



HTC Corporation

Doc. No.

DOC-00045381

REV.

Issued Date

2008/8/12

Revised Date

2008/11/13

A02

Doc. Title

ROSE Service Manual

Page

1 of 94

ROSE

Service Manual



HTC Proprietary

Confidential Treatment Requested

Rev. A03

HTC Corp.

Engineering Mobility



HTC Corporation

Doc. No.

DOC-00045381

REV.

Issued Date

2008/8/12

Revised Date

2008/11/13

A02

Doc. Title

ROSE Service Manual

Page

2 of 94

REVISION CONTROL TABLE

REV	DATE	CONTENTS	DEPT	REVISED	STAGE
AX01	2008/8/12	Fist Draft	PSE	Clement_Chen	DVT
A01	2008/10/3	First Release Complete SM	PSE	Clement_Chen	PVT
A02	2008/10/31	Modify Board Level 2.5 Repair section	PSE	Clement_Chen	MV
A03	2008/11/13	1) Add SIM door holder assembly/disassembly procedure into service manual 2) Update feature sheet content to the updated version 3) Add idle/Sleep modes power test criteria	PSE	Clement_Chen	MV



HTC Corporation

Doc. No.

DOC-00045381

REV.

Issued Date

2008/8/12

Revised Date

2008/11/13

A02

Doc. Title

ROSE Service Manual

Page

3 of 94

1. INTRODUCTION4

1.1 PRODUCT FEATURES5

1.2 PRODUCT OVERVIEW 10

2. DEVICE DISASSEMBLING AND ASSEMBLING PROCEDURE17

2.1 TOOLS LIST 17

2.2 DISASSEMBLING PROCEDURE..... 18

2.3 ASSEMBLING PROCEDURE30

3. ROM RE-FLASH PROCEDURE41

3.1 ROM UPGRADE THRU RUU (RE-FLASH UPGRADE UTILITY)41

3.2 ROM IMAGE UPGRADE THRU SD CARD45

4. DIAGNOSTIC PROGRAM47

4.1 LIST OF DIAGNOSTIC TEST ITEMS47

5. POWER MEASUREMENT TEST60

5.1 MAIN BOARD LEAKAGE CURRENT TEST PROCEDURE60

5.2 BATTERY RUNDOWN TEST PROCEDURE65

6. COSMETIC INSPECTION CRITERIA.....71

6.1 CLASSES DEFINITION OF INSPECTIVE AREA.....71

6.2 DISPLAY INSPECTION73

6.3 MAIN UNIT INSPECTION74

7. GENERIC TROUBLESHOOTING77

8. GENERIC LABELING PLAN.....82

9. GENERIC SPARE PART LIST AND PHOTOS.....85

9.1 SPL FOR REPAIR.....85

9.2 BOARD LEVEL 2.5 REPAIRS90

10. RF ANTENNA SPECIFICATION93



HTC Corporation

Doc. No.

DOC-00045381

REV.

Issued Date

2008/8/12

Revised Date

2008/11/13

A02

Doc. Title

ROSE Service Manual

Page

4 of 94

1. Introduction

- This manual provides the technical information to support the service activities of this product.
- This document contains highly confidential information, so any or all of this document should not be revealed to any third party.
 - Chapter 1: Introduction-This Chapter is about Products features and basic Product function. After reading this chapter, you will know what feature the product has and basic hardware operation. Also you will know how to perform soft-rest and hard-rest in this chapter.
 - Chapter 2: Device Disassembling and Assembling Procedure- After reading this chapter, you will learn how to disassemble and assemble the product. Also, you will know what tools to use and the torque. Please follow the instruction to disassemble the unit to prevent from damaging the unit.
 - Chapter 3: ROM Re-flash Procedure- After reading this chapter, you will learn how to perform the ROM image re-flesh by using RUU and SD-Card. Also you can find the steps of enter the boot loader mode.
 - Chapter 4: DIAGNOSTIC PROGRAM- After reading this chapter, you will learn
 - How to use the diagnostic program to perform unit function test
 - How to test some functions in Windows Mobile mode (ex. WLAN, Bluetooth, and USB etc...)
 - Chapter 5: Power measurement test- After reading this chapter, you will learn how to use MB leakage test procedure and battery run-down test (Battery Capacity Measurement).
 - Chapter 6: Cosmetic Inspection Criteria- After reading this chapter you will learn the appearance quality inspection criteria, ex. Display, bezel, and housing etc...
 - Chapter 7: Generic Troubleshooting- After reading this chapter, you will learn how to do generic trouble-shooting.
 - Chapter 8: Generic Labeling Plan- In this chapter, you will find generic labels for reference, ex. Regulation label, and battery label etc...
 - Chapter 9: Generic Spare Part List and Photos- In this chapter, you will find Spar parts reference list and photos for repairing, including unit and Board level.
 - Chapter 10: RF Antenna Specification- Reference Spec for RF test.



HTC Corporation

Doc. No.	DOC-00045381	REV.	
Issued Date	2008/8/12	A02	
Revised Date	2008/11/13		
Doc. Title	ROSE Service Manual	Page	5 of 94

1.1 Product Features

Features

Target

- Schedule: September, 2008
- EU, Asia markets

Platform

- Compact bar phone with sliding QWERTY
- Microsoft Windows Mobile 6.1 Standard

Dimension

- 116.3 mm(L) x 43.4 mm(W) x 16.6 mm(T)

Processor / Chipsets

- Qualcomm MSM7225, 528MHz

Memory

- ROM: 256 MB (for programs and users' storage)
- RAM: 256 MB SDRAM

Main LCD Module

- 2.4" QVGA resolution
- 65K-color TFT LCD with LED back light

UMTS/HSDPA/GSM/EDGE Function

- Internal antenna
- Dual-band HSDPA/UMTS 900/2100 for EU and Asia, 1700MHz for eMobile (2100 MHz for roaming outside Japan), 850/1900 MHz for US, GSM/GPRS/EDGE qual-band (850/900/1800/1900Mhz)
 - ◆ HSDPA/UMTS
 - ✓ 850: 824-849MHz, 869-894MHz
 - ✓ 900: 880-915, 925-960MHz
 - ✓ 1700:1844.9-1879.9MHz, 1749.9-1784.9MHz
 - ✓ 1900:1850-1910MHz, 1930-1990MHz
 - ✓ 2100:1920-1980MHz, 2110-2170MHz
 - ◆ GSM/GPRS/EDGE
 - ✓ 850: 824-849Mhz, 869-894Mhz
 - ✓ 900: 880-915, 925-960MHz
 - ✓ 1800: 1710-1785, 1805-1880MHz
 - ✓ 1900: 1850-1910, 1930-1990MHz
- TNZ sku: Single-band HSDPA/UMTS 2100 MHz and GSM/GPRS/EDGE 850/900/1800/1900 MHz (with 900 band is with 3 to 5 dBm compromised)
- HSDPA / UMTS
 - ◆ 3GPP Release 5 compliant
 - ◆ Up to 3.6/7.2Mbps peak rate [7.2 Mbps is option, depends on carrier engagement]
- Support MCC-MNC-UC-ID, as stated in 3GPP TS 25.401 R99, Section 6, for both RIL and radio
- Global roaming
- Auto band switching
- Handover and cell selection between GSM/EDGE and UMTS
- DTM class 9
- SAIC (Circuit-Switch Only)
- Equalizer (HSDPA channel only)
- Audio codec: AMR-NB, AMR-WB [TBD], EFR, FR, HR,
- SMS (MO, MT), concatenated SMS (640 characters)
- Supplement 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)
- E-GPRS Function
 - ◆ EGPRS class B
 - ◆ Multi-slot standard class 12 (class 10 operator dependent)
 - ◆ MO/MT SMS over GPRS
 - ◆ PBCCH
- USIM/SIM
 - ◆ 1.8 / 3V of UICC
 - ◆ USIM Application at least according to 3GPP TS 31.102
 - ◆ SIM Application Tool Kit release 98 class 3 and 99 (partial)
 - ◆ Over the Air (OTA) programming
 - ◆ Fixed Dialing Number (FDN)
 - ◆ Abbreviation Dial Number (ADN)
 - ◆ Security Pin 1 & 2 control
 - ◆ EAP-SIM

Standalone GPS

- Internal GPS antenna
- Support both standalone & assisted modes
- Sensitivity : 145dBm for cold start and -155dBm for tracking
- Support NMEA 0183 version 3.0 or above
- Dynamically allocated parallel channel GPS receiver
- Acquisition time
 - ◆ Hot start: 8 seconds, average TTFF (open sky & static condition)
 - ◆ Warm start: 60 seconds, average TTFF (open sky & static condition)
 - ◆ Cold start: 75 seconds, average TTFF (open sky & static condition)
- Update rate: once/1sec (default)
- GPS Accuracy
 - ◆ Position: < 15 meters, 95% successful rate
 - ◆ Velocity: 0.05 meter/sec steady state

A-GPS (Qualcomm)

- Support UE-based & UE-assisted A-GPS
- OMA SUPL v1.0 compliance (v2.0 if available)



Doc. No.	DOC-00045381	REV.	
Issued Date	2008/8/12	A02	
Revised Date	2008/11/13		
Doc. Title	ROSE Service Manual	Page	6 of 94

- ◆ SUPL-RRLC
- ◆ SUPL-RRC (optional)
- ◆ SMS initiated SUPL [QCT not supported]
- ◆ WAP push initiated SUPL
- Standard 3GPP A-GPS compliance
 - ◆ 3GPP TS 44.031 (RRLP 5.12)
 - ◆ 3GPP TS 25.305 (GSM & UMTS)
- JSR 179 (location API) support
- Emergency priority override existing A-GPS service
- Performance requirement (A-GPS mode)
 - ◆ TTFF (95% successful rate): <20 seconds
 - ◆ 2D location error (95% successful rate) : <100 m
 - ◆ 3GPP TS 25.171 compliance (requirement for support of Assisted Global Positioning System)
 - ◆ 3GPP 34.171 (terminal conformance specification, Assisted Global Positioning System)
 - ◆ 3GPP TS 34.108 (common test environments for user equipment conformance testing)

FM Radio

- Tuning range:
 - ◆ 76 MHz ~ 90 MHz for Japan
 - ◆ 87.5 MHz ~ 108 MHz for other regions
- Frequency space: 100Khz
- Auto channel search

Digital Camera

- Main camera
 - ◆ 3.2 mega-pixels Color CMOS fixed focus

Keyboard/Button/Switch

- Power button – [wake up key] – Position on the top
- Send / Hands-free button [wake up key]
 - ◆ Long Press: voice speed dial
 - ◆ Long Press during the call: Hands-free On/Off
- End button [wake up key]
 - ◆ Quick Press: End a phone call
 - ◆ Long Press: Turn on Key-lock
- 2 Soft Keys [wake up key]
- Home Button [wake up key]
- Back / Clear Button [wake up key]
 - ◆ Non-Text mode: Back key
 - ◆ Text Editing mode: Clear one character
- Numerical dialing keypad (12 buttons) [wake up key]
- Volume Up: [wake up key, location: side button, left up] – Position on the left side
- Volume Down: [wake up key, location: side button, left up, below volume up] – Position on the left side
- Camera capture button [wake up key] – Position on the right side
- Physical 5-way navigator [wake up key]
- One-stop sliding QWERTY keyboard
 - ◆ Full size 4 lines keyboard with 2 soft keys
 - ◆ Cap and Function indicator
 - ◆ Auto sound effect when sliding out/ close
 - ◆ Auto display orientation and QWERTY scenario UI
 - ◆ Ambient light sensor control for backlight brightness

Notification

- Notification by sound, vibration, navigator LEDs or status shown on the display

Audio

- Built-in Microphone
- Receiver
- 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 EDR support (v2.1 when available)
 - ◆ Class 2 transmit power
 - ◆ Supported profiles:
 - ✓ GAP (generic access profile)
 - ✓ SPP (serial port profile)
 - ✓ OPP (object push profile)
 - ✓ GOEP (generic object exchange profile)
 - ✓ ActiveSync-Over-Bluetooth (legacy application via SPP)
 - ✓ HSP 1.5 (headset profile)
 - ✓ HFP (handsfree profile)
 - ✓ A2DP (Advanced Audio Distribution profile)
 - ✓ AVRCP (Audio/Video Remote control Profile)
 - ✓ HID (Human interface device profile)
 - ✓ SIM Access Profile
 - ✓ Service Discovery Application Profile
 - ✓ BPP (basic printing profile)
 - ✓ FTP (file transfer profile)
 - ✓ PAN (personal area networking profile)
 - ✓ PBAP (Phone Book Access Profile)
- Wi-Fi
 - ◆ IEEE 802.11b/g compliant
 - ◆ Internal WLAN antenna
 - ◆ Data rate auto fallback for extended range for 802.11b
 - ◆ ELP mode
 - ◆ Security 802.11i and AES
 - ◆ However, OS doesn't support 802.11i and AES
 - ✓ WPA authentication – WEP, WPA, PSK, EAP-TLS, PEAP, LEAP,
 - ✓ Signaling interfaces between the terminal device and the servers: mutually authenticated and encrypted utilizing TLS (RFC 2246) with RC4 encryption with SGA1 used as the message integrity check
 - ◆ QoS
 - ✓ 802.11 WME QoS
 - ✓ 802.11e
 - ✓ Fast AP to AP handover
- USB 2.0 with high speed
 - ◆ 11-pin mini-USB



Doc. No.	DOC-00045381	REV.
Issued Date	2008/8/12	A02
Revised Date	2008/11/13	

Doc. Title	ROSE Service Manual	Page	7 of 94
------------	----------------------------	------	---------

- ◆ audio jack in one
- ◆ HTC H2Wire support
- Micro SD card slot with cover
 - ◆ High capacity support
- Antenna Connector for testing purpose only
- 1.8 / 3 V USIM/SIM card slot
- Power**
- Battery
 - ◆ Removable and chargeable Lithium ion polymer battery, 1000 mAh
- Battery life
 - ◆ Playing WMV: 8 hours
 - ◆ Playing WMA: 12 hours
 - ◆ UMTS talk time: Up to 320 minutes
 - ◆ GSM talk time: Up to 380 minutes
 - ◆ UMTS standby time: Up to 400 hours
 - ◆ GSM standby time: Up to 280 hours
 - ◆ Push Email: 3 days (50 emails per day)
- Travel charger
 - ◆ AC input: 100 ~ 240V AC, 50/60 Hz
 - ◆ DC output: 5V and 1A
- Ambient sensor for power saving on keypad backlight

Hanger Hole

- Stylish strip to wear phone on wrist or neck and to attach phone hanger

Accessories

- Quick start guide [Inbox]
- CD (User manual & Sync. software) [Inbox]
- Travel charger, TC P200 [Inbox]
- Mini-USB data cable, DC300 [Inbox]
- Standard battery [Inbox]
- Wired stereo headset, HS S200 [Inbox]
- Accessory leaflet [Inbox] (for HTC branded sku only)
- Pouch [Inbox]
- 3.5 mm audio adaptor with earphone, HS U110
- Wired remote controller with earphone, RC E100
- Mono Bluetooth Headset, BH M200
- Stereo Bluetooth Headset, BH S100
- Multifunction audio cable
- Car charger
- Car holder
- Generic cradle
- Car upgrade kit (car charger and car holder)

Compatibility Test:

Below accessories are required to do the compatibility test

- Y-Cable 11 pin to 5pin + 6pin
- Y-Cable 11 pin to 5pin + 3.5 mm audio Jack
- Y-Cable 11-pin to 5-pin + 2.5 mm audio Jack
- Mono Bluetooth Headset, BH M100
- Handsfree Carkit : Parrot CK3400LS, Parrot MK6100, Parrot Minikit, Audi, BMW & Mercedes incar and Wavecom MB SAP solutions
- Bluetooth Conference: Parrot Conference
- Bluetooth Speaker: Parrot Boombox

- SanDisk memory cards (including SDHC format)
- Microsoft Windows Mobile 6.1 Standard Applications**

- Microsoft Outlook Mobile
 - ◆ Messaging (SMS/E-mail), Contacts, Calendar, Tasks, Email Set Up Wizard
- Microsoft Internet Explorer Mobile
- Microsoft Media Player Mobile
- Microsoft ActiveSync
- Microsoft Windows Mobile Update
- Internet Sharing
- Pictures & Videos
 - ◆ Graphics: JPEG, GIF87a, GIF89a, PNG, WBMP
- Games
- File Explorer
- Task Manager
- Device Management
- Security Enhancement
 - ◆ Storage Card Encryption
 - ◆ Device Lock
- Microsoft Office Mobile
 - ◆ Word Mobile, Excel Mobile, PowerPoint Mobile, OneNote Mobile
- Microsoft Windows Live!
 - ◆ Windows Live Messenger
 - ◆ Windows Live Mail (Push Mail)
 - ◆ Windows Live Contacts
 - ◆ Windows Live Search
 - ◆ Windows Live Spaces
- Microsoft Smart Dial
- Microsoft Remote Desktop Mobile

Value-Added Applications

- Windows Mobile Enhancements
 - ◆ DirectShow Filters
 - ✓ Audio playback

Codec	Extension	Profile
AAC	.aac/.m4a/.mp4/.3gp	LC profile
AAC+	.aac/.m4a/.mp4/.3gp	
eAAC+	.aac/.m4a/.mp4/3gp	
AMR-NB	.amr/.3gp	
AMR-WB	.awb/.3gp	
QCELP	.qcp/.3g2	
EVRC	.qcp	
MIDI	.mid	
SP-MIDI	.mid	
MPEG4	.m4a	

- ✓ Video playback



Doc. No.	DOC-00045381	REV.
Issued Date	2008/8/12	A02
Revised Date	2008/11/13	
Doc. Title	ROSE Service Manual	
Page	8 of 94	

Codec	Extension	Profile
H.264	.mp4/ .3gp/ .3g2/ .m4v	Baseline profile
H.263	.3gp/ .3g2	P0 profile
MPEG4	.mp4	Simple profile
Motion-JPEG	.avi	

- ✓ H263, MPEG4: 30fps decoding for QVGA resolution
 - ✓ H264: 30fps decoding for QVGA resolution
 - ◆ Pictures & Videos enhancements
 - ✓ Link camera icon to in-house camera & camcorder application
 - ✓ Thumbnail view for video files:
 - ◇ AVI (.avi)
 - ◇ H.263 (.3gp)
 - ◇ H.263 (.3g2)
 - ◇ MPEG-4 (.mp4)
 - ◇ H.264 (.mp4/.3gp)
 - ◆ Ring Tone enhancements
 - ✓ MIDI
 - ◇ 40 polyphonic & Standard MIDI format 0 and 1 (SMF) / SP MIDI
 - ✓ Ring Tone support codec (format):
 - ◇ eAAC+ (.aac)/ AAC+ (.aac)/ AAC (.aac)/ AMR-NB (.amr)/ AMR-WB (.awb)/ QCP (.qcp/.3g2)/ MIDI (.mid)/ MP3 (.mp3)/ MPEG4-Audio (.mp4)/ WMA (.wma)/ Wave (.wav)
 - Telephony
 - ◆ (HTC) Phone Canvas
 - ✓ Full screen incoming call alert
 - Multimedia
 - ◆ (HTC) Camera
 - ✓ Camera Mode
 - ◇ Encoding format: JPEG
 - ◇ Resolution: QXGA 2048x1536, UXGA 1600x1200, SXGA 1280x960, VGA 640x480, QVGA 320x240
 - Digital zoom up to 4x
 - ✓ Camcorder Mode
 - ◇ Up to 24 fps encoding for QVGA resolution
 - ◇ Encoding format
- | Codec | Extension | Profile |
|----------------|-----------|----------------|
| MPEG4 + AMR-NB | .mp4 | Simple profile |
| H.263 + AMR-NB | .3gp | Profile 0 |
- ✓ Effects: Grayscale, Sepia, Cool, Negative

- ✓ "Property" adjustment
- ✓ Camera Album access
- ◆ Album
- ◆ Audio Manager (for non-US sku)
- ◆ Audio Booster
- ◆ Streaming Media Player
 - ✓ A 3GPP PSS based client solution
 - ✓ Support RTSP/RTP based streaming protocols
- ◆ FM Radio
- Web
 - ◆ RSS Reader & Podcast
- Input Method
 - ◆ Smartphone Intelligent IME
 - ✓ Prediction, completion and correction
 - ✓ Symbol table
- Messaging
 - ◆ MMS Client
 - ✓ OMA MMS (v1.2 or above)
- GPS/LBS
 - ◆ Google Maps for Mobile
 - ◆ Quick GPS
- User Interface
 - ◆ Sound Effect of Sliding
 - ✓ User customizable sounds
- Tools & Utilities
 - ◆ (HTC) Connection Setup
 - ◆ Voice Recorder
 - ◆ Document Viewer – PDF
 - ◆ OMA DRM Engine:
 - ✓ OMA 1.0
 - ◆ Java virtual machine
 - ✓ JSR 185 JTWI
 - ✓ JSR 75 PIM access
 - ✓ JSR 120 Wireless Messaging API
 - ✓ JSR 135 Mobile Media API
 - ◆ Voice tag
 - ◆ STK
 - ◆ SIM manager
- Tools & Utilities
 - ◆ Backup Tool
- Web
 - ◆ Multi-Headed IM with Mundu (for Rose MR)
 - ✓ Supports MSN, Yahoo, AOL, ICQ, and GoogleTalk
 - ✓ Text chat with multiple contacts
 - ✓ Quick Text function for easier feedback on mobile device
 - ✓ Receive offline messages.
- User Interface
 - ◆ Enhancements to Microsoft Sliding Panel Mode
 - ✓ Weather
 - ✓ Messages
 - ✓ E-mail
 - ◆ Sliding-out menu (Action Menu) and animation



HTC Corporation

Doc. No.

