SAMSUNG

UMTS TELEPHONE
SGH-ZV30

SERVICE Manual

UMTS TELEPHONE

CONTENTS

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ELECTRONICS

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BASIC.

1. Specification

1-1. GSM General Specification

	EGSM 900	DCS1800	PCS1900	W-CDMA
Freq. Band[MHz] Uplink/Downlink	880~915 925~960	1710~1785 1805~1880	1850~1910 1930~1990	1920~1980 2110~2170
ARFCN range	0~124 & 975~1023	512~885	512~810	UL:9612~9888 DL:10562~10838
Tx/Rx spacing	45MHz	95MHz	80MHz	190MHz
Mod. Bit rate/ Bit Period	270.833kbps 3.692us	270.833kbps 3.692us	270.833kbps 3.692us	3.84Mcps
Time Slot Period/Frame Period	576.9us 4.615ms	576.9us 4.615ms	576.9us 4.615ms	Frame length : 10ms Slot length : 0.667ms
Modulation	0.3GMSK	0.3GMSK	0.3GMSK	QPSK HQPSK
MS Power	33dBm~5dBm	30dBm~0dBm	30dBm~0dBm	24dBm ~ - 50dBm
Power Class	4 (max +33dBm)	1 (max +30dBm)	1 (max +30dBm)	3 (max +24dBm)
Sensitivity	-102dBm	-100dBm	-100dBm	-106.7dBm
TDMA Mux	8	8	8	
Cell Radius	35Km	2Km	2Km	2Km

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1-2. GSM TX power class

TX Power control level	GSM900
5	33±2 dBm
6	31±2 dBm
7	29±2 dBm
8	27±2 dBm
9	25±2 dBm
10	23±2 dBm
11	21±2 dBm
12	19±2 dBm
13	17±2 dBm
14	15±2 dBm
15	13±2 dBm
16	11±3 dBm
17	9±3dBm
18	7±3 dBm
19	5±3 dBm

TX Power control level	DCS1800
0	30±3 dBm
1	28±3 dBm
2	26±3 dBm
3	24±3 dBm
4	22±3 dBm
5	20±3 dBm
6	18±3 dBm
7	16±3 dBm
8	14±3 dBm
9	12±4 dBm
10	10±4 dBm
11	8±4dBm
12	6±4 dBm
13	4±4 dBm
14	2±5 dBm
15	0±5 dBm

TX Power control level	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

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2. Circuit Description

2-1. SGH-ZV30 RF Circuit Description

- Antenna Switch Module (U106)

The antenna switch module allows multiple operating bands and modes to share the same antenna. A common antenna connects to one of five paths: 1) UMTS-2100 Rx/Tx, 2) EGSM-900 Rx, 3) EGSM-900 Tx, 4) DCS-1800 Rx, and 5) DCS-1800 Tx. 6) PCS-1900 Tx, 7) PCS-1900 Rx, UMTS operation requires simultaneous reception and transmission.

- Filter

To convert Electromagnetic Field Wave to Acoustic Wave and then pass the specific frequency band.
- GSM Rx FILTER (F100) : For filtering the frequency band between 925 ~ 960 MHz.
- DCS Rx FILTER (F101) : For filtering the frequency band 1805 and 1880 MHz.
- PCS Rx FILTER (F102) : For filtering the frequency band 1930 and 1990 MHz.
- WCDMA Rx FILTER (F201) : For filtering the frequency band 2110 and 2170 MHz.
- WCDMA Tx FILTER (F202) : For filtering the frequency band 1920 and 1980 MHz.

- VCTCXO (OSC201)

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

- Duplexer (F204)

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

- UMTS PAM (U202)

This is a key component in the transmitter chain and must complement the RTR6250 IC precisely; jointly they dominate the UMTS transmitter performance characteristics. Parameters such as gain, output power level, ACLR, harmonics, Rx-band noise, and power supply current are critical.

- GSM/DCS/PCS PAM (U105)

The PAM is a key component in any transmitter chain and must complement the rest of the transmitter precisely.For GSM, DCS, PCS operation, the closed-loop transmit power control functions add even more requirements relative to the UMTS PA. In addition to gain control and switching requirements, the usual RF parameters such as gain, output power level, several output spectrum requirements, and power supply current are critical..

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- GSM/DCS/PCS I Tx VCO (OSC101)

The Tx VCO outputs for EGSM, DCS, PCS drive a resistive network that splits the active signal into two signals: 1) the input to the active PAM / this is the low loss path, and 2) the OPLL feedback signal.

- RF VCO (OSC202)

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

- RFL6200 (U201)

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

- RFR6200 (U203)

The RFR6200 provides the Zero-IF receiver signal path, from RF to analog baseband, for UMTS-2100 applications. The RFR6200 accepts its UMTS input signal from the handset RF front-end design. The UMTS input is configured differentially to optimize second-order inter-modulation and common mode rejection performance, and implements MSM-controlled gain adjustments to extend the receiver dynamic range.

- RTR6250 (U104)

The RTR6250 supports multi-band, multi-mode phones with two receiver signal paths and three transmitter signal paths:

1) Receiver paths
- EGSM-900
- DCS-1800
- PCS-1900

2) Transmitter paths
- EGSM-900 (using OPLL technique)
- DCS-1800 (using OPLL technique)
- PCS-1900
- UMTS-2100

Numerous secondary functions are integrated on-chip as well:

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2-2. Baseband Circuit description of SGH-ZV30

2-2-1. PM6650

- Power Management

  Ten low-dropout regulators designed specifically for GSM applications power the terminal and help ensure optimal system performance and long battery life. It provides LDOs support for 1.375V, 1.8V, 2.6V, 2.85V,3.3V.IC-level interfaces include the three-line serial bus interface(SBI) used by the MSM6250 device to control and status the PM6650 IC.

- TCXO Controller and Buffers

  The PM6650 IC includes circuits for controlling the TCXO warm-up and buffering its signal for distribution throughout the handset. Performance specifications are presented below.

2-2-2. Connector

- LCD Connector

  LCD is consisted of main LCD(color 262K TFT LCD) and small LCD(OLED color 65K LCD). Chip select signals in the U302, MAIN_LCD_CSB can enable main LCD and SUB_LCD_CSB can enable small LCD.Dimming signal enables white LED of main LCD and Dimming Control. C_Main_LCD_RESETB signal initiates the reset process of the main LCD. C_SUB_LCD_RESETB signal initiates the Reset process of the small LCD. 16-bit data lines(D2(0)~D(15)) transfers data and commands to LCD. Data and commands use "C_A2(1)" signal. If this signal is high, Inputs to LCD are commands. If it is low, Inputs to LCD are data.

  The signal which informs the input or output state to LCD, is required. But this system is not necessary this signal. Power signals for LCD are "VBATT and VREG_MSMP". "EAR1OP" and "EAR1ON" are used for audio speaker. And "MOTOR_EN" from U302 enables the motor.

- Key

  This is consisted of key interface pins among U302, KEY_N(0:4). These signals compose the matrix.Result of matrix informs the key status to key interface in the U302. Power on/off key is seperated from the matrix. The key LED use the "VBATT" supply voltage. "KEY_LED_ON" signal enables LEDs with current control. "HALL_SW" informs the status of folder (open or closed) to the. This uses the hall effect IC, EM1681

- EMI ESD Filter

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

- IF connector

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

2-2-3. Audio

EAR1OP and EAR1ON from U302 are connected to the main Receiver. MIC1P and MIC1N are connected to the main MIC. And MIC2P and MIC2N are connected to the Earphone. YMU769 has a built-in amplifier, and thus, is an ideal device for outputting sounds that are used by mobile phones in addition to game sounds and ringing melodies that are replayed by a synthesizer.

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The synthesizer section adopts "stereophonic hybrid synthesizer system" that are given advantages of both FM synthesizers and Wave Table synthesizers to allow simultaneous generation of up to 32 FM voices and 32 Wave Table voices. Furthermore, YMU769 has a built-in hardware sequencer that helps to realize complex play without heavily loading the host CPU. And this device also has a built-in circuit for controlling vibrators and LEDs synchronizing with play of music. The consumed electric current can be stopped to the minimum by power down mode when not operating. The hardware sequence built in this device allows playing of the complex music without giving excessive load to the CPU of the portable telephones. Moreover, the registers of the FM synthesizer can be operated directly for real time sound generation, allowing, for example, utilization of various sound effects when using the game software installed in the portable telephone.

2-2-4. Memory

The signals in the MSM6250 enable two memories. They use two volt supply voltage, VREG_MSME and VREG_MSMP from the PM6650. This system uses SEC's memory, KBE00F005M-F411. It is consisted of 1G bits flash NAND memory and 512M bits SDRAM memory. It has 16 bit data line, D1[0~15] which is connected to MSM6250.It has 22 bit address lines, A[1~22]. ROM_CS and RAM_CS signals is chip select.

2-2-5. Camera

The camera module consists of 1.3 Mega pixel. The Mega camera is a highly integrated CMOS color image sensor implemented by Hynix CMOS sensor process realizing high sensitivity and wide dynamic range. Total pixel array size is 1298H x 982V, and 1280H x 960V pixels are active.

2-2-6. IRDA

This system uses IRDA module, HSDL_3208, Agilent's. This has signals, "IRDA_EN"(enable signal), "RXD0"(Input data) and "TXD0"(output data). These signals are connected to U302(MSN6250). It uses two power signals. "VREG_MSMP" is used for circuit and "VBATT" is used for LED.

2-2-7. TransFlash Card (External Memory Card)

Memory Module has eight exposed contacts on one side. The host is connected to the module using a dedicated eight-pin connector. Measuring just 11mm by 15mm and 1mm thick, Two-thirds the size of a SIM module, TransFlash is even smaller than many embedded memory devices.

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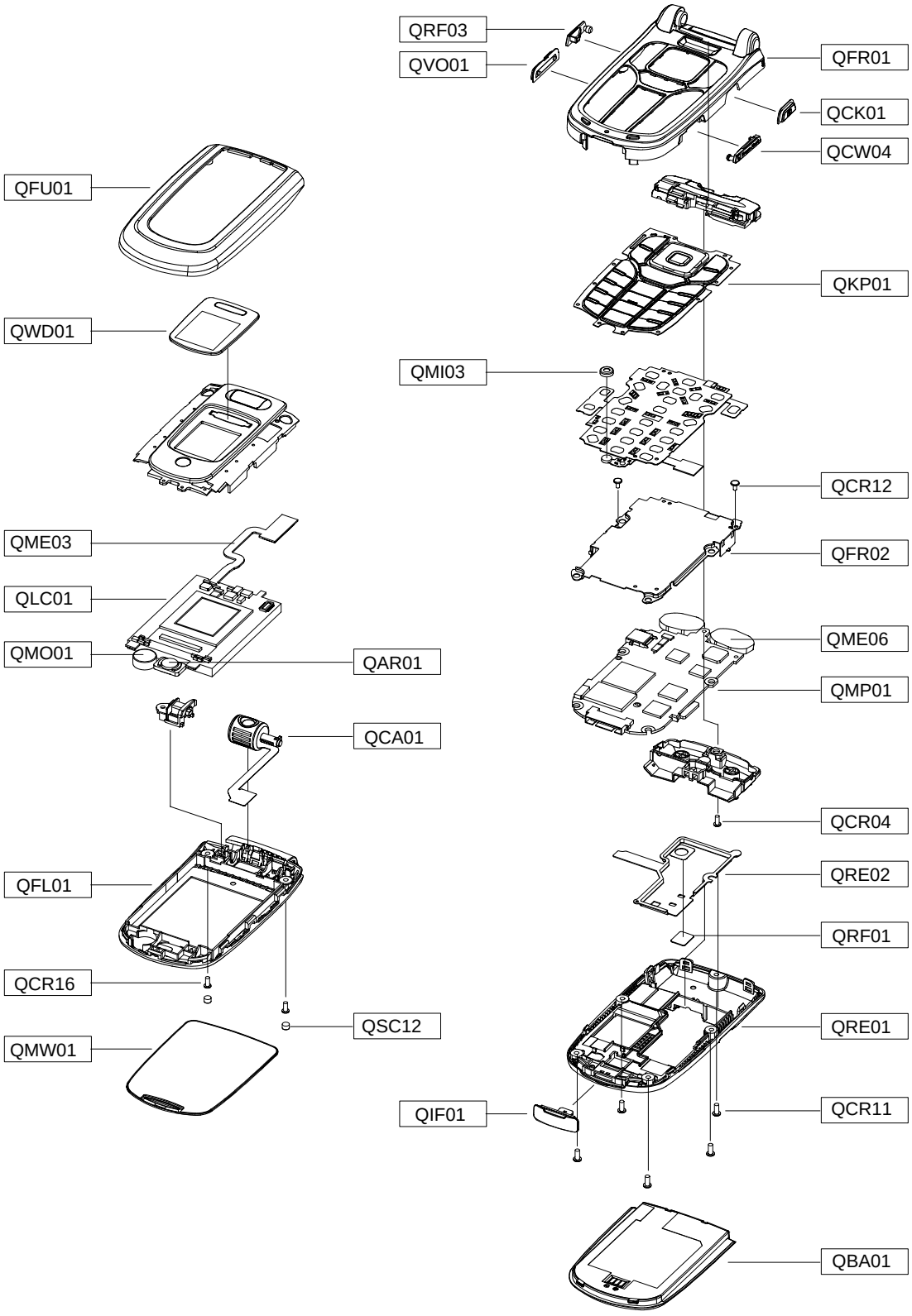
3. Exploded View and Parts List

3-1. Exploded View



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3-2. Parts List

Location No		Description	Sec Code
QAR01		AUDIO-RECEIVER;32ohm,110dB±2dB,11x7	3009-001132
QBA01		BATTERY-1000MAH,SIL,ENG,M;BST474ASB,	GH43-01990A
QCA01		UNIT-CAMERA;SGH-ZV30,MOMFA331U1A,-,E	GH59-02281A
QCK01		MEC-CAMERA KEY;SGH-ZV30,VODAFON,PC,-	GH75-06987A
QCR04		SCREW-MACHINE;PH,+,-,M1.4,L4,ZPC(BLK	6001-001479
QCR11		SCREW-MACHINE;PH,+,M1.7,L4,ZPC(BLK),	6001-001654
QCR12		SCREW-MACHINE;PH,+,M1.4,L2.5,ZPC(BLK	6001-001530
QCR16		SCREW-MACHINE;PH,+,-,M1.7,L4.5,ZPC(B	6001-001878
QFL01		MEC-FOLDER LOWER;SGH-ZV30,VODAFON,PC	GH75-06980A
QFR02		MEC-FRONT SHIELD CAN;SGH-ZV30,VODAFO	GH75-06983A
QFU01		MEC-FOLDER UPPER;SGH-ZV30,VODAFON,PC	GH75-06979A
QIF01		PMO-IF COVER V2;SGH-ZV30,PC+URETHANE	GH72-25828A
QKP01		MEC-KEYPAD(VOD/D_GRY);SGH-ZV30,VODAF	GH75-06982A
QLC01		LCD-SGHZV30 MODULE;UF-17E101-A,SGH-Z	GH07-00754A
QME03		UNIT-FPCB;SGH-ZV30,KBSGHZV30KM,-,OMN	GH59-02284A
QME06		UNIT-SPK MODULE;SGH-ZV30,SS-SGH-ZV30	GH59-02356A
QMO01		MOTOR DC-SGHZV30;DMJBRK94B,SGH-ZV30,	GH31-00177A
QMP01		PBA MAIN-SGHZV30;SGH-ZV30,VODAFONE,G	GH92-02152A
QMW01		MEC-MAIN WINDOW;SGH-ZV30,VOD,PC,-,-,	GH75-07462A
QRE01		MEC-REAR COVER;SGH-ZV30,VODAFON,PC,-	GH75-06985A
QRE02		MEC-REAR SHIELD CAN;SGH-ZV30,VODAFON	GH75-06984A
QRF01		MPR-SHEET REAR SHIELD CA;SGH-ZV30,PC	GH74-15903A
QSC12		RMO-FOLDER SCREW;SGH-ZV30,SI RUBBER,	GH73-05042A
QVO01		MEC-VOLUME KEY;SGH-ZV30,VODAFON,PC,-	GH75-06986A
QWD01		PCT-SUB WINDOW;SGH-ZV30,ACRYL,SIL,-,	GH72-25186A
QFR01		MEC-FRONT COVER;SGH-ZV30,VODAFON,PC,	GH75-06981A
	QCW04	PMO-TRANS FLASH COVER;SGH-ZV30,PC,D/	GH72-21805A
	QMI03	RMO-RUBBER MIC;SGH-ZV30,205C,5XT2.35	GH73-04677A
	QRF03	PMO-EAR JACK COVER;SGH-ZV30,PC+URETH	GH72-21806A

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Description	Sec Code
BAG PE;LDPE,T0.05,W80,L180,TRP,-,-	6902-000634
CBF INTERFACE-PC DATA CABLE;SGH-Z110	GH39-00326A
CHARGER-TCH;TCH137ESE,SGH-X910,AC/DC	GH44-00701A
S/W CD-PC STUDIO VODAFONE;SGH-ZV30,S	GH46-00168A
UNIT-EARPHONE;SGH-Z107,EM-SS650E-ST,	GH59-01713A
LABEL(P)-WATER SOAK;COMM,NORGE,100G,	GH68-02026A
MANUAL-WEEE CARD;COMM,SEC,ENGLISH,UN	GH68-07013A
LABEL(R)-MAIN;SGH-ZV30,EU,MAT,0.05,4	GH68-07055A
MANUAL-USER;SGH-ZV30,MAN,GERMAN,GERM	GH68-07773A
MANUAL-QSG;SGH-ZV30,VD2,GERMAN,GERM,	GH68-08167A
CUSHION-CASE LOWER(VOD);SGH-Z105,PUL	GH69-02177A
BOX(P)-MENUAL BOX(UMTS);SGH-Z107V,SI	GH69-02540C
CUSHION-CASE(UPPER);SGH-Z300,PULP,T0	GH69-02837A
BOX(P)-SGHZV30(UMTS);SGH-ZV30,SC350+	GH69-03235A
IPR-LOCKER SPRING;SCH-750,STS304,-,T	GH70-10633A
PMO-BATTERY LOCKER;SGH-ZV30,PC,GRY,-	GH72-24503A
MPR-BOHO VNYL CONN V2;SGH-E316,#950,	GH74-11112A
MPR-BOHO VINYL TOP F/U;SGH-ZV30,3M 4	GH74-14662A
MPR-BOHO VINYL F/LOWER;SGH-ZV30,3M 4	GH74-14663A
MPR-NON WOVEN FRONT LCD;SGH-ZV30,NON	GH74-15896A
MPR-MIC PC SHEET;SGH-ZV30,PC SHEET+T	GH74-15897A
MPR-TAPE ALUMINIUM;SGH-ZV30,AL TAPE,	GH74-16493A
MPR-GASKET GOLD L;SGH-ZV30,CFPWX290,	GH74-16494A
MPR-GASKET GOLD R;SGH-ZV30,CFPWX290,	GH74-16495A
MPR-TAPE LCD INSULATION2;SGH-ZV30,3M	GH74-16497A
MPR-BOHO VINYL UPPER;SGH-ZV30,PBC,38	GH74-17233A
MPR-SPONGE EAR COVER;SGH-ZV30,SRS PO	GH74-17968A
MEC-HANGER;SGH-E710,KORA,-,-,ME/SIL,	GH75-03673B

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

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

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

3-3-3. Serial Cable

3-3-4. Power Supply Cable

3-3-5. DATA CABLE (GH39-00326A)

