

ALTAIR-160

12G-SDI Router

Grass Valley's hybrid router technology gives broadcasters the flexibility to work the way they want to work today, yet future-proof their operations for tomorrow.



Media companies face difficult trade-offs as they scale to support UHD productions. On one hand, they can transition to an IP-based infrastructure. But the challenges with IP systems are that UHD is cost-prohibitive due to the massive amount of bandwidth required and that IP-based systems are more complex and require additional training and maintenance. On the other hand, there are limited options for SDI routers that natively support 12G (UHD), and the options that are available are expensive and overly complex as they typically try to combine SDI and IP workflows. This leads to an unnecessary burden for users who want a simple and cost-effective solution for UHD infrastructure.

Altair is intended to solve this need by offering a simple, reliable 12G-SDI router/multiviewer solution at an extremely cost-effective price point.

Routing

- Video and audio routing in a single chassis
- Route 12G signals alongside SD, HD, 3G, ASI and audio, in any combination
- Route audio between embedded and MADi sources and destinations – no limitations

Control

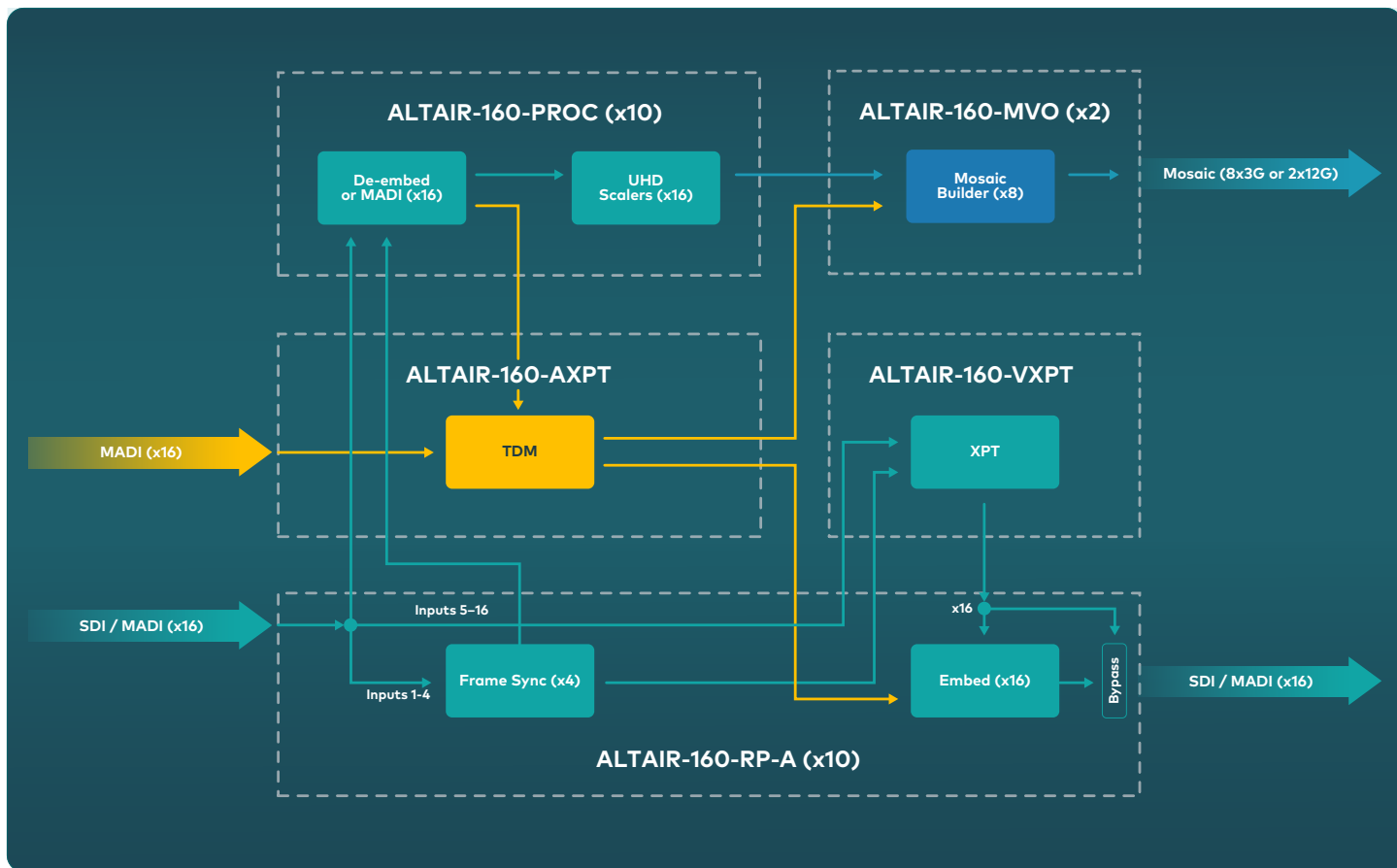
- Direct connect intelligent control panels or fully orchestrated via GV Orbit®
- SWP-08 and RollCall protocols for third-party Integration

