205-003192	UCP800	IC-MODEM	SA
1205-003210	U503	IC-CODEC	SA
1205-003214	U409	IC-CODEC	SA
1205-003278	U700	IC-TRANSCEIVER	SA
1205-003283	U100	IC-TRANSCEIVER	SA
1205-003419	BT100	IC-TRANSCEIVER	SA
1404-001221	VR200	THERMISTOR-NTC	SA
1404-001221	VR800	THERMISTOR-NTC	SA
1405-001138	V800	VARISTOR	SA
2007-000070	L401	R-CHIP	SA
2007-000070	L402	R-CHIP	SA
2007-000138	R112	R-CHIP	SA
2007-000138	R324	R-CHIP	SA
2007-000138	R325	R-CHIP	SA
2007-000138	R403	R-CHIP	SA
2007-000138	R406	R-CHIP	SA
2007-000138	R414	R-CHIP	SA
2007-000138	R415	R-CHIP	SA
2007-000138	R416	R-CHIP	SA
2007-000138	R520	R-CHIP	SA
2007-000140	R105	R-CHIP	SA
2007-000140	R213	R-CHIP	SA
2007-000140	R318	R-CHIP	SA
2007-000140	R907	R-CHIP	SA
2007-000141	R306	R-CHIP	SA
2007-000141	R516	R-CHIP	SA
2007-000141	R517	R-CHIP	SA
2007-000141	R817	R-CHIP	SA
2007-000141	R818	R-CHIP	SA
2007-000143	R107	R-CHIP	SA
2007-000143	R700	R-CHIP	SA
2007-000143	R705	R-CHIP	SA
2007-000143	R706	R-CHIP	SA
2007-000143	R707	R-CHIP	SA
2007-000143	R709	R-CHIP	SA
2007-000143	R822	R-CHIP	SA
2007-000148	R106	R-CHIP	SA
2007-000148	R200	R-CHIP	SA

SEC Code	Design LOC	Description	STATUS
2007-000148	R201	R-CHIP	SA
2007-000148	R205	R-CHIP	SA
2007-000148	R206	R-CHIP	SA
2007-000148	R211	R-CHIP	SA
2007-000148	R214	R-CHIP	SA
2007-000148	R224	R-CHIP	SA
2007-000148	R401	R-CHIP	SA
2007-000148	R412	R-CHIP	SA
2007-000148	R600	R-CHIP	SA
2007-000148	R601	R-CHIP	SA
2007-000148	R602	R-CHIP	SA
2007-000148	R910	R-CHIP	SA
2007-000148	U902	R-CHIP	SA
2007-000157	R228	R-CHIP	SA
2007-000157	R229	R-CHIP	SA
2007-000157	R230	R-CHIP	SA
2007-000157	R420	R-CHIP	SA
2007-000157	R825	R-CHIP	SA
2007-000159	R320	R-CHIP	SA
2007-000162	R108	R-CHIP	SA
2007-000162	R109	R-CHIP	SA
2007-000162	R113	R-CHIP	SA
2007-000162	R202	R-CHIP	SA
2007-000162	R209	R-CHIP	SA
2007-000162	R210	R-CHIP	SA
2007-000162	R225	R-CHIP	SA
2007-000162	R304	R-CHIP	SA
2007-000162	R307	R-CHIP	SA
2007-000162	R308	R-CHIP	SA
2007-000162	R309	R-CHIP	SA
2007-000162	R310	R-CHIP	SA
2007-000162	R311	R-CHIP	SA
2007-000162	R312	R-CHIP	SA
2007-000162	R313	R-CHIP	SA
2007-000162	R314	R-CHIP	SA
2007-000162	R319	R-CHIP	SA
2007-000162	R321	R-CHIP	SA
2007-000162	R510	R-CHIP	SA
2007-000162	R511	R-CHIP	SA
2007-000162	R512	R-CHIP	SA
2007-000162	R514	R-CHIP	SA
2007-000162	R519	R-CHIP	SA

SEC Code	Design LOC	Description	STATUS
2007-000162	R802	R-CHIP	SA
2007-000162	R804	R-CHIP	SA
2007-000162	R805	R-CHIP	SA
2007-000162	R806	R-CHIP	SA
2007-000162	R808	R-CHIP	SA
2007-000162	R809	R-CHIP	SA
2007-000162	R810	R-CHIP	SA
2007-000162	R901	R-CHIP	SA
2007-000162	R906	R-CHIP	SA
2007-000170	R220	R-CHIP	SA
2007-000170	R221	R-CHIP	SA
2007-000170	R322	R-CHIP	SA
2007-000170	R515	R-CHIP	SA
2007-000171	L403	R-CHIP	SA
2007-000171	L404	R-CHIP	SA
2007-000171	R222	R-CHIP	SA
2007-000171	R303	R-CHIP	SA
2007-000171	R400	R-CHIP	SA
2007-000171	R402	R-CHIP	SA
2007-000171	R411	R-CHIP	SA
2007-000171	R413	R-CHIP	SA
2007-000171	R419	R-CHIP	SA
2007-000171	R421	R-CHIP	SA
2007-000171	R506	R-CHIP	SA
2007-000171	R518	R-CHIP	SA
2007-000171	R522	R-CHIP	SA
2007-000171	R523	R-CHIP	SA
2007-000171	R524	R-CHIP	SA
2007-000171	R525	R-CHIP	SA
2007-000171	R606	R-CHIP	SA
2007-000171	R701	R-CHIP	SA
2007-000171	R702	R-CHIP	SA
2007-000171	R703	R-CHIP	SA
2007-000171	R801	R-CHIP	SA
2007-000171	R811	R-CHIP	SA
2007-000172	R110	R-CHIP	SA
2007-000172	R111	R-CHIP	SA
2007-000172	R417	R-CHIP	SA
2007-000172	R418	R-CHIP	SA
2007-000174	R800	R-CHIP	SA
2007-000242	R814	R-CHIP	SA
2007-000758	R207	R-CHIP	SA

<b>SEC Code</b>	<b>Design LOC</b>	<b>Description</b>	<b>STATUS</b>
2007-000758	R212	R-CHIP	SA
2007-000758	R316	R-CHIP	SA
2007-000758	R603	R-CHIP	SA
2007-000758	R909	R-CHIP	SA
2007-000932	R712	R-CHIP	SA
2007-000932	R713	R-CHIP	SA
2007-001288	R714	R-CHIP	SA
2007-001295	R503	R-CHIP	SA
2007-001295	R504	R-CHIP	SA
2007-001303	R323	R-CHIP	SA
2007-001319	R216	R-CHIP	SA
2007-001319	R218	R-CHIP	SA
2007-001333	R317	R-CHIP	SA
2007-001333	R500	R-CHIP	SA
2007-001333	R502	R-CHIP	SA
2007-001339	R908	R-CHIP	SA
2007-003001	R710	R-CHIP	SA
2007-007008	R715	R-CHIP	SA
2007-007008	R716	R-CHIP	SA
2007-007092	R711	R-CHIP	SA
2007-007100	R903	R-CHIP	SA
2007-007107	R203	R-CHIP	SA
2007-007107	R803	R-CHIP	SA
2007-007107	R807	R-CHIP	SA
2007-007137	R404	R-CHIP	SA
2007-007137	R405	R-CHIP	SA
2007-007137	R407	R-CHIP	SA
2007-007137	R408	R-CHIP	SA
2007-007142	R505	R-CHIP	SA
2007-007142	R604	R-CHIP	SA
2007-007311	R305	R-CHIP	SA
2007-007312	R605	R-CHIP	SA
2007-007318	R315	R-CHIP	SA
2007-007318	R409	R-CHIP	SA
2007-007318	R410	R-CHIP	SA
2007-007334	R507	R-CHIP	SA
2007-007334	R823	R-CHIP	SA
2007-007489	R104	R-CHIP	SA
2007-007573	R300	R-CHIP	SA
2007-007573	R820	R-CHIP	SA
2007-007981	R501	R-CHIP	SA
2007-008354	R301	R-CHIP	SA

SEC Code	Design LOC	Description	STATUS
2203-000233	C107	C-CHIP;CHIP	SA
2203-000233	C114	C-CHIP;CHIP	SA
2203-000233	C124	C-CHIP;CHIP	SA
2203-000233	C131	C-CHIP;CHIP	SA
2203-000233	C316	C-CHIP;CHIP	SA
2203-000254	C514	C-CHIP;CHIP	SA
2203-000254	C716	C-CHIP;CHIP	SA
2203-000278	C111	C-CHIP;CHIP	SA
2203-000278	C122	C-CHIP;CHIP	SA
2203-000278	C126	C-CHIP;CHIP	SA
2203-000278	C402	C-CHIP;CHIP	SA
2203-000278	C409	C-CHIP;CHIP	SA
2203-000278	C701	C-CHIP;CHIP	SA
2203-000278	C720	C-CHIP;CHIP	SA
2203-000311	C127	C-CHIP;CHIP	SA
2203-000311	C614	C-CHIP;CHIP	SA
2203-000330	C117	C-CHIP;CHIP	SA
2203-000386	C116	C-CHIP;CHIP	SA
2203-000386	C902	C-CHIP;CHIP	SA
2203-000425	C219	C-CHIP;CHIP	SA
2203-000425	C317	C-CHIP;CHIP	SA
2203-000425	C343	C-CHIP;CHIP	SA
2203-000425	C500	C-CHIP;CHIP	SA
2203-000425	C502	C-CHIP;CHIP	SA
2203-000425	C518	C-CHIP;CHIP	SA
2203-000425	C519	C-CHIP;CHIP	SA
2203-000425	C900	C-CHIP;CHIP	SA
2203-000438	C132	C-CHIP;CHIP	SA
2203-000438	C617	C-CHIP;CHIP	SA
2203-000466	C710	C-CHIP;CHIP	SA
2203-000466	C713	C-CHIP;CHIP	SA
2203-000489	C724	C-CHIP;CHIP	SA
2203-000627	C320	C-CHIP;CHIP	SA
2203-000679	C526	C-CHIP;CHIP	SA
2203-000679	C812	C-CHIP;CHIP	SA
2203-000696	C110	C-CHIP;CHIP	SA
2203-000696	C112	C-CHIP;CHIP	SA
2203-000812	C119	C-CHIP;CHIP	SA
2203-000812	C120	C-CHIP;CHIP	SA
2203-000812	C123	C-CHIP;CHIP	SA
2203-000812	C140	C-CHIP;CHIP	SA
2203-000812	C141	C-CHIP;CHIP	SA

SEC Code	Design LOC	Description	STATUS
2203-000812	C142	C-CHIP;CHIP	SA
2203-000812	C143	C-CHIP;CHIP	SA
2203-000812	C144	C-CHIP;CHIP	SA
2203-000812	C202	C-CHIP;CHIP	SA
2203-000812	C204	C-CHIP;CHIP	SA
2203-000812	C208	C-CHIP;CHIP	SA
2203-000812	C210	C-CHIP;CHIP	SA
2203-000812	C214	C-CHIP;CHIP	SA
2203-000812	C325	C-CHIP;CHIP	SA
2203-000812	C420	C-CHIP;CHIP	SA
2203-000812	C421	C-CHIP;CHIP	SA
2203-000812	C717	C-CHIP;CHIP	SA
2203-000812	C721	C-CHIP;CHIP	SA
2203-000812	C722	C-CHIP;CHIP	SA
2203-000812	C723	C-CHIP;CHIP	SA
2203-000812	C815	C-CHIP;CHIP	SA
2203-000812	C905	C-CHIP;CHIP	SA
2203-000812	R708	C-CHIP;CHIP	SA
2203-000854	C312	C-CHIP;CHIP	SA
2203-000854	C802	C-CHIP;CHIP	SA
2203-000854	C805	C-CHIP;CHIP	SA
2203-000854	C808	C-CHIP;CHIP	SA
2203-000854	C811	C-CHIP;CHIP	SA
2203-000854	C918	C-CHIP;CHIP	SA
2203-000870	C105	C-CHIP;CHIP	SA
2203-000870	C106	C-CHIP;CHIP	SA
2203-000995	C501	C-CHIP;CHIP	SA
2203-000995	C709	C-CHIP;CHIP	SA
2203-000995	C712	C-CHIP;CHIP	SA
2203-001072	R704	C-CHIP;CHIP	SA
2203-001201	C705	C-CHIP;CHIP	SA
2203-001239	C441	C-CHIP;CHIP	SA
2203-001239	C442	C-CHIP;CHIP	SA
2203-001239	C511	C-CHIP;CHIP	SA
2203-001239	C512	C-CHIP;CHIP	SA
2203-001239	C513	C-CHIP;CHIP	SA
2203-001385	C706	C-CHIP;CHIP	SA
2203-001385	C707	C-CHIP;CHIP	SA
2203-002525	C517	C-CHIP;CHIP	SA
2203-002668	C108	C-CHIP;CHIP	SA
2203-005050	C113	C-CHIP;CHIP	SA
2203-005050	C121	C-CHIP;CHIP	SA

SEC Code	Design LOC	Description	STATUS
2203-005050	C711	C-CHIP;CHIP	SA
2203-005281	C139	C-CHIP;CHIP	SA
2203-005288	C704	C-CHIP;CHIP	SA
2203-005390	C148	C-CHIP;CHIP	SA
2203-005393	C618	C-CHIP;CHIP	SA
2203-005393	C619	C-CHIP;CHIP	SA
2203-005393	C620	C-CHIP;CHIP	SA
2203-005395	C137	C-CHIP;CHIP	SA
2203-005444	C147	C-CHIP;CHIP	SA
2203-005482	C206	C-CHIP;CHIP	SA
2203-005482	C211	C-CHIP;CHIP	SA
2203-005482	C216	C-CHIP;CHIP	SA
2203-005482	C401	C-CHIP;CHIP	SA
2203-005482	C403	C-CHIP;CHIP	SA
2203-005482	C406	C-CHIP;CHIP	SA
2203-005482	C410	C-CHIP;CHIP	SA
2203-005482	C416	C-CHIP;CHIP	SA
2203-005482	C417	C-CHIP;CHIP	SA
2203-005482	C418	C-CHIP;CHIP	SA
2203-005482	C432	C-CHIP;CHIP	SA
2203-005482	C437	C-CHIP;CHIP	SA
2203-005482	C438	C-CHIP;CHIP	SA
2203-005482	C439	C-CHIP;CHIP	SA
2203-005482	C504	C-CHIP;CHIP	SA
2203-005482	C505	C-CHIP;CHIP	SA
2203-005482	C507	C-CHIP;CHIP	SA
2203-005482	C508	C-CHIP;CHIP	SA
2203-005482	C509	C-CHIP;CHIP	SA
2203-005482	C510	C-CHIP;CHIP	SA
2203-005482	C700	C-CHIP;CHIP	SA
2203-005482	C702	C-CHIP;CHIP	SA
2203-005482	C719	C-CHIP;CHIP	SA
2203-005482	C725	C-CHIP;CHIP	SA
2203-005482	C809	C-CHIP;CHIP	SA
2203-005482	C810	C-CHIP;CHIP	SA
2203-005482	C820	C-CHIP;CHIP	SA
2203-005482	C901	C-CHIP;CHIP	SA
2203-005483	C817	C-CHIP;CHIP	SA
2203-005496	C133	C-CHIP;CHIP	SA
2203-005496	C200	C-CHIP;CHIP	SA
2203-005496	C201	C-CHIP;CHIP	SA
2203-005496	C203	C-CHIP;CHIP	SA



SEC Code	Design LOC	Description	STATUS
2203-005496	C205	C-CHIP;CHIP	SA
2203-005496	C207	C-CHIP;CHIP	SA
2203-005496	C209	C-CHIP;CHIP	SA
2203-005496	C213	C-CHIP;CHIP	SA
2203-005496	C215	C-CHIP;CHIP	SA
2203-005496	C426	C-CHIP;CHIP	SA
2203-005496	C427	C-CHIP;CHIP	SA
2203-005496	C430	C-CHIP;CHIP	SA
2203-005496	C431	C-CHIP;CHIP	SA
2203-006048	C125	C-CHIP;CHIP	SA
2203-006048	C128	C-CHIP;CHIP	SA
2203-006048	C129	C-CHIP;CHIP	SA
2203-006048	C130	C-CHIP;CHIP	SA
2203-006048	C300	C-CHIP;CHIP	SA
2203-006048	C326	C-CHIP;CHIP	SA
2203-006048	C503	C-CHIP;CHIP	SA
2203-006048	C529	C-CHIP;CHIP	SA
2203-006048	C615	C-CHIP;CHIP	SA
2203-006048	C616	C-CHIP;CHIP	SA
2203-006048	C800	C-CHIP;CHIP	SA
2203-006048	C801	C-CHIP;CHIP	SA
2203-006048	C803	C-CHIP;CHIP	SA
2203-006048	C804	C-CHIP;CHIP	SA
2203-006048	C806	C-CHIP;CHIP	SA
2203-006048	C807	C-CHIP;CHIP	SA
2203-006048	C813	C-CHIP;CHIP	SA
2203-006048	C814	C-CHIP;CHIP	SA
2203-006257	C301	C-CHIP;CHIP	SA
2203-006257	C302	C-CHIP;CHIP	SA
2203-006257	C305	C-CHIP;CHIP	SA
2203-006257	C308	C-CHIP;CHIP	SA
2203-006257	C313	C-CHIP;CHIP	SA
2203-006257	C323	C-CHIP;CHIP	SA
2203-006257	C331	C-CHIP;CHIP	SA
2203-006257	C332	C-CHIP;CHIP	SA
2203-006257	C333	C-CHIP;CHIP	SA
2203-006257	C903	C-CHIP;CHIP	SA
2203-006257	C908	C-CHIP;CHIP	SA
2203-006257	C911	C-CHIP;CHIP	SA
2203-006257	C915	C-CHIP;CHIP	SA
2203-006257	C919	C-CHIP;CHIP	SA
2203-006260	C423	C-CHIP;CHIP	SA

SEC Code	Design LOC	Description	STATUS
2203-006260	C425	C-CHIP;CHIP	SA
2203-006348	C318	C-CHIP;CHIP	SA
2203-006399	C217	C-CHIP;CHIP	SA
2203-006399	C221	C-CHIP;CHIP	SA
2203-006399	C315	C-CHIP;CHIP	SA
2203-006399	C324	C-CHIP;CHIP	SA
2203-006399	C339	C-CHIP;CHIP	SA
2203-006399	C342	C-CHIP;CHIP	SA
2203-006399	C419	C-CHIP;CHIP	SA
2203-006399	C422	C-CHIP;CHIP	SA
2203-006399	C506	C-CHIP;CHIP	SA
2203-006399	C601	C-CHIP;CHIP	SA
2203-006399	C602	C-CHIP;CHIP	SA
2203-006399	C605	C-CHIP;CHIP	SA
2203-006399	C906	C-CHIP;CHIP	SA
2203-006562	C146	C-CHIP;CHIP	SA
2203-006562	C220	C-CHIP;CHIP	SA
2203-006562	C311	C-CHIP;CHIP	SA
2203-006562	C321	C-CHIP;CHIP	SA
2203-006562	C329	C-CHIP;CHIP	SA
2203-006562	C336	C-CHIP;CHIP	SA
2203-006562	C340	C-CHIP;CHIP	SA
2203-006562	C412	C-CHIP;CHIP	SA
2203-006562	C414	C-CHIP;CHIP	SA
2203-006562	C415	C-CHIP;CHIP	SA
2203-006562	C424	C-CHIP;CHIP	SA
2203-006562	C600	C-CHIP;CHIP	SA
2203-006562	C603	C-CHIP;CHIP	SA
2203-006562	C606	C-CHIP;CHIP	SA
2203-006562	C910	C-CHIP;CHIP	SA
2203-006562	C917	C-CHIP;CHIP	SA
2203-006681	C100	C-CHIP;CHIP	SA
2203-006681	C104	C-CHIP;CHIP	SA
2203-006681	C134	C-CHIP;CHIP	SA
2203-006681	C135	C-CHIP;CHIP	SA
2203-006824	C303	C-CHIP;CHIP	SA
2203-006824	C309	C-CHIP;CHIP	SA
2203-006824	C314	C-CHIP;CHIP	SA
2203-006824	C328	C-CHIP;CHIP	SA
2203-006824	C515	C-CHIP;CHIP	SA
2203-006824	C904	C-CHIP;CHIP	SA
2203-006824	C907	C-CHIP;CHIP	SA

SEC Code	Design LOC	Description	STATUS
2203-006825	C304	C-CHIP;CHIP	SA
2203-006825	C522	C-CHIP;CHIP	SA
2203-006838	C101	C-CHIP;CHIP	SA
2203-006838	C102	C-CHIP;CHIP	SA
2203-006838	C103	C-CHIP;CHIP	SA
2203-006838	C118	C-CHIP;CHIP	SA
2203-006838	C136	C-CHIP;CHIP	SA
2203-006838	C212	C-CHIP;CHIP	SA
2203-006838	C327	C-CHIP;CHIP	SA
2203-006838	C407	C-CHIP;CHIP	SA
2203-006838	C408	C-CHIP;CHIP	SA
2203-006838	C413	C-CHIP;CHIP	SA
2203-006838	C440	C-CHIP;CHIP	SA
2203-006838	C521	C-CHIP;CHIP	SA
2203-006838	C523	C-CHIP;CHIP	SA
2203-006838	C604	C-CHIP;CHIP	SA
2203-006838	C909	C-CHIP;CHIP	SA
2203-006838	C914	C-CHIP;CHIP	SA
2203-006838	U406	C-CHIP;CHIP	SA
2203-006841	C337	C-CHIP;CHIP	SA
2203-006841	C338	C-CHIP;CHIP	SA
2203-006842	C115	C-CHIP;CHIP	SA
2203-006890	C516	C-CHIP;CHIP	SA
2203-007147	C335	C-CHIP;CHIP	SA
2203-007195	C334	C-CHIP;CHIP	SA
2404-001225	TA100	C-TA;CHIP	SA
2404-001226	TA405	C-TA;CHIP	SA
2404-001381	C322	C-TA;CHIP	SA
2404-001381	TA300	C-TA;CHIP	SA
2404-001381	TA900	C-TA;CHIP	SA
2404-001396	TA402	C-TA;CHIP	SA
2404-001396	TA403	C-TA;CHIP	SA
2404-001430	TA404	C-TA;CHIP	SA
2404-001506	TA101	C-TA;CHIP	SA
2404-001506	TA600	C-TA;CHIP	SA
2404-001506	TA700	C-TA;CHIP	SA
2404-001516	TA400	C-TA;CHIP	SA
2404-001516	TA401	C-TA;CHIP	SA
2703-001178	L110	INDUCTOR-SMD	SA
2703-001729	L702	INDUCTOR-SMD	SA
2703-001729	L704	INDUCTOR-SMD	SA
2703-001751	L111	INDUCTOR-SMD	SA

