Trouble Shooting Guide, Mechanical

Applicable for T280

CONTENTS

1   General

This document outlines the mechanical repairs that should be made in an attempt to fix the common failures that are seen in the field. To gain a complete understanding of how to test and repair a specific failure, this document should be used in conjunction with the Test Instructions, Mechanical and the Working Instructions, Mechanical.

1.1   Service functions in the software

The service menu will be accessed with the following key combination.

⇒ * ⇐ ⇐ * ⇐ *

They are as follows:

Service info
Service tests
Text labels

Under the "**Service tests**" option, the phone's software has a built in service functionality that allows you to test some of the phones functions. It looks like this:

Main display
Camera
LED/illumination
Keyboard
Vibrator
Earphone
Speaker
Real time clock
Total call time
FM radio
Microphone

NOTE: Different names may occur depending on language setting and customization.

1.2　Misuse and other no warranty issues
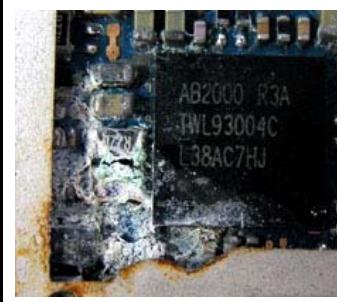
Misuse is not covered by warranty. This chapter will explain what's <u>not</u> covered by warranty. Phones that have been exposed to misuse will not be covered by warranty.
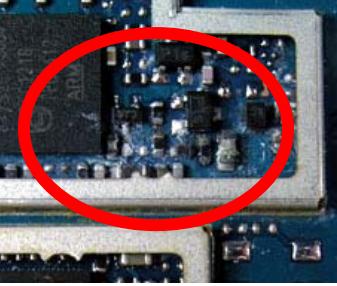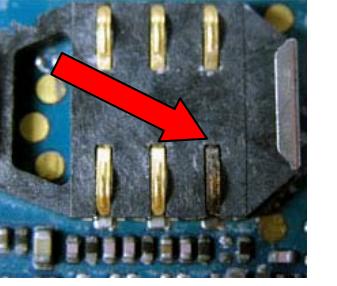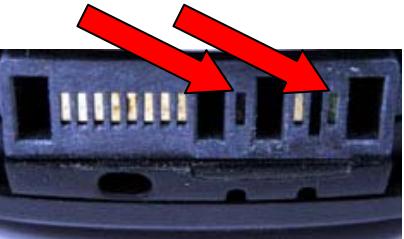
This means: if it is possible to repair the phone, the customer will have to pay for the repair. SEMC will not allow any of these phones to be claimed into WCMS. Some local perspectives may interfere with this. Please reference to local directives.
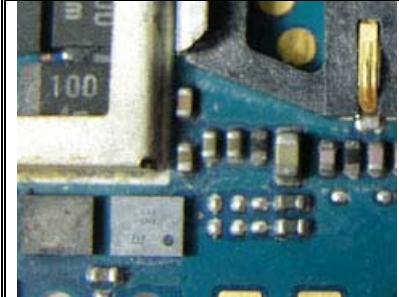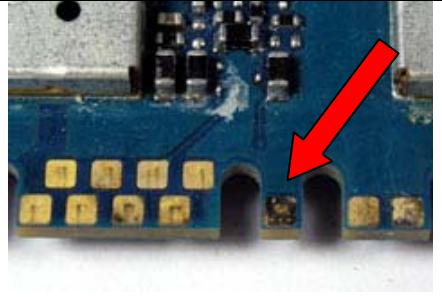
1.2.1　Action

Make a general visual inspection for misuse.

Below are some **examples** of what is not covered by warranty.

Front window broken due to misuse.	LCD cracked due to drop.	Clear scratches	Mark after drop	Corrosion components on the PCB.

Corrosion components on the PCB.	Corrosion components on the PCB.	SIM reader damaged by liquid.	System connector damaged by liquid

Components around system connector damaged by liquid	System connector pad(s) damaged by liquid

1.2.2   Liquid Intrusion Indicator

In the phone there is placed an indicator that can give you a hint to see if the phone is damaged by liquid or not. This indicator is located in the Battery housing lower part (Fig. 1.2.1) and it is possible to see it without disassemble the phone.

