TCT Mobile

Level 2 Repair Document

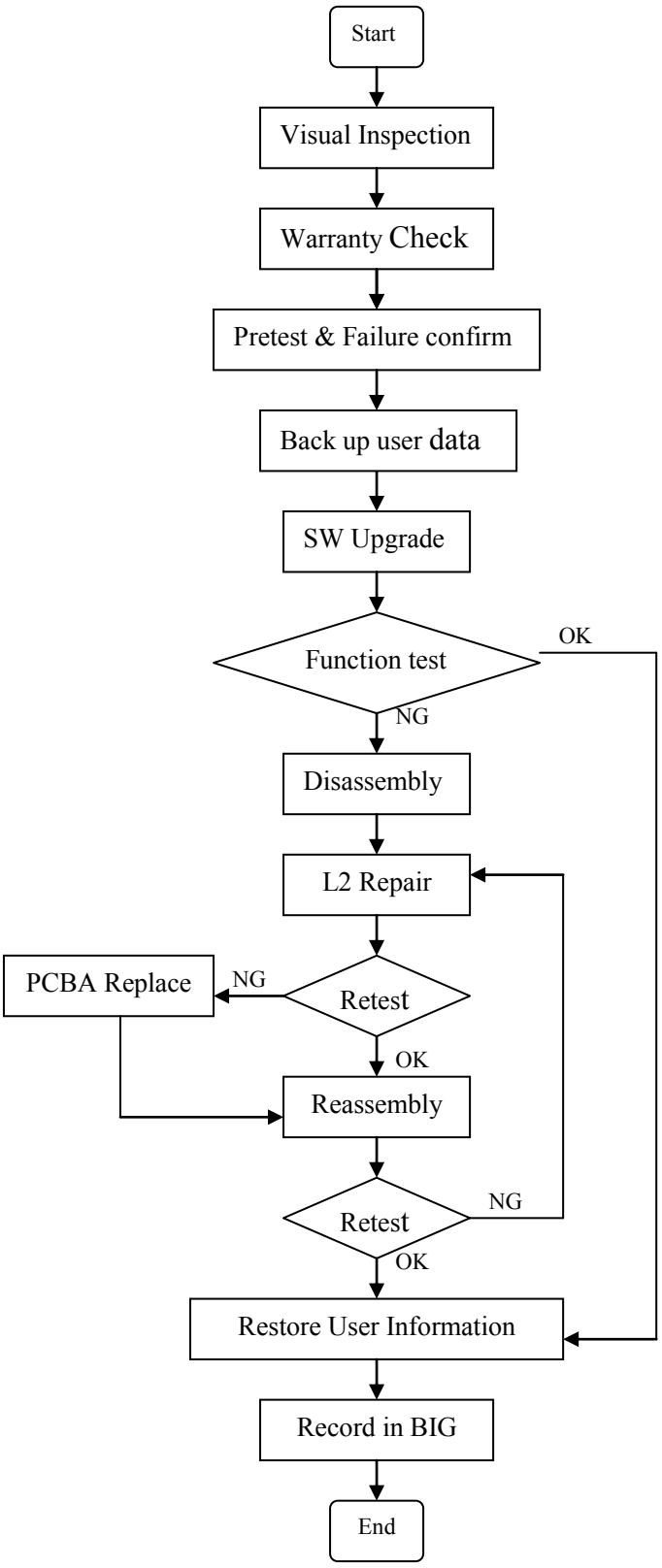
GIN / One Touch 918(N/A/D/S)

Note: this manual is non-contractual and TCT Mobile phone can modify without prior notice the characteristics of described equipments.

HISTORY			
Date	Version	Author	Comments
2011.09.15	0.1	Huangzhen	The first create
2011.10.21	0.2	Huangzhen	Update MMI test
2011.10.24	0.3	Huangzhen	Add SoftwareUpgrade
2012.03.24	3.0	Huangzhen	Add 918S

	Function	Name	Date	Signature
Written by	GCC TS Engineer	Huangzhen	2011-9-15	Huangzhen
Verified by	CPM	Venus	2011-10-25	Venus
Approved by	PM	Xinjian yan	2011-10-25	xinjian

1. LEVEL 2 REPAIR PROCESS



2. VISUAL INSPECTION AND WARRANTY CHECK

2.1 Warranty Check

Warranty confirmation of L1:

- ✓ **IMEI sticker check:**

  The IMEI number MUST be the same with the one on the IMEI sticker. If not, it's out of warranty policy

  IMEI label should NOT be removed/ scratch or unreadable/ not approved or provided by Alcatel.

- ✓ **Humidity sticker: Liquid detection on humidity sticker**

sticker OK

Sticker of a good terminal
This terminal is under warranty.

sticker NOK

Sticker of a terminal dived in water
This terminal is out of warranty.

