

TCT<sub>Mobile</sub>

# Service manual

## B9c/OT-660

*Mainstream multimedia*

1. Products presentation
2. Maintenance guide



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

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Written by	CPM	Catherine		
Verified by	PM	SP CHUA		
Checked by	TSD Manager	Sky Gao		
Approved by	QPM	Ma Yijun		

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# Chapter 1

## Products presentation

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# CHAPTER 1

## PRODUCTS PRESENTATION

### 1.1 - GENERAL

B9c/OT-660 is a clamshell cell phone with OLED sub screen, support BT/FM/Java/MP3/WAP etc functions, and supporting external memory card up to 2GB, and embedded 3<sup>rd</sup> part applications. It works with GSM dual band.

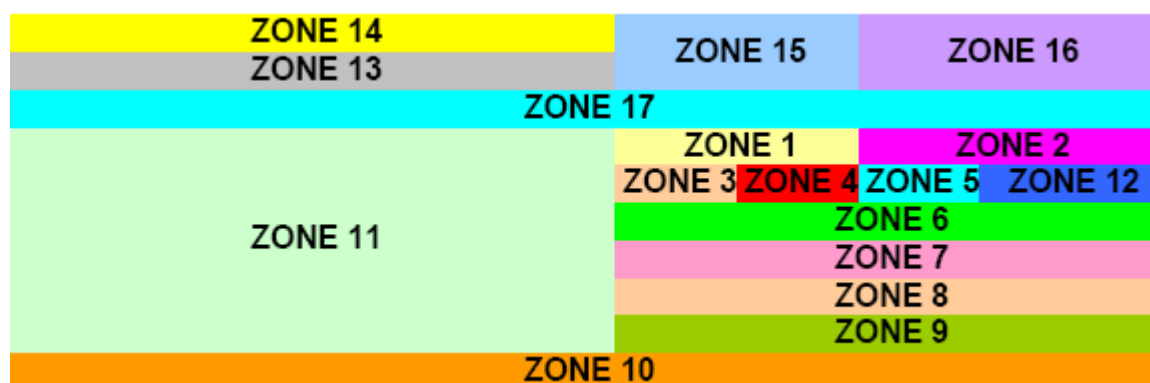
They detail features as following:

Design	Terminal Form Factor	clamshell
	Dimensions (x, y, z)	94.3 x 46.2 x 19.4mm
	Weight	82.7g
Bearer	Bearer	2G - GPRS
	GSM bands - Please state which bands are supported	GSM Dual Band (900/1800) EU, GSM Dual Band (850/1900) US
	GPRS Class	Class 10
	FM or DAB Radio (please specify)	FM Radio (incl. RDS)
Input	Navigation	5 way navigation (4+ centre click)
	Predictive Text	T9
Connectivity	Bluetooth support	BT 2.0
	USB	USB 2.0 - Full Speed + Power charging
Display	Main display colour space	65k
	Main display resolution	128 * 160
	Main Display dimension (Diagonal physical size)	1.8"
	Main Display Orientation	Portrait
	Main display technology	TFT
	Sub-LCD resolution & colour space	Mono OLED/ 0.8"
Camera	Still image capture resolution	1.3Mpixel
	Camera Features	4X Digital zoom
Memory	Internal user available memory	10MB
	External memory card supported	Up to 2GB
	Phone book entries	800 entries
	SMS	500
	MMS	Share the 10MB memory
Accessory	Battery capacity (mAh)	750
	Charger	USB
	earphone	stereo

	USB data cable	optional
Format support	Audio	AAC, AAC+, Enhanced AAC, AMR, MP3, Midi
	Video	3GP, MP4
	Image	BMP, JPEG, GIF
	MMS attachment	vcard and vcal

## 1.2 - PORTABLE STICKERS

Labels are located on the back of the handset.



EU IMEI 35238703\*\*\*\*\*

US IMEI 01187200\*\*\*\*\*

Figure 1.1 - PORTABLE STICKERS

The formation on the identification sticker is:

Zone	Variable	Signification
1	-	Type of product : XXXX
2	-	Distributor : For EMEA: TCT Mobile Limited For Latam: TCT MOBILE For CN: 苏州 TCL 天一移动通信有限公司 GSM 双频 GPRS 功能数字移动电话机
3	DATA3	PTS='soft' techn. Release xxx
4	DATA10 or DATA 12	Short code xxxx
5	DATA2	PTM
6	-	Made In (by) ... according to made in file
7	-	China version—CMII:0000000000 / PCS version—FCC ID:RADXXX
8	DATA7	Commercial Ref
9	DATA5	Full IMEI
10	DATA5	Bar code IMEI
11	DATA5/DATA11/DATA2/DATA3/DATA7	DATAMATRIX Code IMEI No. / INDUS. REF. / PTH(PTM) / PTS / COM. REF.
12	DATA4	Date Code xxx
13	Not used-	Commercial Name
14	Not used-	
15	Not used-	
16	Not used-	Special Logo on other project
17		Bluetooth QD ID BXXXXXXX
NO	DATA11	3DS ( INDUS REF )

## 1.3 - EXPLODED VIEW

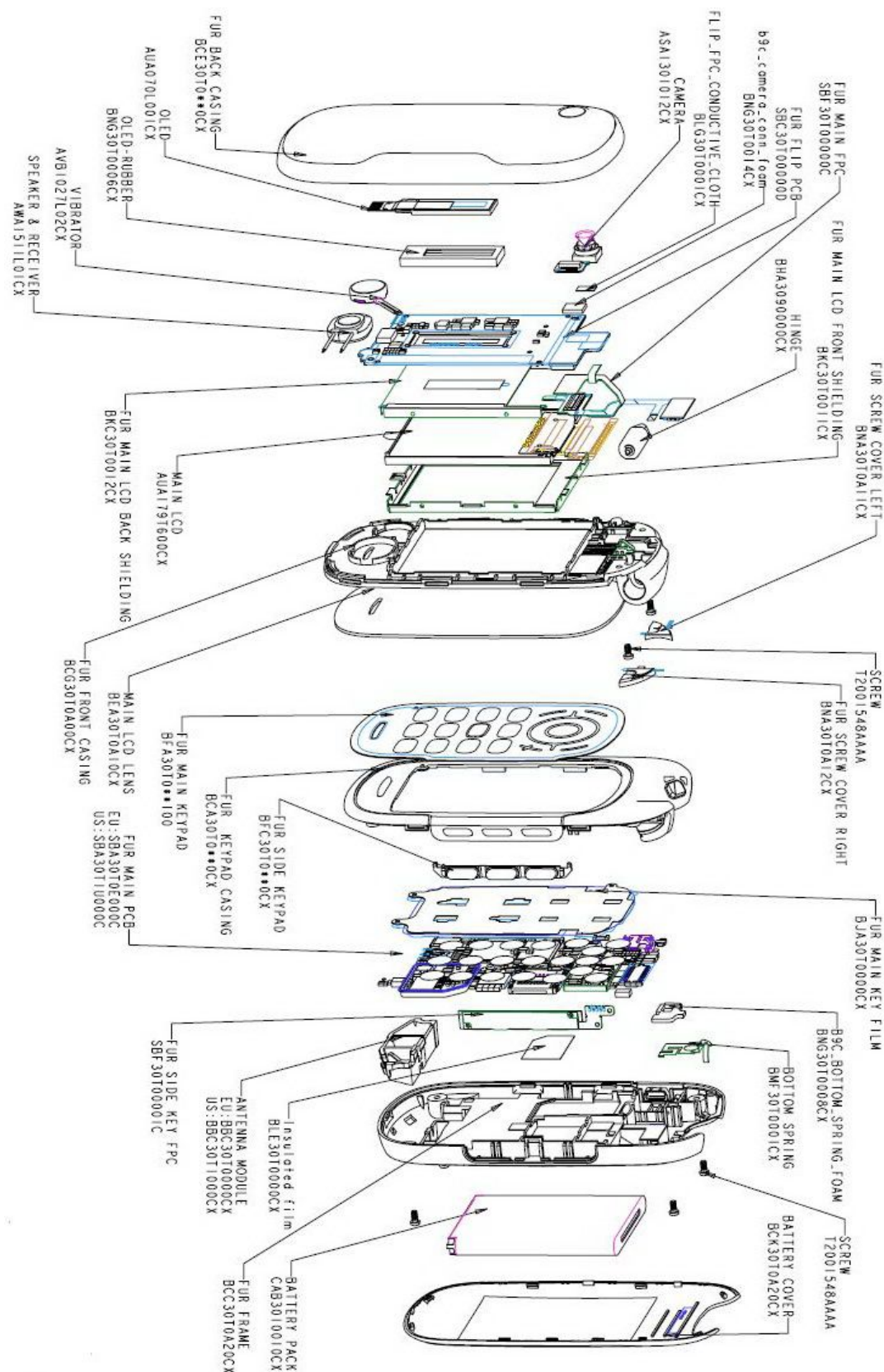


Figure 1.2 - EXPLODED VIEW

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## 1.4 - ACCESSORIES

### 1.4.1 - BATTERY



Figure 1.3 - PRESENTATION OF THE BATTERY (Lithium 750 mAh)

