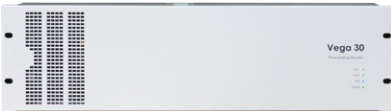
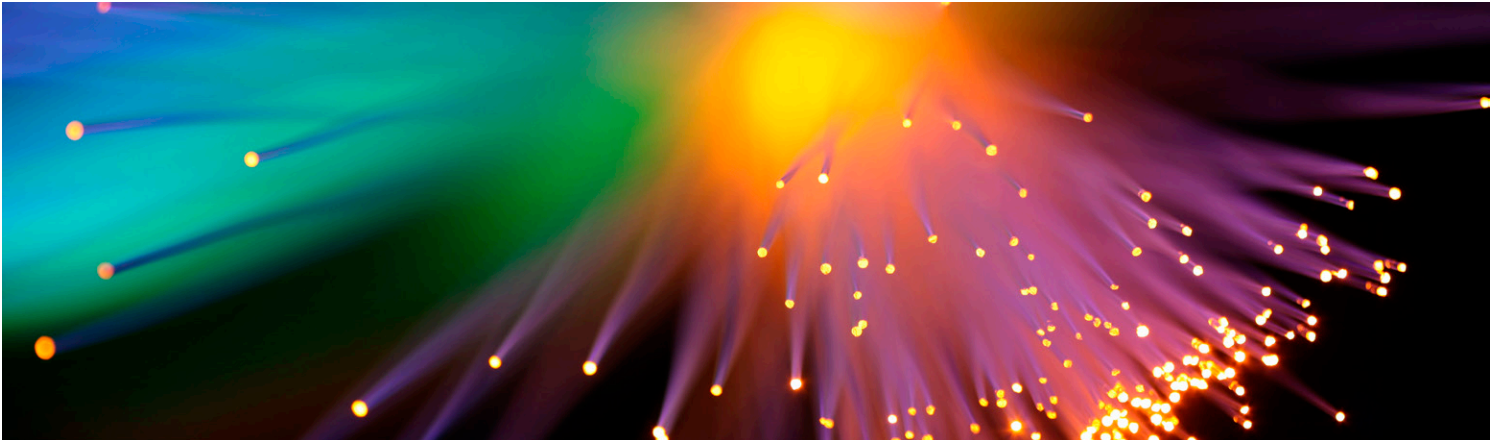


Vega

A New Generation of Routing and Processing



The Vega router family is a powerful suite of routers that delivers superior functionality at price points that suit broadcasters' and media organizations' budgets. The family is divided into the Vega 10 Series, the Vega MV Series and the Vega 100 Series. They offer different physical interfaces that are all simple to configure and because all the models are easy to install, choosing the appropriate model for your routing needs is never difficult.

Vega, from Grass Valley, a Belden Brand, is ideal for small to mid-size applications. It comes in a series of frame sizes, from simple fixed hardware for smaller budgets to flexible dynamic routing architecture for more complex productions. Even if you're a novice in the field, Vega's simple design makes the routers straightforward and easy to operate.

The Vega range has extensive redundancy options with dual redundant crosspoints, frame controllers, power supplies and fans. Future-proof and adaptable, the Vega suite is also equipped to handle 4K UHD as standard to give broadcasters a simple transition when moving to 4K UHD.

Vega 10 Series

A powerful fixed 3 RU mainframe with a fixed 34x34 video matrix. The 3 RU chassis measures at 65 mm (2.56 inches) deep which makes the Vega 10 the perfect router for projects where space is of concern.

The router in the Vega 10 series is the:

- Vega 30

With MADI interfaces, de-embedding and embedding, plus clean and quiet switching and line synchronization, the Vega 30 is ideal for small trucks and studios, headends, bay monitoring, houses of worship and theater.

Vega MV Series

Vega MV routers are flexible, cost-effective, small form factor routers with integrated multiviewer displays. Available in a 1 RU frame, the Vega MV range is offered as:

- Vega 16MV – 16x16 video matrix
- Vega 32MV – 32x32 video matrix

The Vega MV range is perfect for space-conscious setups. It provides routing capability and single or multiple displays with fully configurable screen layouts, comprehensive monitoring and alarm capability and simple, intuitive configuration. For those wanting to transition to 4K UHD, the Vega MV Series is 4K UHD-capable, offering 4K UHD inputs and outputs.

Vega 100 Series

For more complex video and audio routing needs, the Vega 100 Series offers modular and flexible software, configurable inputs and outputs for asymmetric routing for both coax and fiber I/O and is fully redundant for critical applications.

The Vega 100 Series consists of:

- Vega 200
- Vega 400
- Vega 700

With such a broad range of matrix configurations, the Vega 100 Series is ideal for many small and mid-sized applications including medium and larger OB trucks, news studios, playout centers, theaters, rental & flyaway, houses of worship and studio complexes.

Vega A New Generation of Routing and Processing

KEY FEATURES

All Vega Family Routers

- Video routing with clean quiet switching technology, for smooth fade program transitions
- Hybrid audio routing with de-embedding, embedding and discrete audio
- MADI audio inputs and outputs
- Unique input embedding capability
- Line synchronizers
- Integrated multiviewer
- Web configuration

Vega 30 – Small Fixed

- Powerful processing
- Fast configuration
- 4K UHD ready
- Space saving, small form factor
- Cost-efficient

Vega MV Series (16/32)

- Powerful processing
- Fast configuration
- 4K UHD ready
- Space saving, small form factor
- Cost-efficient
- Integrated multiviewer for easy monitoring
- Excellent picture quality
- Alarm for fast error detection

Vega 200 – Small Flexible / Vega 400 – Medium Flexible / Vega 700 – Large Flexible

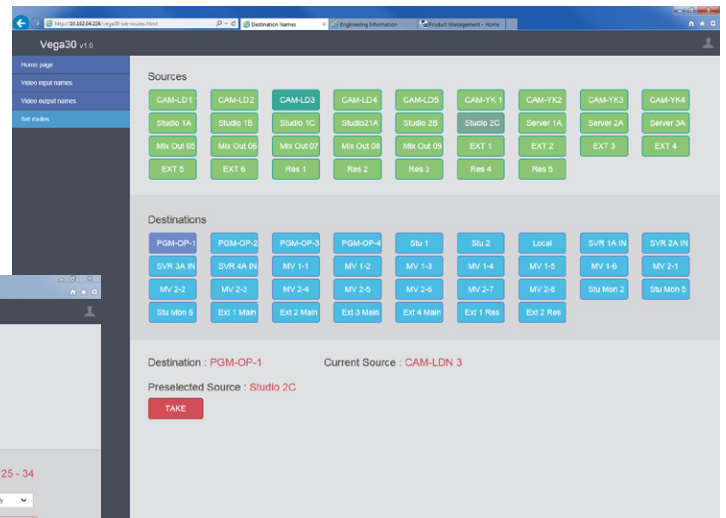
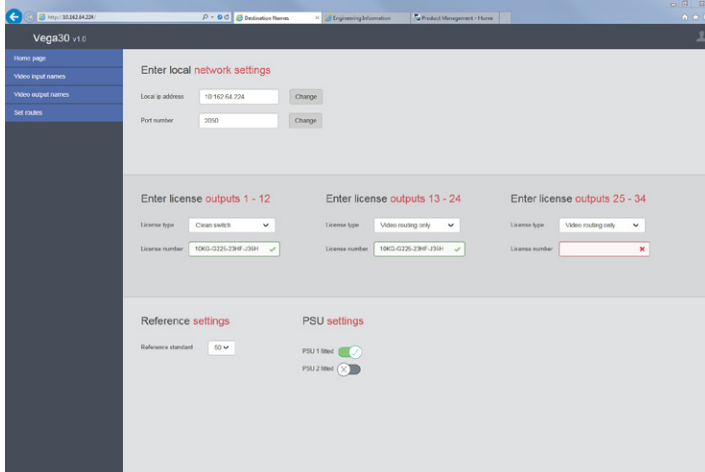
- Flexibility in small and medium sized routers
- Resilient and reliable
- Versatile and fast configuration
- Fully modular
- Smooth program transitions with clean & quiet switching
- 4K UHD ready

The Vega Series is available with varying features and specifications

	Vega 16MV	Vega 32MV	Vega 30	Vega 200	Vega 400	Vega 700
Mainframe	1 RU	1 RU	3 RU	2 RU	4 RU	7 RU
Size Video	16x16	32x32	34x34	1x95 to 95x1	1x191 to 191x1	144x288 to 288x144
Size Audio			736x928	960x912		
Audio Routing			3x6 MADI	6x6 MADI		
Audio Interfaces						
MADI			3 in, 6 out	6 in, 6 out, or dual 3 in with auto failover, dual 3 out		
AES			—	Up to 96 ports	Up to 192 ports	Up to 288 ports
Embedded			34 outputs with 16 audio channels on each	Up to 36 inputs and 33 outputs with 16 audio channels on each		
Processing						
Input Line Sync			—	✓	✓	✓
De-Embedding	✗	✗	✓	✓	✓	✓
Output Embedding	✗	✗	✓	✓	✓	✓
Output Line Sync	✗	✗	✓	✓	✓	✓
Clean & Quiet Switching Outputs	✗	✗	✓	✓	✓	✓
Multiviewer						
4K UHD Output	✓	✓				
4K UHD Input	✓	✓				
UMD	✓	✓				
Tally	✓	✓				
Clock	✓	✓				
Alarms	✓	✓				
Dolby Metering	✓	✓				

Control

The Vega 10 and 100 Series use web-based control, softpanels and hardware panels to control each router function. A browser launched plug-and-play GUI provides intuitive configuration and control via a PC. In addition, 1 RU and 2 RU control panels are available for connection over fast Ethernet either directly or via standard hub and/or IP routing devices. Vega uses Grass Valley's external control protocols, which means third-party control is easy.



Web-based configuration and software control panels.

Hard Panels

The Luna hard panel range has been designed to make control of Vega routers easy and quick. The Luna panel range offers:

Destination/Source search keys

Destination/Source search keys enable the user to define *group* or *category* keys and use for multiple *drill down* filters to specific source/destination. Only names in the selected groups will appear on the display for easy viewing.

Numeric/function keypad

Having numeric keys and *group* keys allow for specific name filtering. Function keys enable toggle source, destination selection, lock, take plus AHP (hybrid) specific controls, as well as clear all and select all function for fast audio track selection.

Multifunction LCD display

The multifunction LCD display enables video routing, audio track routing and processing enabling channel control using rotary controls or buttons.

