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Elf/Elfin series model

Service Manual




HTC Proprietary

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Rev. A08

MAR 21, 2008

Engineering Mobility

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Revision Control Table

Rev	Date	Contents	Dept.	Revised	App Dept	Stage/Per
AX01	2007/05/03	First Release	PSE	Ares Chang	GSD	CVT
AX02	2007/05/21	Modify LEAKAGE CURRENT MEASUREMENT in page37	PSE	Ares Chang	GSD	MV
A01	2007/06/05	1. Modify the FS 1.5 ver and SPL 2. add the DIAGNOSTIC PROGRAM test step 3. Modify the COSMETIC INSPECTION CRITERIA	PSE	Ares Chang	GSD	MV
A02	200708/10	Add reflash Touch flo tool on P44 Update SPL photo	PSE	Ares Chang	GSD	MV
A03	2007/08/21	Add LCD inspection criteria on P56	PSE	Ares Chang	GSD	MV
A04	2007/08/22	Modify board Level on P66	PSE	Ares Chang	GSD	MV
A05	2007/11/23	Modify the electric screw driver speed	PSE	Ares Chang	GSD	MV
A06	2008/01/02	Modify the SPL	PSE	Ares Chang	GSD	MV
A07	2008/01/30	Update LCD assembly process	PSE	Ares Chang	GSD	MV
A08	2008/03/21	Update the USB CON repair noticed on P65	PSE	Ares Chang	GSD	MV



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APPENDIX.....66

A GENERIC LABELING PLAN 66

CHAPTER 1 – INTRODUCTION

This manual provides the technical information to support the service activities of the pocket PC phone.

This document contains highly confidential information, so any or all of this document should not be revealed to any third party.

Features

Target

- ⌚ Primary for consumer market with reduced size in thickness and length

Platform

- ⌚ Bar-type PDA form factor with Tri-band Edge, 2 Mega Pixel camera, Wi-Fi and Bluetooth
- ⌚ Microsoft Windows Mobile 6 Professional

Dimension

- ⌚ 99.9 mm(L) x 58 mm(W) x 13.9 mm (T)
- ⌚ 112 g with battery pack

Processor/Chipset

- ⌚ TI OMAP 850, 200Mhz

Memory

- ⌚ ROM
 - ⌚ 128 MB NAND (default)
 - ⌚ 256 MB NAND (optional)
- ⌚ SDRAM: 64 MB mobile Double Data Rate (DDR)


LCD Module

- ⌚ 2.8" 240 x 320 dots resolution
- ⌚ 65K-color TFT LCD with backlight
- ⌚ Sensitive Touch Screen


GSM/EDGE Function

- ⌚ Internal antenna

- ⌚ GSM/GPRS/EDGE Tri-band (900/1800/1900)
- ⌚ GSM/GPRS/EDGE
 - ⌚ 900: 880-915, 925-960MHz
 - ⌚ 1800: 1710-1785, 1805-1880MHz
 - ⌚ 1900: 1850-1910, 1930-1990MHz
- ⌚ Global roaming
- ⌚ Auto band switching
- ⌚ Generic Services
 - ⌚ Call Holding, Waiting, Forwarding
 - ⌚ Call Barring
 - ⌚ CLI (Calling Line Identity)
 - ⌚ SMS (Short Message Service)
 - ⌚ SMSMT, SMSMO, SM Reply, SM Replace, SM Acknowledgement, 8 Bits SMS Data
 - ⌚ Concatenated messages, up to 640 characters
 - ⌚ Display own number, telephone number storage capability in terminal and SIM card
 - ⌚ Network selection
 - ⌚ Cell broadcast
 - ⌚ Multi-party conference capability

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- ⌚ Phase 2+ Unstructured Supplementary Service Data
- ⌚ Audio Codec: AMR/EFR/FR/HR
- ⌚ Network Lock
- ⌚ CPHS (Partial)
- ⌚ E-GPRS Function
 - ⌚ EGPRS class B
 - ⌚ Multi-slot standard class 10
 - ⌚ MO/MT SMS over GPRS
 - ⌚ PBCCH
- ⌚ SIM
 - ⌚ 1.8/3V of SIM
 - ⌚ SIM Application Tool Kit release 98 class 3 and 99 (Partial)
 - ⌚ SIM+ (manufacturer option)
 - ⌚ Over the Air (OTA) programming
 - ⌚ Fixed Dialing Number (FDN)
 - ⌚ Abbreviation Dial Number (ADN)
 - ⌚ Security Pin 1 & 2 control
- Connectivity & Interface*
- ⌚ Bluetooth
 - ⌚ Compliant with v2.0
 - ⌚ Class 2 transmit power
 - ⌚ Supported profiles:
 - ⌚ Generic Access profile
 - ⌚ Serial Port profile
 - ⌚ Headset profile
 - ⌚ Object Push profile
 - ⌚ PAN
 - ⌚ Hands-free profile
 - ⌚ Generic Object Exchange profile
 - ⌚ A2DP
 - ⌚ AVRCP
- ⌚ SIM Access Profile
- ⌚ Service Discovery profile
- ⌚ HID profile
- ⌚ File Transfer Profile
- ⌚ Basic Printing Profile
- ⌚ Activesync-Over-Bluetooth
- ⌚ WiFi (manufacturer option)
 - ⌚ IEEE 802.11b/g compliant
 - ⌚ Internal WLAN antenna
 - ⌚ Data rate up to 54Mbps, auto fallback for extended range
 - ⌚ ELP mode
 - ⌚ Security 802.11i and AES
 - ⌚ However, OS doesn't support 802.11i and AES
 - ⌚ WPA authentication – WEP, WPA, PSK, EAP-TLS, PEAP, LEAP,
 - ⌚ Signaling interfaces between the terminal device and the servers: mutually authenticated and encrypted utilizing TLS (RFC 2246) with RC4 encryption with SGA1 used as the message integrity check
 - ⌚ QoS
 - ⌚ 802.11 WME QoS
 - ⌚ 802.11e
 - ⌚ Fast AP to AP handover
- ⌚ USB 2.0 with full speed
 - ⌚ 11-pin mini-USB
 - ⌚ audio jack in one
 - ⌚ HTC H2Wire support
- ⌚ Micro SD card slot
 - ⌚ SDHC support

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- ⌚ External antenna connector
- ⌚ 1.8/3V SIM card

Digital Camera

- ⌚ 2 MP Colors CMOS Fixed Focus Camera
- ⌚ Preview mirror

Power

⌚ Battery

- ⌚ Removable and chargeable Lithium ion battery, 1100 mAh
- ⌚ Charging time:
 - ⌚ 4 hours max at 0 °C in off mode or standby mode by AC
 - ⌚ 3 hours max at 25 °C in off mode or standby mode by AC
- ⌚ Battery life
 - ⌚ WMA: 12 hours (base on NSTL test case)
 - ⌚ WMV: 8 hours (base on NSTL test case)
 - ⌚ Talk time: 3.5 ~ 5 hours (base on RF power level 5~12)
 - ⌚ Standby time: 150 ~ 200 hours (base on multi-frame 2~5)
- ⌚ AC adaptor
 - ⌚ AC input: 100 ~ 240V AC, 50/60 Hz
 - ⌚ DC output: 5V and 1A

Keyboard/Button/Switch

- ⌚ Power button (Position: Top)
 - ⌚ Short Press: system sleep on/off
 - ⌚ Long Press: power on/off
- ⌚ One 5-way navigation pad

- ⌚ Key orientation shall be adjusted after view changed

⌚ Send / Hands-free button

- ⌚ Long Press during the call: Hands-free On/Off

⌚ End button

⌚ Volume Up & Down (Position: Upper left)

⌚ Camera button (Position: Bottom right)

⌚ Reset

Notification


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

Audio

- ⌚ Built-in Microphone
- ⌚ Receiver
- ⌚ Loud speaker for Hands-Free supported
- ⌚ Full duplex
- ⌚ Audio sampling rate
 - ⌚ 16-bits with 8KHz, 11KHz, 22KHz, 44.1KHz
- ⌚ AMR-NB / AMR-WB / AAC / AAC+ / eAAC+ / WAV / WMA / MP3 codec
- ⌚ Audio path routing for VoIP over WLAN

Stylus

- ⌚ Lock type mechanism (Position: top right corner)

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Lanyard / Strap Hole

- ⌚ Stylish lanyard to wear phone with neck as pendant or to attach various phone straps

Accessories

- ⌚ User manual, Quick start guide & Sync. software CD
- ⌚ Screen Protector
- ⌚ Stylus
- ⌚ 3-in-1 stylus
- ⌚ Travel Charger (AC adapter)
- ⌚ Pouch (Carrying Case)
- ⌚ USB Sync Cable (mini-USB/USB)
- ⌚ Battery
- ⌚ Wired Stereo Headset
- ⌚ 3.5 mm Audio Adaptor
- ⌚ 3.5 mm Audio Adaptor with Microphone
- ⌚ Wired Remote Controller, RC W100
- ⌚ Wired Remote Controller with Earphone, RC E100
- ⌚ Mono Bluetooth Headset, BH M100
- ⌚ Mono Bluetooth Headset, BH M200
- ⌚ Stereo Bluetooth Headset, BH S100
- ⌚ Bluetooth Keyboard
- ⌚ Y-Cable 11 pin to 5pin + 6pin
- ⌚ Y-Cable 11 pin to 5pin + 3.5 mm Audio Jack
- ⌚ Car Charger
- ⌚ Generic Car Holder

Optional support accessories

- ⌚ Wired Car Kit
- ⌚ Bluetooth Car Kit
- ⌚ Battery Charger
- ⌚ Extended Battery

Microsoft Windows Mobile 6 Applications

- ⌚ Microsoft Outlook Mobile

- ⌚ Messaging (SMS/E-mail), Contacts, Calendar, Tasks, Email Set Up Wizard


- ⌚ Microsoft Internet Explorer Mobile
- ⌚ Microsoft Media Player Mobile
- ⌚ Microsoft ActiveSync
- ⌚ Microsoft Windows Mobile Update
- ⌚ Microsoft Windows Mobile Marketplace
- ⌚ Internet Sharing
- ⌚ Picture & Video
- ⌚ Games
- ⌚ File Explorer
- ⌚ Device Management
- ⌚ Security Enhancement
 - ⌚ Storage Card Encryption, Device Lock
- ⌚ Microsoft Office Mobile
 - ⌚ Word, Excel & PowerPoint Mobile
- ⌚ Microsoft Windows Live!
 - ⌚ Windows Live Messenger
 - ⌚ Windows Live Mail (Push Mail)
 - ⌚ Windows Live Contacts
 - ⌚ Windows Live Search
 - ⌚ Windows Live Spaces
- ⌚ Microsoft Remote Desktop Mobile [optional]

Value Added Applications


- ⌚ Camera / Camcorder
 - ⌚ Camera Mode
 - ⌚ Encoding format: JPEG
 - ⌚ Resolution: UXGA 1600x 1200, SXGA 1280x960, VGA 640x480, QVGA 320x240, QQVGA 160x120
 - ⌚ Digital Zooming: at least 10X
- ⌚ Time & Date Stamp

