

## mDECK Densu io



### Overview

Optimize your media production and distribution workflows with mDECK Densu io, a professional dual-node media deck that can combine operations of record, ingest, transcode, and playback content in FHD, and NDI in a single box.

This compact and cost-effective media deck not only performs hybrid workflows (file-based and live) but also supports the most used formats on the market and allows users to work together as a group.

Additionally, it has the option for local storage of 6 or 12TB and can be pre-configured to support IP Live workflows. This powerful media deck comes with PSU redundancy, and an OS Drive.



### Highlights

- mPAM - Content and production asset manager for up to 2 users
- mSWITCH - Remote live switching and compositing
- mTALK - Audio communication between users
- Live to live - multiple simultaneous records
- Batch capture
- Multiple simultaneous transcodes
- Automated file ingest
- Metadata preservation, enhancement, and enrichment
- File playback - multiple simultaneous plays
- Playlist management
- Quality control, audio, and video report
- Flexible file naming and renaming engine
- Locators support
- Closed captions
- Media checksum
- Supports spanned clips
- Proxy generation
- Playout preparation and control
- Improved security
- Artificial intelligence

### Specially Designed For

- Educational/Government
- Live Entertainment/Worship
- Corporate
- Sports
- Film/TV Studio/Scripted
- Digital News
- Mobile Studios/OB Vans
- Digitalization
- Archiving
- Post-Production
- Television/Broadcasting
- OTT & Streaming

## Features

Features
<b>Timecode support</b>
LTC (SMPTE 12M)
VITC (SMPTE RP188)
Time of Day
From VTR (BVW) - Serial
<b>Multiple LIVE and simultaneous records</b>
Crash Record operations
Gang Capture operations
Independent workflow selection in Gang Captures
Unique workflow for gang captures while using clipnaming with counters
Hide unused Capture Instances
Synchronized gang captures
Ability to choose which channels are present in the gang
Frame Chase editing
Unlimited capture duration support
Loop record support
Extend playlist maximum duration in Loop Record workflows
Perform Loop record captures through automatic jobs
Growing files support
Growing file support for Grass valley Edius Workgroup v.9 and X
Growing XDCAM MXF OP1a file support on Avid Media Composer <b>*required Nablet AMA Plugin</b>
Automatic Stream Control - Detect input streams and start recording automatically
Continuous recording support
Continuous live stream capture
Recording timer for captures
Abort or force stop a capture or a stream
Frame rate conversion option on Capture workflows
Generation of MP4 files as fragmented MP4 with DCP packager
Generate XML sidecars with WAV file as output while recording
Perform "Run after completion" scripts
Live Probing option
Stream Closed Captions
Edit a Workflow directly from the Player
Option to start timecode recording from 00:00:00:00
Export MOG playlist (.XML Sidecar containing information about the chunks of the recorded media)
Batch record support
Deck control through Serial Ports
Pre-roll and post-roll options
LiveU NewsML batch capture
LiveU NewsML metadata import
LiveU NewsML - support XML from devices (Live U, Android and iPhone)
LiveU include subfolder browse
Contribution Web Video Player - Aspect marker, Safe Area Marker, and Center marker
Player Overlay - Center Dot and Cross
Support for Active Format Description (AFD)
<b>Operation modes</b>
Automatic
Manual
Scheduled
<b>Clipnaming</b>
Flexible file renaming engine
Create multiple and diverse Clipnaming templates
Clipnaming based under metadata profiles
Use of common labels (Id, label, Counter, Date, Original Source Name, Weekday, User)
Field numeric representation of the day of the week
Folder Structure creation
Drag and Drop support
Restore auto numbering on capture abort in naming templates
Time Zone Support when the "CreationDate" field is selected
Support to append "_p" to proxy clip names
<b>Multi-Configuration metadata management and enrichment</b>
Internal asset management
Quickly search for assets metadata
Metadata management
Metadata generation on capture operations
Metadata fields - prevent overwrite
Protection of metadata fields
Delete custom metadata
Edit group clip metadata
Edit source metadata based on a metadata profile
"Description" field editable in metadata widget
"Description" field as a column in the asset explorer list view
Send metadata to Gang Captures
Favorite metadata fields
Create custom metadata fields
Rating metadata field

## Features

- Metadata source update directly in the metadata widget
- Add asset tags insertion in preset list
- Support re-using lists of possible values
- Update Metadata in Media Central/Interplay using AMT-3 library
- Ability to rename media in Interplay after capture began
- Take field (counter)
- Support for "Reel" metadata field using Apple ProRes Wrapper
- Read metadata from cloud storage (Amazon S3 / Google Cloud Storage / Tencent / IBM Cloud Object Storage)
- Preserve Arri specific fields
- Preserve RED digital cinema color information

### Find immediately and learn everything about any asset

- Asset Browser - Show/hide proxies
- Asset Browser - Sort, order, and search
- Asset Explorer - Resizable thumbnails
- Asset Explorer - Support asset availability
- Asset Explorer - Search all
- Asset Explorer - Extraction of thumbnails and posters while indexing
- Asset Explorer - Playable thumbnails
- Asset Explorer - Pop-up player
- Asset Explorer - View the exact duration of files with more than 24 hours
- Asset Selection -View the total duration of the selected assets
- Asset Selection - Configurable asset preview duration
- Asset Selection - Add Numeric Input

