



NAVIGATOR

PLUG-IN MANUAL

vDOT4

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INSTALL AND REFERENCE MANUAL

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FOREWORD

Thank you for purchasing this quality Xitron product.

The Epson vDot4 plug-in provides high quality proofing capability to Xitron Navigator Imagesetter and CTP RIPs driving Epson Variable Dot printers. Chapter 1 of this guide lists the supported printer models.

You do not need any special programming or technical skills to install and use the vDot4 plug-in; however it is a good idea to fully read through this documentation in order to understand the procedures involved with successful use of this product. This manual guides you through the installation procedure and explains how to print test output jobs from your RIP on a color printer.

Full support for ICC Profile Color Management is included. ICC profiles have become the industry-preferred method of color control. All color generated by the vDot plug-in is controlled by our included ICC profile processor (ColorPro). Properly used, exceptional ink control including “contract color” is attainable.

Xitron supplies a range of profiles with your vDot4 plug-in, covering a wide range of standard media.

These profiles will work well with your printer provided it is in good condition, has had all recommended nozzle cleaning

and alignment procedures, is using the correct media for the profile and uses recommended inks.

You will improve accuracy even further by calibrating your particular printer using the procedure described in Chapter 7. For ultimate accuracy, and especially if you wish to use other media than those for which profiles and calibration are already supplied, you may wish to generate a custom ICC profile for your printer.

Generally it is not necessary to also create a custom ICC Profile for your plate-making and press system. In fact, doing so can actually lead to a reduction in the quality of proofs. This is because exceptional process control is required throughout the plate making and press environment to maintain press consistency close enough to match a custom press profile. Instead, the use of a standard press (e.g. SWOP) or emulated analog proof (e.g. Matchprint) Input (emulation) profile is generally a more suitable starting point.

This manual does not cover the topics of adding support for custom media and the creation and installation of custom ICC profiles. These areas require additional information, software tools and training. Contact your supplier for information about availability of these items.

CHAPTER 1: SUPPORTED PRINTERS & MEDIA

1.1 PRINTERS

Xitron's vDot4 plug-in supports the following Epson Variable Dot 8-color printers:

Epson Stylus Pro 4900, 7890, 7900, 9890, 9900.

Pre-calibrated color is available for the Epson "Ultrachrome HDR" Ink Set only. Users of other ink sets will have to provide their own calibration and color management profiles.

1.2 MEDIA

There are many hundreds of media marketed for use with ink jet printers; from printer manufacturers such as Epson and HP, from established graphic arts suppliers such as Mitsubishi or Agfa, and from many other third party vendors.

Many of these media have very similar names, and it can become quite confusing. For example Epson's *Photo Quality Glossy Paper*, *Glossy Photo Paper* and *Photo Glossy Paper* are all different products with different characteristics, while Epson's *SemiGloss Paper-Heavy Weight* and *Semigloss Photo Paper* are in fact the **same** product, sold under different names in different locations.

The vDot4 plug-in includes a library of color profiles and calibrations for specific media, and accurate results are only possible if the correct media is used.

A full list of supported media for this product is attached as Appendix A to this manual.

CHAPTER 2: INSTALLATION

2.1 CONFIGURATION REQUIREMENTS

To use the vDot4 plug-in you must have a Navigator RIP that meets the requirements listed below. Assuming the RIP is operational, resolve any outstanding RIP issues before installing the plug-in. This manual deals only with the additional information needed to be successful with the vDot4 plug-in, and does not attempt to cover all of the RIP features and requirements.

NAVIGATOR RIP PLATFORM REQUIREMENTS

- A Windows Server 2003 and 2008, Windows XP Pro, Windows Vista or Windows 7 equipped 32 or 64-bit PC. 1 GHz recommended.
- Minimum 2GB RAM.
- 2 GB free disk space.
- The correct Epson Windows printer driver, using any physical connection method you wish to use. Best results are obtained with USB connections, or Ethernet for long cable runs.
- Xitron Navigator RIP revision 8.0 or later.

2.2 PC PLATFORM INSTALLATION

2.2.1 CHECK YOUR RIP CONFIGURATION

Use the *Navigator > About Navigator* menu selection to check the version of your Navigator RIP. The vDot4 plug-in requires

version 8.0 or later. If your version is older, please contact your supplier for an upgrade. The upgrade must be installed and configured with your imagesetter before continuing to install the plug-in.

2.2.2 EPSON WINDOWS DRIVER

Before continuing, install the Epson Windows printer driver for your printer model and output a test page through the driver.

Epson posts the latest drivers on their web site at <http://www.epson.com>.

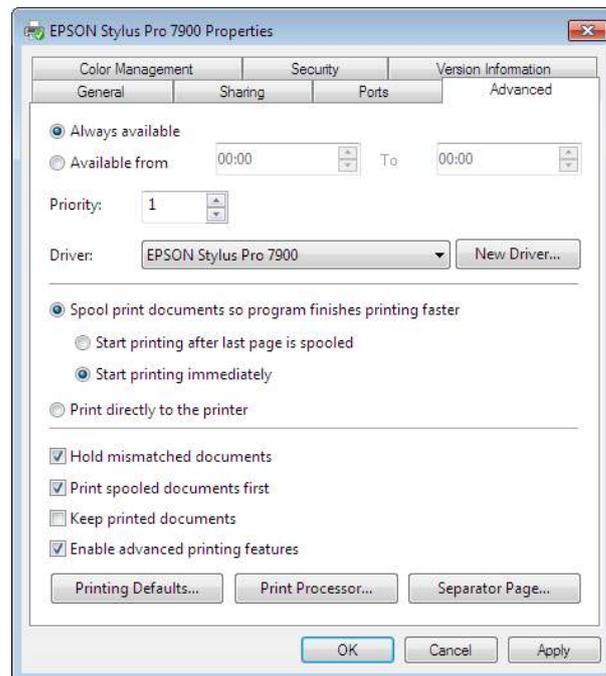
This manual assumes that you have installed the driver that applies to your printer(s), and that its name is “EPSON Stylus Pro 4900”, “EPSON Stylus Pro 7890 or 9890”, “EPSON Stylus Pro 7900 or 9900”, as appropriate. (You can use other names if you wish, provided that you configure the RIP for the correct name, as described later in this manual.)

2.2.3 CONFIGURING AND TESTING THE WINDOWS PRINTER DRIVER

To configure and test a Windows printer driver, proceed as follows (this example shows the Stylus Pro 7900 and 4900):

Click on *Start*, select *Devices and Printers* or *Printers and Faxes*; click to open the window. Highlight the item *EPSON Stylus Pro 7900*, right click and click on *Printer Properties*. Select the *Advanced* tab.

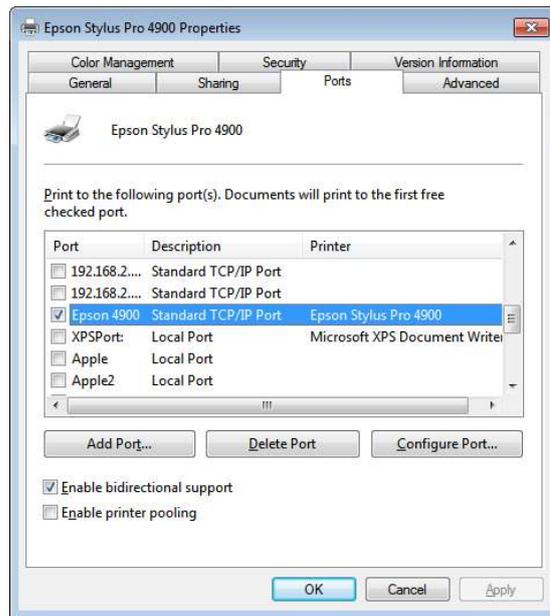
FIGURE 2.1 : WINDOWS PRINTER ADVANCED TAB



Select the “Spool print documents...” button. For maximum throughput (proofs per hour) select “Start Printing after last page...” For the shortest time to process individual proofs, select “Start Printing Immediately.”

Select the *Ports* tab.

FIGURE 2.2: WINDOWS DRIVER PORTS TAB



Ensure the port shown is your preferred connection method. The Epson drivers provide great flexibility of interconnection by using any method supported by the Windows printer driver. In this example a TCP/IP port is shown.

Select the *General* tab and click on Print Test Page to test the Windows driver, printer and connection method. Resolve any problems at this stage before installing the plug-in or launching the RIP. If you experience any difficulties at this stage, consult your Epson documentation and Epson on-line help resources.

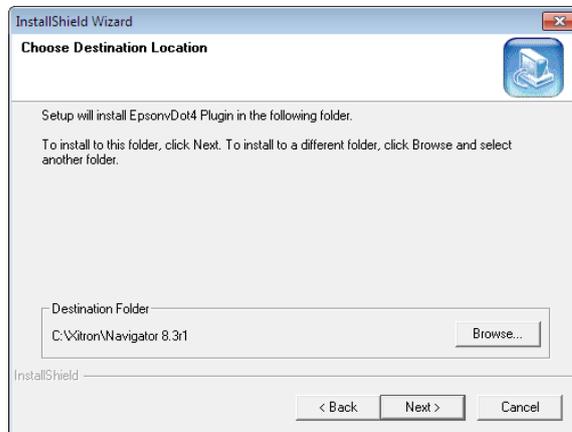
2.2.4 INSTALL VDOT4 PLUG-IN

The vDot4 plug-in is available from a Navigator RIP CD or by downloading from Xitron's web site at www.xitron.com.

