



Inkjet Direct User Guide

Xitron. January 2017.

1. Introduction

Inkjet Direct, referred to as “IjD”, is a Navigator RIP plug-in which controls Epson Stylus Pro inkjet printers to output film or plates. Separately available Xitron plug-ins will drive Epson Stylus Pro inkjet printers as contract proofers.

This user guide will help you to configure Xitron’s Inkjet Direct plug-in for Navigator RIPs and other RIPs based on the Harlequin RIP.

Installation is covered in separate document titled “Inkjet Direct Installation Guide” and is available on our [web site](#). Please read that document first. **Note: there is an important instruction on configuring the Epson in that document so that the Epson does not override any settings coming from the RIP.**

If you prefer to dive right in you can try one of our Quick Start Guides that cover a variety of supported substrates for printing including Mitsubishi film, Epson plates, and Technova plates.

1.1 Two supported modes.

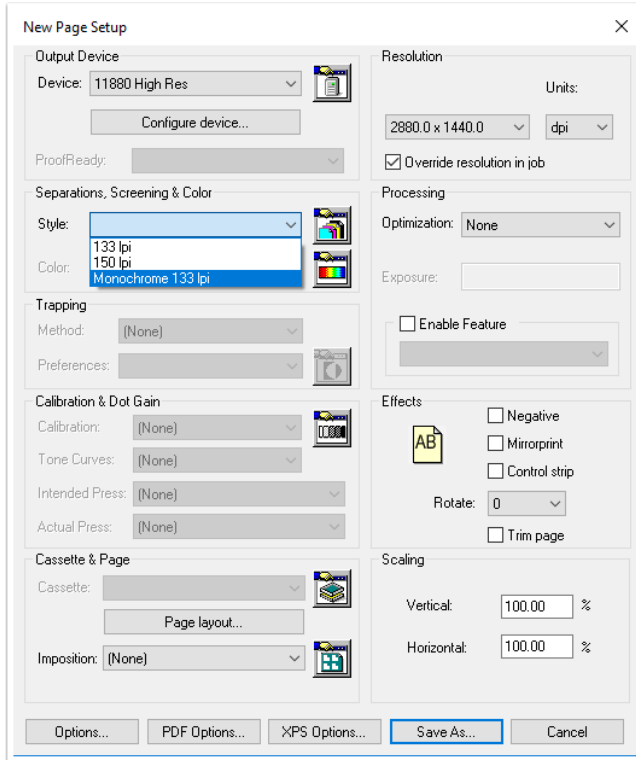
The plug-in has a high-resolution micro-dot mode as well as a low-resolution variable-dot mode. Which one you use will depend upon your application. The following chart is intended as a guide to help you decide. It is not an exhaustive list of capability.

Application	Substrate	Resolution	LPI	plug-in mode
Screen printing	Film	720	40 - 85	Low Res
Flexo	Film	720 – 1440	40 - 100	Low Res
Flexo	Film	1440 - 2880	100 - 150	High Res
Commercial	Plate	2880x1440	133 - 150	High Res

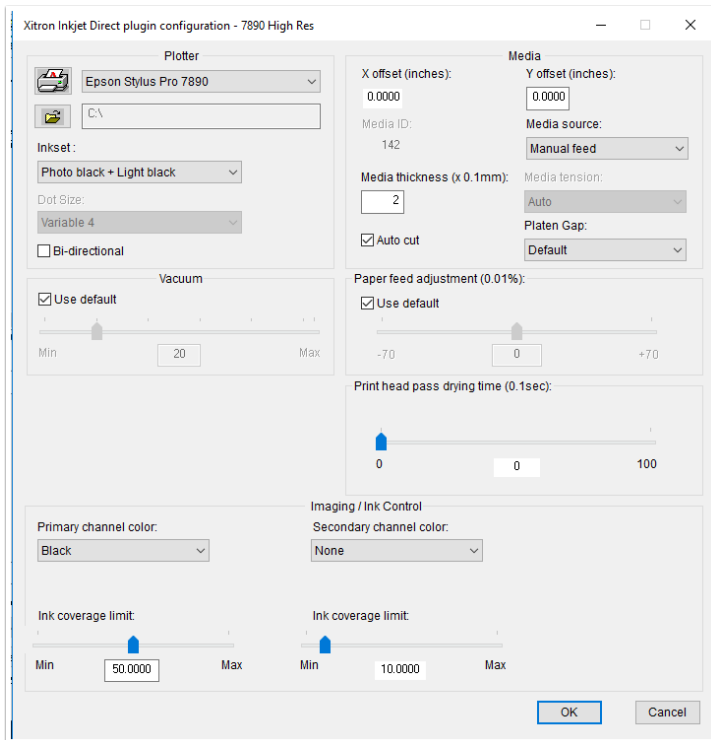
Other line screens and resolutions are available. The plug-in is also used for special purposes such as Direct to Screen imaging systems for screen printing and can be adapted.