7028: 1 RU Series LED 36 button



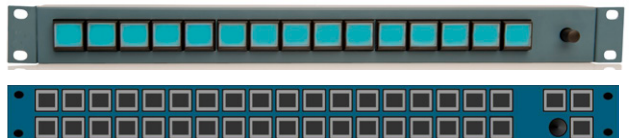
6026: 2 RU Series X-Y, LCD



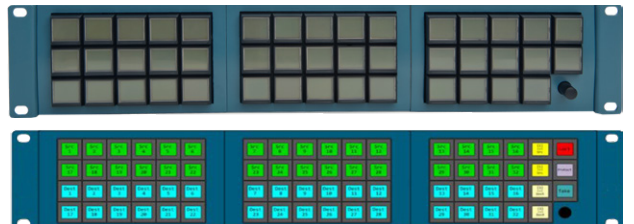
48 LCD button, display



1 RU – 15 Key and rotary switch – 39 Key and rotary switch



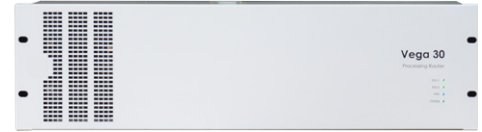
2 RU – 44 Key and rotary switch – 71 Key and rotary switch



The Vega 10 Series

34x34 Video Router with Audio Routing and Clean & Quiet Switching

Vega 30 offers the most advanced hybrid audio routing and processing available in a highly compact, lightweight chassis. Clean and quiet switching options on all outputs, with MADI and embedded audio routing options put Vega 30 routers in a class of their own.



Vega 10 Series Hybrid Video and Audio Routing

The Vega 10 Series is the ideal router solution for live production and OB facilities because it can interface with audio mixing desks, track swapping incoming feeds, route video and audio feeds all with clean and quiet switching.

Offering a simpler solution for video and audio routing, the Vega 10 Series has fixed inputs and outputs on a 3 RU mainframe. Each audio input (embedded or MADI) can be both routed simultaneously with video feeds. Audio can be embedded on the outputs without the need of external equipment. This makes for a cost-effective smaller router with a power level that most routers in its class can't match.

Vega 10 Series Synchronizer and Clean Switching

The Vega series can be equipped with line synchronizer re-timing capability for inputs and outputs. On Vega 10 Series, this is on outputs. This automatically manages any timing differences present on incoming signals and allows timed signal switching in the router.

Clean and quiet switching is available throughout the entire Vega 10 Series to give you smooth nonvisible transitions, as well as to get rid of any noticeable audio clicks and pop interference that may occur on a router switch transition. It also ensures there is no disruption to the video data stream, therefore downstream equipment cannot be disturbed by the transition.

Shallow 3 RU chassis

Ultra lightweight — ideal for all mobile applications. Minimal depth allows mounting behind equipment if space is critical.

34x34 video routing

Simple video only routing for all SDI formats to 3 Gb/s and ASI.

3x6 MADI audio

Interfaces to audio mixing consoles, AES and analog breakout boxes, etc. for small production trucks.

Options for clean and quiet switching on all outputs

12, 24 or all 34 outputs with clean and quiet switching. Line synchronization cleans switch line disturbances, and fades give smooth audio transitions.

Audio routing MADI, embedded

Route embedded audio to and from MADI swap audio channels within a video stream, or add new audio to outgoing video signals.

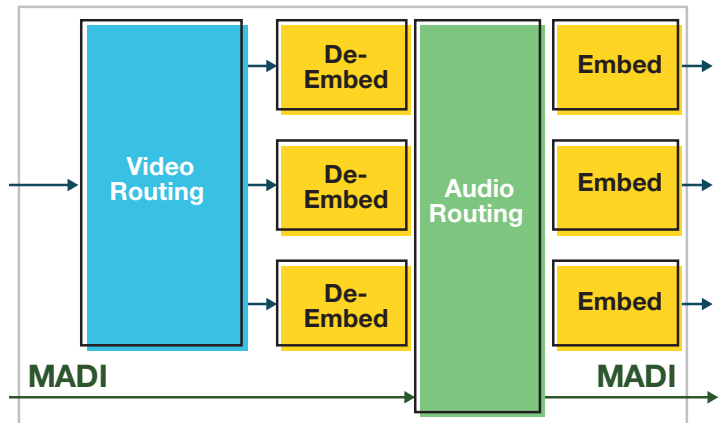
Flexible control

Control from a simple web browsers panel, hardware panels with LCD re-legendable panels and simple button per crosspoint panels and from industry standard open router control protocols, simultaneously.

Simple configuration

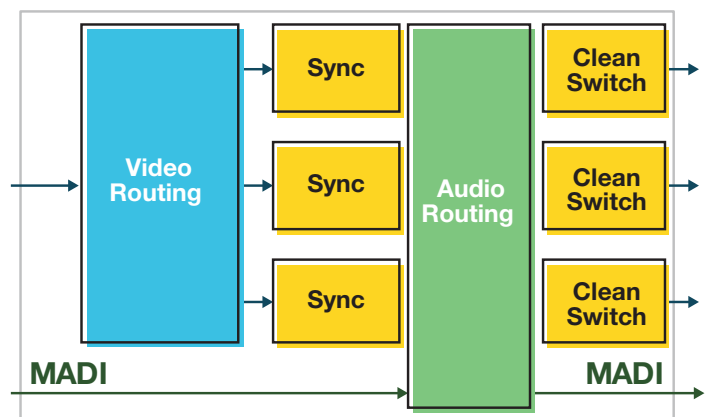
Simple intuitive configuration. No external software to install.

Vega 10 Series – Video & Audio Routing



Vega 10 Series has the ability to mix both video and audio feeds and embed audio on the outputs when required avoiding using external devices and increased expenditure.

Vega 10 Series – Synchronizing & Clean Switching



The Vega 10 Series offers full clean and quiet switching on the outputs, eliminating any doubt that there may be disturbance on downstream signals.

KEY FEATURES

- Video & audio routing
- Powerful processing
- Fast configuration
- Hardware, softpanel and remote control
- Powerful processing capability at a very low cost
- Simple browser configuration
- Flexible control options
- User upgradable
- Space saving, small form factor
- 4K UHD capable
- Video and audio routing
 - Clean and quiet switching for smooth transitions
 - De-embedding & embedding
 - MADI with full audio routing
- Mix any of these for ultimate flexibility
- Supports quad link co-timed switching as signal source or destination

Vega 30 Options

- Audio routing (MADI and embedded)
- De-embedding and embedding for full hybrid routing
- Line synchronizing outputs
- Clean and quiet switching outputs for smooth program transitions
- Dual redundant PSU

Simplified Configuration and Control

- The Vega 30 can be configured simply online via a web application
- When control is needed the Vega 30 offers:
 - Browser control panel for routing and processing,
 - RollCall interface for Luna panel control
 - General Switcher (SW-P-02) and General Remote (SW-P-08) protocols on Ethernet
 - SNMP control (crosspoint setting) and monitoring (simple PSU/fan fail)

Architecture and Options

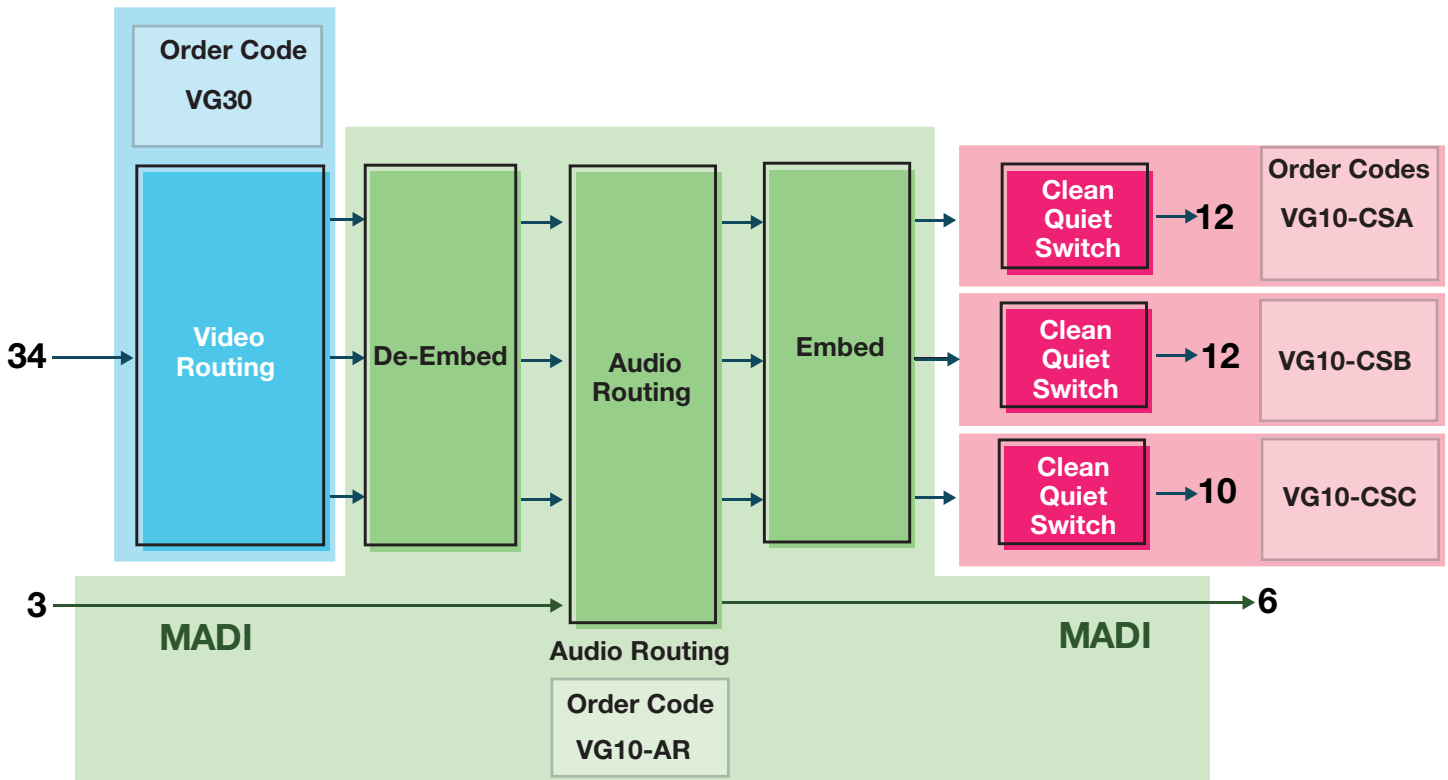
Vega 10 Series is a fixed hardware platform which provides simple video routing by default.

Vega 30 Video Routing

Vega 30 router hardware with no license applied provides a 34x34 video router for all video signals between 270 Mb/s and 3 Gb/s, including DVB-ASI. Licensed options can be added (when purchased, or upgraded later) for additional capability.

Extra Options available for the Vega 10 Series are:

Option	Description
Clean and quiet switching on outputs 1 – 12	Video is re-timed to the reference input (see specifications for timing window.)
Clean and quiet switching on outputs 13 – 24	When a route is changed, embedded audio is faded down, the video route is switched in the active picture area of the switching line as defined by SMPTE RP 168. The switch disturbance on video is removed and embedded audio from the new source is faded up.
Clean and quiet switching on outputs 25 – 34	
Audio routing	Audio embedded on all video signals after the video crosspoint, plus 3 MADI inputs can be routed to any video output and to any MADI channel.