Processing

- Frame synchronization with delay
- De-embed, track swap, gain, delay, embed

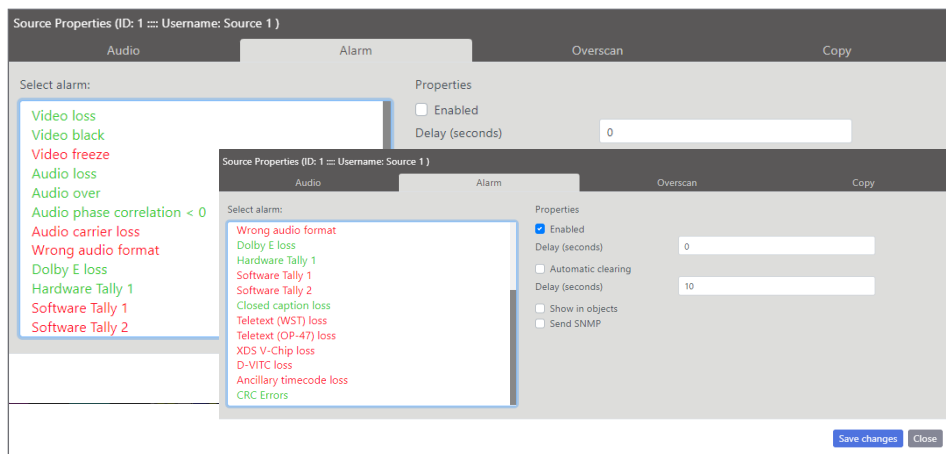
Multiviewers

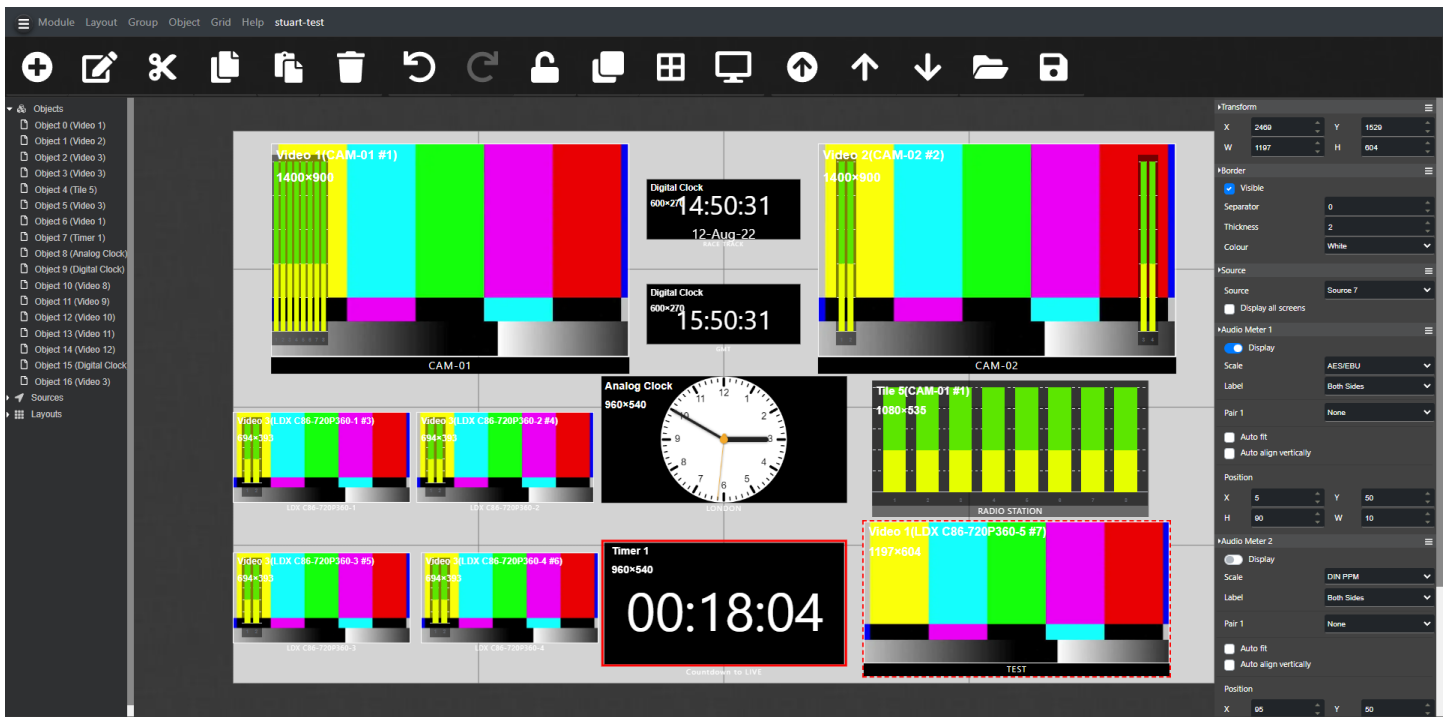
- Advanced alarms and indicators for video, audio and metadata
- Custom layouts with configurable indicators
- Video alarms can be generated from Video Loss or Video Frozen with definable zone-based monitoring inside the tile
- Luminance alarms can be configured for over- or under-range values or black level
- Audio alarms include carrier loss, silence, over-range, phase error and mono
- Metadata alarms including CC and subtitling can be configured on every input
- Indicators can be configured with a variety of colors and flashing borders with indicators based on alarm severity and status



