Service Manual
for Amadeus

HTC Proprietary
Confidential Treatment Requested

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HTC Corp.
Engineering Mobility

TITLE: Service Manual for Amadeus

REV. NO.	DATE	CONTENTS	DEP.	REVISED	APP'D	STGE.PER.
A01	11/03	First reversion	TSC			

Table of contents

Chapter 1 – Introduction

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

1.1 History

Reversion	Update item	Pages effected
A01	First release	N/A

Chapter 2 - Product Specifications

Function	Specification
Platform	● Microsoft Smart Phone 2003
Dimensions	● 107.76 (L) x 46.83 (W) x 19.58 (T) mm
Weight	● 106.5g with battery
CPU	● TI OMAP 730 tri-band GSM/GPRS solution
Memory	● SDRAM：32MB ● Flash ROM：64MB
GSM Function	● Tri-band 900/1800/1900 ● GPRS, Class B ● Multi-slot class 10
Display	● 2.2 inch, 176x220 dots resolution ● 64K colors TFT Transflective LCD ● Dot Pitch：66um x 198 um ● LED back Light
Keyboard/Button	● One Power Button (On the Top) ● One Numeric Dialing Keypad(12 buttons) ● Two soft key button ● One Home/connection quick list button ● One Back button ● Send/Phone button ● End Phone button ● One 5- way navigation keypad ● One Camera Capture button ● Volume up button (Long Press as voice record) ● Volume down button(long press as Voice command/Dial.
Interface	● 3.0 V SIM Card. ● One mini-USB connector (Slave USB, Power IN) ● One Infrared IrDA SIR. ● One Mini SD memory card slot ● One external antenna connector. ● Earphone/microphone jack with stereo sound,2.5 diameter
Power	● Rechargeable battery, Li-Ion 1050 mAH ● Talk：3.5 ~ 4 hours ● Standby：140 hours ● AC Adapter: - AC input rating：100 ~ 240 VAC, 50/60 HZ - DC Output rating: 5VDC,1A ● Ambient Light Sensor for LED power consumption
Device to device connectivity	● Bluetooth ● Infrared IrDA SIR ● USB mini-B plug and receptacle
CMOS Camera	● Color ● Resolution: VGA ● Min. 5 Lux ● Preview Mirror

Notification	• One Bi-color LED (Green and Red) for GSM STANDBY, GSM standby, GSM network status, Event Notification, Power charging status. • One Blue LED for Bluetooth connectivity status. • Vibration for notification and Incoming call. • Notification by LED, Sound, Message, Vibration Motor.
Accessories	• **Bundle:** ➢ AC adapter w/ DC_In via mini USB plug ➢ USB Sync cable ➢ Stereo wired headset with Microphone ➢ Standard Battery ➢ User Manual, Quick Start Guide, Sync. Software CD • **Option** ➢ Car Adapter ➢ Traveler Charger with back up battery charging slot ➢ Car kit with Car Stereo Mute function ➢ Carrying case

Chapter 3 - Servicing Tools

This chapter provides information for the servicing tools for Amadeus.

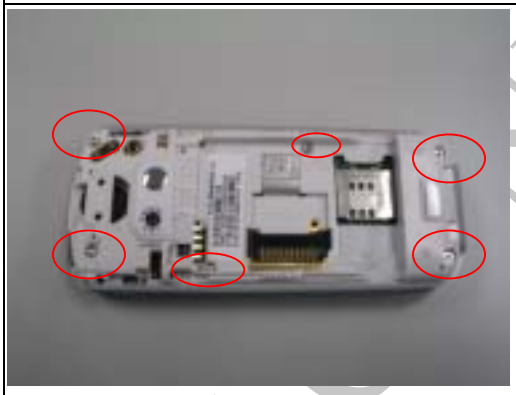
List of Servicing Tools

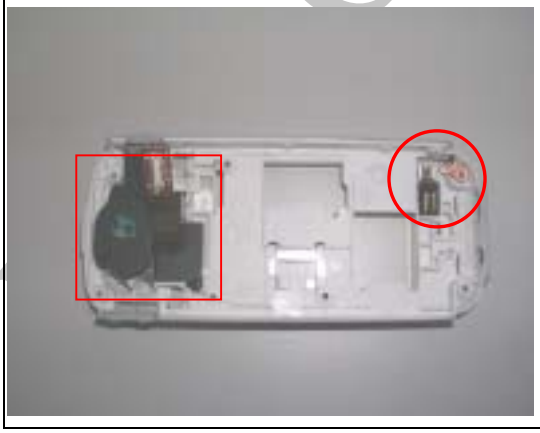
No.	Item	Use	Remark
1	Disassembly tools	Plastic stick for dismantle the unit Cleaning wipers Philips Screw driver Protective Film Tweezers Air Gun Clean Bench (Mandatory)	
2	Mini USB cable	For Synchronization Test	
3	Mini SD Memory Card	For SD card test	
4	Headset	For Hand free / Recording test	
5	AC Adapter	Power supply to Amadeus	
6	Diagnostic Test Program	Test Program for Functional Test	
7	Software Upgrade tools	For software version upgrade or re-flash	
8	Label Printer & Scanner	For Printing & Scanning regulation label when housing or M/B is changed.	
9	Battery Test Jig	For Main Battery judgement.	

Chapter 4 - Assembling and Disassembling

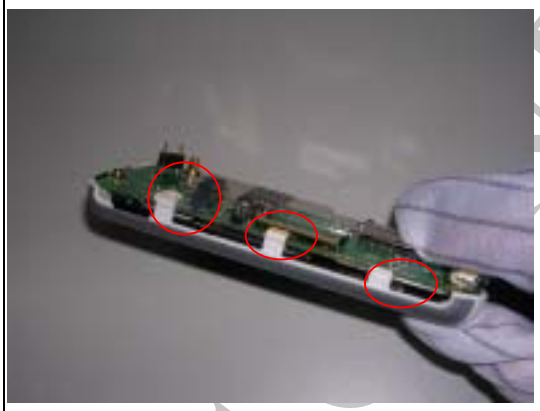
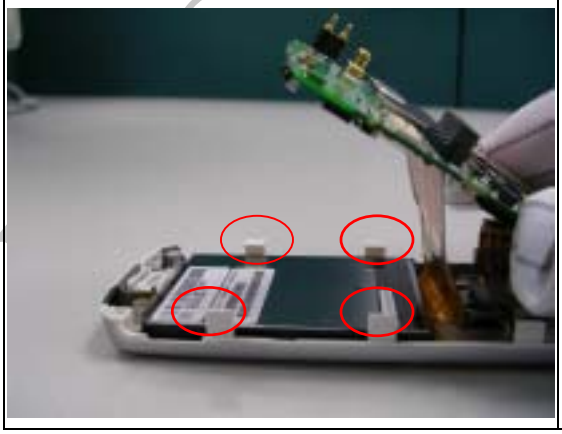
4.1 Disassembling

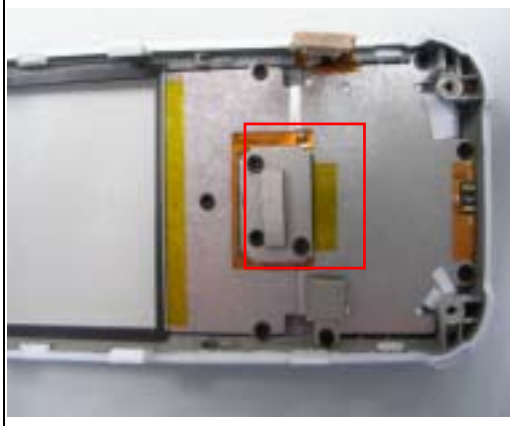
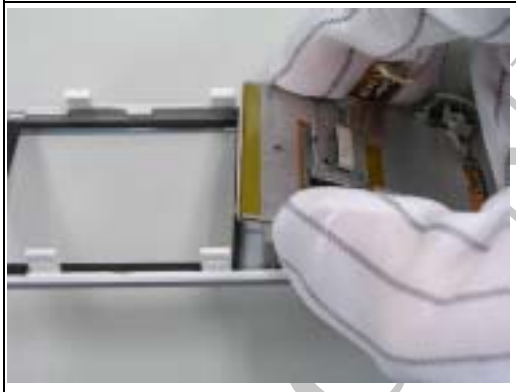
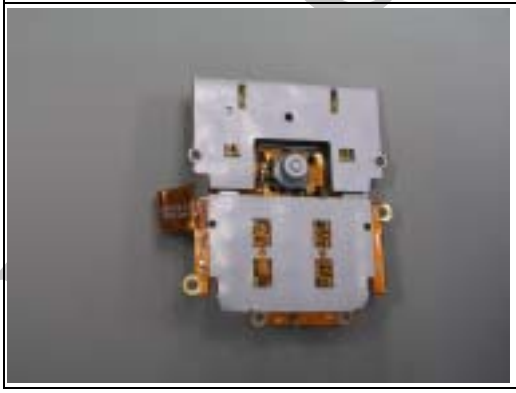
	Tools needed for Assembling and Disassembling the Smart Phone 1. Glove & Lens Cleaning Tissue. 2. Plastic type tweezer. 3. Philip Screw Driver #0. 4. Philip Screw Driver type T5 5. Special Made Plastic Stick
	Front side
	Remove antenna rubber, battery cover, battery from unit
	Release the antenna radiator by insert in the plastic stick into the gap between antenna and frame (housing)

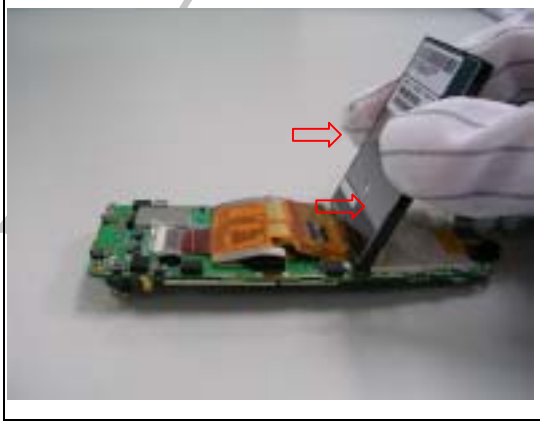
	The same method applied to the left side
	Release the antenna
	Unfasten 6 screws located on the back side
	Insert in plastic stick into the gap between upper cover and housing to release three hooks which fix them.

	The same method to release hooks on other side.
	Release the camera FPC before removing the frame.
	Separate the Upper cover from frame housing
	1. Vibrator could be removed from housing. 2. To remove the speaker, release three screws which fix the sound box cover

	Three screws fix the sound box
	Speaker could be released after removing the sound box cover. **CAUTION:There is risk to damage the camera during release the cover. Put your finger to hold on the camera FPC during release the cover.**
	To remove Camera, the camera lens should be removed in advance, then use soft tool such as stylus to push out the camera. **Caution:** Please do not pull out the Camera from its FPC side
	CMOS camera

	Frame housing
	Release the Switch board FPC
	Release 6 hooks which hold the MB with upper cover, starting from left side .
	Remove the MB together with the LCD, pay attention to the hooks. Then take out the MB and LCD Please use protector to protect the LCD screen

	1. Unfasten 7 screws located on metal support of keypad.
	Also 3 screws on the center
	Take out the switch board
	Switch board and keycap. To remove keycap, just release it .

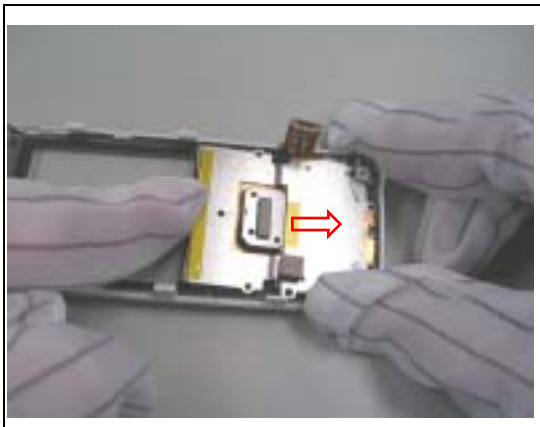
	To disassembly receiver Slightly release it from its lower left part.
	Push out the functional keypad and Numeric keypad from front side
	Take out and put on safe place. Upper cover Function keypad Numeric keypad
	MB and LCD Release its two tape on LCD‘s rear side.

