



Vega

A new generation of flexible routers

**PROVISIONAL
INFORMATION**



The basic format of video routers has remained unchanged for decades - it's time to offer so much more!

- **Total asymmetric signal routing**
Each signal port independently configured for use as an input or output
- **Coaxial copper or fiber connectivity**
HD-BNC and/or DIN 1.0/2.3 and/or LC fiber SFP (Small Form-factor Pluggable) I/O modules
- **Extensive redundancy options**
Dual redundant crosspoints, frame controllers, power supplies and fans
- **Ultra compact frame**
50% more signal ports than conventional coax router for same rack height
- **Entry level lower cost alternative**
Dedicated 12-port 'coax only' rear modules (fiber connectivity not required)
- **Comprehensive set of 'soft' and/or 'hard' control options**
Intuitive software-based 'plug and play' control and monitoring system and/or 1RU and 2RU control panels.

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Introduction to Vega

Despite the revolution in signal formats spanning 'composite' analog to serial digital (with its multiple flavors of data rate), 'physical layer' connectivity has remained almost the exclusive preserve of coaxial copper cable and the BNC connector. In more recent times though momentum is building towards more use of optical fiber connectivity driven by the ease with which it will handle very high data rates over much longer distances. Perhaps more directly relevant to traditional router designs is the fact that semiconductor switching devices are only available as 'square' matrices i.e. they have an equal number of inputs and outputs. Understandably router designers have mostly copied this rigid symmetry with respect to the I/O port designation on the rear of their equipment. Unfortunately real signal routing applications virtually never require exactly the same number of inputs as outputs!

In today's world it's never been more true that having multiple options and flexible solutions are key requirements. Established formats and methods must be revisited and adapted to maximize efficiency and improve return on investment.

With this in mind, Snell's Engineering, Sales and Product Specialist teams combined their years of experience to examine what could be improved with the traditional router concept. The paramount consideration was to understand equipment use from the point of view of real installations and modern operational requirements.

The result of these studies is **Vega**, a totally new concept in routing, offering a range of key new benefits!

Innovative next generation routing



Vega uses proprietary algorithms to continuously monitor every sub-assembly!

‘Live’ or non-critical routing

Typical scenario

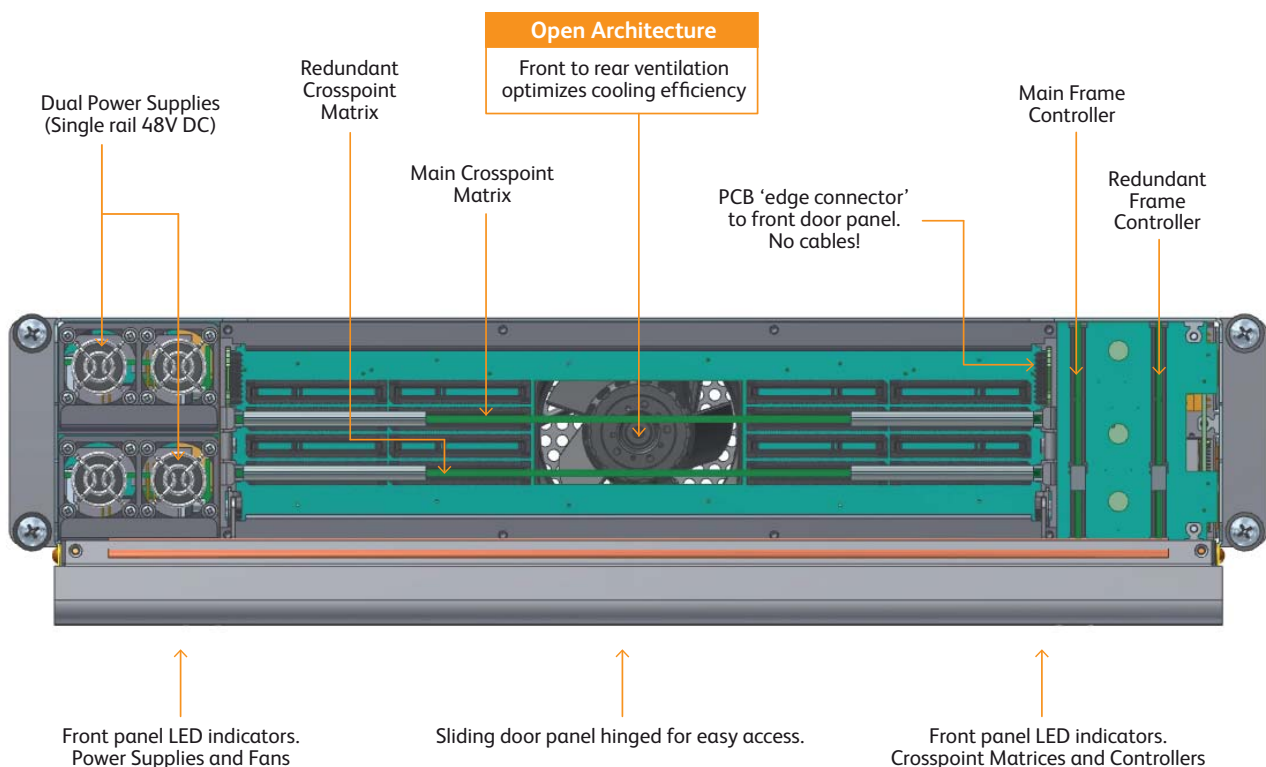
“Our new installation requires routers for both ‘On-Air’ and non-critical workflow applications. We need a routing platform that’s very reliable with extensive backup and redundancy built-in. ‘Live’ serviceability is a big issue in key areas! We’d very much like to standardize on a single platform type for all these applications...oh and we don’t have a great deal of space!”

