

SPEKTA

Hybrid AM/FM screening

WORKFLOW



Innovation & Reliability



SPEKTA

Revolutionary screening method for the digital age

SCREEN IS PROUD TO INTRODUCE SPEKTA, A NEW HYBRID TECHNOLOGY AND THE FUTURE OF SCREENING IN THE DIGITAL AGE. SPEKTA PROVIDES DRAMATICALLY INCREASED PRINT QUALITY WITHOUT ANY LOSS OF PRODUCTIVITY, AND WITHOUT THE NEED TO CHANGE FROM CONVENTIONAL 175 LPI PRINT CONDITIONS. OUTPUT ON THERMAL PLATESETTERS, ORDINARY 2,400 DPI SPEKTA SCREENS ACHIEVE THE SAME QUALITY OF EXTREMELY HIGH FREQUENCY SCREENS. THIS IS MADE POSSIBLE BY COMBINING THE STRENGTHS OF BOTH AM AND FM SCREENING METHODS.



Higher quality print with conventional printing equipment and methods

WITH AM SCREENING, THE MOST WIDELY USED FORM OF SCREENING TODAY, THE POSITION AND ANGLE OF DOTS REMAINS FIXED, BUT THE SIZE OF EACH DOT IS VARIED TO REPRODUCE THE EFFECT OF CONTINUOUS TONE.

On the other hand, FM screening (or stochastic screening) uses dots of the same size, but places them randomly in varying amounts to reproduce continuous tone. With the FM method, it is possible to produce very fine detailed print and eliminate the moiré and broken lines associated with AM screening. With SPEKTA screening, you can have the best of both AM and FM screening methods. And you can have it on every page and every image that you print.



With AM screening at 175 lpi, the texture of this fabric would probably result in moiré. Here it is reproduced faithfully, with all the fine details and full color of the intricate embroidery.