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- ⌚ Camcorder Mode
- ⌚ 8 fps encoding for QCIF resolution
- ⌚ Encoding format
 - H.263 + AMR-NB (.3gp)
 - MPEG4 + AMR-NB (.mp4)
- ⌚ Ring Tone Enhancement
 - ⌚ MIDI
 - ⌚ 40 polyphonic & Standard MIDI format 0 and 1 (SMF) / SP MIDI
 - ⌚ AAC, AAC+, eAAC+, MP3, WMA, WAV, QCELP, MPEG4, AMR-NB and AMR-WB
- ⌚ DirectShow Filters for WMP - Audio
 - ⌚ Audio Playback format: AAC, AAC+, eAAC+, MP3, WMA, WAV, QCELP, MPEG4, AMR-NB and AMR-WB
- ⌚ DirectShow Filters for WMP - Video
 - ⌚ Video Playback format: H.263, MPEG4, WMV, Motion JPEG (.avi)
 - ⌚ 20-25 fps decoding for H.263 & MPEG4 @ QCIF resolution
 - ⌚ Combined Bit Rate: 64Kbps (playback)
- ⌚ Picture & Video Enhancement
 - ⌚ Video Thumbnail Preview: H.263 (.3gp), MPEG4 (.mp4), Motion JPEG (.avi)
 - ⌚ Integrate with camera and WMP for video files management and playback
- ⌚ ZIP
- ⌚ Smart Dialing
- ⌚ MMS Client
 - ⌚ Partial Compliant to MMS 1.2 & 1.3 (when available)
- ⌚ Voice Speed Dial
 - ⌚ Speaker Dependent
- ⌚ Document Viewer - PDF
- ⌚ OMA DRM Engine: For all types of files (Pictures, audio, application etc.), and also all types of delivery method (MMS, email etc.)
 - ⌚ OMA 1.0 / 2.0 when available
 - ⌚ Multi-DRM support : MSFT & OMA DRM
- ⌚ SIM Manager
- ⌚ Comm. Manager
- ⌚ STK R99 partial
- ⌚ Audio Manager
 - ⌚ Music Player
- ⌚ Voice Recorder
- ⌚ Task Manager
- ⌚ Backup Tool
- ⌚ TouchFLO Multi-devices
 - ⌚ PDA
 - ⌚ Quick Launcher
 - ⌚ Favorite People
 - ⌚ Media Hub Mini
- ⌚ TouchFLO Scrolling
- ⌚ Java MIDlet Manager (J2ME, CLDC 1.1, MIDP 2.0)
 - ⌚ JSR 185 JTWI
- Customer Specific Applications*
- ⌚ HTC Home
- ⌚ RSS Reader & Podcast
- ⌚ Opera Browser
- ⌚ Streaming Media Player
- ⌚ Push E-mail
 - ⌚ RIM Blackberry
 - ⌚ Visto
- Regulatory*
- ⌚ Microsoft Windows Mobile Logo (NTSL)

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- ⊕ USB Certification
- ⊕ BQB Certification
- ⊕ WiFi Certification
- ⊕ CB Certificate/report [International]
- ⊕ GCF Certification [European Union]
- ⊕ R&TTE: EMC / EMI, Safety SAR [European Union]
- ⊕ PTCRB Approval [North America]
- ⊕ UAELAB [UAE]
- ⊕ ICASA [South Africa]

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CHAPTER 2 – 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(connector, button, MIC...) +L2

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



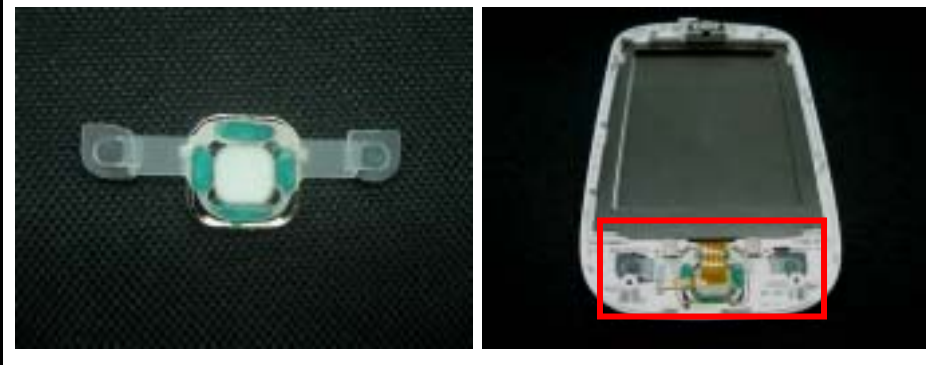
2.2 List of Servicing Tools

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	WLAN AP	For WiFi test	
	5	Micro SD Card with Diagnostic test program (must be encoded by HTC)	For unit diagnostic test	HTC design
	6	128MB micro SD memory card (must be encoded by HTC)	For unit ROM code transfer to SD card for re-flash	HTC design
	7	Unit current consumption test fixture		HTC design
	8	Power supply	Measure Unit current consumption	Local purchase
	9	Current Meter		Local purchase
	10	Mobile tester	For RF test	Local purchase
L 2	11	Special Made Plastic Stick	Assembly & Disassembly	HTC special tools
	12	Hand tools	Assembly & Disassembly	Local purchase
	13	Label printer	Print agency label if replacing M/B	Local purchase
L 2.5	14	Lead-free Soldering station	Board level repair	Local purchase
	15	Air heater	Board level repair	Local purchase


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CHAPTER 3 –DISASSEMBLING AND ASSEMBLING


Assembly Procedure


	<p>Tools:</p> <ol style="list-style-type: none"> 1. Glove & Lens Cleaning Tissue. 2. Plastic type tweezers. 3. PHILIP Screw Driver 000X40. 4. TORX Screw Driver T5X40 5. Flat Plastic Stick 6. ESD bracelet. 7. Air gun 8. Clean environment
	<p>Assemble the receiver in the receiver slot</p>
	<p>Assemble the keypad into the slot on the bezel</p>


		<p>Assemble the rigid-flex board.</p>
		<p>Fasten the 2 screws as the location indicated and apply the mylar on the rigid-flex board to press down rigid-flex board FPC.</p> <p>72H00353-10M Torque: 1.0 +- 0.1kg-cm</p>
		<p>Assemble the Camera.</p>
		<p>Assemble the LCD and LCD supporter and make sure that the FPC goes through the supporter hole.</p>

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		<p>Insert the LCD FPC into the slot and make sure that the white line on the FPC align with the M/B connector's edge and apply the Mylar on the LCD connector.</p>
		<p>Assemble the SIM Rubber.</p>
		<p>Assemble the vibrator and put the wire in the fillister as the picture shown on the left.</p>
		<p>Fasten the 2 screws to fix the main board with LCD supporter. 72H01050-00M Torque: 0.4 +- 0.1kg-cm</p>

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		<p>Insert the vibrator wire into connector on the Main Board.</p>
		<p>Assembly rigid flex board FPC on the Main Board and check the panel and LCD if any exists on the surface(stain, filament, scratch...etc)</p> <p>Warning: Please apply air gun to clean the LCM & casing surface in CLEAN ENVIRONMENT , and ensure no dust or particle inside before assemble into bezel.</p>
		<p>Assemble the speaker on the antenna cover slot at location indicate.</p>


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	<p>Assemble the antenna cover.</p>
	<p>Fasten the 4 screws to fix the housing with bezel.</p>  <p>New screw P/N: 72H02401-00M Screw,Delta PT,T5,M1.5*6,ELFIN Torque: for new build, 1&2(Torque) : 1.0±0.05kg-cm(700RPPM) 3&4(Torque) : 1.3±0.05kg-cm(700RPPM) Torque : For rework, 1&2(Torque):1.0±0.1 kg-cm(700RPPM) 3&4(Torque):1.3±0.1 kg-cm(700RPPM)</p>
	<p>Assemble the battery.</p>



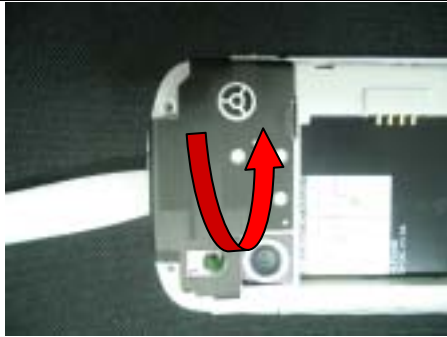
Assemble battery cover and insert Stylus.

-----Assembly process is done-----

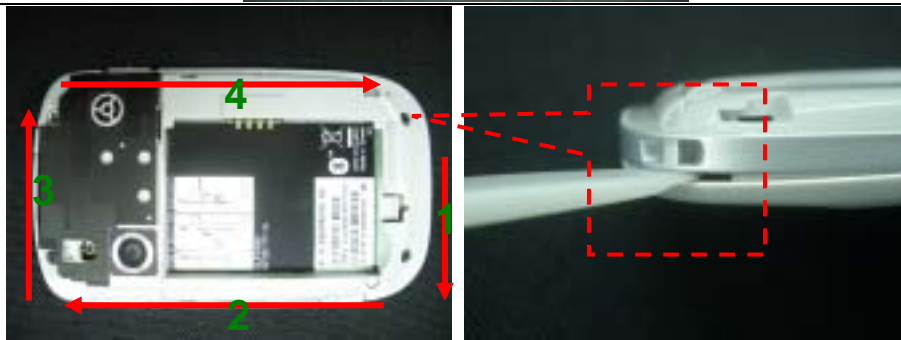
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Disassembly Procedure

		Main Unit
		Apply the force on the location indicates and Remove the battery cover
		<ol style="list-style-type: none"> 1. Pull out the Stylus. 2. Eject the micro SD card if inserted.
		Unfasten the 4 screws (Red Circles). 



Remove the antenna cover.
If damage when disassemble the speaker/receiver, must replace new




Hold the flat plastic stick vertically and slide through the gap to disassemble.




Unplug the rigid flex board FPC connector









Remove the receiver, keypad FPC and keypad.
If damage when disassemble the speaker/receiver, must replace new

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		<p>Unfasten the 2 screws on the rigid-flex board.</p> <p>Remove the mylar* on the rigid-flex board.</p> <p>Release the touch window FPC connector by unlocking the switch.</p> <p>* This Mylar is reusable.</p>
		<p>Remove the rigid-flex board and keypad from bezel.</p>
		<ol style="list-style-type: none"> 1. Unplug the vibrator connector. 2. Unfasten the 2 screws on the LCD supporter.
		<p>Disassemble the main board from B-cover by releasing the hooks.</p> <p>The hook on the B-cover to grab the main board at location indicates.</p>

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		<p>Remove the mylar and unlock the LCD connector and remove the FPC.</p>
		<p>Remove the Camera from its connector</p>  <p>----- Disassembly process is done-----</p>

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CHAPTER 4 – DIAGNOSTIC PROGRAM

4.1 List of Diagnostic / WinCE Test Items

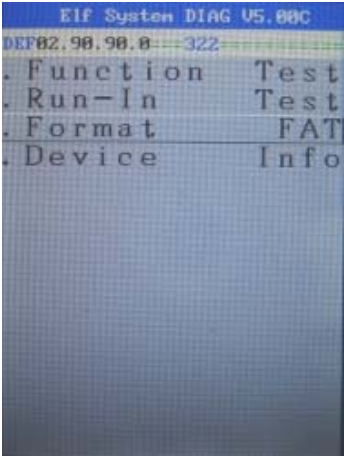
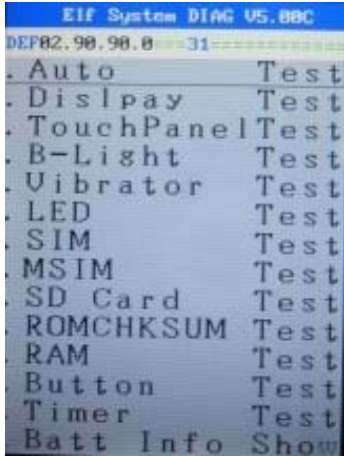
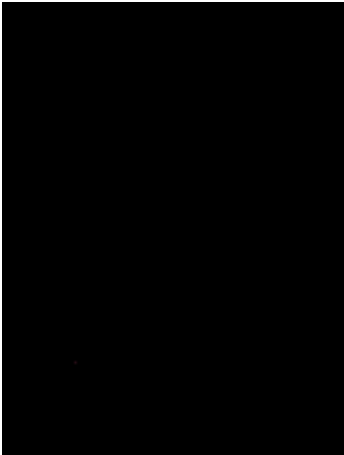

Mode	No	Item	Description	Remark
Diagnostic	Function Test			
	1	Auto Test	Auto test.	
	2	Display Test	Color bar/White/Black/R/G/B/Gray pattern.	
	3	TouchPanel Test	TP test	
	4	B-Light Test	F-Lght off / DIM / HIGH / S-HIGH test	
	5	Vibrator Test	Vibrator on test.	
	6	LED Test	Red/Green/ Blue/Key Pad.	
	7	SIM Test	SIM card test	
	8	MSIM Test	Mega SIM card test.	
	9	SD Card Test	SD card Read/Write test.	
	10	ROMCHKSUM Test	ROM checksum test.	
	11	RAM Tset	SDRAM test	
	12	Button test	VolUp / VolDn / Send / Up / Down / Left / Right / Act /End /Power /Camera	
	13	Timer test	RTC (Real time clock) test.	
	14	Batt Info test	Battery info check.	
	Run-in Test			
	1	2 Hour	2 Hour Run-in Test/PressUP key.	Option
	2	4 Hours	4 Hours Run-in Test/Press DN key.	Option
	3	8 Hours	8 Hours Run-in Test/Press LF key.	Option
4	16 Hours	16 Hours Run-in Test/Press RG key.	Option	
5	EXIT	Prsee ACT 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	WLAN Test	WLAN test.	