Vega solution

Snell understands the importance of system redundancy and has designed Vega to offer the full range of options for maximum protection: **dual crosspoints, dual controllers, dual power supplies and dual fans!** All are ‘hot’ pluggable or replaceable!

Vega uses proprietary algorithms, proven over many years, to continuously monitor every sub-assembly. Alternatively, of course, you can just add the options that you feel are necessary... Vega is a single solution for a huge range of routing applications.

All this with 50 % more inputs and outputs than a traditional 2RU router!



Flexibility at your fingertips...

Typical scenario

“Our SDI signal inputs and outputs are a mixture of copper and fiber over long and short distances...although in some areas we are likely to stay ‘all copper’. In a few cases we need twice the number of outputs as inputs so that means either a bigger router or adding racks of DAs. Reference inputs is another issue...the more the better! We’ve also noticed there are very few routers that offer signal ‘OK’ monitoring on the rear panel... it would be invaluable during install for identifying cable connection issues.”

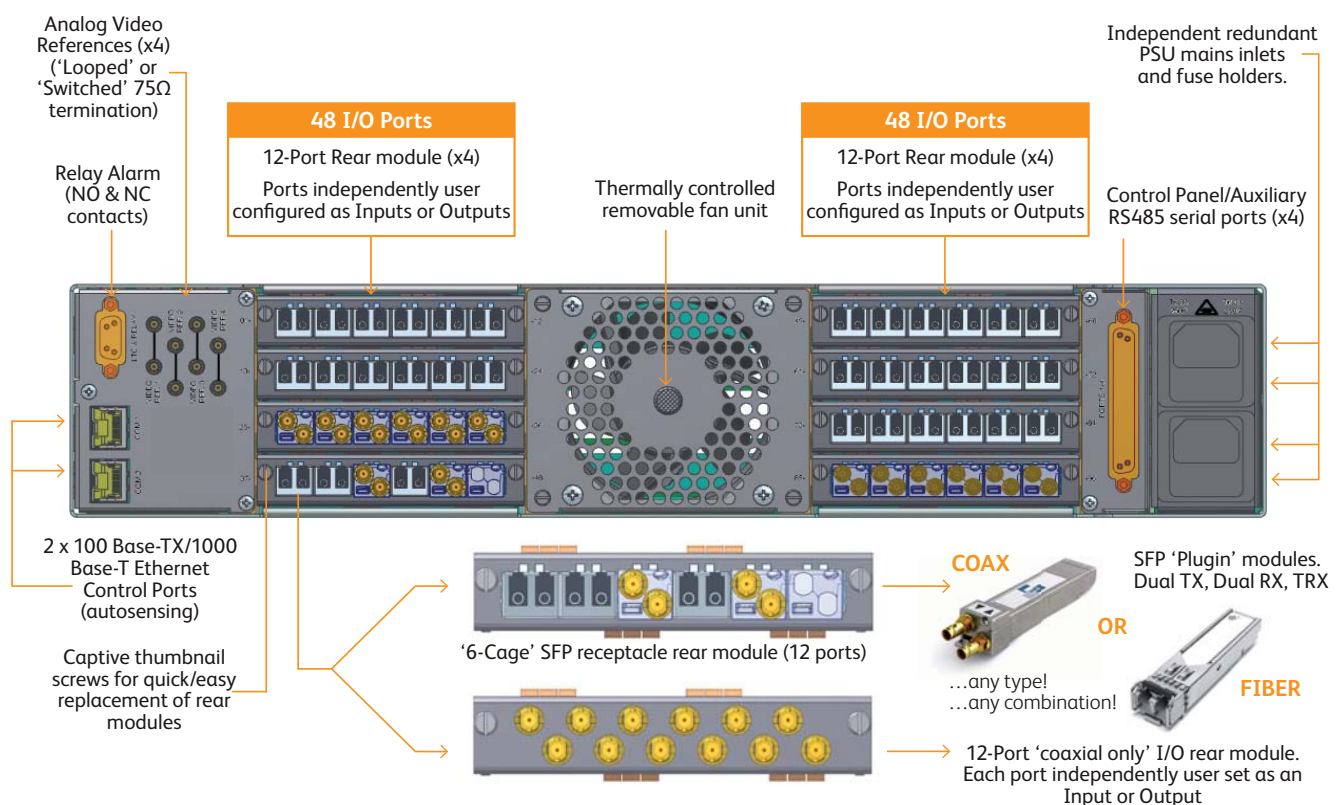
Vega solution

Flexibility with respect to coax or fiber connectivity is a corner stone of the concept behind Vega...just plug in the appropriate module(s) as shown below.