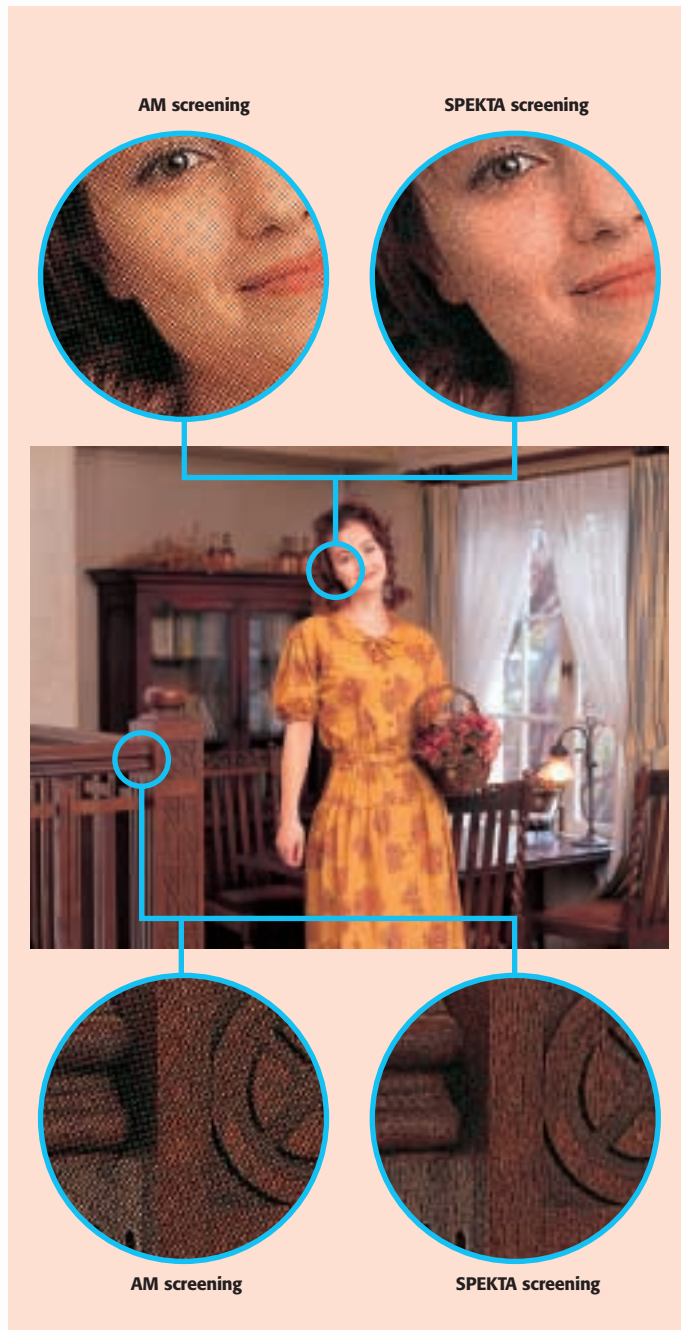


SPEKTA excels at reproducing the photographic qualities of images such as these. The difference is clear to see in the texture and colour of the fruits and food, and the clear lettering on the bottle.

The benefits of SPEKTA

Makes high quality print more accessible

With SPEKTA, the quality that can be achieved with an ordinary setup of 175 lpi and 2,400 dpi will appear equal to that of 300 lpi printing. And it can achieve this without the stringent controls usually required for high lpi printing. Higher quality print is achieved with the same printing equipment.



Totally free of moiré

The placement of dots is always random with SPEKTA, as in FM screening, which means there are no screen angles to contend with. As a result, SPEKTA avoids the moiré resulting from interference patterns between screen angles and items such as lace cloth, stereo speaker mesh, and CRT screenshots. It also eliminates the rosette moiré that can occur in dark gray or black areas.

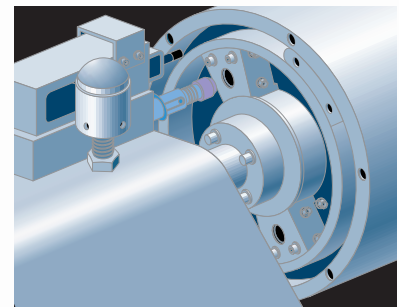
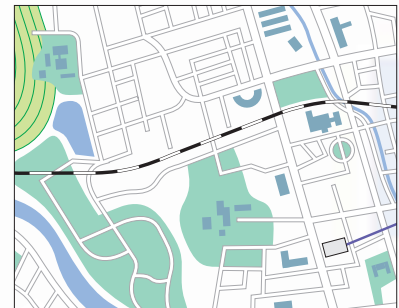
Brings out life in the midtones

SPEKTA does a better job of bringing out the vibrancy in the midtones for skin colours and other areas where true-to-life colour is required. Photo images of fresh flowers and fruit, sumptuous meals and desserts it is easier than ever to reproduce the full appeal of these in print with SPEKTA.



Superior reproduction of fine details

SPEKTA demonstrates its superiority in reproducing fine details, such as those required in maps. It improves the rendition of lines that are created with halftones. Because 175lpi AM screening tends to leave light-coloured fine lines jagged and broken, printers must often resort to using spot colours to reproduce them. However, SPEKTA can reproduce these kinds of images sharply using only process colours. Details such as fine hair and delicate lace are also rendered precisely, without jagged edges.



Taking the benefits of CtP even further

SPEKTA is supported by Screen's PlateRite series of thermal platesetters. The extremely sharp dots achieved by PlateRite platesetters enable SPEKTA to produce hybrid screens of the maximum effectiveness. RIPs that support SPEKTA are the HQ-510PC series RIPs, the digital workflow automation system, TaigaSPACE, and the intelligent RIP system for network production, Trueflow.

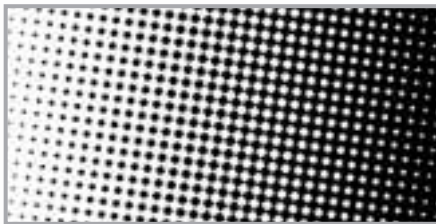


The advanced screening technology of SPEKTA

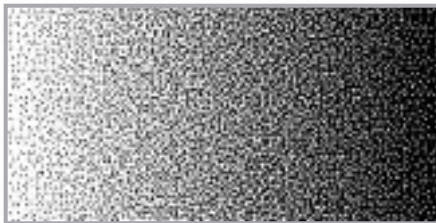
Hybrid AM/FM screening

SPEKTA uses AM-like dots or FM-like dots depending on the colour-density qualities of each image. By doing this it overcomes the weaknesses and delivers the strengths of both screening methods.

