

# Equipment List, Electrical

Applicable for Z250 and Z320

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## 1 General

This document describes the minimum required equipments for the Electrical Repair Process of the Z250 and Z320 mobile phones.

## 2 Column Definitions

The matrices in the end of the equipment tables describe where the actual equipment is needed (marked with an X) or may be needed/optional (marked with a Z).

Flash upgrade:      Equipment for downloading software to the unit, both signaling and test-program.

Manual test:        Equipment necessary to perform a manual test.

Repair:              Equipment necessary for replacing components.

Go/No Go            Equipment necessary to perform RF tests.



The columns that assist in specifying and/or clarifying the equipment needed are considered description type columns.


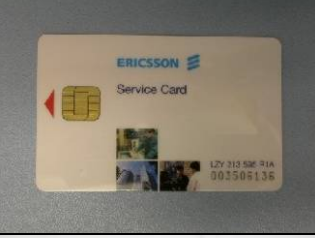

- Description      The name of the equipment.
- Part Number    The Sony Ericsson part number to use when ordering from Sony Ericsson.
- Comments       Additional information that helps to specify or clarify the equipment.


## 3 Repair Equipment

Some of the required equipment will be provided by Sony Ericsson and some equipment has to be sourced locally. This chapter will separate these equipments.

### 3.1 Sony Ericsson Provided Repair Equipment

Description	Part Number	Comments	Picture	Flash Upgrade	Manual Test	Trouble Shoot	Repair	Go/No Go test
Sony Ericsson Programming Interface (SEPI)	LTN 214 1484	The Sony Ericsson Programming Interface (SEPI) is used in conjunction with the SEPI interface cable, the USB computer cable and battery charger to perform flash upgrade on this product.		X				
Sony Ericsson Programming Interface (SEPI) cable – A1	KRY 101 1119	A battery charger needs to be connected to this cable during flash upgrade.		X				

Description	Part Number	Comments	Picture	Flash Upgrade	Manual Test	Trouble Shoot	Repair	Go/No Go test
USB Smartcard Reader and CD	LZY 213 1191	<p>This USB Smartcard Reader provides the means for reading a Service Card.</p> <p>This item is required for using the LabelMake II application and flashing offline.</p>					Z	
Service Card	LZY 213 595	<p>This item is required for using the LabelMake II application and flashing offline.</p>					Z	
Zebra Printer Ribbon	LZK 102 734/1	<p>This is the ribbon that should be used in the Zebra printer when generating labels for this product.</p>					Z	

Description	Part Number	Comments	Picture	Flash Upgrade	Manual Test	Trouble Shoot	Repair	Go/No Go test
				Z	Z			Z
Dummy Battery	NTZ 112 542	This item, also known as a “Battery Eliminator”, can be used in the place of the battery when it is used in conjunction with the power supply and the power cables.						

## 3.2 Equipment Provided by Other Suppliers

This is the list of equipments provided by other suppliers than Sony Ericsson

		Flash Upgrade	Manual Test	Trouble Shoot	Repair	Go/No Go test
Description	Comments					
Battery	Model # - BST-33 • Purchase from local vendor	X	X			X
Battery Charger - that connects to system connector	Model #: CST-60 or equivalent • Use a charger that works with your area's electrical system. • Purchase from local vendor	X	X			

