

# ***Technical Service Manual for Customer***

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## **glofiish<sup>®</sup> X800**

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**Rev 1.1**

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***ETEN Information System Corp.***



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## CHAPTER 1. INTRODUCTION

This manual provides technical information necessary to maintain and support repair service of Pocket PC Phone glofish® X800. Information contained in this document is copyrighted by E-TEN Information Systems Co., Ltd. It is intended for use of E-TEN's authorized service providers and clients. Service technicians may reproduce this document as needed for repair uses only. Reproduction for any other activities may be illegal to copy certain materials without permission, including documents and images. If you are not sure whether you have permission, seek legal advice.

Every effort has been made to keep the information contained in this document current and accurate as of the date of revision. However, no guarantee is given to error-free and may include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in later editions. Improvements or changes in the product designs or the specifications described may be made at any time.



## CHAPTER 2. PRODUCT SPECIFICATION

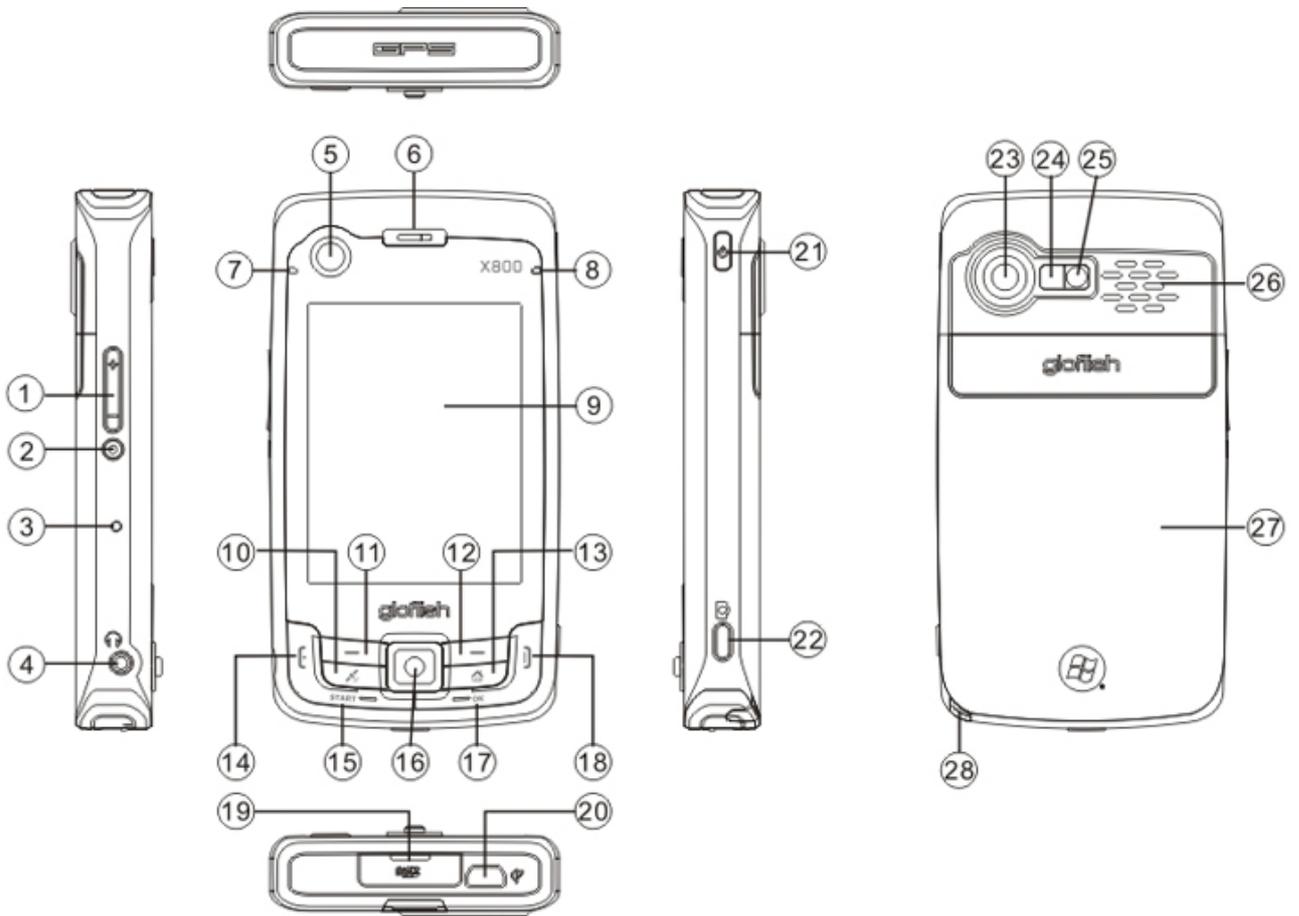
### 2.1 Product Specification

Operating System	Windows Mobile™ 6.0 for Pocket PC Phone Edition
Processor	Samsung SC3 2442, 500MHz
Memory	64MB RAM, 256MB ROM
Display	2.8" VGA, 65,536 colors TFT-LCD touch panel ( Resolution : 640 x 480 )
Dimensions	113.5 (L) x 60.5 (W) x 15.8 (H) mm
Weight	147 g ( including Battery & Stylus )
Communications	HSDPA / UMTS ( 2100/1900/850 MHz ) Quad-Bands GSM : 850/900/1800/1900 MHz  EDGE class 10/GPRS class 10  Bluetooth 2.0 class 2 + EDR WiFi IEEE802.11b/g Certificated
GPS	Embedded Chip, SiRF Star III
Camera	2M pixels Auto-Focus with flashlight, up to 1600x1200 resolution 0.3M pixels Fixed-Focus Camera for conference call usage
Expansibility	micro SD slot
Interface/ Audio	Built-in microphone and speaker, external stereo headset jack.
Interface/ Data	miniUSB Sync
Ergonomic Design	<ol style="list-style-type: none"> <li>1. Touch Panel for stylus or fingertip</li> <li>2. Buttons :             <ul style="list-style-type: none"> <li>- Joystick navigation key</li> <li>- Power button</li> <li>- Camera shoot key</li> <li>- Reset button</li> <li>- Record button</li> <li>- Volume control key</li> <li>- Send/End key</li> </ul> </li> </ol>



	<ul style="list-style-type: none"> <li>- Quick Application key x 6 ( Right Softkey / Left Softkey / GPS hotkey / M-desk hotkey / OK / Start )</li> </ul>
Battery	1530 mAh Li-Poly, rechargeable & replaceable
Power	DC Adaptor, 5V1A,
LED Indication	<p>&lt;&lt; Right-Up side: Red, Green &gt;&gt;</p> <ul style="list-style-type: none"> <li>- Red always light: Device is charging</li> <li>- Red sparkling once every 4 sec: Warning of Battery low level</li> <li>- Red sparkling twice repeatedly: Warning of Battery critical situation.</li> <li>- Red sparkling continuously: Battery cover not on or Battery level very low.</li> <li>- Green always light: Battery charging is full</li> <li>- Green sparkling once every 4 sec: GSM is connecting on line</li> </ul> <p>&lt;&lt; Lift-Up side: Blue, Amber &amp; White &gt;&gt;</p> <ul style="list-style-type: none"> <li>- Blue sparkling once every 4 sec: BlueTooth enable</li> <li>- Amber sparkling once every 4 sec: WLAN enable</li> <li>- White sparkling once every 4 sec: GPS enable</li> </ul>
Add-on Applications	<ol style="list-style-type: none"> <li>1. E-TEN Application Value Pack</li> <li>2. E-TEN Application Value Pack for Multimedia</li> <li>3. E-TEN Application Value Pack for Phone</li> <li>4. MMS Composer* (*subject to change by region)</li> <li>5. Voice Recognition* (*subject to change by region)</li> </ol>
Accessories (Optional)	Standard Battery pack / Car-Charger / Car-Mount / Bluetooth Headset.
Certification	CE / R&TTE / DGT / FCC /BQB / WiFi /USB-IF/ NSTL-LTK