If you need more outputs than inputs then take a look on the next page...it shows just how flexible Vega is when it comes to input versus output configurations.

Four reference inputs have been included to accommodate requirements such as black and burst and/or multiple flavors of HD tri-level syncs.

For instant status indication on the rear panel Vega features multi-colored LED signal indicators on every port. These can be switched to ‘grid mode’ to highlight a specific port.



Every port can be independently configured as an input or output by the user.

Asymmetric formats, all user configured...

Typical scenario

“Most conventional medium size routers have an equal number of inputs and outputs, how is Vega different and why? Anything clever usually means a big increase in price...any premium would have to pay for itself!”

Vega solution

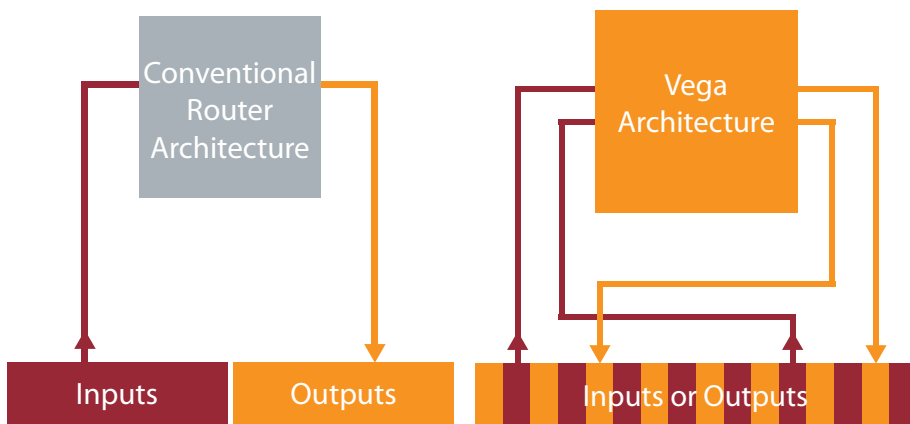
Vega can operate as a conventional router, but imagine if you could convert all your unused outputs to inputs or all your unused inputs to additional outputs! This is exactly how Vega is different...we describe it as ‘fully asymmetric’ ...every port can be independently set up as an input or an output! For monitoring or distribution applications this minimizes I/O port wastage, where a traditional router of twice the size might be needed to implement the same system solution... Vega offers real savings in cost and space!