### Asset management Check-in

- AVID AAF
- AVID interplay
- XML support
- XSLT transformation - XML sidecar
- Edit share flow
- Vizzi OTT check in

### Audio support

- Input and output PCM support
- Input support for Dolby E-AC-3, Dolby TrueHD, and DTS
- Input and output Dolby-E support
- DTS Coherent Acoustics (DCA)
- Support PCM 96KHz
- Independent audio encoder for hires and proxy
- Individual audio mapping by output target
- Record audio only streams
- Playout audio only streams
- Loudness normalization (EBU R128)
- Audio downmixing & upmixing
- External audio files support (.WAV)
- MPEG-4 Audio (M4A) audio format as output
- Mute proxy option in output

### Close captions

- CEA/EIA - 608
- Scenarist (SCC)
- Add sidecar - SubRip (SRT)
- Add sidecar - Fragmented WebVTT
- Add sidecar - ISMT/CMFT subtitles
- DCP subtitle burn-in (.SCC)
- Digital Cinema Package (DCP) open captioning
- Support DVB-S captions in streams
- Support captioning for OTT (CMFT, SubRip, and WebVTT)
- Stream Closed Captions

### Locators

- Create locators with shortcut keys
- Edit and delete locators
- Edit locators description
- Insertion and viewing
- Action fields creation and customization
- Comments insertion in a markers widget tab
- Locators source in markers widget
- Multiple subcategories for a locator
- Order asset locators by timecode
- Absolute timecode for source locators
- Enter Timecode without the need of entering colons
- Eject locators using the player eject button
- Locators merge
- Support for locators with AMT captures
- Send locators to gang captures
- Send locators to playout
- Preserve Metadata Enhancement locators created by an Automatic Job

### Scheduler (Calendar View)

- Scheduled Record
- Scheduled Automatic Jobs via Scheduler
- Edit individual events

## Features

Allow editing of settings for each occurrence/repetition
Configure the number of events repetitions
Check collision between events with repetitions
Placeholder when editing an occurrence name
Enable field event name as AVID Interplay clipname by default
Pre-set naming templates
Independent targets and multiple outputs support
Capability to set a maximum capture duration
Configurable number of iterations when using maximum capture duration
Use AVID Interplay clip name as event name on crash record events
Pre-roll and post-roll options for scheduled events
Define events to be triggered on any day, on working days only or only on weekends
Possibility to use the calendar notion option in order to adjust for daylight saving time automatically
Ability to edit Start Time field after the first recording
Visualize scheduled events in a List View
Export activity events
Perform captures from a MOG S1000
Perform captures from an Airspeed 5000
Perform captures from a Softron Movie Recorder
<b>Scheduler (Payout Grid View) - Unifies in a single rollout view all Payout activities - Optional</b>
Grid View for Payout
Crash Payout directly from the Grid View
Loop a playlist
Schedule Clip Lists to be Played out
Time zone Support
Ability to set a pre-determined number of repetitions
Trigger Payout events (Any day, On Working Days or only on Weekends)
<b>Signal error detection and related recovery actions</b>
Signal error detection
Drop frame detection
Timecode breaks support
Configurable capture resume methodology
Automatic streaming (headless) - Restart capture after stopping/crashing or rebooting
<b>Checksum media</b>
MD5 hash file
MDL - Media hash list
<b>Live to Live</b>
Delete artifacts on abort
Vizzi OTT Live Output
Multiple resolutions check-in
Support Time of Day in input streams (RTMP, MPEG-TS, RTP, SRT, RTSP, HLS, LLDASH, MSS, MPEG-DASH, CMAF)
Support Live Stream from sCapture as rPayout input
Variable Frame Rate Input
Support IGMPv3 multicast
<b>MPEG-TS Support</b>
Capture of MPEG-Transport Streams
Support of MPEG-TS program IDs
<b>NDI</b>
Native NDI output
NDI HX Support
NDI audio and video synchronized mechanism
NDI discovery mechanism
Capture multiple NDI sources
Time of day and embedded timecode options in NDI input
<b>RTMP</b>
RTMP recording with absolute timecode
RTMP Push Mode in input and output
RTMP Pull Mode in input and output
Native RTMP listener capability
Multiple audio channels in RTMP Output
<b>SRT</b>
Input modes: Caller, Listener, and Rendezvous
SRT listener mode as stream output
Output modes: Caller and Rendezvous
Stream ID support
Configurable latency settings
Configurable overhead bandwidth
Configurable passphrase
Monitoring input metrics
<b>WebRTC</b>
h.264 Support
VP8 Support
VP9 Support
<b>Live switcher - Capture switcher producer</b>
Commute between channels while recording
Record audio and video from one channel, or just audio or video
Payout from SDI Inputs
Payout from Streams Inputs