To install after downloading, follow the instructions found on the web site or readme file.

To install from the DVD, insert the Navigator RIP DVD containing the vDot4 plug-in. After the start-up window appears, click the large button labeled "Plug-ins and Tools" then click on Next. The following window appears:

FIGURE 2.3: INITIAL INSTALLATION SCREEN

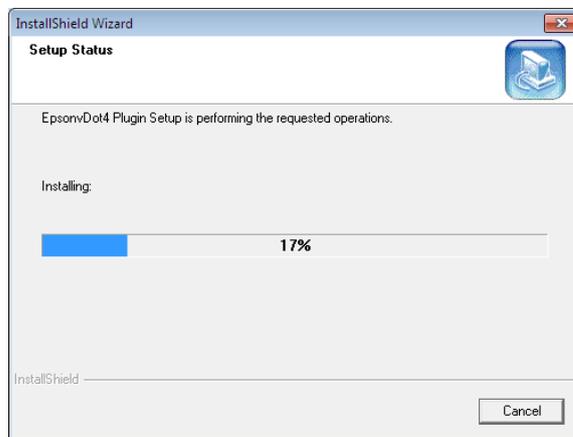


Ensure the destination folder is the correct location for the RIP to which you are installing the Plug-in. If it is not correct, use the *Browse* button to locate the correct folder and click *Next*.

If the Installer returns a “RIP Not Found...” error at this stage, it is not able to locate important components of the RIP. Click *Back*, and re-confirm that you have correctly specified the RIP destination folder.

The installer will now copy the plug-in and support files to the RIP. During this process you will see progress information similar to the example in figure 2.4.

FIGURE 2.4: INSTALLATION PROGRESS

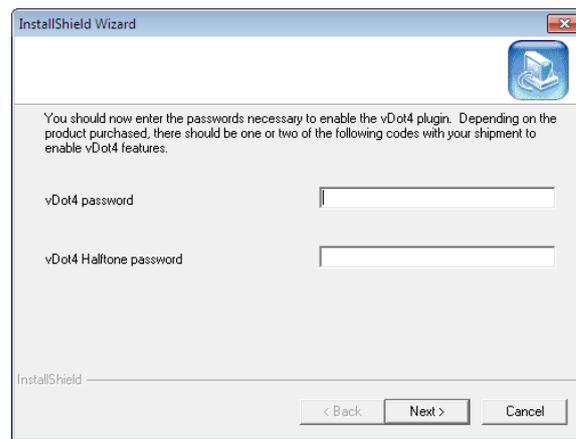


2.2.5 FEATURE PASSWORDS

After copying a number of files to your system, the Installer will prompt for feature passwords as shown in Figure 2.5.

With your vDot4 Plug-in you received a printed sheet with several passwords listed. These are required to enable a number of specific features in your Navigator RIP for use with the vDot4 plug-in.

FIGURE 2.5: ENTERING PASSWORDS



If you have purchased the Halftone Option you will also need to enter a password to enable it.

There are two different types of passwords: RIP passwords, which have five to eight digits, and Plug-in passwords which have twenty alphanumeric characters.

Normally the passwords are entered during installation of the plug-in. However they may also be entered after the RIP is running as described in Chapter 3.

You can enter either 7 or 20-character passwords into the Installer screen shown in figure 2.6. The entries are as follows:

a) vDot4

Enables Epson Stylus Pro 4900, 7890, 7900, 9890 and 9900 support.

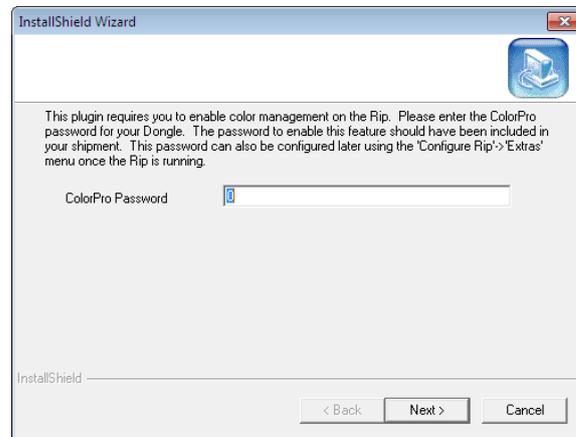
b) Halftone Option

Always a 20 digit Plug-in Password.

The next screen, shown in Figure 2.6, is similar. You will need to enter a password to enable the RIP's Color Management system. This password is also found on the printed password sheet.

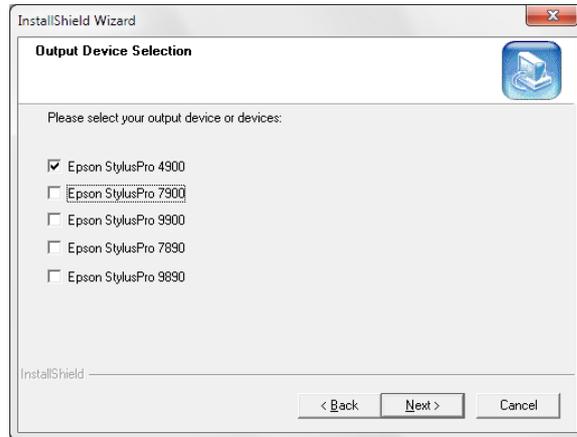
The ColorPro password is always a 7 digit number.

FIGURE 2.6: ENTERING COLOR MANAGEMENT PASSWORD



Next, select the type of device you intend to drive, as shown in Figure 2.7.

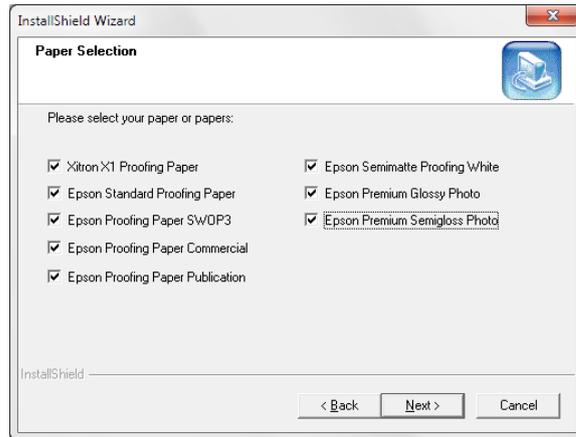
FIGURE 2.7: OUTPUT DEVICE SELECTION



Now select the paper types you intend to use (this controls which color profiles are installed), as shown in the dialog in Figure 2.8.

After the installation is complete, click on *Finish* to close the Installer.

FIGURE 2.8: PAPER SELECTION



CHAPTER 3: SET UP RIP FOR PROOFING

3.1 INTRODUCTION TO SETUP

Now that your vDot4 Plug-in is installed, you need to configure certain options in the RIP. These options are divided into two groups – initial setup and configuration choices for media and quality. Chapters 3 and 4 explain this.

3.2 MEMORY SETTINGS

a) Overall Memory Allocation

Launch the RIP, select *Navigator > Configure RIP > Options* and make sure the “Memory For RIP” and “Allow Use of All Available Memory” boxes are **not** checked, and that the “Memory Reserve For RIP” box shows 0.

b) “Minimum Memory left for system” (previously called Memory Reserved for System)

Set to 256 M Bytes (enter 256000).

c) “Printer Buffer”

In the *Configure RIP* window enter 20000 KB for Printer Buffer. Click *OK*. Exit and re-launch the RIP.

3.3 FEATURE PASSWORDS

With your vDot4 Plug-in you received a printed sheet with several passwords listed. These are required to enable a number of specific features in your Navigator RIP for use with the vDot4 plug-in.

Normally these passwords are all entered during installation of the plug-in (see section 2.2.6 above). If you already entered this information, go directly to section 3.4. To enter passwords into an existing RIP, follow these steps:

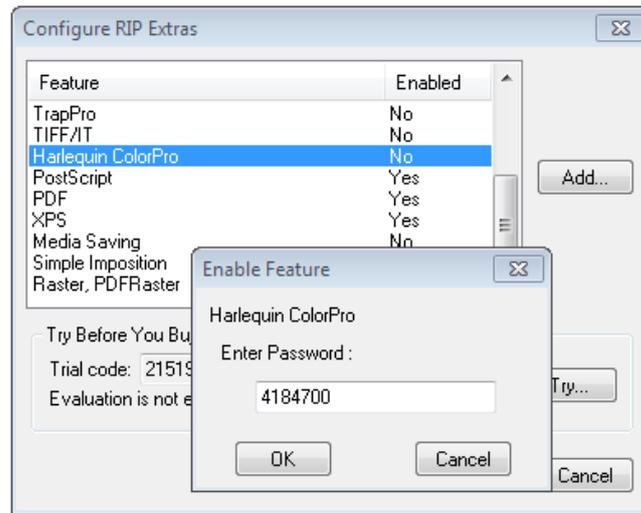
3.3.1 RIP PASSWORDS

To enter these passwords, select *Navigator > Configure RIP > Extras*, as shown in *Figure 3.1*.

