Editing a Watermark

1. When you change the print settings from your software application, access the printer properties. See page 4.2.

2. Click the **Extras** tab, and click the **Edit** button in the **Watermark** section. The Watermarks window appears.

3. Select the watermark you want to edit in the Current Watermarks list, and change the watermark message and the options. Refer to "Creating a Watermark" on page 4.20.

4. Click **Update** to save the changes.

5. Click **OK**.

Deleting a Watermark

1. When you change the print settings from your software application, access the printer properties. See page 4.2.

2. From the **Extras** tab, click the **Edit** button in the Watermark section.

3. Select the watermark you want to delete in the **Current Watermarks** list, and click **Delete**.

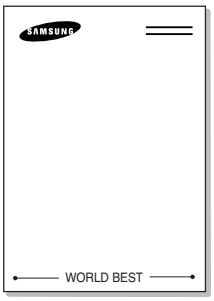
4. Click **OK**.

Printing Overlays

What is an Overlay?

An overlay is text and/or images stored in the computer hard disk drive(HDD) as a special file format that can be printed on any document. Overlays are often used to take the place of preprinted forms and letterhead paper. Rather than using preprinted letterhead, you can create an overlay containing the exact same information that is currently on your letterhead. To print a letter with your company's letterhead, you do not need to load preprinted letterhead paper in the printer. You need only tell the printer to print the letterhead overlay on your document.

Creating a New Page Overlay

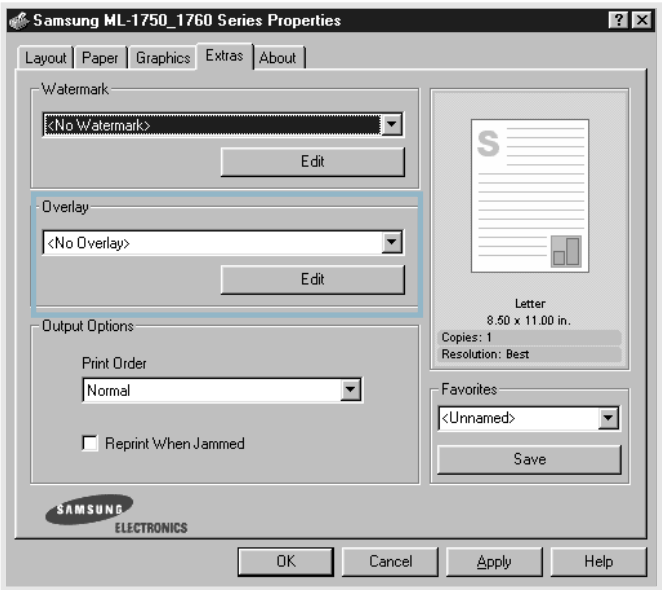


To use a page overlay, you must create a new page overlay containing your logo or image.

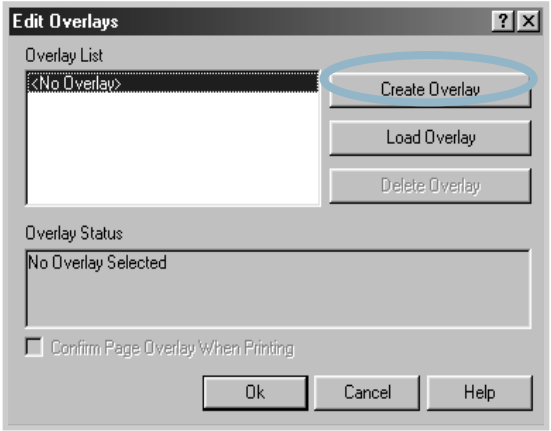
1. Create or open a document containing text or an image for use in a new page overlay. Position the items exactly as you wish them to appear when printed as an overlay. If needed, save the file for later use.

2. When you change the print settings from your software application, access the printer properties. See page 4.2.

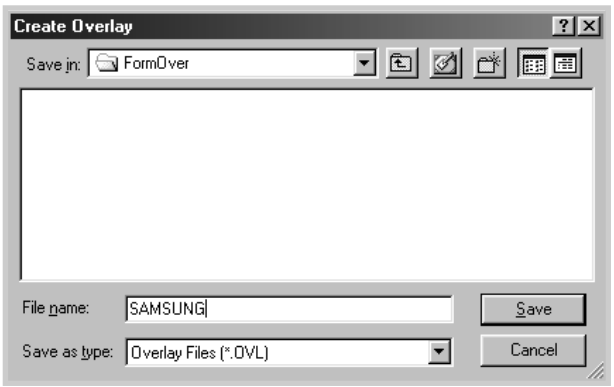
3. Click the **Extras** tab, and click **Edit** button in the **Overlay** section.



4 In the Overlays window, click **Create Overlay**.



5 In the Create Overlay window, type a name of up to eight characters in the **File name** box. Select the destination path, if necessary. (The default is C:\Formover).



6 Click **Save**. You will see the name in the **Overlay List**.

7 Click **OK** or **Yes** until you complete creating.

The file is not printed out. Instead it will be stored on your computer HDD disk.

Note: The overlay document size must be the same as documents you will print with the overlay. Do not create an overlay with a watermark.

Using a Page Overlay

After an overlay has been created, it is ready to be printed with your document. To print an overlay with a document:

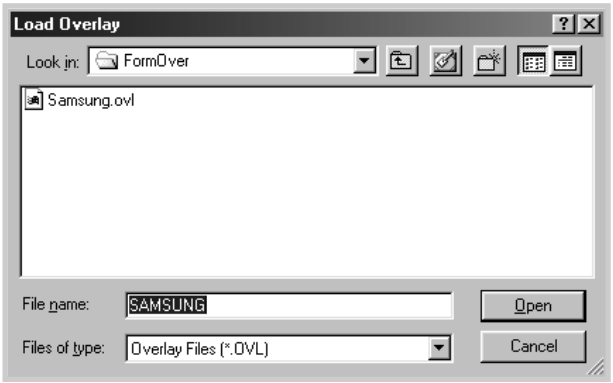
1. Create or open the document you want to print.

2. When you change the print settings from your software application, access the printer properties. See page 4.2.

3. Click the **Extras** tab.

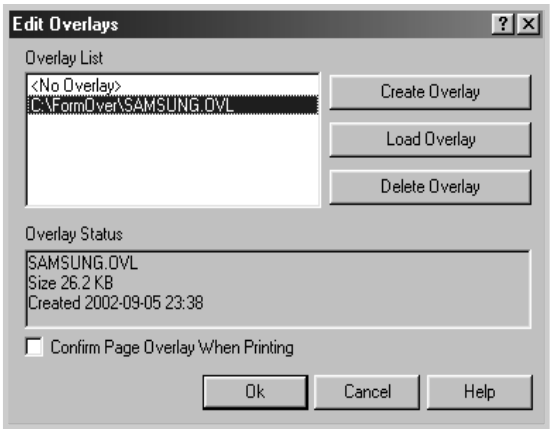
4. Select the desired overlay from the **Overlay** drop-down list box.

5. If the desired overlay file does not appear in the **Overlay** list, click **Edit** button and **Load Overlay**, and select the overlay file.



If you have stored the overlay file you want to use into an external source, you can also load the file when you access the Load Overlay window.

After you select the file, click **Open**. The file is now shown in the **Overlay List** box and is available for printing. Select the overlay from the **Overlay List** box.



6 If necessary, click **Query Page Overlay**. If this box is checked, a message window will appear each time you submit a document for printing, asking you to confirm your wish to print an overlay on your document.

Answering **Yes** to the window means that the selected overlay will be printed with your document. Answering **No** to the window cancels overlay printing.

If this box is empty and an overlay has been selected, the overlay will be automatically printed with your document.

7 Click **OK** or **Yes** until the printing starts.

The selected overlay will be downloaded with your print job and printed on your document.

Note: The resolution of the overlay document must be the same as that of the document you will print with the overlay.

Deleting a Page Overlay

You can delete page overlays that are no longer used.

1 In the printer properties window, click the **Extras** tab.

2 Click **Edit** in the **Overlay** section.

3 Select the overlay you want to delete from the **Overlay List** box.

4 Click **Delete Overlay**.

5 Click **OK** until you exit the Print window.

Using the Status Monitor

If you installed the Status Monitor software, you can check the current status of the printer whenever you want. If an error occurs in your printer, the Status Monitor window appears, showing the error.

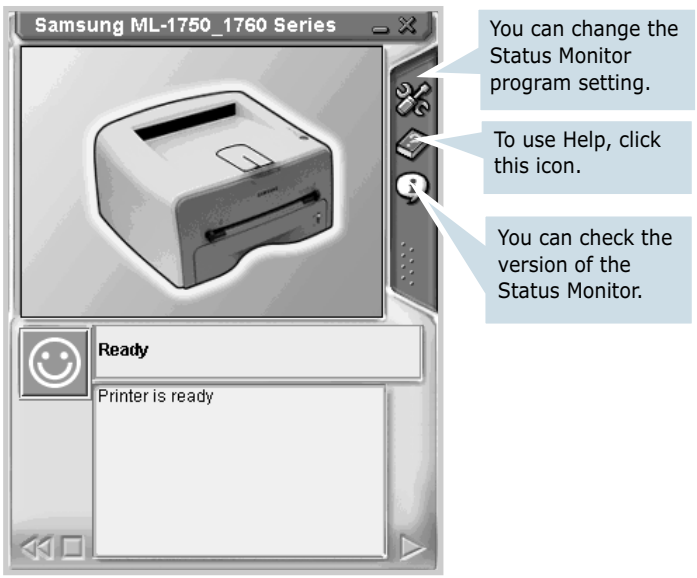
Note: The Status Monitor program can be used only if you connect the printer to your computer with the USB cable.

Opening the Status Monitor

1 Double click the Status monitor icon on the Windows task bar.

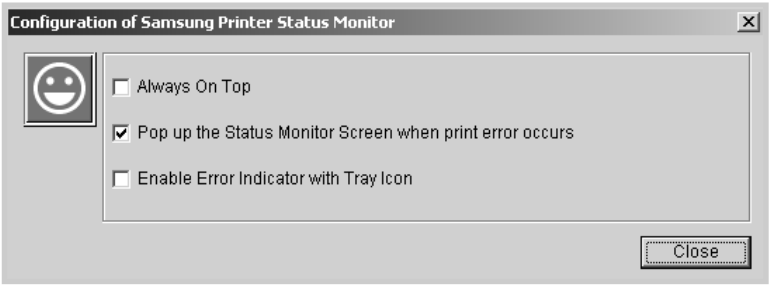
Or, select **Programs** from **Start**, **Samsung ML-2150 Series**, and **Samsung Printer Status Monitor**.

2 The Samsung ML-2150 Series Status monitor window appears.



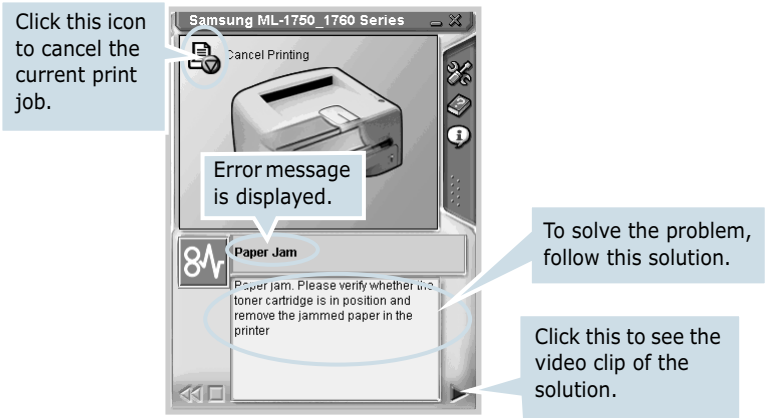
Changing the Status Monitor Program Setting

From the Status Monitor window if you click the configuration icon , you can see the following window.



- **Always On Top** always shows the Status monitor window on the top of the window regardless opening other programs.
- **Pop up the Status Monitor Screen when print error occurs** shows the Status monitor window when an error occurs in the printer.
- **Enable Error Indicator with Tray icon** shows the blinking tray icon which indicates an error occurs in your printer.

Note: When the Status monitor window appears to indicate an error, you can see the corresponding solution.



Setting Up Locally Shared Printer

You can connect the printer directly to a selected computer, which is called "host computer", on the network. The printer can be shared by other users on the network through a Windows 9x, Me, 2000, XP or NT 4.0 network printer connection.

Windows 9x/Me

Setting Up Host Computer

1. Start Windows.
2. From the **Start** menu, select **Control Panel**, and double-click on the **Network** icon.
3. Check the **File and Print Sharing** box, and click **OK**.
4. Click **Start** and select **Printers** from **Settings**, and double-click your printer name.
5. Select **Properties** in the **Printer** menu.
6. Click the **Sharing** tab, and check the **Shared As** box. Fill in the **Shared Name** field, and then click **OK**.

Setting Up Client PC

1. Right-click **Start**, and select **Explorer**.
2. Open your network folder in the left column.
3. Right-click the shared name, and select **Capture Printer Port**.
4. Select the port you want, check the **Reconnect at log on** box, and then click **OK**.
5. From the **Start** menu, select **Settings** and **Printers**.
6. Double-click your printer icon.
7. From the **Printer** menu, select **Properties**.
8. Press the **Details** tab, select the printer port, and click **OK**.

Windows NT/2000/XP

Setting Up Host Computer

1. Start Windows.

2. From the **Start** menu, select **Settings** and **Printers**. (Windows NT/2000)
   From the **Start** menu, select **Printers and Faxes**. (Windows XP)

3. Double-click your printer icon.

4. From the **Printer** menu, select **Sharing**.

5. Check the **Shared** box. (Windows NT)
   Check the **Shared As** box. (Windows 2000)
   Check the **Share this printer** box. (Windows XP)

   Fill in the **Share Name** field, and than click **OK**. (Windows NT)
   Fill in the **Shared Name** field, and then click **OK**. (Windows 2000/XP)

Setting Up Client PC

1. Right-click **Start**, and select **Explorer**.

2. Open your network folder in the left column.

3. Click the shared name.

4. From the **Start** menu, select **Settings** and **Printers**. (Windows NT/2000)
   From the **Start** menu, select **Printers and Faxes**. (Windows XP)

5. Double-click your printer icon.

6. From the **Printer** menu, select **Properties**.

7. Press the **Ports** tab, and click **Add Port**.

8. Select **Local Port**, and click **New Port**.

9 Fill in the **Enter a port name** field, and enter the shared name.

10 Click **OK**, and click **Close**.

11 Click **OK**. (Windows NT)
Click **Apply**, and click **OK**. (Windows 2000/XP)

5 Maintaining Your Printer

This chapter provides suggestions for maintaining the toner cartridge and the printer.