SEC Code	Design LOC	Description	STATUS
2703-001786	L103	INDUCTOR-SMD	SA
2703-001786	L700	INDUCTOR-SMD	SA
2703-002170	L108	INDUCTOR-SMD	SA
2703-002170	L109	INDUCTOR-SMD	SA
2703-002314	L102	INDUCTOR-SMD	SA
2703-002544	L703	INDUCTOR-SMD	SA
2703-002558	L701	INDUCTOR-SMD	SA
2703-002596	L106	INDUCTOR-SMD	SA
2703-002608	C708	INDUCTOR-SMD	SA
2703-002861	L300	INDUCTOR-SMD	SA
2703-003064	L107	INDUCTOR-SMD	SA
2703-003103	L101	INDUCTOR-SMD	SA
2703-003103	L105	INDUCTOR-SMD	SA
2703-003182	L506	INDUCTOR-SMD	SA
2801-004455	OSC700	CRYSTAL_SMD	SA
2801-004466	OSC300	CRYSTAL_SMD	SA
2801-004466	OSC900	CRYSTAL_SMD	SA
2801-004587	OSC100	CRYSTAL_SMD	SA
2801-004587	OSC101	CRYSTAL_SMD	SA
2801-004682	OSC500	CRYSTAL_SMD	SA
2901-001286	F604	FILTER-EMI SMD	SA
2901-001315	F200	FILTER-EMI SMD	SA
2901-001408	F500	FILTER-EMI SMD	SA
2901-001418	F605	FILTER-EMI SMD	SA
2901-001469	F501	FILTER-EMI SMD	SA
2901-001469	F502	FILTER-EMI SMD	SA
2901-001469	F600	FILTER-EMI SMD	SA
2901-001469	F601	FILTER-EMI SMD	SA
2901-001469	F602	FILTER-EMI SMD	SA
2901-001469	F603	FILTER-EMI SMD	SA
2901-001498	F606	FILTER-EMI SMD	SA
2901-001498	F607	FILTER-EMI SMD	SA
2904-001744	F700	FILTER-SAW	SA
2909-001299	F100	FILTER-LC	SA
2911-000087	F101	DUPLEXER-FEM	SA
3301-001534	L200	BEAD-SMD	SA
3301-001534	L201	BEAD-SMD	SA
3301-001534	L400	BEAD-SMD	SA
3301-001534	L405	BEAD-SMD	SA
3301-001534	L505	BEAD-SMD	SA
3301-001659	L100	BEAD-SMD	SA
3404-001152	TAC600	SWITCH TACT	SA

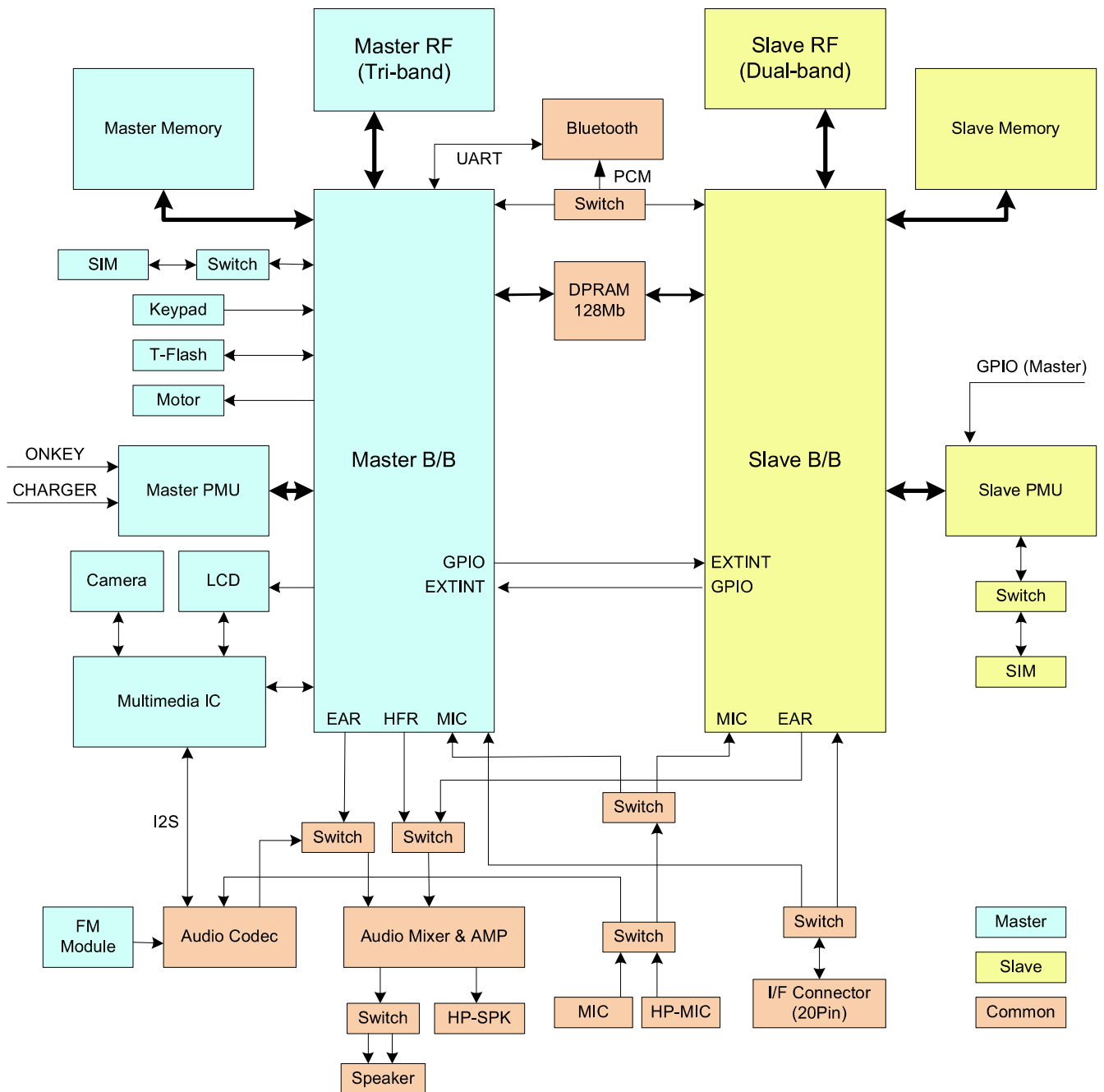
SEC Code	Design LOC	Description	STATUS
3404-001152	TAC601	SWITCH TACT	SA
3404-001152	TAC602	SWITCH TACT	SA
3404-001152	TAC603	SWITCH TACT	SA
3705-001358	RFS700	CONNECTOR-COAXIAL	SA
3705-001421	RFS100	CONNECTOR-COAXIAL	SA
3708-002222	CN500	CONNECTOR-FPC/FFC/PIC	SA
3709-001392	CD300	CONNECTOR-CARD EDGE	SA
3709-001447	SIM300	CONNECTOR-CARD EDGE	SA
3709-001447	SIM900	CONNECTOR-CARD EDGE	SA
3710-002081	MOT600	SOCKET-INTERFACE	SA
3710-002499	IFC500	SOCKET-INTERFACE	SA
3711-005728	HEA601	HEADER-BOARD TO BOARD	SA
3711-005962	HEA600	HEADER-BOARD TO BOARD	SA
3711-006137	BTC600	HEADER-BATTERY	SA
4302-001181	BAT300	BATTERY-LI(2ND)	SA

Please consult the GSPN website (Samsung Portal) for the most recent version of the product's part list.

