

VirtualReScan 4.5 Advanced Clarity Feature

(Available with a VRS 4.5 Professional License)

Application Note

Date	June 08, 2009
Applies To	VirtualReScan (VRS) 4.5
Summary	This application note provides a general explanation of the VirtualReScan 4.5 Advanced Clarity feature.
Revision	1.0

VRS 4.5 Advanced Clarity Feature Overview

The VirtualReScan (VRS) 4.5 Professional Advanced Clarity feature offers an additional image quality option to process documents with complicated, textured backgrounds. It is available for challenging documents that cannot be processed adequately with the standard brightness/contrast adjustments and thresholding. New options have been included in the Advanced Clarity feature to Analyze color to provide optimal black and white images and to Ignore Pictures when VRS is evaluating the page content.

For example, you may notice some documents produce less than optimal image quality results when scanned with the default VRS settings; because the document's patterned background is dense and difficult to suppress. With the Advanced Clarity feature enabled, VRS can process the background successfully and produce optimal results.

Note: This feature is only available when scanning with Black and White output with a VRS 4.5 Professional license or in Professional Demo Mode.

General Explanation of VRS 4.5 Advanced Clarity

The Advanced Clarity feature was improved with the VirtualReScan 4.5 product to provide additional image cleaning beyond what was previously offered with the VRS 4.1 or 4.2 Advanced Clarity feature. These improvements were needed because there were many challenging images that the VRS 4.1 or 4.2 Advanced Clarity features could not successfully affect. The Advanced Clarity tool adjusts settings based on algorithmic intelligent judgments. This will prevent a VRS user from having to manually adjust their settings, test the new settings, and readjust the setting, etc. when a challenging image is encountered.

Analyze Color Setting

For pages that contain a color background or color text, this option produces optimal black and white images by including subtle color content variations in the page evaluation. Otherwise, only grayscale variations are evaluated. With this feature enabled, the VRS software will request a color image from the scanner. The color image allows the VRS software to more accurately modify the image because of the higher data content. The final image is rendered as a black and white file.

When scanning with the Advanced Clarity enabled, if using the VRS Trap features such as Stop on Every Page, the Analyze color option will be grayed out. This is because the image displayed in the VRS trap has already been scanned in as a black and white or grayscale page and the Analyze Color option requires the page to be scanned in color.

Ignore Pictures Setting

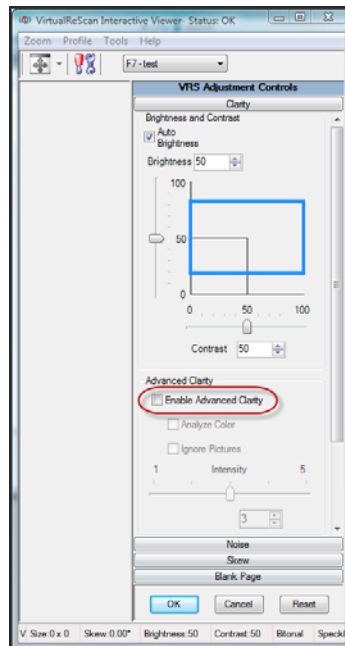
For pages that contain both text and pictures, the Ignore Pictures option ignores color text or photos when VRS evaluates the page content. As a result, the clarity improvements are applied to other (non-picture) content on the page.

- The Advanced Clarity feature provides the following additional image cleanup options:
 - Image noise reduction for challenging images.
 - Different size noise image cleanup.
 - Image cleanup that does not destroy the image's text.
- Image cleaning provides the following benefits.
 - Reduced image file size.
 - Improved OCR performance.
 - More accurate image orientation.
- Advanced Clarity is available when the VRS 4.5 user:
 - Has a VRS Professional license or is running VRS in Professional Demo Mode.
 - Is scanning with Black and White output.
- Feature Limitations:
 - There are still some challenging images which this feature cannot enhance.
 - There is also a decline in scan speed performance

Using VRS 4.5 Advanced Clarity

Follow the steps below to enable the Advanced Clarity feature.