This chapter includes:

- **Maintaining the Toner Cartridge**
- **Cleaning the Printer**
- **Consumables and Replacement Parts**

Maintaining the Toner Cartridge

Toner cartridge storage

To get the maximum results from the toner cartridge, keep the following guidelines in mind.

- Do not remove the toner cartridge from its package until ready for use.
- Do not refill the toner cartridge. **The printer warranty does not cover damage caused by using a refilled cartridge.**
- Store toner cartridges in the same environment as the printer.
- To prevent damage to the toner cartridge, do not expose it to light for more than a few minute.

Toner cartridge life expectancy

The life of the toner cartridge depends on the amount of toner that print jobs require. When printing text at 5% coverage, a new toner cartridge lasts an average of 3,000 pages. (The original toner cartridge supplied with the printer lasts an average of 1,000 pages.)

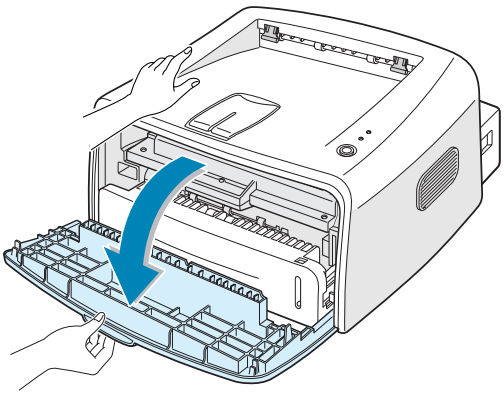
Saving toner

To save toner, press the **Cancel** button on the printer control panel. The button will be lit. You can also enable the Toner Save in the printer properties. Refer to "Using the Toner Save Mode" on page 4.8. Selecting this option will extend the life of the toner cartridge and reduce your cost per page, but will reduce the print quality.

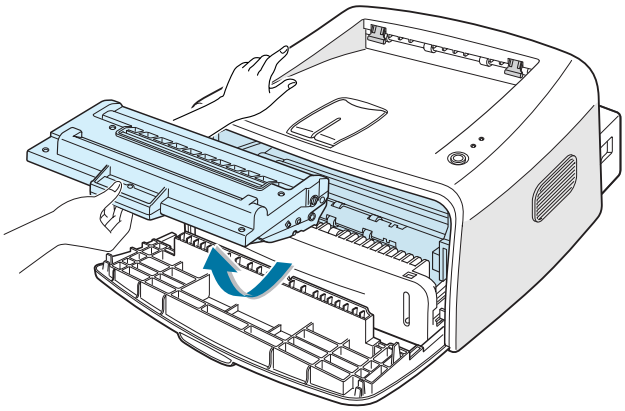
Redistributing Toner

When toner is low, faded or light areas may appear on a printed page. You may be able to temporarily improve the print quality by redistributing the toner. The following procedures may allow you to finish the current print job before replacing the toner cartridge.

1 Grasp the front cover and pull it toward you to open.



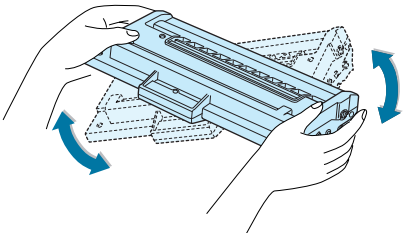
2 Remove the toner cartridge from the printer.



Caution:

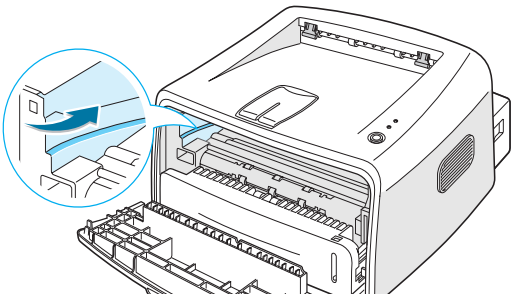
- Avoid reaching too far into the printer. The fusing area may be hot.
- To prevent damage to the toner cartridge, do not expose it to light for more than a few minutes.

3 Gently shake the toner cartridge from side to side five or six times to redistribute the toner.

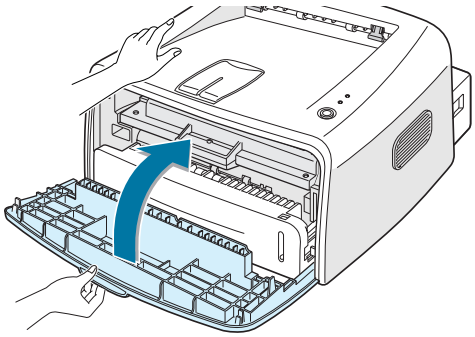


Note: If the toner gets on your clothing, wipe it off with a dry cloth and wash clothing in cold water. Hot water sets toner into fabric.

4 Reinsert the toner cartridge into the printer. Ensure that the toner cartridge snaps into place.



5 Close the front cover. Make sure that the cover is securely closed.



Replacing the Toner Cartridge

If the print remains light after redistributing toner (see page 5.3), replace the toner cartridge.

Remove the old cartridge and install a new toner cartridge. See “Installing the Toner Cartridge” on page 2.4.

Cleaning the Printer

To maintain the print quality, follow the cleaning procedures below each time the toner cartridge is replaced or if print quality problems occur.

Notes:

- Do not use ammonia-based cleaners or volatile solvents, such as thinner, on or around the printer. These can damage the printer.
- While cleaning the inside of the printer, be careful not to touch the transfer roller (located underneath the toner cartridge). Oil from your fingers can cause print quality problems.

Cleaning the Outside

Wipe the outside surface of the printer with a soft, clean, lint-free cloth. You can dampen the cloth slightly with water, but be careful not to be let any water drip onto the printer or inside of it.

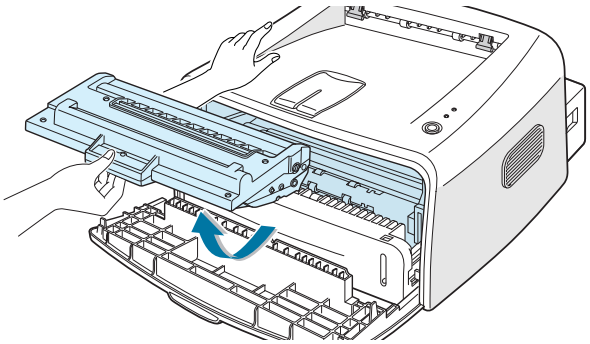
Cleaning the Inside

During the printing process, paper, toner, and dust particles can accumulate inside the printer. This buildup can cause print quality problems, such as toner specs or smearing. Cleaning the inside of the printer will eliminate or reduce these problems.

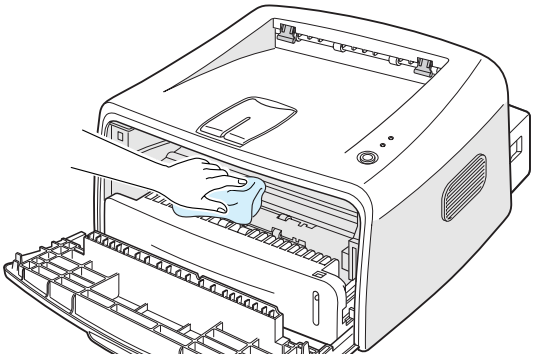
Cleaning inside the printer

1. Turn the printer off and unplug the power cord, then wait for the printer to cool.

2. Open the front cover and remove the toner cartridge.

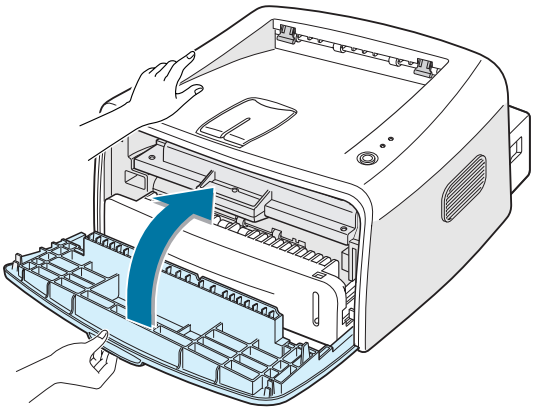


3 With a dry, lint-free cloth, wipe away any dust and spilled toner from the toner cartridge area and the toner cartridge cavity.



Note: To prevent damage to the toner cartridge, do not expose it to light for more than a few minute. Cover it with a piece of paper, if necessary. Also, do not touch the black transfer roller inside the printer.

4 Reinsert the toner cartridge and close the cover.



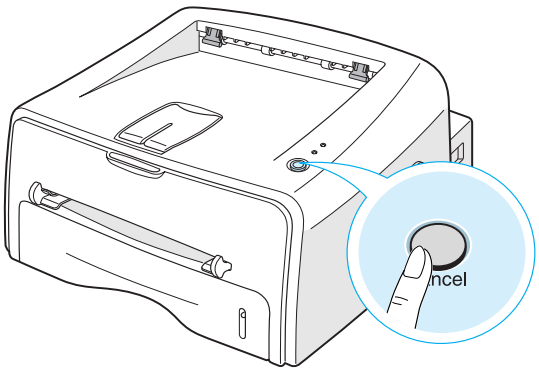
5 Plug in the power cord, and turn the printer on.

Printing a cleaning sheet

If you are experiencing blurred, faded or smeared printouts. Printing a cleaning sheet cleans the drum inside the toner cartridge. This process will produce a page with toner debris, which should be discarded.

1 Ensure that the printer is turned on and in the Ready mode with paper loaded in the tray.

2 Press and hold down the **Cancel** button on the control panel for about 10 seconds.



3 Your printer automatically picks up a sheet of paper from the tray and prints out a cleaning sheet with dust or toner particles on it.

Note: The cartridge cleaning process takes some time. To stop printing, turn the power off.

Consumables and Replacement Parts

From time to time, you will need to replace the roller and fuser unit to maintain top performance and avoid print quality problems and paper feed problems resulting from worn parts.

The following items should be replaced after you have printed a specified number of pages. See the table below.

Items	Yield (Average)
Paper Feeding Roller	60,000
Transfer Roller	60,000
Pick-up roller	60,000
Fuser Unit	60,000

The purchase the consumables and replacement parts, contact Samsung dealer or the place where you bought your product. We strongly recommend that items be installed by a trained service.

6 Solving Problems

This chapter provides helpful information for what to do if you encounter an error while using your printer.

This chapter includes:

- **Troubleshooting Checklist**
- **Solving General Printing Problems**
- **Clearing Paper Jams**
- **Solving Print Quality Problems**
- **Troubleshooting Error Messages**
- **Common Windows Problems**
- **Common Macintosh Problems**
- **Common Linux Problems**
- **Common DOS problem**

Troubleshooting Checklist

If the printer is not working properly, consult the following checklist. If the printer does not pass a step, follow the corresponding troubleshooting suggestions.

Check	Solution
Check the power cord and the power switch.	Check the power source by plugging into another outlet.
Make sure that the **On Line/Error** LED is on.	In the Ready mode, the **On Line/Error** LED lights green. If the **On Line/Error** LED lights red or blinks, go to "Troubleshooting Error Messages" on page 6.17.
Press and hold the **Cancel** button to print a demo page.	• If a demo page does not print, check the paper supply in the input tray. • If the paper jams in the printer, go to "Clearing Paper Jams" on page 6.7.
Check the demo page to see if it is printed correctly.	If there is a print quality problem, go to "Solving Print Quality Problems" on page 6.11.
Print a short document from a software application to verify that the computer and printer are connected and are communicating correctly.	• If the page does not print, check the cable connection between the printer and the computer. • Check the print queue or print spooler to see if the printer has been paused. • Check the software application to insure you are using the proper printer driver and communication port. If the page is interrupted during printing, go to "Solving General Printing Problems" on page 6.3.
If completing the checklist does not resolve the printer problem, check the following troubleshooting sections.	• "Solving General Printing Problems" on page 6.3. • "Troubleshooting Error Messages" on page 6.17. • "Common Windows Problems" on page 6.18. • "Common Macintosh Problems" on page 6.19. • "Common Linux Problems" on page 6.20. • "Common DOS problem" on page 6.22.

Solving General Printing Problems

For problems with the operation of your printer, refer to the table for suggested solutions.

Problem	Possible Cause	Solution
The Printer does not print	The printer is not receiving power.	Check the power cord connections. Check the power switch and the power source.
	The printer is not selected as the default printer.	Select **Samsung ML-2150 Series** in the Printer folder in Windows as your default printer.
	Check the printer for the following:	• The printer cover is not closed. • Paper is jammed. • No paper is loaded. • The toner cartridge is not installed. If a printer system error occurs, contact your service representative.
	The printer may be in Manual Feed mode.	Add paper to the manual feeder and press the **Cancel** button on the printer's control panel to begin printing.
	The connection cable between the computer and the printer is not connected properly.	Disconnect the printer cable and reconnect it.
	The connection cable between the computer and the printer is defective.	If possible, attach the cable to another computer that is working properly and print a job. You can also try using a different printer cable.
	The port setting is incorrect.	Check the Windows printer setting to make sure that the print job is sent to the correct port (for example, LTP1). If the computer has more than one port, make sure that the printer is attached to the correct one.
	The printer may be configured incorrectly.	Check the printer properties to ensure that all print settings are correct.

