SAMSUNG

GSM TELEPHONE
SGH-X600

SERVICE Manual

GSM TELEPHONE

CONTENTS

1. SGH-X600 Specification

1. GSM General Specification

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

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

2. SGH-X600 Circuit Description

1. SGH-X600 RF Circuit Description

1) RX PART

1. ASM(U102) → Switching Tx, Rx path for GSM900, DCS1800 by logic controlling.
2. ASM Control Logic (Q100, Q101) → Truth Table

	VC_1	VC_2
GSM Tx Mode	H	L
DCS Tx Mode	L	H
GSM Rx Mode	L	L
DCS Rx Mode	L	L

3. FILTER

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

- GSM FILTER (F101) → For filtering the frequency band between 925 ~ 960 MHz
- DCS FILTER (F102) → For filtering the frequency band 1805 ~ 1880 MHz.

4. VC-TCXO (OSC101)

To generate the 26MHz reference clock to drive the logic and RF.
After additional process, the reference clock applies to the U103 Rx IQ demodulator and Tx IQ modulator.
The oscillator for RX IQ demodulator and Tx modulator are controlled by serial data to select channel and use fast lock mode for GPRS high class operation.

5. Transceiver (U103)

The receiver front-end converts the aerial RF signal from EGSM, DCS bands down to a low intermediate frequency (IF) of 100 kHz. The first stages are symmetrical low noise amplifiers (LNAs). They are matched to 50 ohm. The LNAs are followed by an I,Q down mixer. It consists of two mixers in parallel but driven by quadrature out of phase LO signals. The In phase (I) and quadrature phase (Q) IF signals are low pass filtered to provide protection from high frequency offset interferers. The low IF I and Q signals are then fed into the channel filter. The front-end low IF I and Q outputs enter the integrated bandpass channel filter with provision for five 8dB gain steps in front of the filters.

2) TX PART

Baseband IQ signal fed into offset PLL, this function is included inside of U103 chip.
OSC100 chip generates modulator signal which power level is about 6.5dBm and fed into Power Amplifier(U101).
The PA output power and power ramping are well controlled by Auto Power Control circuit.
We use offset PLL below .

Modulation Spectrum	200kHz offset 30 kHz bandwidth	GSM	-35dBc
		DCS	-35dBc
		PCS	-35dBc
	400kHz offset 30 kHz bandwidth	GSM	-66dBc
		DCS	-65dBc
		PCS	-66dBc
	600kHz ~ 1.8MHz offset 30 kHz bandwidth	GSM	-75dBc
		DCS	-68dBc
		PCS	-75dBc

2. Baseband Circuit description of SGH-X600

1. PCF50601

1.1. Power Management

Ten low-dropout regulators designed specifically for GSM applications power the terminal and help ensure optimal system performance and long battery life. A programmable boost converter provides support for 1.8V, 3.0V, and 5.0V SIMs, while a self-resetting, electronically fused switch supplies power to external accessories. Ancillary support functions, such as RTC module and High Voltage Charge pump, Clock generator, aid in reducing both board area and system complexity. I2C BUS serial interface provides access to control and configuration registers. This interface gives a microprocessor full control of the PCF50601 and enables system designers to maximize both standby and talk times.

Supervisory functions. including a reset generator, an input voltage monitor, and a temperature sensor, support reliable system design. These functions work together to ensure proper system behavior during start-up or in the event of a fault condition(low microprocessor voltage, insufficient battery energy, or excessive die temperature).

1.2. Backlight Brightness Modulator

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

This phone (SGH-X600) is not use PWM, but use DC CONTROL (COLOR_LCD_BL)

So "COLOR_LCD_BL" voltage is high value, backlight brightness is bright and "COLOR_LCD_BL" voltage is low value, backlight is gloomy .

1.3. Clock Generator

The Clock Generator (CG) generates all clocks for internal and external usage. The 32768 Hz crystal oscillator provides an accurate low clock frequency for the PCF50601 and other circuitry.

2. Connector

2-1. LCD Connector

LCD is consisted of LCD(color 65K STN LCD). Chip select signals in the U500, LCD_CS can enable LCD. This signal is from IO part of the DSP in the U500(alpha chip). "RESET_2.8V" signal initiates the Reset process of the LCD.

16-bit data lines(LD(0)~LD(15)) transfers data and commands to LCD through by pass capacitor. Data and commands use "RS" signal. If this signal is high, Inputs to LCD are commands. If it is low, Inputs to LCD are data. The signal which informs the input or output state to LCD, is required. But this system is not necessary this signal. So "L_WD" signal is used to write data or commands to LCD. Power signal for LCD is "VDD2".

2-2. IRDA

This system uses IRDA module, HSDL_3208, Agilent's. This has signals, "IRDA_DOWN"(enable signal), "RXD0"(input data) and "TXD0"(output data). These signals are connected to OM6357. It uses two power signals. "VDD2" is used for circuit and "VBAT" is used for LED.

2-3. Key

This is consisted of key interface pins among OM6357, KBIO(0:7). These signals compose the matrix. Result of matrix informs the key status to key interface in the OM6357. Power on/off key is separated from the matrix. So power on/off signal is connected with PCF50601 to enable PCF50601. Ten key LEDs use the "BLVDD" supply voltage.

"COLOR_LCD_BL" signal enables LEDs with current control.

2-4. EMI ESD Filter

This system uses the EMI ESD filter, EMIF09 to protect noise from IF CONNECTOR part.

2-5 IF connetor

It is 18-pin connector. They are designed to use VBAT, V_EXT_CHARGE, TXD0, RXD0, RTS0, CTS0, JIG_REC, CHARGER_OK, RXD1, TXD1, AUX_MIC, AUX_SPK and GND. They connected to power supply IC, microprocessor and signal processor IC.

3. Battery Charge Management

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

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

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

4. Audio

EARP_P and EARP_N from OM6357 are connected to the main receiver. AUXSP is connected to the Hands free kit. MIC_P and MIC_N are connected to the main MIC. And AUX_MIC_P and AUX_MIC_N are connected to the Hands free kit.

YMU762C is a LSI for portable telephone that is capable of playing high quality music by utilizing FM synthesizer and ADPCM decorder that are included in this device.

As a synthesis, YMU762C is equipped 32 voices with different tones. Since the device is capable of simultaneously generating up to synchronous with the play of the FM synthesizer, various sampled voices can be used as sound effects.

Since the play data of YMU762C are interpreted at anytime through FIFO, the length of the data(playing period) is not limited, so the device can flexibly support application such as incoming call melody music distribution service.
The hardware sequencer 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.
YMU762C includes a speaker amplifier with high ripple removal rate whose maximum output is 550mW (SPVDD=3.6V). The device is also equipped with conventional function including a vibrator and a circuit for controlling LEDs synchronous with music.
For the headphone, it is provided with a stereophonic output terminal.
For the purpose of enabling YMU762C to demonstrate its full capabilities, Yamaha purpose to use "SMAF:Synthetic music Mobile Application Format" as a data distribution format that is compatible with multimedia. Since the SMAF takes a structure that sets importance on the synchronization between sound and images, various contents can be written into it including incoming call melody with words that can be used for training karaoke, and commercial channel that combines texts, images and sounds, and others. The hardware sequencer of YMU762C directly interprets and plays blocks relevant to synthesis (playing music and reproducing ADPCM with FM synthesizer) that are included in data distributed in SMAF.

5. Memory

signals in the OM6357 enable two memories. They use only one volt supply voltage, VDD3 in the PCF50601. This system uses Samsung's memory, KBB06A300M-T402. It is consisted of 128M bits flash NOR memory and 128M bits flash NAND memory and 32M bits UtRAM. It has 16 bit data line, HD[0~15] which is connected to OM6357 and MV317SA. It has 23 bit address lines, HA[1~23]. CS_NAND and NCSRAM signals is chip select. Writing process, HWR_N is low and it enables writing process to flash memory and SRAM. During reading process, HRD_N is low and it enables reading process to flash memory and SRAM. Each chip select signals in the OM6357 select memory among 2 flash memory and UtRAM. Reading or writing procedure is processed after HWR_N or HRD_N is enabled. Memories use reset, which is VDD3 delay from PCF50601. HA[22] signal enables lower byte of SRAM and HA[23] signal enables higher byte of SRAM.

6. OM6357

OM6357 is consisted of ARM core and DSP core. It has **8x1Kword on-chip program/data RAM, 55Kwords on-chip program ROM** in the DSP. It has 4K*32bits ROM and 2K*32bits RAM in the ARM core. DSP is consisted of KBS, JTAG, EMI and UART. ARM core is consisted of EMI, PIC(Programmable Interrupt Controller), reset/power/clock unit, DMA controller, TIC(Test Interface Controller), PPI, SSI(Synchronous Serial Interface), ACC(Asynchronous communications controllers), timer, ADC, RTC(Real-Time Clock) and keyboard interface.
KBIO(0:7), address lines of DSP core and HD[0~15]. HA[1~23], address lines of ARM core and HD[0~15], data lines of ARM core are connected to memory, YMU762C. MV317SA(Camera DSP Chip) controls the communication between ARM core and DSP core.
CS_NAND, NCSRAM, NCSFLASH in the ARM core are connected to each memory. HWR_N and HRD_N control the process of memory. External IRQ(Interrupt ReQuest) signals from each units, such as, PMU need the compatible process. KBIO[0~7] receive the status from key and RXD0/TXD0/irDA_DOWN are used for the communications using IRDA and data link cable(DEBUG_DTR/RTS/TXD/RXD/CTS/DSR).
It has JTAG control pins(TDI/TDO/TCK) for ARM core and DSP core. It receives 13MHz clock in CKI pin from external TCXO. ADC(Analog to Digital Convertor) part receives the status of temperature, battery type and battery voltage.

7. TCO-9141G(26MHz)

This system uses the 26MHz TCXO, TCO-9141G, Toyocom. AFC control signal form OM6357 controls frequency from 26MHz x-tal. It generates the clock frequency. This clock is connected to OM6357, YMU762.

8. Camera DSP(MV317SA)

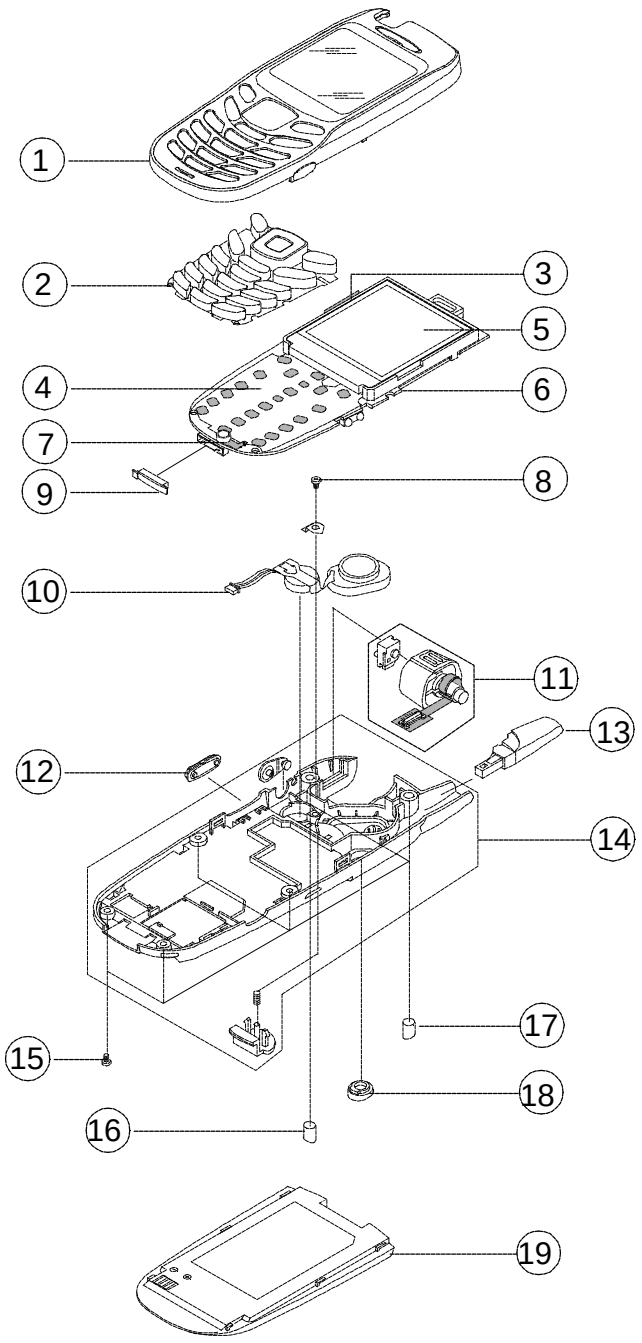
Tiger is an Integrated circuit for mobile phone camera. This structure will allow effectiveness for large data management and significantly reduces main processor will get burden.

In hence, Tiger will allow the user to be able to display to LCD direct without burdening the main processor. It also allows to have various kinds of display size on the LCD and snapshot for Jpeg. Digital effect will also be executed on real time base resulting Tiger as being a video co-processor in the mobile platform.

Also,an i80 type processor' s 16bit parallel interface of Tiger makes it available for the CPU to interchange the data with Tiger. As the additional 8Mbit is usable except 2Mbit buffer embedded in Tiger, the diverse UI data processing which is not a burden to the CPU is available. JPEG encoder and decoder are baseline ISO/IEC 10918-1 JPEG compliance (DCT-based). JPEG decoder supports YUV444, YUV422, YUV420 and YUV411 format standard JPEG image.

3. SGH-X600 Exploded View and its Parts list

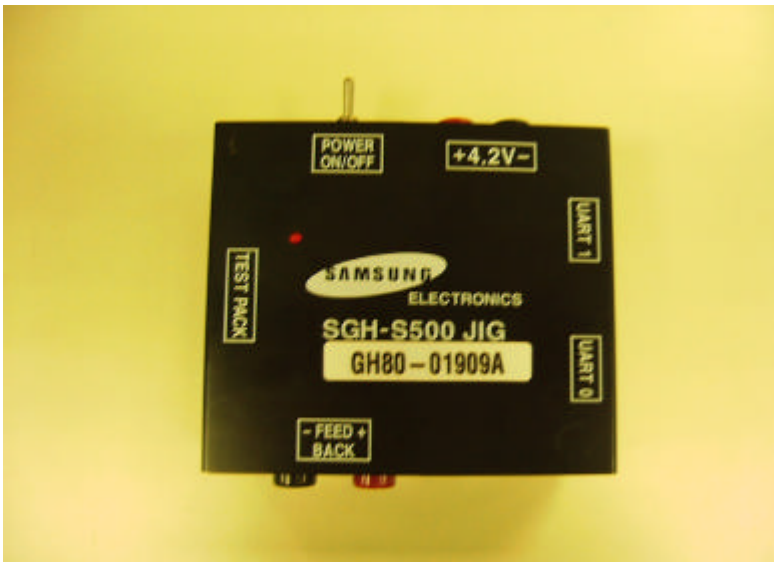
1. Cellular phone Exploded View



2. Cellular phone Parts list

NO	Description	SEC.CODE	REMARK
1	FRONT COVER	GH75-03273A	
2	KEYPAD	GH75-03274A	
3	VOLKEY FPCB	GH59-00953A	
4	DOME SHEET	GH59-00954A	
5	LCD	GH07-00421A	
6	MAIN PBA	GH92-01605A	
7	MIC	GH30-00057A	
8	SCREW	6001-001530	
9	IF COVER	GH73-02269A	
10	MOTOR_SPEAKER ASS'Y	GH59-01032A	
11	CAMERA	GH59-00969A	
12	VOLUME KEY	GH75-03275A	
13	ANTENNA	GH42-00354A	
14	REAR COVER	GH75-03276A	
15	SCREW	6001-001639	
16	SCREW CAP A	GH72-10691A	
17	SCREW CAP B	GH72-10692A	
18	RF COVER	GH72-10690A	
19	BATTERY	GH43-01033A	

3. Test Jig (GH80-01909A)



3-1. RF Test Cable
(GH39-00105A)

3-2. Test Cable
(GH39-00217A)

3-3. Serial Cable

3-4. Power Supply Cable

3-5. DATA CABLE
(GH39-00219A)

3-6. TA
(GH44-00482A)

4. SGH-X600 MAIN Electrical Parts List

SEC CODE	Design LOC
0403-001387	ZD201
0403-001446	D608
0404-001172	D614
0406-001083	D200
0406-001083	D201
0406-001083	D300
0406-001083	D601
0504-001012	Q501
0504-001012	Q502
0504-001012	Q503
0504-001012	Q601
0504-001151	Q100
0504-001151	Q101
0505-001423	Q300
0506-000107	Q200
0506-000107	Q600
0601-001611	D602
0601-001611	D615
0601-001790	D604
0601-001790	D605
0601-001790	D606
0601-001790	D607
0601-001790	D609
0601-001790	D610
0601-001790	D612
0601-001790	D613
0601-001823	D500
0601-001823	D501
0604-001261	D301
0801-002237	U302

SEC CODE	Design LOC
0801-002540	U202
0801-002540	U205
0801-002540	U300
1001-001183	U201
1003-001440	Q201
1109-001280	U301
1201-001954	U101
1202-001036	U204
1203-002633	U601
1203-002680	Q500
1203-002764	U203
1204-002161	U303
1205-002276	U200
1205-002327	U103
1205-002350	U400
1404-001221	TH201
1405-001018	V502
1405-001082	C200
1405-001082	C221
1405-001082	V201
1405-001082	V202
1405-001082	V203
1405-001082	V204
1405-001082	V205
1405-001082	V300
1405-001082	V301
1405-001082	V302
1405-001082	V303
1405-001082	V503
1405-001082	V505

SEC CODE	Design LOC
1405-001082	V506
1405-001082	V601
1405-001082	V602
1405-001082	V603
1405-001082	V614
1405-001082	V615
1405-001082	V616
1405-001082	V617
1405-001082	V618
1405-001082	V619
1405-001082	V620
1405-001082	V621
1405-001082	V622
1405-001082	V623
2007-000138	R125
2007-000139	R111
2007-000139	R112
2007-000140	R123
2007-000140	R139
2007-000140	R322
2007-000140	R616
2007-000141	R104
2007-000141	R223
2007-000141	R224
2007-000141	R320
2007-000142	R141
2007-000146	R321
2007-000147	R116
2007-000148	R100
2007-000148	R101

SEC CODE	Design LOC
2007-000148	R115
2007-000148	R120
2007-000148	R133
2007-000148	R202
2007-000148	R229
2007-000148	R231
2007-000148	R310
2007-000148	R400
2007-000148	R408
2007-000148	R519
2007-000148	R520
2007-000152	R537
2007-000160	R516
2007-000162	R205
2007-000162	R213
2007-000162	R214
2007-000162	R222
2007-000162	R313
2007-000162	R314
2007-000162	R315
2007-000162	R318
2007-000162	R319
2007-000162	R323
2007-000162	R325
2007-000162	R326
2007-000162	R327
2007-000162	R330
2007-000162	R338
2007-000162	R509
2007-000166	R211

