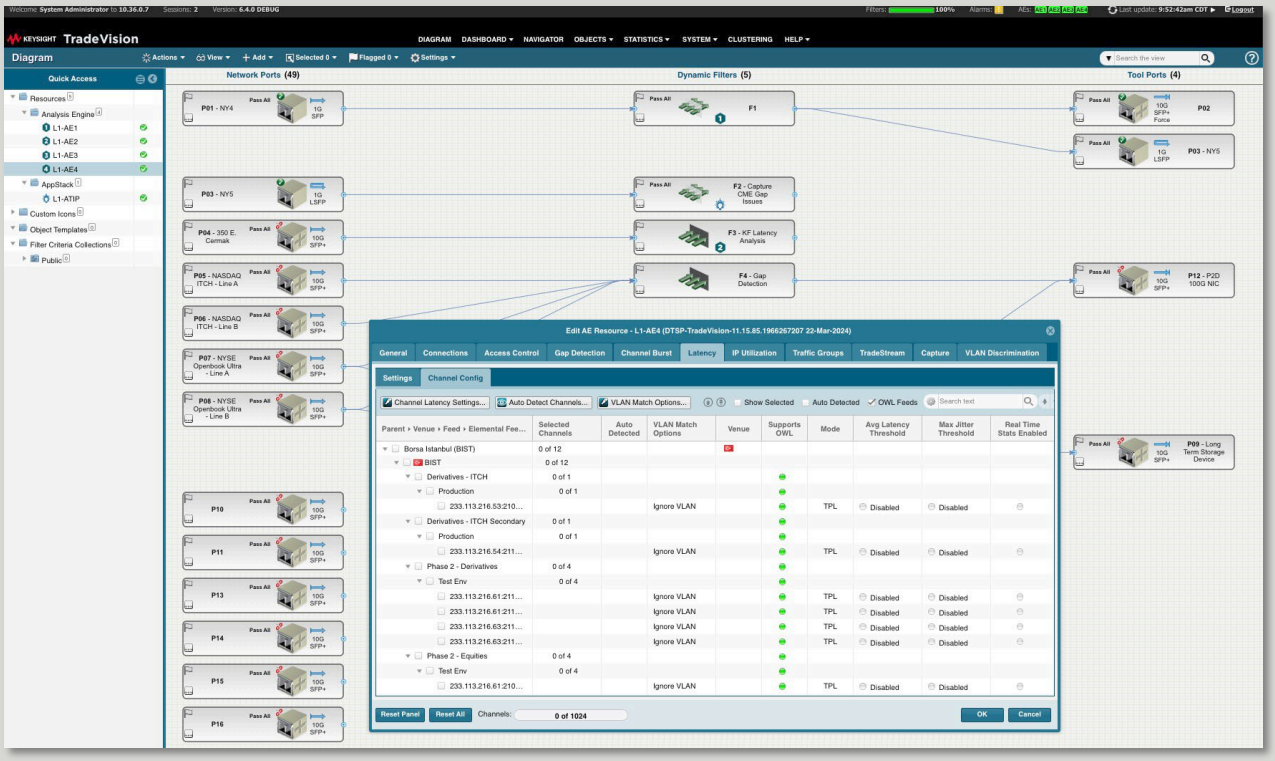


Monitoring Real Time Market Data Feeds with TradeStack

Market Feed aware tap aggregation solutions

KEYSIGHT

Feed Monitoring Issues

Rapidly detecting degradation in the quality of market data feeds is a considerable challenge for any market participant who uses or transports real-time market data. Market data transport technology is primarily based around the use of multicast, which does not have any error correcting mechanisms at the network layer. This means that any packets containing key trade data that have been lost cannot be detected until they are passed through a feed handler system at the end user site.

This creates several challenges:

- Many feed handlers use feed arbitration (between A and B feeds) to autocorrect message drops, so application teams may neither be aware of problems nor quickly pass-on details to their network operations teams
- Application teams may be aware of the problem, but the tools they use may not be available to the network operations teams who are responsible for diagnosing and resolving the issue.
- Detecting a problem at the feed handler does not tell you where the problem occurred. Was it a problem with the Exchange or Market Data Vendor's ticker plant? Was it a problem in their internal network? Was there a problem in the third- party network carrier or extranet provider used to transfer the market data? Was there a problem with one or more of the upstream production switches? Or, was the problem in the end user's internal network?

All these questions lead to slow decision-making, lengthy problem identification and remediation times that can be measured in days and not minutes. Much of the technology used to monitor this infrastructure today is either not up to the task or involves expensive data capture, storage, and analytics technologies that have remained the same for twenty years. These technologies are expensive and consume valuable power and real estate within expensive colocations and data centers.

