97055 Service Manual

V1.0

Prepared by		Date	
Reviewed by		Date	
Approved by		Date	

Revision record

Date	Revision Version	Revision Cause	Section Number	Change Description	Author

Contents

Product Specifications

Item		Specification
Dimensions (L × W × H)		126.8*65*10mm
Shape		PDA
Antenna		Built-in
Charger		5 V
Battery	1350 mAh Li-ion	Standby time: About 150 hours (depending on network conditions) Talk time: About 10 hours (depending on network conditions)
Screen	Resolution	480 × 800 pixel
	LCD type	WVGA
	Colors	1670K
	LCD size	4 inches
Interfaces	Charger interface	Micro-USB port
	Data cable interface	Micro-USB port
	Micro-SD card interface	Micro-SD card interface
	Headset jack	3.5 mm in diameter

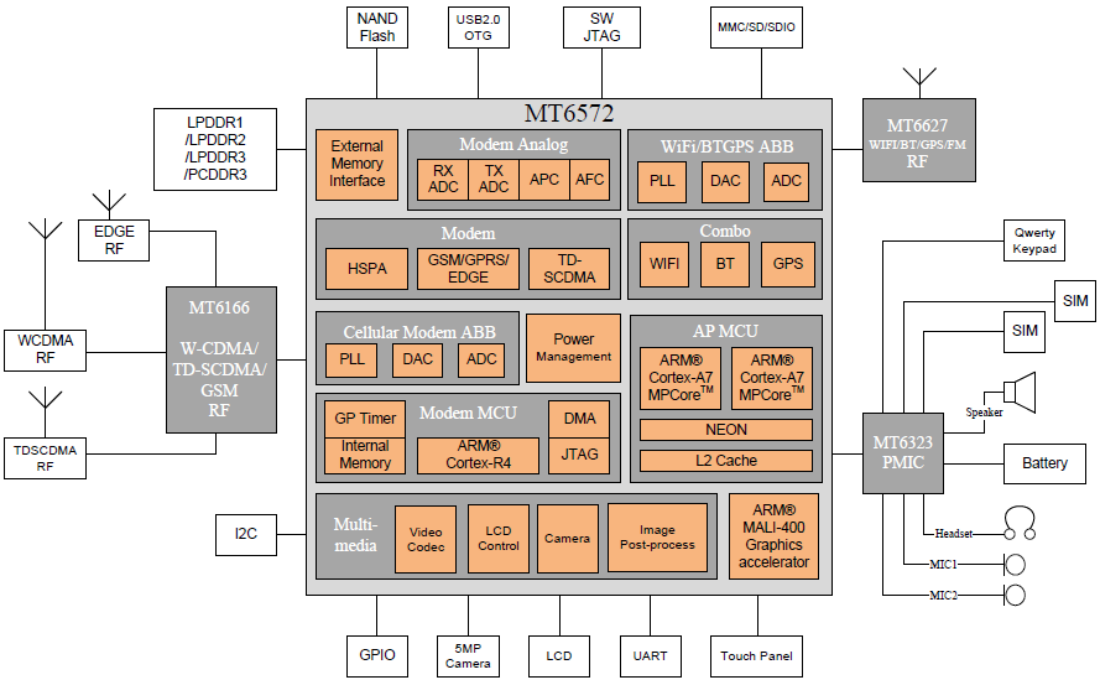
1 Maintenance Tools

	Name: Constant-temperature Hot Air Gun Purpose: Heat component.
	Name: Constant-temperature Hot Air Gun Purpose: Heat component.
	Name: Soldering Iron Purpose : Repair soldering
	Name: DC Power Supply Purpose: Supply voltage and current.
	Name: Soldering Station Purpose: Fix main board.
	Name: Pb-free Solder Wire Purpose: Join component.
	Name: Digital Multimeter Purpose: Service measure

	Name: Oscilloscope Purpose: Service measure
	Name: Tool kit Purpose : Assemble and Disassemble tool
	Name: Electronic Screw Driver Purpose : Assemble and Disassemble tool

2 Principle Instruction and Trouble shooting

2.1 System Module Block Diagram



MT6572 is a highly integrated baseband platform incorporating both modem and application processing subsystems to enable 3G smart phone applications, with integrated Bluetooth, WiLAN and GPS modules. The chip integrates a Dual-core ARM® Cortex-A7 MPCoreTM operating up to 1.2GHz, an ARM® Cortex-R4 MCU and a powerful multi-standard video accelerator. MT6572 supports various interfaces, including parallel/serial NAND flash memory and 32-bit LPDDR2 for optimal performance, and supports booting from SLC NAND or eMMC to minimize the overall BOM cost. In addition, an extensive set of interfaces and connectivity peripherals are included to interface to cameras, touch-screen displays, MMC/SD cards.

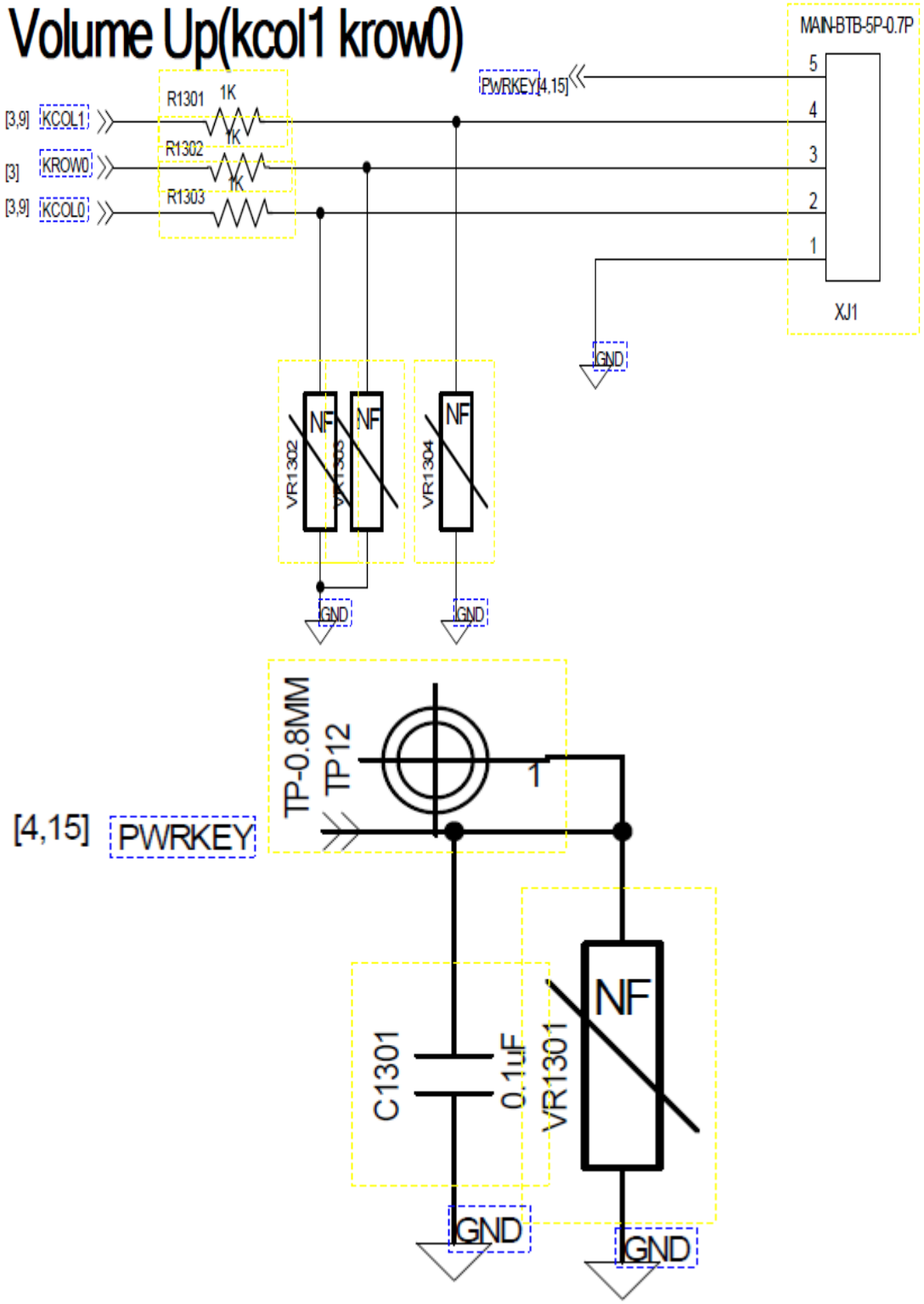
The application processor, a Dual-core ARM® Cortex-A7 MPCoreTM which includes a NEON multimedia processing engine, offers processing power necessary to support the latest OpenOS along with its demanding applications such as web browsing, email, GPS navigation and games. All are viewed on a high resolution touch screen display with graphics enhanced by the 2D and 3D graphics acceleration. The multi-standard video accelerator

and an advanced audio subsystem are also included to provide advanced multimedia applications and services such as streaming audio and video, a multitude of decoders and encoders such as H.264 and MPEG-4. Audio supported includes FR, HR, EFR, AMR FR, AMR HR and Wide-Band AMR vocoders, polyphonic ringtones and advanced audio functions such as echo cancellation, hands-free speakerphone operation and noise cancellation.
An ARM® Cortex-R4, DSP, and 2G and 3G coprocessors provide a powerful modem subsystem capable of supporting WCDMA Category 14 (21 Mbps) HSDPA downlink and Category 6 (5.76 Mbps) HSUPA uplink data rates or TD-SCDMA Category 14 (2.8 Mbps) HSDPA downlink, Category 6 (2.2 Mbps) HSUPA , as well as Class 12 GPRS and EDGE.
MT6572 also embodies wireless communication device, including WLAN, Bluetooth and GPS. With four advanced radio technologies integrated into one single chip, MT6572 provides the best and most convenient connectivity solution among the industry. MT6572 implements advanced and sophisticated radio coexistence algorithms and hardware mechanisms. It also supports single antenna sharing among 2.4 GHz antenna for Bluetooth, WLAN and 1.575 GHz for GPS.

2.2 Baseband Subsystem

2.2.1 Startup Principle

- **Block Diagram of startup：**



➢ Circuit Analysis:

The power on principle of MT6323 implement by MTK software,and VBAT voltage diversion to others step power during power on process by PMU

Type	LDO name	Vout (Volt)	Imax (mA)	Application
ALDO	VRF28_1 VRF28_2	2.85 1.8/2.85	200	RF chip
ALDO	VTCXO_1 VTCXO_2	2.8 1.8/2.8	40	13/26MHz reference clock
ALDO	VA	1.82.5	100	Analog baseband
ALDO	VA28	2.5/2.8	40	Audio
ALDO	VCAMA	1.5/1.8/2.5/2.8	200	Analog power for camera module
DLDO	VAST	0.9/1.0/1.1/1.2	300	AST core power
DLDO	VIO28	2.8	400	Digital IO
DLDO	VSIM1	1.2/1.3/1.5/1.8/2.5/2.8/3.0/3.3	200	1st SIM card
DLDO	VSIM2	1.2/1.3/1.5/1.8/2.5/2.8/3.0/3.3	200	2nd SIM card
DLDO	VUSB	3.3	200	USB
DLDO	VGP1 VGP2/VGP3/VGP4/VGP5/VGP6	1.2/1.3/1.5/1.8/2.5/2.8/3.0/3.3	400 200	General purpose LDO1, 2, 3~6
DLDO	VEMC_1V8	1.2/1.3/1.5/1.8/2.5/2.8/3.0/3.3	200	1.8V EMMC
DLDO	VEMC_3V3	3.0/3.3	800	3.3V EMMC
DLDO	VMC	1.8/3.3	200	SD 2.0/3.0 memory card
DLDO	VMCH	3.0/3.3	800	SD 3.0 memory card
DLDO	VIBR	1.2/1.3/1.5/1.8/2.5/2.8/3.0/3.3	200	Vibrator
RTCLDO	VRTC	1.8/2.0/2.1/2.8	2	Real-time clock

➢ Description of the Signals in the Circuit Diagram in This Section:

Signal Name	Functional introduction	Reference value or waveform chart
VBAT	Main supply source	Range:0-4.2V
PWR_KEY-1	Power ON/OFF signal	Range:0-4.2V
X1	26MHZ clock	

➢ Phone can't power on trouble shooting:

I. PCBA no power on

Observe the current change status when the external power supply steadily gives the output to PCBA .Also, the external power supply can display output voltage and current .The external power supply exports about 4.0V voltage, 2.0A current, check:

1. If the current value is about 10mA, the clock don't work normally .Check the major clock Crystal X600，BBIC U101，Flash（U402），and peripheral electronic component, whether empty soldering or not ， conjoint soldering，stability of power supply。Check the input and output range value of 26MHz clock, the aberrance state of wave shape, the state of frequency 。When push power key or plug charger, observe the input wave with oscillograph , is regular 26MHz sine wave or not，and follow output clock wave is regular or not，no too anomalous burr 26MHz sine wave. If the shape of wave is not regular ，then adjust the RF circuit ，also check the state of incidental circuit ，the working state of component ，by clock input become normal and steady 。

2. If the current value is about 20mA, then the software may have some problem， need download software to test。If the current keep in the value about 50mA or over 80mA, then the BBIC may be broken or soldering failure.

3. If the current value is about several hundred milliampere ，the over current protection will be opened，please check these components of connecting VBAT ， with multimeter check the VBAT to ground and VCHARGE to ground ,whether there is short circuit or not . If there is short circuit ， first check those associated components of ESD protection circuit ， second analyses those associated components of VBAT network ,whether there is short circuit or some components are broken or not . The analyzing rule is from easiness to difficulty ，so resolve these problems that can be analyed easily .

II. Handset can't power on analysis

1. power key can't power on ：

First , take out battery , use outside DC power supply to charge the handset ,and pull power key , according to variety state of handset current , and analyses the reason ：

If the current has no any variety ，then power key may be failure , should check contact state of power key , may check the state of FPC keyboard 。

If the current has obvious variety , but no any direction of power on ,for example ，keyboard LED shining , booting ring and so on ， then exclude the reason of software causing .Download software again ,if can’t resolve the problem , then check these main chip ,whether empty soldering or not ,BBIC and FLASH may be broken or soldering failure.。

If the current has several hundred milliampere, first, check the soldering assembly component ,for example , LCD, speaker , keyboard link FPC and so on , confirm these components whether soldering state well or not . Whether there exist short circuit or not . If can’t resolve the problem ， please repair in trouble flow of PCBA .

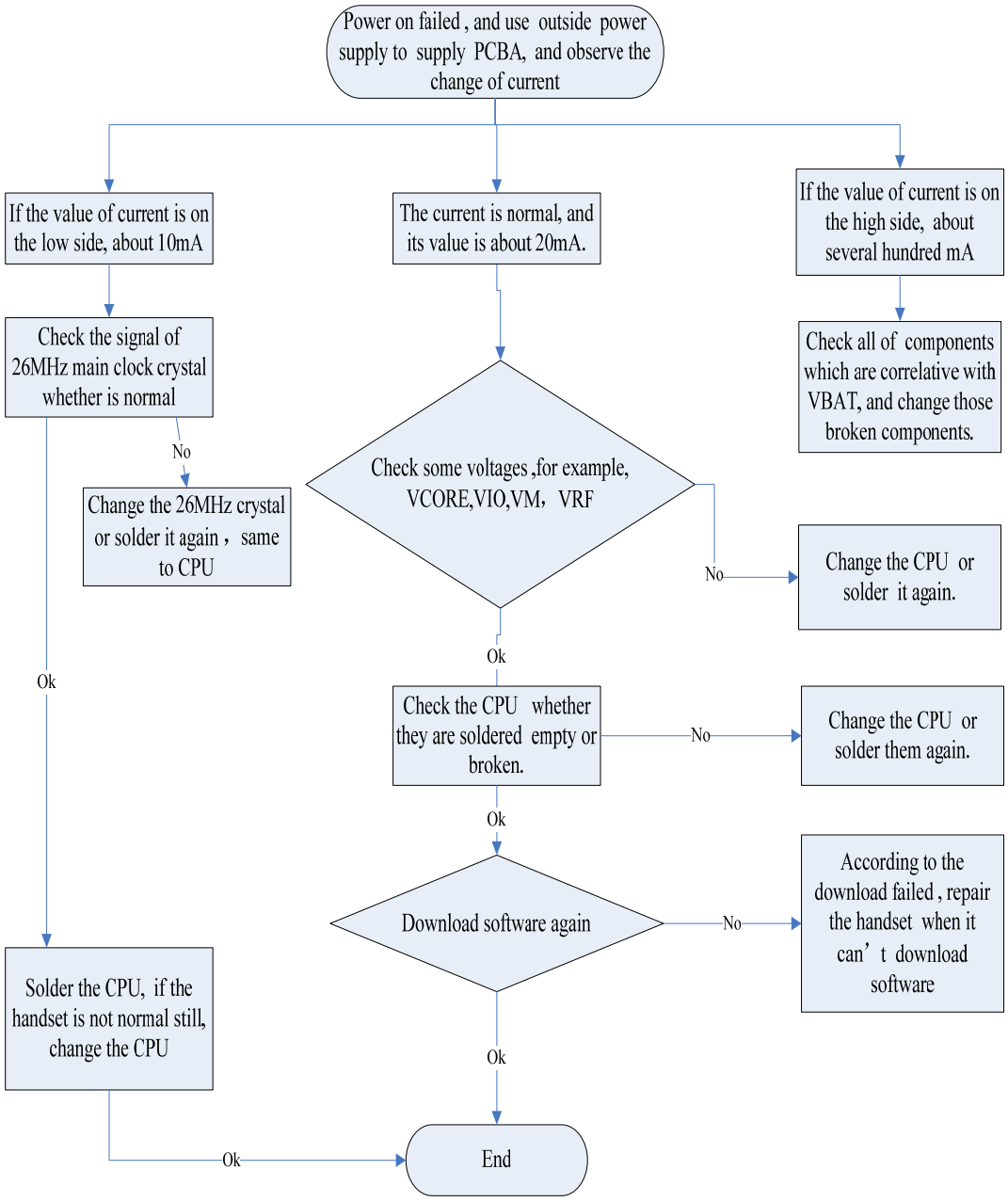
No power on of plugging in charger ：

If connect charger to handset with battery , there is no any response and no any display charging ， then first check the contact state of battery with SIM connector . If no any problem, then use a outside power supply to charge handset, and observe the state of current. If the outside power supply has no current output, first please check the soldering state of USB pin with main board, then check the working state of power management component, finally charge power circuit in the BBIC may be broken, need to be changed.

