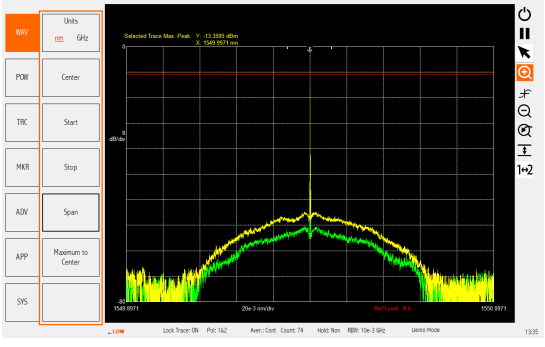
BOSA series 6

BOSA is the most advanced and versatile High Resolution Optical Spectrum Analyzer in the market. Thanks to our unique optical filtering and full spurious free dynamic range the BOSA achieves reliable measurements avoiding artifacts and undesired effects on your measurements.

BOSA's unique combination of high-resolution and high dynamic-range brings a new range of measurement possibilities to the optical domain. BOSA reveals the optical spectra of the signals with a detail and precision that enables direct measurement of performance parameters for lasers and modulated signals

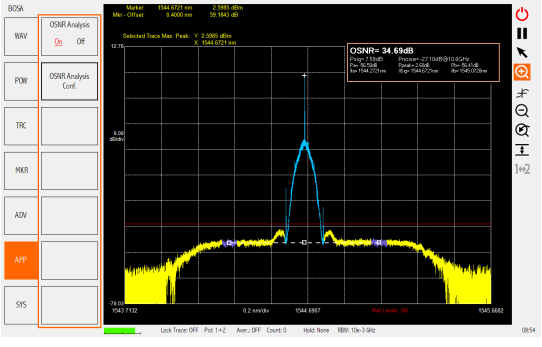


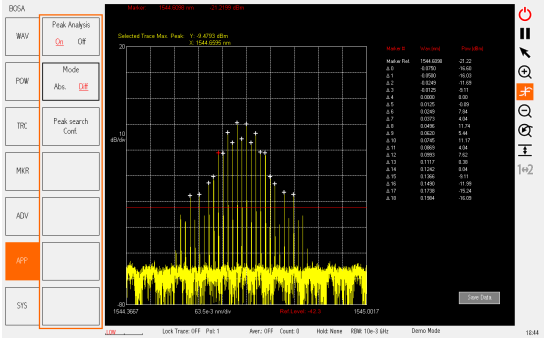
KEY FEATURES

- ✓ High resolution (10 MHz / 0.08 pm) and purely optical narrow filter
- ✓ Great dynamic range (>80 dB) with no artifacts. Maximum reliability
- ✓ Unique spectrally-resolved polarization measurement
- ✓ Patented optical phase spectrum measurement: chirp measurement, eye diagram, constellation…
- ✓ Integrated tunable laser and component analyzer for maximum versatility

TECHNOLOGY

BOSA all-optical patented technology use the stimulated Brillouin scattering (SBS) as a non-linear optical effect that causes a very narrow filtering effect. By pumping the SBS with an external cavity tunable laser source (TLS), the filter is swept along the spectral region of interest, giving the high-resolution optical spectrum. The threshold imposed by SBS eliminates all the spurious effects of the local oscillator sidemodes that produce measurement artifacts in heterodyne OSAs, giving the highest spurious-free dynamic range measurement available in any HR-OSA.





APPLICATIONS

- Pulsed lasers & frequency combs
- 100G/400G transceiver testing
- Advanced modulation formats: OFDM, Nyquist, 4PAM, QAM, DP-QPSK…
- Chirp effects analysis
- Non-linear laser dynamics

High-Resolution Optical Spectrum Analyzer

TECHNICAL SPECIFICATIONS

Optical	
Wavelength range	C band: 1525-1565 nm C+L bands: 1525-1610 nm O band: 1265-1345 nm S & T bands available on request
Optical resolution (FWHM)	10 MHz
Calibrated power range	+13 to -70 dBm
Maximum safe total input power	+20 dBm
Sweep time	20 nm/s
Wavelength reference	Linearization + absolute reference
Measurement	
Spurious-free dynamic range	>80 dB
Sensitivity (@10 MHz)	-70 dBm
Power accuracy	±0.5 dB
Wavelength accuracy	±0.5 pm (C, C+L) ±1.0 pm (O)

OTHER SPECIFICATION

Physical & electrical	
Operating Temperature	+15 °C to +35 °C
Power Requirements	110/220V; 50/60Hz Máx. 200W.
Dimmension & Mass	430x230x470 (mm). Máx. 18Kg
Optical Connections	FC/APC Others on request
Available interfaces	Ethernet, USB, GPIB

ZEPREN Solutions

BOSA series 6

OPTION 100. EXTERNAL TUNABLE LASER

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 10. TUNABLE LASER OUTPUT

This option provides access to the internal tunable laser source included in BOSA so that it can be used for additional applications.

