DIGITAL FILM TECHNOLOGY

SONDOR VERSA

Sondor Versa

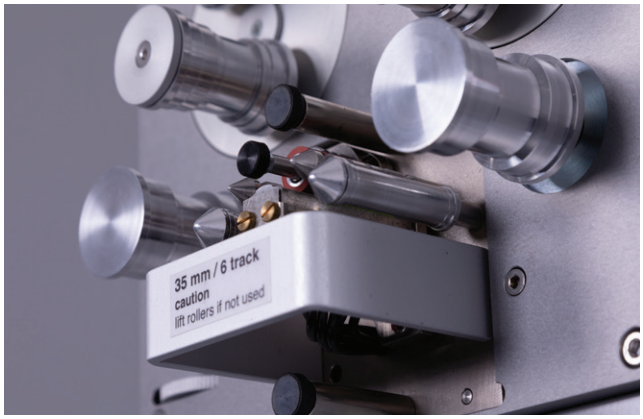
audio playback and digitization for film archives

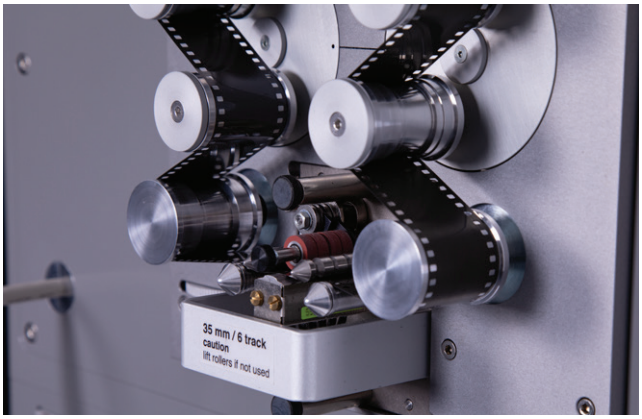
Sondor Versa is a modular and scalable platform for audio digitization of aged film.
At its core a precision film transport system delivers high quality stable sound reproduction, which is essential for any high level film audio digitization process.
Sondor Versa offers two different audio digitization options: Modular Soundheads and Resonances.

Key Features

- transfer of COMMAG and separate magnetic soundtracks
- transfer of COM-OPTICAL soundtracks
- optional Resonances advanced optical soundtrack scanning
- noise reduction via advanced image processing
- image spread correction
- safe & precise handling of fragile archive stock

Modular Soundheads





The modular design of Sondor Versa offers a large selection of different soundheads, which can easily be added at any time, so that the scanner adapts to your needs. Modular Soundheads can be configured to ingest audio from a range of film types, including 16mm, 17.5mm and 35mm. Headblocks are available for any known track standard in the film industry. For magnetic soundtrack digitization the exchangeable sound headblocks cover all common formats of SEPMAG and COMMAG.
For optical sound digitization Sondor Versa uses red LED headblocks for mono and stereo optical soundtracks.
Soundheads are offered as archive version, an accurate film-to-head contact is enforced by spring-loaded film guides and the pressure roller.
Automatic setup recall per head allows for easy switch between 16mm and 35mm.
Outputs options are analog or optional AES/EBU digital output signal.

The following archival soundhead modules are available for Sondor Versa:

SEPMAG Audio Formats

- 16mm Mono Center Track
- 16mm 2-track EBU
- 16mm 2-track EBU & CUE
- 17.5mm Mono Center Track
- 17.5mm 2-track EBU
- 35mm 1-Track
- 35mm 3-Track
- 35mm 4-Track
- 35mm 6-Track

