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# RIPit Up

Volume Number Two  
Issue Number Two

THE OFFICIAL PRODUCTIVITY  
COMMUNICATION FROM  
RIPit® COMPUTER CORPORATION

# Understanding the Color Screening Window

Ticket Editor Focus Pg.2

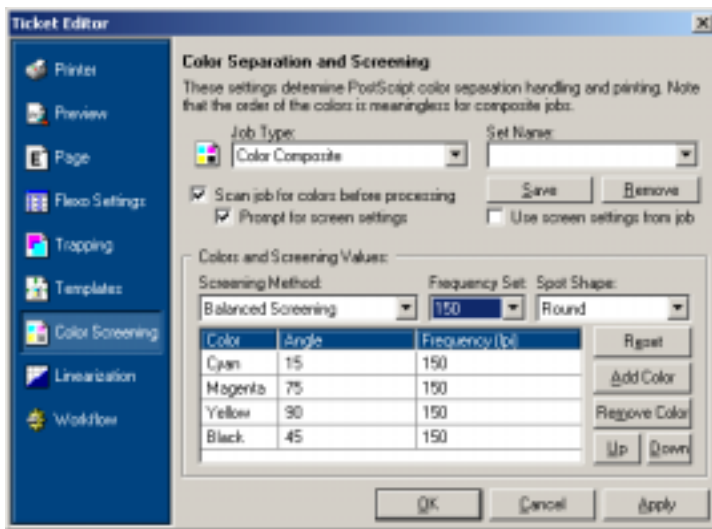


RIPit® Computer Corporation

1 888-947-4748 [www.ripit.com](http://www.ripit.com)

# Understanding the Color Screening Window

One area of continuing confusion for both new users and experienced users alike is the Color Screening window in the Ticket Editor. This is probably the most complicated window in the whole product, and quite a few customer's problems can be traced to incorrect settings in this window. In this article, I'll discuss what all these options mean, and how they interact with one another.



## Job Type

There are two common ways to print a file from a graphic design application such as Quark or PageMaker. The traditional way is to print a file as separations, where each color used in the job is sent as a separate page. In the early days of RIPs, if you wanted separated film – and you usually did – you had to send the file as separations, and you would get one page of film from the imagesetter for each separation page you printed in the application. In those days, that was simply how you did it and today, we have a name for that way of printing files: a *separated workflow*. Up through the last version of OpenRIP NT (released in 1999, which used a Level 2 PostScript interpreter), that was the preferred way of sending a file. The current version of OpenRIP also supports a separated workflow, and many users continue to use OpenRIP that way. But OpenRIP 3 and OpenRIP 2000 also provide improved support for a *composite workflow*, in which all the colors used in a page are printed on the page together. Color copier users have been familiar with composite work-flows for many years, after all, their

customers wouldn't be too happy if they received their color copies as separate cyan, magenta, yellow, and black pages! But for printing, why would we want to use a composite workflow, if what we eventually want to accomplish is separations? The answer is, OpenRIP supports a feature called In-RIP Trapping, which can take the place of manual trapping and application-based trapping. In-RIP Trapping requires a composite workflow, because the interpreter needs all the colors to be present on a page together in order to trap them. Once the file has been trapped, the interpreter separates the colors out into individual pages if that is necessary for the output device.

Where does **Job Type** fit in with that? Simply, if you printed the job as separations, you should set the Job Type in OpenRIP to **Mono/ Separated** to reflect that choice. If you printed the job as composite, or with In-RIP separations, you should set the Job Type to **Color Composite**. What about the **Mono/Separated (Autodetect)** choice? It's essentially an obsolete feature, which automatically assigns the proper process color to separations based on the angles assigned to them when you printed the job in your graphic design application. The problem is that it does not detect spot colors, and it assigns black to a plate if you used a screen angle which it does not recognize. The feature has been superseded by the **Scan For Colors** feature, which is able to detect spot colors and which doesn't rely on the screen angle. We've left **Autodetect** in OpenRIP because there are a few applications for which the **Scan For Colors** feature doesn't work very well – for those applications, and for process color jobs only, **Autodetect** can be a useful feature. For most users, though, our advice is to use **Scan For Colors**, and stay away from **Autodetect**. Also, you may have inferred that **Scan for Colors** and **Autodetect** are mutually exclusive features – they are. Both are techniques for assigning the proper color to a plate, and they cannot both be used at once.