DOC-00045381

REV.

Issued Date

2008/8/12

Revised Date

2008/11/13

A02

Doc. Title

ROSE Service Manual

Page

9 of 94

Regulatory

- GCF certification [Operator dependent]
- GSM Type Approval. (FTA)
- R&TTE: EMC / EMI, Safety SAR
- BQB (Bluetooth Qualification Body) certification
- Windows Mobile Logo (NTSL)
- USB certification
- WiFi Certification (manufacture option)
- CB certificate/report

1.2 Product overview

QWERTY keyboard

See "Use the QWERTY Keyboard" in this chapter for details.

Left SOFT KEY

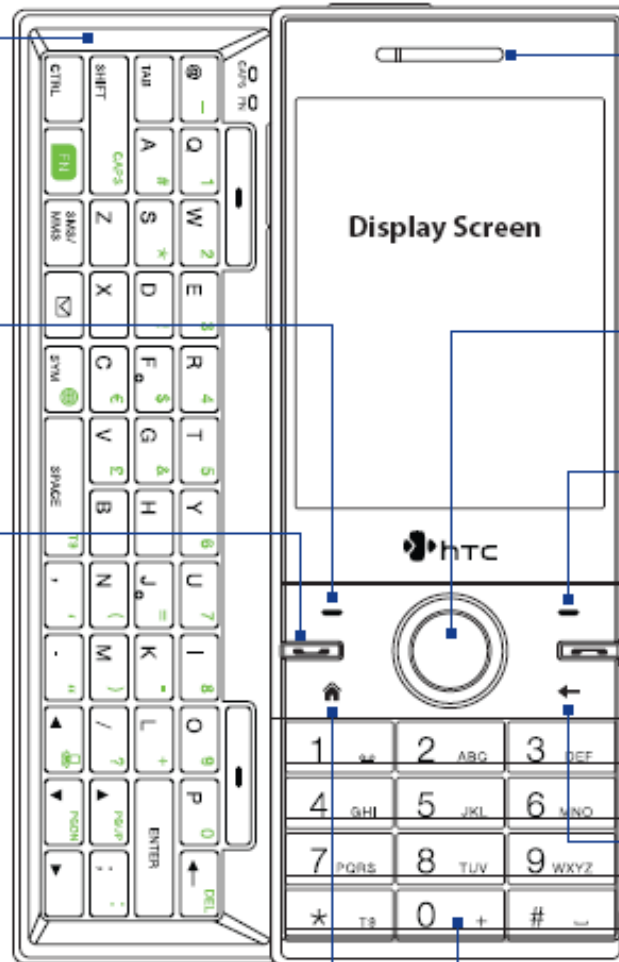
Press to perform the command above the button.

TALK/SEND

- Press to answer an incoming call or dial a number.
- During a call, press and hold to toggle the speakerphone on and off.
- Press and hold to use Voice Speed Dial.

HOME

Press to go to the Home Screen.



Earpiece

Listen to a phone call.

NAVIGATION CONTROL/CENTER OK

Use to scroll left, right, up, or down. Press the center to use as the CENTER OK button.

Right SOFT KEY

Press to perform the command above the button.

END

Press to end a call or press and hold to lock the phone.

BACK

Press to go to the previous screen or backspace over characters.

Keypad

See "Use the Keypad" in this chapter for details.

3.2 Megapixel Camera

See "Taking Photo and Videos with the Phone Camera" in chapter 10 for details.

Volume Up

Press to increase the phone volume.

Volume Down

Press to decrease the phone volume.

**Sync Connector/
Earphone Jack**

- Connect the supplied USB cable to synchronize information or plug in the AC adapter to recharge the battery.
- Connect the supplied USB stereo headset for hands-free conversation or for listening to audio media.

POWER

Press and hold (about 3 seconds) to turn on and off the phone. Press and quickly release to display the Quick List. See "Quick List" later in this chapter for more details.

Speaker

Back Cover

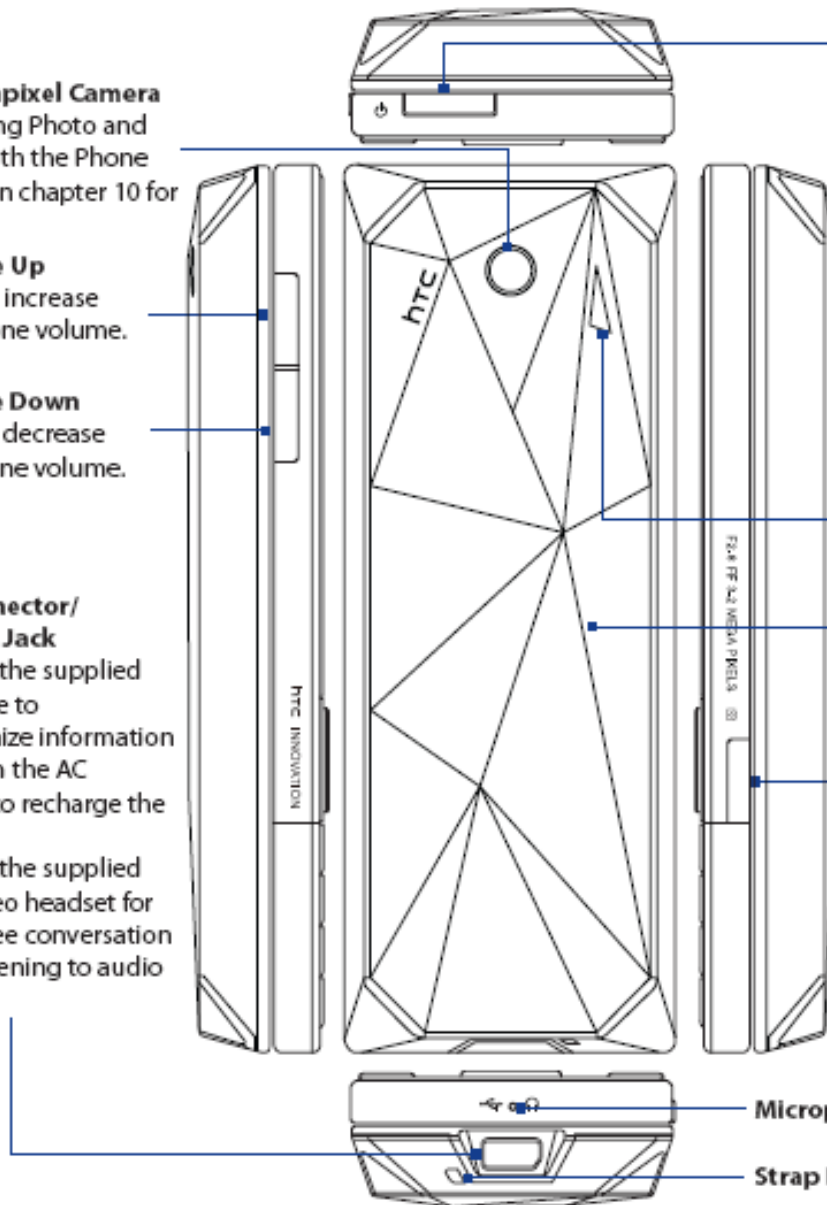
Push the back cover downwards to remove it.

CAMERA

See Chapter 10 for details

Microphone

Strap Holder





HTC Corporation

Doc. No.

DOC-00045381

REV.

Issued Date

2008/8/12

Revised Date

2008/11/13

A02

Doc. Title

ROSE Service Manual

Page

12 of 94

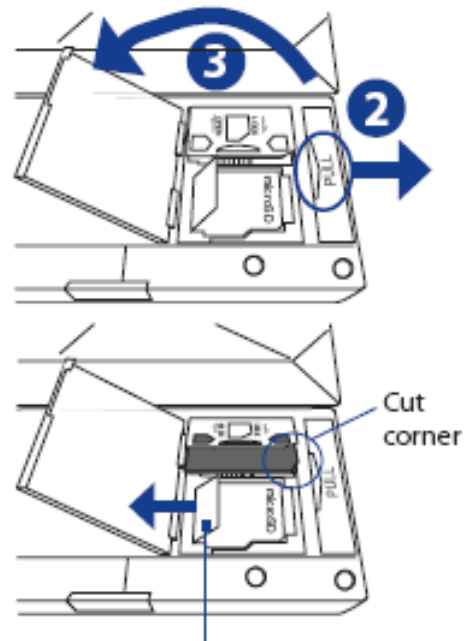
The buttons below the screen and the LED ring of the NAVIGATION CONTROL will light up in the following situations:

Controls	Light Behavior
SEND button	Light flashes when there is an incoming call.
END button	Light stays solid when there is an incoming call.
NAVIGATION CONTROL	<ul style="list-style-type: none">• The LED ring shows a “breathing” white light when the battery is being charged.• The LED ring shows a solid white light when the battery is fully charged.• The LED ring flashes a white light once when the battery level is low and reaches down to about 10%.• The top and bottom parts of the LED ring flashes a white light twice when there is a new e-mail, voice mail, or meeting reminder.• A white light goes around the LED ring counterclockwise twice starting from the top when there is a missed call, new SMS, or MMS message.

- [Installing the SIM card](#)

To install the SIM card

1. Slide open the QWERTY keyboard by pushing the front panel of the phone to the right.
2. Flip the phone upside down and then unlock the SIM card and storage card compartment by gently pulling on "PULL". The compartment slightly opens.
3. Open the compartment.
4. Push the SIM card holder to the direction of "OPEN" and then lift the edge of the SIM card holder.
5. Insert the SIM card with its gold contacts facing down (check the SIM card slot for the correct orientation when inserting the SIM card).
6. Push down the SIM card holder and then lock the SIM card holder by pushing the SIM card holder to the direction of "LOCK."

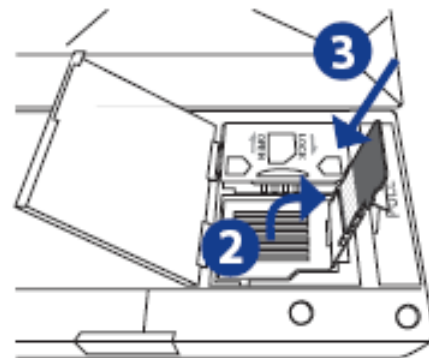


Make sure to pull this flap back before you push down the SIM card holder.

- [Installing the SD card](#)

To install the microSD™ card

1. Follow steps 1 to 3 of "To install the SIM card."
Note If there is a SIM card installed, remove it.
2. Open the storage card holder by lifting the flap.
3. Insert the microSD card into the storage card holder with its gold contacts facing out.
4. Lock the storage card holder by pushing it down into place. You should feel a light click.



Note microSD card is not included in the box.

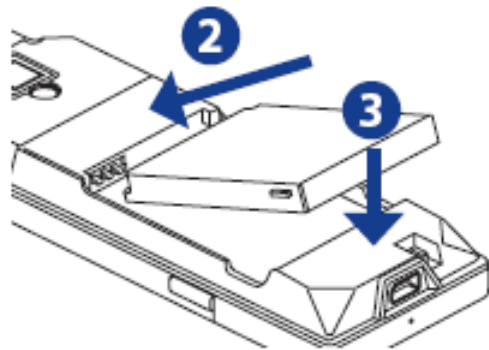
To remove the microSD card

1. With the SIM card and storage card compartment opened, lift the storage card holder flap to open it.
2. Remove the microSD card.

- [To install / remove the battery](#)

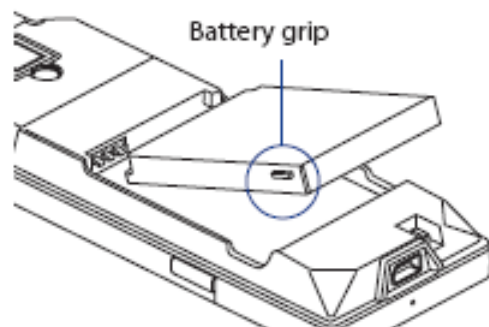
To install the battery

1. Slide the back cover downward to remove it.
2. Align the exposed metal contacts on the edge of the battery with the prongs in the body of the phone.
3. Push the bottom of the battery into place and then replace the back cover.



To remove the battery

Remove the battery by lifting the protruding grips of the battery.



- [Charging the battery](#)

To charge the battery

1. Connect the USB connector of the AC adapter to the sync connector at the bottom of your phone.
2. Plug in the AC adapter to an electrical outlet to start charging the battery.

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

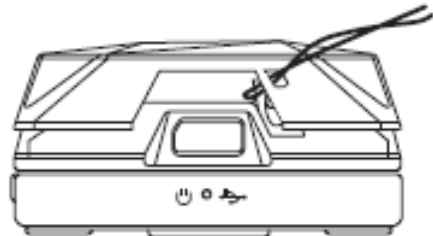
- [Using the Strap Holder](#)

The strap holder at the bottom of your phone allows you to attach a wrist strap, neck lanyard, or string accessory.

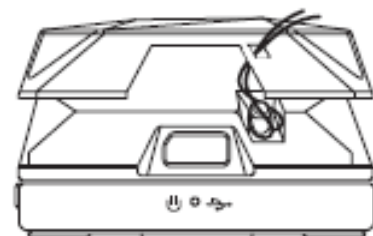
To attach a strap, lanyard or string accessory to the strap holder

1. Remove the back cover.
2. Insert the loop of the strap, lanyard or string accessory through the strap holder hole.

Tip To pass through the strap holder easier, push the loop into the strap holder hole using a pointed object such as a needle or toothpick.



3. Attach the loop over the small hook at the bottom of the back side of the phone.
4. Slightly pull the strap, lanyard or string accessory to fix it securely in place.
5. Replace the back cover.





HTC Corporation

Doc. No.

DOC-00045381

REV.

Issued Date

2008/8/12

Revised Date

2008/11/13

A02

Doc. Title

ROSE Service Manual

Page

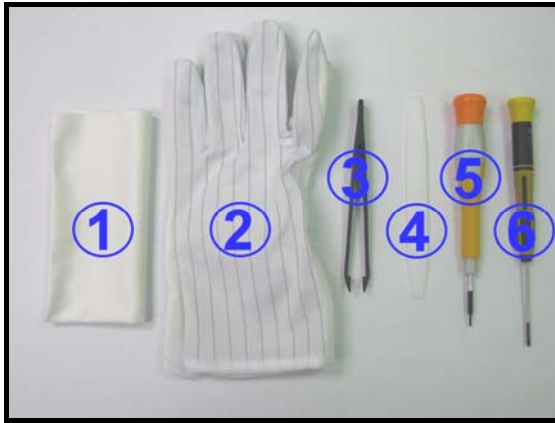
17 of 94

2. Device Disassembling and Assembling Procedure

2.1 Tools list

level	No.	Item	Vendor	P/N
L 1	1	Mini USB DATA interface Cable		
	2	Earphone Headset		
	3	AC Adapter		
	4	WLAN AP		
	5	Memory Card with Diag. test program (need be encoded by HTC)	HTC design	DCT-00060
	6	Memory card for ROM code re-flash (must be encoded by HTC)	HTC design	DCT-00060
	7	3pin battery holder	HTC special tools	MLT-00008
	8	Universal Leakage Current Tester	HTC special tools	MLT-00001
	9	Power supply		
	10	Current Meter		
	11	Mobile tester		
L 2	12	Special Made Plastic Stick	HTC special tools	RTT-00006
	13	Hand tools		
	14	Oven for rework purpose	HTC special tools	RTT-00007
	15	Barcode label printer (400dpi resolution and up)		
L 2.5	16	Lead-free Soldering station		
	17	Hot air gun		

2.2 Disassembling procedure



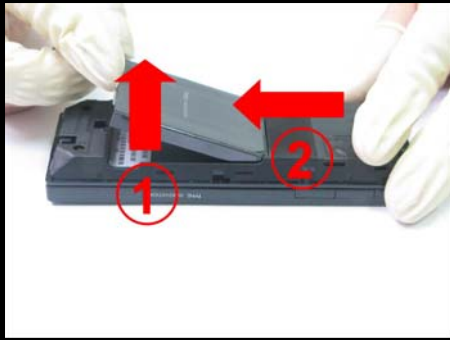
1. CLEANING CLOTH
2. ESD GLOVE OR ESD WRIST STRAP
3. PLASTIC TWEEZERS
4. FLAT PLASTIC STICK (P/N: RTT-00006)
5. PHILLIPS SCREW-DRIVER T4X30
6. PHILLIPS SCREW-DRIVER PH000X50



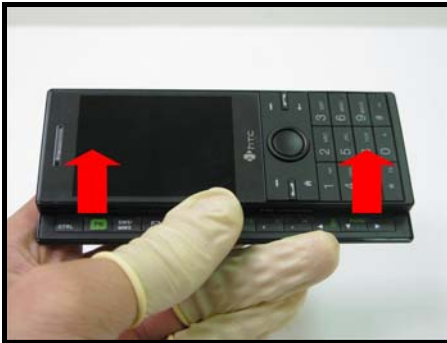
7. OVEN FOR REPAIR / REWORK PURPOSE (P/N: RTT-00007)



1. REMOVE THE BATTERY COVER AS SHOWN.



1. TAKE OUT THE BATTERY AS SHOWN.
2. LOOSEN THE 4 INDICATED SCREWS FROM THE HOUSING.



1. EXTEND THE KEYBOARD BY SLIDING THE DISPLAY UP.
2. INSERT THE FLAT PLASTIC STICK BETWEEN THE HOUSING AND QWERTY KEYBOARD AND THEN FOLLOW THE ARROW DIRECTION.

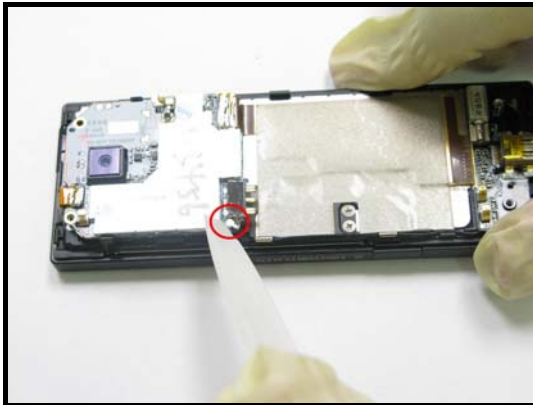


1. DISASSEMBLE THE HOUSING AS SHOWN.



1. USE PLASTIC TWEEZER TO DISCONNECT THE SPEAKER AT THE LOCATION INDICATED.

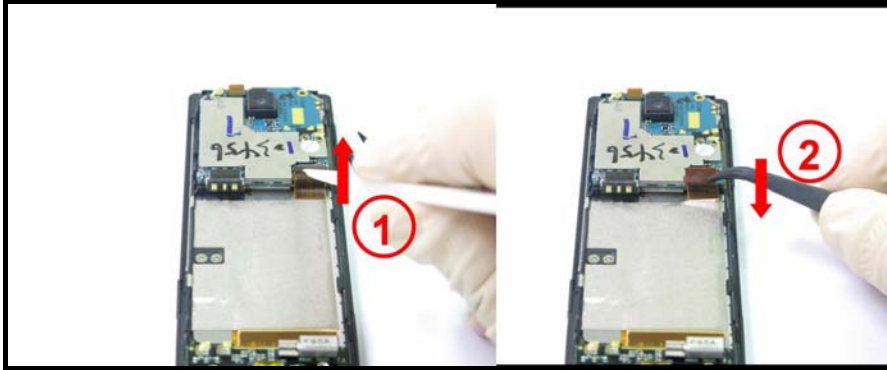
CAUTION: AVOID DAMAGE THE SPEAKER



1. USE THE FLAT PLASTIC STICK TO DISCONNECT THE RF CABLE WIRE FROM THE M/B AT THE LOCATION INDICATED.



1. USE THE PLASTIC TWEEZERS TO REMOVE THE KAPTON TAPES AT THE LOCATION INDICATED.



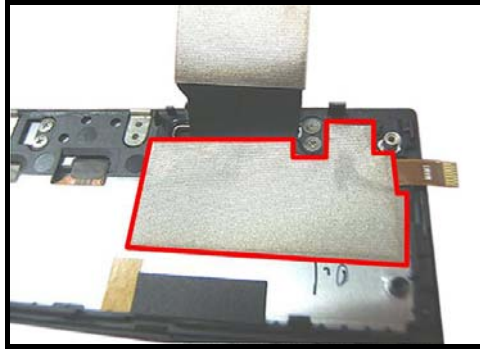
1. USE THE FLAT PLASTIC STICK TO RELEASE THE I/O BOARD FPC CONNECTOR AND USE THE PLASTIC TWEEZER TO REMOVE THE INDICATED I/O BOARD FPC.