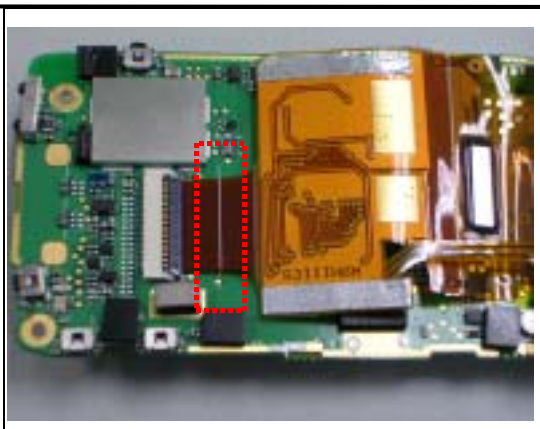
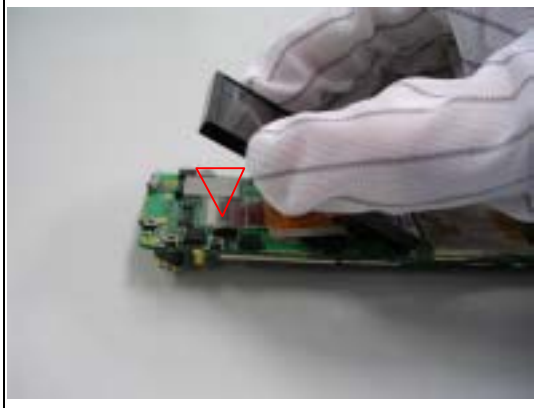
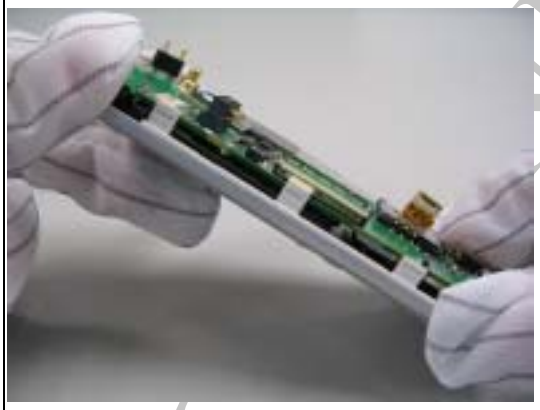
	To release the LCD, unlock the connector cover.
	Main Board
	LCD

Now the disassembly process is DONE

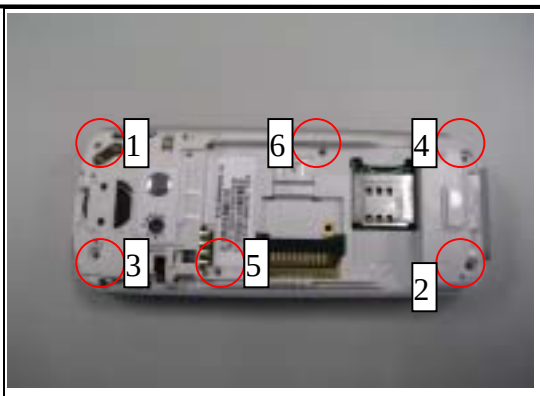
4.2 Assembly Process

	Assembly vibrator into its place on rear cover.
	**Assemble** Receiver into its place, notice the two pins **should not bent** on assembly process. Notice: Receiver coming as spare part already has double side tape on it. You could remove the top layer and stick it on front panel.
	Assemble functional keypad on upper cover.
	Assemble numeric keypad on upper cover.

	Assembly Switch Board into upper cover.
	Fasten 10 screws to fix the switch board. Upper part assembly is done
	**LCD assembly.** Insert the LCD into MB connector which refer to second white guide line **Remark: Make sure the LCD is installed properly.**

	Please be noticed that the Black part on FPC cable should in line with the second white line on MB
	Place the LCD as shown on figure
	Assemble the MB AND LCD INTO UPPER cover. Make sure the LCD & MB is inserted properly into hooks.
	Assemble the switch board connector

	Assemble frame housing to upper part
	Starting from bottom part, match the connector into their place.
	Insert camera FPC into its place. Then fasten frame housing with upper cover properly.
	Fix along each side of unit

	Fasten 6 screws follow the sequence on picture. **1 ~4 continue with 5 ~ 6** **Torque:** **1.0 ± 0.05 kgf-cm**
	**Antenna radiator ASSEMBLY**
	Installed the antenna radiator starting from upper part,
	Attached Battery, battery cover, external antenna cover into unit. **NOTE: Do remember to put warranty seal for after repair unit.**

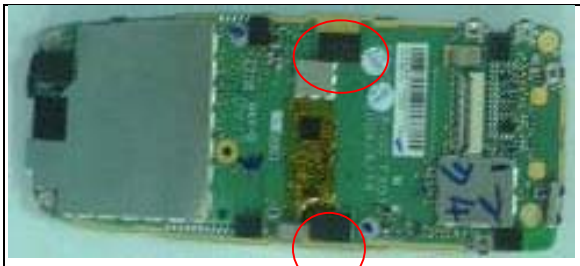
	**The unit now is ready for Functional TEST**

Assembly process is DONE.

4.3 MB Pre-assembly

Parts that need to pre-assembled first upon replacing to new one:

(1) Main board.(A SIDE), totally 10

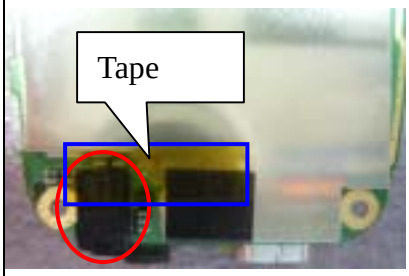


Two Sponge for LCD support
76H00596-00

>Three PORON
P/N: 76H00597-00
>One small Poron for LCD support(on right top side)
P/N:76H00762-00

>Additional two more poron, part no:
P/N :76H00597-00

Two GASKET,
P/N:76H00595-00



>Rubber Cover
P/N:76H00741-00

(2)MB Pre Assembly (B SIDE), totally 3

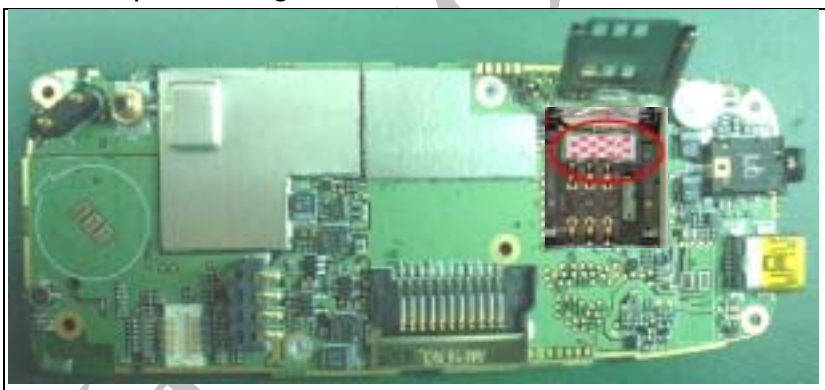
Add one conductive fabric

P/N: 72H00718-00

Add insulator tape on MB

P/N: 76H00759-00

And one liquid damage indicator behind SIM connector cover.



P/N: 77H00193-00

4.4 LCD Pre-assembly

On LCD

	There is a mylar put on LCD FPC, this mylar is pre-sticked on LCD.
	Need to apply anti dust tape on LCD. P/N: **76H00824-00**
	
	

Chapter 5. Diagnostics Program

5.1 List of Test Item

- You will see HTC Copy right on the first page of Diagnostic program.
- Totally there are 24 items content of Diagnostic test.

No.	Item	Description	Remark
1	Pre- Test	Use as internal test station on HTC	HTC Use Only
2	RAM TEST	RAM Memory Test	
3	DISP TEST	LCD pattern display test	
4	LED Test	LED (BLUE/GREEN/RED/Key) test	
5	Key Test	Keypad & soft-key pressing test	
6	Time Test	RTC timer test	
7	VIB. Test	Vibrator On/Off test	
8	B.L TEST	Back light Test	
9	SD TEST	SD card read / write test	
10	SPK PLAY	Test Speaker output	
11	REV Play	Test Receiver output	
12	HST play	Test headset output	
13	INT1~ SPK O	Internal MIC to Speaker output	
14	INT1~ REV O	Internal MIC to Receiver output	
15	INT1~ HSTO	Internal MIC to Headset output	
16	HSTI~HSTO	Headset input to Headset output	
17	LI Sensor	Light Sensor Test	
18	MS Format	RESET Phone to Default(Factory setting)	
19	DIAG 2 SD	HTC internal use	HTC Use Only
20	Batt Info	Show AC IN or Out and Battery info	
21	Unit Info	Show Unit Serial No and IMEI No.	
22	RUN IN	Perform RUN IN Test	
23	BatRunDwn	Battery Run Down Test	
24	Checksum	Checksum value check after Reflash	

Some items need to test under OS Mode			
25	USB TEST	Link with PC/Notebook to check USB Link function	
26	SIR Test	Infrared port test	Test with second unit
27	RS232 TEST	Link with PC/Notebook to check RS232 Link function	
28	Camera Test	Test Camera Function	
29	Bluetooth	Test Bluetooth function	

5.2 Test procedure

(a) Power OFF.

(b) Insert Diagnostic Mini SD card (provide by HTC) to Smartphone Unit

(c) Set the Unit into Bootloader Mode (Press & Hold **Capture**, then press **Power** button, then release power button first). Then press volume down button to download diagnostic to unit. Wait for "HTC logo" appears on screen, press Action key into Diagnostic test.

*** Its DEFAULT to enter Typhoon DIAGNOSTIC on first entering, please press POUND (#) key to switch to AMADEUS.

REMARK(Please choose correct type of Diagnostic)

*Press **TALK**(DEFAULT) : TYPHOON

*Press END :FEELERS

*Press **STAR**(*):AMADEUS

*Press **POUND**(#):SONATA

(d) On test menu, use Navigation button to select the item then press Action key for testing,You could also use numeric key to select the test item. Use Right/Left to change to other page.

(e) Remove the battery directly to exit the Diagnostic program when finish the testing.

(f) If the system fails while testing, please also remove the battery directly to turn off power.

IMPORTANT NOTICE:

1. Please do not leave the mini SD diagnostic card left on the unit while booting to Windows mode. Because mini SD card do not have lock mechanism, easily to be formatted by accident.
2. Once the unit has been entering Windows mode (HOME SCREEN) , the SD card might be formatted already and once executing the diagnostic will stop on " CHECKSUM ERROR " without successfully entering the Diagnostic.
3. Once happen, you might need to ask HTC assistance for card replacement .

5.3 Test procedure and description

No.	Item	Description	Remark
1	RAM TEST	RAM Memory Test, Once finished test will show PASS and back to main Menu	Will stop once FAILED.
	DISP TEST	Press Action to change display mode	Press Action to change display mode
2	LED Test	LED ON for BLUE>GREEN>RED>Keypad	Press Action to NEXT
3	Key Test	Launch(capture)> Vol up> Vol dwn>Soft1> Home >Back >Soft2 >AP1 >AP2 >AP3 >AP4 >Talk >End > UP >Right > Down >Left > Action > Numeric(1 ~ #)	Back to Main MENU automatically
4	Time Test	RTC timer test	Back to Main MENU automatically
5	VIB. Test	Select this item will activate Vibrator	Press Action to MENU
6	B.L TEST	Back light adjust from MAX >DIM > OFF	Press Action to MENU
7	SD TEST	Performing SD R/W test	Back to Main MENU automatically
8	SPK PLAY	Select this item to check speaker	Back to Main MENU automatically
9	REV Play	Select this item to check Receiver quality	Back to Main MENU automatically
10	HST play	Select this item to check Headset function	Back to Main MENU automatically
11	INT1~ SPK O	Recording test via MIC > Speaker	Back to Main MENU automatically
13	INT1~ REV O	Recording test via MIC > Receiver	Back to Main MENU automatically
14	INT1~ HSTO	Recording test via MIC > Headset	Back to Main MENU automatically
15	HSTI~HSTO	Recording test headset	Back to Main MENU automatically
16	LI Sensor	Light Sensor Test	Put your finger into light sensor on bottom part of unit, under 0 keypad. Follow procedure on screen.
17	MS Format	RESET Phone to Default(Factory setting)	**For Refurbishment ONLY**
18	Batt Info	Show AC plug status & battery capacity(ref)	Press Action to exit
19	Unit Info	Show Unit Serial No and IMEI No.	Press “ 0 “ to exit
20	RUN IN	RUN IN Test with 1,2 ,4 ,8 hours selection	Show RUN IN Pass after time out
21	BatRunDwn	RUN DOWN FOR 1 HOUR	
22	CheckSum	Calculate checksum of Flash-ROM	Could be use for verifying after OS reflash
Some items need to test under OS Mode			
24	USB TEST	Link with PC/Notebook to check USB Link function	
25	SIR Test	Infrared port test	Test with second unit
26	RS232 TEST	Link with PC/Notebook to check RS232 Link function	