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4.2 Test Procedure

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

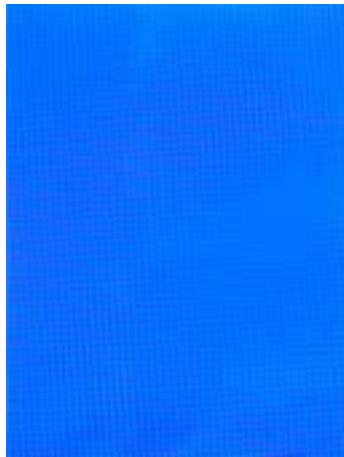
How to execute the test program: Press "Action" button to start each of test items.

<p>A. Diagnostic test menu.</p>		
<p>Display test</p> <ul style="list-style-type: none"> - Black pattern. - White pattern. 		

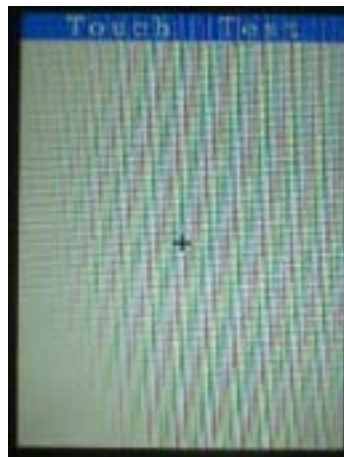
- Red pattern.
- Green pattern.



- Blue pattern.
- Color bar pattern.



- B. Touch Panel test
- C. B-Light test



D. Vibrator test



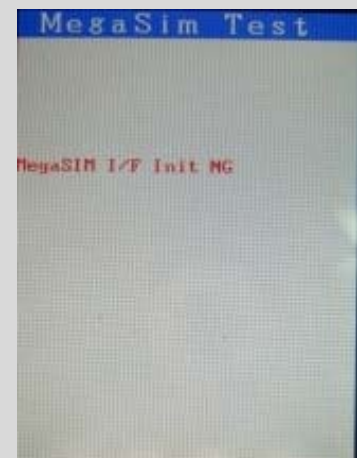
E. LED test screen.
LED RED/BT ON
LED GREEN/WiFi ON

Press<Act> to next

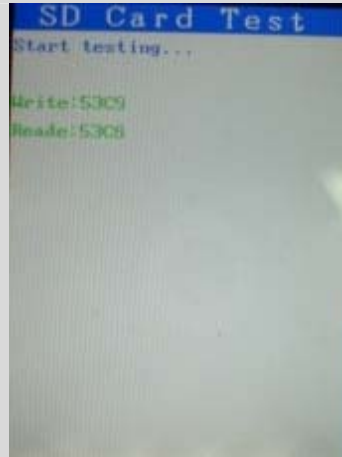


F. SIM test

G. MSIM test



H. SD Card Test

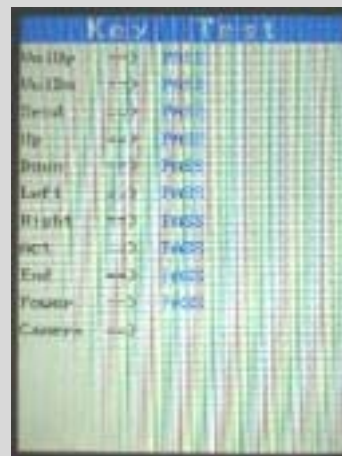



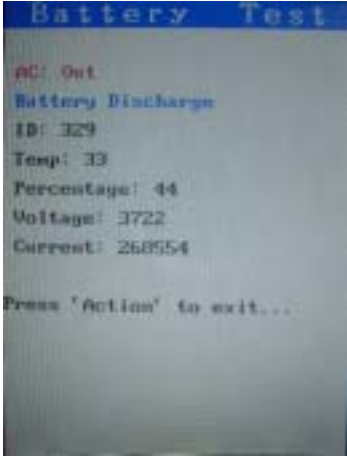

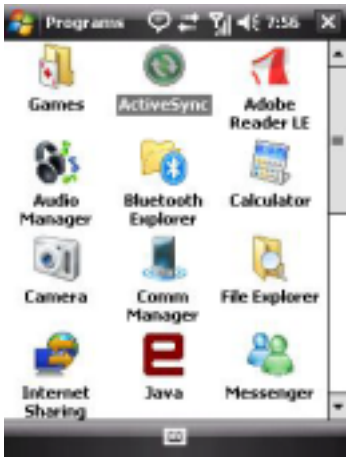

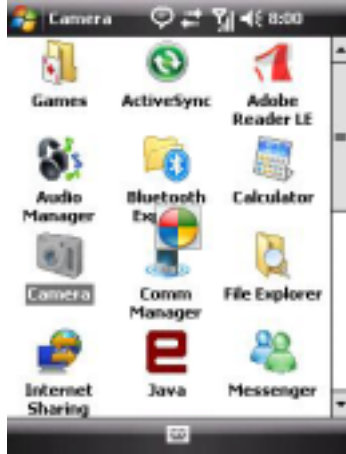
I. ROM check SUM


J. RAM







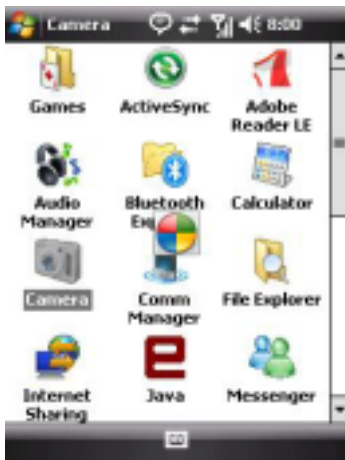

K. Button test screen.




<p>L. Timer check M. Battery information</p>	 
<p>N. Format storage test screen. O. USB link test screen (ActiveSync) - Start->Programs->ActiveSync.</p>	 
<p>P. Bluetooth test screen. - Start->Settings->Connections ->Bluetooth->Bluetooth->mode Q. Camera test screen. - Start->Programs->Camera.</p>	 



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WinCE Test


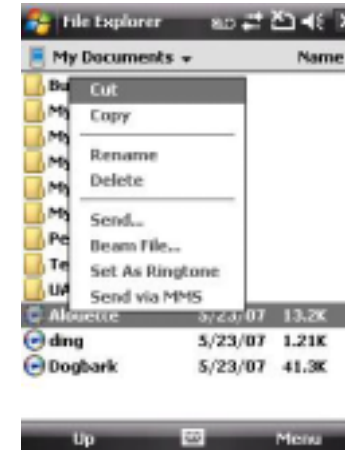
USB Test	
<ol style="list-style-type: none"> I. Start up the Microsoft® ActiveSync® program in the PC. II. Insert USB cable and connect unit to desktop/ or laptop. III. The USB to PC icon -> is appears on the Today screen when your device is connected to your desktop/ or laptop. 	 
Camera Test	
<ol style="list-style-type: none"> I. Tap <u>Start->Programs->Camera</u> 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. 	 


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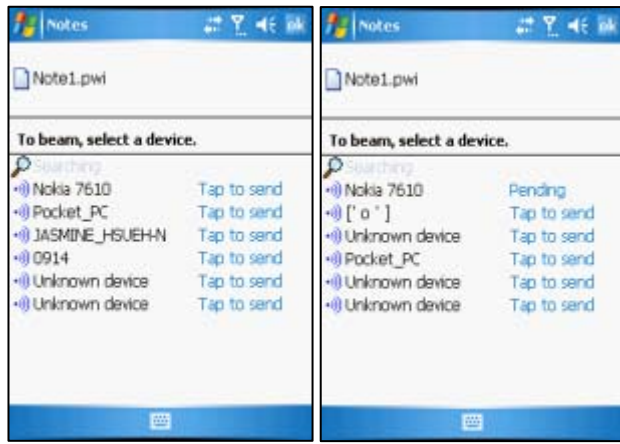
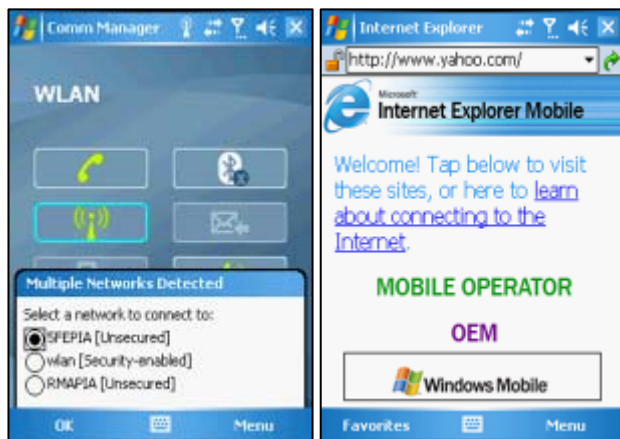
Bluetooth Test - 1


<ol style="list-style-type: none"> I. Tap icon <u>COMM Manager</u> 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

<ol style="list-style-type: none"> I. Tap <u>Start->Settings->Connections->Beam</u> and select “Receive all....” Checkbox. II. To create a file, tap <u>Start->Programs ->Notes->New.</u> III. Tap and select the “Beam file...” 	 
---	---

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Bluetooth Test - 3	
<p>IV. Once device is searched, tap the device to send the file.</p> <p>V. Return to Today screen and tap <u>Start->Program->COMM Manager</u> -><u>Bluetooth</u> to turn off Bluetooth.</p>	
WLAN Test	
<p>I. Tap icon <u>COMM Manager</u> on the Today screen and turn on WLAN.</p> <p>II. Select the hot-spot/ or access point which searchable and appears on screen.</p> <p>III. Once the hot-spot (access point) is connected, press the IE button and logon Internet.</p>	

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4.3 BATTERY RUNDOWN TEST PROCEDURE

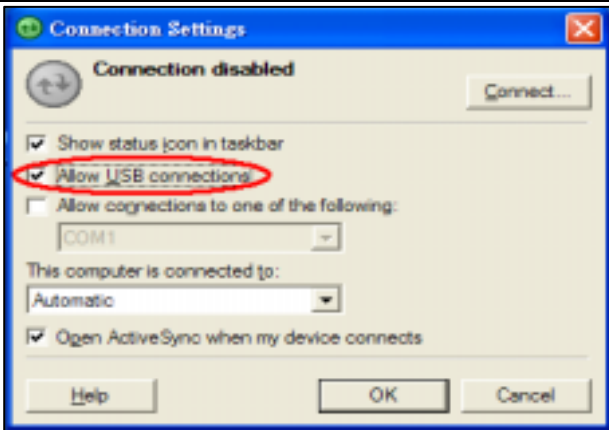
Test Requirement:

- Windows 2000/XP
- USB Cable
- ActiveSync 4.2 above (WinCE 6.0 should use ActiveSync 4.5)
- Master Unit
- Battery in Warrantee

Caution:

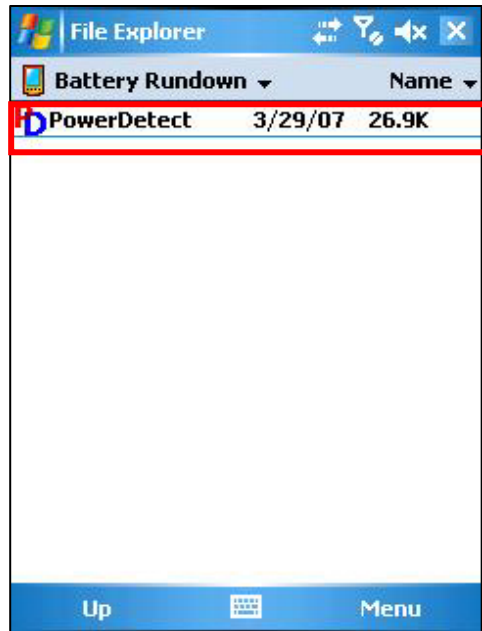
- 1、 Please charge your unit to full capacity for battery (until the green light is displayed) before doing the test.
- 2、 Disable all RF functions including GSM, BT, WLAN, GPS, and etc.

