

## mLIVE Densu io

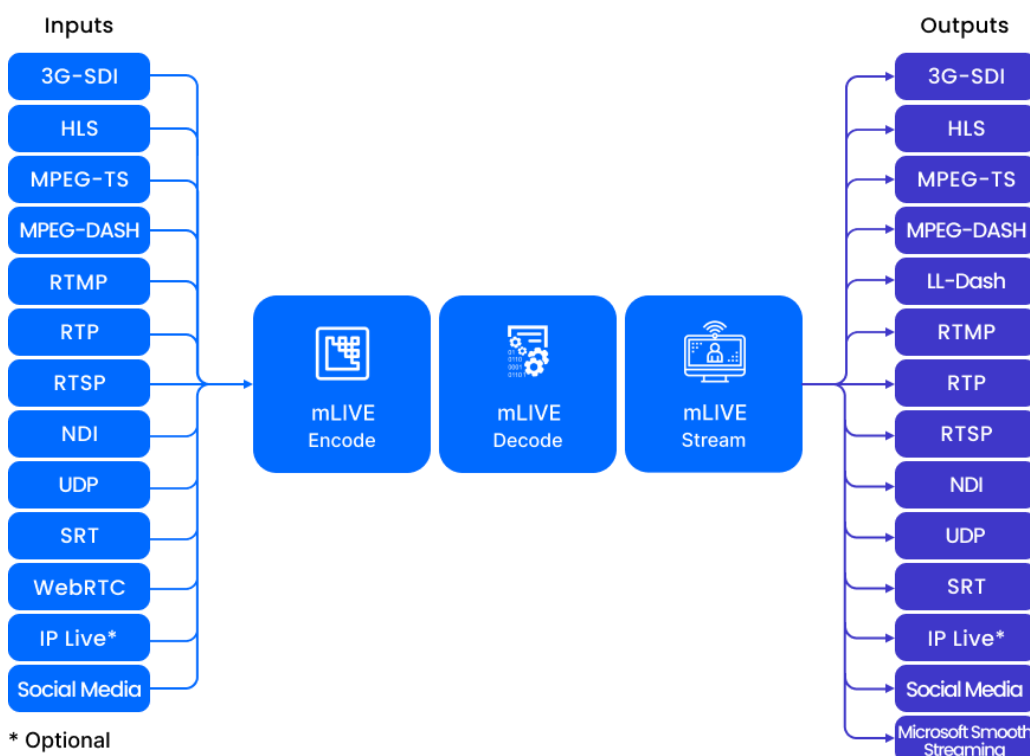


### Overview

mLIVE Densu io is a powerful and flexible compact appliance to manage all your live video streams in an integrated media production ecosystem.

It brings you unparalleled power and proven reliability, no matter the scenario. Broadcast live events, automate 24/7 channels playout, or distribute to OTT and social media effortlessly, no matter the source.

mLIVE Densu io supports simultaneous media operations that can be a combination of live video streams, file previews, live switching, and even intercom between different users.



### Highlights

- **mSWITCH** - Remote live switching and compositing
- **mTALK** - Audio communication between users
- Full featured local and remote user interface (includes quick control through touch screen)
- Encodes and/or decodes contents according to the destination format
- Multiple output resolutions for OTT
- Operation modes: manual and scheduled
- Ideal for multiple feeds of video contribution
- Social media sharing

### Specially Designed For

- Educational/Government
- Live Entertainment/Worship
- Corporate
- Sports
- Film/TV Studio/Scripted
- Post-Production
- Broadcast/Digital News
- OTT & Streaming
- System Integrators/Rentals

