Gene

Service Manual

HTC Proprietary

Confidential Treatment Requested

Rev. A08

Nov 26, 2008

HTC Corp.

Engineering Mobility

Revision Control Table

Rev	Date	Contents	Dept.	Revised	App Dept	Stage/Per
A01	2006/12/08	First Draft	PSE	Jerry W. Lin	GSD	PVT
A02	2006/12/21	Update disassemble procedure	PSE	Jerry W. Lin	GSD	MV
A03	2007/03/09	Add pictures on chapter 5.1	PSE	Budiman Cheng	GSD	MP
A04	2007/04/10	Add battery rundown on chapter 6	PSE	Budiman Cheng	GSD	MP
A05	2007/05/08	Add more description at the “Location” column on chapter 9.2	PSE	Budiman Cheng	GSD	MP
A06	2007/07/23	Add more spare parts and location on Chapter 9	PSE	Budiman Cheng	GSD	MP
A07	2007/08/06	Add 75H00566-00M on chapter 9.2	PSE	Budiman Cheng	GSD	MP
A08	2008/11/26	Add FRU M/B additional parts location on chapter 9.3	PSE	Budiman Cheng	GSD	MP

TABLE OF CONTENTS

CHAPTER 1 – INTRODUCTION

1.1 Production Specification

- Platform
  - PDA form factor integrated quad-band GSM/EDGE
  - OS: Microsoft Windows Mobile 5.0-PocketPC Phone Edition
- Dimension
  - 109mm (L) x 58mm (W) x 17.65/18.15mm around camera(T)
  - 126g with battery pack
- Processor/Chipset
  - TI OMAP 850
- Memory
  - Flash ROM: 128MB (for program and users' storage)
  - SDRAM: 64MB DDR SDRAM
- LCD Module
  - Main LCD Module
    - 2.8", 240x320 dots resolution
    - 64K-color TFT LED with backlight
    - Sensitive Touch Screen
- GSM/EDGE Functional
  - Internal Antenna
  - GSM/GPRS/EDGE:
    - Quad-band (850/900/1800/1900MHz)
  - Auto Band Switching
  - Global roaming
  - Audio codec: AMR, EFR, FR, HR
  - SMS (MO, MT), concatenated SMS (640 characters)
  - Generic services
    - Call holding, waiting, forwarding and barring
    - CLI (Call Line Identity)
    - Display own number
    - Network selection
    - Cell broadcast
    - Multi-party conference capability
    - Network lock
    - Phase 2+ unstructured supplementary service data
    - CPHS
  - E-GPRS Function
    - EGPRS Class B
    - Multi-slot Standard Class 10
    - MO/MT SMS over GPRS
    - PBCCH
  - SIM
    - 3V of SIM
    - SIM application tool kit release 98 class 3 and 99(Patial)
    - Over the Air (OTA) programming
    - FDN (Fixed Dialing Number)
    - ADN (Abbreviated Dialing Number)
    - Security PIN 1&2 control
- Keyboard/Button/Switch
  - Button
    - Power button(Short Press: system sleep on/off, Long Press: power on/off)

- 5-way navigation pad
- Send/Hands-free button(Long Press during call: Hand-free On/Off)
- End button,
- Ok button
- Voice command / Voice record button(Short Press: voice command, Long Press: voice record)
- 2 soft-keys button (Calendar and Contact)
- Start button
- Volume Up & Down
- Camera capture button
- Reset

➢ Notification
- One bi-color(red & green) LED for GSM standby, GSM message, GSM network status, and charging status
- One blue LED for Bluetooth notification
- Notification by LED, sound, Vibration, message on the display

➢ Audio
- Build-in Microphone
- Receiver
- Loud speaker for Hands-free supported
- Full duplex
- AMR/AACWAV/WMA//MP3 codec
- 16 bits with 8KHz, 11KHz, 22KHz, 44.1KHz

➢ Camera
- 2 mega-pixel CMOS

➢ Bluetooth
- Compliant with V2.0 without EDR
- Class 2 transmit power
- Supported profiles:
  - Generic Access Profile
  - Serial Port Profile
  - Headset Profile
  - Object Push Profile
  - PAN
  - Heads-free Profile
  - Generic Object Exchange Profile
  - Advanced Audio Distribution Profile (A2DP)
  - Audio/Video Remote Control Profile (AVRCP)
  - SIM Access Profile for hTC
  - Human Interface Device Profile
  - Service discovery application profile

➢ Interface
- 3V SIM card
- 11-pin min-USB (USB 1.1) client/audio jack in one
- SDIO/MMC card slot (support SD2.0 or SDHC)
- External antenna connector

➢ Power
- Removable rechargeable Lithium Polymer battery
- Capacity: 1250mAh
- Charging time: 3 hours
- Talk-Time: 3.5~5 hours
- Standby Time: 150~200 hours
- Playing WMV 12 hours

- Playing WMA 8 hours
- AC Adapter.
  - AC input rating: 100-240Vac, 50-60 Hz.
  - DC output: 5V / 1A

➢ Hanger Hole
- Stylish hanger r to wear phone with neck strap as pendant or to attach various phone hangers.

➢ Accessories
- Inbox
  - AC adapter with mini-USB power plug
  - Sync. Cable (mini-USB)
  - Battery (rechargeable and replaceable)
  - Stylus
  - Carrying case
  - Stereo-wired headset with microphone
- Optional
  - Car adapter.
  - Car Holder
  - BT keyboard
  - Travel Charger

➢ Microsoft Windows Mobile 5.0 Applications
- Pocket Outlook: Calendar, Contacts, Messaging, Tasks, and Voice Notes
- FirectPushl
- Internet Explorer Mobile
- Office Mobile: Word, Excel & PowerPoint Mobile
- Windows Media Player 10 Mobile
- Pictures & Videos
- ActiveSync Client
- Pocket MSN
- Device Management
- OTA Provisioning
- Internet Sharing
- Set-ip Wizard for E-mail
- Terminal Service Client
- Calculator
- Games

➢ Value Added Application
- Camera/Camcorder
- Picture Enhancement for Pictures & Videos
- Polyphonic MIDI Ringtone
- Audio/Video enhancement for WMP
- ZIP
- Smart Dialing
- MMS Client: MMS 1.1 supported
- Voice Dial & Command
- Document Viewer – PDF
- OMA DRM 1.0 supported
- SIM Manager
- Comm. Manager
- Smart Dial
- STK
- Audio Manager
- Ringtone Trimmer

- Task Manager
- Bluetooth FTP

➢ Carrier Specific Applications
- Java virtual machine (J2ME,CLDC 1.1, MIDP 2.0)
- SPB GPRS Monitor (for hTC)
- Bluetooth SAP (for hTC)

➢ Regulatory
- R&TTE: EMC/EMI, Safety SAR
- FCC Approval
- FCC HAC
- PDCRB Approval
- BQB (Bluetooth Qualification Body) certification
- Microsoft Windows Mobile Logo (NTSL)

CHAPTER 2 – SERVICEING TOOLS

2.1 Repair Level Definition

Unit

L0 Accessory test and unit swap

L1 Unit Test and ROM Re-flash

L2 Refurbishment and Module Swap +L1

L2.5 M/B Repair(connecter, button, MIC…) +L2

Note : These level is for reference only depends on service model

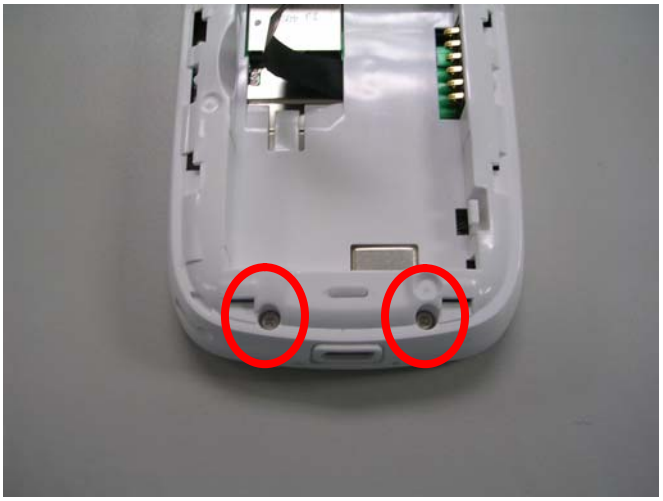
2.2 List of Servicing Tools

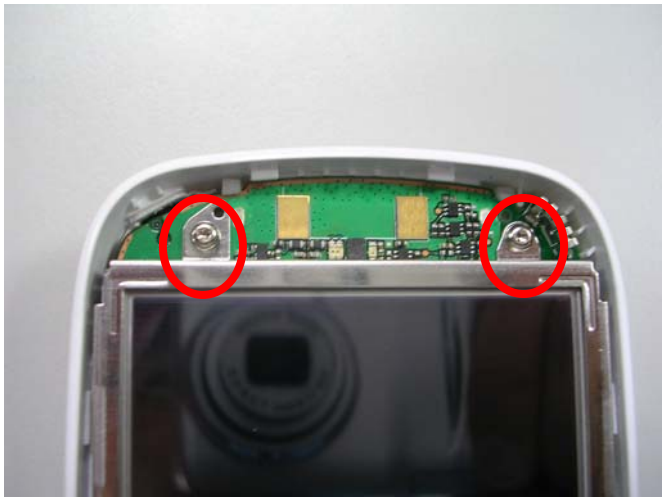
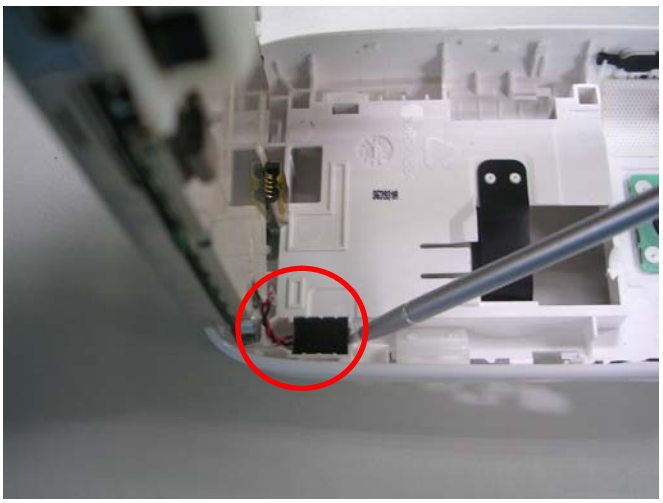
level	No.	Item	Use for	Remark
L 1	1	Mini USB DATA interface Cable	Check for mini USB communication; RUU re-flash	
	2	Earphone Headset	For Audio test.	
	3	AC Adapter	Transfer AC to DC for Unit	
	4	SD Card with Diagnostic test program (must be encoded by HTC)	For unit diagnostic test	HTC design
	5	128MB SD memory card (must be encoded by HTC)	For unit ROM code transfer to SD card for re-flash	HTC design
	6	Unit current consumption test fixture	Measure Unit current consumption	HTC design
	7	Power supply	For RF test	Local purchase
	8	Current Meter		Local purchase
	9	Mobile tester		Local purchase
	10	Special Made Plastic Stick	Assembly & Disassembly	HTC special tools
L 2	11	Hand tools	Assembly & Disassembly	Local purchase
	12	Label printer	Print agency label if replacing M/B	Local purchase
	13	Lead-free Soldering station	Board level repair	Local purchase
L 2.5	14	Air heater	Board level repair	Local purchase

