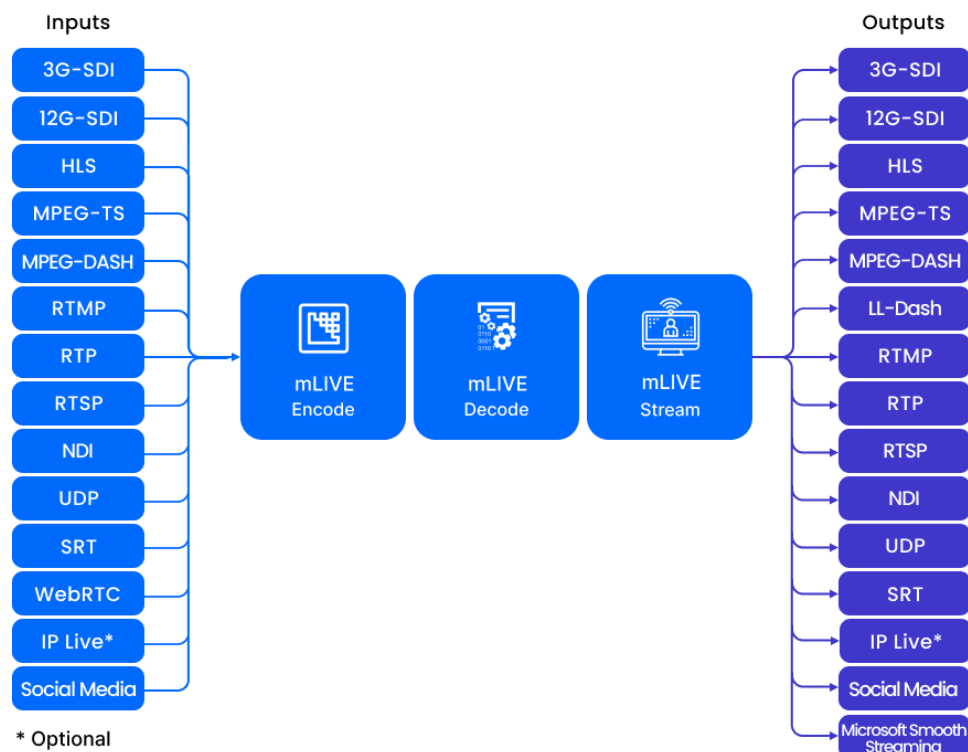# mLIVE Grand io

Overview

mLIVE Grand io is a powerful and flexible encode and decode 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 Grand io supports simultaneous media operations that can be a combination of live video streams, file previews, live switching, and even intercom between different users.

Inputs

3G-SDI
12G-SDI
HLS
MPEG-TS
MPEG-DASH
RTMP
RTP
RTSP
NDI
UDP
SRT
WebRTC
IP Live*
Social Media

* Optional

mLIVE Encode → **mLIVE Decode** → **mLIVE Stream**

Outputs

3G-SDI
12G-SDI
HLS
MPEG-TS
MPEG-DASH
LL-Dash
RTMP
RTP
RTSP
NDI
UDP
SRT
IP Live*
Social Media
Microsoft Smooth Streaming

Highlights

- **mSWITCH** - Remote live switching and composing
- **mTALK** - Audio communication between users
- Encodes and/or decodes contents according to the destination format
- Full featured local and remote user interface (includes quick control through touch screen)

- Operation modes: manual and scheduled
- Multiple output resolutions for OTT
- 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
Timecode support
LTC (SMPTE 12M)
VITC (SMPTE RP188)
Time of Day
Multiple LIVE and simultaneous records
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
Operation modes
Manual
Scheduled
Clipnaming
Drag and Drop support
"CreationDate" field can refer to a desired Time Zone
Audio support
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
Close captions
CEA/EIA - 608
Support DVB-S captions in streams
Stream with Closed Captions
Scheduler (Calendar View)
Schedule a Record operation
Edit individual 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
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
Export activity events

Features

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

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

h.264 Support

VP8 Support

VP9 Support

Burn-In Video options

Graphic burn-in while recording

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

Features
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 Cluser Configurarion while displaying running servicers per node