TEST PROCEDURE

Connect device to PC	
<ol style="list-style-type: none"> 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. 	

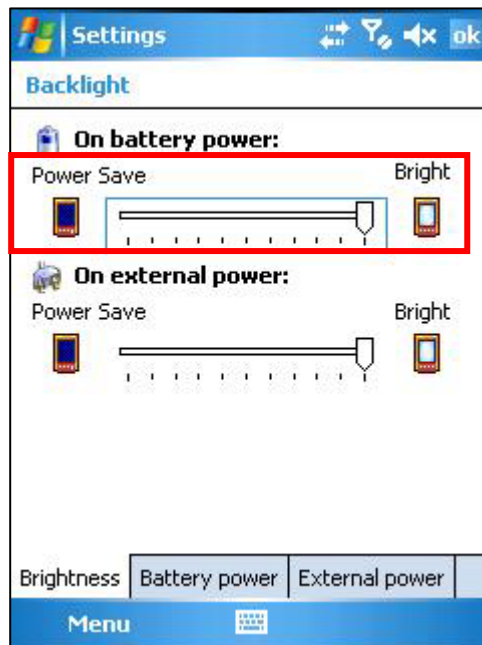
Copy the Battery Rundown tool into the device


- I. Make a folder in the device.
- II. Copy **PowerDetect.exe** into the folder.

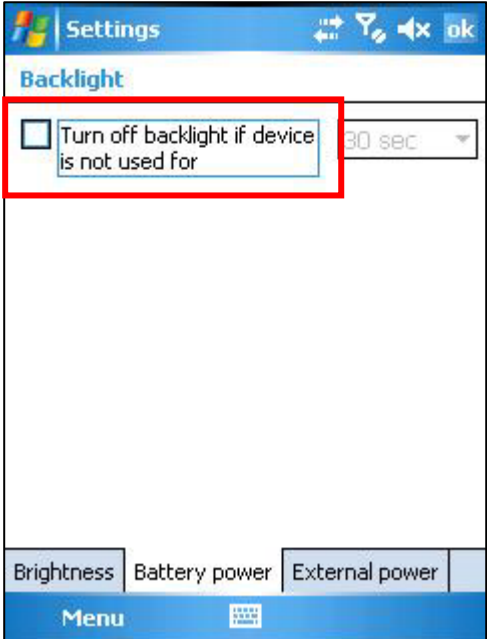
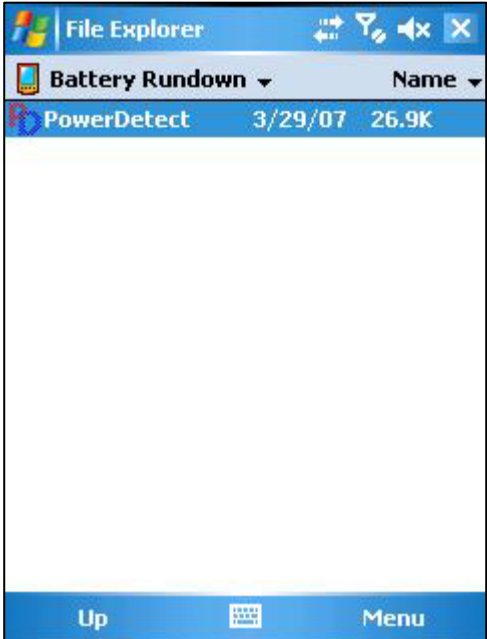


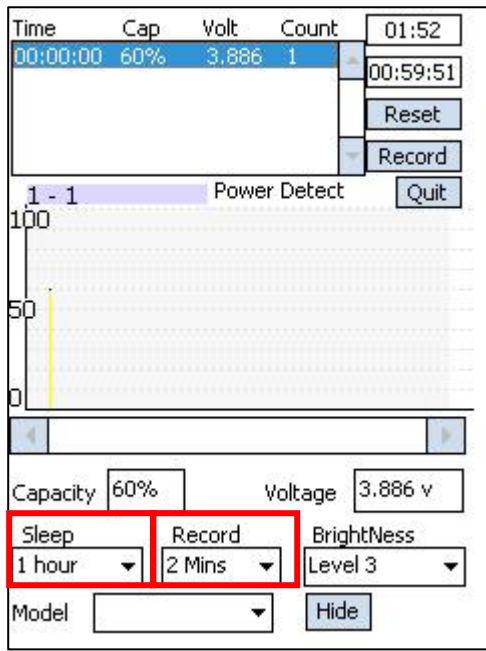
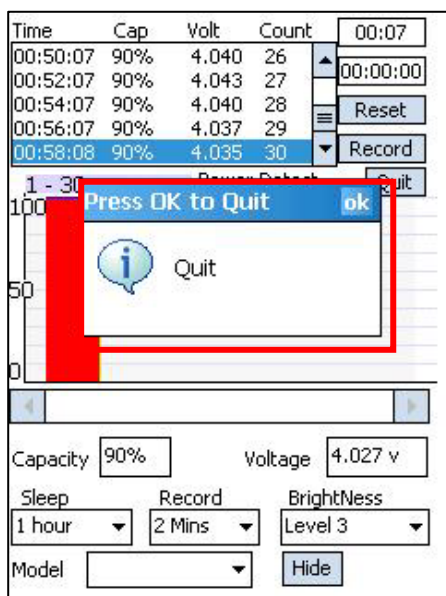
Battery Rundown-1

- I. Adjust the Backlight brightness into the maximum level on battery power.

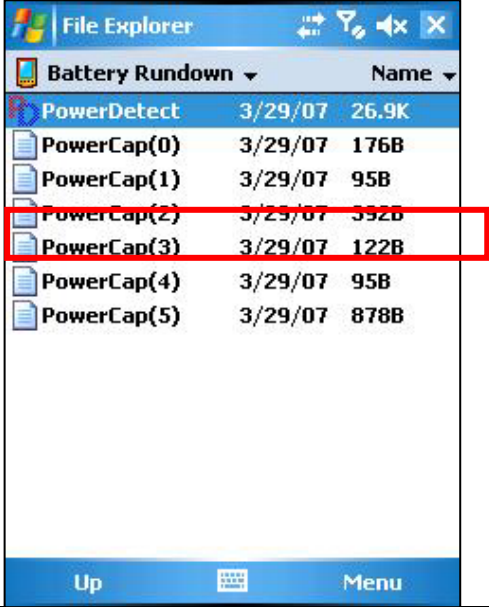


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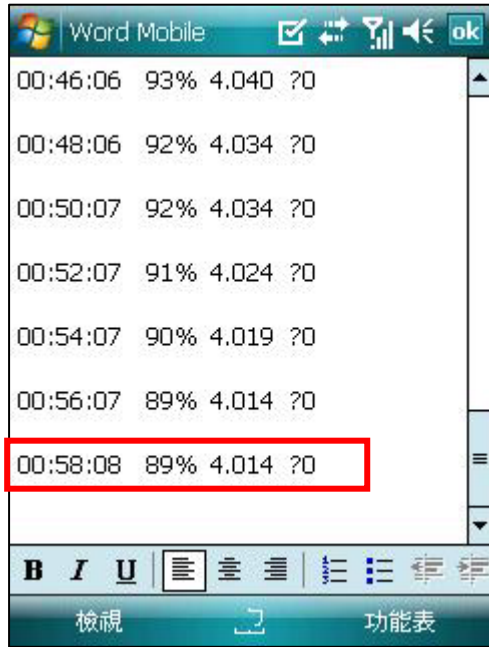
Battery Rundown-2	
<p>I. Disable Turn off backlight if device is not used for in Battery power.</p>	
Battery Rundown-3	
<p>I. Execute PowerDetect.exe under WinCE</p>	

Battery Rundown-4	
<ol style="list-style-type: none"> I. Set the Sleep as 1hour II. Set the Record as 2Mins 	
Battery Rundown-5	
<ol style="list-style-type: none"> 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

<p>I. Test result is generated into the log file as PowerCap(x).</p>	
---	---

Battery Rundown-7

<p>I. Tag the log file to check the capacity.</p>	
---	--

**Caution: If the capacity is under 70%,
Please replace a new battery.**

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CHAPTER 5 –SOFTWARE UPGRADE PROCEDURE

System Requirement:

- Windows 2000/XP
- USB Cable
- ActiveSync 4.5 above
- Master Unit
- 128 MB Micro SD card

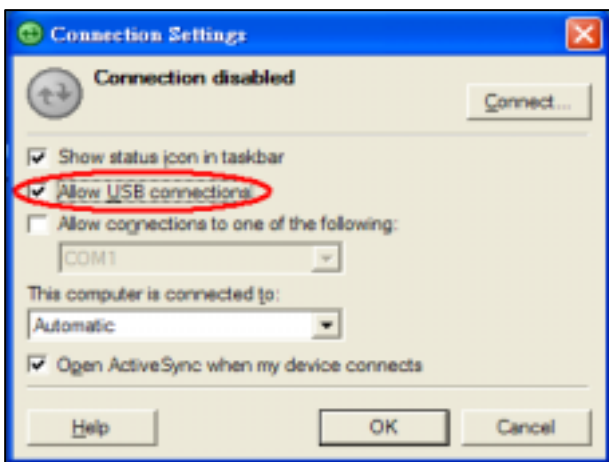
Caution: The unit must have at least 70% of battery capacity before starting the re-flash process. Charge the battery in advance if necessary.

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>

RUU (Re-flash Upgrade Utility)

Connect device to PC	
<p>IV. Make sure your device was “TURN ON” status.</p> <p>V. Setting and allow USB connections in Microsoft ActiveSync.</p> <p>VI. Connect your device and desktop/ or laptop via USB cable.</p> <p>VII. Check the pop-up message from Microsoft ActiveSync when device is synchronized with PC.</p>	
Download OS Image from SDO	

- III. Download OS image from SDO.
<http://htcscm10.htc.com.tw/SD>
- IV. Un-zip the file and execute RUU program.







- V. Follow instruction on your PC, complete check box and "NEXT"





- VI. On process will show your device current ROM version, choose "UPDATE"




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<p>VII. Confirm your ROM version and new update version, then choose "NEXT"</p>	
<p>VIII. Click "Next" to proceed.</p>	
<p>IX. You can see the update progress from your PC and in your device.</p>	


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RUU - 7	
<p>X. The OS upgrade is finished, click "Finish" to close the utility.</p>	

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5.2 SD card upgrade

Download OS Image from SDO	
<p>I. Download OS image from SDO. http://htcscm10.htc.com.tw/SDO</p> <p>II. Un-zip the image file.</p>	
Format SD card and copy image file to SD card	
<p>III. Select file system and format the SD card to FAT32 mode.</p> <p>IV. Copy the image file XXXX.nbh to Micro SD card and rename to ELF0IMG.NBH</p>	

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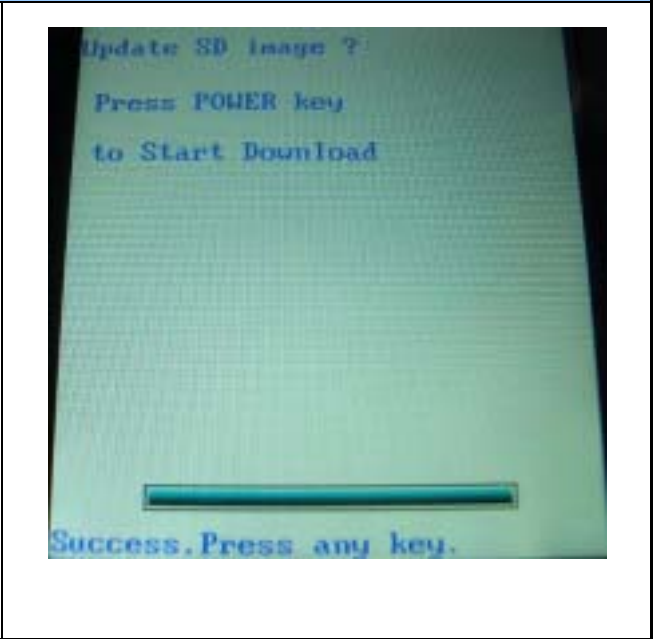
SD Upgrade - 1

- V. Turn the device power off and insert Diagnostic SD card.
- VI. Press and hold **camera key** then **press power key** to entry Boot loader mode.
- VII. Press **power key** to start upgrade procedure.