Vega A New Generation of Routing and Processing

SPECIFICATIONS

General

Router size:

34x34 video
3x6 MADI

Connectors: HD-BNC 75Ω

Standards supported:

SMPTE ST 259 525 & 625 SD-SDI
SMPTE ST 292 720p and 1080i HD-SDI
SMPTE ST 424 1080p 3G-SD
MADI AES-10

Signals

Inputs – video

Return loss: >15 dB 10 MHz to 1.5 GHz, >10 dB
1.5 GHz to 3 GHz

Input amplitude (nominal): 800 mV

DC offset: <5V

Cable equalization: automatic for Belden 1694A:

SD: 350m / 1150 ft.

HD: 200m / 650 ft.

3G: 140m / 460 ft.

Outputs – video

Return loss: >15 dB 10 MHz to 1.5 GHz, >10 dB
1.5 GHz to 3 GHz typical

Amplitude: 800 mVp-p ±10%

Rise/fall time: <180 ps @ HD, <650 ps @ SD,
90 ps @ 3G

Timing jitter: <0.25 UI @ 1.5G and 3G, <0.15
UI @ SD

Alignment jitter: <0.15 UI @ 1.5G and 3G, <0.1
UI @ SD

DC offset: 0V ±0.5V

Inputs – MADI audio

Return loss: >15 dB 10 MHz to 1.5 GHz, >10 dB
1.5 GHz to 3 GHz

Input signal format: MADI to AES-10
56- or 64-channel, 48 kHz sample rate

Connector: HD-BNC

Outputs – MADI audio

Output format:

MADI to AES-10

64-channel, 48 kHz sample rate

Connector: HD-BNC

Amplitude: 800 mVp-p ±10%

Clean and Quiet Switching

Switch line processing

Re-generation of switching line, line synchron-
ized to reference signal. Video and audio V-fade
around the crosspoint switch transition

All clean switching signals must be the same
format and synchronous to the reference

V fade rate

4, user selectable, cut to 0.5s V-fade

Non-audio signals

Auto detect and cut

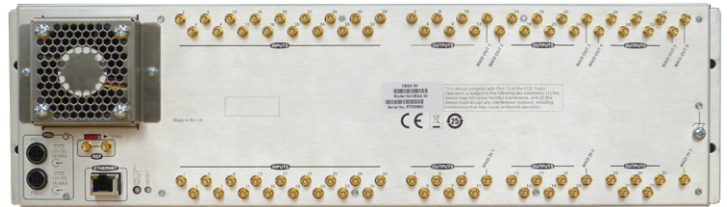
Ancillary data handling in V-fade

VANC data passes transparently

HANC non-audio passes transparently

Audio V-faded

AES validity, user and channel status bits passed
transparently



ORDERING

VG30

Vega 30 – 34x34 video router with single PSU

VG10-CSA

Vega 10 series license – clean quiet switching & line synchronizer license for outputs 1-12

VG10-CSB

Vega 10 series license – clean quiet switching & line synchronizer license for outputs 13-24

VG10-CSC

Vega 10 series license – clean quiet switching & line synchronizer license for outputs 25-34

VG30-PSU

Vega 30 PSU (main or redundant)

VG30-FAN

Vega 30 replacement fan assembly

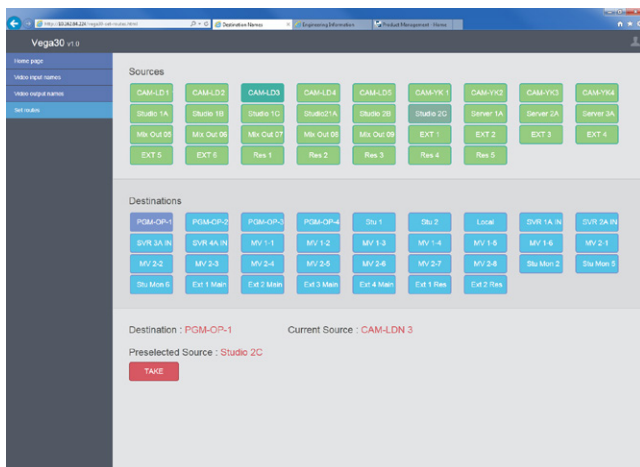
Vega 30 Packages

VG30-P2

Vega 30 – 34x34 video router with 12 clean quiet switching outputs

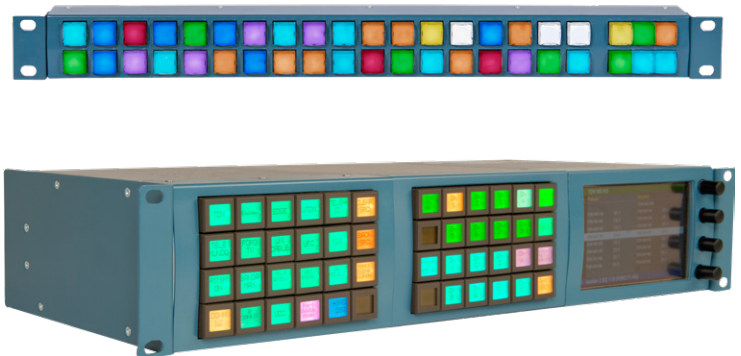
Control

There is a choice of options for router control for the Vega 10 Series.



Web soft panel – a simple browser based X-Y panel

Luna 1 RU and 2 RU control panel



Vega 16MV & 32MV

SDI Routers with Integrated 4K UHD Multiviewer Capability

A cost-effective solution for video routing with 4K UHD multiviewer outputs.



The Vega 16MV and Vega 32MV are cost effective-solutions for routing and multi-image displays. Vega MV are standalone routers with integrated multiviewer, ideal for smaller applications such as ENG and small OB vans, small studios and live productions, or concert venues, houses of worship and conference centers.

Applications

Vega MV is ideal for use in:

- Studio galleries
- OB trucks
- ENG vans
- Post production suites

In fact any application that benefits from a single or multiple display(s).

Vega MV Capability

- Generate audio metering of individual channels from AES or Dolby E
- Auto detect Dolby E formats and adjust bars to suit, or show incorrect audio formats
- Display closed captioning
- Decode and use WSS (wide screen signaling for aspect ratio control)
- One or two rows of audio metering for efficient use of display space
- Audio phase indication
- UMD source names from external routers and production switchers
- Source tallies from tally systems
- Alarm indicators
- Safe area marker
- Real-time clocks or timers
- VITC or LTC timecode display
- Multiple clocks with timezone offsets
- Store and display graphics for on screen logos
- Alert message boxes containing text, updated from external systems

Control Integration

Vega MV can be operated standalone, or as part of a larger routing and monitoring system.

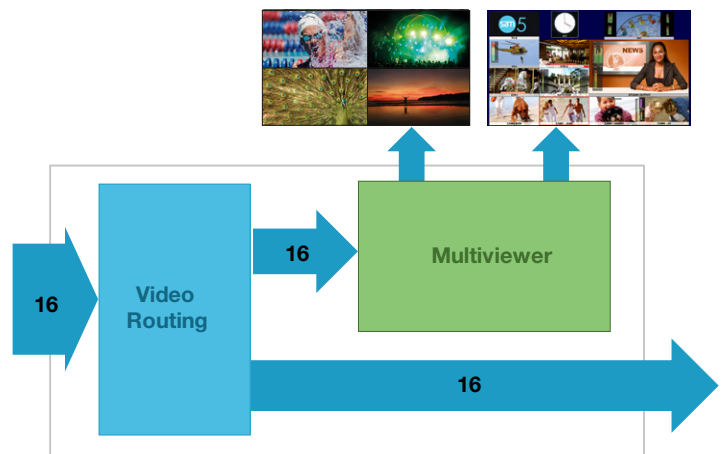
Support for SW-P-02 router control protocol allows control from any Grass Valley control system, or from many other manufacturer's control systems.

SW-P-08 protocol support adds the ability to extract source and destination names, and for the Vega MV to take names from external routers and switchers, to display on screen.

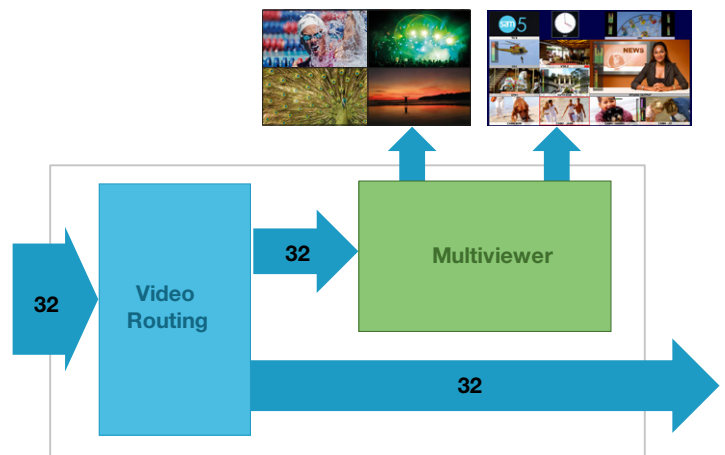
RollCall protocol allows direct connection to control panels, and all can be used simultaneously.

As well as a 16x16 or 32x32 router, a separate router feeds the multiviewer scalars. This allows totally independent control of sources routed to each multiviewer tile. Alternatively, a "destination follow" mode forces a tile to automatically follow the source routed to a specified destination, giving confidence that the correct source has been routed.

Custom alarms can be triggered on-screen, with configured text and text box colors, driven from RollCall or other third-party applications, providing system level alarms.



Vega 16MV



Vega 32MV

KEY FEATURES

- SDI routing to 3G:
 - 16x16
 - 32x32
- 4K UHD quad link inputs
- 16 or 32 scalers (separately routed from inputs)
- 2 multiviewer outputs:
 - 4K UHD HDMI2
 - 1080p SDI copy
- Control from industry standard protocols
- Hardware control panels or softpanels
- Simple web browser configuration and control
- Redundant PSU option

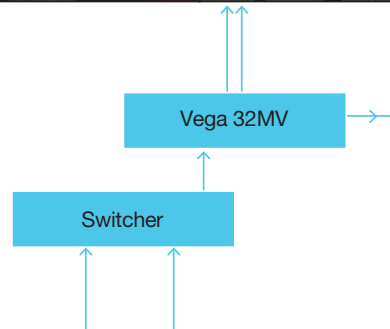
Multiviewer Output Features

- Multiformat SD/HD/3G/4K UHD inputs
- Fully scalable images
- Audio metering
- Dolby metering
- Audio format indication
- Multiple metering scales, with flexible bar layouts
- UMD tallies showing switcher and router source names
- Comprehensive alarms for video, audio and metadata
- Analog and digital clocks (with timezone offsets)
- Subtitle, CC & VITC display
- AFD, WSS detection and auto aspect ratio switching
- GPIO
- Ethernet and serial comms to external control systems
- Intuitive web interface for simple configuration
- Two independent multiviewer outputs per system, each SDI with HDMI copy
- Monitor on a local screen using HDMI, and route to remote screens using SDI

Outside Broadcast/Live Production

Multichannel display with graphical background and channel logos for clear identification:

- 1 RU systems allow production switcher live operation
- Cue lights
- UMD tallies showing switcher and router source names
- Clock
- 4K UHD HDMI out for high-quality monitoring with SDI copy



The Vega MV can be configured simply online via a web application

When control is needed the Vega MV offers:

- Browser control panel for routing and configuration
- Hardware panel control for routing and layout recalls
- General Switcher (SW-P-02) and General Remote (SW-P-08) protocols on Ethernet
- SNMP control and monitoring

Simple web browser-based configuration means no software to install before configuration can begin.