Also, there’s no large price premium. Vega uses a larger cross-point device, keeping the incremental costs very competitive when compared with the cost of multiple surplus ports on a conventional router.

Vega is also extremely easy to set up. In the ‘set-up’ section of the control software ports can be designated as either inputs or outputs. On saving the configuration, if a port has been designated as an input (receiver), but an output (transmit) SFP ‘plug-in’ module has been fitted in error, the control software will flag the problem suggesting the user either reconfigure the port or exchange the ‘plug-in’ for the correct (receiver) type...it’s as simple as that!

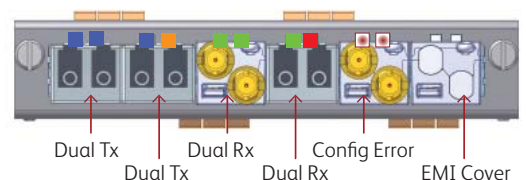
In addition, every port has a single multi-colored LED indicator. Each color indicates if a port is an input or output together with its current status. ‘Flashing’ red LEDs indicate there is a configuration error. Therefore any problems are immediately visible when fitting a new plug in at the back of a rack.

Vega Asymmetric Format



Rear Panel LED Indicators

- Blue ■ Output (Tx) = ‘OK’
- Amber ■ Output (Tx) = OFF / Laser Disabled
- Green ■ Input (Rx) = ‘OK’ – Signal Present
- Red ■ Input (Rx) = No Signal Detected
- Flashing Red ■ ERROR = Config / Plug-in mismatch
- OFF ■ ‘EMI & Dust’ module fitted / No ‘Plug-in’

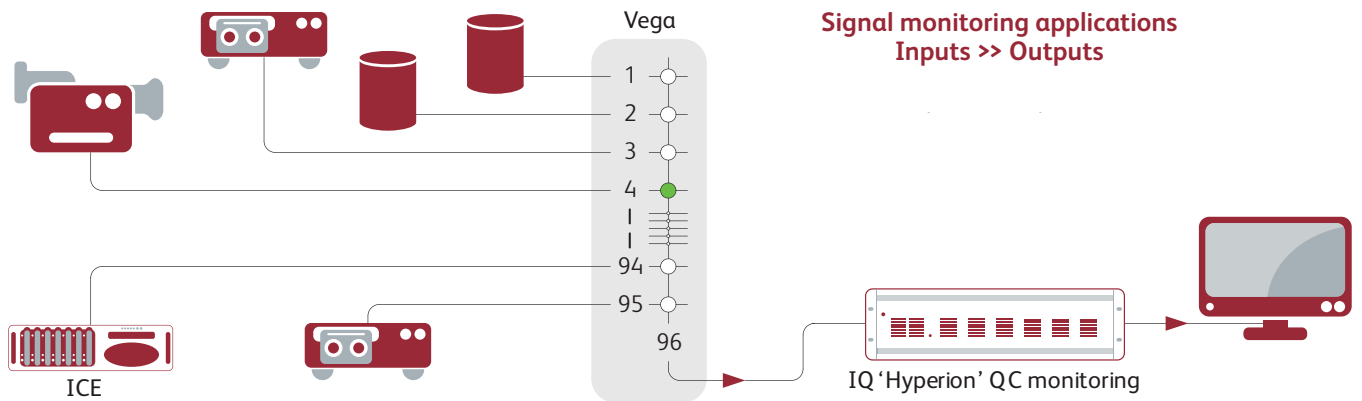


...from one extreme to the other!