Key Features

- **Routing:**
 - Up to 160x160 12G-SDI I/O
 - Audio routing via de/embedding and MADI
- **Processing:**
 - Frame synchronization
 - Audio and video delay
- **Multiviewing:**
 - Up to 16x multiviewers
 - Extensive probing and alarming
 - Advanced layout customization
- **Control:**
 - Simple web UI and front panel control
 - Direct connect hardware control panels
- Power supplies with IEC inlets are hot-swappable and power sharing to reduce wear. Intelligent power supply modules are continuously logged for status, temperature and efficiency
- Temperature-controlled fans reduce noise and increase lifespan
- Optimized airflow allows the use of quiet, low-speed fans – ideal for OB trucks/vans
- Remote control over Ethernet via an integrated HTML5 browser
- Local control and source status via color LCD touchscreen





Layout Workspace

The integrated web browser uses ubiquitous HTML5 for maximum interoperability. Tiles are created and customized in the layout workspace. Navigation is simple and intuitive using the Object selection filter on the left panel. The main parameters for each Object can be quickly adjusted on the right-hand panel with changes reflected immediately on the layout before committing to the multiviewer. There is no restriction on the size and location of any of the objects which can be of type: video, audio, text, clock, logo or timer up to a maximum of 128 tiles. The multiviewer includes a number of factory layouts. Customized layouts can be stored and recalled as required. Up to 16 audio channels can be configured for each source. Dolby E Metadata can be configured with up to eight channels per source pair. Clock/date

display data can be derived from the system clock, NTP synchronization, LTC or VITC from a chosen SDI input. D-VITC and ATC decoding and display is supported. Hardware and software tallies for each source. Up to two lines of UMD text can be left, center or right justified and may be placed anywhere in the tile. UNICODE is used for storing UMDs. Any TrueType font can be installed to allow any set of characters to be displayed.

The Smarter Path to UHD Workflows

The Altair 12G SDI range empowers production teams to deliver UHD content with the efficiency and simplicity of traditional SDI. By integrating routing, multiviewing and processing into one modular platform, Grass Valley provides a future-ready solution for any facility looking to modernize without overhauling existing infrastructure.

Specifications

Frame Features

Dimensions:

- 6 RU
- 440x264x490 mm (17.3x10.4x19.3 in.) (WxHxD)
- 483x264x490 mm (19.0x10.4x19.3 in.) (WxHxD) with rack mount brackets

Weight (two PSUs): 26 kg (55 lbs.)