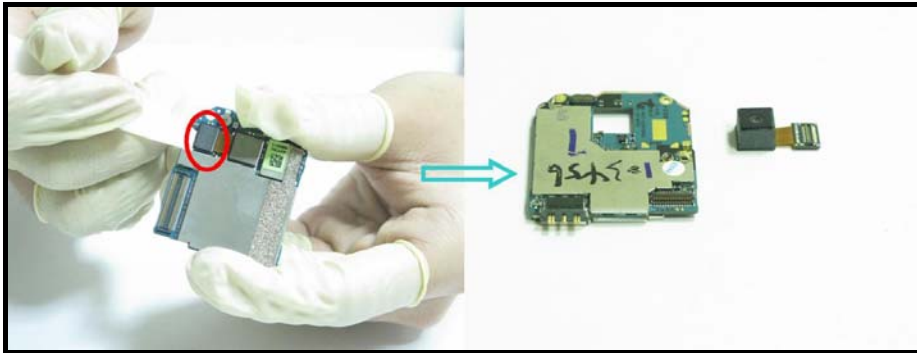
1. USE THE FLAT PLASTIC STICK TO RELEASE THE KEYBOARD FPC CONNECTOR AND USE THE PLASTIC TWEEZER TO REMOVE THE INDICATED KEYBOARD FPC.



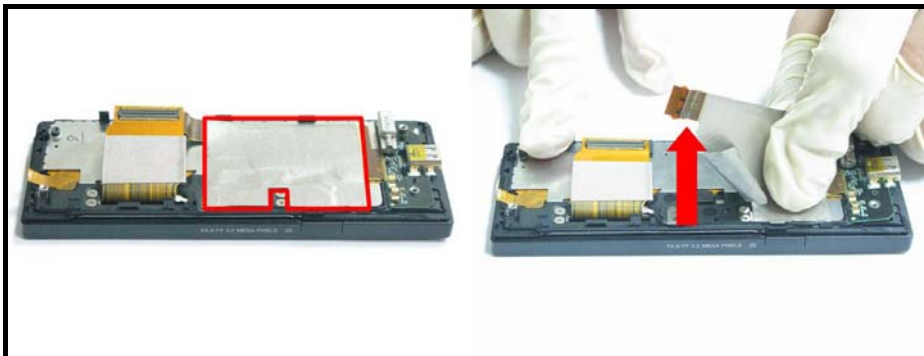
1. UNFASTEN THE M/B BY RELEASING THE INDICATED M/B HOOK.



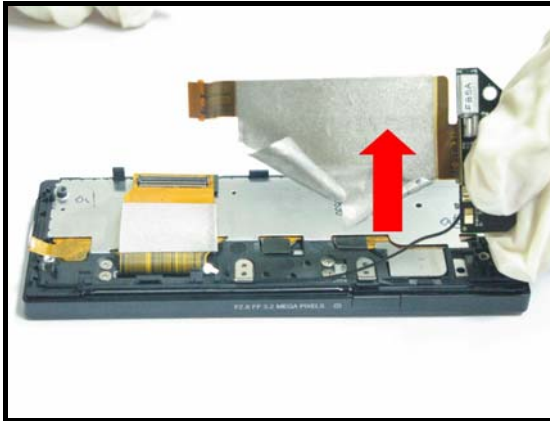
1. USE THE FLAT PLASTIC STICK TO DISCONNECT THE INDICATED M/B FPC CONNECTOR.
2. REMOVE THE CONDUCTIVE FABRIC AT THE LOCATION INDICATED.



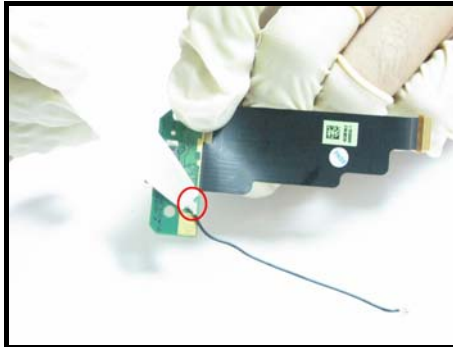
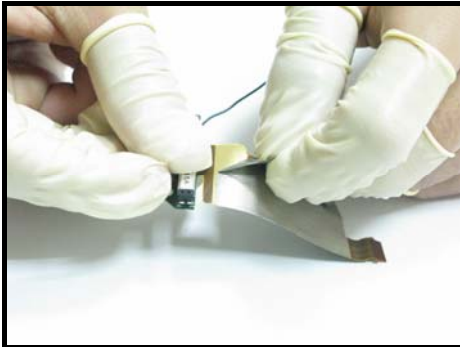
1. USE THE FLAT PLASTIC STICK TO DISCONNECT THE INDICATED CAMERA MODULE FPC CONNECTOR TO SEPERATE M/B AND CAMERA MODULE AS SHOWN.



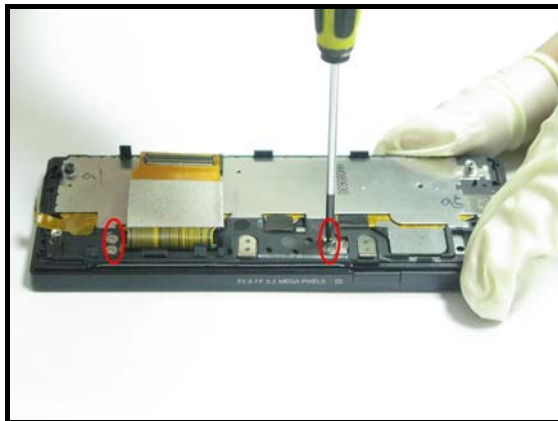
1. REMOVE THE CONDUCTIVE FABRIC AT THE LOCATION INDICATED.



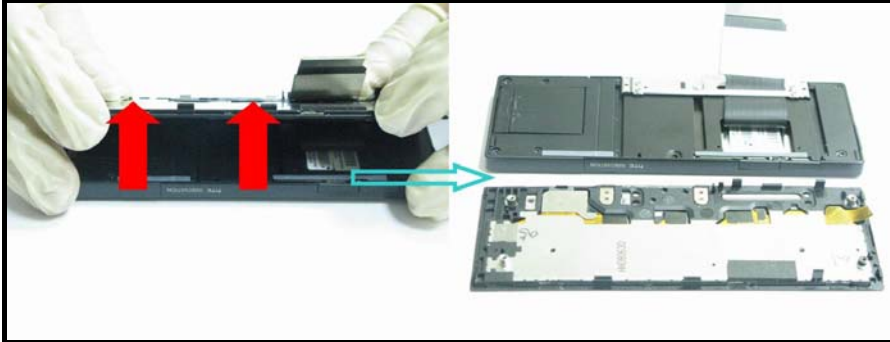
1. REMOVE THE I/O BOARD FROM THE C COVER AS SHOWN.



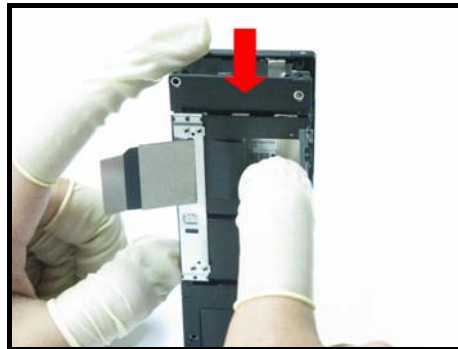
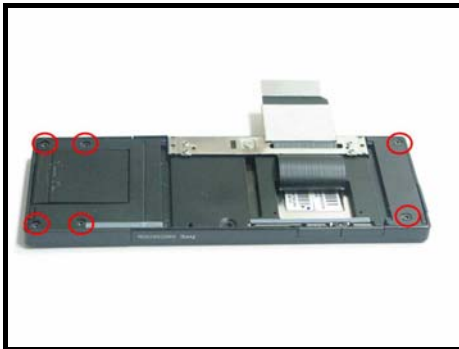
1. CAREFULLY REMOVE THE CONDUCTIVE FABRIC FROM THE I/O BOARD AND NOT TO DAMAGE THE I/O BOARD.
2. USE THE FLAT PLACTIC STICK TO DISCONNECT THE RF CABLE WIRE AT THE LOCATION INDICATED.



1. LOOSEN THE INDICATED 4 SCREWS FROM THE C CORVER.



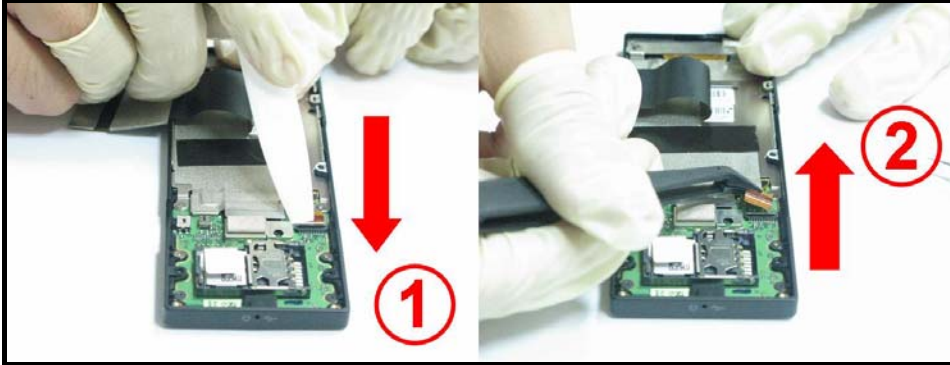
1. DISASSEMBLE THE QWERTY KEYPDA AND C COVER BY LIFTING THEM UP AS SHOWN.



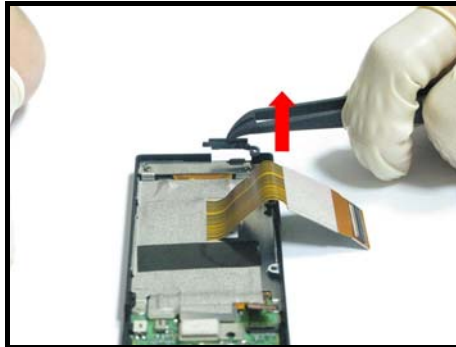
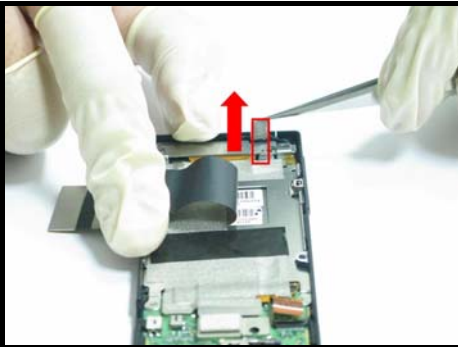
1. LOOSEN THE INDICATED 6 SCREWS FROM THE B CORVER.
2. DISASSEMBLE THE B COVER BY USING FINGER HOOK TO PULL IT UP CAREFULLY.



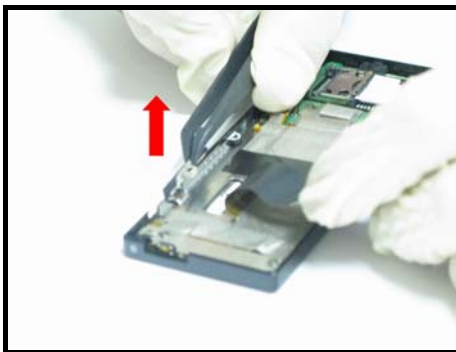
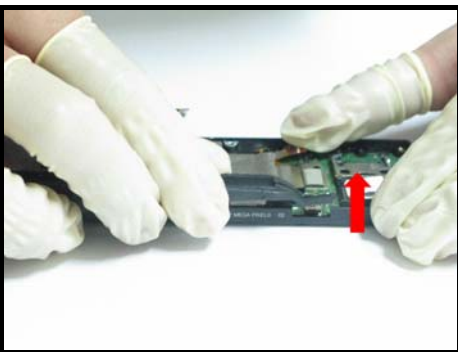
1. USE THE PLASTIC TWEEZERS TO REMOVE THE KAPTON TAPES AT THE LOCATION INDICATED



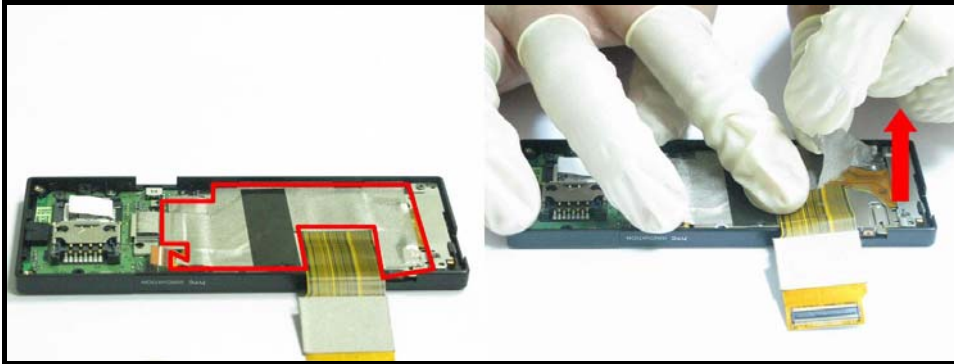
1. RELEASE THE FPC CONNECTOR AND REMOVE THE FPC INDICATED



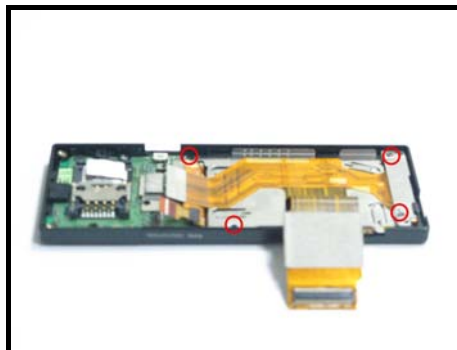
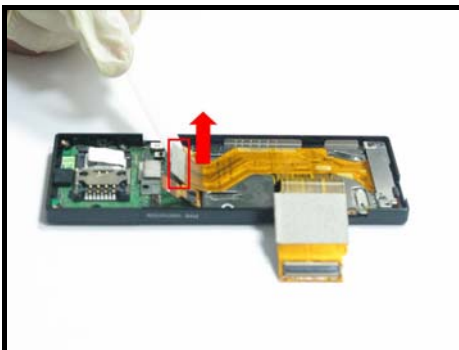
1. REMOVE THE CONDUCTIVE FABRIC AT THE LOCATION INDICATED.
2. USE THE PLASTIC TWEEZERS TO REMOVE THE POWER BUTTON.



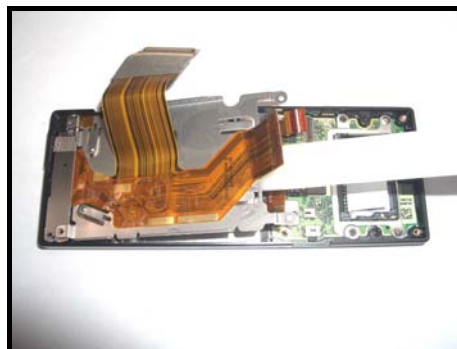
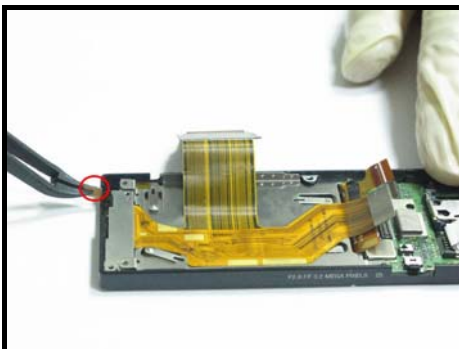
1. USE THE PLASTIC TWEEZERS TO REMOVE THE CAMERY BUTTON.
2. USE THE PLASTIC TWEEZERS TO REMOVE THE VOLUME BUTTON.



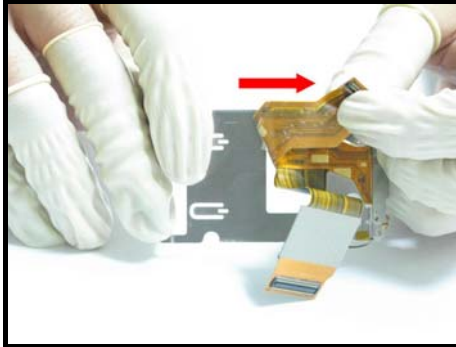
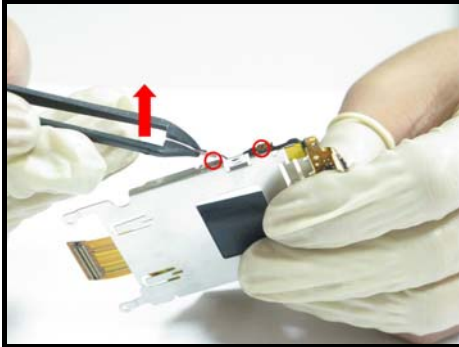
1. REMOVE THE CONDUCTIVE FABRIC AT THE LOCATION INDICATED



1. USE THE FLAT PLASTIC STICK TO DISCONNECT THE LCD FPC CONNECTOR INDICATED
2. LOOSEN THE 4 INDICATED SCREWS FROM THE LCD METAL HOLDER.



1. USE THE PLASTIC TWEEZER CAREFULLY TO TEAR DOWN THE INDICATED POWER SWITCH FROM A COVER.
2. USE FLAT PLASTIC STCK TO DISASSEMBLY THE LCD METAL HOLDER CAREFULLY AS SHOWN.



1. USE THE PLASTIC TWEEZER CAREFULLY TO TEAR DOWN THE INDICATED TWO VOLUME SWITCHS FROM LCD METAL HOLDER AS SHOWN.
2. TEAR DOWN THE LCD FPC FROM LCD METAL HOLDER.

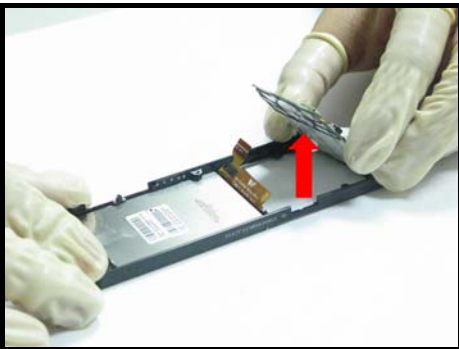
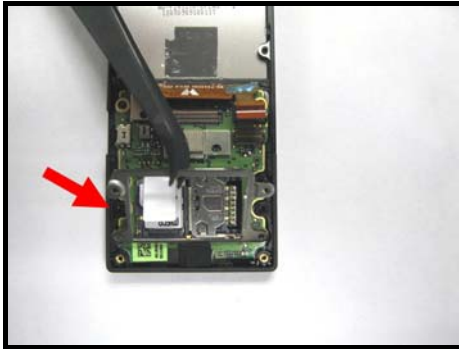


1. USE PLASTIC TWEEZER TO DISCONNECT THE SPEAKER AT THE LOCATION INDICATED.

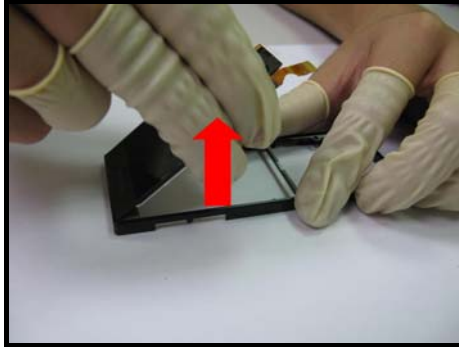
CAUTION: AVOID DAMAGE THE SPEAKER



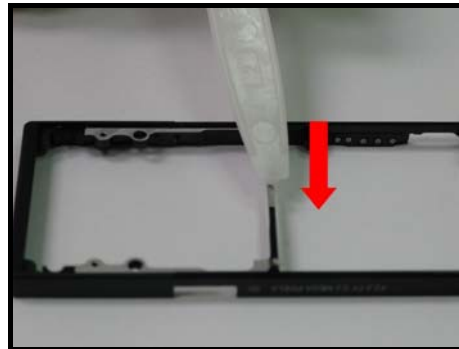
1. LOOSEN THE 4 INDICATED SCREWS FROM THE A COVER.
2. USE PLASTIC TWEEZER TO DISASSEMBLE SIM DOOR HOLDER AS SHOWN.
3. DISASSEMBLE THE KEYPAD FROM A COVER BY LIFTING IT UP AS SHOWN.



1. DISASSEMBLE THE LOWER BOARD FROM A COVER BY LIFTING IT UP AS SHOWN.
2. USE PLASTIC TWEEZER TO DISCONNECT THE MIC RUBBER AT THE LOCATION INDICATED.



1. PUT THE PRE ASSY LCD WITH A COVER INTO AN OVEN ABOUT 5 MINUTES AT 65 DEGREE CELCIUS.
2. DISASSEMBLE THE PRE ASSY LCD FROM A COVER BY LIFTING IT UP AS SHOWN.