Configuration tools include:

- Grouping
- Align to grid
- Auto scale to aspect ratio
- Multicolor indication of borders for different types of tile
- Auto-update of screens as changes are made, or push once layout is complete

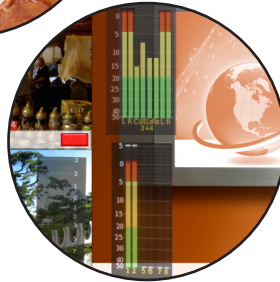
Input setups (audio meter colors, over/under levels, and alarm settings) for any input can be applied to one or more selected inputs to speed configuration.

Monitoring and Alarms

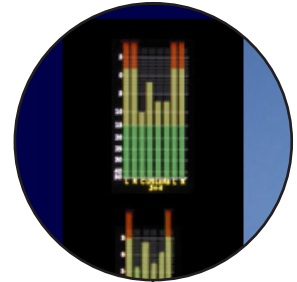
- SDI auto detection from SD to 3G
- Multiple GPIs and GPOs for external tally and alarm triggers
- Content and metadata monitoring and alarms
- Clear indication of missing or incorrect meta-data on-screen and via external alarm
- Audio bargraph (embedded and discrete AES) including Dolby E metering
- "Wrong audio format" detection gives simple indication on screen or via alarm
- Subtitle, AFD, WSS, VITC decoding and monitoring
- Subtitle/teletext monitoring:
 - WST/ITU-R BT.653-3, SD only
 - OP47 – SD, HD, 3G-A
- Closed captions:
 - CEA-608 NTSC
- AFD driving aspect ratio:
 - SMPTE ST 2016, SD, HD and 3G-A
- WSS driving aspect ratio
 - ETSI EN300294, composite
- D-VITC display
 - SMPTE ST 12 – SD-SDI only

Clear on screen alarms

Video and audio alarms are displayed on each tile. Alarms can be set for each tile, and font size is fully configurable.



Two rows of audio metering for efficient use of display space.



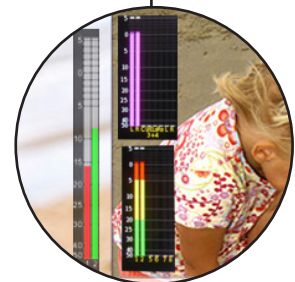
Dolby Metering

Meter all Dolby E formats simply and clearly.



Incorrect audio format indicators and alarms

Expected audio formats can be defined for each channel — if this format is not present, a different colored bar is displayed. Alarm text can also be displayed.



Vega A New Generation of Routing and Processing

SPECIFICATIONS

Inputs and Outputs

Number of inputs/outputs:

16 or 32, 3G/HD/SD, optionally quad link 4K UHD

Input formats and standards supported:

PAL, PAL-M, NTSC, NTSC-4.43: 720x480i/59.94, 720x576i/50

SD-SDI: 1920x1080i/60, 1920x1080i/59.94, 1920x1080i/50, 1920x1080p/30, 1920x1080p/29.97

HD-SDI: 1920x1080p/25, 1920x1080p/24, 1920x1080p/23.98, 1280x720p/60, 1280x720p/59.94, 1280x720p/50

3G-SDI: 1920x1080p/60, 1920x1080p/59.94, 1920x1080p/50

Metering capacity:

Dolby: up to 4 Dolby encoded pairs per input

Mono Audio: a maximum of 32 mono audio channel meters can be displayed per video tile

Dolby metering operation:

Auto-detect: audio meters adjust to incoming format

Fixed: audio bars are set to defined format. Channels of different formats are shown in "alarm" color

Multiviewer Outputs

2x SDI outputs with 2x HDMI copies

Output formats:

Format	Resolution
HD 720p	1280x720, 50 Hz, 59.94/60 Hz
3G 1080p	1920x1080, 50 Hz, 59.94/60 Hz
4K UHD (HDMI only)	3840x2160, 50 Hz, 59.94/60 Hz

Video processing delay:

Nominal delay with co-timed input signals is 1 frame

Non-synchronous signals can add up to 1 frame of delay

Image configuration:

Images can be continuously varied in size and position on screen or may be displayed in preconfigured layouts, positions and sizes. When the outputs are configured to feed two display devices the tiles may be assigned to one or both outputs. The system menu can be displayed on one or both video outputs

Audio metering standards:

AES/EBU, BBC PPM, DIN PPM, Nordic PPM, VU and Extended VU

Alarms:

Video: loss of sync, loss of luminance, freeze frame or motion

Audio: loss of embedded or external audio, over level, out of phase, wrong format + Dolby E loss

Other: loss of VITC, subtitles or V-chip, video non-sync detection

Environmental

Depth: 426 mm (16.7 in.)

Weight: 8 kg/18 lbs.

Backup power: external 1 RU provides 24 VDC

Power: 190W max.

Supply voltage: 100-240 VAC, 50/60 Hz

Cooling: Fan assisted, front to side

ORDERING

Frames

VG-16MV

Vega 16MV. 1 RU 16x16 router with dual 4K UHD multiviewer outputs

VG-32MV

Vega 32MV. 1 RU 32x32 router with dual 4K UHD multiviewer outputs

PSUs

MV-EXTPSU3

External backup 1 RU chassis for 3 PSU modules (PSU not included)

MV-1000PSU

PSU module for Vega 16MV and Vega 32MV, and external backup chassis

Options

MV-EXTPSU3 + MV-1000PSU

A 1 RU backup power supply frame accommodating up to 3 backup power units provides power to the Vega MV in the event of an internal power supply failure. It also supports hot swapping of faulty power modules

Support

Grass Valley provides a host of world-class customer services that take our clients from the inception of a project, through all of the key stages to successfully get on air, and throughout the system's working life.



Vega 100 Series

Flexible Resilient Hybrid Routing and Processing

The Vega 100 Series is available in three frame sizes from 6x6 to 144x288 with an impressive feature set, including hybrid video and audio routing, powerful processing, input embedding, synchronizers and clean and quiet switching.



The Vega 100 Series is suited to more complex productions that demand the flexibility to manage many different feeds quickly and to route instantly in the event of last-minute changes.

With the Vega 100 Series, any port can be configured as input or output with a choice of coax, fiber or HDMI, which gives users the freedom to customize their router to specific needs.

All inputs and outputs can be configured easily via the software setup menu, which allows multiformat, multilevel routing in any combination for both video and audio. All routing in a single chassis simplifies system design and saves on space, power and costs.

Vega 100 Series Input Embedding, Audio Routing and Clean Switching

With these functions, the Vega 100 Series provides a powerful option that enables your baseband infrastructure to include a mix of dynamic configurations of mixed video, audio, copper and fiber for both inputs and outputs.

There are three rack sizes in the Vega 100 Series, which means you can use the same modules throughout your application or you can standardize on one size throughout your facility.

Vega 100 Series Input Embedding and Audio Routing

The Vega 100 Series can be equipped with any combination of video and audio modules. It will route any format of video and AES, MADI, embedded or compressed audio in any combination in a single frame, allowing multiformat, multilevel routing. For users, this means a uniquely flexible architecture for varying applications, such as if they're working in an OB environment, for example:

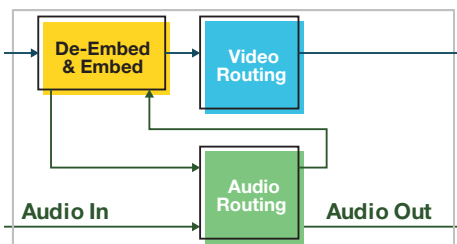
- De-embed audio on processing inputs
- MADI inputs (mixing desk interface)
- AES inputs and outputs
- Stereo routing with mono breakaway
- Input embedding

Vega 100 Series Synchronizer and Clean Switching

The Vega family can be equipped with line synchronizer re-timing capability for inputs and outputs. On the Vega 100 Series, both inputs and outputs can be synchronized. This automatically manages any timing differences present on incoming signals, and allows timed signal switching in the router.

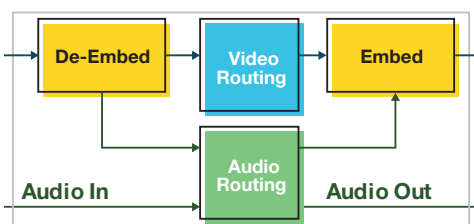
Clean and quiet switching is available throughout the entire Vega 100 Series to give you smooth nonvisible transitions, as well as to get rid of any noticeable audio clicks and pop interference that may occur on a router switch transition. It also ensures there is no disruption to the video data stream, therefore downstream equipment cannot be disturbed by the transition.

Vega 100 Series - Input Embedding & Audio Routing



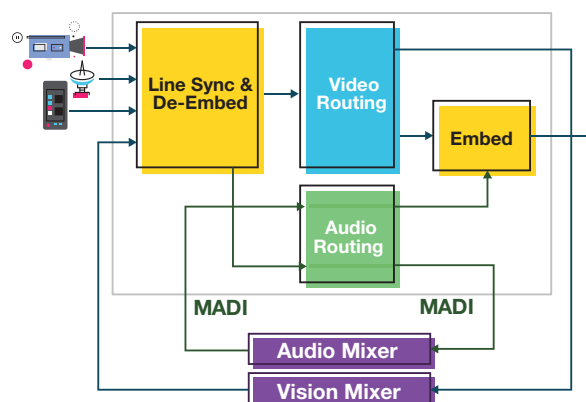
The Vega 100 Series can embed audio on both inputs and outputs, allowing for multiple feeds to be configured accordingly. Input embedding is a unique feature of both Vega and Sirius 800 router families. Programs with combinations of video and audio tracks can be created on a router input, rather than the output and wrapping external cables back around to an input. This saves space, power and cost.

Vega 100 Series - Hybrid Video & Audio Routing



The Vega 100 Series allows audio to be embedded on both inputs and outputs and it can simultaneously route video and audio. Totally flexible routing of video and audio, together with input embedding, means any signal workflow can be accommodated within the Vega.