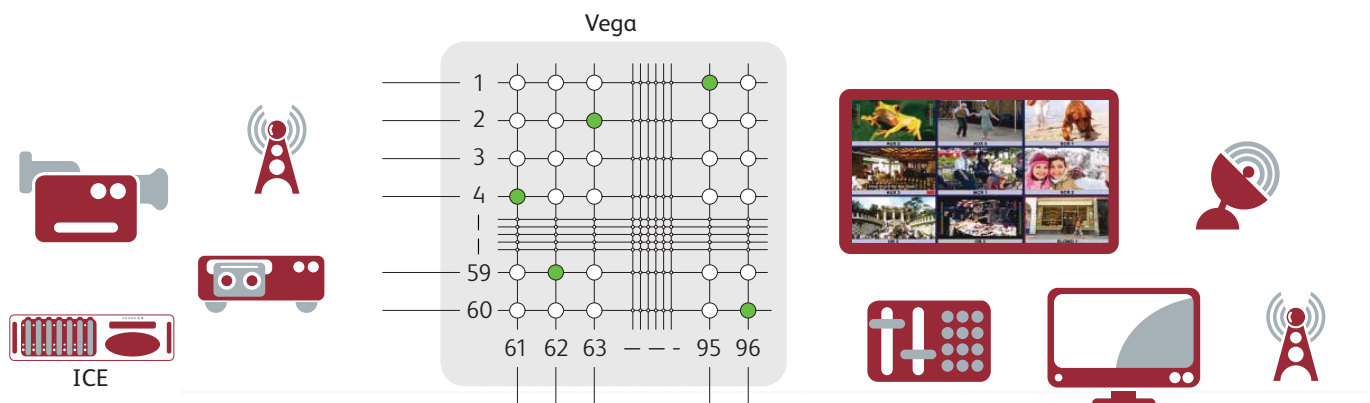
Inputs

Outputs

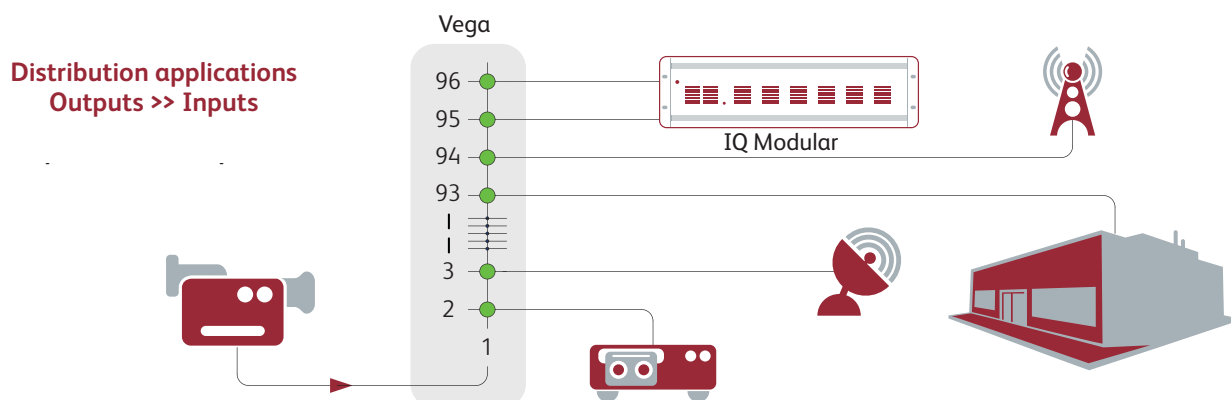
One extreme...95 Inputs x 1 Output



Through all the options...94 x 2, 93 x 3, 49 x 47, 48 x 48, 47 x 49 etc...2 x 94



To the other extreme...1 Input x 95 Outputs



All coaxial copper and fiber boundaries can be bridged without external media converters.

Coax & fiber boundaries

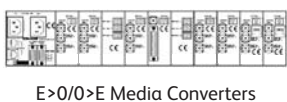
Typical scenario

“The final decision on where to use optical fiber connectivity in place of coaxial copper is not yet made. Coax could be used between equipment in the same racks with fiber for all other connections...or it could be that fiber is only used between floors, buildings and remote venues! We are still evaluating all the options and it’s delaying equipment purchase. There are supplier timescales to consider and I’m worried the install time will start to get squeezed!”

