AVENUE™

Routing, Keying and Multiviewer Solutions

Integrated Router, Keyer, and Multiviewer

4K / 3G / HD / SD

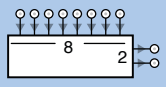
IP Connected Control

Clean and Quiet Switching

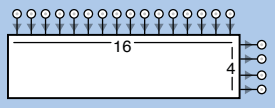
ENSEMBLE
DESIGNS

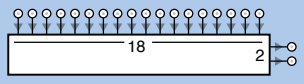
With Avenue from Ensemble Designs, Integrate All of these Functions... Into a Comprehensive Solution

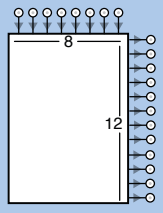
Routing



9430
8 x 2

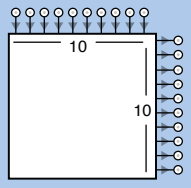




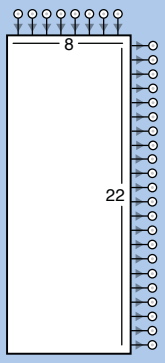


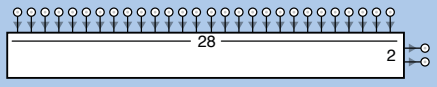
Choose Your Size

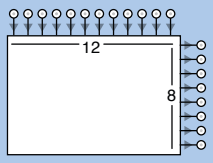
Then Choose Again. And Again.
Highly flexible matrix sizing lets you decide on your own configuration. The basic size is 8 x 2. Add user configurable input or output ports – all the way up to 30 ports. From 28 x 2 to 8 x 22 – or any size in between. Need 12 x 5 or a 15 x 15? You Choose.

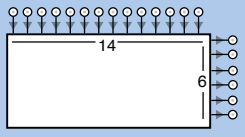


9430 + 9440
Double Module / 20 ports



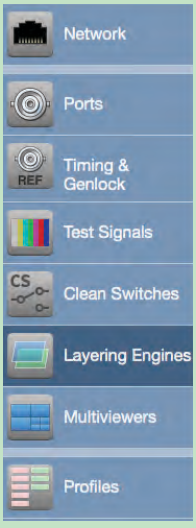






9430 + 9440 + 9440
Triple Module has 30 ports, User configurable from 8 x 2 to 28 x 2

Control



Now you can look at your source before you do a take. The exclusive live thumbnail display in the Avenue Router panel shows you the source before you take it to air.

See It

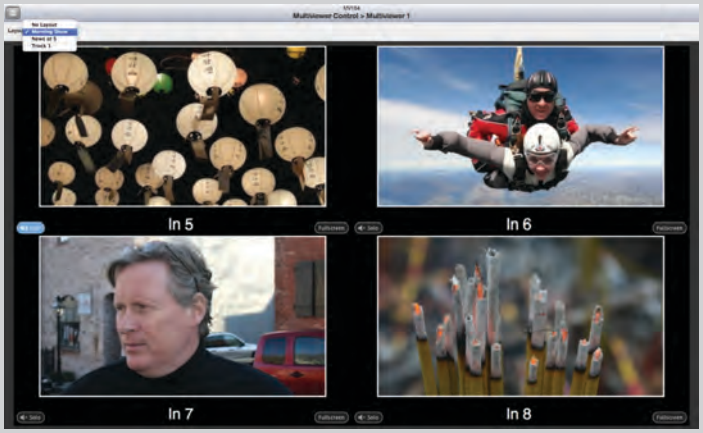
Frame Synchronization & Clean Switching

Take It

It's the best of both worlds, a router and a Clean Switch – all in one. The Clean Switch gives you full frame synchronization that locks to your house reference so it can even switch between asynchronous sources. Flawless audio sample rate conversion makes this router truly Clean and Silent. Even with Dolby content.

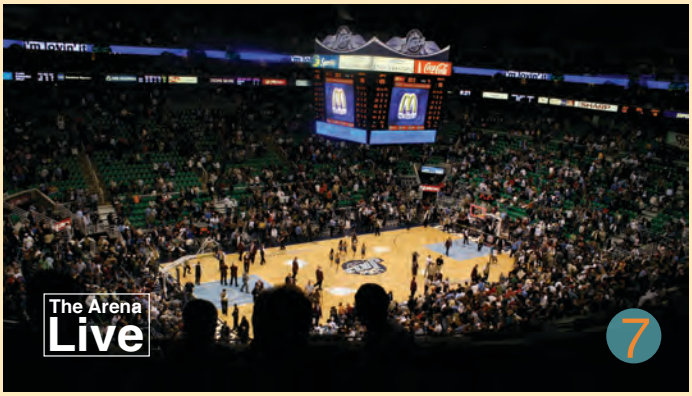
Multiviewer

Add Multiviewer Functionality – Without Consuming a Single Port



Ensemble's proprietary scaling ensures beautiful images – no matter what size. Stunning detail in every position. Intuitive, quick configuration with web-based, click-drag interface. Labels, Audio Meters, Tally, Alarms, interface to UMD systems.

Keying & Mixing



Add the Avenue Layering Engine to your Avenue router and increase its usefulness in broadcast, live venues and presentation. The Avenue Layering Engine provides two, independent linear keyers, program/preset background transitions, and audio mixing and breakaway. Any of your router sources can feed the Layering Engine and the program/preview outputs can be routed to any router destination.

The intuitive Web control interface gives you full control over the mix/effect with program and preview thumbnails and comprehensive view of all graphic layers. There is an equally complete automation protocol, via TCP/IP or RS-232 interfaces, allowing integration into every type of application, including channel branding, master control, fly-pack, DSK and centralcasting.

Integrate Routing, Keying, and Mulitiviewer with SPG/TSG, ACO, and Loudness Control

Designed for Integration

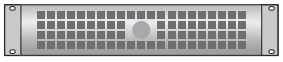
The design of the 9430 Flexible Matrix Router, 9440 ten port expansion module, P9425 Layering Engine, and MV82 and MV164 Multiviewers are easy to integrate into a single system. One cable connects a source simultaneously to Routing, Keying, and Multiviewer.

Configure and control from Web or 1RU Control Panels. Extensive automation control through TCP/IP and RS-232 interfaces.

Expand and refine the system with the extensive repertoire of signal processing modules in the Avenue System. Add Sync and Test Generators, Automatic Program Switches, Audio Embedding and Loudness Control.

Any of our other Avenue cards, such as DAs, protection switches, converters, embedders/disembedders, can fit into the same Avenue 3RU Frame using the remaining 7 or 8 available slots.

