Technology Document

Document Title: ZTE C300 CDMA 1X After-sales Service Manual (Level 2)

Total: 28 Pages (Cover included)

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ZTE CORPORATION

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Notice: 1. Fill in the table while modify the document.
2. The modification reason and main modification content columns are filled in none during first document making.

目录

1. Product Summary

1.1 Specification

Model: Super slim bar phone

Dimension (W*L*H): 45 mm×105 mm×13 mm

Weight: 80g（with standard battery）

Antenna: inner antenna

LCD: single display 1.5 inch, Color Filter, 96×64

Color: black

Battery Capacity: 670 mAh lithium battery

Continuous talk time: 2-4 hours

Continuous standby time: 80-160 hours

1.2 Function

LCD: 1.5 inch single screen, Color Filter, 96×64

Phone book: 200*3 groups

Alert: 32 chord. 20 for ring tone + 6 for message, group ring tone

Message: 50 for Inbox/Outbox each. group send, up to 10

Incoming call: Incoming call firewall

Value added service: BREW download; UTK

Others: Headset(optional), hand free, built-in vibration; various input methods of Chinese /English /Symbol /Digit; calculator, alarm, calendar, game; standard USB data /charge interface

1.3 Inner code

Inner Code	Outer Code
ZTEC300	ZTEC300

2. Inner Structure and Elements

2.1 Function Test

Check ESN NO.: '*#06#'
Check version: '*983*837#'
Function Test : '*983*0#'

- Input '*983*0#'to test LCD→ ringing tone→ motor → keypad → audio loop → earphone → FM

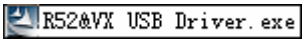
Main Tests

- LCD test: Check if the LCD display has display defects such as line defect, spot defect, and screen contortion
- Ringing tone, vibration test: No exceptional noise, burst noise; vibration even, no noise
- Key test: Check if it is possible to type the correct characters by each key. The strength should be even, and the keys should feel good and elastic
- Audio loop test: Blow to the microphone, and the speaker sends out rustles, but no other noise
- Earphone test: Plug in the headset, blow to the microphone, and the speaker sends out rustles, but no other noise
- FM test: Plug in the headset, do the radio test, and there is no exceptional noise or burst noise
- When finished, press the 'End key', the phone will automatically restart

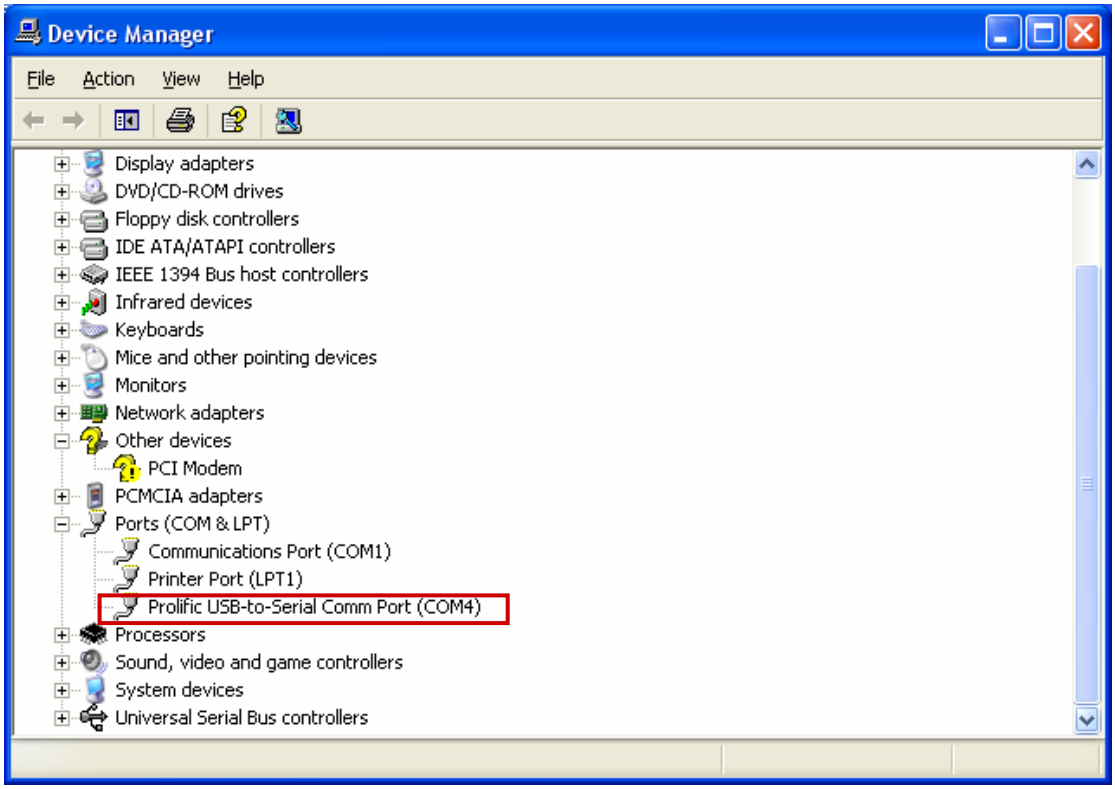
2.2 Software Download

- Software download instruction
  Repaired handset must be updated to the latest version
- C300 has the same download platform and operation with C330, so here uses the C330 download operation interface. In the practical operation, be careful with the choice of version
- Download data cable
  C330/C350 download data cable (code: ISO13032)

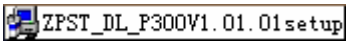
- Data cable driver: R52&VX USB driver



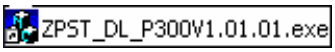
- Check serial port
- Check route: right click 'My Computer' → 'Attribute' → 'Hardware' → 'Device Manager' → 'Port'



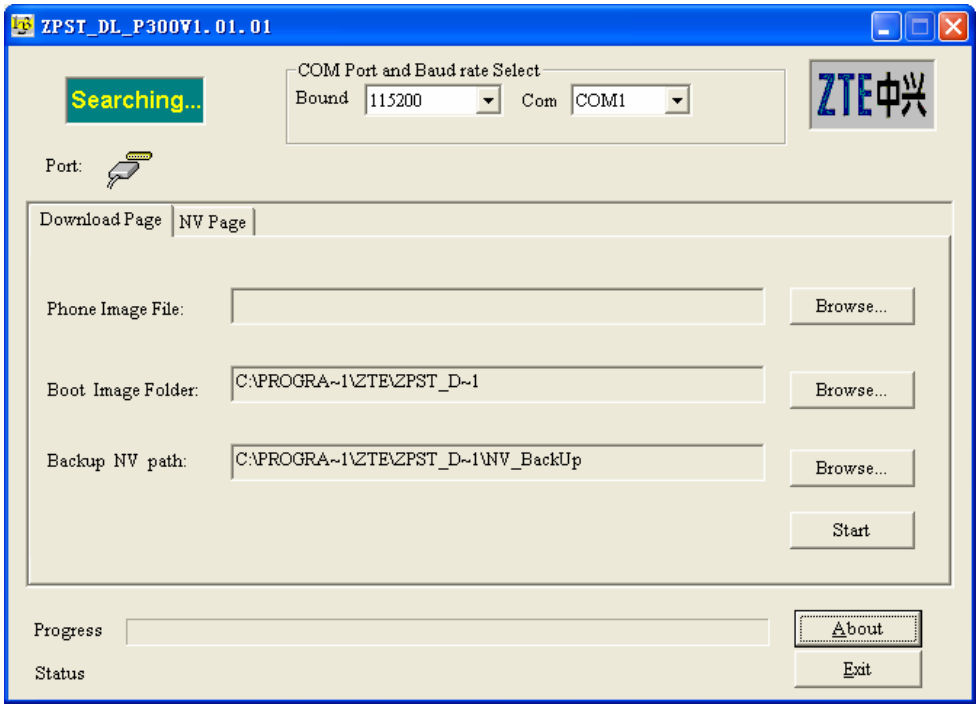
- Download platform: ZPST_DL_P300V1.01.01setup