## Features

Playout from File Inputs
Overlay graphics support
Chroma Key as Input
<b>File ingest</b>
Multiple simultaneous transcodes
Batch ingest
Card ingest
Clip merge
Clip renaming
Disable Clip File Naming generation
Partial restore
Rough cut
Insert Subclips SOM and EOM without colons
Automatic drag and drop ingest
Drag and drop from social networks
Generate XML sidecar with WAV file as output while ingest
Generate a .xml file for each output AVID clip or AVID sequence
Merge as Sequence from MP4 proxy files
Automatically select workflows available in job control attending the source files
Allow the creation of clip cuts in growing files to be added to a playlist for playout
Directly select the storage on the dashboard instead of accessing workflow profiles
Copy assets
Group Assets - Group the resulting outputs into a single asset
Copy - Transfer sidecars if available
Encode the contents according to the destination format
Decode the contents according to the destination format
Move assets
Edit while ingest
Use locators on growing files
Multiple resolutions check-in
Frame rate conversion
Variable Frame Rate Input
High Dynamic Range (HDR) support - HLG (arib std-b67) / PQ (SMPTE 2084)
High Frame Rate (HFR) up to 120fps (ST2081-10, ST2081-11, ST2082-10, ST2082-11 and ST2082-30)
Ability to perform "Run after completion" scripts
Audio only OPAAtom as output
Do not overwrite files option
Support for .MOV files containing "Run-length encoding" video essence
Enable "growing" support on EDL ingest workflow
Merge as EDL independent of input format
Merge Trimmed files
Merge files with different framerates
Merge P2 with different audio channels
Allow merge of more than 200 assets
Support for spanned Panasonic P2 structure
Preserve original time code breaks in Panasonic P2 Format
Mute proxy option in output (requires proxy option)
Edit decision lists with cut points
Display the total duration of sub-clips on Edit Decision List widget
Ingest from cloud locations
Digital Cinema Package (DCP) support
DCP Packager - Possibility to force fragmented MP4 while uploading to S3 buckets
Generation of MP4 files as fragmented MP4 with DCP packager
Digital Picture Exchange (DPX) support
IMF (Netflix Compliant) output metadata
FTP for generic network devices as input
Ability to delete OPAAtom source files
Support for GOPRO spanned files
Support video with vertical rotation
MOG file package support
Support MOG Package from Cloud Storages
Outgest growing media from Interplay
HDR (PQ, HLG) conversion to SDR as output
Support for image files ingest
Support 48fps drop frame media (DJI Camera Drones)
Support for spanned clips
XDCAM support for spanned & merge clips in network locations/network devices
Add black bars to respect aspect ratio
Delete Output on Job Abort
Schedule ingest (Calendar) - Automatic Job
Ingest and/or transcode the contents according to the destination format
Vubiquity assets support
Support for Vizzi collections as input files
Browse Avid Interplay folder structure from within the "Workflow selection window"
Avid Sub Clip export referencing Growing Master Clip
Generate Avid OPAAtom assets to an FTP server
Update Metadata in Media Central/Interplay using AMT-3 library
Live Ingest Operations

## Features

Live sources available in asset browser/explorer
Override start timecode
<b>Burn-In Video options</b>
Graphic burn-in while recording
Graphic burn-in while ingesting
Text (Position, Text color, Box Color, Font Size)
Timecode (Position, Text color, Box Color, Font Size)
Overlays support (images and videos positioning)
LUT (Look-Up Table) - Save particular color grades as a template
<b>Quality control - Report</b>
<b>Video Report</b>
Black frames detection
Video freeze detection
Scene change detection
<b>Audio Report</b>
Audio clipping detection
Loudness detection
Silence detection
<b>Others</b>
Timecode gap detection
<b>Automated ingest</b>
Dynamic workflows using metadata fields
Dynamic workflows with support for metadata without sidecars
Delete Assets in Dynamic Jobs
Support different input types on dynamic configurations
Ignore files before a start date
Support metadata enhancement workflows
Vizzi Collections support
<b>File playback</b>
Simultaneous playback
Composition play
Instant play
Gang Play
Replay a group or an individual asset
Loop playback
Group Loop Playback
Gridline (3x5) Overlay
Remote preview
Support for 10bit
Synchronous SDI playback of multiple files
Closed captions
Cue mode
Monitor - support HDR
Option to add locators
Play assets from cloud storages
Playback - 8K UHD
Embedded VITC output support
Step multiple frames forward and backwards on SDI/gang playback
Timecode and metadata overlaying on SDI out
Support for growing assets in player
Support for spanned assets in player
Timecode only monitoring
Use of a contour shuttle to control an asset during playback
Playback duration showing the remaining time of the clip
Remove clips
Reorder clips
Export playlist
High Dynamic Range (HDR) support - HLG (arib std-b67) / PQ (SMPTE 2084)
High Frame Rate (HFR) up to 120fps (ST2081-10, ST2081-11, ST2082-10, ST2082-11 and ST2082-30)
Preview - Possibility to change the playback speed by multiplier factors
Simple Time Delay: Scheduling a Playback of a Single File in Growing Recording Mode
Read Metadata Timecode Package (Auto / Material Package / Source Package)
<b>Playout</b>
<b>Playout Preparation</b>
Build playlists in a Playlist Builder widget
Create multiple Playlists
Allow configuring playout clip action while preparing the playlist
Support visual separators for rPlayout playlists
Drag and Drop clips to the player for media preparation
Support insertion of Timecodes without separators “-” in the playlist builder
Use both types of TC (Relative and Absolute) for Mark-ins and mark-out at playlist builder
Trim clips to be included in the Playlist
Editable timecodes of the in and out points
Re-arrange clips order
Duplicate Edit Decision Lists
Export Edit Decision Lists