The battery has the following features:

Battery model	Technology	Capacity
Battery Li	Lithium	750 mAh

Table 1.1- BATTERY FEATURES

Table 1.2 shows the rated ranges for B9c/OT-660 cellphones in standby, in talking modes and MP3/video playing time. These typical values are expressed in normal temperature conditions with batteries initially charged and under good ratio coverage.

Battery range depends on the network characteristics, the ambient temperature and particularly on movements that cause cell changes.

Mode	B9c/OT-660			
	Standby (paging 9)	Talking(with Pim*+50%DTX**)	MP3 playing time	Video playing time
Power pack Lithium	310 Hours	9 Hours	headset: 15h; handsfree: 12h; BT: 7h	headset: 7.0h handsfree:6.0h

\* Pmin: minimum transmission power

\*\* DTX: no transmission during period of silence

Table 1.2 - BATTERY RATED RANGES

For a normally discharged battery (which has not been stored), the charge/discharge time are those indicated in table 1.3



Mode	Typical Charge time
Power pack Lithium	3 hours 10 min

Table 1.3 - TYPICAL CHARGE TIME

Precautions when using and storing batteries:

If your battery is brand new, recharge it before use: the icon will then appear after a short while.

If the battery is deeply discharged, the battery charge indicator can take several minutes to appear and accompanied by a slight sound.

## 1.4.2 - CHARGERS

The power supply is a **current generator**.

It includes an electrical part: AC to DC conversion based on a switch regulation, which must be connected to an indoor plug.

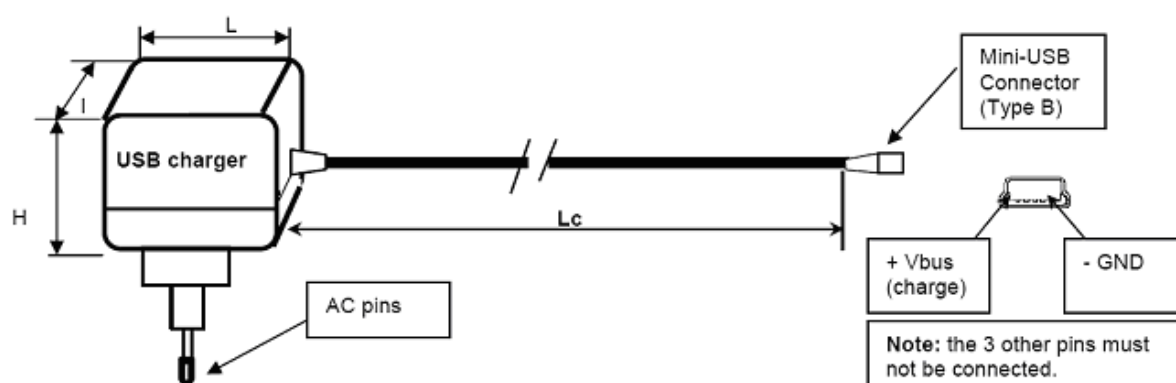


Figure 1.4 - DESCRIPTION TO THE CHARGER

### Mechanical dimensions

$L \times I \times H = 63.4\text{mm} \times 38.5\text{mm} \times 24\text{mm}$  / Upon JRDC approval

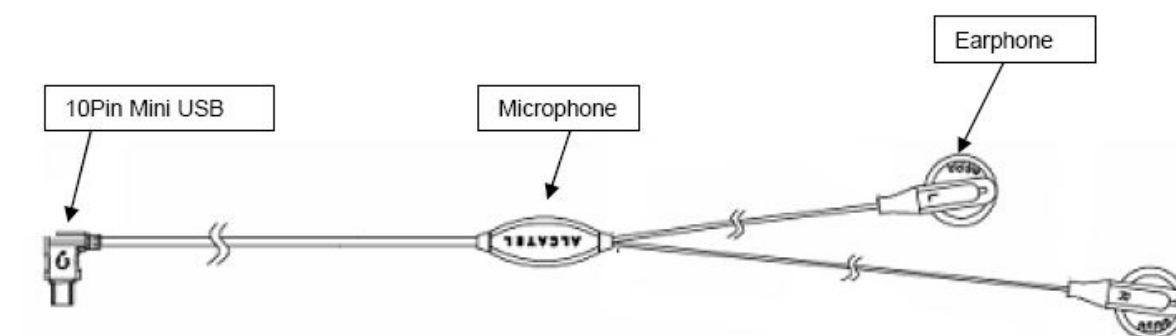
$Lc = 1.5\text{m} \pm 0.1\text{m}$

Maximum Weight (total): 54g / Upon JRDC approval

Figure 1.5 - USB CHARGER



## 1.4.3 - STEREO HEADSET



Microphone	Earphone
Electret condenser Microphone (without preamplifier)	Sound pressure level (1mW): $\approx 115 \pm 5$ dB SPL (94 dB SPL = 1 dB Pa) at 1kHz with $V_{\text{input}} = 0.179$ V rms
Sensitivity: $\approx -40$ dBV/Pa $\pm 4$ dB at 1kHz	Maximum input power: 10mW
Current consumption: $\leq 1$ mA	Impedance: $32\Omega \pm 15\%$
Signal/noise ratio: $\approx 50$ dB	Resonant frequency: 20Hz-20KHz
DC voltage $V_{\text{micro}}$ range: 0.35-1.1V	Burst demodulation noise: $< -45$ dBpa

Figure 1.6 - STEREO HEADSET



# Chapter 2

## Maintenance guide

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# CHAPTER 2

## MAINTENANCE GUIDE

### 2.1 - MAINTENANCE POLICY

This chapter describes the maintenance of the B9c/OT-660 cellphones authorized at L1 repair centers. The maintenance operations can only be performed in approved repair centers.

### 2.2 - GENERAL

Main L1 maintenance operations are as followings:

For handset:

- Warranty check
- Function test on the handset
- SW downloading by AMSU
- Replacement of the defective handset.

For the standard accessory (battery, charger, earphone and USB cable)

- Warranty check
- Functional check on it
- Replacement of defective accessories

If you input the following codes to cellphones, you can:

- Display the software version and IMEI number in each phone: **\*#06#**
- Reset all users parameter and data: **\*#73738#**
- Unlock the phone in case the lock function has been activated and the code lost (called Super code): **11223344**
- Access calls duration directly (called DAP code): **###232#**
- Auto test code: **\*#2886#** (refer to 2.3.7)

#### **WARNING:**

1 - All user personal data will be lost after the factory code **\*#73738#**, except information in SIM card. This includes: pictures, sounds, downloaded applications and games, products directory data, WAP bookmark ... added by the user. This may also delete some of the original pictures/sounds/game provided within the phone. You can save and restore the data by using the Cloning software.

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2 - After the sequence has been entered, phone auto switch on will take approx. 60 sec. Never manipulate the phone during this period of time.

## 2.3 - CELLPHONE MAINTENANCE

### 2.3.1 - REQUIRED TOOLS

Cell phone testing requires:

- A charged battery,
- A functional micro-SIM card.