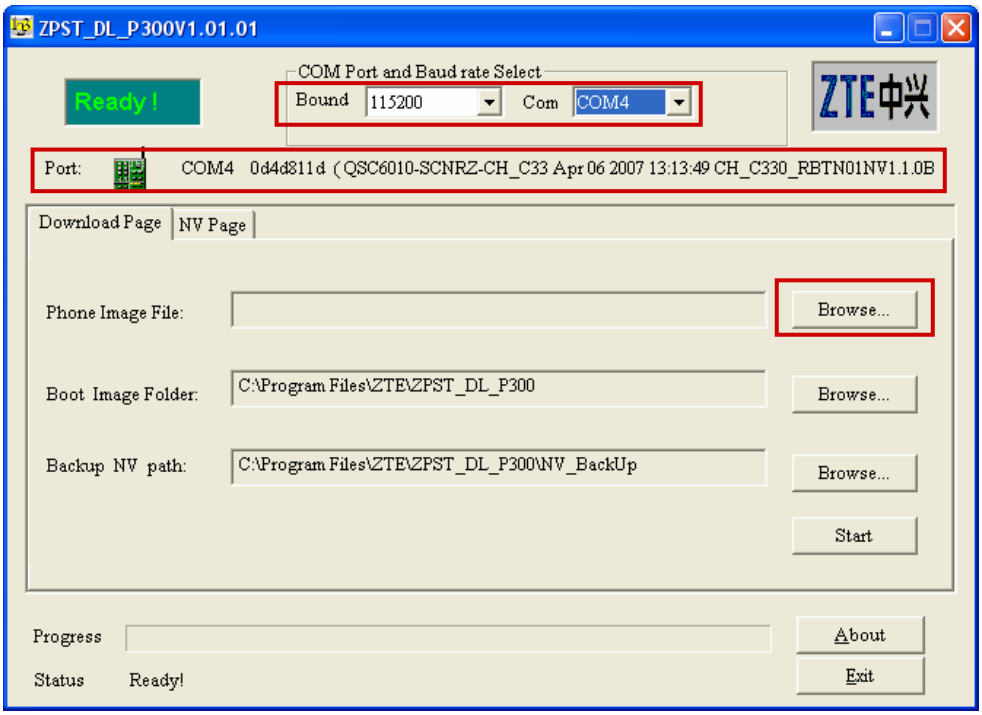
- After successfully installed, double-click the shortcut icon



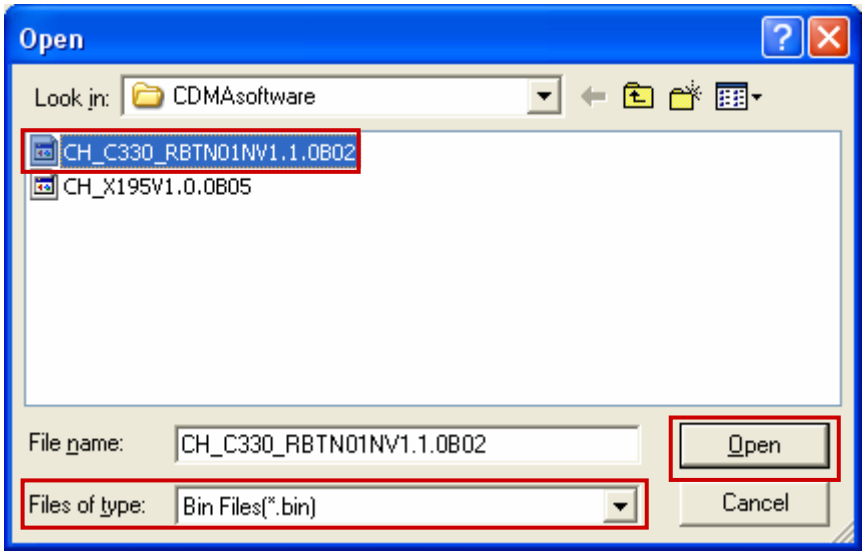
- Main interface



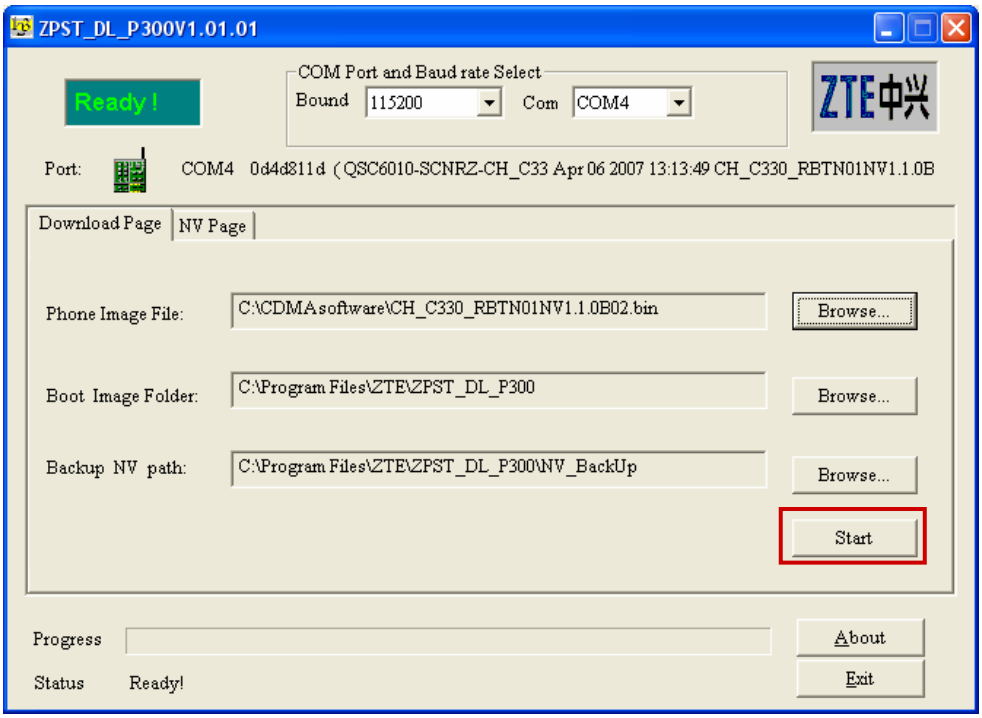
- Select 'Bound: 115200'
- Select correct serial port, then the platform will automatically read out the software version information → click 'Browse'



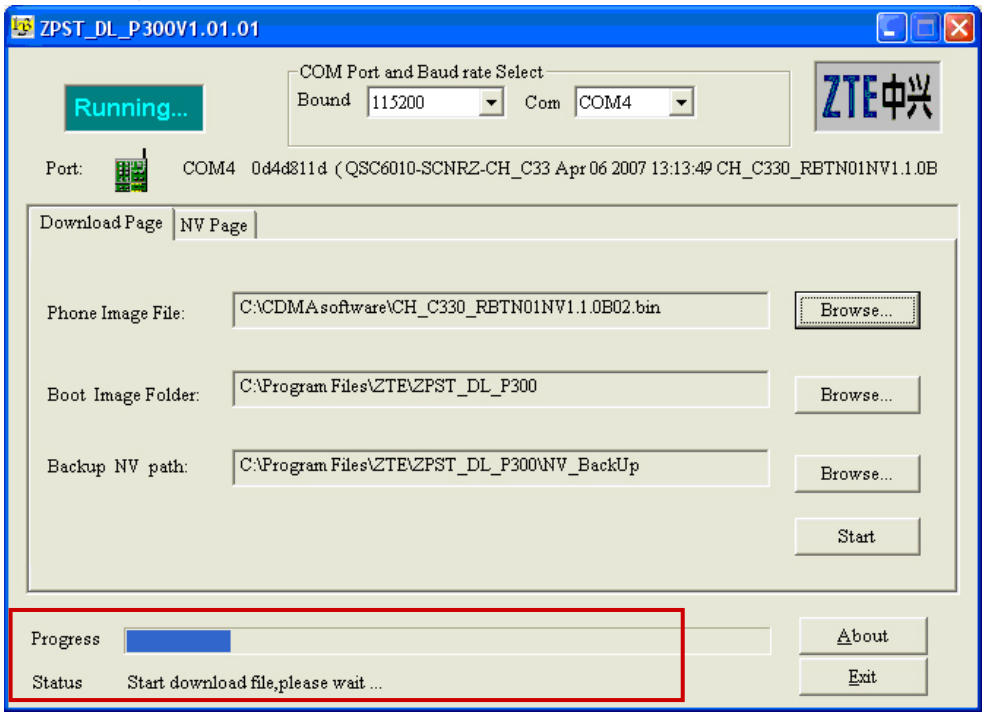
♦ Select '*bin file type'→ select the right version file→ click 'Open'



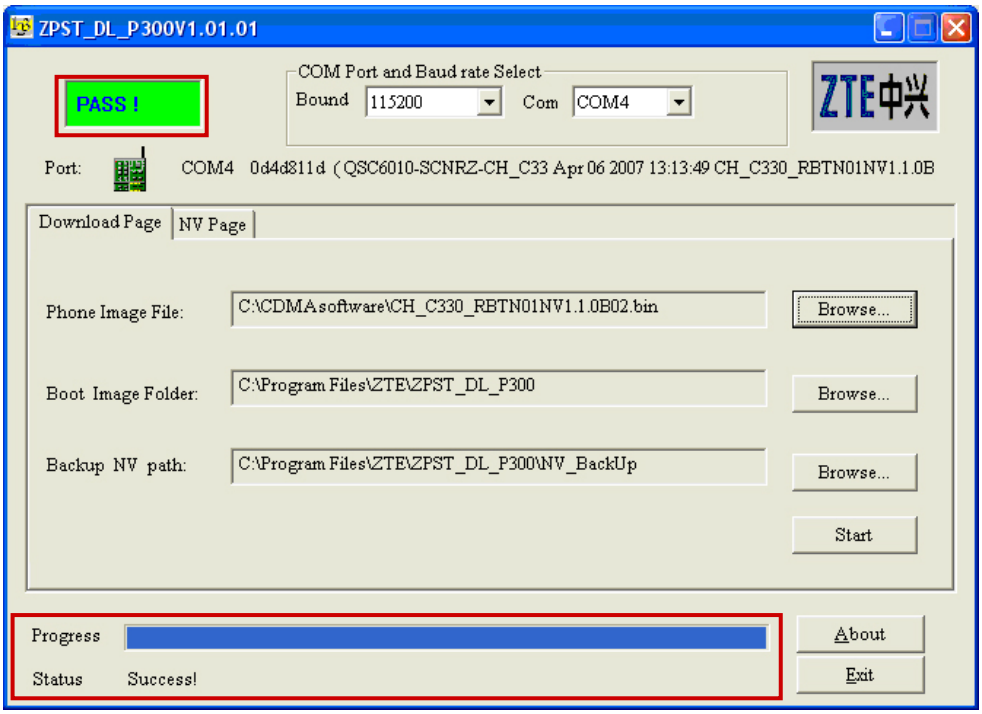
♦ Click 'Start'