For each item, highlight it in the list, and click *Add*. Enter the password and click *OK*.

It is possible that a ColorPro password will be required.

FIGURE 3.1: CONFIGURE RIP EXTRAS DIALOG



ColorPro is the advanced color management system provided with 6.0 and later RIPs.

When you have entered all the seven (or eight) digit RIP passwords supplied, click *OK* twice, exit and re-launch the RIP. Return to the *Configure RIP >Extras* dialog and make sure all the entries you added show up as “Yes” in the list. If any do not show “Yes,” check and re-enter the password.

3.3.2 PLUG-IN PASSWORDS

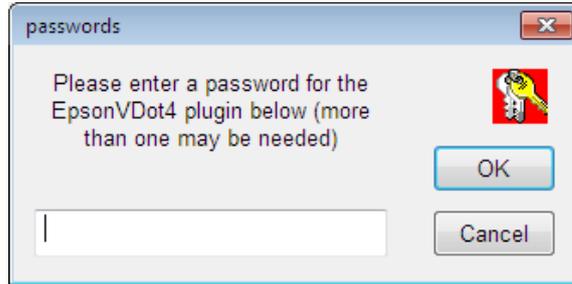
If you purchased the Halftone Option, the password will be a 20-character string.

If you are using a High Resolution Navigator RIP, you will also have a Plug-in Password for vDot4 devices (see 3.3.1). The vDot4 20-character password enables the 4900, 7890, 7900, 9890 and 9900 printer models.

The third menu item in the main Navigator user interface (between “Edit” and “Color”) controls special functions for individual plug-ins. Select this menu item (on a new RIP it will default to “Preview”) and choose the “Select Device” option. You will see a list of all the available output devices in the RIP. Choose any one of the “4900/7890/7900/9890/9900” devices listed, and click “Select.” The main menu item will now change from “Preview” to the chosen device.

Select the menu again, and choose “Enter a Password.” A dialog box will appear as shown in figure 3.2:

FIGURE 3.2: ENTERING A PLUG-IN PASSWORD



Enter the first 20-character plug-in password on your sheet. Make sure you copy the password exactly and with no spaces.

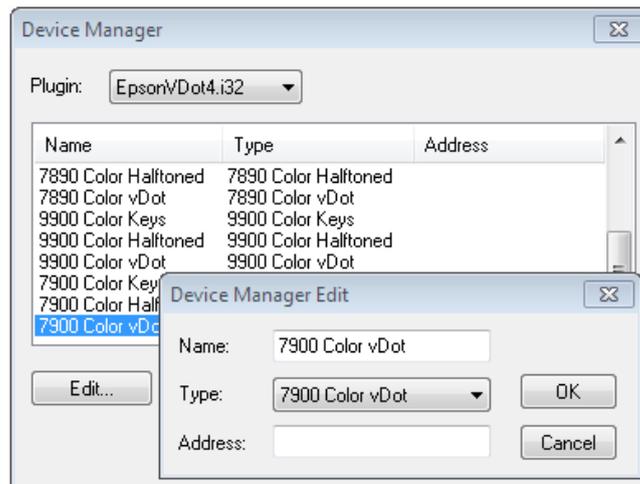
Click OK to store the password.

If you have more than one 20-character Plug-in Password, simply repeat these steps until all have been entered.

3.4 DEVICE MANAGER SETTINGS

The Device Manager allows you to select and name the output devices you will be using in the RIP. Select *Navigator > Device Manager*. At the top of the window is a list box labeled, "Plugin." The names of the various plug-ins are shown on page 1 for each printer. Check that the box shows the correct entry for the vDot4 plug-in, EpsonVDot4.i32.

FIGURE 3.3: DEVICE MANAGER DIALOG



Some entries may already be filled in. If so, leave these, or re-name them to something you prefer. If you plan on using the pre-configured calibration and color management features of the vDot4 plug-in, you must ensure that the Names you use are identical with the Types chosen, as in the example in figure 3.3. At a minimum you need to have at least one Name entry for each different printer. Each printer model has several Device Types, the differences being as follows:

Color vDot

This is the standard high-quality color device type using variable dot error diffusion screening, suitable for Sheet or Roll fed media.

Color Halftone

This device creates composite full color images which have been screened by the RIP's conventional dot-based screening system, Harlequin Precision Screening (HPS). Spot colors are accurately reproduced as screen dots of the appropriate color. Depending on the printer model and media used, screens pitches above 150 lpi can be simulated.

Color Keys

The Color Keys device creates individual separated prints for each color in the job, including spot colors. These prints can be reproduced on clear film to provide an accurate proof of traps when printing with multiple colors.

Note that the Color Halftone and Color Keys device types require the purchase of the Halftone Option. Installation of the Option is achieved by adding a password, as shown in section 3.3.2.

The choice of device type completes the initial Setup of the RIP to use the vDot4 plug-in.

The next step is to configure specific details necessary to produce output.

CHAPTER 4: CREATING A PAGE SETUP – CONFIGURATION CHOICES

4.1 WHAT'S INVOLVED

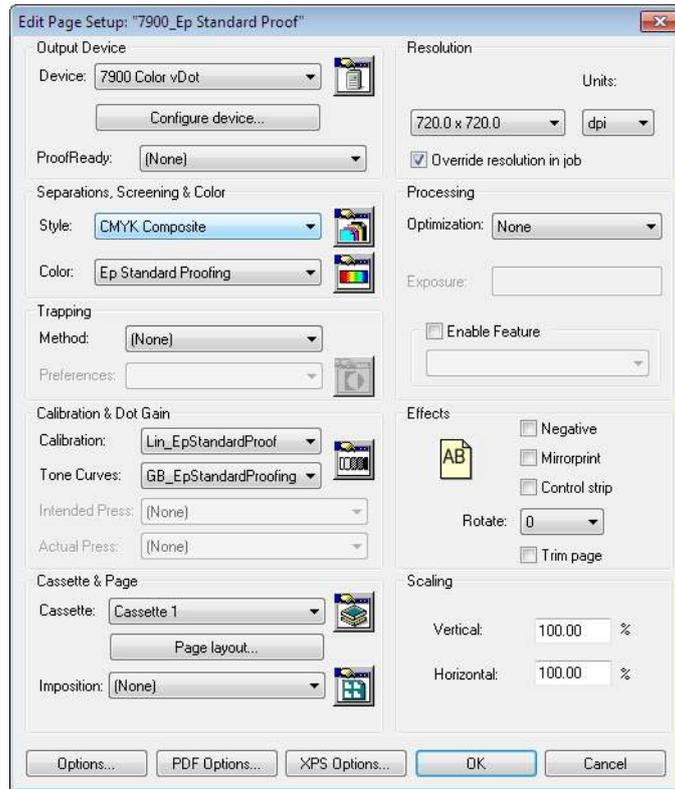
This section covers the selection or creation of one or more Page Setups for your printer. A Page Setup includes settings for printer, resolution, connection method, print quality and media selection (which sets calibration and color management).

The vDot4 plugin comes ready with a range of pre-built RIP Page Setups for the Epson Stylus Pro 4900, 7890, 7900, 9890 and 9900. These include pre-selected color, calibration and tone curve settings. These pre-built Page Setups are listed in Appendix A.

If you wish to create your own Page Setup to drive one of these printers, we recommend that you base it on one of the pre-built ones, and make the modifications you require.

The required items are reviewed in order below. To start, select *Navigator > Page Setup Manager*, highlight the existing Page Setup closest to your needs, and click *Copy*. An example Page Setup dialog is shown in figure 4.1.

FIGURE 4.1: PAGE SETUP DIALOG (7.X RIP)



4.2 PRINTER MODEL

To select the printer model and mode for this Page Setup, select it in the Devices list box. In this example we are selecting the printer type “7900 Color vDot”.

Important: Leave the ProofReady drop-down list set to (None).

4.3 NOTE ON RESOLUTION

When a RIP product such as Xitron's Navigator drives a plotting device such as an ink jet printer, the term Resolution has two distinct uses. This is because the RIP first processes the incoming data into a continuous tone raster at a specified resolution, called the RIP Resolution, and then in a second process at output time the continuous tone data is screened and output on the printer at (maybe) a different resolution, called the Plotter Resolution.

4.4 PAGE SETUP CONTROLS

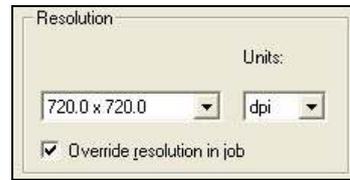
In the main page setup window you can choose your RIP Resolution (but not Plotter Resolution, which is set when you select your media in Configuration, section 4.5.1 below), image orientation, scaling, calibration and color management.

For further details about the settings in Page Setup see the **Xitron Navigator User's Guide**.