Vega solution

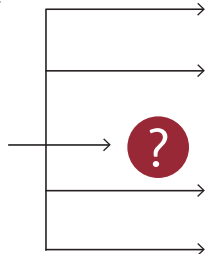
With Vega all coaxial copper and fiber boundaries can be bridged without the need for external media converters. All signal inputs can be independently configured for coax or fiber using the appropriate SFP ‘plug-in’ modules. This means that a final decision on some or all of the physical media types can be deferred. Indeed unused ports (or receptacles) can remain empty until required. Simply purchase the additional modules at a later date.

When connecting to a conventional router the number of coax to fiber media converters required will depend on the fiber connectivity policy. This involves additional planning, rack space and cost.

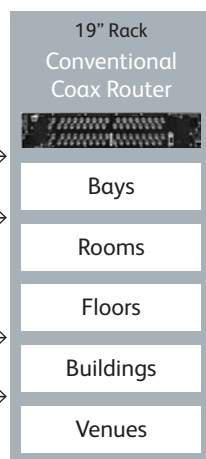


E>O/O>E Media Converters

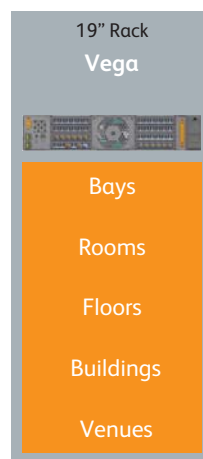
Required at single or multiple boundaries!



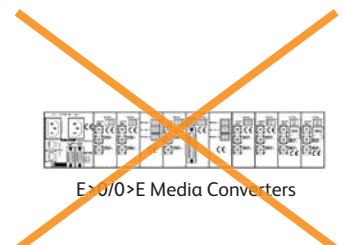
Conventional Coax Router



Vega



Vega is transparent to coax/fiber boundaries. The required media for every connection can be independently set using SFP I/O ‘plug-in’ modules...making it easy to change as your plant evolves!



E>O/O>E Media Converters

Redundant for all router connections!

Vega covers all the options....

...past, present and future

Traditional installation using mainly coax with fiber for ‘long haul’ links

Integration of ‘legacy’ equipment to new fiber plant

Increase in ‘useable’ ports on equipment with dual media I/O

Modern ‘all fiber’ plant. Some coax connectivity between ‘nearby’ equipment.