If Power on handset，then it dead or power off automatically：

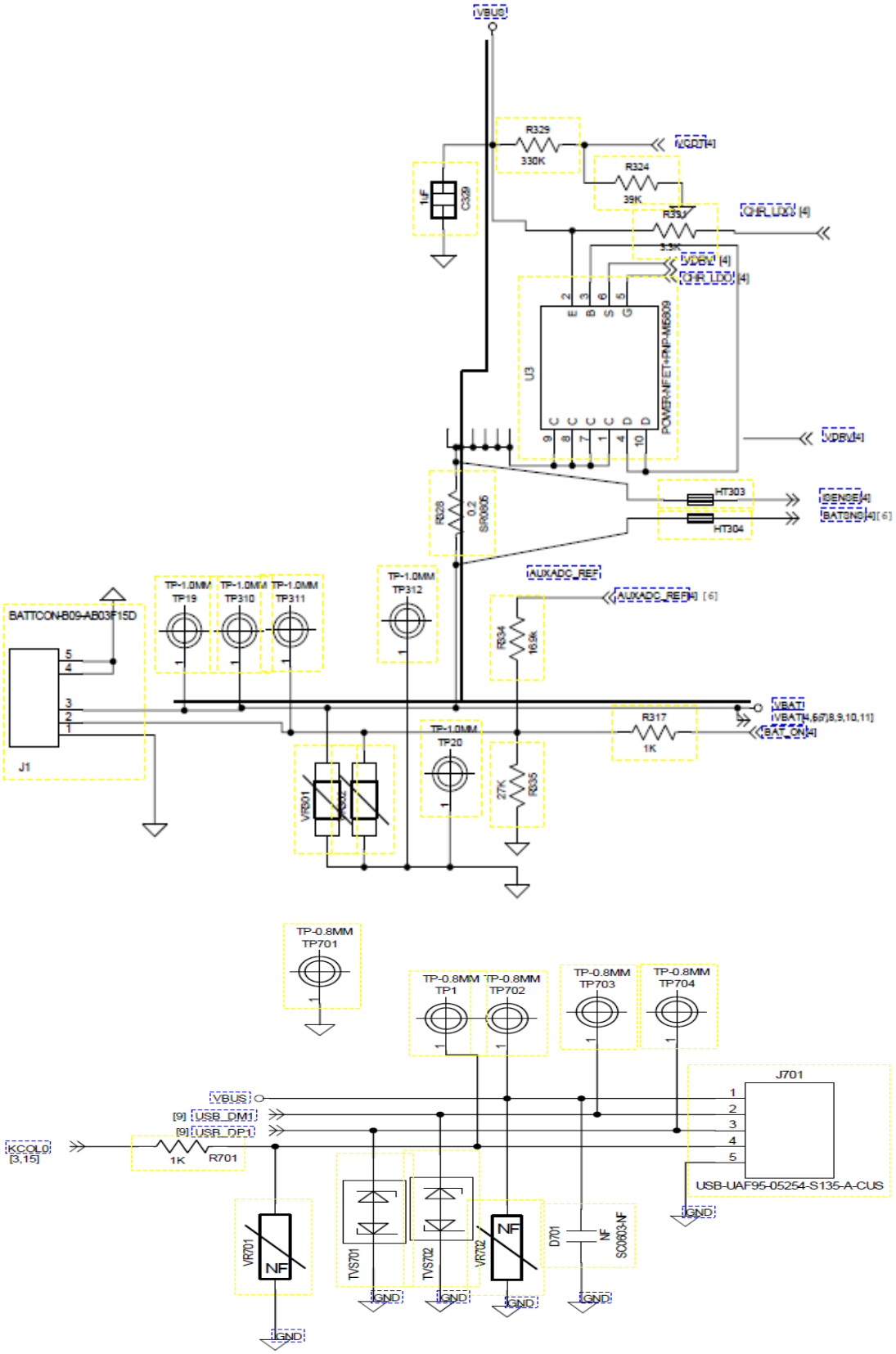
First check the outside power supply whether be restricted current or not，adjust to equal position and test again .

If use one enough strength battery to power on, then check the content of battery is enough or not. If the battery is normal，then handset can power on over 3.7V and work stably。Also, handset will become dead when it power on to play tone, may the soldering point of speaker become a short circuit with ground in the board . Also ,LCD，MIC etceteras outside components bad soldering will cause dead , or power off automatically . According to the bad components , check it one by one。If can’t found the fault，then analyses。


Power on failed , and use outside power supply to supply PCBA, and observe the change of current
If the value of current is on the low side, about 10mA
The current is normal, and its value is about 20mA.
If the value of current is on the high side, about several hundred mA
Check the signal of 26MHz main clock crystal whether is normal
No
Change the 26MHz crystal or solder it again , same to CPU
Check some voltages ,for example, VCORE,VIO,VM, VRF
No
Change the CPU or solder it again.
Check all of components which are correlative with VBAT, and change those broken components.
Ok
Ok
Check the CPU whether they are soldered empty or broken.
No
Change the CPU or solder them again.
Ok
Download software again
No
According to the download failed , repair the handset when it can't download software
Solder the CPU, if the handset is not normal still, change the CPU
Ok
End

2.2.2 Charging Management Circuits

- **Block Diagram of charging:**

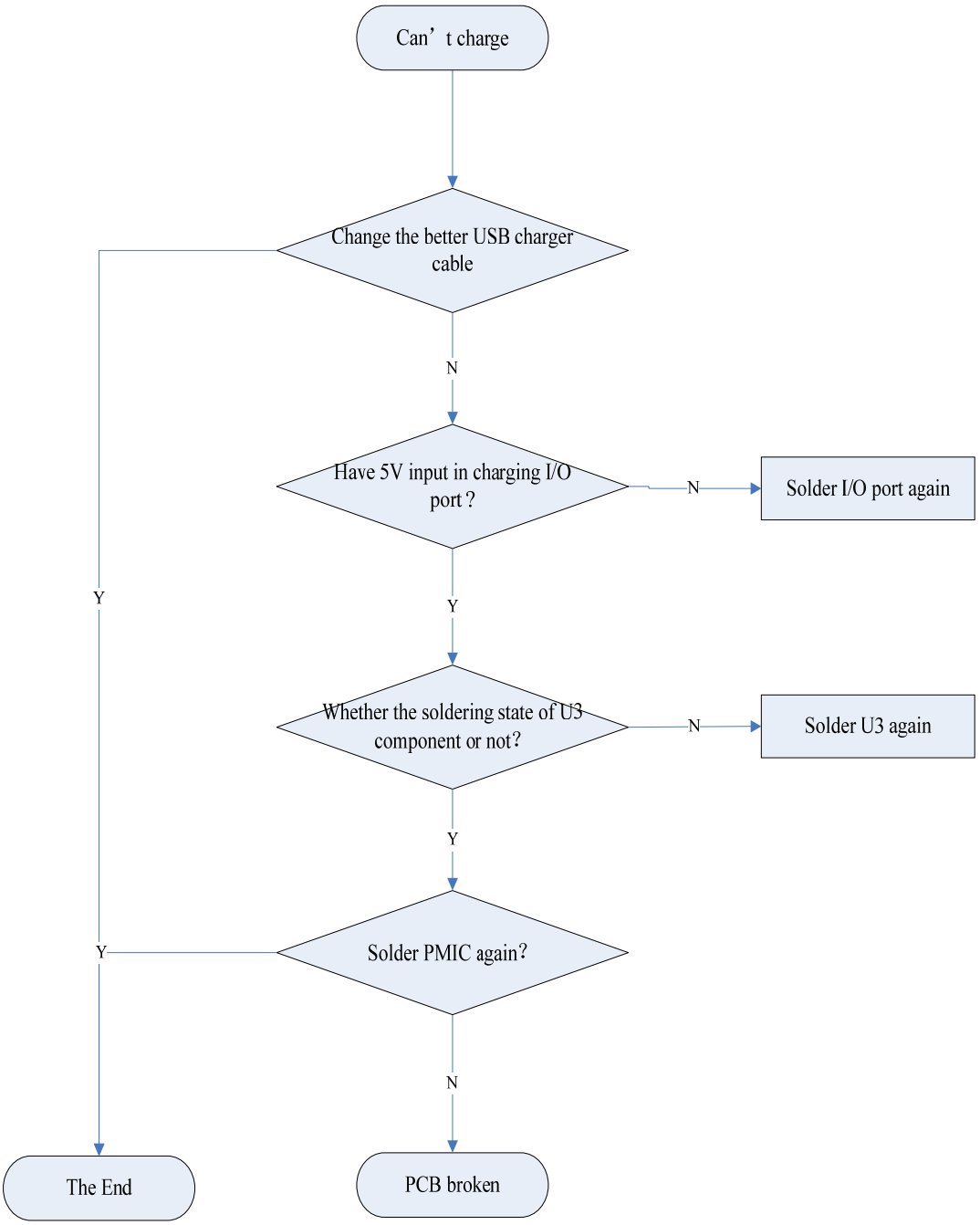


➢ Circuit Analysis:

The MT6323 integrate the charger control circuit. When inserting the charging adapter, VCDT detect high level, and start the charging program, VDRV output low level, then drive the MOSFET U311 to charge the battery.

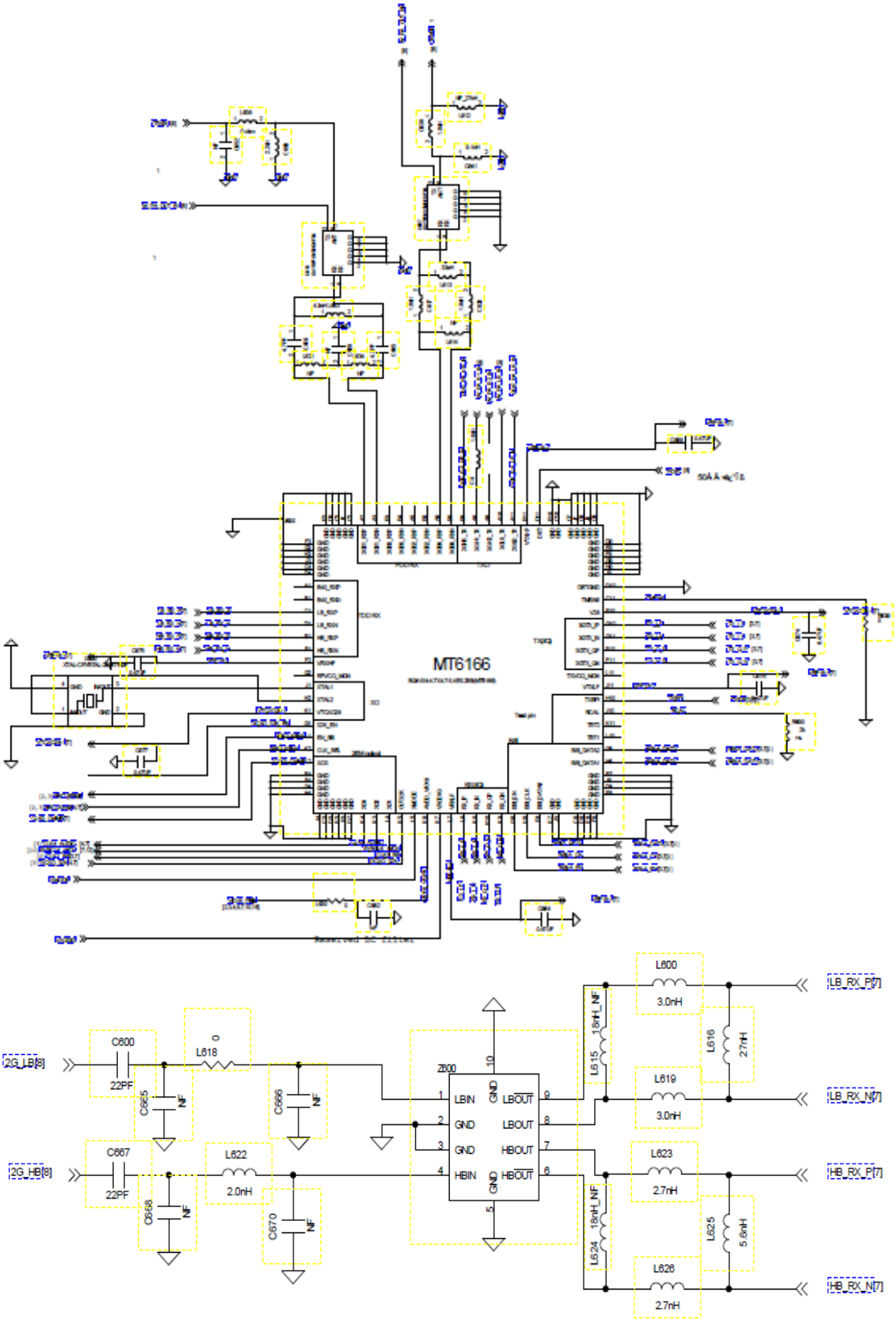
➢ Troubleshooting:

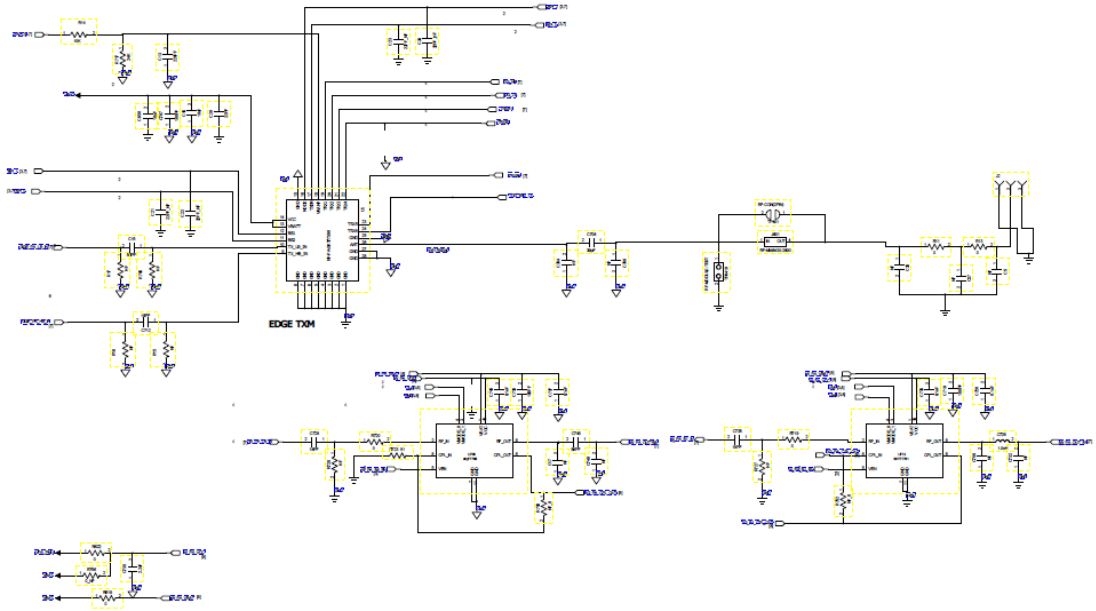
The main reason of can't charge is I/O port connecting failure，the detailed reason is I/O port empty soldering or connecting soldering ； and the 5pin I/O port of Micro USB connector cable loosen possibly which maybe cause connect bad , may change a USB connector cable, the detail repair flow in the following chart ：



2.3 RF Subsystem

Block Diagram of display：

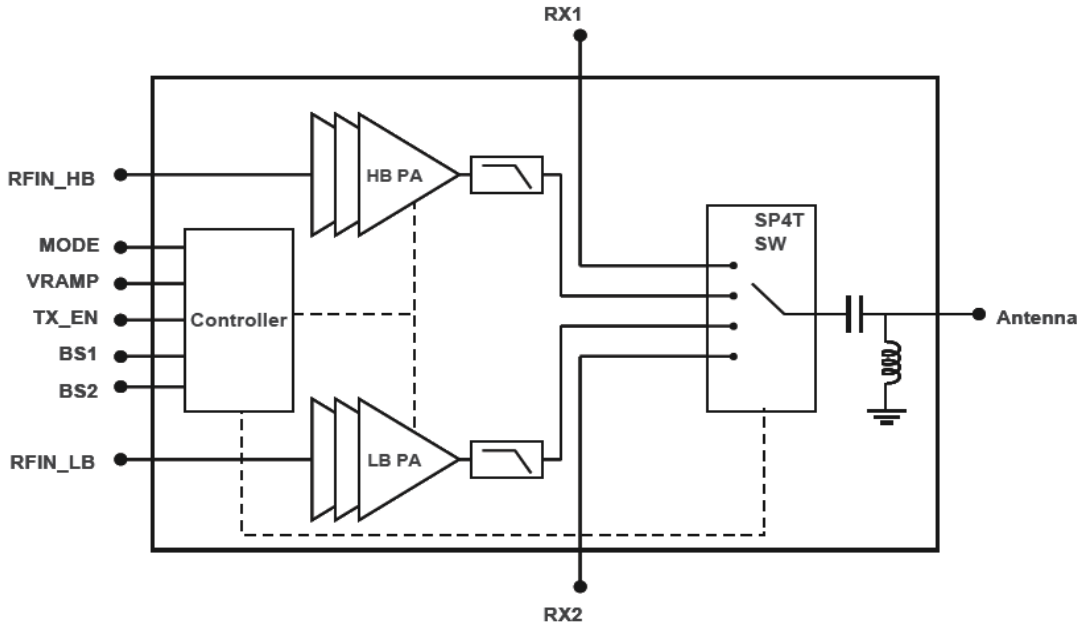




➢ Circuit Analysis

This circuit shows the transmitter and receiver path of GSM/ GPRS/ EDGE/WCDMA. The RF signal which is amplified by RF PA transmits to antenna through antenna swith and than transmits to the air. R3, R4, C626, C627 make up of the antenna matching circuit.

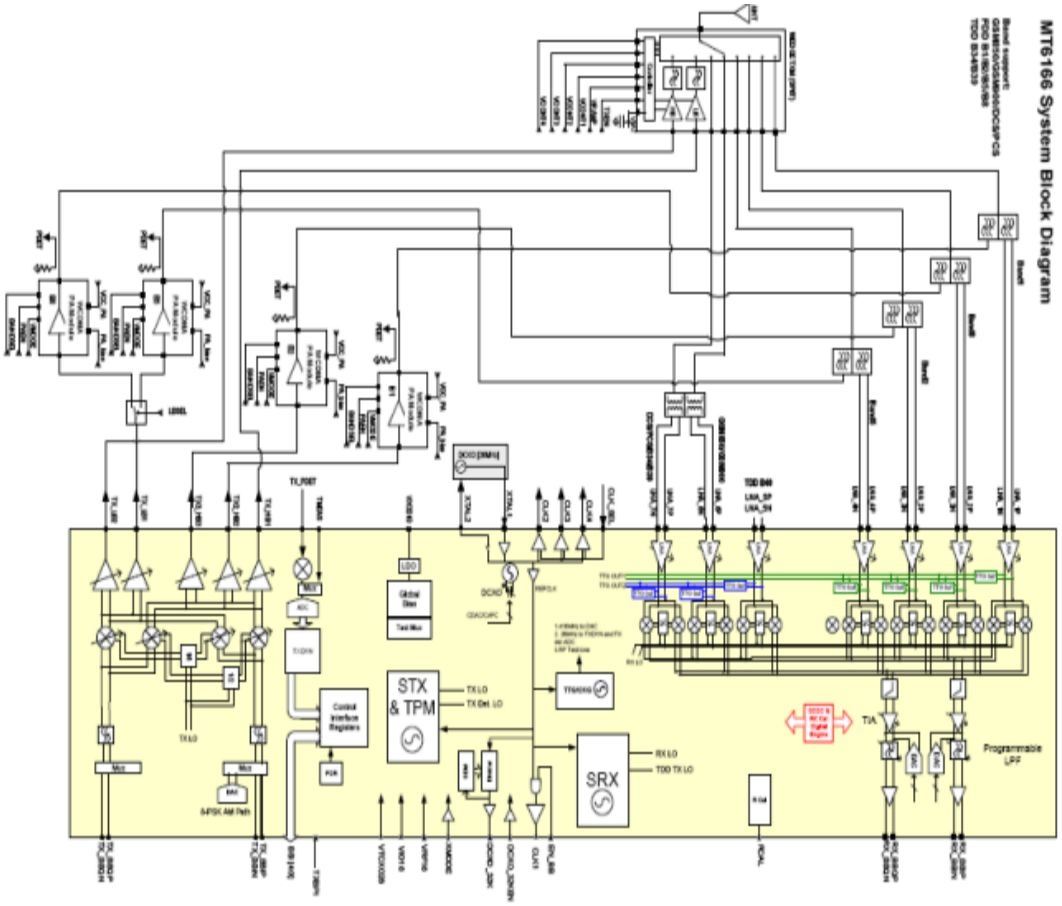
When receiver , the antenna receiver the RF signal, and then demodulated by MT6616 after band filter