## 2.2 Overview



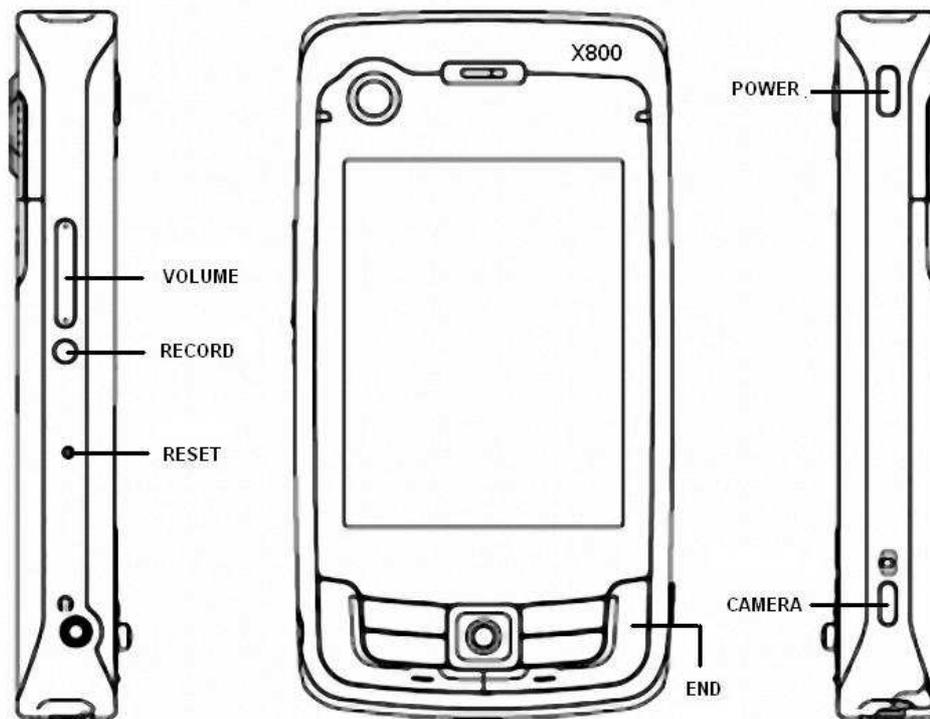
①	Volume Adjustment	⑪	Left Soft-Key	⑳	Power key
②	Recorder key	⑫	Right Soft-Key	㉑	Camera shoot key
③	Reset key	⑬	M-Desk	㉒	2M AF Camera Lens
④	Headset Jack	⑭	Send / Hang on Contact list	㉓	Mirror
⑤	VGA Camera	⑮	Start Hot-Key	㉔	Flashlight LED
⑥	Receiver	⑯	Joystick Navigation key	㉕	Speaker hole
⑦	BT /WLAN /GPS active LED	⑰	OK Hot-Key	㉖	Battery Cover
⑧	Power / Phone active LED	⑱	End / Hang up	㉗	PDA Stylus
⑨	Display w/ Touch Panel	㉘	Micro SD slot		
⑩	GPS Hot-Key	㉙	Mini-USB connector		

## CHAPTER 3. TOOLING FOR REPAIR

Item	Purpose
Cleaning Wipers T5 Screwdriver Tweezers Plastic Stick	Disassembly & Assembly
Blower Soft Brush	Camera Lens Clean
Mini USB Cable / Cradle	Synchronization Test to PC
Micro SD Card	SD Read / Write Test
Headset	Headset Audio / Recording / FM Test
AC Adapter Battery	Charging
Software Upgrade tools	Software Upgrade (EUV, ActiveSync)
GSM / 3G(HSDPA/UMTS) SIM Card Bluetooth Headset	Phone Function Live Test
Barcode Label Printer	IMEI Sticker Printing

## CHAPTER 4. MODE SWITCHING

Function	Procedure
Hardware Reset	<ol style="list-style-type: none"> <li>1. Press and hold <b>POWER</b> button</li> <li>2. Press <b>RESET</b> button and release both (power &amp; reset) buttons at the same time</li> </ol>
Software Reset	Press <b>RESET</b> button
Testing (Build-in) Program	<ol style="list-style-type: none"> <li>1. Press and hold <b>CAMERA</b> button immediately after doing a hardware reset</li> <li>2. Release <b>CAMERA</b> button after the testing program shows up on the LCD</li> </ol>
Clean-boot Option	<ol style="list-style-type: none"> <li>1. Press and hold <b>END</b> button immediately after doing a hardware reset</li> <li>2. Release <b>END</b> button after the clean boot option screen shows up on the LCD</li> </ol>
Download Mode	<ol style="list-style-type: none"> <li>1. Press and hold <b>RECORD</b> button immediately after doing a hardware reset</li> <li>2. Release <b>RECORD</b> button after the USBDL screen shows up on the LCD</li> </ol>



## CHAPTER 5. DIAGNOSTICS

### 5.1 PDA Build-in Diagnostic Program

How to entering the program :

- a. Press and hold **POWER** button
- b. Press **RESET** button and release both buttons at the same time
- c. Press and hold **CAMERA** button immediately after having hardware reset (above 1 & 2)
- d. Release **CAMERA** button after the screen shows up

X800 Test System		×
1.NFlash	2.RAM	▲
3.Keypad	4.T Panel	
5.AUDIO	6.LCD	
7.BackLight	8.LED	
9.Vibrator	10.BAT Chip	
11.Battery	12.SD/MMC	▼
13.Camera	14.OS IMG	
15.Bluetooth	16.GPS	
17.GSM	18.FM Test	
19.B&E Info	20.X Packet	

*NOTE. Always tap the up-right corner [x] to exit when finished.*

Item	Description	Procedure / Criteria
NFlash	NAND Flash test	Tap screen if result is "Test O.K.- Bad Block =0". <i>Tap up-right corner to exit</i>
RAM	SDRAM test	Tap screen if result is "All are O.K." <i>Tap up-right corner to exit</i>
Keypad	Pad Test	Follow the instruction and press GREEN hinted button in order. <i>Tap up-right corner to exit if passed all pad test</i>



