



HTC Corporation

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Service Manual



HTC Proprietary

Confidential Treatment Requested

Rev. A03

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HTC Corporation
Engineering Mobility

Revision Control Table

Rev	Date	Contents	Dept	Revised	Stage
AX01	2008/3/26	Modified Athena service manual to Athena 1.5.	PSE	Aken_Kan	DVT
AX02	2008/4/21	AX02 version Modified SPL, L2.5 and Labeling plan.	PSE	Aken_Kan	PVT
A01	2008/4/28	1. Modified device assembling and disassembling procedure. 2. Modified diagnostics test procedure.	PSE	Aken_Kan	MV
A02	2008/6/12	Add 6.4 Build up map files thru MiniSD card from page 79.	PSE	Aken_Kan	MV
A03	2008/8/28	1. Remove VueFLO from product feature. 2. Modify some pictures.	PSE	Aken_Kan	MV



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1. INTRODUCTION

- ◆ This manual provides the technical information to support the service activities of Athena 1.5.
- ◆ This document contains highly confidential information, so any or all of this document should not be revealed to any third party.

1.1 Product Features

Platform

- Mobile Power Pad with detachable & thin QWERTY keyboard
- Microsoft Windows Mobile Pocket PC Phone Edition

Dimension

- 133.5 x 98 x 16 mm (additional 4mm for KB)
- Less than 359g with battery and KB

Processor/Chipset

- Qualcomm MSM 6275
- Intel Bulverde 624 MHz
- ATi Graphic Chip 2284

Memory

- ROM: 256 MB
- RAM: 128 MB SDRAM
- Flash Disk: 16 GB

LCD Module

- 5" 480x640 VGA resolution
- 65K-color TFT LCD with LED backlight
- Sensitive Touch Screen

UMTS/HSDPA/GSM/EDGE Function

- Internal antenna
- HSDPA/UMTS Tri-mode (2100MHz for Europe and 850/1900MHz for USA) and GSM/GPRS/EDGE quad band (850/900/1800/1900)
- HSDPA/UMTS
 - 850: 824-849, 869-894MHz
 - 1900: 1850-1910MHz, 1930-1990MHz
 - 2100: 1920-1980MHz, 2110-2170MHz



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- GSM / GPRS/EDGE
 - 850: 824-849, 869-894MHz
 - 900: 880-915, 925-960MHz
 - 1800: 1710-1785, 1805-1880MHz
 - 1900: 1850-1910, 1930-1990MHz
- HSDPA / UMTS
 - UMTS: 3GPP Release 99 compliant
 - HSDPA: 3GPP Release 5 compliant
 - UE category 12, QPSK, 1.8Mbps peak rate
 - DL up to 1.8Mbps and UL up to 384Kbps
 - PS RAB on HSDPA channel and CS data call (VT call) simultaneously will be supported
- Global roaming
- Auto band switching
- Handover and cell selection between GSM/EDGE and UMTS
- 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
 - Phase 2 Unstructured Supplementary Service Data
 - Audio Codec: AMR/EFR/FR/HR
 - Network Lock
 - CPHS (Partial Compliance)
- E-GPRS Function
 - EGPRS class B
 - Multi-slot standard class 10
 - MO/MT SMS over GPRS
 - PBCCH



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- USIM/SIM
 - 1.8 / 3V of UICC
 - Mega SIM
 - USIM Application at least according to 3GPP TS 31.102
 - SIM Application Tool Kit release 96, 98 class 3 and 99 partial
 - Over the Air (OTA) programming
 - Abbreviation Dial Number (ADN)
 - Security Pin 1 & 2 control

Standalone GPS

- Internal GPS antenna for UMTS & EDGE
- Support NMEA 0183 version 3.0 or above
- 20 parallel channel GPS receiver
- Acquisition time
 - Hot start: 8 seconds, typical TTFF
 - Warm start: 35 seconds, typical TTFF
 - Cold start: 45 seconds, typical TTFF
- Update rate: user configurable once/1sec, once/10sec and once/30sec continuous
- GPS Accuracy
 - Position: < 15 meters, 95% typical
 - Velocity: 0.05 meter/sec steady state

Digital Camera

- Main Camera: 3 Mega pixel with Auto Focus
- 2nd camera: Color CMOS VGA camera
- High Power LED for camera flash

Keyboard/Button/Switch

- POWER button (Side)
 - Short Press: Power On/Off
 - Long Press: Turn off system power totally
- Camera capture button (Side)
- Two step camera button for 3M pixel AF
- Volume Up / Down control (Side)
- Home Key / Portal key (Front)
- Built-in 57 keys QWERTY Keyboard (including two soft keys, one start button, one OK button, one send call key, one end call key, and alphanumeric and symbol keys)



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- RESET switch (Back)

Notification

- 1st lens - one-color (amber) LED for new message and notification
- 2nd lens - bi-color (green and blue) LED for WiFi and bluetooth notification
- 3rd lens –bi-color (green and red) LED for 3G & 2G network status & GPS indicator
- 4th lens – bi-color (green and red) LED for charging status & low power indicator
- Notification by Sound, and Message on the display

Audio

- Built-in Microphone
- Dual speakers with 3D surround sound
- Loud speaker for Hands-Free supported
- Audio sampling rate
- 16-bits with 8KHz, 11KHz, 22KHz, 44.1KHz
- AMR/AAC/WAV/WMA/MP3 codec

Connectivity & Interface

- Bluetooth
- Compliant with v2.0 without EDR
- Class 2 transmit power
- Supported profiles:
 - GAP (generic access profile)
 - SPP (serial port profile)
 - OPP (object push profile)
 - DUN (dial-up networking profile)
 - GOEP (generic object exchange profile)
 - ActiveSync (legacy application via SPP)
 - HSP (headset profile)
 - HFP (handsfree profile)
 - A2DP (Advanced Audio Distribution profile)
 - AVRCP (Audio/Video Remote control Profile)
 - Service Discovery Application Profile
 - SIM Access Profile
 - HID (Human interface device profile)
 - FTP
- Co-exist with WiFi



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- WiFi (manufacture option)
- IEEE 802.11b/g compliant
- Internal WLAN antenna
- Data rate auto fallback for extended range
- ELP mode
- Security 802.11i and AES
 - WPA authentication – WEP, WPA, PSK, EAPTLS, 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
- HTC ExtUSB (11-pin mini-USB / audio jack in one)
- USB 2.0 client
- USB charging
- miniSD card slot with hotswap feature
- External Antenna (UMTS/GSM/CDMA) Connector
- External GPS Antenna Connector
- 1.8 / 3 V USIM/SIM card slot
- HTC Proprietary 16 Pin Port
- USB 1.1 host (Support USB low power)
 - Thumb Memory
 - Card Reader
 - Keyboard
 - Mouse
- VGA Out – VGA
- TV Out – Composite & S-Video (4 pin)
- 3.5 Ø stereo audio jack with mic

Power

- Battery
 - Removable and chargeable Lithium ion polymer battery, 2100mAh
 - Charging time: less than 4 hours
 - RTC: 5 min (min.) supported by golden capacitor
- Battery life



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- Playing WMV: 8 hours
- Playing WMA: 12 hours
- Talk time: 330~360 minutes for GSM
- Talk time: 180~300 minutes for UMTS
- Video Talk time: >120 min
- Standby time: 300+ hours for GSM
- Standby time: 300 hours for UMTS
- Talk time with GPS tracking mode (Backlight is in Max. level): 2.6 hour with 10dBm transmit power at WCDMA band
 - WLAN time: 2.8 hours (Backlight level is 3)
- AC adaptor
 - AC input: 100~240Vac, 50/60Hz
 - AC input current: 0.2Aac (max)
 - Output voltage: 5Vdc (typical)
 - Output current: 1A (typical)

Stylus

- Lock Type in the main unit

Accessories

- Travel Charger w/ mini-USB power plug
- Attachable Keyboard and Screen Cover Carrying Case
- Mini USB Cable (mini-USB/USB)
- Battery (rechargeable and replaceable)
- Stereo wired headset with microphone (button for voice command) for 3.5 Ø
- User manual, Quick start guide, & Sync. software CD
- HTC Proprietary 16 pin cable (one to many ports) [optional]
 - USB Standard A female port
 - VGA (15pin) port
 - Composite Video Out
 - S-Video (4 pin) Out
- Cradle [optional]
 - VGA (15pin) port
 - Video Out port
 - Cradle [optional]
 - S-Video (4 pin) port



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- 3.5 Ø Audio jack (for External Speakers & Headset)
- One miniUSB port for power charging
- One miniUSB port for synchronization
- 2 x USB Standard A female port (USB Host)
- 2nd Battery charging slot
- 3 LEDs Indicators – 2nd Battery, Power & Sync
- Mono Bluetooth headset with microphone [optional]
- Stereo bluetooth headset with microphone [optional]
- Car Charger [optional]
- Car Holder [optional]
- Car Kit with car stereo mute function [optional]
- TTY adaptor for USA market [optional]
- External GPS antenna Cable [optional]
- Keyboard (KB connector) [optional]
- 16pin to D-Sub/VGA cable [optional]
- Bluetooth Keyboard [optional]
- Traveling bag [optional]
- Travel charger holder
- Device with pouch holder
- Bluetooth headset holder
- Sync cable holder
- 4 port video cable holder
- Business card holder
- SD card holder
- Stylus
- Pen

Microsoft Windows Mobile 6.1 Professional Applications

- Microsoft Outlook Mobile
- Calendar, Contacts, Messaging (SMS/E-mail),Tasks, & Voice Notes, Email Set Up Wizard
- Push Mail
- Microsoft Internet Explorer Mobile
- Microsoft Media Player Mobile
- Microsoft ActiveSync
- Microsoft Windows Mobile Update



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- 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
- Windows Smart Dialing
- Microsoft Remote Desktop Mobile [optional]

Value Added Applications

- Camera / Camcorder
- Camera Mode
 - Encoding format: JPEG
 - Resolution: QXGA 2048x1536, UXGA 1600x1200, SXGA 1280x960, VGA 640x480, QVGA 320x240, QQVGA 160x120
 - Night Mode
 - Digital Zooming: max. 8X
- Camcorder Mode
 - 15 fps encoding for CIF resolution
 - Encoding format
 - H.263 + AMR-NB/WB
 - MPEG4 + AMR-NB/WB
- Ringtone
 - MIDI
 - 40 polyphonic & Standard MIDI format 0 and 1 (SMF) / SP MIDI



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- MP3, AAC, AAC+, WMA, WAV and AMR-NB/WB
- DirectShow Filters for WMP - Audio
 - Audio Playback format: AAC, AAC+, MP3, WMA, WAV, AMR-NB/WB
- DirectShow Filters for WMP - Video
 - Video Playback format: H.263, MPEG4, & WMV
 - 5~8 fps @ VGA decoding for H.263 & MPEG4
 - Min. 30 fps @ QVGA decoding for H.263 & MPEG4
 - Combined Bit Rate: 64Kbps (playback)
 - Video scaling up to full VGA display
- Picture Enhancement for Pictures & Videos
 - Graphics: JPEG, GIF87a, GIF89a, PNG, WBMP
 - Video Thumbnail Preview: H.263, MPEG4, & Motion JPEG (AVI)
- 3G-324M Video Telephony
- ZIP
- Smart Dialing
 - Support of QWERTY Keyboard Input
- Sub-display UI when keyboard is attached to LCD
- VGA / TV Out Setting
- MMS Client
 - Partial Compliant to MMS 1.2
- Java virtual machine
 - JSR 75 File Access
 - JSR 118 MIDP 2.0
 - JSR 135 Mobile Media API 1.1
 - JSR 139 CLDC 1.1
 - JSR 185 JTWI 1.0
- Voice Dial & Command
 - Speaker Dependent or Independent
 - Support on both wired and bluetooth headset
- Document Viewer - PDF
- 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 : Microsoft DRM & OMA DRM



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- SIM Manager
- Comm. Manager
- STK
- TTY for US Market
- GPS Navigation SW
- Quick GPS
- Backup Tool
- Symbol Pad
- Voice Recorder
- Task Manager
- Audio Manager
- Opera Browser
 - Support HTC VueFLO
- HTC Home (5 tabs)
 - HTC Touch without Cube
 - Random Access
 - Auto screen rotation
 - Photo album
 - YouTube client
 - Google Map

Customer Specific Applications

- Streaming Media Player
 - 3GPP (T-Mobile, CHT, Vodafone)
 - Combined Bit Rate: 384Kbps (streaming)
- Streaming Media Player
- Push E-mail
 - RIM Blackberry Push E-mail Client
 - Visto (Vodafone)
 - SEVEN (Cingular)
- Antivirus (TMO)
- Document Printing (TMO/HTC)
- PowerPoint Editor (HTC)
- RSS Reader & Podcast (HTC)
- TMO HomeZone (TMO)



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- GPRS Monitor
- VoIP SDK

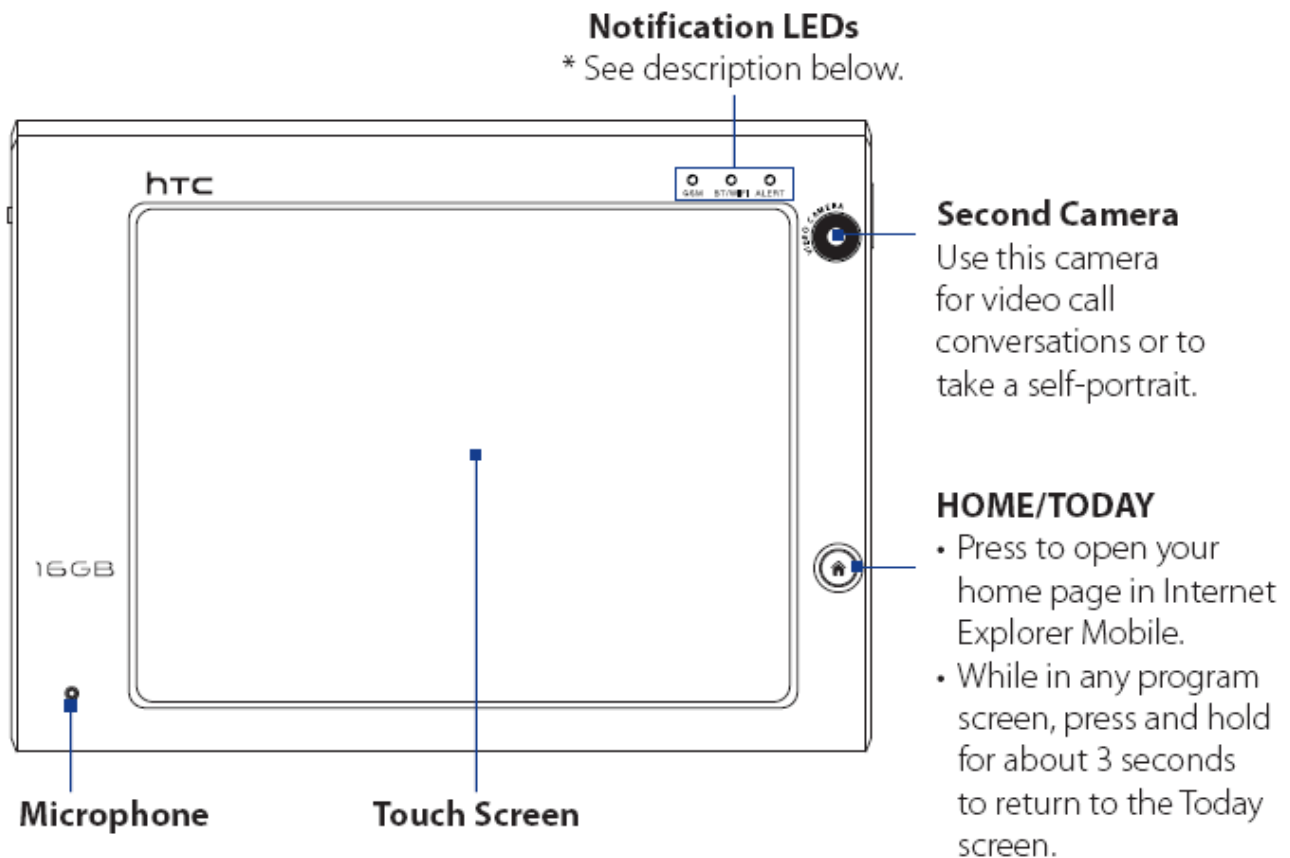
Regulatory

- GCF certification [Operator dependent]
- R&TTE: EMC / EMI, Safety SAR
- WiFi Certification
- FCC [Operator dependent]
- PDCRB [Operator dependent]
- BQB (Bluetooth Qualification Body) certification
- Windows Mobile Logo (NTSL)
- USB certification

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1.2 Product overview

Front panel



* Notification LED 1 (GSM): Shows green and amber lights for HSDPA/WCDMA/EDGE/GSM/GPRS standby, and network status as well as the battery charging status. Flashes red when the battery level reaches 5% or below. Shows amber light for GPS status.

Notification LED 2 (BT/WIFI): Shows a flashing blue light for Bluetooth system notification of powered-up and ready to transmit Bluetooth signal, or a flashing green light for Wi-Fi status. When both Bluetooth and Wi-Fi are enabled, their lights flash alternately.

Notification LED 3 (ALERT): Shows a flashing amber light when you receive a new message or for other notifications.

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Left panel

VOLUME CONTROL

During a call or when playing music, slide up or down to adjust the volume.

VGA/TV-Out and USB Host Port

Connect the supplied multifunction cable on this port to output the device screen to an external display or to connect USB peripherals.

DC IN/SYNC Port

Connect the supplied USB cable to synchronize information or plug in the AC adapter to recharge the battery.

Earphone/Microphone Jack

Connect the supplied stereo headset to this port. You can also connect stereo speakers or a microphone with a 3.5 mm plug to this port.

Right panel

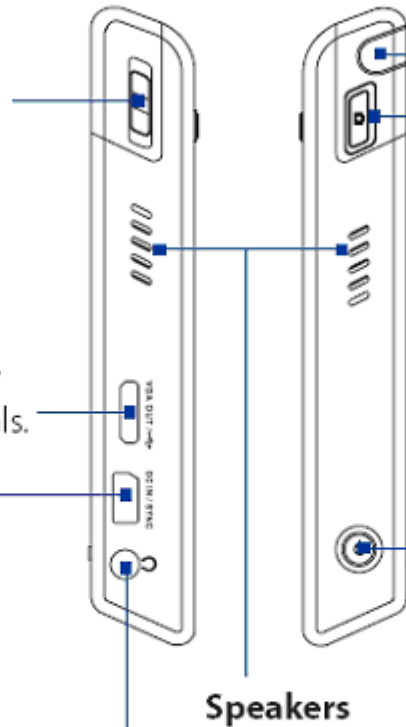
Stylus

CAMERA

Press to open the Camera program.

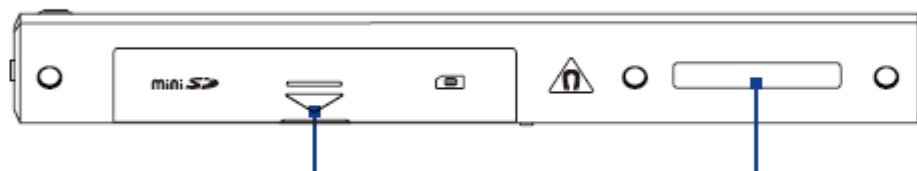
POWER

Press and hold for about 5 seconds to turn the device on or off. Press to turn off the display temporarily.



Speakers

Bottom panel



Battery Compartment

Houses the battery, SIM card, and miniSD™ card.

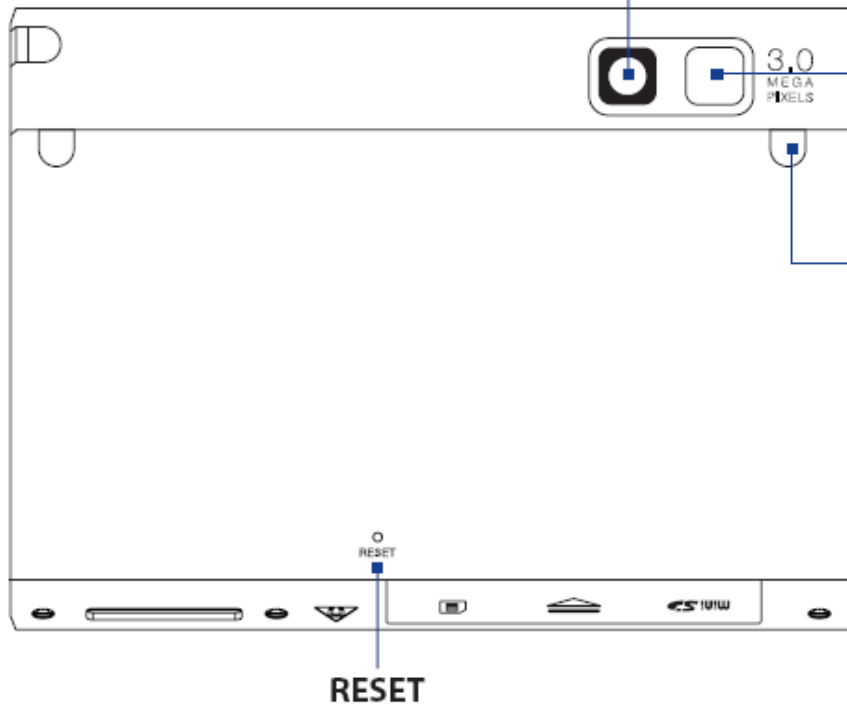
Keyboard Connector

Connects the device to the hardware keyboard.

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Back panel

3.0 Megapixel Camera
See Chapter 12 for details.



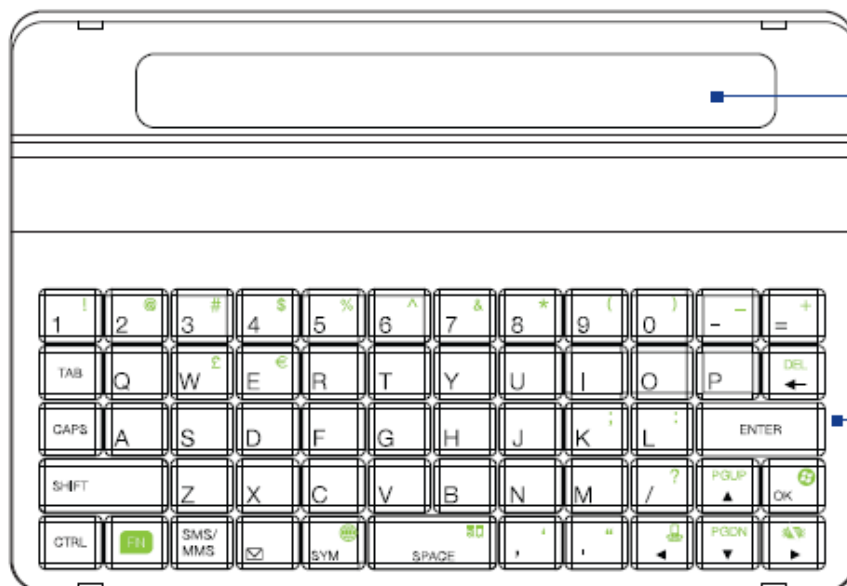
Flash Light

GPS Antenna Connector

Peel the rubber cover, then connect an external GPS antenna for better GPS signal reception.

Note Use only the external GPS antenna with model number **GA S110**.