Keysight Tap Aggregators

To address the above problems, Keysight has a range of tap aggregators that give brokers, hedge funds, exchanges and other market participants, the ability to monitor their real time data feeds in a cost effective way. Keysight has a family of three distinct tap aggregators (sometimes referred to as network packet brokers):

- **E400S** – provides traditional tap aggregation functions, but with an inbuilt data base of the multicast IP addresses and ports of most exchanges around the world that utilize multicast market data feeds. The use of this data base combined with 'point and click' filters allows rapid and low error rate set up of network filters – this is known as 'Feed Aware Filtering'. Supports network speeds up to 400 Gbps. To facilitate accurate time stamping E400S has PPS timing inputs in addition to NTP and PTP time interfaces.
- **TradeVision** – in addition to tap aggregation functions supports a range of market feed analytics such as multicast gap detection, latency analysis, feed health and micro-burst analysis. This additional capability is known as TradeStack. Supports network speeds up to 40Gbps. Has both NTP and PTP inputs for time stamping.
- **V400S** – Combines the best of both E400S and TradeVision. Supports TradeStack in addition to Finance Aware Filtering and highly accurate timestamping. Supports speeds up to 400Gbps.

E400S is idea for deployments where users already have their own feed monitoring tools and want to capture traffic from optical taps, time stamp the packets, filter the traffic and then send on to network monitoring tools or data capture devices. Its high speed capabilities are well suited to deployment and monitoring of high speed backbones links or exchanges with extremely high native bandwidths – eg. OPRA in the USA. It has a mixture of 24 medium speed QSFP56 native ports (up to 25Gbps) or 16 400Gbps (QSFP-DD) ports that can be configured at speeds from 10Gbps to 400Gbps.

TradeVision and V400 with TradeStack are ideally suited for both single-site data center and multi-site deployments where high performance, high fidelity, and real-time monitoring at the network edge is crucial. V400 with TradeStack uses the same platform as the E400 but with the addition of a high performance FPGA which gives the ability to perform sophisticated real time market data error detection and statistics without the danger of dropped packets or incorrect analysis.

Both TradeVision and V400 support super accurate and high-performance analytics of real-time market data by combining this powerful FPGA-based market data analytics with the best-in-class network packet brokering capabilities on the same physical platform. This allows the user to aggregate and filter incoming market and network wire data before performing advanced market data analytics. Both use a powerful user interface which leverages Keysight's patented filter complier to make otherwise complex configuration simple.

TradeVision and TradeStack on V400 deliver high-performance monitoring of market data feeds, instantly detecting multicast sequence gaps, microbursts, market data or network latency, and feed failures. TradeVision can provide such analysis simultaneously on up to 4 x 40Gbps communication links or LAN segments, even when all quality monitoring features are enabled at the same time, and at full line rate of 40Gbps without the risk of false 'gap' positives. V400 can provide such analysis simultaneously on up to 4 x 100Gbps communication links or LAN segments, even when all quality monitoring features are enabled at the same time, and at full line rate of 100Gbps without the risk of false 'gap' positives. In addition, both support market data latency analytics for real-time application latency and latency jitter from the exchange to a remote site, and between multiple points across a data center infrastructure.

All TradeVision and TradeStack trade analytics features are additionally available to the user via real-time dashboards and comprehensive aggregated reports which in turn allow for progressive disclosure of relevant information through intuitive drill-down from any top-level data point to corresponding detailed meta data for events and alerts stored in their local syslog data repository.

V400 also gives the ability to run third party applications such as sophisticated order entry analytics in real time using the high performance Intel based CPU combined with Kubernetes.

Key Features

Features vary by model (see table in later section) and may be subject to licensing fees.

- **Nanosecond Time Stamping** timestamps the traffic that carry the electronic trading traffic and time stamps the messages directly off the wire at ingress using nanosecond resolution time stamping with sub microsecond accuracy to UTC. E400 and V400 perform per port timestamping at ingress with port to port time stamp accuracies of single digit nanoseconds, whilst TradeVision undertakes timestamping using its FPGA and is accurate to 200 nanoseconds. E400/V400 uses the highly efficient and industry standard Source MAC timestamp format, whilst TradeVision uses the more traditional packet trailer format. Timestamps may be synchronized to PTP and NTP time sources and accuracy improved further on the E400/V400 by the use of PPS signals.
- **'Point and Click' Configuration** allows complex scenarios to be rapidly deployed. For example, Multicast traffic can be sent to inbuilt gap detection capabilities, whilst TCP/IP traffic is routed to trade analytics tools.