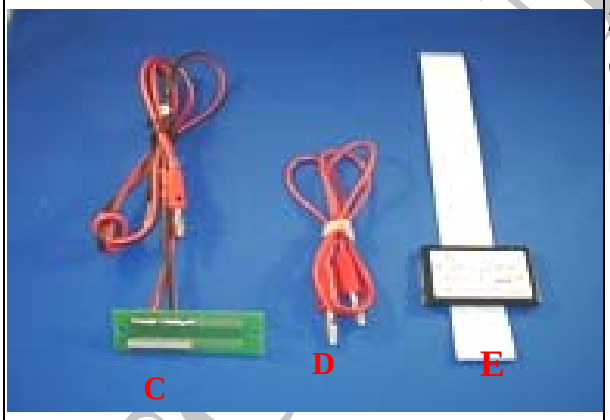
27	Camera Test	Test Camera Function	
28	Bluetooth	Test Bluetooth function	

Chapter 6 – Leakage current measurement

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

(1) Requirement：

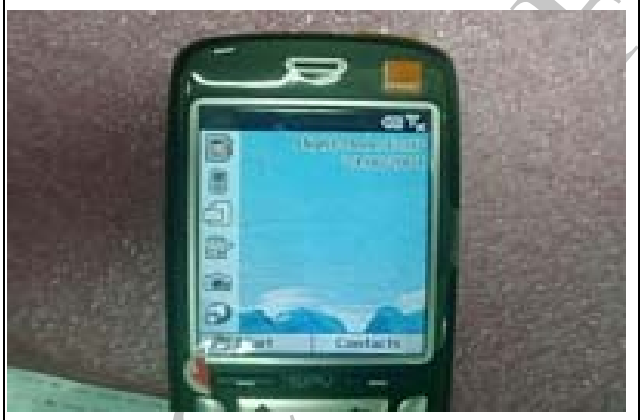
- Power Supply
- Micro-current Meter
- Current series JIG
- CABLE
- Battery JIG

	Equipment need: A. Power Supply (set at 4 V). B. Micro-Current Meter (support 0.5mA ~ 2A).
	**2. Fixture needed** C. Current series jig.(with black and red cable) D. Cable E. Battery with extension cable
	**3.** Connect cable (D) to positive polarity of power supply (A) and current meter (B)


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

Note : black cable to power supply (A) and red cable to current meter (B)

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



6. Set the unit to :
* Flight mode
* Turn on Bluetooth

Note : Need to put SIM card first on the unit.

7. Remove original main battery and install battery fixture (E)

8. Turn on power supply (4V) and current meter (2A)

	**9. Power on.**
	**10. Measure flight mode current** Wait about 1 minutes, display will be off, in this condition, please check current value on the current meter, Current value must under **5 mA**, if over, it means M/B failed, please replace M/B for repair.
	11. Switch OFF the unit.
	12. Measure power off current Check current value on the current meter, Current value must under 0.3 mA, if over, it means M/B failed, please replace M/B for repair.

Conclusion:
If current consumption are passed at both of flight and power off mode, it means M/B is GOOD.

If there is any item FAILED at flight or power off mode, it means M/B is failed, please replace M/B for repair.

Measurement parameter

Measurement mode	Measured Current	REMARK
Flight Mode	Under 5mA	MB is good
	Over 5mA	Fail, MB need to be futher repaired
POWER OFF	Under 0.3 mA	MB is good
	Over 0.3 mA	Fail, MB need to be futher repaired

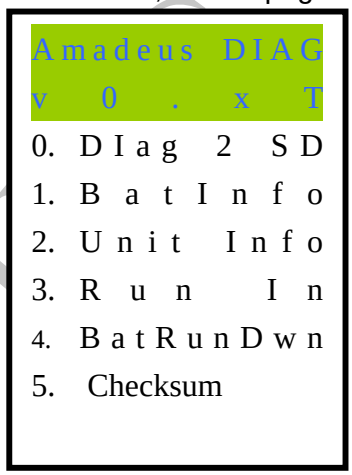
6.2 Battery Capacity Test (with Rundown program - Diagnostic)

(1) Full charge the battery

(2) Turn power off, then insert Diagnostic SD card (Rev. 1.0T) to handset.

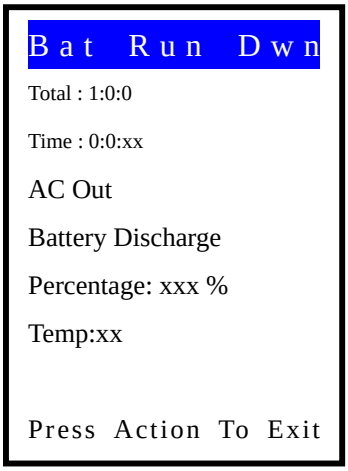
(3) Set the handset into Bootloader Mode (While Press & Hold Capture button**,** then press **Power** button). Wait for the message "Press Volume down to download SD Image" appears, press ACTION key to into Diagnostic mode.

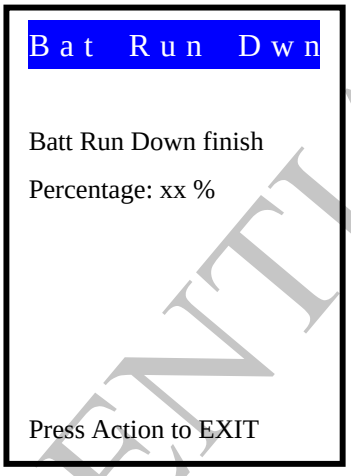
(4) Under DIAG menu, GOTO page 3 and select item "4**. BatRunDwn**" to perform Battery rundown test.



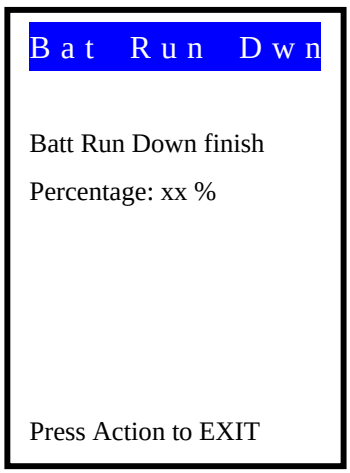
(5) Screen will display as fig. 1

(6) After an hour test, the Battery Rundown Test will stop automatically . Then indicate the test result on the screen (Battery capacity percentage) for your reference(Fig 2)





(7) If you would stop the program while testing, press “ACTION” button several times to exit the test program and back to menu screen.



(6) Test Result and Criteria

Run Down 1 hour	**Capacity ≧ 60 %**	**GOOD**
Run Down 1 hour	**Capacity ≦ 60 %**	Failed

(a) The Battery Rundown Test program is available for the battery in 6-months Warranty period ONLY.

(b) How to check the warranty period

Check unit serial no or Manufacture Date.

Chapter 7 – Software Upgrade Procedure

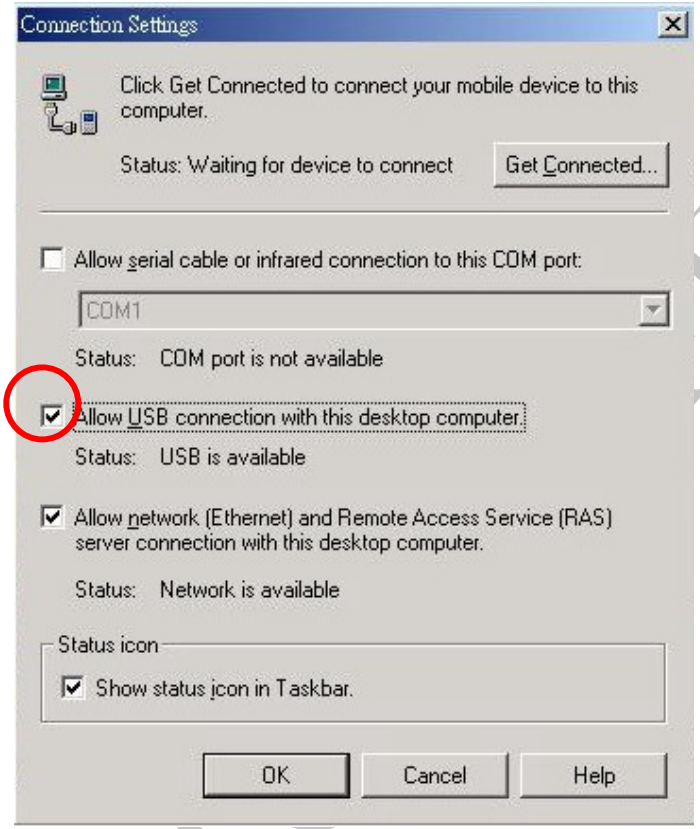
7.1 Software upgrades

(1) System Requirement：

- Windows 2000 or XP on PC
- USB Cable
- **RUU** tool for Smartphone
- 64MB SD card with latest software version

(2) Software upgrade procedure

(a) Enable the USB Connection Settings in ActiveSync.

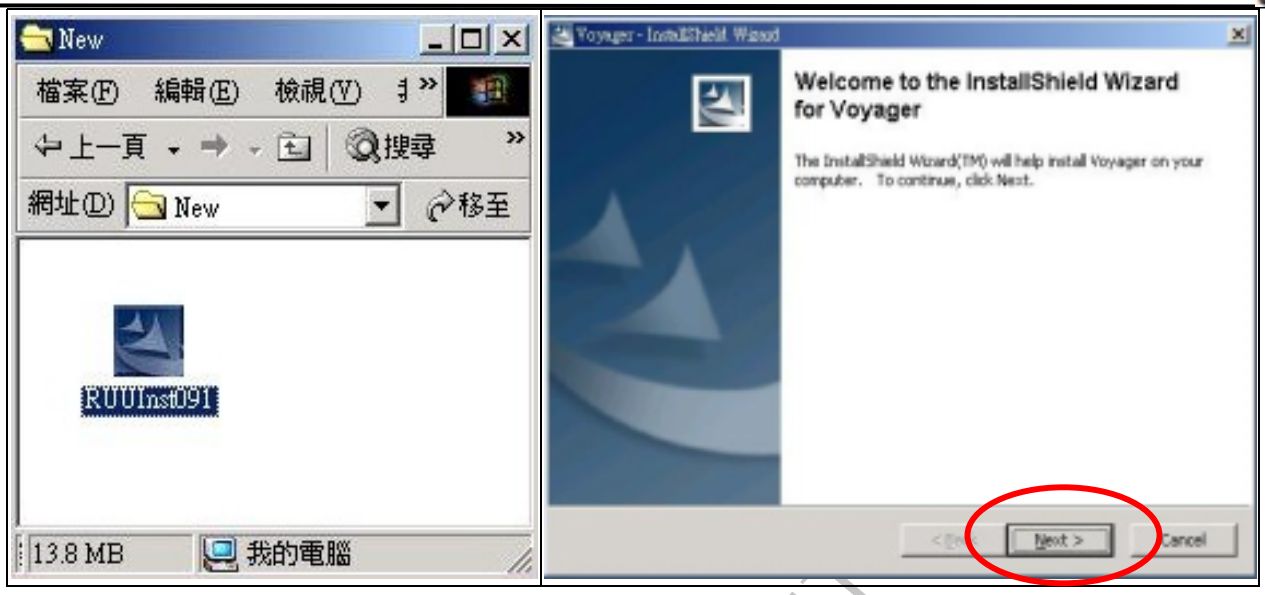


(b) Set the Smartphone into **OS** Mode (SIM card must be inside).

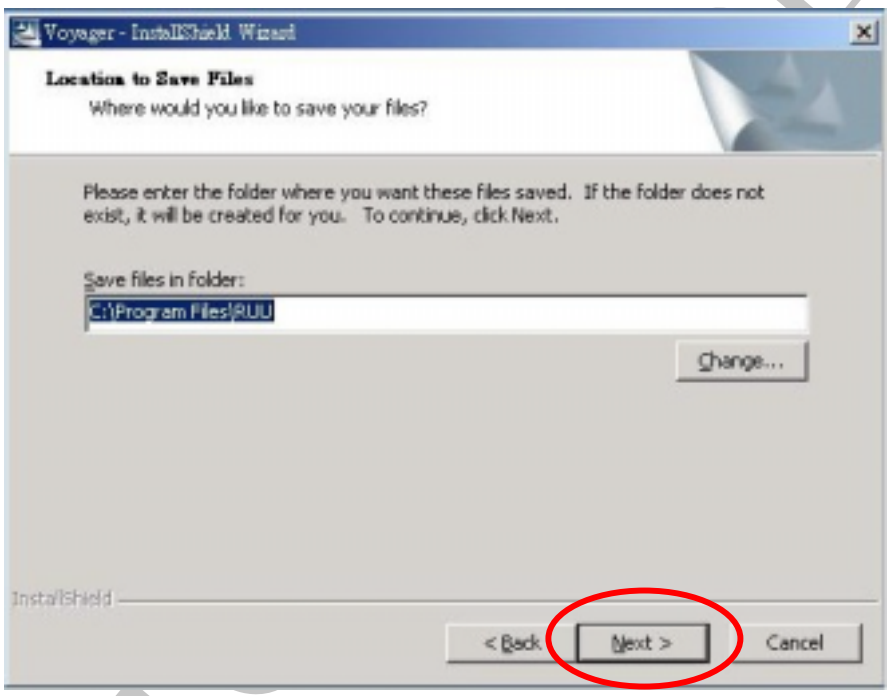
(c) Sync Smartphone to PC via **USB cable** and synchronize with PC.