Hardware acceleration *If Hardware is installed or available

Intel QSV

General Purpose IN/OUT

GPI triggers supported

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

Features
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	
	SD/HD/FHD-SDI
	SD-SDI (SMPTE 259M)
	3G-SDI (SMPTE 292M, SMPTE296M, SMPTE372M, SMPTE425M)
	12G-SDI (SMPTE ST-2081/SMPTE ST-2082, SMPTE/2108-1)
	12G-SDI (Quad-Link 3G-SDI)
	Support for 8, 10 and 12 bits
	Streams
	Video Content Hyperlinks
	HLS
	MPEG-TS
	MPEG-DASH
	RTMP (with support for HEVC / VP9 / AV1)
	RTP
	RTSP
	NewTek NDI
Live	UDP
	Haivision SRT
	WebRTC
	Zixi
	Audio
	Dante Audio *Negotiated separately
	Social Media
	Facebook
	Twitch
	X (Twitter)
	YouTube
	IP Live *Optional
	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	**SD/HD/FHD-SDI**
	SD-SDI (SMPTE 259M)
	3G-SDI (SMPTE 292M, SMPTE296M, SMPTE372M, SMPTE425M)
	12G-SDI UHD-SDI (SMPTE ST-2081/SMPTE ST-2082)
	Support for 8, 10 and 12 bits
	Streams
	HLS
	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
	Vizzi
	Live Output
	Social Media
	Facebook
	Twitch
	X (Twitter)
	YouTube
	Vimeo
	Multiple and Adaptive bitrates for the OTT
	IP Live *Optional
	ST2022-7
	ST2110-10, ST2110-20, ST2110-21, ST2110-30, ST2110-31
	ST2110-40

Formats

Output Formats

Output Video Formats
H.264 2160p 35 - 68 Mbps High Profile
H.264 1440p 16 - 24 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 2160p 13 - 51 Mbps High Profile (Live)
H.264 1440p 6 - 18 Mbps High Profile (Live)
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

Output Video Formats
H.264 15-30 Mbps MAIN Profile
H.264 L10 10 Mbps
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
H.265/HEVC 4K 25 Mbps LGOP
H.265/HEVC 4K 50 Mbps LGOP
NDI HX H.264 - High Profile
NDI HX H.265 - High Profile
AOMedia Video 1 (Full HD)
AOMedia Video 1 (4K)

OTT Formats

Output OTT Formats
H.264 2160p 35 - 68 Mbps High Profile
H.264 1440p 16 - 24 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 2160p 13 - 51 Mbps High Profile (Live)
H.264 1440p 6 - 18 Mbps High Profile (Live)
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 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.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	Platform	Dell R750	
	GPU	2x Nvidia A2	
	Video IO	4x DeckLink 8K Pro	
	Operating System Drive	480GB RAID 1	
	Operating System	Windows 10 Enterprise (LTSC)	
Connectivity	Networking	1Gb Ethernet Port	2
		10Gb Ethernet Port SFP+	2
	Video	VGA Out	1
	USB	2.0	1
		3.0	1
	BNC 12G In/Out	16	
	Ref. In	4	
	Power Requirements	Dual 1100W	
Extended Connectivity	Peripheral Module**	LTC Input	1
		Audio Out	1
		Breakout Connector	1
	Breakout Cable**	RS422	4
		GPO branch with 4 outputs	1
		GPI branch with 4 inputs	1
Other	Dimensions & Weight	2RU, 772x482x86.8mm (D, W, H), ~40 kg	
	Delivery Packaging	970x660x310mm (D, W, H), ~45Kg	
	Temperature	Continuous Operation	10°C to 35°C (50°F to 95°F)
	What is Included	Power Cable	2x C13 to C14
		Other	Static rails for 2/4-post racks

** Not included by default

Concurrent Media Operations

With mLIVE Grand 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 Grand io supports up to 18 media operations at the same time. Within this margin, you can combine the operations shown in the table below:

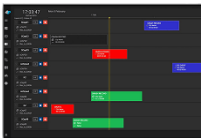| Concurrent Media Operations			
Live Video Streams	**File Preview**	**Live Switch**	**Intercom**
Up to 16 live channels	Up to 10 files preview	Up to 1 operation	Up to 1 operation

Product

Part Number	Product	Description
mlgrio	mLIVE Grand io	Encode/decode appliance of up to 18 combined media operations

Available Options

Choose from the products below to customize the mLIVE Grand 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
mpla1c	mPLAN	Scheduler & Router Control per licensed channel

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.

Hardware

Customize your solution to your day-to-day media needs.

Part Number	Product	Description
pcbx	Peripheral module	Optional MOG module to expand I/O available with 1x LTC, 1x audio output, 1x GPI, 1x GPO and 4x RS422
-	IP live card*	Add up to 4 UHD IP channels into your media production infrastructure

* Each Live IP card effectively replaces 8 SDI input/output channels. This offers the flexibility to opt for a hybrid appliance supporting both SDI and IP or, by integrating two Live IP cards, all current SDI inputs/outputs will be seamlessly transformed into IP-based connections.

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

Contact our sales team at sales@mog-technologies.com to find out how to purchase or in case you need more information.