Keyboard



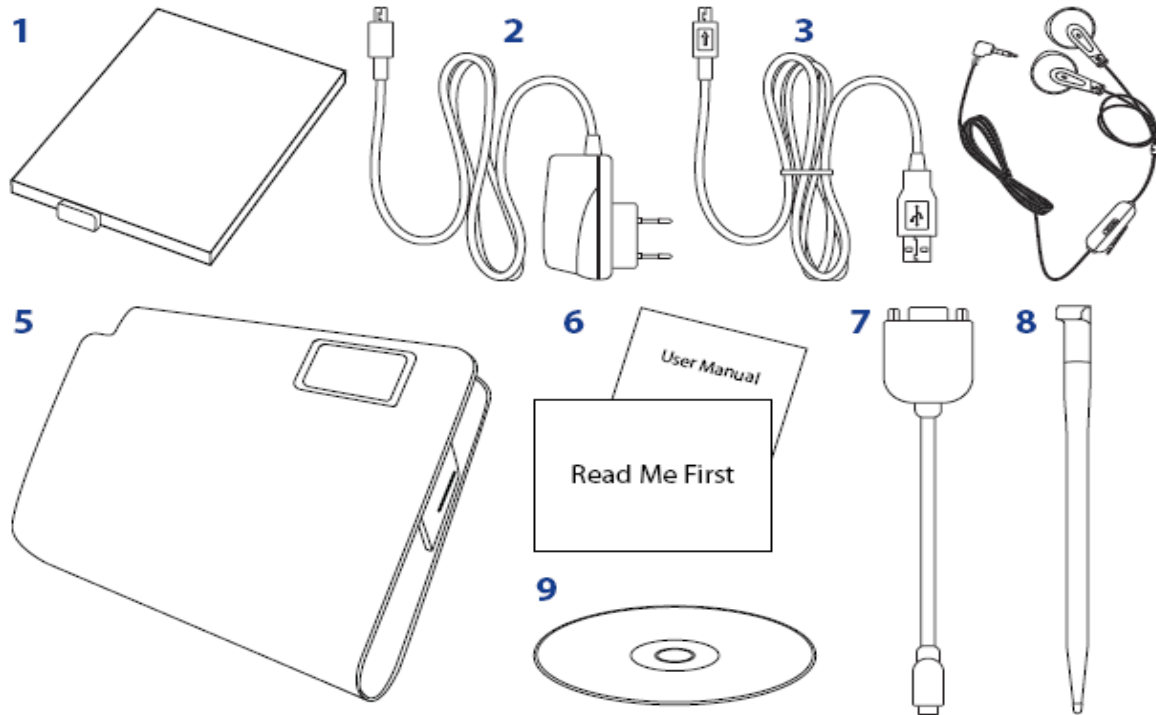
Subdisplay Window

View device information on this window when the keyboard covers the touch screen.

QWERTY Keyboard

See Chapter 2 for details on how to connect and use the keyboard.

Accessories



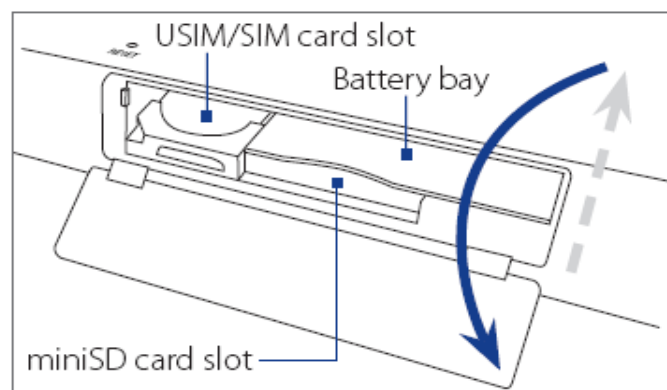
No.	Accessory	Function
1	Battery	Powers the device.
2	AC adapter	Recharges the battery. Connect the AC adapter to your device, then plug the AC adapter to an electrical outlet to charge the battery.
3	USB sync cable	Connects your device to a PC and synchronizes data.
4	Stereo headset	Lets you listen to phone calls or music. The headset provides a volume control slider and a Send/End button. Press the Send/End button to pick up a call or put a call on hold; press and hold the button to end the call.
5	Carrying case	Acts as a protective carrying case for your device.
6	User manual and Read Me First	Provide instructions for using your device.
7	Multifunction cable	Connects your device to an external display to output the screen contents.
8	Extra stylus	Use to tap items on-screen.
9	Getting Started disc	Sources for additional tools and programs.

Installing the USIM/SIM Card, Storage Card and Battery, and Charging the PDA Phone

Always turn off your device before installing or replacing the USIM/SIM card, storage card, and battery. You also need to remove the back cover before you can install these components.

To remove the back cover

1. Make sure your device is turned off.
2. Place the device face down on a clean and stable surface.
3. Slide up the battery compartment cover, then flip it down to access the battery bay, USIM/SIM card slot, and miniSD™ card slot.



Note To close the battery compartment cover, flip it up and align it with the battery compartment, then slide it down until it fits into place.

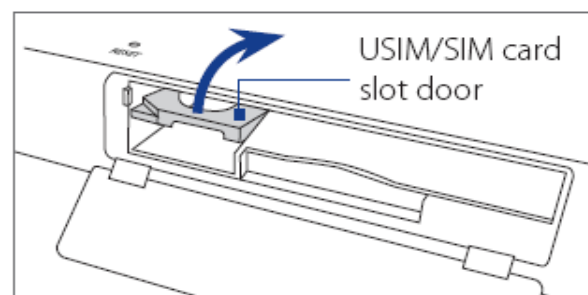
USIM/SIM card

The 3G USIM (Universal Subscriber Identity Module) or SIM (Subscriber Identity Module) card contains your phone number, service details, and phonebook/message memory. Your device supports both 1.8V and 3V USIM/SIM cards.

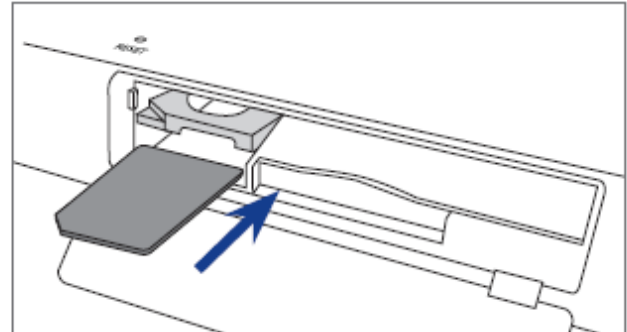
Note Some legacy SIM cards may not function with your device. You should consult with your service provider for a replacement SIM card. There may be fees for this service.

To install the USIM/SIM card

1. Make sure your device is turned off.
2. Locate the USIM/SIM card slot inside the battery compartment, then flip up the USIM/SIM card slot door.



3. Insert the USIM/SIM card completely into the slot with its gold contacts on top and its cut-off corner facing out the slot.
4. Flip down the USIM/SIM card slot door, then press it until it clicks in place.



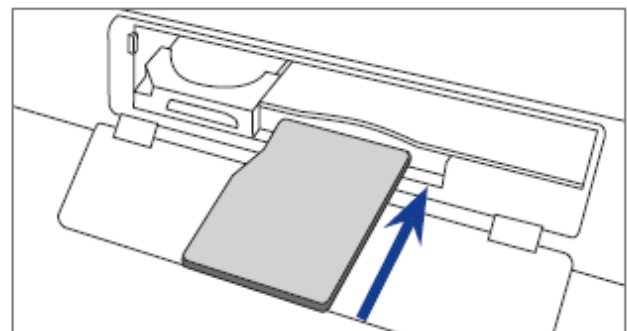
Storage card

A miniSD™ card slot is located inside the battery compartment. To have additional storage for your images, videos, music, and files, you can purchase a miniSD card and install it into the your .

To install a miniSD card

Insert the miniSD card into the slot with its gold contacts facing up.

Note To remove the miniSD card, press it to eject it from the slot.



Battery

Your device comes with a rechargeable Lithium-ion polymer battery and is designed to use only manufacturer-specified original batteries and accessories. Battery performance depends on many factors, including network configuration, signal strength, the temperature of the environment in which you operate your device, the features and/or settings you select and use, items attached to connecting ports, and your voice, data, and other program usage patterns.

Note Battery life is subject to network and phone usage.

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Battery life estimates (approximations):

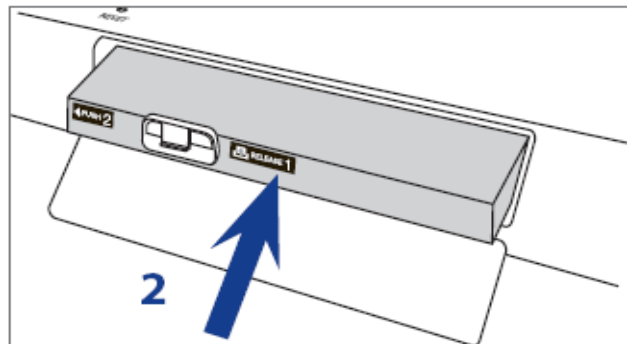
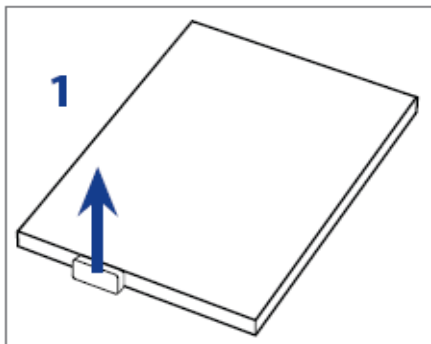
- Standby time: Up to **300 hours** (GSM/WCDMA)
- Talk time: Up to **300 minutes** for WCDMA
Up to **360 minutes** for GSM
- Video call: Up to **120 minutes**
- Media playback time: Up to **8 hours** for WMV
Up to **12 hours** for WMA

Warning! To reduce risk of fire or burns:

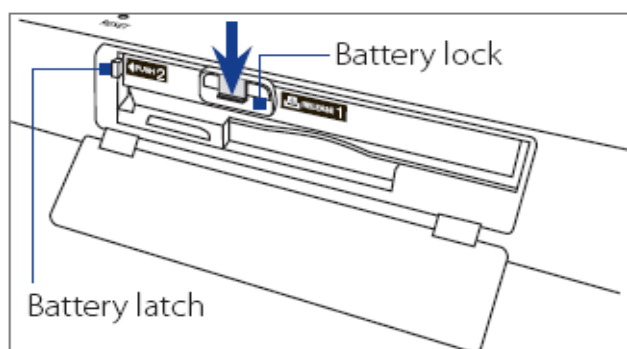
- Do not attempt to open, disassemble, or service the battery pack.
- Do not crush, puncture, short external contacts, or dispose of in fire or water.
- Do not expose to temperatures above 60°C (140°F).
- Replace only with the battery pack designated for this product.
- Recycle or dispose of used battery as stipulated by local regulations.

To install the battery

1. Pull up the battery lock.
2. Insert the battery with its label side up and its copper connectors first.

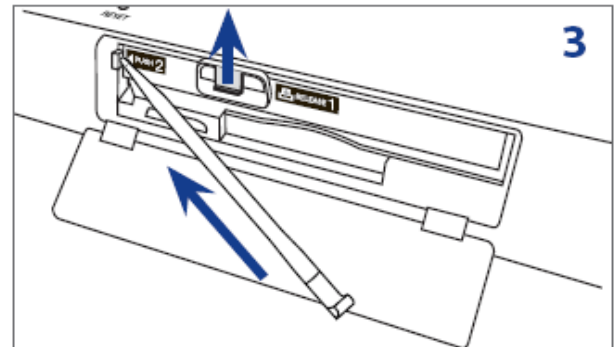


3. Gently push the battery into the bay until the battery latch clicks in place.
4. Press the battery lock, then close the battery compartment cover.



To remove the battery

1. Make sure your device is turned off.
2. Open the battery compartment.
3. Lift the battery lock, then push the battery latch inward with the stylus tip. The battery automatically ejects from the bay.
4. Pull the battery out of the bay, then set it aside.



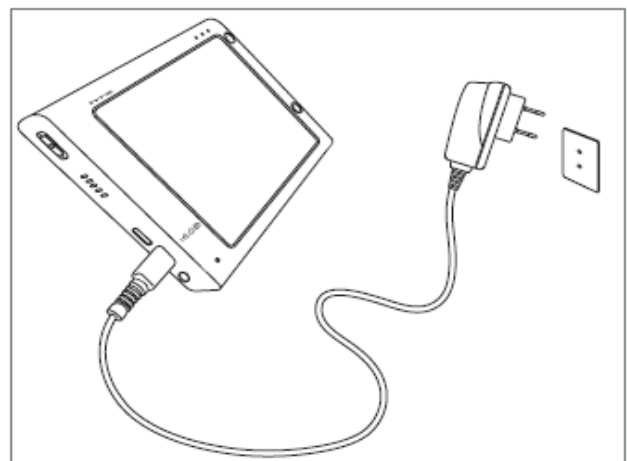
Charge the battery



New batteries are shipped partially charged. Before you start using your device, it is recommended that you install and charge the battery. Some batteries perform best after several full charge/discharge cycles.

To charge the battery

- Connect the power adapter to the device's DC IN/SYNC port.
- Connect the device to your computer using the provided USB Sync cable.

Note Only the AC adapter and USB sync cable provided with your device must be used to charge the device.



Charging is indicated by a solid amber light on the Notification LED 1 (GSM) indicator. As the battery is being charged while the device's power is on, a charging icon  appears in the title bar of the Today screen. After the battery has been fully charged, the Notification LED 1 charging indicator becomes green and a full battery icon  appears in the title bar of the Today screen.

Warning!

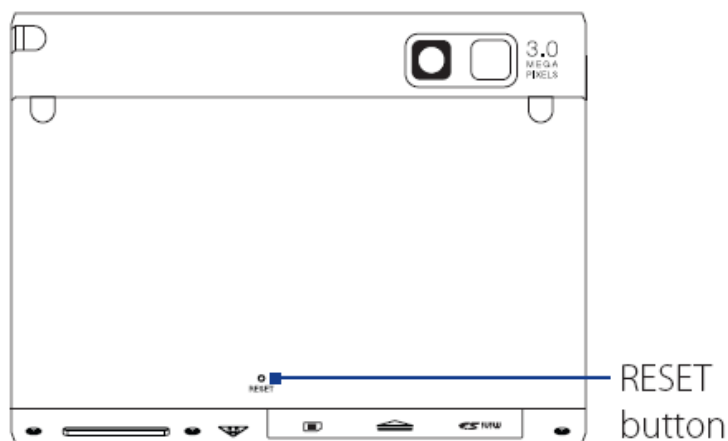
- Do not remove the battery from the device while you are charging it using the AC or car adapter.
- As a safety precaution, the battery stops charging when it overheats.

Soft reset

Occasionally, you may need to reset your device. A soft (or normal) reset of your device clears all active program memory and shuts down all active programs. This can be useful when your device is running slower than normal, or a program is not performing properly. A soft reset is also necessary after the installation of some programs. If a soft reset is performed when programs are running, unsaved work will be lost.

To perform a soft reset

Press the RESET button at the back panel of your device. Your device restarts and displays the Today screen.



Hard reset

You can also perform a hard reset (also known as a full reset). A hard reset should be performed only if a normal reset does not solve a system problem. After a hard reset, the device is restored to its default settings—the way it was when you first purchased it and turned it on. Any programs you installed, data you entered, and settings you customized on your device will be lost. Only Windows Mobile® software and other pre-installed programs will remain.



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Warning! Your device will be set back to factory default settings. Make sure that any additional installed programs and/or user data have been backed up before you perform a hard reset.

Important If **Encrypt files placed on storage cards** is or was enabled before, then backup all files from the storage card **before** using Clear Storage, performing a hard reset, or updating the ROM system software. Otherwise you will no longer be able to access the encrypted files on the storage card. Use ActiveSync or Windows Mobile Device Center to transfer files between your storage card and computer. After the procedure, copy your files back to the storage card.

To perform a hard reset

1. Slide down VOLUME CONTROL and press the RESET button simultaneously.
2. Release the RESET button, but keep holding down the VOLUME CONTROL slider until you see this message on the screen:

**Press POWER to restore factory default.
Press Camera Key to exit.**

3. Press the POWER button to proceed with the hard reset; otherwise, press the CAMERA button to exit.

Clear Storage

Another way of clearing the device storage and reset all settings back to factory default settings is to use the **Clear Storage** feature. You can also use Clear Storage to reformat the device's flash disk. You will lose all your data and files on the device storage and/or flash disk when you use Clear Storage, so make sure to do a backup first.

Important If **Encrypt files placed on storage cards** is or was enabled before, then backup all files from the storage card **before** using Clear Storage, hard reset or updating the ROM system software. Otherwise you will no longer be able to access the encrypted files on the storage card. Use ActiveSync or Windows Mobile Device Center to transfer files between your storage card and computer. After the procedure, copy your files back to the storage card.



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To clear the storage, reformat the flash disk, or both

1. Tap **Start > Settings > System tab > Clear Storage**.
2. Tap the options box, then select:
 - **Clear storage only** to clear the device storage.
 - **Format Flash Disk** only to format the device flash disk.
 - **Clear storage and format Flash Disk** to clear the device storage and format the device flash disk.
3. Enter "**1234**" in the box, then tap **Yes**.
4. If you selected the **Clear storage only** or the **Clear storage and format Flash Disk** option, the device restarts and displays the Quick Setup Wizard.



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Managing Memory

To see how much memory is available for use, tap **Start > Settings > System tab > Memory**. On the **Main** tab, the amount of memory allocated to data storage versus program storage is displayed, as well as the amount of memory in use versus the available memory.

To see available storage card memory, tap **Start > Settings > System tab > Memory > Storage Card** tab.

If your device is running low on memory, try the following to free memory on your device:

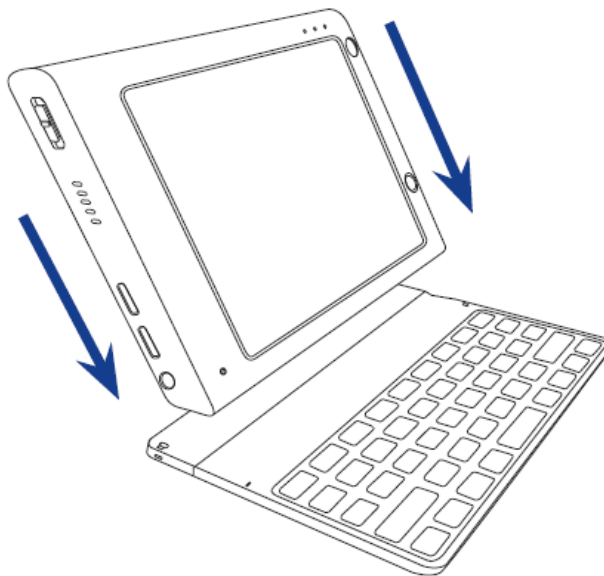
- Close or remove programs which are not in use.
- Move e-mail attachments to a storage card.
- Move files to a storage card. Tap **Start > Programs > File Explorer**. Tap and hold the file, and tap **Cut**. Navigate to the storage card folder and tap **Menu > Edit > Paste**.
- Delete unnecessary files. Tap **Start > Programs > File Explorer**. Tap and hold the file, and tap **Delete**.
- Delete large files. To find large files on your device, tap **Start > Programs > Search**. In the **Type** list, tap **Larger than 64 KB**, and tap **Search**.
- In Internet Explorer Mobile, delete temporary Internet files and clear history information. For more information, see "Internet Explorer® Mobile" in Chapter 10.
- Reset your device.

1.3 Using the Hardware Keyboard

When you start a program or select a field that requires text or numbers, you can either use the QWERTY keyboard or one of the onscreen input methods to enter information.

QWERTY keyboard

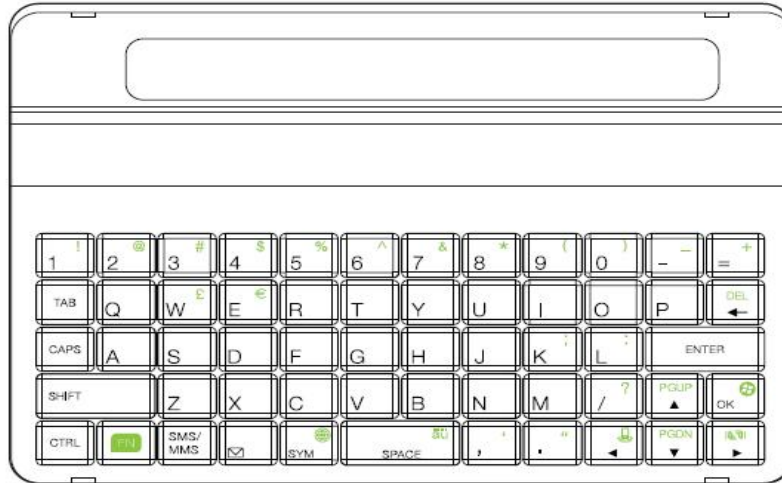
Your device comes with a QWERTY keyboard, which is similar to a standard keyboard on your PC. To use the keyboard, attach it to your device via the keyboard connector. The device securely attaches itself to the keyboard through a magnet.
























To separate the device from the keyboard, simply pull them apart.

Note Observe care when detaching the keyboard from the device.

Warning! Avoid placing credit cards, diskettes, audio or video cassettes or any other form of magnetic data carriers near the device or the keyboard as this could otherwise lead to loss of data stored on such objects. Other magnetic sensitive devices like a mechanical wristwatch should also not be placed near the device or keyboard.



You can do the following with the QWERTY keyboard:

- To type lowercase letters, press the keys using your thumbs or fingers.
- To use all uppercase letters, press . The CAPS LOCK icon () appears before the Input Panel icon on the screen to indicate that CAPS LOCK is on. To change back to all lowercase letters, press  again.
- To use a single uppercase letter, press  and then press the corresponding key.
- To enter the symbol or punctuation mark, or launch the program that is printed at the upper right corner of a key, press , then press the corresponding key. When  is pressed, the function key icon () appears before the Input Panel icon on the screen.
- To type accented characters (like á, ã, ç, ê, í, ó, ü, etc), press the letter key first, press and hold , then press  several times until you find the correct character you need.
- To open the Symbol Pad, press .
- Press  to verify your data entries or exit the program in use.
- Press the arrow keys  /  /  /  for directional movement.
- Press  to open the Messaging program.
- Press  to open your SMS/MMS messaging account.
- Press  +  to enable or disable the keyboard's tactile feedback.
- Press  +  to open the Start menu.

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For magnetic devices

Please avoid putting any media that contains magnets, e.g. magnetic card, credit cards, bank cards, audio/video tape or magnetic memory devices, directly on the device or keyboard without any distance.

It is highly recommended to put the media containing magnets in a security distance of at least 5 cm. If you carry your wallet or billfold which contains magnetic cards next to the device or its keyboard, information stored on these cards could be destroyed.

Please make sure that there is an adequate distance from the device or its keyboard other magnetic sensitive devices, e.g., a mechanical watch or measure instruments.



For pacemakers

The functionality of pacemakers can be interfered by the device and its keyboard. Always keep the device and its keyboard in a fair distance to your pacemaker, which at least will be 5 cm. In any case, please do not carry the device and/or its keyboard in the front pockets of your shirt or coat.

For information about other medical active implants, please contact the producer or a doctor to ensure such active implants will not be interfered by magnetic field.



The Sub display

The Sub display lets you view notifications, music info, weather, temperature and time on a designated area on the LCD screen when the keyboard is attached to the LCD screen of the main unit. The Sub display is automatically activated when the QWERTY keyboard is pressed against the LCD screen.

To activate the Sub display

Place the QWERTY keyboard on top of the Athena 1.5's LCD screen. The transparent end of the QWERTY keyboard must be on the same side as the hole on the face of the Athena 1.5.



