

BOSA

UNVEIL THE SPECTRUM

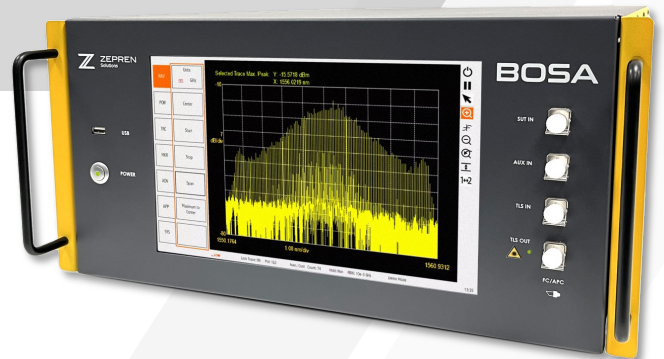


ZEPREN
Solutions

As optical systems and photonic integration continue to advance, the demands on spectral characterization grow in parallel: higher resolution, higher dynamic range, and absolute confidence in the validity of every trace, both in R&D and in production environments where repeatability is critical.

BOSA, our **High-Resolution Optical Spectrum Analyzer**, stands at the forefront of the market. Built on a unique all-optical technology, It delivers the highest spurious-free dynamic range measurement available in any HR-OSA.

By combining ultra-high resolution with high dynamic range in a single platform, BOSA 600 unlocks a new level of spectral insight.



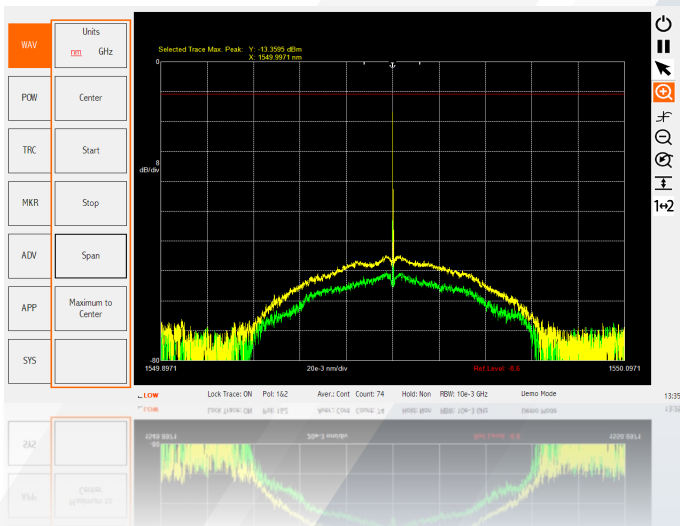
APPLICATIONS

- Characterization of pulsed lasers & frequency combs
- 800G/1.6T transceiver testing
- Advanced modulation formats: OFDM, Nyquist, 4PAM, QAM, DP-QPSK...
- Chirp effects analysis
- Non-linear laser dynamics



KEY FEATURES

- Real time measurement
- High resolution (10MHz / 0.08pm) and purely optical narrow filter
- Unique and patented all-optical technology
- Great dynamic range fully free of artifacts >80dB
- Option for unique spectrally-resolved polarization measurement
- Option for patented optical phase spectrum measurement: chirp measurement, eye diagram, constellation...
- Integrated tunable laser and option for component analyzer for maximum versatility
- Multiple bands available
- External TLS compatible (100 series)



BOSA - OPTIONS

OPTION 10 - TUNABLE LASER OUTPUT

BOSA 600 offers an option that enables users to **access the unit's internal source as a tunable laser**, allowing it to be used as an external test source and expanding the system's versatility for additional applications.

It provides high wavelength accuracy and excellent scanning repeatability, with trigger synchronization to ensure consistent, repeatable sweeps and simplified integration into automated test setups.