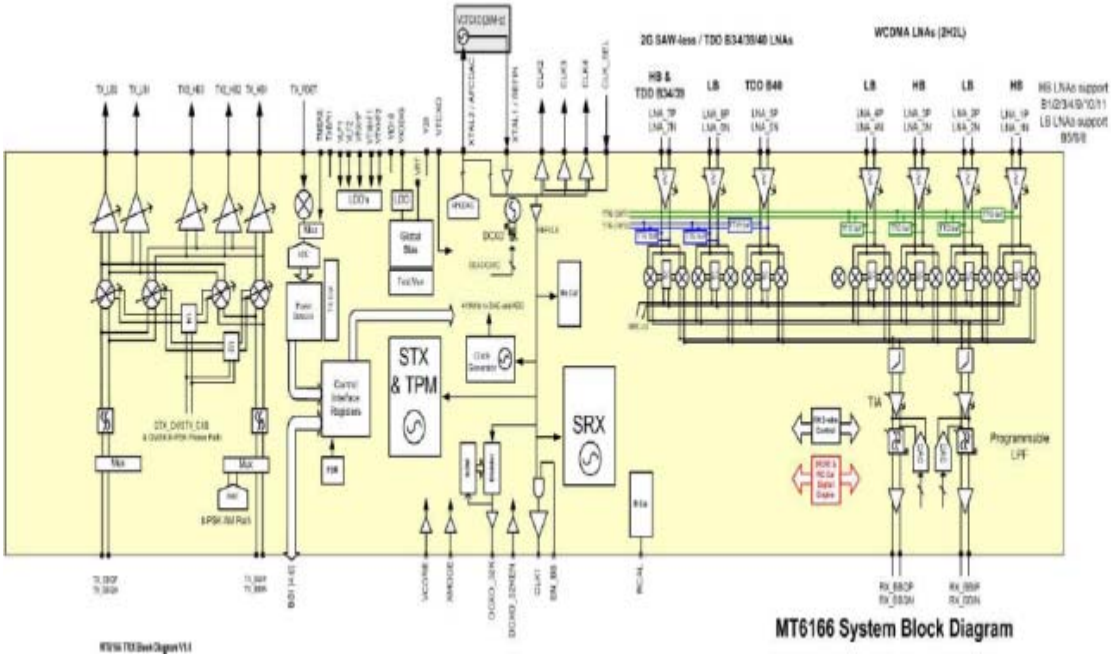
GSM PA AP6682 Functional Block Diagram

MODE	TX_EN	MODE	BS1	BS2
Standby	0	0	0	0
RX1	0	1	0	0
RX2	0	1	1	0
LB_GPRS	1	0	0	1
HB_GPRS	1	0	1	1

GSM PA SKY77589 Mode Control Logic



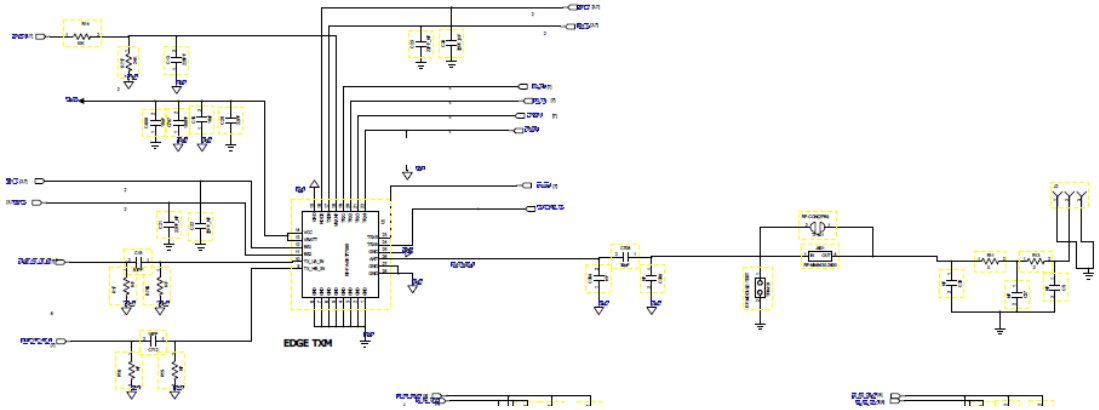
MT6166 Applications Diagram

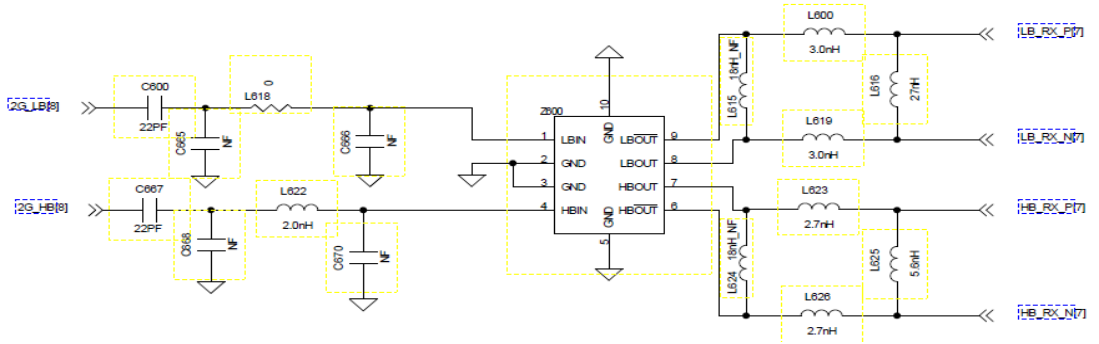


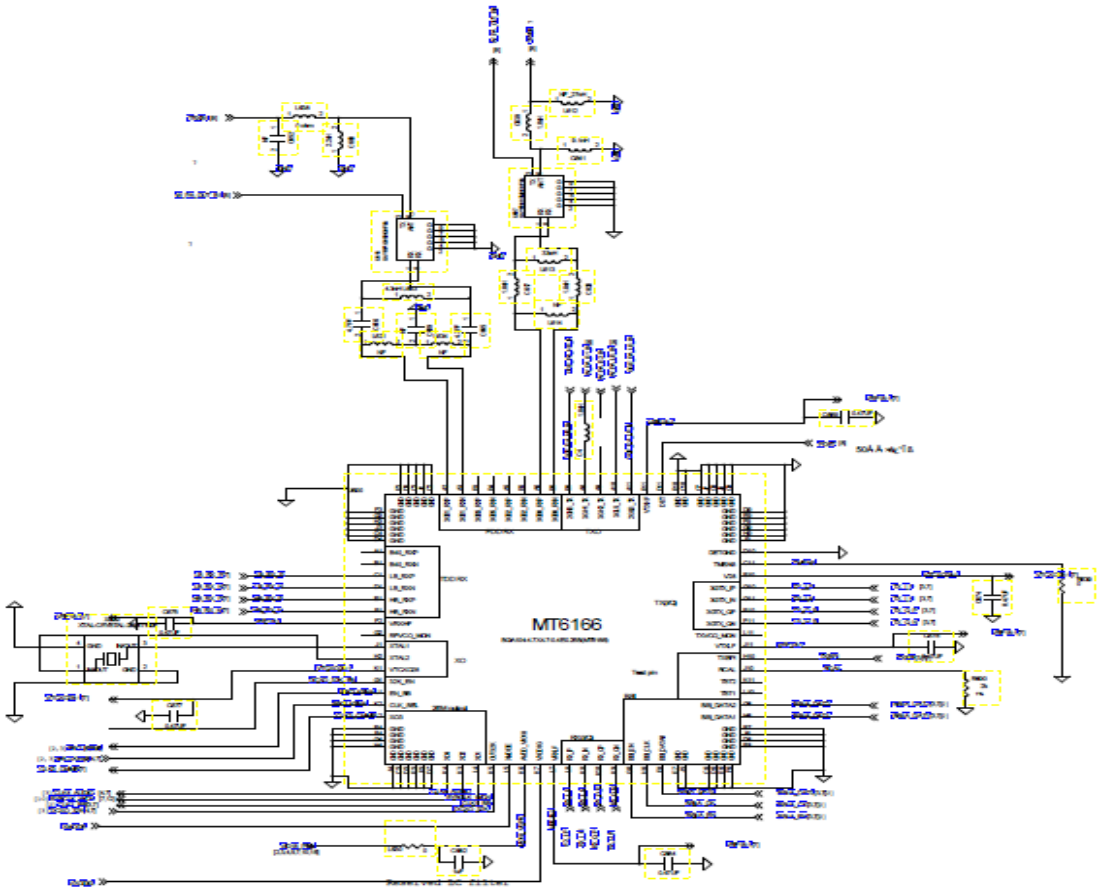
MT6166 System Block Diagram

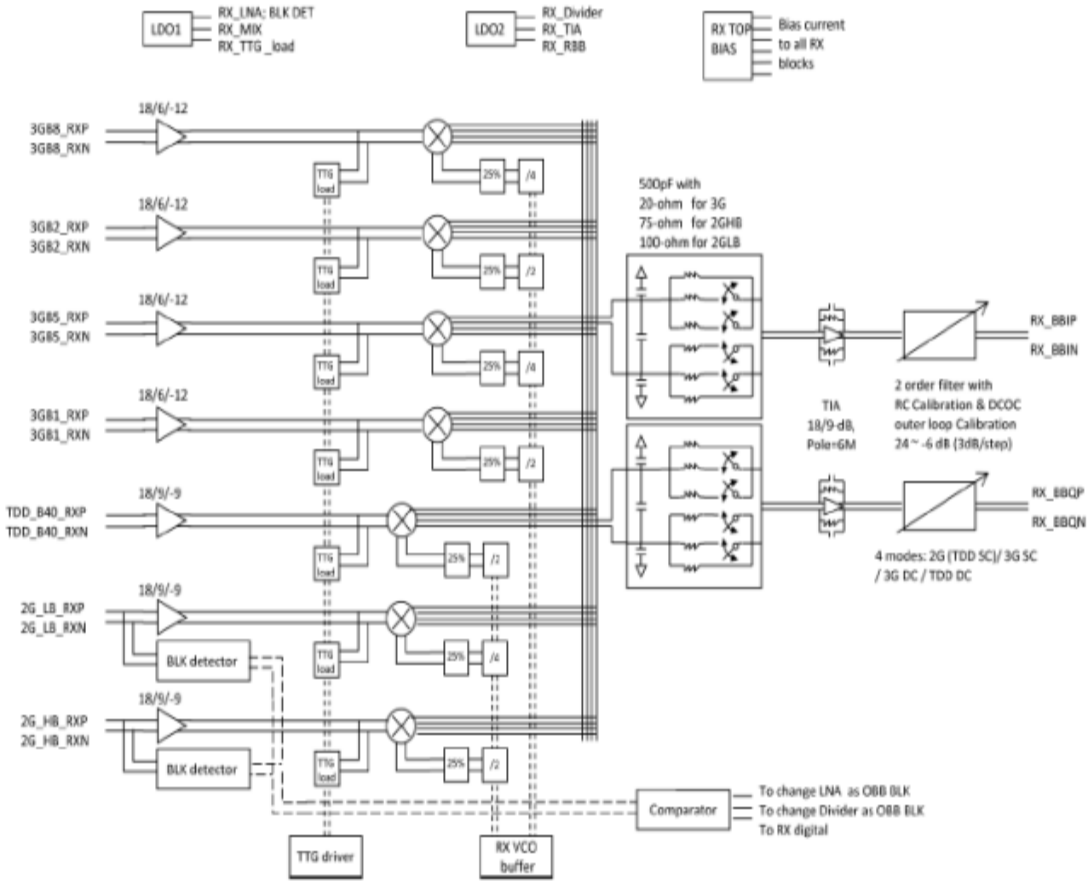
2.3.1 RF Reception

- **Block Diagram of RF Reception：**







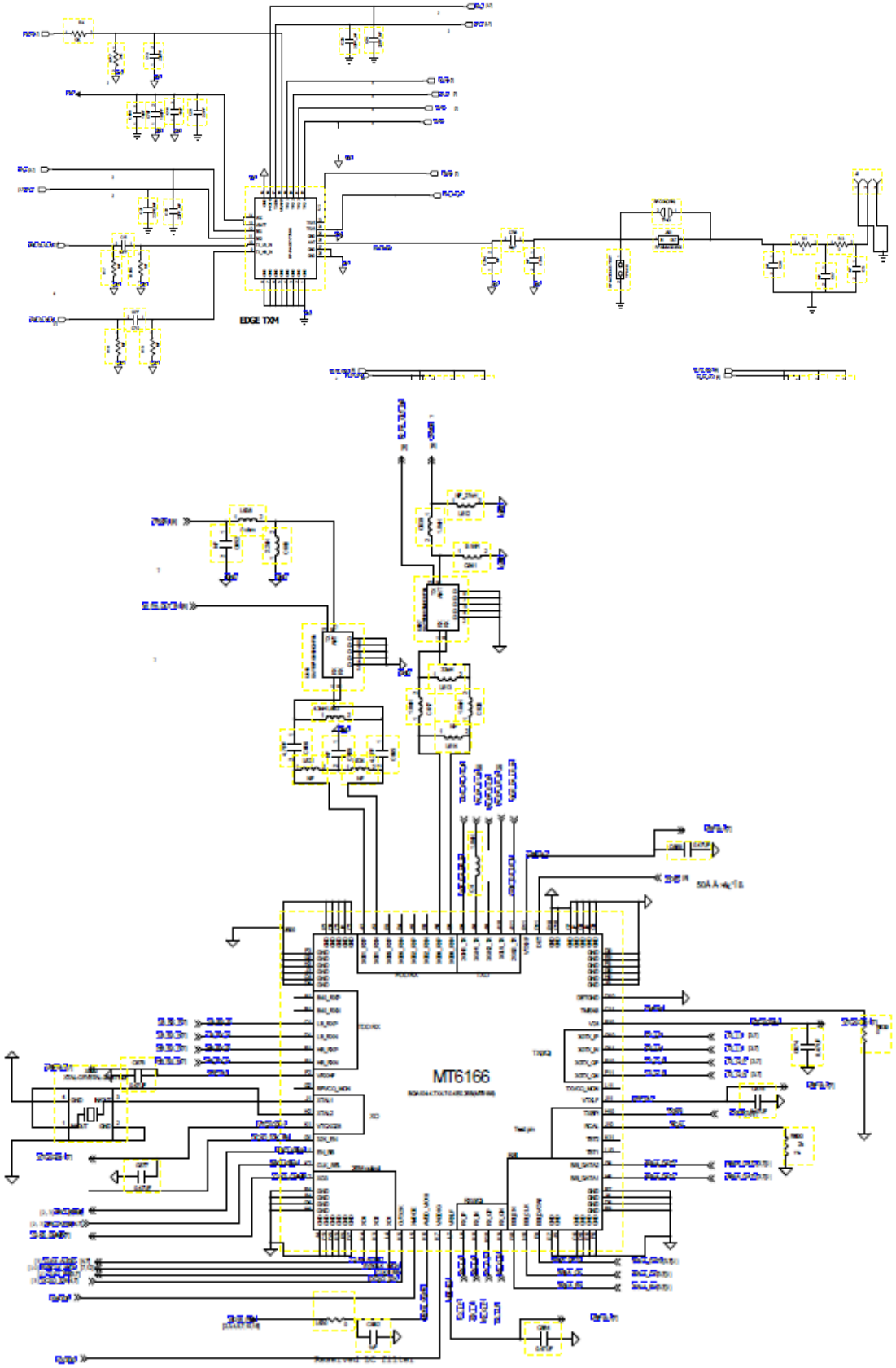


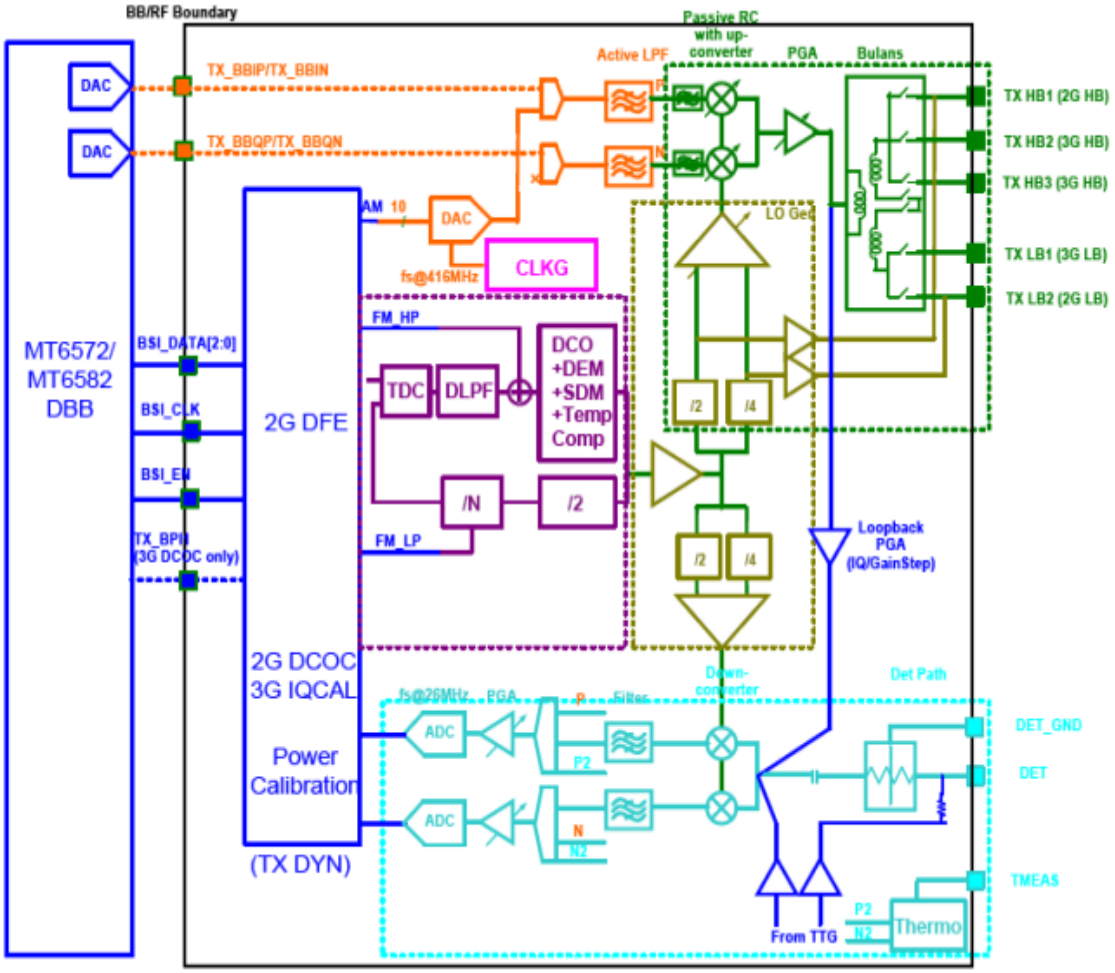
The receiver circuits are all regulated by the internal LDOs.

The direct conversion/LIF receiver contains all active circuits for the complete receiver chain supporting single-cell (SC)/dual-cell (DC) 3G WCDMA, 3G TDSCDMA and 2G GSM/GPRS/EDGE (GGE) mode reception. The path contains a total of 7 LNAs (Low Noise Amplifier). The first 4 LNAs support 3G Band1/2/3/4/5/6/8/9; the fifth LNA supports TDD B40; the last 2 LNAs support GGE low band (GSM850/900) and GGE high band (DCS1800/PCS1900). GGE high band LNA also supports TDD B33/B34/B39.

