Cinegy Air 26.2 System Recommendations

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Operating Systems

Supported Operating Systems

Cinegy Air software is certified to run on the 64-bit editions of the following operating systems:

- Windows Server 2019
- Windows Server 2022
- Windows 11

Recommendations

We recommend using the following operating systems which have been patched with the latest Microsoft updates and hotfixes:

Servers: Windows Server 2022

Workstations/Desktops: Windows 11

Cinegy Air components are tested on fully patched versions of the supported operating systems at the time of version release, and problems may be encountered if a machine is not at this minimum patch level. Supported released versions are continuously tested against the recommended operating system, and incompatibilities that new patches might introduce will be addressed via a new Cinegy software release where appropriate.

To ensure compatibility and optimal performance, users should verify the compatibility of their chosen SDI card with the operating system.

Hardware Recommendations

The performance of a machine within the Cinegy Air workflow depends significantly on factors such as the number of active channels, their resolutions, enabled inputs and outputs, as well as various settings like RTP encoding/decoding or proxy. Therefore, precise hardware recommendations cannot be provided.

Nevertheless, as we continually optimize our software tools for improved performance, we have tested the following typical configurations for our and our customers' reference. Please note that these hardware recommendations are based on previously tested older systems. The listed CPUs should be used as a guide for selecting modern equivalent options rather than strict requirements. We also strongly recommend reviewing the GPU recommendations for optimal performance.

Configuration Samples

Regardless of which hardware configuration sample you use from those described below, please note that after installing a dedicated graphics card, you should disable the onboard graphics card (e.g., Matrox) using the Windows Device Manager > Display Adapters and selecting the "Disable device" option for that card.



The Cinegy Title GPU acceleration and GPU encoding/decoding (NVEnc/NVDec) are supported by NVIDIA in different ways. Depending on your requirements, please contact the Cinegy Support Team to get recommendations for choosing the proper graphics card.

SD Playout Machine

The following configuration has proven to be reliably sufficient for any single-channel SD playout: Supermicro X10 series motherboard, single Xeon E5 2620v3 or Core i7 4770K CPU, 4x 4GB of DDR4 RAM, at least two separate SATA-2 SSD drives for OS and media cache (proxy) folder.

With the Cinegy Title channel branding option enabled, a dedicated NVIDIA Quadro K620 video board or better is required.

HD Playout Machine

The following configuration has proven to be reliably sufficient for an average single-channel HD playout having one SDI, one RTP streaming output, and proxy enabled: Supermicro X10 series motherboard, dual Xeon E5 2630v3 CPU, 8x 4GB of DDR4 RAM and dedicated disk(s) for Cinegy Air Network Proxy Caching Volume.

With the Cinegy Title channel branding option or GPU offloaded encoding enabled, a dedicated NVIDIA Quadro M2000 video board or better is required.

Ultra HD (4K) Playout Machine

The following configuration will play one Ultra HD channel to SDI with one animated logo: Supermicro X10 series motherboard, dual Xeon E5 2697v3 CPU, 16x 8GB of DDR4 RAM, SATA-2 SSD for OS and PCIe 3.0 SSD for media.

With the Cinegy Title channel branding option or GPU offloaded encoding enabled, a dedicated NVIDIA Quadro M4000 or better video board is required.

Multi-Channel Playout Scenarios

If multiple independent playout instances shall be configured on a single machine, please consider the matrix below:

Application	Single Xeon E5 2620v3 CPU 16GB DDR4 RAM NVIDIA Quadro K620 VGA	Dual Xeon E5 2630v3 CPU 32GB DDR4 RAM NVIDIA Quadro M2000 VGA	Dual Xeon E5 2697v3 CPU 128GB DDR4 RAM NVIDIA Quadro M4000 VGA
	Recommended Number of Simultaneous Playout Instances		
SD	1	4	16
SD with Cinegy Title	1	2	8
HD	–	2	4
HD with Cinegy Title	–	1	2
Ultra HD	–	–	1

For highly intensive graphics please consider the NVIDIA Quadro M4000 board or better. Newer NVIDIA boards such as the "P" Pascal series have a large performance enhancement compared with the previous "M" Maxwell series, and are therefore recommended.

	Daniel2 GPU encoding/decoding performance balance is shifted compared with Cinegy Air v24.1. Daniel2 decoder is approximately 10% slower, while Daniel2 GPU encoder is approximately 10% quicker. Please carry out performance testing on your system before using Cinegy Air v26.2 if, for example, you are using media files that are encoded using Daniel2 or the Proxy feature is enabled for any Cinegy Playout engine.

