

# NextGen Network Packet Broker: Vision E400S

## Scale your visibility to 400G speed

Keysight's Vision E400S is the next-generation network visibility solution with comprehensive feature sets to meet the ever-evolving visibility needs of your production network, for up to 400Gbps network speed.

Highly compact and 1RU in size, Vision E400S front panel provides 24 QSFP56 and 16 QSFP-DD ports. Each QSFP-DD can break out to many smaller speed ports (200G, 100G, 40G, 50/25/10G) via fan-out cable. It's the only NPB that supports all possible permutation of speeds, increasing the chance of interoperating with legacy devices while maximizing design flexibility.

The re-programmable nature of the silicon allows fast implementation of a new parser or header stripping option of any new protocols, well-known or proprietary. New load balance options support load balancing per port group. In addition to traditional session-aware load balance, new options also allow asymmetric LB, weighted LB, random LB, and LB using tunneled IP header.

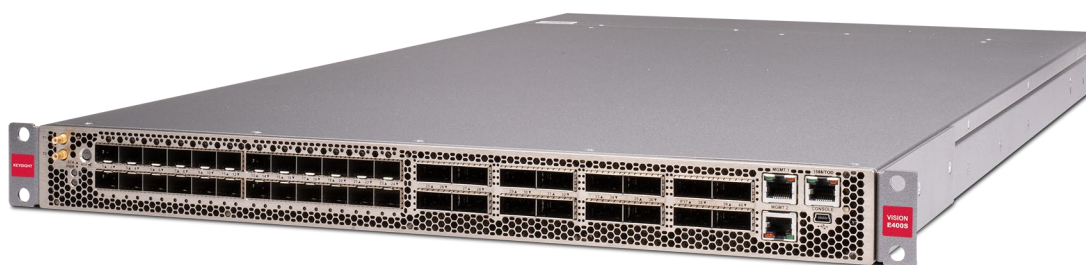


Figure 1. Keysight Vision E400S

For more information on Keysight Technologies' products, applications or services, please contact:  
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## Highlights

- Compact 1RU NPB that supports 10/25/40/50/100/200/400G port speeds
- P4 and Tofino based programmable silicon
- Full-duplex, non-blocking, and line rate L2 forwarding of 9.2 Tbps
- Front panel includes 24 SFP56 and 16 QSFP-DD ports
- Hot-swappable fans, power supplies
- Industry only 400G NPB that supports all QSFP-DD speed permutations: 1x400G, 2x200G, (1,2,4) x100G, (4,8)x50G, (1,2)x40G, 8x25G, 8x10G
- NTP, 1588 PTP and 2 independent 1PPS timing sources
- All ports of all speeds support up to 20 protocols header striping/masking and time stamping (PacketStack+)
- Flexible L2GRE and VxLAN tunneling
- First release supports OOB tool deployments only
- Per port group load balancing. Algorithms include session aware, asymmetric, weighted, tunneled packet type, and random
- Integration with Keysight Visibility Orchestrator (KVO) for Intent Based Visibility (IBV)
- Ease of use, best in the class WebUI

## Key Features

- **Automated filter compiler** resolves overlap rules seamlessly, allowing quickest response to tool or filtering changes without worry of blind spots
- **Header stripping, tunnel termination, IP/MAC masking and timestamping on all ports** and require no FPGA resources (PacketStack Plus)
- **Supports up to 20 protocols** header stripping and tunnel termination
- **Two banks** of load balance options, and load balancing on per port group basis
- **Load Balance** on both outer IP and tunneled inner IP. All well-known tunnel protocols are supported
- **GTP User Plane Load Balance** based on inner IP information (User sessions)
- **User session filtering** inside GTP User Plane tunnels (Explicit tunneled IPv4 and IPv6 filtering)
- **Space efficient 1RU design** saves rack space in your data center
- **Flexible L2GRE and VxLAN** tunnel origination. Up to 256 tunnels per chassis.
- **Comprehensive wizards** make inline tool deployment extremely easy for complex use cases that require tool sharing or VLAN translation
- **Secure serial console** port with authentication
- Support **management port** IP allow-list

