AFINIA LABEL®

AFINIA 502
LABEL PRINTER

USER MANUAL

Version 1.0.5

Afinia Label

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Edition

502 Printer User Guide Edition 1.0.5. February 2024.

FCC

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Table of Contents

Setting up the Printer 5
In the Box 5
Parts of the Printer 6
The Control Panel 7
Unpacking, Setup, and Installation 8
Remove Tape and Foam 8
Connect Power 8
Set Date, Time, and Language 8
Install Printer Driver 9
USB Connection 10
Network Connection 10
Install Ink Cartridges 11
Align the Printheads 13

Using the Printer 14
Choosing Label Media 14
Loading the Printer 16
Unloading Media 16
Bypassing the Unwinder 17
Using the Control Panel 18
Help Screen 18
Home Screen 18
Setup 18
Cartridge Information 19
Network 20
Printing Labels 22
Printer Preferences 22
Adjusting Alignment for Printing 24
Selecting Media Size 25
Creating Custom Media Sizes 26
Selecting Media Type 26
Change Default Settings in Printer Driver 26
Canceling a Print 27
Out of Paper 27
Wrong Media 28
End of Roll 28
Shutting Down the Printer 28
Software Tools 29
Afinia 502 Toolbox 29
Afinia 502 Printer Utility 31
Cost Calculator 31
Printer Utilities 33
Printer Firmware Update 34
Controller Utilities 35
Advanced 36
Add Afinia 502 Network Printer Utility 37

Printer Maintenance 38
Replacing an Ink Cartridge 38
Dye or Pigment Ink Cartridges 38
Changing Printheads 39
Purchasing Printheads 39
Guidelines for Preventative Maintenance 40
General dust and debris removal 40
Cutter Maintenance 40
Print Path Maintenance 41
Print Carriage Sensor Maintenance 41
Pinch Roller Maintenance 42
Unwinder Maintenance 42
Next level ZIM sensor cleaning 43
Encoder Maintenance 43
Ink Tray Maintenance 44
Troubleshooting 45
Control Panel LED 45
Poor Print Quality or Incorrect Printout 46
Clearing a Media Jam 48
502 Label Printer Control Panel Menu 49
Technical Support 51

Chapter 1

The Afinia Label 502 Label Printer Series includes the **L502**, which uses label stock on a 3" diameter core, and the **F502**, which uses fanfold label stock.

This manual applies to both the L502 and the F502. Any differences in operation between the two models will be detailed in the applicable sections.

Setting up the Printer

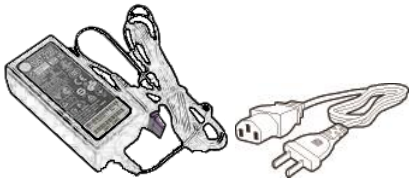
In the Box

Afinia L502 Label Printer

4 Ink Cartridges
(1 each)

Will be either Dye-based or Pigment-based, depending on which type was purchased

USB Cables
*(1 Type **B**, 1 Type **C**)*



Power Supply and Cord

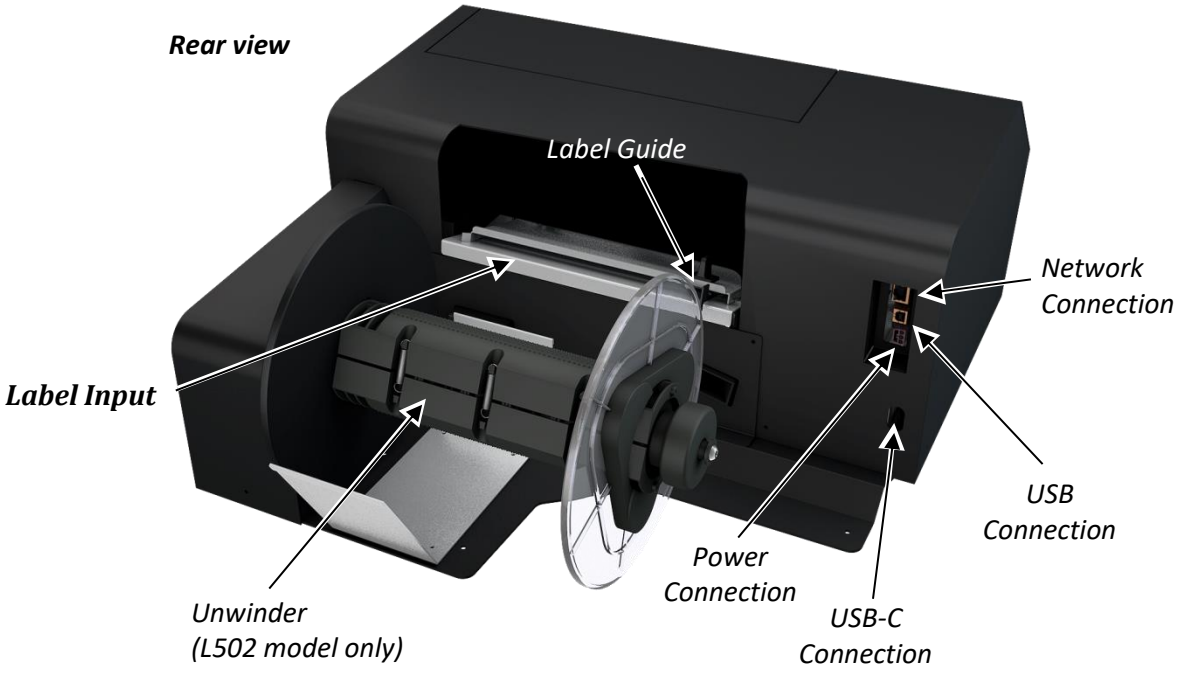
Quick Setup Guide

- 4 aerosol absorbing pads

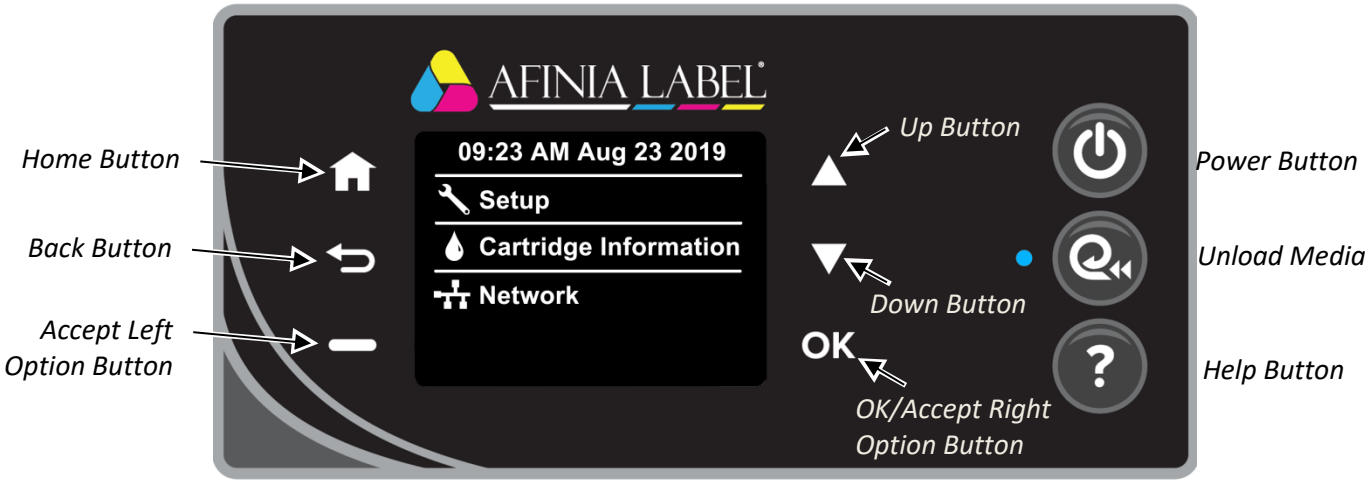
<u>F502 Only</u>:

Input hopper and thumb screws

Parts of the Printer

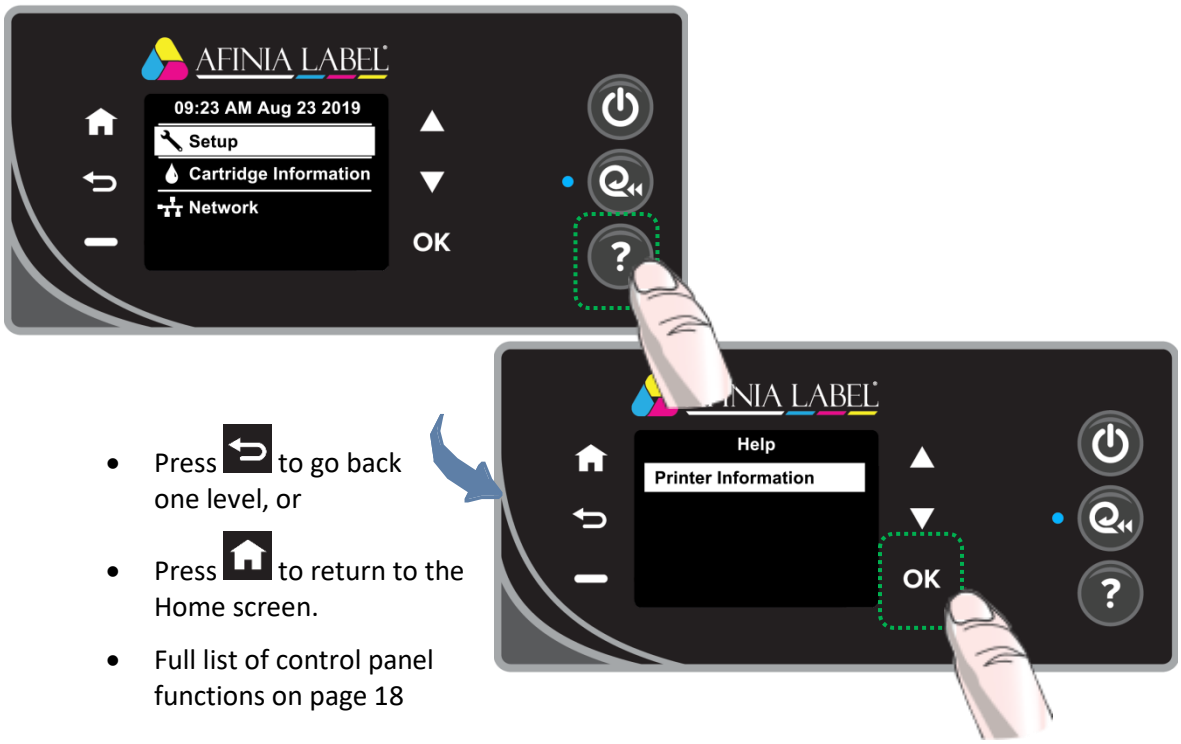


The Control Panel



The control panel includes nine buttons to help you navigate through the menu to the various controls and functions. For example:

- Press **Help** on the Control Panel.
- Press the **OK** button with **Printer Information** selected to view the printer name, model, serial number, and firmware version.

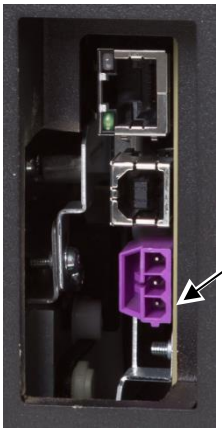


- Press to go back one level, or
- Press to return to the Home screen.
- Full list of control panel functions on page 18

Unpacking, Setup, and Installation

Remove Tape and Foam

- Lift top foam from the box
- Remove the Accessory box from the box.
- Lift printer from box.
- Remove the packaging tape from the printer cover (x2) and Ink waste tray (right).
- **F502** – Install input hopper.



Connect the Power Supply to the Printer

Rear of Printer, right side

Connect Power

Press Power button on Control Panel

Set Date, Time, and Language

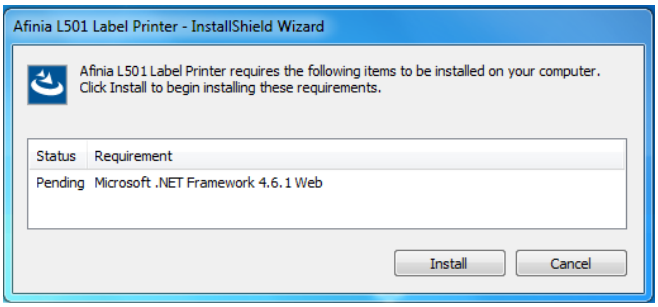
Use the Up/Down buttons to set the Date, Time, and Language. Press the **OK** button when the element shown is correct. Press **Done** when complete.