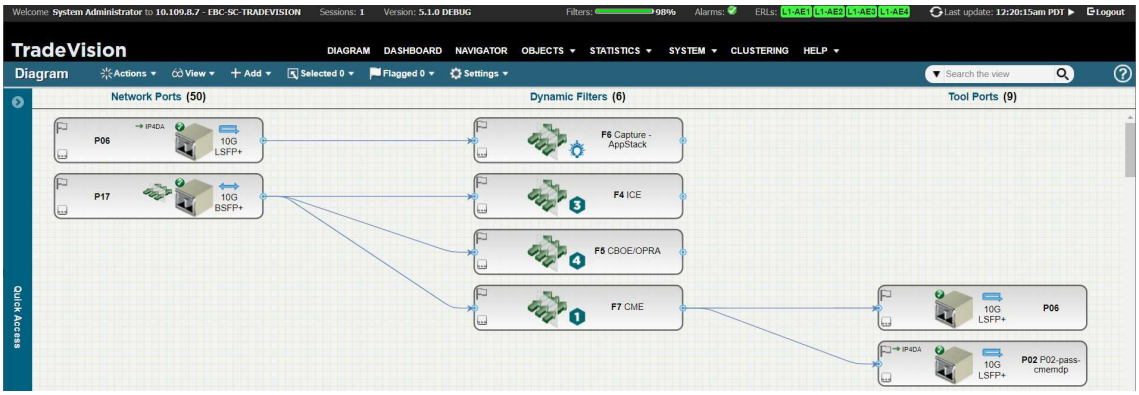


Figure 1. Example of "Point and Click" visualization of aggregation and filtering

- **Feed Aware Filtering** is available on all platforms and allows users to rapidly set up complex filters to aggregate and filter market data traffic to tool ports without the risk of errors that manual filter set up causes. This capability uses the same database of UDP ports and addresses that is used in TradeStack and TradeVision. See Specifications section for list of Exchanges supported.
- **Multicast Gap Detection** detects errors in mission critical market data feeds and sends alerts to other tools and systems, so you can quickly recover from market data errors and have correct prices to trade on. Gaps, out of sequence and duplicate packets are rapidly detected and notified to down steam management systems via Syslog, TradeStream, or SNMP messages. See Specifications section for list of Exchanges supported.

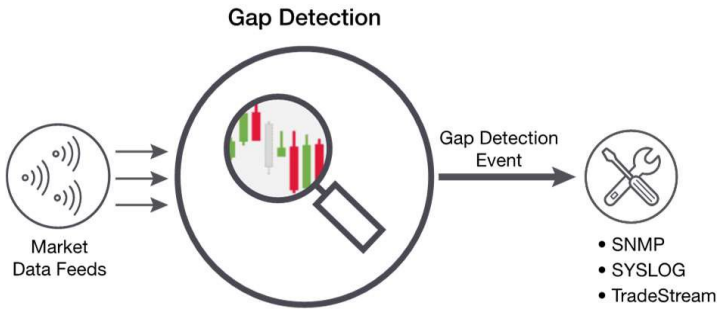


Figure 2. Gap detection alert options

- **One Way Latency (OWL)** measures nanosecond latency and jitter from an exchange to a remote site. OWL is calculated on per packet level by computing the delta time between the embedded exchange application timestamp (TE) and the PTP-synchronized time of arrival (TA), when the packet is received by TradeVision/TradeStack's Analysis Engine (AE). See Specifications section for list of Exchanges supported.

