CMA4000i

Optical Test System

research
& design

manufacturing

installation
& maintenance

network
monitoring

optical
components

Solutions

Reduce the Cost of Optimizing Optical Networks

The insatiable consumer desire for real-time interaction with multimedia applications over the Internet has continued to fuel the demand for more bandwidth. To satisfy this need and to provide additional revenue generating services, telecommunication providers either install more optical fiber, increase the number of channels on existing fiber or speed up the data rate for additional bandwidth.

With efforts to not only increase revenue potential through bandwidth optimization, industry professionals are also looking for ways to reduce their measurement costs during the installation, commissioning and maintenance of optical networks. As a result, they require flexible, economical equipment that will enable them to accurately measure the performance of current and converging optical networks in less time.

The CMA4000i Optical Test System is an all-in-one test and measurement solution for network commissioning, fault location/restoration, maintenance and DWDM spectral analysis. Combining best in class OTDR and OSA performance, modular flexibility and ease-of-use, the CMA4000i is the ultimate time saving system for increasing network performance while reducing the cost of measurement.

The All-In-One System
The CMA4000i can be configured as an OTDR with a Visual Fault Locator, Optical Power Meter and Light Source, or as a high resolution Optical Spectrum Analyzer (OSA) for DWDM systems. With its variety of functions, the CMA4000i clearly offers the best value for optical network installation, commissioning and maintenance applications.

Reduce Test Time
Save test time by quickly characterizing optical fiber and DWDM systems with the industry's best performance specifications, such as the highest OTDR dynamic range and the highest optical spectral resolution.

• 50 dB dynamic range provides improved data quality, the ability to test longer lengths, less averaging and shorter test time

• Operating from 1520-1620 nm (C- and L-band), the OSA module automatically identifies over 400 DWDM channels spaced less than 12.5 GHz apart

Increase User Efficiency
The CMA4000i user interface and test applications provide ease-of-use for increased operator efficiency and decreased training time.

• Multiple test modes simplify and automate tests for several applications from fiber reel validation measurements to Metropolitan and Backbone network maintenance

• Panel of dedicated keys for easy access to functions needed most

The Industry Leader in Optical Performance

High performance networks demand even higher performance test and measurement equipment - and there's no better solution than NetTest's award winning CMA4000i. With the recent release of the CMA4000i, NetTest continues the tradition of being the worldwide leader in optical performance.

With 50 dB of dynamic range and deadzones as small as 3.0 m, the CMA4000i is the ideal solution for testing long-haul backbone networks, Metropolitan Optical Networks (MONs) or Passive Optical Networks (PONs). For complete system characterization, the CMA4000i can be easily equipped with a light source and power meter for complete end-to-end loss testing. In addition, the Visual Fault Locator (VFL) option for the CMA4000i enables you to locate breaks within the OTDR's deadzone or identify specific optical fibers within a cable.

