WILEYFOX

Wiley Fox Swift Service Manual

Contents

1. A5042 (WILEY FOX SWIFT) overview

1.1 A5042 (WILEY FOX SWIFT) brief introduction

The development and design of the A5042 (WILEY FOX SWIFT) PCBA is based on MSM8916 platform. The mainboard system mainly consists of the chip MSM8916+ WTR4905+PM8916, which are responsible for three part functions, namely, baseband, radio frequency and power management chip. A5042 (WILEY FOX SWIFT) PCBA is an all-in-one phone main board, which supports GSM, WCDMA, and covers Bluetooth, WIFI, Camera, FM functions, and so forth.

The maintenance of mainboard is one of the important links among mobile products rear-end producing. The speed and quality of maintenance relate to the rate of good products, production efficiency, and cost control throughout the producing. In the case of a reasonable design of product, in the end-producing, finding the significant proportion in the bad board should be SMT bad and component incoming material bad. So, when maintaining, first, start with the two aspects. The principal means of fault diagnosis are:
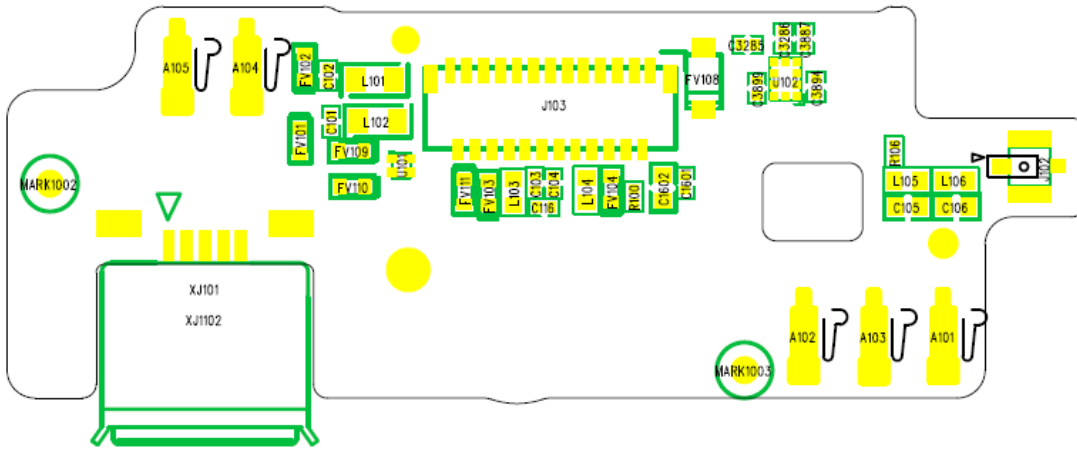
(1) find that bad welding spots or components by microscopic examination and visual inspection;

(2) guess failure positions from the fault phenomena;

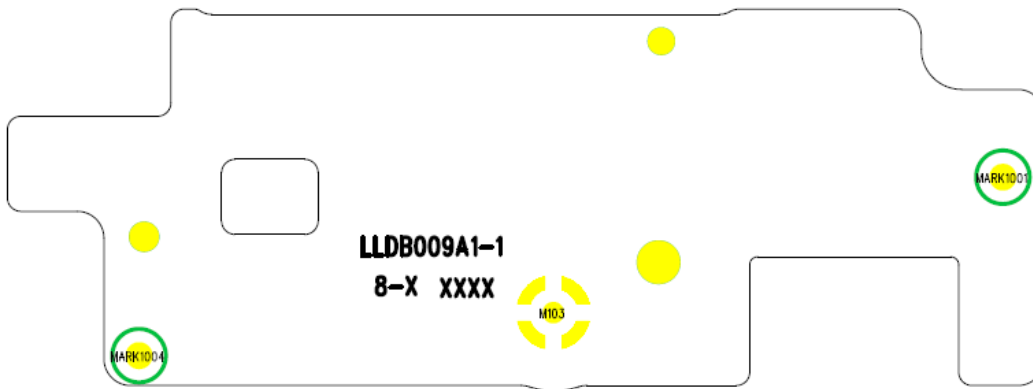(3) confirm the fault units by signal detection.

1.2 Function diagram

1.3 Mainboard component distribution diagram

Mainboard TOP
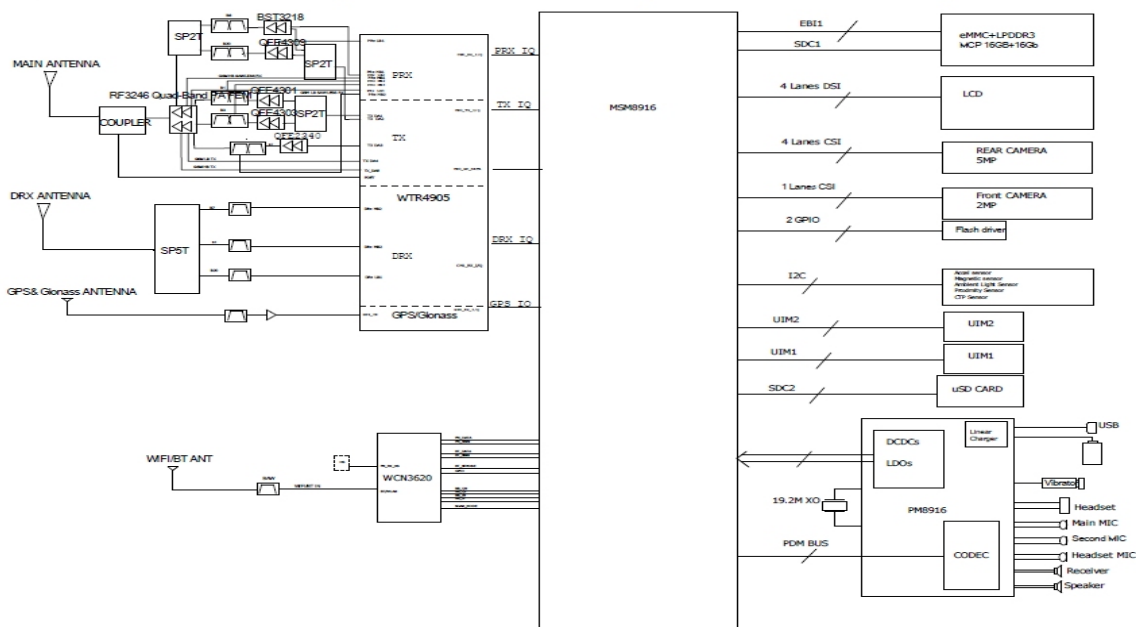
Main board BOTTOM

Little board-TOP

Little board-BOTTOM

1.4 Main IC Names

|						
11507061	IC,SY6882,OVP SWITCH	SY6882ADFC	只	1	U301	Silergy
11501018	IC,SGM3733BYTDI6G/TR,38V Step-Up LED Driver, PWM control	SGM3733BYTDI6G/TR	只	1	U2001	SGMICRO
11502113	IC,SY7803,2MHz,1.5A Flash LED Driver	SY7803DUC	只	1	U2110	Silergy
11508015	IC,NCP706MX300TAG,LDO,3.0V,1A	NCP706MX300TAG	只	1	U2301	ON
11503330	IC,AW2013,3-Channel breath LED Driver,I2C control	AW2013DNR	只	1	U2401	AWINIC
11101564	IC,QFE2101,POWER MANAGEMENT	QFE-2101-0-15BWLNSP-TR-70-0	只	1	U3801	QUALCOMM
11101604	IC,WTR4905,TRANSCEIVER	WTR-4905-1-60WLNSP-TR-01-0	只	1	U3001	Qualcomm
11107032	RF-IC,PA,QFE2340,30-pin,WLNSP,CS	QFE-2340-0-30BWLNSP-TR-0M-0	只	1	U3301	Qualcomm
11107033	IC,QFE4301 ,RF PA Module,LTE/HSPA/WCDMA/CDMA Band 1,1920-1980 MHz,2.5x2.0	QFE4301	只	1	U3504	Qualcomm
11107034	IC,QFE4303 ,RF PA Module,LTE/HSPA/WCDMA Band 3/4/9/10,1710-1785 MHz, 2.5x2	QFE4303	只	1	U3502	Qualcomm
11420762	IC,WCN3620,WIFI/FM/BT SOC, ES2	WCN3620-0-61WLNSP-TR-05-0-VV	只	1	U3701	Qualcomm
11522168	IC,RF3246,Quad-Band GSM/EDGE Transmit Module,6.0x6.0	RF3246	只	1	U3103	RFMD
11522623	IC,BST3218,RF PA,WCDMA BAND58CMOS,2.5*2mm	BST3218	只	1	U3509	Qualcomm
11107035	IC,QFE4309,LTE Band20 GPIO PA,2.5x2.0mm	QFE4309	只	1	U3507	Qualcomm
27154041	FILTER,SAW,1561.10/1575.42/1602MHz,50Ω/50Ω, UNBALANCED,FOR GPS/GLONASS/	SAFFB1G56KB0F0A	只	1	U3902	Murata
11548086	IC,BGS12PL6,SPDT SWITCH,0.1-4.0GHz	BGS12PL6	只	3	U3505,U3510,U3511	Infineon
11527024	IC,BGA824N6,GPS LNA,1550-1615 MHz	BGA824N6	只	1	U3903	infineon
22110186	CRYSTAL+Thermistor,19.2PPM,±10PPM,-20℃/+70℃,7pF,2.5*2.0*1.0	OZ19270001	只	1	Y201	TKC
27112420	Coupler,578.00-2700.00MHz,1.6*0.8*0.7mm	LDJ18829M25AH001	只	1	U3101	MURATA
27151018	FILTER,SAW,2655MHz,Band7-RX,50Ω/50Ω,UNBALANCED,1109	SAFFB2G65AA0F0A	只	1	U3702	MURATA
27150117	FILTER,SAW,1842.5MHz,50Ω/50Ω,UNBALANCED	SAFFB1G84AB0F0AB0S	只	1	U3704	MURATA
27151014	FILTER,SAW,806MHz,Band20-RX,50Ω/50Ω,UNBALANCED,1109	SAFFB806MAA0F0A	只	1	U3705	MURATA
27159610	duplexer,B1,unbalanced,1814	SAYEY1G95GA0F0A	只	1	U3501	MURATA
27159445	duplexer,B20,unbalanced,1814	B8622	只	1	U3506	MURATA
27159680	B8,duplexer,1814,unbalanced	SAYEY897MBA0B0A	只	1	U3508	MURATA
27159630	duplexer,B3,unbalanced,1814	SAYEY1G74BC0B0A	只	1	U3503	MURATA
27159804	DUPLEXER,BAND7,2535/2655MHz,UNBALANCED,2016	SAYFH2G53BC0F0A	只	1	U3302	Murata
27160054	FILTER,BAW,2441MHz,50Ω/50Ω,1411	885033W	只	1	U4002	WISOL
11548561	IC,NJG1665MD7,SP5T Antenna Switch Module,GSM/ UMTS/CDMA	NJG1665MD7	只	1	U3700	NJRC
14110025	DIODE,SOD-523,Schottky	LRB521S-40T1G	只	1	D1703	乐山
14110043	DIODE,SOD-323,Schottky 1A	LMBR140ET1G	只	1	D2001	乐山
14112103	DIODE,ZENER,5.1V,500mW	MM3Z5V1-2/TR	只	1	D1601	WILL
14172350	LED,TOP,R/G/B,1.6*1.6*0.45	19-237/R6GHBHW-C01/2T	只	1	LED2401	EVERLIGHT
14175069	LED,flashlight,2.04*1.64*0.75 1A 200LM	ELCH05-5060J3J6294310-N8(UN)	只	2	LED2101,LED2102	EVERLIGHT
24300007	MIC,SMT,D4,-42dB+/-3dB, 2.2KΩ	SOM4013SL-G423-RC-HFWP	只	1	M1801	共达
25901520	IC，BMC156，Ecompass with 3-axis geomagetic sensor and 12 bit 3-axis accelerometer	BMC156	只	1	U2304	BOSCH
25901521	IC，BMG160，Digital，triaxial gyroscope sensor	BMG160	只	1	U2305	BOSCH
25903033	IC,LTR-559ALS-C34,Digital Proximity and Ambient Light Sensor	LTR-559ALS-C34	只	1	U2303	Sensortek

2. The RF section

2.1 RF Overview

A5042 (WILEY FOX SWIFT) The RF transceiver is WTR4905L. WTR4905L is Qualcomm RF transceiver chip, support LTE, WCDMA, GSM and other models. WTR4905L is a versatile and highly integrated CMOS technology transceiver IC. A5042 (WILEY FOX SWIFT) TEL configuration supports LTE-FDD mode support band B3 / B7 / B20, WCDMA mode support band WCDMA B1 / B8, GSM mode support band GSM850 / GSM900 / DCS1800 / PCS1900.