## Features

Features
<b>Timecode support</b>
LTC (SMPTE 12M)
VITC (SMPTE RP188)
Time of Day
<b>Multiple LIVE and simultaneous records</b>
Gang Capture operations
Independent workflow selection in Gang Captures
Flexible Gang Capture channel configurations / Choose which channels are present in the gang
Automatic Stream Control - Detect input streams and start recording automatically
Continuous live stream capture
Generate MP4 files as Fragmented MP4 via DCP Packager
Perform "Run after completion" scripts
Remove source assets after Job completion for all plain sources
Live Probing option
Stream with Closed Captions
Edit a Workflow directly from the Player
Input selection made directly from a dropdown list on the player
Option to start timecode recording from 00:00:00:00
Contribution Web Video Player - Aspect marker, Safe Area Marker, and Center marker
Player Overlay - Center Dot and Cross
Support for Active Format Description (AFD)
Medialoopster Integration in Capture operations
Medialoopster Integration in Batch Capture operations
<b>Video Router Protocols</b>
Quartz
Probel SW-P-08
Jupiter ASCII
Blackmagic Videohub Ethernet Protocol
<b>Operation modes</b>
Manual
Scheduled
<b>Clipnaming</b>
Drag and Drop support
"CreationDate" field can refer to a desired Time Zone
<b>Audio support</b>
PCM input and output support
Dolby E-AC-3, Dolby TrueHD, and DTS input support
Dolby-E Input and output support
DTS Coherent Acoustics (DCA)
Integration with Dante Audio Capture *Negotiated separately
PCM 96KHz support
Independent audio encoder for hires and proxy
Individually map your audio by output target
Audio downmixing & upmixing
Ability to mute proxy on the output
<b>Close captions</b>
CEA/EIA - 608
Support DVB-S captions in streams
Stream with Closed Captions
<b>Scheduler (Calendar View)</b>
Schedule a Record operation
Schedule Gang Captures
Schedule Playouts
Schedule Maintenance Tasks (Reboot, Export Logs, Export Full Backup)
Edit individual events
Export activity events
Allow editing of settings for each occurrence/repetition
Set the number of an event's repetitions
Check for collisions between events and repetitions
Placeholder when editing an occurrence name

## Features

Use pre-set naming templates

Send the assets to independent targets and multiple outputs

Establish a maximum capture duration

Configurable number of iterations when using maximum capture duration

Define events to be triggered on any day, on working days only or only on weekends

Set the Calendar Notion option to automatically adjust to daylight time

Edit the Start Time field after the first recording

Visualize scheduled events in a List View

### **Scheduler (Record Grid) - Unifies in a single rollout view all ingest activities \*Optional**

Schedule a Record operation

Schedule Gang Captures

Create new scheduled events directly from the timeline

Perform crash record captures directly from the grid view

Metadata Insertion availability

Use of pre-set naming templates

Edit scheduler individual events

Edit an event after it has started

Edit settings for each occurrence/repetition

Trigger Capture events (Any day, On Working Days or only on Weekends)

Adjust events by dragging them on the timeline

Check collision between events with repetitions

On channel settings assign an Input a workflow a router source and a duration and start recording on the fly

Change router source cross point from record scheduler during a live event

Change router source on rollout

Copy an event's name after it is complete

Perform captures from a MOG S1000

Selectable MOG S1000 capture profiles

Perform captures from an Airspeed 5000

Perform captures from a Softron Movie Recorder

Pre-roll and post-roll options for scheduled events

Configure the number of events repetitions

Define events to be triggered on any day, working days or weekends only

Set the Calendar Notion option to automatically adjust to daylight time

Expandable and collapsible views

Jump to date to seek events by day or in a 7 days period

Choose between AVID or MOG color schemes

Confirm a "Stop" action

### **Signal error detection and related recovery actions**

Detect possible signal errors

Detect possible drop frames

Configurable capture resume methodology

Automatic streaming (headless) - Restart capture after stopping/crashing or rebooting

### **Live to Live**

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)

Variable Frame Rate Input

Support IGMPv3 multicast

Add possibility to change the transport stream segments duration

### **MPEG-TS Support**

Capture of MPEG-Transport Streams

Support of MPEG-TS program IDs

### **NDI**

Native NDI output

NDI audio and video synchronized mechanism

NDI discovery mechanism

Capture multiple NDI sources

Time of day and embedded timecode options in NDI input

### **HLS**

Configurable HLS segment duration

Configurable HLS Playlist segment count

## Features

### RTMP

- 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
- HEVC, VP9 and AV1 codec in enhanced RTMP/FLV