In the 1–10% highlights and the 90–99% shadows, SPEKTA uses FM screening's fixed dot size and reproduces tone by varying the density of these uniform dots. In the 10–90% mid-tones, it varies the size of the dots just as AM screening does. However, the placement of dots is always random as in FM screening, so there are never any screen angles to contend with.



AM screening



FM screening



SPEKTA screening

Highlight and shadow areas

SPEKTA uses FM-like dots for highlight and shadow areas. Dots are distributed randomly and their size is also varied to produce tonal gradations. The distribution of the dots is optimised to ensure that they don't overlap or leave large gaps. In this way, graininess is kept completely under control.

Great attention has been paid to the size of the smallest dot. For a usual output device at 2,400 dpi, the smallest dot is about 10.5 microns (i.e. 1/2,400th of an inch). Although dots of this size can be exposed to the plate, it is often impractical to print with them. Precisely because they are very small, they tend to increase instability on press and pose the risk of problems occurring in highlight areas. SPEKTA eliminates this risk by making combinations of the smallest dots. It combines two or three of these microdots (10.5 microns) to build larger dots (either 21 or 32 microns) that are more suitable for printing. This optimises the printability and stability in highlight areas.



Midtone areas

For midtone areas, although SPEKTA distributes the dots randomly as in FM screening, the tonal reproduction is more like conventional AM screening.

That is, while maintaining a fixed number of dots, tone is reproduced by varying the size of the dots. These dots have an optimised roundness that makes them very easy to print. Measures are also introduced that prevent dots toward the highlight range from overlapping. This solves the problem of graininess, which can occur when the gaps between dots vary.

DAINIPPON SCREEN MFG. CO., LTD.

HEAD OFFICE

• Teranouchi-agaru 4-chome, Horikawa-dori, Kamigyo-ku, Kyoto, 602-8585 Japan/Phone +81-75-414-7610/Fax +81-75-414-7608

SCREEN (USA)

• 5110 Tollview Dr., Rolling Meadows, IL 60008, USA/Phone 847-870-7400/Fax 847-870-0149 www.screenusa.com

DAINIPPON SCREEN (DEUTSCHLAND) GmbH

• Mündelheimer Weg 39, 40472 Düsseldorf, Germany/Phone 0211-472701/Fax 0211-4727199/Telex 858-4438 DSDD D

DAINIPPON SCREEN (U.K.) LTD.

• Michigan Drive, Tongwell, Milton Keynes, Buckinghamshire MK15 8HT, UK/Phone 01908-848500/Fax 01908-848501 www.screen.co.uk

DAINIPPON SCREEN (NETHERLAND) BV

• Bouwerij 46, 1185XX Amstelveen, Holland/Phone 020-4567800/Fax 020-4567805 www.screenenurope.com

SCREEN FRANCE

• Z.I. Paris Nord II, 12 Rue des Chardonnerets, B.P. 50315, F-95940 ROISSY C.D.G. Cedex, France/Phone 1-48-17-86-00/Fax 1-48-17-86-01

DAINIPPON SCREEN SINGAPORE PTE. LTD.

• 29, Kaki Bukit View, Kaki Bukit Techpark II, Singapore 415963/Phone 7493833/Fax 7499010 www.screensp.com.sg

DAINIPPON SCREEN (CHINA) LTD.

• 6th Floor, 414 Kwun Tong Road, Kwun Tong, Kowloon, Hong Kong/Phone 2953-0038/Fax 2755-8683

Beijing office /Phone 010-6505-4974, 4976, 0405/Fax 010-6505-4975 (China)

Shanghai office /Phone 021-6466-4501/Fax 021-6466-4503 (China)

DAINIPPON SCREEN (TAIWAN) CO., LTD.

• 4F No. 126-1, Ming Tsu West Rd., Taipei, Taiwan/Phone 02-25862711/Fax 02-25914367

DAINIPPON SCREEN (KOREA) CO., LTD.

• 8th Yonsil Bongsae B/D 48-3, 1(Ga), Bongsae-Dong, Joong-Gu, Seoul 100-161, Korea/Phone 02-7766-786/Fax 02-7766-787

DAINIPPON SCREEN (AUSTRALIA) PTY. LTD.

• Unit 2, 207-209 Young Street, Waterloo, NSW 2017, Australia/Phone 02-9310-1314/Fax 02-9310-3566

Internet web site www.screen.co.jp/

- This brochure was made using SPEKTA screening.
- Printed on recycled paper.

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