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

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4. Electrical Parts List

Design LOC	Description	SEC CODE
AN401	;ACS2450FBAVI	4202-001062
C101,C110,C112,C114	C-CERAMIC,CHIP	2203-000812
C102,C104,C252,C408	C-CERAMIC,CHIP	2203-000679
C103,C107,C129,C137	C-CERAMIC,CHIP	2203-000438
C105,C111,C113,C120	C-CERAMIC,CHIP	2203-005482
C108,C130,C136,C171	C-CERAMIC,CHIP	2203-000254
C115,C116,C117,C119	C-CERAMIC,CHIP	2203-000812
C118,C125,C133,C601	C-CERAMIC,CHIP	2203-000854
C121,C124,C131,C146	C-CERAMIC,CHIP	2203-000812
C122,C126,C132,C134	C-CERAMIC,CHIP	2203-000233
C123,C204	C-CERAMIC,CHIP	2203-000885
C127,C135,C154,C159	C-CERAMIC,CHIP	2203-000995
C128,C141,C142,C150	C-CERAMIC,CHIP	2203-005482
C138	C-FILM,CHIP	2301-001512
C139	C-CERAMIC,CHIP	2203-005446
C140	C-CERAMIC,CHIP	2203-002668
C143,C253	C-CERAMIC,CHIP	2203-000836
C147,C245,C257,C413	C-CERAMIC,CHIP	2203-006208
C148,C153,C162,C168	C-CERAMIC,CHIP	2203-000438
C149,C164,C169,C259	C-CERAMIC,CHIP	2203-000386
C151,C163,C229,C251	C-CERAMIC,CHIP	2203-000812
C152,C156,C157,C207	C-CERAMIC,CHIP	2203-005482
C155,C328,C329,C417	C-CERAMIC,CHIP	2203-006093
C158	C-CERAMIC,CHIP	2203-000311
C160,C457	C-TA,CHIP	2404-001274
C161	C-FILM,CHIP	2301-001515
C165	C-CERAMIC,CHIP	2203-005503
C166	C-CERAMIC,CHIP	2203-002443
C167,C221	C-CERAMIC,CHIP	2203-005234
C170,C201,C202,C209	C-CERAMIC,CHIP	2203-000233
C205	C-CERAMIC,CHIP	2203-006324
C208,C210,C214,C248	C-CERAMIC,CHIP	2203-000330
C211,C685	C-CERAMIC,CHIP	2203-000995
C212	C-CERAMIC,CHIP	2203-001178
C222	C-CERAMIC,CHIP	2203-001383
C224,C228,C234,C244	C-CERAMIC,CHIP	2203-000233
C225,C233,C238,C240	C-CERAMIC,CHIP	2203-005482
C231,C232,C235,C239	C-CERAMIC,CHIP	2203-000254
C236,C242	C-CERAMIC,CHIP	2203-005288
C237,C241,C256,C407	C-CERAMIC,CHIP	2203-000438
C243,C246,C249,C258	C-CERAMIC,CHIP	2203-005482
C247,C250,C262,C404	C-CERAMIC,CHIP	2203-000233
C254	C-CERAMIC,CHIP	2203-000585
C255	C-FILM,CHIP	2301-001214
C260,C261,C684	C-CERAMIC,CHIP	2203-005050
C263	C-CERAMIC,CHIP	2203-000330
C301,C303,C304,C305	C-CERAMIC,CHIP	2203-005482
C302,C310	C-CERAMIC,CHIP	2203-006091
C306,C307,C308,C309	C-CERAMIC,CHIP	2203-005482
C311,C312,C313,C314	C-CERAMIC,CHIP	2203-005482

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Design LOC	Description	SEC CODE
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C319,C320,C321,C322	C-CERAMIC,CHIP	2203-005482
C323,C324,C325,C326	C-CERAMIC,CHIP	2203-005482
C333,C334,C335,C336	C-CERAMIC,CHIP	2203-005482
C337,C338,C339,C340	C-CERAMIC,CHIP	2203-005482
C341,C342	C-CERAMIC,CHIP	2203-000550
C343	C-CERAMIC,CHIP	2203-000489
C344	C-CERAMIC,CHIP	2203-005480
C345	C-CERAMIC,CHIP	2203-000254
C346,C402,C406,C409	C-CERAMIC,CHIP	2203-005482
C347,C501,C638,C647	C-TA,CHIP	2404-001225
C348	C-CERAMIC,CHIP	2203-005395
C401,C481	C-CERAMIC,CHIP	2203-006053
C405	C-CERAMIC,CHIP	2203-000628
C410,C414,C416,C419	C-CERAMIC,CHIP	2203-005482
C415,C422,C423,C431	C-CERAMIC,CHIP	2203-006208
C418,C420,C425,C426	C-CERAMIC,CHIP	2203-006201
C421,C427,C430,C432	C-CERAMIC,CHIP	2203-000278
C424,C440,C442,C458	C-CERAMIC,CHIP	2203-005482
C428,C429,C462	C-CERAMIC,CHIP	2203-006201
C433,C467,C472,C475	C-CERAMIC,CHIP	2203-006093
C434,C603,C604,C606	C-CERAMIC,CHIP	2203-000278
C441	C-CERAMIC,CHIP	2203-001153
C443,C444,C605,C683	C-CERAMIC,CHIP	2203-000812
C446,C449,C450,C451	C-CERAMIC,CHIP	2203-000438
C447,C448	C-CERAMIC,CHIP	2203-006208
C452,C453,C454,C466	C-CERAMIC,CHIP	2203-000438
C460,C461	C-TA,CHIP	2404-001281
C463,C502,C503	C-TA,CHIP	2404-001105
C464	C-CERAMIC,CHIP	2203-002494
C470,C471,C504,C512	C-CERAMIC,CHIP	2203-005482
C473,C474	C-CERAMIC,CHIP	2203-005138
C478,C505,C649	C-TA,CHIP	2404-001339
C479,C506,C650,C693	C-CERAMIC,CHIP	2203-005061
C482,C508,C509,C510	C-CERAMIC,CHIP	2203-006093
C483,C507,C517,C518	C-CERAMIC,CHIP	2203-000233
C511,C615,C622,C670	C-CERAMIC,CHIP	2203-006093
C513,C514,C633,C634	C-CERAMIC,CHIP	2203-005482
C602,C607,C608,C629	C-CERAMIC,CHIP	2203-000854
C609,C613	C-TA,CHIP	2404-001366
C614,C621,C681	C-CERAMIC,CHIP	2203-006137
C616,C617	C-TA,CHIP	2404-001352
C618	C-CERAMIC,CHIP	2203-000233
C630	C-CERAMIC,CHIP	2203-000438
C632,C635,C636,C678	C-CERAMIC,CHIP	2203-000854
C637,C640,C671,C690	C-CERAMIC,CHIP	2203-005482
C639,C691	C-TA,CHIP	2404-001394
C641,C642,C643,C644	C-CERAMIC,CHIP	2203-005481
C645,C646	C-CERAMIC,CHIP	2203-000654
C648,C692	C-TA,CHIP	2404-001225

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Design LOC	Description	SEC CODE
C679,C682,C686,C687	C-CERAMIC,CHIP	2203-000278
C680	C-CERAMIC,CHIP	2203-000854
C688	C-CERAMIC,CHIP	2203-000278
C689	C-CERAMIC,CHIP	2203-006093
C694	C-CERAMIC,CHIP	2203-005061
C695,C696	C-CERAMIC,CHIP	2203-006190
C697,C698	C-CERAMIC,CHIP	2203-000812
CN101	CONNECTOR-COAXIAL	3705-001358
CN401	CONNECTOR-CARD EDGE	3709-001269
CN402	CONNECTOR-SOCKET	3710-002120
CN404	CONNECTOR-HEADER	3711-005781
CN504	CONNECTOR-CARD EDGE	3709-001344
CN505	;14-5602-060-000-829	3711-005367
CN601	JACK-PHONE	3722-002181
CN603,CN604	CONNECTOR-SOCKET	3710-001105
D400	DIODE-SCHOTTKY	0404-001093
D401	DIODE-ARRAY	0407-001002
F100	FILTER-SAW	2904-001550
F101	FILTER-SAW	2904-001570
F102	FILTER-SAW	2904-001571
F201	FILTER-SAW	2904-001439
F202	FILTER-SAW	2904-001438
F203	RF-MODULE	4709-001370
F204	FILTER	2910-000004
HEA501	CONNECTOR-HEADER	3711-005643
L101	INDUCTOR-SMD	2703-002201
L102,L121,L124	INDUCTOR-SMD	2703-002155
L103,L106,L112,L119	INDUCTOR-SMD	2703-002198
L104,L204,L213	INDUCTOR-SMD	2703-002267
L105	INDUCTOR-SMD	2703-002200
L108,L114,L115,L120	INDUCTOR-SMD	2703-002819
L109,L111,L116,L118	INDUCTOR-SMD	2703-002208
L110,L117,L203	INDUCTOR-SMD	2703-002205
L113,L208,L211,L212	CORE-FERRITE BEAD	3301-001756
L122	INDUCTOR-SMD	2703-002170
L123	INDUCTOR-SMD	2703-002369
L201	INDUCTOR-SMD	2703-002314
L202	INDUCTOR-SMD	2703-002198
L205	INDUCTOR-SMD	2703-002268
L206	INDUCTOR-SMD	2703-001750
L207	INDUCTOR-SMD	2703-002206
L209,L210	INDUCTOR-SMD	2703-002368
L214	CORE-FERRITE BEAD	3301-001120
L215	INDUCTOR-SMD	2703-001749
L301,L302,L303,L305	R-CHIP	2007-000171
L402,L403	INDUCTOR-SMD	2703-002782
L404	INDUCTOR-SMD	2703-000300
L405,L501,L502,L503	CORE-FERRITE BEAD	3301-001534
L602,L603,L605,L604	INDUCTOR-SMD	2703-001595
LED401	PHOTO-IRDA	0604-001261

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Design LOC	Description	SEC CODE
OSC101	OSCILLATOR-VCO	2806-001360
OSC201	OSCILLATOR-VCTCXO	2809-001280
OSC202	;MQL302A1G71	2806-001367
OSC301	RESONATOR-CERAMIC	2802-001182
Q403,Q404	TR-DIGITAL	0504-000168
Q405	TR-DIGITAL	0504-001050
R101,R312,R323	R-CHIP	2007-000171
R102,R211	R-CHIP	2007-007491
R105,R106,R129,R130	R-CHIP	2007-000138
R107	INDUCTOR-SMD	2703-001180
R108,R109,R111,R112	R-CHIP	2007-000140
R115,R118,R642,R643	R-CHIP	2007-000172
R116	R-CHIP	2007-007316
R117	R-CHIP	2007-000145
R119,R133,R134	R-CHIP	2007-001217
R120,R121,R635,R636	R-CHIP	2007-003001
R122	R-CHIP	2007-000174
R123,R124,R125,R126	R-CHIP	2007-001307
R127,R128	R-CHIP	2007-001301
R131	R-CHIP	2007-000147
R132,R402	R-CHIP	2007-007142
R135,R204,R207,R214	R-CHIP	2007-000138
R201,R210,R212	R-CHIP	2007-007314
R202	R-CHIP	2007-000173
R205	R-CHIP	2007-007318
R206	R-CHIP	2007-007470
R208	R-CHIP	2007-008263
R209,R314	R-CHIP	2007-000137
R213	R-CHIP	2007-000163
R215,R405	R-CHIP	2007-001298
R216,R221,R313,R325	R-CHIP	2007-000140
R218,R411,R503,R504	R-CHIP	2007-000143
R220	R-CHIP	2007-007310
R222	R-CHIP	2007-001284
R301,R304,R311,R315	R-CHIP	2007-000148
R302,R303,R602	R-CHIP	2007-001339
R308	R-CHIP	2007-000636
R309	R-CHIP	2007-000157
R316,R317,R318,R319	R-CHIP	2007-000148
R321,R326,R327,R508	R-CHIP	2007-000148
R324,R416,R435,R436	R-CHIP	2007-000171
R403,R414,R417,R443	R-CHIP	2007-000140
R406	R-CHIP	2007-007468
R408,R623,R624,R625	R-CHIP	2007-007132
R409	R-CHIP	2007-009117
R410	R-CHIP	2007-007095
R413	R-CHIP	2007-000153
R415,R419,R420,R421	R-CHIP	2007-008542
R423,R424	R-CHIP	2007-008542
R432	R-CHIP	2007-000162

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Design LOC	Description	SEC CODE
R437,R438	R-CHIP	2007-007199
R439	R-CHIP	2007-007107
R445,R454,R631,R632	R-CHIP	2007-000171
R447,R448,R449,R450	R-CHIP	2007-008437
R452,R453	R-CHIP	2007-003112
R459	R-CHIP	2007-000146
R460	R-CHIP	2007-007592
R509,R511,R630,R641	R-CHIP	2007-000148
R510	R-CHIP	2007-000166
R605	R-CHIP	2007-008055
R607,R608,R611,R612	R-CHIP	2007-007317
R616	R-CHIP	2007-001325
R626	R-CHIP	2007-007132
R627,R628	R-CHIP	2007-007139
R633,R634,R639,R640	R-CHIP	2007-000171
R637,R638	R-CHIP	2007-003001
TH201	THERMISTOR	1404-001221
U104	IC	1205-002645
U105	IC	1201-002174
U106	IC	1205-002724
U201	IC	1201-001984
U202	;AWT6252M7P8	1201-002196
U203	IC	1205-002297
U204	TR-DIGITAL	0504-001060
U301	;KBE00F005M-F411	1108-000005
U302	IC	1205-002527
U401	IC	1203-003335
U402	DIODE-ARRAY	0407-001038
U403	RF-MODULE	4709-001352
U407	DIODE-TVS	0406-001200
U408	BATTERY	4302-001177
U409	IC	1203-002785
U411	;AAT4280-3	1205-002767
U413	IC	1001-001248
U414	IC	1203-003728
U415	FET-SILICON	0505-001889
U502	;MIC2211-GKYML	1203-003785
U506,U507,U511	;ECLAMP2378P	2901-001348
U512,U513,U514,U516	VARISTOR	1405-001161
U601	IC	1001-001261
U602	IC	1203-002860
U603	IC	1204-002316
U604,U605	IC	1001-001265
V501,V502,V503,V504	VARISTOR	1405-001082
V505,V506,V507,V508	VARISTOR	1405-001082
V509,V510,V511,V512	VARISTOR	1405-001082
V601,V602,V603,V604	VARISTOR	1405-001082
XTAL401	CRYSTAL-UNIT	2801-004373
ZD402,ZD407	DIODE-TVS	0406-001197
ZD405	DIODE-ZENER	0403-001547

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Design LOC	Description	SEC CODE
ZD408	DIODE-ZENER	0403-001387
ZD501	DIODE-TVS	0406-001215
ZD504,ZD505,ZD506	DIODE-TVS	0406-001201
ZD507,ZD508,ZD509	DIODE-TVS	0406-001201
ZD602,ZD603,ZD604	DIODE-TVS	0406-001201
ZD605,ZD606,ZD607	DIODE-TVS	0406-001201

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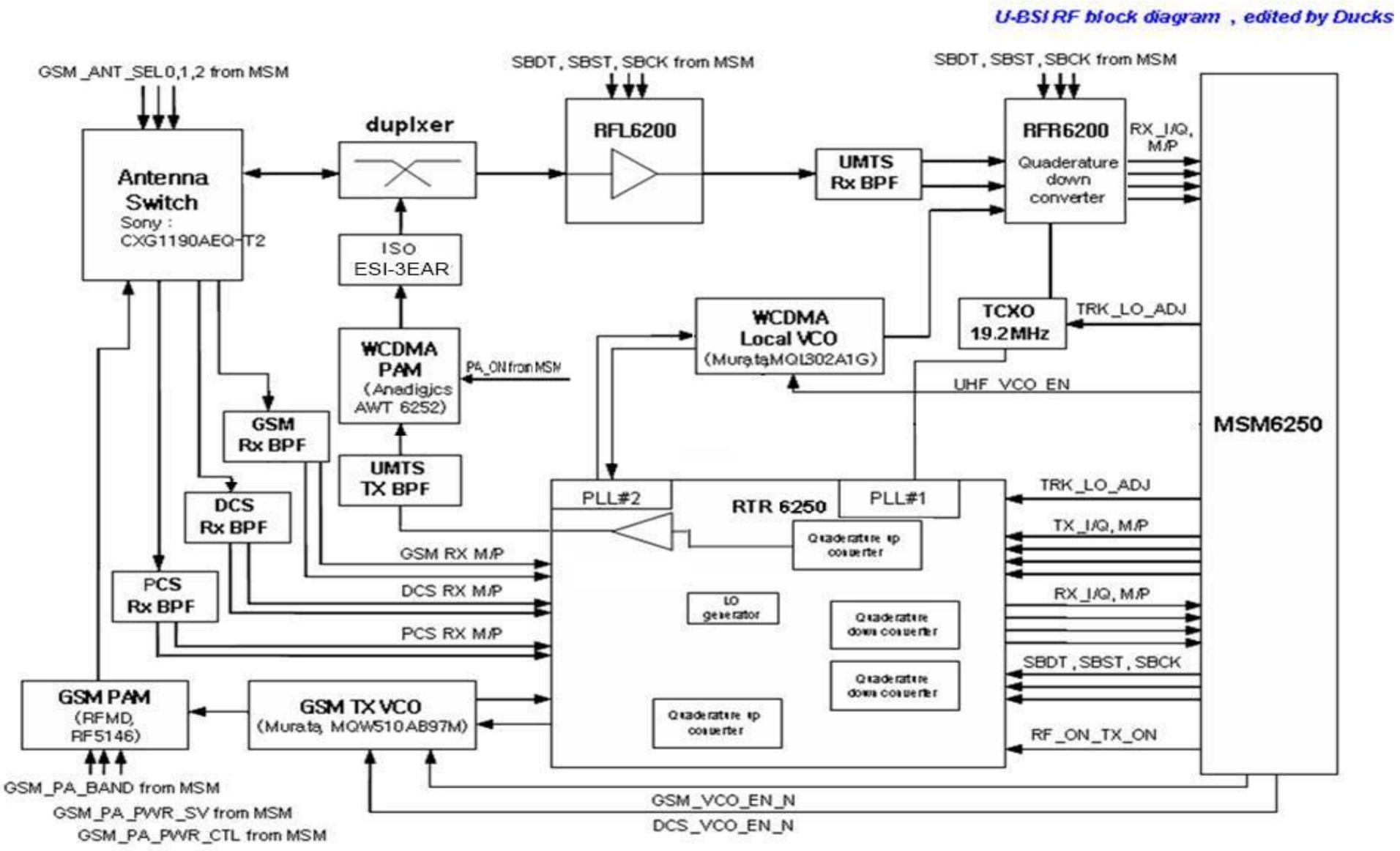
5-1. RF Solution Block Diagram



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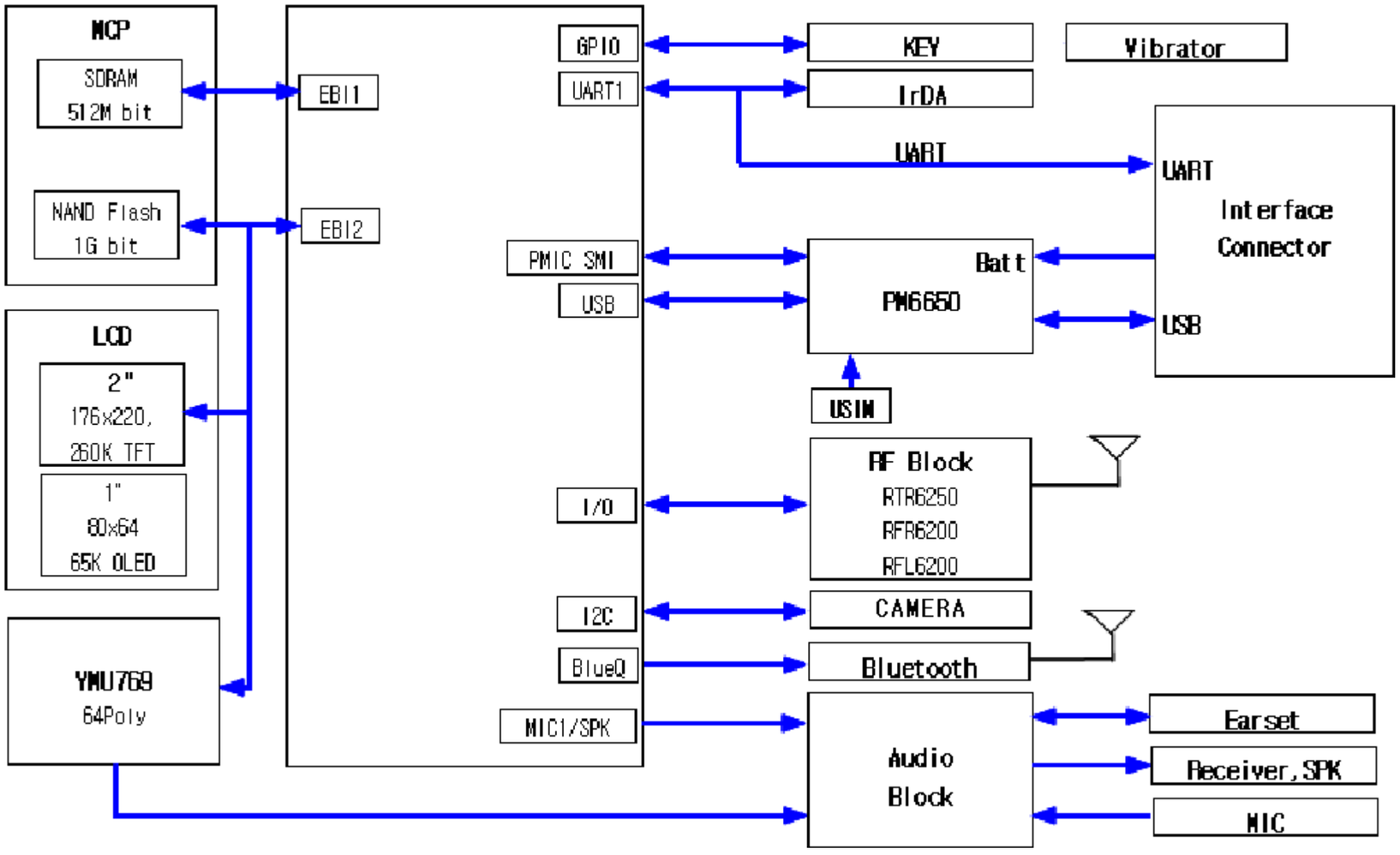
5-2. Base Band Solution Block Diagram