We recommend the following tools:

- A PC with OS (Windows 2000/NT/XP),
- A multimeter for battery test,
- A galvanometry meter for charger measurement,
- A suit of screw driver.

### 2.3.2 - INVOICE CHECK

- Check warranty status of Handset by POP (Proof of Purchase)
- If the enduser lost his POP, pls. consider the data code as the purchasing day.  
Date code transcoding: (SHP)



Note:

Coding Day	Day	Coding Month	Month	Coding Year	Year
1	1 <sup>st</sup>	E	January	O	2005
2	2 <sup>nd</sup>	F	February	P	2006
...	...	G	March	Q	2007
9	9 <sup>th</sup>	...	...	R	2008
A	10 <sup>th</sup>	O	November	S	2009
B	11 <sup>th</sup>	P	December	T	2010
...	...				
U	30 <sup>th</sup>				
V	31 <sup>st</sup>				

### 2.3.3 - IMEI CHECK

- Switch on the handset, enter \*#06#
- The IMEI number MUST be the same with the one on the IMEI sticker. If not, it's out of warranty policy

### 2.3.4 - Label Check

If either of the 2 labels not good, the cellphone will be considered as non-warranty.

- IMEI Labels removed/ scratch or unreadable/ not approved or provided by Alcatel



- Liquid detection on humidity sticker



sticker OK



sticker NOK

### 2.3.5 - VISUAL MECHANICAL INSPECTION

Mechanical warranties check items:

- Corrosion: corrosion on the USB connectors, SIM connectors, and other metal surfaces
- Holes (diam > 1mm): Holes on any surface, including the front casing, furnished frame, battery cover, LCD Lens, keypad...
- Big bumps (diam > 1mm): Bumps on any surface, including the front casing, furnished frame, battery cover, LCD Lens, keypad...
- Long scratch (length > 3mm): Scratches on any surface, including the front casing, furnished frame, battery cover, LCD Lens, keypad...

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- Distortion: Bend, twisted or crushed on the h/s, cover/casing or connectors...
- Broken: LCD broken, casing/cover broken...
- Fallen off: Keypad tear off, LCD lens, connectors fallen off ...
- Gap: External physical damage relating to abnormal use, like front case and frame opened
- Others
  - Damage caused by disassembly like wrong part assembly, lost of components
  - Use in abnormal environment like too high temperature with plastic melts

### 2.3.6 - ACCESSORIES CHECK

- Any use in abnormal temperature, other than the one specify in the user manual.  
Any evidence of plastic/casing melt
- Any mark of food or liquid around the accessory, or in the USB socket
- Any evidence of mechanical shock which damage the enclosure of the battery, charger or headset
- Any label damage or missing on the battery
- Any mark of tentative of disassembly the accessory
- Any abnormal use which create wire damage, wire broken or USB socket deformation

### 2.3.7 - CELLPHONE MAINTENANCE PROCEDURE

- Check that the SIM card is set correctly
- Insert the end-user battery.
- Power on the cellphone.
- If the cellphone can not be power on, visually check the condition of the battery connector and replace the battery if necessary (see paragraph 2.4 for battery test).
- If the cellphone asks to input NCK code, which means it's simlocked, and can only be worked with dedicated simcard. 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# on the idle screen and press left soft key to start the auto test
  - Test clam. Open and close clam, if the function is abnormal, it will display "FAILED", or it will display "OK: OPENED". Press pass to continue
  - Test LCD/keypad backlight. The backlight will be auto on and off, if it works all right, press Pass to continue

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- Test LCD. LCD will turn red, green, blue, white, and black. Press Pass to continue
- Test keypad. Press every key on the keypad and side, the corresponding key on the screen will be disappear. Press Pass to continue
- Test the receiver. Sounds heard from the receiver. Press Pass to continue
  - Test the MIC. Puff near the MIC. If you can hear the sound from the receiver, press Pass to continue.
  - Test the speaker. Louder sounds heard from the speaker. Press Pass to continue
  - Test the headset. Insert the headset and make the voice, you will hear the sound from the headset. Press Pass to continue.
  - Test the battery. Battery is auto-tested. Press Pass to continue
  - Test the melody. You will hear the melody playing. Press Pass to continue
  - Test the vibrator. The phone will vibrate. Press Pass to continue
  - Test the charger. The phone will recognize the charger when you insert it. Press Pass to continue.
  - Test the camera. Scene will be shown on the screen. Press Pass to continue.
  - Test the memory card. The phone will recognize the card when you insert it.
- Make a call.
- Receive a call.
- If the phone is considered as faulty, upgrade the software (without forgetting to save customer information first - see paragraph 2.6).

## 2.3.4 - REPLACING CELLPHONE PARTS

### 2.3.4.1 - PRELIMINARY

Before any sub-assembly removal (except the antenna), the back cover, the battery and the micro SIM-card must be removed.

### 2.3.4.2 - PRECAUTIONS

The heart of the cellphone, containing all the digital circuit (microprocessor, ASIC, memories, display, keypad, etc) and the high-frequency transceiver circuit, is protected by the upper and lower shells.

However, certain areas sensitive to electrostatic discharges are completely or partially visible (keypad keys, micro-SIM drive, etc) and in order to prevent any risk of damage during removal/installation of the shell, the operator's wrist should be grounded when working on the heart of the phone.

This operation is illustrated in the following figure. The operator wears a conducting bracelet connected to an anti-static pad placed on the work

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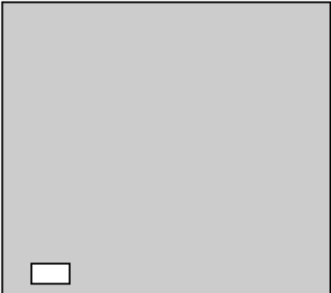
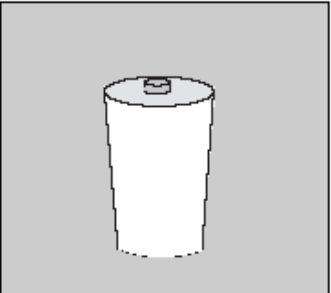







surface, itself connected to the workbench metal structure, the whole being earthed.



## 2.4 - BATTERY TEST

### 2.4.1 - CHARGING PROCESS

Table 2.1 describes the various events related to connection of a standard charger connected to a cellphone.

	B9c/OT-660	
Cellphone status before charger connection	ON	OFF
During charging	<p>Display lights up and following battery icon displayed:</p> <div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p>Sequential icon flashing:</p> <div style="display: flex; justify-content: space-around; align-items: center;">     </div> <div style="display: flex; justify-content: space-around; align-items: center;">    </div>	


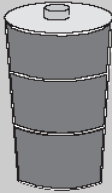

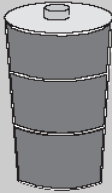

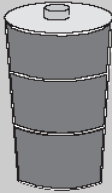
<p>After charging (charger connected)</p>	<p>Following fixed battery icon display :</p> <table><tr><td data-bbox="657 288 986 573"></td><td data-bbox="1021 293 1350 573"></td></tr></table>		
			

Table 2.1 - BATTERY CHARGE STATUS ON THE CELLPHONE

The charger or the cellphones' charge function is defective (connectors or electronics) if the display does not light or the icons do not flash.

In this case, try to charge the battery on the cellphone with another charger.

If the charge process runs correctly, replace the charger. If it does not work, try to charge with another battery. If the charge process runs correctly, replace the battery. Check the Audio/Charge connector. If it is damaged, replace the cellphone.

For a normally discharged battery (with not a long time of stocking), charging time is indicated on table 2.2.