Problem	Possible Cause	Solution
The printer does not print. (continued)	The printer driver may be incorrectly installed.	Reinstall the printer driver; see page 2.12. Try printing a demo page.
	The printer is malfunctioning.	Check the LEDs on the control panel to determine if the printer is indicating a system error.
Printer selects materials from the wrong paper source.	The paper source selection in the printer properties may be incorrect.	For many software applications, the paper source selection is found under the **Paper** tab within the printer properties. Select the correct paper source. See page 4.6.
Paper does not feed into the printer.	Paper has not been loaded correctly.	Remove paper from the tray and reload it correctly.
	There is too much paper in the tray.	Remove excess paper from the tray.
	The paper is too thick.	Use only paper that meets the specifications required by the printer.
Print job is extremely slow.	The job may be very complex.	Reduce the complexity of the page or try adjusting the print quality settings. The maximum print speed of the printer is 16(A4) or 17(Letter) pages per minute.
	If using Windows 9x/Me, the Spooling Setting may be set incorrectly.	From the **Start** menu, choose **Settings** and **Printers**. Right-click the **Samsung ML-2150 Series** printer icon, choose **Properties**, click the **Details** tab, and then choose the **Spool Settings** button. Select the desired spool setting.
Half the page is blank.	The page layout is too complex.	Simplify the page layout and remove any unnecessary graphics from the document.
	The page orientation setting may be incorrect.	Change the page orientation in your application.
	The paper size and the paper size settings do not match.	Ensure that the paper size in the print settings matches the paper in the tray.

Problem	Possible Cause	Solution
The paper keeps jamming.	There is too much paper in the paper tray.	Remove excess paper from the tray. If printing on special materials, use the manual feeder.
	An incorrect type of paper is being used.	Use only paper that meets the specifications required by the printer.
	An incorrect output method is being used.	Special print materials, such as thick paper, should not be printed using the top output tray (face-down). Use the rear output tray (face-up) instead.
	There may be debris inside the machine.	Open the front cover and remove the debris.
The printer prints, but the text is wrong, garbled, or incomplete.	The printer cable is loose or defective.	Disconnect the printer cable and reconnect. Try a print job that you have already printed successfully. If possible, attach the cable and printer to another computer and try a print job that you know works. Finally, try a new printer cable.
	The wrong printer driver was selected.	Check the application's printer selection menu to ensure that your printer is selected.
	The software application is malfunctioning.	Try printing a job from another application.
	The operating system is malfunctioning.	If printing from Windows (any version), exit to a DOS prompt and verify functionality with the following command: At a **C:** prompt, type **Dir LPT1**, and press **Enter**. (This assumes you are connected to LPT1.) Exit Windows and reboot the computer. Turn the printer off and then back on again.

Problem	Possible Cause	Solution
Pages print, but are blank.	The toner cartridge is defective or out of toner.	Redistribute the toner, if necessary. See page 5.3. If necessary, replace the toner cartridge.
	The file may have blank pages.	Check the file to ensure it does not contain blank pages.
	Some parts, such as the controller or the board, may be defective.	Contact a service representative.
The illustrations print incorrectly in Adobe Illustrator.	The setting in the software application is wrong.	Print the document with selecting **Download as Bit Image** in the **Advanced** options of the Graphic properties.

ATTENTION:
If you have any printing problem after your printer prints about 60,000 pages, you must contact the customer service to replace the transfer roller.

Clearing Paper Jams

Occasionally, paper can be jammed during a print job. Some of causes include:

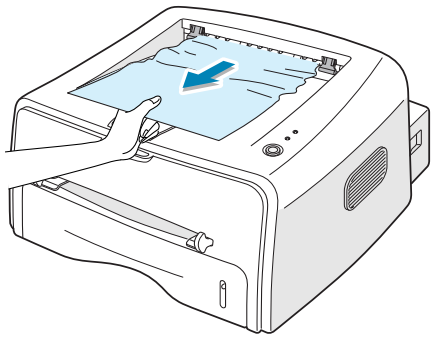
- The tray is loaded improperly or overfilled.
- The tray has been pulled out during a print job.
- The front cover has been opened during a print job.
- Paper that does not meet paper specifications has been used. See "Paper Specifications" on page 7.30.
- Paper that is outside of the supported size range has been used. See "Paper Specifications" on page 7.30.

If a paper jam occurs, the **On Line/Error** LED on the control panel lights red. Find and remove the jammed paper. If it is invisible, look inside the printer.

In the Paper Exit Area

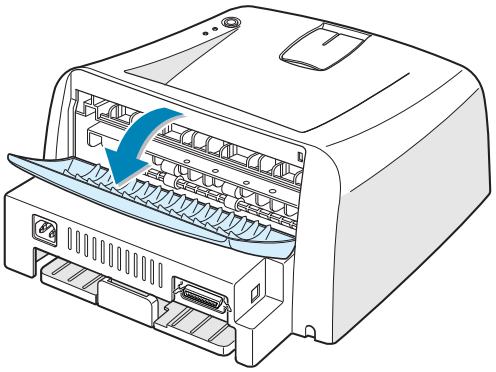
Note: Paper jams in this area may result in loose toner on the page. If you get any toner on your clothes, wash them in cold water as hot water will set the toner into the fabric.

1 If the paper jams as it exits to the output tray and a long portion of the paper is visible, pull the paper straight out.

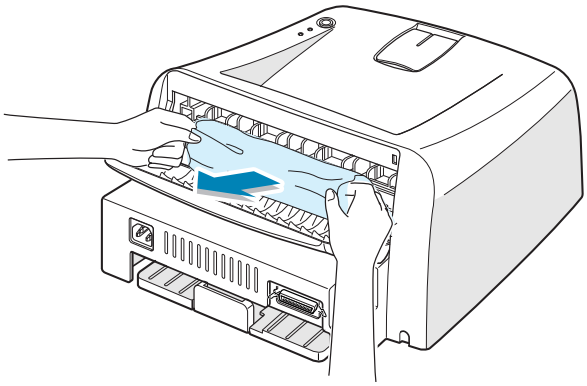


When you pull the jammed paper, if there is resistance and the paper does not move immediately, stop pulling. Continue with the next step.

2 Open the rear output tray.

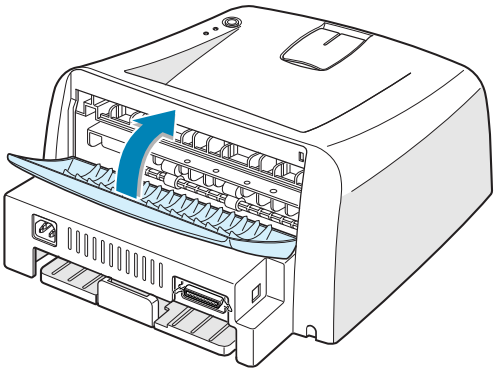


3 Loosen the paper if it is caught in the feed rollers. Then pull the paper gently out.



Notes: Please be careful when you open the rear cover. The inside of the printer is still hot.

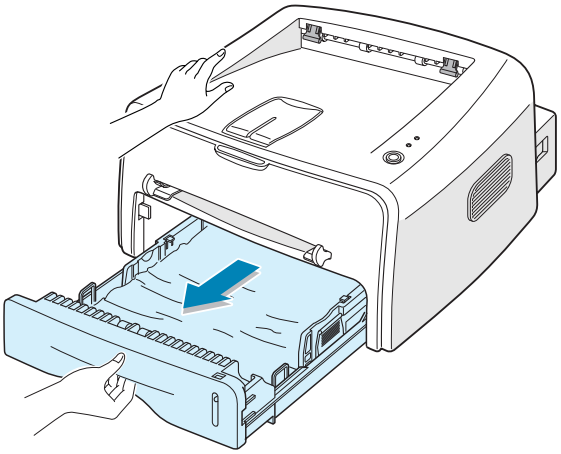
4 Close the rear output tray.



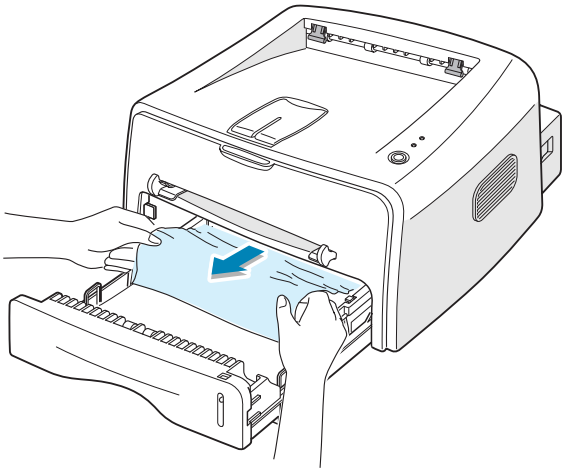
5 Open and close the front cover. Printing can be resumed.

In the Paper Feed Area

1 Slide out the tray to expose the jammed paper.



2 Remove any missfeed paper by pulling it out by the visible edge from the tray. Make sure that all of the paper is properly aligned in the tray.

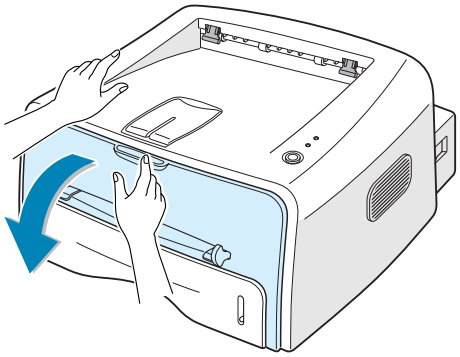


3 Slide the tray back into the printer.

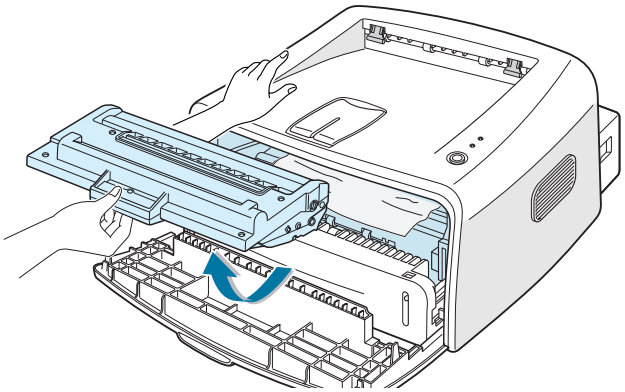
4 Open and close the front cover. Printing can be resumed.

Around the Toner Cartridge

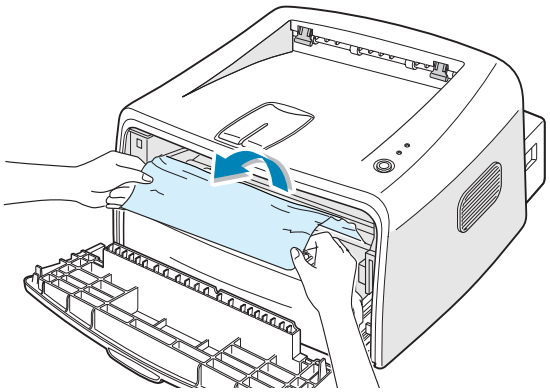
1 Open the front cover.



2 Remove the toner cartridge.



3 Gently pull the paper toward you.



4 Check that there is no other paper in the printer.

5 Reinstall the toner cartridge, and then close the cover. Printing can be resumed.

Tips for Avoiding Paper Jams

By selecting the correct paper types, most paper jams can be avoided. If a paper jam occurs, follow the steps outlined in "Clearing Paper Jams" on page 6.7.

- Follow the procedures in "Loading Paper" on page 2.6. Ensure that the adjustable guides are positioned correctly.
- Do not overload the tray. Ensure that the paper is below the paper capacity mark on the right inside of the tray.
- Do not remove the paper from the tray while printing.
- Flex, fan and straighten the paper before loading.
- Do not use creased, damp or highly curled paper.
- Do not mix paper types in the input tray.
- Use only recommended print media. See "Paper Specifications" on page 7.30.
- Ensure that the recommended print side is facing down when loading paper into the input tray.

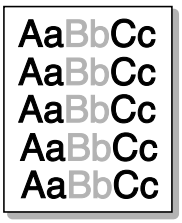
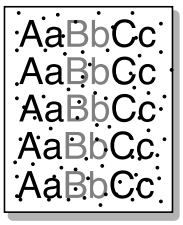
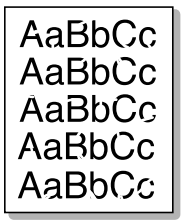
Solving Print Quality Problems

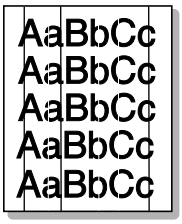
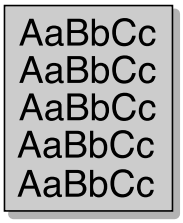
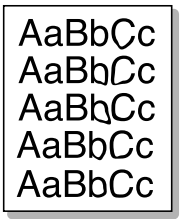
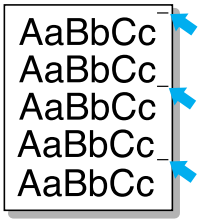
Print Quality Checklist

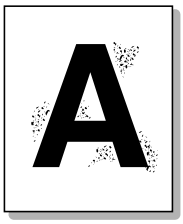
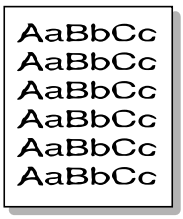
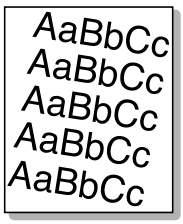
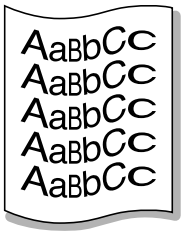
Print quality problems can be resolved by following the checklist below.

- Redistribute toner in the toner cartridge (see page 5.3).
- Clean the inside of the printer (see page 5.5).
- Adjust the print resolution from the printer properties (see page 4.16).
- Ensure that Toner Save Mode is off (see page 4.8).
- Clear general printing problems (see page 6.3).
- Install a new toner cartridge, and check the print quality (see page 2.4).

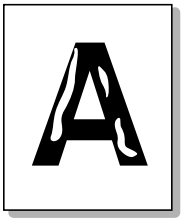
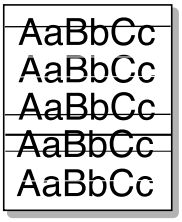
Solving Print Quality Problems

Problem	Solution
Light or faded print  	If a vertical white streak or faded area appears on the page: • The toner supply is low. You may be able to temporarily extend the toner cartridge life. See "Redistributing Toner" on page 5.3. If this does not improve the print quality, install a new toner cartridge. • The paper may not meet paper specifications (for example, the paper is too moist or too rough). See "Paper Specifications" on page 7.30. • If the entire page is light, the print resolution setting is too light or Toner Save Mode is on. Adjust the print resolution and Toner Save Mode in the printer properties. See page 4.16 and 4.8 respectively. • A combination of faded or smeared defects may indicate that the toner cartridge needs cleaning. See "Cleaning the Inside" on page 5.5.
Toner specs  	• The paper may not meet specifications (for example, the paper is too moist or too rough). See "Paper Specifications" on page 7.30. • The transfer roller may be dirty. See "Cleaning the Inside" on page 5.5. • The paper path may need cleaning. See "Cleaning the Inside" on page 5.5.
Dropouts  	If faded areas, generally rounded, occur randomly on the page: • A single sheet of paper may be defective. Try reprinting the job. • The moisture content of the paper is uneven or the paper has moist spots on its surface. Try a different brand of paper. See "Paper Specifications" on page 7.30. • The paper lot is bad. The manufacturing processes can cause some areas to reject toner. Try a different kind or brand of paper. • The toner cartridge may be defective. See "Vertical repetitive defects" on the next page. • If these steps do not correct the problems, contact a service representative.