(d) *Attach AC Adapter to USB cable (It's necessary to attach AC Adapter to unit to prevent software upgrade fail).

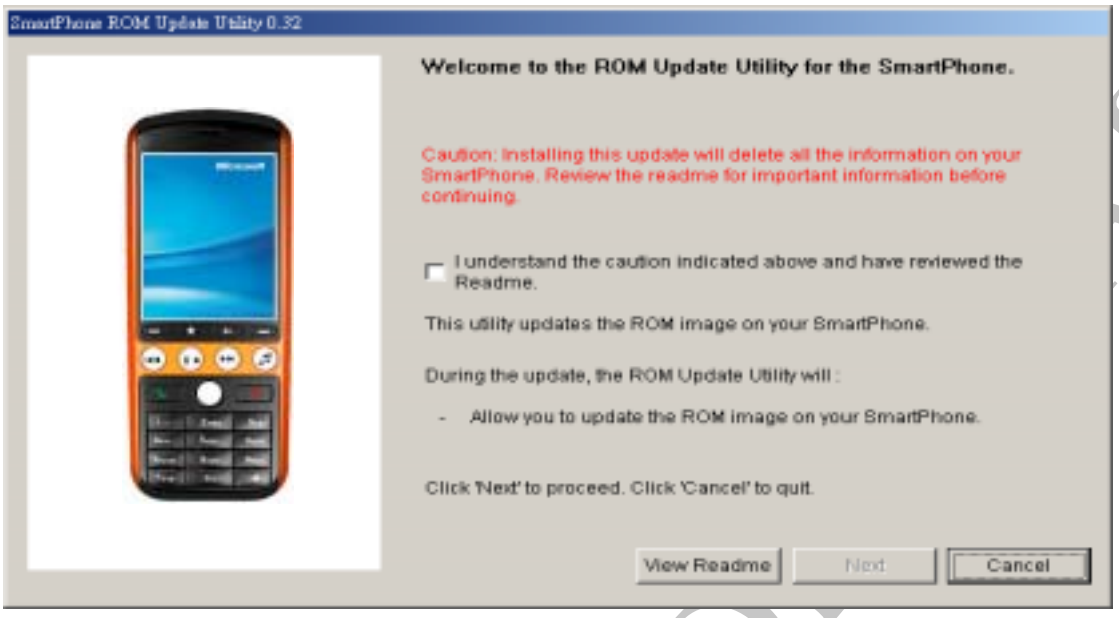
(e) Run "**RUU**" tool under Window 2000. Then Click "Next" to continue.



(f) Select the location to save file then click “Next” to continue.



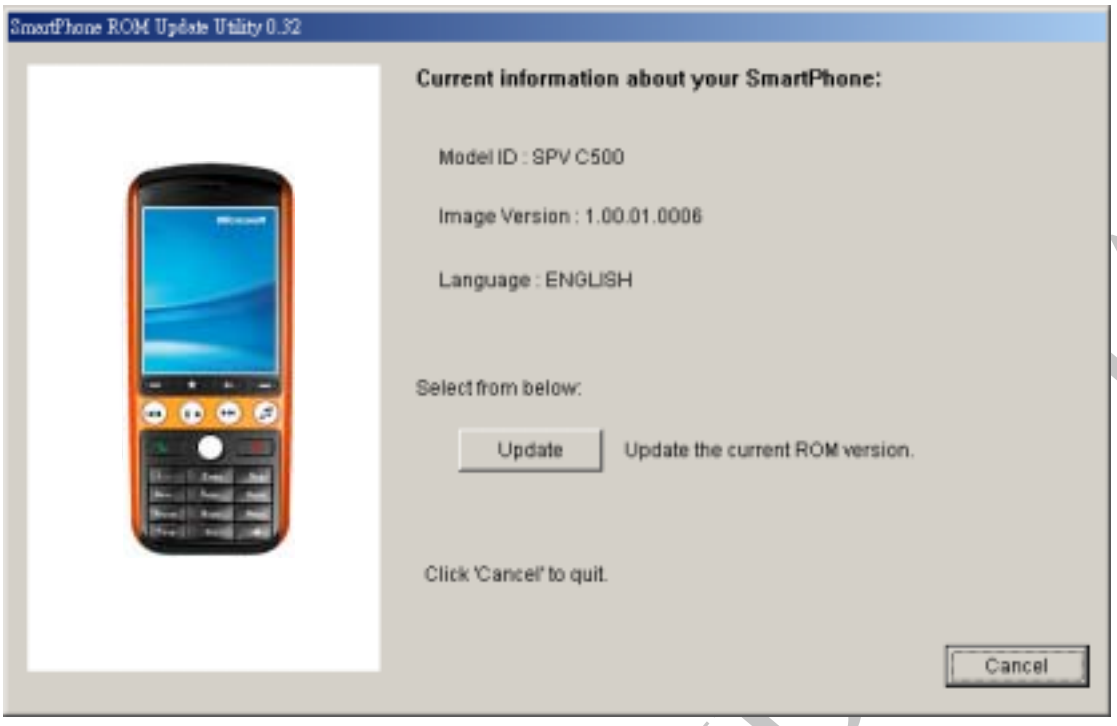
(g) On your PC, it will show below messages, Check the option on screen:



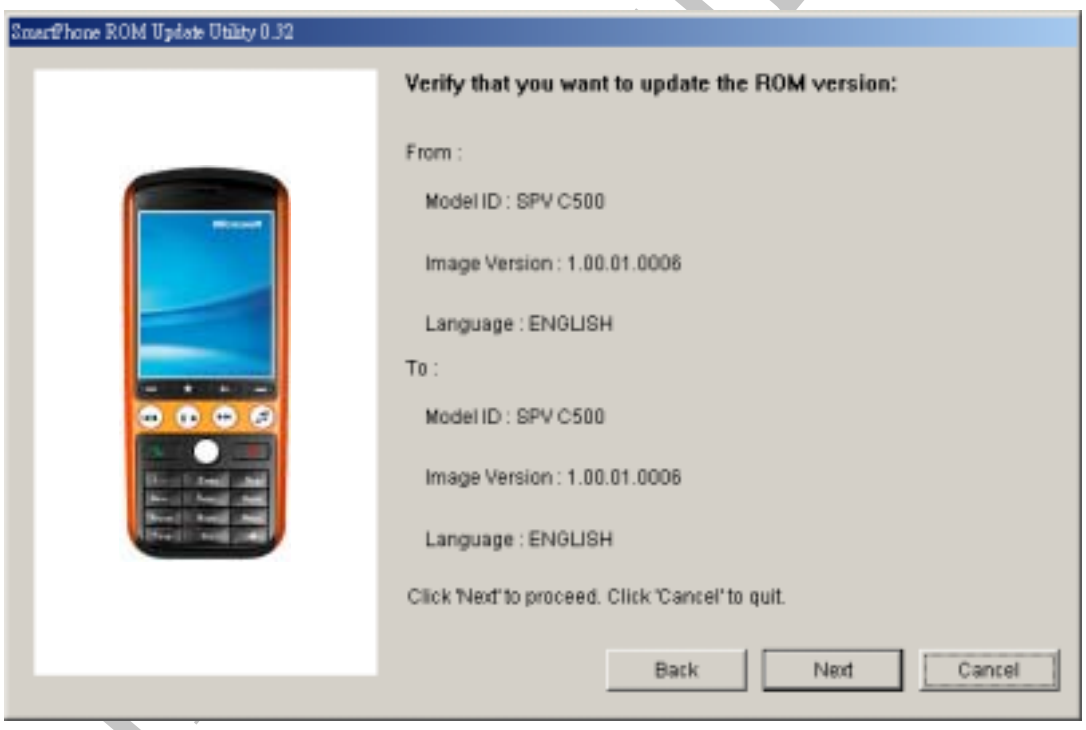
(h) Follow the instruction shown on screen, check the selection part:

(i) During the process, PC will show current information about your smart phone, choose update after

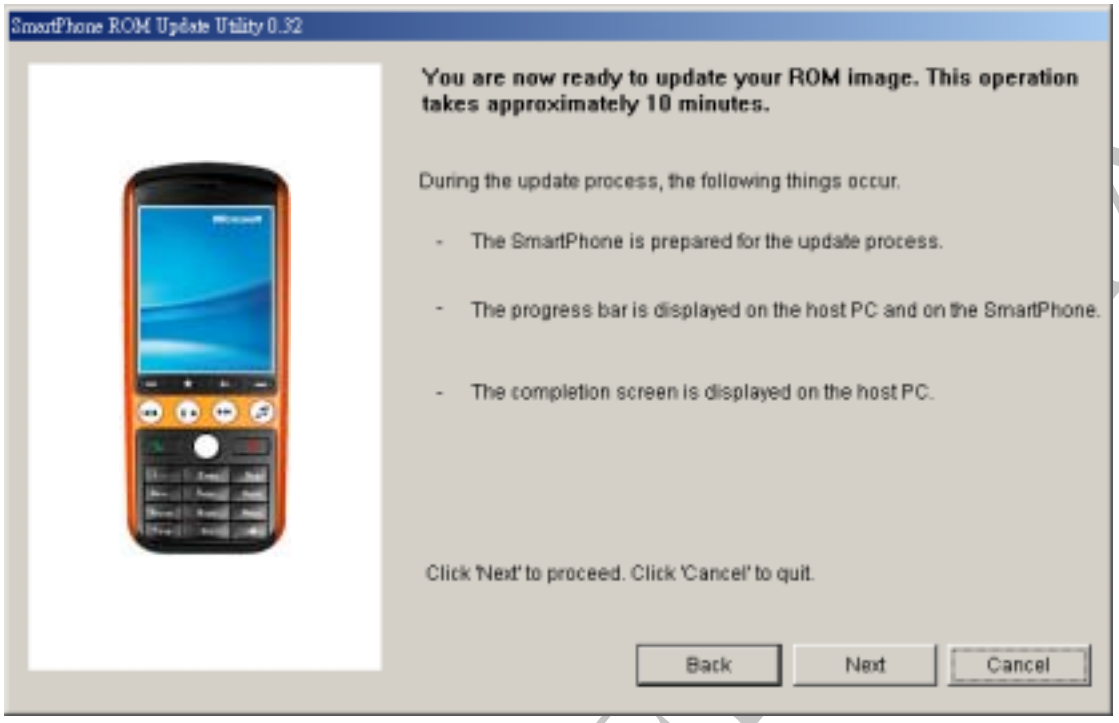
confirm.



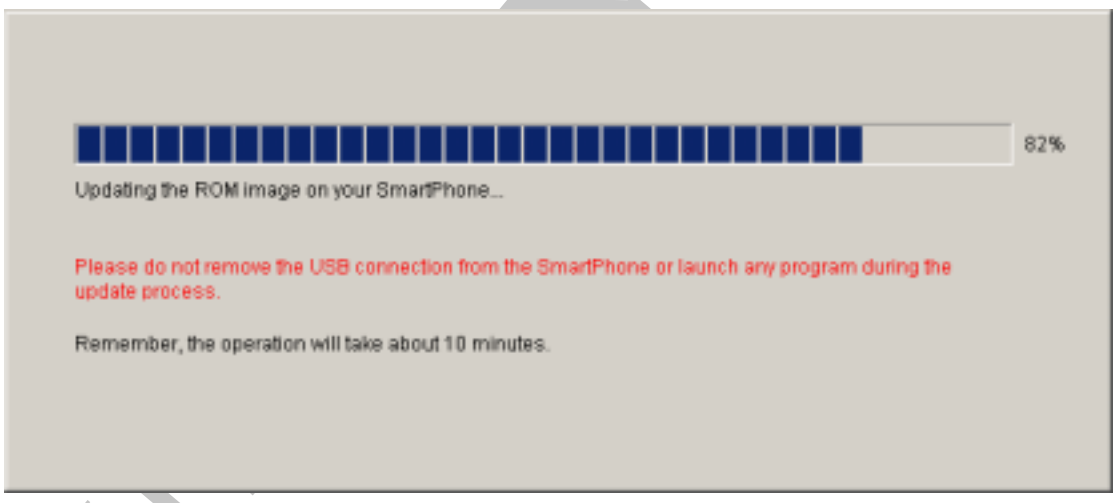
(k) Choose NEXT if you have verified and want to update



(l)It will take about 10 minutes to complete.