This will only need to be done the first time the printer is turned on.

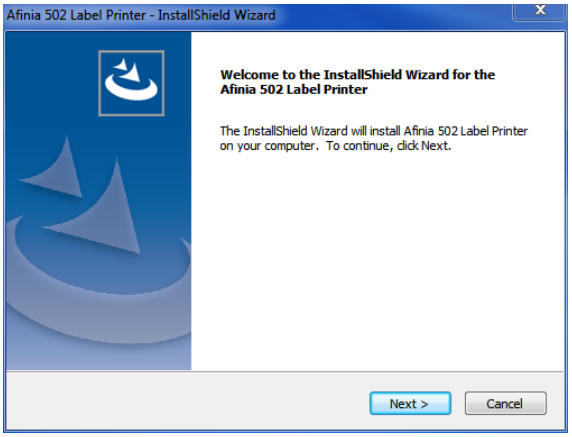
Install Printer Driver

Before connecting the printer to a PC, download and run the installer from http://afinialabel.com/502info.

If an installation for ***Microsoft .NET Framework 4.6.1 Web*** launches, click **Install**. This is necessary for the additional software that comes with the 502 Printer. Depending on your Operating System version, you may need to re-run the 502 Installer once the .NET installation is complete.

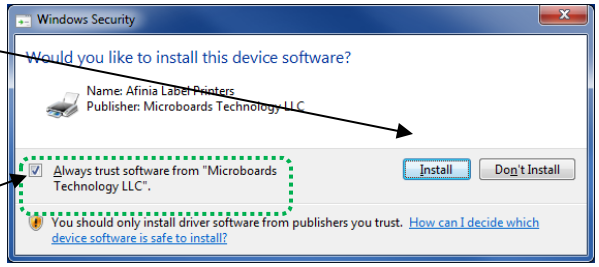


Follow the instructions in each window of the installer as they appear.



During installation, as many as five windows may appear asking for confirmation before installing drivers. Click **Install** on each.

You can avoid multiple windows by checking the option to **Always trust software from Microboards Technology LLC** in the first window.

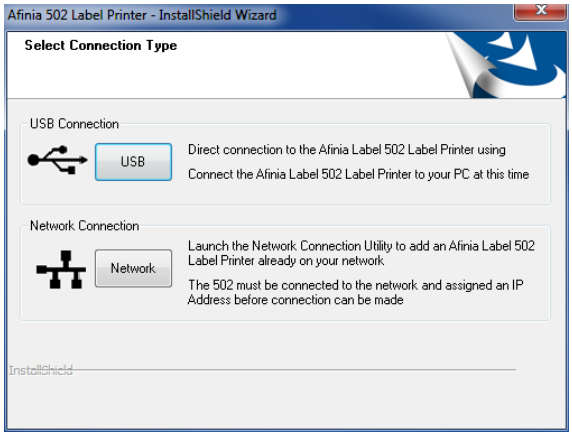


The Afinia Label 502 Label Printer can be connected directly to a PC by USB or can be set up as a network printer.

If connecting directly to the PC, click the **USB** button.

If connecting to a 502 already connected to your network, click the **Network** button.

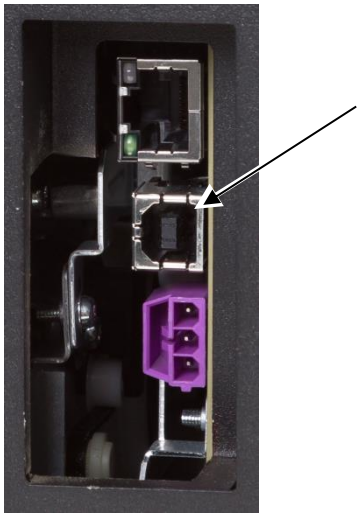
Follow the connection instructions on the next page that match the connection type.



USB Connection

Install the Print Drivers and Toolbox *BEFORE* connecting to the computer

Rear of Printer (right side)



Connect the USB to the Printer and computer

Click **Finish** to close the installer.

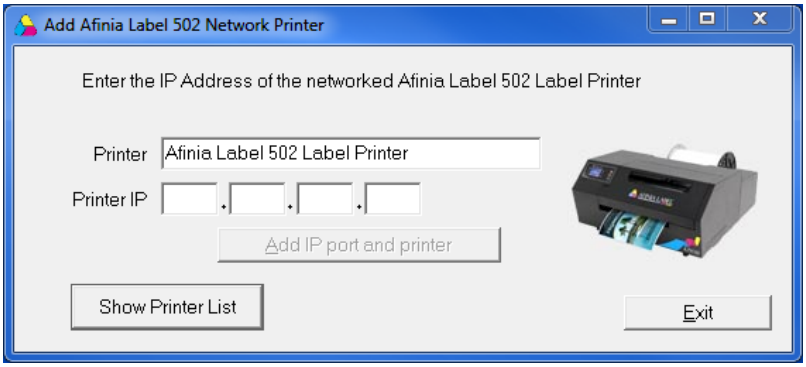
Network Connection

Install the Print Drivers and Toolbox on your computer *BEFORE* connecting to the network printer

The 502 Label Printer must already be connected to the network and have an IP Address before you can connect your computer to it.

When the 502 Label Printer is idle, the top line of the display will alternate between showing the date and time and the IP address. For more information on network settings, please see page 20.

At the end of the installation, click the **Network** button to launch the Add Afinia 502 Network Printer utility.



Enter the IP (v4) Address of the printer in the 4 fields provided. You can enter up to 3 digits in each field, but can enter fewer. Do not enter periods.

Click the **Add IP port and printer** button.

You will be told if the printer was added successfully or not.

If it was not added successfully, verify the IP address of the printer and that it is connected and on before trying again.

Close the Network Printer Utility once the printer has been added, then click **Finish** to close the installer.

For more information on using the Add Afinia 502 Network Printer utility, please see page 37.

Install Ink Cartridges

- Open the Ink Cartridge Access Door
    - Carriage will move to the center to expose the cartridges.
- Insert the Cyan, Magenta, Yellow, and Black ink cartridges into the print carriage, in that order from left to right.
    - Push each cartridge in until it clicks into place and release.
- Close the Ink Cartridge Access Door

Dye or Pigment Ink Cartridges

The Afinia 502 can use either the supported Dye-based or Pigment-based ink cartridges. The Afinia Label 502 Label Printer comes with a set of Dye- or Pigment-based cartridges.

Each type must be used in separate printheads. To use a different type of ink, you will need to install a second printhead (see **Changing Printheads** on page 39).

Installing a new Printhead requires a new set of ink cartridges for priming!

Once a printhead has been primed with one type of cartridge, that printhead will not recognize the other type of cartridge!

Ink Cartridge Color and Part Numbers, by ink type

Ink Type	Ink color	Reorder Number
Dye	Cyan	30636
	Magenta	30643
	Yellow	30650
	Black	30657
Pigment	Cyan	30664
	Magenta	30671
	Yellow	30678
	Black	30685

If you will be using both ink types, you will need a second printhead. It is strongly recommended that you label each printhead accordingly.

Each new printhead comes with a full set of the specified ink cartridges.

Align the Printheads

To ensure the best print quality, a Printhead Alignment is triggered the first time the printer is turned on. The process is slightly different between the L502 and F502 models.

To perform the alignment:

L502- Start here

1. Loosen Unwinder knob and remove end plate.
2. Turn mandrel so one of the flat surfaces faces straight up.

F502 – Start here

3. Move media guide to the widest position.

4. Slide an ***8.5" x 14"*** sheet **of plain, matte paper** into the label input slot until the printer pulls in the sheet.
    a. The paper ***must be matte*** for the alignment to complete successfully.
    b. You can also use continuous matte label stock, minimum 4" wide.
5. Move media guide to side of paper.
6. Press the **OK** button on the Control Panel
7. A series of patterns will be printed and used to automatically align the printheads.
    a. This will take about a minute.
8. Once complete, the display should read **Alignment Successful**
    a. If the display reads **Alignment Failed** or **Alignment Finished**, remove the paper from the printer and repeat steps 4-7 with a new sheet of paper.
9. Pull the paper out the front of the printer.

Chapter 2

Using the Printer

Choosing Label Media

Ensure that the label media meets the requirements for the printer:

Table 1: Media Specifications

Media Type and Dimensions		
Media type	***Inkjet-printable coating required*** Gloss, semi-gloss, and matte	
Media Width	1.5” to 8.625” (38.1 mm to 219 mm)	
Label width	1.0” to 8.5” (25.4 mm to 215.9 mm)	
Label length	Minimum 0.75” (19.1 mm) Maximum 48” (1.016 m)	
Label thickness	Maximum 0.01” (0.3 mm, including liner) Minimum 0.005” (0.13 mm)	
Media Handling	**L502**	**F502**
Print mode	Roll to cut Roll to roll	Cut labels Continuous output
Roll Specifications (L502 model only)		
Figure 1	**Minimum**	**Maximum**
I	Requires 3.0” (76.0 mm) cardboard core (L502	
J	N/A	Maximum 8” (203.2 mm)

Figure 1: Media Roll

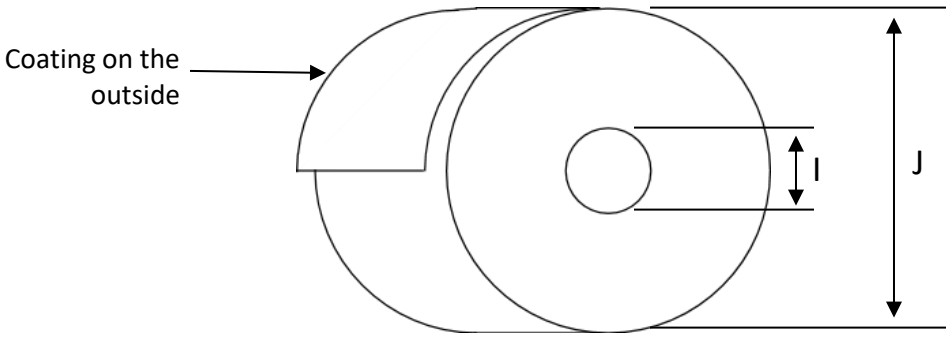
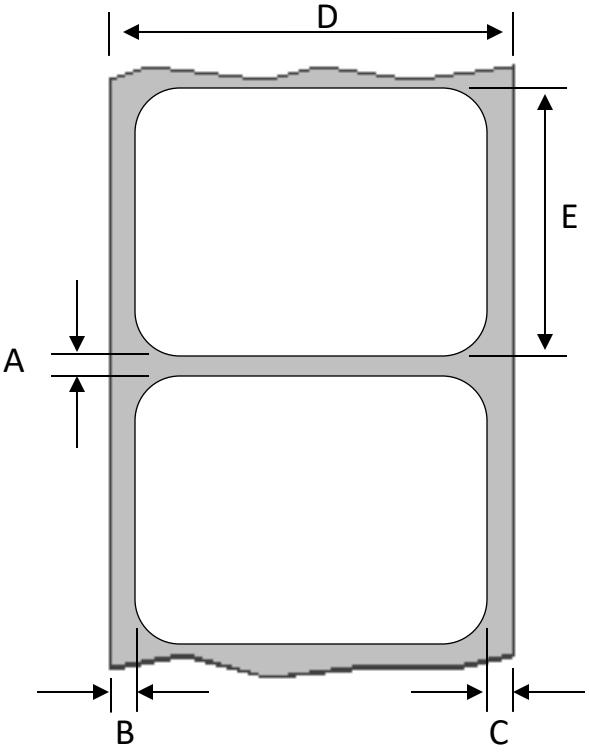
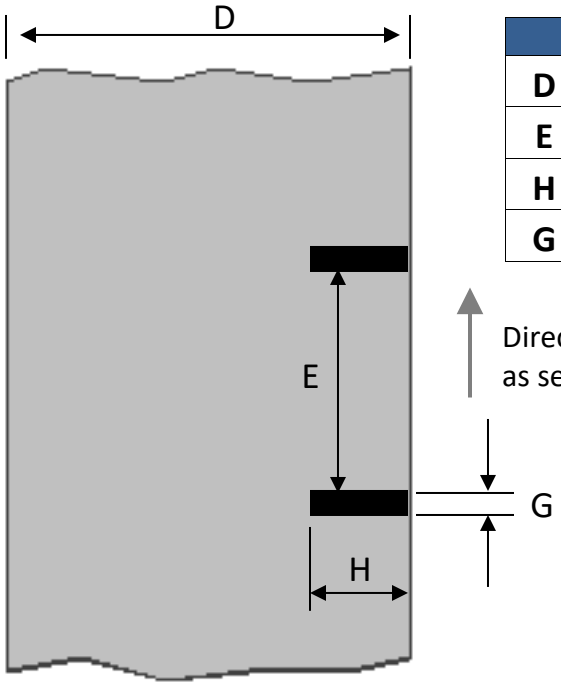


