Grass Valley®
WE LOVE LIVE

DATASHEET

GV I/O
Live Ingest & Playout Using COTS Hardware with GV STRATUS

GV I/O is a high-performance, cost-effective, COTS (commercial off the shelf) ingest and playout platform tailored for fast-turn production workflows on a 1 RU server, with SMPTE ST 2110 support and up to four SD or HD channels or three UHD channels.

Simplicity — GV I/O™ from Grass Valley® is designed with a streamlined workflow and seamless integration in mind. Built on a COTS ingest and playout platform with an evolving feature set, GV I/O offers integration with IT-based storage via Grass Valley's AMS range of storage and can play back and record content over traditional SDI, SMPTE ST 2110 and web streams, all on COTS hardware.

Flexibility — Built for the future with limitless flexibility, GV I/O offers the agility to power your broadcast workflow. With flexibility through licensing, while offering industry leading codec versatility, GV I/O answers the call for today's workflows, and will work with GV STRATUS® or under third-party automation control using AMP or VDCP.

Scalability — GV I/O can scale to meet the workflow demands of newsroom productions regardless of the scope or complexity.
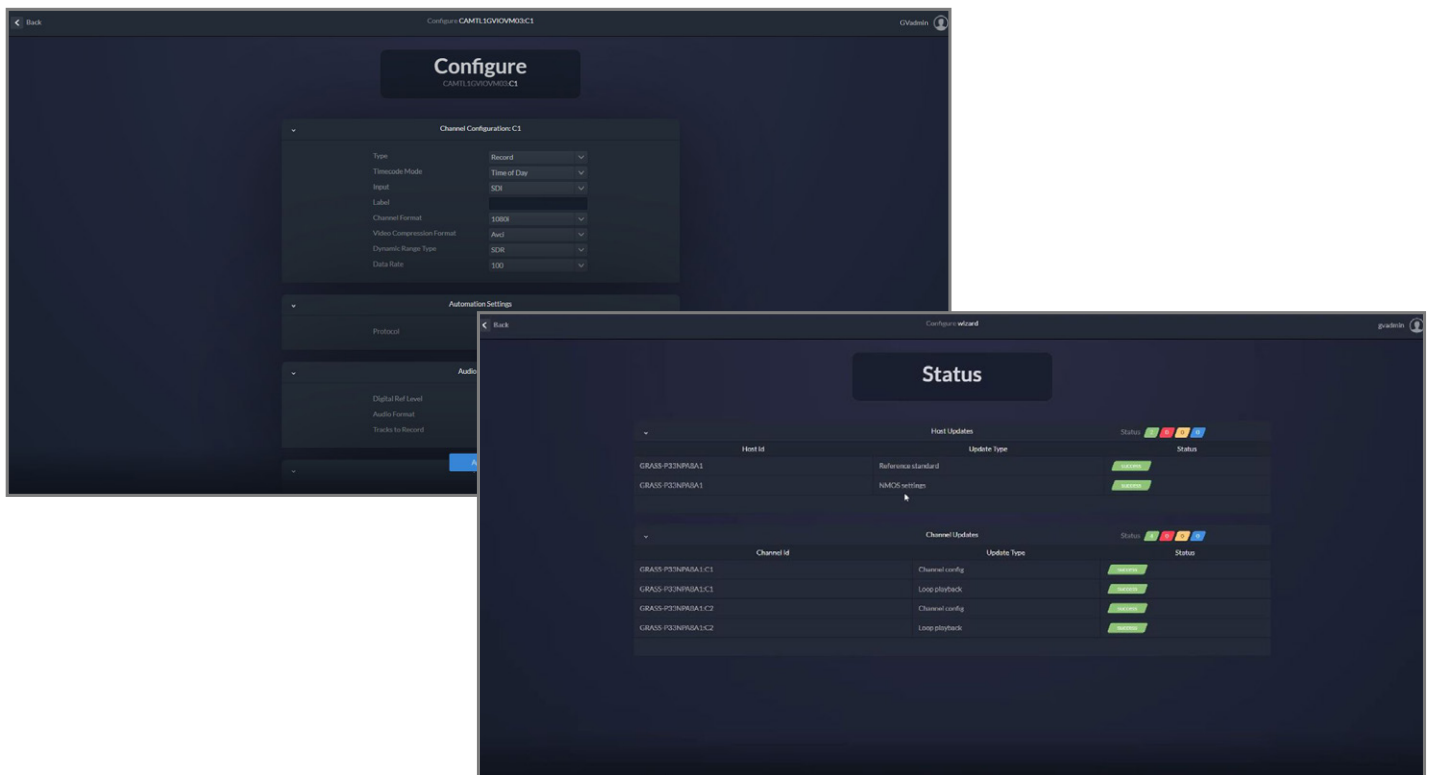
Reliable and Cost-efficient — With redundant power supplies, hot-swappable drives, flash-based storage and RAID-5, GV I/O is designed for on-demand reliability. CPU utilization is roughly 50% of other servers in the market, giving you valuable cost-efficiency in an easy to deploy solution.