(j) PC will show the RUU progress



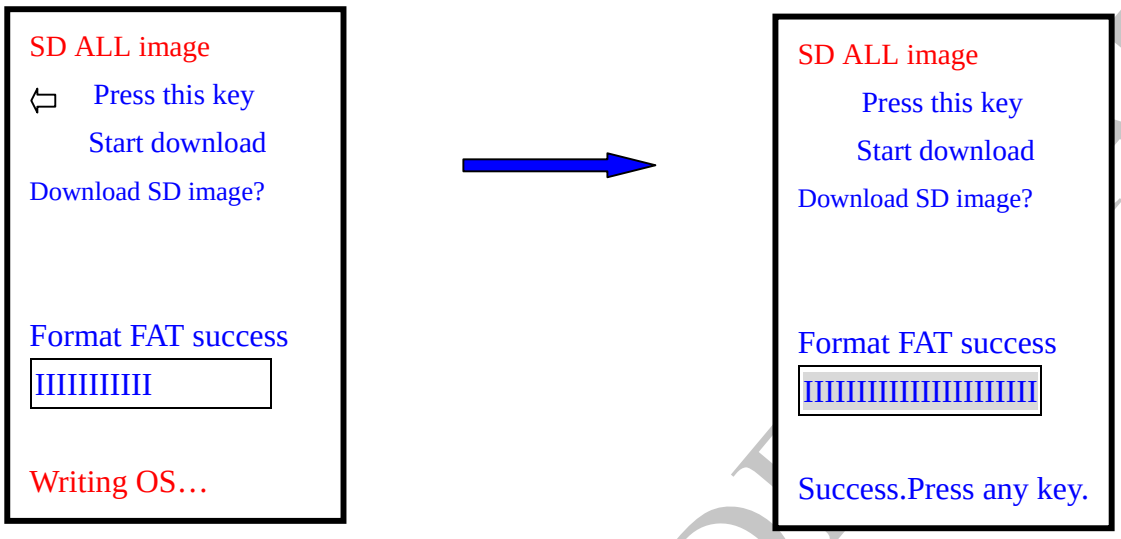
(k) When software upgrade is finished, the Unit will reboot automatically.

(3) Software upgrade from 64MB MINI SD card (with latest software version)

Caution: The unit must have at least 50% of battery capacity before starting the re-flash process. Charge the battery in advance if necessary.

(a) Take one smartphone unit and turn off power.

(b) Insert 64MB Mini SD card (with latest software version) to unit and set it into SPL Mode(Press and Hold Camera + Power button for 2 seconds).Then release Power button first. The screen shown as below.



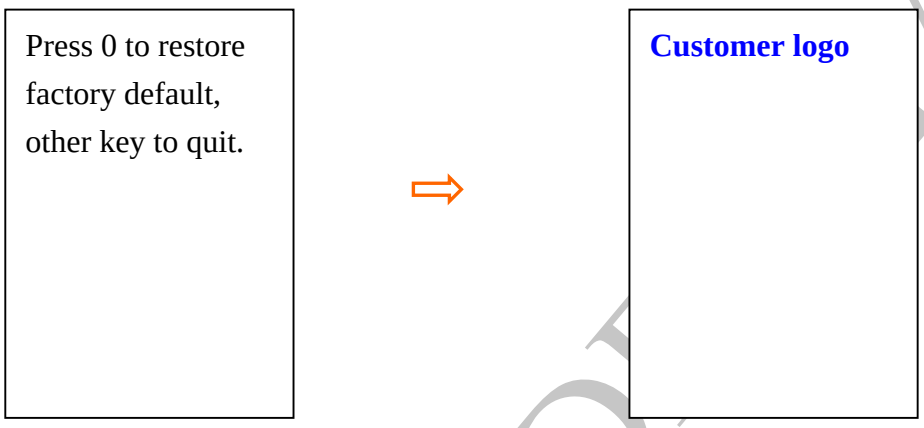
Unit has been re-flash successfully.

7.2 Smart phone Reset.

In case if the system is freezing or not working under OS mode, service center could perform “RESET” the smart phone to fix the problem:

(a) Release the battery and attachéd again to unit.

(b) Hold two soft key together , then press power button for 0.5 seconds.



Warning: This will set phone to original factory setting , there is risk of loosing customer data.

(c) Unit will reboot .

7.3 Smartphone rebuild

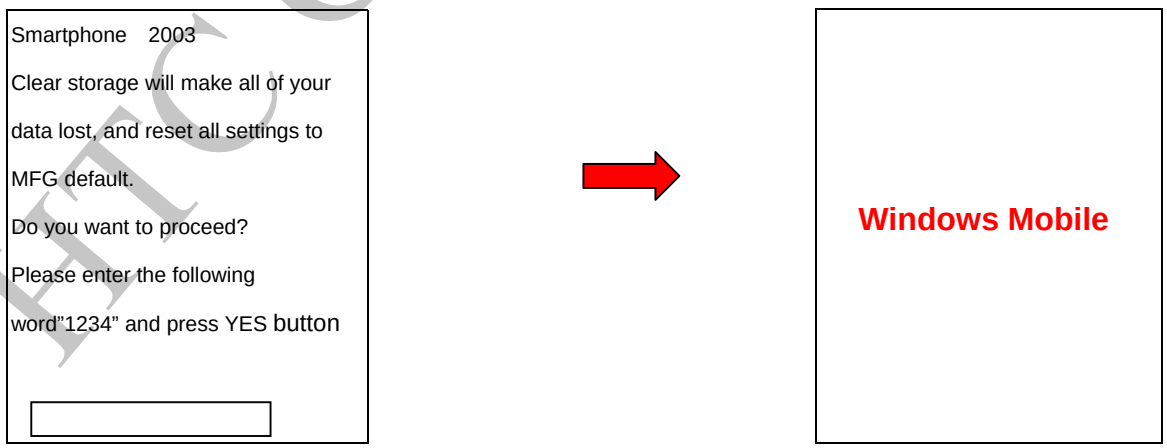
-Use only if you feel system is slow performance (weight loading may cause system run slowly).

-Please be noted that there is a Risk of Loosing customer data and back to factory default setting.

Procedure:

(1) On Windows mode, Press Start > More >More > Accessories > Clear Storage.

On display it will show:



7.4 Software back up to SD card

(A) ***Build your own Golden Mini SD card***

1. Flash a golden unit with the last update ROM Code.
2. Insert a 64MB mini-SD card into unit.
3. Enter SPL : Press and hold camera key. Press power key for one or two seconds, release power key.
4. Enter "r2sd all". Check the screen. Wait for the percentage bar reach to the end.
5. After it is completed, turn off the unit. Take of mini-SD card.

(B) ***Flash unit with golden mini-SD "***

1. Insert mini-SD card into unit.
2. Enter SPL : Press and hold camera key. Press power key for one or two seconds, release power key.
3. SPL will ask if you want to flash the unit.
4. IF Yes, Press Volume Down key quickly. Check the screen. Wait for the percentage bar reach to the end.
5. After it is completed, press any key to enter SPL automatically.
6. Power down device by pressing power button or taking out battery.
7. Remove mini-SD card.
8. Insert SIM card.
9. Power on the unit.
10. Boot into OS.

"Your Mini SD card is ready now for doing Reflash"

CAUTIONS:

- Per customer request, due to security reason, UPGRADE/ Reflash to different CID will be blocked, and will not continue.
- Repair for different region or Customer ID should be treated as OOW repair.

Chapter 8 – RF Antenna test spec and criteria

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

DCS 1800 Receiver Test					
1	Fast Bit Error Rate	0	512	-104	
2	Fast Bit Error Rate	0	700	-104	
3	Fast Bit Error Rate	0	885	-104	
DCS 1800 Transmitter Test					
4	TX Phase RMS Error	0	512	-104	
5	TX Phase Peak Error	0	512	-104	
6	TX Frequency Error	0	512	-104	
7	TX Phase RMS Error	0	700	-104	
8	TX Phase Peak Error	0	700	-104	
9	TX Frequency Error	0	700	-104	
10	TX Phase RMS Error	0	885	-104	
11	TX Phase Peak Error	0	885	-104	
12	TX Frequency Error	0	885	-104	
13	Check TX Power	0	512	-104	
14	Check TX Power	0	700	-104	
15	Check TX Power	0	885	-104	

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

Chapter 9 – Inspection Criteria

9.1 Definition

The inspection criteria HTC defined is for service center repair ONLY. All service centers must follow below inspection criteria to judge if customer returned unit is exactly “defective” caused by out of HTC’s specification.

9.2 Inspection Area

The inspection area of Smartphone is for LCD module ONLY.

9.3 Criteria

Definition:

D: Diameter; L: Length; W: Width ;N: Number of defects ; S: Distance from dot to dot ;H: Height.

Viewing distance for LCM is, approximately: 30cm ± 5cm

Ambient illumination is to be 500~1000lux

Inspection viewing angle range: ±30degree Horizontal and ±45 degree Vertical:

(1) Defective Dot

Item	Status	Criteria
1	Defective dot ＞ 0.25mm	**Fail**
2	0.15＜ Defective dot ≦ 0.25mm	If the Q’ty of defective dot ≦ 6, **Pass**
3	Defective dot ≦ 0.15mm	**Neglect**

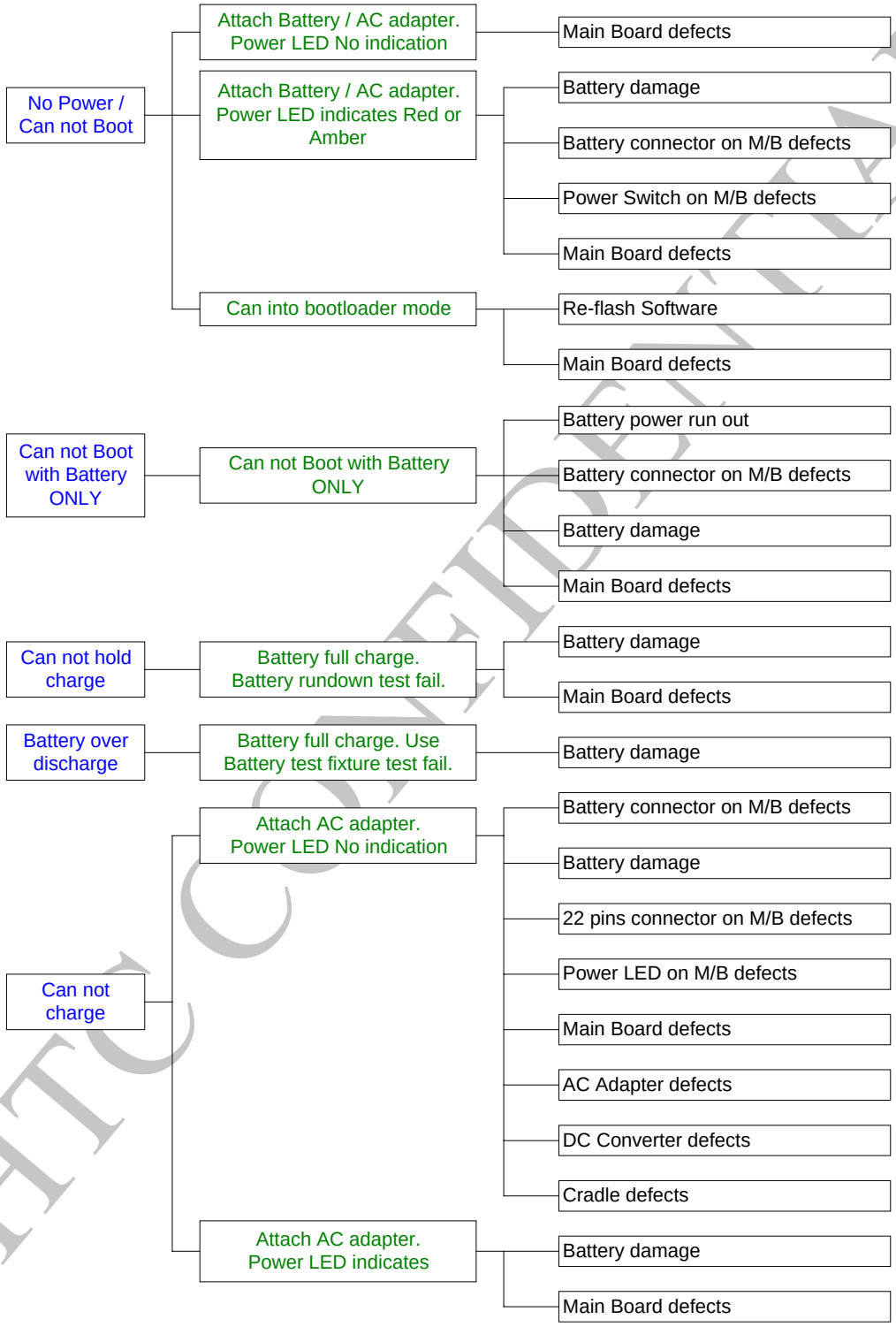
Total dot ≦6; Distance between dot and dot >5mm