Figure 2: Gap (Transmissive) Media



	Minimum	Maximum
A	0.125” (3.0 mm)	0.3” (8.0 mm)
B	0.0	0.5” (12.7 mm)
C	0.0	N/A
D	1.5” (38.1 mm)	8.625” (219 mm)
E	0.75” (19.1 mm)	48.0” (1.219 m)

Figure 3: Black Mark (Reflective) Media



	Minimum	Maximum
D	1.5” (44.5 mm)	8.625” (219 mm)
E	0.75” (19.1 mm)	48.0” (1.219 m)
H	1.25” (31.75 mm)	8.625” (219 mm)
G	0.125” (3 mm)	0.3” (8.0 mm)

Loading the Printer

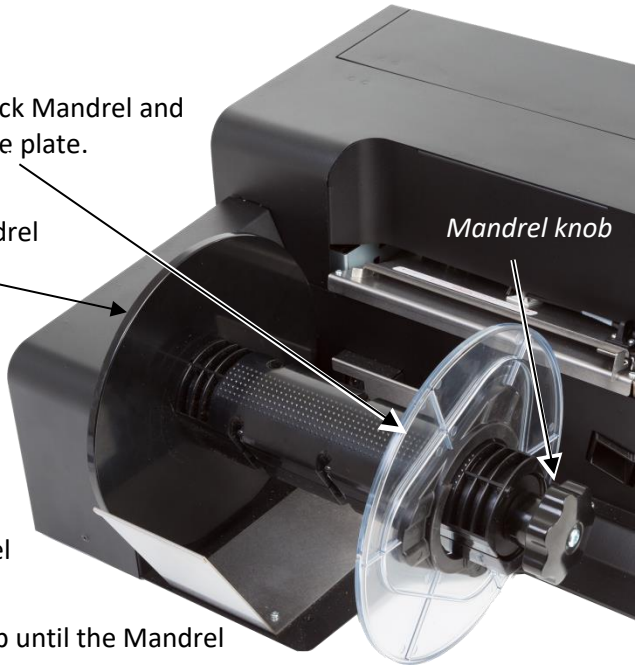
The Afinia Label L502 Label Printer requires a 3" ID core with the labels wound face out.

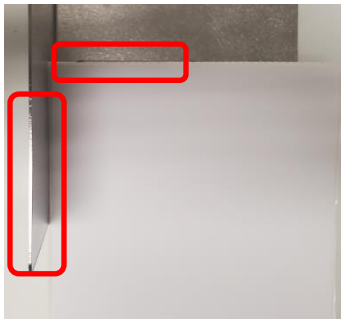
NOTE: Steps 2 through 7 apply to the L502 model only.

1. Cut a clean leading edge on media being loaded.
   a. No partially peeled labels
   b. No folded edges

F502 – Skip to step 7

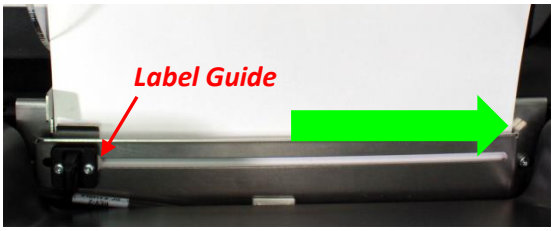
2. Loosen the knob on the Stock Mandrel and remove the adjustable guide plate.
3. Slide the roll onto the Mandrel against the fixed guide plate, label side up.
4. Pull end of label stock until the end of stock is even with the front of the cover.
5. Slide the adjustable guide plate back onto the Mandrel against the stock.
6. Retighten the Mandrel knob until the Mandrel holds the core in place.





F502: Align edge of fan fold stock against the fixed edges of the input hopper.

7. Using the black handle, slide the label guide out to at least the width of the stock.
8. With the printer on, feed the stock into the input slot.
9. Stock should be as far towards the fixed core holder side as possible. Feed until the printer advances the stock.



10. When the stock starts loading, adjust the label guide so it is against the edge of the stock.

Unloading Media

Press the **Unload** button to roll media back to the rear of the printer.

Any printed labels in the printer will be cut before unloading.

Bypassing the Unwinder

(L502 Printer model only)

The integrated Unwinder can be bypassed if an external unwinder is used. Reasons for using an external unwinder would include:

- Using rolls with a diameter greater than 8”
- Using highly reflective label stock, such as gold or silver
- Using stock not on a 3” core

To bypass the integrated unwinder:

1. Loosen Unwinder knob and remove end plate.
2. Turn mandrel so one flat surface faces straight up.
3. Load media from the external unwinder.

If the integrated unwinder turns or you get an unexpected **Out of Paper** message when printing, reposition the mandrel.

To use the integrated unwinder again, unload the media on the external unwinder from the printer and load a roll of media onto the mandrel.

Using the Control Panel

Navigate through the menu by using the **Up** and **Down** buttons to highlight your choice and click **OK**.

Help Screen

Press the **Help** button

Printer Information: Displays Printer Name, Product Number, Serial Number, Service ID, and Firmware Version

Home Screen

Go to **Setup** menu

Check **Cartridge Information**

Go to **Network** menu

Setup

Select **Setup** on the Home Screen and press **OK**.

Printer Settings : Preferences

With ***Printer Settings*** selected, press **OK** twice to open the ***Preferences*** menu.

Date and Time

In the Date and Time menu are the options to enter the **Date**, **Time**, select the **Time Zone** from a list, and turn the **24-Hour format and Daylight Savings** settings ***On*** or ***Off***.

Language

Select the language from the available list.

Country/Region

Select the Country or Region from the available list

Brightness

Change the brightness of the display; options are ***Better***, ***Normal***, and ***Darker***.

Continuable Events
Can be set to ***Press OK to Continue*** or ***Auto Continue***.

Press OK to Continue is the recommended setting.

Tools
Highlight **Tools** and press **OK**.

Clean Printhead *(requires minimum 4" wide continuous stock)*
Select this function to clean the printheads and print the Print Quality Report when complete. The report should show no gaps in the printed output.

Align Printheads
Alignment can be done using plain paper or continuous stock

- **Plain Paper** *(requires 1 sheet 8.5" x 11" plain paper)*
  Turn the stock mandrel so the flat surface is facing the rear of the printer, then load the sheet of paper until the printer starts to feed
- **Continuous stock** *(requires minimum 4" wide matte continuous stock)*
  Matte paper stock must be used when aligning the printheads. Glossy media will cause the alignment to fail. Load stock normally.

A series of patterns will be printed and scanned, with the alignment done automatically.

If the display reads ***Alignment Successful***, remove the paper or stock.

If the display reads ***Alignment Finished*** or ***Alignment Failed***, repeat the alignment. If using plain paper, a new sheet will be needed.

Print Reports
Highlight **Print Reports** and press **OK**.

Print Quality Report *(requires minimum 4" continuous stock)*
Select this function to print a grid showing the pen health of each color.

If any lines are missing in any of the colors, Clean Printheads should be run.

Network Configuration Page *(requires minimum 4" continuous stock)*
Select this function to print the Ethernet settings for the printer.

Cartridge Information
Select **Cartridge Information** on the Home Screen and press **OK**.

Estimated Levels
Press OK when selected to view an estimate of the ink levels.

This shows the same levels as the Afinia 502 Toolbox.

Cartridge Low Alert

Use the **Up** and **Down** buttons to set **Alert** levels to either **Automatic** or **Custom**; press **OK** when the correct option is selected. Alert levels can be set for each cartridge.

If set to **Custom**, use the **Up** and **Down** buttons to set the percentage remaining and click **OK** when each percentage is set.

Cartridge Details

Select **Cartridge Details** and press **OK**.

Use the **Up** and **Down** buttons to select the correct cartridge and press **OK**. Information on the cartridge will be displayed.

Network

Select **Network** on the Home Screen and press **OK**. These settings are only used if the 502 Label Printer is connected to your network using an Ethernet cable.

Ethernet Settings

Select **View Ethernet Details** to review or print the Ethernet settings.

Press the button to print the information. Printing requires minimum 4" wide continuous stock.

Ethernet Settings : Advanced Settings

IP Settings

By default, the 502 Label Printer Advanced Ethernet Settings are **Automatic**. If your network uses DHCP through a Domain Name Server, you do not need to change the IP Settings.

After the printer has been connected to the network and is assigned an IP address, the IP address can be displayed using the **View Ethernet Details** menu option above.

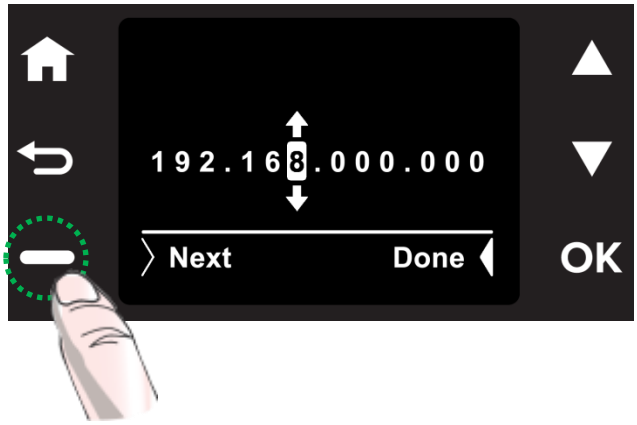
To assign a Static IP address to the printer, change the **IP Settings** to **Manual**. Enter in the **IP Address**, **Subnet Mask**, **Default Gateway**, **Preferred DNS Address**, and optionally enter an **Alternate DNS Address**.

If a Domain Name Server has assigned the printer an IP address, the IP address, Subnet Mask, Default Gateway, and DNS Server addresses will already be entered.

To add or change an address, use the Up and Down buttons to select each digit of the address, moving from left to right.

Press the button when the current digit is correct to move to the next digit.

Press the **OK** button when each address is complete.



Ethernet Settings : Advanced Settings (continued)

IPv6
This option allows you to turn IPv6 addressing **On** (default) or **Off**.

Host Name and **Bonjour Name**
You can change the Host Name and Bonjour Name with these options.

Confirm that you want to change the name by pressing the button when prompted.

Proxy Settings
Use this option to turn the Proxy Settings **On** or **Off** (default).

Link Speed
Select the Link Speed. Options are **Automatic** (default), **10 – Full**, **10 – Half**, **100 – Full**, and **100 – Half**.

Disable EEE
Use this option to turn the EEE (Energy Efficient Ethernet) **On** or **Off** (default).

Print Reports

Requires minimum 4” wide continuous stock.

Press the **OK** button twice to print the Network Configuration Page.

This is the same report as is printed from the Setup : Print Reports : Network Configuration Page and when selecting the Print option from the View Ethernet Details menu item.

Restore Network Settings

Use this option to restore all network settings back to the defaults.

Printing Labels

1. Select the **Print** command from your application.
2. Select the 502 printer and click the **Setup**, **Properties** or similar button.
3. The print settings displayed are the defaults that were set in the printer driver.
4. Change the print settings if needed.

NOTE: Ensure the media settings (e.g. label size, type) match the media loaded in the printer.

5. Print the document.

Any changes to the settings only apply to the current print job. Make the changes in the printer driver to set the default for all print jobs.

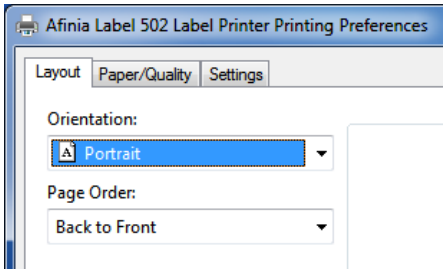
Printer Preferences

There are three main tabs in the Printer Preferences

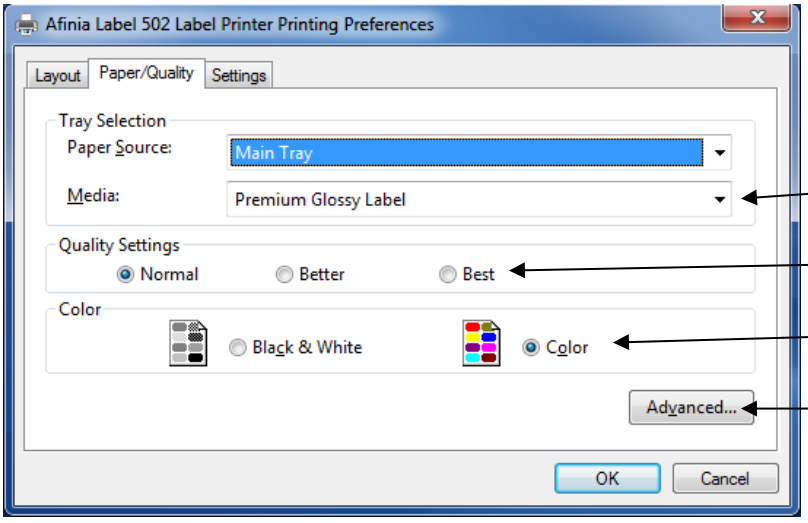
Layout

Select **Orientation** as **Portrait** or **Landscape**.