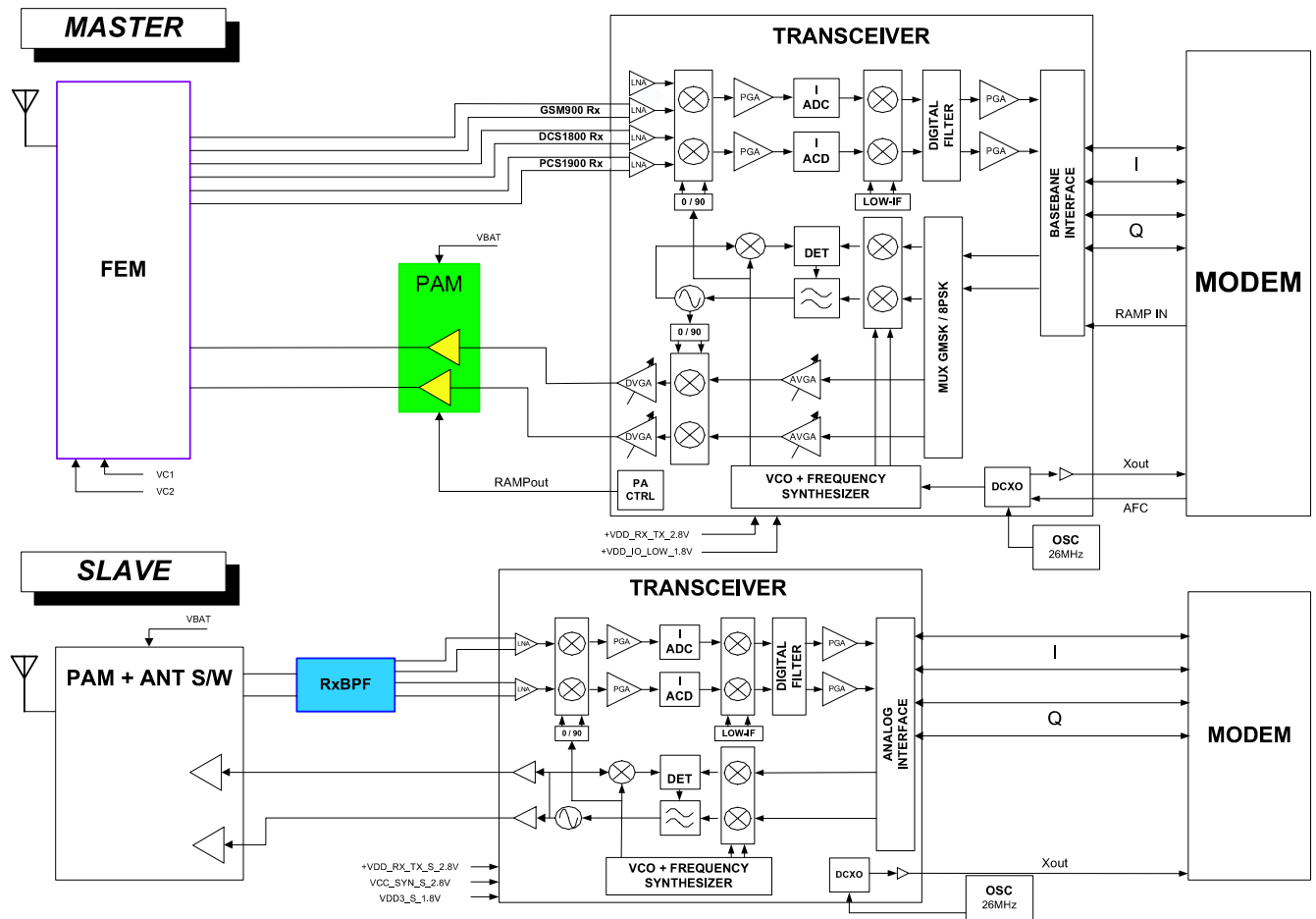


## 7. Block Diagrams

### 7-1. Functional Block Diagram



## 7-2. RF Solution Block Diagram

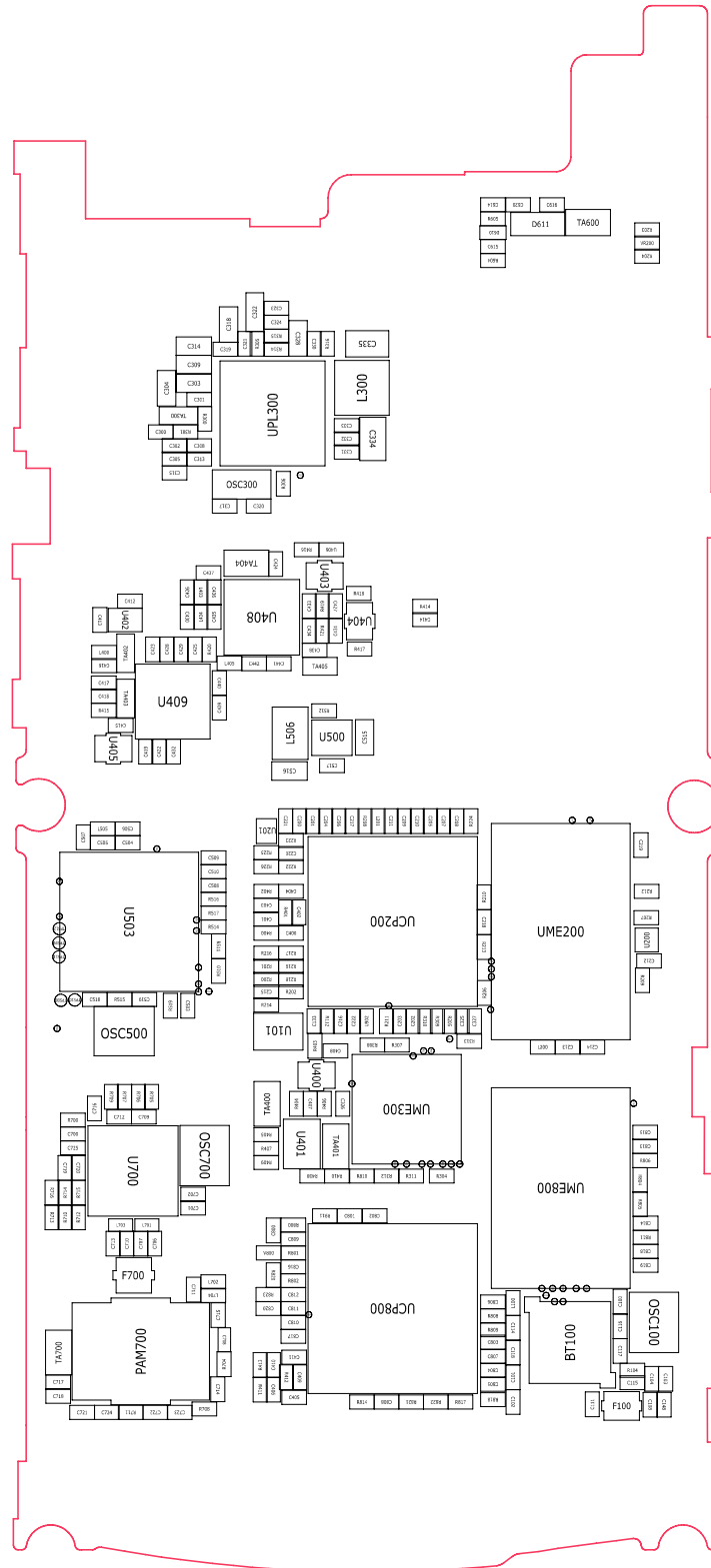




- **Main top view**

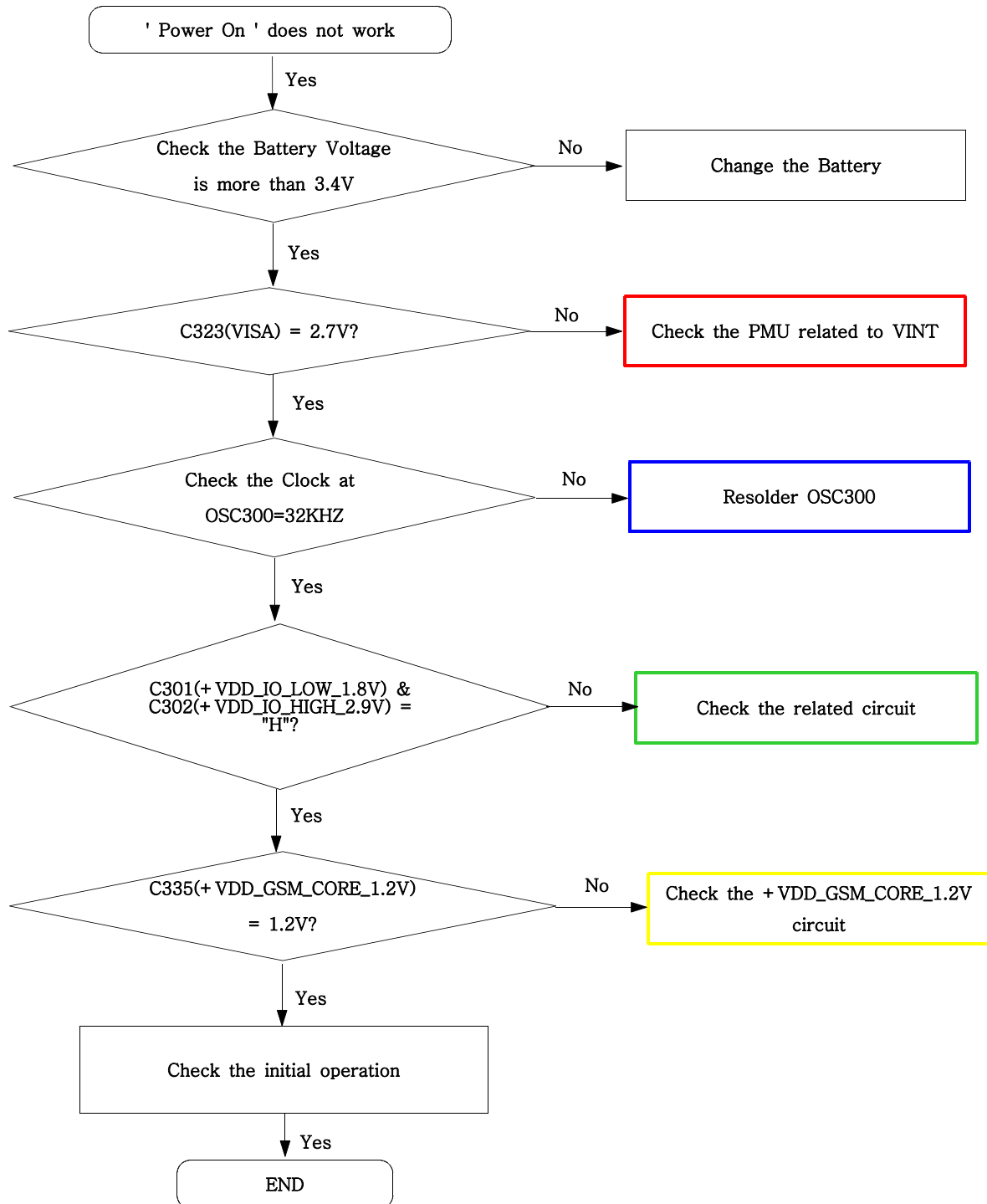


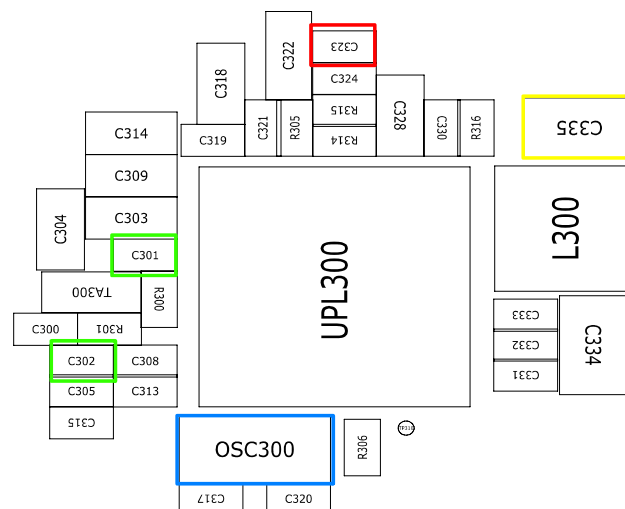
## – Main bottom view



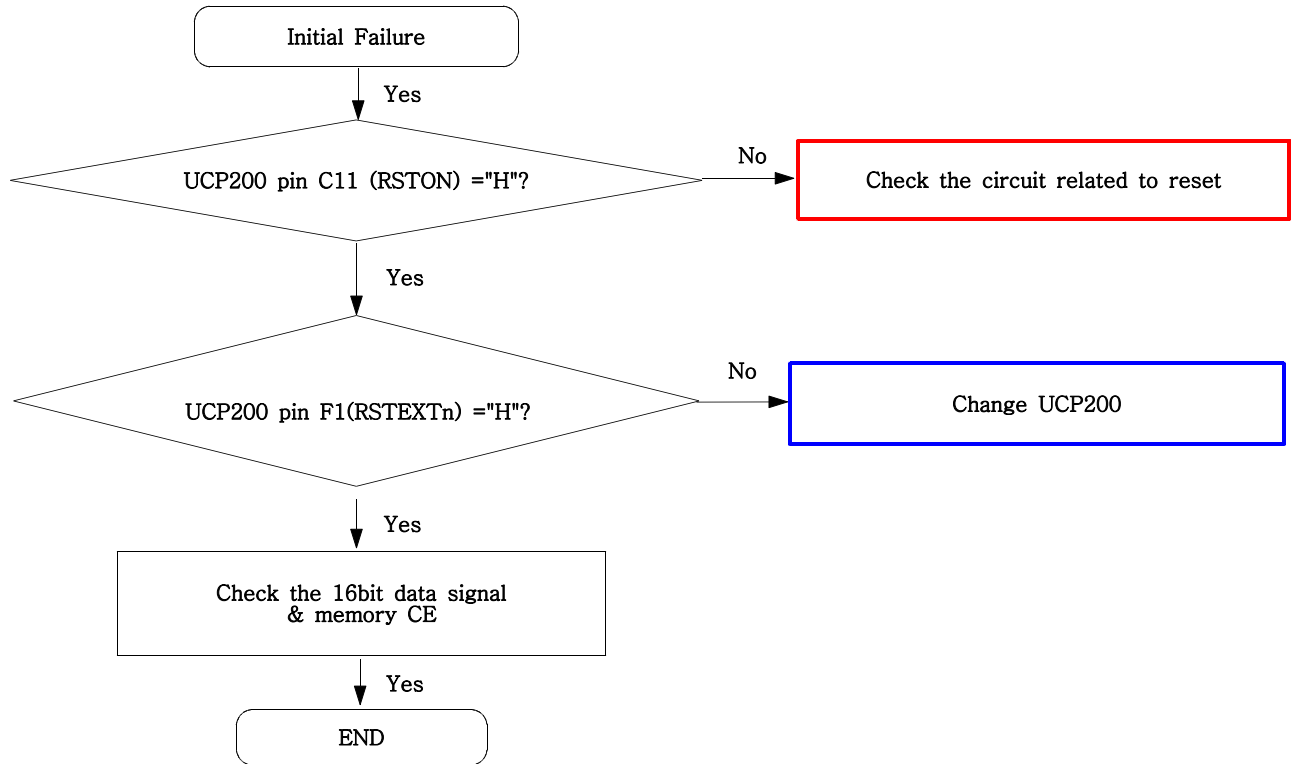
## 9. Flow Chart of Troubleshooting

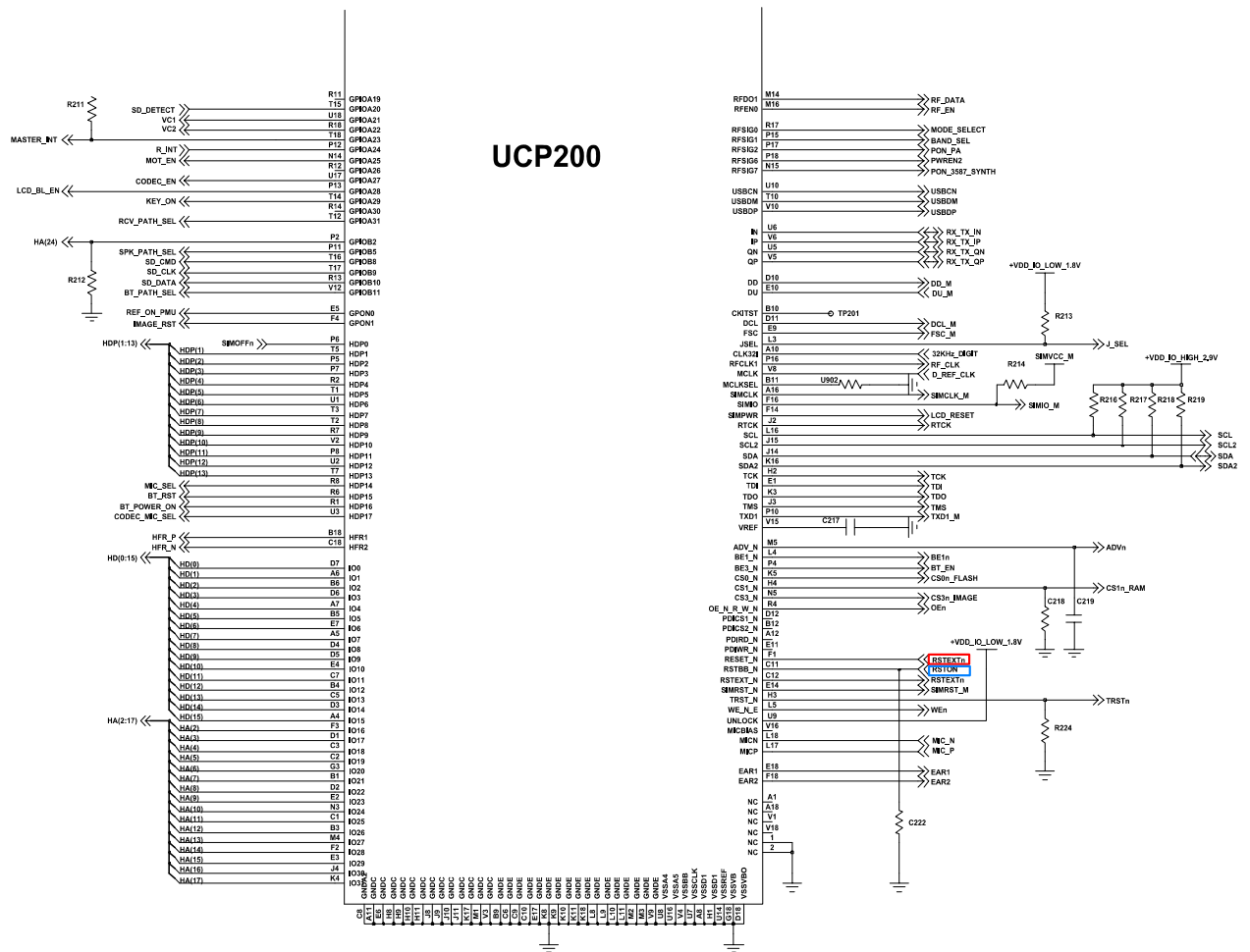
### 9-1. Power On



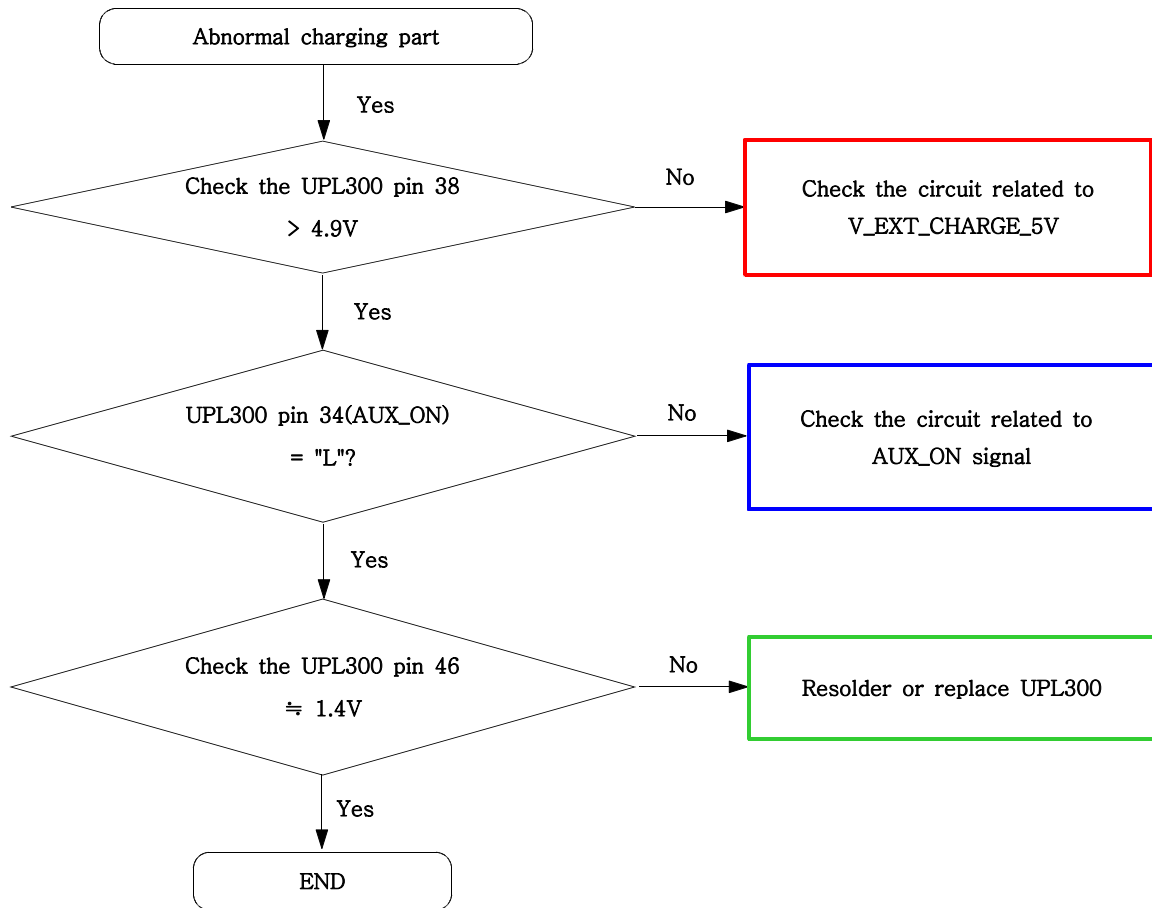


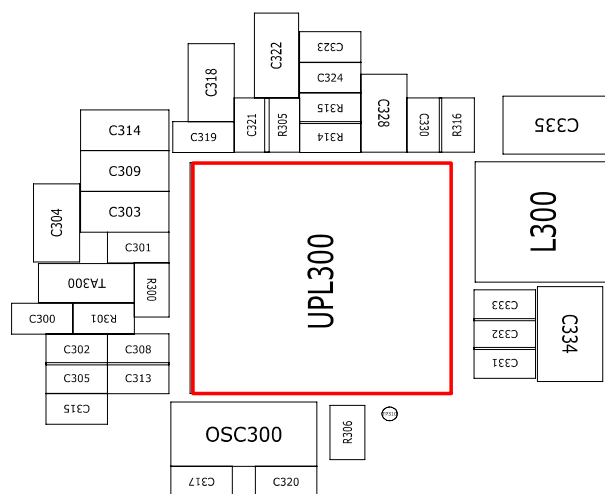
## 9-2. Initial





## 9-3. Charging Part

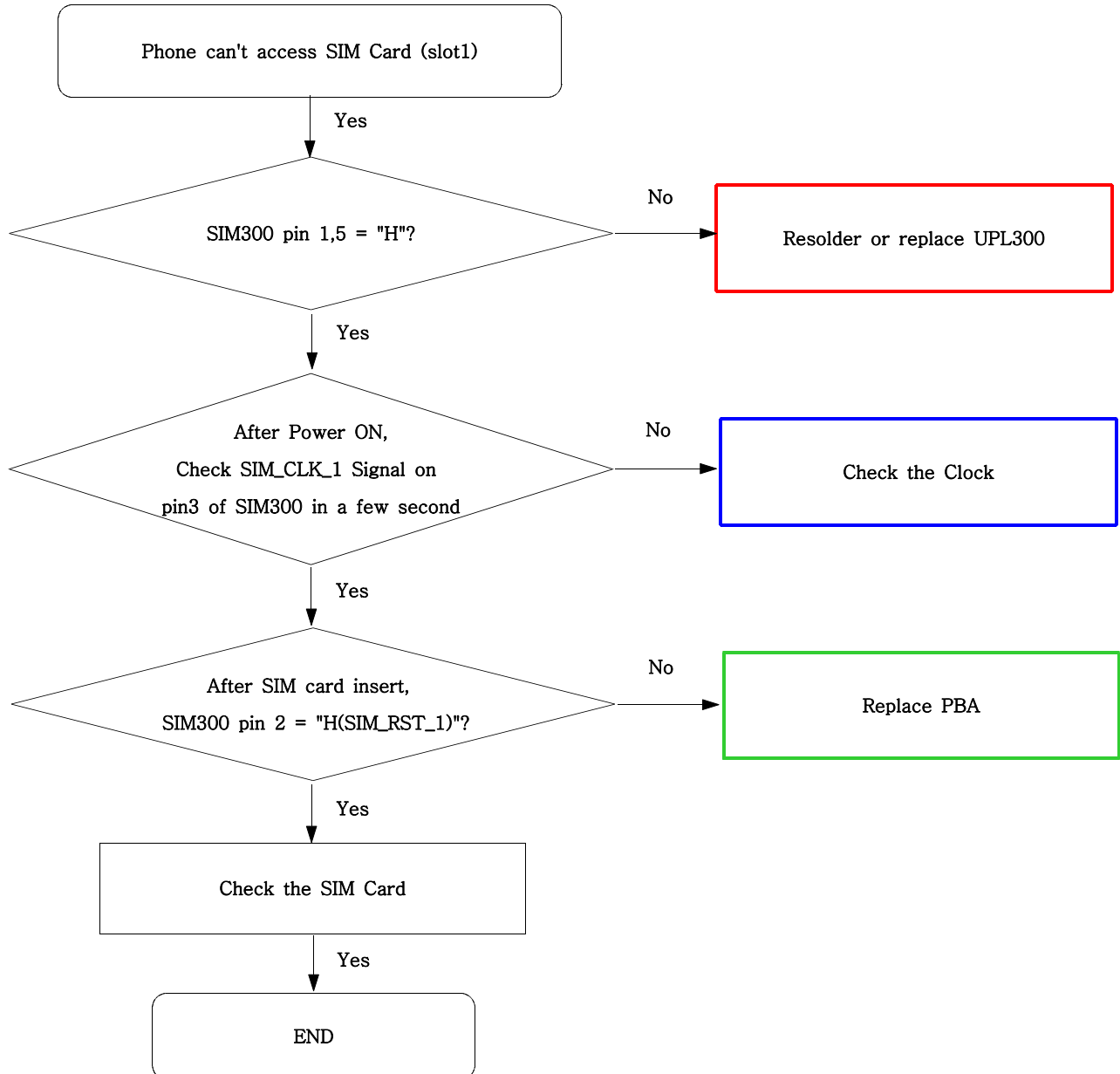


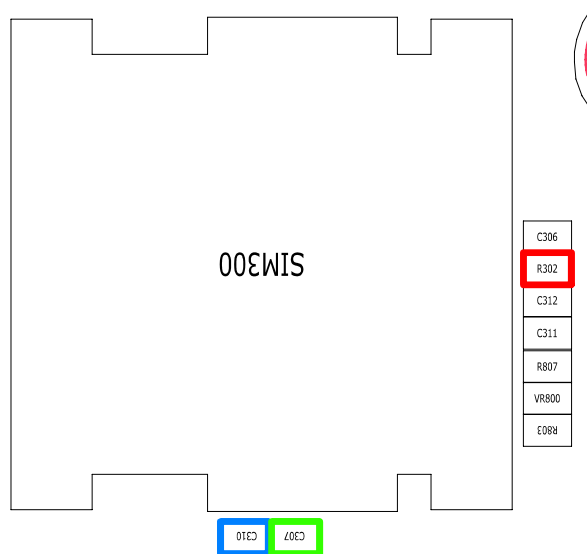
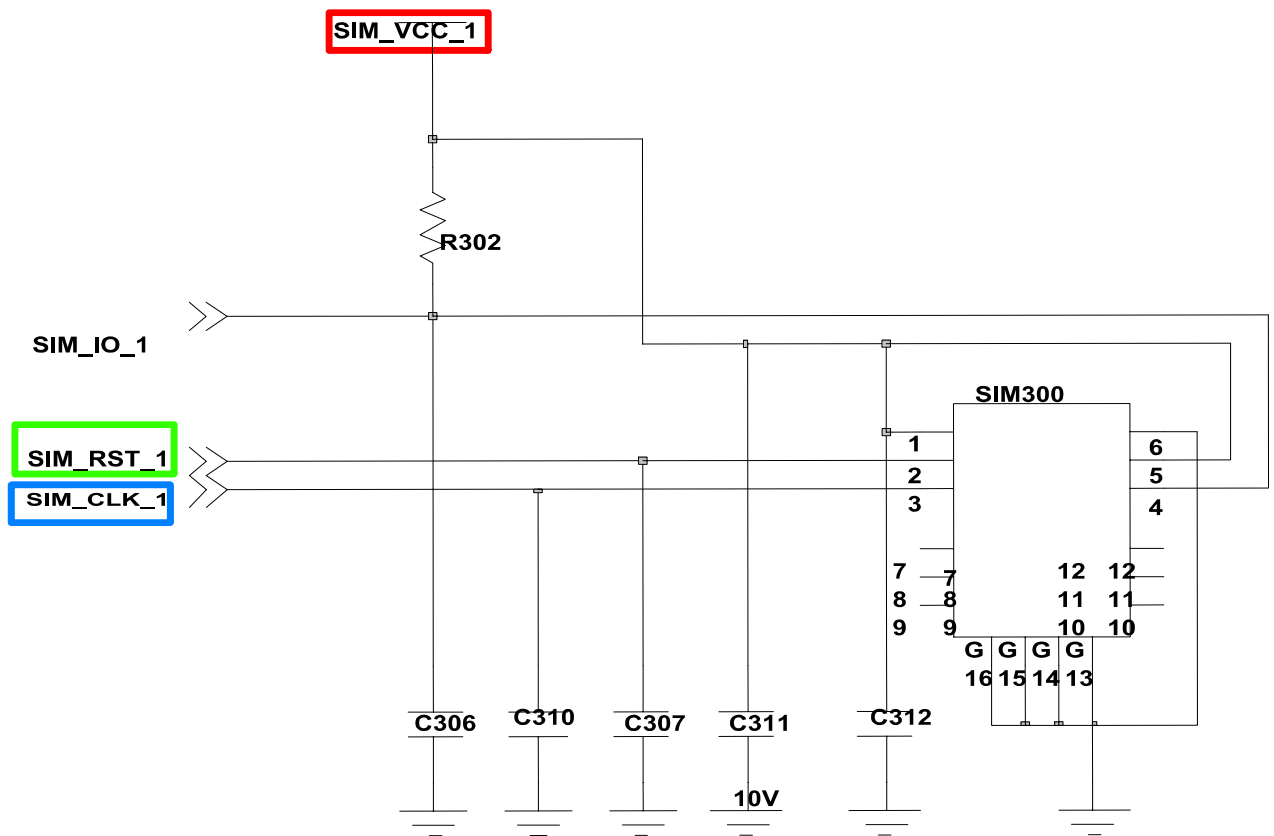