There are two different classes of files which work with the **Color Composite** setting, and both can be used with In-RIP Trapping. When you print a file from an application using the "composite" setting in the

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## Color Screening continued

print dialog box, you are sending a file in which all components are specified by several primary colors – usually in cyan, magenta, yellow, and black, though sometimes in other color spaces such as RGB. (If the application gives you a choice, CMYK is preferred.) Any spot colors present in the job will be rendered as process color within OpenRIP. The second class of files is In-RIP Separations files. These files are similar to composite files, but contain information needed to maintain spot colors as separate from the process colors. An In-RIP seps file may only contain one color, or it may contain only spot colors; process colors may not even be present in the file. If you want to use trapping with a job that has spot colors, you must create this type of file. If your application cannot generate In-RIP Separations, then the next best option is to create an EPS file (which is treated as an In-RIP seps file), or a PDF file. (If you have a PDF file which you think should contain spot colors but it doesn't separate that way, the PDF may have been created wrong.)

For more information on working with a composite workflow, see Chapter 6 of the latest version of the manual. If you have a Build 47 or later installation CD, it is on the CD. Otherwise, you can download it from [www.ripit.com/updater](http://www.ripit.com/updater). The file is the "OpenRIP Manual".

## Scan For Colors

The **Scan For Colors** feature reads through a PS, EPS, or PDF file and attempts to determine which colors the file uses. It does this by reading comments in the file which are part of Adobe's recommendation of how to create standardized PostScript. If properly formatted comments are present in the PS files, the **Scan For Colors** feature can determine which colors are used in a file, and how those colors can be "built" using process colors. If the comments are missing or incomplete, **Scan For Colors** may not find the builds for spot colors, or it may not even find the colors at all. Ironically, not even Adobe follows the standard in all applications. When you select the option, **Scan job for colors before processing**, immediately prior to ripping the file OpenRIP reads through the file to try to determine which colors are present. If it finds colors which are not in its database, it asks you to define them. After it scans the file, it *replaces* the colors which were in the ticket with the colors it found in the file. If you selected the **Prompt for screen settings** option, you are given the opportunity to verify that the color list is complete and correct, and the screen angles are appropriate for the job. OpenRIP attempts to pick screen angles intelligently, but you should examine them to be sure they are what you want. If the job contains spot colors which overlap (as in duotones), the darkest color should be at 45 degrees, and the lighter color(s) should be at 15 and 75 degrees. If spot colors do not overlap, you will usually achieve better results by setting

the spot colors to a 45 degree angle. Process color angles can be left to 15 Cyan, 75 Magenta, 90 Yellow, and 45 Black, unless you are using process colors in your file to represent spot colors – in that case, you may want to choose more appropriate values.

After a file has been scanned for colors, the resulting color list may or may not be accurate. If the color list is not accurate, it is because the comments in the PS files do not accurately represent the actual file. Sometimes, you may need to edit the color list to bring it into agreement with what *you know* to be the actual colors used in the file. There are some differences in how the colors in the color list are used, depending on whether the **Job Type** is set to **Mono/Separated** or **Composite**. If it's **Mono/Separated**, then the color list *determines* the color of each plate, and the colors will be used in exactly the sequence in which they are specified in the list. For example, if you set up a file in your source application using cyan, magenta, yellow, and black, and printed it as separations, but then you edited the color list so that it showed red, blue, brown, black, then those colors in the list *determine* how the job is shown in monitor preview and on printed proofs – monitor preview and the printed proof would show the colors red, blue, brown, and black. On the other hand, in a **Composite** job the color list shows colors which *are available* for the page, and the angles associated with those colors. If you took the job from the example above and printed it in composite mode, and then changed the colors in the ticket to red, blue, brown, and black, the job would still show up in monitor preview and on the printed proof as cyan, magenta, yellow, and black. Why? Because those process colors are always available to the RIP even if they aren't specified in the color list, and the colors in the job – cyan, magenta, yellow, and black – are explicitly referenced in the PS file. If you want to choose different colors for a composite job, then in monitor preview you must choose **View > Change Separation Color** to change to the spot colors you want. To print different colors on a proof, use the **Advanced Proof Feature**.