Problem	Solution
Vertical lines  	If black vertical streaks appear on the page: • The drum inside the toner cartridge has probably been scratched. Install a new toner cartridge.
Gray background  	If the amount of background shading becomes unacceptable, the procedures below may fix the problem. • Change to a lighter weight pages. See "Paper Specifications" on page 7.30. • Check the printer's environment; very dry (low humidity) or high humidity (higher than 80% RH) conditions can increase the amount of background shading. • Remove the old toner cartridge and install a new one. See "Installing the Toner Cartridge" on page 2.4.
Toner smear  	• Clean the inside of the printer. See "Cleaning the Inside" on page 5.5. • Check the paper type and quality. See "Paper Specifications" on page 7.30. • Remove the toner cartridge and install a new one. See "Installing the Toner Cartridge" on page 2.4.
Vertical repetitive defects  	If marks repeatedly appear on the printed side of the page at even intervals: • The toner cartridge may be damaged. If a repetitive mark occurs on the page, print a cleaning sheet several times to clean the cartridge (see page 5.5). After the printout, if you still have the same problems, install a new toner cartridge. See "Installing the Toner Cartridge" on page 2.4. • Parts of the printer may have toner on them. If the defects occur on the back of the page, the problem will likely correct itself after a few more pages. • The fusing assembly may be damaged. Contact a service representative.

Problem	Solution
Background scatter 	Background scatter results from bits of toner distributed on the printed page. • The paper may be too damp. Try printing with a different batch of paper. Do not open packages of paper until necessary so that the paper does not absorb too much moisture. • If background scatter occurs on an envelope, change the printing layout to avoid printing over areas that have overlapping seams on the reverse side. Printing on seams can cause problems. • If background scatter covers the entire surface area of a printed page, adjust the print resolution through your software application or the printer properties.
Misformed characters 	• If characters are improperly formed and producing hollow images, the paper stock may be too slick. Try a different paper. See "Paper Specifications" on page 7.30. • If characters are improperly formed and producing a wavy effect, the scanner unit may need service. Verify that it also occurs on a demo page by pressing the **Cancel** button on the control panel when the printer is ready. For service, contact a service representative.
Page skew 	• Check the paper type and quality. See "Paper Specifications" on page 7.30. • Ensure that the paper or other material is loaded correctly and the guides are not too tight or too loose against the paper stack.
Curl or wave 	• Check the paper type and quality. Both high temperature and humidity can cause paper curl. See "Paper Specifications" on page 7.30. • Turn over the stack of paper in the input tray. Also try rotating the paper 180° in the input tray. • Push the output lever and try printing to the face up output slot.

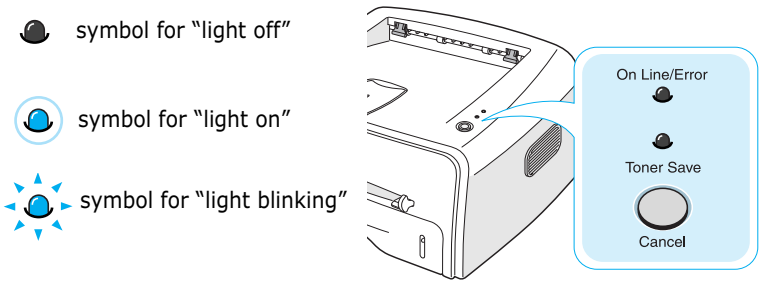
Problem	Solution
Wrinkles or creases	Insure that the paper is loaded properly. • Check the paper type and quality. See "Paper Specifications" on page 7.30. • Open the rear cover and try printing to the rear output tray (face-up). • Turn over the stack of paper in the input tray. Also try rotating the paper 180° in the feeder.
Back of printouts are dirty	• The transfer roller may be dirty. See "Cleaning the Inside" on page 5.5. • Check for leaking toner. Clean the inside of the printer.
Black pages	• The toner cartridge may not be installed properly. Remove the cartridge and reinsert. • The toner cartridge may be defective and need replacing. Install a new toner cartridge. • The printer may require repair. Contact a service representative.
Loose toner	Clean the inside of the printer. • Check the paper type and quality. See "Paper Specifications" on page 7.30. • Install a new toner cartridge. • If the problem persists, the printer may require repair. Contact a service representative.

Problem	Solution
Character Voids 	Character voids are white areas within the parts of characters that should be solid black: • If you are using transparencies, try another type of transparency. Because of the composition of the transparency, some character voids are normal. • You may be printing on the wrong surface on the paper. Remove the paper and turn it around. • The paper may not meet paper specifications. See "Paper Specifications" on page 7.30.
Horizontal stripes 	If horizontally aligned black streaks or smears appear: • The toner cartridge may be installed improperly. Remove the cartridge and reinsert. • The toner cartridge may be defective. Install a new toner cartridge. See "Installing the Toner Cartridge" on page 2.4. • If the problem persists, the printer may require repair. Contact a service representative.

Troubleshooting Error Messages

When the printer experiences an error, the control panel will indicate an error message with the indicator lights. Find the light pattern below that matches the printer light pattern and follow the solutions to clear the error.

LED status legend



LED pattern	Possible Problems and Solutions
On Line/Error Toner Save	Your system has some problems. If this problem occurs, contact your service representative.
On Line/Error Toner Save On Line/Error LED lights red	• Paper jam occurs. To solve the problem, see "Clearing Paper Jams" on page 6.7. • The front cover is open. Close the front cover. • The toner cartridge is empty. Remove the old toner cartridge and install a new one. See "Installing the Toner Cartridge" on page 2.4.
On Line/Error Toner Save	• You pressed the **Cancel** button while the printer is receiving data. • In Manual Feed mode, there is no paper in the Manual Feeder. Load paper into the Manual Feeder. • If the printer is receiving data, the **On Line/Error** LED slowly blinks green. • If the printer is printing the received data, the **On Line/Error** LED blinks green fast.

Common Windows Problems

Problem	Possible Cause and Solution
"File in Use" message appears during installation.	Exit all software applications. Remove all software from the StartUp Group, then restart Windows. Reinstall the printer software.
"Error Writing to LPTx" message appears.	• Ensure that the cables are connected correctly and the printer is on. • If bi-directional communication is not turned on in the driver, it will also cause this message.
"General Protection Fault", "Exception OE", "Spool32", or "Illegal Operation" messages appear.	Close all other applications, reboot Windows, and try printing again.

Note: Refer to Microsoft Windows 9x, Me, NT 4.0, 2000 or XP User's Guide that came with your PC for further information on Windows error messages.

Common Macintosh Problems

Problems in the Chooser

Problem	Possible Cause and Solution
The printer driver icon does not appear in Chooser.	Software is not installed correctly. • The LaserWriter driver should be present as a part of the Macintosh OS. Make sure that the LaserWriter driver is in the **Extensions** folder within the **Systems** folder. If not, install the LaserWriter driver component from the Macintosh OS CD. • Make sure that you are using a high-quality cable. • Make sure that the printer is on the correct network. Select **Network** or **AppleTalk Control Panel** from **Control Panels** in the **Apple** menu and then choose the correct network.
The printer name does not appear in Chooser.	• Make sure that the cables are connected correctly and the printer is turned on. • Make sure that the correct printer driver has been selected in Chooser.

Printing Errors

Problem	Possible Cause and Solution
You cannot use the computer while the printer is printing.	Background Printing has not been selected. • For LaserWriter 8.3, turn **Background Printing** on in the **Chooser**. Status messages will now be redirected to the **Print Monitor** allowing you to continue working while the computer is processing data to be sent to the printer. • For LaserWriter 8.4 or higher, turn **Background Printing** on at the Print dialog box.

Common Linux Problems

Problem	Possible Cause and Solution
I can't change settings in the configuration tool.	You need to have administrator privileges to be able to affect global settings.
I am using the KDE desktop but the configuration tool and LLPR won't start.	Maybe you do not have the GTK libraries installed. These usually come with most Linux distributions, but you may have to install them manually. Refer to your distribution's installation manual for more details about installing additional packages.
I just installed this package but can't find entries in the KDE/ Gnome menus.	Some versions of the KDE or GNOME desktop environments may require that you restart your session for the changes to take effect.
I get a "Some options are not selected" error message while editing the printer settings.	Some printers have conflicting settings, meaning that some settings for two options can't be selected at the same time. When you change a setting and the Printer Package detects such a conflict, the conflicting option is changed to a "No Choice" value, and you have to choose an option that does not conflict before being able to submit the changes.
I can't make a printer the system default.	• In some conditions, it may not be possible to change the default queue. This happens with some variants of LPRng, especially on recent RedHat systems that use the 'printconf' database of queues. • When using printconf, the **/etc/printcap** file is automatically refreshed from the database of printers managed by the system (usually through the 'printtool' command), and the queues in /etc/printcap.local are appended to the resulting file. since the default queue in LPRng is defined as the first queue in **/etc/printcap**, therefore it is not possible for the Samsung Printer Package to change the default when some queues have otherwise been defined using printtool. • LPD systems identify the default queue as the one named 'lp'. Thus if there is already a queue by this name, and if it doesn't have any alias, then you won't be able to change the default. To work around this, you can either delete the queue, or rename it by manually editing the **/etc/printcap** file.

Problem	Possible Cause and Solution
The N-up setting does not work correctly for some of my documents.	The N-up feature is achieved through post-processing of the PostScript data that is being sent to the printing system. However, such post-processing can only be adequately achieved if the PostScript data conforms to the Adobe Document Structing Conventions. Problems may arise when using N-up and other features relying on post-processing if the document being printed isn't compliant.
I am using BSD lpr (Slackware, Debian, older distributions) and some options chosen in LLPR don't seem to take effect.	Legacy BSD lpr systems have a hard limitation on the length of the option string that can be passed to the printing system. As such, if you selected a number of different options, the length of the options may be exceeded and some of your choices won't be passed to the programs responsible for implementing them. Try to select less options that deviate from the defaults, to save on memory usage.
I am trying to print a document in Landscape mode, but it prints rotated and cropped.	Most Unix applications that offer a Landscape orientation option in their printing options will generate correct PostScript code that should be printed as is. In that case, you need to make sure that you leave the LLPR option to its default Portrait setting, to avoid unwanted rotations of the page that would result in a cropped output.
Some pages come out all white (nothing is printed), and I am using CUPS.	If the data being sent is in Encapsulated PostScript (EPS) format, some earlier versions of CUPS (1.1.10 and before) have a bug preventing them from being processed correctly. When going through LLPR to print, the Printer Package will work around this issue by converting the data to regular PostScript. However, if your application bypasses LLPR and feeds EPS data to CUPS, the document may not print correctly.
I can't print to a SMB (Windows) printer.	To be able to configure and use SMB-shared printers (such as printers shared on a Windows machine), you need to have a correct installation of the SAMBA package that enables that feature. The "smbclient" command should be available and usable on your system.
My application seems to be frozen while LLPR is running.	Most Unix applications will expect a command like the regular "lpr" command to be non-interactive and thus return immediately. Since LLPR is waiting for user input before passing the job on to the print spooler, very often the application will wait for the process to return, and thus will appear to be frozen (its windows won't refresh). This is normal and the application should resume functioning correctly after the user exits LLPR.

Problem	Possible Cause and Solution
How do I specify the IP address of my SMB server?	It can be specified in the "Add Printer" dialog of the configuration tool, if you don't use the CUPS printing system. Unfortunately, CUPS currently doesn't allow to specify the IP address of SMB printers, so you will have to be able to browse the resource with Samba in order to be able to print.
Some documents come out as white pages when printing.	Some versions of CUPS, especially those shipped with Mandrake Linux before the 8.1 release, have some known bugs when processing the PostScript output from some applications. Try upgrading to the latest version of CUPS (at least 1.1.14). Some RPM packages for most popular distributions are provided as a convenience with this Linux Printing Package.
I have CUPS and some options (such as N-up) seem to be always enabled even though I don't pick them in LLPR.	There may be some local options defined in your **~/.lpoptions** file, which is manipulated by the lpoptions command. These options will always be used if not overridden by LLPR settings. To get rid of all options for a printer, run the following command, replacing "printer" with the name of the queue: lpoptions -x printer
I configured a printer to print to a file, but I get "Permission denied" errors.	Most printing systems will not run as the super-user but as a special user (usually "lp"). Therefore, make sure that the file you have chosen to print to is accessible to the user owning the spooler daemon.
On my PCL (or SPL) printer, I sometimes get error messages printing instead of my document.	Unfortunately, some Unix applications may generate non-compliant PostScript output that may not be supported by Ghostscript, or even the printer itself in PostScript mode. You can try to capture the output to a file and view the results with Ghostscript (gv or ghostview will allow you to do so interactively) and see if you get error messages. However, since the application is at probably fault, contact your software vendor to inform them of the issue.

Common DOS problem

Problem	Possible Cause and Solution
When using the printer in EPSON Dot Printer Environment, sometimes I can not get the output I want.	Change the emulation to EPSON in the **Config** tab in the Remote Control Panel. For detailed information about selecting printer settings in the Remote Control Panel, see page 7.22.

7 Appendix

This chapter includes:

- **Using Your Printer with a Macintosh**
- **Using Your Printer in Linux**
- **Printing from DOS Applications**
- **Printer Specifications**
- **Paper Specifications**

Using Your Printer with a Macintosh

Your printer supports Macintosh systems with a built-in USB interface. When you print a file from a Macintosh computer, you can use the SPL driver to support your printer's major printing features.