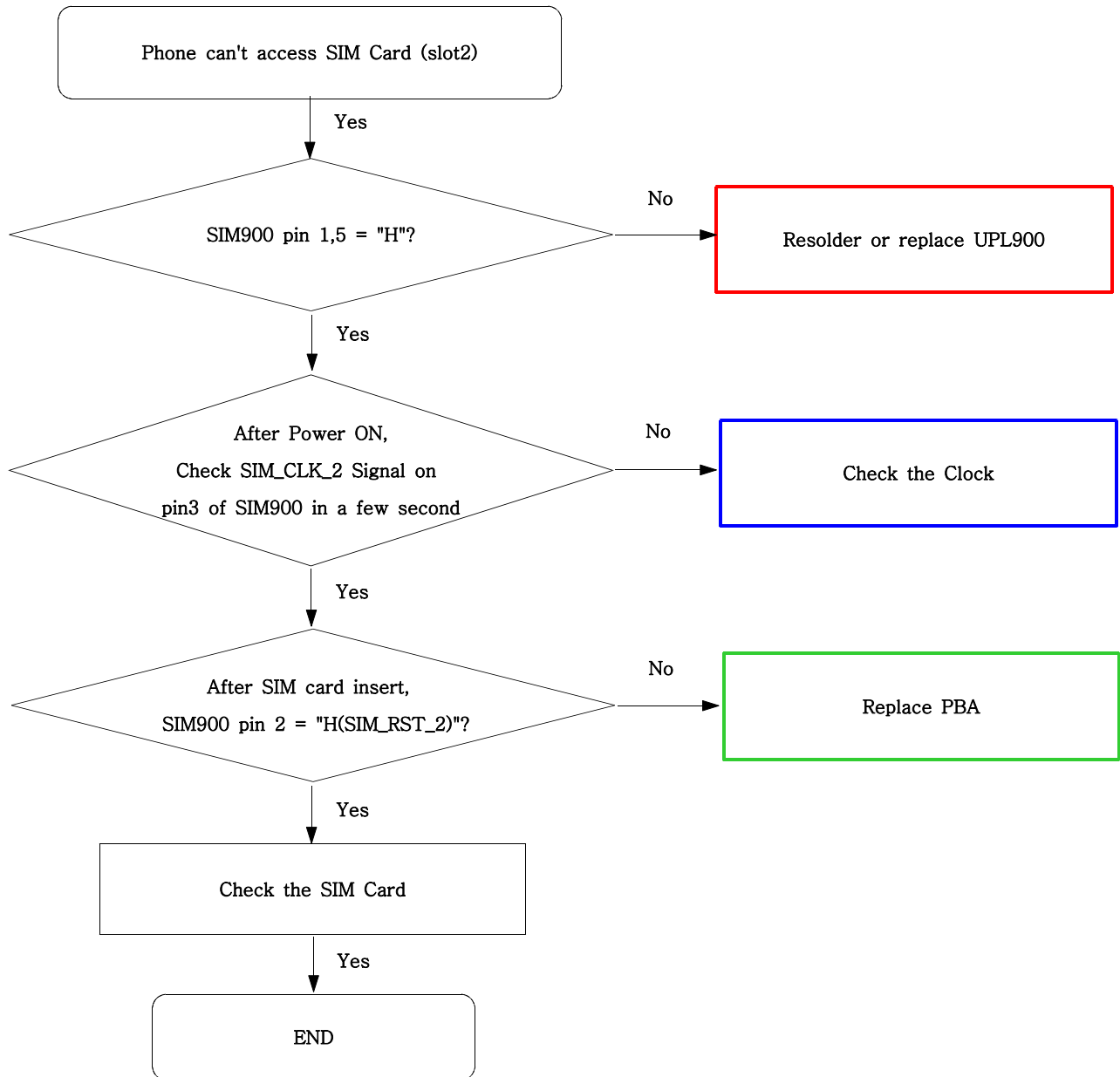


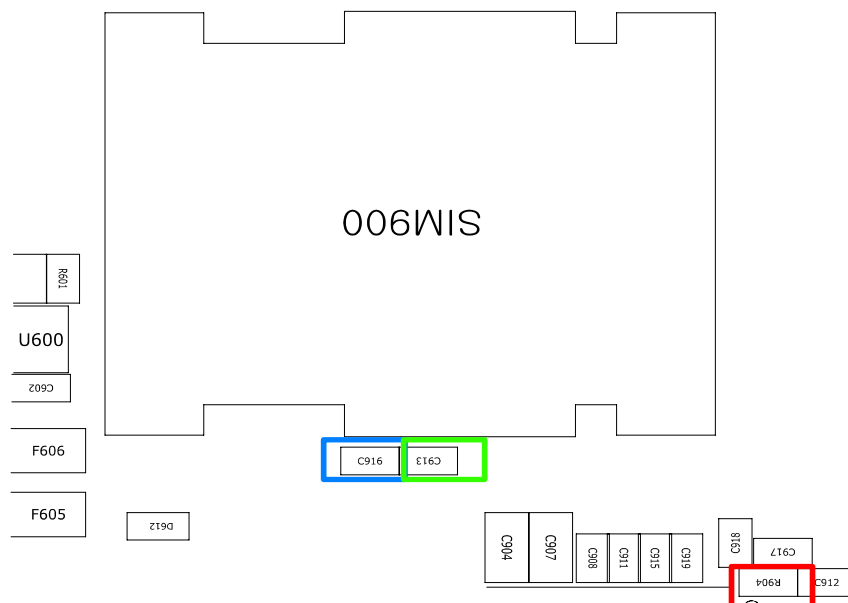
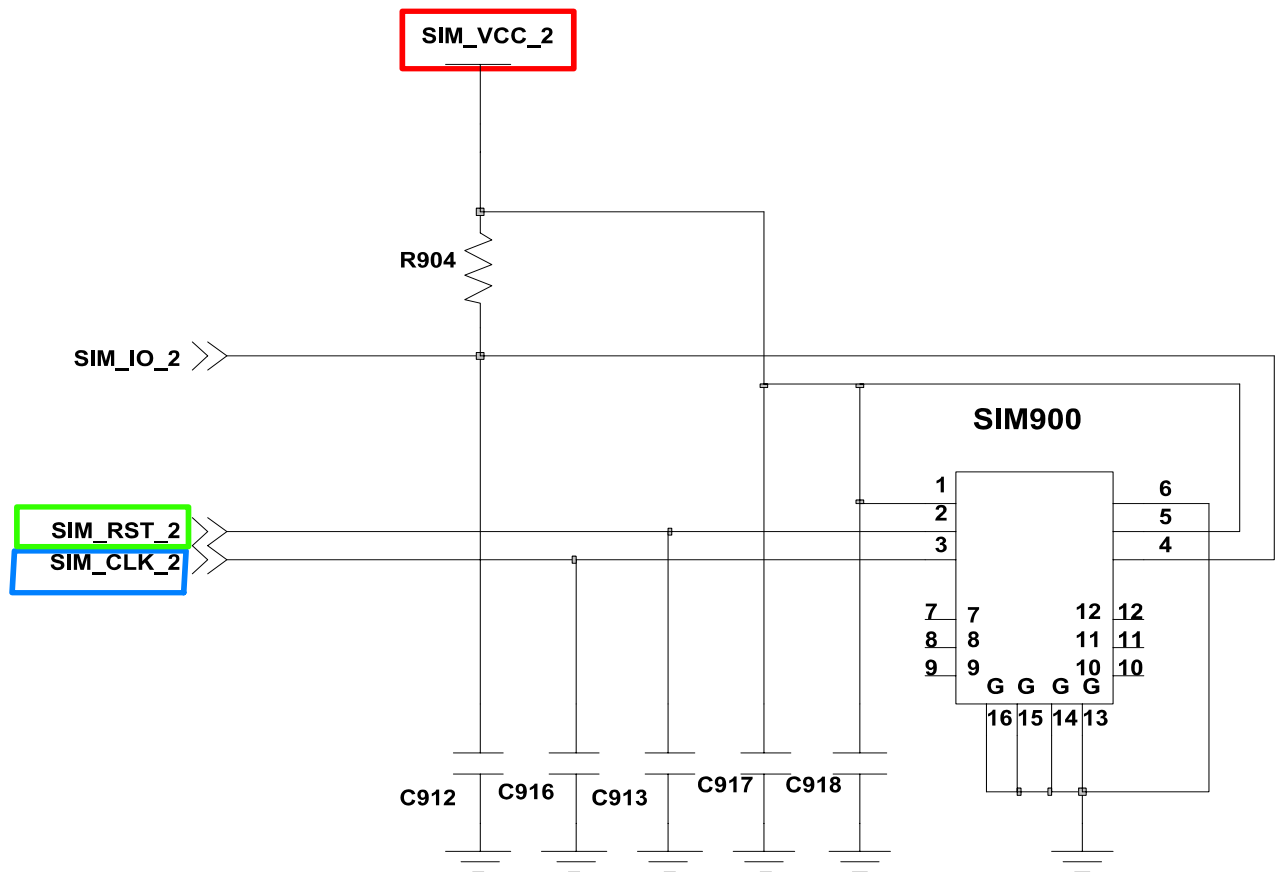
## 9-4. Sim Part

## 1)Master

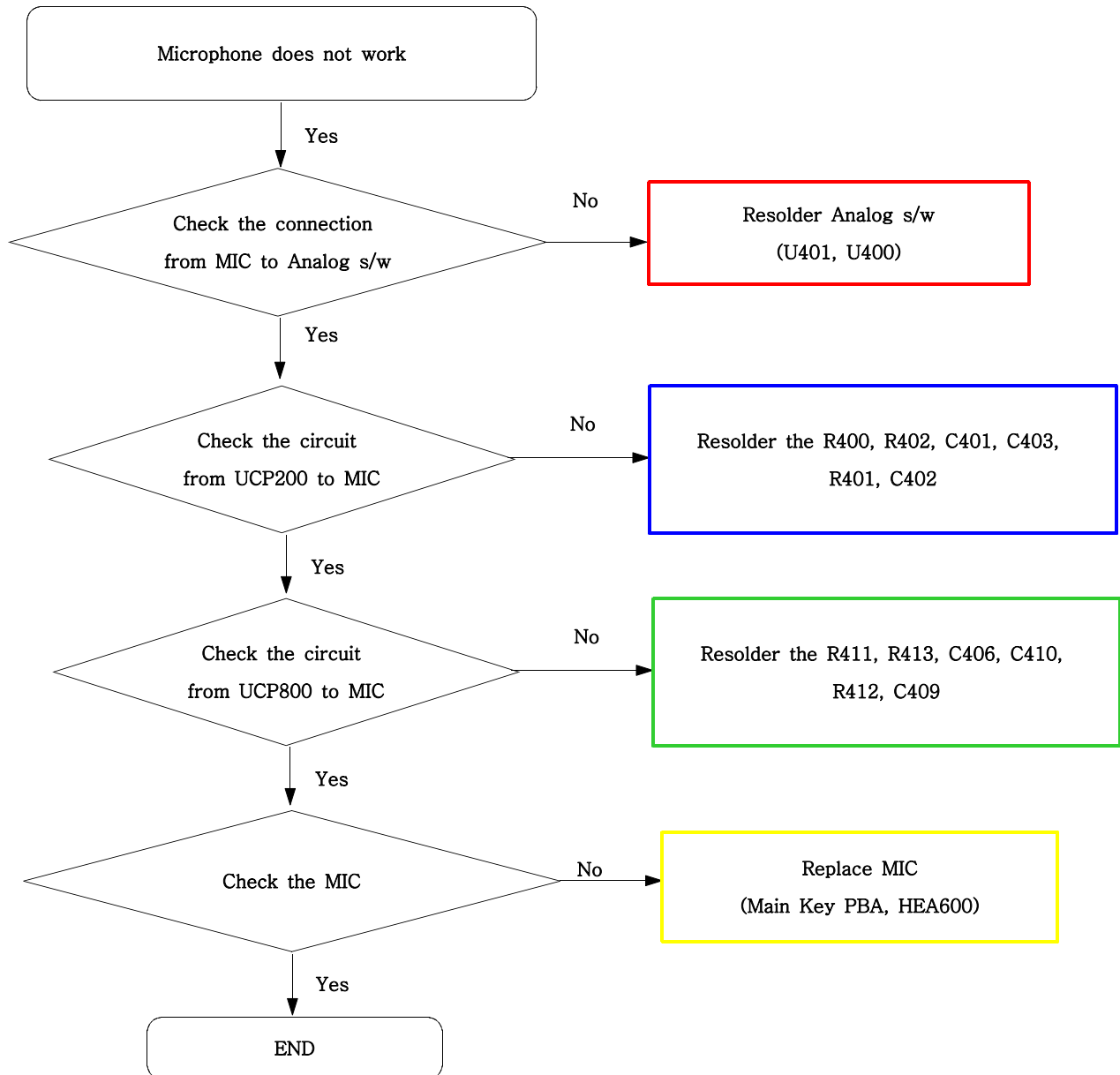


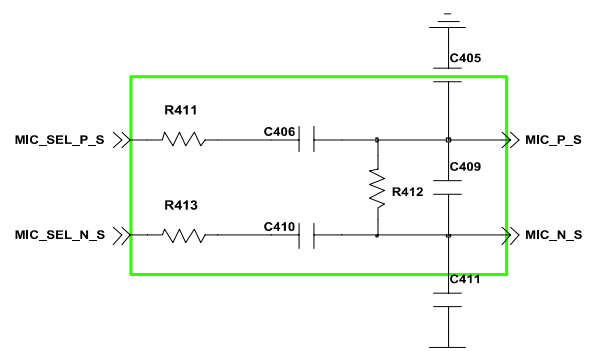
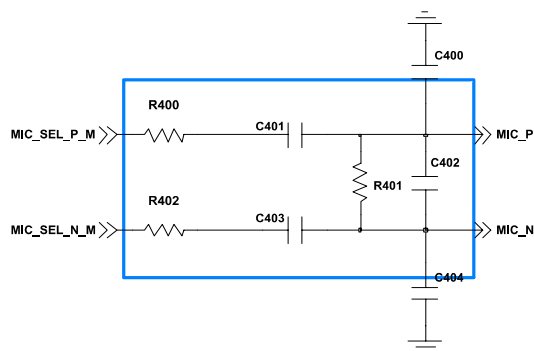
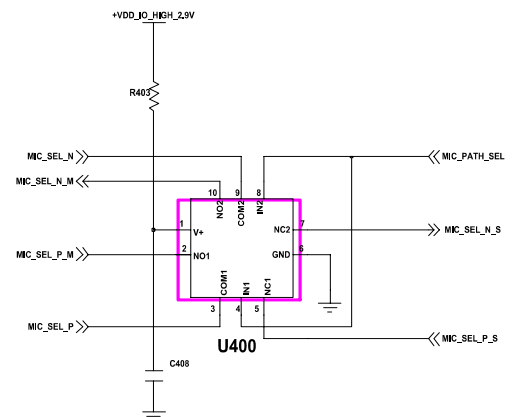
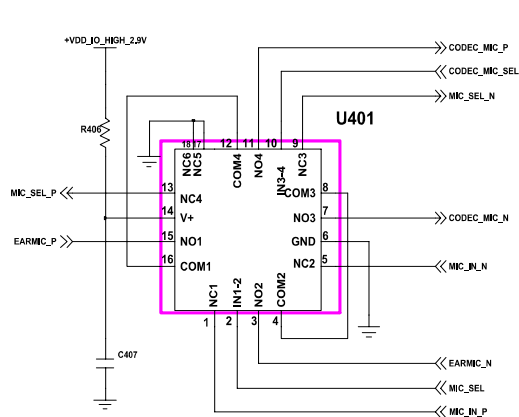


**2)Slave**

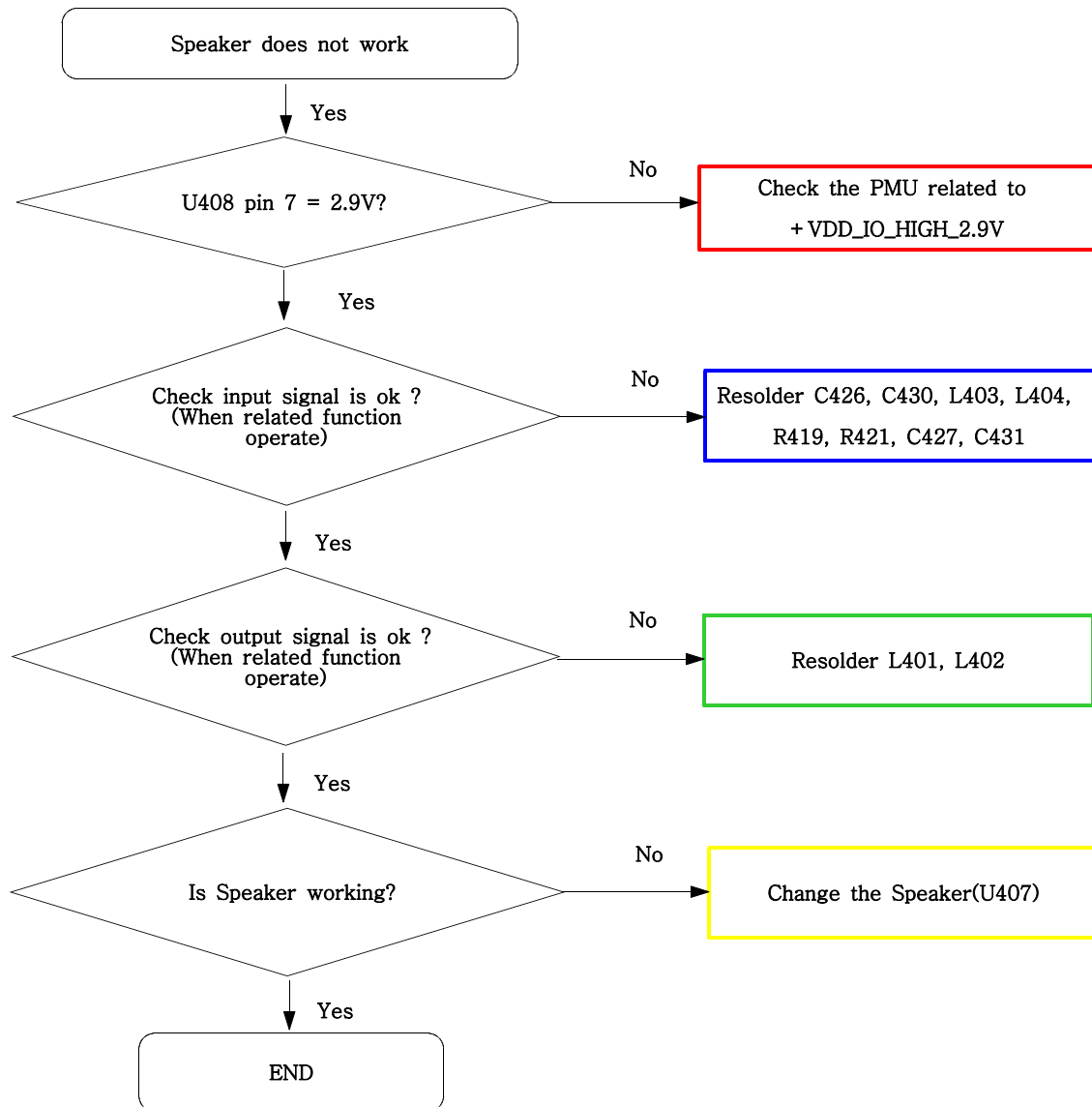


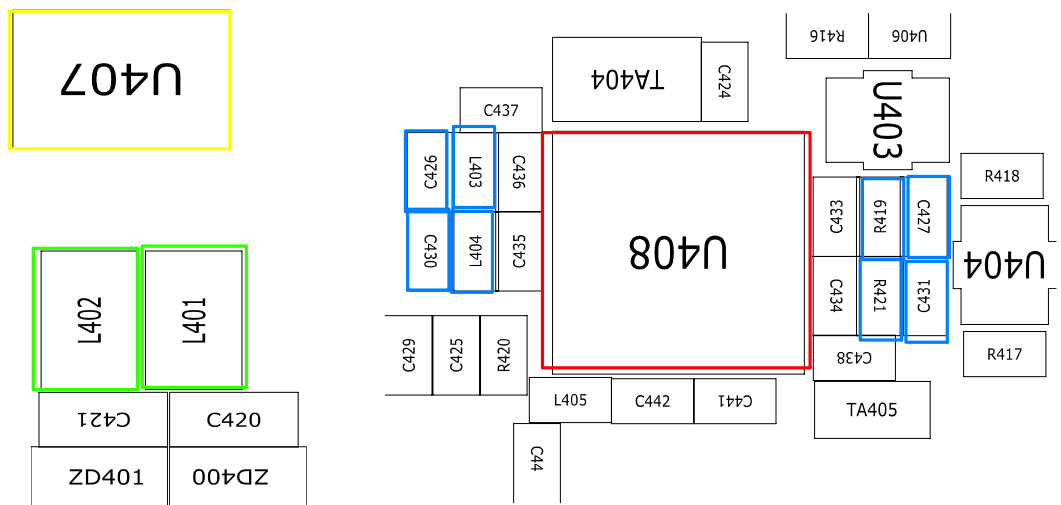
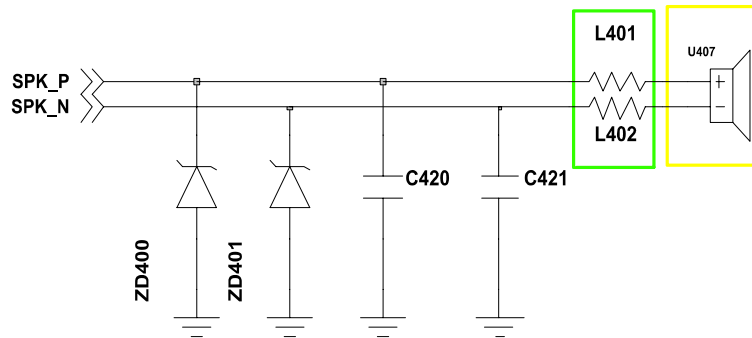
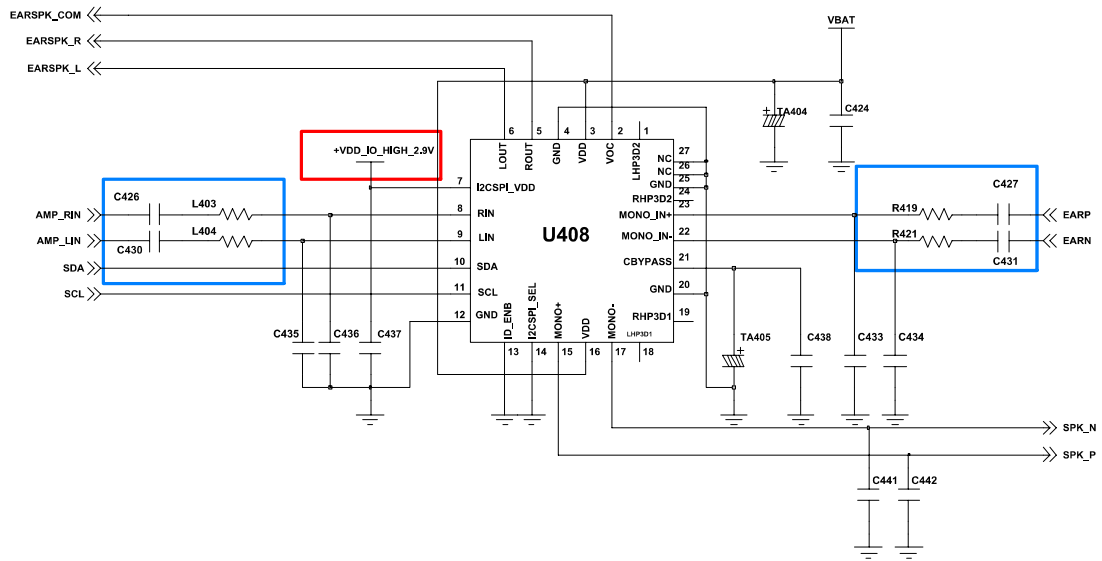
## 9-5. Microphone Part





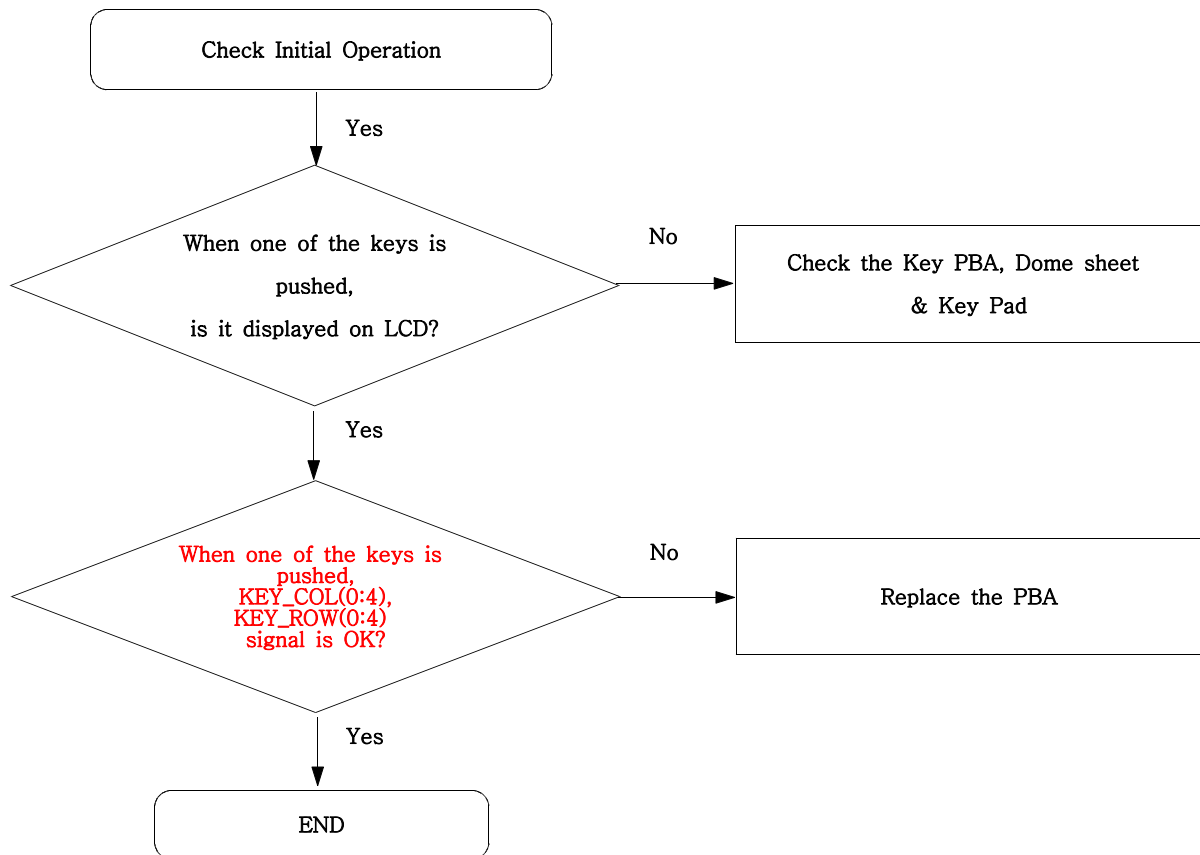
## 9-6. Speaker Part(Melody)