		Flash Upgrade	Manual Test	Trouble Shoot	Repair	Go/No Go test
Description	Comments					
<p>RF Shield Package</p> <p><b>Rohde&amp;Schwarz RF Shield Package</b></p> <p>CMU-Z10 – Antenna Coupler (Partnr: 1150.0801.10)</p> <p>CMU-Z11 – RF Shield Cover (Partnr. 1150.1008.02)</p>	<p>Using an RF shield package is one of the options for testing the applicable product(s). Testing of the applicable product(s) can also be preformed by using the combination of an RF Probe and an RF cable.</p> <p><i>Spare parts for mobile phone fixation for R&amp;S CMU-Z10 are available for purchase from Rohde&amp;Schwarz:</i></p> <ul style="list-style-type: none"> <li>• Grid Positioning Plate – 1158.9789.00</li> <li>• L-shaped bracket – 1158.9808.00</li> <li>• Stabilizing pieces – 1158.9820.00</li> </ul> <p><b>NOTE: The Rohde &amp; Schwarz package will require the use of a precision N-type male to SMA female RF adapter to mate with the SEMC RF cable.</b></p> <p>• <b>NOTE: If you are using a different RF Shield Package than Rohde &amp; Schwartz, special attenuation factors for Go/No-Go test are required.</b></p>					Z
<p>RF adapter for RF shield box</p> <p>The adapter for a Rohde &amp; Schwarz Shield box must be a <b>precision</b> N-type male to SMA female adapter.</p>	<p>This adapter is used to connect the RF shield box to the RF cable and is only required if a shield package is going to be used for testing.</p> <p>Recommended source: Pasternack Enterprises . (949) 261-1920 or <a href="http://www.pasternack.com">www.pasternack.com</a> Part number: PE9430</p>					Z

		Flash Upgrade	Manual Test	Trouble Shoot	Repair	Go/No Go test
Description	Comments					
Computer	<p>One of the following operating systems must be used:</p> <ul style="list-style-type: none"> <li>Windows 2000 with service pack 2 or higher</li> <li>Windows XP</li> </ul> <p>Minimum Requirements:</p> <ul style="list-style-type: none"> <li>One unused PCI slot for GPIB card</li> <li>3 USB Ports</li> </ul> <p>The processor and RAM of the computer should at least meet the the minimum requirements specified by the operating system's manufacturer.</p>	X				Z
A Test SIM (GSM)	<p>A Test SIM (GSM) is needed to perform RF tests (Go/No-Go tests) with a test instrument.</p> <ul style="list-style-type: none"> <li>Use a Test SIM according to the Instrument supplier</li> </ul>					X
Hands-Free Cable - that connects to system connector	<p>Model #: HPM-70 or equivalent</p> <ul style="list-style-type: none"> <li><b>Purchase from local vendor</b></li> </ul>		X			








		Flash Upgrade	Manual Test	Trouble Shoot	Repair	Go/No Go test
Description	Comments					
Zebra Printer (Must be 300 dpi)	<p><b>Current Model Options:</b>  <b>110XIIIPlus</b> or <b>Z4MPlus</b>            These models use a DB9 Male-DB9 Female Null Modem Cable to connect to the computer (POS 42).</p> <p><b>Discontinued Model Options:</b>  <b>NOTE - The following models may also be used, but Zebra has discontinued selling them.</b></p> <ul style="list-style-type: none"> <li>• 90xi Series</li> <li>• Z4M</li> <li>• Z4000 deluxe</li> </ul> <p>These models use a DB25 Male-DB9 Female Null Modem Cable to connect to the computer (POS 42).</p>				Z	
Printer Cable	<p>This cable connects the Zebra printer to the computer. Two companies that carry this type of cable are CDW (<a href="http://www.cdw.com">www.cdw.com</a>) and QVS (<a href="http://www.qvs.com">www.qvs.com</a>).</p> <p>Part numbers for the <b>DB9 Male-DB9 Female version:</b>  <b>CDW - 361875</b> (6 Feet Long)</p> <p>Part numbers for the <b>DB25 Male-DB9 Female version:</b>  <b>CDW – 375939</b> (6 Feet Long)  <b>QVS – CC314-06</b> (6 Feet Long)  <b>QVS – CC314-10</b> (10 Feet Long)</p>				Z	