Battery \ Mode	Typical Charge time
Lithium	Less than 3 hours

Table 2.2 - BATTERY TYPICAL CHARGE TIME

## 2.4.2 - BATTERY SPECIFICATION (LITHIUM)

Nominal Voltage      3.7V  
 Capacity              Minimum 850mAh (From 4.20V to 2.75V cut-off at current 0.2C)  
 Charge Method              CC / CV (Constant Current / Constant Voltage,)  
 Standard Charge Current              1C  
 Max Charge Current              1.5C  
 Max Recommend charge Voltage              4.225V  
 Max Discharge Current              1.5C      (for continuous discharging mode)  
 Discharge Cut-off Voltage              2.75V / cell  
 Operating Temperature:  
     Charge      0 ~ +45°C  
     Discharge      -20 ~ +60°C  
 Storage Temperature  
     1 month      -20 ~ +60°C (\*)  
     3 months      -20 ~ +45°C (\*)  
     1 year      -20 ~ +25°C (\*)  
 Storage Relative Humidity      65±20%

Note (\*): Capacity recovery rate should be more than 80% under the shipment status. The off-load voltage of a normally discharged battery is greater than 2.5 V. If not charge the battery during a few minutes, and test if the voltage is greater than 3.3 V. If not, at least, the battery is not in good condition; replace it. After 10 minutes charging of a normally discharged battery, the cellphone can be switched on and the battery will then behave normally: continue the charge process. If not, either the battery or the cellphone charge function is defective. Replace items until the faulty one is identified.

## 2.5 - TESTING THE CHARGER

When the standard charger is connected to the cellphone, check correct running of the charge sequences on its display (see paragraph 2.4.1).

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Use the galvanometry meter to measure the current of the charger.



Connect the power supply, the charger to the meter (on the side of "IN"), and connect the cables from "OUT" side to the handset, you will see how much the current is on the screen.



The measurements at the charger output should be: 450 mA~550 mA

## 2.6 - USER INFORMATION TRANSFER

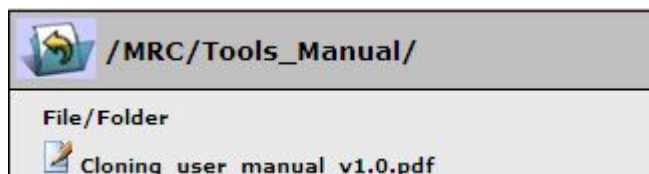
Concerning B9c/OT-660, the clone tool allows save the customer information for users (directory, notebook...) with a PC and downloading cable.

(1) Find cloning tool on MLDC as below detail location:



(2) Install the cloning tool in your computer.

(3) Follow the user manual on MLDC to upgrade the mobile.



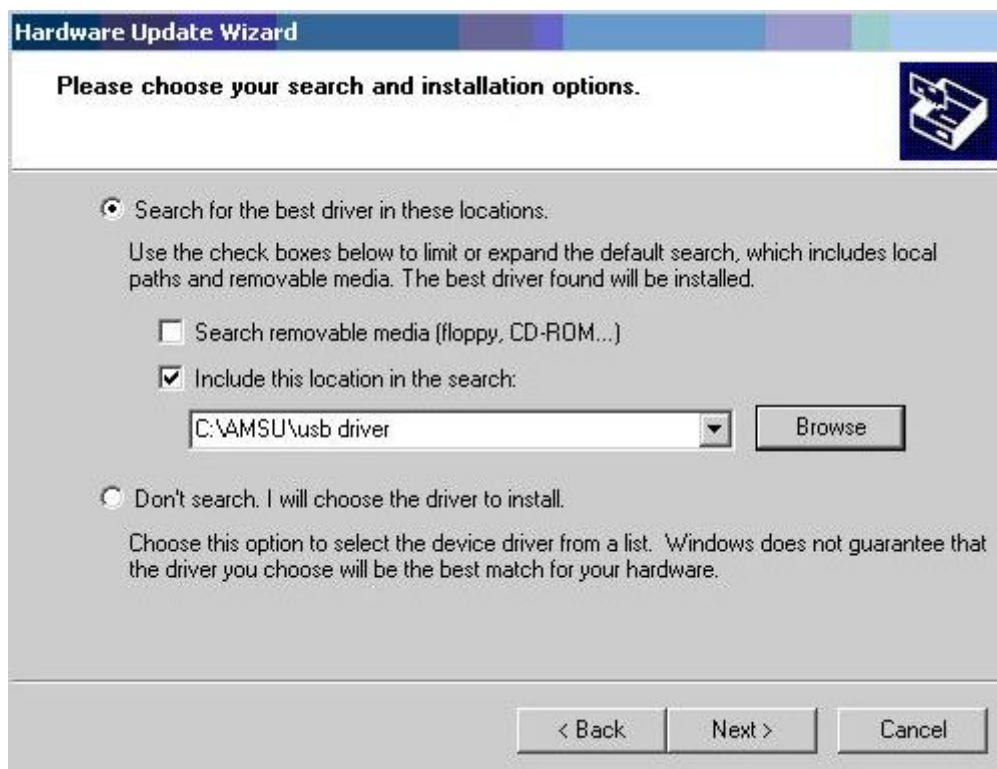
## 2.7 - SOFTWARE DOWNLOAD

In end user side and level 1 Repair center, we can do software downloading for the mobile which need software updated. This downloading tool is called AMSU (Alcatel Mobile Software Upgrade).

- (1) Download the latest AMSU version form the website [www.alcatel-mobilephones.com](http://www.alcatel-mobilephones.com). Find the tool under product module.
- (2) Download and install the tool in your computer.
- (3) Run the tool, and following what the tool asks step by step for downloading.
- (4) You can refer to the “help” menu for user guide.

Notice:

- Choose the “COM port” when connect the handset to PC, and it will ask to install the driver if you are the first time to use “COM port”. The driver is in the folder “\AMSU\usb driver”.



- In step 6, keep pressing “\*” key when you connect the phone to PC, to avoid it going to charging mode.



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B9C/OT-660(A)

Level 2 Repair Document



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Edition	Modification	Date
0.1	Draft Creation	May. 11 <sup>th</sup> , 2009
0.2	Add disassembly	May. 13 <sup>th</sup> , 2009
0.3	Add Cloning tool information Add SWUpgrade tool information	May. 21 <sup>st</sup> , 2009
1.0	Add sticker information Add disassembly process evaluation	May. 22 <sup>nd</sup> , 2009

	Function	Name	Date	Signature
Written by	CPM	Catherine		
Verified by	PM	Wood		
Checked by	TSD Manager	Sky Gao		
Approved by	QPM	Aigui Sun		