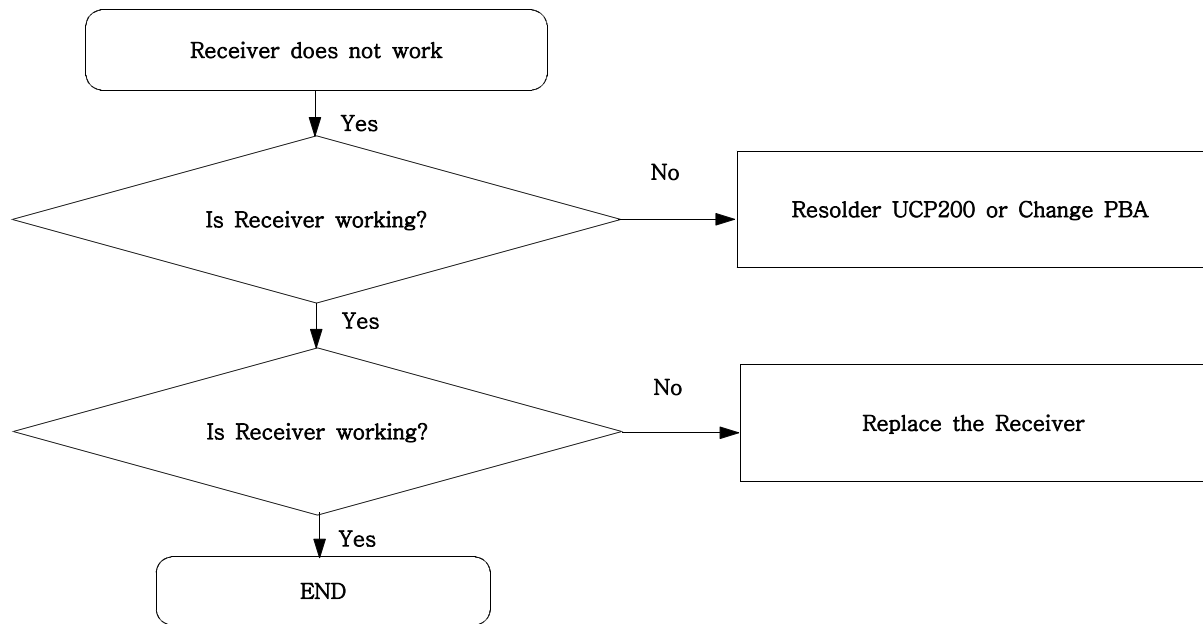




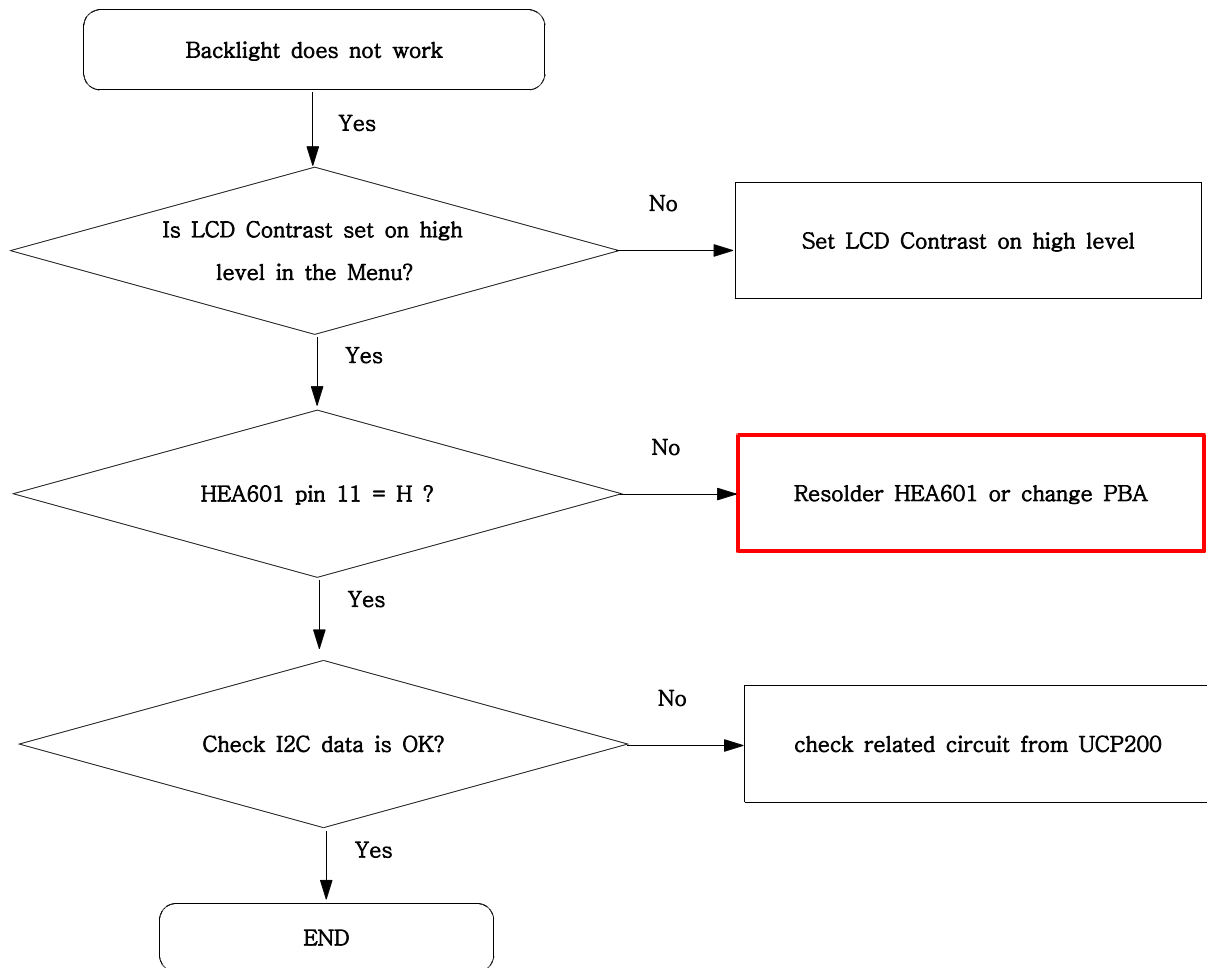
## 9-7. Key Data Input

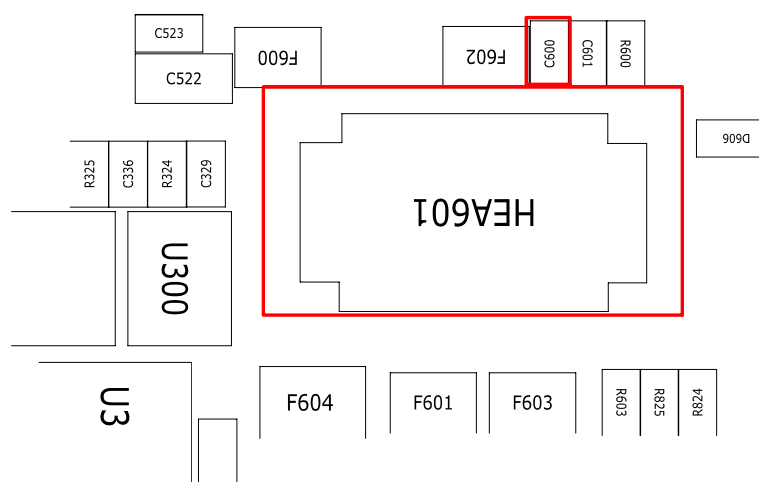
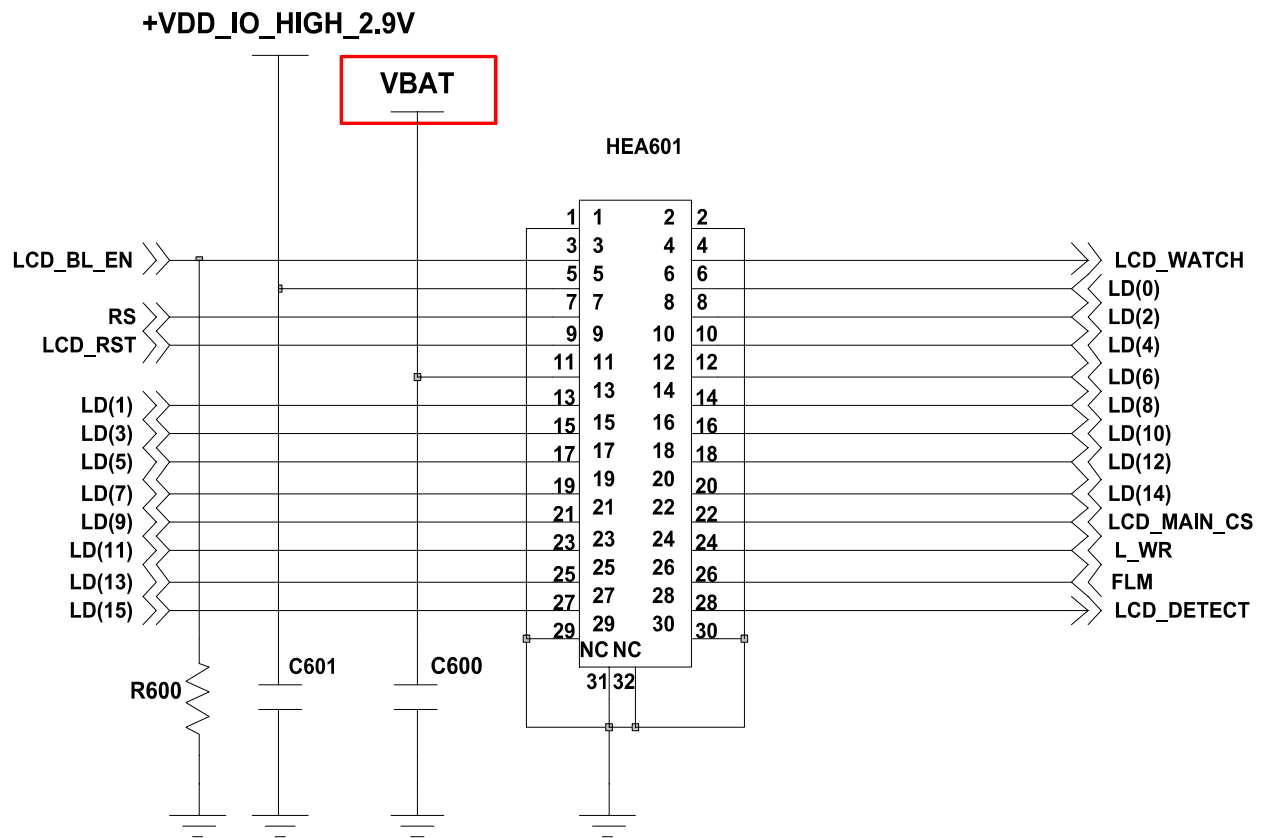


## 9-8. Receiver Part

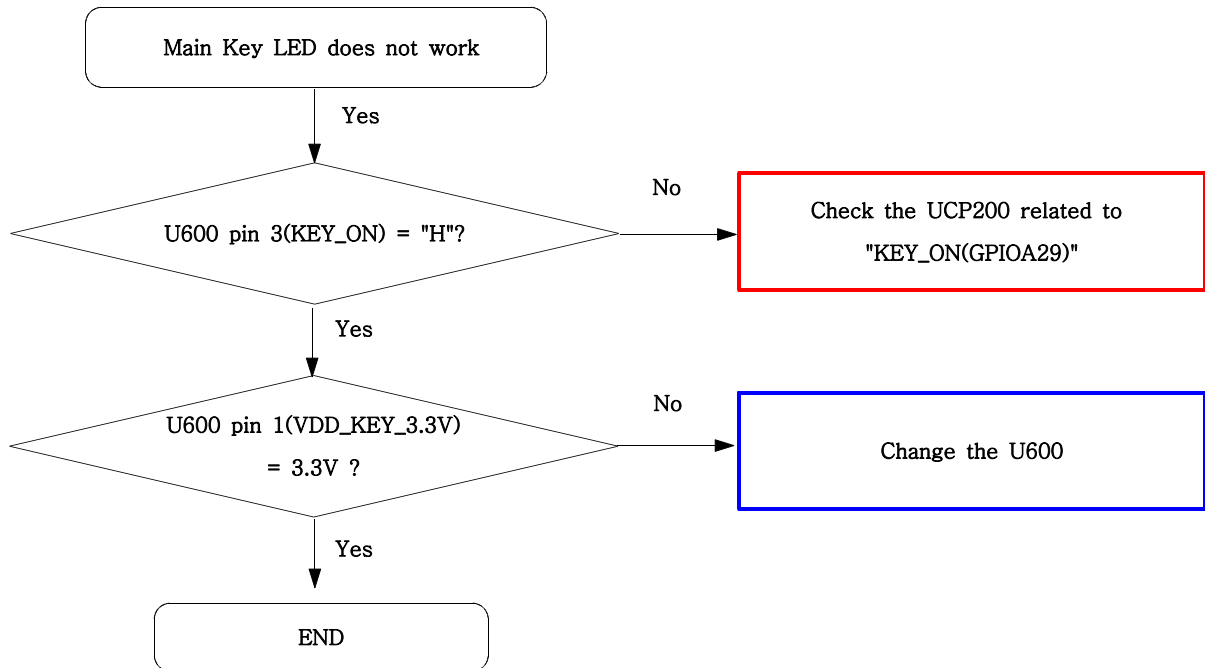


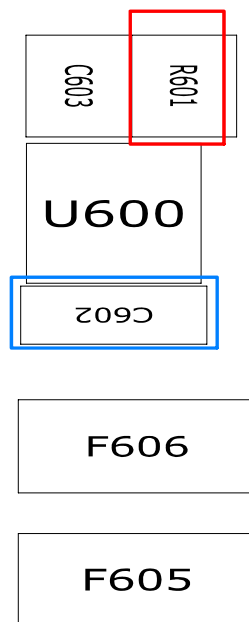
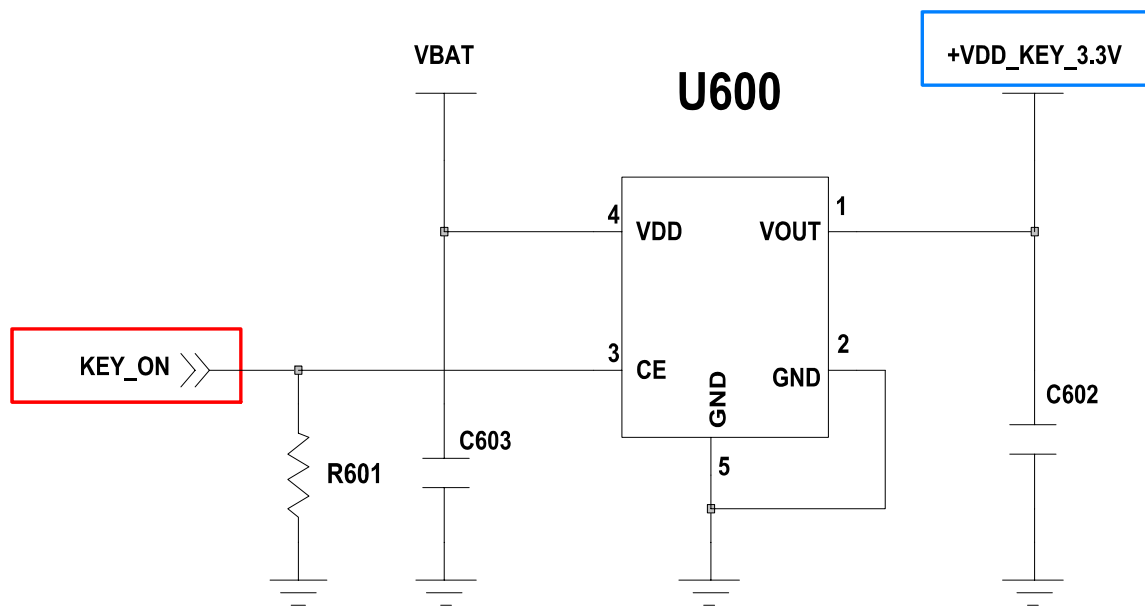
## 9-9. Back Light (for Color Main LCD)



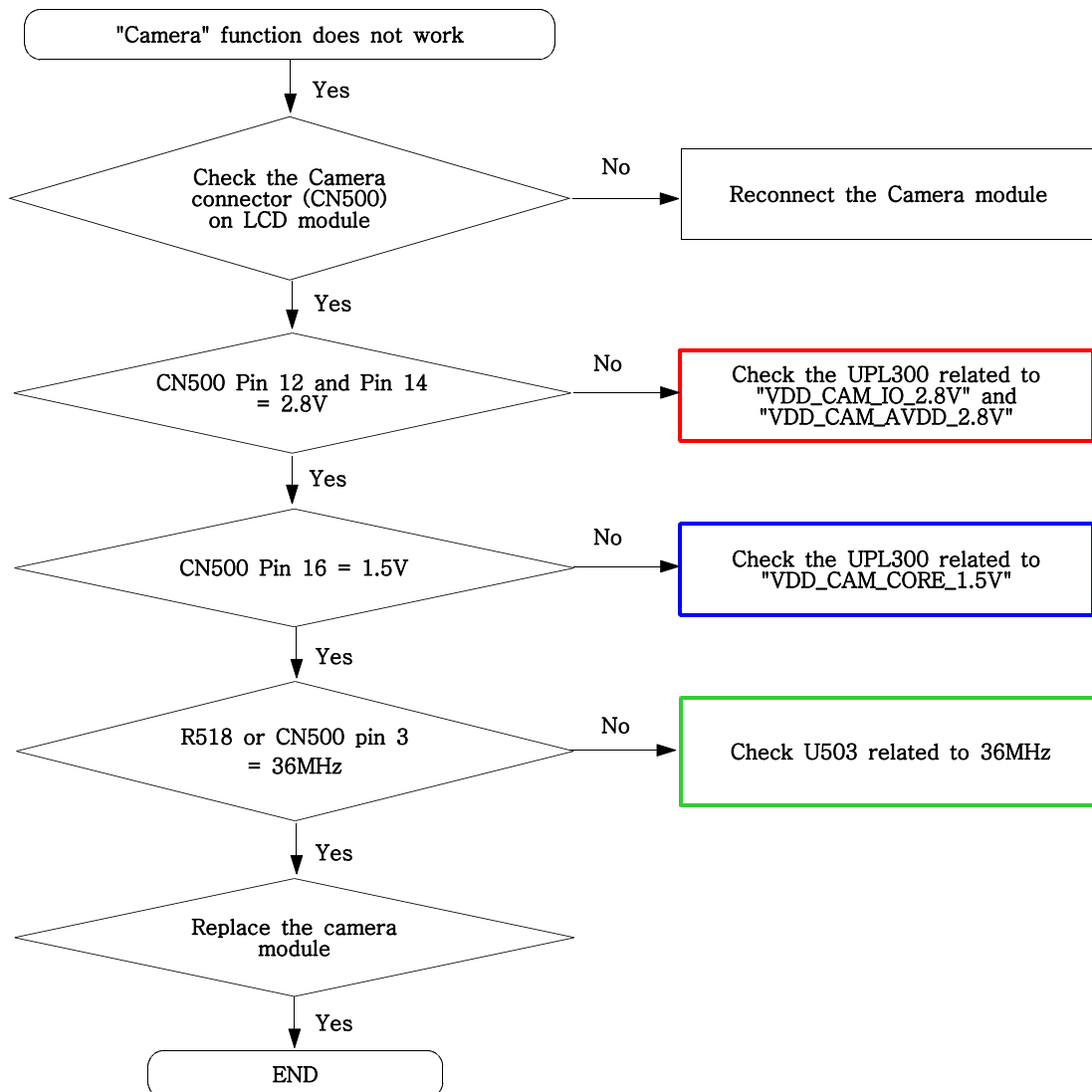


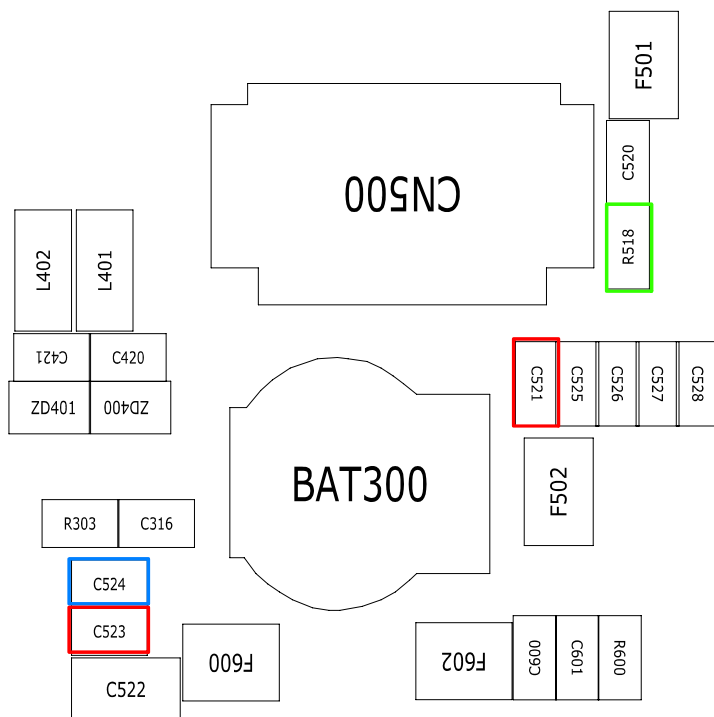
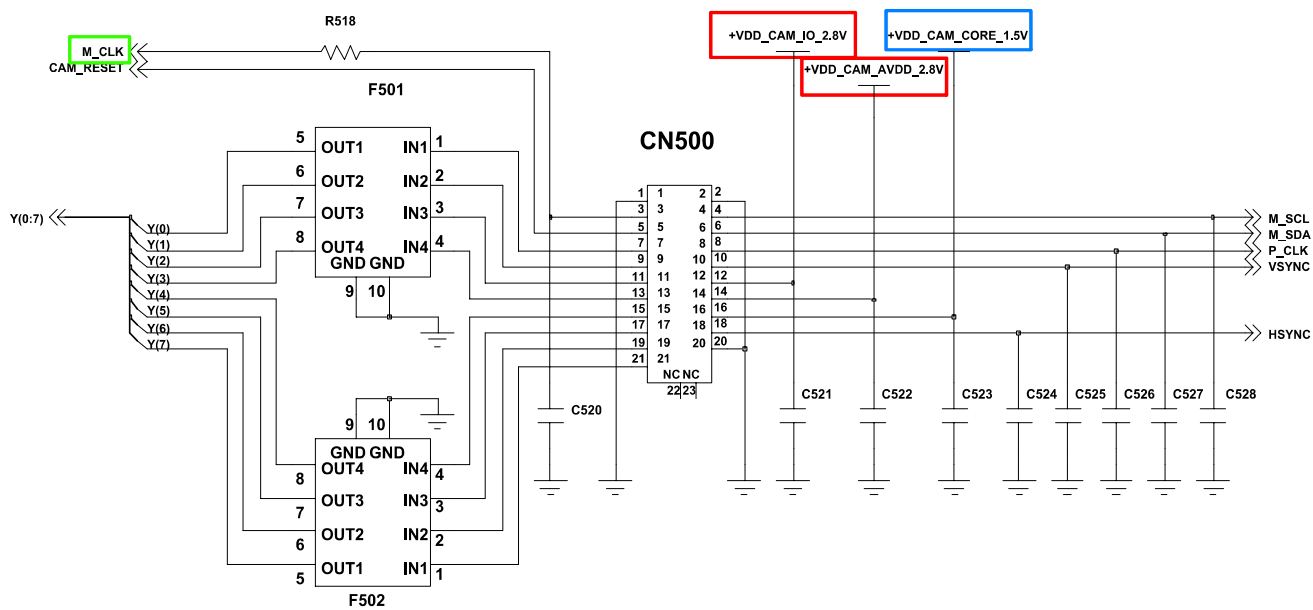
## 9-10. Key Back Light