LTE part of the work Circuit:

LTE: (B1) / B3 / B20 and WCDMA: B1 / B8 (or B5) section:
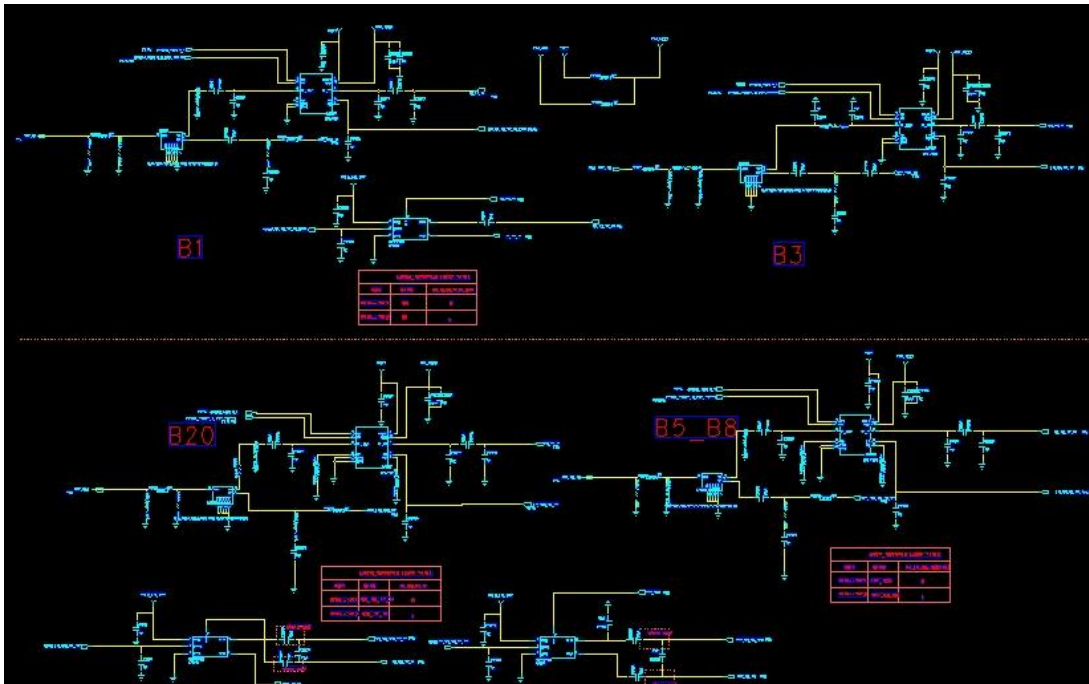
    Emitting section: baseband signal WTR4905L after internal conversion and amplification, LTE B1 and B3 from WTR4905L port TX_DA1 (B1_B3_TX_IN) output via two routes through the switch U3505 corresponding match to B3 PA U3502 and B1 PA U3504, PA signal amplification then, respectively, after each diplexer (B1: U3501, B3: U3503) to PA U3103 by matching an internal switch to the antenna. LTE B20 and WCDMA B8 (or B5) by the WTR4905L port TX_DA2 (B5_B8_B20_TX_IN) output via two routes through the switch U3510 corresponding match to B20 PA U3507 and WCDMA B8 (or B5) PA U3509, PA signal is then amplified by a match After each diplexer (B20: U3506, B8 or B5: U3508) U3511 merge the two routes to the switch all the way to PA U3103 internal switch to antenna. Signal external power coupler U3101 detected through pin6 output to WTR4905L the PIN 31, it is used to power detection and control.

   Receiving part: receive a signal from ANT U3101 through the coupler to the PA U3103, after the PA U3103 internal switch in three columns, two-way through each BAND corresponding DUPLEX (B1: U3501, B3: U3503) to the common terminal RX crossover , and then were to WTR4905L of PIN10 (PRX_MB2) / PIN5 (PRX_MB3) by the internal LNA amplifies, downconverted to a baseband signal; another way to switch U3511 after then were two routes into the respective DUPLEX (B20: U3506, B5 or B8 : U3503) common terminal divider to RX, then were to WTR4905L of PIN17 (PRX_LB1) / PIN11 (PRX_LB2) by the internal LNA amplification, downconversion to baseband signals.

LTE B7 section:

The baseband signal WTR4905L after internal conversion and amplification from TX_DA3 (LTE_B40_B38_B7_IN) output, after output matching to the PA U3301. After the PA signal amplification output from pin29 (HB1_TX) to duplexer U3302, and then output to the PA U3103 through its internal switch to the antenna. Signal external power coupler U3101 detected through pin6 output to WTR4905L the PIN 31, it is used to power detection and control. It receives signals from the ANT through PA U3103 through its internal switch to the duplexer common U3302 to RX, and then to WTR4905L the PIN 22 (PRX_HB2) by the internal LNA amplification, downconversion to baseband signals.

GSM part of the work Circuit:
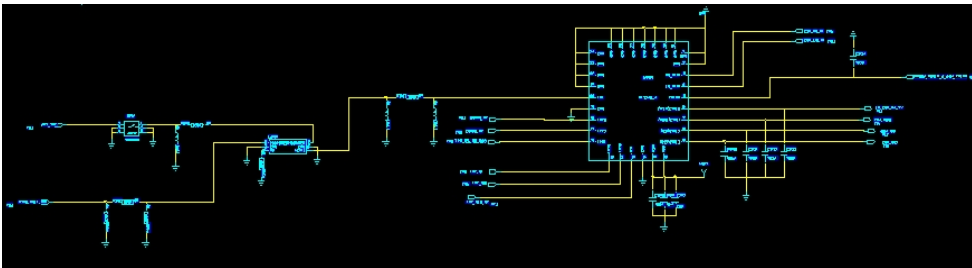
The baseband signal WTR4905L after internal conversion and amplification from TX_DA4 (GSM_LB_IN) / TX_DA5 (GSM_HB_IN) output, to the PA U3103, PA amplified output signal to the antenna terminals. PA U3103 receives signals from the internal antenna after switching to match the corresponding SAWLESS WTR4905L, downconverted to a baseband signal.
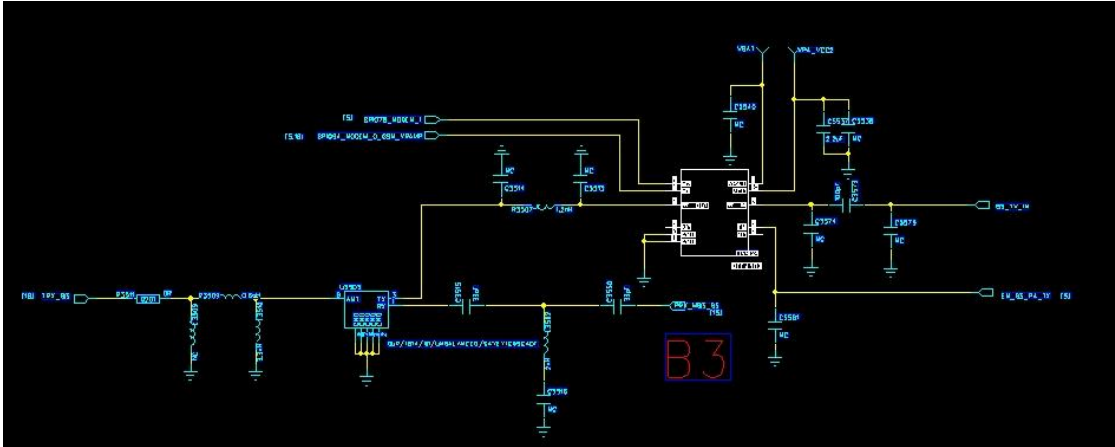
2.2 PA Introduction

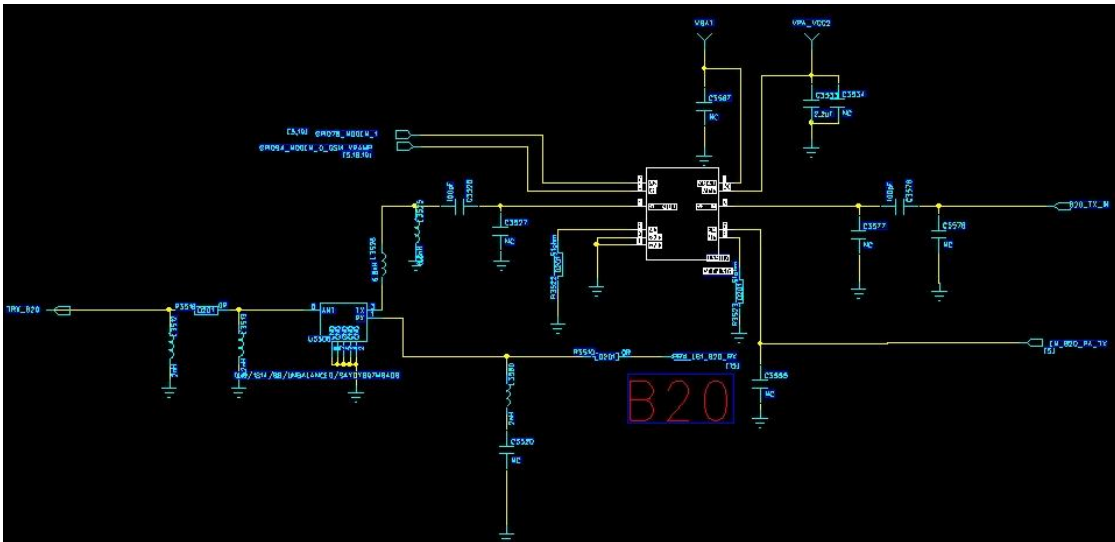LTE-B1 & WCDMA -B1 PA: Qualcomm QFE4301
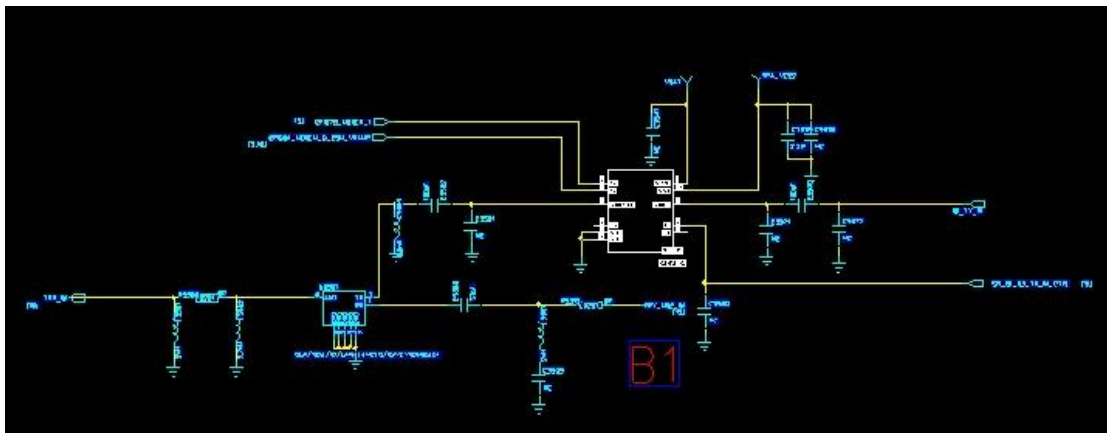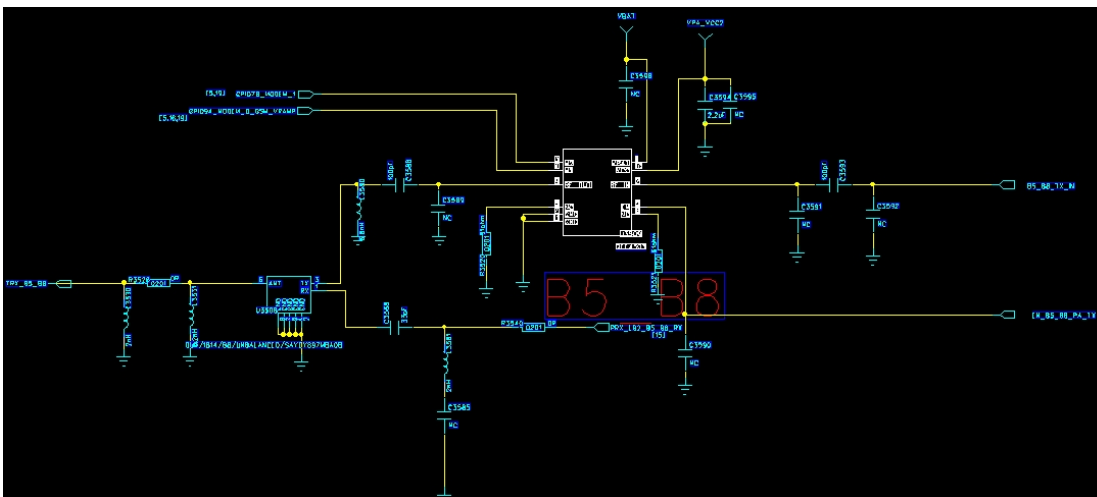

LTE-B3 PA: Qualcomm QFE4303

LTE-B20 PA: Qualcomm QFE4309

WCDMA −B8 PA:BST3218 OR WCDMA −B5 PA:BST3215

2G PA: Qualcomm RFMD RF3246

LTE-B7 PA: Qualcomm QFE2340

After A5042 (WILEY FOX SWIFT) calibration, LTE power generally about 22dbm, GSM900 / GSM850 power is generally about 32.8dbm, DCS1800 / PCS1900 power is generally about 30dbm, WCDMA B1 and WCDMA B8 or WCDMA B5 power generally about 22.5dbm.

⊠

2.3 RF part of the maintenance analysis

2.3.1 TRX path

If BT, FT find the output power is low or no power output, and RX calibration, however, in accordance with the following order using a probe to check:

According to the following order using a probe to check the TX path:

1. Use QRCT into the launch state

2, the measurement of the band corresponding to the control signal PA PA-EN, PA-MODEM1, PA-MODEM2

3, check the CPU-IN

4, issue checks for B1 and TX switch U3505 B3; if it has a switch U3510, for the B20 and B8 (or B5) Check switch U3510

5, check the band corresponding to the PA

6, check the band corresponding to the diplexer

7, if there is switch U3511, for the B20 and B8 (or B5) Check switch U3511

8. Check the antenna switch (U3103)

9, check the external components, special attention string on the road and test stand RC sense whether Weld.