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2. COSMETIC INSPECTION CRITERIA

2.1 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 => View of QWERTY keyboard. (Involved stylus).
- Class C area => 4 sides and back views of main unit.
- Class D area => The socket of battery, inner side of battery cover.

Photo of inspection areas

	
<p>Class A area</p>	<p>Class B area</p>
	
<p>Class C area</p>	<p>Class D area</p>



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Description

- **D: Diameter / L: Length / W: Width / N: Number of defects/ S: Distance from dot to dot**
- Inspecting distance: 30 ± 5cm / Mechanical inspection angle: 90 degrees /
- LCM inspection angle: 90 ± 15 degrees / Inspection time: 5 secs per surface.
- Ambient illumination is to be 500-1100 lux
- The inspection condition of Newton ring:
 - a. Inspection distance: 30cm / Inspection time: 5 sec
 - b. Ambient illumination is to be 500-1000 Lux (Incandescent lamp)
 - c. Inspection should be performed under the condition that LCD screen could reflect the mirror image of lamp.
 - d. The criteria of Newton ring's tinges and measure of area must follow up the worst-case sample.

2.2 Display inspection

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



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2.3 Main unit inspection



Gap & Step inspection			
Description		Accept criteria	Level
1	Gap between bezel and BTM cover	< 0.15 mm	Minor
2	Gap between LCM bezel and touch panel	< 0.7 mm	Minor
3	Gap between bezel and antenna cover	< 0.25 mm	Minor
4	Gap between mating parts on K/B	< 0.25 mm	Minor
5	Gap between key and keyboard opening	< 0.3 mm	Minor
6	Step between bezel and antenna cover in A area	< 0.25 mm	Minor
7	Step between bezel and antenna cover in C area	< 0.4 mm	Minor

It is generic cosmetic inspection criteria for all products if there have any conflict with these generic criterions; please follow the product inspection criteria respectively.

3. DEVICE ASSEMBLING AND DISASSEMBLING PROCEDURE

Repair notice before assembling and disassembling:

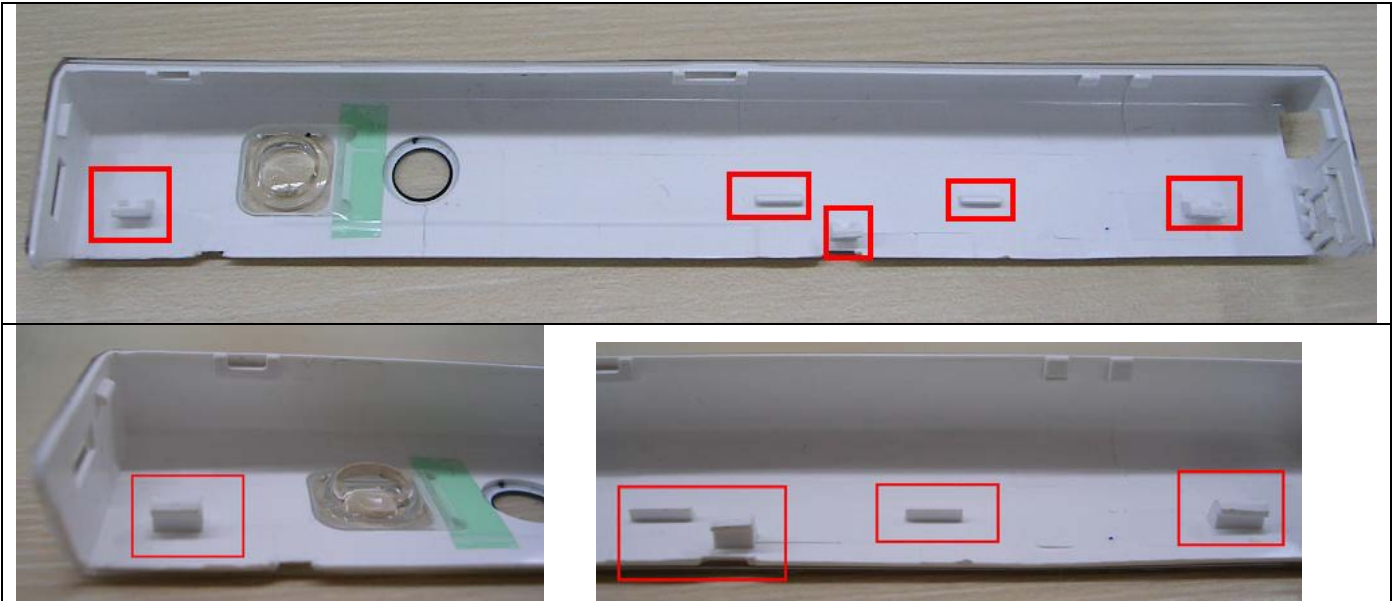
1. Recommend the three spare parts not reusing again when do refurbishment. Suggest replacing the new parts.

Part number	Description	Q'ty	Remark
74H00644-02M	Button Pre-Assy,button,power, Athena 1.5	1	
			

2. Be careful to disassembly the bottom cover and avoid deforming.
3. Avoid cracking the hook of battery cover. Before assembly and disassembly the bottom cover, please open the battery cover first.
4. Assemble the antenna cover; be careful to hold the volume slider to M/B switch. It would easy to cause the M/B switch damaged.



5. Please be careful to disassembly the antenna cover with plastic stick. There are five hooks which the length and depth are different.



3.1 Disassembling procedure

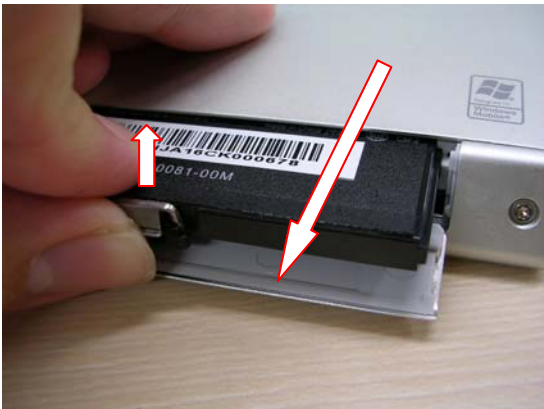


Tools needed for assembling and disassembling the device:

1. Glove & Lens Cleaning Tissue.
2. Tweezers.(Suggest to use plastic made)
3. Philip Screw Driver #0.
4. Philip Screw Driver type T6.
5. Philip Screw Driver type T5.
6. Flat Plastic Stick.
7. ESD bracelet.



1. Make sure your device is turned off.
2. Open the battery compartment at the bottom of the device.



1. Pull up the battery metal holder.
2. Draw out the battery from its slot.



1. Take out Stylus.
2. Take out two antenna rubbers.



Take out the Power button with tweezers.

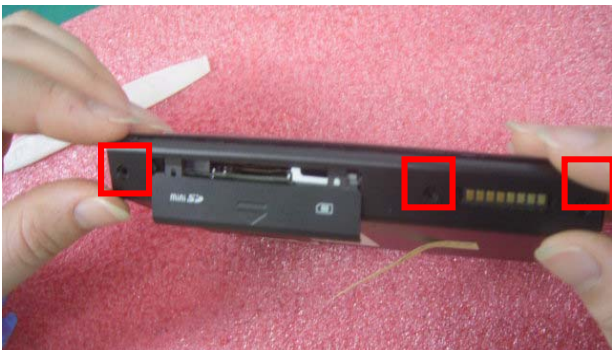
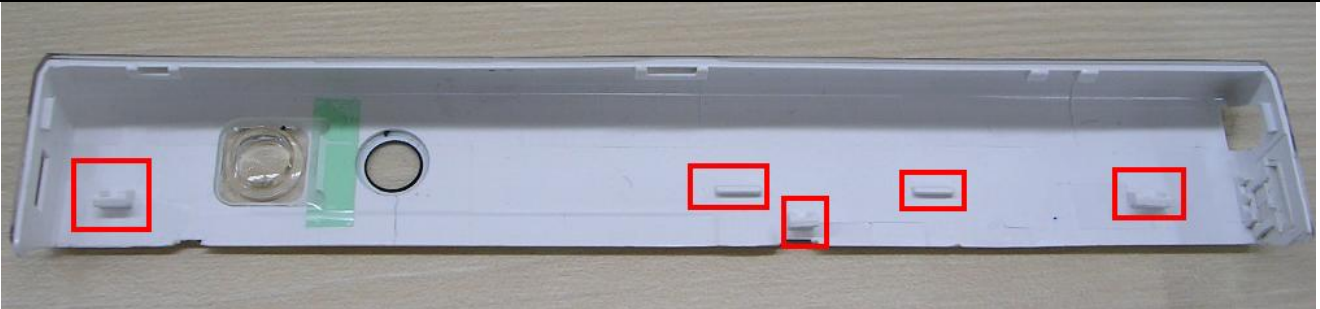


Antenna Cover

Disassemble the antenna cover by plastic stick.



1. Use plastic stick into the gap and release the hooks.
2. Please be careful to disassembly the antenna cover. There are five hooks which the length and depth are different.

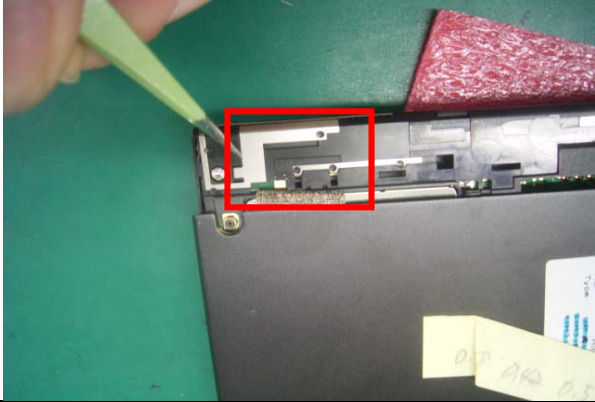


Unfasten three Screws from the bottom cover and take out bottom cover by plastic stick.

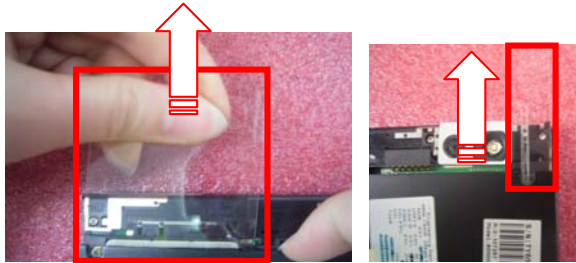
[NOTE]
Be careful to take out the bottom cover and avoid deforming.

✓ SCREW: 72H01853-00M (Q'TY: 3).

[NOTE]
PLEASE SET UP THE TORQUE OF ELECTRICAL SCREW DRIVER TO 0.6 ± 0.05 KGF-CM



Use tweezers to take out the gasket.



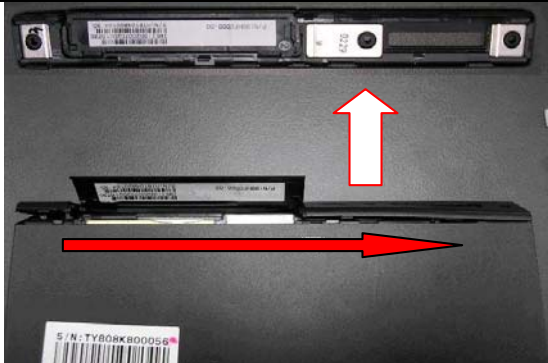
Use tweezers to hook two fillers and take it out from main unit.



1. Unfasten three screws from the antenna.
2. Separate the antenna from upper frame by plastic stick, take out the antenna.

✓ SCREW: 72H00339-00M (Q'TY: 3).

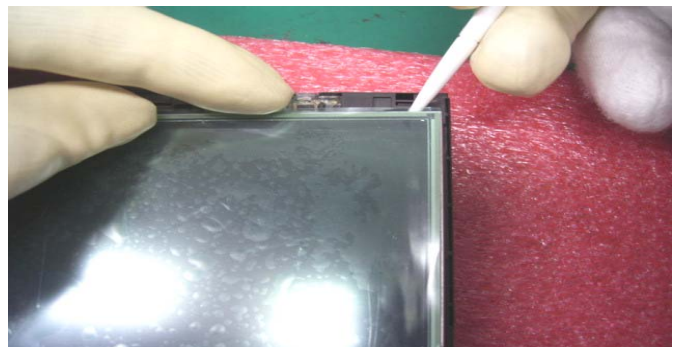
[NOTE]
PLEASE SET UP THE TORQUE OF ELECTRICAL SCREW DRIVER TO 1.2 ± 0.05 KGF-CM



Separate the battery holder by plastic stick.

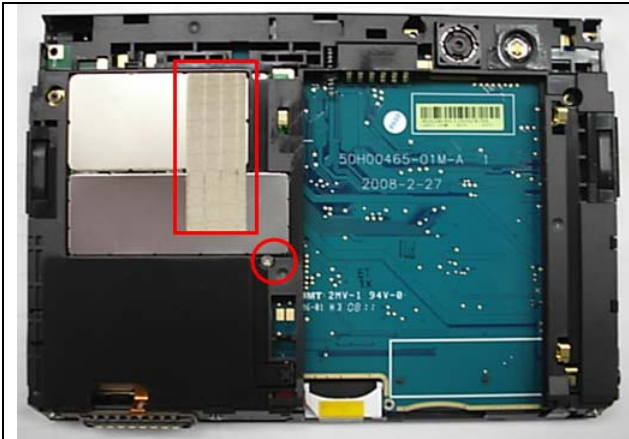


Separate main unit and Metal Bezel.



Use plastic stick to separate the LCM and frame. Then take out the LCM. Remove the LCM mylar by tweezers and separate them. Take out the LCM.

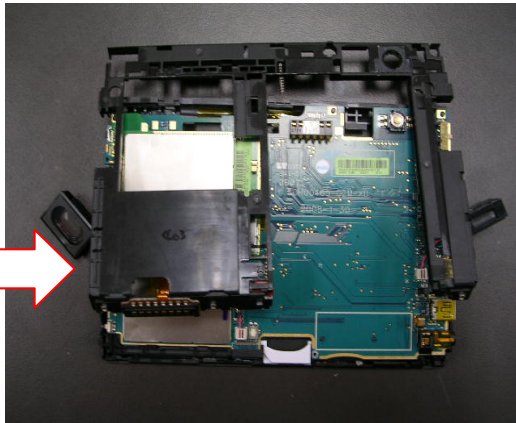
[NOTE]
PLEASE REMOVE THE LCM MYLAR BEFORE TAKE OUT THE LCM.



1. Use tweezers to take out the Conductive Fabric from UMTS board.
2. Unfasten one screw on Lower Frame.

✓ SCREW: 72H00338-00M (Q'TY: 1).

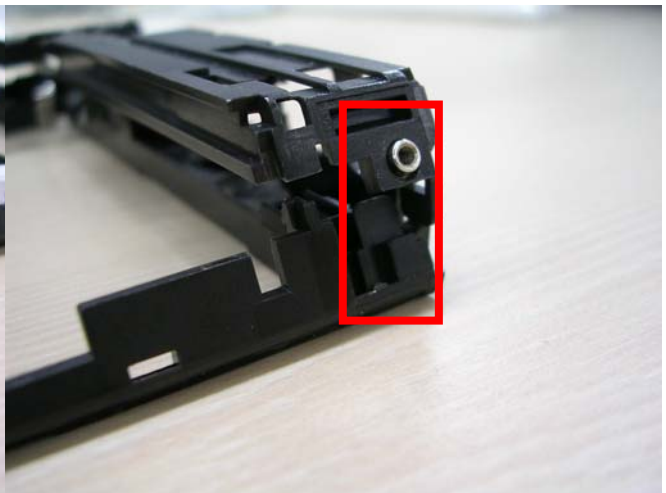
[NOTE]
PLEASE SET UP THE TORQUE OF ELECTRICAL SCREW DRIVER TO 0.8 ± 0.05 KGF-CM



Hook 1

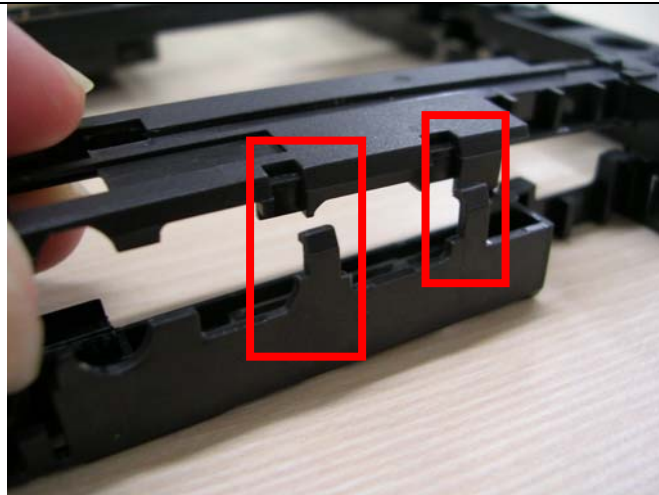


Hook2

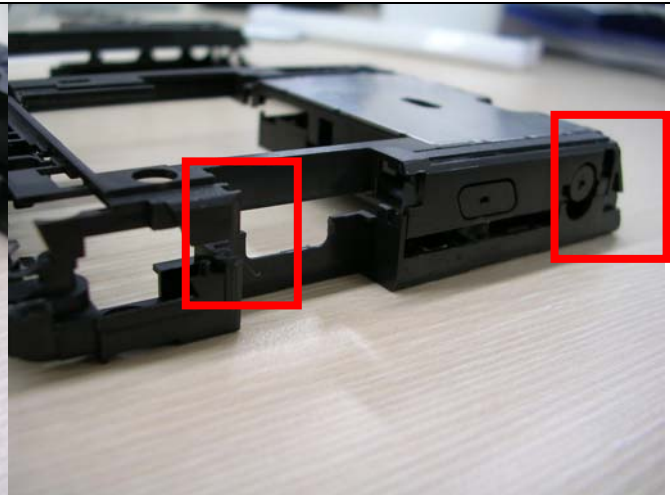


Hook 3,4

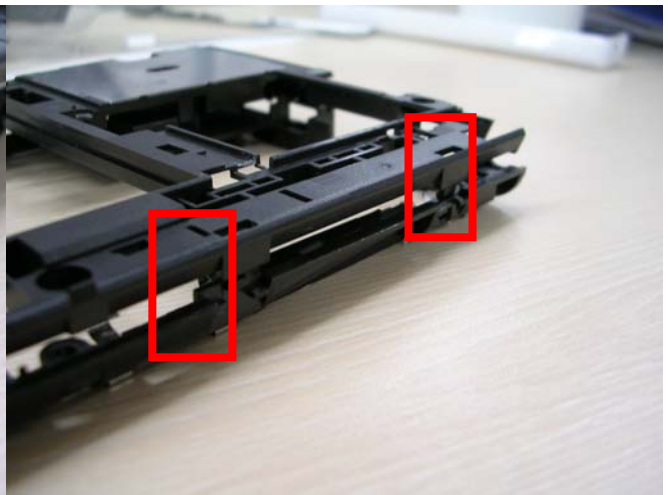
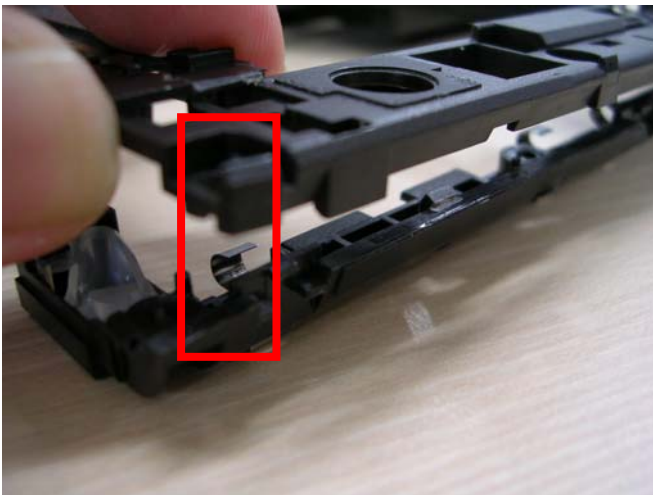
Hook 5,6



Hook 7



Hook 8



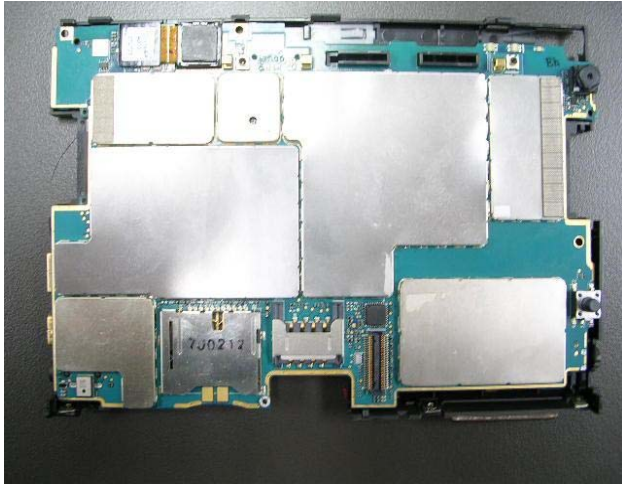
Open the upper frame and lower frame by plastic stick and separate them.



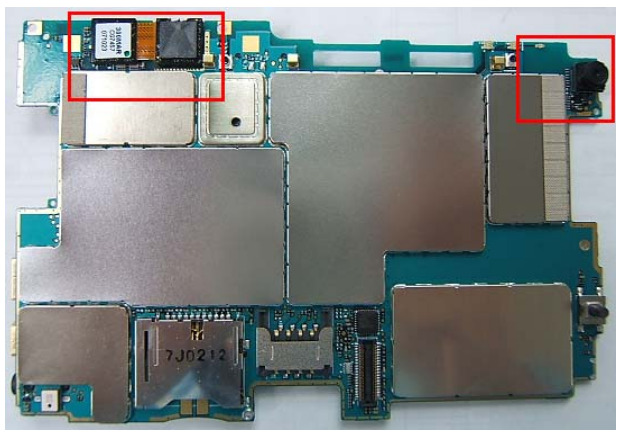
1. Unfasten one screw from the UMTS board and take out it.
2. Remove the tape and take out the Right Speakers.
3. Take out the Left Speaker.

✓ SCREW: 72H01367-00M (Q'TY: 1).

[NOTE]
PLEASE SET UP THE TORQUE OF ELECTRICAL SCREW DRIVER TO $0.8 \pm 0.05\text{KGF-CM}$

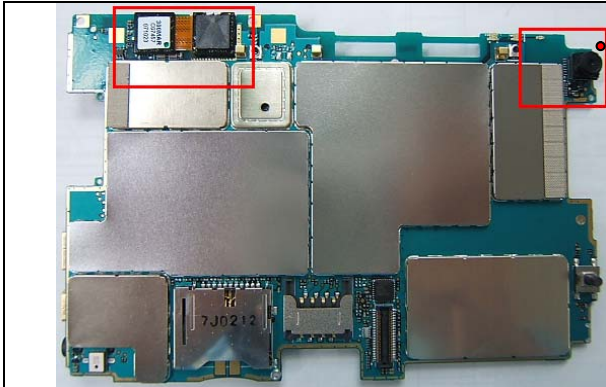


Release the I/O FPC and separate the MB from lower frame.