Vega 100 Series - Synchronizing, Hybrid Routing & Clean Switching



Vega A New Generation of Routing and Processing

KEY FEATURES

- Vega 200 (2 RU) 1x95 to 95x1
- Vega 400 (4 RU) 1x191 to 191x1
- Vega 700 (7 RU) 144x288 to 288x144
- Configurable inputs and outputs
- Hybrid video and audio routing
- Mixture of SDI, HD, 3G, coax, fiber and HDMI
- MADI & AES audio — balanced and unbalanced
 - Up to 6 MADI inputs and 6 MADI outputs
- De-embedding and embedding for full hybrid routing
- Ultra-resilient — redundant PSUs, controllers, crosspoints and fans
- A variety of control interfaces
- Fully modular with hot swappable cards, PSUs and fans
- SDI, ASI, 4K UHD capable
- Synchronizing inputs and outputs
- Clean and quiet switching for smooth program transitions on outputs
- Audio track shuffling
- Input embedding
- Clean and quiet switching

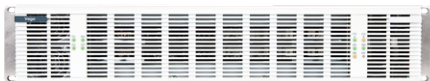
Benefits

- Inherent flexibility in small & medium sized routing applications
- Zero compromise in resilience and redundancy
- Versatility and speed in system configuration

Input/Output Options

- Coax input/output — 12 channels
- Fiber, coax or HDMI SFP input/output — 12 channels
- AES balanced and unbalanced — 12 channels
- Input processing — 9 channels
- Output processing — 9 channels
- MADI and audio routing — 6x6

Flexible hybrid video and audio routing	
Video, AES, Embedded and MADI interconnects for maximum flexibility in multiple audio formats. Balanced and unbalanced AES connections.	Increased system design flexibility. Mixed signal routing in a compact frame. Ideal for small/medium live production in OBs and studios.
Clean & quiet switching	
Clean switching line disturbances, and V-fade audio.	Disturbance-free on-air master control and switcher bypass applications.
Asymmetric signal routing	
Each signal port independently software configured for use as an input or an output.	No input or output port wastage! Can negate the need for the 'next size up' router (particularly for monitoring and distribution applications). Change the router size without hardware changes.
Multiple video connection options	
Coax, fiber SFP and HDMI I/O modules. Spans video physical layer boundaries. Simply route between SDI to HDMI.	No need for external fiber or HDMI converters. Reduced cabling, increased reliability. PC graphics and PC monitor routing.
Extensive redundancy options	
Dual redundant crosspoints, frame controllers, power supplies.	Full protection for critical or 'live' services. No loss of revenue from sub-assembly failure!
Ultra compact frame	
50% more signal ports than conventional BNC electrical router for same rack height.	Greater efficiency with reduced racking space & costs. Or more ports for future expansion!
Entry level lower cost alternative	
Dedicated 12-port coax-only SDI rear modules.	Minimizes outlay and complexity for all-coax installations.
Comprehensive set of soft and/or hard control options	
Intuitive plug-and-play control software and/or 1 RU and 2 RU control panels.	Multiple solutions for all workflow environments. All can co-exist on one router.



Vega 200

2 RU
1x95 to 95x1 video
Square size: 48x48



Vega 400

4 RU
1x191 to 191x1 video
Square size: 96x96



Vega 700

7 RU
144x288 to 288x144 video
Square size: 216x216

Vega 100 Series Architecture

Input/Output Frame Types and Configuration

The Vega architecture allows for an individual channel on a rear panel to be configured as an input or an output. In the Vega 200 and 400 frames, this applies to all slots; in Vega 700 there is a mix of input, output and configurable bidirectional slots.

Vega 100 Series – Input/Output Port Configuration

Frame	Module Slots	Type	Port Input/Output Options
Vega 200	8		All ports can be configured as inputs or outputs
Vega 400	16		All ports can be configured as inputs or outputs
Vega 700	36	Video	144 input ports (12 slots) 144 output ports (12 slots) 144 configuration (input or output) ports (12 slots)
		Audio	144 output ports (12 slots) 144 configuration (input or output) ports (12 slots)

Module Types and Configuration

Input cards can be fitted to any input or bidirectional slot.

Output cards can be fitted to any output or bidirectional slot.

The audio crosspoint MUST be fitted in a bidirectional slot.

Input/Output Module Types

Type	No. of Channels	Input	Output
SDI coax	12	Yes	Yes
SDI SFP	12 (6 HDMI)	Yes	Yes
SDI Input Processing	9	Yes	No
SDI Output Processing	9	No	Yes
Audio Crosspoint & MADI I/O	6 in + 6 out	Yes	Yes
AES Balanced	24 pairs (takes 2 slots)	Yes	Yes
AES Unbalanced	24 pairs (takes 2 slots)	Yes	Yes

SDI Coax and AES Modules

Each port is configured as an input or an output via the router controller configuration screen.

SDI SFP Module

Each port is an input or output dependent on the type of SFP module fitted (receiver or transmitter). Ports can be configured by the router controller as input or output (fixing the configuration even if no SFP is fitted), or automatically set as input or output when an SFP is inserted.

SDI Input and Output Processing Modules

Fixed input or output functionality.

Audio Crosspoint with MADI Inputs and Outputs

MADI fixed as six inputs and six outputs.

System Examples

Video Only, or Two-level Video and AES Routing

Video requires one or more of video SFP or video coax cards.

Discrete AES inputs and outputs require one or more balanced AES or unbalanced AES cards. In this scenario, routing audio does NOT need an audio crosspoint.

Cards can be fitted as shown in the table below.

Frame	Video (coax or SFP) Cards	AES Audio (balanced or unbalanced) Cards
Vega 200	Fit in any slot — max. 96 ports (Vega 200)/192 ports (Vega 400) — video or AES inputs or outputs in any combination	
Vega 400		
Vega 700	Fit in any slot. Notes: 12 input only slots (144 inputs) 12 output only slots (144 outputs) 12 bidirectional slots (144 ports configurable as inputs or outputs)	Inputs – fit in 12 bidirectional slots only (max 144 inputs) Outputs – fit in output or bi-directional slots (max 288 outputs) Audio router sizes – 1x287 to 144x144 (stereo AES sizes)

Video Routing with Clean and Quiet Switching on Outputs

Output processing modules provide clean and quiet switching on video outputs.

Clean and quiet switching does not require an audio crosspoint to be fitted.

Frame	Video (coax or SFP) Inputs or Outputs	Clean & Quiet switching Video Outputs	
		Fit Into	Max no. of cards (video O/P)
Vega 200	Fit in any slot	Any slot	7 slots (56 outputs)
Vega 400	Fit in any slot	Any slot	15 slots (135 outputs)
Vega 700	Fit in any slot Notes: 12 input only slots (144 inputs) 12 output only slots (144 outputs) 12 bi-directional slots (144 ports configurable as inputs or outputs)	12 output slots (108 outputs and/or bidirectional slots)	24 slots (216 outputs)

Embedded Audio and MADI Routing

The audio crosspoint & MADI interface card has 6x MADI inputs and 6x MADI outputs. Each pair of MADI inputs and outputs can be configured as redundant inputs with auto-failover, and dual outputs.

For any embedded or MADI routing the audio crosspoint & MADI interface card must be fitted.

Once fitted, all audio routing is via the audio crosspoint.

Audio Routing with Embedded and MADI audio

Interconnections between the audio crosspoint, and processing and AES cards, use a 48-channel audio multiplex (Amux).

An Amux (audio multiplexer) supports:

- Up to 24 pairs on an AES module
- Up to 16 channels from/to 3 video signals on a processing module

AES modules have one Amux in and one Amux out.

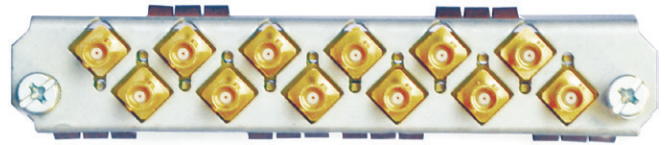
Processing modules have three Amuxes in and three Amuxes out (nine video signals, with 16 channels per video).

Amux use is user configurable — for maximum flexibility, each Amux is individually enabled on the input/output modules.

Automatic configuration then connects up to 12 Amuxes in to the audio crosspoint, and up to 12 Amuxes out from the audio crosspoint.

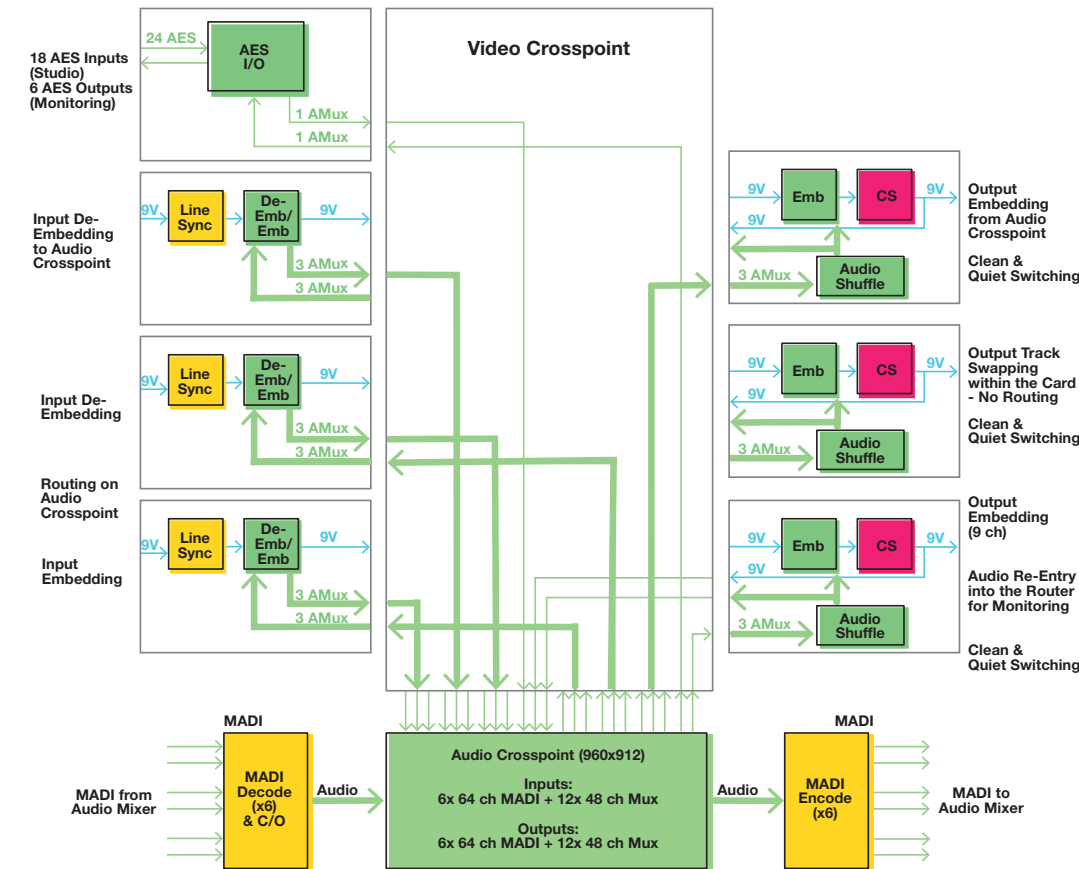
Amuxes are not required for:

- MADI inputs and outputs – these are integral to the audio crosspoint module
- Line synchronization and clean switching functions
- Audio channel swapping within a video signal