♦ Downloading

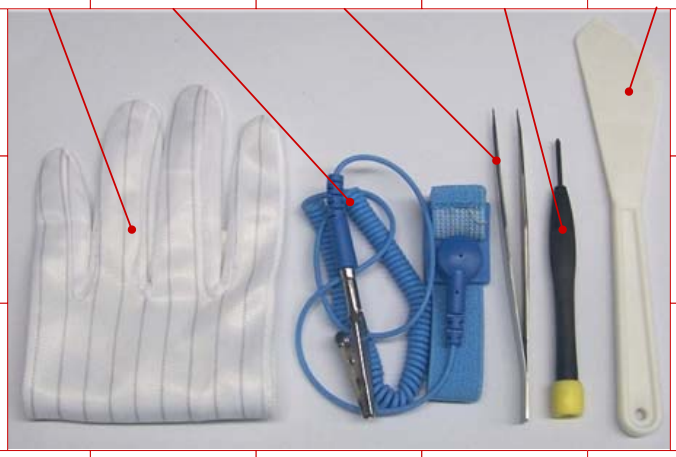


♦ Downloading completion interface



2.3 Disassembly Flow

- Tools

Anti-electrostatic gloves	Anti-electrostatic wrist	Tweezer	Screwdriver	Dismantle house tool
				

- Position of four bolts

♦ Separate front/back cover, pay attention to the locks

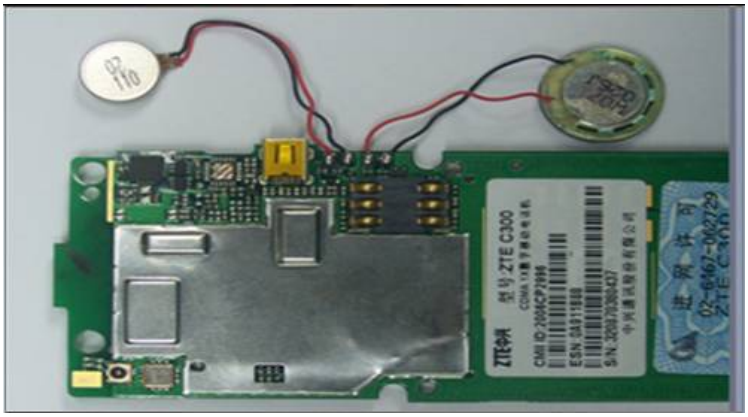
♦ The detached front/back cover and the main board（make sure the microphone is well contacted with the contacts, the receiver is well contacted with the contacts.）

- Front back cover components
- The right position of motor, three salient points face up

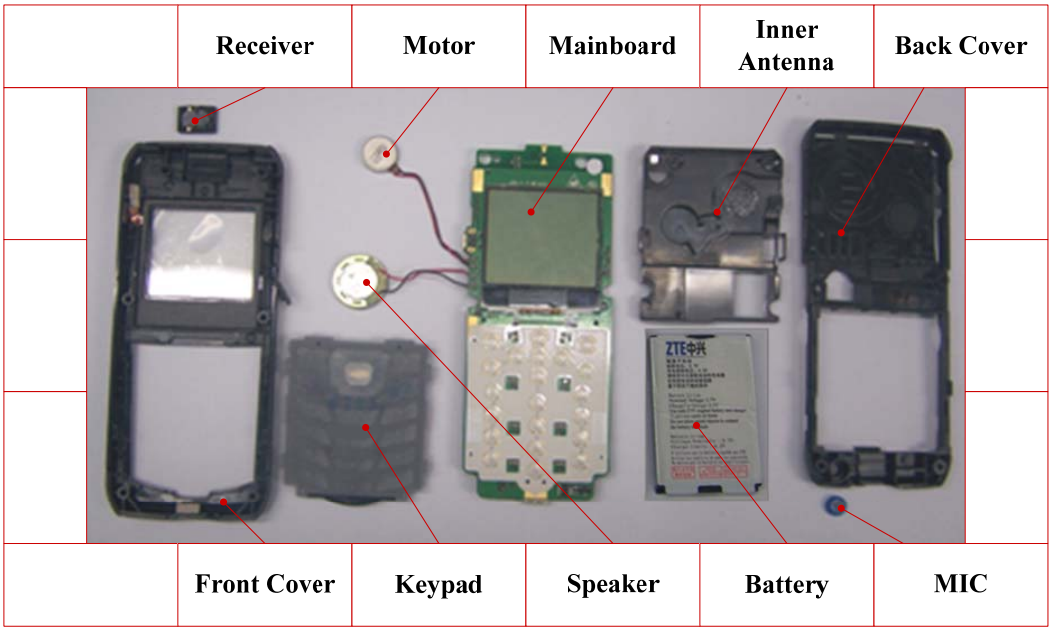
- Be careful with the correct installation of motor and speaker and the winding positio

- Detached antenna and main board（while installing the antenna, make sure the antenna contact blade well contacted with the contacts）

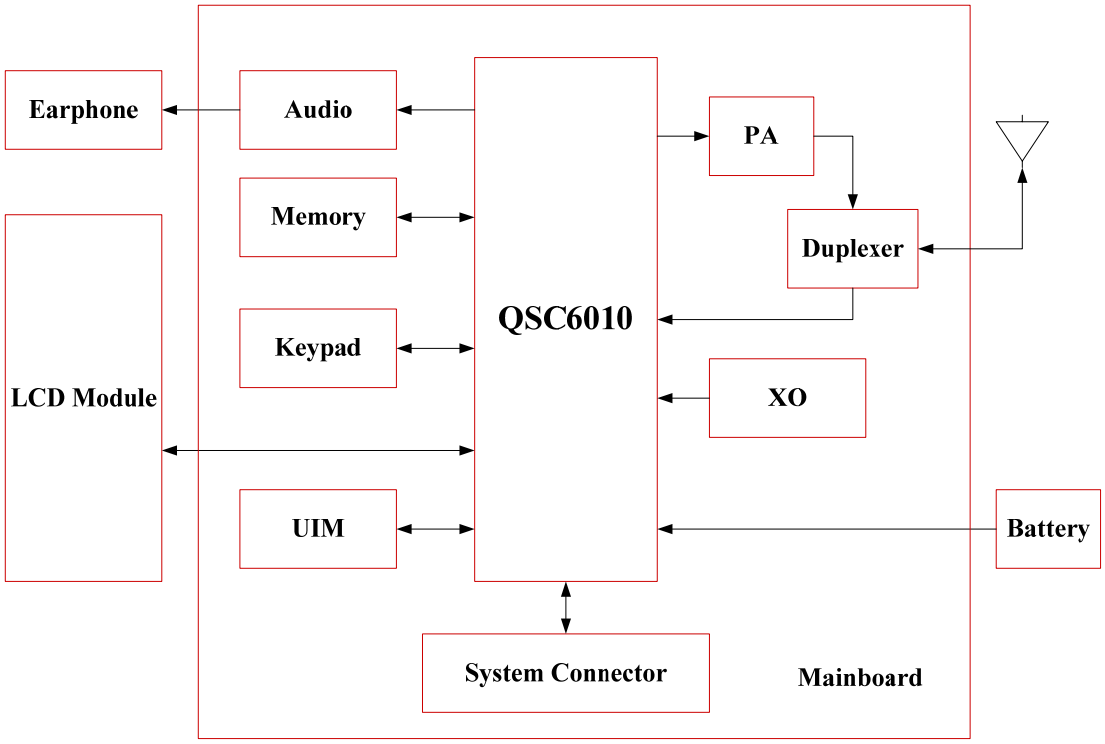
♦ Detached main board, and be careful with the weld between the motor and the speaker