For commissioning or maintaining networks that employ DWDM technology, the 4792 OSA module for the CMA4000i is the ideal solution. It allows the testing of DWDM networks deployed both today and in the future. Operating from 1520-1620 nm (C- and L-band), the 4792 OSA module for the CMA4000i Optical Test System can automatically identify over 400 DWDM channels spaced 10 GHz apart - perfect for testing high capacity DWDM systems.
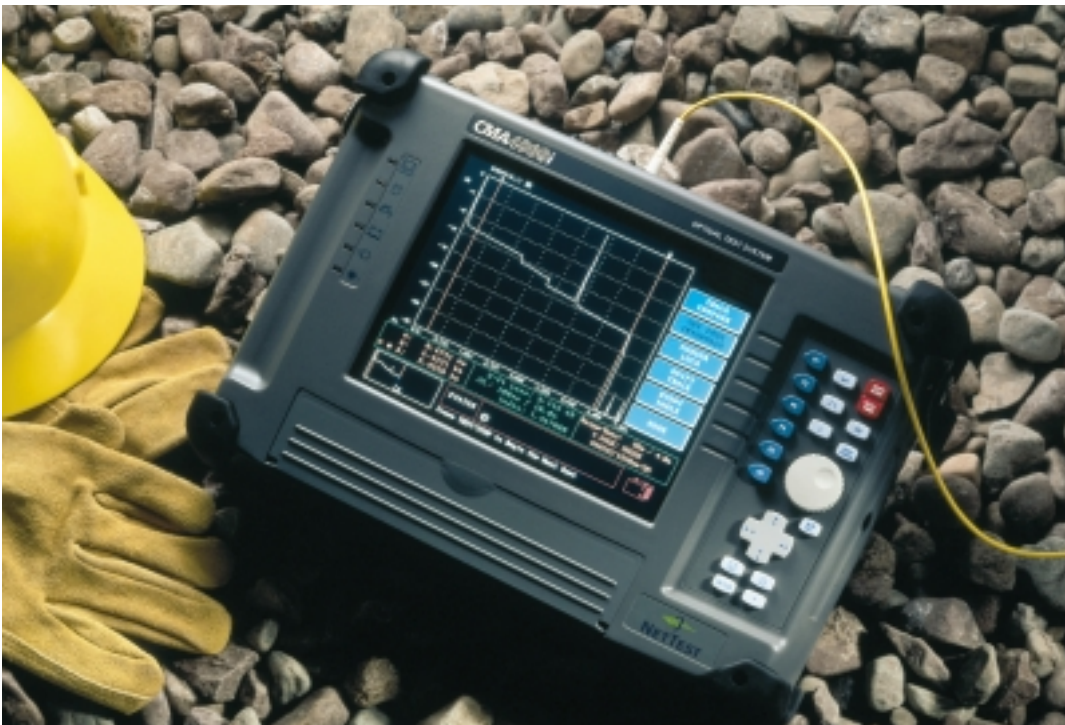
Benefits

- Tri- and Quad-wavelength OTDR modules simplifies S-, C- and L-band fiber characterization
- Industry leading OSA performance
- Long-haul, Metro or PON network applications

FROST & SULLIVAN

Market Engineering Award Recipient

Market Penetration   2001

FIBEROPTIC PRODUCT NEWS
2001
TECHNOLOGY AWARD WINNER

Fault Locate Mode

- Quickly identify faults

- One-button operation

Expert OTDR Mode

- Traditional OTDR measurements

- Unsurpassed flexibility for OTDR parameter optimization

Fault Locate Mode

With a one-button auto test option, the CMA4000i brings ease-of-use to a new level. Simply attach the fiber to the instrument, press Fault Locate and your entire fiber optic cable is completely characterized for length attenuation, splice loss, and reflectance.
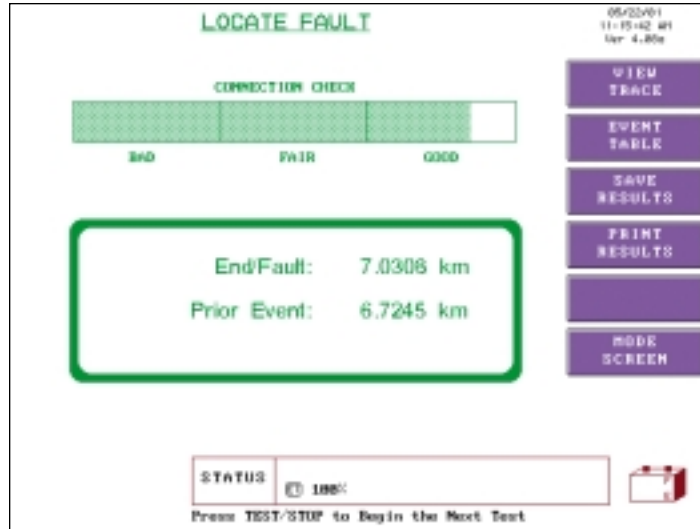
Expert OTDR Mode

Expert OTDR allows the user to perform traditional OTDR functions with dedicated hard keys tied to frequently used OTDR parameters such as pulse width, range/resolution, and wavelength. This mode provides unsurpassed user flexibility for optimization of OTDR parameters without stopping the test in progress. Key features of the Expert mode include:

- Real-time Testing
- Splice Optimization
- Loss Mode Setup
- Dual-Wavelength Testing
- Trace Compare Mode
- Trace Shift Capability
- Trace Analysis
- Event Table Editing
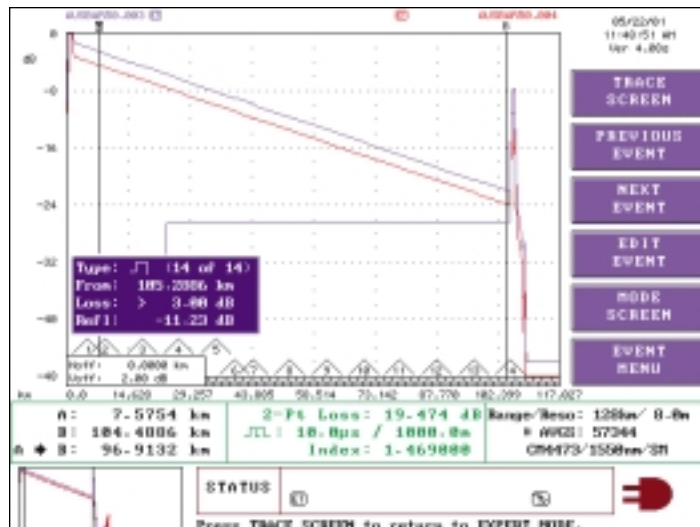
Construct OTDR Mode

Construct Mode simplifies and automates the tests and documentation most frequently performed during fiber installation. Construct Mode is designed for testing multiple fibers and is ideal for cable installation and commissioning.

Construct Mode eliminates the time consuming setups common to the repetitive practices of testing, storing, analyzing, and documenting high fiber count cables. From the setup screen, the operator can quickly select one or all wavelengths to test, determine the file naming structure and specific fiber count for a given cable. Once set up, the OTDR acts as a "task master" to perform the following functions:

• Select the wavelengths

• Test the fiber at all selected wavelengths

• Analyze the trace data

• Store the trace and analysis data to either floppy or hard drive

• Alert the technician to move to the next fiber to be tested and increment the filename to the next sequential number

Construct OTDR Mode

• Automates most frequently performed tasks

• Simplifies testing of high fiber count cables
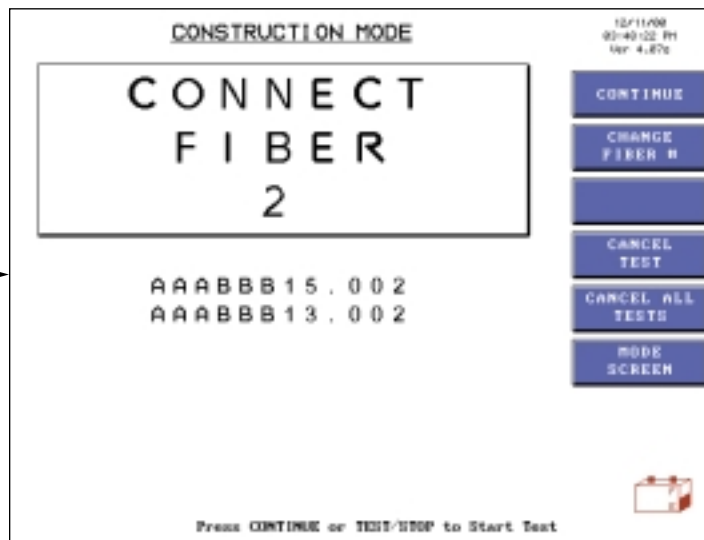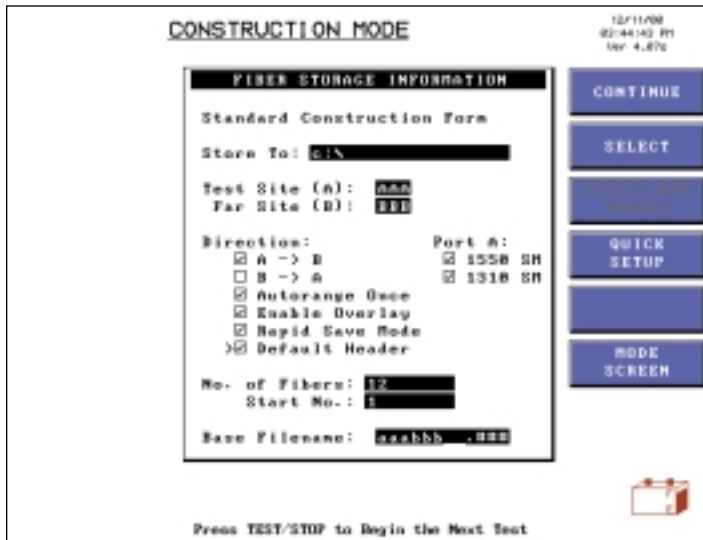
DWDM System Qualifications

Characterizing complex DWDM systems is simple with the CMA4000i. One-button operation ensures that even the novice user is capable of characterizing a complex DWDM system for channel center wavelength, power, and Optical-Signal-to-Noise-Ratio (OSNR). Simply power on the unit with the OSA module installed and one of the following views will be displayed.