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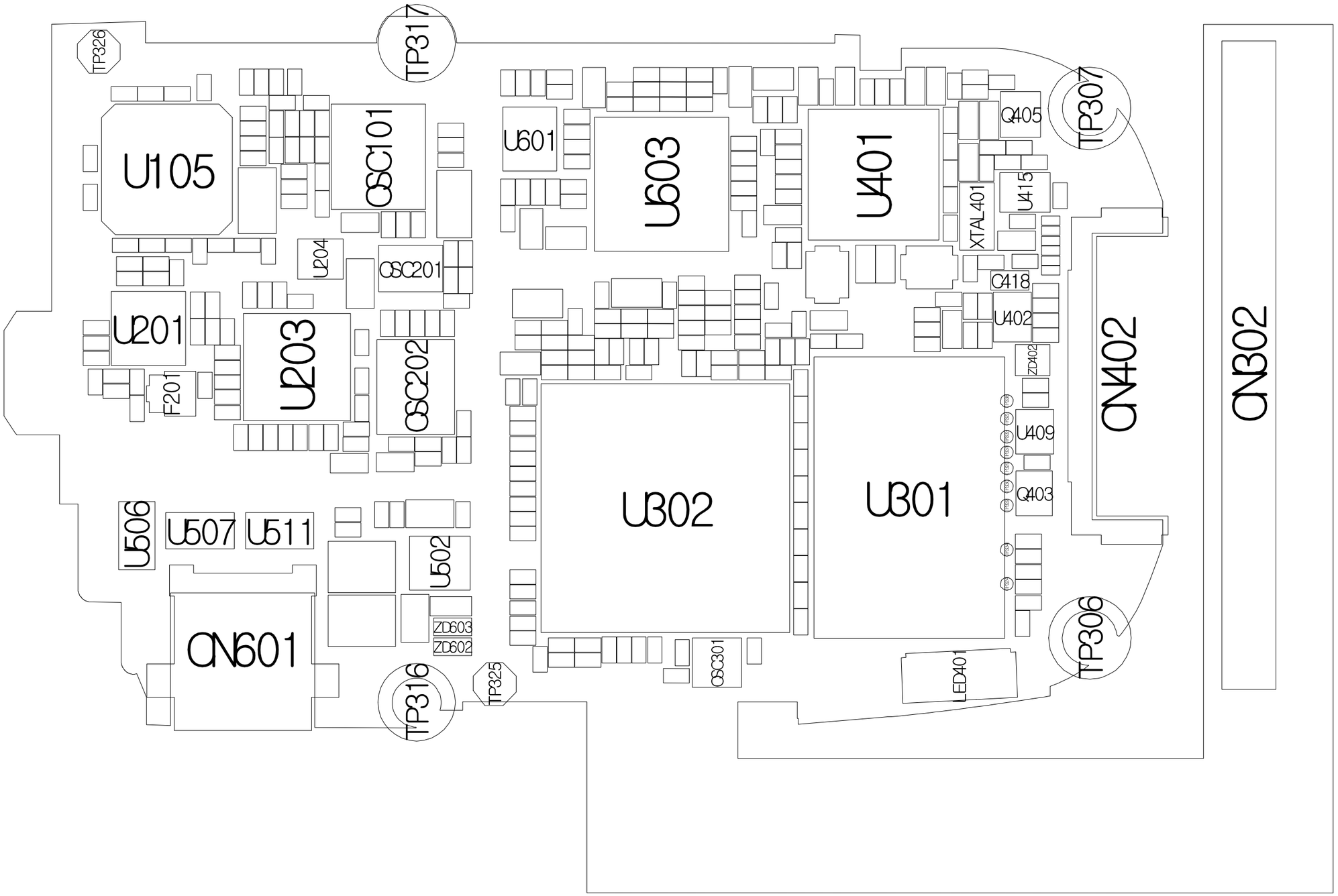
6-1. PCB Top Diagram



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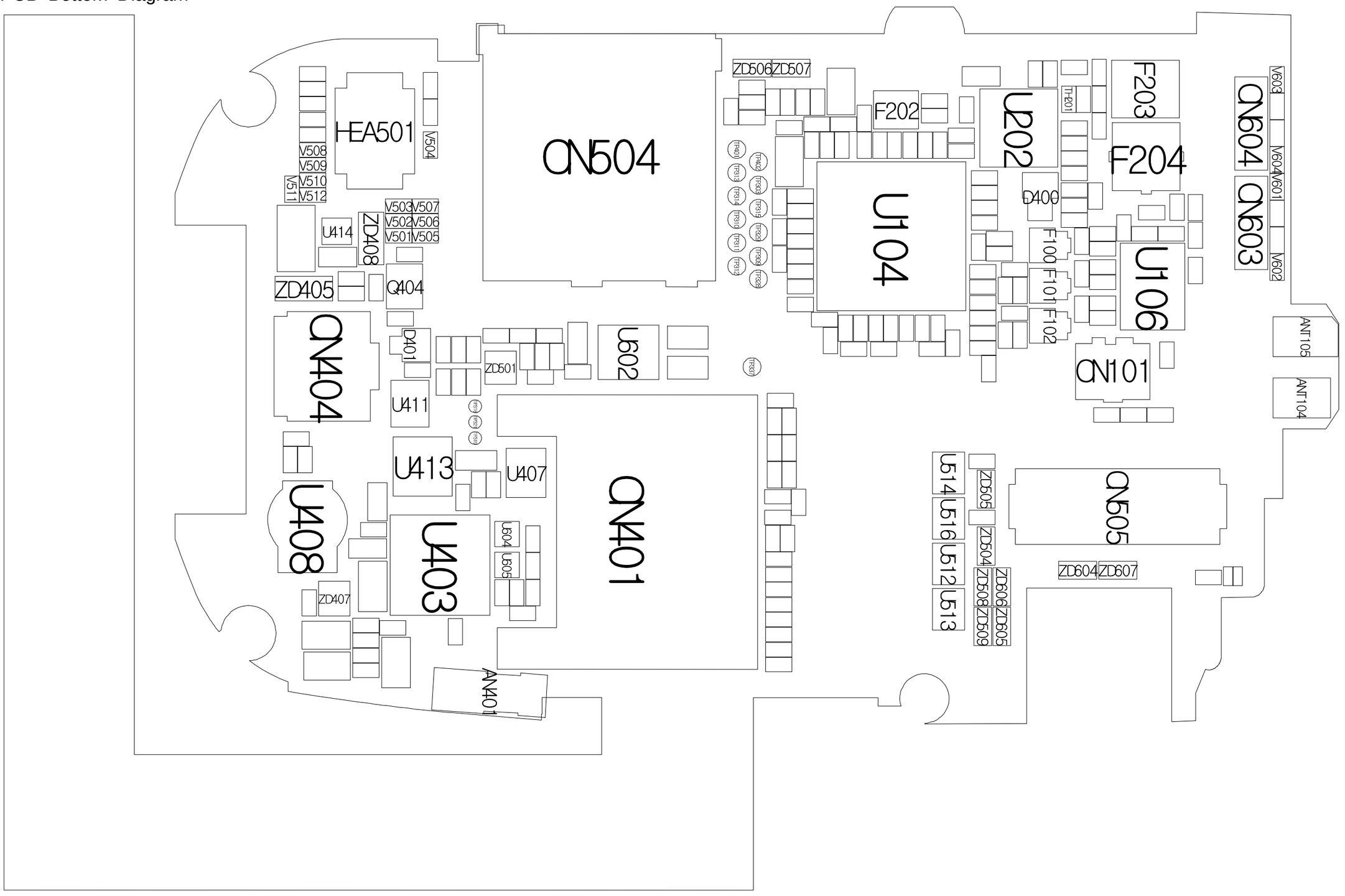
6-2. PCB Bottom Diagram



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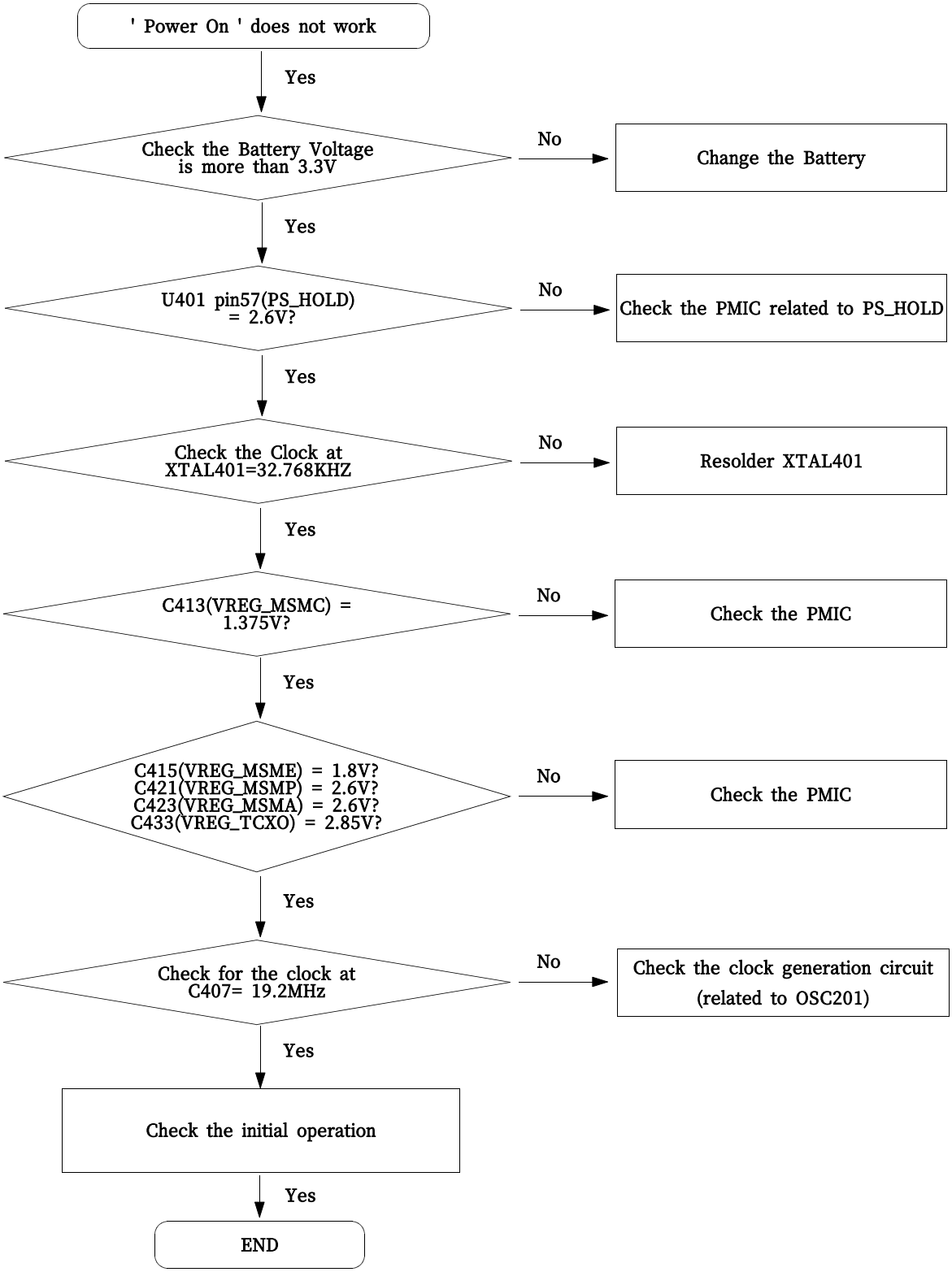
7. Flow Chart of Troubleshooting

7-1. Power On



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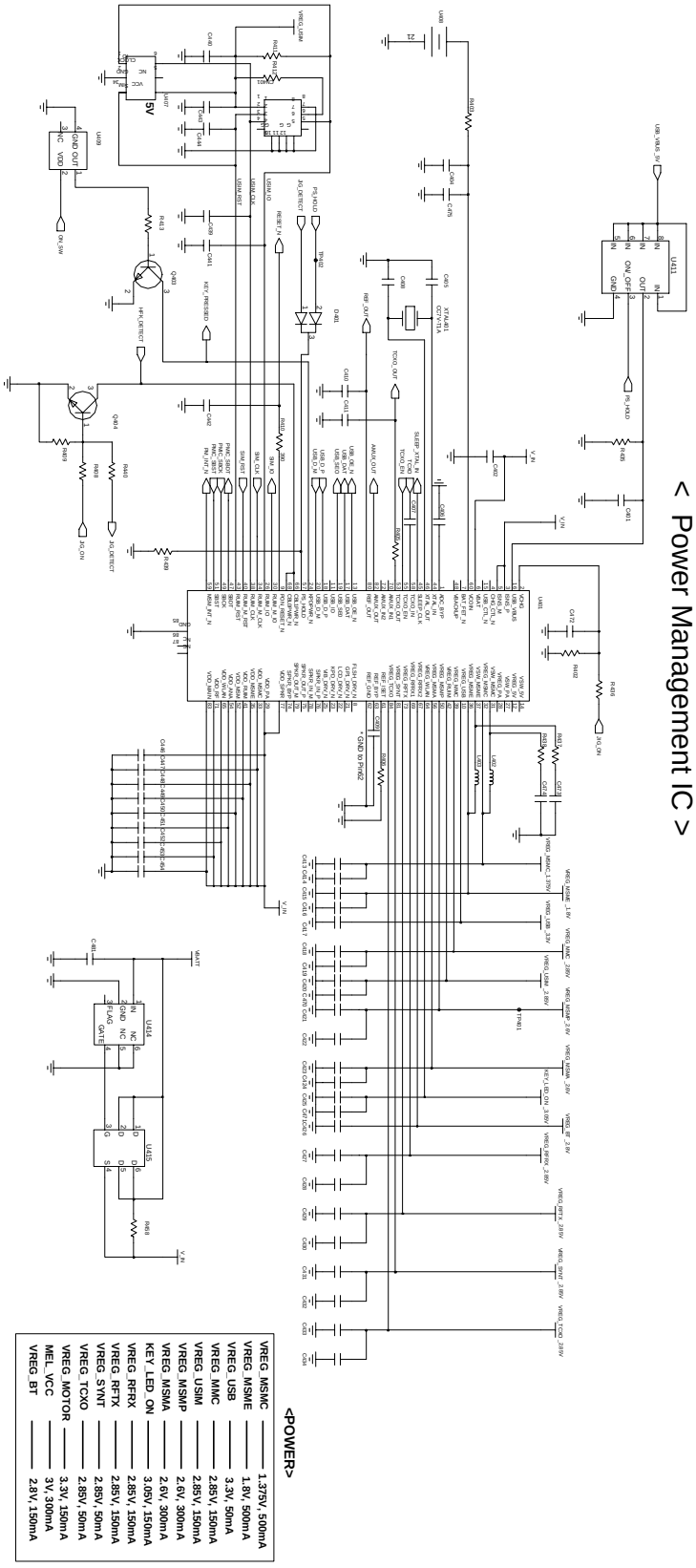
Power On



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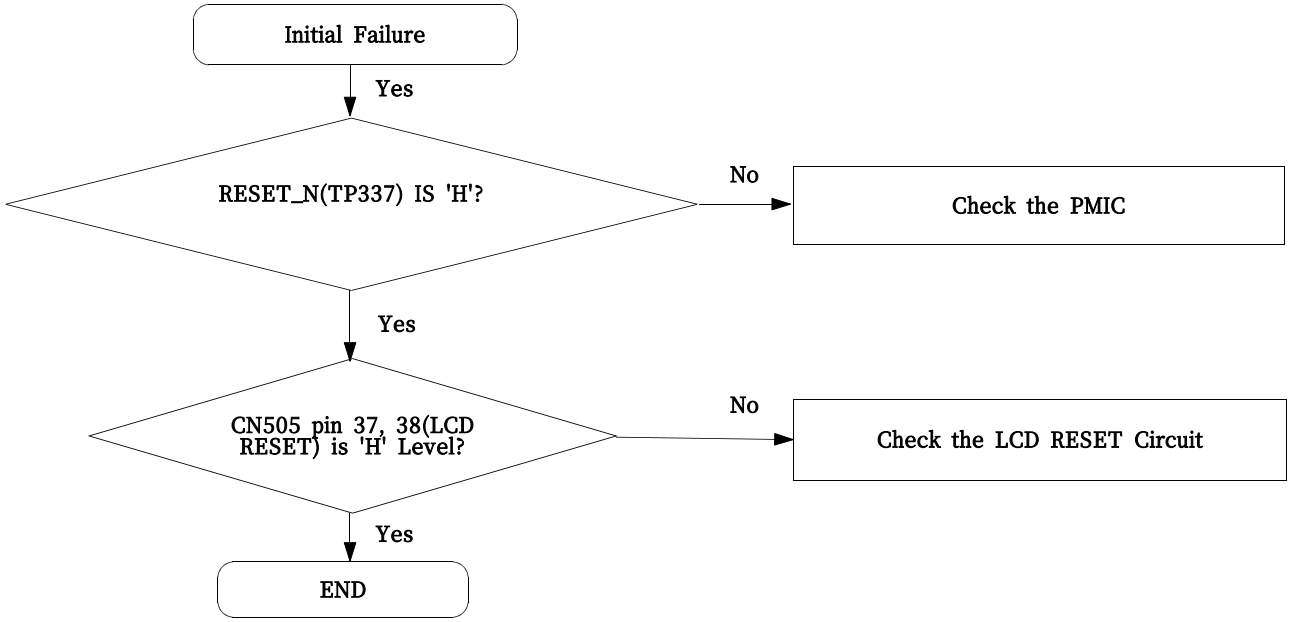
7-2. Initial



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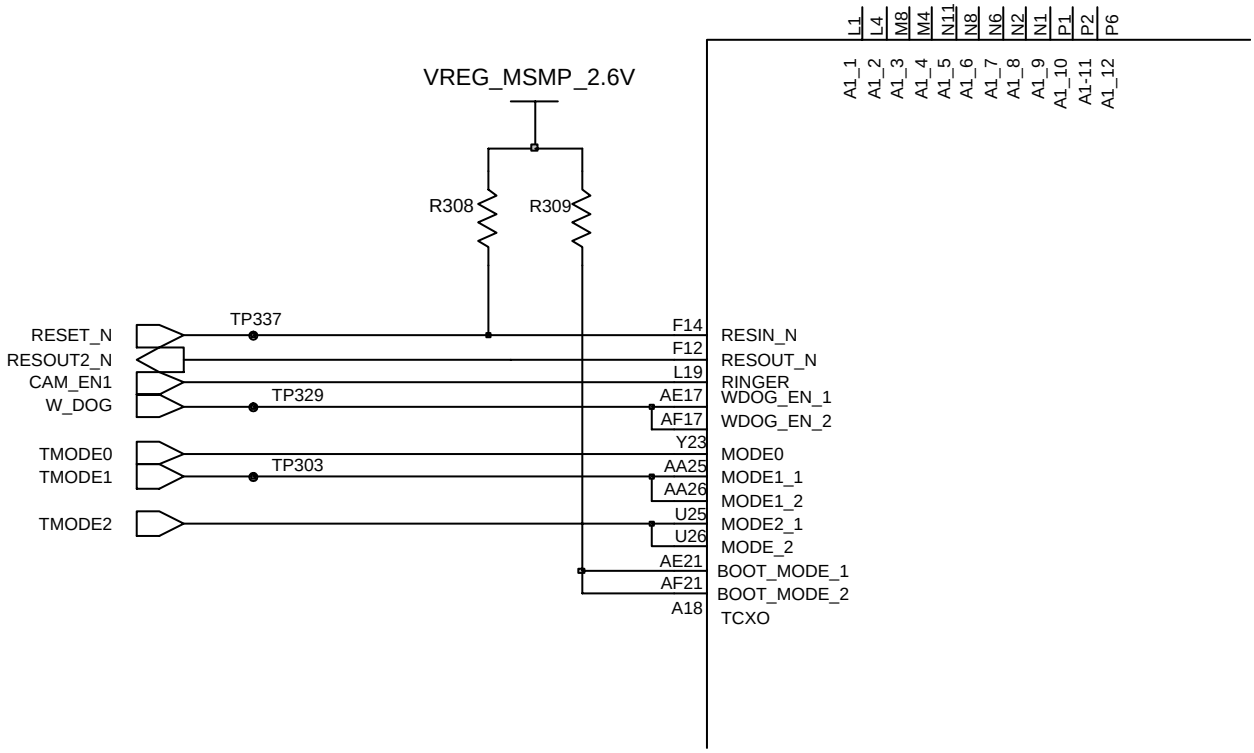