1. Launch the VRS 4.5 Interactive Viewer and select the Clarity option.



VirtualReScan 4.5 Interactive Viewer Advanced Clarity Option

2. In the Advanced Clarity group, select the "Enable Advanced Clarity" check box. By default, the check box is not selected.
3. Using the additional Advanced Clarity clean up options
 - a. Analyze Color
 - i. Check the Analyze color box to enable the setting.
 - b. Ignore Pictures
 - i. Check the Ignore Pictures box to enable the setting.
4. Select the desired Advanced Clarity performance setting by:
 - a. Moving the slider to the left or right to select the desired Intensity setting.
 - The Intensity settings range from a value of 1 to 5. A setting of 1 requires less processing, while a setting of 5 corresponds to more aggressive processing.
 - b. Using the Performance control instead of the slider to select the desired setting.

The valid range is from 1 to 5, a setting of 1 requires less processing, while a setting of 5 corresponds to more aggressive processing.

 - Click in the text box and type in a value.
 - Click the arrows on the text box to change the value.

Note: If you enable the Advanced Clarity feature and subsequently make manual adjustments to the

VirtualReScan 4.5 Advanced Clarity Feature

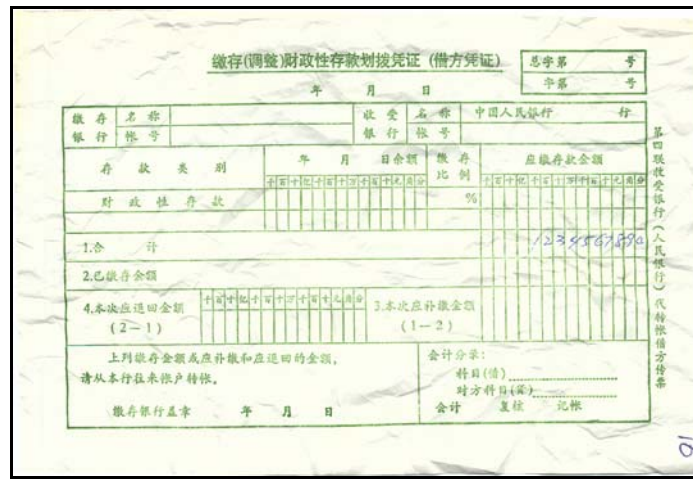
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Brightness or Contrast values, the Advanced Clarity feature will be turned off.

Examples of Advanced Clarity Feature in Use

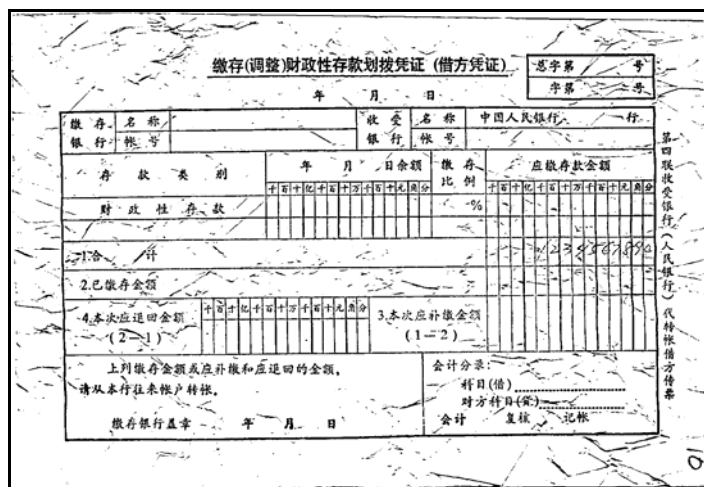
Below, you will find screen captures of challenging images, starting with the original, then with VRS 4.5 Image Cleanup without Advanced Clarity and finally with VRS Image Cleanup with Advanced Clarity.

- Example 1: Wrinkled Paper
 - Below is an image of the original wrinkled paper.



Wrinkled Paper Original

- Here is the same image scanned using VRS 4.5 Image Cleanup but without using the Advanced Clarity feature.



