BRISTOL INSTRUMENTS

LASER 2000

OPTICAL SPECTRUM ANALYZER SOFTWARE

438 Series

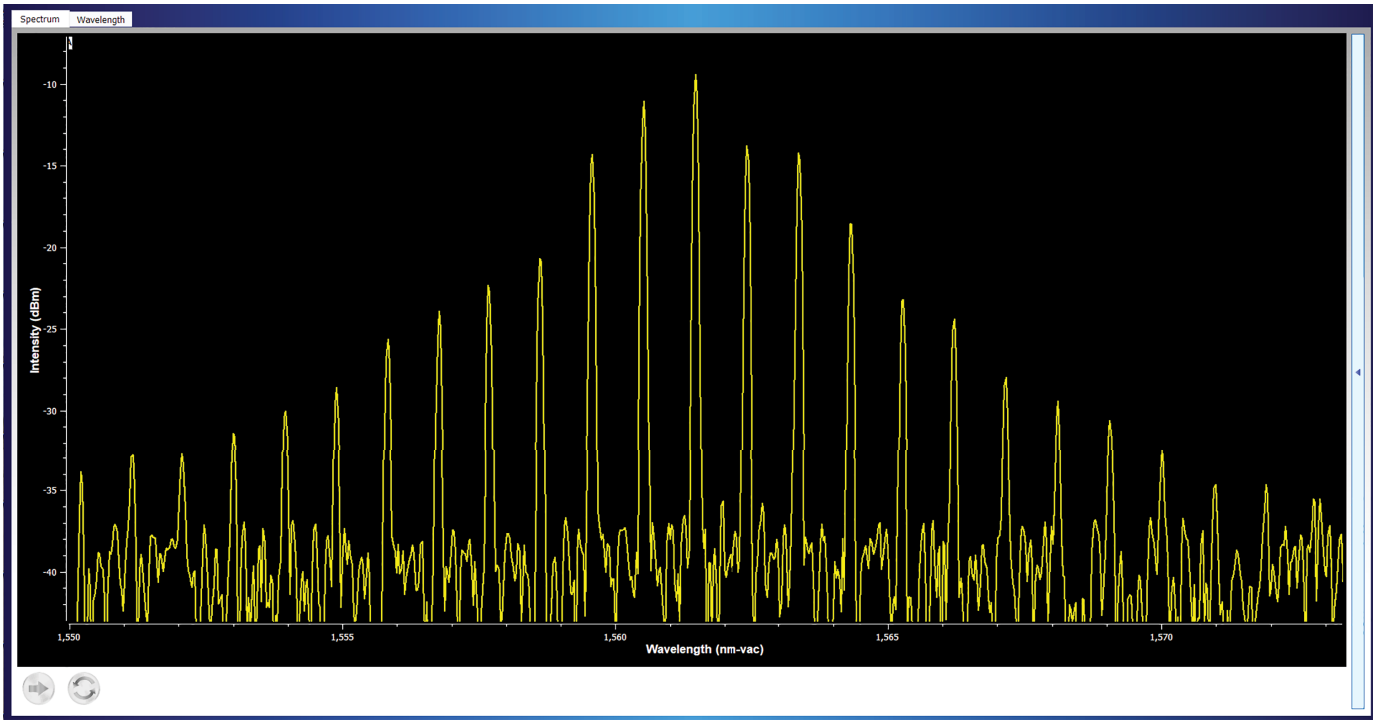
High-resolution spectral analysis with the accuracy of a multi-wavelength meter.

The 438 Series Multi-Wavelength Meter provides a detailed analysis of an optical transceiver or a WDM signal by simultaneously measuring wavelength, power, and OSNR. To provide an even more complete analysis, Bristol Instruments offers **NuView** Optical Spectrum Analyzer Software to generate and display the spectrum of an optical signal to a resolution better than 10 GHz (0.08 nm). This provides the ability to analyze closely-spaced WDM channels and to determine the side-mode suppression ratio of optical transceivers.

NuView Optical Spectrum Analyzer Software operates on a PC running under Windows 10. Data generated by a 438 Multi-Wavelength Meter is transferred to the PC using a USB or Ethernet interface. The spectrum and quantitative data is then displayed in a convenient format.