2. The Inkjet Direct high-resolution (microdot) mode.

The RIP Page Setup will appear something like the one below.



There are resolution choices and some pre-built separation styles which are suitable for film and plate. Choose a resolution and a screen ruling. Click on “configure device” to open the plug-in configuration window.



This is the High Resolution Mode configuration screen.

X and Y offsets may be used to shift images around on the film/plate. You can also use the page setup’s “Page Layout” menu for that.

Platen gap and media thickness will have an effect on the output. We suggest you start with them set the way we have them. Set your “Paper Tray” to *roll* for film, *manual feed* for plates. Only the desktop units, such as the 4900, have a paper tray. Use that setting if you really are using the paper tray to feed media.

Select “auto cut” if you are using roll fed media

and you wish to have the Epson cut it after imaging.

Start with the default vacuum. We will discuss vacuum, platen gap, and media thickness when we discuss certifying new media. We have done the testing to identify the correct settings for a variety of media . See section 2.1 to find out how to configure for those media.

“Primary channel color” allows you to select any ink channel as your primary channel for imaging. If, for example, you are using a plate which works best with standard Epson cyan ink, you would choose *cyan* here. If, for example, you are using a UV blocking ink to image film and you have installed that ink into the black ink well, choose *black* here.

“Secondary channel color” is for substrates that need more than one ink channel to image one separation in order to achieve the proper density. You won’t need this for any plate that we have tested. The practical applications are film and direct-to-screen imaging. If you are unable to achieve the proper maximum density on your chosen film with one ink then you may install a second identical ink into a different ink well. Running two UV blocking inks from (for example) the black and the yellow wells would require you to choose *black* for Primary channel color and *yellow* for Secondary channel color.

Each channel has an ink coverage limit setting. Because the microdot mode uses the smallest possible dot on the engine, the way to reduce ink coverage is to remove microdot pixels in a systematic way that produces the best quality. The other mode, low-res variable dot mode, varies the dot sizes to change coverage. High-Res microdot mode either removes pixels or adds secondary ink channels.

The secondary channels ink coverage limit setting does not matter unless you enable a secondary channel.

High resolution work will, in most cases, require that you use an ink coverage limit rather than two ink channels.

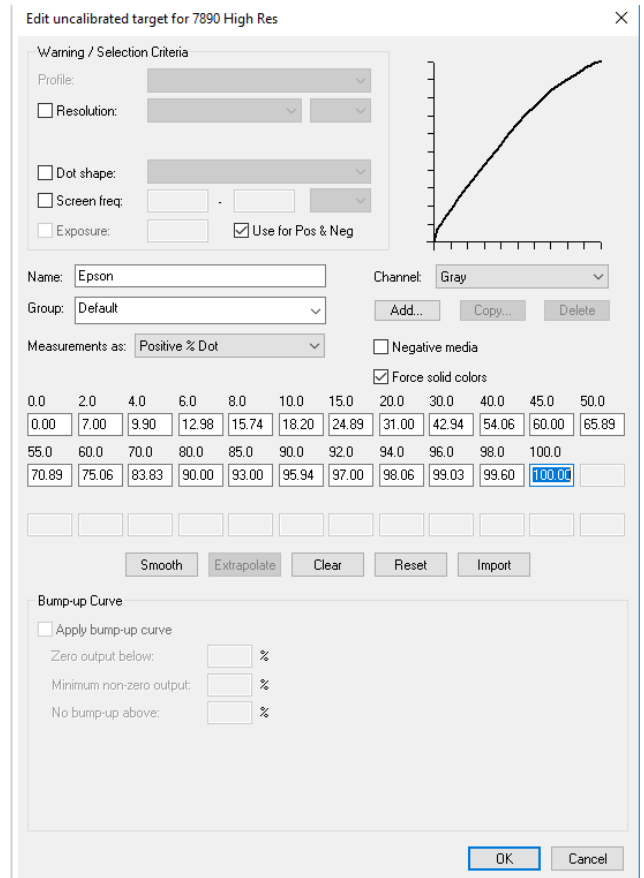
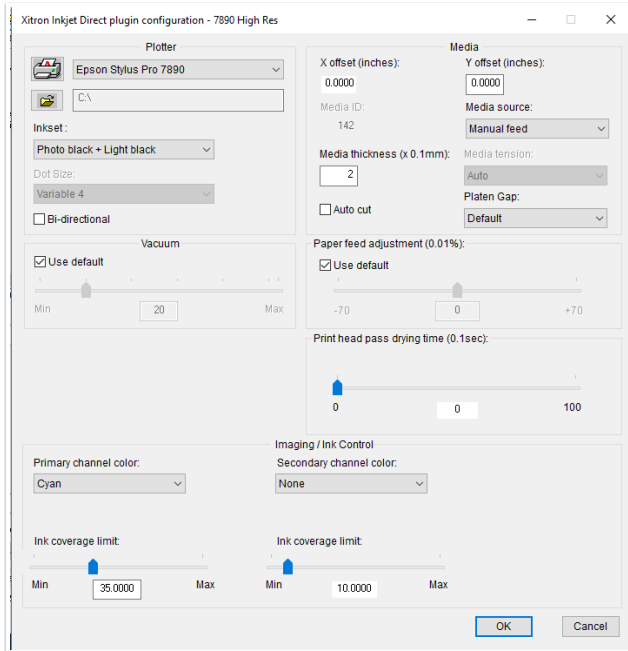
Lower resolution work may require that you use a higher ink coverage limit or even a second channel. If you are not using one of the media substrates we have tested then you will need to do some of your own testing to determine the correct ink coverage setting. We have created a test file which will help you to do this. See the section titled “Certifying New Media ” below.

