

Advanced screening
technology for consistent,
reliable, high-impact print
production

Kodak
Staccato
screening



Staccato screening
provides on-press
stability for color-critical
work, helping flesh tones
and process color builds
remain consistent

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Kodak Staccato software is advanced, second-order FM screening technology. **Staccato** screening produces high-fidelity, continuous tone images that exhibit fine detail and an extended color gamut, creating a photographic experience free of visible printing artifacts, such as subject moiré and rosettes.

Staccato screening eliminates gray level limitations and abrupt jumps in tone, while improving color and halftone stability. **Staccato** technology also reduces image degradation due to press misregistration. Leveraging a 10,000 DPI laser, **Kodak SQUAREspot** thermal imaging technology delivers the resolution required to reproduce very fine screens in a reliable and practical manner for routine daily print production.

Increased stability means more vibrant, more predictable color

Staccato screening brings tonal and color stability to the pressroom by reducing variations in dot gain caused by changes in solid ink density, wet trap, and color contamination from paper. The pseudo-random nature of the **Staccato** screening halftone patterns also means that misregistration does not degrade the look of the halftone, nor cause overall color shifts in presswork. Unique halftone patterns are used for each



separation to minimize artifacts in screen tint builds. The on-press stability of **Staccato** screening makes it particularly effective for replacing spot colors with process screen builds by using the **Kodak Spotless** printing solution.

Staccato screening software is available with six additional extended screen patterns for **Spotless** five, six, and seven-color printing support. **Spotless** technology utilizes color-mapping technology and **Staccato** software's extended color gamut and continuous tone properties to deliver smooth, accurate spot color results.

Greater gamut and contone quality

Staccato screening produces high-impact, artifact-free images with greater image fidelity, richer colors, open shadows, sharper texture, and finer detail than conventional AM or hybrid AM/XM screens. It eliminates screening moiré, subject moiré, rosette patterns, shade stepping, and abrupt tone jumps.

Staccato screening absorbs light more efficiently and produces midtone vibrancy and gamut that is not possible with conventional AM screens. **Staccato** screening provides near-photographic quality, protects the purity and saturation of colors, and subdues color inconsistencies caused by paper substrate.

Smooth tints and quarter tones for noise-free print

Staccato screening delivers the best of conventional AM halftone screens while overcoming the problems with graininess and visible artifacts in flat tint areas commonly associated with early stochastic/FM screens. **Staccato** screening dots grow in size and are clustered into orderly patterns to eliminate low-frequency noise and inconsistencies that lead to visibly grainy patterns.

Print on more materials, using ink more efficiently

Staccato screening distributes ink more efficiently, making it ideal for printing on a wide range of substrates including fine paper, uncoated stock, recycled paper, newsprint, plastics, and metals. Shadows can be held open without sacrificing solid ink density, contrast or gamut. **Staccato** software's small dots dry faster than dots used with AM screens, which improves performance on perfecting presses, reduces drying time with less setoff, and may help speed up work in progress and reduce time to bindery.

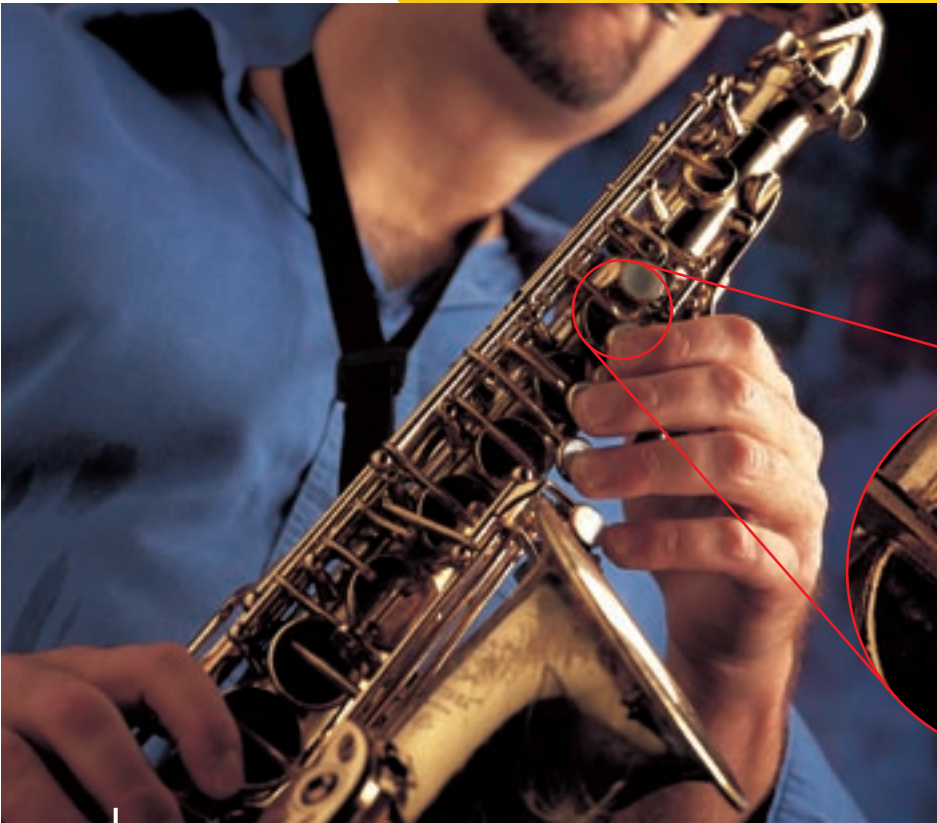
Staccato screening meets the stability and quality needs of sheetfed and web offset printers. It is being used with great success in all offset printing environments, including web publication, directory printing, newspaper, packaging, and commercial sheetfed printing.