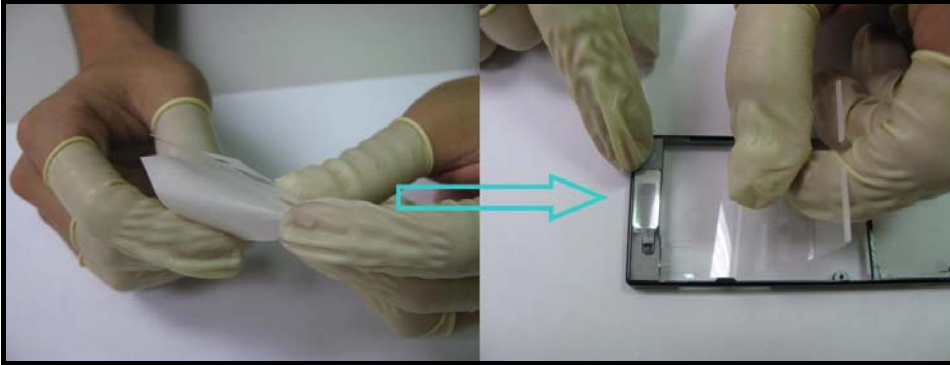


1. USE THE FLAT PLASTIC STICK TO REMOVE THE A COVER FRAME REMAINED GLUE AS THE LOCATION INDICATED



DISASSEMBLY COMPLETE

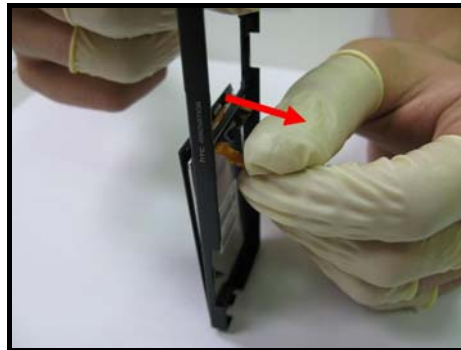
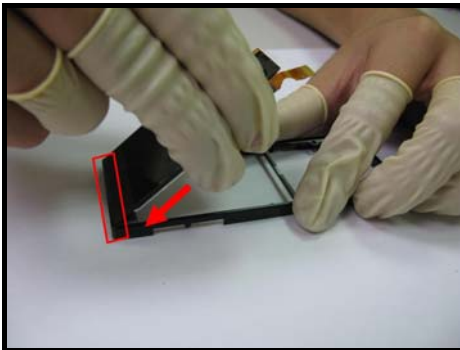
2.3 Assembling procedure



1. USE AN ADHESIVE-DOUBLE TAPE TO PASTE ON THE A COVER AS SHOWN (ADHESIVE-DOUBLE TAPE P/N 76H02971-00M).

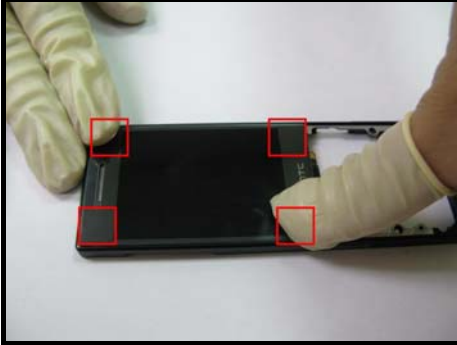


1. TEAR DOWN THE TRANSPARENT LENS AND REMAIN THE DOUBLE TAPE ON THE A COVER'S FRAME AS SHOWN.

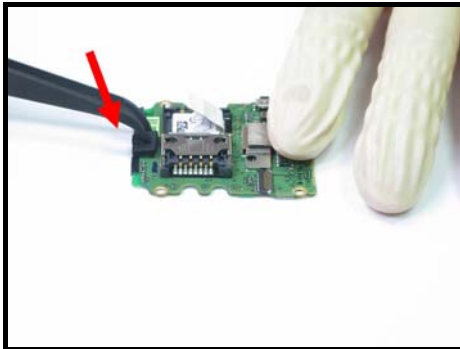


1. PASTE THE PRE ASSY LCD'S UPPER SIDE ON THE A COVER AT THE LOCATION INDICATED.
2. GENTLY BEND THE PRE ASSY LCD'S FPC TO PASS THROUGH THE A COVER AS SHOWN.

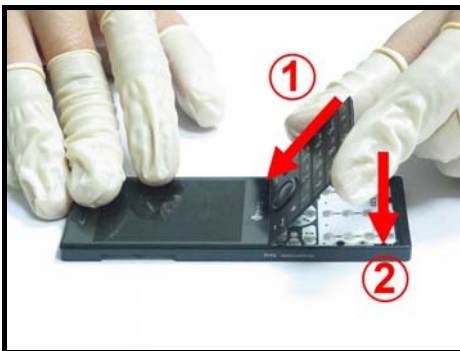
CAUTION: AVOID DAMAGE THE FPC



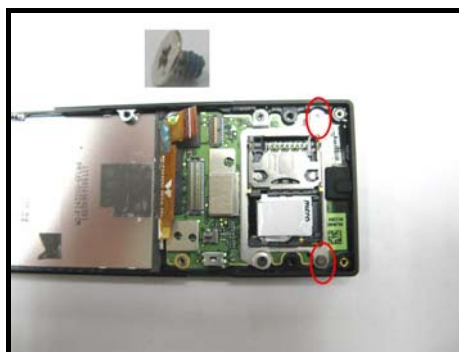
1. USE THUMBS TO PRESS THE INDICATED 4 CORNERS GENTLY AS SHOWN.
2. CHECK THE REAR SIDE OF THE PRE ASSY LCD TO ASSURE THE PRE ASSY LCD IS ADHERED TO A COVER'S FRAME AS SHOWN.

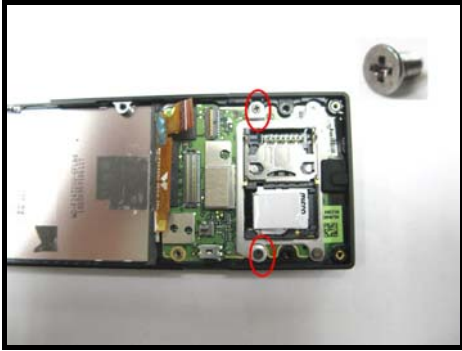


1. USE PLASTIC TWEEZER TO ASSEMBLE THE MIC RUBBER AT THE LOCATION INDICATED.
2. INSERT THE LOWER BOARD INTO THE INDICATED 2 HOOKS AS SHOWN.

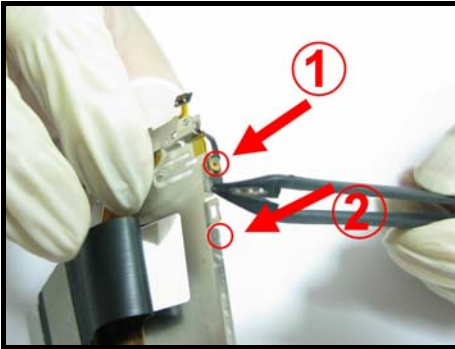
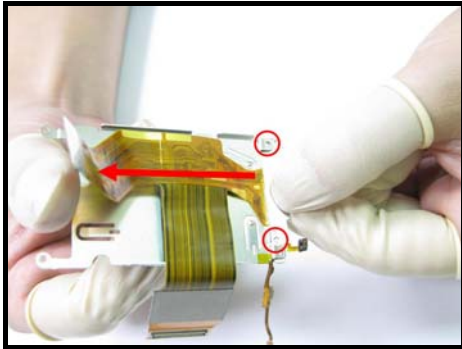


1. INSERT THE KEYPAD TO A COVER BY LIFTING IT UP AS SHOWN.
2. USE PLASTIC TWEEZER TO ASSEMBLE THE SIM DOOR SUPPORTER AS SHOWN.
3. FASTEN THE 2 SCREWS AT THE LOCATIONS INDICATED (SCREW P/N: 72H02425-00M).
TORQUE: 0.5-0.01 KG-CM





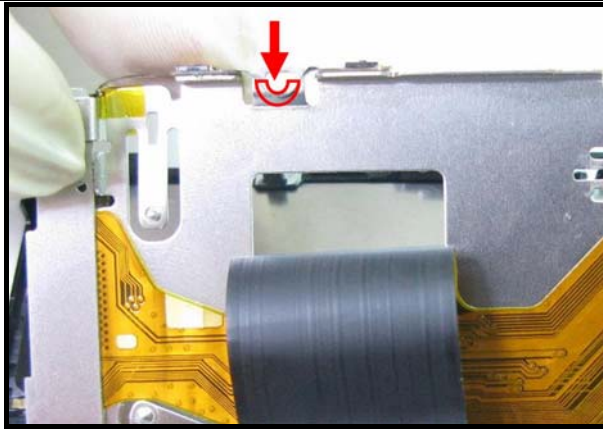
1. FASTEN THE 2 SCREWS AT THE LOCATIONS INDICATED (SCREW P/N: 72H02991-00M). TORQUE: 0.5-0.01 KG-CM
2. INSTALL THE RECEIVER AT THE LOCATION INDICATED.



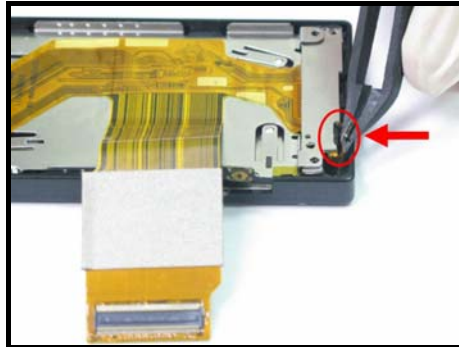
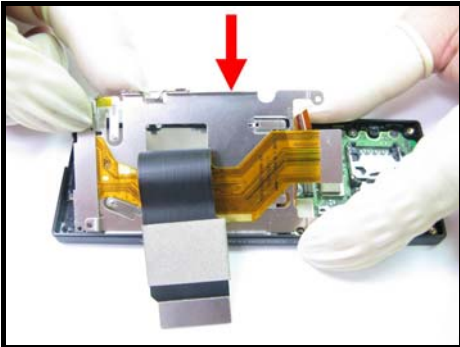
1. GET ALLY THE INDICATED 2 SCREW HOLES TO PASTE THE LCD FPC ON THE LCD METAL HOLDER AS SHOWN.
2. USE THE PLASTIC TWEEZER PASTE THE INDICATED TWO VOLUME SWITCHES ON LCD METAL HOLDER AS SHOWN.



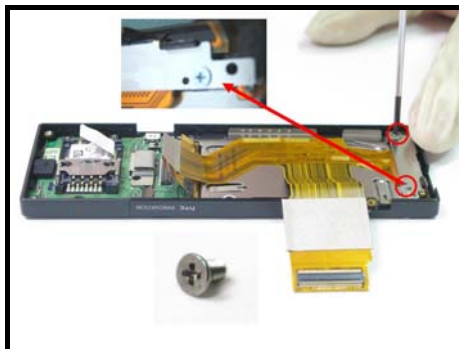
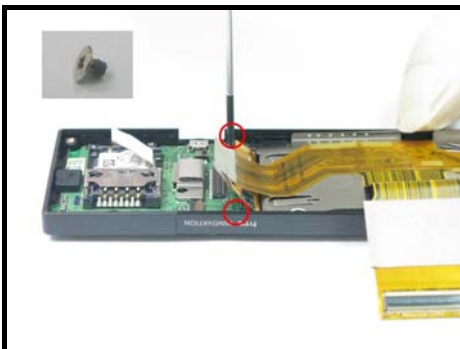
CAUTION: PLEASE PAY SPECIAL ATTENTION ON THE INDICATED OVERLAPPING PARTS OF THE LCD FPC AND LCD METAL HOLDER.



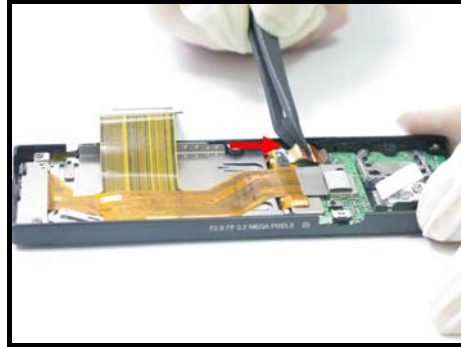
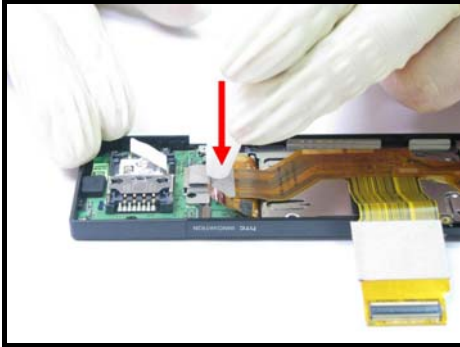
CAUTION: PLEASE BEND THE FPC BETWEEN THE TWO VOLUME SWITCHES AS THE INDICATED ARCH SHAPE.



1. PLACE THE LCD METAL HOLDER AND LCD FPC ON THE A COVER AS SHOWN.
2. USE THE PLASTIC TWEEZER PASTE THE INDICATED POWER SWITCH TO THE A COVER.



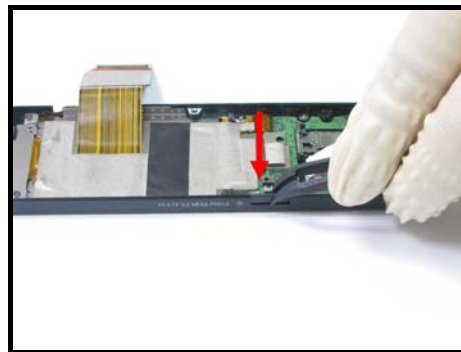
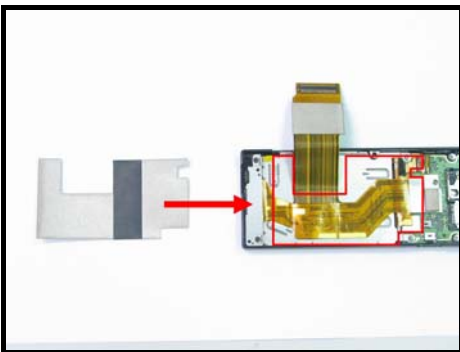
1. FASTEN THE 2 SCREWS AT THE LOCATIONS INDICATED (**SCREW P/N: 72H02425-00M**).
TORQUE: 0.5-0.01 KG-CM
2. FASTEN THE 2 SCREWS AT THE LOCATIONS INDICATED (**SCREW P/N: 72H02991-00M**).
TORQUE: 0.5-0.01 KG-CM



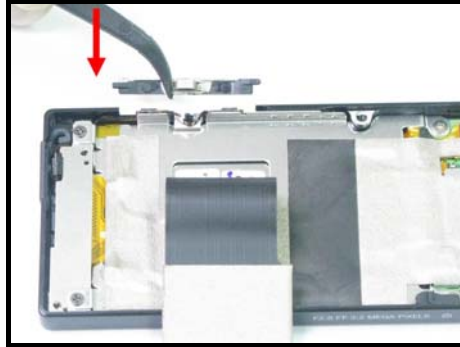
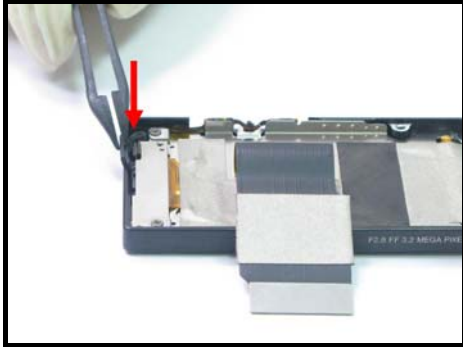
1. USE THE FLAT PLASTIC STICK TO CONNECT THE LCD FPC CONNECTOR INDICATED.
2. USE THE PLASTIC TWEEZERS TO INSERT THE LCD FPC INTO THE LOWER BOARD FPC SLOT AS SHOWN.



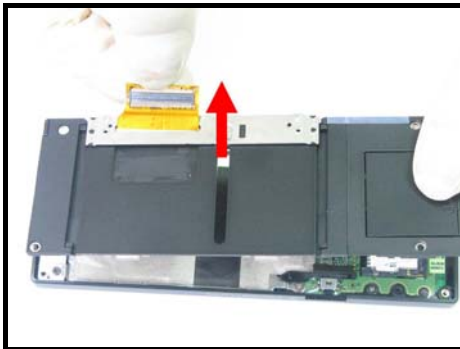
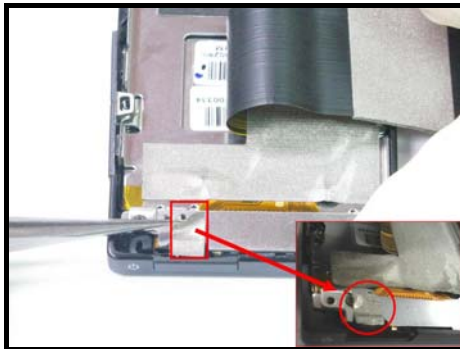
1. USE THE PLASTIC TWEEZERS TO PASTE THE KAPTON TAPES AT THE LOCATION INDICATED (KAPTON TAPES P/N: 76H01925-00M).



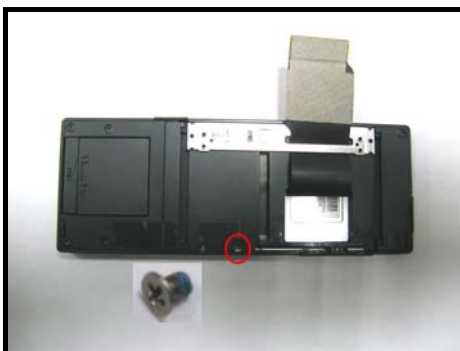
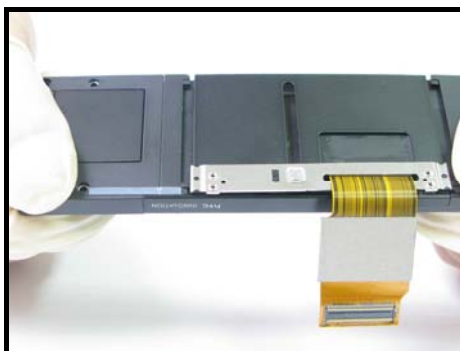
1. PASTE THE FPC CONDUCTIVE FABRIC AT THE LOCATION INDICATED (FPC CONDUCTIVE FABRIC P/N: 76H02870-00M).
2. USE THE PLASTIC TWEEZERS TO INSERT THE CAMERA BUTTON INTO THE CAMERA BUTTON SLOT OF THE A COVER.



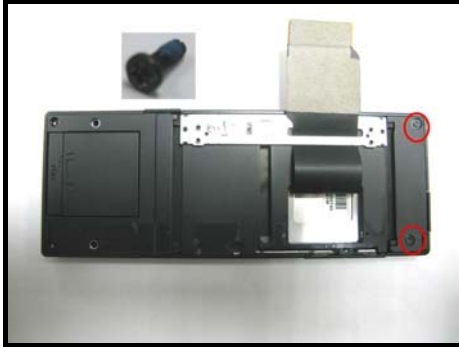
1. USE THE PLASTIC TWEEZERS TO INSERT THE POWER BUTTON INTO THE POWER BUTTON SLOT OF THE A COVER.
2. USE THE PLASTIC TWEEZERS TO INSERT THE VOLUME BUTTON INTO THE VOLUME BUTTON SLOT OF THE A COVER.



1. PASTE THE POWER SWITCH CONDUCTIVE FABRIC AT THE LOCATION INDICATED (**POWER SWITCH CONDUCTIVE FAERIC P/N: 76H02871-00M**).
2. CAREFULLY INSERT THE FPC CONNECTOR THROUGH THE HOLD OF THE B COVER AS SHOWN.



1. ASSEMBLE THE A COVER AND B COVER AS SHOWN.
2. FASTEN THE SCREW TO THE B CORVER AT THE LOCATIONS INDICATED (**SCREW P/N: 72H02456-00M**).
TORQUE: 0.5-0.05 KG-CM

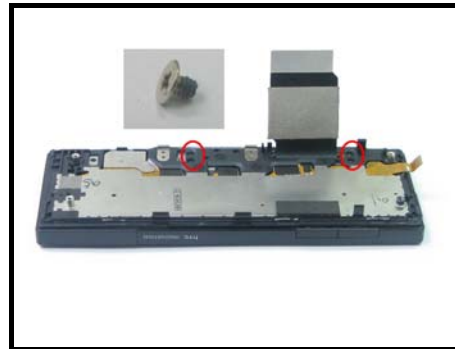
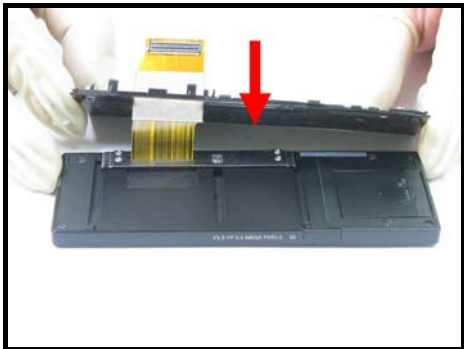


1. FASTEN THE 6 SCREWS TO THE B CORNER AT THE LOCATIONS INDICATED (SCREW P/N: 72H02986-00M).

TORQUE: 0.8-0.05 KG-CM

2. FASTEN THE 4 SCREWS TO THE B CORNER AT THE LOCATIONS INDICATED (SCREW P/N: 72H02257-00M).

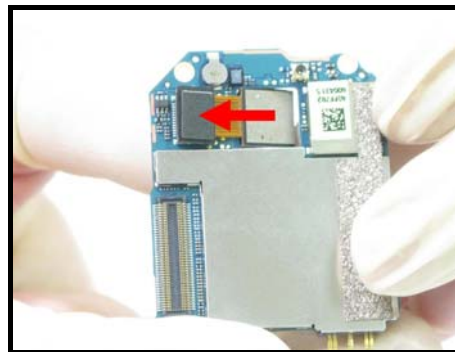
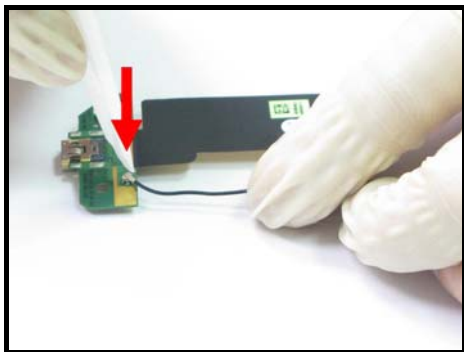
TORQUE: 0.7-0.05 KG-CM



1. CAREFULLY INSERT THE FPC CONNECTOR THROUGH THE HOLD OF THE C COVER TO ASSEMBLE B COVER AND C COVER AS SHOWN.

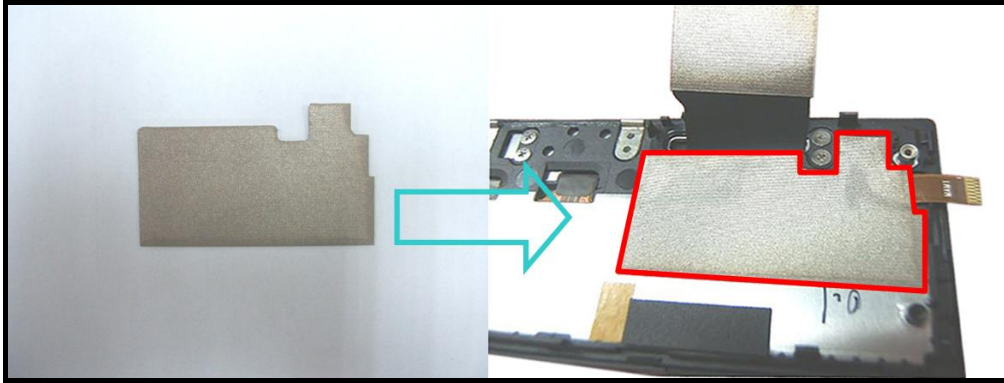
2. FASTEN THE 4 SCREWS AT THE LOCATIONS INDICATED (SCREW P/N: 72H02952-00M).