- ✓ **Visual mechanical check;**

1) Corrosion: corrosion on the USB connectors, SIM connectors, and other metal surfaces
2) Holes (diam > 1mm): Holes on any surface, including the front casing, furnished frame, battery cover, touch Lens, keypad…
3) Big bumps (diam > 1mm): Bumps on any surface, including the front casing, furnished frame, battery cover, touch Lens, keypad…
4) Long scratch (length > 3mm): Scratches on any surface, including the front casing, furnished frame, battery cover, touch Lens, keypad…
5) Distortion: Bend, twisted or crushed on the h/s, cover/casing or connectors…
6) Broken: touch broken, casing/cover broken…
7) Fallen off: Keypad tear off, touch lens, connectors fallen off …
8) Gap: External physical damage relating to abnormal use, like front case and frame opened
9) Others:
   - Damage caused by disassembly like wrong part assembly, lost of components
   - Use in abnormal environment like too high temperature with plastic melts

2.2 Pretest

- ➢ Check that the SIM card is set correctly
- ➢ Insert the end-user battery.
- ➢ Power on the cell phone.
- ➢ If the cell phone can not be power on, visually check the condition of the battery connector and replace the battery if necessary.
- ➢ If the cell phone asks to input NCK code, which means it is SIM locked, and can only be worked with

dedicated SIM card. Use the correct SIM card.

- Enter the phone code if necessary.
- If power on OK, test step by step with the auto test code:

-press *#2886# in dial screen and select "go" to begin the testing(if one of the testing failed, it will retest from the first one)

- Test TRACABILITY, it will display CU_reference, BT address and WIFI address…

- Test Battery temperature, there will display current Battery temperature

-Test BACKLIGHT Level, the screen blacklight will flashing

-Test KBD BACKLIGHT, the keyboard backlight will flashing

- Test VIBRATOR. The phone will vibrate.

- Test CAMERA IMG, Scene will be shown on the screen.

- Test MIC, when you start it, it will record the sound, please speak loudly and then select stop and play to confirm the MIC.

- Test MELODY, a audio will auto play.

- Test Headset, Insert the headset and make the voice, you will hear the sound from the headset.

- Test SIM, Press pass if detect SIM card.

- Test MEMORYCARD, The phone will recognize the card when you insert it.

- Test USB, Insert USB connector to phone in time. Will showed pass.

-Test the BT. The phone will running the BT and show the BT address on screen. Press pass to continue, and BT will turn off.

-Test the WIFI, The phone will running the WIFI and search the WIFI network.

- Test GSENSOR, put the handset face up and towards up, then to the Left, Right, Up and Down,

-Test COMPASS, if it's OK, press pass to continue

-Test the GPS. The phone will running the GPS and search the satellite.

-Test keypad. Press every key showed in the screen, the corresponding key on the screen will be disappear.

- Test ALS/PS, if it's OK, press pass to continue

3. SOFTWARE UPGRADING

In level 2 Repair center, we can do software downloading for the mobile which need software updated, which you need a PC and downloading cable. The downloading cable reference is CDA3122002C1。You can download software tool and "USB VCOM driver" from TS website: https://css.tclmobile.cn/.

(1) **When doing SW upgrade, you need:**

1、A handset with full battery.
2、PC with common windows system.
3、A USB cable.
4、USB VCOM driver

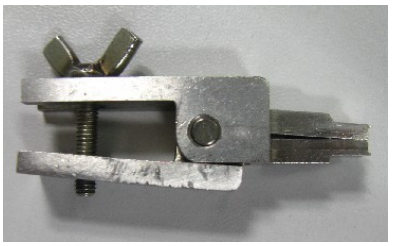
Plastic Flake

Tweezers

Hot wind gun

Screwdriver

Soldering iron



Camera Jig

4.3 Disassembly Process

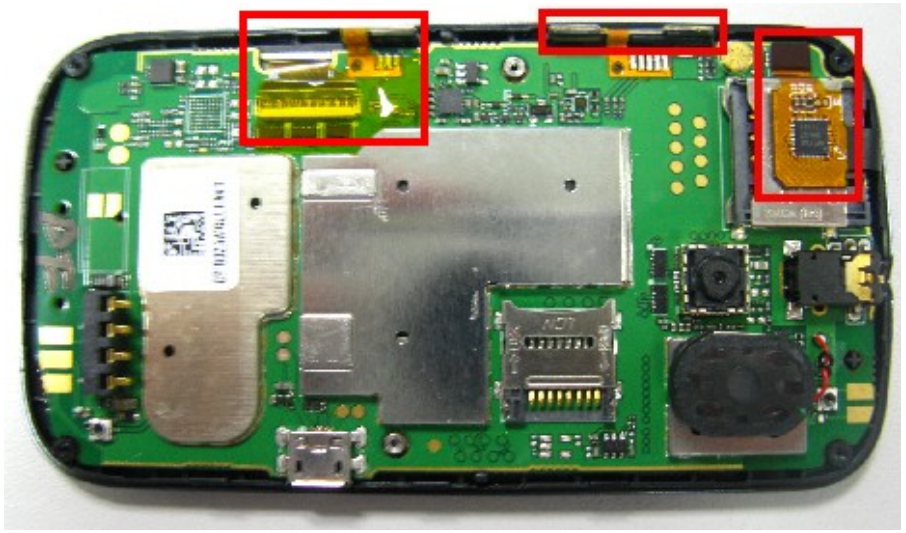
The steps of disassembly One Touch 918 are as below.