4.4.1 RIP RESOLUTION

Select the RIP Resolution in the top right corner of the Page Setup Dialog. In Figure 4.2 we have selected the normal resolution for high quality proofs, 720 by 720 dpi.

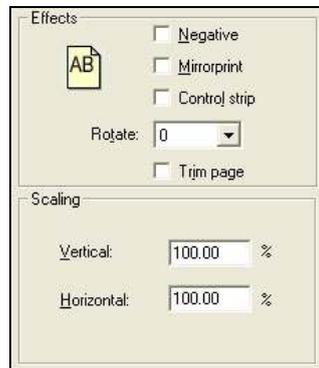
FIGURE 4.2: RIP RESOLUTION SETTINGS



4.4.2 IMAGE ORIENTATION AND SCALING

The controls for orientation and scaling are in the lower right corner of the Page Setup Dialog.

FIGURE 4.3: IMAGE ORIENTATION AND SCALING



Use the controls to change the orientation of the printed image, and to scale it (up or down) in the X and Y axes. The “Trim Page” option removes any large amounts of white space from the top and bottom of the image. The Control Strip option adds an information slugline to the output, which provides a range of useful information about the job and printing conditions.

FIGURE 4.4: CONTROL STRIP



4.4.3 CALIBRATION AND COLOR MANAGEMENT

Controls for Calibration and Color Management are located on the left side of the Page Setup Dialog as shown in Figure 4.5.

Separation Style

Set the Style list box to CMYK Composite. This is the only option available for the Color vDot and Color Halftoned devices. The Color Keys device has additional options.

“Monochrome” separation Style renders all colors into shades of gray in a single image.

“CMYK Separations” separation Style renders each color as an individual grayscale image.

FIGURE 4.5: CALIBRATION AND COLOR MANAGEMENT CONTROLS

Output Device

Device: 7900 Color vDot 

Configure device...

ProofReady: (None) 

Separations, Screening & Color

Style: CMYK Composite 

Color: Ep Standard Proofing 

Trapping

Method: (None) 

Preferences: 

Calibration & Dot Gain

Calibration: Lin_EpStandardProof 

Tone Curves: GB_EpStandardProofing 

Intended Press: (None) 

Actual Press: (None) 

If you are using either of the Halftone Dot device types (Halftone and Color Keys) there are additional controls required to set screen rulings, dot shapes and spot color handling. See Chapter 8, **Using the Halftone Option**, for further details.

vDot4 Color Management

The vDot4 Plug-in is pre-configured with calibration and color management for specific media types, and the vDot4 data set that corresponds exactly to your Output Media should be selected in the ProofReady list box. (The media choice must also match the setting you make in section 4.5.1 below.)

This setting is pre-configured to apply ICC Profile-based color management targeted at a standard SWOP press. Choosing a ProofReady color management configuration accepts this option for Color Management, and the entry “vDot” appears in the “Color” List Box.

If you wish to configure color management differently, you can create a special ColorPro Setup. Details of the use of ColorPro are contained in a separate ColorPro User’s Guide.

If you wish to calibrate your individual printer to match the pre-configured calibration state, see Chapter 7.

You will only get accurate color with exactly the correct media and the correct resolution, though you may find acceptable results for some applications by using substitutes.

If the RIP is able to detect that you have made an incorrect combination of settings it will warn you when you attempt to process a job. For example, if you select a calibration profile in Page Setup for a different media than that chosen in the Configuration dialog you will see the following warning:

FIGURE 4.6 MIS-MATCHED PROFILE WARNING

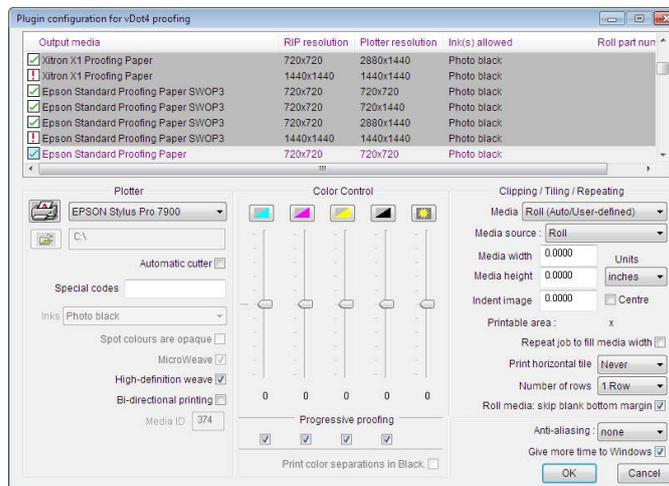
```
Setup loaded: "7900 Color vDot"  
Starting Job On Tuesday, September 20, 2009 03:21:48 PM  
Using Color Setup "[No Color Management]"  
Calibrating for device 'Epson Semimatte Proof'  
  
!! WARNING !! Media type does not match selected calibration profile!
```

4.5 CONFIGURE THE PLUG-IN

From within the Page Setup dialog, locate the button near the top left corner of the screen marked "Configure Device." Click this button to open the vDot4 Device Configuration window.

Note: many of the variables in this window can be changed **after** the job is RIPed. To do so, highlight the job in the Active or Held queues in the Output Controller, click *Info* then *Configure Device*. You will see the same display as figure 4.7, but some functions will no longer be available (such as Progressive Proofs) because they were processed at the time the job was RIPed. However, many other functions such as Repeat to fill media or Horizontal Tiling can be selected at this stage, either before the job is printed or before re-printing it, which is done by dragging it back to the Active Queue.

FIGURE 4.7: vDOT4 CONFIGURATION DIALOG BOX



4.5.1 OUTPUT MEDIA (AND PLOTTING RESOLUTION)

The large window at the top of the screen lists the various media types supported by the Epson vDot4 Plug-in for this printer. Also listed are the various RIP and Plotter Resolution options (see Appendix C for more information), a Media ID value, and typical part numbers for each media type, where known. It is very important that the media is correctly specified as there are numerous settings including color management, ink drop size and speed, ink nozzle control etc., that vary from one type to another. Left of the window are icons for each entry that present useful information as described below:



The current RIP Resolution is incorrect for this choice.



The current RIP Resolution is correct for this choice.

In most cases, if the RIP resolution is incorrect there will be another choice for the same media with the current RIP resolution. If not, you can still choose the media but you should then change the RIP resolution to the correct value when you exit the Configuration dialog (see 4.4.1 above).

Note that some media types and resolution combinations are not supported when you use Matte Black as an ink choice in certain models (see below). The RIP will not be able to output if an incorrect combination of media and ink set has been chosen.

If you need to use a media type not listed, see Appendix C.

4.5.2 PLOTTER

The section labeled “Plotter” contains entries related to the printer connection. The list box next to the icon of a printer should show the previously installed Epson Windows printer driver for this printer model. If not, select it now. It is possible to output through another Windows driver but Xitron does not recommend this action. If you wish to output to a file for printing later, choose *File* from this list and enter the path and filename below.

Check the box labeled “*Automatic Cutter*” if you are using roll media and require a cut after each job.

The box labeled “*Special Codes*” is reserved for use by Xitron technical support staff. Do not put any information in this box unless asked to do so by our support staff or their representatives. (With some media types you may notice some automatic entries in this field - this is normal.)

The “Inks” list box allows you to select which of two types of black ink are installed on the printer.

The choices available are Photo Black and Matte Black. Changing ink type requires a complex flushing and re-charging process that consumes a substantial amount of ink and time. See your printer documentation for details.

When you select your Output Media (see 4.5.1 above) you may notice the “Inks Allowed” column, which identifies which

ink set(s) are permitted with the chosen media. If you choose a medium where both Photo and Matte inks are allowed then you can print regardless of ink set, but you may not achieve acceptable quality. If you specify an Ink Set that differs from that actually installed on the printer, the printer may abort the job and report the error.

The remaining controls in this section are inactive unless you select “User Defined” as your Output Media. See Appendix C for more information about non-standard media.

The box labeled, “*Give more time to Windows*” should normally be checked. If your RIP output speed seems slow, and you have at least 512 M Bytes RAM in your PC, uncheck the box and compare results.

4.5.3 COLOR CONTROLS

Xitron’s Epson vDot4 Plug-in provides two methods of color control; manual and ICC profile. The four sliding controls in the Configuration dialog provide the manual method of color control, but they can also be used to make adjustments when ICC Profile-based color management including vDot4 color management is in use.

The icons at the top of each slider control can be used as a quick way to reset each control to zero. Moving the sliders up or down from zero increases or decreases the particular color channel – the units shown are percentages, so if you set Cyan to +10 all values of Cyan in the image will be increased by

10%. The Brightness control changes all ink channels together, to make the overall image lighter or darker.

4.5.4 CLIPPING, TILING AND REPEATING

Xitron's Epson vDot4 Plug-in has additional special features for tiling or clipping large images and repeating small ones.

Specify the Media Type and Size in the *Media* list box and the *Width* and *Height* entries. Also select the correct *Media Source* for the chosen media. The options for *Media Source* vary from one printer model to another so check the list box and your printer documentation if you are unsure which source you need to specify.

