



PixelStrings®
By Cinnafilm®

THE SOLUTION FOR MEDIA OPTIMIZATION AND CONVERSIONS

A theatrical or broadcast-quality, anything-to-anything video/audio optimization and conversion engine at your fingertips.

Features

- **PixelStrings Enterprise Transcoder** – Next-generation transcoding engine
- **Skywalker Sound Tools** – Audio loudness correction, downmixing, channel routing, and retiming
- **Tachyon** – Standards/frame rate conversions
- **Dark Energy** – Denoise and image texture management
- **Wormhole** – Retiming of assets to meet a runtime target
- **Xenon** – Automated SDR ↔ HDR upconversion (Advanced HDR by Technicolor)
- **Video Legalization**
 - RightHue proprietary algorithm for accurate color
 - DPP compliant
 - EBU R103 Tight and Optimum
 - NTSC 7.5 IRE
 - NTSC 0 IRE
 - PAL
- **Cinecert Anini** – IMF and DCP packaging
- **CodeMill** – Accurate Player playback

Overview

PixelStrings® contains the same industry-leading tools that international studios, production companies, and broadcasters trust on their most valuable theatrical, broadcast, and OTT content. Combining best-of-breed image processing, audio processing, previsualization, and repackaging capabilities makes PixelStrings the ultimate media conversion platform.

PixelStrings is a post-production giant in the cloud, capable of transforming digital video like camera footage, dailies, masters, mezzanines, and archives to fulfill almost any delivery requirement – all at a price that is at least an order of magnitude less than the same quality the large post facilities would charge for.

MORE THAN YOUR AVERAGE TRANSCODER

The transcoding engine inside the PixelStrings platform is a powerful, extensible engine that provides the utmost in flexibility and functionality. Whether in the cloud or on-prem, PixelStrings transcoding capabilities make it the most robust, automated image processing platform ever created.

Specifications

- Six simultaneous conversions per license (on-prem)
- Supported input containers:
 - MXF
 - GXF
 - QT
 - MP4
 - MPEG TS/PS
- Supported input codecs:
 - ProRes
 - DNx
 - DVC Pro
 - MPEG2
 - H.264
 - H.265
- Supported output containers
 - QT
 - MP4
 - MXF
 - MPEG TS/PS
- Supported output codecs
 - ProRes
 - DNx
 - MPEG2
 - H.264
 - H.265
- Skywalker Sound Tools
 - Audio group reordering
 - Downmixing
 - Channel routing and mapping
 - Loudness correction
 - Retiming & pitch correction
- Closed caption support:
 - SAMI, DXFP, SCC, HCC Caption XML
 - CEA-608, CEA-708, CEA-708 translation
 - Video essence captions
 - SMPTE 436M VANC
- Legalize video (Gamut legalization)
- Compute/server requirements
 - Minimum OS: Windows 10 Professional 64-bit
 - Preferred OS: Windows Server 2012/16 Standard, 64-bit
 - Minimum CPU: 1, Xenon E5-2670 v3
 - Preferred CPU: 2, Xenon Gold 6254
 - Minimum Memory: 32 Gigabytes, DDR4-2133, Dual Rank
 - Preferred: 64 Gigabytes, DDR4-2933, Single Rank
 - Minimum Disk i/o: 300 megabytes of simultaneous read/write throughput
 - Preferred: 1.2 Gigabytes of simultaneous read/write throughput



Image Processing Tachyon® Dark Energy® Wormhole®

Included in every minute of processing is the entire Cinnafilm-created image processing library. Tachyon for standards and frame rate conversion, Dark Energy for noise reduction and superlative resolution change up to 8k, and Wormhole for making your project meet the runtime requirements your distribution channels need.

PixelStrings provides a value proposition unequaled by any other cloud-based media transformation service. In a single render, extremely high-quality image processing toolsets are automatically stacked, in an optimal order, to produce the best possible output. Eliminating multiple steps prevents render degradation and accelerates delivery times for some of the most sought after image processing functions.

The Best in Audio Skywalker Sound Tools®

Cinnafilm has partnered with the legendary audio minds at Lucasfilm's Skywalker Ranch to provide the audio processing engine in PixelStrings. Skywalker Sound Tools was designed to provide the utmost in audio grouping and channel routing capabilities along with one of the most comprehensive audio loudness processing engines ever created. Loudness presets are included for the majority of large content aggregators, as well as the ability to customize the audio processing to meet any specification.

Wormhole retimings are also in line for the Skywalker Sound upgrade. Pitch corrections and time compression/expansion will be handled by the Skywalker Sound engine with no cross-talk, audio phasing, pops, glitches, or dropouts. It will quickly become one of the strongest audio retiming solutions available on the market.

Options That Don't Break the Bank

There are times when features require significant engineering investment because of their complexity and involvement with other technology companies to deliver the best solution. When necessary, Cinnafilm charges a slight premium to ensure the economics are always kept in check for Cinnafilm and our partners.

Automated SDR-HDR Upconversion Brilliance

Xenon SDR-HDR upconversion is a partnership technology with Technicolor. Advanced HDR by Technicolor is an incredibly accurate, Intelligent Tone Management (ITM) solution that automatically generates HDR-10 and HLG assets up to 2,000 nits. No trim pass is necessary, and no need to book a colorist. Just select a preset, and your HDR asset is a short render away.



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Options That Don't Break the Bank *(Continued)*

Packaging That Would Make UPS Proud

Cinecert Anini for the PixelStrings platform is the delivery of assets for unique requirements like IMF and DCP. With the integration of Cinecert Anini, a trusted solution that has packaged millions of hours of assets into IMF and DCP format, PixelStrings has become a complete one-stop-shop from restoration to delivery of a specific, professional packaging standard.

Cinecert Anini provides complete reference-standard implementations for DCP and IMF mastering, from uncompressed images through encrypted packages. Anini's deep customization capability provides the flexibility necessary to quickly address specific workflow needs including AS-DCP Track Files and AS-02 Essence Component files, subtitle files, composition playlists, packing lists, asset maps, key delivery messages, IMB security logs, RSA key pairs, X.509 certificates, and much more.

What You See Is What You Get

Accurate Player by CodeMill: Cinnafilm's image processing technology is rooted in a real-time feedback interface in our Dark Energy Professional and ARRI Relativity software titles. This type of interface is ideal when image processing, and there is ample time to make scene-by-scene adjustments on titles worthy of dedicated attention. However, with large libraries of content, manual scene-by-scene adjustment is not possible, and the automated solutions provided by Tachyon, Dark Energy, Wormhole, and Xenon are needed.

PixelStrings has added CodeMill's Accurate Player to our interface so users can quickly visualize their renders without leaving the browser. Users will have a lower bit-rate proxy created that plays back frame-accurate in Accurate Player, cutting the cycle time down from when a workflow is envisioned to when images can be approved.

We know that one size does not fit all with proxy playback. For Tachyon and Wormhole-only workflows, a lower bitrate is possible because playback smoothness and artifact inspection are not significantly impacted at lower rates. For Dark Energy and Xenon-enabled workflows, a higher bitrate proxy is generated because image texture and details are critical to verify. In either case, CodeMill's Accurate Player provides the review mechanism to very quickly view the test samples that are generated.