According to the following order using a probe to check the RX path:

1, QRCT tool into the receiving state

2, check the antenna switch (U3103)

3, check the band corresponding to the diplexer

4, check the CPU IC

5. Check the external components, special attention being RC and test seat series on the road if Weld.

LTE and WCDMA part of the main set

1. Visual inspection of RF test socket is welded J3101 good? Female polarity is correct? Female center for foreign
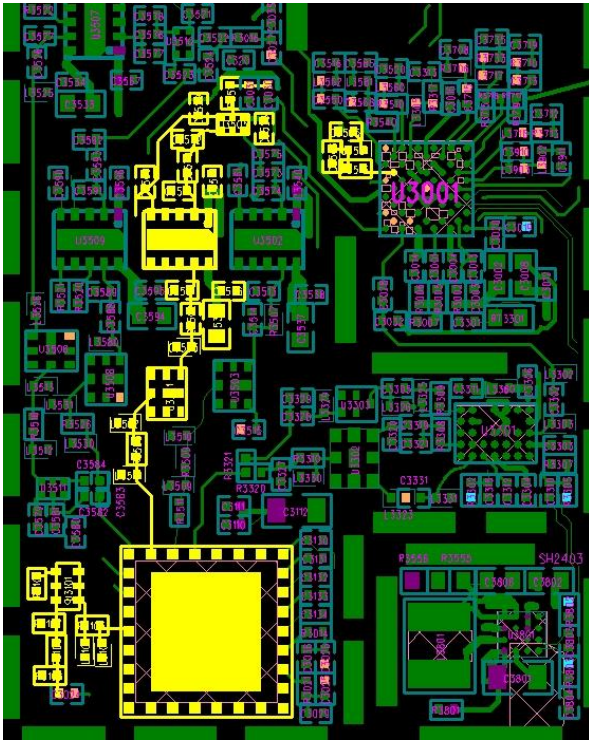

objects?
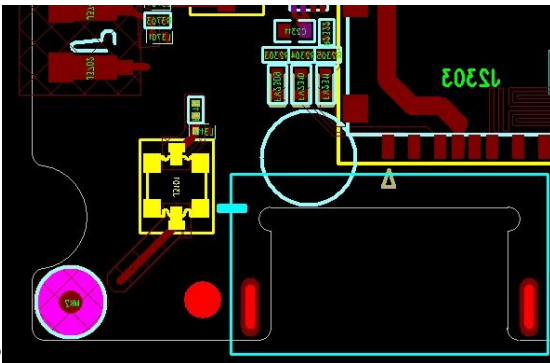
2, element visual inspection transmit and receive circuits on whether the patch abnormalities, such as visual inspection are no exception, replace the test.
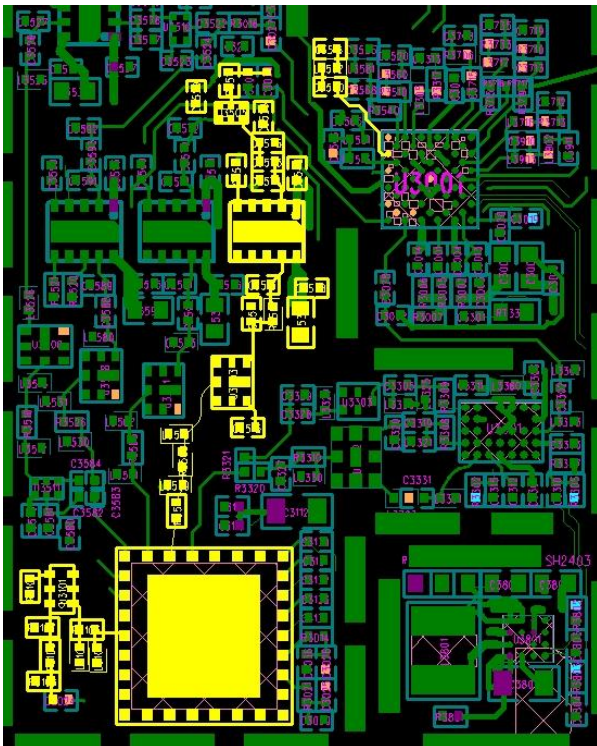Problems for the band as a test circuit is highlighted (as the figures yellow)

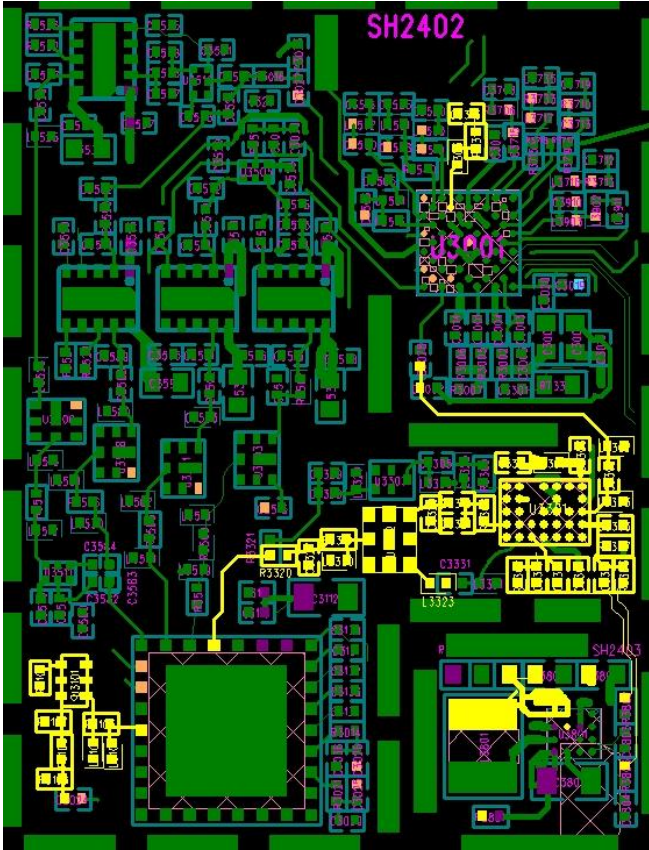**(1) LTE B1 or WCDMA B1 section:**

(2) LTE B3 section:

(3) LTE B20 Part:

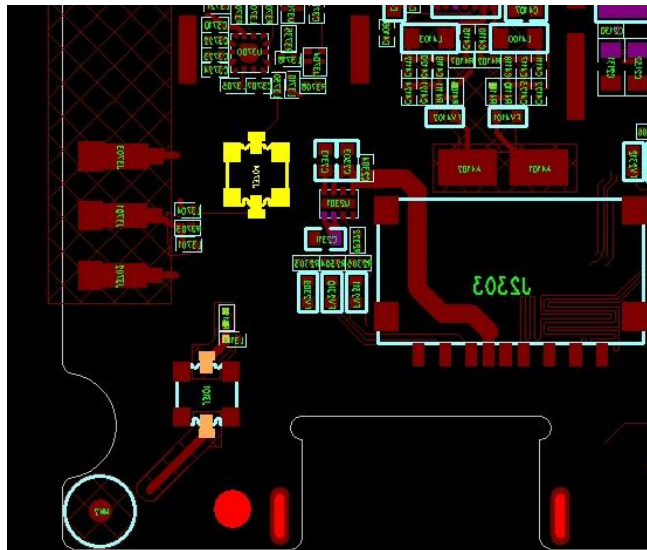**(4) WCDMA B8 or WCDMA B5 Part:**
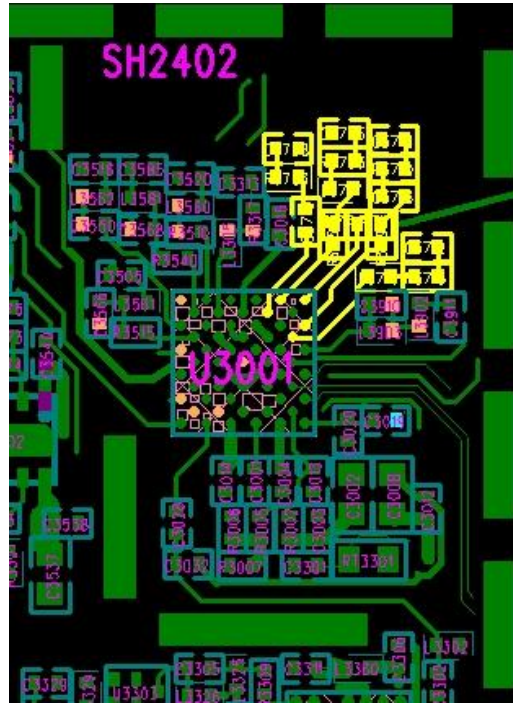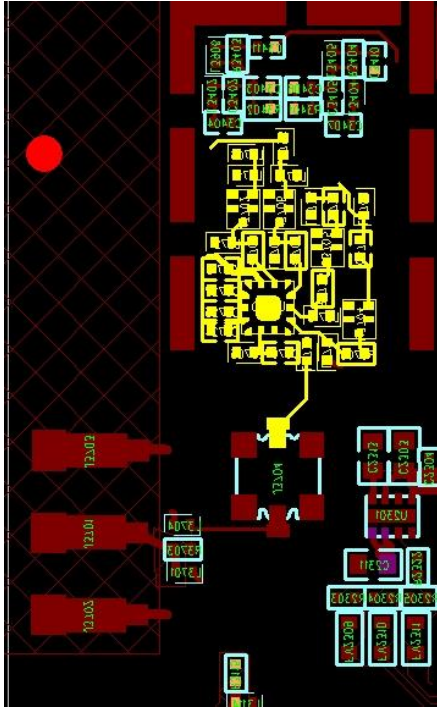
(5) LTE B7 section:

LTE diversity reception section

1. Visual inspection of RF test socket welding J3704 good? Female polarity is correct? Female center for foreign objects?

⊠2, matching circuit elements on the receive path if the patch abnormalities, such as visual inspection are no exception, replace the test

GSM-emitting portion

Visual inspection of RF test socket is welded J3101 good? Female polarity is correct? Female center for foreign objects?

2. Visual inspection U3103 and emitting element matching circuit is abnormal patches, such as visual inspection are no exception, replace U3103 test.

⊠

GSM receiving part: visual inspection whether RF test socket welding J3101 good? Female polarity is correct? Female center for foreign objects?

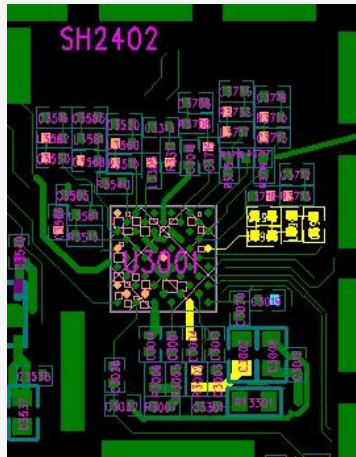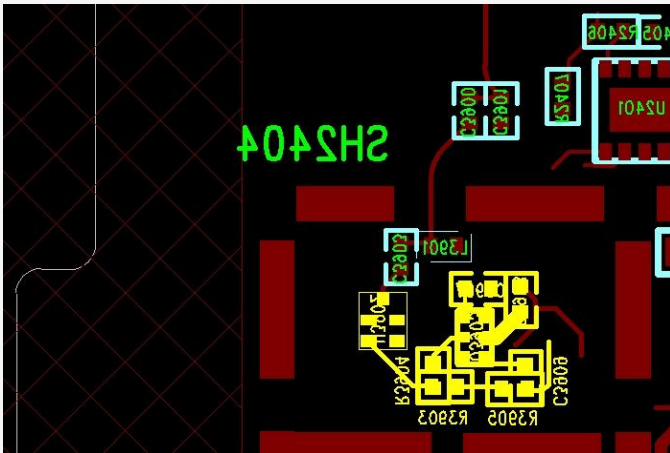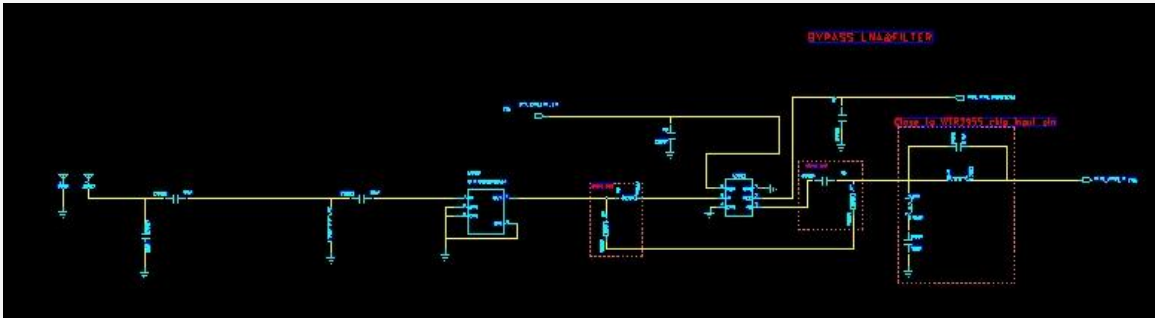
2, matching circuit on the receive path is good welding?
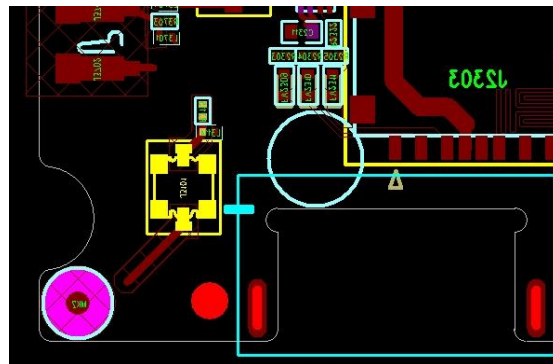
2.3.2 GPS part:

GPS signal first enters the GPS filter U3902, filtered through amplification U3903, U3001 inputted to the chip, the demodulated signal.
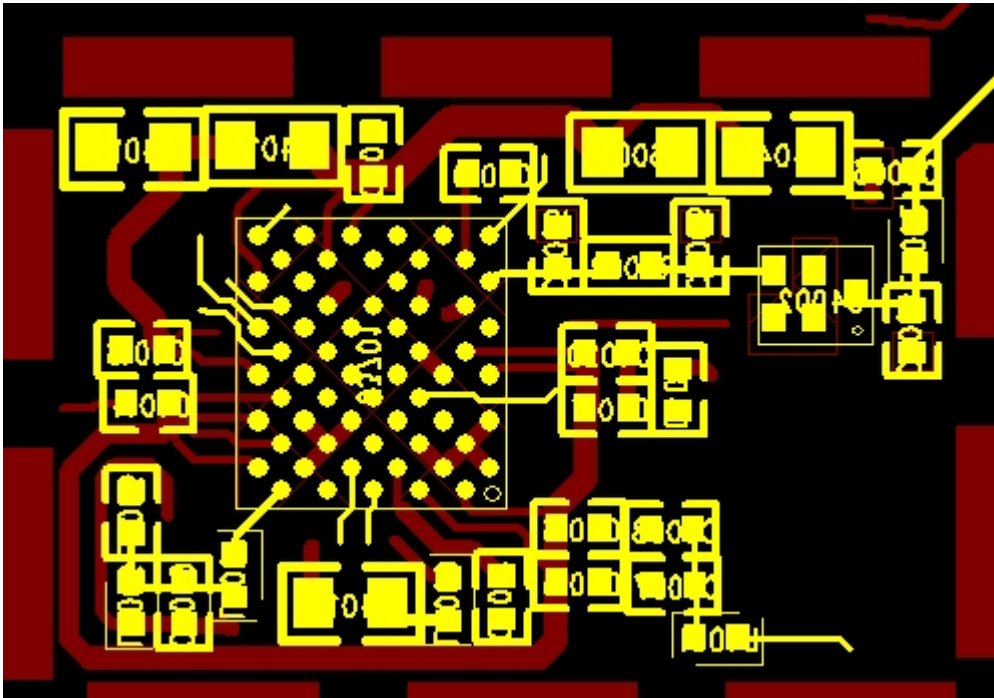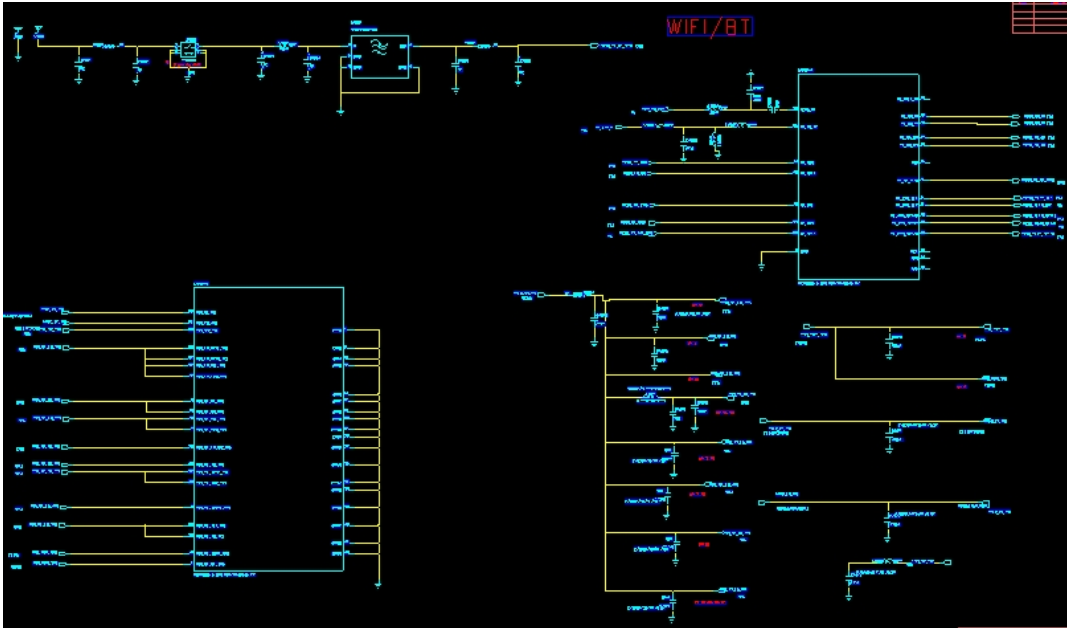

GPS main issues:

GPS satellite can not be searched or satellite search CN value is low, check the U3902 filters and peripheral circuits are weld, and then check whether U3903 LNA working properly, as they pin PIN2 voltage 2.05V power supply is normal, the pin is enabled PIN5 open, if normal, may not posted U3001 good or damaged.

2.3.3 WiFi / BT section

WiFi uses Qualcomm's WCN3620 chips. Peripheral related RF devices rarely: U4002 and RC sense devices.

⊠**WIFI main issues:**

1. WCN3620 chip production line not BT calibration, only FT test. WiFi test problems is very low probability, encounter FT failure problem, please restart the phone off first re-test again.

2. Wifi power tests fail, we require the power to be in 10dbm 11G above, re-tests again fail check-emitting device path on the U3701, U4002 whether Weld even welding, as well as channel RC sense devices.

3. WIFI test freq error fail, the main check WIFI_TCXO pass device L4001, C4008 whether Weld or bad.

4. WIFI test EVM fail. The main and associated power and freq error, if power is too high or too large may also cause EVM freq exceeded, please re-testing, or checking on WIFI_TCXO pass device L4001, C4008 whether Weld or bad, and the RF circuit U3701, U4002 , R3904, C3909, L3903, L3902, C3911 is virtual welding.

5. WIFI RX fail, main receiver sensitivity, however, the first re-test once whether the exclusion error test, if it is, check the RF circuit U3701, U4002, R3904, C3909, L3903, L3902, C3911 is virtual welding

3. Baseband section

3.1 Outline

Baseband circuit completes main functions: the procedure data storage, keyboard input, and the communication between the RF module, RF power control, the control of the power management module, RUIM card interface, serial download interface, Camera, T-flash, Bluetooth, and MMI (man-machine interface, such as the display, backlight, buzzer, speaker, microphone, motors, etc.). Baseband section has very regular modules, and corresponds to the following function. The functions of each module are summarized below。
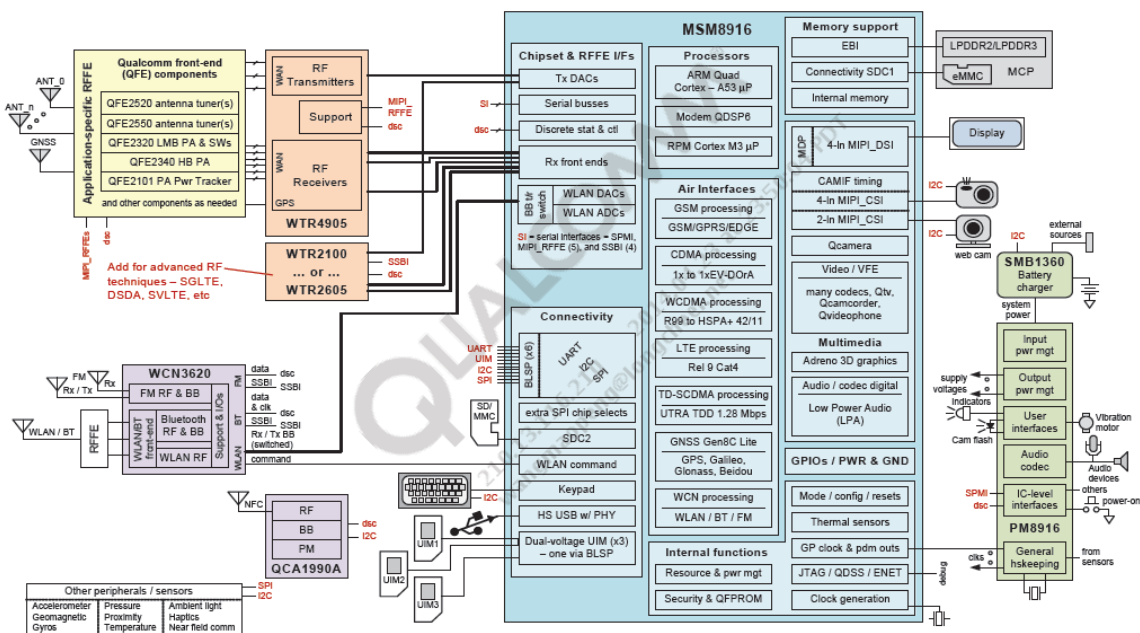

Figure 1-1 MSM8916 functional block diagram and example application

3.1.1 Memory

The baseband part has an EMMC+LPDDR3 EMCP. Where in the amount of eMMC storage 16GB, it stores a communication protocol layer and application layer software, and storing various system parameters, calibration parameters, such as RF control correction value of an audio signal, the IMEI number, and other important information and store user settings data such as phone number, CALL volume, and tone; LPDDR3 memory 16Gb, temporary variables stored phone program run

3.1.2   Power Management
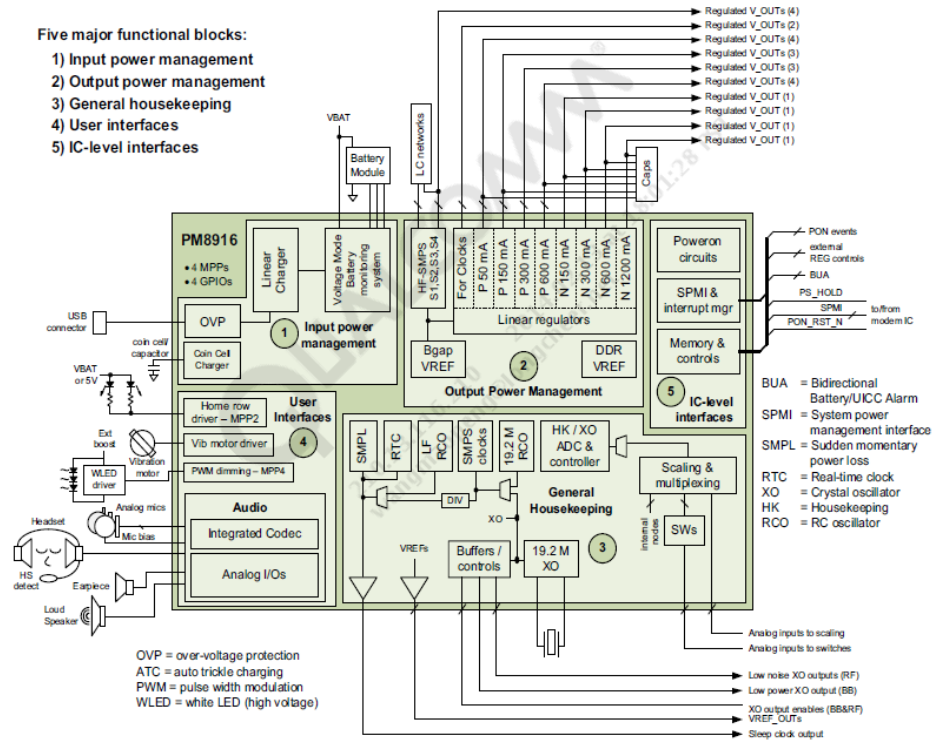
MSM8916 overview

Feature	PM8916 capability
Input power management	
Supported external power source	USB
Over-voltage protection	Fully integrated up to +15 V (integrated OVP FET)
Supported battery technologies	Lithium-ion, lithium-ion polymer
Charger regulation method	Linear battery charger ■ Autonomous charging modes ■ Trickle charging
Supported charging modes	Trickle, constant current, and constant voltage modes. Enhanced automation for lesser software interaction
Charger on indication	Dedicated charging indication LED current sink
Voltage, current, & temperature sensors	Internal and external nodes; reported to on-chip state-machine
Battery monitoring system	Voltage mode Battery Monitoring system (VM-BMS)

Coin cell or capacitor backup	Keep-alive power source; orchestrated charging
Output voltage regulation	
Switched-mode power supplies:	Four Buck converters One 5 V Boost converter
Low dropout linear regulators	20 LDOs ■ Three NMOS LDOs: Two 1.2 A and one 600 mA ■ Four PMOS 600 mA LDOs ■ Three sub-regulated type PMOS 300 mA LDOs ■ Four PMOS 150 mA LDOs - three regular type and one sub-regulated type ■ Four PMOS 50 mA LDOs ■ Two custom low-noise LDOs for the clock system
Pseudo-capless LDO designs	All LDOs except L1, L2 and L3
LPDDR support	Reference voltage output for LPDDR2/LPDDR3
General housekeeping	
On-chip ADC	Shared housekeeping (HK) and XO support
Analog multiplexing for ADC ■ HK inputs ■ XO input	■ Many internal nodes and external inputs, including configurable MPPs ■ Dedicated pin (XO_THERM)
Over-temperature protection	Multistage smart thermal control
19.2 MHz oscillator support	XO (with on-chip ADC)
XO controller and XO outputs	Four sets: ■ Two low-noise RF outputs ■ Two low-power baseband outputs
Sleep clock outputs	One (dedicated)
32 kHz clock source	XO/586 and RC CAL circuits provide real-time clock with alarm. 32,768 Hz crystal oscillator is not supported.
Realtime clock	RTC clock circuits and alarms
Audio inputs	■ Three single-ended inputs ■ Two ADCs
Multi-button headset control (MBHC)	■ Up to five buttons MBHC headset support ■ One input for headset jack detection
Audio outputs	■ Four outputs – Ear, HPHL + HPHR, Class-D speaker driver ■ Three DACs ■ Over current protection on HPH, EAR, and speaker outputs
Multiple input/output audio sample rates	■ Supports sample rates 8 kHz, 16 kHz, 32 kHz, and 48 kHz

User interfaces	
Pulse width Modulator	Dimming control of external WLED driver
Home row LED driver	Current sync through one MPP
Other current drivers	■ MPPs can be configured to sink up to TBD ■ ATC indicator (see input power management features)
Vibration motor driver	1.2 to 3.1 V in 100 mV increments
IC-level interfaces	
Primary status and control	2-line SPMI
Interrupt managers	Supported by SPMI
Optional hardware configurations	OPT bits select hardware configuration
Power sequencing	Power on, power off, and soft resets
Extra features	External regulator; detects inputs; batter-enabled UICC alarm; UIM support (x2)
Configurable I/Os	
MPPs	Four; configurable as digital in/out; level-translating bidirectional I/Os; analog multiplexer inputs; current sinks; VREF buffer outputs; MPP1 and MPP3 are fixed for VDD_PX_BIAS and VREF_DAC respectively
GPIO pins	Four; configurable as digital inputs or outputs or level-translating I/Os; all are faster than MPPs
Package	
Size	6.2 mm x 6.2 mm
Pin count and package type	176 pin WB-NSP

3.1.3 Battery

2500mAh 4.35V Li-polymer battery.

3.1.4 19.2MHzCrystal

19.2MHz crystal is used for power-saving mode and real-time clock。

If Xtal defective phone just entering the power saving mode will be closed。

3.1.5 RUIM Card

RUIM card interface is RUIM card interface provided by MSM8916.

3.1.6 Audio frequency

The microphone is dual electret condenser microphone。

Headset as a standard 3.5mm headphone jack port, the nominal resistance 32Ω。

Speaker adopts 0916 specification, Receiver adopts 1511 specification.