For multi-page documents, print order can be selected using **Page Order**.



Paper/Quality



Select **Media** type

Select **Quality**

Select **Black & White** or **Color**

Select **Media** size (see page 25)

Settings

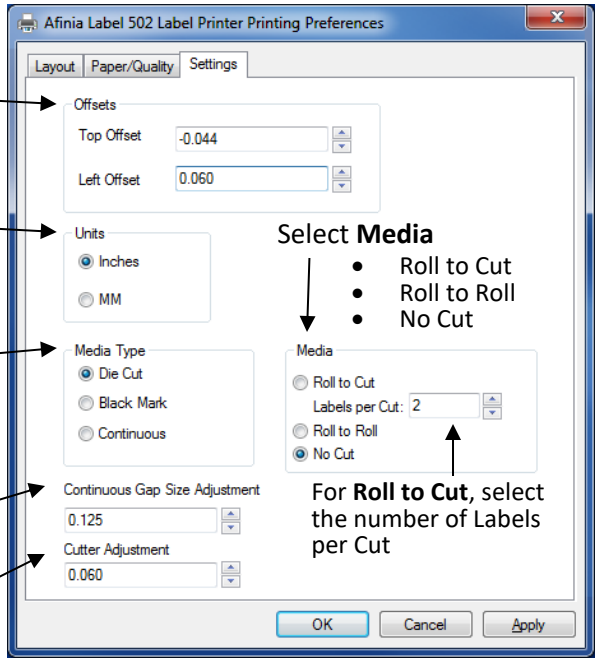
Set **Top** and **Left** print offsets (see below)

Select **Units** of measurement
- Inches
- Millimeters

Select **Media Type**
- Die Cut
- Black Mark
- Continuous

Set **Continuous Gap Size Adjustment**
Adds space between continuous labels.

Set **Cutter Adjustment**
Shifts cutting stop position up or down.
Increase to move cut farther from last label printed,
Decrease to move cut closer to last label printed



Select **Media**
- Roll to Cut
- Roll to Roll
- No Cut

For **Roll to Cut**, select the number of Labels per Cut

Adjusting Alignment for Printing

NOTE: Offsets are made looking at the printed labels right-side up, not as they are printed.

NOTE: Top Offset does not apply to Continuous media.

Use the **Cutter Adjustment** to change the amount of unprinted space at the top of continuous labels.

Left Offset

Increase to move image right
Decrease to move image left

Cutter Adjustment

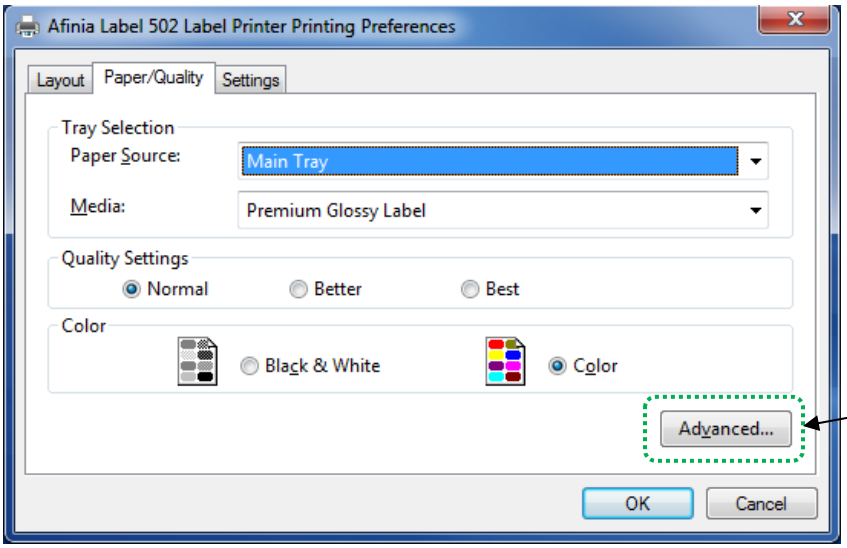
Decrease to move cut up
Increase to move cut down

Top Offset

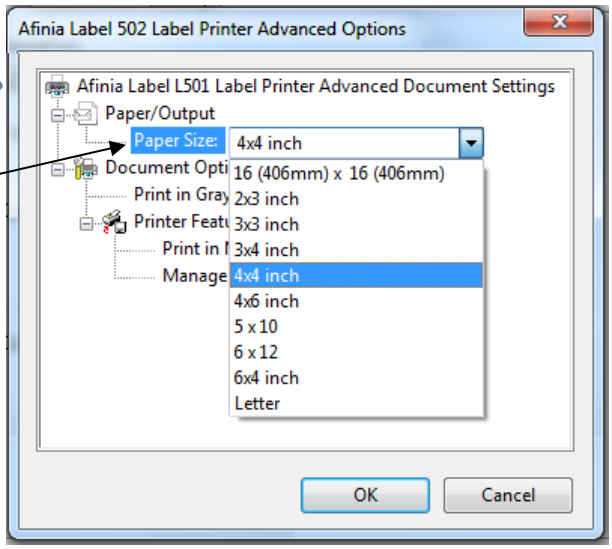
Decrease to move image up
Increase to move image down

Selecting Media Size

Change the Media Size by going into the Printer Preferences.



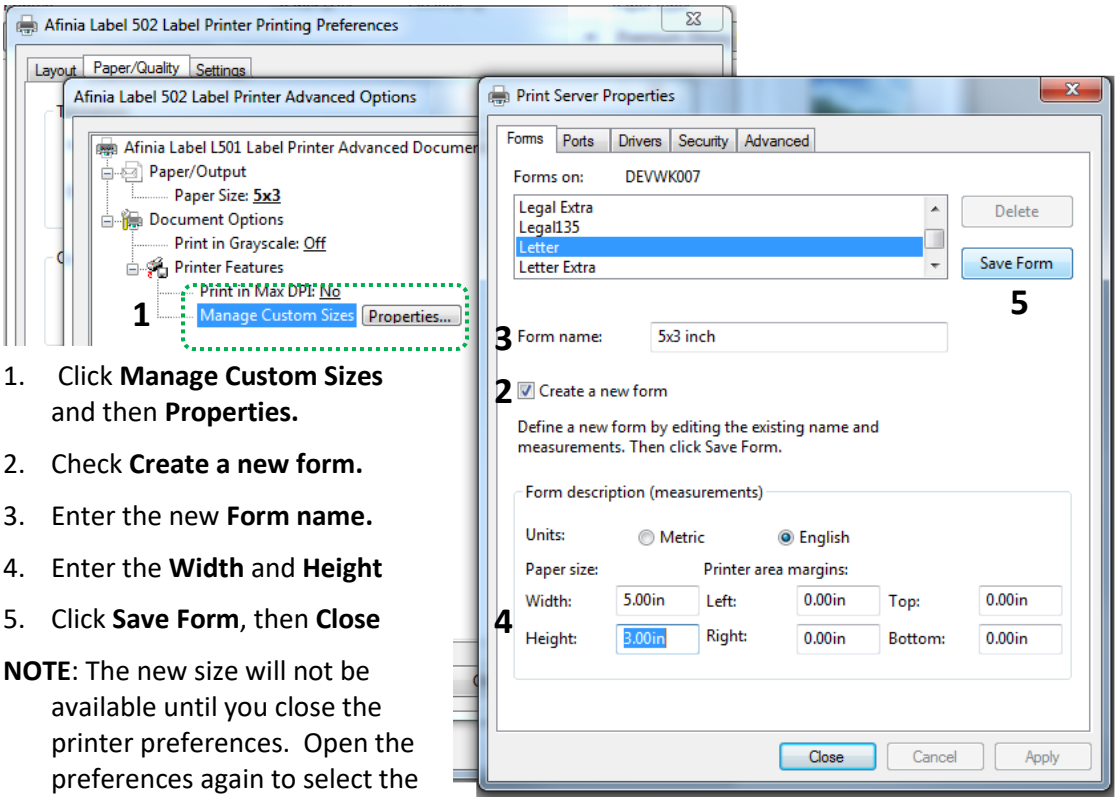
1. Click **Advanced** on the ***Layout*** or ***Paper/Quality*** tab.



2. Select the correct entry from the **Paper Size** list and click **OK.**

Creating Custom Media Sizes

From Advanced Options:

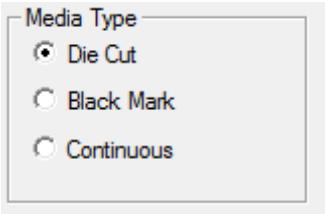


1. Click **Manage Custom Sizes** and then **Properties.**
2. Check **Create a new form.**
3. Enter the new **Form name.**
4. Enter the **Width** and **Height**
5. Click **Save Form**, then **Close**

NOTE: The new size will not be available until you close the printer preferences. Open the preferences again to select the new size.

Selecting Media Type

Select the type of media accordingly from the **Settings** Printer Preferences tab.



Change Default Settings in Printer Driver

Make changes in the printer driver to set the default for all print jobs.

To select the default print settings that will be used for all print jobs:

1. From the Windows **Start** menu, select **Devices and Printers**.
2. Right-click the printer and select **Printing Preferences**.
3. The printing preferences contain three tabs as shown on page 22.
4. Make the changes and click **OK** to save.

It is recommended that any adjustments needed for individual print jobs be made during printing rather than changing the defaults.

Canceling a Print

1. Display reads “Printing…”
2. Press cancel
3. Display reads “Canceling…”
4. Wait for labels to eject and stop.

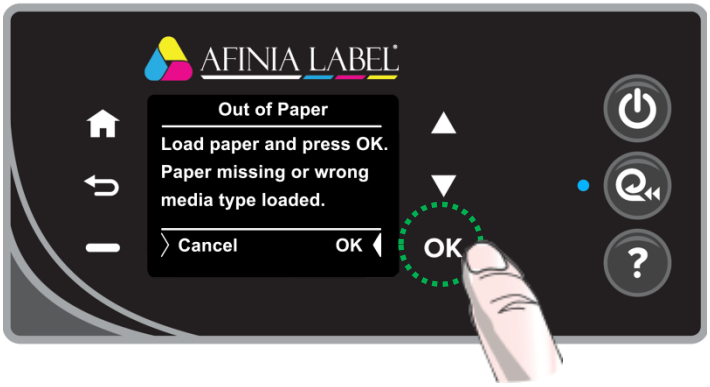
Out of Paper

The display will give an out of paper message if a print job is sent without media loaded.

It will also be displayed at the end of roll or if the selected media type doesn’t match the loaded media.

1. Insert media into input until the printer starts to load the media.
2. Press **OK** to begin.

To cancel the job, press **Cancel** instead of **OK**.



Wrong Media

If the media loaded in the printer does not match the Media Type selected in the Preferences, the printer may not print.

Media mismatches that will result in an error state are:

- **Continuous** loaded, **Die Cut** or **Black Mark** selected.
- **Die Cut** loaded, **Black Mark** selected.
- **Black Mark** loaded, **Die Cut** selected.

Media may feed through the printer past the cutter before the error state occurs.

1. Media will unload after cutting.
2. Display will show Out of Paper message.
    a. Use Out of Paper recovery steps from page 27

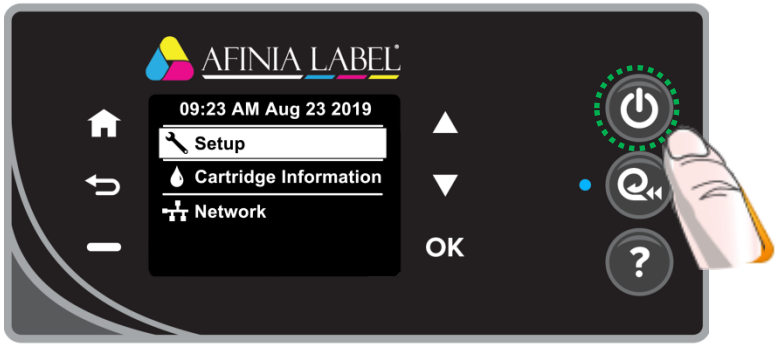
End of Roll

If the media runs out during printing, print will stop and the printer will enter an error state.