SEC CODE	Design LOC
2007-000171	R140
2007-000171	R142
2007-000171	R201
2007-000171	R203
2007-000171	R206
2007-000171	R207
2007-000171	R234
2007-000171	R238
2007-000171	R331
2007-000171	R332
2007-000171	R334
2007-000171	R336
2007-000171	R503
2007-000171	R506
2007-000171	R507
2007-000171	R518
2007-000171	R525
2007-000171	R534
2007-000171	R535
2007-000171	R536
2007-000171	R600
2007-000171	R612
2007-000172	R328
2007-000172	R329
2007-000174	R601
2007-000174	R602
2007-000174	R604
2007-000174	R605
2007-000174	R606
2007-000174	R607

SEC CODE	Design LOC
2007-000174	R608
2007-000174	R610
2007-000174	R611
2007-000174	R613
2007-000242	R138
2007-000242	R200
2007-000242	R204
2007-000566	R119
2007-000566	R121
2007-000566	R208
2007-001217	R128
2007-001217	R129
2007-001217	R308
2007-001290	R110
2007-001292	R105
2007-001298	R521
2007-001298	R530
2007-001301	R114
2007-001305	R131
2007-001306	R522
2007-001306	R531
2007-001307	R107
2007-001307	R108
2007-001308	R130
2007-001311	R317
2007-001319	R324
2007-001325	R312
2007-002965	R113
2007-002965	R510
2007-003022	R333

SEC CODE	Design LOC
2007-003025	R618
2007-007001	R219
2007-007001	R226
2007-007008	R517
2007-007008	R523
2007-007014	R307
2007-007014	R309
2007-007100	R401
2007-007100	R502
2007-007107	R210
2007-007107	R216
2007-007142	R212
2007-007142	R215
2007-007148	R103
2007-007311	R126
2007-007334	R228
2007-007489	R217
2007-007489	R230
2007-007528	R236
2007-007573	R225
2007-007791	R134
2007-007791	R135
2007-007791	R136
2007-007791	R137
2007-007981	R209
2007-008117	R235
2007-008312	R232
2203-000233	C116
2203-000233	C117
2203-000233	C140

SEC CODE	Design LOC
2203-000233	C300
2203-000254	C142
2203-000254	C301
2203-000254	C305
2203-000257	C411
2203-000278	C111
2203-000278	C139
2203-000278	C154
2203-000278	C201
2203-000278	C222
2203-000278	C235
2203-000278	C244
2203-000278	C410
2203-000311	C135
2203-000311	C149
2203-000311	C150
2203-000311	C151
2203-000311	C152
2203-000330	C232
2203-000330	C233
2203-000330	C500
2203-000330	C501
2203-000359	C121
2203-000386	C202
2203-000386	C215
2203-000386	C216
2203-000386	C223
2203-000386	C237
2203-000438	C124
2203-000438	C136

SEC CODE	Design LOC
2203-000438	C248
2203-000438	C249
2203-000438	C310
2203-000438	C316
2203-000550	C144
2203-000609	C146
2203-000628	C514
2203-000643	C506
2203-000679	C231
2203-000679	C234
2203-000679	C236
2203-000679	C239
2203-000679	C243
2203-000679	C303
2203-000679	C307
2203-000679	C308
2203-000679	C319
2203-000679	C431
2203-000812	C101
2203-000812	C112
2203-000812	C229
2203-000812	C240
2203-000854	C106
2203-000854	C109
2203-000854	C203
2203-000854	C219
2203-000854	C220
2203-000870	C318
2203-000870	C432
2203-001017	C190

SEC CODE	Design LOC
2203-001153	C143
2203-001153	C317
2203-001432	C130
2203-001652	C416
2203-001652	C434
2203-001652	C436
2203-002443	C133
2203-002494	C435
2203-002687	C314
2203-002793	C507
2203-002793	C608
2203-003054	C230
2203-003054	C241
2203-005054	C155
2203-005056	C110
2203-005057	C107
2203-005057	C114
2203-005057	C119
2203-005057	C129
2203-005057	C148
2203-005057	C156
2203-005057	C413
2203-005057	C415
2203-005061	C204
2203-005061	C205
2203-005061	C206
2203-005061	C207
2203-005061	C208
2203-005061	C209
2203-005061	C210

SEC CODE	Design LOC
2203-005061	C211
2203-005061	C212
2203-005061	C213
2203-005061	C214
2203-005061	C217
2203-005061	C225
2203-005061	C226
2203-005061	C227
2203-005061	C228
2203-005061	C247
2203-005061	C250
2203-005061	C402
2203-005061	C403
2203-005061	C405
2203-005061	C419
2203-005061	C420
2203-005065	C238
2203-005065	C252
2203-005065	C320
2203-005065	C437
2203-005065	C440
2203-005065	C504
2203-005065	C505
2203-005065	C508
2203-005065	C509
2203-005065	C510
2203-005138	C120
2203-005148	C426
2203-005148	C427
2203-005393	C159

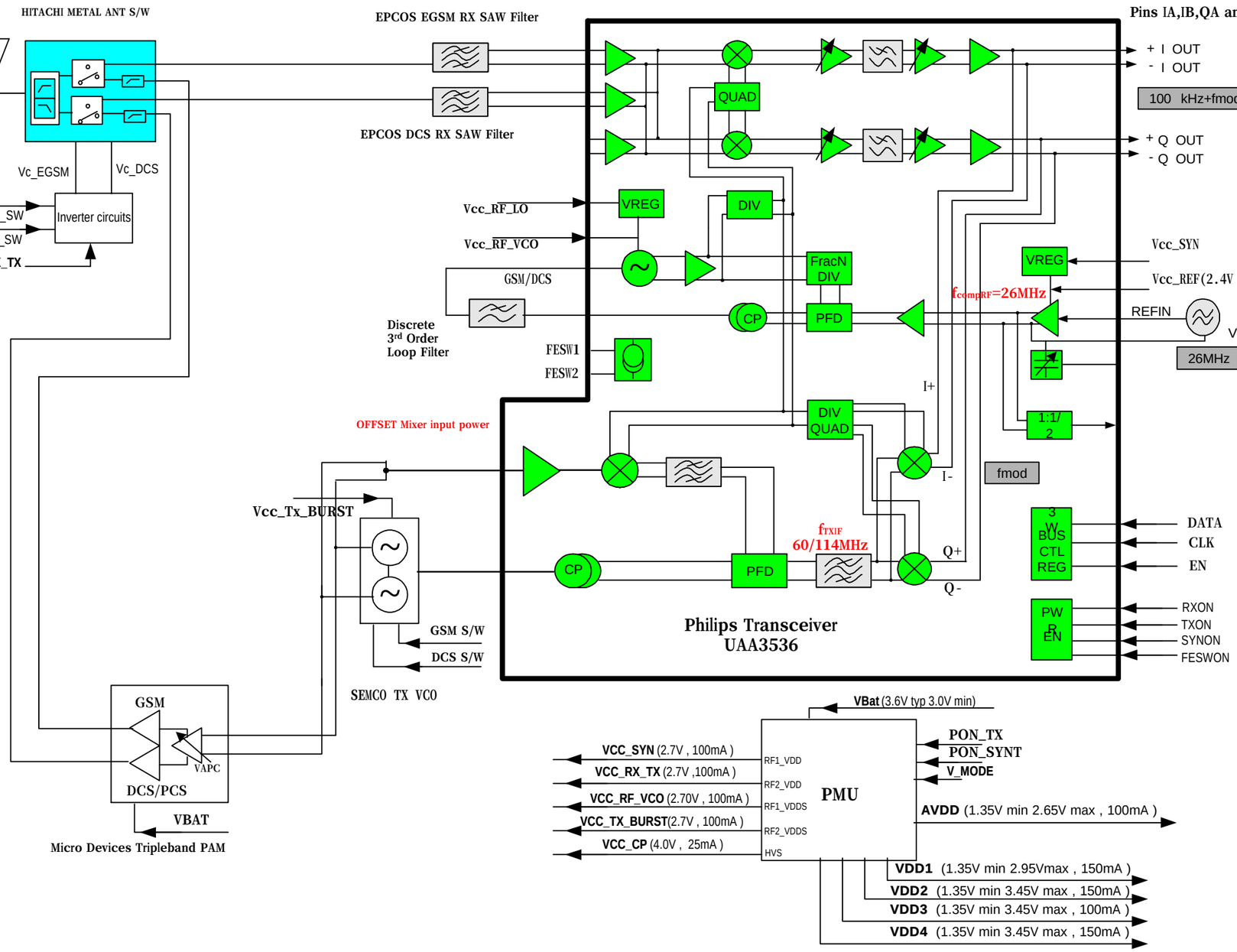
SEC CODE	Design LOC
2203-005444	C302
2203-005482	C108
2203-005482	C115
2203-005482	C118
2203-005482	C128
2203-005482	C147
2203-005482	C153
2203-005482	C224
2203-005482	C242
2203-005482	C304
2203-005482	C306
2203-005482	C309
2203-005482	C311
2203-005482	C313
2203-005482	C401
2203-005482	C414
2203-005482	C424
2203-005482	C511
2203-005496	C132
2203-005496	C513
2203-005503	C134
2203-006053	C123
2203-005571	C428
2203-005571	C429
2203-006093	C502
2203-006093	C503
2203-006190	C137
2203-006190	C315
2203-006208	C253
2203-006208	C312

SEC CODE	Design LOC
2203-006208	C400
2203-006208	C404
2203-006208	C409
2203-006208	C417
2203-006208	C418
2203-006208	C421
2203-006208	C423
2203-006208	C430
2203-006208	C433
2203-006208	C438
2203-006208	C439
2301-001197	C122
2301-001213	C125
2404-001086	C609
2404-001105	C412
2404-001239	C126
2404-001268	C322
2404-001281	C422
2404-001281	C425
2703-001180	L103
2703-001722	L109
2703-001722	L113
2703-001723	L105
2703-001723	L107
2703-001723	L114
2703-001748	L108
2703-001748	L110
2703-001750	L102
2703-001750	L104
2703-002170	L100

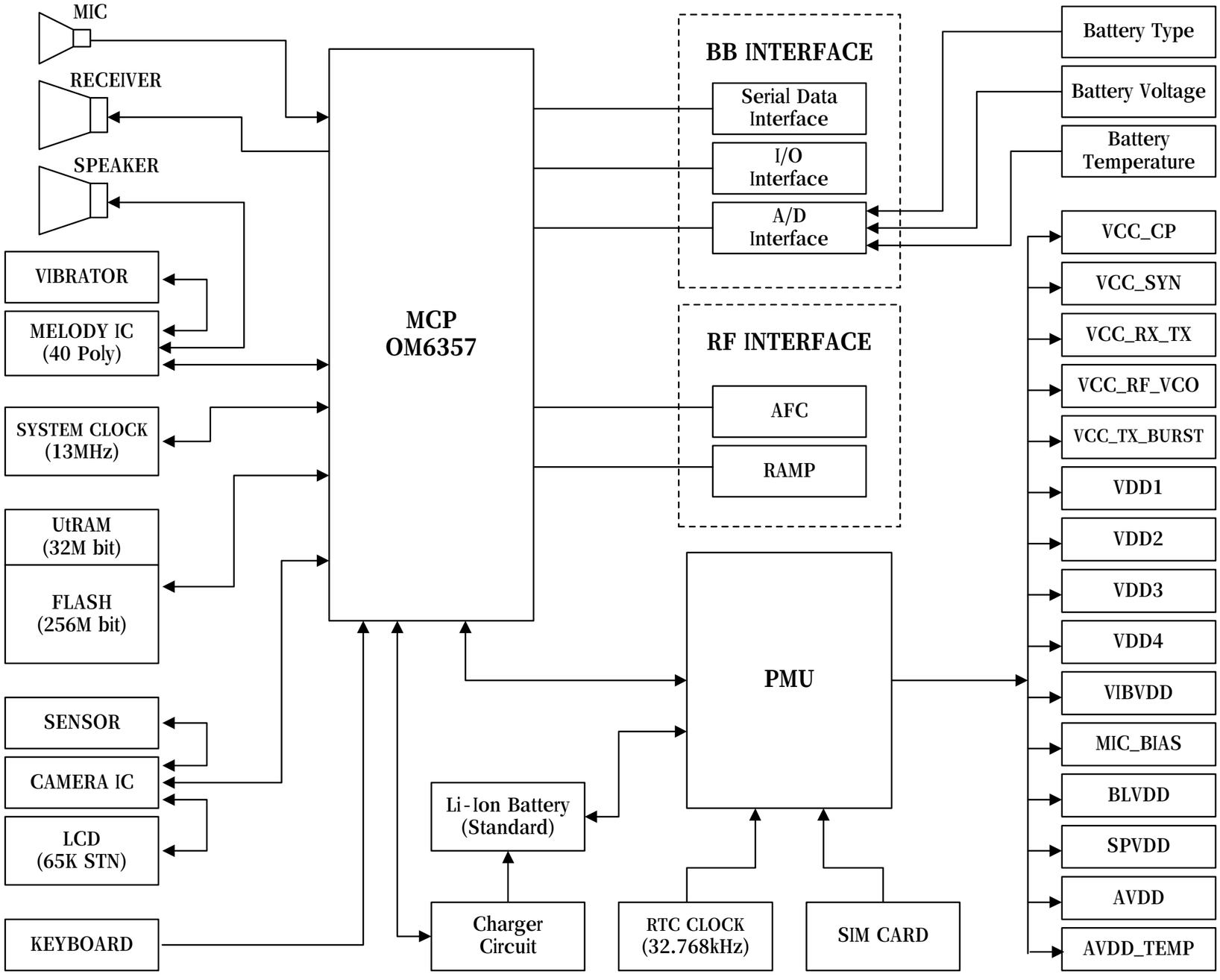
SEC CODE	Design LOC
2703-002199	L112
2703-002199	L115
2703-002203	L106
2703-002339	L600
2801-004025	X400
2801-004285	OSC500
2806-001326	OSC100
2809-001281	OSC101
2901-001246	U304
2904-001417	F101
2904-001419	F102
2909-001216	U102
3301-001105	L400
3705-001273	CN101
3709-001273	CN400
3710-001611	CN301
3711-005210	CN500
3711-005521	CN201
3711-005558	CN300
3722-001715	EAR201
4302-001130	BAT400
GH13-00019A	U500
GH71-02243A	ANT100