2.3.2 RF Transmission

- **Block Diagram of RF Transmission：**





MT6166 Tx Block Diagram

MT6166 TX Output Port Name	GSM850/900	FDD B5/B6/B8	Notes
3GL5_TX		✓	3G Path only
2GLB_TX	✓	✓	2G Path or 3G Path or Multimode Path

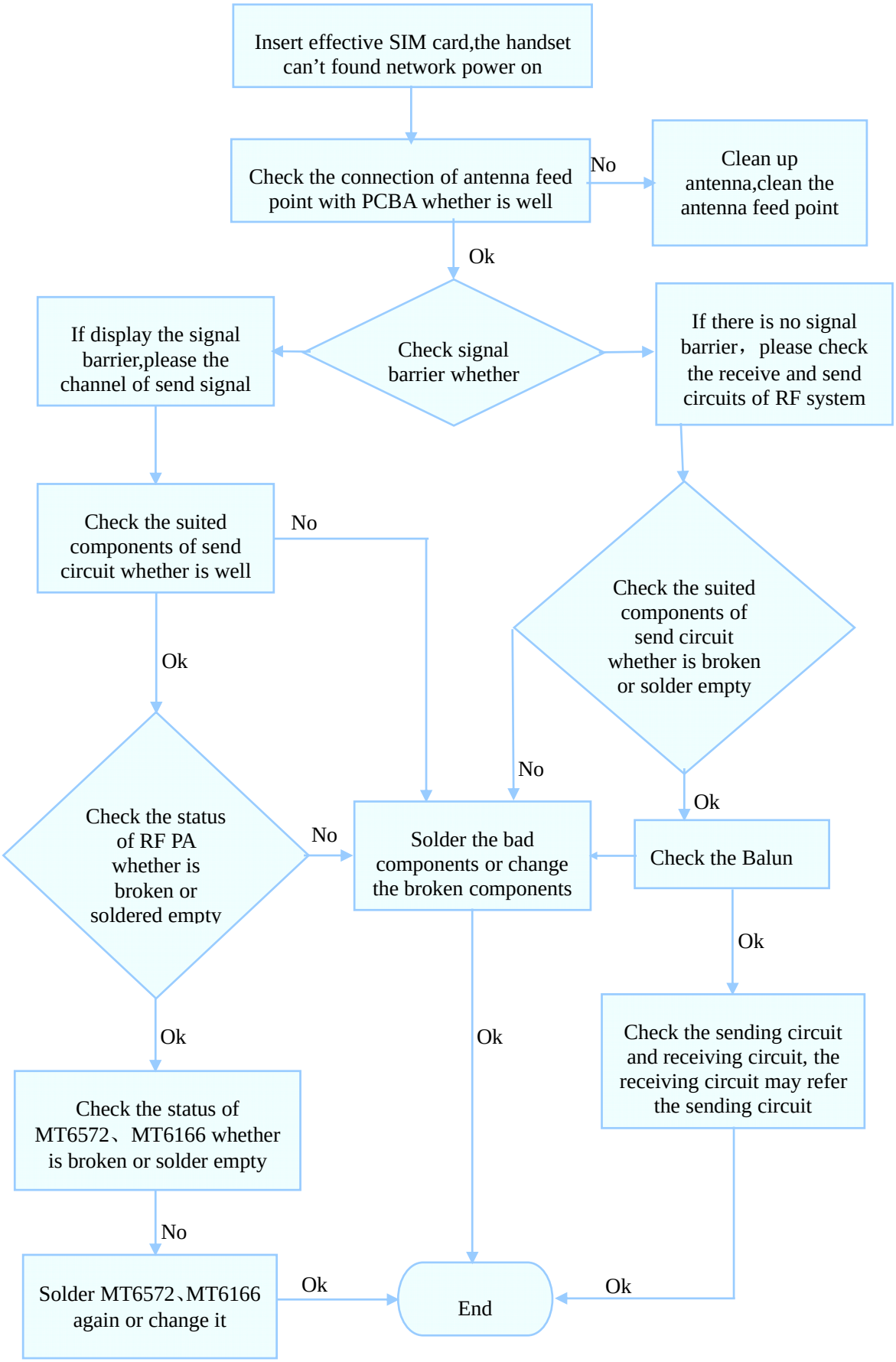
MT6166 TX Output Port Name	GSM1800/1900	FDD B1/B2/B3/B4 TDD B34/B39/B40	Notes
2GHB_TX	✓	✓	2G Path or 3G Path or Multimode Path or TDD Reuse Path
3GH1_TX		✓	3G FDD or TDD Path
3GH2_TX		✓	3G FDD or TDD Path

MT6166 Tx Output Port Mapping

➢ Circuit Analysis:

Transmitter consists of 5 output ports. TX_LB2 and TX_HB1 ports are multi-mode ports which can support 2G or 3G depending on application circuits on the phone. Typ. maximum TX output power is >0dBm. Overall TX gain dynamic range is 78dB in RF and 8dB in BB. The power detection circuits are also included for better power accuracy over power region of PA gain mode change. In order to ensure power detection accuracy, the PCB trace to DET pin should not be put too close to TX output signal traces.

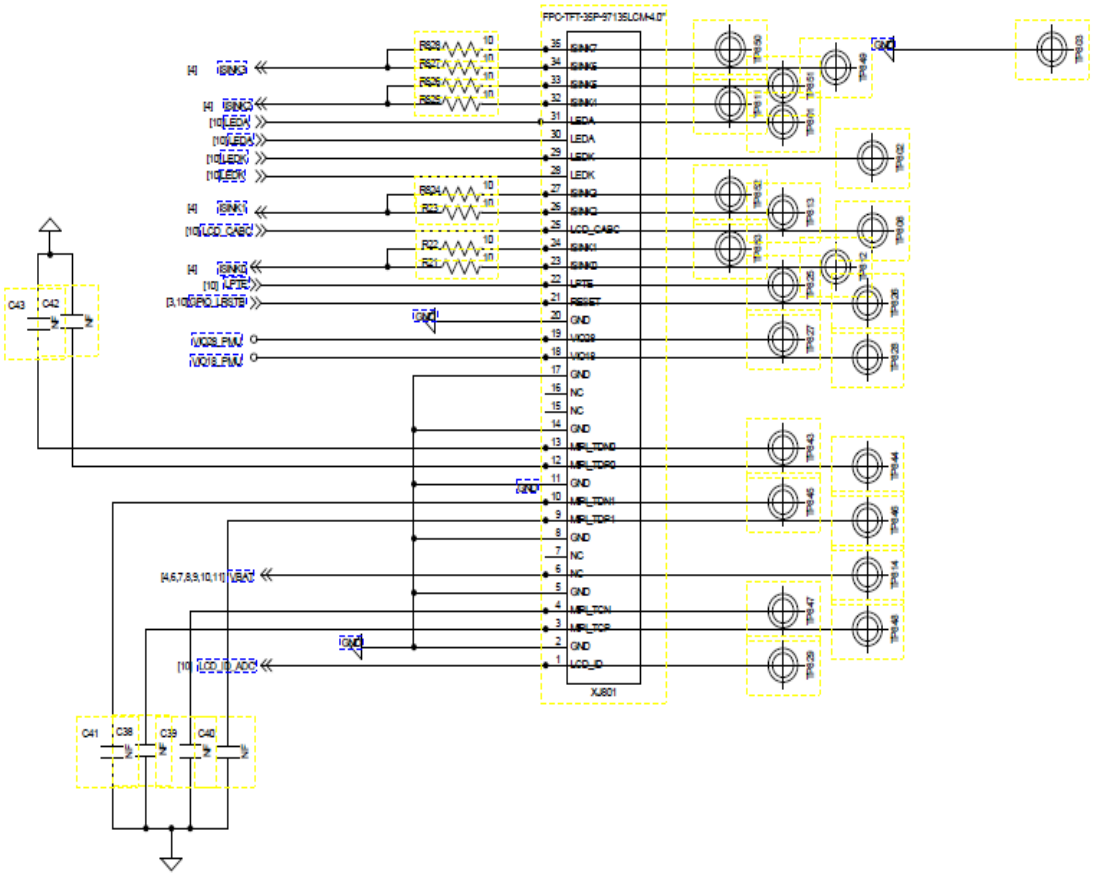
➢ Troubleshooting:



2.4 Peripheral Subsystem

2.4.1 Display

- **Block Diagram of display：**



- **Circuit Analysis:**

The display of W97055A3 used 4.0 inch WVGA color LCD. Its data interface include MIPI port and signal controlled lines , The digital port of LCD is driven by BBIC MT6572(The several saw filters are used to Electro Magnetic Interference in the middle cycle) , and its power supplied by VIO 2.8V of PMIC, and its driven circuit of backlight is supplied by the four common anode and backlight cycles of MT6323.

- **Description of the Signals in the Circuit Diagram in This Section:**

Signal Name	Functional introduction	Reference value or waveform chart
VIO	LCM supply voltage	2.8V
VBAT	LCM BL anode voltage	0~4.2V

➢ Troubleshooting:

The reasons of LCD display abnormal are the following status:

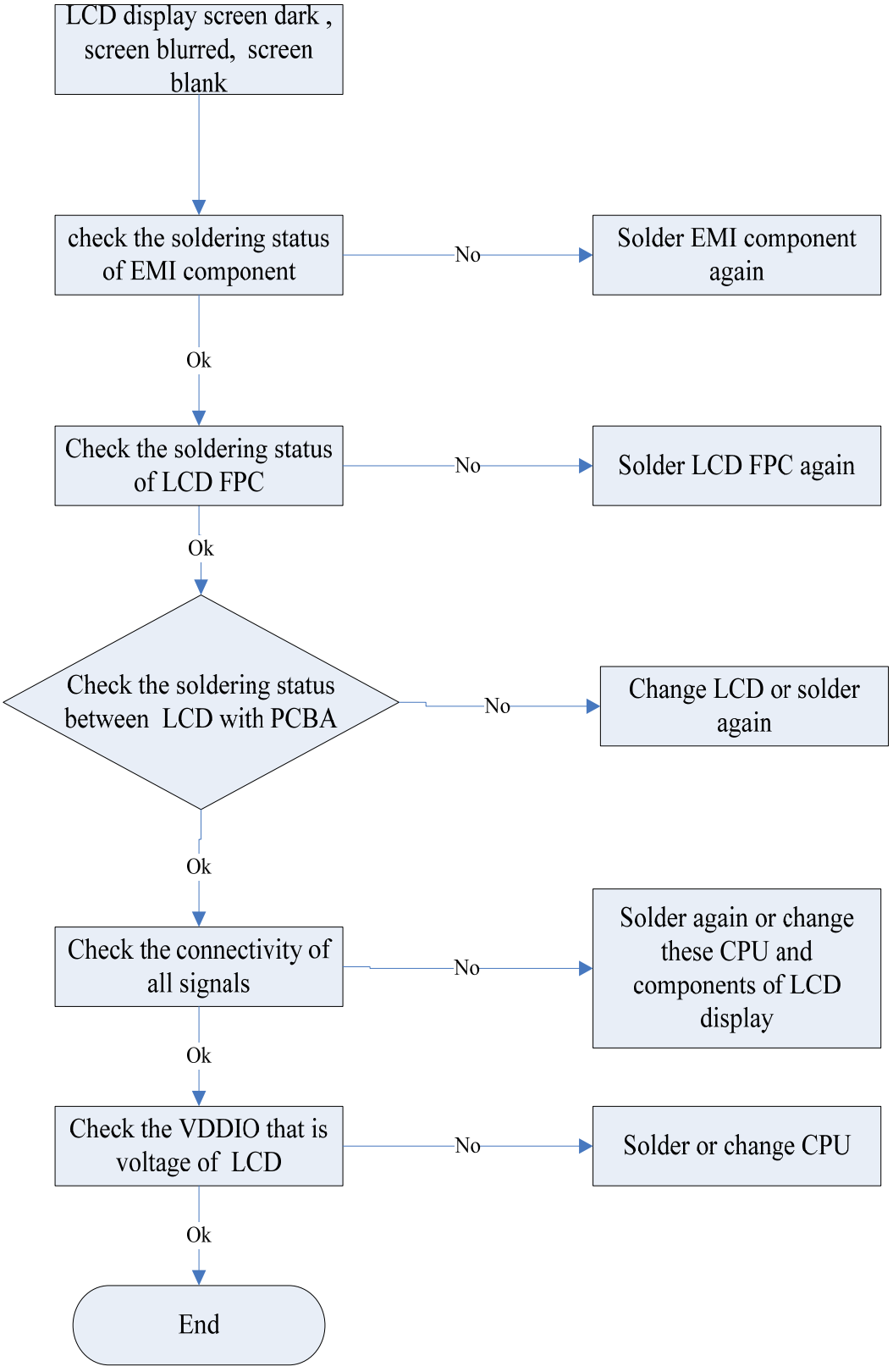
a. EMI SAW soldering empty , or soldering connected ；

b. LCD assembly soldering empty , or soldering connected ；

1. Display screen white，screen blurred and blank ：First，check whether the software is exact or not ,check the soldering status of LCD , LCD FPC pin no excrescent tin , no phenomenon of short circuit , no smudge and so on . Finally, check the component of CPU and EMI, whether occur soldering empty , may solder again these correlative components or change them .

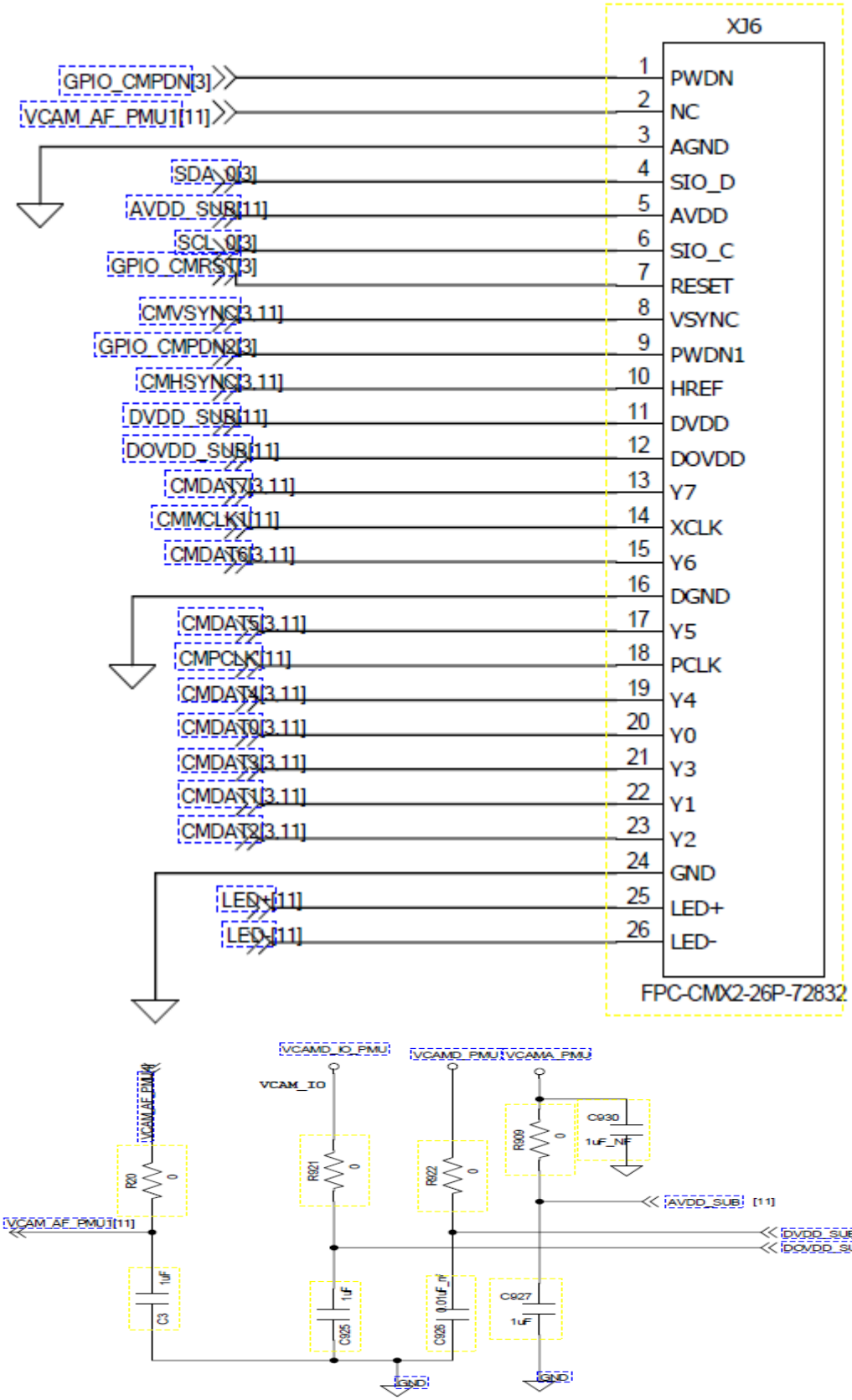
2. Display screen dark，no backlight：First, check LCD and its soldering, check the working voltage of LCD backlight, check the pins of LCD FPC and clear them . Finally, check the circuit between output port of CPU backlight with LCD, and check the working status of outside components. If these components are broken, then change them.

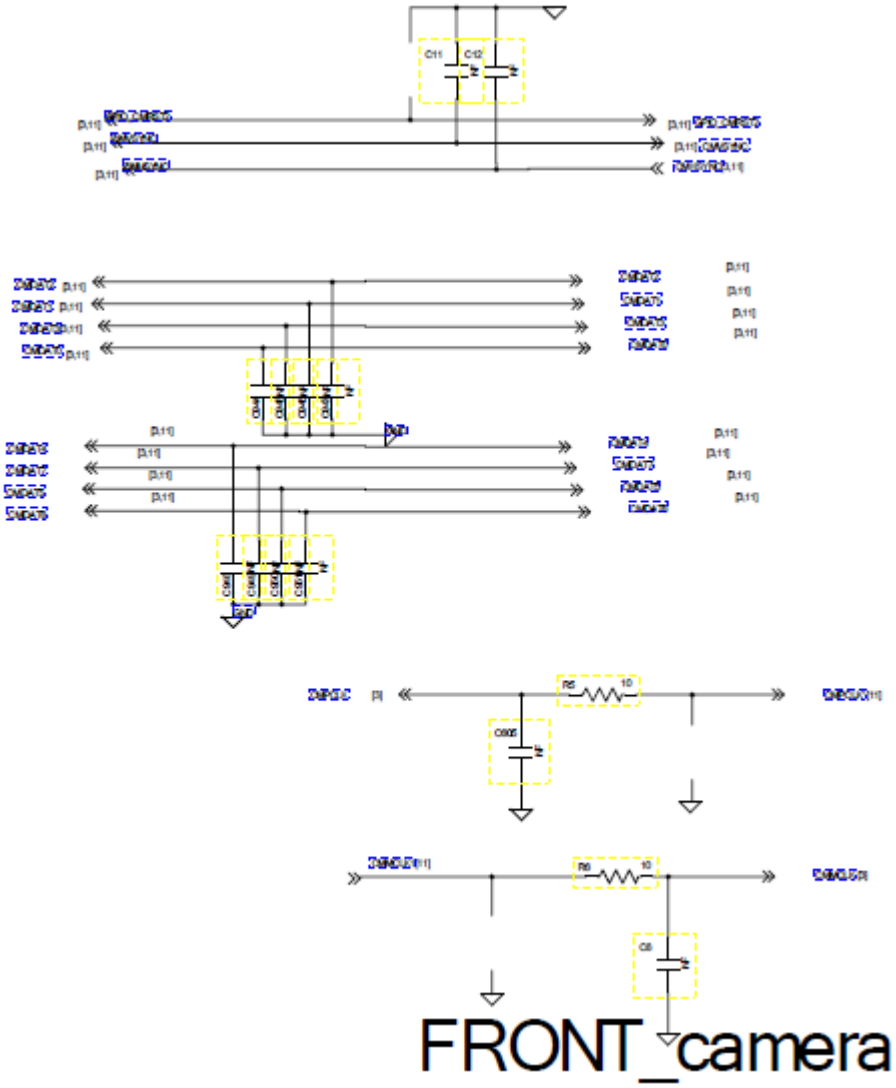
Repair flow ：


LCD display screen dark , screen blurred, screen blank
check the soldering status of EMI component
No
Solder EMI component again
Ok
Check the soldering status of LCD FPC
No
Solder LCD FPC again
Ok
Check the soldering status between LCD with PCBA
No
Change LCD or solder again
Ok
Check the connectivity of all signals
No
Solder again or change these CPU and components of LCD display
Ok
Check the VDDIO that is voltage of LCD
No
Solder or change CPU
Ok
End

2.4.2 Camera

- **Block Diagram of display：**




FRONT_camera

➢ Circuit Analysis:

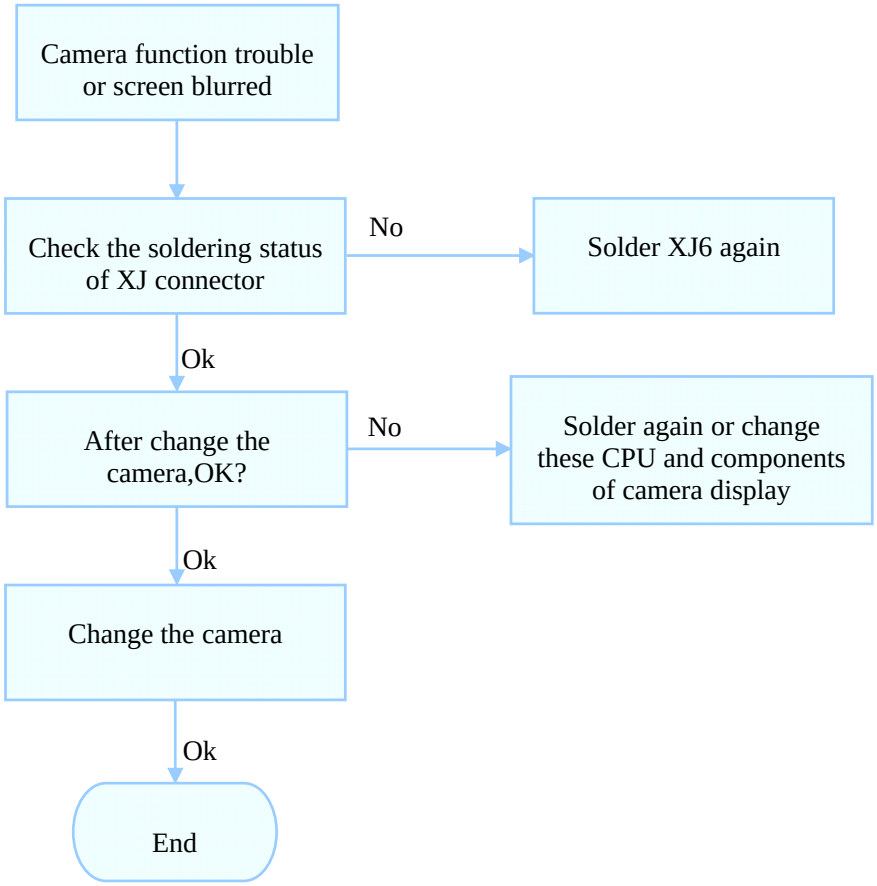
MT6572 communicates with camera mode chip by 8 bit data signals and 2 synchro signals

