

# Equipment List, Electrical

Applicable for MD300

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## 1 General

This document describes the equipment needed to repair the product at an Electrical Repair Level. The first section is equipment that can be purchased from a Sony Ericsson Parts and Tools warehouse. The second section is equipment that must be purchased from other vendors.

## 2 Column Definitions

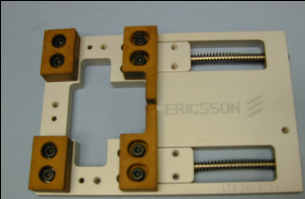
### Description Columns

- Description = The name of the equipment.
- Part Number = The Sony Ericsson part number to use when ordering from a Sony Ericsson Parts and Tools warehouse.
- Comments = Additional information that helps to specify or clarify the equipment.
- Picture

### 3 Repair Equipment

Some of the required equipment will be orderable from Sony Ericsson and some equipment has to be sourced locally. The following sections are structured based on whether equipment is obtained from Sony Ericsson or from a local supplier.


#### 3.1 Repair Equipment orderable from Sony Ericsson

Description	Part Number	Comments	Picture
Rework Fixture for PCB	LTD 260 273	Used to hold the PCB during repair.	

#### 3.2 Repair Equipment that should be obtained from local Suppliers




Description	Comments
Small Convection (Hot Air) Device	<p>Device Requirements:</p> <ul style="list-style-type: none"> <li>The device should allow variable adjustment over a temperature range.</li> <li>The device should be capable of reaching an upper temperature of 426.7°C (800°F) or more.</li> </ul> <p>The range of airflow the device is capable of generating should fall under 20 litre/minute.</p>
Large Convection (Hot Air) Device	<p>Use this device for large parts, shield cans, and BGA-type components.</p> <p>The device should allow variable temperature adjustment and be capable of reaching an upper temperature of 426.7°C (800°F) or more.</p> <p>The range of airflow the device is capable of generating should be above 20 litre/minute.</p>





<b>Description</b>	<b>Comments</b>
Nozzles for Large Convection (Hot Air) Device	NOTE: Only necessary if you have a large convection device.
Temperature Probes (Thermocouples)	Used to measure temperatures on the board when replacing parts with the Large Convection Device or creating temperature profiles.
Digital Multi-meter	Used for troubleshooting failures.
Microscope	Minimum magnification required is 10x.
Component baking oven	<p>Temperature requirements: 125°C +5°C/-0°C Required for drying moisture sensitive components.</p> <p>Below are links to several companies that sell convection ovens.  <a href="http://www.cascadetek.com/forcedlist.php">http://www.cascadetek.com/forcedlist.php</a>  <a href="http://www.wisoven.com/lab1.htm">http://www.wisoven.com/lab1.htm</a>  <a href="http://www.shellab.com/products.html">http://www.shellab.com/products.html</a>  <a href="http://www.terrauniversal.com/products/tempcontrol/ovens/imperiaivmechcon.php">http://www.terrauniversal.com/products/tempcontrol/ovens/imperiaivmechcon.php</a>  <a href="http://www.labsynergy.com/products_laboratoryovens.asp?keyword=*laboratoryovens">http://www.labsynergy.com/products_laboratoryovens.asp?keyword=*laboratoryovens</a> </p>
FLUX	<p>Lead-free solder does not require a special flux. The "No Clean" flux used with leaded products is acceptable.</p> <p>Although some manufacturers are developing fluxes specially made for use with lead-free solder (higher evaporation temperatures, less smoke, etc.), these are not required.</p>
Low Static Heat Protection Tape	This tape is required to protect adjacent components from hot air.

Description	Comments
Metal Cutters	<p>Use these to trim shield can fences when they obstruct access to parts.  Cutters should be small enough to cut fences without damaging parts on the board.  Cutters should be sharp enough to cut fences without twisting or pulling the fence.  Recommended cutters available at <a href="http://www.MSCDirect.com">www.MSCDirect.com</a>:  Knipex (left) - <b>Mfr Part #:</b> KN7803-5, <b>MSC #:</b> 32997462  Xuron (right) - <b>Mfr Part #:</b> 2175AS, <b>MSC #:</b> 88356431</p> 

### 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.

Description	Comments	Picture
<p>Lead-free Solder</p> <p>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.</p>	<p>Manufacturers of LF Solder:</p> <ul style="list-style-type: none"> <li>- Tamura (<a href="http://www.tamura-kaken.co.jp">www.tamura-kaken.co.jp</a>) Part # TLF-206-93F</li> <li>- Multicore (<a href="http://www.multicore.com">www.multicore.com</a>) Part # 96SC</li> <li>Senju (<a href="http://www.senju-m.co.jp">www.senju-m.co.jp</a>) Part # M705</li> </ul>	
<p>Lead-free labels (sheet of 24)</p> <p>SEMC Part # SVF9301379 (These labels are available from the Sony Ericsson Parts and Tools Warehouse.)</p>	<p>Required for labeling all soldering tools and materials that contact the solder.</p>	
<p>Soldering Tips</p>		

Description	Comments	Picture
<p>Soldering Iron</p> <p>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.</p>	<p>The device should allow variable temperature adjustment and be capable of reaching an upper temperature of 426.7oC (800oF) or more.</p>	
<p>Wicking Tape</p>		
<p>Tip Tinner</p>		
<p>Tip Cleaner (steel wool)</p>		

## 4 Revision History

Rev.	Date	Changes / Comments
1	2008-Mar-12	Initial release