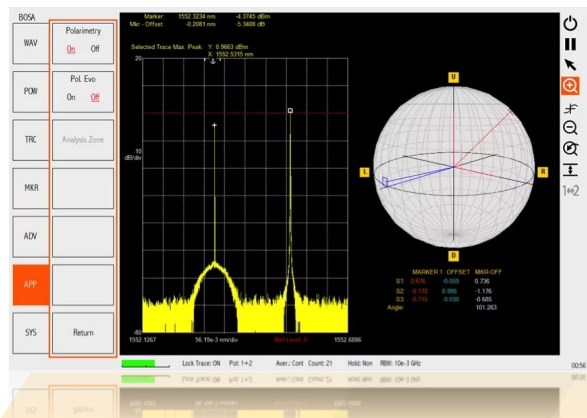
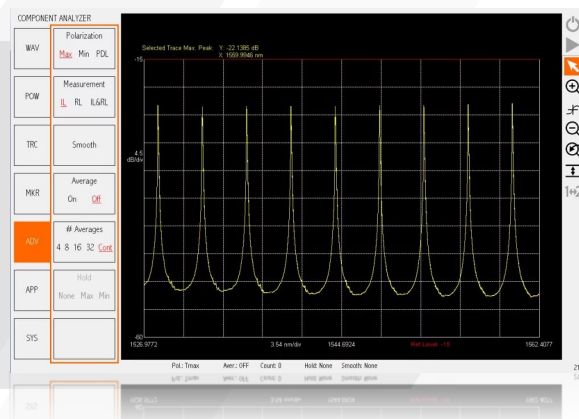
This option removes the internal tunable laser so that BOSA **can be used with a customer benchtop tunable laser**, reducing significantly the system cost. Inquire about compatible models.

OPTION 100 - EXTERNAL TUNABLE LASER

OPTION 20 - COMPONENT ANALYZER

This option expands BOSA's capabilities into passive component analysis by including a **high-dynamic range** measurement port synchronized with the TSL sweep.

By connecting a passive optical device (FBGs, PICs, Resonators...) both Insertion Losses and Return Losses are measured. Polarization Dependent Losses are also available when Option 30 is enabled.



OPTION 30 - SPECTRAL POLARIMETRY

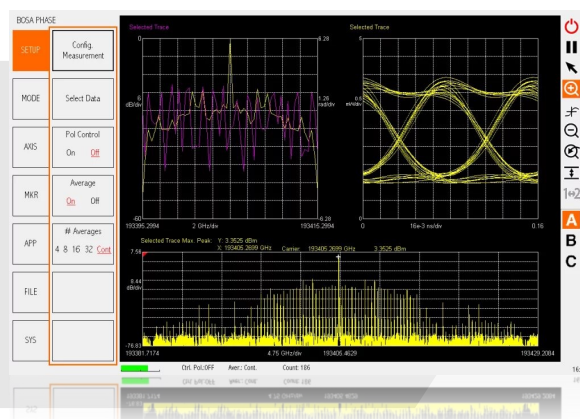
By including the option of spectral polarimetry, BOSA becomes a powerful platform for advanced polarimetry analysis, enabling **spectrally resolved State of Polarization (SOP)** measurements with high precision.

It supports Polarization alignment of different sources, tracking polarization evolution with wavelength, and the measurement of Polarization Dependent Loss (PDL).

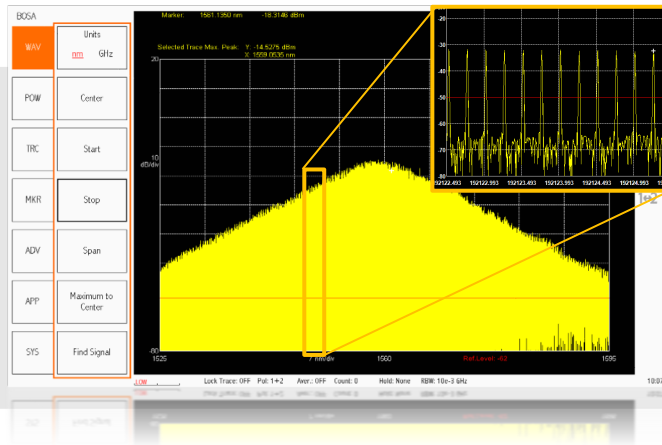
OPTION 40 - PHASE MEASUREMENT

This option transform BOSA into an **Optical Complex Spectrum Analyzer (OCSA)**, enabling measurement of both the optical amplitude and phase to fully characterize the signal under test.