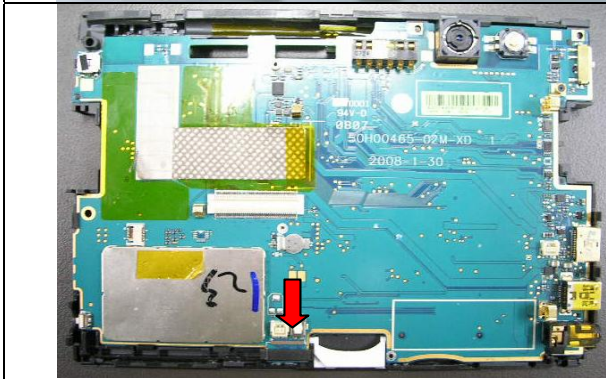
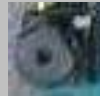
1. Disassembly Main Camera and 2nd Camera from M/B.

Assembling procedure

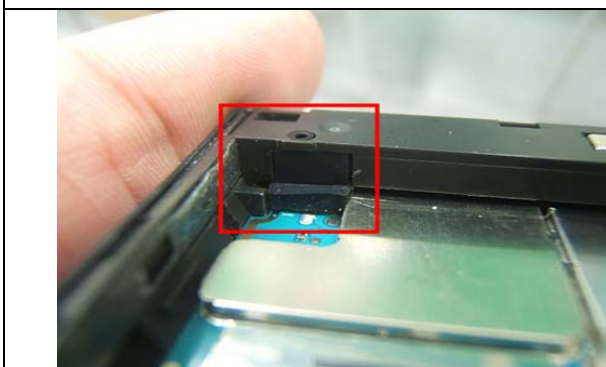


Assembly Main Camera and 2nd Camera to M/B.

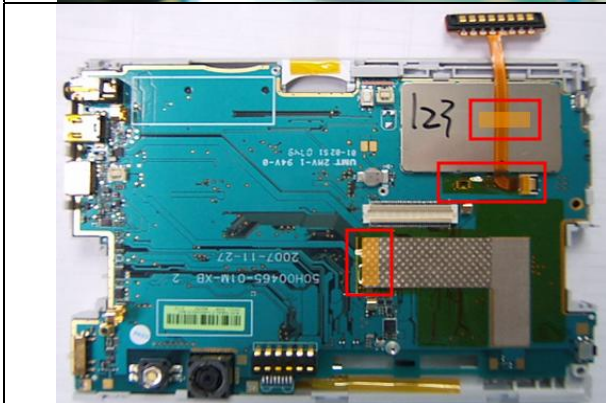
[NOTE]
THE LOCATION OF WHITE SPOT AS INDICATED.



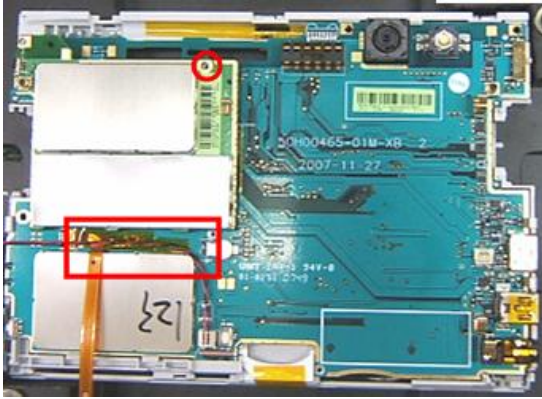
Assembly M/B to upper frame.



Use plastic stick to press microphone rubber.



1. Connect the I/O FPC to M/B.
2. Stick 2 tapes on main board connector and battery FPC.
3. Stick 1 tape on conductive fabric.

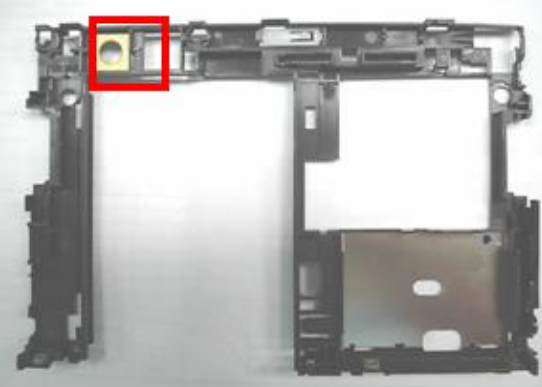


1. Connect UMTS board to M/B and fasten 1 screw to UMTS board.
2. Plug in the left speaker into connector and adjust the speaker cable along as figure. Then paste type.

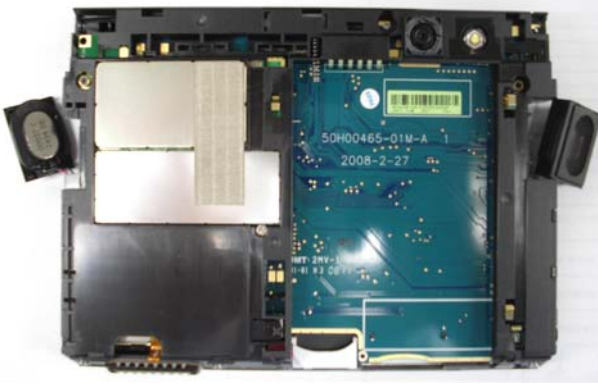
✓ SCREW: 72H01367-00M (Q'TY: 1).



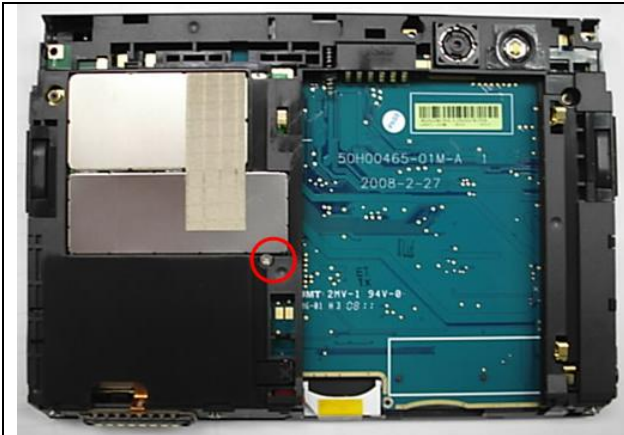
Plug in the right speaker into connector.



Remove protection film of lower frame.



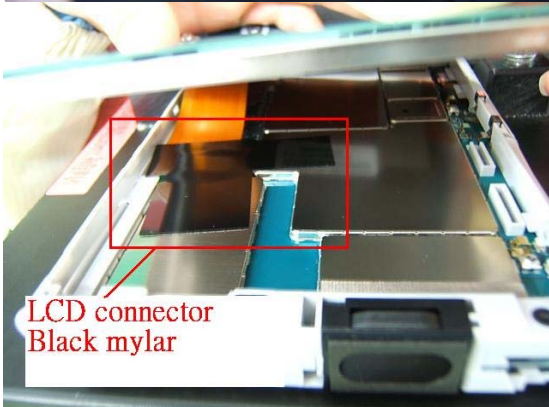
1. Pass the battery FPC through the hole of lower frame.
2. Assembly the lower frame and upper frame and make sure hold by the hook.



1. Tighten one screw to lower frame.
2. Place left speaker and right speaker to the unit.

✓ SCREW: 72H00338-00M (Q'TY: 1).

[NOTE]
PLEASE SET UP THE TORQUE OF ELECTRICAL SCREW DRIVER TO 0.8 ± 0.05KGF-CM

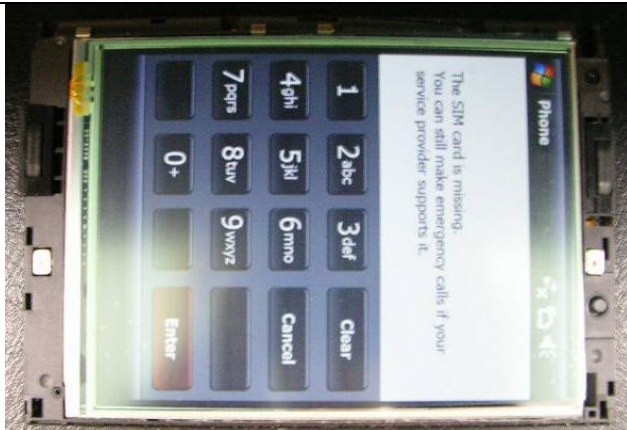


LCD connector
 Black mylar

1. Place LCM to Upper Frame.
2. Combine the LCM FPC and the connector of M/B.
3. Stick one mylar to fix LCD connector

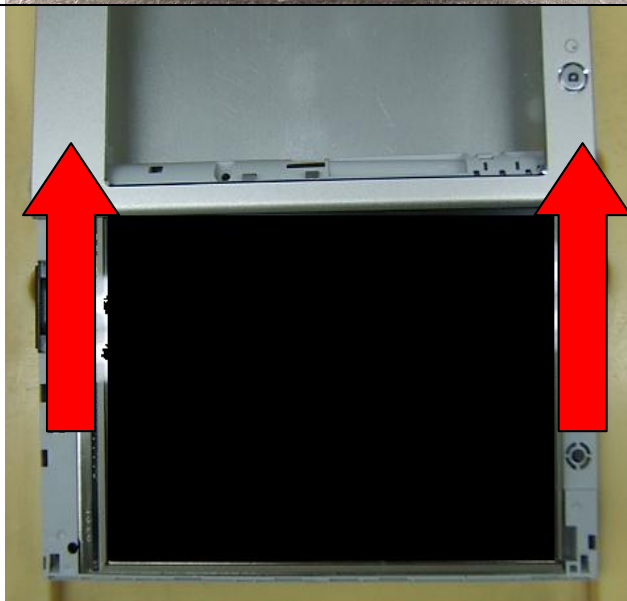


Adjust the position of LCM into upper frame.

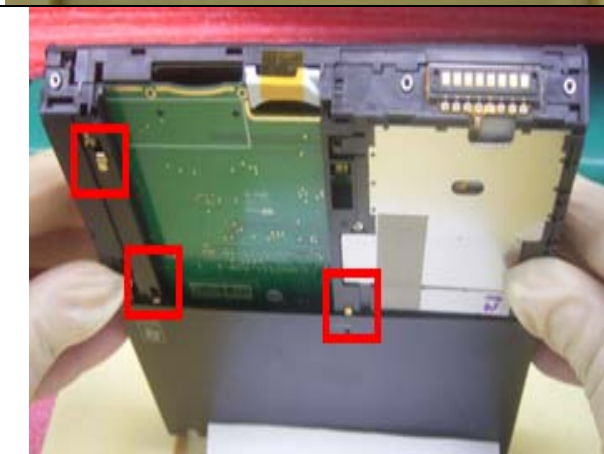


Insert battery into main unit and check the unit can power on.

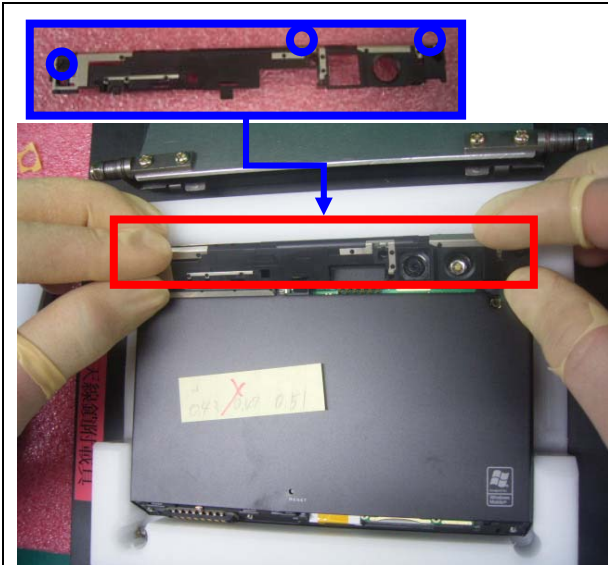
[NOTE]
Remove the battery after check OK.



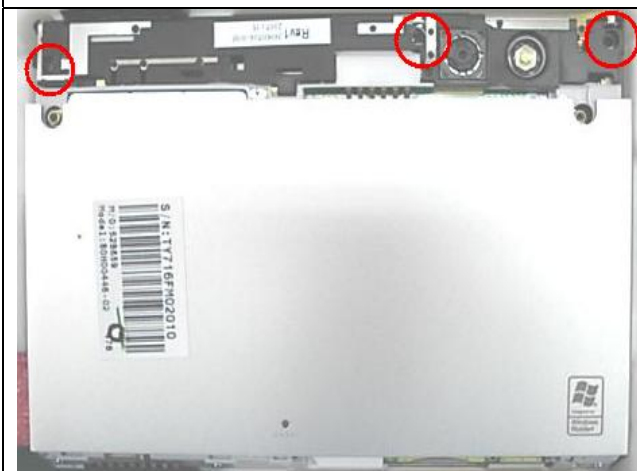
Insert the unit into the Metal Bezel.



Notice these three springs and be careful to jam it into the Metal Bezel.



Assembly the antenna to main unit.



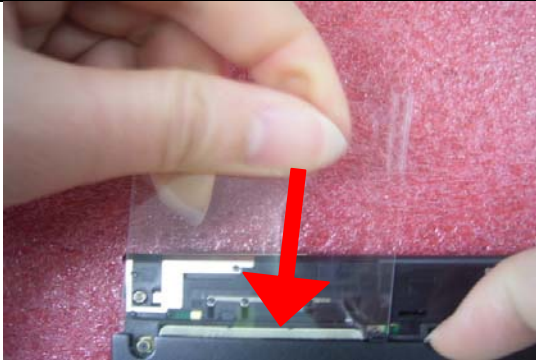
Tighten three screws to antenna.

- ✓ SCREW: 72H00339-00M (Q'TY: 3).

[NOTE]
PLEASE SET UP THE TORQUE OF ELECTRICAL SCREW DRIVER TO $1.2 \pm 0.05\text{KGF-CM}$



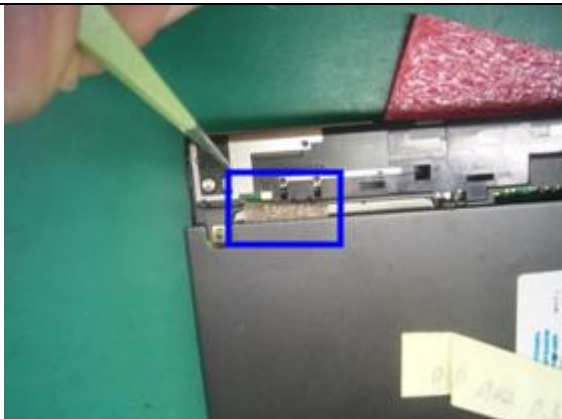
Apply the warranty label to antenna screw.



Insert the Left filler.



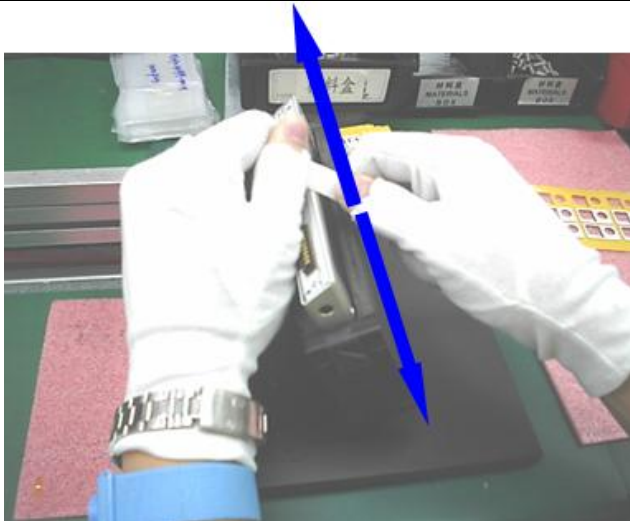
Insert the Right filler.



Take one Gasket and insert to the bezel.



The figure is for reference:
Gasket is filled in the relative position in the bezel.



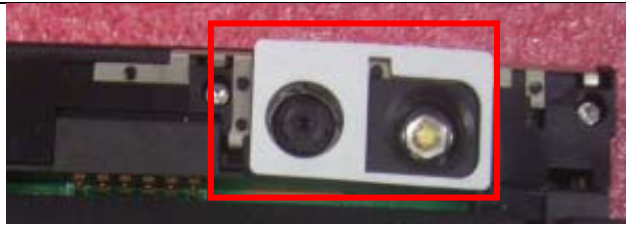
1. Use plastic handle and defeat and shut the lower of main unit aluminums and check gap is OK.
2. Constructed and defeated shutting to both sides by the middle.



1. Open the battery cover before assembly the Bottom Cover into unit.
2. Then tighten three screws.
3. The Bottom Cover has magnets, be careful to tighten the screws.

✓ SCREW: 72H01853-00M (Q'TY: 3).

[NOTE]
PLEASE SET UP THE TORQUE OF ELECTRICAL SCREW DRIVER TO 0.6 ± 0.05 KGF-CM



Take one camera Poron. Stick it into antenna as shown as figure.

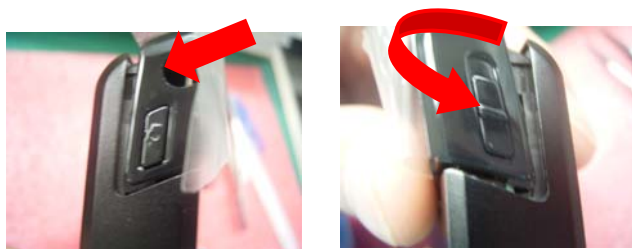


Stick spacer mylar to upper frame of antenna cover.



1. Assembly antenna cover to main units. First to hold the camera button site to unit. Then assembly the volume slider side to unit.

[NOTE]
Be careful to assembly and adjust the Volume Slider button to unit. Ensure to hold the switch of M/B and don't break it.





Stick Power button in to unit.



Insert a Metal Holder into battery lock. Then insert Battery.



Insert stylus and antenna rubber.



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4. DIAGNOSTICS PROGRAM AND WINCE TEST ITEM

4.1 Test Plan

Mode	No	Item	Description	Remark
Diagnostic	Function Test			
	1	Auto	Auto run the all of function testing.	
	2	SDRAM	RAM memory test.	
	3	LCD	Color bar/R/G/B/Black/White/Gray pattern test.	
	4	LED	LED indicator test.	
	5	Back Light	Back Light adjust test.	
	6	Flash Light	Flash light test. (Athena only)	
	7	Thermal Sensor	Thermal test.	
	8	Touch Panel	Align screen test.	
	9	RomCheckSum	Show ROM Check Sum info.	
	10	Spk-Play	Speaker test.	
	11	Hst-Play	Stereo handset test.	
	12	Int-Mic & Spt-Play	Internal MIC recording and playing it from Speaker test.	
	13	Ext-Mic & Hst-Play	External MIC recording and playing it from handset test.	
	14	SD Card	SD card Read/Write test.	
	15	MMC Card(Mega-Sim)	Mega SIM test	
	16	Read BDA(TI6150)	Show BDA info.	
	17	Read WLAN ID	Show WLAN ID info.	
	18	PCB H/W VER	Show PCB Ver info.	
	19	Battery	Show Battery info.	
	20	External RTC	RTC (Real time clock) test.	
	21	G-Sensor	G-Sensor function test.	
	22	TV-OUT(VGA MODE)	VGA output test.	
	23	HDD Detect	HDD test. (Athena only)	
	24	Key	Function Key test.	
	25	Qwerty Key(Athena1.5)	Qwerty Key test.	
	26	Exit		
Run-in Test				
1	2 Hours	2 Hours Run-in Test/Press Volume Up key.		
2	4 Hours	4 Hours Run-in Test/Press Volume Down key.		
3	8 Hours	8 Hours Run-in Test/Press Portal key.		
4	16 Hours	16 Hours Run-in Test/Press Capture key.		
5	Non Limited	Non-limited time Run-in Test/Press Power key.		



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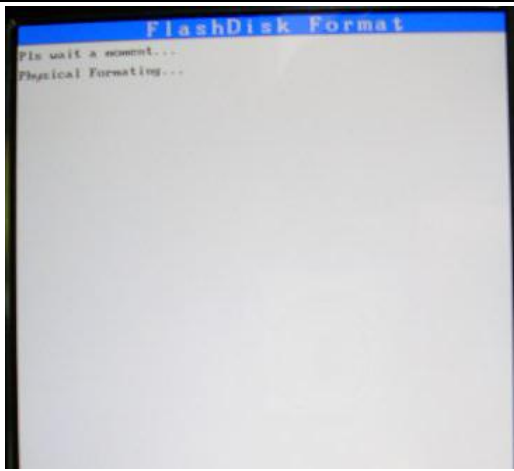
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WinCE	Format FAT		
	Show Device Information		
	Clear Talk Time		
	Compare CID (Compare the CID code of M/B and UMTS board)		
	1	USB Test	USB link test (Microsoft ActiveSync).
	2	Camera Test	Camera test.
	3	2 nd Camera Test	2 nd Camera Test
4	Bluetooth Test	Bluetooth test.	
5	WLAN Test	WLAN test.	
6	GPS Test	GPS test.	

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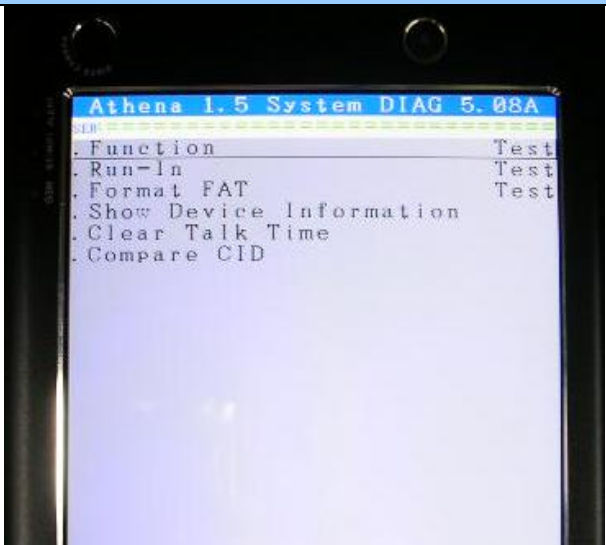
4.2 Test Procedure

- Power OFF.
- Insert Diagnostic MiniSD card (provided by HTC) to device.
- Press **Power + Camera** button, release the **Reset** buttons after hold for 2 seconds, and then the device enter boot-loader mode.

FlashDisk Format	
<p>I. Wait a moment for flash disk format.</p>	

- On test menu, use volume key to select the item then press Portal button to perform test.
- Remove the battery directly or perform soft reset to exit the Diagnostic program when finish testing.
- If the system fails while testing, please also remove the battery directly to turn off power.

Diagnostic Test

Main Menu/Function Test Menu	
<p>II. Using volume key to select the test item.</p> <p>III. Select item Function to find the Function test menu.</p>	

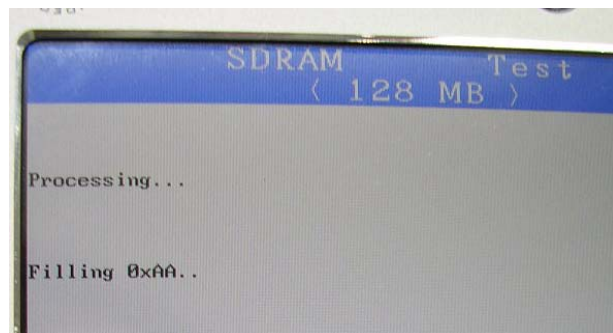
Auto Test

- I. Press portal Button to select Auto on Function test menu.
- II. The program will perform all of function test item for one cycle. Press portal button to go next test.
- III. Press portal button to exit and return to Function test menu.



SDRAM Test

- I. Press volume key to select SDRAM on Function test menu.
- II. The program will test SDRAM block automatically.
- III. Press portal button to exit and return to Function test menu.