On the other pictures below you will see the different between a indicator that has been in contact with liquid (Fig. 1.2.2) and with one that hasn't (Fig. 1.2.3).

Location of sticker	This sticker <u>is not</u> ok	This sticker is ok
Fig. 1.2.1	**Fig. 1.2.2**	**Fig. 1.2.3**

If the white indicator has been in contact with liquid, it turns into a blurred indicator. In this case you should check the phone for liquid damage (see point 1.2.1).

NOTE!   There must be clear marks after liquid on the PCB before rejecting the phone for repair.
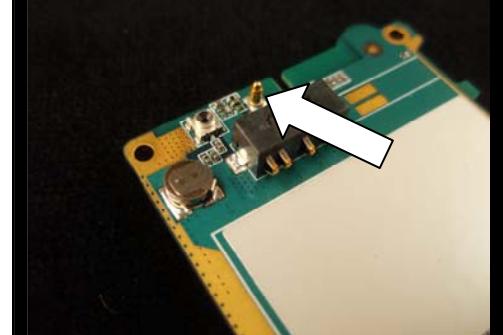
1.2.3   Action

Make a general visual inspection for misuse, corrosion or oxidation from liquid damage. No further action should be taken for a liquid damaged phone. Handle the unit according to local directives.

2 Appearance Problems
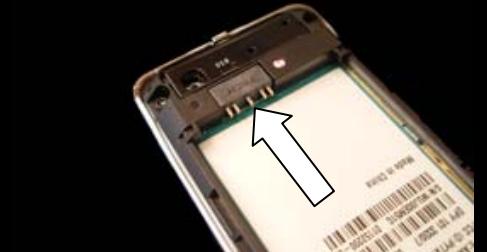
Problem Area	Items to Check	Repair Action	Reference Image

Appearance	Visually inspect the cosmetic quality of all user viewable surfaces of:
	
	    Front cover assembly
	    Battery cover
	    Keypad
		• If dirty
		  – Clean parts as necessary
		
		• If unacceptable scratched or damaged
		  – Replace damage parts as necessary.	
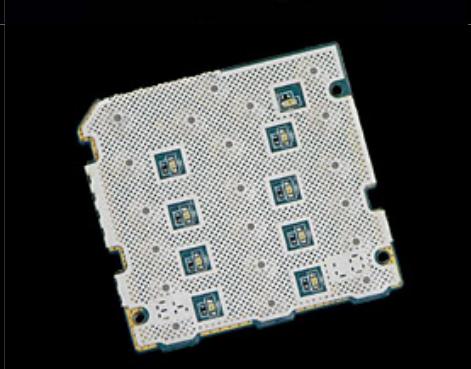
3 Network/Signal Problems

Problem Area	Items to Check	Repair Action	Reference Image
No Signal or Poor Signal	Before proceeding	• Perform a flash upgrade.	
	Visually inspect the SIM connector	• If dirty or oxidized – Clean it • If damaged – Send to an electrical repair location.	
	Visually inspect the Antenna connector	• If dirty or oxidized – Clean it • Trial the spring for elasticity. If locked – Send to an electrical repair location	

| Problem Area	Items to Check	Repair Action	Reference Image

	Visually inspect the Antenna contact pad	• If dirty or oxidized
		  – Clean it
		
		• If damaged
		  – Replace the Antenna assembly	

	If the issue has not been resolved	• Handle the unit according to local directives.	

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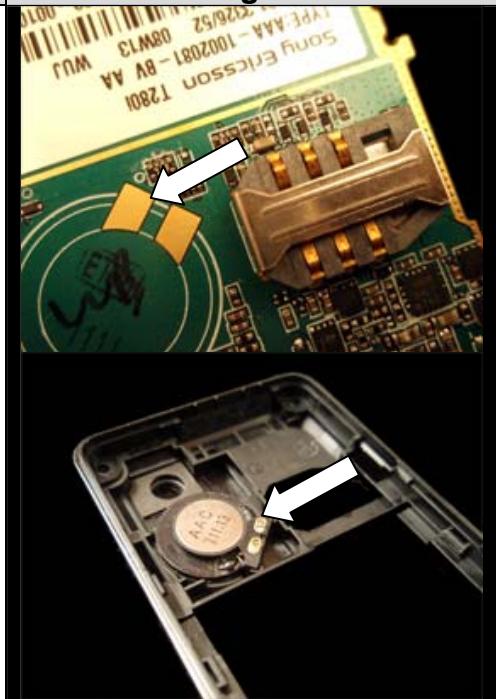
4 On/Off Problems