Camera



Player

Server

Production Switcher

BrightEye NXT 450
Decoder
DualPath Rx

Router Control Panel

Layering Engine Control Panel

9430 Router

9425 Layering Engine

20 Inputs

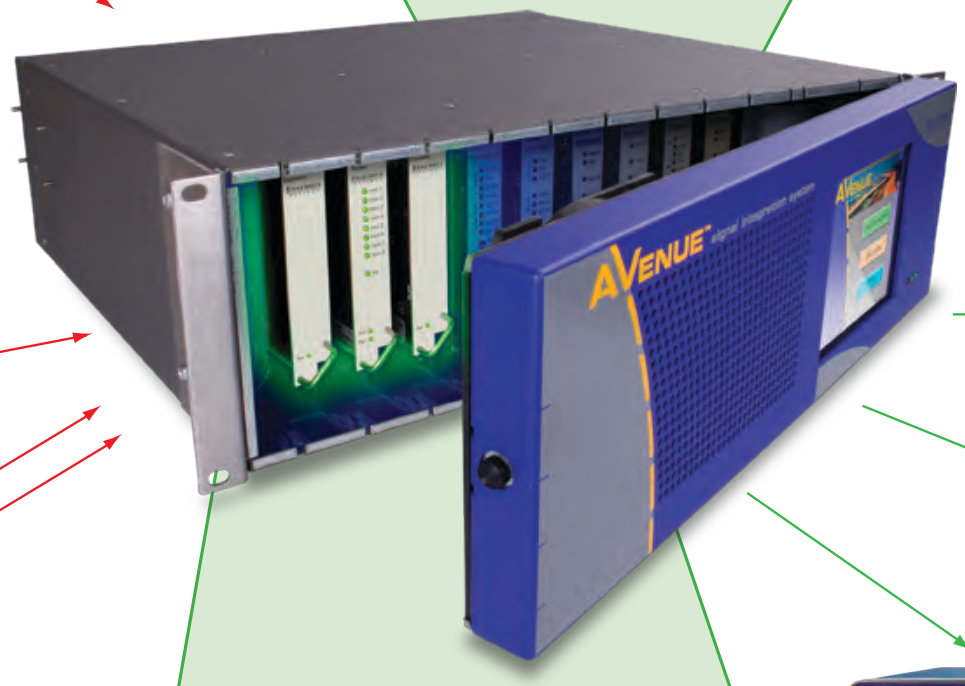
9440 Expansion

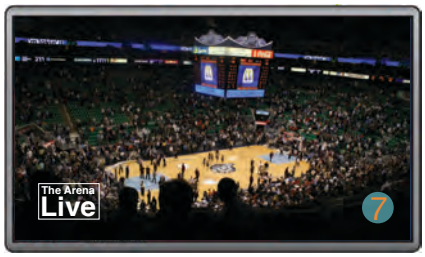
9480 Multiviewer

9440 Expansion

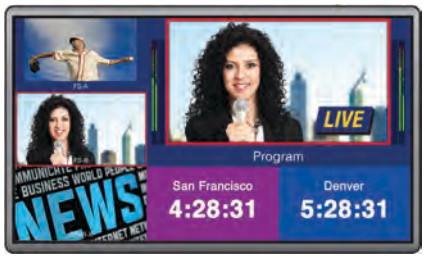
3G / HD / SD

10 Outputs



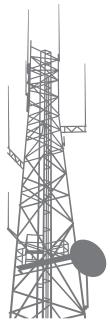


Layering Engine Program Output



Multiviewer Output

BrightEye NXT 445
Streaming Encoder
with Decoder License



Transmission

9400 3G / HD / SD
Sync Generator
Test Signal Generator

9455 3G / HD / SD
Clean & Quiet
Protection Switch

9600 + 9670 3G / HD / SD
Audio Embed / Disembed
Automatic Loudness Control

9430 Router and 5830 Control Panel

Features

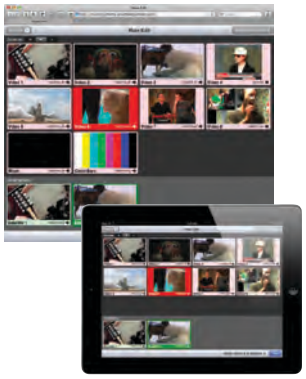
- **Use this router for master control bypass, QC monitoring, off-site news bureaus and radio shows, mobile trucks, helicopters**
- **Layering Engine option**
- **Multiviewer option**
- **Exclusive realtime video thumbnail display for every SDI source and destination in the router**
- **Highly configurable – choose exactly the size and number of I/O ports needed from 8x2 to 28x2 (or 8x22) or any size in between such as 12x5 or 15x15. You choose**
- **Clean and quiet switch option has full frame sync**
- **Look-ahead preview**
- **Signal diagnostics and reporting with indicators for synchronicity and timing, audio, closed captions, timecode and AFD**
- **Two independent TSGs built-in. No need for external generators. Saves router inputs**
- **Control choices include the Router Control Panel, iPad, Mac and PC from a web browser, serial protocols via TCP/IP, RS-232 and SNMP**
- **Supports every type of signal you need – 3G, HD, SD, ASI and 310M. It's multi-format, use any mix of signal types**

Routing and Signal Processing in the Same Frame

A basic 8x2 Avenue router requires only a single slot in the Avenue frame, or the equivalent of 3/10 of a RU of space. A fully expanded router requires only three slots in the Avenue frame, leaving plenty of room for additional modules. The Avenue router is an excellent choice where space is at a premium and other signal processing and conversion functions are required.

A Router Revolution

The Avenue modular digital video router is the most flexible, technologically advanced small router available today. It's ideal for QC monitoring, master control bypass switching, ENG trucks, edit suites, and a host of other applications. Ease of expansion, user-definable input/output port geometry, exclusive video thumbnails, built-in test signal generation, and optional clean and quiet switching on multiple outputs make it perfect for your next project or upgrade.



Exclusive Live Thumbnail Display

Realtime video thumbnails travel over Ethernet to the Router Control Panel where they are shown on a compact, high resolution display. Video thumbnail generation enables the operator to visually verify source content before performing any switching operations. Use the panel at your facility or use it remotely, thousands of miles away.

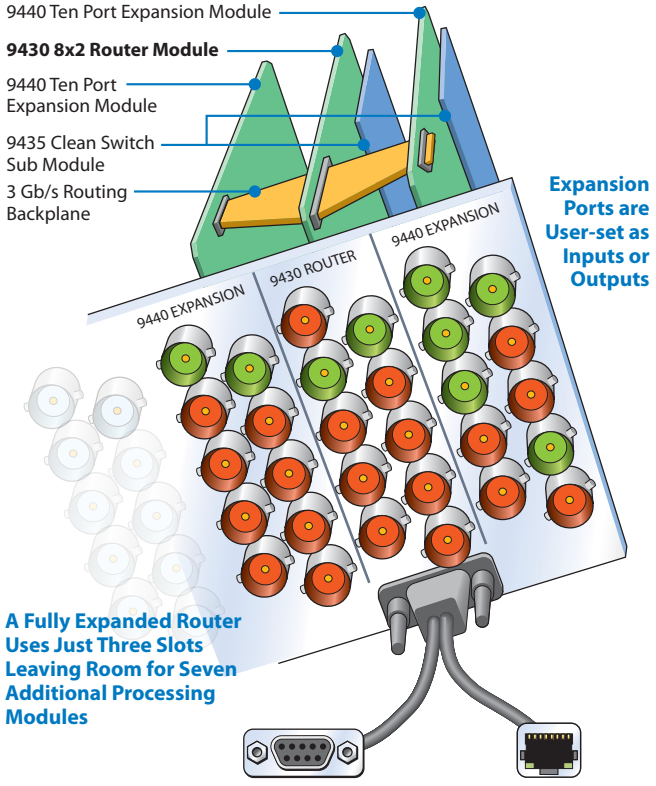
The Avenue router allows the user to define both source and destination names as part of the configuration process and store them in the router. Names are displayed on both the hardware and software control panels along with the video thumbnails.

Built-in Signal Diagnostics

The 9430 module detects and measures key parameters associated with each video source. Synchronicity and timing, line and frame rate, embedded audio presence/absence, closed caption information, and timecode data are displayed on the Avenue router hardware and software panels. Control panels provide the option of displaying abbreviated information as a thumbnail overlay, or more detailed information as a dedicated screen.

9430 Router and 5830 Control Panel

Router Expansion Example for a 21 In x 9 Out Configuration



Architecture

While the dimensions of the base 9430 router module are fixed at 8 inputs by 2 outputs, the 9440 module provides ten additional ports, each of which is individually user configurable as either an input or an output. Up to two 9440 expansion modules may be added to the base 9430 module. A 9430 plus a single 9440 supports a total of 11 different configurations ranging in size from 18x2 to 8x12. A 9430 plus two 9440 modules supports a total of 21 different configurations from 28x2 to 8x22.

Internal Generators for Easy QC

Bars/tone and black/silence are sources that are needed in many applications. Internal generation of these sources is another unique capability of the Avenue router. The bar generator includes a user programmable graphics overlay to allow the user to visually identify the source of the bars. This eliminates the need for additional external signal generation equipment, an important factor in many mobile and portable applications. Internal black and bars appear as sources without consuming a connector.

Clean Switch Option

Add a 9435 or 9435-4CS sub module to the system for clean and quiet switching. The 9435 provides clean and quiet switching for up to two independent destinations while the 9435-4CS provides for four destinations. A single sub module may be added to the base 9430 8x2 router module. A second sub module may be added to expanded systems, providing clean and quiet switching for up to eight independent destinations.

The Avenue router utilizes video frame synchronizers rather than line delays to ensure perfect alignment of mis-timed and completely non-synchronous SDI sources. In addition, the unit's frame synchronizers continue to output black if the input signal goes away. This ensures continuity of the router's video output signal, a significant benefit if the router is feeding an MPEG encoder.

Glitch-free, quiet switching of embedded audio signals requires synchronization and alignment of audio sources at the input to the switcher. With the Avenue router's clean and quiet option, digital audio is de-embedded, and if it is linear PCM, sample rate converted, switched, and re-embedded. Encoded audio streams such as Dolby™ E are de-embedded and re-embedded but not processed in any way.