## 9-11. Camera part

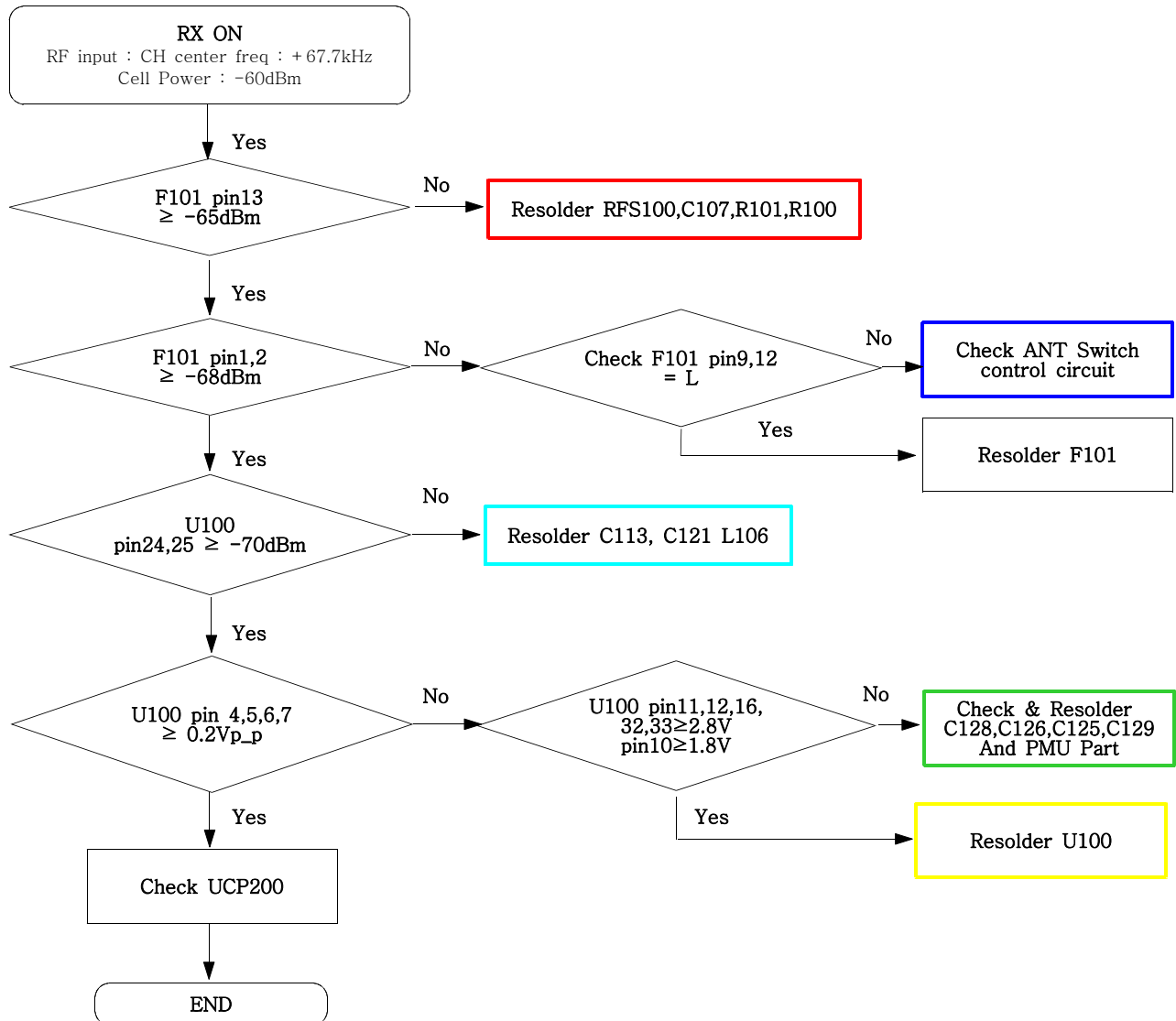




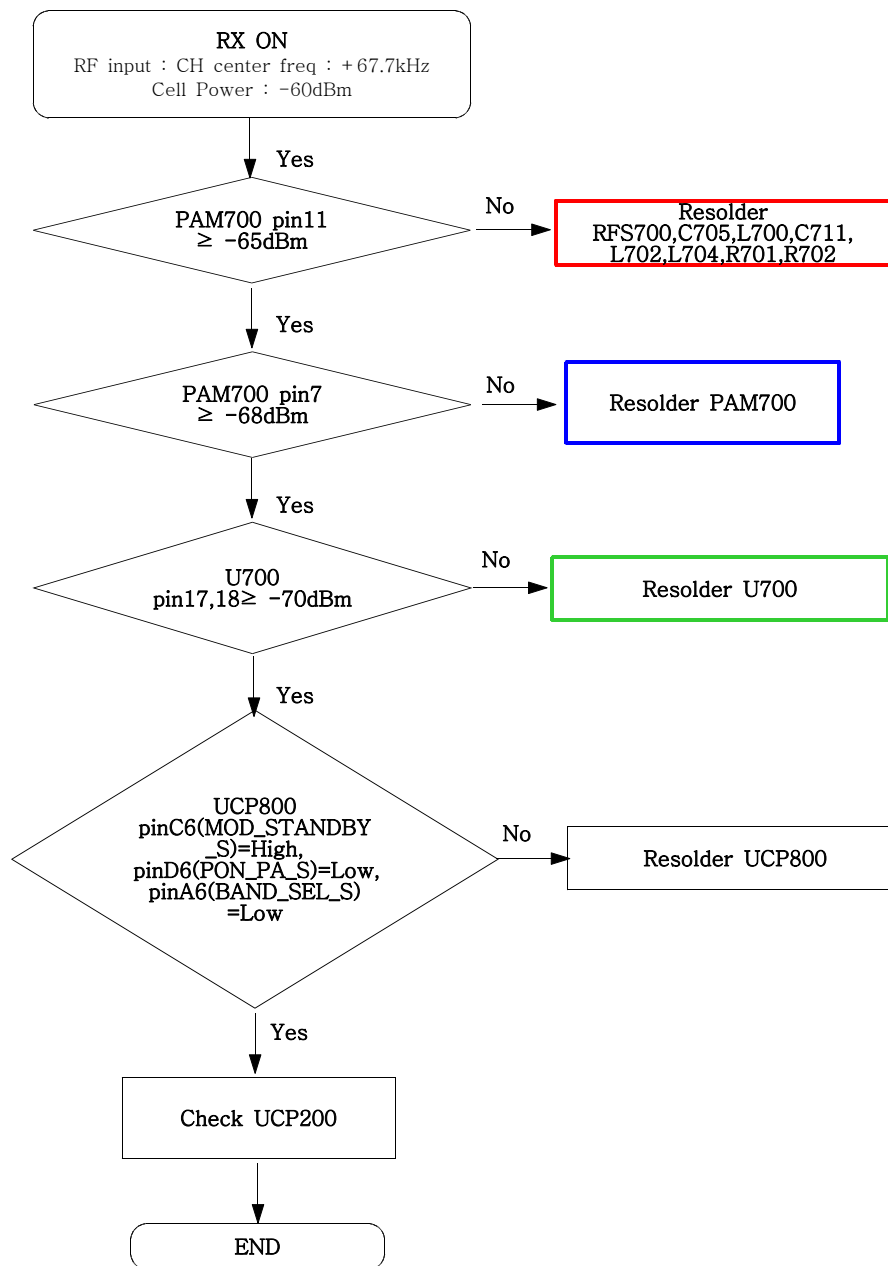


## 9-12. GSM Receiver

### 1) Master

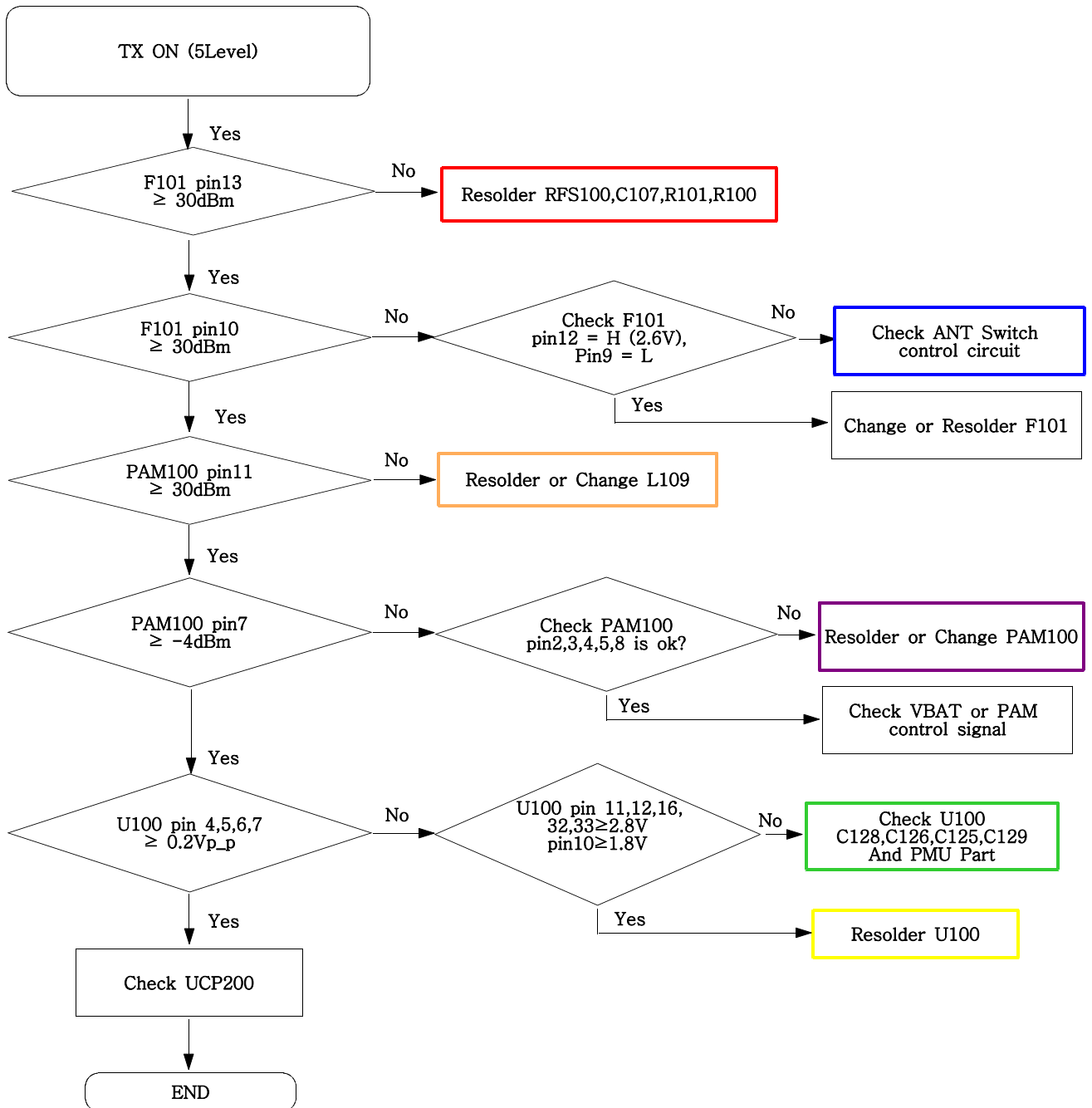


## 2)Slave

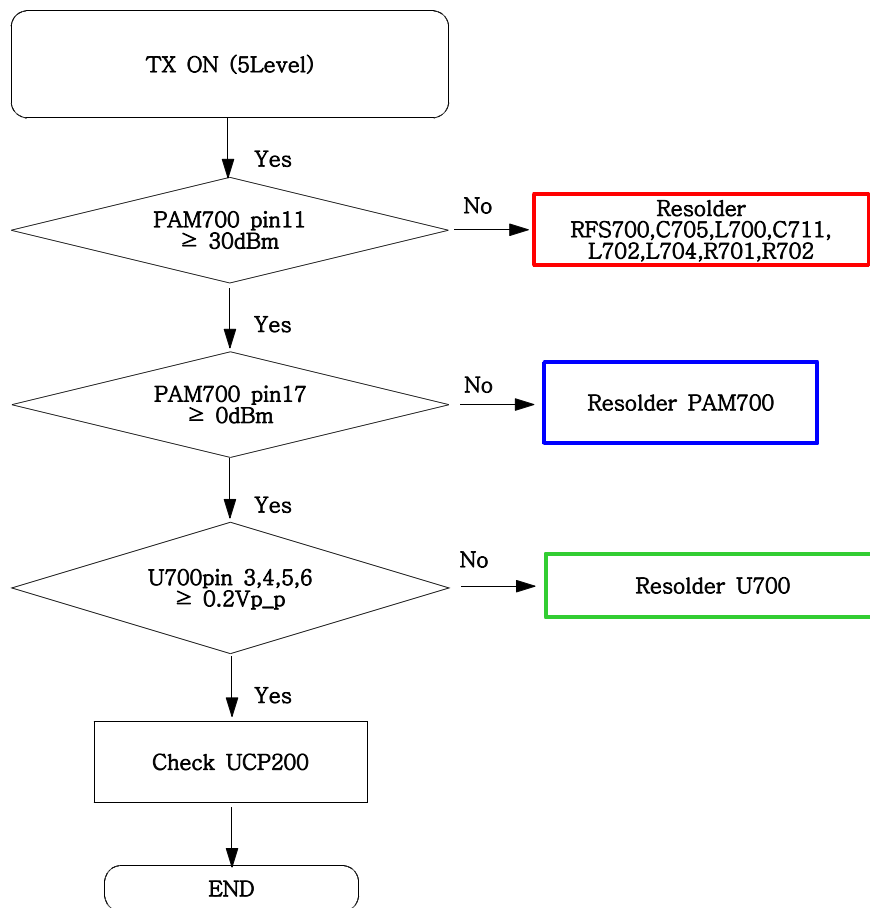


### 9-13. GSM Transmitter

#### 1) Master

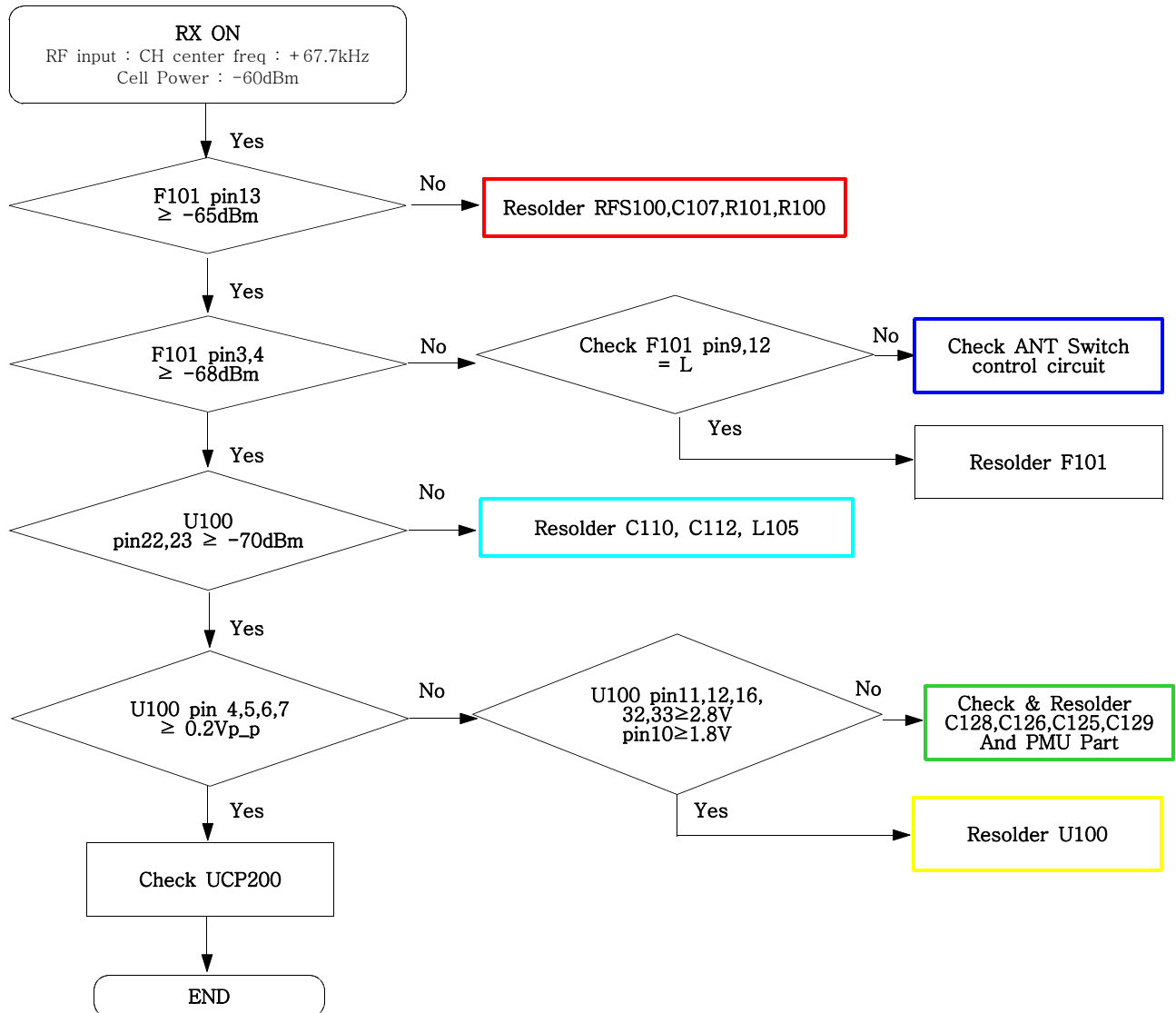


## 2)Slave

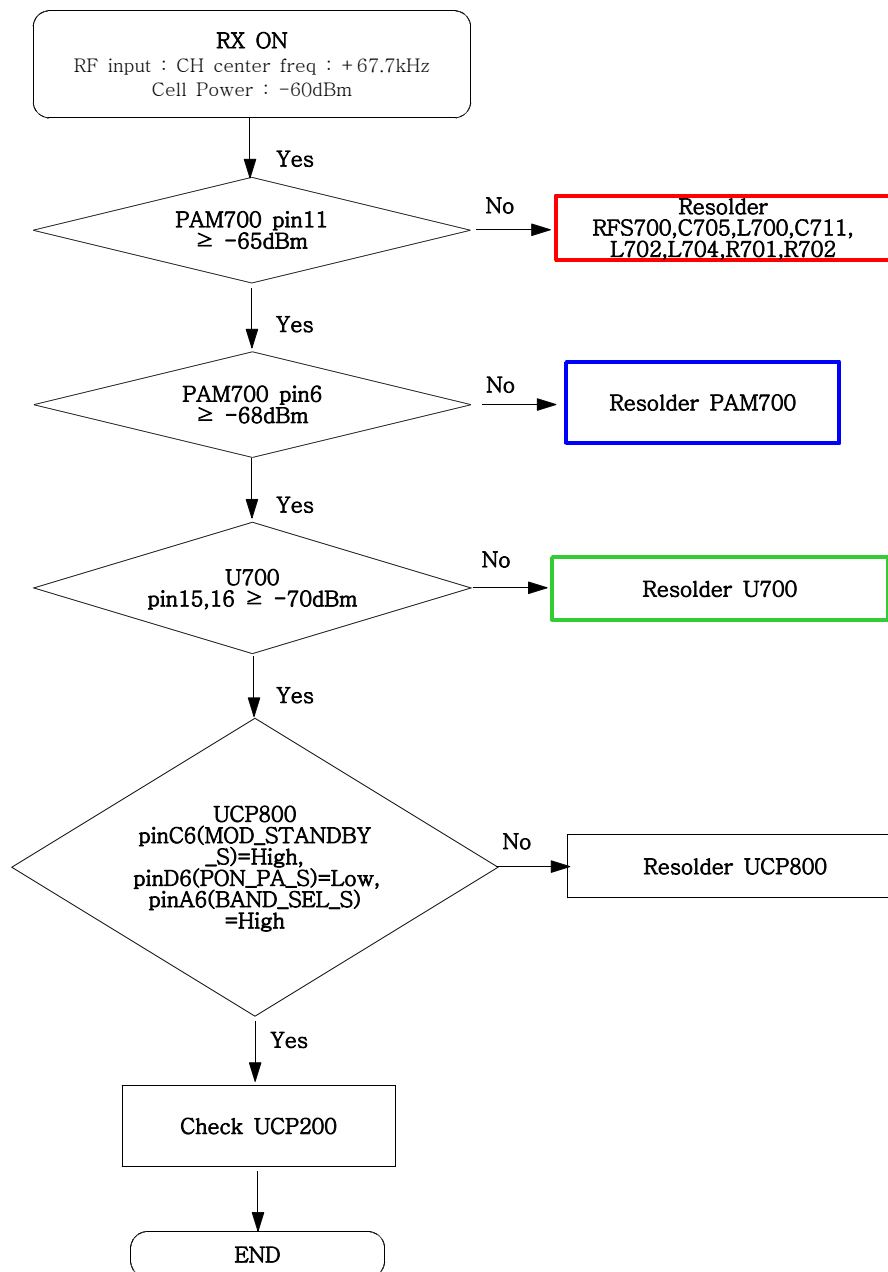


## 9-14. DCS Receiver

### 1) Master

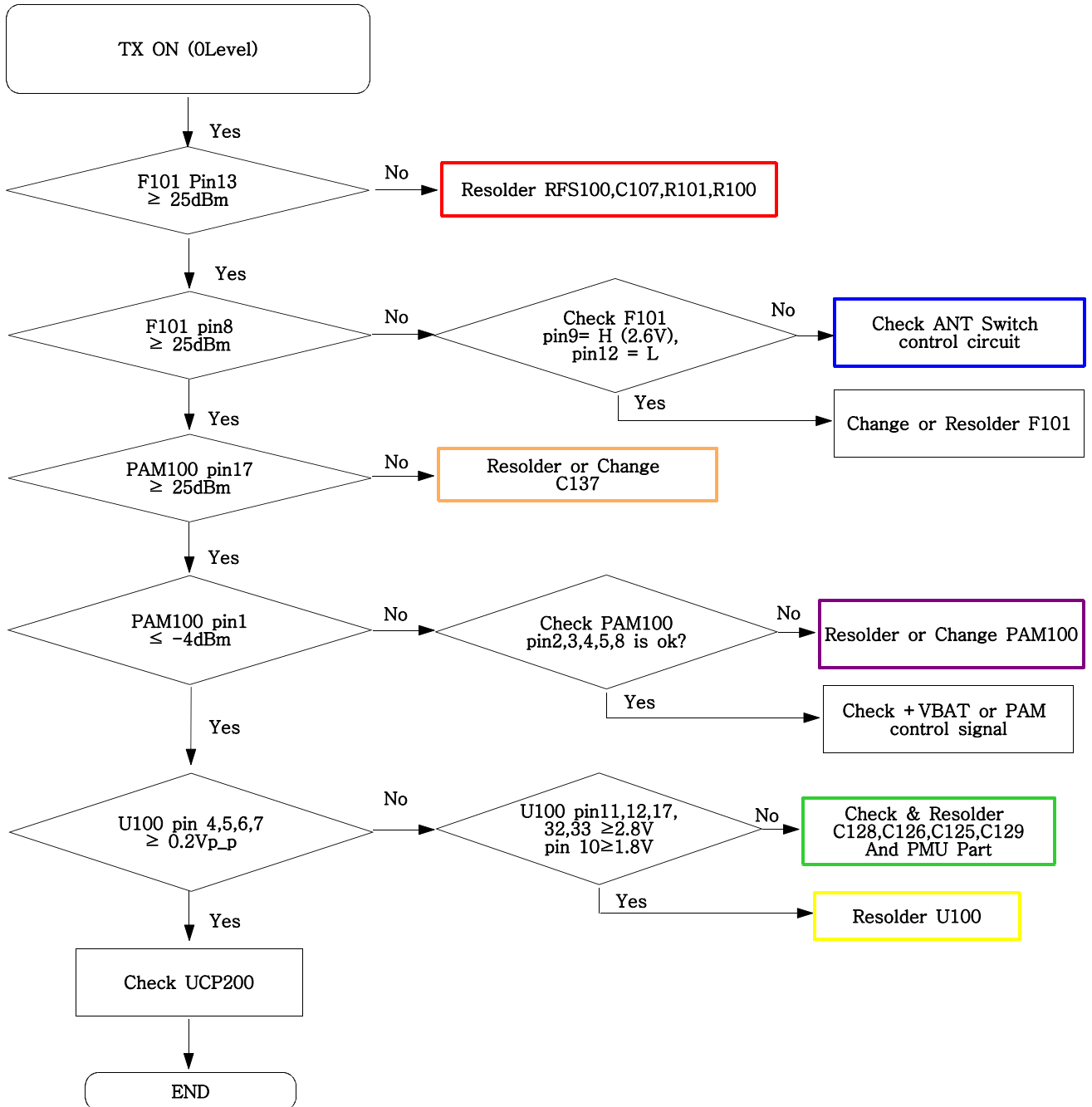