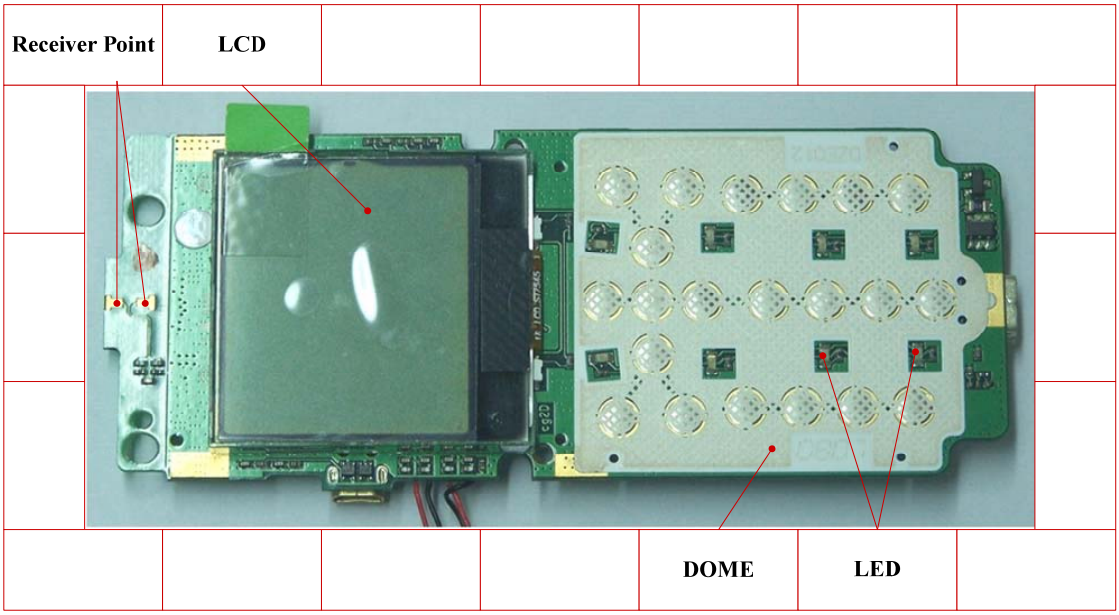
2.4 Components

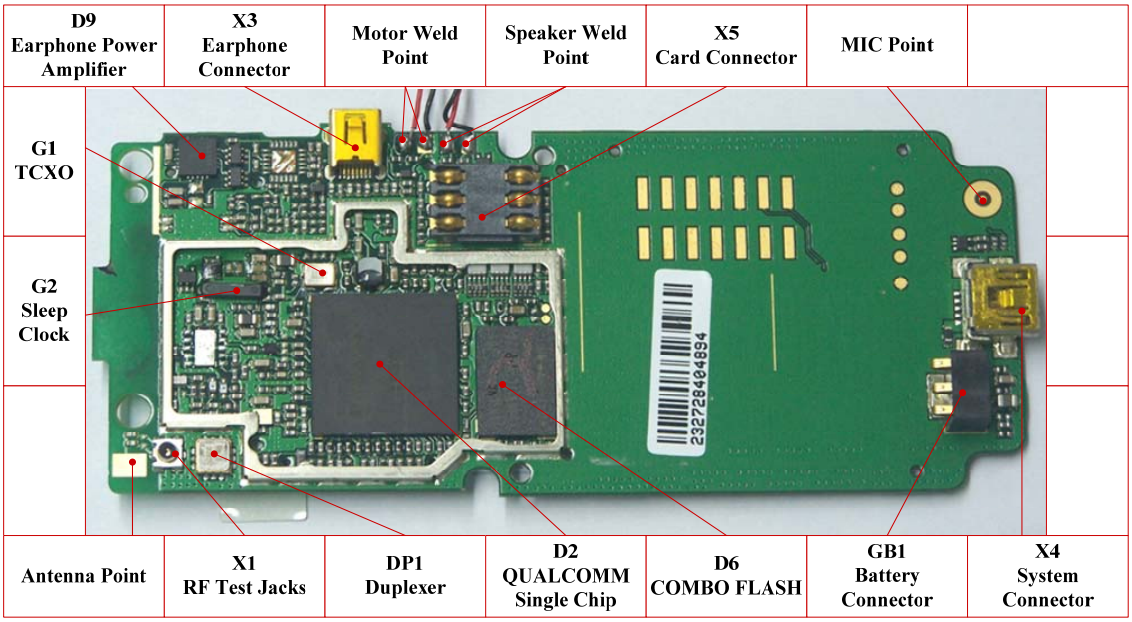


2.5 Principle Block Diagram



2.6 Basic Device Distributing





2.7 Main Test Point

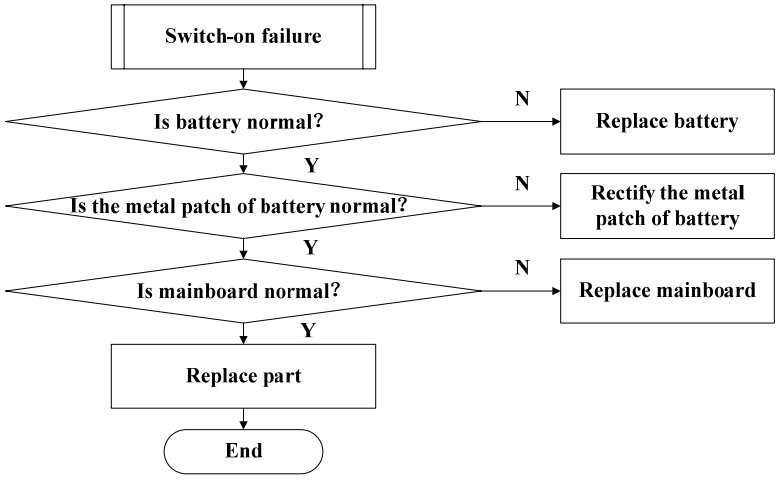
Name	Voltage	Test point	Function
VREG_TCXO	2.85V	C19	Power supply for TCXO of RF circuit
VREG_RFRX	2.6V	C21	Power supply for the front RX
VREG_RFTX	2.6V	C39	Power supply for TX circuit
VREG_RUIM	3V	C18	Power supply for UIM card
VREG_MSMP	2.6V	C32	Power supply for the outer equipment
VREG_MSME1	2.9V	C33	Power supply for BUS
VREG_MSME2	2.9V	C23	Power supply for BUS
VREG_MSMA	2.6V	C37	Power supply for analog circuit of the baseband
VREG_MSMC	1.2V	C40	Power supply for CPU

3. Basic Flow Chart of Common Troubleshooting (Level 1)

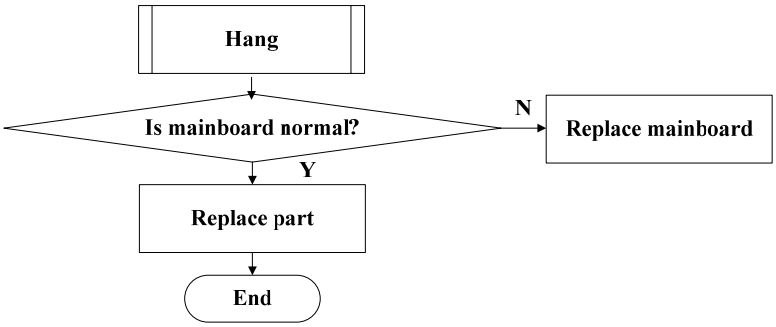
3.1 Structure Failure

For the structure failure, please make the corresponding replacement (refer to section Disassembly Flow)