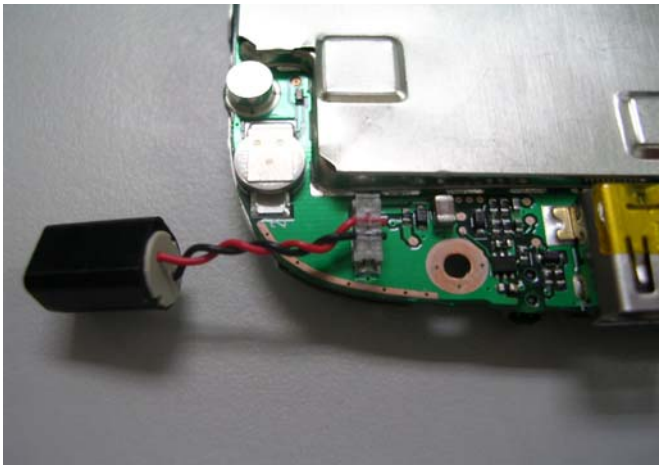
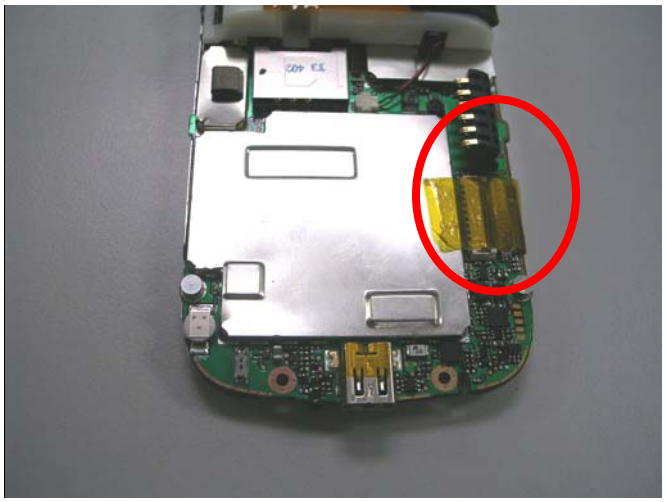
CHAPTER 3 – ASSEMBLING AND DISASSEMBLING

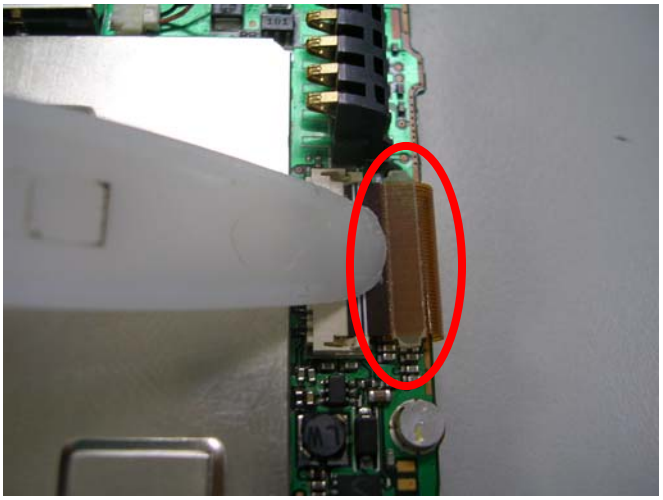
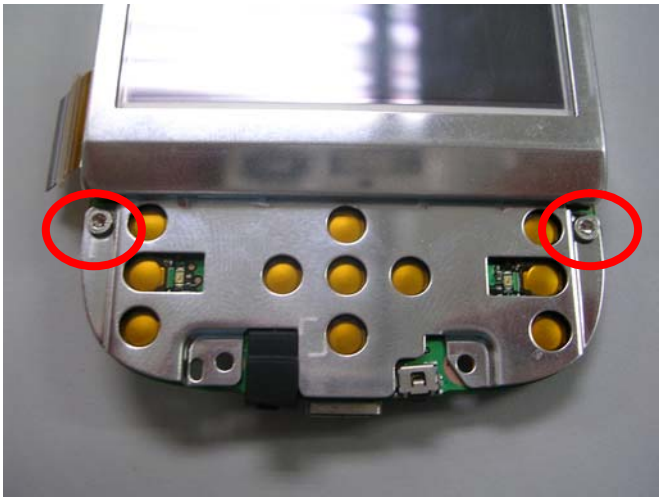
3.1 Disassembling

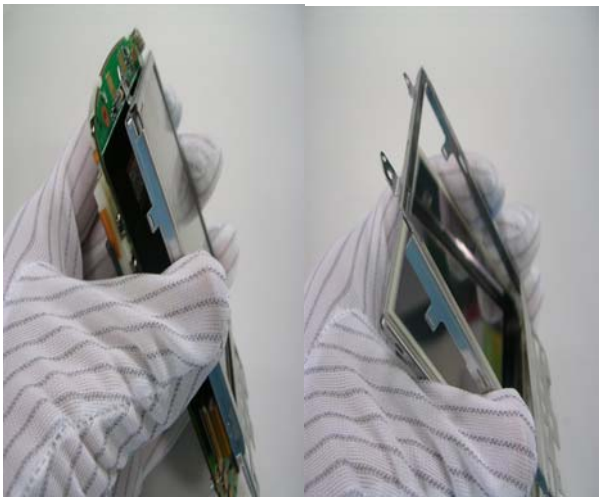
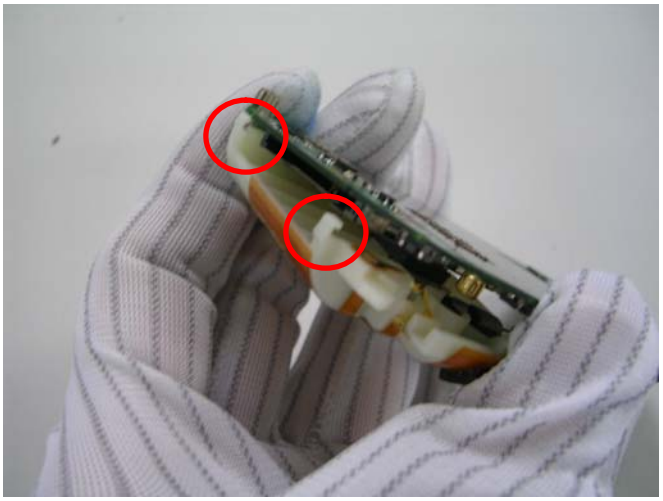
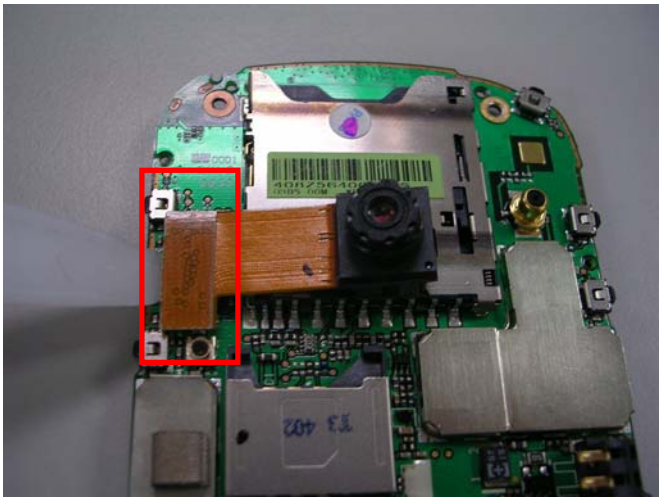
	Tools needed for Assembling and Disassembling 1. Torx Screw Driver T4X30 2. Flat Plastic Stick
	1. Take out the Stylus. 2. Remove the SD card if any.
	Push the battery cover to open.

	Remove the battery by simply pull up the plastic ribbon. **Warning: To reduce risk of fire or burns, do not disassemble, crush, puncture, short external contacts, or dispose of in fire or water. Replace only with specified batteries. Recycle or dispose of used batteries properly** Li-ion
	Release 2 screws on housing.
	1. Insert the flat plastic stick into the gap between the bezel and the housing on the left and right of the LCD to release the hooks. 2. Separate the housing and the bezel.

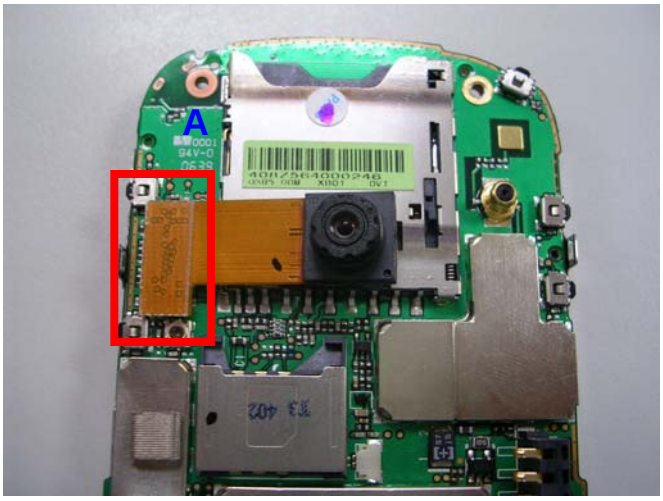
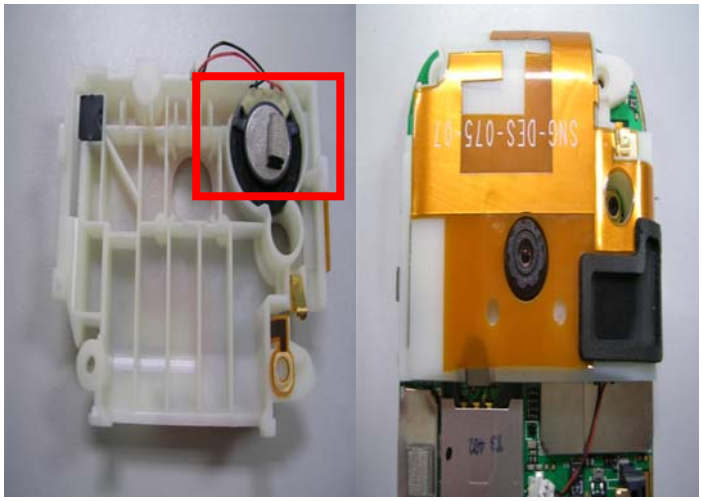
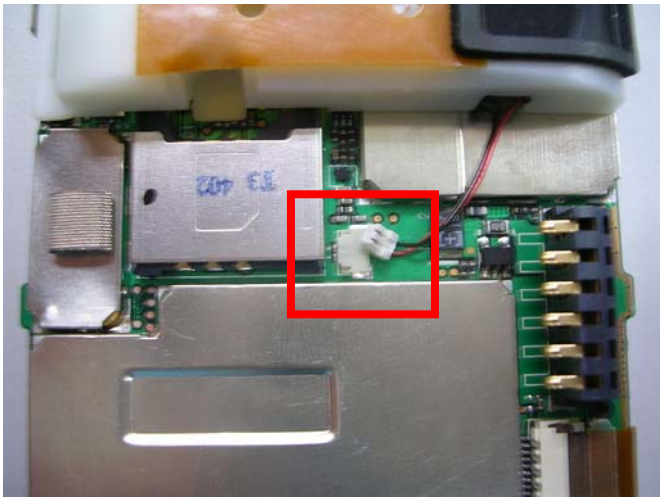
	Loosen and take out 2 screws from the housing.
	Remove the main board from the housing (start from the top side)
	Use Stylus to lift up vibrator from the housing.