TORQUE: 1-0.05 KG-CM

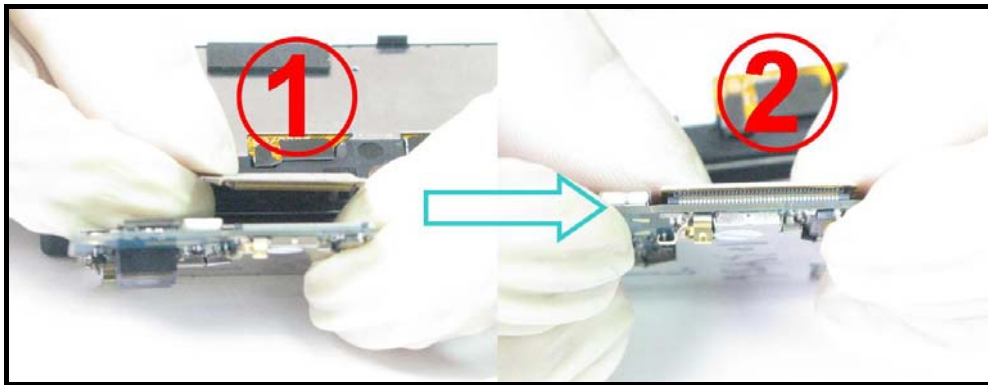


1. USE THE FLAT PLASTIC STICK TO CONNECT THE RF CABLE WIRE AT THE LOCATION INDICATED.

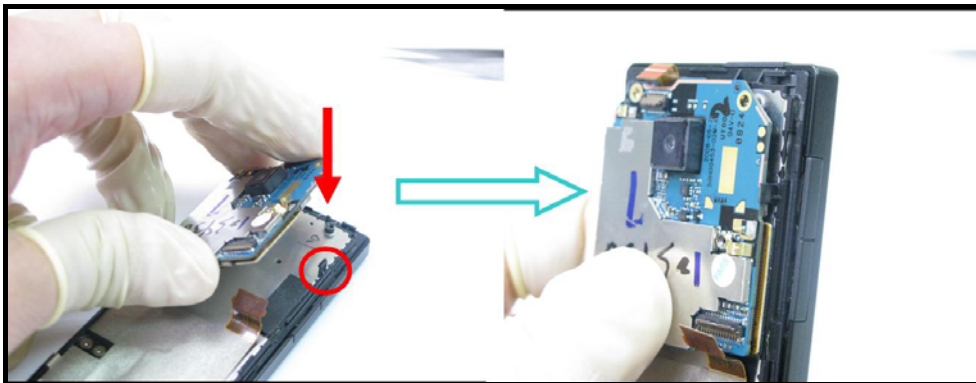
2. CONNECT THE INDICATED CAMERA MODULE TO THE M/B AS SHOWN.



1. PASTE THE FPC CONDUCTIVE FABRIC AT THE LOCATION INDICATED (FPC CONDUCTIVE FABRIC P/N: 72H02957-00M).



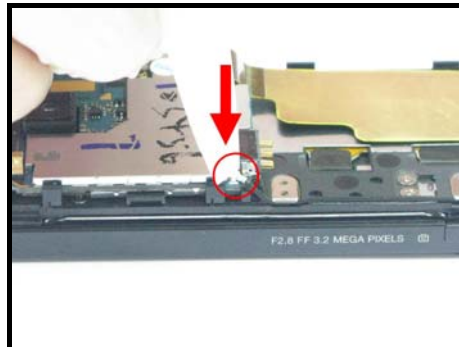
1. CONNECT THE INDICATED M/B FPC CONNECTOR TO THE M/B AS SHOWN.



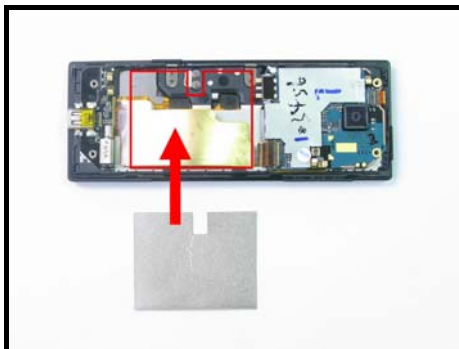
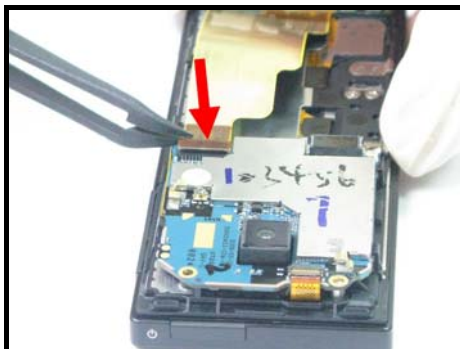
1. FASTEN THE M/B TO THE C COVER BY CONNECTING THE INDICATED M/B HOOK AS SHOWN.



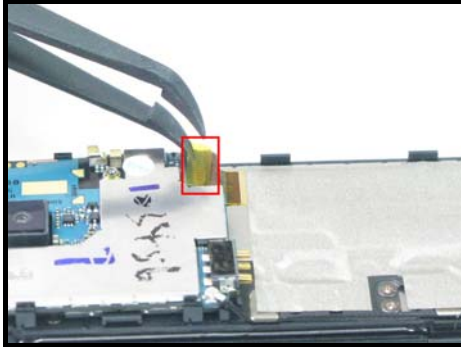
1. USE THE PLASTIC TWEEZERS TO INSERT THE LCD FPC INTO THE LOWER BOARD FPC SLOT AS SHOWN.
2. GET ALLY THE INDICATED 2 HOLES TO PLACE THE I/O BOARD ON THE C COVER AS SHOWN.



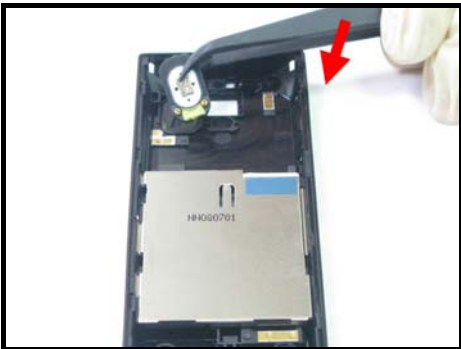
1. USE THE FLAT PLASTIC STICK TO FASTEN THE RF CABLE INTO THE INDICATED 2 RF CABLE HOOKS AS SHOWN.
2. USE THE FLAT PLASTIC STICK TO CONNECT TO THE RF CABLE INTO THE M/B AS SHOWN.



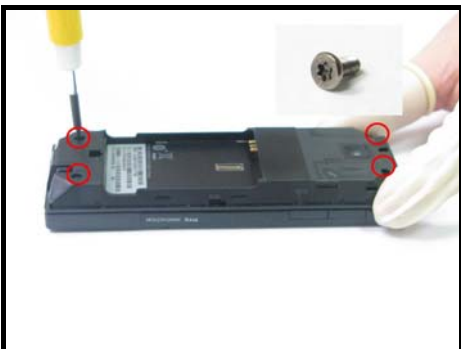
1. USE THE PLASTIC TWEEZERS TO INSERT THE FPC INTO THE M/B'S FPC SLOT AT THE LOCATION INDICATED.
2. PASTE THE CONDUCTIVE FABRIC TO THE LOCATION INDICATED (**CONDUCTIVE FABRIC** P/N: 76H02872-00M).



1. PASTE THE KAPTON TAPES AT THE LOCATIONS INDICATED (**KAPTON TAPE P/N: 76H01925-00M**).



1. USE PLASTIC TWEEZER TO CONNECT THE SPEAKER AS SHOWN.
2. ASSEMBLE THE HOUSING AS SHOWN.



1. FASTEN THE 4 INDICATED SCREWS TO THE HOUSING (**SCREW P/N: 72H01109-00M**). **TORQUE: 0.8 KG-CM**
2. INSERT THE BATTERY INTO THE UNIT AS SHOWN.



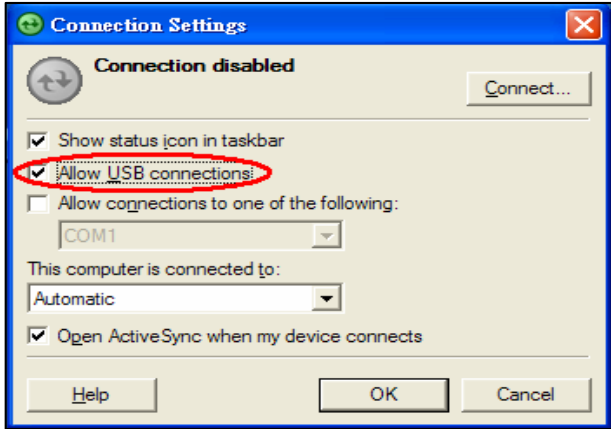
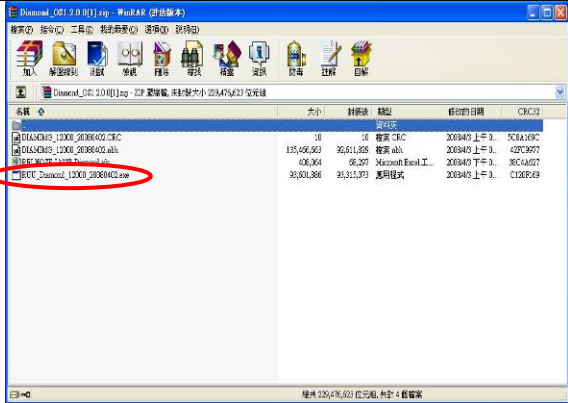
1. HOLD THE THUMBS ON THE TOP LEFT AND BOTTOM RIGHT OF THE BATTERY COVER AND SLIDE IT DOWNWARDS.



ASSEMBLY COMPLETE

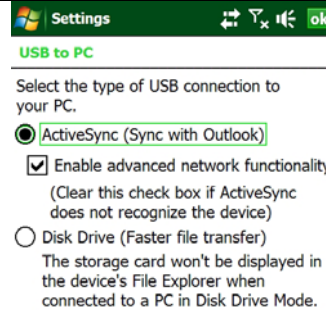
3. ROM Re-flash Procedure

3.1 ROM upgrade thru RUU (Re-flash Upgrade Utility)

Connect device to PC	
<ol style="list-style-type: none"> Setting and allow USB connections in Microsoft ActiveSync. Connect your device and desktop/ or laptop via USB cable. 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"> Download OS image from SDO. http://htcscm10.htc.com.tw/SDO Un-zip the file and execute RUU program. 	

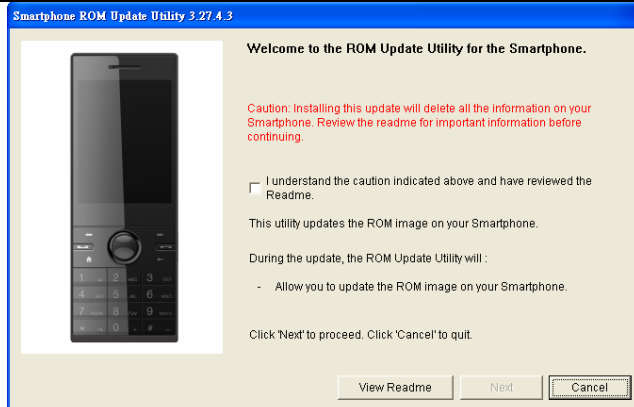
Check the setting of menu

6. Select the type of USB connection with "ActiveSync" mode in the settings of menu.



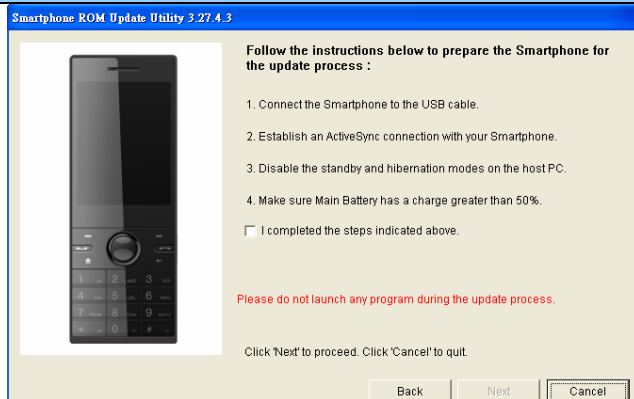
RUU-1

7. Hold the volume down key then press power button to trigger the boot loader mode.
8. Read the pop-up message form ROM update utility and select the "I understand..." checkbox.
9. Click "Next" to proceed.



RUU-2

10. Read the pop-up message form ROM update utility to follow and perform the instructions and select the "I completed..." checkbox.
11. Click "Next" to proceed.



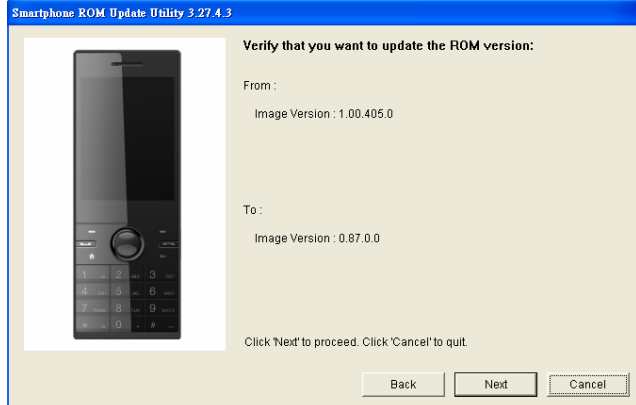
RUU – 3

- 12. Current image version confirmation.
- 13. Click “Update” to proceed



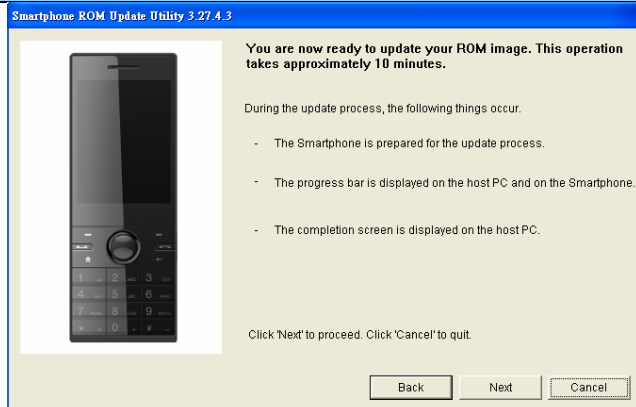
RUU-4

- 14. Double verify the ROM revision which you want to update before re-flash procedure.
- 15. Click “Next” to proceed.



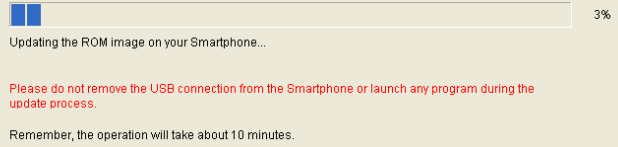
RUU-5

- 16. Read the information from pop-up message and the OS update procedure will takes 10 minutes long.
- 17. Click “Next” to proceed.



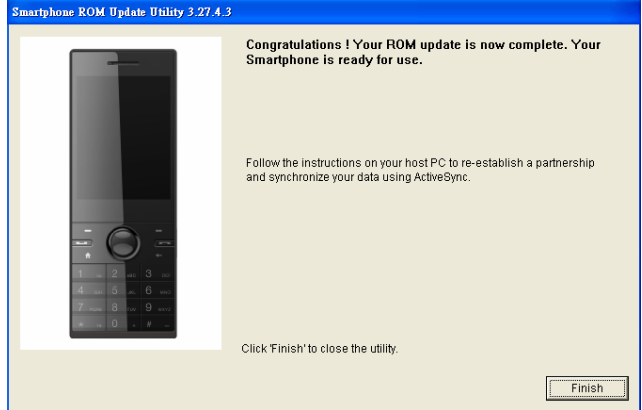
RUU – 6

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

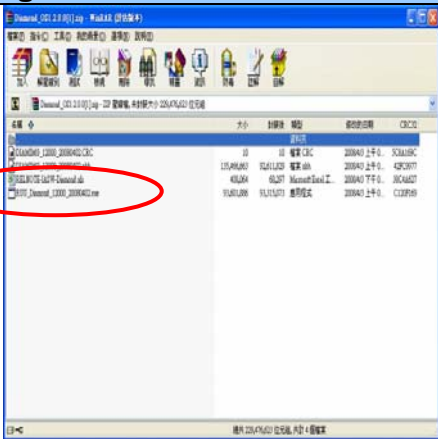



RUU – 7

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

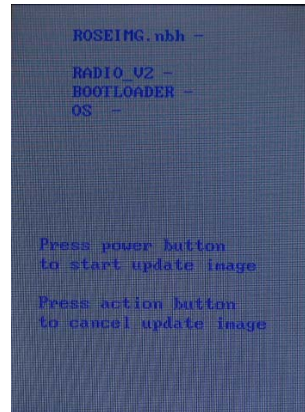


3.2 ROM Image upgrade thru SD card

Download OS Image from SDO	
<ol style="list-style-type: none"> Download OS image from SDO. http://htcscm10.htc.com.tw/SDO Un-zip the image file. 	
Format SD card and copy image file to SD card	
<ol style="list-style-type: none"> Select file system and format the SD card to FAT32 mode. Copy image file XXX.nbh to the micro SD card and rename to RoseIMG.NBH. 	

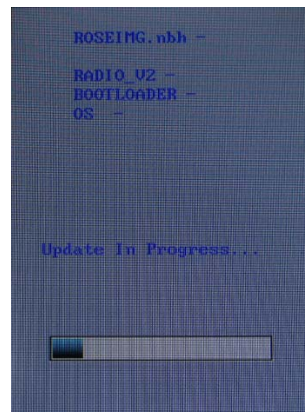
SD Upgrade - 1

5. Turn the device power off and insert micro SD card.
6. Press and hold **Volume down** + **Power** button and then release the power button first to enter Boot loader mode.
7. Press **Power** button to start upgrade procedure.



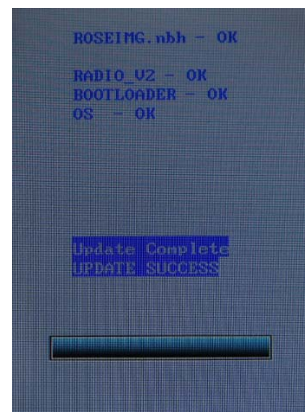
SD Upgrade - 2

8. Reading source code from micro SD card.
- [Note]: Please don't power off the device during this process.



SD Upgrade - 3

9. After finish, press Reset button to reboot.





HTC Corporation

Doc. No.

DOC-00045381

REV.

Issued Date

2008/8/12

Revised Date

2008/11/13

A02

Doc. Title

ROSE Service Manual

Page

47 of 94

4. DIAGNOSTIC PROGRAM

4.1 List of Diagnostic Test Items

Mode	No	Item	Description	Remark
Diagnostic	Function Test			
	1	Auto	Auto Regular Tests (Display, B.L, Vibrator, etc...)	
	2	Display Test	Color bar/R/G/B/Black/White/Gray pattern.	
	3	Vibrator Test	Vibrator on test.	
	4	Button Test	Power, Volume up, Volume down, Key action, Key left, Key up, Key right, Key down	
	5	Keyboard Test	QWERTY keyboard test	
	6	ROM Checksum Test	ROM size	
	7	SD card Test	SD card read / write test	
	8	Battery Test	Battery test	
	9	Light Sensor Test	Motion Light sensor function test	
	10	LED Test	LED test	
	11	Back Light Test	LCD back light test (dim to bright).	
12	Slide Test	QWERTY keyboard sliding test		
Run-in Test				
1	1 Hour	1 Hour Run-in Test/Press Soft1 key.	Option	
2	2 Hours	2 Hours Run-in Test/Press Soft 2 key.	Option	
3	4 Hours	4 Hours Run-in Test/Press Start key.	Option	
4	8 Hours	8 Hours Run-in Test/Press OK key.	Option	
Format Internal Storage (Personal information, talk times)				
Device Info				



HTC Corporation

Doc. No.