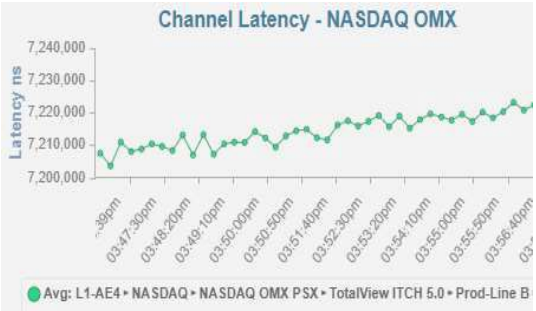


Figure 3. Example of channel latency graph

- **Two Point Latency (TPL)** measures the delta between nanosecond timestamps at two points in the network: upstream timestamp inserted at a production switch, and a downstream TradeVision, both deployed in the same data center in different locations.
- **Feed and Channel** Health detects the lack of traffic on market data feeds so that network operations staff can address without having to wait to be alerted by application IT staff. This can operate on an individual multicast channel or a feed level.
- **Microburst Detection** detects excessive multicast traffic and sends alerts to other tools and systems, so that network congestion issues can be quickly addressed. Traffic is sampled in FPGAs in resolutions as low as 15.2uS. Traffic can be analyzed on a multicast channel by channel basis or channels can be aggregated together to analyze traffic on a feed by feed or even port by port basis. Threshold alerts can be configured to be generated via SNMP, Syslog, and TradeStream when the burst threshold on a channel or given traffic group exceeds configured value(s). See Specifications section for list of Exchanges supported.
- **Tradestream** streams high resolution traffic statistics and alerts via UDP packets on a designated TradeVision or V400 TradeStack tool port. Detailed information on gap statistics, latency and jitter metadata, and real-time microburst link utilization at traffic group level are streamed to Big Data applications such as Splunk, InfluxDB or kdb+. This allows network engineers to build up data on historical traffic patterns, improve capacity planning, and enable a more tightly coupled integration with local incident management tools. TradeStream supports the streaming of Traffic Group Statistics, Gap Statistics, Channel Statistics, Traffic Group Summary Statistics, AE Config Beacon Metadata, Latency Metadata, and Jitter Metadata
- **Pre-programmed Exchange Feeds** are populated with over 35,000+ unique IP address and destination ports. This amounts to over 250 top level feeds that are continuously updated via DTSP (the TradeStack/TradeVision Decoder Database) subscription updates which are published approximately every 6 weeks. See Specifications section for list of Exchanges supported. This data contains knowledge of each multicast channel IP and port along with knowledge of the structure of the feed – Eg. the format of the sequence number and its location. The channel information is also tagged with the 'ownership' of that channel. This 'ownership' is grouped into 'Parent Entity' (Eg. Intercontinental Exchange Group), 'Exchange" (Eg. NYSE Arca Options), 'Feed' (Eg. XDP Complex Feed), and Instance (Eg. Production Line A – Live). Users of TradeVision and TradeStack can select relevant multicast channels either individually or at any intermediate ownership level within a 'Selection Tree'. Selection Trees are used extensively to select which channels to monitor and/or filter and are one of the key features of TradeStack/TradeVision.

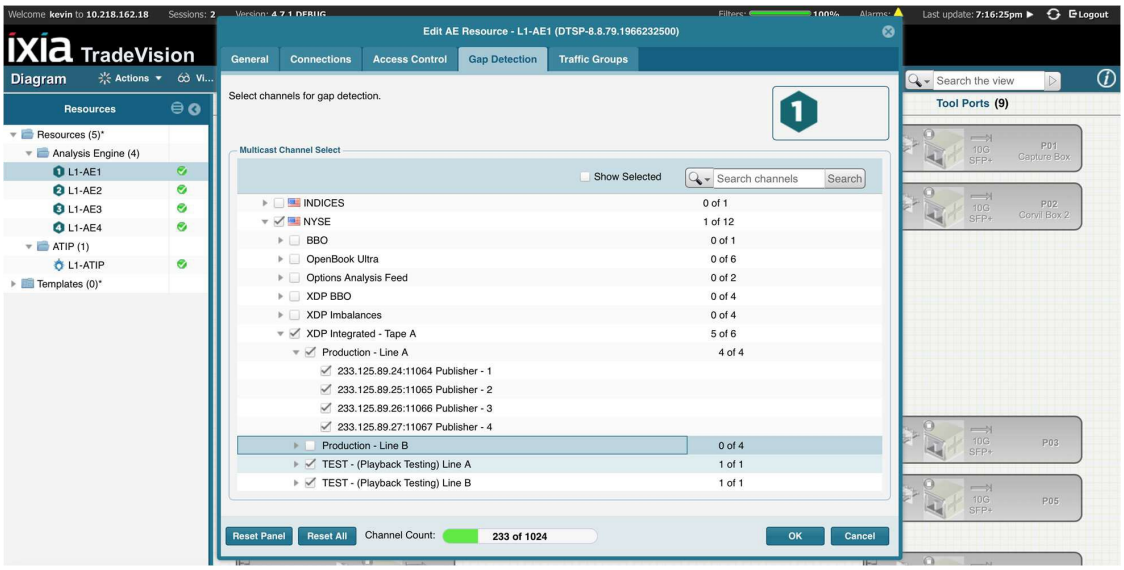


Figure 4. Example of pre-populated gap detection Selection Tree

- **Reverse Channel Look Up** the Selection Trees have extensive search capabilities which allow users to not only select relevant multicast channels to be monitored but to undertake reverse searches for IP addresses. For example – Users who had detected 224.0.105.32:51025 on their network could with one click find that this was in fact Channel 1, A Side, AIS, MIAX Options feed part of the Miami Stock Exchange. This saves tedious look ups in large spreadsheets or other databases.'
- **VLAN Port Tagging and Discrimination** – E400, V400 and TradeVision all support VLAN port tagging. In addition, V400 with TradeStack and TradeVision can use VLAN tags to discriminate multiple copies of the same multicast UDP packet. This allows the devices to track gaps from identical packets that are received on different ports. Up to 28 VLAN tags can be used to discriminates identical packets.
- **Visual Dashboards and End-of-Day Reports** simplify issue identification and remediation by displaying relevant event meta-data with high-precision drill-down into associated local syslog viewer event metadata for progressive disclosure and rapid problem resolution.