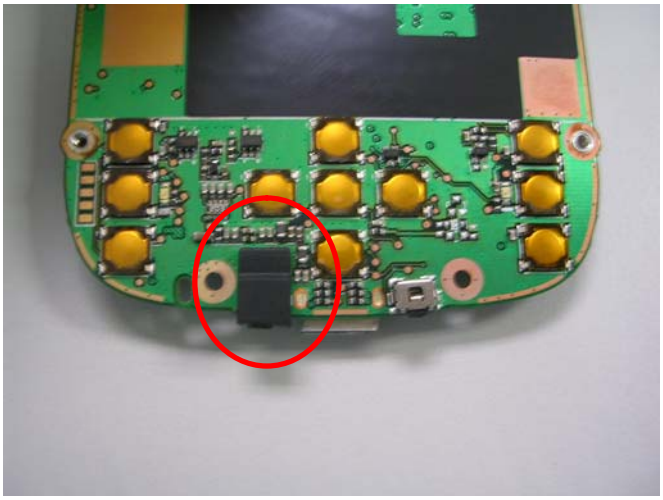
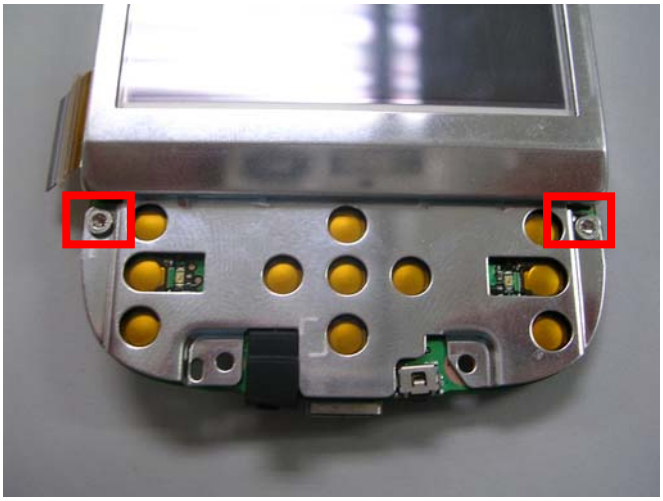
	UNPLUG VIBRATOR FROM THE MAIN BOARD. 
	Unplug speaker connector from its connector on the M/B.
	Remove the kapton tape from the LCM connector.

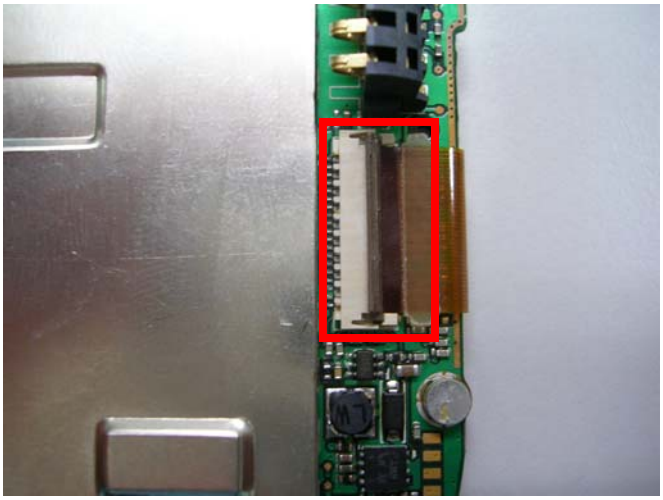
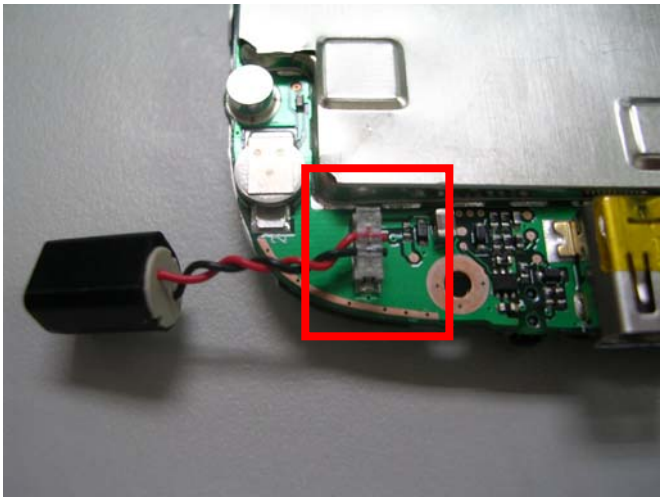
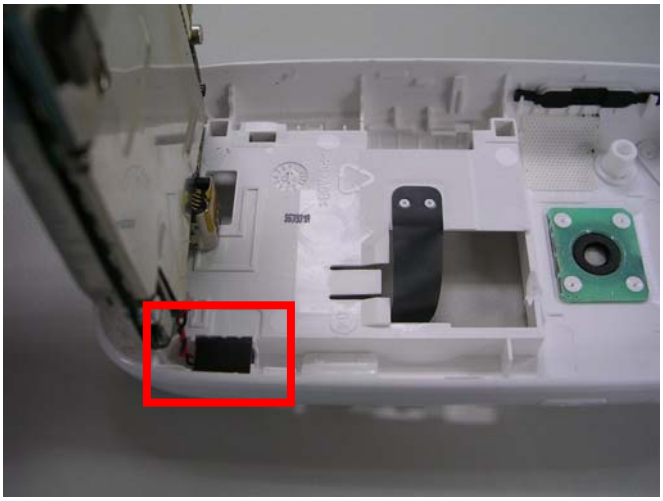
	Unlock the LCM connector and then release the LCM FPC.
	Loosen 2 screws from LCD bracket.
	Remove microphone rubber. Be careful of the rubber 

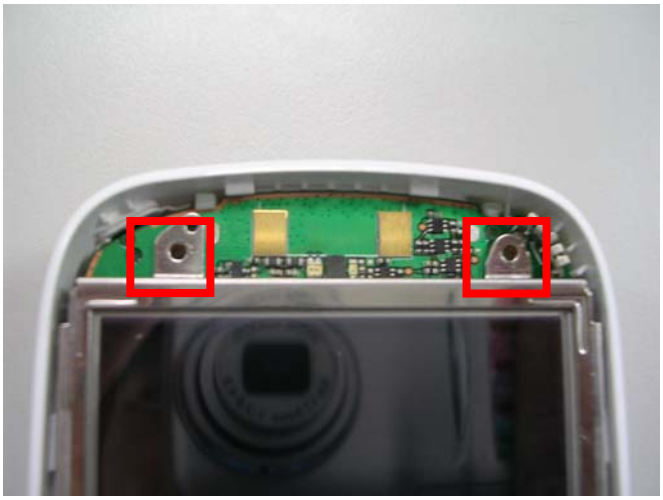
	Separate the LCD bracket from the M/B then separate the LCM from LCD bracket.
	Unlock 2 antenna hooks to remove the antenna from the main board.
	Disconnect the camera module. The Disassembly process is finished.

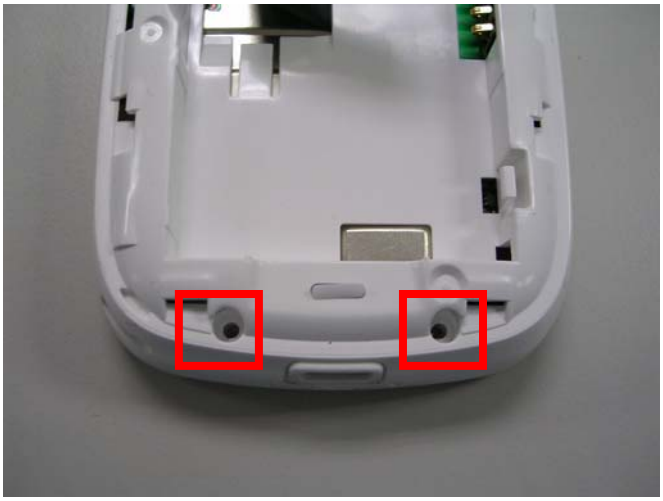
3.2 Assembling

	Connect the Camera module.
	1. Install the speaker into the antenna cover. 2. Assemble the antenna on the M/B.
	Connect the speaker connector

	Attach the microphone rubber. Be careful of the rubber
	1. Assemble the LCM on the LCD bracket. 2. Assemble the LCD bracket to the M/B.
	Fasten 2 screws to fix the LCD bracket. Screw:72H00353-10M Torque: 0.4+-0.1 kgf-cm

	Insert the LCM FPC into the connector and then lock the connector.
	Connect the vibrator.
	Assemble the vibrator on the housing.

	1. Assemble the Main Board into housing. 2. Fasten 2 screws to fix it. Screw:72H01403-00M Torque: 1.2 +-0.1 kgf-cm
	Attach the receiver to the bezel.
	Assemble the bezel to the housing, start from the earpiece side.

	Fasten 2 screws on the housing. Screw:72H01403-00M Torque: 1.2 +-0.1 kgf-cm
	Install the battery by insert the right side of the battery first, then gently push the battery into its place. (Note: Leave the end part of the plastic ribbon laid upon the battery)
	1. Replace the battery cover. 2. Put the stylus back into its place. The Assembly process is finished.

CHAPTER 4 – DIAGNOSTIC PROGRAM

4.1 List of Diagnostic / WinCE Test Items

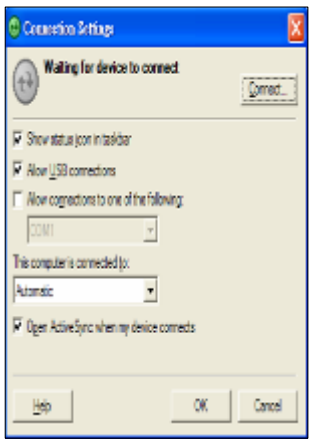
Mode	No	Item	Description	Remark
Diagnostic	**Function Test**			
	1	SDRAM Test	RAM memory test.	
	2	Display Test	Color bar/R/G/B/ White/Black/ /Gray pattern.	
	3	LED Test	Red/Green/ BT	
	4	Key Test	Volume up,down/Soft1/Send/App1/Upt /Down/Left/Action/Soft2/End/End/App2/Power/Camera/voice	
	5	B. L Test	Front light test	
	6	Timer Test	RTC (Real time clock) test.	
	7	SD Card Test	SD card Read/Write test.	
	9	Checksum Test	ROM checksum test.	
	10	Battery Test	Battery info check.	
	11	Vibrator Test	Vibrator on test.	
	12	Headset Play Test	Headset out test.	
	13	Speaker Play Test	Speaker out test.	
	14	Receiver Play Test	Receiver out test.	
	15	Int. Rec-Spk out Test	Internal MIC record and play to Speaker test.	
	16	Int. Rec-HST out Test	Internal MIC record and play to Headset test.	
	Run-in Test			
	1	1 Hour	1 Hour Run-in Test/Press Soft1 key.	Option
	2	2 Hours	2 Hours Run-in Test/Press Soft 2 key.	Option
	3	4 Hours	4 Hours Run-in Test/Press Start key.	Option
	4	8 Hours	8 Hours Run-in Test/Press OK key.	Option
	Format FAT / Clear PIN (Personal information, talk times)			
	Device Info			
Win CE	**1**	USB Test	USB link test (Microsoft ActiveSync).	
	2	Camera Test	Camera test.	
	3	Bluetooth Test	Bluetooth test.	