5. SGH-X600 Block Diagrams

1. RF Solution Block Diagram

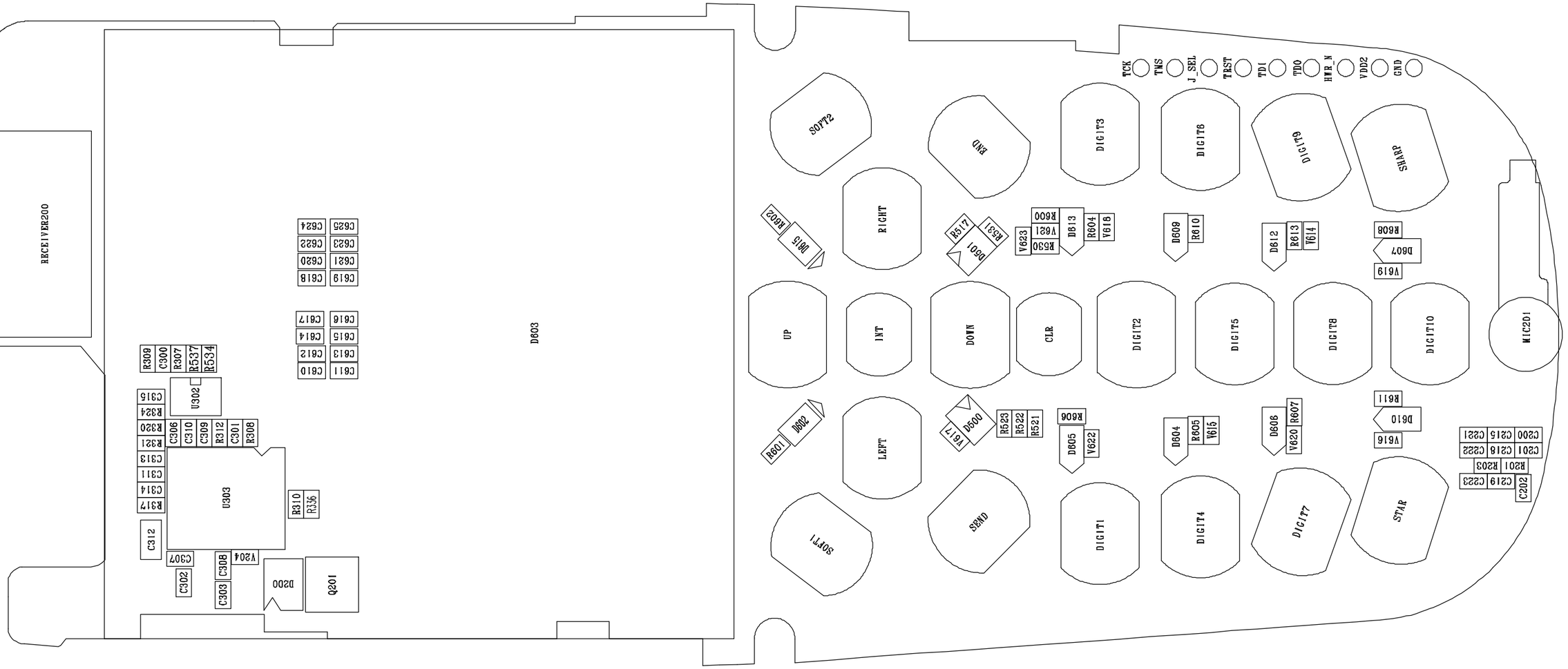


2. Base Band Solution Block Diagram

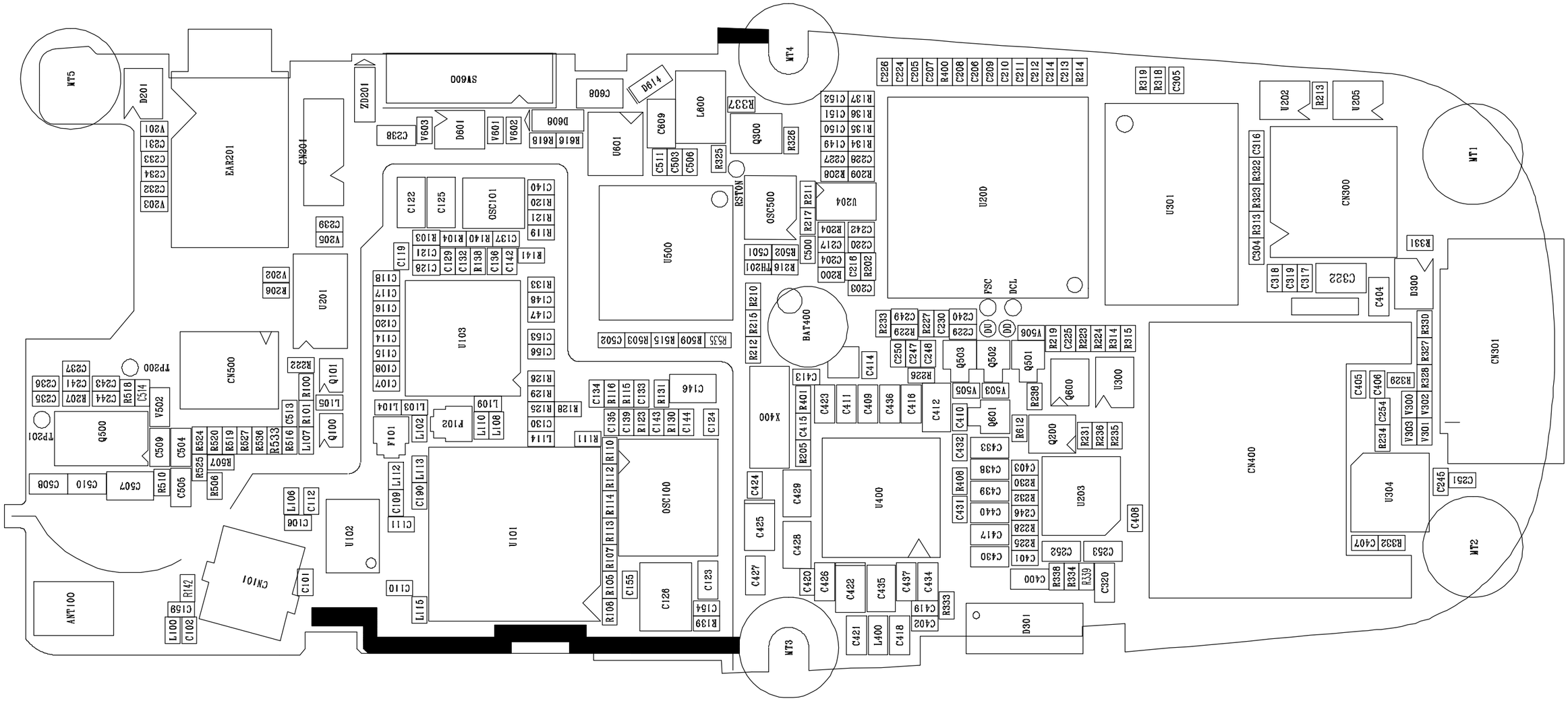


6. SGH-X600 PCB Diagrams

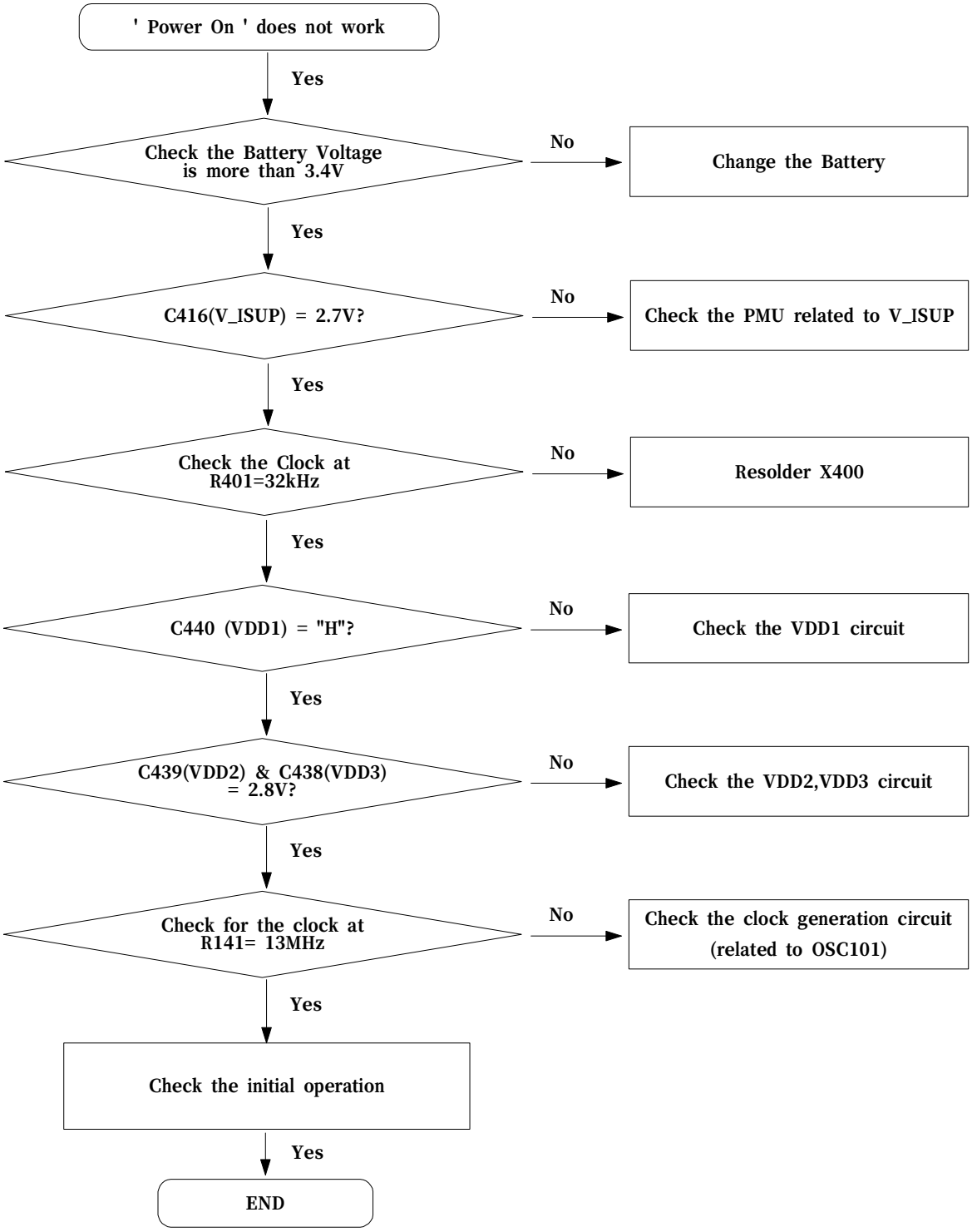
1. Main PCB Top Diagram



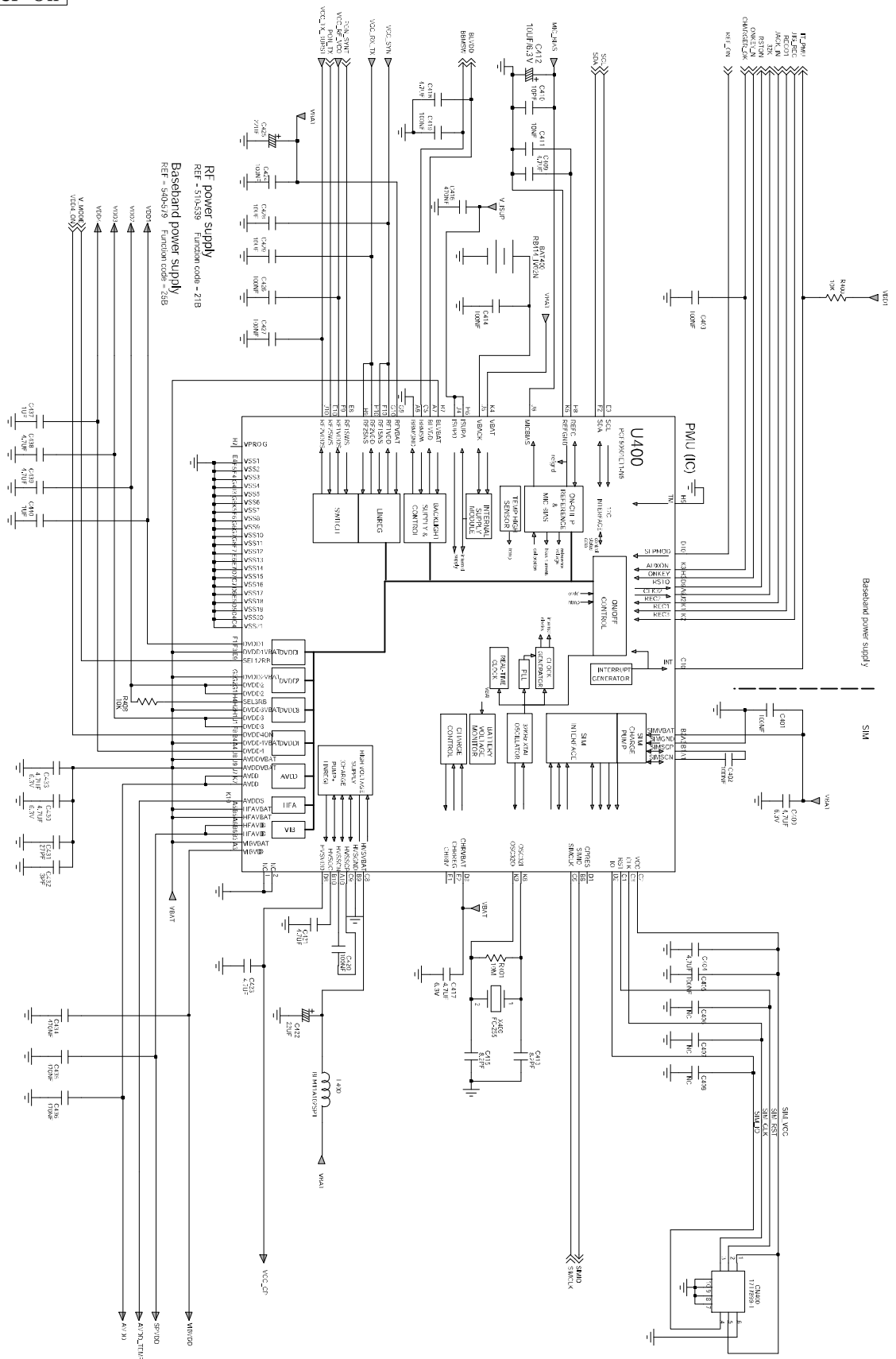
2. Main PCB Bottom Diagram



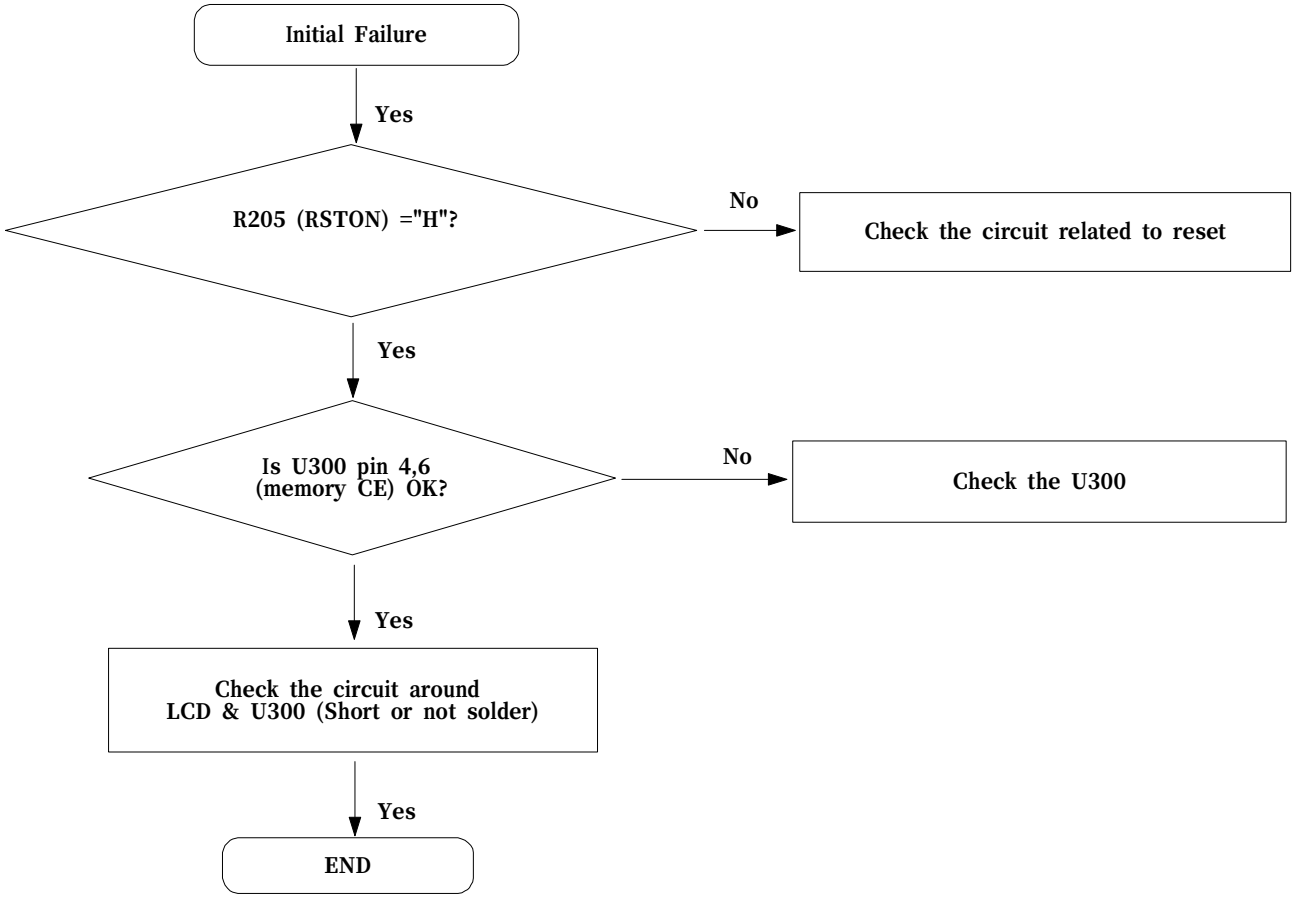