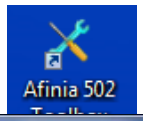
1. Media will unload after cutting.
2. Display will show Out of Paper message.
    a. Use Out of Paper recovery steps from page 27

Shutting Down the Printer

To avoid damaging the printer or cartridges, always use the Control Panel power button to shut the printer down.

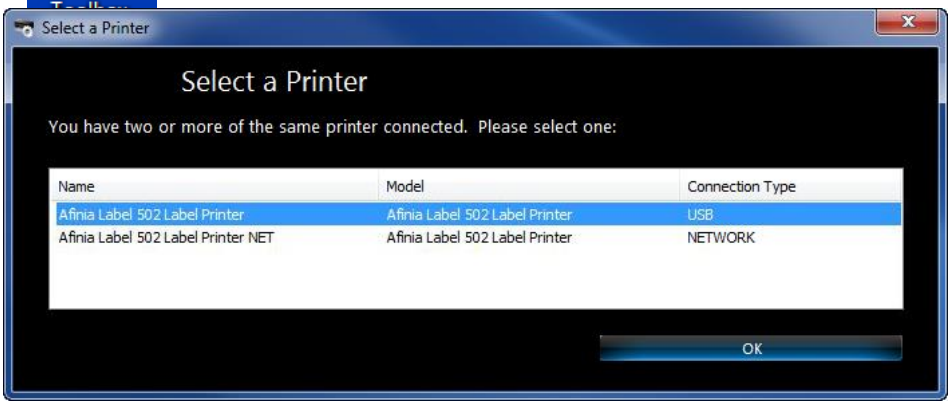


Software Tools

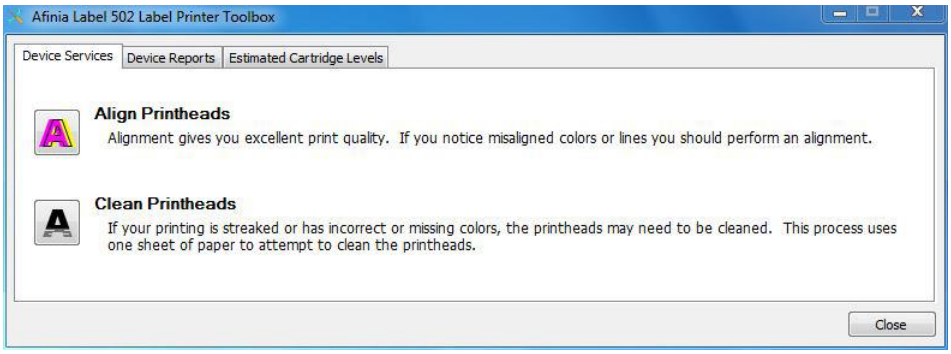


Afinia 502 Toolbox

Open the Afinia 502 Toolbox using the desktop icon for printer utilities. If you have more than one 502 connected to the computer, select the one you want to access.



Several of the utilities require continuous label stock at least 4" wide. If media is not loaded before sending the prints, an Out of Paper state will result (see page 27).



Device Services: Align Printheads (requires paper or stock: see below)

Press this button to align the printheads.

Alignment can be done using plain paper or continuous stock

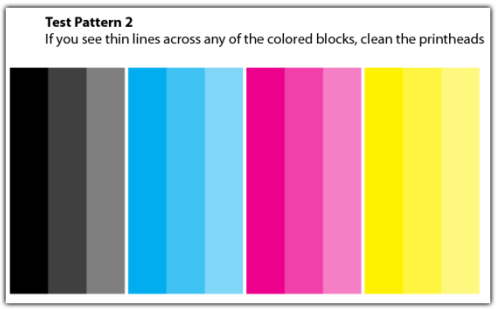
- **Plain Paper** *(requires 1 sheet 8.5" x 11" plain paper)*
  Turn the stock mandrel so the flat surface is facing the rear of the printer, then load the sheet of paper until the printer starts to feed
- **Continuous stock** *(requires minimum 4" wide matte continuous stock)*
  Matte paper stock must be used when aligning the printheads. Glossy media will cause the alignment to fail. Load stock normally.

A series of patterns will be printed and scanned, with the alignment done automatically.

If the display reads ***Alignment Successful***, remove the paper or stock.

If the display reads ***Alignment Finished*** or ***Alignment Failed***, repeat the alignment. If using plain paper, a new sheet will be needed.

Device Services: Clean Printheads (requires minimum 4" wide continuous stock)



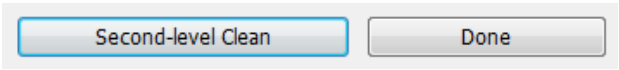
Test Pattern 2

If the Print Quality Diagnostic Page shows horizontal gaps in Test Pattern 2, press this button to clean the printheads.

When the first cleaning round is complete, the Diagnostic Page will print again.

Examine Test Pattern 2; if the problems are cleared up, press **Done**.

Click **Second-level Clean** if gaps in the printed pattern are still visible.



A **Third-level Clean** is available if the Second-level Clean does not clear up the gaps in Test Pattern 2. However, this level of cleaning will use a large amount of ink.

Device Reports: Print Diagnostic Information (requires minimum 4" wide continuous stock)

Click this button to print two test patterns showing the pen alignment and health of each color.

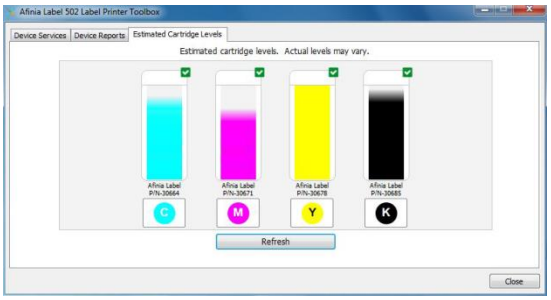
If any lines in Test Pattern 1 are not straight or disconnected, the printheads should be aligned.

If there are any horizontal white lines across the color blocks in Test Pattern 2, Clean Printheads should be run.

Estimated Cartridge Levels

This tab shows an estimate of the remaining ink in the cartridges.

Click the **Refresh** button if the toolbox has been open during printing to show the current estimated levels.



Afinia 502 Printer Utility

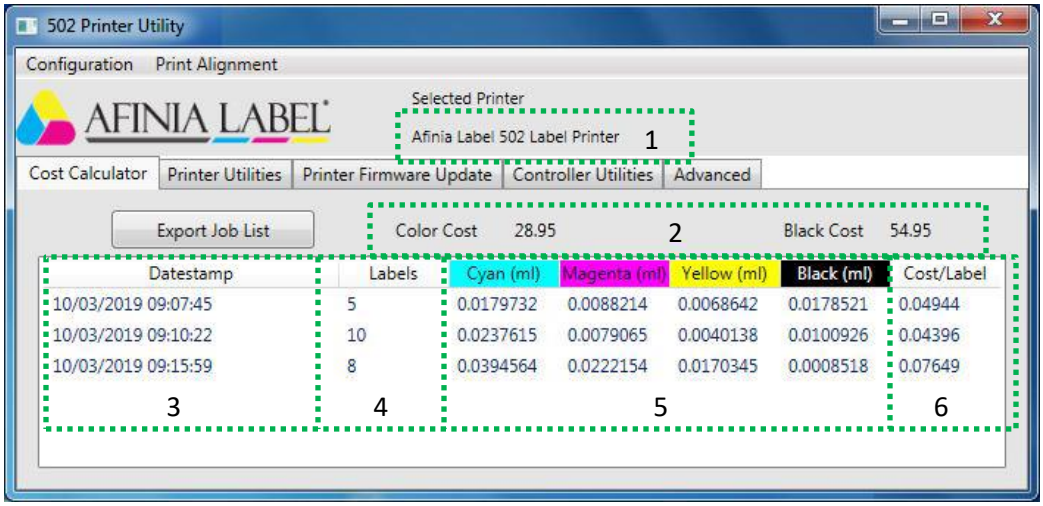
The Afinia Label 502 Printer Utility includes several functions.

All functions in the utility except the Cost Calculator require a USB connection to the printer.

Cost Calculator

The Cost Calculator can be used to help estimate the cost of ink for printing a specific label. This will help in estimating the cost of print jobs.

Unless you are monitoring the full production print job, these numbers will be estimates only; many factors could change the actual ink usage during a longer print job.



The main window shows you:

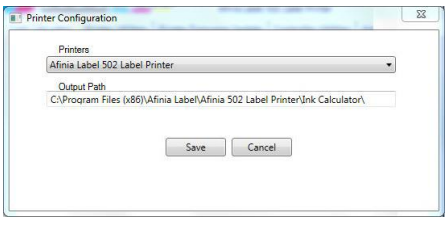
1. Printer being monitored
2. Costs per cartridge
3. Time and Date the job was printed
4. Total Labels Printed
5. Milliliters used per label per cartridge
6. Cost per Label

Open the Calculator before printing a number of the labels you want to estimate – a minimum of 6 labels is recommended. The more labels printed, the more accurate the results will be.

Once the job is finished printing, the ink usage and cost information will appear.

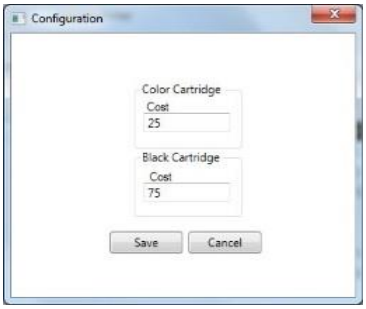
Configuration Menu : Configuration

Click the **Configuration** menu and select **Printer** from the sub-menu to choose or change the printer being monitored or to change the Output directory location.



Only printers installed with the Afinia 502 drivers will appear in the Printer list; the name of the printer itself does not matter.

You cannot open this menu option while the printer you are monitoring is printing.



Configuration Menu : Cost

The **Cost** of the ink cartridges used by the calculator can be changed in this window.

You cannot open this menu option while the printer is printing.

Export Job List

Click this button to export all jobs printed while the Calculator has been running to a .csv file. This type of file can be opened in Microsoft Excel and other spreadsheet applications.

The exported file will be created in the directory set in the **Output Path** set in the ***Configuration : Printer*** menu.

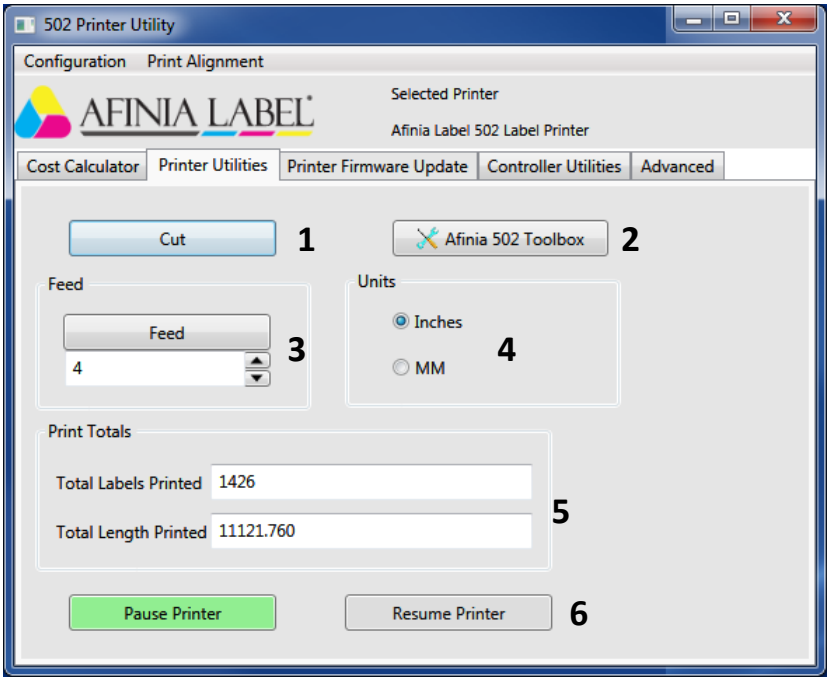
The file will be named **jobs_{year}_{month}_{day}_{hour}_{minute}_{second}.csv**, with the items in brackets coming from the date and time the file was created.