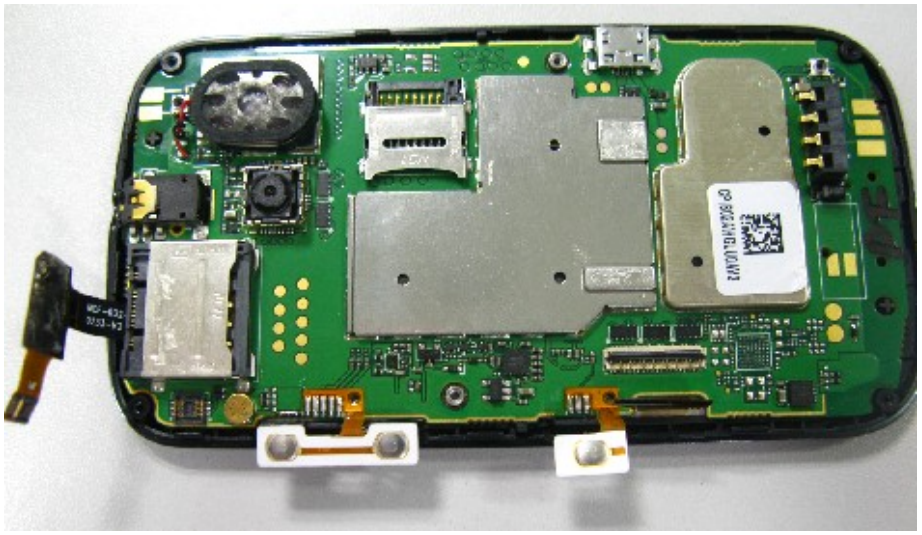
This module should only be disassembled from bottom to top.

Step1: Take off the 6 screws from the furnished frame by screw driver.

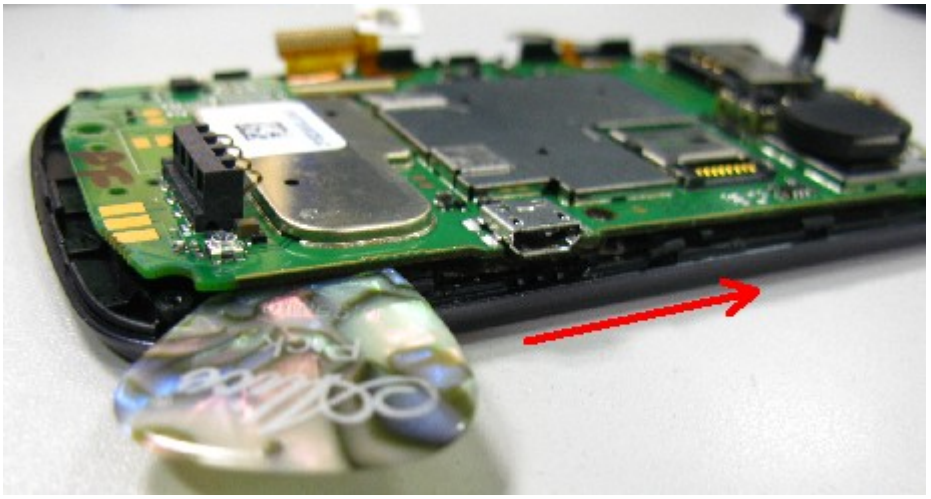
Step 2: Separate the main PCBA from furnished frame

Step 3： Remove Touch Lens and LCD Module FPC connector by Plastic Flake





Step 4: Separate the Main PCBA from Furnished front casing



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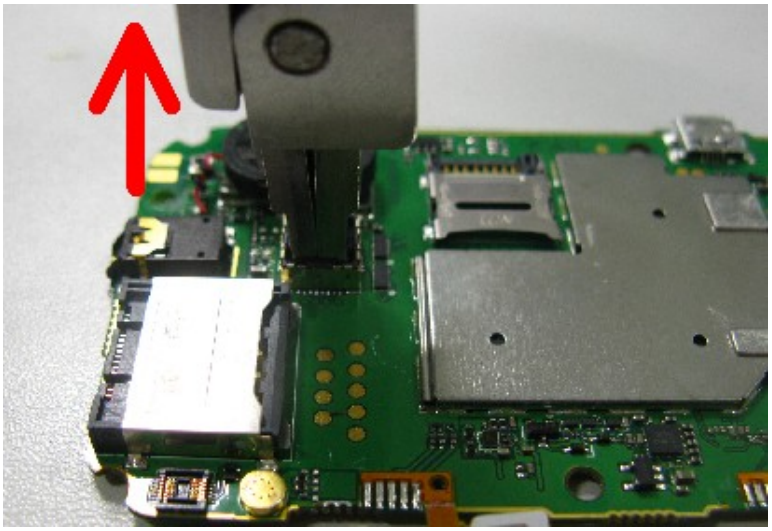
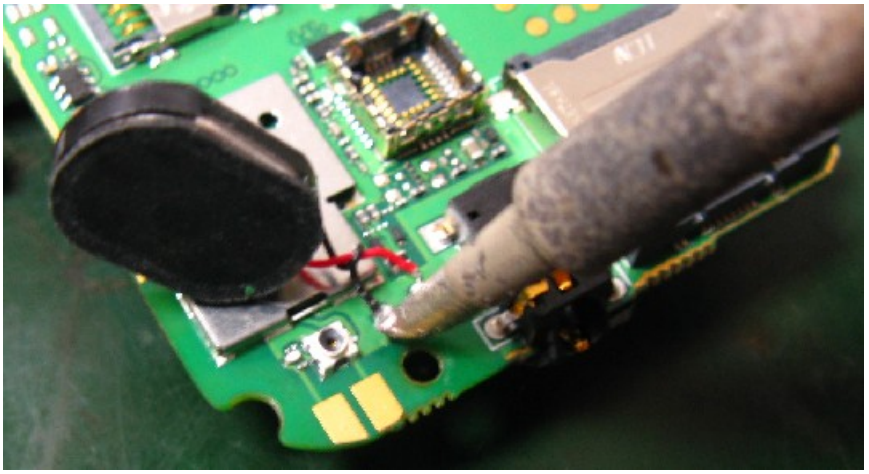
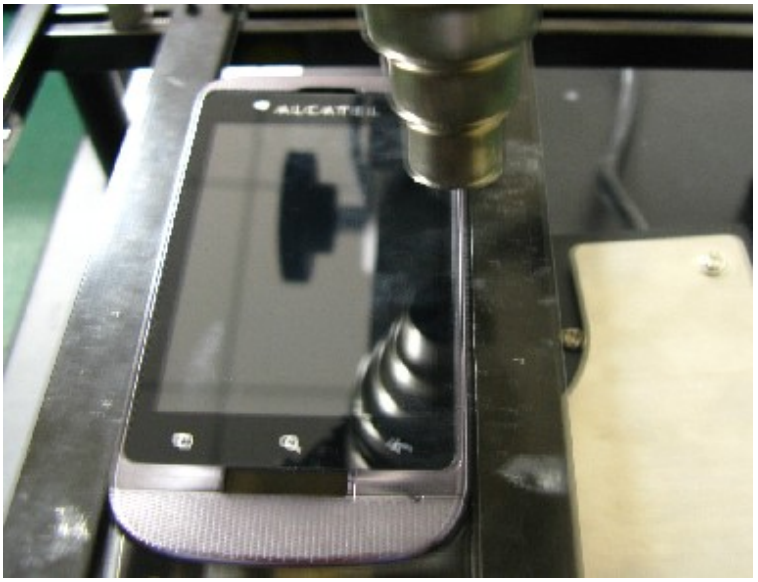
Step 5：Extract the camera by camera jig.