Wrinkled Paper Scanned with VRS Image Cleanup without Advanced Clarity Feature Enabled

- Finally, here is the same image scanned using VRS 4.5 Image Cleanup with the Advanced Clarity feature enabled.

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总字第 号
字第 号

年 月 日

缴存名称	收受名称	中国人民	行
银行帐号	银行帐号		
存款类别	年 月 日 余额	缴存比例	应缴存款金额
财政性存款		%	
1. 合计			12,544,678.96
2. 已缴存金额			
4. 本次应退回金额 (2-1)		3. 本次应补缴金额 (1-2)	
上列缴存金额或应补缴和应退回的金额, 请从本行往来帐户转帐。		会计分录: 科目(借) _____ 对方科目(贷) _____ 会计 复核 记帐	
缴存银行盖章 年 月 日			

第四联收受银行(人民银行)或持帐簿方持票

Wrinkled Paper Scanned with VRS Image Cleanup with Advanced Clarity Feature Enabled

- Example 2: Dirty Paper
 - Below is an image of the original "dirty" paper.

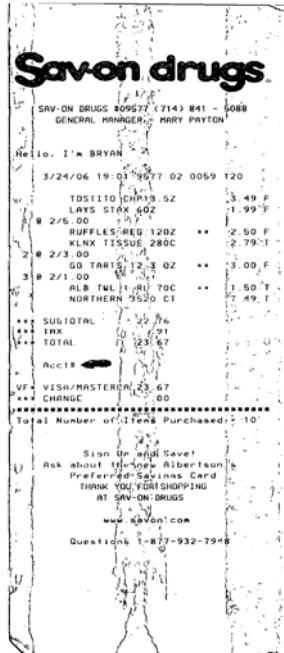


Dirty Paper Original

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- o Here is the same image scanned using VRS 4.5 Image Cleanup but without using the Advanced Clarity feature.



Dirty Paper Scanned with VRS Image Cleanup without Advanced Clarity Feature Enabled

- o Finally, here is the same image scanned using VRS 4.5 Image Cleanup with the Advanced Clarity feature enabled.



Dirty Paper Scanned with VRS Image Cleanup with Advanced Clarity Feature Enabled

- Example 3: Paper with Bleed-through
 - Below is an image of the original paper with bleed-through.

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年 月 日 第 号

付 全 称			收 全 称		
款 帐号或地址			款 帐号或地址		
人 开户银行	行号		人 开户银行	行号	
金 人民币			亿	千	百
额 大 写				2	3
原凭证金额	赔偿金		万	4	7
原凭证名称	号 码		千	5	7
科目(贷)			百	9	7
对方科目(借)			十	0	
转原 帐因	银行盖章		元		
			角		
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Paper with Bleed-through Original

- Here is the same image scanned using VRS 4.5 Image Cleanup but without using the Advanced Clarity feature.

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人 开户银行	行号		人 开户银行	行号	
金 人民币			亿	千	百
额 大 写				2	3
原凭证金额	赔偿金		万	4	7
原凭证名称	号 码		千	5	7
科目(贷)			百	9	7
对方科目(借)			十	0	
转原 帐因	银行盖章		元		
			角		
			分		

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Paper with Bleed-through Scanned with VRS Image Cleanup without Advanced Clarity Feature Enabled

- Finally, here is the same image scanned using VRS 4.5 Image Cleanup with the Advanced Clarity feature enabled.

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款 帐号或地址			款 帐号或地址		
人 开户银行	行号		人 开户银行	行号	
金 人民币			亿	千	百
额 大 写				2	3
原凭证金额	赔偿金		万	4	7
原凭证名称	号 码		千	5	7
科目(贷)			百	9	7
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Paper with Bleed-through Scanned with VRS Image Cleanup with Advanced Clarity Feature Enabled

For additional details on this feature, please refer to the **Advanced Clarity (VRS Professional only)** section, beginning on page 60, of the [VirtualReScan \(VRS\) 4.5 User's Guide](#).