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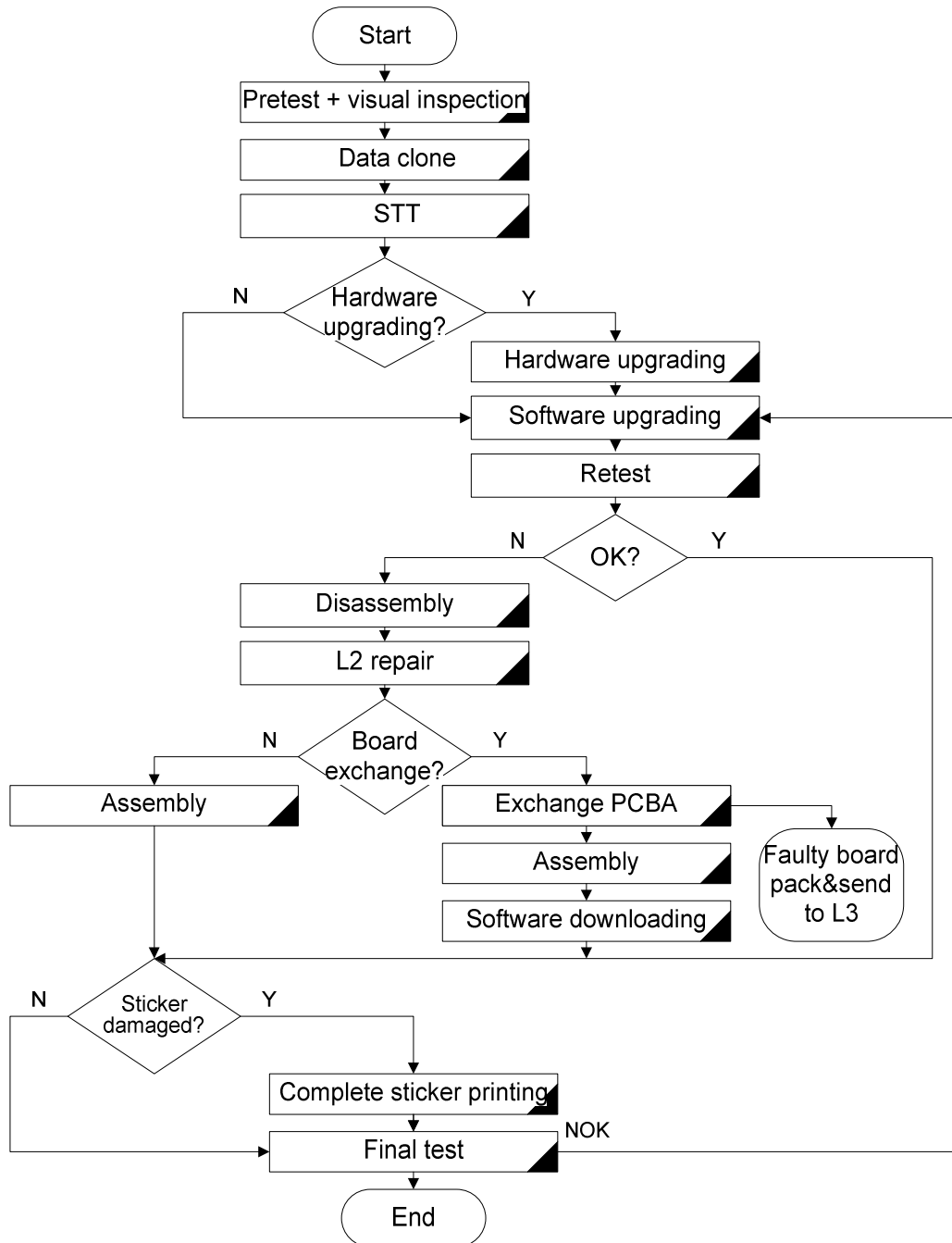
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## 1. LEVEL 2 REPAIR PROCESS



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## 2. WARRANTY CHECK AND PRETEST

### 2.1 Warranty Check

Warranty confirmation of L1:

a. 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.

b. 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.

c. Visual mechanical check;

Mechanical warranties check items:

- Corrosion: corrosion on the USB connectors, SIM connectors, and other metal surfaces

- Holes (diam > 1mm): Holes on any surface, including the front casing, furnished frame, battery cover, LCD Lens, keypad...

- Big bumps (diam > 1mm): Bumps on any surface, including the front casing, furnished frame, battery cover, LCD Lens, keypad...

- Long scratch (length > 3mm): Scratches on any surface, including the front casing, furnished frame, battery cover, LCD Lens, keypad...

- Distortion: Bend, twisted or crushed on the h/s, cover/casing or connectors...

- Broken: LCD broken, casing/cover broken...

- Fallen off: Keypad tear off, LCD lens, connectors fallen off ...

- Gap: External physical damage relating to abnormal use, like front case and frame opened

- Others

Damage caused by disassembly like wrong part assembly, lost of components

Use in abnormal environment like too high temperature with plastic melts

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## 2.2 Pretest

- . Power on the cellphone.
- . Insert a battery, plug a charger on product, and check the icon on main display or sub display.
- . If the cellphone asks to input NCK code, which means it's simlocked, and can only be worked with dedicated SIM card. Use the correct SIM card.
- . Enter the super code to unlock the phone if necessary.
- . If power on OK, test step by step with the auto test code:
  - Press \*#2886# on the idle screen and press left soft key to start the auto test\
  - Test clam. Open and close clam, if the function is abnormal, it will display "FAILED", or it will display "OK: OPENED". Press pass to continue
  - Test LCD/keypad backlight. The backlight will be auto on and off, if it works all right, press Pass to continue
  - Test LCD. LCD will turn red, green, blue, white, and black. Press Pass to continue
  - Test keypad. Press every key on the keypad and side, the corresponding key on the screen will be disappear. Press Pass to continue
  - Test the receiver. Sounds heard from the receiver. Press Pass to continue
  - Test the MIC. Puff near the MIC. If you can hear the sound from the receiver, press Pass to continue.
  - Test the speaker. Louder sounds heard from the speaker. Press Pass to continue
  - Test the headset. Insert the headset and make the voice, you will hear the sound from the headset. Press Pass to continue.
  - Test the battery. Battery is auto-tested. Press Pass to continue
  - Test the melody. You will hear the melody playing. Press Pass to continue
  - Test the vibrator. The phone will vibrate. Press Pass to continue
  - Test the charger. The phone will recognize the charger when you insert it. Press Pass to continue.
  - Test the camera. Scene will be shown on the screen. Press Pass to continue.
  - Test the memory card. The phone will recognize the card when you insert it.
- . Make a call.
- . Receive a call.
- . Reproduce the fault which end user complaint.

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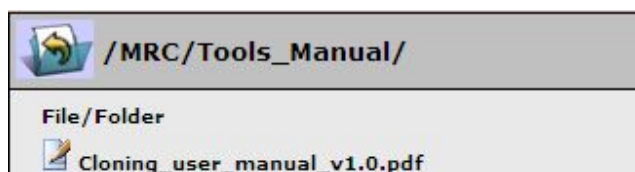
## 3. CLONING TOOL

(1) Find cloning tool on MLDC as below detail location:



(2) Install the cloning tool in your computer.

(3) Follow the user manual on MLDC to upgrade the mobile.



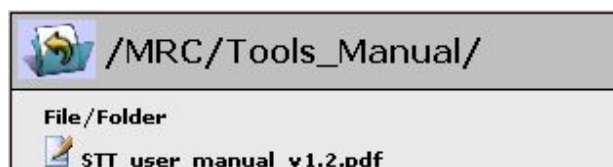
## 4. SAV TEST TOOL

(1) Find STT on MLDC as below detail location:



(2) Install the cloning tool in your computer.

(3) Follow the user manual on MLDC to upgrade the mobile.



## 5. HARDWARE UPGRADE

For OT-660(A), there is no hardware upgrade in L2 repair.

## 6. SOFTWARE DOWNLOADING

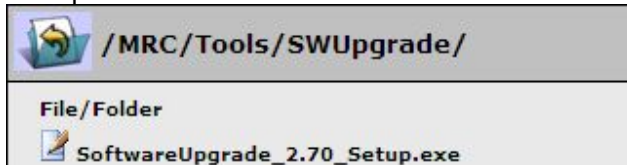
SWUpgrade tool is a method to download the SW from the SWupgrade server. Your internet connection is necessary during the process.

(1) Find softwareUpgrade tool on MLDC as below detail location:

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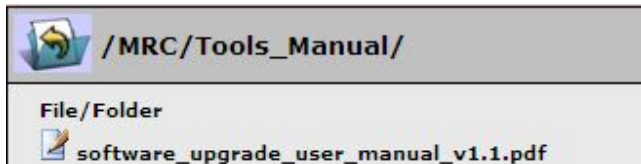
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B9C L2 repair document



(2) Install the cloning tool in your computer.

(3) Follow the user manual on MLDC to upgrade the mobile.



## 7. DISASSEMBLY and REASSEMBLY of OT-660(A)

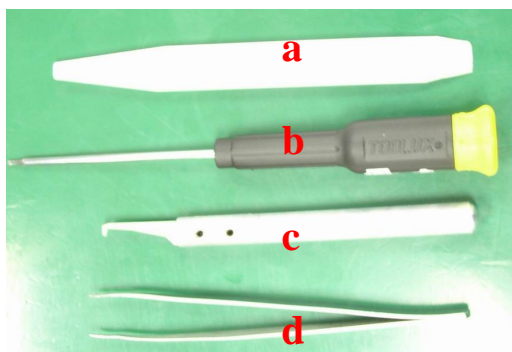
### 7.1 ESD Safety



Please wear static loop or static glove

### 7.2 Disassembly tools

**a** .Plastic Wedge **b** .Screwdriver (TORX5) **c** .Hook **d** .Tweezers **e** .Soldering iron  
**f** .knife **h** .Hot wind gun



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7.3 Process

The steps of disassembly OT-660(A) are as below.