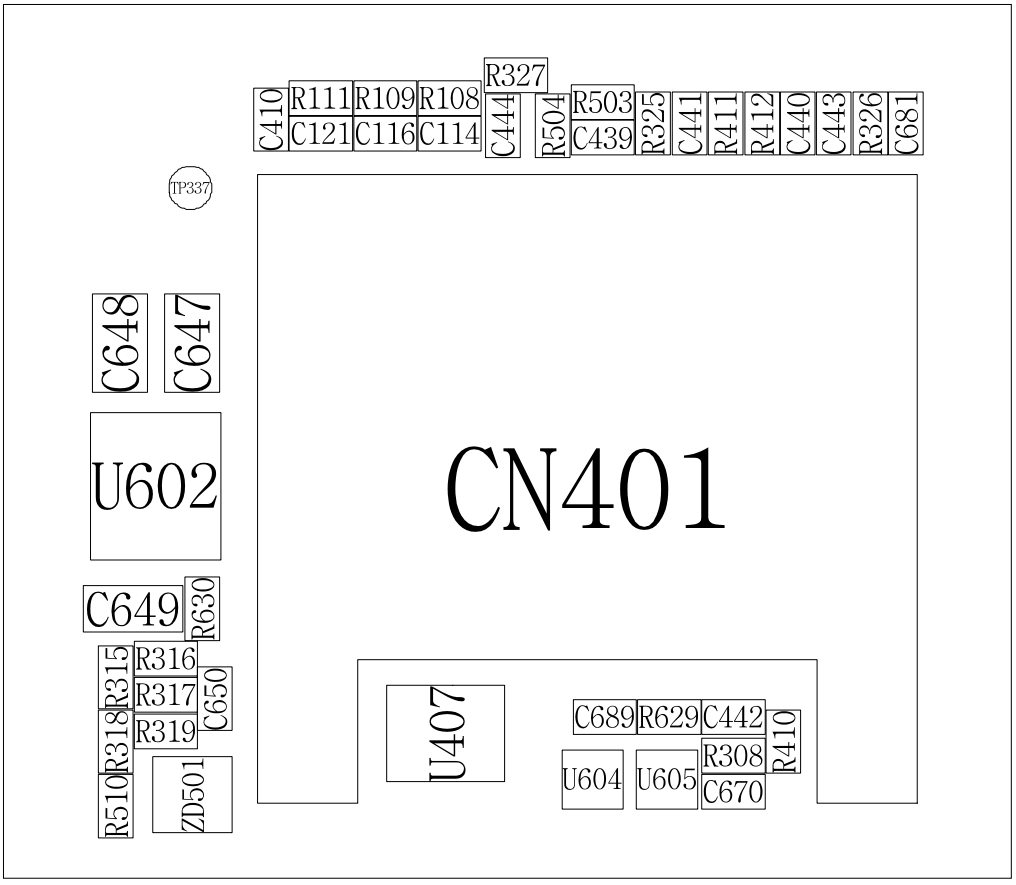

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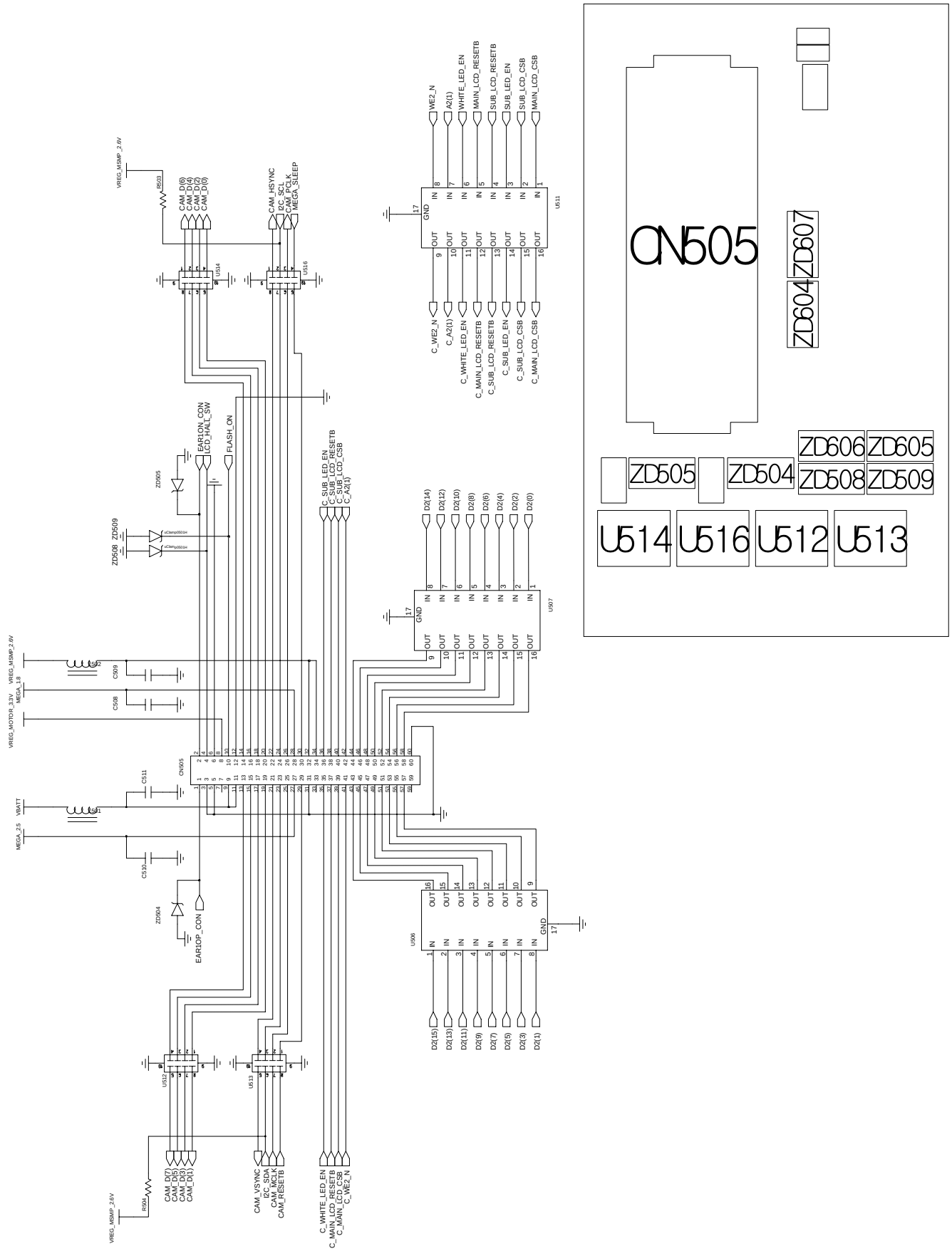

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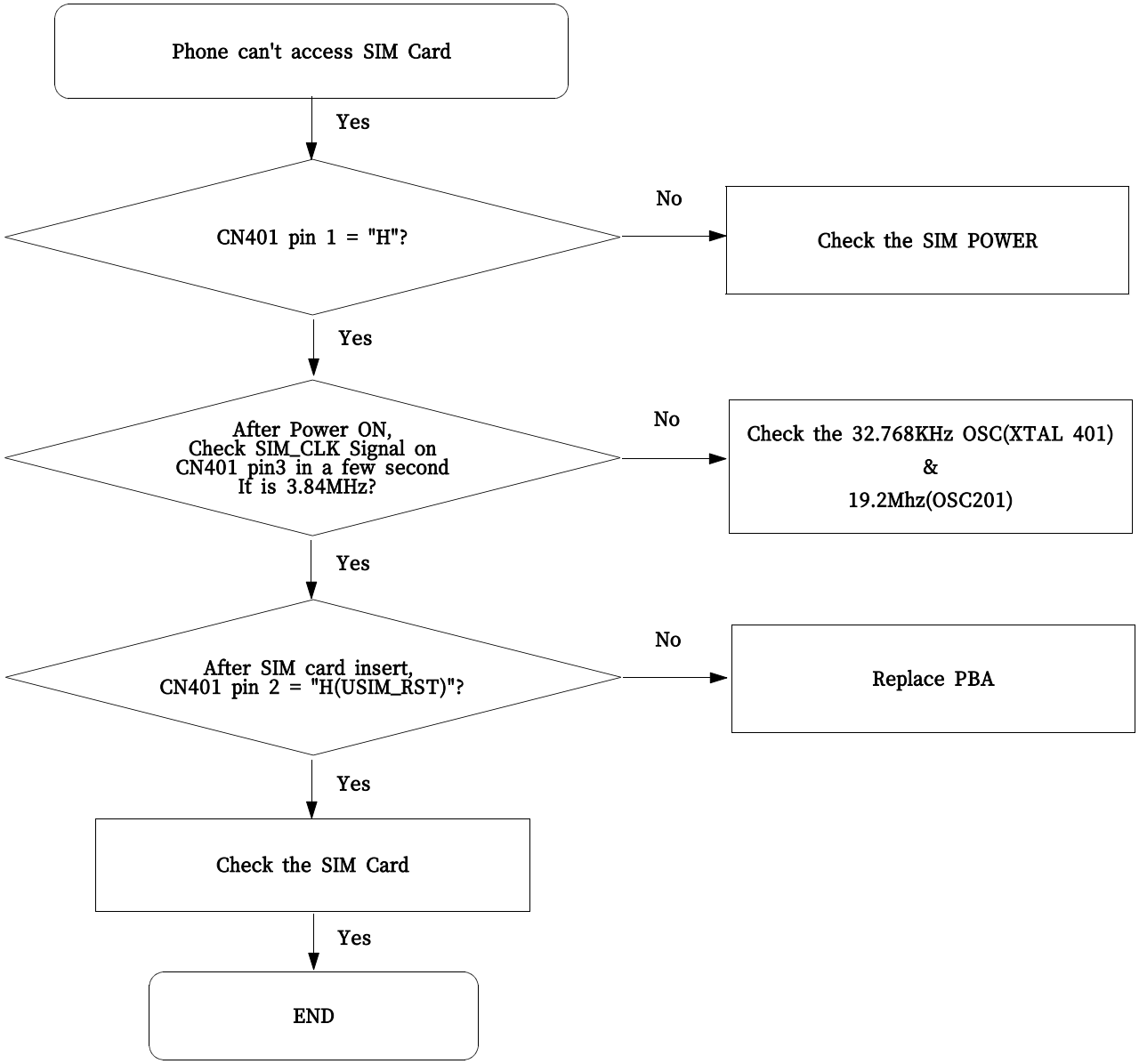
7-3. SIM Part



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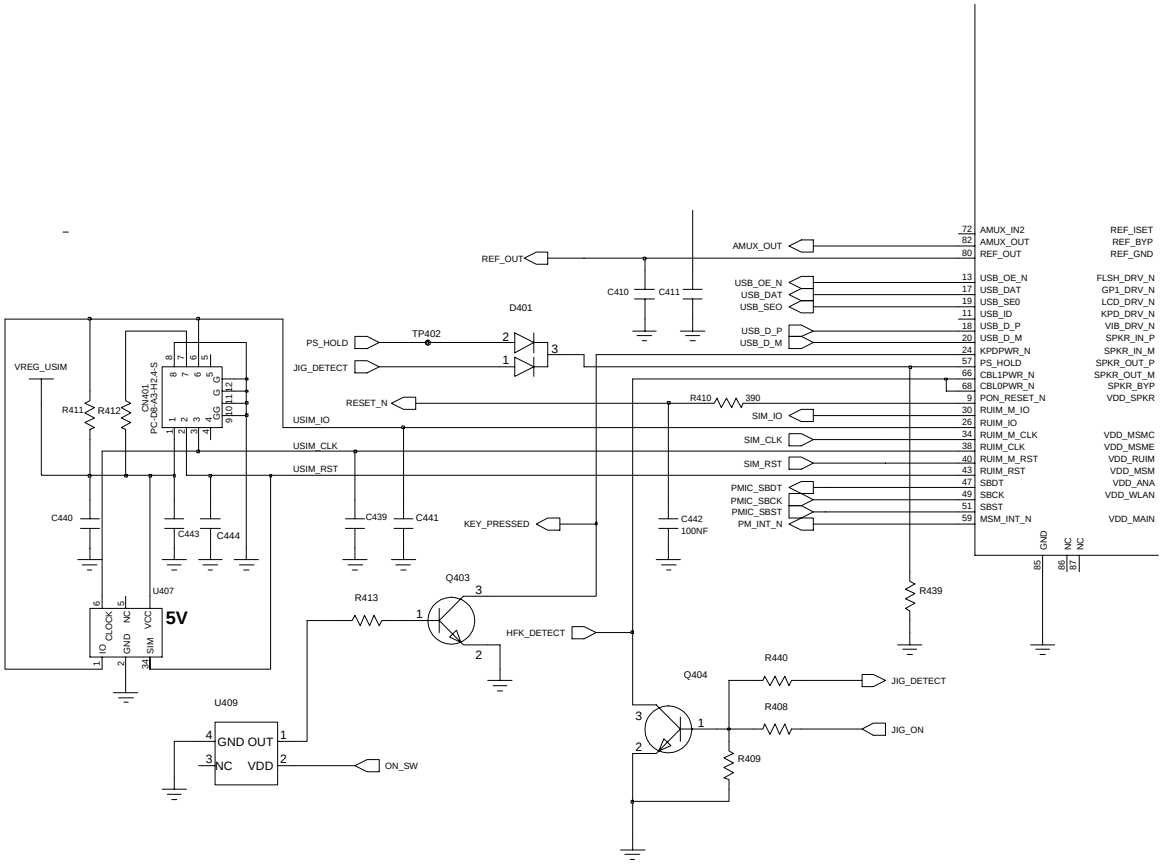
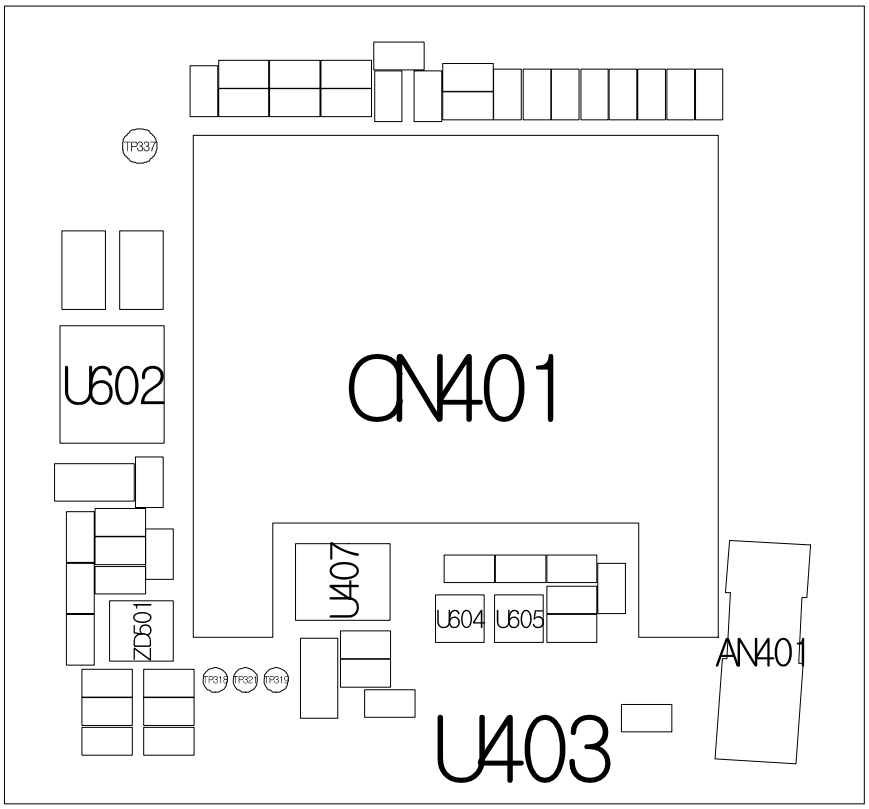
SIM





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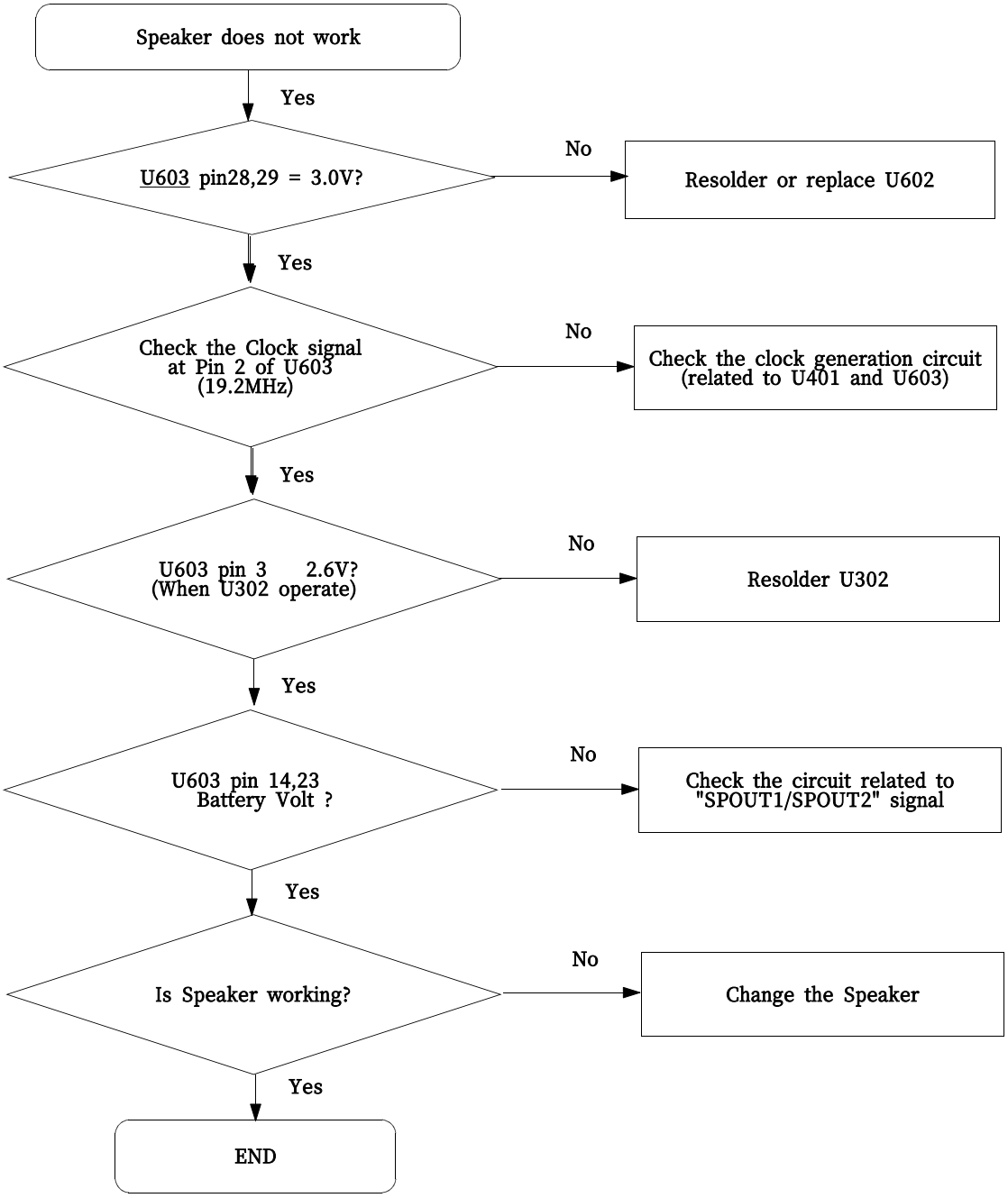
7-4. Speaker Part(Melody)



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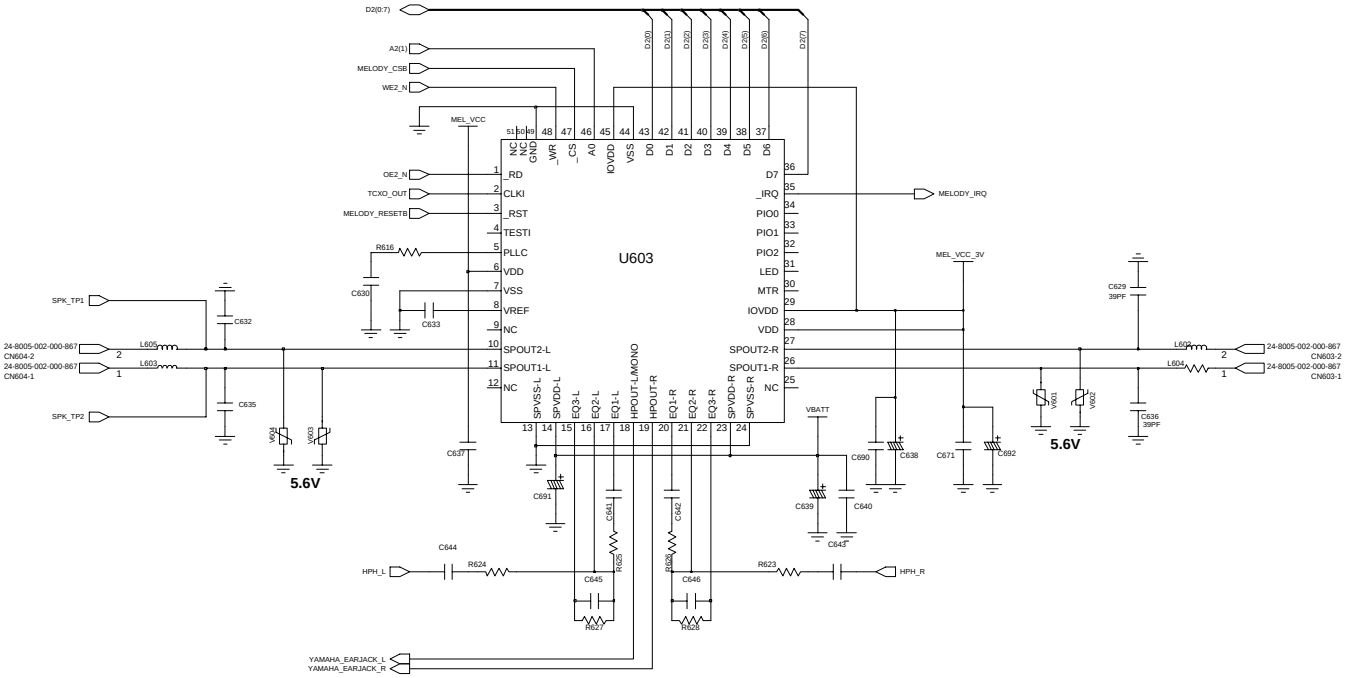
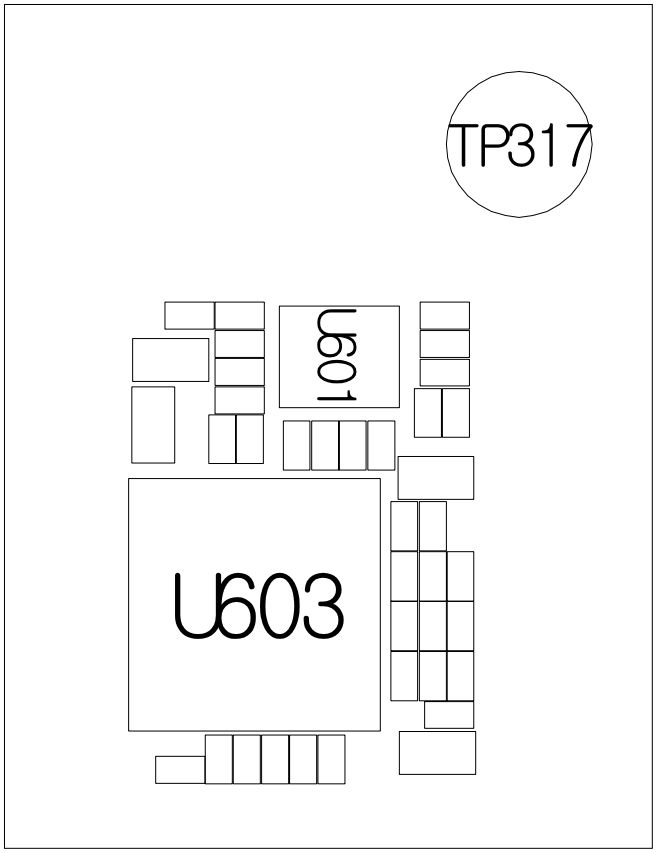
Speaker





