MAINCONCEPT

Converter & Scaler

Comprehensive A/C Codec Library

The MainConcept Converter & Scaler SDK is a set of powerful components focusing on audio and video processing. The package includes highly optimized libraries for color conversion, image scaling, audio conversion and frame rate conversion targeted at applications and services for video encoding, transcoding, editing, processing and storage.

OPTIMIZED COLOR CONVERSION & SCALING

The powerful Universal Color Converter (UCC) is a highly flexible library for scaling, RGB to YUV as well as colorimetry conversion (BT.601, BT.709 and BT.2020). Allowing both image scaling and color conversion in a single operation to reduce processing time, it offers bit depth conversion, support for short/full range, alpha channel and many other useful features.

REAL-TIME HDR CONVERSION

The UCC additionally performs HDR (High Dynamic Range) and transfer characteristics conversion for both live and VOD productions. It allows signaling SMPTE 2084 based HDR-10 including SMPTE 2086 mastering display metadata and MaxFALL, MaxCLL. HLG transfer characteristics are signaled in accordance with ITU-R BT.2100. The UCC also offers several algorithms that enable real-time PQ/HDR-10 to HLG, HLG to PQ/HDR-10 and PQ/HDR-10 to SDR conversion to create content compliant with non-HDR devices.

UCC MEETS EVA: SPEED UP PROCESSING WITH NVIDIA GPUS

The latest release joins the MainConcept EVA (Easy Video API) family featuring hardware support on NVIDIA GPUs in the UCC in addition to sole CPU processing. It utilizes a CUDA implementation for high performance image scaling as well as colorimetry processing, dramatically extending the list of possible RGB/YUV color space conversions on GPU. As a result, the CPU is fundamentally relieved to perform other tasks.

A/V PROCESSING FOR LIVE & VOD

IMAGE SCALING & COLOR CONVERSION

Optimized component that can perform both image scaling and color conversion in a single operation to reduce processing time.

COLOR SPACE CONVERSION

Large matrix of available real-time color spaces and bit depths beyond 8K, incl. color space support for BT.709, BT.601 and BT.2020.

FRAME RATE CONVERSION

Allows to convert video frame rates on field level. Supports conversion of progressive and interlaced frames.

AUDIO CONVERSION

On-the-fly audio conversion PCM, DVD LPCM, HDMV LPCM and AES3 input/output data formats, incl. sample rate and channel configuration change.

OPTIMIZE WITH MAINCONCEPT PROFESSIONAL SERVICES

SYSTEM REQUIREMENTS

	x86	Arm
Windows	Windows 10, Windows 11	Windows 11 Arm
Linux	Rocky Linux 9, Ubuntu 22.04 LTS – 26.04 LTS	Ubuntu Arm 20.04 LTS – 24.04 LTS
macOS	macOS 14 Sonoma, macOS 15 Sequoia	macOS 15 Sequoia, macOS 26 Tahoe

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FEATURES

Universal Color Space Converter:

- Color space conversion
- Conversion between color primaries sets
- Transfer characteristics (HDR) conversion
- Signal range conversion
- Gamma correction
- Bit depth conversion
- Brightness and sharpness change
- Scaling
- Alpha channel support
- Cropping
- Bars for letterboxing or pillarboxing
- Support for non-grayscale overlay
- Synchronous and asynchronous operating modes
- Full on-GPU color conversion & scaling powered by NVIDIA CUDA
- Supports NETINT VPUs on Linux x86, enabling end-to-end workflows with NETINT hardware

Frame Rate Converter:

- Works on the field level
- Supports progressive and interlaced frames
- Deinterlacing
- Line Doubler capability

Audio Converter:

- Resampling
- Support for 8, 16, 20, 24, 32 bps input/output audio data
- Support for PCM, DVD LPCM, HDMV LPCM and AES3 input/output data formats
- Modify channel configuration of input audio
- Supports between 1 – 16 input/output channels

PACKAGES

- **Converter & Scaler**
  Combined package of components for converting video across multiple color spaces and colorimetries (including BT.2020 support), scaling video and change audio sampling frequencies.

ABOUT MAINCONCEPT

MainConcept provides audio and video codec solutions that fuel creativity and business across the globe—from professional video production, multimedia, broadcast, digital signage, and gaming to the medical and security verticals. Our software development kits, transcoding applications and plugins deliver the simplicity you need with the customer experience you deserve. Since 1993, MainConcept codecs have been used by hundreds of organizations including Adobe, Autodesk, Corel, Dalet, Encoding.com, Endeavor Streaming, Grass Valley, Intel, MAGIX, Nikon, PlayBox Neo, Soliton and Wowza. For more information, visit www.mainconcept.com.

More Information
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