- **Timing sources** support NTP, 1588 PTP, or 1PPS+ToD(G.8271) with two independent 1PPS SMA/SMP connectors (T1 and T2). As such, Vision E400S allows rich combination of timing sources:
  - PPS-T1 + NTP = Take ToD from NTP and use 1PPS from T1 input
  - PPS-T2 + NTP = Take ToD from NTP and use 1PPS from T2 input
  - PPS-T1 + PTP = Take ToD from PTP and use 1PPS from T1 input
  - PPS-T2 + PTP = Take ToD from PTP and use 1PPS from T2 input
  - PPS-RJ45+G.8271 = Take ToD from G.8271 format and use 1PPS from RJ45 pin
  - PPS-T1+G.8271 = Take ToD from G.8271 format and use 1PPS from T1 input (ignore the RJ45 1pps input)
  - PPS-T2+G.8271 = Take ToD from G.8271 format and use 1PPS from T2 input (ignore the RJ45 1pps input)

## Port Flexibilities

### 24 SFP56 fronts ports and each support:

- 10G or 25G using NRZ encoding
- 50G using PAM4 encoding

### 16 QSFP-DD front ports and each support:

- 1x400G
- 2x200G
- (1,2,4)x100G
- (4,8)x50G
- (1,2)x40G
- 8x25G
- 8x10G

## Product Capabilities

### Netstack capabilities

The Keysight gold-standard baseline filtering functionality for network packet brokers



**Three stages of filtering** – Filter at ingress ports, in the middle and at egress ports for the maximum flexibility in designing complex Boolean logic without the need of using extra ports for loopback



**Dynamic filter compiler** – Patented technology that resolves rule overlaps automatically hence makes configuration simple and eliminates human errors



**Aggregation** – consolidate incoming traffic to optimize port usage and simplify filter logic. Support 1:1, 1:Many, Many:1 and Many:Many traffic mapping



**Replication** – At the ingress port as well as at the dynamic filter. Replication at the ingress allows the same input to connect to multiple dynamic filters. Replication at the dynamic filter allows multiple tools to get identical traffic from the same dynamic filter.



**Load-balancing** – sophisticatedly distributes traffic across tools ports for monitoring in a session aware manner to preserve traffic integrity and also to maximize up-time with fail-over protection



**Source Port Labelling (VLAN Tagging and Untagging)**  
VLAN tag management (ingress tagging and egress stripping)

## Packetstack+ capabilities

Perform advanced packet processing such as header (protocol) stripping, data masking, timestamping, and GRE/VxLAN tunnel origination at all ports of all speeds



**Native Tunnel Origination**  
L2GRE and VxLAN



**Data Masking**  
Mask Source or/and Destination MAC or IP



**Timestamping**  
Timestamping (local, NTP, PTP 1588)  
using source MAC substitution



**Native Tunnel Termination/Protocol Stripping** – Includes VLAN, FabricPath, ETag, VNTag, GENEVE, L2GRE, L3GRE, L2GRE and L3GRE, VxLAN, GTP, LISP, GTP and LISP, MPLS L2VN with or without Control Word, MPLS L3VPN, MPLS L2VPN and L3VPN, MPLS over GRE, MPLS over UDP, ERSPAN, PBB-TE, PPPoE, OTV, INT

## Specifications

### Physical specifications

#### Size and weight

- 1U high rack mountable enclosure
- Dimensions: 17.5"W x 31.0"L x 1.75"H (inches)
- Weight: 35lbs or 16kg

#### MTBF:

Vision E400S	MTBF (hours) 25° C
Base Chassis	98728
Chassis + 2 AC PSUs + 7 fans	79833
Chassis + 2 DC PSUs + 7 fans	78233

#### AC power

- Dual hot swappable AC power supplies
- AC 100-240VAC (x2) 9A MAX
- Maximum heat/power dissipation for system:  
800W / 2730 BTU/hour

#### DC power

- Dual hot swappable DC power supplies
- Input DC 52-60VDC (x2) Nominal 20A MAX
  - DC input range 44-72VDC
- Maximum heat/power dissipation for system:  
800W / 2730 BTU/hour

*Note: Typical standoff voltage in DC deployment is 52-53VDC. 48V is the power provided by batteries upon a AC power failure/loss/brownout i.e. general power outage. The "Bel Power" DC power supply is designed to support the standoff voltage for nominal power, or power under charge 52-60VDC range, but supports 44-72VDC power input MIN-MAX*

## Operating specifications

<b>Temperature</b>	<ul style="list-style-type: none"><li>• Operating: 5°C to 40°C</li><li>• Short-term*: -5°C to 55°C (*not to exceed 96 consecutive hours)</li><li>• Short-term* with fan failure: -5°C to 40°C (*not to exceed 96 consecutive hours)</li></ul>
<b>Humidity</b>	<ul style="list-style-type: none"><li>• Operating: 5% to 85%, (non-condensing)</li><li>• Short-term*: 5% to 90% (non-condensing, *not to exceed 96 hours)</li></ul>
<b>EMC</b>	<ul style="list-style-type: none"><li>• FCC Part 15B - Class A</li><li>• ICES-003 - Class A</li><li>• AS/NZS CISPR 32 &amp; 24</li></ul>
<b>Safety certifications and compliance</b>	<ul style="list-style-type: none"><li>• IEC 62368-1:2018</li><li>• CB 154258-80132943</li></ul>