4.2 Test Procedure

How to select test item: Using navigation button -"Up" or "Down" or to select the test items

How to execute the test program: Press “Action” button to start each of test items.

WinCE Test

<table>
<tr><th colspan="2">USB Test</th></tr>
<tr><td>I. Start up the Microsoft® ActiveSync®program in the PC.
II. Insert USB cable and connect unit to desktop/ or laptop.
III. The USB to PC icon -> is appears on the Today screen when your device is connected to your desktop/ or laptop.</td><td> 


</td></tr>
<tr><th colspan="2">Camera Test</th></tr>
<tr><td>I. Tap Start->Program->Camera or Press Camera button to turn on the Camera.
II. Make sure the device will present and enter the preview display.
III. Check camera pre-view and image quality.</td><td> 

 </td></tr>
<tr><th colspan="2">Bluetooth Test - 1</th></tr>
</table>

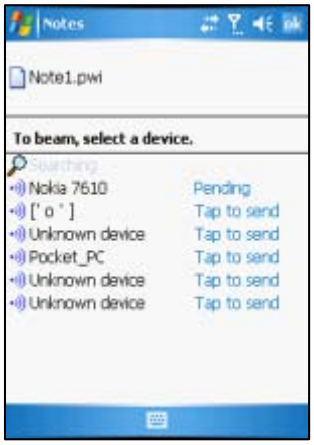
I. Tap icon Comm Manager on the Today screen and turn on Bluetooth.
II. Tap the icon “Settings” down-right the corner of the screen and select the “Make this device….” Checkbox.
III. Press Action key (Jog-ball) to go next test pattern.

Bluetooth Test - 2

I. Tap Start->Settings->Connections-> Beam and select “Receive all….” Checkbox.
II. To create a file, tap Start->Programs ->Notes->New.
III. Tap and select the “Beam file…”

Bluetooth Test - 3

IV. Once device is searched, tap the device to send the file.
V. Return to Today screen and tap Start->Program->Comm Manager ->Bluetooth to turn off Bluetooth.



CHAPTER 5 –SOFTWARE UPGRADE PRCEDURE

System Requirement:

-Windows 2000/XP

-USB Cable

-ActiveSync 4.0 above

-Master Unit

-128 MB Mini SD card

Caution: The unit must have at least 70% of battery capacity before starting the re-flash process. Charge the battery in advance if necessary.

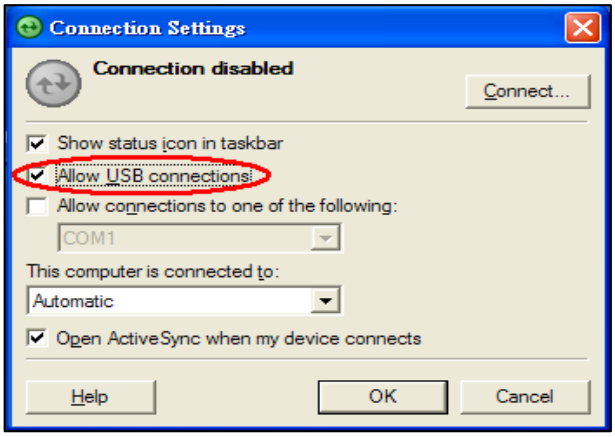
For the master unit, you could prepare it in the following ways:

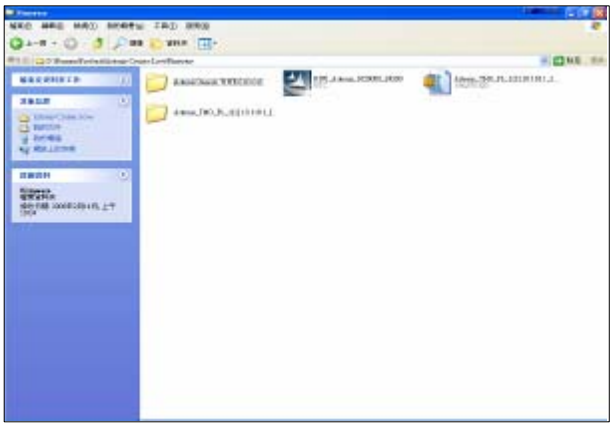
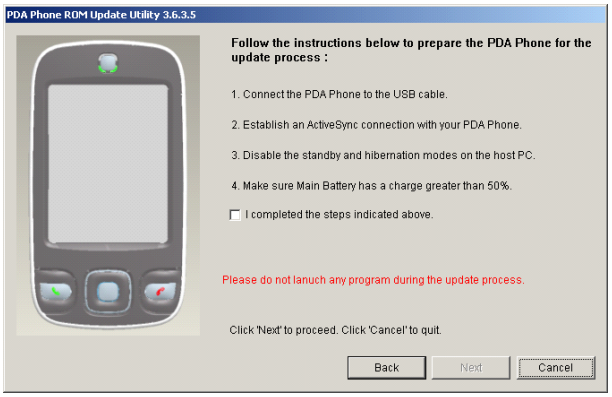
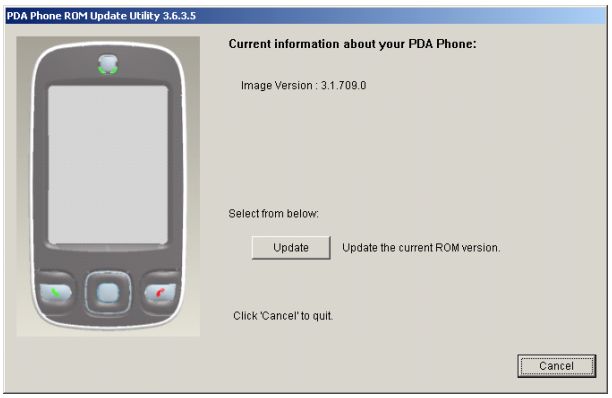
- Take one from Swap unit with the most up to date Rom Code.

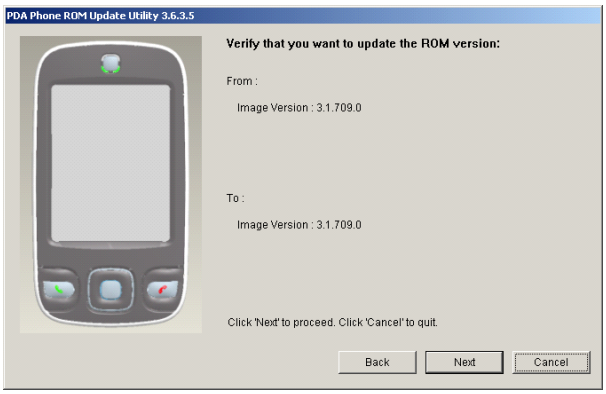
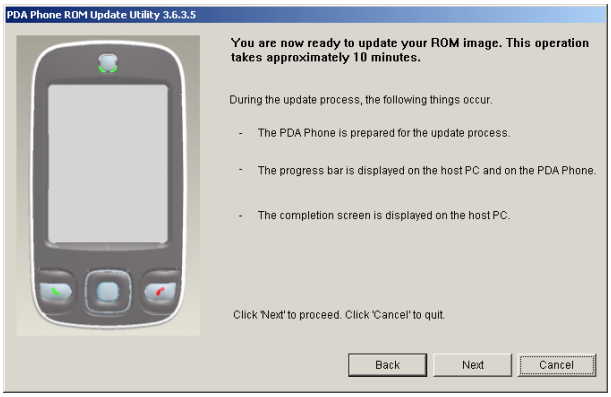
- Build one first by connecting to SDO for OS Upgrade/ Download via RUU.

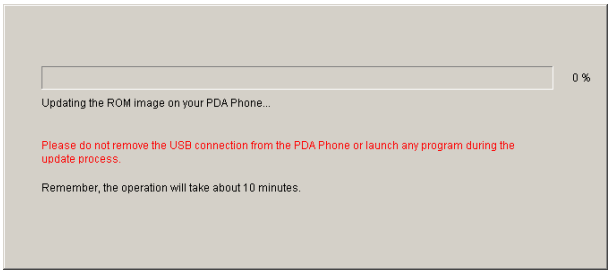
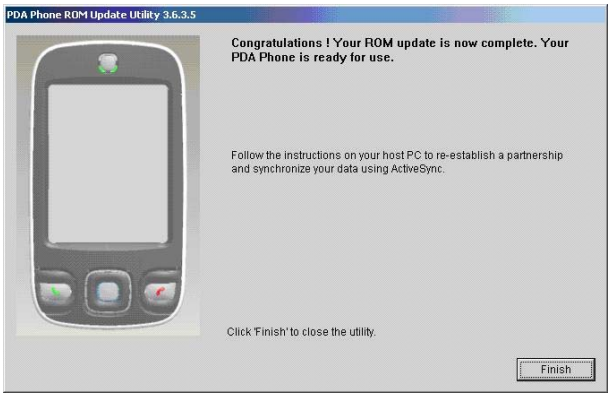
HTC RMAIII – Service Document Online: https://rma.htc.com.tw/rmaiii/home/index.asp

5.1 RUU (Re-flash Upgrade Utility)

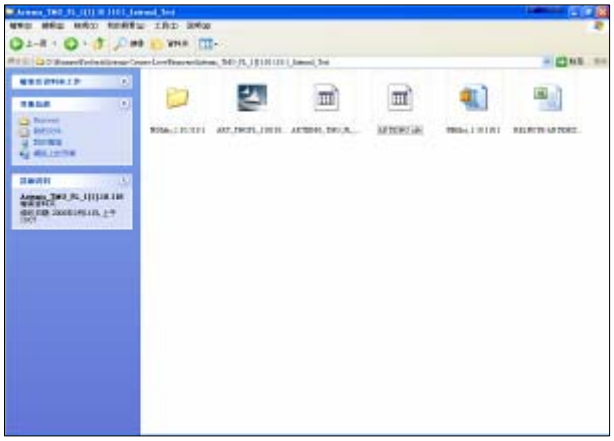
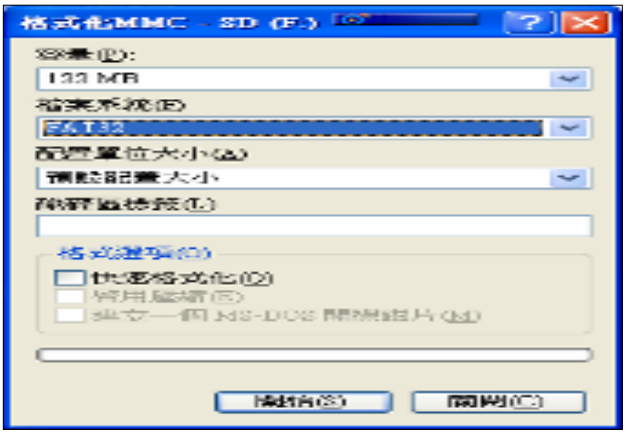
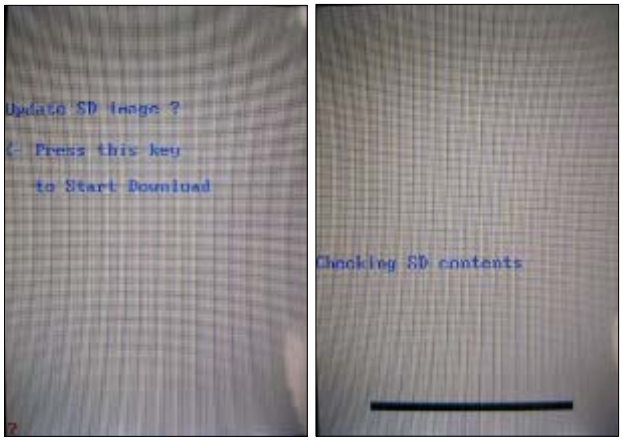
Connect device to PC	
I. Setting and allow USB connections in Microsoft ActiveSync. II. Connect your device and desktop/ or laptop via USB cable. III. Check the pop-up message from Microsoft ActiveSync when device is synchronized with PC.	
Download OS Image from SDO	

