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Agilent 8159xA/S
Modular Optical Switches
Technical Specifications



Agilent's 8159xA/S modular optical switches route light in single mode optical fibers from the input to several output ports. They are a family of plug-in modules for Agilent's Lightwave Solution Platform 8163A/B, 8164A/B, 8166A/B. Their high flexibility within this modular test platform makes them ideal as test and measurement equipment for signal routing in automated test environments. The available configurations are 1x2, 2x2 and 1x4.

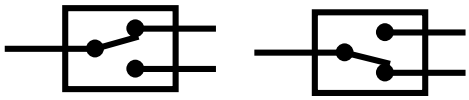
Agilent Technologies

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Modular Design for Solution Platform

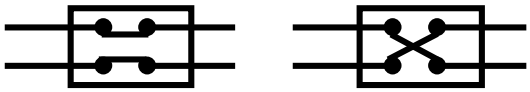
Agilent's 8159xA modular optical switches are a family of plug-in modules for Agilent's Lightwave Solution Platform 8163A/B, 8164A/B and 8166A/B. They enable manufacturers of optical and network components to automate their processes by routing optical signals when testing devices such as line cards, 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.

The 1 x 2 optical switch has two positions:

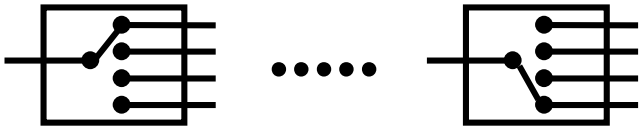


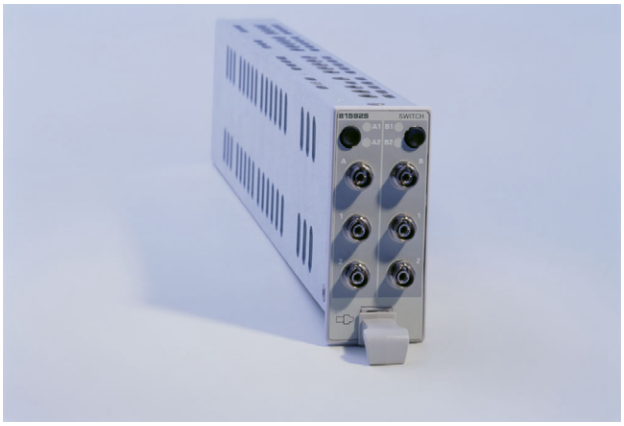
The dual 1x2 optical switch has two independent 1x2 switches in one module to reduces rack space and cost.

The 2x2 non-blocking (crossover) optical switch also has two positions:



The 1x4 optical switch has four positions:





Key Features

- Wide wavelength range: 1270–1650 nm
- Excellent repeatability: +/- 0.005 dB
- Low insertion loss: 0.8 dB
- Modular design, which allows up to 34 switches (1x2) in one mainframe
- Switch positions that can be individually controlled on each module
- Connector types: FC/PC, FC/APC, SC/PC, SC/APC

Applications

- Signal routing
- Bit Error Rate test
- Optical amplifier test and characterization
- Transmission system test
- DWDM components test

Agilent 8159xA/S optical switch modules are produced to the ISO 9001 international quality system standard, as part of Agilent's commitment to continually increasing customer satisfaction through improved quality control.

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Modular Optical Switch Specifications

	81591A	81591S	81592A	81592S	81594A	81594S	81595A	81595S
Switch type	1x2		1x2 dual		2x2		1x4	
Connectivity	angled	straight	angled	straight	angled	straight	angled	straight
Fiber type	9/125 μm SMF28							
Wavelength range	1270-1650 nm							
Insertion loss [1,2]	< 0.8 dB excluding connectors [3] < 1.2 dB (typ. 0.8 dB) including connectors [4]				< 1.0 dB excluding connectors [3] < 1.4 dB (typ. 1.0 dB) including connectors [4]			
Polarization dependent loss [1]	< 0.07 dB [5]		< 0.07 dB [5]		< 0.20 dB [2]		< 0.14 dB [5]	
Return loss [2]	typ. 60 dB	typ. 45 dB	typ. 60 dB	typ. 45 dB	typ. 60 dB	typ. 45 dB	typ. 60 dB	typ. 45 dB
Repeatability [6]	< +/- 0.005 dB		< +/- 0.005 dB		< +/- 0.005 dB		< +/- 0.01 dB	
Crosstalk [2]	typ. –70 dB							
Switching time [1]	typ. 10 ms		typ. 10 ms		typ. 15 ms		typ. 15 ms	
Lifetime	> 10 Mio cycles							
Spectral flatness [1,7]	typ. 0.10 dB							
Maximum input power	300 mW							
Dimensions (H x W x D)	75 mm x 32 mm x 335 mm (2.8" x 1.3" x 13.2")							
Weight	0.5 kg							
Operating temperature	10 °C – 45 °C							
Humidity	95%, non-condensing							
Warm-up time	30 min.							

[1] At temperature = 23°C +/- 3°C
[2] For λ = 1310 nm +/- 15 nm and 1550 nm +/- 15 nm
[3] Not measured for connectorized versions
[4] Measured with reference connector
[5] For λ = 1550 nm +/- 15 nm, add 0.06 dB for λ = 1310 nm +/- 15 nm
[6] Consecutive measurement
[7] For 1525 nm < λ < 1575 nm, over all channels

Ordering Information

Modules for angled contact connectors

81591A Optical switch, 1x2
81952A Optical switches, 2 independent, 1x2 in one module
81594A Optical switch, 2x2 non-blocking (crossover)
81595A Optical switch, 1x4

Option SCI: Optical switch comes with fixed SC/APC connector interfaces
Option FCI: Optical switch comes with fixed FC/APC connector interfaces for R key (narrow key width only)

Modules for straight contact connectors

81591S Optical switch, 1x2
81592S Optical switches, 2 independent, 1x2 in one module
81594S Optical switch, 2x2 non-blocking (crossover)
81595S Optical switch, 1x4

Option SCI: Optical switch comes with fixed SC/PC connector interfaces
Option FCI: Optical switch comes with fixed FC/PC connector interfaces

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Europe:
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Japan:
(tel) (81) 426 56 7832
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(fax) (852) 2506 9284

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Related Agilent Literature

Agilent 8163B Lightwave Multimeter
Agilent 8164B Lightwave Measurement System
Agilent 8166B Lightwave Multichannel System
Technical Specifications
p/n 5988-3924EN

Agilent 81480/680/640B
Agilent 81672/482/682/642B
Technical Specifications
p/n 5988-5508EN

Agilent 81689A/81689B/81649A
Compact Tunable Laser Modules
Technical Specifications
p/n 5988-3675EN

Agilent Power Sensor Modules
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Agilent Return Loss Modules
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p/n 5988-1569EN

Agilent 81662A DFB Laser
Agilent 81663A DFB Laser
Agilent Fabry perot Laser
Technical Specifications
p/n 5988-1570EN

Agilent 8156xA and 8157xA Optical Attenuators,
Technical Specifications
p/n 5988-2696EN

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