2.1 Configuring supported media.

This section contains a cross reference of substrates and known, good configurations. Each identifies a media, a marking fluid, configuration for the “configure device” dialog box and for the “calibration”. These are excellent starting points for success with each of the media listed. You may wish to do your own calibration.

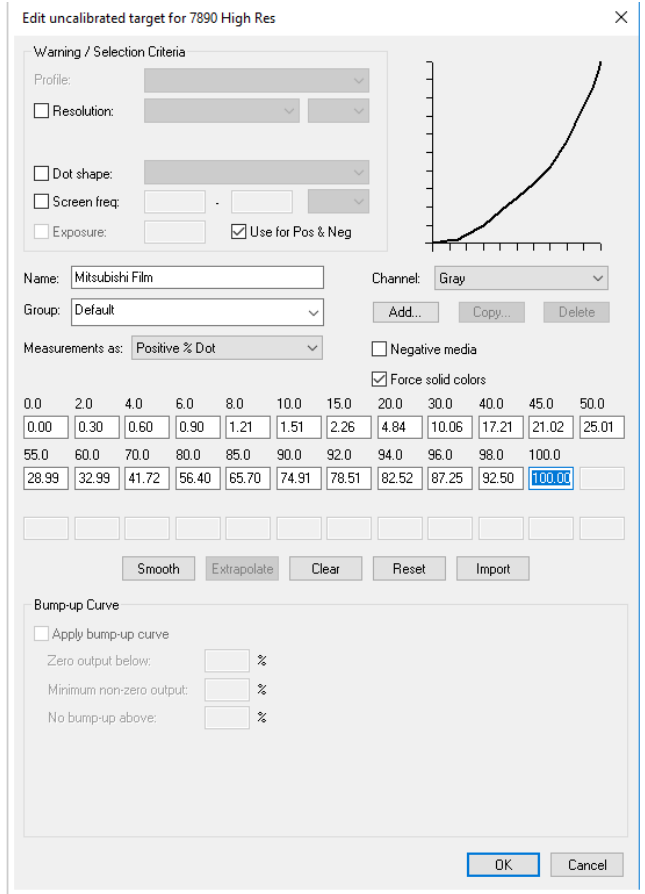
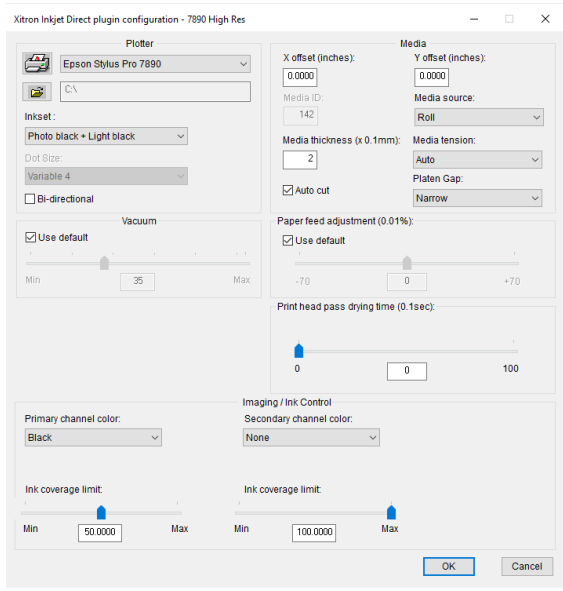
2.1.1 Epson Plates (Epson part number S045196 and other sizes)