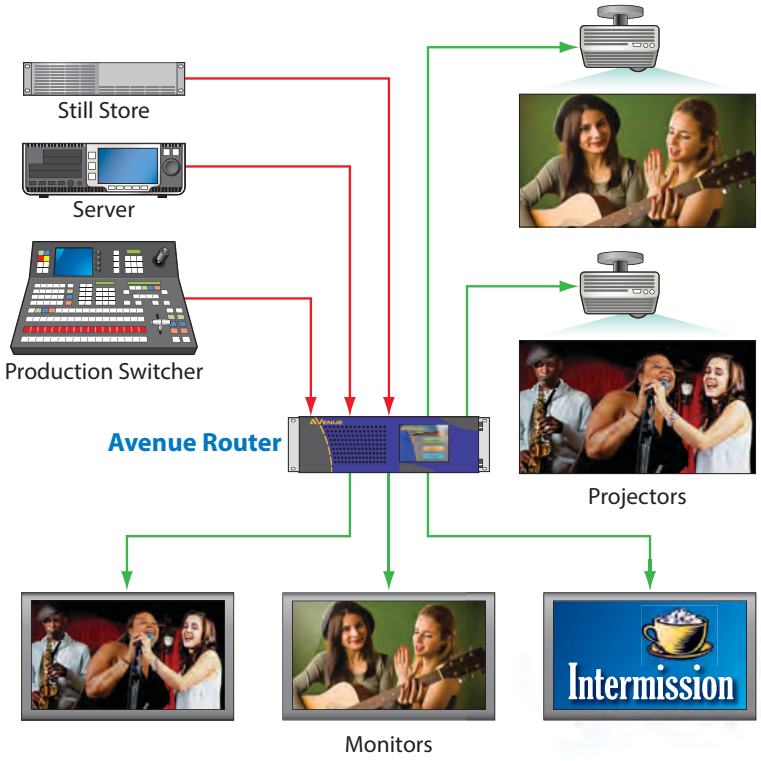
Router Control Panel

The control panel features a front panel LCD display that shows thumbnails of sources, allowing instant verification of switching selections.

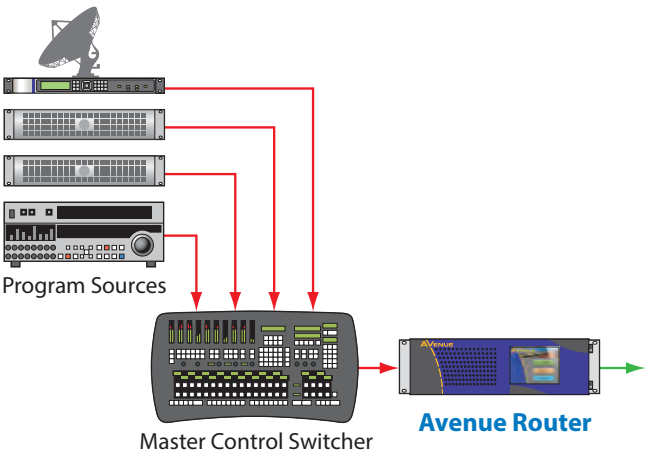
Applications

The Avenue router is ideally suited to a wide range of applications, including mobile and portable systems, QC stations, graphics and post-production islands, ingest, production switcher pre-select, master control bypass, driving on-set monitors, and general utility switching. The flexibility of the system makes it possible to tailor the input/output dimensions to a wide range of requirements.

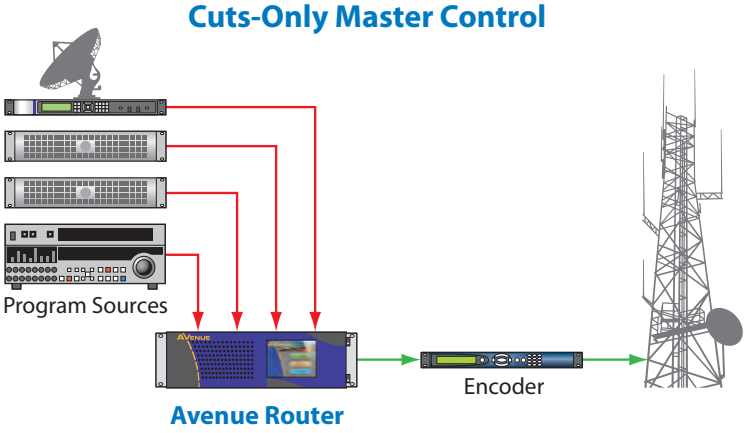
Monitors and Projectors for Venues



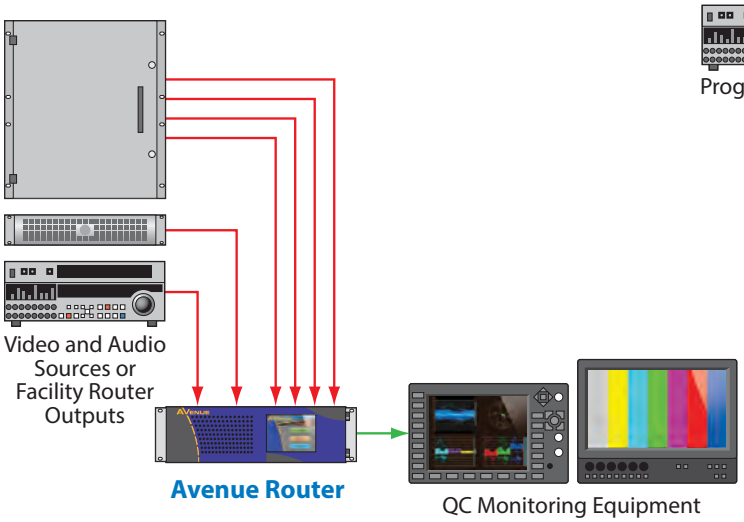
Master Control Bypass



Cuts-Only Master Control



Quality Control and Signal Monitoring



9425 Layering Engine and 5825 Control Panel

You have complete control over the configuration and operation of this powerful Layering Engine with a web interface, operation control panel, TCP/IP and serial control

More Than a Mix Effect

Use Ensemble's Avenue Layering Engine for broadcast, live venues and presentation. With two independent linear keyers, program/preset background transitions, and audio mixing and breakaway, it's an agile and flexible solution to combining audio and video content.

Powerful, Flexible Keying and Layering

The extensive features of the Avenue Layering Engine span a wide range of applications. Keyer presets will recall the entire configuration of a layer with a single touch or keystroke.

The visual interface displays thumbnail views of connected sources and the content stored in the LogoStore.

Hard Surface Operator Control Panel

The Avenue 5825 Layering Engine Control Panel controls keying and vision mixing functions positively and instantly. Source selection, cuts, dissolves, and three levels of keying can be independently controlled.

The control panel features a front panel LCD display that shows thumbnails of sources, allowing instant verification of switching selections.

The panel, connected via IP, allows access from anywhere on the network, and can be powered via POE for easy, single wire hook up.

When used alongside the award-winning web browser interface, all of the functionality of the powerful switching and keying system can be harnessed in a compact, easy-to-use control position, such as an iPad or laptop.

LogoStore

Logos and Graphics created with paint and animation applications can be loaded into the Avenue Layering Engine's LogoStore through a web interface. These elements can then be keyed and combined with live video inputs.

The Positioning and Masking features can be applied to LogoStore content. Combined with Keyer Presets, these features allow a single logo to be used in a variety of ways.

The LogoStore's non-volatile memory is a great solution to sourcing lower third supers, branding logos, watermarks, and even full screen titles.

EAS and Downstream Keyer Option

Add the 9425-XK option for additional keying capability. The downstream keyer provides a third layer of keying, drawing from stills and animations in the Layering Engine's LogoStore. A basic character generator is included for producing a lower-third crawl.

Two key layers and a background source can be simultaneously combined to produce the program output

Foreground

Choose Foreground video from any of the SDI inputs, an internal matte generator, or the built-in LogoStore to recall both still and animated graphics.

Adjust

The keyers support linear, luminance and additive keying from a variety of video sources.

Key/Alpha

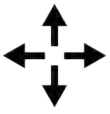
The Key (Alpha) signal can be selected automatically according to the chosen Foreground video, or chosen independently from any input.

Mask

Apply masking to any key to exclude unwanted content, or create window inserts.

Shadow

Drop shadows can be added to any key. Adjust position and density to enhance the separation between Foreground and Background video.



Position

Position the overlay anywhere on the output raster. Positioning supports live video inputs as well as content from the LogoStore.

9425 Layering Engine and 5825 Control Panel

Timing and Synchronization

The Avenue Layering Engine genlocks to a house reference signal, allowing you to time the effects output to match system requirements in your facility. Even asynchronous (wild) sources can be used as inputs to the Layering Engine.

