![adaptif PHOTONICS]

A1000
High Speed
Polarization Analyzer

PMF Alignment

PER=21.69 dB

Event Trigger
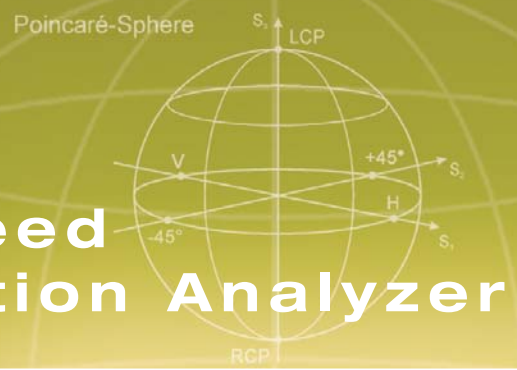
PRODUCT HIGHLIGHTS

- High-Speed Operation
- Calibration Data on Board
- Analogue and Digital Data
  Output Ports
- On-Board Memory / DSP
- Compact Size
- Robust, no Moving Parts
- PC Software: polarizationNAVIGATOR™

APPLICATIONS

- Monitoring / Measurement of
  - State of Polarization (SOP)
  - Stokes Parameter
  - Degree of Polarization (DOP)
- Recirculating Loop Experiments:
  High-Speed Analysis of SOP/DOP of
  Recirculating Signal
- Feedback Signal for PMD Compensation
- Analysis of PM-Fiber Extinction Ratio
- Performance Analysis of Polarization
  Scramblers
- Quality-Monitoring in Optical Networks
  (PMD/OSNR)
- Intrusion Detection
- High-Speed PMD/PDL Measurement
- Jones-, Mueller- Matrix Analysis
- Polarization Event Analysis
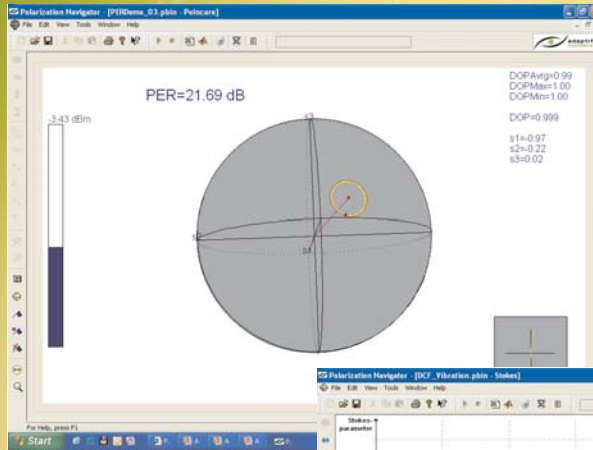
The A1000 is a compact high-speed Polarization Analyzer which provides comprehensive capabilities for analyzing polarization properties of optical signals. This includes representation of the State of Polarization (SOP) on the Poincaré Sphere (Stokes Parameter) as well as determining the Müller and Jones Matrices. The on-board algorithms together with the on-board calibration data ensure highly accurate operation across a broad wavelength range.

Due to its real time capability (1 MSamples/s) the instrument is well suited for analyzing disturbed and fluctuating signals as well as for control applications requiring real time feedback of polarization information. Analogue data output ports are provided, for example for support of control loops in automated manufacturing test systems.

The provided analysis software allows a comprehensive analysis of the obtained measurement data. Combining this unit with a polarization controller and a tuneable laser allows high-speed PMD/PDL measurements.

Polarization Mode Dispersion

Optical Pulse ▶

Differential Group Delay

A1000
High Speed
# Polarization Analyzer
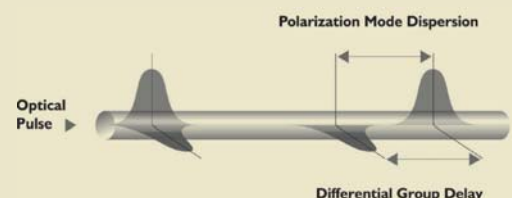
APPLICATION EXAMPLES

Recirculating Loop Experiments

Managing the polarization properties of the fiber loop is mandatory for successfully conducting experiments with such structures. The A1000 High Speed Polarization Analyzer allows an analysis of the SOP and the DOP of the travelling pulse. Due to the high sampling rate and the trigger capabilities of the instrument, the development of the SOP and the DOP along the travelling pulse can be analyzed.
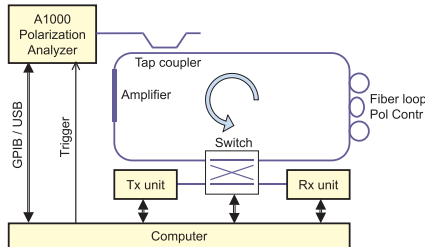
Alignment of Polarization Maintaining Fibers

Accurate alignment of the polarization axis of Polarization Maintaining Fibers is crucial for the performance of a large range of optical components. The A1000 allows due to its high-speed capability real time feedback regarding the currently achieved Polarization Extinction Ratio (PER).
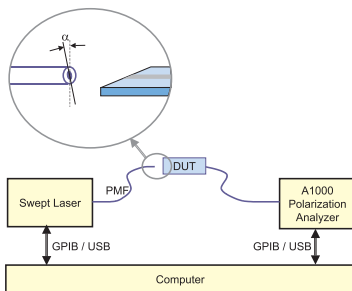
Event Trigger

Advanced Communication systems are sensitive to rapid polarization changes ("events") on fiber links. Such events may be caused for example by trains passing by or by vibrations on bridges. The speed of the polarization events are of concern for system integrators and network operators. The event trigger function of Adaptif's A1000 allows detecting and storing such events.
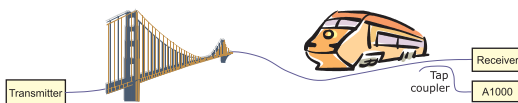
CHARACTERISTICS

Wavelength Range	Operating Range	1260-1640 nm
	Factory Calibration Range	A1000-B: 1270-1375nm
		A1000-C: 1460-1620nm [1]
SOP Accuracy		< ±1° on Poincaré Sphere
DOP Accuracy		< ±2 %
		< ±0.5 % (typ.) after calibration [2]
Input Power Range		-50dBm .. +7dBm
Sampling Rate		up to 1MHz
Maximum SOP Movement Rate		>50K SOP-revolutions/s [3,4]
Optical Connector		FC/PC or FC/APC, other on request
Operating Temperature		+10°C .. 40°C
Interfaces		GPIB, USB, RS232
Analogue Output		0...5V
Power		100V - 240V, <36W
Physical		330 x 270 x 70 mm^3

[1] other factory calibration ranges on request
[2] valid at calibration wavelength and calibration temperature
[3] SOP-revolutions in Stokes representation (Poincaré sphere)
[4] for input power > -20dBm

ORDER INFORMATION

A1000-X-Y
X: indicates wavelength range,
Y: 0 for FC/PC
   1 for FC/APC (recommended for Standard applications)

Comment: A state of the art PC with GPIB/USB/RS232 Interface is required; it is not included in Adaptif's delivery

Your local sales contact

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F 301 / 03.05