Taking control

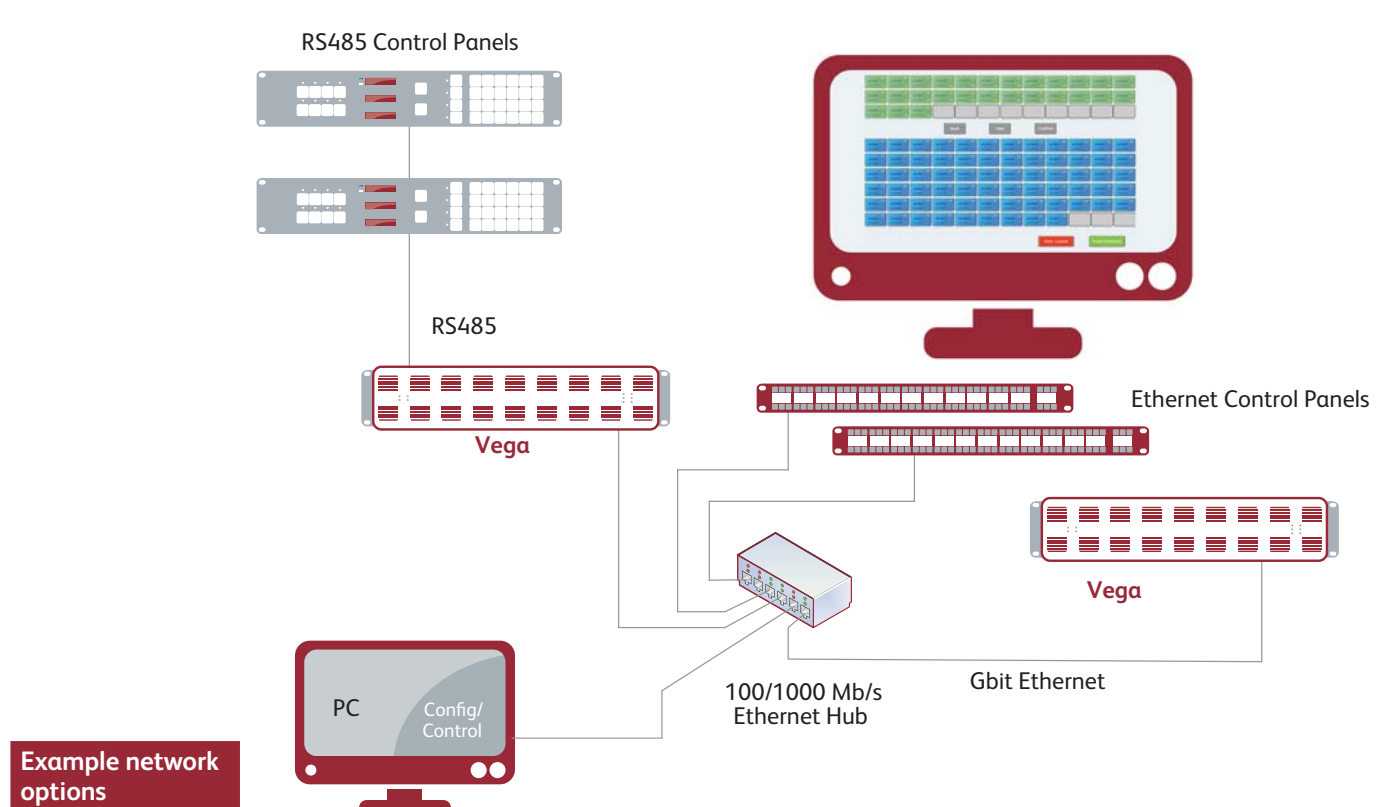
Typical scenario

“Vega looks like the perfect solution for us. I just need to know what control and monitoring options are available? We need both ‘hard’ and ‘soft’ control for the new installation, but we’d also like to install Vega at an older existing site nearby...they use a third party control and monitoring system.”

Vega solution


Snell’s established pedigree in conventional routers means we can offer an extensive range of control solutions which have been enhanced to accommodate Vega’s unique features. Centra Vite is ‘plug-and-play’ software providing both configuration and control via a PC for single or multiple routers on the same ethernet network. In addition a variety of 1RU and 2RU control panels are available for direct connection via RS422 or over the network.

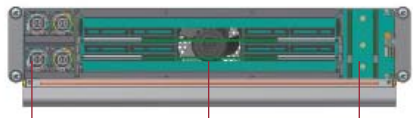
Vega uses standard message protocols therefore implementing third party control is easy.





Example network options

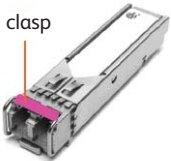
Ordering information


Mainframes	Order code	Description
 <p>3 alternative control panels</p>	VG-MF096H	Main Frame, 96-Port I/O, HD BNC reference inputs (4)
	VG-MF096D	Main Frame, 96-Port I/O, DIN 1.0/2.3 reference inputs (4)
	VG-MF096B	Main Frame, 96-Port I/O, BNC reference inputs (2)
<p>Note: There are 3 versions of the mainframe. These are identical except that they are supplied fitted with different Rear Control Panels. Each panel has an alternative type of coaxial connector for the reference inputs. These are given in the descriptions above. The Control Panel type can be changed at a later date by purchasing an alternative type...see order codes in 'Replacement Assemblies' on the next page.</p>		

Dual Redundant Options	Order code	Description
 <p>DR PSU DR Crosspoint DR Controller</p>	VG-PSU096-A	Power Supply Unit for VG-MF096x series mainframes, Type A
	VG-XPT096-A	X(Cross)-Point card for VG-MF096x series mainframes, Type A
	VG-CTL6462-A	Controller card for VG-MF096x series mainframes, Type A
<p>Note: All 3 mainframe versions are supplied with one PSU, one cross-point 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 'live' install at a later date or simply for spares/replacements.</p>		