If you wish to use cut sheets, select Sheets from the *Media* list. Refer to your printer manual for details of permissible sheet sizes and thicknesses.

Print Horizontal Tile controls the tiling system. When set to *Never*, only one print is made from each job. If the job is too wide for the media it will be clipped to the value shown in *Media Width*. To print only part of the job, enter the width to which you wish the job clipped in the *Media width* box.

If *Print Horizontal Tile* is set to *All*, the system will create as many tiles as necessary to output the job. Each tile will be the full height of the job (assuming roll media), and the width will be equal to the value entered in the *Media Width* box. To print one tile at a time, *Print Horizontal Tile* can be set to the tile

number required. Tiles are numbered from left to right, and tiles overlap by about 0.5 inches.

The *Repeat job to fill media width* check box controls step-and-repeat printing. This box is only available if *Print Tile Number* is set to *Never*. If the box is checked, jobs are repeated as many times as they will fit across the available media width, as set in the *Media width* box. For example, if the *Media width* box is set to 35.6 inches (when using 36 inch roll media) and an 8.5 inch-wide job is processed, the job will be repeated 4 times across the width of the roll. If more copies are required the *Number of rows* can be set to any value up to 10, which will yield a total of 40 copies in this example.

The *Indent image* check box moves all images across the media from the origin point in cases where blank space is needed to the left of the image.

The *Center* check box sets the margins to place the image in the center of the width of the media.

The *Units* list box sets the measurement unit for all of controls to Inches, MM or Points as required (based on the Units setting of your Windows 2000 installation).

4.5.5 PROGRESSIVE PROOFING

This special feature is primarily for printers running four-color jobs on two-color presses. The system can create a proof that simulates the job after the first pass through the press, helping to ensure that when the final two colors are added the result is

correct. The system is very simple and flexible, and enables any combination of one, two or three colors to be printed as required.

Note that due to limitations in RIP processing, Progressive Proofs are not color managed as accurately as full color composite proofs.

To use the feature, un-check the boxes for the colors that you do not wish to print, and check again to turn that color back on. When a color is off, its icon is shown with a cross.

Note that the Progressive Proofs option is incompatible with several standard Page Features such as the Crop Marks and Imposition Features. If you are using Progressive Proofs we recommend not using Page Features.

Click OK to return to the Page Setup Dialog.

Click *Save As* (or Save if you are editing an existing Page Setup) and give your new Page Setup a useful name.

CHAPTER 5: TESTING YOUR vDOT4 INSTALLATION

5.1 PRINTING A TEST FILE

Once you have selected or created a Page Setup it is time to output a sample job.

Begin by clicking the checkbox labeled “Disable Output” on the Output Controller window. Pull down the Navigator Menu and select Print File.

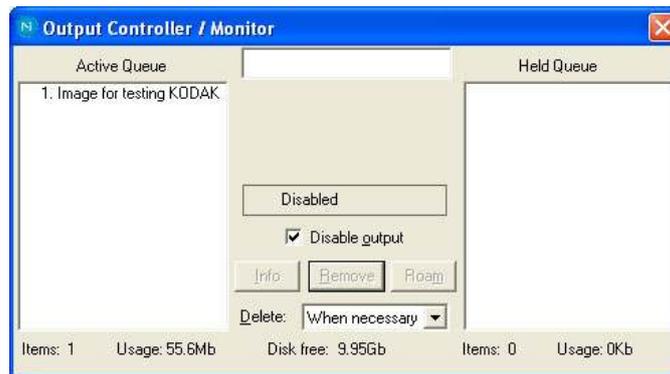
From the list box, choose the Page Setup created for the vDot4 plug-in (on the PC select “pdf” in the “Files of Type...” list box).

Browse the system for your RIP, usually C:\Xitron\Navigator 8.x. There you’ll find a folder labeled Sample Files containing a file labeled “Drupa Sample.PDF.” Select this file and click Print.

5.2 INFO AND ROAM FUNCTIONS

After the RIP processes the file it will appear in the Output Controller as shown in figure 5.1.

FIGURE 5.1: THE OUTPUT CONTROLLER



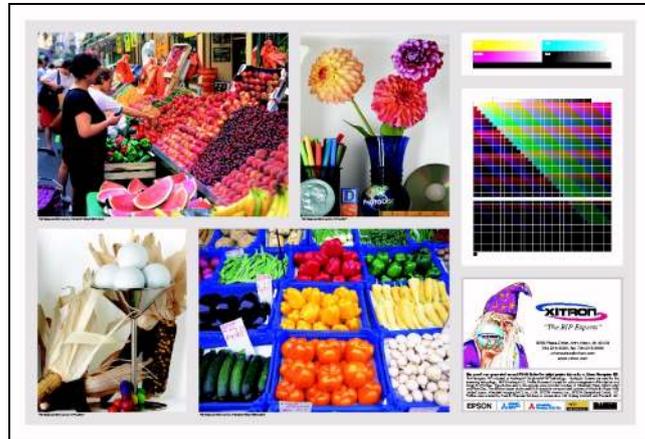
With the job highlighted, click the “Info” button and check the size, orientation, printer type etc. Take particular note of the width and height of the job and make sure it is within the limits of your printer. (You can often save media by setting rotation in the Page Setup dialog - see section 4.4.2 above.) By clicking the “Roam” button you can see an on-screen preview of the job before outputting it.

(To obtain a reduced scale ROAM view, use the menu on the ROAM window and select Reduced ROAM.) The test image should appear as shown in figure 5.2.

Don’t be surprised if some of the colors in the ROAM view seem wrong. You are looking at data that has been color managed for the printer, ink and paper combination you have

specified and these adjustments typically look incorrect when viewed on an RGB monitor.

FIGURE 5.2: TEST IMAGE



5.3 PRINTING

After viewing, close the Roam windows and click the “Disable Output” box to release the job for output.

As the job progresses, you will see a dark gray bar in the central window of the Output Controller. This progress bar indicates the proportion of the job output.

Depending on your Windows Printer driver settings (see section 2.2.4 above) it may take several seconds before the

printer starts to output. If the printer does not start to output after one to two minutes, check the output controller for error messages and see Appendix B, Troubleshooting.

CHAPTER 6: CALIBRATION

6.1 INTRODUCTION

Xitron supplies the vDot4 plug-in with a number of calibration curves for specific media and resolution. These curves were created with reference printers of the same type that the plug-in is intended to support.

In many cases printers will have characteristics so similar to the reference printers that no additional steps are needed to get good quality output. However, it may be helpful to calibrate your printer to compensate for differences between it and the reference machine.

6.2 TOOLS AND MATERIALS NEEDED

The RIP includes facilities for interfacing an automatic strip reading measurement instrument such as the X-Rite DTP-41. However, for occasional calibration you can also use any quality instrument capable of reading color densities in Status T format.

(Note that the DTP-41 is not only able to measure color densities required for calibration, but is also a spectrophotometer which is a requirement if you plan to create ICC profiles.)

In addition, you will require a good supply of media. Note that the RIP can only be calibrated for media listed in the document

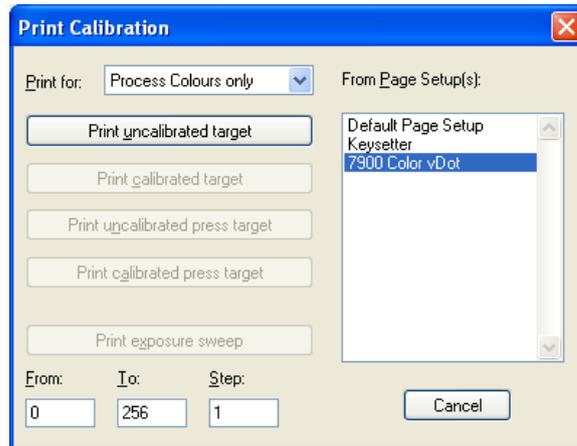
“Media For ink Jet Printers” - referred to in Chapter 1 and attached at Appendix A - for which Xitron provides internal calibration targets. To create an initial calibration curve for other media types requires the use of additional tools not provided with the vDot4 Plug-in.

6.3 PRINTING A TARGET

This step is essential and may not be skipped. It is possible to go through the entire process without this step but the results will be incorrect. Begin by making sure you have created a Page Setup with the correct settings for the calibration targets. The *Color* list box will show “vDot4” and Calibration should show “None.” In this example we will calibrate an Epson 7900 using Epson Standard Proofing Paper at 720 dpi. We have created a suitable Page Setup, and named it 7900 Color vDot.

Go to the *Output* menu and choose *Print Calibration*. The window shown in Figure 6.1 will appear.

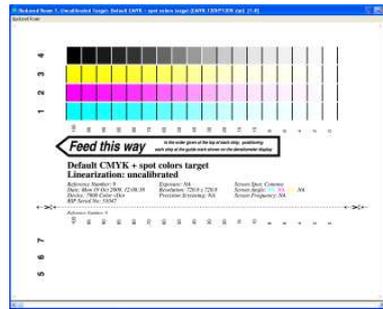
FIGURE 6.1: PRINT CALIBRATION



Highlight the correct Page Setup, and click on “Print Uncalibrated Target.” The RIP will generate a special four-color target which you should print on the correct media type.