- imaged with standard Epson cyan ink



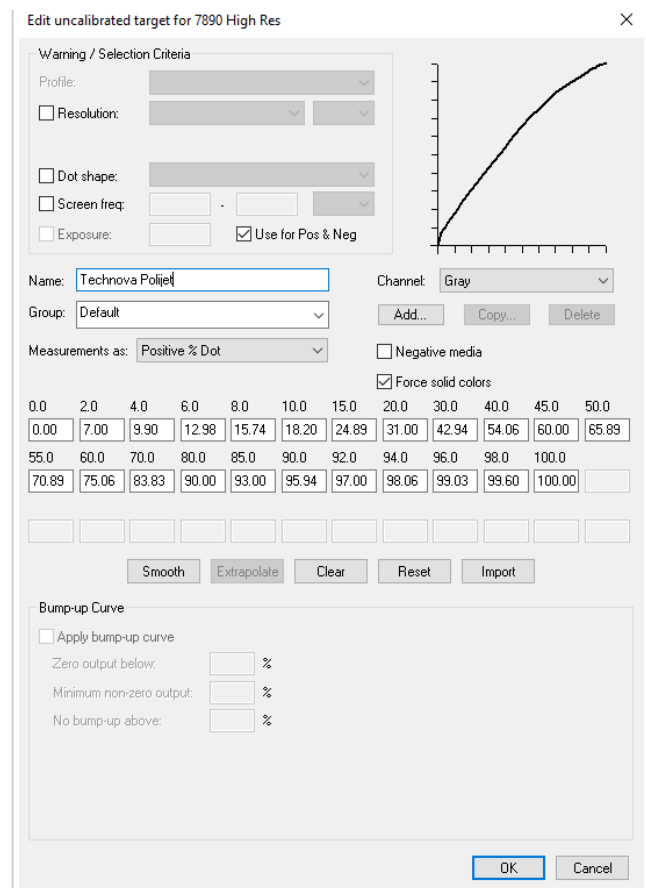
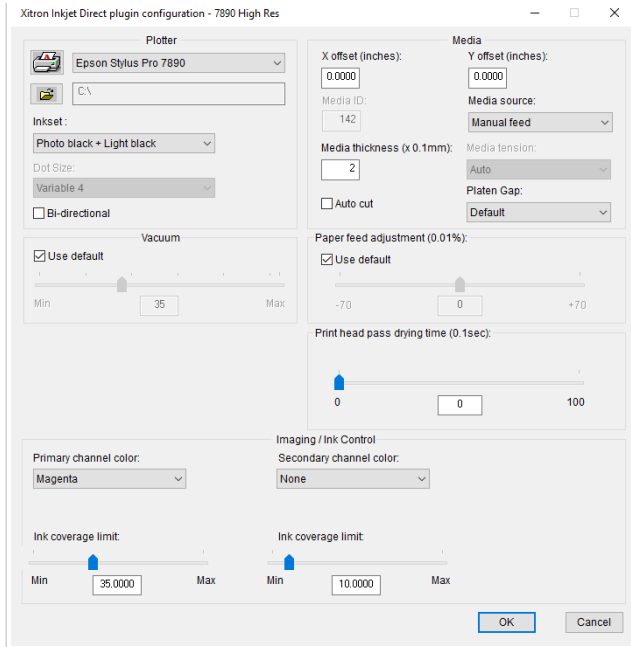
2.1.2 Mitsubishi film (Mitsubishi Clear Proof 180) -imaged film negatives with Black Mask Film Ink from [Acti Cameras, Inc](#) (part # 81-11590).

Specially formulated ink is also available from [Mitsubishi Imaging, Inc](#) of Rye, New York, but the settings below were derived with the Acti Camera ink.