Table View

Table View is ideal for quickly characterizing a DWDM system's essential features and performance. The number of channels, channel spacing, and relative power between channels is immediately visible. The table also shows each channel's wavelength/ frequency, power, OSNR, delta wavelength, and delta power.
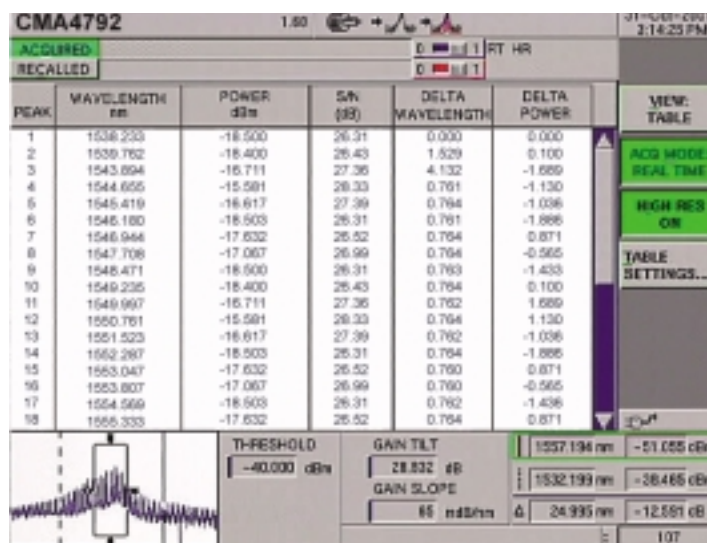


Table View

Drift View

Drift View is used in conjunction with the drift acquisition mode and is ideal for evaluating long-term power and wavelength stability of DWDM channels. This view displays channel number, reference wavelength, reference channel width, current wavelength, current power, minimum/maximum detected wavelength and detected power. It can also be used to compare the received channel frequencies to the ITU standard DWDM grid or a user-defined template - making field procedures simpler than ever.
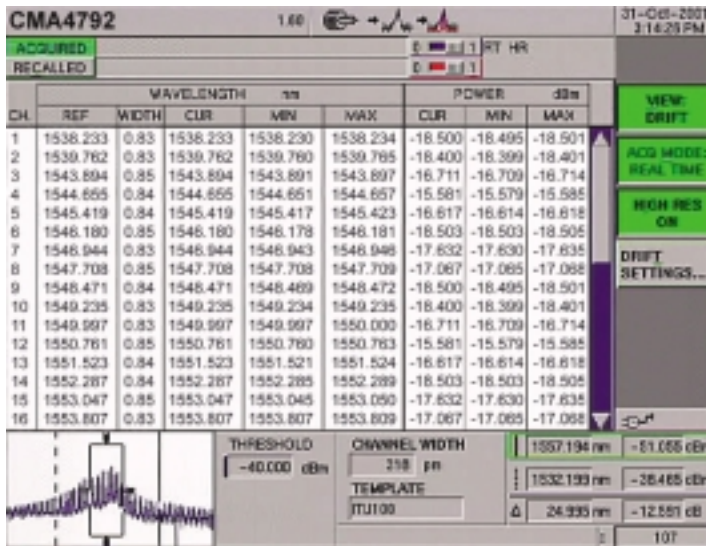
Graph View