## Features

### Playout Control

- Edit playlist on the fly and while playing
- Playlist countdown and clip countdown
- File and clip list progress bars
- Playout Capture streams through SDI and native window
- Print to tape
- Queue clip on the playlist
- Queue on first frame and last frame
- Queue on first frame the first clip of the playlist
- Bypass action for playout clips
- Pause Playlist
- Playout to stream
- Thumbnail preview of the current clip on the playlist and its remaining time until Playout of the next clip
- On Air - current loaded playlist name
- Loop a playlist
- Loop one or more assets in the playlist
- Drag and Drop Clip List entries in Playout Control
- Multi-channel playout capability
- Schedule Playout
- Choose between Playout Services available - rPlayerSDI or CasparCG
- Mini control bar for use with Playout Control
- Keyboard shortcuts for playout control and associated WEB player
- Autoplay option
- As Run Log's containing Date, Time, Clip name, Time Code In, and Time Code Out
- Prepare the Playout clip actions while preparing the playlist

### Input/output social media \*Optional

- Google Chrome Social-m Plugin
- Social-m - Add support for live stream capture
- Metadata in Chrome Social-m Plugin
- Capture to Facebook Live
- Stream to Facebook Live
- Stream to Twitch Live
- Capture to YouTube Live
- File based YouTube Upload
- Capture X (Twitter) Live
- Stream to X (Twitter) Live
- Upload to Vimeo
- Metadata social annotation and enhancement

### PAM - Production Asset Management

- Advanced text search
- Asset browser permissions
- Asset collections
- Asset essences
- Asset essences for generic sources
- Asset comments
- Enable on-the-fly tagging
- Flexible metadata management
- Dynamic Automatic Jobs - Age value for CreationDate (Available for Copy, Move, Archive Workflows)
- Display of Essences File Paths
- Check-in via detector
- Check-in via metadata update
- Check-in via workflow
- Interactive approval workflows
- MOG player proxy
- Move option in asset collections
- Collections as input in automatic jobs
- Private and shared asset collections
- Show the creator of the collection
- Statistics for collections
- Save searches and filters
- Rich logging workflows
- User abstraction for in/out assets
- Instant play, anytime and anywhere of any asset (with or without proxy)

### Metadata Enhancement and preservation

#### Artificial Intelligence

##### Audio

- Audio clipping detection
- Loudness detection
- Silence detection
- Voice activity detection
- Audio mute detection
- Audio phase detection
- Mono audio detection

##### Video

- Black frames detection
- Video freeze detection
- Scene change detection
- Black Margins detection

Features
Flashing video detection
<b>Object</b>
Concept tagger 2.0
Vehicle detection
License plate detection
<b>Others</b>
Timecode gap detection
Update existing interplay entry with new metadata
Possibility to add bounding boxes to player
<b>Transform</b>
Automatically Blur License Plates
Black margins automatic crop
Remove audio clicks
Remove audio clipping
AI Upscale
Reduce video flashing
<b>Additional AI Operations</b>
Face recognition 2.0
Face recognition - Support dataset with multiple images for each person
Age prediction detection
Object detection 2.0
Optical Character Recognition (OCR)
Speech recognition 2.0 (with ability to detect non speech tokens)
<b>mTALK</b>
Audio communication between users
QR code implementation
WebApp (requires Android smartphone)
Toggle Mode
<b>Analytics</b>
Google Analytics and Tag Manager integration
Option to enable and disable Analytics
Track menu events
Video metrics
Track job control widget events
Track asset explorer widget events
<b>Improved security</b>
Support for Windows UAC
Support for HTTP/HTTPS Ingress
HTTPS (Hypertext Transfer Protocol Secure) for REST API
Secure login
User Impersonation
Token based authentication
Two-factor authentication
Remote services, system restart, and settings recovery features
DASH/HLS packager with DRM
"Keep me signed in" login option
User Verification through email
<b>Transfer acceleration protocols</b>
Aspera FASP transport technology - Transfer acceleration protocol
FileCatalyst direct - Transfer acceleration protocol
<b>Hardware acceleration</b> *If Hardware is installed or available
Intel QSV
<b>General Purpose IN/OUT</b>
GPI triggers supported
GPO triggers supported
<b>Additional Highlights</b>
REST API - allows interaction with RESTful web services
Change Aspect Ratio (4:3 / 16:9 / 1.9:1 / 2:1 or use same as source)
Active Format Description (Option to Preserve, Discard or Override)
Notify user upon connection lost with the Server
Manage via web interface or REST APIs for integration with automation system
Control XPRESS display panel with peripheral API
Configurable quality and target latency of the preview stream
Logging - Human readable information on Services logs
Logging - Add user information on flow actions
Logging - Structured Logging
SMTP E-mail Notifications
Support an external Database
Microsoft Edge / Firefox and Chrome Support
<b>Unified Interface User Experience</b>
Web-Based Interface with video preview
Dashboards based experience where users can create their own personalized view
Dashboards presets for ease-of-use deployment
Create custom dashboard templates
Import and export of users Dashboards
Associate same dashboards to multiple users
LDAP user authentication
User profile management



