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PRELIMINARY DATA SHEET

ENVIRONMENTAL OPTICAL TEST SYSTEM


Environmental Optical Test System

Features:

- Long period testing capability for optical passive component reliability
- Multiple wavelength configurations
- Multiple channel configurations
- Optional swept wavelength capability
- Flexible and simple user interface
- Statistical measurement analysis
- Custom configuration designs available
- Optional Optical Return Loss (ORL) capability
- Optional Polarization Dependent Loss (PDL) measurement capability
- Low cost

Applications:

- DWDM channel testing
- Long term reliability testing on optical passive components
- Characterization of insertion loss versus wavelength dependence
- Optical return loss measurement
- Characterization of PDL dependence versus wavelength
- Product qualification as per Telcordia
- Quality Control

Product Description:

OZ Optics has developed an environmental multi channel optical test system allowing fast, low cost, simple and flexible long-term reliability testing. The system integrates an optimized optoelectronic design (including sources, optical switches and photo-detectors) and robust system management software. This system allows optical manufacturers to perform automated and flexible long-term testing for compliance with industry standards such as Telcordia generic requirements (GR-326-CORE, GR-1209-CORE and GR-1221-CORE). The meter offers the capability of characterizing very low insertion loss (IL) drift. It also offers the optional capability of measuring return loss and polarization dependent loss variations. Measurement capability using tunable sources can also be offered.

The system can be run through any computer operating Windows™. The management software has a built in database for data processing and statistical analysis of multiple sets of measurements. Collected data can be graphically displayed for easy interpretation. Remote configuration and operation of the unit is possible with the unit via a parallel printer port, a standard serial communication port (RS232) or General Purpose Interface Bus (GPIB).

Ordering Information for Standard Parts:

Bar Code	Part Number	Description
13598	EOTS-100-24-3U3U-1310-1550-9/125-S	24 channels, 1310 and 1550 nm dual source Environmental Optical Test System with Ultra FC/PC connector in both input and output ports
13599	EOTS-100-12-3U3U-1310-1550-9/125-S	12 channels, 1310 and 1550 nm dual source Environmental Optical Test System with Ultra FC/PC connector in both input and output ports
2736	Power Cord - UK	Power Cord for the United Kingdom
2737	Power Cord Europe	European Power Cord

Windows™ is a trade mark of Microsoft Corporation

Standard Product Specifications:

Wavelength	1310 nm, 1550nm or 1625nm
Source type	SLED
Output Power level	> -6 dBm
Number of channels	12 or 24
Insertion loss repeatability	± 0.025 dB
Insertion Loss Dynamic Range	50 dB
ORL accuracy	±0.5 dB up to 55dB ± 1 dB from 55dB to 60dB (for FC/APC on DUT)
PDL accuracy	±(0.01 dB + 5% of PDL)
PDL dynamic range	0.025 dB up to 10 dB
Fiber type	SMF-28 (9/125/900 μm)
Input Connector Type	Ultra FC/PC, FC/APC, SC, SCA, LC, or MU
Output Connector Type	Ultra FC/PC, FC/APC, SC, SCA, LC, or MU
Display resolution	0.01 or 0.001 dB
Switch life time	Over 10 million cycles
Adjacent channel switching time	10 ms
Host Computer Operating system	Windows 2000, Windows Me, Windows XP, Windows 98. Minimum computer requirements: 300 Mhz or faster Pentium III computer, 128 Mb of RAM.
External control	Parallel Printer Port, RS-232 or GPIB
Operating temperature	0°C to 50°C
Storage temperature	-40°C to 60°C
Platform dimensions without external computer (H-W-D)	17.6X48X36 cm 7”X19”X15” (19 inch rack mountable)
Weight	< 10 Kg (22lbs)
Input voltage	100 to 240 V AC / 50 to 60 Hz

Ordering Examples For Standard Parts:

A North American optical passive component manufacturer wants to perform IL long-term reliability testing of single mode jumpers for quality control reasons. Assuming they have their own programmable environmental chamber and a computer, they need to order these following parts:

Bar Code	Part Number	Description
13599	EOTS-100-12-3U3U-1310-1550-9/125-S	12 channels, 1310 and 1550 nm dual source Environmental Optical Test System with Ultra FC/PC connector in both input and output ports

Ordering Information For Custom Parts:

OZ Optics welcomes the opportunity to provide custom designed products to meet your application needs. As with most manufacturers, customized products do take additional effort so please expect some differences in the pricing compared to our standard parts list. In particular, we will need additional time to prepare a comprehensive quotation, and lead times will be longer than normal. In most cases non-recurring engineering (NRE) charges, lot charges, and a 1 piece minimum order will be necessary. These points will be carefully explained in your quotation, so your decision will be as well-informed as possible. We strongly recommend buying our standard products.

Questionnaire For Custom Parts:

1. How many devices do you want to test simultaneously?
   12☐ 24☐ 64☐ Other_____

2. What wavelengths are you using?
   1310nm☐ 1550nm☐ 1625nm☐ Other_____

3. Do you want wavelength tuning over any of the following ranges?
   O-band☐ S-band☐ C-band☐ L-band☐ Other_____ Not required ☐

4. Do you require optional features?
   PDL measurement☐ ORL measurement☐ Other _____

5. Which type of computer interface would you prefer to have?
   GPIB☐ USB ☐ RS-232☐ Other_____

6. What type of housing do you require?
   Not concerned☐ 19” rack mount☐ Other_____

7. What is the maximum allowable time for one insertion loss measurement for all channels?
   Not important☐ Specify Time _____

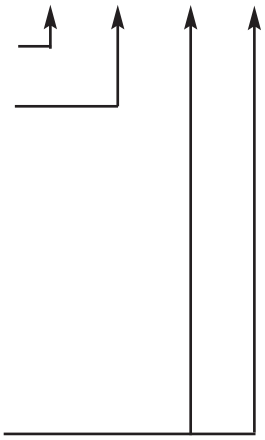
8. What connection type do you need?