Step 6：Remove Speaker by soldering iron. (Temperature: 350±10℃)



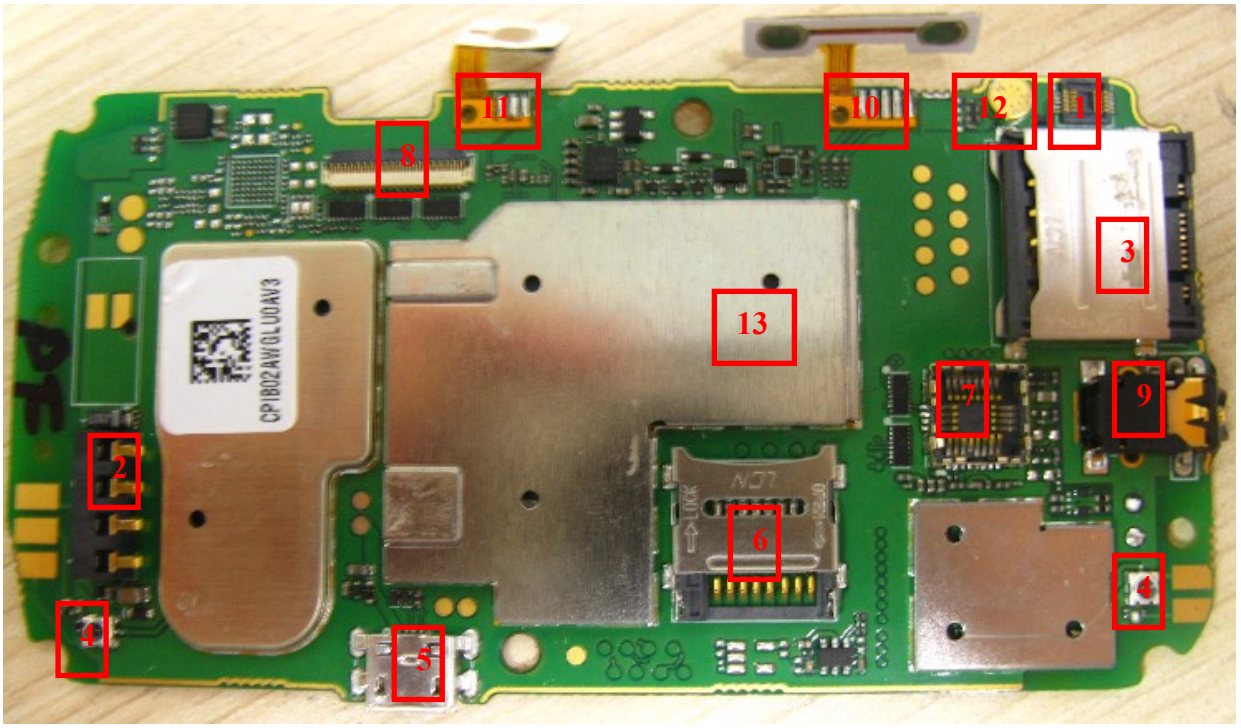
Step 7：Please use hot wind gun heating around the touch lens, then separate the touch lens from furnished front casing. (Temperature: 100±10℃, Air Level:3, Height:5-10mm, Time:30s)



Step 8: Please pay attention the place of TP fpc when you separate the Touch lens.

Step 9： Separate the LCD Module from Touch lens by Plastic Flake.

Step 10: Remove the following components from main PCBA with hot wind gun.



1- Touch panel Module connector 2-battery connector 3-SIM connector 4-RF connector 5-USB connector 6-T flash connector 7-camera connector 8-LCD module connector 9-audior jack 10-volume side key FPC 11- Power side key FPC 12-Microphone

Disassembly Notice:

Put all the spare parts on right position (don't let all spare parts mixed and put on the clean place to avoid vitiated or stained for each spare part) after disassembly. When taking apart of LCD and key film, take care not to dirty or damage it.