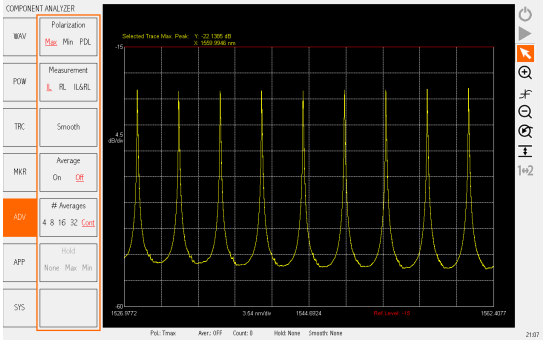
- High accuracy & scanning repeatability.
- Output power >0 dBm.
- Trigger synchronization.
- Use our TLS for your own purposes!

OPTION 20. COMPONENT ANALYZER

This option turns your BOSA into a passive component analyzer by including a high-dynamic range measurement port synchronized with the TLS sweep.

Connect a passive optical device (FBGs, PICs, Chips, Resonators…) to measure:

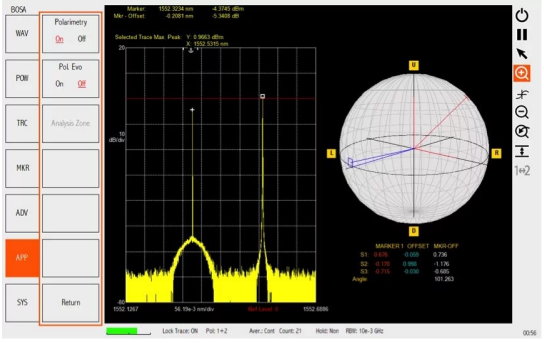
- Insertion & Return Losses
- Polarization Dependent Losses (option)



OPTION 30. SPECTRAL POLARIMETRY

With this option, you can turn your BOSA into the most advanced tool for polarization analysis: the spectrally-resolved state of polarization (SOP) can be measured.

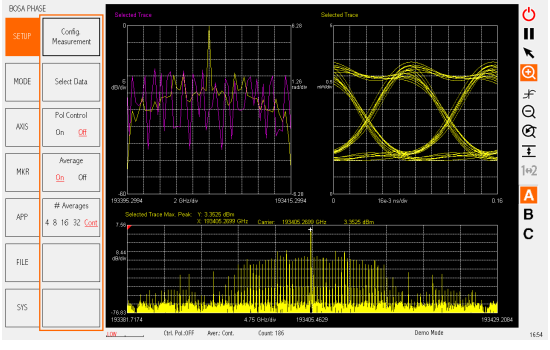
- Polarization alignment of different sources
- Evolution of Polarization with wavelength
- PDL measurement for components



OPTION 40. PHASE MEASUREMENT

This option turns the BOSA into an optical complex spectrum analyzer (OCSA), capable of measuring both the amplitude and the phase of the optical signal under test, fully characterizing the signal. With the complex spectrum information and through inverse Fourier transform, all the time-domain information can be retrieved:

- Eye diagram
- Constellation
- Time-resolved chirp



Upgrade options

TECHNICAL SPECIFICATIONS

	BOSA Options		
Measured bands	C band	C+L band	O band
Option 10 – Tunable laser output			
Wavelength Range	1516-1565 nm [a]	1521-1630 nm [b]	1265-1345 nm
Absolute accuracy	±1.5 pm	±2.0 pm	
Tunning speed	1-100 nm/s [c]		
Output power	>1 mW		
Side-mode suppresion	>43 dB	>45 dB	
RIN	<-145 dB/Hz	<-140 dB/Hz	
Linewidth	<1 MHz [d]		
Trigger output	BNC		
Option 20 – Component analyzer			
Wavelength range	1516-1565 nm [a]	1521-1630 nm [b]	1265-1345 nm
Wavelength accuracy	±1.0 pm	±2.0 pm	
Power accuracy	±0.2 dB		
Polarization Measurement	Two orthogonal states. PDL with option 30		
Output power	>0 dBm		
Sensitivity	-70 dBm (IL) -45 dBm (RL)		
Calibrated input range	-10 to -70 dBm		
Spurious-free dynamic range	>80 dB [e]		
Measurement time	1 s for 100 nm [f]		
Option 30 – Spectral polarimetry			
Polarization repeatability	±5°		
Temperature dependence	±0.2°/°C		
Measurement time	6 scans at 20 nm/s [g]		
Polarization sensitivity	-40 dBm		
Polarization crosstalk	<20 dB		
Option 40 – Phase measurement			
Wavelength range	1525-1565 nm [a]	1525-1615 nm [b]	1265-1345 nm
Bandwidth	80 MHz to full span		
Pattern Frequency Range	70 MHz to 2 GHz		
Phase accuracy	±1°		
Sensitivity	-70 dBm		
Electrical Reference input power	+5 to -15 dBm		
Measurement time	1 s for 20 nm [f]		

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a simac group company

Contacter WAVETEL - FRANCE
tel : +33(0)2 99 14 69 65
email : sales@wavetel.fr
web : www.wavetel.fr

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