3.1.7 I/O Interface

I/O Connector MICRO USB interface standard. Mainly used for software, download picture messages。

3.1.8 Display

The main screen of HD color screen. SIZE 5'

3.2 Common Failure Analysis and Maintenance

Before cutting board after the completion of the production line SMT X-RAY inspection, according to the actual situation, X-RAY examination can not be found 100% badness; X-RAY inspection may omissions some fault plate flow down. If found fault plate in the testing process, the first step is to re-check of the X-RAY and carefully to see if there is even welding, lap welding, Weld, if normal, analyze the situation following the positioning。

3.2.1 Power failure Check

  The failure phenomenon caused by a power failure: can not boot, shutdown leakage current boot large current. The main reason for the problem: Weld, electrical the original filtering or ESD device to short-circuit, burning with the device is connected to a power source.

Positioning as well as steps to solve this type of problem is as follows：

1， Troubleshoot and connected to the power supply components of the welding, Weld, or the peripheral devices even tin。
2， with a millimeters rule out whether there is power to short-circuit, and step by step to troubleshoot the cause of the short (mainly: even tin, IC burned ESD protection device breakdown, capacitor breakdown)。
3， boot to test the power output is normal.

If a power output value is not normal, whether the view filter capacitor welding problems, whether the breakdown, filter capacitor is broken, replace; excluded one by one, and finally you can navigate to the main chip damage.

3.2.2 Audio faults

The audio part has main four parts including the speaker, receiver, mic and headphone. First undesirable phenomena distinguish what part of the problem, and then analyzed according to the following respective module.

（1）Speaker loop

The A5042 (WILEY FOX SWIFT) phone's speaker circuit is as follow, PMIC to the speaker directly
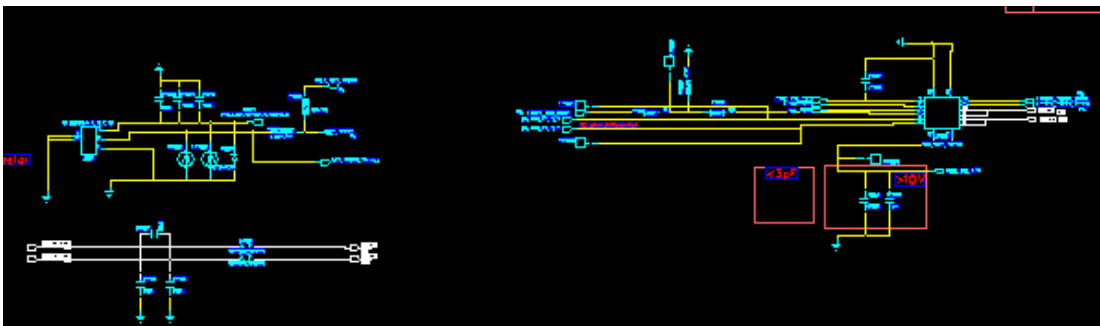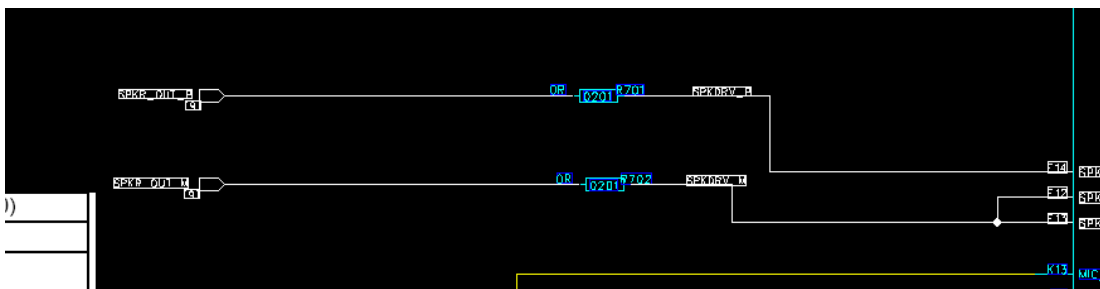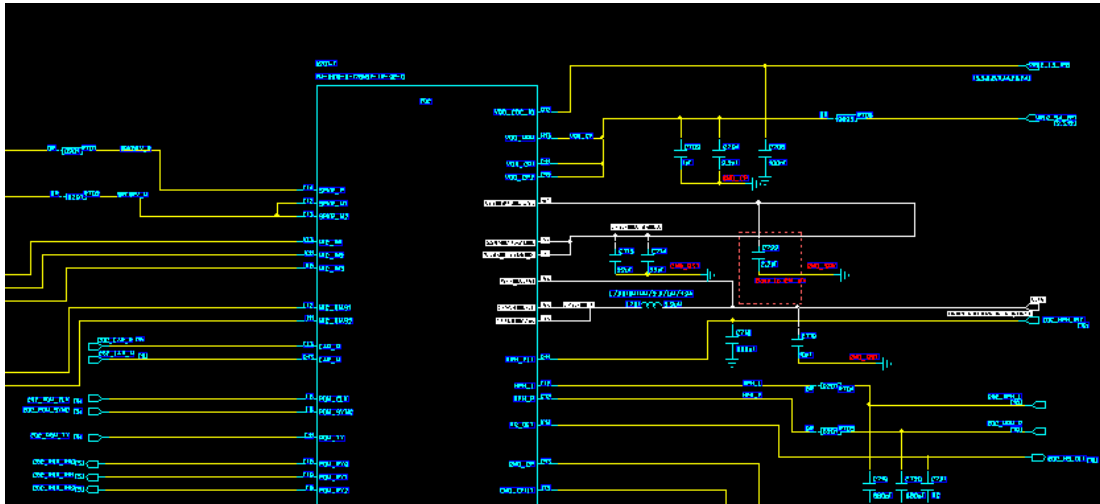
Speaker Loop

Speaker Common faults and reasons：

1:SPK Ringtones reasons: 1) light board, SPK itself is bad, or the connection FPC problem, the whole observation board board PFC Cartridge is skew, not in place 2) relevant component there is dry welding 3) software problems

2: SPK ringtones or murmur: 1) software volume settings 2) SPK ontology reasons

3. Switch machine ringtones, but engineering tests SPK OK: 1) scene mode is set to switch machine ringer off 2) software problems, itself boot ringtones;

(2) Receiver circuit

A5042 (WILEY FOX SWIFT) phone receiver is embedded in the mobile phone front shell through shrapnel and motherboard connection. Mainly used for the call. Receiver circuit diagram as shown below.
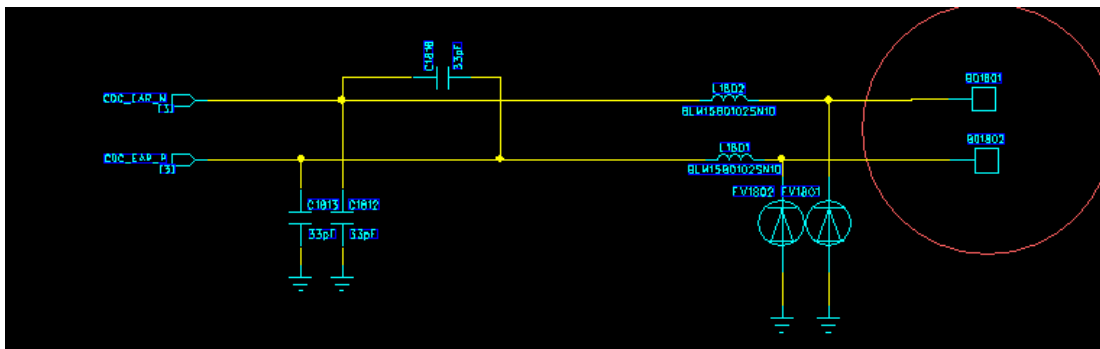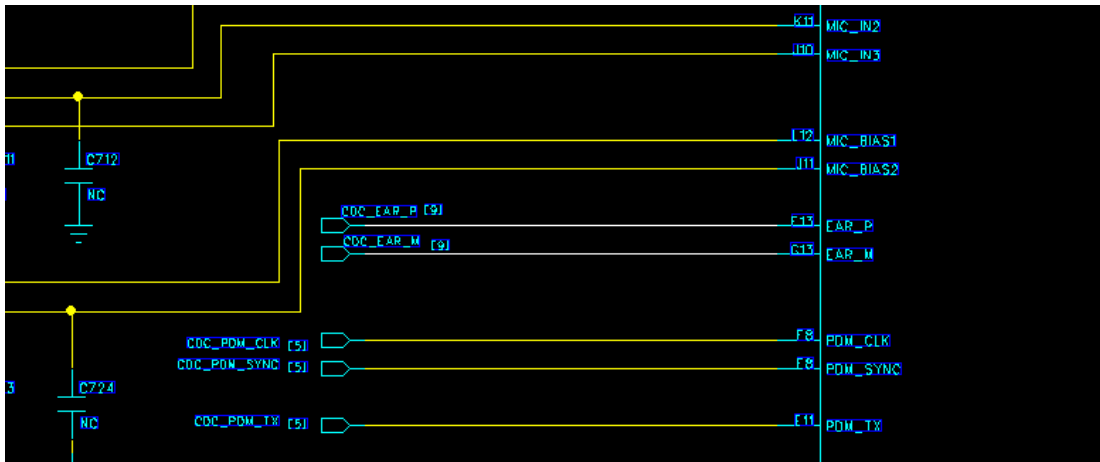
Receive Loop

Receiver Common faults and reasons：

1, Receiver without sound: 1) Receiver assembly adverse, the shrapnel and board poor contact 2) Receive ontology bad 3) the volume settings or software problems

2, Receiver noise or volume: 1) Receiver incoming material, whether caused by pad short circuit 2) relevant components have solder skips 3) software problems

(3) Mic loop

The A5042 (WILEY FOX SWIFT) contains two electret condenser MIC circuits for reduce noise except headphone MIC. One in MB M1801 for reducing noise. Loop schematic diagram as following:
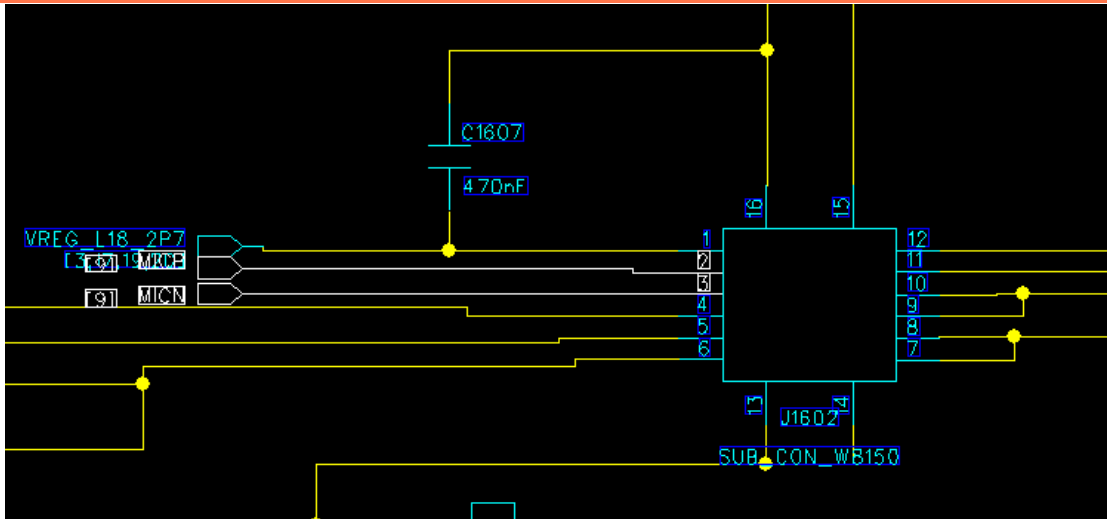
Main MIC common faults and causes