2.1.4 Technova Polijet XLE polyester plates

- imaged with standard Epson magenta ink

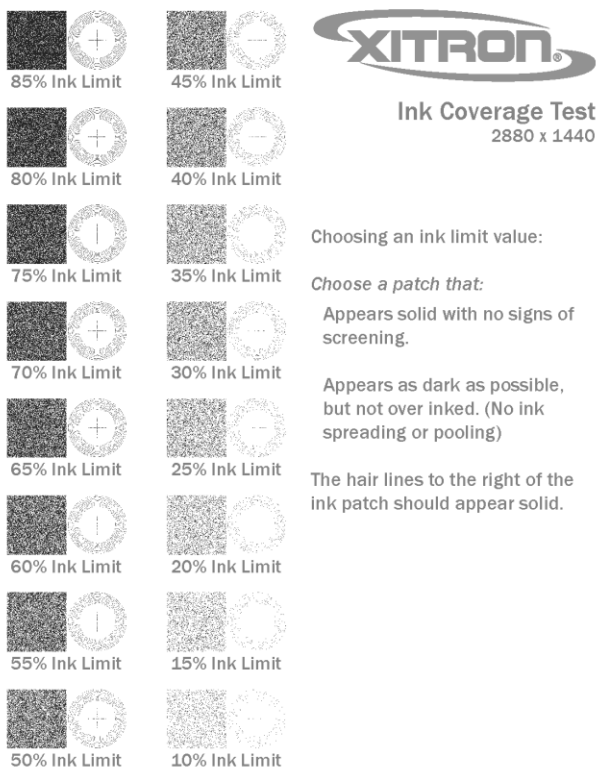


2.2 Certifying new media

Warning: You will not succeed if you haven't followed the procedures in the installation guide. Please start there.

If you are starting from scratch with new media or a new media/ink combination you will need to print a test to decide how to set your ink coverage. Create a page setup for your device at either 2880 square or 2880x1440 resolution. Set the primary channel to the ink channel you need to use. Set the secondary channel to none. Set the ink coverage limit for the primary channel to unlimited. This is important for running the test file. There are two test files. They were installed inside the RIP folder in a folder called "Samples". They are resolution specific. The files are called "2880x1440 Calibration Page.pdf" and "2880x2880 Calibration Page.pdf". RIP and print the appropriate file with no ink limitation.

The test job has patches at a variety of ink limits. You will look for a patch that has no mottling, no pooling, no over inking of any kind. It must appear to be solid. Look for the one that just gets the area covered and no more. Ensure the concentric hairlines appear to be solid lines. Take the percentage number from that patch and use it as your ink coverage limit. See the ink coverage test file below for reference.



In most high resolution cases, this will be all that is required. You would then move to calibrating in the normal Navigator RIP method.

However, a discussion of the other settings which can affect the output is appropriate here.

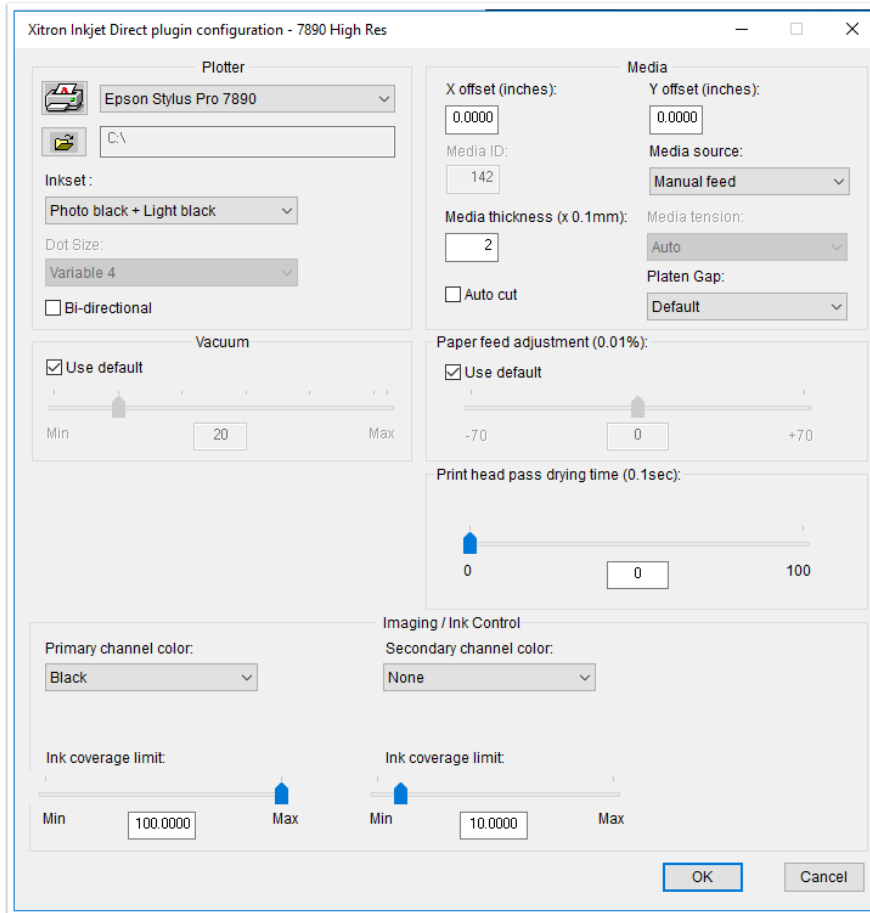
What happens if the density is not high enough? Make sure you don't have any over inking on your test file. If you cannot get high enough density AND you have no over inking you may need to actually add a secondary channel. To test for that, print an uncalibrated strip from the RIPs calibration manager.