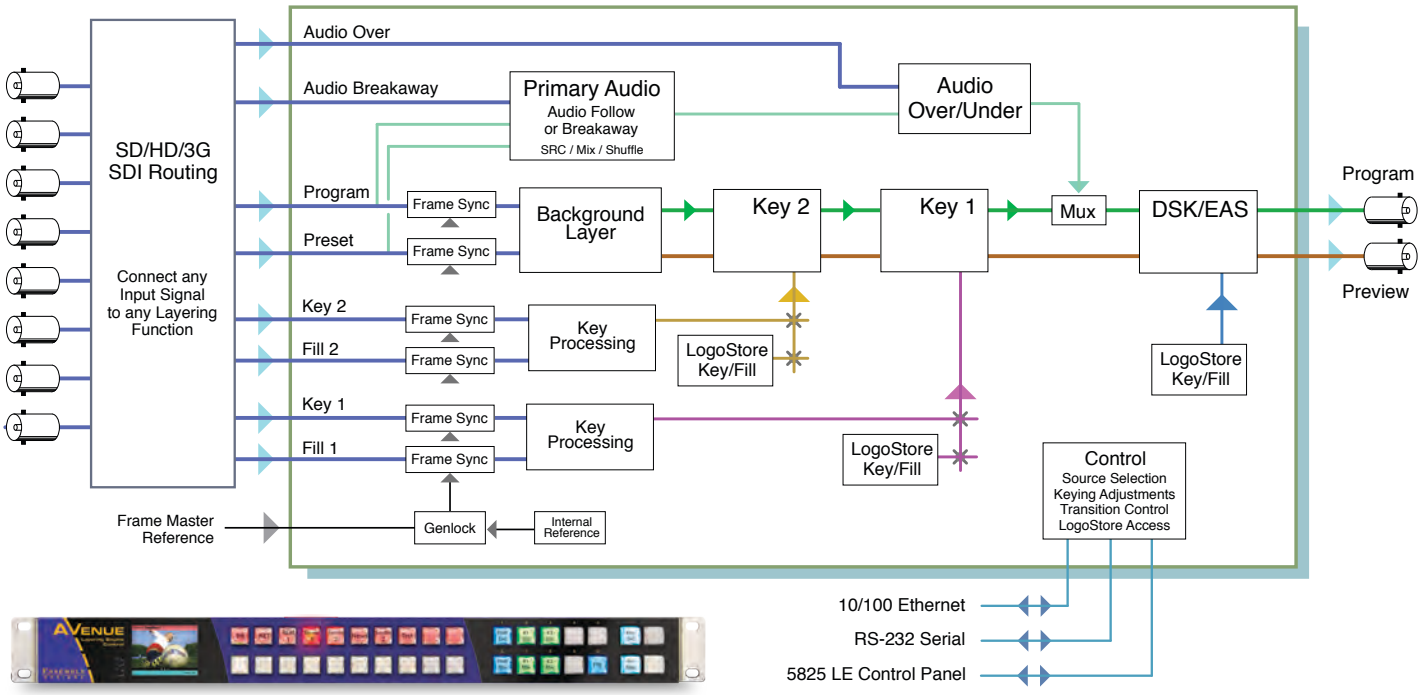
Each input incorporates a frame synchronizer, automatically correcting each source to match system timing. When no external reference is available, as in a flypack system, a stable internal reference signal is used.

Complete Audio

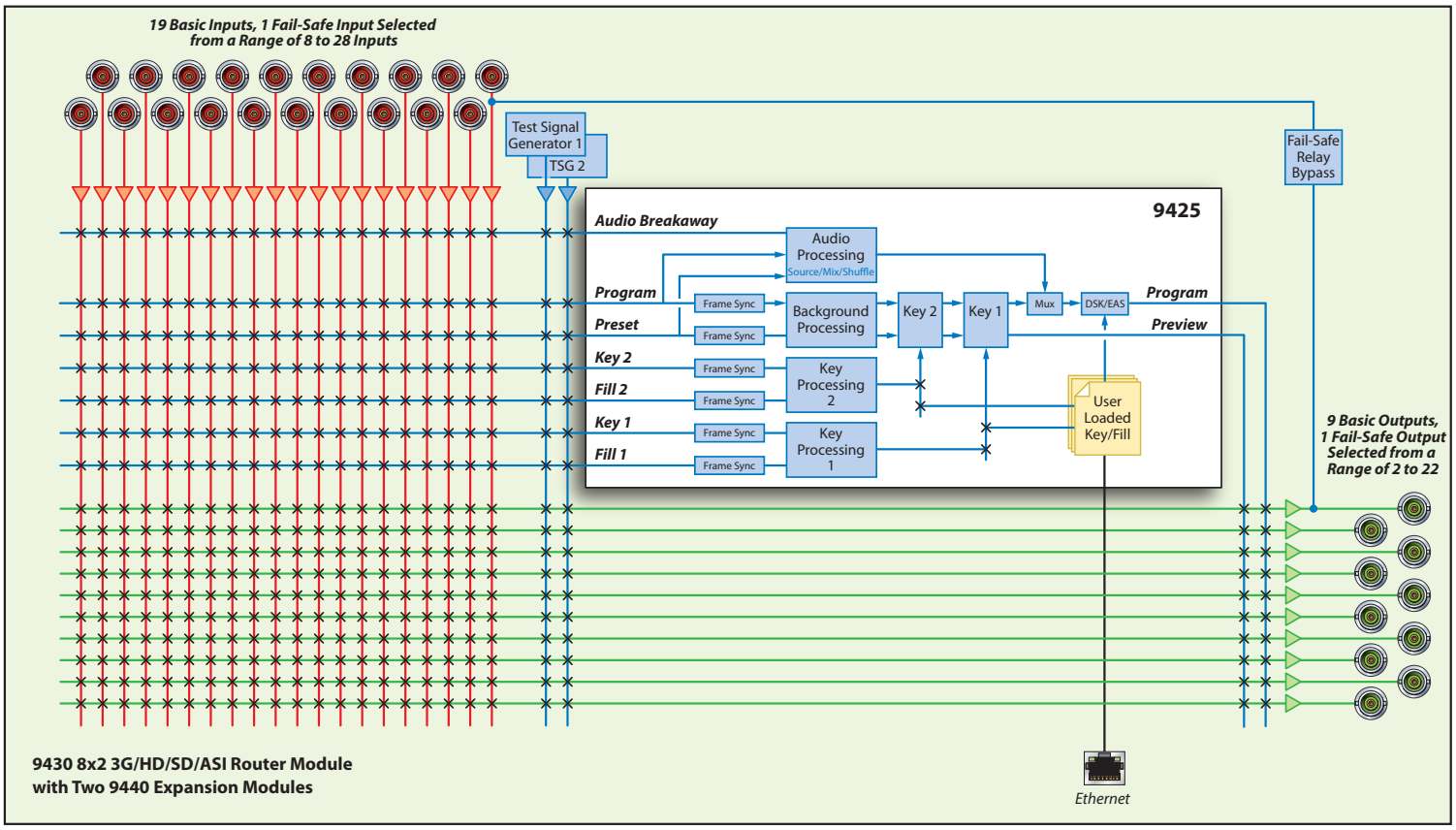
The primary audio output can be taken automatically from the embedded content in the currently selected background video source. This AFV (Audio Follow Video) mode will produce smooth, pop-free audio transitions that duplicate the background video – whether cutting or mixing.

Alternately, the audio can be selected independently (Audio Breakaway) of the background video so that it comes from the embedded content of any connected source.

16 channels of embedded audio are supported throughout the entire processing chain.



Any of the P9425's eight inputs can be used as background video, key fill or source, or audio breakaway. Program and look-ahead preview outputs are provided. Occupies just one module slot in the Avenue frame.



System example: Here is an example of a 30-port system that is configured with 20 inputs and 10 outputs. Program, preview and all sources are routable, as shown. 3 module slots are used in the Avenue frame.

Any input source or the Layering Engine outputs can be routed to any destination. This configuration consumes only 3 module slots in the 3RU Avenue frame. This flexible architecture puts video effects, audio mixing and routing functionality in a single, convenient package.

Signal Performance

SDI I/O ports support SD, HD, and 3G data rates. The full 10 bit SDI resolution is carried throughout all of the background, foreground, and alpha paths. Internal processing is performed at even higher resolution so that the final, composited effect is true to all nuances and subtle details in the original sources.

Integrates into the Avenue Flexible Matrix Router

The basic Avenue Layering Engine configuration provides 8 input ports and 2 outputs. Expansion is easy. When installed in one of the router's option positions, the Avenue Layering Engine gains full access to all of the router sources. And the program and look-ahead preview outputs become available as sources to be routed to any of the output destinations.

Control Interface

The web browser iPad interface and the operation control panel put clear and complete control over the Avenue Layering Engine in the hands of an operator. Automation control over Ethernet TCP/IP, SNMP, and RS-232 serial interfaces, using industry standard as well as product specific protocols, provide support for a wide variety of applications.