Conventional AM, XM, FM, and Staccato screening compared

	AM screening	Maxtone screening	FM screening	Staccato screening
Fewer and larger minimum dot sizes in highlights and shadows in hybrid AM/XM screens can result in loss of detail and increase in graininess.				
The angle and frequency of halftone dots in conventional AM and hybrid AM/XM screens can cause subject moiré, screening moiré, and unstable rosette structures.				
Conventional FM screens produce local line, checkerboard, and irregular patterns that may contribute to grain, inconsistent dot structures, and localized ink plugging.				
Staccato screening produces regular patterns and consistent halftone structures, delivering reductions in grain, dot gain variability, and midtone plugging.				
A variety of Staccato screening patterns are available at any given resolution. A unique pattern is used for each process color and is consistently repeated each time it is applied to the image. Staccato software is optimized to avoid secondary pattern artifacts and create smooth overprints.				

Features

Fast imaging	Staccato screening is rendered, screened, and imaged at full engine speed, with no effect on RIPping or rendering time.
Plate qualification	The majority of thermal plates are qualified for Staccato screening, contact your Kodak representative for a current list.
Screening options Minimum highlight dot size at 2400 dpi	10.6 micron Staccato screening – 2 nd order* 21.2 micron Staccato screening – 1 st order* 21.2 micron Staccato screening – 2 nd order* 31.8 micron Staccato screening – 2 nd order 42.3 micron Staccato screening – 2 nd order 63.2 micron Staccato screening – 2 nd order *applies to specific thermal plates only, refer to media specifications for details
Controlled by Kodak workflows	Staccato screening is an optional feature of Prinerger, Brisque, and iMPAct workflow software, and the screening is controlled from within the workflow.
Object level control	Screening can be applied using the Acrobat plug-in as well as by desktop applications that permit screening control of EPS and PDF at the separation, image, page, or document level.
Predefined calibration curves	Staccato software is shipped with standard tone reproduction curves and evaluation press test forms. Alternatively, custom curves can be built using the Kodak Harmony software utility (Prinerger and iMPAct workflow software) or tone reproduction curves (Brisque software).
Suitable for a wide range of printing applications	Staccato screening can be used on fine paper, uncoated stock, recycled paper, newsprint, carton board, plastics, and metals.
For sheetfed and web offset printing	Staccato screening provides image quality and efficiency benefits for commercial, publications, direct mail, packaging, and newspaper printing.
Kodak Veris, Matchprint, Iris, and Spectrum proofers	Staccato screening can be proofed reliably on Kodak Spectrum digital halftone proofing devices, and proofed for color on Kodak Veris, Matchprint, and Iris Inkjet proofers.
Independent screens for four and six-color separations	<ul style="list-style-type: none"> Four independent screens for CMYK work Six independent screens for low-resolution six-color proofing Optional six-color screen sets for Kodak Spotless software application Six-color separations available for specific output devices only. Contact your Kodak representative for a list of devices.



Staccato screening renders moiré-free, photographic fidelity for even the most challenging images

Consistent, stable printing

Staccato software's microdot structures carry a more efficiently distributed ink film through most of the tonal range, substantially reducing the variation in mechanical gain common to AM dots. Dot gain in **Staccato** screening is primarily optical, not mechanical. Lower mechanical gain means less variation as inking levels and paper characteristics change on press, resulting in more reliable and predictable color. Compared to images screened with AM screening, **Staccato** screening images are not susceptible to a visible change in the halftone structure and color when misregistered, further improving overall presswork stability.

SQUAREspot thermal imaging technology for reliable screening

Conventional filmsetters as well as computer-to-plate (CTP) devices, require a level of process control in imaging, proofing, plating and processing that makes it difficult for many printers to deliver consistent results with the very fine dots used in high-line AM screening and stochastic halftones.

These issues are overcome by **Kodak SQUAREspot** thermal imaging technology—the foundation for accurate and consistent plates delivered to the pressroom. With **SQUAREspot** technology, **Staccato** software's fine dot structure becomes reliable and practical for routine daily production. **SQUAREspot** imaging technology delivers end-to-end imaging integrity from the original file through to the press despite natural imaging variables such as laser power, plate sensitivity, and processor variation.

Optimized screens for print, proof, and tone control

Staccato screening is optimized for printability and smoothness. Unique halftones are used in each separation. To ensure consistency, the dot patterns are built-in and deliver the same pattern every time they are imaged. Pre-defined calibration curves help normalize dot gain to standard printing conditions. In addition, for custom print requirements, **Staccato** software can be optimized with the **Harmony** tonal calibration software utility in **Prinergy** and **iMPAct** workflow software, or with tone reproduction curves in **Brisque** workflow software.

Predictable, accurate proofing

Kodak offers a complete family of proofers for all printing applications. For optimal color proofing of **Staccato** screening, Kodak recommends the **Kodak Veris** and **Matchprint** Inkjet proofers, or the **Kodak Approval** digital halftone proofing system.

Simplicity for workflow integration

Staccato screening is applied and calibrated in prepress in the same manner as other halftone screens. **Staccato** software can be controlled from **Prinergy** workflow systems, and from desktop applications that can assign screening to PDF and EPS images, pages, forms, and individual separations. Its use has no effect on RIPing or rendering time.

Staccato screening implementation services

Benefit from a comprehensive range of Professional Implementation Services, providing valuable experience and resources for timely and successful adoption of **Staccato** screening.



To learn more about solutions from Kodak:

Visit graphics.kodak.com

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