Graph View displays full spectrum data and allows full manipulation of the waveform. Since this view displays the entire spectrum at all times, the user can zoom in while still maintaining a full spectrum view. In addition, it allows acquired and recalled data to be displayed together; this is especially useful for comparing spectra, analyzing channel power flatness, and viewing channel spacing.
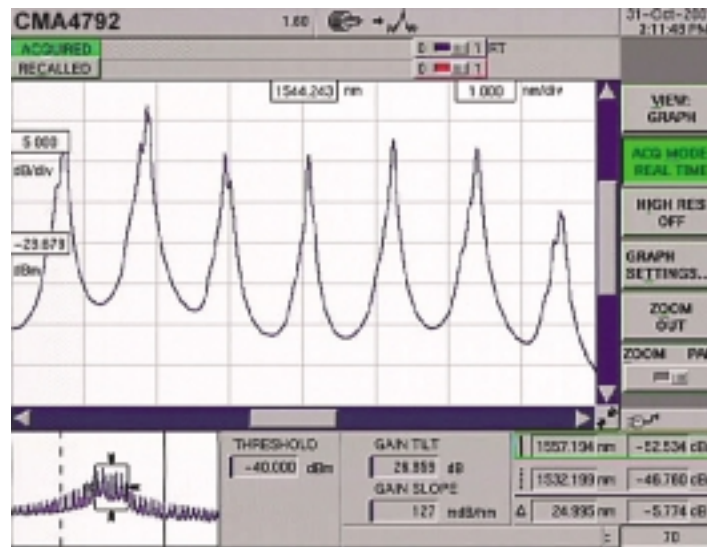
Drift View

Graph View

NetWorks OTDR/OSA Emulation Software

Because obtaining and analyzing test data can prove to be a daunting task, particularly in high fiber count networks, NetTest offers comprehensive data emulation software and economical trace analysis services that will make you and your equipment more productive.

NetWorks - The Software Emulation Tool that Simplifies Data Analysis
NetWorks data emulation software contains powerful tools for analyzing, reporting, and printing OTDR and OSA data from the NetTest Model 7500 and CMA family of OTDRs. The software allows you to save test data in the field and perform analysis on your desktop, which means that the equipment can remain in the field performing more tests instead of being tied up in the office.

Whether you're viewing OTDR trace results or analyzing spectral data, NetWorks will save valuable time in the office, as well as in the field. Its familiar Windows® environment makes operating the software a simple task, even for those unfamiliar with OTDR or OSA operations. Analysis can be performed with a few clicks of the mouse - integrated help screens are available whenever they're needed. The software supports other manufacturer's OTDR data formats and can easily convert between legacy and current file formats and the Bellcore GR-196 standard.

NetWorks/OTDR key features

- Automated analysis tools for locating splice-points and building splice loss measurement templates

- Batch processing to update and reformat multiple trace files simultaneously

- Current View, Batch, Frame and Bi-directional printing with color option

- Trace Summary, Exception, Fiber Acceptance, Uni-directional and Bi-directional splice loss reports

- Dial-a-language with English, Spanish, French, Russian, German and Traditional Chinese available to the user
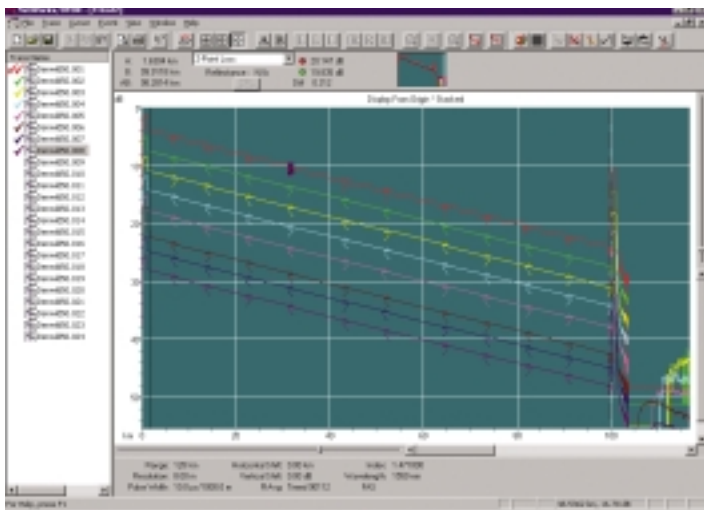
NetWorks/OSA key features

- Multiple spectrum viewing and power measurements

- Integrated peak and drift tables

- Optional gain tilt and slope lines

- Flexible batch and frame printing formats

- Ability to display in nanometers (nm) or terahertz (THz)