SD Upgrade - 2

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



Now the upgrade is done!

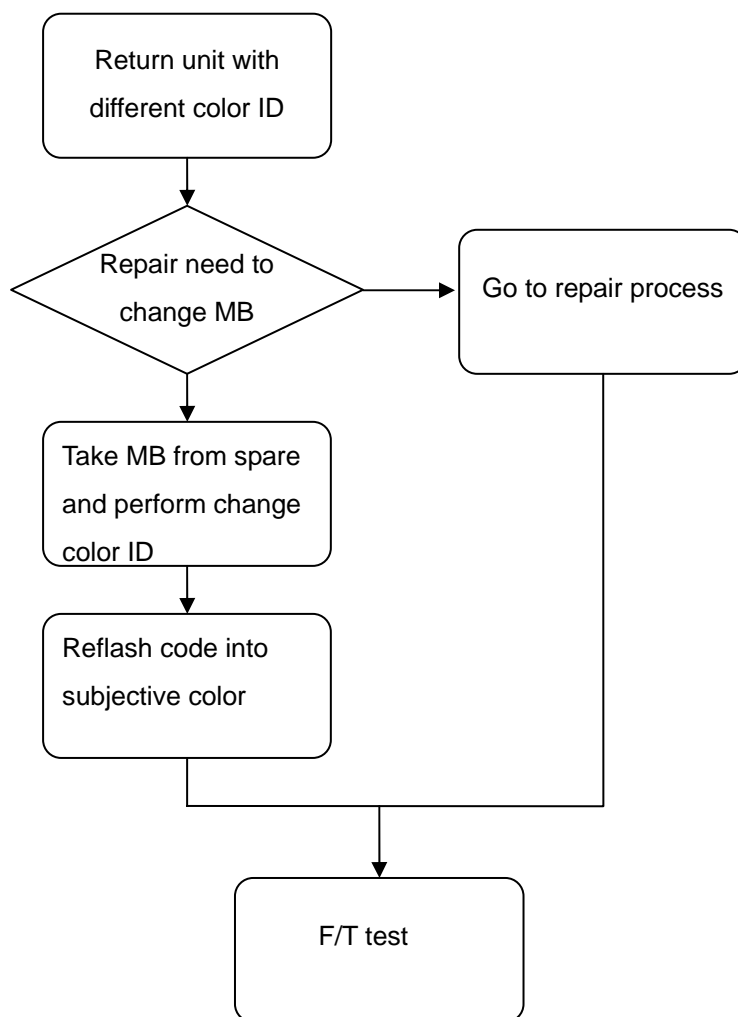
Note: Due to security issue, it is not allowed to re-flash different customer ID.


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5.3 Reflash tool for change color ID upgrade process

hTc ship more than two colors into market. Due to ROM code is also bundled with its color ID; update code will differ according to its color.

For service flexibility, hTc is only sending ONE COLOR ID main board to all service side, service side could use special diagnostic software tool to change its color ID to meet customer need.



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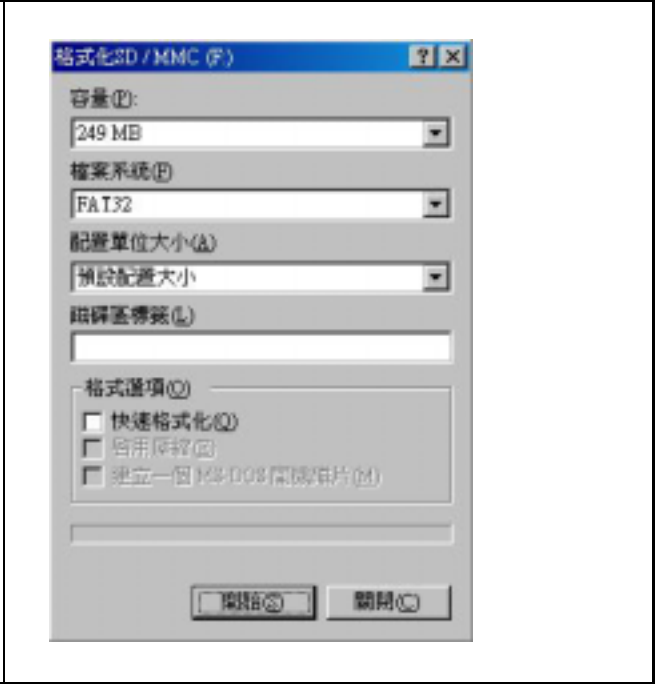
Download OS Image from SDO (Encrypted SD card from hTc)


1. Download OS image from SDO.
<http://htcscm10.htc.com.tw/SDO>
2. Un-zip the image file.



Format SD card and copy image file to SD card(Encrypted SD card from hTc)

3. Select file system and format the SD card to **FAT32** mode.
4. Copy the image file to Micro SD card and rename to **elf0diag**



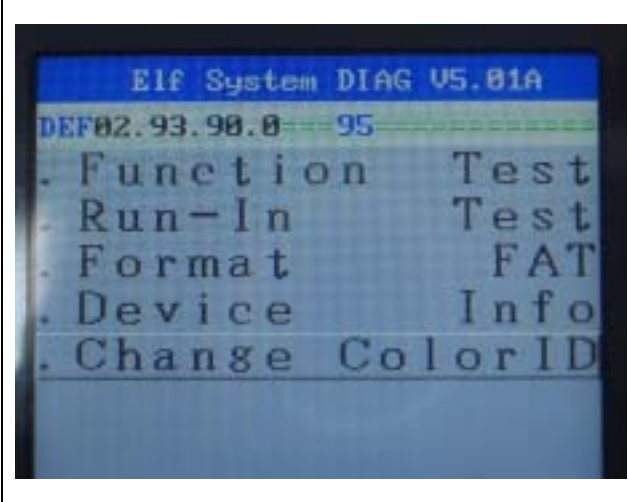
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Reflash tool for change color ID Upgrade - 1(Encrypted SD card from hTc)

5. Turn off the device and insert Diagnostic SD card.

6. Press and hold [camera key](#) then [press power key](#) to entry Boot loader mode.

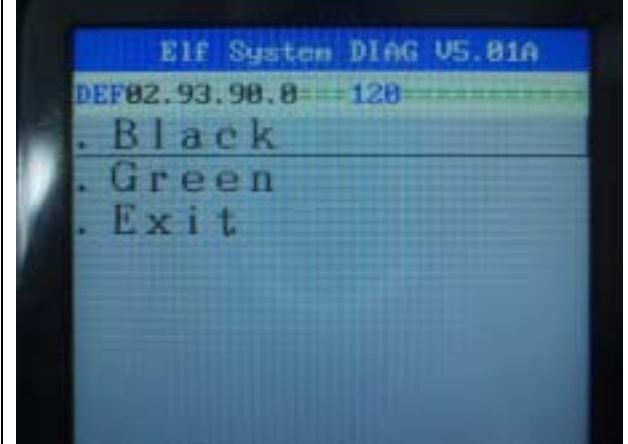
7. Chose [Change Color ID](#) to start Reflash tool for change color ID Upgrade procedure.




Reflash tool for change color ID Upgrade - 2(Encrypted SD card from hTc)

8. Chose which one color you want to change.

9. Following color ID and reflash the equally ROM code.



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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 :

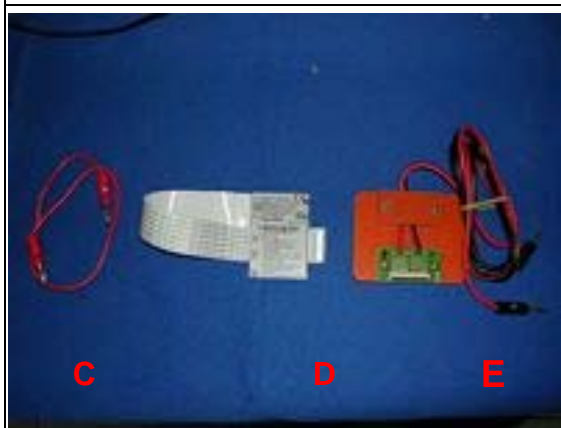
- Power Supply
- Micro-current Meter
- Current series JIG
- CABLE
- Battery JIG



1. Equipment need:

A. Power Supply (set at 4 V /1A).

B. Micro-Current Meter (support 0.5mA ~ 1A).

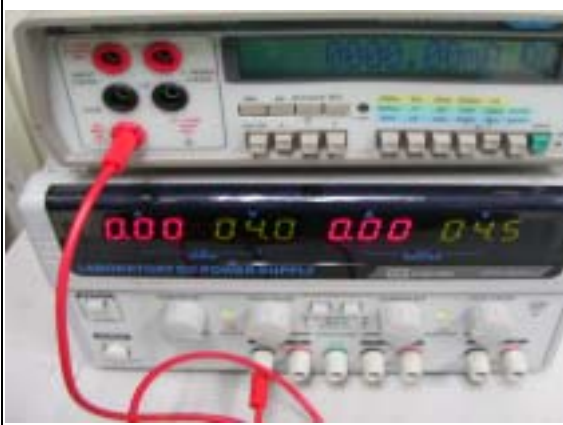


2. Fixture needed

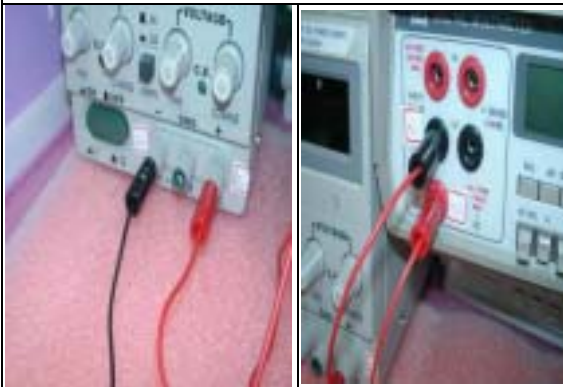
C. Cable

D. Battery with extension cable

E. Current series jig.(with black and red cable)

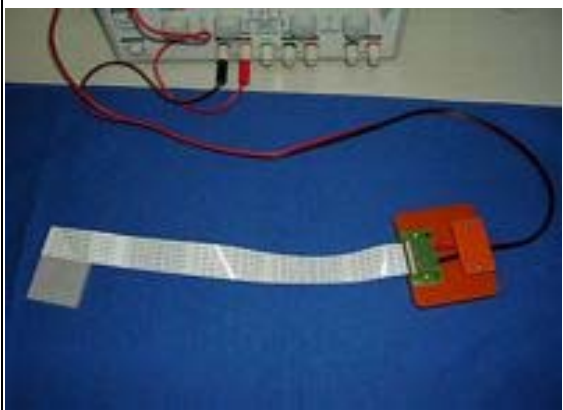


3. Connect cable (C) to positive polarity of power supply (A) and current meter (B)



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)



5. Setting is **Ready for testing**

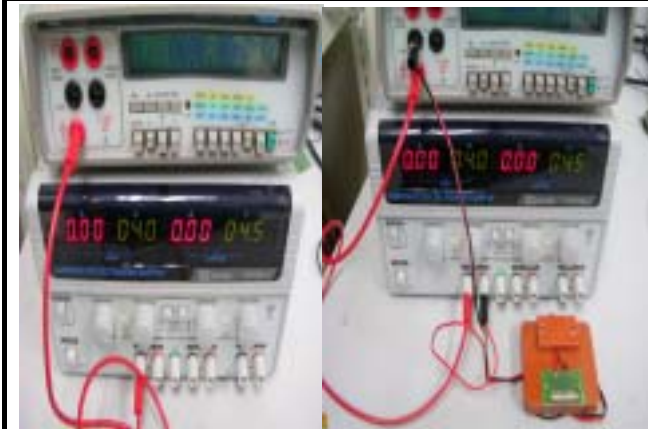
Assemble Battery into device.