T Panel	Touch Panel test	Take stylus pen then draw few lines slowly around the screen rims and center. *Breaking lines and screen can't alignment are not allowed. <i>Tap up-right corner to exit</i>
AUDIO	Voice record/reply test	1. Tap Recording icon and talk to the microphone for 1-2 sec, the voice will reply the recorded sound automatically. 2. Plug your headset and run the record/reply test again. 3. Tap Receiver, and tap "PASS" after hear a tone by phone generated. <i>Tap up-right corner to exit</i>
LCD	LCD color test	Tap screen repeatedly. Check color screen if normal or any defective pixels on it. <i>Tap up-right corner to exit</i>
BackLight	LCD backlight test	Tap "Back Light On/Off" and tap "scroll up/down" to test backlight. <i>Tap up-right corner to exit</i>
LED	LED indication test	Tap "ALL ON" then "ALL OFF" to check all indicative color LED turns on/off, and tap PASS. <i>Tap up-right corner to exit</i>
Vibrator	Vibration testing	Select "Vibrator On then Off" to check if device is vibrating. <i>Tap up-right corner to exit</i>
BAT Chip	main battery test	Test main battery calibration. <i>Tap up-right corner to exit if screen shows PASS</i>
Battery	Test battery switch function	Follow the procedures and check screen shows "PASS!" <i>Tap up-right corner to exit</i>
B&E Info	Read SW version	Tap "Read SW Version", check the system software and language version. <i>Tap up-right corner to exit</i>



## 5.2 Other Function Test Under OS

Testing Item	Procedures	Guidelines
Phone Live Test	Test dial and receive phone calls 1. Using Device over device to test 2. Using Headset to answer a call 3. Using Bluetooth to answer a call	Check Dial/Receive phone call's voice is clear enough
USB connection	Synchronize PDA with PC	Connected USB to check PDA can be communicate with PC's ActiveSync
Camera with Micro SD card Read/Write Test	Snap shot a photo then delete and save the file in Micro SD card	1. Check Camera function and photo appear normal 2. Check read, write & delete the saved file for Micro SD card
WiFi Test	1. Enable Wireless 2. Execute Internet Explore to check if the Wireless LAN works well	Must be able to open a website
	<i>Note: Problems regarding to Firewall and set Proxy, please contact your IT specialists</i>	
GPS Test	1. Execute the AP as GPS Viewer 2. Check the contents of AP	Satellite searching status 1. No time limitation 2. Fix: 3D Fixed
Power consumption Test	1. Turn off power button, check SI 2. Execute program "2577" under OS 3. Select Backlight ON and OFF to test TI 4. Finally select Clean Boot to  Tool: 1. Dummy battery 2. Dummy battery cover 3. Power supply 4. Micro SD card	SI: current $\leq 10\text{mA}$ TI: Backlight ON (GSM/BT/WLAN/GPS ALL OFF) current $\leq 250\text{mA}$ TI: Backlight OFF (GSM/BT/WLAN/GPS ALL OFF) current $\leq 100\text{mA}$

## CHAPTER 6. DISASSEMBLY

		P/N
A	B	
C	D	
E	F	

\*Quick Ref. Figure Reading Sequences

<b>Main Unit → Battery Cover &amp; Stylus &amp; Battery, SIM Card ( if has )</b>		P/N: 49005120 40009520 40009510
		
<p>A. Remove battery-cover from the unit, bottom side go first.</p> <p>B. Pull out the Stylus.</p> <p>C. Removing battery from the unit by tools, release both latches.</p> <p>D. Finish.</p>		

Main Bracket Assy → Antenna Cover Assy

P/N: 64041640



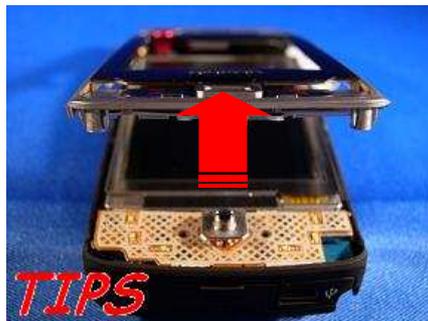
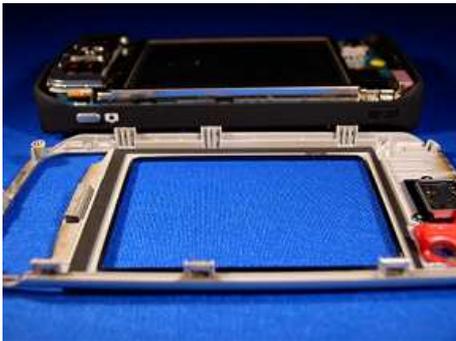
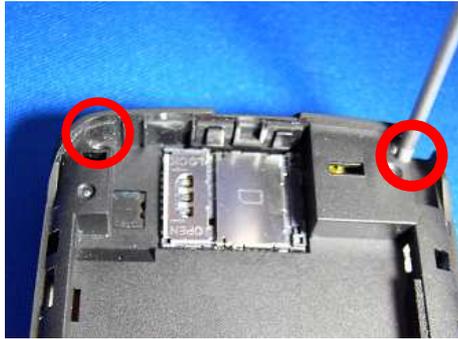
- A. Use plastic-stick to insert the latch hole, dig it up with a little strength.
- B. When finished, taking care of the other side as well. Unlock all latches and remove Cover from the bracket.
- C. Finish.

**TIPS.** Always the bottom go first, or you will hard to get this part disassembled at the end.

*Caution!! The surface of the Cover easily been cut or get injury, do not use any sharp tools get the help.*

Main Bracket Assy → Front Cover Assy (unscrew needed)

P/N: 44001160\*2



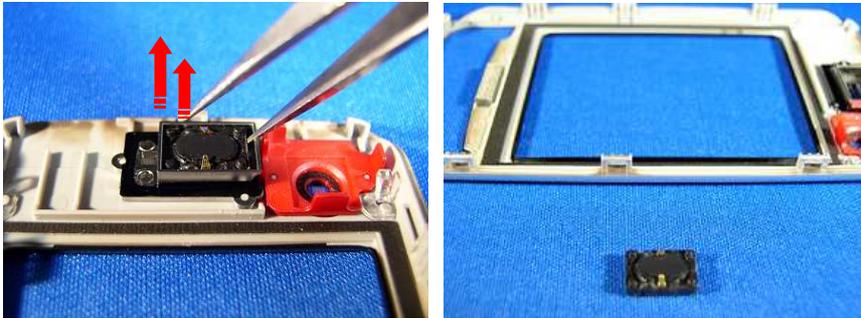
- A. Two screw holes are at bottom of the unit. Use T5-screwdriver to unscrew them both.
- B. Use plastic-stick to pick a hole near the camera-button, dig it up by using a little strength.
- C. Sliding stick to the top of cover, separate them from the bracket.
- D. Sliding through bottom case by the same way.
- E. Slightly move it along to the top, nicely to lifts the Cover up and remove it from the bracket.
- F. Finish.

**TIPS.** Always the bottom go first, or you will hard to get this part disassembled at the end.

*Caution!! Do not use over strength to do the works, other parts would be damaged when using the sticker.*

### Front Cover Assy → Receiver

P/N: 64041650  
49005280



- A. Remove receiver by using tweezers. Or, tapping it out by fingers.
- B. Finish.