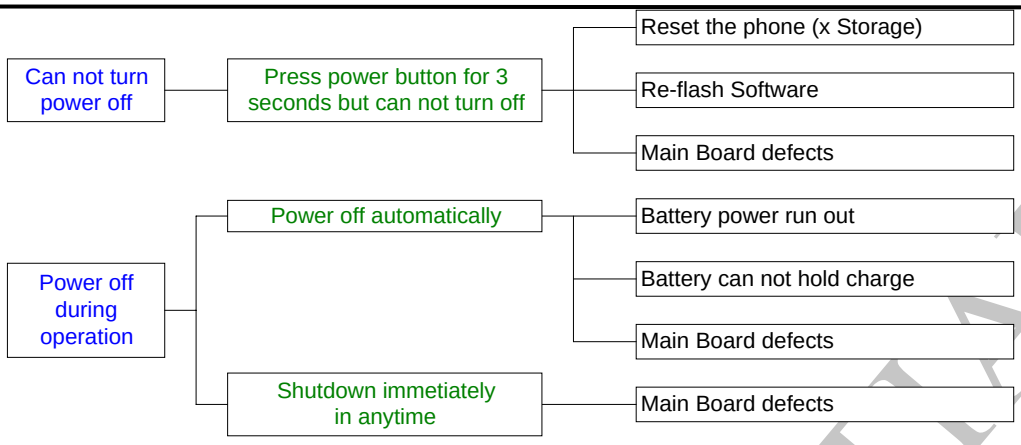
(2) Defective Pixel

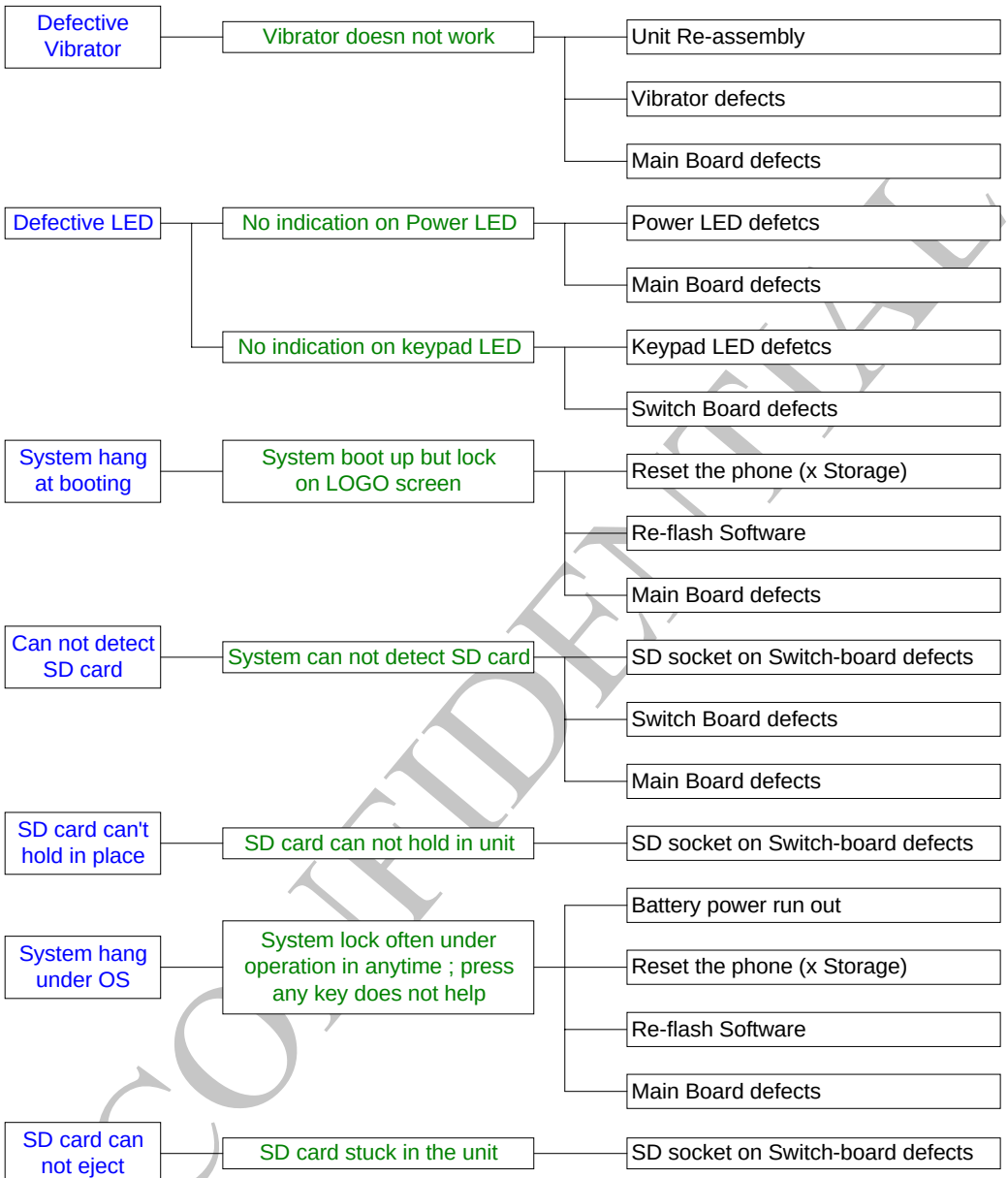
Item	Status	Criteria
1	Bright pixel only	If the Q’ty of bright pixel ≦ 3, **Pass**
2	Dark pixel only	If the Q’ty of dark pixel ≦ 3, **Pass**
3	Bright + Dark pixels (total)	If total Q’ty of bright + dark pixel ≦ 3, **Pass**
4	2 bright pixels connected together	If the Q’ty of connected bright pixel ≦ 0, **Pass**
5	2 dark pixels connected together	If the Q’ty of connected dark pixel ≦ 0, **Pass**
6	Connected Bright + Dark pixels (total)	If the Q’ty of connected bright + dark pixels ≦ 0, **Pass**
7	The distance between two bright pixels	If the distance ≦ 5mm, **Fail**
8	The distance between two dark pixels	If the distance ≦ 5mm, **Fail**