COMOPT Audio Formats

- 16mm Mono Red LED
- 35mm Stereo LED

COMMAG Audio Formats

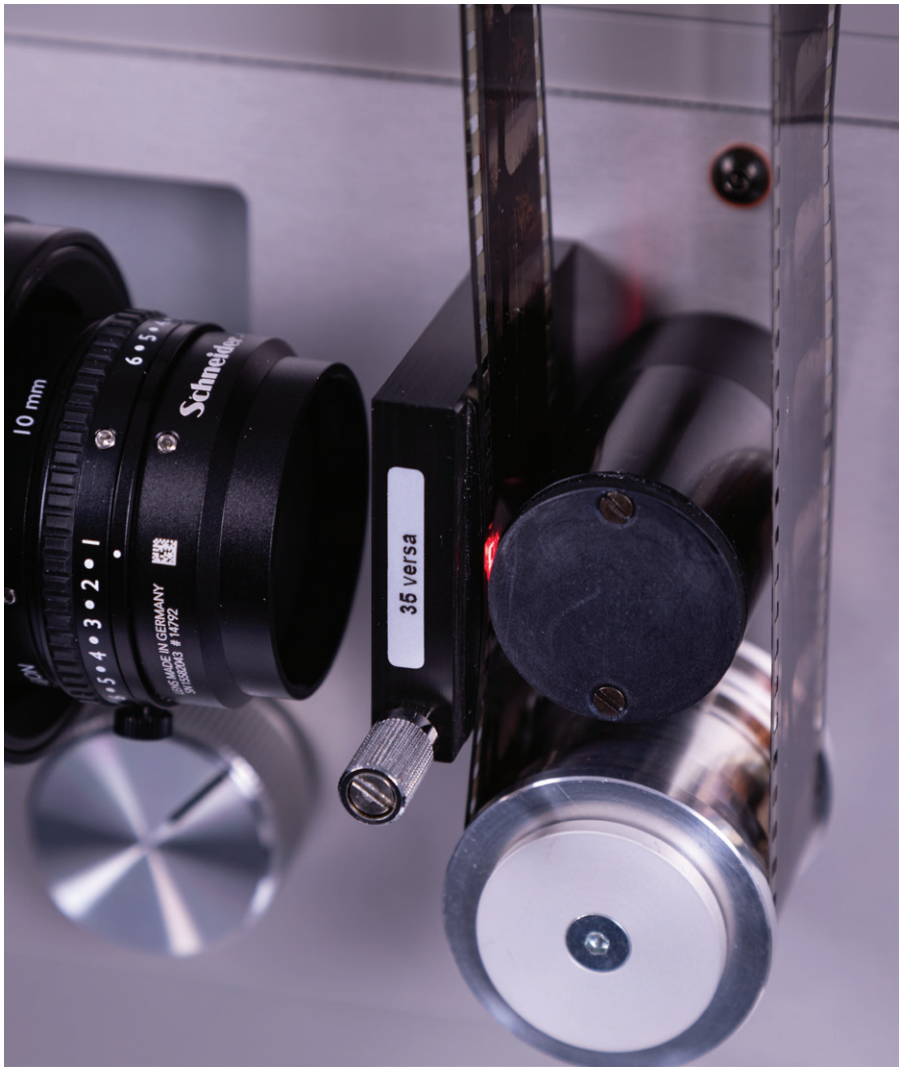
- 16mm Mono Center Track

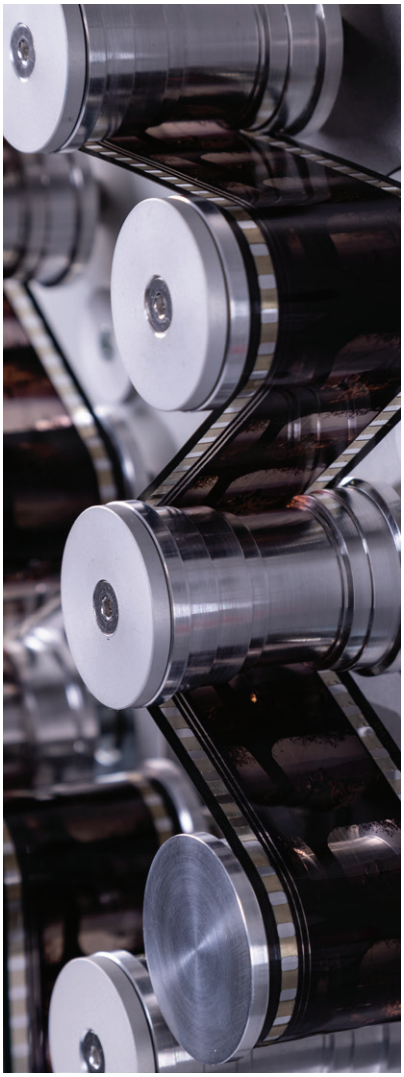
Resonances

the solution for scanning negative optical sound tracks

Key Features

- for variable area and variable density soundtracks
- for silver halide, high-magenta and cyan dye tracks
- for prints and negatives
- output as WAV file, digital or analog audio





Sondor Versa can be optioned with Resonances, which allows for digital camera-based audio ingest and offers advanced optical soundtrack scanning for all optical soundtracks, including soundtrack negatives. Resonances also includes a range of real-time restoration software features to address defects of the optical audio tracks directly during the scan process to avoid additional work in the downstream postproduction workflow.