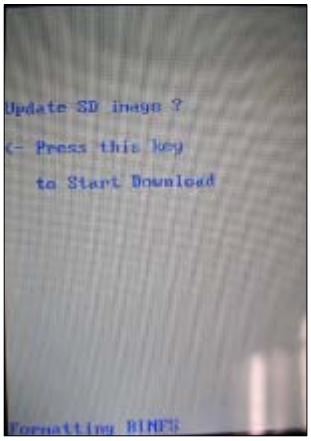
<table>
<tr><td>I. Download OS image from SDO.
http://htcscm10.htc.com.tw/SDO
II. Un-zip the file and execute RUU program.</td><td>  </td></tr>
<tr><td>III. Follow instruction on your PC, complete check box and “NEXT”</td><td> 
</td></tr>
<tr><td>IV. On process will show your device current ROM version, choose “UPDATE”</td><td> 
</td></tr>
</table>

<table>
<tr><td>V. Confirm your ROM version and new update version,then choose “NEXT”</td><td> 
</td></tr>
<tr><td>VI. Click “Next” to proceed.</td><td> 
</td></tr>
<tr><td colspan="2">VII. Read the information from pop-up message and the OS update procedure will takes 10 minutes long.
Click “Next” to proceed.</td></tr>
</table>

VIII. You can see the update progress from your PC and in your device.	
IX. The OS upgrade is finished, click "Finish" to close the utility.	

5.2 SD card upgrade

Download OS Image from SDO	
I. Download OS image from SDO. http://htcscm10.htc.com.tw/SDO II. Un-zip the image file.	
Format SD card and copy image file to SD card	
III. Select file system and format the SD card to FAT32 mode. IV. Copy the image file XXX.nbh to SD card and rename to **GENEIMG.NBH**.	
SD Upgrade - 1	
V. Turn the device power off and insert Diagnostic SD card. VI. Press and hold **Capture + POWER** button, and **Reset** button to entry Boot loader mode. VII. Press power key to start upgrade procedure. [Note]: This process will takes 5 mins, please don't power off the device.	
SD Upgrade - 2	

VIII. Take out the SD card. IX. Cold boot the device.	 

Now the upgrade is done!

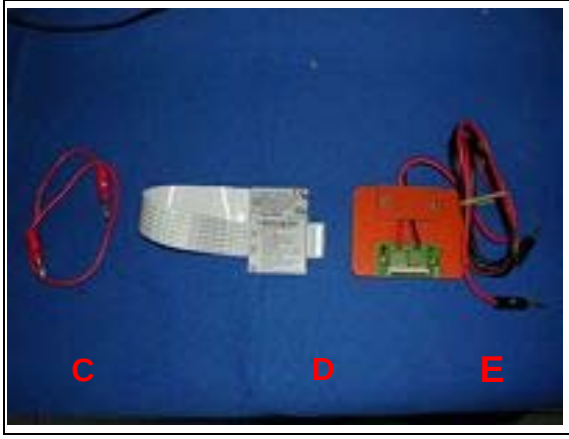
Note: ***Due to security issue, it is not allowed to re-flash different customer ID.***

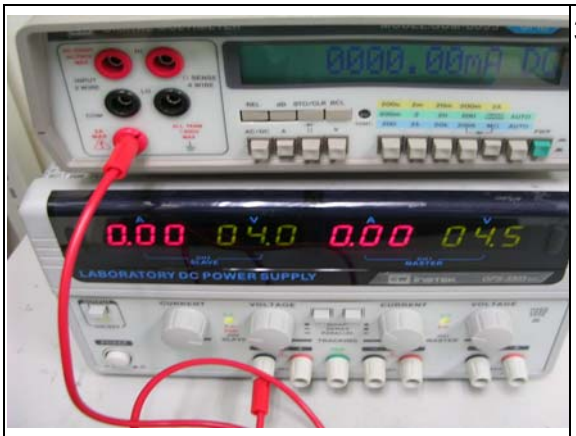
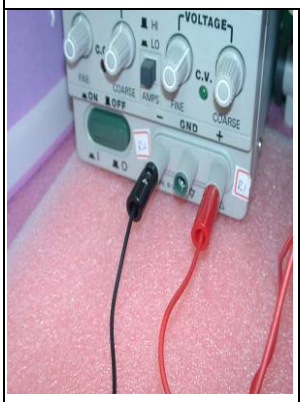
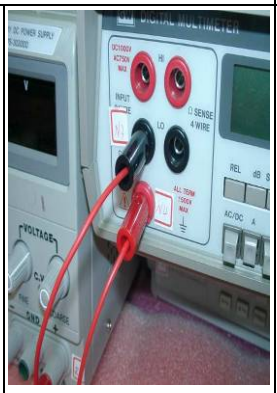
CHAPTER 6 –LEAKAGE CURRENT MEASUREMENT

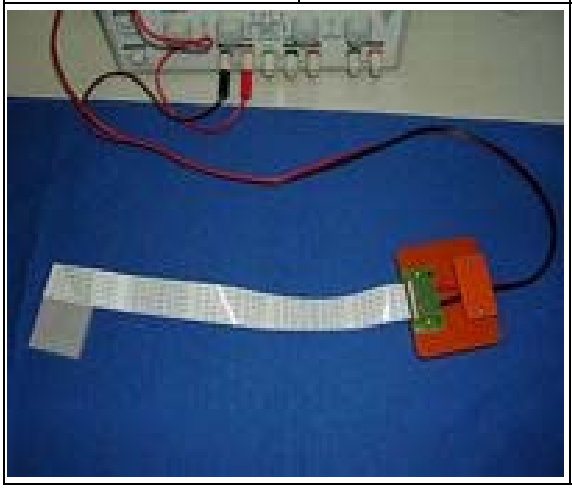
This is a quick method to measure if any abnormal leakage current on main board which caused high power consumption compare to GOOD main board.

(1) Requirement：

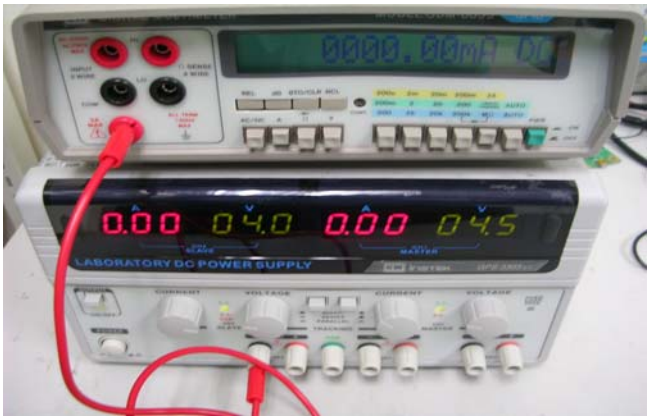
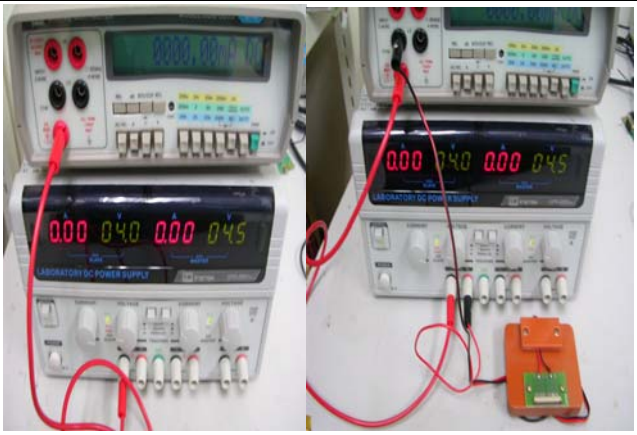
- Power Supply
- Micro-current Meter
- Current series JIG
- CABLE
- Battery JIG

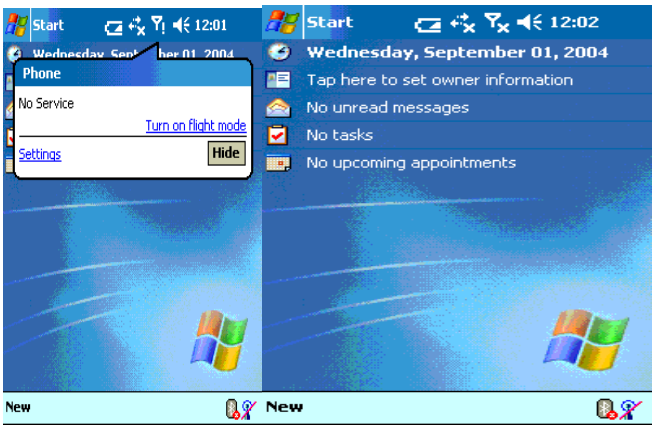
	1.Equipment need: A. Power Supply (set at 4 V /1A). B. Micro-Current Meter (support 0.5mA ~ 1A).
	2. Fixture needed C. Cable D. Battery with extension cable E. Current series jig.(with black and red cable)

<table>
<tr><td>  </td><td>3. Connect cable (C) to positive polarity of power supply (A) and current meter (B)</td></tr>
<tr><td> 
  </td><td>4. Connect cable of fixture(C) to negative polarity of power supply (A) and current meter (B)

Note : black cable to power supply (A) and red cable to current meter (B)</td></tr>
<tr><td>  </td><td>5. Setting is Ready for testing
Assemble Battery into device.
(Don’t turn the power on at this moment)

Assemble Battery into device.</td></tr>
</table>

	**3.** Connect cable (C) to positive polarity of power supply (A) and current meter (B)
	**4.** Connect cable of fixture(E) to negative polarity of power supply (A) and current meter (B)
	**5.** Setting is **Ready now for testing** (Don't turn the power on at this moment)

	**6.Turn on power supply (4V) and current meter (2A)** **Set the unit to :** * Flight mode * Turn off Bluetooth
	**7. Measure flight mode current** Choice Setting/System/Backlight/Brightness Adjust brightness level to power save. Current value must under **78mA**, if over, it means M/B failed, please replace M/B for repair.
	8. Switch OFF the unit. Unit is turn off and no display. 9. Measure power off current Check current value on the current meter, Current value must under 4.5 mA, if over, it means M/B failed, please replace M/B for repair.

Conclusion

I. If current consumption test PASS when UUT in Flight and Sleep mode, it means that the M/B works normal.

II. If current consumption test FAIL when UUT in Flight or Sleep mode, it means that the M/B works abnormal, please replace M/B and re-test again.

BATTERY RUNDOWN TEST PROCEDURE

Test Requirement:

-Windows 2000/XP

-USB Cable

-ActiveSync 4.2 above (WinCE 6.0 should use ActiveSync 4.5)

-Master Unit

-Battery in Warrantee

Caution:

1、Please charge your unit to full capacity for battery (until the green light Is displayed) before doing the test.