See Chapter 12 of the Navigator RIP User Guide if you don't know how to do this.

Then, gradually add ink from the secondary channel by starting with the lowest ink number in the secondary channel and gradually boost it up.

Warning: almost no one running at 2880x1440 or higher should ever need to do this. Too much over inking could cause ink to run all over your printer. Our best advice about this situation is: all the plates and film we have tested need ink reduction not a secondary channel of ink. If you are running at 1440x1440 we suggest you use variable droplet size mode.

What happens if you are seeing quality problems such as lines in the output or undesirable patterning? You can look at the other settings in the plug-in.



Bi-directional - This setting causes the printer to image in both directions at about twice the speed. If you care about quality and are running at a high line screen you should not even bother with this. If you are having quality problems do not turn this on. Screen printers imaging low line screens are using this. No one else should.

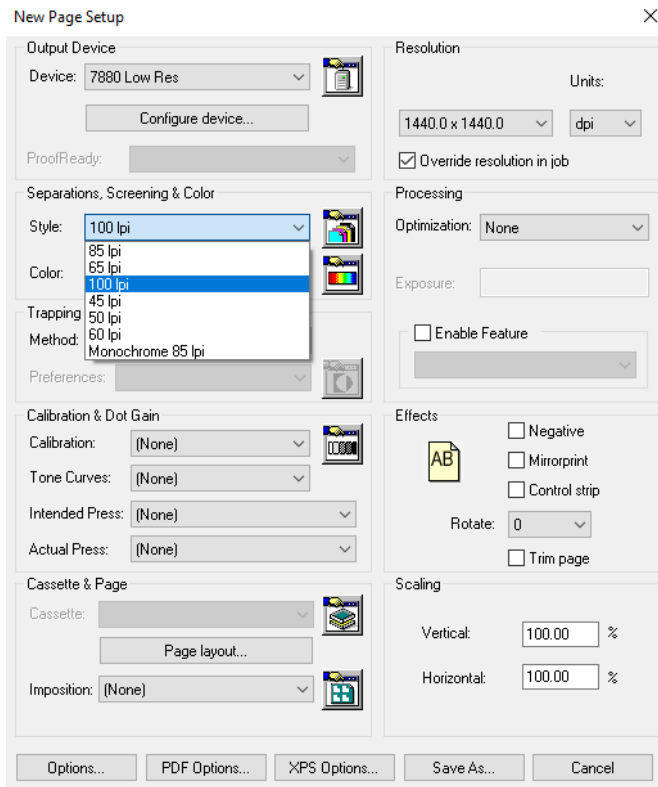
Vacuum – Use the default vacuum. Most of the media we have seen works best with the engine controlling this. If you had an exceptionally heavy or an exceptionally light media and were having trouble with lines in the output or skewing, you might move this toward *max* for a heavier media and toward *min* for a lighter media.

X and Y offsets – You may move your image around on your media either here or in the Page Setup’s *Page Layout* window.

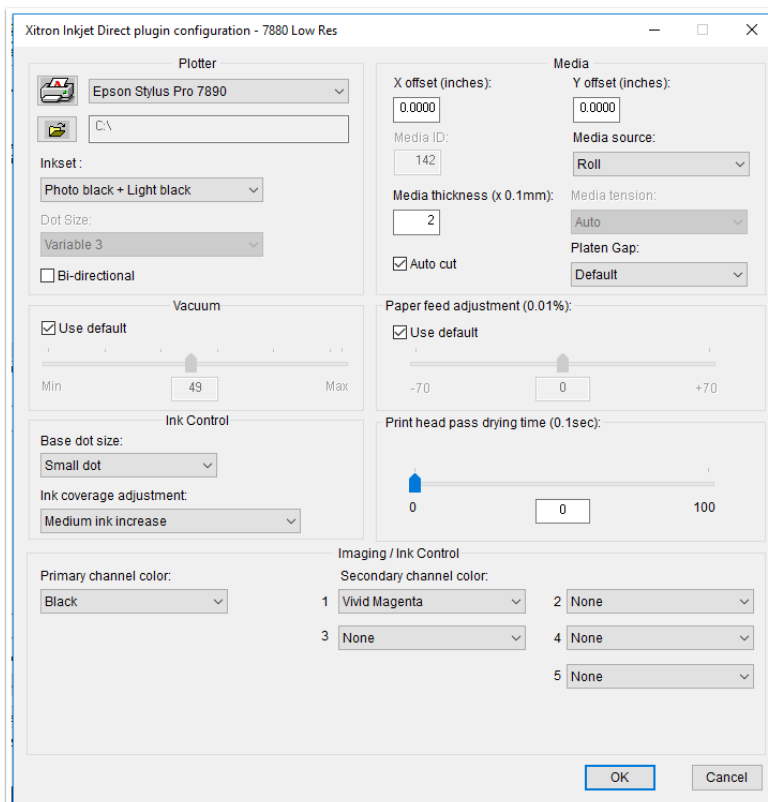
Platen Gap – This will have an effect on how media feeds. Start with 4. Choices are 4, 3, 2, 1, 0. 4 is the thinnest platen gap. 1 is the thickest. 0 tells the engine to choose based on the media ID used.

