

Keysight Optical Switches

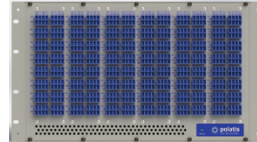
Flexible, Low-Loss Optical Switching to Streamline Connectivity, Scale Automation, and Future-Proof Your Lab

Keysight partners with leading optical switch providers to deliver a full suite of high-performance switching technologies tailored for test labs and advanced network environments. Whether your requirements call for single/multi-mode, simplex/duplex fibers, or small/medium/large scale, Keysight's Velocity automation framework integrates seamlessly with third-party optical solutions to ensure low-loss, scalable, and reliable testbed operations. This guide provides an at-a-glance comparison of our partner optical switches, enabling you to identify the right solution for your application. Ask your Keysight representative for more information.



Figure 1. Three Keysight optical switch platforms: Calient, Polaris, and Telescent

Keysight Optical Switches



Platforms	Calient	Polaris	Telescent
Models	S320 Optical Circuit Switch	6000i/n; 7000i/n	G5 Robotic Patch Panel
Switching Technology	MEMS Micromirror array	Piezoelectric	Robotic Switch
Port Capacity	320 ports (TX/RX pairs)	8x8 up to 384x384 (TX/RX pairs)	48 up to 1,008 ports (TX/RX pairs) scalable to > 10,000 fibers
Fiber Type	Single Mode	Single Mode / Multimode (up to 16x16)	Single Mode/ Multi-Mode
Latency	<30 ns latency	25 - 75 ns latency	≈ 30 ns latency
Switching Speed	<200 ms	<25-50 ms	~90 seconds
Insertion Loss	1.5 dB typical; 3.0 dB max	0.5-2.7 dB depending on size	<0.3 dB typical (<0.5 dB max)

Additional Velocity Automation Switches

Test labs are challenged with the ever-changing landscape of ethernet speeds, test tools, and interface types. Velocity provides a variety of automation switches to support your test lab requirements and environments.

Velocity 3900 Series

Keysight Velocity 3900 Series switches for test lab automation serve as the focal point for managing lab connectivity and topology. The 3900 optimizes test lab operations by combining Layer 1 matrix switching into a scalable architecture. It offers flexible pay-as-you-grow configurations, with 1, 3, and 12 slot chassis options and a variety of interoperable optical-electrical-optical blades.

Velocity HS Series Switches

The Velocity HS series can maximize efficiency in diverse environments by supporting Ethernet speeds up to 400G and enabling the use of lower speed test tools for higher speed testing through rate conversion and aggregation. Isolated port mapping allows you to easily configure test scenarios that would otherwise require additional spending for new tool ports. The HS Series delivers flexible, multi-speed support in three different chassis options with QSFP-28 or QSFP-DD interfaces.

Velocity Core

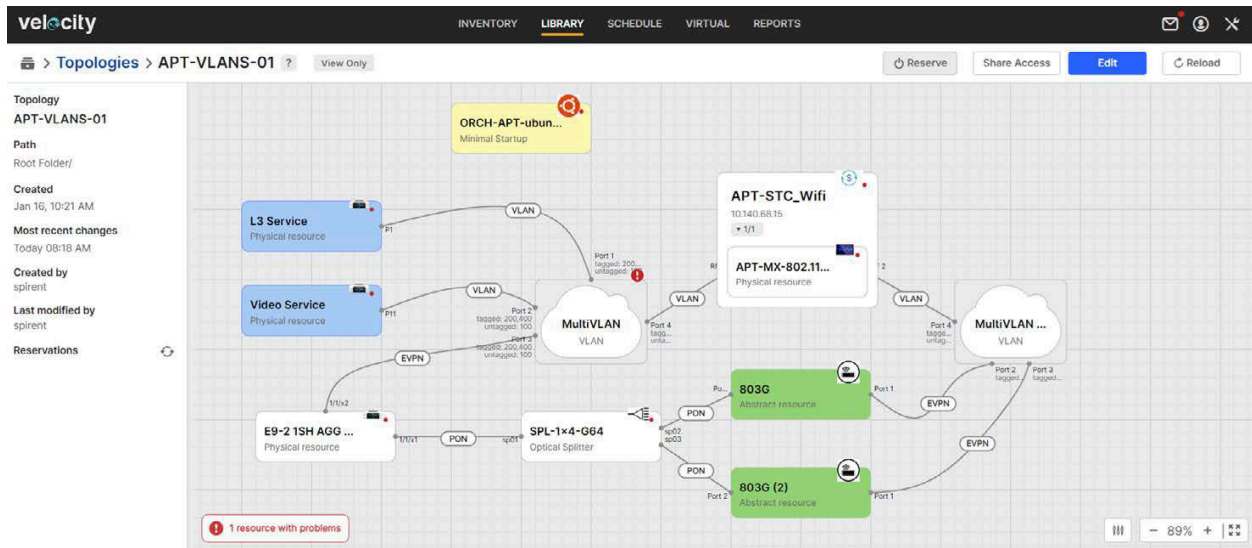


Figure 2. Screenshot of Velocity Core interface

Velocity Core serves as the central orchestration layer for Keysight’s automation portfolio, unifying management of the Layer 1 fabric across electrical and optical environments. It integrates seamlessly with Micro-Electro-Mechanical Systems (MEMS), piezoelectric, and robotic optical switches to deliver low-loss, automated connectivity at scale. By consolidating resources, enabling just-in-time provisioning, and simplifying topology management, Velocity Core ensures test labs maximize equipment utilization, accelerate release cycles, and reduce costs while maintaining the flexibility to adapt to evolving multi-vendor test requirements.

Velocity Automation Portfolio



Figure 3. Chart displaying Velocity Automation Portfolio offerings

The Velocity Automation Portfolio supports the complete automation of customer lab and testing environments for large enterprise, network equipment manufacturer (NEM), and service provider organizations. It is the only fully integrated solution to provide automation and management of lab resources, facilitate automated test suite creation, oversee lab connectivity and topology, and provide professional services for initiative success.

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.