EOTS-100-*AA*-*XY*-W_1-W_2-9/125-S-(*OPT*)

AA: Number of channels: 8, 12, 16, 24, 32 or 64

***X*,*Y*:** Input & Output Receptacle Code:
- 3S = Super NTT-FC/PC connector
- 3U = Ultra NTT-FC/PC connector
- 3A= Angled NTT- FC/PC
- SC=SC
- SCA=Angled SC
- MU= MU type connector
- LC= LC type connector.

***W1,W2*:** Built in sources: 1310, 1550, 1625. Specify 0000 for external sources



***OPT*:** -BR for optional measurement capability (for 60dB ORL measurements, the connectors have to be angled FC/PC)
-BR/PDL for optional ORL and PDL capability
-PDL for Optional PDL capability

Add -T for tunable wavelength source option

Ordering Examples For Custom Parts:

A European optical passive component R&D facility wants to perform IL and PDL long-term reliability testing of Fiber Bragg Gratings across the C-band. Assuming they have their own programmable environmental chamber and a computer, they need to order these following parts:

Bar Code	Part Number	Description
NA	EOTS-100-24-3U3U-0000-1550-9/125-S-PDL	24 channels, Environmental Optical Test System with Ultra FC/PC connector in both input and output ports, with an external wavelength selectable source across the C-band, a built-in 1550nm source and PDL measurement capability
2737	POWER CORD - Europe	European power cord

Frequently Asked Questions (FAQs)

Q: How many channels can be ordered in a single unit?
A: 8,12,16,24, 32 or 64.

Q: Can I order a custom system?
A: Yes, the design is customer oriented in both software and hardware.

Q: Can I use the system without an external computer?
A: No, an external computer with a suitable Windows operating system is required to operate with the unit

Q: Can we export saved data to another computer for data analysis?
A: Yes, the data can be saved in text format so that it can be easily imported to a standard spreadsheet or statistical software.

Q: Can I test a 1 by 4 device using a 24 channel system without cycling through all ports?
A: Yes, a flexible user interface allows the system to be configured for a variety of operating conditions.

Q: Can I use the test system with polarization maintaining or multimode fibers?
A: Yes the system can be used with polarization maintaining fibers although it will not maintain polarization itself, but not for multimode fiber because the inputs have singlemode fibers

Q: Can I use my own source for testing?
A: The standard system is provided with built-in sources. Ask OZ about custom configurations.

Q: Can I monitor other parameters, such as external voltages, temperature, humidity, etc.?
A: No, these parameters are external to our system. However, if the environmental chamber can provide such parameters, the application software can be configured to monitor those parameters during the test.

Application Notes:

Temperature vs insertion loss testing of 11 attenuators at 1550nm

OZ Optics' Environmental Optical Test System (EOTS) is designed to allow easy, flexible and automated long-term environmental testing such as is recommended by industry standards like Telcordia. The application software installed on a personal computer is used to control and manage the measurements. The devices under test are inserted inside the host environmental chamber and then connected to the EOTS respectively at the input and output ports (see figure below). The system allows handling saved measurements locally for further data analysis. The setup below shows a configuration allowing insertion loss testing of 11 optical variable attenuators at 1550nm and 1310nm with temperature cycling.

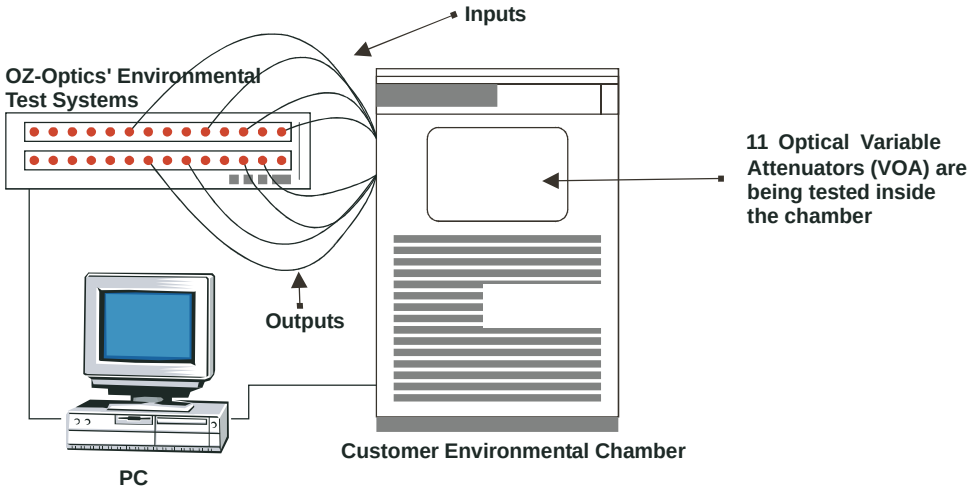


Figure 1: Measuring Temperature Dependent Losses Of 11 Variable Optical Attenuators At 1310 And 1550 nm