PART I – Bottom assembly

Step 1

Take off the battery cover, battery and SIM card if there is.  
Take off the 4 screws from the furnished frame, position as the below picture showed,  
Then remove the furnished frame..



Step 2

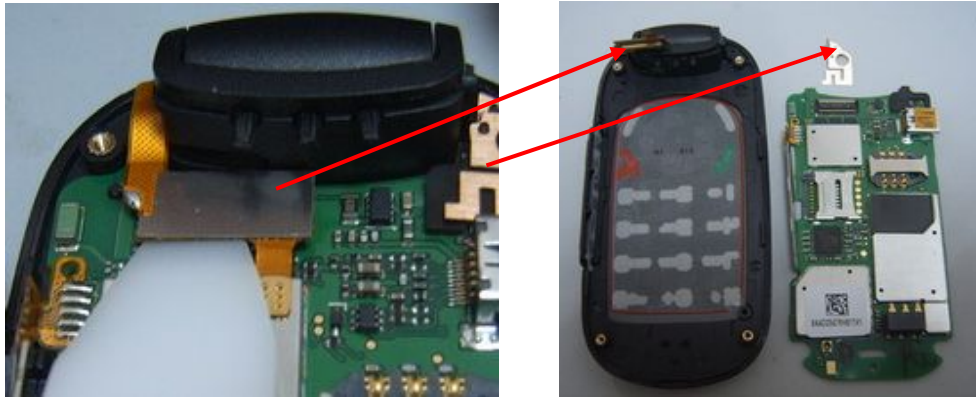
Remove the main PCBA as below.

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### Step 3

Remove side keypad from the keypad casing.



### Step 4

Remove the antenna from furnished frame.



### Step 5

Separate the top and bottom assembly by loosen the hinge.

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### Step 6

Remove main keypad with tweezers.



## PART II – Top assembly

### Step 7

Remove the 2 screw covers-> remove the 2 screws under them-> separate the back casing with the front casing.



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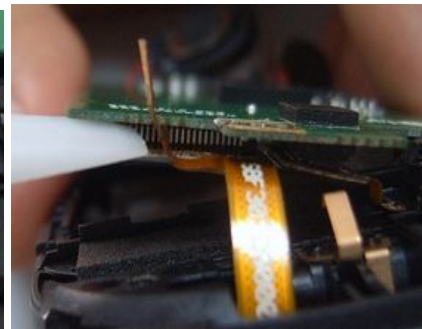
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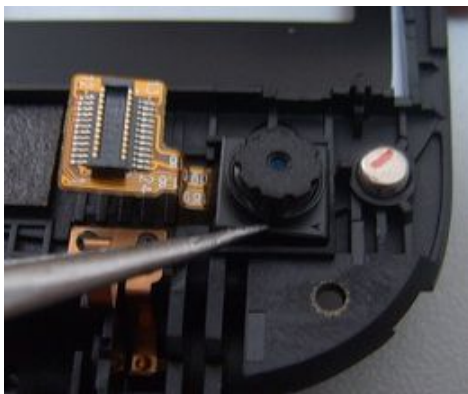
### Step 8

Remove the flip PCBA: vibrator and 2 in 1 speaker -> conductive fabric-> Zif connector on main FPC and camera.



### Step 9

Remove the camera and main FPC.



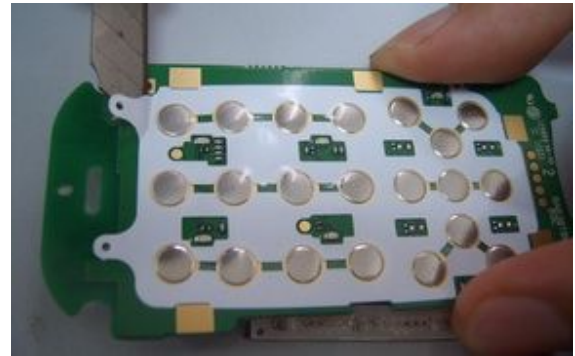
### Step 10

Remove the LCD lens and main key film.

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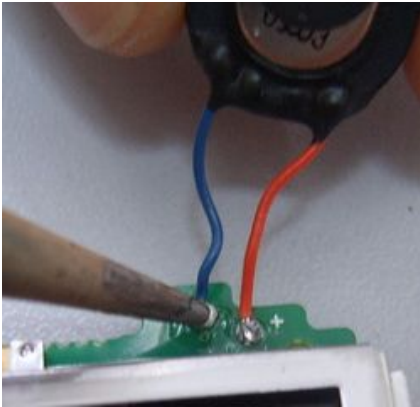
## B9C L2 repair document



### PART III – Components on PCBA board

#### Step 10

Remove the speaker, vibrator, and OLED screen off the flip PCBA.



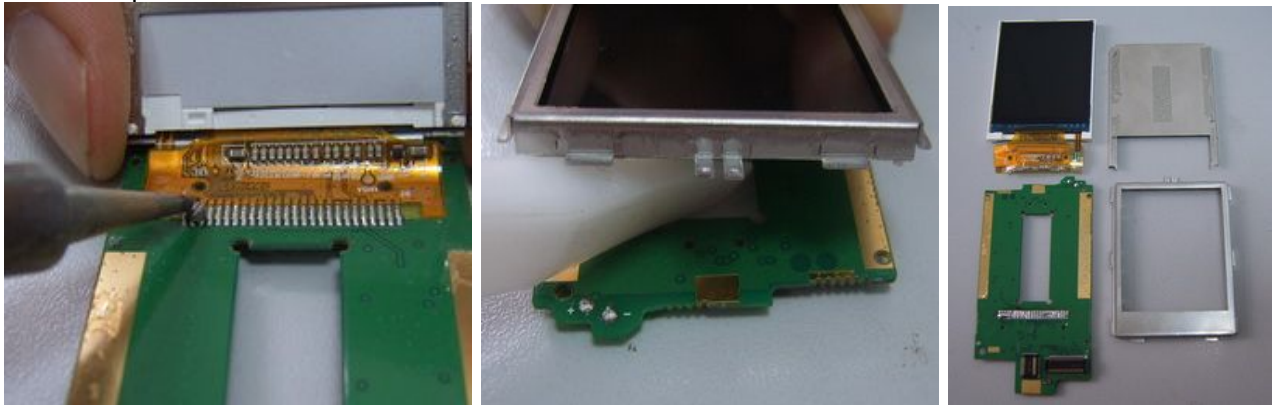
#### Step 11

Remove the main LCD.

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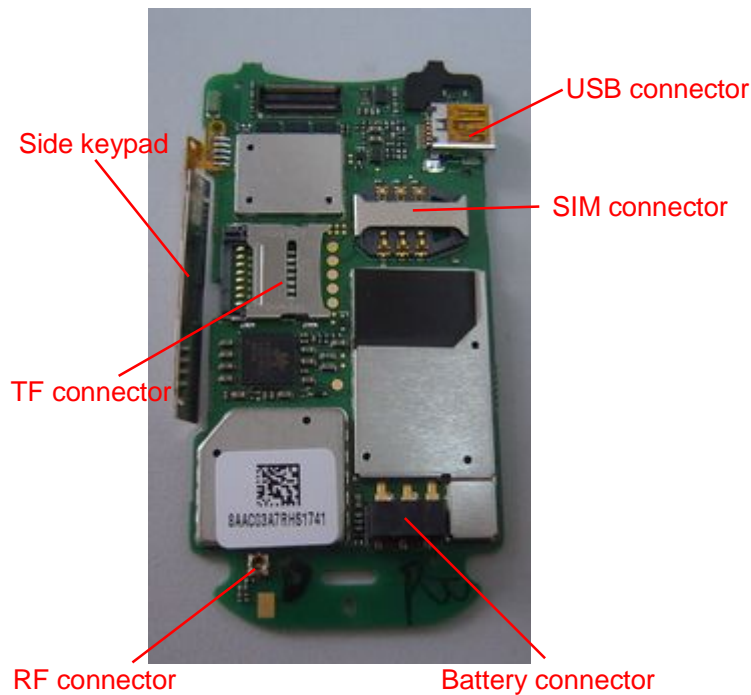
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## Step 7