➢ Description of the Signals in the Circuit Diagram in This Section:

Signal Name	Functional introduction	Reference value or waveform chart
VCAMA’ VCAMD VCAMA	Simulation voltage, Digital voltage, IO voltage	2.8V,1.8V,2.8V

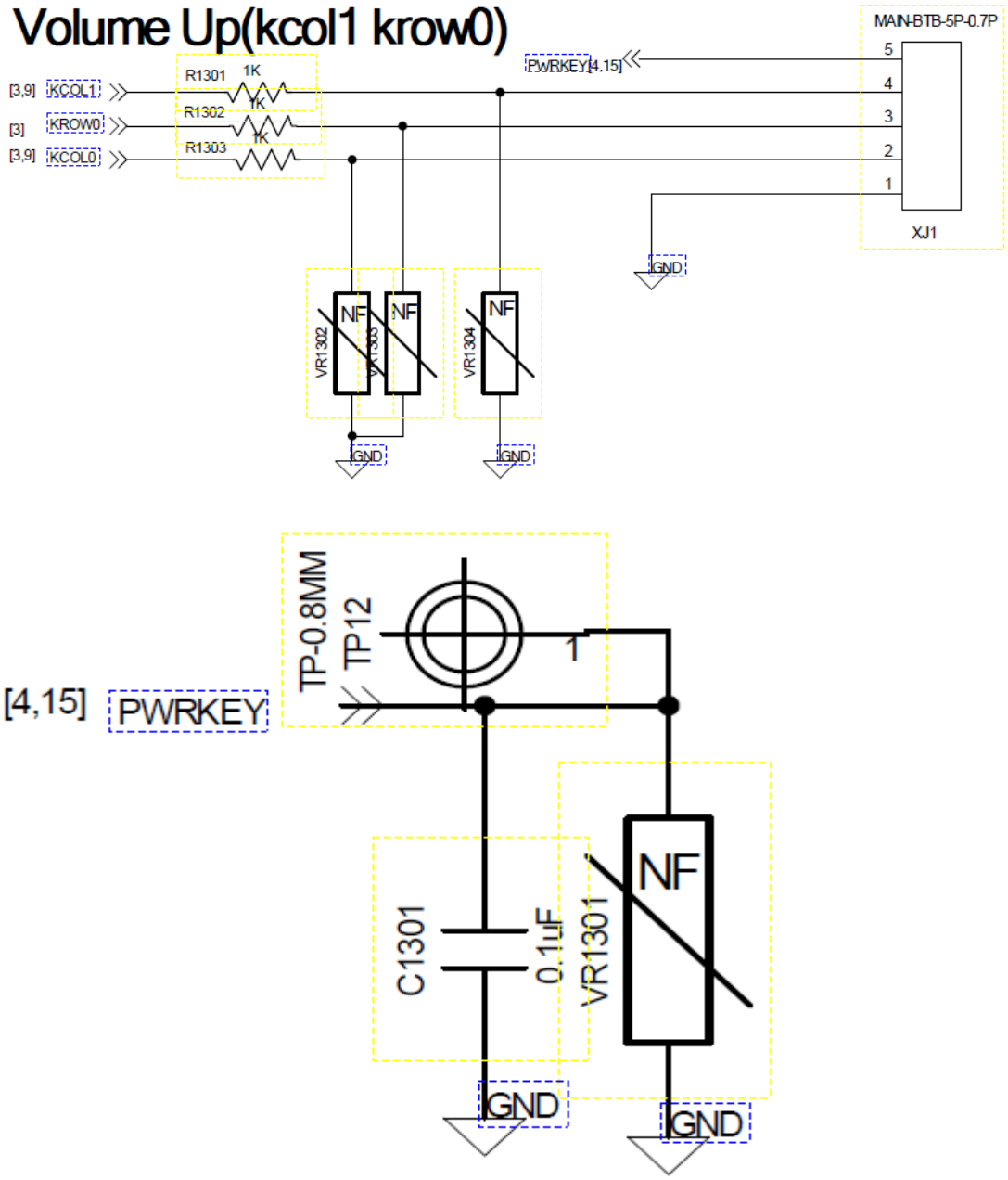
➢ Trouble shooting:

If can’t enter the mode or the camera is blurring screen , First check the soldering state of connector XJ6 ,and confirm there is no short circuit and soldering empty ; finally confirm whether change the camera or not .If change the camera ,the problem exist still , then please check these signals of working voltage and clock whether correct or not , according to the trouble , solder again or change BBIC 。



2.4.3 KEYPAD

- **Block Diagram of display：**



- **Circuit Analysis:**

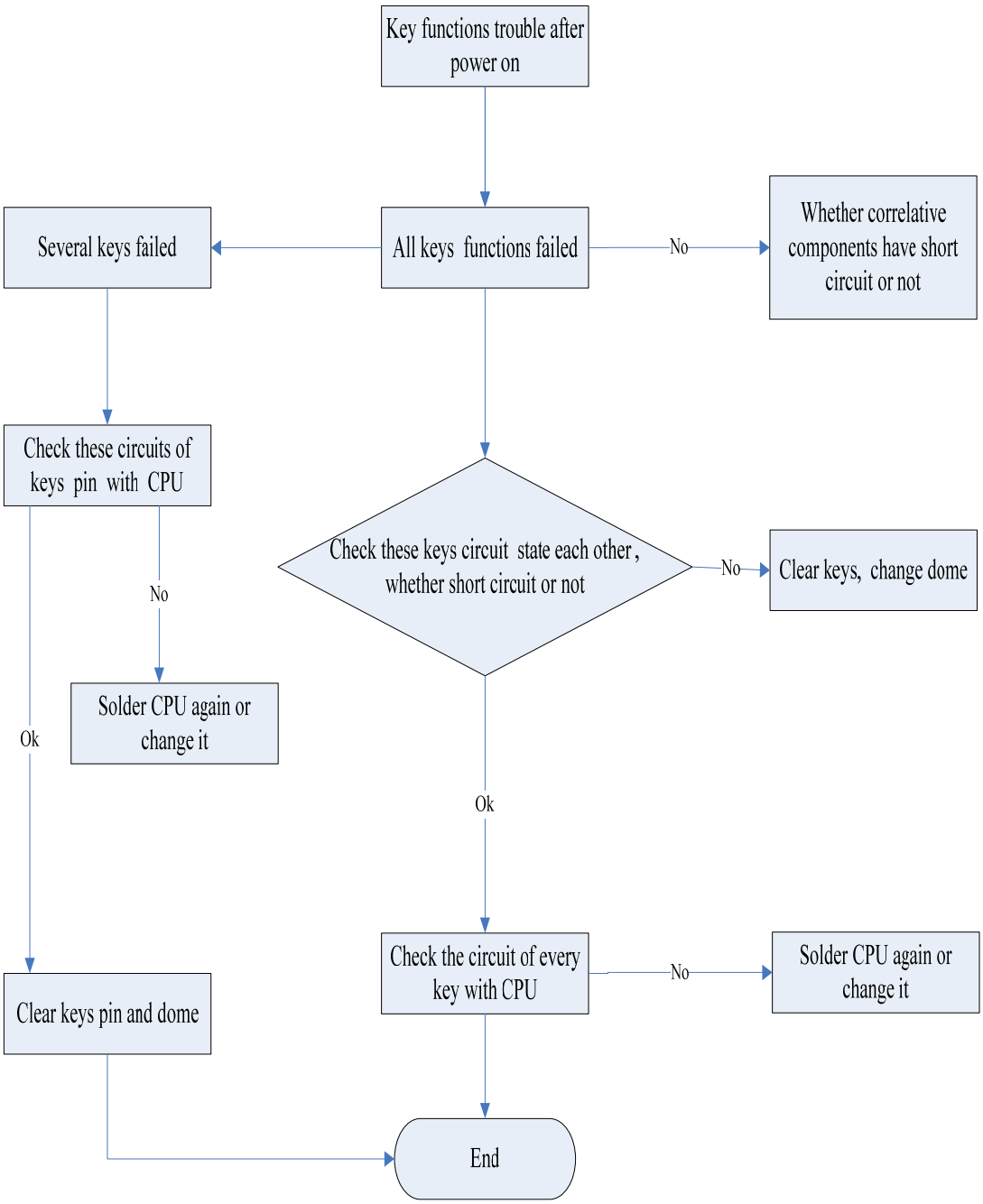
KCOL signal is a interrupt signal to BB when the key is pressed, and it puts high level at the initialization stage; KROW signal is a BB output signal, and it puts low level at the initialization stage. When a key was pressed, the keypad dome shorted the KCOL and KROW signal, in other words, the KCOL signal is pulled down by KROW signal, then give BB a interrupt signal, completed the keypad pressed function.

➢ Trouble shooting:

1. Keypad can't use ， pull any key no response ： check keys each other whether short circuit；

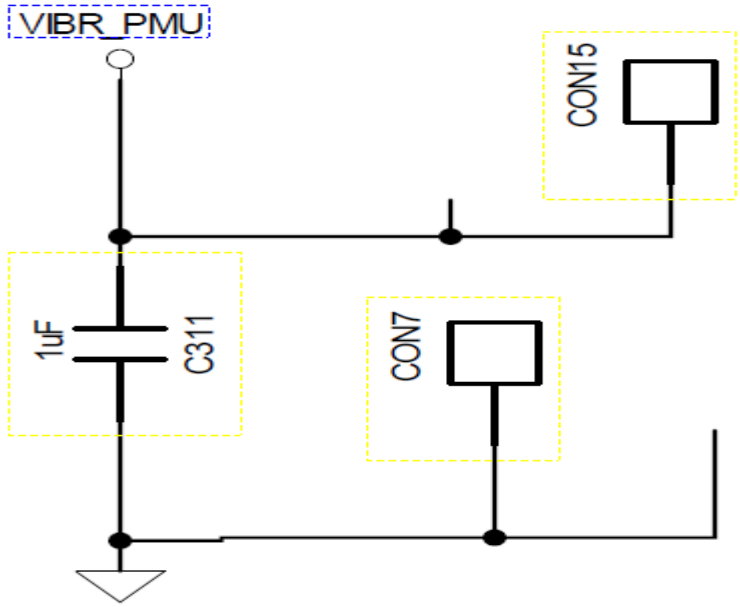
2. Anyone key can't use : it normally is dome dirty or golden annular dish dirty, clear it, OK；

3. Any key can't use ： check these bad keys whether connect the same signal, if is the same signal, check the BBIC whether soldering empty or PCB open circuit 。



2.4.4 Vibrator

- **Block Diagram of display：**

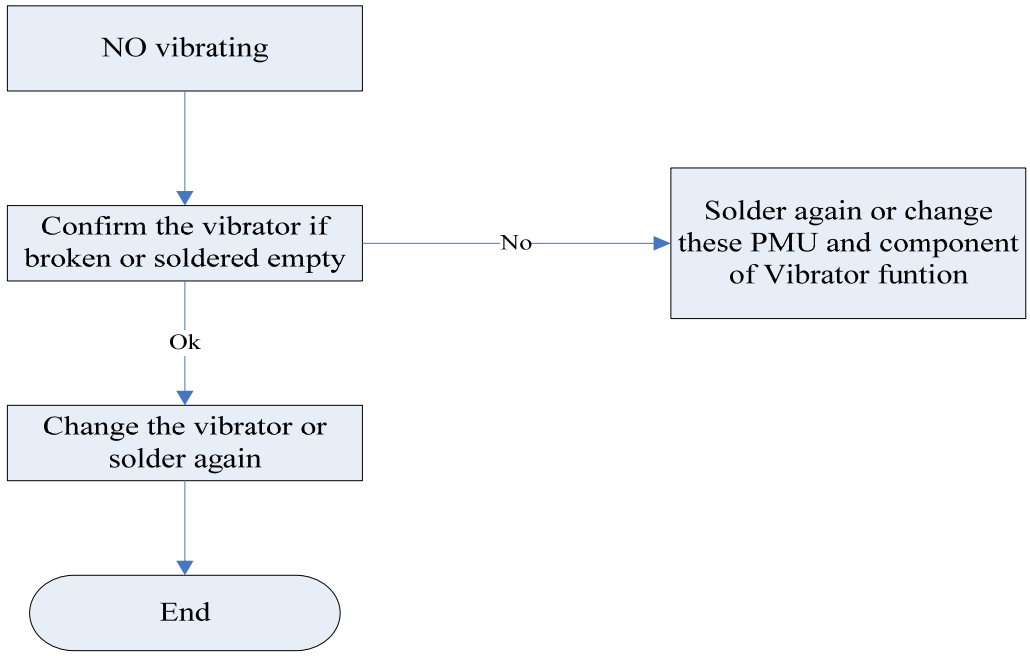


- **Circuit Analysis:**

Vibrate circuit is composed by reverse diode (PMU integrated) bypass capacity and the vibrator. In the vibrate mode, the signal VIB which come from the PMU chip is HIGH, the other side of vibrator connect GND, the vibrator is working 。

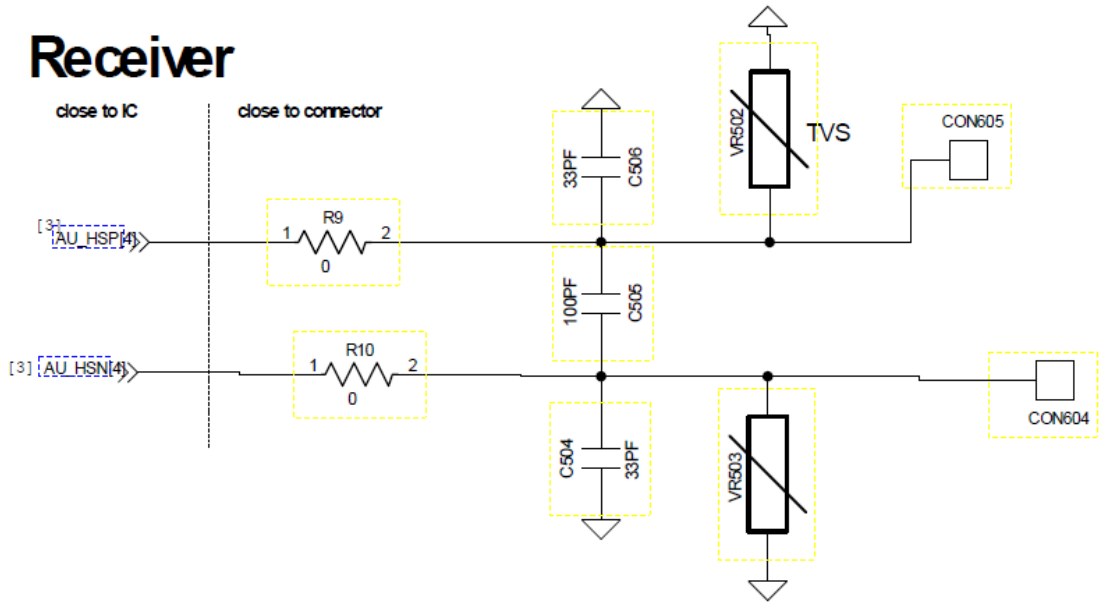
- **Trouble shooting:**

If there is no vibrating , then confirm the motor are broken. If change the vibrator and assembly it , there is no vibrating , then confirm the vibrator solder empty , please solder again . The problem is resolved 。



2.4.5 Receiver

- **Block Diagram of display：**



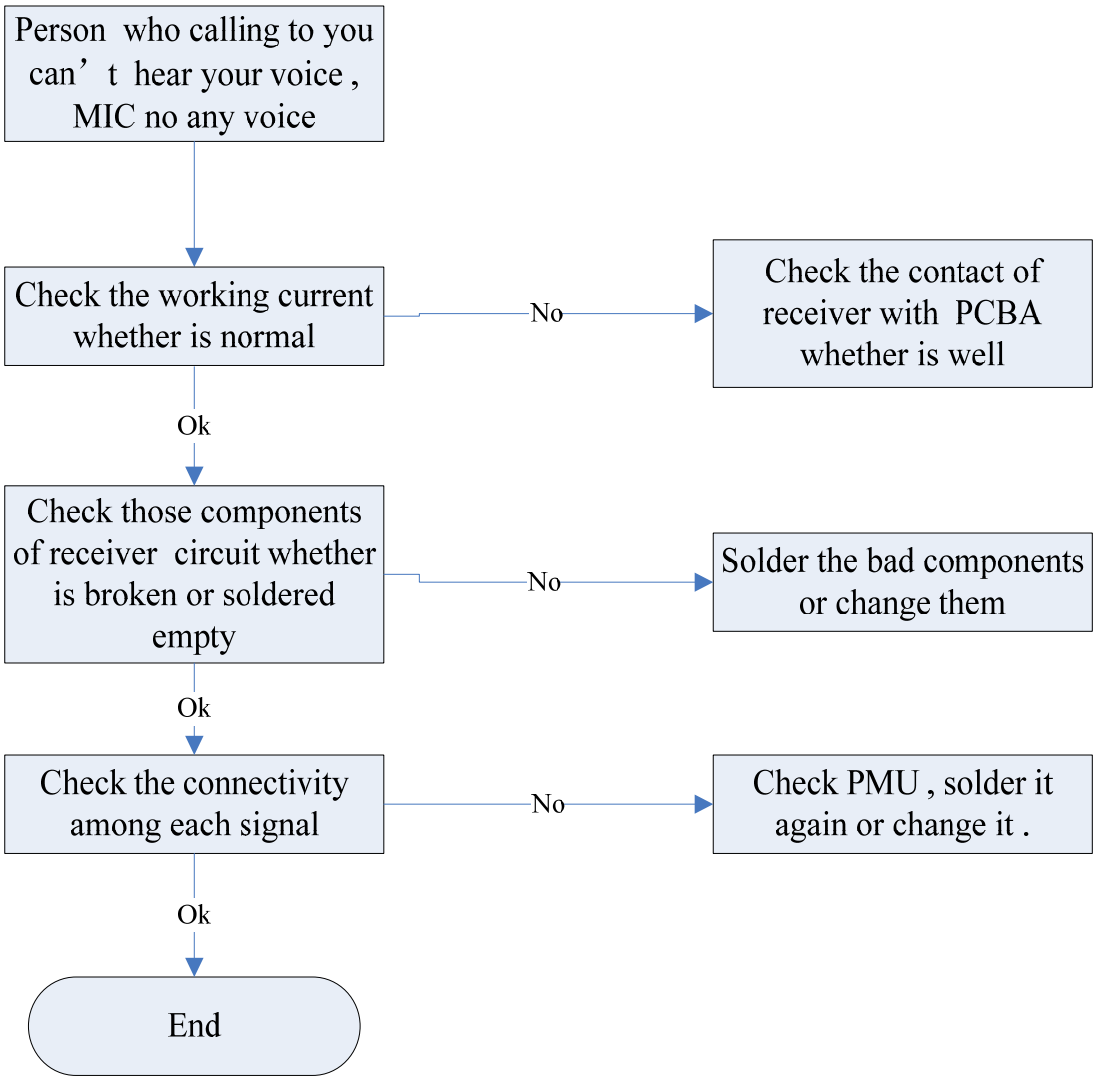
- **Circuit Analysis:**

Simulation audio signal are deal with by MT6323,then output to receiver by passed inductor and capacitor filter

➢ Trouble shooting:

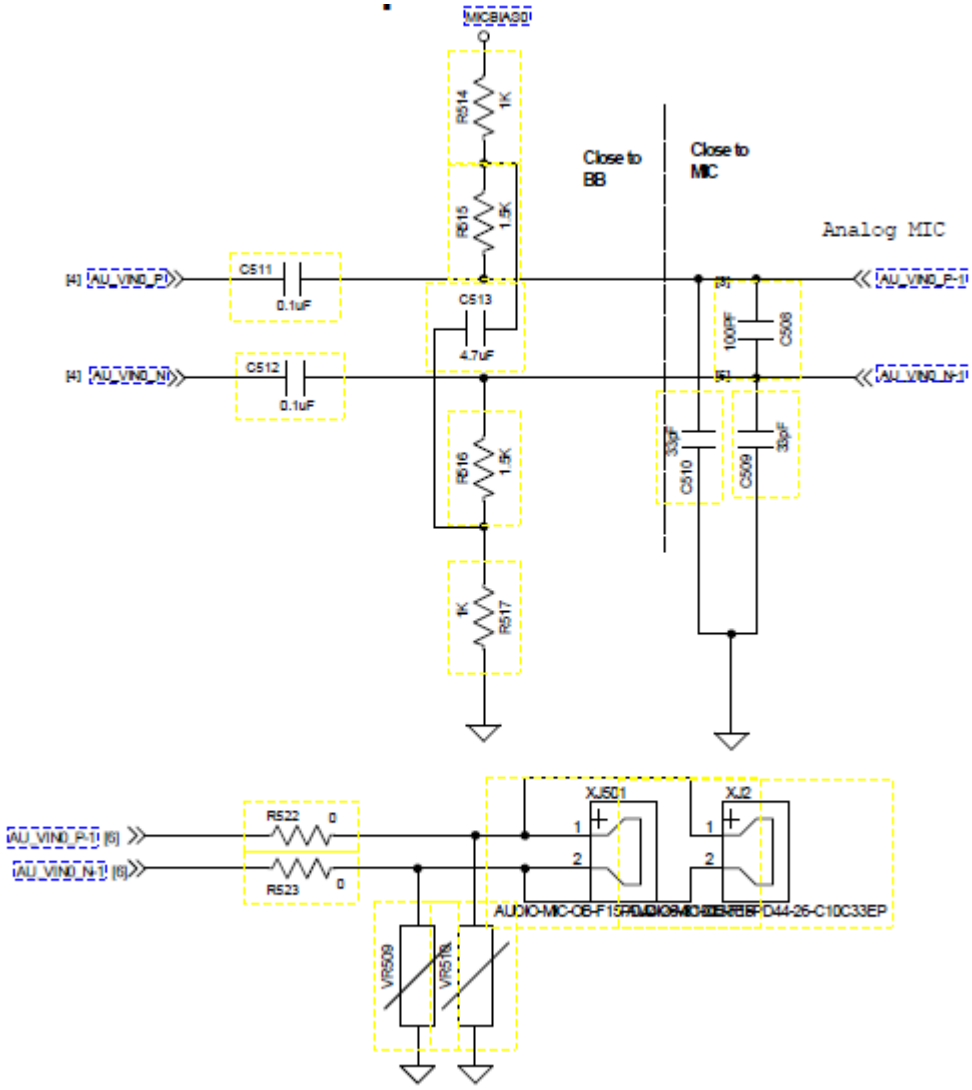
First , confirm the receiver well , may change it and test 。Because the receiver type is leaf , check the contact between receiver with PCBA weather is well , and confirm the contact pin clean ， and no smudge。Finally , check the channels of the tone signals AU_HSP and AU_HSN and PMU，and according to the bad status to solder again or change PMU 。

Repair flow：



2.4.6 MIC

- **Block Diagram of display：**



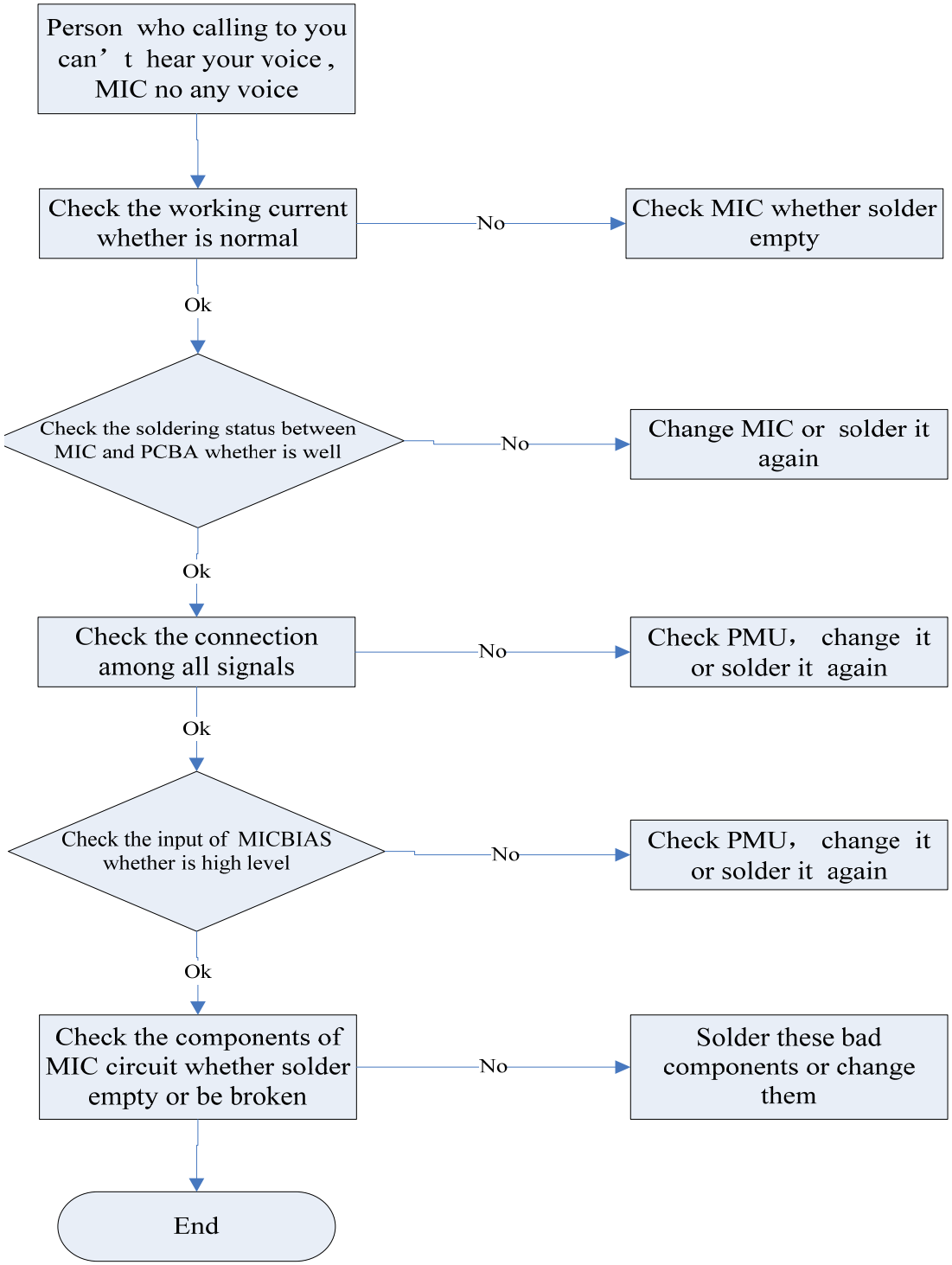
- **Circuit Analysis:**

The voice signals are switched by MIC, from AU_VIN0_P/N to PMU , and are sent after processed .

- **Trouble shooting:**

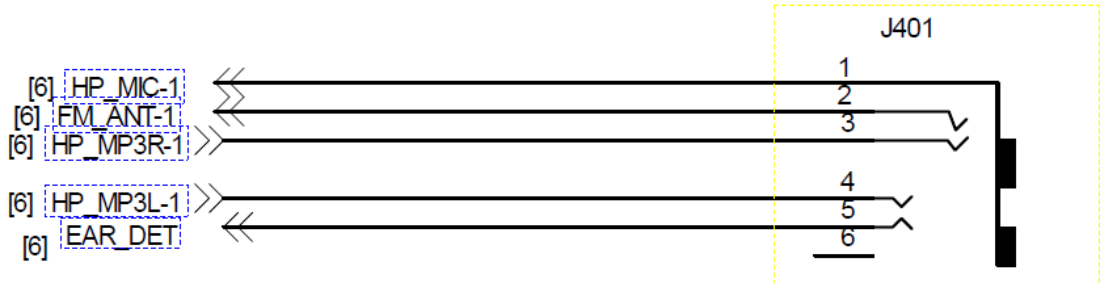
No receiving call , may check saw filter which is the component of MIC circuit whether solder well , and the voltage of MICBIAS whether normal, also , may check the circuit of PMU with AU_VIN0_P and AU_VIN0_N which is the input signal of tone 。According to bad , may solder again or change them, as PMU、MIC。

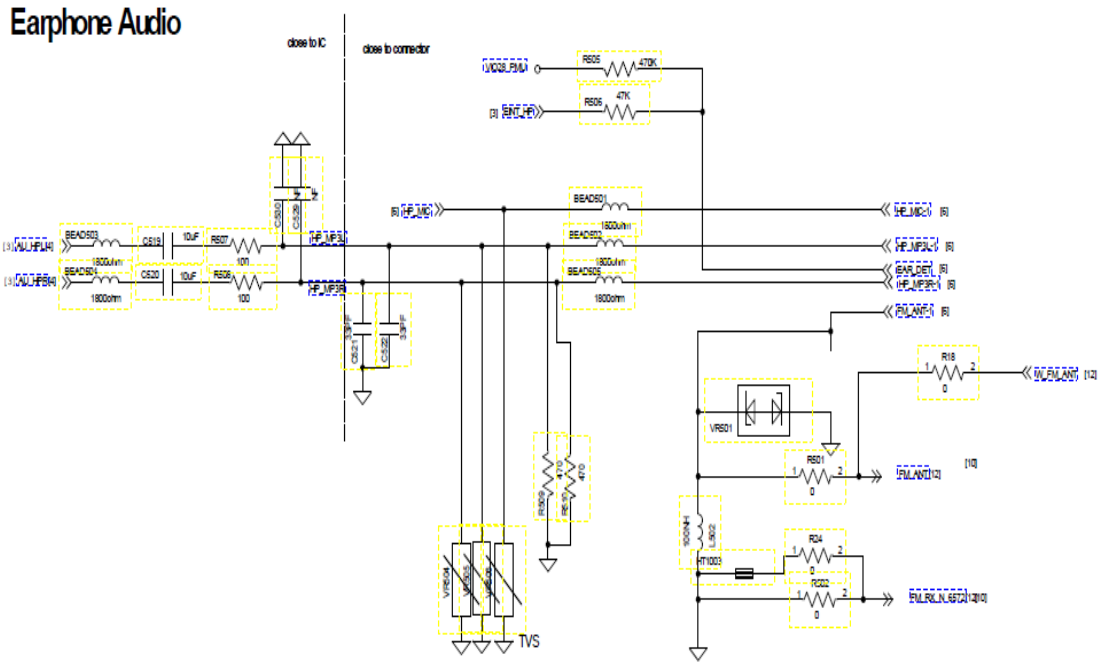
Repair flow ：

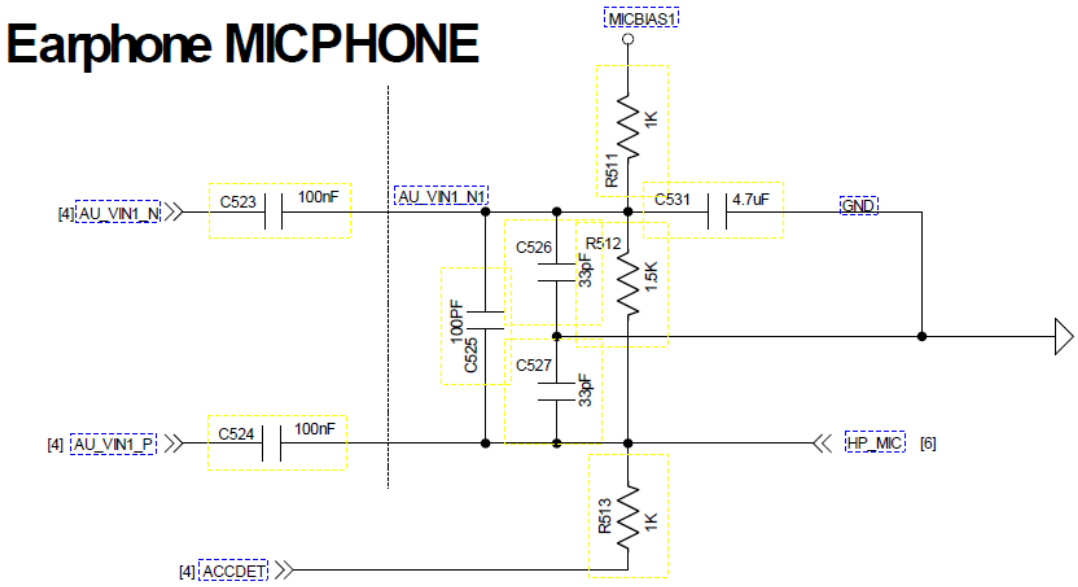

Person who calling to you can’ t hear your voice , MIC no any voice
Check the working current whether is normal
No
Check MIC whether solder empty
Ok
Check the soldering status between MIC and PCBA whether is well
No
Change MIC or solder it again
Ok
Check the connection among all signals
No
Check PMU， change it or solder it again
Ok
Check the input of MICBIAS whether is high level
No
Check PMU， change it or solder it again
Ok
Check the components of MIC circuit whether solder empty or be broken
No
Solder these bad components or change them
End

2.4.7 Earphone

- **Block Diagram of display：**







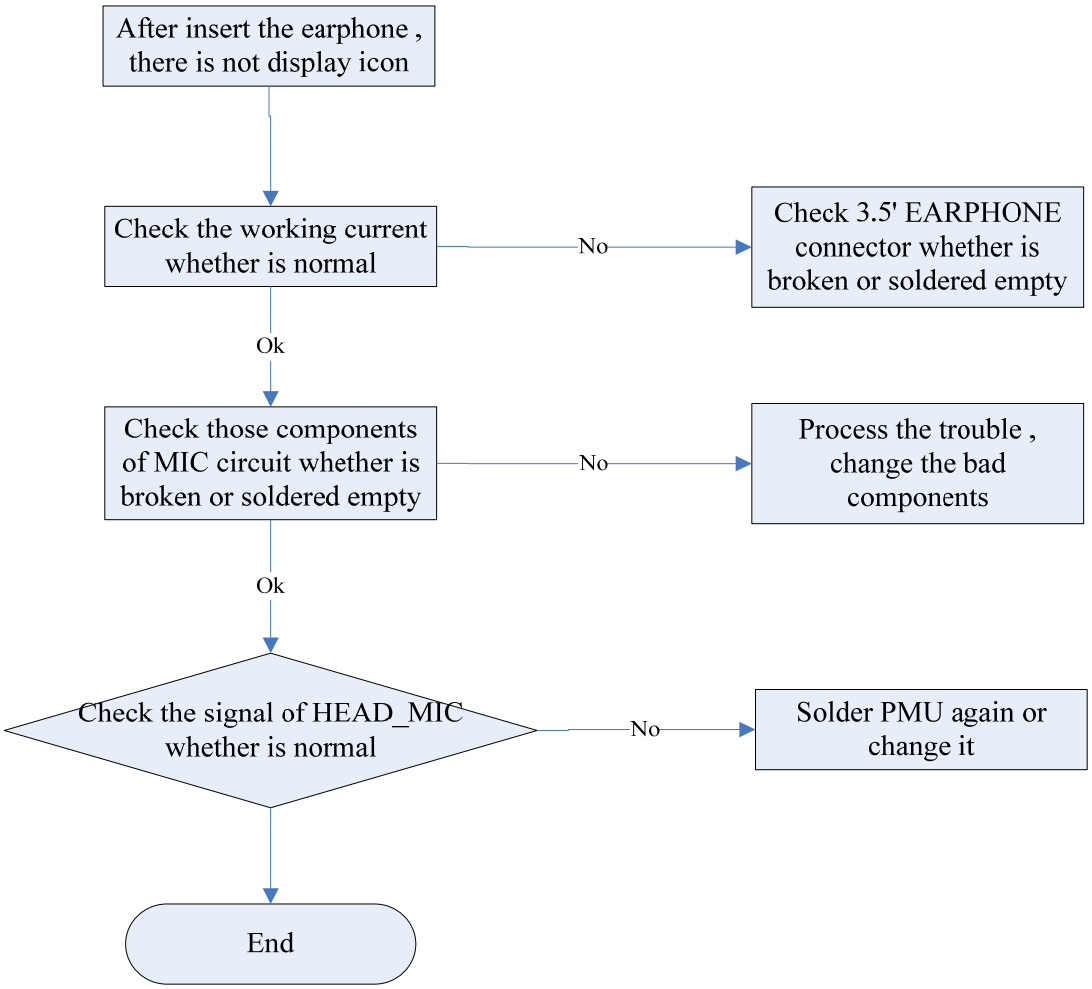
➢ Circuit Analysis:

The earphone circuit are made of 4 signals. They are special voltage HP_MIC , tone signals HP_MP3L_1 , HP_MP3R_1 and FM antenna signal FM_ANT .

➢ Trouble shooting:

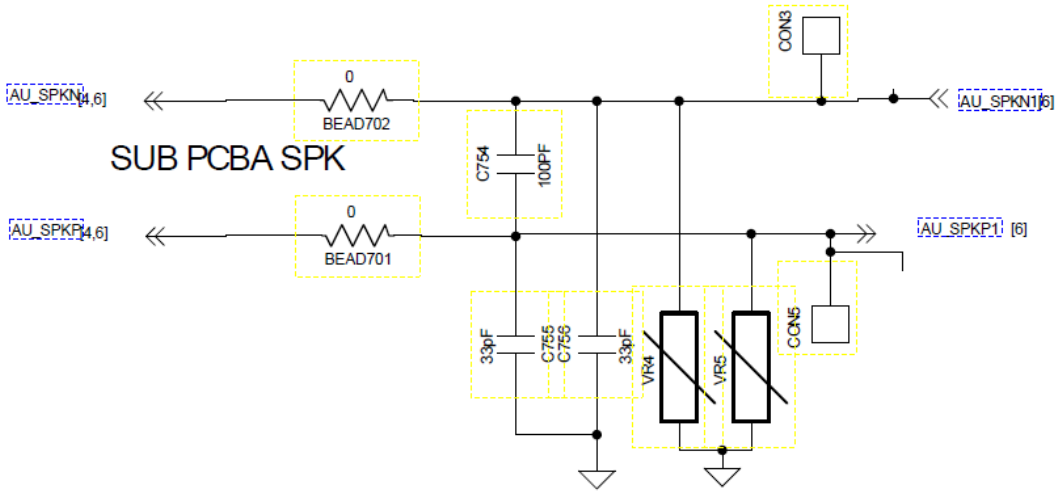
Headset failure mainly means no function after being plugged , which unrecognizable. The headset plug detect signals head enormous MIC if you can identify an earphone, but to have a breakdown in the words to the headset MIC circuit, to view the HP_MIC,HP_MP3L_1, HP_MP3R_1, EAR_DET and access between the PMU is normal, the headset MIC if there is virtual circuit the device may damage.