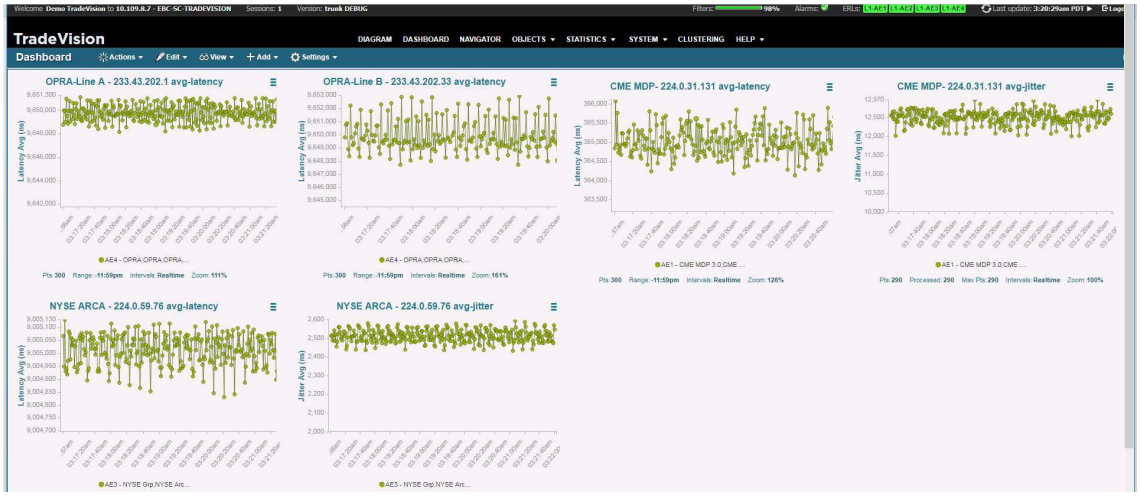


Figure 5. Example of dashboard shows multiple graphs of latency and latency jitter

- **Powerful GUI** allows you to focus on market feed data management rather than configuration the industry-leading user interface and patented filter compiler makes configuration simple.
- **Auto Detection of Channels** allows the user to scan selected feeds or individual channels for presence of data on the wire.
- **Order Entry Analysis – BETA on V400** Gives users the ability to run order analytics software on a V400. Combine the best of high performance FPGA based market data gap analysis with market leading order entry analysis from market leaders such as Instrumentix.

Specifications

Ports and time stamping

Description	E400	TradeVision	V400 + TradeStack
Number of physical ports	24 x SFP56 & 16 x QSFP-DD	48 x SFP+ & 4 x QSFP	24 x SFP56 & 16 x QSFP-DD
Max. number of 1Gbps ports	-	64	-
Max. number of 10Gbps ports*	152	64	152
Max. number of 25Gbps ports*	152	-	152
Max. number of 40Gbps ports*	32	4**	32
Max. Number of 100Gbps ports*	64	-	64
Max. Number of 400Gbps ports	16	-	16
Per Port Time stamping at line Rate	Yes	No	Yes
Time stamping	Yes	Yes	Yes
Time Sources	PTP, NTP and PPS	PTP and NTP	PTP, NTP and PPS
Time Stamp Format	SRC MAC (16/32)***	Trailer	SRC MAC (16/32)***

1. 50Gbps and 200Gbps speeds also supported
2. * May involve breakout cables
3. ** Fan in cables can be used to increase number of 40G ports
4. *** With PSPLF licenses only

Functionality

Description	E400	TradeVision	V400 + TradeStack
"Point and Click" interface	Yes	Yes	Yes
Standard Filtering	Yes (Dynamic)	Yes (Dynamic and Priority)	Yes (Dynamic)
Feed Aware Filtering	Yes	Yes	Yes
Aggregation	Yes	Yes	Yes
Tunnel Origination	Yes	Yes	Yes
Reverse IP feed Look Up	Yes	Yes	Yes
Gap Detection	-	Yes	Yes
Microburst Detection	-	Yes	Yes
One Way Latency Measurement	-	Yes	Yes
Two Point Latency Measurement	-	Yes	Yes
Feed Health	-	Yes	Yes
Max. Number of Multicast Channels Monitored	N/A	4096	8192*
Micro-burst Traffic Resolution	N/A	down to 15.2 micro seconds	down to 15.2 micro seconds
TradeStream Support	-	Yes	Yes
VLAN Port Tagging	Yes	Yes	Yes
Alerts via SNMP	Yes	Yes	Yes
Alerts via Syslog	Yes	Yes	Yes
Event triggered packet capture	-	Yes - up to 5000 pcaps and 20GB in total storage	-
Authentication	Local, RADIUS, TACACS+ and LDAP	Local, RADIUS, TACACS+ and LDAP	Local, RADIUS, TACACS+ and LDAP