Audio crosspoint capacity	Inputs	Outputs
MADI (64 channels per MADI)	6 x 64 = 384	6 x 64 = 384
Internal busses to processing and AES cards (48 channels per bus)	12 x 48 = 576	12 x 48 = 576
Silence and test tones	6	-
Total	966	960

Audio multiplex usage	Crosspoint Inputs	Crosspoint Outputs
Input processing card	3 (de-embedding and audio routing)	3 (input embedding from the crosspoint)
Output processing card	3 (embedding of routed audio from the crosspoint)	3 (output embedding from the crosspoint)
AES input/output modules	1	1

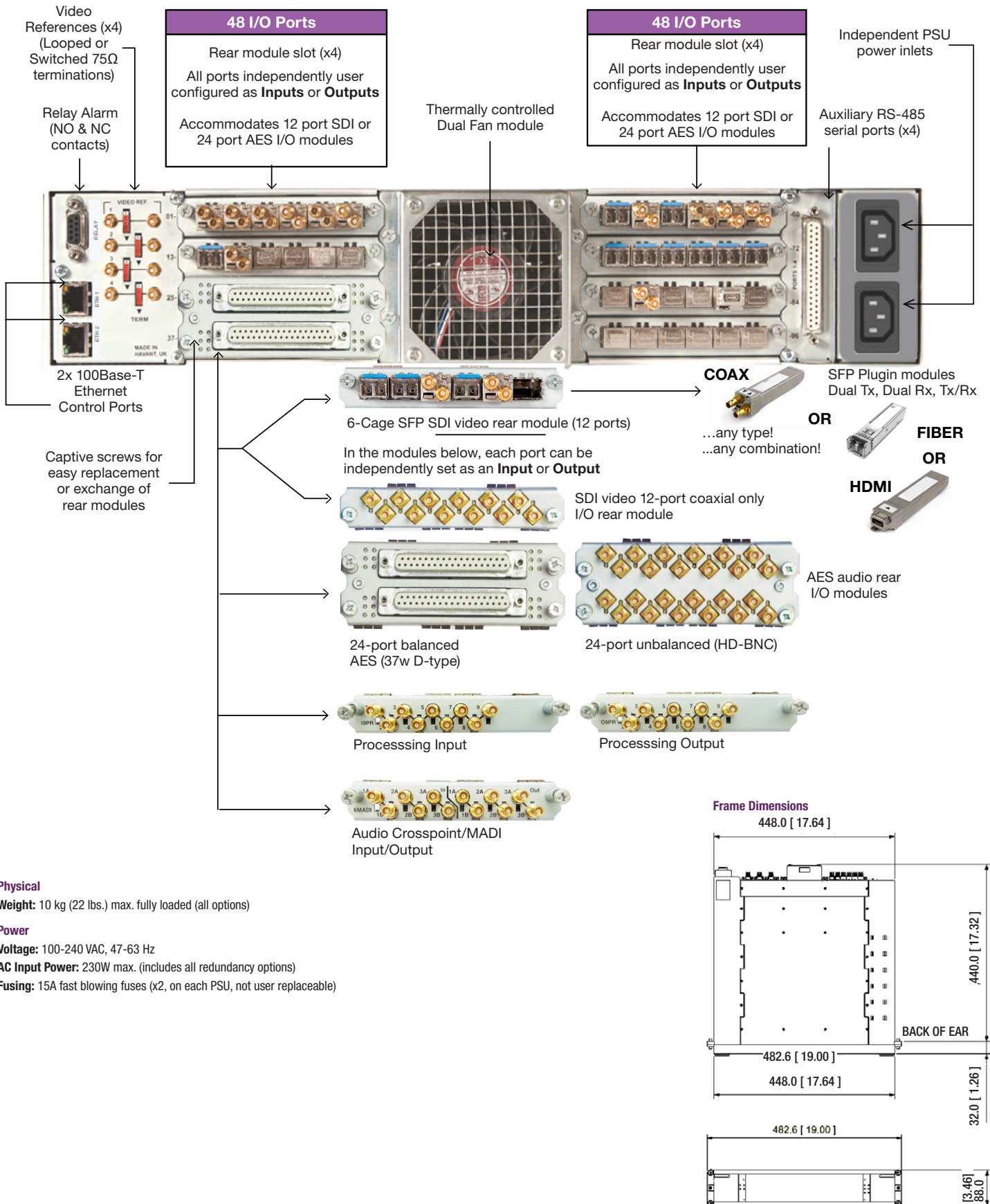


Possible audio configurations. All channels are handled as mono audio on the crosspoint. Controller configuration allows audio to be set as stereo or surround signals containing multiple mono channels.

SPECIFICATIONS

Frames and Options

Vega 200



Physical
Weight: 10 kg (22 lbs.) max. fully loaded (all options)

Power
Voltage: 100-240 VAC, 47-63 Hz
AC Input Power: 230W max. (includes all redundancy options)
Fusing: 15A fast blowing fuses (x2, on each PSU, not user replaceable)

Vega A New Generation of Routing and Processing

SPECIFICATIONS (CONT.)

Vega 400

16 module slots
All ports can be configured as inputs or outputs

Physical

Weight: 18 kg (40 lbs.) max. fully loaded (all options)

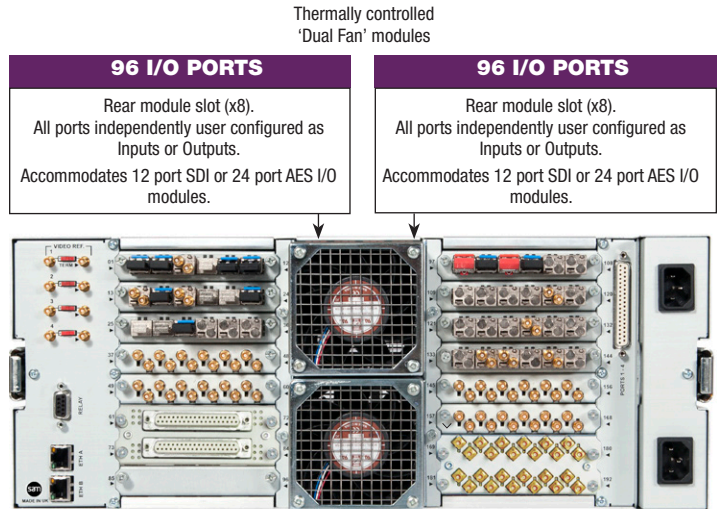
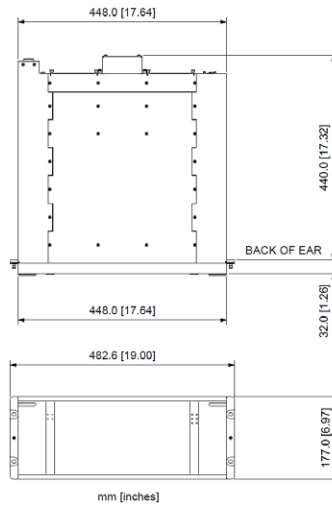
Power

Voltage: 100-240 VAC, 47-63 Hz

AC Input Power: 384W max. (includes all redundancy options)

Fusing: 15A fast blowing fuses (x2, on each PSU, not user replaceable)

Frame Dimensions



Vega 700

36 module slots

Video

144 input ports (12 slots)
144 output ports (12 slots)
144 configurable ports (12 slots)

Audio

144 configurable ports (12 slots)
144 outputs (12 slots)

Physical

Weight: 31 kg (68 lbs.) max. fully loaded (all options)

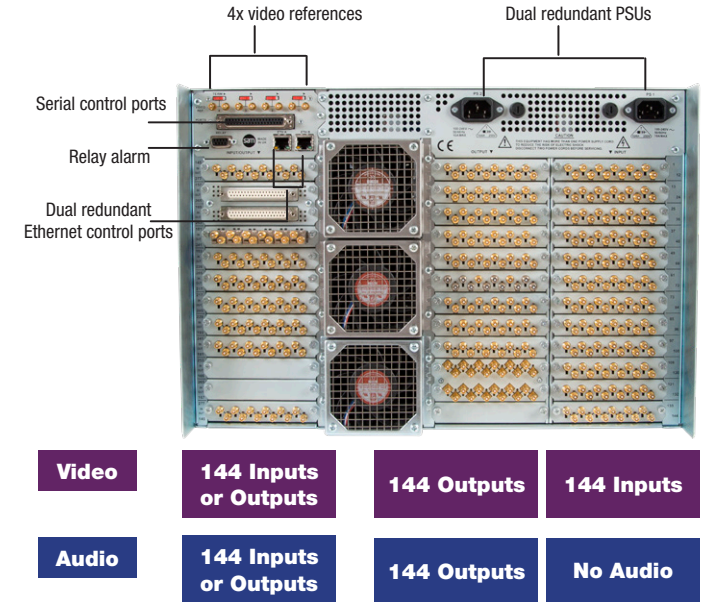
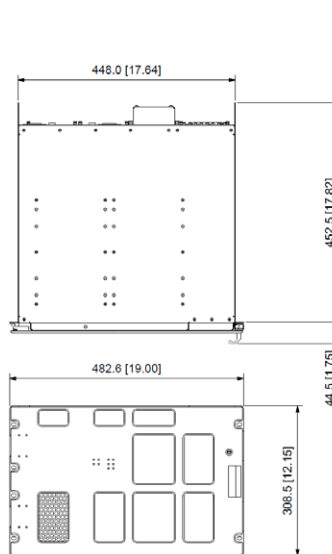
Power

Voltage: 100-240 VAC, 47-63 Hz

AC Input Power: 540W max. (includes all redundancy options)

Fusing: Fuse 10A fast blow (on rear panel)

Frame Dimensions



Compliance

EMC – Emissions: EN55103-1 (EU), FCC Part 15 (USA)

EMC – Immunity: EN55103-2 (EU)

Safety: EN60950 (EU), UL1419 (USA)

Hazardous Material: RoHS-6 (UK) – Complies with EU Directive

Auxiliary Ports:

Physical layer: RS-485 x 4 ports

Control & Status

Network

Physical layer: Ethernet 100Base-T RJ45

Video References

No. of inputs: 4 looped HD-BNC

Impedance: 75Ω ±0.1% or Hi Z (switched on rear panel)

Signals: 1 Vp-p analog video/syncs/tri-level HD syncs

Switching lines: Line 10 (525), Line 6 (625), Line 7 (HD)

Alarm Relay

Connector: 9-way D/female/screw lock, NO & NC contacts

SPECIFICATIONS (CONT.)

SDI & AES Input/Output Modules

SDI Rear Module for SFP Plug-Ins (VG-RM6SFP – SDI)

No. of SFP ports: 6 (12x SDI signal ports)

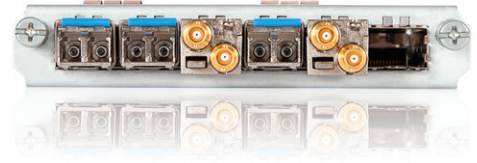
Data rates: 2.970 Gb/s, 2.970/1.001 Gb/s, 1.485 Gb/s, 1.485/1.001 Gb/s, 270 Mb/s

Signal standards: SMPTE ST 424/SMPTE ST 292/SMPTE ST 259 (Reclocked – Bypass option). DVB-ASI (Non relocked)

Note: SDI re-clocking circuitry is contained in VG-RM6SFP-SDI. All SFP modules are non-reclocking.