Installing Software for Macintosh

System Requirements

To use your printer and its software with a Macintosh, your system should have:

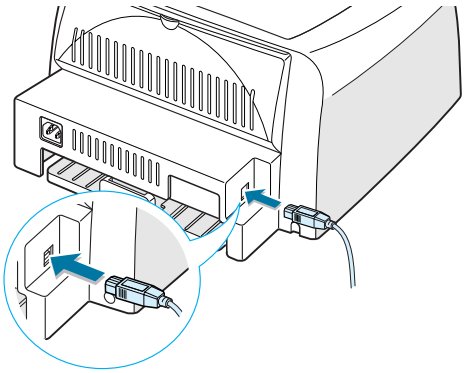
Macintosh Hardware Requirement:

- One of the following Macintosh models:
  -Power Macintosh series
  -Power Macintosh G3, G4
  -iMac series
  -PowerBook series
  -iBook series
- USB interface

Macintosh System Requirement:
System 8.6 or later

Installing Software

1 Turn the printer and computer off and plug the USB cable into your printer's USB connector. For more details, see page 2.10.



Note: If you are using a USB hub, connect the printer's cable to the first tier of the hub, or the printer may malfunction. If the printer doesn't work with the hub, connect it directly to the USB port.

2 Turn on your computer and printer.

3 Insert the CD-ROM which came with your printer into the CD-ROM drive.

4 Double-click **ML-2150** on your Macintosh desktop.

5 Double-click the **West** folder.

6 Double-click the **Samsung Laser Printer Installer** icon next to each language to select the correct one.

7 Click **Continue**, and then click **Continue**.

8 The Samsung Laser Printer Installer window opens. Select the installation type. The window provides the following two options for software installation:

- **Easy Install** (recommended method): This option installs the SPL driver.
- **Custom Install**: This option allows you to choose which components will be installed, the SPL driver or Adobe Acrobat Reader program for opening the User's Guide.

9 Click **Install**.

If other programs are operating, the alert message appears. Click **Continue** to install the software, or click **Cancel** and close other programs, and install the software.

10 After installation is complete, click **Restart**.

Choosing Your Printer

1 From the **Apple** menu, select **Chooser**.

2 From the left pane of the Chooser window, click **SAMSUNG SPL II**. Then your printer name will appear in the right pane of the Chooser window.

3 Click **SAMSUNG SPL II**, and close the Chooser window.

4 The message window indicating that you have changed your current printer appears. Click **OK**.

5 An SAMSUNG SPL II printer icon will be created on your desktop.

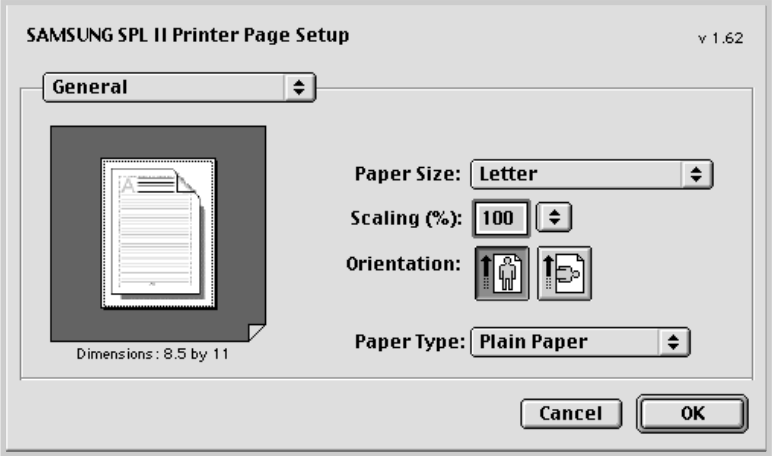
Printing a Document

When you print with a Macintosh, you need to check the printer software setting in each application you use. Follow these steps to print from a Macintosh:

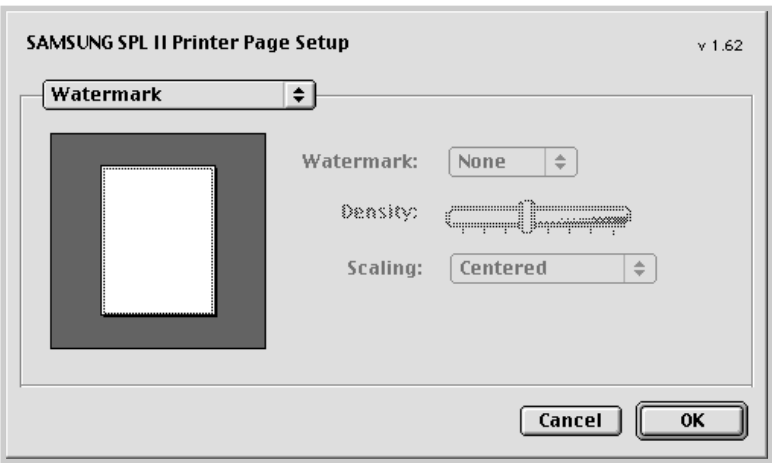
1 Open a Macintosh application and select a file you want to print.

2 Open the **File** menu, and click **Page Setup** (**Document Setup** in some applications).

3 Choose your paper size, orientation, paper type and other options and click **OK**.

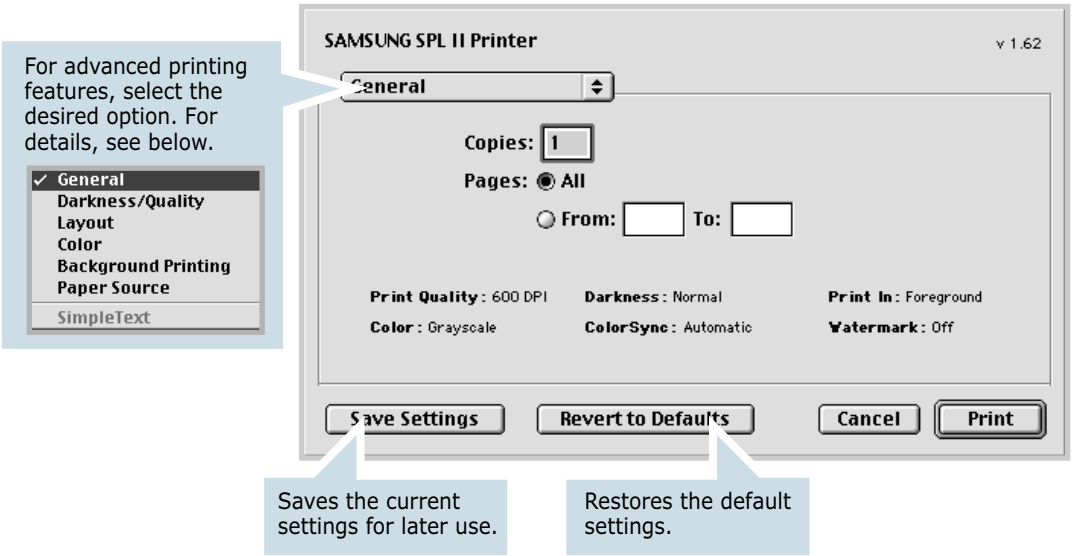


Choose **Watermark** to add a watermark to each page in your document to emphasize its purpose or indicate how it should be handled. For details on the watermark options, see page 4.19.



4 Open the **File** menu and click **Print**. You will see the SAMSUNG SPL II Printer window.

5 Choose the number of copies and indicate which pages you want to print.



6 Click **Print** when you finish setting the options.

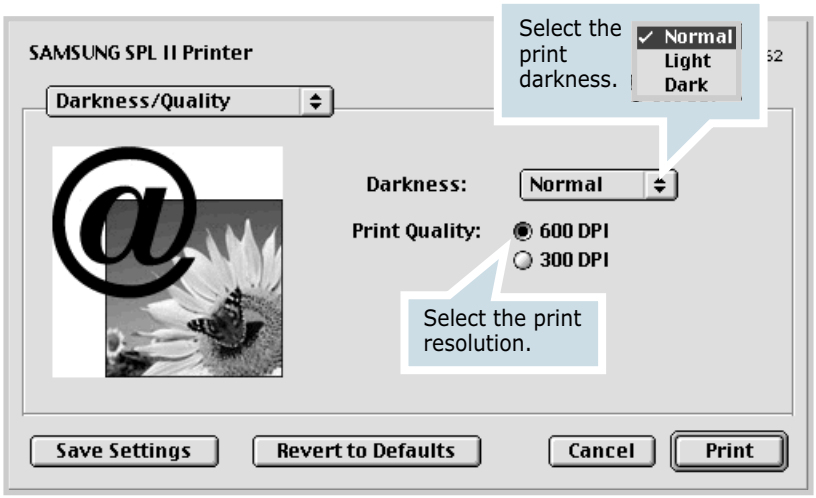
Using Advanced Printing Features

The SAMSUNG SPL II Printer window contains five categories of advanced properties. Listed below is the name of each property.

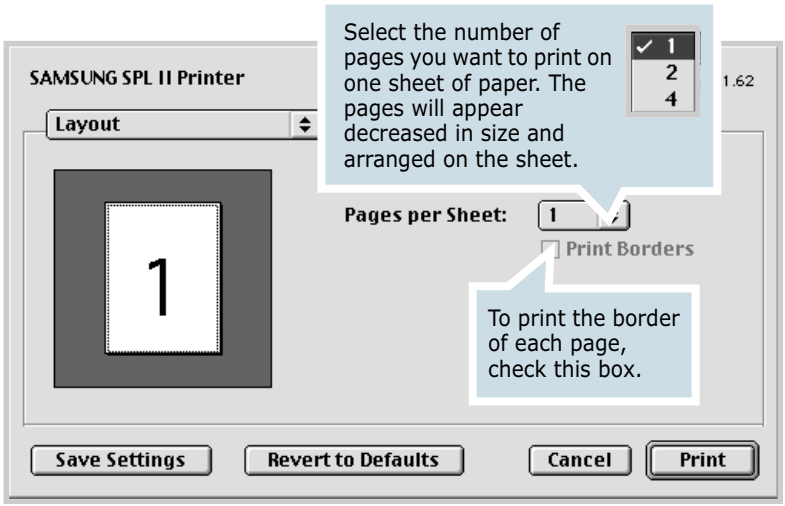
- Darkness/Quality
- Layout
- Color
- Background Printing
- Paper Source

Figures next display each property in the SAMSUNG SPL II Printer window.

Darkness/Quality

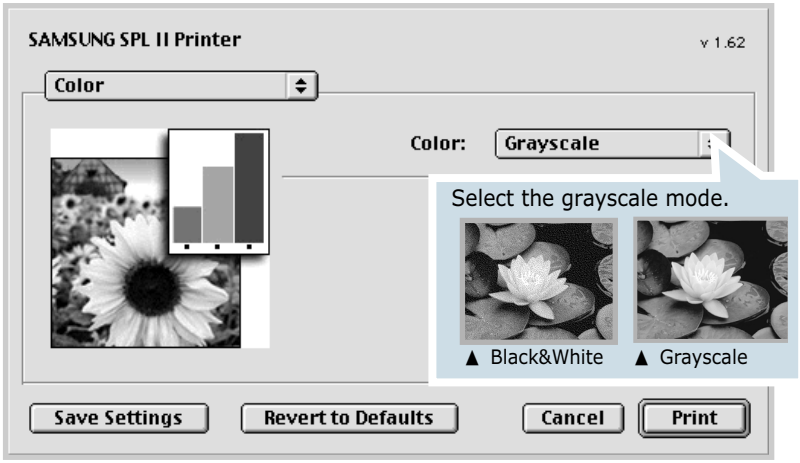


Layout

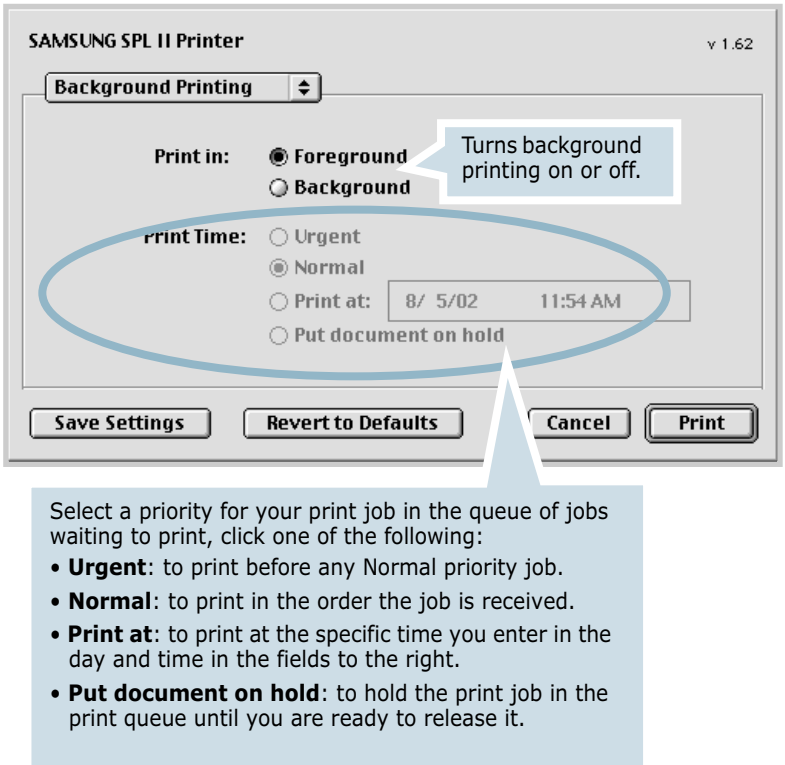


7

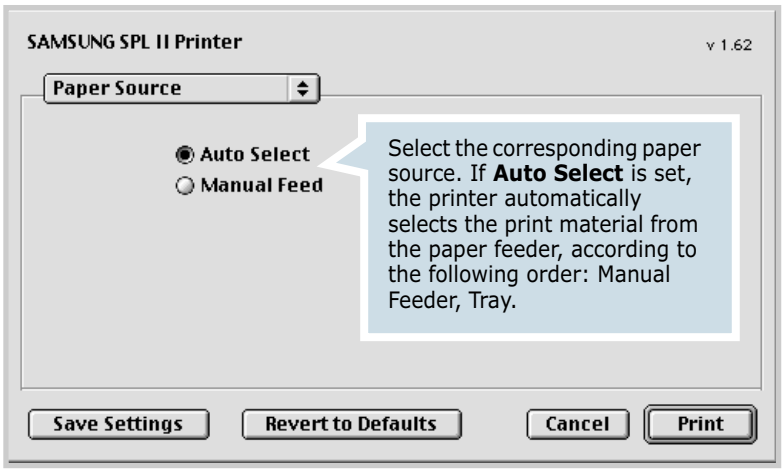
Color



Background Printing



Paper Source



Using Your Printer in Linux

Installing the Printer Driver

System Requirements

Supported OS

- Redhat 6.2/7.0/7.1 and above
- Linux Mandrake 7.1/8.0 and above
- SuSE 6.4/7.0/7.1 and above
- Debian 2.2 and above
- Caldera OpenLinux 2.3/2.4 and above
- Turbo Linux 6.0 and above
- Slackware 7.0/7.1 and above

Recommended Requirements

- Pentium II or Power PC G3
- RAM 64 MB or higher
- HDD 20 MB or higher

Softwares

- Glibc 2.1 or higher
- GTK+ 1.2 or higher
- GhostScript

Installing Printer Driver

1. Make sure that you connect the printer to your computer. Turn both the computer and the printer on.

2. When the Administrator Login window appears, type in **"root"** in the Login field and enter the system password.

Note: You must log in as a super user (root) to install the printer software. If you are not, ask your system administrator.