Media thickness – A measurement in tenths of a millimeter. It should be available from the supplier.

3. The Inkjet Direct Low Resolution (Variable Dot) mode



There are resolution choices and some pre-built separation styles suitable for screen rulings between 45 and 100 lines per inch. Choose a resolution and a screen ruling. Click on “configure device” to open the plug-in configuration window.



This is the Low Resolution Mode configuration screen.

X and Y offsets may be used to shift images around on the film/plate.

You can also use the page setup’s “Page Layout” menu for that.

Platen gap and media thickness will have an effect on the output. We

suggest you start with them set the way we have them.

Set your “Paper Tray” to *roll* for film, *manual feed* for plates. Only the desktop units, such as the 4900, have a paper tray. Use that setting if you really are using the paper tray to feed media.

Select “auto cut” if you are using roll fed media and you wish to have the Epson cut it after imaging.

Start with the default vacuum. We will discuss vacuum, platen gap, and media thickness when we discuss certifying new media. We have done the testing to identify the correct settings for a variety of media. See section 3.1 to find out how to configure for those media.

“Primary channel color” allows you to select any ink channel as your primary channel for imaging. If, for example, you are using a plate which works best with standard Epson cyan ink, you would choose *cyan* here. If, for example, you are using a UV blocking ink to image film and you have installed that ink into the black ink well, choose *black* here.

“Secondary channel color” is for substrates that need more than one ink channel to image one separation in order to achieve the proper density. Low resolutions are likely to need extra channels. If you are unable to achieve the proper maximum density on your chosen film with one ink then you may install a second, third, fourth, fifth, sixth identical ink into a different ink well. Running two UV blocking inks from (for example) the black and the yellow wells would require you to choose *black* for Primary channel color and *yellow* for Secondary channel color.

There is also an overall ink coverage adjustment. Because the variable dot may use any possible dot size on the engine, the way to reduce ink coverage is to substitute dots of a smaller size. You can do this in different amounts. Likewise the way to increase ink coverage is to substitute dots of a larger size for some number of dots.

The choices for ink reduction are subtractive light, medium, and heavy.

The choices for ink addition are additive light, medium, and heavy.

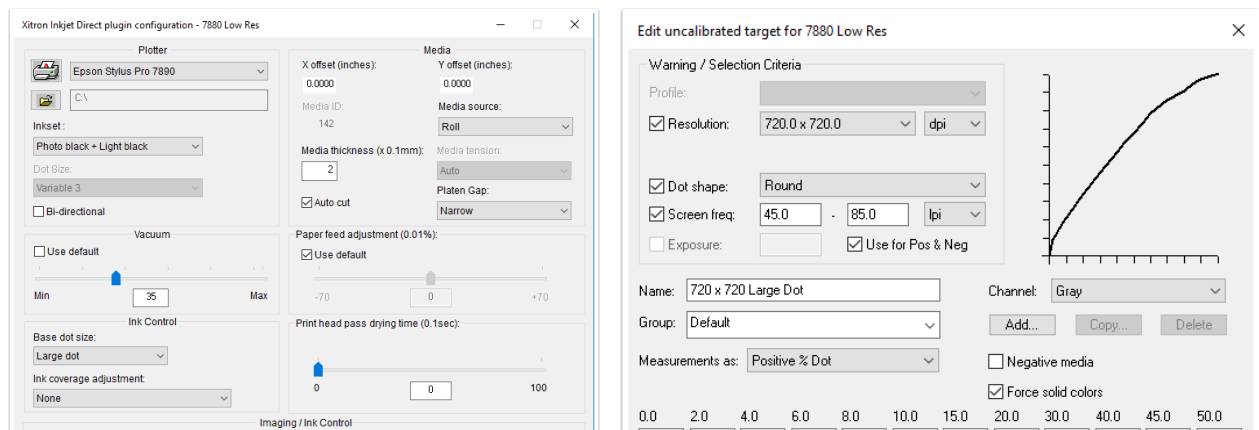
Lower resolution work may require that you use a additive ink coverage adjustment or multiple channels. If you are not using one of the media substrates we have tested then you will need to do some of your own testing to determine the correct ink coverage setting. See the section titled “Certifying New Media ” below.