1.* Available Q1 2024

Venues supported

Description	E400	TradeVision	V400 + TradeStack
Gap Detection	N/A	Aequitas, AQUIS, ASX24, B3*, BMV (Mexican Ex.), BME (Spanish Ex.), Borsa Istanbul, BOX Options, BROKERtech. CBOE (US Equities, C1, C2, CBOE Australia, CBOE EU, Futures Exchange, CBOE Japan, CBOE One, CFLEX, EDGA, EDGX, Index, MATCHNow, MDI), CBOT, CFE, ChiX Canada, Chi-X Europe, Borsa Italiana, CME MDP3.0 (BM&F, BMD, CBOT, COMEX, DME, Europe, KRX, MEXDER, MGEX, NYMEX), CNSX Group, CTA, Dealerweb, Deutsche Boerse (Eurex, Xetra), Direct Edge, Euronext (multiple venues), FINRA, Hong Kong Exchange, IEX Group, Intelligent Cross, Intercontinental Exchange (American Options, Arca Options, ICE, IDC, INDICES, Intelligent Cross, NYSE American, NYSE American (Options), NYSE ARCA, NYSE ARCA OPTIONS, NYSE Bonds, NYSE Equities Arca Pillar, NYSE Global OTC, NYSE National NATIV XDP, NYSE NYC MMW, XDP), Japan Exchange Group (J Gate and TSE), Japannext, Johannesburg Stock Exchange, LME, London Stock Exchange Group (CDS, FTSE, LSE, TRADEecho, Turquoise), MEMX, Moscow Exchange, National Stock Exchange, Nodal Exchange, Omega, One Chicago, OPRA, ODX, ODE, OSLO Borse, OTC Markets, SIX, Small Exchange, Strike Technologies, Taiwan Futures Exchange, TMX Group (Alpha, MX Futures, MX Options, TMX IP, TSE, TVE), Tradeweb EU, Warsaw Stock Exchange, UTP	
Feed Health and Micro Bursts	N/A	As above Gap Detection list plus B3 (V400), KOSCOM, Namibian Exchange,	
One Way Latency Measurement	N/A	Borsa Istanbul, Borsa Italiana, BROKERTech, CBOE (Multiple venues), CME (MDP3.0), CTA, Intelligent Cross, ICE (multiple venues), LSEG (multiple venues), NASDAQ (multiple venues), OPRA, Small Exchange, UTP	
Smart Feed Aware Filtering	Same as Feed Health for TradeVision	Same as Feed Health for TradeVision	

1. * TradeVision only

Physical specifications

Description	E400	TradeVision	V400 + TradeStack
Airflow Direction	Front to Back	Front to Back	Front to Back
MTBF (including P/S and fans) – Hrs @ 25C	79,833	94.924	68,563
Physical Size (W x D x H)	44.5 x 78.7 x 4.5 cm. 17.5 x 31.0 x 1.75 in.	44.5 x 75.0 x 4.5 cm. 17.5 x 29.5 x 1.75 in.	44.5 x 78.7 x 4.5 cm. 17.5 x 31.0 x 1.75 in.
Rack Mountable	Yes – 1U	Yes – 1U	Yes – 1U
Weight	16.0 kg or 35.0 lbs	16.5 kg or 36.4lbs	18.0 kg or 40.0 lbs
Per Port Time stamping at line Rate	Yes	No	Yes
Time stamping	Yes	Yes	Yes
Time Sources	PTP, NTP and PPS	PTP and NTP	PTP, NTP and PPS
Time Stamp Format	SRC MAC (16/32)	Trailer	SRC MAC (16/32)

Electrical specifications

Description	E400	TradeVision	V400 + TradeStack
Power Supplies	2 redundant hot swap AC power supplies	2 redundant hot swap AC power supplies	2 redundant hot swap AC power supplies
Voltage	100-240 VAC (x2), 50-60Hz	100-240 VAC (x2), 50-60Hz	100-240 VAC (x2), 50-60Hz
Current	Max. 9A @ 100- 240 VAC	Max. 7.7A @ 100- 240 VAC	Max. 9A @ 100- 240 VAC
Heat Dissipation	Max. 800W / 2730 BTU/hour	Max. 800W / 2730 BTU/hour	Max. 800W / 2730 BTU/hour