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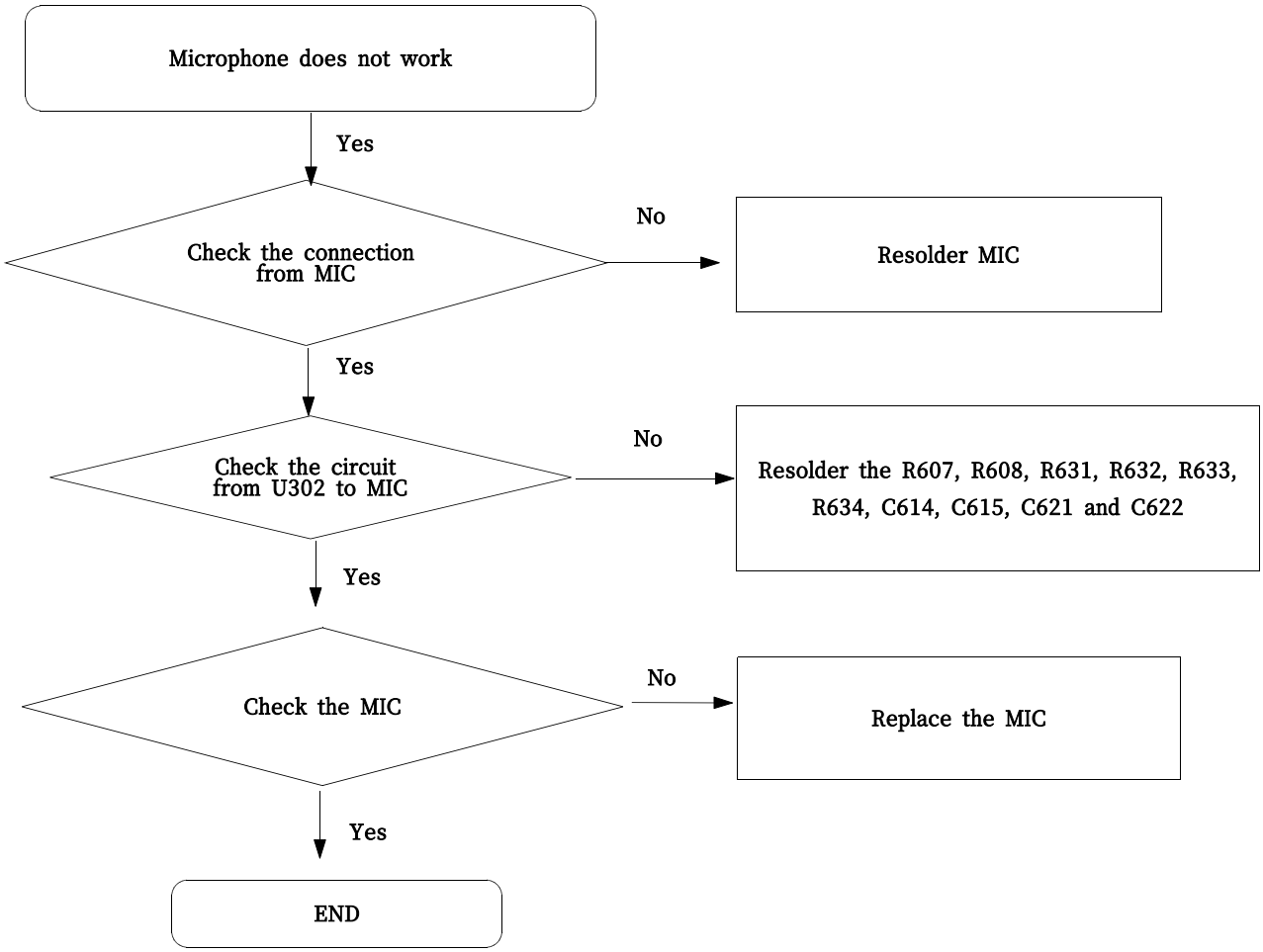
7-5. Microphone Part



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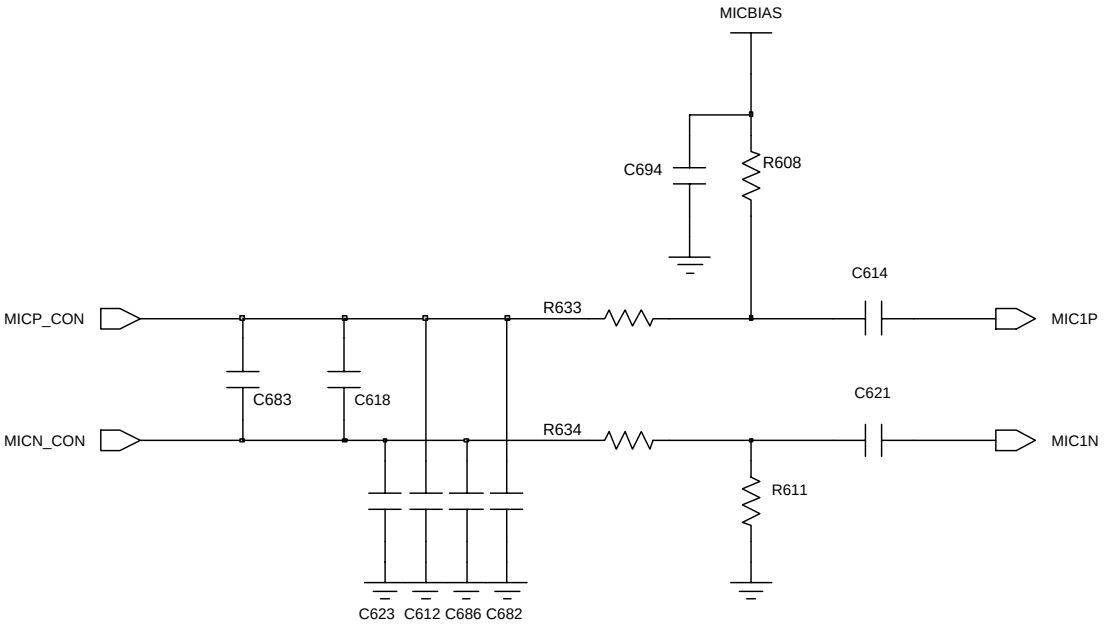
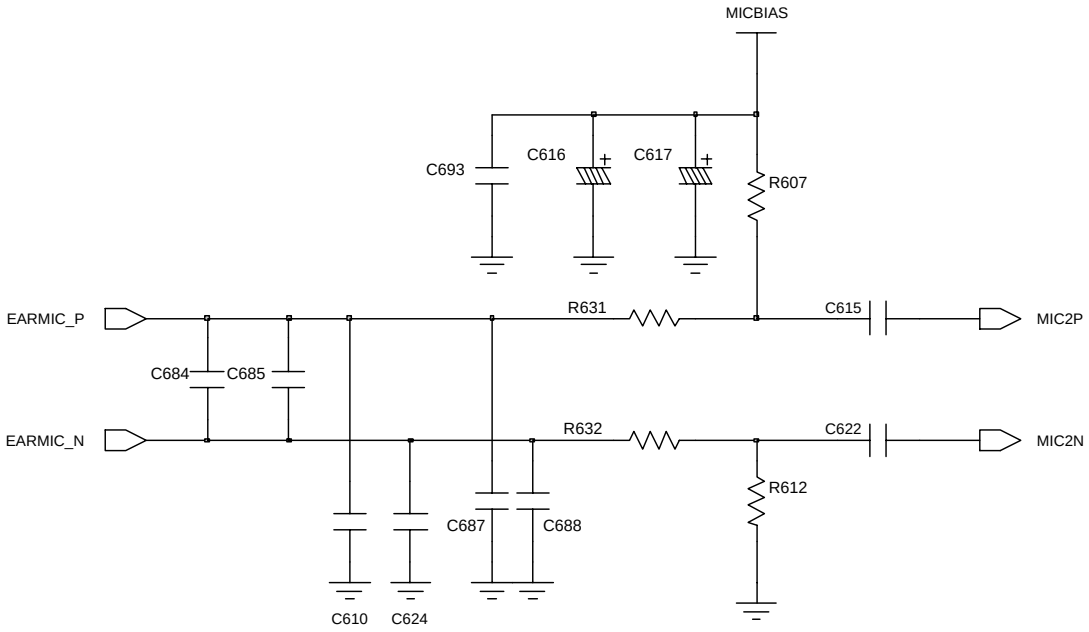
Microphone





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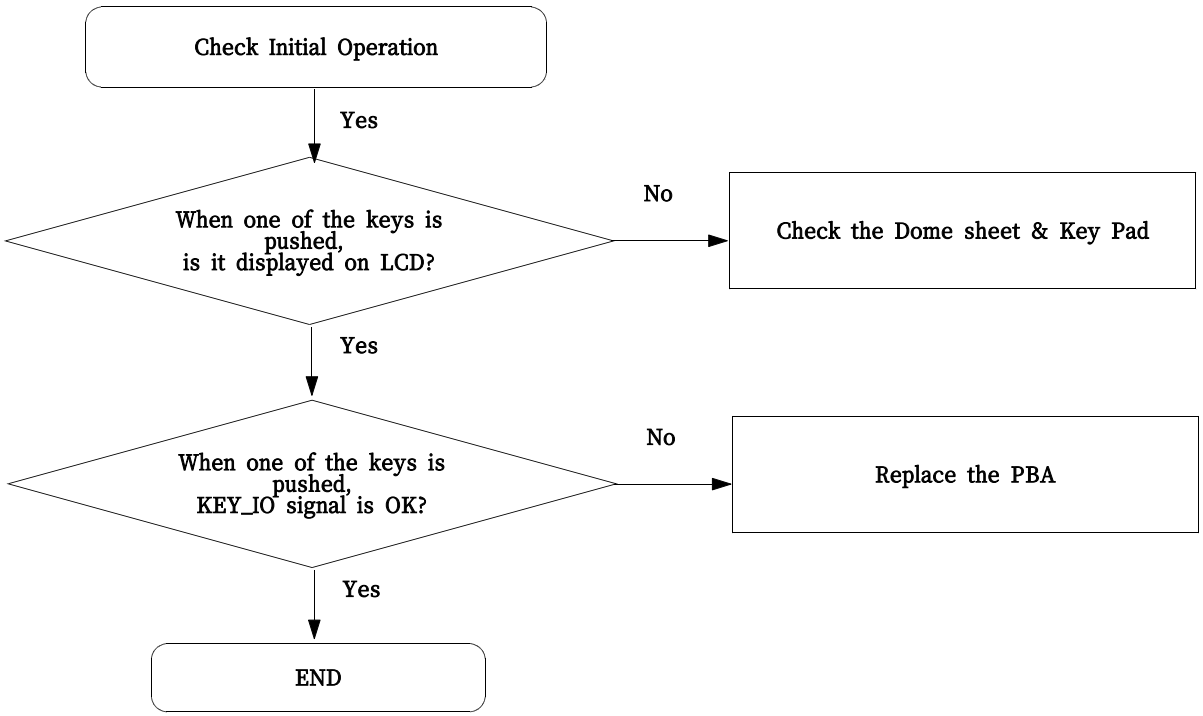
7-6. Key Data Input



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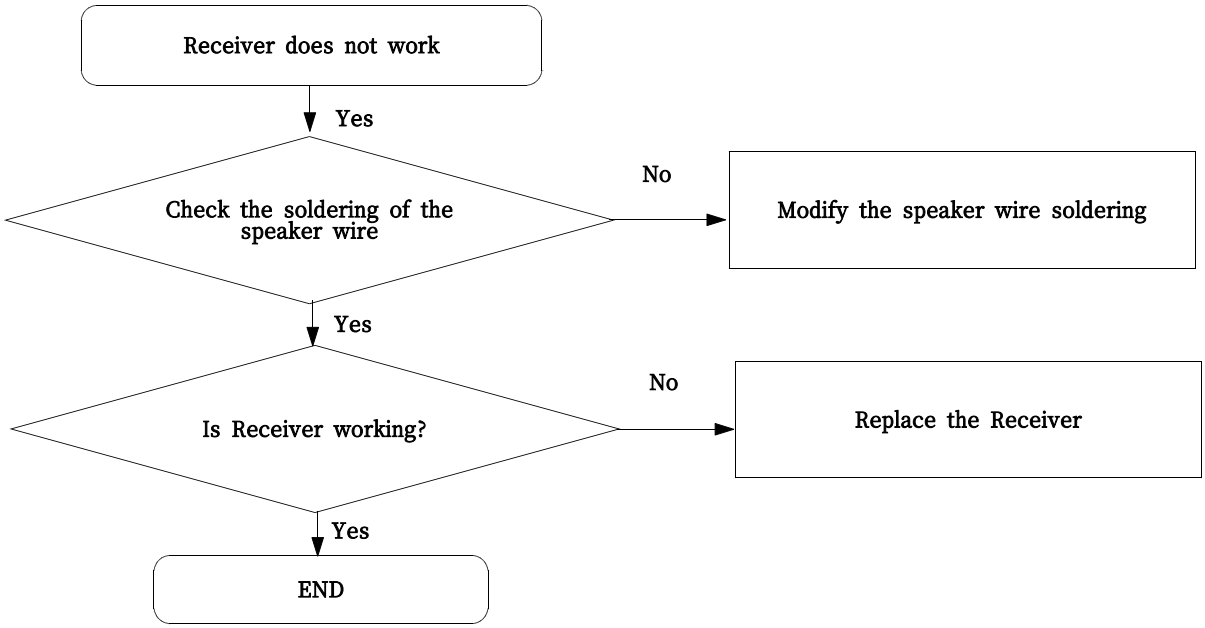
7-7. Receiver Part



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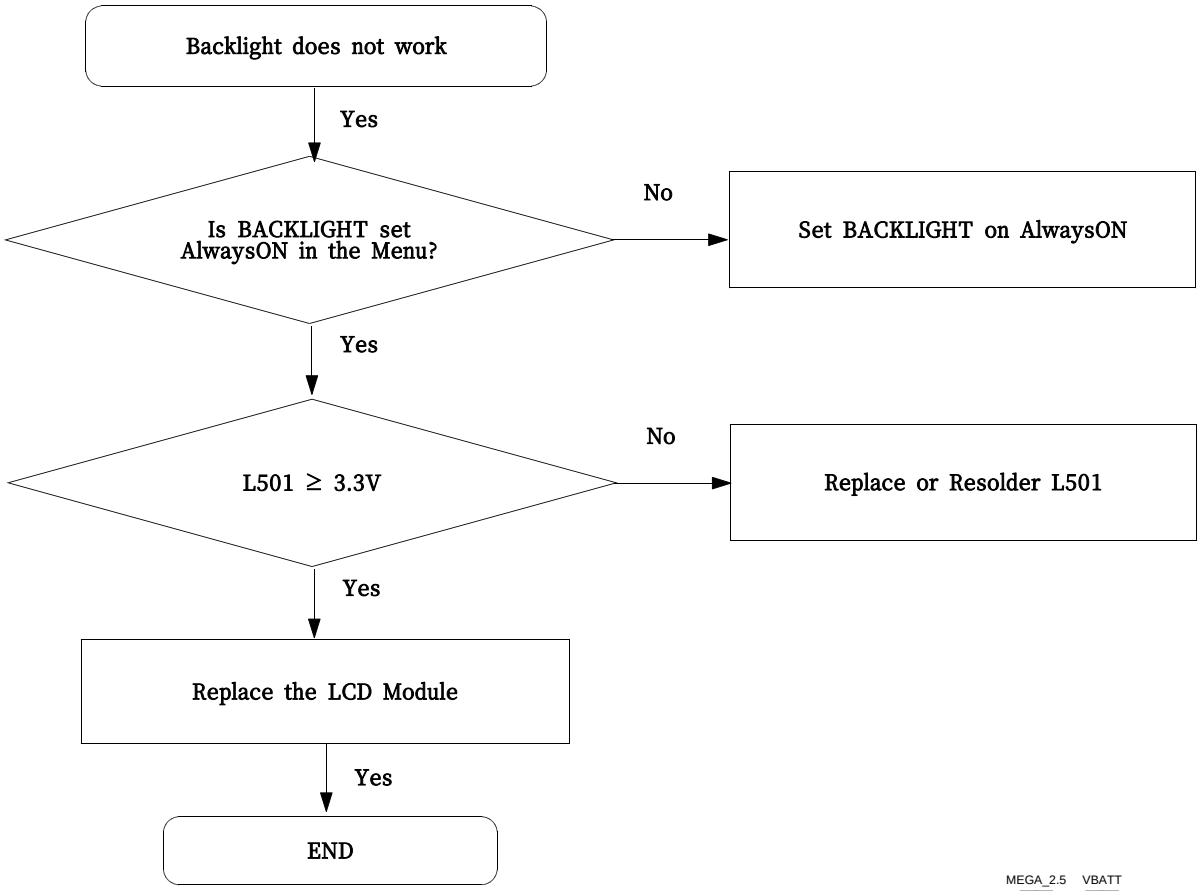
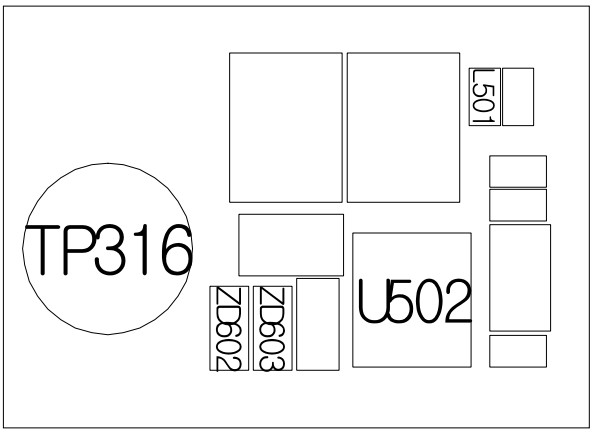
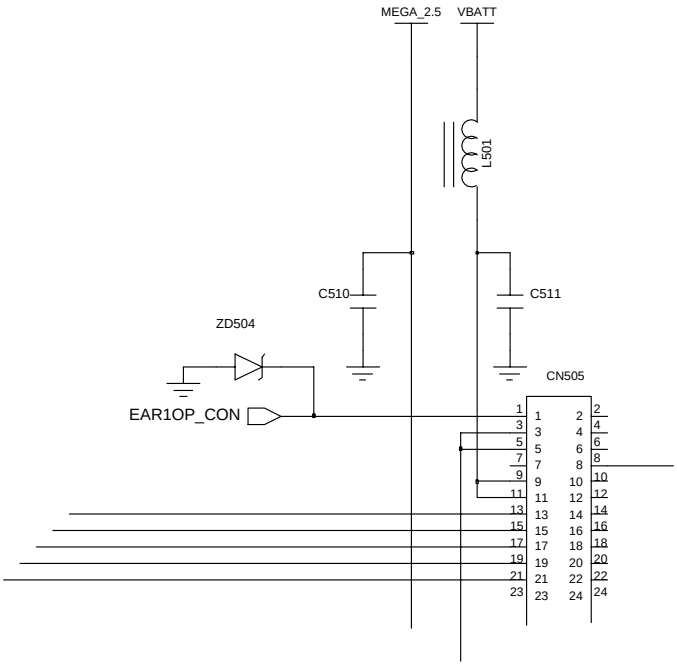
7-8. Back Light (for Color Main LCD)