Cooling fans: 7 fans each 80x80x20 mm nominal 6-12V operating range

- 60 CFM 44.7 dBA 0.31A 4.1W

AC/DC power supplies: Unit is supplied with two (450W each) hot-swappable power supplies with current sharing and intelligent monitoring

Redundant PSUs: Option for a third and fourth additional redundant hot-swappable power supply

HID color touchscreen: 6.7" 1920x1080 RGB TFT LCD in landscape orientation with touch panel used to display status information and for user control

Modular architecture: Hot-swappable modular video processing cards

Remote control: Linux OS with Integrated HTML5 browser

Protocols supported:

- Grass Valley SW-P-02, SW-P-08, RollCall
- Open Protocol/TSL Protocol v3.1 and v5.0

Firmware updates: Field upgradeable via IP with on screen progress meter

Fault monitoring: CSV log files accessible via LAN and browser

Layouts: Burnt-in layouts, edit and save as new layouts, recall and upload/download

Signals

Inputs 3G-SDI: Maximum input resolution FHD50/59/60

Inputs 12G-SDI: Maximum input resolution UHD50/59/60

SDI Outputs:

- In 4K UHD mode maximum resolution is UHD50/59/60 4:2:2
- In 2K FHD mode maximum resolution is FHD50/59/60 4:2:2

High frame rate input: Up to 6x frame rate with 6 streams/camera

Multiple source scaling: Sources can be routed to any output with arbitrary scaling and location with the requirement that each source is assigned to a dedicated scaler. Up to 16 duplicate PIPs (per scaler) may be displayed on any head output. Scaler assignments are tracked within the layout configurations in the browser

High Dynamic Range: BT2100 up-mapping/down-mapping

Maximum pips: A maximum of 512 unique tiles can be configured per output (144 of which can be video sources)

GPIO:

- High-density 44-way D-type
- Assignable 32x GPIO inputs, 8x GPIO outputs

Ethernet:

- Primary MVC3 RJ45 LAN: 100Base-T
- Secondary MVC3 RJ45 LAN: 100Base-T

Serial Comms: RS-422 and RS-485 – 1x RJ45

Audio

Audio meters (video pips): Each video pip can have its own audio meters up to a maximum of 144 fully configurable video pips with left/right or split meters

Audio meters (audio pips): Audio pips can be configured up to a maximum of 512 (including video pips) with audio sources derived from the video inputs

Embedded audio on outputs: Multiviewer head outputs can be individually configured to include up to four pairs of embedded audio from any of the inputs

Reference

Genlock reference: BB/Tri-level sync nominal 1 Vp-p 75Ω HD BNC

Time reference: LTC input or NTP (network protocol) Nominal 1 Vp-p

Source Data

Subtitles: WST on SD-SDI or OP-47 on HD-SDI

Aspect ratio: Automatic adjustment using AFD decoding

Timecode: D-VITC and Ancillary TC SD/HD-SDI

User logo: PNG format with storage capacity up to 50 MB

Idents: Idents, text boxes and any TrueType fonts

Alarms

Alarms: Video, audio, and metadata (CC, WST, OP-47, D-VITC, ATC loss and CRC errors)

Alarm outputs:

- Hard and soft alarm outputs
- Soft outputs via LAN and/or SNMP

Tallies:

- Hard (GPIO Input) and Soft Tally input support. 2 tallies per tile
- Maximum 32x GPIO inputs can be assigned

Under monitor displays: Under Monitor Display (UMD) information may be generated from remote sources via the LAN operating on a remote PC or serial using TSL/Open protocols

Clocks/dates:

- Analog and digital clocks with foreground and background colors. Date display with digital clock. Clock/date display data can be derived from several sources: the system clock, NTP synchronization, LTC or VITC from a chosen SDI input
- Time-zone and offset settings

Timers:

- Programmable Countdown Color, Transition Color and Destination Color. Countdown timer may be setup to start at a certain time of the day or controlled by GPIO inputs
- Timer modes for single and dual GPIO inputs supporting Pause, Resume and Reset

Battery backup: A battery ensures the time and date settings are retained if power is lost or the unit is powered down

Environmental

Temperature: 0°C to 40°C (32°F to 104°F)

Humidity: 30% to 90% (no condensation)

AC/DC power module:

- 90 VAC ~ 264 VAC, 50/60 Hz
- Safety Compliance: CB, CE, CCC, cUL, UL, TÜV

Max. Power Consumption: 900W at 200-240 VAC, 50 Hz

Compliance:

- EMC – Emissions EU: EN55103-1 USA: FCCR 47 CFR: 2009, Part 15, Sub-part B (Class A)
- EMC – Immunity EU: EN55103-2. Safety EN: EN60950-1 USA: Tested to UL1419 (3rd Edition)
- Hazardous Material UK: RoHS-6 – Complies with EU Directive

Ordering

ALTAIR-160-6RU

Altair 160x160 6 RU frame with front panel, 2x PSU, video crosspoint and MVO card

ALTAIR-160-AXPT

Altair 160x160 audio crosspoint card

ALTAIR-160-RP

Altair 160x160 standard 16x16 BNC rear panel

ALTAIR-160-RP-A

Altair 160x160 advanced 16x16 BNC rear panel

ALTAIR-160-MVO

Altair 160x160 multiviewer output card

ALTAIR-160-PROC

Altair 160x160 processing card

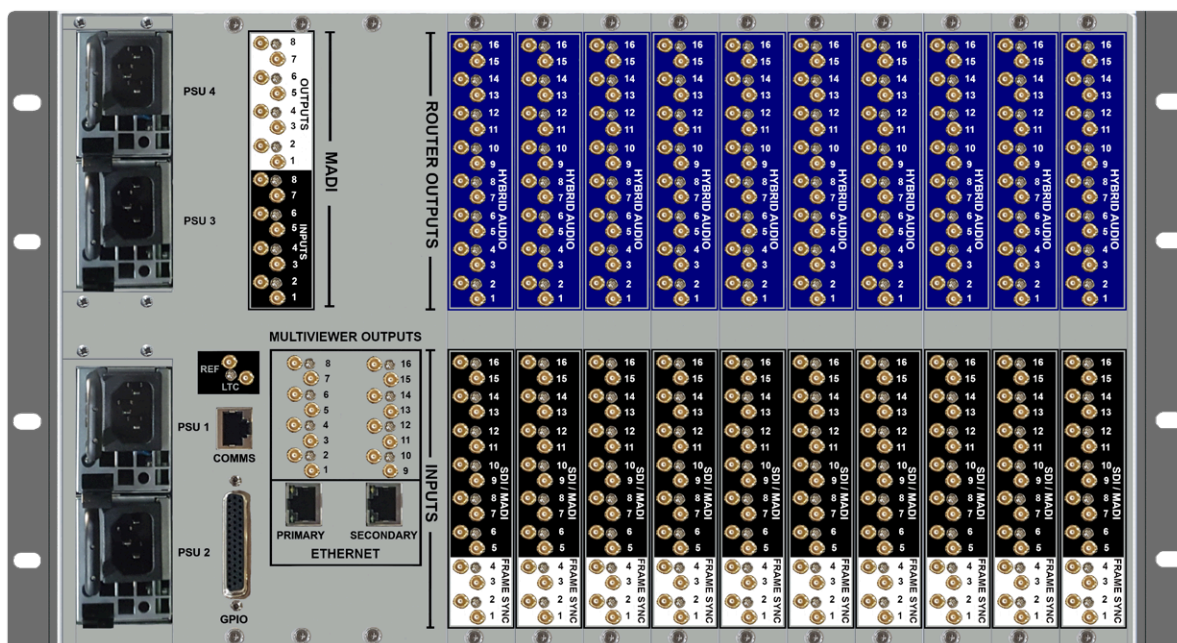
ALTAIR-160-SVXPT

Altair 160x160 spare video crosspoint card

MV-1200-PS

MV-1200 Series Multiviewer power supply

Altair 12G SDI Series Hybrid Router Rear View



ALTAIR-160 shown fully populated.

This product may be protected by one or more patents. For further information, please visit: www.grassvalley.com/patents

DS-PUB-3-1100B-EN

Grass Valley®, GV®, GV Grass Valley®, and the Grass Valley logo are trademarks or registered trademarks of Grass Valley USA, LLC, or its affiliated companies in the United States and/or other jurisdictions. Grass Valley products listed above are trademarks or registered trademarks of Grass Valley USA, LLC or its affiliated companies, and other parties may also have trademark rights in other terms used herein. Copyright © 2026 Grass Valley Canada. All rights reserved. Specifications subject to change without notice.

www.grassvalley.com Join the Conversation at GrassValleyLive on [Facebook](#), [X](#), [YouTube](#) and Grass Valley on [LinkedIn](#)