### SRT

- 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

### WebRTC

- VP8 Support
- VP9 Support

### Burn-In Video options

- Graphic burn-in while recording

### Input/output social media

- 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

### mTALK

- Communicate via audio between two or more users
- QR code implementation
- WebApp (requires Android smartphone)
- Toggle Mode

### Analytics

- Integrate with Google Analytics and Tag Manager
- Enable or disable Analytics
- Keep track of menu events
- Receive video metrics
- Keep track of Job Control widget's events
- Keep track of Asset Explorer widget's events

### Improved security

- 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
- Opt to "Keep me signed in"
- Send a User Verification through email
- Configurable password visibility in logs

### Orchestration

- Orchestration View for output workflows
- Services Menu that eases Group and Cluster Configuration while displaying running services per node

### Hardware acceleration \*If Hardware is installed or available

- Intel QSV

### General Purpose IN/OUT

- GPI triggers supported

## Features

GPO triggers supported

### Additional Highlights

- REST API - allows interaction with RESTful web services
- Notify user upon connection lost with the Server
- Manage via web interface or REST APIs for integration with automation system
- Configurable quality and target latency of the preview stream
- Logging - Add user information on flow actions
- Logging - Structured Logging
- Receive SMTP notifications via e-mail
- Support an external Database
- Microsoft Edge / Firefox / Safari and Chrome Support

### Unified Interface User Experience

- Configurable web interface access port
- Embeddable Dashboards/Widgets
- 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 your own custom dashboard templates
- Import and Export Users' Dashboards
- Associate a single dashboard to multiple users
- LDAP user authentication
- User profile management
- Users permissions control
- Widget based modular interface
- Lock/Unlock widgets permission
- Choose between multiple interface themes (Midnight, Carbon, Dark or 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
- Monitor Grouped Servers' activity in a Group Activity Widget
- Remove the "quick edit" button from the Job Control Widget

### Multiviewer

- Define the quality and target latency of the preview stream
- Ability to control to up to 4 players in a single dashboard

### Maintenance

#### Scheduler

- Reboot host or group
- Export database (backup) as a scheduled task
- Export logs as a scheduled task

#### Activity

- Export last activity
- Export all activity
- Export activity from a date range
- Clear all activity

#### Logs

- Export logs

#### Backup

- Export full backup - A full backup will create an archive of all the files and configurations
- Import full backup

#### Dashboards

- Export dashboards from one user or all users
- Import dashboards

#### Data

- Clean data usage
- Clean assets, flows and notifications
- Perform a Factory Data Reset
- Erase all data and reset the system
- Force clear cache

# Technical Specifications

## Supported Live Inputs

Inputs	
Live	<b>SD/HD/FHD-SDI</b>
	SD-SDI (SMPTE 259M)
	3G-SDI (SMPTE 292M, SMPTE296M, SMPTE372M, SMPTE425M)
	Support for 8, 10 and 12 bits
	<b>Streams</b>
	Video Content Hyperlinks
	HLS
	MPEG-TS
	MPEG-DASH
	RTMP (with support for HEVC / VP9 / AV1)
	RTP
	RTSP
	NewTek NDI
	UDP
	Haivision SRT
	WebRTC
	Zixi
	<b>Audio</b>
	Dante Audio *Negotiated separately
	<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	
ST2110 - NMOS IS-04 and IS-05 support	

## Supported Live Outputs

Outputs	
Live	<b>SD/HD/FHD-SDI</b>
	SD-SDI (SMPTE 259M)
	3G-SDI (SMPTE 292M, SMPTE296M, SMPTE372M, SMPTE425M)
	Support for 8, 10 and 12 bits
	<b>Streams</b>
	HLS
	HTTPS Push
	Microsoft Smooth Streaming
	MPEG-DASH
	Low Latency Dash - LL-Dash
	NewTek NDI
	MPEG-TS
	RTMP (with support for HEVC / VP9 / AV1)
	RTP
	RTSP
	UDP
	Haivision SRT
	WebRTC
	<b>Vizzi</b>
	Live Output

### Outputs

Live	<b>Social Media</b>
	Facebook
	Twitch
	X (Twitter)
	YouTube
	Vimeo
	<b>Multiple and Adaptive bitrates for the OTT</b>
	<b>IP Live *Optional</b>
	ST2022-7
	ST2110-10, ST2110-20, ST2110-21, ST2110-30, ST2110-31
ST2110-40	