Problem Area	Items to Check	Repair Action	Reference Image
Power on problems	Check whether the phone vibrates after pressing the power key and whether the keypad illuminates.	• If activation of the vibrator or keypad is detected – Refer to the "Display problem" in Chapter 7.	
	Before proceeding	• Perform a flash upgrade	
	Visually inspect the contact pads of the battery Note! Use new battery to check	• If dirty or oxidized – Clean the pads • If damaged – Replace the battery	
	Visually inspect the Battery connector	• If dirty or oxidized – Clean it • If damaged – Send to an electrical repair location.	

Problem Area	Items to Check	Repair Action	Reference Image
	Visually inspect the Keypad	• If power button damaged – Replace it	
	Visually inspect the Key board assembly	• If dirty or oxidized – Clean it • If damaged – Replace it	
	If this issue has not been resolved	• Send to an electrical repair location.	

5 Audio Problems

Problem Area	Items to Check	Repair Action	Reference Image
Loudspeaker *No sound or poor quality sound*	Before proceeding	• Perform a flash upgrade and a setting reset	
	Visually inspect the Loud speaker external port	• If dirty or clogged – Clean it	
	Visually inspect the Speaker mesh	• If dirty or clogged – Clean it • If damaged – Replace the Rear Frame Assembly and clean all parts from dust.	

Problem Area	Items to Check	Repair Action	Reference Image
	Visually inspect the: Loud speaker Loud speaker springs The pads on the PCB	• If springs on the Loud speaker or the pads on the PCB are dirty or oxidized – Clean parts. • If the Loud speaker or the Loud speaker springs are damaged – Replace the Loud speaker.	
	If this issue has not been resolved	• Send to an electrical repair location.	
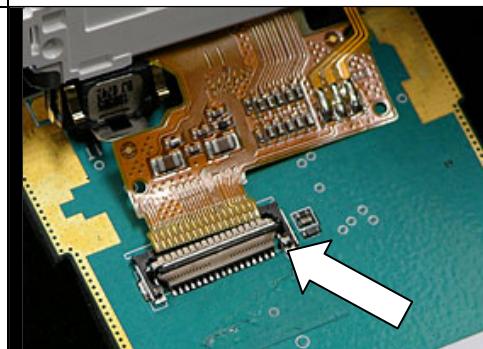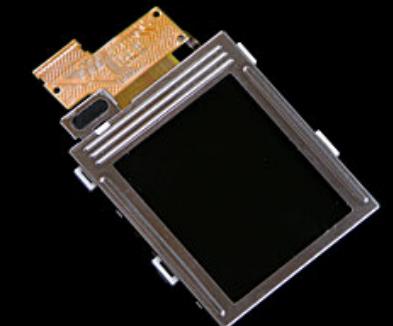
Problem Area	Items to Check	Repair Action	Reference Image
Receiver: *No sound or poor quality sound*	Before proceeding	• Perform a flash upgrade and a setting reset	
	Visually inspect the Ear phones external port	• If clogged – Clean it or replace the Front cover	
	Visually inspect the Ear phone Perform a test with a new Ear phone for verification	• If dirty or oxidized – Clean the springs • If damaged – Replace it	
	If this issue has not been resolved	• Send to an electrical repair location.	