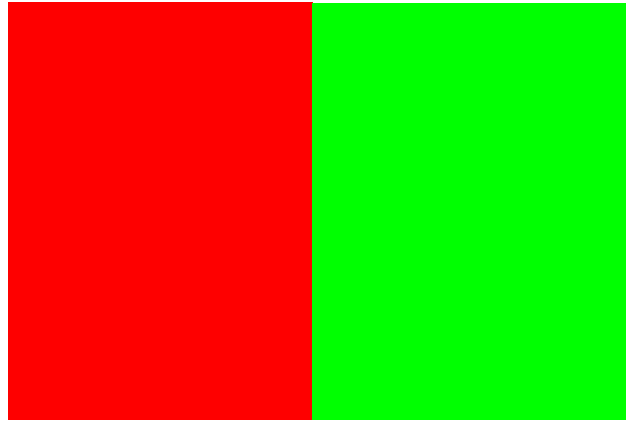
LCD Test (WHITE/BLACK pattern)

- I. Press volume key to select LCD on Function test menu.
- II. After the test pattern is show up, please check the pattern if any un-uniform color or chromatist.
- III. Press portal button to go next test pattern.



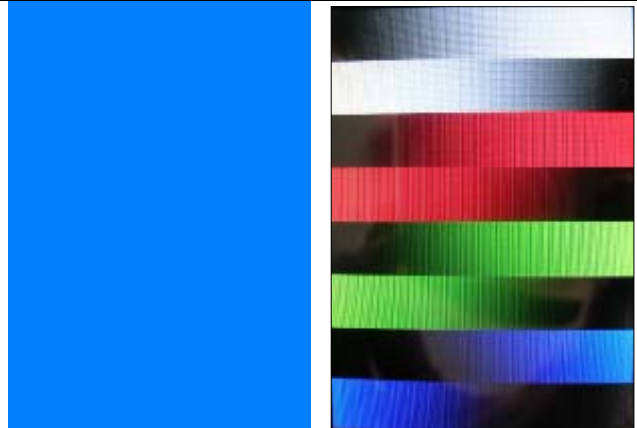
LCD Test (RED/GREEN pattern)

IV. Press portal button to go next test pattern.



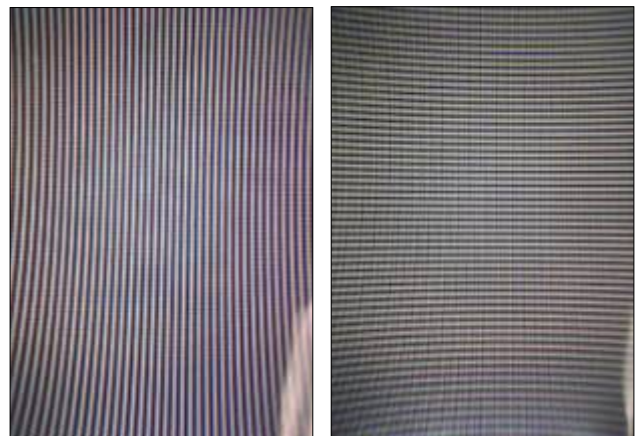
LCD Test (BLUE/Color bar pattern)

V. Press portal button to go next test pattern.



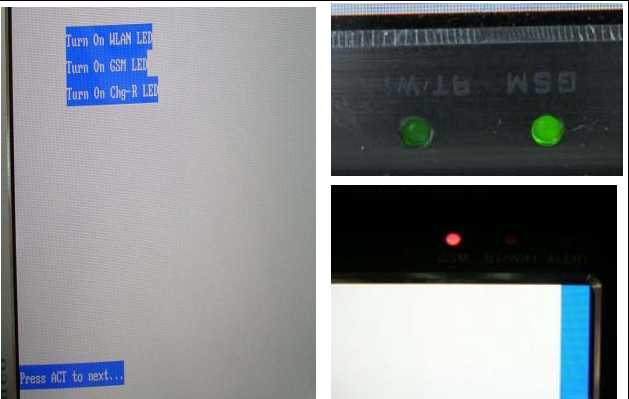
LCD Test (Straight/Crabwise lines pattern)

VI. Press portal button to exit and return to Function test menu.



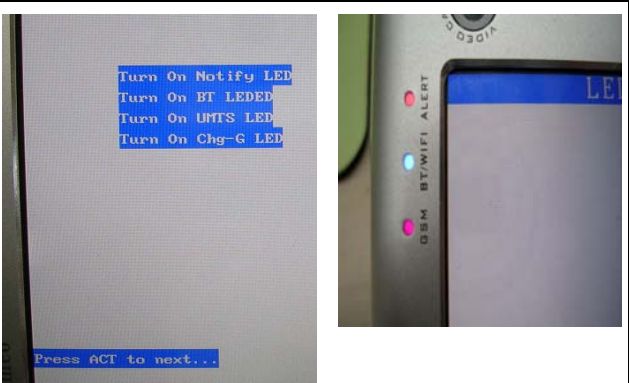
LED Test (WLAN/GSM/Charge-red lights)

- I. Press volume key to select LED on Function test menu.
- II. After the LED indicator is show up, please check the LED if any un-uniform color.
- III. WLAN(**G**),GSM(**G**),Charge(**R**).
Press portal button to go next test pattern.



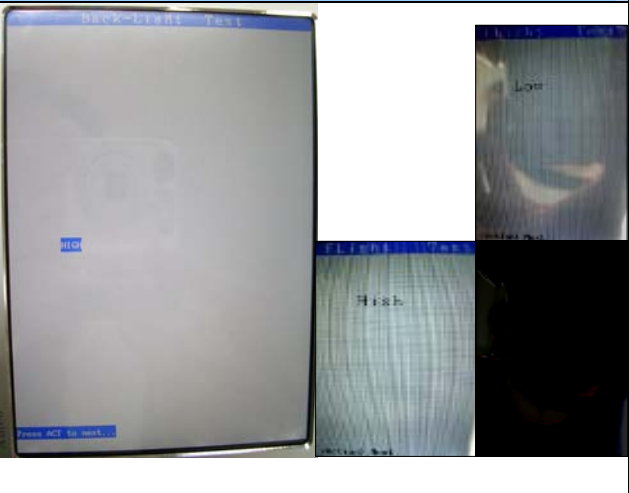
LED Test (Notify/BT/UMTS/Chg-G lights)

- IV. ALBERT(**O**),BT(**B**),UMTS(**R**)
Charge(**G**)
- V. Press portal button to exit and return to Function test menu.



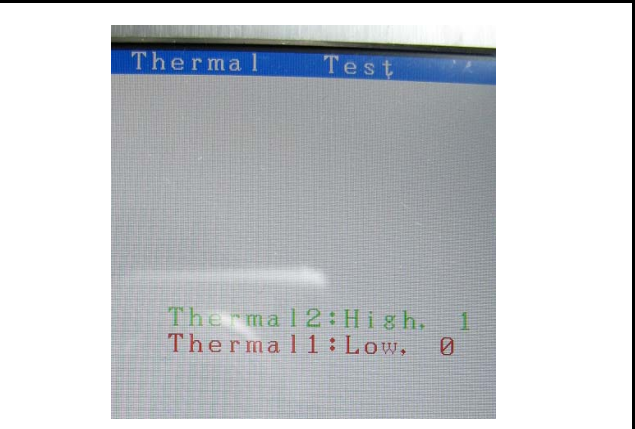
Back Light Test (HIGH/MIDH/LOW/OFF)

- I. Press volume key to select Back Light on Function test menu.
- II. Press portal button to switch the LCD backlight level from HIGH (100%) -> MIDH (50%) -> Low (25%) -> Off (0%).
- III. Press portal button to exit and return to Function test menu.



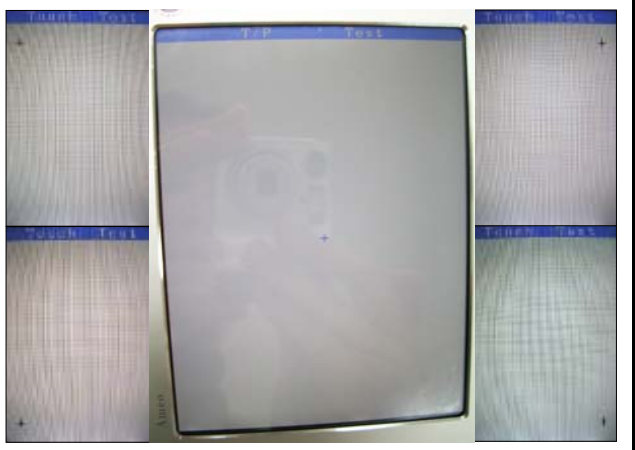
Thermal Sensor Test

- I. Press volume key to select Thermal on Function test menu.
- II. Press portal button to exit and return to Function test menu.



Touch Panel Test

- I. Press volume key to select Touch Screen on Function test menu.
- II. Using Stylus to tap and follow the symbol "+" at Center, Up-left, Down-left, Down-right position of the screen to perform the test.
- III. Press portal button to exit and return to Function test menu.



Rom Check Sum Test

- I. Press volume key to select Rom Check Sum on Function test menu.
- II. Inspect Check Sum and please check the value.
- III. Press portal button to exit and return to Function test menu.



Spk-Play Test

- I. Press volume key to select Spk-Play on Function test menu.
- II. Device will play beep sound from speaker.
- III. The screen will return to Function test menu after the test is finished.



Hst-Play Test

- I. Press volume key to select Hst-Play on Function test menu.
- II. Insert Stereo handset and hear the beep sound.
- III. The screen will return to Function test menu after the test is finished.



Int-Mic & Spk-Play Test

- I. Press volume key to select Int-Mic & Spk-Play on Function test menu.
- II. Device will record voice from internal MIC and then play records from speaker.
- III. The screen will return to Function test menu after the test is finished.



Ext-Mic & Hst-Play Test

- I. Press volume key to select Ext-Mic & Hst-Play on Function test menu.
- II. Insert Stereo headset.
- III. Device will record voice from external MIC and then play records from handset.
- IV. The screen will return to Function test menu after the test is finished.



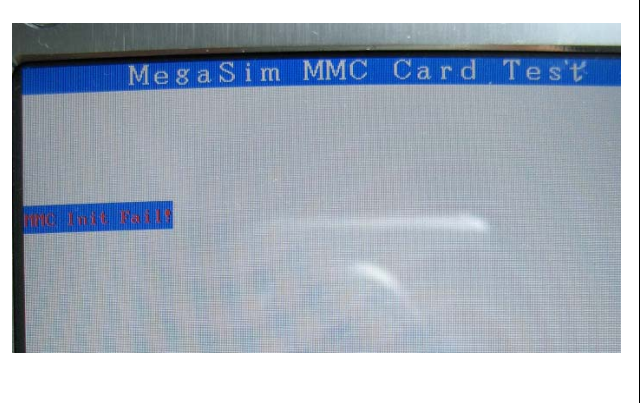
SD Card Test

- I. Press volume key to select SD Card on Function test menu.
- II. Insert SD card and device will read/write SD card for testing.
- III. The screen will return to Function test menu after the test is finished.



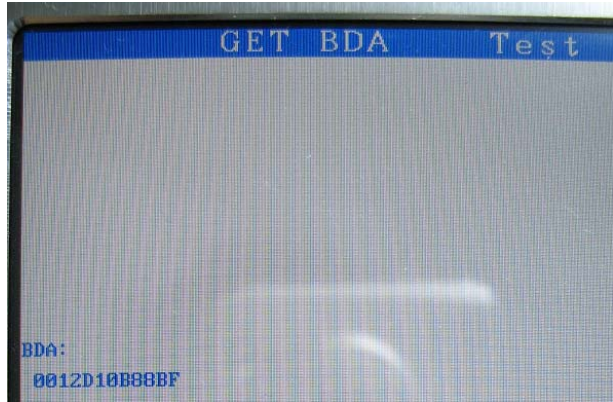
MMC Card(Mega-SIM) Test

- I. Please inset Mega SIM card to the device before test.
- II. Press volume key to select MMC Card(Mega-SIM) on Function test menu.
- III. Press portal button to exit and return to Function test menu.



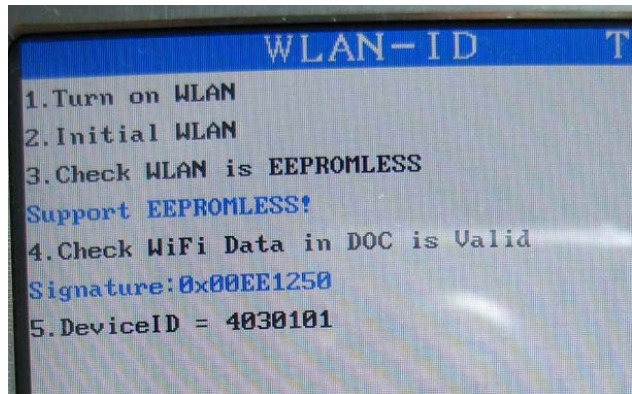
Read BDA (TI6150) Test

- I. Press volume key to select Read BDA(TI6150) on Function test menu.
- II. Device will get BDA data and display it.
- III. Press portal button to exit and return to Function test menu.



Read WLAN ID Test

- I. Press volume key to select Read WLAN ID on Function test menu.
- II. Device will get WLAN-ID data and display it.
- III. Press portal button to exit and return to Function test menu.



PCB H/W VER Test

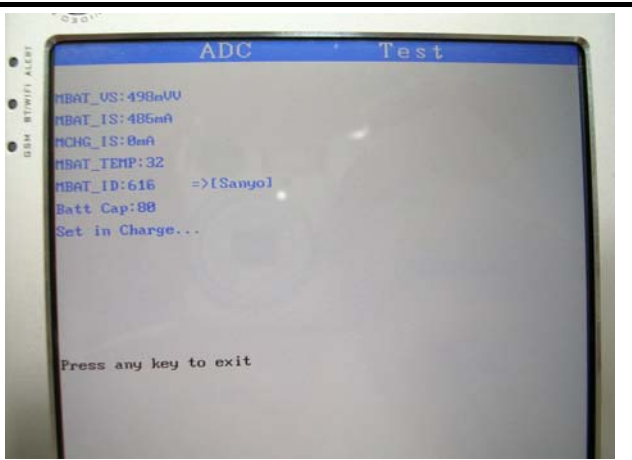
- I. Press volume key to select PCB H/W VER on Function test menu.
- II. Device will get PCB version data and display it.
- III. Press portal button to exit and return to Function test menu.



Battery Test

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- I. Press volume key to select Battery on Function test menu.
- II. Plug In/Out the AC-Adapter to check the battery charging/discharging status.
- III. Press portal button to exit and return to Function test menu.



G-Sensor Test

- I. Hold the device to incline as figure.
- II. Don't take a straight angle or vertical.
- III. Press volume key to select G-Sensor on Function test menu.
- IV. Press portal button to exit and return to Function test menu.



TV_OUT (VGA MODE) Test

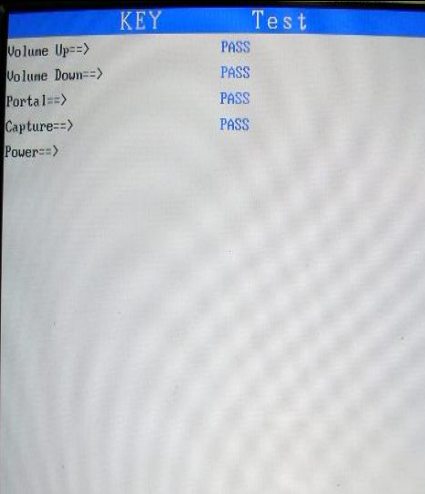
- I. Press volume key to select TV-OUT on Function test menu.
- II. Plug in the VGA-OUT cable and connect it to external LCD to check the display output function.
- III. Press portal button to exit and return to Function test menu.



KEY Test

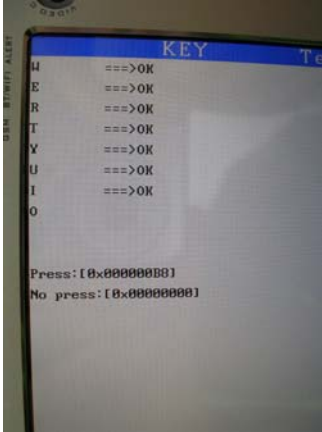
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- I. Press volume key to select **KEY** on Function test menu.
- II. Follow the instruction on screen to perform the Key/Button test (**Volume Up, Volume Down, Portal, Capture and Power**).
- III. Press portal button to exit and return to Function test menu.



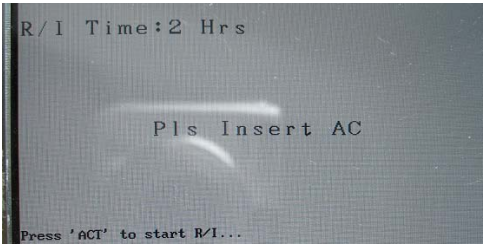
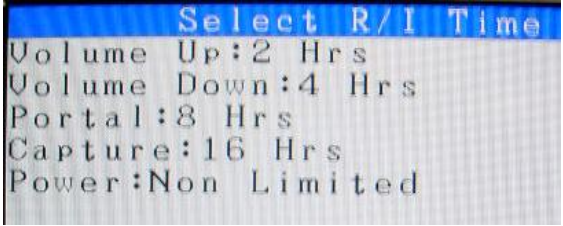
Qwerty Key Test (Athena 1.5)

- I. Press volume key to select **Qwerty KEY** on Function test menu.
- II. Plug in Qwerty Keyboard and follow the instruction on screen to perform the Key/Button test.
- III. Press portal button to exit and return to Function test menu.



Run-In Test

- I. Return to Main Menu and press volume key to select **Run-In** test item.
- II. Insert AC-adaptor and follow the instruction to press key to setup the Run-In hours.
- III. The program will perform cycling test (Flash Light, LCD, LED, SDRAM, ROM Check Sum, Spk-Play, Back Light and Battery).



Format FAT

- I. Return to Main Menu and press volume key to select Format FAT item.
- II. Press portal button to exit and return to Main menu.

(Clear personal information data) for Unit Refurbishment.



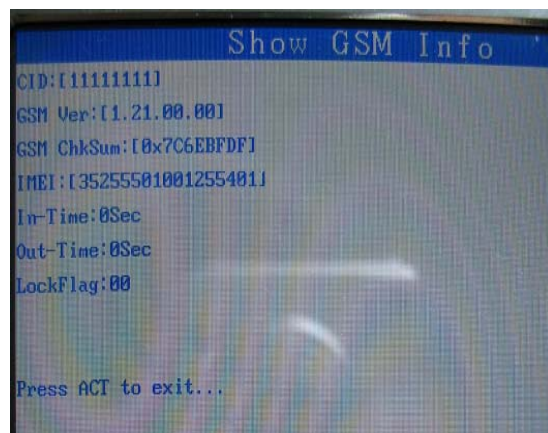
Show Device Information (Show DEV Info)

- I. Return to Main Menu and press volume key to select Show Device Information item.
- II. Press portal button to go next Info item.



Show Device Information (Show GSM Info)

- III. Press portal button to go next Info item.



Show Device Information (Show SIM Lock Info)

IV. Press portal button to exit and return to Main menu.



Clear Talk Time

- I. Return to Main Menu and press volume key to select Clear Talk Time item.
- II. Device will clear talk time and then show GSM info.
- III. Press portal button to exit and return to Main menu.

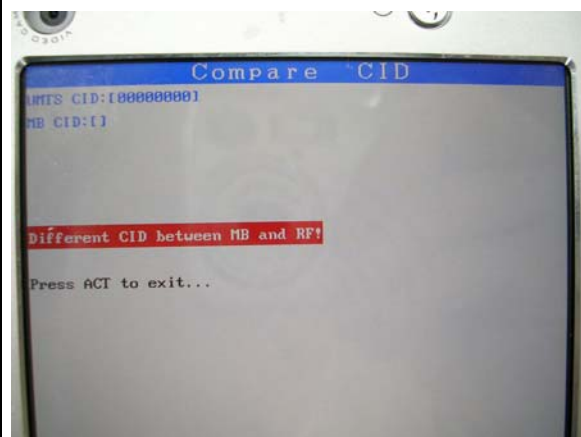
Clear Talk Time for Unit Refurbishment



Compare CID

- IV. Return to Main Menu and press volume key to select Compare CID item.
- V. Device will compare the CID code of MB and UMTS board.
- VI. Press portal button to exit and return to Main menu.

Please ensure the CID code of MB and UMTS board is consistent.




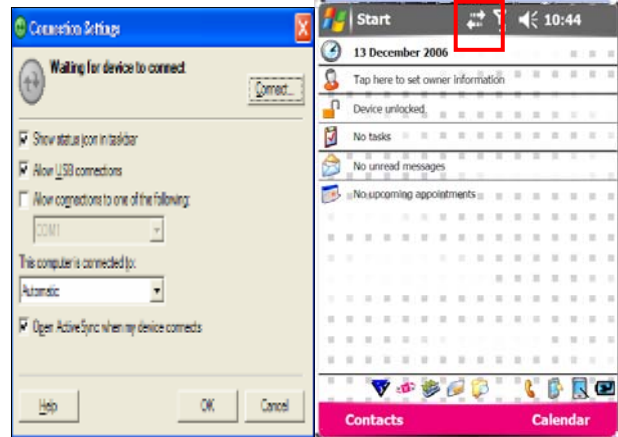
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WinCE Test

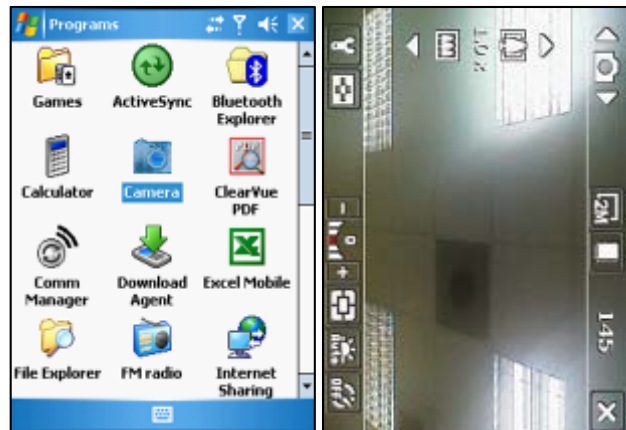
USB Test

- 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.



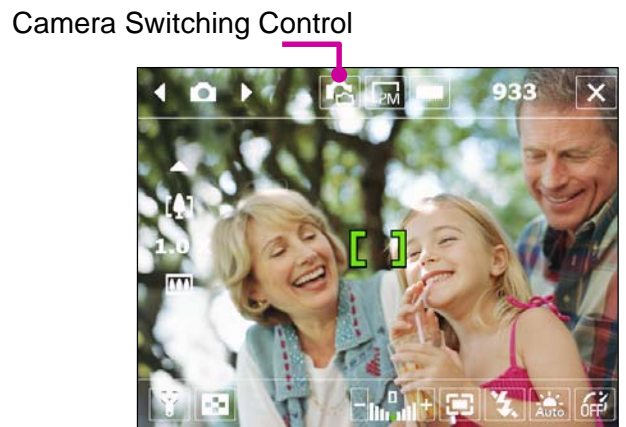
Camera Test

- 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.



2nd Camera Test

- I. Tap Start->Program->Camera or Press Camera button to turn on the Camera. Then select Camera Switching Control to switch 2nd camera.
- II. Make sure the device will present and enter the preview display.
- III. Check camera pre-view and image quality.