4.4 Reassembly Process

Please make reference to the disassembly process for assembly reverse an order of the disassembly steps.

Attention:

Insert main FPC and assembly main PCBA with furnished keypad casing, lock the main FPC connector to PCBA connector, and then place the side key, Assembly the furnished frame. Note the orientations of the main FPC.

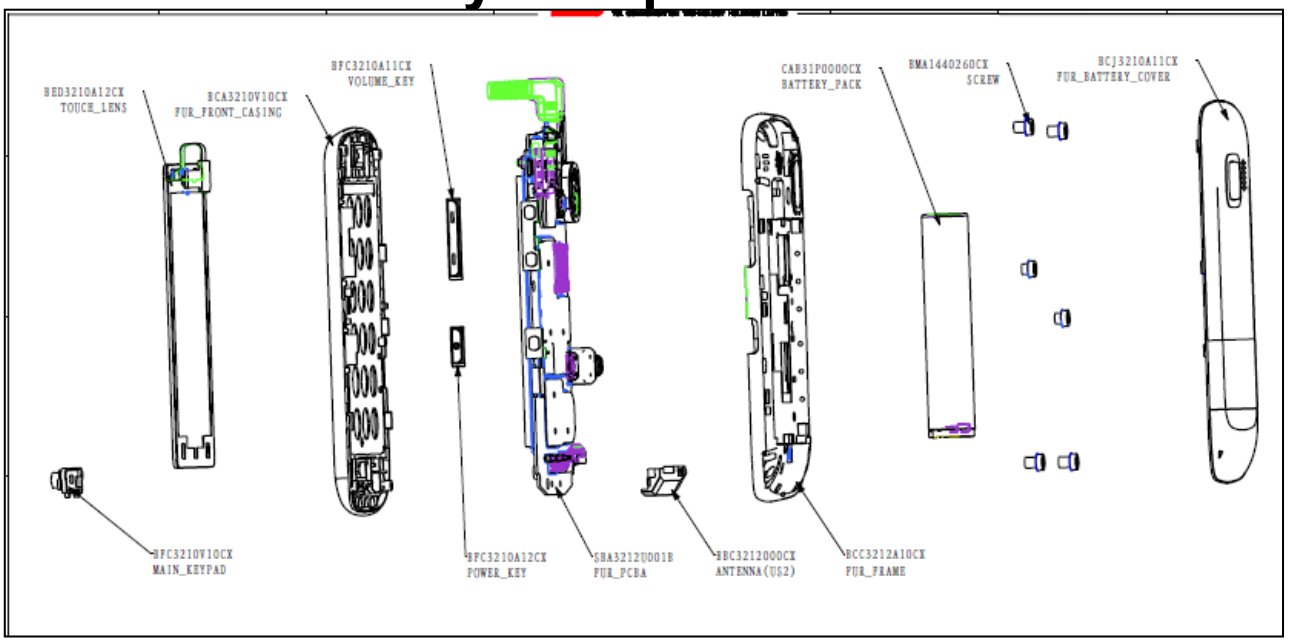
4.5 Disassembly process evaluation

We list the one touch 918 parts disassembly time, technique levels and disassembly methods as below, for technique levels, Class 1 signifies easy to disassembly, Class 2 signifies normal to disassembly and Class 3 signifies hard to disassembly.

spare part	Time for disassembly	Jigs for disassembly	Difficulty Class	Remark
battery cover	3s	Plastic Flake	Class 1	
Furnished casing with screws	20	screwdriver	Class 1	
PCBA	20s	Plastic Flake	Class 1	
Volume key	5S	Tweezers	Class 1	
Power key	5S	Tweezers	Class 1	
Antenna Module	20S	Tweezers	Class 1	
Speaker	10s	Soldering iron	Class 1	
Camera module	10s	Camera jig	Class 1	
volume key FPC	15s	Hot wind gun screwdriver	Class 2	
Power key FPC	15s	Hot wind gun screwdriver	Class 2	
Receiver	10s	Tweezers	Class 1	
Receiver mylar	10s	Tweezers	Class 1	
PS rubber	5s	Tweezers	Class 1	
Vibrator	5s	Tweezers	Class 1	
LCD Module	20s	Plastic Flake	Class 2	
LCD connector tape	20s	Tweezers	Class 2	
TP FPC tape	20s	Tweezers	Class 2	Be careful for main PCBA pad and LCD FPC damage
BTB connector socket	60s	Hot wind gun Tweezers	Class3	The connector is easy to be damaged
RF swithch	60s	Hot wind gun Tweezers	Class3	The connector is easy to be damaged
USB connector	60s	Hot wind gun Tweezers	Class3	The connector is easy to be damaged
2 in 1SIM card connector	120s	Hot wind gun Tweezers	Class 3	The connector is easy to be damaged
audio jack	60s	Hot wind gun Tweezers	Class3	The connector is easy to be damaged
flash card connector	120s	Hot wind gun Tweezers	Class 3	The connector is easy to be damaged

Battery connector	40s	Hot wind gun Tweezers	Class3	The connector is easy to be damaged
Microphone	40s	Hot wind gun Tweezers	Class3	
LED	60s	Soldering iron Tweezers	Class3	
Keypad film	20s	Tweezers	Class 2	