### M/B → Keypad Module Assy

P/N: 40010600



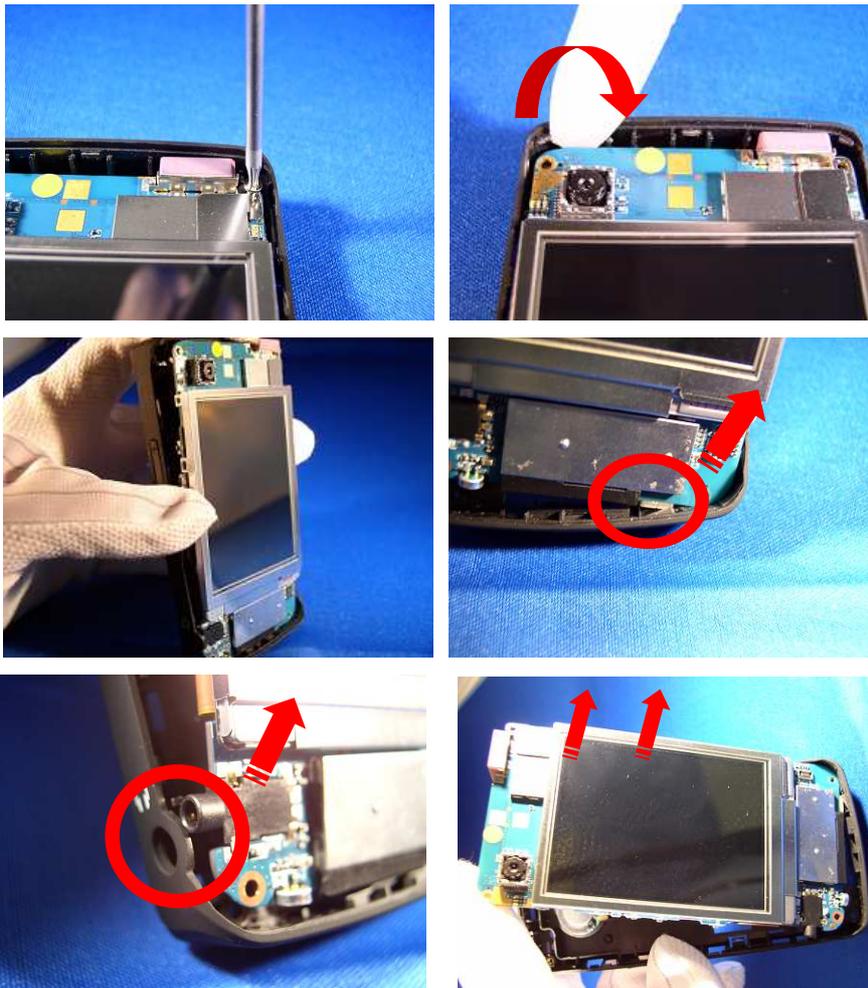


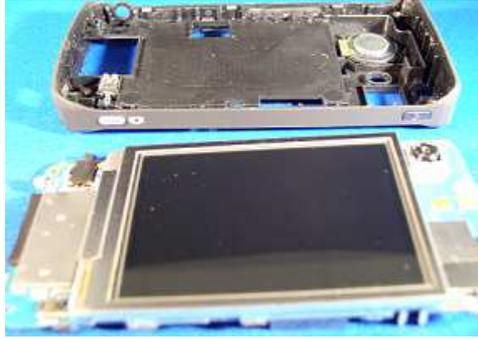
- A. Use plastic-stick to digging gap with a little strength, nicely to pick the Keypad Module up.
- B. Bending FPC to the opposite way. Unlock connector from socket by using tweezers.
- C. Finish.

*Caution!! Use tweezers in an ease way to get the helps. The FPC Assy or other parts could be damaged by tools misuse.*

**Main Bracket Assy → M/B ( unscrew needed )**

P/N: 44001160\*2



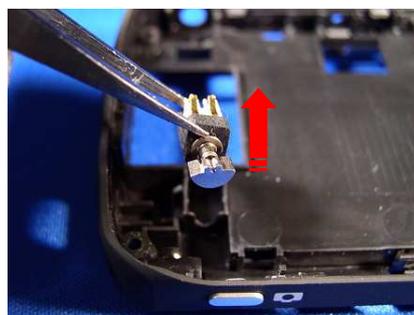


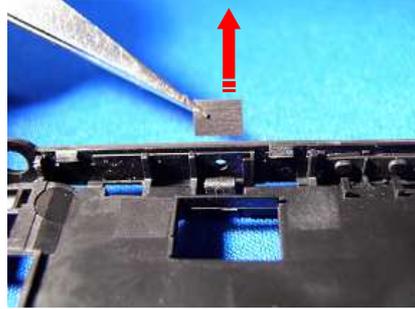
- A. Two screw holes at top of the unit. Use T5-screwdriver to unscrew them both.
- B. Use plastic-stick digging M/B a little out from the top corner of bracket.
- C. Hold the unit and make it straight on the desk.
- D. Use two hands to apart the M/B from the bracket, smoothly to get it out from the mini USB port.
- E. Next the headset port.
- F. Slightly take the M/B out when released.
- G. Finish.

**TIPS.** Follows “mini USB” then “headset” port in an order.

### Main Bracket Assy → Speaker & Vibrator, Rubber Reset Key

P/N: 40009410  
49005290  
49005260  
43001070



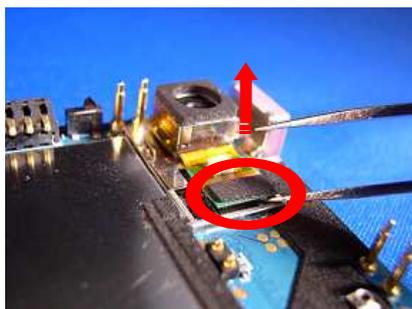
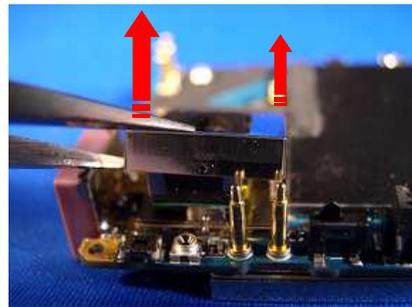
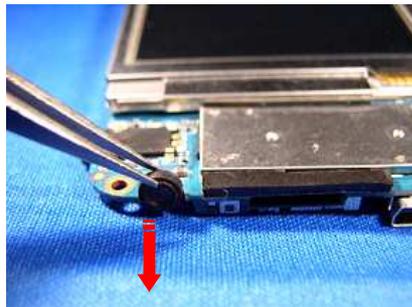


- A. Pulling out Speaker from bracket with the hook side of plastic-stick.
- B. Pick Vibrator out from bracket by using tweezers.
- C. Pick key rubber up from the bracket.