DOC-00045381

REV.

Issued Date

2008/8/12

Revised Date

2008/11/13

A02

Doc. Title

ROSE Service Manual

Page

48 of 94



Mode	No	Item	Description	Remark
Win CE	1	Bluetooth Test	Bluetooth Function Test	
	2	USB Test	USB link test (Microsoft ActiveSync)	
	3	Camera Test	Camera Function Test	
	4	WLAN Test	WLAN Function Test	
	5	GPS Test	GPS Function Test	
	6	FM Radio Test	FM Radio Function Test	
	7	Audio Test	All Audio Function Test	

Test Procedure

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

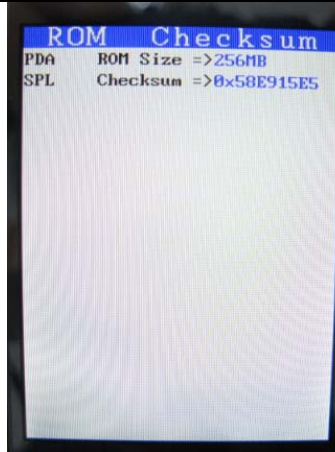
How to execute the test program: Press "Action" button to start each of test items.

Diagnostic

Main Menu/Function Test Menu	
<ol style="list-style-type: none"> 1. Turn the device power off and insert Diagnostic SD card. 2. Press and hold Volume down button and press Power button then enter Diagnostic mode. 3. Using to select the test item and move to next page as well. 4. Select item "Function Test" to find The Function test menu. 	
Auto Test	
<ol style="list-style-type: none"> 5. Press the Action key to start the Auto-test. 6. It will perform the regular tests, please follow the system instruction to do the test. 	

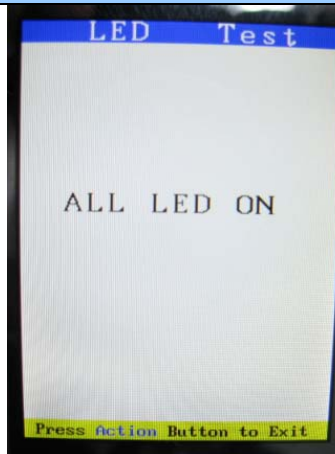
ROM Checksum Test

7. Press Action key to select
8. The Rom Checksum will be displayed on the screen



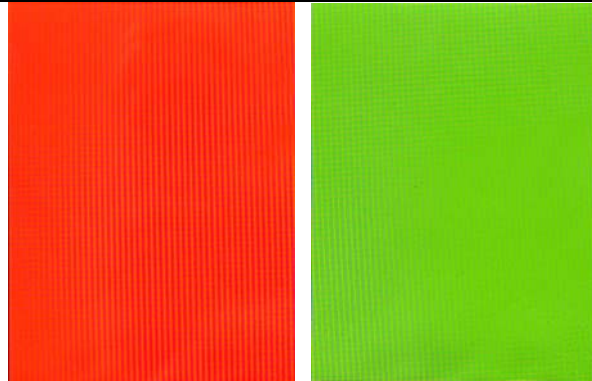
LED Test

9. Press Action key to select
10. It will perform the LED test, please follow the system instruction to check the LED.



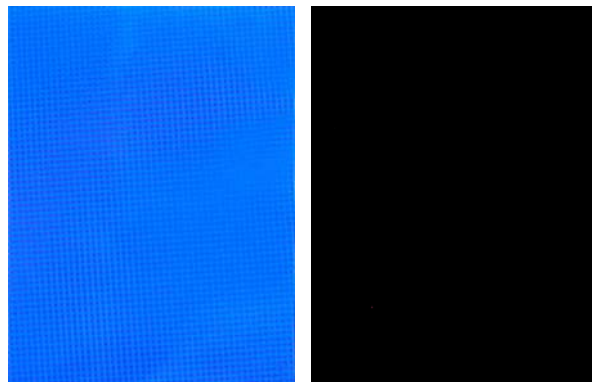
Display Test (and RED/ GREEN pattern)

11. Press Action key to select Display Test on Function test menu.
12. After the test pattern is show up, please check the pattern if any un-uniform color or chromatist.
13. Press Action key to continue the next test pattern.



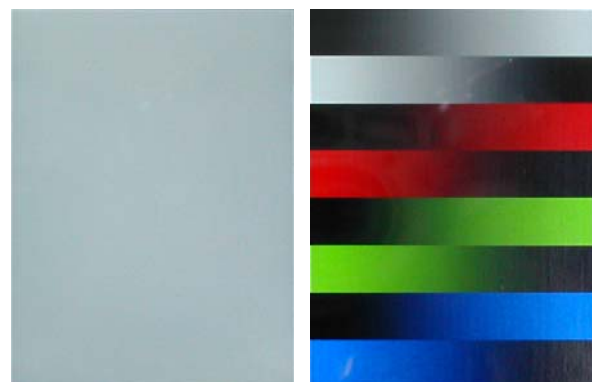
Display Test (BLUE/ BLACK pattern)

14. Press Action key to continue the next test pattern.



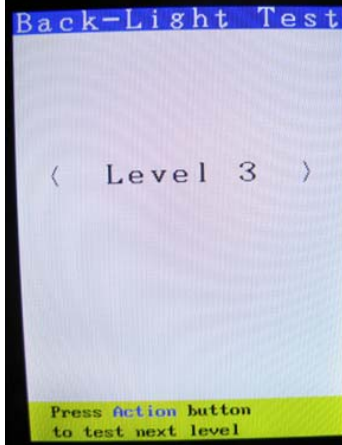
Display Test (WHITE/Color bar pattern)

15. Press Action key to continue the next test pattern.



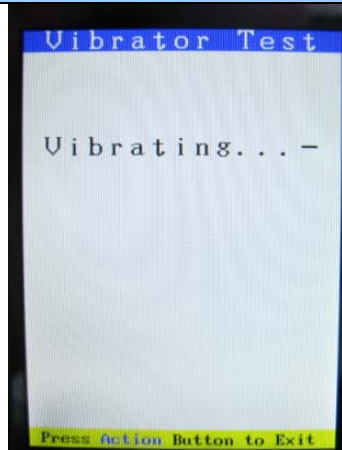
Back Light Test

- 16. Press Action key to select Back Light Test on Function test menu.
- 17. Press Action key to switch the LCD backlight level from Level 1, Level2, and Level3.
- 18. Press Action key to exit and return to Function test menu.



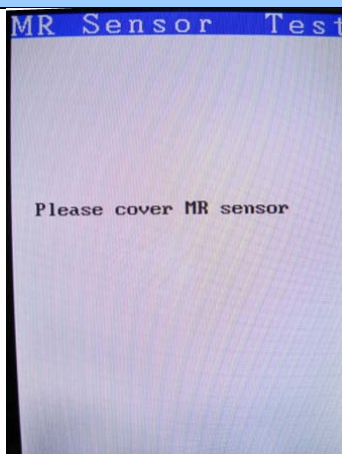
Vibrator Test

- 19. Press Action key to select Vibrator Test on Function test menu.
- 20. Press Action key to exit and return to Function test menu.



Sliding Test

- 21. Press Action key to select Sliding Test on Function test menu.
- 22. Press Action key to exit and return to Function test menu.



SD card R/W Test

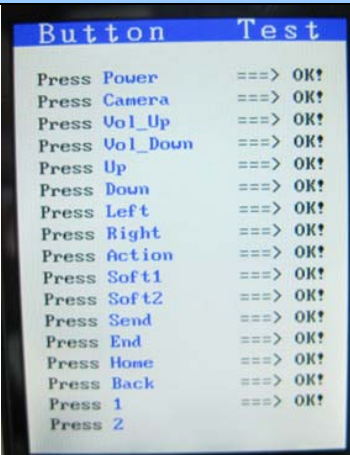
23. Press Action key to select SD card R/W Test on Function test menu.



Button Test

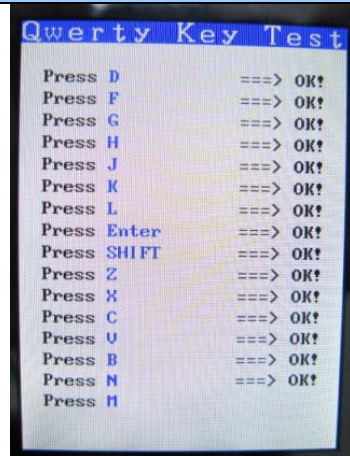
24. Press Action key to select Button Test on Function test menu.
 25. Follow the instruction on screen to perform the Key/Button test (**Power, Volume up, Volume down, Key action, Key left, Key up, Key right, Key down**).

The screen will return to Function test menu after the test is finished.



QWERTY Key Test

26. Press Action key to select QWERTY key Test on Function test menu.



Light Sensor Test

27. Press Action key to select Light Sensor Test on Function test menu.

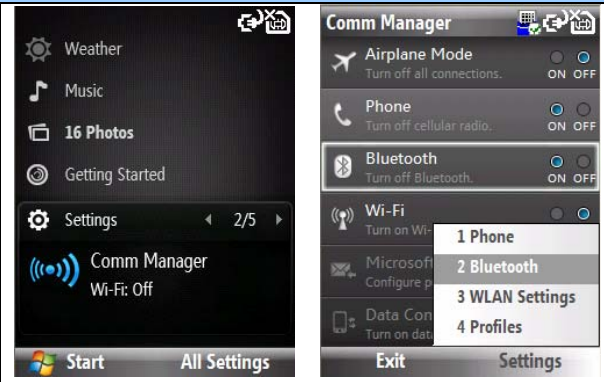
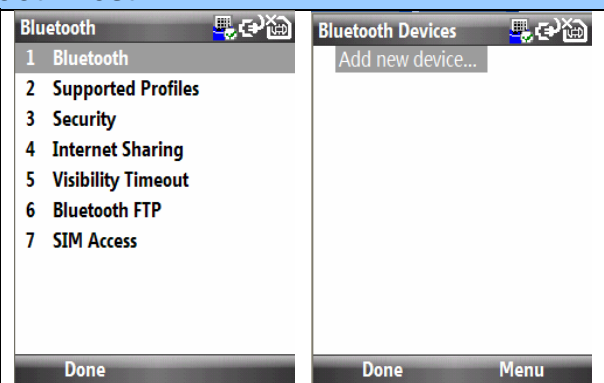


Battery Test

28. Press Action key to select Battery Test on Function test menu.

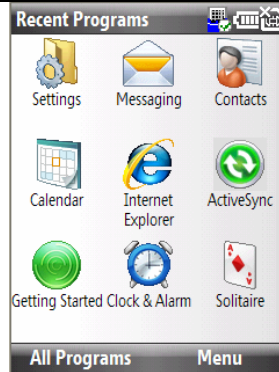


WinCE Test

Bluetooth Test – 1	
<ol style="list-style-type: none"> 1. Select <u>Comm Manager</u> on the Today screen and turn on Bluetooth. 2. Select the icon “Settings” down-right the corner of the screen and select the “Make this device....” Checkbox. 3. Press Action key to go next test pattern. 	 <p>The screenshot shows two parts of the WinCE interface. On the left is the 'Today' screen with a list of items: Weather, Music, 16 Photos, Getting Started, Settings (2/5), and Comm Manager (Wi-Fi: Off). On the right is the 'Comm Manager' settings screen, where 'Bluetooth' is turned on. A list of Bluetooth profiles is shown: 1 Phone, 2 Bluetooth, 3 WLAN Settings, and 4 Profiles.</p>
Bluetooth Test-2	
<ol style="list-style-type: none"> 4. Select <u>Bluetooth</u> item. 5. Then press Action key to get start pairing Bluetooth devices. 	 <p>The screenshot shows two parts of the WinCE interface. On the left is the 'Bluetooth' settings screen with a list: 1 Bluetooth, 2 Supported Profiles, 3 Security, 4 Internet Sharing, 5 Visibility Timeout, 6 Bluetooth FTP, and 7 SIM Access. On the right is the 'Bluetooth Devices' screen with an 'Add new device...' option.</p>

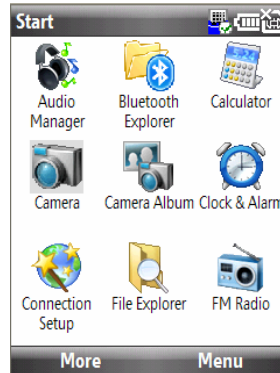
USB Test

1. Select Start->ActiveSync to do the USB link test.



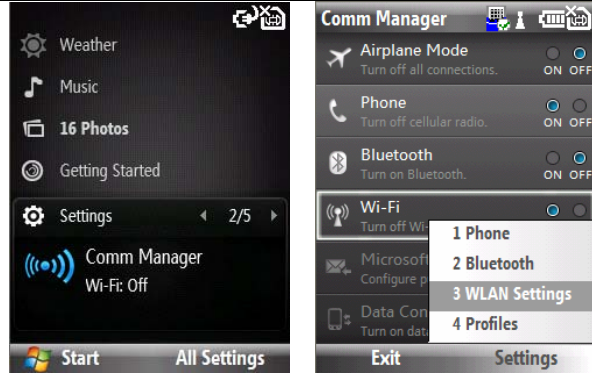
Camera Test

1. Select Start->Program->Camera or Press Camera button to turn on the Camera.
2. Make sure the device will present and enter the preview display.
3. Check camera pre-view and image quality.



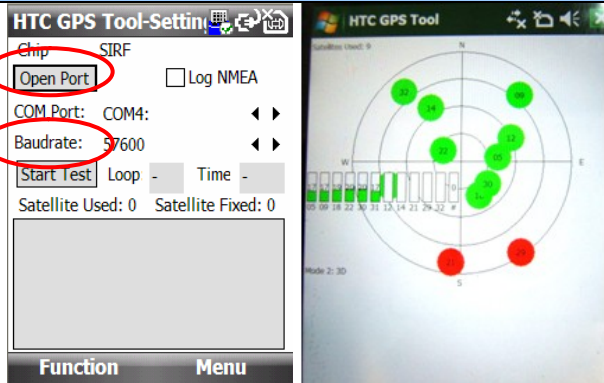
WLAN Test

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



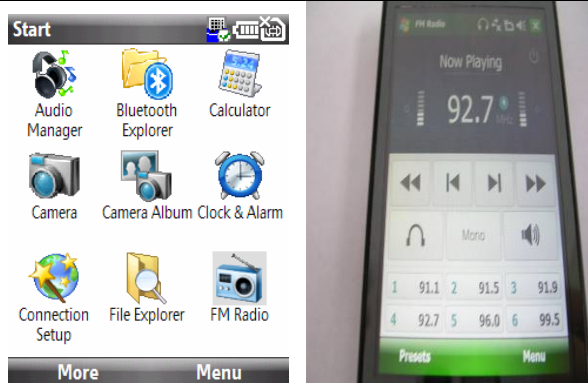
GPS Test

1. Download test program from SDO (DOC-00042190) <http://htcscm10.htc.com.tw/SDO>
2. Setup the COM port to COM4.
3. Place device in GPS receptor coverage area and select the icon "Open Port".
4. Check the GPS status as picture shown.



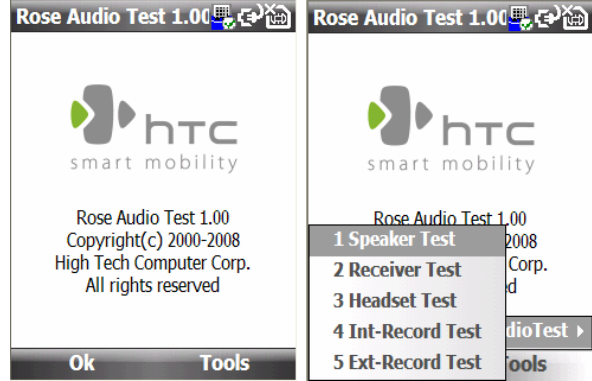
FM Radio Test

1. Insert the headset into the USB connector before doing the testing.
2. Select icon FM Radio in the programs of the menu.
3. Select the different channels for testing.



Audio Test-1

- Download test program from SDO (GSD-00005556)
<http://htcscm10.htc.com.tw/SDO>
- Un-zip the image file.
- Copy "mfgtest.dll" and "Audio Test.exe" to internal storage.
- Execute "Audio Test" program from internal storage.
- Choose the each test in the menu of "Tools"



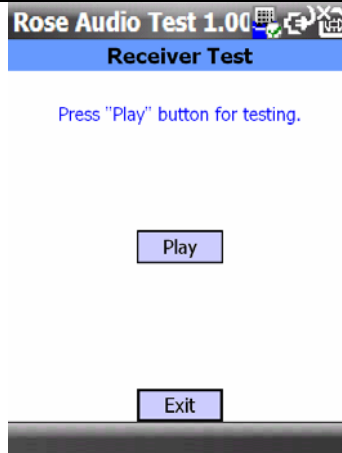
Audio Test-2

- Select the Speaker Test then press Play button for testing



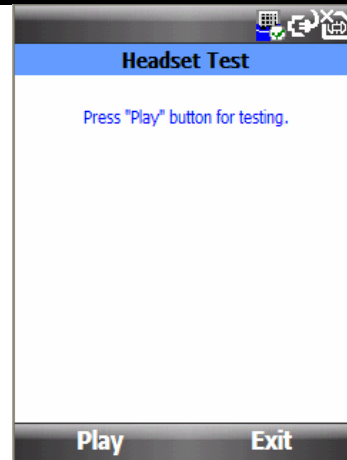
Audio Test-3

- Select the Speaker Test then press Play button for testing



Audio Test-4

8. Connect the headset into the USB port before doing the testing
9. Select the Headset Test then press Play button for testing



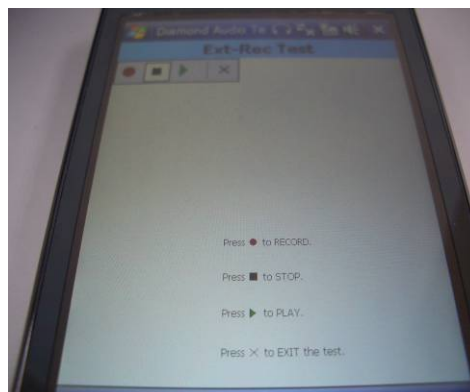
Audio Test-5

10. Select the Int-Rec Test then press the "Record" button for voice recording first
11. Stop the voice record then press "Play" button for internal receiver test



Audio Test-6

12. Connect the headset into the USB port before doing the testing
13. Select the Ext-Rec Test then press the "Record" button for voice recording first



5. Power measurement test

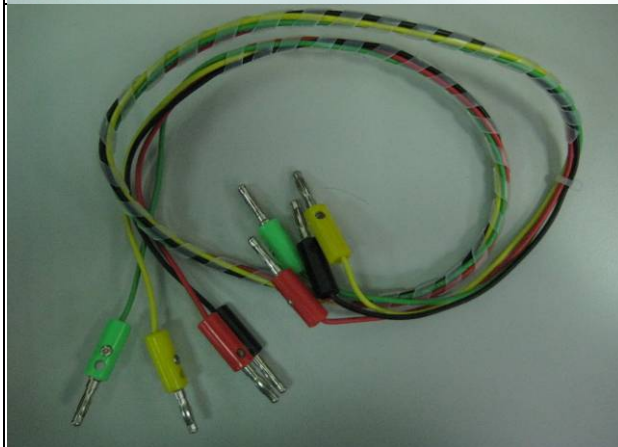
5.1 Main board leakage current Test Procedure

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

Equipment list



1. Control box



2. 4 colors cable

Cable A: Red
 Cable B: Yellow
 Cable C: Green
 Cable D: Black

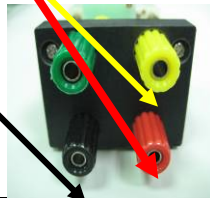


Jig-F

C. types Jig

Jig - F (3 pins-Short)

Equipment set up



1. Connect control box and jig through 3 colors cable with red, black and yellow



2. Set up each button by row A~D according to product specification Following is an setting for Diamond

MODEL	JIG TYPE	Button set up matrix			
		A	B	C	D
ROSE	F	0	8	X	0

It means, press button A0,B8,D0

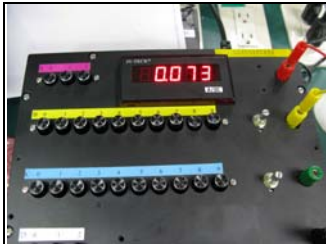


3. Install jig to device (the photo is for reference only)

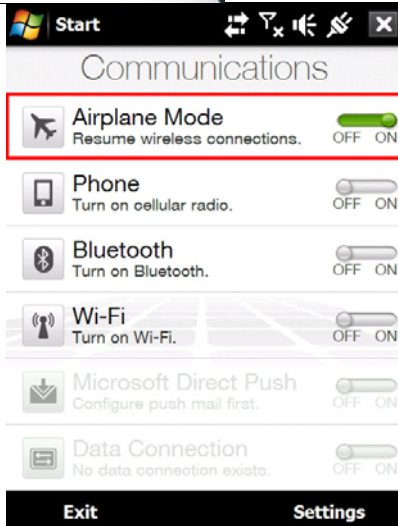
Start testing



1. Turn on control box power button



2. Press Power button to turn on the Device



3. In "main page", Check phone status, Click "Turn on Airplane mode"

Set the unit to :

* Airplane mode

* Make sure all RF function is off (phone, BT, Wifi..)