4.6 Disassembly Complete



Item	English Description	Qty	Remark
8	furnished front casing	1	Furnished front casing,GIN,Dark chrome
9	Touch lens	1	Touch Lens，GIN，Black printing on the backside, IC: melfas 6024, With TCL logo,o-film
9	Touch lens	1	Touch Lens，GIN，Black printing on the backside, IC: melfas 6024, with ALCATEL logo,o-film
10	Main keypad	1	Main keypad，GIN, Dark chrome
11	LCD module	1	LCD 液显模块,,GIN,262K colors,3.17",320×480,TFT,Driver IC:ILI9486,,TD-T320T2G706-10,TCL Display,,
12	furnished PCBA	1	PCBA， GIN
13	camera module (3M)	1	Camera module,GIN,,300 万像素,6.5×6.5×4.1mm,,,S5K5CAGA,P3S01A,
14	PS rubber	1	silicon rubber，GIN
15	receiver	1	Receiver,GIN,12×6×3.9(WH2.32),,,spring contact,,XHR120610SD39P36-01
16	receiver mylar	1	Receiver mylar,PET0.05+tesa68542,GIN
17	speaker	1	12x17xH3.5xWH4.0, wire13.5, tape on back，Lian Chuang
18	Volume keypad fpc	1	FPC，Volume keypad fpc，GIN

19	Power key fpc	1	FPC，Power key fpc, GIN
20	Volume key	1	,Volume key,GIN,Black painting
20	Volume key	1	,Volume key,GIN,Aubergine painting
21	Power key	1	power key,GIN,Black painting
21	Power key	1	power key,GIN,Aubergine painting
22	Vibrator	1	11.7x5xH5.5-WH5.5, spring type
23	LCD conn tape	1	LCD 连接器胶带，LCD conn tape，0.06T KAPTON+Tesa 68542, GIN
24	TP FPC tape	1	TP FPC tape，0.06T KAPTON+Tesa 68542, GIN
25	Furnished frame 2sim	1	Furnished frame,GIN 2sim,Black soft touch
25	Furnished frame 1sim	1	Furnished frame,GIN 1sim,Black soft touch
26	Antenna Module (US2)	1	(US2),GIN,Ethertronics
27	middle screw	2	Screw,PM1.4×L2.5mm,HD=Φ2.6×T0.5mm,plating WZn3+, Nylok,十字形
28	screw	4	Screw,PB1.4×0.45p x L4.0,HD=Φ2.5×T0.5mm,plating WZN, type,,
29	BTB connector socket	1	BTB connector socket,,10pin,0.4pitch,H=1.0mm,,,24 5805 010 000 829+,KYOCERA,
30	Battery connector	1	Battery connector,,4pin,3.1pitch,H=5.4mm,KBC24S3H541R,KEIRAKU
31	RF switch	2	RF switch,,6pin,,2.5×2.5×T1.5mm,,ECT818000163,ECT,
32	Audio Jack	1	Audio Jack,,5pin,Diameter=3.5mm,H=4.4,,ACPJ-035-2-020,Amphenol,,
33	USB connector	1	USB connector,,5pin,0.65pitch,,macro B type,cut PCB0.8,KIU90531S1R,KEIRAKU,
34	Flash card connector	1	,T-Flash card connector,,8pin,1.1pitch,H=1.6mm,,,CAH11-08163-SF05,Linkconn,,
35	2 in 1 SIM card connector	1	2 in 1 SIM card connector,,12pin,0.635pitch,H=4.0mm,,,CAF97-12403-0300,Linkconn,
36	Keypad film	1	Keypad film,GIN,
37	Microphone	2	,Microphone,,Φ4.0×T1.3mm,-42±2dB,,,SMT type,,ACMG4013-05S-422-001,AAC,,
38	LED,White	2	,LED,White,,1.6×0.8×0.4mm,Vf=2.8V,Iv=72mcd,If=5mA,S-C2,R-D1,S-D1,,HT-193BP5,Harvatek,,
39	LED,Blue	1	LED,Blue,,1.6×0.8×0.4mm,Vf=2.85V,Iv=28mcd,If=5mA,,M/B,M/C,N/B,N/C,HT-193NB5,Harvatek,,

5. LEVEL 2 REPAIR

This chapter describes the LEVEL 2 repairs that can be done without any diagnostic equipment.

	Problem description	Action And Solution
Charging	Bad or No Charge	1.Check voltage of the battery: if 0V, charge some minutes and check the charge indicator;

		2.Check the battery connection, change the battery connector if broken; 3.Check the charge plug, change it if necessary;
Switch on with battery power	Can 't Switch on	1.Check voltage of the battery; 2.Check the battery contact, change the battery connector if broken; 3.Check the keypad 4.Check BTB connector socket pin
Main display	Missing line or column; no display; bad or no LCD backlight	Check Connection flex (FPC cable),change it if necessary; Replace display module if necessary;
Keyboard	Keyboard backlight or keyboard function	Check keypad film or keypad PCB, change it if necessary
Vibrator	The vibrator does not work	Check the contact on the PCBA (dirty or oxidized), replace the vibrator if necessary;
Network Problem	No emission or No reception	Check the antenna contactor on the PCBA; Check the contact on the PCBA (dirty or oxidized);
TF card	No communication between the phone and the TF card	Check the TF connector on the PCBA;
Camera	Camera doesn't work	Check camera module Check also camera FPC broken or not
Audio	Bad or no emission (TX audio from mobile); Bad or no reception (RX audio on mobile); Hands-free problem; Key beep and melody problem	Check microphone, replace it if necessary; Check the contact on the PCBA (dirty or oxidized) Check loud speaker, replace it if necessary; Check the contact on the PCBA (dirty or oxidized)

In case the LEVEL 2 repairs can't solve the problem, or if the board is damaged, exchange the board.