CATSII Multi-Color LED Indicators (12)

Blue	Output (Tx) = "OK"
Green	Input (Rx) = "OK" – Signal present
Flash Red	Error/Plug-in mismatch to configuration
Amber	Output (Tx) = OFF/Laser disabled
Red	Input (Rx) = No Signal detected
OFF	EMI-Dust SFP/No Plug-in



SFP Fiber Modules

General data

Receptacle: LC Duplex Port FOCIS-10-A-2-1-2

Mating plugs:

LC/PC Simplex (x 2) FOCIS-3P-0-1-1-1-0 [Single mode]

– or –

LC/PC Duplex FOCIS-10-P-2-2-1-1-0 [Single mode]

Data rates: 2.970 Gb/s, 2.970/1.001 Gb/s, 1.485 Gb/s, 1.485/1.001 Gb/s, 270 Mb/s

Signal standards: SMPTE ST 424/SMPTE ST 292/SMPTE ST 259, DVB-ASI

Note: FOCIS = Fiber Optic Connector Intermateability Standard.

Re: ANSI/TIA/EIA 604-10 (FOCIS 10)

Standard and Long Range Fiber Modules

SM-T31T31-3G: Dual 1330 nm Tx

SM-T31R-3G: 1330 nm Tx & wideband Rx

SM-T55T55-3G: Dual 1550 nm Tx

SM-T55R-3G: 1550 nm TX & wideband Rx

SM-RR-3G: Dual wideband Rx

TX – Transmitter(s)

Laser(s)	FP*	DFB**
Wavelength	1310 nm [±30 nm]	1550 nm [±30 nm]
Power	-2 dBm typical, -5 dBm min, 0 dBm max.	-2 dBm typical, 5 dBm min, 0 dBm max.
Extinction Ratio	7 dB min.	7 dB min.
Link Distance	Up to 30 km @2.97 Gb/s	Up to 45 km @2.97 Gb/s

RX – Receiver(s)

Receiver(s): PIN + TIA

Wavelength: 1260 – 1620 nm

Sensitivity:

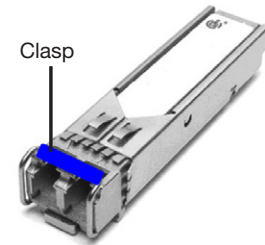
-25 dBm typical

-21 dBm max.

Overload: 0 dB max.

Link distance: See TX modules

SM-RR-3G dual RX is also for use with dual CWDM TX below.



All single mode TX modules are Class 1 laser products. They comply with IEC-60825 and FDA 21 CFR 1040.10 and 1040.11

CWDM Fiber Modules

	CH1	CH2	CWDM Color Codes
SM-T59T61-3G	SM Fiber, 1591 nm Tx + 1611 nm Tx, 3 Gb/s SDI	Red/Brown	
SM-T55T57-3G	SM Fiber, 1551 nm Tx + 1571 nm Tx, 3 Gb/s SDI	Yellow/Orange	
SM-T51T53-3G	SM Fiber, 1511 nm Tx + 1531 nm Tx, 3 Gb/s SDI	Blue/Green	
SM-T47T49-3G	SM Fiber, 1471 nm Tx + 1491 nm Tx, 3 Gb/s SDI	Grey/Violet	
SM-T43T45-3G	SM Fiber, 1431 nm Tx + 1451 nm Tx, 3 Gb/s SDI	Black/Yellow Orange	
SM-T39T41-3G	SM Fiber, 1391 nm Tx + 1411 nm Tx, 3 Gb/s SDI	White/Silver	
SM-T35T37-3G	SM Fiber, 1351 nm Tx + 1371 nm Tx, 3 Gb/s SDI	Pink/Beige	
SM-T31T33-3G	SM Fiber, 1311 nm Tx + 1331 nm Tx, 3 Gb/s SDI	Yellow Green/Yellow Ocher	
SM-T27T29-3G	SM Fiber, 1271 nm Tx + 1291 nm Tx, 3 Gb/s SDI	Light Purple/Sky Blue	

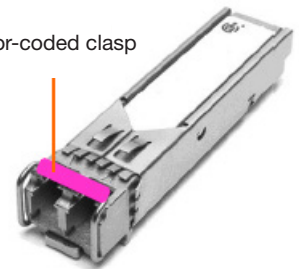
Laser output power: +2.5 dBm typical. 0 dBm to +5 dBm

Extinction ratio: 9 dB min.

Note: 18 CWDM Tx wavelengths available in 9 dual SFP modules conforming to ITU-T-REC-G.642.2. Clasp (Latch) Color Code is for Channel 1 CWDM wavelength.

Note: CWDM link distance depends on mux/demux attenuations.

Color-coded clasp



SFP HDMI Modules

	SR-HDMI (Receiver)	ST-HDMI (Transmitter)
HDMI Format	1.4	1.4
Signal Ports	1	1
Connector	HDMI D-Type plug with retention	HDMI D-Type plug with retention
Formats Supported	HDMI/DVI input: 24-bit (3x8 bit) in video formats 525, 625, 720p, 1080i (50/59.94/60 Hz), 1080p (23.98/24/25/29.94/30/50/59.94/60 Hz)	SMPTE ST 424, SMPTE ST 292 and SMPTE ST 259 compliant video in 525/625, 720p/1080i (50/59.94/60 Hz), 1080p (23.98/24/15/29.97/30/50/59.94/60 Hz) formats. HDMI/DVI output 24-bit (3x8 bit)



* FP = Fabry Pérot

** DFB = Distributed Feedback

SPECIFICATIONS

SFP Coaxial Modules

CC-RRH-3G-N (Dual RX), CC-TRH-3G-N (TX/RX), CC-TTH-3G-N (Dual TX)

SDI Signal Ports: 2

Connectors:

- Amphenol RF HD-BNC (Jack)
- SMPTE ST 292 & SMPTE ST 424

Impedance: 75Ω [±0.1%]

Return Loss: <15 dB 270 MHz – 1.5 GHz, <10 dB @ 3 GHz

Data Rates: 2.970 Gb/s, 2.970/1.001 Gb/s, 1.485 Gb/s, 1.485/1.001 Gb/s, 270 Mb/s

Signal standards: SMPTE ST 424/SMPTE ST 292/SMPTE ST 259, DVB-ASI

Options: Available as Dual Input (RX), Dual Output (TX), or 1x Input, 1x Output (TX/RX)

Transmitter Specification

Signal amplitude: 800 mVp-p [750 mV min., 850 mV max.]

Rise & fall time:

- 130 ps max. @ 2.97 Gb/s & 1.485 Gb/s
- 800 ps max. @ 270 Mb/s

DC offset: 0V ±0.5V

Receiver Specification

Signal Amplitude: 950 mVp-p max.

Cable Equalization (Belden 1694A)

- 120m (365 ft.) @ 2.97 Gb/s
- 200m (655 ft.) @ 1.485 Gb/s
- 400m (1310 ft.) @ 270 Mb/s



HD-BNC

SDI Dedicated Coaxial Rear Modules (VG-RM12H-SDI)

SDI signal ports: 12 (each port independently user settable as an input or an output)

Connectors:

- Amphenol RF HD-BNC (Jack)
- SMPTE ST 292 & SMPTE ST 424

Impedance: 75Ω [±0.1%]

Return loss: <15 dB 270 MHz – 1.5 GHz, <10 dB @ 3 GHz

Data rates: 2.970 Gb/s, 2.970/1.001 Gb/s, 1.485 Gb/s, 1.485/1.001 Gb/s, 270 Mb/s

Signal standards:

- SMPTE ST 424/SMPTE ST 292/SMPTE ST 259 (Reclocked – 'Bypass' option)
- DVB-ASI (Non reclocked)

CATSII LED indicators (12): same as VG-RM6SFP-SDI [see page 17]

Transmitter Specification

Signal amplitude: 800 mVp-p (750 mV min., 850 mV max.)

Rise & fall time:

- 130 ps max. @ 2.97 Gb/s & 1.485 Gb/s
- 800 ps max. @ 270 Mb/s

DC offset: 0V ±0.5V

Timing jitter: <0.25 UI @ 1.5G & 3G, <0.15 UI @ SD

Alignment jitter: <0.15 UI @ 1.5G & 3G, <0.10 UI @ SD

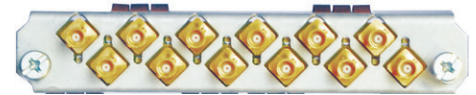
Receiver Specification

Signal amplitude: 950 mVp-p max.

Cable equalization (Belden 1694A):

- 120m (365 ft.) @ 2.97 Gb/s
- 200m (655 ft.) @ 1.485 Gb/s
- 400m (1310 ft.) @ 270 Mb/s

VG-RM12H-SDI



AES Audio Input/Output Modules

AES Balanced – VG-RM24D-AES

AES ports: 24, balanced

Impedance: 110Ω ±20%

Connectors: 37W D-type socket

Signal standards: AES3-2009

Formats Supported (both types):

- Synchronous AES & Dolby E – fully transparent
- Asynchronous AES – sample rate converted on inputs
- Asynchronous Dolby E – not supported

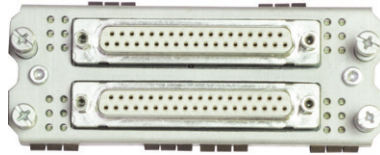
AES Unbalanced – VG-RM24H-AES

AES ports: 24, unbalanced

Impedance: 75Ω ±2Ω

Connectors: HD-BNC

Signal standards: AES3-2009



Vega A New Generation of Routing and Processing

SPECIFICATIONS

Vega 100 Input Processing Module

The Vega Input Processing module can be used for the following functions:

- Audio de-embedding (16 channels)
- Line synchronization
- Audio track shuffling within each video channel
- Silence or test tone insertion

When an audio crosspoint is fitted to the Vega router:

- Input embedding of routed audio channels from any input

Key Features:

- Embed any combination of audio from the incoming video, any audio source via the audio crosspoint, silence or test tones
- Embed shuffled audio channels before the video crosspoint
- Transparent to all ancillary data (HANC and VANC)
- HANC and VANC data re-inserted on the same line
- Audio embedding bypass path

VG-RMI9PR



Number of inputs: 9

Connector: HD-BNC (Gold Plated) 75Ω

Data rates: SD-SDI to ST259, HD-SDI to ST292, 3G-SDI to ST424, DVB-ASI to ETSI TR101 891

Return loss: T <15 dB to 1.5 GHz, <10 dB to 3 GHz

Cable Equalization (Belden 1694A):

- 350m @ 270 Mb/s
- 200m @ 1.5 Gb/s
- 140m @ 3 Gb/s

Cable Equalization (Belden 1855ENH):

- 230m @ 270 Mb/s
- 110m @ 1.5 Gb/s
- 60m @ 3 Gb/s

Embedded Audio Formats Supported:

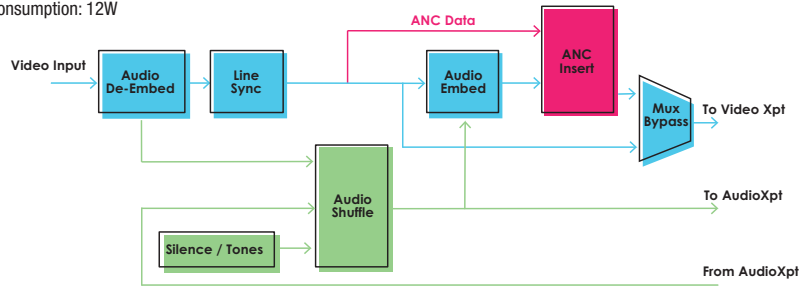
- ST272 SD-SDI (20-bit audio)
- ST299 HD-SDI 720p 50/59.94/60 frames/s ST299 HD-SDI 1080i 50/59.94/60 frames/s
- ST299 3G-SDI 1080p 50/59.94/60 frames/s level A

Audio Processing:

AES: Transparent to VUC bits. Parity regenerated on outputs.