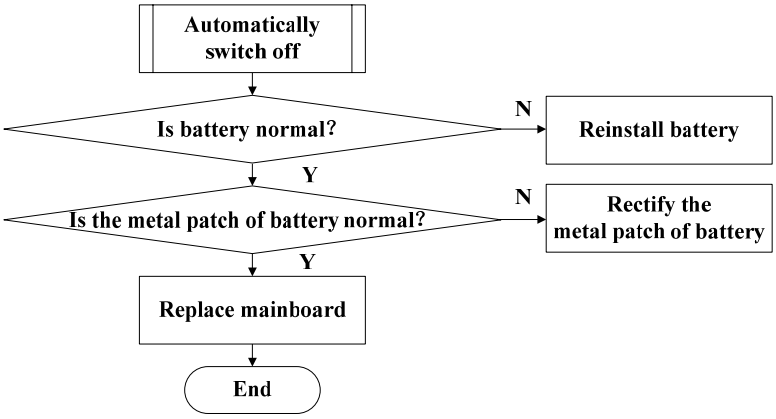
3.2 Switch-on Failure



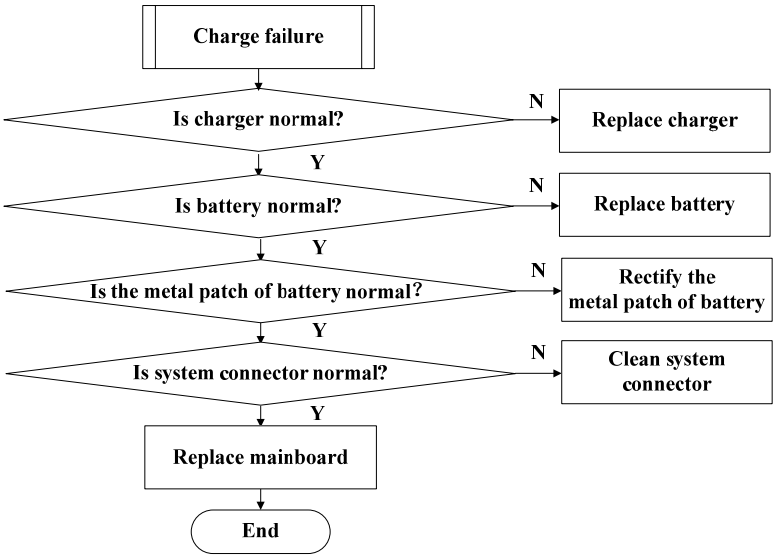
3.3 Hang



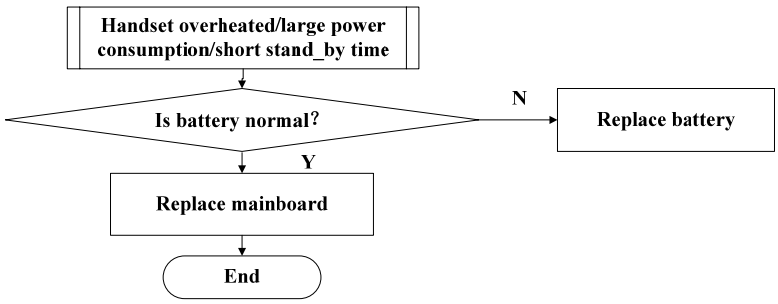
3.4 Automatically Switch Off



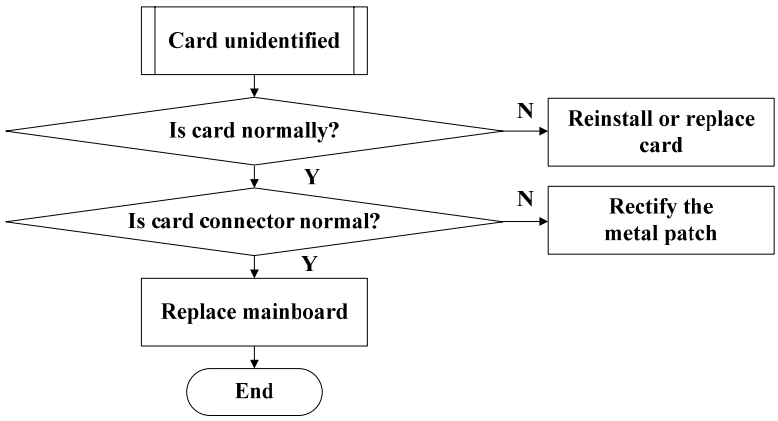
3.5 Charge Failure



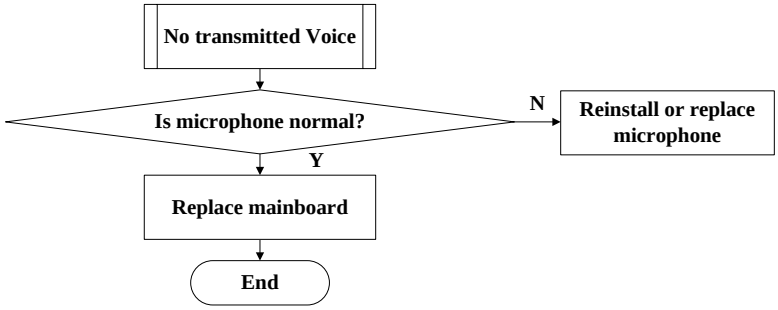
3.6 Handset Overheated/Large Power Consumption/Short Stand _by Time