6. BOARD EXCHANGE

In case that LEVEL 2 repair does not solve the failure, it is mandatory to change the board and apply the following process:

1) Collect the fault PCBA board (without accessories LCD, and camera), **with microphone and vibrator.**
2) Get a new PCBA from swap stock. Reuse those accessories to assemble the mobile.
3) Fill in the fault sticker with IMEI number, the fault code, the short code, the Hardware Technical Level, and the software version.
4) Send the fault PCBA with fault sticker back to L3 repair center with the suggested packaging method, the detail packaging method please see solution 1 of APPENDIX 2.

7. OTHER COMPONENT EXCHANGE

The other components exchange like LCD module,vibrator, receiver, speaker, microphone, camera, FPC connection, audio/camera connector and related mechanical components, please follow the detail steps from paragraph 7(Disassembly and Reassembly process), but need to be very careful to handle the components with related special tool or jig (especially replacing new components) and better to handle it with plastic tools

(plastic tweezers and wedge etc.), besides technicians must put on static gloves, fingertips or wear static loop during the whole process of components exchange.

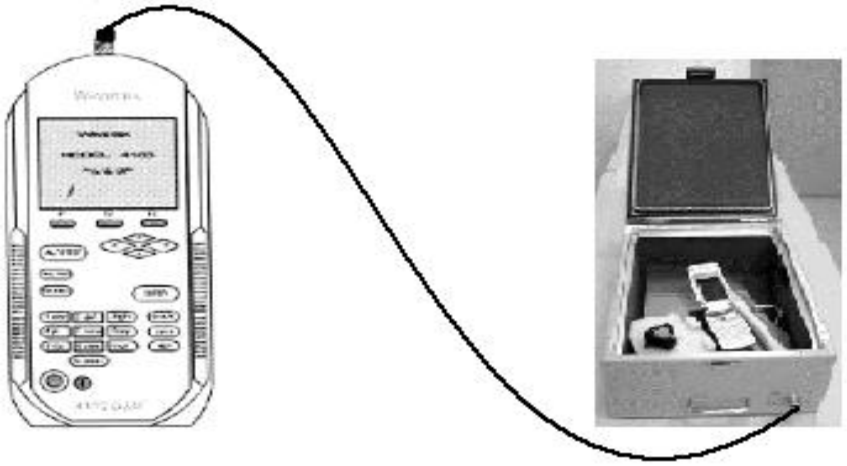
8. FINAL TEST

8.1 Function Test

During the function test, the following items must be checked and validated.

- ✓ Cosmetic aspect of the handset, the Software Technical sticker state on the Board
- ✓ Switch on the handset
- ✓ Default welcome message
- ✓ Press *#2886# on the idle screen to start the auto test (refer to the "Pretest" in Chapter 2)

8.2 Measurement



Measurements	Channels	Power levels	Tol.min	Tol.max	Conditions
GSM					
Connection Mobile	63*	9	None	None	Radiated meas
Call base from mobile	5*	9	None	None	Radiated meas
Power level measurements	5*	9	22 dBm	28 dBm	Radiated meas
Power level measurement	5*	5	31 dBm	35 dBm	Radiated meas
Peak Phase error measurements	5*	5	0°	20°	Radiated meas
RMS Phase error measurements	5*	5	0°	5°	Radiated meas
Frequency error measurements	5*	5	-90 Hz	+90 Hz	Radiated meas
RX Level (BS power level : -60dBm)	5*	5	45	55	Radiated meas
Power level measurements	120*	5	31 dBm	35 dBm	Radiated meas
Peak Phase error measurements	120*	5	0°	20°	Radiated meas
RMS Phase error measurements	120*	5	0°	5°	Radiated meas
Frequency error measurements	120*	5	-90 Hz	+90 Hz	Radiated meas
RX Level (BS power level : -60dBm)	120*	5	45	55	Radiated meas
DCS					
Power level measurements	515*	0	28 dBm	32 dBm	Radiated meas
Peak Phase error measurements	515*	0	0°	20°	Radiated meas
RMS Phase error measurements	515*	0	0°	5°	Radiated meas
Frequency error measurements	515*	0	-180 Hz	+180 Hz	Radiated meas
RX Level (BS power level : -60dBm)	515*	0	45	55	Radiated meas
Power level measurements	880*	0	28 dBm	32 dBm	Radiated meas
Peak Phase error measurements	880*	0	0°	20°	Radiated meas
RMS Phase error measurements	880*	0	0°	5°	Radiated meas
Frequency error measurements	880*	0	-180 Hz	+180 Hz	Radiated meas
RX Level (BS power level : -60dBm)	880*	0	45	55	Radiated meas
Keyboard test (1)	-	-	-	-	-
Audio test GSM	70*	9	None	None	Radiated meas
Hang up	70*	9	None	None	Radiated meas
Call mobile from BS	700*	9	None	None	Radiated meas
Power level measurements	700*	0	27 dBm	33 dBm	Radiated meas
Audio test DCS	700*	0	None	None	Radiated meas
Hang up	70*	9	None	None	Radiated meas
PCS					