4. Measure Idle mode current (condition: Display on BL default/ KB LED off/ GSM off/ WiFi off/ BT off). Idle current value must under **35mA**, if over the criteria, it means M/B failed, please replace M/B for repair.



5. After idle current checked, Switch OFF the unit. Unit is turn off and no display to be the sleep mode (condition: Display & BL off/ KB LED off/ RF off/ WiFi off/ BT off). Sleep current value must under **3mA**, if over the criteria, it means M/B failed, please replace M/B for repair.

Conclusion:

If current consumption is passed at both of idle and sleep mode, it means M/B is GOOD. If there is any item FAILED at idle or sleep mode, it means M/B is failed, please replace M/B for repair.

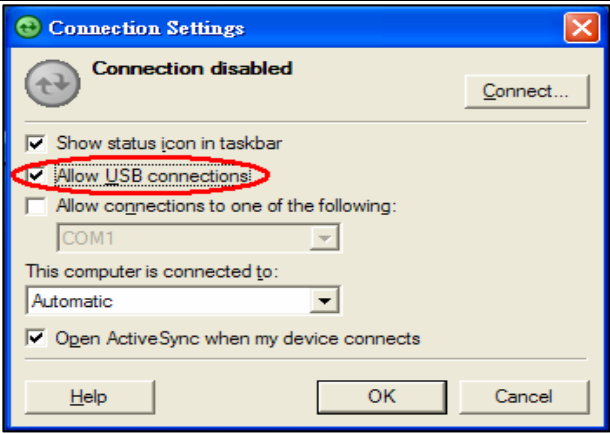
5.2 Battery rundown test procedure

Test Requirement:

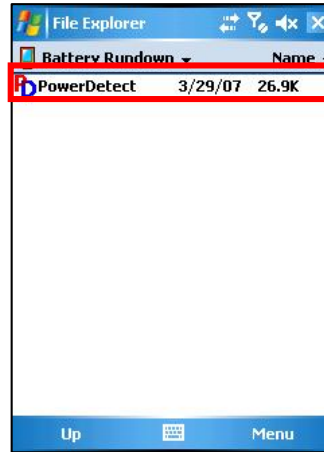
- Windows 2000/XP
- USB Cable
- ActiveSync 4.2 above (WINCE 6.0 should use ActiveSync 4.5)
- Master Unit
- Battery in Warrantee

Caution: Please charge your unit to full capacity for battery (until the green light is displayed) before doing the test.

TEST PROCEDURE

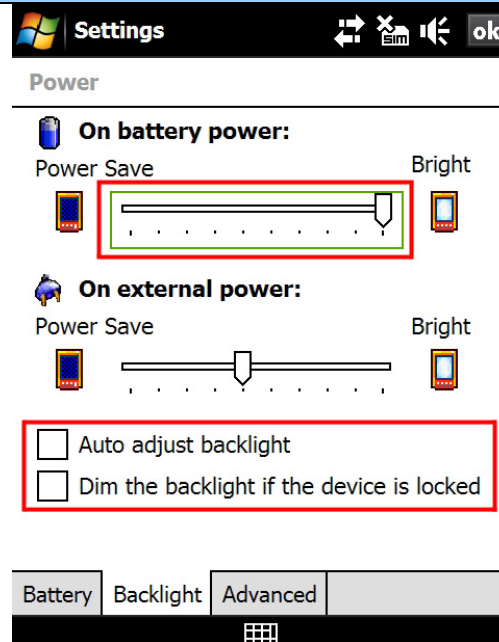
Connect device to PC	
<ol style="list-style-type: none"> I. Setting and allow USB connections in Microsoft ActiveSync. II. Connect your device and desktop/ or laptop via USB cable. III. Check the pop-up message from Microsoft ActiveSync when device is synchronized with PC. 	
Copy the Battery Rundown tool into the device	

- IV. Make a folder in the device.
- V. Copy **PowerDetect.exe** into the folder.



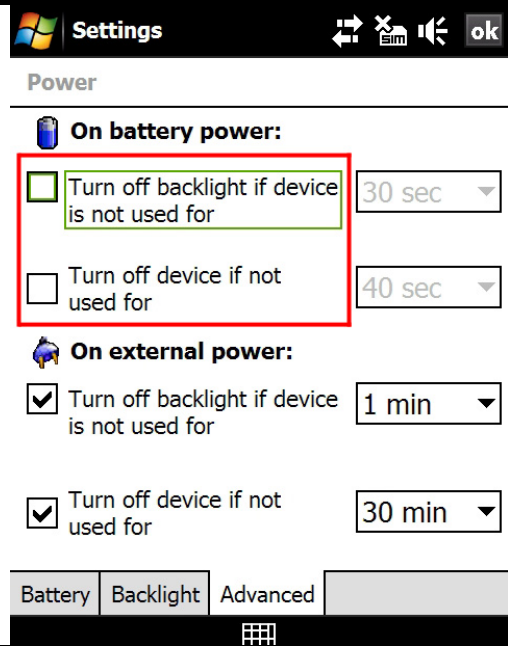
Battery Rundown-1

- VI. Adjust the Backlight brightness into the maximum level on battery power. (Disable **auto adjust backlight** and **dim the backlight if the device is locked**)



Battery Rundown-2

VII. Disable **Turn off backlight if device is not used for** and **Turn off device if not used for** on Advanced menu.



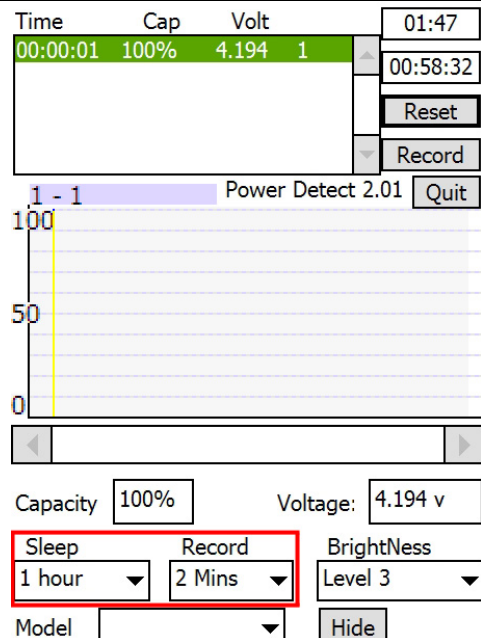
Battery Rundown-3

VIII. Execute **PowerDetect.exe** under WinCE



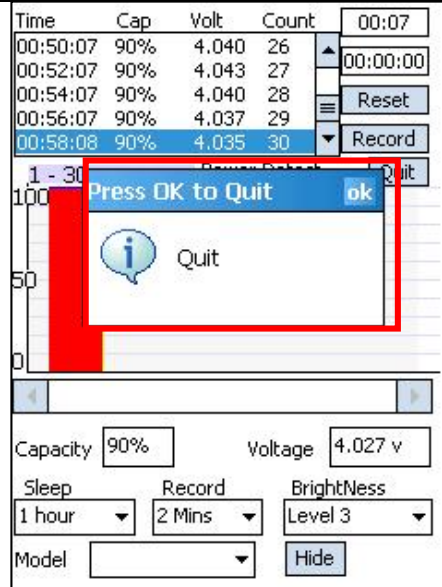
Battery Rundown-3

IX. Set the Sleep as **1hour**
 X. Set the Record as **2Mins**



Battery Rundown-4

- XI. After running 1 hour, the test will be finished.
- XII. Press the Power Button to turn on the power.
- XIII. Click ok to quit the program.



Time	Cap	Volt	Count
00:50:07	90%	4.040	26
00:52:07	90%	4.043	27
00:54:07	90%	4.040	28
00:56:07	90%	4.037	29
00:58:08	90%	4.035	30

Buttons: Reset, Record, Quit

Dialog: Press OK to Quit, Quit, ok

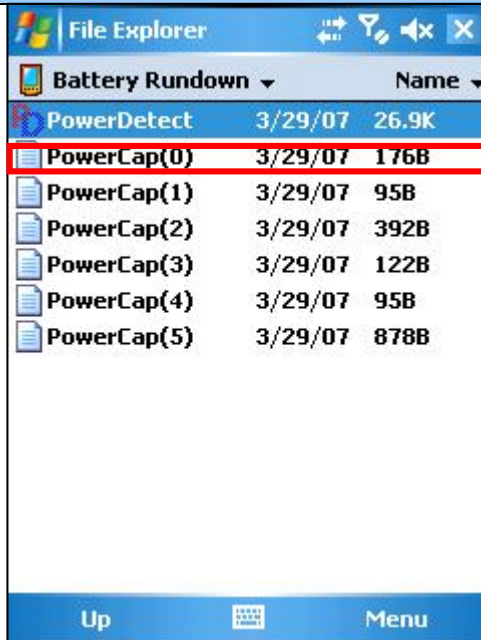
Capacity: 90% Voltage: 4.027 v

Sleep: 1 hour Record: 2 Mins Brightness: Level 3

Model: [dropdown] Hide

Battery Rundown-5

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



Name	Date	Size
PowerDetect	3/29/07	26.9K
PowerCap(0)	3/29/07	176B
PowerCap(1)	3/29/07	95B
PowerCap(2)	3/29/07	392B
PowerCap(3)	3/29/07	122B
PowerCap(4)	3/29/07	95B
PowerCap(5)	3/29/07	878B

Buttons: Up, Menu

Battery Rundown-6

XV. Tag the log file to check the capacity.

Time	Capacity	Voltage	Temp
00:46:06	90%	4.052	□€0
00:48:06	90%	4.048	□€0
00:50:07	90%	4.040	□€0
00:52:07	90%	4.043	□€0
00:54:07	90%	4.040	□€0
00:56:07	90%	4.037	□€0
00:58:08	90%	4.035	□€0

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

6. Cosmetic Inspection Criteria

6.1 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 (involve stylus).
- Class C area => 4 sides and back views of main unit.
- Class D area => Socket of battery, inner side of battery cover and back side of slid part.

Photo of inspection areas

CLASS A	
CLASS B	

CLASS C



CLASS D





HTC Corporation

Doc. No.	DOC-00045381	REV.
Issued Date	2008/8/12	A02
Revised Date	2008/11/13	

Doc. Title	ROSE Service Manual	Page	73 of 94
------------	----------------------------	------	----------

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.

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.

6.2 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.
		2 adjacent	0
	Dark or Bright lines	0	
	All Allowable Dots Defects	Total Number ≤ 3, S ≥ 5mm.	
Shift and tilt of screen viewed area	The black edge around display area must be detected by front view.		
Foreign Scratch, Objects or Lint on power off status	Scratch	0.03 < W ≤ 0.1 (mm) L ≤ 5 (mm), N ≤ 2 (mm)	
	Lint (linear foreign objects)	0.03 < W ≤ 0.1 (mm) 0.3 < L ≤ 3.0 (mm) N ≤ 5	
	Spots	0.1 < D ≤ 0.3 (mm), N ≤ 4	
	Fish eye on film	0.1 < D ≤ 0.4 (mm), N ≤ 4	
	Breakage on film surface	Not acceptable	
	Total acceptable defect quantity	≤ 10	



HTC Corporation

Doc. No.	DOC-00045381	REV.
Issued Date	2008/8/12	A02
Revised Date	2008/11/13	

Doc. Title	ROSE Service Manual	Page	74 of 94
------------	----------------------------	------	----------

6.3 Main unit inspection

Cosmetic inspection generic spec:

1. Exposure of substratum is not acceptable for peeling. (Area 4 is included) If not exposure of substratum, please check by SPEC of dot or scratch. (Area 4 is not included)
2. Logo may not have blurred or double print., the peeling on logo is not acceptable.
3. The character printing of main unit does not allow bad printing, scratch, dirty, lacquered peeling, dark/white dot on it)
- 4 .Camera Lens: Contamination dot / foreign matter
 $D \leq 0.25\text{mm}$, $S \geq 3\text{mm}$; Lint: $L \leq 1.5\text{mm}$, $W \leq 0.2\text{mm}$.
5. Accessories include Cradle; please follow Class B for inspection.
6. Main unit cosmetic inspection criteria of class D, please follow dummy class C for inspection criteria.

GAP & STEP INSPECTIONS

Description	Accept criteria	Level
Status of main unit assembly	Defective assembly and deformed shape were not allowed	Minor
Gap between upper / lower slide part	$0.3\text{mm} < \text{Gap between upper / lower slide part} < 0.65\text{mm}(V)$	Minor
Gaps between Navi keys & Nmber keys	$0.25\text{mm} < \text{Gap between Navi keys \& Number keys} < 0.35\text{mm}$	Minor
Gaps between LCD panel and bezel	$0.20\text{mm} < \text{Gaps between LCD panel and bezel} < 0.35\text{mm}$	Minor
Gaps between side keys and mechanical parts	Gaps between side keys and mechanical parts $< 0.20\text{mm}$	Minor

COSMETIC INSPECTION:

Scratch

Description	Accept criteria	
Class A	Exposure of substrate do not accept Scratch : $L \leq 4\text{mm}$, $W \leq 0.2\text{mm}$, $N \leq 2$, $S \geq 10\text{mm}$	MI



HTC Corporation

Doc. No.

DOC-00045381

REV.

Issued Date

2008/8/12

Revised Date

2008/11/13

A02

Doc. Title

ROSE Service Manual

Page

75 of 94

Class B	Exposure of substrate do not accept Scratch : $L \leq 7\text{mm}$, $W \leq 0.25\text{mm}$, $N \leq 3$, $S \geq 10\text{mm}$ If IR window has scratch without any effective feeling then don't care IR window scratch: $L \leq 3\text{mm}$, $W \leq 0.2\text{mm}$, $N \leq 3$	MI
Class C	Label area don't care Exposure of substrate do not accept Scratch : $L \leq 10\text{mm}$, $W \leq 0.4\text{mm}$, $N \leq 5$, $S \geq 5\text{mm}$	MI

Contamination dot/Granule dot/Cave granule

Description	Accept criteria	
Class A	$D \leq 0.5\text{mm}$, $N \leq 2$, $S \geq 15\text{mm}$ Ignored if $D \leq 0.15\text{mm}$	MI
Class B	Total: $D < 0.6\text{mm}$, $N \leq 4$, $S \geq 15\text{mm}$ Ignored if $D \leq 0.25\text{mm}$	MI
Class C	$D < 0.9\text{mm}$, $N \leq 4$, $S \geq 10\text{mm}$	MI

Burr....etc.

Description	Accept criteria	
Burr.	Don't accept hand scrape	MI

Imprint mark

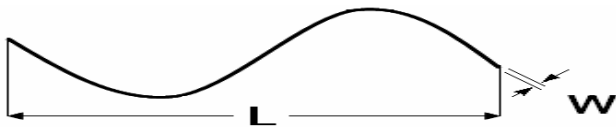
Description	Accept criteria	
Class A	$0.25 \leq \text{diameter} \leq 0.65\text{mm}$, $N \leq 3$	MI
Class B	$0.65\text{mm} < \text{Diameter} \leq 1.00\text{mm}$, $N \leq 3$	MI

Bright mark

Description	Accept criteria	
Class A	$L \leq 2.5\text{mm}, W \leq 0.25\text{mm}, N \leq 3$	MI
Class B	$L \leq 3.0\text{mm}, W \leq 0.25\text{mm}, N \leq 4$	MI
Class C	$L \leq 3.0\text{mm}, W \leq 0.3\text{mm}, N \leq 5$	MI

Lint

Description	Accept criteria	
Class A	$L \leq 3\text{mm}, W \leq 0.2\text{mm}, N \leq 2, S \geq 5\text{mm}$	MI
Class B	$L \leq 5\text{mm}, W \leq 0.3\text{mm}, N \leq 3, S \geq 5\text{mm}$	MI
Class C	$L \leq 10\text{mm}, W \leq 0.3\text{mm}, N \leq 3$	MI



This definition is not applicable to LCM.



HTC Corporation

Doc. No.

DOC-00045381

REV.

Issued Date

2008/8/12

Revised Date

2008/11/13

A02

Doc. Title

ROSE Service Manual

Page

77 of 94

7. Generic Troubleshooting

1 · Main Unit Does Not Respond to Power Button

- (1) Connect the AC adapter, maybe the battery pack is exhaust and wait few minutes for battery recharging.
- (2) Check if battery installed well.
- (3) Check the Power Button whether it's damaged.
- (4) Replace another battery pack.
- (5) Try to start boot-loader mode [refer to section 4.2]. Re-flash ROM if boot loader mode is enabled.
- (6) Check all connectors including LCD FPC to Main Board.
- (7) Replace Main Board if necessary.
- (8) Once the defective part has been identified, verify the defective part again whether the symptom could be duplicated with another unit.

2 · 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 the defective part again whether the symptom could be duplicated with another unit.



HTC Corporation

Doc. No.

DOC-00045381

REV.

Issued Date

2008/8/12

Revised Date

2008/11/13

A02

Doc. Title

ROSE Service Manual

Page

78 of 94

3 · Unusual Vertical / Horizontal lines or partial display

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

4 · 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.

5 · CF/SD Card cannot be used

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



HTC Corporation

Doc. No.

DOC-00045381

REV.

Issued Date

2008/8/12

Revised Date

2008/11/13

A02

Doc. Title

ROSE Service Manual

Page

79 of 94

6 · 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.
- (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.

7 · 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.

8 · 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.



HTC Corporation

Doc. No.

DOC-00045381

REV.

Issued Date

2008/8/12

Revised Date

2008/11/13

A02

Doc. Title

ROSE Service Manual

Page

80 of 94

9 · 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.

10 · No Sound from Speaker or Distorted sound

- (1) Check "Sound & Notifications" Settings in the unit for Sound Enabling.
- (2) Make sure it's not MUTED.
- (3) 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.

11 · 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 the defective part again whether the symptom could be duplicated with another unit.



HTC Corporation

Doc. No.

DOC-00045381

REV.

Issued Date

2008/8/12

Revised Date

2008/11/13

A02

Doc. Title

ROSE Service Manual

Page

81 of 94

12 · Wireless connection (WLAN/BT) not functioning

- (1) Make sure the wireless environment is OK before connecting to WLAN.
- (2) Make sure the wireless connection setting has 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 the defective part again whether the symptom could be duplicated with another unit.

8. Generic Labeling Plan

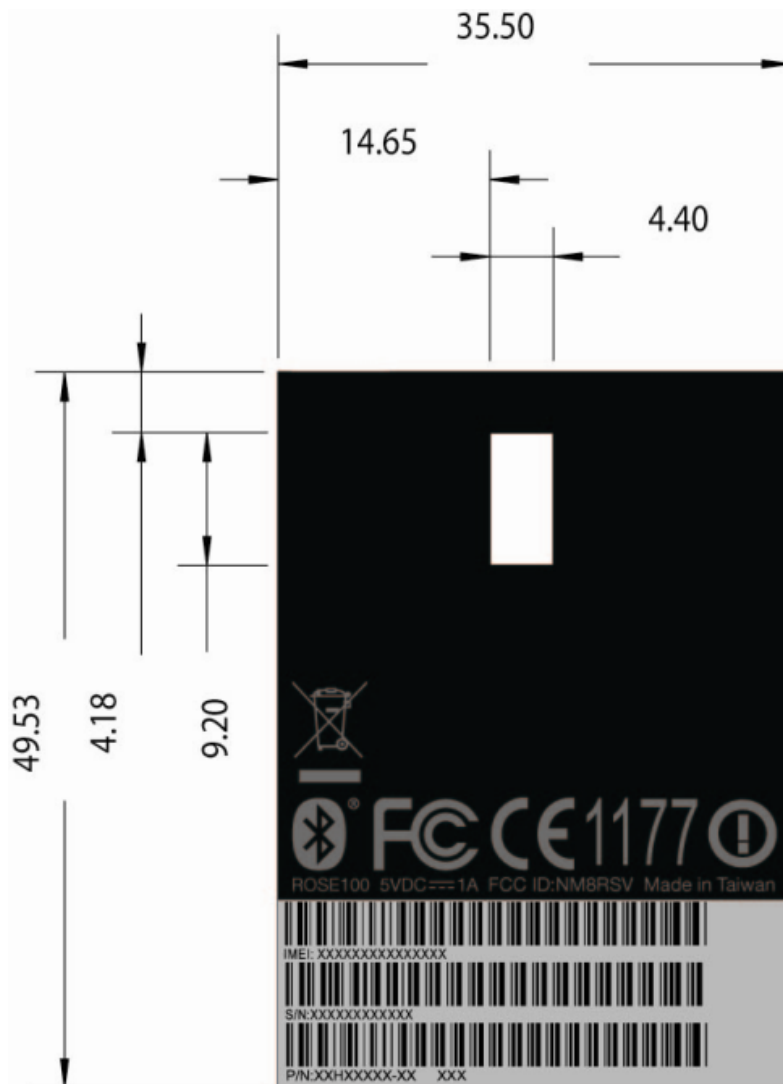
■ Main unit

■ Agency label_Rose100

The brand name is shown on bezel

HTC P/N: 77H00631-00M

Size: 35.50 X 49.53mm





HTC Corporation

Doc. No.

DOC-00045381

REV.