MV82 and MV164 Multiviewers

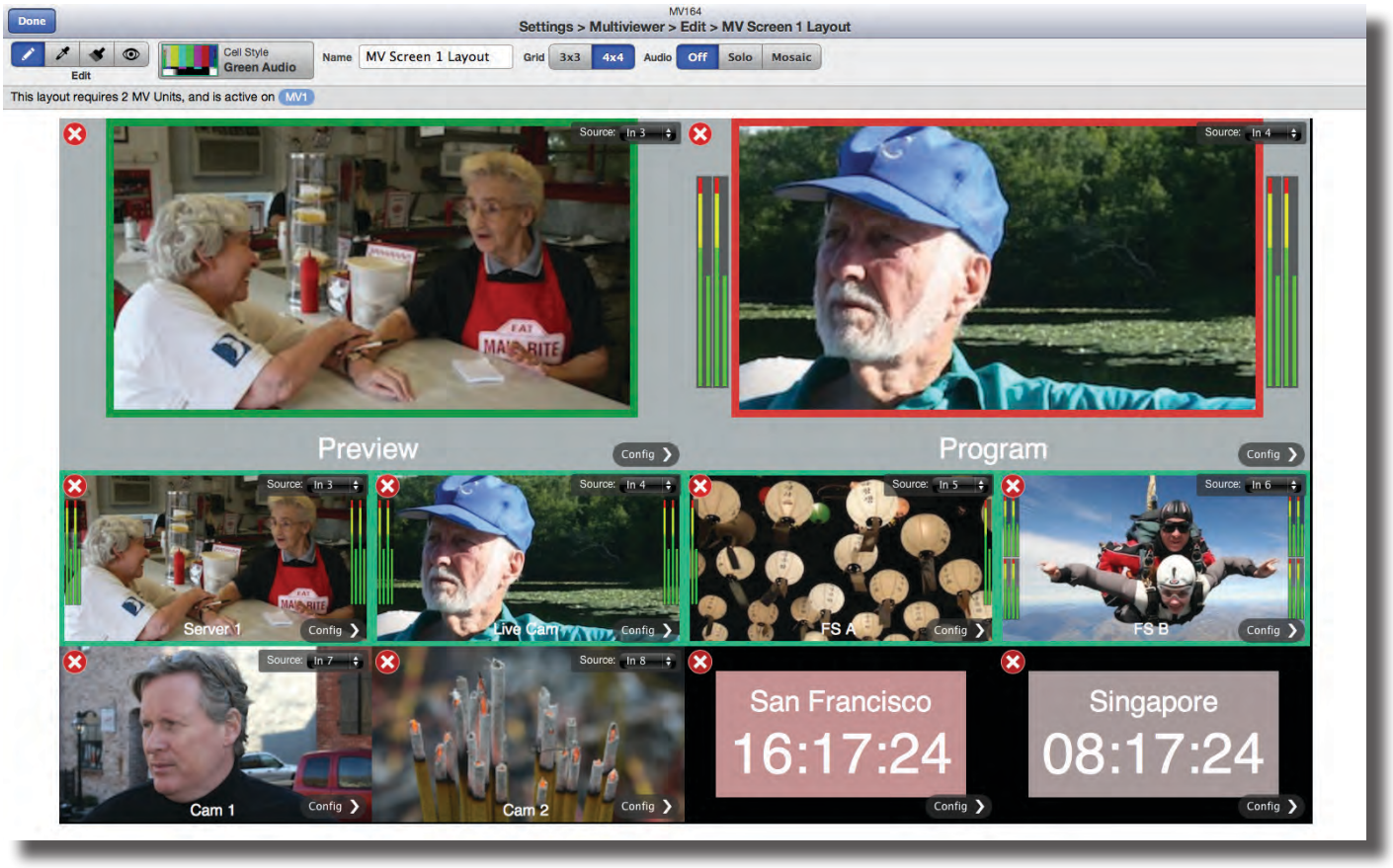
Avenue Multiviewers

Monitoring all your sources couldn't be easier with Ensemble Designs' MV82 and MV164 Multiviewers. Simple intuitive set-up, powerful display options, and incredible image quality with no latency are just the start. Whether you're displaying a simple quad split, or designing an entire control room wall, the Avenue Multiviewers are the right solution at the right price.

Avenue Multiviewers give you an offline mode for creating screen layouts, alarms for ensuring signal integrity, fast authoring tools with eyedropper and paste functions, closed caption support, and countdown clocks.

Stunning Detail

The Avenue Multiviewers take advantage of Ensemble Designs' newest scaling technology and filtering to deliver stunning detail from every source, even when the same signal appears multiple times. Video sources are always displayed at full motion frame rate, even with 16 images on the screen. Sources are sized perfectly with Ensemble's proprietary scaling algorithms, ensuring a beautiful picture, no matter what size you choose.



Different Workflows for Operations and Engineering

Staff setting up and configuring a Multiviewer have very different needs from the day-to-day operators. Independent Edit and Control modes provide users the precise controls needed for their particular jobs. Installation and engineering staff can use the Edit mode to configure the Multiviewer hardware, set up alarms and create screen layouts. Segment producers, master control operators and QC staff can use the Control windows to see various sources and check signal quality.

Flexible Architecture

The Avenue Multiviewer accepts all standard SD, HD and 3 Gb/s video formats. The MV82 has 8 source inputs and 2 outputs; the MV164 has 16 source inputs and 4 outputs. Outputs can be genlocked and timed with respect to house reference. 1080i or 1080p SDI are output at 59.94 or 50 Hz. When you need to drive an HDMI video monitor, use a BrightEye 81 SDI to HDMI converter at the monitor.

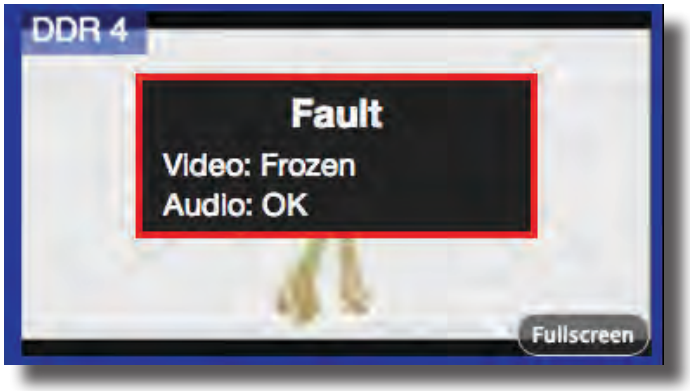
Control Mode for Operations Staff

From a fully enabled Multiviewer Control window, operators can take any of the sources on the Multiviewer output to fullscreen, select the audio from any source, select a different Screen Layout (which may have completely different sources), and clear alarm notices.

16 Channel Audio

While it's easy to look at 16 video sources on a monitor, audio must be monitored one source at a time. Click the Solo button to select and monitor the audio from one of your inputs. The Fullscreen button lets you take any source fullscreen on your monitor; a great tool for QC-ing the quality of a particular feed.

Audio content is displayed on VU meters and can be set to show 4, 8 or 16 channels. A peak indication feature, with fast or slow response, makes it easy to monitor headroom.

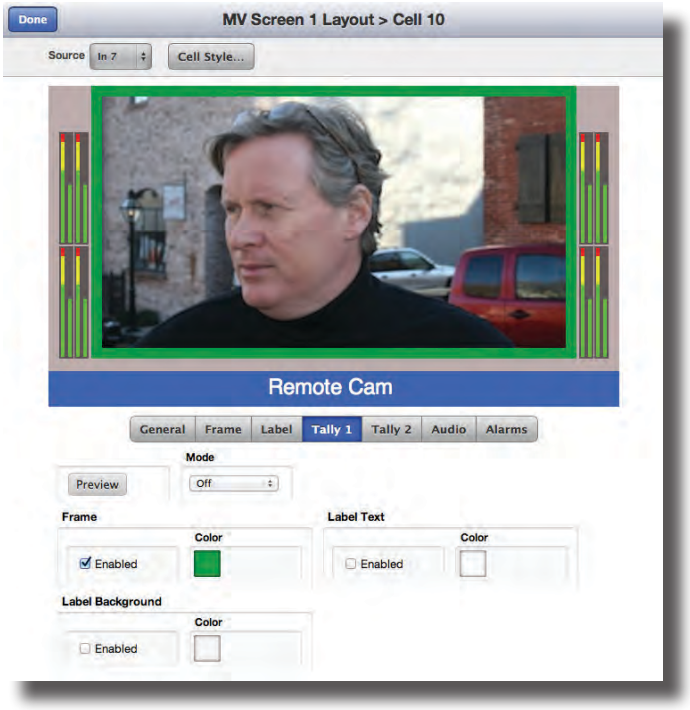


Alarms

Use alarms to monitor for loss of signal, black, freeze, and audio presence. When a fault is detected, you can choose to have an on-screen display of the Alarm notice show on the Multiviewer output and on the Multiviewer Control window. Using a third-party device, alarms can be configured to generate GPO triggers and alarm conditions can be cleared with a GPI.

