

# Equipment List, Electrical

Applicable for P990i

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# 1 General

This document describes the minimum required equipments for the Electrical Repair Process of the P990i mobile phone. Equipment listed without a part number is not orderable from Sony Ericsson and must be bought locally.

The matrix 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 signalling and test-program.
Manual test:	Equipment necessary to perform a manual test.
Repair:	Equipment necessary for replacing components.
Go/No Go test:	Equipment necessary for Go/No Go test.
Calibration with SERP:	Equipment necessary to perform a calibration with SERP. Calibration can only be done by authorized repair centers.

## 2 Repair Equipment, Electrical

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.



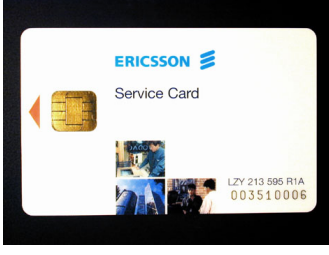

### 2.1 Sony Ericsson Provided Repair Equipment

Description	Part Number	Comments	Flash Upgrade	Go/No Go Test	Manual Test	Calibration in SERP	Repair
USB Service Card Reader	LZY 213 1191	Software Package/CD+USB Reader	X				
Service Card	LZY 213 595		X				
SonyEricsson programming interface - SEPI	LTN 214 1484	USB/Interface Box+CD	X			X	
DCU-60/USB Cable	KRY 101 1413	Interface cable between PC and phone for SW loading.	X				
SonyEricsson programming interface cable - SEPI	KRY 101 1119/1	SEPI-A1 Cabel (yellow label)				X	
Torque Screwdriver *	NTZ 112 459	Torque set to 9, 14, 17 and 20 Ncm +/- 6 %					X
Front opening tool	NTZ 112 302/2	Opening tool					X
Flex film assembly tool	NTZ 112 521	Tweezers					X
Shield Fence Plier	NTZ 112 537	For use when repair under shield fence is necessary					X
Lead-free labels (sheet of 24)	SVF 930 1379	These lead-free labels must be applied to all materials and tools that contact the solder.					X
Battery Eliminator	NTZ 112 533	Dummy battery	Z			X	
Rework fixture	LTD 260 273	For PBA (Printed Board Assembly)					X
Holder RF Connector	NTZ 112 561	Used together with antenna connector and RF cable.		Z		X	

			Flash Upgrade	Go/No Go Test	Manual Test	Calibration in SERP	Repair
Description	Part Number	Comments					
Antenna Connector	RNT 403 303/001			Z		X	
RF Test Cable Flexible 1M	RPM 119 855	This is the only approved RF cable!		Z		X	

## 2.2 Picture of equipments orderable from Sony Ericsson

Pictures of tools that is orderable from Sony Ericsson.

			
LTN 214 1484	LZY 213 1191	LZY 213 595	KRY 101 1119/1

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NTZ 112 302/2	RNT 403 303/001	NTZ 112 459	SVF 930 1379


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NTZ 112 561	NTZ 112 521	NTZ 112 533	LTD 260 273
			
KRY 101 1413	NTZ 112 537	RPM 119 855	

## 2.3 Equipment Provided by Other Supplier

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

		Flash Upgrade	Go/No Go Test	Manual Test	Calibration in SERP	Repair
Description	Comments					
Battery	BKB 193 208/1	X	X	X		
- Battery Charger	Standard SonyEricsson charger <i>Note! New systemconnector on the phone!</i>			X		
Computer	Minimum Pentium III 500 Mhz 128 Mb RAM or better. At least 2 USB ports	X	Z		X	
USB-PC Cable	Type A-B Plug-Plug Cable	X			X	
Tweezers	ESD-safe					X
Dentist hook	To be used when removing adhesives.					X
Bits	Spare part to screwdriver					X
Isopropyl Alcohol	To be used when removing glue.					X
Cotton Gloves	ESD-safe					X
Zebra Printer	90xi, 90xi II or 4000 deluxe					Z
Printer Cable	Standard RS 232 serial printer cable [referred to Zebra printer manual]					Z
Hot Air Flow Repair Station, Medium.	To be used when removing phone label (if needed) Temperature range 360-380° C. Air-flow up to 9 l/min					X
Soldering Iron	Temperature range 340-370° C.					X
Soldering Iron Tip Lead free	Temperature range 340-370° C.					X