For a composite job, the colors in the color list do not need to be in proper sequence, and not all colors in the list even have to be used in the job. The RIP will only create separations for colors which are actually used on a particular page. (Except in PDF files, where you will get cyan, magenta, yellow, and black separations even if those colors are not used on the page – this is a quirk of the Adobe® PostScript® 3™ interpreter.)

## Use Screen Settings from Job

Normally, OpenRIP ignores the screen angles and frequencies which are set in the source application's print dialog box, and uses the settings in the **Colors and Screening Values** box. If you want to use the screen settings specified in the print dialog box, you can do so by checking the **Use screen settings from job** box. Only use this setting when the screening method in OpenRIP is set to **Accurate Screens** or **Standard**

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# RIPit Focus:

## Color Screening continued

Screening, **Balanced Screening** and **Enhanced RT** use screening techniques which are not compatible with the **Use screen settings** option, and you may get scrambled screens on your plates.

## Colors and Screening Values

In the lower half of the Color Screening window, you can select the screening method, frequencies, and angles you wish to use for output. OpenRIP provides the following screening methods:

**Balanced Screening:** This method generally provides the best quality screens. It also allows higher linescreens for a given resolution - 120lpi at 1200dpi, and 200lpi at 2400dpi, and also supports enhanced gray levels to reduce banding. The limitations of Balanced Screening are that it is not available at all resolutions, and it only allows the standard offset screen angles: 15, 75, 90, and 45 degrees. These limitations are not likely to be a problem for most users.

**Accurate Screens:** This method allows the user to select any combination of resolution, linescreen frequency, and angle. It also allows a variety of different spot shapes which may be useful to achieve different effects. The primary disadvantages of Accurate Screens are that it does not presently support enhanced gray levels, and the dots tend to have a rougher shape, relative to Standard Screening and Balanced Screening.

**Enhanced RT:** This method allows very high linescreens for a given resolution, but uses non-standard screen angles and does not create a traditional rosette as the previous choices do. This method also limits you to specific resolutions, frequencies, and screen angles, and also does not support enhanced gray levels. We only recommend this screening method for work without overlapping color screens.

**Standard Screening:** This method generates cleaner looking dots than Accurate Screens, and allows all the same spot shape choices as Accurate Screens. It also allows any combination of resolution, linescreen frequency, and angle, although it may not produce the requested angles and frequencies with complete precision. It also does not support enhanced gray levels. Like Enhanced RT, we do not recommend this method for work with overlapping color screens. (We have, however, seen flawed PS files which only produce proper screened output with Standard Screening. If you think you have such a file, try Standard Screening.)

The **Color List** is immediately below the **Screening Method** pulldown box. This shows the default colors for the queue (if the job has not been processed), or the detected colors (if the job has been processed with **Scan For Colors** enabled.) You can change the colors and their sequence by using the **Add Color**, **Remove Color**, **Up** and **Down** buttons. You can also change the screen angles for each color, and you can change the frequency settings individually if you are using **Accurate Screens** or **Standard Screening**.



Wayne Wasulko

## President's Message:

RIPit Computer Corporation has offered CTP and CTF solutions for the offset and flexography markets

for some time now. These imaging systems have been available in our standard 2-up (13.3" x 20") and our landscape (15.75" x 20.25") formats. Now RIPit is proud and excited to introduce Exxcalibur, our new 6-Up series imagesetter designed to image high resolution films (to 4000 dpi / 225 lpi) for large format printers. Exxcalibur will be driven by our OpenRIP® Adobe® PostScript® 3™ Interpreter with features like *Monitor Preview*, *KOOLKolor™ Proofing*, *Custom Templating*, *AdvancedScan™*, *In-RIP Trapping* and of course, *In-RIP Imposition* to automate stripping.