(Don't turn the power on at this moment)

Assemble Battery into device.




3. Connect cable (C) to positive polarity of power supply (A) and current meter (B)

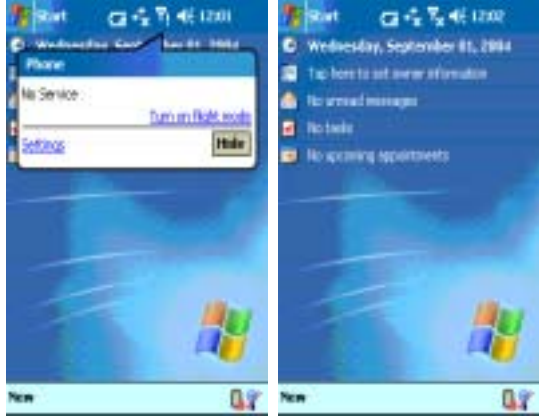





4. Connect cable of fixture(E) to negative polarity of power supply (A) and current meter (B)



5. Setting is **Ready now for testing**
(Don't turn the power on at this moment)

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	<p>6. Turn on power supply (4V) and current meter (2A)</p> <p>Set the unit to :</p> <ul style="list-style-type: none"> * Flight mode * Turn off Bluetooth
	<p>7. Measure flight mode current</p> <p>Choice Setting/System/Backlight/Brightness Adjust brightness level to power saves. Current value must under 108mA, if over, it means M/B failed, please replace M/B for repair.</p>
	<p>8. Switch OFF the unit. Unit is turn off and no display.</p> <p>9. Measure power off current Check current value on the current meter, Current value must less than 4.5mA, if over, it means M/B failed, please replace M/B for repair.</p>
<p>Conclusion</p>	
<p>I. If current consumption test PASS when UUT in Flight and Sleep mode, it means that the M/B works normal.</p> <p>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.</p>	

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CHAPTER 7 – COSMETIC INSPECTION CRITERIA

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

These cosmetic criteria should be applied in QC1, QC2, CDIT stations. Regarding functional inspection of CDIT, please refer to CDIT SIP.

7.1 Classes definition of inspective area


7.2.1 Class A area => The front side of main unit involve all buttons, Wheel, and LED lens except LCD.

7.2.2 Class C area => 4 sides and back views of main unit include side key *3, volume key, Camera and stylus.

7.2.3 Class D area => Socket of battery, inner side of battery cover, Antenna, Micro SD/SIM Connector and battery connector

*. Figure 1 : (Photo of inspection areas)




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7.2 Main unit inspection

7.3.1 System assembly inspection :

- ✧ **General inspective regulations and according SPEC refer to IS-3047 Generic Cosmetic Inspection Criteria.**
 - ✧ **In the event of any inconsistencies between this document of IS-4176 and the Relationship Agreement, the parties agree that this document of IS-4176 shall prevail.**
- Exposure of substratum is not acceptable for peeling. (Area 4 is included) If not exposure of substratum, please check by SPEC. of dot or scratch. (Area 4 is not included)
 - Logo may not have blurred or double print., the peeling on logo is not acceptable.
 - The character printing of main unit does not allow bad printing, scratch, dirty, lacquer peeling, dark/white dot on it) Camera lens dot, particle D 0.25mm ; burr 1.5mm , W 0.2mm ,

1. (Gap inspection)			
Description		Accept criteria	Level
1.	Status of main unit assembly.	Defective assembly and deformed shape neither were nor allowed.	Minor
2.	Gap between touch panel and bezel.	Gap between touch panel and bezel < 0.7 mm (Skip corner and Enter the material to click)	Minor
3.	Gap between upper / lower slid parts.	Gap between upper / lower slid parts < 1.0 mm	Minor
4.	Qwerty key Gap and around Gap	Between key Gap < 0.35 mm, Edge of key and C-part Gap < 0.4 mm	Minor
5.	Gap between navigation key and AP keys assembly.	(gap) < 0.35 mm Key stuck is not allowed.	Minor
6.	Gap around power button, record button, volume key, camera button	(gap) < 0.35 mm Key stuck are not allowed	Minor
7.	Stylus	Stylus assembly protruding, loose, missing, falling and deformed is not allowed.	Minor
8.	Gap between battery cover and main unit.	D,E parts(gap) < 0.50 mm	Minor


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9	Gap between other mating parts. Stylus near key (gap)	A,B part (gap) <0.3 mm, around stylus (gap) <0.65 mm C part (gap) <0.3 mm A,B parts (gap) <0.3 mm, Stylus near key (gap) :0.4mm Edge of C-part (gap) <0.3 mm B/C-part front and rear GAP Tolerance<0.1mm	Minor
10	 APP KEY around GAP	GAP 0.9mm(Key stuck are not allowed) & APP key height 0.9mm	Minor

2. (Step inspection)			
Description		Accept criteria	Level
1.	Step between upper / lower slid parts.	(Step) < 0.50 mm	Minor
2.	Others between upper / lower parts.	(Step) < 0.40 mm	Minor

Cosmetic inspection:

1. (Scratch)			
Description		Accept criteria	Level
Class 1/Class 2 /Class 3			
Class 2/ stylus		Exposure of substratum is not acceptable Scratch : L 7mm ,W 0.25mm ,N 3, S 10mm Bright mark area should be less than 1 mm x 10 mm	Minor
Class 4		Any damaged marks, shortage of plating and printing are not acceptable.	Minor
label		Wrong printing or illegible print is not allowed.	Minor

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2. (Contamination dot/Granule dot/Cave granule)

Description	Accept criteria	Level
Class 1/Class 2 /Class 3		
MS logo Spot	D 0.25mm,N 1	Minor

3. (Burr....etc.)

Description	Accept criteria	Level
Edge damage on all mating parts	$L \leq 3\text{mm}$, $W \leq 0.254\text{mm}$	Minor
2. Burr.	W: 0.25mm Max, sharp edge is not acceptable	Minor

4. (Imprint mark)

Description	Accept criteria	Level
Class 1/Class 2 /Class 3 Cosmetic inspection refer to IS-3047		

5. (Bright mark)

Description	Accept criteria	Level
Class 1/Class 2 /Class 3 Cosmetic inspection refer to IS-3047		


6. (Lint)

Description	Accept criteria	Level
Class 1/Class 2 /Class 3 Cosmetic inspection refer to IS-3047		

P.S. Definition of lint identification


This definition is not applicable to LCD



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Cosmetic of Camera

Symptom		Standard	Defect model
Glue	Inner glass	Accept	Minor
	Out side glass	Over to black area not accept	
Line, Lint	Inner glass	W 0.25 mm and L 3.0 mm , N 1 Should not affect to picture quality	Minor
	Out side glass	Over to black area not accept	
Spot	Inner glass	D 0.25, N 1	Minor

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7.4 Display inspection:

Inspection Defects		Accept Level	Level	
2.1 Electrical Characteristic Defects	1. Bright Dots	1 Single Red+ Green+ Blue 3 $S \geq 5\text{mm}$.	Minor	
		2 adjacent	0	Minor
		3 or more adjacent	0	Minor
	2. Dark Dots	1 Single Total Number 2 $S \geq 5\text{mm}$.	Minor	
		2 adjacent	0	Minor
	3. Dark or Bright lines	0	Minor	
	4. All Allowable Dots Defects	Total Number 3 $S \geq 5\text{mm}$.	Minor	
	5. Shift and tilt of screen viewed area	The black edge around display area. must be detected by front view.	Minor	
	2.2 Foreign Scratch, Objects or Lint On power off status	1. Scratch	$0.03 < W \leq 0.1$ (mm) $L \leq 5$ (mm) $N \leq 2$	Minor
		2. Lint (linear foreign objects)	$0.03 < W \leq 0.1$ (mm) $0.3 < L \leq 3.0$ (mm) $N \leq 5$	Minor
3. Spots		$0.1 < D \leq 0.3$ (mm) $N \leq 4$	Minor	
4. Fish eye on film		$0.1 < D \leq 0.4$ (mm) $N \leq 4$	Minor	
5. Breakage on film surface		Not acceptable	Minor	
6. Total acceptable defect quantity		10	Minor	

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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 replacements 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 Window Does Not Respond to Screen Tap

- (1) Check the perimeter of Display between Bezel and Touch Window Surface for unusual foreign objects. Clean it, reassemble the unit and check the Touch Window function again.
- (2) Check the connection of LCD/Touch Window FPC whether is properly connected.
- (3) Try with another LCD/Touch Window.
- (4) Try with another Rigid-Flex board.
- (5) Try with another Main Board.
- (6) Replace LCD/Touch Window if necessary
- (7) Replace Main Board if necessary.

2 - B . Buttons Do Not Respond

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- (1) 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 LCD FPC whether is properly connected.
- (2) Try with another LCD.
- (3) Try with another Rigid-Flex board
- (4) Try with another Main Board.
- (5) Replace LCD 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 LCD.
- (3) Try with another Rigid-Flex board
- (4) Try with another Main Board.
- (5) Replace LCD 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 - micro SD Card cannot be used

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- (1) Check whether SD is fully inserted to the slot until you hear a click.
- (2) Try with another micro 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 / WLAN) 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) Connect to the AC Adapter and see if it takes charge. Also check AC Adapter condition.
- (2) Check whether AC Adapter is functioning properly.
- (3) Check whether the condition of Battery Charging status is correct.
- (4) Dismantle the unit and check the appearance of Battery cover.

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- (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.

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 pack.
- (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.


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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

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CHAPTER 9 –GENERIC SPARE PART LIST


SPL for Repair


Item	HTC P/N	Description	Using Q'ty	Remark
1	35H00095-00M	BATTERY_LI-ION,1100mAh,3.7V,ICP553450AR,TWS,MAXELL cell,60/-20degC,51.3*36.85*5.6mm	1	
2	36H00539-00M	Antenna Pre-Assy,AMPHENOL,Elf 1 each 2(B)	1	
3	36H00560-00M	Speaker,MP-131805BA,KDIC 1 each 1(A)	1	
4	36H00570-00M	Receiver,DTR893-001-01,MERRY 1 each 2(B)	1	
5	36H00578-00M	Vibrator,A4A-05-WBS-3,C.I.KASEI,RPM 12500+/2500 1 each 1(A)	1	
6	52H10057-41M	Rigid-Flex Board Pre-Assy,keypad,GLOBAL FLEX,防靜電托盤,Elf 1 each 5(C)	1	
7	54H00240-00M	Camera Module,07PE01,LITEON,Samsung S5K3BAFB EVT2,GS-8415,20.6*10.2*7.45mm 1 each 1(A)	1	
8	60H00094-00M	TFT-LCD Module,LMS283GF01,SAMSUNG,71.7*52.9*1.9mm 1 each 1(A)	1	
9	71H01952-01M	Keypad,HTC,AP,Black,ELF-C9 1 each 1(A)	1	
10	72H00353-10M	Screw,M1.6 X 2.5,TORX,FD,Ni-plated,Nylok,Gene	2	TORX
11	72H01050-00M	Screw,HAMA NAKA SHOUKIN,RF board,Ni,TP-B,FPHM1.6x2.8,WIZARD	2	Phillips
12	72H02401-00M	Screw,Delta PT,T5,M1.5*6,ELFIN	4	TORX
13	74H00849-03M	Stylus Pre-Assy,HTC,Black,ELF-C9 1 each 1(A)	1	
14	74H00875-09M	Cover Pre-Assy,HTC,Battery,Black,HTC Touch,ELF-C9 1 each 1(XA)	1	
15	74H00876-00M	Support Pre-Assy,LCD,ELF	1	
16	74H00892-01M	Housing Pre-Assy,HTC,Black,ELF-C9 1 each 3(A)	1	
17	76H00965-00M	Tape,LCD connect,Kapton RC-502; 3M 467,Hurricane-Robbie	1	
18	76H01214-00M	Mylar,Battery Connector,Charmer 0.05 each 1(A)	1	
19	76H01810-00P	Rubber,Silicon,Mic,Elf	1	
20	76H01811-00M	ME Gasket,camera,ELF	1	
21	76H01861-00P	Mylar,PC,keyboard,ELF	1	
22	76H01915-00M	Mylar,FPC,LCM,Elf	1	
23	76H01918-00M	Rubber,SIM,ELF	1	
24	76H02031-00M	Sponge,Receiver,Elf 0.01 each 1(A)	1	
25	77H00203-00M	Water Sensitive Label,4*2.5mm,Ming Jye,BlueAngels	1	