Connection Mobile	661*	5	None	None	Radiated meas
Call base from mobile	513*	5	None	None	Radiated meas
Power level measurements	513*	5	15 dBm	25 dBm	Radiated meas
Power level measurements	513*	0	25 dBm	35 dBm	Radiated meas
Peak Phase error measurement	513*	0	0°	20°	Radiated meas
RMS Phase error measurements	513*	0	0°	6°	Radiated meas
Frequency error measurements	513*	0	-180 Hz	+180 Hz	Radiated meas
RX Level (BS power level : -65dBm)	513*	0	35	55	Radiated meas
Keyboard test (1)	-	-	-	-	-
Power level measurements	880*	0	25 dBm	35 dBm	Radiated meas
Peak Phase error measurements	880*	0	0°	20°	Radiated meas
RMS Phase error measurements	880*	0	0°	6°	Radiated meas
Frequency error measurements	880*	0	-180 Hz	+180 Hz	Radiated meas
RX Level (BS power level : -60dBm)	880*	0	35	55	Radiated meas
Audio test 1900	683*	5	None	None	Radiated meas
Hang up	683*	5	None	None	Radiated meas
Call mobile from BS	683*	5	None	None	Radiated meas
Power level measurements	683*	5	15 dBm	25 dBm	Radiated meas
Hang up	683*	5	None	None	Radiated meas

- **These values are given for indication , compatible low ,middle and high channels have to be found.**

APPENDIX 1 Packaging Requirements

1、 Appearance Requirements of PCBA

a、 The failure code label, commercial label, custom label and network code should be stuck onto PCBA

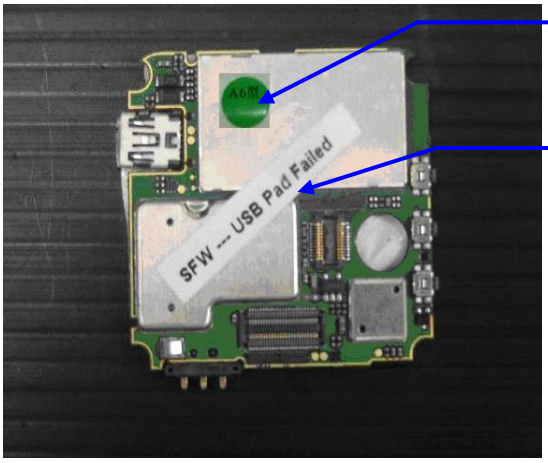
b、 The repair PCBA and custom label should be matched (see appendix one for the detailed information)

PCBA of Flip Phone

Network code

Commercial label

put commercial label and network code on one side



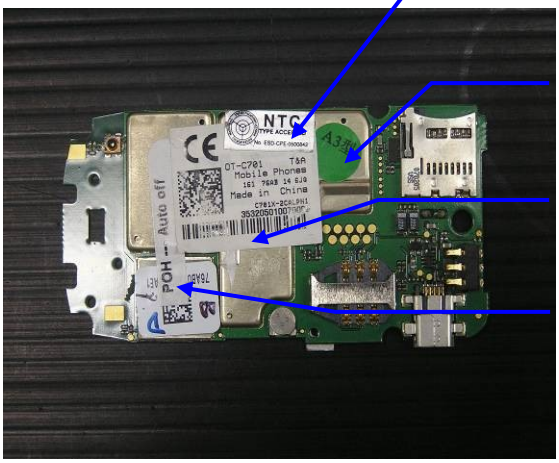
Custom label

Failure code label

Put failure code label and custom label on other side

PCBA of Bar Phone

Put commercial label and custom label on PCBA



Network code

Custom label

Commercial code

Failure code label

At the same time put network code label and failure code label

2、 PCBA Packing Requirements

i. After packing with anti-vibration bag, the commercial label on PCBA should be easy

recognized;

Inner packing is anti-static bag

Outer packing is anti-vibration bag

Custom label is easy to see

Put commercial label on anti-vibration bag

3、 Packing Requirements

ii. Please pay attention to the following points when different models put into one box:

iii. Stick up the same models with tapes

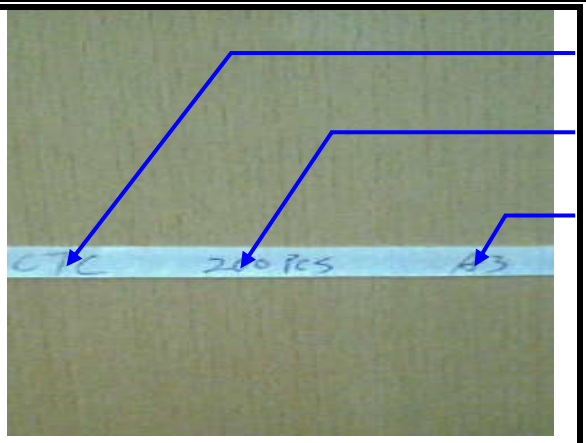
iv. Mark the model, quantity and specification of custom label on tape

v. The packing box for PCBA should have marking sticker and well sealed by the tape

vi. with TCL logo

vii. Finally put all the packing boxes into packing cases strong enough and post to HK.

Stick up the same models with tapes



Mark the model, quantity and specification of custom label on tape

The packing box for PCBA should have marking sticker and well sealed by the tape with TCL logo

Put all the packing boxes into packing cases strong enough and post to HK

Once the PCBA are damaged or cannot be repaired or delayed in custom because of unqualified packing, the shipping side will take the responsibility.

End of the document