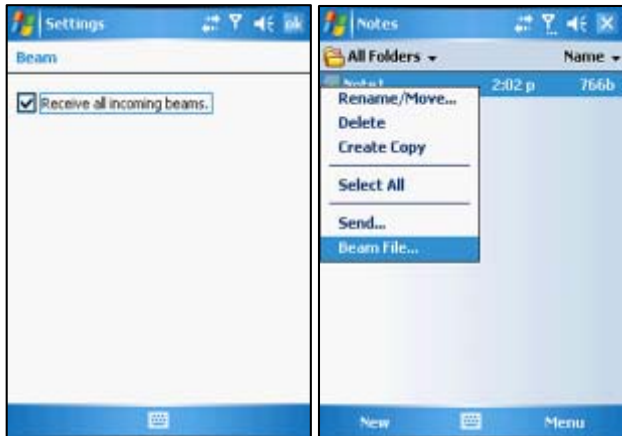
Bluetooth Test - 1

- 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 to go next test pattern.



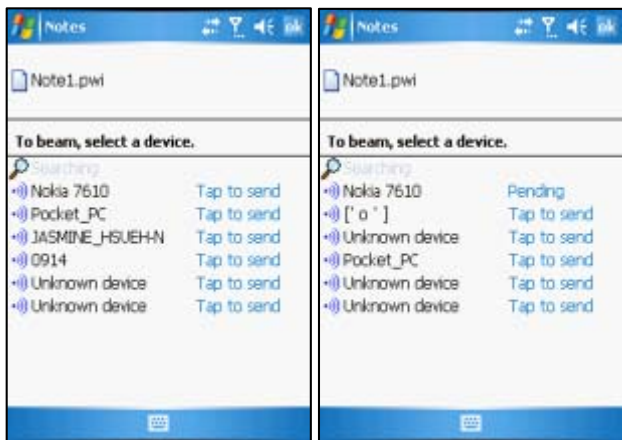
Bluetooth Test - 2

- 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.



WLAN Test

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- I. Tap icon Comm Manager on the Today screen and turn on WLAN.
- II. Select the hot-spot or access point which searchable and appears on screen.
- III. Once the hot-spot (access point) is connected, press the IE button and logon Internet.



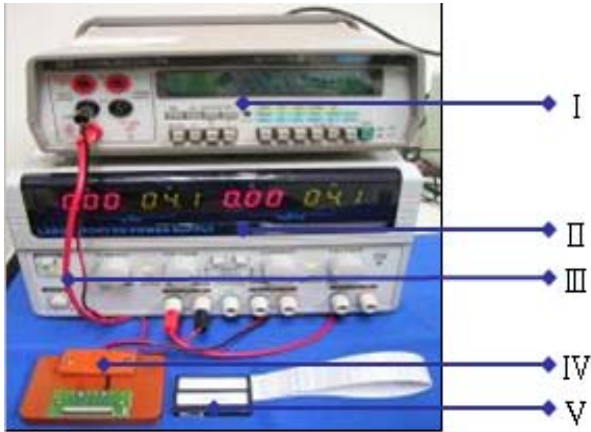
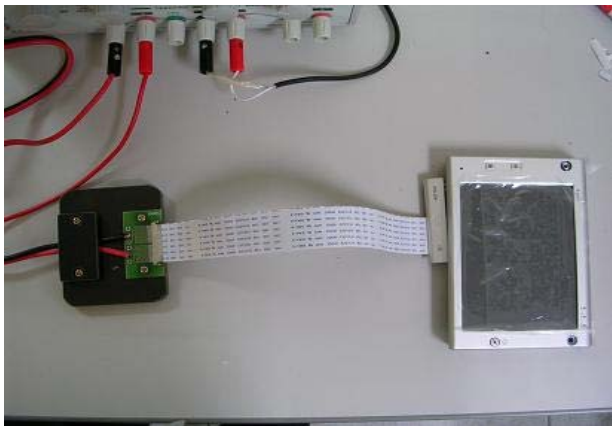

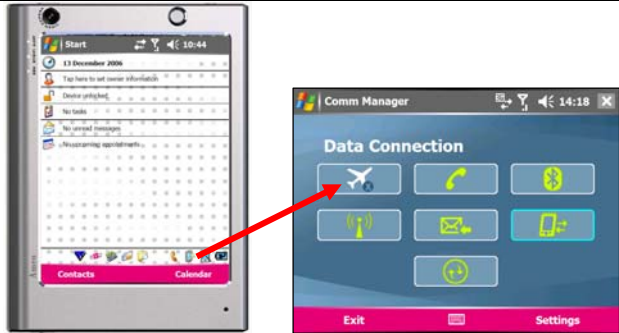
GPS Test

- I. Install GPS tool to device and execute the program.
- II. Setup the COM port to COM4.
- III. Place device in GPS receptor coverage area and tap the icon "Open GPS".
- IV. Check the GPS status as picture shown.

[Note]: Please build up similar GPS test station in repair center.



5. LEAKAGE CURRENT MEASUREMENT

Equipments & Fixtures	
<p>I. Micro-Current Meter.</p> <p>II. Power Supply.</p> <p>III. Cable.</p> <p>IV. Current series jig.</p> <p>V. Battery with extension cable.</p>	
Connect device to test Jig	
<p>VI. Insert battery/ with extension cable to UUT (unit under test).</p> <p>VII. Turn on the device and enter WinCE mode.</p>	
WinCE setup	
<p>VIII. Tap the icon  on the Today screen.</p> <p>IX. Turn on <u>Flight mode</u>.</p> <p>X. Turn off BT, WLAN, Push Mail and Sync.</p>	

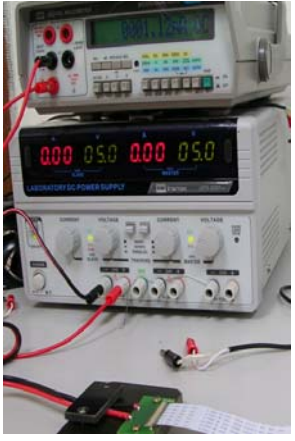
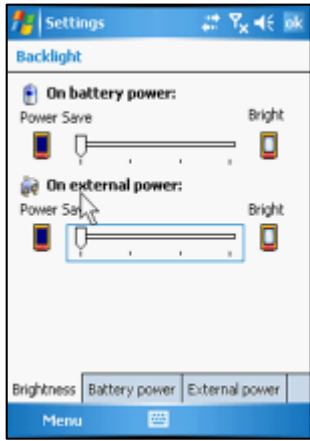
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Leakage current measurement when Backlight off/Sleep mode

- XI. Tap Start->System->Backlight.
- XII. Adjust the backlight level to 0% and checks the current from current meter. **[Note1]**
- XIII. Press power button to initial device enter sleep mode and checks the current from current meter. **[Note2]**

[Note1]: 106mA (Spec \leq 106mA).
[Note2]: 3mA (Spec \leq 3mA).

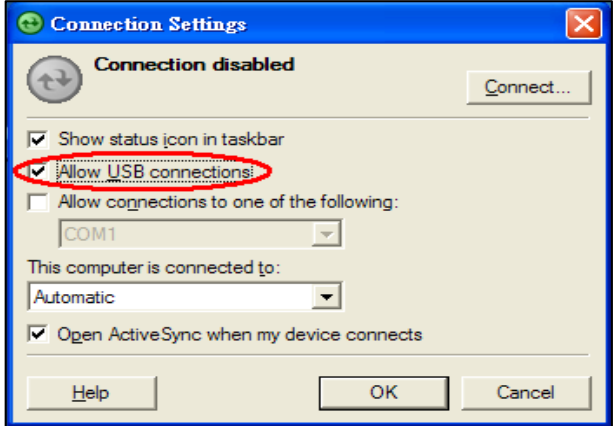
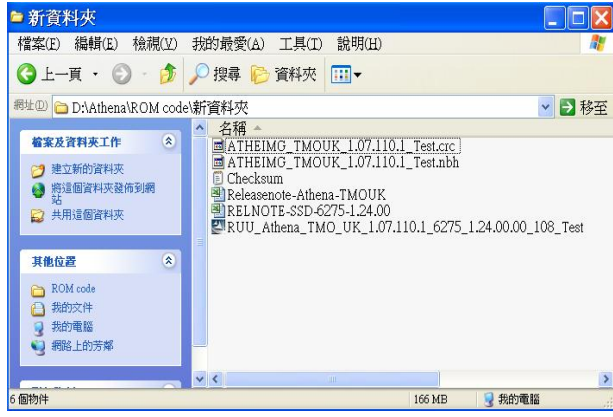
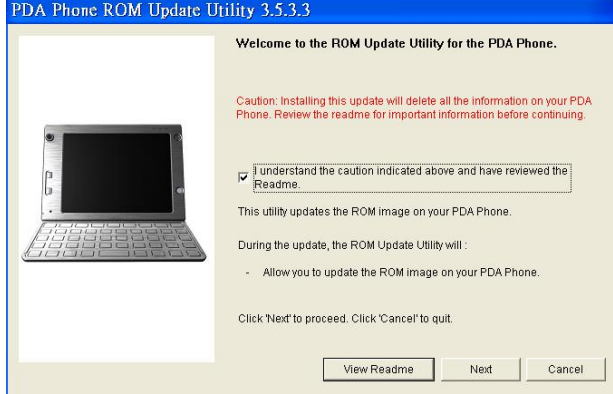


Conclusion

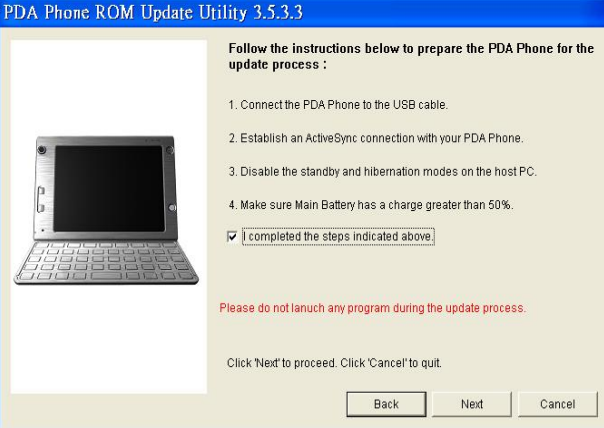


- I. If current consumption test PASS when UUT in Flight and Sleep mode, it means that the M/B works normal.
- II. If current consumption test FAIL when UUT in Flight or Sleep mode, it means that the M/B works abnormal, please replace M/B and re-test again.

6. OS RE-FLASH PROCEDURE

6.1 OS upgrade thru RUU (Re-flash Upgrade Utility)

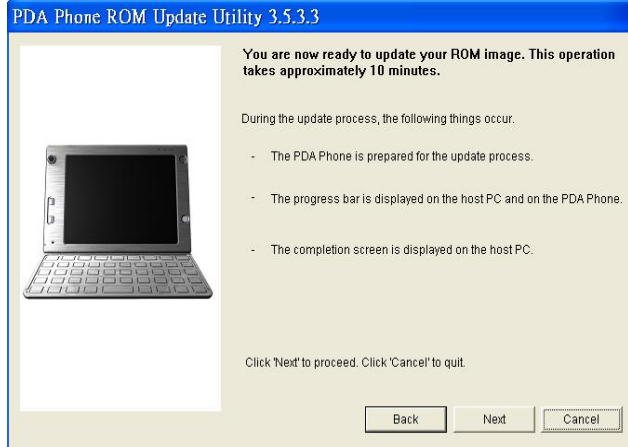
Connect device to PC	
<ol style="list-style-type: none"> I. Setting and allow USB connections in Microsoft ActiveSync. II. Connect your device and desktop/ or laptop via USB cable. III. Check the pop-up message from Microsoft ActiveSync when device is synchronized with PC. 	
Download OS Image from SDO	
<ol style="list-style-type: none"> IV. Download OS image from SDO. http://htcscm10.htc.com.tw/SDO V. Un-zip the file and execute RUU program. 	
RUU - 1	
<ol style="list-style-type: none"> VI. Read the pop-up message form ROM update utility and select the "I understand..." checkbox. VII. Click "Next" to proceed. 	

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RUU - 2	
<p>VIII. Read the pop-up message form ROM update utility to follow and perform the instructions and select the "I completed..." checkbox.</p> <p>IX. Click "Next" to proceed.</p>	 <p>PDA Phone ROM Update Utility 3.5.3.3</p> <p>Follow the instructions below to prepare the PDA Phone for the update process :</p> <ol style="list-style-type: none"> 1. Connect the PDA Phone to the USB cable. 2. Establish an ActiveSync connection with your PDA Phone. 3. Disable the standby and hibernation modes on the host PC. 4. Make sure Main Battery has a charge greater than 50%. <p><input checked="" type="checkbox"/> I completed the steps indicated above.</p> <p>Please do not launch any program during the update process.</p> <p>Click 'Next' to proceed. Click 'Cancel' to quit.</p> <p>Back Next Cancel</p>
RUU - 3	
<p>X. Current image version confirmation.</p> <p>XI. Click "Update" to proceed.</p>	 <p>PDA Phone ROM Update Utility 3.5.3.3</p> <p>Current information about your PDA Phone:</p> <p>Image Version : 1.07.00.00</p> <p>Select from below:</p> <p><input type="button" value="Update"/> Update the current ROM version.</p> <p>Click 'Cancel' to quit.</p> <p>Cancel</p>
RUU - 4	
<p>XII. Double verify the ROM revision which you want to update before re-flash procedure.</p> <p>XIII. Click "Next" to proceed.</p>	 <p>PDA Phone ROM Update Utility 3.5.3.3</p> <p>Verify that you want to update the ROM version:</p> <p>From :</p> <p>Image Version : 1.07.00.00</p> <p>To :</p> <p>Image Version : 1.07.110.1</p> <p>Click 'Next' to proceed. Click 'Cancel' to quit.</p> <p>Back Next Cancel</p>
RUU - 5	

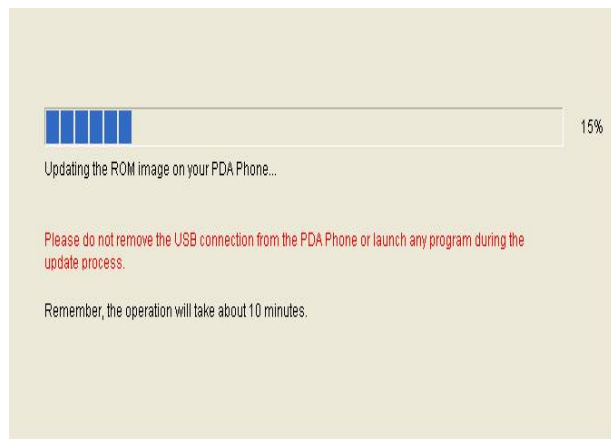
XIV. Read the information from pop-up message and the OS update procedure will takes 10 minutes long.

XV. Click "Next" to proceed.



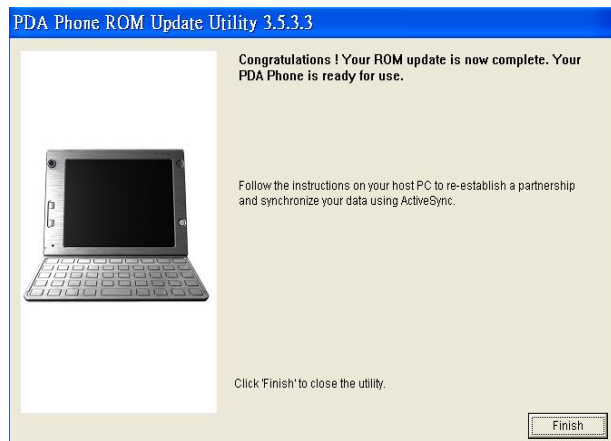
RUU - 6

XVI. You can see the update progress from your PC and in your device.



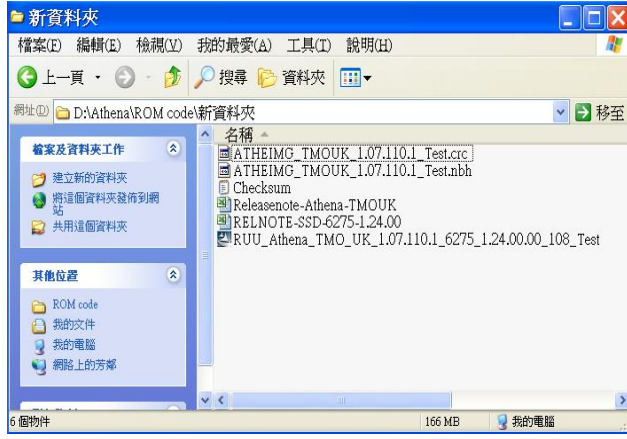
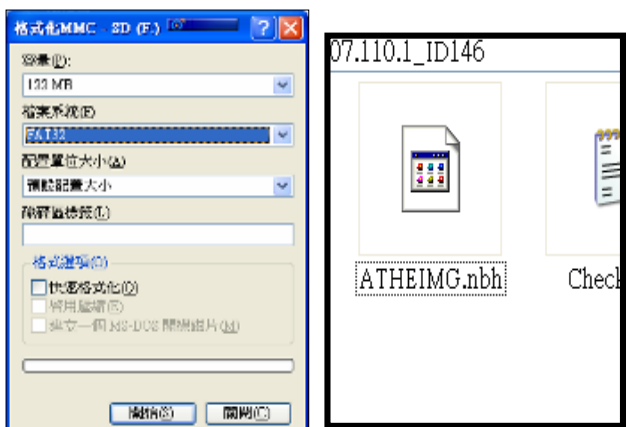
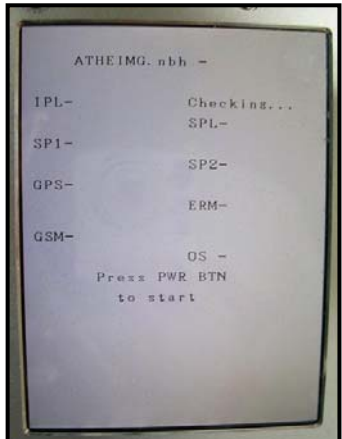
RUU - 7

XVII. The OS upgrade is finished, click "Finish" to close the utility.



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6.2 OS upgrade thru MiniSD card

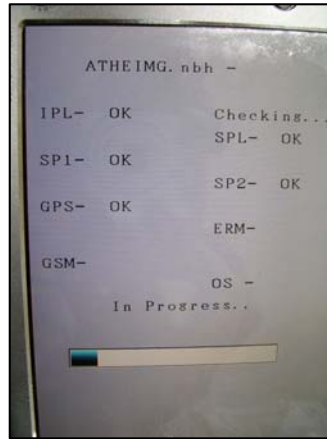
Download OS Image from SDO	
<p>I. Download OS image from SDO. http://htscm10.htc.com.tw/SDO</p> <p>II. Un-zip the image file.</p>	
Format MiniSD card and copy image file to MiniSD card	
<p>III. Select file system and format the MiniSD card to FAT32 mode.</p> <p>IV. Copy image file XXX.nbh to the micro SD card and rename to ATHEIMG.NBH.</p>	
MiniSD Upgrade - 1	
<p>V. Turn the device power off and insert MiniSD card.</p> <p>VI. Press and hold Power + Camera button, and Reset button to entry Boot loader mode.</p> <p>VII. Press Power button to start upgrade procedure.</p>	

MiniSD Upgrade - 2

VIII. Reading source code from MiniSD card.

[Note]: This process will takes 15 mins, please don't power off the device.



IX. After finish, press [Reset](#) button to reboot.



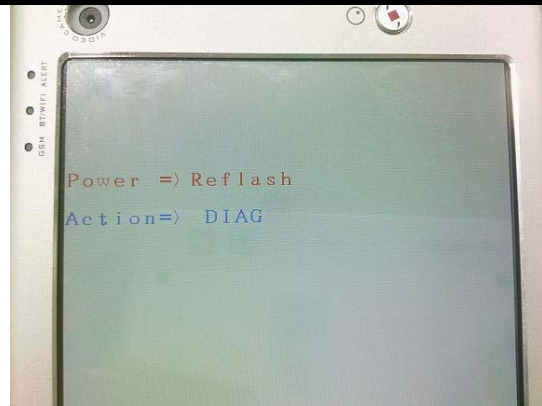
6.3 OS upgrade thru diagnostic MiniSD card

This is new function to reflash OS thru diagnostic MiniSD card.
It will clear storage completely and finish the reflash process within 10 Mins.

- Power OFF.
- Insert Diagnostic MiniSD card (provided by HTC) to device.
- Press **Power + Camera** button, release the **Reset** buttons after hold for 2 seconds, and then the device enter boot-loader mode.
- Remove the battery directly or perform soft reset to reboot when finish reflash procedure.
- **Please make sure the battery power over than 50% or plug in AC adapter during reflash procedure.**

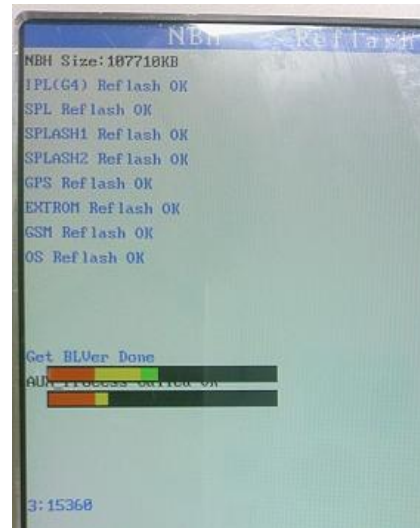
Download OS Image from SDO	
<p>I. Download OS image from SDO. http://htcscm10.htc.com.tw/SDO</p> <p>II. Un-zip the image file.</p>	
Copy OS image file to diagnostic MiniSD card	
<p>III. Copy OS image file XXXX.nbh to the MiniSD card and rename to ATHEIMG.NBH.</p> <p>IV. The MiniSD should be contained with ATHEDIAG.nbh (diagnostic tool).</p>	
MiniSD Upgrade - 1	

- V. Turn the device power off and insert Diagnostic MiniSD card.
- VI. Press and hold **Power + Camera** button, and **Reset** button to entry Boot loader mode.
- VII. Press **Power** button to start upgrade procedure.



MiniSD Upgrade - 2

- VIII. Reading source code from MiniSD card.
[Note]: This process will take about 8 mins.
- IX. After finish, press **Reset** button to reboot.





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Build up map files thru MiniSD card

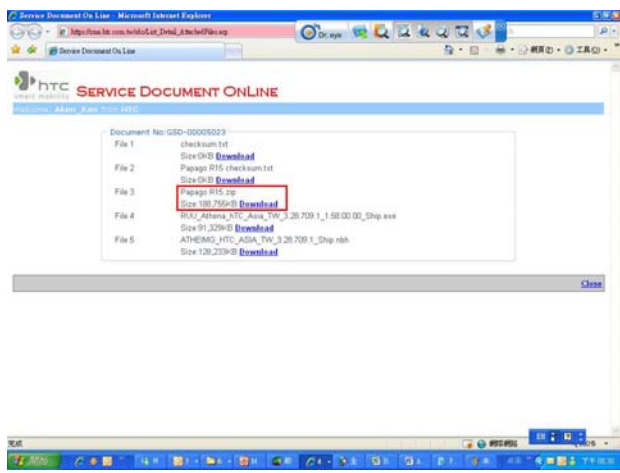
After OS reflash or replace MB, you must build up the map file to device for below P/N.

Country	TW	HK (CHT)	HK (WWE)	Singapore/ Malaysia	Indonesia
Languages	CHT	CHT	WWE	WWE	WWE
HTC 99H P/N	99HFC018-00/01	99HFC019-00/01	99HFC020-00/01	99HFC021-00/01	99HFC022-00/01
Map solution	PAPAGO R15	Mapking R12 (CHT)	Mapking R12 (WWE)	Mapking R12 (WWE)	Mapking R12 (WWE)

This process will format flash disk of device and automate perform copy file process within 15 Mins.