3. Insert the printer software CD-ROM. The CD-ROM automatically runs.

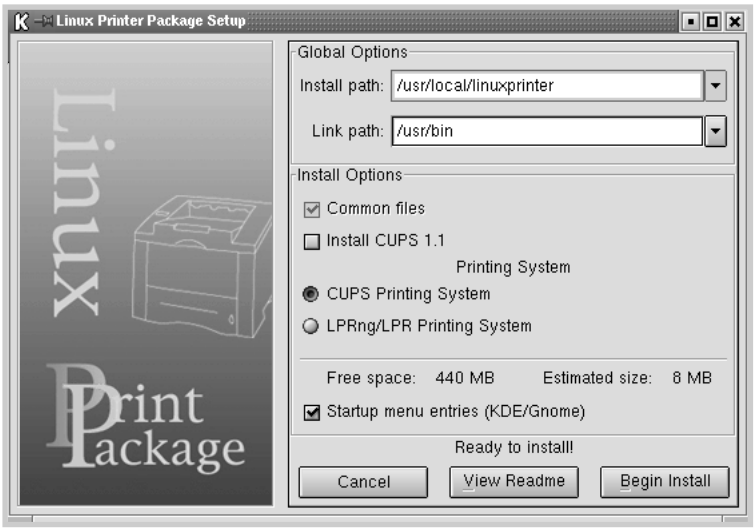
Note: If the CD-ROM does not automatically run, click the icon at the bottom of the window. When the Terminal screen appears, type in:
[root@local /root]# **cd /mnt/cdrom** (the CD-ROM directory)
[root@local cdrom]# **./setup.sh**

4 Select the installation type, either **Recommended** or **Expert**, and then click **Continue**.

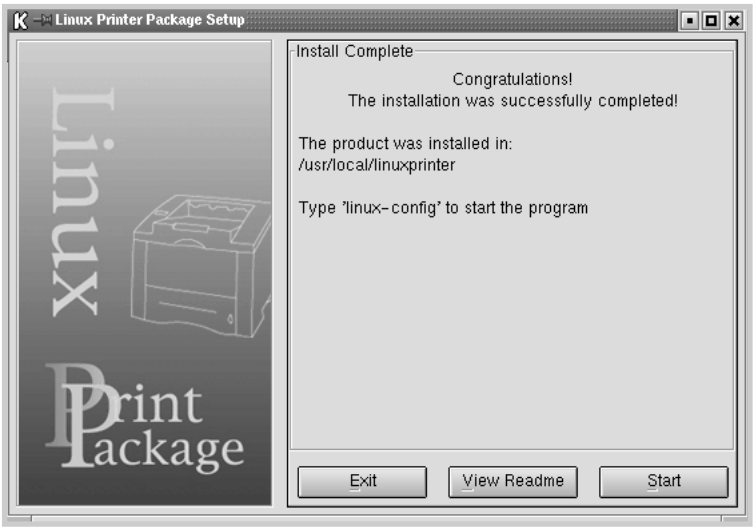
Recommended is fully automated and is not required any interaction. **Expert** installation allows you to select the install path or printing system.

5 If you selected **Recommended**, go to Step 6.

For **Expert**, select the desired option and then click **Begin Install**.



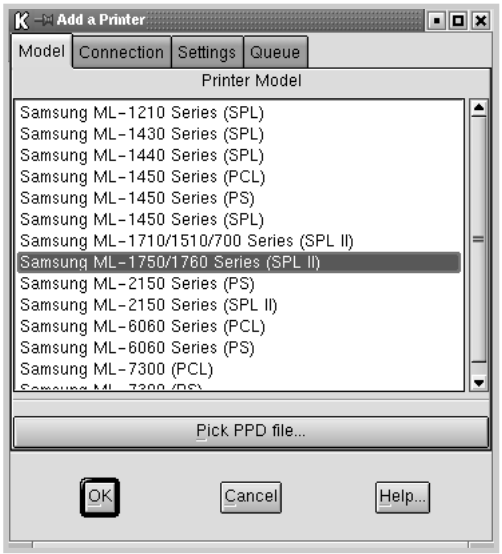
6 The printer driver installation begins. When the installation is completed, click **Start**.



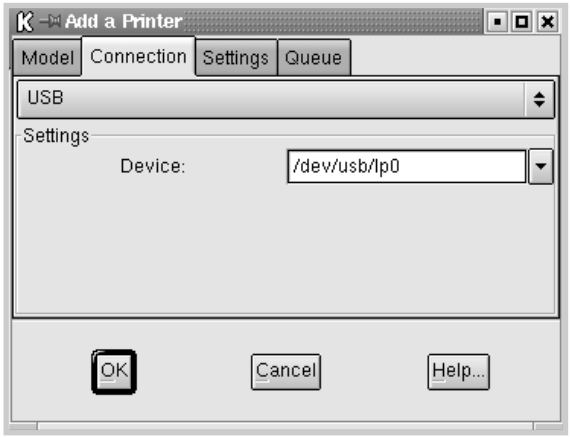
7 The Linux Printer Configuration window opens. Click the **Add Printer** icon on the toolbar at the top of the window.

Note: Depending on the printing system in use, the Administrator Login window may appear. Type in **"root"** in the Login field and enter the system password.

8 You see the printers currently added in your system. Select the printer you will use. The function tabs available for the selected printer appear at the top of the Add a Printer window.



9 Click the **Connection** tab and ensure that the printer port is set properly. If not proper, change the device setting.



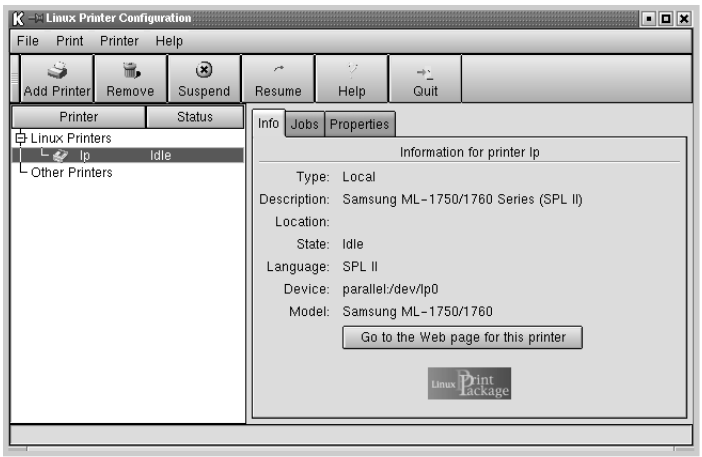
10 You can use the **Settings** tab and the **Queue** tab to view the printer's current setting. If necessary, you can change the settings.

Note: The options may differ depending on the printer in use. The Description and the Location field in the Queue screen may not appear depending on the printing system in use.

11 To exit, click **OK**.

12 When the window prompts that the new printer is successfully configured, click **OK**.

13 The Linux Printer Configuration window re-appears. From the **Info** tab, you can view the information about your printer. If necessary, you can change the printer configuration. For details about changing the printer configuration, see "Using the Configuration Tool" on page 7.16.



Changing the Printer Connection Method

If you change the printer connection method from USB to parallel or vice versa while in use, you must re-configure your Samsung printer by adding the printer in your system. Take the following steps:

1 Make sure that you connect the printer to your computer. Turn both the computer and the printer on.

2 When the Administrator Login window appears, type in "**root**" in the Login field and enter the system password.

Note: You must log in as a super user (root) to install a new printer to the printing system. If you are not, ask your system administrator.

3 From the Startup Menu icon at the bottom of the desktop, select **Linux Printer** and then **Configuration Tool**.

You can also access the **Linux Printer Configuration** window by typing in "**linux-config**" from the Terminal screen.

4 When the **Linux Printer Configuration** window appears, click the **Add Printer** icon on the toolbar at the top of the window.

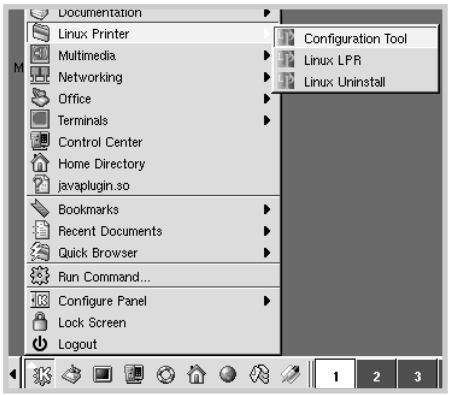
5 Click the **Connection** tab at the top of the **Add a Printer** window.

Ensure that the printer port is set properly. If not proper, change the device setting.

6 Click **OK**.

Uninstalling the Printer Driver

1 From the Startup Menu icon at the bottom of the desktop, select **Linux Printer** and then **Configuration Tool**.



You can also access the Linux Printer Configuration window by typing in "**linux-config**" from the Terminal screen.

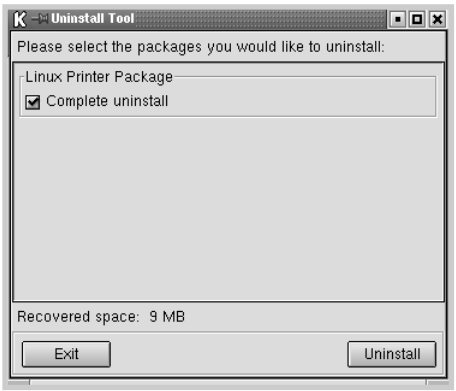
2 In the **Linux Printer Configuration** window, select the **Uninstall** command from the **File** menu.

3 The **Administrator Login** window appears. Type in "**root**" in the Login field and enter the system password. Click **Proceed**.

Note: You must log in as a super user (root) to uninstall the printer software. If you are not, ask your system administrator.

4 The message window which is asking your confirmation to proceed with the uninstallation appears. Click **Yes**.

5 Select **Complete uninstall** and then click **Uninstall**.



6 Click **OK** to begin uninstallation.

7 When the uninstallation is completed, click **Finished**.

Using the Configuration Tool

The configuration tool allows the administrative tasks, including adding and removing new printer, and changing their global settings. Regular users can also run it to easily inspect job queues, examine the printer properties and changing their local preference.

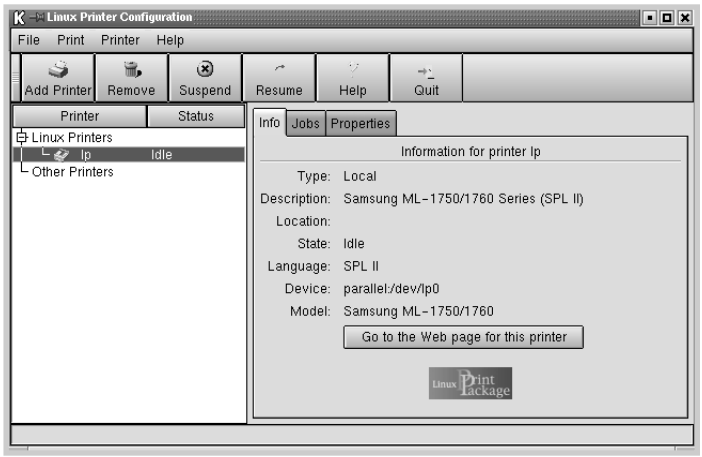
To access the Configuration Tool:

1 From the Startup Menu icon at the bottom of the screen, select **Linux Printer** and then **Configuration Tool**. The Linux Printer Configuration window appears.

You can also open this window from the Terminal screen by typing in "**linux-config**."

2 The Linux Printer Configuration window shows a list of installed printers at the left pane. The right pane shows a number of tabs that display information regarding the currently selected printer.

Select your printer, if not currently selected.

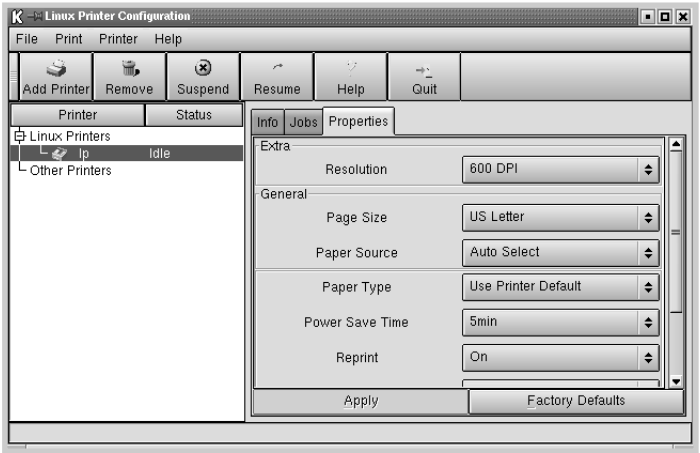


3 The **Info** tab shows general information about the printer.

If you are an Internet user, you can click **Go to the Web page for this printer** to access the Samsung web page.

Click the **Job** tab to inspect and manage the job queue for the selected printer. You can suspend, resume or delete a specific job(s) in the queue. If you drag a specific job(s), you can drop it into the print queue of another printer.

The **Properties** tab allows you to change the default printer settings.



Note: Regular users are able to override the system-wide default settings defined by the administrator. When a regular user clicks **Apply**, these custom settings will be saved in the user's profile and may be later used with LLPR. If the administrator is running the configuration tool, then the settings will be saved as the new global defaults.