Dual Tally

Two levels of tally give you full confidence of which sources are active on air. The Multiviewer can tally against the output of a router, production switcher, effect on the Avenue Layering Engine, or external GPI. Tally can be independently assigned to different elements in the makeup of the cell: frame color, label text, and label background.



Edit Mode for Installation and Engineering

With snap-to grid structure, drag and drop sizing and placement, and an intuitive user interface, the Ensemble Designs Multiviewer family has rewritten the book on Multiviewer set-up. Sources, Labels, Tally, Audio Meters, Alarms, and Audio Monitoring are quick and easy to make part of your display. Whether you use a Mac, PC or tablet, you'll be setting up displays like a pro in a matter of minutes.

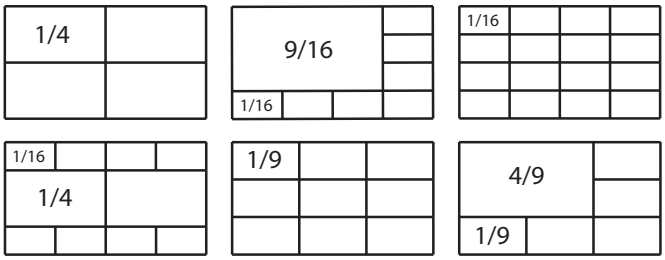
MV82 and MV164 Multiviewers

Straight-Forward Setup

Each Multiviewer output is built on a 4x4 or 3x3 grid. With your computer or iPad, click-to-fill each cell or group of cells to create the output architecture you need. Intuitive eyedropper and paste authoring tools make designing fast and fun.

Thumbnail proxies of the actual video inputs contribute to an easy and natural editing experience. An unlimited number of layouts can be created offline. Multiple screen layouts can be created, saved, and easily recalled, or applied to other Multiviewer outputs.

Inputs	*Outputs*	*Images Per Screen*
MV164 16 Inputs	4 Outputs 3 Outputs 2 Outputs 1 Outputs	4 - 4 - 4 - 4 4 - 4 - 8 8 - 8 or 12 - 4 16
MV82 8 Inputs	2 Outputs 1 Output	4 - 4 8



Example configurations

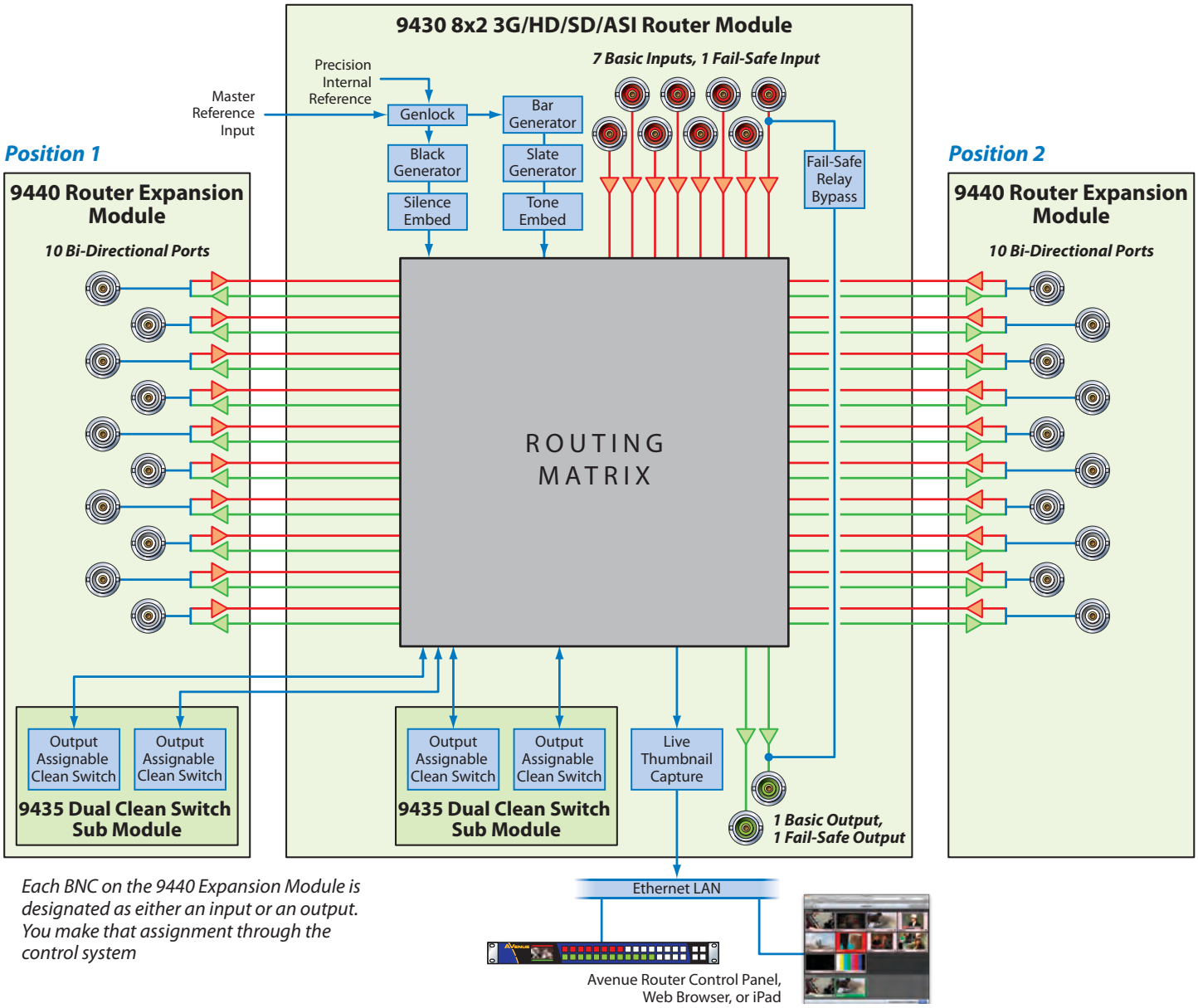
Monitor with 64 images using cascading multiviewers.

Combination for Even More Images

By combining MV82s and MV164s, you can have up to 256 cells on a single Multiviewer screen with video, alarms, and tally.

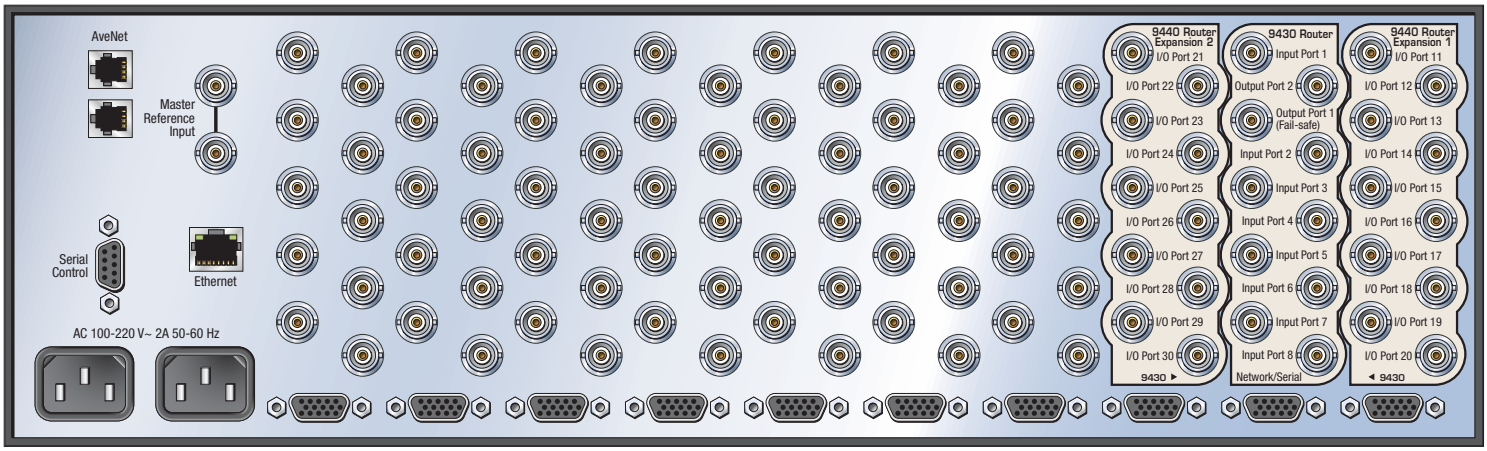
Multiviewer Configuration Example

Below is one of many configuration possibilities for the Avenue MV82 Multiviewer.
This example shows a 4 x 2 dual monitor set up for live production, based on a 3 x 3 grid.