2、Disable all RF functions including GSM、BT、WLAN、GPS、and etc.

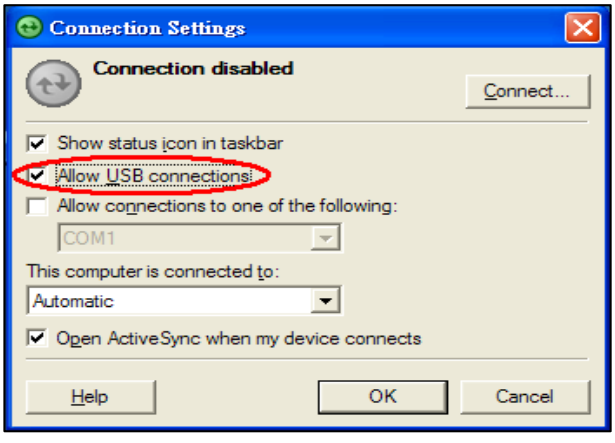
TEST PROCEDURE

Connect device to PC

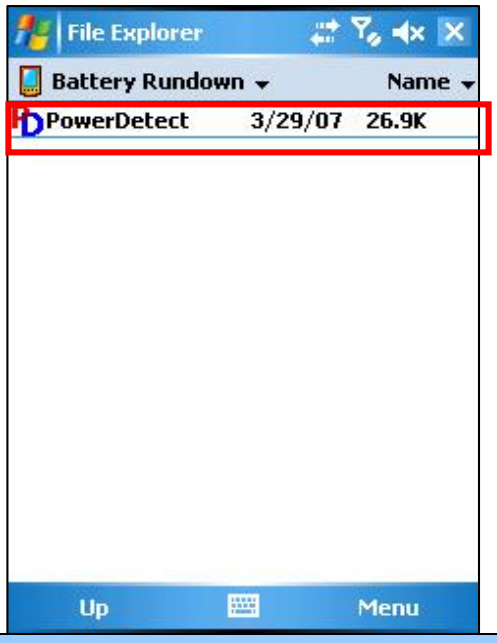
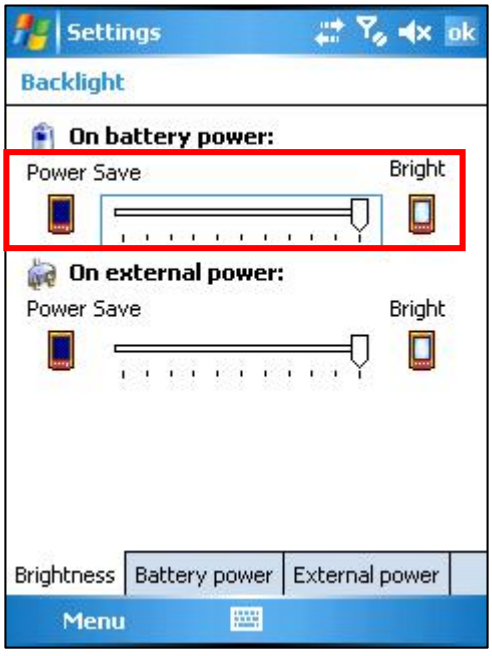
IV. Setting and allow USB connections in Microsoft ActiveSync.

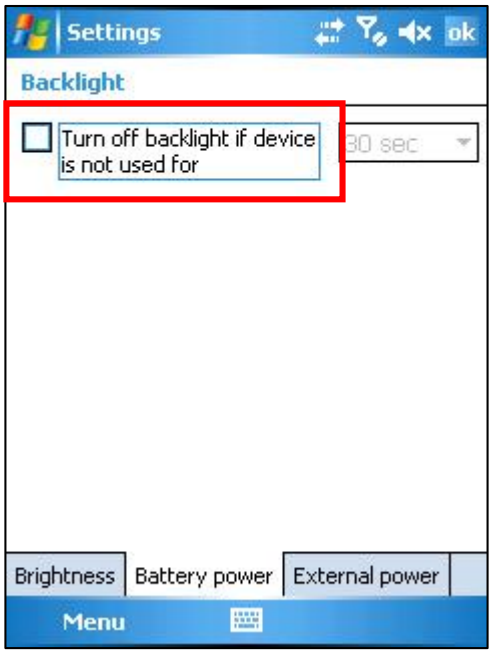
V. Connect your device and desktop/ or laptop via USB cable.

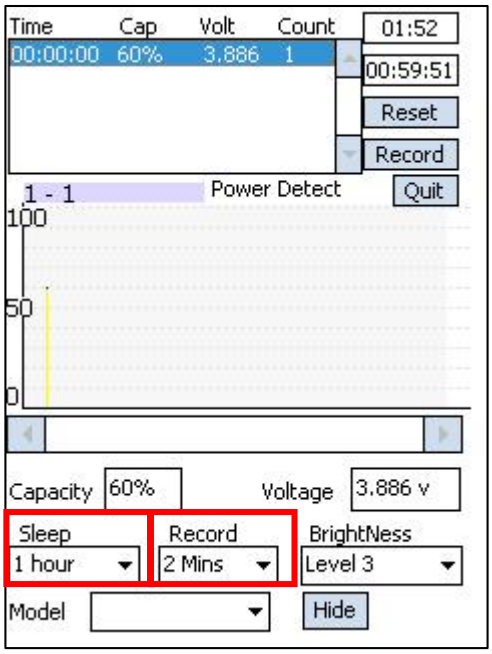
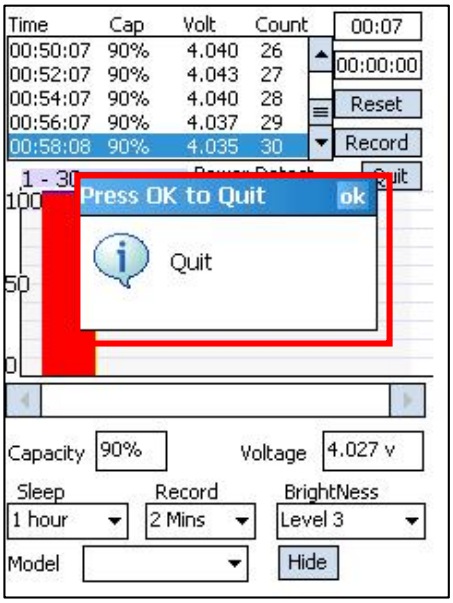
VI. Check the pop-up message from Microsoft ActiveSync when device is synchronized with PC.

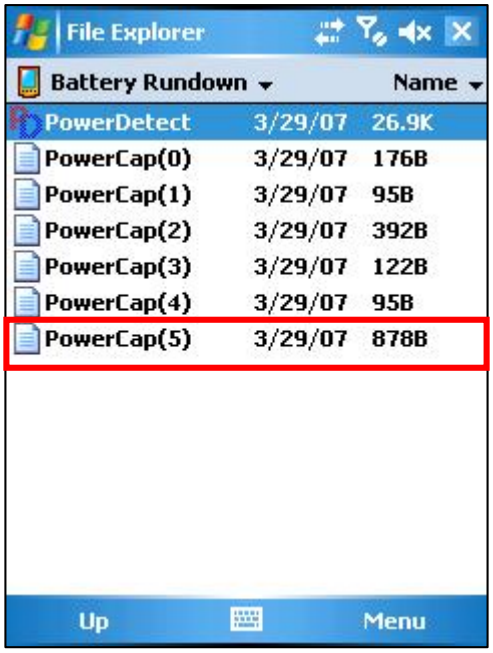
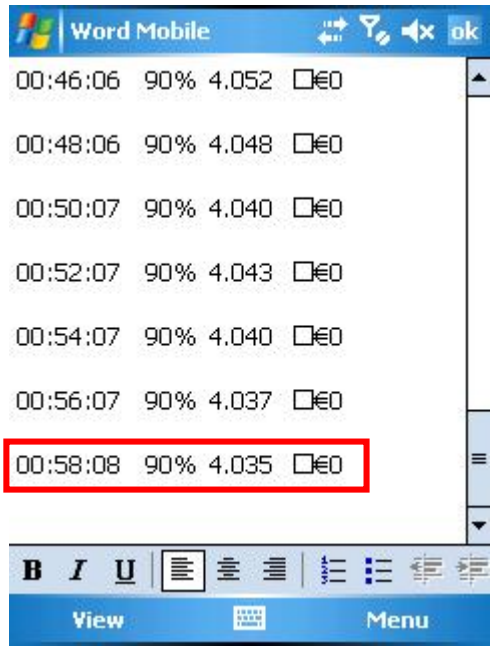


Copy the Battery Rundown tool into the device

<table>
<tr><td>X. Make a folder in the device.
XI. Copy PowerDetect.exe into the folder.</td><td> 
</td></tr>
<tr><td colspan="2">Battery Rundown-1</td></tr>
<tr><td>I. Adjust the Backlight brightness into the maximum level on battery power.</td><td> 
</td></tr>
<tr><td colspan="2">Battery Rundown-2</td></tr>
</table>

I. Disable Turn off backlight if device is not used for in Battery power.	
Battery Rundown-3	
I. Execute PowerDetect.exe under WinCE	
Battery Rundown-4	

I. Set the Sleep as 1hour II. Set the Record as 2Mins	
Battery Rundown-5	
I. After running 1 hour, the test will be finished. II. Press the Power Button to turn on the power. III. Click ok to quit the program.	
Battery Rundown-6	

<table>
<tr><td>I. Test result is generated into the log file as PowerCap(x).</td><td> 
</td></tr>
<tr><td colspan="2">Battery Rundown-7</td></tr>
<tr><td>I. Tag the log file to check the capacity.</td><td> 
</td></tr>
<tr><td colspan="2">Caution: If the capacity is under 80%,
please replace with a new battery.</td></tr>
</table>

CHAPTER 7 – COSMETIC INSPECTION CRITERIA

This document based on the experience of customer's requirements is designated as HTC internal quality inspection standard of GENE products for HTC.

7.1 Classes definition of inspective area

Class A area => The front side of main unit involve all buttons and LED lens except LCD.
Class B area => The view of qwerty keyboard after slid out main unit (involve stylus).
Class C area => 4 sides and back views of main unit.
Class D area => Socket of battery, inner side of battery cover and back side of upper slid part.

***. Figure 1 :** Photo of inspection areas

1. ti

d

A 區
Class A

C 區 / Class C

D 區
Class D

7.2. Main unit inspection

Gap inspection			
Description		**Accept criteria**	**Level**
1.	Stylus	Stylus assembly protruding, loose, missing, falling and deformed is not allowed.	Minor

CHAPTER 8 –TROUBLESHOOTING AND REPAIR

Before repairing, please try to duplicate if the symptom exist or Customer mishandling

1－A・Main Unit Does Not Respond to Power Button
1－B・Main Unit Does Not Respond to Battery Switch
1－C・Charge light is red when plug in AC adapter

(1) Make sure the Battery is installed properly to activate the battery pack.
(2) Connect the AC Adapter, maybe the battery pack is exhaust.
(3) Check the Battery cover is close properly.
(4) Try with another battery pack.
(5) Replace battery pack if necessary.
(6) Try to enter boot loader mode, Perform Re-flash OS if successfully.
(7) CMOS Camera is not assembled properly.
(8) Check all connections including LCD FPC to Main Board. Try with another Main Board.
(9) Fuse blown .
(10) Customer abuse caused the power button fallen off
(11) Both item 9 & 10 , MB replacement is necessary unless you are authorized to do board level repair.
(12) If Charge light is red when plug in AC adapter, it means the main battery is not charge enough and can't power on, You just need to continue charge unit the light become Amber.
(13) Once the defective part has been identified, verify it again with the defective part whether the symptom could be duplicated.