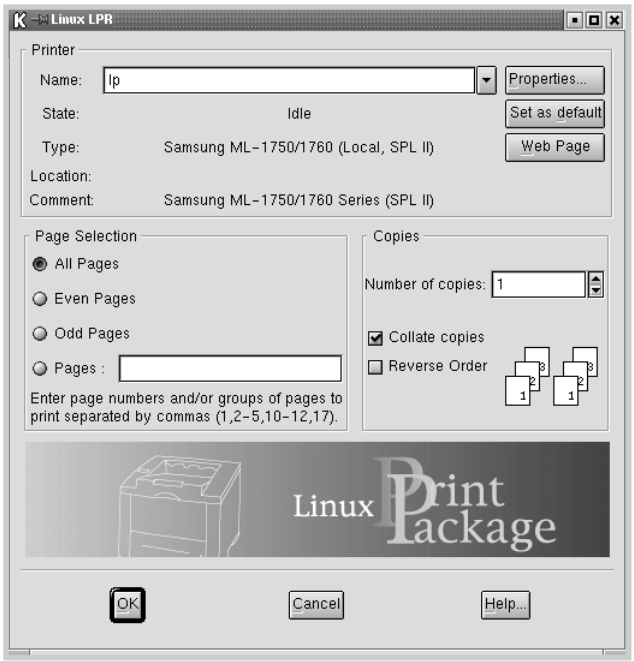
Changing LLPR Properties

You can fine tune the printer's properties by opening the LLPR Properties window.

To open the **LLPR Properties** window:

1. From the application you are using, select the **Print** command.

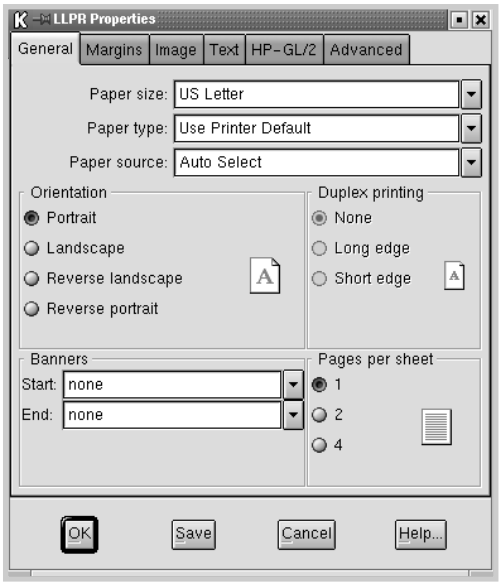
2. When the Linux LPR window opens, click **Properties**.



You can also open the LLPR window by using the following:

- Click the Startup Menu icon at the bottom of the screen and select **Linux Printer** and then **Linux LPR**.
- If the Linux Printer Configuration window is currently open, select **Test Print** from the **Print** menu.

3 The LLPR Properties window opens.



You will see the following six tabs at the top of the window:

- **General** - allows you to change the paper size, the paper type, the paper source, the orientation of the documents, enable duplex feature, add start and end banners, and change the number of pages per sheet.
- **Margins** - allows you to specify the page margins. The graphics on the right shows the current settings. These margins do not apply when printing regular PostScript data.
- **Image** - allows you to set image options that will be used when printing images files, i.e. when a non-PostScript document is passed to LLPR on the command line. But color settings will also take effect for postscript documents.
- **Text** - allows you to select the density of the text and turn the syntax coloring on or off.
- **HP-GL/2** - allows you to set default options to print documents of the HP-GL/2 format, which is used by some plotters.
- **Advanced** - allows you to override the default settings for the printer.

If you click the **Save** button at the bottom of the window, the options will be kept between LLPR session.

Use the **Help** button to view details about the options in the window.

4 To apply the options, click **OK** in the **LLPR Properties** window. You will return to the **Linux LPR** window. To start printing, click **OK**.

Printing from DOS Applications

While your printer is primarily a Windows printer, you can also print from a DOS software program using the Remote Control Panel utility provided in the supplied software CD-ROM.

About the Remote Control Panel

DOS users have access to many printer features through specific DOS printer drivers; however, many software manufactures do not develop printer drivers for their software programs. The printer provides the software control panel for improved printer control when DOS printer drivers are not available or when certain print settings are not available through DOS software programs.

Note: The printer's Remote Control Panel is not a printer driver. It should be used to set print settings that are not available through DOS software programs. Printer drivers are supplied by the manufacturers of your DOS software programs. If your DOS software program does not include a printer driver for your printer, contact the manufacturer of the software program or use one of the alternate printer drivers.

Installing the Remote Control Panel

The Remote Control Panel utility is provided on the printer software CD-ROM.

1. Place the CD-ROM in the CD-ROM drive. Installation will start automatically.

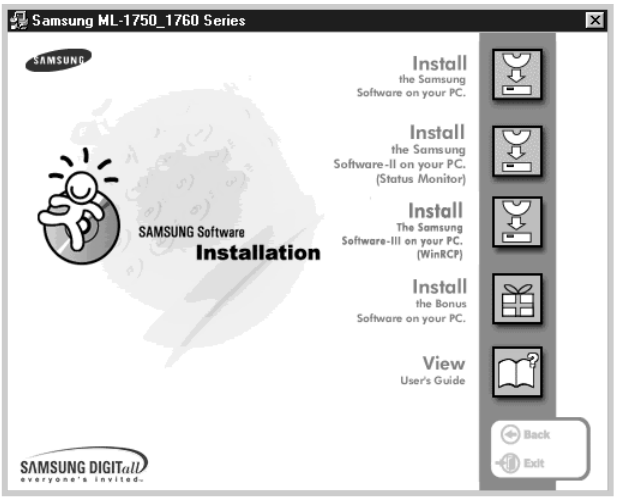
   If the CD-ROM drive does not automatically run:

   Select **Run** from the **Start** menu, and type **x:\cdsetup.exe** in the Open box (where **x** is the drive letter for the CD-ROM drive), and click **OK**.

2 When the language selection window appears, select the appropriate language.

If you can't find the desired language from the screen, scroll through the window using the scroll button on the bottom right of the window.

3 Click **Install the Samsung Software-III on your PC (WinRCP)**.



4 Click **Next**.

The files are copied into the appropriate directory.

5 After the installation is completed, click **Finish**.

Uninstalling the Remote Control Panel

The Uninstall icon in the Samsung ML-2150 series program group allows you to select and remove any or all of the Windows ML-2150 printing system components.

1 From the **Start** menu, select **Programs**.

2 Select **Samsung ML-2150 Series**, and then **Uninstall Remote Control Panel**.

3 Click **OK**.

The Samsung ML-2150 Series Remote Control Panel and all of its components are removed from your computer.

4 Click **Finish**.

Selecting Print Settings

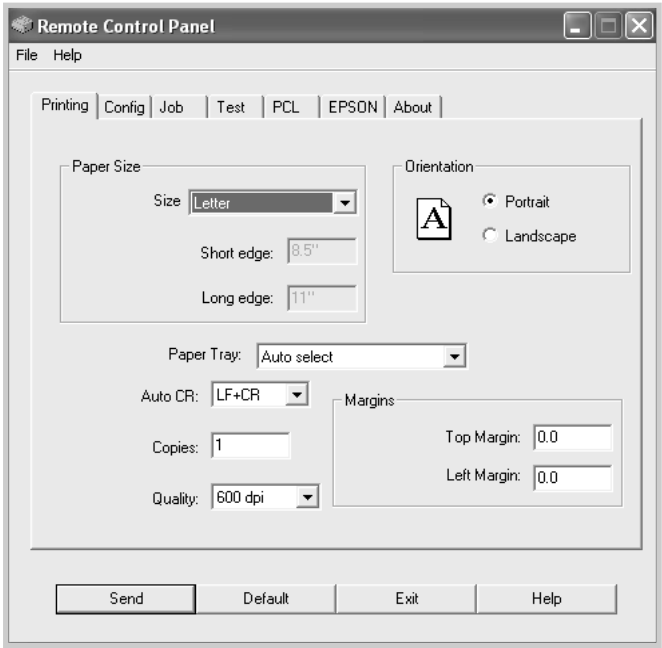
You can use this Remote Control Panel to select print settings that may not be available on some DOS programs. Typically, duplicate print settings that are selected from a DOS software program override the ones that are selected in the Remote Control Panel.

Starting Remote Control Panel

1. From the **Start** menu, select **Programs**.

2. Select **Samsung ML-2150 Series**, and then **Remote Control Panel**.

3. The Remote Control Panel window allows you to access all the information you need when using your printer. If necessary, click other tabs on the top of the window to access other features.

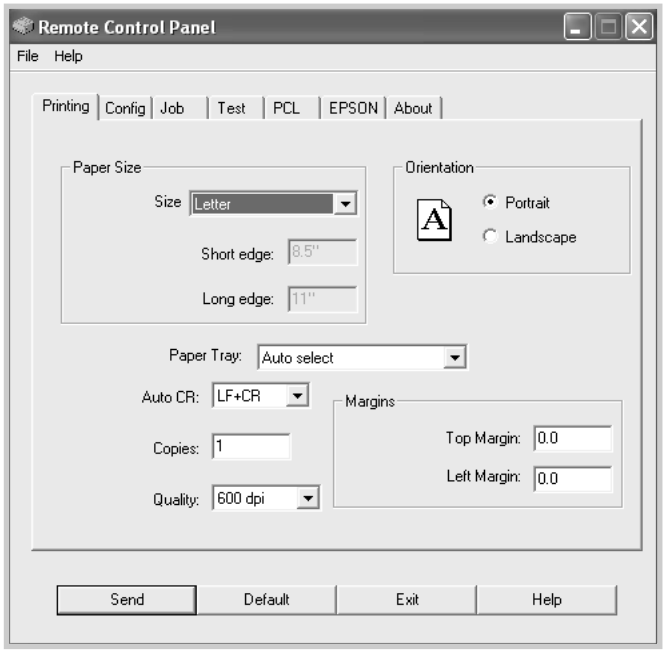


4. When you finish changing the settings, click **Send** until the Print window is displayed.

The Remote Control Panel allows you to access the following features:

PRINTING

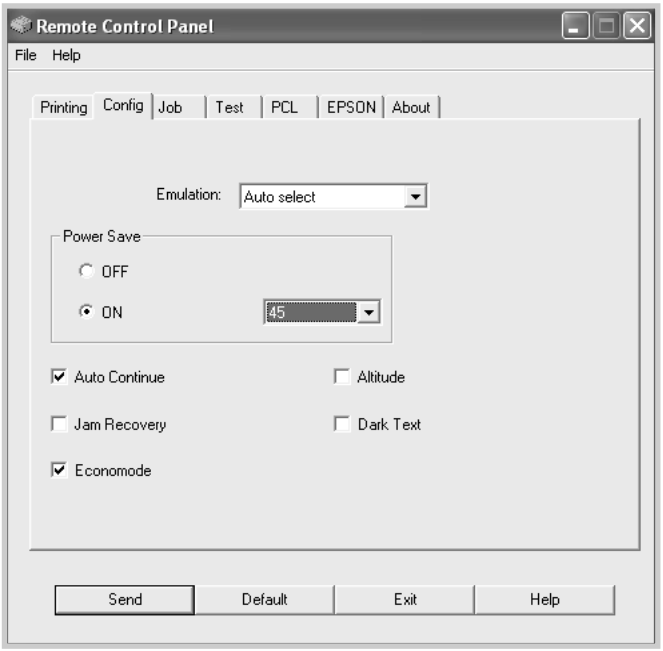
In this tab, you can configure general settings for printing.



- **Paper Size** sets the paper size.
- **Orientation** determines how the output is printed on the page.
- **Paper Tray** sets the default paper source.
- **Auto CR** sets how the printer performs a carriage return.
- **Copies** sets the number of copies printed for each page.
- **Quality** specifies the print quality.
- **Margins** sets the top and left margin of the print material.

CONFIG

You can configure various printer features.

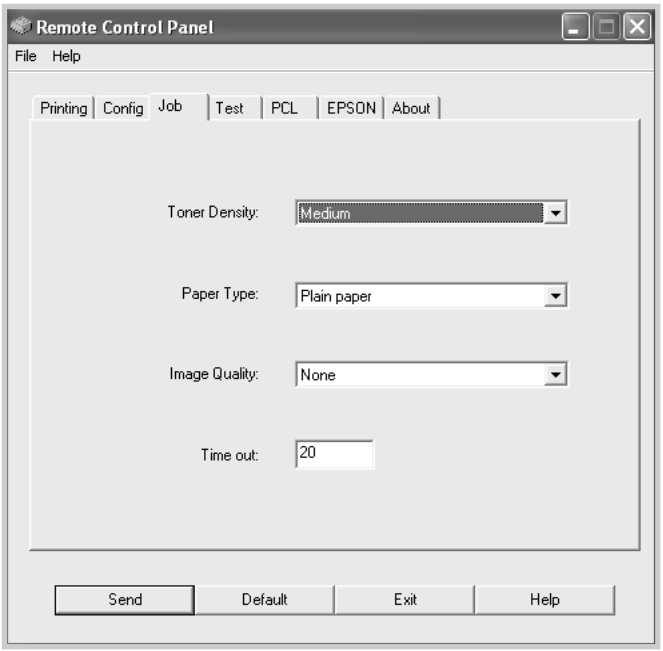


- **Emulation** selects the emulation for printing a document. The factory default is **Auto**.
- **Power Save** determines the length of time the printer waits after a job is printed before it goes to a reduced power state. If the printer is used frequently, select **OFF** which keeps the printer ready to print with the minimum warm-up time. This uses more power to keep the printer warm and ready to print.
- **Auto Continue** determines what action the printer should take when a manual feed print job is sent to the printer. If it is checked, the printer will pick up the paper from the tray after fifteen seconds. Otherwise, the printer will wait for you to load paper in the manual feeder.
- **Jam Recovery** determines what action the printer should take when a paper jam occurs. If it is unchecked, the printer does not reprint a page that has jammed. If it is check, the printer keeps the image in memory for a printed page until the printer signals that the page has successfully printed. The printer reprints all jammed pages.
- **Economode** determines the toner quantity the printer should use when printing. If it is checked, the printer conserves toner when printing. The default value is unchecked, which provides 100% usage.
- **Altitude**: helps the printer optimize its output for a low pressure area, such as a high mountain area.