## 2)Slave

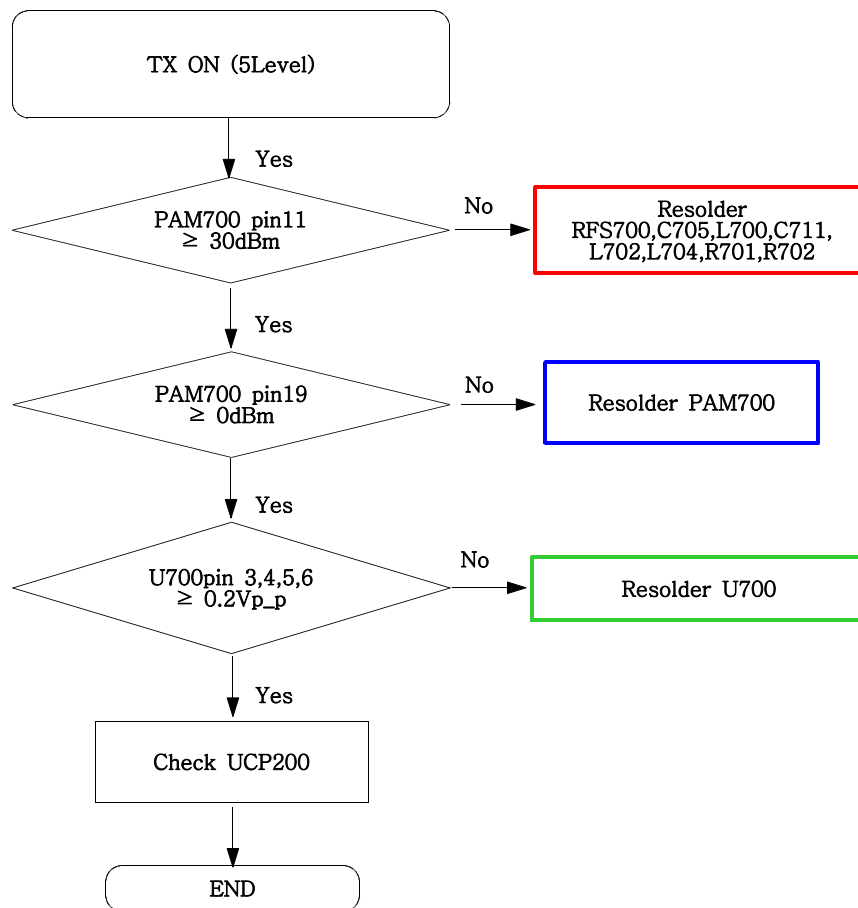


## 9-15. DCS Transmitter

### 1) Master



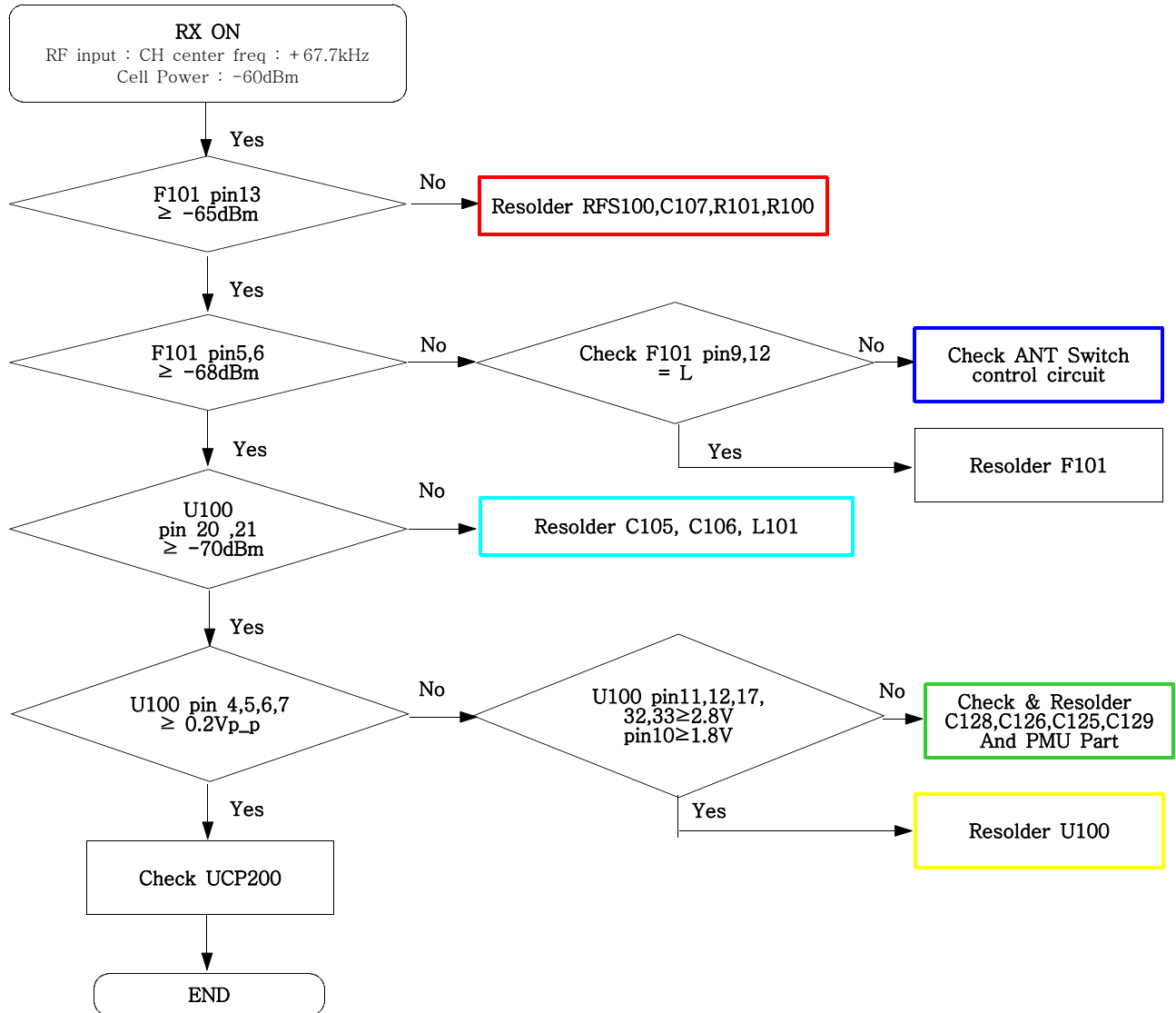
## 2)Slave





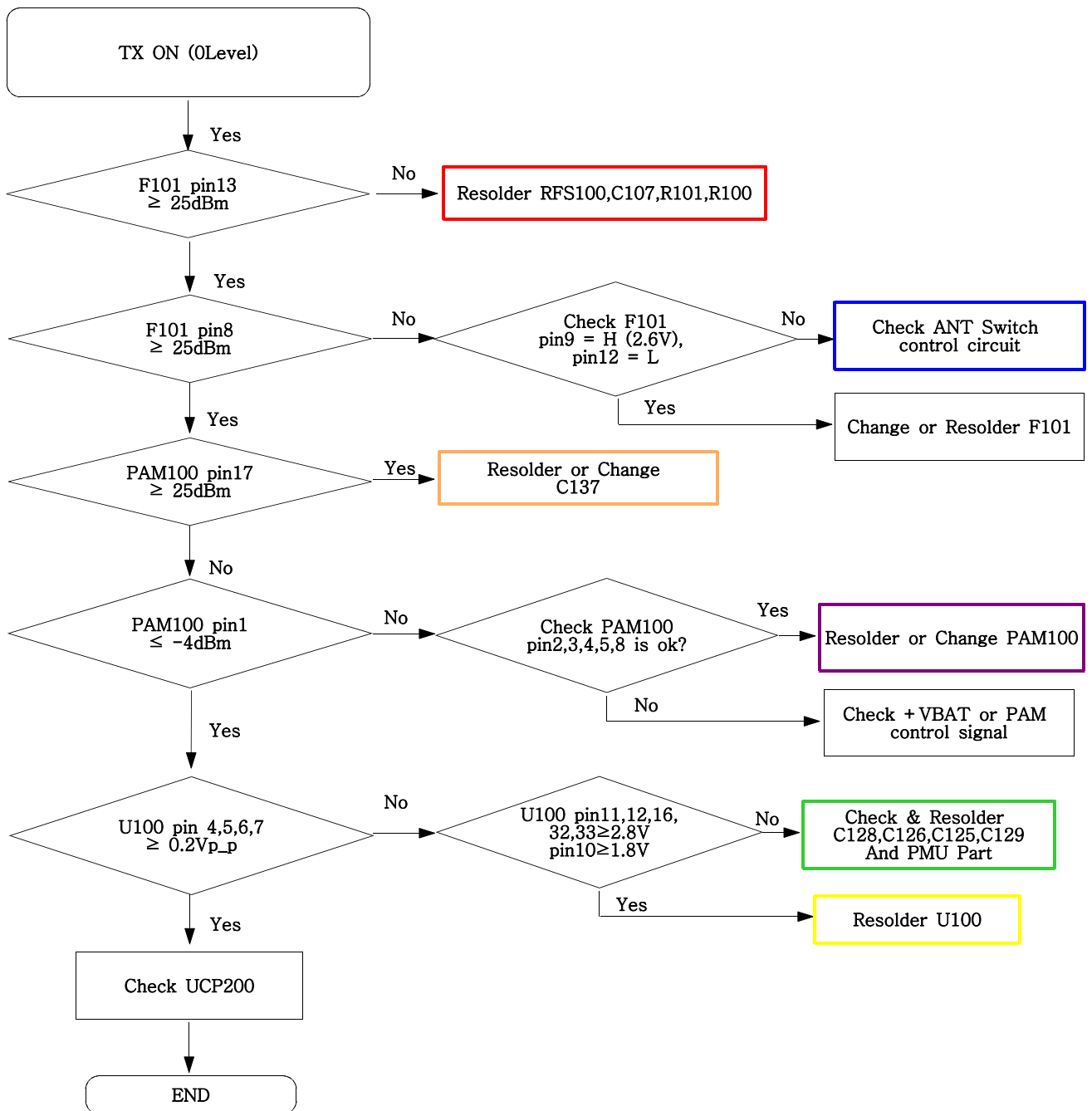
## 9-16. PCS Receiver

### - Master only

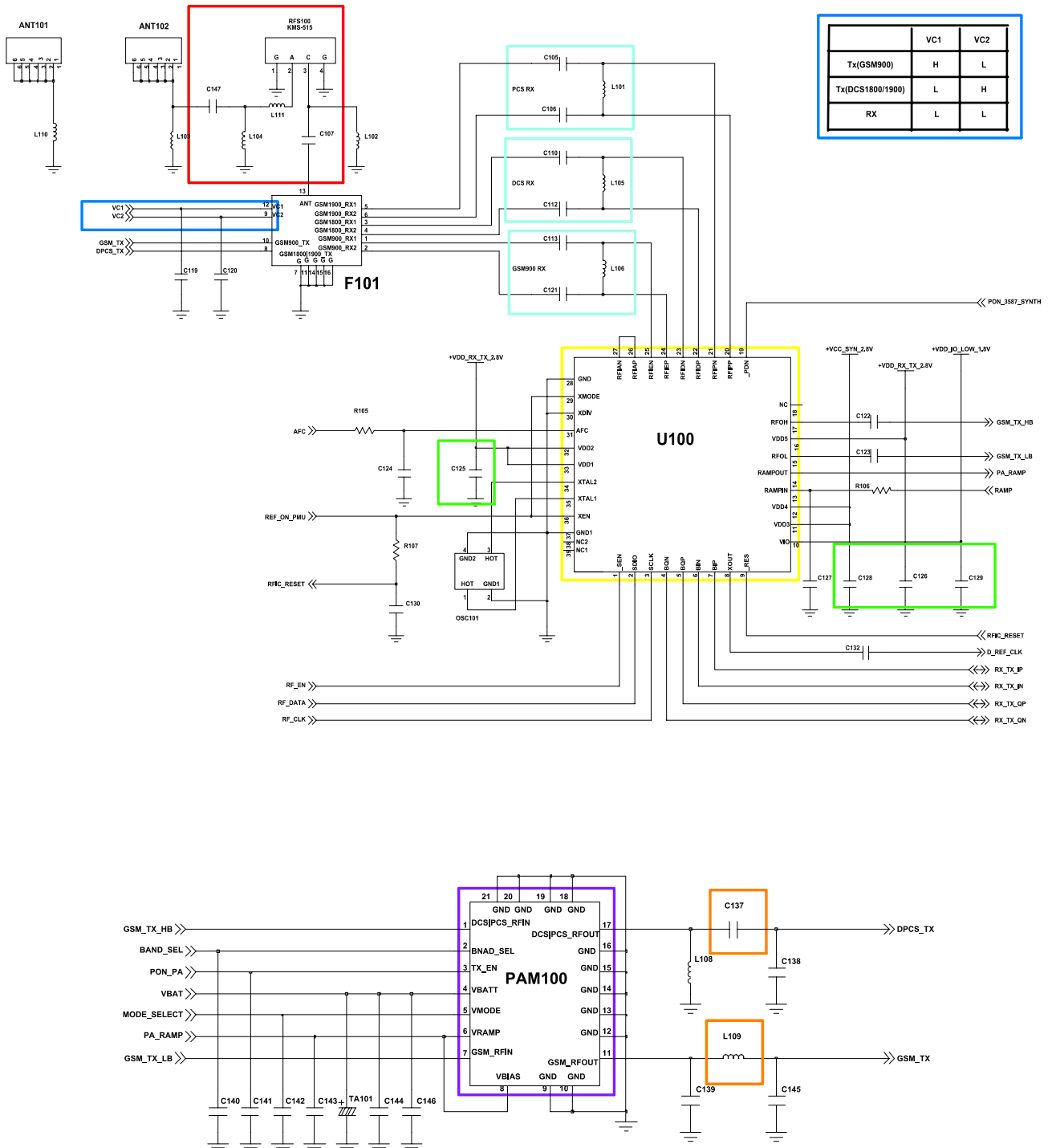


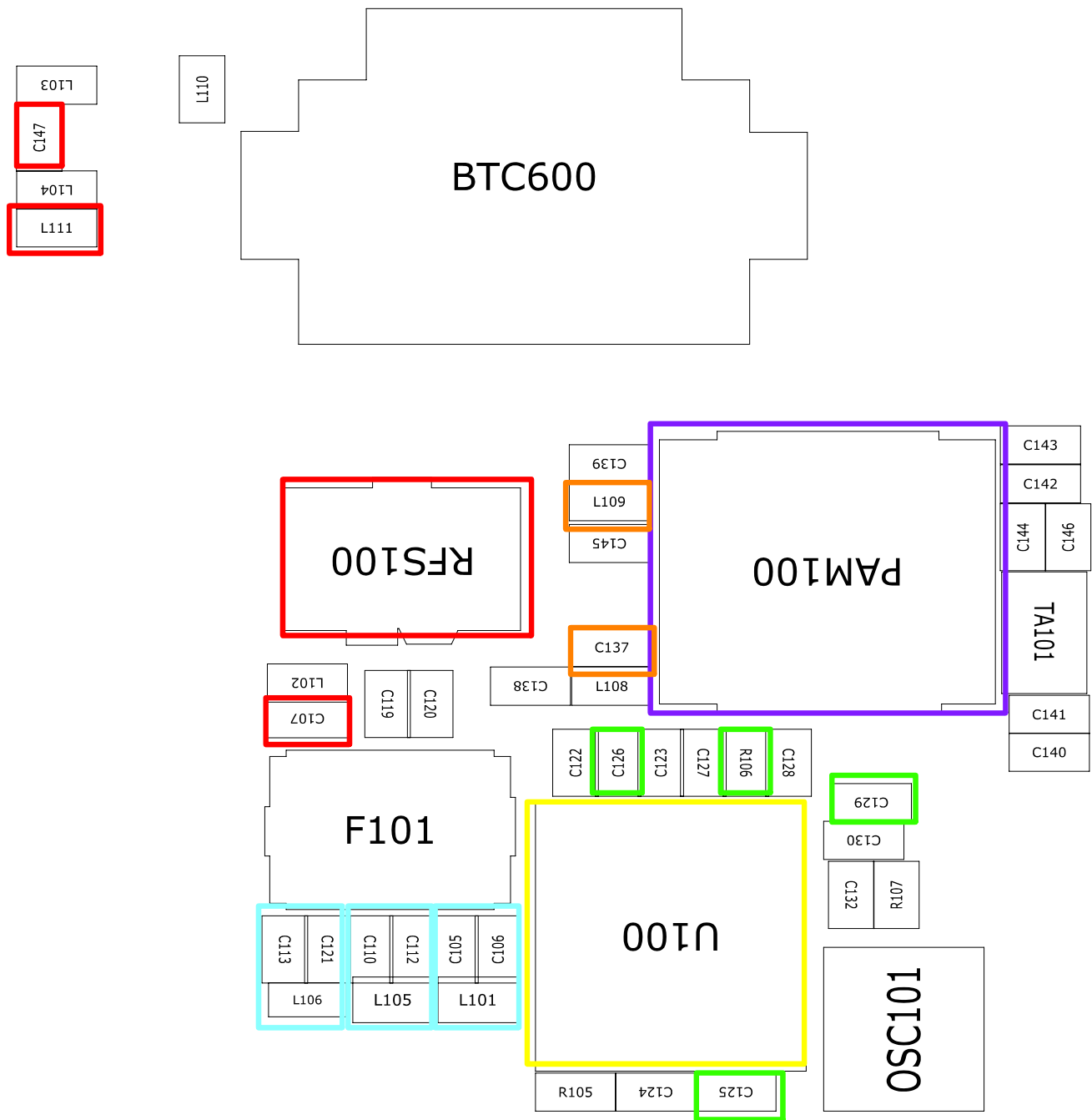
## 9-17. PCS Transmitter

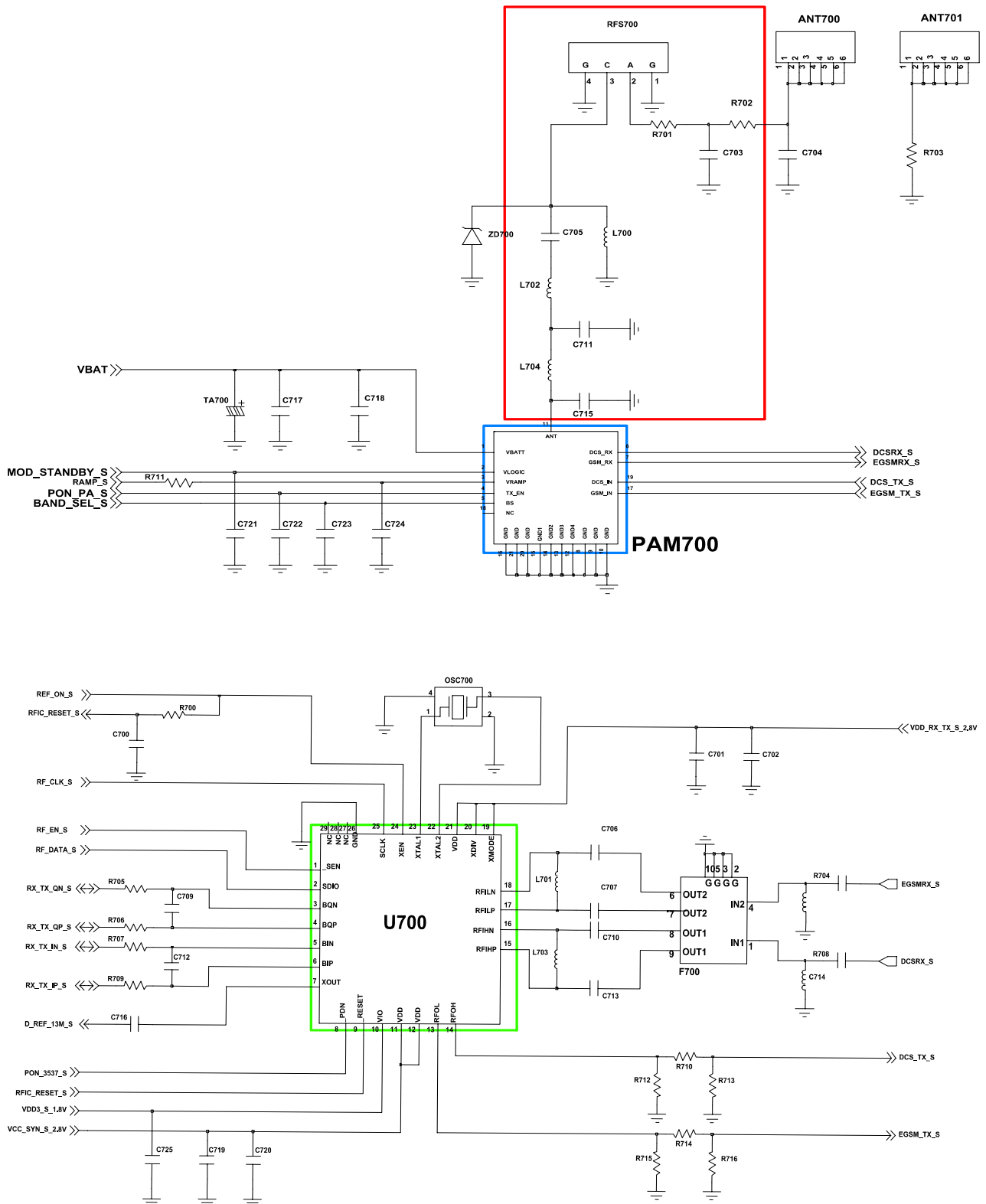