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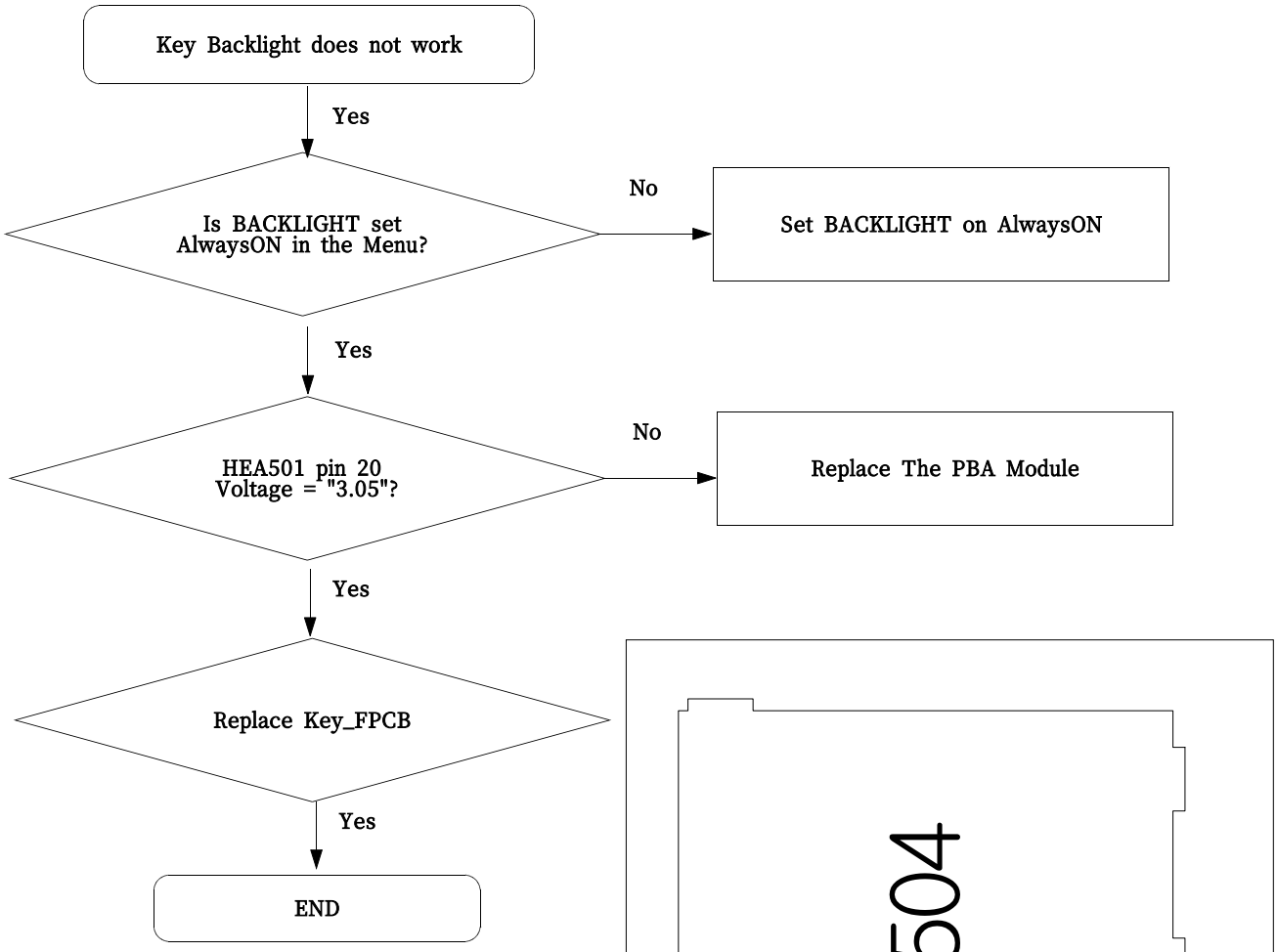
7-9. Key Back Light



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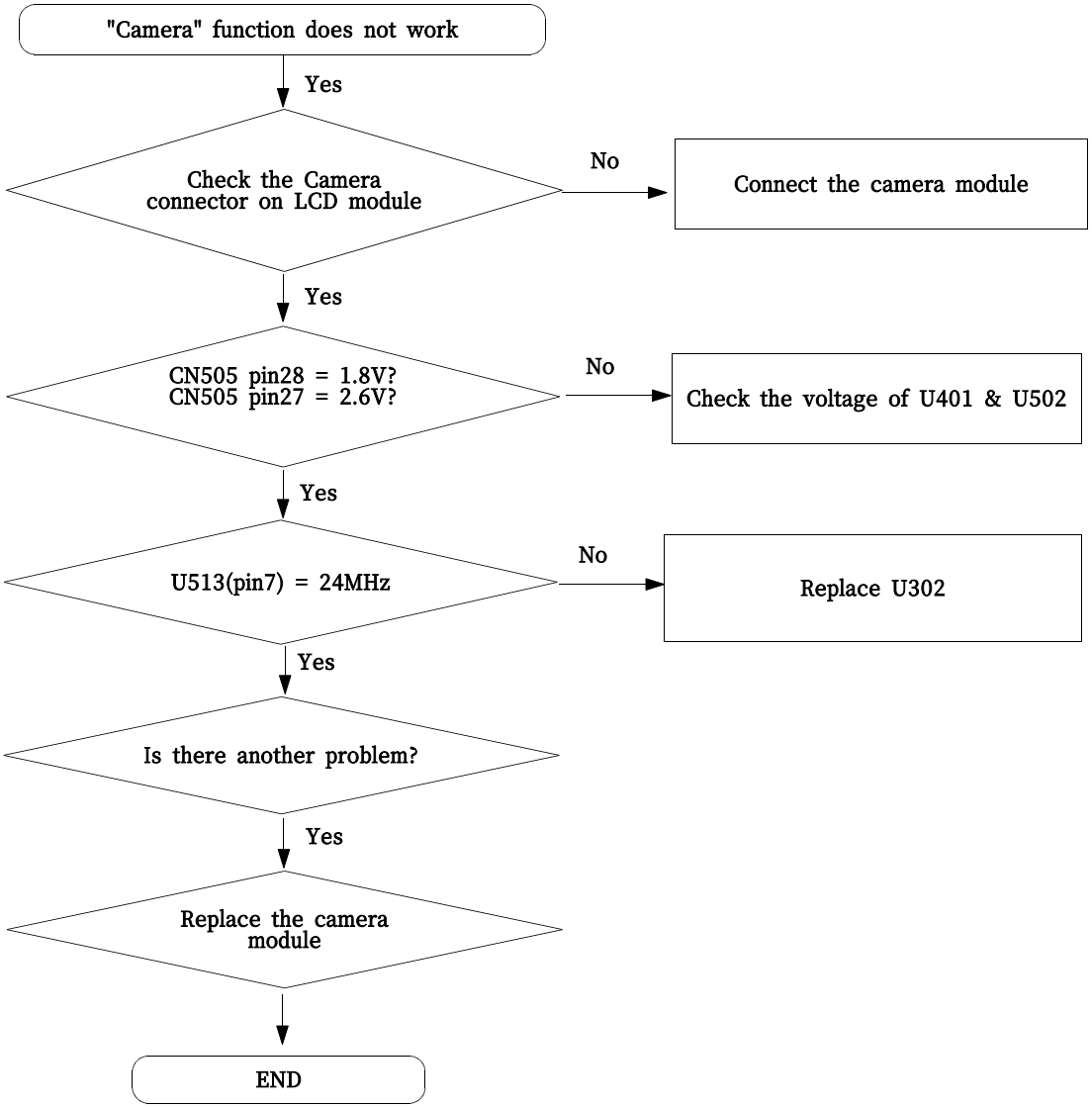
7-10. Camera part



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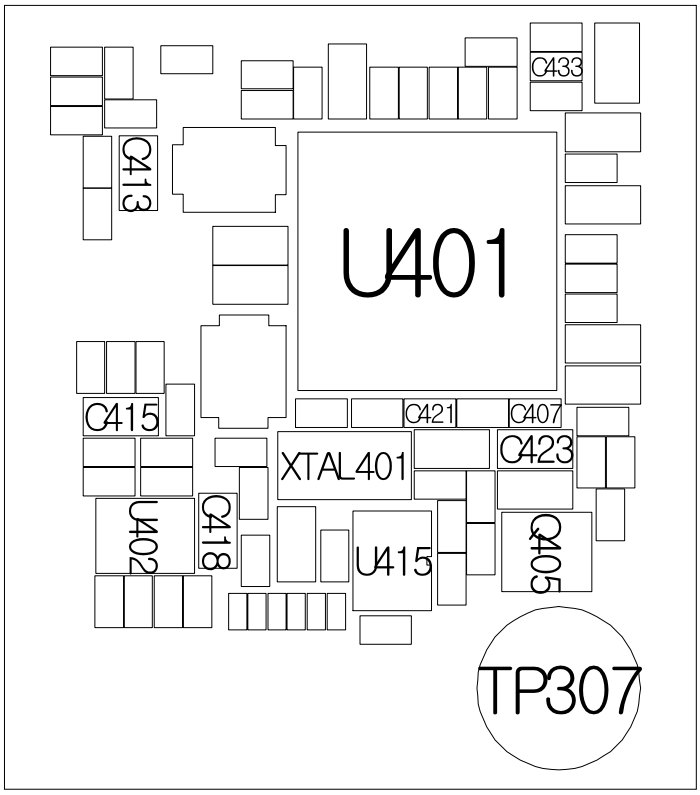

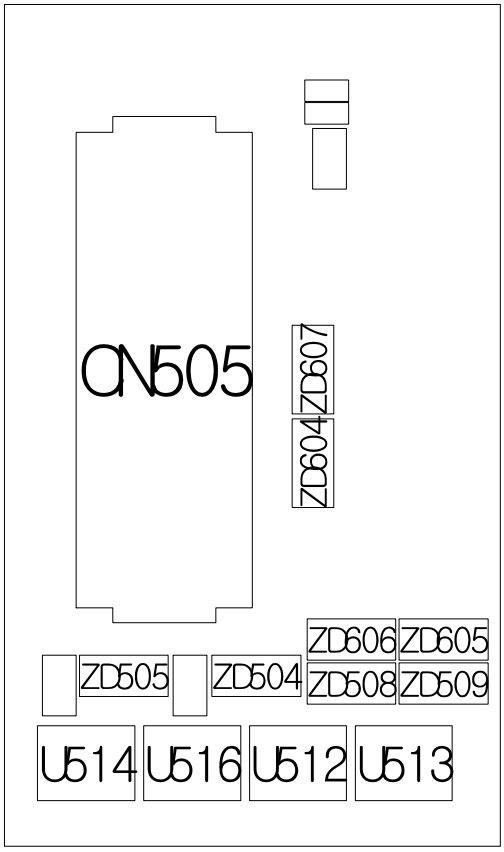

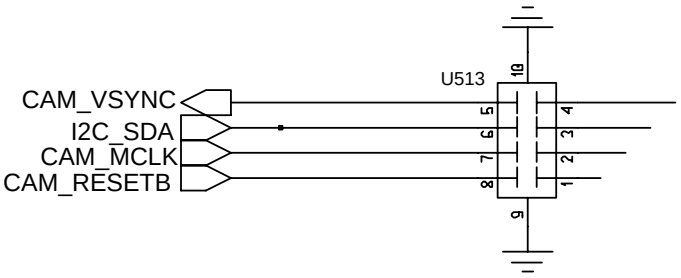

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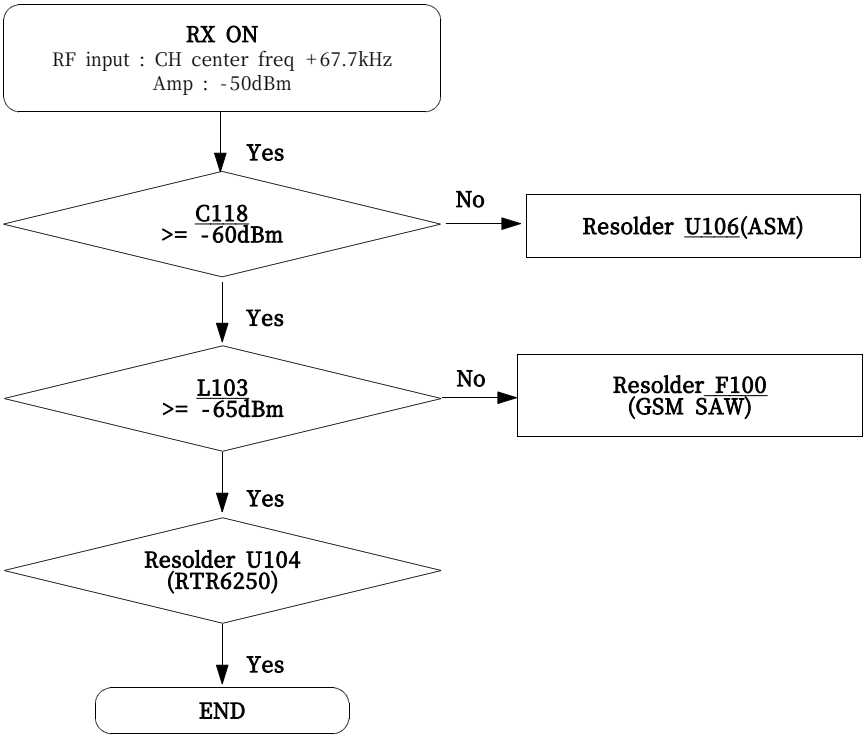
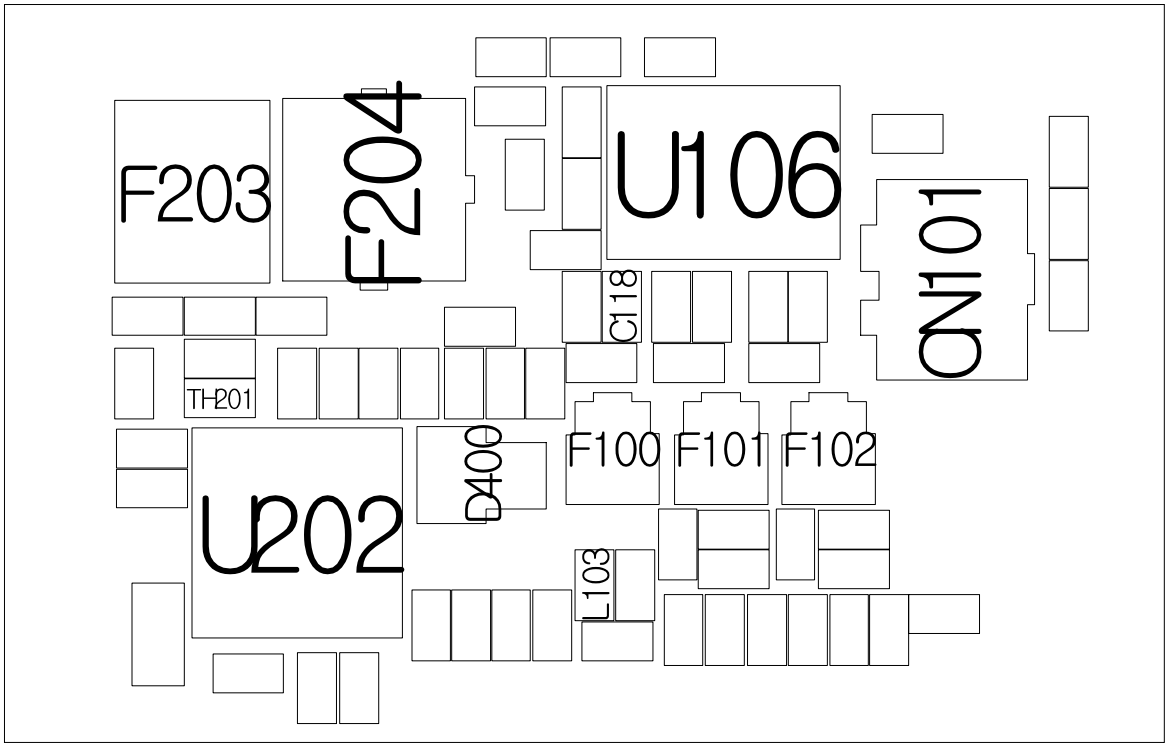
7-11. GSM Receiver





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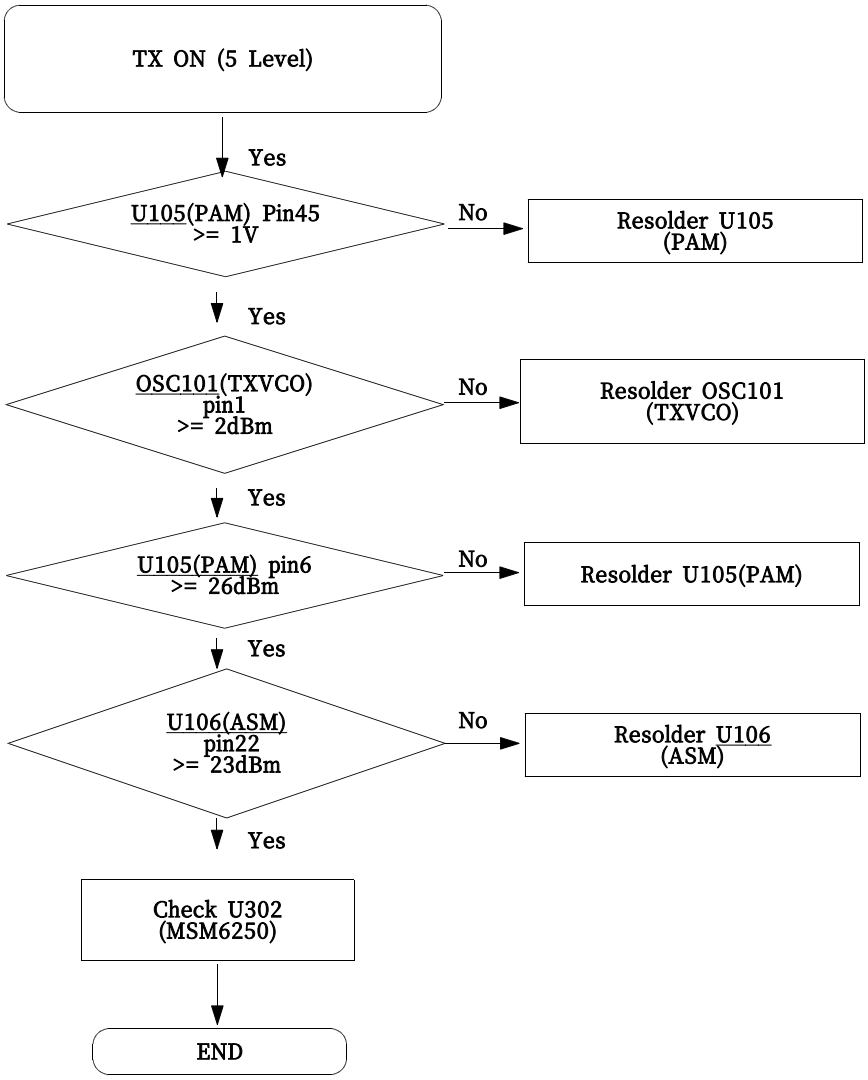
7-12. GSM Transmitter



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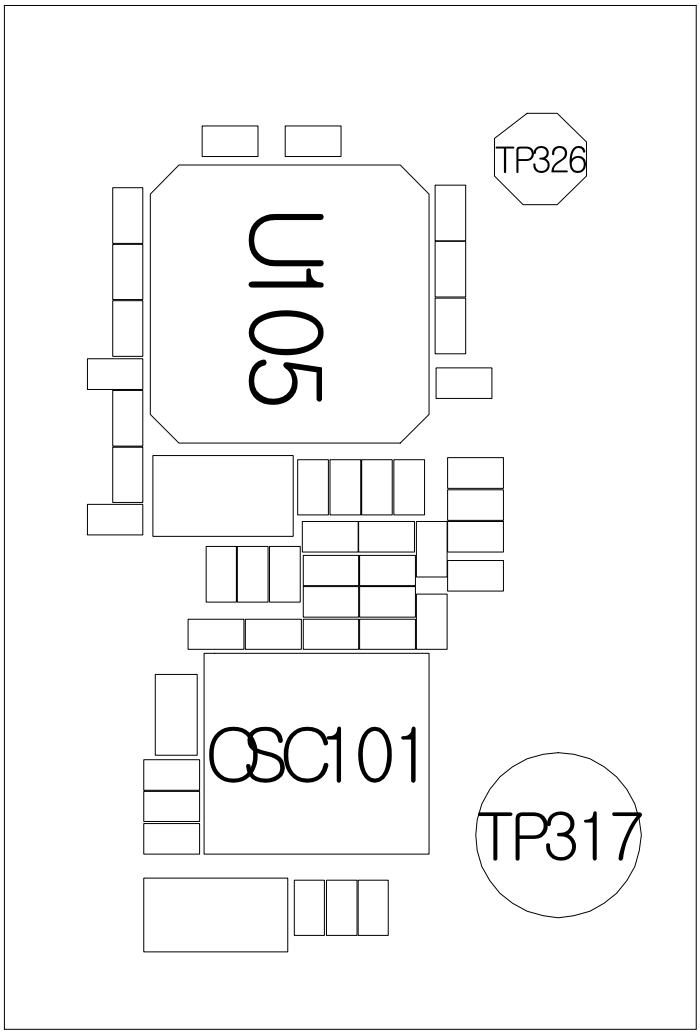

