



TITAN FILE ENCODING PLATFORM

Supported Input Formats
Media containers
.ts, .mpg, .avi, .mp4, .mov, .mxf (all OP, incl. IMF CPL), .gxf, .lxf, .dpx, .tif, .j2c, .j2k, .m2v, .wav, .w64, .aif, .ac3, .ec3, .dde, .srt, .stl, .mcc, .scc
Video codecs
MPEG-1, MPEG-2, MPEG-4 ASP, MPEG-4 AVC / H.264, DV, DVCPRO 25/50, DVCPRO HD, AVC Intra 50/100, Cineform® AVI, Sony® XDCAM50 / IMX 30/40/50 / XAVC, Avid® DNxHD/DNxHR, Apple® ProRes up to 4444 XQ, JPEG2000, RAW RGB/YUV
Audio codecs
PCM, MPEG audio, AAC, DD / DD+, Dolby® E
Preprocessing
Audio preprocessing/editing
Resampling
7.1/5.1 to stereo mixdown
Wav files aggregation
Audio renormalization (EBU R128, A/85)
Video preprocessing/editing
High performance de-interlacing, dithering and denoising filters
Logo insertions with fade-in/out
Image cropping/resizing
3:2 pulldown/inverse telecine
Frame rate conversion/decimation, chapter points
Files concatenation and frame trimming
BT.601/BT.709/P3/BT.2020 color space conversion
Full/Head range conversion
HDR management with any EOTF including ST 2084/PQ and HLG, or custom 3D LUT, ST 2086 metadata and native Dolby® Vision (optional)
Video Compression
Standard
HEVC main and main 10 profiles up to level 5.2
Dolby Vision profile for BD (optional)
HEVC RExt main 12, main 4:2:2 10 and main 4:2:2 12 profiles
H.264 baseline, main, high, high 10 and high 4:2:2 up to level 5.2 (Non-BD Compliant)
MPEG-2 simple, main and 4:2:2 profiles up to high level (Not DVD-Video or BD Compliant)
Apple® ProRes 422 Proxy, 422 LT, 422, 422 HQ, 4444, 4444 XQ

JPEG 2000 4:2:2 10-bit, JPEG thumbnails
Encoding mode
Resolution up to UHDTV/4K
CBR, VBR, VBR 2-pass, VBR Capped, Turbo VBR
From 20 kbps to 100 Mbps
Fixed/variable GOP size
Automatic scene cut detection
IDR-frame strategy control
Progressive, Field, PAFF, MBAFF, PAFF+MBAFF modes
Audio Compression
Compression formats
MPEG-1 Layer II
AAC-LC, AAC-HEv1, AAC-HEv2 (ADTS/LATM format)
Dolby® Digital/Dolby® Digital Plus (up to 7.1), including ATMOS
Dolby® AC-41
PCM (16/24/32 bits)
Rate control mode
CBR (from 32 kbps to 3024kbps)
Data Processing
Closed Captioning
SCTE-20, ATSC, NA DBS Line 21, Divicom® Line 21
Subtitles
DVB Teletext, DVB Subtitles, WebVTT, DFXP/TTML, burn-in
Ad Insertion
SCTE-35 and EBP signals insertion
Nielsen ID3 tags insertion
ESAM1 API
File Output
Built-in M-Wrap™ packager for any combination of:
MPEG-2 TS, MP4, MOV, Elementary Stream, Apple® HLS (up to v7), Microsoft® Smooth Streaming, MPEG-DASH (ISO/BMFF Live and On Demand profiles), MXF (IMX/D10, XDCAM HD and AS-10 High_HD_2014 shim), IMF Application #2 Extended
DRM
Apple® HLS content protection, Microsoft® PlayReady
Common Encryption (CENC) with PlayReady and Widevine
Platform Minimum Requirement
Intel® hexa-core processor/4GB RAM, Windows 7/2008 Server



Product Packages		TITAN SRV	TITAN STD	TITAN UHDBD
Resolution	SD and sub-SD	•	•	•
	HD 720p/1080p	•	•	•
	HD 1080i	•	•	•
	UHD/4K	•	•	•
Video Processing	H.264 encoder (non-BD compliant)	•	•	•
	MPEG-2 encoder (non-BD compliant)	•	•	•
	H.265 / HEVC encoder	•	•	•
	JPEG 2000 encoder	•	•	•
	Apple® ProRes encoder	•	•	•
	HEVC RExt encoder	•	•	•
	HDR processing	•	•	•
	Progressive encoding	•	•	•
	Interlaced encoding	•	•	•
	Parallel HDR stream encoding	3 HDR	1 HDR	1 HDR
	Dolby Vision	Optional	Optional	Optional
	Audio Processing	MP2/AAC encoding	•	•
AC-3/E-AC-3 pass-through		•	•	0
DTS pass-through		•	•	0
PCM output		•	•	0
DD/DD+ encoding		•	•	0
Loudness correction		•	•	0
Multi-audio/SAP		•	•	0
Concurrent Streams		4	2	0
Subtitling/CC	Subtitles/CC support	•	•	•
Processing Mode	CBR/VBR 1-pass/VBR 2-pass	•	•	•
	Turbo VBR (fast 2-pass)	•	•	•
	Advanced pre-processing	•	•	•
Output	HTTP Live Streaming	•	•	0
	Smooth Streaming	•	•	0
	MPEG-DASH	•	•	0
	MP4	•	•	0
	MPEG-2 TS	•	•	0
	MXF	•	•	0
	IMF	•	•	0

**features and packages subject to change without notice*