	If you have a recommended NVIDIA graphics card installed in your machine, you can greatly reduce CPU usage and significantly improve the overall performance of the Cinegy Air components by using the processing power of your graphics card. Please refer to the NVIDIA-accelerated Encoding paragraph below for more information.

Cinegy Title Performance

Cinegy Title is a real-time channel branding software solution, which means it needs instant access to media used in scenes and requires maximum machine performance for real-time accelerated rendering. To avoid slow frame composition, please make sure that:

- NVIDIA board is installed into a full-length PCIe x16 Gen.3 or Gen.4 slot
- The Power Plan in Windows OS is set to High Performance
- NVIDIA driver is up to date, taking into consideration known issues of the driver
- The "Prefer maximum performance" value is used for the "Power management mode" parameter in the NVIDIA Control Panel
- Any media reference within Cinegy Title scenes is valid and this media is placed on a dedicated solid state drive or fast network location



Cinegy Title templates are rendered exclusively on the GPU. Ensure that a suitable GPU is installed in your system to efficiently handle the CG rendering workload.

Playout Proxy Settings

Proxy volume must provide sufficient performance for concurrent read and write operations, while the majority of RAID controllers today will provide good values when only reading or writing – but not both. Therefore, we recommend using RAID 0 or RAID 0+1 with hard disks and avoiding RAID 5 or RAID 6.

With solid state disks no RAID is normally required unless this volume is going to serve multiple channels and requires better performance. If you are building the RAID 0 or RAID 0+1 volume based on SSD, please make sure that these disks are certified by the RAID controller vendor and that TRIM operation for this specific SSD make is fully supported.

SD

A RAID 0 volume of two modern SATA or SAS disks per SD channel is sufficient. No RAID is required with SSD.

HD

Please have at least 4 SATA or SAS drives in a RAID 0 or RAID 0+1 per each channel running in HD. The more drives you have, the better. Six inexpensive SATA drives will provide better performance than four expensive SAS disks. No RAID is required with SSD.

Ultra HD

To benefit from the usage of proxy workflow for Ultra HD formats it is necessary to have a proper NVIDIA GPU board. If no valid GPU is available, the Daniel2 encoder will automatically switch to CPU mode.

Please note that Daniel2 uses quite high bitrates for local cache proxy files (up to 2Gbps on High Quality 10 bit for UHD 2160p50 TV format), therefore usage of good SSD or M.2 media for UHD proxy is highly recommended.

RTP Streaming Network

If you are going to enable the RTP streaming features of Cinegy Air, it is highly recommended to split the file and streaming operations between two physically separate networks. Therefore, please consider that all your servers and workstations have two Gigabit Ethernet adapters.

Please disable the "File and Printer Sharing for Microsoft Networks" and "Client for Microsoft Networks" options for the adapters connected to the RTP network, and uncheck the "Register these connection's addresses in DNS" in this adapter's TCP/IPv4 settings (see Advanced/DNS tab).

Playlist Editor/Control Stations

Cinegy Air and Cinegy Studio software control panels feature an embedded video player which requires a video adapter that supports DirectDraw and Direct3D acceleration. Today, only a few built-in server video adapters do not support it, so any dedicated video adapter should work fine.

The Cinegy Title Editor scene composition tool and Cinegy CG control application require a dedicated NVIDIA board for real-time preview purposes. Any modern GeForce should be fine, though for better experience NVIDIA Quadro K620 or better is recommended.

GPU Support

Cinegy Air features GPU offload for Intel, AMD, and NVIDIA graphic cards.

Intel GPU

To improve the performance of discrete Intel graphics cards, it is strongly recommended to enable "Resizable BAR" in the BIOS.

GPU encoding and decoding are supported on graphics cards compatible with DirectX 11 or higher and the Intel Video Processing Library (Intel VPL). For detailed hardware support information, refer to the following link.

AMD GPU

GPU encoding and decoding are supported on graphics cards that are compatible with DirectX 11 or higher.

NVIDIA GPU

> After installing a dedicated graphics card, please disable the onboard graphics card (e.g., Matrox) using the Windows Device Manager > Display Adapters and selecting the "Disable device" option for that card.

To optimize the performance of your NVIDIA graphics board, it is recommended to use the "Prefer maximum performance" value for the "Power management mode" parameter in the NVIDIA Control Panel.