The target image is shown in Figure 6.2.

FIGURE 6.2: CALIBRATION TARGET



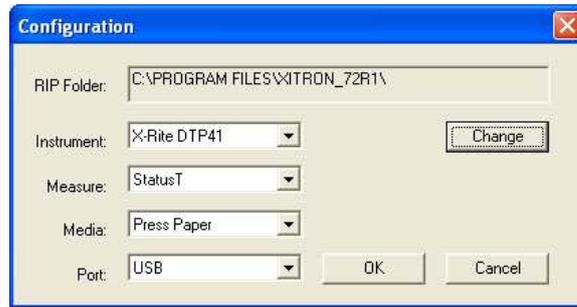
6.4 MEASURING THE TARGET

6.4.1 USING GENLIN

If you do not have a strip-reading densitometer such as the DTP-41 supported by Genlin, and you wish to use a manual Status T densitometer, skip this section and go to 6.5, Entering Measurement Data.

If you have the DTP-41 or similar instrument, use the Genlin application installed with your RIP. Locate the Genlin icon inside the RIP folder, launch it, and then select Configure from the menu bar.

FIGURE 6.3: GENLIN CONFIGURATION



Use the Browse button to locate the RIP you are calibrating. Highlight the SW folder within the RIP folder before clicking the “OK” button.

In the Instrument list box, select the correct model of your measuring device.

Set Measure to Status T, Media to Press paper, and set the Port to the serial port to which you’ve connected the measurement device.

Click *OK*.

From the Menu bar, choose Read Target.

You will see a box with one or more Reference Numbers. Each time the RIP generates a calibration target it records the details in a database and gives each target a Reference Number. This

number is printed on the target. Check the target printed in 6.3 above. Note the Reference Number and highlight the correct number in the list. Then click OK. Verify in the next screen that Genlin is expecting to read the correct number of colors for this target, and click Read.

For each color strip, Genlin shows a window similar to that shown in figure 6.4.

FIGURE 6.4: GENLIN PROMPT



Arrange the target in the direction of the arrow with the first (Cyan) strip under the measuring head and slide the target under the head until it stops. Click OK and feed the target gently through the reader.

Repeat this process for each of the four colors, after which Genlin will display the message box shown in Figure 6.5.

FIGURE 6.5: GENLIN FINISHED PROMPT

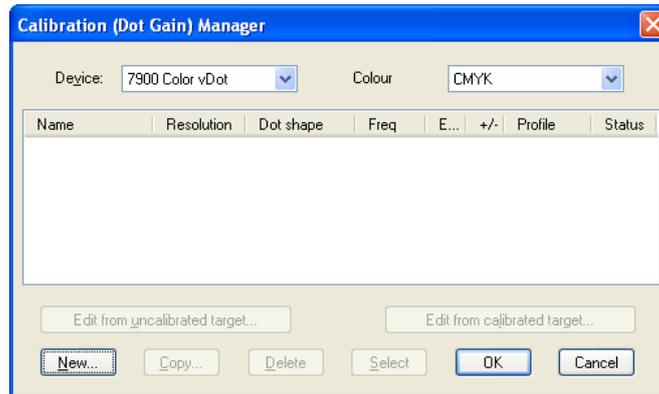


Genlin has placed a file of measurement data in the RIP folder ready for the RIP to import.

6.5 ENTERING MEASUREMENT DATA

From the Navigator Menu Bar select *Output > Calibration Manager*. The window shown in Figure 6.6 will appear.

FIGURE 6.6: CALIBRATION MANAGER

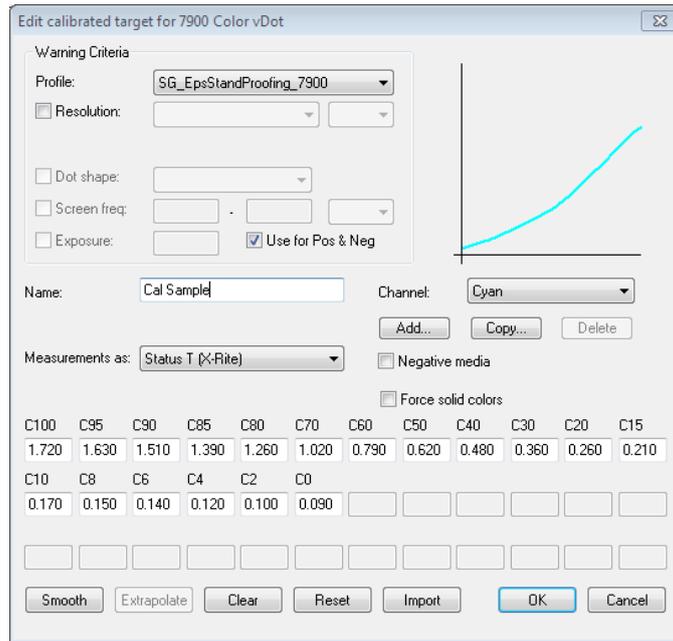


In the *Device* list box, select the device that you are calibrating. This must be the same device name as was selected in Page Setup when you printed the Calibration Target. Click *New*. The window shown in Figure 6.7 will appear.

6.5.1 “PROFILE”

Select in this list box the same Calibration Profile that you chose in Page Setup, which must match the media. This underlying Calibration profile provides the target information (aim curve) against which you will calibrate the printer.

FIGURE 6.7: CALIBRATION EDITOR



6.5.2 NAME

Enter a convenient name for this calibration set.

6.5.3 RESOLUTION

Calibration is only accurate at one resolution, so select the resolution that's set in Page Setup here. This provides a

warning in the RIP monitor, should you attempt to use it at a different resolution.

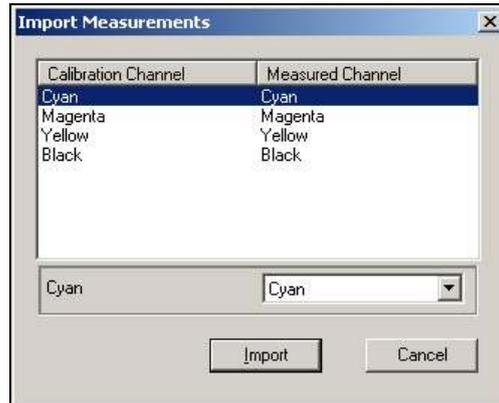
6.5.4 ENTER DATA (MANUAL)

If you are using a hand-held densitometer make sure it is set to the Status T response curve. Measure the density values for each Cyan patch on the target and enter these values in the boxes. When you have finished the Cyan data, select another color in the *Channel* list box, and repeat until all four sets of values have been entered. Click *OK*.

6.5.5 IMPORT DATA FROM STRIP READER

If you used Genlin to create an import data file as described in section 6.4, simply click the *Import* button.

FIGURE 6.8: IMPORT DIALOG



The Import Measurements dialog box shows a list of the four color channels contained in the import data file. Click *Import*.

The RIP will immediately import all the data values and change the numbers in all the boxes for all four colors. Click OK to save the Calibration Set.

6.6 USING THE NEW CALIBRATION SET

Close the Calibration Manager and return to the Page Setup edit window. If you open the Calibration list box you will now see your new calibration set is available for use as shown in Figure 6.9.

Since the new calibration set is based on the originally supplied calibration profile, the color management settings and performance do not change.

If you do not intend to use the default ProofReady color management and wish to create your own using ColorPro, the calibration process does not change. However, in this case there would be no entry in the ProofReady list box and the name of your chosen Color Setup would appear in the Color list box.

FIGURE 6.9: SELECT NEW CALIBRATION

Output Device

Device: 7900 Color vDot 

Configure device...

ProofReady: (None) 

Separations, Screening & Color

Style: CMYK Composite 

Color: Ep Premium Glossy Photo 

Trapping

Method: (None) 

Preferences: 

Calibration & Dot Gain

Calibration: Cal Sample 

Tone Curves: (None) 

Intended Press: (None) 

Actual Press: (None) 

CHAPTER 7: USING THE HALFTONE OPTION

7.1 ENABLING THE HALFTONE OPTION

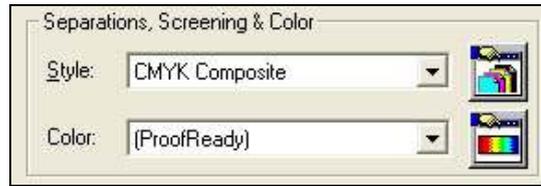
In Chapter 3, sections 3.3.2 and 3.4, we covered entering Plug-in Passwords and the selection of Devices in the Device Manager. For each printer model there are two Halftone device types; Color Halftoned and Color Keys, which depend on the purchase of the Halftone Option for full operation. You can use these devices without the password, but output will include vertical lines showing that the RIP is operating in a demonstration mode. To remove the lines and operate in full mode requires the installation of the Halftone Password using the method described in section 3.3.2.