Problem Area	Items to Check	Repair Action	Reference Image
Microphone	Before proceeding	• Perform a flash upgrade and a setting reset	
	Visually inspect the Microphone's external port	• If clogged – Clean or replace the Front cover	
	If the issue has not been resolved	• Send to an electrical repair location.	
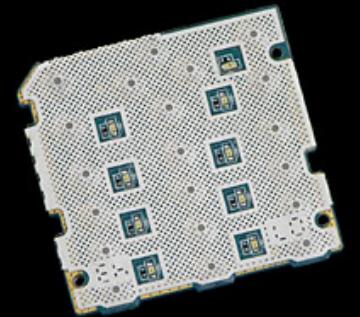
6 Key Problems
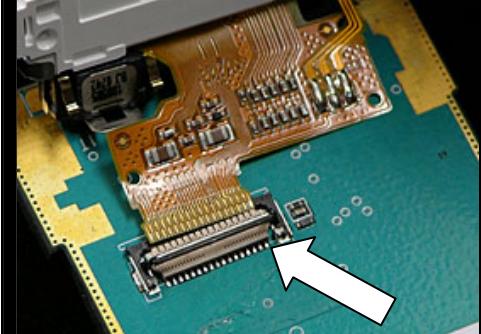
Problem Area	Items to Check	Repair Action	Reference Image
Keypad: *A key on the keyboard is not functioning or is intermittent*	Visually inspect for damage to the Keypad and the Key Board Assembly Visually inspect for debris between the Keypad and the Key Board Assembly	• If dirty or clogged – Clean both parts. • If damaged – Replace the Keypad and/or Key Board Assembly	
	If the issue has not been resolved	• Send to an electrical repair location.	

7 Display Problems
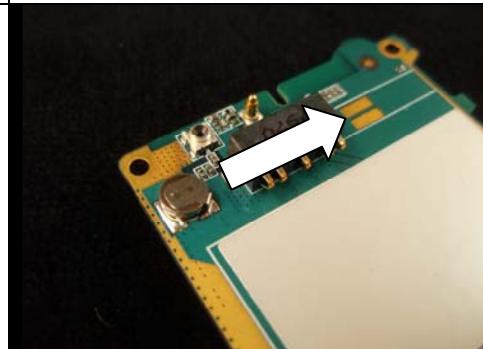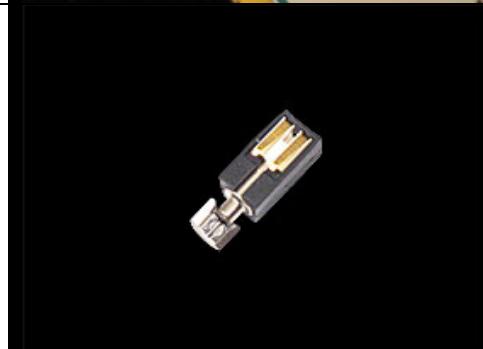
Problem Area	Items to Check	Repair Action	Reference Image
LCD module	Check whether the phone vibrates after pressing the power key and whether the keypad illuminates.	• If activation of the vibrator are not detected – Refer to the "On/Off problems" in Chapter 4	
	Before proceeding	• Perform a flash upgrade.	
	Visually inspect the ZIF connector	• If improperly connected – Reinsert the flex into the ZIF connector	
	Check the LCD with flex	• If damaged – Replace the LCD	
	If the issue has not been resolved	• Send to an electrical repair location.	

8 Illumination Problems

Problem Area	Items to Check	Repair Action	Reference Image
Keys: *The entire keypad or a portion of the keypad does not illuminate*	Before proceeding	• Perform a flash upgrade and a setting reset.	
	Visually inspect the Keypad	• If dirty or clogged – Clean it	
	Visually inspect the Key board assembly	• If dirty or oxidized – Clean it • If damaged – Replace it	
	If the issue has not been resolved	• Send to an electrical repair location.	

Problem Area	Items to Check	Repair Action	Reference Image
LCD	Visually inspect the ZIF Connector	• If improperly connected – Reinsert the flex into the ZIF connector	
	Visually inspect the LCD	• If damaged – Replace the LCD	
	If the issue has not been resolved	• Send to an electrical repair location	