*Note. Removing the tape as clean as possible and make it ready for the new parts on the bracket.*

**M/B → Rubber MIC & Shielding Camera, Camera 2M**

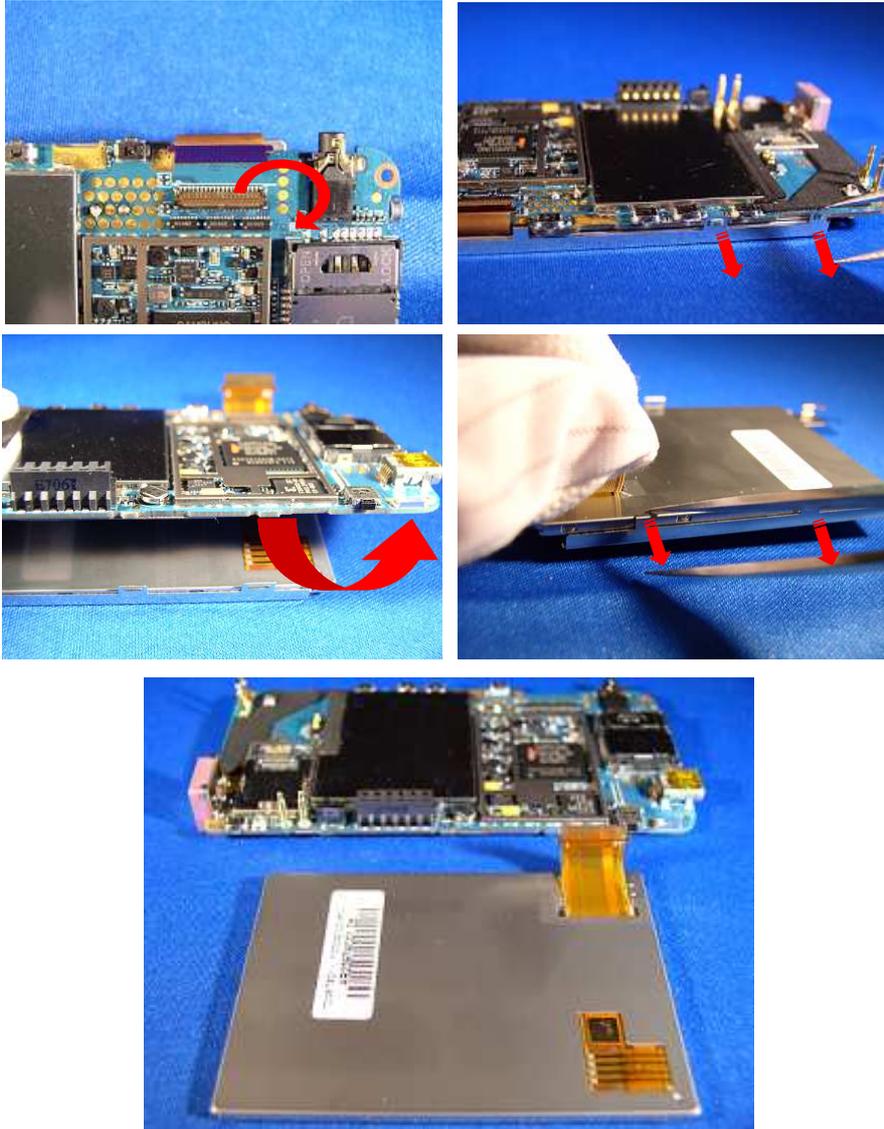
P/N: 64041620  
43001060  
41002670  
03040220



- A. Peel off Rubber from the MIC.
- B. To get a lifting point along shielding edge by using Tweezers. Both sides should get the balance strength to picking it up.
- C. Unlock CAMERA connector from the socket of M/B.
- D. Finish.

### M/B → LCM & Shielding LCM

P/N: 02000670  
41002650



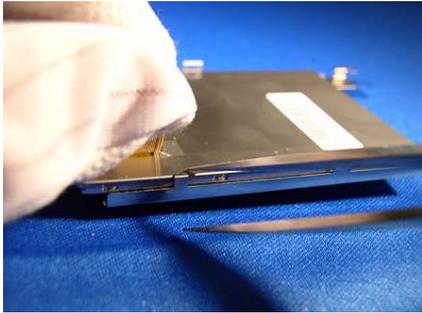
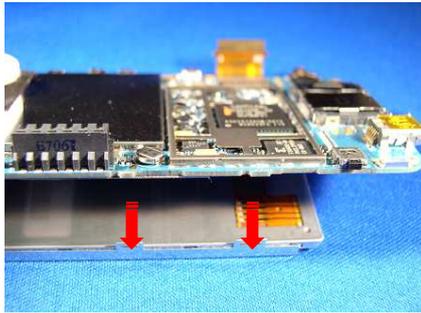
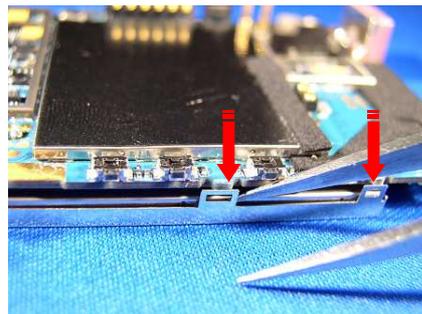
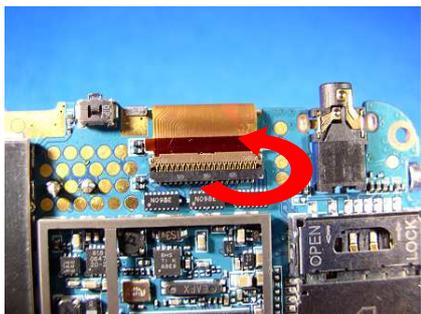
- A. Unlock LCM connector on the M/B.
- B. Release all shielding latches along the edge of M/B.
- C. Pick M/B up from LCM shielding, handle with care if you were caught it by hands.
- D. Unlock latches beside the LCM, get apart LCM from the shielding.
- E. Finish.

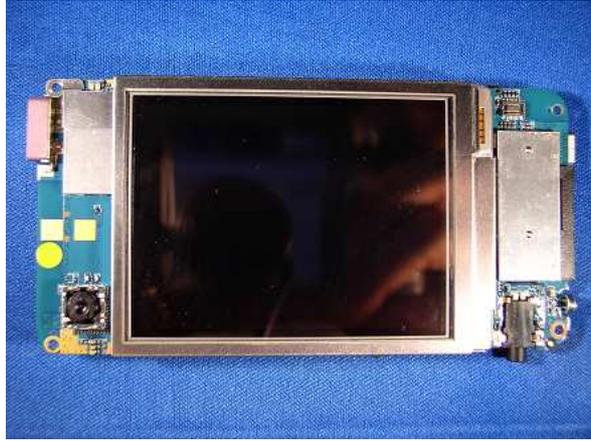
*Note. Move or sliding the LCM with care, it can be easily damaged by indiscreet disassembly.*

## CHAPTER 7. ASSEMBLY

		P/N
A	B	
C	D	
E	F	

\*Quick Ref. Figure Reading Sequences

<b>LCM &amp; Shielding LCM → M/B</b>		P/N: 02000670 41002650 64041620
		
		

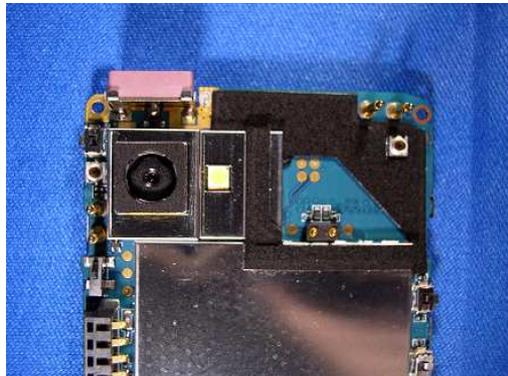
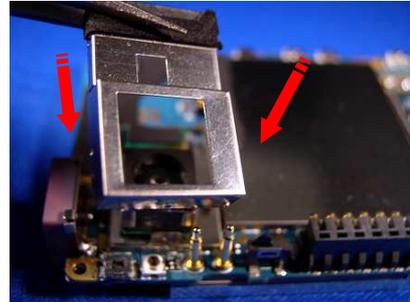
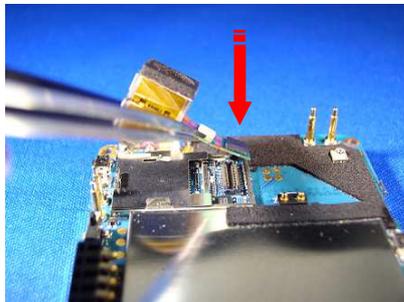


- A. Place LCM module and fit its edge of the shielding with carefully.
- B. Put M/B onto LCM, lean it close to the side of FPC connector first.
- C. Use tweezers to make sure all latch locked.
- D. Bending FPC connector slightly down right into the socket on M/B, lock up the latch.
- E. Finish.