Environmental specifications

Description	E400	TradeVision	V400 + TradeStack
Operating temperature	5°C to 40°C	5°C to 40°C	5°C to 40°C
Operating humidity	5% to 85% RH (non-condensing)	5% to 85% RH (non-condensing)	5% to 85% RH (non-condensing)
Storage temperature	-40°C to 70°C	-40°C to 70°C	-40°C to 70°C
Storage humidity	5 to 95%	5 to 95%	5 to 95%
Operating Altitude	Up to 2000m	Up to 2000m	Up to 2000m
RoHS	Yes	Yes	Yes
WEEE	WEEE Directive 2012/19/EU	WEEE Directive 2012/19/EU	WEEE Directive 2012/19/EU

Compliance

Description	E400	TradeVision	V400 + TradeStack
Safety	EN IEC 62368-1	EN IEC 62368-1	EN IEC 62368-1
	UL 62368-1/CSA C22.2 No. 62368-1	UL 62368-1/CSA C22.2 No. 62368-1	UL 62368-1/CSA C22.2 No. 62368-1
EMC Emissions	CISPR 32, Class A, IEC 61000-3-2, IEC 61000-3-3	CISPR 32, Class A, IEC 61000-3-2, IEC 61000-3-3	CISPR 32, Class A, IEC 61000-3-2, IEC 61000-3-3
	EN 55032, Class A, EN 61000-3-2, EN 61000-3-3	EN 55032, Class A, EN 61000-3-2, EN 61000-3-3	EN 55032, Class A, EN 61000-3-2, EN 61000-3-3
	FCC Part 15B, Class A	FCC Part 15B, Class A	FCC Part 15B, Class A
	CAN ICES-003(A)/NMB-003(A)	CAN ICES-003(A)/NMB-003(A)	CAN ICES-003(A)/NMB-003(A)
	AS/NZS CISPR 32, Class A	AS/NZS CISPR 32, Class A	AS/NZS CISPR 32, Class A
	KS C 9832, Class A, KS C 9610-3-2, KS C 9610-3-3	KS C 9832, Class A, KS C 9610-3-2, KS C 9610-3-3	KS C 9832, Class A, KS C 9610-3-2, KS C 9610-3-3
	VCCI - CISPR 32, Class A	VCCI - CISPR 32, Class A	VCCI - CISPR 32, Class A
EMC Immunity	CISPR 35	CISPR 35	CISPR 35
	EN 55035	EN 55035	EN 55035
	KS C 9835	KS C 9835	KS C 9835
Country of Origin	Malaysia (USA Optional*)	Malaysia (USA Optional*)	Malaysia (USA Optional*)

1. * Special TAA compliant part numbers apply.

Ordering Information

The following tables show the most common part numbers used in capital markets applications. Other capabilities may also be available. See relevant data sheets for full information. DC Versions are also available. Consult Keysight for full range of compatible transceivers and cables.

Vision E400S

Part Number	Description
Base Units	
SYSVE400SBASE-AC	Keysight Vision E400S, base AC system includes chassis, power supply and fan (991-0275)
SYSVE400SSPR-AC	Keysight Vision E400S, base AC system, spare unit, includes chassis, power supply and fan (9910279)
MV400-ACPS	Keysight Vision 400 & E400S, (1) AC power supply (991-0253)
MV400-FAN	Keysight Vision 400 & E400S, (1) Fan module (991-0255)
PacketStack Plus Capability	
LIC-V400-PSPLF-100	Keysight, 400 series, perpetual PacketStack+ for finance license, enables per port timestamping. 24xSFP56 enablement up to 50G and 16xQSFP-DD up to 100G port speeds and installation of DTSP for filtering. (993-0381)
LIC-V400-PSPLF-A400	Keysight, 400G Add-on for PacketStack+ for Finance: Upgrades 16xQSFP-DD ports to 400G port speeds on devices which hold valid perpetual license for PacketStack+ for Finance (LIC-V400-PSPLF-100) (993-0382)
SUB-V400-PSPLF-100	Keysight, 400 series, one (1) year subscription for Finance PacketStack+, enables per port timestamping. 24xSFP56 enablement up to 50G and 16xQSFP-DD up to 100G port speeds and installation of DTSP for filtering (993-0378).
SUB-V400-PSPLF-A400	Keysight, 400G Add-on for PacketStack+ for Finance: Upgrades 16xQSFP-DD ports to 400G port speeds on devices which hold valid one (1) year subscription for PacketStack+ for Finance (SUB-V400-PSPLF-100) (993-0377)