For more information regarding the Exxcalibur and RIPit Imaging Systems, contact a RIPit sales professional, toll free at **888-947-4748**.



### New 6-Up Exxcalibur!

#### Exxcalibur Specifications

**Image Area:** 25.2" x 32" max. on 26" wide film

**Repeatability:** ±.0005" typical. ±.001" max. over 8 consecutive films

**Resolutions:** Select - 3600, 2400, 1800, 1200 and 900

**Dimensions:** 57" wide x 22" high x 27" deep

**Weight:** 220 lbs

**Laser Technology:** 635 nm Laser Diode

*Base Cabinet optional*



## Screening Options in OpenRIP®

About Screening in General: OpenRIP offers a choice of four different screening technologies, each with certain advantages and disadvantages. For printing, Agfa Balanced Screening (ABS) will generally offer better quality for a variety of reasons. An important difference between ABS and the other screening technologies is that ABS uses 16-bit screen sets rather than 8-bit screen sets, so it is the only screening technology which supports the enhanced number of gray levels available from PostScript 3. On very shallow gradients which stretch over long areas, ABS is much less likely to show banding because of its enhanced gray level support. 8-bit screening technologies are restricted to 255 gray levels, while ABS offers substantially more.

### Adobe Accurate Screens and Standard Screening

These two Adobe screening technologies generate screens as necessary during the RIP process. For that reason, all combinations of output resolutions, line screen, and line angle are supported. Generally, Adobe Accurate Screens generates screens which match the requested screen parameters more closely; if you are using unusual screen angles for a particular job, Accurate Screens is probably your best choice. Accurate Screens also produce a clear-centered rosette, while Standard Screening does not.

When using Accurate screens, if you choose a resolution/linescreen/angle combination you have not used before, the interpreter will need to generate a screenset, and this process can take a few minutes. If you are using Accurate Screens and the RIP appears to “hang” during interpretation, the interpreter is probably generating a new screen set. Subsequent interpretations using the same resolution/linescreen/angle combination should go much faster, as the screen set will be stored for future use. (Occasionally, OpenRIP will remove screensets if it detects that drive space is running low.)

Accurate Screens and Standard Screening offer the widest range of spot shapes, as well as a virtually unlimited selection of resolution, screen angle, and screen frequency choices. Accurate Screens add some noise to the spot, while Standard spots tend to look “cleaner”. The noise in Accurate Screens can hide banding, imagesetter artifacts, and other phenomena. Paradoxically, a “noisy” spot may yield cleaner output under some conditions.

Accurate  
Round  
(Euclidean)



Standard  
Round  
(Euclidean)



Accurate  
Round  
(True)



Standard  
Round  
(True)



*n e x t   p a g e*

# RIPit Classroom:

Accurate  
Square



Standard  
Square



Accurate  
Elliptical



Standard  
Elliptical



Accurate  
Euclidean



Standard  
Euclidean



Accurate  
Diamond



Standard  
Diamond



Accurate  
Rhomboid



Standard  
Rhomboid



*n e x t p a g e*

# RIPit Classroom:

## Agfa Balanced Screening

Agfa Balanced Screening (ABS) uses pre-defined screensets, which are stored in a folder within the OpenRIP application folder. Because ABS screensets are not generated by the RIP, you are limited to the resolution/linescreen/angle/spot shape combinations which come with OpenRIP. Round and elliptical spot shapes are available, at angles of 15, 75, 90, and 45 degrees (cyan, magenta, yellow, and black, respectively). The following resolutions and linescreens are available:

1000 dpi:	65, 70, 80, 90, 100 lpi	1800 dpi:	75, 85, 100, 110, 120, 133, 140, 150, 175 lpi
1016 dpi:	65, 70, 80, 90, 100 lpi	2000 dpi:	85, 100, 110, 120, 130, 140, 150, 175 lpi
1200 dpi:	65, 75, 85, 100, 110, 120 lpi	2400 dpi:	85, 100, 110, 120, 133, 140, 150, 175, 200 lpi
1270 dpi:	65, 70, 80, 90, 100, 110, 130 lpi	2540 dpi:	90, 100, 110, 120, 130, 140, 150, 160, 180, 200 lpi
1600 dpi:	75, 85, 100, 110, 125, 140, 160 lpi	3000 dpi:	110, 120, 133, 140, 150, 175, 200, 225 lpi
1693 dpi:	75, 85, 100, 110, 120, 133, 150, 160 lpi	3600 dpi:	133, 140, 150, 175, 200, 225, 250, 300, 360, 425 lpi

Agfa  
Balanced  
Screening  
Elliptical



Agfa  
Balanced  
Screening  
Round



## Enhanced RT:

Enhanced Rational Tangent Screening has been available in OpenRIP the longest of any screening technology. It works well for achieving high linescreens at relatively low resolutions. (Though Agfa Balanced Screening offers almost as high linescreens at low resolutions, and offers much better overall image quality.) Enhanced RT uses nonstandard screen angles (18.4346, 71.5651, 0, and 45 degrees for Cyan, Magenta, Yellow, and Black) and does not produce a traditional rosette pattern on process color work. If you wish to use Enhanced RT Screening, the following combinations of resolution and linescreen are available:

600 dpi:	65, 80, 100 lpi	2000 dpi:	65, 75, 85, 95, 110, 120, 133, 150, 164, 190 lpi
635 dpi:	65, 85, 105 lpi	2400 dpi:	80, 90, 100, 110, 133, 160, 180, 200, 220, 265 lpi
1200 dpi:	65, 80, 100, 110, 130, 160 lpi	2540 dpi:	85, 105, 120, 140, 165, 210, 240, 280 lpi
1270 dpi:	65, 85, 105, 120, 140, 165, 209 lpi	3000 dpi:	100, 110, 125, 140, 165, 200, 250, 280 lpi
1600 dpi:	65, 75, 85, 105, 133, 150, 175 lpi	3386 dpi:	95, 100, 110, 125, 140, 160, 190, 200, 220, 250, 280 lpi
1693 dpi:	65, 70, 80, 95, 110, 130, 140, 160, 190 lpi		

Enhanced RT  
Spot16



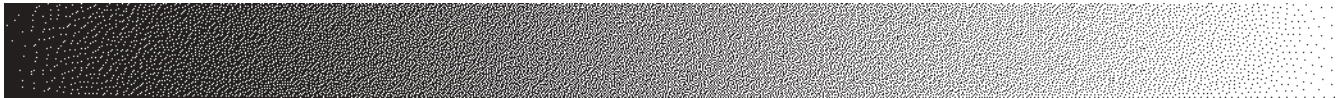
## What's New:

# RIPit's FM Screening

OpenRIP offers FM Screening as an optional feature, which is available if it has been turned on in the hardware key. Traditional AM screening methods (Accurate, Standard, Balanced, and Enhanced RT) vary the size (amplitude) of the halftone dot, but keep the position (frequency) constant. FM screening keeps the size (amplitude) constant, and varies the position (frequency).

FM Screening can create halftone spots which are as small as a single pixel, but on most devices it is desirable to use larger spots. At 2400dpi, the 3x3 spot is a typical size. FM Screening can cause an increase in dot gain under some conditions, so it is important to control dot gain more carefully by using the dot gain compensation feature of OpenRIP.

FM 1x1  
spot at  
150 dpi



FM 2x2  
spot at  
150 dpi



## Faces Behind the Support



Joe Fortes



Eric Bristow



Mark Peeler



Lenney



Oscar

*RIPit Computer Corporation's  
Technical  
Support Staff*

## Calendar:



**Come See Our Stuff at  
Southwestern Graphics**

Booth No. 537  
Dallas Convention Center  
May 16th thru 18th

## Next Issue:

**RIPit's AdvancedScan™,  
scan to plate and image  
manipulation software**