1. Power On



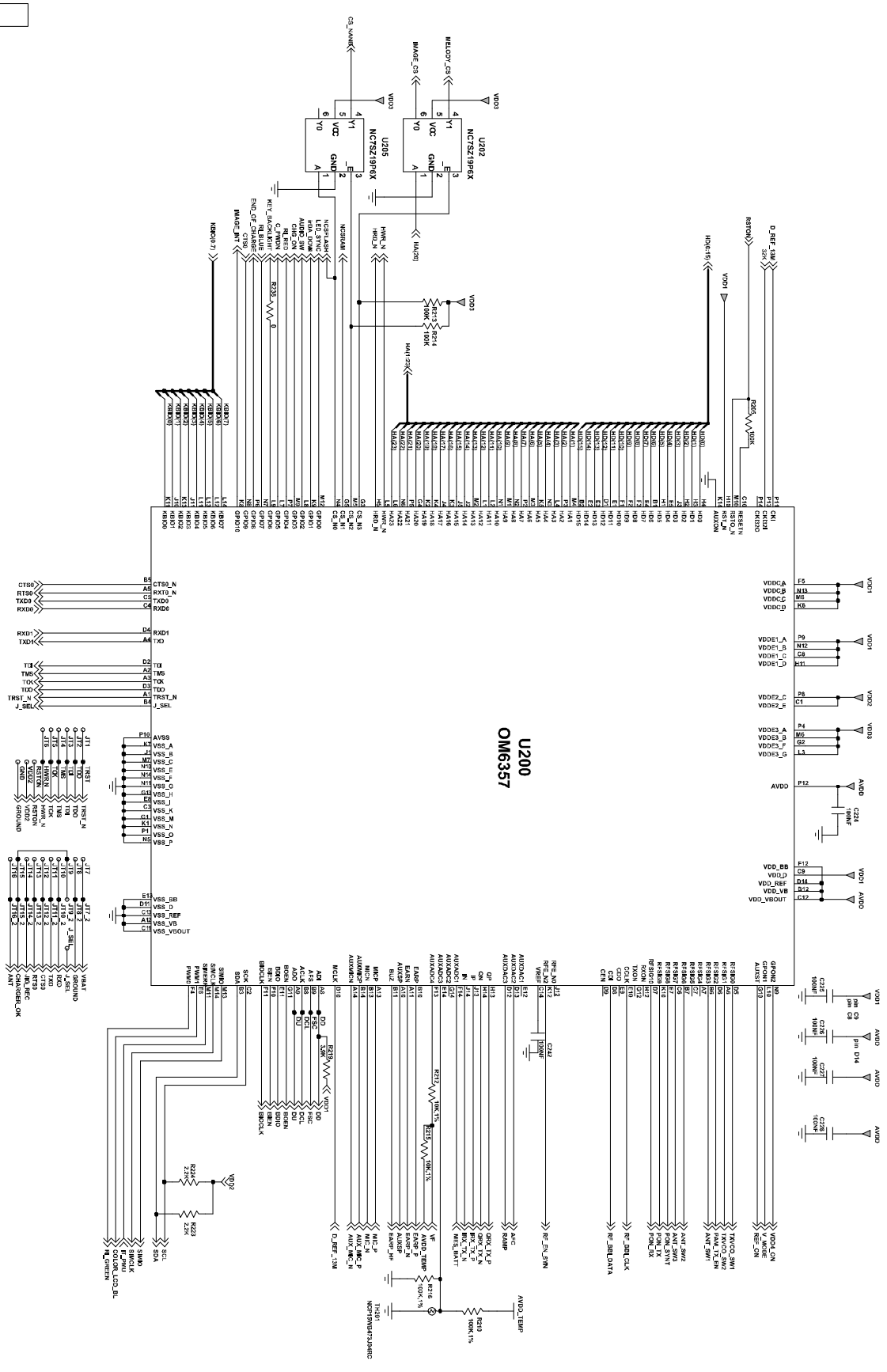
Power On



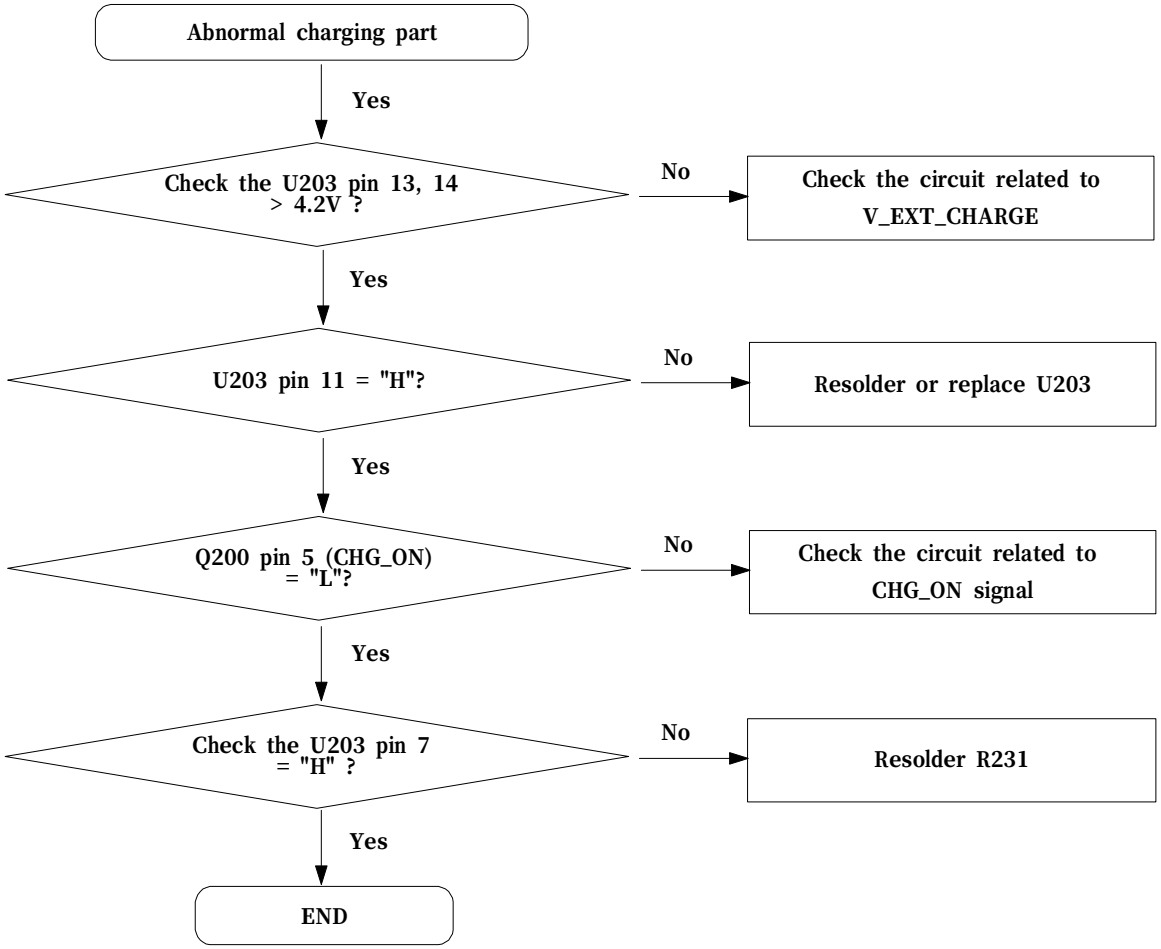
2. Initial



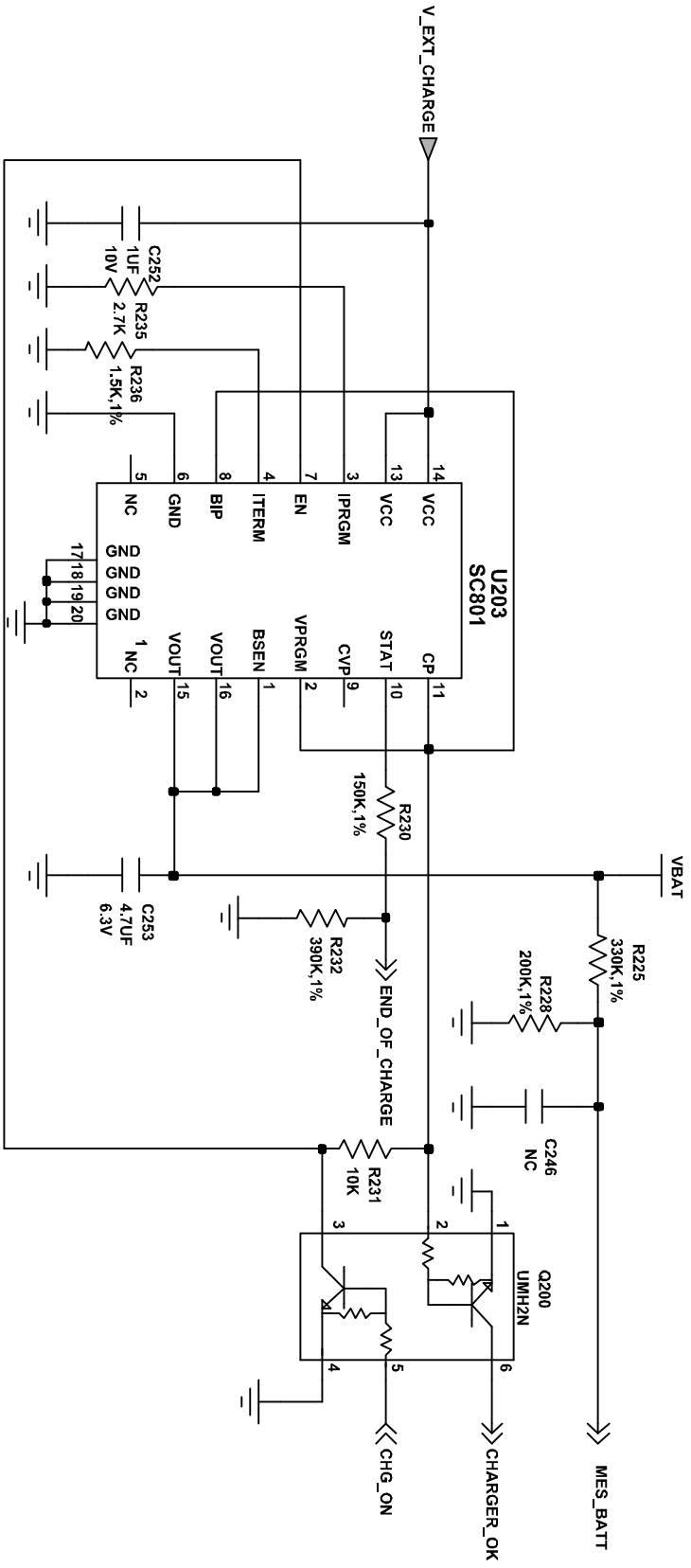
Initial



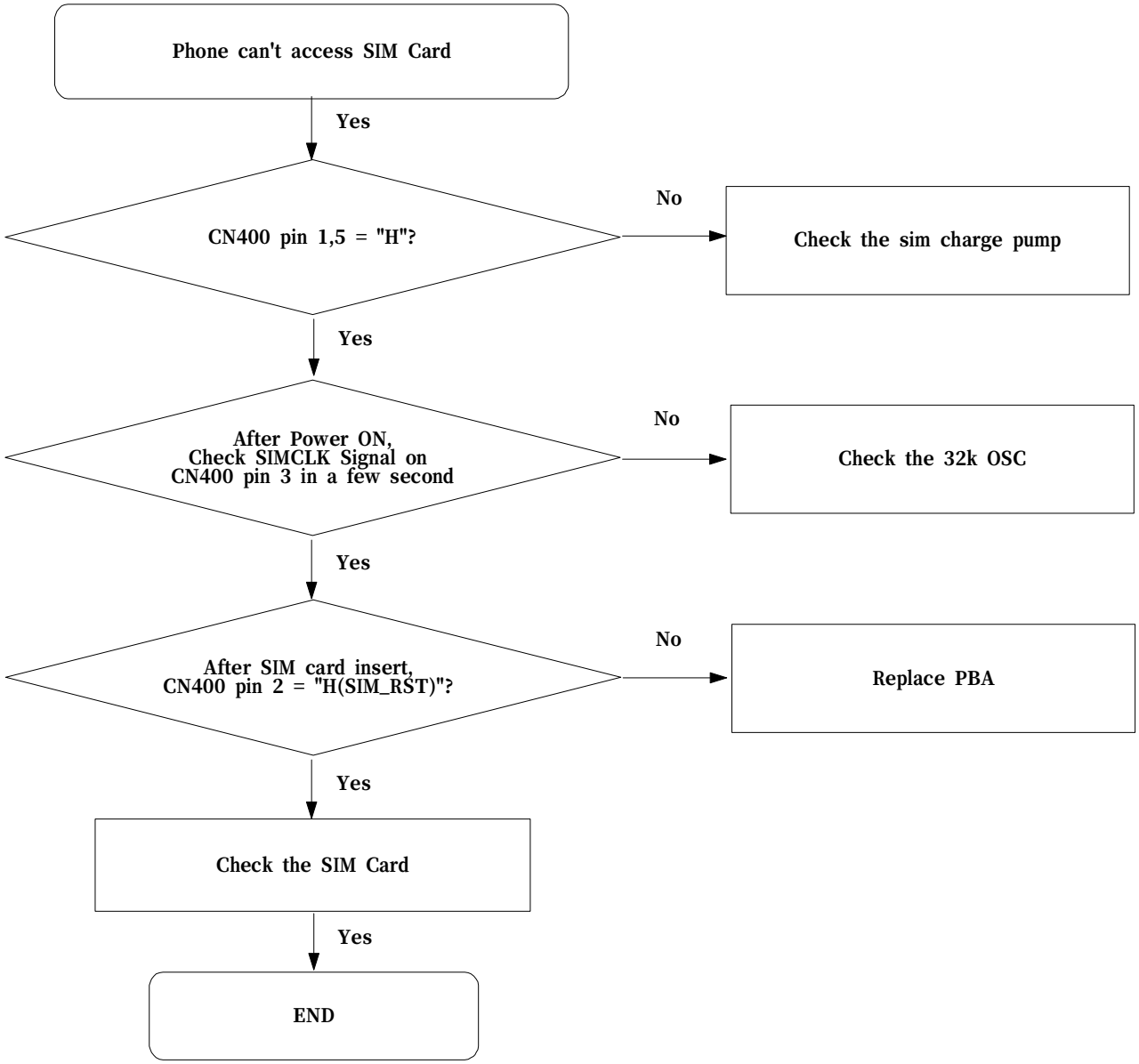
3. Charging Part



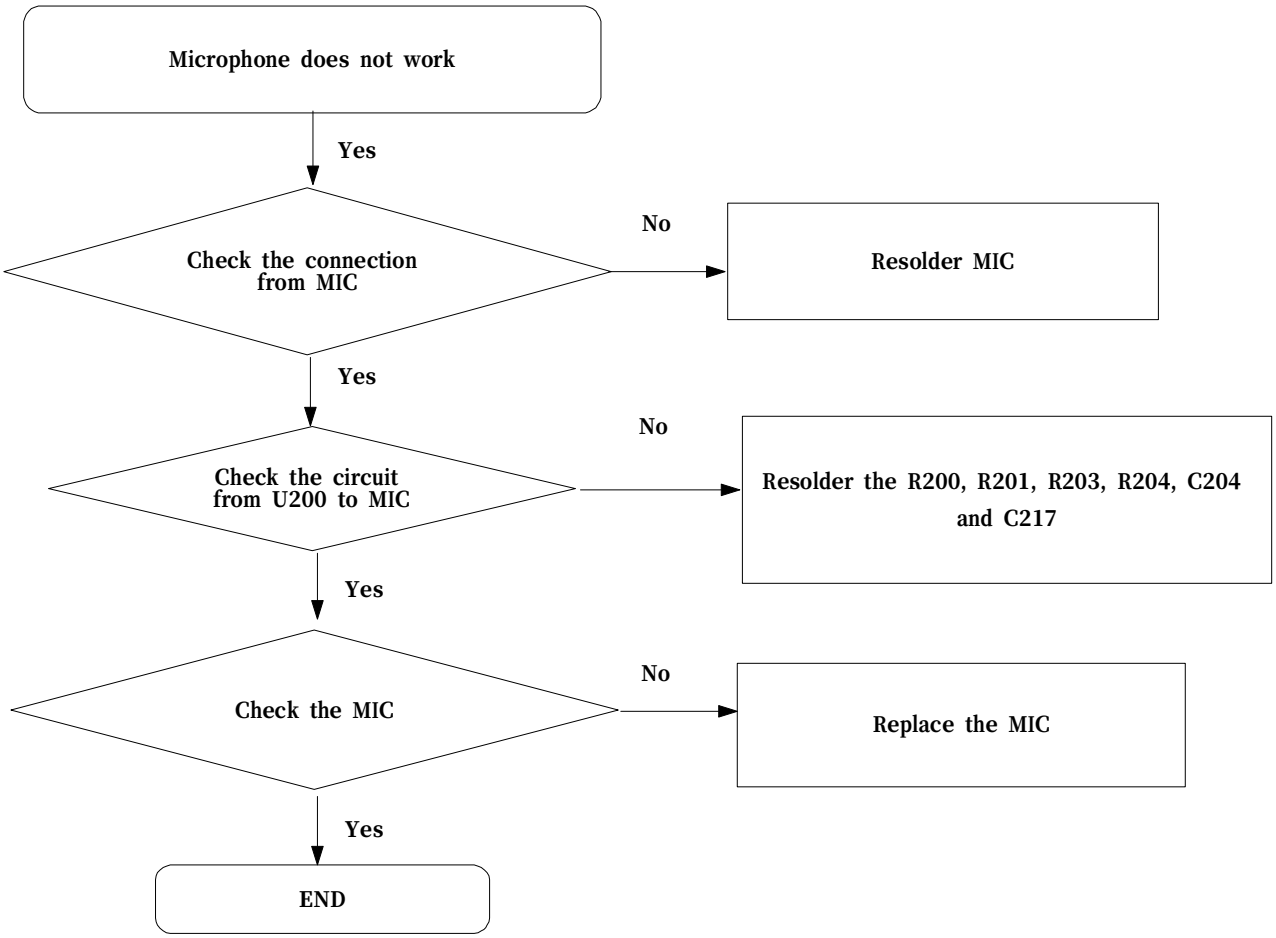
Charging



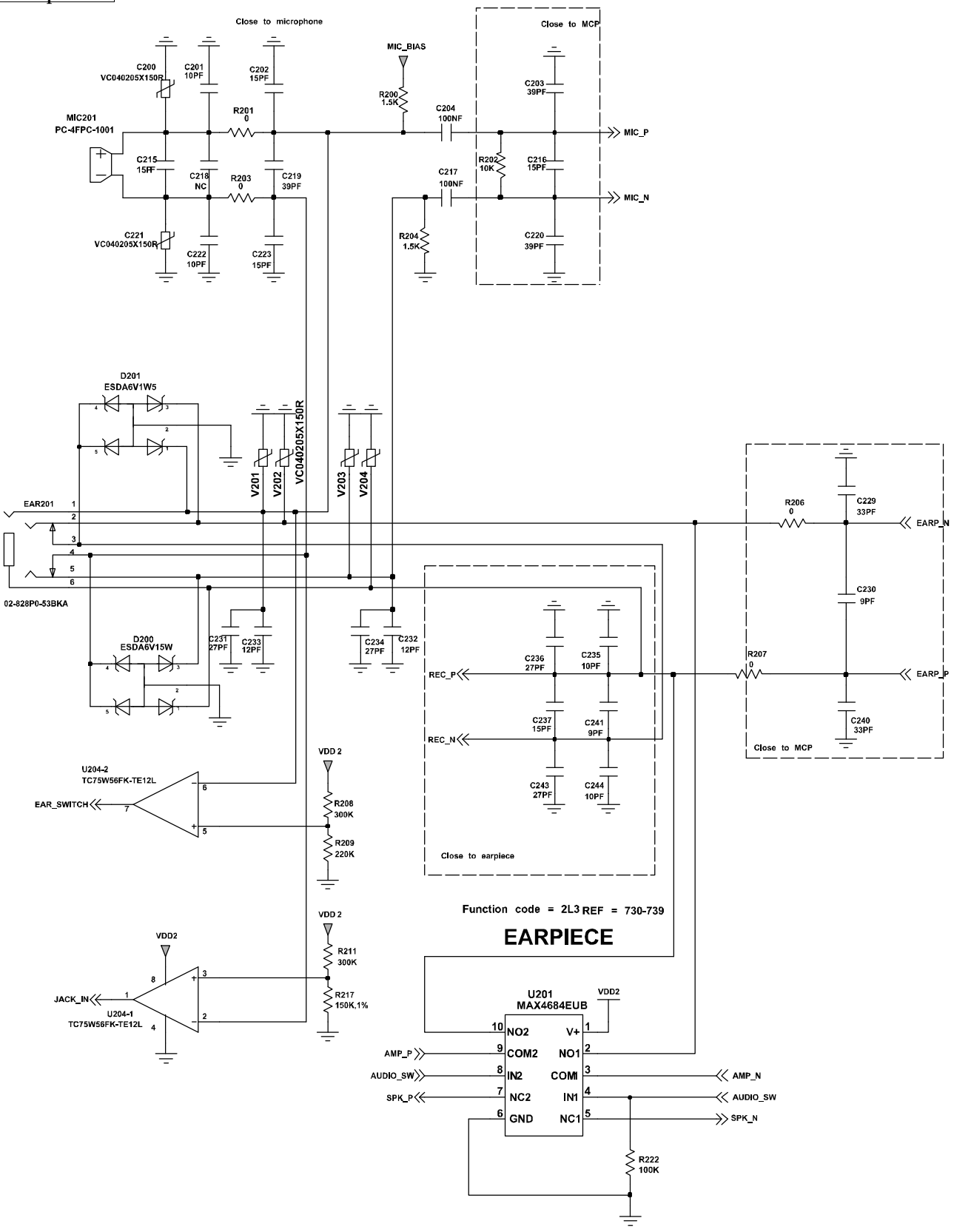
4. Sim Part



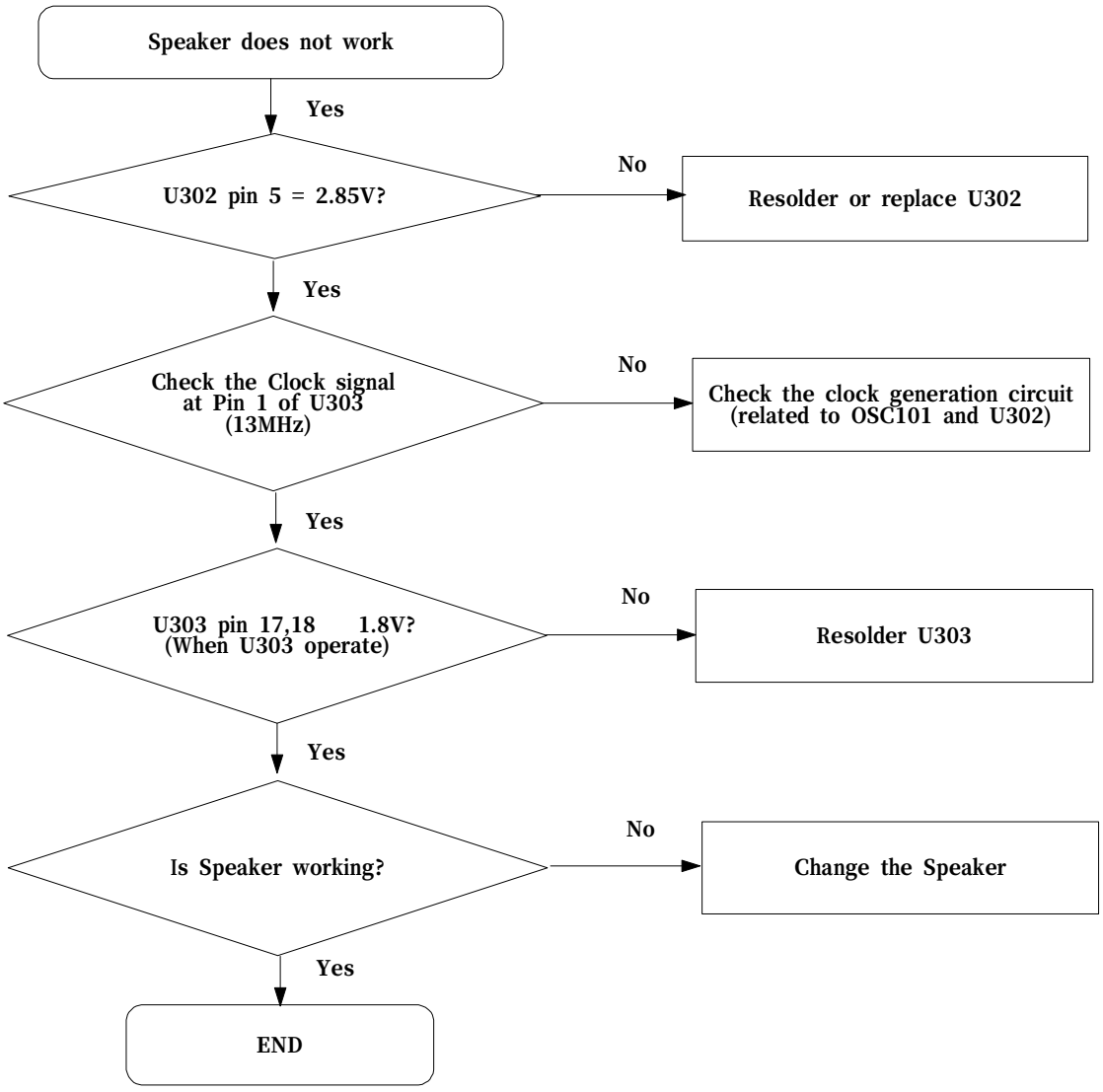