1 MIC unable to send words or recording: 1) MIC poor welding 2) MIC body bad

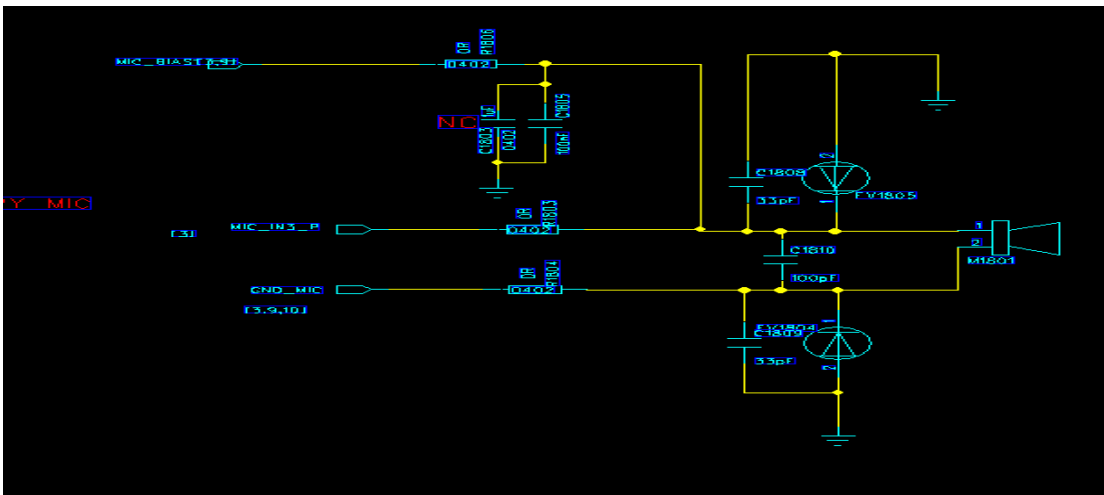2 MIC noise or sound: 1) MIC ontology bad 2) software problems.
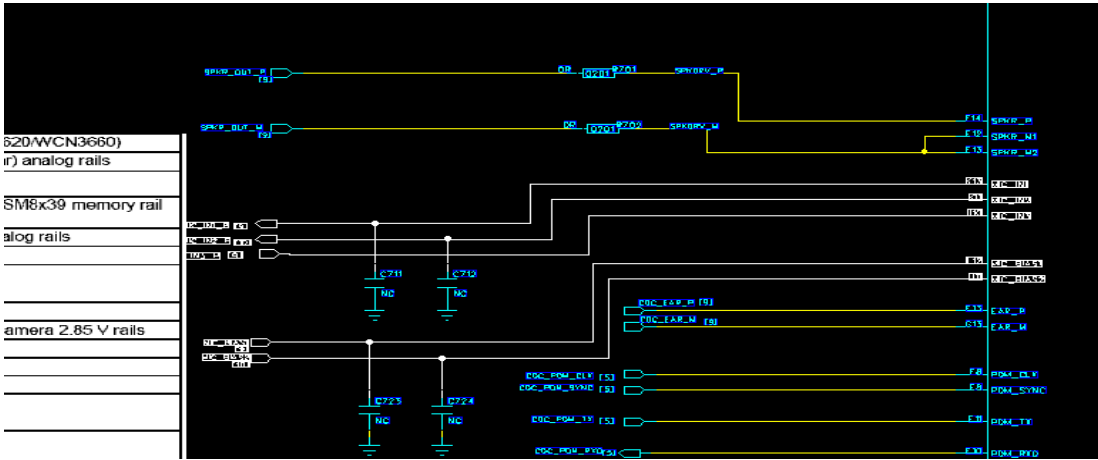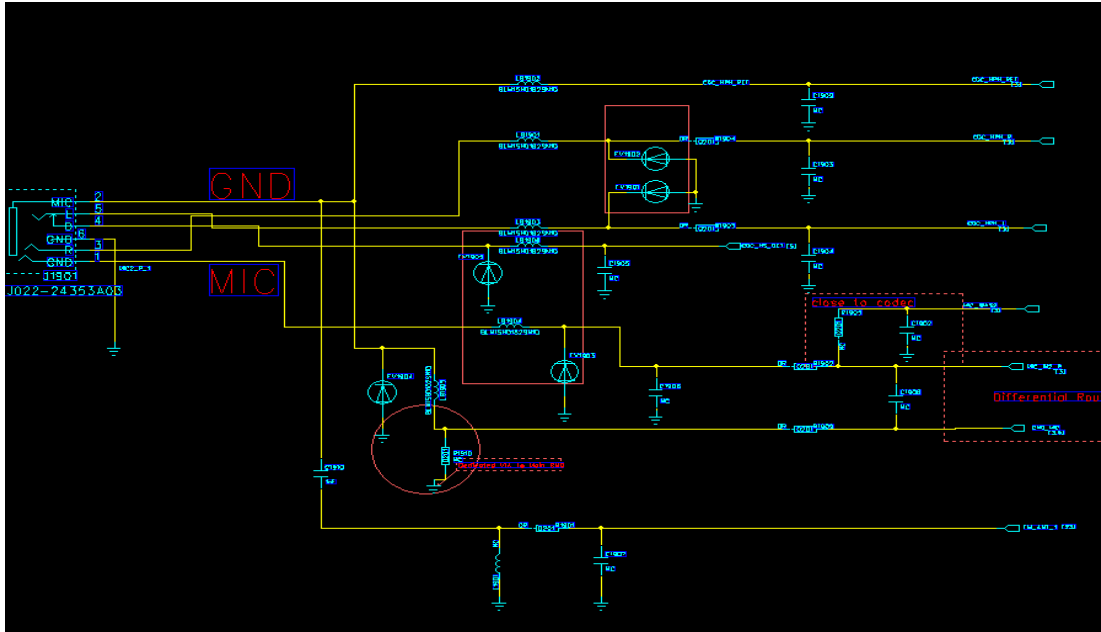

MIC 1 (in SB)
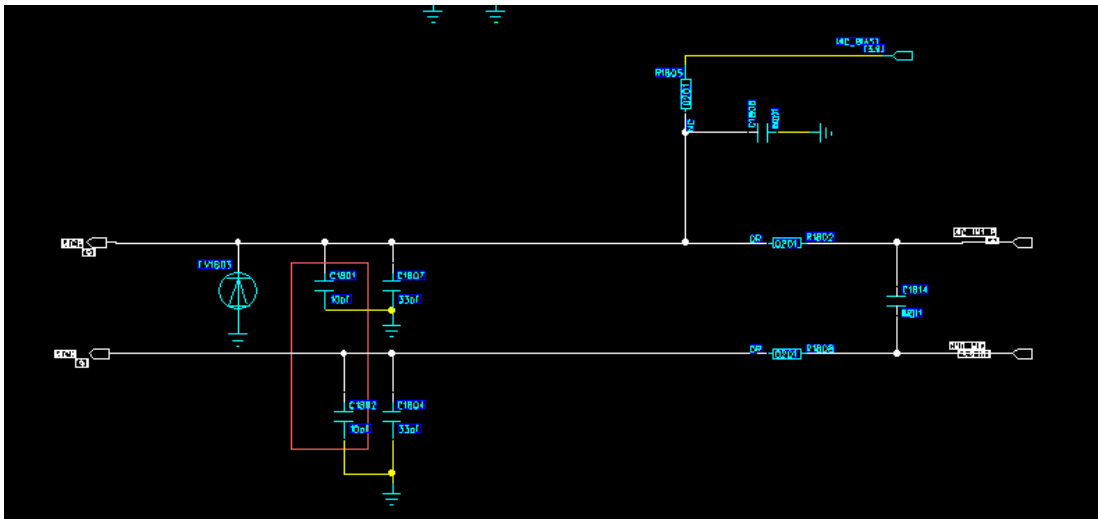
MIC 2 (in MB)

:

（4）Headphone loop

A5042 (WILEY FOX SWIFT) phone use headphones with a standard 3.5mm headphone. Its circuit diagram is as follows:


3.5mmHeadphone jack circuit

Headphones common faults and reasons:

1, headphones only one channel sound: 1) the headset is not inserted in place 2) Relevant component Weld. 3) Relevant component breakdown shorted to ground;

2 headphone left and right channels are no sound: 1) the headset is not inserted in place 2) Relevant component breakdown on the short circuit;

3, unplug the headphones bank borrowing does not recognize: 1) Relevant component Weld; 2) whether headphones Block shrapnel and motherboard good contact 3) software reasons

4 headset MIC no transmitter: 1) the headset is not inserted in place 2) Relevant component Weld

3)Relevant component breakdown on short-circuit;

3.2.4 LCD Fault

A5042 (WILEY FOX SWIFT) adopts 5 -inch LCD, The part of the circuit schematic as shown below. Common problems and causes of the LCD module:

1, LCD screen is blank. 1) LCD is not installed or and fixture poor contact) LCD backlight circuit is bad, check backlight so that the foot is pulled, check whether the R2003 welding problems, backlight IC U2001 whether Weld or shorted to ground. 3) LCD itself fault.
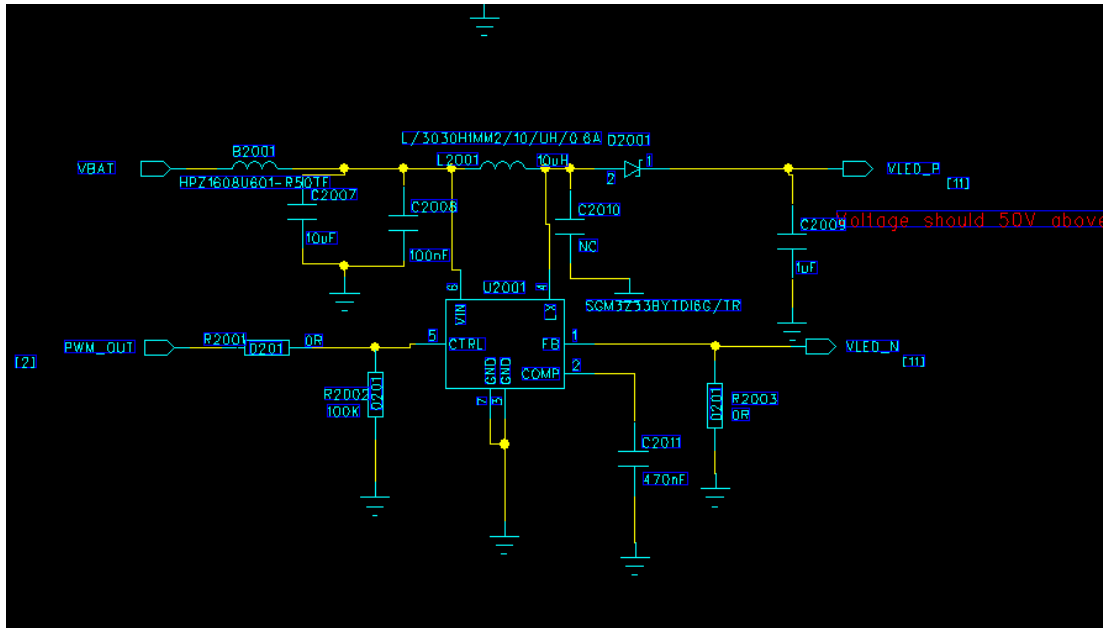
LED DRIVER IC
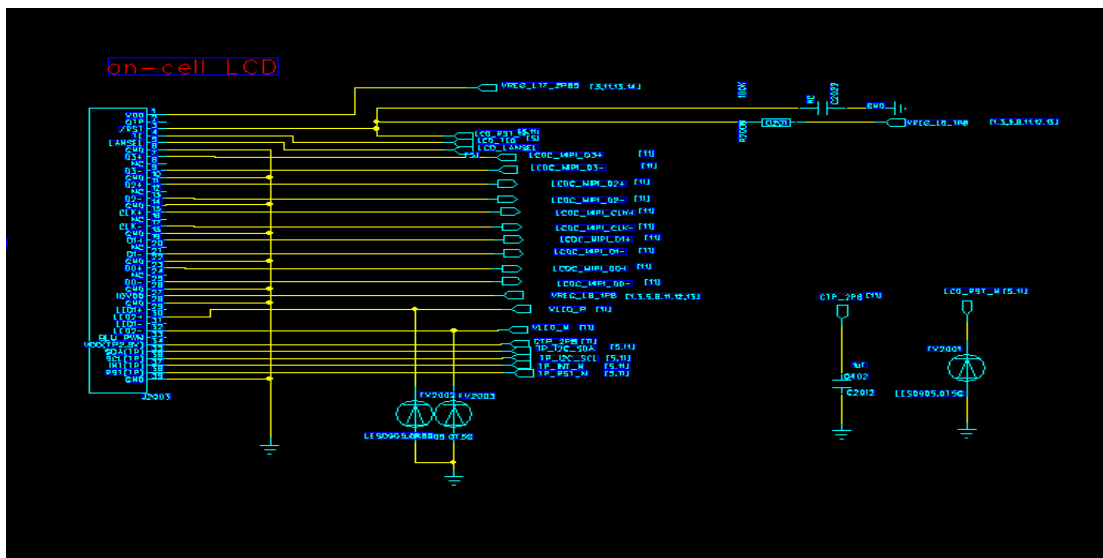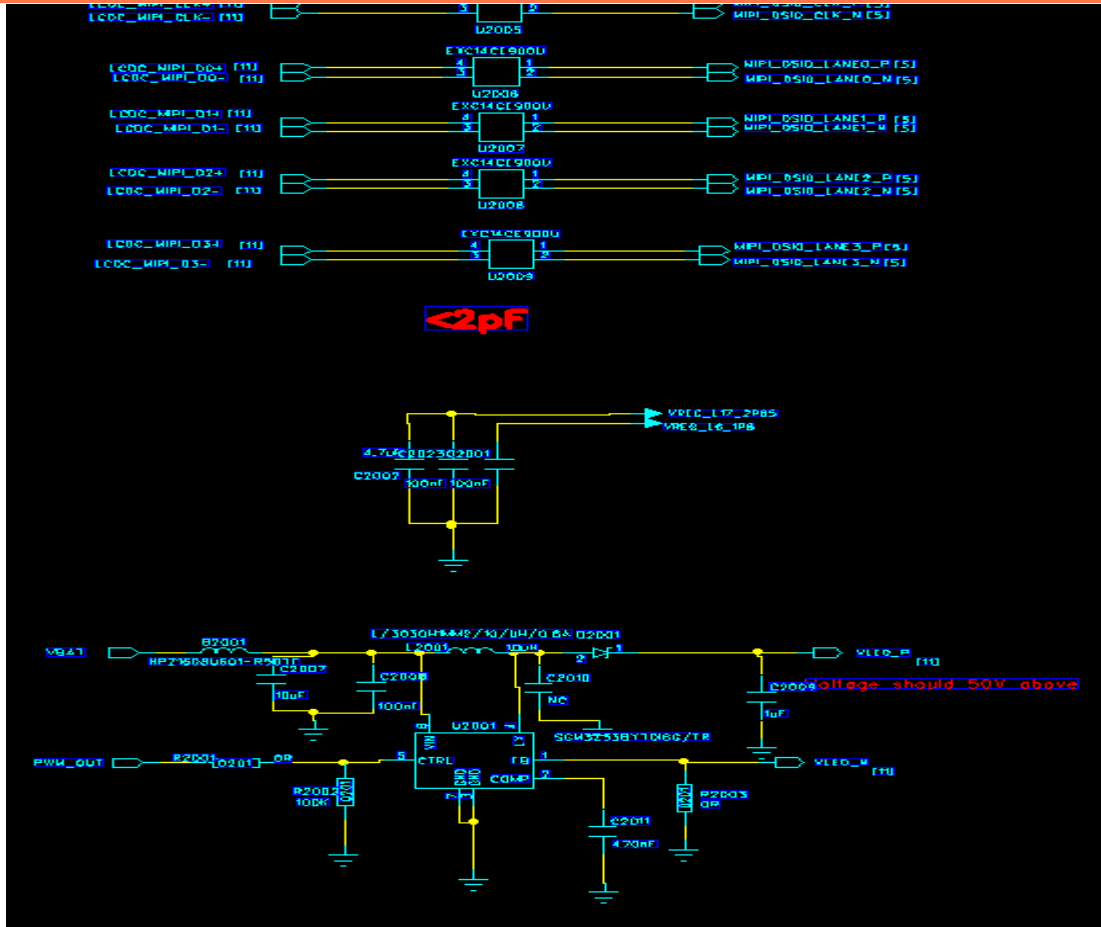
LCD CONNECTOR

2, LCD blurred screen and white screen. Description LCD backlight circuit OK, just shows abnormal. The cause of the malfunction is usually: 1) LCD connector poor contact, poor welding and fixture poor contact 2) related components Weld or even tin short circuit 3) software problems

3. LCD black spots, bright spots, black lines, stripes Failure: LCD ontology bad.

3.2.5 FM

The CPU controls FM IC working condition through the I2C signal, when FM is working, should insert headphone as its antenna. FM outputs audio signal to the CPU Codec, amplify playing or record. FM common faults and causes:

1, FM cannot search frequency or less frequency reason: 1) headphone without inserting or not insert good 2) surrounding environment is bad, such as plant, garage, etc. FM signals itself is weak or no FM signals source 3) FM antenna circuit exists poor soldering or short circuit, lead to unable to receive FM signals or FM signals leak 4) software reason

2，FM without sound reasons or murmur 1) this FM radio frequency is invalid 2) FM weak signal 3）related component bad-welding   4) headphone was not put in place; 5) whether headphone socket shrapnel contacts with the mainboard well 6) whether headphone socket welding is OK

3，FM module operation failed. 1）Check whether the I2C and CLK signal are normal or not   2）Software fault

3.2.5 Bluetooth

A5042 (WILEY FOX SWIFT) BT adopts WCN3620 chip. Data transfer interface and audio interface are directly connected to the CPU. Common failures are:

1, Bluetooth function failure, you need to check the Bluetooth is turned on, the Bluetooth Visibility settings are correct. The Bluetooth power supply and clock circuit the existence of the phenomenon of short circuit or Weld.