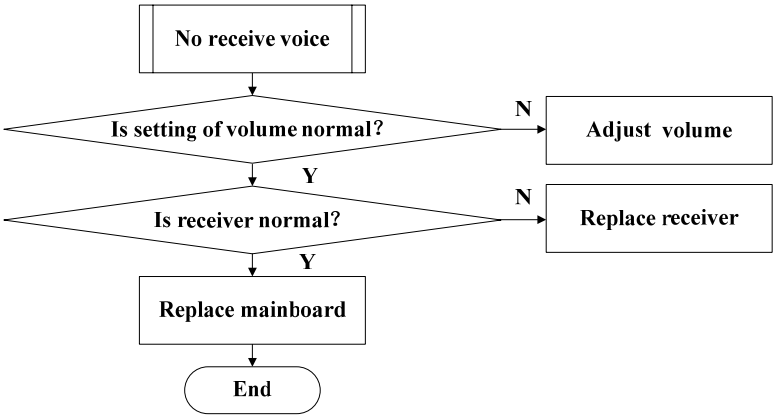
3.7 Card Unidentified



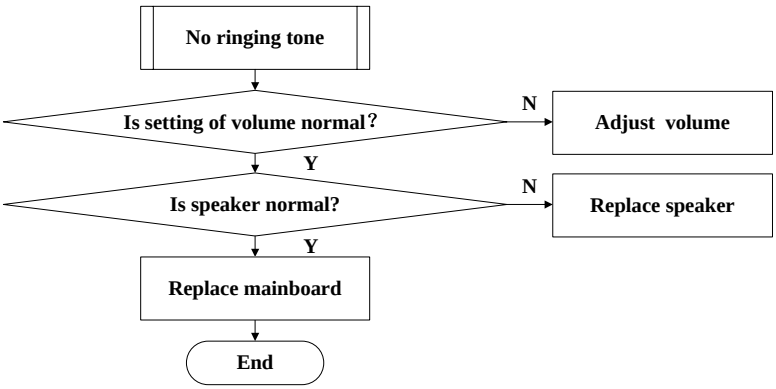
3.8 No Transmitted Voice



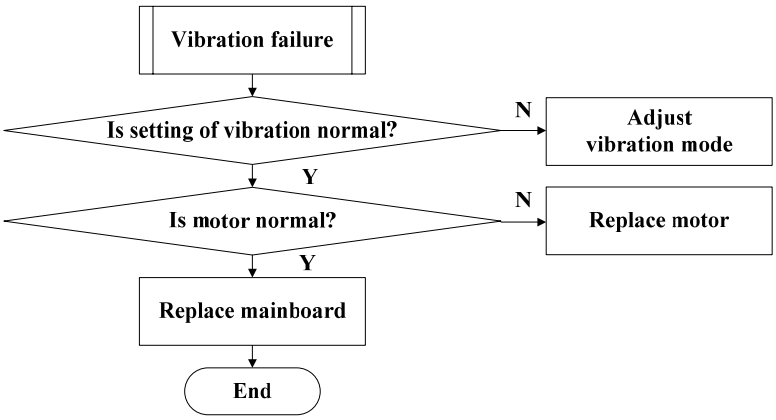
3.9 No Receive Voice



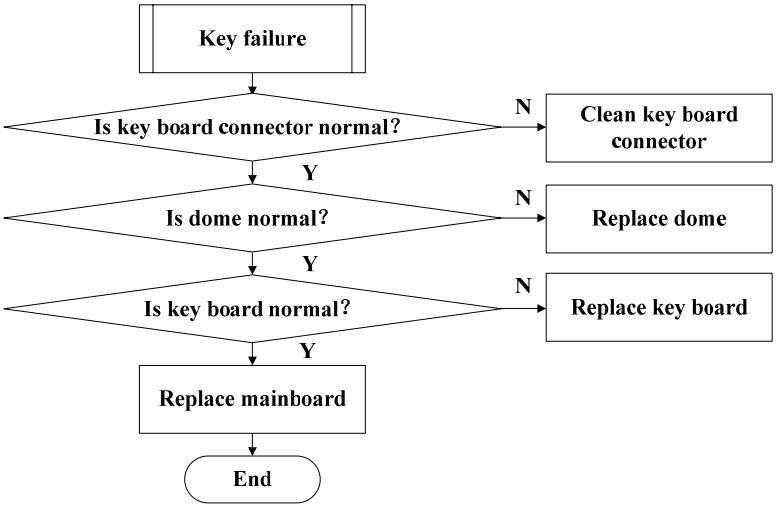
3.10 No Ringing Tone



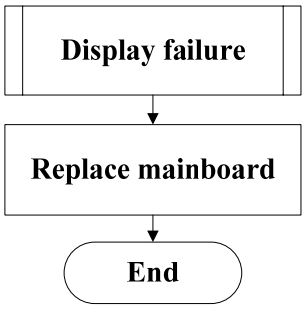
3.11 Vibration Failure



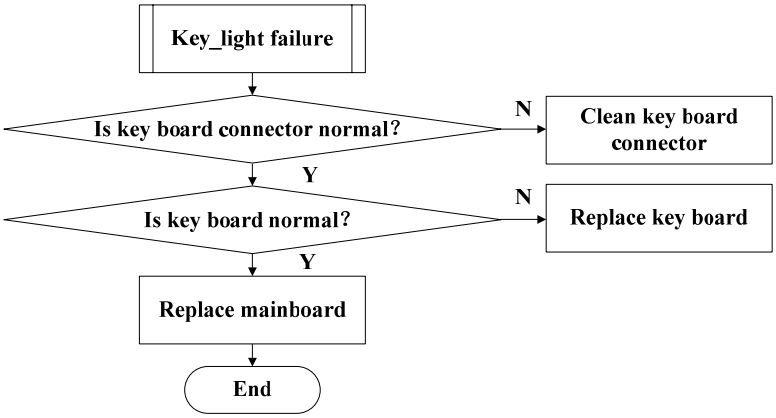
3.12 Key Failure



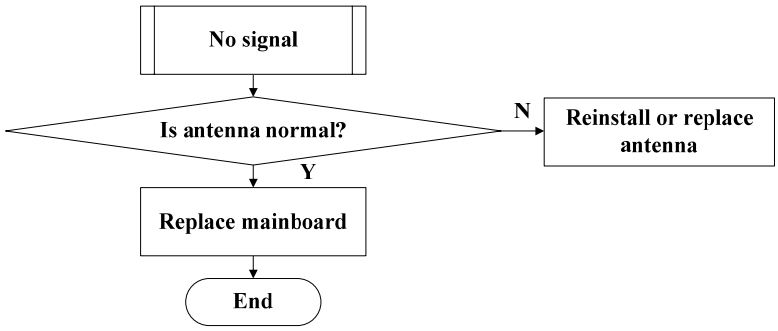
3.13 Display Failure



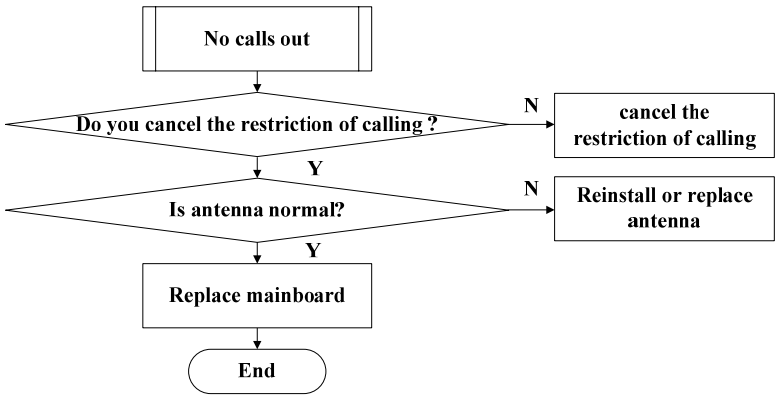
3.14 Key-light Failure



3.15 No signal



3.16 No Calls Out



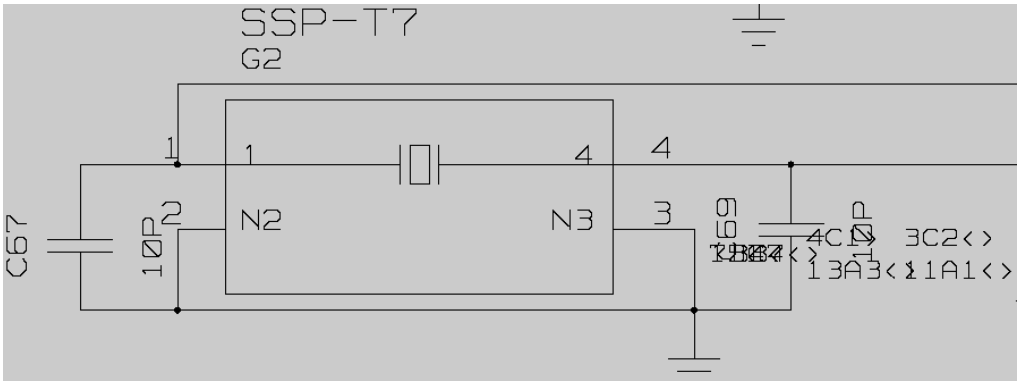
4. Basic Flow Chart of Common Troubleshooting (Level 2)

4. 1 Switch-on Failure

Repair Steps

- Check if each LDO output is normal. If normal, check the clock signal. When the power key is being pressed or power is supplied through the download cable that can automatically switch on the phone, measure the third pin of XO(G1); if the output is not the clock signal of 19.2MHZ, replace the XO. If the clock signal is OK, check the main chip QSC6010(D9) or FLASH (D11)
- If it automatically restarts when it is on, LCD displays “pmapp.c 01074”, check the slow clock G2, and also welds in other portions might be take into account

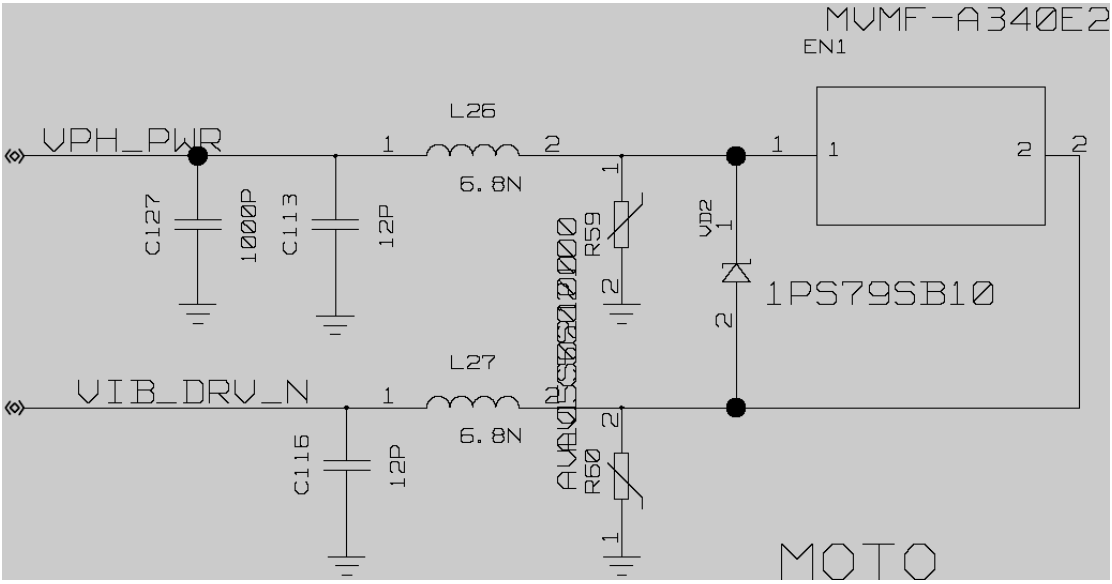
4.2 Restart



Repair Steps

- Check the C67/C69 weld
- Measure the fourth pin of G2. Check if the slow clock input is normal. The signal test should be measured at the instant of switching on. Measuring when it is on may restart the phone. The normal signal should be an around 32.7K signal resembling a sine wave
- Check the main chip weld
- When the input is normal, check if the output is normal. The output should be an around 32.768K sine wave. If not, reweld or replace the slow clock
- Check QSC6010

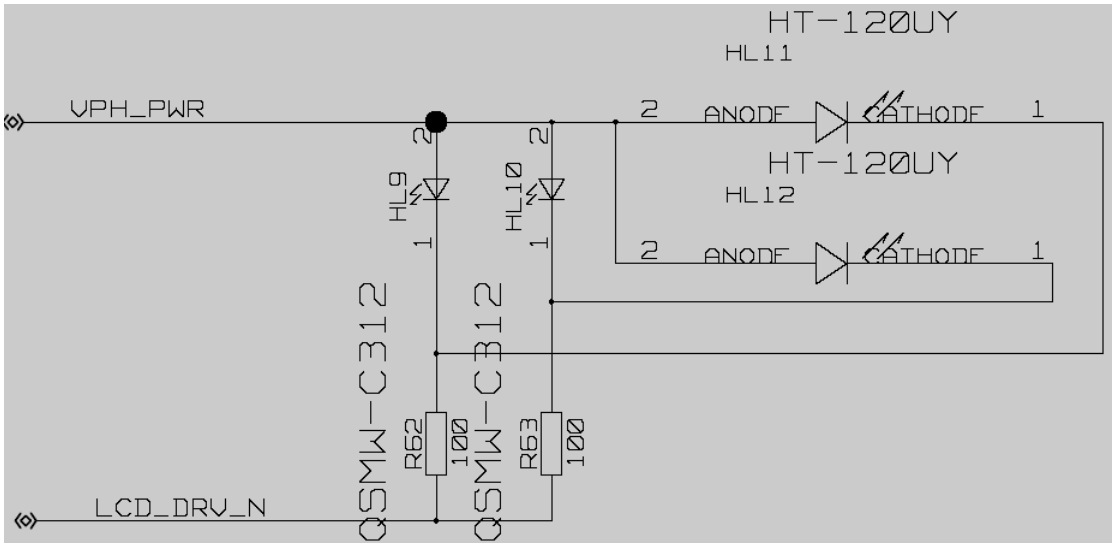
4.3 Vibration Failure



Repair Steps

- Make sure it is not caused by assembly.
- Check the VD/C113/C116/C127 weld.
- Vibration test. If the VIB_DRV_N signal is output low level. If it is always a high level, something is wrong with the main chip output

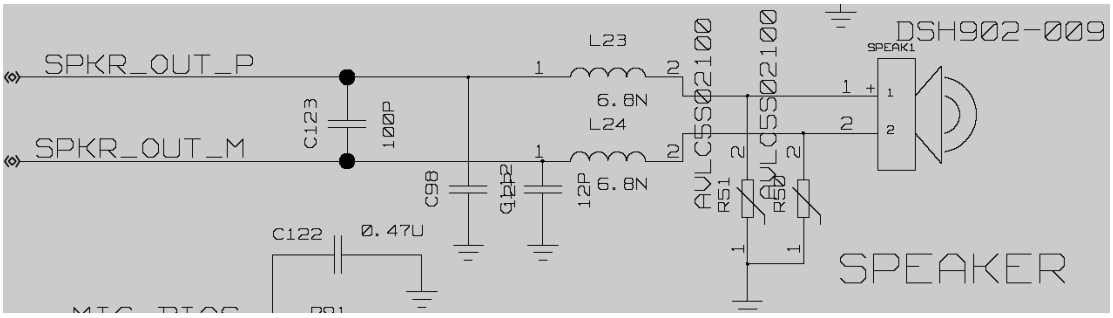
4.4 LCD Failure



Repair Steps

- The LCD display gets a black screen or no display is usually due to the weld problem, so it should be first checked when examined
- If there is welding problems with LCD_FPC