5. Microphone Part



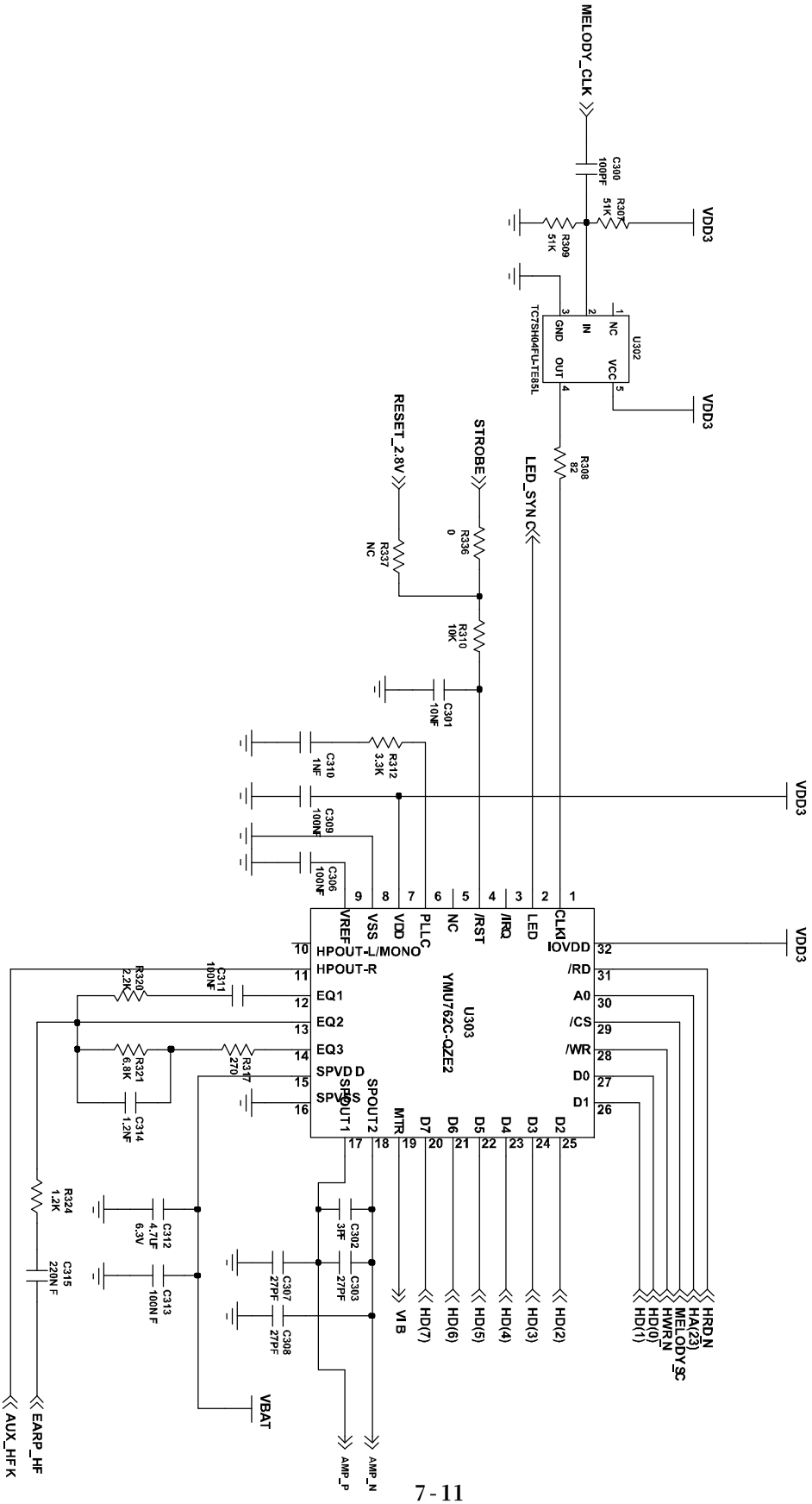
Microphone



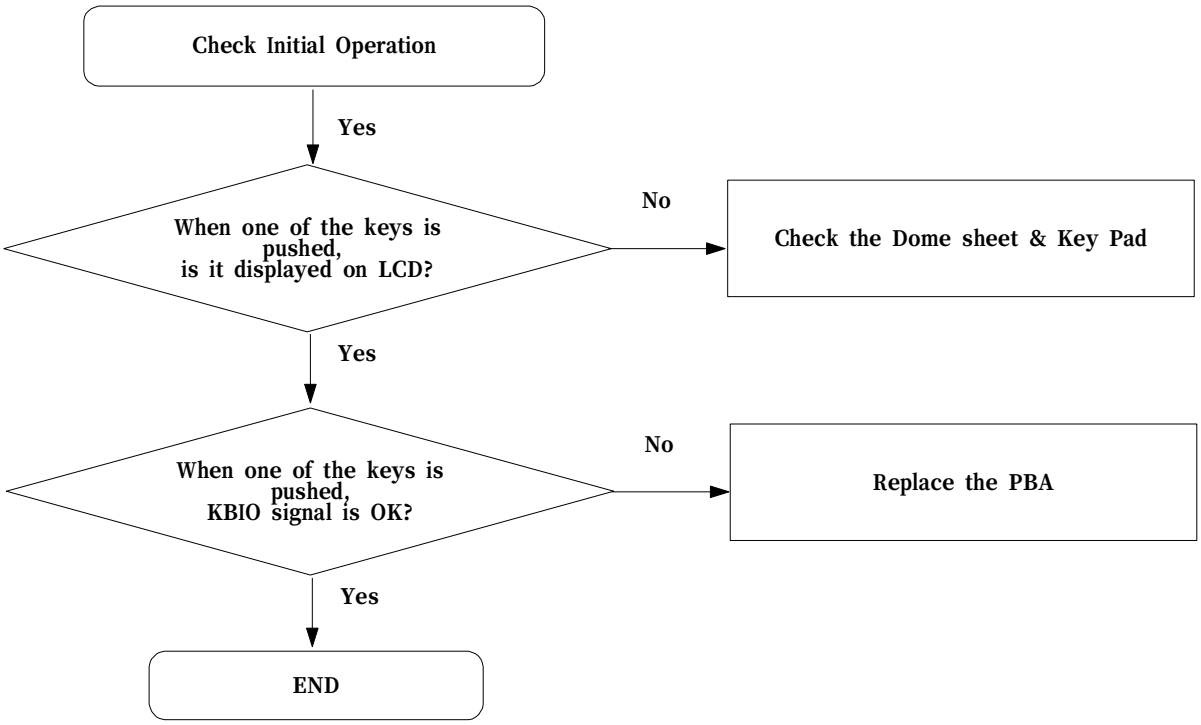
6. Speaker Part(Melody)



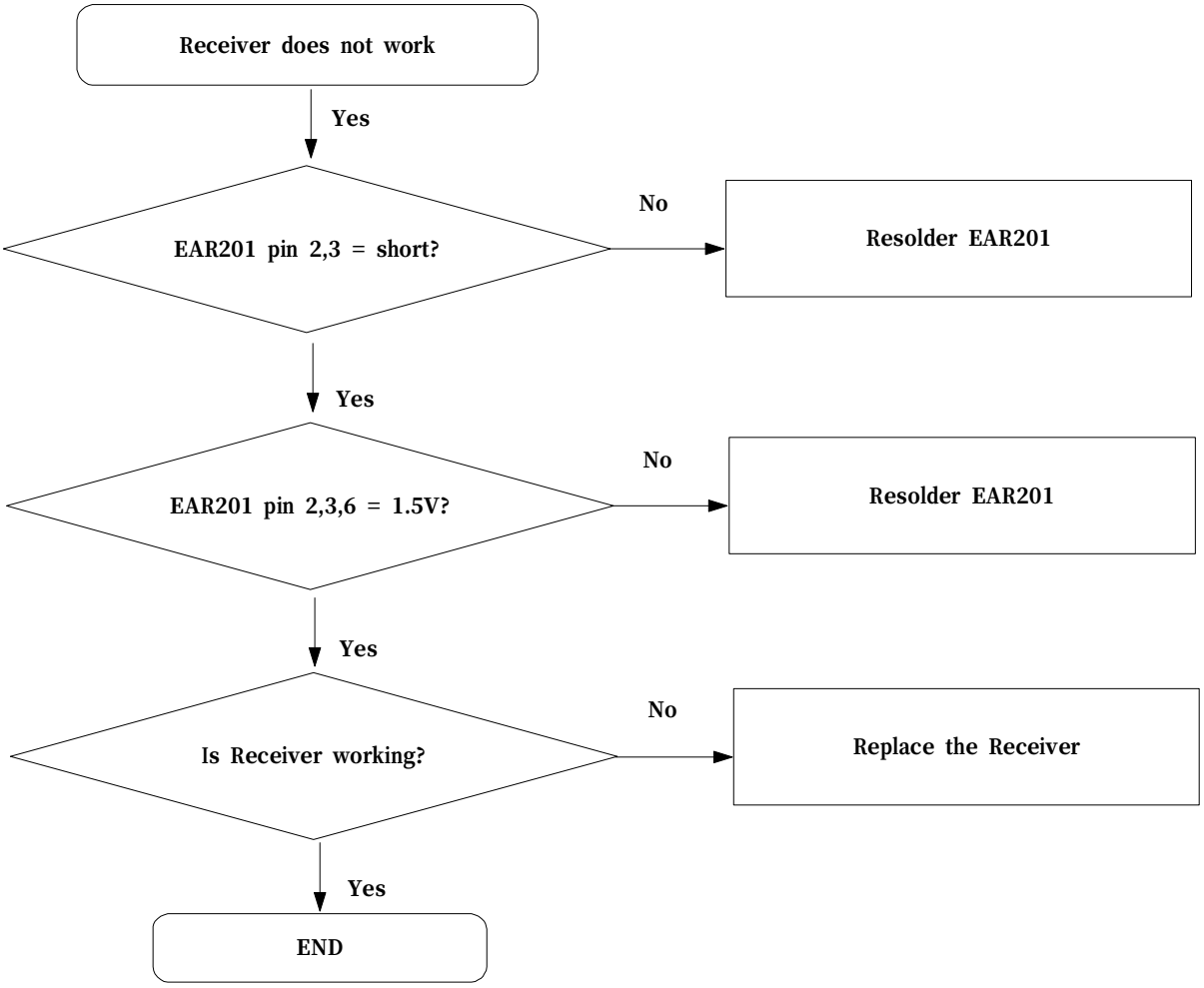
Speaker



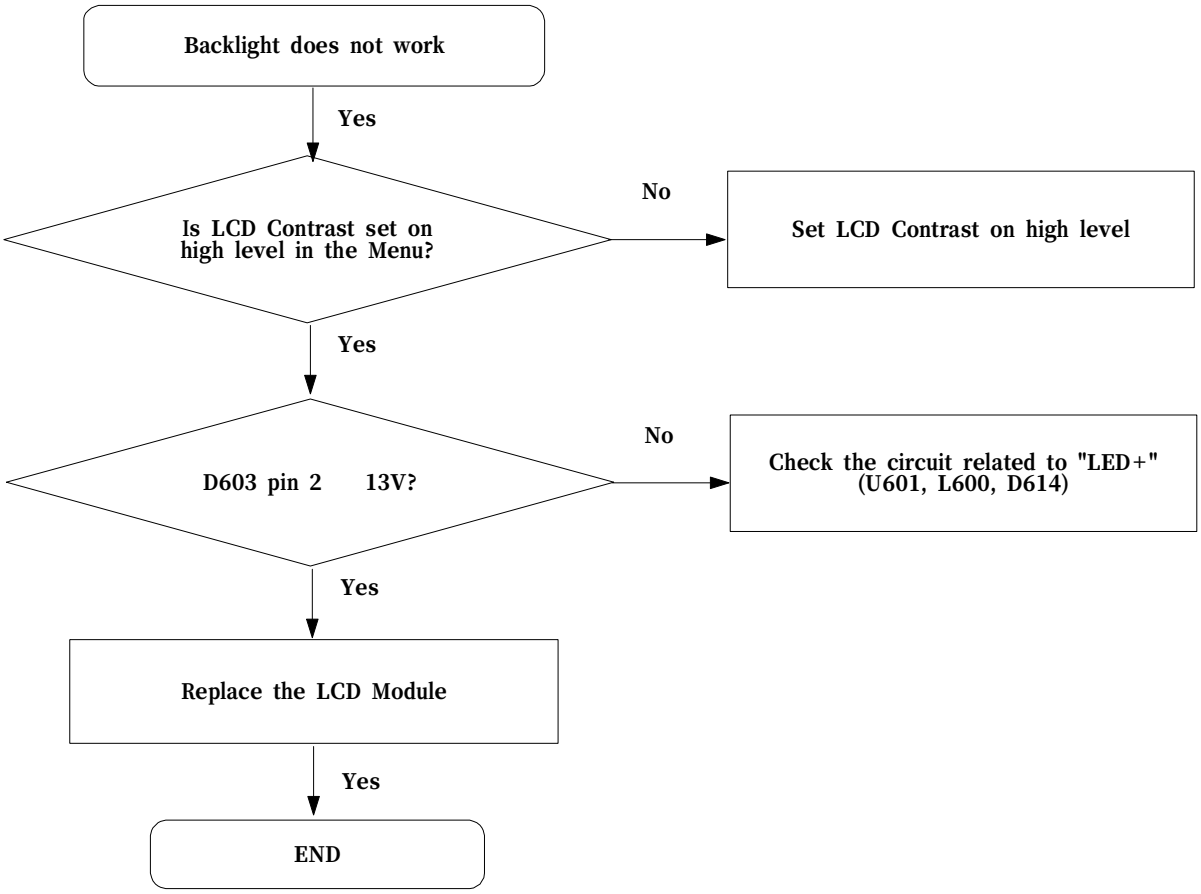
7. Key Data Input



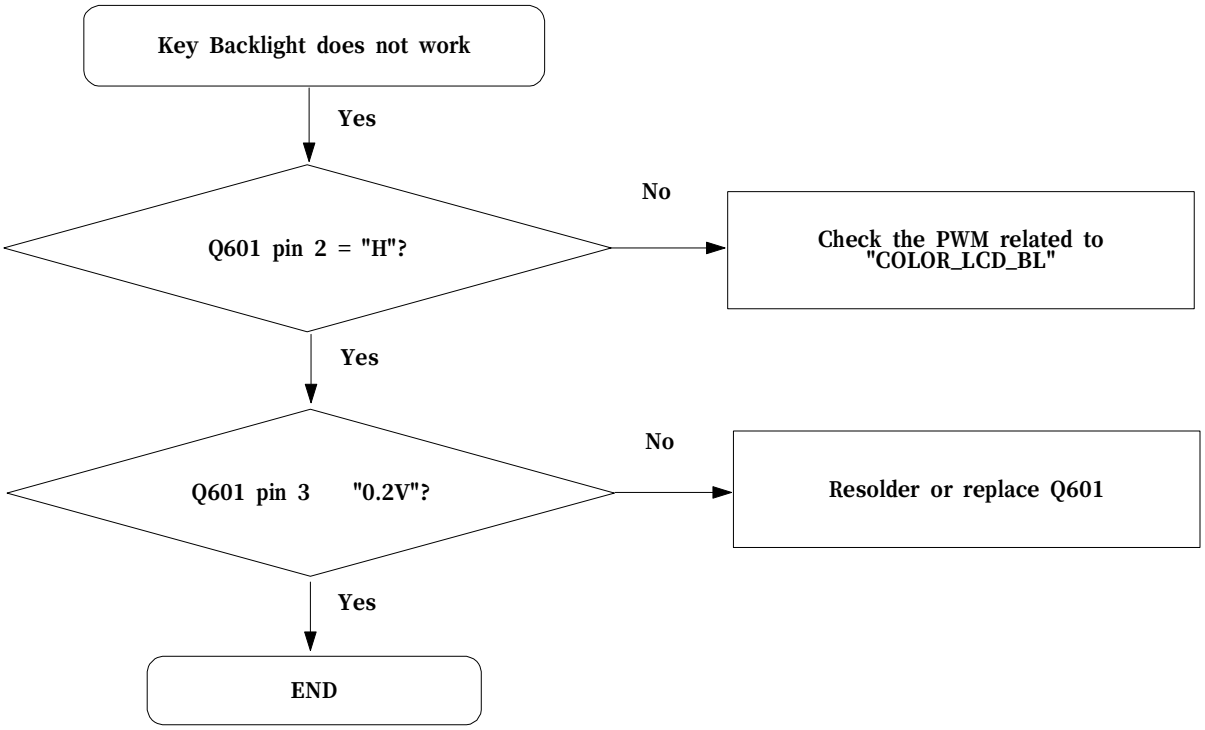
8. Receiver Part



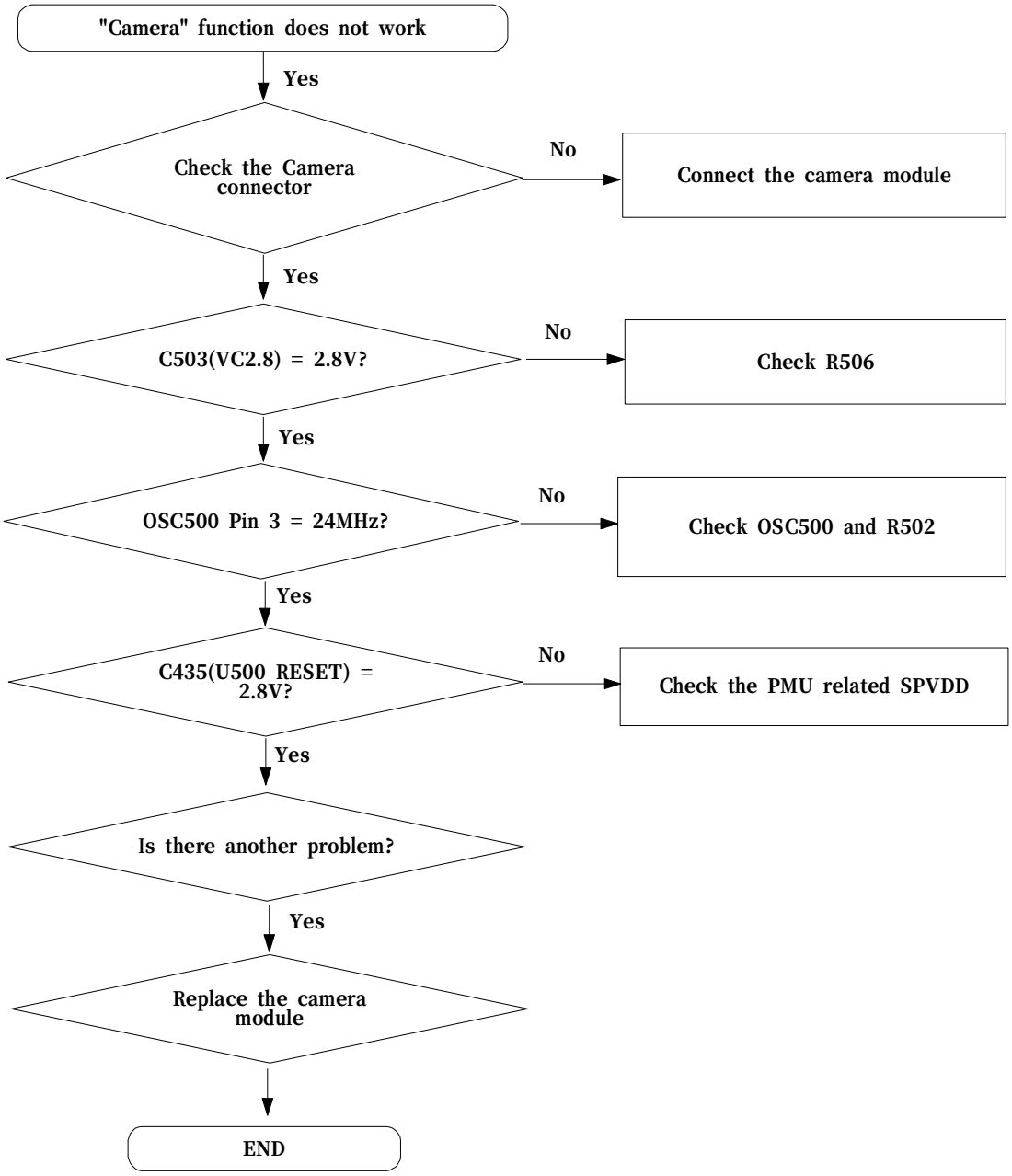
9. Back Light (for Color Main LCD)