2, Bluetooth effective distance is short, easily disconnected. Need to check whether Bluetooth antenna circuit soldered or short circuit, Bluetooth antenna and motherboard contact well.
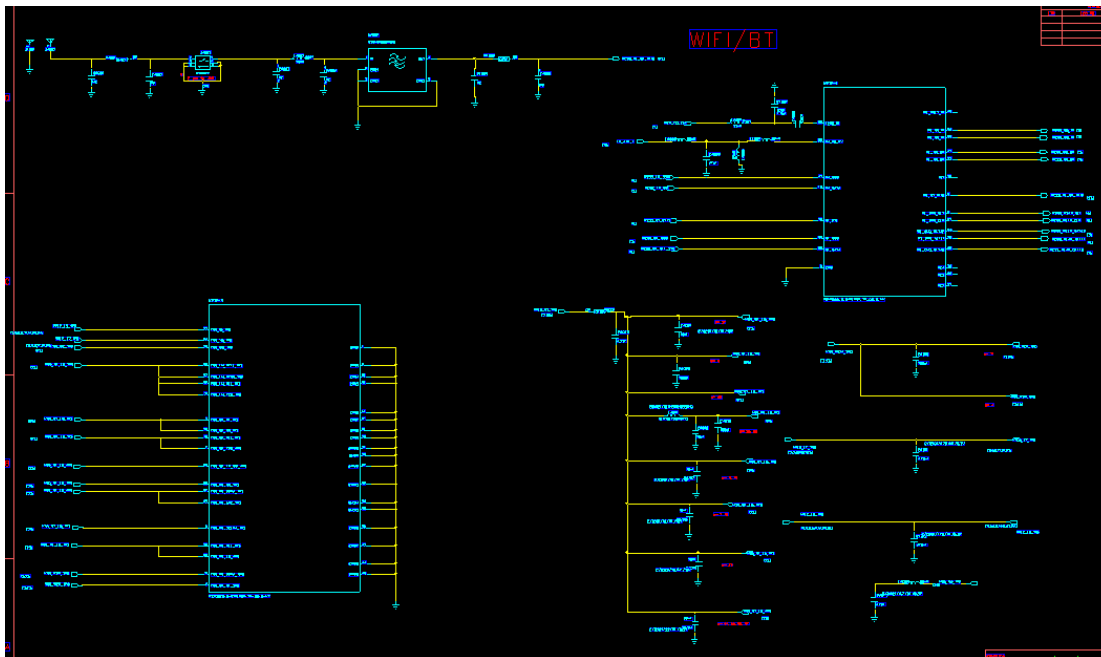
3.2.6 WIFI fault

 WIFI function failure, you need to check the WIFI is turned on, WIFI visibility settings are correct. WIFI power supply and clock circuit whether there is a short circuit or Weld phenomenon.
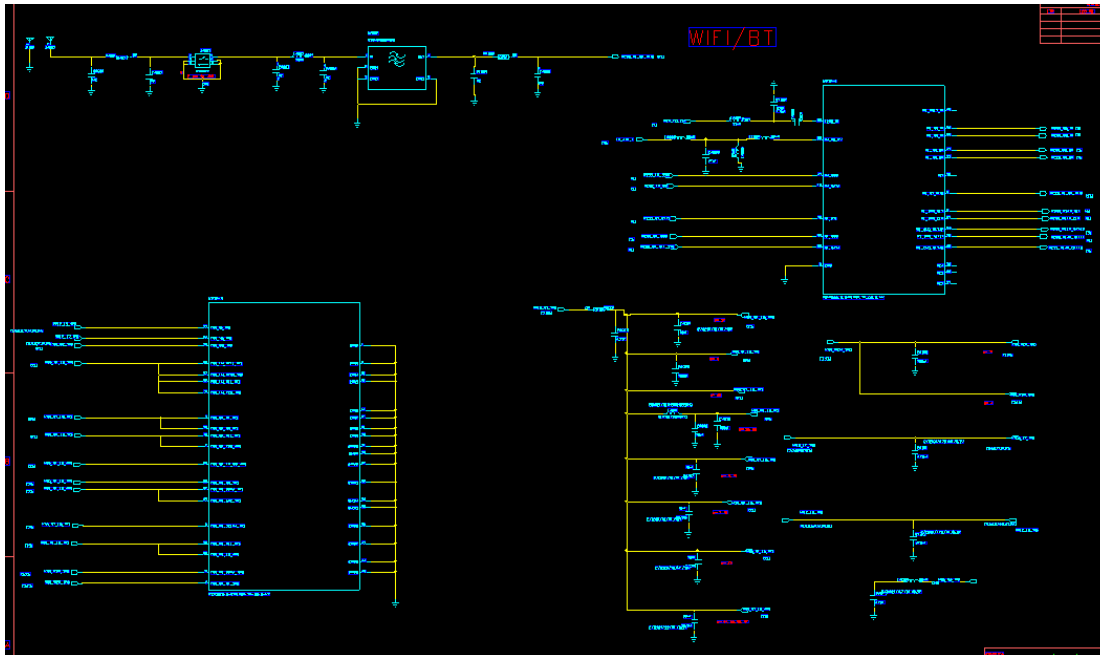
3.2.6 Camera fault

Connect with the CPU through a dedicated Camera IF port. Camera control is done through the I2C bus. Camera common fault and why:

1, Camera initialization failed, could not enter the Camera the main interface. 1) Camera poor welding or poor contact 2) the Camera Ontology failure 3) Camera Power supply is not normal (Weld, or short-circuit led to) 4) related components welding problems

2, Camera Preview shows blurred screen or color is not normal. 1) Camera poor welding or poor contact. 2) related components welding 3) restore the factory settings after restart
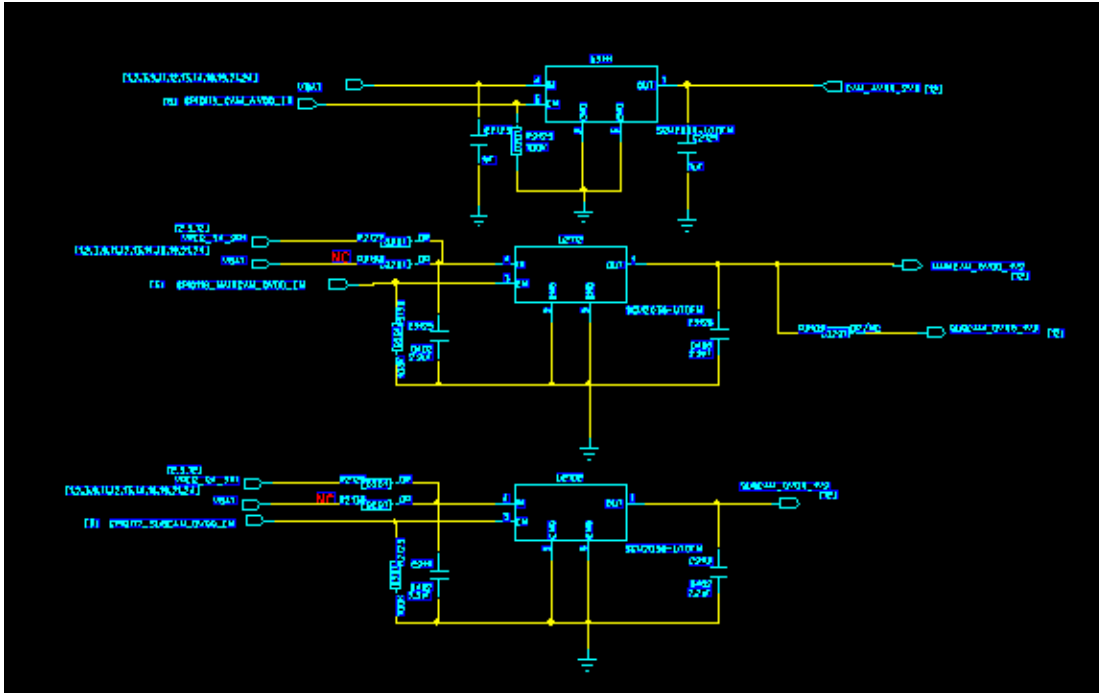
3, Camera other problems, please replace the Camera try to confirm whether the Camera body has problems.

Main camera
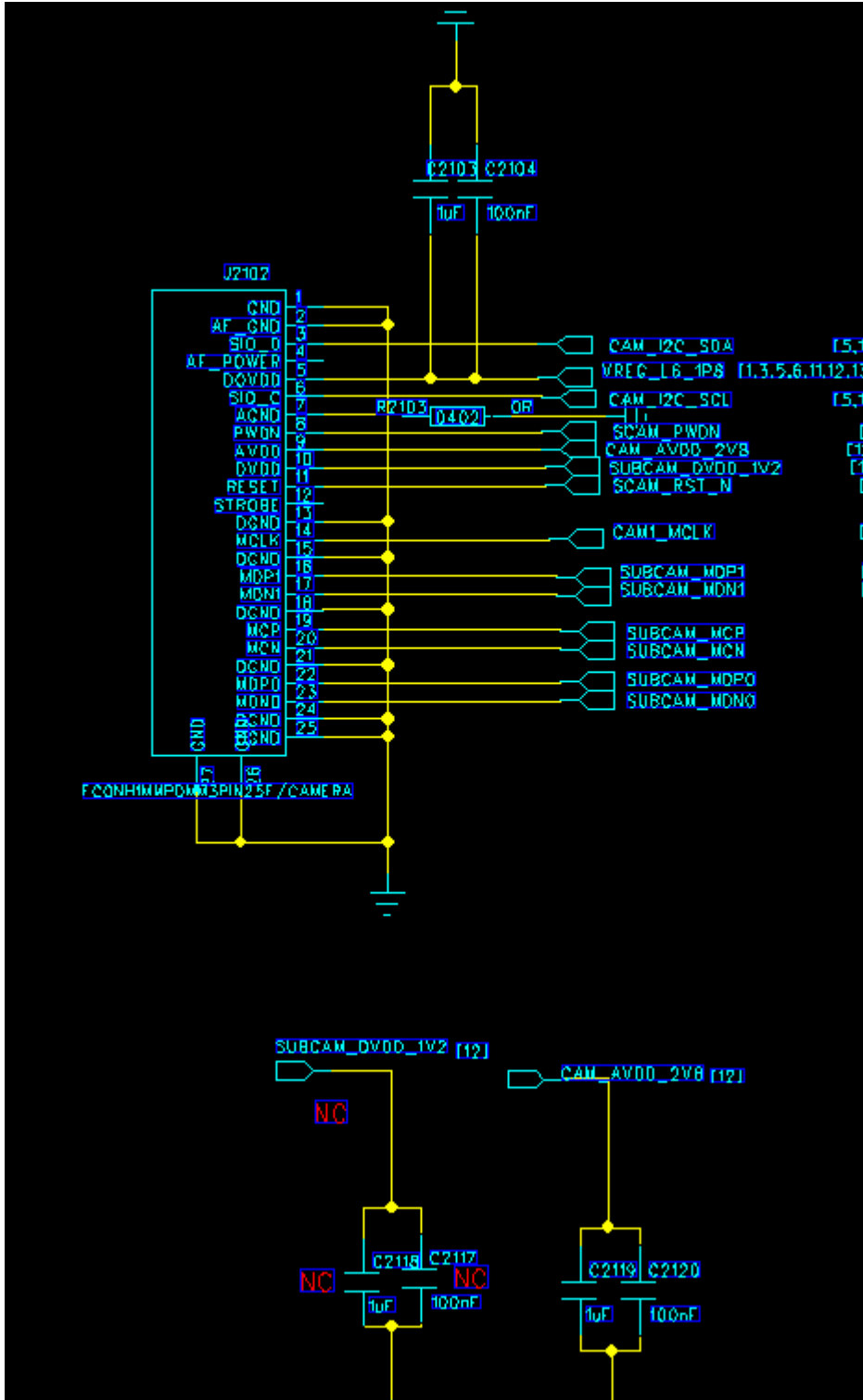
SUB Camera

Camera power supplier

3.2.7 USIM card failure

A5042 (WILEY FOX SWIFT) USIM card module circuit is connected directly with SOC and PMIC through eight-path signal from SUIM slot. The major failure of the module does not know the card, the reason usually: 1) USIM card GSM card and USIM deck poor contact 2) poor USIM card socket welding 3) software problem cause the phone to pick a card, change the card to confirm. 4) USIM card holder exist Weld; 5) card exceeds the itinerary or inserted upside.