Remove the following components from main PCBA with hot wind gun



### 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.

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## 7.4 Reassembly Process

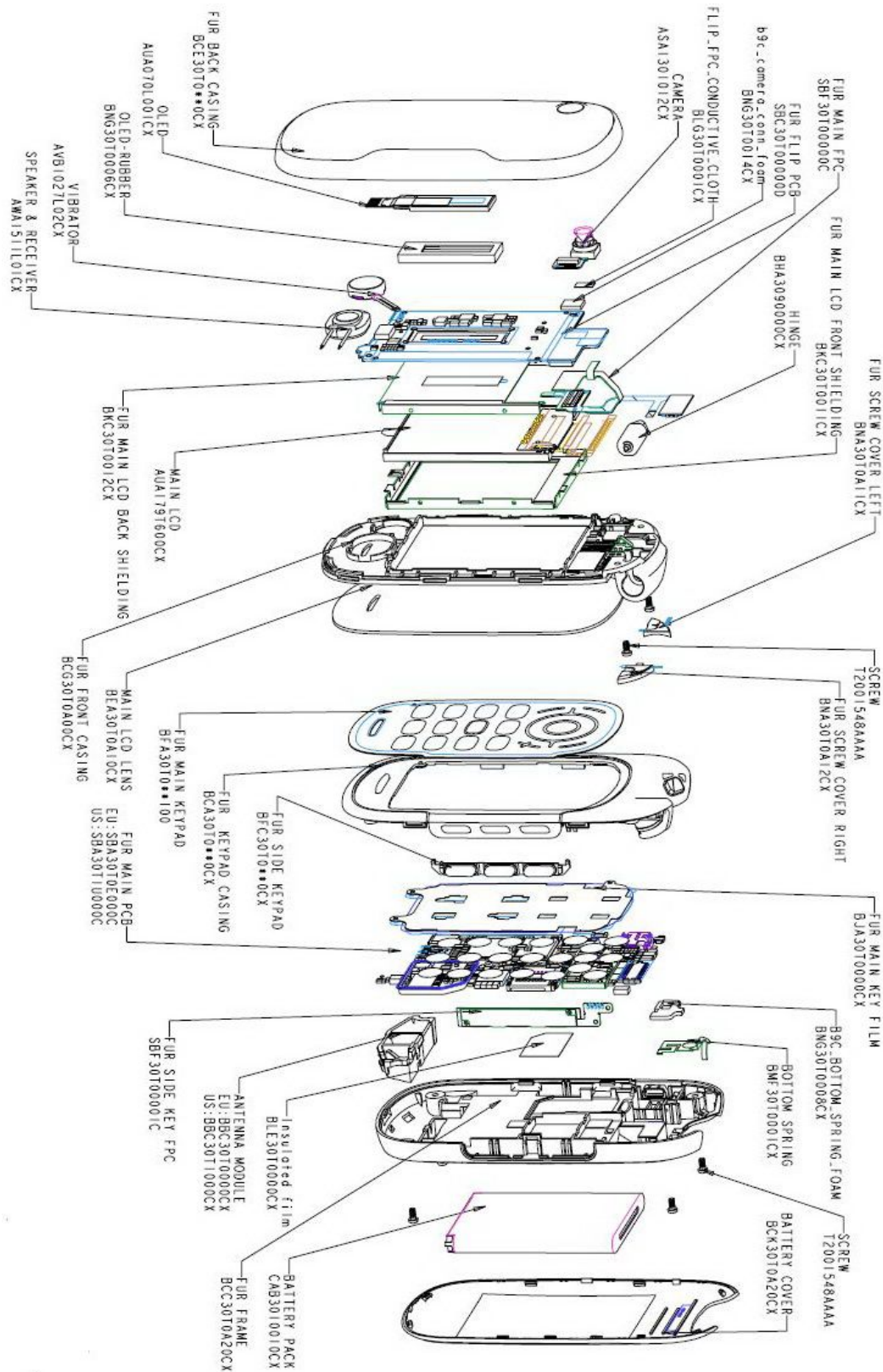
Please make reference to the disassembly process for assembly reverse an order of the disassembly steps.

## 7.5 Disassembly process evaluation

We list the B9C 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
screw	5s	screwdriver	Class 1	
Furnished frame	4s	Plastic Wedge	Class 1	
main PCBA	2s	Plastic Wedge	Class 1	
LCD casing	15s	Soldering iron	Class 3	Must be careful
camera module	1s	Tweezers	Class 1	
vibrator	3s	Tweezers& Soldering iron	Class 1	
Speaker&receiver ( two in one)	5s	Tweezers& Soldering iron	Class 1	
microphone	1s	Tweezers	Class 1	
antenna	1s	Plastic Wedge	Class 1	
camera connector	1s	Plastic Wedge	Class 3	
USB connector	100s	hot wind gun	Class 3	easy to damage
battery connector	80s	hot wind gun	Class 3	Plastic parts are easily damaged during heating
SIM connector	70s	hot wind gun	Class 3	Plastic parts are easily damaged during heating
RF connector	15s	hot wind gun	Class 2	
T-flash card connector	80s	hot wind gun	Class 3	Plastic parts are easily damaged during heating
Side keypad	1s	Tweezers	Class 2	
Main keypad	10	Tweezers	Class 1	
key film	10s	Tweezers&knife	Class 1	keep away from dust
OLED	10s	Soldering iron	Class 2	
Side key pcb	2s	Soldering iron	Class 2	
LCD lens	25s	Tweezers	Class 2	
Flip pcba	10s	Plastic Wedge	Class 2	
Conductive fabric	2s	Tweezers	Class 2	
Screw cap	25s	Tweezers	Class 2	

## 7.6 Disassembly Complete



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## 8. 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 contact, change the battery connector if broken; 3.Check the charge plug on B cover, 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 and Sub 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 B cover; 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 bip 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.

List of available component to be replaced on the PCBA in Level 2, refer to appendix 2

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## 9. 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, microphone, and camera).
- 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 3.

## 10. OTHER COMPONENT EXCHANGE

The other components exchange like *LCD module, keypad, 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!

## 11. STICKERS

Find below the specification concerning the stickers for OT-660(A) products.

This sticker must be re-printed when the board is changed or upgraded .If the sticker is damaged, the mobile must be excluded of manufacturer warranty.



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B9C OT-660  
 EU IMEI 35238703\*\*\*\*\*  
 US IMEI 01187200\*\*\*\*\*

Certification name	Product name	Product type (and internal name)
CE1588	OT-660	B9C
RAD110	OT-660A	B9C

Label information

Length = 33mm

Width = 16mm

Thickness = 0.05mm

Zone	Variable	Signification
1	-	Type of product : XXXX
2	-	Distributor : For EMEA: TCT Mobile Limited For Latam: TCT MOBILE For CN: 苏州 TCL 天—移动通信有限公司 GSM 双频 GPRS 功能数字移动电话机
3	DATA3	PTS='soft' techn. Release xxx
4	DATA10 or DATA 12	Short code XXXX
5	DATA2	PTM
6	-	Made In (by) ... according to made in file
7	-	China version—CMII:0000000000 / PCS version—FCC ID:RADXXX
8	DATA7	Commercial Ref
9	DATA5	Full IMEI
10	DATA5	Bar code IMEI
11	DATA5/DATA11/DATA2/DATA3/DATA7	DATAMATRIX Code IMEI No. / INDUS. REF. / PTH(PTM) / PTS / COM. REF.
12	DATA4	Date Code xxx
13	Not used-	Commercial Name
14	Not used-	
15	Not used-	Special Logo on other project
16	Not used-	
17		Bluetooth QD ID BXXXXXXX
NO	DATA11	3DS ( INDUS REF )