		Flash Upgrade	Manual Test	Trouble Shoot	Repair	Go/No Go test
Description	Comments					
Power Supply	<b>NOTE: Only necessary if using a dummy battery</b> Requirements: <ul style="list-style-type: none"> <li>• The output voltage should, at minimum, be variable from 0 to 5 volts</li> <li>• The output current should, at minimum, be adjustable from 0 to 2 amps</li> <li>• Optional, but recommended - A digital display capable of showing the current value</li> </ul>	Z	Z			
Power cables – one red and one black	<b>NOTE: Only necessary if using a battery eliminator.</b> Cable Requirements: <ul style="list-style-type: none"> <li>• Minimum cross sectional area of conductor = 1.2mm<sup>2</sup></li> <li>• Maximum length = 1.5 m</li> <li>• One end of cable must have a male banana-type connector to be able to interface with the battery eliminator.</li> <li>• The other end of the cable needs whatever connection is necessary to connect to the power supply that you have.</li> </ul>	Z	Z			
FLUX	Lead-free solder does not require a special flux. The “No Clean” flux used with leaded products is acceptable. Although some manufacturers are developing fluxes specially made for use with lead-free solder (higher evaporation temperatures, less smoke, etc.), these are not required.				X	
Low Static Heat Protection Tape	This tape is required to protect adjacent components from hot air.				X	
Digital Multi-meter	Used for troubleshooting failures.			Z		
Microscope	Minimum magnification required is 10x.				X	

### 3.3 Lead-free Solder Equipment

The items in this table, and any other soldering tools or material that make physical contact with the solder, must remain lead-free. They must be adequately labelled to make their lead-free status clearly and easily recognized.

				Test	Repair
Pos	Description	Comments	Picture		
	Lead-free Solder  Note: The solder must be composed of Tin, Silver, and Copper, and nothing else. The exact composition ratio may vary, but it must be Tin, Silver, and Copper only. This composition may also be known as SnAgCu or SAC.	Manufacturers of LF Solder: - Tamura ( <a href="http://www.tamura-kaken.co.jp">www.tamura-kaken.co.jp</a> ) Part # TLF-206-93F - Multicore ( <a href="http://www.multicore.com">www.multicore.com</a> ) Part # 96SC - Senju ( <a href="http://www.senju-m.co.jp">www.senju-m.co.jp</a> ) Part # M705			X
	Lead-free Soldering paste	To be used when replacing the RF module.			X
	Lead-free labels (sheet of 24)  SEMC Part # SVF9301379 (These labels are available from the Sony Ericsson Parts and Tools Warehouse.)	Required for labeling all soldering tools and materials that contact the solder.			X

				Test	Repair
Pos	Description	Comments	Picture		
	Soldering Tips				X
	Soldering Iron If one work bench is divided to accommodate both leaded and lead-free solder, then each side of the bench should have its own iron.	<ul style="list-style-type: none"> <li>The device should allow variable temperature adjustment and be capable of reaching an upper temperature of 426.7oC (800oF) or more.</li> </ul>			X
	Hot Air Flow Repair Station, Medium	Temperature range 360-380° C. Air-flow up to 9 l/min			X
	Wicking Tape				X

				Test	Repair
Pos	Description	Comments	Picture		
	Tip Tinner				Z
	Tip Cleaner (steel wool)				Z
	Brush	This device must be electrostatic-dissipative			X

				Test	Repair
Pos	Description	Comments	Picture		
	Isopropyl Alcohol – 99% concentration by volume	<p>Only isopropyl alcohol that is 99% concentration by volume should be used.</p> <ul style="list-style-type: none"> <li>Other names used for this material include rubbing alcohol, IPA, 2-Propanol, and Isopropanol. Products named using any of the names mentioned are acceptable as long as they meet the 99% concentration by volume requirement.</li> <li>There is no specific supplier that this material needs to be obtained from, but a list of web sites that sell products that meet the 99% by volume requirement are provided below for convenience. <ul style="list-style-type: none"> <li>* <a href="http://www.inj-industries.com">http://www.inj-industries.com</a></li> <li>* <a href="http://www.first-aid-product.com/industrial/isopropyl-alcohol.htm">http://www.first-aid-product.com/industrial/isopropyl-alcohol.htm</a></li> <li>* <a href="http://www.sigmaaldrich.com/">http://www.sigmaaldrich.com/</a></li> </ul> </li> </ul>			X

## 4 Revision History

Rev.	Date	Changes / Comments
A	2007-10-09	1 <sup>st</sup> release