7.2 HOW TO SET UP THE HALFTONE DEVICES

7.2.1 CREATE PAGE SETUP

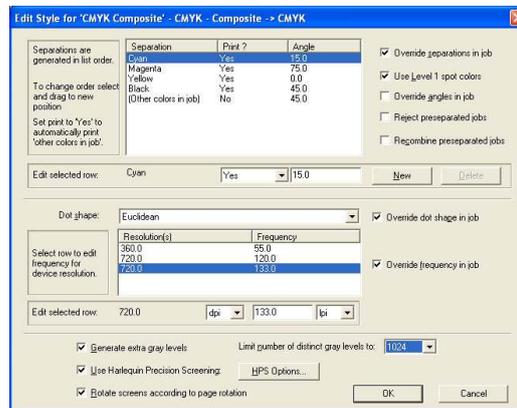
Using the same procedure as described in Chapter 4, create a new Page Setup using one of the Color Halftone devices. The example here will use the 79-9900 Halftone devices.

FIGURE 7.1: COLOR HALFTONE SEPARATION STYLE



After setting the Separation Style, click the icon to the right of the Style Name and click Edit. The screening setup dialog will appear as shown in figure 7.2.

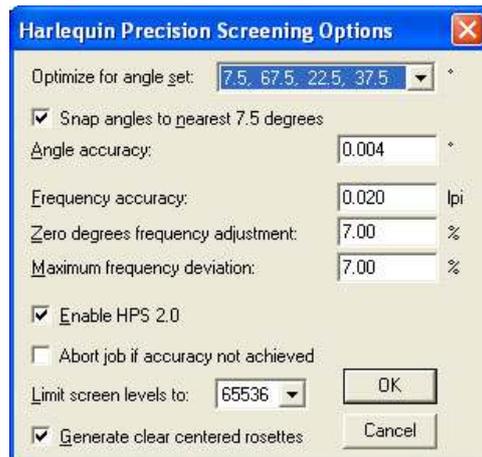
FIGURE 7.2: SCREENING SETUP



7.2.2 SCREEN ANGLES

For best results, Xitron recommends using off-axis screen angles. To do so, check the “Use Harlequin Precision Screening” check box and click the button “HPS Options.” In the following dialog select the angle set “7.5, 76.5, 22.5, 37.5” in the top list box, and click OK.

FIGURE 7.3: HPS OPTIONS



Then set the individual screen angles to the values as shown in Figure 7.4.

FIGURE 7.4: SCREEN ANGLE SETTINGS

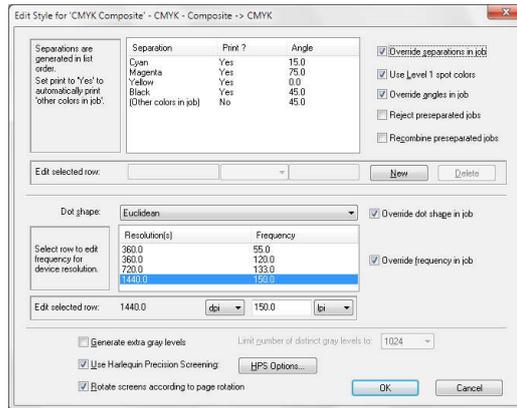
Separation	Print ?	Angle
Cyan	Yes	7.5
Magenta	Yes	67.5
Yellow	Yes	22.5
Black	Yes	37.5
(Other colors in job)	No	37.5

Cyan Yes 7.5

7.2.3 SCREEN RULING

Edit the table near the bottom of the dialog to set the Screen Ruling you wish to use for the current RIP resolution. In this example (Figure 7.5), 150 lpi has been chosen. In addition, “Override angles in job” has been selected.

FIGURE 7.5: SCREEN ANGLE SETTINGS



7.2.4 DOT SHAPE

Choose one of the library of dot shapes (spot functions) available. Euclidean is the conventional round dot that appears as a checkerboard at 50%. You'll also want to turn on "Override dot shape" in the main Page Setup dialog.

7.2.5 HPS OPTIONS

For full details of how to configure and use Harlequin Precision Screening (HPS) see the full Navigator RIP User Manual. The settings shown above are recommended starting points for use with the vDot4 Halftone Option. For the most accurate proof, you should use the same screening settings here as you use when making films or plates at high resolution.

The Halftone Option does not create the exact same dots that you will see on film or plate – no proofing system, can unless it images at the same resolution as the imagesetter and has the same screening algorithms. The Halftone Option simulates press dots such that the result will be a visually closer match, especially at lower rulings as used in newspapers, flyers etc., than the very high quality Error Diffusion screens used in the Color vDot4 mode. In plain terms, Color vDot4 output is often simply too good compared to the press results, and the Halftone Option closes this gap.

The recommended settings for HPS are:

Generate Extra Gray Levels – Yes, set to 1024
Use HPS - Yes (using default HPS Options)
Rotate screens according to page rotation - Yes

7.2.6 PRE-SEPARATION OPTIONS

In the top right hand corner are settings related to the format of the jobs you will be processing. These controls have the following meanings:

Override separations in job

If checked, the RIP will ignore separation information (which objects belong on which separations) in the job file and use the settings you specify here. Xitron always recommends using this feature to eliminate possible errors contained in the page layout file.

Use Level 1 Spot Colors

If checked, this allows the RIP to recognize spot color information defined in the PostScript Language Level 1 Specification. Recommended setting is checked.

Override angles in job

If checked the RIP will ignore screen angle information in the job and use the settings you specify here.

Xitron always recommends using this feature to eliminate possible errors contained in the page layout file.

Reject pre-separated jobs

If checked the RIP will not process any job that is pre-separated by the sending application.

Recommended setting is un-checked.

Recombine pre-separated jobs

If checked the RIP will accept pre-separated jobs, recombine them into a composite, and re-separate using the settings you specify here.

Recommended setting is un-checked.

7.2.7 SPOT COLORS

If Other Colors In Job is set to “No” then spot colors will be converted to CMYK equivalents based on the contents of the PostScript file unless Override separations is checked on. With Override separations on, the system makes calculations using the various ICC profiles and other color management settings in use for this page setup. A spot color will appear as rosettes of the 4 process colors. If set to Yes the same calculation is

done to generate the required color, but the spot color is output as either dots, or solid tone, in the emulated color.

The recommended setting is Yes.

Click OK to save the settings and return to the Page Setup dialog.

7.3 RIP AND PLUG-IN CONFIGURATION

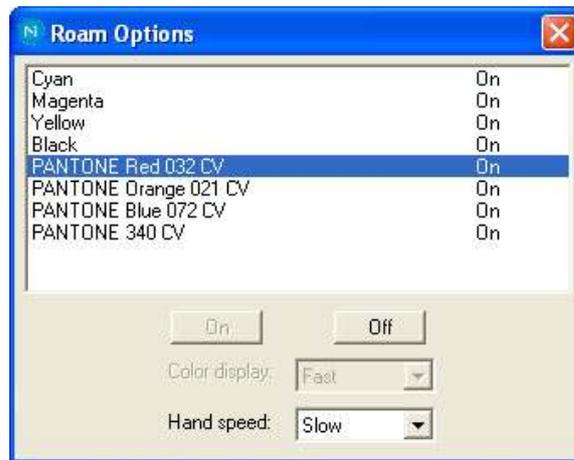
The controls in the Page Setup dialog for RIP configuration and the controls in the Device Configuration dialog for Plug-in configuration have the same functions with the Halftone devices as with the vDot4 devices.

7.4 USING COLOR HALFTONE DEVICES

The first time a job is processed with a Page Setup configured to use one of the Color Halftone devices, the RIP may spend several minutes generating halftone screens. Once generated the RIP saves this information and they do not have to be made again.

If you click Disable Output and ROAM the job when it appears in the Output Controller, it will appear as a normal color job. However if you select Roam Option you will see a list of the individual colors used in this job, each of which has its own screen, as shown in Figure 7.6.

FIGURE 7.6: ROAM OPTIONS WITH SPOT COLORS



Clicking Disable Output again will release the job to the printer. At this time the various colors merge into a print image and output. If you examine the proof with a loupe you will see the rosette structure, and if you have spot colors (and you set “Other Colors In Job” to Yes in Section 7.2.7 above), you will see the spot color reproduced.

APPENDIX A: MEDIA GUIDE - vDOT4

MEDIA FOR INK JET PRINTER INTRODUCTION

There are many hundreds of media being marketed for use with ink jet printers, from manufacturers such as Epson and HP, from established graphic arts suppliers such as Mitsubishi and Agfa, and from many other third-party vendors.

Many of these media have very similar names, and in some cases, several media from one supplier can have almost identical names. For example, Epson's *Photo Quality Glossy Paper*, *Glossy Photo Paper* and *Photo Glossy Paper* are all different products with different characteristics, while Epson's *SemiGloss Paper-Heavy Weight* and *Semigloss Photo Paper* are in fact the **same** product, sold under different names in different locations.

The ProofReady and vDot4 plug-ins include a library of color profiles and calibrations for specific media. Accurate results are only possible if the correct media is used. The purpose of this document is to identify exactly which media are supported on which printer, to enable the user to correctly match the media and RIP settings.