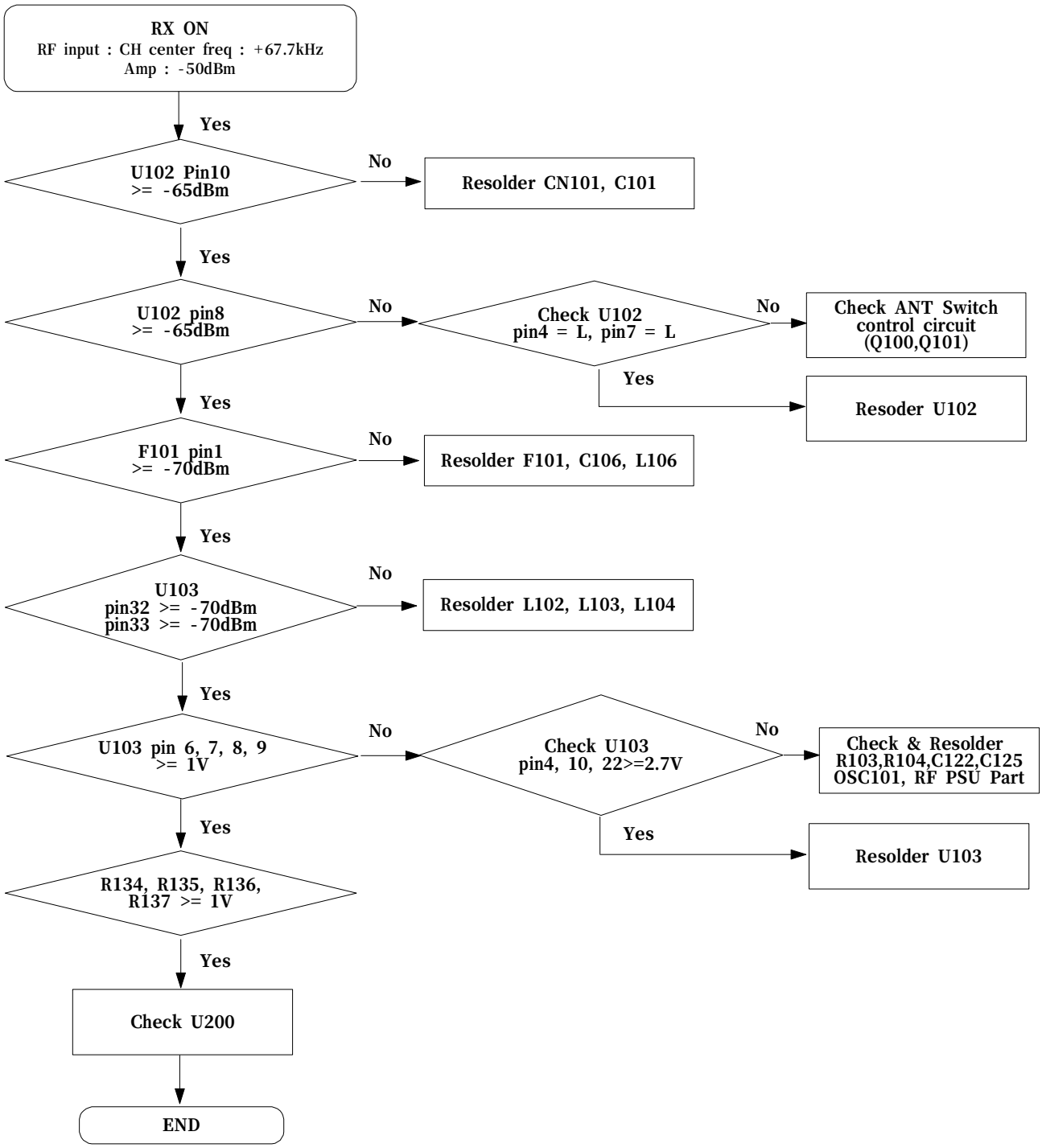
10. Key Back Light



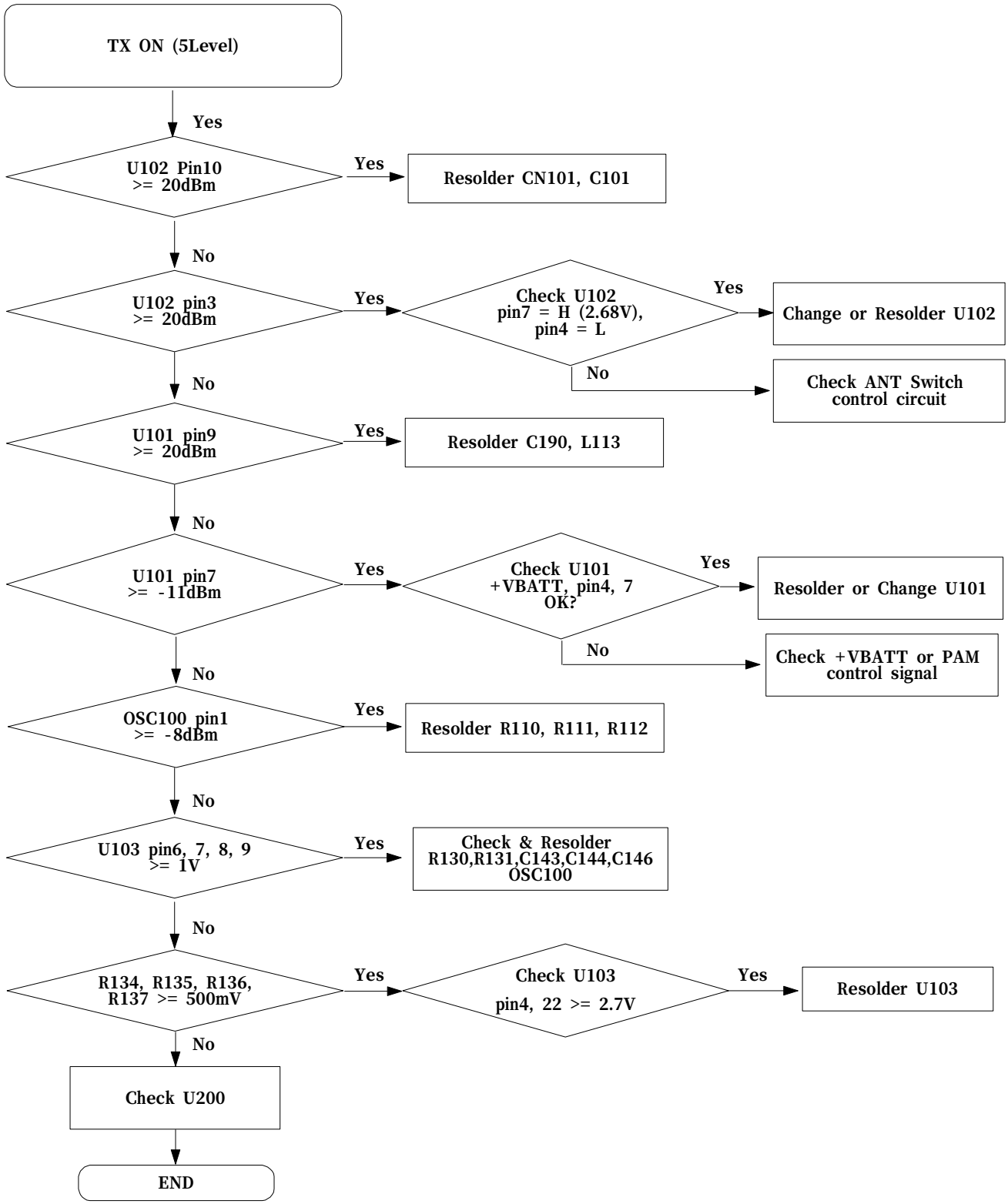
11. Camera part



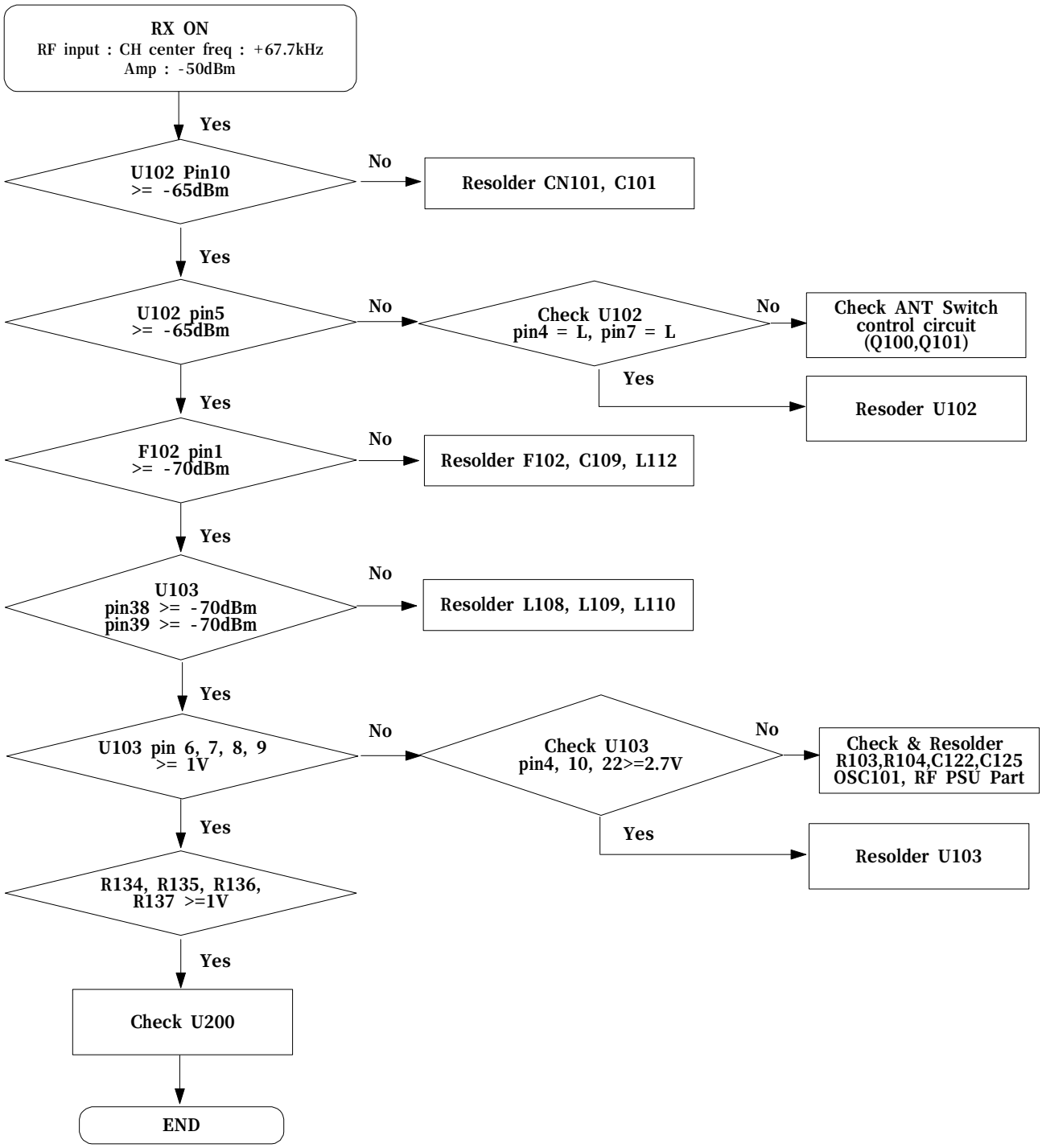
12. GSM Receiver



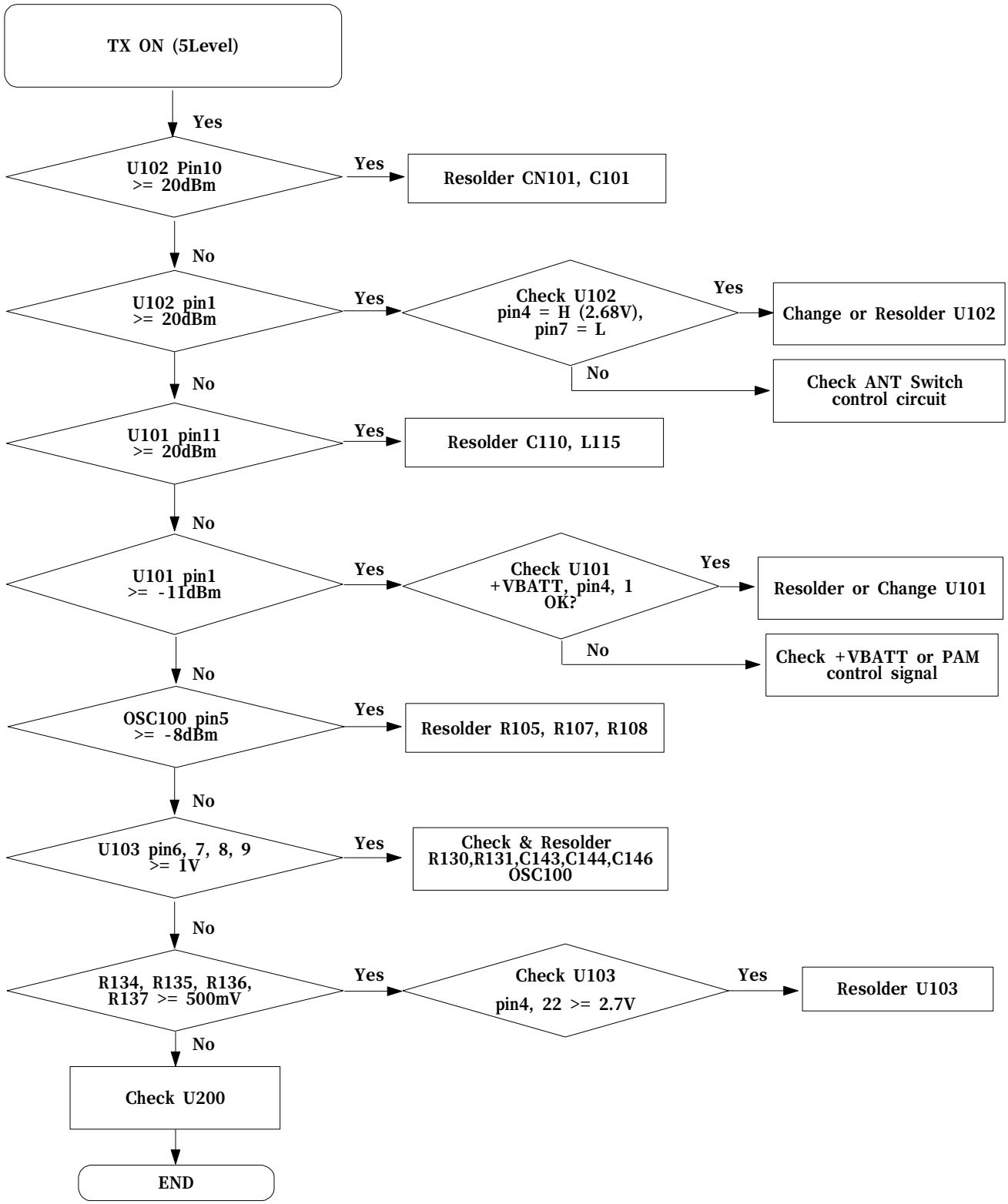
13. GSM Transmitter



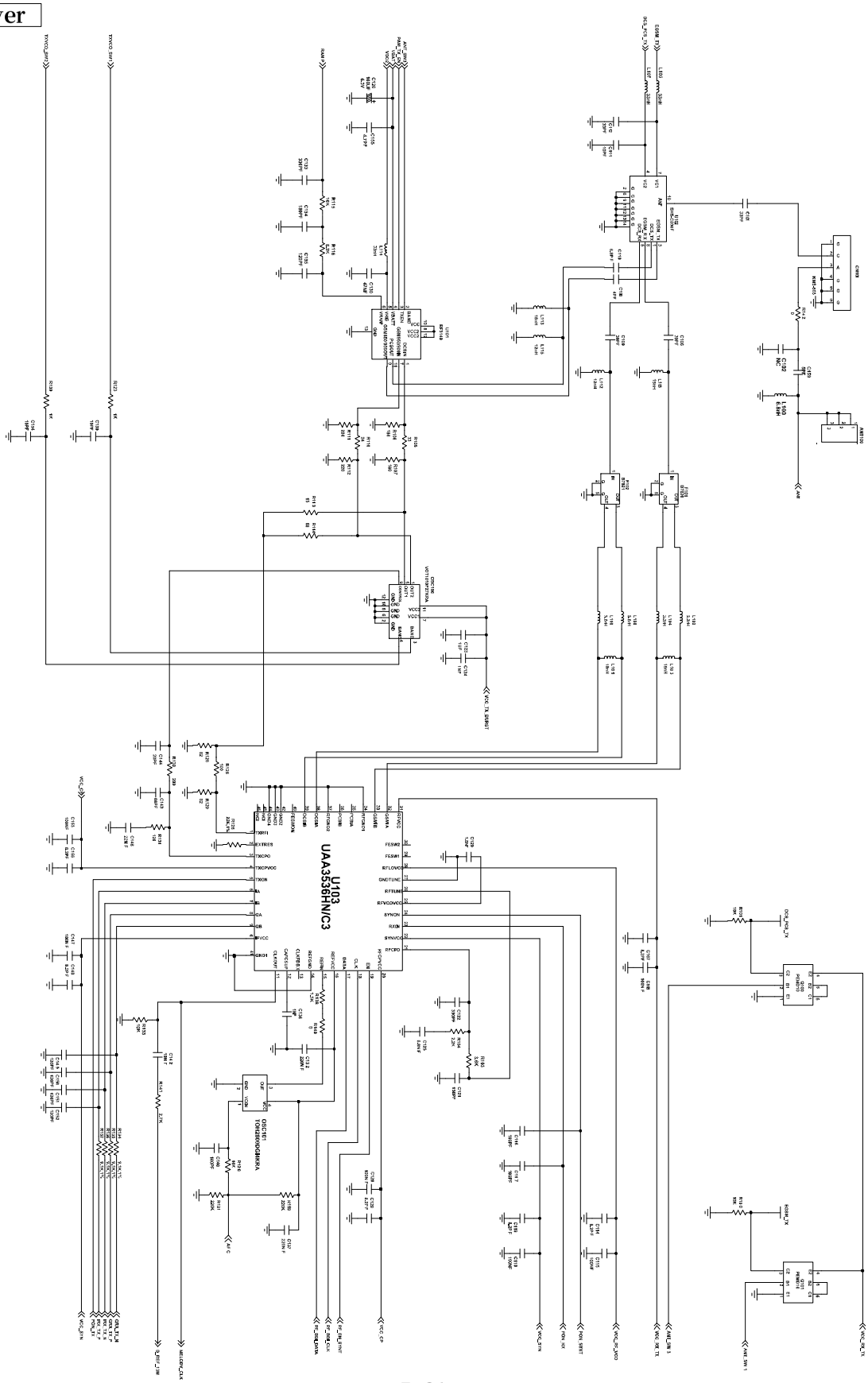
14. DCS Receiver