		Flash Upgrade	Go/No Go Test	Manual Test	Calibration in SERP	Repair
Description	Comments					
Flux	RMA, No-clean flux					X
Solder-wire	Lead free : SN 96%, Ag 3,5% and Cu 0,5%					X
Solder-paste	Lead free : SN 96%, Ag 3,5% and Cu 0,5%					X
Microscope	Minimum 10x magnification					X
VC230 Yokogawa Or other Radio test instrument according to 11/031 62-2/FEA 209 544/702	Go/No Go test instrument		X			
- RF Shield Package Rohde&Schwarz	CMU Z11		X			
Test SIM-card	According to your Instrument supplier. <b>Must support WCDMA.</b>		X			
Operator SIM-card	To be used when making a landline call.			X		
IR-device	To be used to make connection between the phone and the device			X		
Bluetooth-device	To be used to make connection between the phone and the device			X		
Wireless Router	<p>Needed to test the WLAN function of the P990 Smartphone if an active WLAN system is not available.</p>  <p>Example of equipment: NETGEAR model: WGR614 D-Link model: DI-624</p>			X		
Hands free equipment	To be used to verify connection in the system connector. Applicable for P990i. <b>Note! New System connector on the phone</b>			X		



Description	Comments	Flash Upgrade	Go/No Go Test	Manual Test	Calibration in SERP	Repair
GSM/WCDMA Radio Tester for calibration with SERP according to Instrument List 1/131 30-2/FEA 209 544	Only instruments documented in the Instrument list are supported.				X	
GPIB Card – National GPIB Card – Keithley	Either National or Keithley can be used.				X	
GPIB Cable					X	
Power supply <b>NOTE!</b> If using the Power Supply in conjunction with the (Dummy Battery) to power the phone during the GNG test or Calibration routine a high quality DC source that meets the following requirements <u>must</u> be used.	<b>NOTE: Only necessary if using the Battery Eliminator.</b>  Output Voltage: 0-5 volt minimum. Output Current: 0-2 amps minimum Transient response time: < 100 µs	Z	Z		X	
Power cables Red & Black	Minimum cross sectional area of conductor: 1.2 mm <sup>2</sup> Maximum length: 1.5 m	Z	Z		X	

		Flash Upgrade	Go/No Go Test	Manual Test	Calibration in SERP	Repair
Description	Comments					
Component baking oven	<p>Temperature requirements: 125°C +5°C/-0°C</p> <p>Required for drying moisture sensitive components.</p> <p>Below are links to several companies that sell convection ovens.</p> <p><a href="http://www.cascadetek.com/forcedlist.php">http://www.cascadetek.com/forcedlist.php</a></p> <p><a href="http://www.wisoven.com/lab1.htm">http://www.wisoven.com/lab1.htm</a></p> <p><a href="http://www.shellab.com/products.html">http://www.shellab.com/products.html</a></p> <p><a href="http://www.terrauniversal.com/products/ovens/imperiaivmechcon.php">http://www.terrauniversal.com/products/ovens/imperiaivmechcon.php</a></p> <p><a href="http://www.labsynergy.com/products_laboratoryovens.asp?keyword=*laboratoryovens">http://www.labsynergy.com/products_laboratoryovens.asp?keyword=*laboratoryovens</a></p>					X

## 2.4 Pictures of equipments provided by other supplier

Pictures of tools that is orderable from other supplier.



Type A-B Plug-Plug Cable



### 3 Revision History

Rev.	Date	Changes / Comments
A	2006-07-20	Initial release
B	2007-02-14	Updated SEPI cable number