TradeVision

Part Number	Description
Base Units	
SYS-TV	Ixia TradeVision - Vision ONE System AC power with (4) 40G and 48 (1/10G) ports enabled plus TradeStack capabilities (991-0124)
SYS-V1-FAN-ASSY	Keysight Vision ONE System - Spare Fan assembly module. (991-2020)
SYS-V1-ACPS	Keysight Vision ONE System - Spare AC power module. (991-3023)
LIC-V1-SPR	Keysight Vision ONE series - Cold spare system port license (993-0097)
TradeStack Capability	
SUB-TV-TS	Ixia TradeVision, initial (first year) annual subscription for TradeStack capabilities - decoders required for multicast gap detection and feed health (993-0122)
909-5027	IXIA Renewal of annual subscription to the TradeStack decoders required from multicast gap detection and feed health (909-5027)
SUS-TV-LTNCY	IXIA TradeVision one-year subscription for Advanced Latency Analytics, with decoders required for One Way Latency (OWL) and Two Point Latency (TPL) (993-0129)
909-5028	Ixia Renewal subscription, annual, for Advanced Latency Analytics capabilities, with decoders required for One Way Latency (OWL) and Two Point Latency (TPL) (909-5028)

Vision 400

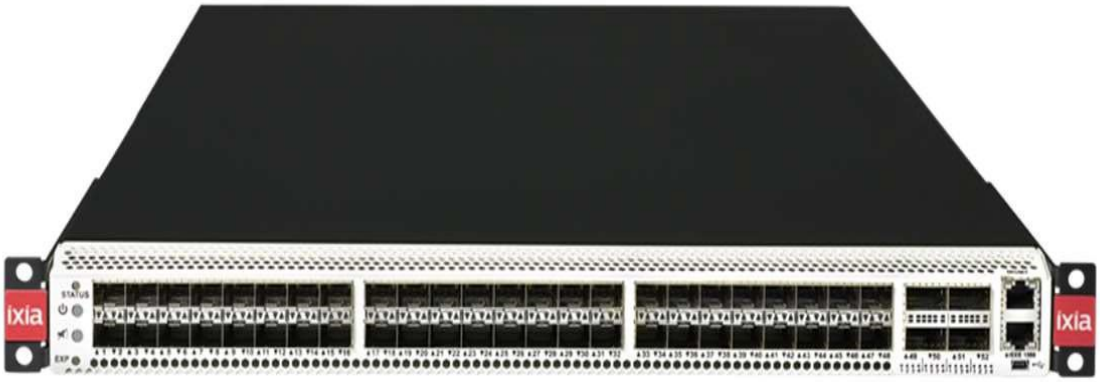
Part Number	Description
Base Units	
SYS-V400-BASE-AC	Keysight Vision 400, base AC system, includes chassis power supply and fan (991-0256)
SYS-V400-SPR-AC	Keysight Vision 400, AC cold spare unit (991-0258)
MV400-ACPS	Keysight Vision 400 & E400S, (1) AC power supply (991-0253)
MV400-FAN	Keysight Vision 400 & E400S, (1) Fan module (991-0255)
PacketStack Plus Capability	
LIC-V400-PSPLF-100	Keysight, 400 series, perpetual PacketStack+ for finance license, enables per port timestamping. 24xSFP56 enablement up to 50G and 16xQSFP-DD up to 100G port speeds and installation of DTSP for filtering. (993-0381)
LIC-V400-PSPLF-A400	Keysight, 400G Add-on for PacketStack+ for Finance: Upgrades 16xQSFP-DD ports to 400G port speeds on devices which hold valid perpetual license for PacketStack+ for Finance (LIC-V400-PSPLF-100) (993-0382)
SUB-V400-PSPLF-100	Keysight, 400 series, one (1) year subscription for Finance PacketStack+, enables per port timestamping. 24xSFP56 enablement up to 50G and 16xQSFP-DD up to 100G port speeds and installation of DTSP for filtering (993-0378).
SUB-V400-PSPLF-A400	Keysight, 400G Add-on for PacketStack+ for Finance: Upgrades 16xQSFP-DD ports to 400G port speeds on devices which hold valid one (1) year subscription for PacketStack+ for Finance (SUB-V400-PSPLF-100) (993-0377)
TradeStack Capability	
SUB-V400-TS400	Keysight, one (1) year subscription for TradeStack FPGA based Market Data Analytics. Package enables DTSP market data feed decoder use within TradeStack on Vision 400 and enables the FPGA based market data analytics (993-0379)
SUB-V400-TS400-LTNCY	Keysight, one (1) year subscription for TradeStack Latency Analytics for use on Vision 400 (993-0380)

Physical Units

Vision 400 and E400S



TradeVision



Support

Keysight's Visibility industry-best products are backed by our industry-leading expertise. Our comprehensive product support does more than ensure uptime – it ensures a competitive edge. The Keysight support team partners with customers to:

- Avoid downtime and keep schedules on track
- Implement according to industry specifications
- Develop best practices to meet individual needs and objectives
- Maximize efficiency and reduce operating expenses
- Protect and maximize investments in test and visibility

Keysight enables innovators to push the boundaries of engineering by quickly solving design, emulation, and test challenges to create the best product experiences. Start your innovation journey at www.keysight.com.

KEYSIGHT

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