Key Features

- Highest density UHD COTS platform in a 1 RU footprint:
  - SMPTE ST 2110 single raster UHD
  - NMOS support
  - AVC Class 300 support
- Access media immediately:
  - Fast turnaround editing
  - Full high-resolution quality and proxy workflow availability
  - Deliver media while recording to break stories faster

- Web-based management configuration tool:
  - Configure multiple systems from a single UI
  - Codec selection
  - Select proxy quality
- **Four-channel configurations:**
- SD:
  - DV and D10 (IMX)
  - DV, DVCAM, DV25, DV50
- HD: DCAM, XDCAM HD, XDCAM EX, XDCAM 422, DVCPRO HD, AVC-Intra, DNxHD
- UHD:
  - XAVC-I Class 300, UHD, 2160p59.94 and 2160p50
  - Channels: 2 in and 1 out

- Network resiliency through low-bandwidth
- Import/export all formats as MXF OP1a, SMPTE ST 360 (GXF) or QuickTime
- Preservation of ANC data
- Full multichannel audio support — 16 audio tracks per video channel
  - 64-channel support in SMPTE ST 2110 as 32 pairs

Functionality	K2 Summit 3G	GV I/O
Supported on COTS hardware	✘	✔
Codecs offered as standard option	✘	✔
Software deployable VM*	✘	✔
Up/down/crossconversion	✔	✔
32 channels of audio	✔	✔
Real-time proxy generation	✔	✔
Direct read/write to/from SAN	✔	✔
Growing file support	✔	✔
3G 1080p	✔	✔
SMPTE ST 2110 UHD single raster support	✘	✔
IP with SMPTE ST 2110	✘	✔
Recording of web streams	✘	✔
Supports VDCP control	✔	✔
Supports AMP control	✔	✔

* VM OVA (GVIO-SW-VM) – The GVIO-SW-VM software option is a packaged VM OVA that supports SD, 720p and 1080i with currently supported codecs as a 2 in/1 out configuration via SMPTE ST 2110 only. It has been validated on Cisco UCS C240 hardware. SDI, UHD and 1080p are not supported at this time.

Specifications

Video I/Os

4 SD/HD/3G-SDI channels record channels DIN 1.0/2.3 connectors

SD-SDI: SMPTE ST 259, ITU R601, 525/625 line, 10-bit

HD-SDI: SMPTE ST 292, 10-bit

3G-SDI:

SMPTE ST 424, 10-bit

SMPTE ST 2110-20 Uncompressed Video over IP

SMPTE 2110-30 PCM Audio over IP

SMPTE ST 2110-40 Ancillary Data over IP

Formats

(SD) 525i59.94

(SD) 625i50

(HD) 720p50/59.94

(HD) 1080i50/59.94

(3G Level A) 1080p50/59.94

(UHD) 2160p59.94 and 2160p50

Compression Types

SD:

DVCAM, DVCPRO25, DVCPRO50

D10 (IMX) 30/40/50 Mb/s

HD:

XDCAM HD (18, 25, 35 Mb/s)

XDCAM HD 4:2:2 (50 Mb/s)

XDCAM EX

DVCPRO HD

AVC-Intra 50/100

AVC-Intra Class 100 1080p50/60 Level A (optional)

DNxHD 115, 120, 145, 175, 185, 220 Mb/s

UHD:

XAVC-I Class 300

Audio

Up to 64 tracks (32 pairs) SMPTE ST 2110

Up to 16 tracks per channel

Input: 48 kHz, 16- or 24-bit digital audio=PCM

Reference Genlock

Blackburst analog and tri-level sync

Single DIN 1.0/2.3 connector

Media Exchange

MXF OP1a and GXF (SMPTE ST 360)

Power Requirements

Dual 750W power supplies

Note: UHD storage is not validated for existing GV AMS Elite (K2 SAN) storage.

Ordering

Base Servers

GVIO-HW-SV-01-HD

GV I/O Turnkey server for HD workflows. Includes Nvidia A4000 GPU card for proxy generation. Supports up to 4 channels. Requires either EC9735 for SDI workflows or EC9733 for SMPTE ST 2110 workflows.

GVIO-HW-SV-02-UHD

GV I/O Turnkey server for UHD workflows. Includes Matrox M264 S3 for proxy generation - supports 2 channels in and 1 channel out. Requires EC9733 Mellanox card and SFP-25G transceivers.

VM OVA

GVIO-SW-VM

GV I/O Software Only. Deployable VM OVA. Requires VM Ware on host. Validated only on Cisco UCS C240 hardware. Supports SMPTE ST 2110 only with a configuration of 2 in/1 out. UHD and 1080p not supported. Up to a maximum of x3 GVIO-SW-IP-CH licenses need to be ordered. A Rivermax VM license is needed, if not already available, then GVIO-SW-OPT-RMAX is required

GVIO-SW-OPT-RMAX

Rivermax VM software license including a year of Silver support

Options

EC9735

SDI expansion card — Deltacast video card (PCI-express). Provides 8 SDI ports independently configurable as input or output.

EC9733

IP expansion card — ConnectX-6 NIC — Dual 10G/25G NVIDIA/Mellanox IP interface card with SFP+ interfaces. Requires SFP-10G or SFP-25G (Must use 25G SFP for UHD). Includes Rivermax license and silver 1 year support.

GVIO-HW-M264-FK

Matrox M.264 3 codec card upgrade for UHD support. Replaces NVIDIA P2000 card

SFP-10G

Two (2) 10 GbE SFP modules required for EC9733 card

SFP-25G

Two (2) 25 GbE SFP modules required for EC9733 card

SSD-1920

Internal 1.92 TB SSD drive

SSD-3840

Internal 3.84 TB SSD drive

GVIO-SW-ISCSI

Connection required to add GV I/O to an older K2 SAN using Qlogic TOE card. SNFS 6 systems only. K2 Summit 10.1.2 or later software

GVIO-SW-SN-LAN

SNFS connection required to add GV I/O to a new K2 SAN (no TOE card). K2 Summit 10.1.2 or later software. Server 2016/SNFS 6 only

GVIO-SW-IP-CH

GV I/O per channel IP license – for HD only (maximum 4 per server)

GVIO-SW-UHD-CH

GV I/O per channel UHD license (maximum 3 per server, maximum 2 in)

GVIO-SW-SDI-CH

GV I/O per channel SDI license (maximum 4 per server)

GVIO-SW-1080P-CH

GV I/O per channel 1080p license (maximum 2 per server). GVIO-SDI-CH or GVIO-IP-CH are a prerequisite

Note: When using 1080p channels, a maximum of 2 channels is recommended.

GVIO-SW-WEB-CH

GV I/O per channel web license (ingest only, maximum 4 per server)

GVIO-SW-HD

GV I/O software. Required for GVIO-HW-SV-01-HD

GVIO-SW-UHD

GV I/O software. Required for GVIO-HW-SV-02-UHD

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