Inks

In addition to the correct media, the correct ink set is essential for accurate results. All Xitron's color calibration and profiling is done using the default ink sets supplied by the printer

manufacturer. Where there are multiple choices the correct ink set is identified on the charts that follow.

Layout

The following pages contain charts for each family of printers for which Xitron supply color profiles and calibrations. (This is not by any means the full list of devices which Xitron are able to drive from our RIP products.)

Each chart identifies the printer followed by a list of the supported media for that model.

**EPSON STYLUS PRO 4900
(EPSON ULTRACHROME HDR INKS)**

Media Type	Page Setup Names
Epson Standard Proofing Paper	4900_Ep Standard Proof
Epson Proofing Paper SWOP3	4900_Ep Standard Proof SWOP3
Epson Proofing Paper Publication	4900_Ep Publication Proofing
Epson Semimatte Proofing White	4900_Ep Semi Matte Proof White
Epson Proofing Paper Commercial	4900_Ep Commercial Proofing
Epson Premium Glossy Photo Paper (250)	4900_EP Premium Glossy Photo
Epson Premium Semigloss Photo Paper (170, 250)	4900_EP Prem SemiglossPhoto250g
Xitron X1 Proofing Paper	4900_Xitron X1 Proofing Paper

**EPSON 7890 AND 9890 (EPSON
ULTRACHROME HDR INKS)**

Media Type	Page Setup Names
Epson Standard Proofing Paper	7890_Ep Standard Proof 9890_Ep Standard Proof
Epson Proofing Paper SWOP3	7890_Ep Standard Proof SWOP3 9890_Ep Standard Proof SWOP3
Epson Proofing Paper Publication	7890_Ep Standard Proof Pub 9890_Ep Standard Proof Pub
Epson Semimatte Proofing White	7890_Ep Proof White Semimatte 9890_Ep Proof White Semimatte
Epson Proofing Paper Commercial	7890_Ep Commercial Proofing 9890_Ep Commercial Proofing
Epson Premium Glossy Photo Paper (250)	7890_Ep Premium Glossy Photo 9890_Ep Premium Glossy Photo
Epson Premium Semigloss Photo Paper (170, 250)	7890_Ep Premium SemiGloss 9890_Ep Premium SemiGloss
Xitron X1 Proofing Paper	7890_Xitron X1 Proofing Paper 9890_Xitron X1 Proofing Paper

**EPSON STYLUS PRO 7900 AND 9900
(EPSON ULTRACHROME HDR INKS)**

Media Type	Page Setup Names
Epson Standard Proofing Paper	7900_Ep Standard Proof 9900_Ep Standard Proof
Epson Proofing Paper SWOP3	7900_Ep Standard Proof SWOP3 9900_Ep Standard Proof SWOP3
Epson Proofing Paper Publication	7900_Ep Publication Proofing 9900_Ep Publication Proofing
Epson Semimatte Proofing White	7900_Ep Semi Matte Proof White 9900_Ep Semi Matte Proof White
Epson Proofing Paper Commercial	7900_Ep Commercial Proofing 9900_Ep Commercial Proofing
Epson Premium Glossy Photo Paper (250)	7900_EP Premium Glossy Photo 9900_EP Premium Glossy Photo
Epson Premium Semigloss Photo Paper (170, 250)	7900_EP Prem SemiglossPhoto250g 9900_EP Prem SemiglossPhoto250g
Xitron X1 Proofing Paper	7900_Xitron X1 Proofing Paper 9900_Xitron X1 Proofing Paper

SUPPORTED INK SETS

Stylus Pro 7900, 9900

Epson Ultrachrome HDR Cyan, Magenta, Yellow, Photo Black, Light Cyan, Light Magenta, Light Black, Light Light Black, Orange, Green.

Stylus Pro 4900

Epson Ultrachrome HDR Cyan, Vivid Magenta, Yellow, Photo Black, Light Cyan, Vivid Light Magenta, Light Black, Light Light Black, Orange, Green.

Stylus Pro 7890, 9890

Epson Ultrachrome K3, comprising Photo Black, Light Black, Light Light Black, Cyan, Light Cyan, Yellow, Vivid Magenta, Vivid Light Magenta.

APPENDIX B: TROUBLESHOOTING

Printer Not Ready

Check to make sure that the printer says “Ready” on the display, and that no ‘ink empty’ lights or ‘paper empty’ lights are lit, then power off the machine and power it up again.

If this does not solve the problem, check to make sure that your connection method is set up properly. See Chapter 4 for more information about connection methods.

I am using a network connection, but I get a communication error when I try to print to my printer.

Follow Epson’s instructions to make sure your Windows driver is installed and working properly. Verify you can print a test page from Windows before trying to use the RIP.

I can’t configure my RIP to print with Firewire.

Firewire can be used (with the Epson Firewire option, where it is not supplied as standard). Again, the Windows driver and Epson Firewire software must be installed and working before using the RIP.

Paper White Looks Yellow

Epson's paper stocks are very bright compared with most input samples you might be trying to match. Try turning off "Fill background with paper color of input job" in your color setup (see the ColorPro user manual). Alternatively, try to use a paper stock with a white that is the same color or slightly darker than the paper white of that which you are trying to match.

Streaks/Lines in Output

Usually, streaks or lines in your output are caused by poor print head alignment or clogged nozzles. You should use the Epson Windows driver Utility software to perform a head cleaning or print head alignment. Occasionally more extreme cleaning is required and can be performed by an Epson technician.

Some third party inks are infamous for clogging Epson print nozzles. Use of third party inks is not recommended by Epson, nor are stock color profiles supportable with their use.

Can I Use TrapPro with Epson printers?

Yes. All supported devices work well with TrapPro.

I get an error using a Page Feature with Progressive Proofs (Epson vDot4).

This is the result of an incompatibility between the Progressive Proofs system and the RIP's Page Feature mechanism. If you get an error when combining Progressive Proofs with a Page Feature then you must disable the Page Feature.

I get a resolution mismatch error when I print.

The RIP will warn of all uses of the built-in profiles that do not match Media ID, RIP or Plot resolution. Some of the pre-installed color setups will cause the RIP to post a "resolution mismatch" error message. The jobs will output without stopping and they will not be affected in any way. This message should be ignored

APPENDIX C: NOTES ON MEDIA, RESOLUTION AND COLOR MANAGEMENT FOR THE EPSON vDOT4 PLUG-IN

MEDIA SELECTION

The Configuration dialog discussed in Chapter 4 includes a list of media types. For each media there are several entries, with different combinations of RIP and Plotter resolutions. The reason for these different entries is that the vDot4 driver has to make a number of adjustments depending on the combinations of RIP and Plotter resolution. These adjustments include setting ink droplet size, print head speed, maximum ink level and the interweaving of scan lines. Most of these adjustments are encapsulated in a single Media ID variable, for example Epson Photo Glossy Paper is Media ID 44.

The system of ink control is so sophisticated that for many purposes, provided the correct Media ID is selected, accurate and pleasing proofs can be generated with only minor manual adjustments rather than implementing a full ICC color management configuration. For this reason we strongly recommend using one of the many alternative standard Media Types. Remember that a non-standard medium is not only unknown to the vDot4 plug-in, but also unsupported by Epson.

USING NON-STANDARD MEDIA

If you are forced to use a non-standard medium, significant experimentation will be required to establish a suitable Media ID and other settings.

Create a test job containing Cyan, Magenta, Yellow and Black step wedges from 5% to 100%, and a number of patches of Super Black with total ink levels from 100 to 300% containing reversed out (white) type of around 6 pt.

Print this test job under your intended conditions of use (e.g. RIP at 720 dpi, plot at 720 by 720 dpi) with a range of different standard media selected. You don't have to try all combinations – if your medium is glossy then only try glossy and semi-glossy options; if your medium is matte only try matte and semi glossy options, etc. You will be able to reject many samples on grounds of ink run on the surface, or the reverse type being illegible at total ink coverage of only 150%, etc. The goal is to find a media option that produces clean prints that dry quickly and have reversed type visible all the way to 300% (because the chosen settings are preventing total ink coverage from exceeding a safe value regardless of the job). Measure the reflection density of the 100% patches of each color and select the settings that give you maximum density without over-inking. If you cannot find a standard media setting that meets these requirements then your medium is probably not suitable for use with the Epson Stylus Pro 4900/7890/7900/9890/9900 series.

RESOLUTION AND COLOR MANAGEMENT

ICC Profiles supplied with the vDot4 plugin have been generated using “normal” conditions, meaning RIPing at 720 dpi and plotting at 720 by 720 dpi. Tests show that the profiles are still valid at other RIP resolutions, but some errors will occur if used at different plotting resolutions. Errors of 2 or 3 Delta-e can be expected if you plot at 720 by 1440 instead of 720 by 720. These errors are reduced but not eliminated by calibrating under the actual output conditions.

The RIP will warn of all uses of the built-in profiles that do not match Media ID, RIP or Plot resolution. Some of the pre-installed color setups will cause the RIP to post a “resolution mismatch” error message. The jobs will output without stopping and they will not be affected in any way. This message should be ignored.