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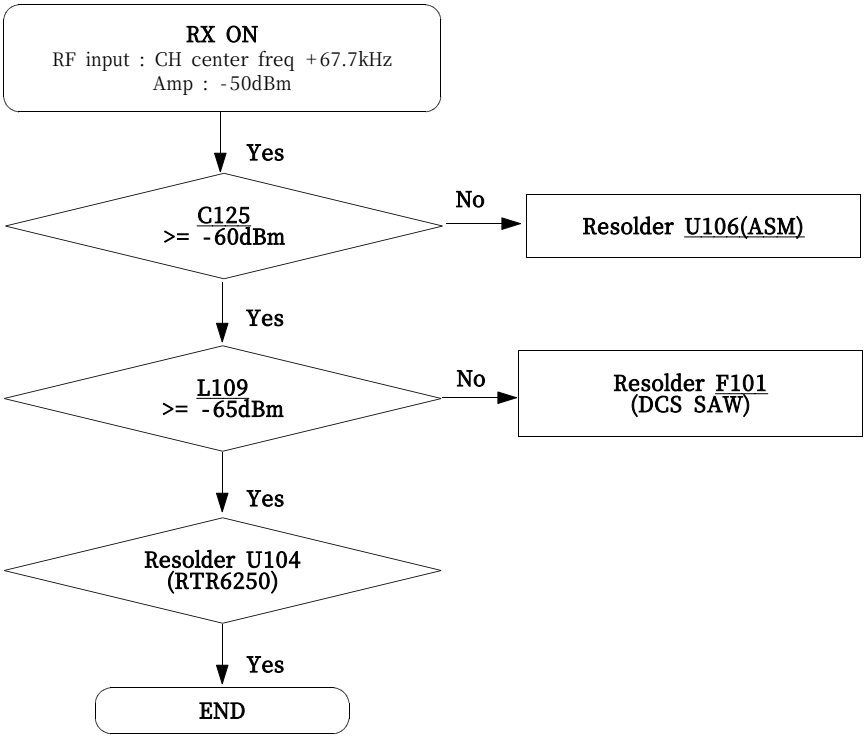
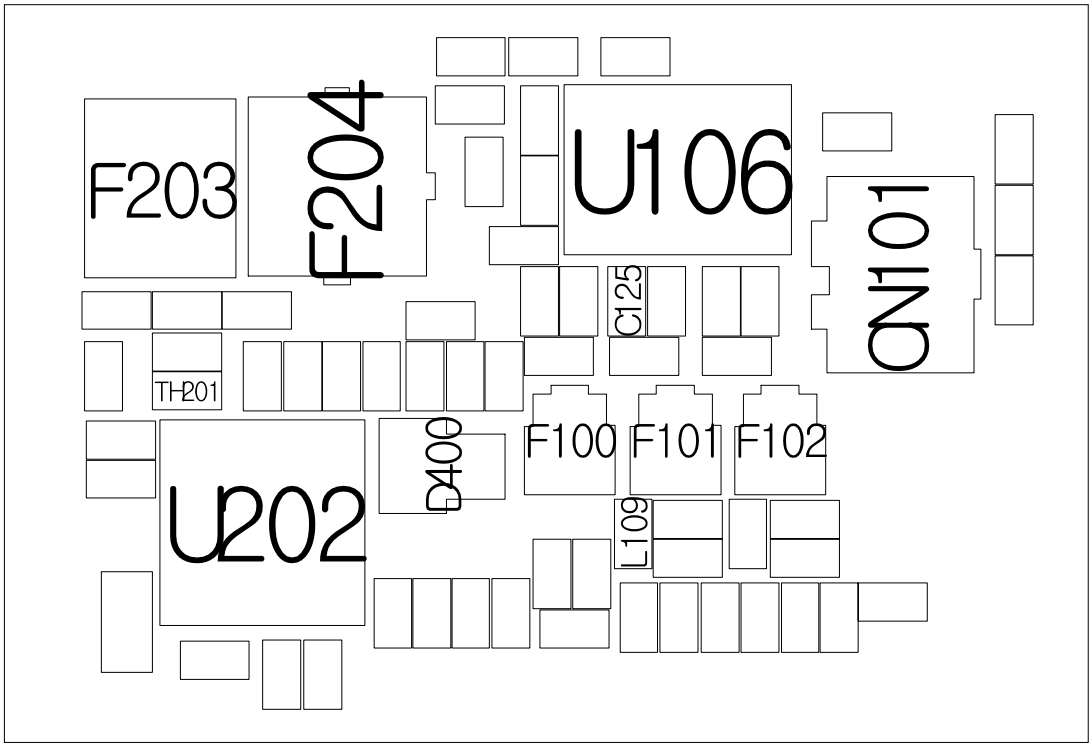
7-13. DCS Receiver





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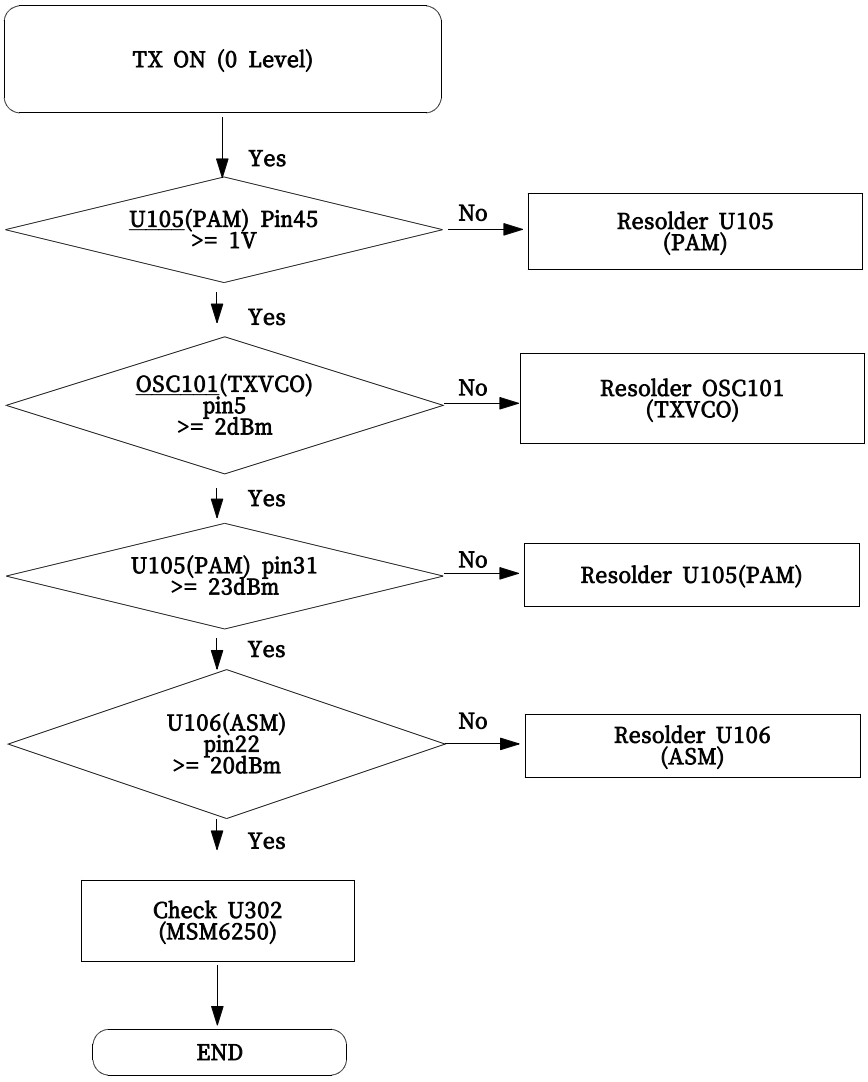
7-14. DCS Transmitter



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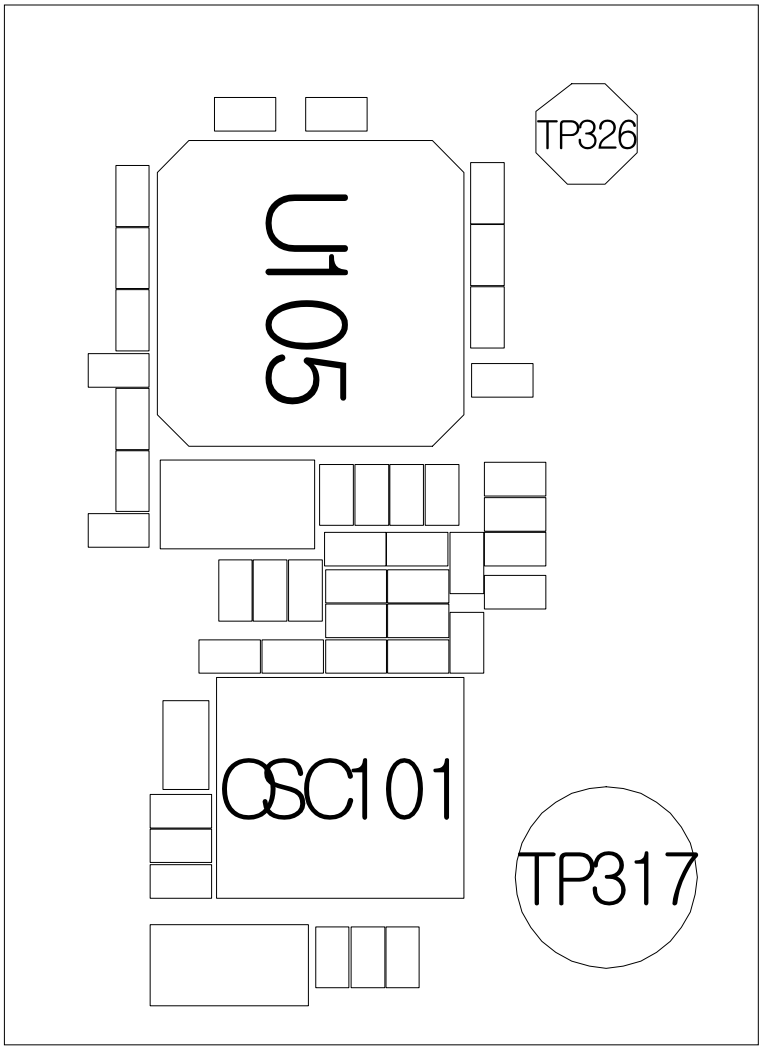

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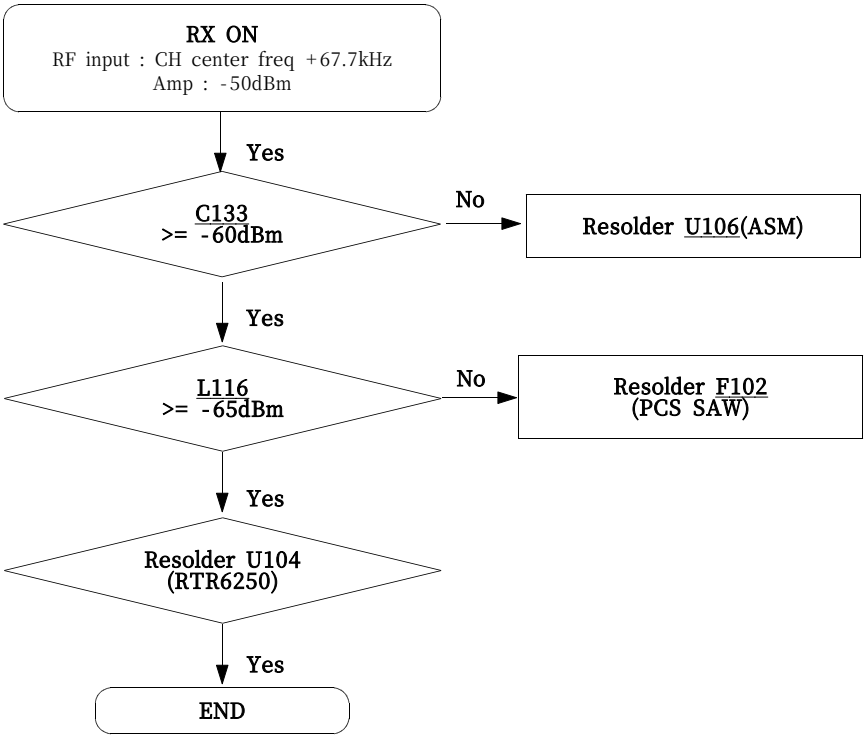
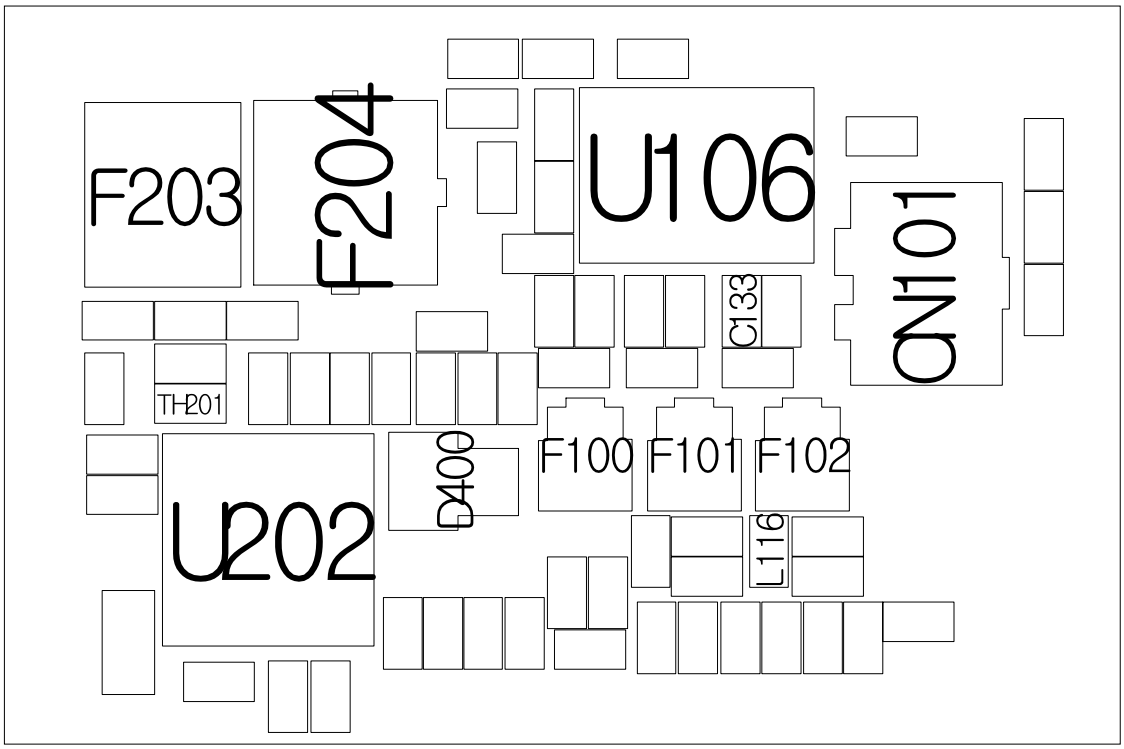
7-15. PCS Receiver





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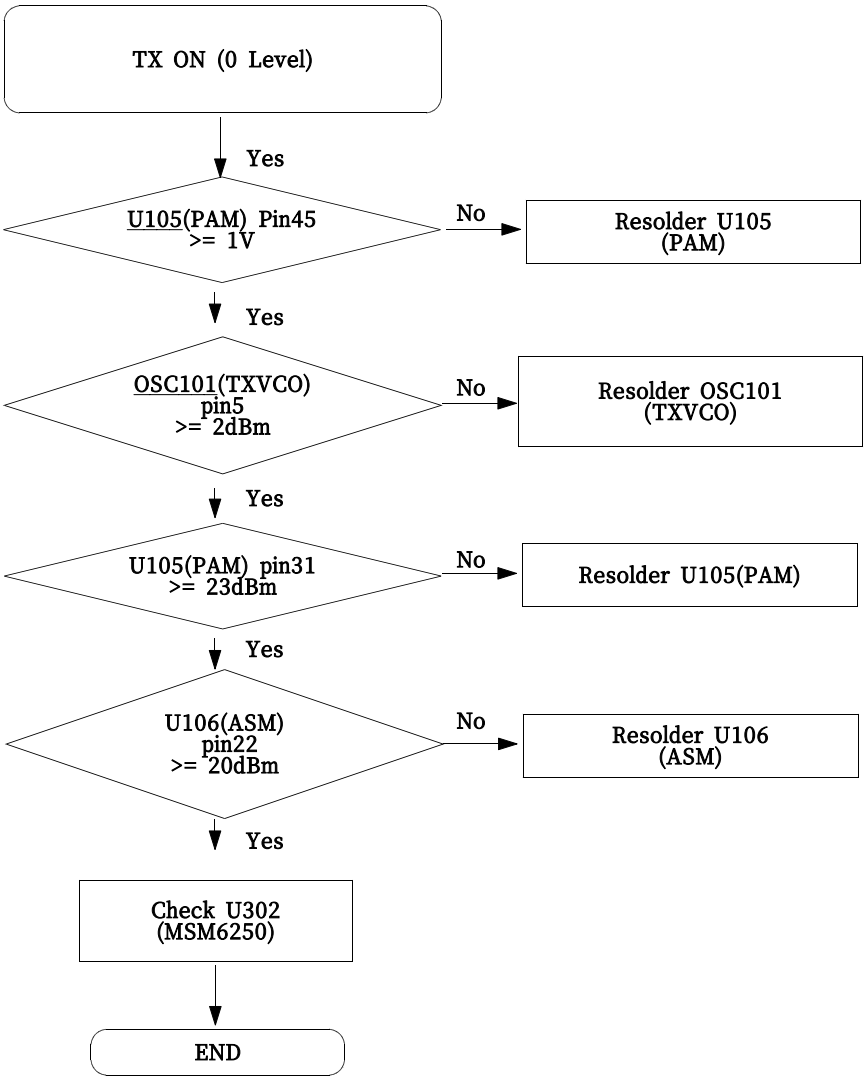
7-16. PCS Transmitter



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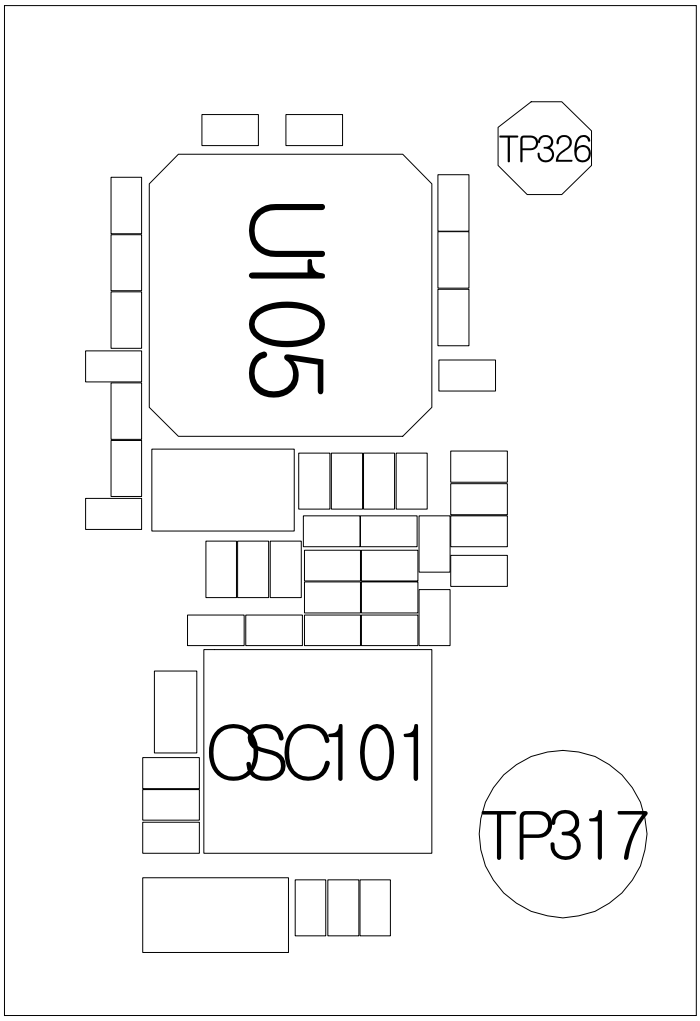