Features	
Users permissions control	
Widget based modular interface	
Lock/Unlock widgets permission	
High contrast theme	
Touch screen mode	
Monitoring - Advanced metrics	
Multi Language Support	
User tour	
Show/Hide player overlays	
Notifications of required actions needed to resume a workflow	
View which servers in a group are running Capture and Ingest Operations in a Group activity widget	
Possibility to remove quick edit button from Job Control widget	
Permissions to activate or deactivate settings of Gang Capture widget	
<b>Multiviewer</b>	
Configurable quality and target latency of the preview stream	
Ability to control to up to 4 players in a single dashboard	
<b>Maintenance</b>	
<b>Scheduler</b>	
Reboot host or group	
Export database (backup) as a scheduled task	
Export logs as a scheduled task	
<b>Activity</b>	
Export last activity	
Export all activity	
Export activity from a date range	
Clear all activity	
<b>Logs</b>	
Export logs	
<b>Backup</b>	
Export full backup - A full backup will create an archive of all the files and configurations	
Import full backup	
<b>Dashboards</b>	
Export dashboards from one user or all users	
Import dashboards	
<b>Data</b>	
Clean data usage	
Clean assets, flows and notifications	
Factory data reset	
Erase all data and reset the system	
Force clear cache	

## Technical Specifications

### Supported File Inputs

Inputs	
OnPrem	<b>Plain Files or Structures</b>
	ARRI ALEXA Cameras
	BlackMagic Cameras
	RED Digital Cinema
	Avid Files
	Avid Media Files (standalone or Nexis/ISIS)
	Avid Sequences (master clips and rendered sequences)
	CANON DSLR 5D, 7D, C300, C100
	GoPro Cards
	IKEGAMI GFPAK
	JVC (AVC HD models)
	NextoDI NSB-25
	Panasonic AU-EVA1 and GH5 Cameras
	<b>Panasonic P2</b>
	AJ-PCD 2 / AJ-PCD 20/30/35 / AJ-MPD1
	AU-XP1E / AU-XP3EJ
	<b>XDCAM EX:</b>
	Sony SxS (SBAC-UT100, SBAC-US10/20/30)
	<b>XDCAM HD</b>
	Sony XDCAM HD: Disc (PDW-U1, PDW-U2, PDW-U4)
	XAVC Structures
	DJI (Camera Drones)
	HLS Structures
	MPEG-TS Structures
	<b>Network</b>
	XDCAM Network
	P2 Network
	ARRI RAW Network
	Ikegami Network

## Inputs

OnPrem	<b>Storage</b>
	Avid ISIS / Nexis
	Avid Unity™ MediaNetwork
	DDP – Dynamic Drive Pool
	Facilis TerraBlock
	Harmonic MediaGrid
	Editshare EFS
	NAS / SAS (SMB 2.0 and 3.0)
	Quantum StorNext
	ScaleLogic NX2 & ZX NAS Storage
	EMC Isilon
	QNAP
	Studio Network Solutions EVO
	Oracle Storage
	Netapp
Cloud	<b>Social Media</b>
	Facebook
	X (Twitter)
	Vimeo
	YouTube
	<b>Professional Cloud Storages</b>
	Adobe Creative Cloud
	Amazon S3 Glacier
	Microsoft Azure Storage
	Tencent
	Lucidlink Cloud NAS
	Google Cloud Storage
	IBM Cloud Object Storage
	Generic S3 storages
	<b>Consumer Cloud Storages</b>
	Apple I Cloud Drive
	Dropbox
	Google Drive
	Microsoft One Drive

## Supported File Outputs

### Outputs

OnPrem	Avid ISIS / Nexis
	Avid Unity™ MediaNetwork
	DDP – Dynamic Drive Pool
	Facilis TerraBlock
	Harmonic MediaGrid
	Editshare EFS
	NAS / SAS (SMB 2.0 and 3.0)
	Quantum StorNext
	ScaleLogic NX2 & ZX NAS Storage
	EMC Isilon
	QNAP
	Studio Network Solutions EVO
	Oracle Storage
	Netapp
Cloud	FTP Servers (List on request)
	Generic File Shares
	<b>Consumer Cloud Storages</b>
	Apple I Cloud Drive
	Dropbox
	Google Drive
	Microsoft One Drive
	<b>Multiple and Adaptive bitrates for the OTT *Optional</b>
	<b>Professional Cloud Storages</b>
	Adobe Creative Cloud
	Amazon S3 Glacier
	Microsoft Azure Storage
	Tencent
	Lucidlink Cloud NAS
	Google Cloud Storage
	IBM Cloud Object Storage
	Generic S3 storages

Outputs	
Cloud	<b>Social Media *Optional</b>
	Facebook
	X (Twitter)
	Vimeo
	YouTube

Supported Live Inputs

Inputs	
Live	<b>SDI</b>
	SD-SDI (SMPTE 259M)
	3G-SDI (SMPTE 292M, SMPTE296M, SMPTE372M, SMPTE425M)
	<b>Streams</b>
	Video Content Hyperlinks
	HLS
	MPEG-TS
	MPEG-DASH
	RTMP
	RTP
	RTSP
	NewTek NDI
	UDP
	Haivision SRT
	WebRTC
	<b>Social Media</b>
	Facebook
	Twitch
	X (Twitter)
	YouTube
	<b>IP Live *Optional</b>
	ST2022-6
	ST2022-7
	ST2110-10, ST2110-20, ST2110-21, ST2110-30, ST2110-31
	ST2110-40