Data in the log file includes information not included in the displayed ink usage and costs, with each job on its own row.

The columns in the file are: printer name, name of the printed file, number of labels printed, cost per label per cartridge, total cost per cartridge, total ink used per cartridge, pages printable per cartridge, total job cost, and cost per label.

Printer Utilities

This tab includes a few utilities for the 502 printer.



1. *Cut*

This button will advance the stock out to the cutter and run the cut cycle, then return the edge of the stock to the print position.

2. *Afinia 502 Toolbox*

This button will open the Afinia 502 Toolbox (same as desktop shortcut).

3. *Feed*

This button will advance the stock based on the distance entered and the units selected.

4. *Units*

Sets the units used to Inches or Millimeters. This applies to the Feed distance and the Total Length Printed values.

5. *Total Labels and Total Length Printed*

The total labels printed and the length of printed stock will be displayed.

Like the Feed function, the Total Length will be in the Units selected.

6. *Pause and Resume Printer*

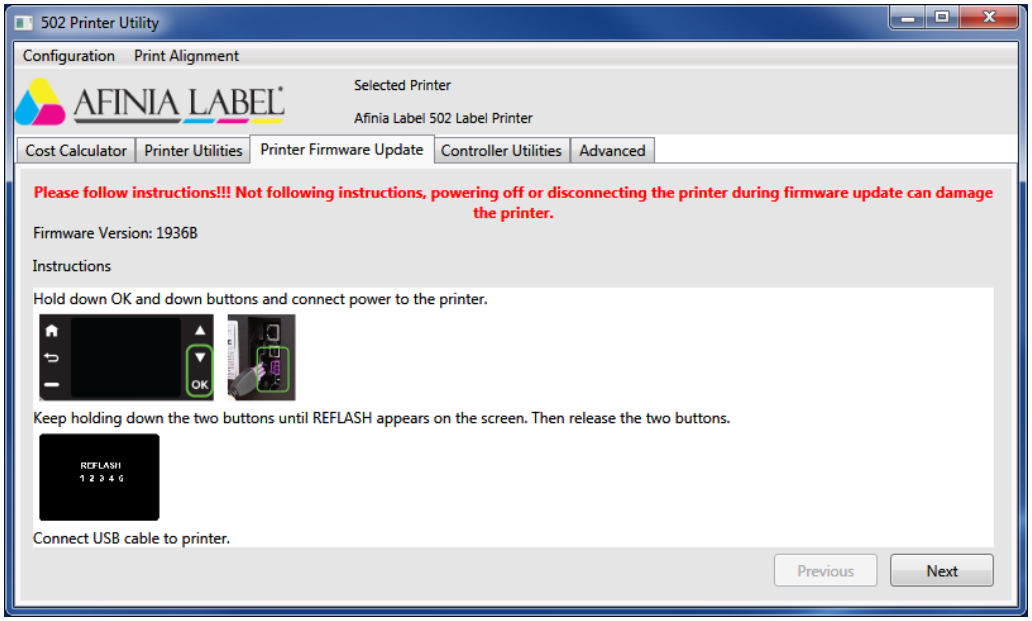
Click the **Pause** button to pause the printer after the label currently being printed. Click the **Resume** button to continue printing with the next label.

Note that if the **Pause** button is clicked before a print job is sent, the printer will pause after the first label of the job is printed.

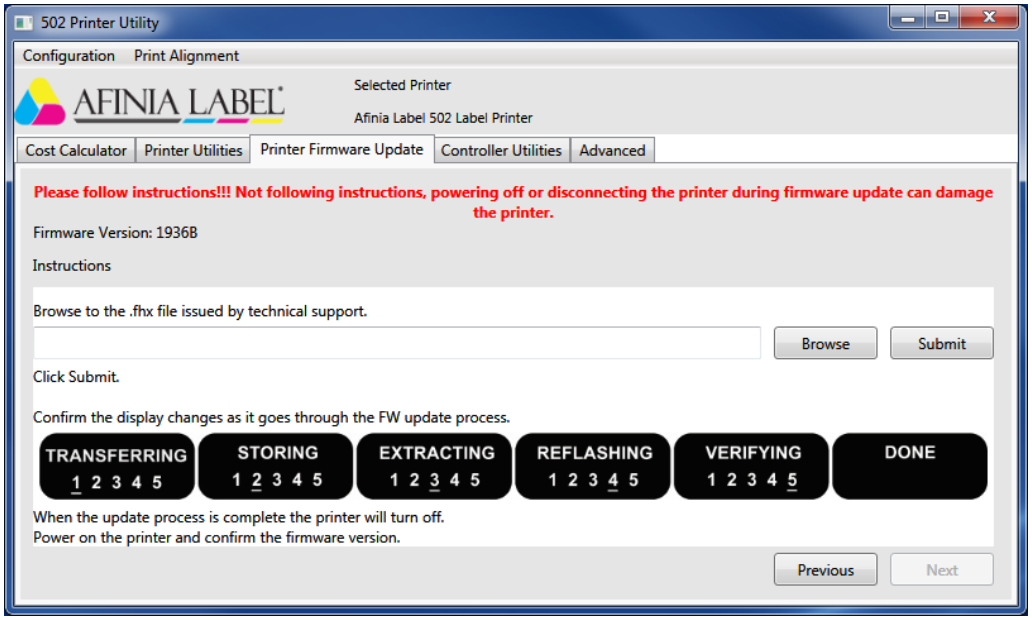
If **Pause** is clicked while the last label is being printed, the job won't complete and cut until the **Resume** button is clicked.

Printer Firmware Update

The Printer Firmware Update tab allows you to update the printer firmware if directed to do so by Afinia Label Technical Support.



Follow the directions on the first page of the tab before clicking the **Next** button.



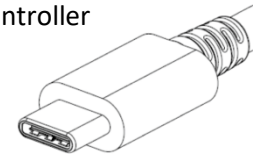
Click the **Browse** button and select the file that was sent to you by the Support technician. Click **Submit** once the file is selected.

The display will show the firmware update stages, then will reboot after **Done** is displayed. **This process will take several minutes.**

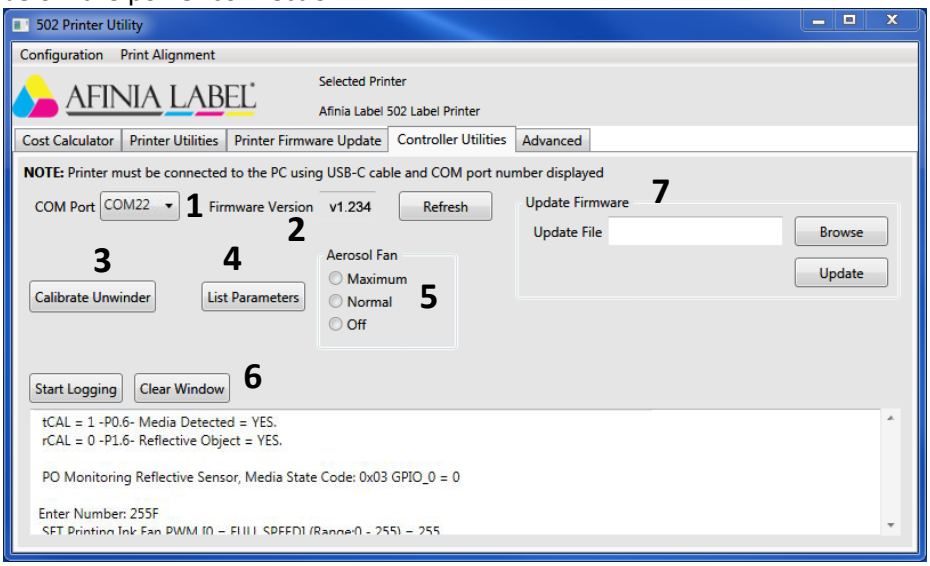
Do not turn off or disconnect the printer while the firmware update is in progress!

Controller Utilities

The Controller Utilities tab includes functions that apply to the controller in the 502 printer.



These functions will only work when the printer is connected to a PC using the USB-C diagnostic port on the rear of the printer, below the power connection.



1. *COM Port*

If a single 502 Printer is connected to the PC using the USB-C diagnostic port, the COM port will be the only one available. If multiple printers are connected, select the correct port from the drop-down list.

While multiple printers can be connected using the diagnostic ports, having a single printer connected means you cannot select the wrong COM port.

2. *Firmware Version*

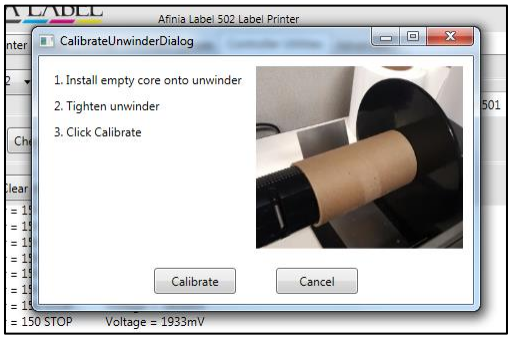
Displays the current firmware on the controller board (the version number shown here is for illustration purposes only).

The **Refresh** button will only be available if the Utility did not detect the Printer when it was started (printer off, not connected, etc.).

3. *Calibrate Unwinder*

Click the **Calibrate Unwinder** button to calibrate the unwinder to the thickness of your cores. You will need an empty core of the same thickness that you are using.

Place the empty core on the unwinder, all the way over to the fixed plate and tighten the mandrel. Click the **Calibrate** button.

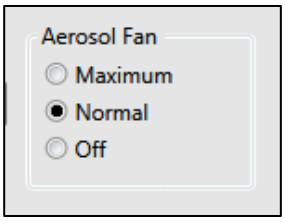


4. *List Parameters*

Click the **List Parameters** button to show the current parameter settings in the data window.

5. *Aerosol Fan*

The aerosol fan can be adjusted, if necessary. **Normal** is the default setting.



If the fan is causing any print clarity problems, select **Off**. You will be warned that with the fan off ink will build up inside the printer faster, requiring more maintenance.

The fan speed will reset to the default **Normal** setting when it is turned on.

6. *Start Logging/Save Log and Clear Window*

Click the Start Logging button to allow the log file to be saved; the button cation will change to “Save Log”.

The Clear Window button will delete all data displayed from the current session of the utility.

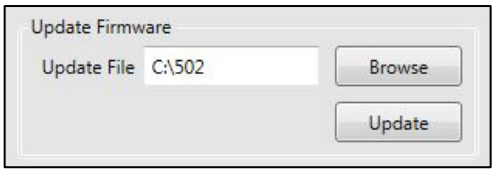
7. *Update Firmware*

The firmware of the controller board can be updated on this tab.

This should only be done under supervision from an Afinia Label Technical Support representative.

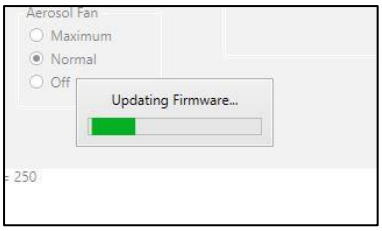
The Support representative will provide you with the firmware update file to save on your PC.

Do not turn off or disconnect the printer while the controller firmware update is in progress!



Click the **Browse** button, go to the location of the firmware file and select the file, then click **Open**.

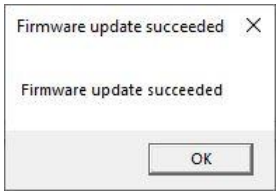
Once the file is selected, click the **Update** button.



A firmware update progress bar will run during the controller update. When the update is complete, a message will be displayed and the firmware version on the tab will be updated.

Advanced

The Advanced tab is password protected and is only to be used by trained Afinia Label technicians or under their direct supervision.

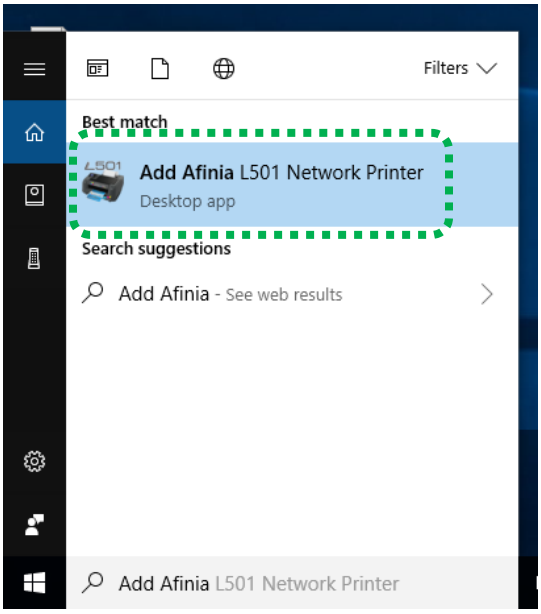


Add Afinia 502 Network Printer Utility

If you've already installed the 502 software and want to add a network 502 printer that is already on your network, use the **Add Afinia 502 Network Printer** utility to easily connect your computer to the printer. All you will need to know is the IP Address of the printer.

