SWS15100/16100 Swept Wavelength Systems

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The swept wavelength system is the solution for characterizing the wavelength dependence of passive optical components. The SWS is available in two wavelength ranges: the SWS15100 system scans the C-band from 1520-1570 nm and the SWS16100 offers extended L-band coverage from 1541-1630 nm. Both systems provide a very high wavelength accuracy of ± 3 pm (± 0.003 nm) and a speed considerably faster than a broadband source/OSA or a tunable laser source/power meter system. The SWS can completely characterize the insertion loss of a 40-channel DWDM in less than 90 seconds. Where full coverage of the C and L-bands in a single trace is desired, the signals from the transmitters can be combined with an optional dual band selector switch located in the receiver.

The standard SWS package consists of; a tunable laser source and source optics module in a transmitter cabinet, receiver chassis, a parallel port connector or optional data acquisition board, application software, and a user-supplied computer.

The tunable laser provides a narrow line width source in the wavelength range of interest. The source optics module performs real-time wavelength measurements and transmits them to the receiver. At the receiver, a portion of the light is sent to a reference detector while the rest is sent to the device under test (DUT). This process provides an accurate ratio measurement.

One of the essential benefits of the SWS is the ability to simultaneously test multiple outputs of a component. As the number of outputs increases, the test time per component decreases significantly compared to more conventional measurement techniques. Each receiver comes standard with one control module and a dual detector module. With additional chassis and detector modules, up to 128 channels can be tested simultaneously.

A single transmitter unit can support nominally four independent receiver stations. As the SWS is a modular system with a distributed architecture, only a single optical fiber is needed to connect the transmitter to each receiver.

Key Features

- Absolute wavelength accuracy ± 3 pm
- Simultaneous testing of multiple outputs of a component
- Compared to more conventional measurement techniques, reduction in test time per component becomes significant as the number of outputs increases
- Up to 128 channels can be tested at the same time, resulting in significant reduction in test instrument costs
- Distributed architecture, a single tunable laser source serves multiple receivers
- Intuitive and powerful graphical user interface · Integrated tunable laser source
- 24/7 service and support
- CE compliant

Applications

Can be used in both research and development and manufacturing settings to test a full range of devices:

- DWDM demultiplexers
- Bandpass filters
- Fiber Bragg gratings
- Isolators

- Switches
- Attenuators
- Broadband couplers/splitters
- Interleavers

Parameters Measured:

- Polarization dependent loss (PDL) (using optional controller)
- Insertion loss (IL)
- Bandwidth
- Center wavelength

Parameters from Analysis:

- Passband
- Crosstalk
- Flatness
- Isolation