Repair flow ：



2.4.8 Ring Tone

- **Block Diagram of display：**



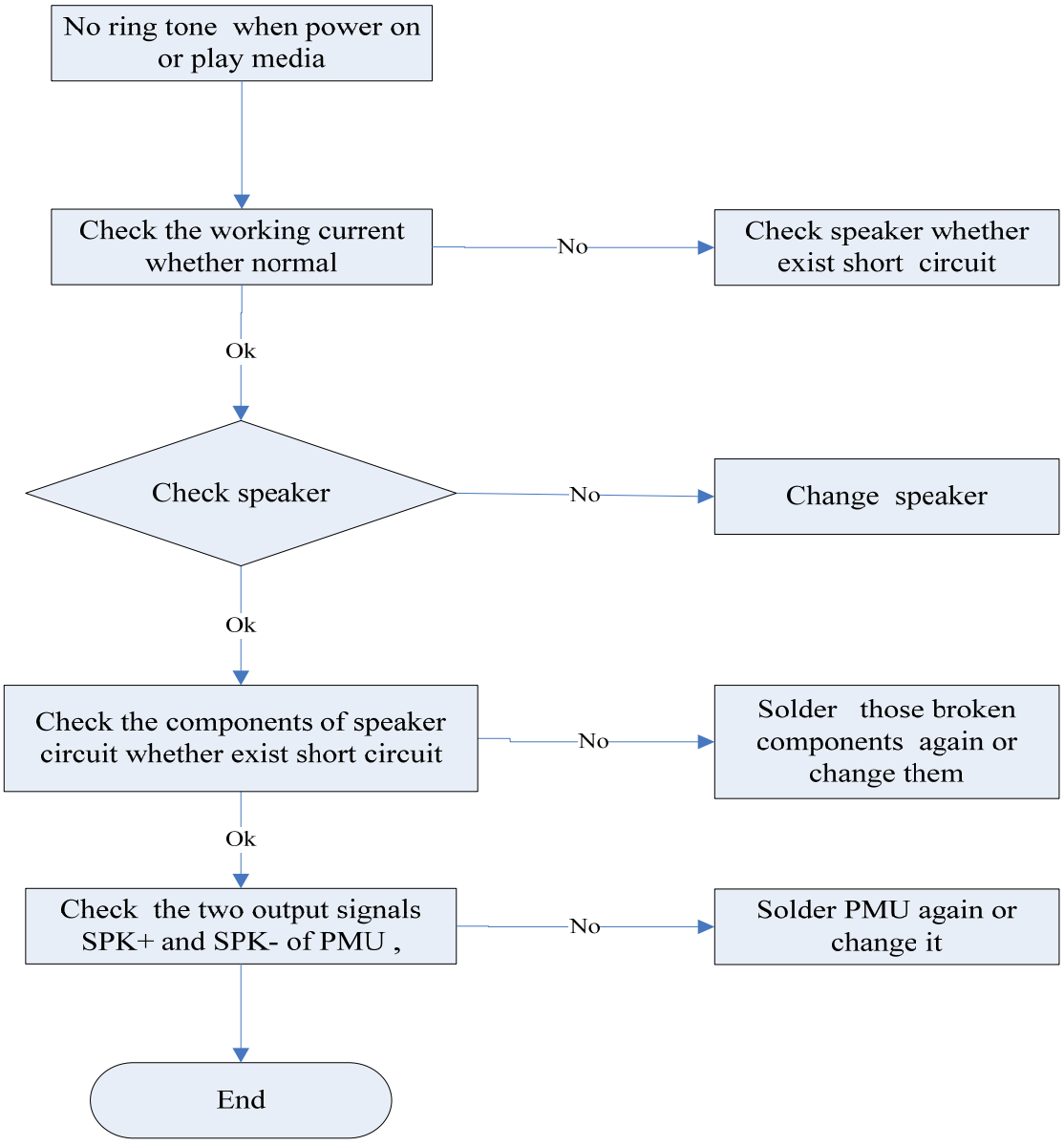
- **Circuit Analysis:**

The ring tone cycle is achieved by AB amplifier that integrated in PMU MT6323 driving speaker,.

➢ Trouble shooting:

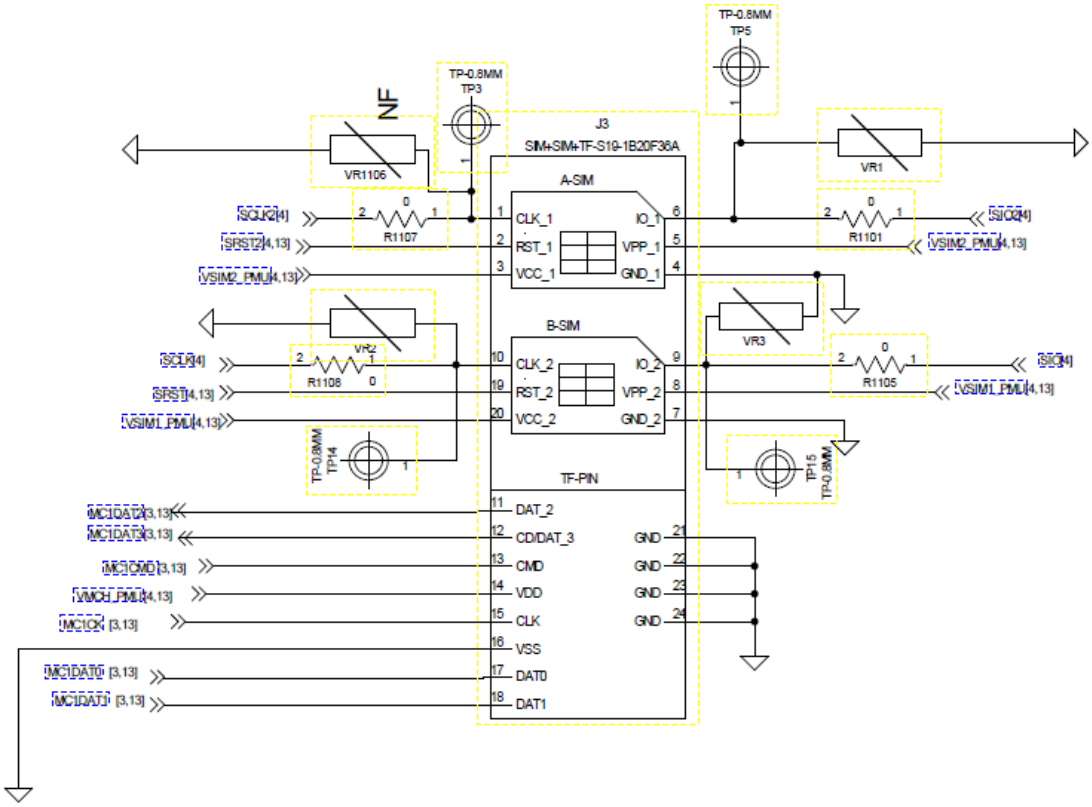
There is no ring tone when the handset play Mp3 or power on : first，check speaker whether can work normally or contact badly , and according to the principle check the status of speaker circuit components , and check the status of PMU and its outside components whether solder empty or broken。

Repair flow ：



2.4.9 SIM Card

- **Block Diagram of display：**



- **Circuit Analysis:**

The MT6323 can supply dual SIM card port , The 4 signal cables connected PMU are the following , such as SIMDAT，SIMCLK，SIMRST，VSIM .

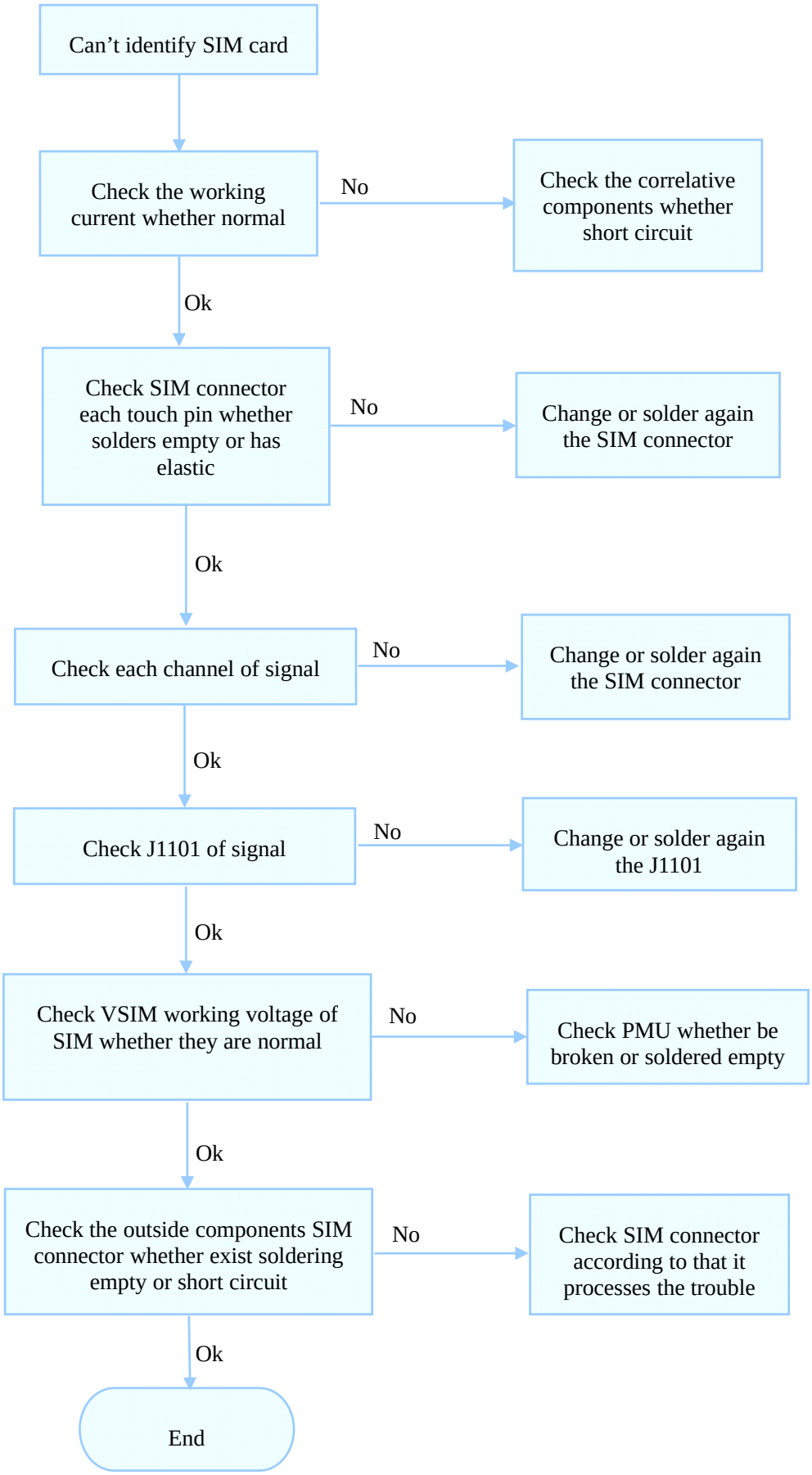
- **Description of the Signals in the Circuit Diagram in This Section:**

Signal Name	Functional introduction	Reference value or waveform chart
VSIM	SIM work voltage	2.8v

- **Trouble shooting:**

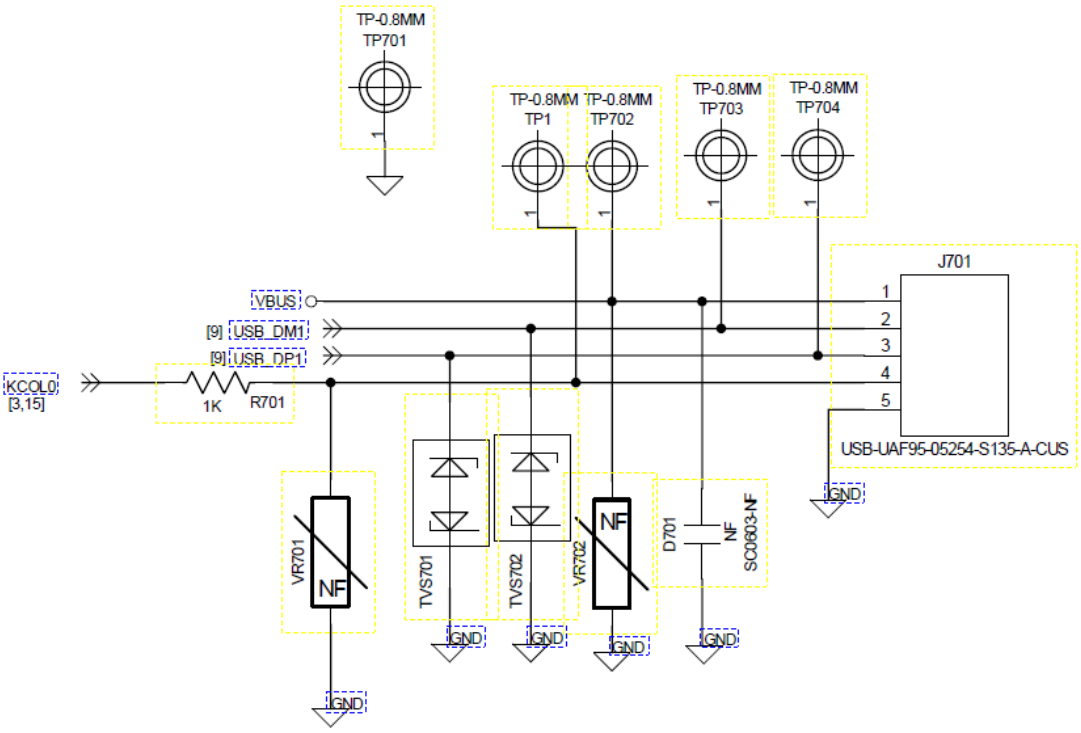
If power on , can't found SIM card 。Check every card and their structure ， confirm every their structure and touch pins are clean . And check these components of in line whether short circuit , and check whether the working voltage is normal or not . Check the circuit between the SIM card with PMU , if there is failure , you may solder again or change PMU .

Repair flow ：


Can’t identify SIM card
Check the working current whether normal
No
Check the correlative components whether short circuit
Ok
Check SIM connector each touch pin whether solders empty or has elastic
No
Change or solder again the SIM connector
Ok
Check each channel of signal
No
Change or solder again the SIM connector
Ok
Check J1101 of signal
No
Change or solder again the J1101
Ok
Check VSIM working voltage of SIM whether they are normal
No
Check PMU whether be broken or soldered empty
Ok
Check the outside components SIM connector whether exist soldering empty or short circuit
No
Check SIM connector according to that it processes the trouble
Ok
End

2.4.10 I/O connector

- **Block Diagram of display：**



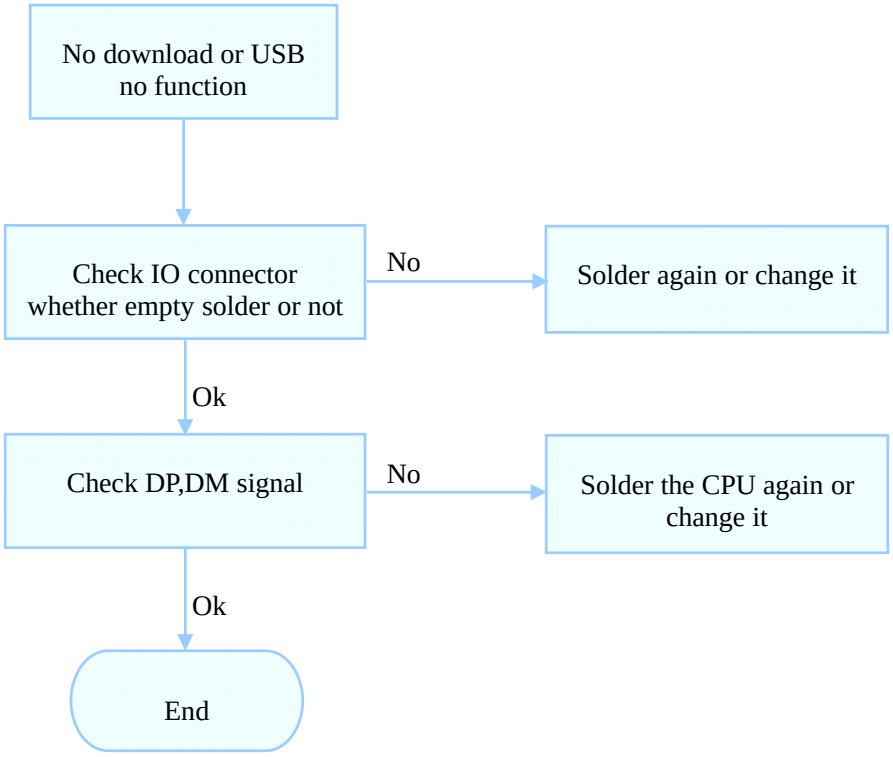
- **Circuit Analysis:**

The software is downloaded to W97240B1 project flash and to work with PC by DP,DM signals

- **Trouble shooting:**

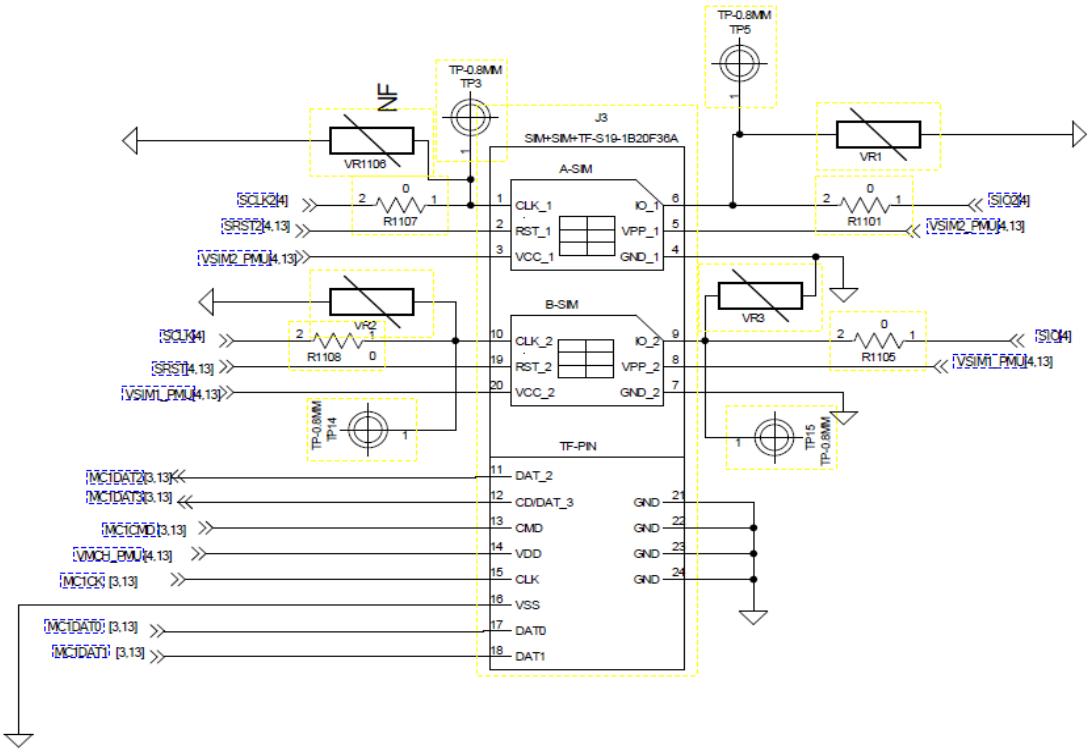
if the handset couldn't download or had no USB function ,whether the IO connector circuit exist short circuit 。And check the circuit channel between the CPU with the T flash card , and change the CPU or solder them again 。

Repair flow ：


No download or USB no function
Check IO connector whether empty solder or not
No
Solder again or change it
Ok
Check DP,DM signal
No
Solder the CPU again or change it
Ok
End

2.4.11 SD Card Connector

➢ Block Diagram of display：



➢ Circuit Analysis:

The BBIC MT6572 corresponds with T-flash card by SPI interface

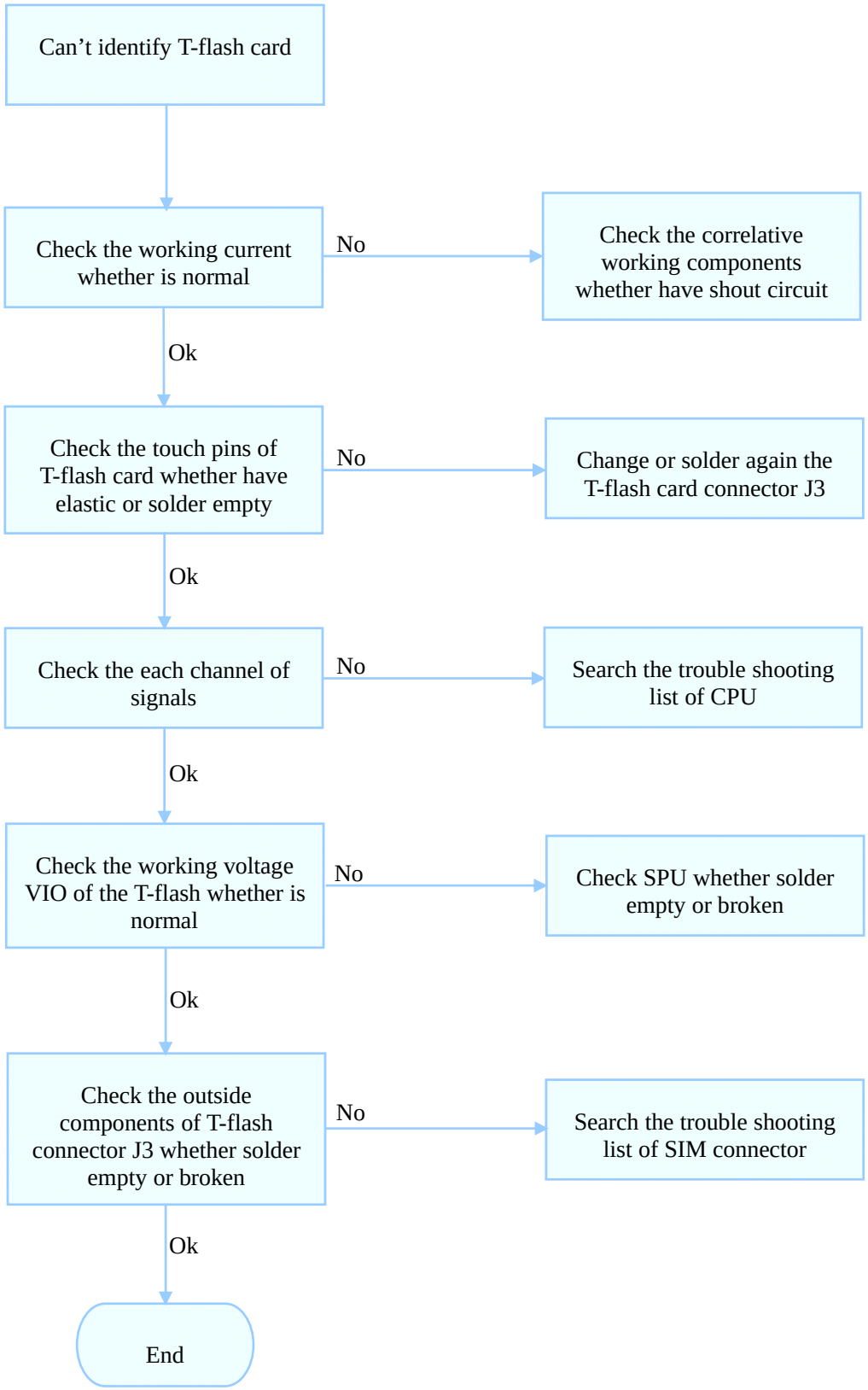
➢ Description of the Signals in the Circuit Diagram in This Section:

Signal Name	Functional introduction	Reference value or waveform chart
VIO	SD card work voltage	2.8V

➢ Trouble shooting:

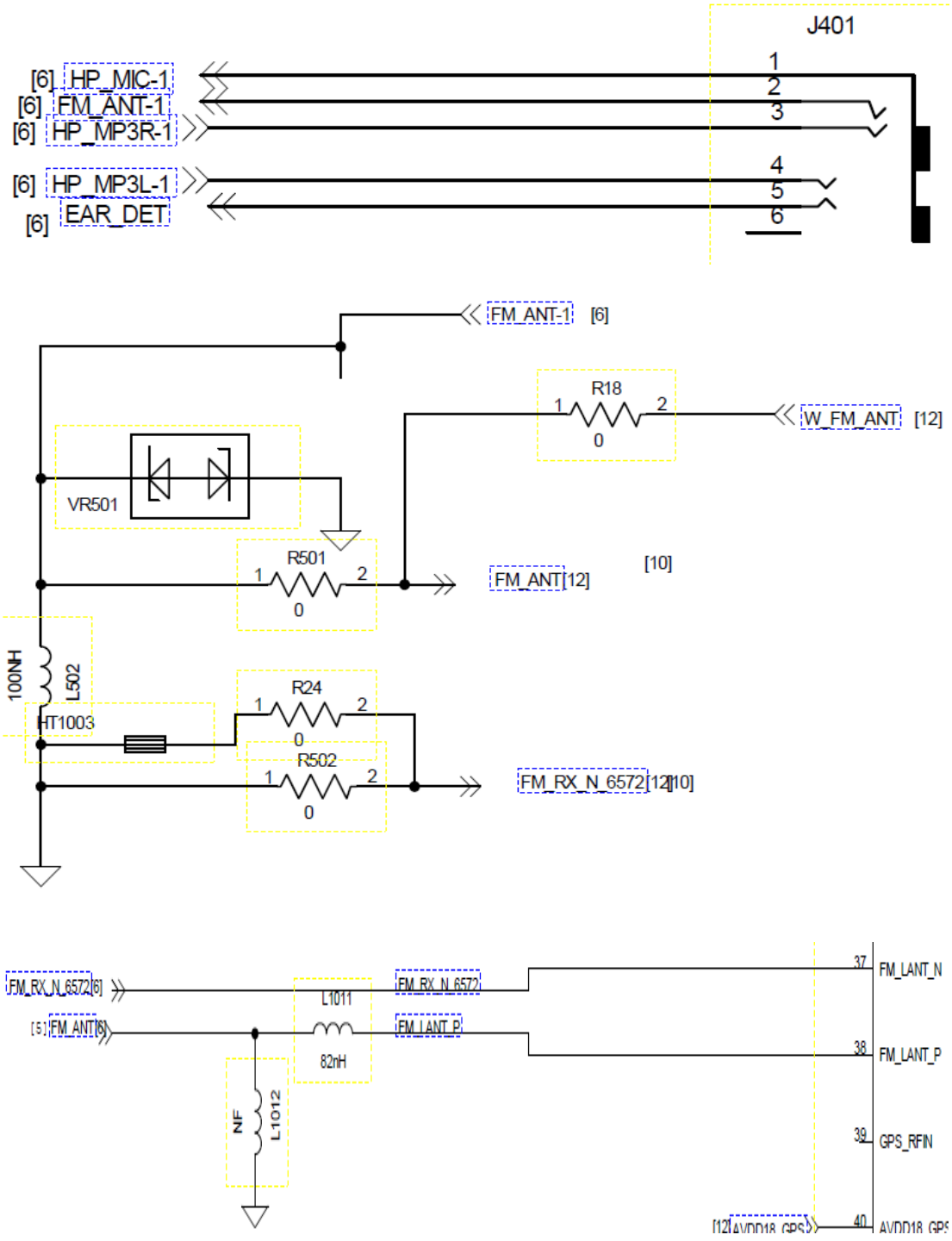
After the handset be powered on, the T flash card can't be found. Please check the structure of T flash card connector J3 weather is normal ， whether the touch pins clean and elastic ，whether the components in T flash card circuit exist short circuit ，whether the working voltage is normal 。And check the circuit channel between the CPU with the T flash card , and change the CPU or solder them again 。

Repair flow ：


Can’t identify T-flash card
Check the working current whether is normal
No
Check the correlative working components whether have shout circuit
Ok
Check the touch pins of T-flash card whether have elastic or solder empty
No
Change or solder again the T-flash card connector J3
Ok
Check the each channel of signals
No
Search the trouble shooting list of CPU
Ok
Check the working voltage VIO of the T-flash whether is normal
No
Check SPU whether solder empty or broken
Ok
Check the outside components of T-flash connector J3 whether solder empty or broken
No
Search the trouble shooting list of SIM connector
Ok
End

2.4.12 FM

- **Block Diagram of display：**



➢ Trouble shooting:

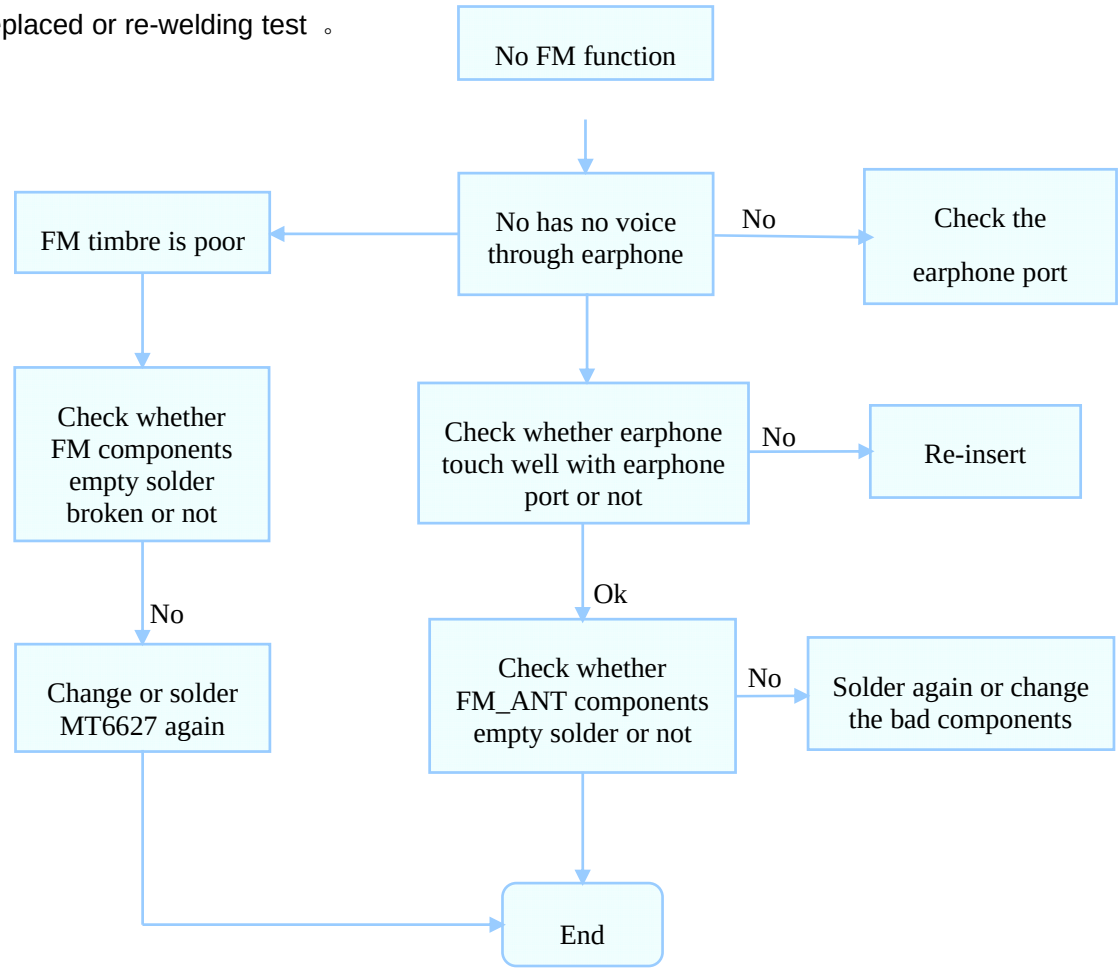
Turn on the radio function, but can't receive radio stations. 2 possibilities:

1, No sound from headphones:

First make sure that if the headset and contact with the 3.5' earphone port; then check the radio chip voltage is normal; final inspections of radio chip, MT6627 and peripheral devices for damage or cold solder joint can be replaced or re-welding test.

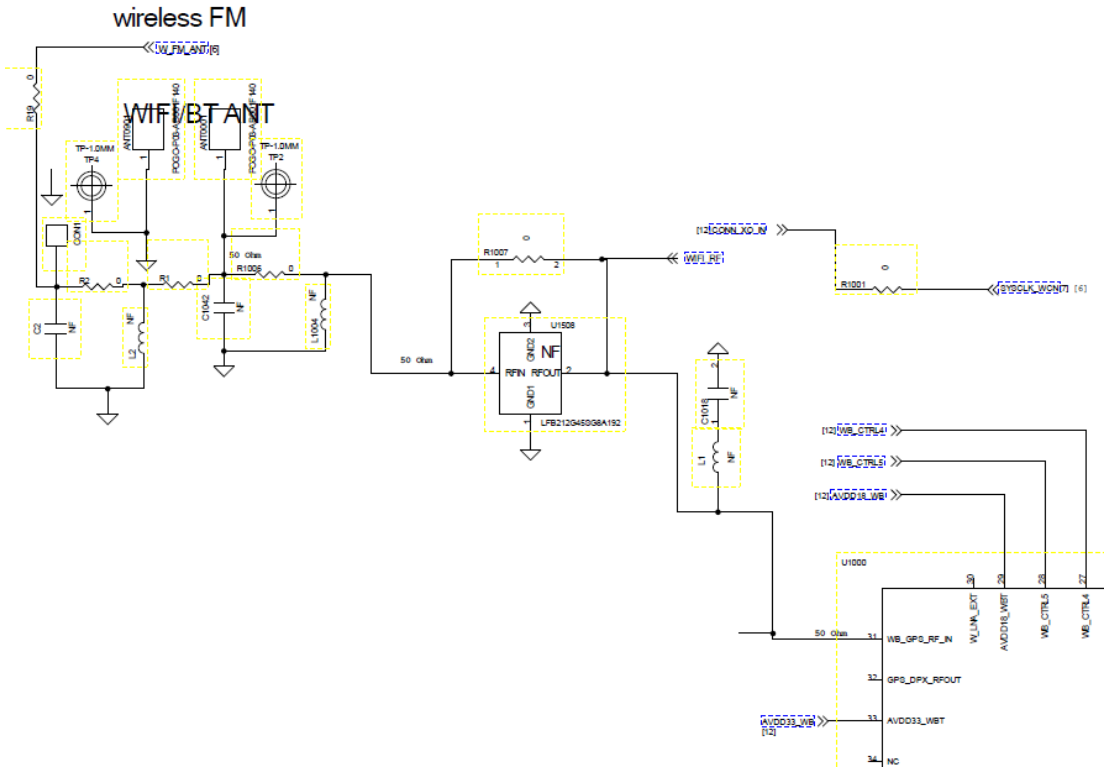
2, A rustling sound headphones, but the radio listening is not clear:

First, to confirm status of local radio signals, such as good and then check the radio antenna, radio antenna is connected through a 3.5' earphone port for headphones to signal reception, check the antenna connection and exposure pathways; final inspections of radio chip, MT6627 and peripheral devices for damage or cold solder joint can be replaced or re-welding test 。



2.4.13 BT

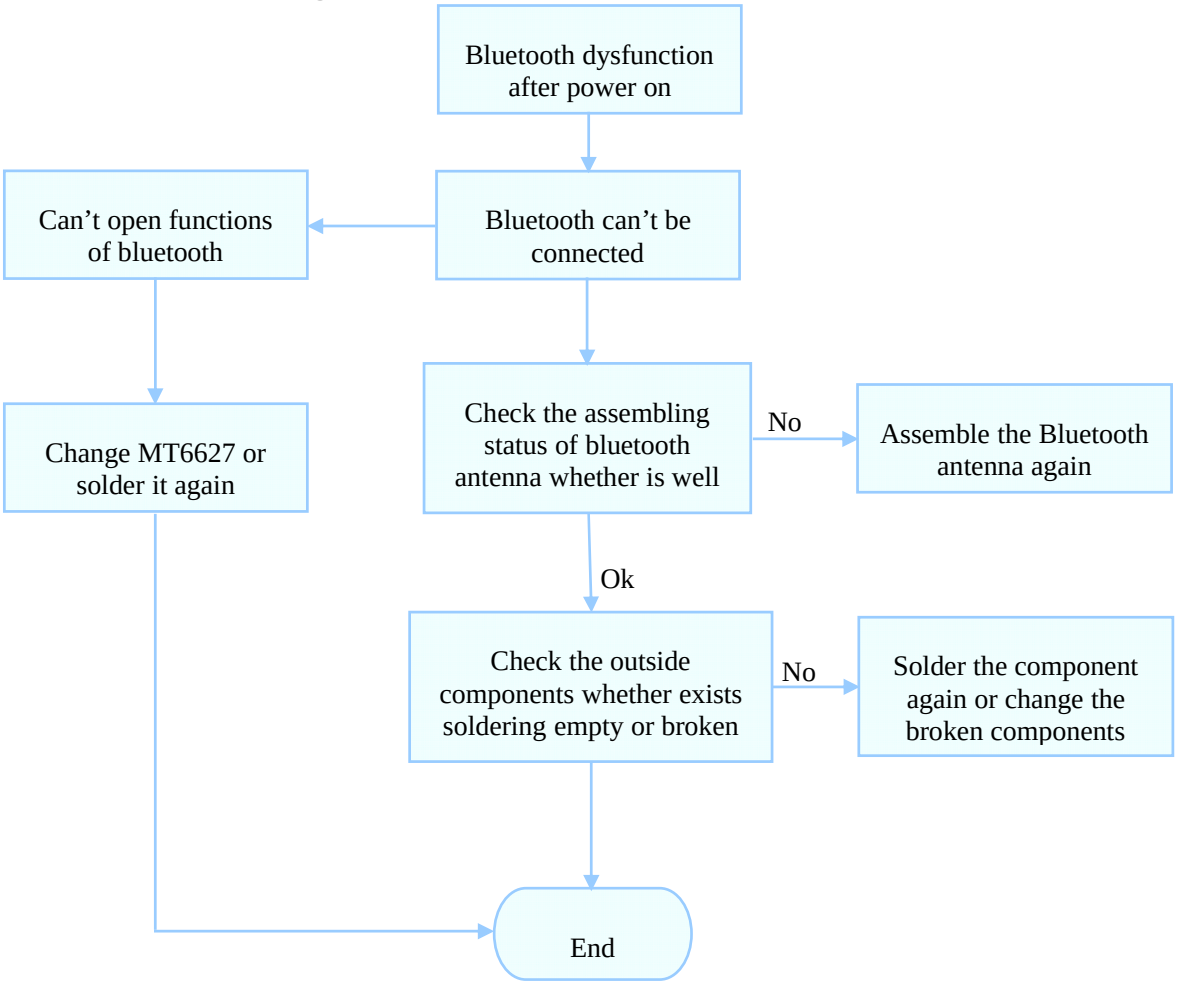
- **Block Diagram of display：**



➢ Circuit Analysis:

BT signal treatment via 4IN1 IC MT6627 chip:

➢ Trouble shooting:



3 Functional Test

3.1 MMI Test

I input *#66*# to enter the MMI test mode.

1. Keypad: test every key including side key ， if any key is normal ， there will display appropriate information in the handset screen.
2. Backlight;Test the function of trichrome LED whether it is normal.
3. CTP; Test touch panel function.
4. T-Flash card；Test the T-flash card whether it can be identified. If you have already inserted the SD card, LCD displays the “SD Card”, otherwise, LCD display the “No SD Card”
5. Bluetooth; Check Bluetooth.
6. SIM card;Test the Sim card whether it can be identified.
7. Vibrating;Test the vibrator whether it can vibrate ， enter this mode ， the vibrator will Vibrate if it is normal.
8. RTC;
9. SPK; test the capability of SPK whether it is normal.
10. Receiver;Check voice of RECEIVER，and can compare it with the normal handset to confirm its status.
11. Headset;Check the function of earphone 。If handset checks there is a earphone in audio jack，then screen of handset will appear ”Headset is in”；And you can test the function of earphone to confirm earphone and MIC。
12. FM Radio;Test the function of FM whether it is normal.
13. Camera: Test the function and capability of camera whether it is normal.
14. Battery: Test the function of battery whether it is normal.
15. WIFI:Test the function of WIFI whether it is normal.
16. Echo loop: Check MIC and receiver if they are normal ； and in this mode，you can hear your echo while you say something forward to MIC.
17. LCM Test；Test the color of LCD whether it is normal .The LCD will display red, green, blue, white and black screen.
18. GPS:Test the function of GPS whether it is normal.
19. Proximity Sensors:Test the function of proximity sensor whether it is normal.
20. Ambient Light Sensor:Test the function of ambient light sensor whether it is normal.
21. G-Sensor calibration

3.2 Voice Call Test

1. Insert UIM card to mobile phone, press and hold Power key to power on.
2. Check whether the signal strength is changed normally in normal network environment.
3. Dial a fixed-line number to test the voice quality during a call.
4. If the preceding tests are normal, end the voice call test. Otherwise, perform the test again or note down failure symptoms for further analysis and repair.