Key Features:

- Converts the 438 Series Multi-Wavelength Meter into a high-resolution OSA
- Spectral resolution of 10 GHz (0.08 nm at 1550 nm)
- Wavelength accuracy as high as ± 0.3 pm
- Automatic calculation of SMSR
- Broad operational range of 1000 nm to 1680 nm



NuView Software converts the 438 Multi-Wavelength Meter to a high-resolution OSA.

LASER 2000

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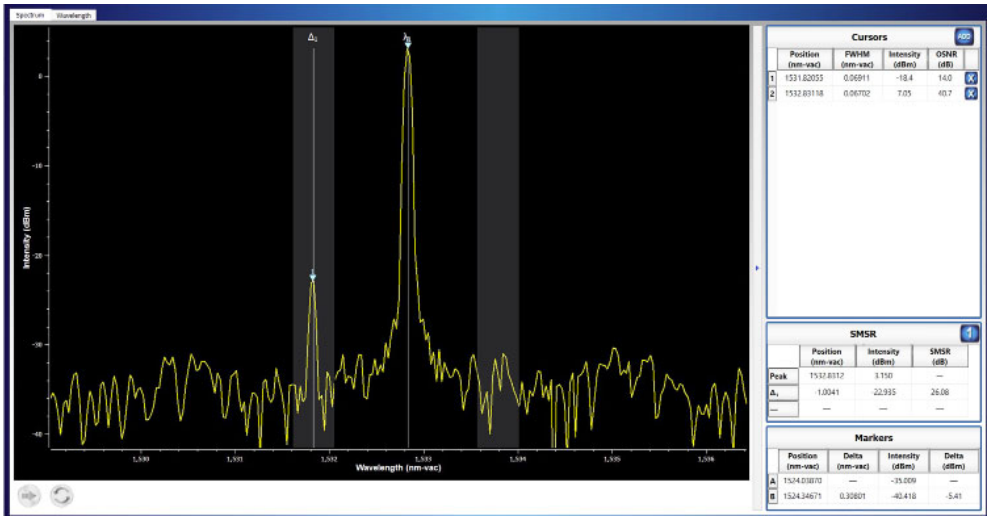
SPECTRAL DISPLAY

NuView Optical Spectrum Analyzer Software displays the spectrum of an optical signal, given as the intensity versus wavelength or frequency. The accuracy of each axis of the spectral display is calibrated to the specified accuracy of the 438 system used. The model 438A has a wavelength accuracy of ± 0.2 parts per million (± 0.3 pm at 1550 nm) and the 438B system is accurate to ± 0.65 parts per million (± 1.0 pm at 1550 nm). The intensity axis for both models is accurate to ± 0.5 dBm. The spectral axis can be displayed in units of nm, µm, GHz, or THz. Intensity is displayed in units of dBm, mW, or µW.

The spectrum of the optical signal can be generated continuously, or a single measurement can be made and then analyzed. A spectrum is generated in about 0.3 seconds. In order to optimize the spectrum that is displayed, convenient zoom and scroll functions are available. A spectral thumbnail shows a small representation of the entire measured spectrum, highlighting the portion that is currently visible in the Spectral Display. Finally, the intensity versus wavelength data of a single spectrum can be collected and saved to a file using a *.csv format. This data can then be analyzed later with other graphing software programs.



Spectral display of a laser with side-mode. The spectrum, parameters used for automatic measurement of SMSR, and measurement results are shown.

DATA TABLES

For quantitative analysis, *NuView* Optical Spectrum Analyzer Software can automatically calculate detailed information and then report it in the Cursors, SMSR, and Markers tables.

Cursors Table – Cursors are used to identify specific spectral features for which wavelength, power, bandwidth (FWHM), and OSNR is calculated. They can be placed manually by selecting any peak in the spectrum or using a threshold to automatically select all peaks above the desired intensity.

SMSR Table – For complete analysis of optical transceivers, NuView Optical Spectrum Analyzer Software can determine SMSR. Parameter settings can be defined to automatically identify both the peak wavelength of the laser under test and any side-mode that may be present.

Markers Table – The optical spectrum can be further analyzed quantitatively using a pair of markers that can be manually positioned at any point in the spectral display. The markers provide absolute spectral and intensity information about any point on the spectrum.