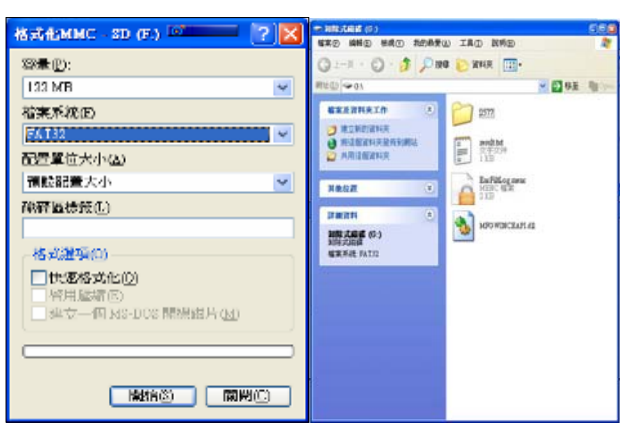
Download map files from SDO

- I. Download map files from SDO.
<http://htcscm10.htc.com.tw/SDO>
- II. Un-zip the map files.



Format MiniSD card and copy map files to MiniSD card

- III. Select file system and format the miniSD card to FAT32 mode.
- IV. Copy all files to the miniSD card.



Automate perform the copying file process

- V. Set the device enter to WinCE.
- VI. Insert the miniSD card and the device will automate perform the copy file process.



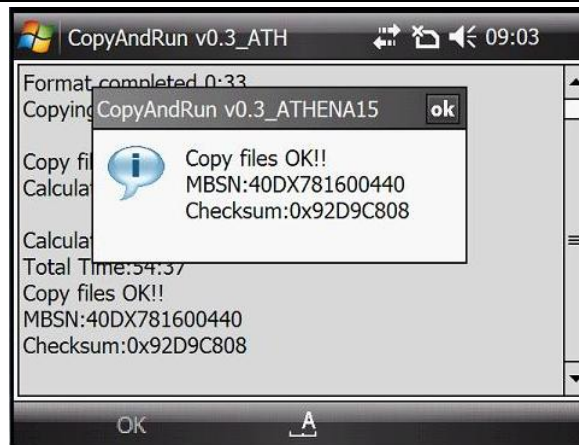
Download map checksum file

- VII. Download the map checksum.txt file from SDO.



Compare the checksum

- VIII. Check both device and txt file checksum should be the same.




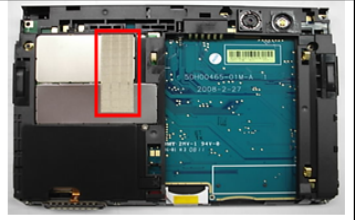
7. GENERIC SPARE PART LIST AND PHOTOS


Picture for SPL 80H Kernel and Accessories

(Part no on picture is for Generic version only, please check SPL for detail per customer)

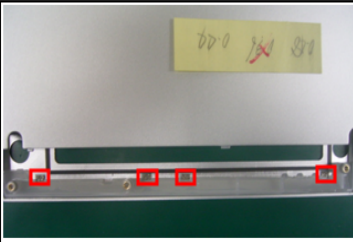
Part No.	36H00506-00M		Part No.	36H00509-00M	
Description	Antenna,ACON,CER147		Description	SPEAKER MODULE left channel	
Q'ty	1		Q'ty	1	
Part No.	36H00510-00M		Part No.	51H00465-XXM (Different P/N by customer)	
Description	SPEAKER MODULE right channel		Description	PCBA-MAIN BOARD	
Q'ty	1		Q'ty	1	
Part No.	51H00359-00M		Part No.	54H00201-00M	
Description	PCBA,UMTS Module		Description	Camera Module,06P037,LITEON,6.5*6.5*4.25mm	
Q'ty	1		Q'ty	1	
Part No.	54H00202-00M		Part No.	60H00049-00M	
Description	Camera Module,LITEON,Micron 3MP/AF		Description	TFT-LCD,LTP500GV-F01,5inch	
Q'ty	1		Q'ty	1	
Part No.	71H01499-00M		Part No.	71H01497-00M	
Description	Filler,right-upper		Description	Filler,left-upper	
Q'ty	1		Q'ty	1	
Part No.	72H00339-00M		Part No.	72H00338-00M	
Description	SCREW,TORX,M1.6x8,NYLOK,L4.5		Description	SCREW,PH,FLAT,M1.4X2.5,NYLOK,L1.5	
Q'ty	3		Q'ty	1	

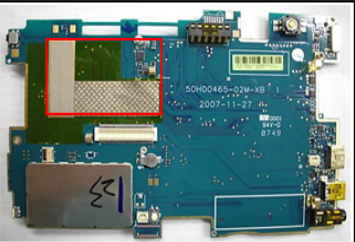
Part No	72H01367-00M	
Description	Screw, ph, fd, M1.4*5.5, nylok	
Q'ty	1	


Part No.	72H01543-00M	
Description	Conductive Fabric, 35*13mm	
Q'ty	1	


Part No.	72H01646-00M	
Description	Conductive Fabric, 40*15*0.1mm, U-TEK	
Q'ty	4	

Part No	72H01796-00M	
Description	Holder, metal, Battery	
Q'ty	1	

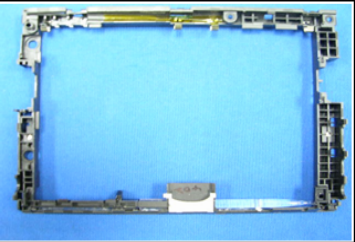
Part No	72H01818-00M	
Description	EMI Gasket, 3*2*0.35mm, U-TEK	
Q'ty	4	

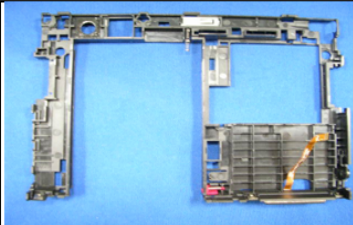
Part No	72H01841-00M	
Description	EMI Gasket, 41*28*0.15mm, L-type gasket	
Q'ty	1	

Part No	72H01852-00M	
Description	EMI Gasket, 16*6*2mm, U-TEK	
Q'ty	1	

Part No.	71H01488-XXM (Different P/N by customer)	
Description	Cover, antenna conn	
Q'ty	2	

Part No	72H01853-XXM (Different P/N by customer)	
Description	Screw, TORX, M1 6x2.35, NYLOK	
Q'ty	3	


Part No	74H001135-XXM (Different P/N by customer)	
Description	Frame Pre-Assy, Upper	
Q'ty	1	


Part No	74H001136-XXM (Different P/N by customer)	
Description	Frame Pre-Assy, Lower	
Q'ty	1	


Part No	74H00655-XXM (Different P/N by customer)	
Description	Cover Pre-Assy, Antenna	
Q'ty	1	

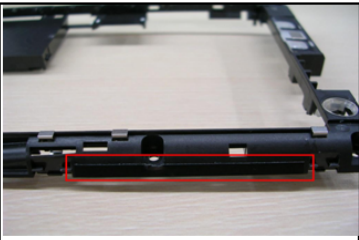
Part No	74H01118-XXM (Different P/N by customer)	
Description	Bezel Pre-Assy,Metal	
Q'ty	1	


Part No	74H00856-XXM (Different P/N by customer)	
Description	Cover Pre-Assy,bottom	
Q'ty	1	

Part No	74H00644-00M	
Description	Button Pre-Assy,button,power (Not reusable)	
Q'ty	1	


Part No	74H00806-XXM (Different P/N by customer)	
Description	Stylus Pre-Assy	
Q'ty	1	


Part No	74H01137-XXM (Different P/N by customer)	
Description	Keypad Pre-Assy,portal (Not reusable)	
Q'ty	1	

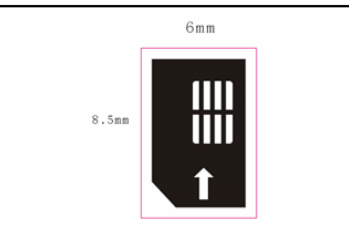
Part No	76H01761-00M	
Description	Spacer,MYLAR,RIGHT,FRAME,UPPER	
Q'ty	1	

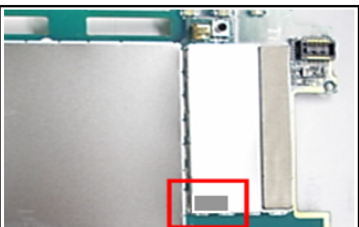
Part No	76H01661-00M	
Description	Mylar,UMTS,board	
Q'ty	1	

Part No	76H02514-00M	
Description	Tape,PET,Mylar,Adhesive,LCM	
Q'ty	1	

Part No	76H01760-00M	
Description	Insulator,KAPTON,UMTS,board	
Q'ty	1	

Part No	76H01705-00M	
Description	Poron,SR-S-15P,CAMERA,FLASH	
Q'ty	1	

Part No	77H00480-00M	
Description	SIM indication Label,6*3mm	
Q'ty	1	

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



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Part No	76H01818-00M	
Description	Tape,Kapton	
Q'ty	3	

Part No	73H20165-09M	
Description	FPC Pre-Assy,IO FPC,CAREE	
Q'ty	1	

Part No	78H00019-XXM (Different P/N by customer)	
Description	Qwerty Keyboard	
Q'ty	1	

Part No	35H00081-00M	
Description	BATTERY_LI-ION,2200mAh,3.7V	
Q'ty	1	

Part No	79H00055-XXM (Different P/N by customer)	
Description	AC Adapter,1A,5V	
Q'ty	1	

Part No	36H00482-XXM (Different P/N by customer)	
Description	Earphone	
Q'ty	1	

Part No	70H00124-XXM 70H00122-XXM (Different P/N by customer)	
Description	Pouch,Accessory bag	
Q'ty	1	

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

Part No	73H00255-XXM (Different P/N by customer)	
Description	16 pin to D-sub video cable	
Q'ty	1	

Part No	77H00453-XXM (Different P/N by customer)	
Description	Regulation Label,Main unit	
Q'ty	1	

Part No	77H00454-XXM (Different P/N by customer)	
Description	Regulation Label,Main unit certification label	
Q'ty	1	

Part No	77H00222-00M	
Description	Warranty Label	
Q'ty	1	



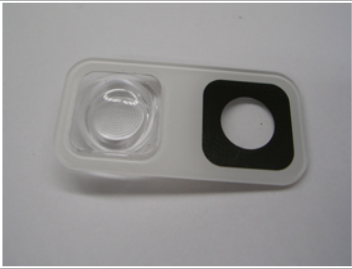
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Part No	71H01507-00M	
Description	Lens, camera2, Athena	
Q'ty	1	

Part No		
Description		
Q'ty		

8. GENERIC LABELING PLAN

Main unit

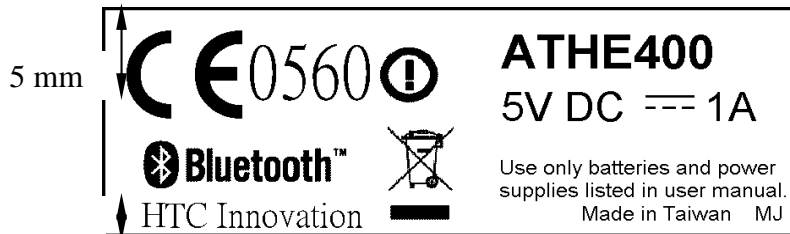
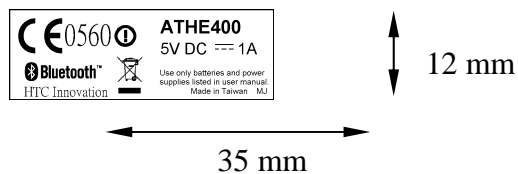
1a. Main unit Regulatory label (on the rear housing of main unit)

HTC P/N: 77H00629-00M

Image file name: Main_Unit_Regulation

Please note: 1. The brand name is shown on Bezel.

2. All bar codes must be code 128 symbology.

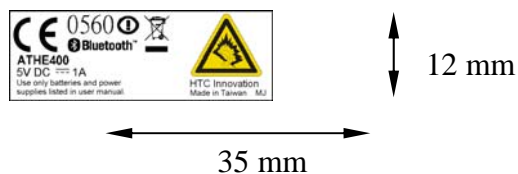


HTC P/N: 77H00629-01M

Image file name: Main_Unit_Regulation

Please note: 1. The brand name is shown on Bezel.

2. All bar codes must be code 128 symbology.





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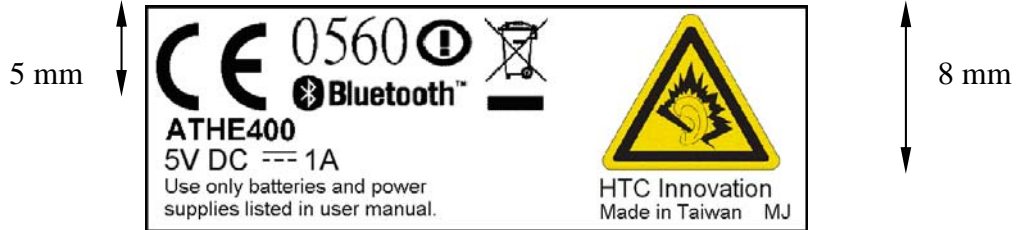
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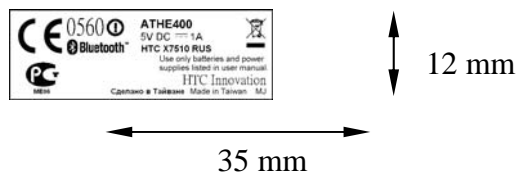


HTC P/N: 77H00629-02M

Image file name: Main_Unit_Regulation

Please note: 1. The brand name is shown on Bezel.

2. All bar codes must be code 128 symbology.





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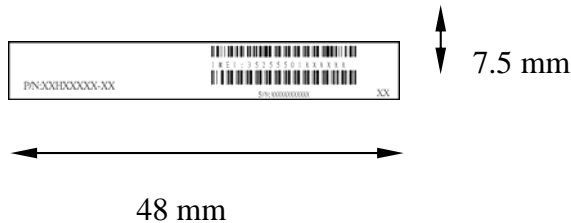
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1b. Main unit Regulatory label (on the battery cover of main unit)

HTC P/N: 77H00453-00M



Controlled by MFG.



For S/N: SSYWWPPZZZZZ

SS: SITE CODE --> HT

Y: Year Last Digital of the Year.

WW: Week Code : 01 ~ 54

PP: Product Code : K8

ZZZZZ: Serial Number (00001 ~ 99999) Use Base 10



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MODEL ID: ATHE400.

Label Characteristic :

Material: polyester

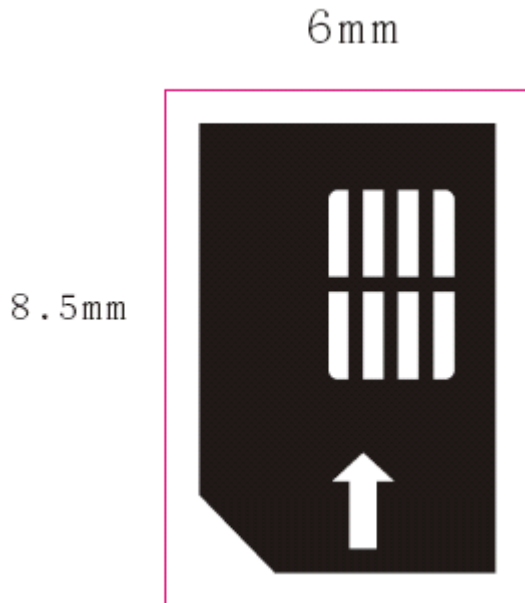
Color: pantone 422c

Ink: pantone 425c

Above printing content is just an example only.

1c. Main unit SIM indication Label

HTC P/N: 77H00480-00M



1d. Main unit Magnetic field warning label

HTC P/N: 77H00481-00M



1e. Main unit indication for battery door label

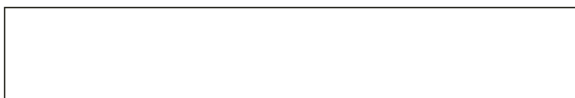
HTC P/N: 77H00492-00M



**1g. Film, protect film for bar code regulatory label
(The label will be stuck on the battery cover of main unit)**

HTC P/N: 77H00502-00M

49mm



8mm



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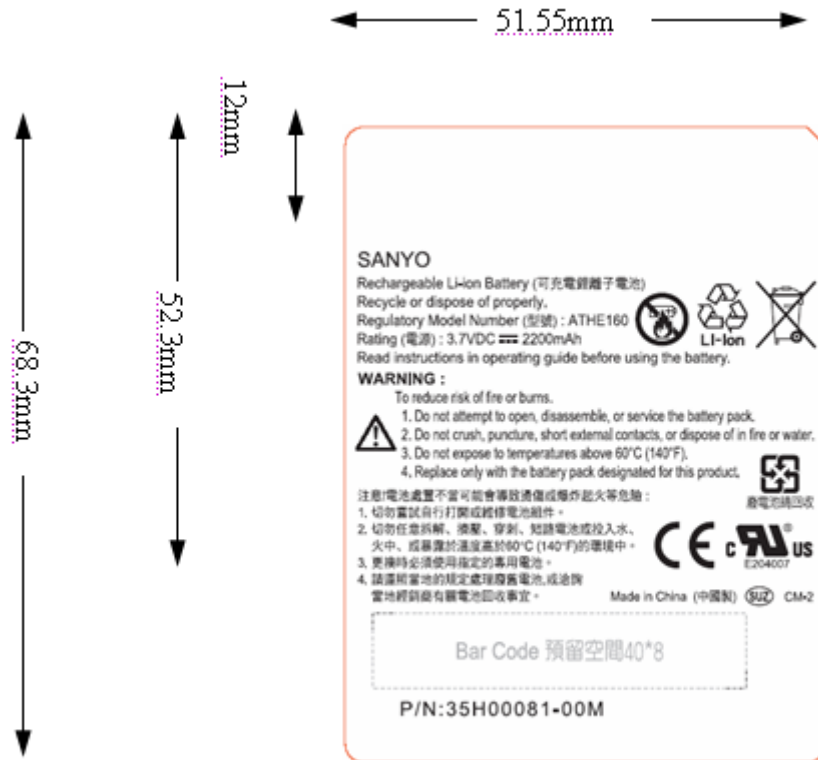
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2. Main Battery Warning Label

HTC P/N: 35H00081-00M

Image file name: Main_Battery_warning

Manufacture by battery vendor.



Label characteristic:

Material: **TBD**

Color: **TBD**

Ink: **TBD**

2.2 Battery Indication Label-1

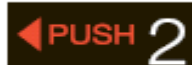
P/N : 77H00635-00M





2.3 Battery Indication Label-2

P/N : 77H00634-00M





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9. RF ANTENNA SPECIFICATION

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	37	-104	
5	Fast Bit Error Rate	5	124	-104	
E-GSM 900 Ttansmitter Test					
6	Check TX Power	5	975	-75	
7	Check TX Power	5	37	-75	
8	Check TX Power	5	124	-75	
DCS 1800 ReceiverTest					
9	Fast Bit Error Rate	0	512	-104	
10	Fast Bit Error Rate	0	698	-104	
11	Fast Bit Error Rate	0	885	-104	
DCS 1800 Ttansmitter Test					
12	Check TX Power	0	512	-75	
13	Check TX Power	0	698	-75	
14	Check TX Power	0	885	-75	
PCS 1900 ReceiverTest					
15	Fast Bit Error Rate	0	512	-104	
16	Fast Bit Error Rate	0	662	-104	
17	Fast Bit Error Rate	0	810	-104	
PCS 1900 Ttansmitter Test					
18	Check TX Power	0	512	-75	
19	Check TX Power	0	662	-75	
20	Check TX Power	0	810	-75	
GSM 850 ReceiverTest					
21	Fast Bit Error Rate	5	128	-104	
22	Fast Bit Error Rate	5	189	-104	
23	Fast Bit Error Rate	5	251	-104	
PCS 1900 Ttansmitter Test					
24	Check TX Power	5	128	-75	
25	Check TX Power	5	189	-75	
26	Check TX Power	5	251	-75	



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Items	Test Name	Power Level	Uplink/Downlink UARFCN	Ist Downlink CellPower	Note
1	Camp @ W-CDMA Band I (2100)	3	9613/10563	-60	
2	BS Originate Call	3	9613/10563	-60	
ReceiverTest					
3	Bit Error Rate	3	9613/10563	-104	
4	Bit Error Rate	3	9750/10700	-104	
5	Bit Error Rate	3	9887/10837	-104	
Ttransmitter Test					
6	Check TX_Max Power	3	9613/10563	-60	
7	Check TX_Max Power	3	9750/10700	-60	
8	Check TX_Max Power	3	9887/10837	-60	
Items	Test Name	Power Level	Uplink/Downlink UARFCN	Ist Downlink CellPower	Note
1	Camp @ W-CDMA Band II(1900)	3	9263/9663	-60	
2	BS Originate Call	3	9263/9663	-60	
ReceiverTest					
3	Bit Error Rate	3	9263/9663	-104	
4	Bit Error Rate	3	9400/9800	-104	
5	Bit Error Rate	3	9537/9937	-104	
Ttransmitter Test					
6	Check TX_Max Power	3	9263/9663	-60	
7	Check TX_Max Power	3	9400/9800	-60	
8	Check TX_Max Power	3	9537/9937	-60	
Items	Test Name	Power Level	Uplink/Downlink UARFCN	Ist Downlink CellPower	Note
1	Camp @ W-CDMA Band VI(850)	3	4133/4358	-60	
2	BS Originate Call	3	4133/4358	-60	
ReceiverTest					
3	Bit Error Rate	3	4133/4358	-104	
4	Bit Error Rate	3	4175/4400	-104	
5	Bit Error Rate	3	4232/4457	-104	
Ttransmitter Test					
6	Check TX_Max Power	3	4133/4358	-60	
7	Check TX_Max Power	3	4175/4400	-60	



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8	Check TX_Max Power	3	4232/4457	-60	
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10. BOARD LEVEL 2.5 REPAIRS

Basic Repair Instructions for Component Replacement:

Step 1 Place the solder-proof tape to cover the surrounding area of the components which being replaced.

Warning : DO NOT overheat the tape and components to avoid the tape melted and make the component damage.