9   Alert Problems
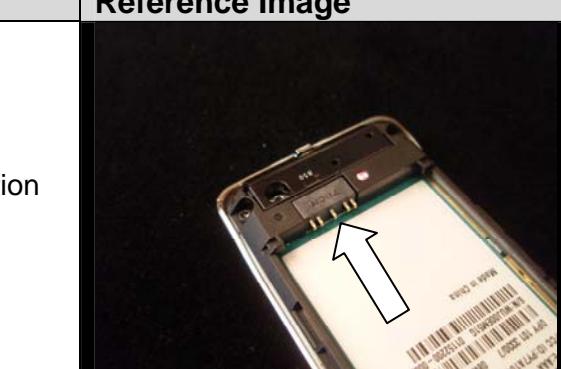
Problem Area	Items to Check	Repair Action	Reference Image
Vibrator	Before proceeding	• Perform a flash upgrade and a setting reset.	
	Visually inspect the vibrator pads on the PCB	• If dirty or oxidized – Clean the pads	
	Visually inspect the vibrator	• If dirty or oxidized – Clean it • If damaged – Replace it	
	If the issue has not been resolved	• Send to an electrical repair location	
Speaker	Refer to "Speaker" section under "Audio Problem"		

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10 SIM Problems

Problem Area	Items to Check	Repair Action	Reference Image

SIM undetected
 	
(Insert SIM)
	Inspect the SIM holder	• If dirty or oxidized
		  – Clean it
		
		• If damaged
		  – Send to an electrical repair location	

	If the issue has not been resolved	• Handle the unit according to local directives.	
Unit indicates an incorrect SIM is inserted (Insert correct SIM)	Check whether the phone is locked to a particular carrier and whether the correct carrier's SIM is being used	• Use Correct Carrier SIM or test SIM.	
	If the issue has not been resolved	• Send to an electrical repair location.	

11 Charging/Capacity Problems

Problem Area	Items to Check	Repair Action	Reference Image
Battery will not charge	Visually inspect the contact pads of the battery	• If dirty or oxidized – Clean it • If damaged – Replace the battery	
	Visually inspect the System connector	• If dirty or oxidized – Clean it • If damaged – Replace it	

Problem Area	Items to Check	Repair Action	Reference Image

	Visually inspect the Battery connector	• If dirty or oxidized
		  – Clean it
		
		• If damaged
		  – Send to an electrical repair location	

	If the issue has not been resolved	Send to an electrical repair location.	
Battery looses charge quickly /standby time seems short	Before proceeding	• Perform a flash upgrade and a setting reset	
	Use new battery to check	• If damaged – Replace the battery.	
	If the problem still can't be resolved	• Send it to an electrical repair.	

12 Camera Problems

Problem Area	Items to Check	Repair Action	Reference Image
Camera	Visually inspect the camera lens	• If the camera lens is dirty – Clean it • If the camera lens is scratched or damaged – Replace the Battery cover	
	Visually inspect whether the camera is properly connected to its socket	• If improperly connected – Reinsert the Camera • If the socket is dirty or oxidized – Clean the socket • If Camera pads are dirty or oxidized – Clean the pads.	
	Perform a test with a new Camera	• If the old Camera is damaged – Replace the it	
	If the issue has not been resolved	• Send to an electrical repair location.	

13 Data Communication Problems

Problem Area	Items to Check	Repair Action	Reference Image
Will not connect through the system connector	Before proceeding	• Perform a flash upgrade and a setting reset	

	Visually inspect the System connector	• If dirty or oxidized
		  – Clean it
		
		• If damaged
		  – Replace it	

	Visually inspect the Antenna Assembly	• If dirty or oxidized
		  – Clean it
		
		• If damaged
		  – Replace it	

	If the issue has not been resolved	• Send to an electrical repair location.	

14 Hands-Free Problems

Problem Area	Items to Check	Repair Action	Reference Image
Will not connect with a functional Hands-Free Device	Before proceeding	• Perform a flash upgrade and a setting reset	
	Visually inspect the System connector	• If dirty or oxidized – Clean it • If damaged – Replace it	
	If the issue has not been resolved	• Handle the unit according to local directives.	

15 Software Problems

- If there are problems with the response of the keypad commands, or spelling errors in the menu, if they are not related to mechanical damage, make a master reset and flash the phone with the latest software from EMMA III.

- Checking the software revision can be done in the Service info, see chapter *Service functions in the software*.
  Choose: Service info / SW information.
  The Software revision and date will be shown in the display.

Note: Do a SW upgrade before sending the unit to a higher level. Do **not** scrap a phone that hasn't been upgraded.

If the failure still occurs, handle the unit according to the local directives.

16 Revision History

Rev.	Date	Changes / Comments
1	2008-04-18	First release