## Formats

### Output Formats

#### Output Video Formats

H.264 1080i 35 Mbps High Profile
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
H.264 480p CBR 2.3 Mbps MAIN Profile
H.264 360p CBR MAIN Profile
H.264 432p CBR MAIN Profile
H.264 576p CBR MAIN Profile
H.264 720p CBR MAIN Profile
H.264 1080p CBR MAIN Profile
H.264 576p CBR - 3 Mbps MAIN Profile
H.264 720p CBR - 4 Mbps MAIN Profile
H.264 1080p CBR - 5Mbps MAIN Profile
H.264 15-30 Mbps MAIN Profile
H.264 WebRTC Baseline
H.265/HEVC 10 Mbps LGOP
H.265/HEVC 25 Mbps LGOP
H.265/HEVC 50 Mbps LGOP
H.265/HEVC 100 Mbps LGOP
NDI HX H.264 - High Profile
NDI HX H.265 - High Profile
AOMedia Video 1 (Full HD)

### OTT Formats

#### Output OTT Formats

H.264 1080i 35 Mbps High Profile
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 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 360p CBR MAIN Profile
H.264 432p CBR MAIN Profile
H.264 576p CBR MAIN Profile

### Output OTT Formats

H.264 720p CBR MAIN Profile
H.264 1080p CBR MAIN Profile
H.264 576p CBR - 3 Mbps MAIN Profile
H.264 720p CBR - 4 Mbps MAIN Profile
H.264 1080p CBR - 5Mbps MAIN Profile
H.265/HEVC 10 Mbps LGOP
H.265/HEVC 25 Mbps LGOP
H.265/HEVC 50 Mbps LGOP
H.265/HEVC 100 Mbps LGOP
H.265/HEVC LGOP 4:2:2

### Product Integrations

Stream	CDN's
Newtek NDI	Lumen
Haivision SRT	Fastly
Zixi	Akamai Technologies
Social Media	Microsoft Azure
Facebook	Cloudflare
Twitch	Limelight Networks
X (Twitter)	Amazon CloudFront
YouTube	BootstrapCDN
Vimeo	StackPath
Hypervisors	KeyCDN
Microsoft HyperV	Rackspace
VMWare ESX	Alibaba Cloud Content Delivery Service
Audio	CacheFly
Dante *Negotiated separately	Verizon

### Server Options

Features		Specs	
System	<b>Platform</b>	Densu 1U	
	<b>Video IO</b>	2x DeckLink miniDuo2	
	<b>Operating System Drive</b>	480GB	
	<b>Operating System</b>	Windows 10 Enterprise (LTSC)	
Connectivity	Networking	1Gb Ethernet Port	2
		2.5Gb Ethernet Port	2
	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	Single 300W		
Breakout Cable	RS422	8	
	GPO branch with 4 outputs	2	
	GPI branch with 4 inputs	2	
Other	<b>Dimensions &amp; Weight</b>	1RU, 245x484x42.5mm (D, W, H), ~7Kg	
	<b>Delivery Packaging</b>	580x380x250mm (D, W, H), ~8Kg	
	<b>Temperature</b>	<b>Continuous Operation</b> 10°C to 32°C (50°F to 89.6°F)	
	<b>What is Included</b>	<b>Power Cable</b>	1x C13 to C14
<b>Other</b>		4x rack mount screws	

\*\* Not included by default



## Concurrent Media Operations

With mLIVE 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 live video streams, file preview, live channel switching, and intercom.

mLIVE Densu io supports up to 8 media operations at the same time. Within this margin, you can combine the operations shown in the table below:

Concurrent Media Operations			
Live Video Streams	File Preview	Live Switch	Intercom
Up to 4 live channels	Up to 10 files preview	Up to 1 operation	Up to 1 operation

## Product

Part Number	Product	Description
mldnio	mLIVE Densu io	Compact encode/decode appliance of up to 8 combined media operations

## Available Options

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

### Production Tools

Tool for 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
mpla8c	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
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.



#### 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
scpi	Screen-m plugin	Screen capture & Delivery

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

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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