3.1 Configuring supported media.

3.1.1 Mitsubishi film (Mitsubishi Clear Proof 180)

Imaged film positives at 720 dpi with 2 channels of Black Mask Film Ink from [Acti Cameras, Inc](#) (part # 81-11590).

Specially formulated ink is also available from [Mitsubishi Imaging, Inc](#) of Rye, New York, but the settings below were derived with the Acti Camera ink.



3.2 Certifying new media

Warning: You will not succeed if you haven't followed the procedures in the installation guide. Please start there.

If you are starting from scratch with new media or a new media/ink combination you will need to print a test to decide how to set your ink coverage. Create a page setup for your device at desired resolution. Set the primary channel to the ink channel you need to use. Set the secondary channels to none. Set the ink coverage adjustment to none. Set your dot size to the smallest available.

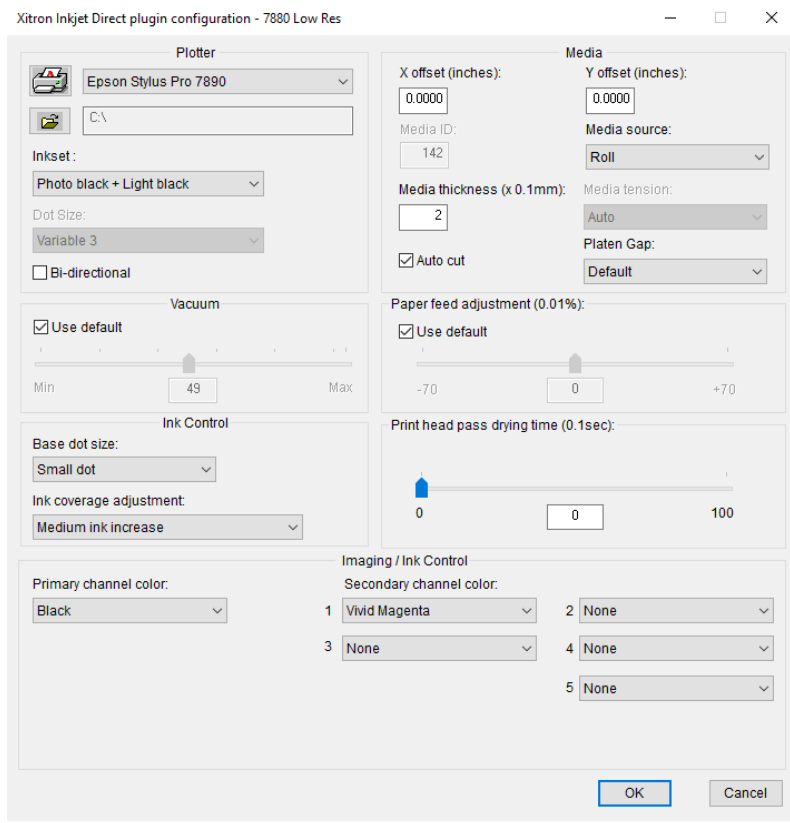
Print an uncalibrated strip from the RIPs calibration manager.

See Chapter 12 of the Navigator RIP User Guide if you don't know how to do this.

Check for density and coverage. Increase overall dot size if you are far away from dense enough. Once you get closer, experiment with additive, heavy. Once you are dialed in you can try medium or light. If you go all the way to the largest dots possible and you are not dense enough, you need to use another channel.

The ink coverage adjustment applies to all the channels.

What happens if you are seeing quality problems such as lines in the output or undesirable patterning? You can look at the other settings in the plug-in.



Bi-directional - This setting causes the printer to image in both directions at about twice the speed. If you care about quality and are running at a high line screen you should not even bother with this. If you are having quality problems do not turn this on. Screen printers imaging low line screens are using this. No one else should.

Vacuum – Use the default vacuum. Most of the media we have seen works best with the engine controlling this. If you had an exceptionally heavy or an exceptionally light media and were having trouble with lines in the output or skewing, you might move this toward *max* for a heavier media and toward *min* for a lighter media.

X and Y offsets – You may move your image around on your media either here or in the Page Setup's *Page Layout* window.

Platen Gap – This will have an effect on how media feeds. Start with 4. Choices are 4, 3, 2, 1, 0. 4 is the thinnest platen gap. 1 is the thickest. 0 tells the engine to choose based on the media ID used.

Media thickness – A measurement in tenths of a millimeter. It should be available from the supplier.

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