Issued Date

2008/8/12

Revised Date

2008/11/13

A02

Doc. Title

ROSE Service Manual

Page

83 of 94

■ ***Water sensitive label***

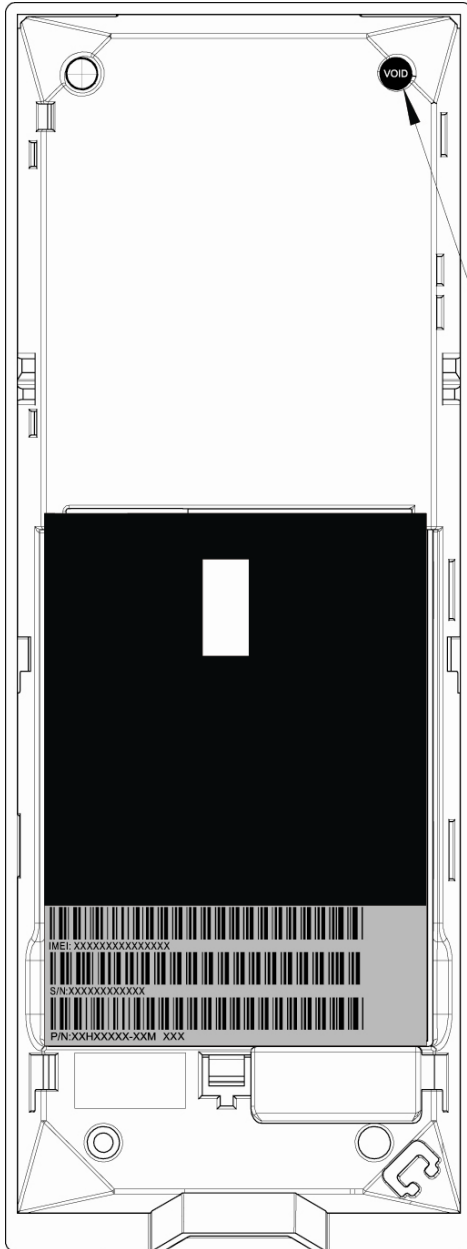
HTC P/N: 77H00668-00M

Qty: 1

■ ***Tamper evident label***

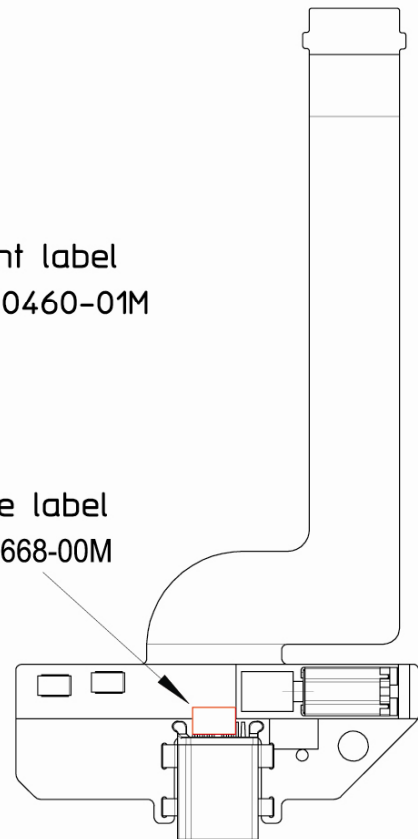
HTC P/N: 77H00460-01M

Qty: 1



Tamper evident label
HTC P/N:77H00460-01M

Water sensitive label
HTC P/N:77H00668-00M

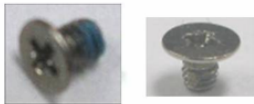





9. Generic Spare Part List and Photos

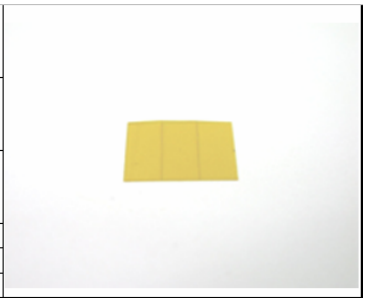
9.1 SPL for Repair

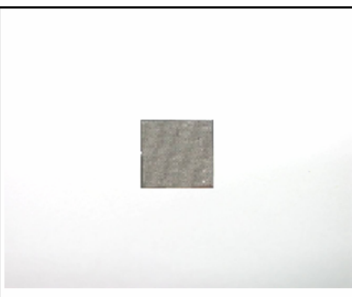
Picture for SPL 80H Kernel and Accessories


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

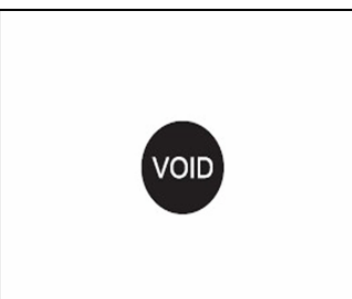
Part No.	72H02952-00M		Part No.	72H02425-00M	
Description	Screw		Description	Screw	
Q'ty	4		Q'ty	4	
Repair Code	N/A		Repair Code	N/A	
Refurbishment	No		Refurbishment	No	
Return to HTC	No		Return to HTC	No	
Part No.	72H02991-00M		Part No.	72H02257-00M	
Description	Screw		Description	Screw	
Q'ty	4		Q'ty	4	
Repair Code	N/A		Repair Code	N/A	
Refurbishment	No		Refurbishment	No	
Return to HTC	No		Return to HTC	No	
Part No.	72H01109-00M		Part No.	72H02456-00M	
Description	Screw		Description	Screw	
Q'ty	4		Q'ty	1	
Repair Code	N/A		Repair Code	N/A	
Refurbishment	No		Refurbishment	No	
Return to HTC	No		Return to HTC	No	
Part No.	72H02986-00M		Part No.	72H02882-00M	
Description	Screw		Description	SIM Door Holder	
Q'ty	2		Q'ty	1	
Repair Code	N/A		Repair Code	N/A	
Refurbishment	No		Refurbishment	No	
Return to HTC	No		Return to HTC	No	

Part No.	76H02871-00M	
Description	Conductive Fabric, Power Switch	
Q'ty	1	
Repair Code	N/A	
Refurbishment	No	
Return to HTC	No	

Part No.	72H02865-00M	
Description	Kapton Tape	
Q'ty	3	
Repair Code	N/A	
Refurbishment	No	
Return to HTC	No	


Part No.	76H01925-00M	
Description	Conductive Fabric, Camera	
Q'ty	1	
Repair Code	N/A	
Refurbishment	No	
Return to HTC	No	

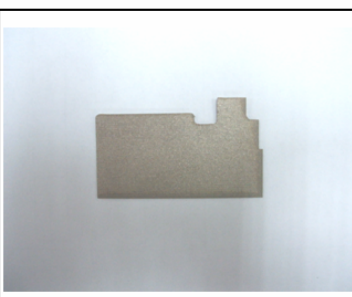
Part No.	77H00631-00M	
Description	Regulation Label	
Q'ty	1	
Repair Code	N/A	
Refurbishment	No	
Return to HTC	No	


Part No.	77H00460-01M	
Description	Tamper evident label	
Q'ty	1	
Repair Code	N/A	
Refurbishment	No	
Return to HTC	No	


Part No.	77H00668-00M	
Description	Water Sensitive Label	
Q'ty	1	
Repair Code	N/A	
Refurbishment	No	
Return to HTC	No	

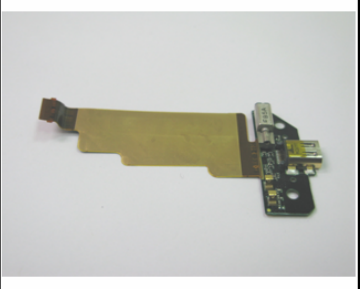
Part No.	76H02872-00M	
Description	Conductive Fabric, I/O Board FPC	
Q'ty	1	
Repair Code	N/A	
Refurbishment	No	
Return to HTC	No	

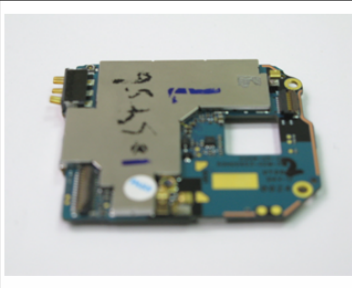
Part No.	76H02870-00M	
Description	Conductive Fabric, LCD FPC	
Q'ty	1	
Repair Code	N/A	
Refurbishment	No	
Return to HTC	No	

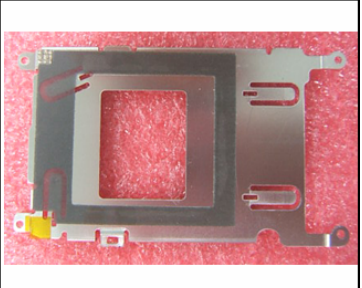
Part No.	72H02957-00M	
Description	Conductive Fabric, C_main-PCB	
Q'ty	1	
Repair Code	N/A	
Refurbishment	No	
Return to HTC	No	


Part No.	74H01278-00M	
Description	Pre-Assy Number Keypad	
Q'ty	1	
Repair Code	C109	
Refurbishment	Yes	
Return to HTC	No	


Part No.	76H02971-00M	
Description	Adhesive-Double Tape	
Q'ty	1	
Repair Code	N/A	
Refurbishment	Yes	
Return to HTC	No	


Part No.	51H10075-00M	
Description	IO-Board	
Q'ty	1	
Repair Code	M201.2	
Refurbishment	No	
Return to HTC	No	

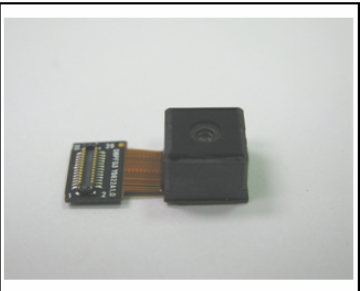
Part No.	51H40453-00M	
Description	Main Board	
Q'ty	1	
Repair Code	M101	
Refurbishment	No	
Return to HTC	Yes	


Part No.	72H02825-00M	
Description	LCD Holder	
Q'ty	1	
Repair Code	N/A	
Refurbishment	No	
Return to HTC	No	

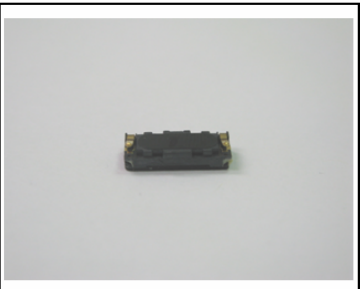
Part No.	62H00027-B1M	
Description	Pre-Assy LCM,Wintek	
Q'ty	1	
Repair Code	L101	
Refurbishment	Yes	
Return to HTC	Yes	


Part No.	51H00488-00M	
Description	Lower Board	
Q'ty	1	
Repair Code	M104.1	
Refurbishment	No	
Return to HTC	No	

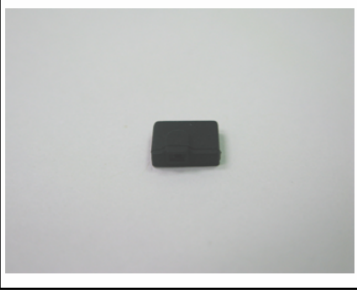
Part No.	73H20200-41M	
Description	Sliding FPC	
Q'ty	1	
Repair Code	C122.3	
Refurbishment	No	
Return to HTC	No	

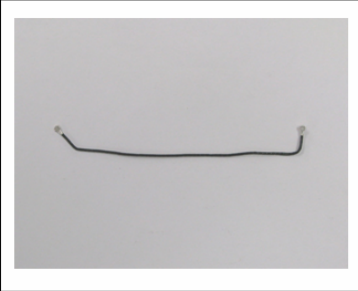
Part No.	54H00293-00M	
Description	Main Camera	
Q'ty	1	
Repair Code	G117	
Refurbishment	No	
Return to HTC	No	

Part No.	35H00116-00M	
Description	Battery	
Q'ty	1	
Repair Code	B101	
Refurbishment	No	
Return to HTC	Yes	


Part No.	36H00736-00M	
Description	Receiver	
Q'ty	1	
Repair Code	G103.1	
Refurbishment	No	
Return to HTC	No	

Part No.	36H00735-00M	
Description	Speaker	
Q'ty	1	
Repair Code	G103	
Refurbishment	No	
Return to HTC	No	


Part No.	76H02954-00M	
Description	Mic Rubber	
Q'ty	1	
Repair Code	N/A	
Refurbishment	No	
Return to HTC	No	

Part No.	73H00302-00M	
Description	Coaxial Cable	
Q'ty	1	
Repair Code	B108	
Refurbishment	No	
Return to HTC	No	

Part No.	71H02544-00M	
Description	Power Key	
Q'ty	1	
Repair Code	C106	
Refurbishment	Yes	
Return to HTC	No	

Part No.	71H02545-00M	
Description	Volume Key	
Q'ty	1	
Repair Code	C106	
Refurbishment	Yes	
Return to HTC	No	

Part No.	74H01282-00M	
Description	A Cover-Bezel	
Q'ty	1	
Repair Code	C101	
Refurbishment	Yes	
Return to HTC	No	

Part No.	71H02546-00M	
Description	Camera Key	
Q'ty	1	
Repair Code	C106	
Refurbishment	Yes	
Return to HTC	No	

Part No.	74H01277-00M	
Description	B Cover With Hinge	
Q'ty	1	
Repair Code	C112.4	
Refurbishment	Yes	
Return to HTC	No	

Part No.	74H01269-00M	
Description	D Cover	
Q'ty	1	
Repair Code	C102.6	
Refurbishment	Yes	
Return to HTC	No	

Part No.	74H01279-00M	
Description	Battery Cover	
Q'ty	1	
Repair Code	C112	
Refurbishment	Yes	
Return to HTC	No	



HTC Corporation

Doc. No.

DOC-00045381

REV.

Issued Date

2008/8/12

Revised Date

2008/11/13

A02

Doc. Title

ROSE Service Manual

Page

89 of 94

Part No.	80H00764-00	
Description	C Cover with QWERTY keyboard assy	
Q'ty	1	
Repair Code	C122.1	
Refurbishment	Yes	
Return to HTC	No	

NOTE:

THE PHOTO OF SPL IS GENERIC AND FOR REFERENCE ONLY, THE COLOR AND THE APPEARANCE MAY BE DIFFERENT FROM THE SHIPPED PARTS, IF YOU WANT TO APPLY THOSE PARTS, PLEASE CONTACT YOUR SERVICE ACCOUNT MANAGER FOR MORE INFORMATION.

AS FOR PICTURE, PLEASE REFER TO THE TABLE AS BELOW.

9.2 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 the components damaged

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

Step 3 Wait till the temperature cool down before removing the solder-proof tape to avoid other components being removed

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

Notice:

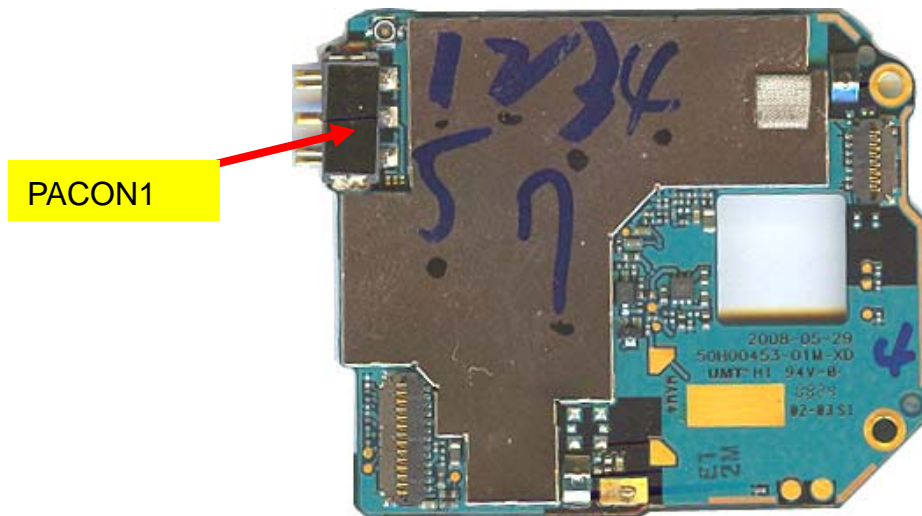
- A. Check the polarity and the position of the components, it can't be shifted, reversed or lifted.
- B. All the parts of the PCB should be checked if it is missing or not.
- C. The OP must to wear antistatic wrist strap .Don't put boards together and avoid hitting them.
- D. When you solder and repair that the soldering iron temperature must be setup 415°C. (The temperature range is 415°C±5°C),and the solder wire's diameter is 0.4/0.5/0.6mm(SAC 305 (1.1%))
- E. Please be noticed to follow below steps for main board repair which is equipped with **Golden**

Capacitor:

1. When replacing level 2.5 components located around the golden capacitor:
 - I. The temperature of the hot air blower must be under 400°C
 - II. When apply the hot air to the part / component, the heating time must be under 20 seconds (including the time of removing and soldering)
 - III. The temperature of the soldering iron must be under 350°C
 - IV. When apply the solder tip to the part / component, the heating time must be under 5 seconds
 - V. The solder tip must not contact with the golden capacitor
2. For BGA replacement: The golden capacitor must be removed before perform pre-heating, heating, soldering and de-soldering process, and then it must be replaced with a new one (please refer to 1.c. and 1.d. steps)
3. For main board which failed to pass the function test, the golden capacitor must be replaced with a new one and must follow below soldering criteria: The temperature of the soldering iron must be under 350°C When apply the solder tip to the part / component, the heating time must be under 5 seconds The solder tip must not have a contact with the body of golden capacitor

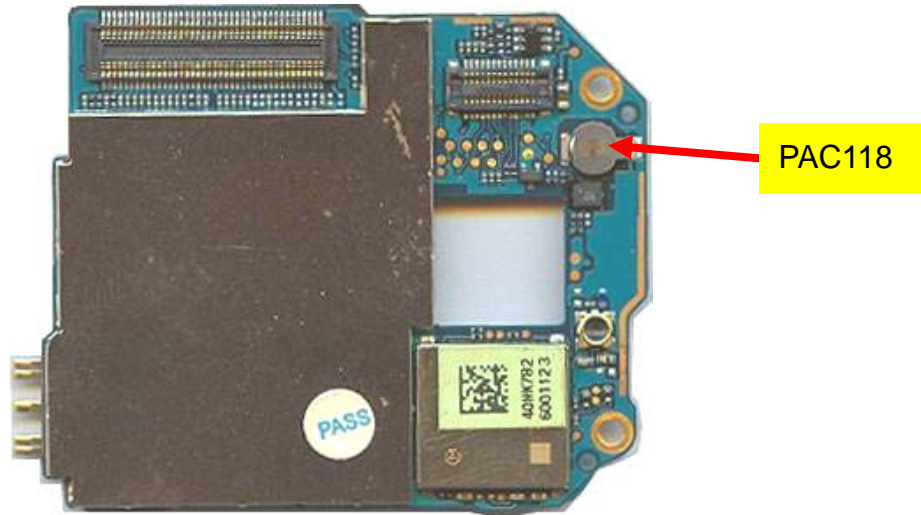
➤ MAIN BOARD (51H40453-XXM)

TOP SIDE



P/N	Description	Location	Remark
75H00776-00M	Connector Device,60mohm,SUYIN,060062MB003GX01ZL,3P,2.75Pitch,2A,12V	PACON1	Battery connector

BOTTOM SIDE



P/N	Description	Location	Remark
16H00019-00M	Gold Cap,0.02F,300ohm,SEIKO,XH311HGII45E, 60/-20degC,+/-30%,3.3V,5.8*3.8*1.45mm	PAC118	Gold Cap



HTC Corporation

Doc. No.

DOC-00045381

REV.

Issued Date

2008/8/12

Revised Date

2008/11/13

A02

Doc. Title

ROSE Service Manual

Page

93 of 94

10. RF Antenna Specification

ROSE/MARIA RF Antenna SPEC

Dual-Band HSDPA/UMTS 900/2100 for EU & Asia, 1700MHz for eMobile
Tri-Band GSM/GPRS/EDGE (900/1800/1900MHz)

EIRP & Sensitivity Test				
GSM	Channel	128	189	251
	EIRP Spec	26	26	26
	Cell power (dBm)			
	Cell power Spec (dBm)	-104.0	-104.0	-104.0
EGSM	Channel	975	42	124
	EIRP (dBm)			
	EIRP Spec	28	28	28
	Cell power (dBm)			
	Cell power Spec (dBm)	-102.0	-102.0	-102.0
DCS	Channel	512	698	885
	EIRP (dBm)			
	EIRP Spec	27	27	27
	Cell power (dBm)			
	Cell power Spec (dBm)	-104.0	-104.0	104.0
PCS	Channel	512	661	810
	EIRP (dBm)			
	EIRP Spec	25	25	25
	Cell power (dBm)			
	Cell power Spec (dBm)	-104.0	-104.0	104.0
UMTS Band V	Channel	4132	4183	4233
	EIRP (dBm)			
	EIRP Spec	18	18	18
	Cell power (dBm)			
	Cell power Spec (dBm)	-104.0	-104.0	104.0



HTC Corporation

Doc. No.

DOC-00045381

REV.

Issued Date

2008/8/12

Revised Date

2008/11/13

A02

Doc. Title

ROSE Service Manual

Page

94 of 94

UMTS Band I	Channel	9612	9750	9888
	EIRP (dBm)			
	EIRP Spec	18	18	18
	Cell power (dBm)			
	Cell power Spec (dBm)	-104.0	-104.0	104.0
UMTS Band IX	Channel	8762	8837	8912
	EIRP (dBm)			
	EIRP Spec	18	18	18
	Cell power (dBm)			
	Cell power Spec (dBm)	-104.0	-104.0	104.0