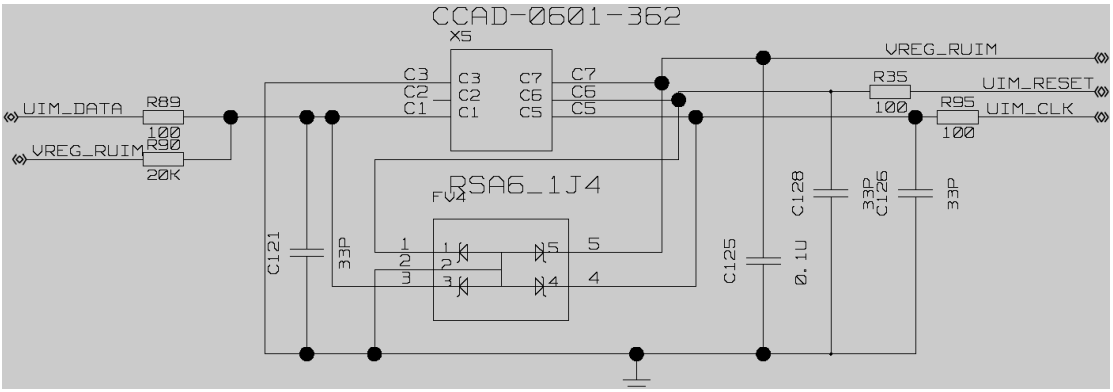
4.5 No Ringing Tone



Repair Steps

- Check if the springs of the receiver are well contacted
- For receiver, except checking if the springs of the RECEIVER are well contacted, the welding of L30, L31 should be checked
- For the output of SPEAKER, test if the audio amplifier has output. During the alert, check if the three PK welding trays on the corresponding main board has signals
- For the speaker output, check the welding of FV1 of ESD. The resistance to ground of SPK welding trays may be measured to find this problem

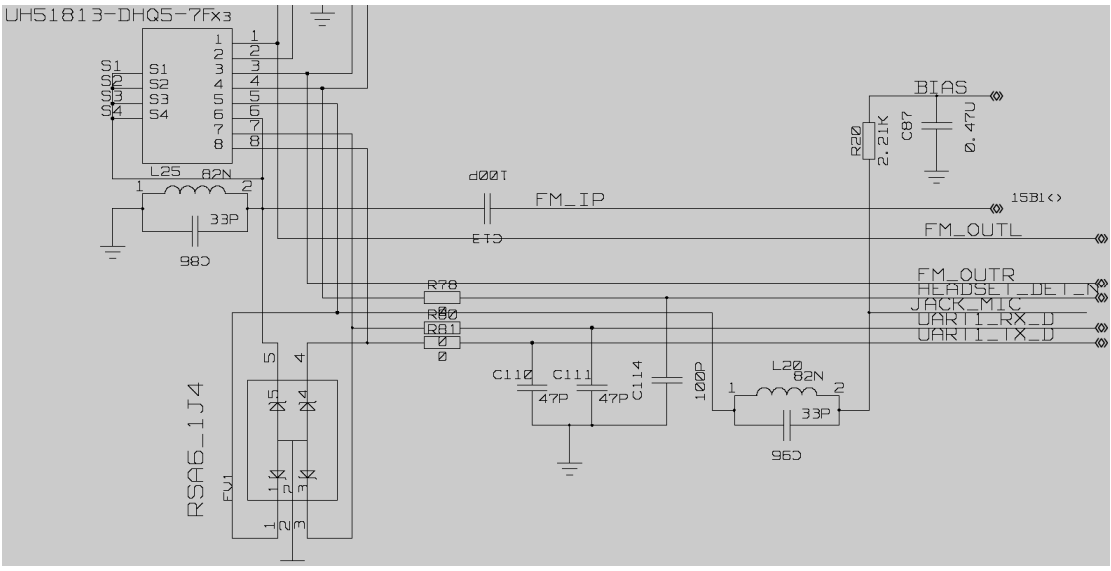
4.6 Card Unidentified



Repair Steps

- Check FV4/ UIM card slot welding
- Test if the voltage of VREG_RUIM is normal at the instant of switching on. If not, reweld or replace the PM
- Test if the input of UIM_RESET, UIM_CLK and the like is normal. If not, check the corresponding filter resister capacitor welding on the network
- Check the main chip
- If all the above is normal, replace the UIM card slot

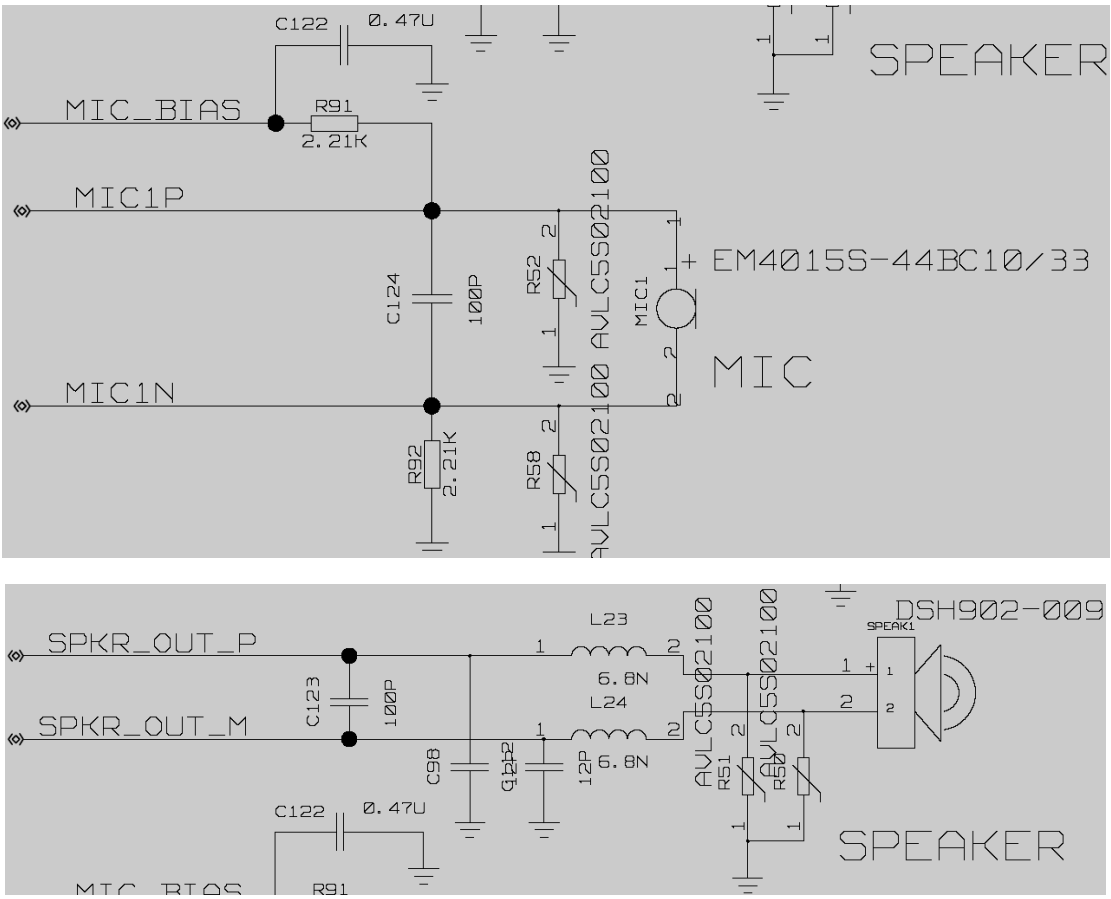
4.7 Earphone Failure



Repair Steps

- Check the welding of headset socket
- If the headset does not work when plugged in, first check the headset socket, the headset voltage output circuit, and then the welding of various elements
- If the headset has been detected, but there is no ring tone or no voice, the welding of ESD should be checked first, then the receiving and transmitting signal pathway, and finally the welding of the main chip