*Note. Move or sliding the LCM with care, it can be easily damaged by indiscreet assembly.*

### Camera 2M & Shielding Camera → M/B

P/N: 03040220  
41002670

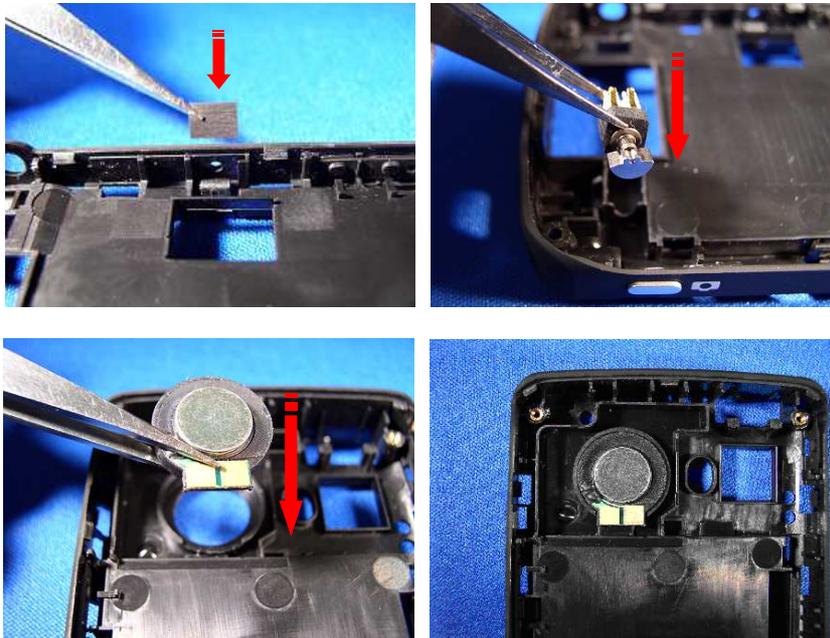


- A. Placing the CAM, aim connector to the socket on top of M/B.
- B. Hand shielding over the CAM, put it down to lock the frame-socket well on M/B. Check it has mount well around the shielding.
- C. Finish.

*Caution!! The CAM module can be placed by the wrong direction as well.*

**Rubber Reset Key & Vibrator, Speaker → Main Bracket Assy**

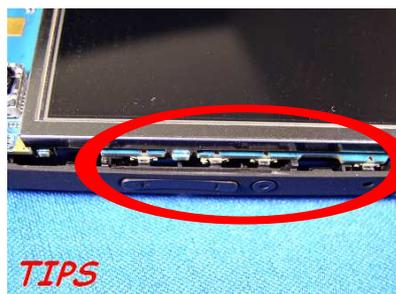
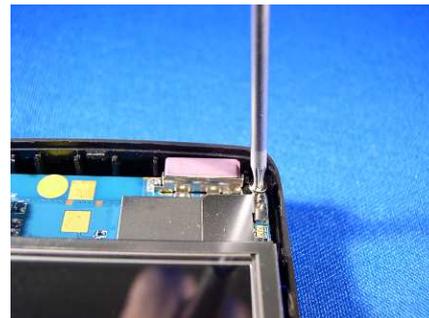
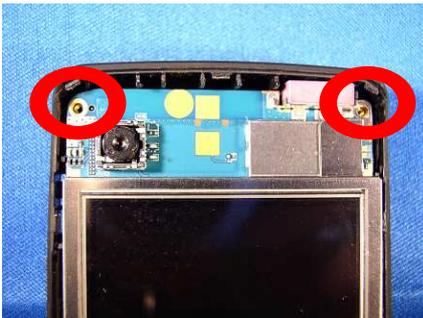
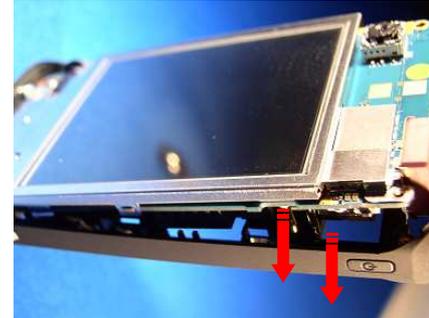
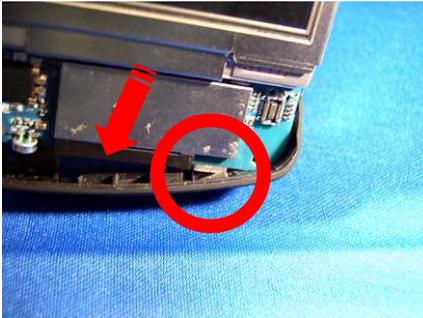
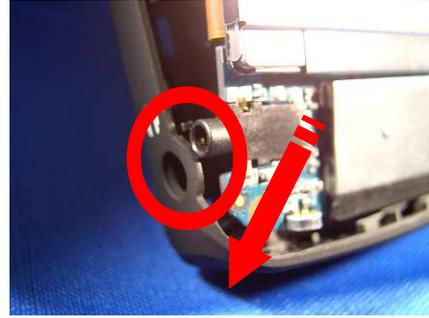
P/N: 43001070  
 49005260  
 49005290  
 40009410



- A. Placing key rubber to the certain place on main bracket by using tweezers.
- B. Placing Vibrator by the same way, use a little strength to push it down.
- C. Same action as above to Speaker.
- D. Finish.