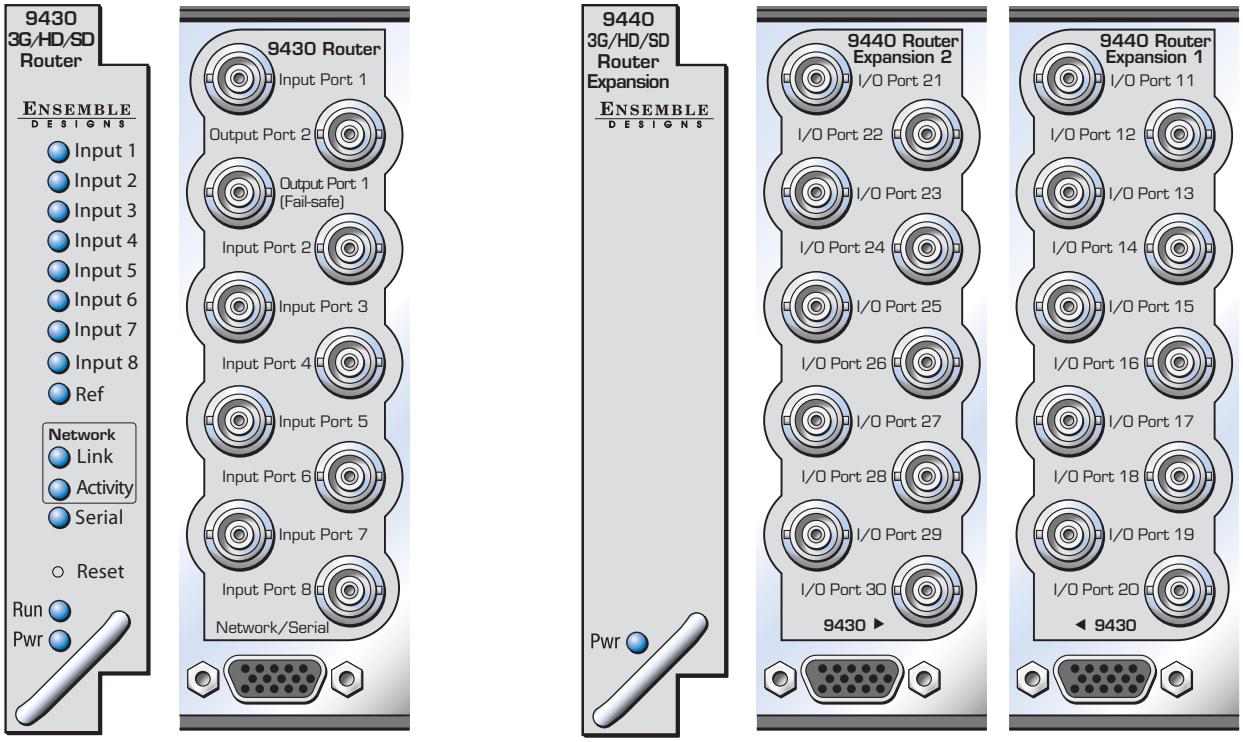
Each BNC on the 9440 Expansion Module is designated as either an input or an output. You make that assignment through the control system

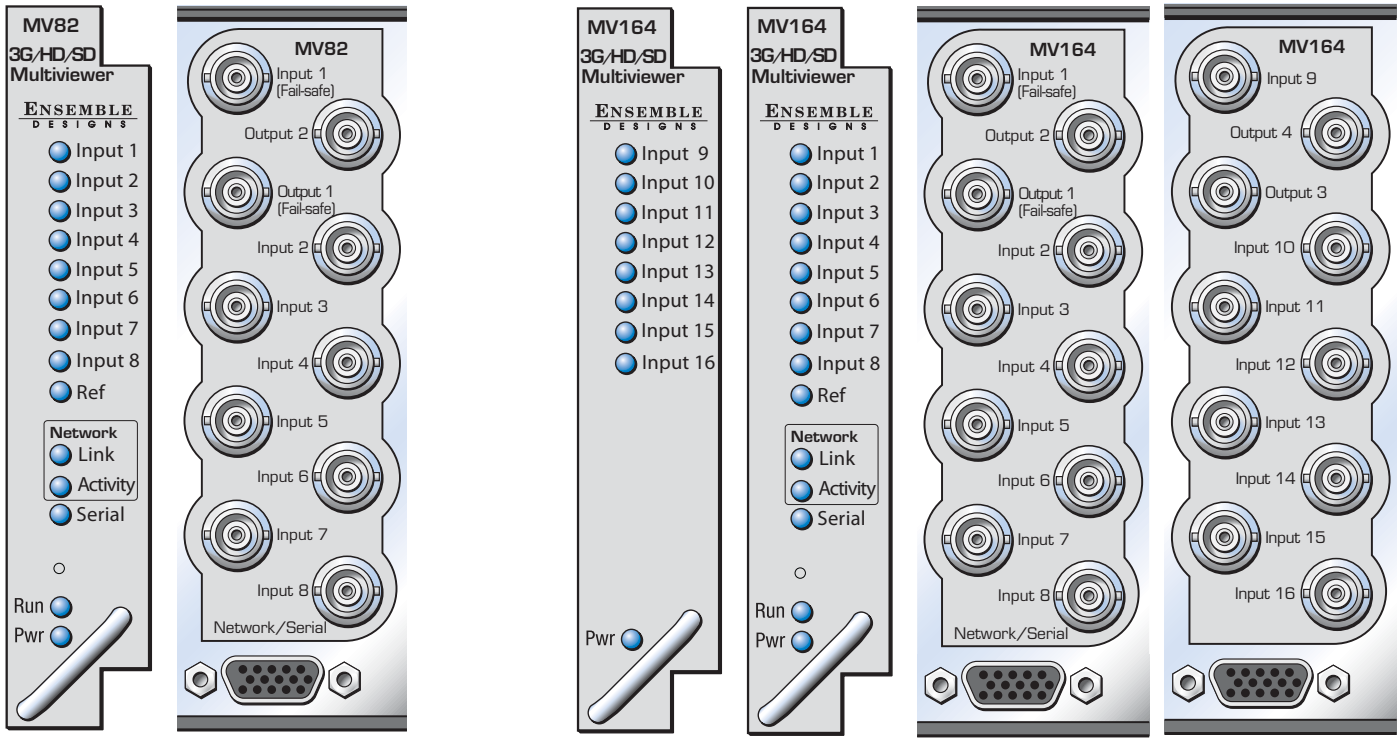
3RU Frame Rear View



Frame Dimensions: Height 3RU, 5.25"/133.4mm Width 19"/482.6mm Depth 15.1"/383.6mm Weight 26.5 lbs/12.1 kg

Front and Rear Views





Frame and Control Order Info

3RUFRM	3RU Frame
5020	Optional Redundant Power Supply
5030	System Control Module
5040	Plain Front Door
5050	Touch Screen Door

Router Order Info

9430	8x2 3G/HD/SD/ASI Router
9440	Router Expansion Module Adds 10 user configurable I/O ports One or two 9440s may be added to each 9430
5830	Router Control Panel with LCD Preview Display (1RU)

9435	Dual Clean Switch sub module Two independent clean switches per 9435
9435-4CS	Quad Clean Switch sub module Four independent clean switches per 9435
9425	Avenue Layering Engine sub module
9480	Multiviewer sub module Configure as 8x2 or two 4x1s Two 9480s require 9430+9440; configurable as 16x4 Outputs 1080i 50/59.94 or 1080p 50/59.94
P94323	3G/HD/SD 30 port Router Package with 4 x Clean Switch

Multiviewer Order Info

MV82	3G/HD/SD Multiviewer	Configurable as one 8x1 or two 4x1s
MV164	3G/HD/SD Multiviewer	16 inputs, 4 outputs, multiple configurations
9480	3G/HD/SD Multiviewer sub module option for the 9430 Router One 9480 configurable as 8x2 or two 4x1s Two 9480s provide 16x4; 9430+9440 required	
P94813	3G/HD/SD Multiviewer Package	16 in, 4 out Multiviewer Package
P94824	3G/HD/SD Multiviewer Package	32 input Multiviewer Package
P94835	3G/HD/SD Multiviewer Package	64 input Multiviewer Package