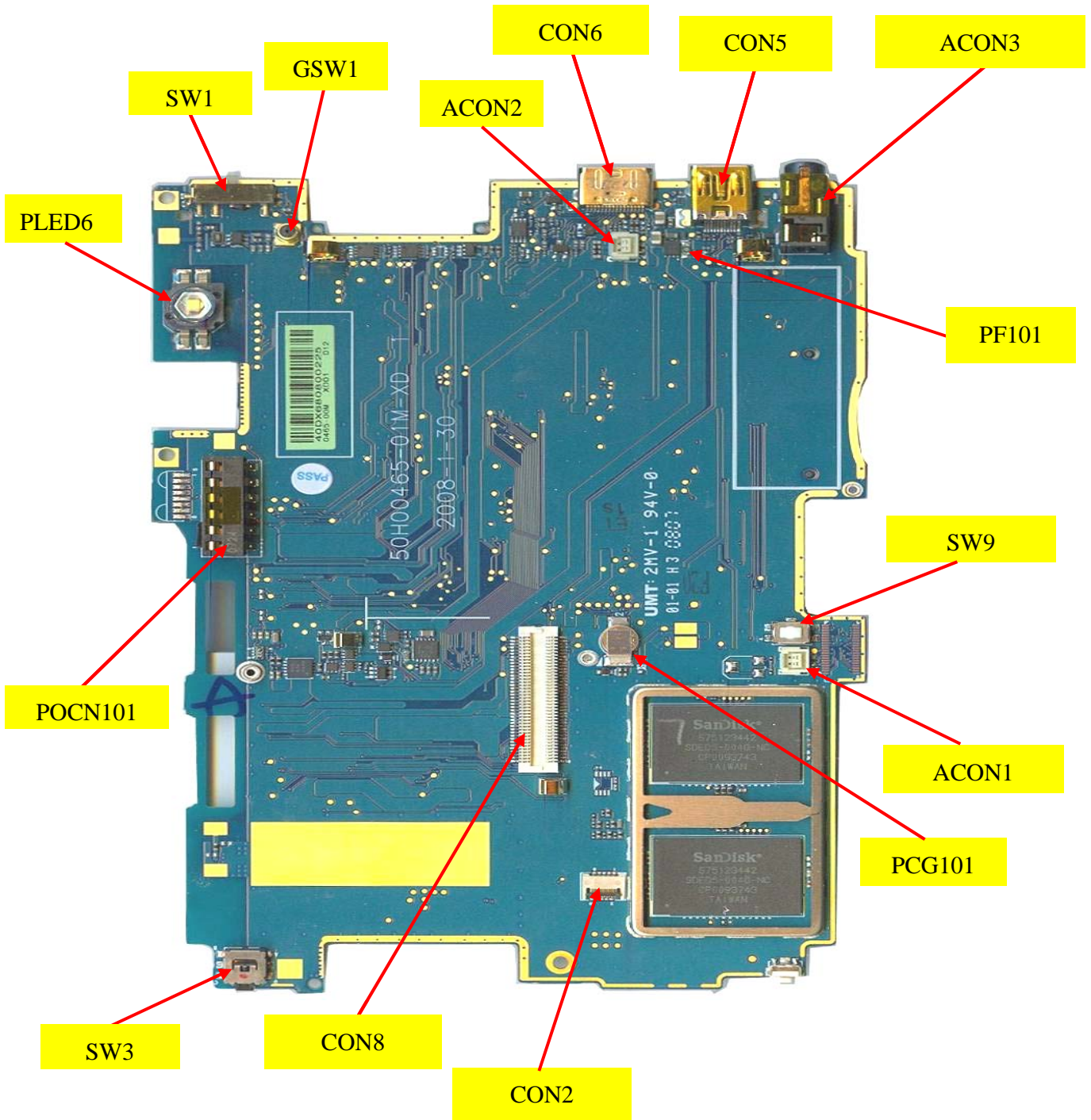
Step 2 Use Heater Gun (HAKO850B, set the temperature between 350°C, Air Speed 3~5) to remove the components.

Step 3 It has to wait the temperature cool down before the damaged components been removed. Or, the others components could be gone when the solder-proof tape been taken off.

Step 4 After the damaged components has been replaced; clear the surroundings for solder and flux residues.

51H00465-00M PCBA-MAIN BOARD(Side A)				
Location	P/N	Description	Q'ty	Description
SW1	36H00551-00M	Slide_Switch,HSS112,HCH	1	Volume slide button
PLED6	27H00145-00M	LED,700mA,3.72V,LXK2-PW12-R00,LUMILEDS	1	LED
PCON101	75H00489-00M	Connector Others,6P,2.5Pitch,3A,6V,30mohm,BTR1Q-6K2000,ACON	1	Battrey connector
SW3	36H00682-00M	Switch,T-MEC,NTC603-CC1G-B200T	1	Camea button
CON8	75H00484-00M	Connector B to B,80P,0.5Pitch,0.05A,60V,90mohm,MATSUSHITA	1	UMTS board connector
CON2	75H00643-00M	Connector B to C,10P,0.3Pitch,FF12-10A-R11A,DDK,0.2A,50V	1	Keyboard FPC connector
PCG101	16H00012-00M	Gold Cap,0.07F,70ohm,3.3V,-25/+50%,XH414H I102E,SEIKO,7.6*4.8*1.72mm,,70/-25degC	1	Gold cap
ACON1 ACON2	75H00124-00M	Connector Device,BM02B-ASRS-TF_LF_SN,2pin,Pitch=1mm,JST	2	Speaker connector
SW9	36H00098-00M	POWER-BUTTON-SWITCH,EVQP2R02M,MATSUSHITA	1	Power button
PF101	36H00300-00M	Fuse,046702.5,2.5A/32V,LITTLEFUSE,Apache	1	Fuse
ACON3	36H00218-11M	Audio Jack,JP011-D4BA-3602XT,3.5mm,T-MEC	1	Audio jack
CON5	75H00454-00M	Connector I/O,Normal,11P,0.4Pitch,302-11101-00,ACT	1	USB connector
CON6	75H00571-00M	Connector I/O,16P,0.45Pitch,0.5A,5V,30mohm,SUYIN	1	VGA output connector
GSW1	75H00514-00P	Connector RF,Female,4P,MS-162,HIROSE,3.5*3.1*2.5mm	1	GPS Female conector

➤ Side A Photo and Component Location





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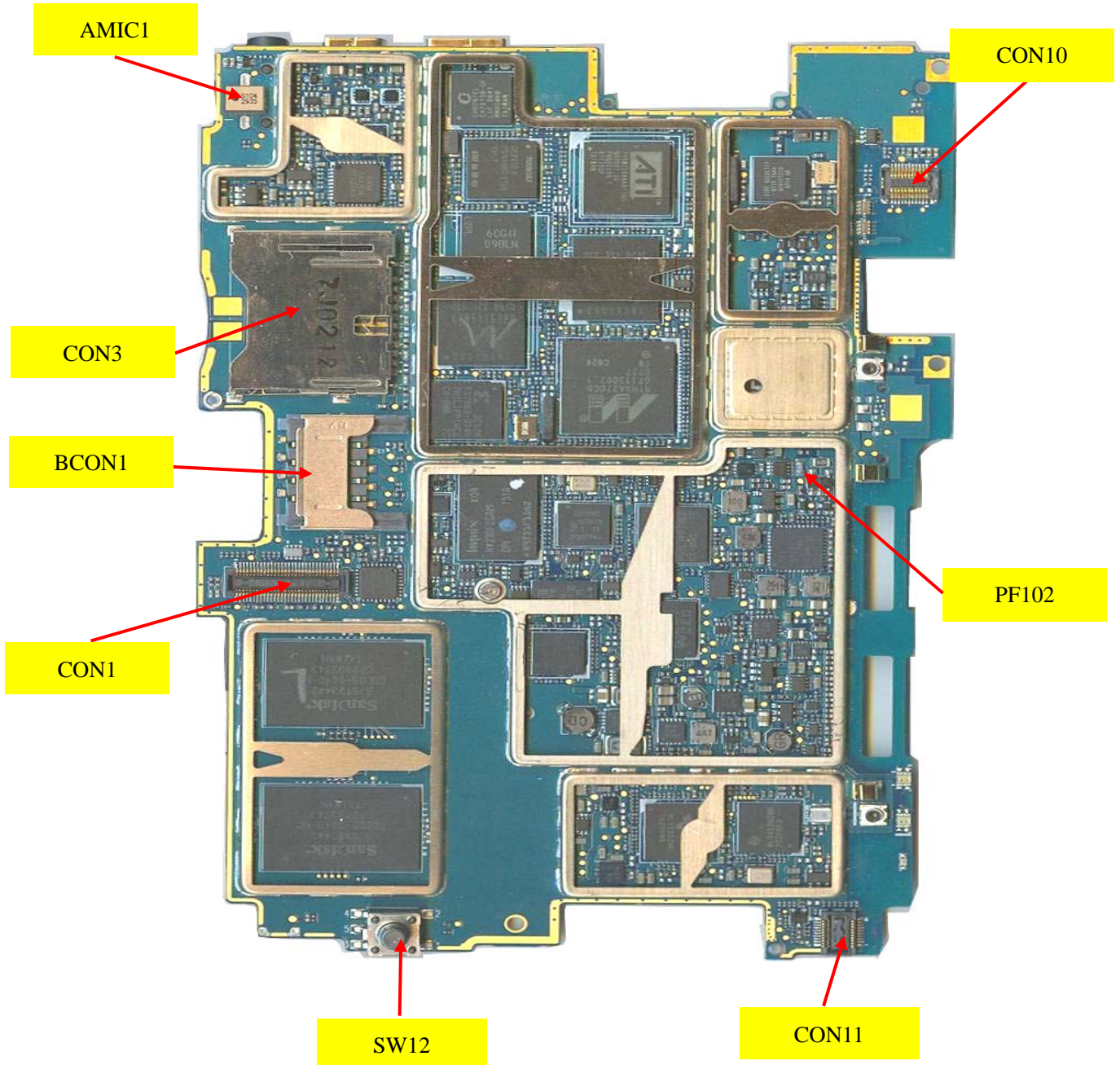
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51H00465-00M PCBA-MAIN BOARD(Side B)

Location	P/N	Description	Q'ty	Description
AMIC1	36H00440-00M	Microphone,SPM0208HE5-SB,KNOWLES,100/-40degC,4.72*3.76*1.25mm	1	MIC
CON3	75H00432-00M	Connector SD Card,mini-SD,CIM-F07N,11pin,Pitch=1.3mm,MITSUMI,0.0*0.0*2.2mm	1	Mini-SD card connector
BCON1	75H00616-00M	Connector SIM Card,8P,2.54Pitch,4250820-SINR01,HAMBURG,14.9*16.3*2.0mm	1	SIM card connector
CON1	75H00487-00M	Connector B to B,60P,0.4Pitch,AXK760147G,NAIS,14.3*4.1*1.5mm	1	LCM connector
SW12	36H00705-01M	Switch,T-MEC,NTC014-CB1G-F160T-A		Home button
CON11	75H00485-00M	Connector B to B,20P,0.4Pitch,0.5A,60V,90mohm,female,MATSUSHITA	1	2nd Camera connector
PF102	36H00067-00M	Fuse,24V,2.5A,FAST-ACTING,0603,TR/0603FA2.5-R,BUSSMANN	1	Fuse
CON10	75H00488-00M	Connector B to B,22P,0.4Pitch,0.03A,60V,90mohm,MATSUSHITA	1	Camera connector

➤ Side B Photo and Component Location





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11. GENERIC TROUBLESHOOTING

1 • Main Unit Does Not Respond to Power Button

- (1) Connect the AC adapter, maybe the battery pack is exhaust and wait for few minutes if unit boot.
- (2) Check if battery installed well and switch to lock.
- (3) Check key lock switch if enable
- (4) Check the Power Button if any damage.
- (5) Try with another battery pack.
- (6) Try if unit can enter boot-loader mode. If so, try to re-flash ROM if can solve the problem.
- (7) Check all connections including LCD FPC to Main Board.
- (8) Replace Main Board if necessary.
- (9) Once the defective part has been identified, verify it again with the defective part whether the symptom could be duplicated.

2 • Touch Panel Does Not Respond to Screen Tap

- (1) Check the connection of LCM FPC cable whether is properly connected.
- (2) Try to cold boot the unit then tries again.
- (3) Try with another LCM.
- (4) Try with another Main Board.
- (5) Replace LCM 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.

3 • Buttons Do Not Respond

- (1) Try to cold boot the unit then tries again.
- (2) Dismantle the unit; check the status of switches on the Main Board and the plastic parts of the Button not responding.
- (3) Try with another Main Board or Front Bezel.
- (4) Replace Main Board or Front Bezel if necessary.
- (5) Once the defective part has been identified, verify it again with the defective part whether the symptom could be duplicated.

4 • Unusual Vertical / Horizontal lines or partial display

- (1) Check the connection of LCM FPC whether is properly connected.



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- (2) Try to cold boot the unit then tries again.
- (3) Try to re-flash the ROM code.
- (4) Try with another LCM.
- (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.

5 · Back Light Does Not Turn ON/OFF

- (1) Check the connection of LCM FPC whether is properly connected.
- (2) Try to re-flash the ROM code.
- (3) Try with another LCM.
- (4) Try with another Main Board.
- (5) Replace LCM 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.

6 · MiniSD Card cannot be used

- (1) Check whether MiniSD Card is fully inserted to the slot until you hear a click.
- (2) Try to re-flash the ROM code.
- (3) Try with another MiniSD Card.
- (4) Try with another Main Board.
- (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.

7 · PC Connection not possible

- (1) If test result is NFF, it is possible caused by user connect cradle to computer before ActiveSync is installed.
- (2) Check whether "Connection Settings" in the MS ActiveSync is properly set.
- (3) Check whether it connects with other cables or cradle, customer's cable might be damaged.
- (4) Check the external appearance of the connector on the unit whether it is physically damaged.
- (5) Try to re-flash the ROM code.



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- (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 · Battery Pack 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) Check the appearance of Battery Pack if any abnormal..
- (6) Try with another Battery Pack or Replace Battery Pack if necessary
- (7) Try with another Main Board or 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.

9 · 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 Pack.
- (4) Try with another Battery Pack or Replace Battery Pack 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.

10 · Battery Pack does not recharge

- (1) Make sure the Battery Pack takes fully charge with AC Adapter.
- (2) Check whether the condition of Battery Charging status is correct. Charge should be done no more than 4 hours.
- (3) Dismantle the unit and check the appearance of Battery Pack.
- (4) Try with another Battery Pack or Replace Battery Pack 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.

11 · No Sound from Speaker or Distorted sound

- (1) Check "Sound & Notifications" Settings in the unit for Sound Enabling.



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- (2) Make sure it's not MUTED.
- (3) Try to re-flash the ROM code.
- (4) Clean up the speaker connection side on MB if there is any contamination.
- (5) Dismantle and Check whether the Speaker is properly installed (Orientation)
- (6) Replace Speaker 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.

12 · 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) Try to re-flash the ROM code.
- (4) Dismantle and Check whether the Microphone is properly installed.
- (5) Replace Microphone 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.

13 · Wireless connection (WLAN/BT) not possible

- (1) Make sure the wireless environment is OK before your checking.
- (2) Make sure the wireless connection setting has been properly set.
- (3) Make a life connection with Internet or another device.
- (4) Try to re-flash the ROM code.
- (5) Try with another 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.

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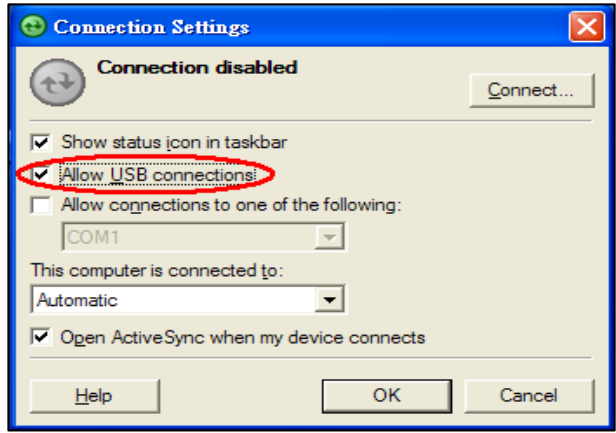
12. BATTERY RUNDOWN TEST PROCEDURE

1. Tool Requirement: Battery Rundown Software.
2. Before performing battery rundown test, please measure and examine the Unit/MB Board whether it is normal or not by leakage current measurement.
3. Please check whether it's the former battery or not.

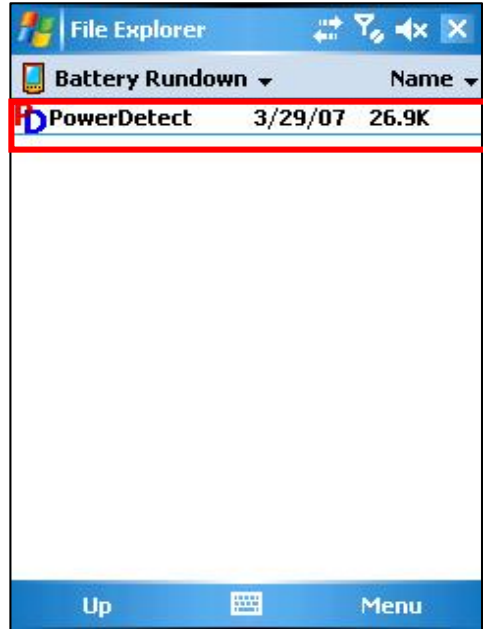
Test Criteria

- A. Please charge your unit to full capacity for battery (until the green light is displayed) before doing the test.
- B. Disable all RF functions including GSM, BT, WLAN, GPS and etc. before testing.
- C. Set your device backlight brightness into the maximum level.
- D. Cancel the item of Turn off backlight if device is not used for.
- E. Please run the Rundown tool for an hour.
- F. If the test result is lower than the Criteria, should exchange the battery for customers in Warranty.

TEST PROCEDURE

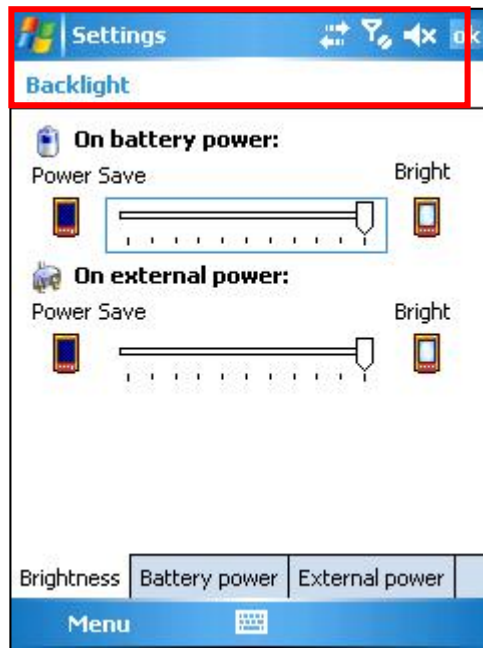
Connect device to PC	
<p>IV. Setting and allow USB connections in Microsoft ActiveSync.</p> <p>V. Connect your device and desktop/ or laptop via USB cable.</p> <p>VI. Check the pop-up message from Microsoft ActiveSync when device is synchronized with PC.</p>	
Copy the Battery Rundown tool into the device	

- XVIII. Make a folder in the device.
- XIX. Copy **PowerDetect.exe** into the folder.



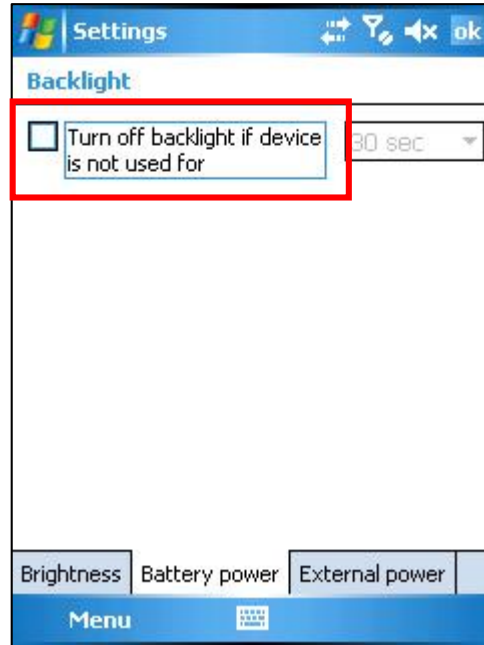
Battery Rundown-1

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



Battery Rundown-2

I. Disable **Turn off backlight if device is not used for** in Battery power.



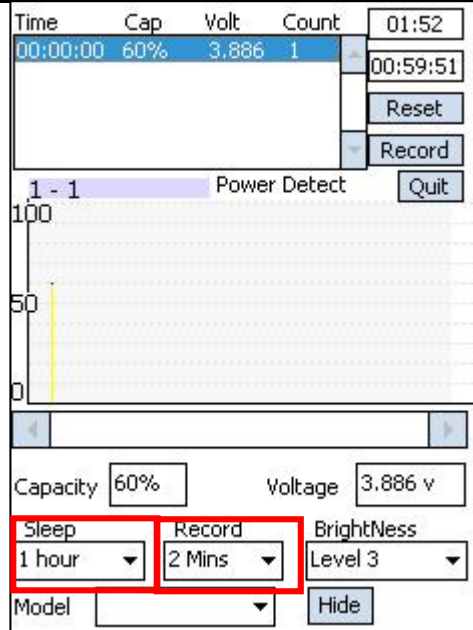
Battery Rundown-3

I. Execute **PowerDetect.exe** under WinCE



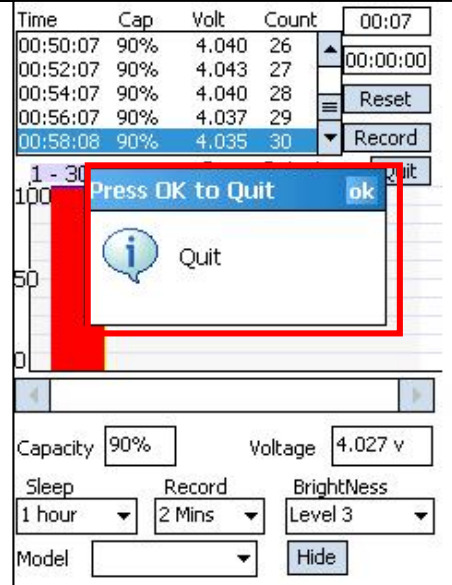
Battery Rundown-4

- I. Set the Sleep as **1hour**
- II. Set the Record as **2Mins**



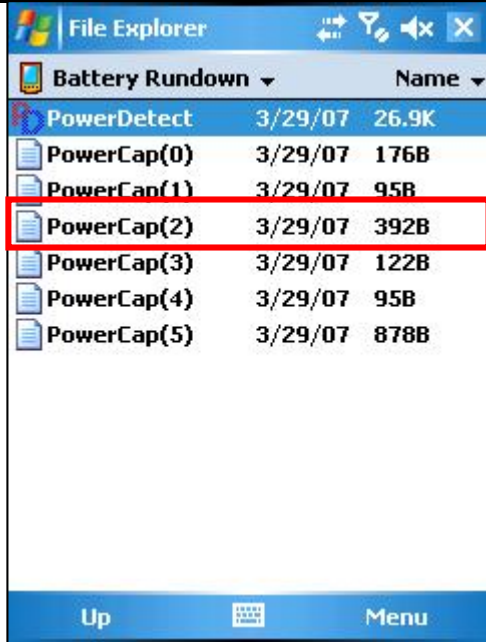
Battery Rundown-5

- 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.



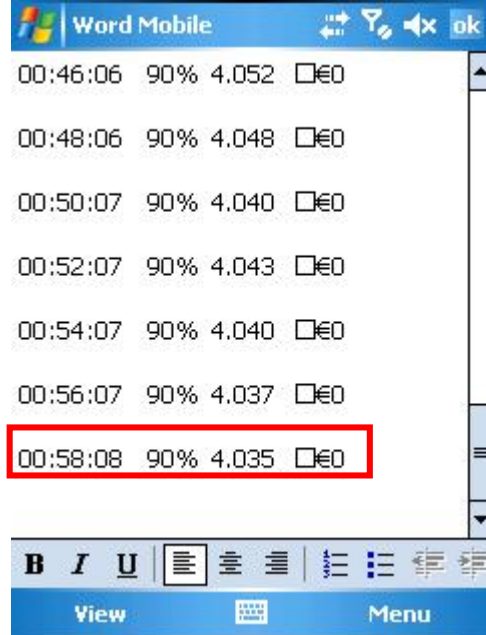
Battery Rundown-6

I. Test result is generated into the log file as **PowerCap(x)**.



Battery Rundown-7

I. Tag the log file to check the capacity.



**Caution: If the capacity is under 72%,
Please replace a new battery.**