Keysight 81595B
Modular Optical Switches

Data Sheet

KEYSIGHT
TECHNOLOGIES

Introduction

The Keysight Technologies, Inc. 81595B 1x4 optical switch module is available for both single-mode and multimode fiber applications. These can be used in all Keysight 816x Lightwave mainframes and support automation while improving measurement repeatability. The multimode switch has excellent mode fidelity.

- 81595B Option 009: 1x4 switch for single-mode fiber
- 81595B Option 062: 1x4 switch for multimode fiber

Key Features

Wide wavelength range	Single mode	1270 nm to 1670 nm
	Multimode	700 nm to 1400 nm
Excellent repeatability	±0.030 dB (maximum variation over 10,000 random cycles)	
Low insertion loss	Single mode	2.0 dB, < 1.25 dB typ.
	Multimode	2.0 dB, < 1.0 dB typ.
Connector types	Single mode	FC/APC (narrow keying)
	Multimode	FC/PC straight
Modular design, allowing up to 17 switches in one mainframe		

The 1 x 4 optical switch has four positions:

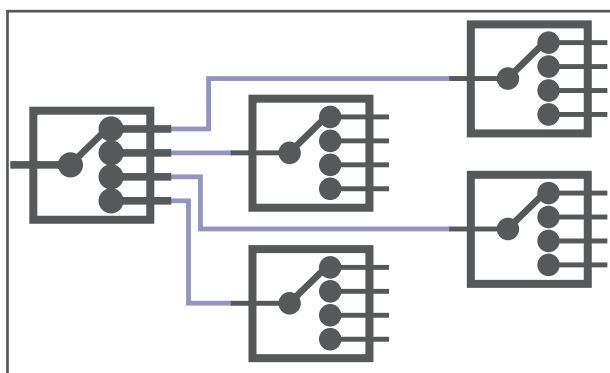# Modular Design for Solution Platform

These modules enable manufacturers of optical and network components to automate their processes by routing optical signals when testing devices such as line cards, amplifiers, and active and passive components. Adding modular optical switches to this instrument platform allows flexible and cost effective all-in-one solutions to be developed for optical component test in automated test environments.

Switching Reduces Uncertainty from Connections and Eases

Test Automation

These modular switches can be used to avoid repeated reconnections during your measurements and are critical to automated procedures. The low IL and PDL and high repeatability assure minimum impact of the switch on measurement accuracy.

Switching can be performed from the button on the module, from the mainframe interface and via GPIB control. The compact form and high performance allow combining switches for multistage setups, like five 1x4 modules.

Modal Fidelity for Multimode Fiber Systems

Signals in multimode fibers are distributed over a range of mode groups that can have different loss and delay in a link. For dependable multimode transceiver testing, the instrument used to set the power level should not change this modal distribution. The Keysight multimode switches are designed with very short collimated paths between fiber, so signals propagate in practically the same distribution as through uninterrupted multimode fiber.

Modular Optical Switch Specifications

81595B		
Switch type	1 x 4	
Fiber interface	# 009 single mode	# 062 multimode
Fiber type	9/125 µm SMF	62.5/125 µm MMF
Connectivity	FC/APC - R angled	FC/PC straight
Wavelength range	1270 nm to 1670 nm	700 nm to 1400 nm
Insertion loss	< 2.0 dB, < 1.25 dB typ. [4]	< 2.0 dB, < 1.0 dB typ. [1]
Polarization dependent loss	typ. 0.07 dBpp	NA
Repeatability [2]	±0.03 dB	±0.03 dB [1]
Return loss	typ. 55 dB	typ. 20 dB
Crosstalk	typ. -70 dB	typ. -70 dB
Switching time	< 10 ms	
Lifetime	> 10 million cycles	
Maximum input power	± 20 dBm	
Dimensions (H x W x D)	75 mm x 32 mm x 335 mm (2.9" x 1.3" X 13.2")	
Weight	0.5 kg	
Operating temperature	10 °C to 45 °C	
Storage temperature [5]	-40 °C to 70 °C	
Humidity	Non-condesing	
Warm-up time	30 min.	

1. Specification is typical with 50/125 µm multimode fiber.
2. Worst case measurement deviation over 10,000 random switching cycles.
3. For λ = 1550 nm; for 1270 nm < λ < 1670 nm add 0.3 dB.
4. For λ = 1550 nm; for 1270 nm < λ < 1670 nm add 0.6 dB.
5. Allow minimum acclimatization of 2 hours if previously stored outside operating temperature range before turning on the module.
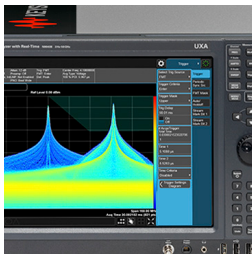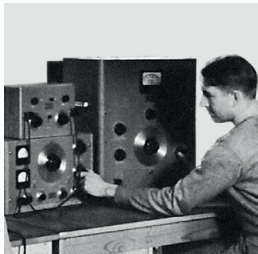
Ordering information:

– Modules for single mode fiber interface: #009
– Modules for multimode fiber interface: #062

Evolving Since 1939

Our unique combination of hardware, software, services, and people can help you reach your next breakthrough. We are unlocking the future of technology.
From Hewlett-Packard to Agilent to Keysight.

myKeysight

myKeysight
www.keysight.com/find/mykeysight
A personalized view into the information most relevant to you.

http://www.keysight.com/find/emt_product_registration
Register your products to get up-to-date product information and find warranty information.

KEYSIGHT SERVICES
Accelerate Technology Adoption.
Lower costs.

Keysight Services
www.keysight.com/find/service
Keysight Services can help from acquisition to renewal across your instrument's lifecycle. Our comprehensive service offerings—one-stop calibration, repair, asset management, technology refresh, consulting, training and more—helps you improve product quality and lower costs.

Keysight Assurance Plans
www.keysight.com/find/AssurancePlans
Up to ten years of protection and no budgetary surprises to ensure your instruments are operating to specification, so you can rely on accurate measurements.

Keysight Channel Partners
www.keysight.com/find/channelpartners
Get the best of both worlds: Keysight's measurement expertise and product breadth, combined with channel partner convenience.

www.ke ysight.com/comms/lightwave

DEKRA Certified
ISO9001 Quality Management System

www.keysight.com/go/quality
Keysight Technologies, Inc.
DEKRA Certified ISO 9001:2015
Quality Management System

KEYSIGHT
TECHNOLOGIES