With OTDR and OSA trace analysis capability, and unsurpassed reporting capability, NetWorks is the one product needed for all your fiber optic system analysis.
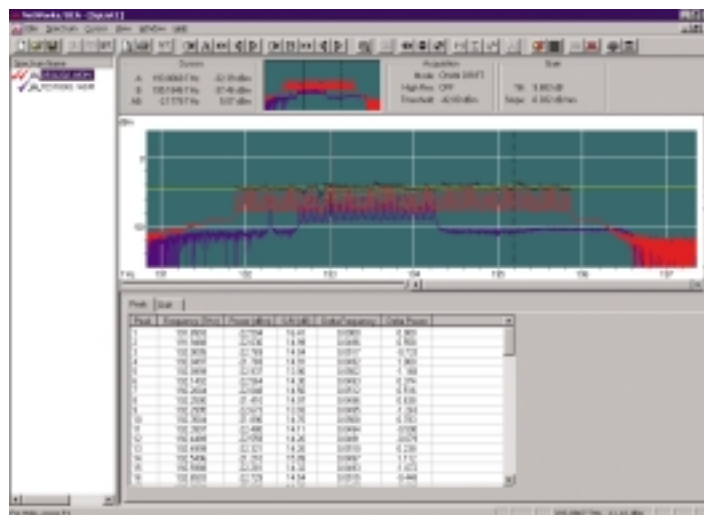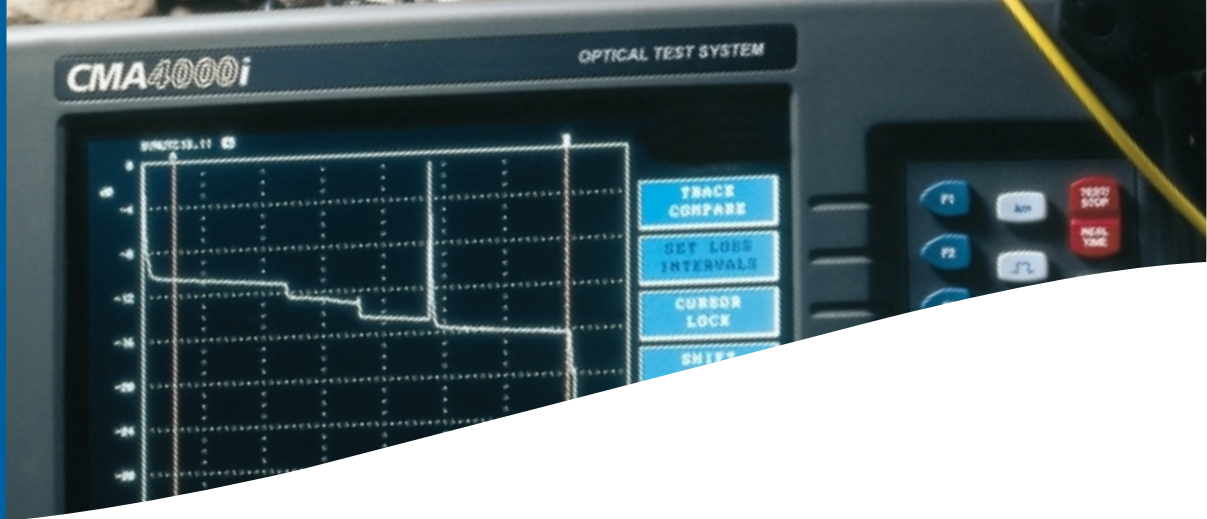
NetWorks OTDR

NetWorks OSA

NetTest Training

Training Service

• Cutting edge training from the industry leader

• Classes tailored for specific needs

• "Train the Trainer" classes educate in-house training departments

As the industry leader in the field of fiber optic installation, commissioning and installation products, NetTest understands the importance of education. The fiber optic industry is rapidly progressing, and staying abreast of the latest technology is a must for retaining your competitive advantage.