M/B → Main Bracket Assy ( screw needed )

P/N: 44001160\*2



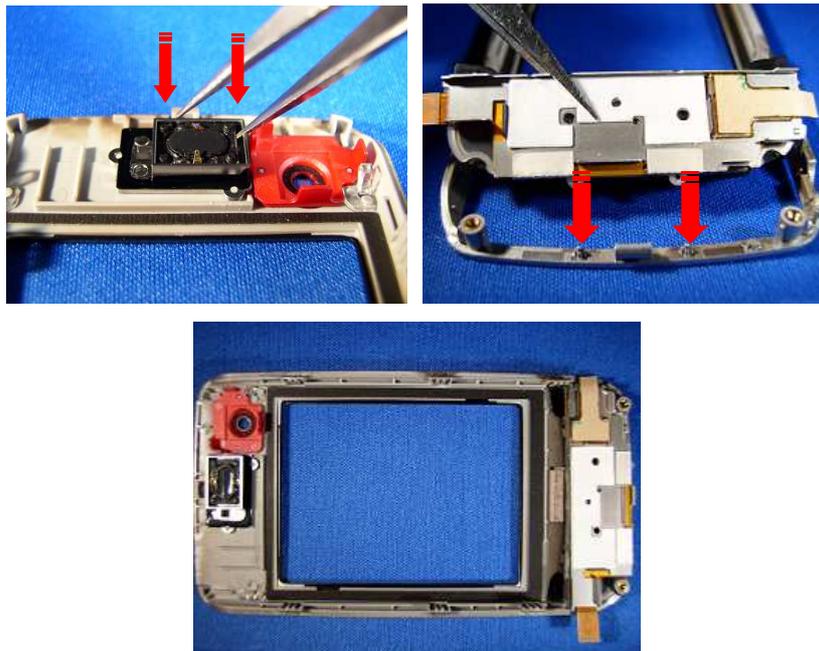
- A. Handling bottom side of M/B with a bevel angle into the main bracket.
- B. Sliding headset-jack right into the case the first.
- C. When headset has stuck, aim mini USB to lock its port, you will hear a “CLICK” sound if the action is correct.
- D. Taking care of the top of M/B, make sure it fitting well to the main bracket.
- E. Two screw holes at top of the unit.
- F. Use T5-screwdriver to screw them both.
- G. Finish.

**TIPS.** Check buttons along the side, see if buttons are matched all function keys.

*Caution!! Do not go pass this step without checking all buttons, in case the function key failed after assembly.*

**Receiver & Keypad Module Assy → Front Cover Assy**

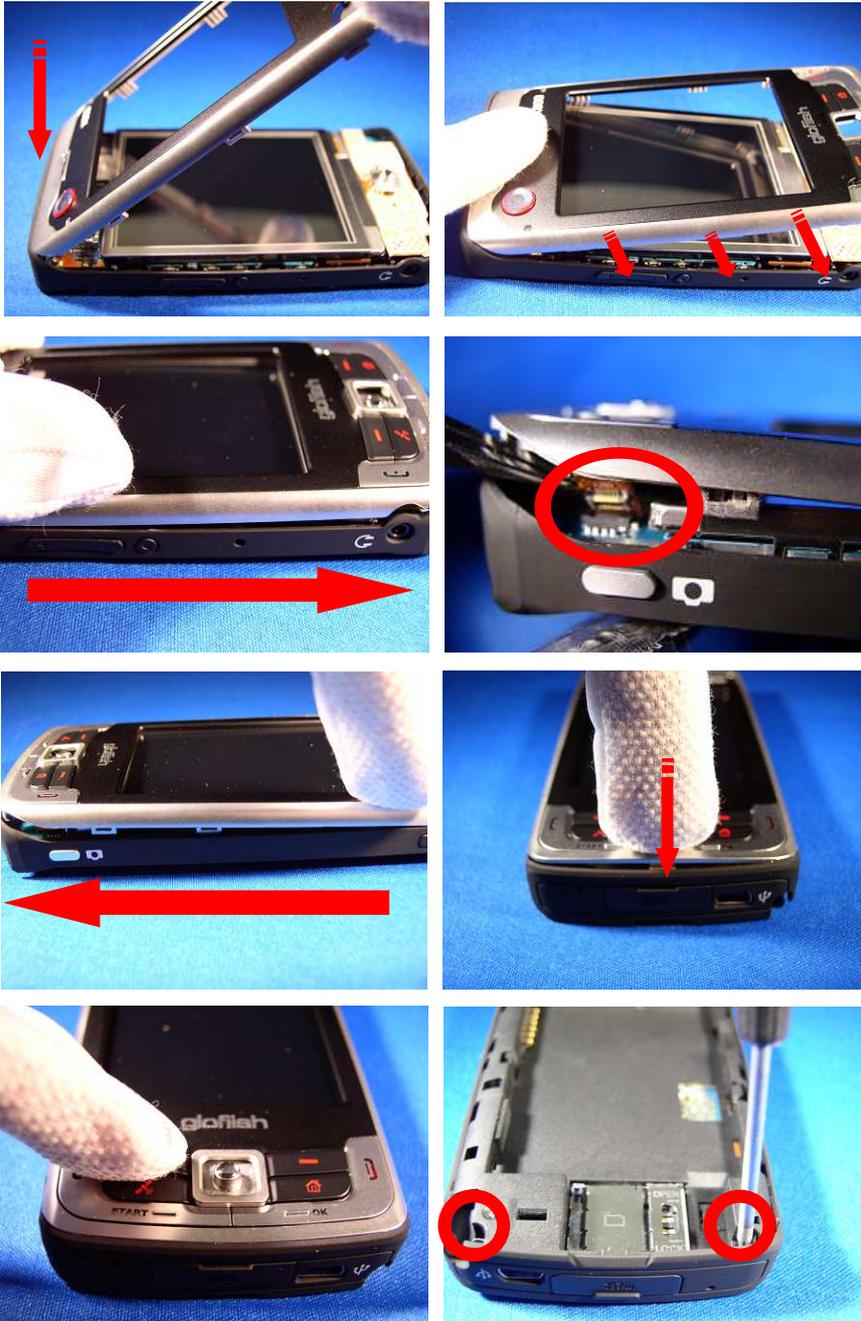
P/N: 49005280  
40010600  
64041650



- A. Placing receiver, push it down to fit well the case.
- B. Placing keypad module onto the certain position of cover.
- C. Finish.

Front Cover Assy → Main Bracket Assy ( screw needed )

P/N: 44001160\*2





- A. Leaning the top of Cover to lock the latch on main bracket.
- B. Use fingers to pressing the top, bend it down slowly.
- C. Sliding your finger along the edge side to get close enough on bracket.
- D. Lock keypad module FPC connector by using tweezers, stretching inside with carefully.
- E. Use same action above to take care of the other side of cover.
- F. To press it down near the keypad of bottom cover.
- G. Feel AP keys with your finger tip, touch them all to see if functioned well.
- H. Two screw holes are at bottom of the unit. Use T5-screwdriver to screw them up.
- H. Finish.

**TIPS.** Always the top go first, or you will hard to get completed this part at the end.

*Caution!! Do not go pass this step without checking all buttons, in case the function key failed after assembly.*

*Note. Please tear the tape before use it.*

### Antenna Cover Assy → Main Bracket Assy

P/N: 64041640





- A. Leaning the top of Cover to lock the latch on main bracket. Slide your finger down to its bottom case.
- B. Make sure both sides are fitting well to the case.
- C. Take care center part of the bottom, push it down to latch hole.
- D. Finish.