2－A・Touch Panel Does Not Respond to Screen Tap

(1) Dismantle the unit, check the perimeter of Display between display Bezel and Touch Panel surface for unusual foreign objects. Clean it, reassemble the unit and check the panel's function again.
(2) Check the connection of LCM FPC whether is properly connected.
(3) Try with another LCM.
(4) Try with another Rigid-Flex board.
(5) Try with another Main Board.
(6) Replace LCM if necessary
(7) Replace Main Board if necessary.
(8) Once the defective part has been identified, verify it again with the defective part whether the symptom could be duplicated.

2－B · Buttons Do Not Respond

(1) Dismantle the unit, check the status of switches on the Main Board and the plastic parts of button of the Button not responding.
(2) Try with another Main Board, rigid-Flex or keypad.
(3) Replace Main Board, rigid-Flex or keypad if necessary.
(4) Once the defective part has been identified, verify it again with the defective part whether the symptom could be duplicated.
(5) Hard Reset The unit.

3－A · Unusual Vertical / Horizontal lines or partial display

(1) Check the connection of LCM FPC whether is properly connected.
(2) Try with another LCM.
(3) Try with another Rigid-Flex board
(4) Try with another Main Board.
(5) Replace LCM if necessary
(6) Replace rigid-Flex board if necessary
(7) Replace Main Board if necessary.
(8) Once the defective part has been identified, verify it again with the defective part whether the symptom could be duplicated.

3－B · Back Light Does Not Turn ON/OFF

(1) Check the connection of FPC whether is properly connected.
(2) Try with another LCM.
(3) Try with another Rigid-Flex board
(4) Try with another Main Board.
(5) Replace LCM if necessary
(6) Replace rigid-Flex board if necessary
(7) Replace Main Board if necessary.
(8) Once the defective part has been identified, verify it again with the defective part whether the symptom could be duplicated.

4－A-SD Card cannot be used

(1) Check whether SD is fully inserted to the slot until you hear a click.
(2) Try with another SD Card
(3) Try with another Main Board.
(4) Replace Main Board if necessary.
(5) Once the defective part has been identified, verify it again with the defective part whether the symptom could be duplicated.

5－A・PC Connection (USB) not possible

(1) Check whether “Connection Settings” in the MS ActiveSync is properly set.
(2) Check whether it connects with other cables or cradle, customer’s cable might be damaged.
(3) Check the external appearance of the connector on the unit whether it is physically damaged.
(4) Replace Main Board if necessary.
(5) Once the defective part has been identified, verify it again with the defective part whether the symptom could be duplicated.

5－B・Wireless Connection (GSM / GPRS / BT) not possible

(1) Make sure the user has been contacting the Carrier for SIM Card validation and activation.
(2) Make sure the Wireless Connection Settings has been properly set.
(3) Make sure the SIM Card is properly inserted to the SIM compartment. Make a life call or test it with the RF Test Station (Antenna Test).
(4) Dismantle the Main Unit and check whether the Antenna cover is properly installed.
(5) Try with another Antenna cover.
(6) Try with another Main Board if necessary.
(7) Once the defective part has been identified, verify it again with the defective part whether the symptom could be duplicated.

6－A · Main Battery does not start

(1) Make sure the Battery cover is closed properly.
(2) Connect to the AC Adapter and see if it takes charge. Also check AC Adapter condition.
(3) Check whether AC Adapter is functioning properly.
(4) Check whether the condition of Battery Charging status is correct.
(5) Dismantle the unit and check the appearance of Battery cover.
(6) Try with another Main Board or Replace Main Board if necessary.
(7) Once the defective part has been identified, verify it again with the defective part whether the symptom could be duplicated.

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6－B · Battery discharges quickly even after fully charged

(1) Make sure the Battery Pack takes fully charge with AC Adapter.
(2) Check whether the condition of Battery Charging status is correct.
(3) Dismantle the unit and check the appearance of Battery cover.
(4) Try with another Battery or Replace Battery if necessary
(5) Try with another Main Board or Replace Main Board if necessary.
(6) Once the defective part has been identified, verify it again with the defective part whether the symptom could be duplicated.

7－C · Main Battery does not recharge

(1) Make sure the Battery takes fully charge with AC Adapter.
(2) Check whether the condition of Battery Charging status is correct. Charge should be done in no more than 3 hours.
(3) Dismantle the unit and check the appearance of Battery cover.
(4) Try with another Battery or Replace Battery if necessary
(5) Try with another Main Board or Replace Main Board if necessary.
(6) Once the defective part has been identified, verify it again with the defective part whether the symptom could be duplicated.

8－A · No Sound from Speaker or Distorted sound

(1) Check “Sound & Notifications” Settings in the unit for Sound Enabling.

(2) Make sure it’s not MUTED.

(3) Dismantle and Check whether the Speaker is properly installed (Orientation)

(4) Make sure the connection point between MB and Speaker is free from contamination or dust.

(5) Replace Speaker if necessary.

(6) Replace Main Board if necessary.

(7) Once the defective part has been identified, verify it again with the defective part whether the symptom could be duplicated.

(8) Replace Camera if camera function was defect at the same time.

9－A · No Recorded Sound or Distorted sound

(1) Check “Sound & Notifications” Settings in the unit for Sound Enabling.

(2) Make sure it’s not MUTED.

(3) Dismantle and Check whether the Microphone is properly installed (check or missing rubber)

(4) Replace Microphone if necessary.

(5) Replace Main Board if necessary.

(6) Once the defective part has been identified, verify it again with the defective part whether the symptom could be duplicated.

10－A · Bezel, Housing Cosmetic damage

(1) Unless it is for Refurbishment, all Bezel, housing replacement due to cosmetic damage shall treat as out of warranty**.**

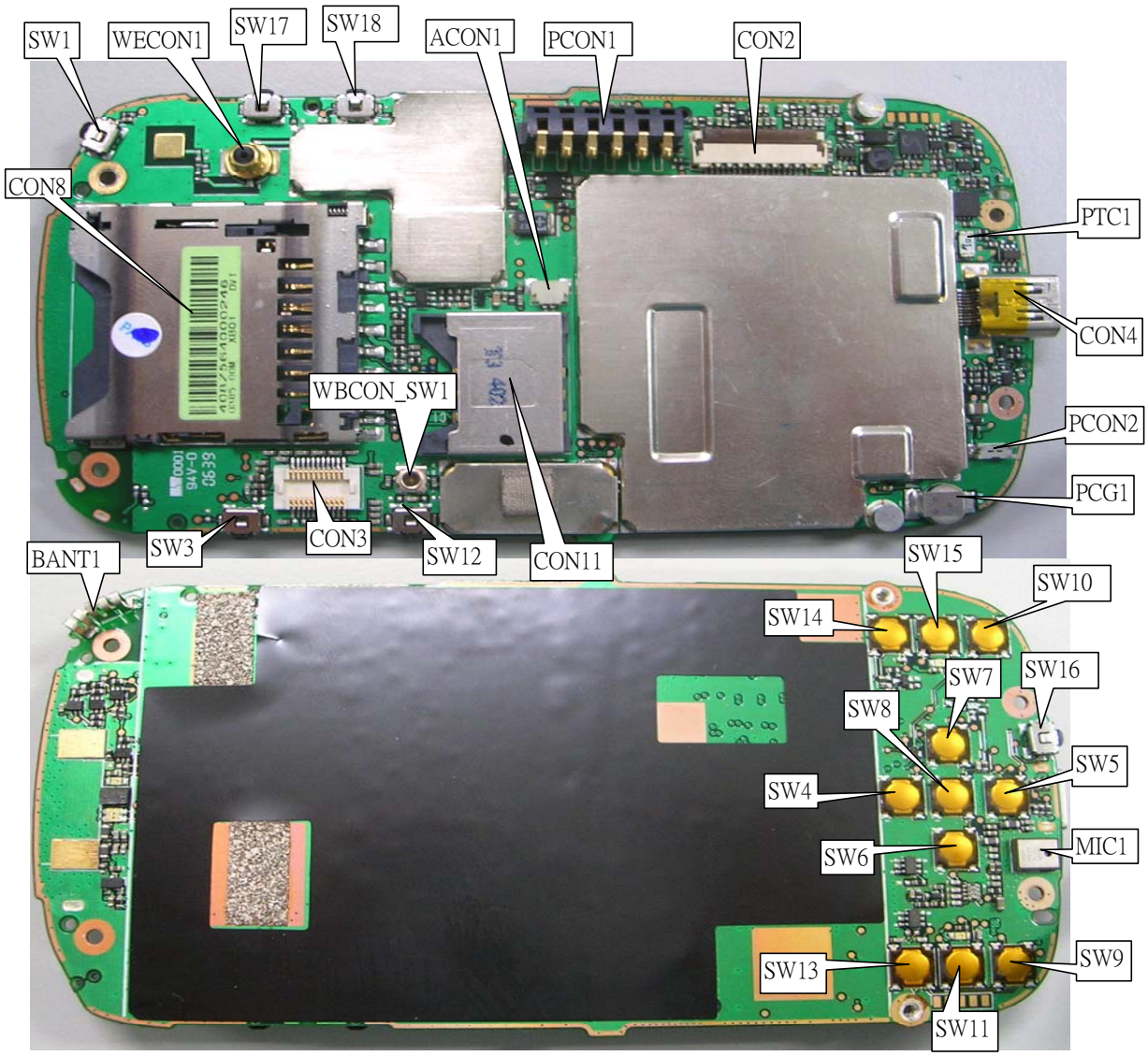
CHAPTER 9 –GENERIC SPARE PART LIST

9.1 SPL for Repair

Item	HTCP/N	Description
1	35H00064-02M	BATTERY_LI-ION,SANYO,1250mAh,3.7V,1UF653450S,CHS,Dopod CN,85/-
2	36H00466-00M	Earphone,MERRY,EMC220-006-01,W/O FM Antenna
3	36H00487-00M	Receiver,SDRP0615FJ04-F20-G,AAC ELECTRONICS
4	36H00490-00M	Vibrator,JT05508-30NC1,JNTECH,Reted speed 12500+/-3000 RPM DC 3V 30 ohm
5	36H00502-00P	Antenna Pre-Assy,PERLOS,Gene
6	36H00503-00M	Speaker,DSH956-004-01,MERRY
7	54H00199-00M	Camera Module,CMHT-20402T,PREMIER,28.7*10.94*7.12mm,GENE
8	60H00080-00M	TFT-LCD Module,H283QN01,AU,73.7*52.9*3.5mm,GENE
9	71H01776-00M	Cover,Battery,Gene
10	72H00353-10M	Screw,M1.6 X 2.5,TORX,FD,Ni-plated,Nylok,Gene
11	72H01403-00M	Screw,TAPING SCREW,EDEN
12	72H01689-00M	EMI Gasket,MPCB,Herald
13	73H00131-04M	Cable,MEC,60-4251-100,USB Cable with WEEE logo,shielding grounded,Universal
14	74H00782-00M	Cover Pre-Assy,LCD,Gene
15	74H00799-02M	Bezel Pre-Assy,DOPOD-ASIA,D600,Dark Silver,Gene-P2A
15A	74H00799-03M	Bezel Pre-Assy,CHINA MOBILE,D600g,Dark silver,Gene-P2
15B	74H00799-04M	Pre-Assy,Pink,dopod,Gene-P2
15C	74H00799-05M	Bezel Pre-Assy,Silver,dopod,Gene-P2
16	74H00800-01M	Housing Pre-Assy,dopod D600,Black,Gene-P2
16A	74H00800-02M	Housing Pre-Assy,dopod D600g,Black,Gene-P2
16B	74H00800-03M	Housing Pre-Assy,White,dopod D600,Gene-P2
17	74H00801-00M	Stylus Pre-Assy,Gene
18	76H00965-00M	Tape,LCD connect,Kapton RC-502; 3M 467,Hurricane-Robbie
19	76H01604-00M	Mylar,LCD,Gene
20	76H01619-00M	Rubber,Silicon,MIC,Gene
21	76H01620-00M	Rubber,Silicon,External Antenna,RF Cap,Gene
23	91H00453-00M	EULA,for Microsoft Windows Mobile™ Version 5.0,English
24	98H00057-00	SKD,Main BD,dopod China,Gene-P2
25	51H00385-00M	PCBA-MAIN BOARD,GENE