USIM card circuit
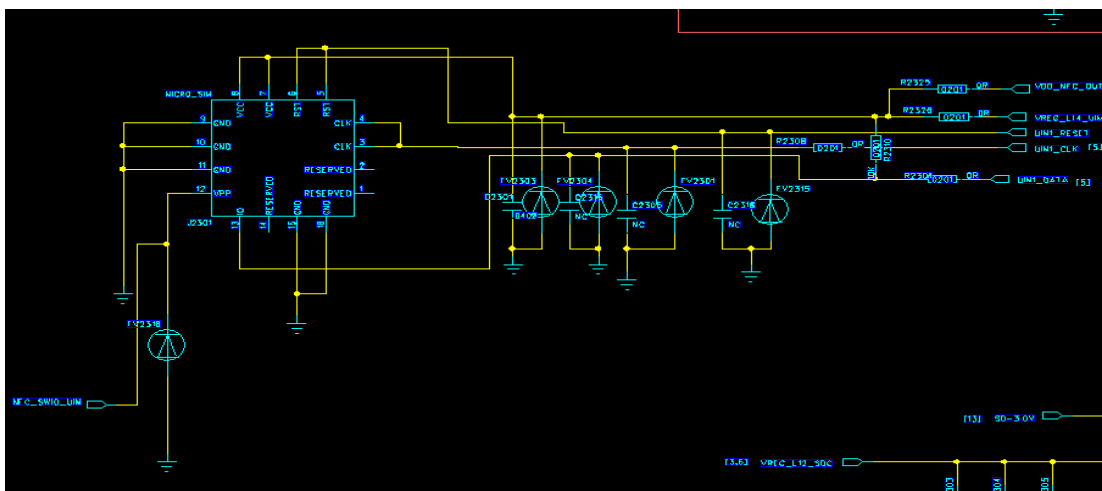
3.2.8 Motor test is invalid

A5042 (WILEY FOX SWIFT) adopts motor, with simple circuit. As shown below. Common motor failures and the reasons are:

1, the motor without vibration 1) motor and motherboard contacted poor 2) motor body bad 3) D1703 on the short circuit 4) whether the FPC installed partial

2, the motor was felt as weak 1) motor ontology bad) the cause of the software settings

3 motor vibration sometimes 1) motor and motherboard poor contact
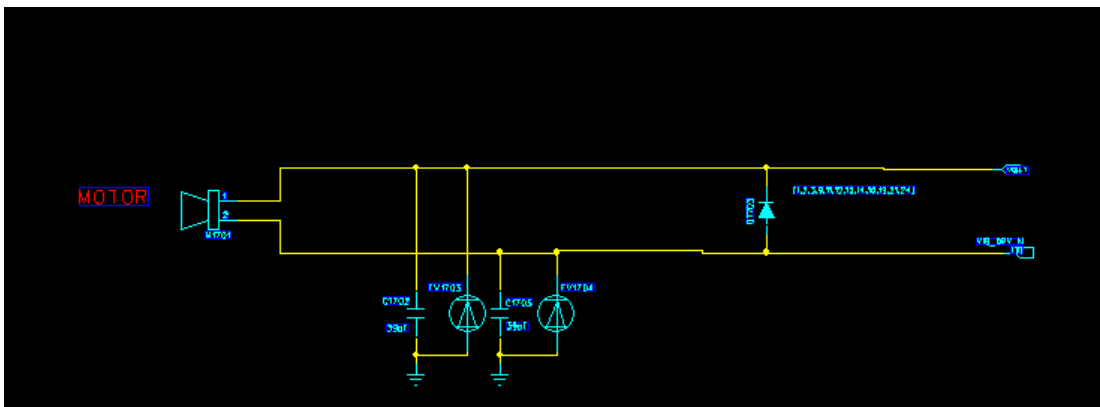
### 3.2.9 Gravity Sensor& M Sensor

A5042 (WILEY FOX SWIFT) Gravity Sensor& M Sensor circuit is very simple, Power offer power to the Sensor IC power, I2C bus transfer command and data. Gravity Sensor& M Sensor faults and the reasons:
1, Sensor without functions: whether the paster is OK
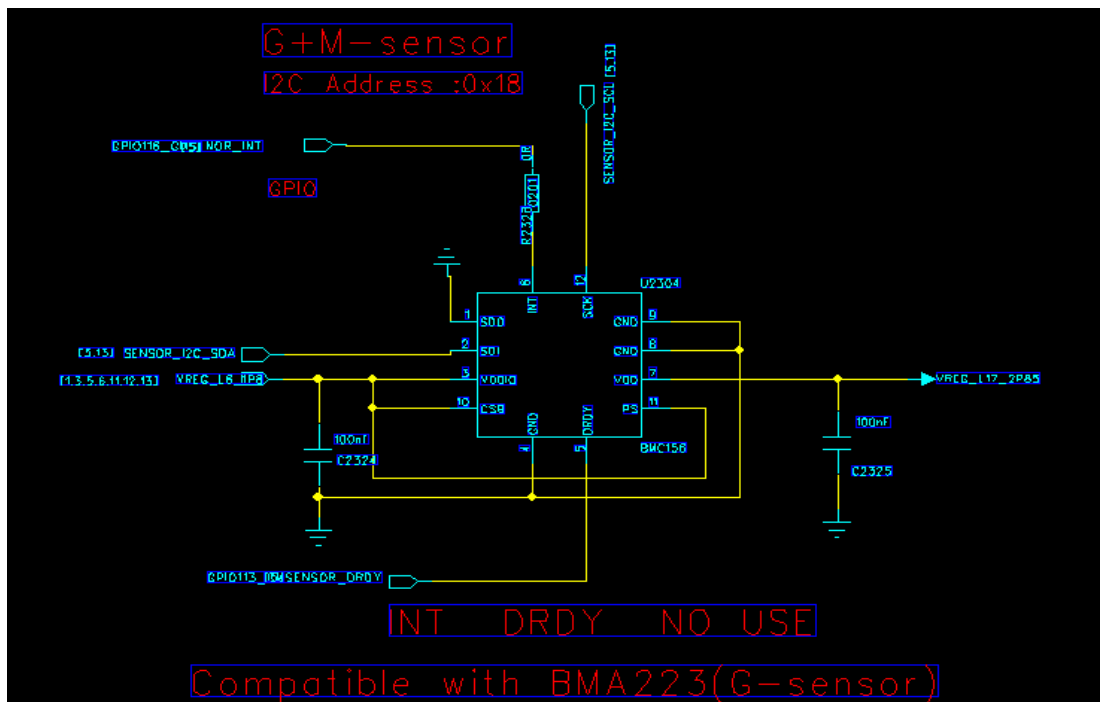
3.2.10 Gyroscope Sensor

A5042 (WILEY FOX SWIFT) Gyroscope Sensor circuit is connected with CPU through the special I2C, circuit
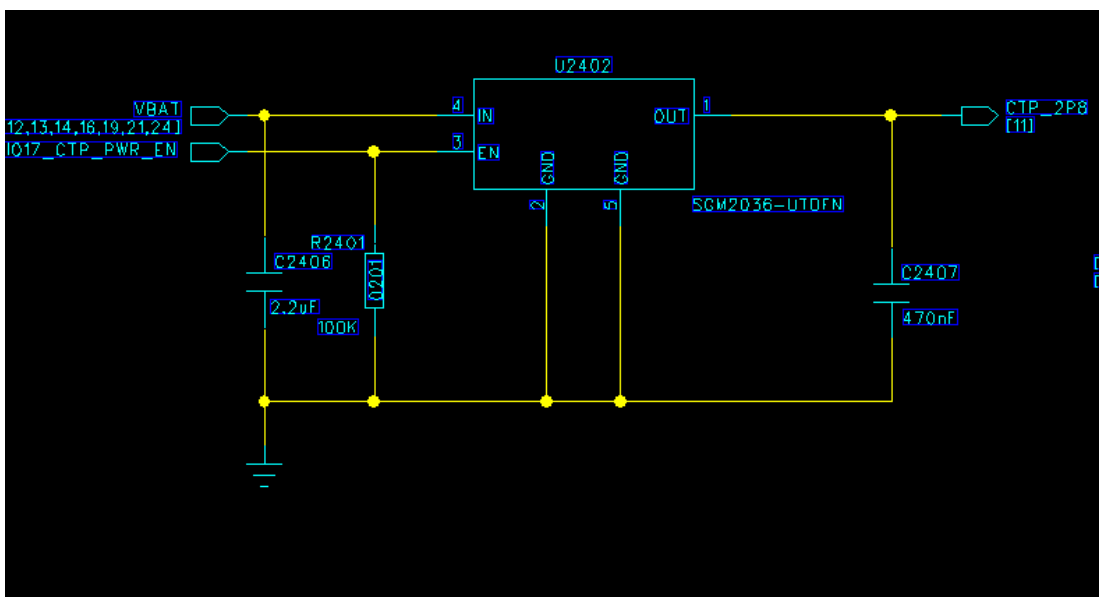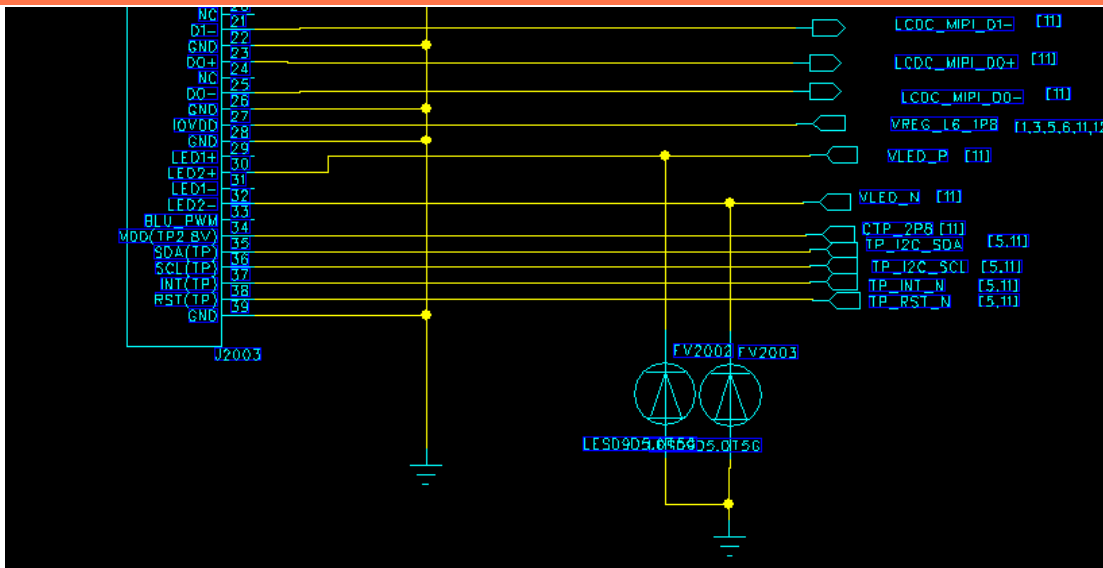
diagram shown below.
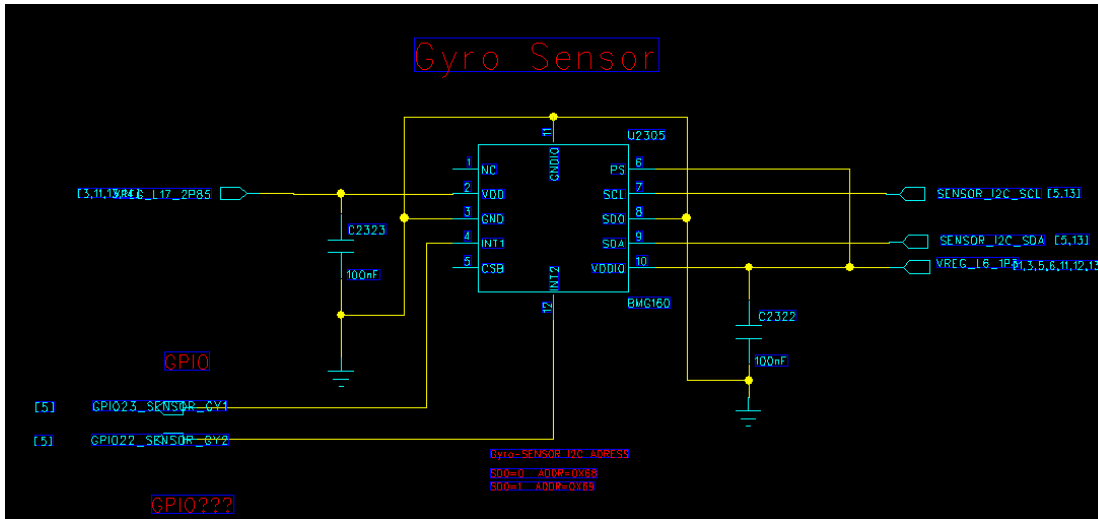
Gyroscope **circuit**

3.2.11Touch Panel function

Touch Panel common fault and reasons are:

1. The Sensor sensitivity low, slow reaction: software problem;

4. Touch Panel function NG, at present is mainly due to FPC itself partial long cause, the I2C initialization failed;

TP circuit

3.2.13 Cannot boot failure

Can't boot failure is the phone fault with highest probability of occurrence. Software problems, welding problem, device failure is the main factor causing failing to boot. Maintenance process can cooperate with LCD and startup current, as well as the keyboard and so on to orientate approximately.

1, Power off leak current is large. The main failure reason is VBAT connected components had to earth short circuit problem. Usually radio frequency PA burned or welding problem cause. The simpler method is looking for is a hot devices, general such devices have larger may on short circuit.

2, Boot without current, LCD no display, keyboard, etc not bright. 1) boot key SMT bad 2) battery connector bad contact (through the plug charging machines)

3, Crashed when boot, 1）can try to re-download the software, 2）replace memory

4, Current is large when boot. LCD displays normally, even can enter the IDIE interface, single board is very hot 1) The individual power circuit short circuit to ground phenomenon exists in the phone, which is usually the problem that ESD protective devices of module circuit breakdown short circuit to ground or weld problems.