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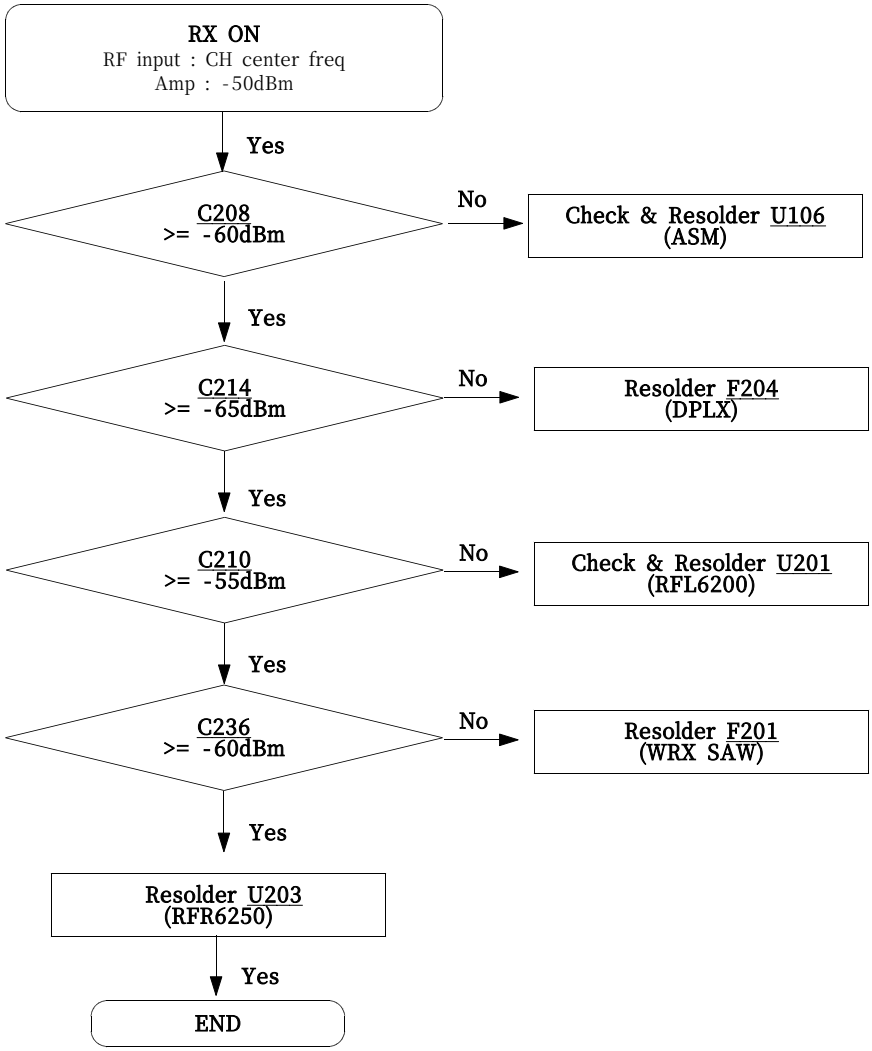
7-17. WCDMA Receiver



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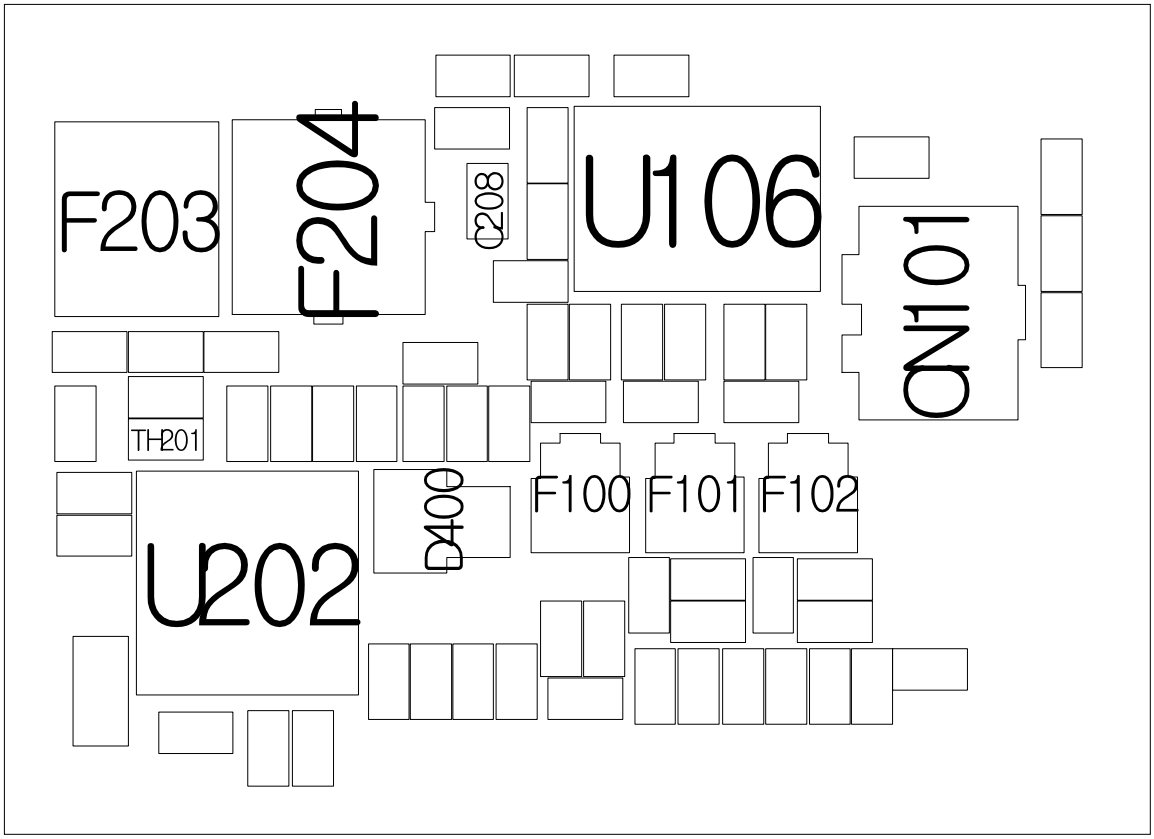

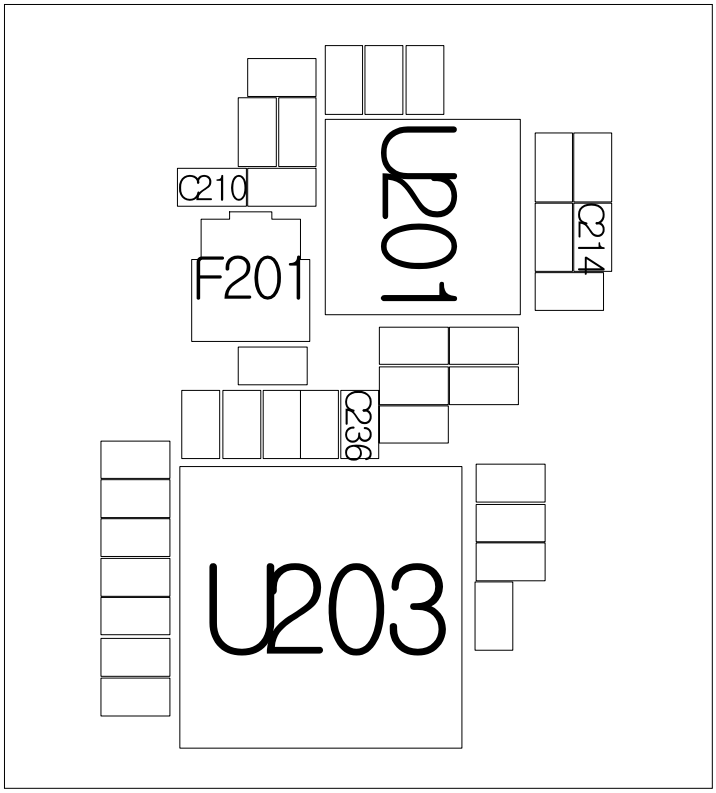

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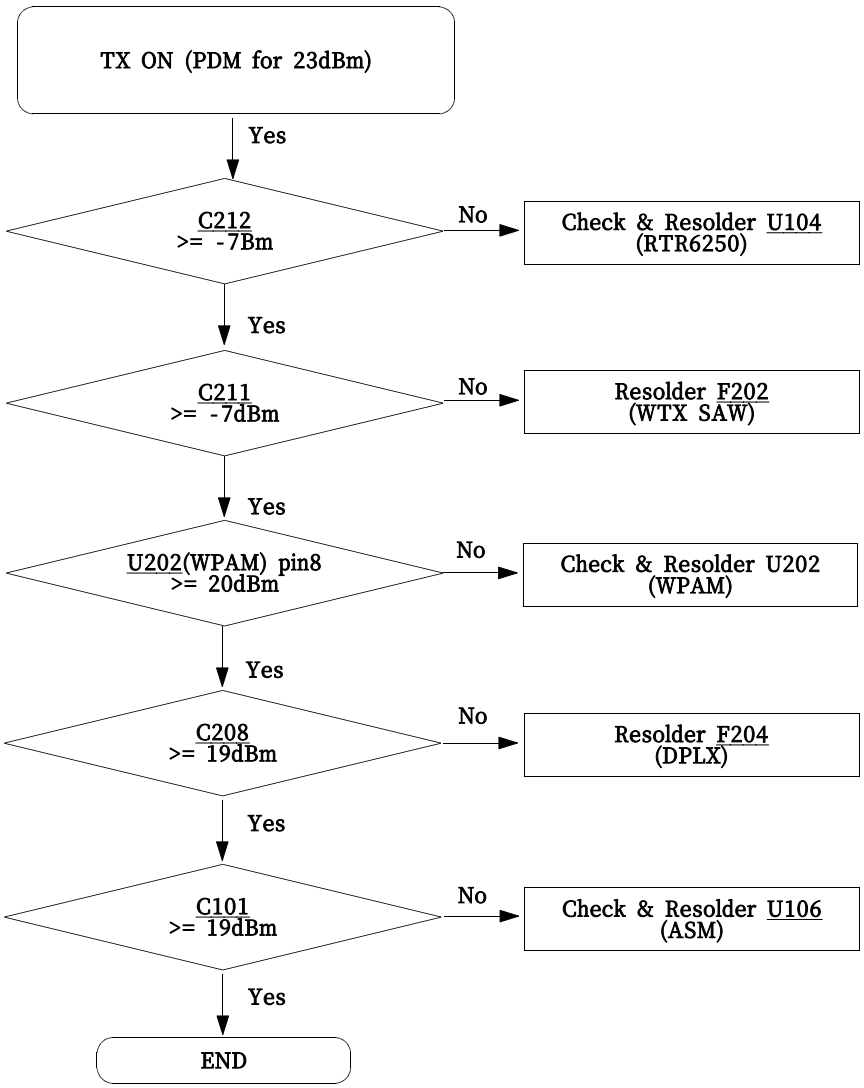
7-18. WCDMA Transmitter



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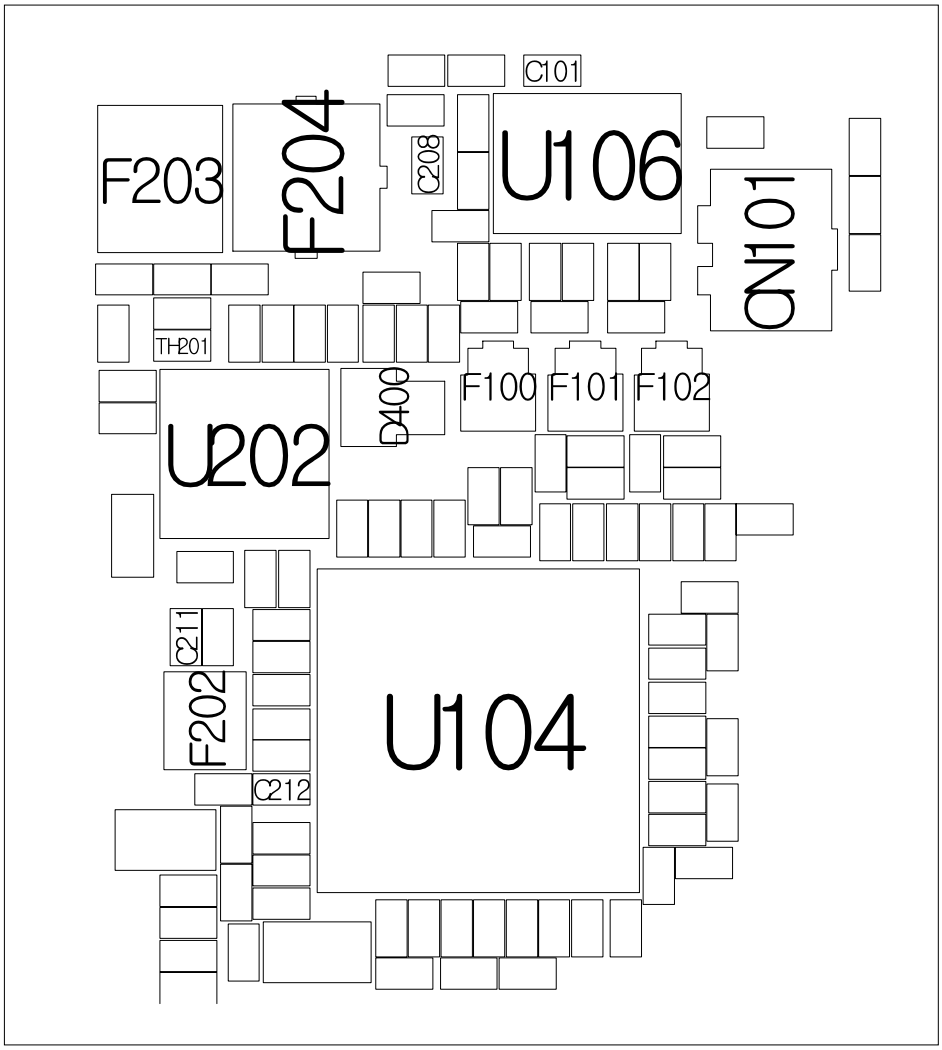

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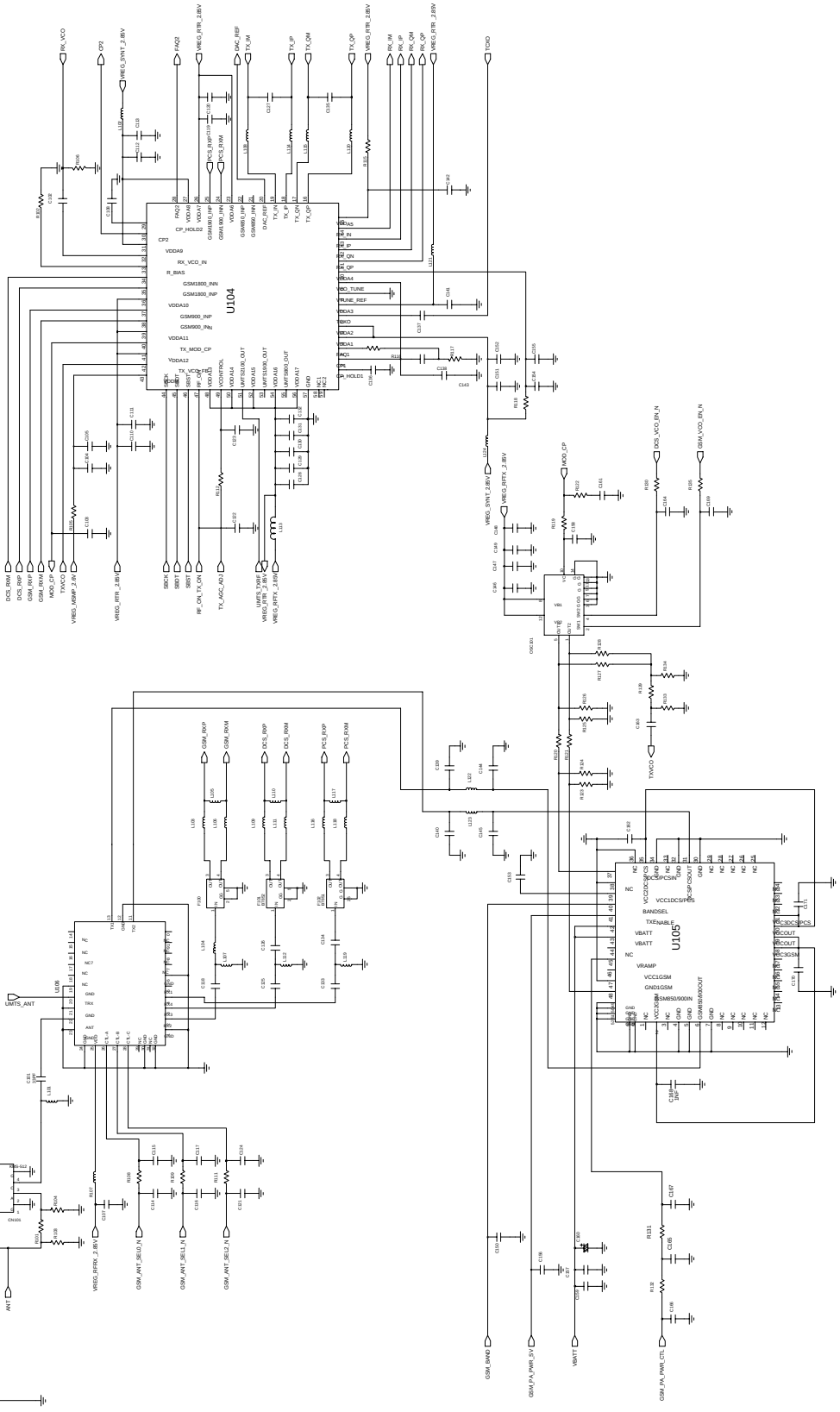
Transmitter



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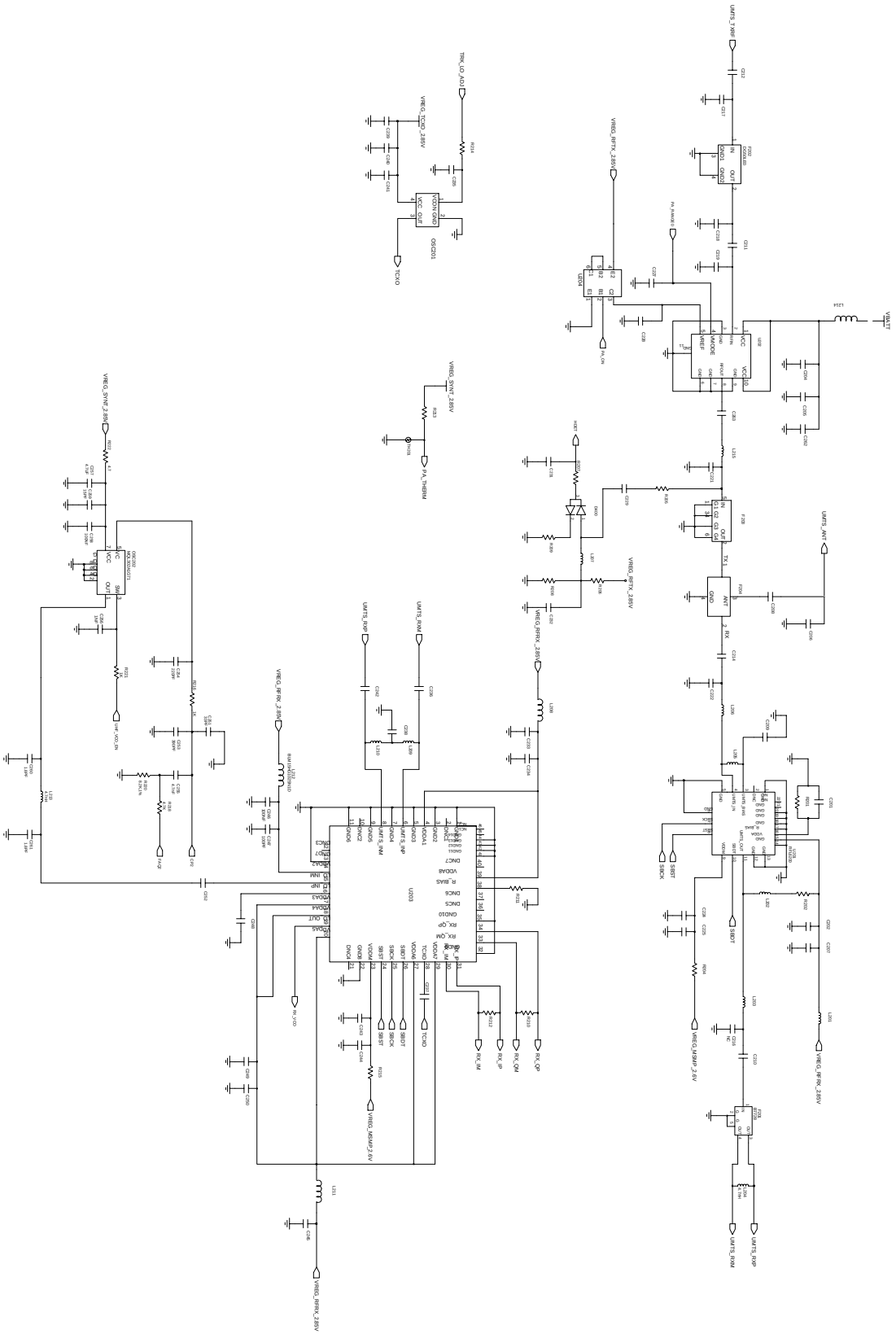

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