9.2 Board Level

Item	P/N	Description	Using Q'ty	Location
1	36H00230-00M	SWITCH,SOH-213HST,MITSUMI,70/-20degC	6	SW1(Power switch), SW3(Camera switch), SW12(Voice Command switch), SW16(Reset switch), SW17(Volume UP switch), SW18(Volume Down
2	36H00440-00M	Microphone,SPM0208HE5-SB,KNOWLES,100/-40degC,4.72*3.76*1.25mm	1	MIC1 (Microphone)
3	36H00489-00M	Antenna,BT,RAY HOME,Gene	1	BANT1 (Bluetooth Antenna)
4	75H00228-00M	Connector Others,SM02B-SURS-TF(LF),JST	1	ACON1 (Speaker connector)
5	75H00366-00M	Connector SDIO,9pin,FPS009-26C29022-0,YAMAICHI	1	CON8 (SD card slot)
6	75H00465-10M	Connector I/O,Reverse,11P,0.4pitch,302-11101-01,ACT,Vera	1	CON4 (Sync / Earphone connector)
7	75H00502-00M	Connector FPC,39P,0.3Pitch,0.2A,50V,50mohm,SD-54393-3981,MOLEX	1	CON2 (LCM connector)
8	75H00566-00M	Connector B to C,2P,1Pitch,1A,30V,KYOCERA	1	PCON2 (Vibrator connector
9	75H00605-00M	Connector B to B,22pin,0.5pitch,AXK5F22547YG,MATSUSHITA,1000mohm,0.5A,60V,Gene	1	CON3 (Camera connector)
10	75H00613-00M	Connector,Battery,6Pin,2.5mmPitch,250042MB006G313ZR,SUYIN,Gene	1	PCON1 (Battery connector)
11	75H00614-00M	Connector SIM Card,6Pin,2.54mmPitch,254020MA006G452ZL,SUYIN,Gene	1	CON11 (SIM card connector)
12	16H00012-00M	Gold Cap,0.07F,70ohm,3.3V,-25/+50%,XH414H II02E,SEIKO,7.6*4.8*1.72mm,,70/-25degC	1	PCG1 (Gold Cap)
13	36H00058-00M	Fuse,1A,6V,0.055ohm ~ 0.21ohm,SMD1206P100TF,PTC,POLYTORNICS,3.5*1.8*1.25mm,85/-40degC	1	PTC1 (Fuse)
14	36H00274-00M	Switch,SOT-152HST,MITSUMI	11	SW4 (Up), SW5 (Down), SW6 (Left), SW7 (Right), SW8 (Enter), SW9 (Start), SW10 (Ok), SW11 (Talk), SW13 (Left soft key), SW14 (Right soft key), SW15 (End)
15	75H00248-00M	COAXIAL CONNECTOR,RF,WITH SWITCH,SMD,MM8430-2600RA1,MURATA	1	WBCON_SW1 (RF connector)
16	75H00276-00P	Connector RF,5.8*5.4*3.9,Female,MS-147(06),4pin,HRS	1	WECON1 (Ext. Antenna conector)



9.3 FRU M/B additional parts location

P/N	Description
72H02377-00M	EMI Gasket,LCM
72H01689-00M	EMI Gasket,MPCB
76H01604-00M	Mylar,LCD
77H00193-00M	Liquid Damage Indicator
76H01619-00M	Rubber,Silicon,MIC

APPENDIX

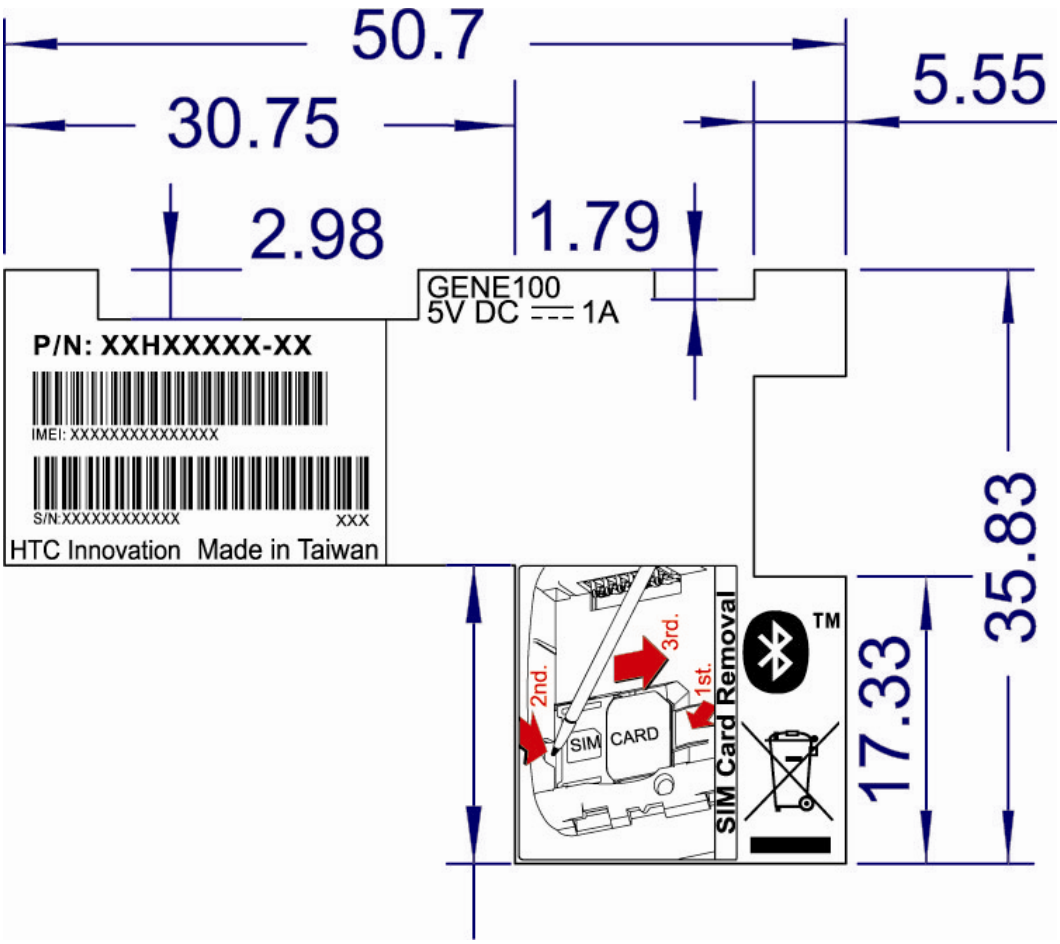
A. Generic Labeling Plan

Agency label

HTC P/N: 77H00457-00M

Size: 50.7 X 35.83mm

The brand name is shown on Bezel.



B. RF Antenna Test Specification

Item	Test Name	Tx level	TCH	1st Download cell power	Note
1	Camp @DCS Band	0	512	-75	BCH=600
2	BS Originate call	0	512	-75	
E-GSM 900 RECEIVER TEST					
3	Fast Bit Error Rate	5	975	-104	
4	Fast Bit Error Rate	5	42	-104	
5	Fast Bit Error Rate	5	124	-104	
E-GSM 900 Transmitter TEST					
6	TX Phase RMS Error	5	975	-104	
7	TX Phase Peak Error	5	975	-104	
8	TX Frequency Error	5	975	-104	
9	TX Phase RMS Error	5	42	-104	
10	TX Phase Peak Error	5	42	-104	
11	TX Frequency Error	5	42	-104	
12	TX Phase RMS Error	5	124	-104	
13	TX Phase Peak Error	5	124	-104	
14	TX Frequency Error	5	124	-104	
15	Check TX Power	5	975	-104	
16	Check TX Power	5	42	-104	
17	Check TX Power	5	124	-104	
DCS 1800 Receiver Test					
1	Fast Bit Error Rate	0	512	-104	
2	Fast Bit Error Rate	0	698	-104	
3	Fast Bit Error Rate	0	885	-104	
DCS 1800 Transmitter Test					
4	TX Phase RMS Error	0	512	-104	
5	TX Phase Peak Error	0	512	-104	
6	TX Frequency Error	0	512	-104	
7	TX Phase RMS Error	0	698	-104	

8	TX Phase Peak Error	0	698	-104	
9	TX Frequency Error	0	698	-104	
10	TX Phase RMS Error	0	885	-104	
11	TX Phase Peak Error	0	885	-104	
12	TX Frequency Error	0	885	-104	
13	Check TX Power	0	512	-104	
14	Check TX Power	0	698	-104	
15	Check TX Power	0	885	-104	
PCS 1900 Receiver Test					
1	Fast Bit Error Rate	0	512	-104	
2	Fast Bit Error Rate	0	661	-104	
3	Fast Bit Error Rate	0	810	-104	
PCS 1900 Transmitter Test					
4	TX Phase RMS Error	0	512	-104	
5	TX Phase Peak Error	0	512	-104	
6	TX Frequency Error	0	512	-104	
7	TX Phase RMS Error	0	661	-104	
8	TX Phase Peak Error	0	661	-104	
9	TX Frequency Error	0	660	-104	
10	TX Phase RMS Error	0	810	-104	
11	TX Phase Peak Error	0	810	-104	
12	TX Frequency Error	0	810	-104	
13	Check TX Power	0	512	-104	
14	Check TX Power	0	661	-104	
15	Check TX Power	0	810	-104	
GSM 850 Receiver Test					
1	Fast Bit Error Rate	5	128	-104	
2	Fast Bit Error Rate	5	189	-104	
3	Fast Bit Error Rate	5	251	-104	
GSM 850 Transmitter Test					
4	TX Phase RMS Error	5	128	-104	

5	TX Phase Peak Error	5	128	-104	
6	TX Frequency Error	5	128	-104	
7	TX Phase RMS Error	5	189	-104	
8	TX Phase Peak Error	5	189	-104	
9	TX Frequency Error	5	189	-104	
10	TX Phase RMS Error	5	251	-104	
11	TX Phase Peak Error	5	251	-104	
12	TX Frequency Error	5	251	-104	
13	Check TX Power	5	128	-104	
14	Check TX Power	5	189	-104	
15	Check TX Power	5	251	-104	