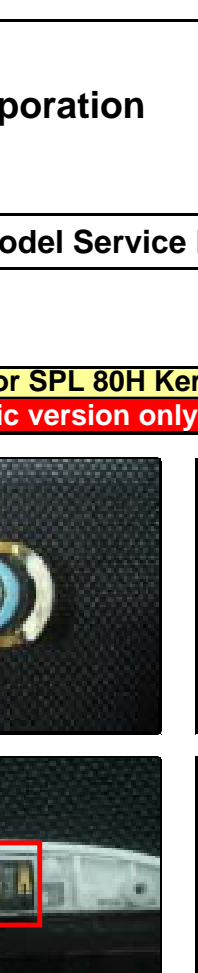
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SPL Photo

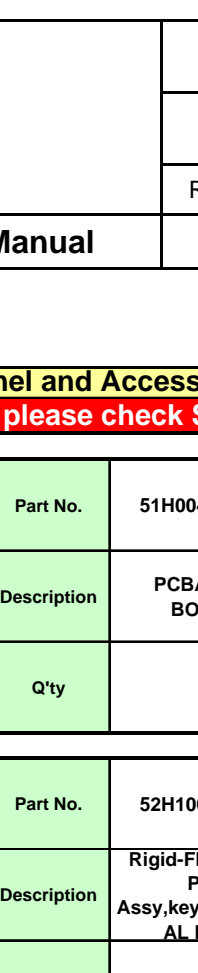
Picture for SPL 80H Kernel and Accessories
 (Part no on picture is for Generic version only, please check SPL for detail per customer)

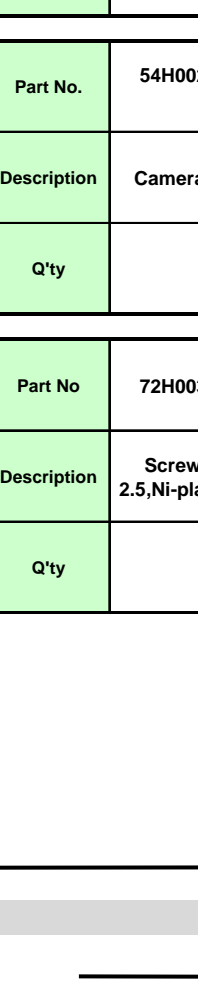
Part No.	36H00486-00M	
Description	Speaker	
Q'ty	1	

Part No.	51H00408-00M	
Description	PCBA-MAIN BOARD	
Q'ty	1	


Part No.	36H00570-00M	
Description	Receiver	
Q'ty	1	


Part No.	52H10057-41M	
Description	Rigid-Flex Board Pre- Assy,keypad,GLOB AL FLEX.	
Q'ty	1	


Part No.	36H00578-00M	
Description	Vibrator	
Q'ty	1	


Part No.	54H00240-00M	
Description	Camera Module	
Q'ty	1	

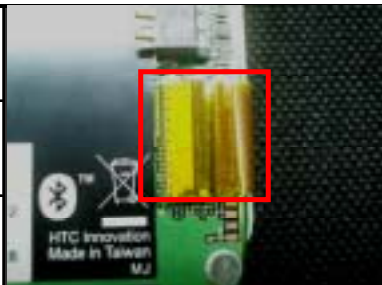
Part No	60H00094-00M	
Description	TFT-LCD Module, SAMSUNG	
Q'ty	1	

Part No	72H00353-10M	
Description	Screw,M1.6 X 2.5,Ni-plated,TORX	
Q'ty	2	


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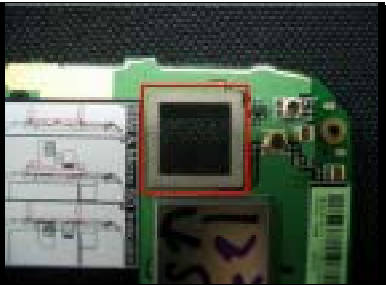
Part No	74H00876-00M	
Description	Support Pre-Assy, LCD, 1 each 1	
Q'ty	1	

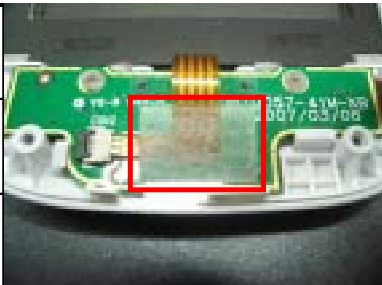
Part No	72H01050-00M	
Description	Screw, RF board, Ni, 1.6x2.8, Phillips	
Q'ty	2	


Part No	76H00965-00M	
Description	Tape, LCD connect, Hurricane-Robbie 1 each 18x13	
Q'ty	1	


Part No	72H02401-00M	
Description	Screw, T5, M1.5*6, TORX	
Q'ty	4	

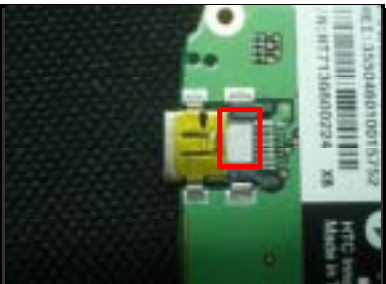
Part No	76H01810-00P	
Description	Rubber, MIC	
Q'ty	1	


Part No	76H01811-00M	
Description	ME Gasket, camera	
Q'ty	1	


Part No	76H01861-00P	
Description	Mylar, PC, keyboard	
Q'ty	1	


Part No	76H01915-00M	
Description	Mylar, FPC, LCM	
Q'ty	1	

Part No	76H01918-00M	
Description	SIM Rubber	
Q'ty	1	

Part No	77H00203-00M	
Description	Water Sensitive Label, 4*2.5mm	
Q'ty	1	

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Part No	D00052944	
Description	Stylus	
Q'ty	1	

Part No	35H00095-00M	
Description	BATTERY_LI-ION,1100mAh,3.7V	
Q'ty	1	

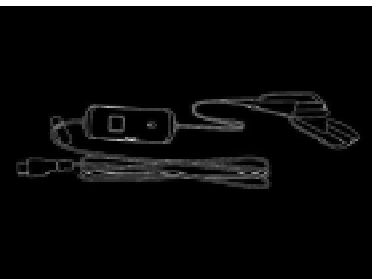
Part No	74H00875-00P	
Description	Battery cover	
Q'ty	1	


Part No	80H00567-XX	
Description	SUB ASSY, Bezel w/Touch window	
Q'ty	1	

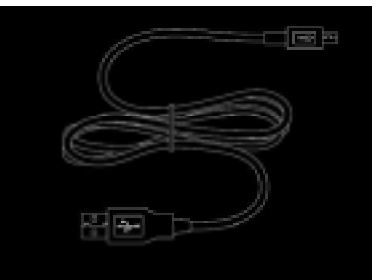
Part No	36H00539-00M	
Description	Antenna Pre-Assy, AMPHENOL	
Q'ty	1	


Part No	71H01952-00M	
Description	Keypad, AP	
Q'ty	1	


Part No	74H00892-00M	
Description	Housing Pre-Assy	
Q'ty	1	

Part No	36H00582-00M	
Description	Earphone, w/htc logo, black, ELF	
Q'ty	1	

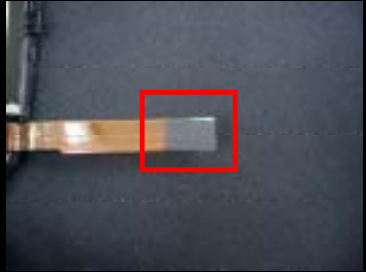
Part No	70H00133-00M	
Description	Pouch, w/ HTC logo, Elf	
Q'ty	1	

Part No	73H00131-04M	
Description	Cable, USB Cable with WEEE logo	
Q'ty	1	


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Part No	79H00055-02M	
Description	AC Adapter,1A,5V,66.5*28*72.7mm	
Q'ty	1	

Part No	76H02031-00M	
Description	Sponge,Receiver,Elf	
Q'ty	1	

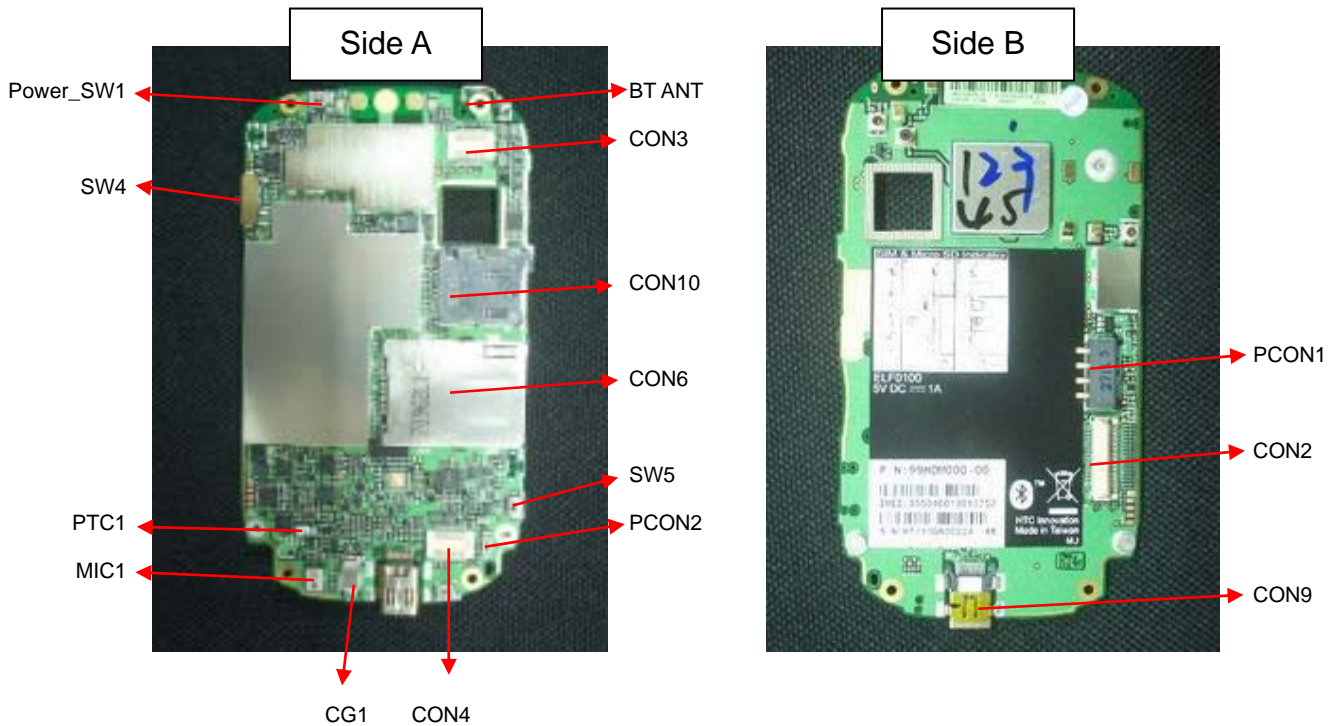
Part No	76H01979-00M	
Description	Mylar,PC,RIGID_FL EX,ELF	
Q'ty	1	