Chapter 10 - Trouble Shooting Guide

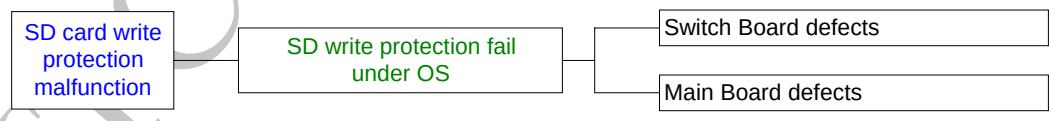
(1) Power / Battery



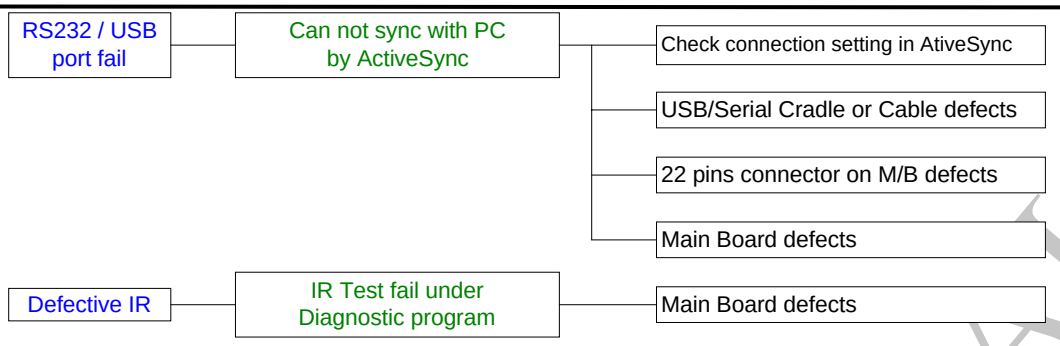




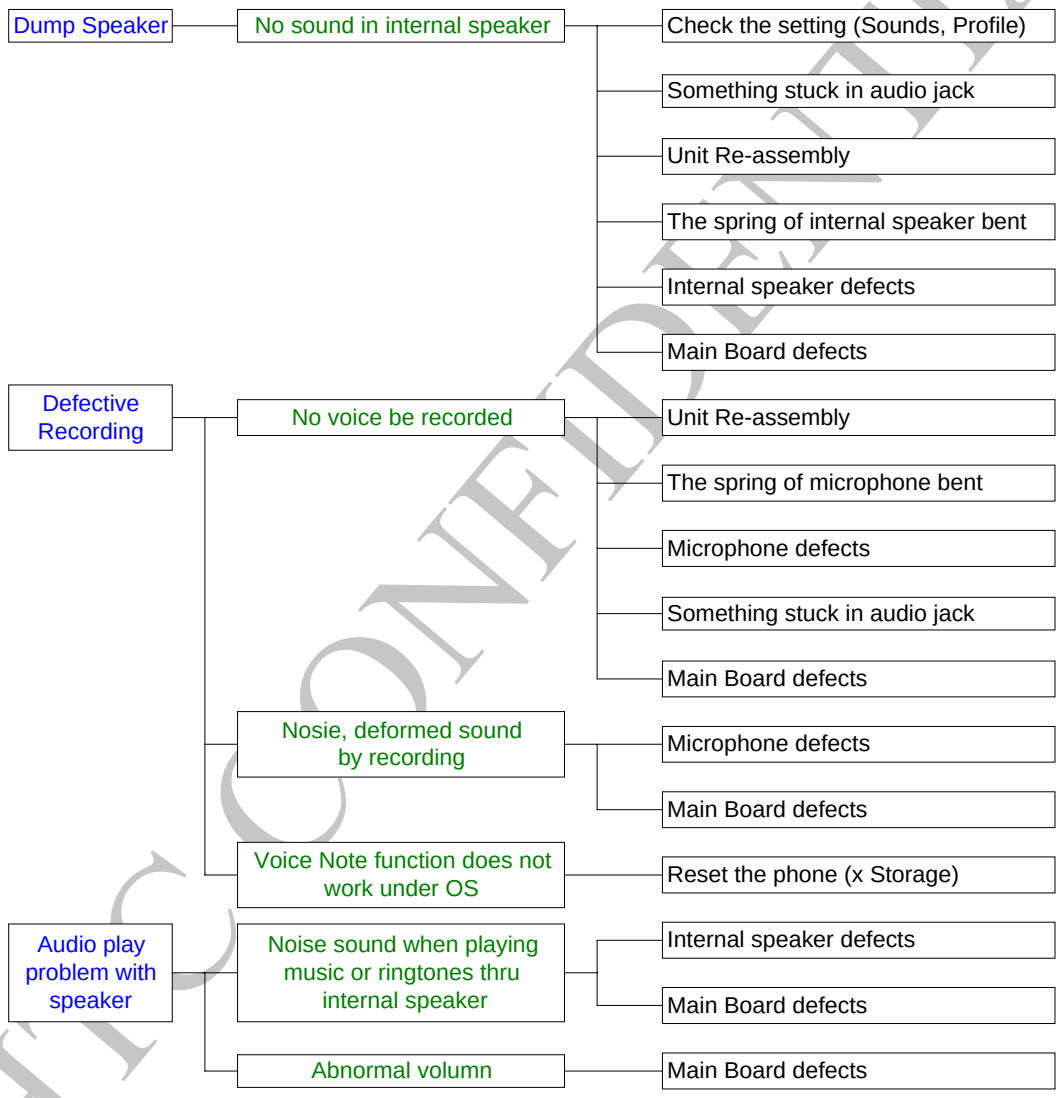
(2) System

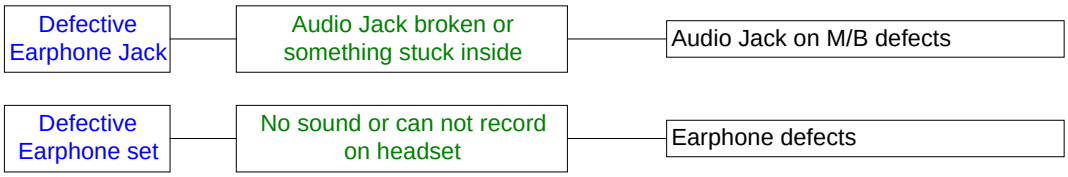


(3) Communication

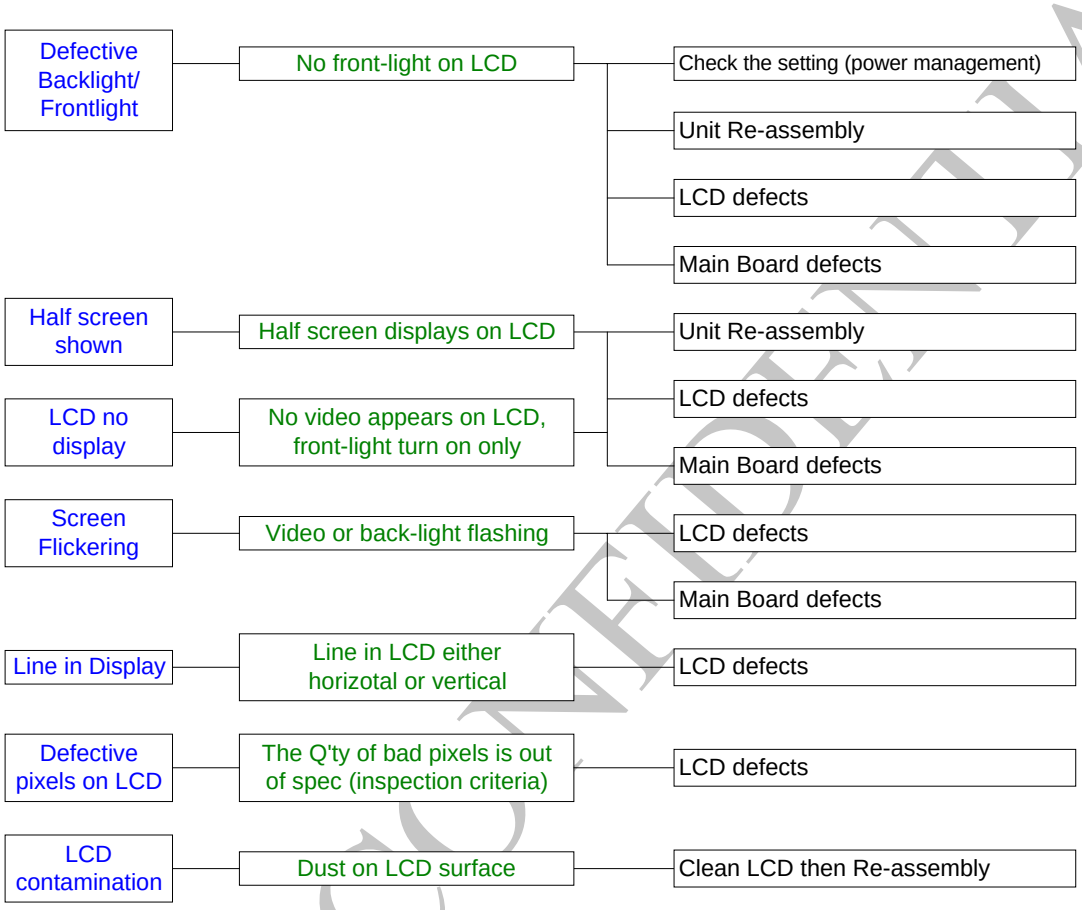


(4) Audio

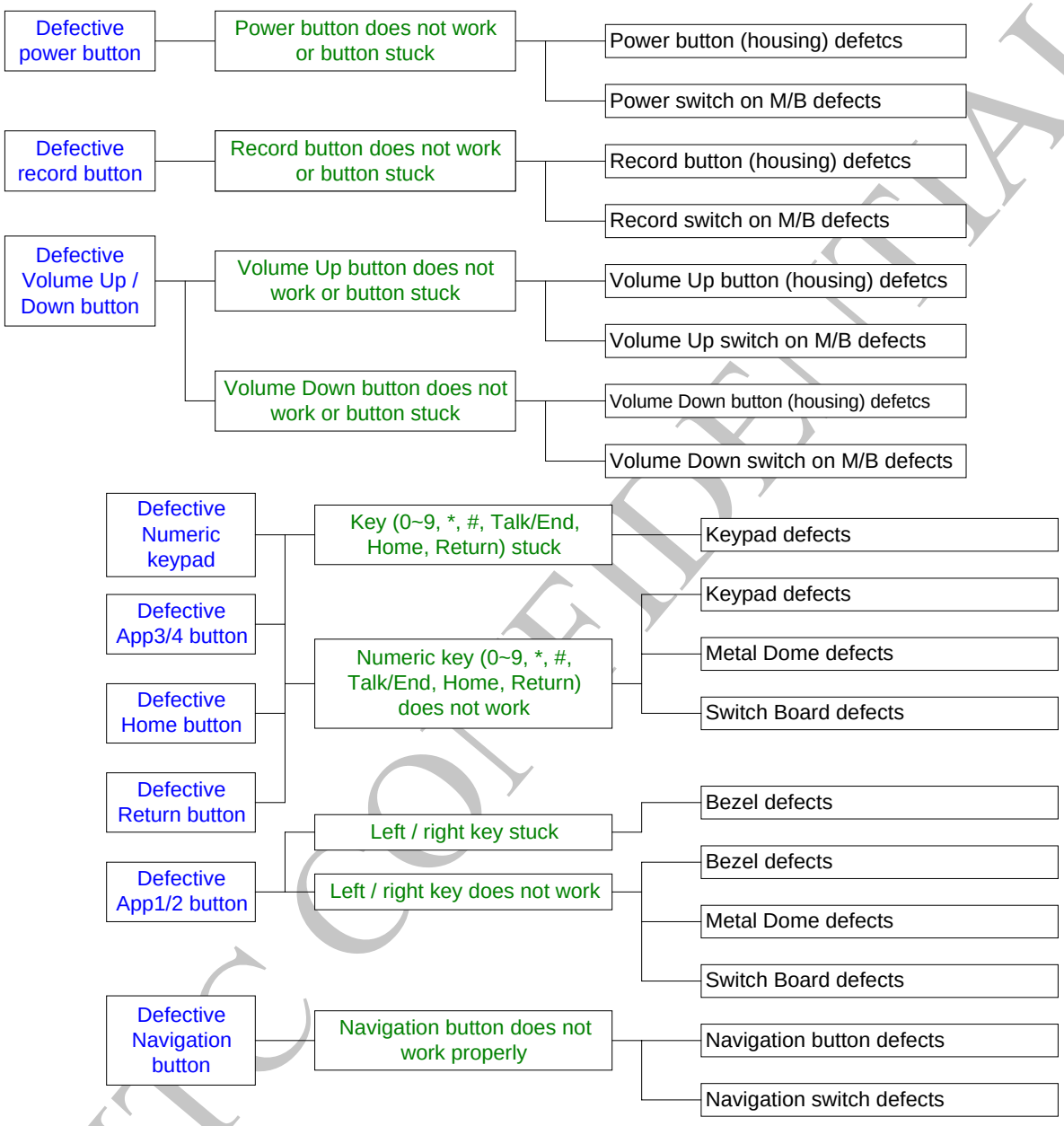




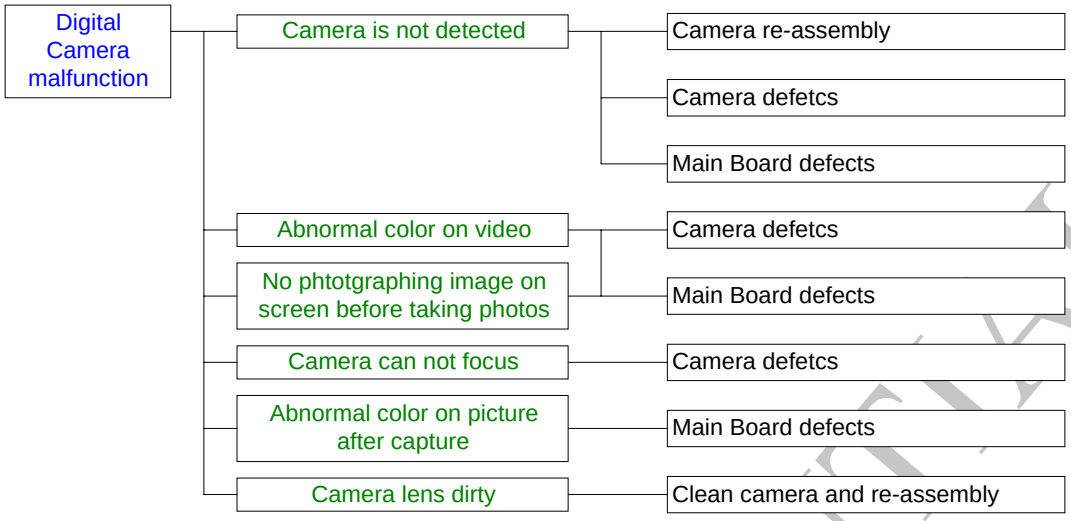
(5) Screen



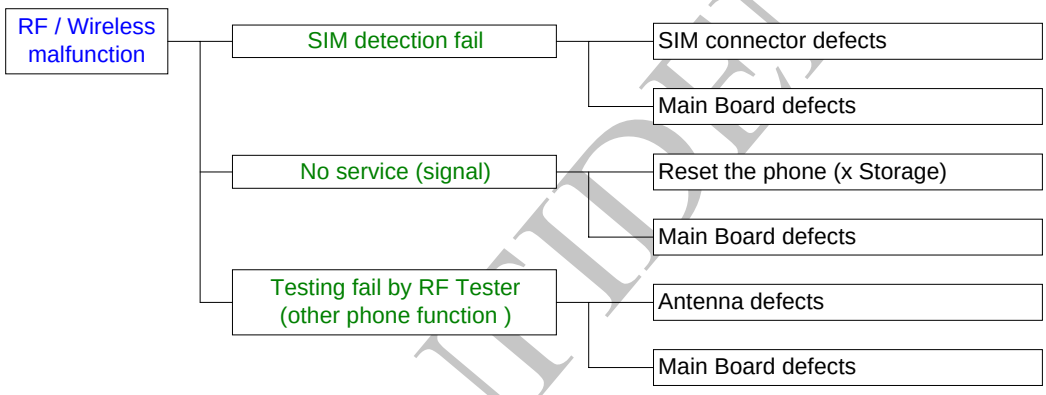
(6) Mechanical



Camera



(7) RF / Wireless



Chapter 11 – Label Plan

11.1 Main unit Regulatory label(on the housing of main unit)

HTC P/N: 77H00215-00
Size: 19 X 9 mm

This label will support following SKU

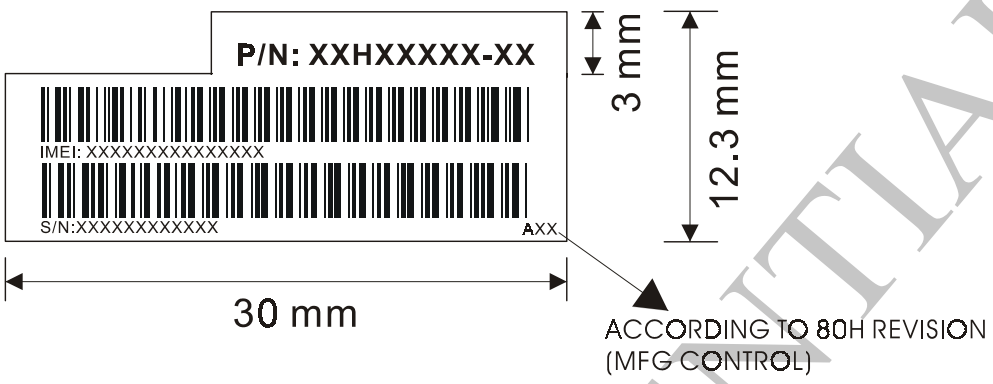
HTC Part Number	Countries Supported
99HAH000-00	German_DE
99HAH001-00	German_AU
99HAH002-00	Czech_CZ
99HAH003-00	English_UK
99HAH004-00	Dutch_NL
99HAH005-00	Hungarian_HU
99HAH006-00	Croatian_HR
99HAH007-00	Slovak_SK
99HAH008-00	Polish_PL

11.2 Main unit Regulatory label(on the housing of main unit)

HTC P/N: 77H00165-00

Size: 30 X 12.3 mm

Barcode Type: Code 128



This label will support following SKU

HTC Part Number	Countries Supported
99HAH000-00	German_DE
99HAH001-00	German_AU
99HAH002-00	Czech_CZ
99HAH003-00	English_UK
99HAH004-00	Dutch_NL
99HAH005-00	Hungarian_HU
99HAH006-00	Croatian_HR
99HAH007-00	Slovak_SK
99HAH008-00	Polish_PL

For S/N: SSYWWPPZZZZZ

SS: SITE CODE --> HT

Y: Year Last Digital of the Year.