Type "Add Afinia" into the program search field and click the matching Desktop app.

There is also a shortcut for the utility in the Start : Afinia Label : Afinia 502 Label Printer folder.

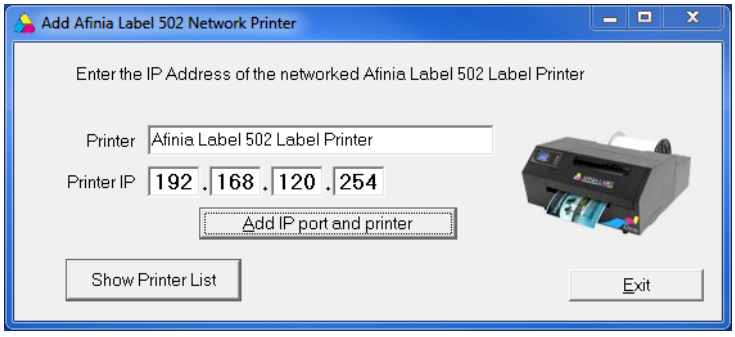


Enter the **Printer IP** address of the 502 Printer, each 3 digit group in each field. If any of the fields only need 1 or 2 digits, you do *not* need to left-pad the field with 0s.

You can change the name of the **Printer** before adding it as well.

Click the **Add IP Port and printer** button when the IP address has been entered.

The utility will let you know if the printer was successfully added or not.



If a printer by the same name already exists, the new printer will have "(Copy ***X***)" at the end, with ***X*** being the next available copy number.

If it was not added successfully, verify the IP Address of the printer.

You can verify the printer was added by clicking the **Show Printer List** button if the list of all printers on your computer is not already open. **Refresh List** will update the list to the current printers. The latest printer added will be the last entry.

If the utility does not work due to security or access settings on your network, please contact your IT department for assistance.

Chapter 3

Printer Maintenance

Replacing an Ink Cartridge

Dye or Pigment Ink Cartridges

The Afinia 502 can use either the supported Dye-based or Pigment-based ink cartridges. However, each type must be used in separate printheads.

To use a different type of ink, you will need to install the second printhead (see **Changing Printheads** on page 39).

Installing a new Printhead requires a new set of ink cartridges for priming!

Once a printhead has been primed with one type of cartridge, that printhead will not recognize the other type of cartridge!

Only Afinia cartridges can be used!

Ink Type	Ink color	Reorder Number
Dye	Cyan	30636
	Magenta	30643
	Yellow	30650
	Black	30657
Pigment	Cyan	30664
	Magenta	30671
	Yellow	30678
	Black	30685

If you will be using both ink types, it is strongly recommended that you label each printhead accordingly.

Cartridges should be replaced when a cartridge reports being low or out of ink.

- Open the Ink Cartridge Access Door
- Press and release the cartridge that needs to be replaced; it will unlock and eject a short way.
- Remove the ink cartridge.
- Remove the new cartridge from the packaging.
- Push in the new cartridge into the carriage until it and locks
- Close the Ink Cartridge Access Door

Changing Printheads

The printhead should be changed if you are switching between dye-based ink and pigment-based ink or if print quality issues persist after cleaning and replacing cartridges.

- Open the Ink Cartridge Access Door
- Remove ink cartridges.

If you are changing from one ink type to another, it is recommended that you keep the ink cartridges in the printhead being removed. Storage of a used printhead with the cartridges removed can lower the life span of the printhead.

- Lift the grey lever on the right to release the printhead assembly and remove.
- Lower replacement printhead into the carriage
- Lower the grey lever to lock printhead in place.
- If the printhead is:
  - **NEW**: Install ***new*** ink cartridges of the type with which the printhead is to be used (Dye-based or Pigment-based) – **new cartridges *must* be used!**
  - **USED**: Install ink cartridges of the same type as has been previously used in the printhead
- Close the Ink Cartridge Access Door to prime the printhead.

If a previously used printhead does not recognize the ink cartridges as valid and doesn't begin priming, the printhead was initially used for the other ink type.

Tip: For the best print results, run the **Toolbox *Printhead Alignment*** (see page 29) when you replace the Printhead.

Purchasing Printheads

Printheads can be purchased through your Reseller.

Each new printhead comes with a full set of ink cartridges as the initial priming of the Printhead requires a new set of cartridges. Be sure to order the Printhead based on the ink type you will be using.

Ink Type	Afinia Printhead Part Number
Dye	30986
Pigment	30993

Guidelines for Preventative Maintenance

Occasional maintenance to remove dust and debris is required for best performance.

Do not substitute where lint-free cloth is called for. Using paper towels or regular cloth could damage the printer.

General dust and debris removal

Tools: Small low-suction hand-held vacuum or compressed air for electronics; tweezers or needle-nose pliers

1. Turn off printer and unplug.
2. Use a small low-suction hand-held vacuum for dust and debris removal.
    a. If you do not have a small low-suction hand-held vacuum, use compressed air for electronics to blow as much dust or debris from printer as possible.
3. Use tweezers or needle-nose pliers to gently remove media debris that is not removed by vacuum.

Do not use a high-suction vacuum to avoid damaging the printer.

4. Plug in and turn on the printer.

Cutter Maintenance

Tools: #1 Phillips screwdriver; lint-free cloth; isopropyl alcohol

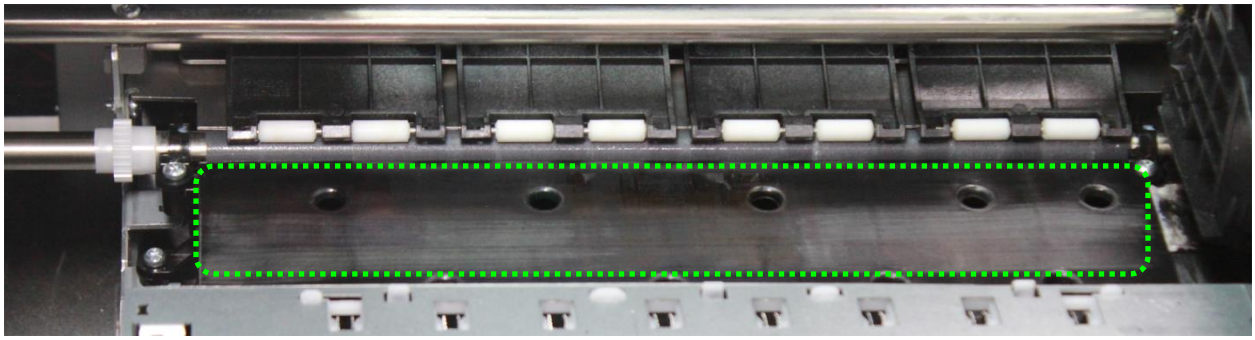
1. Turn off printer and unplug.
2. Remove the two screws on the front of cutter handle.
3. Remove spring from cutter axle.
4. Pull cutter axle and cutting wheel out of cutter.
5. Using a lint-free cloth and isopropyl alcohol, clean any adhesive or debris from wheel.
    a. Note that the axle is not fixed in the wheel and may fall out
6. Using a lint-free cloth and isopropyl alcohol, wipe any adhesive or debris from cutting edge.
    a. Located below rail cutter rests on
    b. Move the position of cutter to clean entire cutting edge.
7. Replace wheel in cutter.
8. Replace spring on cutting wheel axle.
9. Replace the handle.
    a. Do not over-tighten the two screws.
10. Plug in and turn on the printer.

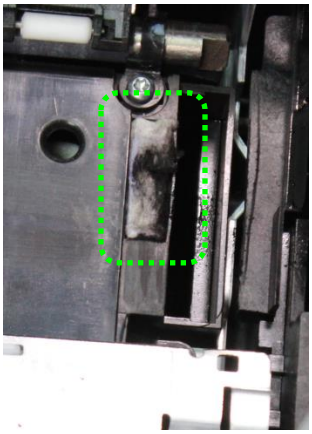
Print Path Maintenance

With use, ink may accumulate on the plate below the print path.

Tools: Lint-free cloth; isopropyl alcohol

1. Turn off printer and unplug.
2. Open Cartridge Access door
3. Clean the plate below the print path with a lint-free cloth dampened with alcohol.



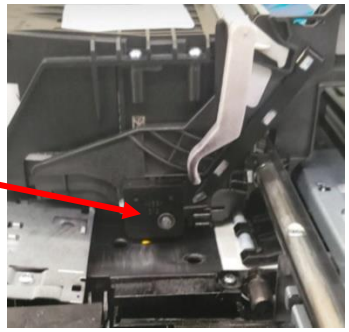


4. Clean ink pad to right of print plate
    a. Replace if necessary (see Troubleshooting)
5. Close Cartridge Access door
6. Plug in and turn on the printer.

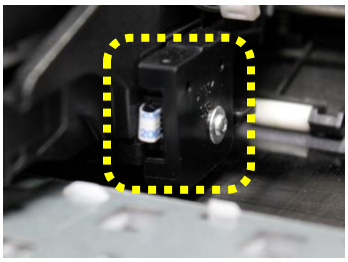
Print Carriage (ZIM) Sensor Maintenance

The sensor is on the right side of the print carriage.

Tools: Compressed air for electronics; lint-free cloth; isopropyl alcohol



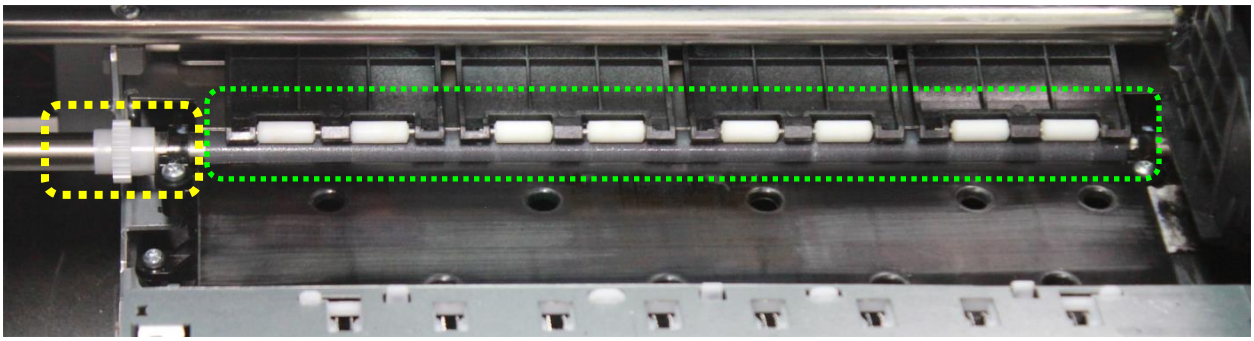
1. Open Cartridge Access door.
2. Blow dust or debris from bottom of sensor (circled in yellow)
3. For more cleaning, gently wipe bottom of sensor with a lint-free cloth dampened with isopropyl alcohol.
4. Close Cartridge Access door.



Pinch Roller Maintenance

Tools: Lint-free cloth; isopropyl alcohol

1. Close Cartridge Access door
2. Turn off and unplug printer.
3. Open Cartridge Access door.
4. Clean each white pinch roller (outlined in green) using lint-free cloth dampened with alcohol.

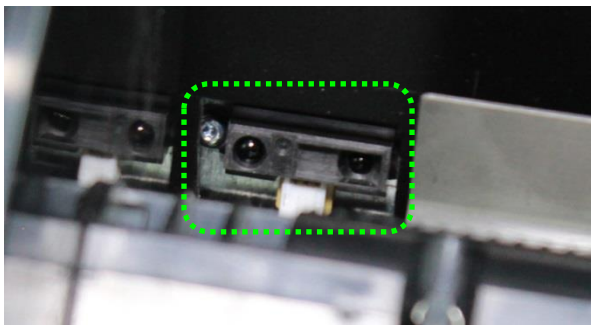


5. Clean grit roller underneath the pinch rollers by manually turning the white gear (outlined in yellow) to the left of the print plate.
6. Close Cartridge Access door
7. Plug in and turn on the printer.