Supported Live Outputs

Outputs	
Live	<b>SDI</b>
	SD-SDI (SMPTE 259M)
	3G-SDI (SMPTE 292M, SMPTE296M, SMPTE372M, SMPTE425M)
	<b>Streams</b>
	HLS
	Microsoft Smooth Streaming
	MPEG-DASH
	Low Latency Dash - LL-Dash
	NewTek NDI
	MPEG-TS
	RTMP
	RTP
	RTSP
	UDP
	Haivision SRT
	WebRTC
	<b>Vizzi</b>
	Live Output
	<b>Social Media *Optional</b>
	Facebook
	Twitch
	X (Twitter)
	Vimeo
	YouTube
	<b>Multiple and Adaptive bitrates for the OTT *Optional</b>
	<b>IP Live *Optional</b>
	ST2022-7
	ST2110-10, ST2110-20, ST2110-21, ST2110-30, ST2110-31
	ST2110-40

Formats

Input Formats

Input Formats
ARRI ARRIRAW
Blackmagic RAW
Digital Cinema Packages (DCP)
RED Digital Cinema
IMX 30/40/50 Mbps
MPEG2 LGOP 18/25/35 Mbps 4:2:0
MPEG2 LGOP 50/70 Mbps 4:2:2
MPEG2 LGOP 422 50 Mbps
MPEG2 LGOP 420 1440x1080 35 Mbps
MPEG2 LGOP 420 (FULL) 35 Mbps
DVCAM 25 Mbps
XAVC Intra 50 / 100 Mbps
XAVC LGOP 25 / 35 / 50 Mbps
DVCPRO 25/50 Mbps / DVCPRO HD 100 Mbps
AVC-Intra 50 / 100 / 200 Mbps
AVC Ultra (LGOP 6/12/25/50 Mbps)
DNxHD (SQ/HQ/HQX/LB)
H.264 1080p 8 - 12 Mbps High Profile
H.264 720p 5 - 7.5 Mbps High Profile
H.264 480p 2.5 - 4 Mbps High Profile
H.264 360p 1 - 1.5 Mbps High Profile
H.264 1080p 3 - 9 Mbps High Profile (Live)
H.264 720p 1.5 - 6 Mbps High Profile (Live)
H.264 480p 0.5 - 2.0 Mbps High Profile (Live)
H.264 360p 0.4 - 1.0 Mbps High Profile (Live)
H.264 240p 0.3 - 0.7 Mbps High Profile (Live)
H.264 L10 10 Mbps
H.264 MOG 1Mbps
H.265/HEVC 10 / 25 / 50 / 100 Mbps LGOP
NDI HX H.264 - High Profile
NDI HX H.265 - High Profile
MPEG-5 EVC Baseline Profile
MPEG-5 EVC Main Profile
ProRes 422 (SQ/HQ/LT)
JPEG 2000 (Full HD)
Google® VP6 / VP7 / VP8 / VP9 (Full HD)
Uncompressed UYVY 422 / V210 / RGBA
AOMedia Video 1 (Full HD)
IMF (JPEG 2000 @ Full HD)

Output Formats

Output Formats
IMX 30/40/50 Mbps
MPEG2 LGOP 18/25/35 Mbps 4:2:0
MPEG2 LGOP 50/70 Mbps 4:2:2
MPEG2 LGOP 422 50 Mbps
MPEG2 LGOP 420 1440x1080 35 Mbps
MPEG2 LGOP 420 (FULL) 35 Mbps
DVCAM 25 Mbps
XAVC Intra 50 / 100 Mbps
XAVC LGOP 25 / 35 / 50 Mbps
DVCPRO 25/50 Mbps / DVCPRO HD 100 Mbps
AVC-Intra 50 / 100 / 200 Mbps
AVC Ultra (LGOP 6/12/25/50 Mbps)
DNxHD (SQ/HQ/HQX/LB)
H.264 1080p 8 - 12 Mbps High Profile
H.264 720p CBR - 6.5 Mbps High Profile
H.264 720p 5 - 7.5 Mbps High Profile
H.264 480p 2.5 - 4 Mbps High Profile
H.264 360p 1 - 1.5 Mbps High Profile
H.264 1080p 3 - 9 Mbps High Profile (Live)
H.264 720p 1.5 - 6 Mbps High Profile (Live)
H.264 480p 0.5 - 2.0 Mbps High Profile (Live)
H.264 360p 0.4 - 1.0 Mbps High Profile (Live)
H.264 240p 0.3 - 0.7 Mbps High Profile (Live)
H.264 1080p CBR 15 Mbps MAIN Profile

### Output Formats

H.264 480p CBR 2.3 Mbps MAIN Profile  
H.264 15-30 Mbps MAIN Profile  
H.264 L10 10 Mbps  
H.264 WebRTC Baseline  
H.265/HEVC LGOP 4:2:2  
H.265/HEVC 10 / 25 / 50 / 100 Mbps LGOP  
NDI HX H.264 - High Profile  
NDI HX H.265 - High Profile  
MPEG-5 EVC Baseline Profile  
MPEG-5 EVC Main Profile  
ProRes 422 (SQ/HQ/LT)  
JPEG 2000 (Full HD)  
Google® VP6 / VP7 / VP8  
Google® VP9 (Full HD)  
Uncompressed UYVY 422 / V210 / RGBA  
AOMedia Video 1 (Full HD)  
IMF (JPEG 2000 @ Full HD)