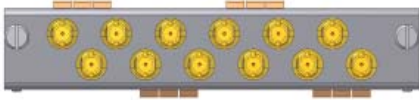
Rear Module for SFP 'Plug-ins'	Order code	Description
	VG-RM6SFP-SDI	Rear Module, 6-Cage (12-Port) I/O, Serial Digital Interface
	<p>Note: All rear modules and 'Plug-Ins' (see below) are purchased separately. International 'EMC' regulations necessitate that all vacant cage ports are plugged/closed using 'dummy' SFP modules (Type SFPBLANKsee below). Risk of non-compliance remains with 'the user' if not fitted.</p>	

SFP Plug-in Modules for VG-MF6SFP-SDI	Order code	Description
<p>Fiber Modules</p> 	SM-T31T31-3G	SM Fiber, 1310nm Tx + 1310nm Tx, 3Gb/s SDI
	SM-T55T55-3G	SM Fiber, 1550nm Tx + 1550nm Tx, 3Gb/s SDI
	SM-T31R-3G	SM Fiber, 1310nm Tx + 1260-1620nm Rx, 3Gb/s SDI
	SM-T55R-3G	SM Fiber, 1550nm Tx + 1260-1620nm Rx, 3Gb/s SDI
	SM-RR-3G	SM Fiber, 1260-1620nm Rx + 1260-1620nm Rx, 3Gb/s SDI
	<p>Note: SM = Singlemode. For Multimode (MM) fiber applications please consult sales office.</p>	

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

Coaxial Copper Modules	Order code	Description
 <p>HD-BNC</p> <p>DIN 1.0/2.3</p>	CC-TTH-3G-N	Coaxial, Tx + Tx, HD-BNC, 3Gb/s SDI, Non-reclocking
	CC-TRH-3G-N	Coaxial, Tx + Rx, HD-BNC, 3Gb/s SDI, Non-reclocking
	CC-RRH-3G-N	Coaxial, Rx + Rx, HD-BNC, 3Gb/s SDI, Non-reclocking
	CC-TTD-3G-N	Coaxial, Tx + Tx, DIN 1.0/2.3, 3Gb/s SDI, Non-reclocking
	CC-TRD-3G-N	Coaxial, Tx + Rx, DIN 1.0/2.3, 3Gb/s SDI, Non-reclocking
	CC-RRD-3G-N	Coaxial, Rx + Rx, DIN 1.0/2.3, 3Gb/s SDI, Non-reclocking
<p>Note: Coax 'Plug-Ins' are 'non-reclocking'. Reclocking circuitry is included in rear module VG-RM6SFP-SDI</p>		
	SFP-BLANK	Small Form-factor Pluggable EMI & dust Blanking module

Dedicated / Other Rear Modules	Order code	Description
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VG-RM12H-SDI
VG-RM12D-SDI

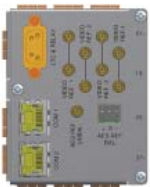
Rear Module, 12-Port I/O HD-BNC, Serial Digital Interface
Rear Module, 12-Port I/O DIN 1.0/2.3, Serial Digital Interface



VG-RMBP

Rear Module, Blanking Panel

Replacement Assemblies



VG-RPCTLH-4
VG-RPCTLD-4
VG-RPCTLB-2

Rear Panel Control I/O, HD BNC reference inputs (4)
Rear Panel Control I/O, DIN 1.0/2.3 reference inputs (4)
Rear Panel Control I/O, BNC reference inputs (2)

Note: Panels are for changing mainframe type.
See 'Note' under mainframe options on previous page!

VG-RMFU

Rear Module Fan Unit

Connectors & Cabling



VG-MC37D
VG-CA37D9-4

Mating Connector & Shell, 37-way D, solder bucket, screw lock
Cable Assembly, 37-way D to 9-way x 4 (Auxiliary serial ports)

Notes: VG-MC37D is supplied free with main frame. Order code is given for reference/spares purposes only. VG-CA37D9-4 must be purchased separately if required.

Innovation in the Multi-Screen World

Company policy is one of continuous product improvement. Specifications are therefore provisional and subject to change without notice.