4.8 No Echo



Repair Steps

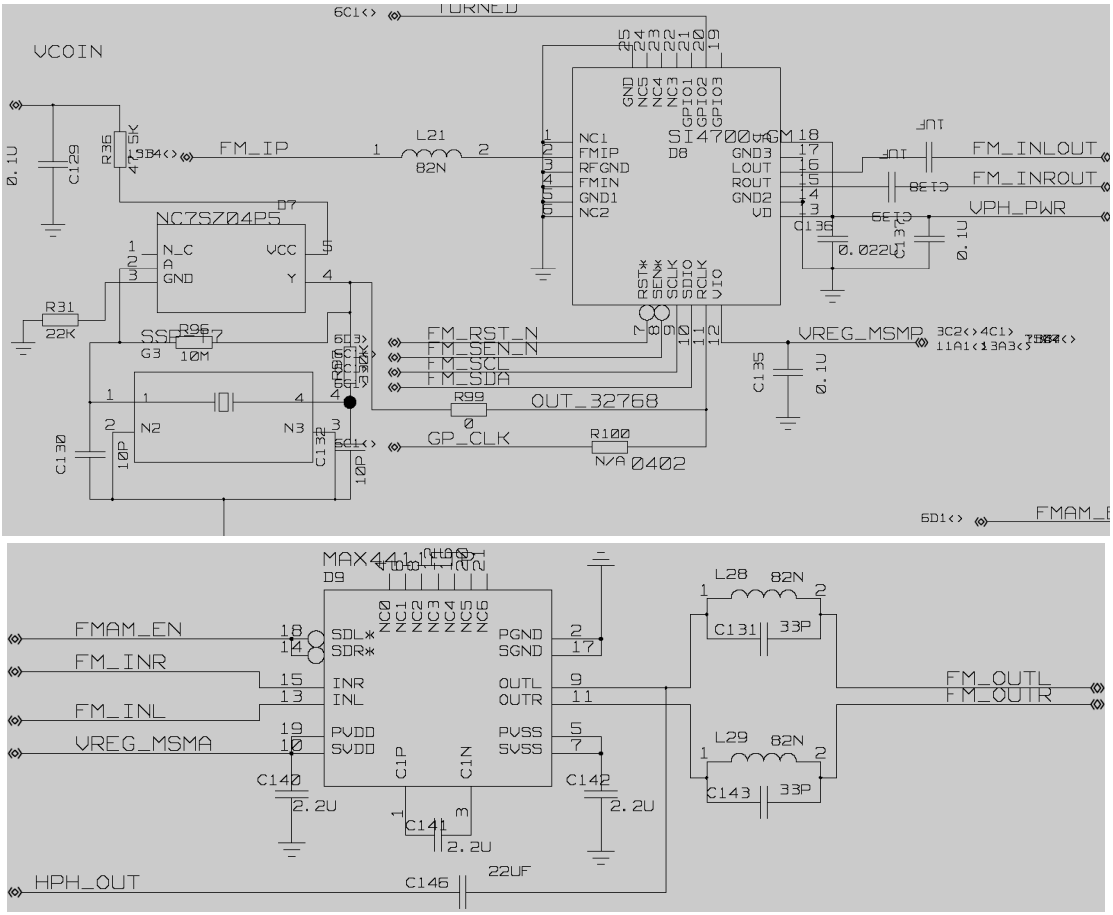
- No echo is usually because of the weld defect, missing or short-circuit on the MIC loop

4.9 Key Failure

Repair Steps

- A string of or a row of keys do not work is usually due to the welding short-circuit or the weld defects; for other failure instances, the network list could be scanned to find out which network is wrong, and thus search the related network according to the circuit diagram
- Check if the keypad panel is dirty. If it is, it needs to be cleaned, for the dirt may usually cause failure of a few keys

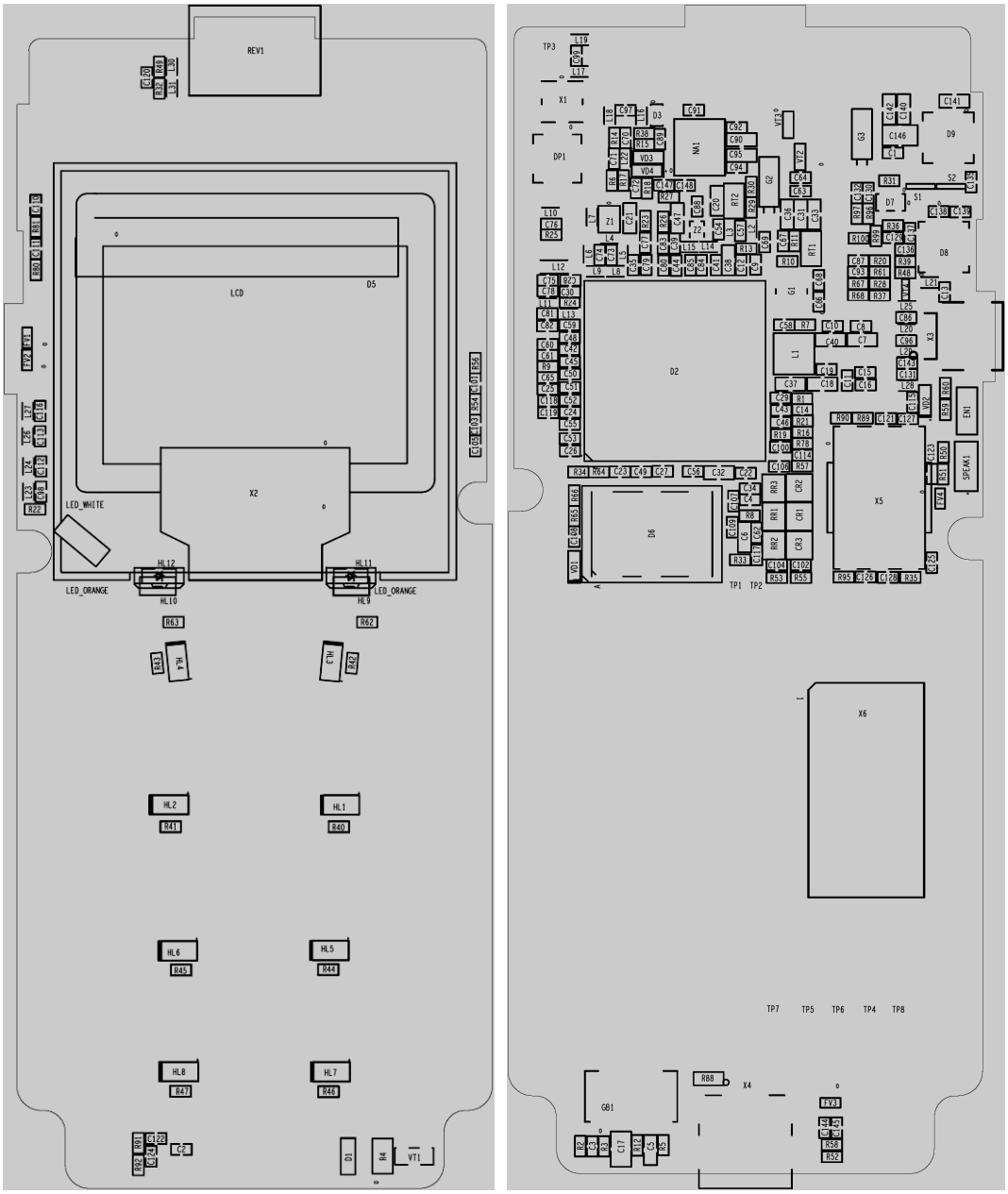
4. 10 FM Failure



Repair Steps

- Check FM chip D8 is normally supplied with power
- Check the FM input signal FM-IP is normal. If not, check the welding of headset jack
- Check if D8 has output. If no output, reweld or replace D8
- If D8 output is normal, check D9 headset amplifying enable signal is normal. If not, reweld or replace the main chip
- Measure if the headset amplifying input voltage is normal
- Reweld or replace the headset amplifier D9

5. PCB Board Position Diagram



6. BOM

6.1 Complete Installation BOM

ZTEC300CDMA1X Digital Mobile Phone Complete Installation BOM		
SN	**Material Code**	**Material Name**
1	055401001963	C300 Front Shell Component
2	055401001964	C300 Back Shell Component
3	055402000525	C300 Keypad Component
4	055402000526	C300 Vaulted Film
5	050603100064	C300 Built-in Antenna
6	055403100036	C300 Lens
7	055401001993	C300USB Plug
8	055402000500	ZTEC170 Coaxial Plug
9	056465000082	V767 Bolt
10	126753350009	ZTEC300MB
11	035030100164	C300LCD Module
12	035040300038	4015 Contact Microphone
13	035070100022	Vibration Motor
14	035040400025	0711 Spring Receiver
15	035040100057	15-L30H04 Speaker_Nostick

6.2 Mainboard BOM

ZTEC300CDMA1X Digital Mobile Phone ZTEC300 Main board ZTEC300MB BOM			
SN	**Material Code**	**Material Name**	**Board Position Number**
1	002010500021	Capacitor Free Stereo Headset Amplifier	D9
2	002030200008	SPDT Analog Switch	S1,S2
3	006030200043	COMBOFLASH	D6
4	012090200039	QUALCOMM Single Chip	D2
5	012090700007	FM Tuner Chip	D8
6	015010200072	RF power amplifier	NA1
7	030012000011	SMD Crystal Resonator	G2,G3
8	030012000048	SMD Crystal Resonator	G1
9	036010100016	SAW Filter	Z1
10	036010100171	SAW Filter	Z2
11	036010200003	SAW Duplexer	DP1
12	042110400006	mini-USB	X4
13	042120100019	3 Position Spill Type Battery Connector	GB1
14	042120200021	UIM card slot	X5
15	042120300016	8pin Mini-usb Socket	X3
16	042120700001	RF Test Jack (socket)	X1

OMIT（Note: The primary elements position diagrams are given. If all the main board BOMs are needed, please make an application to our document base.）