Layering Engine Order Info

P9425 includes: 9425 Layering Engine (sub module) and 9430 8 x 2 Router Module

5825 Layering Engine Control Panel with LCD Display

9425-XK	DSK and EAS Inserter Software Key Option
9440	Expansion Module: Adds 10 user configurable I/O ports One or two 9440s may be added
9435-4CS	Quad Clean Switch sub module Four independent clean switches per 9435 9435-4CS may be added to one 9440 (Expansion Position #1)
P94214	3G/HD/SD 20 port Layering Engine Package

9430 Router Specifications

Inputs

Number	Eight
Signal Type	HD Serial Digital 2.97 Gb/s, SMPTE 424M, 425M HD Serial Digital 1.485 Gb/s, SMPTE 274M, 292M or 296M SD Serial Digital 270 Mb/s, SMPTE 259M DVB-ASI at 270 Mb/s, SMPTE 310M, AES3id
Impedance	75Ω
Return Loss	>15dB to 1.485 GHz
Max Cable Length	270 Mb/s 300 meters Belden 1694A 1.485 Gb/s 100 meters Belden 1694A 2.97 Gb/s 70 meters Belden 1694A

Automatic Cable Input Equalization

Outputs

Number	Two
Signal Type	Follows input
Impedance	75Ω
Return Loss	>15dB to 1.485 GHz
Output DC	None (AC coupled)

Reference

Number	One via frame master ref input
Signal Type	Composite black, Tri-Level Sync, 10 MHz

Standards Supported

1080p 50, 59.94, 60 Hz, SMPTE 424M, 425M
Level A, Level B (9435 Level A only)
1080i 50, 59.94 or 60 Hz, SMPTE 274M -4,5,6
720p 50, 59.94 or 60 Hz, SMPTE 296M -1,2,3
1080p 23.98, 24 or 25 Hz, SMPTE 274M -9,10,11
1080sF 23.98, 24 or 25 Hz, RP211 -14,15,16
625i 50, 525i 59.94, SMPTE 259M

General Specifications

Power Consumption	9430 with 9425 sub module 30 watts
Temperature Range	0 to 40°C ambient (all specs met)
Relative Humidity	0 to 95% noncondensing
Altitude	0 to 10,000 ft

9430 module cannot be installed in slot 3 of a 1RU frame when 5035 System Control module is installed

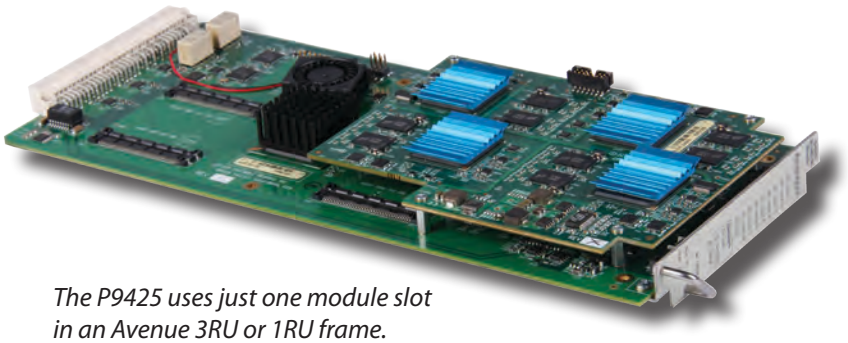
9440 Router Specifications

Inputs

Number	Up to ten, user configurable
Signal Type	Same as 9430
Impedance	75Ω
Return Loss	>15dB to 1.485 GHz

Outputs

Number	Up to ten, user configurable
Signal Type	Follows input
Impedance	75Ω
Return Loss	>15dB to 1.485 GHz
Output DC	None (AC coupled)



The P9425 uses just one module slot in an Avenue 3RU or 1RU frame.

MV82 and MV164 Multiviewer Specifications

Inputs

Number	MV82: Eight MV164: Sixteen
Signal Type	HD Serial Digital 2.97 Gb/s, SMPTE 424M, 425M HD Serial Digital 1.485 Gb/s, SMPTE 274M, 292M or 296M SD Serial Digital 270 Mb/s, SMPTE 259M
Impedance	75Ω
Return Loss	>15 dB to 1.485 GHz
Max Cable Length	270 Mb/s 300 meters Belden 1694A 1.485 Gb/s 100 meters Belden 1694A 2.97 Gb/s 70 meters Belden 1694A Automatic Cable Input Equalization

GPI requires LAN-based interface port. Available separately.

Input Standards

1080p 50, 59.94, 60 Hz, SMPTE 424M, 425M, Level A
1080i 50, 59.94 or 60 Hz, SMPTE 274M -4,5,6
720p 50, 59.94 or 60 Hz, SMPTE 296M -1,2,3
1080p 23.98, 24 or 25 Hz, SMPTE 274M -9,10,11
625i 50, 525i 59.94, SMPTE 259M

Outputs

Number	MV82: Two MV164: Four
Signal Type	1080i 50, 59.94 SMPTE 274M -4,5,6 1080p 50, 59.94 SMPTE 424M, 425M
Impedance	75Ω
Return Loss	>15dB to 1.485 GHz
Output DC	None (AC coupled)

Reference

Number	One via frame master ref input
Signal Type	Composite black, Tri-Level Sync, 10 MHz

General Specifications

Power Consumption	MV82 42 watts, MV164 80 watts
Temperature Range	0 to 40°C ambient (all specs met)
Relative Humidity	0 to 95% noncondensing
Altitude	0 to 10,000 ft

P9425 Layering Engine Specifications

Output Standards

1080p 50, 59.94, 60 Hz, SMPTE 424M, 425M, Level A
1080i 50, 59.94 or 60 Hz, SMPTE 274M -4,5,6
720p 50, 59.94 or 60 Hz, SMPTE 296M -1,2,3
625i 50, 525i 59.94, SMPTE 259M

Input Standards

1080p 50, 59.94, 60 Hz, SMPTE 424M, 425M, Level A
1080i 50, 59.94 or 60 Hz, SMPTE 274M -4,5,6
720p 50, 59.94 or 60 Hz, SMPTE 296M -1,2,3
1080p 23.98, 24 or 25 Hz, SMPTE 274M -9,10,11
625i 50, 525i 59.94, SMPTE 259M

Delay

Minimum Through Delay	1/2 Line

Output Timing

Fully adjustabel across full frame

LogoStore Capacity

65 MegaPixels (MPix)
Lossless compression produces significant memory efficiency.
Typically 100s of logos and lower thirds

Logo File Formats

TGA, PNG, TIFF, BMP, GIF, JPEG

External Control

TCP/IP, RS-232 via various protocols
GPI/GPO via IP-connected Interface

Who is Ensemble Designs?

By Engineers, For Engineers

In 1989, a former television station engineer who loved designing and building video equipment, decided to start a new company. He relished the idea of taking an existing group of equipment and adding a few special pieces in order to create an even more elegant ensemble. So, he designed and built his first product and the company was born.

Focused On What You Need

As the company has grown, more former TV station engineers have joined Ensemble Designs and this wealth of practical experience fuels the company's innovation. Everyone at the company is focused on providing the very equipment you need to complete your ensemble of video and audio gear. We offer those special pieces that tie everything together so that when combined, the whole ensemble is exactly what you need.

Avenue frames handle 270 Mb/s, 1.5 Gb/s and 3 Gb/s signals, audio and MPEG signals. Used worldwide in broadcast, mobile, production, and post.

Notably Great Service for You

We listen to you – just tell us what you need and we'll do our best to build it. We are completely focused on you and the equipment you need. Being privately held means we don't have to worry about a big board of directors or anything else that might take attention away from real business. And, you can be sure that when you call a real person will answer the phone. We love this business and we're here to stay.

Use audio embedders, sync pulse generators, upconverters, logo inserters and routers all together in one frame.

Bricks and Mortar of Your Facility

The bricks and mortar of a facility include pieces like up/downconverters, audio embedders, video converters, routers, multiviewers, keyers, protection switches and SPGs for SD, HD and 3Gb/s. That's what we're focused on, that's all we do – we make proven and reliable signal processing and infrastructure gear for broadcasters worldwide, for you.

Come on by and visit us. Drop in for lunch and a tour!

Shipped with care to television broadcasters and video facilities all over the world.

Clearly, Ensemble wants to be in the broadcast equipment business. It's so rare anymore to find a company of this caliber that has not been gobbled up by a large corporation. They are privately held so they don't have to please the money people. They really put their efforts into building products and working with customers.

I'm really happy with the Avenue products and Ensemble's service, and even more important my engineers are happy. We've continued to upgrade the product and add more cards. We will be rebuilding our production control room and we will use Avenue again.

Don McKay, Vice President Engineering
Oregon Public Broadcasting

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