### - Master only

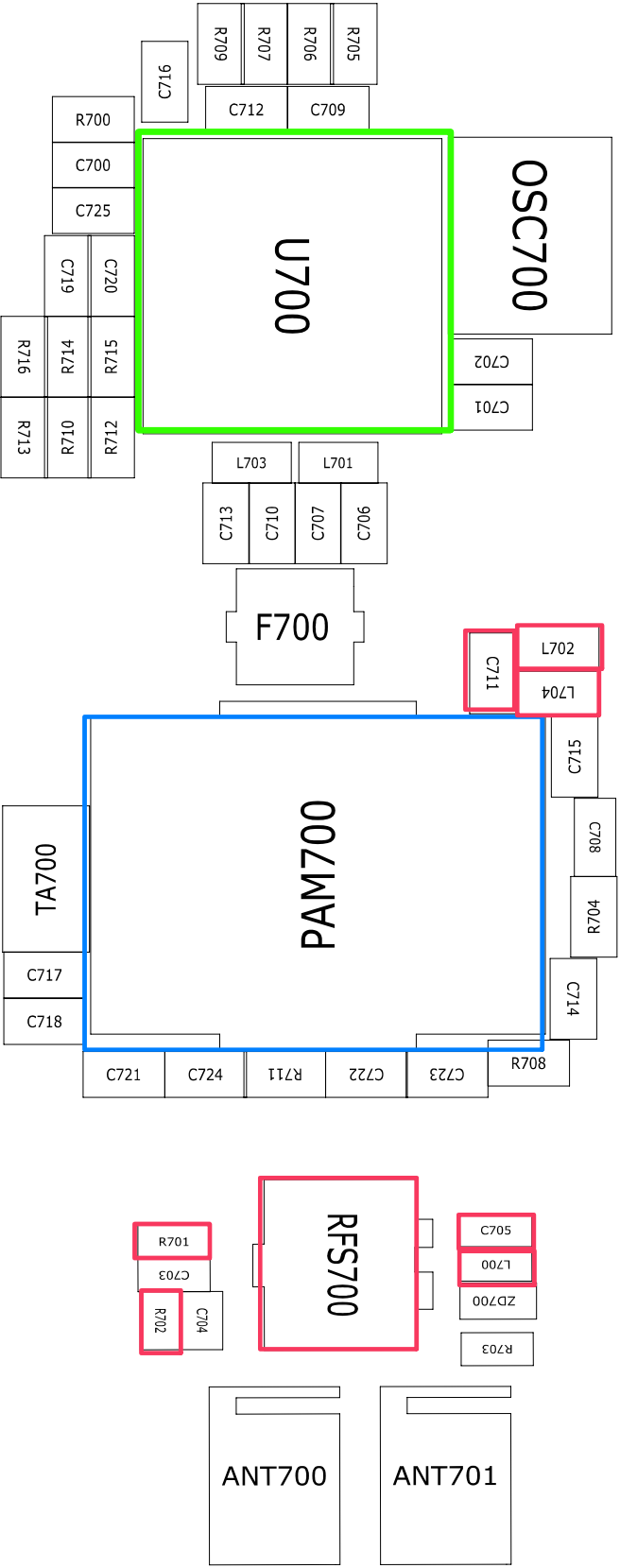


## [Master] Rx, Tx

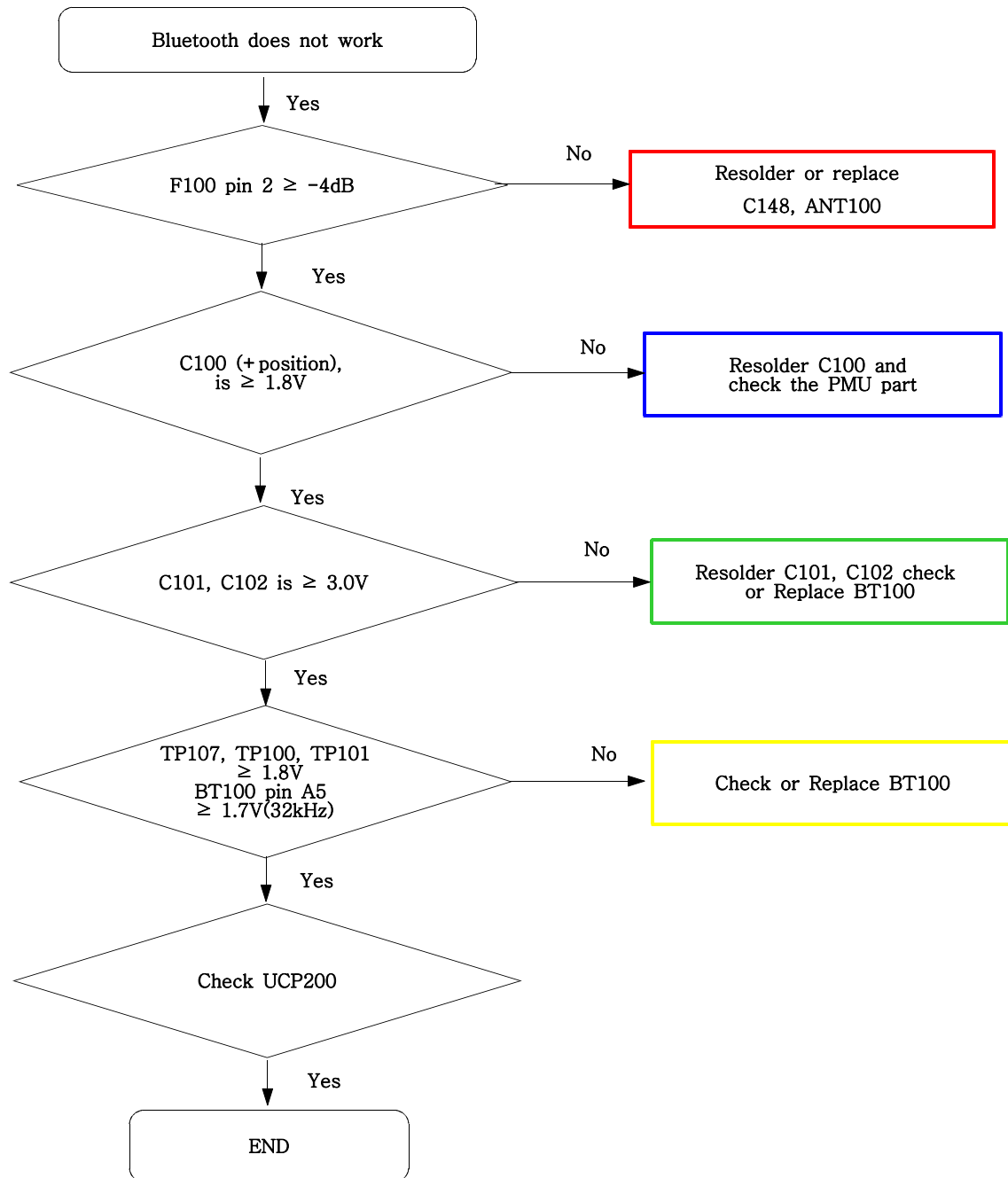


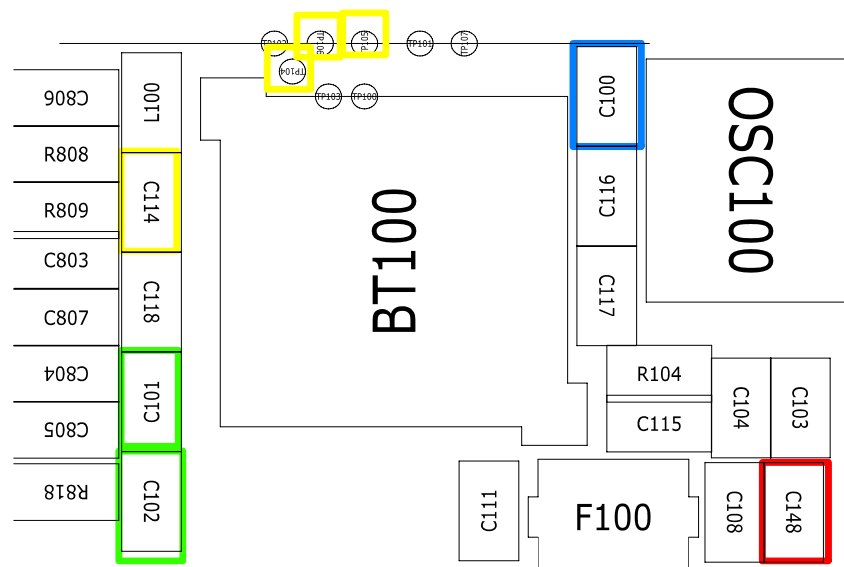


**[Slave] Rx, Tx**



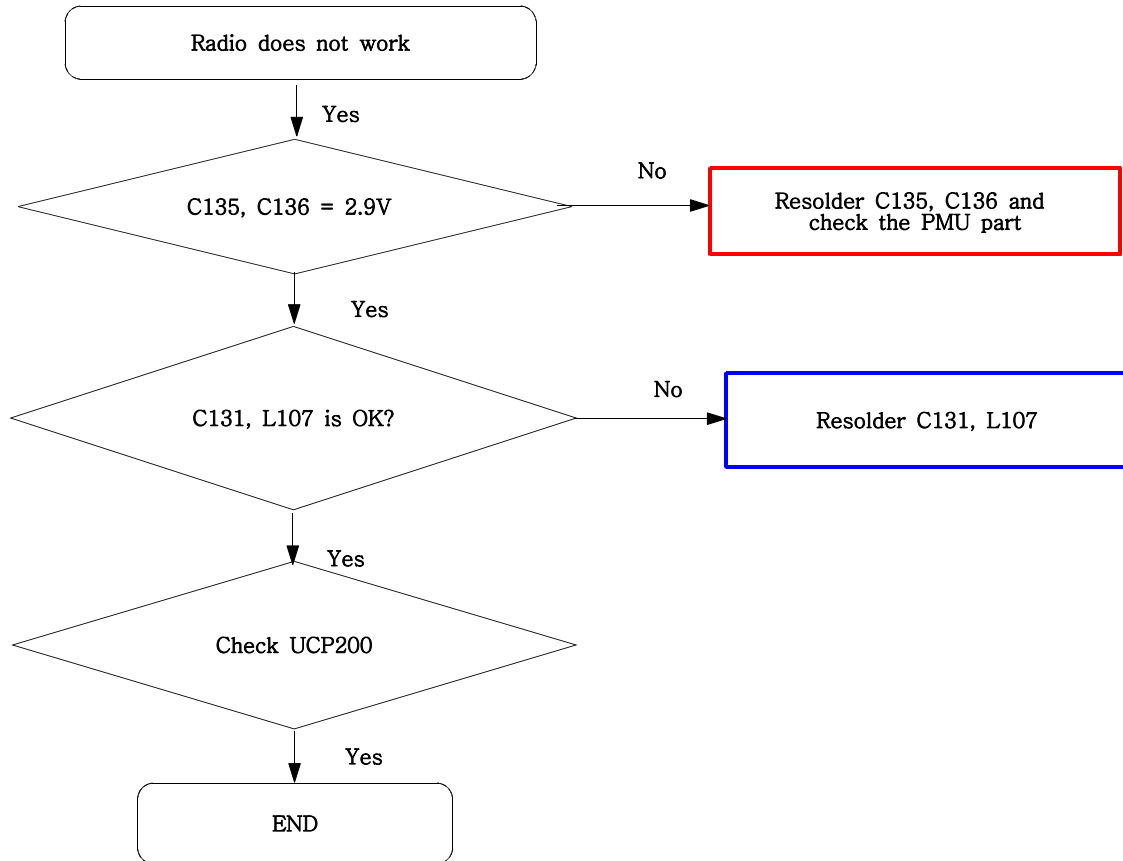
## 9-18. Bluetooth part

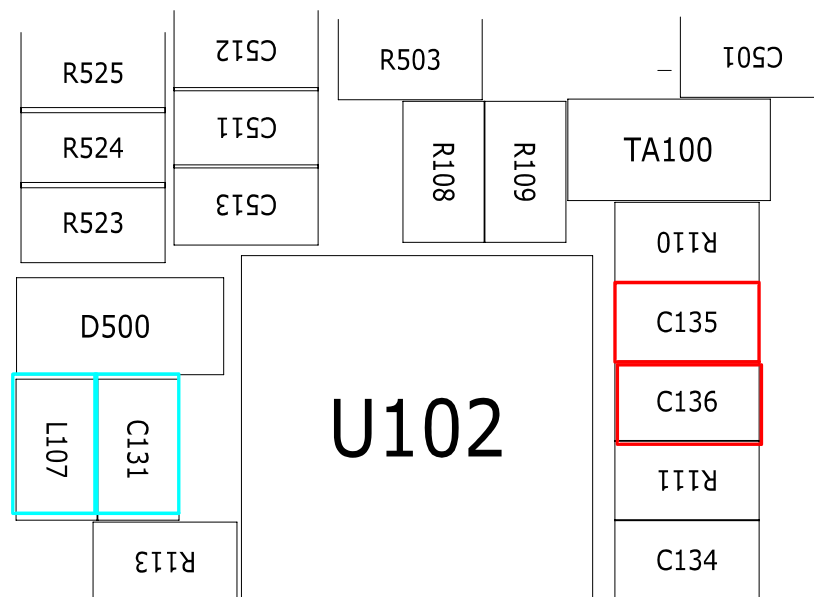
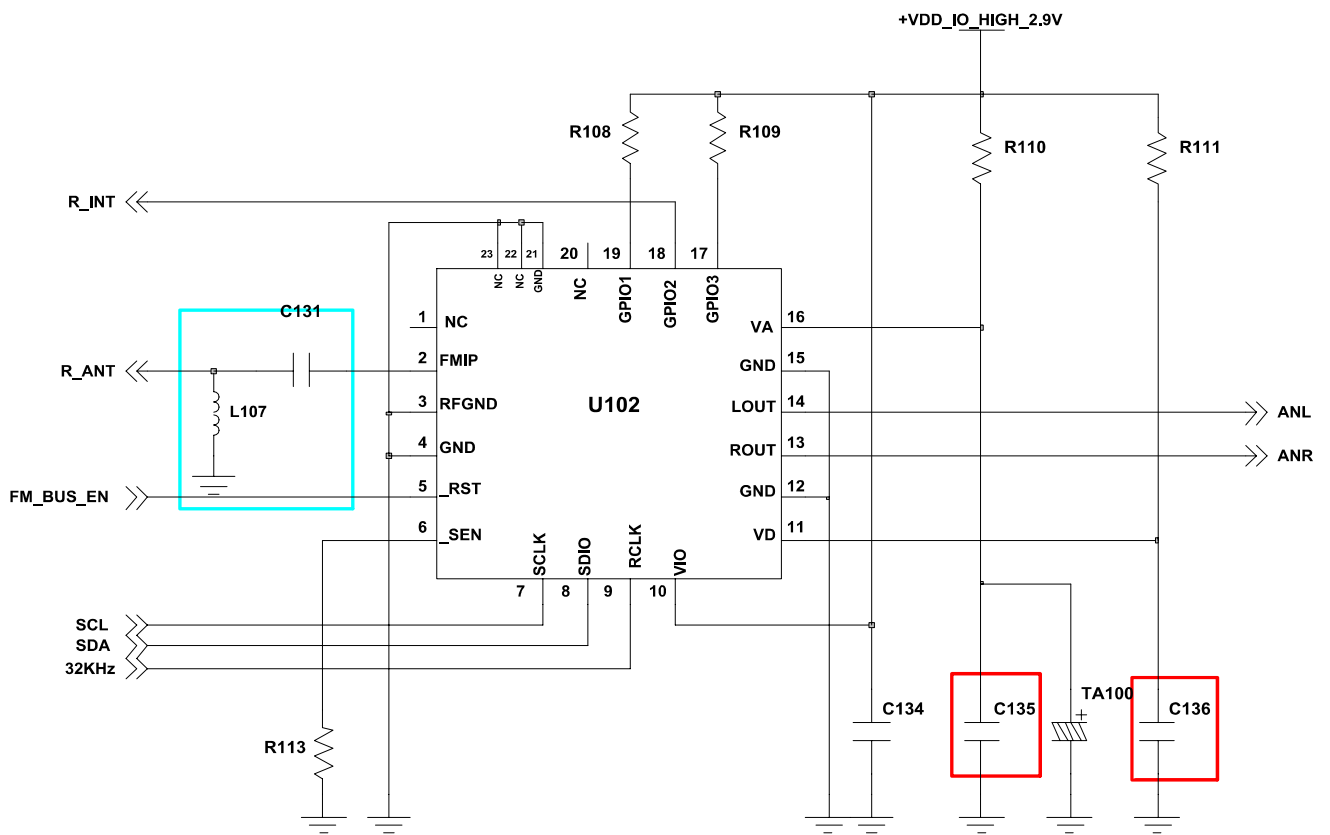






## 9-19. FM Radio part





---

## 10. Reference data

---

### 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