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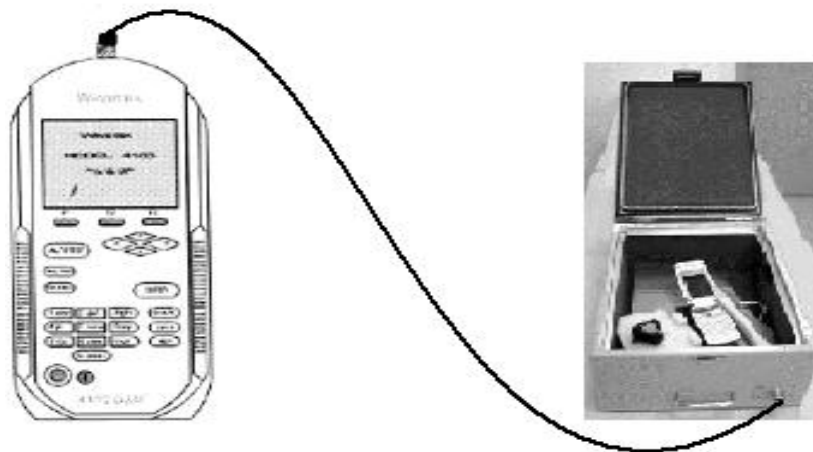
## 12. FINAL TEST

### 12.1 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)

### 12.2 Measurement



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Measurements	Channels	Power levels	Tol.min	Tol.max	Conditions
<b>GSM</b>					
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
<b>DCS</b>					
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

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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
<b>PCS</b>					
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.

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## APPENDIX 1 Tools and Equipments for L2 Repair Center

### 1) Repair Tools and Downloading Tools:



**Plastic Stick**

**Tweezers**

**Steel Hook**



**Screwdriver (TORX6)**



**Knife**



**Soldering iron**



**Hot wind gun**

### 2) Other mandatory Equipments

**Final test kit (charger, batteries, Back covers)**

**Final test interface**

**Bench and socket**

**Stickers**

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## APPENDIX 2 Packaging Requirement

### PCBA shipment requirement:

- Against Electro-Static.
- Avoid PCBA are laid to overlap each other.
- Against press outside package.

**Solution 1:** Each PCBA is packaged by shielding bag, put each PCBA into each cave of the carton (see picture hereunder).



**Solution 2:** Stack by special trays (15 trays maximum), put empty trays to fill space inside the carton and all trays should be bound tightly in order to avoid PCBA move out (see picture hereunder).



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## SPARE PARTS FOR LEVEL1 REPAIRS ON OT- 660(a) PRODUCTS

	DESIGNATION	名称	REFERENCE	QUANTITY	REMARK
1	swap handset EU	周转机（欧盟）	F-A30T0AVA01	1	(TTT) 客服周转机头,B9C(EU),Dark Chrome+Black
2	swap handset MX	周转机（拉美）	F-A30T1AVA01	1	(TTT) 客服周转机头,B9C(US),Dark Chrome+Black
3	furnished front casing	上前壳	BCG30T0A00C0	1	Black raw
4	furnished back casing	上后壳	BCE30T0V10C0	1	Dark chrome+Black,ALCATEL logo
			BCE30T0E20C0	1	Hot pink chrome+Black,ALCATEL logo
5	hinge	滑轨	BHA3090000C0	1	
6	MAIN LCD LENS	主LCD镜片	BEA30T0A10C0	1	
7	FUR KEYPAD CASING	键盘盖	BCA30T0CA0C0	1	side key area:Cashmere grey, background:Black
8	furnished battery cover	电池后盖	BCK30T0A20C0	1	Black soft touch
9	furnished frame	主底组件	BCC30T0A20C0	1	
13	battery(750mAH)	电池(750毫安时)	CAB3010010C1	1	
14	USB charger	充电器	TA76-T5002684AGAA	1	USB CHARGER MEXICO
			TA76-T5002684AAAA		USB CHARGER EU
			TA76-T5002684ABAA		USB CHARGER UK
			TA76-T5002684AHAA		USB CHARGER Argentina
			TA76-T5002684AGAC		USB CHARGER MEXICO (BYD)
15	USB cable	USB数据线	TA24-T5001431ABAA	1	
16	headset stereo	立体声耳机	CCA30B4000C0	1	
17	furnished keypad	主键盘	BFA30T0AC100	1	Cashmere grey,,Latin version
			BFA30T0CC100	1	Cashmere grey,,Cyrillic version
			BFA30T0FC100	1	Cashmere grey,,Arabic version
18	FUR SIDE KEYPAD	侧按键	BFC30T0C10C0	1	Cashmere grey
19	FUR SCREW COVER LEFT	螺丝盖左组件	BNA30T0A11C0	1	black
20	FUR SCREW COVER RIGHT	螺丝盖右组件	BNA30T0A12C0	1	black
21	screw M1.4*3	螺丝	TA54-T2001548AAAA	6	



## SPARE PARTS FOR LEVEL2 REPAIRS ON OT-660(a) PRODUCTS

	DESIGNATION	名称	ERP reference	QUANTITY	REMARK
1	swap PCBA EU	周转PCBA（欧盟）	F-B30T00ALEU	1	(TTT) 客服周转主板,B9C(EU),,ALC.EU, (软件DAA30T0BAAAA)
2	swap PCBA US	周转PCBA（拉美）	F-B30T10ALMX	1	(TTT) 客服周转主板,B9C(US),,ALC.MX, (软件DAA30T0BGDAA)
3	Furnished FLIP PCB	翻盖板组件贴片料	SBC30T00000D	1	
4	Speaker &Receiver	2合一喇叭	AWA1511L01C4	1	
5	LCD Module	显示屏	AUA179T600C1	1	
6	MAIN LCD FRONT SHIELDING	LCD前屏蔽罩	BKC30T0011C0	1	
7	FUR MAIN LCD BACK SHIELDING	LCD后屏蔽罩	BKC30T0012C0	1	
8	OLED	副屏	AUA070L001C1	1	0.7",96X16
9	OLED-RUBBER	OLED软胶	BNG30T0006C0	1	
10	Camera Module	摄像头	ASA1301010C3	1	
11	b9c_camera_conn_foam	压CAMERA连接器泡棉	BNG30T0014C0	1	
12	Vibrator	振动器	AVB1027L02C1	1	
13	Microphone	麦克风	AWC6137M00C1	1	inside BB shielding
14	camera connector.(SOCKET)	摄像头连接器	TA21-T1001939AAAA	1	SOCKET BTB 24 PIN PITCH=0.4 FEMALE
15	Battery connector	电池连接器	ARE0030026C1	1	
16	T-Flash card connector	TF卡连接器	ARJ0080012C1	1	
17	MINI USB connector	mini-USB连接器	ARH0100009C1	1	10pin,0.4pitch,H=3.7mm
18	SIM CARD CONNECTOR	sim卡连接器	ARD0060022C1	1	6PIN,2.54PITCH
19	antenna module(EU)	天线（欧版）	BBC30T0000C1	1	
20	antenna module(US)	天线（美版）	BBC30T1000C1	1	
21	RF connector	RF连接器	ARF0060001C1	1	
22	RF shielding case,18.8x17.6x1.9mm	RF屏蔽盖	BKA30T0000C0	1	
23	BB Shielding,36.3x18x1.9mm	BB屏蔽盖	BKB30T0000C0	1	
24	BT Shielding,11.35x14.69x1.6mm	蓝牙屏蔽盖	BKC30T0000C0	1	
25	Insulated film	绝缘膜	BLE30T0000C0	1	on BB shielding, to avoid short circuit of sim card
26	B9C_BOTTOM_SPRING_FOAM	下弹片泡棉	BNG30T0008C0	1	on main pcba, above USB con
27	Mainboard key film	主键盘膜	BJA30T0000C0	1	
28	FLIP_FPC_CONDUCTIVE_CLOTH	FLIP FPC接地导电布	BLG30T0001C0	1	on top assembly
29	FUR SIDE KEY FPC	侧按键FPC组件	SBF30T00001C	1	
30	FPC CONN(SOCKET)	FPC连接器	ARC0500000C1	2	1 on flip pcba, another on main pcba. b2b,50pins,female , 0.4 mm ,1.5 height
31	FUR MAIN FPC	主FPC组件	SBF30T00000C	1	