Unwinder Maintenance

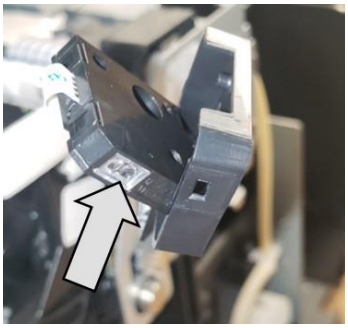
Tools: Lint-free cloth; isopropyl alcohol; compressed air for electronics

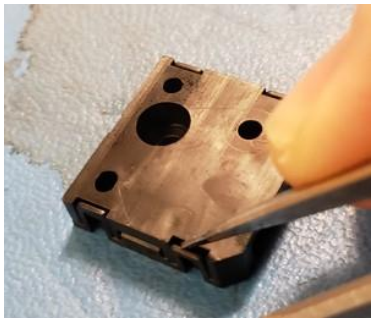
1. Remove loaded stock.
2. Turn off and unplug printer.
3. Using lint-free cloth and isopropyl alcohol, remove any adhesive residue on the mandrel or end caps.
4. Using compressed air, blow dust or debris from sensor.
5. Plug in and turn on the printer.

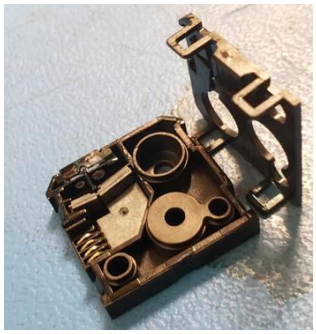


Next level ZIM sensor cleaning

Remove screw with a Torx.
Be careful not to damage the cable.
Follow 3 steps below to take sensor a part and clean.

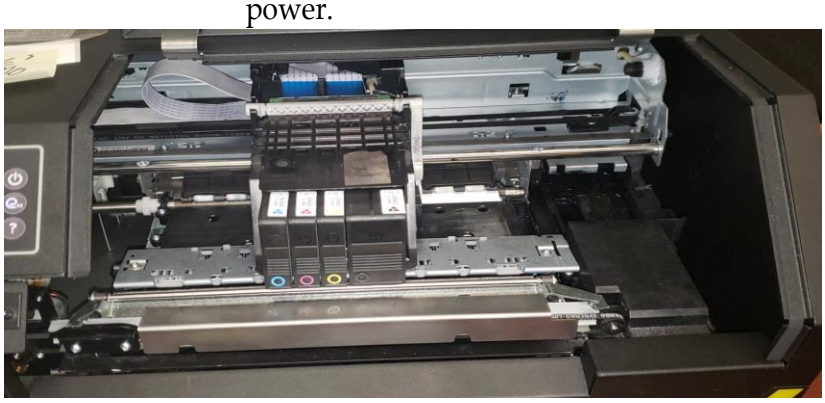






Encoder Maintenance

1. Open the lid.
2. Once the print head comes to the middle power off the printer and unplug power.



3. Locate the encoder strip pointed out below image.
4. Clean with a lint free cloth and water.

NOTE: DO NOT USE Alcohol

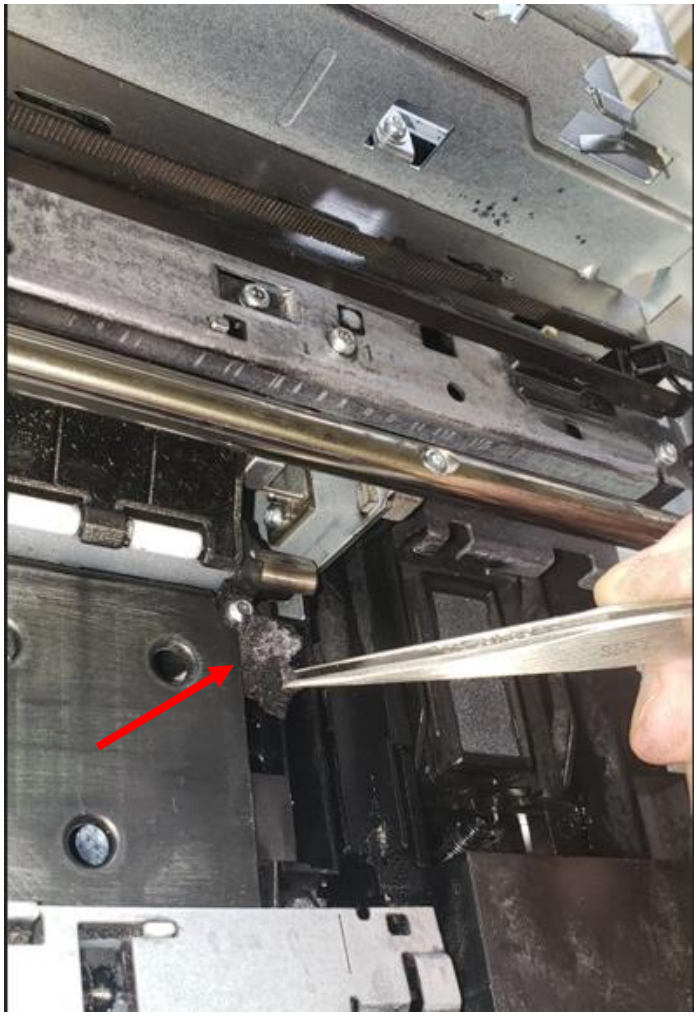
Ink Tray Maintenance

With use, the waste Ink Tray pad may become saturated and need to be cleaned.

Tools: Nitrile or latex gloves; paper towels, plastic spoon

1. Turn off and unplug printer.
2. Remove tray from right side of printer.
3. Using the paper towels, absorb as much ink from the tray as possible.
4. For more solid ink deposits, scoop out of tray with plastic spoon.
5. If pad in tray will not clean easily, contact Technical Support to purchase a new pad. Part: 29117 Ink Absorber, Spittoon.
6. **Replace the tray!**

   Printing without the tray in place can result in ink leaks.
7. Remove and replace the pad shown below. Part:30937 Ink Absorber aerosol.
8. Plug in and turn on the printer.



Chapter 4

Troubleshooting

See the full 502 Label Printer Troubleshooting video here

Control Panel LED

The LED on the control panel indicates a number of printer states:

LED	Display	
Off	**Off**	1. Power cable not plugged in 2. Plugged in, but power button not pressed
Off	**On**	1. No media, cartridges being primed; not ready to print 2. No media, printhead maintenance being performed; not ready to print
Always On	**On**	Printer on, stock loaded (ready)
Slow Blink	**On**	No stock in paper path
Fast Blink	**On**	Paper unloaded but paper sensor blocked. Remove stock from paper path
Pulsing	**On**	Printing

If an error message appears on the Control Panel, follow the instructions to clear the error.

Poor Print Quality or Incorrect Printout

Print Problem	Possible Cause	Resolution
Colors not aligned	Printhead alignment needed	1. **Toolbox** : Device Services : **Align Printheads**
Low or poor print quality	Printhead cleaning needed	1. **Toolbox**: Device Services : Clean Printheads 2. Run **Second Level Clean** if needed
	Printhead needs to be cleaned or replaced	1. **Toolbox**: Device Report : Print Diagnostic Information 2. If report shows missing lines, **Toolbox**: Device Services : Clean Printheads 3. Print Diagnostic Information again; if lines still missing, replace
	Quality setting too low for your artwork	**Printer Preferences :** Change **Quality** setting to ***Better*** or ***Best***
Colors not correct	Printhead cleaning needed	1. **Toolbox**: Device Services : Clean Printheads 2. Run **Second Level Clean** if needed
	Wrong label stock selected	**Printer Preferences** : Check the **Media** selected before printing
Ink not drying or smearing	Wrong media coating	Only use media with inkjet-compatible coating
Print not correct size	Print settings incorrect	1. Verify label size selected is correct 2. Verify scaling is not set when printing
	Label and Image not same size	Resize image or load correct label size
Print not aligned to label	Offsets not correct	**Printer Preferences** : Adjust the **Top** or **Left Offsets** as needed
Print alignment is shifting during printing	Label is not moving in straight path	1. Verify label stock is inserted correctly 2. Verify adjustable core holder is secure 3. Verify core holders are tight against sides of core 4. Verify Label Guide is in correct position 5. Verify input roll is wound straight
Label not stopping in correct cut position	Cutter Offset not correct	**Printer Preferences** : Adjust the **Cutter Offse**t as needed

(continued…)

Print Problem	Possible Cause	Resolution
Length of two labels fed through blank, cuts, media unloads; LED blinking	Wrong **Media Type** selected in **Settings**	Load correct media type and press **OK**, or press **Cancel**.
Printer not printing	No paper in printer when job is sent	Cancel job or load media and press **OK** *If using Die Cut or Black Mark media, the first label will be left blank*
Printer stops printing mid-job	End of Roll	Cancel job or load media and press **OK** *If using Die Cut or Black Mark media, the first label will be left blank*
	Media jam	Clear media jam (see page 48)
	PC disconnect	Verify PC is connected to printer and on
Media does not load	Printer still initializing	Wait until green LED is flashing slowly
	Media Guide in the way	Move the media guide to the left and reload
	Printheads being cleaned	Remove media and wait until the cleaning cycle completes. Retry loading

Clearing a Media Jam

If the media jams, follow these steps to clear the printer:

1. Turn off printer from control panel and unplug power cord.
2. Open Cartridge Access door.
3. Cut any media past the print zone and pull slowly out through front.
4. Remove remaining media by gently pulling stock back toward unwinder.
5. Close Cartridge Access door.
6. Plug in the power cord and turn on the printer.

502 Label Printer Control Panel Menu

Key

- User inputs are in *italics*.
- Default settings are in ***bold***.
- Media needed is in *blue*.

1. Setup
    a. Printer Settings
        i. Preferences
            1. Date and Time
                a. Date
                    i. Enter Date
                b. Time
                    i. Enter Time
                c. Time Zone
                    i. Select from List
                d. 24-Hour Format
                    i. On
                    ii. Off
                e. Daylight Savings
                    i. On
                    ii. Off
            2. Language
                a. Select from list
            3. Country/Region
                a. Select from list
            4. Brightness
                a. Brighter
                b. Normal
                c. Darker
            5. Continuable Events
                a. Press OK to Continue
                b. Auto Continue
            6. Store Anonymous Usage Information
                a. On
                b. Off
    b. Tools
        i. Clean Printhead [1]
            1. Requires minimum 4" wide continuous stock
        ii. Align Printer
            *1. Requires minimum 4" wide **matte** continuous stock*
    c. Print Reports
        i. Print Quality Report [1]
            1. Requires minimum 4" wide continuous stock
        ii. Network Configuration Page [2]
            1. Requires minimum 4" wide continuous stock
2. Cartridge Information
    a. Estimated Levels
        i. Graphic display of cartridge levels
    b. Cartridge Low Alert (per cartridge)
        i. Automatic
        ii. Set Custom Level
            1. Set % for alert for each cartridge
    c. Cartridge Details
        i. Select the cartridge to view

(continued…)

3. Network
    a. Ethernet Settings
        i. View Ethernet Details [2]
            1. Can *View* or *Print*
                a. Print requires minimum 4" wide continuous stock
        ii. Advanced Settings
            1. IP Settings
                a. Automatic
                b. Manual (Static)
                    i. IP Address
                        1. Enter IP Address
                    ii. Subnet Mask
                        1. Enter Subnet Mask
                    iii. Default Gateway
                        1. Enter Default Gateway
                    iv. DNS Address
                        1. Preferred
                            a. Enter Address
                        2. Alternate (optional)
                            a. Enter Address
            2. IPv6
                a. On
                b. Off
            3. Host Name
                a. Enter Name
            4. Bonjour Name
                a. Enter Name
            5. Proxy Settings
                a. On
                b. Off
            6. Link Speed
                a. Automatic
                b. 10 – Full
                c. 10 – Half
                d. 100 – Full
                e. 100 – Half
            7. Disable EEE
                a. On
                b. Off
    b. Print Reports
        i. Configuration Page [2]
            1. Requires minimum 4" wide continuous stock
    c. Restore Network Settings

1 – Clean Printhead will print the Print Quality Report when complete
2 – These three menu items print the same Network Configuration Report

Technical Support

For technical questions or support issues, contact Afinia Label Technical Support:

PH: 952-556-1608

support@afinia.com

www.afinialabel.com/support

Please have the Serial Number of your Afinia Label 502 Label Printer available when contacting Technical Support.

Date of Purchase: _____

Place Purchased: _____

Serial Number: _____

(Located on back of Printer)