- **Dark Text**: allows all text in your document to be printed darker than a normal document.

JOB

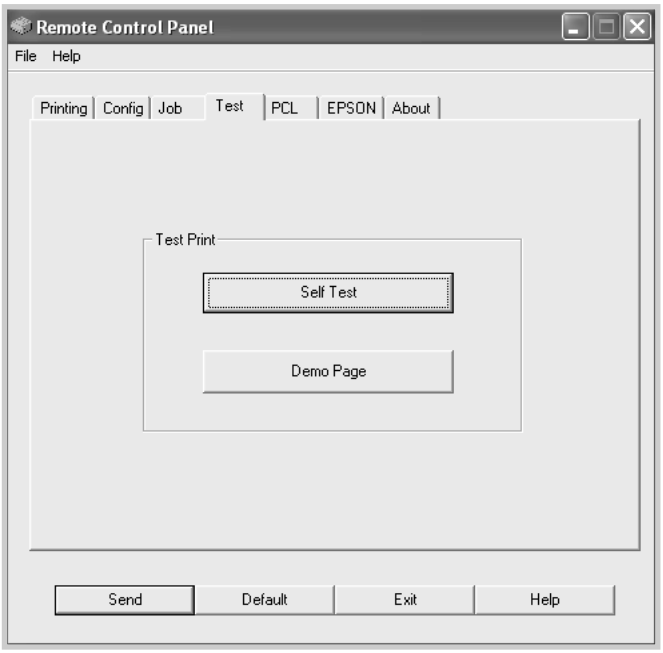
You can set options for improving the quality of your print job.



- **Toner Density** determines the toner density of page. The default value is **Medium**.
- **Paper Type** provides the printer with information about the type of paper to be used for a print job. For the best result, set this to the paper type you loaded in the tray of the printer. When using the plain paper, set this to **Plain paper**.
- **Image Quality** improves the print quality of your text and image and make the characters and images appear smoother. It is preset to **None** at the factory.
- **Time out** determins the amount of time (in seconds) the printer will wait before printing the last pag of a print job that does not end with a command to print the page or a formfeed character. You can set from 0 to 300 seconds.

TEST

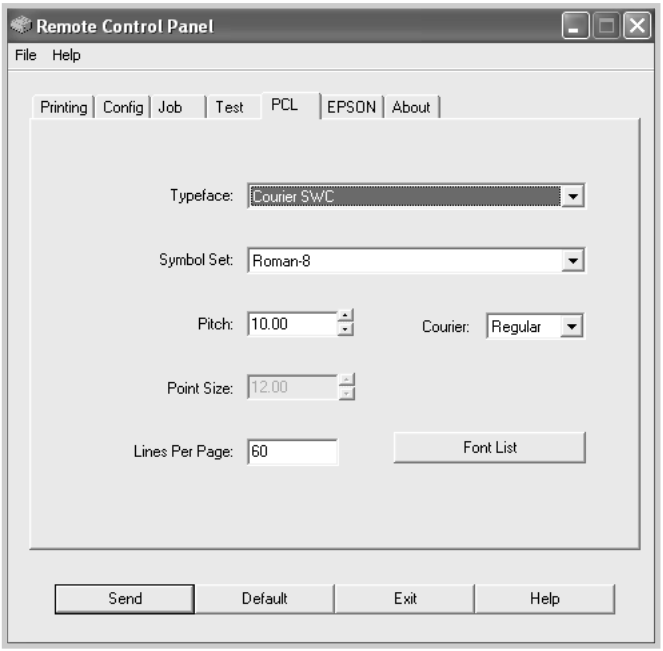
This tab allows you to print a resident page to test your printer's performance.



- **Self Test** prints a configuration sheet. A list of the user default settings and the amout of printer memory available prints.
- **Demo Page** prints a demonstration page. It shows the printer features and specifications.

PCL

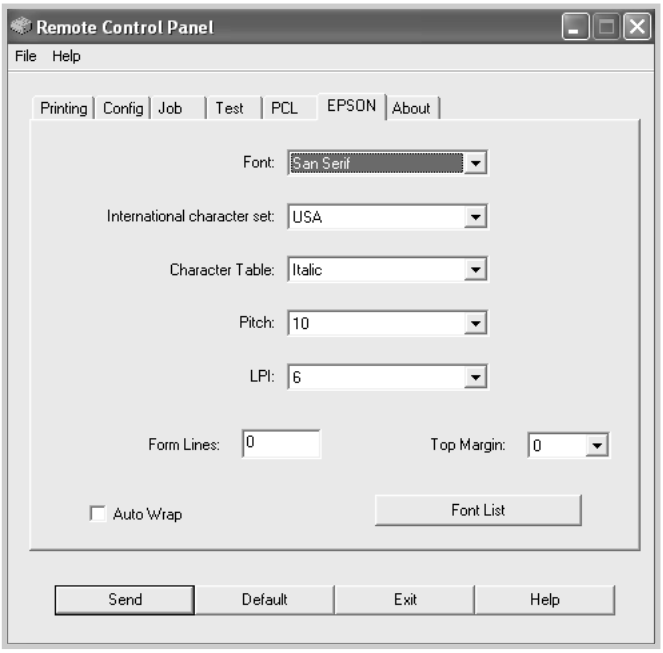
In this tab, you can configure various settings for PCL emulation.



- **Typeface** allows you to select the desired typeface. This setting is ignored when the software application specifies a font.
- **Symbol Set** determines the symbol set. A symbol set is a set of alphabetic and numeric characters, punctuation, and special symbols used when printing with a selected font.
- **Pitch** sets the font pitch (only if you have selected a scalable monospaced font). Pitch refers to the number of fixed-space characters in a horizontal inch of type.
- **Point Size** sets the font point size (only if you have selected a scalable typographic font). Point size refers to the height of the characters in the font. One point equals approximately 1/72 of an inch. You can select point sizes from 4.0 to 999.75 in increments of 0.25 points.
- **Lines Per Page** sets the number of lines that print on each page. The setting can range from 5 to 128 lines per page.
- **Courier** determines the courier font type: **Regular** or **Dark**.
- **Font List** prints a font list showing all the fonts available for PCL emulation.

EPSON

You can configure various settings for EPSON emulation.



- **Font** allows you to select the desired font.
- **International character set** allows you to select a character set of the desired language.
- **Character Table** selects the character sets.
- **Pitch** sets the font pitch. Pitch refers to the number of fixed-space characters in a horizontal inch of type.
- **LPI** sets the number of lines printed a vertical inch. You can select 6 or 8 lines.
- **Form Lines** sets the number of lines that print on each page.
- **Top Margin** allows you to set the top margin of the print material.
- **Auto Wrap** determines whether or not the printer automatically performs line feed when the data overflows the printable area of the print material.
- **Font List** prints a font list showing all the fonts available for EPSON emulation.

Printer Specifications

Item	Specifications and Description
Print Speed	16 PPM (A4), 17 PPM (Letter)
Resolution	1200 x 600 dpi
First Printing Time	Less than 12 seconds
Warmup Time	30 seconds
Power Rating	AC 100 ~ 127 V (USA, Canada) / 220 ~ 240 V (Others), 50 / 60 Hz
Power Consumption	280 W average during operation / Less than 10 W in sleep mode
Acoustic Noise	Stand by: Less than 35 dB; Operating: Less than 50 dB
Toner Supply	Single cartridge
Toner Cartridge Life	3,000 pages (for starter, 1,000 pages), IDC 5% coverage
Duty Cycle	Monthly: 15,000 pages maximum
Weight	7 Kg
Package Weight	Paper: 1.76 Kg, Plastic: 0.2 Kg
External Dimensions (W x D x H)	352 x 372 x 196 mm / 13.8 x 14.6 x 7.7 in.
Operating Environment	Temperature:10 ~ 32 °C / 50 ~ 90 °F; Humidity: 20 ~ 80 % RH
Emulation	PCL6, SPL, IBM ProPrinter, EPSON
Random Access Memory (RAM)	8 MB (nonexpandable)
Fonts	1 bitmap, 45 scalable
Interface Switching	Automatic (Parallel, USB)
Interface	• IEEE 1284 Bidirectional Parallel - Modes supported: Compatible, Nibble, Byte, ECP • USB Interface Standard - USB 2.0 compliant - 12 Mbps 1 port

Paper Specifications

Overview

Your printer accepts a variety of print materials, such as cut-sheet paper (including up to 100% recycled fiber content paper), envelopes, labels, transparencies and custom-size paper. Properties, such as weight, composition, grain and moisture content, are important factors affecting the printer's performance and the output quality. Paper that does not meet the guidelines outlined in this User's Guide can cause the following problems:

- Poor print quality
- Increased paper jams
- Premature wear on the printer.

Notes:

- Some paper may meet all of the guidelines in this guide and still not produce satisfactory results. This may be the result of improper handling, unacceptable temperature and humidity levels, or other variables over which Samsung has no control.
- Before purchasing large quantities of paper, insure the paper meets the requirements specified in this User's Guide.

CAUTION: Using paper that does not meet these specifications may cause problems, requiring repairs. These repairs are not covered by the Samsung warranty or service agreements.

Supported Sizes of Paper

Paper	Dimensions[a]	Weight	Capacity[b]
Letter	8.5 X 11 in. (216 X 279 mm)	60 to 90 g/m^2 bond (16 to 24 lb)	• 250 sheets of 75 g/m^2 bond (20 lb) paper for the tray • 1 sheet of paper for the manual feeder
A4	210 X 297 mm (8.3 X 11.7 in.)		
Executive	7.25 X 10.5 in. (191 X 267 mm)		
Legal	8.5 X 14 in. (216 X 356 mm)		
B5 (JIS)	182 X 257 mm (7.2 X 10 in.)		
Folio	216 X 330 mm (8.5 X 13 in.)		
Minimum size (custom)	76 x 127 mm (3 x 5 in)	60 to 163 g/m^2 bond (16 to 43 lb)	1 sheet of paper for the manual feeder
Maximum size (custom)	216 x 356mm (8.5 x 14 in)		
Transparency	Same minimum and maximum paper sizes as listed above.	Thickness: 0.10 X .14 mm (0.0039 X 0.0055 in.)	
Labels			
Envelopes		up to 90 g/m^2 bond (16 to 24 lb)	

a. The printer supports a wide range of media sizes. See "Printing on Card Stock or Custom-sized Materials" on page 3.15.

b. Capacity may vary depending on media weight and thickness, and environmental conditions.

Note: You may experience jams when using print materials with a length of less than 127 mm (5 in.). For optimum performance, ensure that you are storing and handling the paper correctly. Please refer to "Printer and Paper Storage Environment" on page 7.34.

Guidelines for Using Paper

For the best result, use conventional 75 g/m^2 (20 lb) paper. Ensure that the paper is of good quality, and free of cuts, nicks, tears, spots, loose particles, dust, wrinkles, voids, and curled or bent edges.

If you are unsure of what type of paper you are loading (such as, bond or recycled), check the label on the package.

The following problems may cause print quality deviations, jamming or even damage to the printer.

Symptom	Problem with Paper	Solution
Poor print quality or toner adhesion, problems with feeding	Too moist, too rough, too smooth or embossed; faulty paper lot	Try another kind of paper, between 100 ~ 250 Sheffield, 4 ~ 5 % moisture content.
Dropout, jamming, curl	Stored improperly	Store paper flat in its moisture-proof wrapping.
Increased gray background shading/printer wear	Too heavy	Use lighter paper, open the rear output tray.
Excessive curl problems with feeding	Too moist, wrong grain direction or short-grain construction	• Open the rear output tray. • Use long-grain paper.
Jamming, damage to printer	Cutouts or perforations	Do not use paper with cutouts or perforations.
Problems with feeding	Ragged edges	Use good quality paper.

Notes:

- Do not use letterhead paper printed with low-temperature inks, such as those used in some types of thermography.
- Do not use raised or embossed letterhead.
- The printer uses heat and pressure to fuse toner to the paper. Insure that any colored paper or preprinted forms use inks that are compatible with this fusing temperature (200 °C or 392 °F for 0.1 second).

Paper Specifications

Category	Specifications
Acid Content	5.5 ~ 8.0 pH
Caliper	0.094 ~ 0.18 mm (3.0 ~ 7.0 mils)
Curl in Ream	Flat within 5 mm (0.02 in.)
Cut Edge Conditions	Cut with sharp blades with no visible fray.
Fusing Compatibility	Must not scorch, melt, offset, or release hazardous emissions when heated to 200 °C (392 °F) for 0.1 second.
Grain	Long Grain
Moisture Content	4 % ~ 6 % by weight
Smoothness	100 ~ 250 Sheffield

Paper Output Capacity

Output Tray	Capacity
Face-down output tray	50 sheets of 75 g/m^2 bond (20 lb) paper
Face-up output slot	1 sheet of 75 g/m^2 bond (20 lb) paper

Printer and Paper Storage Environment

Paper storage environmental conditions directly affect the feed operation.

Ideally, the printer and paper storage environment should be at or near room temperature, and not too dry or humid. Remember that paper is hygroscopic; it absorbs and loses moisture rapidly.

Heat works with humidity to damage paper. Heat causes the moisture in paper to evaporate, while cold causes it to condense on the sheets. Heating systems and air conditioners remove most of the humidity from a room. As paper is opened and used, it loses moisture, causing streaks and smudging. Humid weather or water coolers can cause the humidity to increase in a room. As paper is opened and used it absorbs any excess moisture, causing light print and dropouts. Also, as paper loses and gains moisture it can become distorted. This can cause paper jams.

Care should be taken not to purchase more paper than can be used in a short time (about 3 months). Paper stored for long periods may experience heat and moisture extremes, which can cause damage. Planning is important to prevent damage to large supplies of paper.

Unopened paper in sealed reams can remain stable for several months before use. Opened packages of paper have more potential for environment damage, especially if they are not wrapped with a moisture-proof barrier.

The paper storage environment should be properly maintained to ensure optimum printer performance. The required condition is 20° to 24°C (68° to 75°F), with a relative humidity of 45% to 55%. The following guidelines should be considered when evaluating the paper's storage environment:

- Paper should be stored at or near room temperature.
- The air should not be too dry or too humid.
- The best way to store an opened ream of paper is to rewrap it tightly in its moisture-proof wrapping. If the printer environment is subject to extremes, unwrap only the amount of paper to be used during the day's operation to prevent unwanted moisture changes.

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