WW: Week Code (01~54)

PP: Product Code DN>ST20F

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

Label Characteristic

Material: polyester

Color: White

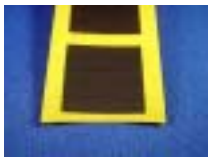
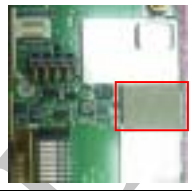
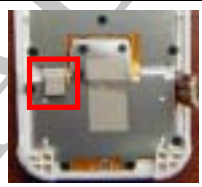
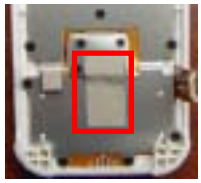
Ink: B110

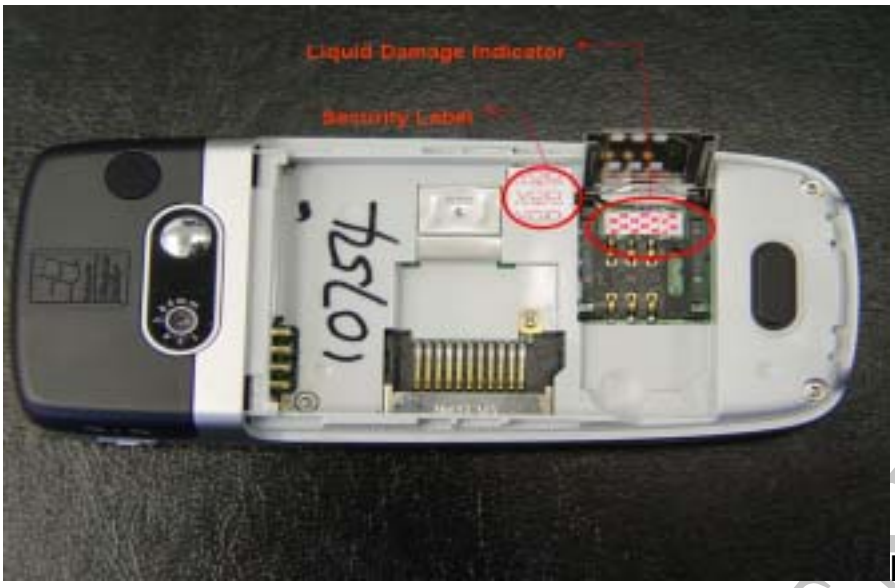
12 Spare parts list

12.1 Spare Part List for Repair

(Please be noticed that Part no on the list below is for reference only, please refer to List from our logistic team which differ per customer)

36H00233-00M		**36H00180-00**		**74H00389-00**	
Antenna Receiver		Vibrator		Function Keypad	
Q'ty：1		Q'ty：1		Q'ty：1	
36H00215-10		**80H00359-00**		**54H00083-00**	
Speaker		FPC Assy Keypad (w/o metal)		CMOS Camera module	
Q'ty：1		Q'ty：1		Q'ty：1	
60H0002x-xx		**74H003xx-XX**		**77H00184-00**	
TFT LCD		Upper cover		Security label(Warranty seal)	
Q'ty：1		Q'ty：1		Q'ty：1	
71H00980-02		**72H00765-00**		**72H00765-01**	
Numeric Keypad		Screw, M1.6*8.2		Screw, M1.6*3.5	
Q'ty：1		**Q'ty：4**		**Q'ty：2**	
74H00393-00		**36H00267-02**		**71H00975-01**	
Frame housing		Antenna radiator(cover)		Battery cover	
Q'ty：1		Q'ty：1		Q'ty：1	
99HAH00X-XX		**72H00794-00**		**72H00792-00**	
FRU MB		Metal support, keypad		METAL SUPPORT, NAVIGATOR	
Q'ty：1		Q'ty：1		Q'ty：1	
76H00595-00		**76H00596-00**		**76H00597-00**	
Gasket		Poron,LCD ground,L32		Poron, LCD support,H48	
Q'ty：2		Q'ty：2		**Q'ty：5**	

76H00561-00 Mylar mini SD **Q'ty：1**		**77H00193-00** Liquid damage indicator **Q'ty：1**		**72H00718-00** Gasket fabric **Q'ty：1**	
35H00044-00 Main Battery **Q'ty：1**		**72H00609-00** Screw KH-BT,4*2.4 **Q'ty：10**		**72H00780-00** Gasket, metal support **Q'ty：1**	
71H01014-00 KEYCAP,NAVI **Q'ty：1**		**72H30055-01** Screw, BIH-BT1.6*4mm **Q'ty：3**		**72H00802-00** Gasket,10*3*2mm **Q'ty：1**	
74H00377-00 Sound Box Pre-Assy **Q'ty：1**		**76H00824-00** Mylar, LCD **Q'ty：1**			



Position of label on unit

Chapter 13- Board Level Repair

If you are authorized by HTC to perform board level repair , you could ask below material/parts from HTC .

13.1 Problem Identification & Troubleshooting

(1) Basic Repair Instructions for Component Replacement：

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

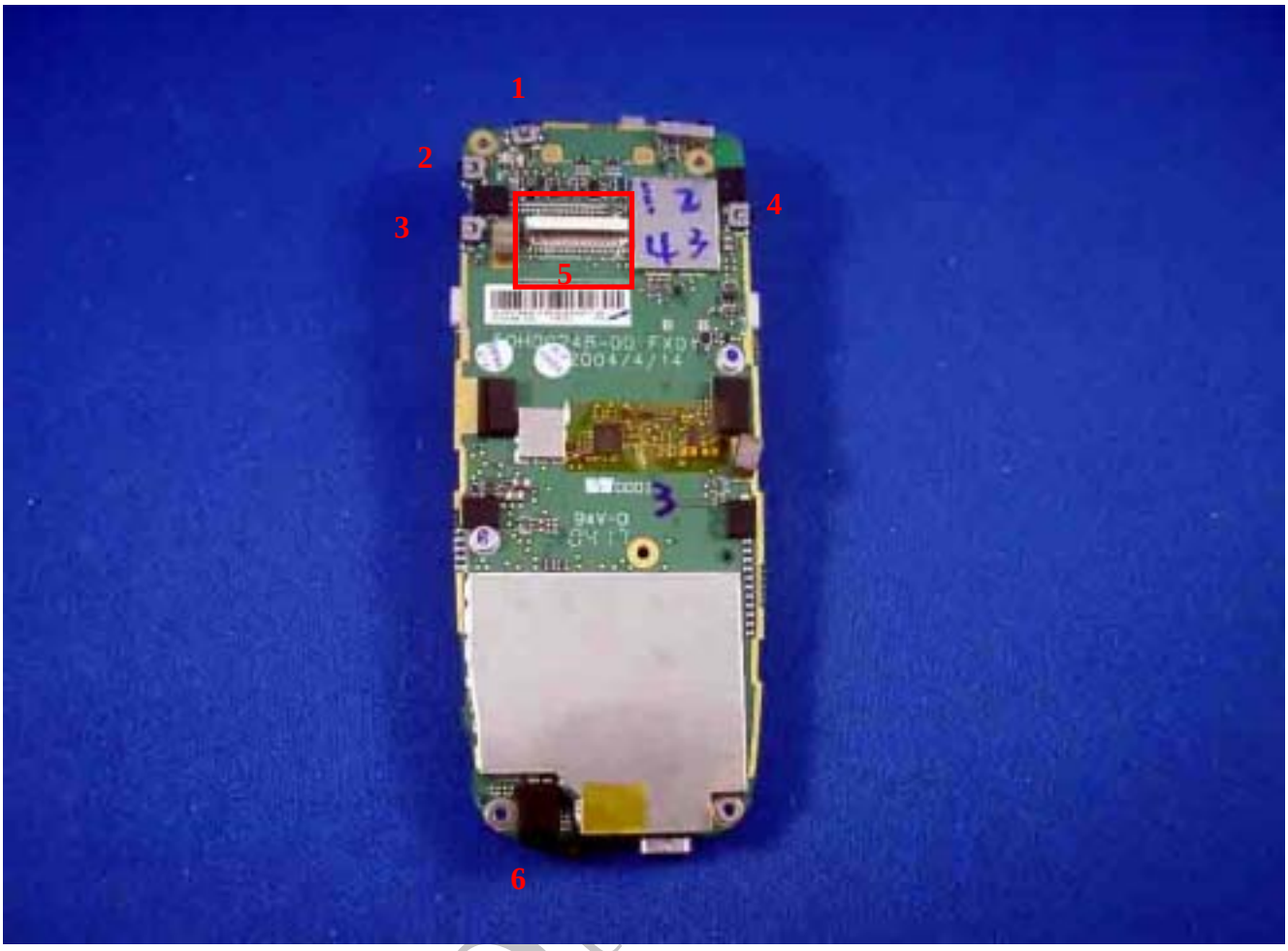
Warning*：*DO NOT *overheat the tape and components to avoid the tape melted and make the component damage.*

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

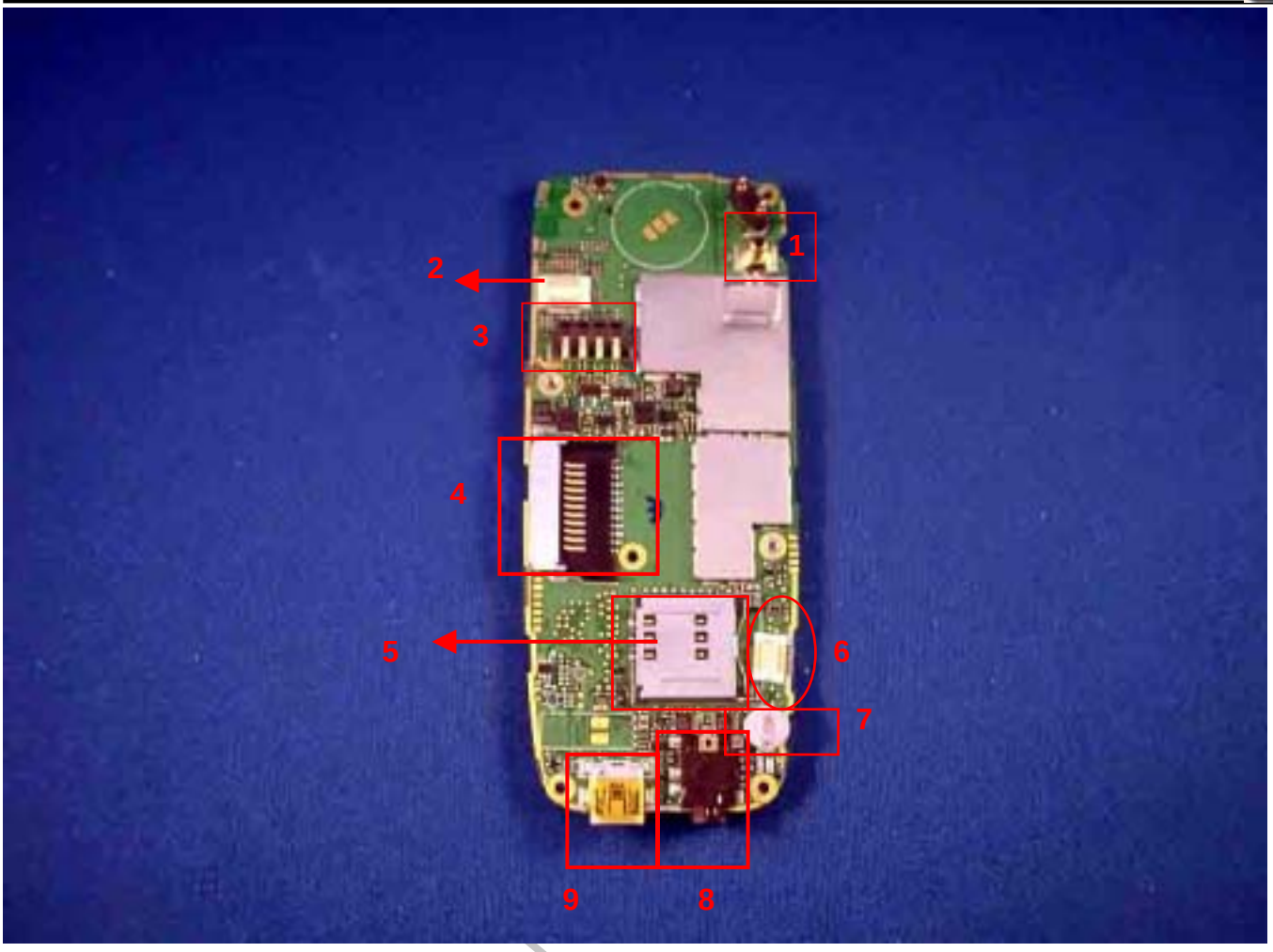
Step 3. It has to wait the temperature cool down before the damaged components been removed. Or, the others components could be gone when the solder-proof tape been taken off.

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

13.2 Components to be replaced：



Parts that could be replaced from MB front side			
NO	**Part location name**	**HTC Part No**	**REMARK**
1	Power switch button	36H00230-00M	SW1
2	Volume up	36H00230-00M	SW2
3	Volume down	36H00230-00M	SW3
4	Camera capture	36H00230-00M	SW4
5	Connector FPC,39P (LCD)	75H00371-00	Con 3
6	MIC	36H00208-00M	MIC1



Parts that could be replaced from MB Back side			
NO	**Part location name**	**HTC Part No**	**REMARK**
1	RF Antenna connector	75H00160-00	WSW1
2	Camera connector (20P)	75H00337-00	CON4
3	Battery connector	75H00332-00M	CON10
4	Mini SD Connector	75H00352-00	CON6
5	SIM Connector (6p)	75H00378-00	CON 9

6	Connector B to B(Keypad Connector,16P)	75H00351-00	CON5
7	Back up capacitor	16H00005-00	CG1
8	Audio Jack	36H00059-00	ACON1
9	I/O Mini USB connector	75H00379-00	CON7

~End of Service Manual~