**TIPS.** Always the top go first, or you will hard to get completed this part at the end.

*Caution!! The surface of the Cover may easily been cut or get injury, stay alert of use any sharp tools.*

### Battery & Stylus, Battery Cover → Main Unit

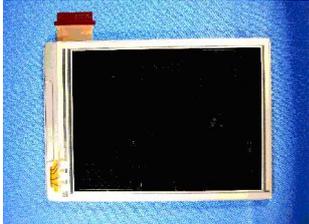
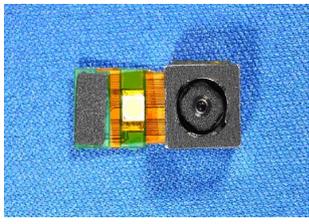
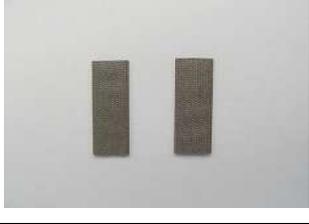
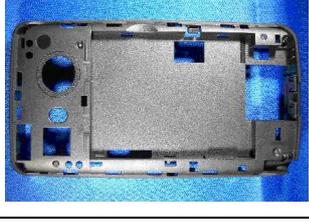
P/N: 49005120  
40009520  
40009510

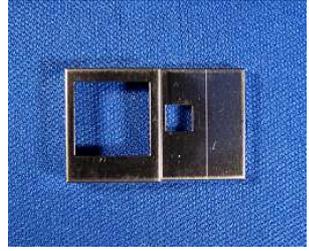


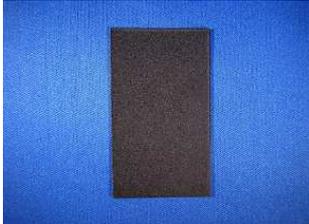
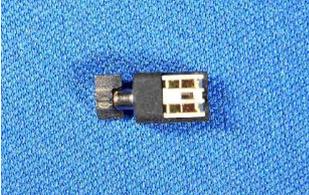
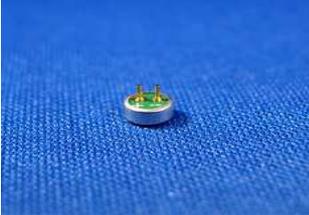
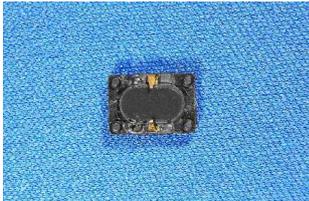
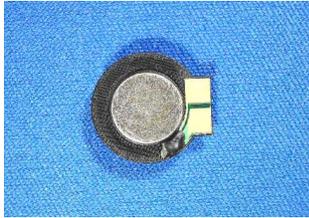
- A. Put battery to right position of the main unit, watch the pins location.
- B. Aim the tip of Stylus into the stylus hole.
- C. Cover up the battery-cover, always the top go first.
- D. Finish.

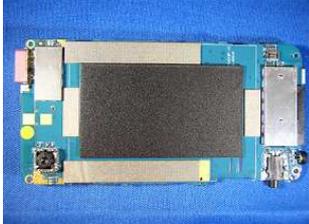
## CHAPTER 8. SPARE PARTS LIST

### 8.1 Spare Parts For Repair

E-TEN P/N	Description	Usage Q'ty	Picture
02000670	LCM, X800	1	
03040220	Camera 2M, X800	1	
33001670	Gasket LCM, X800	2	
33001680	Gasket LCM-Short, X800	2	
33001710	Gasket FPC, X800	2	
40009410	Main Bracket Assy, X800	1	

40009510	Battery Cover, X800	1	
40010600	Keypad Module Assy, X800	1	
41002650	Shielding LCM, X800	1	
41002670	Shielding Camera, X800	1	
43001060	Rubber MIC, X800	1	
43001070	Rubber Reset Key, X800	1	
44001160	Screw, M1.6x4mm, T0.5	4	

46101220	Mylar LCM, X800	1	
49005260	Vibrator, X800	1	
49005270	MIC, X800	1	
49005280	Receiver, X800	1	
49005290	Speaker, X800	1	
53006090	Regulation Label	1	
58000550	Sponge Speaker PCB, X800	1	

58000560	Sponge Speaker Shielding, X800	1	
58000570	Sponge SD Door, X800	1	
58000780	Sponge Stylus, X800	1	
64041620	M/B, X800	1	
64041640	Antenna Cover Assy, X800	1	
64041650	Front Cover Assy, X800	1	



## 8.2 Accessory List

P/N	Item
31301040	USB Cable
40009520	Stylus, X800
40009570	Stylus with bag packing, X800
47000430	Leather Pouch, X800
49004450	Headset
49005040	AC Adapter, X800
49005120	Li-poly Battery, X800
49003940	AC Adapter US-Plug
49004260	AC Adapter AU-Plug
49090020	AC Adapter EU-Plug
49090030	AC Adapter UK-Plug



## CHAPTER 9. SOFTWARE UPGRADE

### 9.1 System Requirements:

- Microsoft® Windows 2000, XP or above
- Latest version of EEU (End User Upgrade) or Bin file utilities for X800(EEU\_xxx.exe)
- Latest version of ActiveSync v4.5 or above
- Tool: mini USB Cable

*Note: E-ten releases both EEU and Bin file for an authorized Service Center. Distributors and local service agent shall only receive EEU software.*

### 9.2 Software Upgrade Steps

- **Via EEU ( Distributors only )**

1. Open Active Sync
2. Connect with PC
3. Execute EEU\_xxx.exe
4. Follow the software's instruction

- **Via BIN ( Service Center only )**

1. Save the bin file in Micro SD card
2. Insert the Micro SD card into the device
3. Press the device into DOWNLOAD mode (refer Chapter 4)
4. The device will be upgrading to the file automatically

## CHAPTER 10. DEFINITION OF SERIAL NUMBER

### S/N MFYMDDB#####

Handset Label Serial Number consists of 12 digital as following format:

MF		Y	M	DD	B	#####
Model Code X800	B5	Year	Month	Day	Handset Band Q'ty	Serial Number Ex: 03214

Manufacture Data

Year	1= 2001   2= 2002   3= 2003   4= 2004   5= 2005   6= 2006 7= 2007   8= 2008   9= 2009   A= 2010   B= 2011   C= 2012
Month	1= Jan   2= Feb   3= Mar   4= Apr   5= May   6= Jun 7= Jul   8= Aug   9= Sep   A= Oct   B= Nov   C= Dec
Day	01= 1   02= 2   03= 3   04= 4   05= 5 <sup>th</sup> 06= 6 <sup>th</sup> 07= 7 <sup>th</sup> 08= 8 <sup>th</sup> 09= 9 <sup>th</sup> 10= 10 <sup>th</sup> .....   31= 31 <sup>st</sup>
Handset Band Q'ty	A= Single band   B= Dual bands   C= Triple bands, 3G

## CHAPTER 11. INSPECTION CRITERIA (LCM)

### Defective Pixel on LCM

Service technicians must test by the LCD color test in the build-in diagnostic program. The maximum of allowable defective dot is Three (3) for criteria 1 and 2.

**Criteria 1** : If service technicians see more than 3 bright dots under the black screen, it means changing LCM is required

**Criteria 2** : If service technicians see more than 3 black dots under the bright screen, it means changing LCM is required

**Criteria 3** : If service technicians see 2 or more dots are connected to each other under either black or bright screen, it means changing LCM is required

## ANNEX. REVISION HISTORY

Date	Version	Update
August 1, 2007	1.0	First Edition
August 10, 2007	1.1	a. Ch6/Ch7 Quick Ref. added b. Ch8/Ch10 items updated c. RF Antenna Test Criteria removed