Dolby E: Transparent to Dolby E

Power Consumption: 12W



Delay (card input to output)	Minimum (µs)	Maximum (lines)
SD 525	11.9	19
SD 625	11.9	18
HD 720p/50	4.4	16
HD 720p/59.94	4.4	19
HD 720p/60	4.4	19
HD 1080i/50	4.4	12
HD 1080i/59.94	4.4	14
HD 1080i/60	4.4	14
3G-A 1080p/50	2.2	12
3G-A 1080p/59.94	2.2	14
3G-A 1080p/60	2.2	14
3G-B	0.04 (serial domain bypass)	N/A
DVB-ASI	0.04 (serial domain bypass)	N/A

Vega 100 Output Processing Module

The Vega Output Processing module can be used for the following functions:

- Clean and Quiet Switching
 - Line synchronization with switch line disturbance clean-up
 - Audio V-fade
- Audio track shuffling within each video channel
- Re-entering video with embedded audio into the video matrix
- Re-entering shuffled audio channels to the audio matrix
- Silence or test tone insertion
- Line synchronization

When an audio crosspoint is fitted to the Vega router:

- Audio embedding from any audio input (16 channels per video)

Key Features:

- Embed any combination of audio from the incoming video, any audio source, silence or test tones
- Embed shuffled audio channels after the video crosspoint
- Transparent to all ancillary data (HANC and VANC)
- HANC and VANC data re-inserted on the same line
- Audio embedding bypass path

VG-RMO9PR



Number of outputs: 9

Connector: HD-BNC (Gold Plated) 75Ω

Data rates: SD-SDI to ST259, HD-SDI to ST292, 3G-SDI to ST424, DVB-ASI to ETSI TR101 891

Return loss: T <15 dB to 1.5 GHz, <10 dB to 3 GHz

Output amplitude: 800 mVp-p ±10%

Rise/fall time: <90 ps @ 3G, <180 ps @ HD, <650 ps @ SD

Timing jitter: <0.25 UI @ 1.5G and 3G, <0.15 UI @ SD

Alignment jitter: <0.15 UI @ 1.5G and 3G, <0.10 UI @ SD

Embedded Audio Formats Supported:

- ST272 SD-SDI (20-bit audio)
- ST299 HD-SDI 720p 50/59.94/60 frames/s
- ST299 HD-SDI 1080i 50/59.94/60 frames/s
- ST299 3G-SDI 1080p 50/59.94/60 frames/s level A

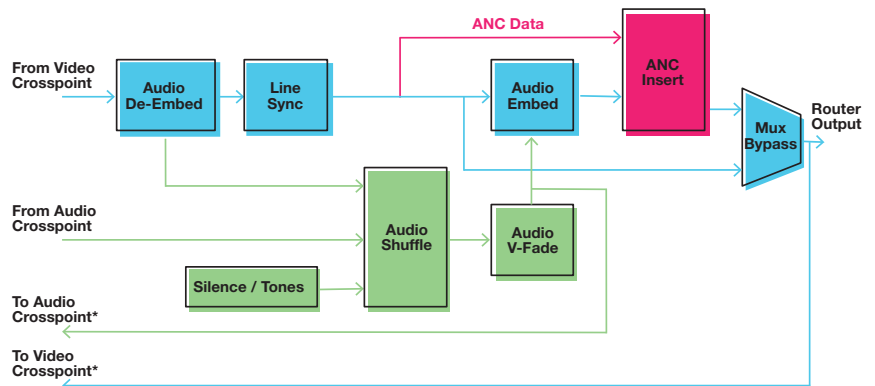
Audio Processing

AES: transparent to VUC bits. Parity regenerated on outputs

Dolby E: Transparent to Dolby E

Audio fade duration: Off (cut), fast (80 ms), medium (200 ms), slow (500 ms)

Power consumption: 12W



Delay (card input to output)	Minimum (µs)	Maximum (lines)
SD 525	11.9	19
SD 625	11.9	18
HD 720p/50	4.4	16
HD 720p/59.94	4.4	19
HD 720p/60	4.4	19
HD 1080i/50	4.4	12
HD 1080i/59.94	4.4	14
HD 1080i/60	4.4	14
3G-A 1080p/50	2.2	12
3G-A 1080p/59.94	2.2	14
3G-A 1080p/60	2.2	14
3G-B	0.04 (serial domain bypass)	N/A
DVB-ASI	0.04 (serial domain bypass)	N/A

* Not available in V700 output-only slots.

Vega A New Generation of Routing and Processing

SPECIFICATIONS

Vega 100 Audio Crosspoint and MADI Input/Output Module

The Vega audio crosspoint also has 6 MADI inputs and 6 MADI outputs.

Together with internal audio connections to and from processing and AES cards, it routes signals from any MADI, AES or embedded input to any MADI, AES or embedded output.

The audio router card must be installed when routing audio to or from any video channel on a processing card.

Routing between AES inputs and outputs only does not require an audio crosspoint.

Key Features:

MADI inputs configurable as 6 in or redundant 3 in with auto failover

MADI outputs configurable as 6 out or dual 3 out

Audio routing between any MADI, AES or embedded input to any MADI, AES or embedded output

Synchronous 48 kHz operation

Transparent to Dolby E

Transparent to AES validity, user and channel status bits

Silence and test tone insertion

VG-RM6MADI



Inputs

Number and type:

6/3 dual redundant with auto-failover

HD-BNC (Gold Plated) 75Ω

Signal: MADI (56- or 64-channel, 48 kHz)

Return loss: <15 dB to 125 MHz

Maximum cable length: 100m (328 ft.) Belden 1855 (from 600 mV source)

Outputs

Output amplitude : 600 mVp-p ±10%

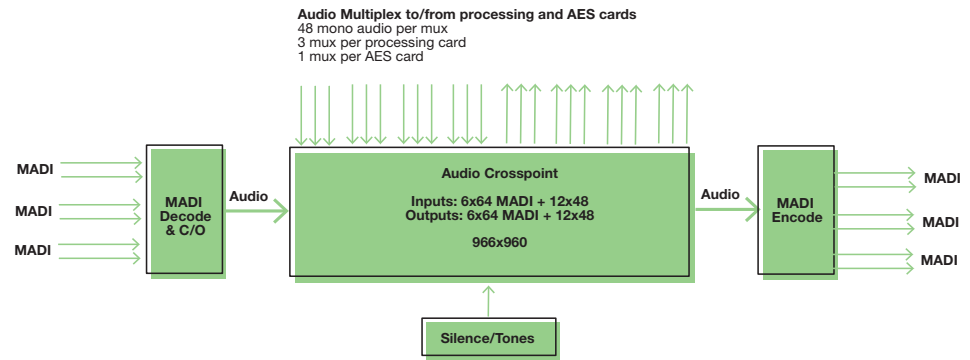
Rise/fall time: <650 ns

Signal path delay (MADI in to MADI out): minimum (µs)

Audio Routing

AES: transparent to VUC bits. Parity regenerated on outputs.

Dolby E: transparent to Dolby E



ORDERING

Mainframes

VG-MF200

Vega 200 Frame. Includes 2 RU chassis, single PSU, single controller, single crosspoint, and cooling fans

VG-MF400

Vega 400 Frame. Includes 4 RU chassis, single PSU, single controller, single crosspoint, and cooling fans

VG-MF700

Vega 700 Frame. Includes 7 RU chassis, single PSU, single controller, single crosspoint, and cooling fans

Note: The mainframe is supplied with one PSU, one crosspoint card and one controller card.

Dual redundant PSUs and/or cards are purchased separately and fitted prior to system test and dispatch. Either none, one, two or all three options should be purchased (per mainframe) depending on the level of redundancy thought to be appropriate. For critical 'Live' applications, all three DR options are recommended. Alternatively any option can be purchased for upgrade on site at a later date or simply for spares/replacements.

Vega 200 Dual Redundant Options and Spares

VG-PSU1

Vega Power Supply Unit for VG-MF 200, 400, 096H and 192H frames

VG-XPT200

Vega crosspoint for VG-MF200 & VG-MF096H 2 RU frame

VG-CTL6464

Vega Controller Card for VG-MF200 and VG-MF096 mainframes

VG-FAN1

Vega Rear Fan Unit for VG-MF200 & VG-MF096H 2 RU frames

Vega 400 Dual Redundant Options and Spares

VG-PSU1

Vega Power Supply Unit for VG-MF 200, 400, 096H and 192H frames

VG-XPT200

Vega Crosspoint for VG-MF200 & VG-MF096H 2 RU frame

VG-CTL6464

Vega Controller Card for VG-MF200 and VG-MF096 mainframes

VG-BUF

Vega Buffer Card for 400, 700, 192 & 432 frames

VG-CTLBUF

Vega Controller & Buffer Card Set for 400, 700, 192H & 432H frames. Consists of VG-CTL6464 and VG-BUF

VG-FAN2

Vega Rear Fan Unit for VG-MF400, 700, 192 & 432 frames

Vega 700 Dual Redundant Options and Spares

VG-PSU2

Vega Power Supply Unit for VG-MF700 & VG-MF432H frame

VG-XPT700

Vega Crosspoint for VG-MF700 & VG-MF432H 7U frame

VG-CTL6464

Vega Controller Card for VG-MF200 and VG-MF096 mainframes

VG-BUF

Vega Buffer Card for 400, 700, 192 & 432 frames

VG-CTLBUF

Vega Controller & Buffer Card Set for 400, 700, 192H & 432H frames. Consists of VG-CTL6464 and VG-BUF

VG-FAN2

Vega Rear Fan Unit for VG-MF400, 700, 192 & 432 frames



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