Using the complex spectrum and an inverse Fourier transform, key time-domain metrics can be directly retrieved (eye diagram, constellation, time-resolved chirp)



BOSA - APPLICATIONS



CHARACTERIZE FREQUENCY COMBS OR PULSED LASERS

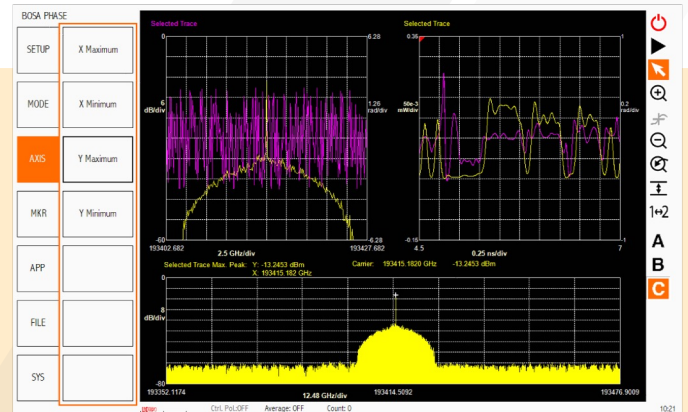
Designed for **advanced laser diagnostics**, BOSA enables detailed characterization of frequency combs and pulsed laser sources with exceptional spectral precision thanks to its 10MHz resolution.

Suitable for femtosecond and picosecond lasers, capturing spectra with high detail and repeatability.

PHASE MEASUREMENT

With phase measurement capability, BOSA goes beyond conventional spectrum analysis by capturing both the **amplitude and phase** of the optical signal.

It unlocks direct insight into **key time-domain performance parameters** as well as chirp parameters.



ADVANCED MODULATION FORMAT CHARACTERIZATION

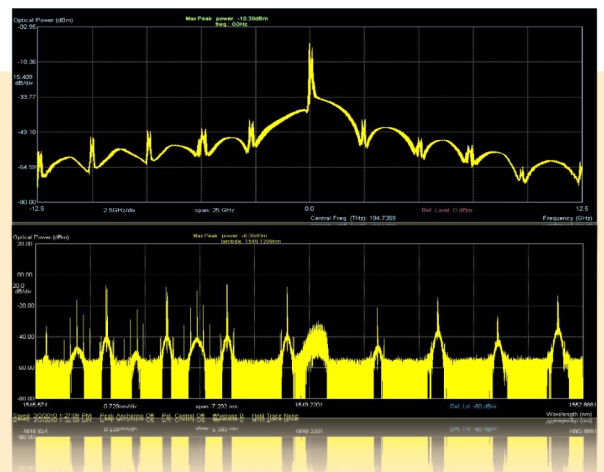
Enable advanced modulation format characterization with BOSA, providing the spectral insight required to evaluate today's **high-capacity coherent signals and transmission technologies**, including:

- OFDM
- Nyquist-WDM
- 800G and 1.6T transmission systems

MODULATOR ANALYSIS

BOSA also supports modulator analysis, enabling detailed evaluation of **modulation-induced effects** through:

- Chirp characterization: high resolution & great close-in dynamic range allow the measurement of very low frequency components.
- Part of a DWDM grid: different channels characterized simultaneously.



BOSA - TECHNICAL SPECIFICATIONS

Optical	
Optical Resolution (FWHM)	10 MHz
Calibrated power range	+13 to -70 dBm
Spurious-free dynamic range	>80dB
Wavelength Reference	Linearization + absolute reference
Power Accuracy	±0.5 dB
Wavelength Accuracy	±0.5 pm ±1.0 pm (O band)
Measurement Speed	10 nm/s
Option 10 - Tunable laser output	
Tuning speed	10, 20, 40 or 100 nm/s
Output power	>1 mW
Option 20 - Component analyzer	
Wavelength accuracy	±1.0 pm ±2.0 pm (O band)
Power accuracy	±0.2 dB
Polarization Measurement	Two orthogonal states. PDL with option 30
Measurement time	1 s for 100 nm or 1s for 10 nm
Option 30 - Spectral polarimetry	
Polarization repeatability	±5°
Temperature dependence	±0.2°/°C
Measurement time	6 scans at 10 nm/s
Polarization sensitivity	-40 dBm
Option 40 - Phase measurement	
Bandwidth	80 MHz to full span
Pattern Frequency Range	70 MHz to 2 GHz
Phase accuracy	±1°
Measurement time	1 s for 10 nm

For additional specifications, please request further information using the contact details below.