## Ordering Information

### Keysight Vision E400S chassis

Part number	Description
SYS-VE400S-BASE-AC	Keysight Vision E400S, base AC system includes chassis, power supply and fan (991-0275)
SYS-VE400S-BASE-AC-T	Keysight TAA Compliant Vision E400S, base AC system includes chassis, power supply and fan (991-0276)
SYS-VE400S-BASE-DC	Keysight Vision E400S, base DC system includes chassis, power supply and fan (991-0277)
SYS-VE400S-BASE-DC-T	Keysight TAA Compliant Vision E400S, base DC system includes chassis, power supply and fan (991-0278)
SYS-VE400S-SPR	Keysight Vision E400S, base AC system, spare unit, includes chassis, power supply and fan (991-0279)
SYS-VE400S-SPR-T	Keysight TAA Compliant Vision E400S, base AC system, spare unit, includes chassis, power supply and fan (991-0280)

## Port Licenses

Part number	Description
LIC-V400-1PC	Keysight Vision E400S and 400, 10/25/40/50/100G port speed enabled on (1) QDD port (993-0300)
SUB-V400-1PC	Keysight Vision E400S and 400, one year subscription for 10/25/40/50/100G port speed enabled on (1) QDD port (993-0350)
LIC-V400-1PCD	Keysight Vision E400S and 400, 10/25/40/50/100/200/400G port speed enabled on (1) QDD port (993-0302)
SUB-V400-1PCD	Keysight Vision E400S and 400, one year subscription for 10/25/40/50/100/200/400G port speed enabled on (1) QDD port (993-0351)
LIC-V400-1PL	Keysight Vision E400S and 400, 10/25/50G port speed enabled on (1) SFP56 port (993-0301)
SUB-V400-1PL	Keysight Vision E400S and 400, one year subscription for 10/25/50G port speed enabled on (1) SFP56 port (993-0352)

## Feature Licenses

Part number	Description
LIC-V400-INLN	Keysight Vision E400S & 400, Inline feature, per chassis (993-0306)
SUB-V400-INLN	Keysight Vision E400S and 400, one year subscription for Inline feature, per chassis (993-0353)
LIC-VE400S-PSPL	Keysight Vision E400S. Fully featured PacketStack Plus features activated on every port. (993-0324)
SUB-VE400S-PSPL	Keysight Vision E400S. One year subscription for fully featured PacketStack Plus features activated on every port. (993-0357)
LIC-VE400S-MASK	Keysight Vision E400S. PacketStack Plus feature for fixed length masking, activated on every port (993-0323)
SUB-VE400S-MASK	Keysight Vision E400S. One year subscription for PacketStack Plus feature for fixed length masking, activated on every port (993-0356)
LIC-VE400S-STRP	Keysight Vision E400S. PacketStack Plus feature for header stripping and tunnel termination, activated on every port (993-0325)
SUB-VE400S-STRP	Keysight Vision E400S. One year subscription for PacketStack Plus feature for generic header stripping, activated on every port (993-0358)
LIC-VE400S-TMSP	Keysight Vision E400S. PacketStack Plus feature for Timestamps PTP/NTP and 1PPS/G.703, activated on every port (993-0326)
SUB-VE400S-TMSP	Keysight Vision E400S. One year subscription for PacketStack Plus feature for Timestamps PTP/NTP and 1PPS/G.703, activated on every port (993-0359)
LIC-VE400S-TUNL	Keysight Vision E400S. PacketStack Plus feature for L2GRE/VxLAN tunnel origination, activated on every port (993-0327)
SUB-VE400S-TUNL	Keysight Vision E400S. One year subscription for PacketStack Plus feature for tunneling, activated on every port (993-0360)

# Power Supply

Part number	Description
MV400-ACPS	Keysight Vision 400 & E400S, (1) AC power supply (991-0253)
MV400-DCPS	Keysight Vision 400 & E400S, (1) DC power supply (991-0254)

# Fan Module

Part number	Description
MV400-FAN	Keysight Vision 400 & E400S, (1) Fan module (991-0255)



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