Part No	76H01803-00M	
Description	Sponge,TP,Elf	
Q'ty	1	

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Board Level

Part Number	Description	Q'ty	Location
1 16H00012-00M	Gold Cap,0.07F,70ohm,3.3V,-25/+50%,XH414H II02E,SEIKO,7.6*4.8*1.72mm,,70/-25degC	1	CG1 (Gold Cap)
2 36H00058-00M	Fuse,1A,6V,0.055ohm ~ 0.21ohm,SMD1206P100TF,PTC,POLYTORNICS,3.5*1.8*1.25mm,85/-40degC	1	PTC1 (Fuse)
3 36H00160-00M	Slide_Switch,HSS112,HCH	1	SW4 (Volume key)
4 36H00230-00M	SWITCH,SOH-213HST,MITSUMI,70/-20degC	3	SW2,SW5,POWER_SW1, (Power SW)
5 36H00440-00M	Microphone,SPM0208HE5-SB,KNOWLES,100/-40degC,4.72*3.76*1.25mm	1	MIC1 (MIC)
6 36H00569-00M	Antenna,RH-HT-PR-PS-Q0060,RAY HOME	1	BT_ANT1 (Bluetooth ANT)
7 75H00248-00M	COAXIAL CONNECTOR,RF,WITH SWITCH,SMD,MM8430-2600RA1,MURATA	2	WBCON_SW1 WCON_SW1(COAXIAL CONNECTOR,RF)
8 75H00467-12M	Connector SD Card,10Pin,1.1Pitch,100053FB010S406ZL,SUYIN,100mohm,0.5A,5V	1	CON10 (microSD card)
9 75H00494-00M	Connector B to B,22P,0.5PITCH,AXK5F22347Y,MATSUSHITA	2	CON3 CON4(Camera connector)
10 75H00502-00M	Connector FPC,39P,0.3Pitch,0.2A,50V,50mohm,SD-54393-3981,MOLEX	1	CON2 (FPC connector)
11 75H00514-00P	Connector RF,Female,4P,MS-162,HIROSE,3.5*3.1*2.5mm	1	WECON1 (RF connector)
12 75H00566-00M	Connector B to C,2P,1Pitch,1A,30V,KYOCERA,248000002000829+,Herald	1	PCON2(VIB connector)
13 75H00706-00M	Connector SIM Card,9P,1.27Pitch,SPPN08-D0-1000,PROCONN	1	CON6 (SIM card)
14 75H00710-00M	Connector Others,1000mohm,4P,2.5Pitch,2A,12V,250037MB004G516ZL,SUYIN	1	PCON1 (BATT connector)
15 75H00707-00M	Connector I/O,11P,0.45Pitch,302-11101-10,ACT 1 each 1(XA)	1	CON9 (USB connector)



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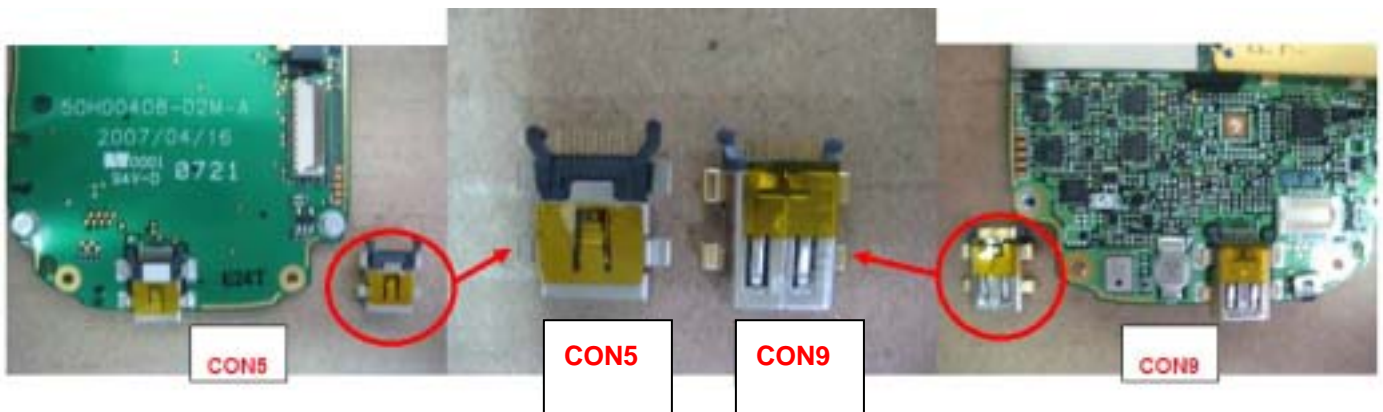
Repair notice of the USB connector


1. When replacing the USB connector, please remove the defective component first, then solder on new component ([75H00707-00M](#) CON 9). The solder **MUST ONLY** be applied on SideA (Please refer to image below).

2. When replacing the USB connector, please remove the defective component first, then solder on new component ([75H00708-00M](#) CON 5). The solder **MUST ONLY** be applied on SideB (Please refer to image below).

[75H00707-00M](#) Connector I/O,11P,0.45Pitch,302-11101-10,ACT 1 each 1(A) [CON9](#)

[75H00708-00M](#) Connector I/O,11P,0.45Pitch,MJE20-11K7P20,ACON 1 each 2(B) [CON5](#)



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APPENDIX


A Generic Labeling Plan

1. Agency label

- 1.1 Agency label
- 1.2 Unit label location explanation
- 1.3 Screen Protector

2. Battery label

battery label-TWS_WW version

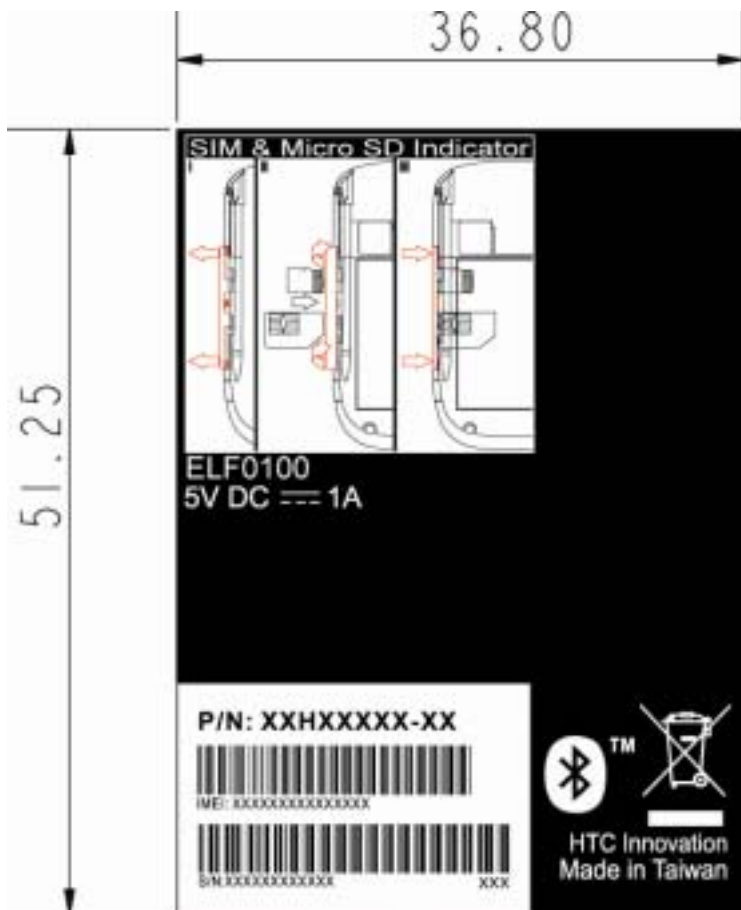
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1. Agency label

1.1 Agency label

HTC P/N: 77H00495-00M

Size: 36.8 X 51.25mm



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1.2 Unit label location explanation

Water sensitive label

HTC P/N: 77HXXXXX-00M


Qty: 1

Tamper evident label

HTC P/N: 77HXXXXX-00M

Qty: 1




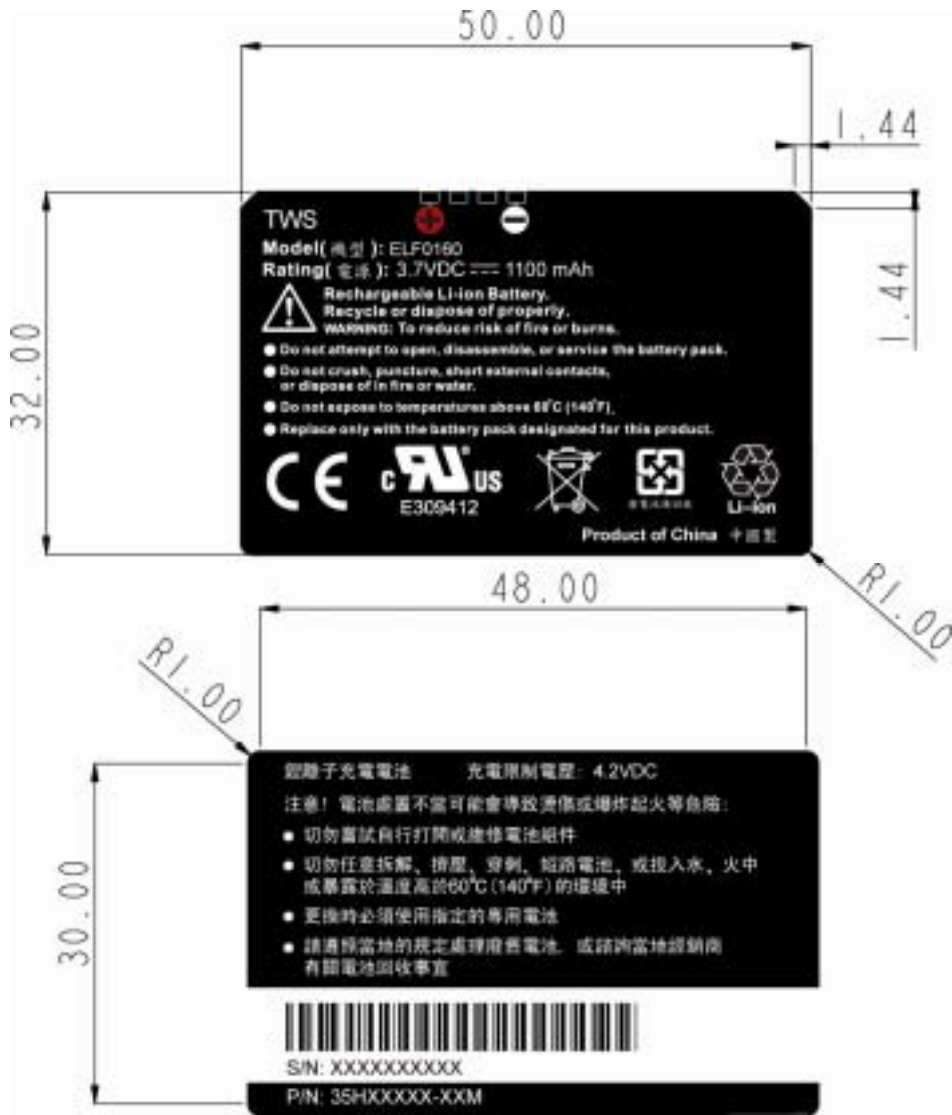
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2. Battery label

2.1 battery label-TWS_WW version


HTC P/N: 35H00095-00M

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B. RF Antenna Test Specification

Antenna level testing is by air coupling within a shielding box. Regarding the setup configuration, please refer to RF Hardware Specification.

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Items	Test Name	TxLevel	TCH	Ist Downlink CellPower	Note
1	Camp @ DCS Band	0	512	-75	BCCH=600
2	BS Originate Call	0	512	-75	
E-GSM 900 ReceiverTest					
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 Ttansmitter 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 ReceiverTest					
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 Ttansmitter 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	

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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 ReceiverTest					
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	661	-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	