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BERT1B882

1.6T High-speed Bit Error Ratio Tester

The Western Optronics BERT1B882 is a high-speed bit error ratio tester for multi-channel PAM4 and NRZ applications, with a single-channel symbol rate of up to 106.25 GBaud. It is designed for research, development and production testing of 1.6T and 800G optical modules.

The dual-channel modular design uses a high-speed multi-core connector for electrical signal transmission. Modules can be removed for near-end operation, or the system can be configured with optical port modules. Transmitter pre-emphasis and PAM4 eye-shape adjustment, receiver equalization, FEC and graphical analysis support automated optical transceiver testing.



BERT1B882 modular test platform

Product Selection

Model	Configuration
BERT1B882	Main unit; modules and test board ordered separately

Applications

- 1.6T / 800G high-speed optical module testing
- AOC, AEC, ACC and DAC cable testing

Modular Configuration

Optical and electrical port modules support quick replacement. Configure one optical and one electrical module, dual optical modules, or dual electrical modules to suit the test application.

FEATURES

- 8-channel platform
- 53.125 / 106.25 GBaud PAM4
- PAM4 and NRZ signaling
- PRBS, SSPRQ and user patterns
- Transmitter pre-emphasis
- Adaptive receiver equalization
- KP4 FEC and error distribution
- SNR and eye diagram analysis

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Signal Generation and Analysis

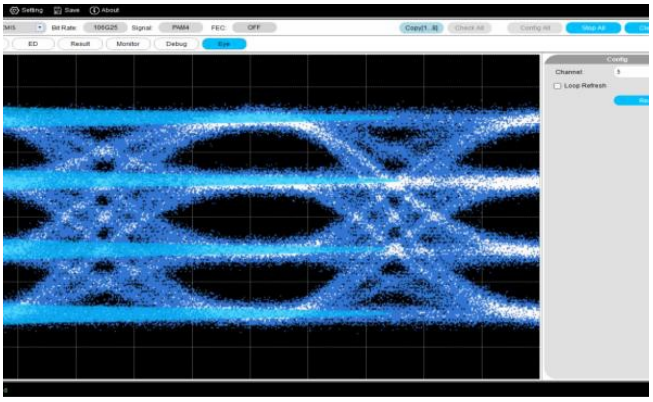
- Low inherent jitter, short rise and fall times, and high signal-to-noise ratio.
- Transmitter pre-emphasis and PAM4 eye-shape adjustment support signal optimization.
- Receiver equalization, SNR readout, eye diagram simulation and KP4 FEC analysis support performance evaluation.



Electrical eye diagram
106.25 GBaud / SSPRQ



Electrical eye diagram jitter analysis
106.25 GBaud / SSPRQ



Eye diagram simulation analysis



KP4 FEC test interface

Remote Control and Automation

SRC remote interactive control supports test software evaluation and GUI programming. The platform provides graphical data analysis and can be integrated with an MCB test board fixture for automated module testing.

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Technical Specifications

Electrical Port Module

Parameter	Specification
Output type	Differential PAM4 / NRZ
Data patterns	PRBS 7/9/11/13/15/23/31/58; PRBS7-58Q; SSPRQ; custom patterns; transmitter bit error insertion
Symbol rate [1]	53.125 / 106.25 GBaud
Frequency accuracy	±50 ppm
Maximum differential output amplitude	>1000 mVpp
FEC function	KP4 FEC
FEC analysis	FEC symbol error distribution analysis
Equalization [2]	Transmitter: 4 / 10 / 11 / 21 taps Receiver: adaptive equalization
Polarity	Transmitter and receiver polarity adjustment
SNR	Receiver SNR readout
Eye diagram analysis	Eye diagram simulation analysis
BLER	Block Error Rate testing
Module dimensions	185 × 120 × 210 mm

[1] Frequency deviation testing and arbitrary rate settings are supported within the allowable PLL bandwidth. Contact Western Optronics for supported settings.

[2] Equalization capability varies with the selected solution. Contact Western Optronics for configuration details.

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Optical Port Module

Parameter	Specification
Supported module packages [1, 2]	OSFP / OSFP-RHS / QSFP-DD
Module IIC	Module IIC testing
Module replacement	Quick insertion and removal of individual single-port modules
Module dimensions	185 × 120 × 210 mm

[1] Optical port module performance is similar to the electrical port module. Parameters may differ slightly between solutions; contact Western Optronics for details.

[2] Different module packages require separate modules. OSFP, OSFP-RHS and QSFP are independent module types. Confirm the required QSFP-family package when ordering.

Host

Parameter	Specification
Communication interfaces	RS232 / LAN
AC power input	100-220 V AC, 50 / 60 Hz
Host dimensions	443 × 170 × 435 mm

Integrated Test Fixture

The BERT1B882 can be combined with an MCB board fixture for integrated module testing. The test board and fixture configuration are selected to match the target module and test solution.



MCB test board fixture

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Ordering Information

Equipment model	Description
BERT1B882	Main unit, excluding modules and test board

Module model	Description
BERT1B882_MFIX_O-#1	Optical port module
BERT1B882_MFIX_E-#1	Electrical port module

[1] Refer to the Module Test Board specification for test-board information. Contact Western Optronics for the required configuration.

[2] Module chip solutions vary. Contact Western Optronics for available module solutions and ordering details.

DOCUMENT CONTROL

Control field	Value
Document title	BERT1B882 - 1.6T High-speed Bit Error Ratio Tester
Document ID	WEOG-BERT1B882
Revision	V1.00
Effective date	2026-09-27
Technical specification version	V1.0.1
Status	Controlled Document

Revision	Date	Change description
V1.00	2026-09-27	Initial Western Optronics branded release

SUPPORT

Western Optronics provides product-selection and application support. Specifications and availability are subject to change without notice.

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