Resonances reads most types of 16mm and 35mm optical tracks and eliminates image-spread distortion from soundtrack negatives. It offers best possible transfer for variable area and variable density optical tracks from print and negatives. Resonances is based on a CCD line-scan camera combined with digital image processing enabling the operator to remove optical defects of the soundtrack at the time of transfer before it is converted into audio. These optical defects include:

- lateral and azimuth off-sets
- under-/ overexposure dust and scratches
- adjusting track size, position and contras
- image-spread distortion (negatives)

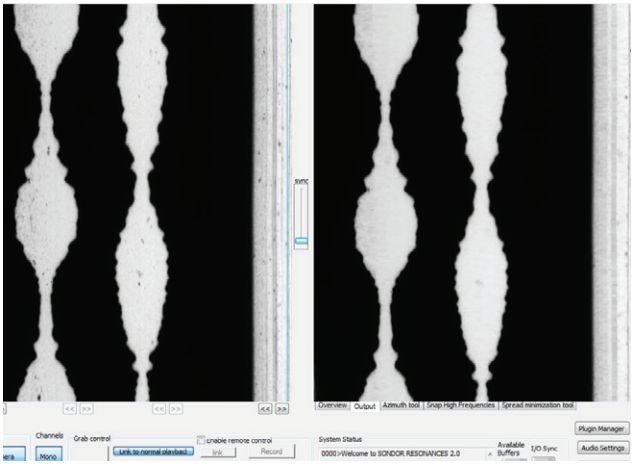
The Resonances software tools include a real-time display representation of the tracks (before and after processing), LUTs for negative/positive conversion, mono/ stereo rendering, noise reduction by image processing, control of audio and camera interfaces and a lot more.

The Resonances option is available for Sondor Versa, but also for most Sondor OMA E and OMA S models as a retrofit option.
The delivery of Resonances includes:

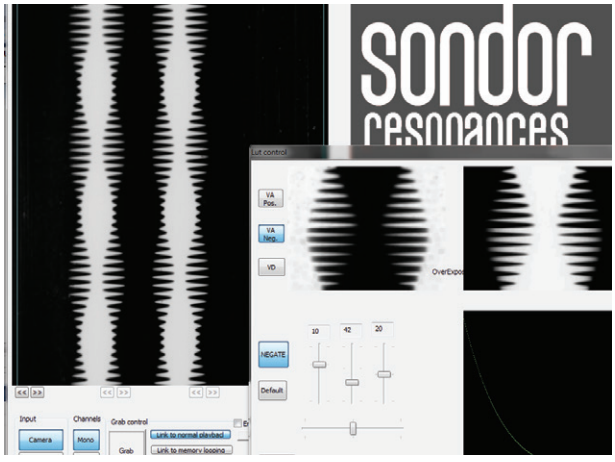
- Camera assembly holding line scan camera and macro lens system, with pre-configured 16mm and 35mm positions
- Adjustable diffuse LED light-source, safe to use with nitrate stock
- PC system including required boards, keyboard/mouse and processing software
- Audio Interface providing balanced/unbalanced analogue, AES/EBU, S/PDIF coax/optical and ADAT format for main-output and monitoring
- 1 year hardware warranty and software support/updates

What is image spread distortion ?

Image spread induces distortion (linear and nonlinear) of the analog-recorded signals and blur on the digital-recorded patches.
Resonances overcomes image spread distortion by enabling users to adjust exposure of the film negative to improve the optical clarity of the scanned audio image.
By using the Resonances software to correct image spread distortion, there is no need to create new optical prints which are time consuming and expensive to produce.



Dust busting - before and after



Converting negative tracks to positive - eliminating image spread distortion

Specifications

Film format	16mm, 35mm 4-perf/3-perf/2-perf (35mm)
SEPMAG Audio Formats (Archival head)	16mm Mono Center Track 16mm 2-track EBU 16mm 2-track EBU & CUE 17.5mm Mono Center Track 17.5mm 2-track EBU 35mm 1-Track 35mm 3-Track 35mm 4-Track 35mm 6-Track
COMOPT Audio Formats (Archival head)	16mm Mono Red LED 35mm Stereo LED
COMMAG Audio Formats (Archival head)	16mm Mono
Capacity	2100ft / 640m on cores
Shuttle speed	0-225 fps forward/reverse shuttle speed for 35mm 0-400 fps forward/reverse shuttle speed for 16mm
Locking time	< 3 sec.
Sync. modes	Wordclock internal/external Biphase out (1, 2, 10 pulse per frame)
Machine control	Serial 9-pin (Sony) RS-422
Dimensions	HWD: 1776 mm x 744 mm x 770 mm
Weight	180 kg
Mains	110V-240VAC, 50/60Hz 70VA idle, 300VA max

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