### Proxy Formats

#### Proxy Formats

XAVC LGOP 25 / 35 Mbps  
AVC Ultra (LGOP 6/12/25 Mbps)  
H.264 @ 500 Kbps Flash  
H.264 @ 486p 1 / 1.5 Mbps Flash  
H.264 360p @ 1.6 Mbps Flash  
H.264 720 480p @ 8 / 10 Mbps Flash  
H.264 720p @ 8 / 15 / 16 / 20 / 24 / 25 Mbps Flash  
H.264 854 480p @ 8 / 10 Mbps Flash  
H.264 960 540p @ 3 Mbps Flash  
H.264 1080p @ 8 / 15 / 16 / 20 / 24 / 25 Mbps Flash  
H.264 SD @ 4 / 8 / 15 / 20 / 25 Mbps  
H.264 480p @ 0.5 - 2 Mbps High Profile (Live)  
H.264 360p @ 0.4 - 1 Mbps High Profile (Live)  
H.264 240p @ 0.3 - 0.7 Mbps High Profile (Live)  
ProRes Proxy 1920x1080  
ProRes Proxy 1280x720  
ProRes Proxy 960x540  
ProRes Proxy SD (16:9 Raster)  
ProRes Proxy SD  
MPEG-1 (layer 2) @ 1.5 Mbps  
Avid MPEG-2 (SIF @ 2Mbps)  
H.264 MOG 1Mbps  
H.264 Interplay Web (SD, 800 Kbps, and 2 Mbps)  
Sony Proxy AV (MPEG-4 Part-2) @1.5 Mbps

### OTT Formats \*Optional

#### OTT Formats

H.264 1080p 8 - 12 Mbps High Profile  
H.264 720p 5 - 7.5 Mbps High Profile  
H.264 480p 2.5 - 4 Mbps High Profile  
H.264 360p 1 - 1.5 Mbps High Profile  
H.264 1080p 3 - 9 Mbps High Profile (Live)  
H.264 720p 1.5 - 6 Mbps High Profile (Live)  
H.264 480p 0.5 - 2.0 Mbps High Profile (Live)  
H.264 360p 0.4 - 1.0 Mbps High Profile (Live)  
H.264 240p 0.3 - 0.7 Mbps High Profile (Live)  
H.265/HEVC 10 Mbps LGOP  
H.265/HEVC 25 / 50 / 100 Mbps LGOP  
H.265/HEVC LGOP 4:2:2

\* Optional output

## Product Integrations

Editing Sytems	MAM / PAM / DAM	Cameras	Consumer Cloud Storages
Adobe Premiere Pro	CatDV MAM	Canon (DSLR5D, DSLR 7D)	Dropbox
AVID Media Composer	CatDV PAM	Canon (DSLR C300, DSLR C100)	Google Drive
AVID Media Central UX	CatDV DAM	ARRI Alexa XT (ARRIRAW)	Microsoft One Drive
AVID Media Central Cloud UX	eMAM Media Asset Management	Panasonic AU-EVA1	Apple I Cloud Drive
Apple Final Cut Pro X	Telestream: Masstech	Panasonic GH5 Cameras	CDN's
Edius: Pro 8, Workgroup 9	AVID Interplay	Panasonic CX350 HEVC	Lumen
BlackMagic: DaVinci Resolve Studio	AVID Media Central UX	Panasonic PTZ Cameras	Fastly
Autodesk: Flame	AVID Media Central Cloud UX	Ikegami Gfpack	Akamai Technologies
Storage	AXLE MAM	JVC AVC HD camera models	Microsoft Azure
AVID ISIS Storage	Editshare Flow	LUMIX DC-S1H	Cloudflare
AVID Nexis Storage	MOG Vizzi	NewTek PTZ3 UHD Camera	Limelight Networks
Avid UnityTM MediaNetwork	Medialoopster MAM	NewTek PTZ3 Camera	Amazon CloudFront
Dynamic Drive Pool SAN Storage	Professional Cloud Storages	RED Digital Cinema	BootstrapCDN
Facilis Terrablock	Adobe Creative Cloud	GOPRO	StackPath
Harmonic MediaGrid	Amazon EC2	Card Readers	KeyCDN
Quantum: Storenext	Amazon S3	Panasonic P2 (AJ PCD 2 / AJ PCD 20/30/35)	Rackspace
Scalelogic: NX2 & ZX NAS Storage	Amazon S3 Glacier	Panasonic P2 (AJ MPD1)	Alibaba Cloud Content Delivery Service
Editshare EFS	Microsoft Azure Storage	Panasonic P2 (AU-XPDI1E / AU-XPDI3EJ)	CacheFly
EMC: Isilon	Microsoft Azure Virtual Machines	Panasonic P2 (AG HPG 20)	Verizon
QNAP	Tencent: Cloud Storage	Sony XDCAM EX (SxS Cards): SBAC-US10/20/30	Social Media *Optional
Studio Network Solutions: EVO	Lucidlink Cloud NAS	Sony XDCAM EX (SxS Cards): SBAC-UT100	Facebook
Oracle Storage	Google Cloud Storage	Sony XDCAM EX (SxS Cards): MRW E-80	Twitch
Netapp	IBM Cloud Object Storage	Sony XDCAM EX (SxS Cards): MRW E-90	X (Twitter)
Transfer Acceleration Protocols	Generic S3	Sony Disc Reader: PDW-U1, PDW-U2	YouTube
File Catalyst Direct	Stream	VTR Decks	Vimeo
IBM: Aspera File Transfer	Newtek NDI	XDCAM HD: Disc (PDW 1500, PDW HD1500)	
Peripheral Devices	Haivision SRT	XDCAM HD: Disc (PDW F70)	
Countour Shuttle Pro V2	Structures	XDCAM Station (XDS1000)	
Elgato Stream Deck	XAVC Structures		