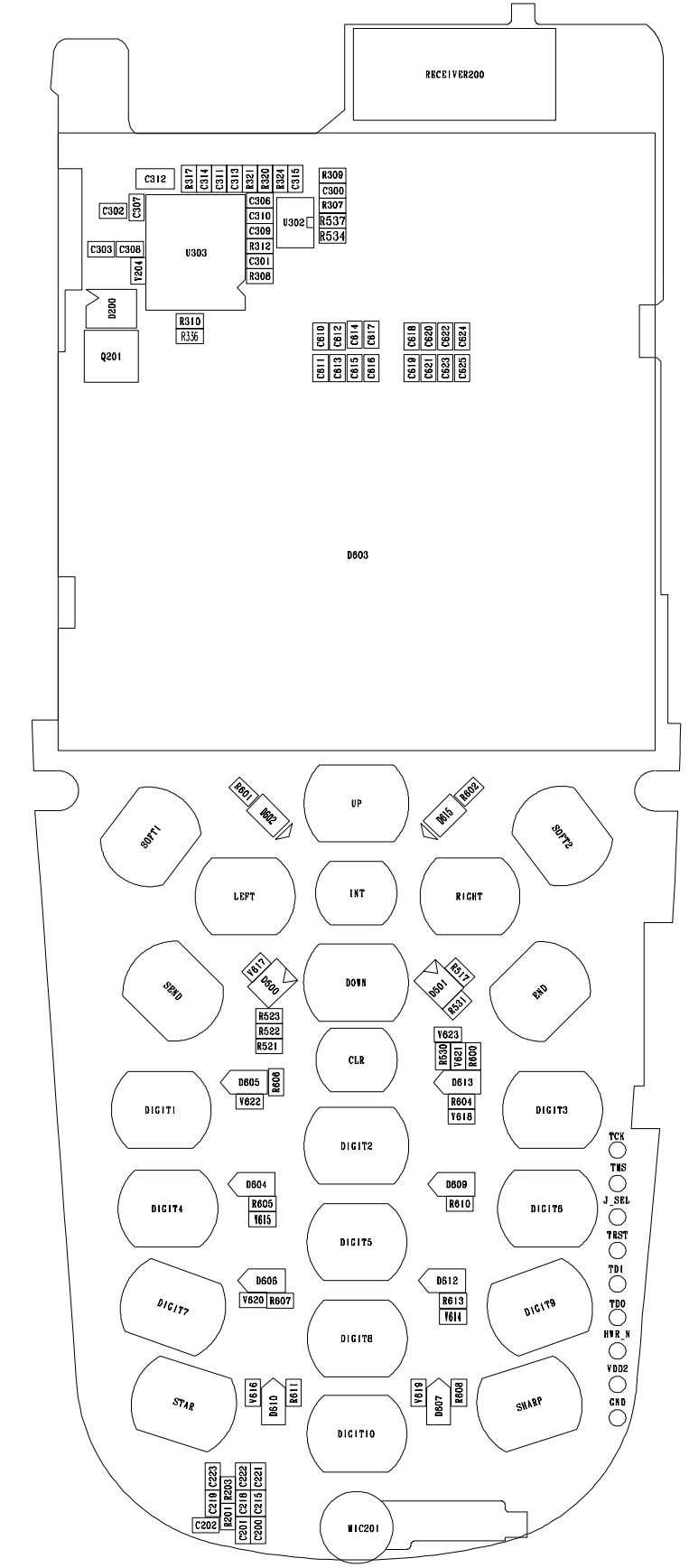


15. DCS Transmitter

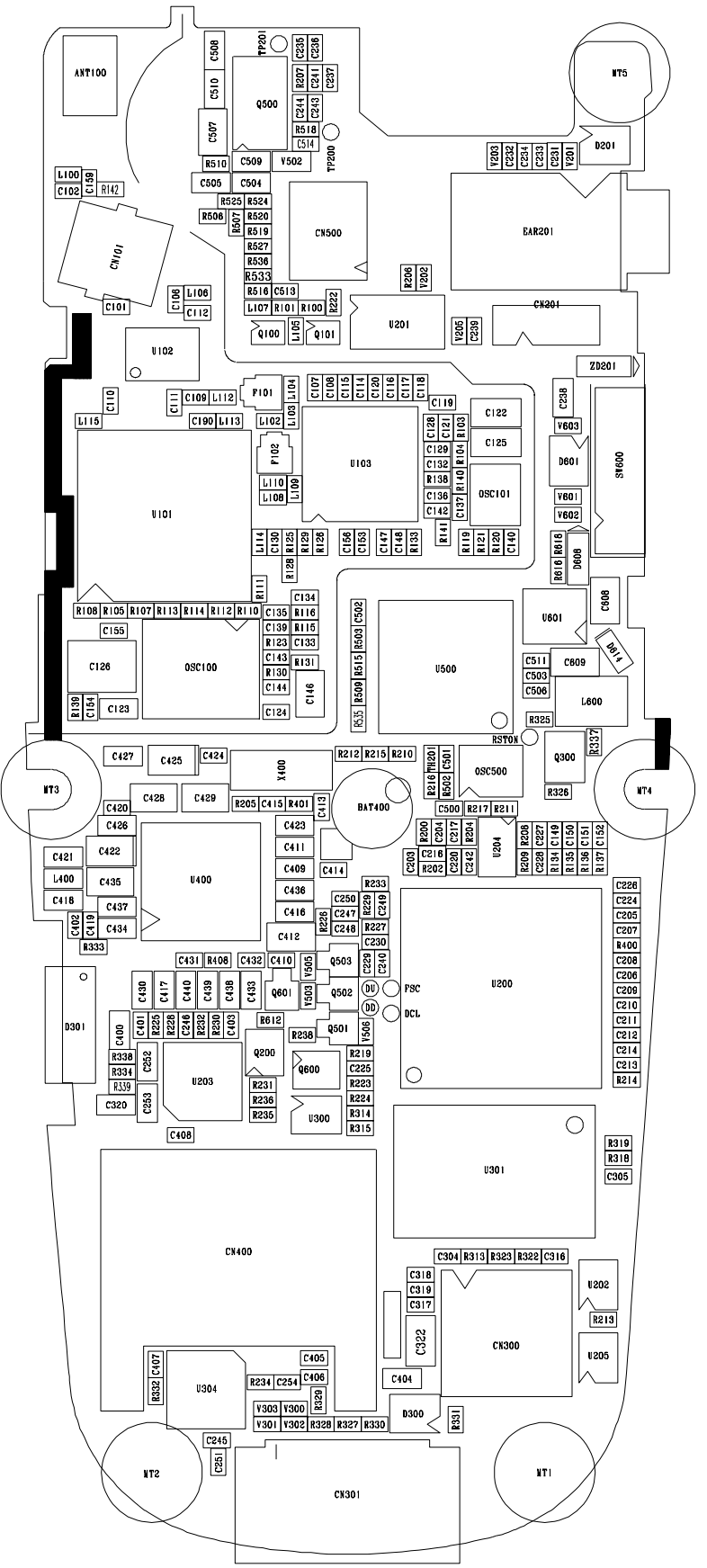


Transceiver

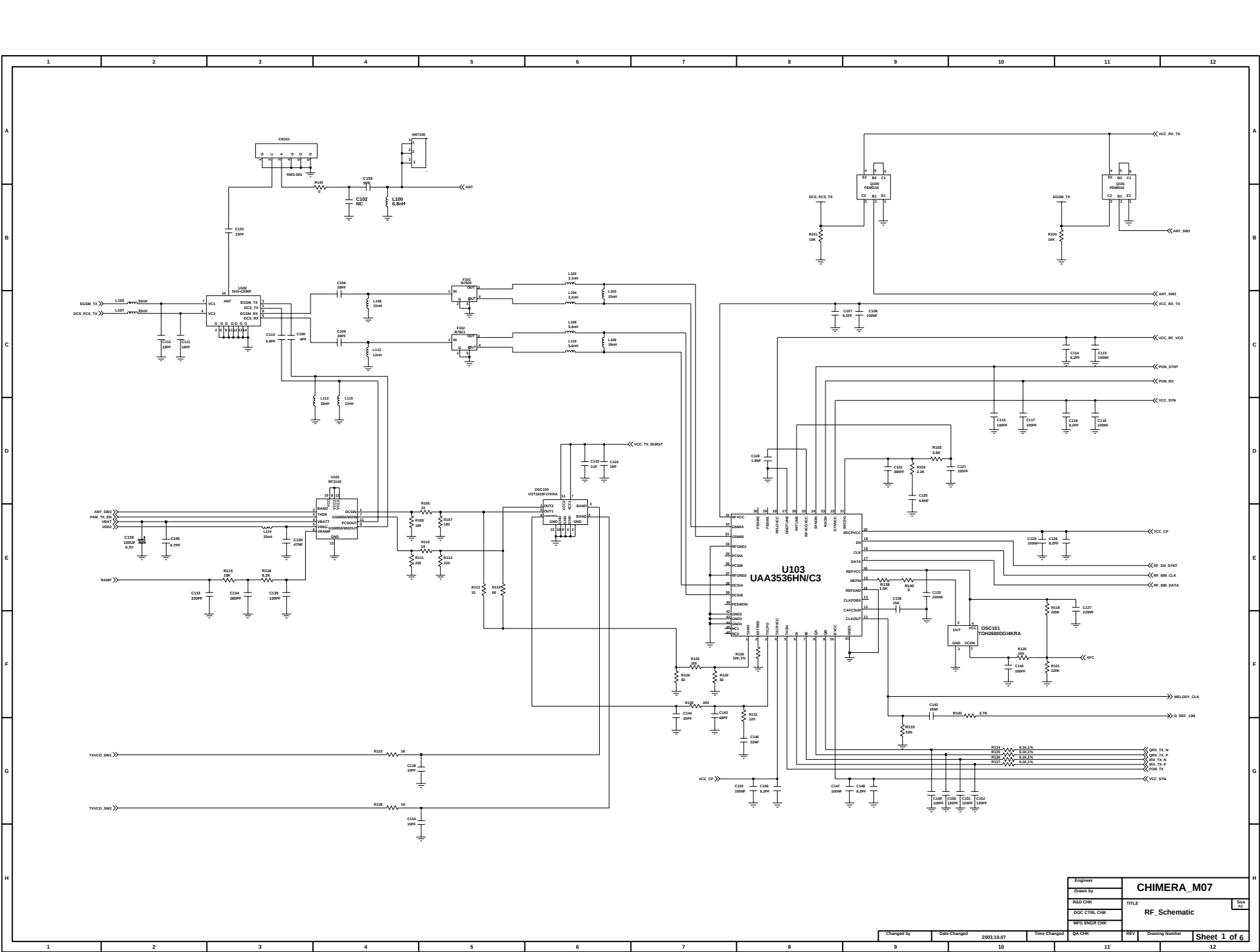


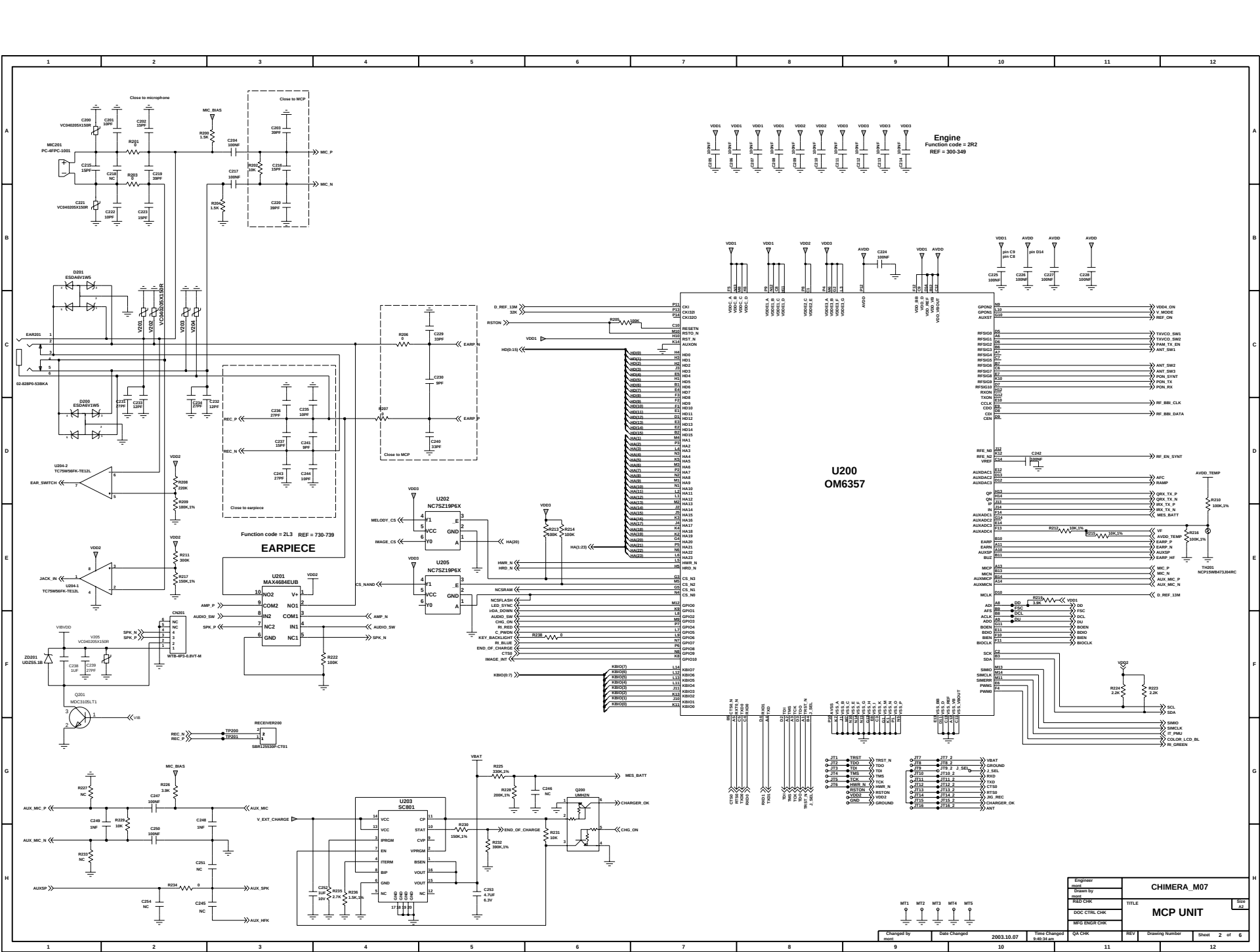


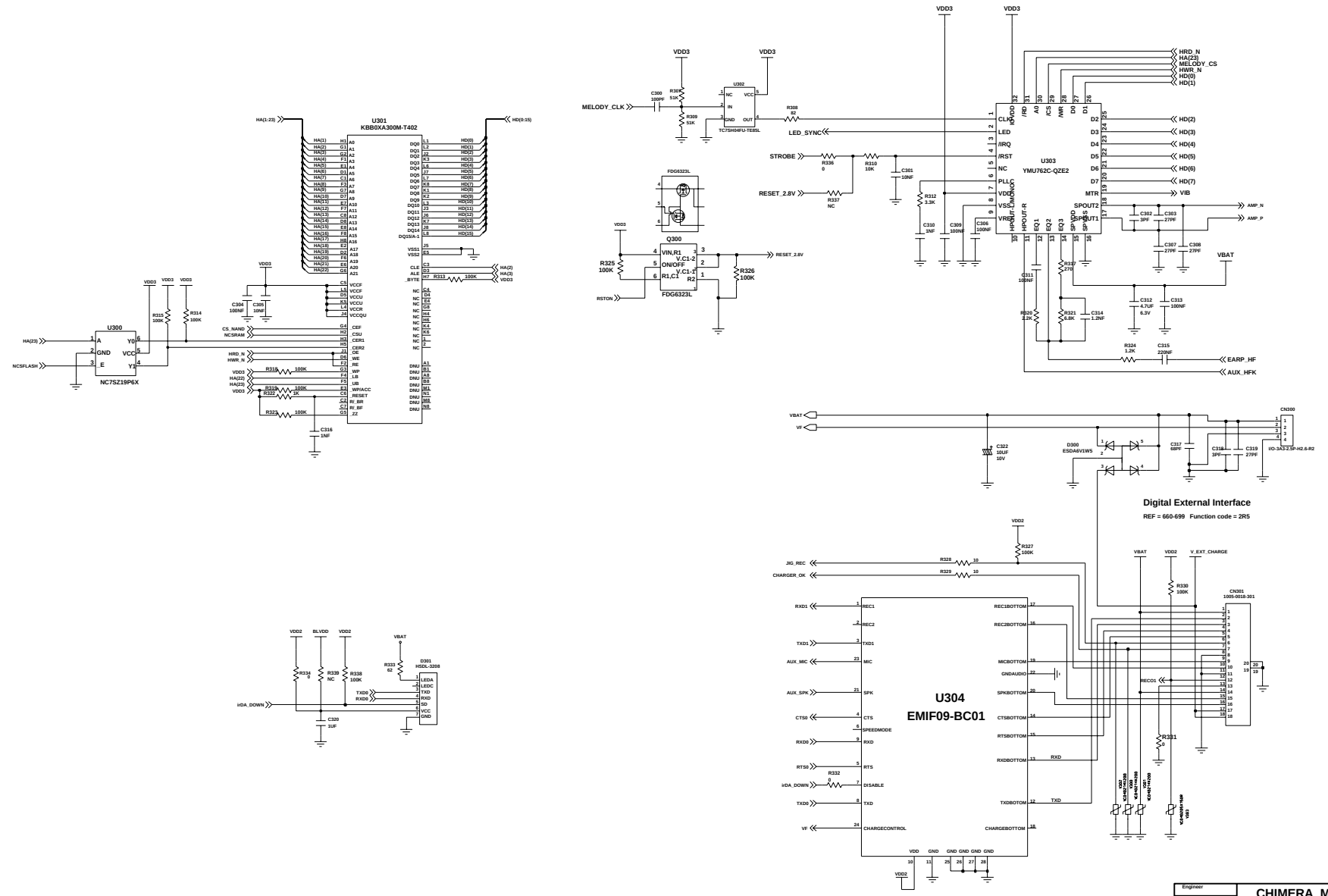
JT16_2 JT15_2 JT14_2 JT13_2 JT12_2 JT11_2 JT10_2 JT9_2 JT8_2 JT7_2