Daniel2 GPU encoding and decoding are supported by NVIDIA video boards that have CUDA Compute Capability 3.5 and higher. If the NVIDIA video board has the CUDA Compute Capability of an earlier version, then use Daniel2 CPU encoding and decoding.

NVIDIA Driver Version Updates

Due to the frequent release of NVIDIA drivers, it's unfeasible for Cinegy to test every driver version with every possible GPU card combination to ensure compatibility with our software. As a result, we are unable to recommend a specific NVIDIA driver version for optimal performance. However, in our "Known Issues" article, we highlight any issues encountered with NVIDIA drivers during our testing phase and, if they are fixed in subsequent driver releases, we provide information about the fixed version and offer recommendations for selecting the appropriate range of NVIDIA drivers. Therefore, when considering an NVIDIA driver update, it's essential to verify its compatibility with your specific hardware and software configuration.

Cinegy Air 26.2 supports the latest NVIDIA boards which require new NVIDIA drivers and a new SDK to be utilized. For that reason, the minimum supported NVIDIA Production Branch driver is R570. Before starting any upgrades, please make sure that the OS under which you are running Cinegy Air components and the model of the NVIDIA board you are using is supported in the version of the NVIDIA driver you choose.

If you use the older driver, you may have an issue with NVIDIA encoding initialization; in this case, you will have the corresponding message in the log file and encoding will fail.

> Perform the process of NVIDIA drivers update only upon stopping Cinegy applications. For detailed instructions on installing an NVIDIA driver, please refer to the **NVIDIA Drivers installation** article.

Input and Output Boards

SDI Boards Recommendations

Before performing any driver changes or updates, it is recommended to stop processes and services (e.g. Cinegy Playout) that use SDI cards. Please note that most of the cards require a reboot or even a power cycle to finalize driver processing/firmware updates. Make sure the auto-start feature for applications or services is disabled. Processes and services that automatically start after reboot and access card/driver may prevent this update from normal processing and finishing.

The following SDI boards are supported for baseband I/O in Cinegy Air:

- Blackmagic Design boards
- AJA boards
- Deltacast boards

Blackmagic Design

The minimal supported Blackmagic Design driver version is specified in the following table, but the newer driver version could be used.

Model	Minimal Supported Driver Version	UHD Support	Key&Fill Support
DeckLink SDI	11.6	-	-
DeckLink HD Extreme 3D	11.6	-	-
DeckLink Duo	11.6	-	-
DeckLink Quad	11.6	-	-
DeckLink Duo 2	11.6	-	+
DeckLink Quad 2	11.6	-	+
DeckLink SDI 4K**	11.6	+	-
DeckLink SDI 4K PRO	11.6	+	+
DeckLink SDI 8K PRO*	11.6	+	+
DeckLink Studio 4K**	11.6	+	-
DeckLink 4K Extreme**	11.6	+	-
DeckLink 4K Extreme 12G	11.6	+	+
DeckLink Mini Recorder	11.6	-	-
DeckLink Mini Monitor	11.6	-	-
Intensity Pro 4K	11.6	+	-
Intensity Shuttle	11.6	-	-

** Supported in Single Link (1.5G - 12G), Dual Link (2x1.5G - 2x6G), Quad Link/2SI (4x 3/12G) modes with TV formats up to UHD 4320p59.94. Please note: DCI formats and 64-channel audio are not yet supported in Cinegy products.*

** *The board does not support VANC playback or capture in UHD mode due to the limitation of the board.*

⚠	Blackmagic Design DeckLink cards should be used with caution for critical installations 24/7 due to their high dependency on host hardware. The workflow should be carefully tested before deciding about using these cards in production.

AJA

⚠	Please be aware that old AJA firmware could be incompatible with the new drivers that are required by Cinegy software. If you cannot access the correct number of inputs on the board after installing the new Cinegy software, a firmware upgrade will be required. The relevant AJA Driver and Tools package can be downloaded from the Cinegy Partner and the Cinegy Customer portals. The use of AJA OEM driver packages provided on Cinegy portals is strongly recommended instead of retail drivers of the same version.