## Server Options

Features			Specs	
System	Platform		Densu 2U	
	Video IO		2x DeckLink miniDuo2	
	Storage Drive		6TB or 12TB SSD**	
	Operating System Drive		480GB	
	Operating System		Windows 10 Enterprise (LTSC)	
Connectivity	Networking	1Gb Ethernet Port	4	
	Video	Display Port	2	
		HDMI	2	
	USB	2.0	4	
		3.0	8	
	HD BNC I/O		8	
	Ref. In		2	
	Live IP Port**		2	
	LTC Input		2	
	Audio Output		2	
	Breakout Connector		2	
	Power Requirements		Dual 300W	
	Breakout Cable	RS422	8	
GPO branch with 4 outputs		2		
GPI branch with 4 inputs		2		
Other	Dimensions & Weight		2RU, 245x484x89mm (D, W, H), ~14Kg	
	Delivery Packaging		580x380x250mm (D, W, H), ~15Kg	
	Temperature	Storage**	-40°C to 65°C (-40°F to 149°F)	
		Continuous Operation	10°C to 32°C (50°F to 89.6°F)	
	What is Included	Power Cable	2x C13 to C14	
		Other	4x rack mount screws	

\*\* Not included by default

## Concurrent Media Operations

With mDECK Densu io, it is possible to run different media operations simultaneously, thus guaranteeing a universe of distinct arrangements to meet the challenging day-to-day activities of media production companies.

Media operations include recording, ingest, transcoding, playback, file preview, live channel switching, and intercom.

mDECK Densu io supports up to 4 media operations per node at the same time. Within this margin, you can combine the operations shown in the table below:

Concurrent Media Operations					
Record	Ingest & Transcode	Playback	File Preview	Live Switch	Intercom
Up to 2 live channels per node	Up to 1 operation	Up to 2 playback files per node	Up to 5 files preview	Up to 1 operation	Up to 1 operation

## Product

Part Number	Product	Description
mddnio	mDECK Densu io	Compact dual-node deck appliance for hybrid workflows of up to 5 combined media operations per node

## Available Options

Choose from the products below to customize the mDECK Densu io according to your business rules.

### Production Tools

Tools for asset management and workflow orchestration.



**mPLAN**  
Setup scheduled events not only from the standard scheduler but through a unique roll out view interface. mPLAN is a tool that maintains a single rollout view of all scheduled events, allowing the management of the ingests process very efficiently. It manages multiple scheduled events across a variety of recording platforms in a multichannel environment using router control cross-points.

Part Number	Product	Description
mpla1c	mPLAN	Scheduler & Router Control of up to 8 channels

**Note:** Adding optional features might affect the number of simultaneous operations.

### Add-ons

Output options to complement your workflows.

Part Number	Product	Description
s2oasa	OTT & Social media	Multiple output resolutions for OTT & Simultaneous social media shares
s2ioiplk	IP live kit	IP media production infrastructure

**Note:** Adding optional features might affect the number of simultaneous operations.

### Plugins

Complement any media production and distribution workflow with turnkey plugins and extensions.



**Social-m**  
Quickly fetch and publish your live or VoD contents to social media.  
This social media plugin for Chrome will let users ingest media without having to access the mDECK GUI, allowing the content to be ready for editing or any other task, in no time. Simply open the plugin, insert the URL and run the workflow to fetch your video, with option to preserve metadata.



**Screen-m**  
Quickly capture and deliver your screen contents to your production environment.  
Easily record your screen in its entirety or choose one of the open windows. You can even enable the capture of a microphone and the mouse cursor to make it easier to explain any presentation.

Part Number	Product	Description
smpi	Social-m plugin	Social media capture & Publishing
scpi	Screen-m plugin	Screen capture & Delivery

**Note:** Adding optional features might affect the number of simultaneous operations.

## Artificial Intelligence

Artificial intelligence engine to boost and facilitate media tasks even more.

Default (already included)	
Black frames detection	Voice activity detection
Video freeze detection	Silence detection
Black margins detection	Loudness detection
Audio clipping detection	Loudness balance
Audio mute detection	Vehicle detection
Audio phase detection	License plate detection
Audio mono detection	Concept tagger
Timecode gap detection	Bouncing boxes
Scene change detection	Update existing interplay entry with new metadata
Transformation	
Frame rate conversion	Crop black margins
Remove audio clicks	AI upscale
Remove audio clipping	Blur license plates

Additional AI Operations	
Part Number	Product
s2aifr	Face Recognition and Age Prediction
s2aiod	Object Detection
s2aicr	Optical Character Recognition
s2aisr	Speech Recognition

**Note:** Adding optional features might affect the number of simultaneous operations.

## Storage

Option for local storage.

Part Number	Description
r2ssd6x1	6TB of SSD storage
r2ssd6x2	12TB of SSD storage

Contact our sales team at [sales@mog-technologies.com](mailto:sales@mog-technologies.com) to find out how to purchase or in case you need more information.

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