NetTest, your fiber optic testing partner, offers a variety of comprehensive and economical training courses held either at a NetTest training facility or at your own location. Standard training courses include Introduction to Fiber Optics, Introduction to Dispersion, OTDR User Training, Advanced OTDR Training (Train-the-Trainer), and NetWorks Software Training. In addition to standard training, NetTest offers customized courses designed specifically for your training and educational needs.
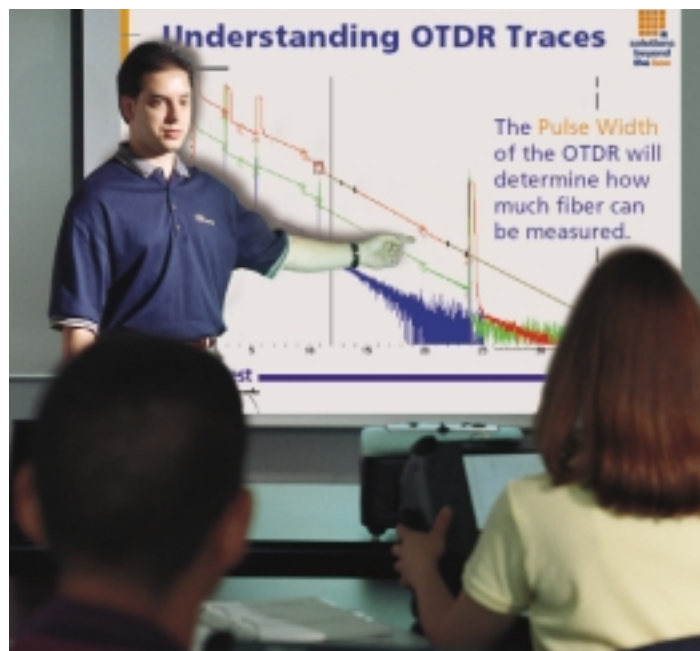
NetTest Trace Analysis Service
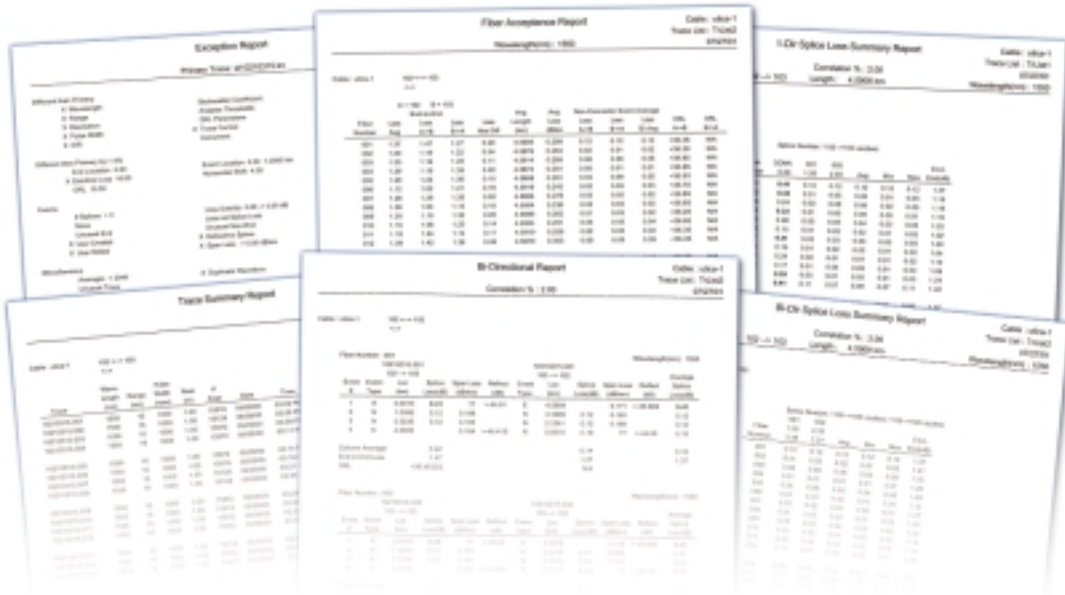
Commissioning a large fiber optic cable, or even a small one, can prove to be a daunting task. Often, dual wavelength, bi-directional testing of fiber optic cables results in hundreds or thousands of OTDR trace signatures. It is imperative that this myriad of information is analyzed accurately and quickly so end-users of network services feel confident that their networks will operate at their optimal level. NetTest's unique trace analysis service will analyze your OTDR traces and quickly prepare clear, concise reports detailing all necessary OTDR trace data to properly commission your fiber optic cables.

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NetTest is a leading worldwide provider of testing, monitoring and management systems across both the optical and network layers of communications networks. NetTest provides network operators, network equipment manufacturers, component manufacturers and enterprise service providers with the network testing solutions they need.