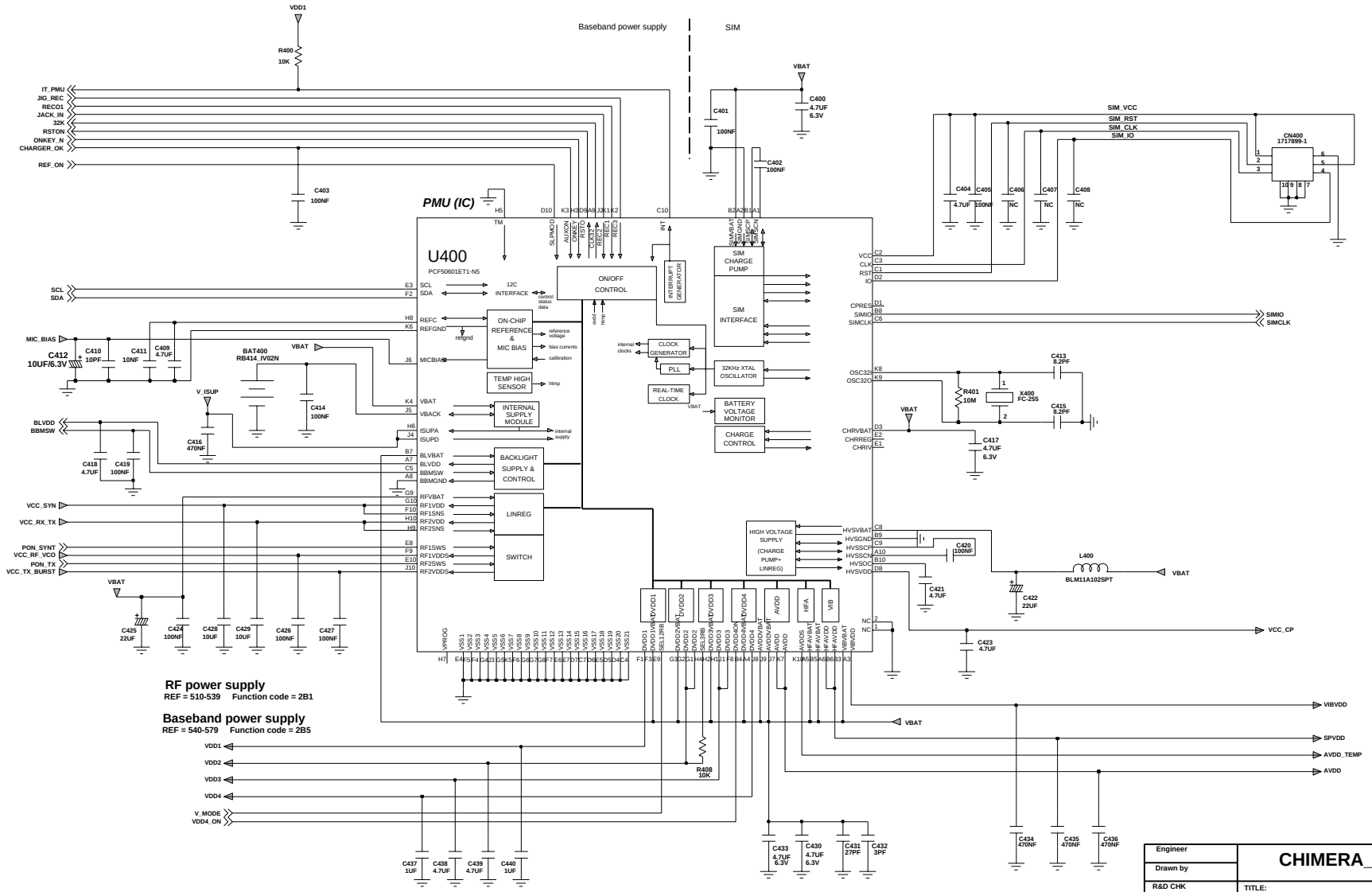


JT1 JT2 JT3 JT4 JT5 JT6 JT7 JT8 JT9 JT10 JT11 JT12 JT13 JT14 JT15 JT16

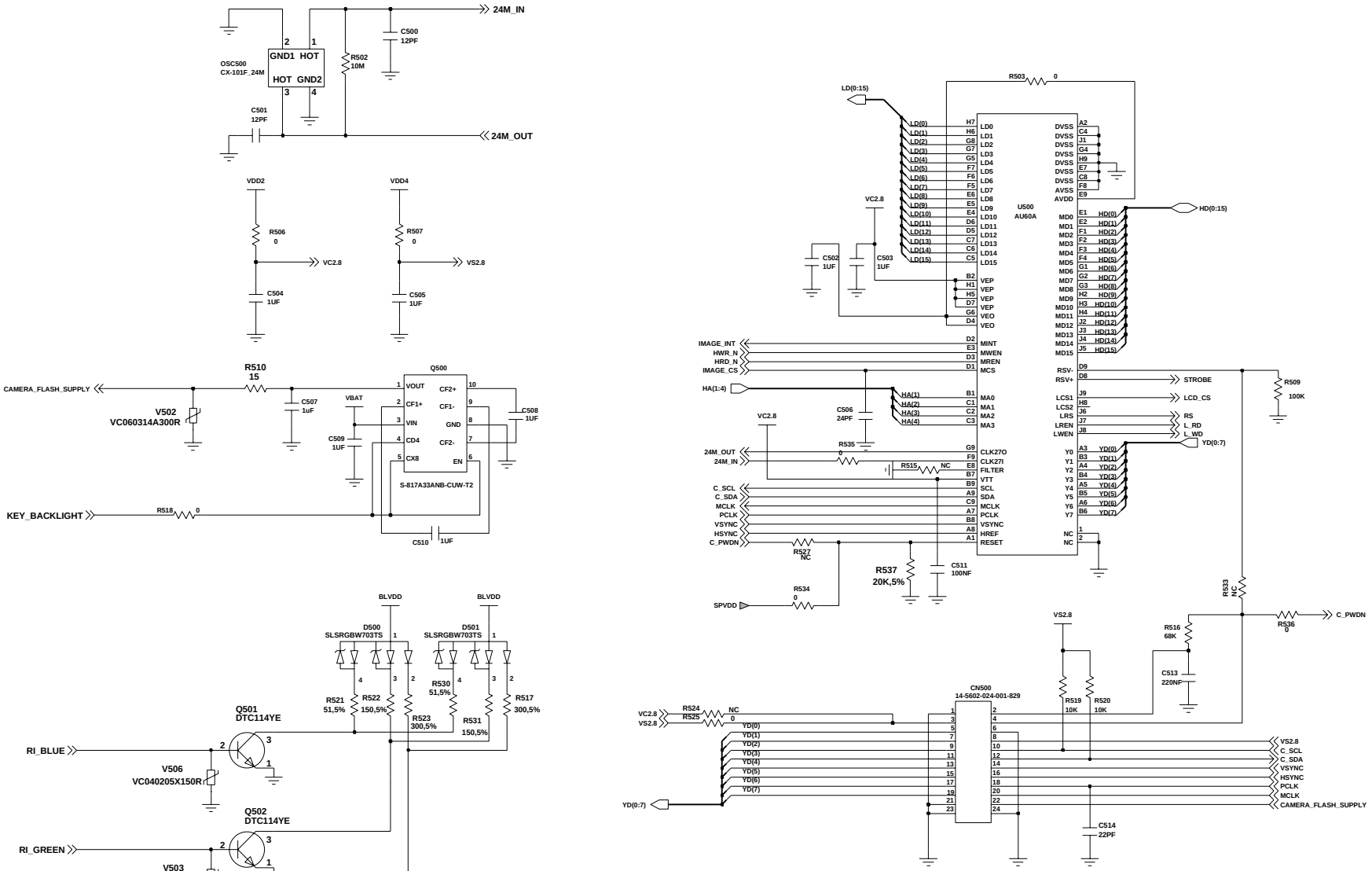

U103
UAA3536HN/C3
OSC101
TOH2600DGI4KRA
CHIMERA_M07
RF_Schematic
Sheet 1 of 6
2003.10.07


Close to microphone
Close to MCP
MIC_BIAS
MIC_P
MIC_N
MIC201
PC-4FPC-1001
C200
VC040205X150R
C201
10PF
C202
15PF
R201
0
C204
100NF
C217
100NF
R200
1.5K
R202
10K
C203
39PF
C216
15PF
C220
39PF
C215
15PF
C218
NC
R203
0
C219
39PF
C221
VC040205X150R
C222
10PF
C223
15PF
D201
ESDA6V1WS
D200
ESDA6V1WS
VD01
VD02
VD03
VD04
VCOM0205X150R
EAR201
02-028P0-53BKA
C231
27PF
C233
12PF
C234
27PF
C232
12PF
R206
0
C229
33PF
C230
9PF
C240
33PF
R207
0
EARP_N
EARP_P
REC_P
REC_N
C236
27PF
C235
10PF
C237
15PF
C241
9PF
C243
27PF
C244
10PF
Close to earpiece
Close to MCP
Function code = 2L3
REF = 730-739
EARPIECE
U204-2
TC75W56FK-TE12L
EAR_SWITCH
R208
220K
R209
180K,1%
U204-1
TC75W56FK-TE12L
JACK_IN
R211
300K
R217
150K,1%
VIBVDD
V205
VCM4205X150R
ZD201
UDZSS.1B
C238
1UF
C239
27PF
Q201
MDC3105LT1
VIB
CN201
WTB-8P2-0.8VT-M
SPK_N
SPK_P
U201
MAX4684EUB
NO2
COM2
IN2
NC2
GND
V+
NO1
COM1
IN1
NC1
AMP_P
AUDIO_SW
SPK_P
AMP_N
AUDIO_SW
SPK_N
R222
100K
RECEIVER200
SBR1253S0F-CT01
REC_N
REC_P
TP200
TP201
U202
NC7SZ19P6X
MELODY_CS
IMAGE_CS
HA(20)
U205
NC7SZ19P6X
CS_NAND
R213
100K
R214
100K
HA(1:23)
HWR_N
HRD_N
NCSRAM
NCSFLASH
LED_SYNC
IrDA_DOWN
AUDIO_SW
CHG_ON
RI_RED
C_PWON
KEY_BACKLIGHT
RI_BLUE
END_OF_CHARGE
CTS0
IMAGE_INT
R238
0
KBIO(0:7)
D_REF_13M
32K
RSTON
R205
100K
HD(0:15)
U200
OM6357
VDD1
VDD2
VDD3
AVDD
C224
100NF
pin C9
pin C8
pin D14
C225
100NF
C226
100NF
C227
100NF
C228
100NF
C242
100NF
AVDD_TEMP
R210
100K,1%
R216
102K,1%
TH201
NCP15WB473J04RC
R212
10K,1%
R215
100K,1%
R215
3.9K
R223
2.2K
R224
2.2K
Engine
Function code = 2R2
REF = 300-349
MIC_BIAS
R227
NC
R226
3.9K
C247
100NF
AUX_MIC_P
AUX_MIC_N
AUXSP
AUX_MIC
AUX_SPK
AUX_HFK
C249
1NF
R229
10K
C250
100NF
C248
1NF
R231
NC
C251
NC
R234
0
C254
NC
C245
NC
V_EXT_CHARGE
U203
SC801
R225
330K,1%
R228
200K,1%
C246
NC
Q200
UMH2N
MES_BATT
CHARGER_OK
CHG_ON
R230
150K,1%
END_OF_CHARGE
R232
390K,1%
R231
10K
C253
4.7UF
6.3V
C252
1UF
10V
R235
2.7K
R236
1.5K,1%
VBAT
R233
0
MT1
MT2
MT3
MT4
MT5
Changed by
mont
Date Changed
2003.10.07
Time Changed
9:40:34 am
QA CHK
Engineer
mont
Drawn by
mont
R&D CHK
DOC CTRL CHK
MFG ENGR CHK
CHIMERA_M07
TITLE
MCP UNIT
Size
A2
REV
Drawing Number
Sheet
2
of
6


U301
KBB0XA300M-T402
U300
NC7SZ19P6X
U302
TC7SH04FU-TE85L
Q300
FDG6323L
U303
YMU762C-QZE2
U304
EMIF09-BC01
Digital External Interface
REF = 660-699 Function code = 2R5
CN300
CN301
D300
ESDA6V1W5
D301
HSDL-3208
MELODY_CLK
LED_SYNC
STROBE
RESET_2.8V
RSTON
VBAT
VF
EARP_HF
AUX_HFK
AMP_N
AMP_P
JIG_REC
CHARGER_OK
V_EXT_CHARGE
CHIMERA_M07
Memory & melody

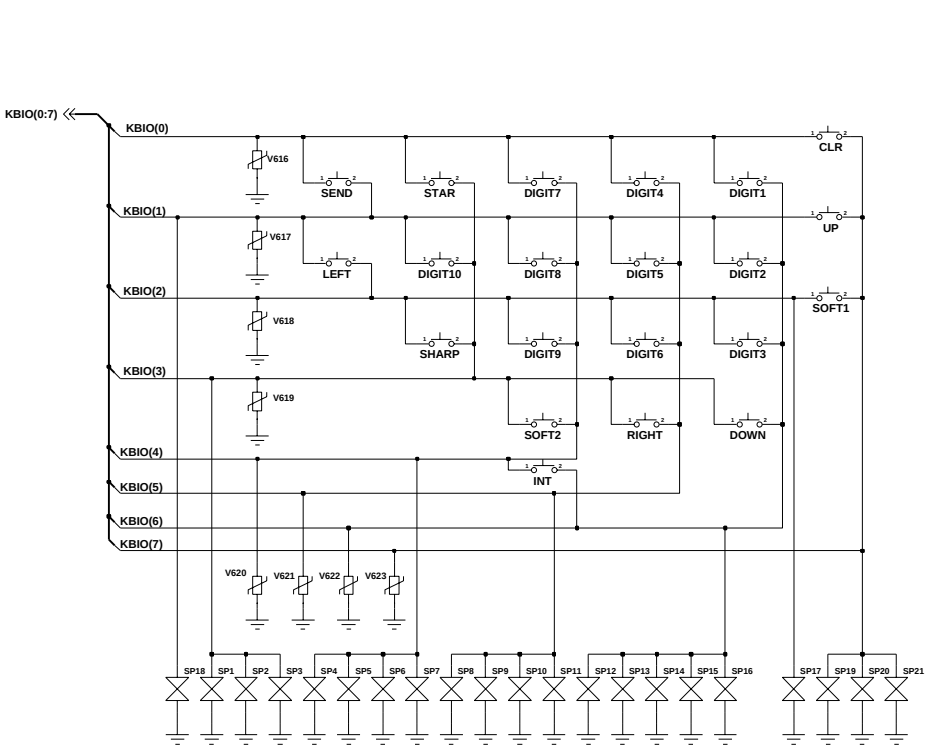


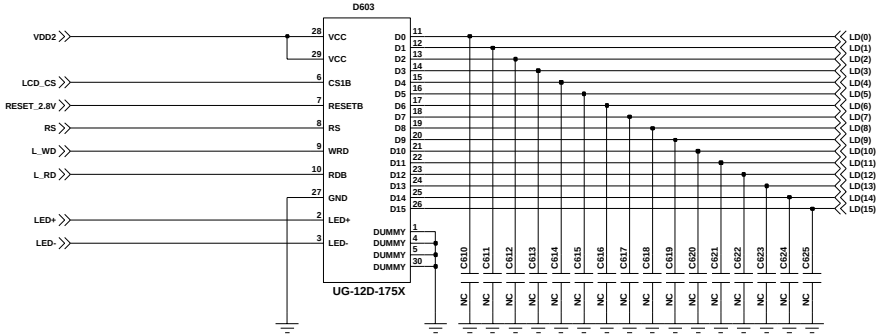
Engineer		CHIMERA_M07					
Drawn by							
R&D CHK		TITLE:					Size A3
DOC CTRL CHK		Power management unit					
MFG ENGR CHK							
Changed by		Date Changed	2003.10.07	Time Changed	QA CHK	REV	Drawing Number
							Sheet 4 of 6

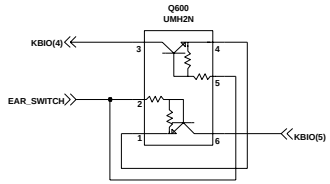


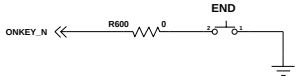
(24pin_1.5t)

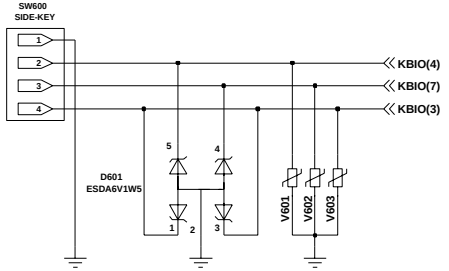
Engineer		CHIMERA_M07	
Drawn by			
R&D CHK		TITLE: CAMERA_PART	Size A3
DOC CTRL CHK			
MFG ENGR CHK			
QA CHK		REV	Drawing Number 5
Changed by	Date Changed 2003.10.07		Sheet 5 of 6

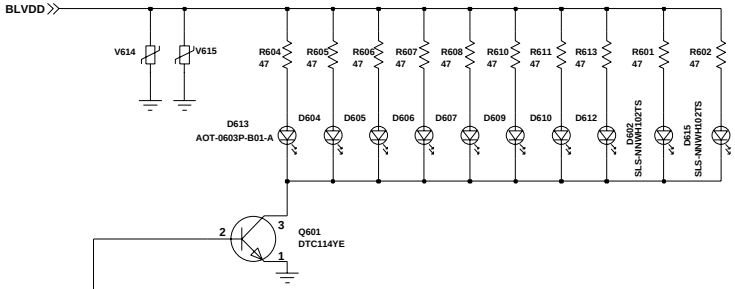


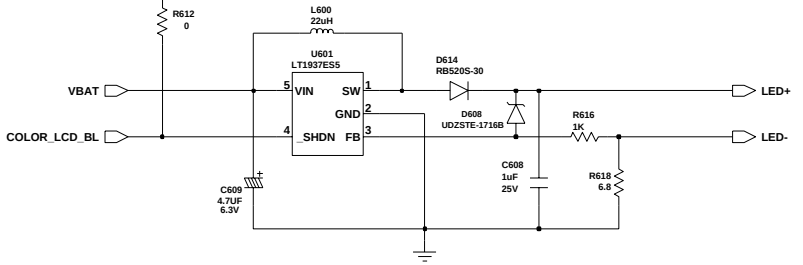












Changed by	Date Changed 2003.10.07	Time Changed	QA CHK	REV	Drawing Number	sheet 6 of6	

Engineer	CHIMERA_M07
Drawn by	
R&D CHK	TITLE: LCD & KEY & B/L
DOC CTRL CHK	Size A3
MFG ENGR CHK	