Model	Recommended Driver Version	UHD Support	Key&Fill support
Kona LHi	17.1.x.x-17.5.x.x	-	-
Kona LHe+	17.1.x.x-17.5.x.x	-	-
Kona 3G	17.1.x.x-17.5.x.x	+	+
Kona 4	17.1.x.x-17.5.x.x	+	+
Kona IP25	17.5.x.x	+	-
Kona IP (SMPTE 2022-6/7, SMPTE 2110, uncompressed IP video)*	17.1.x.x	-	-
Corvid	17.1.x.x-17.5.x.x	-	-
Corvid 3G	17.1.x.x-17.5.x.x	-	+
Corvid 22	17.1.x.x-17.5.x.x	-	+
Corvid 24	17.1.x.x-17.5.x.x	+	+
Corvid 44	17.1.x.x-17.5.x.x	+	+
Corvid 88	17.1.x.x-17.5.x.x	+	+

* *This SDI card is deprecated and will no longer be supported in future Cinegy Air versions.*

Deltacast

Model	Recommended Driver Package	UHD Support
DELTA-hd-elp-d 44	6.19	up to p29.97
DELTA-hd-elp-d 62	6.19	up to p29.97
DELTA-hd-elp-d 80	6.19	up to p29.97
DELTA-3G-elp-d 8c	6.20	up to p60
DELTA-3G-elp-d 4c	6.20	up to p60
DELTA-3G40-hd40-elp-d	6.20	up to p60
DELTA-3G-elp-d 40	6.20	up to p60
DELTA-ip-ST2022-6 10	6.20	-
DELTA-ip-ST2022-6 01	6.20	-

For Deltacast boards with passive cooling please provide at least 5 mph airflow in the chassis, especially when using multiple boards.

VANC features are not supported for RGBA mode.

SDI Signal Source Parameters Recommendations

The following settings are supported:

Parameters	Deltacast/AJA	Blackmagic Design
SDI Signal	SMPTE 292M (1.5G) SMPTE 424M (3G) SMPTE 425-3	SMPTE 292M (1.5G) SMPTE 424M (3G) SMPTE ST-2081 (6G) SMPTE ST-2082(12G)
SDI Level	A	A
Color coding	10-bit YCbCr	10-bit YCbCr
HD formats	Single-link 1.5/3G	Single-link 1.5/3G
UHD formats	Quad-link 1.5/3G/12G "2SI (Two-Sample Interleave)"	Single-link 6G Single-link 12G Quad-link 1.5/3G/12G

RGBA (Fill&Key) dual-link is supported as a special mode only for Cinegy Air products.

Supported GPI I/O Boards

The following boards can be used to trigger external devices, control Cinegy Studio PRO playlist operations or Cinegy Air externally via general purpose interface (GPI):

Vendor	Make	Certified Driver	Supported Features
SeaLevel	8012ES 8209FX	SealO Classic V5	Trigger external devices Switch Cinegy Playout opt-out blocks Control Cinegy Studio PRO playlist and playback operations
	Seal/O-530E	SeaMAX for Windows v3.4.0.1	Trigger external devices

Supported SDI Routers

Cinegy Event Manager will let Cinegy Air to control the following third-party SDI routers:

- Nevion (Network) VikinX
- Grass Valley (Miranda) NVISION Compact and Enterprise
- Imagine Communications (Harris) Panacea and Platinum
- UTAH Scientific
- Blackmagic Design VideoHub
- Kramer Electronics
- Evertz
- Guramex

Supported EAS Devices

Cinegy EAS Gateway will let Cinegy Air automatically play EAS audio and video data received from the following devices:

- TFT 911
- SAGE ENDEC 3644

Cinegy Encode

Supported SDI I/O Boards

Cinegy Encode supports the SDI boards for baseband I/O described in the Input and Output Boards section.

	Please note that DeckLink SDI, Decklink Studio, Decklink Extreme, Decklink Duo, and Decklink Quad legacy boards do not support full duplex mode, therefore live pass-through is only possible with two boards, first serving the input and second providing the output.

Hardware Recommendations

The actual performance of a machine depends on the number of running channels and their resolution, enabled inputs and outputs, and RTP encoding/decoding, therefore no precise hardware recommendation can be given.

Nevertheless, as we keep optimizing our software tools for better performance, the following typical configurations have been tested for our own and our customer's reference:

Application	Single Xeon E5 2620v3 CPU 16GB DDR4 RAM	Dual Xeon E5 2630v3 CPU 32GB DDR4 RAM	Dual Xeon E5 2697v3 CPU 128GB DDR4 RAM
	Recommended Number of Simultaneous Channel Instances		
SD	1	4	16
HD	–	2	4
Ultra HD	–	–	1

These system recommendations use older hardware that has been previously tested. The CPUs listed should be used as a guide to select modern equivalent options and not as direct requirements.

RTP Streaming Network

It is highly recommended to split the file and streaming operations between two physically separate networks. Therefore, please consider that all your servers and workstations have two Gigabit Ethernet adapters.

Please disable the "File and Printer Sharing for Microsoft Networks" and "Client for Microsoft Networks" options for the adapters connected to the RTP network, and uncheck the "Register these connection's addresses in DNS" in this adapter's TCP/IPv4 settings (see the "Advanced/DNS" tab).

Supported Codecs and File Formats

Supported TV Formats

The current version of Cinegy Air components supports the following TV formats:

Standard Definition (SD)	High Definition (HD)	Ultra High Definition (UHD/4K)	Ultra High Definition (UHD/8K)
720x576i@25fps 4:3	1920x1080i@25fps	3840x2160@25fps	7680x4320@25fps
720x576i@25fps 16:9	1280x720p@50fps	3840x2160@50fps	7680x4320@50fps
720x480i@29.97fps 4:3	1920x1080i@29.97fps	3840x2160@29.97fps	7680x4320@29.97fps
720x480i@29.97fps 16:9	1280x720p@59.94fps	3840x2160@59.94fps	7680x4320@59.94fps
	1920x1080p@50fps		
	1920x1080p@59.94fps		
	1920x1080p@23.976fps*		
	1920x1080p@24fps*		
	1920x1080p@25fps		
	1920x1080p@29.97fps		

* *The format is not supported for Cinegy Archive integration.*

Supported Media File Formats

Cinegy Air will read the following file formats (containers):

- Raw DV
- MPEG Elementary Stream (M2V, M2A)
- MPEG Program Stream (MPG, MPEG)
- MPEG Transport Stream (TS, M2T)
- MXF OP1a *
- MXF AS-03/11
- MXF OPAtom
- Apple Quicktime (MOV and MP4)
- Windows AVI
- Windows Media (WMV and WMA)
- WAV
- MP3
- OGG

* *JPEG2000 support is currently considered experimental.*

Supported Video Codecs

Cinegy Air supports the following video codecs. Please note that some of the video codecs listed here may require an additional purchase of a codec license depending on the product version or bundle used.

- DV25
- DVCAM
- DVCPRO
- DVCPRO 50
- DVCPRO HD
- HDV
- Sony IMX
- Sony XDCAM SD
- Sony XDCAM HD
- Sony XDCAM HD422
- Sony XDCAM EX
- H.264 (up to 4:2:2)
- MPEG-2 I-frame
- HEVC (H.265)
- MPEG-2 Long GOP
- Panasonic AVC Intra 50
- Panasonic AVC Intra 100
- Avid DNxHD
- Avid DNxHR
- Apple ProRes
- Windows Media (all versions)
- Cinegy DANIEL 2
- Any Windows-based AVI codec
- Sony XAVC (including Long GOP)

These file formats are recommended for playback in UHD mode: ProRes422, XAVC I-frame, and Cinegy Daniel2.

Supported Audio Codecs

Cinegy Air currently supports live input with an audio sample rate of 48 kHz.

Cinegy Air supports the following audio codecs:

- 16, 20 and 24-bit PCM
- MPEG-2 Audio Layer I-III
- AAC LC/HE/HE2
- AC3
- Vorbis

Supported Image File Formats

The following image formats can be inserted in the Cinegy Air playlist or used for graphics or logo overlay:

- JPEG
- TIFF
- PNG
- TGA
- BMP
- GIF

For dynamic logo or graphic animations overlay please use Cinegy DANIEL2 codec. TARGA sequences are not supported.

Supported Text File Formats

The following text formats can be inserted into the Cinegy Studio Rundown:

- DOC
- DOCX
- TXT
- RTF

Supported Input Sources

Cinegy Air is able to receive and play the following live sources:

- SDI baseband video (refer to the list of supported SDI boards)
- RTP/UDP/SRT streams as per SMPTE 2022-2 (MPEG-2, H.264, H.265, Daniel2 video, various bitrate, GOP structure and audio formats)
- SMPTE 2022-6/7 uncompressed IP video
- NewTek NDI
- ForA HVS-100TB2 Input
- Shared RAM Input
- WDM Input
- Audio Input
- WebCam Input

Supported Subtitle File Formats

Cinegy Air is able to generate open captions (burn-in subtitles) from the following file formats:

- STL
- SRT



Refer to the Cinegy Subtitling Service Manual for more information about the subtitle control service implemented as a sidecar to the main Cinegy Air service.